
TV-1000 Audio Console

TECHNICAL MANUAL

 Wheatstone Corporation

600 Industrial Drive, New Bern, North Carolina, USA 28562

TV-1000 Live Television Audio Console Technical Manual - 2nd Edition (revised)

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Addenda



IMPORTANT: Please note the following updates to this technical manual:

ROUTER CONTROLLER RACKMOUNT POWER SUPPLY SCHEMATIC & PARTS LIST (PCS-125):

Slow Blow Fuse F1 is now 1.25AMP.

SMART SELECT CAGE (mono switcher card) SCHEMATIC & PARTS LIST (SS-MI-8S):

Regulator Q1 has been changed to a PQ05 SZ1 5V 1A.

Resistors R1-R9 are now 619 OHM 1% .25W.

ATTENTION!

Signal Path Insert Points

This TV-1000 audio console is equipped with insert patch points on the following modules:

Submasters

AUX master signals
SUBMASTER signals

Stereo Masters

STEREO MASTER output signals

Unless these points are jumpered (either internally via PCB-mounted jumpers OR looped through at each module's DB-25 rear panel connector) audio signal will not pass.

As shipped from the factory, PCB-mounted insert jumpers have already been installed. If you intend to use outboard signal loops at these points, you must remove the factory installed jumpers.

See “Submaster Module Internal Programming” (Chapter 3) and “Master Module Internal Programming” (Chapter 4) in the TV-1000 Technical Manual for details.

NOTE: While input modules also have insert points, these may simply be front panel bypassed by an “insert” switch at the top of each module.

ATTENTION!

Dual Redundant Power Supplies

If your Wheatstone audio console has been ordered and shipped with a failsafe power supply system, it uses TWO separate rackmount power supplies. Though either is capable of running the console on its own, in failsafe operation both units run in tandem: if one fails, the other takes over, assuring uninterrupted console operation.

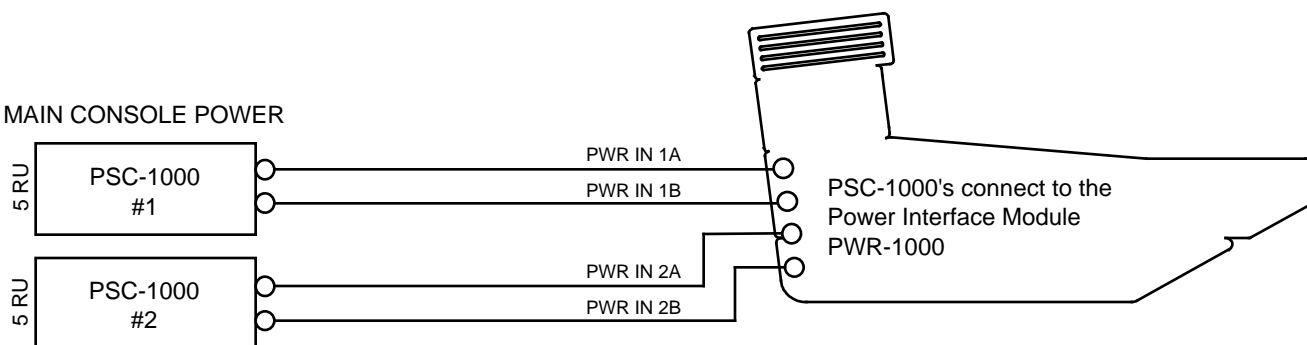
Dual failsafe supplies have their output trimmed to entirely different settings than stand-alone single units, and are MEANT to be run in tandem. If they are not, and you attempt to “save” one supply by powering it down and holding it in reserve until you run into an actual failure condition, you could shorten the life expectancy of the working unit.



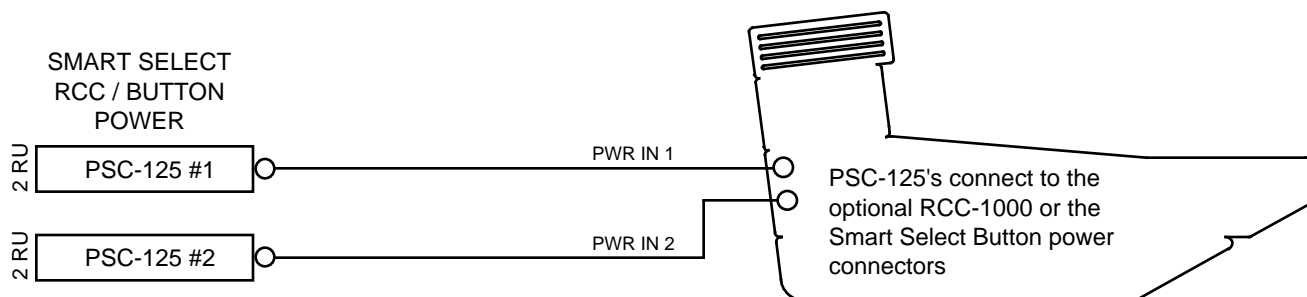
In order for the failsafe system to perform as designed, always have BOTH rackmount supplies powered up and connected to the console.

POWER SUPPLY AND SMART SELECT INSTALLATION GUIDE

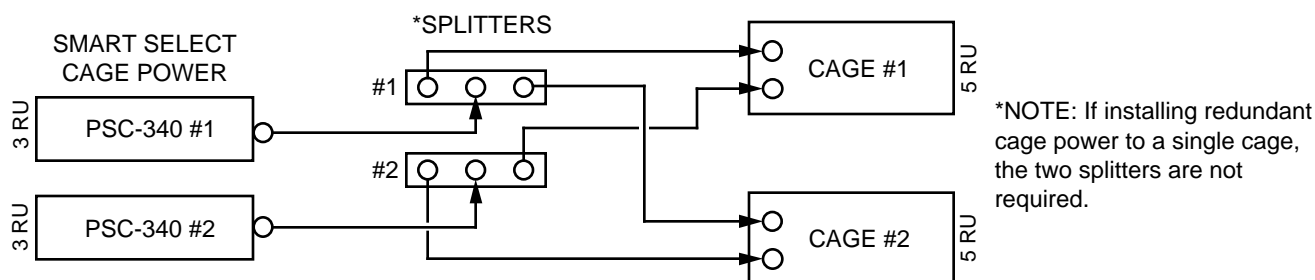
MAIN CONSOLE POWER



SMART SELECT RCC / BUTTON POWER



SMART SELECT CAGE POWER



DEVICE	RACKUNITS	TOTAL POWER REQUIREMENTS
PSC-1000 #1 PSC-1000 #2	5 (8 3/4") 5 (8 3/4")	1500W TOTAL
PSC-125 #1 PSC-125 #2	2 (3 1/2") 2 (3 1/2")	200W TOTAL
PSC-340 #1 PSC-340 #2	3 (5 1/4") 3 (5 1/4")	400W TOTAL
SPLITTER #1 SPLITTER #2	1 (1 3/4") 1 (1 3/4")	N / A
CAGE #1 CAGE #2	5 (8 3/4") 5 (8 3/4")	N / A
		SYSTEM TOTAL = 2100W
NOTES: •Power totals assume redundant power supplies are installed. •Complete system should be run from two 120 VAC/20 AMP circuits.		

Module Removal Tools

Your Wheatstone TV-1000 audio console is equipped with two "module extractor tools" which are mounted underneath the console armrest, to the far right (just in front of the operator's mainframe headphone jack).

Main module faceplates are held into the console mainframe by three fasteners: a lower rear panel screw (below the module's I/O connectors, located at the rear of the console beneath the meterbridge assembly) and two faceplate mounting screws (top and bottom) located on the control surface of the console. The faceplate mounting screws, when removed, leave specially threaded holes that accept the two extractor tools.

To remove a module faceplate from the mainframe:

Remove the rear panel screw, then the front top and bottom mounting screws. Remove the extractor tools from underneath the armrest, and screw each tool into a module faceplate mounting hole. *Use only four or five turns* (do not over-insert; you may damage the threaded mainframe hole underneath). Using the extractor tools as handles, pull the module straight up out of the mainframe.

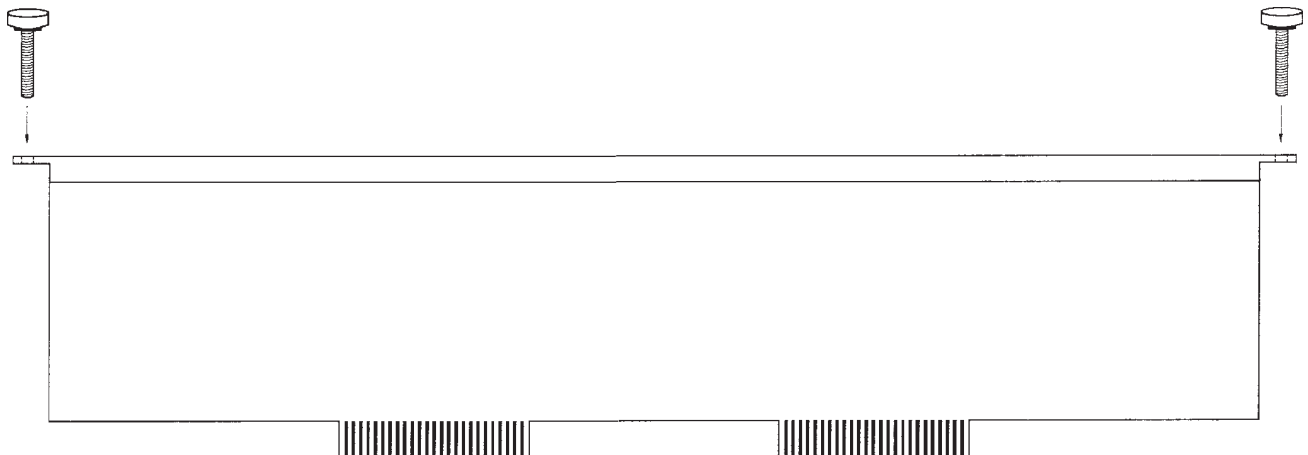


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Installation

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Installation

Console Placement

TV-1000 consoles are **HEAVY**. A fully loaded 70 position mainframe can easily weigh 600 to 700 lbs. We recommend using at least six people to move and place the console.



Console placement should avoid proximity to any electromagnetic fields, such as large power transformers, motors, and fluorescent lighting fixtures. The console may be mounted either on a custom constructed table surface or the optional factory leg support system. In either case, the console's handrest top surface would generally be located 29-30 inches from the floor.

Do not connect the TV-1000 console to its power supply (and do not connect the power supply to the AC power line) until instructed to do so.

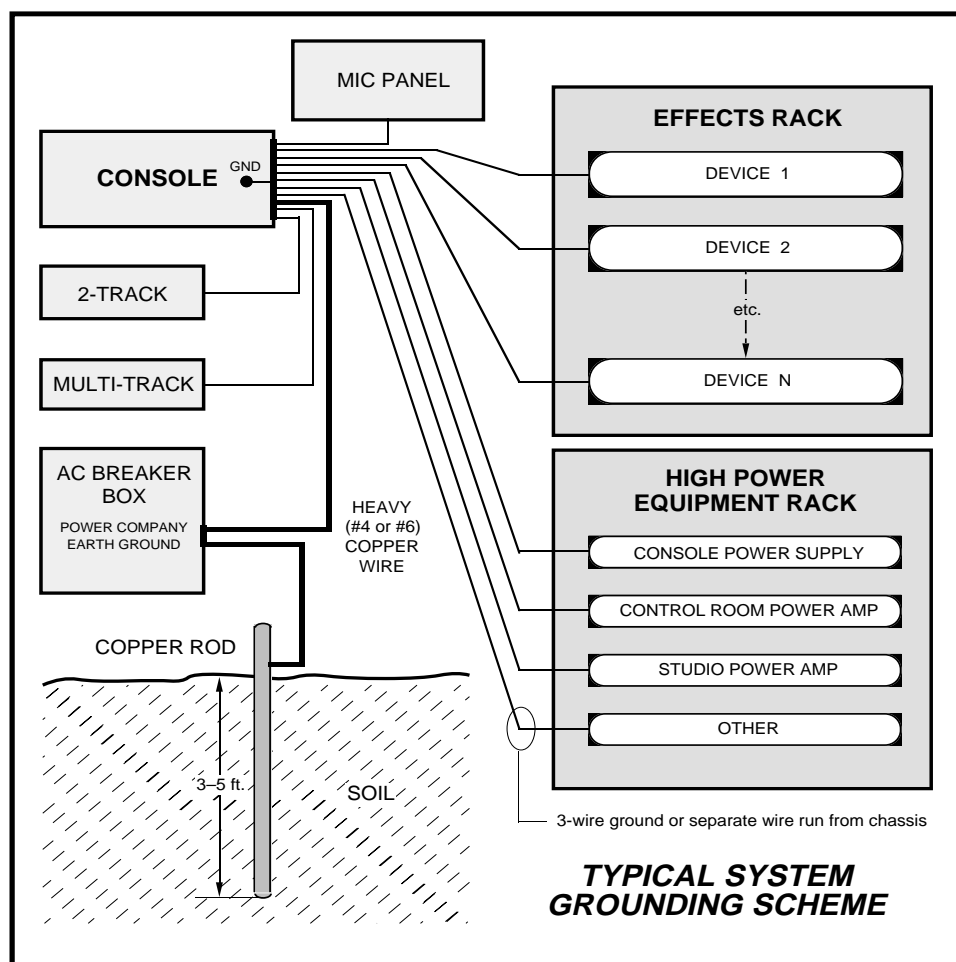
Factory Leg Support System

The optional factory leg system supports the console at sitdown height, and provides a hidden internal wiring chase that may be closed off with a rear concealment panel. The leg support system is pre-assembled at the factory, then broken down for shipment. Field assembly instructions are included in a separate document supplied with the legs. They are also reproduced in the Appendix of this Technical Manual (see page A-8).

System Ground

The first step is to ground the console.

Note that as supplied from the factory, console rackmount power supply common, audio common, and the TV-1000 mainframe are connected together at the console, but are **NOT** connected to electrical ground and the chassis of the power supply. Safety requirements dictate that a positive connection from the console mainframe to electrical ground be made in the completed installation. Use one of the grounding lugs on the bottom of the mainframe to establish your system ground. The grounding lug terminal strip may be found at the rear of the console, along the bottom edge of the mainframe pan directly under the rightmost mainframe slots (to the extreme lower left if you are looking at the rear of the console).



Tie the console ground lug terminal strip to the system earth ground. Tie every piece of equipment in the entire audio system to the console ground lug terminal strip.

The system ground serves two important purposes:

- (1) It provides a zero signal reference point for the entire audio system;
- (2) It assures safety from electrical shock.

There exist two terms that one encounters in a discussion of ground:

(A) **EARTH GROUND**, which is usually a heavy copper rod driven into the soil adjacent to the building (around 6 feet down) or a connection to the copper water pipes leading into the building. Either is acceptable (unless, of course, the water pipe is made of plastic).

(B) **THE POWER COMPANY EARTH CONDUCTOR** that enters the building at the power line breaker box; this conductor should be (and is often by code) tied to the above-mentioned earth ground at one point. This point is the **SYSTEM EARTH GROUND**.

TIE THE CONSOLE GROUND LUG TERMINAL STRIP TO THE SYSTEM EARTH GROUND. TIE EVERY PIECE OF EQUIPMENT IN THE ENTIRE AUDIO SYSTEM TO THE CONSOLE GROUND LUG TERMINAL STRIP. If the system earth ground point is inaccessible, tie the console ground terminal strip to the power company earth conductor at the main breaker box (see drawing "Typical Grounding Scheme" above).

Each piece of equipment should be connected by its own ground wire (usually the round third pin on the AC cord). This means that every AC outlet must have a separate conductor run to the console ground lug terminal strip; the outlets cannot be daisy-chained as is normally encountered in commercial and residential AC systems. Any equipment not supplied with 3-wire AC cables must have individual ground wires (16 gauge or larger) connected to their chassis grounds and then run to the console ground lug terminal strip.

An "isolated AC ground" studio outlet (usually orange in color) can also be used to accomplish the required grounding.

Further Grounding Details

Check all equipment to be absolutely certain that each unit is power transformer isolated from the AC mains to prevent safety hazards.

It is assumed that in each piece of audio equipment the audio ground and the chassis are tied together at some point. Any piece of equipment lacking a grounded chassis is likely to be prone to interference problems.

Locate all unbalanced audio equipment in the same rack if possible, to minimize chassis ground potential differences. It may also be helpful to insulate each piece of unbalanced equipment from its mounting rails in the rack by means of nylon 10-32 screws and insulating washers between rails and faceplates.

Once the system is properly grounded, proceed with the console power supply installation and connection (next section).

Power Supplies

For a complete discussion of TV-1000 power supplies, see the "TV-1000 Power Systems" chapter of this manual (page 9-1). For the purposes of the current chapter, you should properly rackmount the PSC-1000 (console), PSC-125 (Event Computer) and PSC-340 (rackmount smart select cage) power supplies and connect them to their associated equipment as described in the "Power Systems" chapter. (If failsafe versions have been ordered, you will be installing two units of each type.)

Note the power supplies should be mounted in an equipment rack within fifteen feet of the console (but no closer than 3 feet). Avoid locating any high gain equipment (such as phono preamps, tape recorders, etc.) too near the rackmount supplies, to avoid magnetic interference into that equipment. If the optional Wheatstone FC-4 fan unit has been ordered, install and connect that to the PSC-1000 supply per the information given on pages 9-3 and 9-4.

Once the supplies are rackmounted, they should be connected to their respective equipment using the supplied cables. Note that each cable's 10-pin female connector has to be rotated until its locating pins match the male connectors on the equipment it powers. Do not force a connector on; it attaches easily when properly aligned. Connect the cables first to the rear of the their associated equipment, then to the rear of each rackmount power supply.

Note each power supply is fitted with a 3-wire grounded AC cord that should be plugged into a "clean" AC power source. That is, an AC source that feeds only the control room audio gear. This source should be a separate feed from those powering lighting, air-conditioning, or any other non-audio machinery. The third pin ground wire of the AC source should be tied to the central system ground point. *Note that while the AC power cord ground wire terminates at the power supply chassis, it does NOT connect to the TV-1000 console common; the console itself must be grounded separately. (See previous section, "System Ground".)*

The power feed recommended in the text is often installed and referred to in studios as an "isolated AC ground" outlet. It is usually orange in color.

Failsafe Dual Redundant Supply

Wheatstone failsafe power supply systems use two separate rack-mount power supplies for each piece of powered equipment. Though either is capable of running a full load on its own, in failsafe operation both units run in tandem: if one fails, the other takes over, assuring uninterrupted operation.

NOTE dual failsafe supplies have their outputs trimmed to entirely different settings than stand-alone single units, and are MEANT to be run in tandem. If they are not, and you attempt to "save" one supply by powering it down and holding it in reserve until you run into an actual failure condition, you could shorten the life expectancy of the working unit.



In order for failsafe systems to perform as designed, always have BOTH rackmount supplies powered up and connected to their associated equipment.

The "TV-1000 Power Systems" chapter fully covers rackmount installation and connection of failsafe supplies.

Energizing the Supplies

(1) THE CONSOLE – Assuming the TV-1000 console mainframe is properly placed and grounded, and its PSC-1000 power supply correctly rackmounted and connected to the console's power interface module rear panel, you may now energize the PSC-1000 rackmount power supply by plugging it into the AC mains and turning it on, using its front panel circuit breaker/switch. (If you are using a failsafe system, turn on BOTH supplies.) The five LEDs on the power supply front panel should light up to indicate the presence of their respective

voltages. The console's VU meters will illuminate; individual module switches will assume the settings they had when the console was last powered down (there is battery backup RAM built-in to the console to assure this). If this is your first power up, console settings will assume the factory default.

(2) THE CONSOLE EVENT COMPUTER ACCESS PANEL – Again, assuming the event computer's PSC-125 power supply is correctly rackmounted, connected to the rear panel connectors of the event computer access panel at the console, and the supply is connected to the AC main, turn on the supply (or supplies, if failsafe) using the front panel circuit breaker/switch. The supply's two status LEDs should light up, indicating the presence of +12 and +5VDC, and the console's event computer access panel should activate.

(3) THE SMART SELECT CAGE – With the PSC-340 power supply correctly rackmounted and connected, energize the rackmount Smart Select Cage by plugging in the PSC-340 power supply to the AC mains. The Smart Cage should energize, with its switcher LEDs lighting to reflect the settings on the console's associated overbridge preselector panels.

(4) THE ROUTER CONTROL SYSTEM PC COMPUTER – With all the preceding equipment energized, boot the Wheatstone Router Control Computer at its separate keyboard. The monitor screen should light up, run through built-in diagnostics, and eventually display the Main Menu described in the Wheatstone Router Control System manual.

It is best to energize the TV-1000 console, console event computer, and rackmount smart select cage prior to booting up the PC event computer; this way the computer will be able to immediately find the equipment it is connected to. If the PC is booted first, power-up will take much longer as the system keeps looking for equipment that is not yet activated.

For a more complete discussion of Event Computer and Smart Cage start-up procedures see page 10 of "The Wheatstone Router Control System" technical manual.

Once you have verified proper power-up, turn off the rackmount power supplies to de-energize their associated equipment. Power down the PC computer and monitor. You may now proceed to wire up audio and control connections.

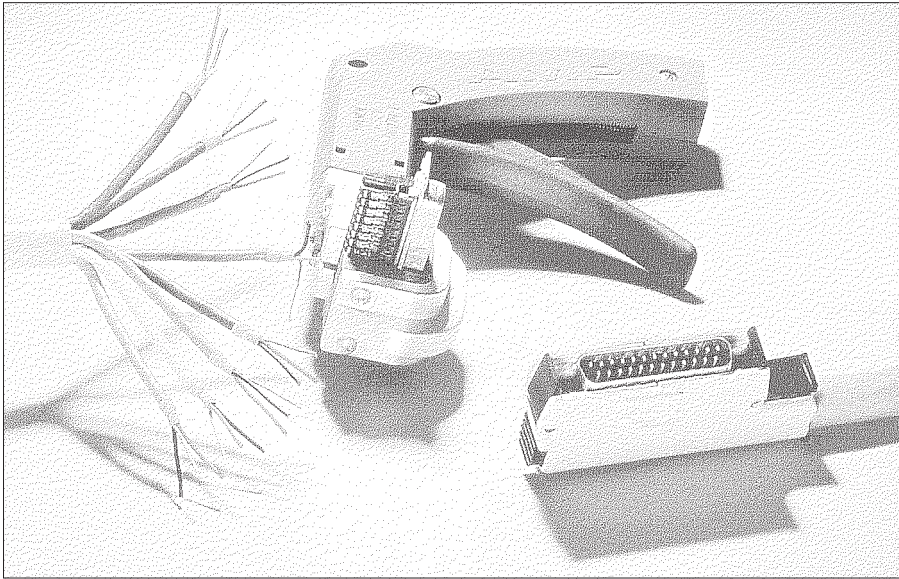
Audio and Control Wiring

All audio and control I/O connections to the TV-1000 console are made through multipin connectors (DB-25 and DB-9 type) located at the rear of the console.

The Insulation Displacement Connector System

The I/O wiring interface system is based on insulation displacement technology. A special AMP wiring tool is included with each console; it is auto-indexing, and allows individual wire connections to be positively made with a single squeeze of the tool's trigger. The trigger action is ratchet controlled, and will not release until a full connection

is made. Once released, the multipin connector held in the tool's jaw automatically indexes to the next connector pin. The technology is such that no stripping, soldering or tinning of wire ends is required; all that is needed is for the wires destined for the connector be snub cut and laid out in order (although tubing should be used on bare drain wires). An empty DB-25 or DB-9 connector is inserted into the tool, indexed to the first pin, and the wires are inserted one by one into the jaw and the trigger squeezed. In this way a single multipin connector can be completely wired up in a minute or two.



The AMP tool insulation displacement connector system. Note the right angle hood with self-locking tabs. The tool, multipin connectors (with gold plated pins) and latching hoods are supplied with each console.

In the event of a wiring error, connector pins may easily be removed from the shell with the wire still attached, and inserted into the correct position. Observe the side of the connector, with the metal part down. You will see a row of "Vees"—simply press the top of the vee together with a scribe or other sharp instrument; this will unlock the pin from the shell, and it can be removed and inserted into the correct position. Spread the vee apart to lock the pin in the new position. It should never be necessary to discard a connector due to a wiring error.

Note that mating right angle hoods for each connector are also supplied with the console. These have locking tabs that hold the connectors securely to the bottom of the console mainframe.

Connection Procedures

As supplied from the factory, the console requires no logic connections to function. Therefore an orderly installation begins with the audio wiring. Note this manual is organized by module type (inputs, submasters, masters, monitor modules, etc.); each chapter contains detailed wiring instructions for its module type. Proceed through the manual, chapter by chapter, until all modules have been wired to suit your particular installation requirements. Once proper audio operation is verified, go back to each individual chapter and proceed with control wiring.

Insert Points

Certain module signals have built-in insert patch points in their signal chains to allow outboard audio processing. These include SUBMASTERS (with both submaster and auxiliary master insert points) and STEREO MASTERS (stereo master output signals).

Normally these points are internally bridged at the factory (via PCB-mounted jumpers) prior to shipment. If you intend to use outboard signal loops at these points, you must remove the factory installed jumpers. See pages 3-6, 3-7 (submasters) and 4-6 (stereo masters) for details.

NOTE: While input modules also have insert points, these may simply be front panel bypassed by the “insert” switch at the top of each module.

NOTE it is also possible to bridge the insert points at each module's DB-25 I/O connector by connecting “INSERT OUT HI” pins to “INSERT IN HI” pins. See individual module pinout drawings (listed below by page number) for details.

Unbalanced Connections

INPUTS — Wire to the console with typical shielded two conductor cable (like Belden 9451), just as if you were connecting a balanced source. At the unbalanced source machine's output, connect the black wire (LOW) to the shield. If the machine has a -10 dBu output, don't hesitate to turn module input gain as high as is needed.

OUTPUTS — TV-1000 consoles use a balanced output circuit which behaves exactly like the secondary of a high-quality transformer, with no center tap—this output is both balanced and floating. Either the HIGH or LOW side of the output should be strapped to ground, with the output taken from the other side. (Normally you'd strap LOW to ground, and take HIGH to feed your unbalanced equipment.)

See page A-3 of the Appendix for a discussion of balanced versus unbalanced connections.

Quick Reference Pinouts

For fastrack access to individual module wiring information, refer to the pinout information on the following pages:

Stereo Mic/Line Inputs	2-17
Mono Mic/Line Inputs	2-29
Stereo Line Inputs	2-41
Preselector Panels (Smart Select Cage audio)	8-7 & 8-8
Submasters (w/Aux and MXM outputs)	3-9
Stereo Masters	4-9 & 4-10
Control Room Monitor (w/Solo and Headphone)	5-7
Studio Monitor	6-6
VU/Oscillator Module (includes Talkback)	7-5
Confidence Panel	8-11
Tape Remote Panel	8-13
Console Power Supply	9-4 & 9-5
Smart Select Cage Power Supply	9-7
Console Event Computer Power Supply	9-6

Input Modules

Stereo Mic/Line Input

General	2-5
Main Module	2-6
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AUX section	2-6
BAL/MIX Control - Mode Switch	2-6
Bus Assign	2-7
Equalization section	2-7
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Talkback to Control Room	2-12
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Cue Dropout	2-13
Timer Restart	2-14
Mix Minus	2-14
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main card (MLS-1000)	10-17
switch card (MLSW-1000)	10-19
Fader panel	10-23
main card (FPI-1000)	10-24
switch card (FPSW-1000; optional)	10-26

Printed Circuit Board Load Sheets

(TECHNICAL DRAWINGS booklet)

MLS-1000 main PCB	TD-16
MLSW-1000 switchcard PCB	TD-22
FPI-1000 fader panel main PCB	TD-49

Schematics

(TECHNICAL DRAWINGS booklet)

MLS-1000 main PCB	TD-9
MLSW-1000 switchcard PCB	TD-17
FPI-1000 fader panel main PCB	TD-46

Mono Mic/Line Input

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Main Module	2-19
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Input section	2-19
AUX section	2-19
PAN Control	2-19
Bus Assign	2-19
Equalization section	2-19
Peak LED	2-19
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Direct Out	2-20

Preselector Panel	2-20
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Input Fader Panel	2-21
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Fader	2-21
Mute Groups	2-21
Mix Minus	2-21
Ready LED	2-21
Channel ON	2-22
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Metering	2-22
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Input Module External Control Ports	2-23
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Remote On and Off	2-23
Cough	2-23
Talkback to Control Room	2-23
On Tally	2-24
Machine Start and Stop	2-24
EFS On/Off	2-24
Machine Remote ON and OFF	2-24
Ready LED	2-24

Mono Mic/Line Input (continued)

Input Module Logic Programming 2-25

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Input Module Audio Wiring 2-28

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Parts Lists (located in Chapter 10)

MI-1000 module	10-27
main card (MI-1000)	10-29
switch card (SISW-1000)	10-32
Fader panel	10-23
main card (FPI-1000)	10-24
switch card (FPSW-1000; optional)	10-26

Printed Circuit Board Load Sheets (TECHNICAL DRAWINGS booklet)

MI-1000 main PCB	TD-30
MI-1000 switchcard PCB ("SISW-1000")	TD-35
FPI-1000 fader panel main PCB	TD-46

Schematics

(TECHNICAL DRAWINGS booklet)

MI-1000 main PCB	TD-23
MI-1000 switchcard PCB ("SISW-1000")	TD-31
FPI-1000 fader panel main PCB	TD-46

Stereo Line Input

General 2-30

Main Module 2-31

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AUX section	2-31
BAL/MIX Control - Mode Switch	2-31
Bus Assign	2-32
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Preselector Panel 2-33

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Input Fader Panel 2-33

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Metering 2-35

Input Module Control Port 2-36

Machine Start and Stop	2-36
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Input Module Logic Programming 2-37

Mute/Tally	2-37
Cue Dropout	2-37
Timer Restart	2-38
Mix Minus	2-38
Bus Minus®	2-38
Sum LED VU ladder	2-38
AUX sends	2-39
Mute Link	2-39
Event Computer Start/Stop/Timer Enable	2-40

Mute Follow Connector 2-40

Input Module Audio Wiring 2-40

I/O Pinout Drawing	2-41
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Parts Lists (located in Chapter 10)

SI-1000 module	10-35
main card (SI-1000)	10-37
switch card (SISW-1000)	10-39
Fader panel	10-23
main card (FPI-1000)	10-24
switch card (FPSW-1000; optional)	10-26

Printed Circuit Board Load Sheets

(TECHNICAL DRAWINGS booklet)

SI-1000 main PCB	TD-44
SISW-1000 switchcard PCB	TD-35
FPI-1000 fader panel main PCB	TD-49

Schematics

(TECHNICAL DRAWINGS booklet)

SI-1000 main PCB	TD-37
SISW-1000 switchcard PCB	TD-31
FPI-1000 fader panel main PCB	TD-46

Main Module

Input section

The upper section of the MLS input module selects between two stereo microphone and two stereo line inputs. The microphone section provides a variable input gain control, switched left and right -20dB pad circuits, and switchable +48V phantom power (labeled “V+”). The electronically balanced line input section has a center detent input gain control (with PCB-mounted calibration trimpots for fine adjustment). Left and right phase reverse switches affect both mic and line inputs. A patch point INS switch (for both mic and line) allows insertion of any pre-patched external processing gear (insert points are electronically balanced in and out).

AUX Section

This section taps eight summed (L+R) post-EQ auxiliary send signals from the main input channel and routes them to the console's send ACN busses. There is a pre/post selector switch and an ON switch for each aux circuit. NOTE aux circuits may also be programmed to operate as left/right stereo pairs via PCB-mounted programming dipswitches (see page 2-15). Also, while aux pre/post switches normally switch before or after both the channel fader AND channel On switch, special PCB-mounted slide switches (four per module) permit dual AUX pairs to follow main channel ON/OFF even when switched to “pre” (page 2-15).

BAL/MIX Control – MODE Switch

The center-detent BAL/MIX rotary control operates in conjunction with the module's MODE switch. Here are the possible settings and functions:

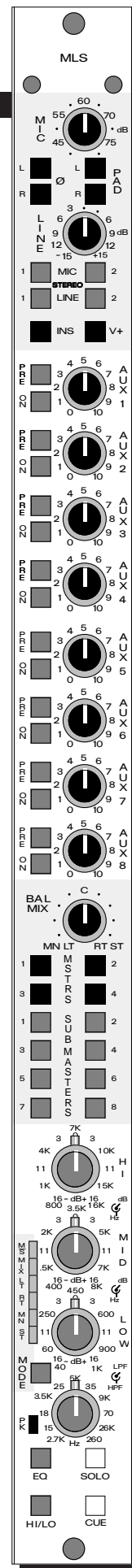
Stereo Mode (ST) – Default setting (MODE switch cap illuminates); the rotary control functions as a regular L/R stereo balance pot.

Mono Mode (MN) – Rotary control functions as a pan pot (a L+R summed signal is panned L/R within the module's stereo field).

Right Mode (RT) – Rotary control pans the right channel signal L/R within the module's stereo field.

Left Mode (LT) – Rotary control pans the module's left channel signal L/R within the module's stereo field.

Mix Mode (MIX) – The module is put into mono sum mode; the rotary control then determines the left-right makeup of the mono sum signal, which remains dead center within the stereo field (i.e., fully counterclockwise: left signal only; center detent: mono sum of equal strength left and right signals; fully clockwise: right signal only; intermediate settings: varying L/R signal strength mix ratios. Useful for setting the balance between field or studio voiceovers and field-recorded actuality audio.



Middle/Side Mode (M/S) — Intended for live or recorded signals that utilize two monophonic microphones: one (feeding the module's left channel) a cardioid mic directed along the main axis of the sound to be recorded; the other a figure-eight mic (feeding the module's right channel) aligned at right angles to the cardioid pickup. When these are fed through the MLS-1000 module functioning in M/S mode, the rotary control will act as follows: when turned all the way to the left (counterclockwise) the LT (cardioid) signal is sent to both left and right module channels and a central "middle" effect results; when turned right (clockwise) the RT (figure-eight) signal goes to left and "–RT" (out-of-phase RT) goes to right, resulting in a "side" effect. In center position the rotary control sends a "LT plus RT" signal to the module's left channel and a "LT minus RT" signal to the module's right channel. Intermediate settings produce combinations of the above.*

Bus Assign

Each input module may have its output assigned to any combination of the console's four stereo MASTERS and/or eight stereo SUBMASTERS.

Equalization Section

A four-band stereo EQ/filter section is included, employing 3 sweep frequency peaking sections (each $\pm 16\text{dB}$ with reciprocal curves) plus sweep frequency (-12dB/octave slope) low pass (2.7KHz - 26KHz) and high pass (12Hz to 260Hz) filters. Note the three-band EQ and HI/LO pass filter sections may be switched in and out separately.

Peak LED

A peak reading LED indicator lights to indicate overload conditions within the channel circuitry (the indicator monitors both pre and post fader points in the signal chain).

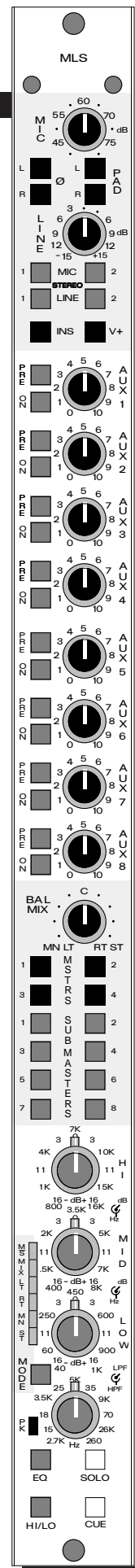
Cue and Solo

Both pre-fader CUE and post-fader/post-channel on SOLO functions are provided. These switches tap the module's PFL and AFL signals and route them to the console's stereo SOLO/CUE monitor bus, where they may be used to feed operator headphones, control room monitors, dedicated speakers, etc. (SOLO/CUE is mastered at the console's control room monitor module; see Chapter 5.) Note CUE may be programmed to automatically drop out whenever the module's ON switch (see fader panel section) is activated (see page 2-13, "Cue Dropout").

Direct Out

Each input module has an electronically balanced direct output. It is post fader, post channel ON.

*TECHNOTE: Use of an X-Y scope (Lissajous display), phase coincidence metering, and accurate monitoring is highly recommended to assure both pleasant and mono-compatible output when using the M/S mode feature.



Preselector Panel

TV-1000 input modules may be supplied with optional overbridge preselector panels. These consist of an eight-bank switch array that determines the source signal being fed to the main module's Line 1 input. As stated before, preselector panels do not control audio directly; they send control pulses to switcher cards mounted in a separate rackmount Smart Select® cage. The cage card then returns the appropriate signal to the module. See pages 8-5 thru 8-8 for smart cage wiring details.

TV-1000 consoles may also be ordered with overbridge preselector panels that interface directly with a station switcher rather than a Smart Select® cage. The operation principle remains the same; the preselector switch sends a control pulse to the station switcher, which then selects and returns the appropriate audio signal to the module.

Note preselector panel switches can be programmed (through the Wheatstone RCC Event Computer's separate keyboard and monitor) to display 4-character alpha-numeric source codes that signify which source has been selected. These codes are displayed on the console's source display strip, located just above the console's fader panels. Note the source display will follow the main module's input selector switches (i.e., Mic 1, Mic 2, Line 1, Line 2); however, when Line 1 is selected at the module, the source display will show the currently selected preselector panel's source code.

Smart Select® cage and Event Computer operation is covered in a separate technical manual ("The Wheatstone Router Control System").

Input Fader Panel

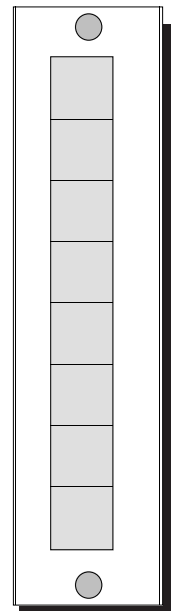
Each input module has an associated fader panel located directly below it. Starting from the bottom, these panels are configured as follows:

Fader

A 3000 Series Penny & Giles long-throw (104mm) stereo fader. Plug-in for easy servicing.

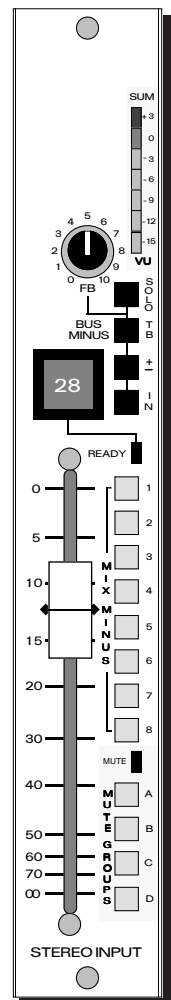
Mute Groups

Each input channel may be assigned to any or all of four Mute Control Groups. These groups (A thru D) can then be muted by the press of a single master mute button. (In other words, whenever the master switch for a mute group is activated, any module assigned to that group will have its output muted.) A "mute" LED indicator lights whenever a module has been muted. (The four mute master switches are located in the fader section of the board, directly underneath the power interface module in the center of the console.)



PRESELECTOR

FADER PANEL



Mix Minus

Feeds a summed version of the module's signal to the console's mix-minus system. Any module turned ON automatically feeds a signal to all eight mix-minus busses. Creation of a feed for IFB or remote use is done by simply pressing one or more of the eight mix-minus switches on the chosen input module's fader panel, which removes that module's feed from the selected busses. Illuminated mix-minus switches thus show the deselected status directly at the input source.

Note the mix-minus signal may be programmed (by an internal PCB-mounted slide switch) to be pre or post fader; a programming jumper permits the mix-minus feed to follow channel ON/OFF. See page 2-14, "Mix Minus" for details.

Ready LED

Used for line inputs; this tally LED is powered by an external source machine to indicate when it is cued-up and ready for play.

Channel ON

This momentary action lighted pushbutton switch turns the input channel on and off. It may also be programmed to activate tallies (4), monitor mutes (4) and timer restart. A DB-9 control port lets the switch control (or be controlled by) external devices. See this chapter, "Input Module External Control Ports" and "Input Module Logic Programming" for a complete discussion.

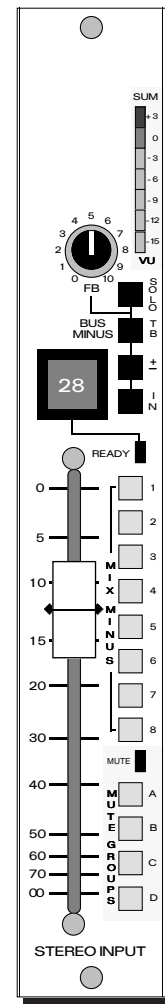
Bus Minus® Foldback

In addition to the eight bus mix-minus system previously described, each input module can also produce its own independent mix-minus feed, called Bus Minus®. This is accomplished by pressing the Bus-Minus IN switch, which places a summed version of the module's signal onto a special dedicated ACN mix bus, where it becomes available to other modules for use in their own Bus-Minus functions.

A rotary level control (FB or foldback) outputs the dedicated ACN bus mix—with or without the module's own signal, depending on the setting of the +/- switch (see immediately following)—to a connector on the module's rear panel. The "+/-" switch, when pressed, illuminates and removes the module's signal only from its own bus-minus output—the signal feed to the ACN mix bus (and other modules) remains unaffected.

A TB switch (programmable to feed pre or post FB level control) sends console talkback audio to the module's bus-minus output, which may be monitored at any time by a SOLO switch. (See page 2-14, "Bus Minus®" section, for programming details.)

FADER PANEL



Metering

Each individual input channel has its own 7-segment mono sum LED VU ladder built in to that channel's fader panel. This LED VU may be internally programmed to monitor pre or post fader. It is always, however, pre channel ON/OFF, allowing it to function as a signal present indicator. The VU ladder is calibrated via a PCB-mounted trimpot on the fader panel's main printed circuit board ("CR1" – see "FPI-1000" load sheet on page 49 of the Technical Drawings, center left). Note a single PEAK LED indicator at the bottom of the main module faceplate also warns of overload transients (it monitors both pre and post fader).

Input channels may also be metered at the console's stereo SOLO VU meter pair in the console overbridge, just above the VU/Oscillator module. The SOLO meters may be driven pre or post fader, depending on whether the module's CUE (PFL) or SOLO (AFL) switches are pressed.

Input Module External Control Ports

The MLS-1000 input module may be turned on and off from a remote location by control wiring to the main module's rear panel DB-9 "CONTROL" connector (bottom of rear panel):

Remote On

Provide a momentary closure between connector pins 6 and 7. This will latch the module ON. (User-supplied momentary contact switch required.)

Remote Off

Provide a momentary closure between pins 6 and 9. This will latch the module OFF. (User-supplied momentary contact switch required.)

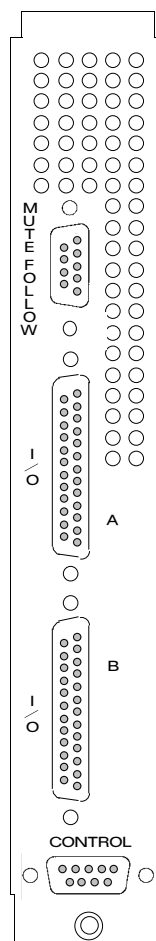
Ready LED

The module's fader panel has a green ready LED next to the channel ON switch. This LED can be powered by an external source machine to indicate when that machine is cued up and ready for play. The LED hookup pins are 8 (+) and 5 (–) [5VDC nominal].

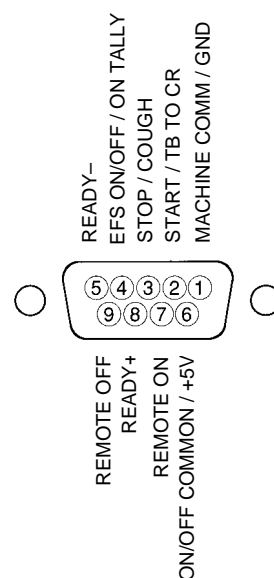
The remaining control functions are input specific; that is, programming jumpers on the module's switch PCB (MLSW-1000) assign them to Mic 1 and/or Mic 2, OR Line 1 and/or Line 2.

Note the jumpers must follow the "Microphone versus Line Functions" PCB-mounted slide switch settings explained below (see also Signal Flow Diagram on page 8 of the Technical Drawings, lower left). If MIC functions have been programmed via the slide switches, then jumpers for M1 and/or M2 must be installed—NOT jumpers for L1/L2. Naturally, the reverse is also true. Generally speaking, input port control jumpers (zero ohm resistors) are already installed at the factory as required by client specifications. However, should you wish to install your own, see jumpers J5 thru J8, Technical Drawings "MLS-1000" switch card load sheet (page 22, center right). Input ports are enabled as follows: Mic 1: J8, Mic 2: J7, Line 1: J6, Line 2: J5.

Programming for MIC or LINE is accomplished by a pair of PCB-mounted slide switches located at the top of the module's switch PCB (SW33 & SW34). See Technical Drawings "MLSW-1000" load sheet (page 22, right). When viewed from the solder side of the board (as you would see it when examining an assembled module) these switches are accessed through a cutout in the PCB labeled "<-mics:lines->". When both slide switches are to the left, microphone functions (COUGH, TB TO CR) are active; when switches to the right, line functions (machine START and STOP) are active.



The module's CONTROL DB-9 connector is at the bottom of its rear panel.



On Tally (Mic Function)

This opto-isolated control function provides a continuous closure between CONTROL DB-9 pin 4 (ON TALLY) and pin 1 (GND) whenever the module's channel ON switch is pressed. This closure can be used to control an externally powered tally light that requires a continuous closure to function. Or an external tally light (i.e., LED) can be powered from the input module by connecting the external LED to CONTROL DB-9 pin 6 (+5V) and pin 4 (ON TALLY). In either case, the current is not to exceed 50 milliamps.

EFS On/Off (Line Function)

This control function is designed to run European type source machines (as opposed to the American MACHINE START/STOP functions called out below). When the module is on, a constant closure occurs between CONTROL DB-9 pins 4 (EFS ON/OFF) and 1 (MACHINE COMMON).

The MLS-1000 input module can also control remote devices by control wiring to the main module's rear panel DB-9 "CONTROL" connector:

Machine Start (Line Function)

The remote source machine's external on pins are wired to the console input module's DB-9 CONTROL connector pins 2 (START) and 1 (MACHINE COMMON). Whenever the module's channel ON switch is activated, the remote machine will start playing.

Machine Stop (Line Function)

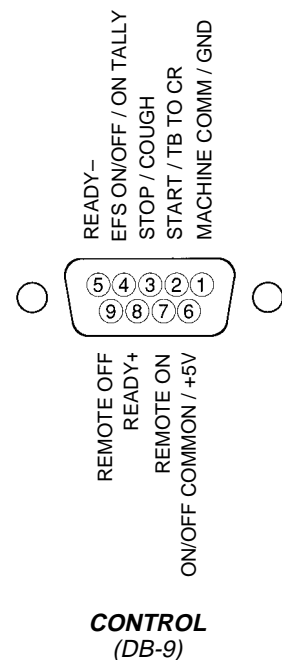
The remote source machine's external off pins are wired to the console input module's DB-9 CONTROL connector pins 3 (STOP) and 1 (MACHINE COMMON). Whenever the module's channel ON switch is deactivated, the remote machine will stop playing.

Cough (Mic Function)

A closure between CONTROL DB-9 connector pins 3 (COUGH) and 1 (GND) will turn the module off. Note this is a non-latching mode; the module will turn on again as soon as the closure stops (i.e., the user-supplied external COUGH switch is released).

TB to CR (Mic Function)

A closure between CONTROL DB-9 connector pins 2 (TB TO CR) and 1 (GND) does two things: a) the module's PFL signal is placed on the console's CUE bus (where it may be heard by the console operator) and b) the module's COUGH function is simultaneously activated, to prevent the TB signal from accidentally going out over other assigned busses. This non-latching condition continues until the user-supplied external TB switch is released.



Input Module Logic Programming

Mute/Tally

The console has four separate MUTE control lines; each input module may be programmed to activate any of these via its channel ON switch. The MUTE control lines are used to shut off control room and studio monitor speakers whenever the microphone for that particular location is activated. The same MUTE control lines can also activate TALLY ports at the console's control room monitor (CRM-1000) and studio monitor (STM-1000) modules (see pages 5-6 and 6-5).

Input module programming is accomplished by PCB-mounted dipswitches located on the main module PCB. Note each of the channel's inputs [M1/2, L1/2] may be programmed separately. See Technical Drawings "MLS-1000" load sheet (page 16, lower right) and schematic (page 14, C-3). The input mute programming dipswitches are:

Mic 1 – Dipswitch "SW24"

Mic 2 – Dipswitch "SW25"

Line 1 – Dipswitch "SW27"

Line 2 – Dipswitch "SW28"

NOTE on those input modules with an associated preselector panel, each preselector input can also be programmed to mute separately. The eight associated preselector panel dipswitches are "SW1" through "SW8". See Technical Drawings "SB-1000" load sheet (page 145, center) and schematic (page 144, B-3).

Mute logic control connections between individual input modules and their associated overbridge preselector panels are made via two DB-9 connectors at each input channel's mainframe location. One is on the main module's rear panel ("MUTE FOLLOW" Upper DB-9); the other is mounted directly behind each module's preselector panel, on the rear of the console's upper meterbridge. The two connectors are wired together, pin-for-pin, by an external multi-conductor cable.

GROUP MUTES MUTE FOLLOW (PCB slide switch "SW26") – Mute/Tally functions are normally programmed to follow the module's channel ON switch. However, this PCB slide switch allows the mute/tally functions to follow the console's four Mute Masters (A thru D, see page 8-12). Thus, when "SW26" is reprogrammed to the right ("GR mutes mute follow") whenever an input module is muted via the group mute masters, its programmed mute/tally functions are automatically deactivated. See Technical Drawings "MLS-1000" load sheet (page 16, lower right) and schematic (page 14, C-3).

Cue Dropout

Input modules may be programmed to automatically drop out of Cue mode whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW22". See Technical Drawings "MLS-1000" load sheet (page 16, lower right) and schematic (page 14, A-5).

Timer Restart

Input modules may be programmed to automatically reset the console's digital timer to zero and start it counting up whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW23". See Technical Drawings "MLS-1000" load sheet (page 16, lower right) and schematic (page 14, C-1).

Mix Minus

The input module's summed mix-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW18") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower left) and schematic (page 46, C-5). The default setting is "post".

The input module's summed mix-minus assign signal may also be programmed to follow the channel ON switch via a programming jumper ("J1") on the module's fader panel main PCB (this is the default setting). See Technical Drawings "FPI-1000" load sheet (page 49, left center) and schematic (page 46, dead center).

Bus Minus®

The input module's summed bus-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW19") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower left) and schematic (page 46, C-5). The default setting is "post".

The input module's summed bus-minus assign signal may also be programmed to follow the channel ON switch via a programming jumper ("J2") on the module's fader panel main PCB (this is the default setting). See Technical Drawings "FPI-1000" load sheet (page 49, left center) and schematic (page 46, C-5).

The talkback feed to the module's bus-minus output may be programmed to be pre or post the foldback (FB) level control via a PCB-mounted slide switch ("SW20") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower right) and schematic (page 46, D-3). The default setting is "post".

Sum LED VU ladder

The input module's mono sum LED VU meter signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW17") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, extreme left) and schematic (page 46, B-7). The default setting is "pre", which allows the meter to act as a "signal present" indicator.

AUX Sends

The TV-1000 console aux SEND busses are normally configured as eight mono ACNs. However, they may be reprogrammed as left/right pairs if desired. This is accomplished by PCB-mounted slide switches on the module's main PCB (SW 14-21). See Technical Drawings "MLS-1000" load sheet (page 16, left center) and schematic (page 12, A-6 thru D-6). The programming switches are:

- Aux send 1 sum/left: SW14
- Aux send 2 sum/right: SW 15
- Aux send 3 sum/left: SW16
- Aux send 4 sum/right: SW 17
- Aux send 5 sum/left: SW18
- Aux send 6 sum/right: SW 19
- Aux send 7 sum/left: SW 20
- Aux send 8 sum/right: SW 21

Note the above switches are reached through access cutouts in the module's upper switchcard PCB.

Aux send pairs may also be programmed to follow the module's channel ON switch regardless of their individual front panel pre/post fader switch settings (this is the default setting). This is accomplished by PCB-mounted slide switches (SW 36-39) on the module's switchcard PCB. See Technical Drawings "MLSW-1000" load sheet (page 22, right center) and schematic (page 18, A-4 thru D-4). The programming switches are:

- Aux send 1/2 pre on/off follow: SW39
- Aux send 3/4 pre on/off follow: SW38
- Aux send 5/6 pre on/off follow: SW37
- Aux send 7/8 pre on/off follow: SW36

Mute Link

The TV-1000 console mute link system is designed to activate mute/tally functions **ONLY** when a live microphone signal is present on-the-air (i.e., live at the console's Stereo 1 master output). Individual input channels can be programmed to be part of the mute link signal chain via PCB-mounted slide switch "SW40". The default setting is mute link DEACTIVATED. See Technical Drawings "MLSW-1000" load sheet (page 22, right center) and schematic (page 20, C-6). Note this slide switch is reached through a cutout in the switchcard PCB.

Each input module also has a "machine link defeat" PCB-mounted slide switch ("SW42"), which allows machine control port microphone functions (i.e., machine start/TB to CR and machine stop/COUGH) to be part of the mute link system chain. The default setting is machine link DEACTIVATED. See Technical Drawings "MLSW-1000" load sheet (page 22, right center) and schematic (page 18, C-3). Note this slide switch is reached through a cutout in the switchcard PCB.

Event Computer Start/Stop/Timer Enable

When the TV-1000 console's event computer takes a snapshot of switch settings on an input module, the channel ON switch state is included in the event storage. When the event is called up at a future time, the module may be turned ON or OFF depending on the snapshot and the current state of the module. If the module is programmed to fire an external source machine (via machine start/stop functions, see page 2-12) a PCB-mounted slide switch on the module's switchcard ("SW41" on PCB MLSW-1000) gives you a choice of having the machine functions (AND the timer restart function) enabled or defeated for the event call-up. See Technical Drawings "MLSW-1000" load sheet (page 22, right center) and schematic (page 18, B-2). Note this slide switch is reached through a cutout on the solder side of the PCB.

Mute Follow Connector

The module's MUTE FOLLOW DB-9 connector, located at the top of the rear panel, is used to transmit muting and tally control signals between the module proper and it's optional preselector panel in the console's overbridge. It is wired pin-for-pin to a matching connector mounted behind each preselector, on the rear face of the console meterbridge.

Actual preselector mute/tally programming is done through PCB-mounted dipswitches (eight; one for each source) on each preselector panel switchcard. See Technical Drawings, "SB-1000 Smart Button" schematic (page 144) and load sheet (page 145).

Input Module Audio Wiring

All audio wiring for the stereo mic/line input module is via two DB-25 connectors mounted on the module's rear panel. Audio signals include mic and line inputs (upper connector "A") and insert point wiring, direct out, and bus minus out (lower connector "B"). See drawing on next page for detailed pinouts.

Parts Lists

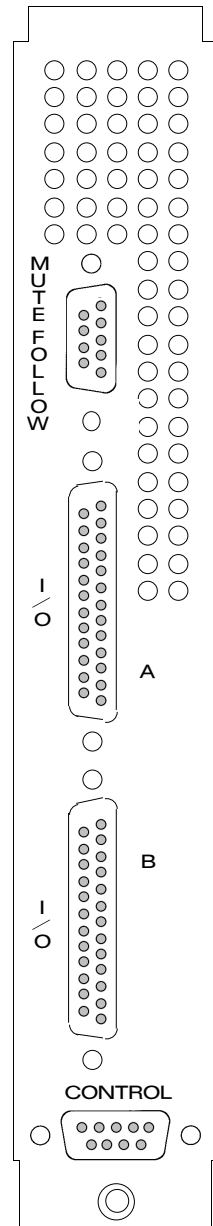
MLS-1000 stereo mic/line input module parts lists may be found in Chapter 10. See contents on page 2-2 for specific list locations.

Printed Circuit Board Load Sheets

Load sheet drawings, showing all part locations, are in the Technical Drawings booklet (see contents on page 2-2 for specific drawing locations).

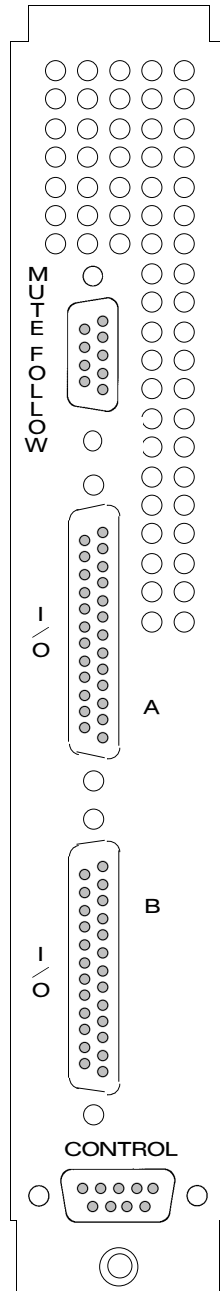
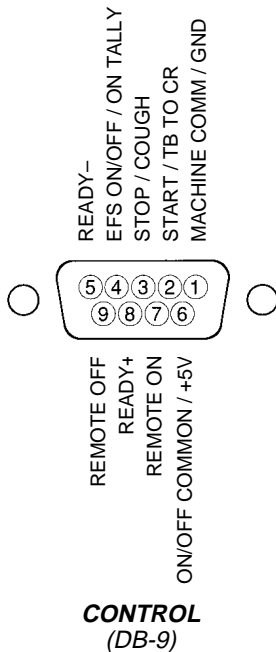
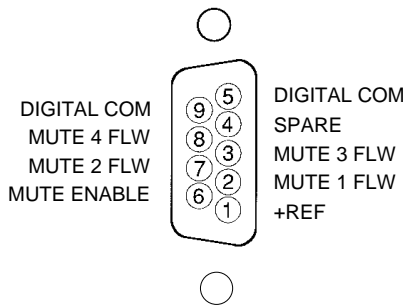
Schematics

Schematic drawings are also in the Technical Drawings booklet (see contents on page 2-2 for specific drawing locations).



The module's two DB-25 connectors (A & B) handle audio input/output signals.

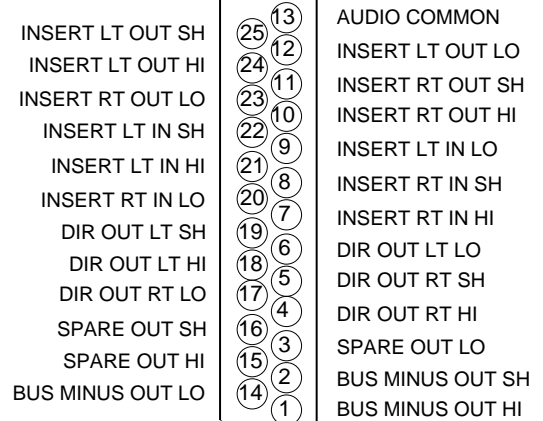
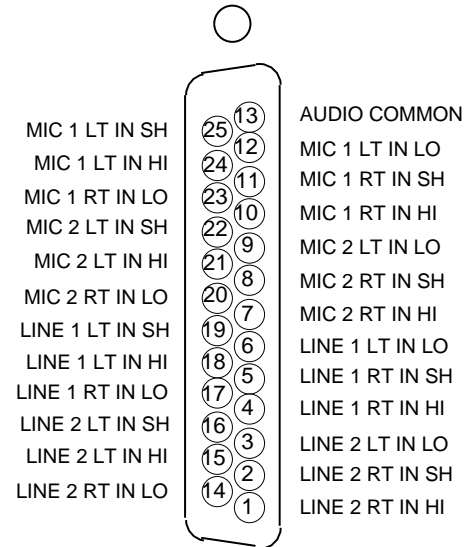
MUTE FOLLOW (upper DB-9)
Mates pin-for-pin to identical DB-9 mounted
behind each overbridge preselector panel
(rear panel of console meterbridge)



MLS-1000

STEREO MIC LINE INPUT MODULE

I/O PORT "A"
(Upper DB-25)



I/O PORT "B"
(Lower DB-25)

Stereo Mic/Line Input Module Rear Panel Pinouts

Mono Mic/Line Inputs

General

MI-1000 input modules accept and output mono signals. Each module can select one of four mono source signals: two are mic level and two are line level.

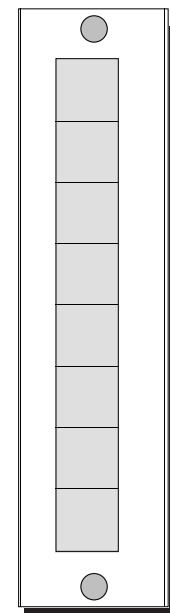
Each input channel consists of three separate panels mounted in a single mainframe position:

- the main module itself (far right),
- a fader panel directly in line with and below the main module (physically separated by the console's alphanumeric source display strip), and
- an (optional) 8-bank preselector switching panel located directly above each channel in the meterbridge overbank section.

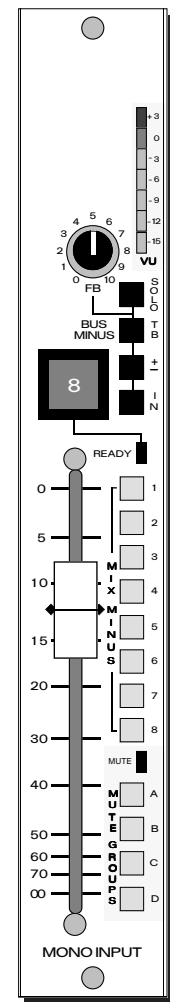
Input channel audio connections are made via a DB-25 multi-pin connector ("A" upper) located on the back rear panel of each main module. Input channel logic and control signals are made through three DB-9 connectors ("MUTE FOLLOW", "MIC LOGIC", and "MACHINE CTRL") also mounted on the same rear panel.

Note console preselector panel switches do not control audio directly. Instead, they send control pulses to separate rackmounted switching cages ("Smart Select®" cages). Actual audio source signals are wired directly to the rackmounted Smart Select® cages (via rear DB-25 connector pairs); the cages then feed selected source signals back to the main input modules.

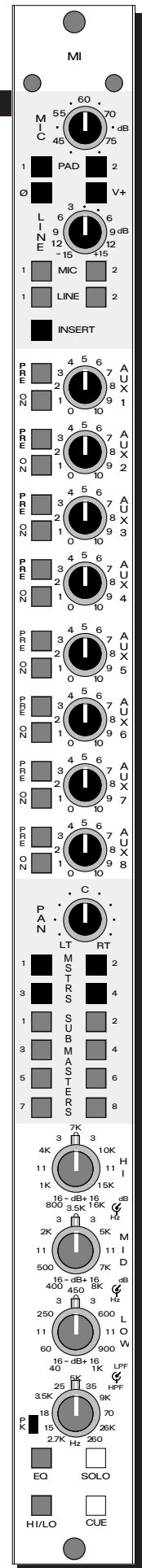
The signal flow diagram on page 22A of the Technical Drawings is helpful in clarifying the information presented in this chapter. You are encouraged to refer to it in conjunction with the text that follows.



PRESELECTOR



FADER PANEL



Main Module

Input section

The upper section of this input module selects between two mono microphone and two mono line inputs. The microphone section provides a variable gain control, switched Mic 1 and Mic 2 -20dB pad circuits, and switchable +48V phantom power (labeled "V+"). The electronically balanced line input section has a center detent input gain control (with PCB-mounted calibration trimpots for fine adjustment). The phase reverse switch affects both mic and line inputs. A patch point INS switch (for both mic and line) allows insertion of any pre-patched external processing gear (insert points are electronically balanced in and out).

AUX Section

This section taps eight post-EQ auxiliary send signals from the main input channel and routes them to the console's send ACN busses. There is a pre/post selector switch and an ON switch for each aux circuit. While aux pre/post switches normally switch before or after both the channel fader AND channel On switch, special PCB-mounted slide switches (four per module) permit dual AUX pairs to follow main channel ON/OFF even when switched to "pre" (page 2-27).

PAN Control

This center-detent rotary control pans the module's mono signal left and right within assigned stereo submasters and masters signals.

Bus Assign

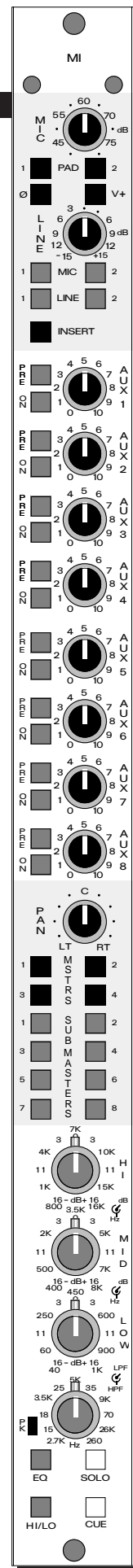
Each input module may have its output assigned to any combination of the console's four stereo MASTERS and/or eight stereo SUBMASTERS.

Equalization Section

A four-band EQ/filter section is included, employing 3 sweep frequency peaking sections (each $\pm 16\text{dB}$ with reciprocal curves) plus sweep frequency (-12dB/octave slope) low pass (2.7KHz-26KHz) and high pass (12Hz to 260Hz) filters. Note the three-band EQ and HI/LO pass filter sections may be switched in and out separately.

Peak LED

A peak reading LED indicator lights to indicate overload conditions within the channel circuitry (the indicator monitors both pre and post fader points in the signal chain).



Cue and Solo

Both pre-fader CUE and post-fader/post channel on SOLO switches are provided. These switches tap the module's PFL and AFL signals and route them to the console's stereo SOLO/CUE monitor bus, where they may be used to feed operator headphones, control room monitors, dedicated speakers, etc. (SOLO/CUE is mastered at the console's control room monitor module; see Chapter 5.) Note CUE may be programmed to automatically drop out whenever the module's ON switch (see fader panel section) is activated (see page 2-25, "Cue Dropout").

Direct Out

Each input module has an electronically balanced direct output. It is post fader, post channel ON.

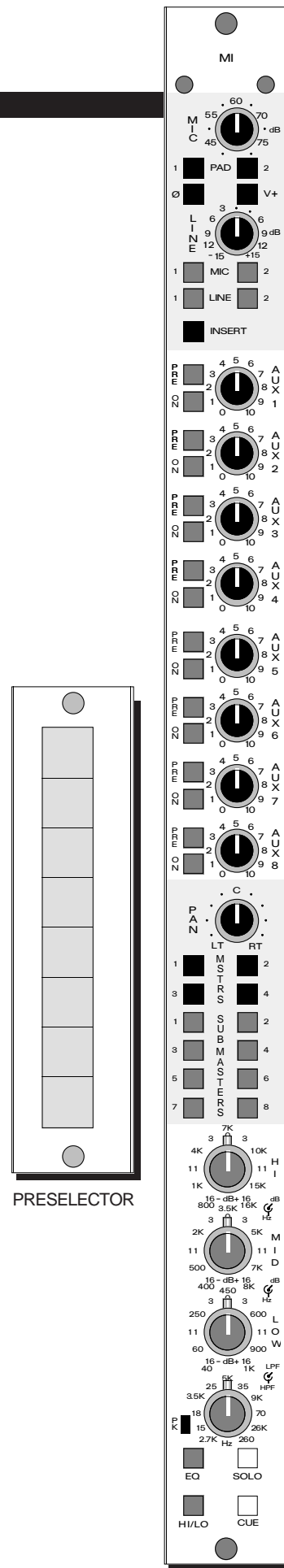
Preselector Panel

TV-1000 input modules may be supplied with optional overbridge preselector panels. These consist of an eight-bank switch array that determines the source signal being fed to the main module's Line 1 input. As stated before, preselector panels do not control audio directly; they send control pulses to switcher cards mounted in a separate rackmount Smart Select® cage. The cage card then returns the appropriate signal to the module. See pages 8-5 thru 8-8 for smart cage wiring details.

TV-1000 consoles may also be ordered with overbridge preselector panels that interface directly with a station switcher rather than a Smart Select® cage. The operation principle remains the same; the preselector switch sends a control pulse to the station switcher, which then selects and returns the appropriate audio signal to the module.

Note preselector panel switches can be programmed (through the Wheatstone RCC Event Computer's separate keyboard and monitor) to display 4-character alpha-numeric source codes that signify which source has been selected. These codes are displayed on the console's source display strip, located just above the console's fader panels. Note the source display will follow the main module's input selector switches (i.e., Mic 1, Mic 2, Line 1, Line 2); however, when Line 1 is selected at the module, the source display will show the currently selected preselector panel's source code.

Smart Select[®] cage and Event Computer operation is covered in a separate technical manual (“The Wheatstone Router Control Sytstem”).



Input Fader Panel

Each input module has an associated fader panel located directly below it. Starting from the bottom, these panels are configured as follows:

Fader

A 3000 Series Penny & Giles long-throw (104mm) fader. Plug-in for easy servicing.

Mute Groups

Each input channel may be assigned to any or all of four Mute Control Groups. These groups (A thru D) can then be muted by the press of a single master mute button (in other words, whenever the master switch for a mute group is activated, any module assigned to that group will have its output muted). A “mute” LED indicator lights whenever a module has been muted. (The four mute master switches are located in the fader section of the board, directly underneath the power interface module in the center of the console.)

Mix Minus

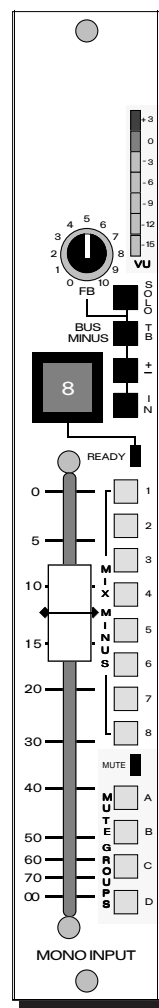
Feeds the module’s signal to the console’s mix-minus system. Any module turned ON automatically feeds a signal to all eight mix-minus busses. Creation of a feed for IFB or remote use is done by simply pressing one or more of the eight mix-minus switches on the chosen input module’s fader panel, which removes that module's feed from the selected busses. Illuminated mix-minus switches thus show the deselected status directly at the input source.

Note the mix-minus signal may be programmed (by an internal PCB-mounted slide switch) to be pre or post fader; a programming jumper permits the mix-minus feed to follow channel ON/OFF. See page 2-26, “Mix Minus” for details.

Ready LED

Used for line inputs; this tally LED is powered by an external source machine to indicate when it is cued-up and ready for play.

FADER PANEL



Channel ON

This momentary action lighted pushbutton switch turns the input channel on and off. It may also be programmed to activate tallies and mutes (4) and timer restart; DB-9 control ports let the switch control (or be controlled by) external devices. See this chapter, “Input Module External Control Ports” and “Input Module Logic Programming” for a complete discussion.

Bus Minus® Foldback

In addition to the eight bus mix-minus system previously described, each input module can also produce its own independent mix-minus feed, called Bus Minus®. This is accomplished by pressing the Bus-Minus IN switch, which places a summed version of the module’s signal onto a special dedicated ACN mix bus, where it becomes available to other modules for use in their own Bus-Minus functions.

A rotary level control (FB or foldback) outputs the dedicated ACN bus mix—with or without the module’s own signal, depending on the setting of the +/- switch (see immediately following)—to a connector on the module’s rear panel. The “+/-” switch, when pressed, illuminates and removes the module’s signal only from its own bus-minus output—the signal feed to the ACN mix bus (and other modules) remains unaffected.

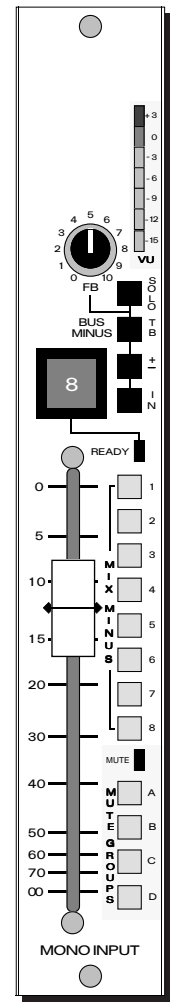
A TB switch (programmable to feed pre or post FB level control) sends console talkback audio to the module’s bus-minus output, which may be monitored at any time by a SOLO switch. (See page 2-26, “Bus Minus®” section, for programming details.)

Metering

Each individual input channel has its own 7-segment LED VU ladder built in to that channel’s fader panel. This LED VU may be internally programmed to monitor pre or post fader. It is always, however, pre channel ON/OFF, allowing it to function as a signal present indicator. The VU ladder is calibrated via a PCB-mounted trimpot on the fader panel’s main printed circuit board (“CR1” – see “FPI-1000” load sheet on page 49 of the Technical Drawings, center left). Note a single PEAK LED indicator at the bottom of the main module faceplate also warns of overload transients (it monitors both pre and post fader).

Input channels may also be metered at the console’s SOLO VU meter pair in the console overbridge, just above the VU/Oscillator module. The SOLO meters may be driven pre or post fader, depending on whether the module’s CUE (PFL) or SOLO (AFL) switches are pressed.

FADER PANEL



Input Module Control Ports

The MI-1000 input module has two control ports: one for microphone sources (“MIC LOGIC”), the other for line sources (“MACHINE CTRL”). Each has its own DB-9 connector mounted on the module’s rear panel.

Control functions are input specific; that is, programming jumpers on the module’s switch PCB (SISW-1000) activate them for Line 1 and/or Line 2, and programming jumpers on the module’s main PCB activate them for Mic 1 and/or Mic 2.

EXAMPLE: A logic enable jumper for L2 has been installed (but not one for L1). When L2 is selected at the top of the module, and the module’s Channel ON switch is pressed, then control functions will take place for any source machine hooked up to the Machine Ctrl DB-9 connector. However, if L1 is preselected and the channel is turned ON, nothing will take place at the source machine wired to the control connector.

Generally speaking, input port control jumpers (zero ohm resistors) are already installed at the factory as required by client specifications. However, should you wish to install your own see jumpers J5 and J6, Technical Drawings “MI-1000 Switch Card” load sheet (page 35, right center), for line inputs (Line 1: J6, Line 2: J5), and jumpers J1 and J2, Technical Drawings “MI-1000 Main Card” load sheet (page 30, right center) for mic inputs (Mic 1: J1, Mic 2: J2).

MIC LOGIC DB-9 connector Functions (for Mic Sources):

To Turn the Module ON & OFF from a Remote Location

REMOTE ON – Activates the module’s CHANNEL ON switch. Provide a momentary closure between pins 1 and 7. This will latch the module ON. (User-supplied momentary contact switch required.)

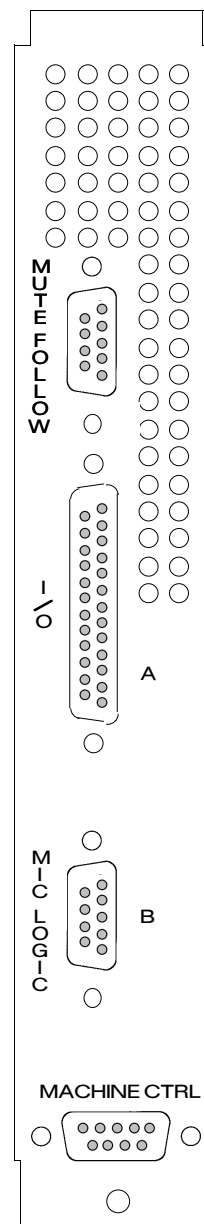
REMOTE OFF – De-activates the module’s CHANNEL ON switch. Provide a momentary closure between pins 1 and 9. This will latch the module OFF. (User-supplied momentary contact switch required.)

COUGH (Momentary OFF) – Provide a closure between pin 3 and pin 1. This will turn the module OFF. Note this is a non-latching mode; the module will turn on again as soon as the closure stops. (User-supplied momentary contact switch required.)

Talkback to Control Room (TB to CR)

Lets talent at a remote location talk to the console operator instead of having his mic signal go out “live”. In this case a user-supplied momentary action TALKBACK switch is required for the remote microphone, where a closure between pins 1 and 2 does two things: (a) the module’s PFL signal is placed on the console’s CUE bus (where it may be heard by the console operator) and (b) the module’s COUGH function is simultaneously activated, to prevent the TB signal from going out over other assigned busses (i.e., “live”). This non-latching condition continues until the external TB switch is released.

Refer to the pinout diagrams on page 2-29 in conjunction with the text of this section.



The module’s MIC LOGIC DB-9 connector (B) is directly below DB-25 connector A

On Tally

Lets the module's channel ON switch control an on-air light or other "microphone on" indicator at a remote location. This opto-isolated control function provides a continuous closure between pin 4 (ON TALLY) and pin 1 (GND) whenever the module's channel ON switch is pressed. This closure can be used to control an externally powered tally light that requires a continuous closure to function. Or an external tally light (i.e., LED) can be powered from the input module by connecting the external LED to pin 6 (+5V) and pin 4 (ON TALLY). In either case, the current is not to exceed 50 milliamps.

MACHINE CTRL DB-9 connector Functions (for Line Sources):

To START & STOP a Remote Source Machine Using the Module's Channel ON Switch:

Machine START – The remote source machine's external on pins are wired to the console input module's DB-9 CONTROL connector pins 2 (START) and 1 (MACHINE COMMON). Whenever the module's channel ON switch is activated, the remote machine will start playing.

Machine STOP – The remote source machine's external off pins are wired to the console input module's DB-9 CONTROL connector pins 3 (STOP) and 1 (MACHINE COMMON). Whenever the module's channel ON switch is deactivated, the remote machine will stop playing.

EFS ON/OFF – This control function is designed to run European type source machines (as opposed to the American MACHINE START/STOP functions called out above). When the module is on, a constant closure occurs between DB-9 pins 4 (EFS ON/OFF) and 1 (MACHINE COMMON).

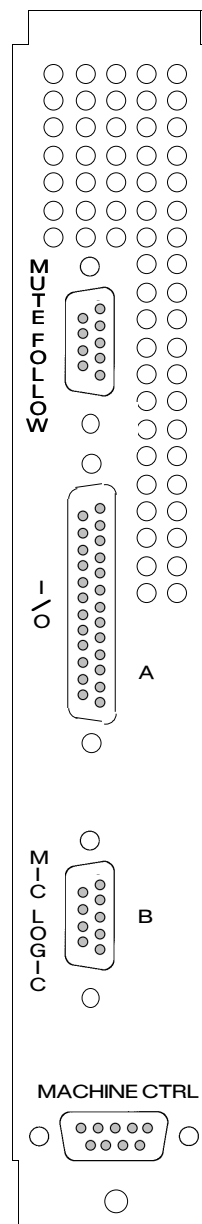
An External Source Machine Turns the Module ON & OFF

REMOTE ON – Activates the module's CHANNEL ON switch. A momentary closure between pins 6 and 7 will latch the module ON. (Can be activated by external source machine control pulses.)

REMOTE OFF – De-activates the module's CHANNEL ON switch. A momentary closure between pins 6 and 9 will latch the module OFF. (Can be activated by external source machine control pulses.)

Ready LED

The module's fader panel has a green ready LED next to the channel ON switch. This LED can be powered by an external source machine to indicate when that machine is cued up and ready for play. The LED hook up pins are 8 (+) and 5 (–) [5VDC nominal].



The module's MACHINE CTRL DB-9 connector is located at the bottom of the rear panel

Input Module Logic Programming

Mute/Tally

The console has four separate MUTE control lines; each input module may be programmed to activate any of these via its channel ON switch. The MUTE control lines are used to shut off control room and studio monitor speakers whenever the microphone for that particular location is activated. The same MUTE control lines can also activate TALLY ports at the console's control room monitor (CRM-1000) and studio monitor (STM-1000) modules (see pages 5-6 and 6-5).

Input module programming is accomplished by PCB-mounted dipswitches located on the main module PCB. Note each of the channel's inputs [M1/2, L1/2] may be programmed separately. See Technical Drawings "MI-1000" load sheet (page 30, lower right) and schematic (page 28, D-3). The input mute programming dipswitches are:

Mic 1 – Dipswitch "SW15"

Mic 2 – Dipswitch "SW16"

Line 1 – Dipswitch "SW18"

Line 2 – Dipswitch "SW19"

NOTE on those input modules with an associated preselector panel, each preselector input can also be programmed to mute separately. The eight associated preselector panel dipswitches are "SW1" through "SW8" on the preselector panel PCB. See Technical Drawings "SB-1000" load sheet (page 145, center) and schematic (page 144, B-3).

GROUP MUTES MUTE FOLLOW (PCB slide switch "SW17") – Mute/Tally functions are normally programmed to follow the module's channel ON switch. However, this PCB slide switch allows the mute/tally functions to follow the console's four Mute Masters (A thru D, see page 8-12). Thus, when "SW17" is reprogrammed to the right ("GR mutes mute follow") whenever an input module is muted via the group mute masters, its programmed mute/tally functions are automatically deactivated. See Technical Drawings "MI-1000" load sheet (page 30, lower right) and schematic (page 28, D-3).

Cue Dropout

Input modules may be programmed to automatically drop out of Cue mode whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW13". See Technical Drawings "MI-1000" load sheet (page 30, lower right) and schematic (page 28, A-5).

Timer Restart

Input modules may be programmed to automatically reset the console's digital timer to zero and start it counting up whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW14". See Technical Drawings "MI-1000" load sheet (page 30, lower right) and schematic (page 28, C-1).

Mix Minus

The input module's summed mix-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW18") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower left) and schematic (page 46, C-5). The default setting is "post".

The input module's summed mix-minus assign signal may also be programmed to follow the channel ON switch via a programming jumper ("J1") on the module's fader panel main PCB (this is the default setting). See Technical Drawings "FPI-1000" load sheet (page 49, left center) and schematic (page 46, dead center).

Bus Minus®

The input module's summed bus-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW19") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower left) and schematic (page 46, C-5). The default setting is "post".

The input module's summed bus-minus assign signal may also be programmed to follow the channel ON switch via a programming jumper ("J2") on the module's fader panel main PCB (this is the default setting). See Technical Drawings "FPI-1000" load sheet (page 49, left center) and schematic (page 46, C-5).

The talkback feed to the module's bus-minus output may be programmed to be pre or post the foldback (FB) level control via a PCB-mounted slide switch ("SW20") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower right) and schematic (page 46, D-3). The default setting is "post".

LED VU ladder

The input module's mono LED VU meter signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW17") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, extreme left) and schematic (page 46, B-7). The default setting is "pre", which allows the meter to act as a "signal present" indicator.

AUX Sends

Aux sends may be programmed in pairs to follow the module's channel ON switch regardless of their individual front panel pre/post fader switch settings (this is the default setting). This is accomplished by PCB-mounted slide switches (SW 34-37) on the module's switchcard PCB. See Technical Drawings "MI-1000 Switch Card Load Sheet" (page 35, center right) and schematic (page 32, A-4 thru D-4). The programming switches are:

Aux send 1/2 pre on/off follow: SW37

Aux send 3/4 pre on/off follow: SW36

Aux send 5/6 pre on/off follow: SW35

Aux send 7/8 pre on/off follow: SW34

Mute Link

The TV-1000 console mute link system is designed to activate mute/tally functions ONLY when a live microphone signal is present on-the-air (i.e., live at the console's Stereo 1 master output). Individual input channels can be programmed to be part of the mute link signal chain via PCB-mounted slide switch "SW38". The default setting is mute link DEACTIVATED. See Technical Drawings "MI-1000 Switch Card Load Sheet" (page 35, center right) and schematic (page 34, C-6). Note this slide switch is reached through a cutout in the switchcard PCB.

Each input module also has a "machine link defeat" PCB-mounted slide switch ("SW40"), which allows machine control port functions to be part of the mute link system chain. In other words, when machine link is enabled machine control functions will only take place when a Mute Link condition has been met (i.e., the source machine is live at Stereo Master 1, or "On-Air". NOTE the default factory setting is machine link DEACTIVATED. See Technical Drawings "MI-1000 Switch Card Load Sheet" (page 35, center right) and schematic (page 32, D-3). The switch is reached through a cutout in the switchcard PCB.

Event Computer Start/Stop/Timer Enable

When the TV-1000 console's event computer takes a snapshot of switch settings on an input module, the channel ON switch state is included in the event storage. When the event is called up at a future time, the module may be turned ON or OFF depending on the snapshot and the current state of the module. If the module is programmed to fire an external source machine (via machine start/stop functions, see page 2-24) a PCB-mounted slide switch on the module's switchcard ("SW39" on PCB SISW-1000) gives you a choice of having the machine functions (AND the timer restart function) enabled or defeated for the event call-up. See Technical Drawings "MI-1000 Switch Card Load Sheet" (page 35, center right) and schematic (page 32, B-2). The switch is reached through a cutout in the switchcard PCB.

Mute Follow Connector

The module's MUTE FOLLOW DB-9 connector, located at the top of the rear panel, is used to transmit muting and tally control signals between the module proper and its optional preselector panel in the console's overbridge. It is wired pin-for-pin to a matching connector mounted behind each preselector, on the rear face of the console meterbridge.

Actual preselector mute/tally programming is done through PCB-mounted dipswitches (eight; one for each source) on each preselector panel switchcard. See Technical Drawings, "SB-1000 Smart Button" schematic (page 144) and load sheet (page 145).

Input Module Audio Wiring

All audio wiring for the mono mic/line input module is via a single DB-25 connector (I/O "A") mounted on the module's rear panel. Audio signals include mic and line inputs, insert point wiring, direct out, and bus minus out. See drawing on next page for detailed pinouts.

Parts Lists

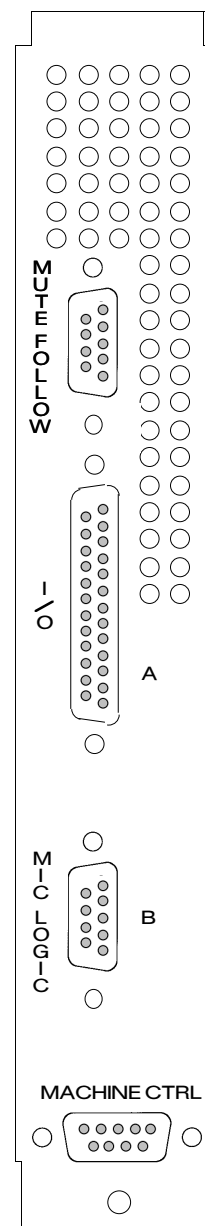
MI-1000 mono mic/line input module parts lists may be found in Chapter 10. See contents on page 2-3 for specific list locations.

Printed Circuit Board Load Sheets

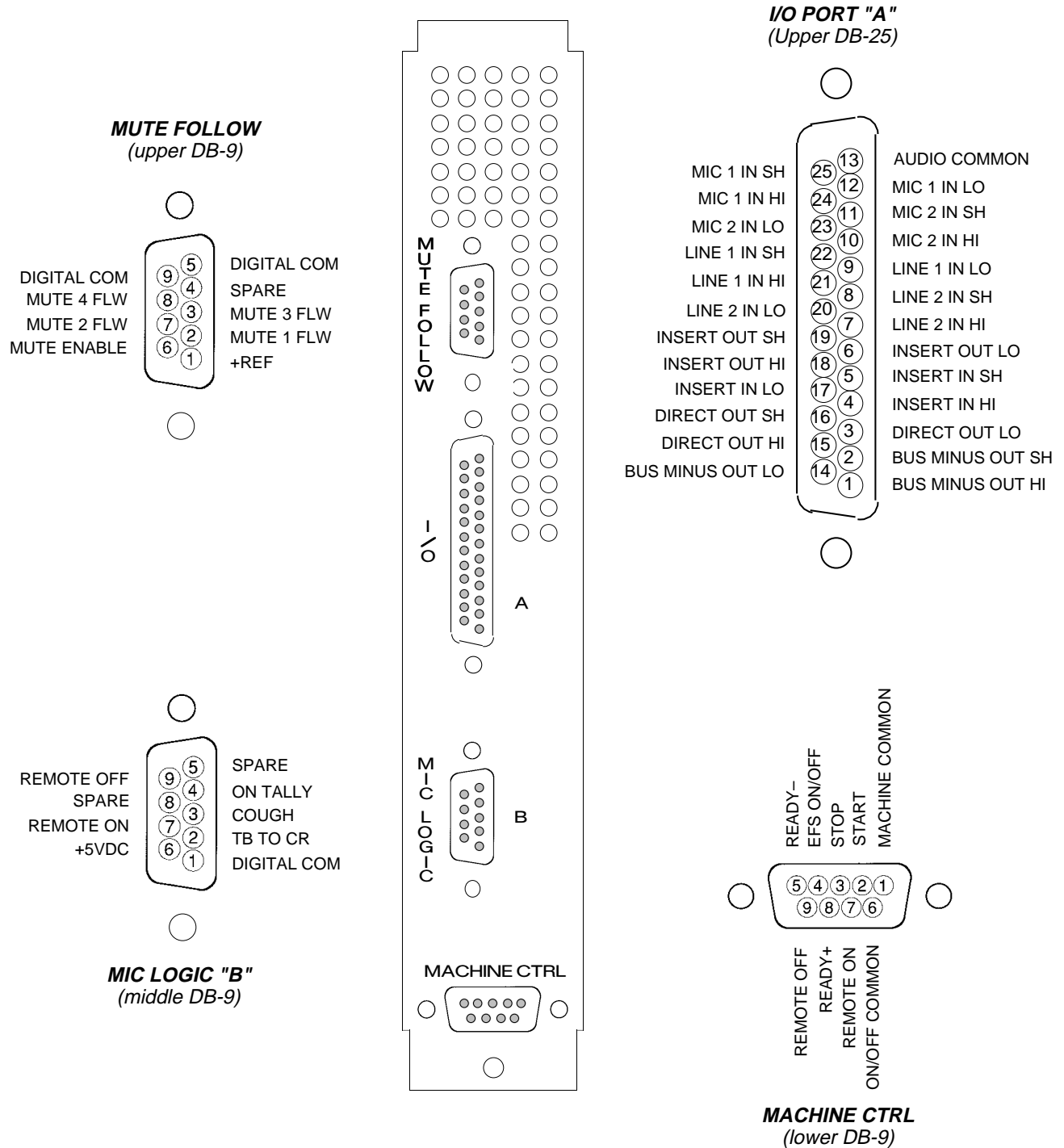
Load sheet drawings, showing all part locations, are in the Technical Drawings booklet (see contents on page 2-3 for specific drawing locations).

Schematics

Schematic drawings are also in the Technical Drawings booklet (see contents on page 2-3 for specific drawing locations).



The module's DB-25 connector (A) handles all audio input/output signals.



Mono Mic/Line Input Module Rear Panel Pinouts

Stereo Line Inputs

General

SI-1000 input modules accept and output stereo signals; each module can select one of four stereo line level source signals.

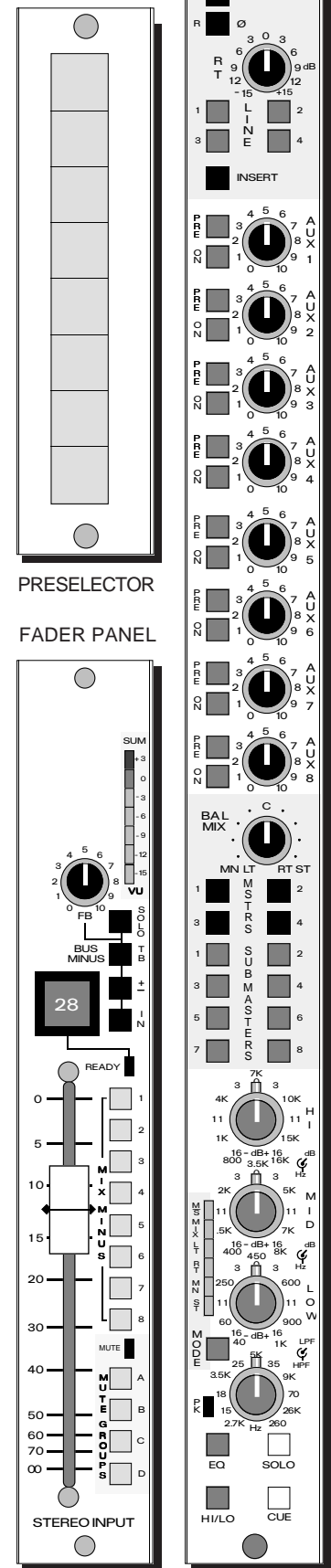
Each input channel consists of three separate panels mounted in a single mainframe position:

- the main module itself (far right),
- a fader panel directly in line with and below the main module (physically separated by the console's alpha-numeric source display strip), and
- an (optional) 8-bank preselector switching panel located directly above each channel in the meterbridge overbank section.

Input channel audio I/O (input/output) connections are made via two DB-25 multi-pin connectors ("A" upper; "B" lower) located on the back rear panel of each main module. Input channel logic and control signals are made through a DB-9 "Control" connector directly below the two DB-25 audio connectors (see page 2-36). An additional DB-9 connector, "mute follow", is mounted on each rear panel; it is used to allow preselector sources to activate the console's four mute/tally signals.

Note console preselector panel switches do not control audio directly. Instead, they send control pulses to separate rackmounted switching cages ("Smart Select®" cages). Actual audio source signals are wired directly to the rackmounted Smart Select® cages (via rear chassis-mounted DB-25 connector pairs); the cages then feed selected source signals back to the main input modules.

For a better understanding of the text that follows, please refer to the signal flow diagram on page 36 of the Technical Drawings.



Main Module

Input section

The upper section of this input module selects one of four stereo line inputs. The electronically balanced line input section has left and right center detent input gain controls (with PCB-mounted calibration trimpots for fine adjustment), left and right phase reverse switches and a patch point INSERT switch (stereo insert points are electronically balanced in and out).

AUX Section

This section taps eight summed (L+R) post-EQ auxiliary send signals from the main input channel and routes them to the console's send ACN busses. There is a pre/post selector switch and an ON switch for each aux circuit. NOTE aux circuits may also be programmed to operate as left/right stereo pairs via PCB-mounted programming dipswitches (see page 2-39). Also, while aux pre/post switches normally switch before or after both the channel fader AND channel On switch, special PCB-mounted slide switches (four per module) permit dual AUX pairs to follow main channel ON/OFF even when switched to "pre" (page 2-39).

BAL/MIX Control – MODE Switch

The center-detent BAL/MIX rotary control operates in conjunction with the module's MODE switch. Here are the possible settings and functions:

Stereo Mode (ST) – Default setting (MODE switch cap illuminates); the rotary control functions as a regular L/R stereo balance pot.

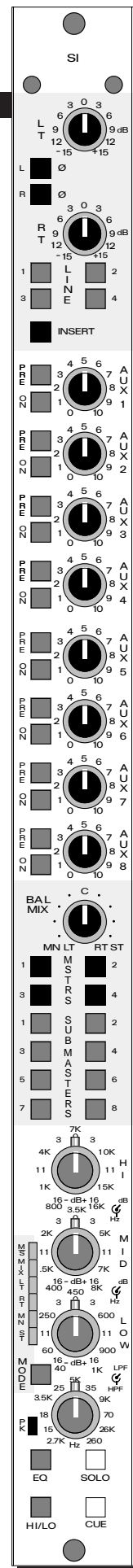
Mono Mode (MN) – Rotary control functions as a pan pot (a L+R summed signal is panned L/R within the module's stereo field).

Right Mode (RT) – Rotary control pans the right channel signal L/R within the module's stereo field.

Left Mode (LT) – Rotary control pans the module's left channel signal L/R within the module's stereo field.

Mix Mode (MIX) – The module is put into mono sum mode; the rotary control then determines the left-right makeup of the mono sum signal, which remains dead center within the stereo field (i.e., fully counterclockwise: left signal only; center detent: mono sum of equal strength left and right signals; fully clockwise: right signal only; intermediate settings: varying L/R signal strength mix ratios. Useful for setting the balance between field or studio voiceovers and field-recorded actuality audio.

Middle/Side Mode (M/S) — Intended for live or recorded signals that utilize two monophonic microphones: one (feeding the



module's left channel) a cardioid mic directed along the main axis of the sound to be recorded; the other a figure-eight mic (feeding the module's right channel) aligned at right angles to the cardioid pickup. When these are fed through the MLS-1000 module functioning in M/S mode, the rotary control will act as follows: when turned all the way to the left (counter-clockwise) the LT (cardioid) signal is sent to both left and right module channels and a central "middle" effect results; when turned right (clockwise) the RT (figure-eight) signal goes to left and "–RT" (out-of-phase RT) goes to right, resulting in a "side" effect. In center position the rotary control sends a "LT plus RT" signal to the module's left channel and a "LT minus RT" signal to the module's right channel. Intermediate settings produce combinations of the above.*

Bus Assign

Each input module may have its output assigned to any combination of the console's four stereo MASTERS and/or eight stereo SUBMASTERS.

Equalization Section

A four-band stereo EQ/filter section is included, employing 3 sweep frequency peaking sections (each $\pm 16\text{dB}$ with reciprocal curves) plus sweep frequency (-12dB/octave slope) low pass (2.7KHz – 26KHz) and high pass (12Hz to 260Hz) filters. Note the three-band EQ and HI/LO pass filter sections may be switched in and out separately.

Peak LED

A peak reading LED indicator lights to indicate overload conditions within the channel circuitry (the indicator monitors both pre and post fader points in the signal chain).

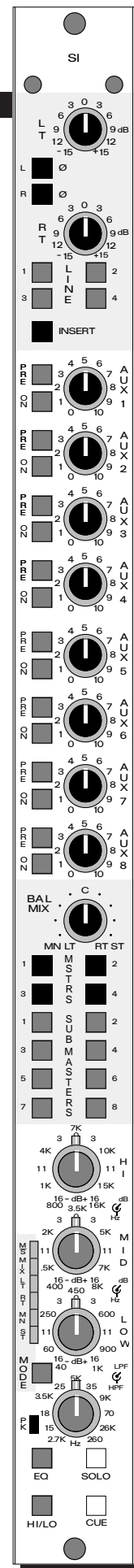
Cue and Solo

Both pre-fader CUE and post-fader/post-channel on SOLO functions are provided. These switches tap the module's PFL and AFL signals and route them to the console's stereo SOLO/CUE monitor bus, where they may be used to feed operator headphones, control room monitors, dedicated speakers, etc. (SOLO/CUE is mastered at the console's control room monitor module; see Chapter 5.) Note CUE may be programmed to automatically drop out whenever the module's ON switch (see fader panel section) is activated (see page 2-37, "Cue Dropout").

Direct Out

Each input module has an electronically balanced direct output. It is post fader, post channel ON.

*TECHNOTE: Use of an X-Y scope (Lissajous display), phase coincidence metering, and accurate monitoring is highly recommended to assure both pleasant and mono-compatible output when using the M/S mode feature.



Preselector Panel

TV-1000 input modules may be supplied with optional overbridge preselector panels. These consist of an eight-bank switch array that determines the source signal being fed to the main module's Line 1 input. As stated before, preselector panels do not control audio directly; they send control pulses to switcher cards mounted in a separate rackmount Smart Select® cage. The cage card then returns the appropriate signal to the module. See pages 8-5 thru 8-8 for smart cage wiring details.

TV-1000 consoles may also be ordered with overbridge preselector panels that interface directly with a station switcher rather than a Smart Select® cage. The operation principle remains the same; the preselector switch sends a control pulse to the station switcher, which then selects and returns the appropriate audio signal to the module.

Note preselector panel switches can be programmed (through the Wheatstone RCC Event Computer's separate keyboard and monitor) to display 4-character alpha-numeric source codes that signify which source has been selected. These codes are displayed on the console's source display strip, located just above the console's fader panels. Note the source display will follow the main module's input selector switches (i.e., Line 1, Line 2, Line 3, Line 4); however, when Line 1 is selected at the module, the source display will show the currently selected preselector panel's source code.

Smart Select® cage and Event Computer operation is covered in a separate technical manual ("The Wheatstone Router Control System").

Input Fader Panel

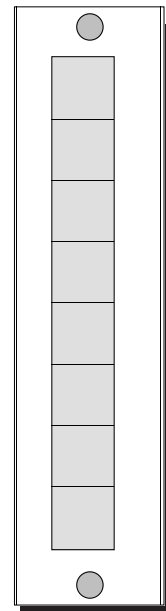
Each input module has an associated fader panel located directly below it. Starting from the bottom, these panels are configured as follows:

Fader

A 3000 Series Penny & Giles long-throw (104mm) stereo fader. Plug-in for easy servicing.

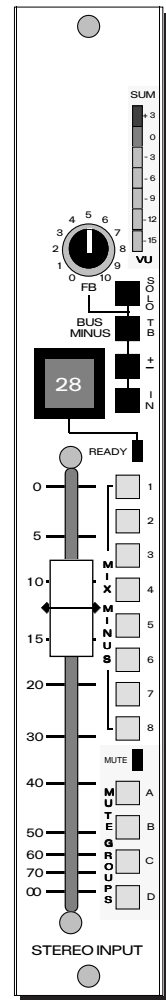
Mute Groups

Each input channel may be assigned to any or all of four Mute Control Groups. These groups (A thru D) can then be muted by the press of a single master mute button (in other words, whenever the master switch for a mute group is activated, any module assigned to that group will have its output muted). A "mute" LED indicator lights whenever a module has been muted. (The four mute master switches are located in the fader section of the board, directly underneath the power interface module in the center of the console.)



PRESELECTOR

FADER PANEL



Mix Minus

Feeds the module's signal to the console's mix-minus system. Any module turned ON automatically feeds a signal to all eight mix-minus busses. Creation of a feed for IFB or remote use is done by simply pressing one or more of the eight mix-minus switches on the chosen input module's fader panel, which removes that module's feed from the selected busses. Illuminated mix-minus switches thus show the deselected status directly at the input source.

Note the mix-minus signal may be programmed (by an internal PCB-mounted slide switch) to be pre or post fader; a programming jumper permits the mix-minus feed to follow channel ON/OFF. See page 2-38, "Mix Minus" for details.

Ready LED

Used for line inputs; this tally LED is powered by an external source machine to indicate when it is cued-up and ready for play.

Channel ON

This momentary action lighted pushbutton switch turns the input channel on and off. It may also be programmed to activate tallies and mutes (4) and timer restart; a DB-9 control port lets the switch control (or be controlled by) external devices. See this chapter, "Input Module External Control Ports" and "Input Module Logic Programming" for a complete discussion.

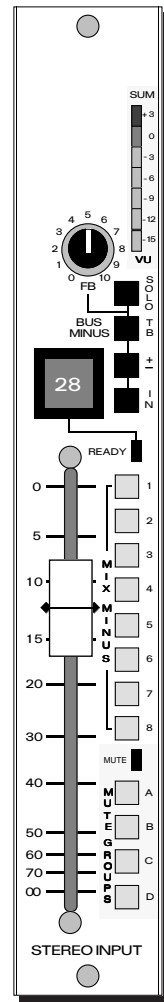
Bus Minus® Foldback

In addition to the eight bus mix-minus system previously described, each input module can also produce its own independent mix-minus feed, called Bus Minus®. This is accomplished by pressing the Bus-Minus IN switch, which places a summed version of the module's signal onto a special dedicated ACN mix bus, where it becomes available to other modules for use in their own Bus-Minus functions.

A rotary level control (FB or foldback) outputs the dedicated ACN bus mix—with or without the module's own signal, depending on the setting of the +/- switch (see immediately following)—to a connector on the module's rear panel. The "+/-" switch, when pressed, illuminates and removes the module's signal only from its own bus-minus output—the signal feed to the ACN mix bus (and other modules) remains unaffected.

A TB switch (programmable to feed pre or post FB level control) sends console talkback audio to the module's bus-minus output, which may be monitored at any time by a SOLO switch. (See page 2-38, "Bus Minus®" section, for programming details.)

FADER PANEL



Metering

Each individual input channel has its own 7-segment LED sum VU ladder built in to that channel's fader panel. This LED VU may be internally programmed to monitor pre or post fader. It is always, however, pre channel ON/OFF, allowing it to function as a signal present indicator. The VU ladder is calibrated via a PCB-mounted trimpot on the fader panel's main printed circuit board ("CR1" – see "FPI-1000" load sheet on page 49 of the Technical Drawings, center left). Note a single PEAK LED indicator at the bottom of the main module faceplate also warns of overload transients (it monitors both pre and post fader).

Input channels may also be metered at the console's stereo SOLO VU meter pair in the console overbridge, just above the VU/Oscillator module. The SOLO meters may be driven pre or post fader, depending on whether the module's CUE (PFL) or SOLO (AFL) switches are pressed.

Input Module Control Port

The SI-1000 input module has one DB-9 CONTROL port mounted at the bottom of the module's rear panel.

Control functions are input specific; that is, programming jumpers on the module's switch PCB (SISW-1000) activate them for Lines 1 thru Line 4.

EXAMPLE: A logic enable jumper for L2 has been installed (but not one for L1). When L2 is selected at the top of the module, and the module's Channel ON switch is pressed, then control functions will take place for any source machine hooked up to the Machine Ctrl DB-9 connector. However, if L1 is preselected and the channel is turned ON, nothing will take place at the source machine wired to the control connector.

Generally speaking, input port control jumpers (zero ohm resistors) are already installed at the factory as required by client specifications. However, should you wish to install your own see jumpers J5 thru J8, Technical Drawings "SI-1000 Switch Card" load sheet (page 45, center right). Input ports are enabled as follows: Line 1: J8, Line 2: J7, Line 3: J6, Line 4: J5.

To START & STOP a Remote Source Machine Using the Module's Channel ON Switch:

Machine START – The remote source machine's external on pins are wired to the console input module's DB-9 CONTROL connector pins 2 (START) and 1 (MACHINE COMMON). Whenever the module's channel ON switch is activated, the remote machine will start playing.

Machine STOP – The remote source machine's external off pins are wired to the console input module's DB-9 CONTROL connector pins 3 (STOP) and 1 (MACHINE COMMON). Whenever the module's channel ON switch is deactivated, the remote machine will stop playing.

EFS ON/OFF – This control function is designed to run European type source machines (as opposed to the American MACHINE START/STOP functions called out above). When the module is ON, a constant closure occurs between DB-9 pins 4 (EFS ON/OFF) and 1 (MACHINE COMMON).

An External Source Machine Turns the Module ON & OFF

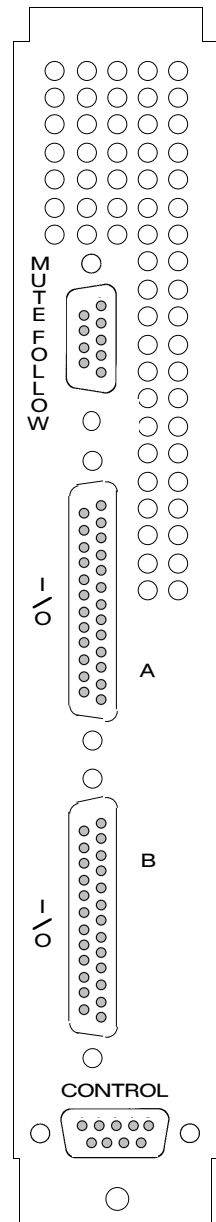
REMOTE ON – Activates the module's CHANNEL ON switch. A momentary closure between pins 6 and 7 will latch the module ON. (Can be activated by external source machine control pulses.)

REMOTE OFF – De-activates the module's CHANNEL ON switch. A momentary closure between pins 6 and 9 will latch the module OFF. (Can be activated by external source machine control pulses.)

Ready LED

The module's fader panel has a green ready LED next to the channel ON switch. This LED can be powered by an external source machine to indicate when that machine is cued up and ready for play. The LED hookup pins are 8 (+) and 5 (–) [5VDC nominal].

Refer to the pinout diagrams on page 2-41 in conjunction with the text of this section.



The DB-9 CONTROL connector is mounted at the bottom of the module's rear panel.

Input Module Logic Programming

Mute/Tally

The console has four separate MUTE control lines; each input module may be programmed to activate any of these via its channel ON switch. The MUTE control lines are used to shut off control room and studio monitor speakers whenever the channel for that particular location is activated. The same MUTE control lines can also activate TALLY ports at the console's control room monitor (CRM-1000) and studio monitor (STM-1000) modules (see pages 5-6 and 6-5).

Input module programming is accomplished by PCB-mounted dipswitches located on the main module PCB. Note each of the channel's inputs [L1 thru L4] may be programmed separately. See Technical Drawings "SI-1000" load sheet (page 44, lower right) and schematic (page 42, C-3). The input mute programming dipswitches are:

Line 1 – Dipswitch "SW24"

Line 2 – Dipswitch "SW25"

Line 3 – Dipswitch "SW27"

Line 4 – Dipswitch "SW28"

NOTE on those input modules with an associated preselector panel, each preselector input can also be programmed to mute separately. The eight associated preselector panel dipswitches are "SW1" through "SW8" on the preselector panel PCB. See Technical Drawings "SB-1000" load sheet (page 145, center) and schematic (page 144, B-3).

GROUP MUTES MUTE FOLLOW (PCB slide switch "SW26") – Mute/Tally functions are normally programmed to follow the module's channel ON switch. However, this PCB slide switch allows the mute/tally functions to follow the console's four Mute Masters (A thru D, see page 8-12). Thus, when "SW26" is reprogrammed to the right ("GR mutes mute follow") whenever an input module is muted via the group mute masters, its programmed mute/tally functions are automatically deactivated. See Technical Drawings "SI-1000" load sheet (page 44, lower right) and schematic (page 42, C-3).

Cue Dropout

Input modules may be programmed to automatically drop out of Cue mode whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW22". See Technical Drawings "SI-1000" load sheet (page 44, lower right) and schematic (page 42, A-5).

Timer Restart

Input modules may be programmed to automatically reset the console's digital timer to zero and start it counting up whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW23". See Technical Drawings "SI-1000" load sheet (page 44, lower right) and schematic (page 42, C-1).

Mix Minus

The input module's summed mix-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW18") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower left) and schematic (page 46, C-5). The default setting is "post".

The input module's summed mix-minus assign signal may also be programmed to follow the channel ON switch via a programming jumper ("J1") on the module's fader panel main PCB (this is the default setting). See Technical Drawings "FPI-1000" load sheet (page 49, left center) and schematic (page 46, dead center).

Bus Minus®

The input module's summed bus-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW19") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower left) and schematic (page 46, C-5). The default setting is "post".

The input module's summed bus-minus assign signal may also be programmed to follow the channel ON switch via a programming jumper ("J2") on the module's fader panel main PCB (this is the default setting). See Technical Drawings "FPI-1000" load sheet (page 49, left center) and schematic (page 46, C-5).

The talkback feed to the module's bus-minus output may be programmed to be pre or post the foldback (FB) level control via a PCB-mounted slide switch ("SW20") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, lower right) and schematic (page 46, D-3). The default setting is "post".

Sum LED VU ladder

The input module's mono sum LED VU meter signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW17") on the module's fader panel main PCB. See Technical Drawings "FPI-1000" load sheet (page 49, extreme left) and schematic (page 46, B-7). The default setting is "pre", which allows the meter to act as a "signal present" indicator.

AUX Sends

The TV-1000 console aux SEND busses are normally configured as eight mono ACNs. However, they may be reprogrammed as left/right pairs if desired. This is accomplished by PCB-mounted slide switches on the module's main PCB (SW 14-21). See Technical Drawings "SI-1000" load sheet (page 44, left center) and schematic (page 40, A-6 thru D-6). The programming switches are:

- Aux send 1 sum/left: SW14
- Aux send 2 sum/right: SW 15
- Aux send 3 sum/left: SW16
- Aux send 4 sum/right: SW 17
- Aux send 5 sum/left: SW18
- Aux send 6 sum/right: SW 19
- Aux send 7 sum/left: SW 20
- Aux send 8 sum/right: SW 21

Note the above switches are reached through access cutouts in the module's upper switchcard PCB.

Aux send pairs may also be programmed to follow the module's channel ON switch regardless of their individual front panel pre/post fader switch settings (this is the default setting). This is accomplished by PCB-mounted slide switches (SW 34-37) on the module's switchcard PCB. See Technical Drawings "SISW-1000 Switch Card" load sheet (page 35, right center) and schematic (page 32, A-4 thru D-4). The programming switches are:

- Aux send 1/2 pre on/off follow: SW37
- Aux send 3/4 pre on/off follow: SW36
- Aux send 5/6 pre on/off follow: SW35
- Aux send 7/8 pre on/off follow: SW34

Mute Link

The TV-1000 console mute link system is designed to activate mute/tally functions ONLY when a live microphone signal is present on-the-air (i.e., live at the console's Stereo 1 master output). Individual input channels can be programmed to be part of the mute link signal chain via PCB-mounted slide switch "SW38". The default setting is mute link DEACTIVATED. See Technical Drawings "SI-1000 Switch Card Load Sheet" (page 45, center right) and schematic (page 34, C-6). Note this slide switch is reached through a cutout in the switchcard PCB.

Each input module also has a "machine link defeat" PCB-mounted slide switch ("SW40"), which allows machine control port functions to be part of the mute link system chain. In other words, when machine link is enabled machine control functions will only take place when a Mute Link condition has been met (i.e., the source machine is live at Stereo Master 1, or "On-Air". NOTE the default factory setting is machine link DEACTIVATED. See Technical Drawings "SI-1000 Switch Card Load Sheet" (page 45, center right) and schematic (page 32, D-3). The switch is reached through a cutout in the switchcard PCB.

Event Computer Start/Stop/Timer Enable

When the TV-1000 console's event computer takes a snapshot of switch settings on an input module, the channel ON switch state is included in the event storage. When the event is called up at a future time, the module may be turned ON or OFF depending on the snapshot and the current state of the module. If the module is programmed to fire an external source machine (via machine start/stop functions, see page 2-36) a PCB-mounted slide switch on the module's switchcard ("SW39" on PCB SISW-1000) gives you a choice of having the machine functions (AND the timer restart function) enabled or defeated for the event call-up. See Technical Drawings "SI-1000 Switch Card Load Sheet" (page 45, center right) and schematic (page 32, B-2). The switch is reached through a cutout in the switchcard PCB.

Mute Follow Connector

The module's MUTE FOLLOW DB-9 connector, located at the top of the rear panel, is used to transmit muting and tally control signals between the module proper and it's optional preselector panel in the console's overbridge. It is wired pin-for-pin to a matching connector mounted behind each preselector, on the rear face of the console meterbridge.

Actual preselector mute/tally programming is done through PCB-mounted dipswitches (eight; one for each source) on each preselector panel switchcard. See Technical Drawings, "SB-1000 Smart Button" schematic (page 144) and load sheet (page 145).

Input Module Audio Wiring

All audio wiring for the stereo line input module is via two DB-25 connectors mounted on the module's rear panel. Audio signals include line inputs (upper connector "A") and insert point wiring, direct out, and bus minus out (lower connector "B"). See drawing on next page for detailed pinouts.

Parts Lists

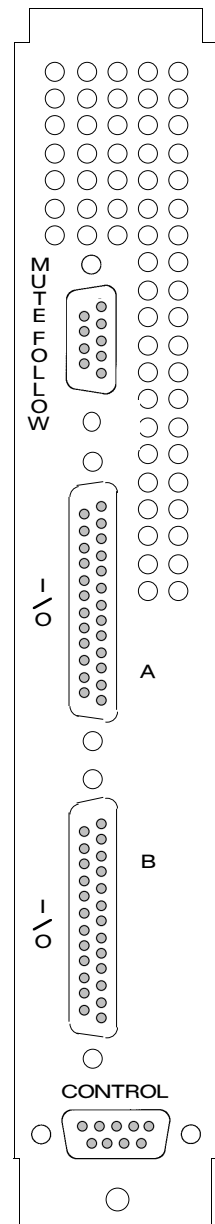
SI-1000 stereo line input module parts lists may be found in Chapter 10. See contents on page 2-4 for specific list locations.

Printed Circuit Board Load Sheets

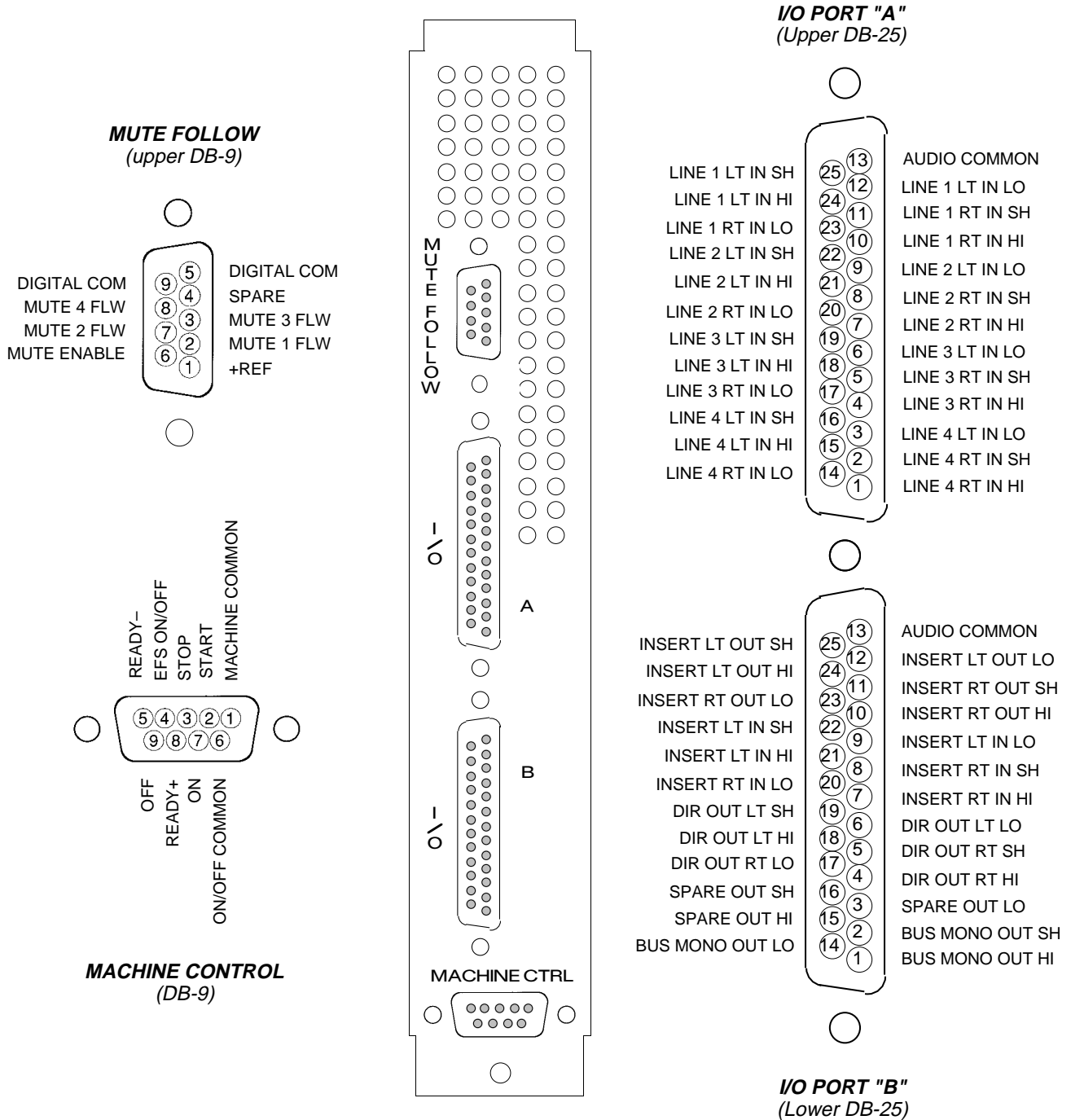
Load sheet drawings, showing all part locations, are in the Technical Drawings booklet (see contents on page 2-4 for specific drawing locations).

Schematics

Schematic drawings are also in the Technical Drawings booklet (see contents on page 2-4 for specific drawing locations).



The DB-9 CONTROL connector is mounted at the bottom of the module's rear panel.



Stereo Line Input Module Rear Panel Pinouts

Submaster Modules

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Fader panel	10-54
main card (FPO-1000)	10-55
switch card (FPSW-1000)	10-57

Printed Circuit Board Load Sheets
(TECHNICAL DRAWINGS booklet)

SG-1000 main PCB	TD-60
SGSW-1000 switchcard PCB	TD-65
SGCF-1000 confidence feed PCB	TD-67
FPO-1000 fader panel main PCB	TD-75
FPSW-1000 fader panel switchcard PCB	TD-77

Schematics

(TECHNICAL DRAWINGS booklet)

SG-1000 main PCB	TD-53
SGSW-1000 switchcard PCB	TD-61
SGCF-1000 confidence feed PCB	TD-66
FPO-1000 fader panel main PCB	TD-72
FPSW-1000 fader panel switchcard PCB	TD-76

Submaster Module

General

TV-1000 audio consoles come equipped with eight stereo SUBMASTER modules. Each submaster module controls one stereo subgroup and houses the master circuitry for one console AUX SEND output and one console MIX MINUS output. There is an associated fader panel directly beneath each main module faceplate.

Submaster audio I/O (input/output) connections are made via two DB-25 multi-pin connectors ("A" upper; "B" lower) located on the back rear panel of the module. Note submaster mono sum outputs (both pre and post) are available at the upper connector (see page 3-9).

Please refer to the signal flow diagram on page 52 of the Technical Drawings in conjunction with the text of this chapter.

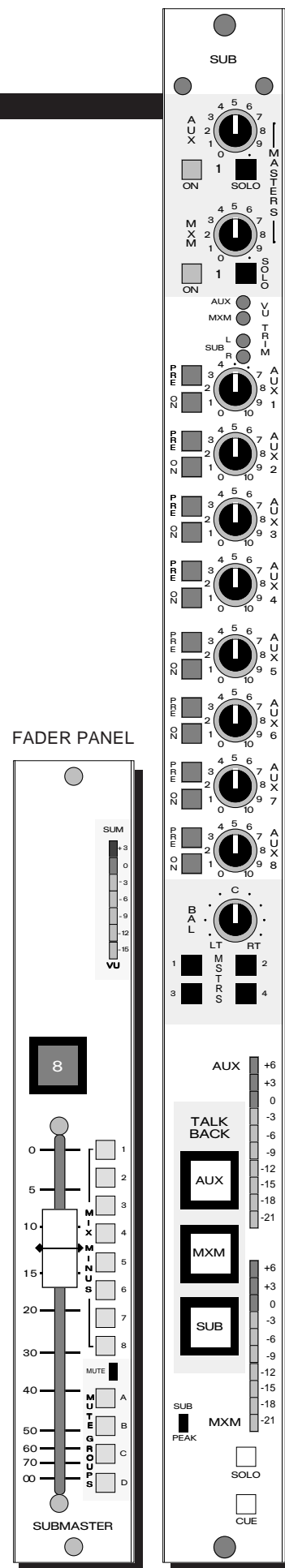
Main Module Controls

Aux Master Section

The TV-1000 console has eight AUX send outputs; each of the console's eight submaster modules contains the master controls for one console AUX send output. These controls consist of a master level pot, an ON switch, and a SOLO switch, which allows the console operator to spot monitor that particular AUX signal via the console's SOLO interrupt circuit and SOLO/CUE VU meters. Note an AUX insert point is provided (it may be PCB-jumper bypassed if desired, see page 3-7).

Mix Minus Master Section

The TV-1000 console has eight MIX MINUS outputs; each of the console's eight submaster modules contains the master controls for one console MIX MINUS output. These controls consist of a master level pot, an ON switch, and a SOLO switch, which allows the console operator to spot monitor that particular MIX MINUS signal via the console's SOLO interrupt circuit and SOLO/CUE VU meters.



Mix Minus Confidence Feed

This is a feature that interrupts regular Mix Minus outputs with a mono line level signal inputted at each submaster module's rear panel upper DB-25 ("A") audio connector. Individual interrupts are controlled by eight MIX MINUS CONFIDENCE FEED switches on a separate module. A ninth MASTER switch will interrupt all eight feeds simultaneously.

VU Trims

AUX and MIX MINUS (mono) outputs are metered via two 10-segment LED VU ladders at the bottom of the main module. These meters are calibrated by the AUX and MXM recessed front panel trimpots in the upper portion of the main module faceplate. The same VU trim section also contains left and right trimpots for the console's meterbridge mounted submaster VU meters.

AUX Section

This section taps eight summed (but see NOTE immediately following) auxiliary send signals from the main submaster channel and routes them to the console's send ACN busses. There is a pre/post selector switch and an ON switch for each aux circuit. NOTE aux circuits may also be programmed to operate as left/right stereo pairs via PCB-mounted programming dipswitches (see pages 3-7, 3-8). Also, while aux pre/post switches normally switch before or after both the channel fader AND channel On switch, special PCB-mounted slide switches (four per module) permit dual AUX pairs to follow submaster channel ON/OFF even when switched to "pre" (see page 3-8).

Balance Pot

Controls the left/right stereo submaster signal.

Master Assign

The module's SUBMASTER signal may be further assigned to any of the TV-1000 console's four stereo master outputs.

Talkback

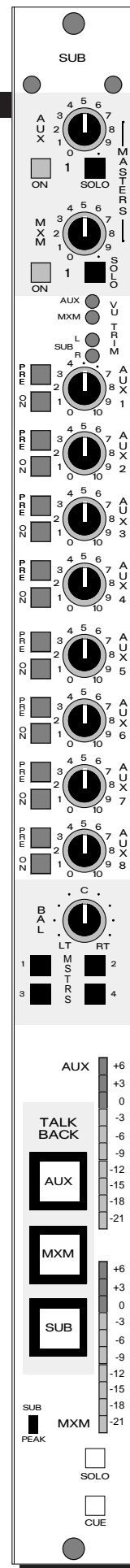
Three TB switches (AUX, MXM and SUB) allow the console operator's talkback microphone signal to be routed to each submaster module's AUX, MIX MINUS and SUBMASTER outputs.

LED VU Ladders

These two meters monitor the module's AUX and MIX MINUS outputs.

Sub Peak LED

Monitors the module's submaster signal for overload transient peaks.



Mute Group Assign

Each submaster module may be assigned to any or all of four Mute Control Groups. These groups (A thru D) can then be muted by the press of a single master mute button (in other words, whenever the master switch for a mute group is activated, any module assigned to that group will have its output muted). A “mute” LED indicator lights whenever a module has been muted. (The four mute master switches are located in the fader section of the board, directly underneath the power interface module in the center of the console.)

Metering

Submasters

In standard mainframe configurations, each of the console’s eight submaster modules has a dedicated stereo VU meter pair mounted in the console meterbridge. These monitor the submaster signal as it outputs the console. Recessed front panel access VU calibration trimpots near the top of the module (“SUB L-R”) permit calibration. A SUB PEAK LED is included at the bottom of the main module faceplate. Submaster fader panels also have built-in mono sum LED VU ladders with PCB-mounted calibration trimpots. Like all signals on the console, submasters can be metered (PFL or AFL) at the stereo SOLO meter pair.

Mix-Minus and Auxiliary Sends

Submaster modules house the console’s eight MXM and AUX masters. Thus each module has two 10-segment front panel LED VU ladders: one monitoring that module’s mix-minus output and the other that same module’s auxiliary send output (both are mono signals).

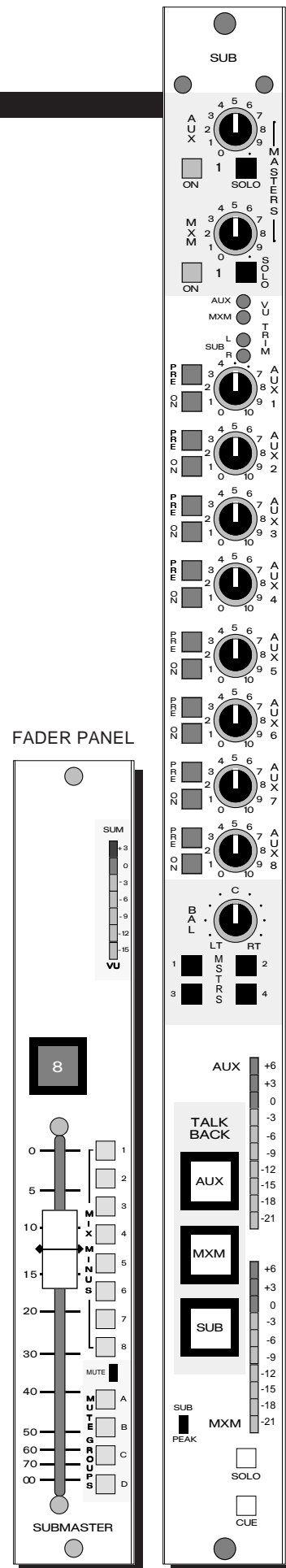
Submaster Module Internal Programming

AUX Solo

The module’s AUX signal is mono; the console’s SOLO circuit is stereo. PCB dipswitch “SW16” positions 1 (LT) and 2 (RT) (see Technical Drawings SG-1000 schematic page 58 B-3, and PCB load sheet page 60 lower right) determine whether the mono AUX signal goes onto the left and/or right SOLO busses.

AUX Insert Bypass

The module’s mono AUX signal electronically balanced insert point is normally bypassed at the factory via PCB jumpers “J6” (high) and “J7” (low; see Technical Drawings SG-1000 schematic page 54 D-6, and PCB load sheet page 60 extreme lower left). If you wish to use this patch point it will be necessary to remove the pre-installed jumpers.



Mix Minus Solo

The module's MXM signal is mono; the console's SOLO circuit is stereo. PCB dipswitch "SW16" positions 3 (LT) and 4 (RT) (see Technical Drawings SG-1000 schematic page 58 B-3, and PCB load sheet page 60 extreme lower right) determines whether the mono MXM signal goes onto the left and/or right SOLO busses.

Submaster Insert Bypass

The module's stereo SUBMASTER electronically balanced insert points may be bypassed via PCB jumpers "J2" (RT hi), "J3" (RT lo), "J4" (LT hi) and "J5" (LT lo). (See Technical Drawings SG-1000 schematic page 53 D-5 & B-5, and PCB load sheet page 60 lower left).

NOTE insertbypassjumpers are normally pre-installed at the factory. If you intend to use an out-board processing loop, you must remove the jumpers.

Mix Minus

The submaster module's summed mix-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW18") on the module's fader panel main PCB. See Technical Drawings FPO-1000 load sheet (page 75, lower left) and schematic (page 72 C-5). The default setting is "post".

The submaster module's summed mix-minus assign signal may also be programmed to follow the submaster channel ON switch via a programming jumper ("J1") on the module's fader panel main PCB (this is the default setting). See Technical Drawings FPO-1000 load sheet (page 75, left center) and schematic (page 72, C-5).

Sum LED VU

The submaster module's mono sum LED VU meter signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW17") on the module's fader panel main PCB. See Technical Drawings FPO-1000 load sheet (page 75, far left) and schematic (page 72, left center). The default setting is "post".

AUX Sends

The TV-1000 console aux send busses are normally configured as eight mono ACNs. However, they may be programmed as left/right pairs if desired. This is accomplished by PCB-mounted slide switches on the module's main PCB (SW 7-14). See Technical Drawings SG-1000 load sheet (page 60, left center) and schematic (page 56, A-6 thru D-6).

The AUX send programming switches are as follows:

- Aux send 1 sum/left: SW7
- Aux send 2 sum/right: SW 8
- Aux send 3 sum/left: SW9
- Aux send 4 sum/right: SW 10
- Aux send 5 sum/left: SW11
- Aux send 6 sum/right: SW 12
- Aux send 7 sum/left: SW 13
- Aux send 8 sum/right: SW 14

Note the preceding switches are reached through access cutouts in the module's upper switchcard PCB.

Aux send pairs may also be programmed to follow the module's channel ON switch regardless of their individual front panel pre/post fader switch settings (this is the default setting). This is accomplished by PCB-mounted slide switches on the module's switchcard PCB (SW 24-27). See Technical Drawings SGSW-1000 load sheet (page 65, lower right) and schematic (page 61, A-2 thru D-2). The programming switches are:

Aux send 1/2 pre on/off follow: SW27

Aux send 3/4 pre on/off follow: SW26

Aux send 5/6 pre on/off follow: SW25

Aux send 7/8 pre on/off follow: SW24

Cue Dropout

Submaster modules may be programmed to automatically drop out of Cue mode whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW15". See Technical Drawings SG-1000 load sheet (page 60, lower right) and schematic (page 58 C-3).

Submaster Module Audio Wiring

All audio wiring for the submaster module is via two DB-25 connectors mounted on the module's rear panel (see right). Audio signals include stereo and mono sum submaster outputs, aux and mix minus outputs, confidence feed line in (upper connector "A") and submaster and aux insert points (lower connector "B"). See pinout drawing on next page for wiring details.

Parts Lists

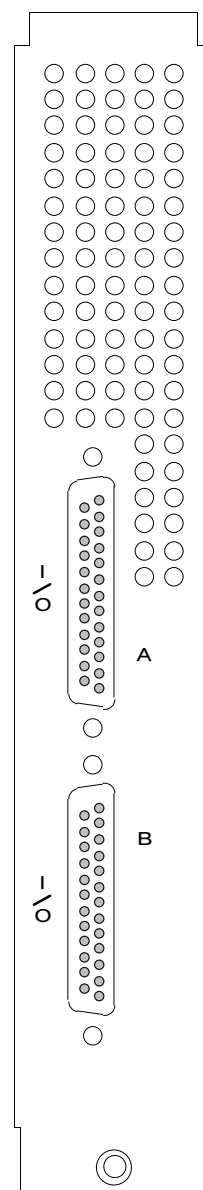
SG-1000 stereo submaster module parts lists may be found in Chapter 10. See "Chapter Contents" page 3-2 for specific list locations.

Printed Circuit Board Load Sheets

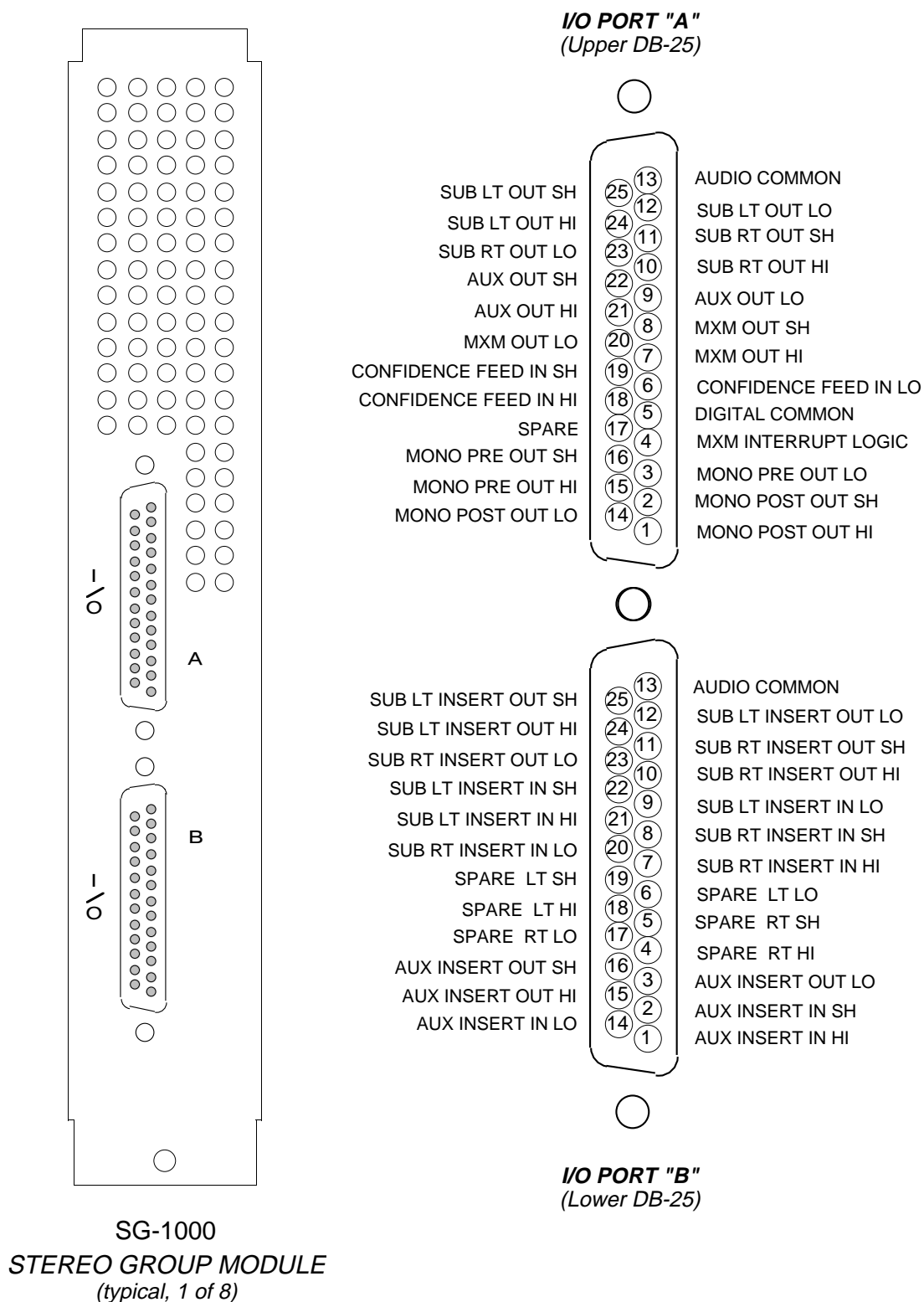
Load sheet drawings, showing part locations, are in the Technical Drawings booklet (see "Chapter Contents" page 3-2 for specific drawing locations).

Schematics

Schematic drawings are in the Technical Drawings booklet (see "Chapter Contents" page 3-2 for specific drawing locations).



The module's two DB-25 connectors (A & B) handle all input/output signals.



Submaster Module Rear Panel Pinouts

Stereo Master Modules

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I/O Pinout Drawing (Masters 2-4)	4-10
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switch card (FPSW-1000)	10-70

Printed Circuit Board Load Sheets (TECHNICAL DRAWINGS booklet)

SG-1000 main PCB	TD-60
SGSW-1000 switchcard PCB	TD-65
SGCF-1000 tone interrupt PCB	TD-71
FPO-1000 fader panel main PCB	TD-75
FPSW-1000 fader panel switchcard PCB	TD-77

Schematics

(TECHNICAL DRAWINGS booklet)

SG-1000 main PCB	TD-53
SGSW-1000 switchcard PCB	TD-61
SGCF-1000 master interrupt PCB	TD-70
FPO-1000 fader panel main PCB	TD-72
FPSW-1000 fader panel switchcard PCB	TD-76

Stereo Master Module

General

TV-1000 audio consoles come equipped with four stereo MASTER modules. Each master module controls one of the console's main stereo outputs. There is an associated fader panel directly beneath each main module faceplate.

Stereo master audio I/O (input/output) connections are made via two DB-25 multi-pin connectors ("A" upper; "B" lower) located on the back rear panel of the module (see page 4-8).

Please refer to the signal flow diagram on pages 68 and 69 of the Technical Drawings in conjunction with the text of this chapter. Note stereo MASTER modules utilize the same printed circuit boards as SUBMASTER modules.

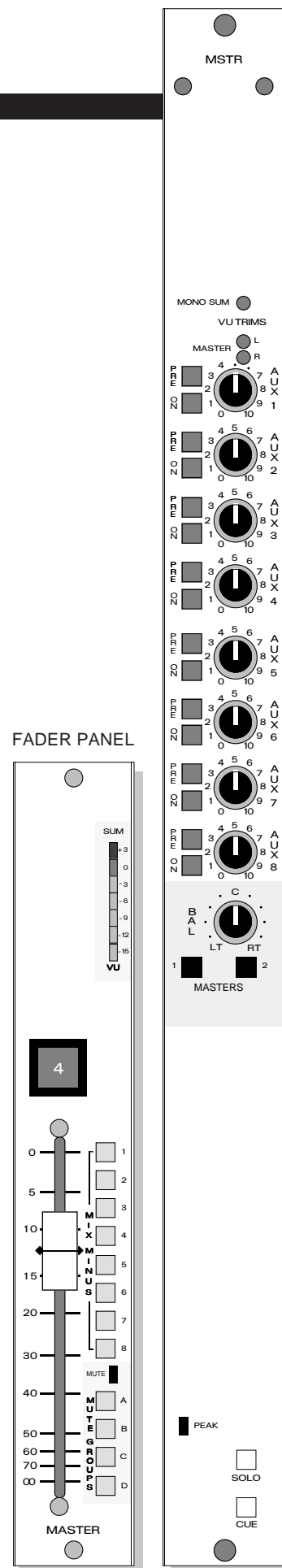
Main Module Controls

VU Trims

These recessed front panel trimpots may be used to calibrate the module's main VU meter pair ("Master") and mono sum LED VU (located on the associated fader panel).

AUX Section

This section taps eight summed (but see NOTE immediately following) auxiliary send signals from the module and routes them to the console's send ACN busses. There is a pre/post selector switch and an ON switch for each aux circuit. NOTE aux circuits may also be programmed to operate as left/right stereo pairs via PCB-mounted programming dipswitches (see page 4-7). Also, while aux pre/post switches normally switch before or after both the channel fader AND channel On switch, special PCB-mounted slide switches (four per module) permit dual AUX pairs to follow stereo master channel ON/OFF even when switched to "pre" (see page 4-7).



Balance Pot

Controls the left/right stereo master signal.

Master 1 & 2 Assign (Modules 3 & 4 only)

Master module signals 3 & 4 may be back-assigned to Masters 1 & 2 for grand mastering situations.

Outputs

Master modules have three main outputs: stereo master, mono sum (pre), and mono sum (post). Stereo Master module #1 also has an additional LINE OUTPUT tapped off the stereo master out (see “Stereo Master Interrupt” immediately following).

Stereo Master Interrupt (Module 1 only)

This feature interrupts the #1 stereo master module’s LINE OUTPUT with a mono line level signal inputted at the module’s rear panel upper DB-25 (“A”) audio connector. The interrupt is turned on and off by a STEREO MASTER INTERRUPT switch on a separate confidence feed panel. It may also be turned off (but not on) by a user-supplied external “Tone Off” switch wired to control pins on that module’s rear panel (see pages 8-9 and 8-10).

Peak LED

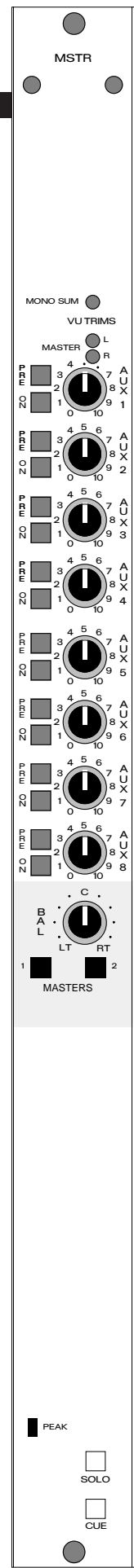
Monitors the module’s stereo master signal (both pre and post) for overload transient peaks.

Solo and Cue

Both pre-fader CUE and post-fader SOLO switches are provided. These switches tap the module’s PFL and AFL signals and route them to the console’s stereo SOLO/CUE monitor bus, where they may be used to feed operator headphones, control room monitors, dedicated speakers, etc. (SOLO/CUE is mastered at the console’s control room monitor module; see Chapter 5.) Note CUE may be programmed to automatically drop out whenever the module’s ON switch (see fader panel section) is activated (see “Cue Dropout,” page 4-7).

Insert Point (rear panel)

The module’s rear panel has an electronically balanced stereo insert point in the stereo master signal chain (lower DBD-25 connector “B”). It is normally PCB-jumper bypassed at the factory (see page 4-6).



Fader Panel Controls

Each stereo master module has an associated fader panel located directly below it. Starting from the bottom, these panels are configured as follows:

Fader

A 3000 Series Penny & Giles long-throw (104mm) stereo fader. Plug-in for easy servicing.

Mix Minus Assign (optional)

Places the module signal on any one (or combination of) the console's eight mix-minus busses. The mix-minus signal may be programmed (by an internal PCB-mounted slide switch) to be pre or post fader; a programming jumper permits the mix-minus feed to follow channel ON/OFF. See "Mix Minus" page 4-6 for details.

Channel ON

This momentary action lighted pushbutton switch turns the module on and off.

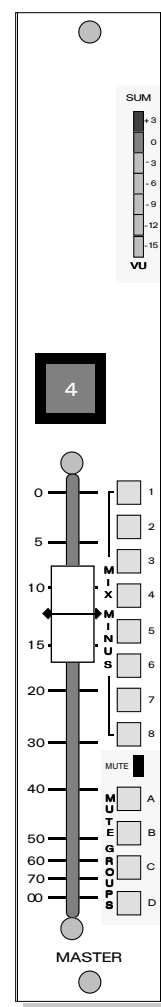
Sum VU

An LED ladder display that meters the module's stereo master summed L+R output. Note the meter may be programmed (by an internal PCB-mounted slide switch, see page 4-7) to monitor pre or post fader. It is always, however, pre channel ON/OFF, allowing it to function as a signal present indicator.

Mute Group Assign

The module may be assigned to any or all of four Mute Control Groups. These groups (A thru D) can then be muted by the press of a single master mute button (in other words, whenever the master switch for a mute group is activated, any module assigned to that group will have its output muted). A "mute" LED indicator lights whenever a module has been muted. (The four mute master switches are located in the fader section of the board, directly underneath the power interface module in the center of the console.)

FADER PANEL



Metering

Stereo Masters

Like inputs and submasters, stereo master fader panels have built-in mono sum LED VU ladders with PCB-mounted calibration trimpots. They may also be metered (PFL or AFL) at the stereo SOLO meter. However, they additionally have dedicated L-R VU meter pairs in the console's meterbridge (these are calibrated by recessed trimpots at the top of each stereo master module faceplate). A PEAK LED indicator is also mounted at the bottom of the main module faceplate.

Master Module Internal Programming

Master Insert Bypass

The module's stereo master electronically balanced insert points may be bypassed via PCB jumpers "J2" (RT hi), "J3" (RT lo), "J4" (LT hi) and "J5" (LT lo) (See Technical Drawings SG-1000 schematic page 53 D-5 & B-5, and PCB load sheet page 60 lower left).

Insert jumpers are normally already installed at the factory.

Mix Minus

The master module's summed mix-minus assign signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW18") on the module's fader panel main PCB. See Technical Drawings FPO-1000 load sheet (page 75, lower left) and schematic (page 72 C-5). The default setting is "post".

The stereo master module's summed mix-minus assign signal may also be programmed to follow the module's channel ON switch via a programming jumper ("J1") on the module's fader panel main PCB (this is the default setting). See Technical Drawings FPO-1000 load sheet (page 75, left center) and schematic (page 72, C-5).

Sum LED VU

The stereo master module's mono sum LED VU meter signal may be programmed pre or post fader via a PCB-mounted slide switch ("SW17") on the module's fader panel main PCB. See Technical Drawings FPO-1000 load sheet (page 75, far left) and schematic (page 72, left center). The default setting is "post".

AUX Sends

The TV-1000 console aux send busses are normally configured as eight mono ACNs. However, they may be programmed as left/right pairs if desired. This is accomplished by PCB-mounted slide switches on the module's main PCB (SW 7-14). See Technical Drawings SG-1000 load sheet (page 60, left center) and schematic (page 56, A-6 thru D-6). The programming switches are:

- Aux send 1 sum/left: SW7
- Aux send 2 sum/right: SW 8
- Aux send 3 sum/left: SW9
- Aux send 4 sum/right: SW 10
- Aux send 5 sum/left: SW11
- Aux send 6 sum/right: SW 12
- Aux send 7 sum/left: SW 13
- Aux send 8 sum/right: SW 14

Note the above switches are reached through access cutouts in the module's upper switchcard PCB.

Aux send pairs may also be programmed to follow the module's channel ON switch regardless of their individual front panel pre/post fader switch settings (this is the default setting). This is accomplished by PCB-mounted slide switches on the module's switchcard PCB (SW 24-27). See Technical Drawings SGSW-1000 load sheet (page 65, lower right) and schematic (page 61, A-2 thru D-2). The programming switches are:

- Aux send 1/2 pre on/off follow: SW27
- Aux send 3/4 pre on/off follow: SW26
- Aux send 5/6 pre on/off follow: SW25
- Aux send 7/8 pre on/off follow: SW24

Cue Dropout

Master modules may be programmed to automatically drop out of Cue mode whenever the channel On switch is pressed (this is the default setting). This is accomplished by PCB-mounted slide switch "SW15". See Technical Drawings SG-1000 load sheet (page 60, lower right) and schematic (page 58 C-3).

Master Module Input/Output Wiring

All wiring for the master modules is via two rear panel DB-25 connectors (see right). Signals include stereo and mono sum master outputs, external tone in, external tone control lines (upper connector “A”) and master insert points (lower connector “B”). Note external tone pins (“external tone” is the stereo master interrupt signal referred to on page 4-4) are on master module #1 only. See pinout drawings on next two pages for wiring details.

Parts Lists

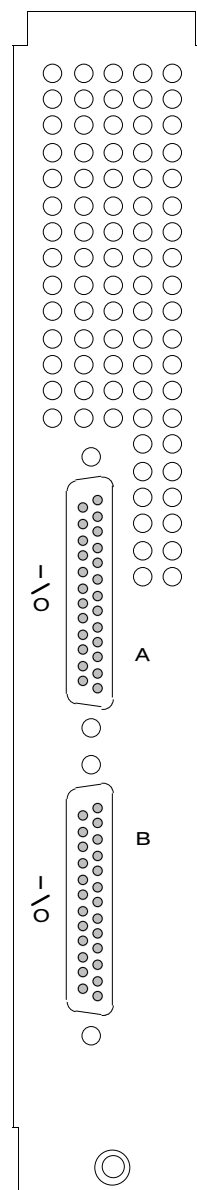
SM-1000 stereo master module parts lists may be found in Chapter 10. See “Chapter Contents” page 4-1 for specific list locations.

Printed Circuit Board Load Sheets

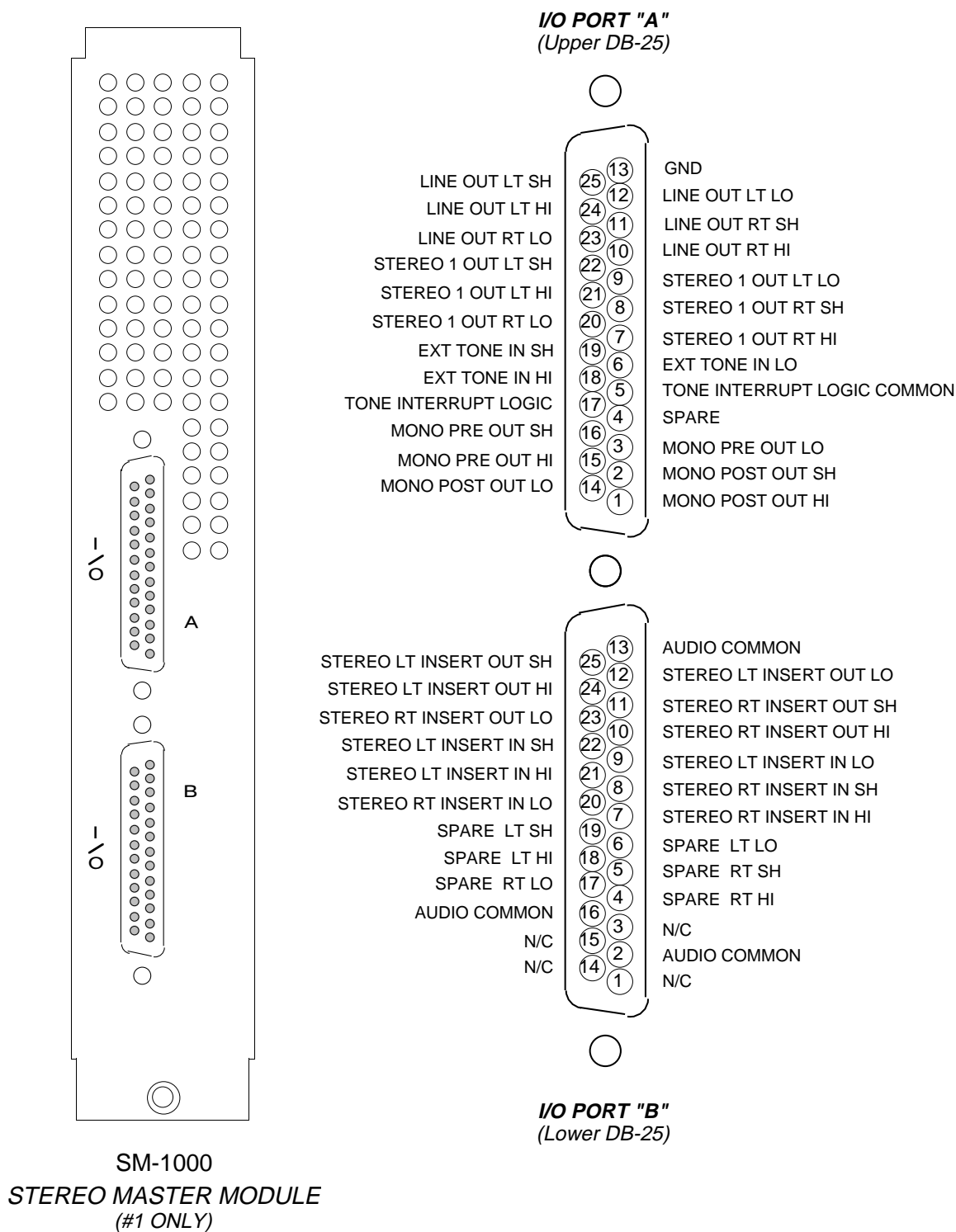
Load sheet drawings, showing part locations, are in the Technical Drawings booklet (see “Chapter Contents” page 4-2 for specific drawing locations).

Schematics

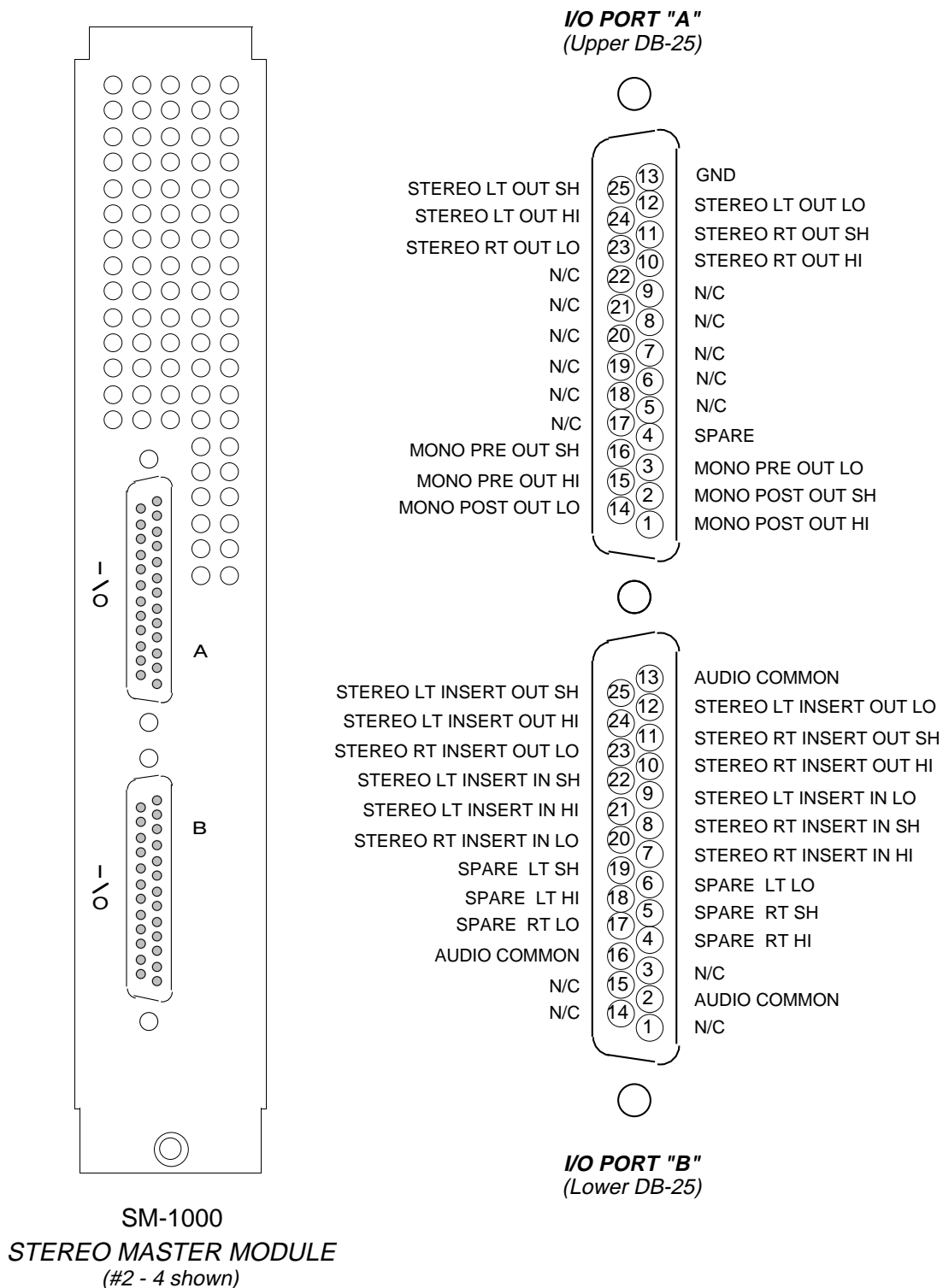
Schematic drawings are in the Technical Drawings booklet (see “Chapter Contents” page 4-2 for specific drawing locations).



The module's two DB-25 connectors (A & B) handle all input/output signals.



Stereo Master Module #1 Rear Panel Pinouts



Stereo Master Modules #2-4 Rear Panel Pinouts

Control Room Module

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Control Room Module

General

TV-1000 audio consoles are equipped with a CR-1000 control room monitor module. The control room module allows the console operator to monitor the TV-1000 console's inputs and outputs by means of a monitor source select switchbank and the console's SOLO/CUE system. It is also the module that houses the console's on-air tally port.

Input channel audio I/O (input/output) connections are made via two DB-25 multi-pin connectors ("A" upper; "B" lower) located on the back rear panel of the module. Tally logic and control signals are made through a DB-9 "TALLIES" connector directly above the rear panel's two DB-25 audio connectors (see page 5-6).

Note the CR-1000 module has a blank FPCR panel in its "fader" position. This panel has active circuitry behind it that feeds the console's SOLO ACN signal to the module proper.

Please refer to the signal flow diagram on page 83 of the Technical Drawings in conjunction with the text of this chapter.

Controls

VU Trims

Two pairs of recessed, front panel trimpots are used to calibrate the console's SOLO/CUE VU feed and optional CR (control room monitor signal) VU meters.

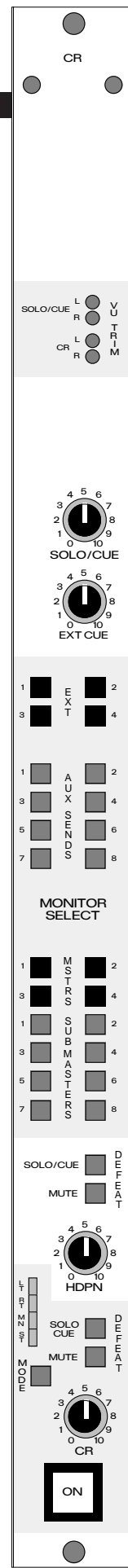
NOTE while the console's SOLO/CUE master circuitry is located on the CR module, solo meter VU driver circuitry is actually on the console's VO-1000 module. The CR module's SOLO/CUE trimpots adjust the signal feed going from the CR module to the VO module's solo/external VU meter drivers (which have their own trimpots; see page 7-3).

Solo/Cue and External Cue Level Controls

The solo/cue master level control sets the loudness for the console's CR and HDPN solo/cue interrupt signals. An external cue pot sets the level for the console's separate solo/cue outputs: one electronically balanced line level out and the other driven by built-in cue speaker amps. The speaker outputs may be stereo or L+R summed.

Monitor Select

These source select switches allow the console operator to monitor the console's eight aux sends, eight submasters and four master outputs. Four additional external line inputs may also be accessed.



Headphone Section

The module's headphone circuit follows the monitor source select switching. There are two headphone outputs: one electronically balanced line level out (programmable as either pre or post HDPN level control), and the other driven by a built-in amplifier (amplifier output may be stereo or L+R summed). Note the headphone outputs are normally subject to the console's muting and solo/cue interrupt circuits; however, these may be defeated by front panel switching if desired.

CR Section

Control room output is determined by the module's monitor source select switching and is subject to the console's muting and solo/cue interrupt circuits (front panel switch defeatable). A CR ON switch turns the console's control room outputs on and off. There are two such outputs; both are electronically balanced line level: one is post level control, the other pre (fixed).

MODE Switch

The mode switch affects both CR and HDPN outputs as follows:

Left Mode (LT) – Left signal to both channels

Right Mode (RT) – Right signal to both channels

Mono Mode (MN) – Left plus right sum signal to both channels

Stereo (ST) — “Normal” mode (MODE switch illuminated).

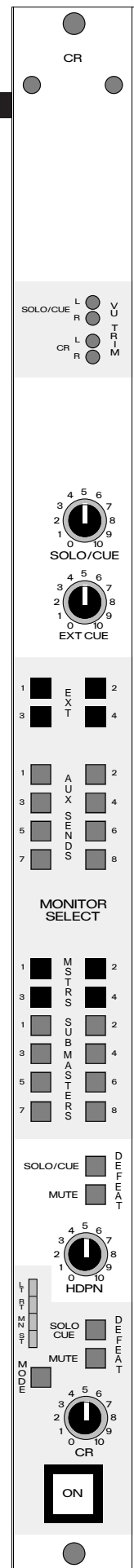
Tally Ports

The CR-1000 module outputs the console's On-Air tally function. There are two ports: relay closure and opto-isolated. Both are controlled by the console's mute/tally control lines (four; which one activates the CR tally port is determined by a PCB-mounted dipswitch).

Metering

Solo/External

The console's solo/external left/right meter pair is multi-functional. Under normal use, they will monitor the external line source selected at the VU/Oscillator module's “External Meter Select” switches (see page 7-3; four external sources are available, brought in at the VO module's rear panel upper DB-25 connector). Whenever CUE or SOLO is activated anywhere on the console, however, the meters automatically switch to the activated signal (a “solo/cue activated” LED below the external source switches lights when this happens).



When solo/cue is de-activated (either by pressing the pertinent switch again, or by using the master solo/cue dropout panel switch) the meters return to the selected external signal.

Since SOLO (AFL) and CUE (PFL) functions are normally programmed to interrupt control room and operator headphone monitor feeds, and since there can easily be over one hundred individual solo and cue switches scattered throughout an average console's control surface, the SOLO/CUE MASTER DROPOUT switch (located directly below the VO-1000 module; see page 7-3) is extremely useful to quickly return the console to a "regular" operational state without having to hunt down the single (or multiple!) offending solo/cue switch(es) causing an interrupt.

There are two sets of front panel calibration trimpots associated with the solo/ext VU meters. The first set calibrates the meter driver circuitry itself at the VO-1000 module ("Solo/Ext"—located at the top of the VO module faceplate). The second set ("Solo/Cue") is located at the top of the control room monitor (CR-1000) module; these adjust the level of the solo/cue signal being fed to the VO-1000 module circuitry.

Solo/Cue Logic Programming

A number of PCB-mounted programming switches on the CR-1000 module allow the console's solo/cue interrupt system to be configured in different ways. The system is designed to allow the console operator to spot monitor any signal or module via PFL (Cue) or AFL (Solo) switching throughout the signal chain. Any time a SOLO or CUE switch is activated on the console, the CR-1000 module's control room and headphone outputs are automatically interrupted and the selected signal replaces the monitor signal normally determined by the module's MONITOR SOURCE SELECT switching. Whether or not these interrupts occur, and the manner in which they occur, is determined by the programming switches described in this section.



NOTE the level of the SOLO/CUE interrupt signal is determined by the solo/cue master rotary level control and not by the CR or HDPN level pots; thus, be careful when setting the solo/cue master level or you may be unpleasantly surprised the first time you activate a solo/cue switch.

HDPN/CR Interrupt Select

PCB dipswitch "SW23" (see Technical Drawings CR-1000 schematic page 87 C-4, and PCB load sheet page 89 lower right) determines which signals (cue and/or solo) will interrupt the module's CR and/or HDPN outputs.

Cue Enable

PCB dipswitch "SW25" (see Technical Drawings CR-1000 schematic page 87 C-4, and PCB load sheet page 89 lower right) determines which console logic signals (cue and/or solo) will enable the module's CUE output.

CR/HDPN Dim Option

Normally a cue or solo signal will replace the CR-1000 module's regular monitor output. However, it is also possible to DIM (attenuate) the regular output and overlay it with the full strength cue/solo signal. PCB dipswitch "SW24" (see Technical Drawings CR-1000 schematic page 87 B-4, and PCB load sheet page 89 lower right) can activate the DIM function for CR interrupt (dipswitch toggle #1) and/or HDPN interrupt (dipswitch toggle #2). If your console is equipped with optional front panel dim trims the amount of attenuation for the CR and HDPN dim functions may also be adjusted.

CR/HDPN Mute

The console's four mute control lines can automatically turn off the module's CR and/or HDPN outputs whenever a programmed input module channel ON switch is activated. PCB-mounted dipswitch "SW24" (see Technical Drawings CR-1000 schematic page 87 B-4, and PCB load sheet page 89 lower right) can activate this muting function for CR (dipswitch toggle #3) and/or HDPN (dipswitch toggle #4).

WHICH of the console's four mute control lines will activate the CR-1000 module's muting functions is determined by PCB-mounted dipswitch "SW22" (see Technical Drawings CR-1000 schematic page 87 D-5, and PCB load sheet page 89 lower right).

Cue Speaker Output Mode

PCB-mounted slide switch "SW18" (see Technical Drawings CR-1000 schematic page 86 D-2, and PCB load sheet page 89 lower center) determines whether the module's cue speaker output is stereo or mono (L+R sum).

Headphone Output Options

Headphone Amp Output Mode

PCB-mounted slide switch "SW19" (see Technical Drawings CR-1000 schematic page 86 B-2, and PCB load sheet page 89 lower center) determines whether the module's headphone amplifier output is stereo or mono (L+R sum).

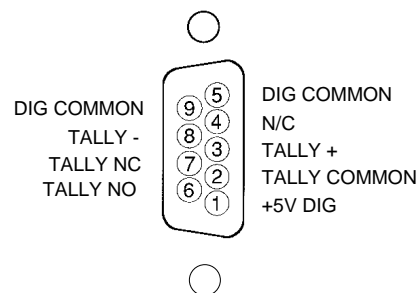
Headphone Line Output Pre/Post Select

PCB-mounted slide switch "SW17" (see Technical Drawings CR-1000 schematic page 86 C-4, and PCB load sheet page 89 center) determines whether the module's electronically balanced line level headphone output is pre or post headphone level control.

Control Room “On-Air” Tally Port

The CR-1000 module tally port is activated by the console’s mute control lines (see dipswitch “SW22”, preceding). Tally signals are outputted at the module’s DB-9 “TALLIES” connector, located at the top of the module’s rear panel. There are two types of control signals available:

- a) a simple relay closure with N.O., N.C. and tally common pins (maximum current 50 milliamps at 24V), and
- b) opto-isolated tally+ and tally– control pins (used to power an external +5V tally light/LED; maximum current 50 milliamps).



If you will be using a high powered lamp/bulb for the external tally, you will need to provide an external power and relay circuit that takes its control pulse from the CR-1000 module’s tally pins.

CR Module Audio Wiring

All audio wiring for the control room monitor module is via two DB-25 connectors mounted on the module’s rear panel (see right). Audio signals include external line inputs (upper connector “A”) and CR, HDPN and Solo/Cue outputs (lower connector “B”). See pinout drawing on next page for wiring details.

Parts Lists

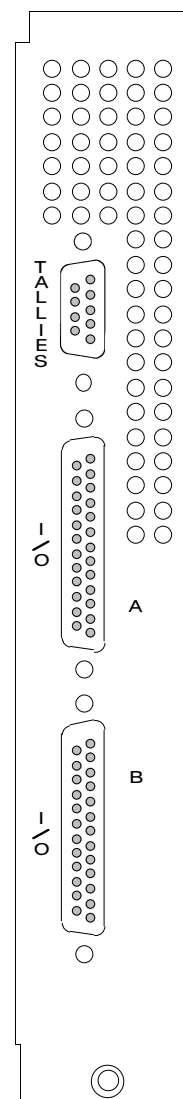
CR-1000 control room module parts lists may be found in Chapter 10. See “Chapter Contents” page 5-1 for specific list locations.

Printed Circuit Board Load Sheets

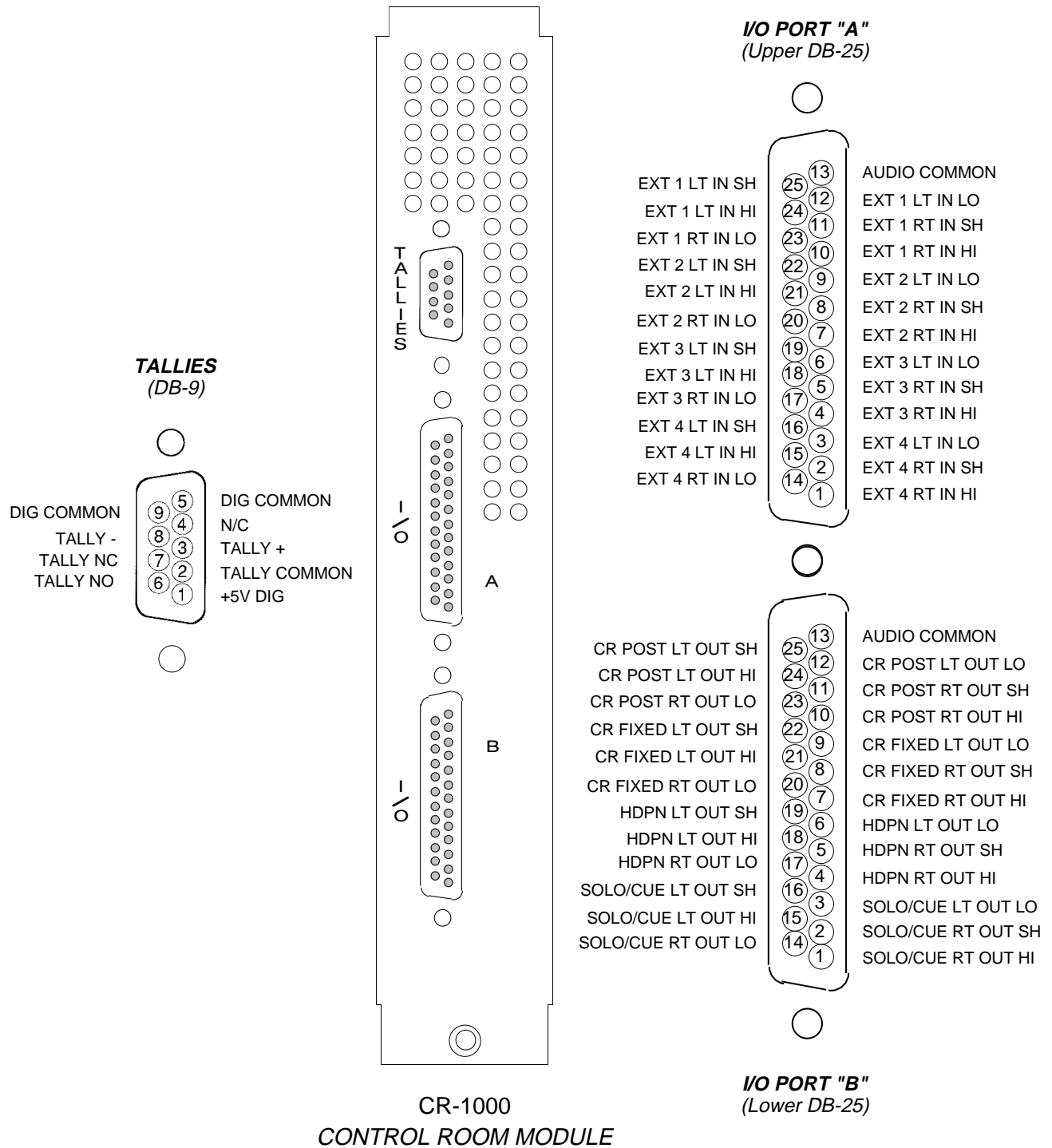
Load sheet drawings, showing part locations, are in the Technical Drawings booklet (see “Chapter Contents” page 5-1 for specific drawing locations).

Schematics

Schematic drawings are in the Technical Drawings booklet (see “Chapter Contents” page 5-1 for specific drawing locations).



CR-1000 Module
Rear Panel
Connectors



Control Room Monitor Module Rear Panel Pinouts

Studio Control Module

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Studio Control Module

General

TV-1000 audio consoles can be equipped with one or more SC-1000 studio monitor modules. Each of these modules allows the console operator to send monitor versions of the TV-1000 console's outputs to a separate studio. Source selection is determined by a set of monitor source select switches that match those available on the console's control room monitor module. Each studio module has two outputs: a main electronically balanced line level STUDIO output, and a dedicated HEADPHONE output available as line level or from a built-in headphone amp. Each module also features an on-air tally port and a talkback circuit.

Input channel audio I/O (input/output) connections are made via two DB-25 multi-pin connectors ("A" upper; "B" lower) located on the back rear panel of the module. Tally logic and control signals are made through a DB-9 "TALLIES" connector directly above the rear panel's two DB-25 audio connectors (see page 6-5).

Please refer to the signal flow diagram on page 84 of the Technical Drawings in conjunction with the text of this chapter. Note the SC-1000 studio monitor module utilizes the same printed circuit boards as the CR-1000 module.

Controls

Studio VU Trims

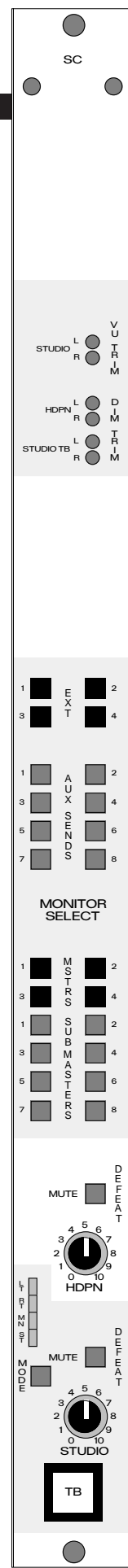
Two pairs of recessed, front panel trimpots used to calibrate optionally available Studio Monitor meters.

Talkback Dim Trims

Two pairs of recessed, front panel trimpots are used to set the level of the TB interrupt to the module's headphone and studio outputs.

Monitor Select

These source select switches allow studio talent to monitor the console's eight aux sends, eight submasters and four master outputs. Four additional external line inputs may also be accessed.



Headphone Section

The studio module's headphone circuit follows the monitor source select switching. There are two headphone outputs: one electronically balanced line level out (programmable as either pre or post HDPN level control), and the other driven by a built-in amplifier (amplifier output may be stereo or L+R summed). Note the headphone outputs are normally subject to the console's mute control circuits; however, this may be defeated by a front panel switch if desired.

Studio Section

Studio output is determined by the module's monitor source select switching and is subject to the console's muting and talkback interrupt circuits (muting is front panel switch defeatable). A studio talkback switch (TB) routes the console operator's talkback microphone signal (see "Talkback" on page 7-3 of the VO-1000 Chapter) to the studio output. There are two studio output ports; both are electronically balanced line level: one is post level control, the other pre (fixed).

MODE Switch

The mode switch affects both STUDIO and HDPN outputs as follows:

Left Mode (LT) – Left signal to both channels

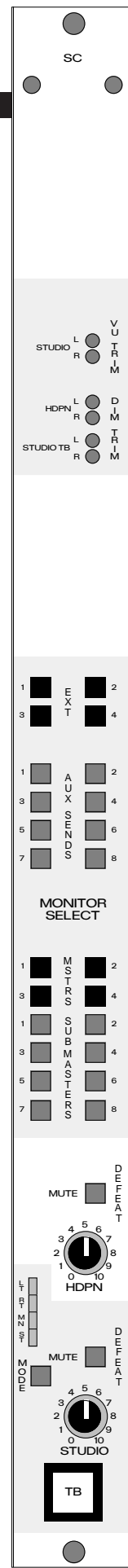
Right Mode (RT) – Right signal to both channels

Mono Mode (MN) – Left plus right sum signal to both channels

Stereo (ST) — "Normal" mode (MODE switch illuminated).

Tally Ports

The SC-1000 module includes a tally function. There are two ports: relay closure and opto-isolated. Both are controlled by the console's mute/tally control lines (four; which one activates the studio tally port is determined by a PCB-mounted dipswitch).



Studio Module Logic Programming

HDPN Talkback Interrupt

PCB dipswitch “SW25” (dipswitch toggle #4; see Technical Drawings CR-1000 schematic page 87 C-4, and PCB load sheet page 89 lower right) determines whether talkback will interrupt the studio HDPN outputs.

STUDIO/HDPN Dim

Normally the operator talkback signal will replace the SC-1000 module’s regular monitor output. However, it is also possible to DIM (attenuate) the regular output and overlay it with the full strength talkback signal. PCB dipswitch “SW24” (see Technical Drawings CR-1000 schematic page 87 B-4, and PCB load sheet page 89 lower right) can activate the DIM function for STUDIO interrupt (dipswitch toggle #1) and/or HDPN interrupt (dipswitch toggle #2). If your console is equipped with optional front panel dim trims the amount of attenuation for the STUDIO and HDPN dim functions may also be adjusted.

STUDIO/HDPN Mute

The console’s four mute control lines can automatically turn off the module’s STUDIO and/or HDPN outputs whenever a programmed input module channel ON switch is activated. PCB-mounted dipswitch “SW24” (see Technical Drawings CR-1000 schematic page 87 B-4, and PCB load sheet page 89 lower right) can activate this muting function for STUDIO (dipswitch toggle #3) and/or HDPN (dipswitch toggle #4).

WHICH of the console’s four mute control lines will activate the SC-1000 module’s muting functions is determined by PCB-mounted dipswitch “SW22” (see Technical Drawings CR-1000 schematic page 87 D-5, and PCB load sheet page 89 lower right).

Headphone Amp Output Mode

PCB-mounted slide switch “SW19” (see Technical Drawings CR-1000 schematic page 86 B-2, and PCB load sheet page 89 lower center) determines whether the module’s headphone amplifier output is stereo or mono (L+R sum).

Headphone Line Output Pre/Post Select

PCB-mounted slide switch “SW17” (see Technical Drawings CR-1000 schematic page 86 C-4, and PCB load sheet page 89 center) determines whether the module’s electronically balanced line level headphone output is pre or post headphone level control.

Studio Tally Port

The SC-1000 module tally port is activated by the console's mute control lines (see dipswitch "SW22", preceding). Tally signals are outputted at the module's DB-9 "TALLIES" connector, located at the top of the module's rear panel. There are two types of control signals available:

- a) a simple relay closure with N.O., N.C. and tally common pins (maximum current 50 milliamps at 24V), and
- b) opto-isolated tally+ and tally- control pins (used to power an external +5V tally light/LED; maximum current 50 milliamps).

If you will be using a high powered lamp/bulb for the external tally, you will need to provide an external power and relay circuit that takes its control pulse from the SC-1000 module's tally pins.

Studio Module Audio Wiring

All audio wiring for the studio monitor module is via two DB-25 connectors mounted on the module's rear panel (see right). Audio signals include external line inputs (upper connector "A") and STUDIO and HDPN outputs (lower connector "B"). See pinout drawing on next page for wiring details.

Parts Lists

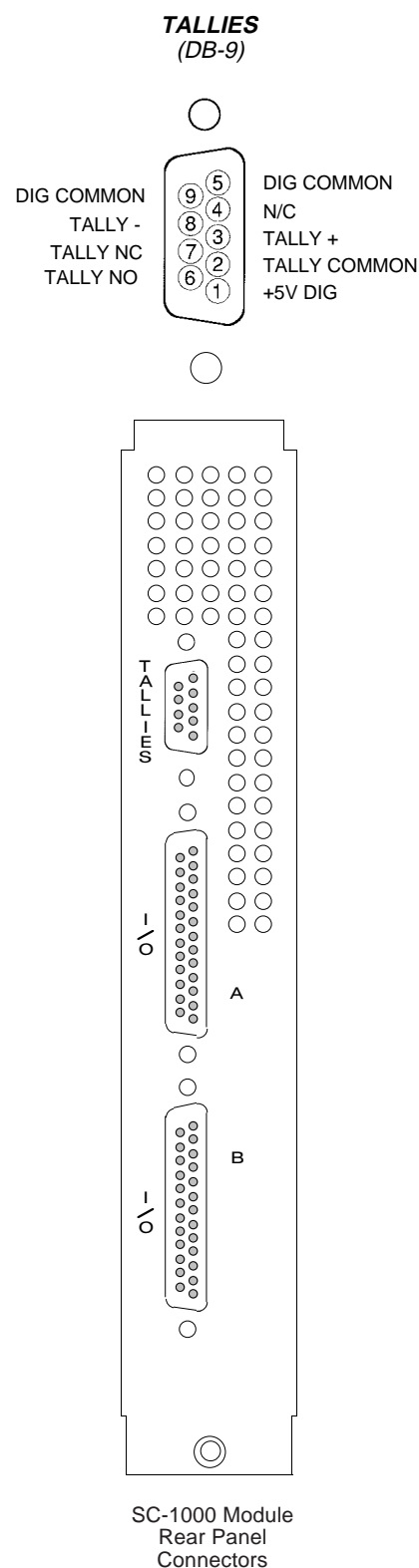
SC-1000 control room module parts lists may be found in Chapter 10. See "Chapter Contents" page 6-1 for specific list locations.

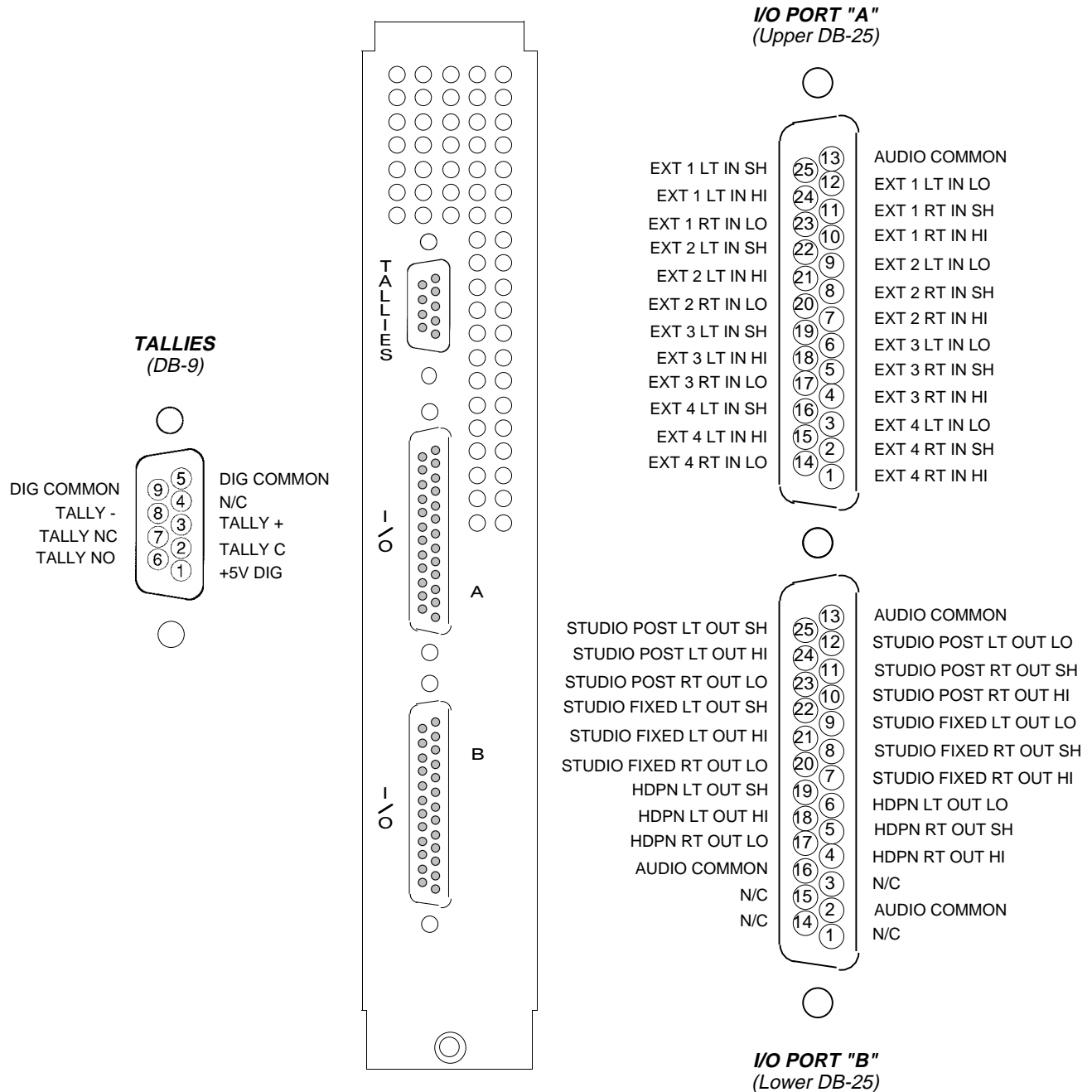
Printed Circuit Board Load Sheets

Load sheet drawings, showing part locations, are in the Technical Drawings booklet (see "Chapter Contents" page 6-1 for specific drawing locations).

Schematics

Schematic drawings are in the Technical Drawings booklet (see "Chapter Contents" page 6-1 for specific drawing locations).





Studio Control Module Rear Panel Pinouts

VU/Oscillator Module

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Main card (MO-1000) 10-86

Switch card (MOSW-1000) 10-89

Timer control card (TCS-60) 10-90

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(TECHNICAL DRAWINGS Booklet)

MO-1000 main PCB TD-102

MOSW-1000 switchcard PCB TD-104

TM-6SB Timer PCB TD-168

Solo/Cue Dropout Panel TD-106

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(TECHNICAL DRAWINGS Booklet)

MO-1000 main PCB TD-98

MOSW-1000 switchcard PCB TD-103

TM-6 Timer TD-169

Solo/Cue Dropout Panel TD-105

VU/Oscillator Module

General

The TV-1000 audio console VU/Oscillator (VO) module houses the console's talkback, oscillator, external meter and timer control circuits.

A control panel directly below the main module houses a special Solo/Cue Master Dropout switch. When pressed, this switch automatically deactivates all solo and cue switches on the console.

Module audio (and timer control) connections are made via two DB-25 multi-pin connectors ("A" upper; "B" lower) located on the back rear panel of the module. An upper DB-9 "TB/OSC" connector handles talkback and oscillator signals, and a lower DB-9 "Line Out VU" connector handles signals for the console's spare VU meter driver circuitry (see page 7-4).

Please refer to the signal flow diagram on page 97 of the Technical Drawings in conjunction with the text of this chapter.

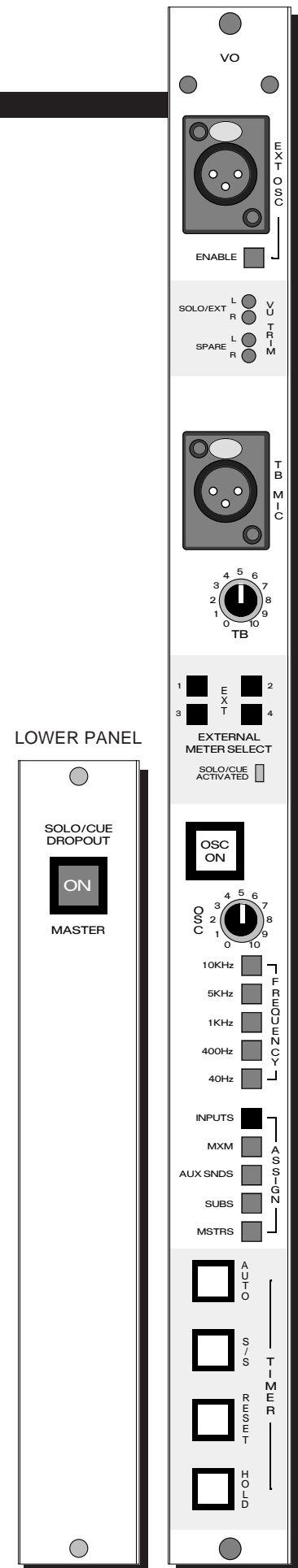
Module Controls

External Oscillator Enable

When activated this switch (with associated front panel XLR input jack) substitutes an external oscillator signal for the module's built-in oscillator (via either the XLR jack OR the module's oscillator in pins on the rear panel lower DB-25 connector).

VU Trims

Recessed front panel trimpots for calibrating the console's meterbridge SOLO/EXT VU meters.



Talkback

The master level control for the console operator's talkback microphone. The signal comes from the associated front panel XLR input jack OR the module's external talkback input pins on the rear panel upper DB-9 ("TB/OSC") connector. Note phantom power is present at both talkback inputs.

External Meter Select

The console's external/solo meter can select from four external line inputs brought into the console via the VO module's rear panel upper DB-25 connector. NOTE the external signal is automatically interrupted by SOLO/CUE whenever a solo or cue switch is activated anywhere on the console. The "solo/cue activated" LED illuminates whenever this occurs.

NOTE there are *two* sets of VU trimpots associated with the SOLO/EXT meters. The L/R pair at the top of the VO module calibrates the SOLO/EXT meters themselves. The "SOLO/CUE" pair at the top of the CRM (control room monitor) module sets the level of the solo/cue VU interrupt feed.

Oscillator Section

A five-frequency built-in test oscillator with ON switch, level control, and separate assignment switches to all inputs, mix-minus busses, aux sends, submasters and master modules. Allows the entire console signal chain to be calibrated from input to output.

Oscillator output may be calibrated by an internal PCB-mounted trimpot ("CR11"; see Technical Drawings MO-1000 schematic page 98 C-3, and PCB load sheet page 102 center).

Timer Control

Four pushbutton controls for the console's digital timer:

AUTO – enables timer restart functions from programmed input modules

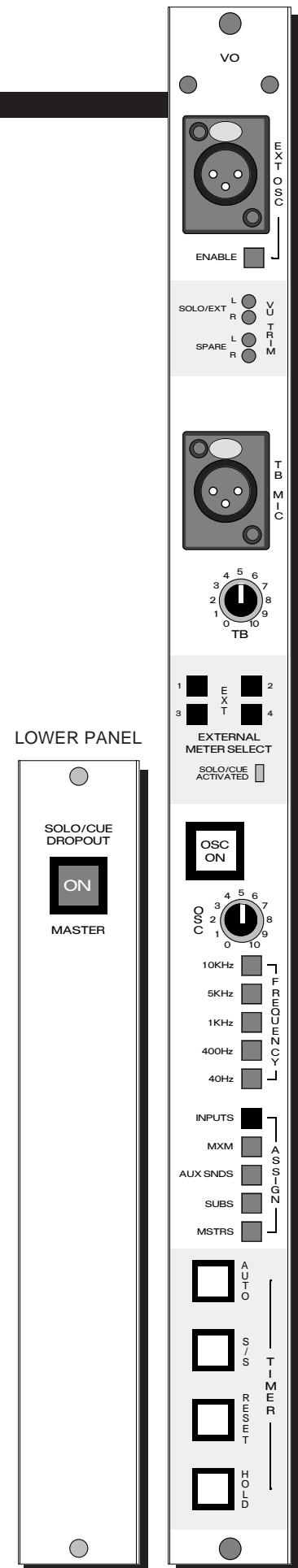
S/S – Start/Stop

RESET - return to zero (if the timer is stopped it will hold at zero; if it is running it will reset to zero and immediately begin counting up).

HOLD – freezes the timer *display* (the counter keeps on going); when released the display catches up to the current count.

Solo/Cue Master Dropout Panel

This lower panel houses one switch which when pressed causes all SOLO and CUE switches on the TV-1000 console to deactivate. The panel utilizes the same printed circuit board (FPW-1000) as the console's MUTE MASTERS panel.



VO Module Input/Output Wiring

All wiring for the VO module is via two DB-25 and two DB-9 connectors mounted on the module's rear panel (see right). See pinout drawing on next page for complete wiring details.

Parts Lists

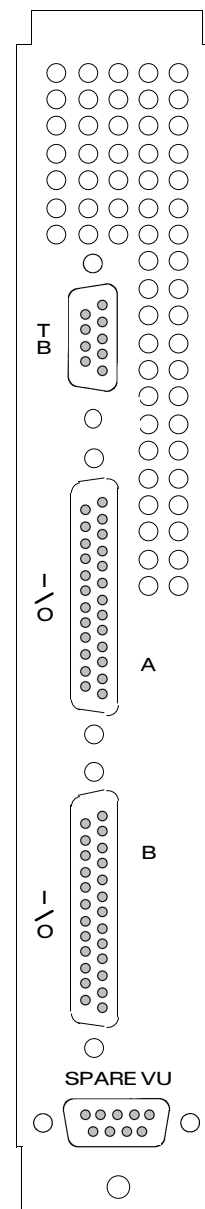
VO-1000 control room module parts lists may be found in Chapter 10. See "Chapter Contents" page 7-1 for specific list locations.

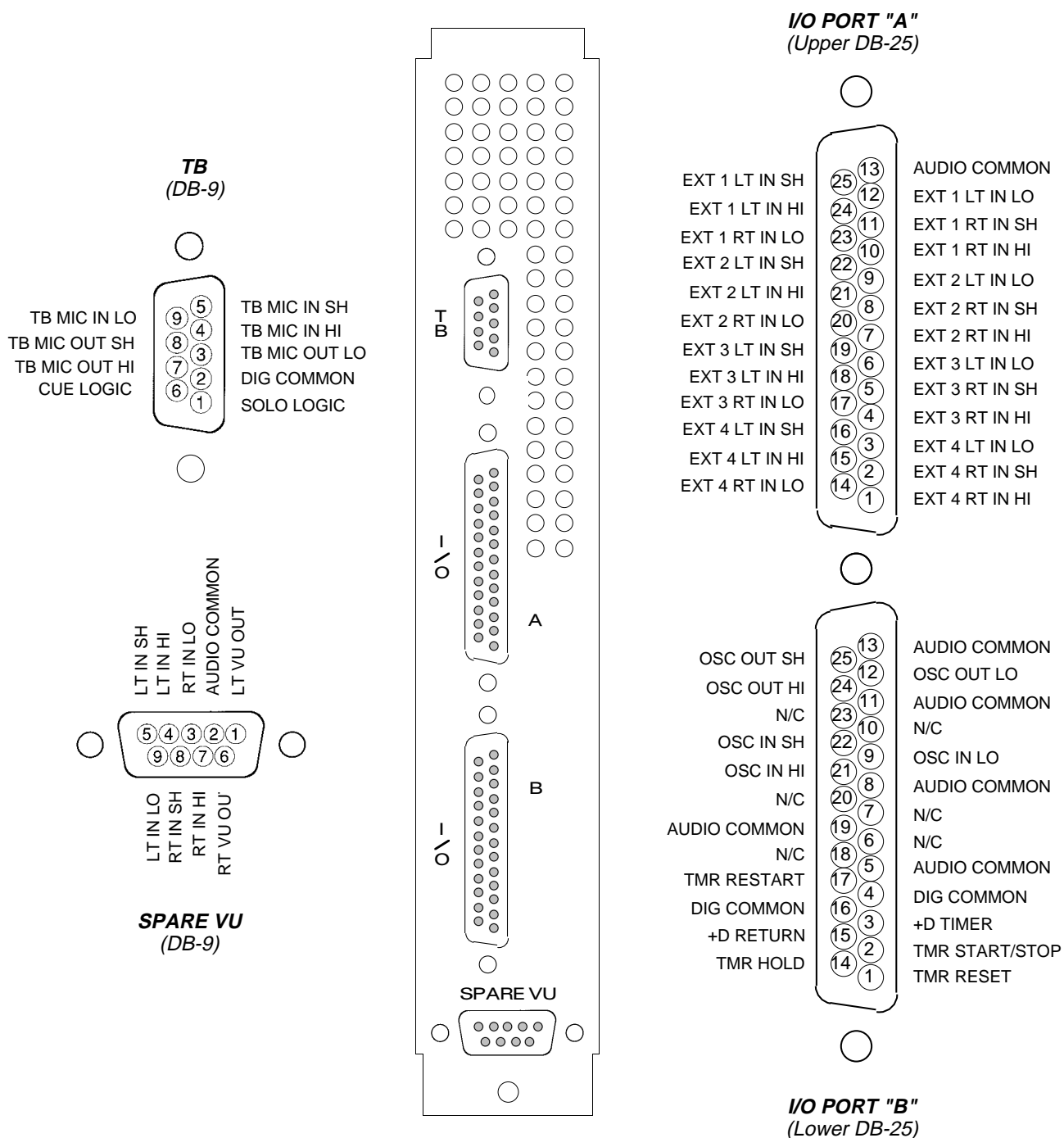
Printed Circuit Board Load Sheets

Load sheet drawings, showing part locations, are in the Technical Drawings booklet. See "Chapter Contents" page 7-1 for specific drawing locations.

Schematics

Schematic drawings are in the Technical Drawings booklet. See "Chapter Contents" page 7-1 for specific drawing locations.





VU/Oscillator Module Rear Panel Pinouts

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Buffer card (RBUF-6A) 10-104

Display strip card (DISP-8) 10-105

Power Supply (PSC-125 rackmount unit) 10-106

Backup Battery Charger (BB-1000) 10-108

Printed Circuit Board Load Sheets (TECHNICAL DRAWINGS booklet)

RC-600 main PCB TD-139

Switch controller card (DSC-1000) TD-143

Buffer card (RBUF-6A) TD-137

Display strip card (DISP-8) TD-141

Power Supply (PSC-125 rackmount unit) TD-164

Schematics (TECHNICAL DRAWINGS booklet)

RC-600 main PCB TD-138

Switch controller card (DSC-1000) TD-142

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Smart Cage motherboard (SS-MB-1) TD-160

Power Supply (PSC-340 rackmount unit) TD-166

Schematics (TECHNICAL DRAWINGS booklet)

Stereo line switcher card (SS-SI-8) TD-156

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Smart Cage motherboard (SS-MB-1) TD-159

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RCC Event Computer

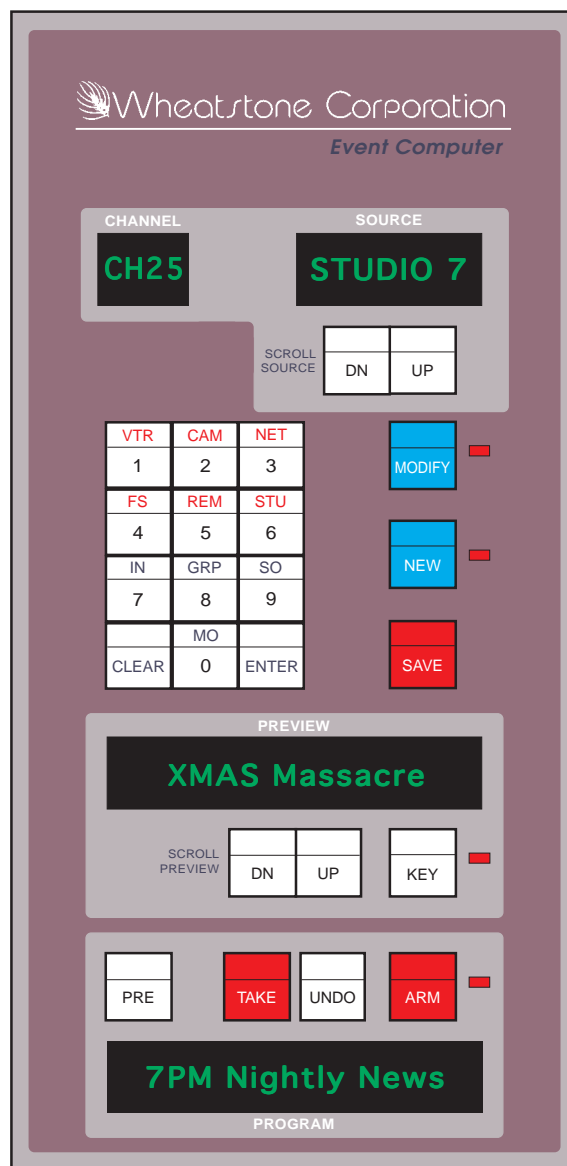
The Wheatstone TV-1000 RCC Event Computer is a PC-based system that takes snapshots of all console audio switching (exceptions: solo/cue, talkback, and oscillator settings), saves them under an event name, and recalls them for instant implementation via a control panel (the Event Computer Access Panel) mounted to the right of the console's studio monitor modules. The system includes an alphanumeric display strip running the entire width of the console main-frame (between the main module faceplates and their associated lower fader panels) that indicates, via user designated 4-character legends, the input channel sources associated with each recalled event. User defined event names and display legends are entered at a separate keyboard attached to the 486-based computer that runs the system.

The system is designed so it may be manually over-ridden at any time by the console operator; override settings may then be saved or discarded at the operator's discretion. All input module preselector panel settings are also included in each event recall. If motorized fader options have been ordered with the console, then those fader settings are also included in the snapshot.

Operation of the RCC Event Computer/Smart Select system is covered in a separate manual ("The Wheatstone Router Control System"). This manual deals with installation wiring from the rear of the console access panel (the "RCC Event Computer") to associated console overbridge rear connectors. Power supply wiring for the Event Computer is covered in a separate section of this technical manual entitled "TV-1000 Power Systems" (Chapter 9).

Technical Documentation: Parts lists, PCB load sheet drawings and schematic locations are called out in the "Chapter Contents" (page 8-1). OEM documentation for the New Micros, Inc. PCB used in the Wheatstone Event Computer Access Panel may be found in Appendix IV (page A-23 of this technical manual).

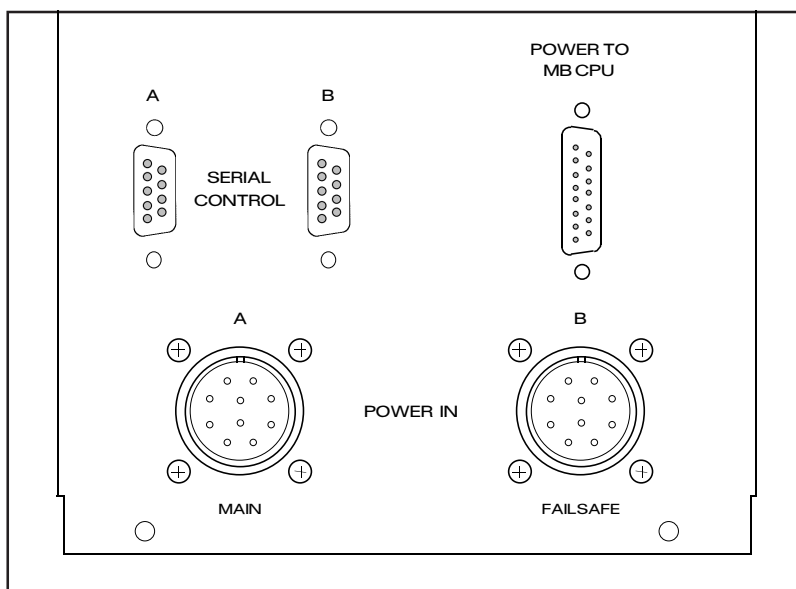
The TV-1000 RCC Event Computer Access Panel



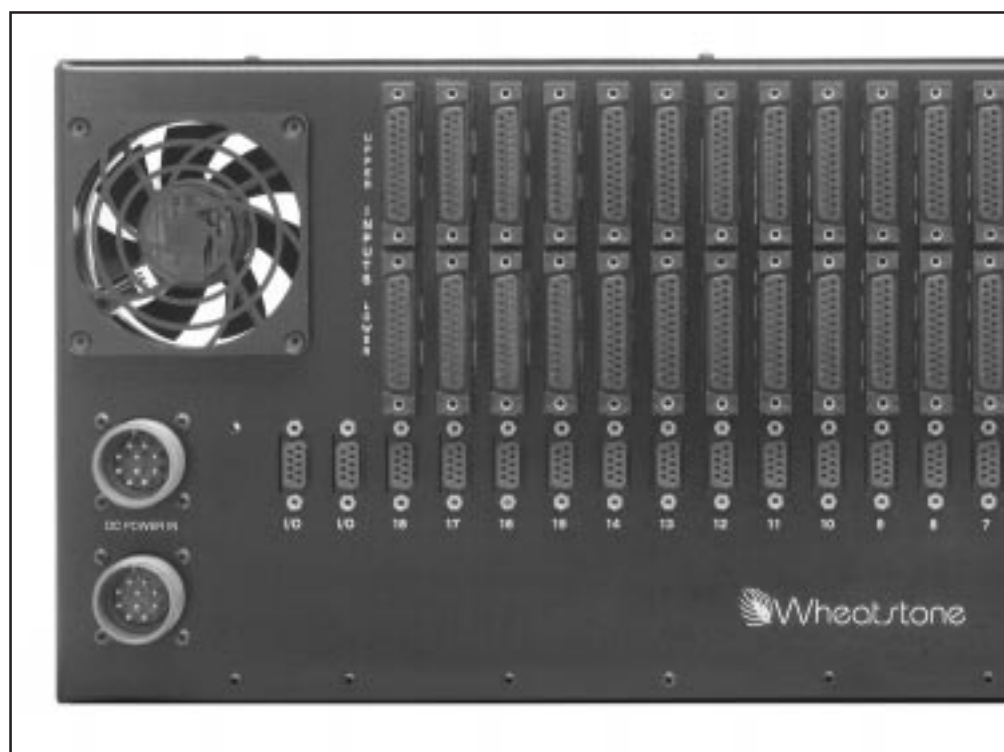
Event Computer Wiring

The back of the console's event computer access panel interfaces to three locations:

- 1) One DB-9 "serial control" connector runs, via special cable, to a matching DB-9 "I/O" connector on the back of the rackmounted Smart Select Cage (see photo below; there are two such connectors—they are interchangeable; either one may be used);
- 2) the other DB-9 "serial control" connector, bundled with a cable from the DB-15 "power to meterbridge CPU" connector, runs to mating connectors on the back of the console's meterbridge (behind the blank preselector panel located in the console overbridge above the PWR-100 power interface module), where they interface with the SBM-1000 smart button mother board printed circuit card;
- 3) The two 10-pin "power in" connectors accept cables from separate rackmounted power supplies (two PSC-125s if the failsafe option has been ordered; otherwise only one supply and cable will be used; see page 9-6).



The console-mounted RCC Event Computer rear panel connectors



Rear of Smart Select Cage chassis. The two I/O connector sockets mentioned in the text are to the left, in line with the top 10-pin DC power-in connector. (Note the Smart Cage power connectors have their own supplies, and are NOT linked to the RCC Event Computer.)

Smart Select® Cage

This console is equipped with a rackmounted Smart Select® switcher cage which accepts control pulses from certain of the console's input module preselector panels. The preselector panels are mounted in the console overbridge area, directly above their associated input modules. Each panel can select eight different stereo sources, the selected source is then fed to designated input module source ports. (See "Input Modules" chapter, page 2-5).

As audio switching takes place at the rackmount cage unit, that unit has connections with the console's snapshot Event Computer, which are covered in this chapter's previous section. Power for the switcher cage comes from a PS-340 rackmount power supply, which is discussed in the "TV-1000 Power Systems" chapter of this manual (page 9-7). Audio wiring for the cage is discussed in the separate "Wheatstone Router Control System" manual. Pinout diagrams are also reproduced on pages 8-7 and 8-8 of this chapter.

Smart Select® Audio Wiring

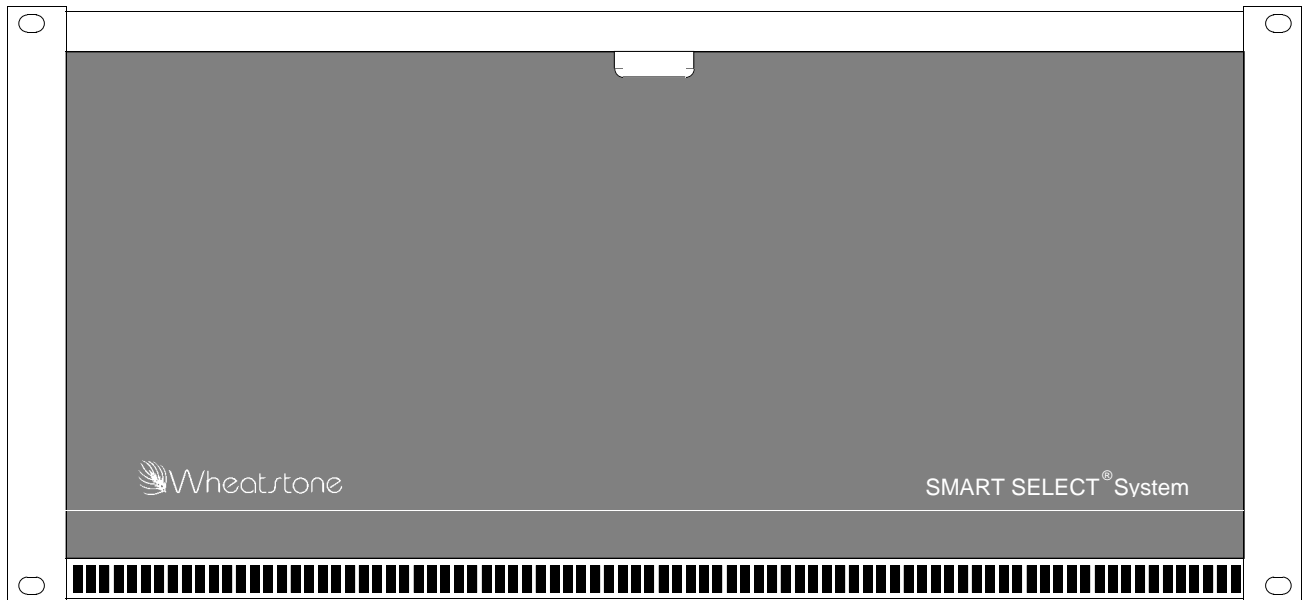
The Smart Select® cage (see photo below) consists of a rackmount chassis populated by switcher cards (two kinds: stereo line and mono mic/line); each card (there are a maximum of eighteen cards per unit) controls eight sources, corresponding to console overbridge mounted preselector panel switchbanks. Inputs and output for each card are via two DB-25 (inputs) and one DB-9 (output) multipin connectors mounted in the back of the chassis (see bottom photo next page;). Pinouts for these connectors are called out on pages 8-7 and 8-8 (note mono cards only use one upper DB-25 input connector). Outputs from the Smart Select cage DB-9 ports connect to matching DB-9 connectors on the back of the TV-1000 console's meterbridge, located in line with the preselector panels they feed.

Technical Drawings

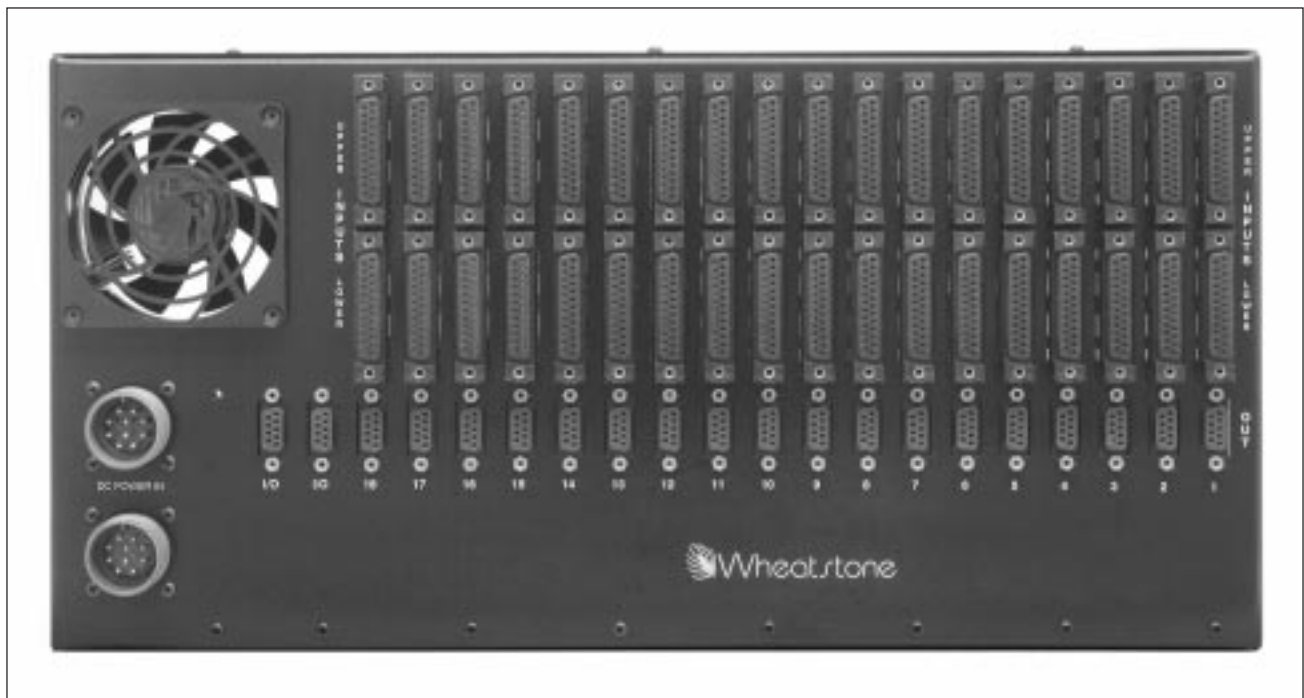
Schematics and printed circuit card load sheets are included in the separately bound "Technical Drawings" section of this manual. Parts lists are in Chapter 10. See this chapter's table of contents (page 8-1) for exact locations.

The Wheatstone Smart Select cage. This rackmount unit performs the actual audio switching for the TV-1000 console's input module preselector panels. Each pull-out card accepts control pulses from a single preselector panel, returning one of eight possible audio sources back to the console. There are two types of cards: mono and stereo. Each rackmount cage can accommodate up to eighteen switcher cards.





The Wheatstone Smart Select Cage – It is 8 3/4" high and occupies five rackmount spaces

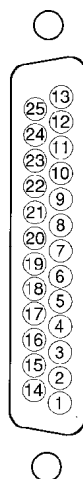


Rear view of the chassis showing audio connectors for eighteen preselector panels

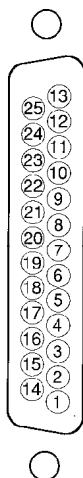
Upper DB-25	Function
13	n/c
25	Channel 1 LT shield
12	Channel 1 LT low
24	Channel 1 LT high
11	Channel 1 RT shield
23	Channel 1 RT low
10	Channel 1 RT high
22	Channel 2 LT shield
9	Channel 2 LT low
21	Channel 2 LT high
8	Channel 2 RT shield
20	Channel 2 RT low
7	Channel 2 RT high
19	Channel 3 LT shield
6	Channel 3 LT low
18	Channel 3 LT high
5	Channel 3 RT shield
17	Channel 3 RT low
4	Channel 3 RT high
16	Channel 4 LT shield
3	Channel 4 LT low
15	Channel 4 LT high
2	Channel 4 RT shield
14	Channel 4 RT low
1	Channel 4 RT high

Lower DB-25	Function
13	n/c
25	Channel 5 LT shield
12	Channel 5 LT low
24	Channel 5 LT high
11	Channel 5 RT shield
23	Channel 5 RT low
10	Channel 5 RT high
22	Channel 6 LT shield
9	Channel 6 LT low
21	Channel 6 LT high
8	Channel 6 RT shield
20	Channel 6 RT low
7	Channel 6 RT high
19	Channel 7 LT shield
6	Channel 7 LT low
18	Channel 7 LT high
5	Channel 7 RT shield
17	Channel 7 RT low
4	Channel 7 RT high
16	Channel 8 LT shield
3	Channel 8 LT low
15	Channel 8 LT high
2	Channel 8 RT shield
14	Channel 8 RT low
1	Channel 8 RT high

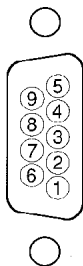
DB-9	Function
5	n/c
9	n/c
4	n/c
8	output, LT shield
3	output, LT low
7	output, LT high
2	output, RT shield
6	output, RT low
1	output, RT high



Stereo Line Switcher
Card Upper DB-25
Female Connector



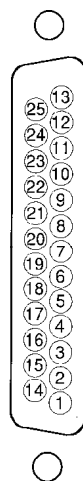
Stereo Line Switcher
Card Lower DB-25
Female Connector



Stereo Line Switcher
Card Female DB-9
Connector

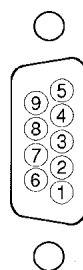
Rackmount Smart Select Cage Audio Pinouts (Stereo Line Switcher Cards)

Upper DB-25	Function
13	n/c
25	Channel 1 shield
12	Channel 1 low
24	Channel 1 high
11	Channel 2 shield
23	Channel 2 low
10	Channel 2 high
22	Channel 3 shield
9	Channel 3 low
21	Channel 3 high
8	Channel 4 shield
20	Channel 4 low
7	Channel 4 high
19	Channel 5 shield
6	Channel 5 low
18	Channel 5 high
5	Channel 6 shield
17	Channel 6 low
4	Channel 6 high
16	Channel 7 shield
3	Channel 7 low
15	Channel 7 high
2	Channel 8 shield
14	Channel 8 low
1	Channel 8 high



Mono Mic/Line Module
Upper DB-25 Female
Connector

DB-9	Function
5	n/c
9	n/c
4	n/c
8	output, LT shield
3	output, LT low
7	output, LT high
2	output, RT shield
6	output, RT low
1	output, RT high



Mono Mic/Line Module
Female DB-9 Connector

Rackmount Smart Select Cage Audio Pinouts

(Mono Mic/Line Switcher Cards)

Confidence Module

The CONF-1000 Confidence module is designed to interrupt regular console signals with a substitute signal as desired. It affects MIX-MINUS and STEREO MASTER #1 LINE OUT signals.

Mix-Minus Interrupt (Confidence Feed)

By their nature, mix-minus outputs are normally only active for those short periods of time when they are in actual use; this often leaves long periods of time when talent or listeners at the other end have no way of knowing whether the circuit is active and working properly. The purpose of this feature is to provide a “confidence” signal that feeds the console’s MXM outputs during off periods to assure the individuals involved that the system is indeed functional and ready for instant “on-air” use.

Pressing the Confidence module’s MXM interrupt switches causes the console’s regular Mix-Minus outputs (there are eight of them; each one mastered at an individual submaster module) to be replaced with a mono line level signal (“Confidence Feed IN”) inputted at each submaster module’s rear panel upper DB-25 audio connector. The interrupt signal(s) can be different for each module or paralleled across so each MXM output gets the same confidence feed. Note pressing the MXM ALL switch interrupts all eight MXM outputs simultaneously. When the MXM ALL switch is turned off, individual switches will revert to their original states (but see “Internal Programming” on next page).

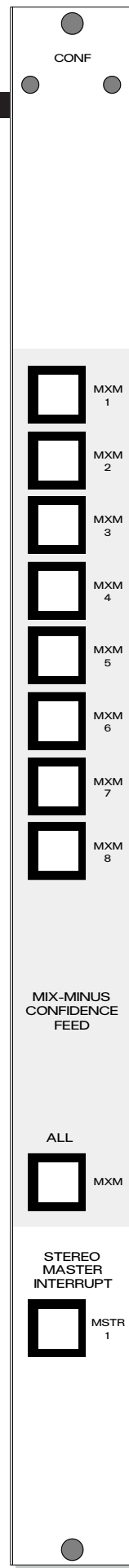
See the Submaster Module signal flow diagram on page 52 of the technical drawings to understand how the circuit works. The composite schematic on page 82 of the technical drawings (upper half) details the function. For applicable input pins and control wiring see the upper diagram on page 8-13.

Stereo Master 1 Interrupt (Tone Interrupt)

Similar to the confidence feed feature, Stereo Master 1 Interrupt is used at the console’s Stereo Master Module #1, where a mono line level signal (“Ext Tone IN”) inputted at the module’s rear panel upper DB-25 audio connector interrupts the “on-air” output (i.e., the Stereo Master 1 main LINE OUTPUT output signal). The purpose is to allow the console to be used for rehearsal and set-up prior to going on-air, but without having the rehearsal signal fed further up the broadcast chain. Instead, a substitute signal (usually a simple tone; hence “tone interrupt”) is outputted from the console whenever the Stereo Master Interrupt switch is activated.

Note Stereo Master Interrupt may also be turned OFF (but not ON) by a user-supplied external “Tone Off” switch wired to lower DB-25 control pins on the confidence module’s rear panel (“Remote Tone Dropout Logic”; see diagram on page 8-11).

See the Stereo Master Module #1 signal flow diagram on page 68 of the technical drawings to understand how the circuit works. The composite schematic on page 82 of the technical drawings (lower half) details the function. For applicable wiring and connections see the diagram on page 8-12.



Confidence Module External Control

The Stereo Master 1 Interrupt function can be de-activated from a remote location via a user-supplied switch. Simply provide a momentary closure between Lower DB-25 connector Pin 17 (Remote Tone Dropout Logic) and Pin 5 (digital ground). This will latch the tone interrupt function OFF.

Confidence Module Internal Programming

A 4-position PCB-mounted dipswitch on the Confidence module's main printed circuit board provides three user-programmable options for the CONF-1000 module (see load sheet drawing on page 81 of the technical drawings – "SW3" lower right):

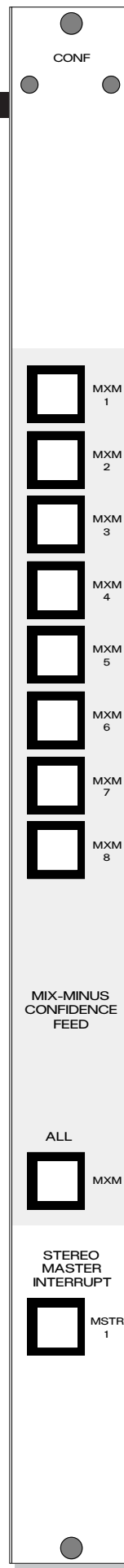
FLASH ENABLE (Dipswitch position 1) — When activated, causes all Confidence module switch indicator LEDs to flash whenever a switch is activated (as opposed to steady illumination, which is the factory default).

MSTR DROP (Position 2) — Whenever the MXM ALL switch is pressed all eight individual MXM switches are automatically activated. As shipped from the factory, when the MXM ALL switch is subsequently turned OFF, individual switches will revert to their original states. However, if dipswitch position 2 is activated, whenever the MXM ALL switch is turned OFF, all individual MXM switches are turned off as well, regardless of their original states.

MUTE DROP (Position 4) — The TV-1000 console has four monitor mute control lines; in typical use the console will be programmed to activate Mute Line 1 whenever the main studio mic input module is turned ON (this is tantamount to going "live on-air"). By throwing dipswitch position 4, whenever the console's mute control line #1 is activated, ALL confidence panel interrupt functions (mix-minus confidence feeds as well as stereo master 1 line out tone interrupt) will be automatically de-activated. Note when the mute control line is de-activated, all switches remain off—they do not revert to their original states)

Technical Documentation

A parts list for the module may be found in Chapter 10 of this manual (page 10-109). The Technical Drawings booklet contains schematics (page 78) and a Load Sheet drawing (page 81). As mentioned before, there is a composite schematic detailing the module's functions on page 82 of the Technical Drawings.



UPPER DB-25 Connector Pin on Confidence Feed Module		UPPER DB-25 Connector Pin on:					
Mix Minus Interrupt Logic 1	<table><tr><td>UDB</td></tr><tr><td>12</td></tr></table>	UDB	12	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 1
UDB							
12							
UDB							
4							
Mix Minus Interrupt Logic 2	<table><tr><td>UDB</td></tr><tr><td>24</td></tr></table>	UDB	24	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 2
UDB							
24							
UDB							
4							
Mix Minus Interrupt Logic 3	<table><tr><td>UDB</td></tr><tr><td>23</td></tr></table>	UDB	23	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 3
UDB							
23							
UDB							
4							
Mix Minus Interrupt Logic 4	<table><tr><td>UDB</td></tr><tr><td>10</td></tr></table>	UDB	10	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 4
UDB							
10							
UDB							
4							
Mix Minus Interrupt Llogic 5	<table><tr><td>UDB</td></tr><tr><td>9</td></tr></table>	UDB	9	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 5
UDB							
9							
UDB							
4							
Mix Minus Interrupt Logic 6	<table><tr><td>UDB</td></tr><tr><td>21</td></tr></table>	UDB	21	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 6
UDB							
21							
UDB							
4							
Mix Minus Interrupt Logic 7	<table><tr><td>UDB</td></tr><tr><td>20</td></tr></table>	UDB	20	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 7
UDB							
20							
UDB							
4							
Mix Minus Interrupt Logic 8	<table><tr><td>UDB</td></tr><tr><td>7</td></tr></table>	UDB	7	<table><tr><td>UDB</td></tr><tr><td>4</td></tr></table>	UDB	4	Submaster Module 8
UDB							
7							
UDB							
4							

("MXM Interrupt Logic")

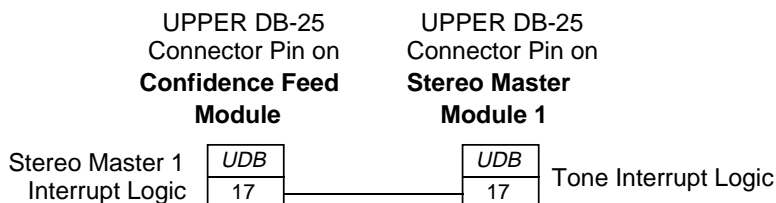
MIX-MINUS INTERRUPT CONTROL WIRING

Separately connect each upper DB-25 MXM interrupt logic (1 - 8) pin from the Confidence Feed module to the upper DB-25 pin 4 of the respective Submaster module (1 - 8)

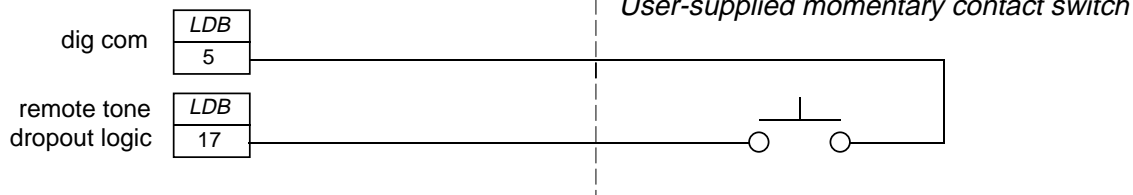
Confidence Module Control Wiring to Submasters & Stereo Master #1

STEREO MASTER #1 INTERRUPT CONTROL WIRING ("Tone Interrupt")

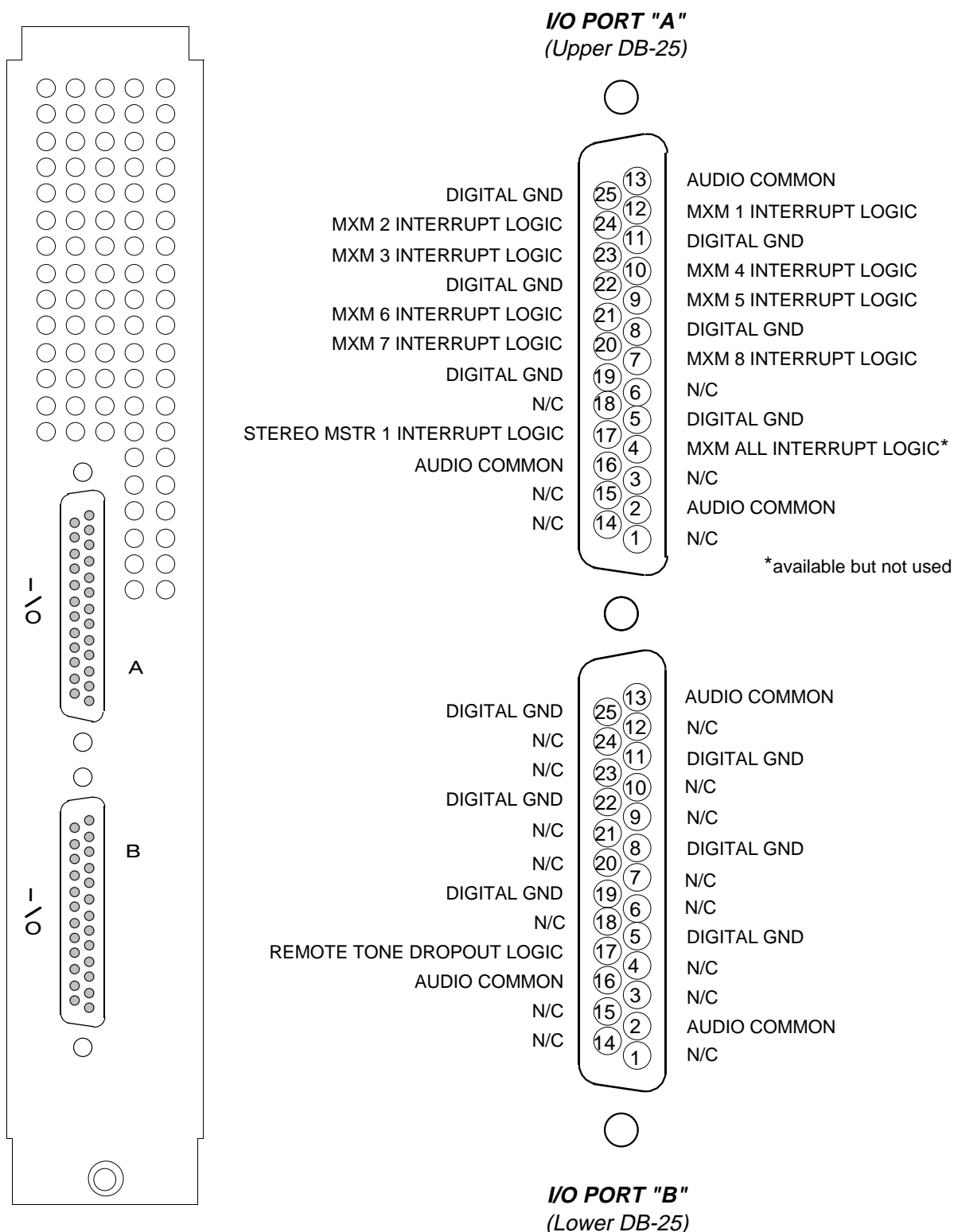
Connect Confidence Feed module upper DB-25 control pin 17 (Stereo Master 1 interrupt logic) to upper DB-25 pin 17 of Stereo Master Module #1 (Tone Interrupt Logic)



LOWER DB-25 Connector Pins on Confidence Feed Module



Remote control (dropout, or OFF only) of the STEREO MASTER #1 interrupt feature may be performed with an external user-supplied momentary contact closure (one pulse latches interrupt feature OFF)



Confidence Panel Wiring Pinouts

Mute Master Panel

The MUTE MASTER panel handles two functions: (1) it houses the console's four mute group (A thru D) master switches, and (2) it contains the master switch for the console's STUDIO MUTE LINK feature. It is usually located in the fader panel position directly below the console's power interface module (plugged in the center of the mainframe).

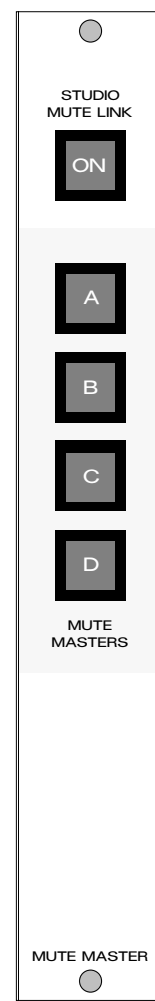
Mute Masters A thru D

All console input, submaster and stereo master modules may be individually assigned to any or all of four mute control busses (A thru D) by means of front panel switches on each channel's fader panel. This feature allows groups of modules to be turned ON and OFF by means of the four master MUTE switches mounted on this panel.

Studio Mute Link

This master switch enables the console's MUTE LINK logic system. The purpose of Mute Link is to activate tally/muting functions ONLY when a microphone signal is actually on-the-air (i.e., live at Stereo Master #1 output). Mute Link keeps track of all pertinent routing in the signal chain (8-bank preselector setting, input module source select, bus assignments, submaster and master module assign, and whenever an "over-the-air" condition is met, automatically triggers appropriate programmed studio tally and muting functions. Each input module may be individually programmed to be included in the MUTE LINK system's logic chain (see INPUT chapter).

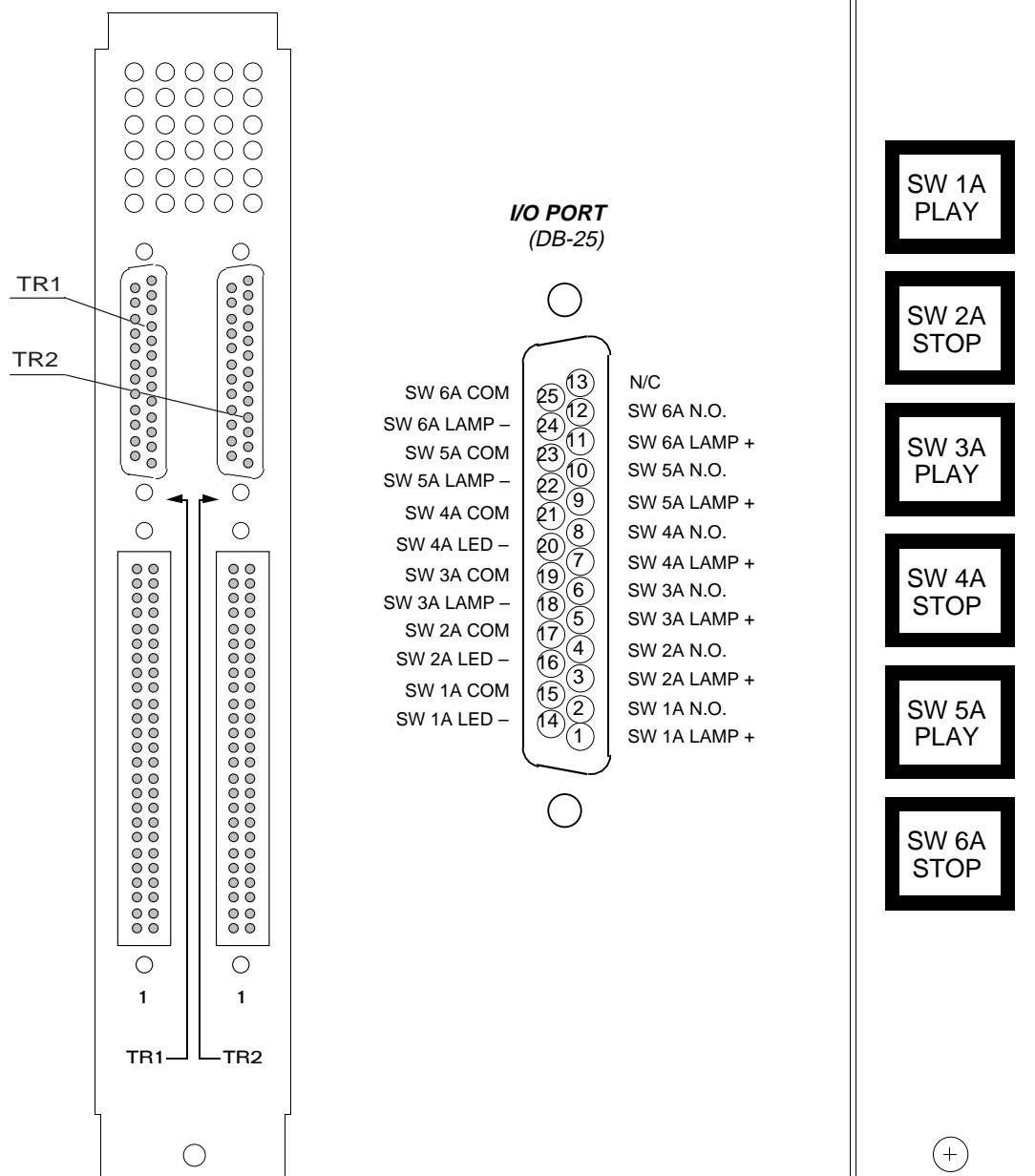
Note console logic follows input module source select, including module source switching AND any associated 8-bank preselector panel. For example, if an input is switched from Line 1 to Mic 1, and the Mic 1 input port is being fed by Source 5 on an optional preselector, then the studio that originates the Source 5 signal is the studio that will have its mute and tally functions activated. If the module is then switched Mic 2, then the studio associated with that mic input will be muted.



Tape Remote Panel

This optional panel is used to control three external source machines using three pairs of START/STOP buttons. LED indicators in each switch function as tallyback indicators and are powered by the source machines; there are no internal connections between the tape remote panel and the console's power rails. Switch pinouts are shown below. Note the switch cap legends can also be ordered to read RTZ, FF, RW, PLAY, REC, and STOP for full-function control of one remote tape machine.

All user wiring takes place at DB-25 multi-pin connector mounted on the top of the extreme left-hand rear panel if you are looking at the rear of the console.



Timer

The timer display is also mounted above the RCC Event Computer, just to the right of the clock. It is controlled by four pushbutton switches at the bottom of the VU/Oscillator module. Control functions are as follows:

AUTO – enables timer restart functions from programmed input modules (see Input chapter, “Timer Restart”)

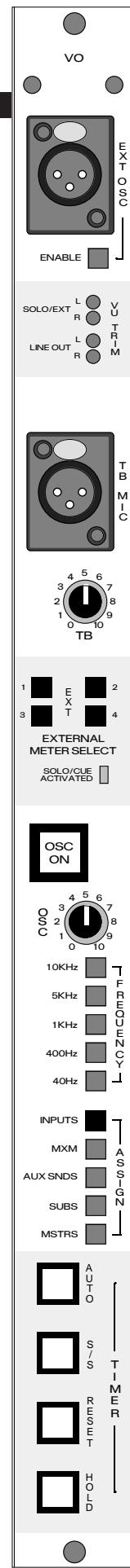
S/S – Start/Stop

RESET - return to zero (if the timer is stopped when this button is pressed it will hold at zero; if it was running it will reset to zero and immediately begin counting up).

HOLD – freezes the timer *display* (the counter keeps on going); when released the display catches up to the current count.

Timer restart, Stop/Start, Reset and Hold control pulses are also paralleled out at the module’s lower DB-25 connector, allowing a second (slave) timer to be controlled by the console (see VO-1000 module pinout drawing on page 7-5).

For parts lists, see Chapter 10. A printed circuit board load sheet and schematic for the timer may be found in the technical drawings on pages 168 and 169 respectively.



TV-1000 Power Systems

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TV-1000 Power Systems

General

TV-1000 audio consoles utilize three separate power supply systems; in each case a separate rackmounted unit supplies power via special cables outfitted with 10-pin connectors at both ends. When dual failsafe systems have been ordered there are two supplies of each type:

PSC-1000 – powers the audio console (via a PWR-1000 Power Interface module located in the center of the TV-1000 mainframe)

PSC-125 – powers the console's RCC event computer access panel.

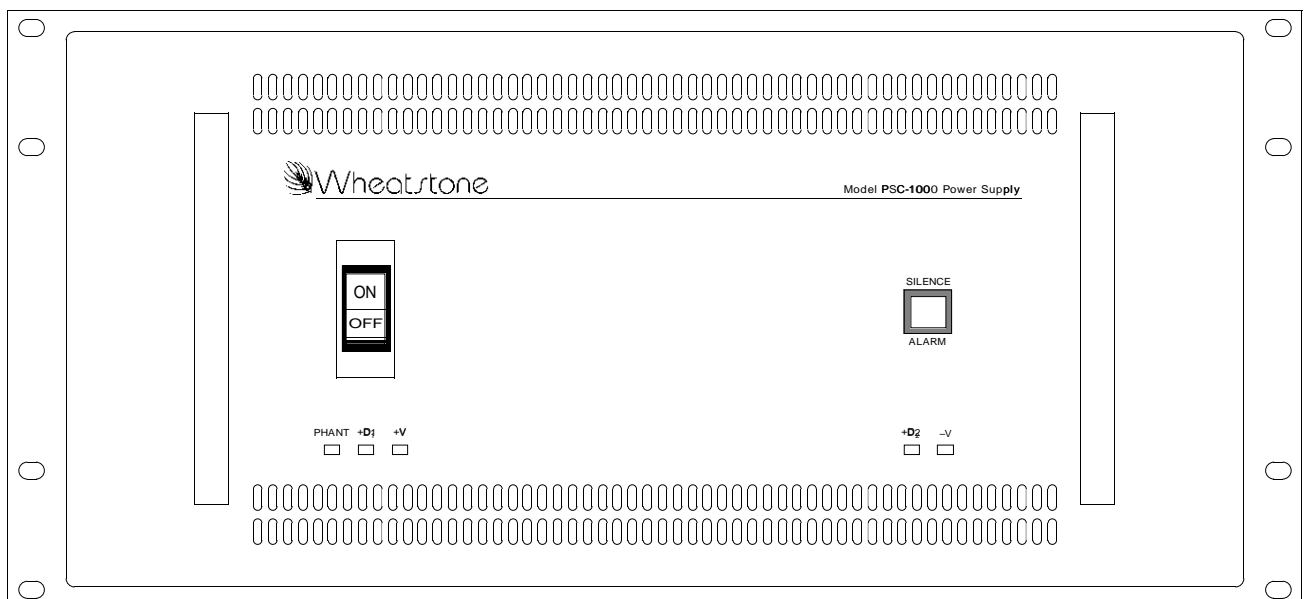
PSC-340 – powers the separate rackmount Smart Select® cage (which performs audio switching for input modules configured with optional preselector panels)

PSC-1000 Console Power Supply

This heavy duty unit occupies five 19" wide rack spaces (total height 8-3/4"). Convection cooled, it requires ample ventilation space above and below it. PSC-1000s generate a lot of heat in the course of normal operation—do *not* mount heat sensitive devices in the same rack cabinet. When rackmounted correctly there should be five vented units of rackspace below it and 12" of unobstructed, vented space above (i.e., ~7 rack spaces for each unit of a failsafe pair).

PSC-1000 power requirements are 1600 watts per unit, which means each PSC-1000 in a failsafe pair will require its own 20 amp (110VAC) main power circuit.

The PSC-1000 faceplate drawing below shows the supply's five status LEDs and the front panel power switch/circuit breaker. Connector pinout details are shown on page 9-4.



The PSC-1000 Power Supply front panel

Alarm Circuit

Note the SILENCE ALARM pushbutton on the supply's front panel. A special circuit has been installed in the supply which monitors all voltage rails; should any voltage drop significantly below its rated output this switch will flash red and an audible alarm will sound to alert personnel of a problem. At the same time, a relay closure takes place (outputted at a special "ALARM" connector on the PSC-1000 rear chassis; see page 9-4) which can activate a separate user-supplied indicator at a remote location. When the SILENCE ALARM button is pushed, the audible alarm cuts out, but the button continues to flash (and the relay closure stays activated) until the fault is corrected and the alarm circuit automatically resets.

It is not necessary to power down the supply to reset the alarm circuit. Once the fault that caused the alarm to trigger is corrected, the alarm will deactivate and automatically reset itself.

NOTE an AC power main failure will also trigger the alarm circuit; in this case a built-in battery backup circuit keeps the audible alarm active for approximately 45 minutes. The rear panel relay closure still takes place. Once power is restored the alarm resets automatically.

Thermal Protection (optional)

Your TV-1000 audio console can have its PSC-1000 power supplies outfitted with optional internal heat sensors which read the temperature of each unit's heatsinks. If this temperature exceeds the normal operating range, a relay closure takes place which is outputted at the rear panel ALARM connector. This closure is designed to activate an optional Wheatstone Model FC-4 rackmount fan unit which brings the supply back down to an acceptable temperature by forcing air past the power supply's external heatsink fins.

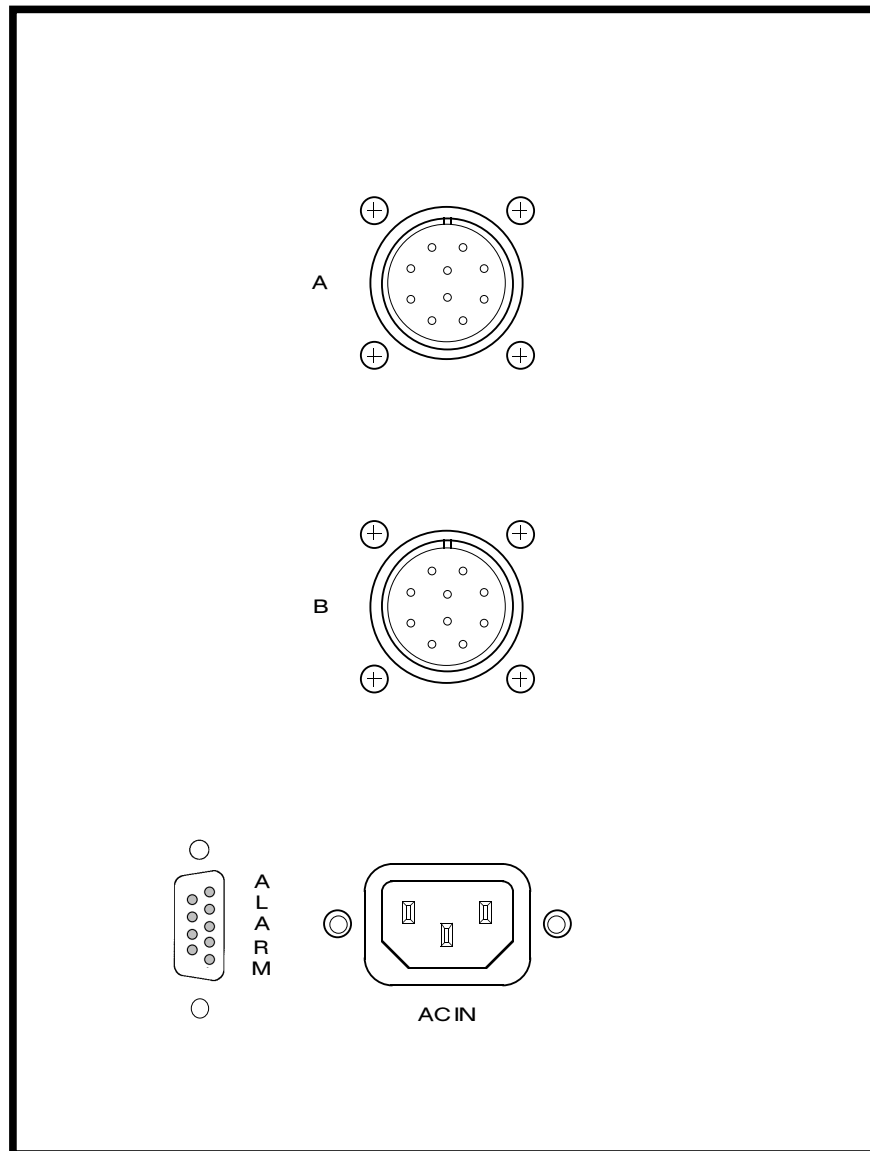
The optional FC-4 fan unit is 5 1/4" high and takes up 3 standard rack spaces. It is mounted directly underneath the PSC-1000, replacing three of the five required vented spaces normally assigned below each supply.

For specific alarm connector pinout information regarding the fan unit hook-up, see diagram at the bottom of the next page.

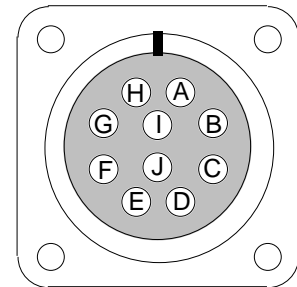
Technical Documentation

PSC-1000 schematics may be found in the Technical Drawings on page 129 (main supply) and page 130 (alarm). Printed circuit board load sheet drawings are also available on page 128 (main supply PCB) and page 131 (alarm PCB) of the same booklet. Parts Lists are found in Chapter 10 (see page 9-1 for exact locations) For power connector pinouts see the next page of this manual. For information on the TV-1000's power interface module, refer to page 9-5 of this chapter.

Rear view of the PSC-1000 power supply chassis (detail)



TYPICAL POWER CONNECTOR
(10-pin)

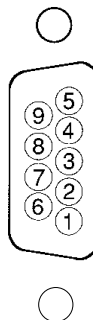


- A : audio/phantom common
- B : 18V+
- C : 18V-
- D : digital common 2
- E : +40V phantom power
- F : digital common 1
- G : digital+ 1
- H : digital+ 2
- I : n/c
- J : optional 60Hz sync

PSC-1000 power connectors are wired to the rear of the TV-1000 console's power interface module (see page 9-5).

ALARM CONNECTOR
(DB-9)

- THERMAL SW COMMON
- THERMAL SW N.O.
- N/C
- EXT ALARM N.O.



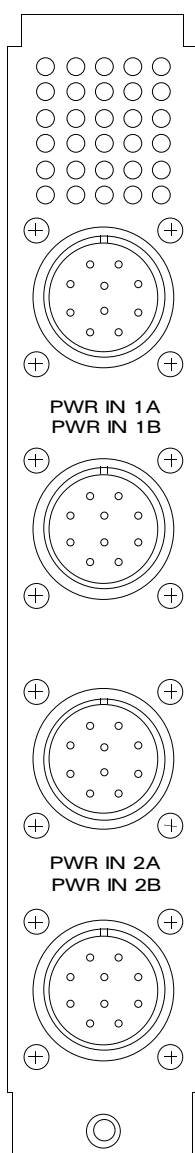
ALARM CONNECTOR: THERMAL switch pins are used to control an optional Wheatstone Model FC-4 rackmount fan unit. EXTERNAL ALARM pins send a relay closure (maximum rating 1 amp @125VAC; 2 amps @30VDC) to a user-supplied alarm indicator that mimics the PSC-1000's built-in alarm functions (see previous page).

PSC-1000 Power Supply Rear Panel Connectors

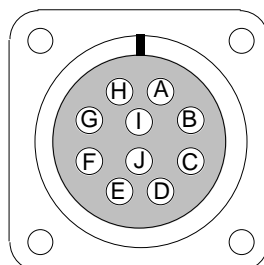
Power Interface Module

The PWR-1000 power interface module accepts power from the console's (dual failsafe) rackmounted PSC-1000 power supplies and feeds it to the TV-1000 console. In the unlikely event of a power supply failure, the panel automatically switches over to the second redundant supply so the console continues uninterrupted operation.

The front panel of this module has test points and status LED indicators for the console's V+, V-, phantom power and digital V+ power rails. The test points allow these rails to be checked under load. Pinout details for the module's rear panel connectors are shown below.

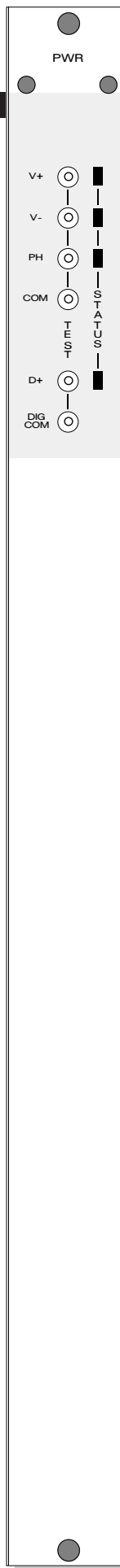


**TYPICAL POWER
CONNECTOR
(10-pin)**



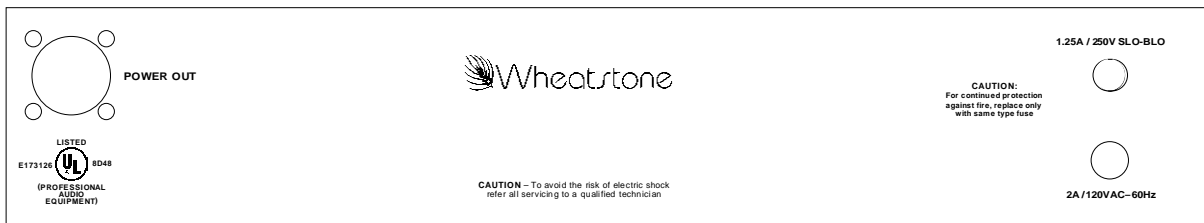
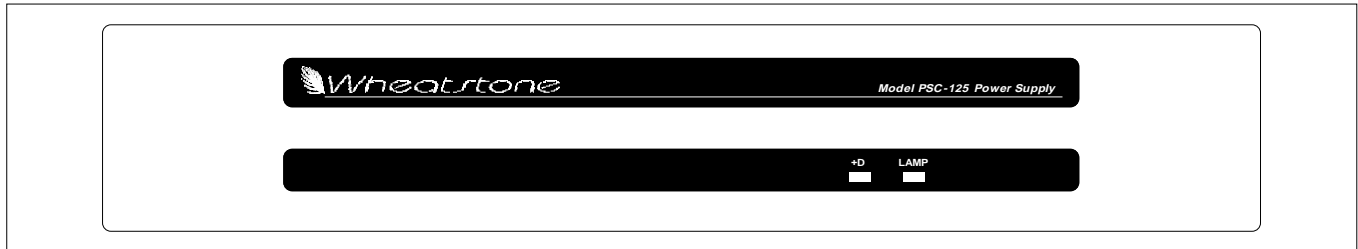
- A : audio/phantom common
- B : 18V+
- C : 18V-
- D : digital common 2
- E : +40V phantom power
- F : digital common 1
- G : digital+ 1
- H : digital+ 2
- I : n/c
- J : optional 60Hz sync

Power Interface Module Rear Panel Pinouts

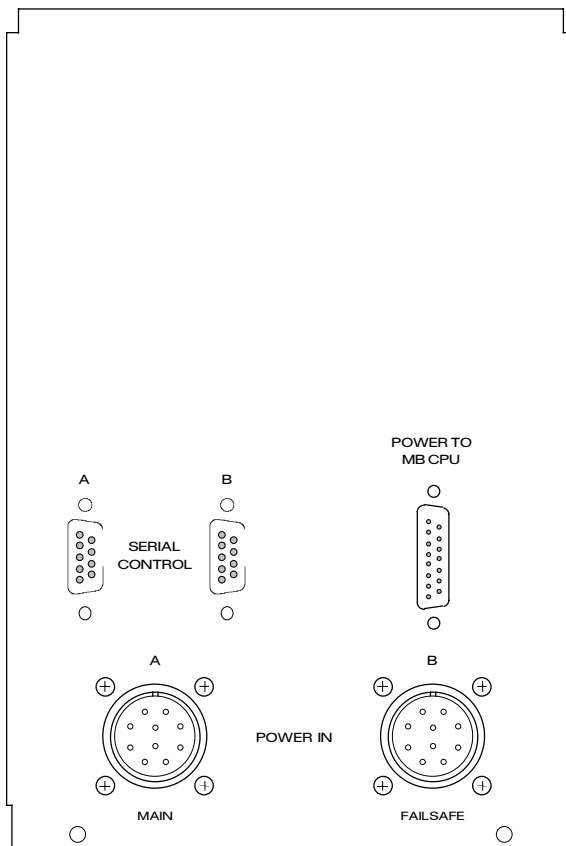


PSC-125 Event Computer Power Supply

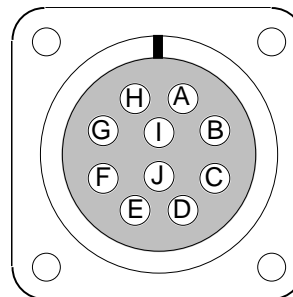
This two rack space unit (total height 3-1/2") powers the TV-1000's Event Computer access panel. It draws about 1.5 amps and has no special rackmount requirements. It has two front panel status LEDs: +D (5V) and LAMP (12V). A supplied cable runs from the power supply chassis rear connector to a matching 10-pin connector on the TV-1000 console's Event Computer rear panel. If you have ordered a failsafe configuration, there will be two supplies; each feeds one connector on the Event Computer rear panel. A schematic may be found on page 165 of the Technical Drawings; a load sheet drawing on page 164.



Front and rear views of the PSC-125 rackmount power supply



PSC-125 POWER
CONNECTOR
(10-pin)

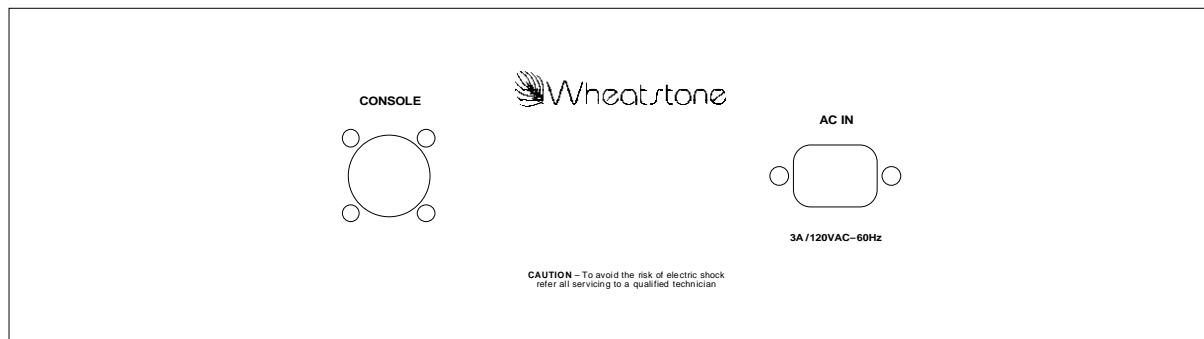
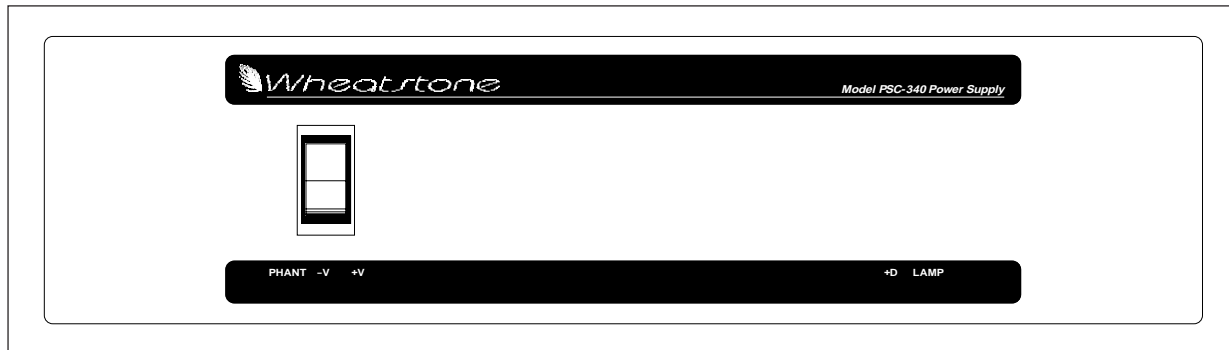


- A: +5V DIG
- B: +5V DIG
- C: +5V DIG
- D: DIG COM
- E: DIG COM
- F: DIG COM
- G: +12V
- H: 12V COM
- I: N/C
- J: N/C

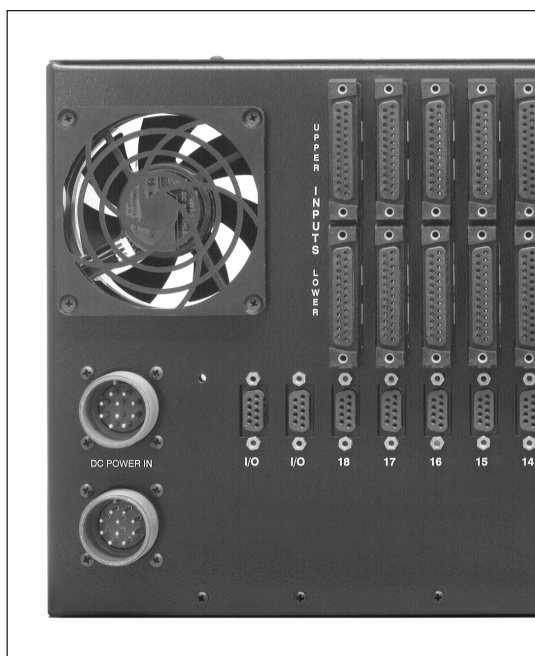
Rear view of the console-mounted TV-1000 Event Computer access panel. The two 10-pin connectors at the bottom accept cables from rackmounted Model PSC-125 power supplies. If a failsafe configuration has not been ordered, only the "Main" connector will be used. (Note the only voltages used are +12 and +5 VDC.)

PSC-340 Smart Select Cage Power Supply

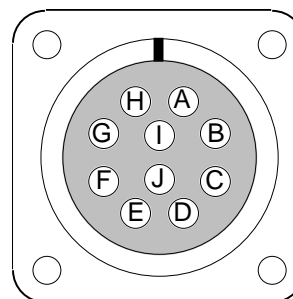
This three rack space unit (total height 5-1/4") powers the TV-1000's separate rackmounted Smart Select® Cage, which performs the actual audio switching for the console's input module preselector panels. The supply draws about 1.5 amps and has no special rackmount requirements. The front panel has five status LEDs (shown below). A supplied cable runs from the power supply chassis rear connector to a matching 10-pin connector on the back of the Smart Select® Cage chassis. If you have



Front and rear views of the PS-340 rackmount power supply



PSC-340 POWER
CONNECTOR
(10-pin)



- A : audio common
- B : 18V+
- C : 18V-
- D : audio common
- E : +40V phantom power
- F : digital common
- G : 12V+ digital
- H : N/A
- I : N/C
- J : N/A

Left rear view of rackmount Smart Select Cage showing dual 10-pin power connectors. If dual failsafe PSC-340 power supplies have not been ordered, only one connector will be used.

ordered a failsafe configuration, there will be two supplies; each feeds one connector on the back of the cage. A schematic may be found on page 167 of the Technical Drawings; a PCB load sheet on page 166.

If the system employs two Smart Select® cages, an FSI-B unit is used to split the supply voltage signals to feed both cages. A cable connects the center connector of the FSI-B to the power supply. A second shorter cable connects the cage (either connector) to one of the remaining connectors on the FSI-B. A third (short) cable connects the other cage to the FSI-B. A failsafe configuration with two cages employs two FSI-B units. The first one is wired as described, while the second one is used to connect the remaining connectors on the cages to the second supply.

TV-1000 Part Lists

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MAINFRAME (TYPICAL 71 POSITION)			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	SIDEPLATE_LEFT CHERRY	1	100052
	SIDEPLATE_RIGHT CHERRY	1	100053
	LEG_SET_TV1000	1	140110
END CONNECTORS FOR POWER CABLE FROM EVENT COMPUTER PANEL TO METERBRIDGE SBM-1000 SMART BUTTON PCB POWER CONNECTOR SOCKET	CONN_DB_15	2	200014
CONNECTOR KIT	CONN_PLUG_HDE20_25_PIN	154	200021
CONNECTOR KIT	HOOD_SNAP_DB_25PIN	154	200025
CONNECTOR KIT	SPRING_LATCH	118	200026
METERBRIDGE MOUNTED DB9 SIGNAL INPUT SOCKET FOR LINE OUT PPM METERS	CONN_DB_IDD9_HDF20	1	200031
CONNECTOR KIT	CONN_PLUG_HDE20_9_PIN	83	200033
CONNECTOR KIT	HOOD_DB_9_PIN	55	200034
CONNECTOR KIT	RETAINING KIT_AMP	119	200035
CONNECTOR KIT	HOOD_DBC15	2	200048
CONNECTOR KIT	HOOD_DB9_RIGHT ANGLE	28	200049
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CONN_CARDEDGE_120 PIN	210	220023
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CONN_BOARD-TO-BOARD_120 PIN_MALE	27	220024
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CONN_BOARD-TO-BOARD_120 PIN_FEMALE	27	220025
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CONN_CARDEDGE_62_PIN	71	220027
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CONN_BOARD-TO-BOARD_60 PIN_MALE	18	220074
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CONN_BOARD-TO-BOARD_60 PIN_FEMALE	18	220075
GROUND LUG TERMINAL STRIP (MAINFRAME BOTTOM PAN, CONSOLE REAR, LOWER LEFT)	GROUND_KIT	1	230001
METERBRIDGE REAR PANEL DB9 CONNECTOR SOCKETS	CONN_DB9_AMP	51	250032
RIBBON CABLE CONNECTOR PLUGS (MBF-1000 FADER MOTHERBOARD PCBs TO MBM-1000 MAIN MOTHERBOARD PCBs) + ALPHA-NUMERIC DISPLAY STRIP CABLES (SIX)	PLUG_20_PIN	292	250041
METERBRIDGE VU FEED SOCKETS	HEADER_3M_50_PIN_CRIMP	2	250047
METERBRIDGE VU FEED PLUGS	PLUG_50_PIN	2	250049
FAN CONNECTOR ON MBM-1000 MAIN MOTHERBOARD PCB	HEADER_3_PIN_JST	70	250062
RIBBON CABLE CONNECTOR SOCKETS (MBF-1000 FADER MOTHERBOARD PCBs TO MBM-1000 MAIN MOTHERBOARD PCBs)	HEADER_20_PIN_ST	280	250074
VU FEED RIBBON CABLE CONNECTOR SOCKETS (MBM-1000 MOTHERBOARD PCBs TO METERBRIDGE, STEREO MASTERS, SUBMASTERS, MONITOR MODULES)	HEADER_16_PIN_TV1000	15	250075
MALE DB15 METERBRIDGE CONNECTOR SOCKET, POWER FEED TO TORPEY CLOCK DISPLAY	CONN_DB15_AMP_TV1000	1	250076

Console Mainframe

(page 1 of 2)

MAINFRAME (TYPICAL 71 POSITION)			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
OPERATOR HEADPHONE RTS OUTPUT JACK (UNDERNEATH CONSOLE ARMREST, FAR RIGHT)	JACK_J112	1	260005
CLOCK CONNECTOR, MIDDLE REAR OF METERBRIDGE, LEITCH MASTER CLOCK SYNC FEED	SOCKET_BNC	1	260016
RIBBON CABLE RESTRAINTS	PATCH_CLIPS	80	280000
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	CAPACITOR_470µF_16V_ELECTROLYTIC	70	400023
METERBRIDGE	METER_VU_AL29WF	24	630004
METERBRIDGE	LIGHT_BOX_AL29_W/OUT LAMP	24	630008
MAIN MOTHERBOARD PCB	PCB_MBM1000	9	700267
FADER MOTHERBOARD PCB	PCB_MBF1000	9	700268
SMART BUTTON MOTHERBOARD PCB	PCB_MBS1000	9	700280
MOUNTING HARDWARE, REAR METERBRIDGE DB9 CONNECTOR SOCKETS	SCREWLOCK_FEMALE	142	820047
MODULE REMOVAL TOOLS, UNDERNEATH CONSOLE ARMREST, FAR RIGHT	SCR_MODULE EXTRACTOR	2	820060
HEADPHONE JACK, CLOCK SYNC CONNECTOR MOUNTING HARDWARE	WASHER_FLAT_2168	2	822007
HEADPHONE JACK, CLOCK SYNC CONNECTOR MOUNTING HARDWARE	WASHER_SHOULDER	2	822008
MBM-1000, MBF-1000 MOTHERBOARD PCB MOUNTING HARDWARE	SPACER_THREAD_440X1/4	560	823016
LOCATED ON MBM-1000 PCB (SEE MBM PARTS LIST)	FUSE_4AMP_POLYSWITCH	6	830018
LOCATED IN BOTTOM OF FRAME PAN	FAN FILTER	6	840012
LOCATED IN BOTTOM OF FRAME PAN	FAN 12V DC	6	840014
CONNECTOR KIT	TOOL_DIE_AMP	1	850031
CONNECTOR KIT	TOOL_HANDLE_AMP	1	850033
RCC EVENT COMPUTER CONSOLE CONTROL PANEL	EVENT COMPUTER	1	940007

Console Mainframe

(page 2 of 2)

MBM - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CT6-CT13, CT26-CT33	CONN_CARDEDGE_120 PIN	16	220023
CT14, CT34	CONN_BOARD-TO-BOARD_120 PIN_MALE	2	220024
CT5, CT25	CONN_BOARD-TO-BOARD_120 PIN_FEMALE	2	220025
CT16	CONN_CARDEDGE_62_PIN	1	220027
CT17	CONN_BOARD-TO-BOARD_60 PIN_MALE	1	220074
CT15	CONN_BOARD-TO-BOARD_60 PIN_FEMALE	1	220075
CT18-CT24	HEADER_3_PIN_JST	7	250062
CT35-CT50	HEADER_20_PIN_ST	16	250074
CT1-CT4	HEADER_16_PIN_TV1000	4	250075
C1-C7	CAPACITOR_470µF 16V ELECTROLYTIC	7	400023
	PCB_MBM1000	1	700267
F1	FUSE_4AMP_POLYSWITCH	1	830018

Console Mainframe (main module motherboards)

MBF - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CT18-CT25	CONN_CARDEDGE_120 PIN	8	220023
CT26	CONN_BOARD-TO-BOARD_120 PIN_MALE	1	220024
CT17	CONN_BOARD-TO-BOARD_120 PIN_FEMALE	1	220025
CT1-CT16	HEADER_20_PIN_ST	16	250074
	PCB_MBF1000	1	700268

Console Mainframe (fader panel motherboards)

MBS - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CT3-CT10	CONN_CARDEDGE_62_PIN	8	220027
CT11	CONN_BOARD-TO-BOARD_60 PIN_MALE	1	220074
CT2	CONN_BOARD-TO-BOARD_60 PIN_FEMALE	1	220075
CT12-CT20	CONN_DB9_AMP_PC MOUNT	9	250032
CT1	CONN_DB15_AMP_PC MOUNT	1	250076
	PCB_MBS1000	1	700280

Console Mainframe (preselector panel motherboards)

LED - 3			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
Q1-Q5	TRANSISTOR_MMBTA05 NPN SMT	5	345001
C1, C2	CAPACITOR_1µF 50V CERAMIC SMT	2	415007
R2-R4, R7	RESISTOR_3.3 _SMT_1206	4	435001
R5, R6, R8, R9	RESISTOR_39 _SMT_1206	4	435004
R1	RESISTOR_1.00K_SMT_1206	1	435015
DS1-DS8	LED_YELLOW_SMT_UP	8	605007
	PCB_LED3	1	700292

Console Mainframe (meter LED lamp card)

EXT - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	CABLE_50 COND FLAT RIBBON	18	150007
EXT-120 PCB	CONN_CARDEDGE_120 PIN	2	220023
MAIN PCB (EXT-1000): CT1-CT6 EXT-120 PCB: 3 PER	CONN_RIBBON_50_PIN_EXT	12	250030
MAIN PCB (EXT-1000): CT1-CT6 EXT-120 PCB: 3 PER	STRAIN RELIEF_RIBBON CABLE	12	250031
	PCB_EXT120	2	700174
	PCB_EXT1000	1	700291

Extender Card (module service card)

PSC - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PSC-600 POWER SUPPLY FACEPLATE	1	007085
	PSC-600 POWER SUPPLY REAR	1	007086
	PSC-600 POWER SUPPLY COVER	2	007087
	PSC-600 POWER SUPPLY FRAME	2	007088
	PSC-600 POWER SUPPLY FACEPLATE TRIM	1	007095
ON/OFF SWITCH	PSC-600 POWER SUPPLY SWITCH BRACKET	1	007096
	PSC-600 POWER SUPPLY XMER BRACKET	1	007097
PWR IN CABLE	CABLE_PS_BLACK 14/22 AWG	32	150085
"AC IN" POWER CORD	CORD_POWER_HEAVY_15A	1	150090
REAR FRAME	GROUND LUG	1	230003
"AC IN" SOCKET	SOCKET_POWER	1	230006
PWR IN CABLE	CONN_CABLE_MIL_AMPH	4	230007
PWR IN "A" ,PWR IN "B" CONNECTOR	CONN_PAN_MIL_AMPH	2	230008
PWR IN CABLE	CONN_S/R_MIL_AMPH	4	230009
SEE BRIDGE RECTIFIER	TERMINAL STRIP	4	230035
LT REAR HEATSINK, RT REAR HEATSINK	BRIDGE RECTIFIER_MB3510_35 AMP 1000 VOLT	4	350000
LT SIDE RAIL, RT SIDE RAIL	DIODE_SCHOTTKY_MBR4045	6	350014
SEE BRIDGE RECTIFIER	VARISTOR_Z15L390	8	360006
"AC IN" POWER SOCKET	CAPACITOR_.0047μUF 1KV CERAMIC, UL RATED	2	410015
SILENCE ALARM SWITCH	SWITCH_DPDT PUSHBUTTON _ MOMENTARY ACTION	1	510059
SILENCE ALARM SWITCH CAP	LENS_KB_WHITE	1	530055
LT PCB: DS1, DS3, DS5 RT PCB: DS4, DS6	L113_GREEN	5	600000
SILENCE ALARM SWITCH LED	LED_ON/OFF_SWITCH_R5_RED	1	600027
	PCB_PS410	2	700259
	PCB_SBDA1	4	700298

Console Power Supply (rackmount unit)

(page 1 of 2)

PSC - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	XFORMER_TV1000_NEW	1	800025
	SCREWLOCK_FEMALE	2	820047
	SCR_#6-32X1_1/4"PHI_PAN_MS_SS	7	820073
	SCR_#10-32X1_HEX_MS_ZI	4	820074
	SCR_#10-32X1/2_PHI_FL8_MS_ZI	4	820075
	STUD_PEM_PS60_LUG	1	821013
	WASHER_1/4_USS_F/L_ZI	4	822019
	SPACER_THREAD_440X1/4	2	823016
	STANDOFF_2"	6	823017
	STANDOFF_LS50	6	823019
	SPACER_ALUMINUM_FSI	6	823033
	POWER SUPPLY HANDLE	2	824015
	HEATSINK_PS410	8	825011
	INSULATOR_KERAFOL_LM350	13	825012
LT PCB: F1	FUSE_4AMP_POLYSWITCH	1	830018
ON/OFF SWITCH	CIRCUIT_BREAKER_15_AMP	1	830026

Console Power Supply (rackmount unit)

(page 2 of 2)

PS-410 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
LT PCB: Q4	REGULATOR_LM317_POSITIVE ADJUSTABLE	1	330012
LT PCB: Q1-Q3, Q5-Q7 RT PCB: Q1-Q3, Q5-Q7	REGULATOR_LT1083 7.5A POSITIVE ADJUSTABLE	12	330022
LT REAR HEATSINK, RT REAR HEATSINK	BRIDGE RECTIFIER_MB3510 _35 AMP 1000 VOLT	4	350000
LT PCB: D3-D12 RT PCB: D3, D12	DIODE_1N4002	12	350003
LT PCB: D1, D13, D14 RT PCB: D1, D2, D14	DIODE_POWER_CR6A4	6	350009
LT PCB: D2 RT PCB: D13	DIODE_SCHOTTKY_MBR4045	2	350014
LT PCB: V1	VARISTOR_82ZA2 V	1	360005
SEE BRIDGE RECTIFIER	VARISTOR_Z15L390 39V	8	360006
LT PCB: C9, C11, C22	CAPACITOR_10µF 63V ELECTROLYTIC	3	400012
LT PCB: C1-C7, C12-C18 RT PCB: C1-C7, C12-C18	CAPACITOR_1µF 35V TANTALUM ORANGE	28	400014
LT PCB: C21	CAPACITOR_470UF 100V AXIAL LEAD ELECTROLYTIC	1	400031
LT PCB: C26, C28 RT PCB: C26, C28	CAPACITOR_2200UF 35V ELECTROLYTIC	4	400033
LT PCB: C19, C20, C23, C24 LT PCB: C19, C20, C23, C24	CAPACITOR_22000UF 35V ELECTROLYTIC	8	400034
LT PCB: C8, C10	CAPACITOR_0047µUF 1KV CERAMIC, UL RATED	2	410015
LT PCB: R2, R3, R7, R14, R18, R19 LT PCB: R2, R3, R7, R14, R18, R19	RESISTOR_05_OHM_5W	12	430020
LT PCB: R4, R17 LT PCB: R4, R17	RESISTOR_47 _CARBON	4	430210
LT PCB: R16 RT PCB: R5	RESISTOR_100 _CARBON	2	430212
LT PCB: R10	RESISTOR_220 _CARBON	1	430214
LT PCB: R15, R20 RT PCB: R1, R6	RESISTOR_330 _CARBON	4	430215
LT PCB: R5, R9 RT PCB: R16	RESISTOR_470 _CARBON	3	430216
LT PCB: R6 RT PCB: R15	RESISTOR_620 _CARBON	2	430218
LT PCB: R1 RT PCB: R20	RESISTOR_1.0K_CARBON	2	430221
LT PCB: R11-R13	RESISTOR_10K_CARBON	3	430239
LT PCB: R8	RESISTOR_100K_CARBON	1	430254

Console Power Supply (main card)

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PS-410 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
LT PCB: CR2	POT_TRIM_HOR_10K	1	500017
LT PCB: CR1, CR3 RT PCB: CR3	POT_TRIM_HOR_500	3	500019
LT PCB: SW1	SWITCH_DIP_4_POS	1	510047
LT PCB: DS1, DS3, DS5 RT PCB: DS4, DS6	LED_L1200_GREEN	5	600003
	PCB_PS410	2	700259
LT PCB: F1	FUSE_4AMP_POLYSWITCH	1	830018

Console Power Supply (main card)

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PSA - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CT2	CONN_DB9_AMP_TV600	1	250032
CT1	HEADER_6_PIN_JST	1	250065
U4	IC_74HC14	1	300053
U5	IC_LM3909_LED FLASHER	1	320016
Q1	REGULATOR_LM2940 5V_LOW DROP OUT VOLTAGE	1	330017
U1, U2, U3	IC_LH1522AB DUAL FET OPTO COUPLER	3	340020
D1, D7-D14	DIODE_1N4002	9	350003
Z1-Z12	DIODE_1N751_ZENER	12	350007
D2-D6	DIODE_1N914	5	350008
C7, C9	CAPACITOR_100µF 25V ELECTROLYTIC UPRIGHT	2	400009
C8	CAPACITOR_1µF 35V TANTALUM ORANGE	1	400014
C5, C6	CAPACITOR_22µF 25V ELECTROLYTIC	2	400017
C2	CAPACITOR_470µF 16V ELECTROLYTIC	1	400023
C10	CAPACITOR_3.3F 5.5V GOLD ELECTROLYTIC	1	400035
C1, C3, C4	CAPACITOR_.1µF 50V MONOLITHIC CERAMIC	3	410005
R15	RESISTOR_10 _CARBON	1	430207
R14	RESISTOR_68 _CARBON	1	430211
R2	RESISTOR_470 _CARBON	1	430216
R1	RESISTOR_1.0K_CARBON	1	430221
R6, R7	RESISTOR_1.5K_CARBON	2	430225
R3, R4, R8-R10	RESISTOR_2.4K_CARBON	5	430228
R11, R13	RESISTOR_4.7K_CARBON	2	430233
R5, R12	RESISTOR_10K_CARBON	2	430239
K1	RELAY_NEC_12V	1	550007
	PCB_PSA1000	1	700301
F1	FUSE_4AMP_POLYSWITCH	1	830018
S1	BUZZER FOR POWER SUPPLY ALARM	1	960001

Console Power Supply (alarm card)

PSR- 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CT1	SOCKET_POWER	1	230006
D1, D2	DIODE_QCR6A4	2	350009
C1, C2	CAPACITOR_47UF_200V ELECTROLYTIC	2	400036
C3, C4	CAPACITOR_.0047μUF 1KV CERAMIC	2	410015
R7-R9	RESISTOR_3.3OHM_5W	3	430026
R1-R6	RESISTOR_22K CARBON	6	430244
K1	RELAY_AROMAT_24V_15A	1	550009
	PCB_PSR1000	1	700340

Console Power Supply (relay card)

MLS - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	MLS-1000_FACEPLATE	1	004603
	DUAL DB-25_DUAL DB-9 REAR PANEL - TV1000	1	004700
TR1, TR2	CAN_MIC	2	110028
	LATCHING BLOCKS - .190	4	200011
	CONN_DB_IDD9_HDF20	1	200031
CT4	CONN_R/A_PC_MT_9_MBL5	1	220016
CT6, CT15	CONN_R/A_PC_MT_25_PIN	2	220017
	SOCKET_26_PIN_PLUG	14	250043
MAIN PCB: CT5, CT7-CT12 SWITCH PCB: CT1-CT5, CT7, CT8	HEADER_3M_26_PIN_ST	14	250044
SWITCH PCB: CT6	HEADER_10_PIN_ST	1	250077
SWITCH PCB: U8	IC_4066	1	300005
U89	IC_74HC02	1	300013
U85-U87	IC_74HC32	3	300029
U88	Q74ABT125_TTL	1	300057
U40	Q74AC14_TTL	1	300059
U63, U64, U90, U91, U92	IC_2142 BALANCED LINE DRIVER IC	5	320004
MAIN PCB: U20, U39, U48, U57, U58 SWITCH PCB: U81	IC_NE5532 DUAL OP-AMP	6	320008
SWITCHPCB: U96, U100	IC_NE5534 DUAL OP-AMP	2	320009
U42, U43, U53, U54	IC_2143 BALANCED LINE RECEIVER IC	4	320012
U9-U19, U21, U23-U25, U36-U38, U45-U47, U52, U56, U59, U60, U62, U66	IC_OP-275	27	320014
MAIN PCB: U1-U8, U61	IC_OP-282	9	320015
SWITCH PCB: Q20	REGULATOR_7812 POSITIVE 12V	1	330002
SWITCH PCB: Q21	REGULATOR_7912 NEGATIVE 12 V	1	330007
SWITCH PCB: U78-U80, U92-U95, U97-U99, U101-U104	IC_LH1522AB_DUAL FET OPTO COUPLER	14	340020
U22, U26-U35, U41, U44, U49-U51, U55, U67-U84	IC_74VHC4053	35	380008

Mic/Line Stereo Input (module)

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MLS - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR10, CR11	BOURNS_10K QUAD CONDUCTIVE PLASTIC	2	500055
CR9	BOURNS_10K DUAL CONDUCTIVE PLASTIC	1	500056
CR1-CR8	BOURNS_10K SINGLE AUDIO CONDUCTIVE PLASTIC	8	500058
CR13-CR15	POT_10K_4/2 CONCENTRIC LINEAR	3	500060
CR16	POT_10K_4/4 CONCENTRIC LINEAR	1	500061
MAIN PCB: SW1-SW13 SWITCH PCB: SW1-SW30	SWITCH_2 POLE PUSHBUTTON , MOMENTARY	43	510113
CR13-CR16	KNOB_SIFAM_TOP_INNER_CONC	4	520024
CR1-CR12	KNOB_BOTTOM_13M M_NO FLANGE	11	520054
CR13-CR16	KNOB_SIFAM_BTMM_OUTER_CON_SHORT	4	520056
CR13-CR16	CAP_SIFAM_11MM_BLK	4	530036
MAIN PCB: SW1-SW5, SW8-SW11 SWITCH PCB: SW1-SW7, SW10-SW25, SW27-SW30	BUTTON_LUMA_230_WHT	36	530083
MAIN PCB: SW6, SW7, SW12, SW13 SWITCH PCB: SW8, SW9	BUTTON_LUMA_230_RED	6	530084
SWITCH PCB: SW25	BUTTON_LUMA_230_YLW	1	530085
CR10, CR11	CAP_SIFAM_CREAM_13MM	2	530103
CR12	CAP_SIFAM_PALE BLUE_13 MM	1	530107
CR5-CR8	CAP_SIFAM_GREY/6_13 MM	4	530113
CR1-CR4	CAP_SIFAM_BLUE/9_13 MM	4	530114
	PCB_MLS1000	1	700295
	PCB_MLSW1000	1	700297
SWITCH PCB: TR1, TR2	XFORMER_MIC	2	810001
	NUT_PEM_SP8	11	821012
	SPACER_NYLON_15/16HEX_440	3	823043

Mic/Line Stereo Input (module)

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PART LISTS

MLS - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U21, U23-U25, U36-U39, U42, U43, U45-U48, U52-U54, U56-U64, U66 U90-U92	SOCKET_SMT_JS8_PIN	50	245001
U40, U85-U89	SOCKET_SMT_JS14_PIN	6	245002
U22, U26-U35, U41, U44, U49-U51, U55, U67-U84	SOCKET_SMT_JS16_PIN	35	245003
CT5, CT7-CT12	HEADER_3M_26_PIN_S	7	250044
U65	REGULATOR_PQ05SZ1_5V_1A SMT	1	335001
Q1-Q7	TRANSISTOR_MMBTA05 NPN SMT	7	345001
Z1, Z2	DIODE_5.1V SMT ZENER	2	355002
D1-D26	DIODE_1N4148 FAST SWITCHING_SMT	26	355003
D27, D28	DIODE_SS14 SCHOTTKY_SMT	2	355004
C20, C21	CAPACITOR_10µF 50V ELECTROLYTIC SMT	2	405001
C3, C5, C7, C9, C11, C13, C15, C17, C19, C22, C42, C43, C70, C160, C161, C176, C177, C194, C197, C215, C218, C306	CAPACITOR_22µF 25V ELECTROLYTIC SMT	22	405002
C2, C4, C6, C8, C10, C12, C14, C16, C18, C23, C41, C44-C47, C49, C52, C54, C57, C59, C62, C64, C67, C88, C97-C100, C103-C106, C127, C128, C162, C163, C172, C174, C178, C180-C183, C185, C187, C219, C244-C248, C250-C255, C257, C258, C261, C264-C271, C284-C286	CAPACITOR_100µF 25V ELECTROLYTIC SMT	71	405003
C68, C101, C102, C107, C198, C199, C259, C260, C262, C263	CAPACITOR_330µF 25V ELECTROLYTIC SMT	10	405004
C36, C37, C79-C81, C83-C85, C119, C121-C123, C137, C139, C164-C167, C169, C170, C208, C249, C256, C281-C283, C299-C301	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	29	405005
C24, C26, C27, C29, C30, C32, C33, C35, C38-C40, C48, C51, C53, C56, C58, C61, C63, C66, C71, C82, C89, C90, C93-C96, C109, C112, C115, C118, C120, C130, C140, C142, C150, C171, C175, C179, C186, C200, C202, C203, C205, C209, C220, C221, C223, C224, C226, C227, C229, C230, C232, C233, C241, C242, C278, C290-C292	CAPACITOR_10pF 100V CERAMIC SMT	61	415001
C272, C273, C275, C279, C293-C296, C309, C310	CAPACITOR_68pF 100V CERAMIC SMT	10	415003
C152-C159, C189-C191, C195, C196, C211, C212, C216, C217, C276, C277, C288, C289	CAPACITOR_.001µF 50V CERAMIC SMT	21	415005
C235, C239	CAPACITOR_.01µF 50V CERAMIC SMT	2	415006
C1, C25, C28, C31, C34, C50, C55, C60, C65, C69, C72, C74, C76, C91, C92, C108, C111, C114, C117, C124, C126, C129, C131, C133, C135, C141, C143, C145, C147, C149, C168, C173, C184, C188, C192, C193, C201, C204, C206, C207, C210, C213, C214, C222, C225, C228, C231, C236, C237, C240, C243, C274, C280, C287, C297, C298, C302-C305, C307, C308, C311, C312	CAPACITOR_.1µF 50V CERAMIC SMT	64	415007
C86, C87, C234, C238	CAPACITOR_.22µF 50V CERAMIC SMT	4	415009
C73, C110, C132, C144	CAPACITOR_1000pF 50V FILM SMT	4	425002
C75, C113, C134, C146	CAPACITOR_2200pF 50V FILM SMT	4	425003
C78, C125, C138, C151	CAPACITOR_3900pF 50V FILM SMT	4	425004
C77, C116, C136, C148	CAPACITOR_.022µF 50V FILM SMT	4	425005

Mic/Line Stereo Input (main card)

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PART LISTS

MLS - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R393	RESISTOR_4.99K_PRECISION	1	430137
R308, R309, R312, R315, R379, R382, R385, R388	RESISTOR_10 _SMT_1206	8	435002
R24, R30, R36, R41, R47, R53	RESISTOR_100 _SMT_1206	6	435007
R31-R33, R51	RESISTOR_475 _SMT_1206	4	435011
R19-R21, R25-R27, R39, R45	RESISTOR_562 _SMT_1206	8	435012
R1, R2, R5-R8, R11-R16, R55, R56, R89, R118, R121, R178, R179	RESISTOR_619 _SMT_1206	19	435013
R119, R158, R159, R176, R177, R193	RESISTOR_1.00K_SMT_1206	6	435015
R4, R37, R42, R43, R48, R49, R54, R90, R402, R403	RESISTOR_1.30K_SMT_1206	8	435016
R163, R164	RESISTOR_1.69K_SMT_1206	2	435017
R3, R10, R35, R86-R88, R129, R131, R160, R181-R183, R228	RESISTOR_2.43K_SMT_1206	13	435020
R58,R60, R62, R64, R66, R68, R70, R72, R123, R133-R136, R140-R143, R184, R191, R192, R196-R217, R219-R221, R223, R226, R227, R236, R248, R256, R257, R269, R274, R288, R289, R291, R300, R302-R305, R310, R311, R313, R314, R316, R317, R319, R322-R381, R383, R384, R386, R387, R390-R392	RESISTOR_4.99K_SMT_1206	135	435023
R109, R112, R115, R166, R169, R172	RESISTOR_5.49K_SMT_1206	6	435024
R17, R18, R22, R23, R28, R29, R38, R40, R44, R46, R50, R52	RESISTOR_9.09K_SMT_1206	12	435027
R9, R59, R61, R63, R65, R67, R69, R71, R73-R85, R107, R108, R110, R111, R113, R114, R116, R117, R122, R126-R128, R130, R144-R157, R162, R165, R167, R168, R170, R171, R173, R174, R180, R185, R189, R190, R224, R231, R232, R238, R243, R258-R268, R270-R273, R275, R286, R296-R299, R301, R306, R318, R320, R321, R389, R394-R401, R404, R407, R408	RESISTOR_10.0K_SMT_1206	103	435028
R229, R230, R244, R245, R292-R295	RESISTOR_15.0K_SMT_1206	8	435032
R194, R195, R239, R240, R250-R255	RESISTOR_20.0K_SMT_1206	10	435034
R34, R57, R91-R106, R124, R125, R132, R137-R139, R161, R186-R188, R218, R225, R233-R235, R237, R241, R246, R247, R249, R276, R277, R283, R285, R287, R290, R307, R405, R406, R409, R410	RESISTOR_40.2K_SMT_1206	49	435039
R120, R175	RESISTOR_100K_SMT_1206	2	435044
R278-R282, R284	RESISTOR_221K_SMT_1206	6	435046
R222, R242	RESISTOR_1.0M_SMT_1206	2	435049
CR17, CR18	POT_TRIM_HOR_50K_SMT	2	505003
SW24, SW25, SW27, SW28	SWITCH_DIP_4_POS _SMT	4	515001
SW14-SW23, SW26	SWITCH_SLIDE _SMT	11	515003
DS6, DS7, DS12, DS13	LED_R/A_RED_SMT_HI_INTENSITY	4	605008
DS1, DS2, DS5, DS8-DS11	LED_R/A_YLW_SMT_HI_INTENSITY	7	605009
DS3, DS4	LED_R/A_AMBER_SMT_HI_INTENSITY	2	605010
	PCB_MLS1000	1	700295
	NUT_PEM_SP8	5	821012
F1-F11	FUSE_3AMP_SMT_POLYSWITCH	11	835001

Mic/Line Stereo Input (main card)

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MLSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
TR1, TR2	CAN_MIC_TV1000	2	110028
U9, U18, U19, U78-U81, U92-U104	SOCKET_8 PIN_.3" DIP_SMT	20	245001
U8	SOCKET_14 PIN_.3" DIP_SMT	1	245002
CT1-CT5, CT7, CT8	HEADER_3M_26_PIN_ST	7	250044
CT6	HEADER_10_PIN_ST	1	250077
U8	IC_4066	1	300005
U44, U46, U47, U51, U53, U55, U57, U58, U61, U64, U66, U67	IC_74ABT244 TTL SMT	12	305002
U3-U5, U24, U35, U91	IC_74ACT00 TTL SMT	6	305004
U6, U7, U13, U16, U22, U70, U71	IC_74ACT08 TTL SMT	7	305006
U20, U28, U30, U31, U33, U37, U41, U82-U85, U89	IC_74ACT32 TTL SMT	12	305010
U45, U48-U50, U52, U54, U56, U59, U60, U63, U65	IC_74HC373 TTL SMT	11	305011
U11, U12, U15, U21, U42	IC_74ACT74 TTL SMT	5	305021
U10, U14, U17, U23, U25-U27, U29, U32, U34, U36, U38-U40, U90	IC_74AC14 TTL SMT	15	305027
U1, U86, U88	IC_74HC30 TTL SMT	3	305028
U2, U72-U76, U87	IC_74ACT02 TTL SMT	7	305040
U68	IC_74ACT123_TTL_SMT	1	305045
U69	IC_74ACT138_TTL_SMT	1	305049
U77	IC_74ACT521_TTL_SMT	1	305050
U62	IC_ADC0804 8 BIT_SMT	1	315009
U43	IC_DAC0808 DA CONVERTOR_SMT	1	315014
U9, U18, U19	IC_TL072	3	320006
U81	IC_NE5532 DUAL OP-AMP	1	320008
U96, U100	IC_NE5534 DUAL OP-AMP	2	320009

Mic/Line Stereo Input (switch card)

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MLSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
Q20	REGULATOR_7812 POSITIVE_12V	1	330002
Q21	REGULATOR_7912 NEGATIVE_12 V	1	330007
Q22, Q23	REGULATOR_PQ05SZ1_5V_1A_SMT	2	335001
U78-U80, U92-U95, U97-U99, U101-U104	IC_LH1522AB DUAL FET_OPTO COUPLER	14	340020
Q1, Q6-Q13, Q19, Q24, Q25	TRANSISTOR_MMBTA05 NPN SMT	12	345001
Q2-Q5, Q14-Q18	TRANSISTOR_MMBTA55 PNP SMT	9	345002
Z1	DIODE_6.2V1W_ZENER	1	350013
D27	DIODE_1N4002W RECTIFYING_1AMP_SMT	1	355001
Z2-Z5	DIODE_5.1V_ZENER_SMT	4	355002
D1-D3, D6, D7, D9, D11, D13-D15, D17-D26, D28, D30, D31	DIODE_1N4148 FAST SWITCHING_SMT	23	355003
D4, D5, D8, D10, D12, D16, D29, D32	DIODE_SS14 SCHOTTKY_SMT	8	355004
C158, C159, C191, C196, C202	CAPACITOR_10µF 50V ELECTROLYTIC SMT	5	405001
C143, C144, C193, C194	CAPACITOR_22µF 25V ELECTROLYTIC SMT	4	405002
C130, C149-C151, C154, C175	CAPACITOR_100µF 25V ELECTROLYTIC SMT	6	405003
C95, C97, C123, C188, C208	CAPACITOR_330µF 25V ELECTROLYTIC SMT	5	405004
C5, C14, C27, C28, C30, C31, C35, C93, C121, C122, C145, C146, C152, C155, C165, C172, C184	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	17	405005
C189, C190, C197, C198, C203, C204, C209, C210	CAPACITOR_100µF 50V ELECTROLYTIC SMT	8	405006
C12, C13, C33, C39, C68, C96, C186, C187, C200, C201	CAPACITOR_33pF 100V CERAMIC SMT	10	415002
C147, C148	CAPACITOR_68pF 100V CERAMIC SMT	2	415003
C192, C206	CAPACITOR_330pF 100V CERAMIC SMT	2	415004
C2, C99, C141, C142, C156	CAPACITOR_001µF 50V CERAMIC SMT	5	415005
C15, C17, C38, C42, C65, C71, C73, C75, C77, C79, C81, C83, C85, C87, C90, C92, C100, C102, C104, C106, C108, C110, C112, C114, C116, C126, C128, C131, C133, C135, C137, C139, C168, C170, C179, C182, C205	CAPACITOR_01µF 50V CERAMIC SMT	37	415006
C6, C7, C10, C11, C16, C18, C32, C34, C36, C37, C40, C41, C43, C66, C69, C70, C72, C74, C76, C78, C80, C82, C84, C86, C88, C89, C91, C98, C101, C103, C105, C107, C109, C111, C113, C115, C117, C124, C125, C127, C129, C132, C134, C136, C138, C140, C153, C157, C160-C164, C169, C171, C173, C174, C176-C178, C180, C181, C183, C185, C195, C199, C207	CAPACITOR_1µF 50V CERAMIC SMT	67	415007
C1, C3, C4, C8, C9, C19-C29, C44-C64, C67, C94, C118-C120, C166, C167	CAPACITOR_22µF 50V CERAMIC SMT	42	415009

Mic/Line Stereo Input (switch card)

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MLSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J4, J9, R191-R206, R220-R227, R235-R242, R342	RESISTOR_3.3 _SMT_1206	35	435001
R228, R296, R305	RESISTOR_10 _SMT_1206	3	435002
R266, R267	RESISTOR_47 _SMT_1206	2	435005
R23, R89	RESISTOR_100 _SMT_1206	2	435007
R351, R381	RESISTOR_150 _SMT_1206	2	435008
R12, R15, R17, R56, R87, R176, R179, R346, R360, R376, R398	RESISTOR_220 _SMT_1206	11	435009
R344	RESISTOR_475 _SMT_1206	1	435011
R5, R10, R11, R13, R19, R21, R44-R55, R59, R60, R64, R65, R74, R79, R82, R84, R103, R105, R108, R110, R113, R134, R154, R162, R167, R243, R245	RESISTOR_619 _SMT_1206	37	435013
R347-R349, R361, R377-R379, R399	RESISTOR_750 _SMT_1206	8	435014
R6, R58, R163, R172, R177, R208, R216, R248, R286, R287, R303, R306, R334, R367, R373, R382, R393	RESISTOR_1.00K_SMT_1206	17	435015
R297, R300, R304, R356-R359, R362, R363, R387-R390, R394-R397, R400, R401, R409-R412	RESISTOR_1.30K_SMT_1206	23	435016
R350, R380	RESISTOR_1.69K_SMT_1206	2	435017
R1, R2, R4, R8, R27, R29, R32, R33, R36, R38, R40-R42, R62, R63, R71, R72, R76, R78, R80, R83, R96, R100, R101, R104, R106, R109, R111, R112, R114-R116, R119, R120, R122-R126, R128-R130, R132, R133, R136, R138, R139, R141-R143, R145, R146, R148, R150-R152, R156-R159, R161, R165, R166, R173, R174, R182, R183, R185, R186, R213-R215, R290, R291, R301, R364, R392, R402	RESISTOR_2.43K_SMT_1206	78	435020
R3, R7, R9, R14, R16, R18, R20, R22, R24-R26, R28, R30, R31, R34, R35, R37, R39, R43, R57, R61, R69, R73, R75, R77, R81, R85, R86, R97, R98, R102, R107, R117, R118, R121, R127, R131, R135, R137, R140, R144, R147, R149, R153, R155, R160, R164, R168-R171, R175, R178, R180, R181, R184, R211, R212, R229-R234, R246, R247, R283, R284, R293, R295, R298, R299, R302, R332, R343, R352-R355, R368-R372, R383-R386, R391, R405-R408	RESISTOR_4.99K_SMT_1206	93	435023
R66-R68, R70, R88, R90-R93, R99, R187-R190, R209, R217-R219, R244, R253, R257, R268, R270-R273, R282, R285, R288, R292, R294, R319-R322, R331, R333, R338, R345, R374, R375	RESISTOR_10.0K_SMT_1206	41	435028
R341	RESISTOR_20.0K_SMT_1206	1	435034
R250-R252, R254, R258-R264, R274-R281, R307-R313, R317, R318, R323-R330, R335-R337, R365, R403	RESISTOR_40.2K_SMT_1206	41	435039
R95	RESISTOR_75.0K_SMT_1206	1	435042
R249, R314-R316, R339, R340	RESISTOR_88.7K_SMT_1206	6	435043
R207, R255, R256, R269	RESISTOR_100K_SMT_1206	4	435044
R289	RESISTOR_221K_SMT_1206	1	435046
R94, R210, R265, R266, R404	RESISTOR_1.0M_SMT_1206	5	435049

Mic/Line Stereo Input (switch card)

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MLSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
SW1-SW30	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	30	510113
SW31, SW32, SW35	SWITCH_DIP_4_POS _SMT	3	515001
SW33, SW34, SW36-SW42	SWITCH_SLIDE _SMT	9	515003
SW1-SW7, SW10-SW25, SW27-SW30	BUTTON_LUMA_230_WHT	27	530083
SW8, SW9	BUTTON_LUMA_230_RED	2	530084
SW25	BUTTON_LUMA_230_YLW	1	530085
DS3, DS5	LED_RED_SMT	2	605004
DS7, DS8	LED_GREEN_SMT	2	605005
DS6, DS9, DS10	LED_YELLOW_SMT	3	605006
DS16, DS17	LED_R/A_RED_SMT_HI_INTENSITY	2	605008
DS4, DS12-DS15, DS19, DS21, DS23, DS25, DS27, DS29, DS31, DS33, DS34, DS37, DS38	LED_R/A_YLW_SMT_HI_INTENSITY	16	605009
DS1, DS2, DS18, DS20, DS22, DS24, DS26, DS28, DS30, DS32, DS35, DS36	LED_R/A_AMBER_SMT_HI_INTENSITY	12	605010
	PCB_MLSW1000	1	700297
TR1, TR2	XFORMER_MIC	2	810001
	NUT_PEM_SP8	5	821012

Mic/Line Stereo Input (switch card)

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MLS - 1000 FADER PANEL			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	STEREO IN FADER FACEPLATE	1	004616
CT2, CT7	PLUG_3_PIN_JST	2	230028
CT3	PLUG_6_PIN_JST	1	230031
CT5	PLUG_9_PIN_JST	1	230032
MAIN PCB: CT1, CT4 SWITCH PCB: CT1	PLUG_RIBBON_14_PIN	3	250034
CT2	HEADER_3_PIN_JST	1	250062
CT3	HEADER_6_PIN_JST	1	250065
CT5	HEADER_9_PIN_JST	1	250066
MAIN PCB: CT1, CT4 SWITCH PCB: CT1	HEADER_14_PIN_TV1000	3	250073
U2	IC_LM3915	1	320001
U16	IC_NE5532 DUAL OP-AMP	1	320008
U17-U19	IC_OP-275	4	320014
U1	IC_OP-282	1	320015
FOLDBACK POT	POT_BOURNS_SINGLE AUDIO	1	500058
CHANNEL "ON" SWITCH	SWITCH_LB_25_GRAY_GOLD	1	510063
MAIN PCB: SW1-SW12 SWITCH PCB: SW1-SW4	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	16	510113
	KNOB_FDR_3000_WHT	1	520007
FOLDBACK POT	KNOB_BOTTOM_13M M_NO FLANGE	1	520054
CHANNEL "ON" SWITCH LENS	LENS_LB_WHITE	1	530059
MAIN PCB: SW3-SW12 SWITCH PCB: CT1	BUTTON_LUMA_230_WHT	10	530083
SW1	BUTTON_LUMA_230_RED	1	530084
MAIN PCB: SW2 SWITCH PCB: SW1-SW4	BUTTON_LUMA_230_YLW	5	530085
FOLDBACK POT	CAP_SIFAM_BLUE/9_13 MM	1	530114
	FADER_P&G_3222_MOUNTING HOLE	1	540021
CHANNEL "ON" SWITCH	LED_ON/OFF_SWITCH_RED	1	600027
	PCB_FPI1000	1	700265
	PCB_FPSW1000	1	700294
	PCB_BPSA1000	1	700299
	NUT_PEM_SP8	5	821012

Mic/Line Stereo Input (fader panel)

FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1, U16-U19	SOCKET_SMT_JS8_PIN	5	245001
U2	SOCKET_SMT_JS20_PIN	1	245004
CT7	HEADER_3_PIN_JST	1	250062
CT3	HEADER_6_PIN_JST	1	250065
CT5	HEADER_9_PIN_JST	1	250066
CT1, CT4	HEADER_14_PIN_TV1000	2	250073
U8	IC_74ACT08 TTL SMT	1	305006
U5	IC_74ACT32 TTL SMT	1	305010
U3, U4, U6, U7, U9, U10	IC_74AC14 TTL SMT	6	305027
U2	IC_LM3915	1	320001
U16	IC_NE5532 DUAL OP-AMP	1	320008
U17-U19	IC_OP-275	3	320014
U1	IC_OP-282	1	320015
Q4	REGULATOR_PQ05SZ1_5V_1A_SMT	1	335001
Q3	TRANSISTOR_MMBTA05 NPN SMT	1	345001
Q1, Q2	TRANSISTOR_MMBTA55 PNP SMT	2	345002
Z1, Z2	DIODE_5.1V_ZENER_SMT	2	355002
D3-D7, D12, D13	DIODE_1N4148 FAST SWITCHING SMT	7	355003
D1, D2, D8-D11	DIODE_SS14 SCHOTTKY SMT	6	355004
U11-U15	IC_74VHC4053 SMT	5	385001
C10, C32-C35, C39, C46, C52, C54, C57	CAPACITOR_22μF 25V ELECTROLYTIC SMT	10	405002
C37, C42, C53, C58, C59	CAPACITOR_100μF 25V ELECTROLYTIC SMT	5	405003
C4, C12, C36, C41, C43, C44	CAPACITOR_1μF 35V ELECTROLYTIC SMT TANTALUM	6	405005
C1, C3, C45, C48, C49, C51, C60, C63, C64	CAPACITOR_10pF 100V CERAMIC SMT	9	415001
C61	CAPACITOR_33pF 100V CERAMIC SMT	1	415002
C2, C5-C9, C11, C17, C26, C31, C40, C47, C50, C55, C56, C62, C65	CAPACITOR_1μF 50V CERAMIC SMT	17	415007
C13-C16, C18-C25, C27-C30, C38	CAPACITOR_22μF 50V CERAMIC SMT	17	415009

Mic/Line Stereo Input (fader panel main card)

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FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J1, J2, R38, R156	RESISTOR_3.3 _SMT_1206	4	435001
R100	RESISTOR_10 _SMT_1206	1	435002
R48-R51, R54, R69, R70, R188	RESISTOR_100 _SMT_1206	8	435007
R104	RESISTOR_220 _SMT_1206	1	435009
R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R30, R31, R33, R35, R45-R47, R60	RESISTOR_619 _SMT_1206	20	435013
R64	RESISTOR_1.00K_SMT_1206	1	435015
R2	RESISTOR_1.69K_SMT_1206	1	435017
R4, R6, R8, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R29, R32, R34, R36, R52, R67, R71, R73, R75, R77, R79, R81, R83, R85, R87, R89, R91, R93, R95, R97, R101, R102, R124, R125	RESISTOR_2.43K_SMT_1206	37	435020
R1	RESISTOR_3.32K_SMT_1206	1	435021
R53, R63, R66, R68, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96, R98, R99, R103, R105-R113, R116, R182, R185	RESISTOR_4.99K_SMT_1206	32	435023
R37, R40, R55, R56, R114, R115, R118, R119, R151-R154	RESISTOR_10.0K_SMT_1206	12	435028
R39, R41, R44, R57-R59, R61, R62, R120, R121	RESISTOR_20.0K_SMT_1206	10	435034
R123, R187	RESISTOR_22.1K_SMT_1206	2	435036
R3, R42, R43, R117, R126-R150, R155, R157-R181, R183, R184	RESISTOR_40.2K_SMT_1206	57	435039
R122, R186	RESISTOR_88.7K_SMT_1206	2	435043
R65	RESISTOR_100K_SMT_1206	1	435044
CT2	POT_DALE_SINGLE_10K	1	500031
CR1	POT_TRIM_HOR_1K_SMT	1	505001
SW1-SW16	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	16	510113
SW17-SW20	SWITCH_SLIDE_SMT	4	515003
	LED_ON/OFF_SWITCH_RED	1	600027
DS1	LED_RED_SMT	1	605004
DS4-DS7, DS12	LED_GREEN_SMT	5	605005
DS2, DS3, DS21	LED_YELLOW_SMT	3	605006
DS8, DS9	LED_R/A_RED_SMT_HI_INTENSITY	2	605008
DS10, DS22-DS25	LED_R/A_YLW_SMT_HI_INTENSITY	5	605009
DS11, DS13-DS20	LED_R/A_AMBER_SMT_HI_INTENSITY	9	605010
	PCB_FPI1000	1	700265
	NUT_PEM_SP8	5	821012
F1-F3	FUSE_3AMP_SMT_POLYSWITCH	3	835001

Mic/Line Stereo Input (fader panel main card)

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FPSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PLUG_RIBBON_14_PIN	2	250034
CT1	HEADER_14_PIN_TV1000	2	250073
R1-R5	RESISTOR_10 _SMT_1206	5	435002
SW1-SW4	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	4	510113
SW1-SW4	BUTTON_LUMA_230_YLW	5	530085
DS5	LED_YELLOW_SMT	1	605006
DS1-DS4	LED_R/A_YLW_SMT_HI_INTENSITY	4	605009
	PCB_FPSW1000	1	700294
	NUT_PEM_SP8	2	821012

Mic/Line Stereo Input (fader panel switch card)

MI-1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
TR1,TR2	CAN_MIC_TV1000	2	110028
	LATCHING BLOCKS - .190	2	200011
"MACHINE CONTROL" CONNECTOR	CONN_DB_IDD9_HDF20	1	200031
CT1, CT9	CONN_R/A_PC_MT_9_MBL5	2	220016
CT2	CONN_R/A_PC_MT_25_PIN	1	220017
SWITCH PCB (SISW-1000): CT5	PLUG_RIBBON_10_PIN	1	230020
MAIN PCB (MI-1000): CT3-CT8 SWITCH PCB (SISW-1000): CT1-CT4,CT6, CT7	SOCKET_26_PIN_PLUG	12	250043
MAIN PCB (MI-1000): CT3-CT8 SWITCH PCB (SISW-1000): CT1-CT4,CT6, CT7	HEADER_3M_26_PIN_ST	12	250044
SWITCH PCB (SISW-1000): CT5	HEADER_10_PIN_ST	1	250077
MAIN PCB (MI-1000): U35	IC_74HC00	1	300012
MAIN PCB (MI-1000): U82	IC_74HC02	1	300013
MAIN PCB (MI-1000): U34	IC_74HC08	1	300015
SWITCH PCB (SISW-1000): U68	IC_74HC138	1	300019
MAIN PCB (MI-1000): U33, U78-U80	IC_74HC32	4	300029
SWITCH PCB (SISW-1000): U76	IC_74HC688	1	300034
MAIN PCB (MI-1000): U81	IC_74HC14	1	300057
MAIN PCB (MI-1000): U36, U57	IC_74HC14	2	300059
MAIN PCB (MI-1000): U46, U48, U49	IC_2142 BALANCED LINE DRIVER IC	3	320004
MAIN PCB (MI-1000): U15, U19, U32, U52, U53, U56 SWITCH PCB (MI-1000):U81	IC_NE5532 DUAL OP-AMP	7	320008
MAIN PCB (MI-1000): U13, U20	IC_NE5534 DUAL OP-AMP	2	320009
MAIN PCB (MI-1000): U37, U45, U47	IC_2143 BALANCED LINE RECEIVER IC	3	320012
MAIN PCB (MI-1000): U1, U10-U12, U14, U16-U18, U41-U44, U50, U51, U54	IC_OP-275	15	320014
MAIN PCB (MI-1000): U2-U9, U55	IC_OP-282	9	320015
MAIN PCB (MI-1000): U58 SWITCH PCB (SISW-1000): Q22, Q23	REGULATOR_PQ05SZ1_5V_1A	3	335001
MAIN PCB (MI-1000): U38-U40,U59 SWITCH PCB (SISW-1000): U77-U79	IC_LH1522AB DUAL FET OPTO COUPLER	7	340020
MAIN PCB (MI-1000): U21-U31, U60-U77	IC_74VHC4053	29	380008

Mono Mic/Line Input (module)

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MI-1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR13, CR14	BOURNS QUAD LINEAR	2	500055
CR9	BOURNS DUAL LINEAR, CDT	1	500056
CR1-CR8	BOURNS SINGLE AUDIO	8	500058
CR10-CR12	POT_GS10M	3	500059
CR16	POT_SA10Q	1	500061
CR17, CR18	POT_SA10Q	2	505002
MAIN PCB (MI-1000): SW1-SW12 SWITCH PCB (SISW-1000): SW1, SW2, SW4-SW30	SWITCH_2 POLE PUSHBUTTON _MOMENTARY	41	510113
HI, MID, LOW, PK CONTROLS	KNOB_SIFAM_TOP_INNER_CONC	4	520024
MIC, LINE, AUX1-AUX8, PAN CONTROLS	KNOB_ BOTTOM_13M M_NO FLANGE	11	520054
HI, MID, LOW, PK CONTROLS	KNOB_SIFAM_BTM_OUTER_CON_SHORT	4	520056
HI, MID, LOW, PK CONTROLS	CAP_SIFAM_11MM_BLK	4	530036
MAIN PCB (MI-1000): SW1-SW4, SW7-SW10 SWITCH PCB (SISW-1000): SW1, SW2, SW4-SW7, SW10-SW25, SW27-SW30	BUTTON_LUMA_230_WHT	34	530083
MAIN PCB (MI-1000): SW5, SW6, SW11, SW12 SWITCH PCB (SISW-1000): SW8, SW9	BUTTON_LUMA_230_RED	6	530084
SWITCH PCB (SISW-1000): SW26	BUTTON_LUMA_230_YLW	1	530085
MIC CONTROL, LINE CONTROL	CAP_SIFAM_CREAM_13MM	2	530103
PAN CONTROL	CAP_SIFAM_PALE BLUE_13 MM	1	530107
AUX5-AUX8 CONTROLS	CAP_SIFAM_GREY/6_13 MM	4	530113
AUX1-AUX4 CONTROLS	CAP_SIFAM_BLUE/9_13 MM	4	530114
	PCB_MI1000C	1	700346
	PCB_SISW1000F	1	700348
TR1, TR2	XFORMER_MIC	2	810001
	SCREWLOCK_FEMALE	6	820047
	NUT_PEM_SP8	11	821012
	SPACER_NYLON_15/16HEX_440	3	823043

Mono Mic/Line Input (module)

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PART LISTS

MI-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U20, U32, U37-U56, U59	SOCKET_SMT_JS8_PIN	42	245001
U33-U36, U57, U77-U79, U81	SOCKET_SMT_JS14_PIN	10	245002
U21-U31, U59-U76	SOCKET_SMT_JS16_PIN	30	245003
U58	REGULATOR_PQ05SZ1 5V 1A SMT T/R	1	335001
Q1-Q10	TRANSISTOR_MMBTA05 NPN SMT	10	345001
Z1, Z2	DIODE_5.1V SMT ZENER C5V1	2	355002
D1-D30	DIODE_1N4148 FAST SWITCHING SMT	30	355003
D31, D32	DIODE_SS14 SCHOTTKY SMT	2	355004
C21, C240, C241, C250	CAPACITOR_10µF 50V ELECTROLYTIC SMT	4	405001
C5, C7, C9, C11, C13, C15, C17, C19, C22, C162, C230-C239, C264	CAPACITOR_22µF 25V ELECTROLYTIC SMT	21	405002
C2-C4, C6, C8, C10, C12, C14, C16, C18, C23, C40-C42, C47, C50, C52, C55, C57, C60, C62, C65, C67, C93, C94, C97, C99, C100, C115, C118, C124, C151-C157, C160, C161, C220, C225, C246-C248	CAPACITOR_100µF 25V ELECTROLYTIC SMT	45	405003
C91, C92, C95, C96, C98, C158, C159, C226-C229	CAPACITOR_330µF 25V ELECTROLYTIC SMT	11	405004
C20, C77-C79, C81-C83, C86, C133-C140, C221, C243-C245, C257-C259	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	23	405005
C25, C27, C28, C30, C31, C33, C34, C36-C39, C43, C45, C46, C49, C51, C54, C56, C59, C61, C64, C68, C69, C80, C101, C103, C110, C117, C125, C164, C165, C168, C169, C172, C173, C176, C177, C193, C194, C197, C198, C201, C202, C205, C206, C208, C209, C217, C218	CAPACITOR_10pF 100V CERAMIC SMT	49	415001
C87, C88, C121, C122	CAPACITOR_33pF 100V CERAMIC SMT	4	415002
C179, C180, C183, C222-C224	CAPACITOR_68pF 100V CERAMIC SMT	6	415003
C114, C132	CAPACITOR_330pF 100V CERAMIC SMT	2	415004
C129, C130, C142-C148, C181, C182	CAPACITOR_.001µF 50V CERAMIC SMT	11	415005
C211, C215, C251	CAPACITOR_.01µF 50V CERAMIC SMT	3	415006
C1, C24, C26, C29, C32, C35, C44, C48, C53, C58, C63, C66, C70, C72, C74, C89, C90, C102, C105, C107, C109, C111, C113, C116, C119, C120, C123, C126-C128, C131, C141, C149, C150, C163, C166, C167, C170, C171, C174, C175, C178, C184-C192, C195, C196, C199, C200, C203, C204, C207, C212, C213, C216, C219, C242, C249, C256, C260-C263, C265, C266	CAPACITOR_.1µF 50V CERAMIC SMT	71	415007
C84, C85, C210, C214, C252-C255	CAPACITOR_.22µF 50V CERAMIC SMT	8	415009
C71, C104	CAPACITOR_1000pF 50V FILM SMT	2	425002
C73, C106	CAPACITOR_2200pF 50V FILM SMT	2	425003
C76, C112	CAPACITOR_3900pF 50V FILM SMT	2	425004
C75, C108	CAPACITOR_.022µF 50V FILM SMT	2	425005

Mono Mic/Line Input (main card)

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MI-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R263	RESISTOR_4.99K_PRECISION	1	430137
R30	RESISTOR_3.3 _SMT_1206	1	435001
R140, R254, R257, R260, R322, R325, R328, R331	RESISTOR_10 _SMT_1206	8	435002
R20, R25, R32	RESISTOR_100 _SMT_1206	3	435007
R110, R137	RESISTOR_150 _SMT_1206	2	435008
R194, R198, R339, R341, R343, R345	RESISTOR_220 _SMT_1206	6	435009
R26, R27	RESISTOR_475 _SMT_1206	2	435011
R16, R17, R21, R22	RESISTOR_562 _SMT_1206	4	435012
R1-R4, R8-R13, R36, R37, R102, R105	RESISTOR_619 _SMT_1206	14	435013
R192, R196, R200, R201	RESISTOR_750 _SMT_1206	4	435014
R103, R117, R118, R264, R265, R332, R337	RESISTOR_1.00K_SMT_1206	7	435015
R33-R35, R193, R195, R197, R199, R202, R203, R361, R362	RESISTOR_1.30K_SMT_1206	11	435016
R109, R136, R146-R148, R150	RESISTOR_1.69K_SMT_1206	6	435017
R40, R69	RESISTOR_2.00K_SMT_1206	2	435018
R6, R7, R31, R67, R68, R86-R89, R119, R121, R130-R132, R144, R152, R191, R204, R208, R212, R216, R335	RESISTOR_2.43K_SMT_1206	22	435020
R39, R41, R43, R45, R47, R49, R51, R53, R55, R70, R107, R123-R128, R133-R135, R138, R139, R141-R143, R155, R156, R158, R160-R168, R170-R176, R178, R183, R186, R223-R225, R248, R255, R256, R258, R259, R261, R262, R266-R321, R323, R324, R326, R327, R329, R330, R336, R338, R342, R346, R348	RESISTOR_4.99K_SMT_1206	124	435023
R93, R96, R99	RESISTOR_5.49K_SMT_1206	3	435024
R205, R209, R213, R217	RESISTOR_6.19K_SMT_1206	4	435025
R14, R15, R18, R19, R23, R24	RESISTOR_9.09K_SMT_1206	6	435027
R42, R44, R46, R48, R50, R52, R54, R56-R66, R90, R92, R94, R95, R97, R98, R100, R101, R106, R108, R112-R116, R122, R129, R151, R179, R181, R182, R187-R190, R206, R207, R210, R211, R214, R215, R218-R222, R226-R236, R247, R249, R250, R252, R333, R334, R340, R344, R347, R349, R350, R353-R360	RESISTOR_10.0K_SMT_1206	84	435028
R91, R111	RESISTOR_15.0K_SMT_1206	2	435032
R5, R28, R29, R38, R71-R85, R149, R153, R154, R157, R159, R169, R177, R180, R184, R185, R237, R238, R244, R246, R251, R253, R351, R352, R363, R364	RESISTOR_40.2K_SMT_1206	39	435039
R104, R120, R145	RESISTOR_100K_SMT_1206	3	435044
R239-R243, R245	RESISTOR_221K_SMT_1206	6	435046

Mono Mic/Line Input (main card)

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MI-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR17, CR18	POT_TRIM_HOR_10K_SMT	2	505002
SW1-SW12	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	12	510113
SW15, SW16, SW18, SW19	SWITCH_DIP_4_POS_SMT	4	515001
SW13, SW14, SW17	SWITCH_SLIDE_SMT	3	515003
DS5, DS6, DS11, DS12	LED_R/A_RED_SMT_HI_INTENSITY	4	605008
DS1, DS2, DS7-DS10	LED_R/A_YLW_SMT_HI_INTENSITY	6	605009
DS3, DS4	LED_R/A_AMBER_SMT_HI_INTENSITY	2	605010
	PCB_MI1000	1	700269
	PCB_SISW1000	1	700278
	NUT_PEM_SP8	5	821012
F1-F11	FUSE_3AMP_SMT_POLYSWITCH	11	835001

Mono Mic/Line Input (main card)

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SISW-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U9,U15,U16,U77-U79,U81	SOCKET_SMT_JS8_PIN	7	245001
U8	SOCKET_SMT_JS14_PIN	1	245002
CT1-CT4,CT6,CT7	SOCKET_26_PIN_PLUG	6	250043
CT1-CT4,CT6,CT7	HEADER_3M_26_PIN_ST	6	250044
CT5	HEADER_10_PIN_ST	1	250077
U8	IC_4066	1	300005
U42, U44, U45, U49, U51, U53, U55, U56, U59, U63, U65, U66	IC_74ABT244 TTL SMT	12	305002
U3-U5, U21, U32	IC_74ACT00 TTL SMT	5	305004
U6, U7, U13, U19, U60, U69, U70	IC_74ACT08 TTL SMT	7	305006
U17, U25, U27, U28, U30, U34, U38, U82-U85	IC_74ACT32 TTL SMT	11	305010
U43, U46-U48, U50, U52, U54, U57, U58, U62, U64	IC_74HC373 TTL SMT	11	305011
U11, U12, U18, U39, U80	IC_74ACT74 TTL SMT	5	305021
U10, U14, U20, U22-U24, U26, U29, U31, U33, U35-U37, U40	IC_74AC14 TTL SMT	14	305027
U1, U86, U88	IC_74HC30 TTL SMT	3	305028
U2, U71-U75, U87	IC_74ACT02 TTL SMT	7	305040
U67	IC_74HC123_TTL_SMT	1	305045
U68	IC_74ACT138_TTL_SMT	1	305049
U76	IC_74ACT521_TTL_SMT	1	305050
U61	IC_ADC0804 8 BIT ADC SMT	1	315009
U41	IC_DAC0808 DA CONVERTOR SMT	1	315014
U9, U15, U16	IC_TL072	3	320006
U81	IC_NE5532 DUAL OP-AMP	1	320008
Q20	REGULATOR_7812 POSITIVE 12V	1	330002
Q21	REGULATOR_7912 NEGATIVE 12 V	1	330007
Q22, Q23	REGULATOR_PQ05SZ1_5V_1A	2	335001
U77-U79	IC_LH1522AB_DUAL FET_OPTO COUPLER	3	340020
Q1, Q6-Q13, Q19	TRANSISTOR_MMBTA05 NPN SMT	10	345001
Q2-Q5, Q14-Q18	TRANSISTOR_MMBTA55 PNP SMT	9	345002
Z1	DIODE_6.2V1W_ZENER	1	350013
D27	DIODE_1N4002W RECTIFYING 1AMP SMT	1	355001
Z2-Z5	DIODE_5.1V_SMT ZENER_C5V1	4	355002
D1-D5, D8, D9, D11, D13, D15, D17-D26	DIODE_1N4148 FAST SWITCHING SMT	20	355003
D6, D7, D10, D12, D14, D16	DIODE_SS14 SCHOTTKY SMT	6	355004

Mono Mic/Line Input (switch card)

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SISW-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C156, C157	CAPACITOR_10µF 50V ELECTROLYTIC SMT	2	405001
C141, C142	CAPACITOR_22µF 25V ELECTROLYTIC SMT	2	405002
C127, C148, C149, C152, C175	CAPACITOR_100µF 25V ELECTROLYTIC SMT	6	405003
C93, C95, C120	CAPACITOR_330µF 25V ELECTROLYTIC SMT	3	405004
C6, C15, C27, C28, C33, C91, C118, C119, C143, C144, C150, C153, C162, C163, C165, C172	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	16	405005
C13, C14, C31, C37, C64, C94	CAPACITOR_33pF 100V CERAMIC SMT	6	415002
C145, C146	CAPACITOR_68pF 100V CERAMIC SMT	2	415003
C3, C97, C139, C140, C154	CAPACITOR_.001µF 50V CERAMIC SMT	5	415005
C17, C19, C38, C41, C67, C69, C71, C73, C75, C77, C79, C81, C83, C85, C87, C99, C101, C103, C105, C107, C109, C111, C113, C115, C122, C124, C126, C129, C131, C133, C135, C169, C179	CAPACITOR_.01µF 50V CERAMIC SMT	33	415006
C1, C7, C8, C11, C12, C16, C18, C30, C32, C34-C36, C39, C40, C65, C66, C68, C70, C72, C74, C76, C78, C80, C82, C84, C86, C88, C89, C96, C98, C100, C102, C104, C106, C108, C110, C112, C114, C121, C123, C125, C128, C130, C132, C134, C136-C138, C151, C155, C158-C161, C164, C168, C170-C174, C176-C178, C180	CAPACITOR_1µF 50V CERAMIC SMT	64	415007
C2, C4, C5, C9, C10, C20-C26, C29, C42-C63, C90, C92, C116, C117, C166, C167	CAPACITOR_22µF 50V CERAMIC SMT	41	415009
R182-R197, R214-R221, R234-R241, R345, J4, J6, J11	RESISTOR_3.3 _SMT_1206	36	435001
R222, R300, R309	RESISTOR_10 _SMT_1206	3	435002
R266, R267	RESISTOR_47 _SMT_1206	2	435005
R23, R89	RESISTOR_100 _SMT_1206	2	435007
R12, R15, R17, R57, R176, R311, R312	RESISTOR_220 _SMT_1206	7	435009
R5, R10, R11, R13, R19, R21, R45-R56, R60, R61, R65, R66, R75, R80, R83, R85, R103, R105, R108, R110, R113, R134, R154, R162, R167, R242, R244	RESISTOR_619 _SMT_1206	37	435013
R6, R59, R163, R172, R177, R199, R247, R287, R288, R307, R310, R313, R341	RESISTOR_1.00K_SMT_1206	13	435015
R301, R304, R308	RESISTOR_1.30K_SMT_1206	3	435016
R1, R2, R4, R8, R27, R29, R33, R34, R37, R39, R41-R43, R63, R64, R73, R77, R79, R81, R84, R100, R101, R104, R106, R109, R111, R112, R114-R116, R119, R120, R122-R126, R128-R130, R132, R133, R136, R138, R139, R141-R143, R145, R146, R148, R150-R152, R156-R159, R161, R165, R166, R173, R174, R204-R206, R209, R210, R230, R231, R292, R293, R305	RESISTOR_2.43K_SMT_1206	73	435020
R3, R7, R9, R16, R18, R20, R22, R24-R26, R28, R31, R32, R35, R36, R38, R40, R44, R58, R62, R70, R72, R74, R76, R78, R82, R86, R87, R96-R98, R102, R107, R117, R118, R121, R127, R131, R135, R137, R140, R144, R147, R149, R153, R155, R160, R164, R168-R171, R175, R202, R203, R208, R223-R229, R232, R233, R245, R246, R283, R284, R297, R299, R302, R303, R306, R339	RESISTOR_4.99K_SMT_1206	75	435023
R14, R67-R69, R71, R88, R90-R93, R99, R178-R181, R200, R207, R211-R213, R243, R253, R257, R268, R270-R273, R282, R285, R286, R290, R294, R295, R298, R326-R329, R338, R340	RESISTOR_10.0K_SMT_1206	41	435028
R344	RESISTOR_20.0K_SMT_1206	1	435034
R30, R249-R252, R254, R258-R264, R274-R281, R289, R291, R296, R314-R320, R324, R325, R330-R337	RESISTOR_40.2K_SMT_1206	41	435039
R95	RESISTOR_75.0K_SMT_1206	1	435042
R248, R321-R323, R342, R343	RESISTOR_88.7K_SMT_1206	6	435043
R198, R255, R256, R269	RESISTOR_100K_SMT_1206	4	435044
R94, R201, R265	RESISTOR_1.0M_SMT_1206	3	435049

Mono Mic/Line Input (switch card)

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SISW-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
SW1, SW2, SW4-SW30	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	29	510113
SW31-SW33	SWITCH_DIP_4_POS_SMT	3	515001
SW34-SW40	SWITCH_SLIDE_SMT	7	515003
SW1-SW7, SW10, SW25, SW27-SW30	BUTTON_LUMA_230_WHT	26	530083
SW8, SW9	BUTTON_LUMA_230_RE	2	530084
SW26	BUTTON_LUMA_230_YLW	1	530085
DS3, DS5	LED_RED_SMT	2	605004
DS7, DS8	LED_GREEN_SMT	2	605005
DS6, DS9, DS10	LED_YELLOW_SMT	3	605006
DS16, DS17	LED_R/A_RED_SMT_HI_INTENSITY	2	605008
DS4, DS12-DS15, DS19, DS21, DS23, DS25, DS27, DS29, DS31, DS33, DS34, DS37, DS38	LED_R/A_YLW_SMT_HI_INTENSITY	16	605009
DS1, DS2, DS18, DS20, DS22, DS24, DS26, DS28, DS30, DS32, DS35, DS36	LED_R/A_AMBER_SMT_HI_INTENSITY	12	605010
	PCB_SISW1000	1	700278
	NUT_PEM_SP8	5	821012

Mono Mic/Line Input (switch card)

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SI-1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	SI-1000 FACEPLATE	1	004600
	DUAL DB-25, DUAL DB-9 REAR PANEL - TV1000	1	004700
	LATCHING BLOCKS - .190	4	200011
CONTROL CONNECTION	CONN_DB_IDD9_HDF20	1	200031
CT5	CONN_R/A_PC_MT_9_MBL5	1	220016
CT6, CT15	CONN_R/A_PC_MT_25_PIN	2	220017
SWITCH PCB (SISW-1000): CT5	PLUG_RIBBON_10_PIN	1	230020
MAIN PCB (SI-1000): CT7-CT12 SWITCH PCB (SISW-1000): CT1-CT4, CT6, CT7	SOCKET_26_PIN_PLUG	12	250043
MAIN PCB (SI-1000): CT7-CT12 SWITCH PCB (SISW-1000): CT1-CT4, CT6, CT7	HEADER_3M_26_PIN_ST	12	250044
SWITCH PCB: (SISW-1000): CT5	HEADER_10_PIN_ST	1	250077
MAIN PCB (SI-1000): U92	IC_74HC02	1	300013
MAIN PCB (SI-1000): U88-U90	IC_74HC32	3	300029
MAIN PCB (SI-1000): U91	Q74ABT125_TTL	1	300057
MAIN PCB (SI-1000): U41	Q74AC14_TTL	1	300059
MAIN PCB (SI-1000): U66, U67, U93-U95	IC_2142 BALANCED LINE DRIVER IC	5	320004
MAIN PCB (SI-1000): U20, U40, U51, U60, U61 SWITCH PCB (SISW-1000): U81	IC_NE5532_ DUAL OP-AMP	6	320008
MAIN PCB (SI-1000): U21, U22, U42, U43, U45, U46, U56, U57	IC_2143 BALANCED LINE RECEIVER IC	8	320012
MAIN PCB (SI-1000): U9-U19, U24-U26, U37-U39, U48-U50, U55, U59, U62, U63, U65, U69	IC_OP-275	26	320014
MAIN PCB (SI-1000): U1-U8, U64	IC_OP-282	9	320015
MAIN PCB (SI-1000): U68 SWITCH PCB (SISW-1000): Q22, Q23	REGULATOR_PQ05SZ1_5V_1A	3	335001
MAIN PCB (SI-1000): U23, U27-U36, U44, U47, U52-U54, U58, U70-87	IC_74VHC4053	35	380008
CR1, CR2, CR11	POT_BOURNS_DUAL LINEAR_ CDT	3	500056
CR3-CR10	POT_BOURNS_SINGLE AUDIO	8	500058
CR13-CR15	POT_10K_4/2 CONCENTRIC LINEAR_12mm_detent	3	500060
CR16	POT_10K_4/4 CONCENTRIC LINEAR_12mm_no detent	1	500061
MAIN PCB (SI-1000): SW3, SW4, SW6-SW13 SWITCH PCB (SISW-1000): SW1-SW30	SWITCH_2 POLE PUSHBUTTON _ MOMENTARY	40	510113
HI, MID, LOW, PK CONTROLS	KNOB_SIFAM_TOP_INNER_CONC	4	520024
LT, RT, AUX1-AUX8, BAL CONTROLS	KNOB_BOTTOM_13M M_NO FLANGE	11	520054
HI, MID, LOW, PK CONTROLS	KNOB_SIFAM_BTM_OUTER_CON_SHORT	4	520056

Stereo Line Input (module)

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SI-1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
HI, MID, LOW, PK CONTROLS	CAP_SIFAM_11MM_BLK	4	530036
MAIN PCB (SI-1000): SW1-SW5, SW8-SW11 SWITCH PCB (SISW-1000): SW1-SW4, SW6, SW7, SW10-SW30	BUTTON_LUMA_230_WHT	33	530083
MAIN PCB (SI-1000): SW6, SW7, SW12, SW13 SWITCH PCB (SISW-1000): SW8, SW9	BUTTON_LUMA_230_RED	6	530084
SWITCH PCB (SISW-1000): SW5	BUTTON_LUMA_230_YEL	1	530085
LT CONTROL, RT CONTROL	CAP_SIFAM_CREAM_13MM	2	530103
BAL CONTROL	CAP_SIFAM_PALE BLUE_13 MM	1	530107
AUX5-AUX8 CONTROLS	CAP_SIFAM_GREY/6_13 MM	4	530113
AUX1-AUX4 CONTROLS	CAP_SIFAM_BLUE/9_13 MM	4	530114
	PCB_SI1000C	1	700266
	PCB_SISW1000D	1	700278
	NUT_PEM_SP8	5	821012
	SPACER_NYLON_15/16HEX_440	3	823043
F1-F10	FUSE/ POLY SWITCH_3AMP	10	835001

Stereo Line Input (module)

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PART LISTS

SI-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U22,U24-26,U37-U40, U42,U43,U45, U46, U48-U51,U55-U57,U59-U68,U92,U93,U94	SOCKET_SMT_JS8_PIN	53	245001
U41, U87-U89, U91	SOCKET_SMT_JS14_PIN	5	245002
U23,U27-U36,U44,U47,U52-U54,U58,U69-U86	SOCKET_SMT_JS16_PIN	35	245003
U92	IC_74HC02	1	300013
U88-U90	IC_74HC32	3	300029
U91	Q74ABT125_TTL	1	300057
U41	Q74AC14_TTL	1	300059
U68	REGULATOR_PQ05SZ1_5V_1A	1	335001
Q1-Q7	TRANSISTOR_MMBTA05_NPN	7	345001
Z1, Z2	DIODE_5.1V_ ZENER_ C5V1	2	355002
D1-D26	DIODE_1N4148_FAST SWITCHING	26	355003
D27, D28	DIODE_SS14 SCHOTTKY	2	355004
C19, C20	CAPACITOR_10µF 50V ELECTROLYTIC SMT	2	405001
C2, C4, C6, C8, C10, C12, C14, C16, C18, C21, C39, C66, C84, C125, C127, C155, C157, C172, C173, C190,C193, C211, C214, C302	CAPACITOR_22µF 25V ELECTROLYTIC SMT	24	405002
C3, C5, C7, C9, C11, C13, C15, C17, C40-C43, C45, C48, C50, C53, C55, C58, C60, C63, C93-C96, C99-C102, C158, C159, C168, C170, C174, C176-C179, C181, C183, C239-C243, C245-C250, C252-C254, C257, C260-C267, C280-C282	CAPACITOR_100µF 25V ELECTROLYTIC SMT	65	405003
C64, C97, C98, C103, C194, C195, C255, C256, C258, C259	CAPACITOR_330µF 25V ELECTROLYTIC SMT	10	405004
C34, C35, C75-C77, C79-C81, C115, C117-C119, C134, C136, C160-C163, C165, C166, C204, C244, C251, C277-C279, C295-C297	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	29	405005
C22, C24, C25, C27, C28, C30, C31, C33, C36-C38, C44, C47, C49, C52, C54, C57, C59, C62, C67, C78, C85, C86, C89-C92, C105, C108, C111, C114, C116, C137, C151, C167, C171, C175, C182, C196, C198, C199, C201, C205, C215, C216, C218, C219, C221, C222, C224, C225, C227, C228, C236, C237, C274, C286-C288	CAPACITOR_10pF 100V CERAMIC SMT	59	415001
C268, C270, C271, C276, C289-C292, C305, C306	CAPACITOR_68pF 100V CERAMIC SMT	10	415003
C123, C126, C139, C140, C143, C144, C153, C156, C185-187, C191, C192, C207, C208, C212, C213, C272, C273, C284, C285	CAPACITOR_.001µF 50V CERAMIC SMT	21	415005
C230, C234	CAPACITOR_.01µF 50V CERAMIC SMT	2	415006
C1, C23, C26, C29, C32, C46, C51, C56, C61, C65, C68, C70, C72, C87, C88, C104, C107, C110, C113, C120, C122, C124, C128, C130, C132, C138, C141, C142, C146, C148, C150, C154, C164, C169, C180, C184, C188, C189, C197, C200, C202, C203, C206, C209, C210, C217, C220, C223, C226, C231, C232, C235, C238, C269, C275, C283, C293, C294, C298-C301, C303, C304, C307, C308	CAPACITOR_.1µF 50V CERAMIC SMT	66	415007
C82, C83, C229, C233	CAPACITOR_.22µF 50V CERAMIC SMT	4	415009
C69, C106, C129, C145	CAPACITOR_1000pF 50V FILM SMT	4	425002
C71, C109, C131, C147	CAPACITOR_2200pF 50V FILM SMT	4	425003
C74, C121, C135, C152	CAPACITOR_3900pF 50V FILM SMT	4	425004
C73, C112, C133, C149	CAPACITOR_.022µF 50V FILM SMT	4	425005

Stereo Line Input (main card)

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SI-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R392	RESISTOR_4.99K_PRECISION	1	430137
R306, R309, R312, R377, R380, R383, R386	RESISTOR_10 _SMT_1206	7	435002
R21, R27, R38, R43, R49, R55, R89, R90	RESISTOR_100 _SMT_1206	8	435007
R28, R29, R30, R53	RESISTOR_475 _SMT_1206	4	435011
R16-R18, R22-R24, R41, R47	RESISTOR_562 _SMT_1206	8	435012
R1-R5, R8-R13, R33, R36, R57, R58, R118, R121, R178, R179	RESISTOR_619 _SMT_1206	19	435013
R119, R158, R159, R176, R177, R191	RESISTOR_1.00K_SMT_1206	6	435015
R31, R34, R39, R44, R45, R50, R51, R56, R399, R400	RESISTOR_1.30K_SMT_1206	10	435016
R7, R32, R35, R37, R87, R88, R129, R131, R160, R181-R183, R226	RESISTOR_2.43K_SMT_1206	13	435020
R59, R61, R63, R65, R67, R69, R71, R73, R123, R133-R136, R140-R143, R184, R189, R190, R194- R219, R221, R224, R225, R234, R247, R255, R256, R268, R273, R287, R288, R290, R299, R301-R304, R307, R308, R310, R311, R313, R314, R316, R319, R321-R376, R378, R379, R381, R382, R384, R385, R388, R389, R391	RESISTOR_4.99K_SMT_1206	135	435023
R109, R112, R115, R166, R169, R172	RESISTOR_5.49K_SMT_1206	6	435024
R14, R15, R19, R20, R25, R26, R40, R42, R46, R48, R52, R54	RESISTOR_9.09K_SMT_1206	12	435027
R6, R60, R62, R64, R66, R68, R70, R72, R74-R86, R107, R108, R110, R111, R113, R114, R116, R117, R122, R126-R128, R130, R144-R157, R165, R167, R168, R170, R171, R173, R174, R180, R222, R229, R230, R236, R237, R242, R257-R267, R269-R272, R274, R285, R295-R298, R300, R315, R317, R318, R320, R387, R390, R393-R398, R401, R404, R405	RESISTOR_10.0K_SMT_1206	99	435028
R227, R228, R243, R244, R291-R294	RESISTOR_15.0K_SMT_1206	8	435032
R161-R164, R185-R188, R192, R193, R238, R239, R249-R254	RESISTOR_20.0K_SMT_1206	18	435034
R91-R106, R124, R125, R132, R137-R139, R216, R223, R231-R233, R235, R240, R245, R246, R248, R275, R276, R282, R284, R286, R289, R305, R402, R403, R406, R407	RESISTOR_40.2K_SMT_1206	43	435039
R120, R175	RESISTOR_100K_SMT_1206	2	435044
R277-R281, R283	RESISTOR_221K_SMT_1206	6	435046
R220, R241	RESISTOR_1.0M_SMT_1206	2	435049
CR17, CR18	POT_TRIM_HOR_50K_SMT	2	505003
SW24, SW25, SW27, SW28	SWITCH_4 POSITION_SMT DIP_TAPE SEALED	4	515001
SW14-SW23, SW26	SWITCH_SLIDE _SMT	11	515003
DS6, DS7, DS12, DS13	LED_R/A_RED_SMT_HI_INTENSITY	4	605008
DS1, DS2, DS5, DS8-DS11	LED_R/A_YLW_SMT_HI_INTENSITY	7	605009
DS3, DS4	LED_R/A_AMBER_SMT_HI_INTENSITY	2	605010
F1-F10	FUSE/ POLYSWITCH_.3AMP	10	835001

Stereo Line Input (main card)

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PART LISTS

SISW-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U9,U15,U16,U77-U79,U81	SOCKET_SMT_JS8_PIN	7	245001
U8	SOCKET_SMT_JS14_PIN	1	245002
CT1-CT4,CT6,CT7	SOCKET_26_PIN_PLUG	6	250043
CT1-CT4,CT6,CT7	HEADER_3M_26_PIN_ST	6	250044
CT5	HEADER_10_PIN_ST	1	250077
U8	IC_4066	1	300005
U42, U44, U45, U49, U51, U53, U55, U56, U59, U63, U65, U66	IC_74ABT244 TTL SMT	12	305002
U3-U5, U21, U32	IC_74ACT00 TTL SMT	5	305004
U6, U7, U13, U19, U60, U69, U70	IC_74ACT08 TTL SMT	7	305006
U17, U25, U27, U28, U30, U34, U38, U82-U85	IC_74ACT32 TTL SMT	11	305010
U43, U46-U48, U50, U52, U54, U57, U58, U62, U64	IC_74HC373 TTL SMT	11	305011
U11, U12, U18, U39, U80	IC_74ACT74 TTL SMT	5	305021
U10, U14, U20, U22-U24, U26, U29, U31, U33, U35-U37, U40	IC_74AC14 TTL SMT	14	305027
U1, U86, U88	IC_74HC30 TTL SMT	3	305028
U2, U71-U75, U87	IC_74ACT02 TTL SMT	7	305040
U67	IC_74HC123_TTL_SMT	1	305045
U68	IC_74ACT138_TTL_SMT	1	305049
U76	IC_74ACT521_TTL_SMT	1	305050
U61	IC_ADC0804 8 BIT ADC SMT	1	315009
U41	IC_DAC0808 DA CONVERTOR SMT	1	315014
U9, U15, U16	IC_TL072	3	320006
U81	IC_NE5532 DUAL OP-AMP	1	320008
Q20	REGULATOR_7812 POSITIVE 12V	1	330002
Q21	REGULATOR_7912 NEGATIVE 12 V	1	330007
Q22, Q23	REGULATOR_PQ05SZ1_5V_1A	2	335001
U77-U79	IC_LH1522AB_DUAL FET_OPTO COUPLER	3	340020
Q1, Q6-Q13, Q19	TRANSISTOR_MMBTA05 NPN SMT	10	345001
Q2-Q5, Q14-Q18	TRANSISTOR_MMBTA55 PNP SMT	9	345002
Z1	DIODE_6.2V1W_ZENER	1	350013
D27	DIODE_1N4002W RECTIFYING 1AMP SMT	1	355001
Z2-Z5	DIODE_5.1V_SMT ZENER_C5V1	4	355002
D1-D5, D8, D9, D11, D13, D15, D17-D26	DIODE_1N4148 FAST SWITCHING SMT	20	355003
D6, D7, D10, D12, D14, D16	DIODE_SS14 SCHOTTKY SMT	6	355004

Stereo Line Input (switch card)

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PART LISTS

SISW-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C156, C157	CAPACITOR_10µF 50V ELECTROLYTIC SMT	2	405001
C141, C142	CAPACITOR_22µF 25V ELECTROLYTIC SMT	2	405002
C127, C148, C149, C152, C175	CAPACITOR_100µF 25V ELECTROLYTIC SMT	6	405003
C93, C95, C120	CAPACITOR_330µF 25V ELECTROLYTIC SMT	3	405004
C6, C15, C27, C28, C33, C91, C118, C119, C143, C144, C150, C153, C162, C163, C165, C172	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	16	405005
C13, C14, C31, C37, C64, C94	CAPACITOR_33pF 100V CERAMIC SMT	6	415002
C145, C146	CAPACITOR_68pF 100V CERAMIC SMT	2	415003
C3, C97, C139, C140, C154	CAPACITOR_.001µF 50V CERAMIC SMT	5	415005
C17, C19, C38, C41, C67, C69, C71, C73, C75, C77, C79, C81, C83, C85, C87, C99, C101, C103, C105, C107, C109, C111, C113, C115, C122, C124, C126, C129, C131, C133, C135, C169, C179	CAPACITOR_.01µF 50V CERAMIC SMT	33	415006
C1, C7, C8, C11, C12, C16, C18, C30, C32, C34-C36, C39, C40, C65, C66, C68, C70, C72, C74, C76, C78, C80, C82, C84, C86, C88, C89, C96, C98, C100, C102, C104, C106, C108, C110, C112, C114, C121, C123, C125, C128, C130, C132, C134, C136-C138, C151, C155, C158-C161, C164, C168, C170-C174, C176-C178, C180	CAPACITOR_.1µF 50V CERAMIC SMT	64	415007
C2, C4, C5, C9, C10, C20-C26, C29, C42-C63, C90, C92, C116, C117, C166, C167	CAPACITOR_.22µF 50V CERAMIC SMT	41	415009
R182-R197, R214-R221, R234-R241, R345, J4, J6, J11	RESISTOR_3.3 _SMT_1206	36	435001
R222, R300, R309	RESISTOR_10 _SMT_1206	3	435002
R266, R267	RESISTOR_47 _SMT_1206	2	435005
R23, R89	RESISTOR_100 _SMT_1206	2	435007
R12, R15, R17, R57, R176, R311, R312	RESISTOR_220 _SMT_1206	7	435009
R5, R10, R11, R13, R19, R21, R45-R56, R60, R61, R65, R66, R75, R80, R83, R85, R103, R105, R108, R110, R113, R134, R154, R162, R167, R242, R244	RESISTOR_619 _SMT_1206	37	435013
R6, R59, R163, R172, R177, R199, R247, R287, R288, R307, R310, R313, R341	RESISTOR_1.00K_SMT_1206	13	435015
R301, R304, R308	RESISTOR_1.30K_SMT_1206	3	435016
R1, R2, R4, R8, R27, R29, R33, R34, R37, R39, R41-R43, R63, R64, R73, R77, R79, R81, R84, R100, R101, R104, R106, R109, R111, R112, R114-R116, R119, R120, R122-R126, R128-R130, R132, R133, R136, R138, R139, R141-R143, R145, R146, R148, R150-R152, R156-R159, R161, R165, R166, R173, R174, R204-R206, R209, R210, R230, R231, R292, R293, R305	RESISTOR_2.43K_SMT_1206	73	435020
R3, R7, R9, R16, R18, R20, R22, R24-R26, R28, R31, R32, R35, R36, R38, R40, R44, R58, R62, R70, R72, R74, R76, R78, R82, R86, R87, R96-R98, R102, R107, R117, R118, R121, R127, R131, R135, R137, R140, R144, R147, R149, R153, R155, R160, R164, R168-R171, R175, R202, R203, R208, R223-R229, R232, R233, R245, R246, R283, R284, R297, R299, R302, R303, R306, R339	RESISTOR_4.99K_SMT_1206	75	435023
R14, R67-R69, R71, R88, R90-R93, R99, R178-R181, R200, R207, R211-R213, R243, R253, R257, R268, R270-R273, R282, R285, R286, R290, R294, R295, R298, R326-R329, R338, R340	RESISTOR_10.0K_SMT_1206	41	435028
R344	RESISTOR_20.0K_SMT_1206	1	435034
R30, R249-R252, R254, R258-R264, R274-R281, R289, R291, R296, R314-R320, R324, R325, R330-R337	RESISTOR_40.2K_SMT_1206	41	435039
R95	RESISTOR_75.0K_SMT_1206	1	435042
R248, R321-R323, R342, R343	RESISTOR_88.7K_SMT_1206	6	435043
R198, R255, R256, R269	RESISTOR_100K_SMT_1206	4	435044
R94, R201, R265	RESISTOR_1.0M_SMT_1206	3	435049

Stereo Line Input (switch card)

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SISW-1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
SW1-30	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	30	510113
SW31-SW33	SWITCH_DIP_4_POS_SMT	3	515001
SW34-SW40	SWITCH_SLIDE_SMT	7	515003
SW1-SW7, SW10, SW25, SW27-SW30	BUTTON_LUMA_230_WHT	27	530083
SW8, SW9	BUTTON_LUMA_230_RE	2	530084
SW26	BUTTON_LUMA_230_YLW	1	530085
DS3, DS5	LED_RED_SMT	2	605004
DS7, DS8	LED_GREEN_SMT	2	605005
DS6, DS9, DS10	LED_YELLOW_SMT	3	605006
DS16, DS17	LED_R/A_RED_SMT_HI_INTENSITY	2	605008
DS4, DS12-DS15, DS19, DS21, DS23, DS25, DS27, DS29, DS31, DS33, DS34, DS37, DS38	LED_R/A_YLW_SMT_HI_INTENSITY	16	605009
DS1, DS2, DS18, DS20, DS22, DS24, DS26, DS28, DS30, DS32, DS35, DS36	LED_R/A_AMBER_SMT_HI_INTENSITY	12	605010
	PCB_SISW1000	1	700278
	NUT_PEM_SP8	5	821012

Stereo Line Input (switch card)

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SB - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	SB-1000 FACEPLATE	1	004620
CT1, CT2, CT3, CT4	CONN_BOARD-TO-BOARD_8 PIN_R/A	4	220069
U6	IC_74C922	1	300010
U4	IC_74HC00	1	300012
U5	IC_74HC02	1	300013
U10	IC_74HC04	1	300014
U13	IC_74HC138	1	300019
U7, U8	IC_74HC573	2	300032
U9	IC_74HC688	1	300034
U3	IC_74HC74	1	300035
SWICH PCB (SBS-1000): SW1-SW8	SWITCH_SINGLE POLE MOMENTARY	8	510109
SWICH PCB (SBS-1000): SW1-SW8	CAP_CLEAR FLAT TOP	8	530109
SWICH PCB (SBS-1000): SW1-SW8	LED_SWITCH_RED	8	600027
	PCB_SB1000	1	700281
	PCB_SBS1000	1	700283
	NUT_PEM_SP8	4	821012

Input Preselector (overbridge panel)

SB - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U5, U10	SOCKET_SMT_JS14_PIN	6	245002
U11- U13	SOCKET_SMT_JS16_PIN	3	245003
U6-U9	SOCKET_SMT_JS20_PIN	4	245004
Q2	REGULATOR_PQ05SZ1 5V 1A SMT	1	335001
U11, U12	LH1522AB DUAL FET OPTO COUPLER	4	340020
Q1	TRANSISTOR_MMBTA05 NPN SMT	1	345001
D37	DIODE_1N4002W RECTIFYING 1AMP SMT	1	355001
D1-D35, D38	DIODE_1N4148 FAST SWITCHING SMT	36	355003
D36	DIODE_SS14 SCHOTTKY SMT	1	355004
C15	CAPACITOR_22µF 25V ELECTROLYTIC SMT	1	405002
C12	CAPACITOR_100µF 25V ELECTROLYTIC SMT	1	405003
C7, C16	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	2	405005
C1-C6, C8-C11, C13, C14, C17	CAPACITOR_.1µF 50V CERAMIC SMT	13	415007
R11	RESISTOR_10 _SMT_1206	1	435002
R1-R8, R24	RESISTOR_220 _SMT_1206	9	435009
R20-R23, R25-R28	RESISTOR_619 _SMT_1206	8	435013
R10, R12-R19, R30-R32	RESISTOR_10.0K_SMT_1206	12	435028
R9	RESISTOR_40.2K_SMT_1206	1	435039
R29	RESISTOR_1.0M_SMT_1206	1	435049
SW1-SW10	SWITCH_DIP_4_POS _SMT	10	515001
	PCB_SB1000	1	700281
	NUT_PEM_SP8	2	821012
F1	FUSE_.3AMP_SMT_POLY SWITCH	1	835001

Input Preselector (printed circuit board)

SBC - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	SBC-1000 FACEPLATE	1	004621
	2 PIN LINK JUMPER	6	240000
U6	SOCKET_SMT_JS8_PIN	2	245001
U3, U4	SOCKET_SMT_JS20_PIN	2	245004
U2	SOCKET_SMT_PLCC_52PIN	1	245010
J1-J9	HEADER_STRIP_BREAKAWAY	1	250016
U4	IC_74HC245	1	300027
U3	IC_74HCT244	1	300037
U6	IC_75176	1	310004
U2	IC_MC68HC711E9FS	1	310028
U5	IC_34064_PS_MONITOR	1	310029
Q2	REGULATOR_PQ05SZ1_5V_1A_SMT	1	335001
U1	LH1522AB DUAL FET OPTO COUPLER	1	340020
Q1	TRANSISTOR_MMBTA55 PNP SMT	1	345002
D1, D2	DIODE_1N4002W RECTIFYING 1AMP SMT	2	355001
Y1	CRYSTAL_4.9152MHZ_SMT	1	375006
C16	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	1	405002
C13	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	1	405003
C1, C2	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	2	405004
C6-C9	CAPACITOR, 10pF 100V CERAMIC SMT	4	415001
C3-C5, C10-C12, C14, C15	CAPACITOR, .1µF 50V CERAMIC SMT	8	415007
R32	RESISTOR_100 _SMT_1206	1	435007
R33	RESISTOR_150 _SMT_1206	1	435008
R22	RESISTOR_1.00K_SMT_1206	1	435015
R23	RESISTOR_1.30K_SMT_1206	1	435016
R4, R13	RESISTOR_4.99K_SMT_1206	2	435023
R1-R3, R5-R12, R14, R16-R21, R24-R31	RESISTOR_10.0K_SMT_1206	26	435028
R15	RESISTOR_10M_SMT_1206	1	435050
	PCB_SBC1000	1	700282
	NUT_PEM_SP8	2	821012
F1	FUSE_3AMP_SMT_POLYSWITCH	1	835001

Input Preselectors (controller card)

(behind overbridge blank panel above PWR-1000 power interface module)

SUB - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	SUB-1000 FACEPLATE	1	004604
	DUAL DB-25 REAR PANEL - TV1000	1	004705
	LATCHING BLOCKS - .190	4	200011
CT4, CT13	CONN_R/A_PC_MT_25_PIN	2	220017
	PLUG_RIBBON_10_PIN	1	230020
	PLUG_6_PIN_JST	3	230031
MAIN PCB (SG-1000): U19	CONN_DIP_8_PIN	1	250010
	SOCKET_26_PIN_PLUG	14	250043
MAIN PCB (SG-1000): CT5-CT9, CT11, CT12 SWTCH PCB (SGSW-1000): CT1-CT6 CONFIDENCE FEED PCB (SGCF-1000): CT1	HEADER_3M_26_PIN_ST	14	250044
CONFIDENCE FEED PCB (SGCF-1000): CT3	HEADER_3_PIN_JST	1	250062
MAIN PCB (SG-1000): CT1-CT3	HEADER_6_PIN_JST	3	250065
SWITCH PCB (SGSW-1000): U3	IC_4066	1	300005
U69	IC_74HC00	1	300012
U68	IC_74HC32	1	300029
U70	Q74ABT125_TTL	1	300057
U35	Q74AC14_TTL	1	300059
U13, U16	IC_LM3915	2	320001
MAIN PCB (SG-1000): U18- U21, U36, U37, U42-U44 CONFIDENCE FEED PCB (SGCF-1000): U3, U4, U6	IC_2142 BALANCED LINE DRIVER	12	320004
MAIN PCB (SG-1000): U3, U22 SWTCH PCB (SGSW-1000): U4, U12, U13	IC_TL072 DUAL BIFET OP-AMP	5	320006
MAIN PCB (SG-1000): U31, U39 SWTCH PCB (SGSW-1000): U74	IC_NE5532 DUAL OP-AMP	3	320008
U47-U51	IC_NE5534 DUAL OP-AMP	5	320009
MAIN PCB (SG-1000): U1, U2, U12, U32-U34, U38, U40, U45, U46 CONFIDENCE FEED PCB (SGCF-1000): U5, U7	IC_OP-275	12	320014
MAIN PCB (SG-1000): U4-U11, U14, U15, U41	IC_OP-282	11	320015
MAIN PCB (SG-1000): U17, U23-U30, U52-U67 CONFIDENCE FEED PCB (SGCF-1000): U1, U2	IC_74VHC4053	27	380008

Stereo Submaster (module)

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SUB - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR3-CR6	POT_TRIM_15_TURN_10K	4	500014
CR15	BOURNS DUAL LINEAR, CDT	1	500056
CR1, CR2, CR7-CR14	BOURNS SINGLE AUDIO	10	500058
TALKBACK SWITCHES	SWITCH_LB_25_GRAY_GOLD	3	510063
MAIN PCB (SG-1000): SW1-SW6 SWITCH PCB (SGSW-1000): SW1-SW22	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	26	510113
ALL ROTARY CONTROL POTS	KNOB_BOTTOM_13M M_NO FLANGE	11	520054
TALKBACK SWITCHES	LENS_LB_WHT	3	530059
SWITCH PCB (SGSW-1000): SW3-SW20	BUTTON_LUMA_230_WHT	18	530083
MAIN PCB (SG-1000): SW1-SW6 SWITCH PCB (SGSW-1000): SW1, SW2	BUTTON_LUMA_230_RED	8	530084
MXM MASTER CONTROL, BAL CONTROL	CAP_SIFAM_PALE BLUE_13 MM	2	530107
AUX5-AUX8 CONTROLS	CAP_SIFAM_GREY/6_13 MM	4	530113
AUX MASTER CONTROL, AUX1-AUX4 CONTROLS	CAP_SIFAM_BLUE/9_13 MM	5	530114
TALKBACK SWITCHES	LED_ON/OFF_SWITCH_RED	3	600027
	PCB_SG1000	1	700285
	PCB_SGCF1000	1	700296
	PCB_SGSW1000G	1	700384
	NUT_PEM_SP8	5	821012
	SPACER_NYLON_15/16HEX_440	3	823043

Stereo Submaster (module)

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SG - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U12, U14, U15, U18-U22, U31-U34, U36-U51	SOCKET_SMT_JS8_PIN	39	245001
U35, U68, U69	SOCKET_SMT_JS14_PIN	3	245002
U17, U23-U30, U52-U67	SOCKET_SMT_JS16_PIN	25	245003
U13, U16	SOCKET_SMT_JS20_PIN	2	245004
CT5-CT9, CT11, CT12	HEADER_3M_26_PIN_ST	7	250044
CT1-CT3, CT10	HEADER_6_PIN_JST	4	250065
U69	IC_74HC00	1	300012
U68	IC_74HC32	1	300029
U70	Q74ABT125_TTL	1	300057
U35	Q74AC14_TTL	1	300059
U13, U16	IC_LM3915	2	320001
U18-U21, U36, U37, U42-U44	IC_2142 BALANCED LINE DRIVER IC	9	320004
U3, U22	IC_TL072 DUAL BIFET OP-AMP	2	320006
U31, U39	IC_NE5532 DUAL OP-AMP	2	320008
U47-U51	IC_NE5534 DUAL OP-AMP	5	320009
U1, U2, U12, U32-U34, U38, U40, U45, U46	IC_OP-275	10	320014
U4-U11, U14, U15, U41	IC_OP-282	11	320015
U71	REGULATOR_PQ05SZ1 5V 1A SMT T/R	1	335001
Q1, Q2	TRANSISTOR_MMBTA05 NPN SMT	2	345001
Z1, Z2	DIODE_5.1V SMT ZENER	2	355002
D1-D20	DIODE_1N4148 FAST SWITCHING SMT	20	355003
D21, D22	DIODE_SS14 SCHOTTKY SMT	2	355004
U17, U23-U30, U52-U67	IC_74VHC4053	25	380008

Stereo Submaster (main card)

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SG - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C4, C6, C8, C10, C12, C14, C16, C18, C20, C22, C98, C99, C107, C127, C128, C222, C236	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	17	405002
C3, C5, C7, C9, C11, C13, C15, C17, C19, C21, C24, C27, C42-C45, C59, C64, C67, C69, C72, C74, C77, C79, C82, C90, C100, C126, C147, C163, C164, C167, C188-C192, C195-C197, C237	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	41	405003
C2, C94-C97, C116, C117, C161, C162, C198-C202, C216, C217	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	16	405004
C48, C49, C53, C54, C56, C57, C101, C139-C144, C213-C215, C225, C231, C232	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	19	405005
C23, C26, C30, C32, C33, C35, C36, C38, C39, C41, C47, C51, C52, C55, C58, C63, C66, C68, C71, C73, C76, C78, C81, C83, C85, C86, C109, C110, C112, C114, C129, C131-C133, C137, C146, C148, C149, C159, C165, C168, C169, C184-C187, C193, C194	CAPACITOR, 10pF 100V CERAMIC SMT	48	415001
C29, C61, C106, C124, C203, C204, C207-C212, C224, C229	CAPACITOR, 33pF 100V CERAMIC SMT	14	415002
C91, C93, C102, C104, C118, C119, C122, C123, C134, C136, C156, C158, C174, C175, C178-C181	CAPACITOR, 68pF 100V CERAMIC SMT	18	415003
C155, C218-C221, C227, C228	CAPACITOR, .001µF 50V CERAMIC SMT	7	415005
C153, C171	CAPACITOR, .01µF 50V CERAMIC SMT	2	415006
C1, C25, C28, C31, C34, C37, C40, C46, C50, C60, C62, C65, C70, C75, C80, C84, C87, C92, C103, C105, C108, C111, C113, C115, C120, C121, C125, C130, C135, C138, C145, C150, C152, C154, C157, C160, C166, C170, C172, C176, C177, C182, C183, C205, C206, C223, C226, C230, C233-C235, C238	CAPACITOR, .1µF 50V CERAMIC SMT	52	415007
C88, C89, C151, C173	CAPACITOR, .22µF 50V CERAMIC SMT	4	415009
R302	RESISTOR_4.99K_PRECISION	1	430137
R118, R120, R122	RESISTOR_100 _CARBON	3	430212
R289, R292	RESISTOR_10 _SMT_1206	2	435002
R11-R16, R27-R32, R228, R230, R232, R234	RESISTOR_100 _SMT_1206	16	435007
R119, R121, R123, R236	RESISTOR_220 _SMT_1206	4	435009
R1, R2, R5-R10, R23-R26, R35, R36	RESISTOR_619 _SMT_1206	14	435013
R19, R22, R41, R46, R108, R113, R126, R131, R146, R150	RESISTOR_1.00K_SMT_1206	10	435015
R311, R312	RESISTOR_1.30K_SMT_1206	2	435016
R18, R34	RESISTOR_1.69K_SMT_1206	2	435017
R3, R4, R72, R73, R100, R141-R143, R190, R204	RESISTOR_2.43K_SMT_1206	10	435020
R17, R33	RESISTOR_3.32K_SMT_1206	2	435021
R37, R40, R42, R45, R47, R48, R50, R52, R54, R56, R58, R60, R62, R74, R77, R101, R103, R105, R107, R111, R112, R115, R116, R125, R127, R130, R132, R136, R144, R145, R149, R151-R155, R162, R164, R167, R170-R188, R192, R193, R207, R208, R218, R220, R229, R231, R233, R235, R238-R281, R286, R290, R291, R293, R294, R296-R299	RESISTOR_4.99K_SMT_1206	121	435023

Stereo Submaster (main card)

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SG - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R38, R49, R51, R53, R55, R57, R59, R61, R63, R64, R76, R95, R133-R135, R137-R140, R159-R161, R163, R165, R166, R168, R169, R191, R194, R200, R201, R203, R206, R209, R215, R216, R219, R221, R222, R224-R227, R237, R283, R284, R288, R301, R303-R310	RESISTOR_10.0K_SMT_1206	56	435028
R65, R94	RESISTOR_15.0K_SMT_1206	2	435032
R66, R68-R70, R97, R99	RESISTOR_16.5K_SMT_1206	6	435033
R67, R71, R202, R217, R223	RESISTOR_20.0K_SMT_1206	5	435034
R96, R98	RESISTOR_33.2K_SMT_1206	2	435038
R39, R43, R44, R75, R78-R93, R102, R104, R106, R109, R110, R124, R128, R129, R147, R148, R156, R189, R195, R205, R210, R213, R214, R285, R287, R295, R300	RESISTOR_40.2K_SMT_1206	41	435039
R114, R117, R157, R158, R282	RESISTOR_88.7K_SMT_1206	5	435043
R20, R21	RESISTOR_100K_SMT_1206	2	435044
R196-R199, R211, R212	RESISTOR_221K_SMT_1206	6	435046
CR16, CR17	POT_TRIM_HOR_1K_SMT	2	505001
CR18, CR19	POT_TRIM_HOR_10K_SMT	2	505002
CR20-CR23	POT_TRIM_HOR_50K_SMT	4	505003
SW1-SW6	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	6	510113
SW16	SWITCH_DIP_4_POS_SMT	1	515001
SW7-SW15	SWITCH_SLIDE_SMT	9	515003
SW1-SW6	BUTTON_LUMA_230_RED	6	530084
DS5, DS6, DS15, DS16	LED_RED_SMT	4	605004
DS9-DS14, DS19-DS24	LED_GREEN_SMT	12	605005
DS7, DS8, DS17, DS18	LED_YELLOW_SMT	4	605006
DS1-DS4, DS25, DS26	LED_R/A_RED_SMT_HI_INTENSITY	6	605008
	PCB_SG1000	1	700285
	NUT_PEM_SP8	5	821012
F1-F10	FUSE_3AMP_SMT_POLYSWITCH	10	835001

Stereo Submaster (main card)

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PART LISTS

SGSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U4, U12, U13, U74	SOCKET_SMT_JS8_PIN	4	245001
U3	SOCKET_SMT_JS14_PIN	1	245002
U63, U73	SOCKET_SMT_JS16_PIN	1	245003
U55, U71, U72	SOCKET_SMT_JS20_PIN	3	245004
CT1-CT6	HEADER_3M_26_PIN_ST	6	250044
U3	IC_4066	1	300005
U39, U41, U46, U50, U52, U54, U58, U60, U61	IC_74ABT244_TTL_SMT	9	305002
U1, U18, U29	IC_74ACT00_TTL_SMT	3	305004
U16, U48, U64, U65	IC_74ACT08_TTL_SMT	4	305006
U14, U19, U22, U24, U25, U27, U31, U35, U43, U47, U75	IC_74ACT32_TTL_SMT	11	305010
U40, U44, U45, U49, U51, U53, U57, U59	IC_74HC373_TTL_SMT	8	305011
U2, U5-U8, U10, U11, U15	IC_74ACT74_TTL_SMT	8	305021
U9, U17, U20, U21, U23, U26, U28, U30, U32-U34, U37	IC_74AC14_TTL_SMT	12	305027
U36, U42, U66-U70	IC_74ACT02_TTL_SMT	7	305040
U62	IC_74HC123_TTL_SMT	1	305045
U63, U73	IC_74ACT138_TTL_SMT	2	305049
U55, U71, U72	IC_74ACT521_TTL_SMT	3	305050
U56	IC_ADC0804_SMT	1	315009
U38	IC_DAC0808_SMT	1	315014
U4, U12, U13	IC_TL072	3	320006
U74	IC_NE5532 DUAL OP-AMP	1	320008
Q19	REGULATOR_7812 POSITIVE 12V	1	330002
Q20	REGULATOR_7912 NEGATIVE 12 V	1	330007
Q21, Q22	REGULATOR_PQ05SZ1 5V 1A SMT T/R	2	335001
Q1, Q6-Q13, Q18, Q23	TRANSISTOR_MMBTA05 NPN SMT	11	345001
Q2-Q5, Q14-Q17	TRANSISTOR_MMBTA55 PNP SMT	8	345002
Z1	DIODE_6.2V1W_ZENER	1	350013
Z2-Z5	DIODE_5.1V_ZENER_SMT	4	355002
D1-D9, D12, D13, D15, D17, D29, D30	DIODE_1N4148 FAST SWITCHING SMT	15	355003
D10, D11, D14, D16, D18-D28, D31-D40	DIODE_SS14 SCHOTTKY SMT	25	355004

Stereo Submaster (switch card)

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SGSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C131, C132	CAPACITOR_22µF 25V ELECTROLYTIC SMT	2	405002
C115, C137-C139, C141, C152	CAPACITOR_100µF 25V ELECTROLYTIC SMT	6	405003
C49, C81, C83, C108	CAPACITOR_330µF 25V ELECTROLYTIC SMT	4	405004
C1, C19, C28, C31, C32, C79, C106, C107, C133, C134, C145, C147	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	12	405005
C4, C5, C17, C23, C51, C82	CAPACITOR_33pF 100V CERAMIC SMT	6	415002
C135, C136	CAPACITOR_68pF 100V CERAMIC SMT	2	415003
C85, C129, C130, C142	CAPACITOR_.001µF 50V CERAMIC SMT	4	415005
C22, C26, C30, C55, C57, C59, C61, C63, C65, C67, C69, C71, C73, C75, C77, C86, C88, C90, C92, C94, C96, C98, C100, C102, C111, C113, C117, C119, C121, C123, C125	CAPACITOR_.01µF 50V CERAMIC SMT	31	415006
C2, C3, C6, C7, C13, C16, C18, C20, C21, C24, C25, C27, C29, C52-C54, C56, C58, C60, C62, C64, C66, C68, C70, C72, C74, C76, C84, C87, C89, C91, C93, C95, C97, C99, C101, C103, C109, C110, C112, C114, C116, C118, C120, C122, C124, C126-C128, C140, C143, C144, C146, C150, C151, C153, C154	CAPACITOR_.1µF 50V CERAMIC SMT	57	415007
C8-C12, C14, C15, C33-C48, C50, C78, C80, C104, C105, C148, C149	CAPACITOR_.22µF 50V CERAMIC SMT	30	415009
R21-R25	RESISTOR_630 _CARBON	5	430218
R135-R150, R169-R176, R202-R209	RESISTOR_3.3 _SMT_1206	32	435001
R177, R260, R285	RESISTOR_10 _SMT_1206	3	435002
R183, R185, R187, R189, R191, R193, R195, R197, R199, R201	RESISTOR_39 _SMT_1206	10	435004
R227, R228	RESISTOR_47 _SMT_1206	2	435005
R67	RESISTOR_100 _SMT_1206	1	435007
R1, R11-R20, R47, R52, R55, R57, R61, R65, R79, R100, R120, R128, R210, R212	RESISTOR_619 _SMT_1206	23	435013
R2, R32-R46, R152, R241, R253, R267	RESISTOR_1.00K_SMT_1206	20	435015
R3, R5, R7-R9, R49, R51, R53, R56, R63, R64, R76, R78, R80-R82, R85, R86, R88-R92, R94-R96, R98, R99, R102, R104, R105, R107- R109, R111, R112, R114, R116-R118, R122-R125, R127, R130, R131, R156-R159, R161-R163, R257, R258	RESISTOR_2.43K_SMT_1206	56	435020
R4, R6, R10, R31, R48, R50, R54, R58, R59, R62, R74, R77, R83, R84, R87, R93, R97, R101, R103, R106, R110, R113, R115, R119, R121, R126, R129, R155, R160, R164, R178-R181, R213, R214, R219, R245, R247, R252, R261, R262, R286, R287	RESISTOR_4.99K_SMT_1206	44	435023
R26-R30, R66, R68-R71, R75, R132-R134, R153, R165-R168, R182, R184, R186, R188, R190, R192, R194, R196, R198, R200, R211, R220, R224, R229, R231-R234, R244, R246, R248-R251, R259, R263-R266, R273-R276	RESISTOR_10.0K_SMT_1206	52	435028
R60, R216-R218, R221, R225, R235-R240, R242, R243, R254-R256, R271, R272, R277-R284	RESISTOR_40.2K_SMT_1206	27	435039
R73	RESISTOR_75.0K_SMT_1206	1	435042
R215, R268-R270	RESISTOR_88.7K_SMT_1206	4	435043
R151, R222, R223, R230	RESISTOR_100K_SMT_1206	4	435044
R72, R154, R226	RESISTOR_1.0M_SMT_1206	3	435049

Stereo Submaster (switch card)

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SGSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
SW1-SW20	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	20	510113
SW23-SW25, SW31-SW35	SWITCH_DIP_4_POS _SMT	8	515001
SW26-SW30	SWITCH_SLIDE _SMT	5	515003
SW3-SW20	BUTTON_LUMA_230_WHT	18	530083
SW1, SW2	BUTTON_LUMA_230_RED	2	530084
DS3	LED_RED_SMT	1	605004
DS1, DS2, DS4-DS20	LED_R/A_RED_SMT_HI_INTENSITY	19	605008
DS22, DS24, DS26, DS28, DS30, DS32, DS34, DS36-DS38	LED_R/A_YLW_SMT_HI_INTENSITY	10	605009
DS21, DS23, DS25, DS27, DS29, DS31, DS33, DS35	LED_R/A_AMBER_SMT_HI_INTENSITY	8	605010
	PCB_SGSW1000G	1	700384
	NUT_PEM_SP8	6	821012

Stereo Submaster (switch card)

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SGCF - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PLUG_RIBBON_10_PIN	1	230020
U3-U7	SOCKET_SMT_JS8_PIN	5	245001
U1, U2	SOCKET_SMT_JS16_PIN	2	245003
CT1	HEADER_3M_26_PIN_ST	1	250044
CT3	HEADER_3_PIN_JST	1	250062
CT2	HEADER_10_PIN_ST	1	250077
U3, U4, U6	IC_2142	3	320004
U5, U7	IC_OP-275	2	320014
Z1, Z2	DIODE_5.1V_ZENER_SMT	2	355002
D1, D2	DIODE_1N4148 FAST SWITCHING SMT	2	355003
U1, U2	IC_74VHC4053	2	380008
C3, C4, C11, C12	CAPACITOR_22µF 25V ELECTROLYTIC SMT	4	405002
C1, C2, C8-C10, C13, C29	CAPACITOR_100µF 25V ELECTROLYTIC SMT	7	405003
C7	CAPACITOR_1µF 35V ELECTROLYTIC SMT	1	405005
C20, C21, C24-C26	CAPACITOR_10pF 100V CERAMIC SMT	5	415001
C5, C6, C14, C15, C18, C19	CAPACITOR_68pF 100V CERAMIC SMT	6	415003
C27, C28	CAPACITOR_001µF 50V CERAMIC SMT	2	415005
C16, C17, C22, C23	CAPACITOR_1µF 50V CERAMIC SMT	4	415007
R9, R10	RESISTOR_2.43K_SMT_1206	2	435020
R1, R2, R4, R6-R8, R11, R12, R15, R16, R18-R20	RESISTOR_4.99K_SMT_1206	16	435023
R21, R22	RESISTOR_10.0K_SMT_1206	2	435028
R3, R5, R13, R14, R17, R23, R24	RESISTOR_40.2K_SMT_1206	7	435039
	PCB_SGCF1000	1	700296

Stereo Submaster (confidence feed card)

SUB - 1000 FADER PANEL			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	SUBMASTER FADER FACEPLATE	1	004614
CT3	PLUG_6_PIN_JST	1	230031
CT5	PLUG_9_PIN_JST	1	230032
MAIN PCB: CT1 SWITCH PCB: CT1	PLUG_RIBBON_14_PIN	2	250034
CT3	HEADER_6_PIN_JST	1	250065
CT5	HEADER_9_PIN_JST	1	250066
MAIN PCB: CT1 SWITCH PCB: CT1	HEADER_14_PIN_TV1000	2	250073
U2	IC_LM3915	1	320001
U16-U19	IC_OP-275	4	320014
U1	IC_OP-282	1	320015
CHANNEL "ON" SWITCH	SWITCH_LB_25_GRAY_GOLD	1	510063
MAIN PCB: SW5-SW12 SWITCH PCB: SW1-SW4	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	16	510113
	KNOB_FDR_3000_BLUE	1	520002
CHANNEL "ON" SWITCH LENS	LENS_LB_WHITE	1	530059
MAIN PCB: SW5-SW12	BUTTON_LUMA_230_WHT	10	530083
SWITCH PCB: SW1-SW4	BUTTON_LUMA_230_YLW	4	530085
	FADER_P&G_3222_MOUNTING HOLE	1	540021
CHANNEL "ON" SWITCH	LED_ON/OFF_SWITCH_RED	1	600027
	PCB_FPI1000	1	700265
	PCB_FPSW1000	1	700294
	NUT_PEM_SP8	5	821012

Stereo Submaster (fader panel)

FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1, U16-U19	SOCKET_SMT_JS8_PIN	5	245001
CT2, CT7	HEADER_3_PIN_JST	2	250062
CT3	HEADER_6_PIN_JST	1	250065
CT5	HEADER_9_PIN_JST	1	250066
CT1	HEADER_14_PIN_TV1000	2	250073
U8	IC_74ACT08 TTL SMT	1	305006
U5	IC_74ACT32 TTL SMT	1	305010
U3, U4, U6, U7, U9, U10	IC_74AC14 TTL SMT	6	305027
U2	IC_LM3915	1	320001
U16-U19	IC_OP-275	4	320014
U1	IC_OP-282	1	320015
Q4	REGULATOR_PQ05SZ1_5V_1A_SMT	1	335001
Q3	TRANSISTOR_MMBTA05 NPN SMT	1	345001
Q1, Q2	TRANSISTOR_MMBTA55 PNP SMT	2	345002
Z1, Z2	DIODE_5.1V_ZENER_SMT	2	355002
D4-D7, D12, D13	DIODE_1N4148 FAST SWITCHING SMT	7	355003
D1, D2, D8-D10	DIODE_SS14 SCHOTTKY SMT	6	355004
U11-U15	IC_74VHC4053 SMT	5	385001
C10, C32-C35, C39, C46, C52, C54, C57	CAPACITOR_22μF 25V ELECTROLYTIC SMT	10	405002
C37, C42, C53, C58, C59	CAPACITOR_100μF 25V ELECTROLYTIC SMT	5	405003
C4, C12, C36, C41, C43, C44	CAPACITOR_1μF 35V ELECTROLYTIC SMT TANTALUM	6	405005
C1, C3, C45, C48, C49, C51, C60, C63, C64	CAPACITOR_10pF 100V CERAMIC SMT	9	415001
C61	CAPACITOR_33pF 100V CERAMIC SMT	1	415002
C2, C5-C9, C11, C13-C31, C40, C47, C50, C55, C56, C62, C65	CAPACITOR_1μF 50V CERAMIC SMT	33	415007
C38	CAPACITOR_22μF 50V CERAMIC SMT	1	415009

Stereo Submaster (fader panel main card)

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FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J1, J2	RESISTOR_3.3 _SMT_1206	2	435001
R99	RESISTOR_10 _SMT_1206	1	435002
R47-R50, R53, R68, R69, R186	RESISTOR_100 _SMT_1206	8	435007
R103	RESISTOR_220 _SMT_1206	1	435009
R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R30, R31, R33, R35, R44-R46, R59	RESISTOR_619 _SMT_1206	20	435013
R63	RESISTOR_1.00K_SMT_1206	1	435015
R2	RESISTOR_1.69K_SMT_1206	1	435017
R4, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R29, R32, R34, R36, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96	RESISTOR_2.43K_SMT_1206	32	435020
R1	RESISTOR_3.32K_SMT_1206	1	435021
R6, R8, R51, R52, R62, R65-R67, R71, R73, R75, R77, R79, R81, R83, R85, R87, R89, R91, R93, R95, R97, R98, R102, R104-R112, R115, R180, R183	RESISTOR_4.99K_SMT_1206	37	435023
R37, R39, R54, R55, R113, R114, R117, R118, R150-R153	RESISTOR_10.0K_SMT_1206	12	435028
R38, R40, R43, R56-R58, R60, R61, R119, R120	RESISTOR_20.0K_SMT_1206	10	435034
R122, R185	RESISTOR_22.1K_SMT_1206	2	435036
R3, R41, R42, R116, R125-R149, R154-R179, R181, R182	RESISTOR_40.2K_SMT_1206	57	435039
R121, R184	RESISTOR_88.7K_SMT_1206	2	435043
R64	RESISTOR_100K_SMT_1206	1	435044
CR1	POT_TRIM_HOR_1K_SMT	1	505001
SW1-SW12	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	12	510113
SW17-SW20	SWITCH_SLIDE _SMT	4	515003
	LED_ON/OFF_SWITCH_RED	1	600027
DS1	LED_RED_SMT	1	605004
DS4-DS7, DS12	LED_GREEN_SMT	5	605005
DS2, DS3, DS21	LED_YELLOW_SMT	3	605006
DS8, DS9	LED_R/A_RED_SMT_HI_INTENSITY	1	605008
DS10, DS22-DS25	LED_R/A_YLW_SMT_HI_INTENSITY	5	605009
DS11, DS13-DS20	LED_R/A_AMBER_SMT_HI_INTENSITY	10	605010
	PCB_FPI1000	1	700265
	NUT_PEM_SP8	5	821012
F1-F3	FUSE_3AMP_SMT_POLYSWITCH	3	835001

Stereo Submaster (fader panel main card)

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FPSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PLUG_RIBBON_14_PIN	2	250034
CT1	HEADER_14_PIN_TV1000	2	250073
R1-R5	RESISTOR_10 _SMT_1206	5	435002
SW1-SW4	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	4	510113
SW1-SW4	BUTTON_LUMA_230_YLW	5	530085
DS5	LED_YELLOW_SMT	1	605006
DS1-DS4	LED_R/A_YLW_SMT_HI_INTENSITY	4	605009
	PCB_FPSW1000	1	700294
	NUT_PEM_SP8	2	821012

Stereo Submaster (fader panel switch card)

MSTR - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	MSTR-1000 FACEPLATE	1	004605
	DUAL DB-25 REAR PANEL - TV1000	1	004705
	LATCHING BLOCKS - .190	4	200011
CT4, CT13	CONN_R/A_PC_MT_25_PIN	2	220017
	SOCKET_26_PIN_PLUG	14	250043
MAIN PCB (SG-1000): CT5-CT9, CT11, CT12 SWTCH PCB (SGSW-1000): CT1-CT6 CONFIDENCE FEED PCB (SGCF-1000): CT1	HEADER_3M_26_PIN_ST	14	250044
CONFIDENCE FEED PCB (SGCF-1000): CT3	HEADER_3_PIN_JST	1	250062
U69	IC_74HC00	1	300012
U68	IC_74HC32	1	300029
U70	IC_74ABT125_TTL	1	300057
U35	IC_74AC14_TTL	1	300059
MAIN PCB (SG-1000): U20, U21, U36, U37, U42, U43 CONFIDENCE FEED PCB (SGCF-1000): U3, U4	IC_2142 BALANCED LINE DRIVER	8	320004
U3, U22	IC_TL072 DUAL BIFET OP-AMP	2	320006
U31, U39	IC_NE5532 DUAL OP-AMP	2	320008
U47-U50	IC_NE5534 DUAL OP-AMP	4	320009
MAIN PCB (SG-1000): U12, U32-U34, U40, U45 CONFIDENCE FEED PCB (SGCF-1000): U5, U7	IC_OP-275	8	320014
MAIN PCB (SG-1000): U4-U11, U41	IC_OP-282	9	320015
MAIN PCB (SG-1000): U23-U30, U52-U67 CONFIDENCE FEED PCB (SGCF-1000): U1, U2	IC_74VHC4053	26	380008

Stereo Master (module)

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MSTR - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR5, CR6	POT_TRIM_15_TURN_10K	2	500014
CR15	BOURNS DUAL LINEAR, CDT	1	500056
CR7-CR14	BOURNS SINGLE AUDIO	8	500058
MAIN PCB (SG-1000): SW3, SW5, SW6 SWITCH PCB (SGSW-1000): SW2-SW18	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	20	510113
ALL ROTARY CONTROL POTS	KNOB_BOTTOM_13M M_NO FLANGE	11	520054
SWITCH PCB (SGSW-1000): SW3-SW18	BUTTON_LUMA_230_WHT	16	530083
MAIN PCB (SG-1000): SW3, SW5, SW6 SWITCH PCB (SGSW-1000): SW2	BUTTON_LUMA_230_RED	4	530084
BAL CONTROL	CAP_SIFAM_PALE BLUE_13 MM	1	530107
AUX5-AUX8 CONTROLS	CAP_SIFAM_GREY/6_13 MM	4	530113
AUX1-AUX4 CONTROLS	CAP_SIFAM_BLUE/9_13 MM	4	530114
	PCB_SG1000	1	700285
	PCB_SGCF1000	1	700296
	PCB_SGSW1000G	1	700384
	NUT_PEM_SP8	5	821012
	SPACER_NYLON_15/16HEX_440	3	823043

Stereo Master (module)

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SG - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U12, U14, U15, U18-U22, U31-U34, U36-U51	SOCKET_SMT_JS8_PIN	39	245001
U35, U68, U69	SOCKET_SMT_JS14_PIN	3	245002
U17, U23-U30, U52-U67	SOCKET_SMT_JS16_PIN	25	245003
U13, U16	SOCKET_SMT_JS20_PIN	2	245004
CT5-CT9, CT11, CT12	HEADER_3M_26_PIN_ST	7	250044
U69	IC_74HC00	1	300012
U68	IC_74HC32	1	300029
U70	IC_74ABT125_TTL	1	300057
U35	IC_74AC14_TTL	1	300059
U20, U21, U36, U37, U42, U43	IC_2142 BALANCED LINE DRIVER IC	6	320004
U3, U22	IC_TL072 DUAL BIFET OP-AMP	2	320006
U31, U39	IC_NE5532 DUAL OP-AMP	2	320008
U47-U50	IC_NE5534 DUAL OP-AMP	4	320009
U12, U32-U34, U45, U46	IC_OP-275	6	320014
U4-U11, U41	IC_OP-282	9	320015
U71	REGULATOR_PQ05SZ1 5V 1A SMT T/R	1	335001
Q1, Q2	TRANSISTOR_MMBTA05 NPN SMT	2	345001
Z1, Z2	DIODE_5.1V SMT ZENER	2	355002
D1-D20	DIODE_1N4148 FAST SWITCHING SMT	20	355003
D21, D22	DIODE_SS14 SCHOTTKY SMT	2	355004
U23-U30, U52-U67	IC_74VHC4053	24	380008

Stereo Master (main card)

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SG - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C4, C6, C8, C10, C12, C14, C16, C18, C20, C22, C98, C99, C107, C127, C128, C222, C236	CAPACITOR, 22 μ F 25V ELECTROLYTIC SMT	17	405002
C3, C5, C7, C9, C11, C13, C15, C17, C19, C21, C24, C27, C42-C45, C59, C64, C67, C69, C72, C74, C77, C79, C82, C90, C100, C126, C147, C163, C164, C167, C188-C192, C195-C197, C237	CAPACITOR, 100 μ F 25V ELECTROLYTIC SMT	41	405003
C2, C94-C97, C116, C117, C161, C162, C198-C202, C216, C217	CAPACITOR, 330 μ F 25V ELECTROLYTIC SMT	16	405004
C48, C49, C53, C54, C56, C57, C101, C139-C144, C213-C215, C225, C231, C232	CAPACITOR, 1 μ F 35V ELECTROLYTIC SMT TANTALUM	19	405005
C23, C26, C30, C32, C33, C35, C36, C38, C39, C41, C47, C51, C52, C55, C58, C63, C66, C68, C71, C73, C76, C78, C81, C83, C85, C86, C109, C110, C112, C114, C129, C131-C133, C137, C146, C148, C149, C159, C165, C168, C169, C184-C187, C193, C194	CAPACITOR, 10pF 100V CERAMIC SMT	48	415001
C29, C61, C106, C124, C203, C204, C207-C212, C224, C229	CAPACITOR, 33pF 100V CERAMIC SMT	14	415002
C91, C93, C102, C104, C118, C119, C122, C123, C134, C136, C156, C158, C174, C175, C178-C181	CAPACITOR, 68pF 100V CERAMIC SMT	18	415003
C155, C218-C221, C227, C228	CAPACITOR, .001 μ F 50V CERAMIC SMT	7	415005
C153, C171	CAPACITOR, .01 μ F 50V CERAMIC SMT	2	415006
C1, C25, C28, C31, C34, C37, C40, C46, C50, C60, C62, C65, C70, C75, C80, C84, C87, C92, C103, C105, C108, C111, C113, C115, C120, C121, C125, C130, C135, C138, C145, C150, C152, C154, C157, C160, C166, C170, C172, C176, C177, C182, C183, C205, C206, C223, C226, C230, C233-C235, C238	CAPACITOR, .1 μ F 50V CERAMIC SMT	52	415007
C88, C89, C151, C173	CAPACITOR, .22 μ F 50V CERAMIC SMT	4	415009
R289, R292	RESISTOR_10 _SMT_1206	2	435002
R11-R16, R27-R32, R228, R230, R232, R234	RESISTOR_100 _SMT_1206	16	435007
R119, R121, R123, R236	RESISTOR_220 _SMT_1206	4	435009
R1, R2, R5-R10, R23-R26, R35, R36	RESISTOR_619 _SMT_1206	14	435013
R19, R22, R41, R46, R108, R113, R126, R131, R146, R150	RESISTOR_1.00K_SMT_1206	10	435015
R311, R312	RESISTOR_1.30K_SMT_1206	2	435016
R18, R34	RESISTOR_1.69K_SMT_1206	2	435017
R3, R4, R72, R73, R100, R141-R143, R190, R204	RESISTOR_2.43K_SMT_1206	10	435020
R17, R33	RESISTOR_3.32K_SMT_1206	2	435021

Stereo Master (main card)

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SG - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R37, R40, R42, R45, R47, R48, R50, R52, R54, R56, R58, R60, R62, R74, R77, R101, R103, R105, R107, R111, R112, R115, R116, R125, R127, R130, R132, R136, R144, R145, R149, R151-R155, R162, R164, R167, R170-R188, R192, R193, R207, R208, R218, R220, R229, R231, R233, R235, R238-R281, R286, R290, R291, R293, R294, R296-R299	RESISTOR_4.99K_SMT_1206	121	435023
R38, R49, R51, R53, R55, R57, R59, R61, R63, R64, R76, R95, R133-R135, R137-R140, R159-R161, R163, R165, R166, R168, R169, R191, R194, R200, R201, R203, R206, R209, R215, R216, R219, R221, R222, R224-R227, R237, R283, R284, R288, R301, R303-R310	RESISTOR_10.0K_SMT_1206	56	435028
R65, R94	RESISTOR_15.0K_SMT_1206	2	435032
R66, R68-R70, R97, R99	RESISTOR_16.5K_SMT_1206	6	435033
R67, R71, R202, R217, R223	RESISTOR_20.0K_SMT_1206	5	435034
R39, R43, R44, R75, R78-R93, R102, R104, R106, R109, R110, R124, R128, R129, R147, R148, R156, R189, R195, R205, R210, R213, R214, R285, R287, R295, R300	RESISTOR_40.2K_SMT_1206	41	435039
R114, R117, R157, R158, R282	RESISTOR_88.7K_SMT_1206	5	435043
R20, R21	RESISTOR_100K_SMT_1206	2	435044
R196-R199, R211, R212	RESISTOR_221K_SMT_1206	6	435046
CR16, CR17	POT_TRIM_HOR_1K_SMT	2	505001
CR18, CR19	POT_TRIM_HOR_10K_SMT	2	505002
CR20-CR23	POT_TRIM_HOR_50K_SMT	4	505003
SW3, SW5, SW6	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	3	510113
SW16	SWITCH_DIP_4_POS_SMT	1	515001
SW7-SW15	SWITCH_SLIDE_SMT	9	515003
SW3, SW5, SW6	BUTTON_LUMA_230_RED	3	530084
DS1-DS4, DS25, DS26	LED_R/A_RED_SMT_HI_INTENSITY	6	605008
	PCB_SG1000	1	700285
	NUT_PEM_SP8	5	821012
F1-F10	FUSE_3AMP_SMT_POLYSWITCH	10	835001

Stereo Master (main card)

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SGSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U4, U12, U13, U74	SOCKET_SMT_JS8_PIN	4	245001
U3	SOCKET_SMT_JS14_PIN	1	245002
U63, U73	SOCKET_SMT_JS16_PIN	1	245003
U55, U71, U72	SOCKET_SMT_JS20_PIN	3	245004
CT1-CT6	HEADER_3M_26_PIN_ST	6	250044
U3	IC_4066	1	300005
U63, U73	IC_74HC138	2	300019
U55, U71, U72	IC_74HC688	3	300034
U39, U41, U46, U50, U52, U54, U58, U60, U61	IC_74ABT244 TTL SMT	9	305002
U1, U18, U29	IC_74ACT00 TTL SMT	3	305004
U16, U48, U64, U65	IC_74ACT08 TTL SMT	4	305006
U14, U19, U22, U24, U25, U27, U31, U35, U43, U47, U75	IC_74ACT32 TTL SMT	11	305010
U40, U44, U45, U49, U51, U53, U57, U59	IC_74HC373 TTL SMT	8	305011
U2, U5-U8, U10, U11, U15	IC_74ACT74 TTL SMT	8	305021
U9, U17, U20, U21, U23, U26, U28, U30, U32, U33, U34, U37	IC_74AC14 TTL SMT	12	305027
U36, U42, U66-U70	IC_74HCT02 TTL SMT	7	305048
U62	IC_74HC123 TTL SMT	1	305045
U56	IC_ADC0804_SMT	1	315009
U38	IC_DAC0808_SMT	1	315014
U74	IC_OP-275	1	320014
U4, U12, U13	IC_OP-282	3	320015
Q19	REGULATOR_7812 POSITIVE 12V	1	330002
Q20	REGULATOR_7912 NEGATIVE 12 V	1	330007
Q21, Q22	REGULATOR_PQ05SZ1 5V 1A SMT T/R	2	335001
Q1, Q6-Q13, Q18, Q23	TRANSISTOR_MMBTA05 NPN SMT	11	345001
Q2-Q5, Q14-Q17	TRANSISTOR_MMBTA55 PNP SMT	8	345002
Z1	DIODE_6.2V1W_ZENER	1	350013
Z2-Z5	DIODE_5.1V_ZENER_SMT	4	355002
D1-D9, D12, D13, D15, D17, D29, D30	DIODE_1N4148 FAST SWITCHING SMT	15	355003
D10, D11, D14, D16, D18-D28, D31-D40	DIODE_SS14 SCHOTTKY SMT	25	355004

Stereo Master (switch card)

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SGSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C131, C132	CAPACITOR_22µF 25V ELECTROLYTIC SMT	2	405002
C115, C137-C139, C141, C152	CAPACITOR_100µF 25V ELECTROLYTIC SMT	6	405003
C49, C81, C83, C108	CAPACITOR_330µF 25V ELECTROLYTIC SMT	4	405004
C1, C19, C28, C31, C32, C79, C106, C107, C133, C134, C145, C147	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	12	405005
C4, C5, C17, C23, C51, C82	CAPACITOR_33pF 100V CERAMIC SMT	6	415002
C135, C136	CAPACITOR_68pF 100V CERAMIC SMT	2	415003
C85, C129, C130, C142	CAPACITOR_.001µF 50V CERAMIC SMT	4	415005
C2, C3, C6, C7, C13, C16, C18, C20, C21, C24, C25, C27, C29, C52-C54, C56, C58, C60, C62, C64, C66, C68, C70, C72, C74, C76, C84, C87, C89, C91, C93, C95, C97, C99, C101, C103, C109, C110, C112, C114, C116, C118, C120, C122, C124, C126-C128, C140, C143, C144, C146, C150, C151, C153, C154	CAPACITOR_.1µF 50V CERAMIC SMT	57	415007
C50, C80, C104, C105, C148, C149	CAPACITOR_.22µF 50V CERAMIC SMT	6	415009
R132-R147, R166-R173, R179-R186	RESISTOR_3.3 _SMT_1206	32	435001
R174, R229, R259	RESISTOR_10 _SMT_1206	3	435002
R183, R185, R187, R189, R191, R193, R195, R197, R199, R201	RESISTOR_39 _SMT_1206	10	435004
R227, R228	RESISTOR_47 _SMT_1206	2	435005
R67	RESISTOR_100 _SMT_1206	1	435007
R1, R11-R20, R47, R52, R55, R57, R61, R65, R79, R100, R120, R128, R210, R212	RESISTOR_619 _SMT_1206	23	435013
R14, R29-R43, R149, R215, R246	RESISTOR_1.00K_SMT_1206	19	435015
R3, R5, R7-R9, R49, R51, R53, R56, R63, R64, R76, R78, R80-R82, R85, R86, R88-R92, R94-R96, R98, R99, R102, R104, R105, R107-R109, R111, R112, R114, R116-R118, R122-R125, R127, R130, R131, R156-R159, R161-R163, R257, R258	RESISTOR_2.43K_SMT_1206	56	435020
R4, R6, R10, R31, R48, R50, R54, R58, R59, R62, R74, R77, R83, R84, R87, R93, R97, R101, R103, R106, R110, R113, R115, R119, R121, R126, R129, R155, R160, R164, R178-R181, R213, R214, R219, R245, R247, R252, R261, R262, R286, R287	RESISTOR_4.99K_SMT_1206	44	435023
R26-R30, R66, R68-R71, R75, R132-R134, R153, R165-R168, R182, R184, R186, R188, R190, R192, R194, R196, R198, R200, R211, R220, R224, R229, R231-R234, R244, R246, R248-R251, R259, R263-R266, R273-R276	RESISTOR_10.0K_SMT_1206	52	435028
R60, R216-R218, R221, R225, R235-R240, R242, R243, R254-R256, R271, R272, R277-R284	RESISTOR_40.2K_SMT_1206	27	435039
R73	RESISTOR_75.0K_SMT_1206	1	435042
R215, R268-R270	RESISTOR_88.7K_SMT_1206	4	435043
R151, R222, R223, R230	RESISTOR_100K_SMT_1206	4	435044
R72, R154, R226	RESISTOR_1.0M_SMT_1206	3	435049

Stereo Master (switch card)

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SGSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
SW2-SW18	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	17	510113
SW21-SW23, SW29-SW33	SWITCH_DIP_4_POS _SMT	8	515001
SW24-SW28	SWITCH_SLIDE _SMT	5	515003
SW3-SW18	BUTTON_LUMA_230_WHT	16	530083
SW2	BUTTON_LUMA_230_RED	1	530084
DS1	LED_RED_SMT	1	605004
DS2-DS18	LED_R/A_RED_SMT_HI_INTENSITY	17	605008
DS20, DS22, DS24, DS26, DS28, DS30, DS32, DS34-DS36	LED_R/A_YLW_SMT_HI_INTENSITY	10	605009
DS19, DS21, DS23, DS25, DS27, DS29, DS31, DS33	LED_R/A_AMBER_SMT_HI_INTENSITY	8	605010
	PCB_SGSW1000G	1	700384
	NUT_PEM_SP8	6	821012

Stereo Master (switch card)

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SGCF - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U3-U7	SOCKET_SMT_JS8_PIN	5	245001
U1, U2	SOCKET_SMT_JS16_PIN	2	245003
CT1	HEADER_3M_26_PIN_ST	1	250044
CT3	HEADER_3_PIN_JST	1	250062
CT2	HEADER_10_PIN_ST	1	250077
U3, U4, U6	IC_2142	3	320004
U5, U7	IC_OP-275	2	320014
Z1, Z2	DIODE_5.1V_ZENER_SMT	2	355002
D1, D2	DIODE_1N4148 FAST SWITCHING SMT	2	355003
U1, U2	IC_74VHC4053	2	380008
C3, C4, C11, C12	CAPACITOR_22µF 25V ELECTROLYTIC SMT	4	405002
C1, C2, C8-C10, C13, C29	CAPACITOR_100µF 25V ELECTROLYTIC SMT	7	405003
C7	CAPACITOR_1µF 35V ELECTROLYTIC SMT	1	405005
C20, C21, C24-C26	CAPACITOR_10pF 100V CERAMIC SMT	5	415001
C5, C6, C14, C15, C18, C19	CAPACITOR_68pF 100V CERAMIC SMT	6	415003
C27, C28	CAPACITOR_001µF 50V CERAMIC SMT	2	415005
C16, C17, C22, C23	CAPACITOR_1µF 50V CERAMIC SMT	4	415007
R9, R10	RESISTOR_2.43K_SMT_1206	2	435020
R1, R2, R4, R6-R8, R11, R12, R15, R16, R18-R20	RESISTOR_4.99K_SMT_1206	16	435023
R21, R22	RESISTOR_10.0K_SMT_1206	2	435028
R3, R5, R13, R14, R17, R23, R24	RESISTOR_40.2K_SMT_1206	7	435039
	PCB_SGCF1000	1	700296

Stereo Master (confidence feed card)

MSTR - 1000 FADER PANEL			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	MASTER FADER FACEPLATE	1	004617
CT3	PLUG_6_PIN_JST	1	230031
CT5	PLUG_9_PIN_JST	1	230032
MAIN PCB: CT1 SWITCH PCB: CT1	PLUG_RIBBON_14_PIN	2	250034
CT3	HEADER_6_PIN_JST	1	250065
CT5	HEADER_9_PIN_JST	1	250066
MAIN PCB: CT1 SWITCH PCB: CT1	HEADER_14_PIN_TV1000	2	250073
U2	IC_LM3915	1	320001
U16-U19	IC_OP-275	4	320014
U1	IC_OP-282	1	320015
CHANNEL "ON" SWITCH	SWITCH_LB_25_GRAY_GOLD	1	510063
MAIN PCB: SW5-SW12 SWITCH PCB: SW1-SW4	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	16	510113
	KNOB_FDR_3000_RED	1	520006
CHANNEL "ON" SWITCH LENS	LENS_LB_WHITE	1	530059
MAIN PCB: SW5-SW12	BUTTON_LUMA_230_WHT	10	530083
SWITCH PCB: SW1-SW4	BUTTON_LUMA_230_YLW	4	530085
	FADER_P&G_3222_MOUNTING HOLE	1	540021
CHANNEL "ON" SWITCH	LED_ON/OFF_SWITCH_RED	1	600027
	PCB_FPI1000	1	700265
	PCB_FPSW1000	1	700294
	NUT_PEM_SP8	5	821012

Stereo Master (fader panel)

FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1, U16-U19	SOCKET_SMT_JS8_PIN	5	245001
CT2, CT7	HEADER_3_PIN_JST	2	250062
CT3	HEADER_6_PIN_JST	1	250065
CT5	HEADER_9_PIN_JST	1	250066
CT1	HEADER_14_PIN_TV1000	2	250073
U8	IC_74ACT08 TTL SMT	1	305006
U5	IC_74ACT32 TTL SMT	1	305010
U3, U4, U6, U7, U9, U10	IC_74AC14 TTL SMT	6	305027
U2	IC_LM3915	1	320001
U16-U19	IC_OP-275	4	320014
U1	IC_OP-282	1	320015
Q4	REGULATOR_PQ05SZ1_5V_1A _SMT	1	335001
Q3	TRANSISTOR_MMBTA05 NPN SMT	1	345001
Q1, Q2	TRANSISTOR_MMBTA55 PNP SMT	2	345002
Z1, Z2	DIODE_5.1V_ZENER_SMT	2	355002
D4-D7, D12, D13	DIODE_1N4148 FAST SWITCHING SMT	7	355003
D1, D2, D8-D10	DIODE_SS14 SCHOTTKY SMT	6	355004
U11-U15	IC_74VHC4053 SMT	5	385001
C10, C32-C35, C39, C46, C52, C54, C57	CAPACITOR_22µF 25V ELECTROLYTIC SMT	10	405002
C37, C42, C53, C58, C59	CAPACITOR_100µF 25V ELECTROLYTIC SMT	5	405003
C4, C12, C36, C41, C43, C44	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	6	405005
C1, C3, C45, C48, C49, C51, C60, C63, C64	CAPACITOR_10pF 100V CERAMIC SMT	9	415001
C61	CAPACITOR_33pF 100V CERAMIC SMT	1	415002
C2, C5-C9, C11, C13-C31, C40, C47, C50, C55, C56, C62, C65	CAPACITOR_1µF 50V CERAMIC SMT	33	415007
C38	CAPACITOR_22µF 50V CERAMIC SMT	1	415009

Stereo Master (fader panel main card)

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FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J1, J2	RESISTOR_3.3 _SMT_1206	2	435001
R99	RESISTOR_10 _SMT_1206	1	435002
R47-R50, R53, R68, R69, R186	RESISTOR_100 _SMT_1206	8	435007
R103	RESISTOR_220 _SMT_1206	1	435009
R5, R7, R9, R11, R13, R15, R17, R19, R21, R23, R25, R27, R30, R31, R33, R35, R44-R46, R59	RESISTOR_619 _SMT_1206	20	435013
R63	RESISTOR_1.00K_SMT_1206	1	435015
R2	RESISTOR_1.69K_SMT_1206	1	435017
R4, R10, R12, R14, R16, R18, R20, R22, R24, R26, R28, R29, R32, R34, R36, R70, R72, R74, R76, R78, R80, R82, R84, R86, R88, R90, R92, R94, R96	RESISTOR_2.43K_SMT_1206	32	435020
R1	RESISTOR_3.32K_SMT_1206	1	435021
R6, R8, R51, R52, R62, R65-R67, R71, R73, R75, R77, R79, R81, R83, R85, R87, R89, R91, R93, R95, R97, R98, R102, R104-R112, R115, R180, R183	RESISTOR_4.99K_SMT_1206	37	435023
R37, R39, R54, R55, R113, R114, R117, R118, R150-R153	RESISTOR_10.0K_SMT_1206	12	435028
R38, R40, R43, R56-R58, R60, R61, R119, R120	RESISTOR_20.0K_SMT_1206	10	435034
R122, R185	RESISTOR_22.1K_SMT_1206	2	435036
R3, R41, R42, R116, R125-R149, R154-R179, R181, R182	RESISTOR_40.2K_SMT_1206	57	435039
R121, R184	RESISTOR_88.7K_SMT_1206	2	435043
R64	RESISTOR_100K_SMT_1206	1	435044
CR1	POT_TRIM_HOR_1K_SMT	1	505001
SW1-SW12	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	12	510113
SW17-SW20	SWITCH_SLIDE _SMT	4	515003
	LED_ON/OFF_SWITCH_RED	1	600027
DS1	LED_RED_SMT	1	605004
DS4-DS7, DS12	LED_GREEN_SMT	5	605005
DS2, DS3, DS21	LED_YELLOW_SMT	3	605006
DS8, DS9	LED_R/A_RED_SMT_HI_INTENSITY	1	605008
DS10, DS22-DS25	LED_R/A_YLW_SMT_HI_INTENSITY	5	605009
DS11, DS13-DS20	LED_R/A_AMBER_SMT_HI_INTENSITY	10	605010
	PCB_FPI1000	1	700265
	NUT_PEM_SP8	5	821012
F1-F3	FUSE_3AMP_SMT_POLYSWITCH	3	835001

Stereo Master (fader panel main card)

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FPSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PLUG_RIBBON_14_PIN	2	250034
CT1	HEADER_14_PIN_TV1000	2	250073
R1-R5	RESISTOR_10 _SMT_1206	5	435002
SW1-SW4	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	4	510113
SW1-SW4	BUTTON_LUMA_230_YLW	5	530085
DS5	LED_YELLOW_SMT	1	605006
DS1-DS4	LED_R/A_YLW_SMT_HI_INTENSITY	4	605009
	PCB_FPSW1000	1	700294
	NUT_PEM_SP8	2	821012

Stereo Master (fader panel switch card)

CRM - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	CR-1000_FACEPLATE	1	004607
	DUAL DB-25, SINGLE DB-9 REAR PANEL - TV1000	1	004703
	LATCHING BLOCKS - .190	4	200011
CT2	CONN_R/A_PC_MT_9_MBL	1	220016
CT3, CT10	CONN_R/A_PC_MT_25_PIN	2	220017
CT1	PLUG_6_PIN_JST	1	230031
MAIN PCB (CR1000) : CT4-CT9 SWITCH PCB (CRSW1000): CT1-CT6	SOCKET_26_PIN_PLUG	12	250043
MAIN PCB (CR1000) : CT4-CT9 SWITCH PCB (CRSW1000): CT1-CT6	HEADER_3M_26_PIN_ST	12	250044
CT11, CT12	HEADER_3_PIN_JST	2	250062
CT1	HEADER_6_PIN_JST	1	250065
U46	IC_74HC02	1	300013
U48	IC_74HC08	1	300015
U47, U49	IC_74HC32	2	300029
U50	IC_74HC14	1	300053
SWITCH PCB (CRSW1000) : U81	IC_74ACT138_TTL_SMT	1	305049
SWITCH PCB (CRSW1000) : U87	IC_74ACT521_TTL_SMT	1	305050
U26-U29, U35-U38	IC_2142 BALANCED LINE DRIVER IC	8	320004
U1, U2, U16	IC_TL072 DUAL BIFET OP-AMP	3	320006
U42-U45	IC_LM675 POWER OP AMP	4	320007
U3, U4, U39, U40	IC_NE5534 DUAL OP-AMP	4	320009
U8, U9, U20, U21, U23, U24, U32, U33	IC_2143 BALANCED LINE RECEIVER	8	320012
U5-U7, U13, U17-U19, U31	IC_OP-275	8	320014
U41	IC_LH1522AB DUAL FET OPTO COUPLER	1	340020
U10-U12, U14, U15, U22, U25, U30, U34	IC_74VHC4053	9	380008

Control Room Monitor (module)

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CRM - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR3, CR4	POT_TRIM_15 TURN_10K	2	500014
CR1, CR2	POT_TRIM_15 TURN_50K	2	500015
CR9-CR12	BOURNS_10K DUAL AUDIO	4	500057
"ON" SWITCH	SWITCH_DPDT PUSHBUTTON_LB_25_GRAY	1	510063
MAIN PCB (CR1000): SW1-SW16 SWITCH PCB (CRSW1000): SW1-SW13	SWITCH_2 POLE PUSHBUTTON _MOMENTARY	29	510113
	KNOB_BTMM_13MM	4	520054
"ON" SWITCH CAP	LENS_LB_WHT	1	530059
MAIN PCB (CR1000): SW3-SW6, SW9-SW12, SW14, SW16 SWITCH PCB (CRSW1000): SW1-SW5, SW8-SW11	BUTTON_LUMA_230_WHT	19	530083
MAIN PCB (CR1000): SW7, SW8, SW13, SW15 SWITCH PCB (CRSW1000): SW6, SW7	BUTTON_LUMA_230_RED	6	530084
MAIN PCB (CR1000): SW1, SW2 SWITCH PCB (CRSW1000): SW12, SW13	BUTTON_LUMA_230_YLW	4	530085
"CR" CONTROL	CAP_SIFAM_CREAM	1	530103
"EXT CUE" CONTROL	CAP_SIFAM_PALE BLUE	1	530107
"SOLO CUE" CONTROL, "HDPN" CONTROL	CAP_SIFAM_BLUE	2	530114
"ON" SWITCH LED	LED_RED	1	600027
	PCB_CR1000	1	700287
	PCB_CRSW1000	1	700288
	SCREWLOCK_FEMALE	2	820047
	NUT_PEM FASTENERS	11	821012
	SPACER_NYLON_15/16HEX_440	3	823043
U42-U45	HEATSINK_LM675	4	825004

Control Room Monitor (module)

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CR - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U9, U13, U16-U21, U23, U24, U26-U29, U31-U33, U35-U41	SOCKET_SMT_JS8_PIN	32	245001
U46-U50	SOCKET_SMT_JS14_PIN	5	245002
U10-U12, U14, U15, U22, U25, U30, U34	SOCKET_SMT_JS16_PIN	9	245003
U51	REGULATOR_PQ05SZ1 5V_1A SMT	1	335001
Q1	TRANSISTOR_MMBTA05_SMT	1	345001
D1	DIODE_1N4002W RECTIFYING 1AMP SMT	1	355001
Z1, Z2	DIODE _5.1V_ZENER	2	355002
C3, C8, C23, C24, C43-C48, C179	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	11	405002
C10-C15, C17-C22, C25-C28, C37, C40, C51, C53, C55, C56, C76, C77, C84, C86, C93, C96, C97, C110, C111, C120, C123, C124, C139, C140, C167-C169	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	39	405003
C87, C88, C180-C183	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	6	405004
C54, C57, C143, C144, C153-C156, C165, C166, C170, C171	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	12	405005
C35, C36, C38, C39, C41, C42, C59, C61, C62, C64, C71, C73, C75, C78-C80, C113, C114	CAPACITOR, 10pF 100V CERAMIC SMT	18	415001
C2, C4, C29, C30, C33, C34, C137, C138, C141, C142, C147, C150, C159, C162	CAPACITOR, 33pF 100V CERAMIC SMT	14	415002
C6, C7, C98, C99, C102-C105, C108, C109, C125, C126, C129-C132, C135, C136	CAPACITOR, 68pF 100V CERAMIC SMT	18	415003
C148, C149, C160, C161	CAPACITOR, 330pF 100V CERAMIC SMT	4	415004
C49, C52, C65, C66, C69, C70, C82, C85, C89, C90, C94, C95, C116, C117, C121, C122	CAPACITOR, .001µF 50V CERAMIC SMT	16	415005
C1, C5, C9, C16, C31, C32, C50, C58, C60, C63, C67, C68, C72, C74, C81, C83, C91, C92, C100, C101, C106, C107, C112, C115, C118, C119, C127, C128, C133, C134, C145, C146, C151, C152, C157, C158, C163, C164, C172-C178	CAPACITOR, .1µF 50V CERAMIC SMT	45	415007

Control Room Monitor (main card)

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CR - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R169, R170	RESISTOR_4.99K_PRECISION	2	430137
R40	RESISTOR_100 _CARBON	1	430212
R117, R118, R127-R130, R139, R140, R168	RESISTOR_3.3 _SMT_1206	9	435001
R141-R148	RESISTOR_24 _SMT_1206	8	435003
R42, R43, R111, R114, R150-R153, R171, R172	RESISTOR_100 _SMT_1206	10	435007
R39	RESISTOR_220 _SMT_1206	1	435009
R23-R38	RESISTOR_619 _SMT_1206	16	435013
R2, R3, R11, R12, R16, R20, R119, R125, R131, R137	RESISTOR_1.00K_SMT_1206	10	435015
R181, R182	RESISTOR_1.30K_SMT_1206	2	435016
R166, R167, R174	RESISTOR_2.43K_SMT_1206	3	435020
R1, R4, R5, R9, R10, R14, R15, R18, R19, R22, R41, R44-R48, R53, R54, R57, R58, R65, R66, R69, R70, R73, R74, R76-R78, R88-R90, R97-R102, R104, R106-R110, R112, R113, R115, R116, R154-R157, R173, R179, R180	RESISTOR_4.99K_SMT_1206	55	435023
R13, R21, R56, R60- R64, R68, R72, R75, R79-R81, R83, R84, R86, R91, R94, R96, R149, R158-R165, R175-R178, R183, R186, R187	RESISTOR_10.0K_SMT_1206	36	435028
R6-R8, R17, R49, R52, R55, R59, R67, R71, R82, R85, R87, R92, R93, R95, R103, R105, R120-R124, R126, R132-R136, R138, R184, R185, R188	RESISTOR_40.2K_SMT_1206	33	435039
R50, R51	RESISTOR_1.0M_SMT_1206	2	435049
CR13-CR16	POT_TRIM_HOR_50K_SMT	4	505003
SW22-SW25	SWITCH_DIP_4_POS_SMT	4	515001
SW17-SW21	SWITCH_DPDT_SLIDE_SMT	5	515003
DS7, DS8, DS13-DS16	LED_R/A_RED_SMT_HI_INTENSITY	6	605008
DS1, DS2, DS9-DS12	LED_R/A_YLW_SMT_HI_INTENSITY	6	605009
DS3-DS6	LED_R/A_AMBER_SMT_HI_INTENSITY	4	605010
	PCB_CR1000	1	700287
F1-F13	FUSE_.3AMP_SMT_POLYSWITCH	13	835001

Control Room Monitor (main card)

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CRSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U81	SOCKET_SMT_JS16_PIN	1	245003
U87	SOCKET_SMT_JS20_PIN	1	245004
CT4-CT9	HEADER_3M_26_PIN_ST	6	250044
U13, U89	IC_74ABT125 TTL SMT	2	305001
U55, U59, U61, U63, U65, U66, U69, U77, U79, U80	IC_74ABT244 TTL SMT	10	305002
U1, U2, U8, U24, U35	IC_74ACT00 TTL SMT	5	305004
U4, U7, U27, U28, U33, U34, U40, U72-U74, U82, U88	IC_74ACT08 TTL SMT	12	305006
U9, U12, U20	IC_74ACT32 TTL SMT	3	305010
U52-U54, U56-U58, U60, U62, U64, U67, U68, U76, U78	IC_74HC373 TTL SMT	13	305011
U5, U6, U15, U19, U21, U36-U39, U47, U48, U50, U51, U71	IC_74ACT74 TTL SMT	14	305021
U10, U17, U22, U25, U26, U29, U31, U70, U90, U91	IC_74AC14 TTL SMT	10	305027
U18, U41-U46, U75	IC_74HC30 TTL SMT	8	305028
U3, U11, U14, U16, U23, U30, U32, U49, U83-U86	IC_74ACT02 TTL SMT	12	305040
U81	IC_74ACT138 TTL SMT	1	305049
U87	IC_74ACT521 TTL SMT	1	305050
Q1, Q2	REGULATOR_PQ05SZ1 5V_1A SMT	2	335001
Z1	DIODE_1N4735 ZENER	1	350013
D1, D23	DIODE_1N4148 FAST SWITCHING SMT	2	355003
D2-D22	DIODE_SS14 SCHOTTKY_SMT	21	355004
C18, C125, C127, C128, C133	CAPACITOR_100µF 25V ELECTROLYTIC SMT	5	405003
C105	CAPACITOR_330µF 25V ELECTROLYTIC SMT	1	405004
C1, C2, C19-C42, C48, C126, C140	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	29	405005
C4, C6, C8, C10, C12, C14, C16, C43-C47, C50, C52, C54, C56, C58, C60, C62, C64, C66, C68, C70, C72, C74, C76, C78, C80, C83, C85, C87, C89, C91, C93, C95, C97, C99, C101, C103, C107, C109, C111, C113, C115, C118, C120, C122, C124, C130	CAPACITOR_01µF 50V CERAMIC SMT	49	415006
C3, C5, C7, C9, C11, C13, C15, C17, C49, C51, C53, C55, C57, C59, C61, C63, C65, C67, C69, C71, C73, C75, C77, C79, C81, C82, C84, C86, C88, C90, C92, C94, C96, C98, C100, C102, C104, C106, C108, C110, C112, C114, C116, C117, C119, C121, C123, C129, C131, C132, C134, C135	CAPACITOR_1µF 50V CERAMIC SMT	52	415007
C136-C139	CAPACITOR_22µF 50V CERAMIC SMT	4	415009

Control Room Monitor (switch card)

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CRSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R223	RESISTOR_630 _CARBON	1	430218
R84, R85, R156-R165	RESISTOR_10 _SMT_1206	12	435002
R82, R113-R116, R125-R127	RESISTOR_39 _SMT_1206	8	435004
R3, R6, R8, R62, R64, R66, R68, R71, R73, R75, R76, R79, R80, R100, R102, R104, R106, R108, R110, R117, R119, R121, R123, R128, R130, R132, R134	RESISTOR_220 _SMT_1206	27	435009
R1, R2, R4, R24-R29, R34-R39	RESISTOR_619 _SMT_1206	15	435013
R63, R65, R67, R69, R70, R72, R74, R77, R78, R81, R101, R103, R105, R107, R109, R111, R118, R120, R122, R124, R129, R131, R133, R135, R139, R140	RESISTOR_1.00K_SMT_1206	26	435015
R137, R141-R143, R190-R193, R212, R216-R219, R222	RESISTOR_2.43K_SMT_1206	14	435020
R5, R7, R9-R23, R30-R33, R40-R60, R86-R99, R112, R136, R138, R152- R155, R166, R167, R168, R172, R213-R215, R220, R221	RESISTOR_4.99K_SMT_1206	72	435023
R61, R83, R145-R151, R178-R181, R200- R203	RESISTOR_10.0K_SMT_1206	17	435028
R198	RESISTOR_20.0K_SMT_1206	1	435034
R144, R169-R171, R173-R175, R182-R189, R196, R199, R204-R211	RESISTOR_40.2K_SMT_1206	25	435039
R176, R194, R195, R197	RESISTOR_88.7K_SMT_1206	4	435043
R177	RESISTOR_1.0M_SMT_1206	1	435049
SW1-SW13	SWITCH_2 POLE PUSHBUTTON _MOMENTARY	13	510113
SW14-SW16	SWITCH_DIP_4_POS _SMT	3	515001
SW1-SW5, SW8-SW11	BUTTON_LUMA_230_WHT	9	530083
SW6, SW7	BUTTON_LUMA_230_RED	2	530084
SW12, SW13	BUTTON_LUMA_230_YLW	2	530085
DS2	LED_RED_SMT	1	605004
DS4, DS5	LED_GREEN_SMT	2	605005
DS3	LED_YELLOW_SMT	1	605006
DS10, DS11	LED_R/A_RED_SMT_HI_INTENSITY	2	605008
DS1, DS6-DS9, DS16, DS17	LED_R/A_YLW_SMT_HI_INTENSITY	7	605009
DS12-DS15	LED_R/A_AMBER_SMT_HI_INTENSITY	4	605010
	PCB_CRSW1000	1	700288
	NUT_PEM FASTENERS	5	821012

Control Room Monitor (switch card)

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FPI - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	FACEPLATE	1	004618
U17	SOCKET_SMT_JS8_PIN	1	245001
U17	IC_OP-275	1	320014
C9, C31	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	2	405002
C52, C57	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	2	405003
C47, C60	CAPACITOR, 10pF 100V CERAMIC SMT	1	415001
C46, C61	CAPACITOR, .1µF 50V CERAMIC SMT	2	415007
R172	RESISTOR_4.99K_SMT_1206	1	435023
R107, R108	RESISTOR_10.0K_SMT_1206	2	435028
	PCB_FPI1000	1	700265
	NUT_PEM FASTENERS	3	821012
F2, F3	FUSE_.3AMP_SMT_POLYSWITCH	2	835001

Control Room Monitor (SOLO feed card)

(behind blank panel below CRM-1000 control room module)

STM - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	STM-1000_FACEPLATE	1	004609
	DUAL DB-9 REAR PANEL - TV1000	1	004700
	LATCHING BLOCKS - .190	4	200011
CT2	CONN_R/A_PC_MT_9_MBL5	1	220016
CT3, CT10	CONN_R/A_PC_MT_25_PIN	2	220017
CT1	PLUG_6_PIN_JST	1	230031
MAIN PCB (CR1000) : CT4-CT9 SWITCH PCB (CRSW1000): CT1-CT6	SOCKET_26_PIN_PLUG	12	250043
MAIN PCB (CR1000) : CT4-CT9 SWITCH PCB (CRSW1000): CT1-CT6	HEADER_3M_26_PIN_ST	12	250044
CT11, CT12	HEADER_3_PIN_JST	2	250062
CT1	HEADER_6_PIN_JST	1	250065
U46	IC_74HC02	1	300013
U48	IC_74HC08	1	300015
U47, U49	IC_74HC32	2	300029
U50	IC_74HC14	1	300053
SWITCH PCB (CRSW1000) : U81	IC_74ACT138_TTL_SMT	1	305049
SWITCH PCB (CRSW1000): U87	IC_74ACT521_TTL_SMT	1	305050
U26-U29, U35-U38	IC_2142 BALANCED LINE DRIVER IC	8	320004
U1, U2	IC_TL072 DUAL BIFET OP-AMP	2	320006
U3, U4, U39, U40	IC_NE5534 DUAL OP-AMP	4	320009
U8, U9, U20, U21, U23, U24, U32, U33	IC_2143 BALANCED LINE RECEIVER	8	320012
U5-U7, U13, U16-U19, U31	IC_OP-275	9	320014
U41	IC_LH1522AB DUAL FET OPTO COUPLER	1	340020
U10-U12, U14, U15, U22, U25, U30, U34	IC_74VHC4053	9	380008

Studio Monitor (module)

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STM - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR3-CR8	POT_TRIM_15 TURN_10K	6	500014
CR11, CR12	BOURNS_10K DUAL AUDIO	2	500057
"TB" SWITCH	SWITCH_DPD T PUSHBUTTON_LB_25_GRAY	1	510063
MAIN PCB (CR1000): SW1-SW12, SW14, SW16 SWITCH PCB (CRSW1000): SW1-SW13	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	27	510113
"HDPN", "STUDIO" CONTROLS	KNOB_BT M_13MM	2	520054
"TB" SWITCH CAP	LENS_LB_WHT	1	530059
MAIN PCB (CR1000): SW3-SW6, SW9-SW12, SW14, SW16 SWITCH PCB (CRSW1000): SW1-SW5, SW8-SW11	BUTTON_LUMA_230_WHT	19	530083
MAIN PCB (CR1000): SW7, SW8 SWITCH PCB (CRSW1000): SW6, SW7	BUTTON_LUMA_230_RED	4	530084
MAIN PCB (CR1000): SW1, SW2 SWITCH PCB (CRSW1000): SW12, SW13	BUTTON_LUMA_230_YLW	4	530085
"STUDIO" CONTROLS	CAP_SIFAM_CREAM	1	530103
"HDPN" CONTROLS	CAP_SIFAM_BLUE	1	530114
"TB" SWITCH LED	LED_RED	1	600027
	PCB_CR1000	1	700287
	PCB_CRSW1000	1	700288
	SCREWLOCK_FEMALE	2	820047
	NUT_PEM FASTENERS	11	821012
	SPACER_NYLON_15/16HEX_440	3	823043

Studio Monitor (module)

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CR - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U1-U9, U13, U16-U21, U23, U24, U26-U29, U31-U33, U35-U41	SOCKET_SMT_JS8_PIN	32	245001
U46-U50	SOCKET_SMT_JS14_PIN	5	245002
U10-U12, U14, U15, U22, U25, U30, U34	SOCKET_SMT_JS16_PIN	9	245003
U51	REGULATOR_PQ05SZ1 5V_1A SMT	1	335001
Q1	TRANSISTOR_MMBTA05_SMT	1	345001
D1	DIODE_1N4002W RECTIFYING 1AMP SMT	1	355001
Z1, Z2	DIODE _5.1V_ZENER	2	355002
C3, C8, C23, C24, C43-C48, C179	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	11	405002
C10-C15, C17-C22, C25-C28, C37, C40, C51, C53, C55, C56, C76, C77, C84, C86, C93, C96, C97, C110, C111, C120, C123, C124, C139, C140, C167-C169	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	39	405003
C87, C88, C180-C183	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	6	405004
C54, C57, C143, C144, C153-C156, C165, C166, C170, C171	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	12	405005
C35, C36, C38, C39, C41, C42, C59, C61, C62, C64, C71, C73, C75, C78-C80, C113, C114	CAPACITOR, 10pF 100V CERAMIC SMT	18	415001
C2, C4, C29, C30, C33, C34, C137, C138, C141, C142, C147, C150, C159, C162	CAPACITOR, 33pF 100V CERAMIC SMT	14	415002
C6, C7, C98, C99, C102-C105, C108, C109, C125, C126, C129-C132, C135, C136	CAPACITOR, 68pF 100V CERAMIC SMT	18	415003
C148, C149, C160, C161	CAPACITOR, 330pF 100V CERAMIC SMT	4	415004
C49, C52, C65, C66, C69, C70, C82, C85, C89, C90, C94, C95, C116, C117, C121, C122	CAPACITOR, .001µF 50V CERAMIC SMT	16	415005
C1, C5, C9, C16, C31, C32, C50, C58, C60, C63, C67, C68, C72, C74, C81, C83, C91, C92, C100, C101, C106, C107, C112, C115, C118, C119, C127, C128, C133, C134, C145, C146, C151, C152, C157, C158, C163, C164, C172-C178	CAPACITOR, .1µF 50V CERAMIC SMT	45	415007

Studio Monitor (main card)

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CR - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R169, R170	RESISTOR_4.99K_PRECISION	2	430137
R40	RESISTOR_100 _CARBON	1	430212
R117, R118, R127-R130, R139, R140, R168	RESISTOR_3.3 _SMT_1206	9	435001
R141-R148	RESISTOR_24 _SMT_1206	8	435003
R42, R43, R111, R114, R150-R153, R171, R172	RESISTOR_100 _SMT_1206	10	435007
R39	RESISTOR_220 _SMT_1206	1	435009
R23-R38	RESISTOR_619 _SMT_1206	16	435013
R2, R3, R11, R12, R16, R20, R119, R125, R131, R137	RESISTOR_1.00K_SMT_1206	10	435015
R181, R182	RESISTOR_1.30K_SMT_1206	2	435016
R166, R167, R174	RESISTOR_2.43K_SMT_1206	3	435020
R1, R4, R5, R9, R10, R14, R15, R18, R19, R22, R41, R44-R48, R53, R54, R57, R58, R65, R66, R69, R70, R73, R74, R76-R78, R88-R90, R97-R102, R104, R106-R110, R112, R113, R115, R116, R154-R157, R173, R179, R180	RESISTOR_4.99K_SMT_1206	55	435023
R13, R21, R56, R60- R64, R68, R72, R75, R79-R81, R83, R84, R86, R91, R94, R96, R149, R158-R165, R175-R178, R183, R186, R187	RESISTOR_10.0K_SMT_1206	36	435028
R6-R8, R17, R49, R52, R55, R59, R67, R71, R82, R85, R87, R92, R93, R95, R103, R105, R120-R124, R126, R132-R136, R138, R184, R185, R188	RESISTOR_40.2K_SMT_1206	33	435039
R50, R51	RESISTOR_1.0M_SMT_1206	2	435049
CR13-CR16	POT_TRIM_HOR_50K_SMT	4	505003
SW22-SW25	SWITCH_DIP_4_POS_SMT	4	515001
SW17-SW21	SWITCH_DPDT_SLIDE_SMT	5	515003
DS7, DS8, DS13-DS16	LED_R/A_RED_SMT_HI_INTENSITY	6	605008
DS1, DS2, DS9-DS12	LED_R/A_YLW_SMT_HI_INTENSITY	6	605009
DS3-DS6	LED_R/A_AMBER_SMT_HI_INTENSITY	4	605010
	PCB_CR1000	1	700287
F1-F13	FUSE_.3AMP_SMT_POLYSWITCH	13	835001

Studio Monitor (main card)

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CRSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U81	SOCKET_SMT_JS16_PIN	1	245003
U87	SOCKET_SMT_JS20_PIN	1	245004
CT4-CT9	HEADER_3M_26_PIN_ST	6	250044
U13, U89	IC_74ABT125 TTL SMT	2	305001
U55, U59, U61, U63, U65, U66, U69, U77, U79, U80	IC_74ABT244 TTL SMT	10	305002
U1, U2, U8, U24, U35	IC_74ACT00 TTL SMT	5	305004
U4, U7, U27, U28, U33, U34, U40, U72-U74, U82, U88	IC_74ACT08 TTL SMT	12	305006
U9, U12, U20	IC_74ACT32 TTL SMT	3	305010
U52-U54, U56-U58, U60, U62, U64, U67, U68, U76, U78	IC_74HC373 TTL SMT	13	305011
U5, U6, U15, U19, U21, U36-U39, U47, U48, U50, U51, U71	IC_74ACT74 TTL SMT	14	305021
U10, U17, U22, U25, U26, U29, U31, U70, U90, U91	IC_74AC14 TTL SMT	10	305027
U18, U41-U46, U75	IC_74HC30 TTL SMT	8	305028
U3, U11, U14, U16, U23, U30, U32, U49, U83-U86	IC_74ACT02 TTL SMT	12	305040
U81	IC_74ACT138 TTL SMT	1	305049
U87	IC_74ACT521 TTL SMT	1	305050
Q1, Q2	REGULATOR_PQ05SZ1 5V_1A SMT	2	335001
Z1	DIODE_1N4735 ZENER	1	350013
D1, D23	DIODE_1N4148 FAST SWITCHING SMT	2	355003
D2-D22	DIODE_SS14 SCHOTTKY_SMT	21	355004
C18, C125, C127, C128, C133	CAPACITOR_100µF 25V ELECTROLYTIC SMT	5	405003
C105	CAPACITOR_330µF 25V ELECTROLYTIC SMT	1	405004
C1, C2, C19-C42, C48, C126, C140	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	29	405005
C4, C6, C8, C10, C12, C14, C16, C43-C47, C50, C52, C54, C56, C58, C60, C62, C64, C66, C68, C70, C72, C74, C76, C78, C80, C83, C85, C87, C89, C91, C93, C95, C97, C99, C101, C103, C107, C109, C111, C113, C115, C118, C120, C122, C124, C130	CAPACITOR_01µF 50V CERAMIC SMT	49	415006
C3, C5, C7, C9, C11, C13, C15, C17, C49, C51, C53, C55, C57, C59, C61, C63, C65, C67, C69, C71, C73, C75, C77, C79, C81, C82, C84, C86, C88, C90, C92, C94, C96, C98, C100, C102, C104, C106, C108, C110, C112, C114, C116, C117, C119, C121, C123, C129, C131, C132, C134, C135	CAPACITOR_1µF 50V CERAMIC SMT	52	415007
C136-C139	CAPACITOR_22µF 50V CERAMIC SMT	4	415009

Studio Monitor (switch card)

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CRSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R223	RESISTOR_630 _CARBON	1	430218
R84, R85, R156-R165	RESISTOR_10 _SMT_1206	12	435002
R82, R113-R116, R125-R127	RESISTOR_39 _SMT_1206	8	435004
R3, R6, R8, R62, R64, R66, R68, R71, R73, R75, R76, R79, R80, R100, R102, R104, R106, R108, R110, R117, R119, R121, R123, R128, R130, R132, R134	RESISTOR_220 _SMT_1206	27	435009
R1, R2, R4, R24-R29, R34-R39	RESISTOR_619 _SMT_1206	15	435013
R63, R65, R67, R69, R70, R72, R74, R77, R78, R81, R101, R103, R105, R107, R109, R111, R118, R120, R122, R124, R129, R131, R133, R135, R139, R140	RESISTOR_1.00K_SMT_1206	26	435015
R137, R141-R143, R190-R193, R212, R216-R219, R222	RESISTOR_2.43K_SMT_1206	14	435020
R5, R7, R9-R23, R30-R33, R40-R60, R86-R99, R112, R136, R138, R152- R155, R166, R167, R168, R172, R213-R215, R220, R221	RESISTOR_4.99K_SMT_1206	72	435023
R61, R83, R145-R151, R178-R181, R200- R203	RESISTOR_10.0K_SMT_1206	17	435028
R198	RESISTOR_20.0K_SMT_1206	1	435034
R144, R169-R171, R173-R175, R182-R189, R196, R199, R204-R211	RESISTOR_40.2K_SMT_1206	25	435039
R176, R194, R195, R197	RESISTOR_88.7K_SMT_1206	4	435043
R177	RESISTOR_1.0M_SMT_1206	1	435049
SW1-SW13	SWITCH_2 POLE PUSHBUTTON _MOMENTARY	13	510113
SW14-SW16	SWITCH_DIP_4_POS _SMT	3	515001
SW1-SW5, SW8-SW11	BUTTON_LUMA_230_WHT	9	530083
SW6, SW7	BUTTON_LUMA_230_RED	2	530084
SW12, SW13	BUTTON_LUMA_230_YLW	2	530085
DS2	LED_RED_SMT	1	605004
DS4, DS5	LED_GREEN_SMT	2	605005
DS3	LED_YELLOW_SMT	1	605006
DS10, DS11	LED_R/A_RED_SMT_HI_INTENSITY	2	605008
DS1, DS6-DS9, DS16, DS17	LED_R/A_YLW_SMT_HI_INTENSITY	7	605009
DS12-DS15	LED_R/A_AMBER_SMT_HI_INTENSITY	4	605010
	PCB_CRSW1000	1	700288
	NUT_PEM FASTENERS	5	821012

Studio Monitor (switch card)

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VO - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	VO-1000_FACEPLATE	1	004611
	VO-1000_REAR PANEL	1	004707
TR1	CAN_MIC	1	110006
	LATCHING BLOCKS - .190	4	200011
"SPARE VU" CONNECTOR	CONN_DB_IDD9_HDF20	1	200031
CT7	CONN_R/A_PC_MT_9_MBLS	1	220016
CT8, CT10	CONN_R/A_PC_MT_25_PIN	2	220017
CT3, CT4	CONN_BOARD-TO-BOARD_8 PIN_R/A	2	220069
	PLUG_RIBBON_10_PIN	3	230020
CT6	PLUG_6_PIN_JST	1	230031
CT6	HEADER_6_PIN_JST	1	250065
CT5	HEADER_40_PIN_ST_BREAKAPART	0.5	250071
CT9	HEADER_10_PIN_ST	1	250077
CT1, CT2	CONN_FEMALE NEUTRIX_BLK	2	260002
U6	IC_74HC02	1	300013
U7, U16	IC_74HC30	2	300028
U3, U10, U19	IC_74HC32	3	300029
U8, U9, U13-U15	IC_74HC74	5	300035
U30	IC_NE555	1	300049
U4, U5, U11, U12, U17, U18, U20	IC_74HC14	7	300053
U28, U50	IC_2142 BALANCED LINE DRIVER IC	2	320004
U1, U29, U51	IC_TL072 DUAL BIFET OP-AMP	3	320006
U27, U44-U46, U49	IC_NE5532 DUAL OP-AMP	5	320008
U2	IC_NE5534 DUAL OP-AMP	1	320009
U21, U22, U24, U25, U38, U39, U41, U42	IC_2143 BALANCED LINE RECEIVER IC	8	320012
Q8	REGULATOR_7812 POSITIVE 12V	1	330002
Q9	REGULATOR_7912 NEGATIVE 12 V	1	330007
U69	REGULATOR_PQ05SZ1 5V 1A_SMT	1	335001

VU/Oscillator (module)

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VO - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U31-U36	IC_LH1522AB DUAL FET OPTO COUPLER	6	340020
U37	IC_ICL8038 OSCILLATOR	1	370006
U23, U26, U40, U43, U47, U48	IC_4053	6	380003
U52-U68	IC_74VHC4053	17	380008
CR1-CR4, CR7-CR10, CR12-CR15	POT_TRIM_15_TURN_10K	12	500014
CR5, CR6	POT_BOURNS_DUAL LINEAR_CDT	2	500056
"OSC ON/OFF" SWITCH	SWITCH_DPDT PUSHBUTTON_LB_25_GRAY	1	510063
TIMER CNTRL PCB: "HOLD" SWITCH	SWITCH_D500_GRN_LED_NO_CAP	1	510094
TIMER CNTRL PCB: "S/S" SWITCH, "RESET" SWITCH	SWITCH_D500_RED_LED_NO_CAP	2	510095
TIMER CNTRL PCB: "AUTO" SWITCH	SWITCH_D500_YLW_LED_NO_CAP	1	510096
MAIN PCB: SW1-SW13 SWITCH PCB: SW1, SW2	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	15	510113
"TB" CONTROL POT, "OSC" CONTROL POT	KNOB_BOTTOM_13M M_NO FLANGE	2	520054
TIMER CNTRL PCB: "HOLD" SWITCH	BUTTON_A6000_BLUE	1	530002
TIMER CNTRL PCB: "RESET" SWITCH	BUTTON_A6000_RED	1	530003
TIMER CNTRL PCB: "S/S" SWITCH	BUTTON_A6000_WHITE	1	530004
TIMER CNTRL PCB: "AUTO" SWITCH	BUTTON_A6000_YELLOW	1	530005
"OSC ON/OFF" SWITCH CAP	LENS_LB_WHT	1	530059
SW4-SW13	BUTTON_LUMA_230_WHT	10	530083
SW1	BUTTON_LUMA_230_RED	1	530084
MAIN PCB: SW2, SW3 SWITCH PCB: SW1, SW2	BUTTON_LUMA_230_YLW	4	530085
"TB" CONTROL POT	CAP_SIFAM_PALE BLUE_13 MM	1	530107
"OSC" CONTROL POT	CAP_SIFAM_GREY/6_13 MM	1	530113
"OSC ON/OFF" SWITCH LED	LED_RED	1	600027
DS4	LED_RED_SMT	1	605004
	PCB_TCS60	1	700195
	PCB_MO1000	1	700289
	PCB_MOSW1000	1	700290
TR1	TRANSFORMER_MIC	1	810001
	NUT_PEM_SP8	5	821012

VU/Oscillator (module)

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MO - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
TR1	CAN_MIC	1	110006
CT7	CONN_R/A_PC_MT_9_MBL5	1	220016
CT8, CT10	CONN_R/A_PC_MT_25_PIN	2	220017
CT3, CT4	CONN_BOARD-TO-BOARD_8 PIN_R/A	2	220069
U1, U2, U21, U22, U24, U25, U27-U36, U38, U39, U41, U42, U44-U46, U49-U51	SOCKET_SMT_JS8_PIN	26	245001
U3-U20, U37	SOCKET_SMT_JS14_PIN	19	245002
U23, U26, U40, U43, U47, U48, U52-U68	SOCKET_SMT_JS16_PIN	23	245003
CT6	HEADER_6_PIN_JST	1	250065
CT5	HEADER_10_PIN_ST	1	250077
CT1, CT2	CONN_NEUTRIX_FEMALE_BLK	2	260002
U6	IC_74HC02	1	300013
U7, U16	IC_74HC30	2	300028
U3, U10, U19	IC_74HC32	3	300029
U8, U9, U13-U15	IC_74HC74	5	300035
U30	IC_NE555	1	300049
U4, U5, U11, U12, U17, U18, U20	IC_74HC14	7	300053
U28, U50	IC_2142 BALANCED LINE DRIVER	2	320004
U1, U29	IC_TL072_DUAL BIFET OP-AMP	3	320006
U27, U44-U46, U49	IC_NE5532_DUAL OP-AMP	5	320008
U2	IC_NE5534_DUAL OP-AMP	1	320009
U21, U22, U24, U25, U38, U39, U41, U42	IC_2143 BALANCED LINE RECEIVER	8	320012
U51	OP-282	1	320015
Q8	REGULATOR_7812 POSITIVE 12V	1	330002
Q9	REGULATOR_7912 NEGATIVE 12 V	1	330007
U69	REGULATOR_PQ05SZ1 5V 1A SMT	1	335001
U31-U36	IC_LH1522AB_DUAL FET_OPTO COUPLER	6	340020

VU/Oscillator (main card)

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MO - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
Q2-Q7	TRANSISTOR_MMBTA05 NPN SMT	6	345001
Q1	TRANSISTOR_MMBTA55 PNP SMT	1	345002
Z1, Z2	DIODE_5.1V_ZENER_SMT	2	355002
D1-D9	DIODE_1N4148 FAST SWITCHING SMT	9	355003
U37	IC_ICL8038 OSCILLATOR	1	370006
U47, U48	IC_4053	2	380003
U23, U26, U40, U43, U52-U68	IC_74VHC4053	21	380008
C36	CAPACITOR_10µF 50V ELECTROLYTIC SMT	1	405001
C39, C41, C79, C81, C92, C102, C105, C111, C114, C115, C124, C137, C170	CAPACITOR_22µF 25V ELECTROLYTIC SMT	13	405002
C3, C4, C17, C122, C123, C125, C130, C131, C136, C143, C144, C154-C158, C162	CAPACITOR_100µF 25V ELECTROLYTIC SMT	17	405003
C2, C82, C85, C106, C138-C142, C145	CAPACITOR_330µF 25V ELECTROLYTIC SMT	10	405004
C5-C15, C70, C90, C96, C151-C153, C163-C167	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	22	405005
C66, C117, C118, C120, C121, C127, C128, C133, C134, C160, C161	CAPACITOR_10pF 100V CERAMIC SMT	11	415001
C29, C30, C34, C35, C86, C88	CAPACITOR_33pF 100V CERAMIC SMT	6	415002
C68, C84, C146, C148	CAPACITOR_68pF 100V CERAMIC SMT	4	415003
C33	CAPACITOR_330pF 100V CERAMIC SMT	1	415004
C18, C25-C28, C37, C40, C60, C61, C64, C65, C77, C80, C98, C99, C103, C104, C107, C108, C112, C113, C149, C159	CAPACITOR_001µF 50V CERAMIC SMT	23	415005
C94	CAPACITOR_01µF 50V CERAMIC SMT	1	415006
C1, C22, C31, C32, C38, C42-C59, C62, C63, C67, C69, C73-C76, C78, C83, C87, C89, C91, C93, C95, C97, C100, C101, C109, C110, C116, C119, C126, C129, C132, C135, C147, C150, C168, C169	CAPACITOR_1µF 50V CERAMIC SMT	53	415007
C16, C19-C21, C23, C24	CAPACITOR_22µF 50V CERAMIC SMT	6	415009
C72	CAPACITOR_3900pF 50V FILM SMT	1	425004
C71	CAPACITOR_022µF 50V FILM SMT	1	425005

VU/Oscillator (main card)

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MO - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J2	RESISTOR_3.3 _SMT_1206	1	435001
R80, R115, R150, R157, R160, R216, R219, R222, R225	RESISTOR_10 _SMT_1206	9	435002
R125	RESISTOR_100 _SMT_1206	1	435007
R4, R8	RESISTOR_150 _SMT_1206	2	435008
R31-R34, R37, R40, R41, R44, R46, R48, R63, R66, R72, R73, R76	RESISTOR_220 _SMT_1206	15	435009
R3, R5, R6, R9-R18, R35, R36	RESISTOR_619 _SMT_1206	15	435013
R1, R2, R7, R25-R29, R38, R42, R43, R45, R49, R61, R74, R95, R101, R111, R117, R122, R131	RESISTOR_1.00K_SMT_1206	21	435015
R236, R237, R227	RESISTOR_1.30K_SMT_1206	3	435016
R85, R86, R89, R94, R106-R110, R123, R124, R126-R130, R133	RESISTOR_1.69K_SMT_1206	17	435017
R20, R21, R51, R53, R55, R58, R62, R64, R68-R71, R140, R141	RESISTOR_2.43K_SMT_1206	14	435020
R90-R93, R113, R132, R138, R139	RESISTOR_3.32K_SMT_1206	8	435021
R19, R22-R24, R30, R39, R52, R54, R56, R57, R59, R60, R65, R67, R77, R78, R81-R84, R96, R98-R100, R118-R121, R163-R215, R217, R218, R220, R221, R223, R224, R226	RESISTOR_4.99K_SMT_1206	88	435023
R87	RESISTOR_5.49K_SMT_1206	1	435024
R47, R50, R75, R79, R104, R112, R114, R135-R137, R142-R149, R151, R158, R159, R161, R162, R228-R235	RESISTOR_10.0K_SMT_1206	31	435028
R134, R152	RESISTOR_20.0K_SMT_1206	1	435034
R97, R102, R103, R116, R153-R156	RESISTOR_40.2K_SMT_1206	8	435039
R88	RESISTOR_100K_SMT_1206	1	435044
R105	RESISTOR_1.0M_SMT_1206	1	435049
CR5, CR6	BOURNS DUAL LINEAR_CDT	2	500056
CR11	POT_TRIM_15_TURN_10K	12	500014
CR11	POT_TRIM_HOR_10K_SMT	1	505002
SW1-SW13	SWITCH_2 POLE PUSHBUTTON_MOMENTARY	13	510113
SW14	SWITCH_DIP_4_POS_SMT	1	515001
DS4	LED_RED_SMT	1	605004
DS1, DS10-DS14	LED_R/A_RED_SMT_HI_INTENSITY	6	605008
DS2, DS3, DS5-DS9	LED_R/A_YLW_SMT_HI_INTENSITY	7	605009
	PCB_MO1000	1	700289
TR1	XFORMER_MIC	1	810001
	NUT_PEM_SP8	5	821012
F3	FUSE_1.1AMP_POLYSWITCH	1	830027
F1, F2, F5-F8	FUSE_3AMP_SMT_POLYSWITCH	6	835001
F4	FUSE_1.1AMP_SMT_POLYSWITCH	1	835002

VU/Oscillator (main card)

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MOSW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CT1	HEADER_10_PIN_ST_BREAKAPART	2	250072
C1	CAPACITOR_.1μF 50V CERAMIC SMT	1	415007
R1, R2	RESISTOR_10 _SMT_1206	2	435002
SW1, SW2	SWITCH_2 POLE PUSHBUTTON_ MOMENTARY	2	510113
SW1, SW2	BUTTON_LUMA_230_YLW	2	530085
DS1, DS2	LED_R/A_YLW_SMT_HI_INTENSITY	2	605009
	PCB_MOSW1000	1	700290
	NUT_PEM_SP8	2	821012

VU/Oscillator (switch card)

TCS - 60 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	CONN_BOARD-TO-BOARD_8 PIN_R/A	2	220069
"HOLD" SWITCH	SWITCH_D500_GRN_LED_NO_CAP	1	510094
"S/S" SWITCH, "RESET" SWITCH	SWITCH_D500_RED_LED_NO_CAP	1	510095
"AUTO" SWITCH	SWITCH_D500_YLW_LED_NO_CAP	2	510096
"HOLD" SWITCH	BUTTON_A6000_BLUE	1	530002
"RESET" SWITCH	BUTTON_A6000_RED	1	530003
"S/S" SWITCH	BUTTON_A6000_WHITE	1	530004
"AUTO" SWITCH	BUTTON_A6000_YELLOW	1	530005
	PCB_TCS60	1	700195

VU/Oscillator (timer control card)

FPW - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	CUE DROP MASTER FADER FACEPLATE	1	004627
CT1	PLUG_6_PIN_JST	1	230031
CT1	HEADER_6_PIN_JST	1	250065
U10	IC_74ACT32 TTL SMT	1	305010
U3	IC_74AC14 TTL SMT	1	305027
Q1	REGULATOR_PQ05SZ1 5V 1A SMT	1	335001
D1, D2	DIODE_SS14 SCHOTTKY SMT	2	355004
C1, C20	CAPACITOR, 22 μ F 25V ELECTROLYTIC SMT	2	405002
C18, C24	CAPACITOR, 100 μ F 25V ELECTROLYTIC SMT	2	405003
C3, C5	CAPACITOR, 1 μ F 35V ELECTROLYTIC SMT TANTALUM	2	405005
C2, C4, C6, C8, C10, C12-C17, C21-C23	CAPACITOR, .1 μ F 50V CERAMIC SMT	14	415007
R56	RESISTOR_3.3 _SMT_1206	1	435001
R3	RESISTOR_220 _SMT_1206	1	435009
R9, R10, R12, R13	RESISTOR_2.43K_SMT_1206	4	435020
R2, R58, R59, R66-R73	RESISTOR_4.99K_SMT_1206	11	435023
R1, R60, R74	RESISTOR_10.0K_SMT_1206	3	435028
R47	RESISTOR_221K_SMT_1206	1	435046
"CUE DROPOUT" SWITCH	SWITCH_DPDT PUSHBUTTON_MOMENTARY ACTION	1	510063
"CUE DROPOUT" SWITCH CAP	LENS_LB_WHITE	1	530059
"CUE DROPOUT" SWITCH LED	LED_ON/OFF_SWITCH_R5_RED	1	600027
	PCB_FPW1000	1	700293
	NUT_PEM_SP8	3	821012
F1	FUSE_3AMP_SMT_POLYSWITCH	1	835001

Solo/Cue Dropout Master

(panel position below VO-1000 module)

PWR - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PWI-1000_FACEPLATE	1	004623
	POWER INTERFACE REAR PANEL	1	004723
CT1-CT4	CONN_PAN_MIL_AMPH	4	230008
WP1-WP6	CONN_TEST POINT	6	230037
Q1-Q13	TRANSISTOR_2N3903 NPN	13	340005
C1-C3	CAPACITOR_470µF 16V ELECTROLYTIC_UPRIGHT	3	400023
R4	RESISTOR_1.0K CARBON	1	430221
R1, R2	RESISTOR_2.0K CARBON	2	430226
R3	RESISTOR_7.5K CARBON	1	430237
R5-R31	RESISTOR_10K CARBON	27	430239
DS2, DS4, DS6, DS8	LED_L113_YELLOW	4	600002
	PCB_PWI1000	1	700270
	NUT_PEM_SP8	6	821012
F1-F17	FUSE_4AMP_POLYSWITCH	7	830018

Power Interface Module

MUTE MASTER PANEL			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	MUTE MASTER FADER FACEPLATE	1	004625
CT1-CT5	PLUG_6_PIN_JST	5	230031
CT1-CT5	HEADER_6_PIN_JST	5	250065
U9	IC_74ABT125 TTL SMT	1	305001
U2, U8	IC_74ABT244 TTL SMT	2	305002
U5	IC_74ACT00 TTL SMT	1	305004
U10	IC_74ACT32 TTL SMT	1	305010
U1, U7	IC_74HC373 TTL SMT	2	305011
U3, U4	IC_74AC14 TTL SMT	2	305027
U11	IC_74ACT02 TTL SMT	1	305040
U6	IC_74ACT138 TTL SMT	1	305049
U12	IC_74ACT521_TTL SMT	1	305050
Q1	REGULATOR_PQ05SZ1 5V 1A SMT	1	335001
D3	DIODE_1N4148 FAST SWITCHING SMT	1	355003
D1, D2	DIODE_SS14 SCHOTTKY_SMT	2	355004
C1, C20	CAPACITOR_22µF 25V ELECTROLYTIC SMT	2	405002
C18, C24	CAPACITOR_100µF 25V ELECTROLYTIC SMT	2	405003
C3, C5, C7, C9, C11, C19	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	6	405005
C2, C4, C6, C8, C10, C12-C17, C21-C23	CAPACITOR_1µF 50V CERAMIC SMT	14	415007
R56	RESISTOR_3.3 _SMT_1206	1	435001
R3, R6, R14, R20, R22	RESISTOR_220 _SMT_1206	5	435009
R8-R13, R16-R19	RESISTOR_2.43K_SMT_1206	10	435020
R2, R4, R5, R7, R15, R21, R23, R27-R30, R58, R59, R66-R73	RESISTOR_4.99K_SMT_1206	21	435023
R1, R39-R41, R43-R55, R60, R74	RESISTOR_10.0K_SMT_1206	19	435028
R24-R26, R31-R38, R57, R62-R65	RESISTOR_40.2K_SMT_1206	16	435039
R42	RESISTOR_221K_SMT_1206	1	435046
R61	RESISTOR_1.0M_SMT_1206	1	435049
MUTE LINK "ON" SWITCH, MUTE MSTR "A"-"D" SWITCHES	SWITCH_DPDT PUSHBUTTON_ MOMENTARY ACTION	5	510063
SW1, SW2	SWITCH_DIP_4_POS _SMT	2	515001
MUTE LINK "ON" SWITCH, MUTE MSTR "A"-"D" SWITCHES	LENS_LB_WHITE	5	530059
MUTE LINK "ON" SWITCH, MUTE MSTR "A"-"D" SWITCHES	LED_ON/OFF_SWITCH_R5_RED	5	600027
	PCB_FPW1000	1	700293
	NUT_PEM_SP8	3	821012
F1	FUSE_3AMP_SMT_POLYSWITCH	1	835001

Mute Master

(panel position below PWR-1000 power interface module)

RACKMOUNT UNIT			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
UPPER/LOWER INPUT CONNECTIONS	CONN_DB25_CARDEDGE	36	200010
DB25 HARDWARE	SCREWLOCK_FEMALE_AMP	22	200013
CT21-CT39	CONN_CARDEDGE_36_PIN	19	220007
DC POWER IN	CONN_PAN_MIL_AMP	2	230008
CT40	PLUG_3_PIN_JST	1	230028
CT1-CT20	CONNECTOR_DB9_PC_MOUNT_UP	20	250032
CT40	HEADER_3_PIN_JST	1	250062
D5, D6	DIODE_1N4002	2	350003
D1-D4, D7, D8	DIODE_CR6A4 POWER	6	350009
	PCB_SS-MB-1	1	700116
	FURNITURE T-BALL LATCH	1	820066
	SPACER_THREAD_440X1/4	8	823016
PCB GUIDE	CARD_GUIDE_4"	38	827002
	FAN_GUARD_ETRI	1	840004
	FAN_12V DC	1	840013

Smart Select Cage

(audio switcher for input preselector panels)

PART LISTS

SS - SI - 8 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U11-U21	SOCKET_SMT_JS8_PIN	11	245001
U4	SOCKET_SMT_JS14_PIN	1	245002
U5-U10	SOCKET_SMT_JS16_PIN	6	245003
U1-U3	SOCKET_SMT_JS20_PIN	3	245004
U4	IC_74HC02	1	300013
U2, U3	IC_74HC573	2	300032
U1	IC_74HC688	1	300034
U20, U21	IC_2142 BALANCED LINE DRIVER	2	320004
U11-U18	IC_TL072 DUAL BIFET OP-AMP	8	320006
U19	IC_NE5532 DUAL OP-AMP	1	320008
Q2	REGULATOR_7815 POSITIVE 15V	1	330003
Q3	REGULATOR_7915 NEGATIVE 15V	1	330008
Q1	REGULATOR_MIC2940A-5.0BU_5V_1.25A_SMT	1	335002
Z1, Z2	DIODE_ZENER_5.1V_SMT	2	355002
D1, D2	DIODE_1N4148 FAST SWITCHING SMT	2	355003
U5-U10	IC_4053	6	380003
C6, C7, C10, C15-C32, C34, C72	CAPACITOR_22µF 25V ELECTROLYTIC SMT	23	405002
C9, C33, C71	CAPACITOR_100µF 25V ELECTROLYTIC SMT	3	405003
C83	CAPACITOR_1µF 35V ELECTROLYTIC SMT TANTALUM	1	405005
C37, C39, C40, C42, C43, C45, C46, C48-C58, C60, C61, C63, C64, C66, C67, C69, C70, C73-C80	CAPACITOR_10pF 100V CERAMIC SMT	34	415001
C84-C115	CAPACITOR_001µF 50V CERAMIC SMT	32	415005
C1-C5, C8, C11-C14, C35, C36, C38, C41, C44, C47, C59, C62, C65, C68, C81, C82	CAPACITOR_1µF 50V CERAMIC SMT	22	415007
R1-R9	RESISTOR_332 _SMT_1206	9	435010
R18, R34	RESISTOR_2.43K_SMT_1206	2	435020
R54-R69, R71-R78, R80-R87	RESISTOR_4.99K_SMT_1206	32	435023
R10-R17, R38-R53, R88-R103	RESISTOR_10.0K_SMT_1206	40	435028
R19-R33, R35-R37, R70, R79	RESISTOR_26.7K_SMT_1206	20	435037
R104	RESISTOR_1.0M_SMT_1206	1	435049
SW1, SW2	SWITCH_DIP_4_POS_SMT	2	515001
DS1-DS9	LED_R/A_RED_SMT	9	605001
	PCB_SS-SI-8S	1	700243
	CARD_HANDLE_SS-PS	1	824013
F1-F3	FUSE_3AMP_SMT_POLYSWITCH	3	835001

Smart Select Cage (stereo switcher card)

PART LISTS

SS-MI-8S PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	8 PIN .3" DIP SMT SOCKET	11	245001
	14 PIN .3" DIP SMT SOCKET	1	245002
	16 PIN .3" DIP SMT SOCKET	6	245003
	20 PIN .3" DIP SMT SOCKET	3	245004
U4	74HC02	1	300013
U2, U3	74HC573	2	300032
U1	74HC688	1	300034
U9–U16	2017 MIC PREAMP IC	8	320003
U18	2142 BALANCED LINE DRIVER IC	1	320004
U17	NE5532 DUAL OP-AMP	1	320008
Q2	7815 POSITIVE 15V REGULATOR	1	330003
Q3	7915 NEGATIVE 15V REGULATOR	1	330008
Q1	MIC2940A-5.0BU 5V 1.25A REGULATOR SMT 2940	1	335002
Z1–Z34	5.1V SMT ZENER DIODE C5V1	34	355002
D1	1N4148 FAST SWITCHING SMT DIODE	1	355003
U5–U8	4053	4	380003
L1–L8	FERRITE CHOKE	8	400025
C44–C51, C54–C61, C64–C71	CAPACITOR, 10µF 50V ELECTROLYTIC SMT	24	405001
C5, C6, C10, C13–C16, C17–C22, C24, C53	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	15	405002
C9, C23, C52	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	3	405003
C88	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	1	405005
C29	CAPACITOR, 10pF 100V CERAMIC SMT	1	415001
C36–C43	CAPACITOR, 330pF 100V CERAMIC SMT	8	415004
C72÷C87	CAPACITOR, .001µF 50V CERAMIC SMT	16	415005
C1–C4, C7, C8, C11, C12, C25–C28, C30, C31–C35, C62, C63	CAPACITOR, .1µF 50V CERAMIC SMT	20	415007
R34, R39, R44, R49, R54, R59, R64, R69	10 OHM 5% .25W MC1206 RESISTOR	8	435002
R31, R33, R36, R38, R41, R43, R46, R48, R51, R53, R56, R58, R61, R63, R66, R68	100 OHM 5% .25W MC1206 RESISTOR	16	435007
R1–R9	332 OHM 1% .25W MC1206 RESISTOR	9	435010
R32, R37, R42, R47, R52, R57, R62, R67	1.00 KOHM 1% .25W MC1206 RESISTOR	8	435015
R30, R35, R40, R45, R50, R55, R60, R65	1.30 KOHM 1% .25W MC1206 RESISTOR	8	435016
R18, R19	2.43 KOHM 1% .25W MC1206 RESISTOR	2	435020
R87–R102	4.99 KOHM 1% .25W MC1206 RESISTOR	16	435023
R10–R17, R71–R86	10.0 KOHM 1% .25W MC1206 RESISTOR	24	435028
R70	13.3 KOHM 1% .25W MC1206 RESISTOR	1	435030
R20–R29	26.7 KOHM 1% .25W MC1206 RESISTOR	10	435037
R103	1.0 MOHM 5% .25W MC1206 RESISTOR	1	435049
SW1–SW10	4 POSITION SMT DIP SWITCH, TAPE SEALED	10	515001
DS1–DS9	RED SMT LED RIGHT ANGLE	9	605001
	PRINTED CIRCUIT BOARD	1	700113
	CARD HANDLE	1	824013
F1–F4	FUSE/ POLYSWITCH .3AMP SMT RESETABLE	4	835001

Smart Select Cage (mono switcher card)

SS - C - 1A PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J1-J3, J5	2 PIN LINK JUMPER	4	240000
U5	SOCKET_J8_PIN	1	240009
U3	SOCKET_PLCC_52_PIN	1	240010
U1, U2, U4	SOCKET_20 PIN DIP	3	250002
J1-J8	HEADER_STRIP_BREAKAWAY	.5	250016
U1, U2, U4	IC_74HCT244	3	300037
U5	IC_75176	1	310004
U3	IC_MC68HC711E9FS	1	310028
Q1	IC_34064_PS_MONITOR	1	310029
Q2	REGULATOR_7805 POSITIVE 5V	1	330001
Y1	CRYSTAL_4.9152MHZ	1	370009
C9	CAPACITOR, 10 μ F 25V ELECTROLYTIC	1	400011
C1, C2, C4, C6-C8, C10	CAPACITOR, .1 μ F 50V MONOLITHIC CERAMIC	7	410005
C3, C5	CAPACITOR, 22pF 50V CERAMIC	2	410010
RN1-RN3	RESISTOR_SIP_10K_OHM	3	430007
	PCB_SS-C-1	1	700115
	CARD_HANDLE_SS-PS	1	824013

Smart Select Cage (controller card)

PSC-340 POWER SUPPLY			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	PSC-600 POWER SUPPLY COVER	2	007087
	PSC-600 POWER SUPPLY FRAME	2	007088
	PSC-600 POWER SUPPLY SWITCH BRK	1	007096
	PSC-340 HEATSINK SPACER	2	007119
	PSC-340 POWER SUPPLY XMER BRACKET	1	007120
	PSC-340 POWER SUPPLY FACEPLATE TRIM	1	007121
	PSC-340 POWER SUPPLY FACEPLATE	1	007122
	PSC-340 POWER SUPPLY REAR	1	007123
	3 X 2 X 1/4 X 15 31/32' 6061T6 ALUMINUM EXTRUSION	2	110027
	7 1/2' BLACK POWER CORD	1	150017
	9 COND COMPOSITE CABLE, 7 COND 14 AWG, 2 COND 22 AWG, .55 OD BLACK OUTER JACKET, UL APPROVED (16')	1	150085
	GROUND LUG	1	230003
	POWER SOCKET	1	230006
	METAL SHELL MILITARY CABLE CONNECTOR	2	230007
	METAL PANEL MOUNT MILITARY CONNECTOR	1	230008
	METAL MILITARY CONNECTOR STRAIN RELIEF	2	230009
	TERMINAL STRIP	4	230035
LT PCB: Q4	LM317 POSITIVE ADJUSTABLE REGULATOR	1	330012
LT PCB: Q1-Q3, Q5-Q7 RT PCB: Q1, Q3, Q7	LT1085 3A POSITIVE ADJUSTABLE REGULATOR LOW DROPOUT VOLTAGE	9	330021
	MB3510 BRIDGE RECTIFIER 35 AMP 1000 VOLT	7	350000
LT PCB: D3, D4, D5, D6, D7, D8, D9, D10, D11, D12 RT PCB: D3, D12	1N4002 DIODE	12	350003
LT PCB: D1, D2, D13, D14 RT PCB: D1, D2, D13, D14	CR6A4 POWER DIODE	8	350009
LT PCB: V1	82ZA2 V VARISTOR	1	360005
	Z15L390 39V VARISTOR	8	360006
LT PCB: C9, C11, C22	CAPACITOR, 10 μ F 63V ELECTROLYTIC	3	400012
LT PCB: C1-C7, C12-C18 RT PCB: C1, C2, C4, C6, C7, C15, C17, C18	CAPACITOR, 1 μ F 35V TANTALUM ORANGE	22	400014

NOTE: Each PSC-340 power supply has two PS-410 PCBs (left and right, viewed from above the unit).

Smart Select Cage Power Supply

(page 1 of 2)

PSC-340 POWER SUPPLY			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
LT PCB: C21	470UF 100V AXIAL LEAD UL APPROVED ELECTROLYTIC CAPACITOR	1	400031
LT PCB: C19, C23 RT PCB: C19, C23	10000UF 50V ELECTROLYTIC CAPACITOR 105°C	4	400032
LT PCB: C26, C28 RT PCB: C26, C28	2200UF 35V ELECTROLYTIC CAPACITOR 105°C	4	400033
LT PCB: C8, C10 (plus 2 on AC power socket)	CAPACITOR, .0047µF 1KV CERAMIC, UL RATED	4	410015
LT PCB: C27 PCB BRA1: C1	CAPACITOR, .47µF 250V FILM	8	420032
LT PCB: R2, R3, R7, R14, R18, R19 RT PCB: R2, R7	.05 OHM 5% 5W RESISTOR	8	430020
LT PCB: R4, R17 RT PCB: R4, R17	47 OHM 1% .25W CARBON FILM RESISTOR	4	430210
RT PCB: R5	100 OHM 1% .25W CARBON FILM RESISTOR	1	430212
LT PCB: R10 RT PCB: R16	220 OHM 1% .25W CARBON FILM RESISTOR	2	430214
LT PCB: R5, R9, R16	470 OHM 1% .25W CARBON FILM RESISTOR	3	430216
LT PCB: R6, R15 RT PCB: R6, R15, R20	620 OHM 1% .25W CARBON FILM RESISTOR	5	430218
LT PCB: R1, R20	1.0 KOHM 1% .25W CARBON FILM RESISTOR	2	430221
RT PCB: R1	1.5 KOHM 1% .25W CARBON FILM RESISTOR	1	430225
LT PCB: R11, R12, R13	10 KOHM 1% .25W CARBON FILM RESISTOR	3	430239
LT PCB: R8	100 KOHM 1% .25W CARBON FILM RESISTOR	1	430254
LT PCB: CR2	10K TRIM POT	1	500017
LT PCB: CR1, CR3 RT PCB: CR1, CR3	500 TRIM POT	4	500019
LT PCB: SW1	4 POSITION DIP SWITCH	1	510047
LT PCB: DS1, DS3, DS5 RT PCB: DS4, DS6	RECTANGULAR GREEN DIFFUSED LED, TRANSPARENT SIDES	5	600003
PRINTED CIRCUIT BOARD	PCB_PS410	2	700259
PRINTED CIRCUIT BOARD	PCB_BRA1	7	700355
	590VA POWER TRANSFORMER	1	800027
	PHILLIPS PANHEAD SILVER SCREW	7	820073
	SCR_#10-32X1/2_PHI_FL8_MS_ZI	4	820075
	PHILLIPS FLATHEAD MACHINE SCREW	4	820076
	PEM FASTENERS	1	821013
	FLAT WASHER 1/4 USS F/L ZINC	4	822019
	4-40 X .5 HEX ALUMINUM	6	823006
	CERAMIC FILM INSULATOR	8	825012
	EXTRUDED ALUMINUM HEATSINK	6	825013
	3 AMP CIRCUIT BREAKER	1	830002
LT PCB: F1	FUSE / POLYSWITCH .4AMP	1	830018

NOTE: Each PSC-340 power supply has two PS-410 PCBs (left and right, viewed from above the unit).

Smart Select Cage Power Supply

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PART LISTS

RCC - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	RCC SUB-FACEPLATE	1	004313
	RCC-1000 FACEPLATE	1	004622
	RCC-1000 REAR PANEL	1	004722
	RCC SHIELD BOX	1	004724
SERIAL CONTROL A & B	CONN_DB_IDD9_HDF20	2	200031
POWER TO MB CPU	CONN_DB_IDD15_HDF20	1	200046
POWER IN A & B	CONN_PAN_MIL_AMPH	2	230008
	PLUG_RIBBON_10 PIN	1	230020
U26, U39, U46	SOCKET_J28W_PIN_DIP	3	240007
CT15, U47	SOCKET_SMT_JS8_PIN	2	245001
U11, U18, U25, U37, U60	SOCKET_SMT_JS14_PIN	5	245002
U38, U48, U49, U58, U59	SOCKET_SMT_JS16_PIN	5	245003
U1, U13, U19, U20, U28, U40, U41	SOCKET_SMT_JS20_PIN_DIP	7	245004
U12	SOCKET_SMT_PLCC52_PIN	1	245010
U27	SOCKET_SMT_PLCC44_PIN	1	245013
CT15	CONN_DIP_8_PIN	1	250010
CT1, CT2-CT5, CT7-CT11, J1, J2, J4, J5	HEADER_STRIP_BREAKAWAY	9	250016
CT16	HEADER_MOLEX_9_PIN	1	270023
CT16	PINS_MOLEX_SILVER	6	270026
CT16	CONN_9 PIN_ FEMALE _4200	1	270027
U25	IC_4066	1	300005
U19	IC_74C922	1	300010
U11	IC_74HC00	1	300012
U37	IC_74HC08	1	300015
U38, U48, U49, U58, U59	IC_74HC138	5	300019
U18	IC_74HC20	1	300026
U28, U41	IC_74HC688	2	300034
U1, U13, U20	IC_74HCT541	3	300039
U60	IC_74HC14	1	300053
U40	IC_74HC373_TTL	1	300058

Console Event Computer (system access panel)

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PART LISTS

RCC - 1000 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U2-U5, U7-U10, U14-U17, U21-U24, U29-U36, U42-U45, U50-U57, U61-U64	IC_74ABT125_TTL_SMT	40	305001
U47	IC_75176	1	310004
U26	IC_27C64_EPROM_64K	1	310018
U6	IC_34064_PS WATCHDOG	1	310029
U12	IC_68HC11AIFN	1	310030
U46	IC_SRAM_8KX8	1	310031
U27	IC_68HC24FN	1	315024
Q1-Q4	TRANSISTOR_MMBA05_NPN_SMT	4	345001
D1-D5	DIODE_1N4148_SMT	5	355003
Y1	CRYSTAL_4.9152MHZ_SMT	1	375006
C68, C80	CAPACITOR_330µF 25V ELECTROLYTIC	2	405004
C9-C12, C23, C25, C36, C39, C49, C67, C69, C87	CAPACITOR_1µF 35V ELECTROLYTIC	12	405005
C13, C14, C27, C28	CAPACITOR_10pF 100V_CERAMIC_SMT	4	415001
C17-C20, C44-C47, C62-C64, C81-C84	CAPACITOR_0.01µF 50V_CERAMIC_SMT	15	415006
C1-C8, C15, C16, C21, C22, C24, C26, C29-C35, C37, C38, C40-C43, C48, C50-C61, C65, C66, C70-C79, C85, C86, C88-C92	CAPACITOR_1µF 50V_CERAMIC_SMT	59	415007
J3	RESISTOR_0 _JUMPER	1	430100
R61	RESISTOR_100 _CARBON	1	430212
R2, R4, R6, R8, R16, R21, R29, R36	RESISTOR_1K_SMT	8	435015
R9, R10, R25, R27, R34, R35, R39, R40, R42, R48, R50, R54, R56, R58	RESISTOR_3.32K_SMT	14	435021
R13	RESISTOR_4.99K_SMT	1	435023
R1, R3, R5, R7, R11, R12, R14, R15, R18, R24, R26, R28, R38, R41, R43, R44, R46, R47, R49, R52, R53, R55, R57, R59, R62	RESISTOR_10.0K_SMT	25	435028
R17, R22, R30, R37	RESISTOR_40.2K_SMT	4	435039
R19, R20, R31-R33, R45, R51	RESISTOR_100K_SMT	7	435044
R23	RESISTOR_10M_SMT	1	435050
SW2, SW3	SWITCH_SIG_BLUE NO LED	2	510065
SW4, SW6, SW15	SWITCH_SIG_RED NO LED	3	510068
SW1, SW5, SW7-SW14, SW17-SW24, SW26	SWITCH_SIG_WHITE NO LED	19	510070
DS1-DS4	LED_L113_RED	4	600001
DS1-DS11	DISPLAY_4 DIGIT GREEN_LED	11	610005
	PCB_RC1000	1	700349
	SCREWLOCK_FEMALE	6	820047
	STANDOFF_4-40 X .375 RND ALUM. PEM	10	823024
	COMPUTER BOARD	1	940001
	INTERFACE_RS-422/485	1	940005

Console Event Computer (system access panel)

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PART LISTS

DSC - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
J2, J7, J8	2 PIN LINK JUMPER	3	240000
U20, U27	SOCKET_J28W_PIN_DIP.6	2	240007
U3	SOCKET_SMT_JS8_PIN	1	245001
CT7	SOCKET_SMT_JS14_PIN	1	245002
J1-J42, TP14, TP16, TP17, CT3	HEADER_STRIP_BREAKAWAY	0.55	250016
CT6	HEADER_3_PIN_JST	1	250062
CT1, CT5	HEADER_10_PIN_ST	2	250077
U26	IC_74ABT244 TTL SMT	1	305002
U4, U5, U30	IC_74ACT32 TTL SMT	3	305010
U24, U25	IC_74ABT2245 TTL SMT	2	305019
U1, U19, U29	IC_74AC14 TTL SMT	3	305027
U11, U16, U21, U28	IC_74HC30 TTL SMT	4	305028
U2	IC_74ACT02 TTL SMT	1	305040
U15	IC_74ACT138 TTL SMT	1	305049
U3	IC_75176	1	310004
U20, U27	IC_27C64 EPROM 64K	2	310018
U9	IC_34064 POWER SUPPLY WATCHDOG CHIP	1	310029
U7, U8, U12, U13, U17, U18, U22, U23	IC_43258 MEMORY SMT	8	315005
U14	IC_MC68HC12 SMT	1	315015
Q2	LM317 POSITIVE ADJUSTABLE	1	330011
Q1	REGULATOR_PQ05SZ1 5V 1A SMT	1	335001
Z1	DIODE_1N4735 ZENER	1	350013
D3	DIODE_1N4002W RECTIFYING 1AMP SMT	1	355001
D1, D2, D4-D10	DIODE_SS14 SCHOTTKY SMT	9	355004
CT6	CRYSTAL(OSCILLATOR)_4.9152MHZ	1	370015
L1-L4	FERRITE BEAD	4	400024

Console Event Computer (switch controller card)

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DSC - 1000			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
C38, C40, C49	CAPACITOR_100µF 25V ELECTROLYTIC SMT	3	405003
C12, C19, C41	CAPACITOR_330µF 25V ELECTROLYTIC SMT	3	405004
C15, C39, C42-C45	CAPACITOR_1µF 35V ELECTROLYTIC SMT	6	405005
C11	CAPACITOR_10pF 100V CERAMIC SMT	1	415001
C46	CAPACITOR_300pF 100V CERAMIC SMT	1	415004
C2, C6, C16, C18, C28, C33-C36	CAPACITOR_01µF 50V CERAMIC SMT	9	415006
C1, C3, C4, C5, C7-C10, C13, C14, C17, C20-C27, C29-C32, C37, C47, C48	CAPACITOR_1µF 50V CERAMIC SMT	26	415007
R35, R36	RESISTOR_10 _SMT_1206	2	435002
R71, R74	RESISTOR_39 _SMT_1206	2	435004
R4	RESISTOR_100 _SMT_1206	1	435007
R3	RESISTOR_150 _SMT_1206	1	435008
R25, R37	RESISTOR_332 _SMT_1206	2	435010
R38, R39	RESISTOR_619 _SMT_1206	2	435013
R72, R73	RESISTOR_1.00K_SMT_1206	2	435015
R28	RESISTOR_1.30K_SMT_1206	1	435016
R78	RESISTOR_2.43K_SMT_1206	1	435020
R27	RESISTOR_3.32K_SMT_1206	1	435021
R79, R80	RESISTOR_3.92K_SMT_1206	2	435022
R2, R5-R24, R26, R30-R32, R34, R40, R42-R45, R47	RESISTOR_4.99K_SMT_1206	32	435023
R1, R29, R33, R41, R46, R48, R65	RESISTOR_10.0K_SMT_1206	7	435028
R49-R64, R66-R70, R75-R77	RESISTOR_40.2K_SMT_1206	24	435039
CR1	POT_TRIM_HOR_1K_SMT	1	505001
SW1	SWITCH_PUSHBUTTON RED LED/ RED CAP	1	510087
	PCB_DSC1000	1	700284
	BATTERY_3V LITHIUM	1	830000
E1	BATTERY HOLDER	1	830003
F1, F2	FUSE_3AMP_SMT_POLYSWITCH	2	835001

Console Event Computer (switch controller card)

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RBUF - 6A PCB		
DESCRIPTION	QTY	WS P/N
SOCKET_20 PIN DIP	3	250002
HEADER_STRIP_BREAKAWAY	6	250016
SOCKET_DIL_20_PIN	1	250057
SOCKET_DIL_34_PIN	2	250058
HEADER_MOLEX_9_PIN	2	270023
PINS_MOLEX_SILVER	18	270026
CONN_9 PIN_ FEMALE _4200	2	270027
IC_74HCT541	3	300039
CAPACITOR_100μF 35V_ELECTROLYTICS	1	400001
CAPACITOR_1μF 35V TANTALUM_ORANGE	1	400014
CAPACITOR_.1μF 50V MONOLITHIC CERAMIC_BLUE	6	410005
PCB_RBUF-6A	1	700093
STANDOFF_4-40 X .375 RND ALUM. PEM		823024

Console Event Computer (buffer card)

PART LISTS

DISP - 8 PCB			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
U2-U9	DISPLAY WINDOWS	1	120011
	SCREWLOCK_FEMALE_AMP	3	200013
U1	SOCKET_J16_PIN	1	240004
U2-U9	SOCKET_FLEX_STRIP_SNAP	8	250014
CT2	HEADER_3M_16_PIN_STRAIGHT	1	250038
CT1	HEADER_3M_20_PIN_R/A	1	250040
U1	IC_74HC138	1	300019
D1-D16	DIODE_1N914	16	350008
C11	CAPACITOR_10μF 25V ELECTROLYTIC	1	400011
C2, C5, C7, C13	CAPACITOR_1μF 35V TANTALUM	4	400014
C1, C3, C4, C6, C8-C10, C12	CAPACITOR_1μF 50V MONOLITHIC CERAMIC	8	410005
RN2, RN4	RESISTOR_SIP_10K_OHM	2	430007
RN1, RN3	RESISTOR_SIP_3.3K_OHM	2	430011
R1-R8	RESISTOR_10K CARBON	8	430239
U2-U9	DISPLAY_4 DIGIT GREEN LED	8	610005
	PCB_DISP8D	1	700030

Console Event Computer (display strip card)

PSC-125 POWER SUPPLY			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	HEATSINK	1	007077
	CARD BRACKET	1	007078
	PSC-125 POWER SUPPLY FACEPLATE	1	007126
	CHASSIS	1	007127
	COVER	2	007128
	BRACKET	2	008071
	GRAY POWER CORD	1	150016
	9 COND COMPOSITE CABLE, 7 COND 14 AWG, 2 COND 22 AWG, .55 OD BLACK OUTER JACKET, UL APPROVED	1	150085
	GROUND LUG	1	230003
	METAL SHELL MILITARY CABLE CONNECTOR	2	230007
	METAL PANEL MOUNT MILITARY CONNECTOR	1	230008
	METAL MILITARY CONNECTOR STRAIN RELIEF	2	230009
	PATCH CLIPS	1	280000
Q1, Q2, Q3	LM338K 5A POSITIVE REGULATOR	3	330014
D1,D3, D4, D5, D6	1N4002 DIODE	5	350003
D11, D12, D13, D15, D16, D17, WIRING PAD: RED	CR6A4 POWER DIODE	7	350009
ON HEATSINK	MBR4045 SCHOTTKY DIODE	1	350014
VR3, VR4, VR5, VR6	18ZA1 VARISTOR	4	360000
VR7, VR8	39ZA1 VARISTOR	2	360002
C18	CAPACITOR, 10000µF 35V ELECTROLYTIC	1	400006
C4, C5, C7, C8, C9, C10	CAPACITOR, 1µF 35V TANTALUM ORANGE	6	400014
C1, C3	CAPACITOR, 22µF 25V ELECTROLYTIC	2	400017
C6, C11	CAPACITOR, .0047µF 1KV CERAMIC, UL RATED	2	410015
WIRING PADS: GRN, VIO	.05 OHM 5% 5W RESISTOR	2	430020
R2	620 OHM 1% 1/4W RESISTOR	1	430218
R11	750 OHM 1% 1/4W RESISTOR	1	430219
R1,R7	10K OHM 1% 1/4W RESISTOR	2	430239
R3, R8, R9	100 OHM 5% 1/4W RESISTOR	3	435007
R19	150 OHM 5% 1/4W RESISTOR	1	435008

Console Event Computer (power supply)

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PSC-125 POWER SUPPLY			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
CR2, CR3	500 TRIM POT	2	500019
+5V, +12V	RECTANGULAR GREEN DIFFUSED LED, TRANSPARENT SIDES	2	600003
MAIN PCB	PS-6040 PRINTED CIRCUIT BOARD	1	700205
SCHOTTKY DIODE PCB (ON HEATSINK)	SBDA1 PRINTED CIRCUIT BOARD	1	700298
A50	POWER TRANSFORMER	1	800005
	SOCKET HEAD CAP SCREW	4	820007
	PHILLIPS PANHEAD STAINLESS STEEL	20	820013
	PHILLIPS FLATHEAD STAINLESS STEEL SCREW UNDERCUT	8	820020
	HEX SOCKETHD BLACK STAINLESS STEEL SCREW	9	820025
	PHILLIP PANHEAD STAINLESS STEEL SCREW	4	820035
	1/4" HEX KEPNUTS S/Z	6	821005
	SMALL PATTERN KEPNUT	5	821006
	ZINC KEPNUT	4	821008
	PEM FASTENERS	2	821009
	PEM FASTENERS	1	821013
	RUBBER GROMMET	4	824005
	STRAIN RELIEF	1	824009
USED ON LM338Ks	CERAMIC FILM INSULATOR	3	825012
	MICA INSULATOR FOR TO-3P SCHOTTKY DIODE	1	825014
	2 AMP FUSE	1	830007
	FUSE HOLDER	1	830010

Console Event Computer (power supply)

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BB - 1000 PCB		
DESCRIPTION	QTY	WS P/N
REGULATOR_LM317	1	330011
DIODE_MBR130P	2	350010
CAPACITOR_100UF 25V_UPRIGHT	2	400009
RESISTOR_0 _CARBON	1	430100
RESISTOR_10 _CARBON	2	430207
RESISTOR_330 _CARBON	1	430215
RESISTOR_620 _CARBON	1	430218
POT_500 _HOR TRIM	1	500019

Console Event Computer (backup battery charger)

CONF-1000 CONFIDENCE FEED MODULE			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
	FACEPLATE	1	004612
	DUAL DB-25 REAR PANEL - TV1000	1	004705
	LATCHING BLOCKS - .190	4	200011
CT11, CT12	RIGHT ANGLE IDD 25 PIN PC MOUNT CONNECTOR	2	220017
CT1—CT10	6 PIN .098" PLUG FOR #26 AWG	10	230031
(U22)	16 PIN .3" DIP SMT SOCKET	1	245003
(U21)	20 PIN .3" DIP SMT SOCKET	1	245004
CT1—CT10	6 PIN .098" HEADER	10	250065
U22	74HC138	1	300019
U21	74HC688	1	300034
U12,U13,U14,U17,U19	74ABT244 TTL SMT	5	305002
U1,U3,U6,U7,U9,U18	74ACT00 TTL SMT	6	305004
U25	74ACT08 TTL SMT	1	305006
U10	74ACT32 TTL SMT	1	305010
U15,U16,U20	74HC373 TTL SMT	3	305011
U2,U5,U8,U11,U24	74AC14 TTL SMT TAPE & REEL ONLY	5	305027
U4	74HC30 TTL SMT	1	305028
U23	74ACT02 TTL SMT	1	305040
U26	PQ05SZ1 5V 1A REGULATOR SMT T/R	1	335001
Q1—Q10	MMBTA05 NPN SMT TRANSISTOR	10	345001
D1,D2	1N4148 FAST SWITCHING SMT DIODE	2	355003
C19,C48	CAPACITOR, 22 μ F 25V ELECTROLYTIC SMT	2	405002
C20,C44	CAPACITOR, 100 μ F 25V ELECTROLYTIC SMT	2	405003
C2—C7,C21—C24,C45	CAPACITOR, 1 μ F 35V ELECTROLYTIC SMT TANTALUM	11	405005
C1,C8—C18,C25—C43,C46,C47	CAPACITOR, .1 μ F 50V CERAMIC SMT	33	415007

Confidence Feed (module)

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CONF-1000 CONFIDENCE FEED MODULE			
COMPONENT NO.	DESCRIPTION	QTY	WS P/N
R53,R56,R59,R62,R65,R68,R71,R74,R77,R80	10 OHM 5% .25W MC1206 RESISTOR	10	435002
R84,R92	100 OHM 5% .25W MC1206 RESISTOR	2	435007
R2,R4,R6,R8,R10,R12,R14,R16,R18,R20	220 OHM 5% .25W MC1206 RESISTOR	10	435009
R22,R23,R24,R26,R27,R30,R31,R33,R34,R35,R37,R38,R40, R41,R42,R44,R45,R46,R48,R49,R50,R91,R93,R94,R132	2.43 KOHM 1% .25W MC1206 RESISTOR	25	435020
R21,R24,R25,R28,R29,R32,R39,R43,F47,R51,R52,R54,R55, R57,R58,R60,R61,R63,R64,R66,R67,R69,R70,R72,R73,R75, R76,R78,R79,R81,R82,R83,R85—R90,R122,R130,R131	4.99 KOHM 1% .25W MC1206 RESISTOR	41	435023
R36,R95—R102	10.0 KOHM 1% .25W MC1206 RESISTOR	9	435028
R103—R118,R119,R120,R121,R123,R124,R125,R127,R128, R129	221 KOHM 1% .25W MC1206 RESISTOR	25	435046
R126	1.0 MOHM 5% .25W MC1206 RESISTOR	1	435049
MXM1—8, MXM ALL, MSTR 1	DPDT PUSHBUTTON SWITCH, MOMENTARY ACTION, GRAY HOUSING	10	510063
SW1,SW2,SW3	4 POSITION SMT DIP SWITCH, TAPE SEALED	3	515001
(MXM1—8, MXM ALL, MSTR 1)	LB STYLE WHITE BUTTON	10	530059
(MXM1—8, MXM ALL, MSTR 1)	RED LED FOR R5 ON/OFF SWITCH	10	600027
	CFC-1000 PRINTED CIRCUIT BOARD SMT	1	700307
	PEM FASTENERS	5	821012
F1—F4	FUSE / POLYSWITCH .3AMP SMT	4	821012

Confidence Feed (module)

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CONSOLE SUB - ASSEMBLIES		
COMPONENT NO.	DESCRIPTION	WS P/N
BB-1000	LOADED CARD	
TM-6 TIMER (STANDARD)	LOADED CARD	002095
CLK-5 CLOCK (STANDARD)	LOADED CARD	002096
TCS-60 LOADED CARD (TRFF)	TR-60 LOADED SWITCH CARD	002450
RCC DISPLAY CARD	LOADED CARD	004461
MLS-1000	MODULE	004503
SUB-1000	MODULE	004504
MSTR-1000	MODULE	004505
MSTRCF-1000	MODULE	004506
CR-1000	MODULE	004507
SC-1000	MODULE	004509
TR-1000	FADER MODULE	004510
VO-1000	MODULE	004511
CONF-1000	MODULE	004512
FPSUB-1000	MODULE	004514
FPMSTR-1000	MODULE	004517
FPCR-1000	MODULE	004518
SB-1000	MODULE	004520
SBC-1000	MODULE	004521
RCC-1000	EVENT COMPUTER MODULE	004522
PWI-1000	MODULE	004523
DSC-1000	LOADED CARD	004524
FPMM-1000	MODULE	004525
FPMLS-1000 ABC	MODULE	004526
FPCUE-1000	MODULE	004527
SGCF-1000	LOADED CARD	004532
MLS-1000	LOADED CARD	004533
SUB-1000	LOADED CARD	004534

Console Sub Assemblies

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CONSOLE SUB - ASSEMBLIES		
COMPONENT NO.	DESCRIPTION	WS P/N
MSTR-1000	LOADED CARD	004535
CR-1000	LOADED CARD	004537
SC-1000	LOADED CARD	004539
VO-1000	LOADED CARD	004541
MLSW-1000	LOADED CARD	004553
SGSW-1000	LOADED CARD	004554
CRSW-1000	LOADED CARD	004557
VOSW-1000	LOADED CARD	004561
FPSUB-1000	LOADED CARD	004564
FPMSTR-1000	LOADED CARD	004567
FPCR-1000	LOADED CARD	004568
SB-1000	LOADED CARD	004570
SBC-1000	LOADED CARD	004571
RCC-1000	LOADED CARD	004572
FPM-1000	LOADED CARD	004575
FPCUE-1000	LOADED CARD	004577
EXT-1000 RIBBON	EXTENDER RIBBON	004595
MBM-1000 ASSEMBLED	LOADED CARD	004596
MBF-1000 ASSEMBLED	LOADED CARD	004597
MBS-1000 ASSEMBLED	LOADED CARD	004598
PSC-1000 POWER SUPPLY	PSC-1000 POWER SUPPLY	007014
PSA-1000	LOADED AND ASSEMBLED	007016
LED-3 LOADED CARD	LOADED CARD	007104
LOADED AND ASSEMBLED SBDA-1000 CARD	LOADED AND ASSEMBLED SBDA-1000 CARD	007117
LOADED PS-410 CARD	LOADED PS-410 CARD	007214
ASSEMBLED DSC-1000 CARD	LOADED AND ASSEMBLED DSC-1000 CARD	054524
ASSEMBLED SGCF-1000 CARD	LOADED AND ASSEMBLED SGCF-1000 CARD FOR SUB	054532
MLS-1000 main assembly	LOADED & ASSEMBLED MAIN CARD	054533
ASSEMBLED SUB-1000 CARD	LOADED AND ASSEMBLED SG-1000 CARD FOR SUB	054534
ASSEMBLED MSTR-1000 CARD	LOADED AND ASSEMBLED SG-1000 CARD FOR MSTR-1000	054535

Console Sub Assemblies

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CONSOLE SUB - ASSEMBLIES		
COMPONENT NO.	DESCRIPTION	WS P/N
STEREO FADER SWITCH CARD	LOADED AND ASSEMBLED FPSW1000 CARD	054536
ASSEMBLED CR-1000 CARD	LOADED AND ASSEMBLED CR-1000 CARD FOR CR-1000	054537
ASSEMBLED SC-1000 CARD	LOADED AND ASSEMBLED CR-1000 CARD FOR SC-1000	054539
ASSEMBLED VO-1000 CARD	LOADED AND ASSEMBLED VO-1000 CARD FOR VO-1000	054541
ASSEMBLED MLSW-1000 SWITCH CARD	LOADED AND ASSEMBLED SWITCH CARD	054553
ASSEMBLED SGSW-1000 CARD	LOADED AND ASSEMBLED SGSW-1000 FOR SUB-1000	054554
ASSEMBLED MSTRSW-1000 CARD	LOADED AND ASSEMBLED SGSW-1000 FOR MSTR-1000	054555
ASSEMBLED CRSW-1000 CARD	LOADED AND ASSEMBLED CRSW-1000 CARD FOR CR-1000	054557
ASSEMBLED VOSW-1000 CARD	LOADED AND ASSEMBLED VOSW-1000 CARD FOR VO-1000	054561
ASSEMBLED SUB FADER CARD	LOADED AND ASSEMBLED FPI-1000 FOR SUB FADER	054564
STEREO IN FADER CARD	LOADED AND ASSEMBLED FPI CARD	054566
FPMSTR-1000 FADER CARD	LOADED AND ASSEMBLED FPI CARD FOR FPMSTR-1000	054567
FPCR-1000 FADER CARD	LOADED AND ASSEMBLED FPI CARD FOR FPCR-1000	054568
SB-1000 CARD	LOADED AND ASSEMBLED SB-1000 CARD	054570
SBC-1000 CARD	LOADED AND ASSEMBLED SBC-1000 CARD	054571
RCC-1000 CARD	LOADED AND ASSEMBLED RCC-1000 CARD	054572
LOADED AND ASSEMBLED SBS-1000 CARD	LOADED AND ASSEMBLED SBS-1000 CARD	054573
ASSEMBLED RBUF-6A CARD	LOADED AND ASSEMBLED RBUF-6A CARD	054574
FPMM-1000 CARD	LOADED AND ASSEMBLED FPMM-1000 CARD	054575
FPCUE-1000 CARD	LOADED AND ASSEMBLED FPCUE-1000 CARD	054577
MBM-1000 CARD	LOADED AND ASSEMBLED MBM-1000 CARD	054596
MBF-1000 CARD	LOADED AND ASSEMBLED MBF-1000 CARD	054597
MBS-1000 CARD	LOADED AND ASSEMBLED MBS-1000 CARD	054598

Console Sub Assemblies

(page 3 of 4)

CONSOLE SUB - ASSEMBLIES		
COMPONENT NO.	DESCRIPTION	WS P/N
JST-AMP CABLE ASSEMBLY	JST-AMP CABLE ASSEMBLY FOR RCC-1000	054651
DUAL DB-9 TO 10 PIN CABLE ASSEMBLY	DUAL DB-9 TO 10 PIN CABLE ASSEMBLY FOR RCC-1000	054652
TWIN POWER CABLE ASSEMBLY	TWIN POWER CABLE ASSEMBLY FOR RCC-1000	054653
20 PIN CABLE ASSEMBLY	20 PIN CABLE ASSEMBLY FOR TV-1000	054654
TV-1000 26 PIN RIBBON ASSEMBLY	RIBBON WIRE ASSEMBLY FOR TV-1000 MODULES	054655
MLS1000 9 TO 10 PIN RIBBON	RIBBON WIRE ASSEMBLY, DB-9 TO DIP 10 FOR VO1000 MODULE	054656
WIRED LB-25 SWITCH, TV1000	WIRED SWITCH FOR TV1000	054657
26 PIN CONF. FEED RIBBON ASSEMBLY, TV-1000	26 PIN RIBBON ASSEMBLY FOR CONFIDENCE FEED	054658
8 TO 10 PIN CONFIDENCE FEED RIBBON ASSEMBLY	RIBBON ASSEMBLY FOR TV-1000 CONFIDENCE FEED; 8 TO 10 PIN	054659
TV-1000 WIRED MONO FADER	WIRED 3220 MONO FADER FOR TV-1000	054660
10 PIN RIBBON, VO-1000	10 PIN RIBBON ASSEMBLY FOR VO-1000	054661
TV-1000 WIRED STEREO FADER	WIRED 3222 FADER FOR TV-1000	054662
TV-1000 WIRED POT, SINGLE AUDIO	#500058 SINGLE AUDIOPOT WIRED FOR TV-1000 MODULES	054663
TV-1000 14 PIN RIBBON ASSEMBLY	TV-1000 14 PIN RIBBON ASSEMBLY	054664
LOADED AND ASSEMBLED PS-410 CARD	LOADED AND ASSEMBLED PS-410 CARD	057214

Console Sub Assemblies

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Appendix I

TV-1000 Console Internal Wiring Paths

As previously stated, most mainframe positions on a TV-1000 console have three active sections: the main module itself, an (optional) overbridge preselector panel, and an associated fader panel directly in line with and below the main module (the two being separated by the console's alpha-numeric source display strip).

Main Module PCBs to Fader Panel PCBs

Main input modules plug (via upper and lower 120-pin edge connectors) into motherboards (MBM-1000 PCBs) mounted in the bottom of the console mainframe. Two 20-pin ribbon cable connectors at each slot location on the motherboard pick-up those signals that must connect to each position's fader panel.

EXAMPLE: see page 111 of the Technical Drawings, main motherboard load sheet (lower left) and schematic, page 118, where CT49 and CT41 (20-pin ribbon cable connector sockets) pick up fader signals from CT32 (lower 120-pin edgcard connector socket). The two ribbon cables then thread through openings under the console's alphanumeric display strip, where they plug into mating sockets (in this case C17 and C15) on the fader panel's motherboard (MBF-1000 PCB; see LOAD SHEET, upper right, page 122 and SCHEMATIC, left half, page 123). The mating sockets then parallel the signals to the fader panel's 120-pin edge card connector socket.

Main Module PCBs to Meterbridge VUs

Individual module VU signals route (via main PCB edgcard fingers) to mainframe motherboard PCBs, where they are carried via ribbon cables to their respective meters. See Technical Drawings, page 132 "Mainframe Meter Wiring" for more information.

Balanced vs. Unbalanced Connections

By now everyone knows (or should know) that balanced inputs and outputs are highly desirable - they have an intrinsic ability to reject hum, noise, crosstalk, and RF, even if the shielding and grounding leave something to be desired. Telephone companies routinely pack hundreds of balanced lines into one cable, with no shielding, next to AC power lines and street lights, and if good balance is maintained, the individual circuits are completely free of noise and crosstalk.

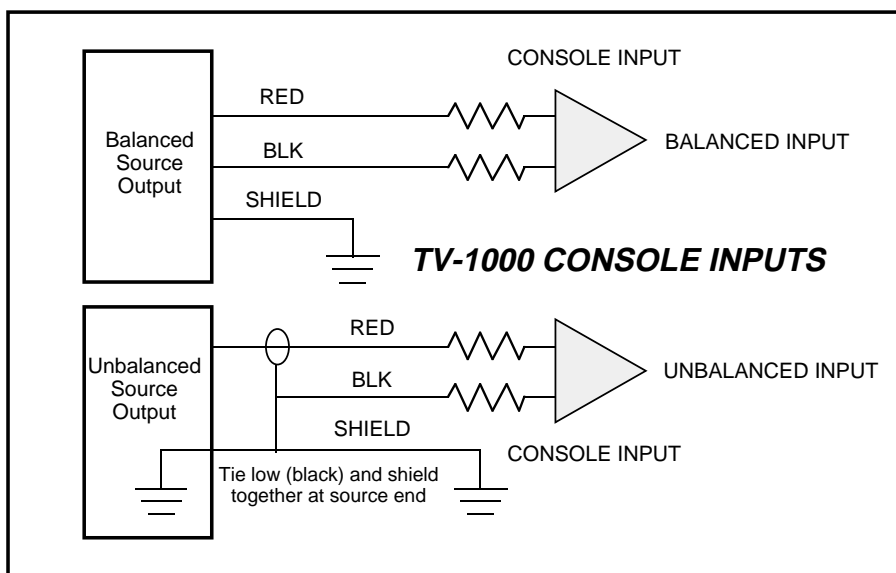
Not all equipment used in stations is balanced, however, and the most cost-effective devices often don't have +4 dBu output levels, either. Because of these realities, all Wheatstone consoles are designed to accept balanced or unbalanced sources with levels as low as -10 dBu.

Connecting unbalanced inputs is simple—wire to the console with typical shielded two conductor cable (like Belden 9451), just as if you were connecting a balanced source. At the unbalanced machine's output, connect the black wire (LOW) to the shield. This “pseudo-balanced” connection has proven to be the simplest and most trouble-free way to go. Another plus is that the wiring need not be changed out if a balanced output machine is subsequently installed in that position. If the machine has a -10 dBu output, don't hesitate to turn your input trimmers as high as is needed.

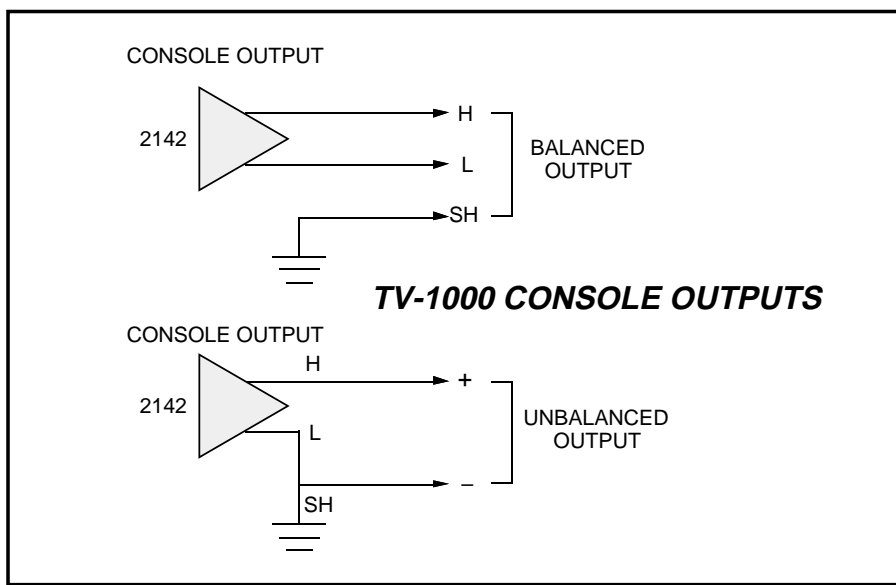
TV-1000 consoles use a balanced output circuit which behaves exactly like the secondary of a high-quality transformer, with no center tap—this output is both balanced and floating. Either the HIGH or LOW side of the output should be strapped to ground, with the output taken from the other side. (Normally you'd strap LOW to ground, and take HIGH to feed your unbalanced equipment.)

This type of self-compensating active-balanced output has been tried before, but it required costly hand-matching of resistors to maintain stability and low distortion. The 2142 balanced line driver IC uses laser-trimming of the on-chip resistors, under computer control, to achieve the desired results. A major advantage over the discrete component designs is the ability to replace the IC without the need for hand-picking resistors to restore the performance of the circuit.

The ability to use output HIGH or LOW permits an easy phase reversal of the console's output signals, should this be desired.



Typical unbalanced input and output connections to the TV-1000 console.



Notes on Level Measurement

Audio levels today are commonly referred to as voltage equivalents of power levels in 600 ohm circuits. One milliwatt (0 dBm) in 600 ohms is a voltage of .775 V. The corresponding unit for use in circuits where the exact impedance is unknown or irrelevant is the dBu (the "u" stands for "unloaded"). Thus, 0 dBu is .775 V regardless of the impedance of the circuit where it is measured. (Note the dBu should not be confused with the dBV; 0 dBV = 1 volt.)

For your convenience, here are some commonly encountered level measurement values:

0 dBm in 600 ohms = .775 V = 0 dBu in any impedance

+4 dBu = 1.23 V

+8 dBu = 1.95 V

-10 dBu = .245 V

-20 dBu = 77.4 mV

-50 dBu = 2.45 mV

When checking out a system, remember to measure the input voltage at the connector, as variations in input impedance and generator source impedance can invalidate your results.

Extender Ribbons

TV-1000 consoles are shipped with EXTENDER RIBBONS. These 3-foot cables allow individual modules to be removed from the console mainframe and still remain powered-up and connected to the bus system, for active troubleshooting. There are three types of extender ribbons: one for main modules, one for fader panels, and one for overbridge preselector panels.

Troubleshooting

Basic Procedures

If you have encountered difficulty in testing your installation, check the items listed below before opening the console. *Note that some items may seem very obvious;* it is often the most obvious things that we overlook.

1) Are the console power supply systems properly installed and operating correctly?

2) Are the sources you are using to test the console installation producing normal, line level signals? For example, if a cart machine is the source, is the cart playing? Is the output of it connected to the console?

3) When checking for sound from the control room speakers, is the external monitor amplifier on? Is the amplifier volume turned up to a normal level? Are the speakers connected to the amplifier outputs? Are the console's SOLO and CUE functions deactivated? (Under normal programming they will interrupt the regular monitor signal.)

4) If you have checked external devices and connections, and feel that the problem is within the console, double check all wiring before attempting to troubleshoot the console itself.

Testing a "Live" (Powered-Up) Console – Precautions

(1) If a module must be removed, but remain connected while troubleshooting (using the extender ribbons that come with the console), place a piece of cardboard or other non-conducting material across the console where the module will be placed. This will prevent shorting, and also avoid scratching or marring the faceplates.

(2) Be extremely careful when using meter or oscilloscope test probes, to avoid shorting a test point to an adjacent connection. This is especially important when probing a pin 7 op-amp output, since the adjacent pin 8 is at 18 volts.

(3) **NEVER** remove or insert an integrated circuit while the console is powered up.

Integrated Circuits

The audio circuits of the console consist almost entirely of plug-in IC op-amps. The types called out in the schematic drawings and parts lists are chosen for optimum performance; in an emergency situation other types of known matching pin-out and capability can be temporarily substituted. Some useful troubleshooting hints for these circuits follow.

(1) Resistors and capacitors, including electrolytic capacitors, have a vanishingly small failure rate in this equipment.

(2) Do not attempt to put any significance to the fact that you can measure very low signal levels on the inverting or "minus" input of an op-amp stage. Due to the large open-loop gain of the typical op-amp, the inverting input of an amplifier, configured as an inverter with its non-inverting input grounded, acts as a "virtual ground," and signal levels at this point can be expected to be extremely low. However, a circuit fault could result in a large signal level at the inverting input, so it may be worth checking.

(3) When one of these ICs fails, it commonly swings its output to one of the power supply rails. This should be a first check when a bad IC is suspected. Measure the output pin of the IC directly (as opposed to measuring after a coupling capacitor) under a no-signal condition and look for a large DC offset at the output. Note that this test is not valid for those op-amps used in non-audio circuits such as integrators and relay drivers.

(4) All of the console modules pick up their power supply voltage from the main distribution busses through polyswitches. These devices are provided to limit the current drawn by the module under fault conditions and prevent a module level fault from becoming a console level fault. Polyswitches will generally activate when an IC fails (see item 3, previous). Whenever a fault is suspected check the voltage on the module side of the polyswitches. When all of the circuits in a module indicate the same fault (all outputs have no audio and a large DC value, or all meters are pegged under no signal conditions, etc.) it is generally due to one of the polyswitches becoming active. Do not defeat the protection offered by these devices by replacing them with wires. Instead, determine the fault that caused them to activate in the first place and correct it.

A polyswitch is an electronic fuse that switches to a very high impedance state when its current threshold is reached. The device resets to a very low impedance state when the fault condition is cleared and they have cooled off to normal temperature.

(5) The capacitive loading effect of a test probe may occasionally cause oscillations in a high gain amplifier circuit. For this reason it is advisable, when using meter probes to measure DC voltage in an amplifier circuit, to isolate the “hot” lead from the circuit under test with a 10K resistor. This introduces a slight measurement error, depending on the meter input impedance, but this error is slight compared to the error that occurs if the amplifier is oscillating. If signal tracing with an oscilloscope, use a low capacity probe.

(6) Because of the feedback loop in the op-amp circuit, sometimes a signal can be measured or heard even when the IC is defective or even removed. Generally this signal will become more and more distorted as the level increases; also the gain of the affected path will be incorrect. Don’t assume that because you can observe an output signal the IC must be working properly.

Other Details

(1) In general, TV-1000 consoles are rugged and user friendly. I/O connections can be unplugged or plugged in while powered up with no damage. Occasionally, this may cause a transient in the logic system that may be sufficient to affect a channel’s ON/OFF or CUE status, but this is rare.

(2) If the power cable is being unplugged from the mainframe or the power supply, be sure to first turn the power off to avoid arcing the connector pins.

(3) The module faceplate Lexan panel overlays are very durable, and can be easily cleaned with Windex. If they should become damaged or torn through carelessness they can be replaced—consult Wheatstone for details.

(4) Care should be taken with the plexiglas covering the VU meters, as it is easily scratched.

(5) Fader knobs should be removed or installed only when the fader is at the end of its travel, to avoid "bowing" the internal fader structure.

Wheatstone maintains an active program of user support and technical assistance. You are encouraged to call (919/252-638-7000) or fax (919/252-637-1285) the factory with any questions, problems, ideas, or suggestions regarding your TV-1000 console.

APPENDIX II

Factory Leg Set Assembly

Furniture Leg Set Assembly Instructions

The TV-1000 furniture leg set is shipped in four sections:

- a) two wooden endpieces
- b) a front vanity panel, pre-attached to an interior access panel
- c) a rear vanity panel

Note the leg set has already been pre-assembled with the TV-1000 console at the factory, so all holes have been predrilled. The set is subsequently broken down for shipping purposes. All that remains at the client end is re-assembly.

a) Note the wooden end pieces: the curved edges face towards the front; metal brackets have been pre-mounted on their inside surfaces; the bottom edge of each piece is longer than the top edge. When set upright in the correct orientation, the distance between them will equal the width of your TV-1000 audio console, and the front and rear vanity panels will span that distance.

b) The double vanity panel (the one already attached to the unfinished wooden ACCESS PANEL) is the *front* spanning piece. Its formica surface faces front; the cherry strip is its bottom edge and rests on the floor. Note the metal angle piece running the entire length of the access panel's top edge—this attaches to the bottom of the TV-1000 console.

c) The single vanity panel is the *rear* spanning piece. Its formica surface faces to the rear. The cherry strip is its bottom edge; when in place it leaves a 3/4" gap between it and the floor. This is for wiring cable access.

Refer to the drawing
on the next page

FIELD ASSEMBLY CONSISTS OF FIVE BASIC STEPS:

1) Position the two side pieces and mount the ACCESS PANEL (with its attached front vanity panel) to them, by screwing through the side piece front metal brackets directly into the predrilled holes on the access panel's (inside) surface, using the wood screws provided.

2) Mount the REAR VANITY PANEL to the rear metal brackets of the side pieces. Note this panel is attached using finished cupwasher screws that go into pre-tapped holes on the side pieces' rear metal brackets. Remember there will be a 3/4" gap between the rear panel's cherry trim strip and the floor.

3) With all screws tightened and the leg set safely assembled as a rigid structure, it is time to place the TV-1000 console onto the leg set. **REMEMBER THE CONSOLE IS HEAVY!** *Depending on main-frame size, it can easily weigh 600+ pounds. We recommend six people to lift it in place.*



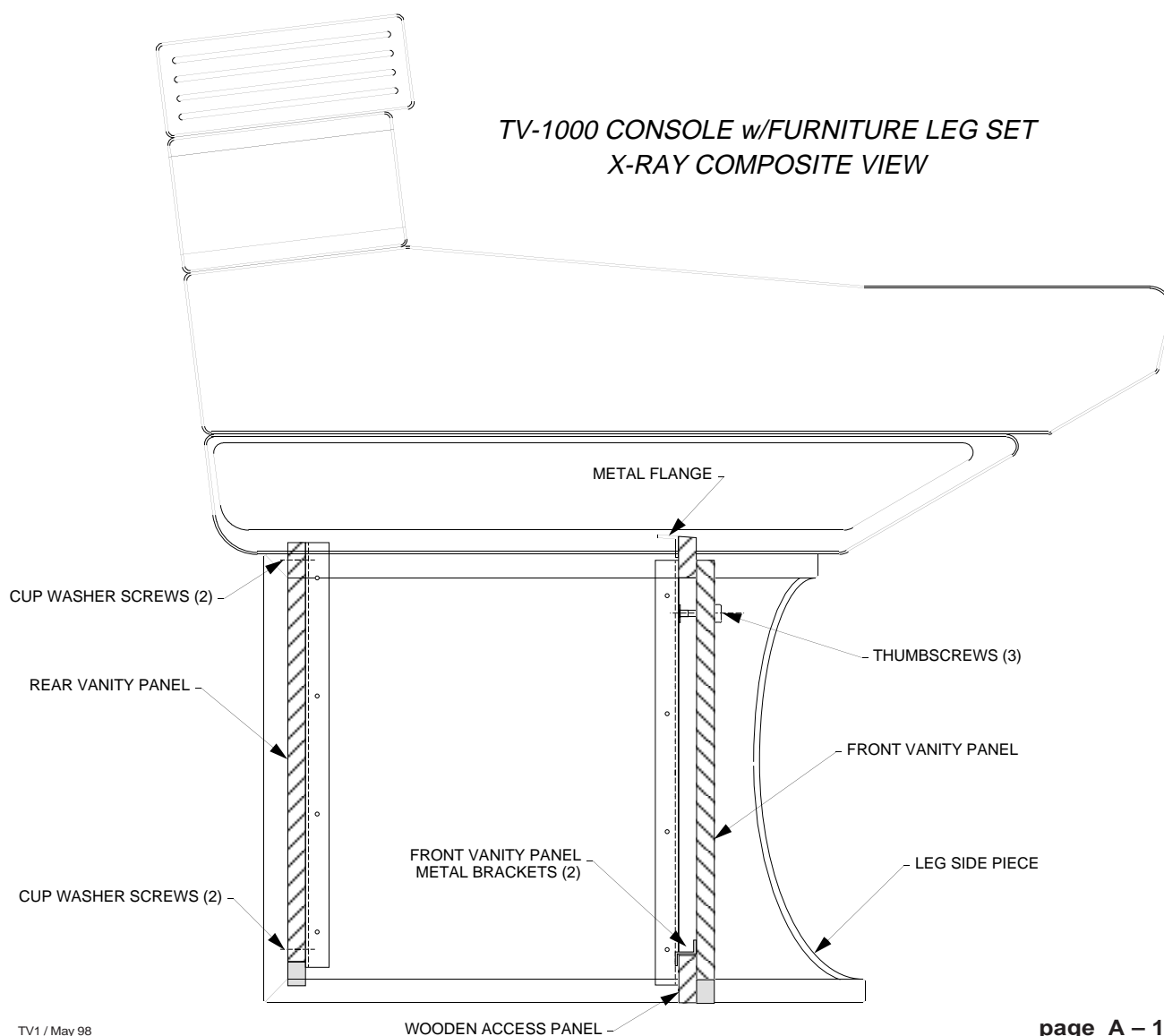
When properly in position (see drawing next page) the console's wooden endpieces will rest on the leg stand's side pieces, and will span the premounted REAR metal brackets. Front to rear position is determined by the predrilled holes in the bottom of the console's mainframe, which correspond to the holes in the metal flange running the full length of the ACCESS PANEL's top edge. NOTE also the rear metal plates on the inside top of the leg stand side pieces. Once the console is screwed down, these swing up and are screwed to the inside of the console wooden side pieces to further secure the completed structure.

4) With the console lifted into place and properly positioned, remove the FRONT VANITY PANEL by unscrewing the black thumbwheels (3) along the outside top edge of same. With these thumbscrews removed, the front vanity panel swings forward at the top and its bottom metal brackets can be lifted clear of the access panel cutouts' bottom edges. This will allow you to get inside the leg stand and screw up through the top edge metal flange into the bottom of the console mainframe. **DONOT REMOVE THE REAR VANITY PANEL TO GAIN ACCESS, AS THE LEG FURNITURE STRUCTURE WILL LOSE ITS RIGIDITY AS A RESULT.** Come in from the front!



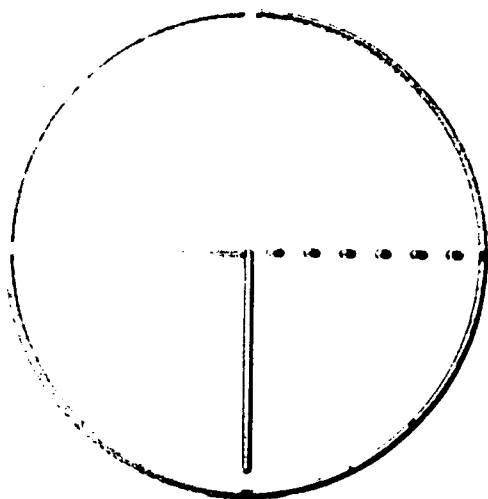
5) Final step: swing the metal plates at the top rear of each leg side piece up so they are inside the console's wooden end piece and attach them to the console with the wood screws provided. Replace the front vanity panel.

With the console now firmly attached to the leg stand, it is safe to remove the rear vanity panel for wiring access.



APPENDIX III

Torpey Clock Display



TORPEY TIME

CONSOLE-MOUNTING REMOTE TIME DISPLAY

TECHNICAL INSTRUCTION MANUAL

Torpey Controls & Engineering Limited
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Scarborough, ON, Canada M1P 3E6
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E-mail: sales@torpeytime.com
Internet: www.torpeytime.com

CONTENTS

This Technical manual contains:

Installation and Technical Description	9 pages
Module Schematic	Drawing CPU-7/2-2
Physical Dimensions	Drawing CPU7-17C.MEC
Display Schematic	Drawing DSP-17/2-1
Warranty	'PRODUCT WARRANTY'

INTRODUCTION

The CPU-7/DSP-17 DIGITAL TIME DISPLAY is a versatile display that is designed to be mounted in a control console. It is a 'slave' display of time data as delivered from a central Master Clock system.

On-board jumpers allow selection of different serial time data sources.

It consists of a compact electronic board which mounts an LED display board on one edge.

The digits are 0.56 in. high.

Power is derived from an outboard 'AC adapter' style power module. Both power and serial code input arrive on a 5-pin locking connector.

SPECIFICATIONS

Input Signals:	SMPTE	as used by Leitch and others
	ESE codes	TC76, TC 89 or TC 90.
	DQS	from Torpey and Dynaquip
	NPR	used by National Public Radio (U.S.)
	NMEA	from a variety of GPS and marine equipment
Input Level	RS422 balanced, data line.	
Display Type	LED (light emitting diode) seven segments.	
Display Size	0.56 in. (14.2 mm.)	
AM and PM Indicators	The AM indicator is at the top left corner of the display. The PM indicator is at the bottom right corner. (These will light only when jumper J7 is in place. See Section 4.)	
Power requirement	9 volts DC from an outboard power pack.	

INSTALLATION

PHYSICAL INSTALLATION

Referring to the enclosed mechanical drawing, mounting holes are provided to allow easy installation in your console.

A red acrylic bezel is recommended for the viewing window.

CODE SELECTION

Since the CPU-7 is designed to operate from several input codes, it is necessary to tell the processor which one to expect.

Jumpers J9, J10, J11, and J12 are used. The following table defines these jumper positions.

CODE	J9	J10	J11	J12	USE
ESE TC76	OUT	IN	IN	OUT	For ESE master clocks
ESE TC89	IN	OUT	OUT	OUT	For ESE master clocks
ESE TC90	IN	OUT	OUT	IN	For ESE master clocks
DQS	OUT	OUT	IN	OUT	Torpey CLK-50 or Dynaquip master clocks
SMPTE	OUT	IN	OUT	OUT	For Leitch master clocks
NPR	IN	IN	OUT	OUT	For the National Public Radio SOSS, or Torpey GPS-1 Master Clock System
NMEA	OUT	OUT	OUT	IN	For use with other GPS receivers

Your unit will normally come with the code selector jumpers set for the code as specified on the label attached to the packing material.

CODE CONNECTION

For use with SMPTE or DQS code, the display will automatically adjust to the incoming polarity of the signal. Therefore, the polarity of the DQS or SMPTE signals is not a concern.

In the case of ESE codes, the code polarity must be respected because this code is normally distributed on unbalanced coaxial cable. If the ESE code is connected backwards, the display will show 'HELP 4' on its LEDs, as an indication that the polarity should be reversed.

The NPR control bus is connected via telephone-style modular plugs, and will normally be supplied with the proper connection polarity for this system. See the addendum to this manual for set-up of your SOSS system to deliver time packets.

INITIAL OPERATION

When first powered, if the serial code is not connected, the LED display will begin counting from 00:00:00 with its colons flashing. Once the serial code is correctly connected, the clock will display the decoded time, and the colons will stop flashing.

If after running, the code is then interrupted for any reason, the colons will flash again, and the clock will continue to run on its own crystal.

The flashing colons are a warning to the operator that the code has been interrupted.

CIRCUIT DESCRIPTION

The CPU-7/DSP-17 is made up of two circuit boards : a CPU-7 controller board and a DSP-17 display board. Each type of board is described separately in the following pages.

CPU-7 CONTROLLER

Please refer to drawing CPU-7/2-2 Schematic for the following discussion.

CENTRAL PROCESSING UNIT

The Central Processing unit is the heart of the CPU-7. The MCU (Micro Controller Unit, U1) executes a program stored as a series of instructions in its internal ROM. This program controls all aspects of the CPU-7's function.

OSCILLATOR

C9, C10, and X1 are used in the oscillator circuit of the MCU (U1). The oscillator controls all the timing of the MCU.

POWER ON RESET AND WATCHDOG.

When power is first applied to the CPU-7, U3 resets the MCU (U1), by putting a momentary HI on U1-9.

It also acts as a 'watchdog' circuit. Pin U3-7 needs to be continuously triggered by the processor from U1-39 (DS1), or else its output U3-5 will go HI and reset the processor at U1-9.

CODE RECEIVER

The code receiver takes a balanced signal and converts it to a level suitable for the MCU (U1). The received input code is then available to the processor at U1-10 and at U1-12.

R9, R10, C5, and U4 form a code receiver.

DIGIT SELECTS

The MCU (U1) activates P0.0 (pin 39) through P0.5 (pin 34) when a digit is to be activated. U2 inverts and buffers this signal to the display board connector. R11 is a pull-up resistor network for these signals.

DISPLAY SEGMENT DRIVERS

Parallel segment data is presented by the MCU on port 2, pins 21 to 28. This parallel data is delivered through R1 to R8, to Q1 to Q8 respectively, which invert this signal and drive the segments of the LED's via the display board connector.

CODE SELECTION

Since the CPU-7 is designed to operate from several input codes, it is necessary to tell the processor which one to expect.

Jumpers J9, J10 are wired to the MCU port P0.6 (pin 33) and P0.7 (pin 32) while J11 and J12 go to P3.6 (pin 16) and P3.7 (pin 17). They are used to tell the processor which area of ROM memory to address, and thus which input code is expected.

See the paragraphs titled 'INSTALLATION' for the code selection options.

DISPLAY MODES

The mode of operation is what decides what time value will appear on the display. You have a choice of time zone offsets, including 30 minutes. 12-hour or 24-hour formats are also available.

The mode of operation is controlled by selectively installing jumpers (or closing a switch contact) on the jumper blocks J1 to J8. These jumpers are normally set at the factory (on certain products switches or external connections are provided so the customer may change the display).

The Display Mode jumpers are numbered 1 through 8.

When all jumpers are absent, the product will operate in the 24-hour mode, i.e. no offset from incoming code.

Jumper #8 acts as a leading zero blanking enable. When these pins are connected, hours values from 00 to 09 will appear as 0 to 9.

Jumper #7 converts the incoming code to 12-hour base, with AM and PM indicators lighting.

#6 adds 16 hours to the incoming code

#5	"	8	"	"	"
#4	"	4	"	"	"
#3	"	2	"	"	"
#2	"	1	"	"	"
#1	"	30 minutes	"	"	"

MODES by FUNCTION

<u>JUMPER 7654321</u>	<u>DISPLAY #1</u>	<u>COMMENTS</u>
0000000	TIME 24 HR	NO CONVERSION
1000000	TIME 12 HR	
X000001	ADD 30 MINUTES	
X000010	ADD 1 HOUR	
X000100	ADD 2 HOURS	
X001000	ADD 4 HOURS	
X010000	ADD 8 HOURS	
X100000	ADD 16 HOURS	

For example:

The desired time display is in the 24-hour mode with zero blanking, but with a time offset (addition) of 5 hours:

Install: jumper #8 for leading zero blanking.
 jumper #4 for an offset of 4 hours.
 jumper #2 for an offset of 1 hour.

RESULT: 4 hours + 1 hour = 5 hours.

If a negative time offset is required, imagine that you are advancing the time display to the next day, so that, for example, if an offset of -3 hours is required, then advance the display by 21 hours (24-3). This case would call for J6 (16 hours), J4 (4 hours), and J1 (1 hour).

Result: 16+4+1=21.

DSP-17 DISPLAY BOARD

1.0 INTRODUCTION

The DSP-17 is a remote timer display board intended for use with the CPU-7 controller board. The display features 0.56 ins. LED's for hours, minutes and seconds display.

Please refer to the schematic labeled DSP-17 for connection of the displays to the CPU-7 board.

TECHNICAL SUPPORT

If you require technical advice concerning the installation, setup, or repair of this unit, we may be reached during normal business hours (Eastern Time) at 1-800-387-6141, or anytime by email at ***support@torpeytime.com***.

NOTES:

ADDENDUM

SET-UP OF SOSS SYSTEM FOR NPR CODE

In order for any Torpey Clock to operate on the National Public Radio system, it must receive Time Packets from the SOSS system, which is communicating with NPR headquarters, and receiving this data (among others).

It is necessary to ensure that the Time Packets are sent on the Control Bus, by running the SETUP program of your SOSS system.

To do this:

1. Double-click on the SOSS icon of your OS2 computer's screen.
(The picture of the satellite dish)
2. Double-click on SETUP as a choice on the screen.
3. Log on using your security code (if applicable).
4. Click on 'Edit' in the Setup menu. (or use ALT-E).
5. Select 'General Parameters' from this menu.
6. The resulting screen offers a list of options. The second line of this screen is:

☐  Send Time Sync Packet Out Control Bus.

Click on this box to select this option.

Click on OK to save this, and return to the Setup Editor.

7. Double-click on the top left corner box of this screen to exit.

As a result of this action, your system is operating exactly as it was before, but with Time Packets sent approx. every ten seconds, interspersed with the control data.

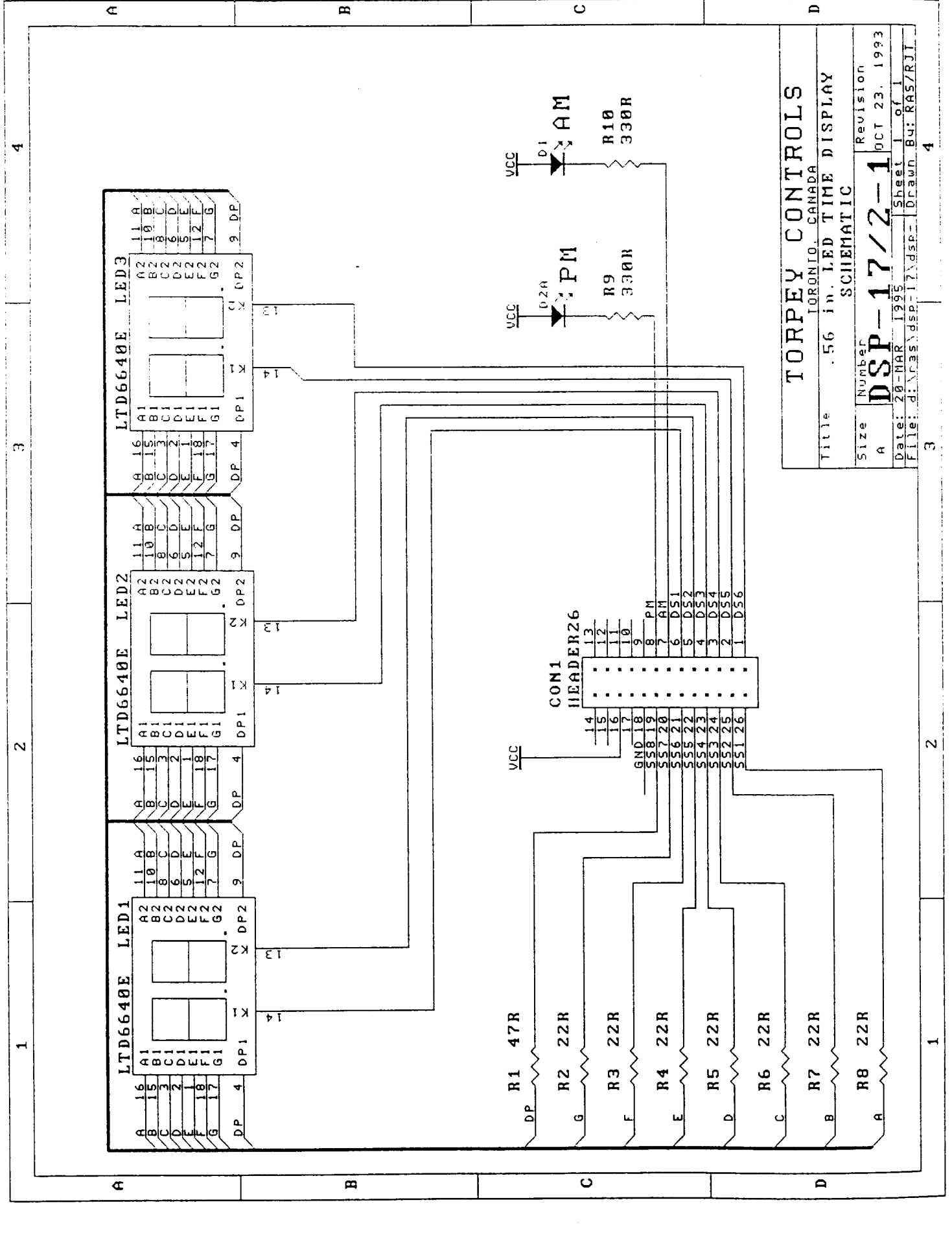
You are now ready to install your Torpey NPR Clock. Choose a convenient location, plug in the power adapter, and connect the telephone-style modular plug to your NPR Control Bus.

When the unit is first powered up, it will begin counting from 00:00:00, with its colons flashing. After a few seconds, it will receive its Time Packet, and set itself to that time. The colons will stop flashing.

NOTE: If the time shown is not in your time zone, or if you desire conversion from 24-hour to 12-hour standard, then consult Section 4 of this manual for Time Offsets.

The unit is delivered to operate in the 24-hour mode of operation. That is, whatever is sent from the SOSS is displayed.

NOTE: IF THE COLONS OF THE DISPLAY BEGIN TO FLASH AFTER THE UNIT IS SYNCHRONIZED, THIS IS AN INDICATION THAT THE UNIT HAS NOT RECEIVED A TIME PACKET FOR OVER A MINUTE, AND IS RUNNING FROM ITS CRYSTAL FREQUENCY AS A REFERENCE. CHECK THAT YOUR MODULAR PLUG IS STILL CONNECTED TO THE CONTROL BUS, AND THAT NOTHING HAS DISTURBED THE SOSS SETUP.



TORPEY CONTROLS

TORONTO, CANADA

Title .56 in. LED TIME DISPLAY

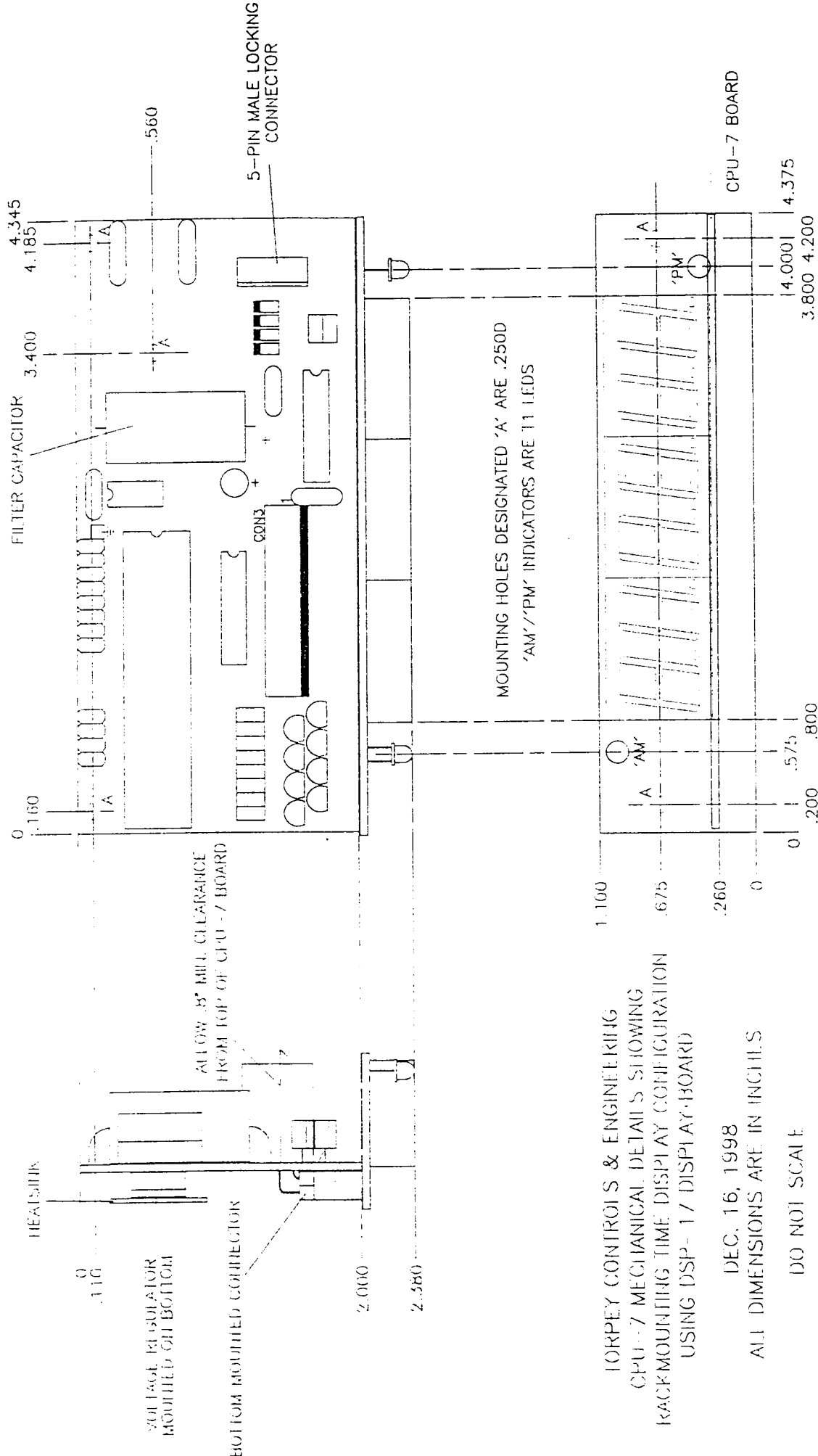
Size Number Revision

A DSP-17/2-1 OCT 23, 1993

Date: 20-MAR 1995 Sheet 1 of 1

File: d:\cas\dsp-17\dsp- Drawn By: RAS/RJI

1 2 3 4



TORPEY CONTROLS & ENGINEERING
 CPU-7 MECHANICAL DETAILS SHOWING
 RACK MOUNTING TIME DISPLAY CONFIGURATION
 USING DSP-1 / DISPLAY BOARD

DEC. 16, 1998

ALL DIMENSIONS ARE IN INCHES

DO NOT SCALE

DRAWING: CPU-7 / 17AM10

TORPEY CONTROLS & ENGINEERING LIMITED

PRODUCT WARRANTY

Torpey Controls warrants all of its products to be free from defects in materials and workmanship under normal and proper use and service for one year from the date of shipment.

Torpey Controls agrees to repair or replace without charge (except as noted in special provisions) all defective parts of said products which are returned, transportation prepaid, for inspection at its service centre within the period of the warranty, provided that such inspection discloses to the satisfaction of Torpey Controls what the defects are as specified above and provided also that the following conditions of this warranty have been met.

The conditions of this warranty are that the equipment has not:

1. Been altered (other than by approved procedures of Torpey Controls),
2. Been subjected to misuse, improper maintenance, negligence or accident,
3. Been damaged by excessive voltage or otherwise incorrect installation & connections,
4. Had its serial number, or any part altered, defaced or removed,
5. Been used with components not supplied by Torpey Controls (except standard solid-state devices, fuses, batteries, LED's or lamps).

Torpey Controls reserves the right, at our option, to supply replacement subassemblies or modules, which are expected to be installed by the owner's technical staff. Cost of this installation shall be borne by the purchaser or owner. Disposition of defective subassemblies or modules shall be at our instructions.

Fuses, batteries, lamps and LED indicators are excluded from the provisions of this warranty and as to these items no warranty, express or implied, is made by Torpey Controls.

The seller shall have the right of final determination as to the applicability of this warranty.

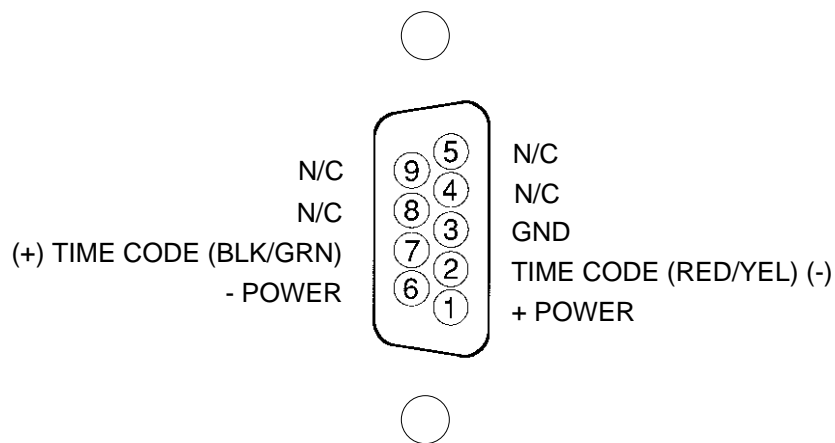
Equipment shall not be returned to the service centre for inspection, replacement or repair without authorization from Torpey Controls.

This warranty is in lieu of all other warranties expressed, implied or statutory, and all other obligations or liabilities on the part of Torpey Controls. No person, including any distributor, dealer, agent or representative of Torpey Controls is authorized to assume for Torpey Controls any liability on its behalf or in its name, except to refer to this warranty herein contained.

In no event shall Torpey Controls be liable for claims, demands, or damages of any nature, however denominated. The sole warranty liability shall be to repair defective items at the service centre or to supply replacement parts in accordance with the terms of this warranty.

TORPEY CLOCK

DB Connector Pinout



FROM POWER PACK

*DB-9 Connector is located on
the rear of console
meterbridge*

APPENDIX IV

Event Computer Access Panel OEM PCB

New Micros, Inc. NMIX-0021/2

The New Micros printed circuit board is located as follows:
Underneath the console's Event Computer Access Panel
is a horizontally mounted RC-600 PCB; directly underneath
that is an RBUF-6A card which acts as an interface
to the NMIX-0021/2 OEM PCB immediately below.

"100 Squared"™ System Documentation

By NEW MICROS INC.
1601 Chalk Hill Rd.
Dallas, Texas 75212

Covers: NMIX-0021 Rev. 1.0 10/10/86
NMIX-0022 Rev. 1.0
NMIT-0021 Rev. 1.0
NMIT-0022 Rev. 1.0
NMIX-0021 Rev. 2.0 & 2.1 12/13/87
NMIX-0022 Rev. 2.0 & 2.1
NMIT-0021 Rev. 2.0 & 2.1
NMIT-0022 Rev. 2.0 & 2.1

Getting Started

The "100 Squared"™, when purchased in development configuration, is complete and ready to run. To operate the system, plug in the wall transformer and connect a terminal to the serial RS-232 DB25F connector. Most terminals should plug in directly, with a straight through cable (ie: pin 1 to pin 1, 2 to 2, 3 to 3, etc.). The "100 Squared"™ uses only lines 2 and 3 for serial in and serial out respectively, and pins 1 and 7 for ground. Many terminals require additional handshaking signals to work, so pins 4 and 5 are hooked together on the DB25F connector, as are pins 6 and 20. In this way the terminals that require the additional handshake signal have their own "clear to send" / "ready to send" and "data terminal ready" / "data set ready" signals wrapped back around, indicating "always ready".

In order to talk to the "100 Squared"™ the terminal must have the correct bit settings. The baud rate should be set at 9600 baud for 2 Mhz systems (8 Mhz crystal), 4800 for 1 Mhz systems (4 Mhz crystal). The "100 Squared"™ sends and receives a bit protocol of one start bit, eight data bits and one stop bits.

```

-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| S | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | S |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

When the terminal is set correctly, every time you depress and release the red reset button the "100 Squared"™ should respond with:

Max-FORTH Vx.x

Seeing that message means the terminal can see the "100 Squared"™. Press "return" on your terminal several times. If the "100 Squared"™ responds with "OK" each time, communications are established.

Now you will want to see the system do something. Type WORDS followed by a return. This will cause the system to list its entire vocabulary, some 200+ words. The listing can be stopped at any time by pressing a key, like the space bar.

When the F68HC11 powers up, it assumes nothing else on the board is working, so it defaults to its own internal RAM. As a result there is a limited terminal input buffer area (16 characters) and dictionary space. The "100 Squared"™ provides external memory expansion. You now need to tell the system to move its terminal input buffer and dictionary to external memory. If the RAM is installed at 0100-1FFF (factory default for single 8K RAM) the following will accomplish that.

```
HEX
100 TIB !
50 TIB 2+ !
200 DP !
```

Now try a simple program to exercise some of these words. Enter:

```
: TYPE-LETTERS 5B 41 DO I EMIT LOOP ;
TYPE-LETTERS
```

to which the machine will respond:

```
: TYPE-LETTERS 5B 41 DO I EMIT LOOP ; OK
TYPE-LETTERS ABCDEFGHIJKLMNOPQRSTUVWXYZOK
```

Now have a look at memory with the DUMP command. Type:

```
0000 80 DUMP
```

and examine the results (remember we put the machine in HEX). Try another WORDS and observe the first word displayed. It has become the word TYPE-LETTERS entered above.

Your "100 Squared"™ is now running and communicating as it should. Its time to begin your design project by learning more about how to use the "100 Squared"™.

The "100 Squared"™, when purchased in the generic target configuration, is a minimum, 5 Volt only, configuration. The F68HC11, Xtal, reset circuit, various HC "glue" components and three 28 pin JEDEC sockets. Typically, a program developed in the "development configured" board will be installed in the "generic target configured" board for production of a dedicated application. The user must install the appropriate jumpers, which are not provided in the target configuration.

All configurations of the F68HC11 based "100 Squared"™ boards use the same base PC board. This includes the NMIX-0021, the NMIX-0022, the NMIT-0021 and the NMIT-0022. Configuration differences refer to the extent to which the board is filled with components.

PARALLEL PORTS

The F68HC11 has five parallel ports, Port A, B, C, D and E. Although some port lines have special multiplexed functions, they can all be used as inputs or as outputs according to their individual designs. Some of the port lines have direction registers allowing them to be used as either inputs or outputs. Two ports of the F68HC11 are sacrificed to create an 64K address and data bus. The 68HC24 simulates the replacement of those ports. Three ports of the F68HC11 and two replacement ports of the 68HC24 are brought out to connector J2. Power and ground are also available on J2.

"100 SQUARED"™ DOCUMENTATION INPUT/OUTPUT JACKS J2

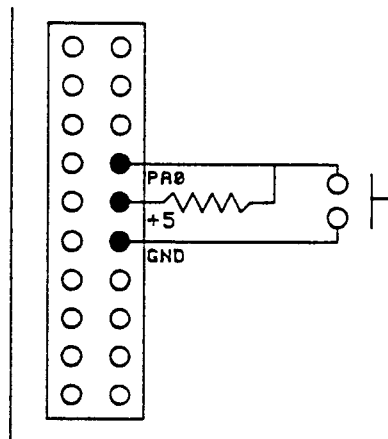
TOP VIEW	
FRONT (EDGE) OF CARD v	
20 pin header group	- X PA7 o o PA6 O
	O PA5 o o PA4 O
	O PA3 o o PA2 I
	I PA1 o o PA0 I
	+5 o o +5
	GND o o GND
	O PB7 o o PB6 O
	O PB5 o o PB4 O
	O PB3 o o PB2 O
	- O PB1 o o PB0 O
	+5 o o +5
	GND o o GND
	- X PC7 o o PC6 X
	X PC5 o o PC4 X
34 pin header group	X PC3 o o PC2 X
	X PC1 o o PC0 X
	+5 o o +5
	GND o o GND
	O PD7 o o PD6 I
	X PD5 o o PD4 X
	X PD3 o o PD2 X
	X PD1 o o PD0 X
	+5 o o +5
	GND o o GND
	I PE7 o o PE6 I
	I PE5 o o PE4 I
	I PE3 o o PE2 I
	I PE1 o o PE0 I
	- +5 o o +5
	GND o o GND

I=INPUT O=OUTPUT X=EITHER

F68HC11 "100 SQUARED"™ NMIX-0022 REV 1.0 & 2.x BOARDS 11/13/87

The lines can be used as individual inputs or outputs or in combination. There are very few applications, however, where pins are switched dynamically, sometimes used as inputs, sometimes as outputs.

The simplest form of input device is a switch to ground, to create a low level when the switch is closed, with a pullup to give a high level when the switch is open. This switch can be breaker points, reed switch, the contacts of a relay, microswitch, etc. To try an example of this type input, hook up a simple push button switch to Port A Line 0 (PA0) with a 10K ohm pull up resistor to +5.

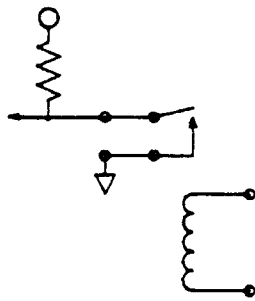


The following program will show the current state of the switch. Enter LOOK after pushing reset. (Reset sets the ports to all "ones".)

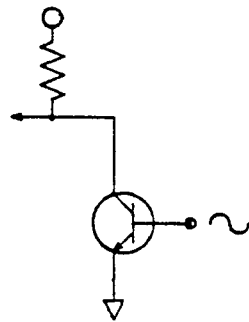
```
B000 CONSTANT PA
: SWITCH PA C@ 1 AND ;
: CHECK-STATE IF ." OPEN" ELSE ." CLOSED" THEN CR ;
: LOOK SWITCH BEGIN SWITCH 2DUP = IF DROP ELSE SWAP 0=
  CHECK-STATE THEN ?TERMINAL UNTIL ;
LOOK
```

Whenever the switch changes state, open or closed, the computer follows with a written report.

Other possible input devices are shown here.



RELAY



TRANSISTOR

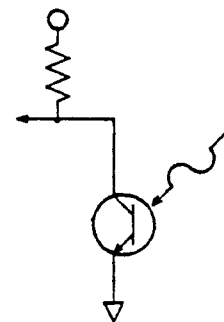
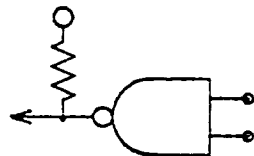
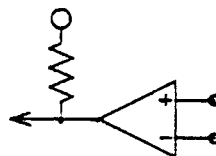


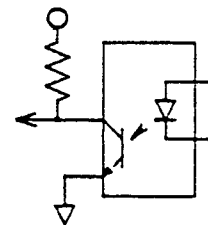
PHOTO TRANSISTOR



TTL LOGIC



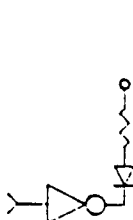
COMPARATOR



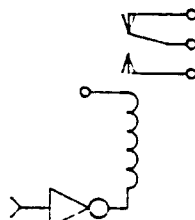
OPTO ISOLATOR

Note that due to the 10K pull up on the port, the "switch" must sink .5 ma to ground with no more voltage rise than an HC low level (2/10ths of Vcc) at the pin. (A voltage of 7/10 Vcc will always be recognised as a logical one.) Voltages applied above V_{od} or below 0 Volts can damage the computer.

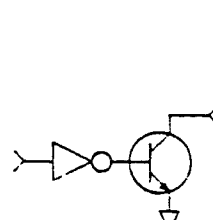
The outputs of the F68HC11 and 68HC24 can sink 1.6 ma to ground while letting the pin go no higher than 0.4 Volts for a "zero" and source about .8 ma at 4.5 Volts for a "one". In terms of control, this is a very small signal. Most relays require over 50 times more current to operate. LED's typically take 5 ma to be visible. HC levels are such that the output is sufficient to drive the input on one pin of one TTL device or about a dozen of the lower power LSTTL inputs. The output is sufficient to drive VMOS FET's and Darlington's with an external pull up which can in turn control several amps of current. Usually, however, a buffer will be needed to do serious non-HC interfacing.



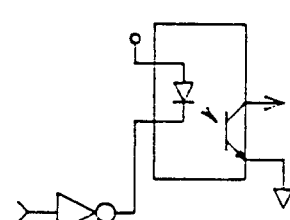
LED



RELAY

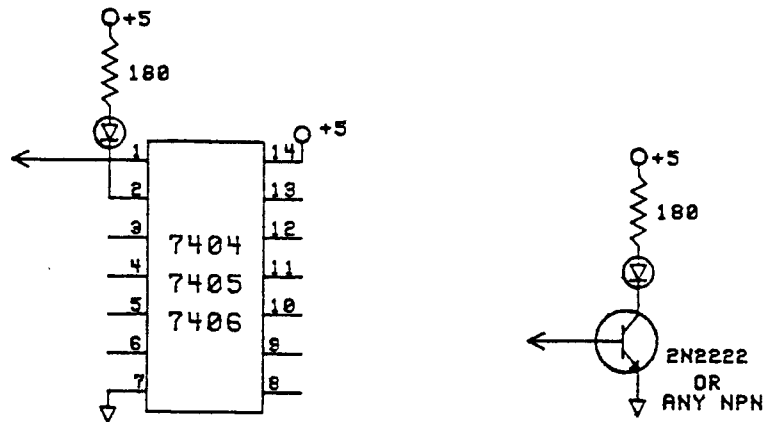


TRANSISTOR



OPTO ISOLATOR

To test the output capabilities, wire one of the two circuits shown here or use an oscilloscope or logic probe.



When the output is a "1" the LED will be on. When the output is a "0" the LED will be off. The following program will exercise the outputs of the 68HC24.

```
: RUN-UP FF B007 C! 0 BEGIN 1+ DUP B003 ! ?TERMINAL UNTIL ;
```

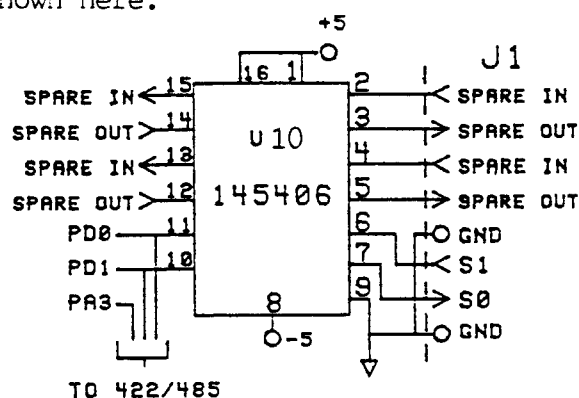
Notice that the low lines of Port B are changing so fast the LED appears to be on continuously at low brightness. Higher numbered Port B lines and Port C lines toggle at slower rates. Each bit position toggles at 1/2 the speed of the next lower bit.

SERIAL I/O

The F68HC11 has a full duplex hardware serial channel that operates at HC levels. To use this serial channel with most standard communications interfaces, level converters are needed. Drivers for RS-232C and IEEE 422/485 drivers are on the boards. (It should be noted that only one combination of RS-232 driver, RS-422 drivers or RS-485 driver should be used at one time to avoid contention of their receiver outputs.)

A zero by RS-232C specification is any voltage from +3 to +15 Volts, a one is between -3 and -15 Volts. To convert the HC signals to the voltage ranges of that interface standard, the "100 Squared"™ Rev. 1.0 uses a single 16 pin device, the MC145406.

The circuit is shown here.



The 145406 is ideally suited for this use. It not only provides an RS-232 receiver and transmitter pair for the F68HC11 processor, but also two spare RS-232 receiver and transmitter pairs which can be used with port lines for handshaking or software driven UARTS, etc..

The RS-422 standard represents a relatively new interface now coming into popularity, and with good reason. Unlike the RS-232 requirements which specify a single wire voltage transmission referenced to ground, the RS-422 standard uses a voltage differential on a pair of conductors. While the RS-232 at full voltage drive levels in electrically noisy environments is barely reliable at distances to 1000 feet, RS-422 signals are considered reliable at distances up to 4000 feet. The 422 drivers operate, requiring only a single sided 5 Volt supply, over twisted pairs of wires. A full duplex connection for RS-422 requires two twisted pairs, one for transmit, one for receive.

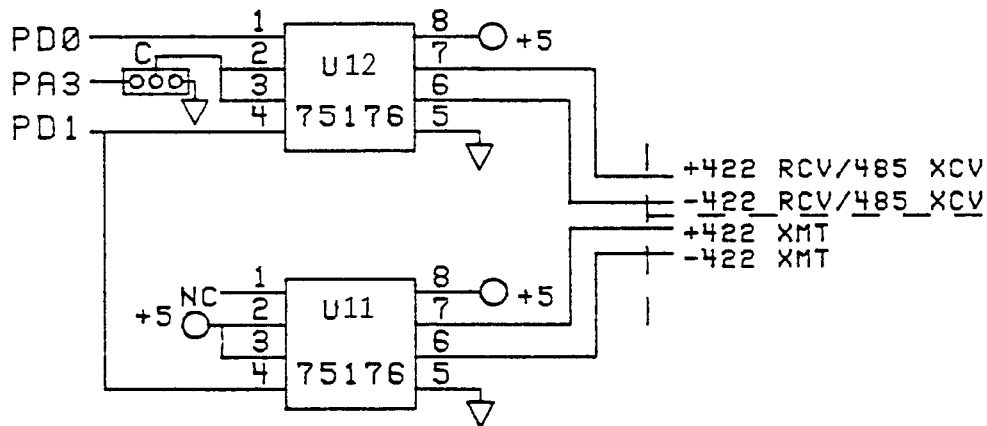
The RS-485 interface uses the same specifications for its transmitters and receivers. It, however, allows a single twisted pair to be used for incoming and outgoing messages. This is accomplished by having both a transmitter (with 3 state ability) and a receiver tied in parallel to the same twisted pair. Multiple drop point communications are possible under this scheme (up to 64 pairs by specification). Of course, in application the

transmitter turns on and takes control of the lines only under software control. The actual implementation of this control will be determined by the particular protocol being used in the communication network. Usually one master sends an addresses message to one of multiple slaves and then turns off its master transmitter. The addressed slave, recognizing its address will turn on its transmitter and respond with the requested data.

These two interfaces are accomodated on the "100 Squared"™ by the addition of two 8 pin 75176's, which each contain a transmitter/receiver pair. Whether the transmitter of the pair is active, or not, is controlled by a signal on one of its pins.

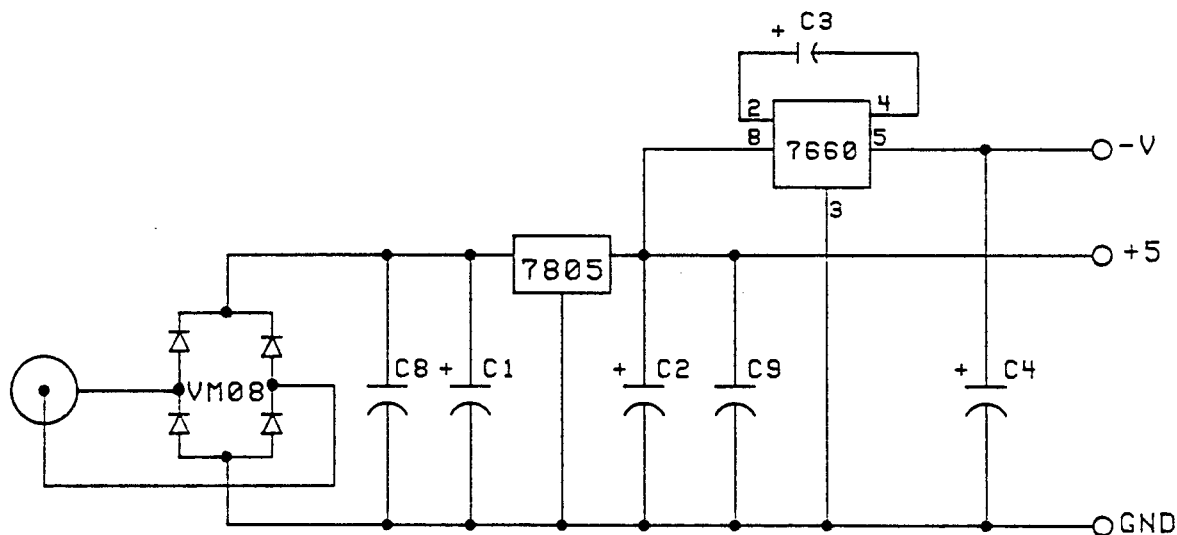
One of the 75176's (U11) has its receiver always enabled. It is used exclusively as the RS-422 receiver. The other 75176 (U12) can be used as the RS-422 transmitter if jumper C on the "100 Squared"™ is grounded (ie: in 422 position), or it can be used as the receiver and transmitter for the RS-485 interface as controlled by PA3 (ie: in 485 position). In this case if PA3 is high, the 75176's transmitter is not active. If PA3 is low its transmitter is active.

The RS-422/485 interface circuit is shown below.



POWER SUPPLY

The power supply circuit on the "100 Squared"™ is designed to allow the board to operate from a simple AC wall transformer. It has three major sub circuits - rectification, regulation and DC to DC conversion. Rev 2.x added battery backup capabilities to the 28 pin JEDEC sockets and the F68HC11 internal RAM, and an improved power-up power-down reset circuit.



The bridge rectifier converts the AC to DC. The 7805 regulates this rectified incoming voltage to a constant 5 Volts.

The most unusual feature of the power supply is the use of the DC to DC converter, the ICL 7660. On NM1x-002x boards the 7660 is fed from the 5 Volt rail. The two voltages are used to power the RS-232 converter circuit. This means the maximum output from the RS-232 converter would be + and - 5 Volts.

The upper limit of +V is set by the ability of the 7805 to dissipate heat. If a heat sink is added to the 7805, voltages in excess of 20 Volts are possible. Driving the 7805 to hard, however, will cause it to enter thermal overload and "shut down" its output.

The typical current required by the "100 Squared"™ with 8K CMOS RAM and the Max-FORTH ROM at 2 Mhz from 9 VAC is 20 ma.

The power terminal, J3, can be used as an alternate power source instead of the AC supply. The 5 Volts applied at the terminal is also applied to the 7660. The 5 Volt +/- rails are usually sufficient to generate more than the +/- 3 Volts needed to meet the RS-232 specification. Some terminals, however, may not fully meet those requirements.

BATTERY BACK UP AND RESET
(Rev 2.x only)

The battery backup capability added to the Rev 2.x boards to allow data retention in otherwise volatile CMOS RAMs and the processors own internal RAM through main board power downs. A third terminal has been added to the power connector, J3, marked VBB for Voltage Battery Backup.

The VBB terminal on J3 is connected to the VBB supply rail on the board by diode, D1. The VBB supply rail supplied the three 28 pin JEDEC sockets, the 8054HN low voltage indicator in the reset circuit, the 74HC00 gate and the 74HC138 decoder. If no power is applied to the VBB terminal, the VBB rail is supplied through the intrinsic diode of P channel FET, Q1, to within a diode drop of the supplying 5 volt rail (~4.4 Volts). When the 8054HN low voltage indicator releases the reset line, Q1 is turned on and the VBB comes almost completely up to the 5 volt rail (~4.95 Volts). (This may cause some problem with the Dallas Semiconductor DS1223 battery sockets, as they "write protect" their RAMs at 4.75 Volts. Running an elevated 5 Volt supply may be necessary to accommodate these parts. The purpose of this new feature is, however, to do away with the need for those devices in final system configurations.)

When the 8054HN low voltage indicator holds the reset line low (when VBB is below 3.8-4.2 Volts), Q1 is turned off and the address decoder is disabled through the same input that is used by MEMDIS. This "access" protects the memories during the power down cycle.

To meet the full letter of the specifications of the parts involved the correct backup voltage on the VBB pin is critical. This supply must be low enough to ensure that after the diode drop of D1, the VBB rail cause the 8054HN to issue a reset (~4.0 Volts), otherwise Q1 will remain on and the whole system will be powered by VBB. It must also be high enough to ensure that after the diode drop of D1, the VBB rail will meet the processors required backup voltage (listed as 4.0 Volts). Therefore, the ideal voltage for the VBB supply is 4.3-4.5 Volts. It should be pointed out however that the Motorola specification appears to be overly conservative. By empirical test, VBB supplies below 3 Volts appear to be quite adequate. Most CMOS RAMs will retain data down to 2.2 Volts. Accounting for the diode drop under such low currents, the VBB supply may work as low as 2.5 Volts.

The process battery backup supply enters the chip via the MODB pin. Jumper block D controls the setting of MODB, either to ground or to VBB. For backup of the processor's RAM to be successful jumpers D and E must be in the Single Chip or Expanded Multiplexed settings. When the VBB supply is used on the processor, it will retain its User Area through power down and remember its linkages to the external FORTH dictionary.

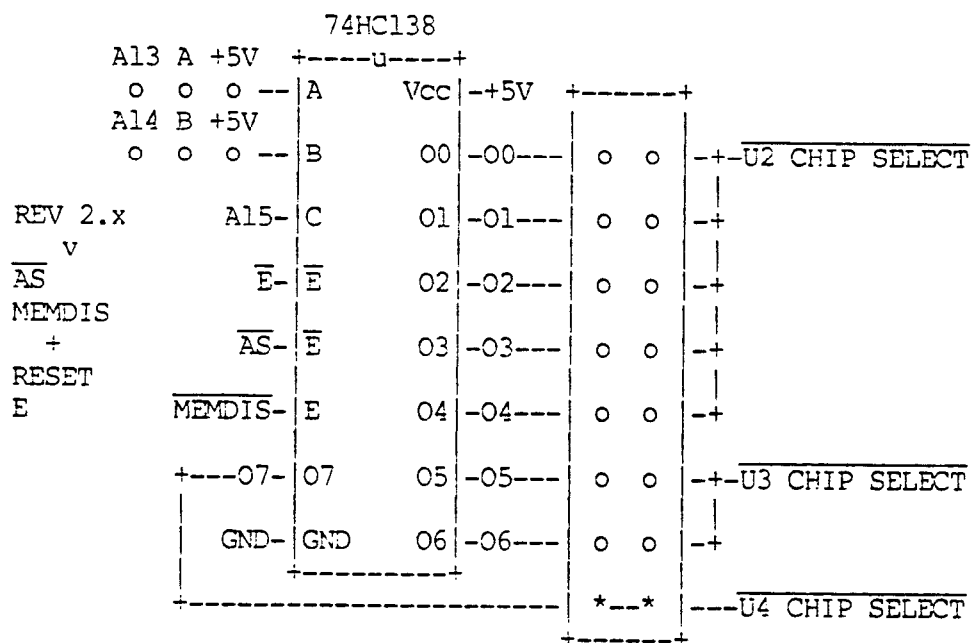
ADDRESS DECODING

The chip selects of the three JEDEC sockets are generated by a 74HC138. When jumpers A and B are in the 8K position, address lines A15 to A13 are brought to this part. This means that each of the eight generated chip selects represent a single 8K byte segment out of the 64K byte memory map.

When jumpers A and B are in the 16K position, address lines A15 and A14 are brought to this part. The A13 is held high. This means that the upper four generated chip selects represent a single 16K byte segment out of the 64K byte memory map.

When jumpers A and B are in the 32K position, address lines A15 alone controls the part. The A14 and A13 are held high. This means that each of the two upper chip selects represent a 32K byte segments out of the 64K byte memory map.

Two other signals control the decoder - Address Strobe (AS) and On Board Memory Disable (MEMDIS). The Address Strobe (AS) signal must be active low before any chip selects are enabled. This is the processor's signal indicating the address on the bus is valid for the off-chip memory. The On Board Memory Disable (MEMDIS) signal allows an offboard open collector source to disable the on board decoder, so offboard components can usurp a memory segment from on board memory, even if the entire 64K is filled with RAM on the main board.



* Rev 1.0 boards do not have a jumper block in this position - U4 Chip Select is hard wired to the socket. On 2.x boards this jumper block is installed - the jumpered connection of the high order chip select to U4 is user selectable.

TROUBLESHOOTING

As always the first thing to do when troubleshooting is to check the power and ground connections. An oscilloscope should be used to check signals. The heat sink of the 7805 is a convenient place to hook a ground clip. If +5 Volts is present at J3 and the board is not operational, the next item to check is the oscillator. Putting the scope on EXTAL (Pin 7) should show a 8 Mhz sine wave (4 Mhz F68HC11 parts running 4 Mhz XTAL's) running from about .5 Volt lows to 4.5 Volt peaks. XTAL (F68HC11 Pin 8) should have an identical signal, but of a much smaller amplitude. If the sine waves are not present and there is 5V present at the power pin Vcc (Pins 26), and ground at Vss (Pin 52), then either the F68HC11 or the crystal are bad and require replacement. There is one exception. If the processor has executed a STOP instruction, the oscillator will stop. When the oscillator is functioning correctly a 2 Mhz (1 Mhz) clean running square wave should be present at the E output (Pin 5). The E signal drives the timing for all external memory transfers. This signal should transition nearly rail to rail, a 0.4V low and a 4.6V high are normal. Less amplitude can indicate a board short or an excessive load on the line external to the F68HC11.

The serial channel should send a sign on message if no autostart ROM interferes. If not, the reset circuit could be bad, the serial converter could have failed, or the F68HC11 could be defective. With the reset button depressed the RES pin (Pin 17) should be at ground. When release, the pin should rise to 5 Volts in about a quarter second. If the reset pin is working and still no message is seen on the terminal, check PD1, the serial output line (Pin 33). When reset is exercised, this line should go from normally high through a multitude of toggles back to a high state. The periods of the toggle transitions are multiples of approximately 100 microseconds. If this signal is not present, and there are no user ROMs in the board, the F68HC11 is suspect. If the signal is present, check pin 3 of the DB25F connector. It should normally be at -V (-5 Volts nominally) and should toggle to +V (+5 Volts nominally) at the same rate as the serial output line. If this is happening and no message is seen, the RS-232 wiring or the terminal is suspect. Check to see if J1 is connected to the DB25F RS-232 connector as follows:

DB25F Signal Name

- | | |
|---|-----------------------------------|
| 1 | Case ground |
| 2 | Serial in (to "100 Squared"TM) |
| 3 | Serial out (from "100 Squared"TM) |
| 7 | Electrical ground |

Check the voltages on pins 2 and 3. If pin 3 is very negative and pin 2 is floating, both systems are trying to talk on the same line. Pins 2 and 3 need to be swapped. Usually this is done with a "null modem" inserted where the two systems connect.

If the -V/+V signal was not found at pin 3, the RS-232 converter is not working. Check pin 1 of the 145406 for +V and pin 8 of the 145406 for -V. If -V is not present at the -V pin, the 7660 has failed. Pin 7 of the 145406, the output, should look the same as pin 3 of J1.

Check pin 2 of J1 which is the serial into the board from the terminal. It should normally be at a negative voltage between -3 and -15 Volts. When a key is pressed on the terminal it should pulse to positive voltages between +3 and +15 Volts. If it doesn't, the terminal or the RS-232 wiring are suspect. The same signals at inverted TTL levels, should also be at PD0, which is the serial input line of the processor (Pin 34).

The most common error in trying to use the "100 Squared"™ is mismatched baud rates or bit settings. Verify that the terminal is set for 9600 baud with one start bit, eighth data bits and one stop bits, with no parity generated. (Review this discussion in the Getting Started section.)

MEMORY MAP

K#	HEX
--	----
64	\$FFFF +-----+
63	RUN TIME
62	KERNEL
61	
60	NON RUN TIME Max-FORTH ROM
59	CODES
58	
57	HEADS
56	\$E000 -----
	\$DFFF
SF800	=====
SF600	=====
	EEPROM
SF000	=====
	REGISTERS

```

5
4 $1000      SOB_AT_$103B
3 $2000
2 $0800
1 $0400
0 $0000      +ON=CHIP=RAM=+

```

"100 SQUARED"™ DOCUMENTATION
MISCELLANEOUS JUMPERS

#	SOURCE	DESTINATION	NORMALLY
<hr/>			
A			
A13-A	ADDRESS LINE 13	ADDRESS DECODER INPUT	
A-5	+5 VOLT RAIL		
B			
A13-A	ADDRESS LINE 13	ADDRESS DECODER INPUT	
A-5	+5 VOLT RAIL		
C			
00-U2	DECODER OUTPUT 0	U2 JEDEC SOCKET	
01-U2	DECODER OUTPUT 1	U2 JEDEC SOCKET	
02-U2	DECODER OUTPUT 2	U2 JEDEC SOCKET	
03-U2	DECODER OUTPUT 3	U2 JEDEC SOCKET	
04-U2	DECODER OUTPUT 4	U2 JEDEC SOCKET	
05-U3	DECODER OUTPUT 5	U3 JEDEC SOCKET	
06-U3	DECODER OUTPUT 6	U3 JEDEC SOCKET	
07-U4	DECODER OUTPUT 7	U4 JEDEC SOCKET *	
D			
GND-D	GROUND	MODB PIN	OPEN
D-5	MODB PIN	+5 VOLT RAIL	CLOSED
E			
GND-E	GROUND	MODA PIN	OPEN
E-5	MODA PIN	+5 VOLT RAIL	CLOSED
F			
XIRQ-B	NMI	INT FROM J4	OPEN
B-IRQ	INT FROM J4	PA3 EDGE SENSITIVE LINE	OPEN
G			
485-C	PA3	U12 PINS 2 & 3	
C-422	U12 PINS 2 & 3	GROUND	
I			
U2	U2 PIN 27 R/W LINE	U2 PIN 28 SUPPLY	OPEN**
J			
U3	U3 PIN 27 R/W LINE	U3 PIN 28 SUPPLY	OPEN**
K			
U4	U4 PIN 27 R/W LINE	U4 PIN 28 SUPPLY	OPEN**

* Rev 1.0 is hard wired to U4, Rev 2.x is jumper selectable

** Rev 2.x has option of pullups on R/W lines to write protect RAMs in socket. To use install 100K pullup resistor & remove jumper from 28 pin JEDEC selection socket for pin 27. If battery backup is in use, RAM will then emulate ROM.

"100 SQUARED"™ DOCUMENTATION
GENERAL PURPOSE SOCKET

Jumper Assignments for JEDEC 28 Pin Sockets

JUMPER 1 o	o 28 +5	<div style="border: 1px dashed black; padding: 5px; display: inline-block;"> o o </div> *
A12 2	27 JUMPER	
A7 3 o	o 26 JUMPER	
A6 4 o	o 25 A8	
A5 5 o	o 24 A9	
A4 6 o	o 23 A11	
A3 7 o	o 22 OE	
A2 8 o	o 21 A10	
A1 9 o	o 20 <u>CHIP SELECT</u>	
A0 10 o	o 19 D7	
D0 11 o	o 18 D6	
D1 12 o	o 17 D5	
D2 13 o	o 16 D4	
GND 14 o	o 15 D3	

PIN 1	PIN 26	PIN 27
O---O	O---O	O---O
O	O	O
A14	+5	+5
A13	A14	RR/W

* Rev 2.x has option of pullups on R/W lines to write protect RAMs in socket. To use, install 100K pullup resistor & remove jumper for pin 27. If battery back up is in use, RAM will then emulate ROM.

"100 SQUARED"™ DOCUMENTATION
GENERAL PURPOSE SOCKET - U6, U7, U8

Jumper Settings for Standard JEDEC 24/28 Pin Devices

ALL 8K X 8 DEVICES

2764

2864

6264

PIN 1		PIN 26		PIN 27		
	X	X			X	*
	X	X			X	
A14	+5V	+5V	A13	A14	RR/W	

16K X 8 EPROM

27128

PIN 1		PIN 26		PIN 27		
	X		X		X	
	X		X		X	
A14	+5V	+5V	A13	A14	RR/W	

32K X 8 EPROM

27256

PIN 1		PIN 26		PIN 27		
	X		X	X		
	X		X	X		
A14	+5V	+5V	A13	A14	RR/W	

32K X 8 RAM

62256

PIN 1		PIN 26		PIN 27		
X			X		X	*
X			X		X	
A14	+5V	+5V	A13	A14	RR/W	

* Rev 2.x has option of pullups on R/W lines to write protect RAMs in socket. To use, install 100K pullup resistor & remove jumper for pin 27. If battery backup is in use, RAM will then emulate ROM.

"100 SQUARED"™ DOCUMENTATION
GENERAL PURPOSE SOCKET - U6, U7, U8

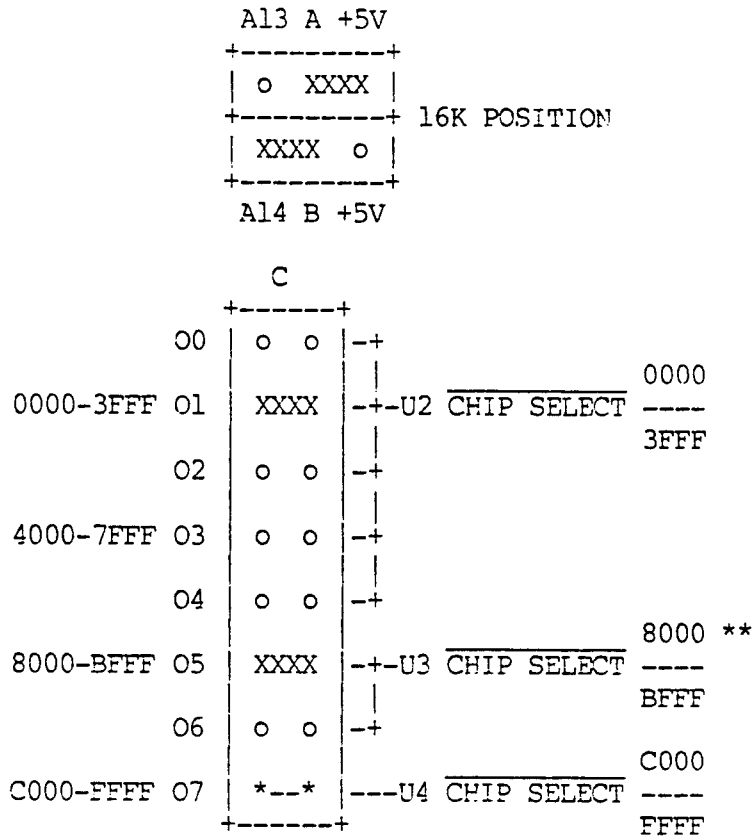
Jumper Settings for Various Addressing Schemes

3 8K DEVICES

		A13 A +5V			
		+-----+			
		XXXX o			
		+-----+		8K POSITION	
		XXXX o			
		+-----+			
		A14 B +5V			
		C			
		+-----+			
0000-1FFF	00	XXXX	---U2	CHIP SELECT	0000 ---- 1FFF
2000-3FFF	01	o o	---+		
4000-5FFF	02	o o	---+		
6000-7FFF	03	o o	---+		
8000-9FFF	04	o o	---+		
A000-BFFF	05	o o	---U3	CHIP SELECT	C000 ---- DFFF
C000-DFFF	06	XXXX	---+		
E000-FFFF	07	*--*	---U4	CHIP SELECT	E000 ---- FFFF
		+-----+			

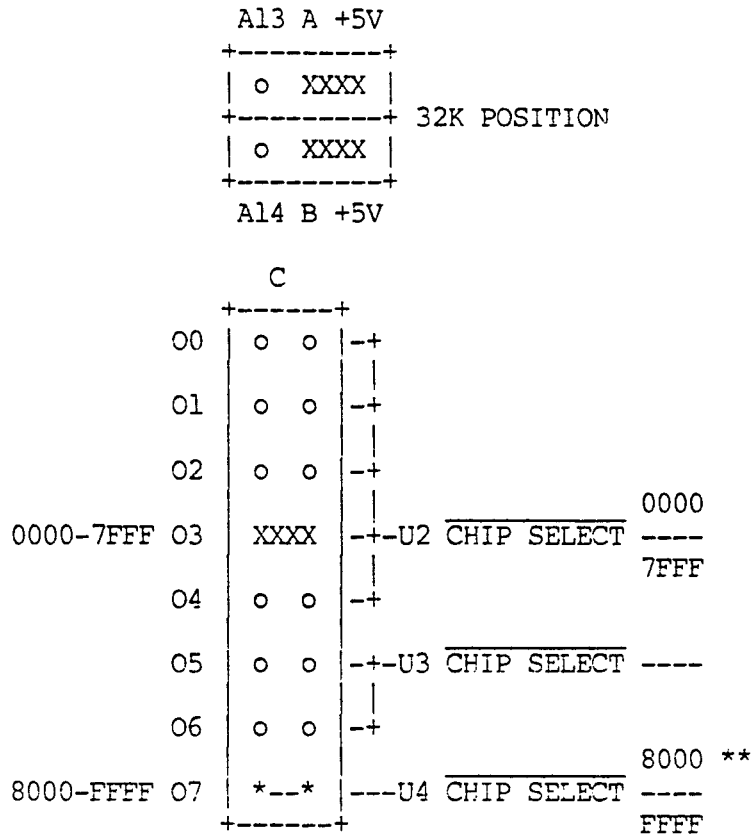
* Rev 1.0 is hard wired to U4, Rev 2.x is jumper selectable

3 16K DEVICES



- * Rev 1.0 is hard wired to U4, Rev 2.x is jumper selectable
 ** See appnote on PRU overmapping cautions

2 32K DEVICES



* Rev 1.0 is hard wired to U4, Rev 2.x is jumper selectable
 ** See appnote on PRU overmapping cautions

"100 SQUARED"™ DOCUMENTATION
SERIAL INPUT/OUTPUT JACKS J1

TOP VIEW
NUMBERED LEFT TO RIGHT

1	2	3	4	5	6	7	8	9	10	11	12	13	14
o	o	o	o	o	o	o	o	o	o	o	o	o	o

DB25F	J1	Signal Name
	1	Spare RS-232 in
	2	Spare RS-232 out
	3	Spare RS-232 in
	4	Spare RS-232 out
1	5	Case ground
2	6	Serial into "100 Squared"™
3	7	Serial out of "100 Squared"™
7	8	Electrical ground
	9	Reset line in or out
	10	Electrical ground
	11	RS-422 Receive + Differential input or 485 xcv
	12	RS-422 Receive - Differential input or 485 xcv
	13	RS-422 Receive + Differential output
	14	RS-422 Receive - Differential output

"100 SQUARED"™ DOCUMENTATION
INPUT/OUTPUT JACKS J2

TOP VIEW	
FRONT (EDGE) OF CARD v	
20 pin header group	- X PA7 o o PA6 O
	O PA5 o o PA4 O
	O PA3 o o PA2 I
	I PA1 o o PA0 I
	+5 o o +5
	GND o o GND
	O PB7 o o PB6 O
	O PB5 o o PB4 O
	O PB3 o o PB2 O
	- O PB1 o o PB0 O
	+5 o o +5
	GND o o GND
	- X PC7 o o PC6 X
	X PC5 o o PC4 X
	X PC3 o o PC2 X
	X PC1 o o PC0 X
34 pin header group	+5 o o +5
	GND o o GND
	O PD7 o o PD6 I
	X PD5 o o PD4 X
	X PD3 o o PD2 X
	X PD1 o o PD0 X
	+5 o o +5
	GND o o GND
	I PE7 o o PE6 I
	I PE5 o o PE4 I
	I PE3 o o PE2 I
	I PE1 o o PE0 I
	- +5 o o +5
	GND o o GND

I=INPUT O=OUTPUT X=EITHER

F68FC11 "100 SQUARED"™ NMIX-0021/2/3 REV 1.0 & 2.x 11/13/87

"100 SQUARED"™ DOCUMENTATION
EXPANSION JACK J4

MEMDIS	o	o	N.C.
E	o	o	RST
A15	o	o	INT
A14	o	o	+5
A12	o	o	R/W
A7	o	o	A13
A6	o	o	A8
A5	o	o	A9
A4	o	o	A11
A3	o	o	OE
A2	o	o	A10
A1	o	o	AS
A0	o	o	D7
D0	o	o	D6
D1	o	o	D5
D2	o	o	D4
GND	o	o	D3

The J4 expansion connector was designed to follow the JEDEC standard for byte sized memory parts in the 8, 16 and 32K Byte varieties. The J4 connector on these boards are made to most closely match the more recently available 32K JEDEC parts.

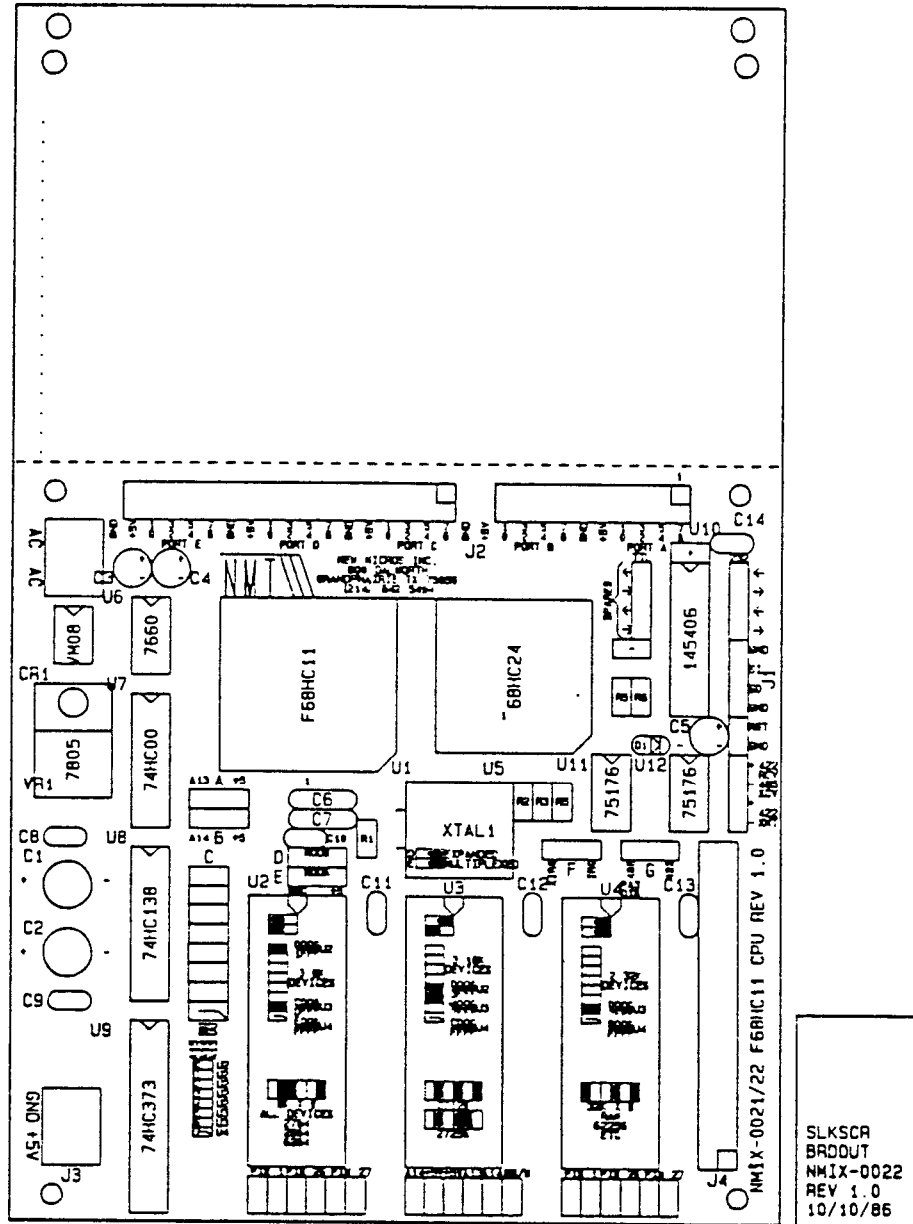
NEW MICROS, INC.
NMIX-0021/2 F68HC11 "100 SQUARED"™ PARTS LIST REV 1.0 & 2.x

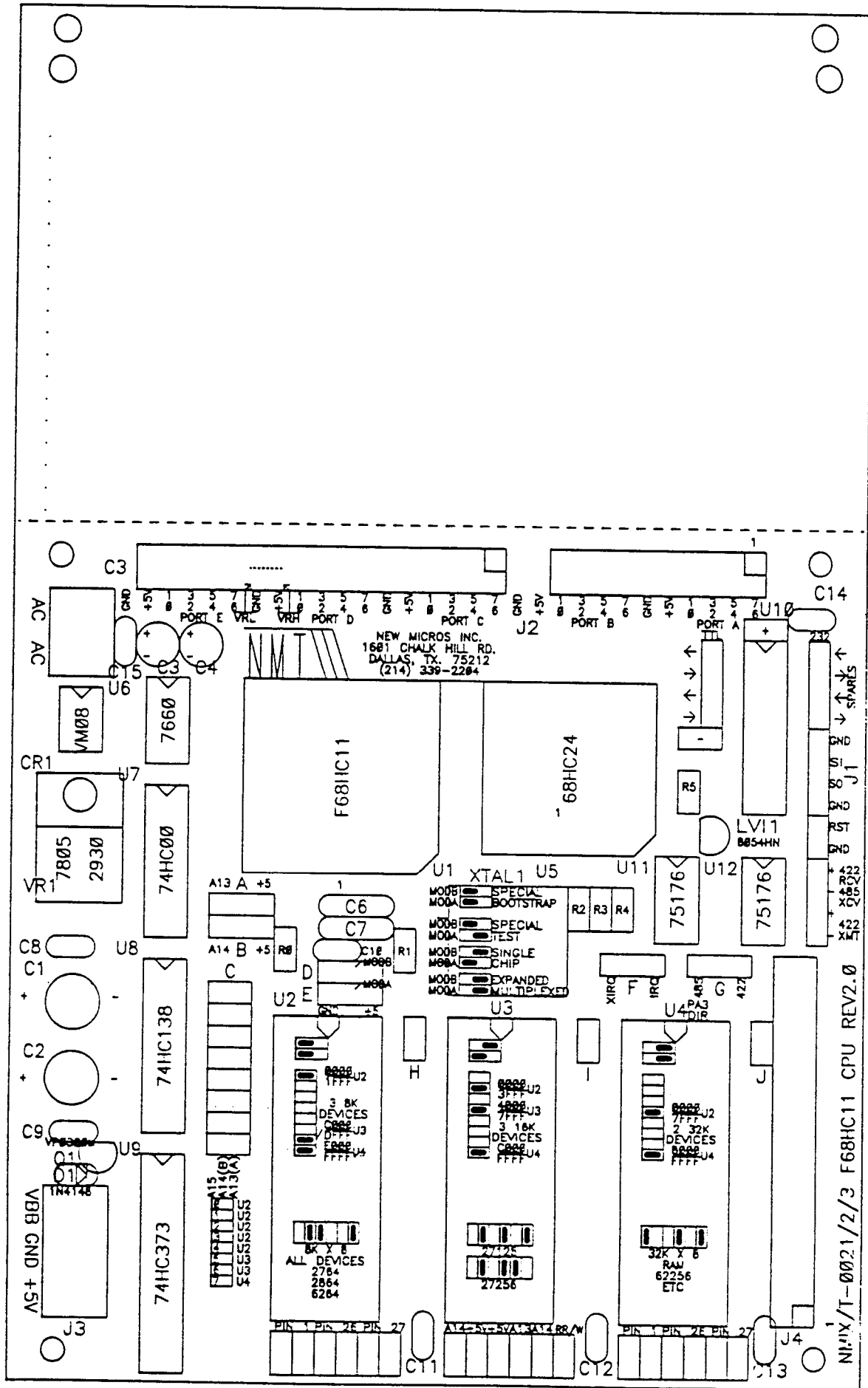
PART#	GENERIC	DESCRIPTION
U1	52 PIN SOCKET F68HC11	FORTH CPU
U2	28 PIN SOCKET 2064	8K x 8 RAM
U3	28 PIN SOCKET	
U4	28 PIN SOCKET 2064/20256	OPTIONAL MEMORIES U4,5
U5	44 PIN SOCKET F68HC24 PRU	PRT RPLCMNT UNT (NMIX-0022 ONLY)
U6	8 PIN SOCKET 7660	DC/DC CONVERTER
U7	14 PIN SOCKET 74HC00	NAND GATE
U8	16 PIN SOCKET 74HC138	ADDRESS DECODING PROM
U9	20 PIN SOCKET 74HC373	8 BIT LATCH
U10	16 PIN SOCKET 145406	RS-232 CONVERTOR
U11,12	8 PIN SOCKETS 75176	RS-422/485 DRIVERS
Y1	8 MHZ XTAL	
J3	SCREW TERMINAL	2 PIN .194" CONN (Rev 1.0 only)
J3	SCREW TERMINAL	3 PIN .194" CONN (Rev 2.x only)
J4	34 PIN VSC HEADER	.1" DUAL INLINE
R0	10K	1/8 WATT RESISTOR (Rev 2.x only)
R1	1Meg	1/8 WATT RESISTOR
R2-5	10K	1/8 WATT RESISTOR
R6	10K	1/8 WATT RESISTOR (Rev 1.0 only)
C1,2	220uf	16V ELECTROLYTIC CAP
C3,4	10uf	16V ELECTROLYTIC CAP
C5	10uf	16V ELECTROLYTIC CAP (Rev 1.0 only)
C6,7	20 pf	CERAMIC DISC
C8-14	.1uf	MONOLYTHIC BYPASS
C15	.1uf	MONOLYTHIC BYPASS (Rev 2.x only)
LV11	8054HN	POWER ON RESET MONITOR (Rev 2.x)
Q1	VP0300L	P CHANNEL FET (Rev 2.x only)
D1	1N4148 OR 1N914	SIGNAL DIODE
CR1	VM08	BRIDGE RECTIFIER
VR1	7805	5V REGULATOR
PCB	100 SQUARED	NMIX-0021/2/3 PCB REV 1.0 or 2.x
	JUMPER PINS	BERG STYLE .1" CENTER JUMPERS
	JUMPER SHUNTS	BERG STYLE .1" CENTER SHUNTS
S1	MOMENTARY PUSH	RESET SWITCH
	9V WALL PLUG	A.C. POWER TRANSFORMER
	CASE	ALUMINUM EXTRUDED METAL CASE
	FRONT PANEL	ALUMINUM MOUNTING FACE PLATE
	BACK PANEL	STEEL BLACK END PLATE

NEW MICROS, INC.
 NMIT-0021/2 F68HC11 "GENERIC TARGET COMPUTER"™ PARTS LIST
 REV 1.0 & 2.x

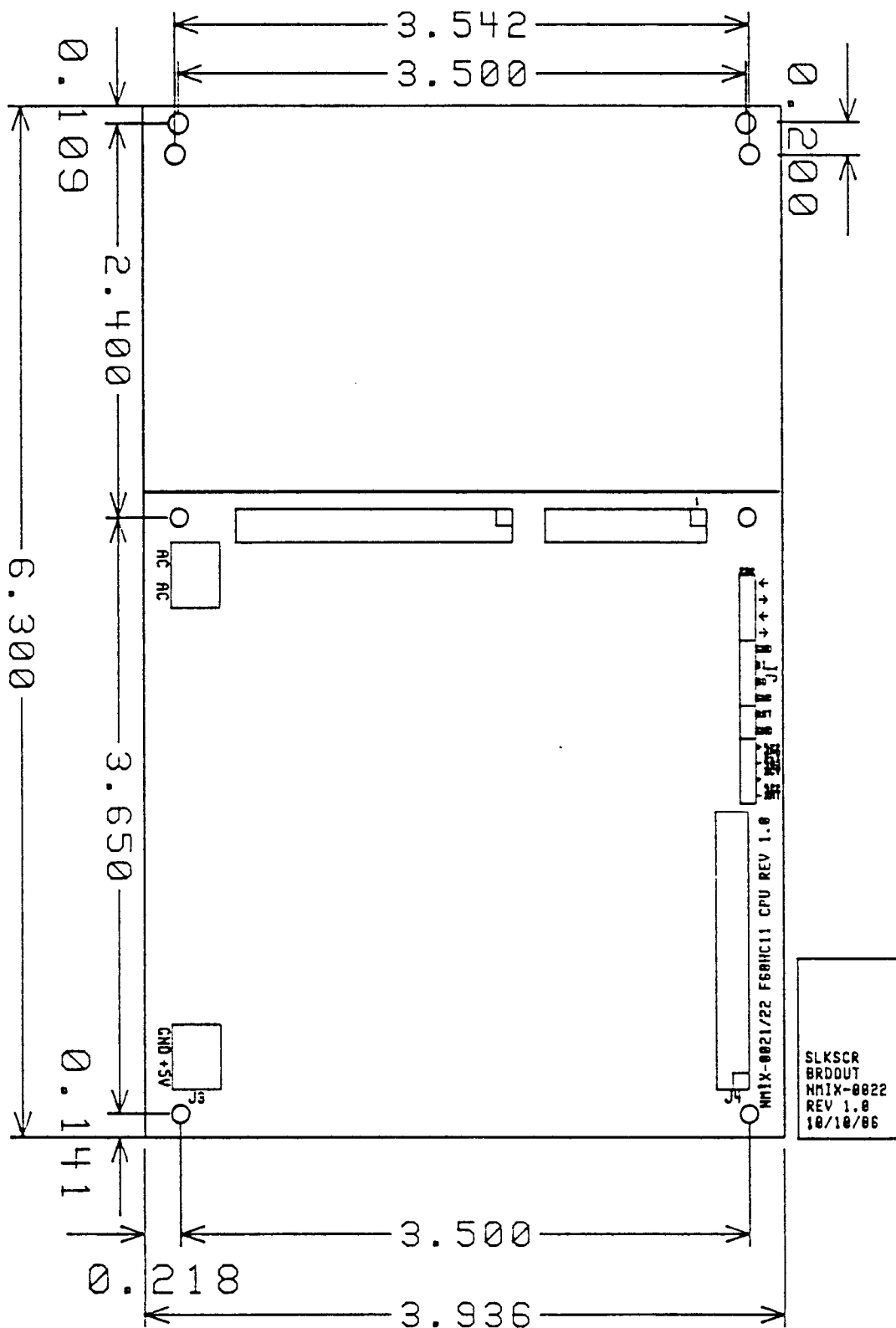
PART#	GENERIC	DESCRIPTION
U1	52 PIN SOCKET F68HC11	FORTH CPU
U2	28 PIN SOCKET	
U3	28 PIN SOCKET	
U4	28 PIN SOCKET	
U7	14 PIN SOCKET 74HC00	NAND GATE
U8	16 PIN SOCKET 74HC138	ADDRESS DECODING PROM
U9	20 PIN SOCKET 74HC373	8 BIT LATCH
Y1	8 OR 4 MHZ XTAL	
R0	10K	1/8 WATT RESISTOR (Rev 2.x only)
R1	1Meg	1/8 WATT RESISTOR
R2-5	10K	1/8 WATT RESISTOR
R6	10K	1/8 WATT RESISTOR (Rev 1.0 only)
C6,7	20 pf	CERAMIC DISC
C9-13	.1uf	MONOLYTHIC BYPASS
C15	.1uf	MONOLYTHIC BYPASS (Rev 2.x only)
LV11	8054HN	POWER ON RESET MONITOR (Rev 2.x)
Q1	VP0300L	P CHANNEL FET (Rev 2.x only)
D1	1N4148 OR 1N914	SIGNAL DIODE
PCB	100 SQUARED	NMIX-0021/2/3 PCB REV 1.0 or 2.x

NMIX-0022 REV 1.0 SILKSCREEN

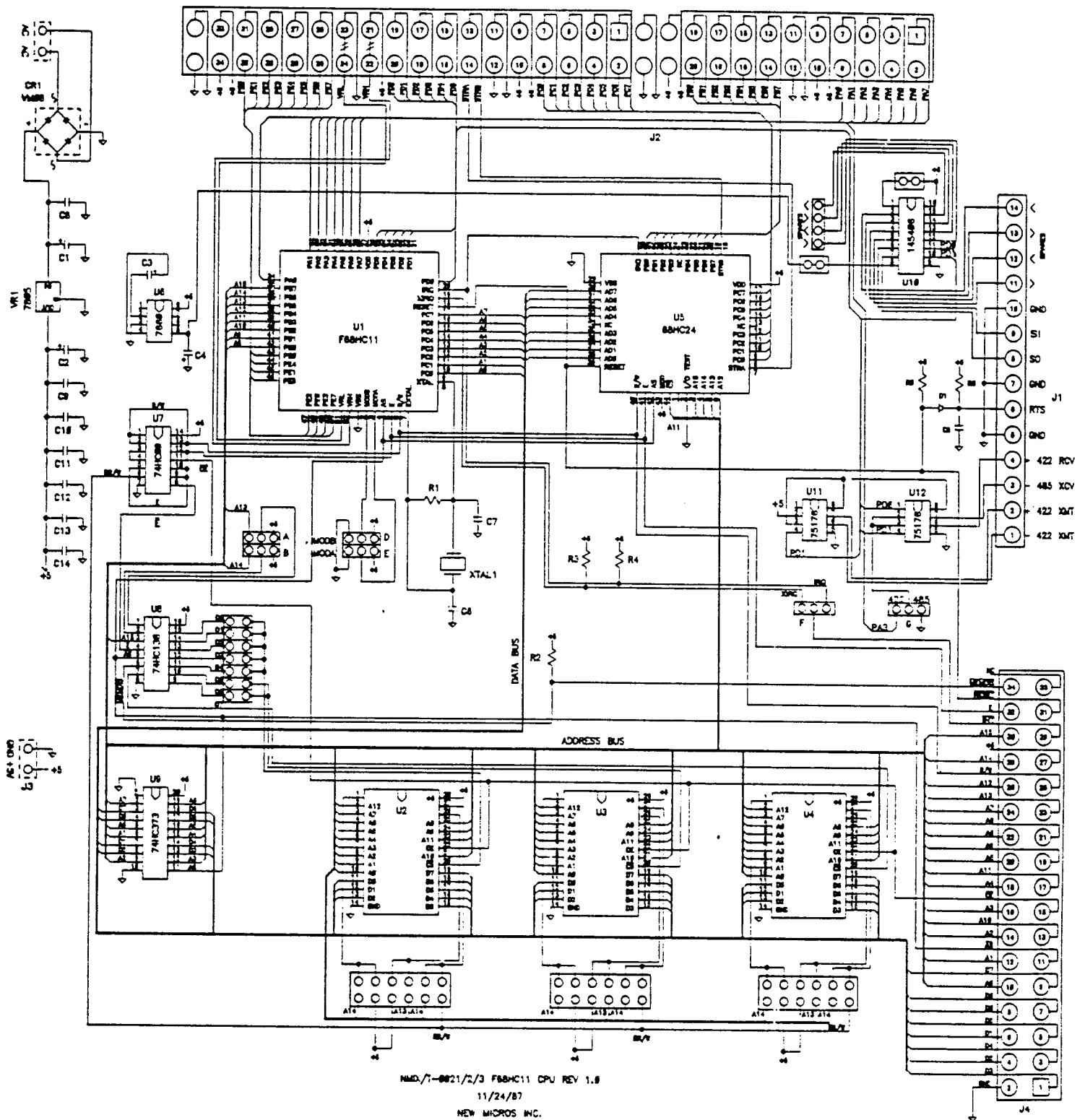




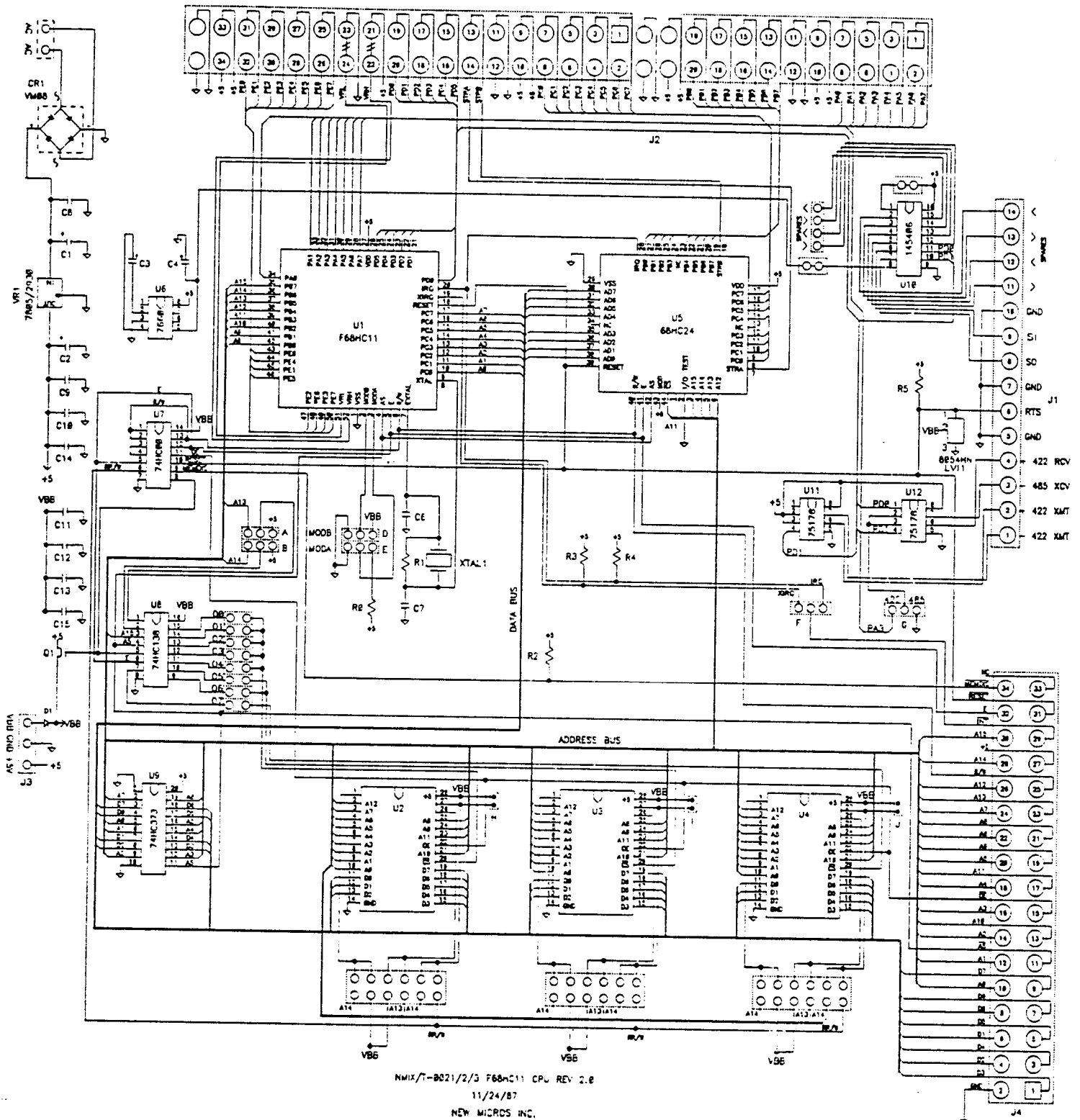
NMIX-0023 REV 1.0 & 2.x MECHANICALS



"schematic REV 1.0"



"schematic REV 2.x"



NMIX/T-8021/2/3 F66HC11 CPU REV 2.8

11/24/87

NEW MICROS INC.
1681 CHALK HILL RD.
DALLAS TX. 75212
214-335-2204

"100 SQUARED"™ DOCUMENTATION
APPLICATION NOTE

CONNECTING A PARALLEL PRINTER TO THE "100 SQUARED"™

Being able to keep a hard copy of entered or displayed text can be a very desirable feature during development. Further, the ability to make written reports from a run time application may be required of the finished system. The hook-up below shows connections between the "100 SQUARED"™ and a Centronics style printer.

This example works only on the NMIX and NMIT-0022 with the Port Replacement Unit installed.

PRINTER CONNECTOR PIN #	SIGNAL NAME	CABLE CONDUCTOR NUMBER	J2 F68HC11 68HC24 34 SIGNAL
1	STB	1	13 STRB (PD7)
19	GND	2	11 GND
2	D0	3	8 PC0
20	GND	4	GND
3	D1	5	7 PC1
21	GND	6	GND
4	D2	7	6 PC2
22	GND	8	GND
5	D3	9	5 PC3
23	GND	10	GND
6	D4	11	4 PC4
24	GND	12	GND
7	D5	13	3 PC5
25	GND	14	GND
8	D6	15	2 PC6
26	GND	16	GND
9	D7	17	1 PC7
27	GND	18	GND
10	ACK	19	14 STRA (PD6)
28	GND	20	GND
11-18	N.C.		
29-36	N.C.		

"100 SQUARED"™ DOCUMENTATION
APPLICATION NOTE

INTEL FORMAT DUMP COMMAND

The following program allows a section of memory to be dumped out the serial channel in the Intel hex format which is a standard used by many of the commercially available PROM programmers. This program should allow the use of such programmers to capture programs and data in EPROMs, which are not supported for programming by the "100 SQUARED"™ directly.

HEX

VARIABLE CHKSUM

```
: CE DUP A < IF 30 ELSE 37 THEN + EMIT ; ( CONVERT AND EMIT )
: 2.R FF AND 10 /MOD CE CE ;
: 4.R 0 100 UM/MOD 2.R 2.R ;

: INTEL-DUMP ( addr count --- )
  OVER + SWAP ( CONVERTS ADDR & COUNT TO UPPER, LOWER ADDR )
  BEGIN
    CR
    2DUP 20 + MIN ( MAKE NEXT LINE OF OUTPUT UP TO 32 BYTES LONG )
    SWAP ( BRING UP START ADDRESS, MOVE DOWN END ADDRESS )
    ." ;" ( BEGIN THE RECORD )
    2DUP - ( FIND OUT # OF BYTES IN THIS RECORD )
    DUP CHKSUM ! ( BEGIN CHKSUM COMPUTATION )
    2.R ( PRINT # OF BYTES IN RECORD IN TWO DIGIT FIELD )
    DUP 100 /MOD + CHKSUM +! ( ADD START ADDRESS TO CHKSUM )
    DUP 4.R ( PRINT START ADDRESS IN FOUR DIGIT FIELD )
    ." 00" ( PRINT RECORD TYPE, NO NEED TO ADD TO CHKSUM )
    >R DUP R> ( MAKE START STOP #S FOR DO LOOP )
    DO
      I C@ 2.R ( PRINT HEX BYTE IN TWO DIGIT FIELD )
      I C@ CHKSUM +! ( UPDATE CHKSUM )
    LOOP
    CHKSUM @ FF AND NEGATE 2.R ( PRINT CHKSUM NEG 2 DIGIT FIELD )
    2DUP =
    UNTIL ( KEEP GOING TILL LINE END IS = TO BLOCK END )
    CR ." :00000001FF" CR ( TACK ON END RECORD )
    2DROP
  ;
```

Program and application courtesy of Danny Barger, International Computing Scale.

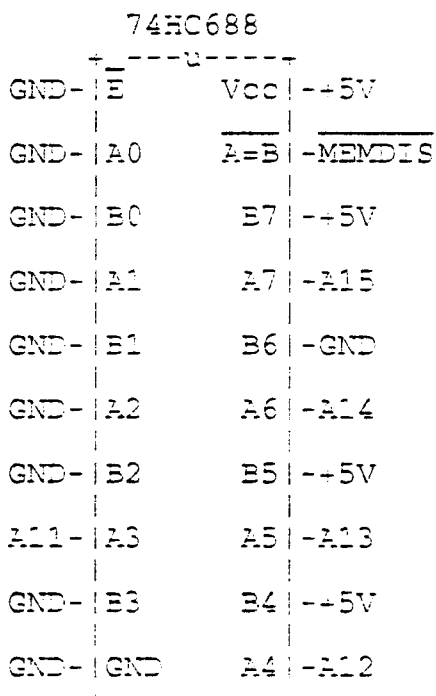
"100 SQUARED"™ DOCUMENTATION APPLICATION NOTE

Special consideration needs to be given to the address requirements of the Port Replacement Part (PRU) if it is optionally installed in a board by the user. Since the PRU is outside the F68HC11, it must compete for its address space with other devices on the bus, while the internal registers do not. It is possible to accidentally "over-map" the 68HC11 PRU with another external memory device unless some care is given to where the Max-FORTH system is mapping its registers.

Particular care must be taken when setting one of these boards for the 32K addressing mode which will always cause problems for the upper 32K device and the PRU. Generally the 8K address mode is the safest mode to use when a PRU is installed, if care is given to the U2 jumper to prohibit "over-mapping".

In Max-FORTH revisions x.1 (and prior) the registers are at \$9000. Later revisions put the registers at \$B000. Only address lines A15 - A11 are attached to the PRU, so it will over map a 2 Kbyte area (i.e. 9000-97FF or B000-B7FF) with a skipping pattern that repeats every 64 (40 hex) locations corresponding to the registers it provides.

An off board address decoder could be used to disable the on board memory using MEMDIS. It would need to generate a low signal on MEMDIS when ever there was any address in the area occupied by the PRU. In this way the memories in the 28 pin sockets would be "notched out" to allow the PRU to function normally.



Above 74HC688 detects addresses B000-B7FF and controls MEMDIS.