A-7000 Audio Console

TECHNICAL MANUAL

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A-7000 Audio Console Technical Manual - 1st Edition

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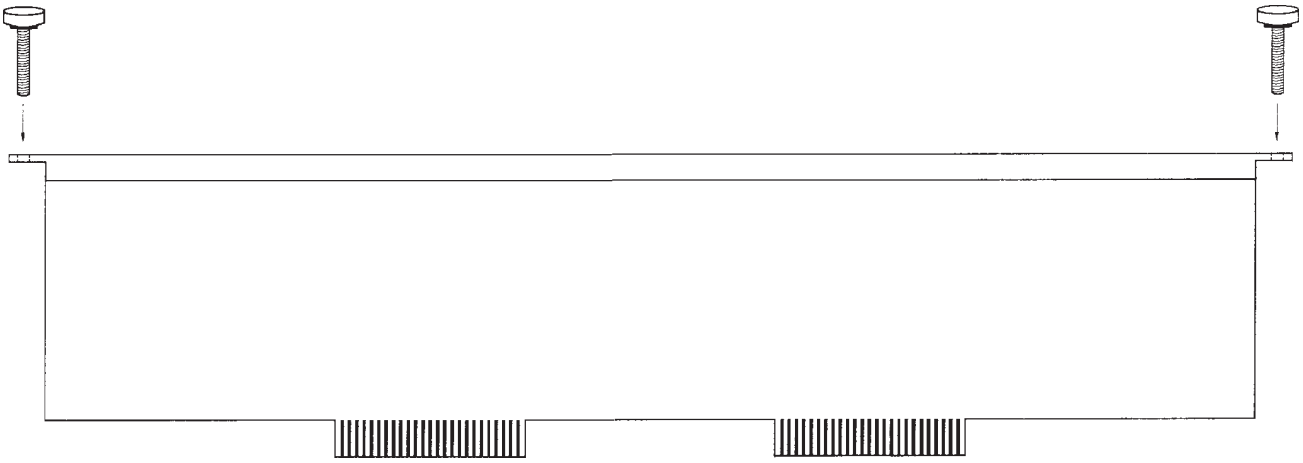
Module Removal Tools

Your Wheatstone A-7000 audio console is equipped with two "module extractor tools" which are mounted in the front panel of the console mainframe (underneath and to the right, just behind the console's armrest).

All modules are held into the console mainframe by two panel screws (top and bottom) which, when removed, leave specially threaded holes that accept the two extractor tools.

To remove a module from the mainframe:

Remove the front top and bottom module mounting screws, unscrew the extractor tools from the mainframe, and screw each tool into a module 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 and Power

Unpacking the Console

The console is normally shipped as two packages. One contains the console; the other contains the rackmount power supply, connecting cable, installation kit, spare parts kit and documentation. Begin by unpacking and locating these items.

Do not connect the A-7000 console to its power supply (and do not connect the power supply to the AC power line) until instructed to do so.

Mainframe Installation

The console is designed for simple drop-through installation in a countertop. Cut-out dimensions (in inches) for the various mainframe types are shown on the chart below:

TOTAL MAINFRAME POSITIONS	25	28	32	36	42
OVERALL CONSOLE DIMENSIONS	24 x 40-3/4	24 x 45-1/4	24 x 51-5/16	24 x 57-5/16	24 x 66-5/16
CUT-OUT DIMENSIONS	21-5/8 x 39-1/16	21-5/8 x 43-5/8	21-5/8 x 49-5/8	21-5/8 x 55-11/16	21-5/8 x 64-3/4
MAXIMUM NUMBER OF INPUT MODULES	21	24	28	32	38

Console placement should take into consideration avoiding proximity to any electromagnetic fields, such as large power transformers, motors, and flourescent lighting fixtures.

Before proceeding with input/output connections, it will be necessary to ground the console properly (next section).

System Ground

The first step is to ground the console.

Note that as supplied from the factory, console rackmount power supply common, audio ground, and the A-7000 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 lower left if you are looking at the rear of the console).

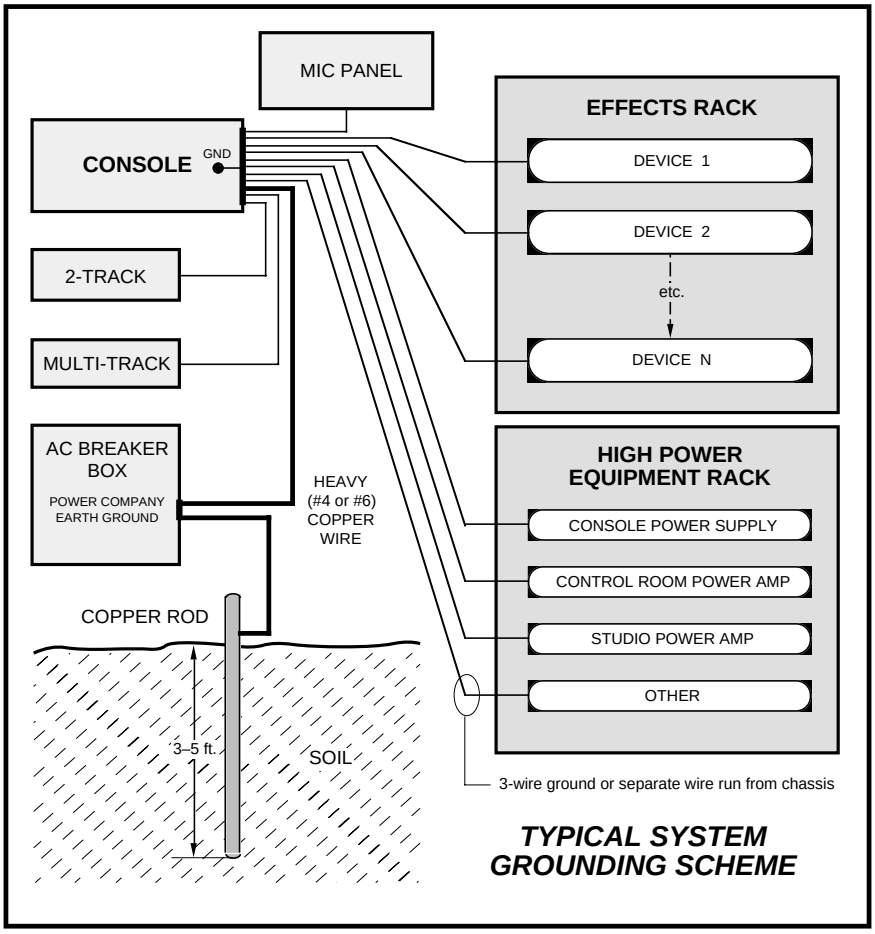
The system ground serves two important purposes:

(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).



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.

(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" on previous page).

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.

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

The A-7000 console is powered by a Wheatstone Model PSC-6008 rackmount 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. The PSC-6008 generates a lot of heat in the course of normal operation — do *not* mount heat sensitive devices in the same rack cabinet.

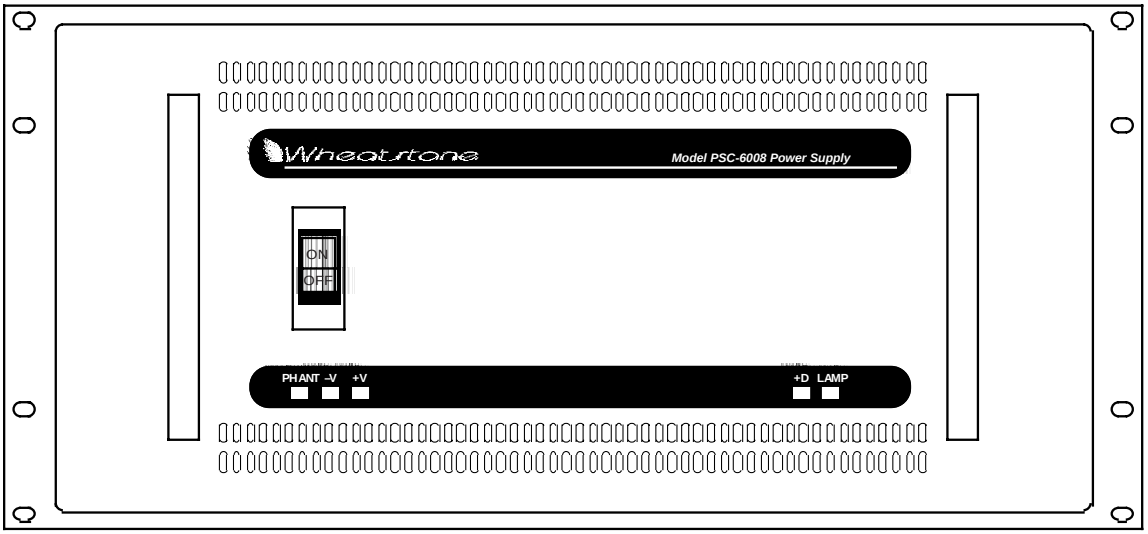
If failsafe redundant supplies have been ordered, you will be installing two units.

Note the power supply (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.

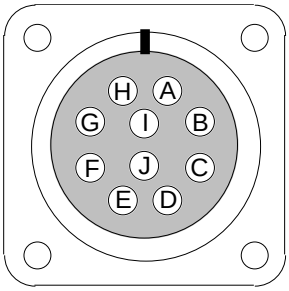
Once the supply is rackmounted, it should be connected to the console using the factory supplied cable. The console's two power supply connectors are located at the rear of the console, one at each end of the mainframe bottom pan. If you are using two supplies (failsafe option) one supply will connect to each console connector; otherwise only one connector will be used (it does not matter which one). Note that the power supply cable's 10-pin female connector has to be rotated until its locating pins match the male connectors on the console. Do not force a connector on; it attaches easily when properly aligned. Connect the cable(s) first to the console, then to the rear of the 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 A-7000 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.



The PSC-6008 Power Supply



TYPICAL POWER CONNECTOR
(10-pin)

A : audio/phantom common
B : +V audio
C : –V audio
D : lamp common
E : +phantom power
F : digital common
G : +digital
H : +lamp
I : n/c
J : n/c

Failsafe Dual Redundant Supply

Wheatstone failsafe power supply systems use two separate rackmount 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.

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

Energizing

Assuming the A-7000 console mainframe is properly placed and grounded, and its PSC-6008 power supply (or supplies) correctly rackmounted and connected to the console, you may now energize the PSC-6008 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 individual module switches will assume factory default settings.

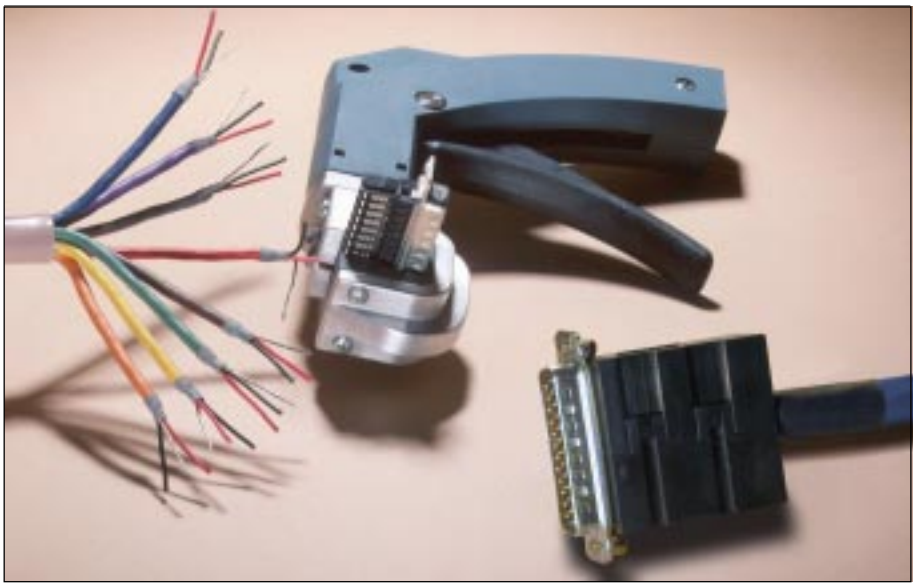
Once you have verified proper power-up, turn off the rackmount power supplies to de-energize the console. You may now proceed to wire up audio and control connections.

Audio and Control Wiring

All audio and control I/O connections to the A-7000 console are made through multipin connectors (DB-25 and DB-9) located on the bottom of the console mainframe.

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



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.

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.

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 hoods for each connector are also supplied with the console. These have locking screws 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, outputs, 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.

Recommended setup is to have all microphone inputs connected to the first channels (mono mic type), with the remaining line input sources connected to stereo line inputs. It is good practice to group input types together. For example, if you have three cart machines, connect them to the inputs of three successive stereo line modules.

Analog Insert Points

Certain module signals have insert patch points in their signal chains to allow outboard audio processing. These include MONO MIC INPUTS (MM-7000) and OUTPUT MODULES (OM-7000).

Normally these points are internally bridged at the factory (via PCB-mounted programming switches) prior to shipment. If you intend to use outboard signal loops at these points, you must reprogram these switches. See pages 2-6 (mic inputs) and 4-3 (output modules) for details.

Unbalanced Connections

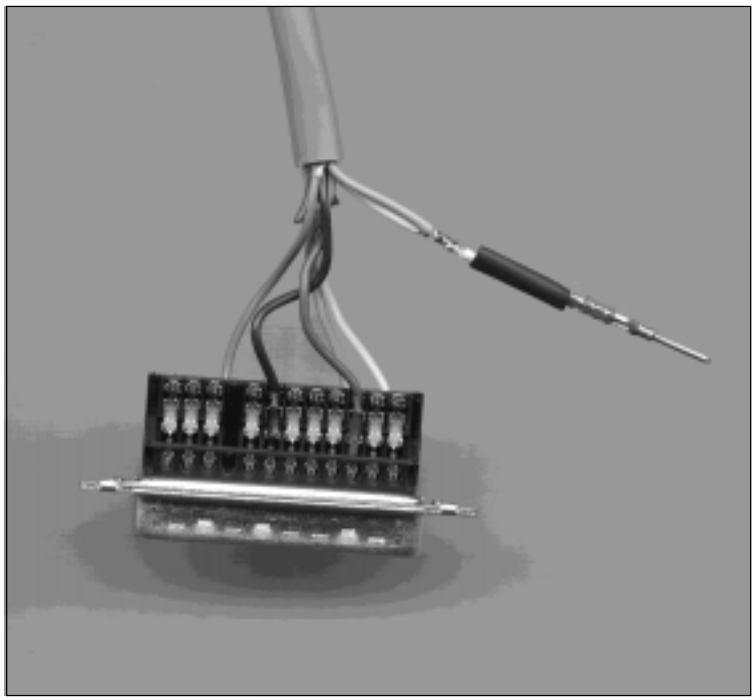
INPUTS — Wire to the console with typical shielded two conductor cable (like Belden 9451), just as if you were connecting a balanced source. At the unbalanced source machine's output, connect the black wire (LOW) to the shield. *If the machine has a -10 dBu output, don't hesitate to turn module input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

See Appendix for a discussion of balanced versus unbalanced connections.

OUTPUTS — A-7000 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.)

Wiring Procedure - Double Connection to One Pin

ref: DB-25 male multi-pin connector



Most audio equipment machine interfaces (as well as Wheatstone consoles) use subminiature D-type connectors. Sometimes the interfaces require making two connections to a single DB pin. If the wiring has been set up using punchblocks, this is not a problem; however, for situations where direct machine-to-console wiring is used, Wheatstone recommends the following procedure:

1) **Connect the first wire to the desired pin as you normally would.**
2) **Note connector pins may easily be removed from the DB-25 shell with the wire still attached: Hold the connector with the metal part down and observe its side. You will see a row of "Vees"—simply press the top of the selected vee together with a scribe or other sharp instrument; this will unlock the pin from the shell, allowing it to be removed.**
3) **With the pin removed, strip out a short section of insulation from the connected wire and wrap and solder the second wire to the first as shown above.**
4) **A short piece of heatshrink tubing (pictured here before being slid into place) completes the connection.**
5) **Re-insert the pin into the DB-25 shell, spreading the vee apart to lock it in place.**

Mono Mic/Line Input Module (ML-7000)

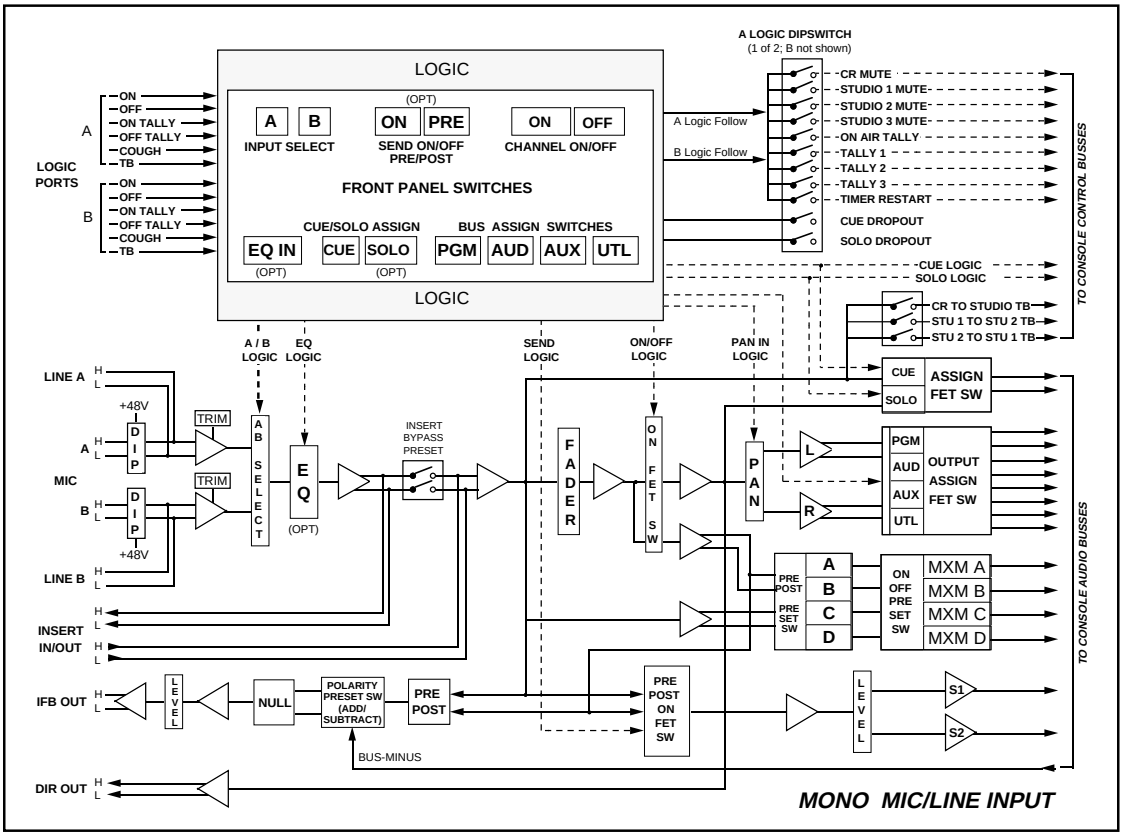
Chapter Contents

Mono Mic/Line Input Module (ML-7000)

Module Overview

In standard configuration these modules accept mono microphone (or line level) input signals (A or B). They are used to control level and route the source signal to various console outputs and monitor busses. They are also available with a whole range of additional features: cue and solo functions, stereo and mono sends, and an electronically controlled multiple input switcher.

All audio and control input and output signals are made via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module; and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 2-11 shows all wiring connections at a glance.



Controls and Functions

DUAL (A/B) – The module actually has two pairs of input ports: Mic A & B and Line A & B selectable via internal slide switch. Both A and B inputs have internal multiturn trim controls for critical gain match to specific microphones. Internal dipswitches independently select A and B phantom power for the mic inputs. Module input leads incorporate RF beads to prevent RF infiltration.

OUTPUT ASSIGN – Assigns the module's mono signal to the console's stereo output busses: Program (PGM), Audition (AUD), Auxiliary (AUX) and Utility (UTL). If the module's channel ON button is activated, a red "On-Air" LED indicator lights when the PGM assign button is pushed.

PGM and AUD assignments follow internal dipswitch settings for separate SPEECH and MUSIC processing paths. This allows, via individual insert patch points at the console's output modules, independent processing of these two types of signals.

AUX and UTL assignment switches may be internally dipswitch programmed to break away or follow channel on-off logic.

PAN – The panpot places the module's mono signal in the left-right fields of assigned stereo output and monitor signals. It is switchable in and out in some variations of the module.

INSERT PATCH POINT – Each input module has its own electronically balanced insert patch point for outboard signal processing (may be internally dipswitch-bypassed).

DIRECT OUTPUT – Electronically balanced; for signal splits or external bus-independent destinations. The direct output signal is taken post fader/channel on-off.

PHANTOM POWER – Internal dipswitches allow you to independently select phantom power for both A and B mic inputs.

MIX-MINUS (internal) – The A-7000 console is equipped with four separate mix-minus busses, individually accessible via internal dipswitch programming at each input module. Each MXM bus assignment can be dipswitch-programmed for a pre or post fader/channel on-off audio tap. In addition, mix-minus can follow or break away (dipswitch programmable) from the channel's on-off logic.

SEND – Available as mono or dual mono. Used to provide special effect feeds or custom monitor mixes to specific locations. Assigns a split off the channel signal to the console's send busses. Send signals may be tapped pre or post fader/channel on-off (via a front panel switch) and may be turned ON or off with a second switch. An internal dipswitch

allows the send function to operate independently of the module's channel on/off status. (NOTE that dual mono sends normally have two level controls; however, when the module is ordered with an EQ section a single dual concentric control is used.)

IFB Bus-Minus® (Internal) – This option allows each input module to general an individual mix-minus output; thus each anchor, each announcer, each host, each guest can have a dedicated mix-minus feed. Internal dipswitches determine whether the channel signal is present or absent from the IFB feed, and whether the signal is tapped pre or post fader/ channel on-off.

CUE (and SOLO) – These monitor functions allow the console operator to spot check the module's signal without interfering with regular bus assignments. CUE is normally supplied; it's feed is tapped pre fader/channel on-off; SOLO is also available; it is post fader/channel on-off and more suitable for production environments. Solo/cue signals are outputted at the console's Control Room (CR) monitor module, where they appear at the CUE output and on the built-in meterbridge speakers, are automatically metered on the console's switched VU meter pair, and can be programmed to automatically interrupt the HEADPHONE and CONTROL ROOM outputs. Exactly how the cue (or solo) signal interrupts the console's regular monitor output is determined by internal dipswitch programming at the CR module itself.

Cue and Solo may be programmed at each input module (via internal dipswitches) to automatically disengage whenever the channel ON button is pressed, preventing potential feedback problems within the control room itself. An optional bottom-of-travel fader overpress switch can also be used to place the module in CUE mode.

3-BAND EQ – This option provides three bands of continuously sweepable boost and cut (±16dB; reciprocal curves) , plus continuously sweepable frequency (40Hz–1KHz, 400Hz–8KHz, and 800Hz–16KHz). EQ in/out is electronically switched for silent punch-ins. (NOTE: due to panel space conflicts, the EQ option is not available with dual mono send pots).

TALKBACK ASSIGN (internal) – The module signal may be dipswitch assigned to the console's three talkback busses (CR to STUDIO 1 & 2, STUDIO 1 to STUDIO 2, STUDIO 2 to STUDIO 1). The talkback signal is taken pre fader/channel on-off.

Talkback (TB TO CR) can be remotely activated via the module's control ports (follows A & B source select).

FADER – Long-throw (104mm) conductive plastic. May be supplied with optional bottom-of-throw overpress switch.

CHANNEL ON/OFF – These switches, in addition to their primary function of turning the module signal on and off, also perform numerous logic tasks, involving MUTING (CR, studios 1 thru 4), TALLYS (on-air tally and tally 1 thru 3), and TIMER RESTART; all these can be programmed (via internal dipswitches) to activate when the channel ON button is pressed. These same switches may also be remotely operated (via the module's control ports), permitting external ON/OFF and COUGH functions. Note all on/off switch logic functions follow A and B source select switching. Thus each function is available at two source locations. Channel on-off switches can also control remote A & B on and off tally indicators.

Internal Programming Options

Each ML-7000 input module has numerous PCB-mounted slide (double throw double pole) and dipswitches switches that may be user-programmed to perform various functions. There are two main categories for these switches: SIGNAL ROUTING (what point in the module signal path a signal is tapped from ["pre/post"] and where the signal is sent when it leaves the module ["bus assignment"]), and LOGIC FUNCTIONS (when a module's channel ON switch is pressed, many different things can happen—both within the console itself and to external equipment connected to the console; what functions actually get activated are determined by this group of switches). All switches are accessed by removing individual modules from the console mainframe.

For programming purposes switches are described as viewed from the component side of the module printed circuit board, with UP being towards the module faceplate and RT pointing to the bottom of the module, where the channel ON/OFF switches are located.

Mono Input Signal Routing Switches

Source Select

Two slide switches allows select mic or line input signals:

SW8 – UP is Mic A input signal; DOWN is Line A input signal
SW9 – UP is Mic B input signal; DOWN is Line B input signal

Music/Speech Assign (PGM & AUD)

Four switches will assign PGM & AUD to music or speech:

SW18 – PGM LT (RT is speech, LT is music)
SW19 – PGM RT (RT is speech, LT is music)
SW20 – AUD LT (RT is speech, LT is music)
SW21 – AUD RT (RT is speech, LT is music)

Insert Bypass

The slide switch SW17 allows the module's insert patch points (see upper DB-25 input/output connector pinouts) to be internally bypassed (LT position is ON and activates the bypass; RT is OFF and places the insert patch points into the signal path).

Mix-Minus Assign

The following four slide switches assign the module signal to the console's four mix-minus ACN busses:

SW22 – MXM A bus assign (UP is off, DOWN is on)
SW23 – MXM B bus assign (UP is off, DOWN is on)
SW24 – MXM C bus assign (UP is off, DOWN is on)
SW25 – MXM D bus assign (UP is off, DOWN is on)

These four slide switches determine whether the mix-minus signal is tapped before (PRE) or after (POST) the module's fader, channel on/off and panpot circuitry:

SW10 – MXM A signal tap (UP is pre, DOWN is post)
SW11 – MXM B signal tap (UP is pre, DOWN is post)
SW12 – MXM C signal tap (UP is pre, DOWN is post)
SW13 – MXM D signal tap (UP is pre, DOWN is post)

Talkback Assign

Positions 5, 6, and 7 of a seven position dipswitch (SW6) assign the module signal to the console's talkback busses (UP is on, DOWN is off).

SW6 Pos 5 – Talkback to Studio 1 and 2
SW6 Pos 6 – Talkback Studio 1 to Studio 2
SW6 Pos 7 – Talkback Studio 2 to Studio 1

IFB Assign

SW7 – Determines whether the channel signal will be present on the module's IFB output (UP is off, DOWN is on).

SW5 – Determines whether the module's IFB signal will be tapped pre or post fader/channel ON-OFF/panpot (UP is pre, DOWN is post).

Mono Input Switch Controlled Logic Functions

Auxiliary Assign

SW2 – LT: Auxiliary assign function follows channel on switch, RT: Auxiliary assign will override (activate) channel on audio FET switch (channel on tally/mute/timer functions are not activated, module is still effectively OFF for other bus assigns).

Utility Assign

SW3 – LT: Utility assign function follows channel on switch, RT: Utility assign will override (activate) channel on audio FET switch (channel on tally/mute/timer functions are not activated, module is still effectively OFF for other bus assigns).

MXM/SEND Assign

SW1 Position 4 – UP: send follows channel on switch, DOWN: send operates independently of channel on switch.

SW4 – LT: MXM/SEND assign function follows channel on switch, RT: MXM/SEND assign operates independently of channel on switch.

CUE and SOLO Dropout

SW1 Position 2 – UP: channel on deactivates cue function, DOWN: cue function operates independently of channel on switch.

SW1 Position 1 – UP: channel on deactivates solo function, DOWN: solo function operates independently of channel on switch.

SW1 Position 3 – UP: External source machine functions (both A and B sources) follow the optional ARM switch, DOWN: the functions work whether ARM button is pressed or not.

Mutes

When a microphone is live in a room, that room's monitor speakers must be muted to prevent feedback. The A-7000 console has five mute control lines: control room and studio 1-4. Each of these may be activated by either an A or B microphone input.

SW14 Position 5 mutes the Studio 4 when mic A is live
SW14 Position 6 mutes the Studio 3 when mic A is live
SW14 Position 7 mutes the Studio 2 when mic A is live
SW15 Position 1 mutes the Studio 1 when mic A is live
SW15 Position 2 mutes Control Room when mic A is live

SW16 Position 2 mutes the Studio 4 when mic B is live
SW16 Position 3 mutes the Studio 3 when mic B is live
SW16 Position 4 mutes the Studio 2 when mic B is live
SW16 Position 5 mutes the Studio 1 when mic B is live
SW16 Position 6 mutes Control Room when mic B is live

Tally

TALLY functions (there are four) activate opto-isolated tally relay closures at the console's control room monitor module. These closures may be used to control externally powered tally lights. Each of these may be activated by either an A or B microphone input.

SW14 Position 1 activates Tally 1 when mic A is live
SW14 Position 2 activates Tally 2 when mic A is live
SW14 Position 3 activates Tally 3 when mic A is live
SW14 Position 4 activates On-Air Tally when mic A is live

SW15 Position 5 activates Tally 1 when mic B is live
SW15 Position 6 activates Tally 2 when mic B is live
SW15 Position 7 activates Tally 3 when mic B is live
SW16 Position 1 activates On-Air Tally when mic B is live

Timer Restart

When the module is turned ON the console's digital timer can be programmed to automatically reset to zero and being counting up.

SW15 Position 3 activates Timer Restart when mic A is turned ON
SW16 Position 7 activates Timer Restart when mic B is turned ON

Phantom Power

Positions 1 and 2 of seven-position dipswitch SW6 turn phantom power on (UP position) and off (DOWN position). Position 1 controls microphone input A, and position 2 microphone B.

Note the factory default setting for phantom power is OFF.

Hook-Ups

As stated before, all user wiring to and from ML-7000 modules is done via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module, and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 2-11 shows all wiring connections at a glance.

Audio Connections

Upper DB-25 Connector

These include A and B mic/line inputs, and insert in and out. The mic input level is nominally -50dBu, line input and in/out insert points level are +4dBu balanced. All signals are analog mono.

Pin 25 – Mic A In SH
Pin 24 – Mic A In HI
Pin 12 – Mic A In LO

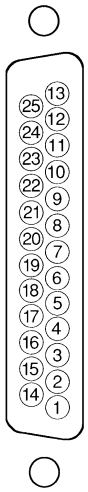
Pin 11 – Mic B In SH
Pin 10 – Mic B In HI
Pin 23 – Mic B In LO

Pin 19 – Line A In SH
Pin 18 – Line A In HI
Pin 6 – Line A In LO

Pin 5 – Line B In SH
Pin 4 – Line B In HI
Pin 17 – Line B In LO

Pin 16 – Insert Out SH
Pin 15 – Insert Out HI
Pin 3 – Insert Out LO

Pin 2 – Insert In SH
Pin 1 – Insert In HI
Pin 14 – Insert In LO



Typical DB-25 connector

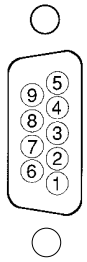
Note the insert points are normally bypassed by PCB-mounted slide SW17 (see page 2-6).

DB-9 Connector

These include direct and IFB output connections.

Pin 8 – Direct Out SH
Pin 7 – Direct Out HI
Pin 3 – Direct Out LO

Pin 5 – IFB Out SH
Pin 4 – IFB Out HI
Pin 9 – IFB Out LO



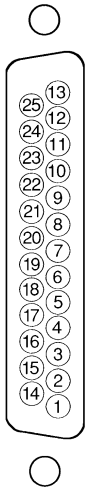
Typical DB-9 connector

Control Connections

Lower DB-25 Connector

These include remote on and off, cough, talkback and tally functions. Note that each function is available twice, at both A and B source ports, allowing control functions to follow the module's A/B mic selector switch.

Pin 1 – A Cough
Pin 2 – A Off Tally
Pin 3 - A Off Switch
Pin 4 – A Digital Common
Pin 5 – A +5VDC
Pin 7 – B Cough
Pin 8 – B Off Tally
Pin 9 – B Off Switch
Pin 10 – B Digital Common
Pin 11 – B +5VDC
Pin 14 – A TB to CR
Pin 15 – A On Tally
Pin 16 – A On Switch
Pin 17 – A Digital Common
Pin 20 - B TB to CR
Pin 21 - B On Tally
Pin 22 – B On Switch
Pin 23 – B Digital Common



Typical DB-25 connector

To Turn the Module ON & OFF from a Remote Location

ON SWITCH — Activates the module's channel ON switch. Provide a momentary closure between Pin 16 (A On Switch) or Pin 22 (B ON Switch) and Digital Ground (Pins 4, 10, 17 or 23). This will latch the module ON. (User-supplied momentary contact switch required.)

OFF SWITCH— Activates the module's channel OFF switch. Provide a momentary closure between Pin 3 (A Off Switch) or Pin 9 (B Off Switch) and Digital Ground (Pins 4, 10, 17 or 23). This will latch the module OFF. (User-supplied momentary contact switch required.)

COUGH — Temporarily Mutes the module. Provide a closure between Pin 1 (A Cough) or Pin 7 (B Cough) and Digital Ground (Pins 4, 10, 17 or 23). 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

If an ML-7000 module is being used for a studio microphone, this connection allows talkback from that studio to the console operator. Provide a closure between Pin 14 (A TB to CR) or Pin 20 (B TB to CR) and Digital Ground (Pins 4, 10, 17 or 23). This will cause the module's pre fader signal to be sent to the console's Cue bus, where it may be heard by the console operator. This non-latching condition continues until the closure is released. (Requires user-supplied momentary action TALKBACK switch at the studio microphone location.)

On Tally

Lets the module's channel ON switch control an on-air light or other "microphone on" indicator at a remote location. This control function provides a continuous closure to ground at Pin 15 (A On Tally) or Pin 21 (B ON Tally) whenever the module is ON.

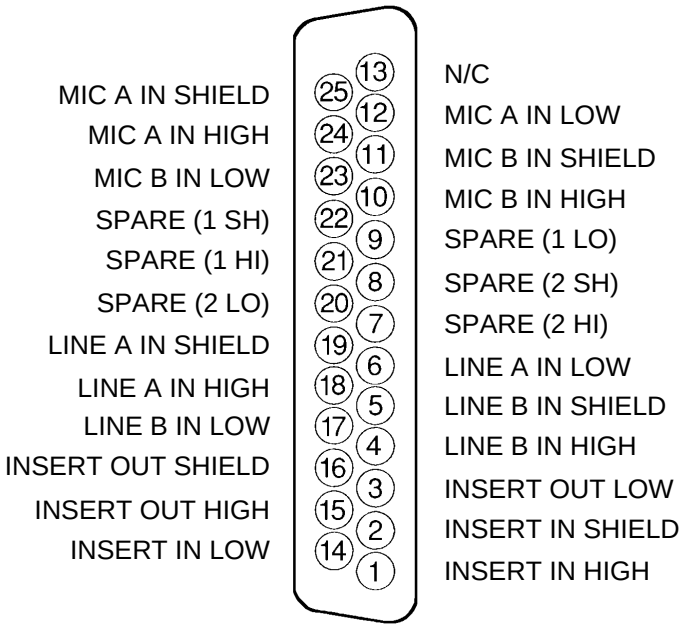
This signal can be used to control an externally powered tally light that requires a continuous signal to function. Or an external tally light (i.e., LED) can be powered from the input module by connecting the external LED to +5 Digital (Pins 5 or 11) and the A or B On Tally port. In either case, current should not exceed 30 milliamps.

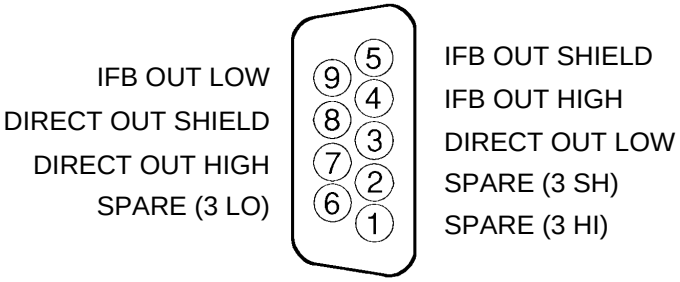
We recommend a series resistor between the LED and +5V digital when you are powering the external tally from the console; a value of 220Ω (1/4W 5%) is suggested.

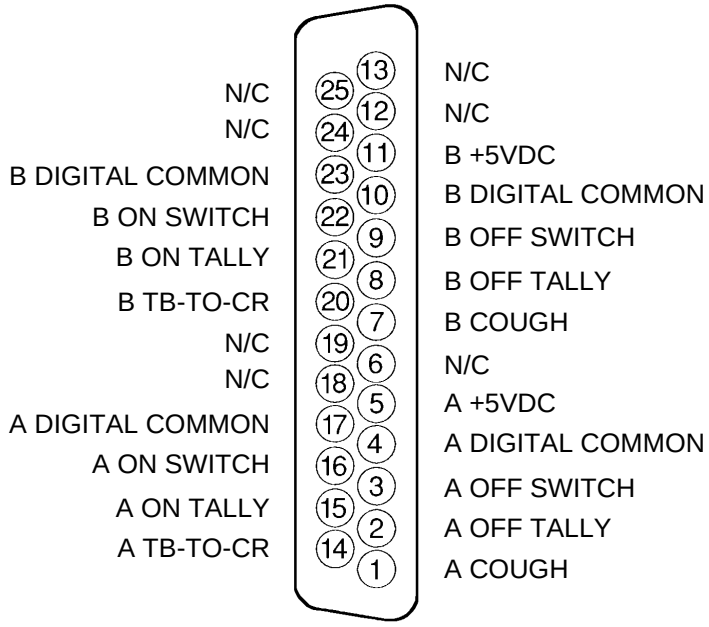
Off Tally

Identical to "On Tally" (preceding), only this tally is active when the module is OFF. Off Tally A is Pin 2; Off Tally B is Pin 8.

Upper DB-25 Connector







Lower DB-25 Connector

Mono Input Module I/O Connector Pinouts

Stereo Line Input Module
(SL-7000)

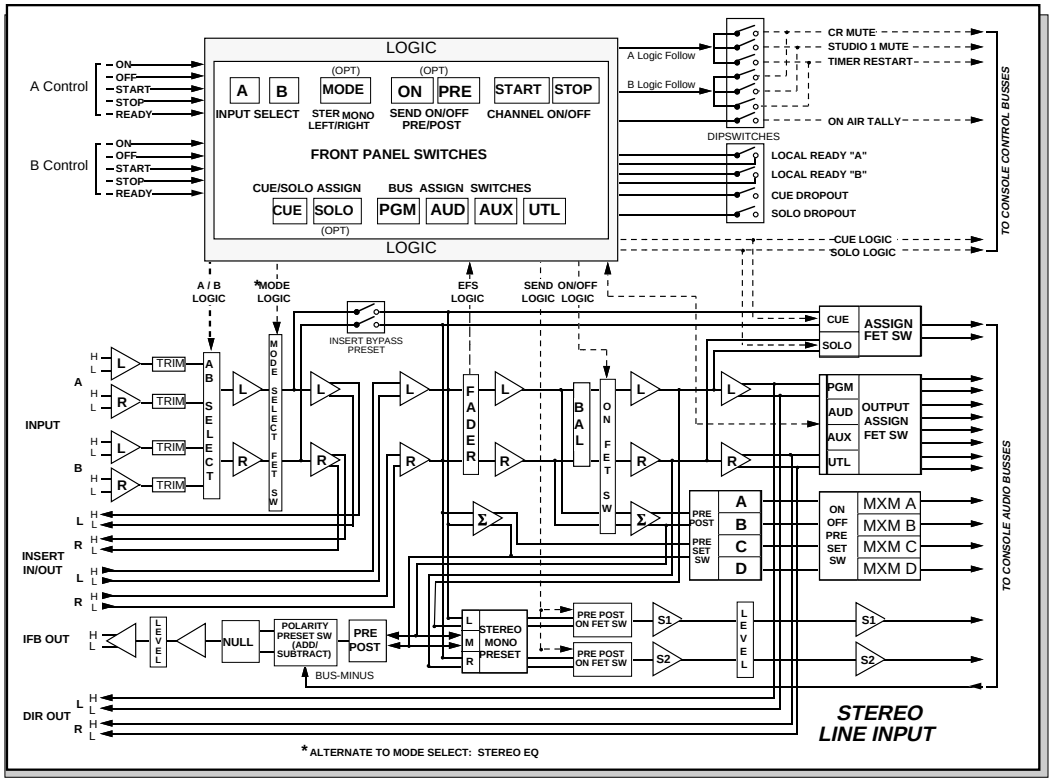
Chapter Contents

Stereo Line Input Module
(SL-7000)

Module Overview

These are stereo input modules, designed to accept line level signals and route them to the console's various busses. Available options are similar to ML-7000 mono input modules, with additional MODE SELECTION feature, which enables the module to operate in stereo, mono, left only, or right only.

All audio and control input and output signals are made via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module; and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 3-12 shows all wiring connections at a glance.



Stereo Line Input Module Signal Flow Diagram

Controls and Functions

DUAL (A/B) – The module actually accepts two stereo line inputs: A and B. Both stereo ports have internal multiturn trim controls (left and right channels) for critical gain matching and L-R balance. Opto-isolated machine control ports follow the A/B source select switches.

MODE SELECTOR – The mode button illuminates red when set to STEREO; four individual color-coded LED indicators show available settings: STEREO, MONO (L+R to both channels), LEFT to both channels, and RIGHT to both channels. Being electronic, mode selection is lossless and click-free. When in MONO mode automatic gain compensation occurs to offset mono summation.

OUTPUT ASSIGN – Assigns the module's stereo signal to the console's stereo output busses: Program (PGM), Audition (AUD), Auxiliary (AUX) and Utility (UTL). If the module's channel ON button is activated, a red "On-Air" LED indicator lights when the PGM assign button is pushed.

PGM and AUD assignments follow internal dipswitch settings for separate SPEECH and MUSIC processing paths. This allows, via individual insert patch points at the console's output modules, independent processing of these two types of signals.

AUX and UTL assignment switches may be internally dipswitch programmed to break away or follow channel on-off logic.

BALANCE – Used in conjunction with A & B input gain trimpots, this control assures precise L-R balance of the module's stereo signal. A center detent position nulls it out.

INSERT PATCH POINT – Each input module has its own stereo electronically balanced insert patch point for outboard signal processing (may be internally dipswitch-bypassed).

DIRECT OUTPUT – Electronically balanced; for signal splits or external bus-independent destinations. The stereo direct output signal is taken post fader/balance/channel on-off.

MIX-MINUS ASSIGN (internal) – The A-7000 console is equipped with four separate mix-minus busses, individually accessible via internal dipswitch programming at each input module. Each MXM bus assignment can be dipswitch-programmed for a pre or post fader/balance/channel on-off audio tap. In both cases this audio tap is a L+R summed version of the module's stereo signal. In addition, mix-minus can follow or break away (dipswitch programmable) from the channel's on-off logic .

SEND – Available as mono or dual mono. Used to provide special effect feeds or custom monitor mixes to specific locations. Assigns a split off the channel signal to the console's send busses. Send signals may be tapped PRE or post fader/balance/channel on-off (via a front panel switch) and may be turned ON or off with a second switch. An internal dipswitch allows the send function to operate independently of the module's channel on/off status. (NOTE that dual mono sends normally have two level controls; however, when the module is ordered with an EQ section, a single dual concentric control is used.) Internal dipswitching determines whether the module's send signal is stereo or mono.

IFB Bus-Minus® – This option allows each input module to general an individual mix-minus signal. Internal dipswitches determine whether the channel signal is present or absent from the IFB feed, and whether the signal is tapped pre or post fader/balance/channel on-off. The IFB output is a summed version of the module's stereo signal.

CUE (and SOLO) – These stereo monitor functions allow the console operator to spot check the module's signal without interfering with regular bus assignments. CUE is normally supplied; it's feed is tapped pre fader/balance/channel on-off; SOLO is also available; it is post fader/balance/channel on-off and more suitable for production environments. Solo/cue signals (stereo; strappable as mono) are outputted at the console's Control Room (CR) monitor module, where they appear at the CUE output and on the built-in meterbridge speakers, are automatically metered on the console's switched VU meter pair, and can be programmed to automatically interrupt the HEADPHONE and CONTROL ROOM outputs. Exactly how the cue (or solo) signal interrupts the console's regular monitor output is determined by internal dipswitch programming at the CR module itself.

Cue and Solo may be programmed at each input module (via internal dipswitches) to automatically disengage whenever the channel ON button is pressed, preventing potential feedback problems within the control room itself. An optional fader switch can also be used to place the module in CUE mode.

CHANNEL START/STOP SWITCHES – These switches, in addition to turning the module on and off, command external source machines, and can control mutes (CR and Studio 1), the on-air tally, and timer restart. They control separate A and B opto-isolated controls ports for START and STOP. Dipswitch-selected logic modes are available for both A and B ports. START can be either pulse

or a European style latching command. SOLO and CUE functions can be programmed for automatic drop-out when START is pressed. The Stop (or Off) switch indicator light (solid-state) can run under local or external control, and SEND, AUX, UTL, and MXM can follow or break away from START switch logic.

3-BAND STEREO EQ – This option provides three bands of equalization, each with continuously variable boost and cut (±16dB; reciprocal curves). Center frequencies are switchable: 50/100Hz, 500/1000Hz, and 5KHz/10KHz. An EQ in/out switch activates logic controlled EQ punch-in and out. When equipped with EQ and SEND, the module can still have A/B source select.

STEREO FADER – Long-throw (104mm) conductive plastic. May be supplied with optional bottom-of-throw overpress switch.

Internal Programming Options

Each SL-7000 input module has numerous PCB-mounted switches that may be user-programmed to do various things. There are two main categories for these switches: SIGNAL ROUTING (what point in the module signal path a signal is tapped from ["pre/post"] and where the signal is sent when it leaves the module ["bus assignment"]), and LOGIC FUNCTIONS (when a module's channel ON switch is pressed, many different things can happen—both within the console itself and to external equipment connected to the console; what functions actually get activated are determined by this group of switches). All switches are accessed by removing individual modules from the console mainframe.

For programming purposes switches are described as viewed from the component side of the module printed circuit board, with UP being towards the module faceplate and RT pointing to the bottom of the module, where the channel ON/OFF switches are located.

Stereo Input Signal Routing Switches

Music/Speech Assign (PGM & AUD)

Four switches will assign PGM & AUD to music or speech:

SW19 – PGM LT (RT is speech, LT is music)
SW20 – PGM RT (RT is speech, LT is music)
SW21 – AUD LT (RT is speech, LT is music)
SW22 – AUD RT (RT is speech, LT is music)

Insert Bypass

The slide switch SW18 allows the module's insert patch points (see upper DB-25 input/output connector pinouts) to be internally bypassed (LT position is ON and activates the bypass; RT is OFF and places the insert patch points into the signal path).

Mix-Minus Assign

The following four slide switches assign the module signal to the console's four mix-minus ACN busses:

SW23 – MXM A bus assign (UP is off, DOWN is on)
SW24 – MXM B bus assign (UP is off, DOWN is on)
SW25 – MXM C bus assign (UP is off, DOWN is on)
SW26 – MXM D bus assign (UP is off, DOWN is on)

These four switches determine whether the mix-minus signal is tapped before (PRE) or after (POST) the module's fader, channel on/off and panpot circuitry:

SW13 – MXM A signal tap (UP is pre, DOWN is post)
SW14 – MXM B signal tap (UP is pre, DOWN is post)
SW15 – MXM C signal tap (UP is pre, DOWN is post)
SW16 – MXM D signal tap (UP is pre, DOWN is post)

Send Mode

SW2 – When UP Send 1 is in stereo mode and receives the left channel signal; when DOWN Send 1 is in mono mode and receives L+R sum.

SW1 – When UP Send 2 is in stereo mode and receives the right channel signal; when DOWN Send 2 is in mono mode and receives L+R sum.

IFB Assign

SW12 – Determines whether the channel signal will be present on the module's IFB output (UP is off, DOWN is on).

SW11 – Determines whether the module's IFB signal will be tapped pre or post fader/channel ON-OFF/panpot (UP is pre, DOWN is post).

Stereo Input Switch Controlled Logic Functions

Auxiliary Assign

SW4 – LT: Auxiliary assign function follows channel on switch, RT: Auxiliary assign will override (activate) channel on audio FET switch (channel on tally/mute/timer functions are not activated, module is still effectively OFF for other bus assigns).

Utility Assign

SW5 – LT: Utility assign function follows channel on switch, RT: Utility assign will activate channel on audio FET switch (channel on tally/mute/timer functions are not activated, module is still effectively OFF for other bus assigns).

Remote ON/OFF - Start/Stop Disable

SW6 - Disables the SL-7000's machine START/STOP outputs when this SL-7000 module is remotely turned ON or OFF.

External - Pulse/Constant

SW10 - This switch is normally not installed. May need to be installed in rare external machine control cases. Consult factory for details.

Send Assign

SW3 Position 4 – UP: send follows channel on switch, DOWN: send operates independently of channel on switch.

Mono Assign

SW8 – RT: MONO assign function follows channel on switch; LT: MONO assign function operates independently of channel on switch. This affects MXM post and SEND MONO post signals.

CUE and SOLO Dropout

SW3 Position 2 – UP: channel on deactivates CUE function, DOWN: cue function operates independently of channel on switch.

SW3 Position 1 – UP: channel on deactivates SOLO function, DOWN: solo function operates independently of channel on switch.

SW3 Position 3 – UP: external source machine ON, OFF and READY functions (both A and B sources) follow the optional ARM switch, DOWN: the preceding functions work whether ARM button is pressed or not.

EFS (European Fader Start)

SW7 – RT: EFS activated; channel ON switch provides latching start control signal for external source machines; LT: channel ON switch provides momentary start control pulses for external source machines.

Local Ready Function

SW9 Position 1 – A source – UP: channel off switch indicator lamp is controlled by console; DOWN: channel off switch indicator lamp is controlled by external source machine (via A READY ports on lower DB-25 connector).

SW9 Position 4 – B source – UP: channel off switch indicator lamp is controlled by console; DOWN: channel off switch indicator lamp is controlled by external source machine (via B READY ports on lower DB-25 connector).

SW9 Positions 2 & 3 – not used.

Mutes

Like ML-7000 inputs, SL-7000 modules can be programmed to mute studio speakers when it's channel ON switch is pressed. Mute functions turn of the console's Control Room and Studio 1 monitor outputs. Each of these may be activated by either an A or B sources.

SW17 Position 5 mutes the Studio 1 when source A is ON
SW17 Position 6 mutes the Control Room when source A is ON

SW17 Position 2 mutes the Studio 1 when source B is ON
SW17 Position 3 mutes the Control Room when source B is ON

Tally

The ON-AIR TALLY function activates an opto-isolated tally relay closure at the console's control room monitor module. This closure may be used to control an externally powered tally light.

SW17 Position 1 activates On-Air Tally.

Timer Restart

When the module is turned ON the console's digital timer can be programmed to automatically reset to zero and being counting up.

SW17 Position 7 activates Timer Restart when source A is turned ON
SW17 Position 4 activates Timer Restart when source B is turned ON

Hook-Ups

As stated before, all user wiring to and from SL-7000 modules is done via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module, and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 3-12 shows all wiring connections at a glance.

Audio Connections

Upper DB-25 Connector

These include A and B line inputs, and insert in and out. The line input and in/out insert points level are +4dBu balanced. All signals are analog stereo.

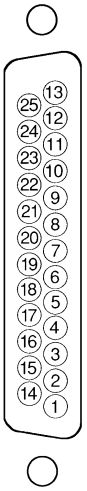
Pin 25 – Line A Lt In SH
Pin 24 – Line A Lt InHI
Pin 12 – Line A Lt In LO

Pin 11 – Line A Rt In SH
Pin 10 – Line A Rt In HI
Pin 23 – Line A Rt In LO

Pin 22 – Line B Lt In SH
Pin 21 – Line B Lt In HI
Pin 9 – Line B Lt In LO

Pin 8 – Line B Rt In SH
Pin 7 – Line B Rt In HI
Pin 20 – Line B Rt In LO

Pin 19 – Insert Lt Out SH
Pin 18 – Insert Lt Out HI
Pin 6 – Insert Lt Out LO



Typical DB-25 connector

Pin 5 – Insert Rt Out SH
Pin 4 – Insert Rt Out HI
Pin 17 – Insert Rt Out LO

Pin 16 – Insert Lt In SH
Pin 15 – Insert Lt In HI
Pin 3 – Insert Lt In LO

Pin 2 – Insert Rt In SH
Pin 1 – Insert Rt In HI
Pin 14 – Insert Rt In LO

Note the insert points are normally bypassed by PCB-mounted slide SW18 (see page 3-5).

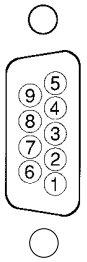
DB-9 Connector

These include direct and IFB output connections.

Pin 5 – IFB Out SH
Pin 4 – IFB Out HI
Pin 9 – IFB Out LO

Pin 8 – Direct Lt Out SH
Pin 7 – Direct Lt Out HI
Pin 3 – Direct Lt Out LO

Pin 2 – Direct Rt Out SH
Pin 1 – Direct Rt Out HI
Pin 6 – Direct Rt Out LO



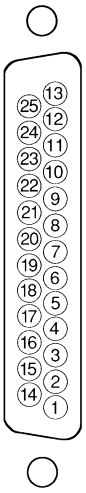
Typical DB-9 connector

Control Connections

Lower DB-25 Connector

Each SL-7000 stereo line input module can select between two input sources (A or B). Each source has its own set of control ports. These are opto-isolated closure ports available at the module's lower DB-25 connector.

Pin 1 – A Ready -
Pin 2 – A Ready +
Pin 3 – A Start +
Pin 4 – A Stop+
Pin 5 – A Start/Stop Common
Pin 6 – B Start/Stop Common
Pin 7 – B Stop+
Pin 8 – B Start+
Pin 9 – B Ready+
Pin 10 – B Ready-
Pin 11 – Digital Common
Pin 12 – On Tally
Pin 13 – +5VDC
Pin 14 - A On-
Pin 15 - A On+
Pin 16 – A Off-
Pin 17 – A Off+



Typical DB-25 connector

Pin 18 - B Off+
Pin 19 - B Off-
Pin 20 – B On+
Pin 21 – B On-

To Turn the Module ON & OFF from a Remote Location

In the case of stereo line input modules, "remote location" can also refer to a remote source machine that is feeding its audio to the module in question. A 5VDC signal, as indicated below, will activate the module's channel ON and OFF switches.

ON SWITCH — Activates the module's channel ON switch. Provide a momentary 5VDC signal between Pins 14 and 15 (Remote On A) or Pins 20 and 21 (Remote On B). This will latch the module ON. Be sure to observe the polarity as indicated on the pinout diagram.

OFF SWITCH — Activates the module's channel OFF switch. Provide a momentary 5VDC signal between Pins 16 and 17 (Remote Off A) or Pins 18 and 19 (Remote Off B). This will latch the module OFF. Be sure to observe the polarity as indicated on the pinout diagram.

On Tally

Lets the module's channel ON switch control an on-air light or other indicator at a remote location. This control function provides a continuous voltage between Pin 12 (On Tally) and Pin 11 (Digital Common) whenever the module is ON. When the module is ON the voltage at Pin 12 is +5VDC.

This on-tally 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 Digital Ground (Pin 11)* and the On Tally port (Pin 12). In either case, current should not exceed 30 milliamps.

We recommend a series resistor between the LED and +5V digital when you are powering the external tally from the console; a value of 220Ω (1/4W 5%) is suggested.

To START and STOP Remote Source Machines Using Module ON/OFF Switches

EXTERNAL START — Hook up the remote machine's "start" control pins to the SL-7000 module's lower DB-25 connector control pins: for START A wire to pins 3 and 5; for START B wire to pins 8 and 6.

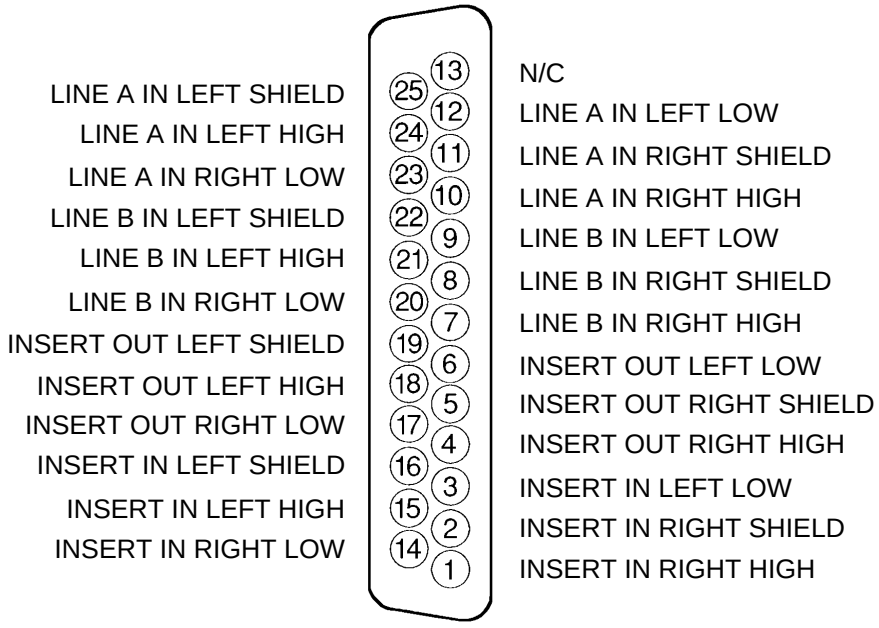
EXTERNAL STOP — Hook up the remote machine's "stop" control pins to the SL-7000 module's lower DB-25 connector control pins: for STOP A wire to pins 4 and 5; for STOP B wire to pins 7 and 6.

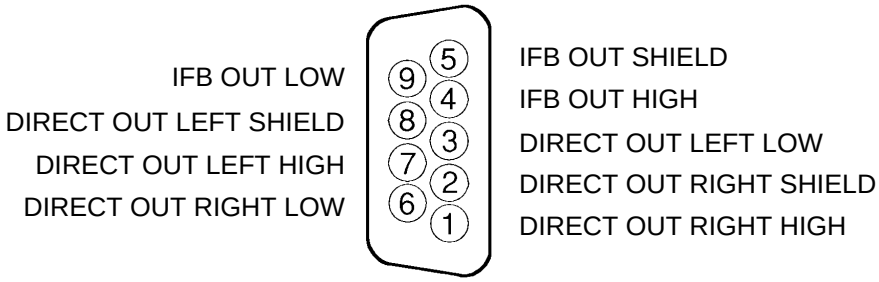
Note that these are opto isolated outputs. START/STOP COM A (pin 5) and START/STOP COM B (pin 6) are the opto emitters, while the remaining connections (START A, pin 3; START B, pin 8; STOP A, pin 4; STOP B, pin 7) are the opto collectors. Correct polarity must be observed in wiring to these connections.

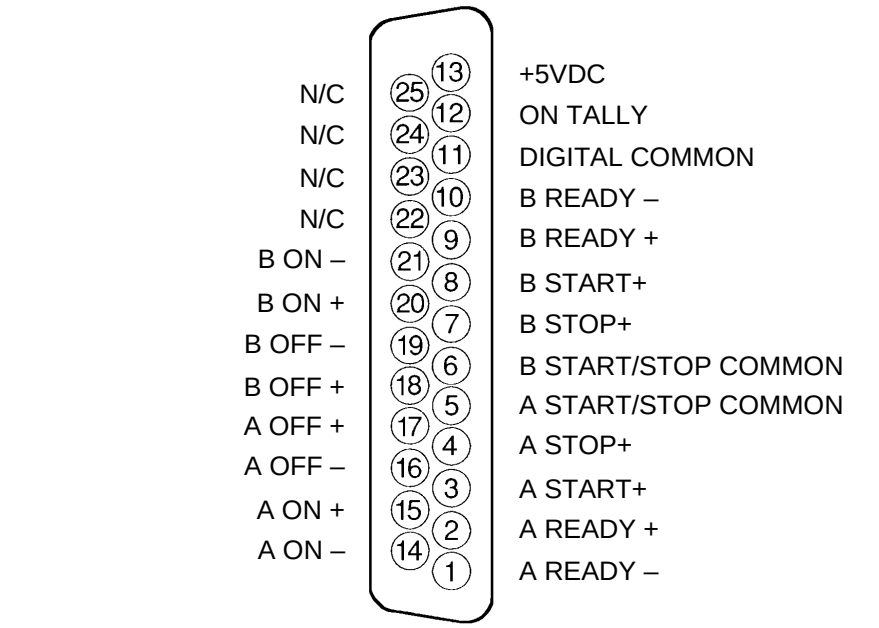
To Control the Module's OFF Switch LED with an External Source Machine

READY — Hook up the remote machine's "ready" control pins to the SL-7000 module's lower DB-25 connector control pins: for READY A wire to pins 1 and 2; for READY B wire to pins 9 and 10. The module's Ready ports are looking for a 5VDC signal with pin 2 positive with respect to pin 1 (READY A) and pin 9 positive with respect to pin 8 (READY B). As long as the voltage is present in the correct polarity, the OFF switch LED will be illuminated.

Upper DB-25 Connector







Lower DB-25 Connector

Stereo Input Module I/O Connector Pinouts

Output Module

(OM-7000)

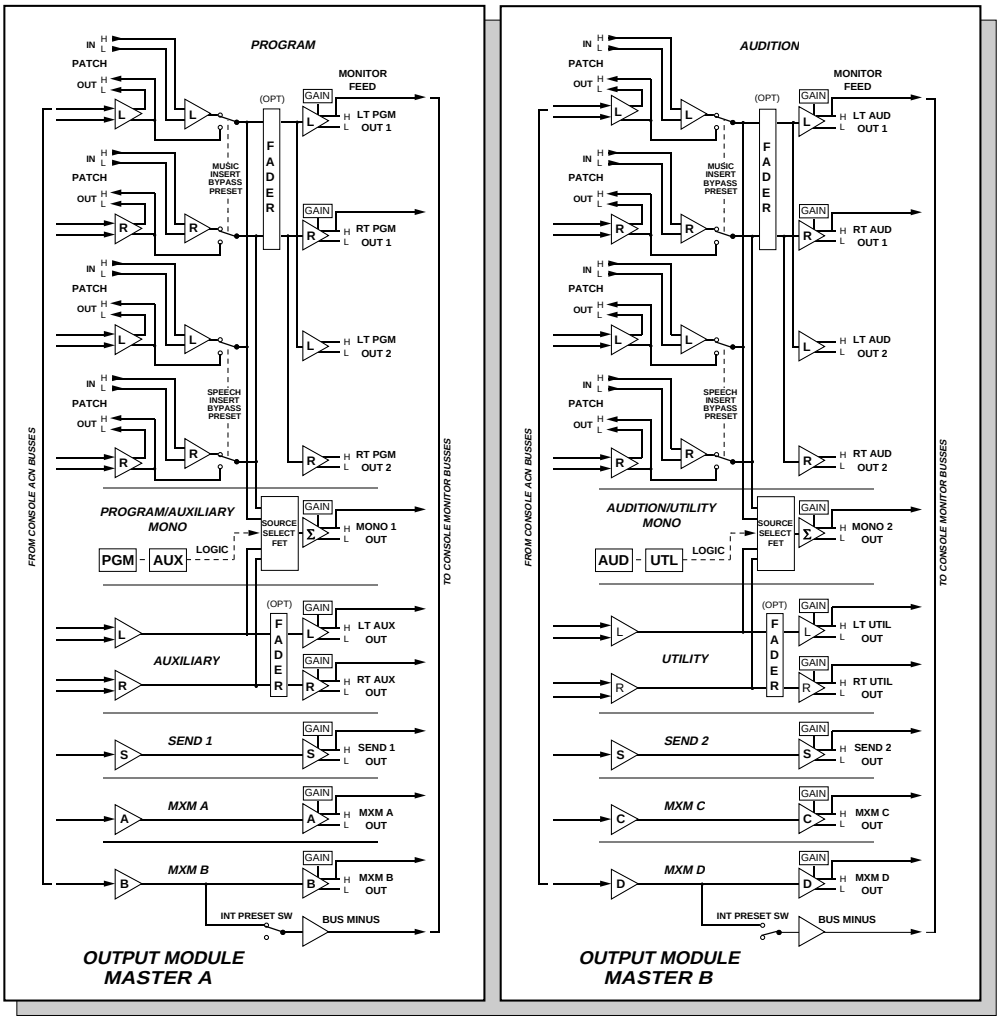
Chapter Contents

Output Module (OM-7000)

Module Overview

Each A-7000 console has two output master modules: Master A handles Program and Auxiliary, Mix-Minus A & B, Send 1 and Mono 1; Master B handles Audition and Utility, Mix-Minus C & D, Send 2 and Mono 2. All outputs are calibrated with front panel multi-turn trimpots. In addition, each master module has selector switches to determine which stereo signal will be summed (L+R) for that module's Mono output (PGM or AUX, AUD or UTL).

Output masters contain both Music and Speech insert patch points for PGM and AUD stereo outputs, allowing outboard signal processing to be easily applied to these signals. Note the insert points may be internally bypassed via PCB-mounted slide switches.



Output Master Modules Signal Flow Diagrams

All user wiring to and from output modules is done via two multi-pin DB-25 connectors located in the bottom of the console's mainframe, directly underneath each individual module, and one DB-9 connector mounted on the console's motherboard. Pinout drawings on pages 4-7 and 4-8 show all wiring connections at a glance.

Internal Programming Options

Each OM-7000 output module has three slide (double throw double pole) PCB-mounted switches that perform the following functions.

For programming purposes switches are described as viewed from the component side of the module printed circuit board, with UP being towards the module faceplate and RT pointing to the bottom of the module, where the channel ON/OFF switches are located.

Music Insert Bypass

When the switch SW1 is UP the bypass is activated; when DOWN the music insert patch points are in the module's signal chain. This applies to the PGM bus on the Master A module or the AUD bus on the Master B module.

Speech Insert Bypass

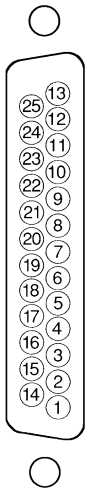
When the switch SW2 is UP the bypass is activated; when DOWN the speech insert patch points are in the module's signal chain. This applies to the PGM bus on the Master A module or the AUD bus on the Master B module.

Bus-Minus Assign

When the switch SW3 is DOWN the module's MXM B (Master A) or MXM D (Master B) signal is assigned to the console's Bus-Minus ACN.

Hook-Ups

As stated before, all user wiring to and from master output modules is done via two multi-pin DB-25 connectors located in the bottom of the console's mainframe, directly underneath each individual module, and one DB-9 connector mounted on the console's motherboard. Pinout drawings on pages 4-7 and 4-8 show all wiring connections at a glance.



Typical DB-25 connector

Master Output A Module:

Audio Outputs

Upper DB-25 Connector

Handles Program, Auxiliary, Send 1 and Mono 1 outputs. All signals are +4dBu balanced.

Pin 25 – PGM 1 Lt Out SH
Pin 24 – PGM 1 Lt Out HI
Pin 12 – PGM 1 Lt Out LO

Pin 11 – PGM 1 Rt Out SH
Pin 10 – PGM 1 Rt Out HI
Pin 23 – PGM 1 Rt Out LO

Pin 22 – PGM 2 Lt Out SH
Pin 21 – PGM 2 Lt Out HI
Pin 9 – PGM 2 Lt Out LO

Pin 8 – PGM 2 Rt Out SH
Pin 7 – PGM 2 Rt Out HI
Pin 20 – PGM 2 Rt Out LO

Pin 19 – AUX Lt Out SH
Pin 18 – AUX Lt Out HI
Pin 6 – AUX Lt Out LO

Pin 5 – AUX Rt Out SH
Pin 4 – AUX Rt Out HI
Pin 17 – AUX Rt Out LO

Pin 16 – SEND 1 Out SH
Pin 15 – SEND 1 Out HI
Pin 3 – SEND 1 Out LO

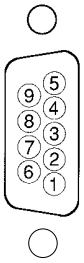
Pin 2 – MONO 1 Out SH
Pin 1 – MONO 1 In HI
Pin 14 – MONO 1 In LO

DB-9 Connector

Handles MXM A and B output.

Pin 8 – MXM A Out SH
Pin 7 – MXM A Out HI
Pin 3 – MXM A Out LO

Pin 2 – MXM B Out SH
Pin 1 – MXM B Out HI
Pin 6 – MXM B Out LO



Typical DB-9 connector

Program Insert Points

Lower DB-25 Connector

Handles MUSIC/SPEECH INSERTS input/output.

Pin 25 – MUSIC INS Lt Out SH
Pin 24 – MUSIC INS Lt Out HI
Pin 12 – MUSIC INS Lt Out LO

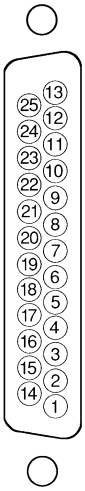
Pin 11 – MUSIC INS Rt Out SH
Pin 10 – MUSIC INS Rt Out HI
Pin 23 – MUSIC INS Rt Out LO

Pin 22 – SPEECH INS Lt Out SH
Pin 21 – SPEECH INS Lt Out HI
Pin 9 – SPEECH INS Lt Out LO

Pin 8 – SPEECH INS Rt Out SH
Pin 7 – SPEECH INS Rt Out HI
Pin 20 – SPEECH INS Rt Out LO

Pin 19 – MUSIC INS Lt In SH
Pin 18 – MUSIC INS Lt In HI
Pin 6 – MUSIC INS Lt In LO

Insert points are normally bypassed at the factory. See “Internal Programming Options” (page 4-3) if you intend to use these points.



Typical DB-25 connector

Pin 5 – MUSIC INS Rt In SH
Pin 4 – MUSIC INS Rt In HI
Pin 17 – MUSIC INS Rt In LO
Pin 16 – SPEECH INS Lt In SH
Pin 15 – SPEECH INS Lt In HI
Pin 3 – SPEECH INS Lt In LO
Pin 2 – SPEECH INS Rt In SH
Pin 1 – SPEECH INS Rt In HI
Pin 14 – SPEECH INS Rt In LO

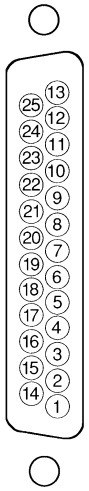
Master Output B Module:

Audio Outputs

Upper DB-25 Connector

Handles Audition, Utility, Send 2 and Mono 2 outputs. All signals are +4dBu balanced.

Pin 25 – AUD 1 Lt Out SH
Pin 24 – AUD 1 Lt Out HI
Pin 12 – AUD 1 Lt Out LO
Pin 11 – AUD 1 Rt Out SH
Pin 10 – AUD 1 Rt Out HI
Pin 23 – AUD 1 Rt Out LO
Pin 22 – AUD 2 Lt Out SH
Pin 21 – AUD 2 Lt Out HI
Pin 9 – AUD 2 Lt Out LO
Pin 8 – AUD 2 Rt Out SH
Pin 7 – AUD 2 Rt Out HI
Pin 20 – AUD 2 Rt Out LO
Pin 19 – UTL Lt Out SH
Pin 18 – UTL Lt Out HI
Pin 6 – UTL Lt Out LO
Pin 5 – UTL Rt Out SH
Pin 4 – UTL Rt Out HI
Pin 17 – UTL Rt Out LO
Pin 16 – SEND 2 Out SH
Pin 15 – SEND 2 Out HI
Pin 3 – SEND 2 Out LO
Pin 2 – MONO 2 Out SH
Pin 1 – MONO 2 In HI
Pin 14 – MONO 2 In LO

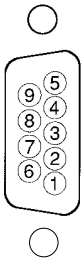


Typical DB-25 connector

DB-9 Connector

Handles MXM C and D output.

Pin 8 – MXM C Out SH
Pin 7 – MXM C Out HI
Pin 3 – MXM C Out LO
Pin 2 – MXM D Out SH
Pin 1 – MXM D Out HI
Pin 6 – MXM D Out LO



Typical DB-9 connector

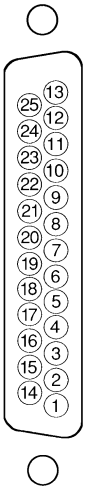
Audition Insert Points

Lower DB-25 Connector

Handles MUSIC/SPEECH INSERTS input/output.

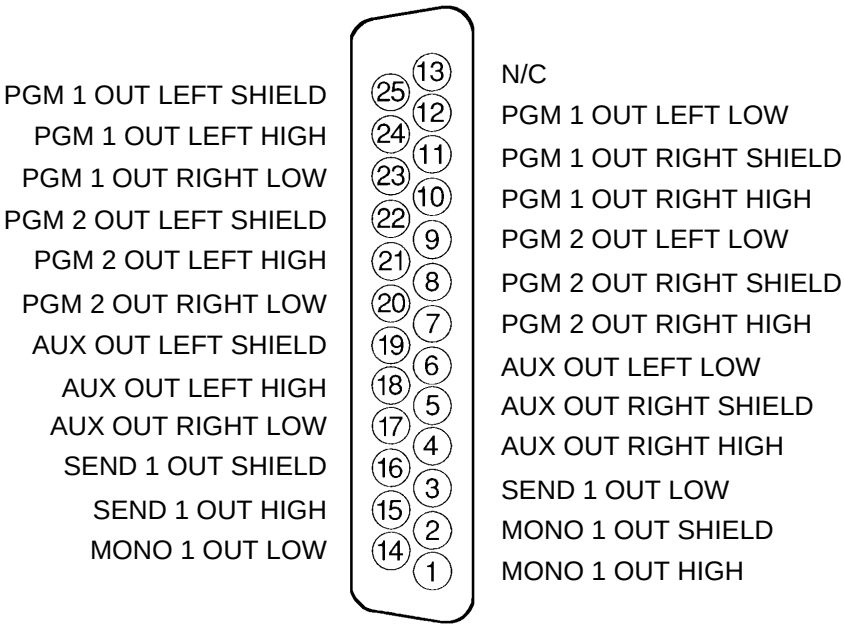
Pin 25 – MUSIC INS Lt Out SH
Pin 24 – MUSIC INS Lt Out HI
Pin 12 – MUSIC INS Lt Out LO
Pin 11 – MUSIC INS Rt Out SH
Pin 10 – MUSIC INS Rt Out HI
Pin 23 – MUSIC INS Rt Out LO
Pin 22 – SPEECH INS Lt Out SH
Pin 21 – SPEECH INS Lt Out HI
Pin 9 – SPEECH INS Lt Out LO
Pin 8 – SPEECH INS Rt Out SH
Pin 7 – SPEECH INS Rt Out HI
Pin 20 – SPEECH INS Rt Out LO
Pin 19 – MUSIC INS Lt In SH
Pin 18 – MUSIC INS Lt In HI
Pin 6 – MUSIC INS Lt In LO
Pin 5 – MUSIC INS Rt In SH
Pin 4 – MUSIC INS Rt In HI
Pin 17 – MUSIC INS Rt In LO
Pin 16 – SPEECH INS Lt In SH
Pin 15 – SPEECH INS Lt In HI
Pin 3 – SPEECH INS Lt In LO
Pin 2 – SPEECH INS Rt In SH
Pin 1 – SPEECH INS Rt In HI
Pin 14 – SPEECH INS Rt In LO

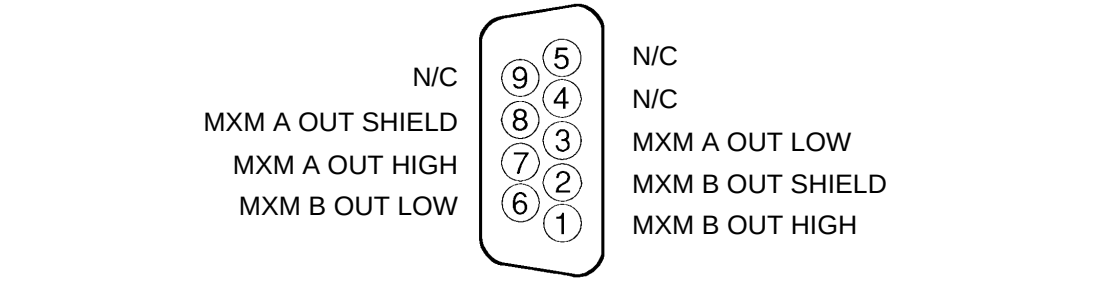
Insert points are normally bypassed at the factory. See “Internal Programming Options” (page 4-3) if you intend to use these points.

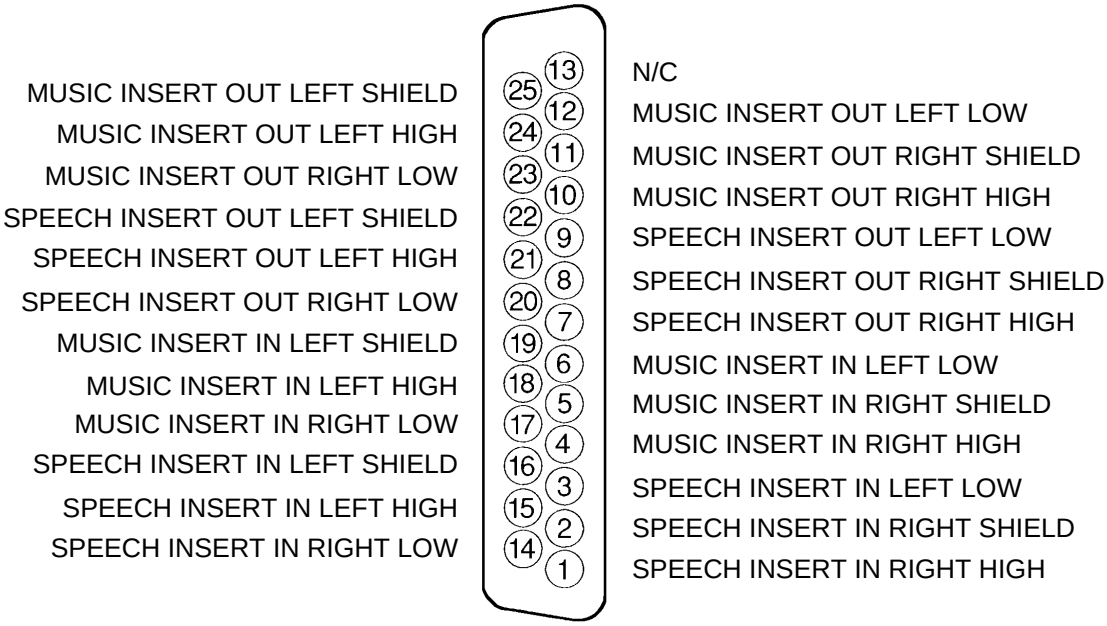


Typical DB-25 connector

Upper DB-25 Connector



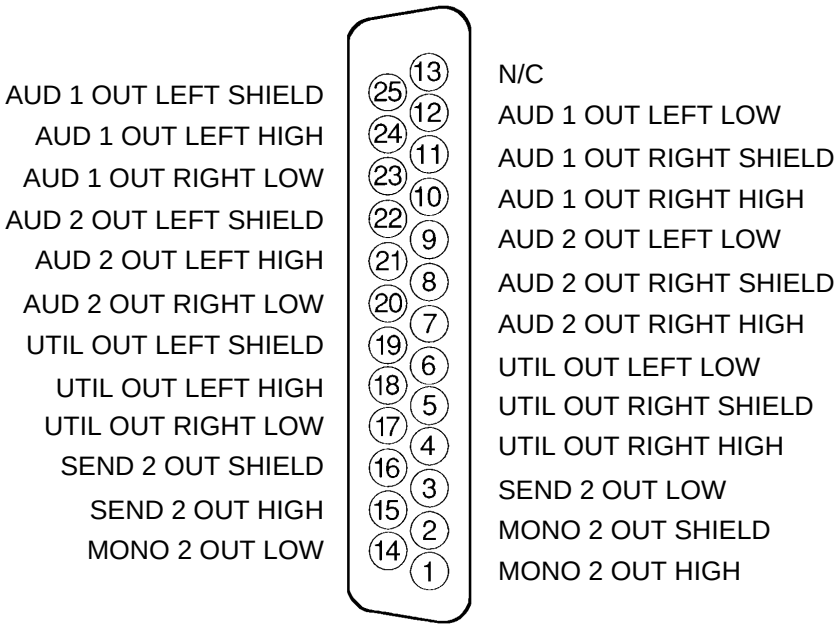


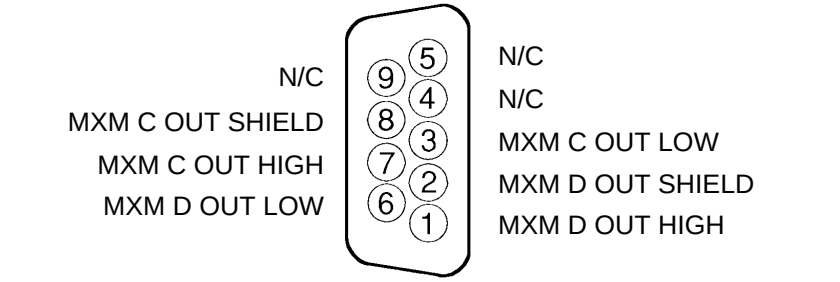


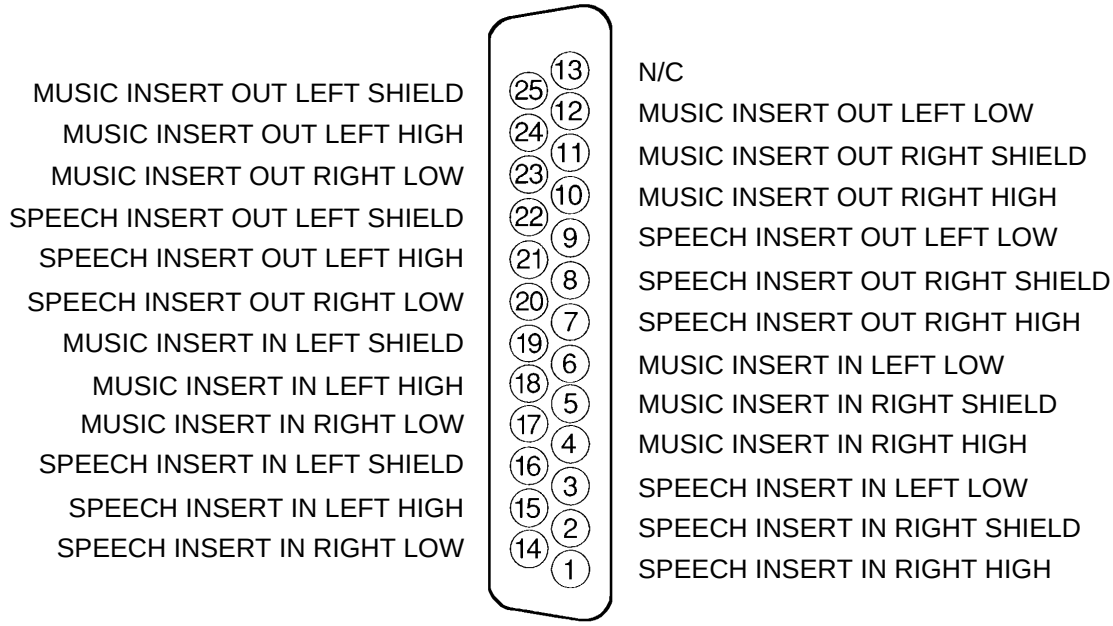
Lower DB-25 Connector

Master Output A Module I/O Connector Pinouts

Upper DB-25 Connector







Lower DB-25 Connector

Master Output B Module I/O Connector Pinouts

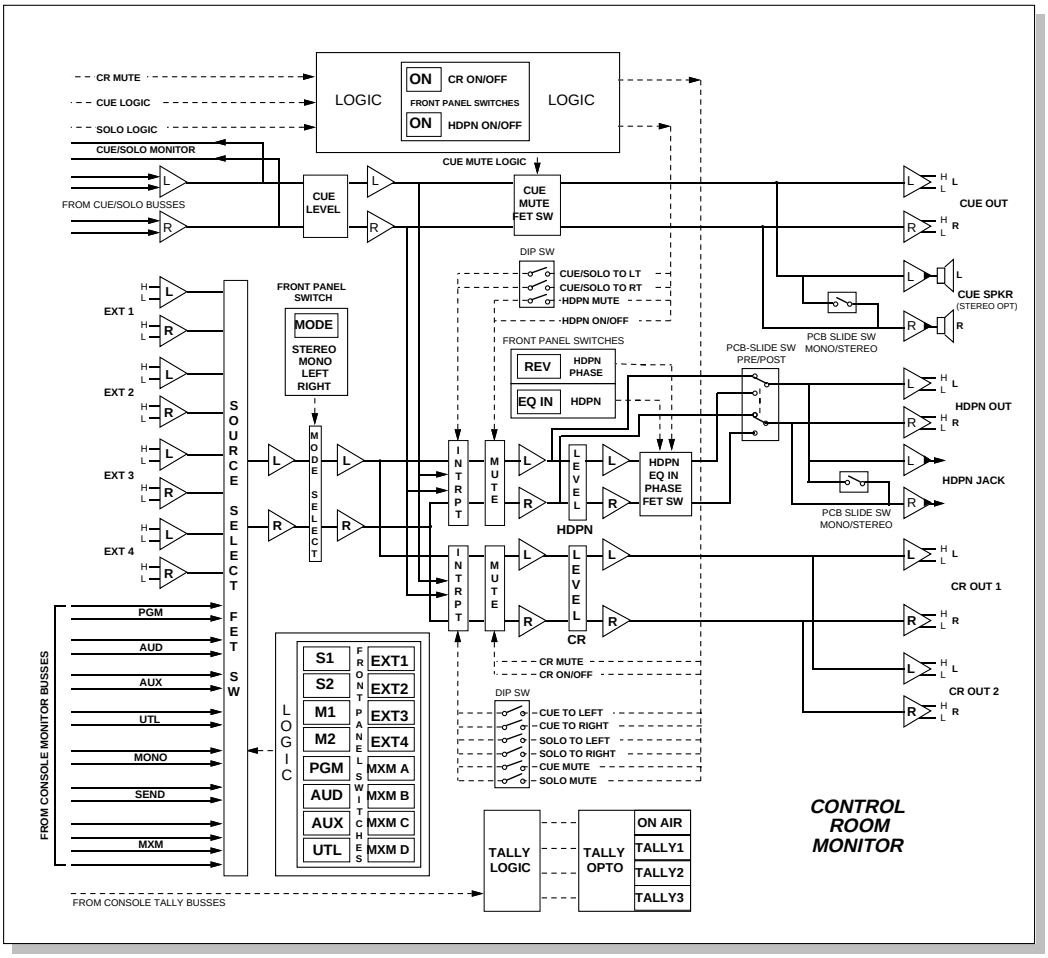
Control Room Module
(CR-7000)

Chapter Contents

Control Room Module (CR-7000)

Module Overview

The CR-7000 module is the heart of the console's monitoring systems. It enables the console operator to monitor all of the A-7000's outputs: Sends 1 & 2, the four Mix-Minus feeds (A, B, C & D), Mono 1 & 2, PGM, AUD, AUX and UTL, plus four external stereo line inputs. Each source has its own lighted selector switch. The selected source feeds both the console's stereo CR output and the built-in headphone circuit.



Control Room Monitor Module Signal Flow Diagram

All user wiring to and from the CR-7000 module is done via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath the module, and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 5-7 shows all wiring connections at a glance.

Controls and Functions

MODE SELECTOR – The mode button determines how each signal will be monitored. It illuminates red when set to STEREO. Four individual color-coded LED indicators show available settings: STEREO, MONO (L+R to both channels), LEFT to both channels, and RIGHT to both channels. Being electronic, mode selection is lossless and click-free. When in MONO mode automatic gain compensation occurs to offset mono summation.

CUE – This is the master level control for the console's CUE/SOLO signals. Whenever a Cue or Solo button is pushed anywhere on the console, the resulting signal automatically interrupts the regular monitor program source. Exactly what form this interruption takes is programmable via PCB-mounted dipswitches. Note Cue/Solo signals also appear at the console's built-in stereo cue speakers (mounted left and right in the VU meterbridge) via a built-in power amplifier.

HEADPHONE – The built-in headphone circuit includes an on/off switch, a level control, high and low EQ (continuously variable, ±16dB, with EQ in/out switch) and a unique phase switch (REV), which reverses the phase of both the left and right channels to optimize audio clarity for the announcer's voice by putting the headphone audio in phase with his own internal auditory path. Note that Headphone normally listens to the same source as the control room but automatically switches to Cue or Solo when so selected (this feature may be internally defeated by dipswitch). External headphone jacks are provided on the left and right sides of the console mainframe (just below counter height, to keep cords away from the work surface).

CONTROL ROOM – A conductive plastic level pot (with on/off switch) controls CR monitor signals.

Internal Programming Options

There are five PCB-mounted programming switches on the printed circuit board of the control room monitor module. They may be user-programmed to provide the following functions.

For programming purposes switches are described as viewed from the component side of the module printed circuit board, with UP being towards the module faceplate and RT pointing to the bottom of the module, where the channel ON/OFF switches are located.

Control Room Interrupt Signals (7-position dipswitch; UP is ON)

SW1 Position 1 – CUE to CR LT
SW1 Position 2 – CUE to CR RT
SW1 Position 3 – SOLO to CR LT
SW1 Position 4 – SOLO to CR RT
SW1 Position 5 – CUE MUTE
SW1 Position 6 – SOLO MUTE

Headphone Interrupt Signals (4-position dipswitch; UP is ON)

SW2 Position 3 – CUE/SOLO to HDPN LT
SW2 Position 4 – CUE/SOLO to HDPN RT
SW2 Position 2 – HDPN MUTE (follows CR MUTE when ON)

Cue Mute Enable (dipswitches; UP is ON) - These switches determine whether or not the cue line level output and the console's cue speakers are muted when any module is placed in CUE or SOLO. The muting does **NOT** affect CUE/SOLO audio interrupting the CR output or the HEADPHONES.

SW2 Position 1 – SOLO MUTED
SW1 Position 7 – CUE MUTED

Headphone Pre/Post (2-position slide switch) - Affects the HDPN line level output, but **NOT** the HDPN jacks.

SW4: Left - PRE, Right - POST (factory default)

Headphone Mode (2-position slide switch) - Affects the HDPN jacks, but **NOT** the HDPN line level out.

SW5: Left - STEREO (factory default), Right - MONO

Cue Mode (2-position slide switch) - Affects CUE only in the console's cue speakers.

SW3: Up - MONO, Down - STEREO (factory default)Cue Interrupt

Hook-Ups

As stated before, all user wiring to and from the CR-7000 module is done via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module, and one DB-9 connector mounted on the console's motherboard.

Upper DB-25 Connector — Audio Connections

Handles module's cue, headphone, and control room outputs. All audio signals are analog stereo (+4dBu balanced).

Pin 25 – CUE Lt Out SH
Pin 24 – CUE Lt Out HI
Pin 12 – CUE Lt Out LO

Pin 11 – CUE Rt Out SH
Pin 10 – CUE Rt Out HI
Pin 23 – CUE Rt Out LO

Pin 22 – HDPN Lt Out SH
Pin 21 – HDPN Lt Out HI
Pin 9 – HDPN Lt Out LO

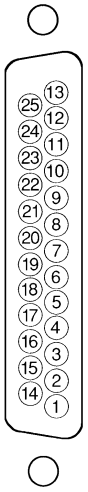
Pin 8 – HDPN Rt Out SH
Pin 7 – HDPN Rt Out HI
Pin 20 – HDPN Rt Out LO

Pin 19 – CR A Lt Out SH
Pin 18 – CR A Lt Out HI
Pin 6 – CR A Lt Out LO

Pin 5 – CR A Rt Out SH
Pin 4 – CR A Rt Out HI
Pin 17 – CR A Rt Out LO

Pin 16 – CR B Lt Out SH
Pin 15 – CR B Lt Out HI
Pin 3 – CR B Lt Out LO

Pin 2 – CR B Rt Out SH
Pin 1 – CR B Rt Out HI
Pin 14 – CR B Rt Out LO



Typical DB-25 connector

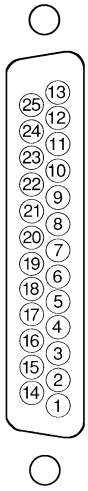
Lower DB-25 Connector — Audio Connections

Handles module's External inputs. All audio signals are analog stereo (+4dBu balanced).

Pin 25 – Ext 1 Lt In SH
Pin 24 – Ext 1 Lt In HI
Pin 12 – Ext 1 Lt In LO

Pin 11 – Ext 1 Rt In SH
Pin 10 – Ext 1 Rt In HI
Pin 23 – Ext 1 Rt In LO

Pin 22 – Ext 2 Lt In SH
Pin 21 – Ext 2 Lt In HI
Pin 9 – Ext 2 Lt In LO
Pin 8 – Ext 2 Rt In SH
Pin 7 – Ext 2 Rt In HI
Pin 20 – Ext 2 Rt In LO
Pin 19 – Ext 3 Lt In SH
Pin 18 – Ext 3 Lt In HI
Pin 6 – Ext 3 Lt In LO
Pin 5 – Ext 3 Rt In SH
Pin 4 – Ext 3 Rt In HI
Pin 17 – Ext 3 Rt In LO
Pin 16 – Ext 4 Lt In SH
Pin 15 – Ext 4 Lt In HI
Pin 3 – Ext 4 Lt In LO
Pin 2 – Ext 4 Rt In SH
Pin 1 – Ext 4 Rt In HI
Pin 14 – Ext 4 Rt In LO

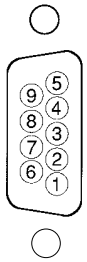


Typical DB-25 connector

DB-9 Connector — Control Connections

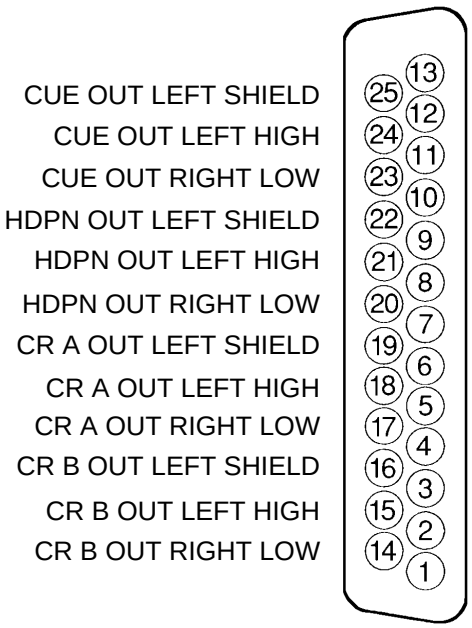
Handles On-Air Tally and Tally 1-3 control connections.

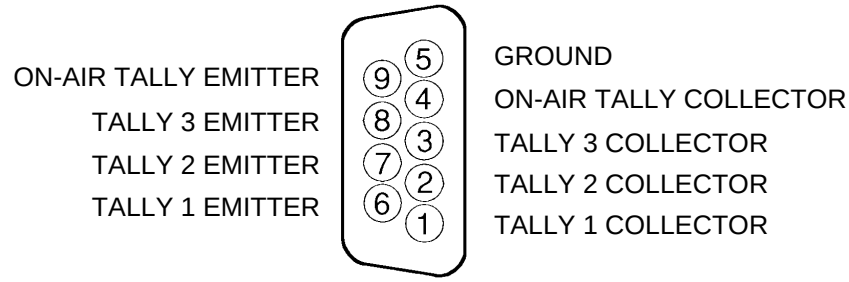
Pin 9 – On-Air Tally Emitter
Pin 4 – On-Air Tally Collector
Pin 6 – Tally 1 Emitter
Pin 1 – Tally 1 Collector
Pin 7 – Tally 2 Emitter
Pin 2 – Tally 2 Collector
Pin 8 – Tally 3 Emitter
Pin 3 – Tally 3 Collector
Pin 5 – Ground

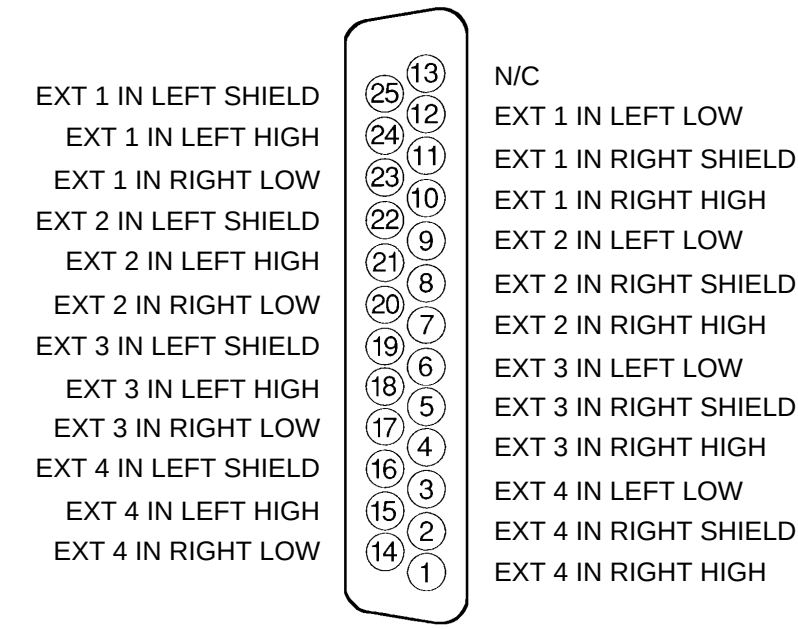


Typical DB-9 connector

Upper DB-25 Connector







Lower DB-25 Connector

Control Room Module I/O Connector Pinouts

Studio Control Module
(SC-7000)

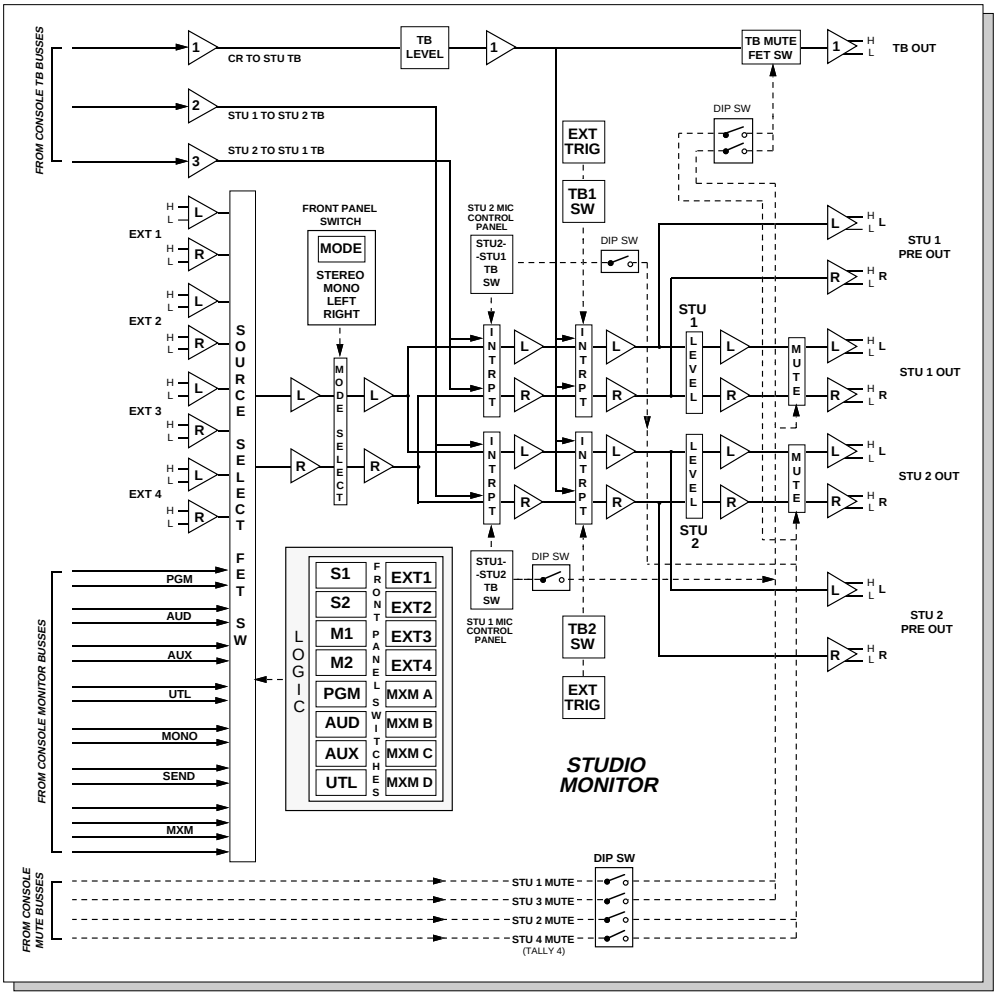
Chapter Contents

Studio Control Module (SC-7000)

Module Overview

Each studio control module provides level control and talkback to two studios, and has the same monitor source selection capabilities as the CR-7000 module (including the mode selector).

All user wiring to and from the SC-7000 module is done via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath the module, and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 6-6 shows all wiring connections at a glance.



Studio Monitor Module Signal Flow Diagram

Controls and Functions

MODE SELECTOR – The mode button determines how each signal will be monitored. It illuminates red when set to STEREO. Four individual color-coded LED indicators show available settings: STEREO, MONO (L+R to both channels), LEFT to both channels, and RIGHT to both channels. Being electronic, mode selection is lossless and click-free. When in MONO mode automatic gain compensation occurs to offset mono summation.

TALKBACK – Talkback level is set by a control pot; talkback switches may be specially programmed to attentuate the regular monitor signal (instead of totally replacing it). This is accomplished to client specifications by factory-installed resistors.

STUDIO 1and 2 – Stereo outputs intended for remote studio power amp/speaker systems.

TALKBACK SWITCH (TB) – When the momentary action talkback switch is pressed, all microphones assigned to the talkback bus will interrupt the regular monitor signal being sent to the studio output.

Internal Programming Options

There are two PCB-mounted dipswitches on the printed circuit board of the studio monitor module. Switches are activated when in the UP position. They may be user-programmed to provide the following functions.

For programming purposes switches are described as viewed from the component side of the module printed circuit board, with UP being towards the module faceplate and RT pointing to the bottom of the module, where the channel ON/OFF switches are located.

Talkback Mute Functions

SW3 Position 4 – STUDIO 1 (3) TB MUTE
SW3 Position 3 – STUDIO 2 (4) TB MUTE
SW3 Position 2 – STUDIO 1 TO STUDIO 2 TB MUTE
SW3 Position 1 – STUDIO 2 TO STUDIO 1 TB MUTE

Studio Mute Functions

SW4 Position 4 – STUDIO 1 MUTE
SW4 Position 3 – STUDIO 2 MUTE
SW4 Position 2 – STUDIO 3 MUTE
SW4 Position 1 – STUDIO 4 MUTE (TALLY 3)

Hook-Ups

As stated before, all user wiring to and from the SC-7000 module is done via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module, and one DB-9 connector mounted on the console's motherboard.

Upper DB-25 Connector — Audio Outputs

Handles module's studio and studio pre outputs. Studio output is +4dBu balanced, low source impendance; load impendance is 600 or greater.

Pin 25 – Studio 1 Pre Lt Out SH
Pin 24 – Studio 1 Pre Lt Out HI
Pin 12 – Studio 1 Pre Lt Out LO

Pin 11 – Studio 1 Pre Rt Out SH
Pin 10 – Studio 1 Pre Rt Out HI
Pin 23 – Studio 1 Pre Rt Out LO

Pin 22 – Studio 1 Lt Out SH
Pin 21 – Studio 1 Lt Out HI
Pin 9 – Studio 1 Lt Out LO

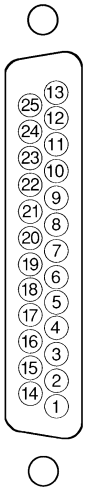
Pin 8 – Studio 1 Rt Out SH
Pin 7 – Studio 1 Rt Out HI
Pin 20 – Studio 1 Rt Out LO

Pin 19 – Studio 2 Pre Lt Out SH
Pin 18 – Studio 2 Pre Lt Out HI
Pin 6 – Studio 2 Pre Lt Out LO

Pin 5 – Studio 2 Pre Rt Out SH
Pin 4 – Studio 2 Pre Rt Out HI
Pin 17 – Studio 2 Pre Rt Out LO

Pin 16 – Studio 2 Lt Out SH
Pin 15 – Studio 2 Lt Out HI
Pin 3 – Studio 2 Lt Out LO

Pin 2 – Studio 2 Rt Out SH
Pin 1 – Studio 2 Rt Out HI
Pin 14 – Studio 2 Rt Out LO



Typical DB-25 connector

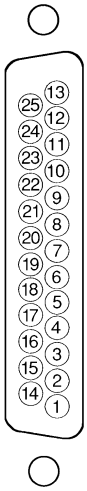
Lower DB-25 Connector — Audio Inputs

Handles module's External inputs. All audio signals are analog stereo (+4dBu balanced).

Pin 25 – Ext 1 Lt In SH
Pin 24 – Ext 1 Lt In HI
Pin 12 – Ext 1 Lt In LO

Pin 11 – Ext 1 Rt In SH
Pin 10 – Ext 1 Rt In HI
Pin 23 – Ext 1 Rt In LO

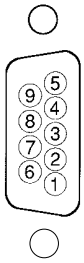
Pin 22 – Ext 2 Lt In SH
Pin 21 – Ext 2 Lt In HI
Pin 9 – Ext 2 Lt In LO
Pin 8 – Ext 2 Rt In SH
Pin 7 – Ext 2 Rt In HI
Pin 20 – Ext 2 Rt In LO
Pin 19 – Ext 3 Lt In SH
Pin 18 – Ext 3 Lt In HI
Pin 6 – Ext 3 Lt In LO
Pin 5 – Ext 3 Rt In SH
Pin 4 – Ext 3 Rt In HI
Pin 17 – Ext 3 Rt In LO
Pin 16 – Ext 4 Lt In SH
Pin 15 – Ext 4 Lt In HI
Pin 3 – Ext 4 Lt In LO
Pin 2 – Ext 4 Rt In SH
Pin 1 – Ext 4 Rt In HI
Pin 14 – Ext 4 Rt In LO



Typical DB-25 connector

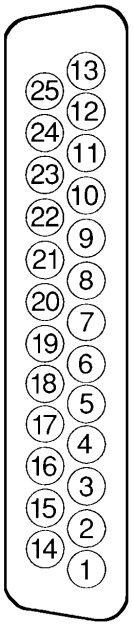
DB-9 Connector — Talkback Connections

Pin 5 – Talkback Out SH
Pin 4 – Talkback Out HI
Pin 9 – Talkback Out LO
Pin 7 – Talkback 1 Control
Pin 8 – Talkback 1 Control Common
Pin 1 – Talkback 2 Control
Pin 2 – Talkback 2 Control Common
Pin 3 – Studio 1 to Studio 2 Talkback
Pin 6 – Studio 2 to Studio 1 Talkback

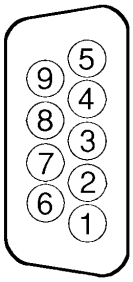


Typical DB-9 connector

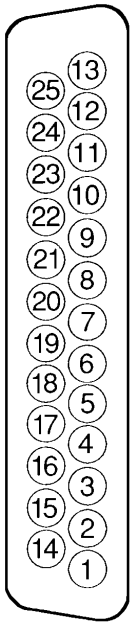
Upper DB-25 Connector



STUDIO 1 PRE OUT LEFT SHIELD	N/C
STUDIO 1 PRE OUT LEFT HIGH	STUDIO 1 PRE OUT LEFT LOW
STUDIO 1 PRE OUT RIGHT LOW	STUDIO 1 PRE OUT RIGHT SHIELD
STUDIO 1 OUT LEFT SHIELD	STUDIO 1 PRE OUT RIGHT HIGH
STUDIO 1 OUT LEFT HIGH	STUDIO 1 OUT LEFT LOW
STUDIO 1 OUT RIGHT LOW	STUDIO 1 OUT RIGHT SHIELD
STUDIO 2 PRE OUT LEFT SHIELD	STUDIO 1 OUT RIGHT HIGH
STUDIO 2 PRE OUT LEFT HIGH	STUDIO 2 PRE OUT LEFT LOW
STUDIO 2 PRE OUT RIGHT LOW	STUDIO 2 PRE OUT RIGHT SHIELD
STUDIO 2 OUT LEFT SHIELD	STUDIO 2 PRE OUT RIGHT HIGH
STUDIO 2 OUT LEFT HIGH	STUDIO 2 OUT LEFT LOW
STUDIO 2 OUT RIGHT LOW	STUDIO 2 OUT RIGHT SHIELD
	STUDIO 2 OUT RIGHT HIGH



TALKBACK OUT LOW	TALKBACK OUT SHIELD
TALKBACK 1 CONTROL COMMON	TALKBACK OUT HIGH
TALKBACK 1 CONTROL	STUDIO 1 TO STUDIO 2 TALKBACK
STUDIO 2 TO STUDIO 1 TALKBACK	TALKBACK 2 CONTROL COMMON
	TALKBACK 2 CONTROL



EXT 1 IN LEFT SHIELD	N/C
EXT 1 IN LEFT HIGH	EXT 1 IN LEFT LOW
EXT 1 IN RIGHT LOW	EXT 1 IN RIGHT SHIELD
EXT 2 IN LEFT SHIELD	EXT 1 IN RIGHT HIGH
EXT 2 IN LEFT HIGH	EXT 2 IN LEFT LOW
EXT 2 IN RIGHT LOW	EXT 2 IN RIGHT SHIELD
EXT 3 IN LEFT SHIELD	EXT 2 IN RIGHT HIGH
EXT 3 IN LEFT HIGH	EXT 3 IN LEFT LOW
EXT 3 IN RIGHT LOW	EXT 3 IN RIGHT SHIELD
EXT 4 IN LEFT SHIELD	EXT 3 IN RIGHT HIGH
EXT 4 IN LEFT HIGH	EXT 4 IN LEFT LOW
EXT 4 IN RIGHT LOW	EXT 4 IN RIGHT SHIELD
	EXT 4 IN RIGHT HIGH

Lower DB-25 Connector

Studio Control Module I/O Connector Pinouts

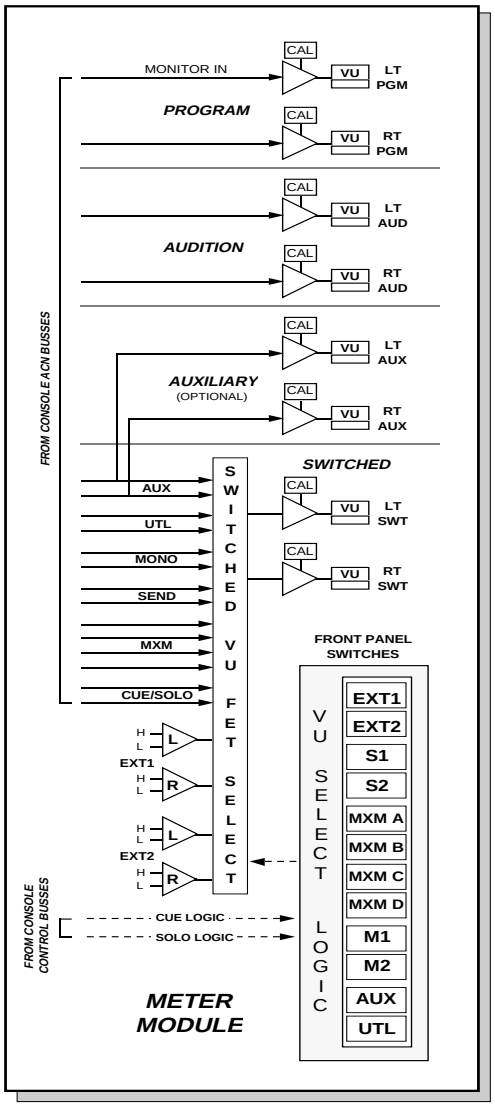
Meter Output Module
(MO-7000)

Chapter Contents

Meter Output Module (MO-7000)

Module Overview

The console's meter output module contains VU driver circuitry and controls for the digital timer. On those consoles with mainframes large enough to accommodate them (i.e., 24 inputs or more) there are dedicated VU meter pairs for Program, Audition and Auxiliary, plus a fourth switched pair of VUs which can pick up (via front panel selector switches) Sends 1 & 2, Mix-Minus feeds A, B, C & D, Mono 1 & 2, and Utility (plus Auxiliary on smaller mainframes). Two additional switch-selected exter-



Meter Output Module Signal Flow Diagram

nal line inputs may also be selected. Note Cue/Solo is automatically metered on the switched pair whenever activated at any point on the console (A red LED lights when in Cue/Solo metering mode).

The MO-7000 module has front panel multi-turn VU trim controls for the console's four meter pairs: PGM, AUD, AUX, and SWITCHED.

At the bottom of the module are the timer control buttons (the timer display is mounted in the righthand end of the console meterbridge):

AUTO – enables timer restart functions from programmed input modules' ON buttons.

S/S - START/STOP - halts the timer, holds the last count, and then restarts and accumulates the count when depressed again.

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

All user wiring to and from the MO-7000 module takes place at the lower DB-25 multi-pin connector mounted directly beneath the module on the console mainframe's bottom pan. This lower connector (near the console armrest) inputs the module's two external stereo line signals. See the pinout drawing on page 7-4.

While there are two DB-25 connectors, the upper one (towards the console meterbridge) is for factory use only. It sends the module's VU to the meterbridge (a factory-provided cable runs from this upper DB-25 to a matching connector mounted at the back of the meterbridge, in the center of the console). The DB-9 connector, mounted on the console's motherboard, sends timer control signals to the meterbridge.

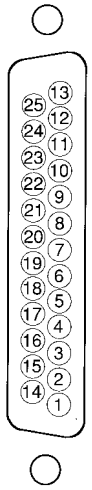
Internal Programming Options

There are no internal programming options on the MO-7000 module.

Hook-Ups

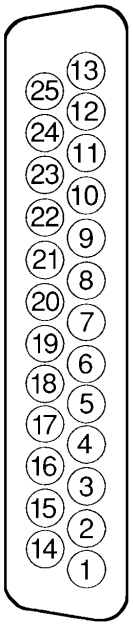
As stated before, the only user wiring into the MO-7000 module is two external stereo line inputs (analog +4dBu balanced) on the module's LOWER DB-25 connector.

Pin 19 – Ext 1 Lt In SH
Pin 18 – Ext 1 Lt In HI
Pin 6 – Ext 1 Lt In LO
Pin 5 – Ext 1 Rt In SH
Pin 4 – Ext 1 Rt In HI
Pin 17 – Ext 1 Rt In LO
Pin 16 – Ext 2 Lt In SH
Pin 15 – Ext 2 Lt In HI
Pin 3 – Ext 2 Lt In LO
Pin 2 – Ext 2 Rt In SH
Pin 1 – Ext 2 Rt In HI
Pin 14 – Ext 2 Rt In LO

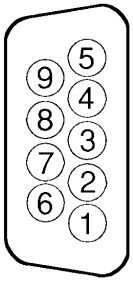


Typical DB-25 connector

Upper DB-25 Connector

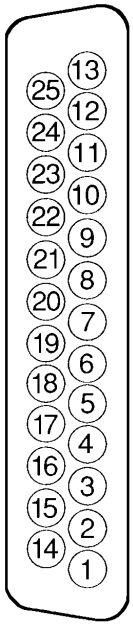


PGM VU LEFT HIGH	25	13	AUDIO COMMON
PGM VU RIGHT HIGH	24	12	PGM VU LEFT SHIELD
AUD VU LEFT HIGH	23	11	PGM VU RIGHT SHIELD
AUD VU RIGHT HIGH	22	10	AUD VU LEFT SHIELD
AUX VU LEFT HIGH	21	9	AUD VU RIGHT SHIELD
AUX VU RIGHT HIGH	20	8	AUX VU LEFT SHIELD
SWITCHED VU LEFT HIGH	19	7	AUX VU RIGHT SHIELD
SWITCHED VU RIGHT HIGH	18	6	SWITCHED VU LEFT SHIELD
VU LAMP COMMON	17	5	SWITCHED VU RIGHT SHIELD
VU LAMP COMMON	16	4	VU LAMP COMMON
VU LAMP +V DIG	15	3	VU LAMP COMMON
VU LAMP +V DIG	14	2	VU LAMP +V DIG
		1	VU LAMP +V DIG



N/C	9	5	AUDIO COMMON
TIMER START/STOP	8	4	+V DIG
TIMER HOLD	7	3	DIGITAL COMMON
TIMER RESET	6	2	DIGITAL COMMON
		1	TIMER RESTART

NOTE: With the exception of the external stereo line inputs (bold-faced type) on the lower DB-25 connector, I/O connections from the MO-7000 meter output module are "internal" to the console (i.e., used to route VU and timer signals to the meterbridge) and are not applicable to end customer use.



AUDIO COMMON	25	13	N/C
N/C	24	12	N/C
N/C	23	11	AUDIO COMMON
AUDIO COMMON	22	10	N/C
N/C	21	9	N/C
N/C	20	8	AUDIO COMMON
EXT 1 INPUT LEFT SHIELD	19	7	N/C
EXT 1 INPUT LEFT HIGH	18	6	**EXT 1 INPUT LEFT LOW**
EXT 1 INPUT RIGHT LOW	17	5	**EXT 1 INPUT RIGHT SHIELD**
EXT 2 INPUT LEFT SHIELD	16	4	**EXT 1 INPUT RIGHT HIGH**
EXT 2 INPUT LEFT HIGH	15	3	**EXT 2 INPUT LEFT LOW**
EXT 2 INPUT RIGHT LOW	14	2	**EXT 2 INPUT RIGHT SHIELD**
		1	**EXT 2 INPUT RIGHT HIGH**

Lower DB-25 Connector

Meter Output Module Connector Pinouts

Superphone Input
(SPN-7000; optional)

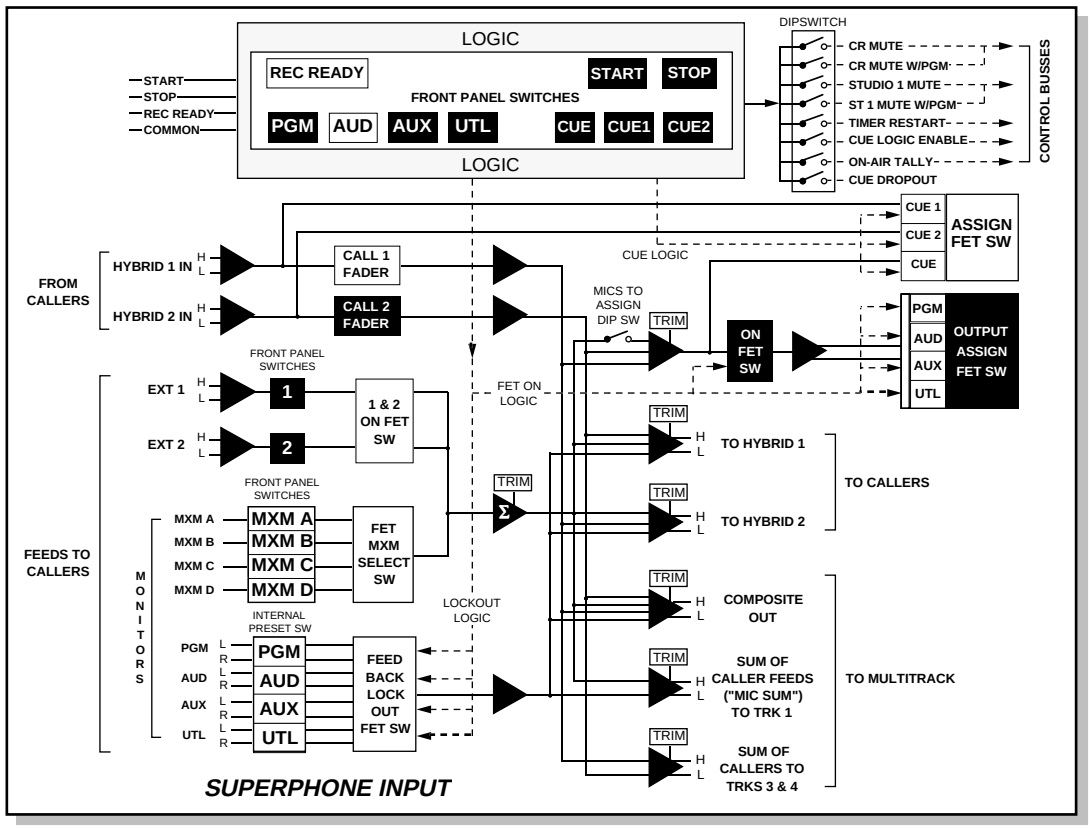
Chapter Contents

Superphone Input
(SPN-7000; optional)

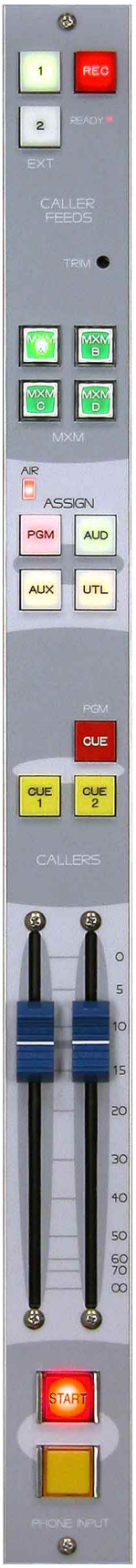
Module Overview

The optional superphone module SPN-7000 allows complete phone segment operation directly from one module panel. It handles two callers, automatic announcer mic functions, selection of callers feeds, caller cue and level adjustments, and multitrack recorder operations.

All audio and control input and output signals are connected via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath the module. A pinout drawing on page 8-7 shows all wiring connections at a glance.



Superphone Module Signal Flow Diagram



Controls and Functions

EXTERNAL FEEDS – These line level inputs (+4dBu) may be used to bring in two external mono signal feeds.

RECORD READY – See "ON" switch below.

MIX-MINUS CALLER FEED – These switches select which of the console's four mix-minus busses will be used to feed the callers.

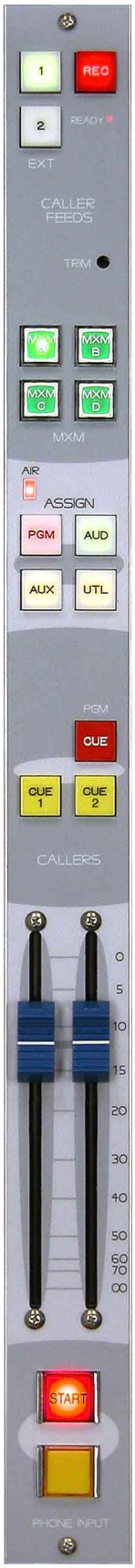
FEED TRIM – Sets the level for mix-minus and external caller feeds.

ASSIGN – Assigns the module signal to the console's four output busses: PGM (program), AUD (audition), AUX (auxiliary) and UTL (utility). An On-Air LED lights whenever the module's channel ON button is pressed *and* PGM assign is activated.

CUE – PGM Cue picks up the module's pre ON/OFF signal and sends it to the console's cue bus. Caller Cue buttons 1 & 2 (pre-fader) send caller input to the same bus. NOTE: while both caller cue buttons may be activated at the same time, caller cues and PGM cue are mutually exclusive.

CALLER INPUT – Caller 1 and 2 fader level controls.

CHANNEL ON/OFF – The module's channel ON (red) and OFF (amber) switches at the bottom of the module may be programmed to control a remote reel-to-reel tape recorder (i.e., remote START/STOP functions). NOTE: if the RECORD READY switch at the top of the superphone module is activated ("Ready" LED), pressing the module's START button will automatically start the reel-to-reel recording.



Internal Programming Options

There are 8 individual switches and one 7-position switch mounted on the printed circuit board of the superphone module. They may be user-programmed to provide a variety of signal routing and control functions. (Individual switches are ON when the slider is positioned towards the white dot.)

For programming purposes switches are described as viewed from the component side of the module printed circuit board, with UP being towards the module faceplate and RT pointing to the bottom of the module, where the channel ON/OFF switches are located.

CUE Dropout

When the dipswitch SW1 is ON, whenever the module's channel ON switch is pressed, CUE functions will be automatically deactivated.

AUX Enable

When slide switch SW2 is OFF, AUX assign follows channel ON. When SW2 is ON, AUX assign operates independently of channel ON.

Utility Enable

When slide switch SW3 is OFF, UTL assign follows channel ON. When SW3 is ON, UTL assign operates independently of channel ON.

MICs to Assign

When slide switch SW6 is ON the module's External inputs and Mix-Minus feeds are available for Cue and Output Assignment.

Output Assign

The four slide switches SW7-SW10 determine which of the console's output busses will be heard by callers:

SW7 activates UTL switch control
SW8 activates AUX switch control
SW9 activates AUD switch control
SW10 activates PGM switch control

Mutes

When the SPN-7000 phone channel ON switch is pressed, it can activate console mute functions. The first four positions of the seven-position dipswitch SW11 determines which of console's four mute lines will be activated.

Position 1: CONTROL ROOM MUTE - When activated, automatically mutes the console's control room output whenever the module is turned ON.

Position 2: CONTROL ROOM MUTE WITH PROGRAM - When activated, automatically mutes the console's control room output whenever the module is turned ON *and* the PGM ASSIGN button is activated.

Position 3: STUDIO MUTE - When activated, automatically mutes the console's studio output whenever the module is turned ON.

Position 4: STUDIO MUTE WITH PROGRAM - When activated, automatically mutes the console's studio output whenever the module is turned ON *and* the PGM ASSIGN button is activated.

On-Air Tally

When the module is turned ON, the dipswitch SW11 position 5 activates the on-air tally control line.

Cue Enable

Dipswitch SW11 position 6 - when activated, whenever a Caller CUE or PGM CUE switch is pressed, the caller signal will appear on the console's CUE bus.

Timer Restart

When the module is turned ON, the console's digital timer can be programmed to automatically reset to zero and begin counting up.

SW11 position 7 activates timer restart when the phone module's ON/START switch is pressed.

Hook-Ups

All audio and control input and output signals are connected via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath each individual module. The DB-9 connector is not used. A pinout drawing on page 8-7 shows all wiring connections at a glance.

Upper DB-25—Audio Input Connections

These include External and callers inputs. All are +4dBu balanced analog mono.

Pin 25 – Ext 1 In SH
Pin 24 – Ext 1 In HI
Pin 12 – Ext 1 In LO

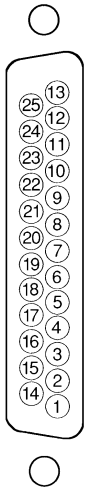
Pin 11 – Ext 2 In SH
Pin 10 – Ext 2 In HI
Pin 23 – Ext 2 In LO

Pin 22 – Call 1 In SH
Pin 21 – Call 1 In HI
Pin 9 – Call 1 In LO

Caller inputs should come from the station's telephone hybrid outputs.

Pin 8 – Call 2 In SH
Pin 7 – Call 2 In HI
Pin 20 – Call 2 In LO

Pins 2, 5, 16 and 19 - Audio Common



Typical DB-25 connector

Lower DB-25—Audio Output Connections

These include outputs to the station hybrid and module output composite feeds (for recording).

Pin 25 – Composite Out SH
Pin 24 – Composite Out HI
Pin 12 – Composite Out LO

The Composite Out is the sum of ALL inputs to the Superphone Module. It may be connected directly to a recorder input if desired.

Pin 11 – Composite Minus Callers Out SH
Pin 10 – Composite Minus Callers Out HI
Pin 23 – Composite Minus Callers Out LO

Pin 22 – Caller Sum to Track 2 & 3 Out SH
Pin 21 – Caller Sum to Track 2 & 3 Out HI
Pin 9 – Caller Sum to Track 2 & 3 Out LO

Pin 8 – Feed To Hybrid 1 Out SH
Pin 7 – Feed To Hybrid 1 Out HI
Pin 20 – Feed To Hybrid 1 Out LO

Pin 19 – Feed To Hybrid 2 Out SH
Pin 18 – Feed To Hybrid 2 Out HI
Pin 6 – Feed To Hybrid 2 Out LO

Lower DB-25—Control Connections

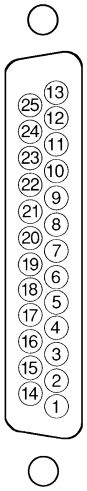
These are simply two parallel-connected sets of pins for the same control port.

Pin 1 – Record Ready
Pin 2 – Start
Pin 3 – Stop
Pin 4 – Start/Stop Common

Pin 14 – Record Ready
Pin 15 – Start
Pin 16 – Stop
Pin 17 – Start/Stop Common

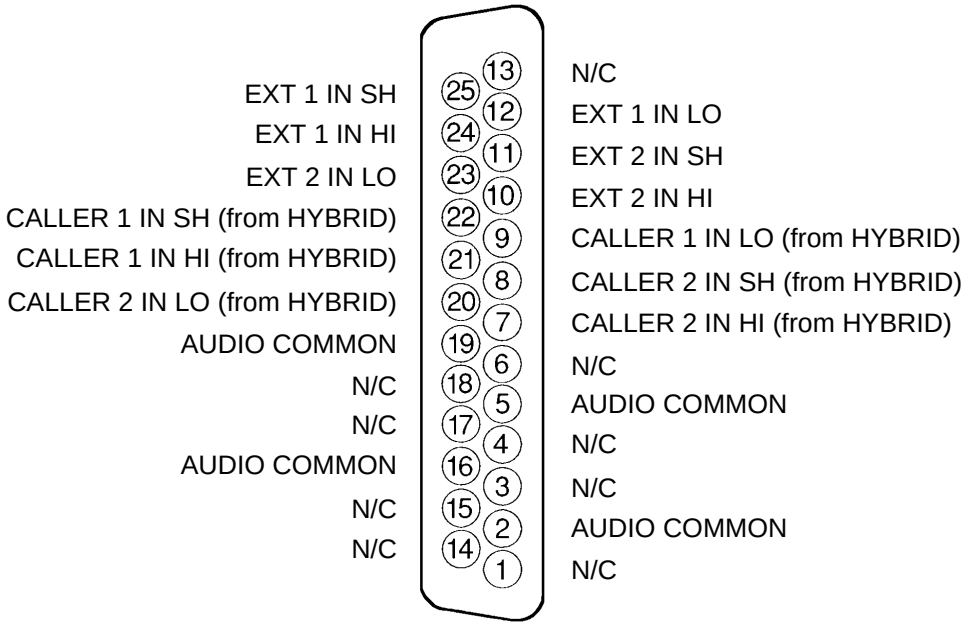
When the module's ON switch is pressed, a closure takes places between START/STOP COMMON and START; when the module's OFF switch is pressed, a closure takes place between START/STOP COMMON and STOP. These may be used to control a remote tape machine for recording phone segments.

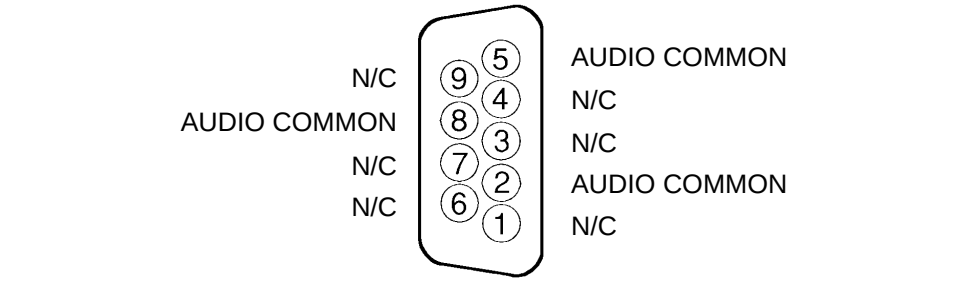
When the RECORD READY switch is activated, pressing the module's ON button generates a closure that can be used to start the machine in record mode.

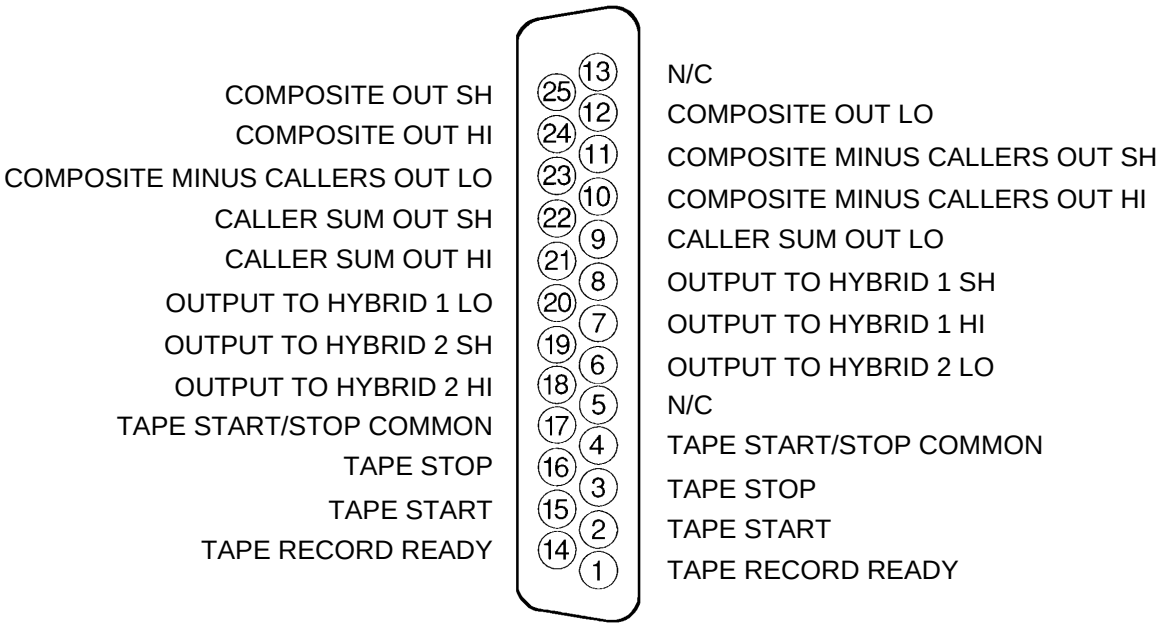


Typical DB-25 connector

Upper DB-25 Connector







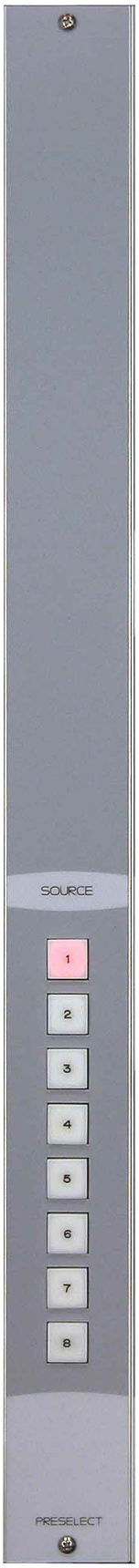
Lower DB-25 Connector

Superphone Module I/O Connector Pinouts

Line Preselector Module
(LS-7000; optional)

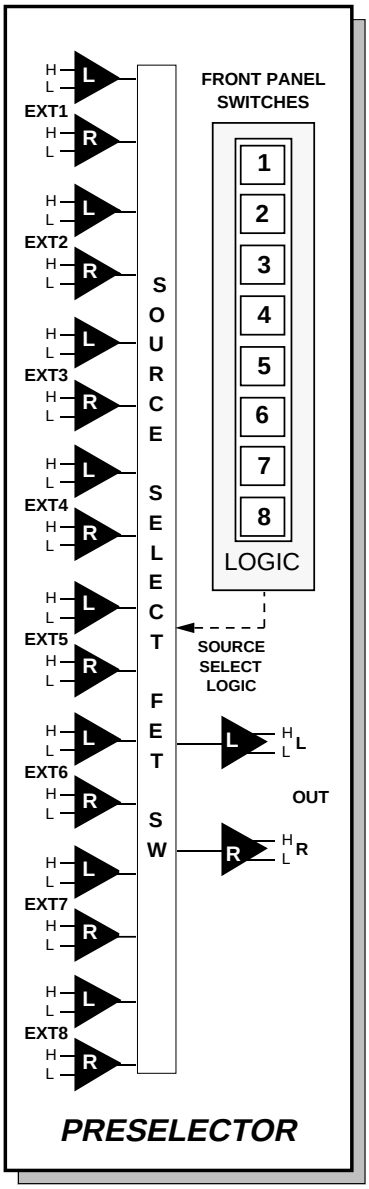
Chapter Contents

Line Preselector Module
(LS-7000; optional)



Module Overview

This optional module electronically selects one of eight stereo line sources and routes it to one stereo output, allowing you to expand the source capability of an input channel or monitor module.



Signal Flow Diagram

All audio input and output signals are connected via two DB-25 multi-pin connectors located in the bottom of the console's mainframe, directly underneath the module, and one DB-9 connector mounted on the console's motherboard. A pinout drawing on page 9-5 shows all wiring connections at a glance.

Internal Programming Options

There are no internal programming options on the LS-7000 module.

Hook-Ups

Upper DB-25 Connector - Audio Inputs 1-4

Pin 25 – Line 1 Lt In SH
Pin 24 – Line 1 Lt In HI
Pin 12 – Line 1 Lt In LO

Pin 11 – Line 1 Rt In SH
Pin 10 – Line 1 Rt In HI
Pin 23 – Line 1 Rt In LO

Pin 22 – Line 2 Lt In SH
Pin 21 – Line 2 Lt In HI
Pin 9 – Line 2 Lt In LO

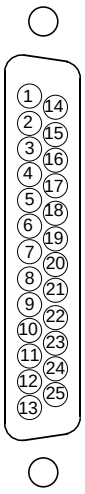
Pin 8 – Line 2 Rt In SH
Pin 7 – Line 2 Rt In HI
Pin 20 – Line 2 Rt In LO

Pin 19 – Line 3 Lt In SH
Pin 18 – Line 3 Lt In HI
Pin 6 – Line 3 Lt In LO

Pin 5 – Line 3 Rt In SH
Pin 4 – Line 3 Rt In HI
Pin 17 – Line 3 Rt In LO

Pin 16 – Line 4 Lt In SH
Pin 15 – Line 4 Lt In HI
Pin 3 – Line 4 Lt In LO

Pin 2 – Line 4 Rt In SH
Pin 1 – Line 4 Rt In HI
Pin 14 – Line 4 Rt In LO



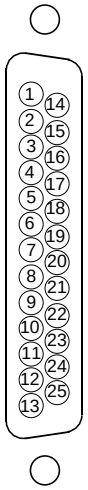
Typical DB-25 connector

Lower DB-25 Connector - Audio Inputs 5-8

Pin 25 – Line 5 Lt In SH
Pin 24 – Line 5 Lt In HI
Pin 12 – Line 5 Lt In LO

Pin 11 – Line 5 Rt In SH
Pin 10 – Line 5 Rt In HI
Pin 23 – Line 5 Rt In LO

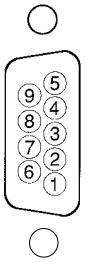
Pin 22 – Line 6 Lt In SH
Pin 21 – Line 6 Lt In HI
Pin 9 – Line 6 Lt In LO
Pin 8 – Line 6 Rt In SH
Pin 7 – Line 6 Rt In HI
Pin 20 – Line 6 Rt In LO
Pin 19 – Line 7 Lt In SH
Pin 18 – Line 7 Lt In HI
Pin 6 – Line 7 Lt In LO
Pin 5 – Line 7 Rt In SH
Pin 4 – Line 7 Rt In HI
Pin 17 – Line 7 Rt In LO
Pin 16 – Line 8 Lt In SH
Pin 15 – Line 8 Lt In HI
Pin 3 – Line 8 Lt In LO
Pin 2 – Line 8 Rt In SH
Pin 1 – Line 8 Rt In HI
Pin 14 – Line 8 Rt In LO



Typical DB-25 connector

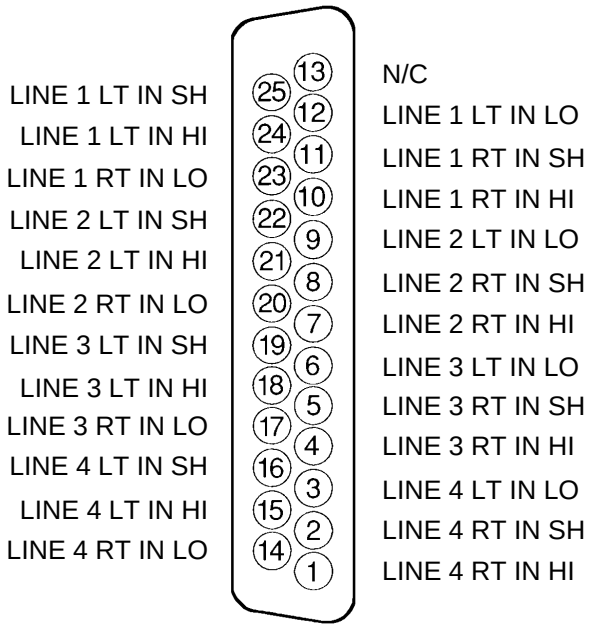
DB-9 Connector - Audio Outputs

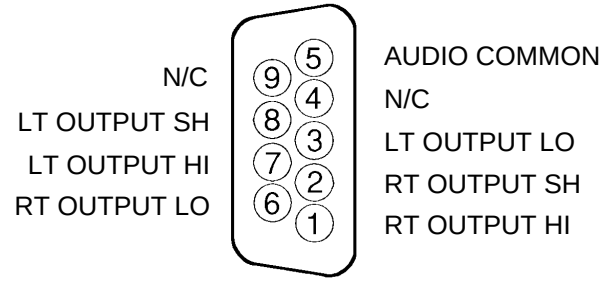
Pin 8 – Line Lt Out SH
Pin 7 – Line Lt Out HI
Pin 3 – Line Lt Out LO
Pin 2 – Line Rt Out SH
Pin 1 – Line Rt Out HI
Pin 6 – Line Rt Out LO

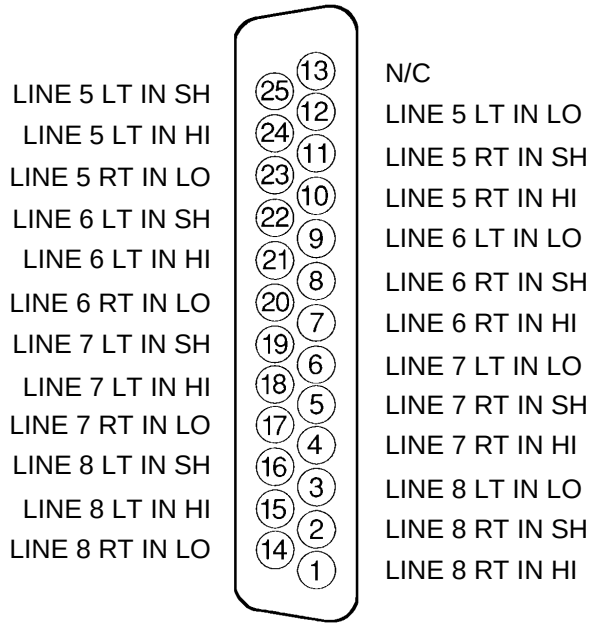


Typical DB-9 connector

Upper DB-25 Connector







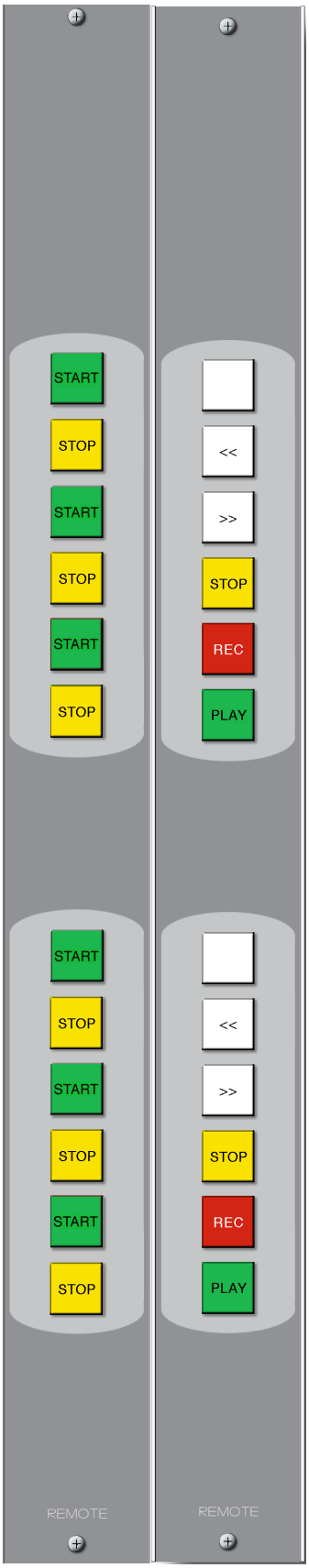
Lower DB-25 Connector

Line Selector Module I/O Connector Pinouts

Tape Remote Module
(TR-7000; optional)

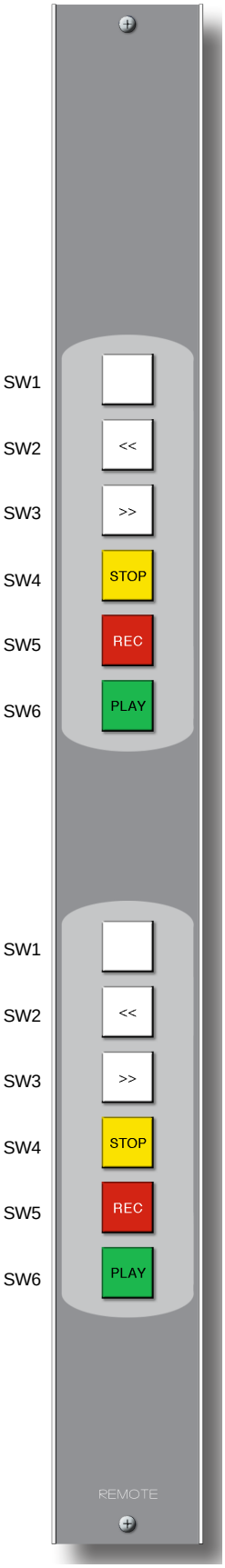
Chapter Contents

Tape Remote Module
(TR-7000; optional)



Module Overview

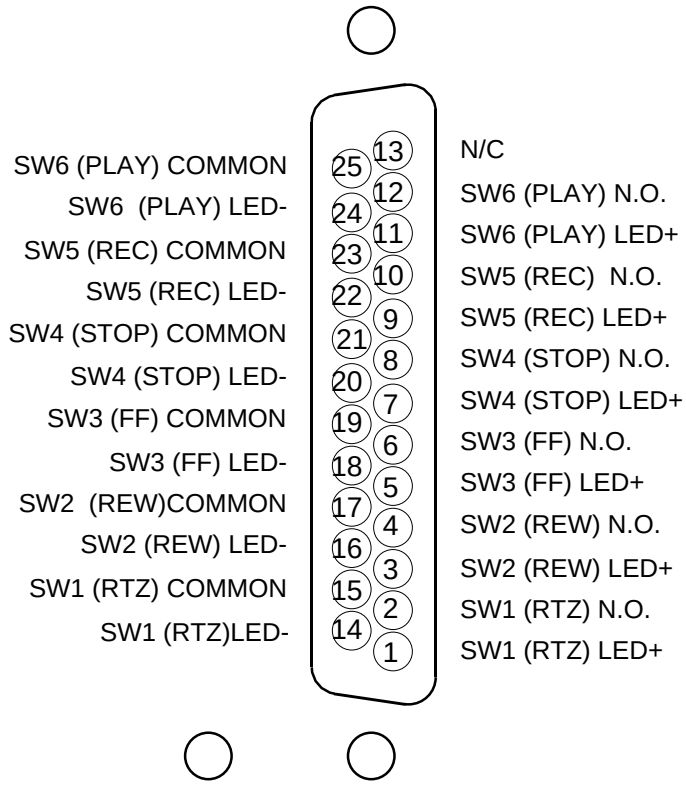
This optional module is available in two versions. The START/STOP version offers three sets of START and STOP buttons to provide start-stop control of three remote reel-to-reel machines. The full function version provides RTZ (or blank), REW, FF, STOP, REC, and PLAY buttons for a single machine. LED indicators in each switch function as tallyback indicators and are powered by the source machine. There are no internal connections between the tape remote panel and the console's power rails.



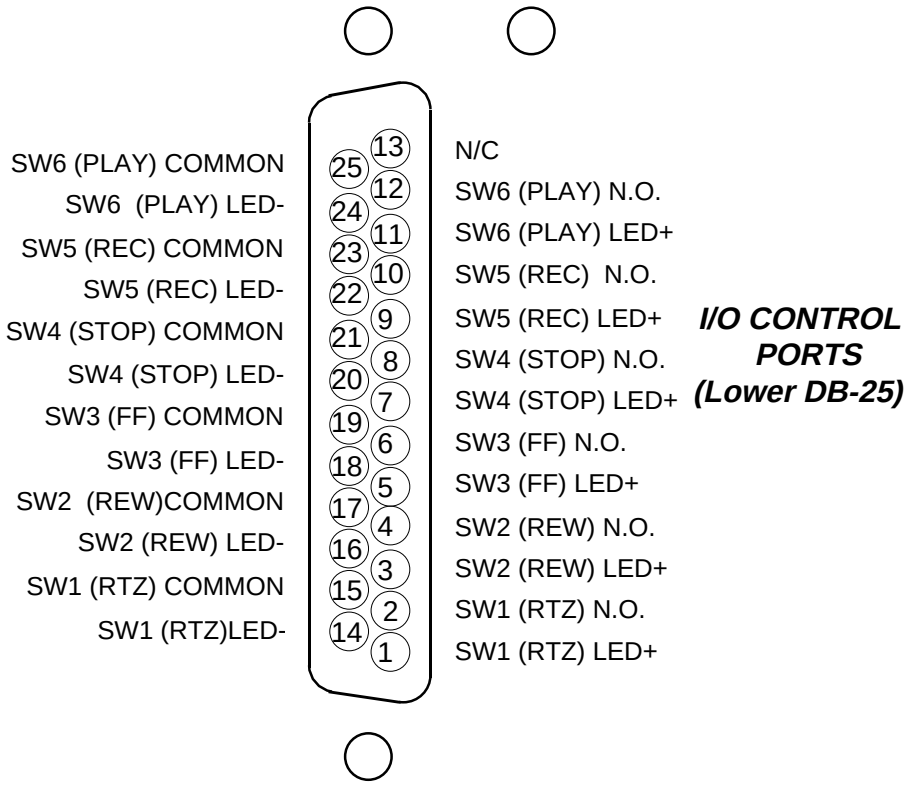
TR-7000/FF Tape Remote Module

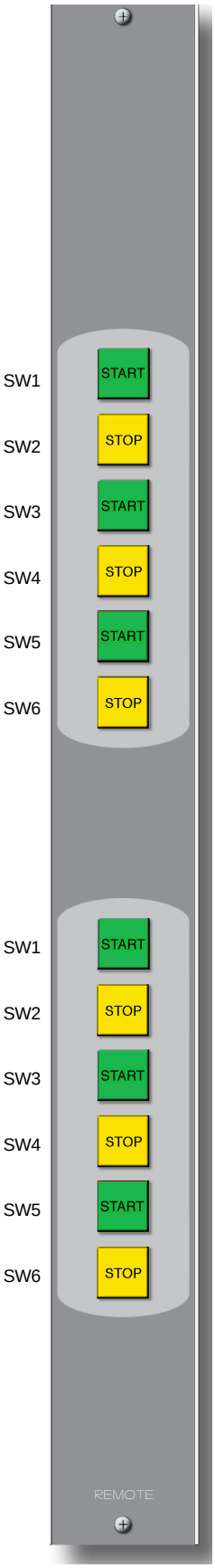
DB Connector Pinouts

I/O CONTROL PORTS (Upper DB-25)



I/O CONTROL PORTS (Lower DB-25)

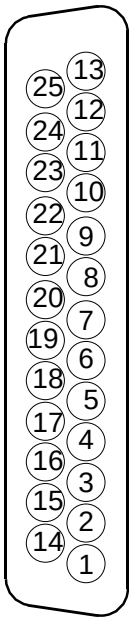




TR-7000/SS Tape Remote Module

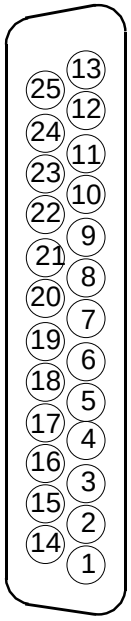
DB Connector Pinouts

I/O CONTROL PORTS (Upper DB-25)



SW6 (STOP) COMMON	25	13 N/C
SW6 (STOP) LED-	24	12 SW6 (STOP) N.O.
SW5 (START) COMMON	23	11 SW6 (STOP) LED+
SW5 (START) LED-	22	10 SW5 (START) N.O.
SW4 (STOP) COMMON	21	9 SW5 (START) LED+
SW4 (STOP) LED-	20	8 SW4 (STOP) N.O.
SW3 (START) COMMON	19	7 SW4 (STOP) LED+
SW3 (START) LED-	18	6 SW3 (START) N.O.
SW2 (STOP) COMMON	17	5 SW3 (START) LED+
SW2 (STOP) LED-	16	4 SW2 (STOP) N.O.
SW1 (START) COMMON	15	3 SW2 (STOP) LED+
SW1 (START)LED-	14	2 SW1 (START) N.O.
		1 SW1 (START) LED+

I/O CONTROL PORTS (Lower DB-25)



SW6 (STOP) COMMON	25	13 N/C
SW6 (STOP) LED-	24	12 SW6 (STOP) N.O.
SW5 (START) COMMON	23	11 SW6 (STOP) LED+
SW5 (START) LED-	22	10 SW5 (START) N.O.
SW4 (STOP) COMMON	21	9 SW5 (START) LED+
SW4 (STOP) LED-	20	8 SW4 (STOP) N.O.
SW3 (START) COMMON	19	7 SW4 (STOP) LED+
SW3 (START) LED-	18	6 SW3 (START) N.O.
SW2 (STOP) COMMON	17	5 SW3 (START) LED+
SW2 (STOP) LED-	16	4 SW2 (STOP) N.O.
SW1 (START) COMMON	15	3 SW2 (STOP) LED+
SW1 (START)LED-	14	2 SW1 (START) N.O.
		1 SW1 (START) LED+

Meterbridge

Chapter Contents

Meterbridge

Overview

The console's meterbridge houses up to four pairs of left-right VU meters (Program, Audition, Auxiliary and Switched; see "Meter Output Module" Chapter 7), the digital timer display, the cue speakers, and the console clock.

The meterbridge assembly hinges open for easy access (VU meter lamp replacement, setting the clock). Simply swing the bridge up and back until it rests in a fully opened position.

Digital Timer

The console timer control buttons are located on the MO-7000 Meter Output Module (see page 7-3).

The timer is provided with an AUTO-RESTART function so programmed input modules can automatically reset the timer display to zero and start a new count, allowing the announcer to easily track his own pace. The AUTO button toggles this function on and off.

The START/STOP button halts the timer, holds the last count, and then restarts and accumulates the count when depressed again–perfect for compiling tapes of desired duration.

RESET has a dual-mode capability:

- if you depress it while the timer is counting, the display will instantly reset to zero and start a fresh count;

- if the timer is already stopped, depressing this button will reset the timer to zero, where it will hold until start is pressed, or until an auto restart is activated.

HOLD button allows you to hold the display for a longer viewing duration, while still allowing the counter to continue in the background. Releasing the button will then display the current count.

Console Clock

The Wheatstone digital clock is a six-digit time-of-day clock with LED display. The clock is designed with CMOS circuits and an on-board crystal-controlled time base oscillator. There are two basic parts to the clock: a main PCB containing the clock circuits and clock set controls (also may include capacitor backup) and a second PCB containing displays. Clock set controls may be accessed by opening the meterbridge cover.

Controls

The clock is controlled by a trimmer and two switches; the trimmer and switches are mounted on the main clock PCB assembly.

The trimmer alters the frequency of the quartz-controlled oscillator, which in turn causes the clock to run slightly slower or faster. In order to keep accurate time, the oscillator must run at 4.096 MHz. The oscillator is set to this frequency at the factory. However, due to the nature of quartz/crystal-controlled oscillators, there may be a slight change in the frequency of the oscillator during the first few months of operation due to the aging effect of quartz crystals. A minor readjustment of the trimmer will compensate for this effect.

A buffered output of the oscillator is available at TP1 to assist in adjusting the oscillator.

Setting the Time

The setting controls consist of two switches: MODE and SET. To set the clock, open the meterbridge cover:

1) The control switches (mounted on the main clock PCB assembly) are labelled "M" and "S". "M" (Mode) is used to scroll from seconds to minutes to hours; "S" is used to Set the time. The procedure is to set the clock slightly ahead of the current time, hold the second count at "00" until the current time catches up, and then release the count.
2) Press the MODE button until the hour digits blink. Depress the SET button until the desired hour is displayed.
3) Press the MODE button until the minute digits blink. Depress the SET button until the desired minute count is displayed.
4) Press the MODE button until the second digits blink. Depress and hold the SET button; the seconds display will hold at "00". When the current time catches up to the display, release the SET button. The clock will start counting. Hit the MODE button three more times to place the clock into working mode.

Capacitor Backup

With the meterbridge open note the super capacitor at C25. This super capacitor is self charging. Note that the super capacitor does NOT light up the clock display; it powers the clock crystal to keep it from losing count (it will do this for about one hour).

Operational Modes

The standard factory default clock configuration is crystal-controlled, 12 hour mode, stand-alone operation. However, the clock will operate either from the internal crystal controlled time base or from an ESE master (TC-76, TC-89, TC-90, autodetect) signal. Because crystal time bases are subject to drift over time, Wheatstone recommends operating the clock in the ESE slave mode for those applications where the exact time is critical. Connect an ESE master at connector CT3 (Pin 1 - Signal, Pin 2 - Shield). Switch #4 on SW3 sets 12/24 hour mode (Off - 12 hour, On - 24 hour).

The clock can also be programmed to count in either 12 hour or 24 hour modes, controlled by SW3 position 4.

Parts List

Chapter Contents

ML-7000A MIC LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
ML-7000 MAIN PCB	LOADED CARD	1	***001484***
	Dual Switch Barrier/Bracket D-series Veetronix	1	***003689***
ML-7000A	FACEPLATE	1	***003820***
PCB_ML6000: CT2, CT8, CT9 PCB_SW2 700: CT1, CT2	6 PIN .098" PLUG FOR #26 AWG	5	***230031***
CT7	9 PIN .098" PLUG FOR #26 AWG	1	***230032***
PCB_IPS6000: CT2, CT3	15 POSITION FLEX STRIP	2	***250055***
PCB_SW2 700: CT1, CT2	6 PIN .098" HEADER	2	***250065***
PCB_SW2 700: R1, R2	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
PAN POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	1	***500023***
A/AUD SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	2	***510094***
PAN/PGM SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	2	***510095***
B/AUX/UTL SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	3	***510096***
ON/OFF SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	RED FADER KNOB, 11mm FOR 3000 SERIES FADER	1	***520006***
PAN KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	1	***520022***
PAN SWITCH CAP	RED SWITCH CAP	1	***530003***
A/B/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	6	***530004***
PAN KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
ON SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
OFF SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,SINGLE AUDIO TAPER, 4000 SERIES W/RED KNOB	1	***540006***
AIR LED	RECTANGULAR RED LED	1	***600004***
ON SWITCH LED	RED LED FOR R5 ON/OFF SWITCH	1	***600027***
OFF SWITCH LED	YELLOW LED FOR R5 ON/OFF SWITCH	1	***600031***
PCB_IPS6000	PRINTED CIRCUIT BOARD	1	***700049***
PCB_SW2 700	PRINTED CIRCUIT BOARD	1	***700688***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	2	***823082***

ML-7000CA MIC LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
ML-7000 MAIN PCB	LOADED CARD	1	***001484***
	Dual Switch Barrier/Bracket D-series Veetronix	1	***003689***
ML-7000CA	FACEPLATE	1	***003832***
CT10	3 PIN .098" PLUG FOR #26 AWG	1	***230028***
PCB_ML6000: CT2, CT6, CT8, CT9 PCB_SW2 700: CT1, CT2	6 PIN .098" PLUG FOR #26 AWG	6	***230031***
CT7	9 PIN .098" PLUG FOR #26 AWG	1	***230032***
PCB_IPS6000: CT2, CT3	15 POSITION FLEX STRIP	2	***250055***
PCB_SW2 700: CT1, CT2	6 PIN .098" HEADER	2	***250065***
PCB_SW2 700: R1, R2	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
PAN POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	1	***500023***
SEND1/SEND2 POT	10KΩ SINGLE AUDIO CONDUCTIVE PLASTIC, BOURNS	2	***500058***
A/PRE/AUD SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	3	***510094***
ON/PAN/PGM/CUE SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	4	***510095***
B/AUX/UTL/SOLO SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	4	***510096***
ON/OFF SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	RED FADER KNOB, 11mm FOR 3000 SERIES FADER	1	***520006***
SEND1/SEND2/PAN KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	3	***520022***
PAN/CUE SWITCH CAP	RED SWITCH CAP	2	***530003***
A/B/PRE/ON/PGM/AUD/AUX/UTL/SOLO SWITCH CAP	WHITE SWITCH CAP	9	***530004***
PAN KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
SEND 1 KNOB CAP	PASTEL GREEN CAP W.BLACK LINE FOR 15MM KNOB	1	***530079***
SEND 2 KNOB CAP	CREAM CAP W. BLACK LINE FOR 15MM KNOB	1	***530080***
ON SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
OFF SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,SINGLE AUDIO TAPER, 4000 SERIES W/RED KNOB	1	***540006***
AIR LED	RECTANGULAR RED LED	1	***600004***
ON SWITCH LED	RED LED FOR R5 ON/OFF SWITCH	1	***600027***
OFF SWITCH LED	YELLOW LED FOR R5 ON/OFF SWITCH	1	***600031***
PCB_IPS6000	PRINTED CIRCUIT BOARD	1	***700049***
PCB_SW2 700	PRINTED CIRCUIT BOARD	1	***700688***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	2	***823082***

ML-7000AF (w/EQ) MIC LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
ML-7000 MAIN PCB	LOADED CARD	1	***001484***
	Dual Switch Barrier/Bracket D-series Veetronix	1	***003689***
ML-7000AF	FACEPLATE	1	***003824***
PCB_ML6000: CT2, CT6, CT8, CT9 PCB_SW2 700: CT1, CT2	6 PIN .098" PLUG FOR #26 AWG	5	***230031***
CT7	9 PIN .098" PLUG FOR #26 AWG	1	***230032***
U1-U8	8 PIN .3" DIP SMT SOCKET	8	***245001***
U9	16 PIN .3" DIP SMT SOCKET	1	***245003***
CT1	8 PIN DIP CONNECTOR	2	***250010***
PCB_IPS: CT2, CT3	15 POSITION FLEX STRIP	2	***250055***
PCB_SW2 700: CT1, CT2	6 PIN .098" HEADER	2	***250065***
U1-U3, U5-U8	TL072 DUAL BIFET OP-AMP	7	***320006***
U4	NE5532 DUAL OP-AMP	1	***320008***
Z1, Z2	5.1V SMT ZENER DIODE C5V1	2	***355002***
U9	14053BCP	1	***380003***
C10, C28, C29	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	3	***405002***
C7, C9, C25-C27	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	5	***405003***
C1-C3, C8, C11, C12	CAPACITOR, 10pF 100V CERAMIC SMT	6	***415001***
C16	CAPACITOR, 33pF 100V CERAMIC SMT	1	***415002***
C4-C6, C13-C15, C19, C22	CAPACITOR, .1µF 50V CERAMIC SMT	8	***415007***
C23, C24	CAPACITOR, 1000pF 50V FILM SMT	2	***425002***
C20, C21	CAPACITOR, 2200pF 50V FILM SMT	2	***425003***
C17, C18	CAPACITOR, .022µF 50V FILM SMT	2	***425005***
R13, R17, R21	100 OHM 5% .25W MC1206 RESISTOR	3	***435007***
PCB_SW2 700: R1, R2	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
R1, R2	475 OHM 1% .25W MC1206 RESISTOR	2	***435011***
R3-R6	562 OHM 1% .25W MC1206 RESISTOR	4	***435012***
R14, R18, R22	1.30 KOHM 1% .25W MC1206 RESISTOR	3	***435016***
R50, R54	2.43 KOHM 1% .25W MC1206 RESISTOR	2	***435020***
R34, R39, R44	5.49 KOHM 1% .25W MC1206 RESISTOR	3	***435024***
R7-R9, R10-R12	9.09 KOHM 1% .25W MC1206 RESISTOR	6	***435027***
R15, R16, R19, R20, R23, R24, R27-R33, R35-R38, R40-R43, R45-R48	10.0 KOHM 1% .25W MC1206 RESISTOR	25	***435028***
R49	26.7 KOHM 1% .25W MC1206 RESISTOR	1	***435037***
R25, R26, R52	40.2 KOHM 1% .25W MC1206 RESISTOR	3	***435039***
CR1-CR3	10K POT, DUAL CONCENTRIC LINEAR, 12mm	3	***500010***
PAN POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	1	***500023***
SEND POT	388 SERIES DUAL 10K AUDIO CONCENTRIC W/LONG SHAFT	1	***500062***

ML-7000AF (w/EQ) MIC LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
PRE/AUD SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	2	***510094***
EQ IN//ON/PGM/CUE SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	4	***510095***
AB/AUX/UTL/SOLO SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	4	***510096***
ON/OFF SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	RED FADER KNOB, 11mm FOR 3000 SERIES FADER	1	***520006***
HIGH/MID/LOW KNOB	CONCENTRIC OUTER KNOB FOR 12mm POT	3	***520018***
PAN KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	1	***520022***
HIGH/MID/LOW KNOB	CONCENTRIC INNER KNOB FOR 12mm POT	3	***520024***
SEND KNOB	CONCENTRIC OUTER COLLET KNOB FOR 1/2" POT	1	***520036***
SEND KNOB	CONCENTRIC INNER COLLET KNOB FOR 1/2" POT	1	***520037***
EQ IN/CUE SWITCH CAP	RED SWITCH CAP	2	***530003***
PRE/ON/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	6	***530004***
AB/SOLO SWITCH CAP	YELLOW SWITCH CAP	2	***530005***
PAN KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
SEND KNOB CAP	11mm BLACK CAP W/WHITE LINE FOR 15mm KNOB	1	***530036***
HIGH/MID/LOW KNOB CAP	11mm BLUE/9 CAP W/WHITE LINE	3	***530317***
ON SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
OFF SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,SINGLE AUDIO TAPER, 4000 SERIES W/RED KNOB	1	***540006***
AIR LED	RECTANGULAR RED LED	1	***600004***
ON SWITCH LED	RED LED FOR R5 ON/OFF SWITCH	1	***600027***
OFF SWITCH LED	YELLOW LED FOR R5 ON/OFF SWITCH	1	***600031***
PCB_EQ/IPS6000	PRINTED CIRCUIT BOARD	1	***700037***
PCB_EQ/M6000	PRINTED CIRCUIT BOARD	1	***700206***
PCB_SW2 700	PRINTED CIRCUIT BOARD	1	***700688***
	4-40 X .375 HEX BRASS M/F SPACER	3	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	2	***823082***

ML-7000 MAIN PCB PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
U1, U2, U7, U20-U22, U26, U27, U34, U38, U41, U42, U45-U50, U52	8 PIN .3" DIP SMT SOCKET	19	***245001***
U4, U6, U8-U17, U23, U24, U25, U32, U33, U44, U51	14 PIN .3" DIP SMT SOCKET	19	***245002***
U3, U7, U18, U19, U28-U31, U35-U37, U39, U40	16 PIN .3" DIP SMT SOCKET	13	***245003***
U5	20 PIN .3" DIP SMT SOCKET	1	***245004***
CT1, CT3	5 PIN .1" STRAIGHT HEADER	6	***250023***
CT4, CT5, CT10	3 PIN .098" HEADER	3	***250062***
CT2, CT6, CT8, CT9	6 PIN .098" HEADER	4	***250065***
CT7	9 PIN .098" HEADER	1	***250066***
U14, U24	74HC00	2	***300012***
U12, U16, U17, U25, U33, U44, U51	74HC02	7	***300013***
U6, U9	74HC30	2	***300028***
U10, U13, U15, U23, U32	74HC32	5	***300029***
U11	74LS37	1	***300050***
U4, U8	74HC14	2	***300053***
U5	GAL16V8 PAL	1	***310026***
U7	GAL20V8 PAL	1	***310027***
U48, U49	2017 MIC PREAMP IC	2	***320003***
U38, U42, U45, U46	2142 BALANCED LINE DRIVER IC	4	***320004***
U1, U2, U20-U22, U26, U27, U34, U47	NE5532 DUAL OP-AMP	9	***320008***
U41, U50, U52	2143 BALANCED LINE RECEIVER IC	3	***320012***
U43	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
Q3, Q9, Q12-Q16	MMBTA05 NPN SMT TRANSISTOR	7	***345001***
Q1, Q2, Q4-Q8, Q10, Q11, Q17	MMBTA55 PNP SMT TRANSISTOR	10	***345002***
D1-D3	1N4002W RECTIFYING 1AMP SMT DIODE	3	***355001***
Z1-Z10	5.1V SMT ZENER DIODE C5V1	10	***355002***
D4, D5	1N4148 FAST SWITCHING SMT DIODE	2	***355003***
U28-U31, U35-U37, U39, U40	14053BCP	9	***380003***
U3, U18, U19	74VHC4053	3	***380008***
L1, L2	FERRITE CHOKE	2	***400025***
C122, C124, C149-C152	CAPACITOR, 10µF 50V ELECTROLYTIC SMT	6	***405001***
C8, C50, C68, C71, C72, C77, C78, C96	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	8	***405002***
C1, C15, C16, C45, C46, C65, C85, C86, C88-C90, C95, C106, C107	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	14	***405003***
C66, C67, C75, C76, C87, C93, C94	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	7	***405004***
C17, C18, C30, C31, C33-C44	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	16	***405005***
C55	TRIMMER CAPACITOR	1	***410001***
C2, C4, C6, C7, C48, C51, C56, C58, C60, C64, C73, C79, C80, C109, C117	CAPACITOR, 10pF 100V CERAMIC SMT	15	***415001***

ML-7000 MAIN PCB PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
C83	CAPACITOR, 33pF 100V CERAMIC SMT	1	***415002***
C74, C92, C98, C101, C102, C120, C121, C143, C144	CAPACITOR, 68pF 100V CERAMIC SMT	9	***415003***
C111, C113	CAPACITOR, 330pF 100V CERAMIC SMT	2	***415004***
C135-C142	CAPACITOR, .001µF 50V CERAMIC SMT	8	***415005***
C3, C5, C9-C14, C19-C29, C32, C47, C49, C52-C54, C57, C59, C61-C63, C69, C70, C81	CAPACITOR, .1µF 50V CERAMIC SMT	33	***415007***
C82, C84, C91, C97, C99, C100, C103-C105, C108, C110, C112, C114-C116, C118, C119	CAPACITOR, .1µF 50V CERAMIC SMT	17	***415007***
C123, C125-C134, C145-C148	CAPACITOR, .1µF 50V CERAMIC SMT	15	***415007***
J1-J3, R188	3.3 OHM 5% .25W MC1206 RESISTOR	4	***435001***
R19, R78, R82, R89, R115, R209, R210, R215, R219, R234, R235, R240, R241	10 OHM 5% .25W MC1206 RESISTOR	13	***435002***
R10, R17, R24, R62, R66, R70, R73, R74, R108, R118, R187	100 OHM 5% .25W MC1206 RESISTOR	11	***435007***
R28-R41, R43-R57, R232, R233, R236, R237, R239, R242, R244, R246	220 OHM 5% .25W MC1206 RESISTOR	37	***435009***
R77, R83, R88, R93-R107	1.00 KOHM 1% .25W MC1206 RESISTOR	18	***435015***
R218, R222	1.30 KOHM 1% .25W MC1206 RESISTOR	2	***435016***
R72, R86, R109, R116, R175, R176	2.43 KOHM 1% .25W MC1206 RESISTOR	6	***435020***
R6-R9, R18, R21-R26, R63-R67, R71, R75, R84, R85, R92, R112, R119, R129	3.32 KOHM 1% .25W MC1206 RESISTOR	22	***435021***
R69, R76	3.92 KOHM 1% .25W MC1206 RESISTOR	2	***435022***
R1, R4, R11-R13, R16, R42, R58-R60, R79, R134, R135, R171, R172, R223-R231, R238, R243,R245	4.99 KOHM 1% .25W MC1206 RESISTOR	27	***435023***
R27, R68, R91	5.49 KOHM 1% .25W MC1206 RESISTOR	3	***435024***
R128, R132	9.09 KOHM 1% .25W MC1206 RESISTOR	2	***435027***
R3, R5, R20, R61, R87, R110, R111, R114, R117, R120-R122, R124, R126, R127, R131, R133	10.0 KOHM 1% .25W MC1206 RESISTOR	17	***435028***
R136-R150, R153-R159, R163-R170, R174, R177, R179-R186, R189-R208, R211-R214, R216	10.0 KOHM 1% .25W MC1206 RESISTOR	65	***435028***
R217, R220, R221	10.0 KOHM 1% .25W MC1206 RESISTOR	3	***435028***
R123	11.0 KOHM 1% .25W MC1206 RESISTOR	1	***435029***
R125, R151, R161, R173	22.1 KOHM 1% .25W MC1206 RESISTOR	4	***435036***
R162	33.2 KOHM 1% .25W MC1206 RESISTOR	1	***435038***
R2, R14, R15, R90, R113	40.2 KOHM 1% .25W MC1206 RESISTOR	5	***435039***
R80, R81, R130, R152, R160, R178	88.7 KOHM 1% .25W MC1206 RESISTOR	6	***435043***
CR4, CR5	50K 15 TURN TRIM POT	2	***500015***
CR1-CR3	1K 15 TURN TRIM POT	3	***500025***
SW1	4 POSITION SMT DIP SWITCH, TAPE SEALED	1	***515001***
SW6, SW14-SW16	7 POSITION SMT DIP SWITCH, TAPE SEALED	4	***515002***
SW2-SW5, SW7-SW13, SW17-SW25	DPDT SMT SLIDE SWITCH	20	***515003***
PCB_ML6000SC	PRINTED CIRCUIT BOARD SMT	1	***700240***
	PEM FASTENERS	4	***821009***
U43	HEATSINK FOR T-220 WITH MOUNTING PIN	1	***825010***
F1-F3	FUSE/ POLYSWITCH .3AMP SMT RESETABLE	3	***835001***

SL-7000B STEREO LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
SL-7000 MAIN PCB	LOADED CARD	1	***001483***
	Dual Switch Barrier/Bracket D-series Veetronix	1	***003689***
SL-7000B	FACEPLATE	1	***003821***
PCB_SL6000: CT2, CT7, CT8 PCB_SW2 700: CT1, CT2	6 PIN .098" PLUG FOR #26 AWG	5	***230031***
CT10	9 PIN .098" PLUG FOR #26 AWG	1	***230032***
CT1, CT3	15 POSITION FLEX STRIP	2	***250055***
PCB_SW2 700: CT1, CT2	6 PIN .098" HEADER	2	***250065***
PCB_SW2 700: R1, R2	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
BAL POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	1	***500023***
A/AUD SWITCH LED	PUSHBUTTON SWITCH GREEN LED/ NO CAP	2	***510094***
MODE/PGM/CUE SWITCH LED	PUSHBUTTON SWITCH RED LED/ NO CAP	3	***510095***
B/AUX/UTL SWITCH CAP	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	3	***510096***
START/STOP SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	BLACK FADER KNOB, 11mm FOR 3000 SERIES FADER	1	***520001***
BAL KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	1	***520022***
MODE/CUE SWITCH CAP	RED SWITCH CAP	2	***530003***
A/B/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	6	***530004***
BAL KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
START SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
STOP SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,DUAL AUDIO TAPER, 4000 SERIES	1	***540012***
AIR LED	RECTANGULAR RED LED	1	***600004***
STEREO/START SWITCH LED	RED LED FOR R5 ON/OFF SWITCH	2	***600027***
LT/RT/STOP SWITCH LED	YELLOW LED FOR R5 ON/OFF SWITCH	3	***600031***
MONO LED	HIGH INTENSITY GREEN LED	1	***600072***
PCB_IPS6000	PRINTED CIRCUIT BOARD	1	***700049***
PCB_SW2 700	PRINTED CIRCUIT BOARD	1	***700688***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	2	***823082***

SL-7000BZ STEREO LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
SL-7000 MAIN PCB	LOADED CARD	1	***001483***
	Dual Switch Barrier/Bracket D-series Veetronix	1	***003689***
SL-7000BZ	FACEPLATE	1	***003823***
PCB_SL6000: CT2, CT6-CT8 PCB_SW2 700: CT1, CT2	6 PIN .098" PLUG FOR #26 AWG	6	***230031***
CT10	9 PIN .098" PLUG FOR #26 AWG	1	***230032***
CT1, CT3	15 POSITION FLEX STRIP	2	***250055***
PCB_SW2 700: CT1, CT2	6 PIN .098" HEADER	2	***250065***
PCB_SW2 700: R1, R2	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
BAL POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	1	***500023***
SEND POT	388 SERIES DUAL 10K AUDIO CONCENTRIC W/LONG SHAFT	1	***500062***
A/PRE/AUD SWITCH LED	PUSHBUTTON SWITCH GREEN LED/ NO CAP	3	***510094***
MODE/ON/PGM/CUE SWITCH LED	PUSHBUTTON SWITCH RED LED/ NO CAP	4	***510095***
B/AUX/UTL/SOLO SWITCH CAP	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	4	***510096***
START/STOP SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	BLACK FADER KNOB, 11mm FOR 3000 SERIES FADER	1	***520001***
BAL KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	1	***520022***
SEND KNOB	CONCENTRIC OUTER COLLET KNOB FOR 1/2" POT	1	***520036***
SEND KNOB	CONCENTRIC INNER COLLET KNOB FOR 1/2" POT	1	***520037***
MODE/CUE SWITCH CAP	RED SWITCH CAP	2	***530003***
A/B/PRE/ON/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	9	***530004***
SOLO SWITCH CAP	YELLOW SWITCH CAP	1	***530005***
SEND KNOB CAP	11mm BLACK CAP W/WHITE LINE FOR 15mm KNOB	1	***530036***
BAL KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
START SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
STOP SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,DUAL AUDIO TAPER, 4000 SERIES	1	***540012***
AIR LED	RECTANGULAR RED LED	1	***600004***
STEREO/START SWITCH LED	RED LED FOR R5 ON/OFF SWITCH	2	***600027***
LT/RT/STOP SWITCH LED	YELLOW LED FOR R5 ON/OFF SWITCH	3	***600031***
MONO LED	HIGH INTENSITY GREEN LED	1	***600072***
PCB_IPS6000	PRINTED CIRCUIT BOARD	1	***700049***
PCB_SW2 700	PRINTED CIRCUIT BOARD	1	***700688***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	2	***823082***

SL-7000BN (w/EQ) STEREO LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
SL-7000 MAIN PCB	LOADED CARD	1	***001483***
	Dual Switch Barrier/Bracket D-series Veetronix	1	***003689***
SL-7000BN	FACEPLATE	1	***003822***
PCB_SL6000: CT2, CT6-CT8 PCB_SW2 700: CT1, CT2	6 PIN .098" PLUG FOR #26 AWG	6	***230031***
CT10	9 PIN .098" PLUG FOR #26 AWG	1	***230032***
U1-U4, U6	8 PIN .3" DIP SMT SOCKET	5	***245001***
U5	16 PIN .3" DIP SMT SOCKET	1	***245003***
CT1	8 PIN DIP CONNECTOR	2	***250010***
CT1, CT3	15 POSITION FLEX STRIP	2	***250055***
PCB_SW2 700: CT1, CT2	6 PIN .098" HEADER	2	***250065***
U1-U4, U6	TL072 DUAL BIFET OP-AMP	5	***320006***
Z1, Z2	5.1V SMT ZENER DIODE C5V1	2	***355002***
U5	74VHC4053	1	***380008***
C30, C32, C45, C46, C48-C51, C53, C54	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	10	***405003***
C31, C34, C36-C38, C40, C42, C44, C47, C52	CAPACITOR, 10pF 100V CERAMIC SMT	10	***415001***
C29, C33, C35, C39, C41, C43	CAPACITOR, .1µF 50V CERAMIC SMT	6	***415007***
C1, C2, C5, C6, C15, C16, C19, C20	CAPACITOR, .22µF 50V CERAMIC SMT	8	***415009***
C12, C13, C26, C27	CAPACITOR, 390pF 50V FILM SMT	4	***425001***
C8, C9, C11, C14, C22, C23, C25, C28	CAPACITOR, 3900pF 50V FILM SMT	8	***425004***
C3, C4, C7, C10, C17, C18, C21, C24	CAPACITOR, .039µF 50V FILM SMT	8	***425006***
PCB_SW2 700: R1, R2	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
R6, R8, R11-R14, R17, R18, R23, R24, R30, R31	1.00 KOHM 1% .25W MC1206 RESISTOR	12	***435015***
R3	1.30 KOHM 1% .25W MC1206 RESISTOR	1	***435016***
R33, R35, R40, R42	2.00 KOHM 1% .25W MC1206 RESISTOR	4	***435018***
R36, R37	2.43 KOHM 1% .25W MC1206 RESISTOR	2	***435020***
R1	3.32 KOHM 1% .25W MC1206 RESISTOR	1	***435021***
R32, R34, R38, R39, R41, R43	4.99 KOHM 1% .25W MC1206 RESISTOR	6	***435023***
R2, R4, R5, R20, R21	10.0 KOHM 1% .25W MC1206 RESISTOR	5	***435028***
R7, R9, R10, R15, R16, R19, R22, R25-R29	221 KOHM 1% .25W MC1206 RESISTOR	12	***435046***
BAL POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	1	***500023***
HIGH/MID/LOW POT	10KΩ DUAL CONDUCTIVE PLASTIC, BOURNS, WITH DETENT	3	***500056***
SEND POT	388 SERIES DUAL 10K AUDIO CONCENTRIC W/LONG SHAFT	1	***500062***
SW1	2 POLE PUSHBUTTON SWITCH, ALTERNATE ACTION	1	***510051***
SW2-SW4	4 POLE PUSHBUTTON SWITCH, ALTERNATE ACTION	3	***510085***
A/AUD SWITCH LED	PUSHBUTTON SWITCH GREEN LED/ NO CAP	2	***510094***
ON/PGM/CUE SWITCH LED	PUSHBUTTON SWITCH RED LED/ NO CAP	3	***510095***

SL-7000BN (w/EQ) STEREO LINE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
AUX/UTL/SOLO SWITCH CAP	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	3	***510096***
START/STOP SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	BLACK FADER KNOB, 11mm FOR 3000 SERIES FADER	1	***520001***
BAL KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	1	***520022***
SEND KNOB	CONCENTRIC OUTER COLLET KNOB FOR 1/2" POT	1	***520036***
SEND KNOB	CONCENTRIC INNER COLLET KNOB FOR 1/2" POT	1	***520037***
HIGH/MID/LOW KNOB	1/8" COLLET KNOB, NO POINTER, NO LINE	3	***520053***
CUE SWITCH CAP	RED SWITCH CAP	1	***530003***
A/ON/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	6	***530004***
SOLO SWITCH CAP	YELLOW SWITCH CAP	1	***530005***
SEND KNOB CAP	11mm BLACK CAP W/WHITE LINE FOR 15mm KNOB	1	***530036***
HIGH/MID/LOW KNOB CAP	11mm GRAY/99 CAP W/ WHITE LINE FOR 15MM KNOB	3	***530040***
BAL KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
START SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
STOP SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,DUAL AUDIO TAPER, 4000 SERIES	1	***540012***
EQ IN LED	HIGH INTENSITY GREEN LED	1	***600072***
AIR LED	RECTANGULAR RED LED	1	***600004***
PCB_EQ/S/IPS6000	PRINTED CIRCUIT BOARD	1	***700169***
PCB_EQ/S6000S	PRINTED CIRCUIT BOARD SMT	1	***700341***
PCB_SW2 700	PRINTED CIRCUIT BOARD	1	***700688***
	4-40 X .625 RND NYLON	1	***823013***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	2	***823082***

SL-7000 MAIN PCB PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
U1, U2, U9, U19, U22-U25, U28, U29, U31, U32, U46-U49, U53-U56, U58-U60	8 PIN .3" DIP SMT SOCKET	23	***245001***
U4, U5, U7, U9-U18, U26, U27, U30, U41, U51	14 PIN .3" DIP SMT SOCKET	18	***245002***
U3, U8, U20, U21, U33-U40, U42-U45, U52, U57	16 PIN .3" DIP SMT SOCKET	18	***245003***
U6	20 PIN .3" DIP SMT SOCKET	1	***245004***
CT1, CT3	5 PIN .1" STRAIGHT HEADER	6	***250023***
CT4, CT5, CT9	3 PIN .098" HEADER	3	***250062***
CT2, CT7-CT9	6 PIN .098" HEADER	4	***250065***
CT10	9 PIN .098" HEADER	1	***250066***
U4, U26, U27, U41,	74HC00	6	***300012***
U16, U17, U30, U51	74HC02	4	***300013***
U7, U10	74HC30	2	***300028***
U11, U14, U18	74HC32	3	***300029***
U12	74LS37	1	***300050***
U5, U9	74HC14	2	***300053***
U6	GAL16V8 PAL	1	***310026***
U8	GAL20V8 PAL	1	***310027***
U46-U48, U54	2142 BALANCED LINE DRIVER IC	4	***320004***
U1, U2, U19, U22-U25, U28, U29, U31, U32, U49	NE5532 DUAL OP-AMP	12	***320008***
U53, U55, U56, U58-U60	2143 BALANCED LINE RECEIVER IC	6	***320012***
U50	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
U42, U52, U57	PS2502-4 QUAD OPTO COUPLER (PS25-2 DUAL)	3	***340019***
Q3, Q10, Q12, Q13	MMBTA05 NPN SMT TRANSISTOR	4	***345001***
Q1, Q2, Q4-Q9, Q11	MMBTA55 PNP SMT TRANSISTOR	9	***345002***
D1-D3	1N4002W RECTIFYING 1AMP SMT DIODE	3	***355001***
Z1, Z2	5.1V SMT ZENER DIODE C5V1	2	***355002***
D4, D5	1N4148 FAST SWITCHING SMT DIODE	2	***355003***
U20, U21, U33-U40, U43-U45	14053BCP	13	***380003***
U3	74VHC4053	1	***380008***
C47	CAPACITOR, 22µF 25V ELECTROLYTIC	1	***400017***
C8, C53-C56, C78, C84, C85, C89, C90, C113	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	11	***405002***
C1, C13, C14, C49, C50, C58, C74, C91, C103, C104, C112, C115, C116	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	13	***405003***
C76-C80, C108-C110	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	7	***405004***
C28, C29, C31-C42, C44, C45	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	16	***405005***
C59	TRIMMER CAPACITOR	1	***410001***
C2, C3, C5, C6, C15, C30, C52, C57, C60, C64, C65, C67, C73, C75, C83, C87, C88, C92, C96	CAPACITOR, 10pF 100V CERAMIC SMT	19	***415001***
C97, C100, C123, C124	CAPACITOR, 10pF 100V CERAMIC SMT	4	***415001***

SL-7000 MAIN PCB PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
C72, C105, C118-C120, C153-C155	CAPACITOR, 68pF 100V CERAMIC SMT	9	***415003***
C144-C151	CAPACITOR, .001µF 50V CERAMIC SMT	8	***415005***
C4, C7, C9-C12, C16-C27, C43, C46, C51, C61-C63, C66, C68-C71, C81, C82, C86	CAPACITOR, .1µF 50V CERAMIC SMT	32	***415007***
C93-C95, C98, C99, C101, C102, C106, C107, C111, C114, C117, C121, C122, C125-C143	CAPACITOR, .1µF 50V CERAMIC SMT	33	***415007***
C48	CAPACITOR, .22µF 50V CERAMIC SMT	1	***415009***
R16, R103, R107, R110, R204, R205	10 OHM 5% .25W MC1206 RESISTOR	6	***435002***
R11, R60, R63, R66, R69, R93, R99, R195	100 OHM 5% .25W MC1206 RESISTOR	8	***435007***
R13, R25-R38, R40-R54, R64, R108, R109, R120, R219	220 OHM 5% .25W MC1206 RESISTOR	35	***435009***
R220-R225	475 OHM 1% .25W MC1206 RESISTOR	6	***435011***
R75-R88, R91, R92, R100, R104, R105, R111	1.00 KOHM 1% .25W MC1206 RESISTOR	20	***435015***
R196, R197	2.43 KOHM 1% .25W MC1206 RESISTOR	2	***435020***
R9, R10, R12, R17, R59, R61, R62, R65, R67, R68	3.32 KOHM 1% .25W MC1206 RESISTOR	10	***435021***
R23, R24	3.92 KOHM 1% .25W MC1206 RESISTOR	2	***435022***
R1, R2, R5, R8, R14, R15, R21, R39, R55-R57, R96, R163-R167, R179-R182, R198-R203, R216	4.99 KOHM 1% .25W MC1206 RESISTOR	28	***435023***
R217, R218	4.99 KOHM 1% .25W MC1206 RESISTOR	2	***435023***
R121, R122	9.09 KOHM 1% .25W MC1206 RESISTOR	2	***435027***
R4, R18, R58, R70-R73, R89, R90, R94, R95, R101, R102, R106, R112-R116, R123-R126	10.0 KOHM 1% .25W MC1206 RESISTOR	23	***435028***
R128-R130, R132-R158, R170-R177, R184, R185, R187-R194, R206-R215	10.0 KOHM 1% .25W MC1206 RESISTOR	58	***435028***
R19, R20, R22, R74	11.0 KOHM 1% .25W MC1206 RESISTOR	4	***435029***
R117, R118, R160, R161, R183	22.1 KOHM 1% .25W MC1206 RESISTOR	5	***435036***
R168, R169	33.2 KOHM 1% .25W MC1206 RESISTOR	2	***435038***
R3, R6, R7	40.2 KOHM 1% .25W MC1206 RESISTOR	3	***435039***
R97, R98, R119, R127, R159, R162, R186	88.7 KOHM 1% .25W MC1206 RESISTOR	7	***435043***
R131, R178	1.0 MOHM 5% .25W MC1206 RESISTOR	2	***435049***
CR2-CR5	50K 15 TURN TRIM POT	4	***500015***
CR1	1K 15 TURN TRIM POT	1	***500025***
SW3, SW9	4 POSITION SMT DIP SWITCH, TAPE SEALED	2	***515001***
SW17	7 POSITION SMT DIP SWITCH, TAPE SEALED	1	***515002***
SW1, SW2, SW4-SW8, SW10-SW16, SW18-SW26	DPDT SMT SLIDE SWITCH	23	***515003***
PCB_SL6000SF	PRINTED CIRCUIT BOARD SMT	1	***700242***
	PEM FASTENERS	4	***821009***
U50	HEATSINK FOR T-220 WITH MOUNTING PIN	1	***825010***
F1-F3	FUSE/ POLYSWITCH .3AMP SMT RESETABLE	3	***835001***

OM-7000/A OUTPUT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	SHIELD	1	***001389***
	SHIELD	1	***001390***
	SHIELD	2	***001391***
OM-7000/A	FACEPLATE	1	***003825***
U1 (PCB_OMSW6000)	14 PIN DIP SOCKET	1	***240003***
U10	16 PIN DIP SOCKET	1	***240004***
U1-U9, U11-U47, CT1	8 PIN DIP SOCKET	47	***240009***
CT1 (PCB_OMSW6000)	8 PIN DIP CONNECTOR	2	***250010***
U15, U19, U24, U34-U43, U45	2142 BALANCED LINE DRIVER IC	14	***320004***
U4--U9, U13, U16, U17, U21, U22, U26-U33	NE5532 DUAL OP-AMP	19	***320008***
U1-U3, U11, U12, U14, U18, U20, U23, U25, U44, U46, U47	2143 BALANCED LINE RECEIVER IC	13	***320012***
Q2	78L05 POSITIVE 5V REGULATOR	1	***330006***
Q1	79L05 NEGATIVE 5V REGULATOR	1	***330010***
Q1 (PCB_OMSW6000)	LM2931 5V LOW DROP OUT VOLTAGE LOW POWER REGULATOR	1	***330018***
Q2, Q3 (PCB_OMSW6000)	2N3903 TRANSISTOR NPN	2	***340005***
D1-D3 (PCB_OMSW6000)	1N914 DIODE	3	***350008***
U1 (PCB_OMSW6000)	4013	1	***380001***
U10	14053BCP	1	***380003***
C15, C32, C36-C39, C50, C51, C53, C57, C77, C78, C80, C99, C107, C126	CAPACITOR, 100µF 25V ELECTROLYTIC	16	***400009***
C1, C8, C14, C16, C17, C28, C30, C31, C47 C1, C4-C6 (PCB_OMSW6000)	CAPACITOR, 22µF 25V ELECTROLYTIC	13	***400017***
C5, C6, C9, C10, C12, C13, C22, C25, C29, C33-C35, C41, C44-C46, C48, C49, C54, C55	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	20	***410005***
C58-C60, C62, C65, C69-C73, C82, C85, C89-C91, C97, C98, C100-C106, C108-C115	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	32	***410005***
C123-C125, C127 C2, C3, C7, C8 (PCB_OMSW6000)	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	8	***410005***
C2-C4, C7, C11, C18-C21, C23, C24, C26, C27, C40, C42, C43, C52, C56, C61, C63, C64, C66	CAPACITOR, 10pF 50V CERAMIC	22	***410007***
C79, C81, C83, C84, C86, C96	CAPACITOR, 10pF 50V CERAMIC	6	***410007***
C67, C68, C74-C76, C87, C88, C92-C95, C116-C122	CAPACITOR, 33pF 50V CERAMIC	18	***410012***
R27, R30, R33, R36, R53, R56, R59, R62	5.49 KOHM 1% .25W METAL FILM RESISTOR	8	***430140***
R1, R2, R4, R6, R8, R10-R12	6.19 KOHM 1% .25W METAL FILM RESISTOR	8	***430143***
R3, R5, R7, R9, R13-R15, R39-R44, R49, R50, R63-R65, R69-R73, R75, R79-R85	10.0 KOHM 1% .25W METAL FILM RESISTOR	31	***430153***
R16-R19, R26, R29, R32, R35, R45-R48, R52, R55, R58, R61, R68, R74	11.0 KOHM 1% .25W METAL FILM RESISTOR	18	***430155***
R20-R23, R25, R28, R31, R34, R51, R54, R57, R60, R66, R67	22.1 KOHM 1% .25W METAL FILM RESISTOR	14	***430171***
R37, R38, R76-R78	3.3 OHM 5% .25W CARBON FILM RESISTOR	5	***430206***
R1, R3, R11, R13 (PCB_OMSW6000)	100 OHM 5% .25W CARBON FILM RESISTOR	4	***430212***
R14, R15 (PCB_OMSW6000)	220 OHM 5% .25W CARBON FILM RESISTOR	2	***430214***
R6, R7 (PCB_OMSW6000)	4.7 KOHM 5% .25W CARBON FILM RESISTOR	2	***430233***
R2, R4, R5, R8-R10, R12 (PCB_OMSW6000)	10 KOHM 5% .25W CARBON FILM RESISTOR	7	***430239***

OM-7000/A OUTPUT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
R24	47 KOHM 5% .25W CARBON FILM RESISTOR	1	***430249***
CR1-CR8	10K 15 TURN TRIM POT	8	***500014***
PGM SWITCH	PUSHBUTTON SWITCH W. RED LED	1	***510038***
AUX SWITCH	PUSHBUTTON SWITCH W. YELLOW LED	1	***510039***
SW1-SW3	DPDT SLIDE SWITCH	3	***510082***
PGM/AUX SWITCH CAP	WHITE SWITCH CAP	2	***530004***
PCB_OMSW6000	PRINTED CIRCUIT BOARD	1	***700141***
PCB_OM/1_6000	PRINTED CIRCUIT BOARD	1	***700142***
	PEM FASTENERS	4	***821009***
	4-40 X .20 HEX BRASS M/F SPACER	3	***823025***

OM-7000/B OUTPUT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	SHIELD	1	***001389***
	SHIELD	1	***001390***
	SHIELD	2	***001391***
OM-7000/B	FACEPLATE	1	***003826***
U1 (PCB_OMSW6000)	14 PIN DIP SOCKET	1	***240003***
U10	16 PIN DIP SOCKET	1	***240004***
U1-U9, U11-U47, CT1	8 PIN DIP SOCKET	47	***240009***
CT1 (PCB_OMSW6000)	8 PIN DIP CONNECTOR	2	***250010***
U15, U19, U24, U34-U43, U45	2142 BALANCED LINE DRIVER IC	14	***320004***
U4--U9, U13, U16, U17, U21, U22, U26-U33	NE5532 DUAL OP-AMP	19	***320008***
U1-U3, U11, U12, U14, U18, U20, U23, U25, U44, U46, U47	2143 BALANCED LINE RECEIVER IC	13	***320012***
Q2	78L05 POSITIVE 5V REGULATOR	1	***330006***
Q1	79L05 NEGATIVE 5V REGULATOR	1	***330010***
Q1 (PCB_OMSW6000)	LM2931 5V LOW DROP OUT VOLTAGE LOW POWER REGULATOR	1	***330018***
Q2, Q3 (PCB_OMSW6000)	2N3903 TRANSISTOR NPN	2	***340005***
D1-D3 (PCB_OMSW6000)	1N914 DIODE	3	***350008***
U1 (PCB_OMSW6000)	4013	1	***380001***
U10	14053BCP	1	***380003***
C15, C32, C36-C39, C50, C51, C53, C57, C77, C78, C80, C99, C107, C126	CAPACITOR, 100µF 25V ELECTROLYTIC	16	***400009***
C1, C8, C14, C16, C17, C28, C30, C31, C47 C1, C4-C6 (PCB_OMSW6000)	CAPACITOR, 22µF 25V ELECTROLYTIC	13	***400017***
C5, C6, C9, C10, C12, C13, C22, C25, C29, C33-C35, C41, C44-C46, C48, C49, C54, C55	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	20	***410005***
C58-C60, C62, C65, C69-C73, C82, C85, C89-C91, C97, C98, C100-C106, C108-C115	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	32	***410005***
C123-C125, C127 C2, C3, C7, C8 (PCB_OMSW6000)	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	8	***410005***
C2-C4, C7, C11, C18-C21, C23, C24, C26, C27, C40, C42, C43, C52, C56, C61, C63, C64, C66	CAPACITOR, 10pF 50V CERAMIC	22	***410007***
C79, C81, C83, C84, C86, C96	CAPACITOR, 10pF 50V CERAMIC	6	***410007***
C67, C68, C74-C76, C87, C88, C92-C95, C116-C122	CAPACITOR, 33pF 50V CERAMIC	18	***410012***
R27, R30, R33, R36, R53, R56, R59, R62	5.49 KOHM 1% .25W METAL FILM RESISTOR	8	***430140***
R1, R2, R4, R6, R8, R10-R12	6.19 KOHM 1% .25W METAL FILM RESISTOR	8	***430143***
R3, R5, R7, R9, R13-R15, R39-R44, R49, R50, R63-R65, R69-R73, R75, R79-R85	10.0 KOHM 1% .25W METAL FILM RESISTOR	31	***430153***
R16-R19, R26, R29, R32, R35, R45-R48, R52, R55, R58, R61, R68, R74	11.0 KOHM 1% .25W METAL FILM RESISTOR	18	***430155***
R20-R23, R25, R28, R31, R34, R51, R54, R57, R60, R66, R67	22.1 KOHM 1% .25W METAL FILM RESISTOR	14	***430171***
R37, R38, R76-R78	3.3 OHM 5% .25W CARBON FILM RESISTOR	5	***430206***
R1, R3, R11, R13 (PCB_OMSW6000)	100 OHM 5% .25W CARBON FILM RESISTOR	4	***430212***
R14, R15 (PCB_OMSW6000)	220 OHM 5% .25W CARBON FILM RESISTOR	2	***430214***
R6, R7 (PCB_OMSW6000)	4.7 KOHM 5% .25W CARBON FILM RESISTOR	2	***430233***
R2, R4, R5, R8-R10, R12 (PCB_OMSW6000)	10 KOHM 5% .25W CARBON FILM RESISTOR	7	***430239***

OM-7000/B OUTPUT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
R24	47 KOHM 5% .25W CARBON FILM RESISTOR	1	***430249***
CR1-CR8	10K 15 TURN TRIM POT	8	***500014***
AUD SWITCH	PUSHBUTTON SWITCH W. RED LED	1	***510038***
UTL SWITCH	PUSHBUTTON SWITCH W. YELLOW LED	1	***510039***
SW1-SW3	DPDT SLIDE SWITCH	3	***510082***
AUD/UTL SWITCH CAP	WHITE SWITCH CAP	2	***530004***
PCB_OMSW6000	PRINTED CIRCUIT BOARD	1	***700141***
PCB_OM/2_6000	PRINTED CIRCUIT BOARD	1	***700171***
	PEM FASTENERS	4	***821009***
	4-40 X .20 HEX BRASS M/F SPACER	3	***823025***

CR-7000 CONTROL ROOM MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
SS-6000	LOADED CARD	1	***001902***
	Single Switch Barrier/Bracket D-series Veetronix	2	***003688***
CR-7000	FACEPLATE	1	***003828***
PCB_CR6000: CT1, CT2, CT8-CT12 PCB_SW1 700: CT1	6 PIN .098" PLUG FOR #26 AWG	9	***230031***
U22-U24, U31-U36, U38-U41, U45-U50, U52, U53	8 PIN .3" DIP SMT SOCKET	21	***245001***
U1-U21, U30	14 PIN .3" DIP SMT SOCKET	22	***245002***
U25-U29, U51	16 PIN .3" DIP SMT SOCKET	6	***245003***
CT3, CT5-CT7	5 PIN .1" STRAIGHT HEADER	12	***250023***
CT3, CT5-CT7	26 PIN PLUG	4	***250043***
CT4, CT17	26 PIN PC MOUNT STRAIGHT HEADER	2	***250044***
PCB_CR6000: CT14 PCB_SS_6000: CT2	40 PIN RIBBON PLUG	2	***250053***
CT15	10 PIN RIGHT ANGLE HEADER W. EJECTOR TABS	1	***250054***
CT1-CT4 (PCB_SPS6000)	15 POSITION FLEX STRIP	4	***250055***
CT14	40 PIN BOXED HEADER, STRAIGHT	1	***250056***
CT13, CT18	3 PIN .098" HEADER	2	***250062***
CT1, CT2, CT8-CT12	6 PIN .098" HEADER	7	***250065***
CT1 (PCB_SW1 700)	6 PIN .098" HEADER	2	***250065***
U5, U7, U12, U16, U18	74HC02	5	***300013***
U10, U13	74HC30	2	***300028***
U3, U4, U8, U9, U14, U15, U19, U20	74HC74	8	***300035***
U1, U21, U30	74LS74	3	***300046***
U2	74LS37	1	***300050***
U6, U11, U17	74HC14	3	***300053***
U45-U50, U52, U53	2142 BALANCED LINE DRIVER IC	8	***320004***
U37, U42-U44	LM675 POWER OP AMP	4	***320007***
U22-U24, U31-U36, U40, U41	NE5532 DUAL OP-AMP	11	***320008***
U38, U39	2143 BALANCED LINE RECEIVER IC	2	***320012***
Q5	PQ05SZ1 5V 1A REGULATOR SMT T/R	1	***335001***
U51	LH1522AB DUAL FET OPTO COUPLER 10Ω ON RESISTANCE (SOLID STATE RELAY)	2	***340020***
Q1-Q3, Q6, Q7, Q10-Q13	MMBTA05 NPN SMT TRANSISTOR	9	***345001***
Q4, Q8, Q9	MMBTA55 PNP SMT TRANSISTOR	3	***345002***
D2	1N4002W RECTIFYING 1AMP SMT DIODE	1	***355001***
Z1, Z2	5.1V SMT ZENER DIODE C5V1	2	***355002***
D1, D3-D19	1N4148 FAST SWITCHING SMT DIODE	18	***355003***
U25-U29	74VHC4053	5	***380008***
C3, C5, C6, C8, C38, C41, C75, C76, C86, C87, C88	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	13	***405002***

CR-7000 CONTROL ROOM MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
C7, C35, C37, C42, C57, C66, C67, C77, C93, C124, C126, C130, C140, C141, C149, C153	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	16	***405003***
C95, C115, C131, C163	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	4	***405004***
C1, C2, C15-C17, C20, C43-C46, C48-C56, C71, C72, C78, C80, C116, C123, C133, C134, C137	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	28	***405005***
C146, C147, C167	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	3	***405005***
C4, C34, C36, C40, C68, C69, C81, C84, C90, C97, C98, C100, C101, C1O4, C108, C109	CAPACITOR, 10pF 100V CERAMIC SMT	16	***415001***
C91, C105, C111, C113, C127, C129, C132, C135, C136, C144	CAPACITOR, 33pF 100V CERAMIC SMT	10	***415002***
C138, C148, C150, C152, C154, C156, C157, C160, C168, C169, C171, C172, C174-C177	CAPACITOR, 68pF 100V CERAMIC SMT	16	***415003***
C119, C120, C145, C166	CAPACITOR, 330pF 100V CERAMIC SMT	4	***415004***
C47	CAPACITOR, .001µF 50V CERAMIC SMT	1	***415005***
C9-C14, C18, C19, C21-C33, C39, C70, C73, C74, C79, C82, C83, C85, C89, C92, C94, C96	CAPACITOR, .1µF 50V CERAMIC SMT	33	***415007***
C99, C102, C106, C107, C110, C112, C114, C117, C118, C121, C122, C125, C128, C139	CAPACITOR, .1µF 50V CERAMIC SMT	14	***415007***
C142, C143, C151, C155, C158, C159, C161, C164, C165, C170, C173	CAPACITOR, .1µF 50V CERAMIC SMT	11	***415007***
C62-C65	CAPACITOR, .22µF 50V CERAMIC SMT	4	***415009***
C58-C61	CAPACITOR, .022µF 50V FILM SMT	4	***425005***
R172, R173, R175, C176, R181, R182, R195, R196	3.3 OHM 5% .25W MC1206 RESISTOR	8	***435001***
R99, R108, R153, R168, R169, R199, R200	10 OHM 5% .25W MC1206 RESISTOR	7	***435002***
R2, R12-R14, R23-R48, R52-R63, R102, R107, R183, R185, R187, R189	220 OHM 5% .25W MC1206 RESISTOR	48	***435009***
R1 (PCB_SW1 700)	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
R1, R6-R11, R21, R22, R49-R51, R64-R71, R103, R104, R154, R157, R197, R203	1.00 KOHM 1% .25W MC1206 RESISTOR	26	***435015***
R80-R83, R132, R135	1.30 KOHM 1% .25W MC1206 RESISTOR	6	***435016***
R92, R96, R109, R112, R115, R118, R121, R124, R125, R128, R136, R139	2.00 KOHM 1% .25W MC1206 RESISTOR	12	***435018***
R73, R77, R101, R106	2.43 KOHM 1% .25W MC1206 RESISTOR	4	***435020***
R86, R87, R149-R152, R160-R167, R184, R186, R188, R190-R194	3.92 KOHM 1% .25W MC1206 RESISTOR	22	***435022***
R5, R72, R74-R76, R78, R79, R89, R90, R91, R95, R110, R111, R113, R116, R117, R119, R122	4.99 KOHM 1% .25W MC1206 RESISTOR	18	***435023***
R123, R126, R127, R133, R134, R137, R138, R140, R141, R145, R146	4.99 KOHM 1% .25W MC1206 RESISTOR	11	***435023***
R3, R16, R17, R19, R20, R85, R88, R93, R94, R97, R98, R100, R105, R114, R120, R129, R130	10.0 KOHM 1% .25W MC1206 RESISTOR	17	***435028***
R142, R143	10.0 KOHM 1% .25W MC1206 RESISTOR	2	***435028***
R147, R148, R158, R159	11.0 KOHM 1% .25W MC1206 RESISTOR	4	***435029***
R4, R15, R18, R84, R155, R156, R170, R171, R174, R177, R178-R180, R198, R201, R202	40.2 KOHM 1% .25W MC1206 RESISTOR	16	***435039***
R131, R144	1.0 MOHM 5% .25W MC1206 RESISTOR	2	***435049***
HIGH/LOW POT	DUAL 10K LINEAR POT, 1/8" SHAFT WITH DETENT	2	***500023***
HDPN/CR POT	ROTARY POTENTIOMETER W/15MM SHAFT	2	***500024***
CUE POT	10K DUAL AUDIO POT W/ 1/8" SHAFT	1	***500026***
1/MXMA/MXMB/MXMC/MXMD/AUD SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	6	***510094***
MODE/S1/S2/PGM/EQ IN SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	5	***510095***
2-4/M1/M2/AUX/UTL/REV SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	8	***510096***

CR-7000 CONTROL ROOM MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
ON SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
SW2	4 POSITION SMT DIP SWITCH, TAPE SEALED	1	***515001***
SW1	7 POSITION SMT DIP SWITCH, TAPE SEALED	1	***515002***
SW3-SW5	DPDT SMT SLIDE SWITCH	3	***515003***
CUE/HIGH/LOW KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	3	***520022***
HDPN/CR KNOB	21mm GRAY COLLET KNOB FOR 6mm SHAFT	2	***520023***
MXMA/MXMB/MXMC/MXMD SWITCH CAP	GREEN SWITCH CAP	4	***530001***
MODE/EQ IN SWITCH CAP	RED SWITCH CAP	2	***530003***
1-4/S1/S2/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	10	***530004***
M1/M2/REV SWITCH CAP	YELLOW SWITCH CAP	3	***530005***
HDPN/CR KNOB CAP	GRAY CAP W/BLACK LINE FOR 21mm COLLET KNOB	2	***530035***
CUE KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
HIGH/LOW KNOB CAP	11mm BLUE CAP W/WHITE LINE FOR 15mm KNOB	2	***530045***
ON SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	2	***530097***
STEREO/ON LED	RED LED FOR R5 ON/OFF SWITCH	3	***600027***
LT/RT LED	YELLOW LED FOR R5 ON/OFF SWITCH	2	***600031***
MONO LED	HIGH INTENSITY GREEN LED	1	***600072***
PCB_SPS6000	PRINTED CIRCUIT BOARD	1	***700182***
PCB_CR6000S	PRINTED CIRCUIT BOARD SMT	1	***700255***
PCB_SW1 700	PRINTED CIRCUIT BOARD	2	***700689***
	PEM FASTENERS	4	***821009***
	4-40 X .625 RND NYLON	6	***823013***
	4-40 X .375 HEX BRASS M/F SPACER	5	***823034***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	4	***823082***
U37, U42-U44	HEATSINK FOR T-220 WITHOUT MOUNTING PIN	4	***825004***
F1-F3, F13	FUSE/ POLYSWITCH .17 AMP RESETABLE	4	***830043***
F4-F12	FUSE/ POLYSWITCH .3AMP SMT RESETABLE	9	***835001***

SC-7000 STUDIO CONTROL MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
SS-6000	LOADED CARD	1	***001902***
	Single Switch Barrier/Bracket D-series Veetronix	2	***003688***
SC-7000	FACEPLATE	1	***003831***
CT5	3 PIN .098" PLUG FOR #26 AWG	1	***230028***
CT6, CT7 (PCB_SC6000) CT1 (PCB_SW1-700)	6 PIN .098" PLUG FOR #26 AWG	4	***230031***
U2, U3	14 PIN DIP SOCKET	2	***240003***
U1, U7, U10-U14, U20	16 PIN DIP SOCKET	8	***240004***
U4	18 PIN DIP SOCKET	1	***240005***
U5	24 PIN IC SOCKET .6 CENTERS	1	***240006***
U6, U8, U9, U15-19, U21-U30	8 PIN DIP SOCKET	18	***240009***
CT1-CT4	5 PIN .1" STRAIGHT HEADER	12	***250023***
CT8, CT10 (PCB_SC6000) CT1,CT3 (PCB_SS6000)	26 PIN PLUG	4	***250043***
CT8, CT10	26 PIN PC MOUNT STRAIGHT HEADER	2	***250044***
CT9 (PCB_SC6000) CT2 (PCB_SS6000)	40 PIN RIBBON PLUG	2	***250053***
CT1-CT4 (PCB_SS6000)	15 POSITION FLEX STRIP	4	***250055***
CT9	40 PIN BOXED HEADER, STRAIGHT	1	***250056***
CT5	3 PIN .098" HEADER	1	***250062***
CT6, CT7 (PCB_SC6000) CT1 (PCB_SW1-700)	6 PIN .098" HEADER	4	***250065***
U4	74C922	1	***300010***
U2, U3	74LS37	2	***300050***
U5	74LS154	1	***300051***
U22-U30	2142 BALANCED LINE DRIVER IC	9	***320004***
U8, U9, U15-U19, U21	NE5532 DUAL OP-AMP	8	***320008***
Q17	78L05 POSITIVE 5V REGULATOR	1	***330006***
Q18	79L05 NEGATIVE 5V REGULATOR	1	***330010***
Q23	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
Q19, Q20	2N3903 TRANSISTOR NPN	2	***340005***
Q1-Q16	2N3906 TRANSISTOR PNP	16	***340006***
D1-D10	1N914 DIODE	10	***350008***
U7, U10-U14, U20	14053BCP	7	***380003***
U1	4022	1	***380007***
C10, C26, C32-C34, C37, C44-C46, C48, C67-C71, C73, C77, C79, C89, C90, C93	CAPACITOR, 100µF 25V ELECTROLYTIC	21	***400009***
C9	CAPACITOR, 1µF 35V TANTALUM ORANGE	1	***400014***
C1, C5, C15, C18-C20, C31	CAPACITOR, 22µF 25V ELECTROLYTIC	8	***400017***
C2-C4, C7, C8, C14, C16, C17, C21-C23, C27, C28, C35, C36, C38-C43, C47, C49-C53, C56	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	28	***410005***
C59, C64, C75, C76, C78, C80-C88, C91, C92, C94, C95	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	18	***410005***

SC-7000 STUDIO CONTROL MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
C12, C13, C24, C25, C29, C30, C54, C55, C57, C58, C60-C63, C65, C66, C72, C74	CAPACITOR, 10pF 50V CERAMIC	18	***410007***
RN5, RN7, RN9, RN13	10K OHM 8 PIN ISOLATED SIP PACKAGE	4	***430004***
RN1-RN4, RN6, RN8, RN10-RN12, RN14	3.9K OHM 8 PIN ISOLATED SIP PACKAGE	10	***430012***
R49-R52	2.67 KOHM 1% .25W METAL FILM RESISTOR	4	***430122***
R4, R6, R14, R16, R18, R20, R22-R24, R28, R29, R32, R33, R36, R37, R40, R43-R48, R54	10.0 KOHM 1% .25W METAL FILM RESISTOR	23	***430153***
R55	10.0 KOHM 1% .25W METAL FILM RESISTOR	1	***430153***
R15, R17, R19, R21	15.0 KOHM 1% .25W METAL FILM RESISTOR	4	***430161***
R3	40.2 KOHM 1% .25W METAL FILM RESISTOR	1	***430180***
R56-R60	3.3 OHM 5% .25W CARBON FILM RESISTOR	5	***430206***
R35, R41	10 OHM 5% .25W CARBON FILM RESISTOR	2	***430207***
R25, R34, R38, R39, R42, R53	100 OHM 5% .25W CARBON FILM RESISTOR	6	***430212***
R1, R9-R13	220 OHM 5% .25W CARBON FILM RESISTOR	6	***430214***
RN5, RN13	330 OHM 5% .25W CARBON FILM RESISTOR	4	***430215***
R8	1.0 KOHM 5% .25W CARBON FILM RESISTOR	1	***430221***
R7	47 KOHM 5% .25W CARBON FILM RESISTOR	1	***430249***
R5, R26, R27, R30, R31	100 KOHM 5% .25W CARBON FILM RESISTOR	5	***430254***
R1 (PCB_SW1-700)	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
STUDIO POT	ROTARY POTENTIOMETER W/15MM SHAFT	2	***500024***
TALKBACK POT	10KΩ SINGLE AUDIO CONDUCTIVE PLASTIC, BOURNS	1	***500058***
1/MXMA/MXMB/MXMC/MXMD/AUD LED	PUSHBUTTON SWITCH W. GREEN LED	6	***510037***
MODE/S1/S2/PGM LED	PUSHBUTTON SWITCH W. RED LED	4	***510038***
2-4/M1/M2/AUX/UTL LED	PUSHBUTTON SWITCH W. YELLOW LED	7	***510039***
SW3, SW4	4 POSITION DIP SWITCH	2	***510047***
SW1, SW2	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
TALKBACK KNOB	15mm GREY COLLET KNOB FOR 1/8" SHAFT	1	***520022***
STUDIO KNOB	21mm GRAY COLLET KNOB FOR 6mm SHAFT	2	***520023***
MXMA/MXMB/MXMC/MXMD SWITCH CAP	GREEN SWITCH CAP	4	***530001***
MODE SWITCH CAP	RED SWITCH CAP	1	***530003***
1-4/S1/S2/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	10	***530004***
MONO1/MONO2 SWITCH CAP	YELLOW SWITCH CAP	2	***530005***
STUDIO KNOB CAP	GRAY CAP W/BLACK LINE FOR 21mm COLLET KNOB	2	***530035***
TALKBACK KNOB CAP	11mm BLUE/105 CAP W/BLACK LINE FOR 15mm KNOB	1	***530043***
TB1/TB2 SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	2	***530098***
STEREO LED	RED LED FOR R5 ON/OFF SWITCH	1	***600027***
LT/RT/TB1/TB2 LED	YELLOW LED FOR R5 ON/OFF SWITCH	4	***600031***
MONO LED	HIGH INTENSITY GREEN LED	1	***600072***

SC-7000 STUDIO CONTROL MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
PCB_MMS6000	PRINTED CIRCUIT BOARD	1	***700072***
PCB_SC6000	PRINTED CIRCUIT BOARD	1	***700168***
PCB_BPSA1000	PRINTED CIRCUIT BOARD	1	***700299***
PCB_SW1700	PRINTED CIRCUIT BOARD	2	***700689***
	4-40 X .625 RND NYLON	6	***823013***
	4-40 X .20 HEX BRASS M/F SPACER	5	***823025***
	440 X 3/16" HEX X 11/16" LONG S/Z MALE/FEMALE STANDOFF	4	***823082***
	HEATSINK FOR T-220 WITHOUT MOUNTING PIN	1	***825004***

SS-7000 SOURCE SELECT PARTS LIST (for CR & SC Modules)

ITEM#	DESCRIPTION	QTY	W#
U2, U5-U7, UU15-U21	8 PIN .3" DIP SMT SOCKET	11	***245001***
U1, U3, U4, U8-U14	16 PIN .3" DIP SMT SOCKET	10	***245003***
CT1, CT3	26 PIN PC MOUNT STRAIGHT HEADER	2	***250044***
CT2	40 PIN BOXED HEADER, STRAIGHT	1	***250056***
U2, U18, U19	NE5532 DUAL OP-AMP	3	***320008***
U5-U7, U15-U17, U20, U21	2143 BALANCED LINE RECEIVER IC	8	***320012***
Z1, Z2	5.1V SMT ZENER DIODE C5V1	2	***355002***
U1, U3, U4, U8-U14	74VHC4053	10	***380008***
C5, C9, C18-C34, C36-C40, C48, C51, C54	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	27	***405002***
C1-C4	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	4	***405003***
C7, C14, C45, C47, C52, C55	CAPACITOR, 10pF 100V CERAMIC SMT	6	***415001***
C6, C8, C10-C13, C15-C17, C35, C41-C44, C46, C49, C50, C53	CAPACITOR, .1µF 50V CERAMIC SMT	18	***415007***
R1-R16	100 OHM 5% .25W MC1206 RESISTOR	16	***435007***
R23, R24	2.43 KOHM 1% .25W MC1206 RESISTOR	2	***435020***
R25, R26, R31-R59	4.99 KOHM 1% .25W MC1206 RESISTOR	31	***435023***
R17, R18, R21, R22, R27-R30	10.0 KOHM 1% .25W MC1206 RESISTOR	8	***435028***
R19, R20	1.0 MOHM 5% .25W MC1206 RESISTOR	2	***435049***
PCB_SS6000	PRINTED CIRCUIT BOARD SMT	1	***700279***
F1, F2	FUSE/ POLYSWITCH .3AMP SMT RESETABLE	2	***835001***

MO-7000 METER OUTPUT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
MO-7000	FACEPLATE	2	***003827***
U6, U7	14 PIN DIP SOCKET	2	***240003***
U2, U5, U14-U19	16 PIN DIP SOCKET	8	***240004***
U1	18 PIN DIP SOCKET	1	***240005***
U8	6 PIN IC SOCKET	1	***240008***
U9-U13, U20-U23	8 PIN DIP SOCKET	9	***240009***
U3, U4	20 PIN DIP SOCKET	2	***250002***
CT1-CT4	5 PIN .1" STRAIGHT HEADER	12	***250023***
CT5	10 PIN RIGHT ANGLE HEADER W. EJECTOR TABS	1	***250054***
PCB_MMS6000: CT1-CT3 PCB_UTS6000: CT2	15 POSITION FLEX STRIP	4	***250055***
U1	74C922	1	***300010***
U6	74LS00	1	***300041***
U7	74LS74	1	***300046***
U3, U4	74LS240 TWO GROUPS OF FOUR TRISTATE BUFFERS	2	***300052***
U9-U13	TL072 DUAL BIFET OP-AMP	5	***320006***
U20-U23	2143 BALANCED LINE RECEIVER IC	4	***320012***
Q4	78L05 POSITIVE 5V REGULATOR	1	***330006***
Q5	79L05 NEGATIVE 5V REGULATOR	1	***330010***
Q6	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
U8	4N32 OPTO COUPLER DRLNGTN	1	***340000***
Q1-Q3	2N3903 TRANSISTOR NPN	3	***340005***
U2, U5	4051	2	***380002***
U14-U19	14053BCP	6	***380003***
C36, C38, C51, C53, C72, C75	CAPACITOR, 100µF 25V ELECTROLYTIC	6	***400009***
C14	CAPACITOR, 1µF 35V TANTALUM ORANGE	1	***400014***
C12, C15-C17, C35, C54-C71	CAPACITOR, 22µF 25V ELECTROLYTIC	23	***400017***
C1-C11, C13, C18, C19, C22, C25, C28, C31, C34, C37, C39-C50, C52, C73, C74, C76-C79	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	39	***410005***
C20, C21, C23, C24, C26, C27, C29, C30, C32, C33	CAPACITOR, 33pF 50V CERAMIC	10	***410012***
RN1, RN2	1K OHM 10 PIN BUSSED SIP PACKAGE	2	***430009***
R28, R31, R33, R35, R37, R39, R41, R43-R64	15.0 KOHM 1% .25W METAL FILM RESISTOR	29	***430161***
R68-R70	3.3 OHM 5% .25W CARBON FILM RESISTOR	3	***430206***
R81, R82	47 OHM 5% .25W CARBON FILM RESISTOR	2	***430210***
R22, R65, R66, R71-R80, R83-R86	100 OHM 5% .25W CARBON FILM RESISTOR	17	***430212***
R1, R3-R14, R21	220 OHM 5% .25W CARBON FILM RESISTOR	14	***430214***
R2	330 OHM 5% .25W CARBON FILM RESISTOR	1	***430215***
R27	470 OHM 5% .25W CARBON FILM RESISTOR	1	***430216***

MO-7000 METER OUTPUT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
R24	1.0 KOHM 5% .25W CARBON FILM RESISTOR	1	***430221***
R16, R19, R23	2.4 KOHM 5% .25W CARBON FILM RESISTOR	3	***430228***
R87-R94	3.9 KOHM 5% .25W CARBON FILM RESISTOR	8	***430232***
R29, R30, R32, R34, R36, R38, R40, R42	4.7 KOHM 5% .25W CARBON FILM RESISTOR	8	***430233***
R15, R17, R18, R20, R25, R26	10 KOHM 5% .25W CARBON FILM RESISTOR	6	***430239***
CR1-CR8	50K 15 TURN TRIM POT	8	***500015***
1/MXMA/MXMB/MXMC/MXMD SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	5	***510094***
S1/S2 SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	2	***510095***
SS/RESET/HOLD SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	3	***510095***
2/M1/M2/AUX/UTL SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	5	***510096***
AUTO SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	1	***510096***
MXMA/MXMB/MXMC/MXMD SWITCH CAP	GREEN SWITCH CAP	4	***530001***
HOLD SWITCH CAP	BLUE SWITCH CAP	1	***530002***
RESET SWITCH CAP	RED SWITCH CAP	1	***530003***
1/2/S1/S2/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	6	***530004***
S/S SWITCH CAP	WHITE SWITCH CAP	1	***530004***
M1/M2 SWITCH CAP	YELLOW SWITCH CAP	2	***530005***
AUTO SWITCH CAP	YELLOW SWITCH CAP	1	***530005***
CUE/SOLO LED	RECTANGULAR RED LED	1	***600004***
PCB_MMS6000	PRINTED CIRCUIT BOARD	1	***700072***
PCB_UTS6000	PRINTED CIRCUIT BOARD	1	***700129***
PCB_MO6000	PRINTED CIRCUIT BOARD	1	***700151***
	PEM FASTENERS	4	***821009***
	4-40 X .375 HEX BRASS M/F SPACER	9	***823034***
R67	FUSE/ POLYSWITCH 1.1AMP RESETABLE	1	***830027***

SPN-7000 SUPERPHONE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
STEREO LINE INPUT MODULE FIX CARD	SL1X-6000 LOADED CARD	1	***001480***
SUPERPHONE MODULE FIX CARD	SL2X-6000 LOADED CARD	1	***001482***
SPN-7000	FACEPLATE	1	***003833***
CT9, CT10	5 PIN .098" PLUG FOR #26 AWG	2	***230030***
CT11, CT12	6 PIN .098" PLUG FOR #26 AWG	4	***230031***
U3	14 PIN DIP SOCKET	1	***240003***
U10-U12, U19-U27	16 PIN DIP SOCKET	12	***240004***
U8	6 PIN IC SOCKET	1	***240008***
U4-U7, U9, U13-U18, U28-U32	8 PIN DIP SOCKET	16	***240009***
U2	24 PIN DIP IC SOCKET, .3 SPACING	1	***240015***
U1	20 PIN DIP SOCKET	1	***250002***
CT1-CT4	5 PIN .1" STRAIGHT HEADER	12	***250023***
CT1-CT4	15 POSITION FLEX STRIP	4	***250055***
CT5-CT8	3 PIN .098" HEADER	4	***250062***
CT9, CT10	5 PIN .098" HEADER	2	***250064***
CT11, CT12 (PCB_SPN6000) CT1, CT2 (PCB_SW2-700)	6 PIN .098" HEADER	4	***250065***
U3	74LS37	1	***300050***
U1	GAL16V8 PAL	1	***310026***
U2	GAL20V8 PAL	1	***310027***
U28-U32	2142 BALANCED LINE DRIVER IC	5	***320004***
U4-U7, U9, U17, U18	NE5532 DUAL OP-AMP	7	***320008***
U13-U16	2143 BALANCED LINE RECEIVER IC	4	***320012***
Q7	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
Q1, Q2, Q5 ON SW, OFF SW (PCB_SW2-700)	2N3903 TRANSISTOR NPN	5	***340005***
Q3, Q4	2N3906 TRANSISTOR PNP	2	***340006***
U8	4N38 OPTO COUPLER	1	***340009***
Z1, Z2	1N751 ZENER DIODE	2	***350007***
D1-D39	1N914 DIODE	39	***350008***
U10-U12, U19-U27	14053BCP	12	***380003***
C25, C41, C43-C45, C60-C65, C71	CAPACITOR, 100µF 25V ELECTROLYTIC	12	***400009***
C7-C10, C14, C15	CAPACITOR, 1µF 35V TANTALUM ORANGE	6	***400014***
C13, C22, C23, C27-C34, C37, C38, C42, C72, C73	CAPACITOR, 22µF 25V ELECTROLYTIC	16	***400017***
C35, C36, C46	CAPACITOR, 470µF 16V ELECTROLYTIC	3	***400023***
C1, C4	CAPACITOR, .001µF 50V CERAMIC	2	***410002***
C2, C3, C5, C6, C11, C12, C24, C26, C48-C57, C59, C66-C70, C74-C82, C85, C88, C90, C91	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	37	***410005***
C16-C21, C39, C40, C47, C58, C83, C84, C86, C87	CAPACITOR, 10pF 50V CERAMIC	14	***410007***

SPN-7000 SUPERPHONE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
RN1-RN3	10K OHM 10 PIN BUSSED SIP PACKAGE	3	***430007***
RN4	3.9K OHM 8 PIN ISOLATED SIP PACKAGE	1	***430012***
R21, R24, R26, R29-R45, R58-R73, R76-R81, R90-R93, R95-R97, R99-R105, R123, R124	10.0 KOHM 1% .25W METAL FILM RESISTOR	58	***430153***
R75	11.0 KOHM 1% .25W METAL FILM RESISTOR	1	***430155***
R54, R57, R82-R89	22.1 KOHM 1% .25W METAL FILM RESISTOR	10	***430171***
R55, R56	88.7 KOHM 1% .25W METAL FILM RESISTOR	2	***430193***
R107, R109, R110	3.3 OHM 5% .25W CARBON FILM RESISTOR	3	***430206***
R19, R25, R28	10 OHM 5% .25W CARBON FILM RESISTOR	3	***430207***
R11	47 OHM 5% .25W CARBON FILM RESISTOR	1	***430210***
R46, R47, R111-R122	100 OHM 5% .25W CARBON FILM RESISTOR	14	***430212***
R1-R4, R6-R10, R12-R18	220 OHM 5% .25W CARBON FILM RESISTOR	16	***430214***
R23, R27 ON SW, OFF SW (PCB_SW2-700)	1.5 KOHM 5% .25W CARBON FILM RESISTOR	4	***430225***
R106, R108	2.4 KOHM 5% .25W CARBON FILM RESISTOR	2	***430228***
R48-R53, R74	4.7 KOHM 5% .25W CARBON FILM RESISTOR	7	***430233***
R5	39 KOHM 5% .25W CARBON FILM RESISTOR	1	***430248***
R94, R98	47 KOHM 5% .25W CARBON FILM RESISTOR	2	***430249***
R20, R22	100 KOHM 5% .25W CARBON FILM RESISTOR	2	***430254***
R1, R2 (PCB_SW2-700)	220 OHM 5% .25W MC1206 RESISTOR	2	***435009***
CR1	10K 15 TURN TRIM POT	1	***500014***
CR2-CR7	10K TRIM POT	6	***500017***
1/MXMA/MXMB/MXMC/MXMD/AUD SWITCH	PUSHBUTTON SWITCH W. GREEN LED	6	***510037***
REC/PGM/CUE SWITCH	PUSHBUTTON SWITCH W. RED LED	3	***510038***
2/AUX/UTL/CUE1/CUE2 SWITCH	PUSHBUTTON SWITCH W. YELLOW LED	5	***510039***
SW11	7 POSITION DIP SWITCH	1	***510048***
SW1-SW3, SW6-SW10	DPDT SLIDE SWITCH	8	***510082***
ON/OFF SWITCH	SINGLE POLE MOMENTARY REED KEYBOARD SWITCH	2	***510109***
FADER KNOB	BLUE FADER KNOB, 11mm FOR 3000 SERIES FADER	2	***520002***
MXMA/MXMB/MXMC/MXMD SWITCH CAP	GREEN SWITCH CAP	4	***530001***
REC/CUE SWITCH CAP	RED SWITCH CAP	2	***530003***
1/2/PGM/AUD/AUX/UTL SWITCH CAP	WHITE SWITCH CAP	6	***530004***
CUE1/CUE2 SWITCH CAP	YELLOW SWITCH CAP	2	***530005***
ON SWITCH CAP	ON SW RED TRANSP CAP WHITE BASE WHITE INS	1	***530097***
OFF SWITCH CAP	OFF SW ORANGE TRANSP CAP WHITE BASE WHITE INS	1	***530098***
FADER	10K FADER,SINGLE AUDIO TAPER, 3000 SERIES	2	***540020***
READY LED	RECTANGULAR RED DIFFUSED LED, TRANSPARENT SIDES	1	***600001***
ON-AIR LED	RECTANGULAR RED LED	1	***600004***

SPN-7000 SUPERPHONE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
ON SWITCH LED	RED LED FOR R5 ON/OFF SWITCH	1	***600027***
OFF SWITCH LED	YELLOW LED FOR R5 ON/OFF SWITCH	1	***600031***
PCB_SPN6000	PRINTED CIRCUIT BOARD	1	***700181***
PCB_SPS6000	PRINTED CIRCUIT BOARD	1	***700182***
PCB_SW2-700	PRINTED CIRCUIT BOARD	1	***700688***
	PEM FASTENERS	4	***821009***
	4-40 X .20 HEX BRASS M/F SPACER	4	***823025***
	4-40 X .20 HEX BRASS M/F SPACER	2	***823082***
	HEATSINK FOR T-220 WITHOUT MOUNTING PIN	1	***825004***

SL1X-6000 SL MODULE FIX CARD PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
CT1	20 PIN .3" DIP SMT SOCKET	1	***245004***
CT1	40 PIN BREAKAWAY HEADER STRIPS, STRT .1x.165"	.5	***250071***
U2, U3	74AC14 TTL SMT TAPE & REEL ONLY Hex Schmitt Trigger	2	***305027***
U1	74HC30 TTL SMT 8-Input NAND	1	***305028***
C9	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	1	***405005***
C8, C10	CAPACITOR, .1µF 50V CERAMIC SMT	2	***415007***
C1-C7	CAPACITOR, .22µF 50V CERAMIC SMT	7	***415009***
R9-R15	220 OHM 5% .25W MC1206 RESISTOR	7	***435009***
R2-R6, R8	1.00 KOHM 1% .25W MC1206 RESISTOR	6	***435015***
R1, R7	4.99 KOHM 1% .25W MC1206 RESISTOR	2	***435023***
PCB_SL1X6000	PRINTED CIRCUIT BOARD SMT	1	***700230***

SPH2X-6000 SPN MODULE FIX CARD PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
U2	8 PIN .3" DIP SMT SOCKET	1	***245001***
U2	16 PIN .3" DIP SMT SOCKET	1	***245003***
CT1	40 PIN BREAKAWAY HEADER STRIPS, STRT .1x.165"	1	***250071***
U1, U4	74AC14 TTL SMT TAPE & REEL ONLY Hex Schmitt Trigger	2	***305027***
U3	74HC30 TTL SMT 8-Input NAND	1	***305028***
D1, D2	1N4148 FAST SWITCHING SMT DIODE	2	***355003***
C11	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	1	***405005***
C1, C12, C13	CAPACITOR, .1µF 50V CERAMIC SMT	3	***415007***
C2-C10	CAPACITOR, .22µF 50V CERAMIC SMT	9	***415009***
R11-R19	220 OHM 5% .25W MC1206 RESISTOR	9	***435009***
R1-R9	1.00 KOHM 1% .25W MC1206 RESISTOR	9	***435015***
R10	4.99 KOHM 1% .25W MC1206 RESISTOR	1	***435023***
PCB_SPH2X6000	PRINTED CIRCUIT BOARD SMT	1	***700233***

LS-7000 LINE PRESELECT MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
LS-7000	FACEPLATE	7	***003829***
U3, U5-U10	16 PIN DIP SOCKET	7	***240004***
U2	18 PIN DIP SOCKET	1	***240005***
U1, U11-U28	8 PIN DIP SOCKET	19	***240009***
U4	20 PIN DIP SOCKET	1	***250002***
	5 PIN .1" STRAIGHT HEADER	6	***250023***
CT1, CT2	15 POSITION FLEX STRIP	2	***250055***
U2	74C922	1	***300010***
U4	74LS240 TWO GROUPS OF FOUR TRISTATE BUFFERS	1	***300052***
U24, U25	2142 BALANCED LINE DRIVER IC	2	***320004***
U1	NE5532 DUAL OP-AMP	1	***320008***
U11-U23, U26-U28	2143 BALANCED LINE RECEIVER IC	16	***320012***
Q1	78L05 POSITIVE 5V REGULATOR	1	***330006***
Q2	79L05 NEGATIVE 5V REGULATOR	1	***330010***
Q5	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
U3	4051	1	***380002***
U5-U10	14053BCP	6	***380003***
C5, C6, C9-C12, C15, C16, C23, C25-C27, C32-C39, C52, C53, C56, C57, C60, C61	CAPACITOR, 100µF 25V ELECTROLYTIC	26	***400009***
C14	CAPACITOR, 1µF 35V TANTALUM ORANGE	1	***400014***
C1, C2, C7, C8, C13, C17-C22, C24, C28-C31, C40-C51, C54, C55, C58, C59, C62-C64	CAPACITOR, .1µF 50V MONOLITHIC CERAMIC	35	***410005***
C3, C4	CAPACITOR, 10pF 50V CERAMIC	2	***410007***
RN1	1K OHM 10 PIN BUSSED SIP PACKAGE	2	***430009***
R1, R2, R14-R29	10.0 KOHM 1% .25W METAL FILM RESISTOR	18	***430153***
R30-R32	3.3 OHM 5% .25W CARBON FILM RESISTOR	3	***430206***
R4-R11	220 OHM 5% .25W CARBON FILM RESISTOR	8	***430214***
R3	330 OHM 5% .25W CARBON FILM RESISTOR	1	***430215***
R12, R13	47 KOHM 5% .25W CARBON FILM RESISTOR	2	***430249***
SW1-SW8	PUSHBUTTON SWITCH RED LED/ NO CAP	8	***510095***
1-8 BUTTONS	WHITE SWITCH CAP	8	***530004***
PCB_UTS6000	PRINTED CIRCUIT BOARD	1	***700129***
PCB_LS6000	PRINTED CIRCUIT BOARD	1	***700179***
	PEM FASTENERS	4	***821009***
	4-40 X .375 HEX BRASS M/F SPACER	1	***823034***

TR/FF-7000 TAPE REMOTE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
TR-7000/FF	FACEPLATE	1	***003830***
CT1-CT4	5 PIN .1" STRAIGHT HEADER	12	***250023***
CT1-CT4	15 POSITION FLEX STRIP	4	***250055***
R1-R6	1.0 KOHM 5% .25W CARBON FILM RESISTOR	12	***430221***
FF/STOP/PLAY SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	6	***510094***
RTZ/REW/REC SWITCH	PUSHBUTTON SWITCH RED LED/ NO CAP	6	***510095***
PLAY BUTTON	GREEN SWITCH CAP	2	***530001***
STOP BUTTON	RED SWITCH CAP	2	***530003***
RTZ/FF/REW BUTTON	WHITE SWITCH CAP	6	***530004***
REC BUTTON	YELLOW SWITCH CAP	2	***530005***
PCB_UTS6000	PRINTED CIRCUIT BOARD	2	***700129***
PCB_TR6000	PRINTED CIRCUIT BOARD	1	***700178***
	PEM FASTENERS	4	***821009***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***

TR/SS-7000 TAPE REMOTE MODULE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
TR-7000/SS	FACEPLATE	1	***003830***
CT1-CT4	5 PIN .1" STRAIGHT HEADER	12	***250023***
CT1-CT4	15 POSITION FLEX STRIP	4	***250055***
R1-R6	1.0 KOHM 5% .25W CARBON FILM RESISTOR	12	***430221***
STOP SWITCH	PUSHBUTTON SWITCH GREEN LED/ NO CAP	6	***510094***
START SWITCH	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	6	***510096***
STOP BUTTON	GREEN SWITCH CAP	6	***530001***
START BUTTON	YELLOW SWITCH CAP	6	***530005***
PCB_UTS6000	PRINTED CIRCUIT BOARD	2	***700129***
PCB_TR6000	PRINTED CIRCUIT BOARD	1	***700178***
	PEM FASTENERS	4	***821009***
	4-40 X .375 HEX BRASS M/F SPACER	4	***823034***

CLK-70 CLOCK PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
U1, U4	8 PIN .3" DIP SMT SOCKET	2	***245001***
U6	14 PIN .3" DIP SMT SOCKET	1	***245002***
U1	20 PIN .3" DIP SMT SOCKET	1	***245004***
CT4, CT5	20 PIN DIL SOCKET	2	***250057***
CT1	10PIN BOXED HEADER, STRAIGHT	1	***250077***
U4	74AC14 TTL SMT TAPE & REEL ONLY Hex Schmitt Trigger	1	***305027***
U2	74LS74 TTL SMT Dual D-Type Pos-Edge-Triggered Flip-Flop	1	***305029***
U3	DS90C031 LVD DIFF LINE DRIVER SMT	1	***305051***
U6	LTC491 RS485/ RS422 INTERFACE	1	***310041***
U1	IC PIC16LC66-04/SP MICRO	1	***310064A***
U5	IC ADM690 POWER SUPERVISORY	1	***310065A***
Q2	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	1	***330017***
Q1	MMBTA05 NPN SMT TRANSISTOR	1	***345001***
D7, D9, D10	1N4002W RECTIFYING 1AMP SMT DIODE	3	***355001***
D2-D6	1N4148 FAST SWITCHING SMT DIODE	5	***355003***
D1	SS14 SCHOTTKY SMT DIODE	1	***355004***
Y1	CRYSTAL 4.096 MHZ	1	***370022A***
E1	CAP 2.2F SUPERCAP 5.5V	1	***400069A***
C5, C9, C10, C16	CAPACITOR, 22µF 25V ELECTROLYTIC SMT	4	***405002***
C13, C14	CAPACITOR, 330µF 25V ELECTROLYTIC SMT	2	***405004***
C11, C17, C19	CAPACITOR, 1µF 35V ELECTROLYTIC SMT TANTALUM	3	***405005***
C3	TRIMMER CAPACITOR	1	***410001***
C4	CAPACITOR, 10pF 100V CERAMIC SMT	1	***415001***
C2	CAPACITOR, 33pF 100V CERAMIC SMT	1	***415002***
C1	CAPACITOR, 68pF 100V CERAMIC SMT	1	***415003***
C21-C26	CAPACITOR, .01µF 50V CERAMIC SMT	6	***415006***
C6-C8, C15, C18, C20	CAPACITOR, .1µF 50V CERAMIC SMT	6	***415007***
R21	100 OHM 5% .25W MC1206 RESISTOR	1	***435007***
R22, R23	619 OHM 1% .25W MC1206 RESISTOR	2	***435013***
R1	49.9 KOHM 1% .25W MC1206 RESISTOR	1	***435040***
R24	100 KOHM 1% .25W MC1206 RESISTOR	1	***435044***
R15, R20	10 MOHM 5% .25W MC1206 RESISTOR	2	***435050***
R13, R14, R19, R25, R27, R28, R31, R34, R35	20.0 KOHM 1% .25W MC1206 RESISTOR	9	***435058***
R2-R8, R10, R26, R29, R30, R32, R33, R36	53.6 KOHM 1% .25W MC1206 RESISTOR	14	***435060***
R9, R12	100 KOHM 1% .25W MC1206 RESISTOR	2	***435061***
R11, R16, R17	10 MOHM 5% .25W MC1206 RESISTOR	3	***435062***

CLK-70 CLOCK PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
SW1	PUSHBUTTON SWITCH GREEN LED/ NO CAP	1	***510094***
SW2	PUSHBUTTON SWITCH RED LED/ NO CAP	1	***510095***
SW3, SW4	4 POSITION SMT DIP SWITCH, TAPE SEALED	2	***515001***
	GREEN SWITCH CAP	1	***530001***
	CLEAR BUTTON WITH WHITE FRAME	1	***530266***
PCB_CLK220E	PRINTED CIRCUIT BOARD SMT	1	***700575***
Q2	HEATSINK FOR T-220 WITHOUT MOUNTING PIN	1	***825004***
F1	FUSE/ POLYSWITCH 1.0AMP SMT RESETABLE	1	***835002***

CLD-70 CLOCK DISPLAY PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
DS1-DS5	20 POSITION SNAP APART SOCKET, .1" SIL	5	***250014***
	40 PIN BREAKAWAY HEADER STRIPS, STRAIGHT .1" SIL	1	***250016***
U2	DS90C032 LVD DIFF LINE RECEIVER SMT	1	***305052***
U1, U3	IC ADSP2115 DSP PROCESSOR	2	***315044***
C1, C4	CAPACITOR, 100µF 25V ELECTROLYTIC SMT	2	***405003***
C2, C3, C5-C8	CAPACITOR, .1µF 50V CERAMIC SMT	6	***415007***
R6, R7	10 OHM 5% .25W MC1206 RESISTOR	2	***435002***
R2, R3, R5, R8	100 OHM 5% .25W MC1206 RESISTOR	4	***435007***
R9-R12	220 OHM 5% .25W MC1206 RESISTOR	4	***435009***
R1, R4	22.1 KOHM 1% .25W MC1206 RESISTOR	2	***435036***
DS1-DS6	SINGLE DIGIT LED DISPLAY	6	***610004***
DS7-DS10	SINGLE SEGMENT GREEN LED DISPLAY	4	***610018***
PCB_CLD220D	PRINTED CIRCUIT BOARD	1	***700590***

PSC-6008 POWER SUPPLY PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	PSC-600 POWER SUPPLY XFORMER BRACKET	1	***007057***
	PSC-6008 POWER SUPPLY FACEPLATE TRIM	1	***007059***
	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***
ON/OFF SWITCH	PSC-600 POWER SUPPLY SWITCH BRK	1	***007096***
	PSC HEATSINK SPACER	2	***007115***
	3 X 2 X 1/4 X 15 31/32' 6061T6 ALUMINUM EXTRUSION	2	***110027***
PWR IN CABLE	15A 14AWG HEAVY DUTY 9'10" BLACK POWER CORD	1	***150090***
REAR FRAME	GROUND LUG	1	***230003***
AC IN SOCKET	POWER SOCKET	1	***230006***
PWR IN CONNECTOR	METAL PANEL MOUNT MILITARY CONNECTOR	1	***230008***
410_PCB LT : Q4	LM317 POSITIVE ADJUSTABLE REGULATOR	1	***330012***
410_PCB LT: Q1-Q3, Q5-Q7 410_PCB RT: Q1-Q3, Q5, Q7	LT1085 3A POSITIVE ADJUSTABLE REGULATOR LOW DROPOUT VOLTAGE	11	***330021***
410_PCB LT: C 410_PCB RT: G, H	MB3510 BRIDGE RECTIFIER 35 AMP 1000 VOLT	3	***350000***
BRA1_PCB	MB3510 BRIDGE RECTIFIER 35 AMP 1000 VOLT	4	***350000***
410_PCB LT: D3-D12 410_PCB RT: D3, D12	1N4002 DIODE	12	***350003***
410_PCB LT: D1, D2, D13, D14 410_PCB RT: D1, D2, D13, D14	CR6A4 POWER DIODE	8	***350009***
PSR1000_PCB: D1	CR6A4 POWER DIODE	1	***350009***
410_PCB LT: V1	82ZA2 V VARISTOR	1	***360005***
BRA1_PCB LT: V1, V2	Z15L390 39V VARISTOR	8	***360006***
410_PCB LT: C10, C21, C26	CAPACITOR, 10µF 63V ELECTROLYTIC	3	***400012***
410_PCB LT: C1-C7, C11-C17 410_PCB RT: C1-C7, C11-C14, C16, C17	CAPACITOR, 1µF 35V TANTALUM ORANGE	27	***400014***
410_PCB LT: C20	470UF 100V AXIAL LEAD UL APPROVED ELECTROLYTIC CAPACITOR	1	***400031***
410_PCB LT: C18, C19, C22, C23 410_PCB RT: C18, C19, C22, C23	10000UF 50V ELECTROLYTIC CAPACITOR 105°C	8	***400032***
410_PCB LT: C25, C27 410_PCB RT: C25, C27	2200UF 35V ELECTROLYTIC CAPACITOR 105°C	4	***400033***
PSR1000_PCB: C1, C2	47UF 200V ELECTROLYTIC CAPACITOR	2	***400036***
410_PCB LT: C8, C9 (plus 2 on AC power socket) PSR1000_PCB: C3, C4	CAPACITOR, .0047µUF 1KV CERAMIC, UL RATED	6	***410015***
410_PCB LT: C27 BRA1_PCB LT: C1	CAPACITOR, .47µF 250V METAL FILM	5	***420032***
410_PCB LT: R2, R3, R7, R14, R18, R19 410_PCB RT: R2, R3, R7, R14, R19	.05 OHM 5% 5W RESISTOR	11	***430020***
PSR1000_PCB: R7-R9	3.3 OHM 5% 5W RESISTOR	3	***430026***
410_PCB LT: R4, R17 410_PCB RT: R4, R17	47 OHM 5% .25W CARBON FILM RESISTOR	4	***430210***
410_PCB LT: R10 410_PCB RT: R16	220 OHM 5% .25W CARBON FILM RESISTOR	2	***430214***
410_PCB RT: R1	330 OHM 5% .25W CARBON FILM RESISTOR	1	***430215***
410_PCB LT: R5, R9, R16	470 OHM 5% .25W CARBON FILM RESISTOR	3	***430216***

PSC-6008 POWER SUPPLY PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
410_PCB LT: R6, R15 410_PCB RT: R6, R15, R20	620 OHM 5% .25W CARBON FILM RESISTOR	5	***430218***
410_PCB LT: R1, R20	1.0 KOHM 5% .25W CARBON FILM RESISTOR	2	***430221***
410_PCB LT: R11-R13	10 KOHM 5% .25W CARBON FILM RESISTOR	3	***430239***
PSR1000_PCB: R1-R6	22 KOHM 5% .25W CARBON FILM RESISTOR	6	***430244***
410_PCB LT: R8 410_PCB RT: R5	100 KOHM 5% .25W CARBON FILM RESISTOR	2	***430254***
410_PCB LT: CR2	10K TRIM POT	1	***500017***
410_PCB LT: CR1, CR3 410_PCB RT: CR1, CR3	500Ω TRIM POT	4	***500019***
SW1	4 POSITION DIP SWITCH	1	***510047***
	DPDT RELAY, 24V, 15A	1	***550009***
410_PCB LT: DS1, DS3, DS5 410_PCB RT: DS4, DS6	RECTANGULAR GREEN DIFFUSED LED, TRANSPARENT SIDES	5	***600003***
PCB_410E	PRINTED CIRCUIT BOARD	2	***700259***
PCB_PSR1000	PRINTED CIRCUIT BOARD	1	***700340***
PCB_BRA1	PRINTED CIRCUIT BOARD	7	***700355***
	POWER TRANSFORMER	1	***800026***
	PHILLIPS PANHEAD SILVER SCREW	7	***820073***
	SCR_#10-32X1/2_PHI_FL8_MS_ZI	4	***820075***
	PHILLIPS FLATHEAD MACHINE SCREW STAINLESS STEEL	4	***820076***
	FLAT WASHER 1/4 USS F/L ZI	4	***822019***
	6-32 X 1.625 HEX ALUM. M/F	6	***823019***
	#4 X 3/4" ALUMINUM HEX SPACER	4	***823036***
	POWER SUPPLY HANDLE	2	***824015***
	EXTRUDED ALUMINUM HEATSINK, L=8.25"	6	***825011***
	CERAMIC FILM INSULATOR	12	***825012***
	8 AMP CIRCUIT BREAKER	1	***830001***
F1	FUSE/ POLYSWITCH .4AMP RESETABLE	1	***830018***

LED-1 METER LED LAMP PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
Q1-Q4	MMBTA05 NPN SMT TRANSISTOR	4	***345001***
D1-D4	1N4002W RECTIFYING 1AMP SMT DIODE	4	***355001***
C1-C3	CAPACITOR, .1µF 50V CERAMIC SMT	3	***415007***
R3, R4	3.3 OHM 5% .25W MC1206 RESISTOR	2	***435001***
R5, R6	39 OHM 5% .25W MC1206 RESISTOR	2	***435004***
R1, R2	4.99 KOHM 1% .25W MC1206 RESISTOR	2	***435023***
DS1-DS8	HIGH INTENSITY YELLOW SMT LED VERTICAL	8	***605013***
PCB_LED1	PRINTED CIRCUIT BOARD SMT	1	***700273***

A-7000-42 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	CARD GUIDE BRACKET FOR A6000-42	1	***001625***
	CARD GUIDE BRACKET FOR A6000-42	1	***001629***
CLK-70	LOADED CLK/TMR CARD	1	***002749***
	FACEPLATE SIDE SHIM - A7000	2	***003840***
	Clock/Timer Bracket for A7000	1	***003847***
	FRAME PAN FOR A7000-42	1	***003910***
	METER BRIDGE COVER FOR A7000-42 w/OVB	1	***003911***
	METER BRIDGE REAR FOR A7000-42 w/OVB	1	***003912***
	FRAME PAN FACE FOR A7000-42	1	***003913***
	METER BRIDGE FACE FOR A7000-42 w/OVB	1	***003914***
	PLEXI RAIL FOR A7000-42 w/overbridge	1	***003915***
	Meter Bridge Bracket for A7000-42 w/OVB	1	***003917***
	MB PLEXI FOR A7000-42 w/overbridge	1	***003918***
	ARMREST FOR A7000-42	1	***003919***
	METAL SIDEPLATE FOR A7000 w/overbridge	2	***003920***
	Card Cage Top for A7000 w/overbridge	1	***003921***
	Card Cage Bottom for A7000 w/overbridge	1	***003922***
	Speaker Bracket for A7000 w/overbridge	1	***003923***
	D5.1 METER BRACKET FOR TWO VU METERS	4	***005186***
LED-1	LOADED CARD	6	***007101***
	Sideplate Left A7000 w/OVB Painted	1	***100114***
	Sideplate right A7000 w/OVB Painted	1	***100115***
	ALUMINUM CONTINUOUS HINGE, 72"X1.06" X .040"	1	***110024***
	DB25 / 25 PIN CARDEDGE CONNECTOR	84	***200010***
	AMP FEMALE SCREWLOCKS	46	***200013***
	25 PIN DB CONNECTOR	1	***200018***
	25 PIN DB PREWIRE CONNECTOR	45	***200022***
	25 PIN DB PREWIRE CONNECTOR	2	***200022***
	RIGHT ANGLE DB25 HOOD	45	***200024***
	RIGHT ANGLE DB25 HOOD	1	***200024***
	25 PIN DB CONNECTOR HOOD	1	***200025***
	THREADED 9 PIN DB CONNECTOR-IDD9	2	***200031***
	9 PIN HDE SUBMINIATURE D CONNECTOR MALE	22	***200033***
	9 PIN HDE SUBMINIATURE D CONNECTOR MALE	3	***200033***
	9 PIN DB CONNECTOR HOOD	22	***200034***
	9 PIN DB CONNECTOR HOOD	4	***200034***

A-7000-42 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	MALE SCREW RETAINER KIT	22	***200035***
	MALE SCREW RETAINER KIT	5	***200035***
	9 PIN HDE FEMALE SUBMINIATURE D CONNECT	1	***200045***
	120 PIN CARDEDGE CONNECTOR FOR A6000	42	***220023***
	120 PIN BOARD-TO-BOARD MALE CONNECTOR	3	***220024***
	120 PIN BOARD-TO-BOARD FEMALE CONNECTOR	3	***220025***
	GROUND KITS	1	***230001***
	METAL PANEL MOUNT MILITARY CONNECTOR	2	***230008***
	10 PIN PLUG	2	***230020***
	3 PIN .098" PLUG FOR #26 AWG	2	***230028***
	8 PIN DIP CONNECTOR	3	***250010***
	DB9 PC MOUNT UP CONNECTOR	42	***250032***
	RTS JACK	2	***260005***
	VU METER	6	***630004***
	LIGHT BOX FOR AL29 METER WITHOUT LAMP OR LAMPHOLDER	6	***630008***
PCB_MB6000	PRINTED CIRCUIT BOARD	3	***700060***
	CABLE TIE ANCHOR BASE (#8 SCREW)	43	***820041***
	#8 X 1" EXTRACTOR SCREWS	2	***820046***
	D SUB STANDOFFJACK HARDWARE 3/16" LONG	46	***820047***
	FLAT WASHER	2	***822007***
	SHOULDER WASHER	2	***822008***
	4-40 X .250 HEX ZINC	42	***823016***
	METER TERMINAL	12	***826001***
	4" CARD GUIDE	84	***827002***
	TOOL DIE	1	***850031***
	TOOL HANDLE	1	***850033***
	SPEAKER	2	***960000***

A-7000-36 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	CARD GUIDE BRACKET FOR A6000-36	1	***001496***
	HAT CHANNEL BRACKET FOR A6000-36	1	***001498***
CLK-70	LOADED CLK/TMR CARD	1	***002749***
	FACEPLATE SIDE SHIM - A7000	2	***003840***
	Clock/Timer Bracket for A7000	1	***003847***
	METAL SIDEPLATE FOR A7000	2	***003849***
	FRAME PAN FOR A7000-36	1	***003900***
	METER BRIDGE COVER FOR A7000-36	1	***003901***
	METER BRIDGE REAR FOR A7000-36	1	***003902***
	FRAME PAN FACE FOR A7000-36	1	***003903***
	METER BRIDGE FACE FOR A7000-36	1	***003904***
	PLEXI RAIL FOR A7000-36	1	***003905***
	CARD GUIDE BRACKET FOR A7000-36	1	***003906***
	Meter Face Bracket for A7000-36	1	***003907***
	MB PLEXI FOR A7000-36	1	***003908***
	ARMREST FOR A7000-36	1	***003909***
	D5.1 METER BRACKET FOR TWO VU METERS	3	***005186***
LED-1	LOADED CARD	6	***007101***
	PAINTED LEFT SIDEPLATE	1	***100112***
	PAINTED RIGHT SIDEPLATE	1	***100113***
	ALUMINUM CONTINUOUS HINGE, 72"X1.06" X .040"	1	***110024***
	DB25 / 25 PIN CARDEDGE CONNECTOR	72	***200010***
	AMP FEMALE SCREWLOCKS	40	***200013***
	25 PIN DB CONNECTOR	1	***200018***
	25 PIN DB PREWIRE CONNECTOR	73	***200022***
	RIGHT ANGLE DB25 HOOD	72	***200024***
	25 PIN DB CONNECTOR HOOD	1	***200025***
	THREADED 9 PIN DB CONNECTOR-IDD9	2	***200031***
	9 PIN HDE SUBMINIATURE D CONNECTOR MALE	36	***200033***
	9 PIN DB CONNECTOR HOOD	36	***200034***
	MALE SCREW RETAINER KIT	36	***200035***
	9 PIN HDE FEMALE SUBMINIATURE D CONNECT	1	***200045***
	120 PIN CARDEDGE CONNECTOR FOR A6000	36	***220023***
	120 PIN BOARD-TO-BOARD MALE CONNECTOR	3	***220024***
	120 PIN BOARD-TO-BOARD FEMALE CONNECTOR	3	***220025***
	GROUND KITS	1	***230001***

A-7000-36 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	METAL PANEL MOUNT MILITARY CONNECTOR	2	***230008***
	10 PIN PLUG	2	***230020***
	3 PIN .098" PLUG FOR #26 AWG	2	***230028***
	8 PIN DIP CONNECTOR	3	***250010***
	DB9 PC MOUNT UP CONNECTOR	36	***250032***
	RTS JACK	2	***260005***
	VU METER	6	***630004***
	LIGHT BOX FOR AL29 METER WITHOUT LAMP OR LAMPHOLDER	6	***630008***
PCB_MB6000	PRINTED CIRCUIT BOARD	3	***700060***
	CABLE TIE ANCHOR BASE (#8 SCREW)	37	***820041***
	#8 X 1" EXTRACTOR SCREWS	2	***820046***
	D SUB STANDOFFJACK HARDWARE 3/16" LONG	40	***820047***
	FLAT WASHER	2	***822007***
	SHOULDER WASHER	2	***822008***
	4-40 X .250 HEX ZINC	36	***823016***
	METER TERMINAL	12	***826001***
	4" CARD GUIDE	72	***827002***
	TOOL DIE	1	***850031***
	TOOL HANDLE	1	***850033***
	SPEAKER	2	***960000***

A-7000-32 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	CARD GUIDE BRACKET FOR A6000-32	1	***001475***
	HAT CHANNEL BRACKET FOR A6000-32	1	***001477***
CLK-70	LOADED CLK/TMR CARD	1	***002749***
	FACEPLATE SIDE SHIM - A7000	2	***003840***
	Clock/Timer Bracket for A7000	1	***003847***
	METAL SIDEPLATE FOR A7000	2	***003849***
	FRAME PAN FOR A7000-32	1	***003870***
	METER BRIDGE COVER FOR A7000-32	1	***003871***
	METER BRIDGE REAR FOR A7000-32	1	***003872***
	FRAME PAN FACE FOR A7000-32	1	***003873***
	METER BRIDGE FACE FOR A7000-32	1	***003874***
	PLEXI RAIL FOR A7000-32	1	***003875***
	CARD GUIDE BRACKET FOR A7000-32	1	***003876***
	Meter Face Bracket for A7000-32	1	***003877***
	MB PLEXI FOR A7000-32	1	***003878***
	ARMREST FOR A7000-32	1	***003879***
	D5.1 METER BRACKET FOR TWO VU METERS	3	***005186***
LED-1	LOADED CARD	6	***007101***
	PAINTED LEFT SIDEPLATE	1	***100112***
	PAINTED RIGHT SIDEPLATE	1	***100113***
	ALUMINUM CONTINUOUS HINGE, 72"X1.06" X .040"	1	***110024***
	DB25 / 25 PIN CARDEDGE CONNECTOR	64	***200010***
	AMP FEMALE SCREWLOCKS	36	***200013***
	25 PIN DB CONNECTOR	1	***200018***
	25 PIN DB PREWIRE CONNECTOR	53	***200022***
	RIGHT ANGLE DB25 HOOD	53	***200024***
	25 PIN DB CONNECTOR HOOD	1	***200025***
	THREADED 9 PIN DB CONNECTOR-IDD9	2	***200031***
	9 PIN HDE SUBMINIATURE D CONNECTOR MALE	27	***200033***
	9 PIN DB CONNECTOR HOOD	27	***200034***
	MALE SCREW RETAINER KIT	28	***200035***
	9 PIN HDE FEMALE SUBMINIATURE D CONNECT	1	***200045***
	120 PIN CARDEDGE CONNECTOR FOR A6000	32	***220023***
	120 PIN BOARD-TO-BOARD MALE CONNECTOR	3	***220024***
	120 PIN BOARD-TO-BOARD FEMALE CONNECTOR	3	***220025***
	GROUND KITS	1	***230001***

A-7000-32 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	METAL PANEL MOUNT MILITARY CONNECTOR	2	***230008***
	10 PIN PLUG	2	***230020***
	3 PIN .098" PLUG FOR #26 AWG	2	***230028***
	8 PIN DIP CONNECTOR	3	***250010***
	DB9 PC MOUNT UP CONNECTOR	32	***250032***
	RTS JACK	2	***260005***
	VU METER	6	***630004***
	LIGHT BOX FOR AL29 METER WITHOUT LAMP OR LAMPHOLDER	6	***630008***
PCB_MB6000	PRINTED CIRCUIT BOARD	3	***700060***
	CABLE TIE ANCHOR BASE (#8 SCREW)	33	***820041***
	#8 X 1" EXTRACTOR SCREWS	2	***820046***
	D SUB STANDOFFJACK HARDWARE 3/16" LONG	41	***820047***
	FLAT WASHER	2	***822007***
	SHOULDER WASHER	2	***822008***
	4-40 X .250 HEX ZINC	32	***823016***
	METER TERMINAL	12	***826001***
	4" CARD GUIDE	64	***827002***
	TOOL DIE	1	***850031***
	TOOL HANDLE	1	***850033***
	SPEAKER	2	***960000***

A-7000-28 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	CARD GUIDE BRACKET FOR A6000-28	1	***001615***
	HAT CHANNEL BRACKET FOR A6000-28	1	***001639***
CLK-70	LOADED CLK/TMR CARD	1	***002749***
	FACEPLATE SIDE SHIM - A7000	2	***003840***
	Clock/Timer Bracket for A7000	1	***003847***
	METAL SIDEPLATE FOR A7000	2	***003849***
	FRAME PAN FOR A7000-28	1	***003880***
	METER BRIDGE COVER FOR A7000-28	1	***003881***
	METER BRIDGE REAR FOR A7000-28	1	***003882***
	FRAME PAN FACE FOR A7000-28	1	***003883***
	METER BRIDGE FACE FOR A7000-28	1	***003884***
	PLEXI RAIL FOR A7000-28	1	***003885***
	CARD GUIDE BRACKET FOR A7000-28	1	***003886***
	Meter Face Bracket for A7000-28	1	***003887***
	MB PLEXI FOR A7000-28	1	***003888***
	ARMREST FOR A7000-28	1	***003889***
	D5.1 METER BRACKET FOR TWO VU METERS	3	***005186***
LED-1	LOADED CARD	6	***007101***
	PAINTED LEFT SIDEPLATE	1	***100112***
	PAINTED RIGHT SIDEPLATE	1	***100113***
	ALUMINUM CONTINUOUS HINGE, 72"X1.06" X .040"	1	***110024***
	DB25 / 25 PIN CARDEDGE CONNECTOR	56	***200010***
	AMP FEMALE SCREWLOCKS	32	***200013***
	25 PIN DB CONNECTOR	1	***200018***
	25 PIN DB PREWIRE CONNECTOR	57	***200022***
	RIGHT ANGLE DB25 HOOD	56	***200024***
	25 PIN DB CONNECTOR HOOD	1	***200025***
	THREADED 9 PIN DB CONNECTOR-IDD9	2	***200031***
	9 PIN HDE SUBMINIATURE D CONNECTOR MALE	28	***200033***
	9 PIN DB CONNECTOR HOOD	28	***200034***
	MALE SCREW RETAINER KIT	28	***200035***
	9 PIN HDE FEMALE SUBMINIATURE D CONNECT	1	***200045***
	120 PIN CARDEDGE CONNECTOR FOR A6000	28	***220023***
	120 PIN BOARD-TO-BOARD MALE CONNECTOR	2	***220024***
	120 PIN BOARD-TO-BOARD FEMALE CONNECTOR	2	***220025***
	GROUND KITS	1	***230001***

A-7000-28 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	METAL PANEL MOUNT MILITARY CONNECTOR	2	***230008***
	10 PIN PLUG	2	***230020***
	3 PIN .098" PLUG FOR #26 AWG	2	***230028***
	8 PIN DIP CONNECTOR	3	***250010***
	DB9 PC MOUNT UP CONNECTOR	28	***250032***
	RTS JACK	2	***260005***
	VU METER	6	***630004***
	LIGHT BOX FOR AL29 METER WITHOUT LAMP OR LAMPHOLDER	6	***630008***
PCB_MB6000	PRINTED CIRCUIT BOARD	2	***700060***
	CABLE TIE ANCHOR BASE (#8 SCREW)	29	***820041***
	#8 X 1" EXTRACTOR SCREWS	2	***820046***
	D SUB STANDOFFJACK HARDWARE 3/16" LONG	32	***820047***
	FLAT WASHER	2	***822007***
	SHOULDER WASHER	2	***822008***
	4-40 X .250 HEX ZINC	28	***823016***
	METER TERMINAL	12	***826001***
	4" CARD GUIDE	56	***827002***
	TOOL DIE	1	***850031***
	TOOL HANDLE	1	***850033***
	SPEAKER	2	***960000***

A-7000-25 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	CARD GUIDE BRACKET FOR A6000-25	1	***001605***
	HAT CHANNEL BRACKET FOR A6000-25	1	***001628***
CLK-70	LOADED CLK/TMR CARD	1	***002749***
	FACEPLATE SIDE SHIM - A7000	2	***003840***
	Clock/Timer Bracket for A7000	1	***003847***
	METAL SIDEPLATE FOR A7000	2	***003849***
	FRAME PAN FOR A7000-25	1	***003860***
	METER BRIDGE COVER FOR A7000-25	1	***003861***
	METER BRIDGE REAR FOR A7000-25	1	***003862***
	FRAME PAN FACE FOR A7000-25	1	***003863***
	METER BRIDGE FACE FOR A7000-25	1	***003864***
	PLEXI RAIL FOR A7000-25	1	***003865***
	CARD GUIDE BRACKET FOR A7000-25	1	***003866***
	Meter Face Bracket for A7000-25	1	***003867***
	MB PLEXI FOR A7000-25	1	***003868***
	ARMREST FOR A7000-25	1	***003869***
	D5.1 METER BRACKET FOR TWO VU METERS	3	***005186***
LED-1	LOADED CARD	6	***007101***
	PAINTED LEFT SIDEPLATE	1	***100112***
	PAINTED RIGHT SIDEPLATE	1	***100113***
	ALUMINUM CONTINUOUS HINGE, 72"X1.06" X .040"	1	***110024***
	DB25 / 25 PIN CARDEDGE CONNECTOR	50	***200010***
	AMP FEMALE SCREWLOCKS	29	***200013***
	25 PIN DB CONNECTOR	1	***200018***
	25 PIN DB PREWIRE CONNECTOR	51	***200022***
	RIGHT ANGLE DB25 HOOD	50	***200024***
	25 PIN DB CONNECTOR HOOD	1	***200025***
	THREADED 9 PIN DB CONNECTOR-IDD9	2	***200031***
	9 PIN HDE SUBMINIATURE D CONNECTOR MALE	25	***200033***
	9 PIN DB CONNECTOR HOOD	25	***200034***
	MALE SCREW RETAINER KIT	25	***200035***
	9 PIN HDE FEMALE SUBMINIATURE D CONNECT	1	***200045***
	120 PIN CARDEDGE CONNECTOR FOR A6000	25	***220023***
	120 PIN BOARD-TO-BOARD MALE CONNECTOR	2	***220024***
	120 PIN BOARD-TO-BOARD FEMALE CONNECTOR	2	***220025***
	GROUND KITS	1	***230001***

A-7000-25 FRAME PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	METAL PANEL MOUNT MILITARY CONNECTOR	2	***230008***
	10 PIN PLUG	2	***230020***
	3 PIN .098" PLUG FOR #26 AWG	2	***230028***
	8 PIN DIP CONNECTOR	3	***250010***
	DB9 PC MOUNT UP CONNECTOR	25	***250032***
	RTS JACK	2	***260005***
	VU METER	6	***630004***
	LIGHT BOX FOR AL29 METER WITHOUT LAMP OR LAMPHOLDER	6	***630008***
PCB_MB6000	PRINTED CIRCUIT BOARD	2	***700060***
	CABLE TIE ANCHOR BASE (#8 SCREW)	26	***820041***
	#8 X 1" EXTRACTOR SCREWS	2	***820046***
	D SUB STANDOFFJACK HARDWARE 3/16" LONG	29	***820047***
	FLAT WASHER	2	***822007***
	SHOULDER WASHER	2	***822008***
	4-40 X .250 HEX ZINC	25	***823016***
	METER TERMINAL	12	***826001***
	4" CARD GUIDE	50	***827002***
	TOOL DIE	1	***850031***
	TOOL HANDLE	1	***850033***
	SPEAKER	2	***960000***

A-7000 CONSOLE PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
BK-500 SUPPORT	UNIVERSAL BRACKET	6	***001240***
EXT-6000 RIBBON	EXTENDER RIBBON	1	***001392***
ML-7000A	MODULE	4	***003800***
SL-7000B	MODULE	14	***003801***
SL-7000BN	MODULE	14	***003802***
SL-7000BZ	MODULE	1	***003803***
ML-7000AF	MODULE	4	***003804***
OM-7000/1	MODULE	1	***003805***
OM-7000/2	MODULE	1	***003806***
MO-7000	MODULE	1	***003807***
CR-7000	MODULE	1	***003808***
LS-7000	MODULE	1	***003809***
TR-7000	MODULE	0	***003810***
SC-7000	MODULE	1	***003811***
ML-7000CA	MODULE	1	***003812***
SPN-7000	MODULE	1	***003813***
A7000 TELOS 326	FACEPLATE & BRACKET	1	***003836***
BROADCAST TOOLS A7000	FACEPLATE & BRACKET	1	***003837***
DUAL SAS APC-88 A7000	FACEPLATE & BRACKET	1	***003838***
BK-7000	A7000 BLANK FACEPLATE	6	***003839***
A7000-42 FRAME	COMPLETE FRAME A7000 w/OVB	0	***003842***
A7000-36 FRAME	COMPLETE FRAME A7000	0	***003843***
A7000-25 FRAME	COMPLETE FRAME A7000	0	***003844***
A7000-28 FRAME	COMPLETE FRAME A7000	0	***003845***
A7000-32 FRAME	COMPLETE FRAME A7000	1	***003846***
A7000 MANUAL	OWNER'S MANUAL FOR A7000	1	***003899***
A7000 SPARE PARTS KIT	SPARE PARTS KIT	1	***051376***
PSC-6008	PSC-6008 POWER SUPPLY	1	***007015***
STD PS CABLE	STANDARD POWER SUPPLY CABLE	1	***007021***

SPARE PARTS KIT PARTS LIST

ITEM#	DESCRIPTION	QTY	W#
	UTILITY BOXES	2	***160021***
	MALE PIN	10	***200023***
	4066	2	***300005***
	GAL16V8 PAL	1	***310026***
	GAL20V8 PAL	1	***310027***
	2017 MIC PREAMP IC	2	***320003***
	2142 BALANCED LINE DRIVER IC	2	***320004***
	NE5532 DUAL OP-AMP	2	***320008***
	2143 BALANCED LINE RECEIVER IC	2	***320012***
	78L05 POSITIVE 5V REGULATOR	2	***330006***
	79L05 NEGATIVE 5V REGULATOR	2	***330010***
	LM2940 5V LOW DROP OUT VOLTAGE REGULATOR 2940	2	***330017***
	2N3906 TRANSISTOR PNP	2	***340006***
	PS2502-4 QUAD OPTO COUPLER (PS25-2 DUAL)	1	***340019***
	14053BCP	2	***380003***
	PUSHBUTTON SWITCH GREEN LED/ NO CAP	1	***510094***
	PUSHBUTTON SWITCH RED LED/ NO CAP	1	***510095***
	PUSHBUTTON SWITCH YELLOW LED/ NO CAP	1	***510096***
	RED LED FOR R5 ON/OFF SWITCH	1	***600027***
	YELLOW LED FOR R5 ON/OFF SWITCH	1	***600031***

Schematic Drawings

Chapter Contents

Meter Output

Superphone

Line Select

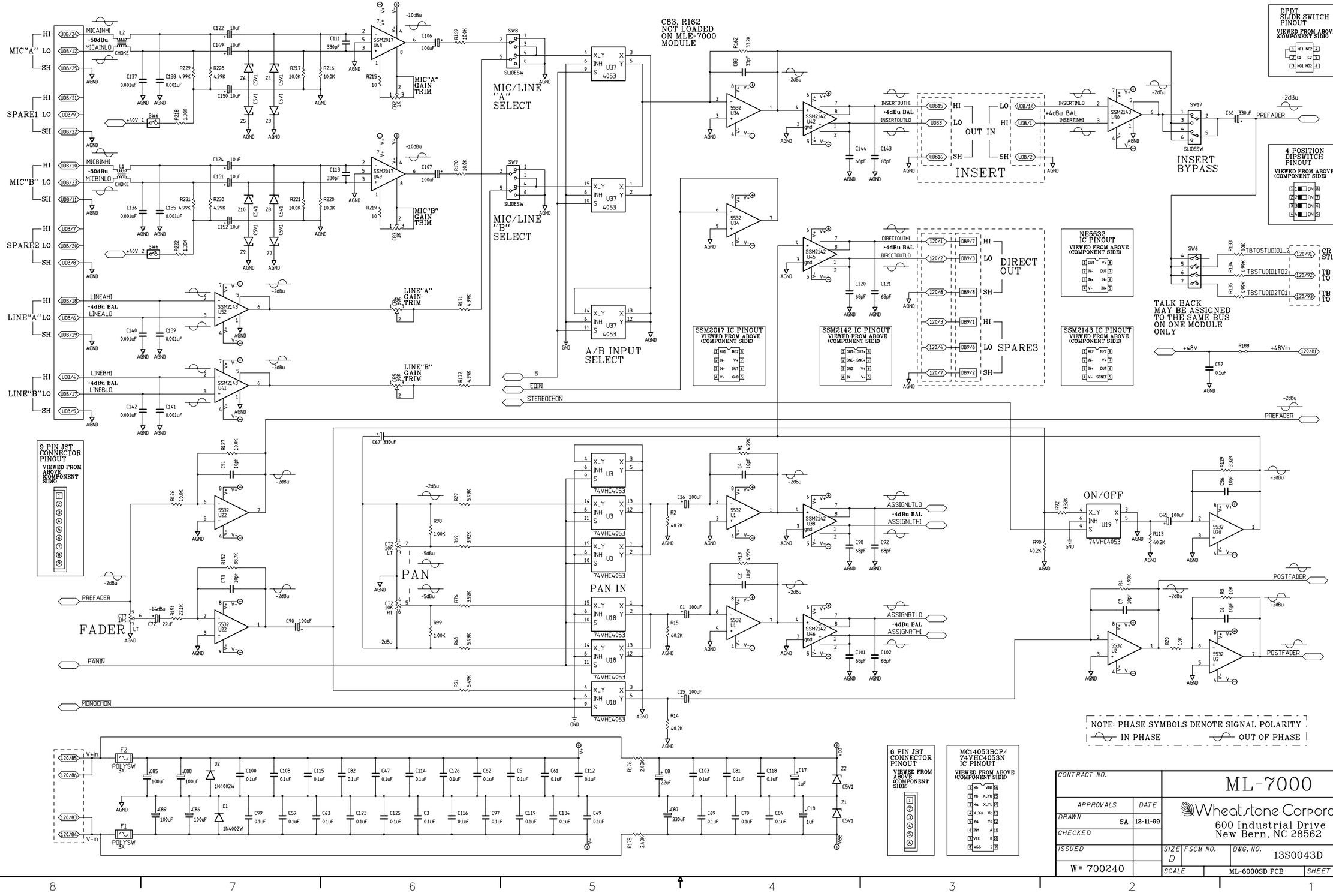
Tape Remote

Clock/Timer (CLK-70)

Clock/Timer Display (CLD-70)

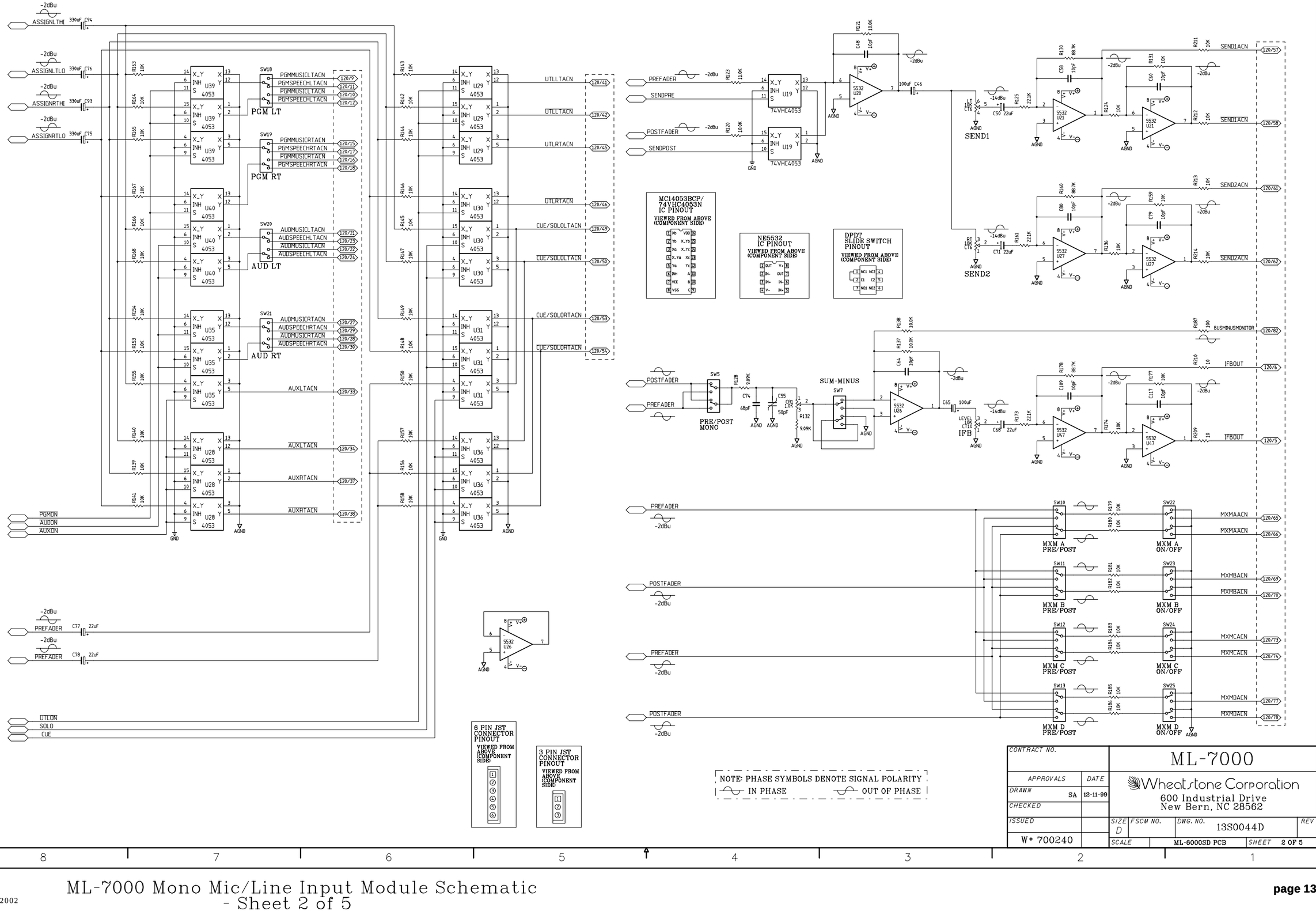
Power Supply

Main Interface PCB

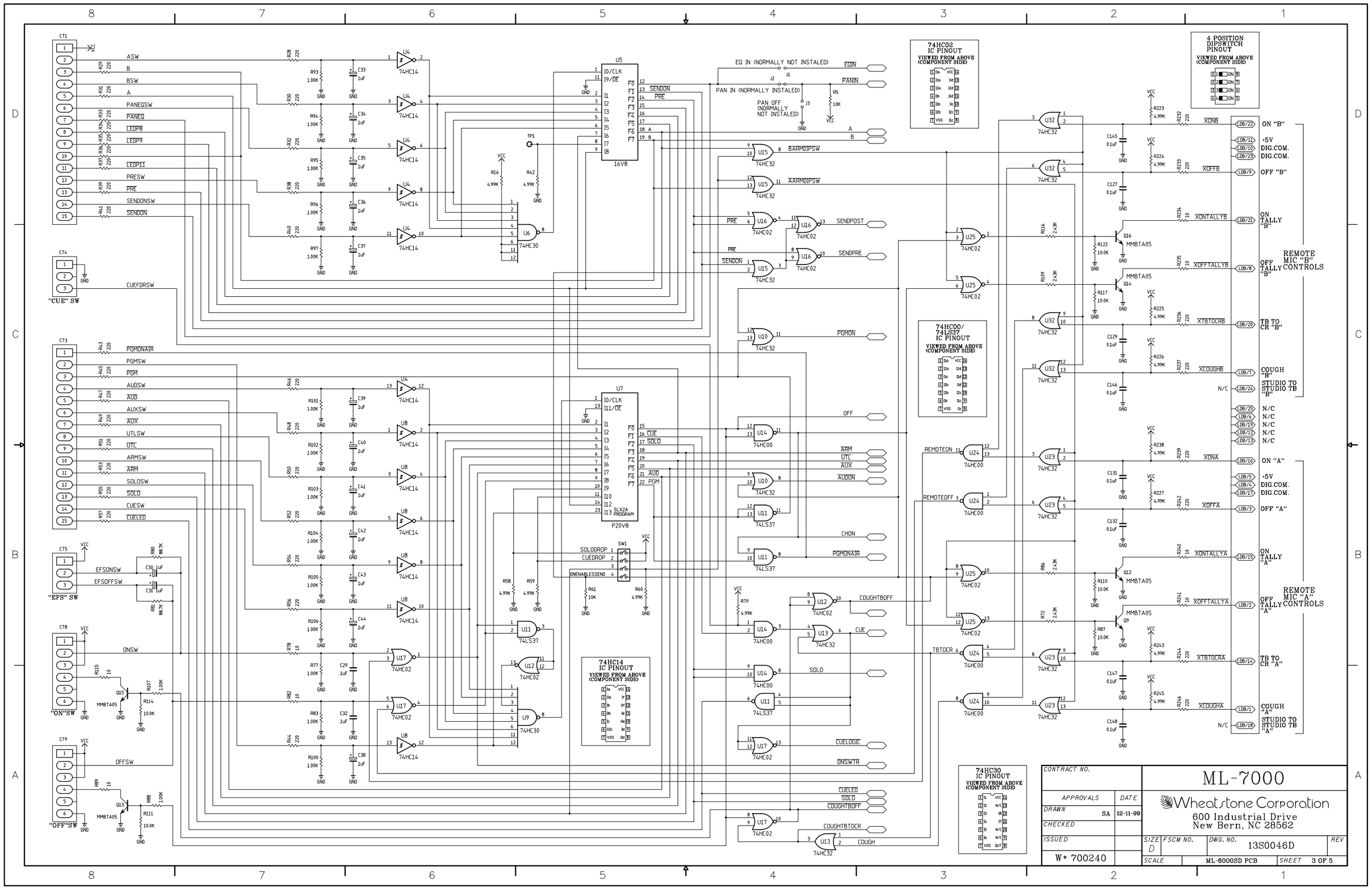


CONTRACT NO.		ML-7000	
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	12-11-99		
CHECKED			
ISSUED		SIZE D / FSCM NO. / DWG. NO. 13S0043D / REV	
W* 700240		SCALE / ML-6000SD PCB / SHEET 1 OF 5	

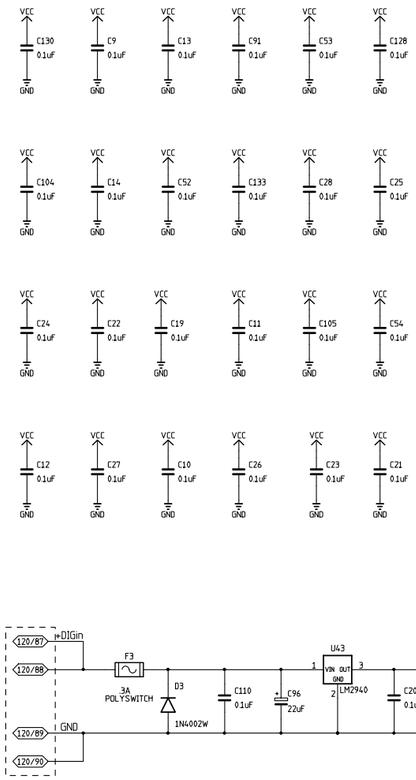
ML-7000 Mono Mic/Line Input Module Schematic - Sheet 1 of 5

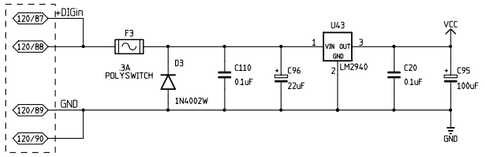


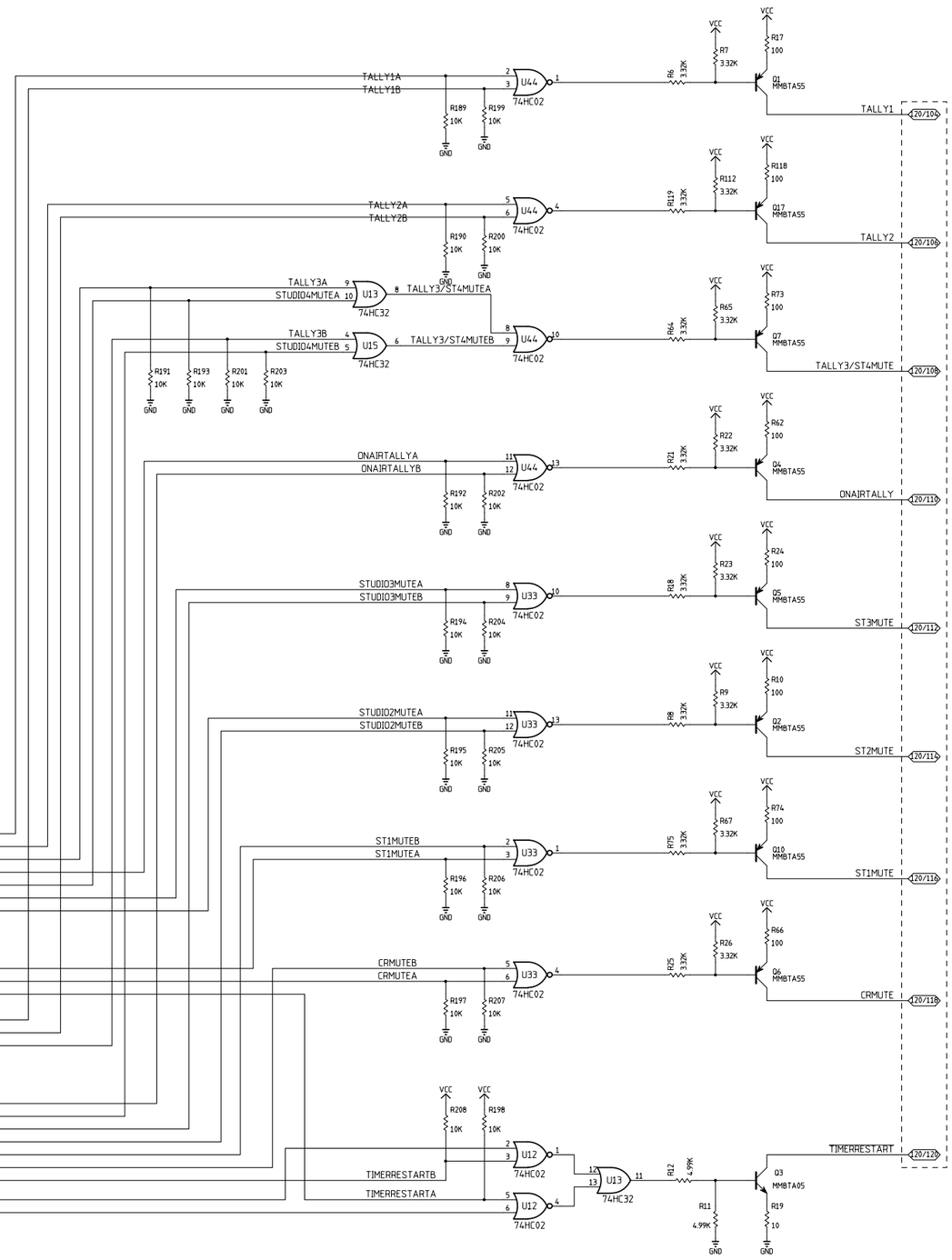
ML-7000 Mono Mic/Line Input Module Schematic - Sheet 2 of 5

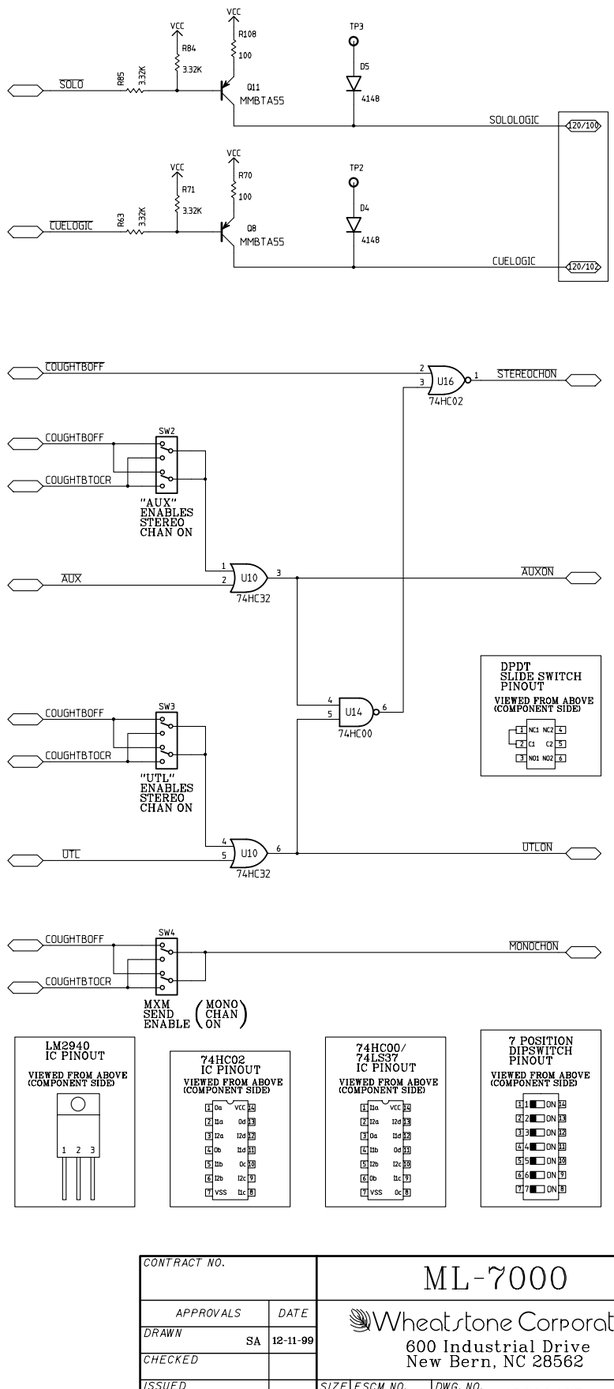


ML-7000 Mono Mic/Line Input Module Schematic
- Sheet 3 of 5







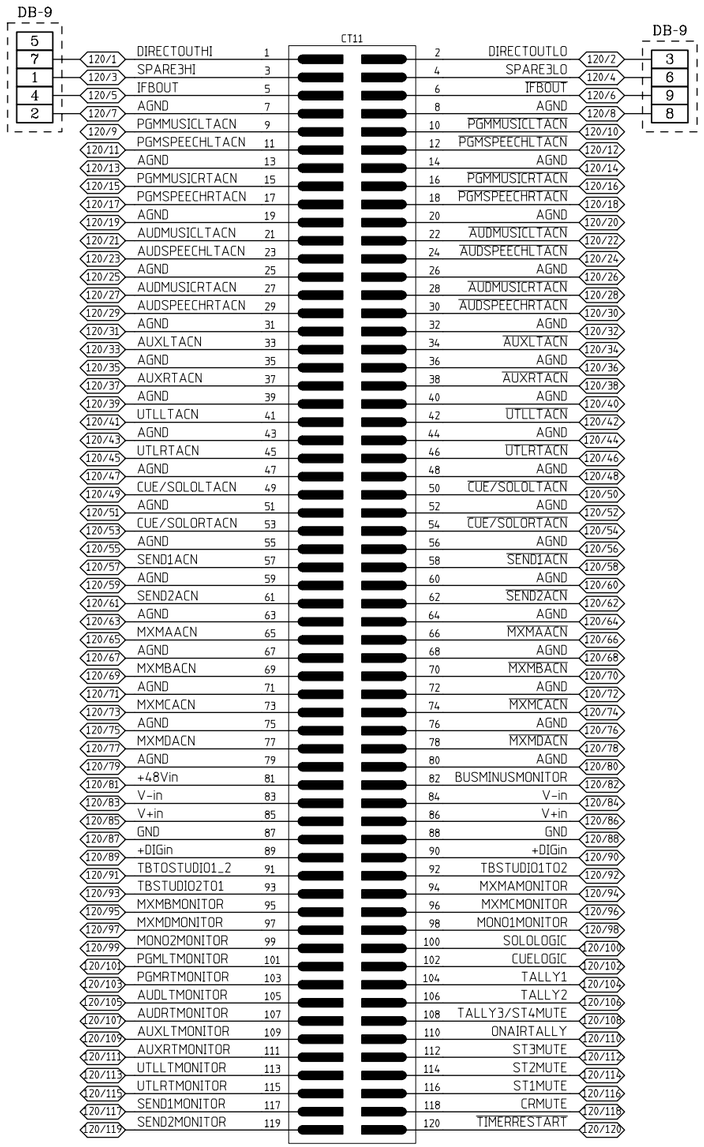


CONTRACT NO.		ML-7000	
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	12-11-99		
CHECKED			
ISSUED		SIZE D / FSCM NO. / DWG. NO. 13S0047D / REV	
W* 700240		SCALE / ML-6000SD PCB / SHEET 4 OF 5	

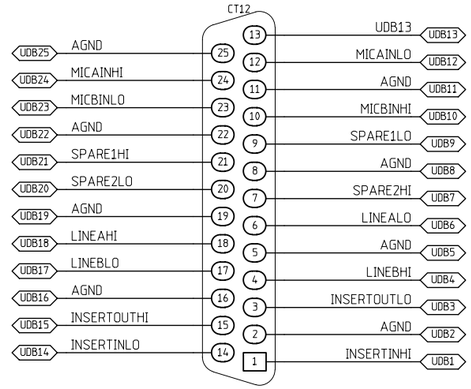
ML-7000 Mono Mic/Line Input Module Schematic - Sheet 4 of 5

CONNECTORS BUSS CHART

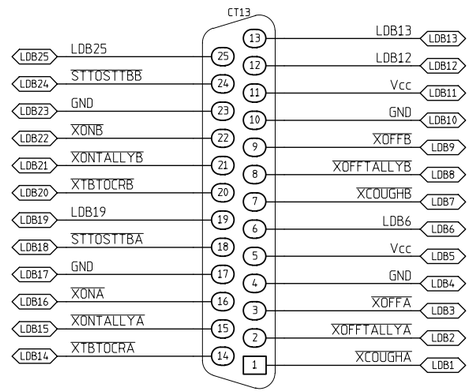
120 PIN EDGE CONNECTOR



UPPER DB-25 CONNECTOR

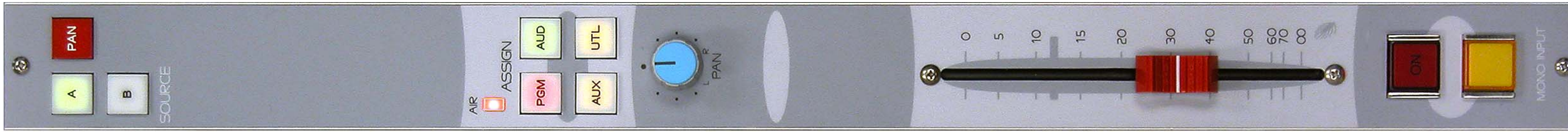


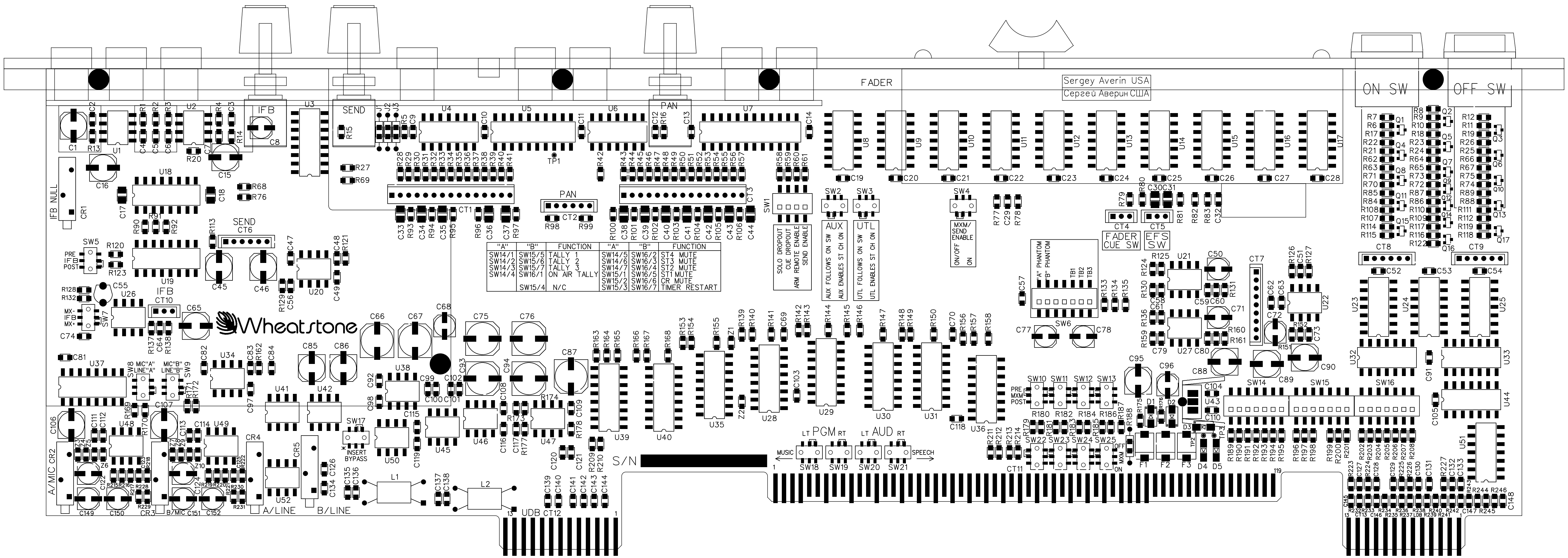
LOWER DB-25 CONNECTOR



CONTRACT NO.		ML-7000	
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	12-11-99		
CHECKED		SIZE C / FSCM NO. / DWG. NO. 13S0045D / REV -	
ISSUED			
W# 700240		SCALE ML-6000SD PCB / SHEET 5 OF 5	

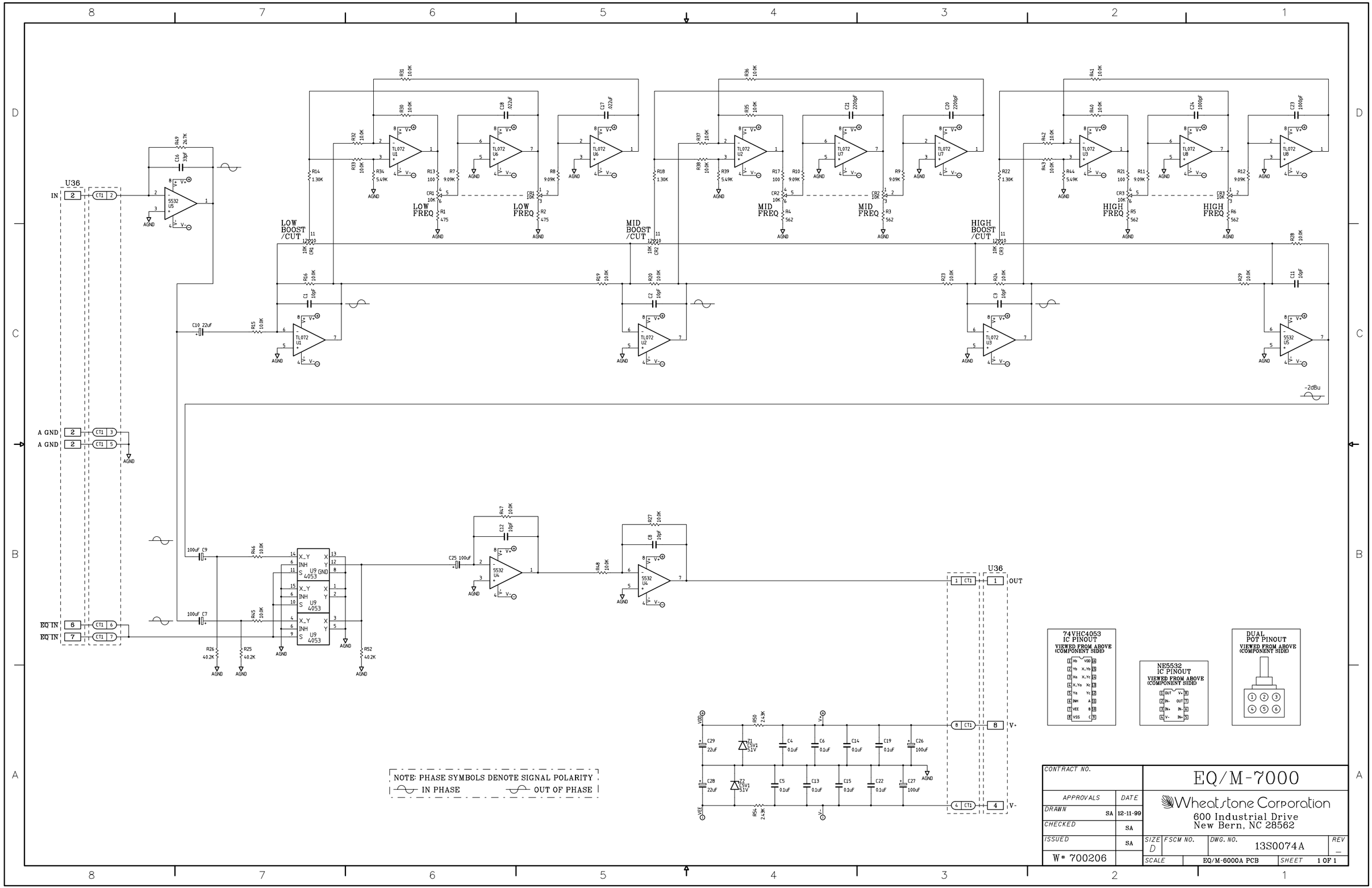
ML-7000 Mono Mic/Line Input Module
Schematic - Sheet 5 of 5



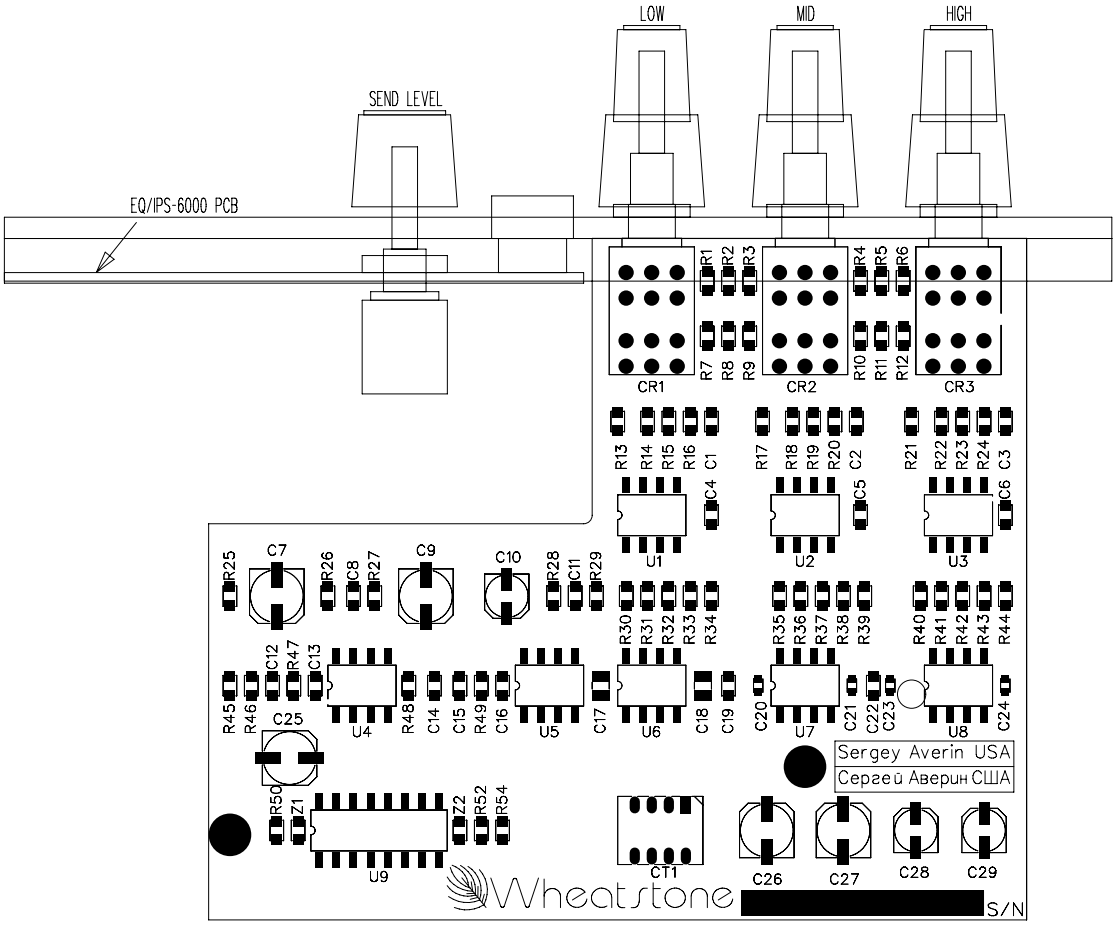


"A"	"B"	FUNCTION	"A"	"B"	FUNCTION
SW14/1	SW15/5	TALLY 1	SW14/5	SW16/2	ST4 MUTE
SW14/2	SW15/6	TALLY 2	SW14/6	SW16/3	ST3 MUTE
SW14/3	SW15/7	TALLY 3	SW14/7	SW16/4	ST2 MUTE
SW14/4	SW16/1	ON AIR TALLY	SW15/1	SW16/5	ST1 MUTE
			SW15/2	SW16/6	CR MUTE
	SW15/4	N/C	SW15/3	SW16/7	TIMER RESTART

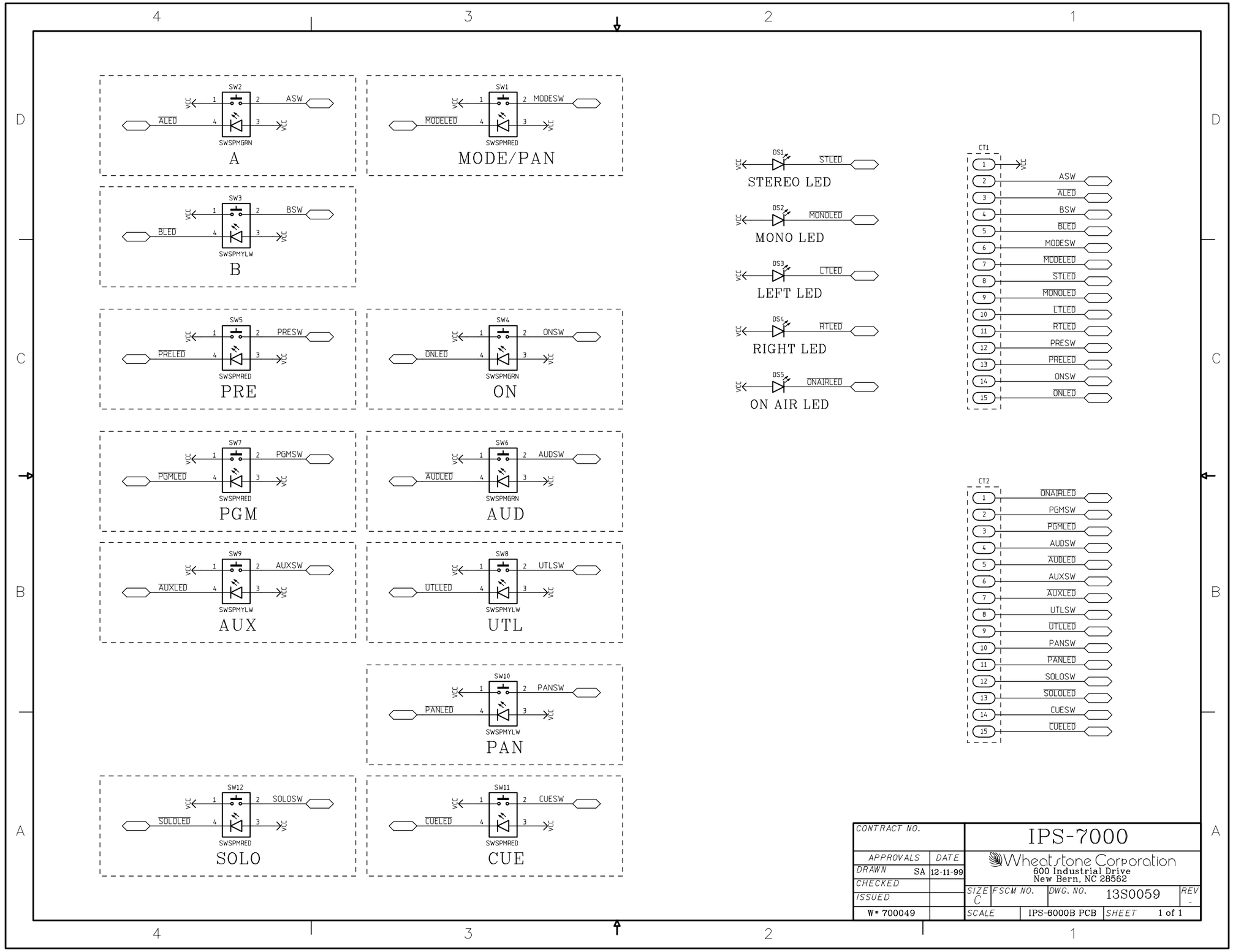
ML-7000 Mono Miic/Line Input Module - Load Sheet



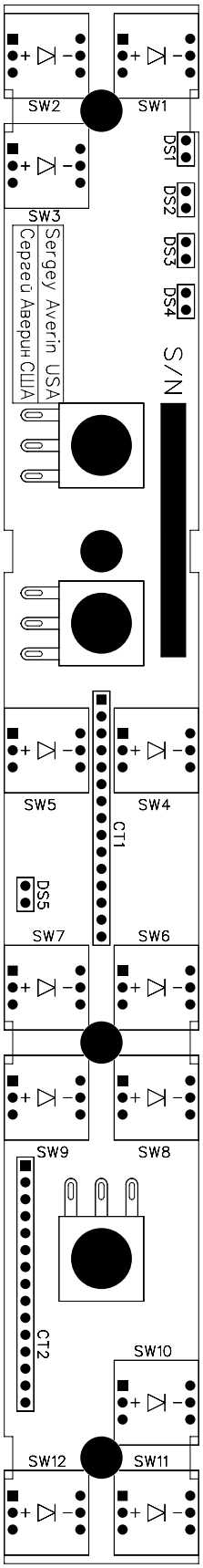
MLE-7000 Mono Input Module w/EQ Schematic - Sheet 1 of 1



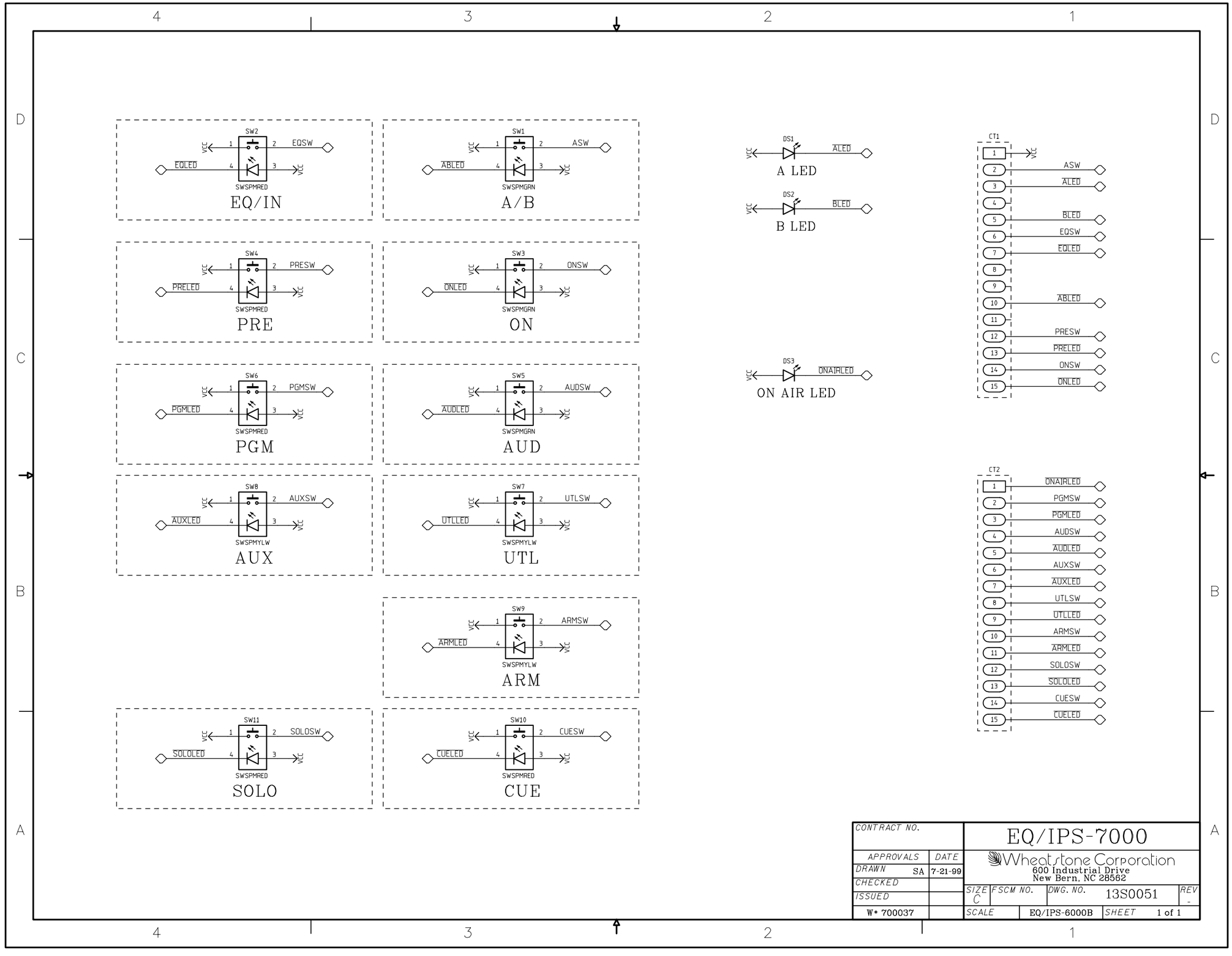
MLE-7000 Module w/EQ - Load Sheet



Mono Input Module Switch Card Schematic - Sheet 1 of 1

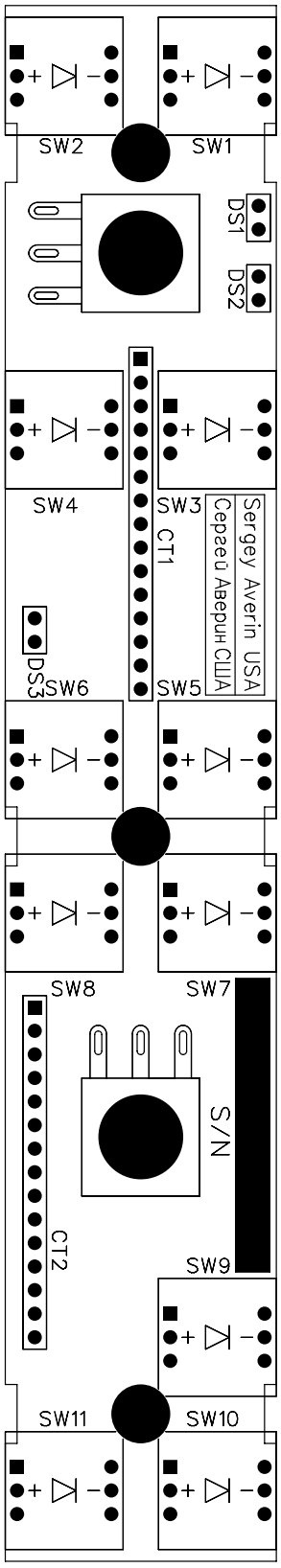


IPS-7000 Switch Card - Load Sheet

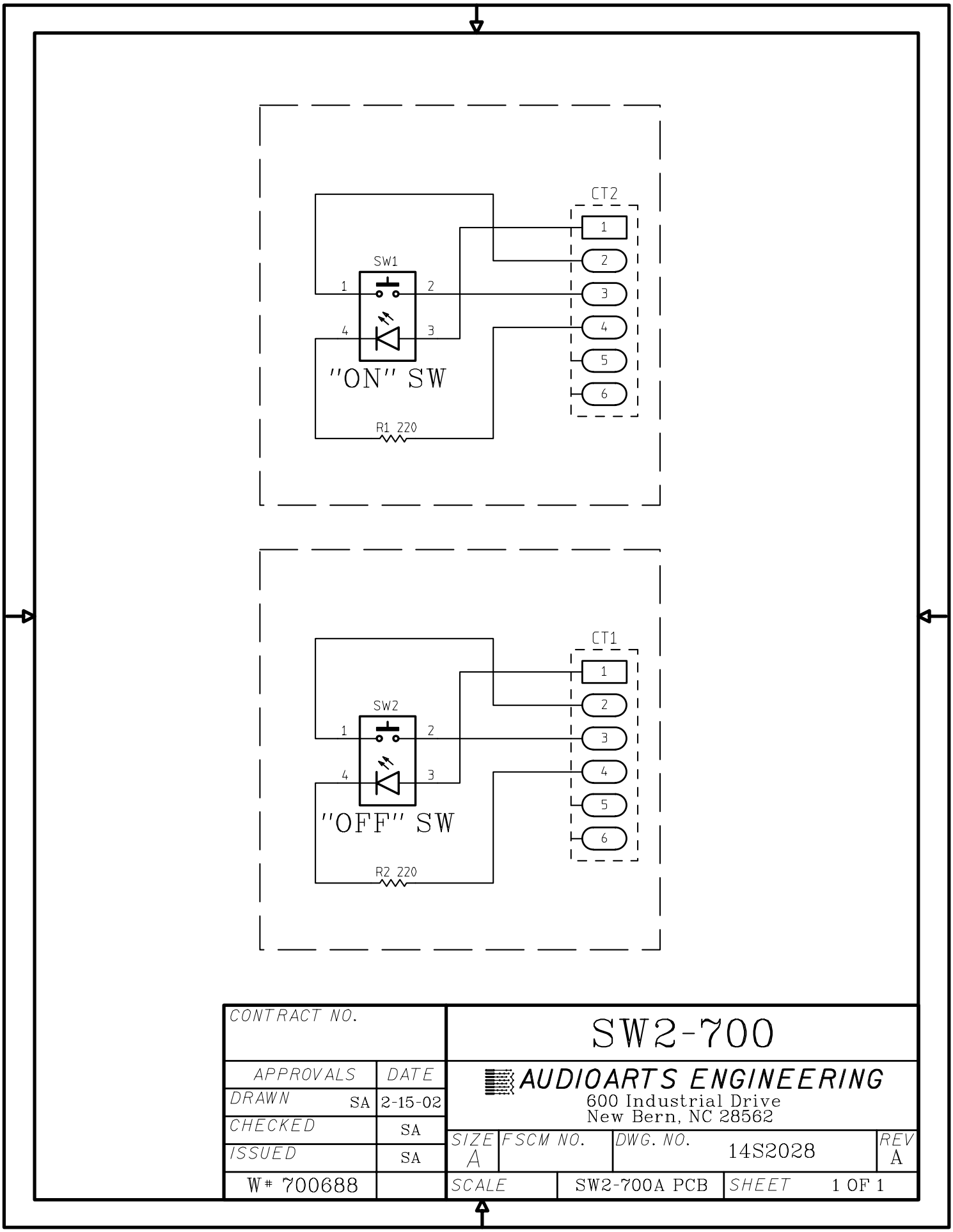


CONTRACT NO.		EQ/IPS-7000
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562
DRAWN SA	7-21-99	
CHECKED		
ISSUED		
W* 700037		SIZE C · FSCM NO. · DWG. NO. 13S0051 · REV -
		SCALE · EQ/IPS-6000B · SHEET 1 of 1

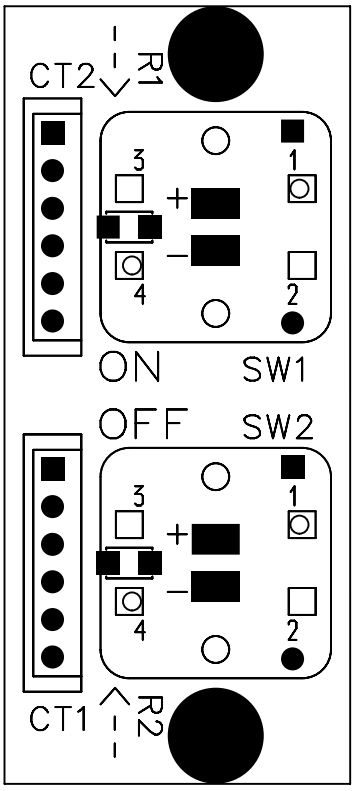
EQ Mono Input Module Switch Card Schematic - Sheet 1 of 1



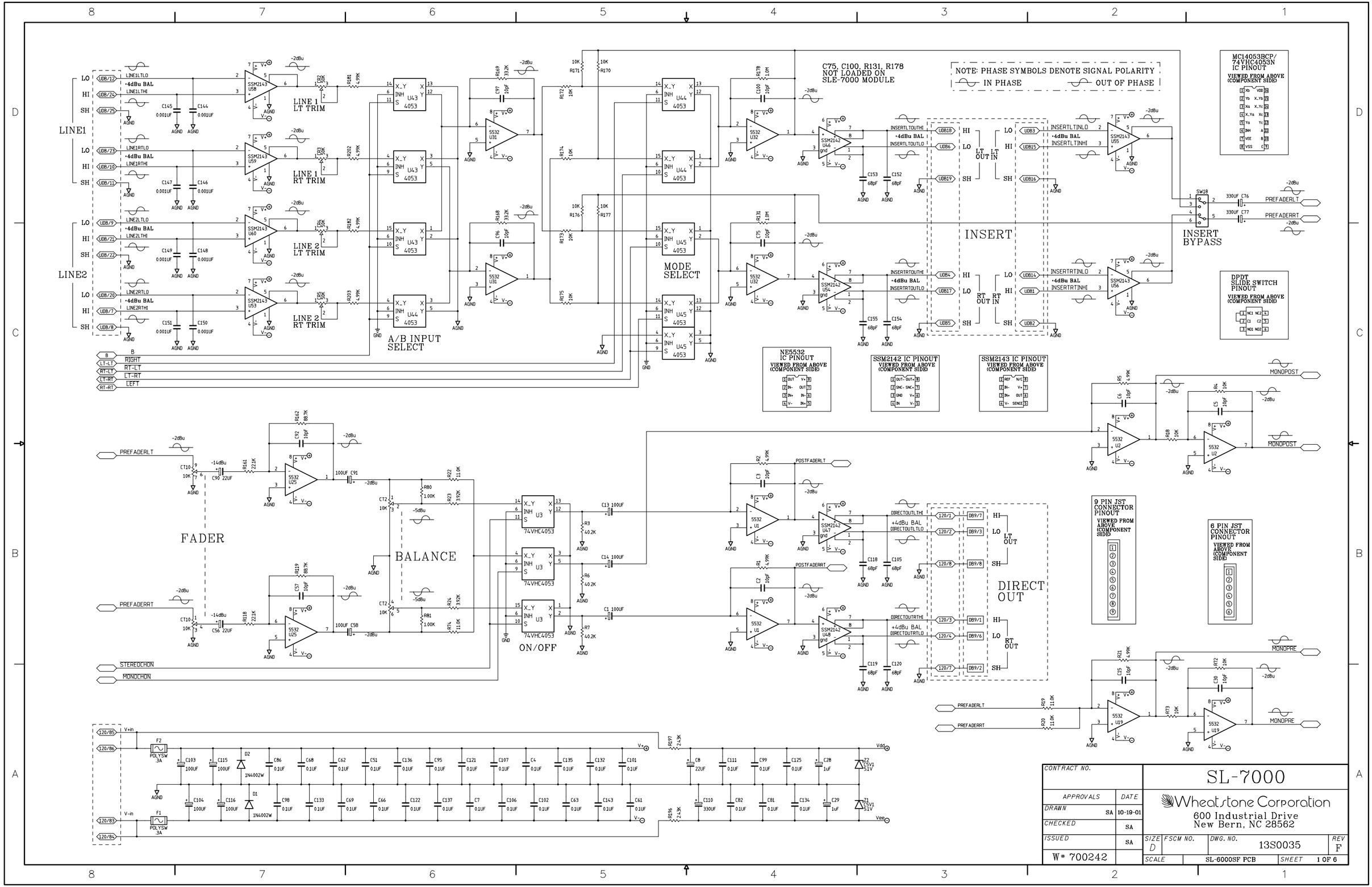
EQ/IPS-7000 Switch Card - Load Sheet



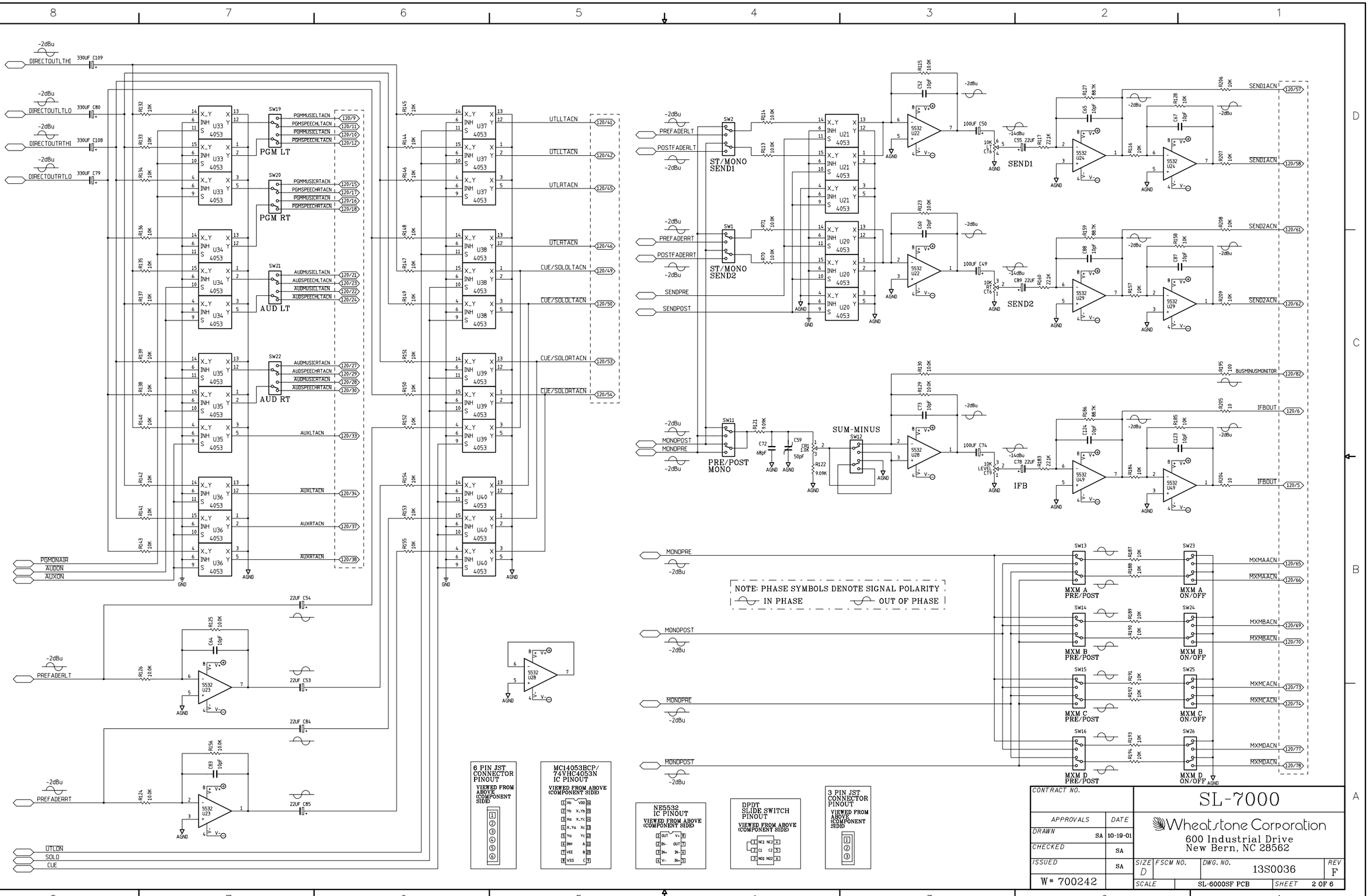
SW2-700 Switch Card Schematic - Sheet 1 of 1



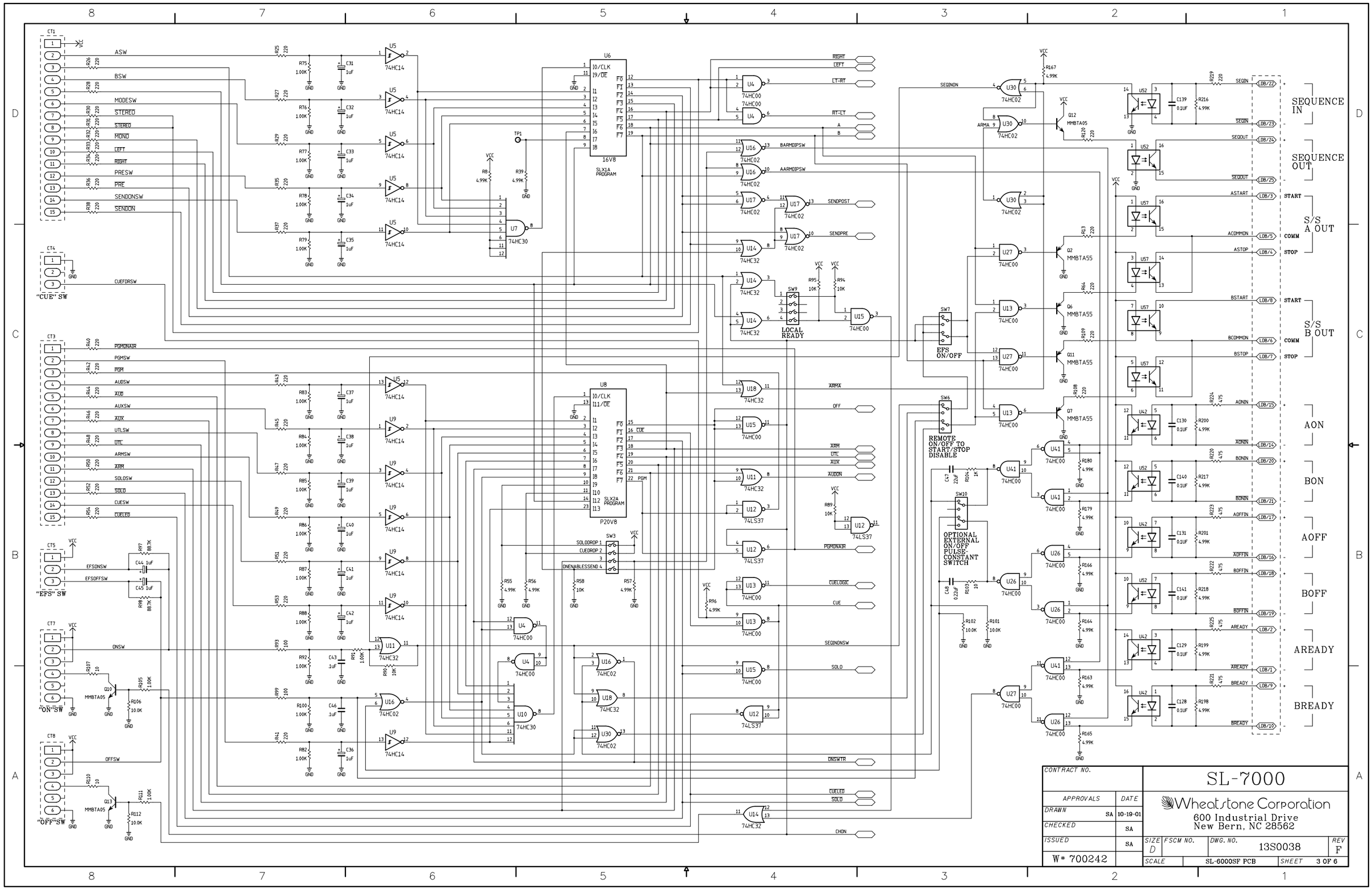
SW2-700 Switch Card - Load Sheet



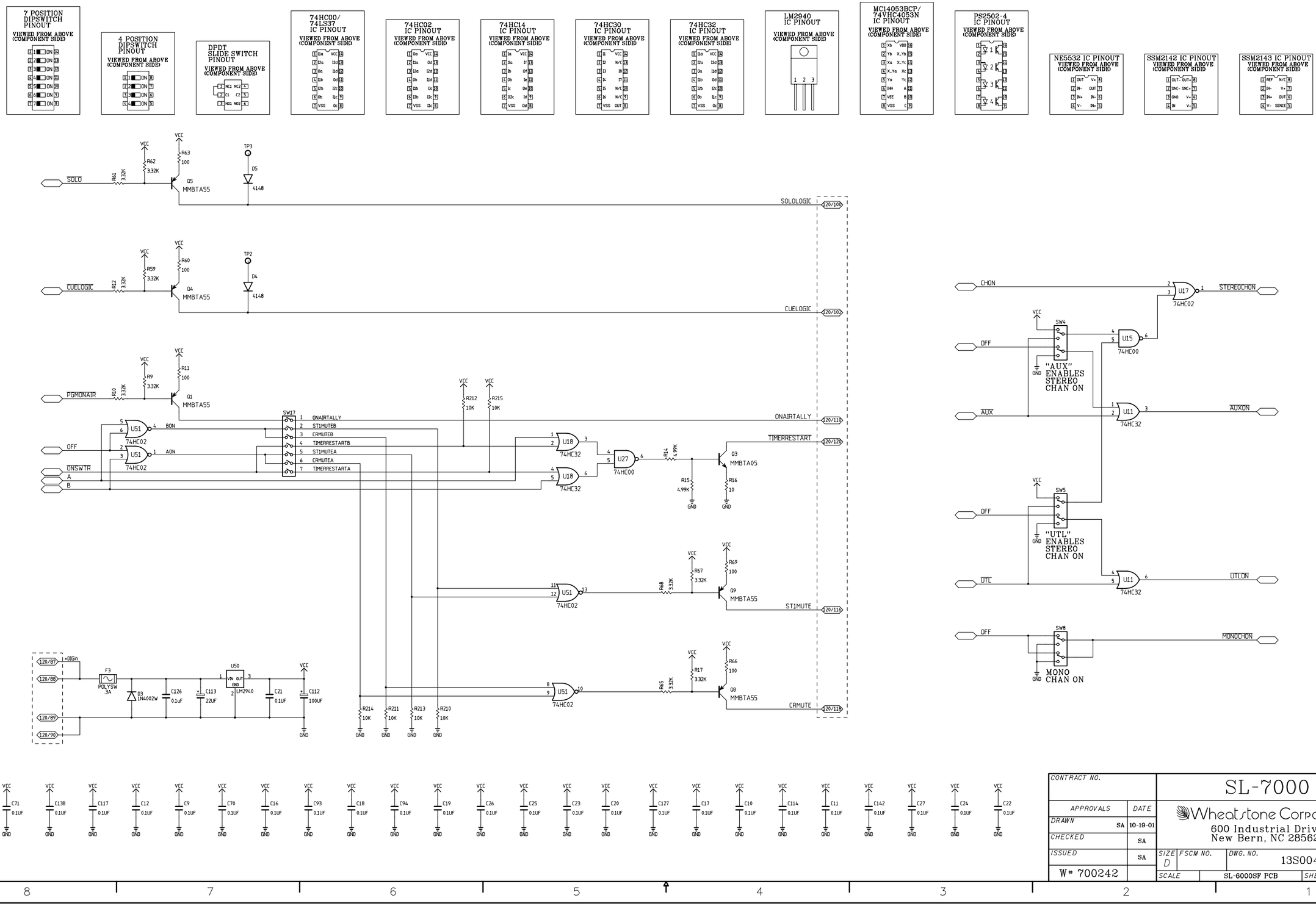
SL-7000 Stereo Input Module Schematic - Sheet 1 of 5



SL-7000 Stereo Input Module Schematic - Sheet 2 of 5

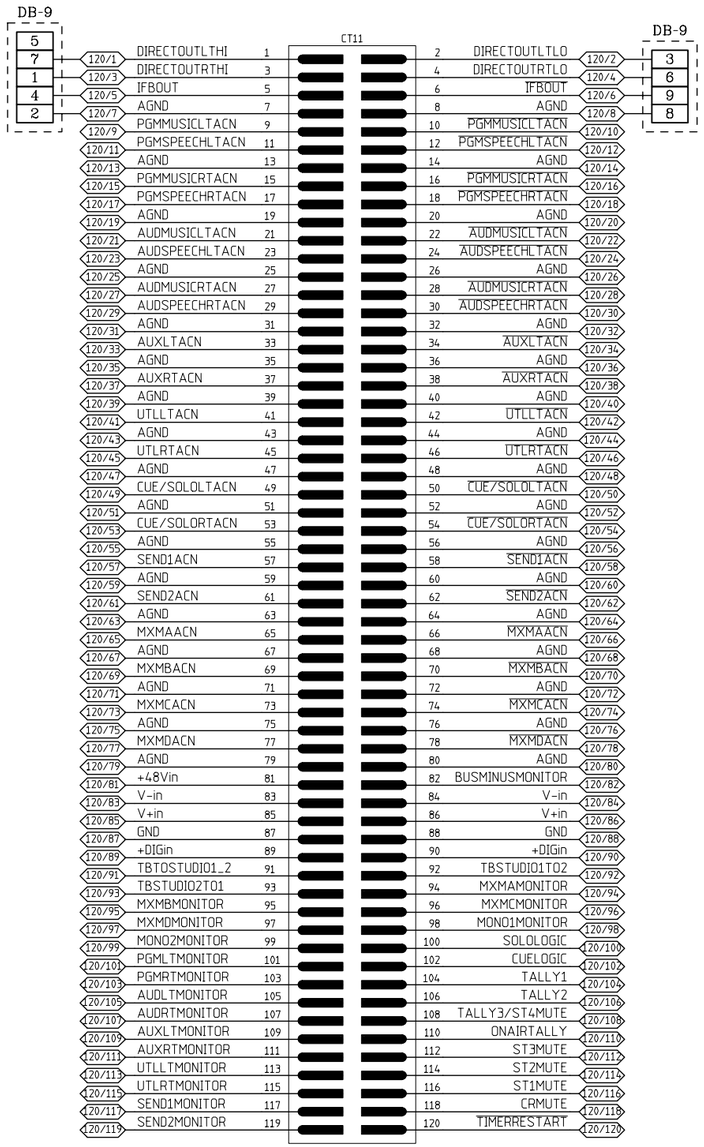


SL-7000 Stereo Input Module Schematic - Sheet 3 of 5

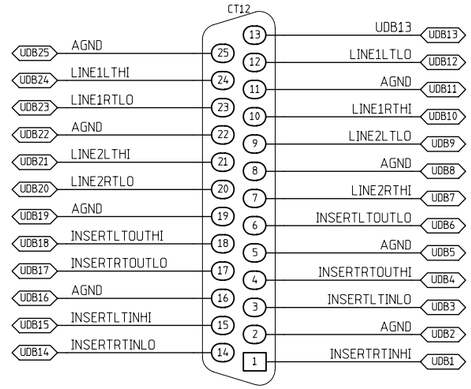

7 POSITION DIPSWITCH PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
4 POSITION DIPSWITCH PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
DPDT SLIDE SWITCH PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
74HC00/ 74LS37 IC PINOUT
74HC02 IC PINOUT
74HC14 IC PINOUT
74HC30 IC PINOUT
74HC32 IC PINOUT
LM2940 IC PINOUT
MC14053BCP/ 74VHC4053N IC PINOUT
PS2502-4 IC PINOUT
NE5532 IC PINOUT
SSM2142 IC PINOUT
SSM2143 IC PINOUT
SOLO
SOLOLOGIC
CUELOGIC
PGMONAIR
ONAIRTALLY
TIMERRESTART
STIMUTE
CRMUTE
OFF
ONSWTR
A
B
BON
AON
SW17
STIMUTEB
CRMUTEB
TIMERRESTARTB
STIMUTEA
CRMUTEA
TIMERRESTARTA
+DCin
POLYSW .3A
D3 1N4002W
LM2940
CHON
STEREOCHON
"AUX" ENABLES STEREO CHAN ON
AUX
AUXON
"UTL" ENABLES STEREO CHAN ON
UTL
UTLON
MONOCHON
MONO CHAN ON
CONTRACT NO.
APPROVALS
DRAWN SA 10-19-01
CHECKED SA
ISSUED SA
W# 700242
SL-7000
Wheatstone Corporation
600 Industrial Drive
New Bern, NC 28562
SIZE D
FSCM NO.
DWG. NO. 13S0042
REV F
SCALE SL-6000SF PCB
SHEET 4 OF 6

CONNECTORS BUSS CHART

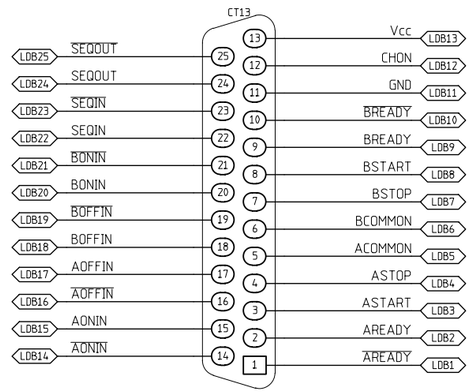
120 PIN EDGE CONNECTOR



UPPER DB-25 CONNECTOR

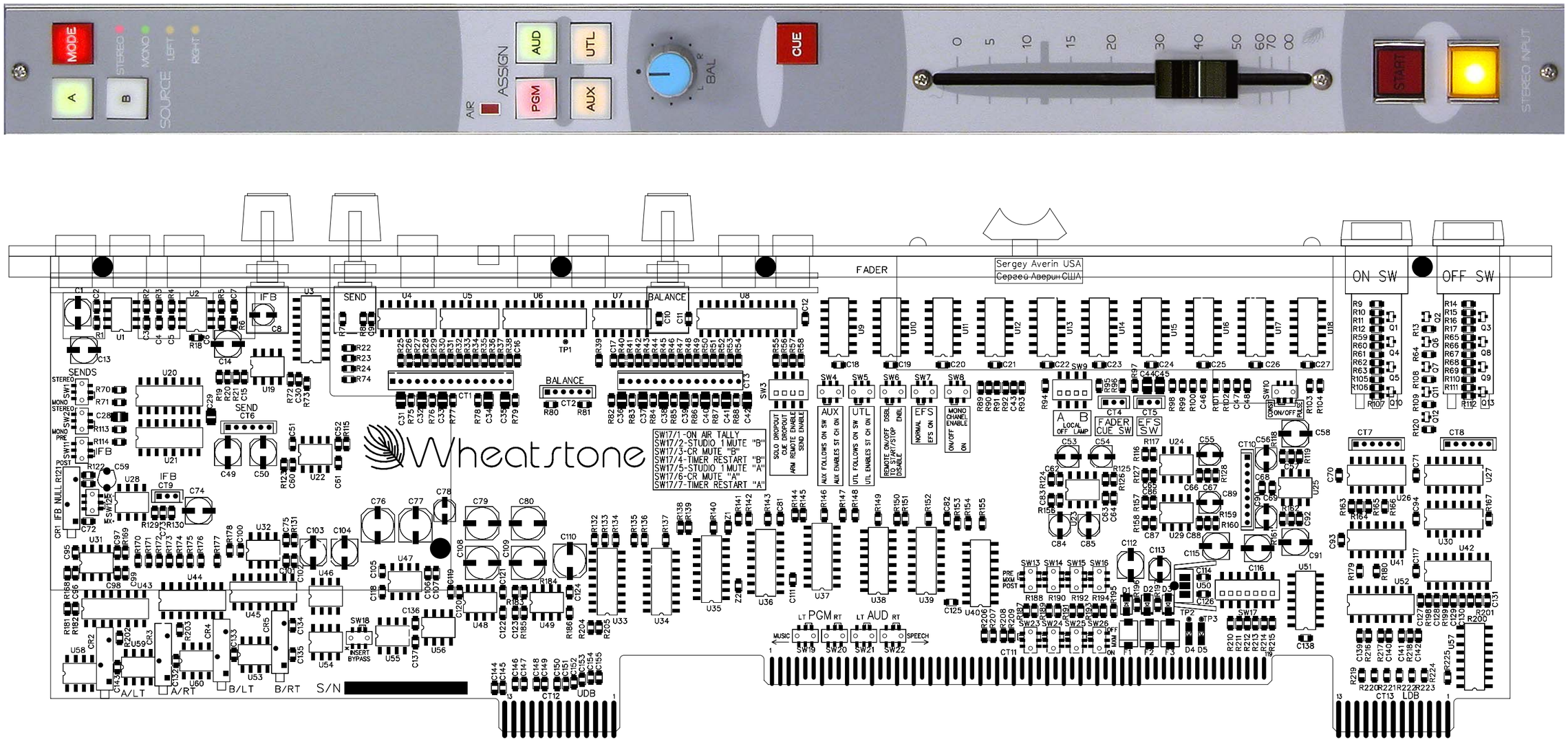


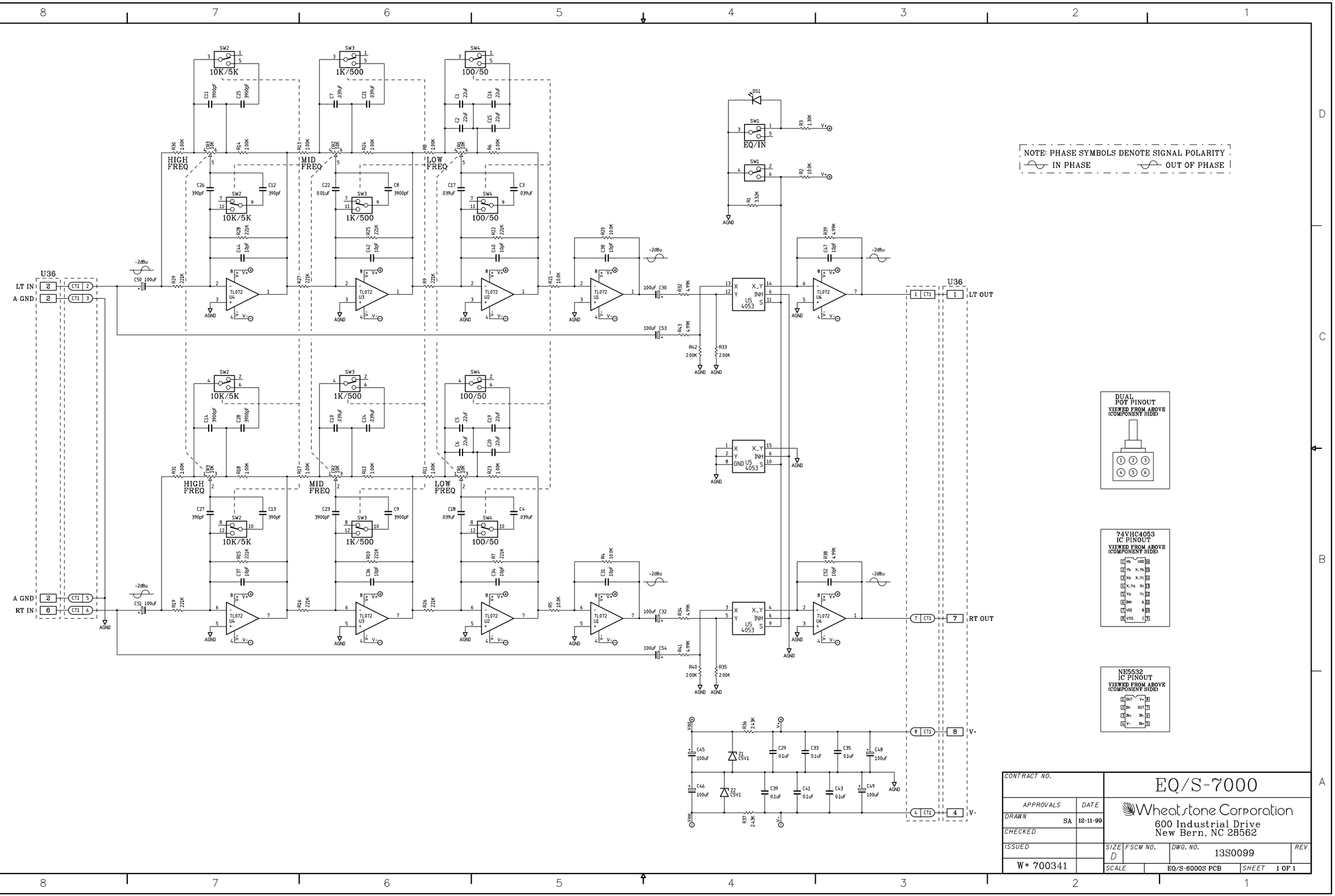
LOWER DB-25 CONNECTOR



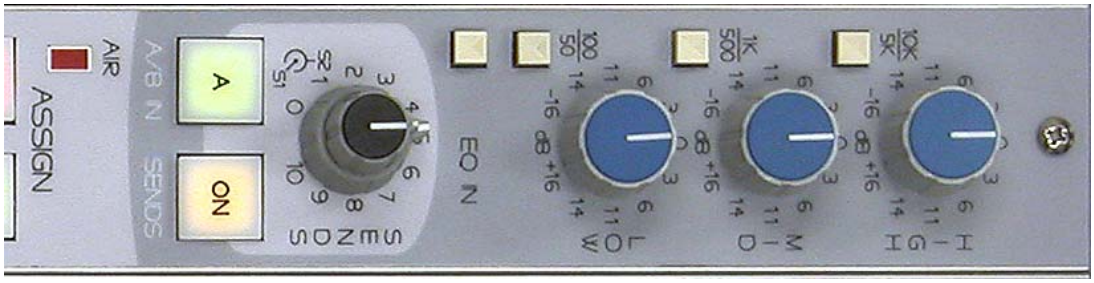
CONTRACT NO.		SL-7000	
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	10-19-01		
CHECKED	SA	SIZE C / FSCM NO. / DWG. NO. 13S0037	REV F
ISSUED	SA		
W* 700242		SCALE SL-6000SF PCB	SHEET 5 OF 6

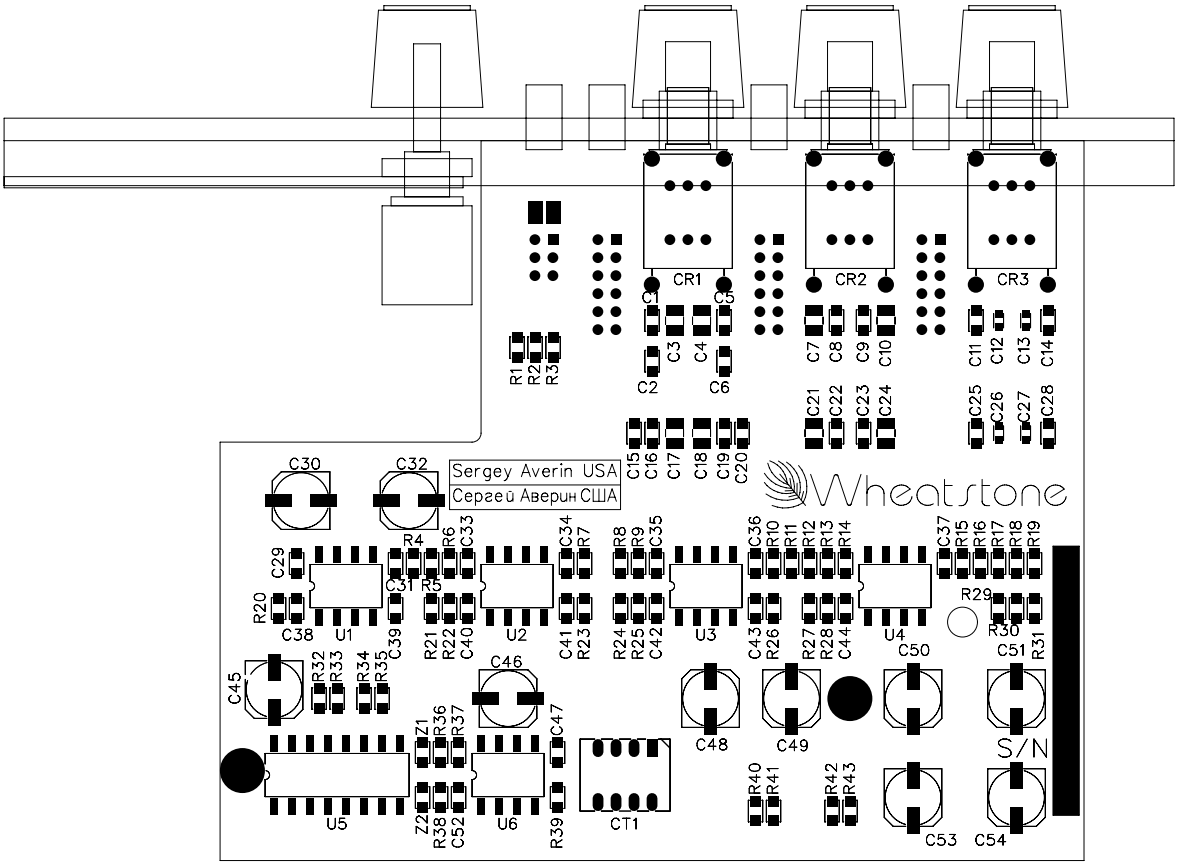
SL-7000 Stereo Input Module Schematic - Sheet 5 of 5


MODE
A
B
SOURCE
STEREO
MONO
LEFT
RIGHT
AIR
ASSIGN
AUD
UTL
PGM
AUX
BAL
CUE
START
STEREO INPUT
FADER
Sergey Averin USA
Сергей Аверин США
ON SW
OFF SW
SEND
BALANCE
SENDS
IFB
SEND
BALANCE
LT PGM RT
LT AUD RT
MUSIC
SPEECH
A/LT
A/RT
B/LT
B/RT
S/N
UDB
LDB
SW17/1 -ON AIR TALLY
SW17/2-STUDIO 1 MUTE "B"
SW17/3-CR MUTE "B"
SW17/4-TIMER RESTART "B"
SW17/5-STUDIO 1 MUTE "A"
SW17/6-CR MUTE "A"
SW17/7-TIMER RESTART "A"
Wheatstone

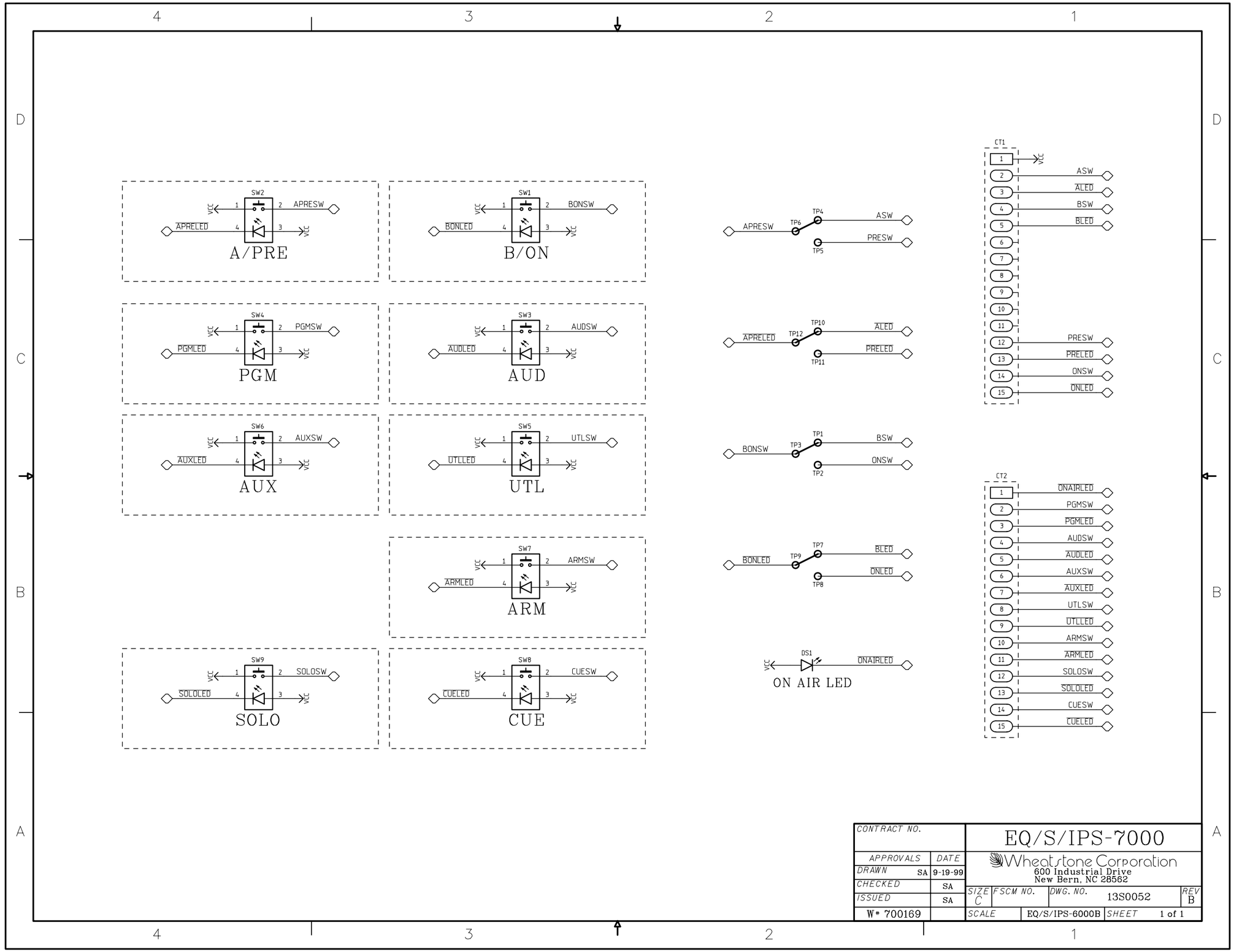


SLE-7000 Stereo Input Module w/EQ Schematic - Sheet 1 of 1

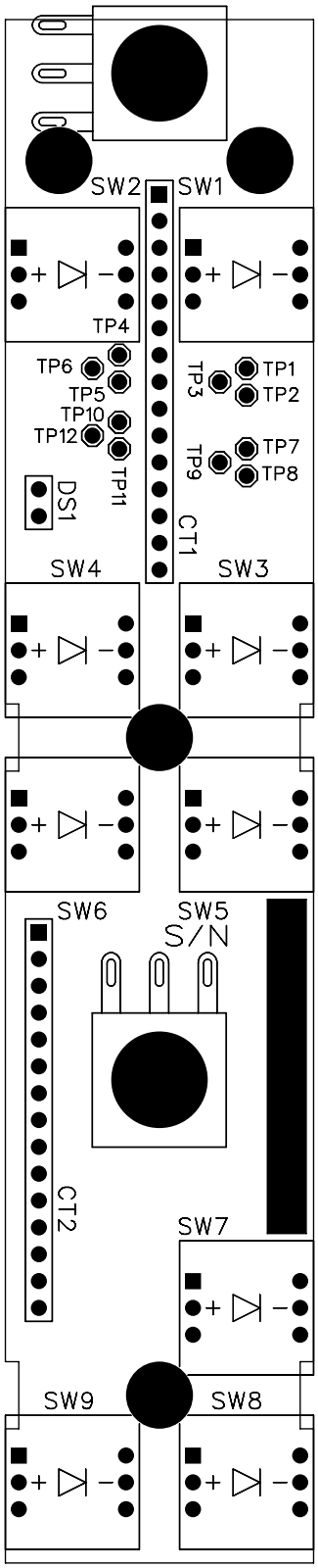




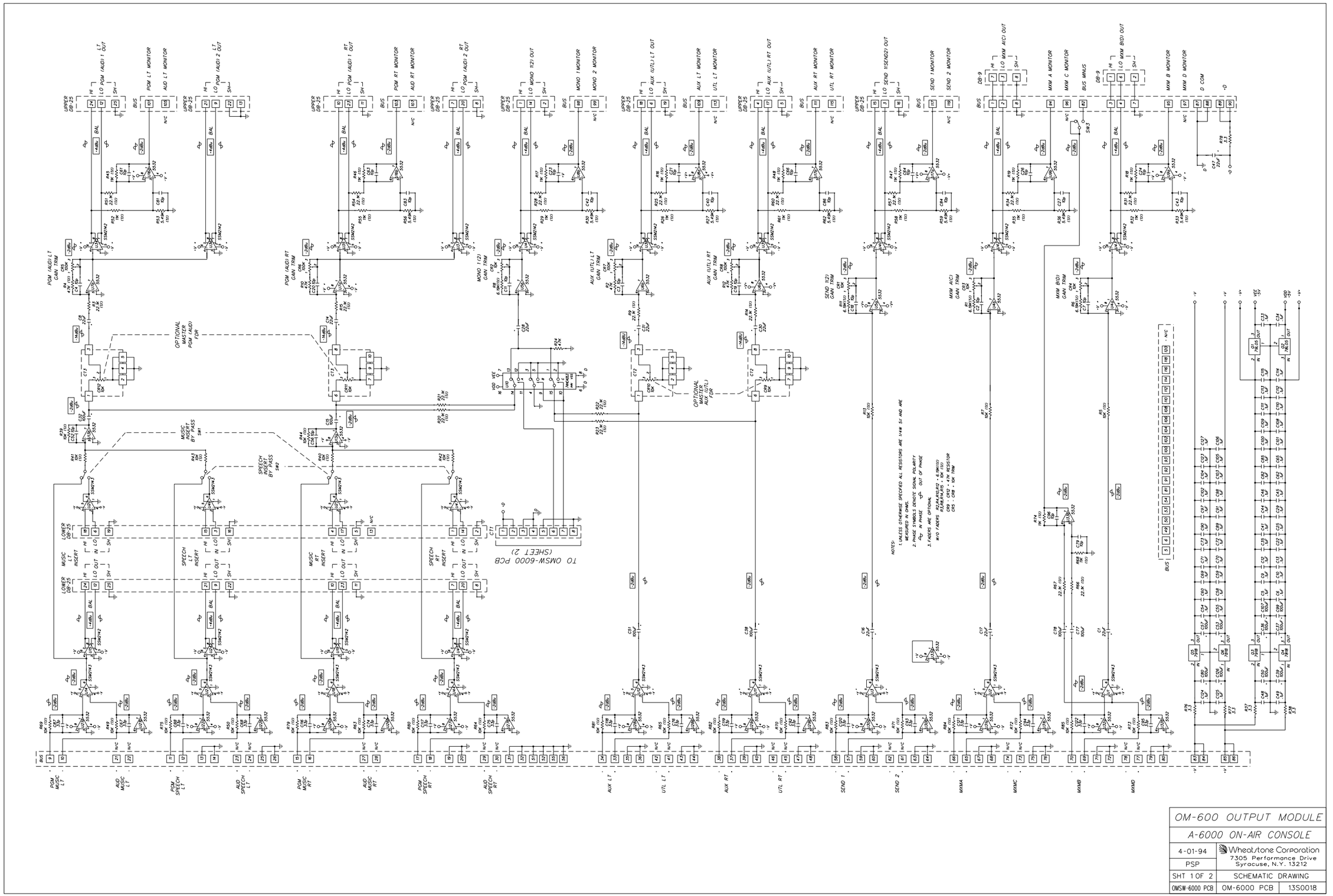
SLE-7000 Module w/EQ - Load Sheet

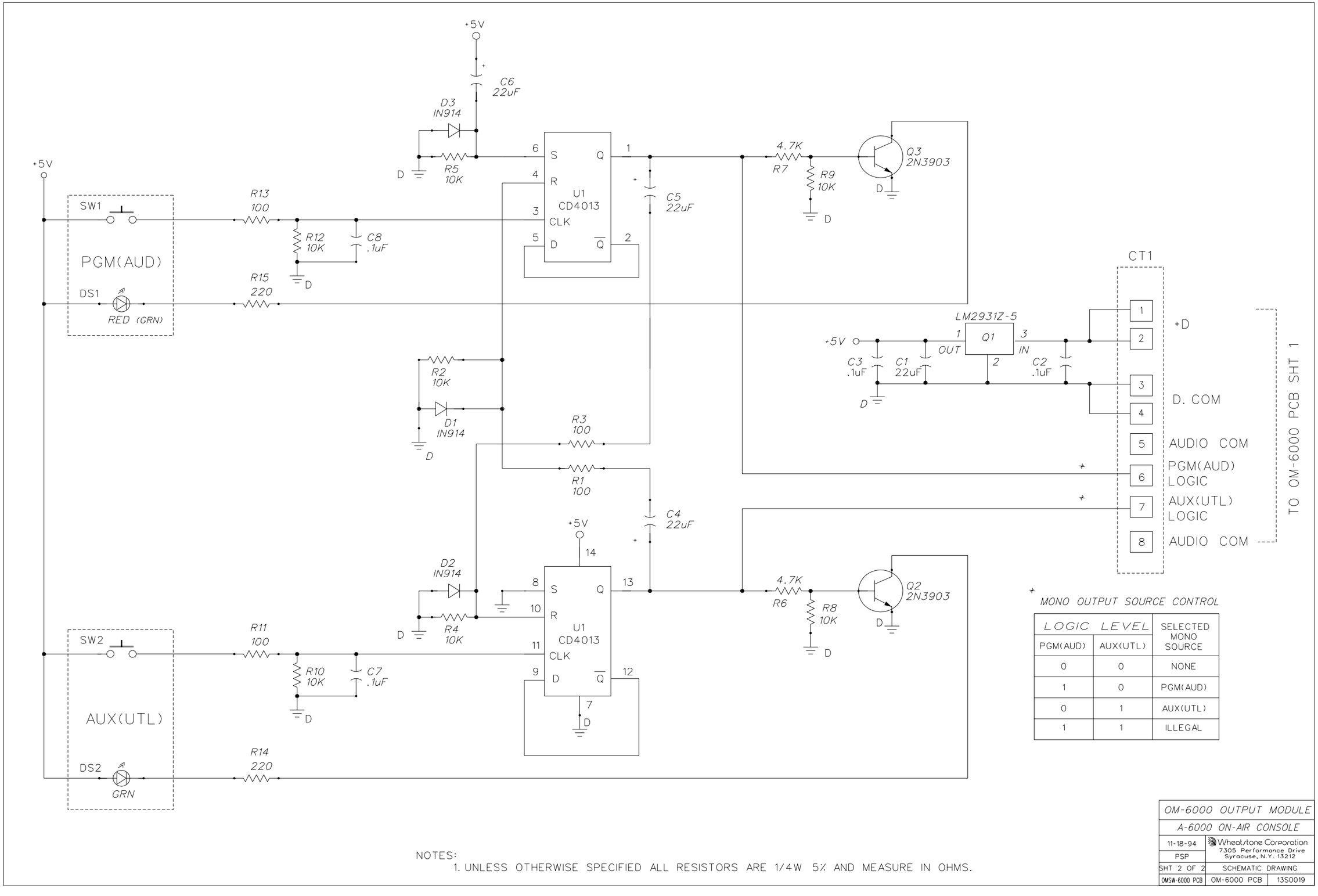


EQ Stereo Input Module Switch Card Schematic - Sheet 1 of 1



EQ/S/IPS-7000 Switch Card - Load Sheet


OPTIONAL MASTER PGM (AUD) FDR
OPTIONAL MASTER AUX (UTL) FDR
MUSIC INSERT BY PASS SW1
SPEECH INSERT BY PASS SW2
TO OMSW-6000 PCB (SHEET 2)
NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W 5% AND ARE MEASURED IN OHMS.
2. PHASE SYMBOLS DENOTE SIGNAL POLARITY
IN PHASE
OUT OF PHASE
3. FADERS ARE OPTIONAL
W/O FADERS R2,R4,R5,R7 - 6.5K(1%)
R1,R3,R6,R8 - 6.5K(1%)
CR9 - CR12 - 4.7K RESISTOR
CR5 - CR8 - 10K TRIM
OM-600 OUTPUT MODULE
A-6000 ON-AIR CONSOLE
4-01-94
PSP
Wheatstone Corporation
7305 Performance Drive
Syracuse, N.Y. 13212
SHT 1 OF 2
SCHEMATIC DRAWING
OMSW-6000 PCB
OM-6000 PCB
13S0018

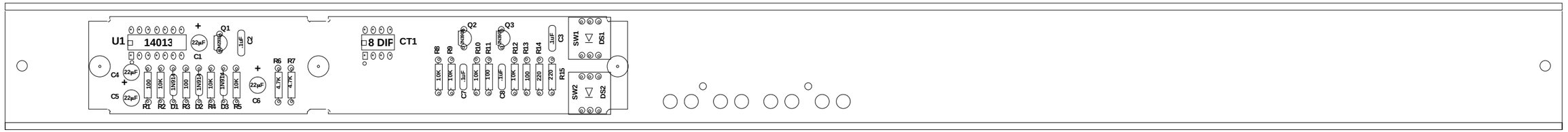


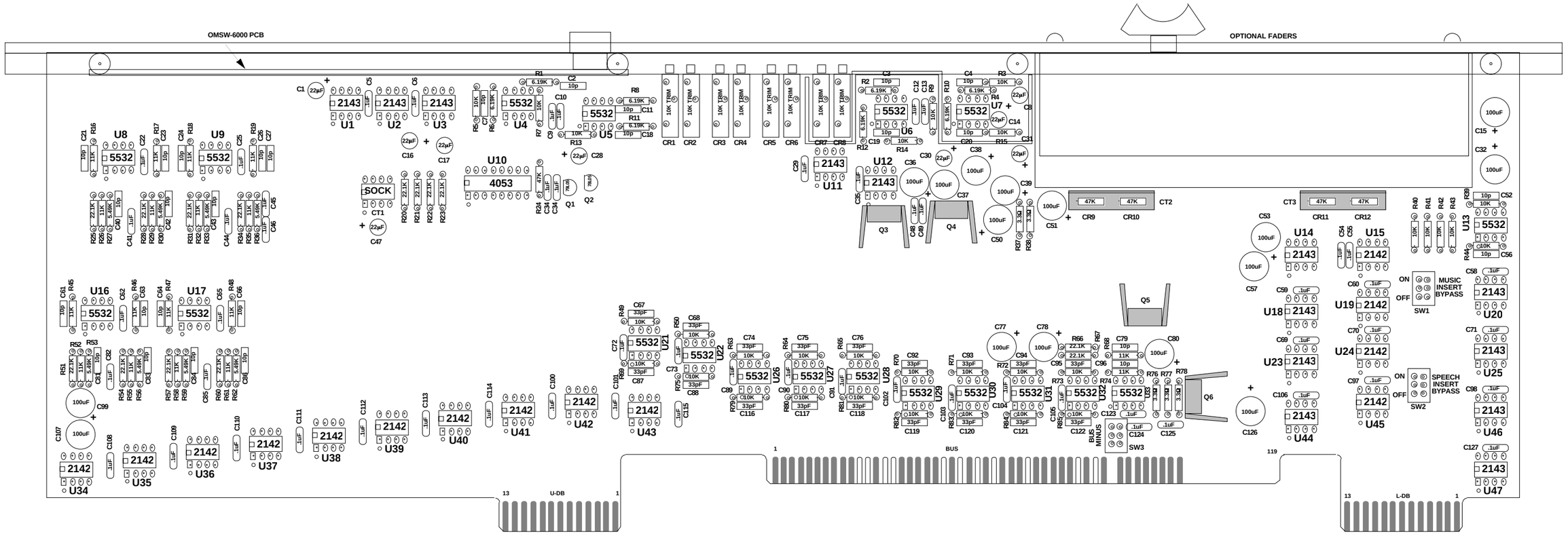
* MONO OUTPUT SOURCE CONTROL

LOGIC LEVEL		SELECTED MONO SOURCE
PGM(AUD)	AUX(UTL)	
0	0	NONE
1	0	PGM(AUD)
0	1	AUX(UTL)
1	1	ILLEGAL

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W 5% AND MEASURE IN OHMS.

OM-6000 OUTPUT MODULE		
A-6000 ON-AIR CONSOLE		
11-18-94	Wheatstone Corporation 7305 Performance Drive Syracuse, N.Y. 13212	
PSP		
SHT 2 OF 2	SCHEMATIC DRAWING	
OMSW-6000 PCB	OM-6000 PCB	13S0019

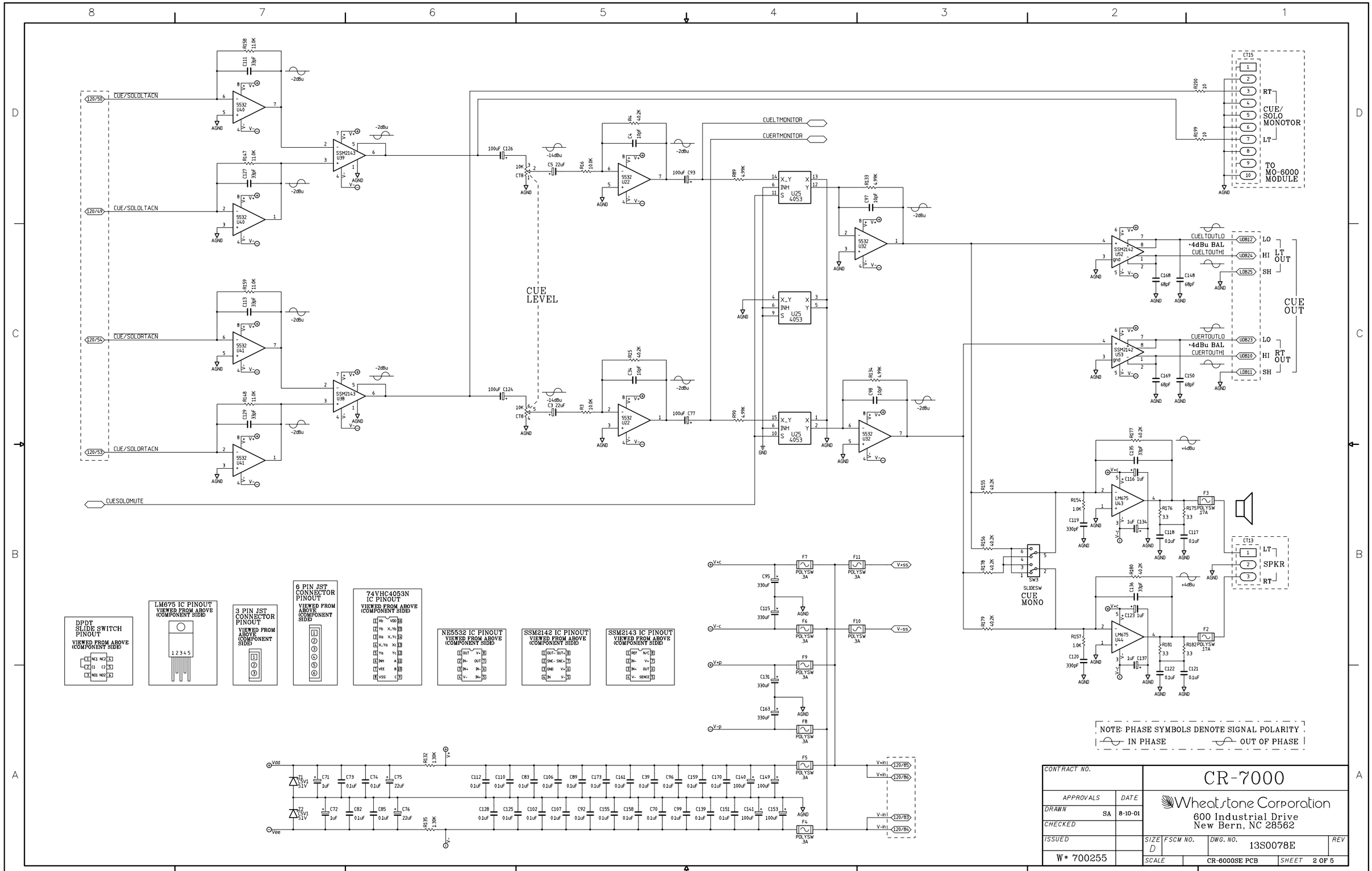




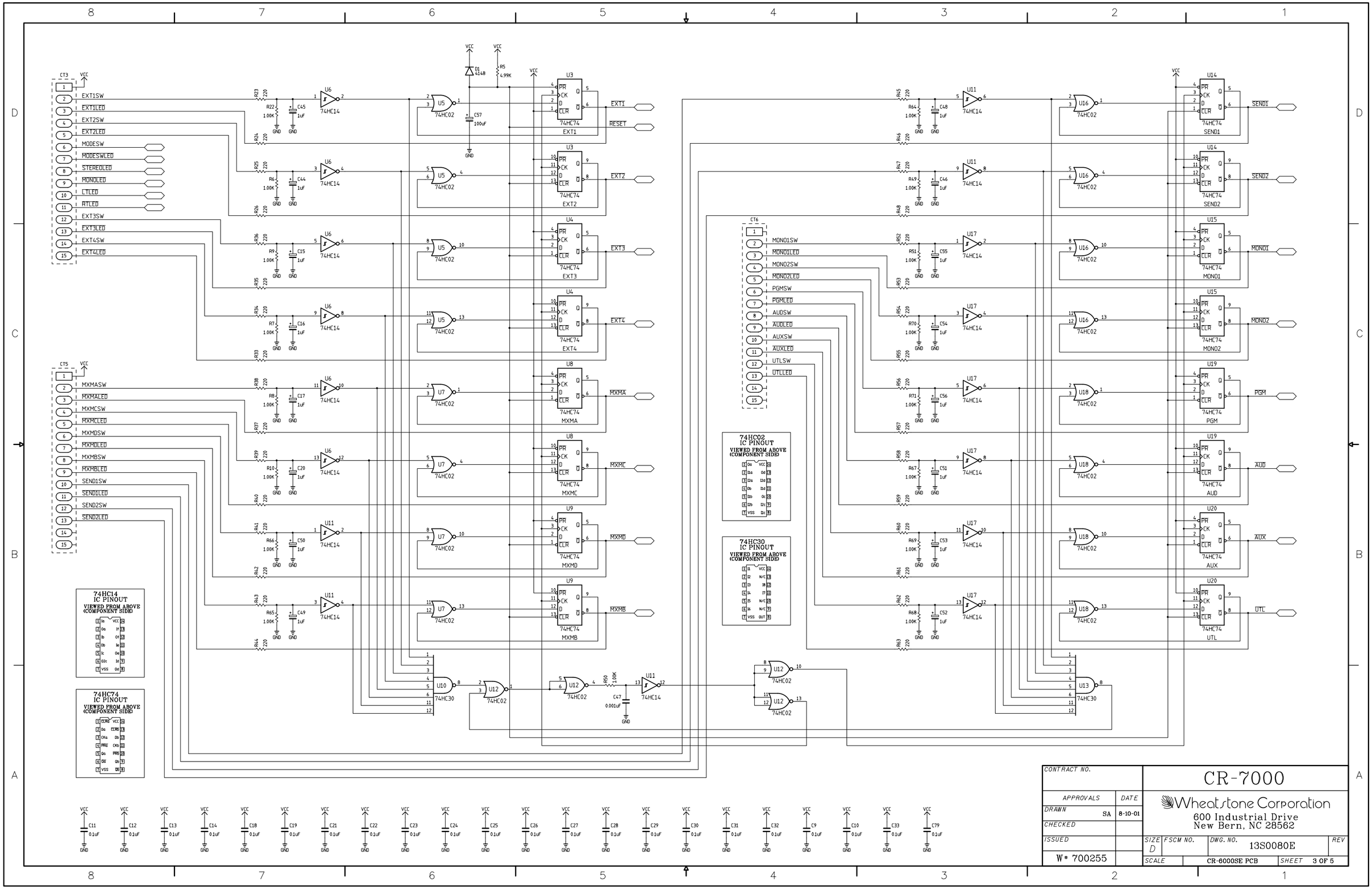
5.49K
6.19K
10K
11K
22.1K
} 1%

WHEATSTONE CORP
OM-6000
LOAD SHEET
13L0009E

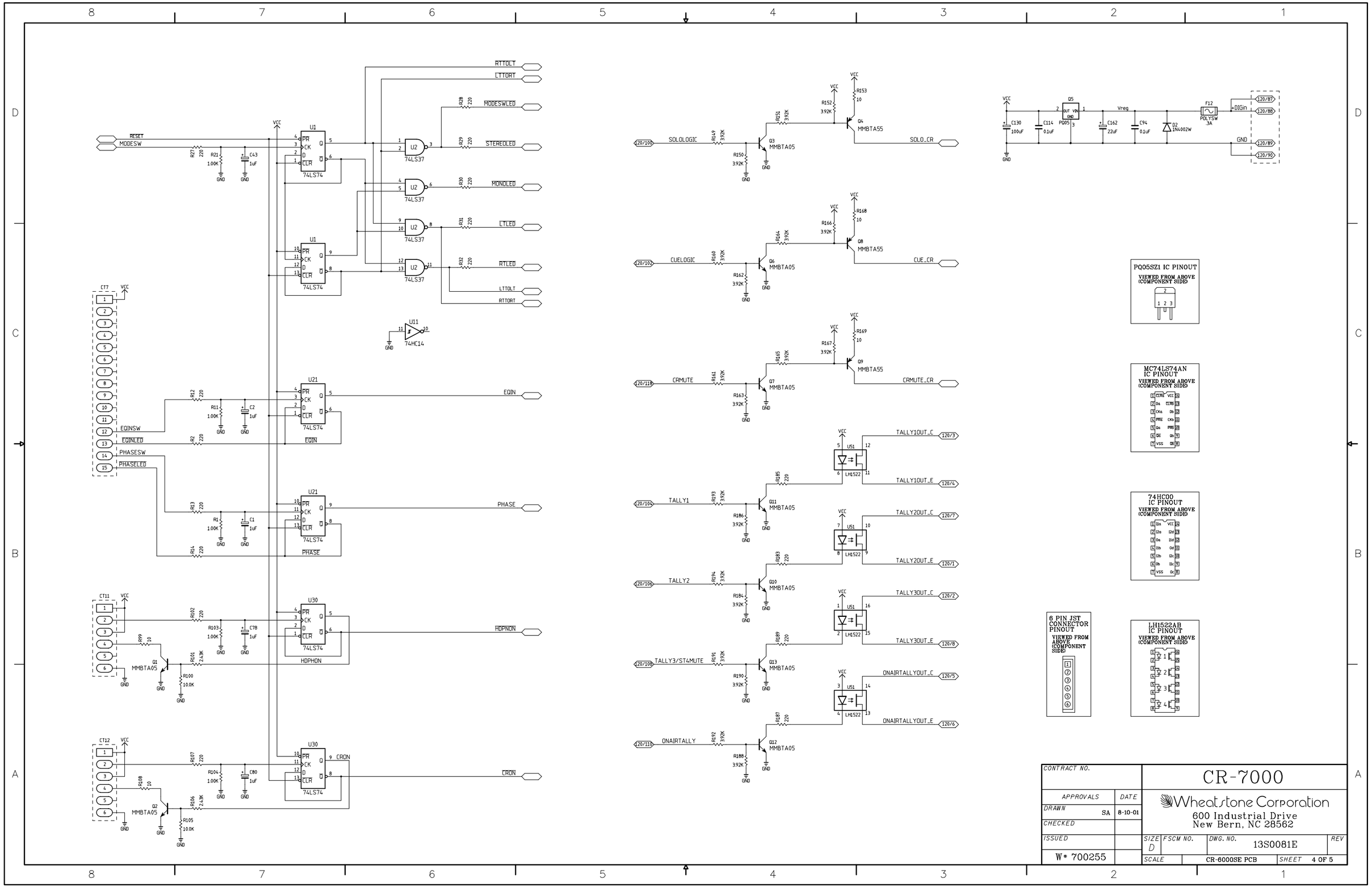
CUELTMONITOR
CUERTMONITOR
-2dBu
LTOUT
-2dBu
RTOUT
CUE_CR
SOLO_CR
CRON
CRMUTE_CR
HDPNON
CUESOLOMUTE
CR INTERRUPT -MUTE
HDPN INTERRUPT -MUTE
CR LEVEL
HDPN LEVEL
CUE TO LT
CUE TO RT
SOLO TO LT
SOLO TO RT
CUE MUTE
SOLO MUTE
CUE MUTED
SOLO MUTED
HDPN MUTE
CUE/SOLO TO LT
CUE/SOLO TO RT
4148 D7
4148 D8
4148 D9
4148 D10
4148 D11
4148 D12
4148 D13
4148 D3
4148 D4
4148 D6
4148 D14
4148 D15
4148 D17
4148 D16
4148 D18
4148 D19
4148 D5
SW1
SW2
U26 4053
U27 4053
5532 U33
5532 U24
5532 U34
5532 U23
100uF C7
100uF C42
100uF C35
100uF C66
100uF C37
100uF C67
C8 22uF
C41 22uF
C6 22uF
C38 22uF
-14dBu
-2dBu
10K CT2
10K CT1
CRLT
CRRT
EQIN
NOTE: PHASE SYMBOLS DENOTE SIGNAL POLARITY
IN PHASE
OUT OF PHASE
7 POSITION DIPSWITCH PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
4 POSITION DIPSWITCH PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
NE5532 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
SSM2142 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
74VHC4053N IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
6 PIN JST CONNECTOR PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
3 PIN JST CONNECTOR PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
LM675 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
DPDT SLIDE SWITCH PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
SSM2142 U45
SSM2142 U46
SSM2142 U47
SSM2142 U50
LM675 U42
LM675 U37
CR1LTOUTHI
CR1LTOUTLO
CR1RTOUTHI
CR1RTOUTLO
CR2LTOUTHI
CR2LTOUTLO
CR2RTOUTHI
CR2RTOUTLO
HDPNLTOUTLO
HDPNLTOUTHI
HDPNRTOUTLO
HDPNRTOUTHI
+4dBu BAL
HI
LO
SH
LT OUT
RT OUT
CR A OUT
CR B OUT
HDPN OUT
SLIDESW
HDPN PRE/POST
HDPN MONO
PHASE
POLYSW 17A
F13
F1
CT18
LT
HDPN
RT
U29 4053
U28 4053
U23
U24
U31
U34
U35
U36
U37
CONTRACT NO.
APPROVALS
DATE
DRAWN
SA
8-10-01
CHECKED
ISSUED
W* 700255
CR-7000
Wheatstone Corporation
600 Industrial Drive
New Bern, NC 28562
SIZE D
FSCM NO.
DWG. NO. 13S0077E
REV
SCALE
CR-6000SE PCB
SHEET 1 OF 5



CONTRACT NO.		CR-7000
APPROVALS	DATE	Wheatstone Corporation
DRAWN SA	8-10-01	600 Industrial Drive, New Bern, NC 28562
CHECKED		
ISSUED		SIZE D · FSCM NO. · DWG. NO. 13S0078E · REV
W* 700255		SCALE · CR-6000SE PCB · SHEET 2 OF 5

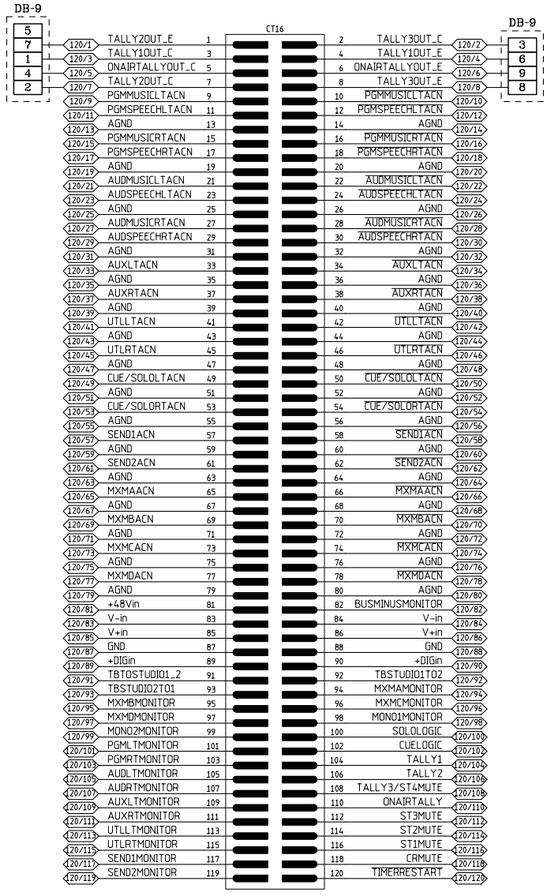


CR-7000 Control Room Module Schematic - Sheet 3 of 5

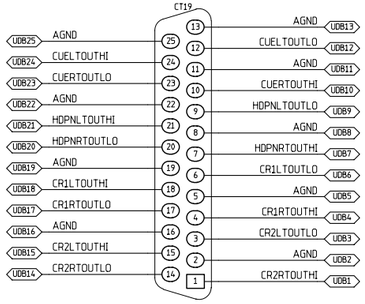


CR-7000 Control Room Module Schematic - Sheet 4 of 5

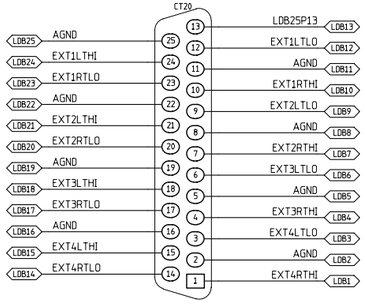
120 PIN EDGE CONNECTOR

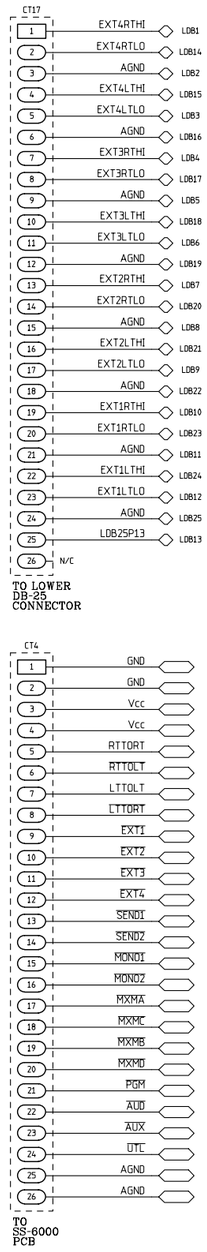


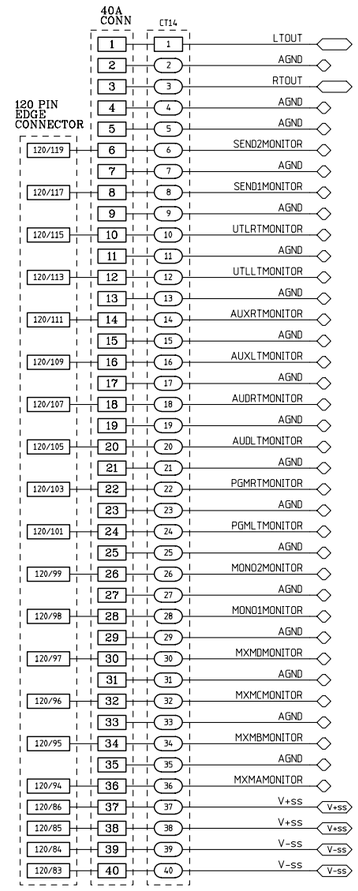
UPPER DB-25 CONNECTOR



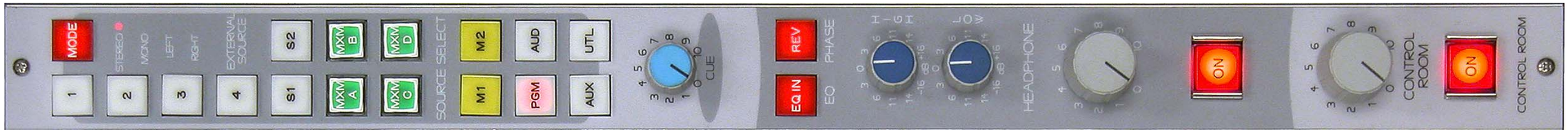
LOWER DB-25 CONNECTOR

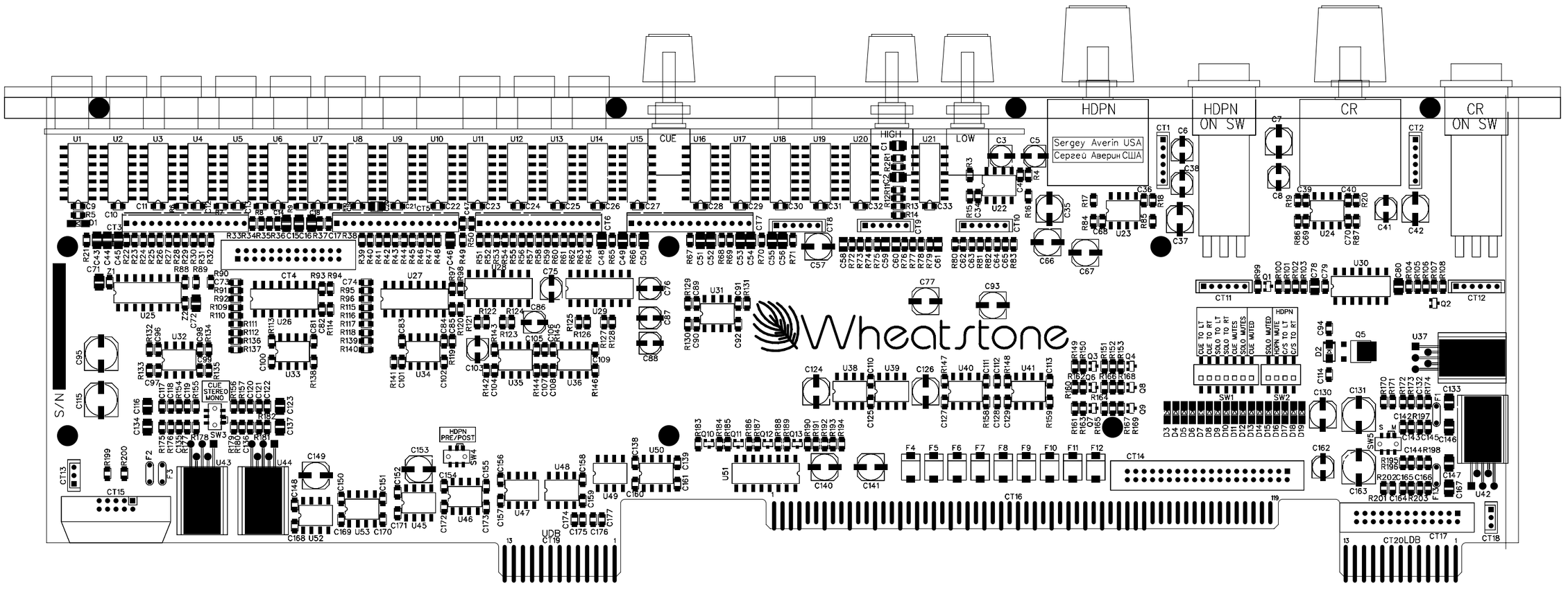


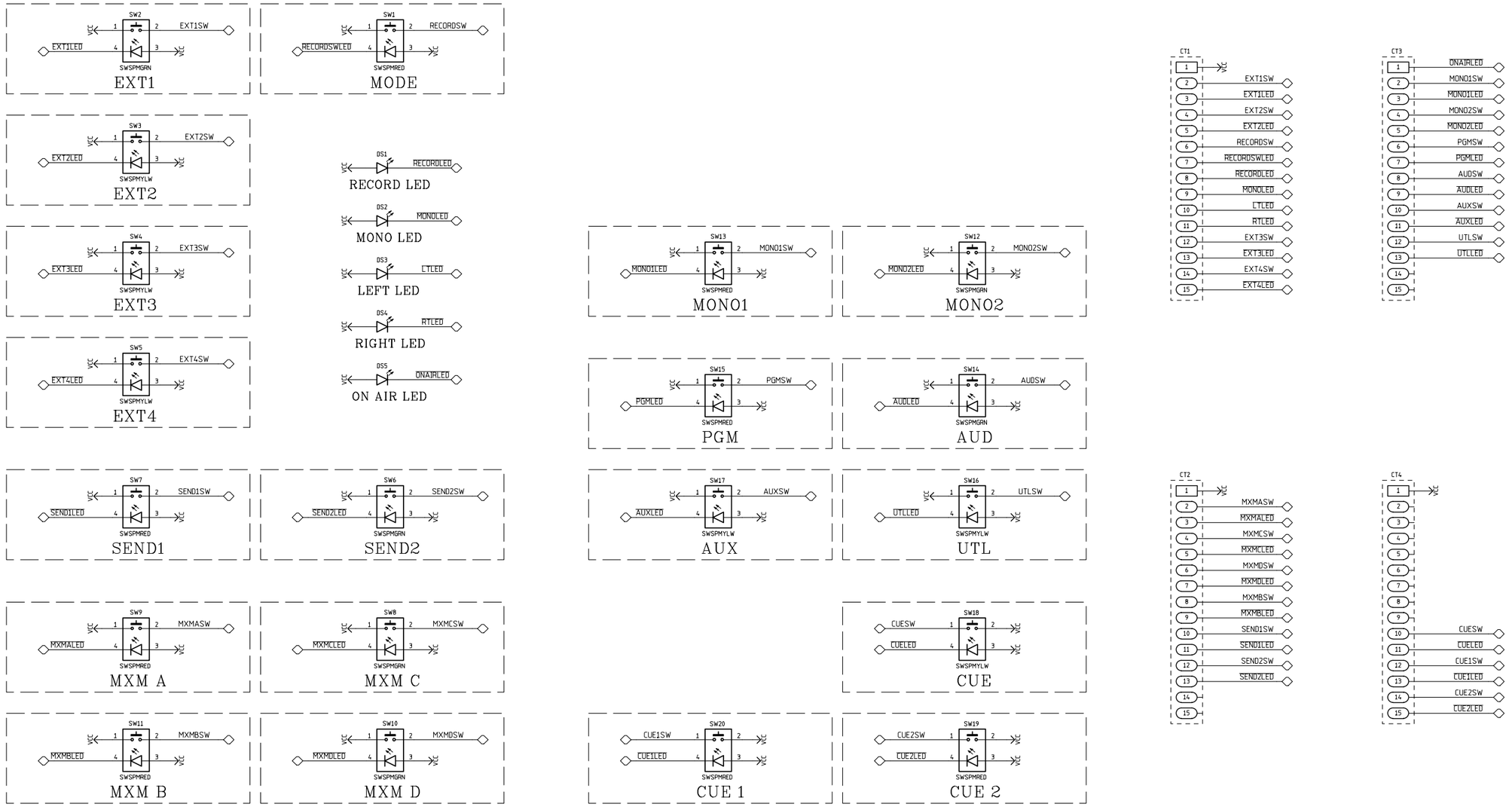




CONTRACT NO.		CR-7000
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562
DRAWN SA	8-10-01	
CHECKED		
ISSUED		SIZE D · FSCM NO. · DWG. NO. 13S0079E · REV
W* 700255		SCALE · CR-6000SE PCB · SHEET 5 OF 5

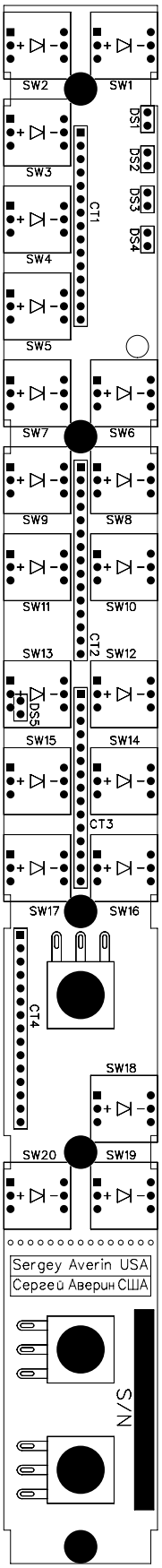

MODE
STEREO
MONO
LEFT
RIGHT
EXTERNAL SOURCE
SOURCE SELECT
S2
S1
MXM B
MXM A
MXM D
MXM C
M2
M1
AUD
PGM
UTL
AUX
1
2
3
4
CUE
REV
EQ IN
EQ PHASE
HIGH
LOW
HEADPHONE
ON
CONTROL ROOM
ON
CONTROL ROOM


HDPN
Sergey Averin USA
Сергей Аверин США
HDPN ON SW
CR
CR ON SW
CUE
HIGH
LOW
S/N
Wheatstone
CUE STEREO MONO
HDPN PRE/POST
UDB
CT19
CT20LDB
CT17
CT16
CT14
CT15
SW1
SW2
SW3
SW4
SW5
SW6
CUE TO LT
CUE TO RT
SOLO TO LT
SOLO TO RT
CUE MUTES
SOLO MUTES
CUE MUTED
SOLO MUTED
HDPN MUTE
C/S TO LT
C/S TO RT

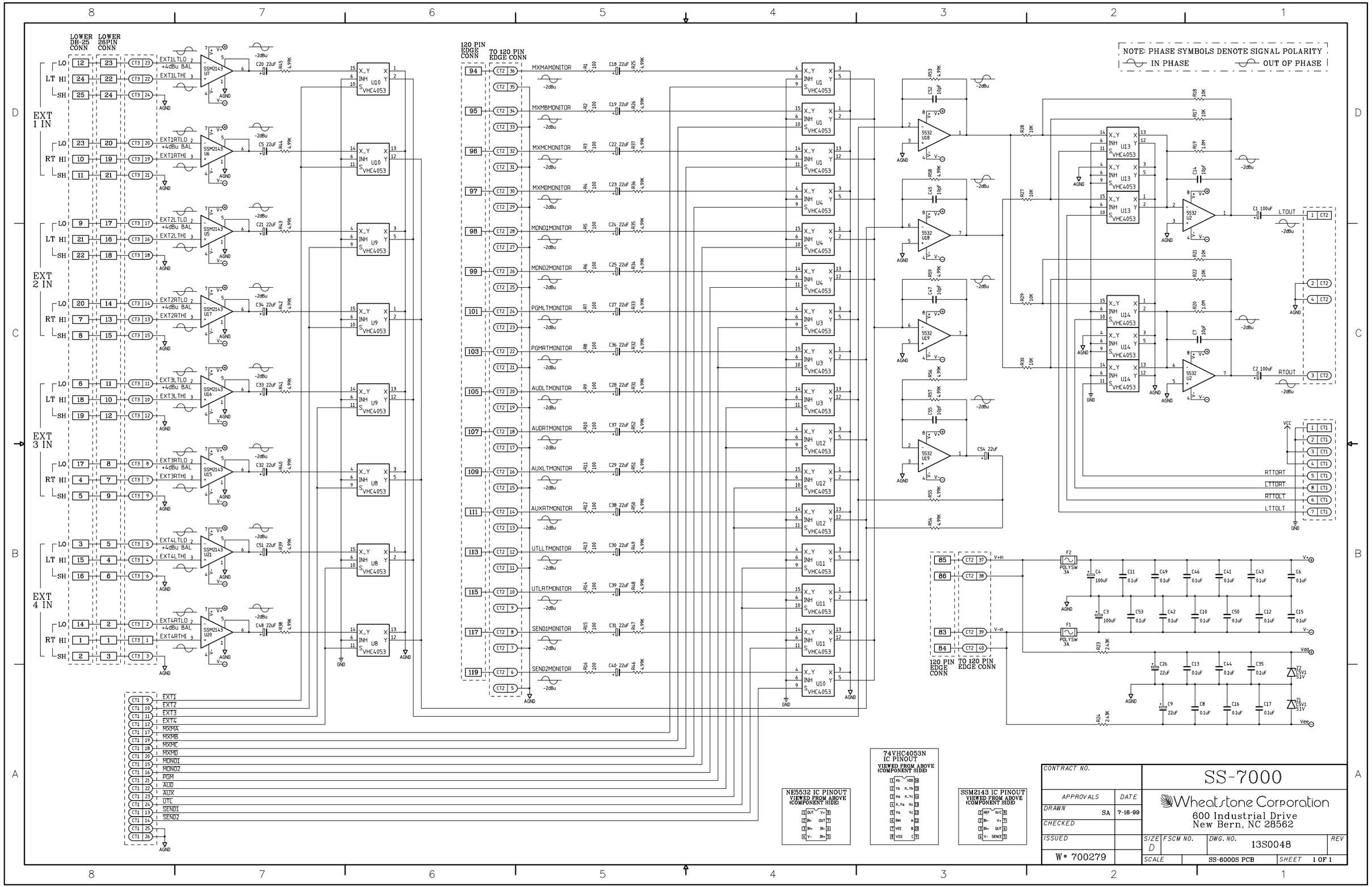


CONTRACT NO.		SPS-6000	
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	7-15-99		
CHECKED			
ISSUED		SIZE D / FSCM NO. / DWG. NO. 13S0076 / REV	
W* 700182		SCALE SPS-6000A PCB / SHEET 1 OF 1	

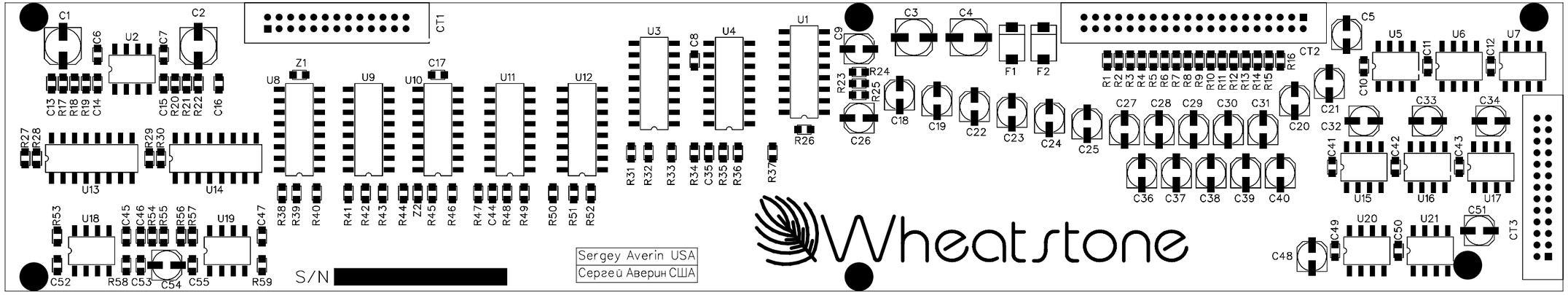
SPS-7000 Switch Card Schematic - Sheet 1 of 1
(used for CR-7000 and SPN-7000 modules)

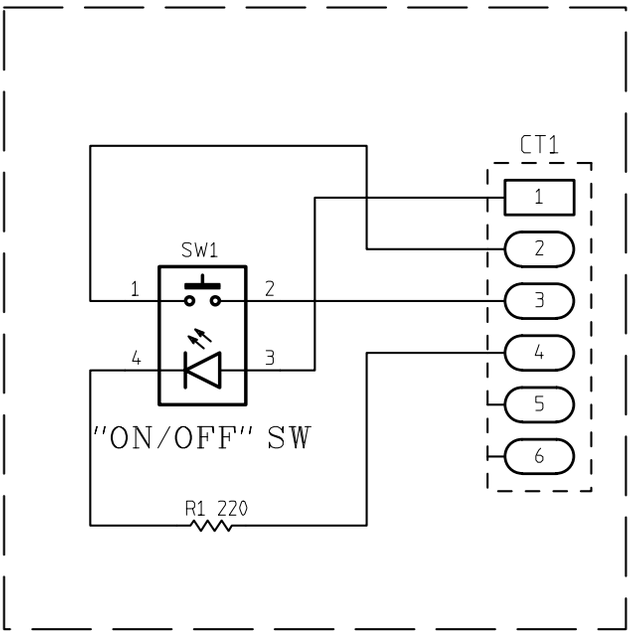


SPS-7000 Switch Card - Load Sheet



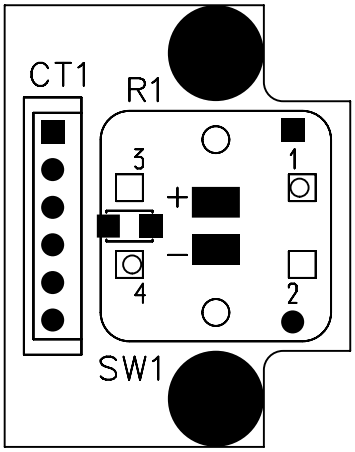
SS-7000 Source Select Card Schematic - Sheet 1 of 1


C1
C2
CT1
U2
C6
C7
C13 R17 R18 R19 C14
C15 R20 R21 R22 C16
U8
Z1
U9
U10
C17
U11
U12
U3
C8
U4
U1
C9
R23
R24
R25
R26
C26
C3
C4
F1
F2
CT2
R1 R2 R3 R4 R5 R6 R7 R8 R9 R10 R11 R12 R13 R14 R15 R16
C5
U5
U6
U7
C10
C11
C12
C21
C32
C33
C34
C41
C42
C43
U15
U16
U17
C51
CT3
C18
C19
C22
C23
C24
C25
C27
C28
C29
C30
C31
C20
C36
C37
C38
C39
C40
R27 R28
R29 R30
U13
U14
R31
R32
R33
R34
C35
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
Z2
R45
R46
R47
C44
R48
R49
R50
R51
R52
R53
U18
C45
C46
R54
R55
R56
R57
U19
C47
C52
R58
C53
C54
C55
R59
C48
C49
U20
C50
U21
S/N
Sergey Averin USA
Сергей Аверин США
Wheatstone



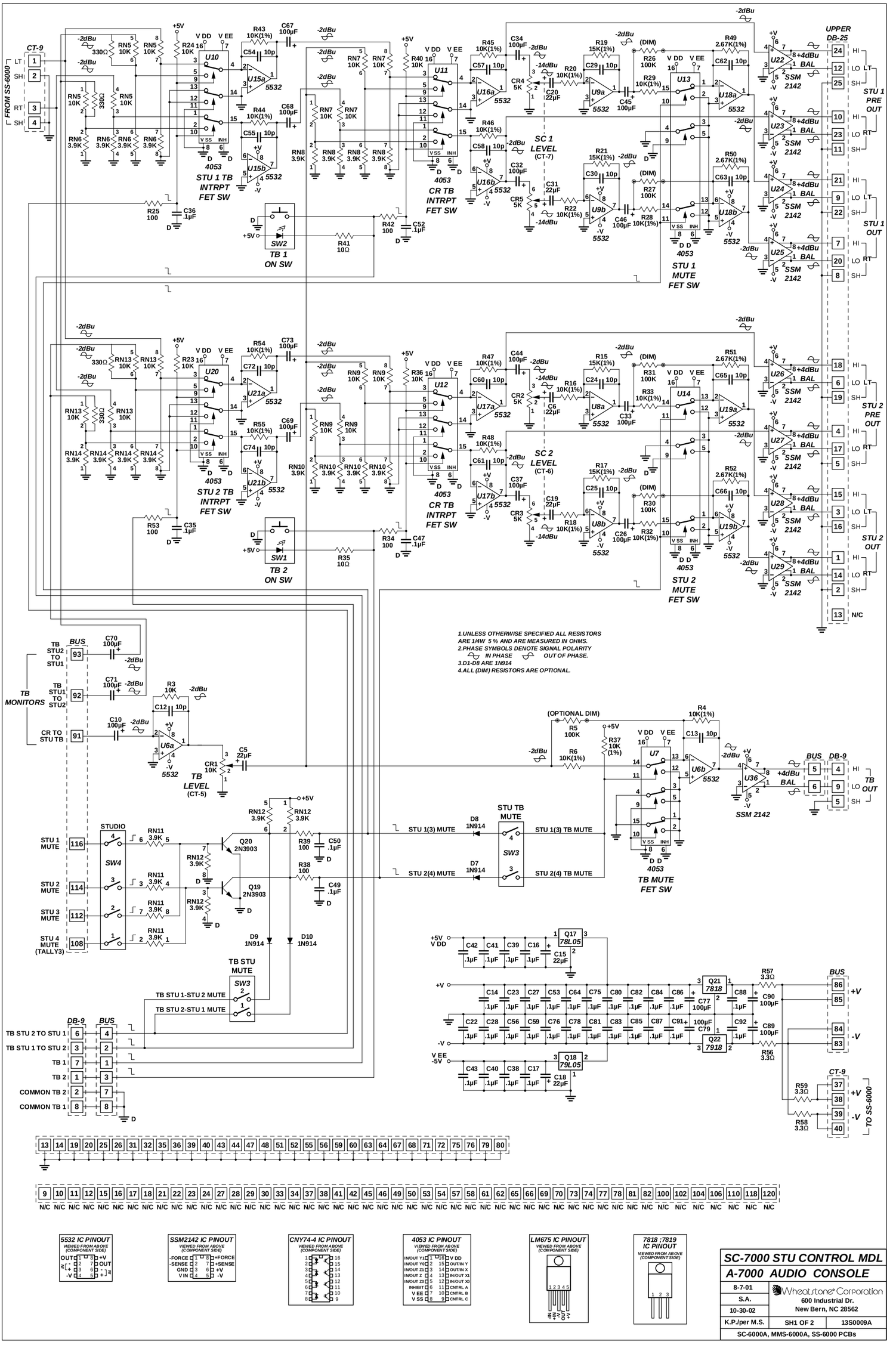
CONTRACT NO.		SW1-700	
APPROVALS	DATE	AUDIOARTS ENGINEERING 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	2-15-02		
CHECKED	SA		
ISSUED	SA		
W# 700689		SIZE A / FSCM NO. / DWG. NO. 14S2029 / REV A	
		SCALE / SW1-700A PCB / SHEET 1 OF 1	

SW1-700 Switch Card Schematic - Sheet 1 of 1

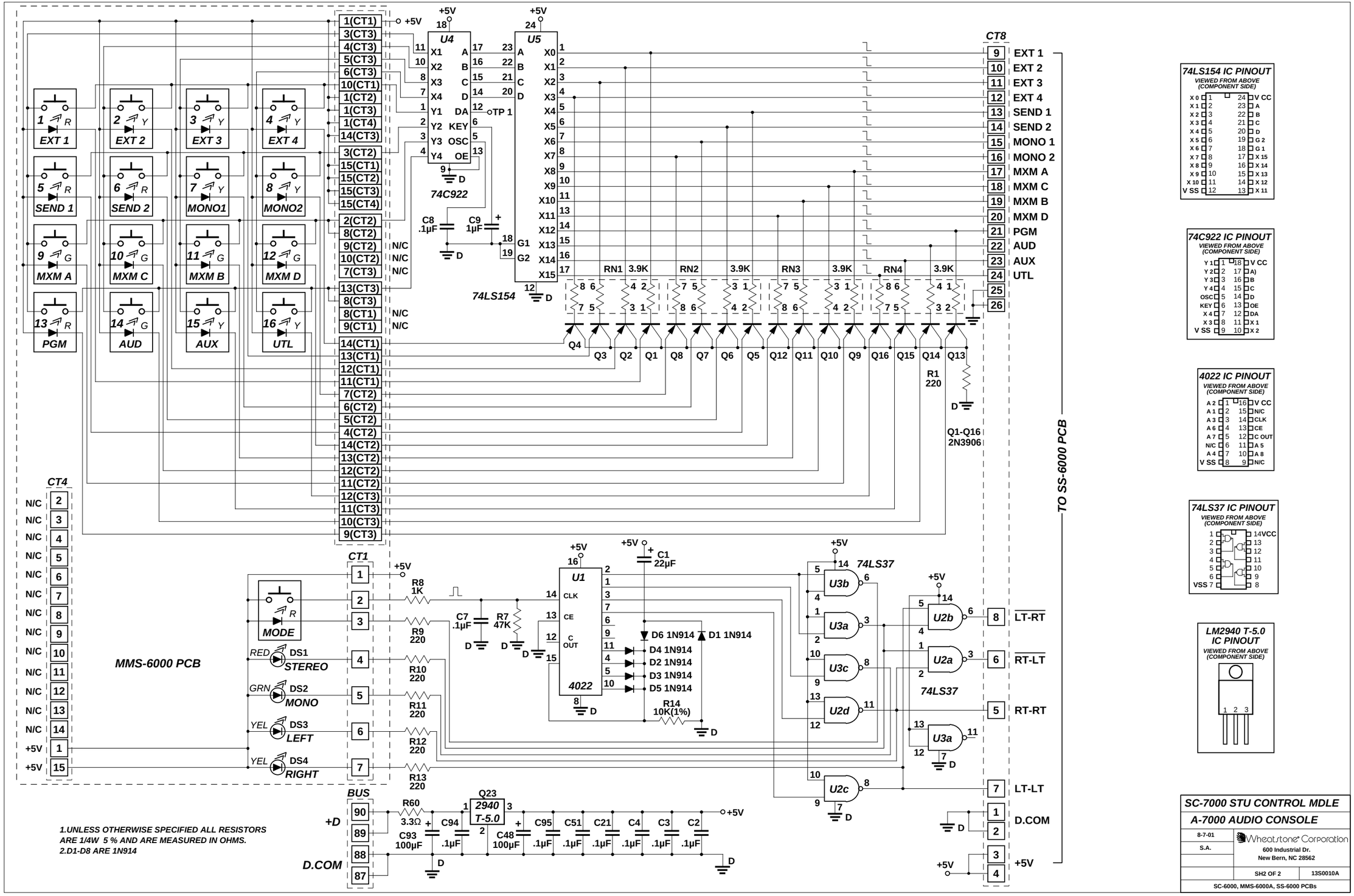


SW1-700 Switch Card - Load Sheet

SC-7000 Studio Control Module Schematic (page 1 of 2)



SC-7000 STU CONTROL MDL		
A-7000 AUDIO CONSOLE		
8-7-01	Wheatstone® Corporation	
S.A.	600 Industrial Dr.	
10-30-02	New Bern, NC 28562	
K.P./per M.S.	SH1 OF 2	13S0009A
SC-6000A, MMS-6000A, SS-6000 PCBs		



74LS154 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)

X 0	1	24	V CC
X 1	2	23	A
X 2	3	22	B
X 3	4	21	C
X 4	5	20	D
X 5	6	19	G 2
X 6	7	18	G 1
X 7	8	17	X 15
X 8	9	16	X 14
X 9	10	15	X 13
X 10	11	14	X 12
V SS	12	13	X 11

74C922 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)

Y 1	1	18	V CC
Y 2	2	17	A)
Y 3	3	16	B
Y 4	4	15	C
OSC	5	14	D
KEY	6	13	OE
X 4	7	12	DA
X 3	8	11	X 1
V SS	9	10	X 2

4022 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)

A 2	1	16	V CC
A 1	2	15	N/C
A 3	3	14	CLK
A 6	4	13	CE
A 7	5	12	C OUT
N/C	6	11	A 5
A 4	7	10	A 8
V SS	8	9	N/C

74LS37 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)

1	1	14	VCC
2	2	13	
3	3	12	
4	4	11	
5	5	10	
6	6	9	
VSS	7	8	

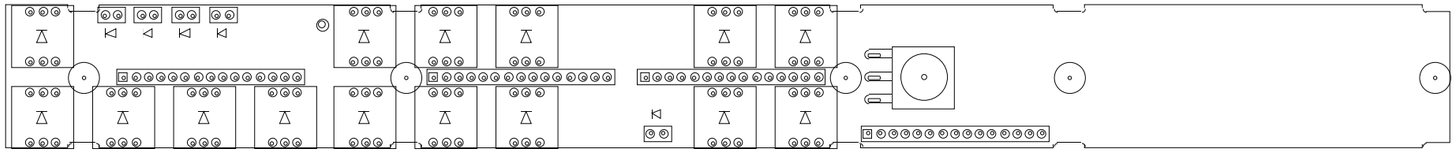
LM2940 T-5.0 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)

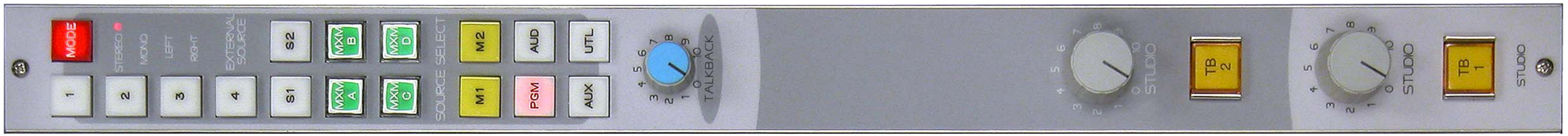
1 2 3

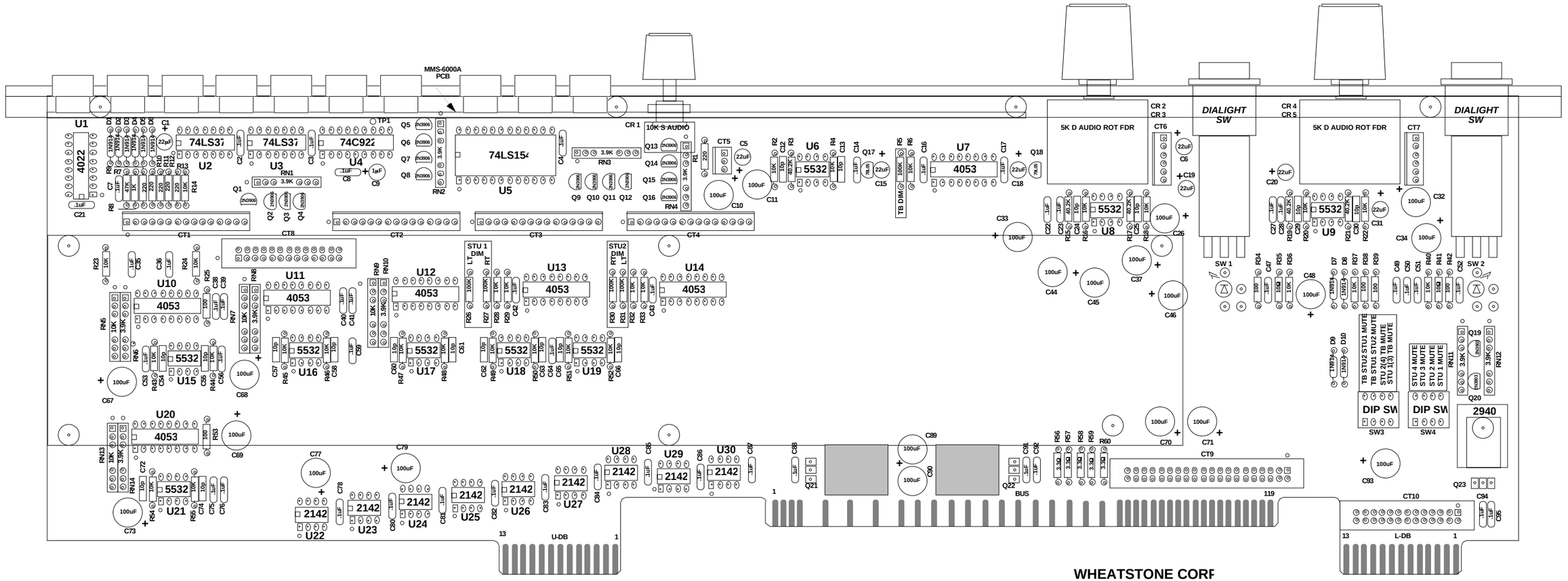
SC-7000 STU CONTROL MDLE
A-7000 AUDIO CONSOLE

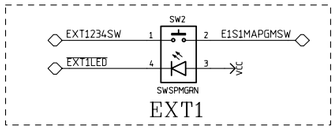
8-7-01	Wheatstone Corporation	
S.A.	600 Industrial Dr. New Bern, NC 28562	
	SH2 OF 2	13S0010A
SC-6000, MMS-6000A, SS-6000 PCBs		

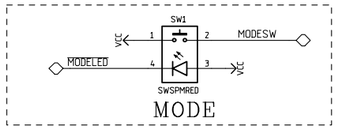
SC-7000 Studio Control Module Schematic (page 2 of 2)

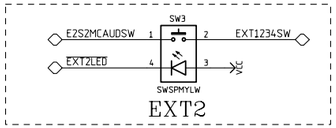


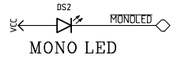

MODE
STEREO
MONO
LEFT
RIGHT
EXTERNAL SOURCE
S2
S1
MXM B
MXM A
MXM D
MXM C
SOURCE SELECT
M2
M1
AUD
PGM
UTL
AUX
TALKBACK
STUDIO
TB 2
TB 1

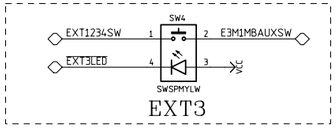

MMS-6000A PCB
5K D AUDIO ROT FDR
DIALIGHT SW
10K S AUDIO
TB DIM
STU 1 DIM
STU2 DIM
DIP SW
SW1
SW2
SW3
SW4
BUS
U-DB
L-DB
10K
40.2K
1%
WHEATSTONE CORP
SC-6000A
LOAD SHEET
13L0013E

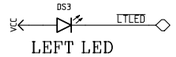


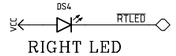


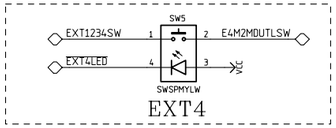


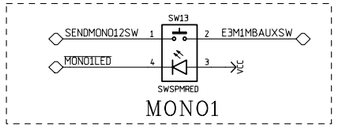


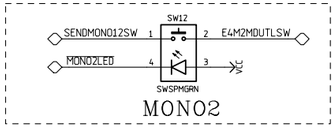


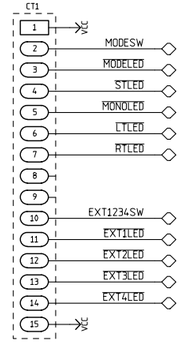


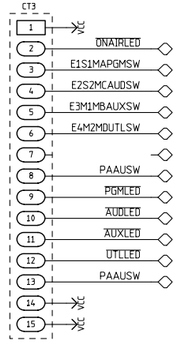


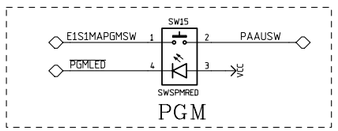


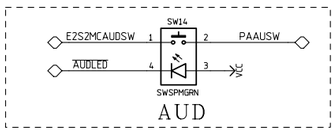


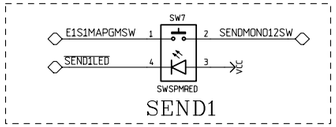


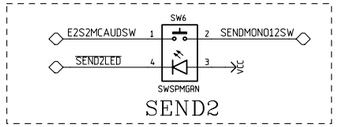


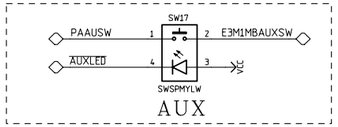


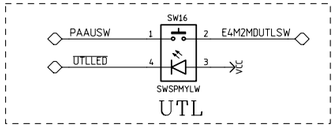


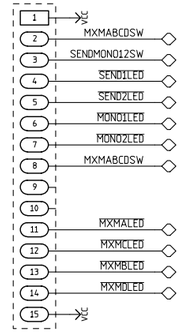


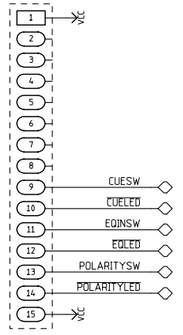


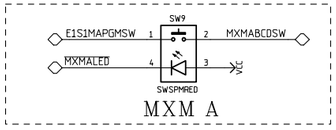


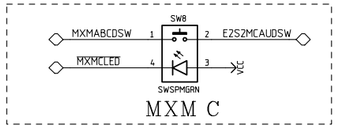


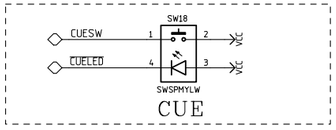


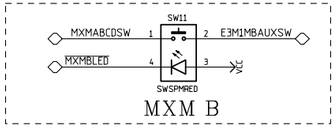


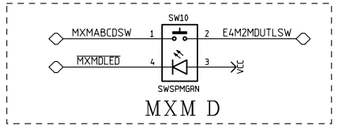


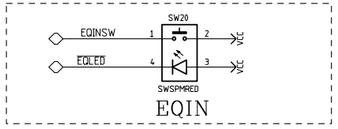


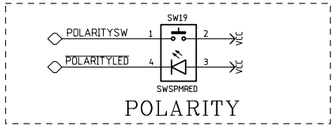






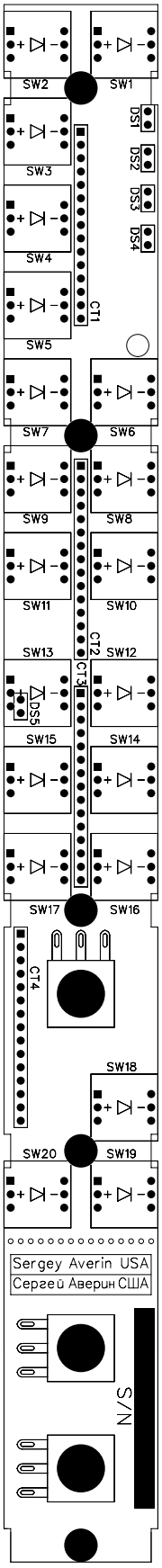






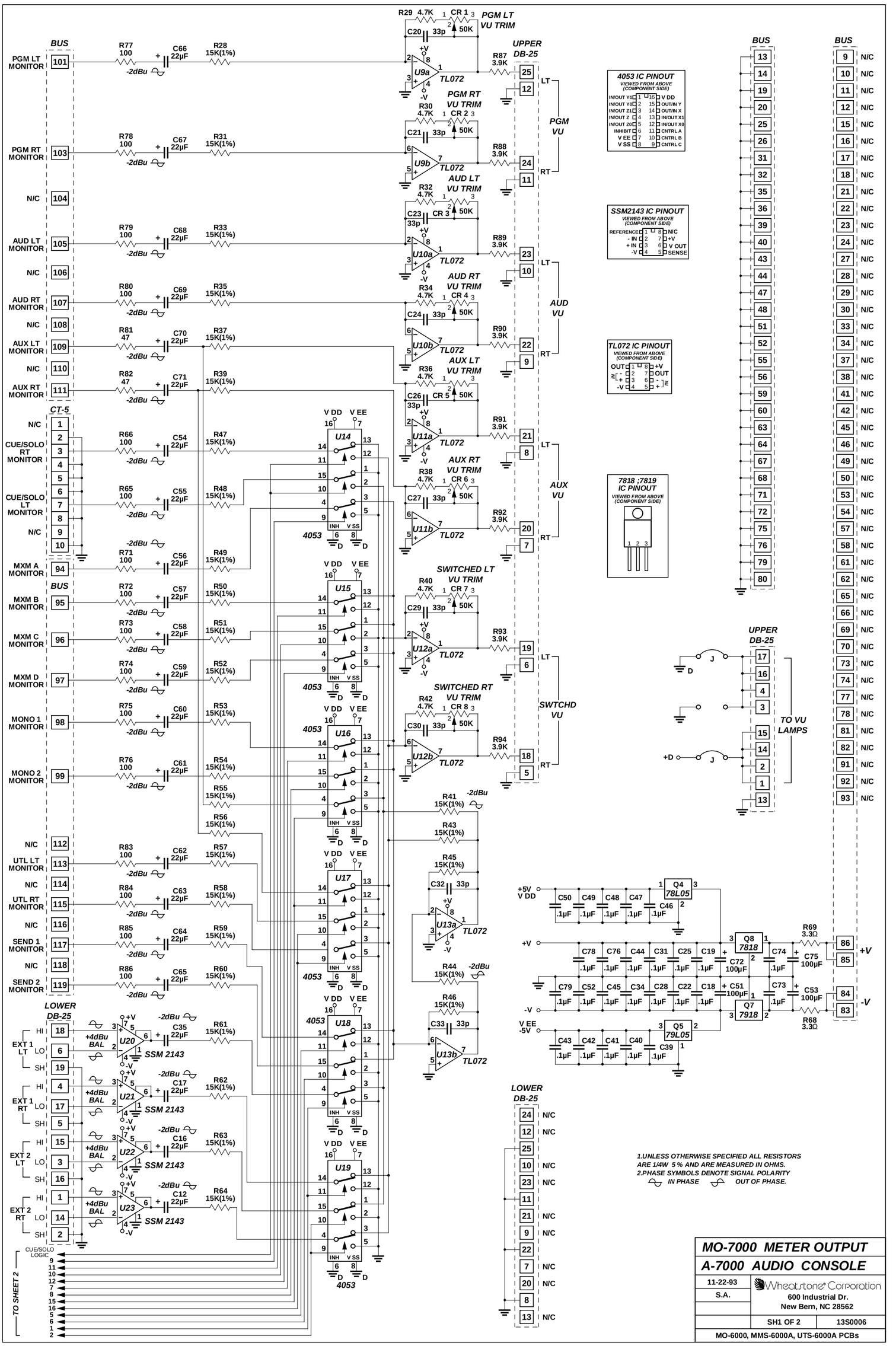
CONTRACT NO.		MMS-7000
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562
DRAWN SA	7-25-99	
CHECKED SA		
ISSUED SA		SIZE D · FSCM NO. · DWG. NO. 13S0071 · REV C
W# 700072		SCALE MMS-6000C PCB · SHEET 1 OF 1

MMS-7000 Monitor Module Switch Card Schematic - Sheet 1 of 1
(used for SC-7000 and MO-7000 modules)



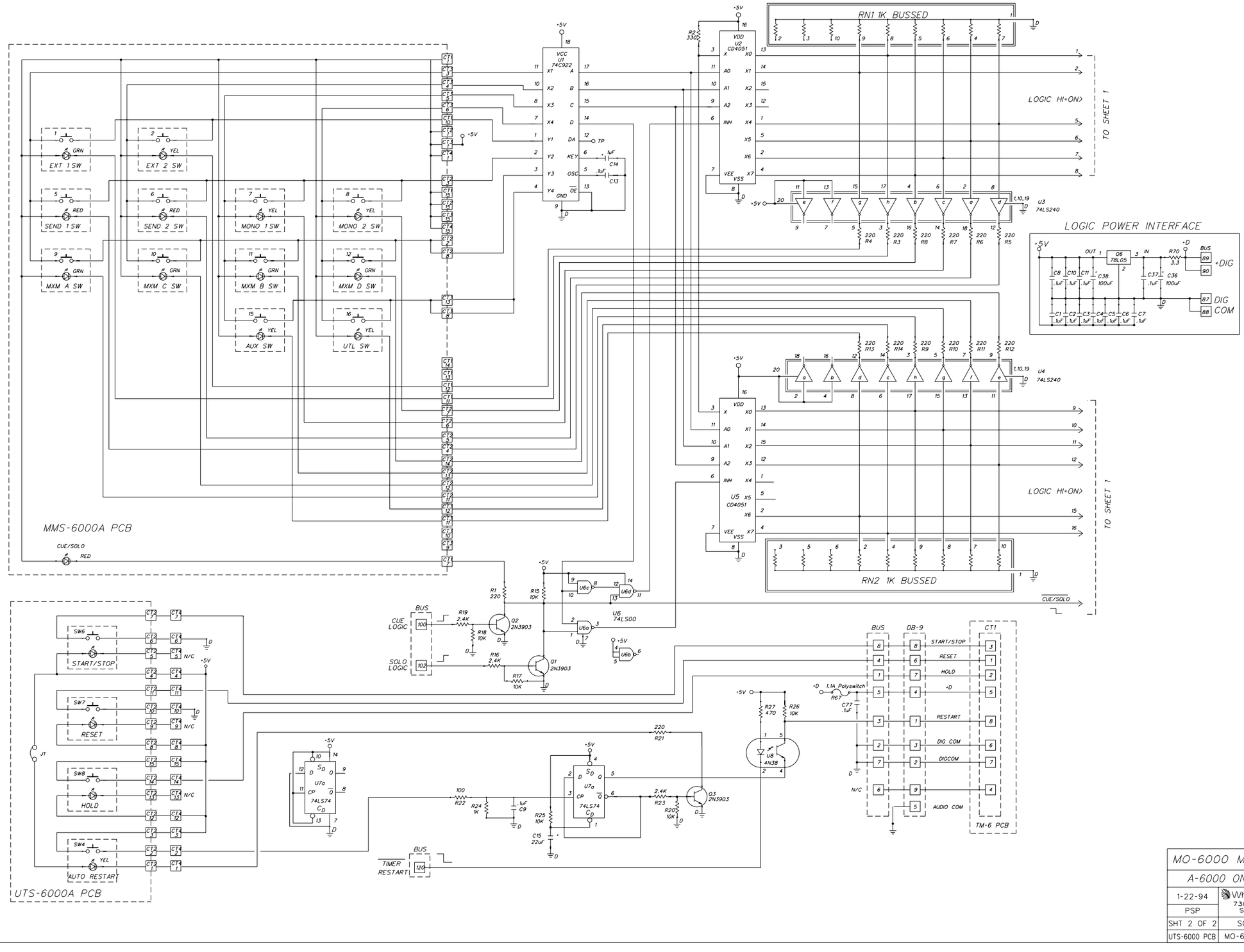
MMS-7000 Switch Card - Load Sheet

MO-7000 Meter Output Schematic (page 1 of 2)

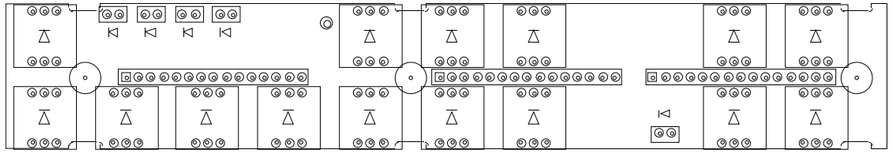


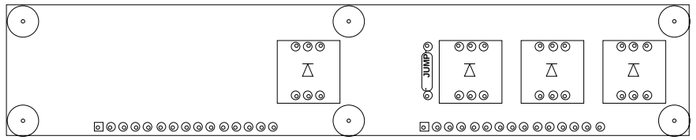
1.UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W 5 % AND ARE MEASURED IN OHMS.
2.PHASE SYMBOLS DENOTE SIGNAL POLARITY
~ IN PHASE ~ OUT OF PHASE.

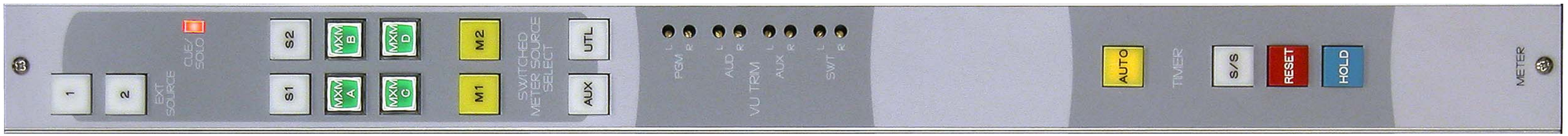
MO-7000 METER OUTPUT		
A-7000 AUDIO CONSOLE		
11-22-93	Wheatstone® Corporation	
S.A.	600 Industrial Dr. New Bern, NC 28562	
	SH1 OF 2	13S0006
MO-6000, MMS-6000A, UTS-6000A PCBs		

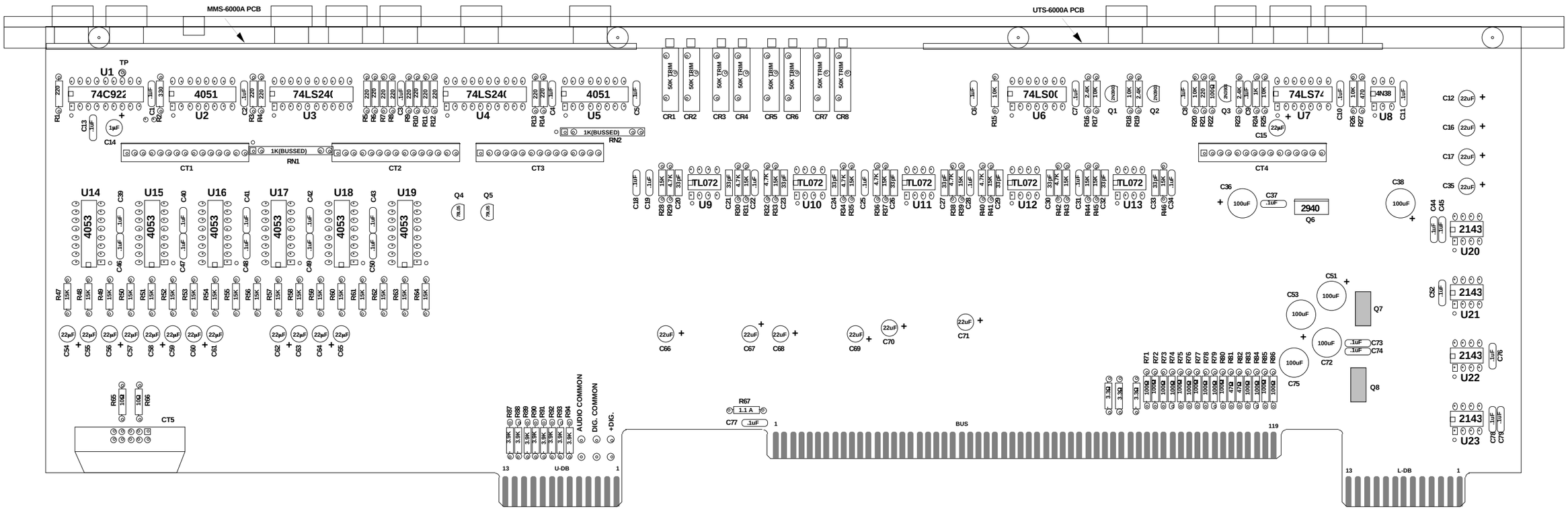


MO-6000 METER MODULE		
A-6000 ON-AIR CONSOLE		
1-22-94	Wheatstone Corporation 7305 Performance Drive Syracuse, N.Y. 13212	
PSP		
SHT 2 OF 2	SCHEMATIC DRAWING	
UTS-6000 PCB	MO-6000 PCB	13S0020B

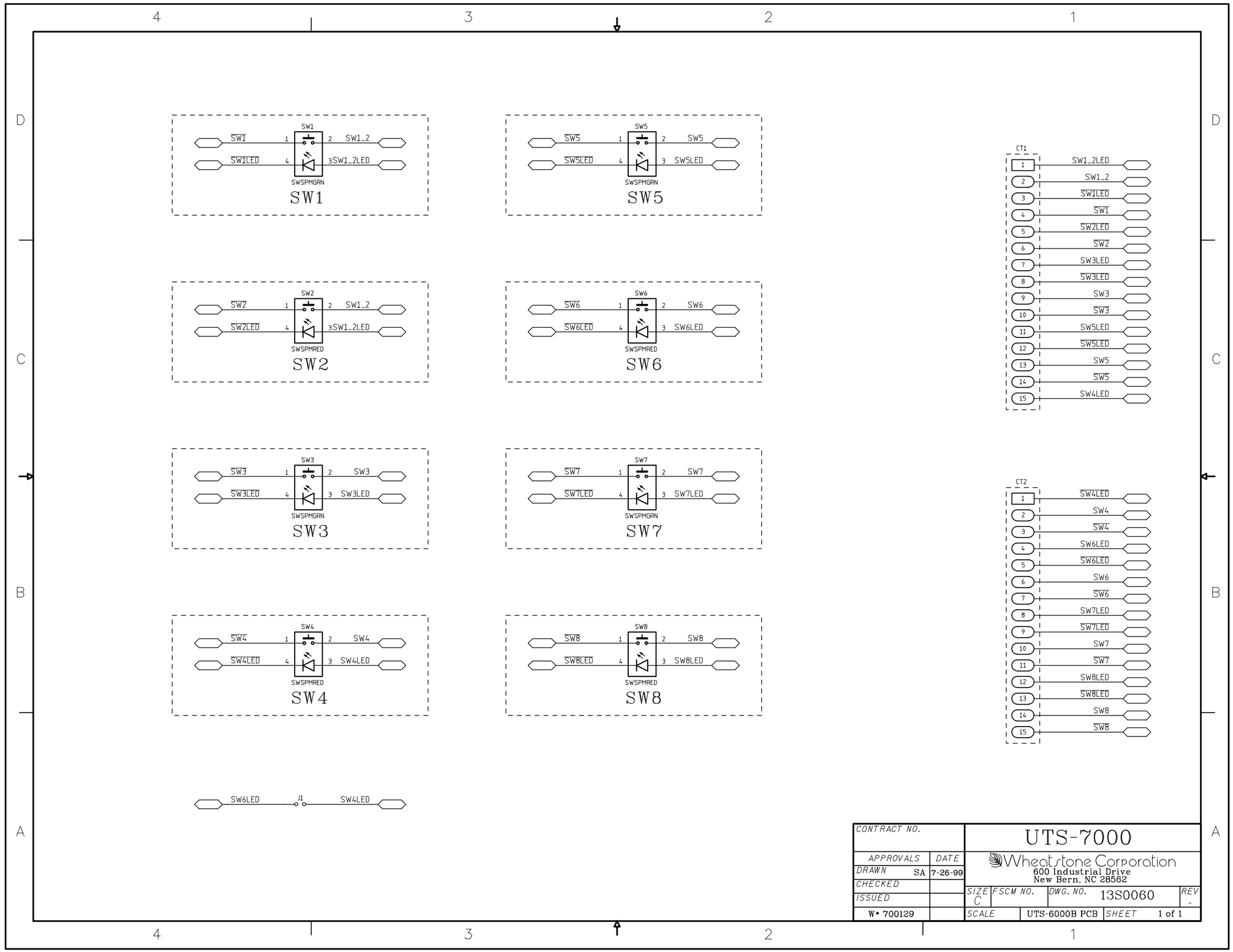




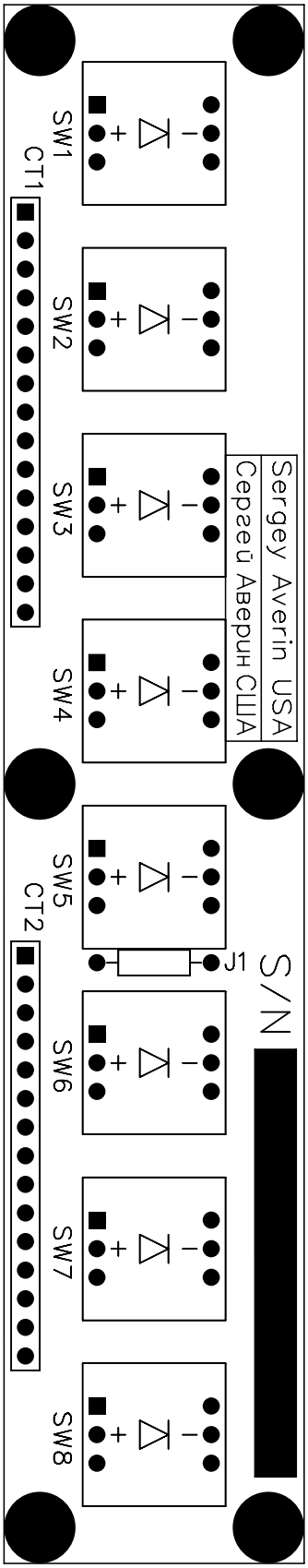




WHEATSTONE CORP
MO-7000
LOAD SHEET
13L0011A

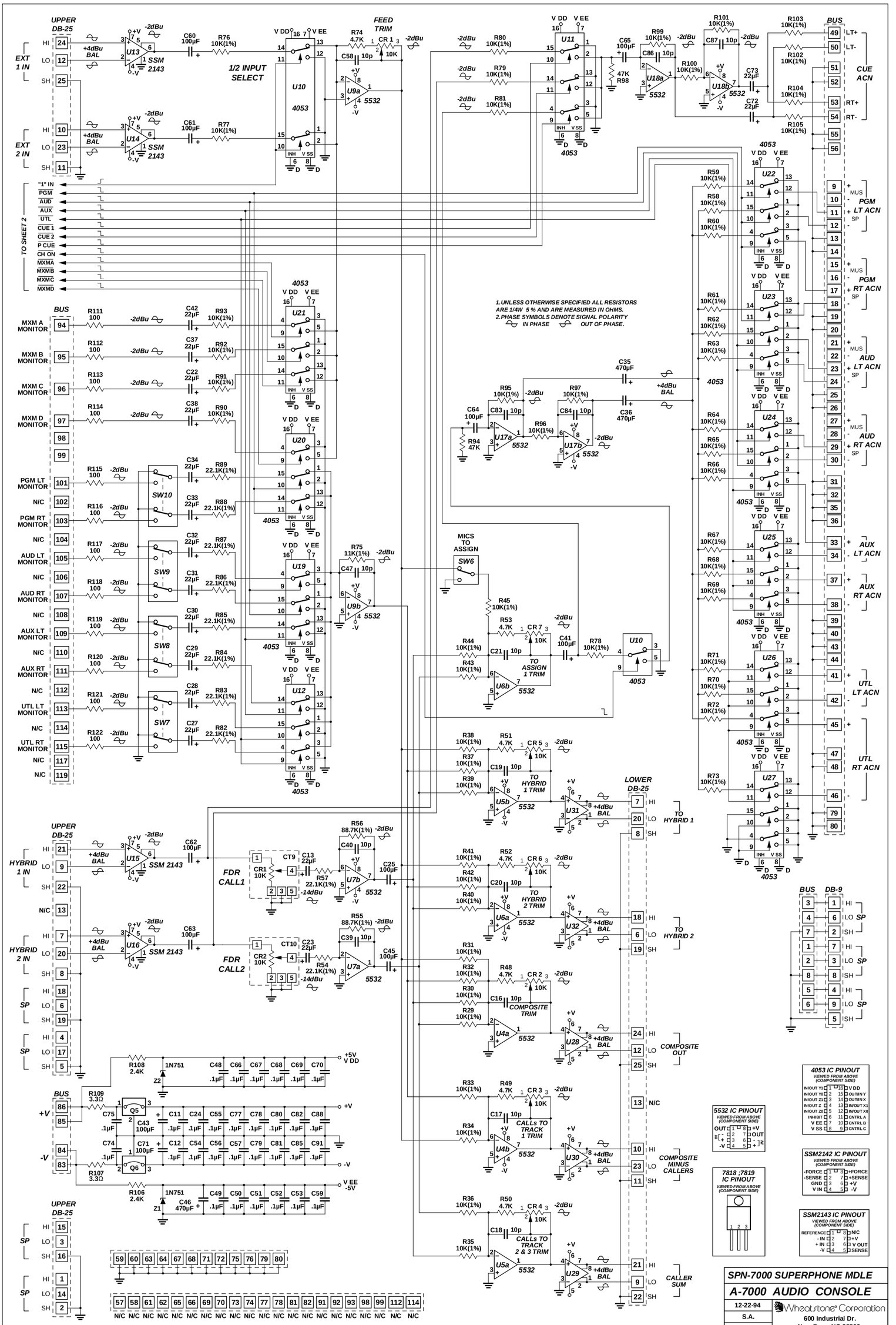


Utility Module Switch Card Schematic - Sheet 1 of 1



UTS-6000 Utility Switch Card - Load Sheet

SPN-7000 Superphone Module Schematic (page 1 of 2)

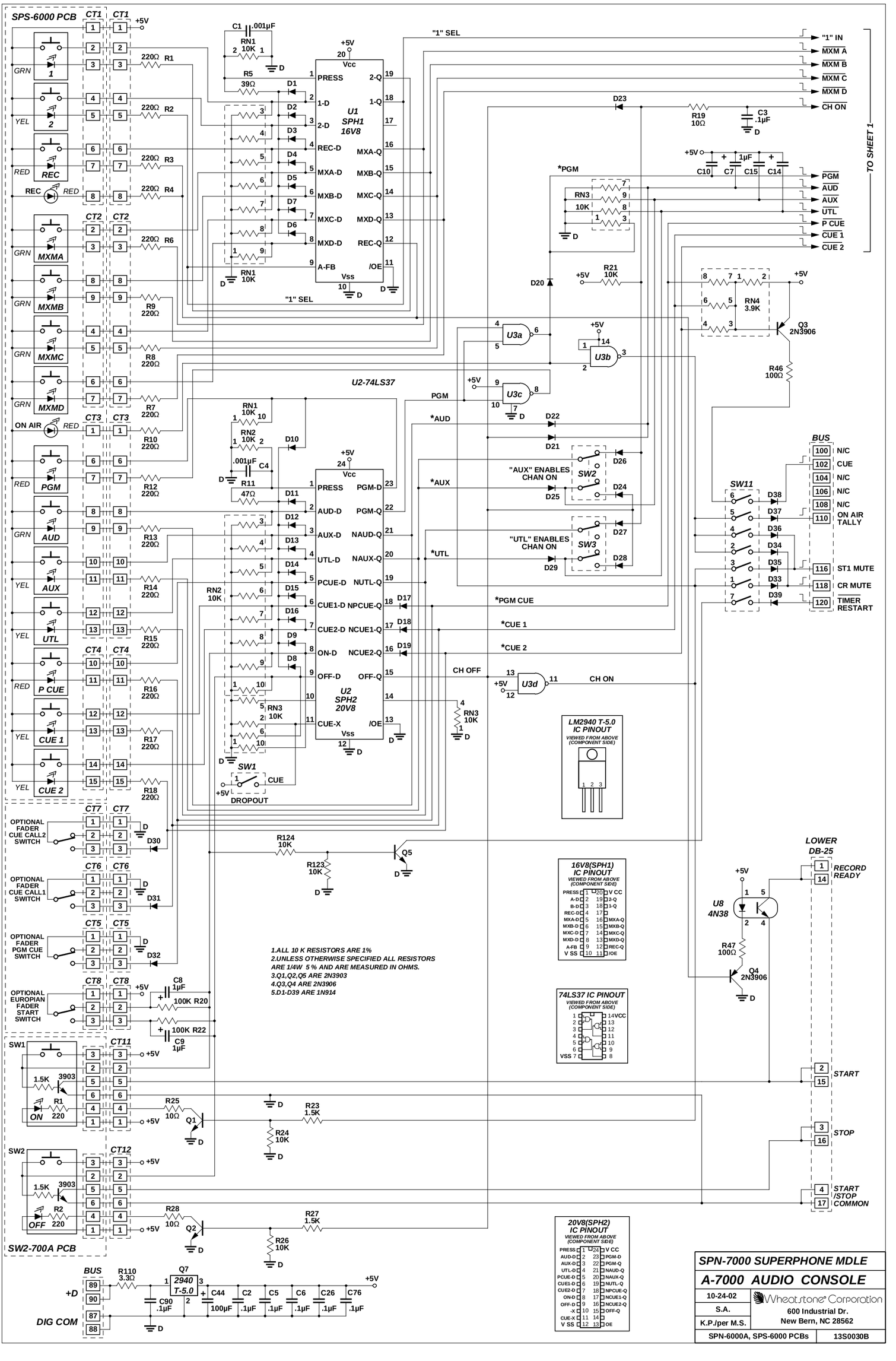


SPN-7000 SUPERPHONE MDLE

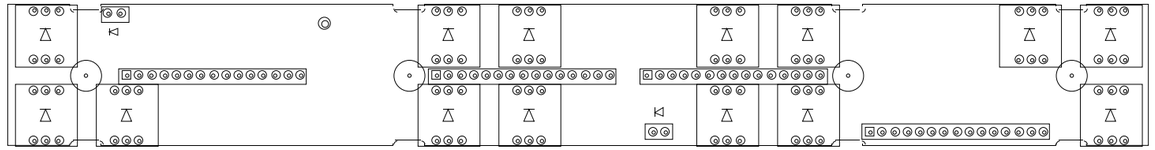
A-7000 AUDIO CONSOLE

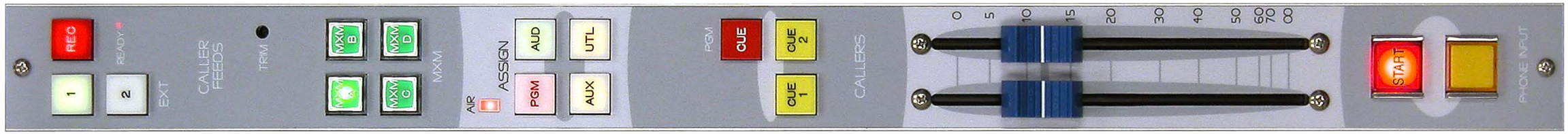
12-22-94	Wheatstone Corporation
S.A.	600 Industrial Dr. New Bern, NC 28562
SPN-6000A, SPS-6000 PCBs	13S0029A

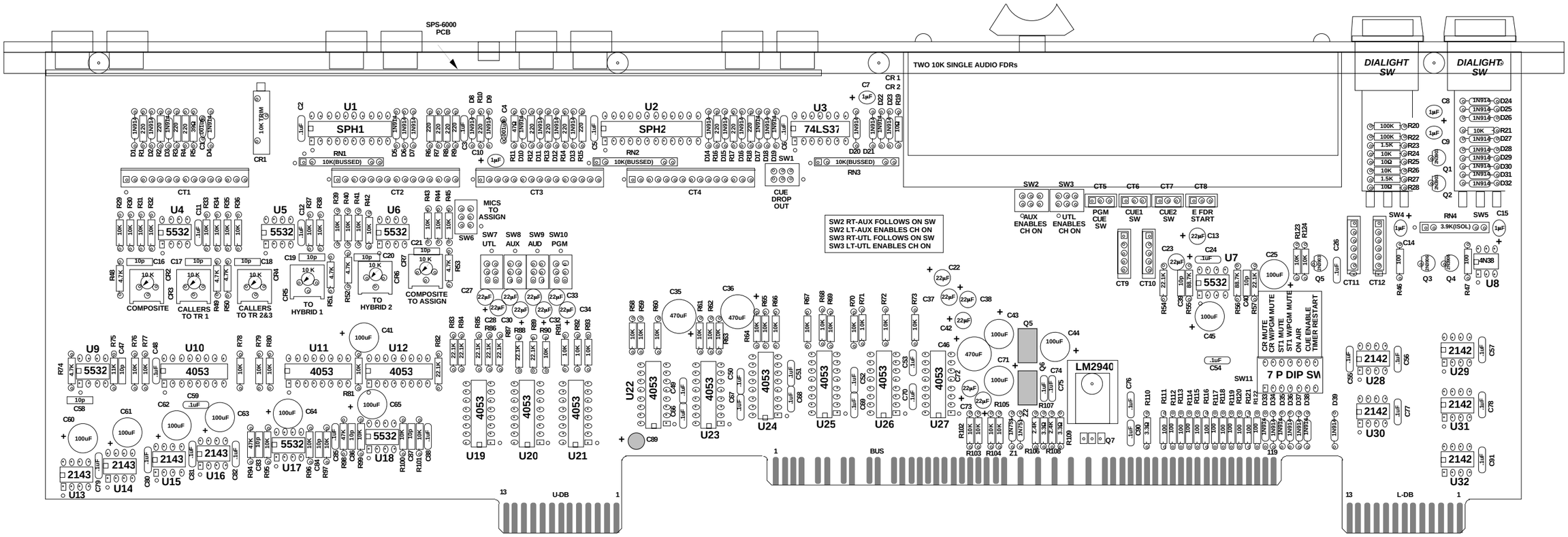
SPN-7000 Superphone Module Schematic (page 2 of 2)



SPN-7000 SUPERPHONE MDLE	
A-7000 AUDIO CONSOLE	
10-24-02	Wheatstone Corporation
S.A.	600 Industrial Dr.
K.P./per M.S.	New Bern, NC 28562
SPN-6000A, SPS-6000 PCBs	13S0030B

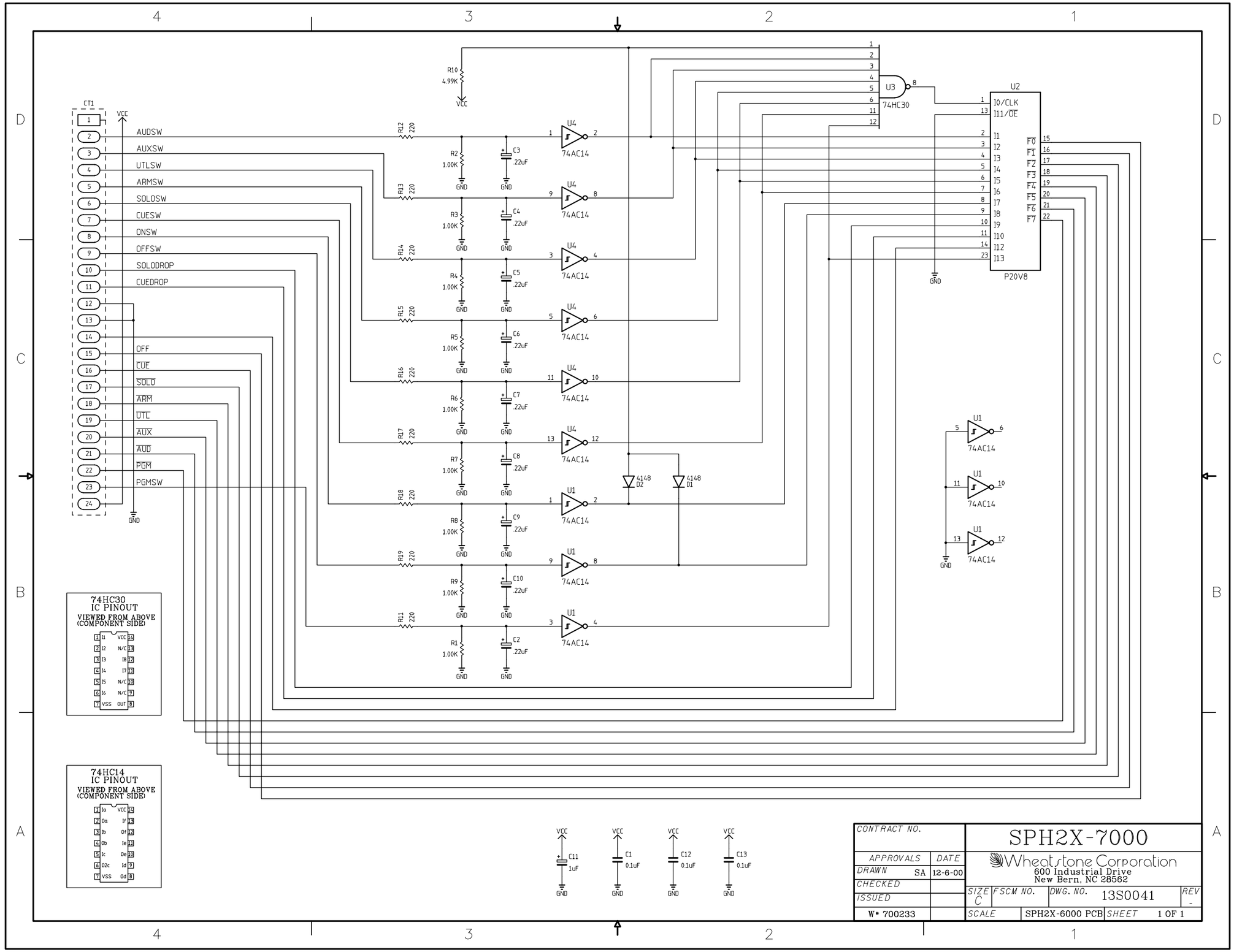




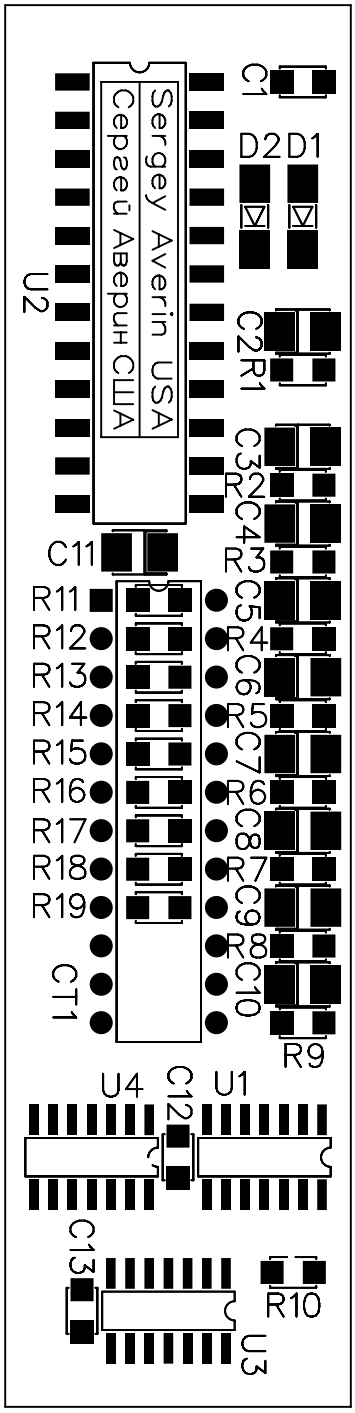


10K
11K
22.1K
88.7K
} 1%

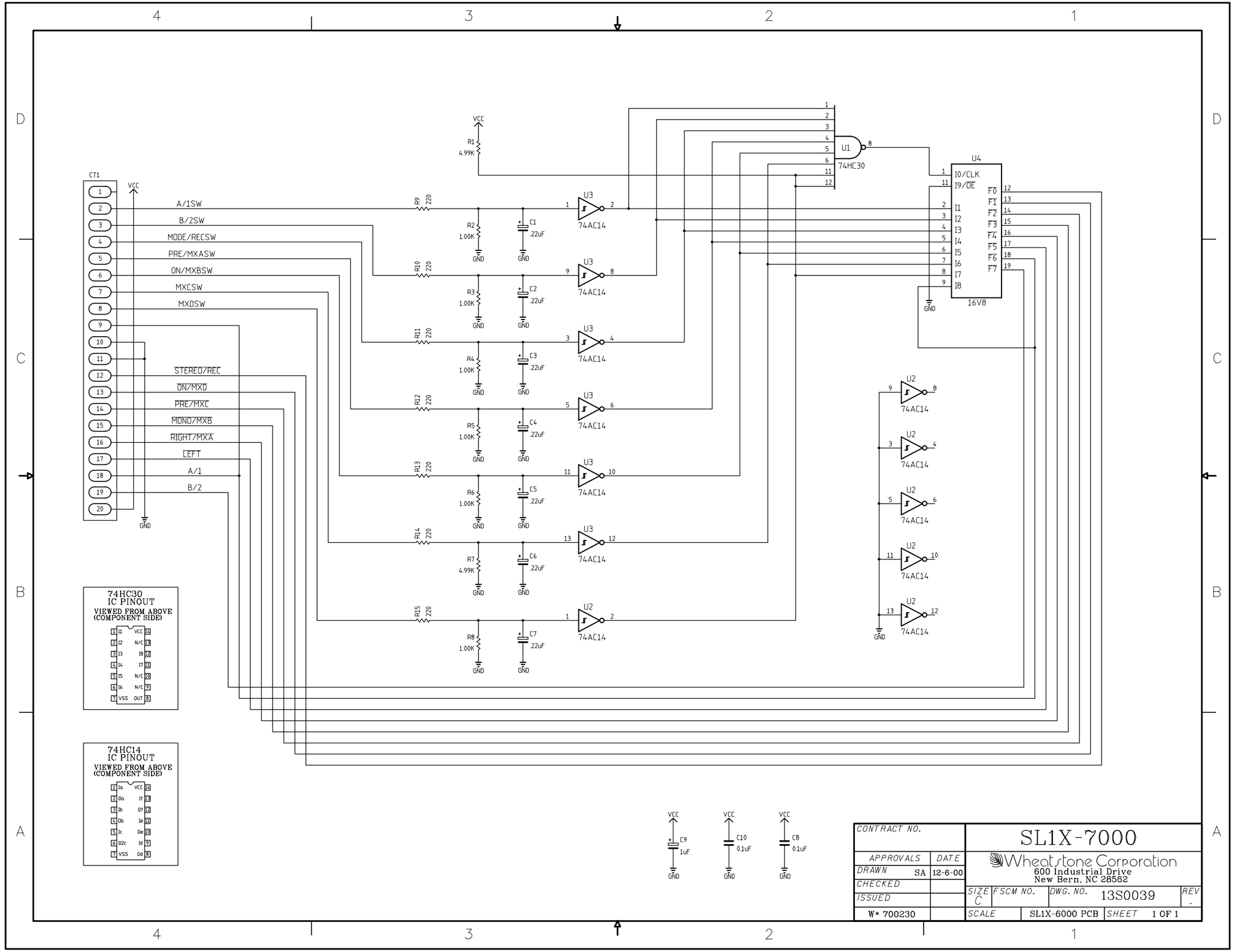
WHEATSTONE CORP
SPN-6000/
LOAD SHEET
13L0015/



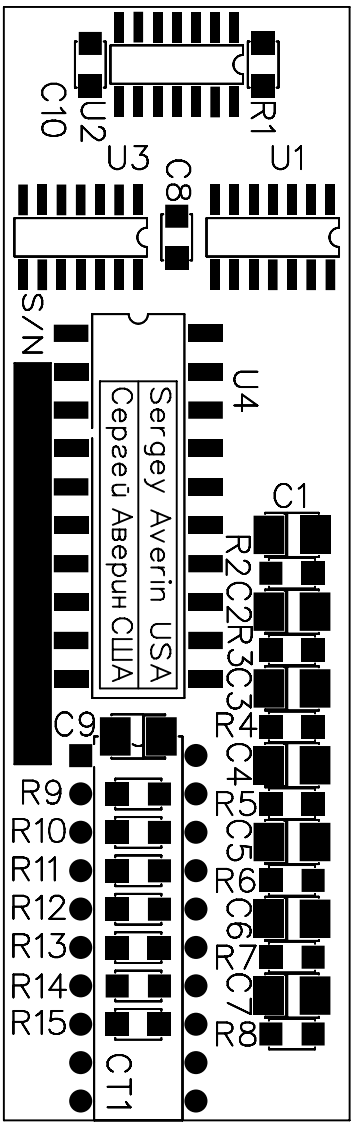
SPN-7000 Super Phone Module Fix Card Schematic - Sheet 1 of 1



Superphone Module Fix Card - Load Sheet

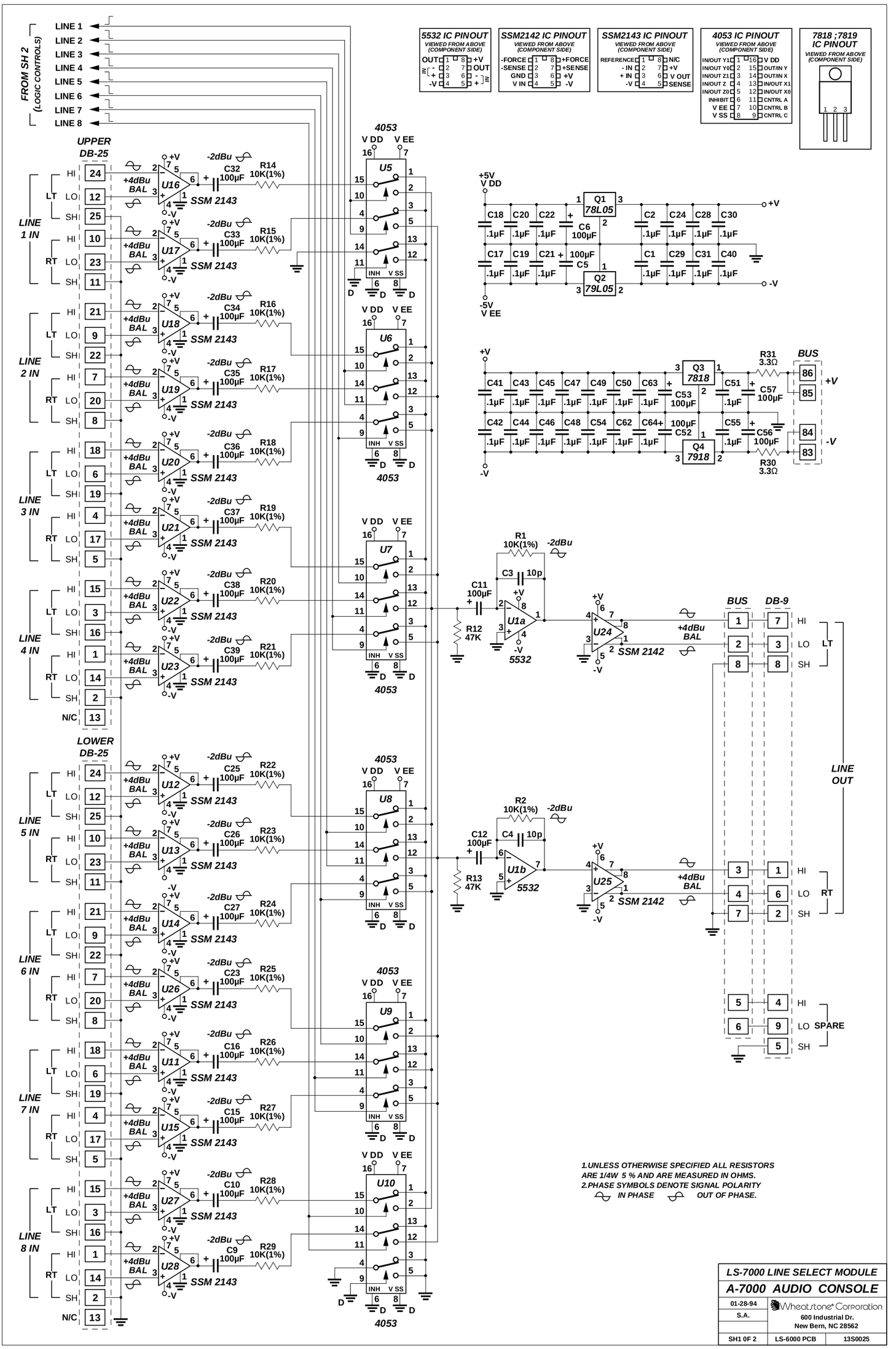


Stereo Line Input Module Fix Card Schematic - Sheet 1 of 1

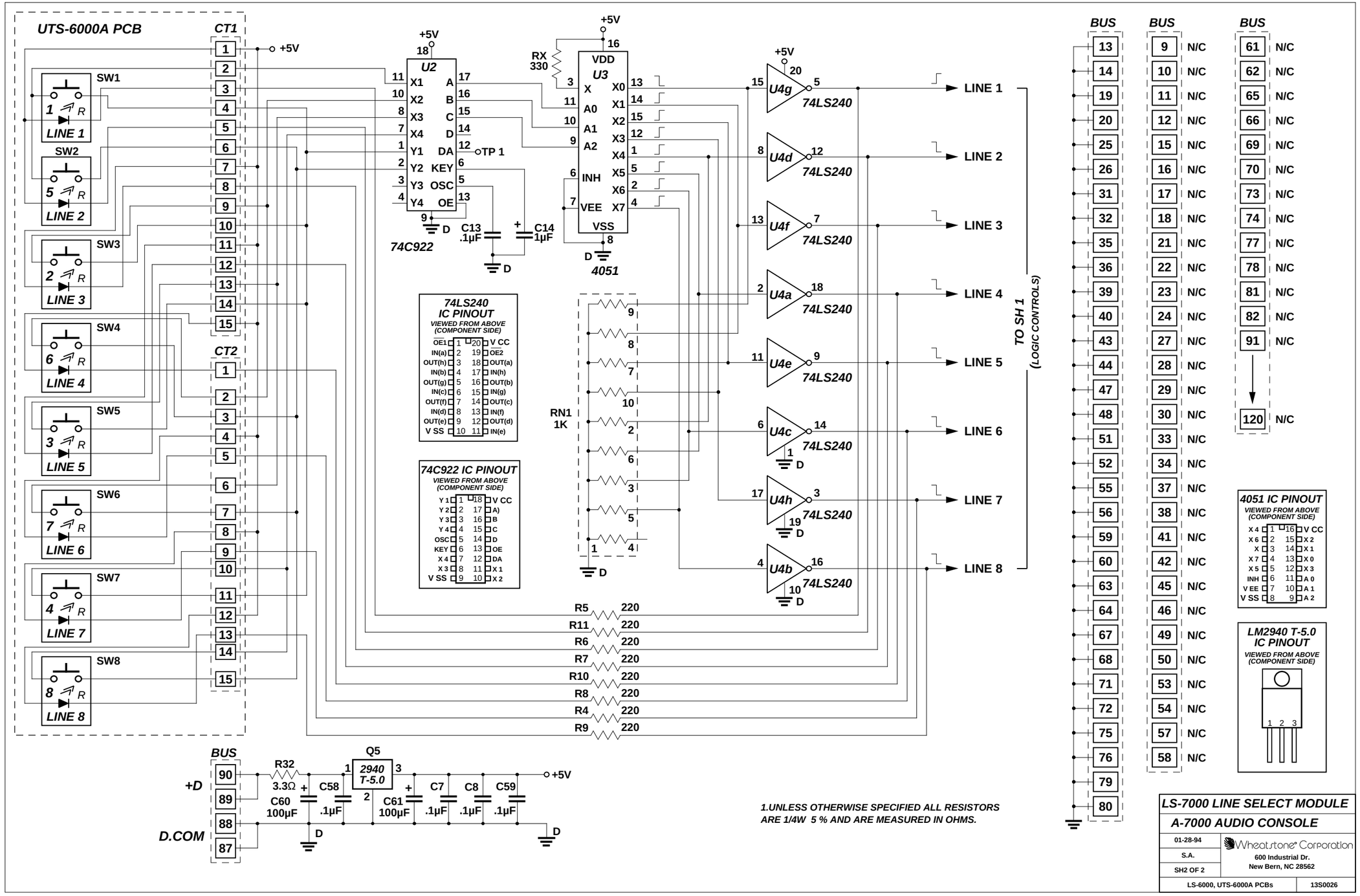


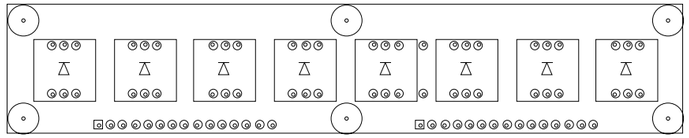
SL1X-7000 Stereo Line Module Fix Card - Load Sheet

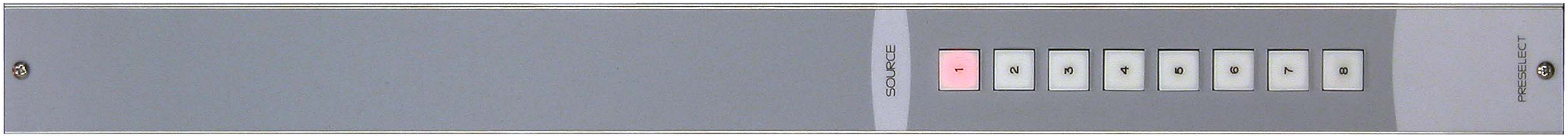
LS-7000 Line Selector Schematic (page 1 of 2)

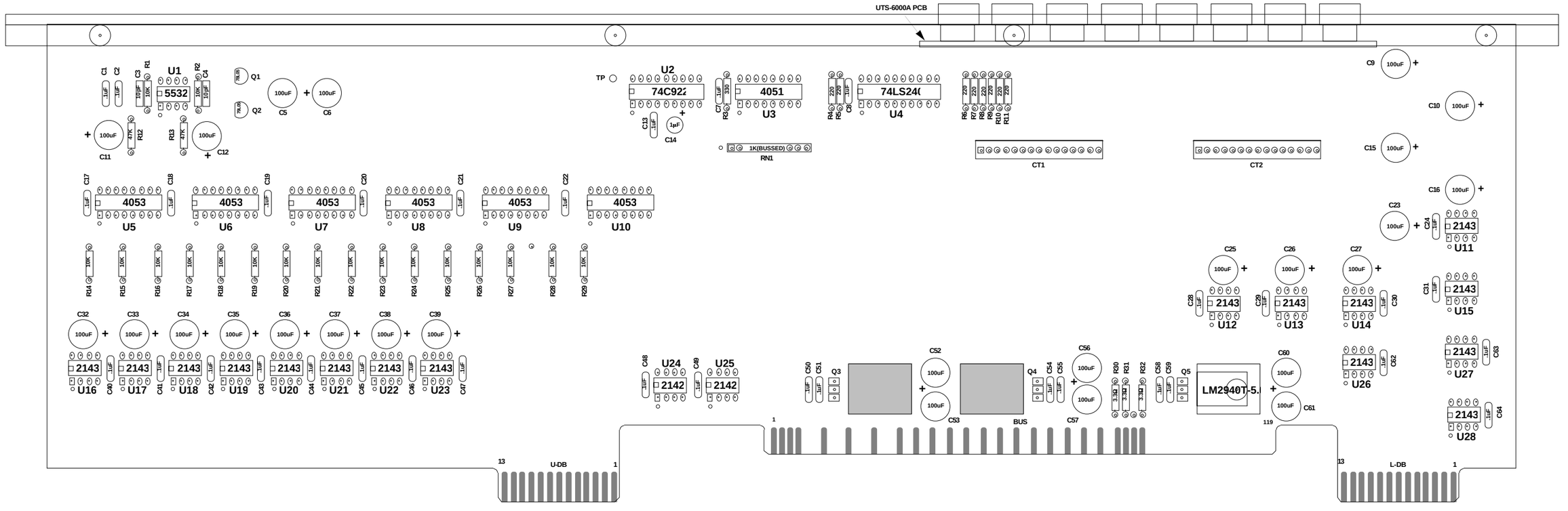


LS-7000 LINE SELECT MODULE		
A-7000 AUDIO CONSOLE		
01-28-94	Wheatstone Corporation	
S.A.	600 Industrial Dr. New Bern, NC 28562	
SH1 0F 2	LS-6000 PCB	13S0025


UTS-6000A PCB
CT1
CT2
SW1
LINE 1
SW2
LINE 2
SW3
LINE 3
SW4
LINE 4
SW5
LINE 5
SW6
LINE 6
SW7
LINE 7
SW8
LINE 8
+5V
U2
74C922
TP 1
C13 .1µF
C14 1µF
U3
4051
RX 330
RN1 1K
74LS240 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
74C922 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
U4g
U4d
U4f
U4a
U4e
U4c
U4h
U4b
74LS240
LINE 1
LINE 2
LINE 3
LINE 4
LINE 5
LINE 6
LINE 7
LINE 8
TO SH 1
(LOGIC CONTROLS)
R5 220
R11 220
R6 220
R7 220
R10 220
R8 220
R4 220
R9 220
BUS
+D
D.COM
R32 3.3Ω
C60 100µF
C58 .1µF
C61 100µF
C7 .1µF
C8 .1µF
C59 .1µF
Q5
2940 T-5.0
N/C
4051 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
LM2940 T-5.0 IC PINOUT
VIEWED FROM ABOVE (COMPONENT SIDE)
1.UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/4W 5 % AND ARE MEASURED IN OHMS.
LS-7000 LINE SELECT MODULE
A-7000 AUDIO CONSOLE
01-28-94
S.A.
SH2 OF 2
Wheatstone Corporation
600 Industrial Dr.
New Bern, NC 28562
LS-6000, UTS-6000A PCBs
13S0026




SOURCE
1
2
3
4
5
6
7
8
PRESELECT


UTS-6000A PCB
U1
5532
Q1
Q2
U2
74C922
U3
4051
U4
74LS24(
CT1
CT2
RN1
U5
4053
U6
4053
U7
4053
U8
4053
U9
4053
U10
4053
U11
2143
U12
2143
U13
2143
U14
2143
U15
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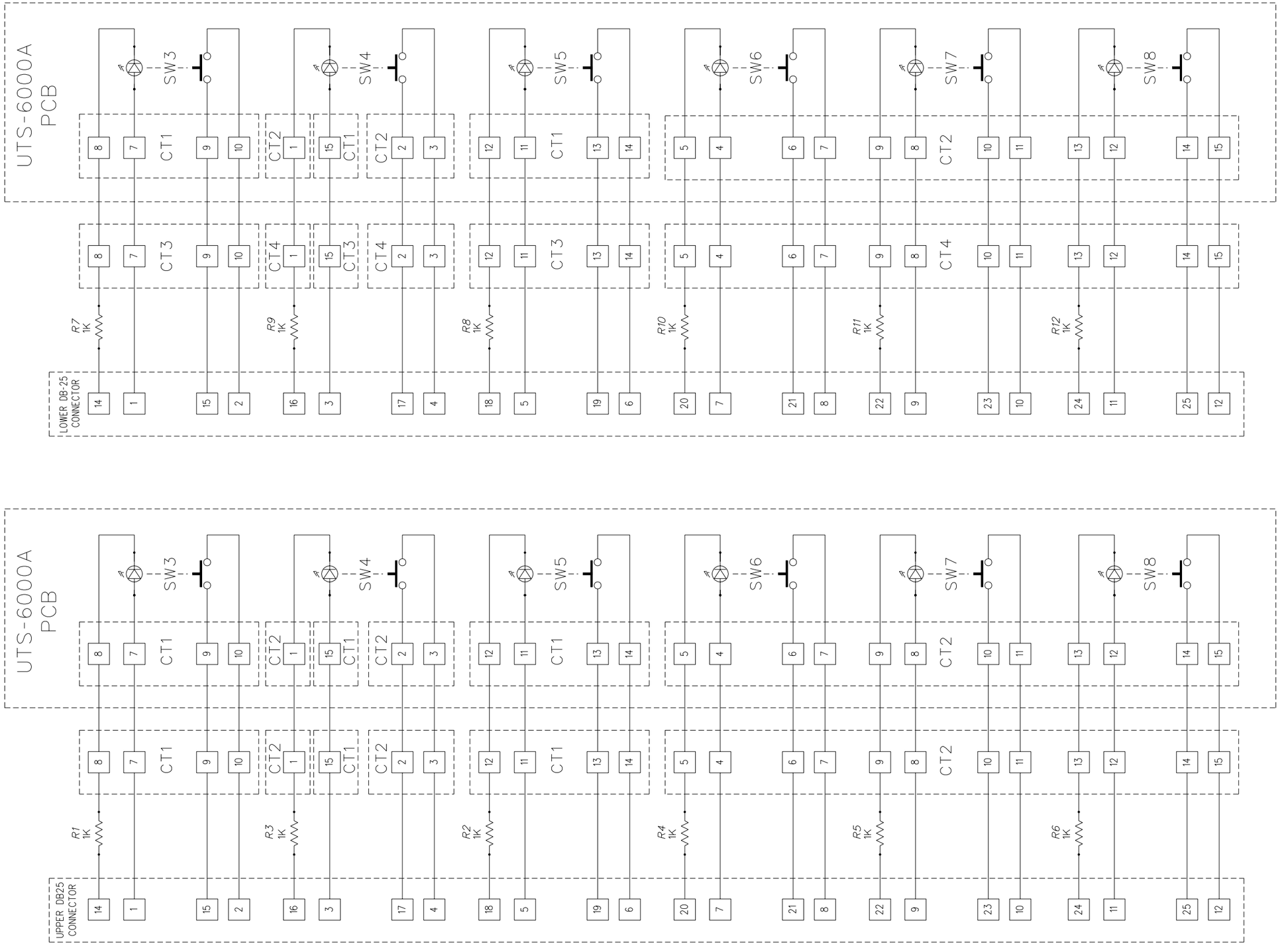
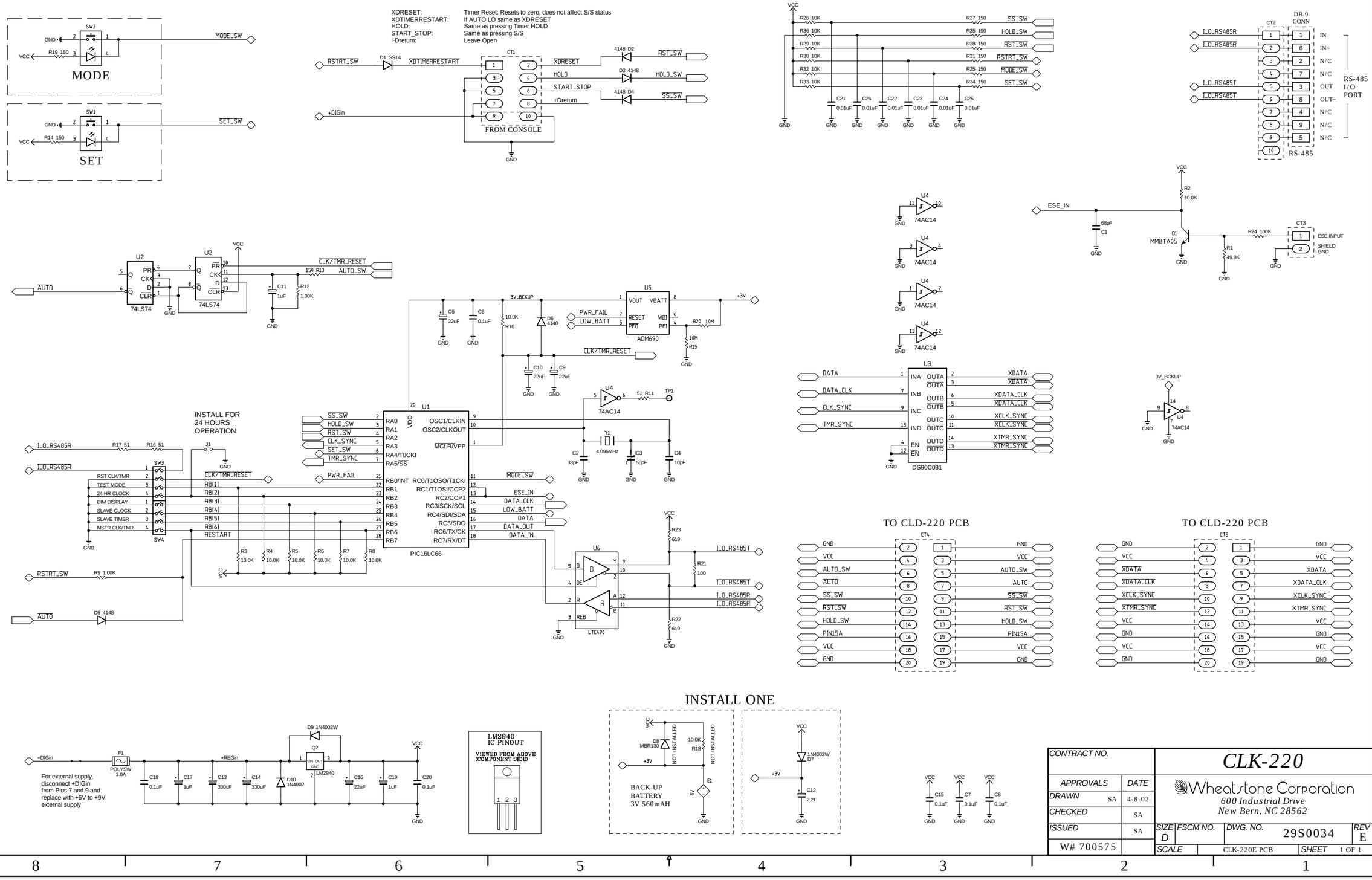
U16
2143
U17
2143
U18
2143
U19
2143
U20
2143
U21
2143
U22
2143
U23
2143
U24
2142
U25
2142
U26
2143
U27
2143
U28
2143
LM2940T-5.
U-DB
L-DB
BUS
WHEATSTONE CORP
LS-600(
LOAD SHEET
13L0023A

10K } 1%

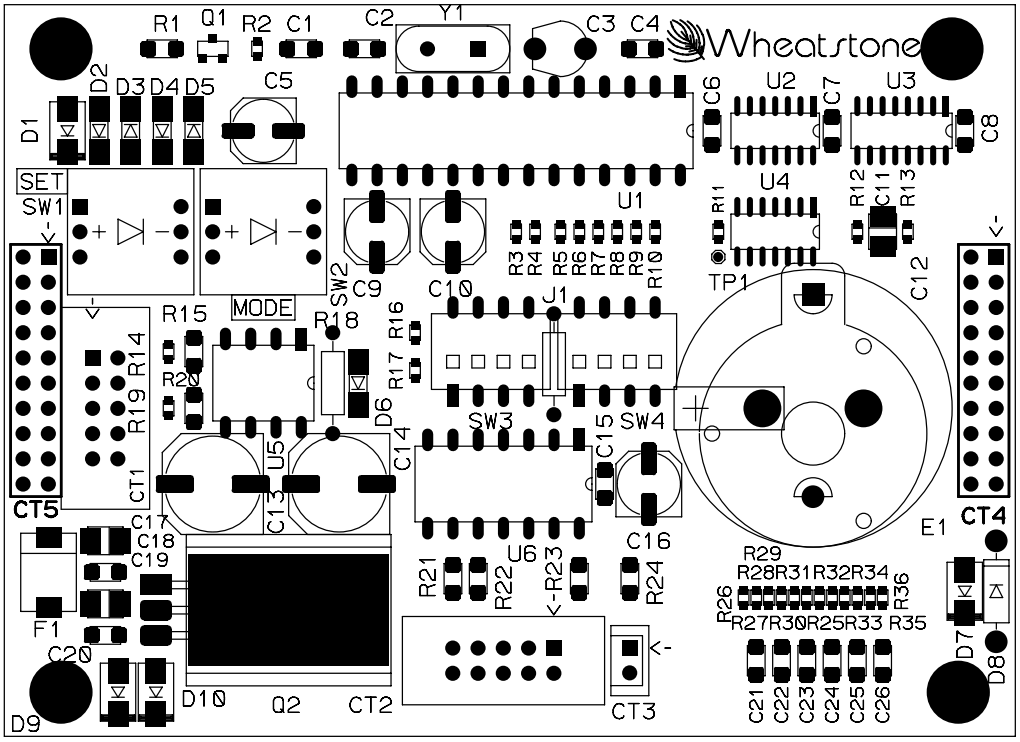

UTS-6000A
PCB
SW3
SW4
SW5
SW6
SW7
SW8
CT1
CT2
CT3
CT4
R7 1K
R9 1K
R8 1K
R10 1K
R11 1K
R12 1K
LOWER DB-25 CONNECTOR
UTS-6000A
PCB
R1 1K
R3 1K
R2 1K
R4 1K
R5 1K
R6 1K
UPPER DB25 CONNECTOR
TR-6000 TAPE REMOTE
A-6000 ON-AIR CONSOLE
1-17-94
PSP
Wheatstone Corporation
7305 Performance Drive
Syracuse, N.Y. 13212
SHT 1 OF 1
SCHEMATIC DRAWING
UTS-6000 PCB
TR-6000 PCB
13S0027


MACHINE 1
RTZ
<<
>>
STOP
REC
PLAY
MACHINE 1
MACHINE 2
RTZ
<<
>>
STOP
REC
PLAY
MACHINE 2
UTS-6000A PCB
UTS-6000A PCB
CT1
CT2
CT3
CT4
1K
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
13
U-DB
1
13
L-DB
1
WHEATSTONE CORP.
TR-6000
LOAD SHEET
13L0022A

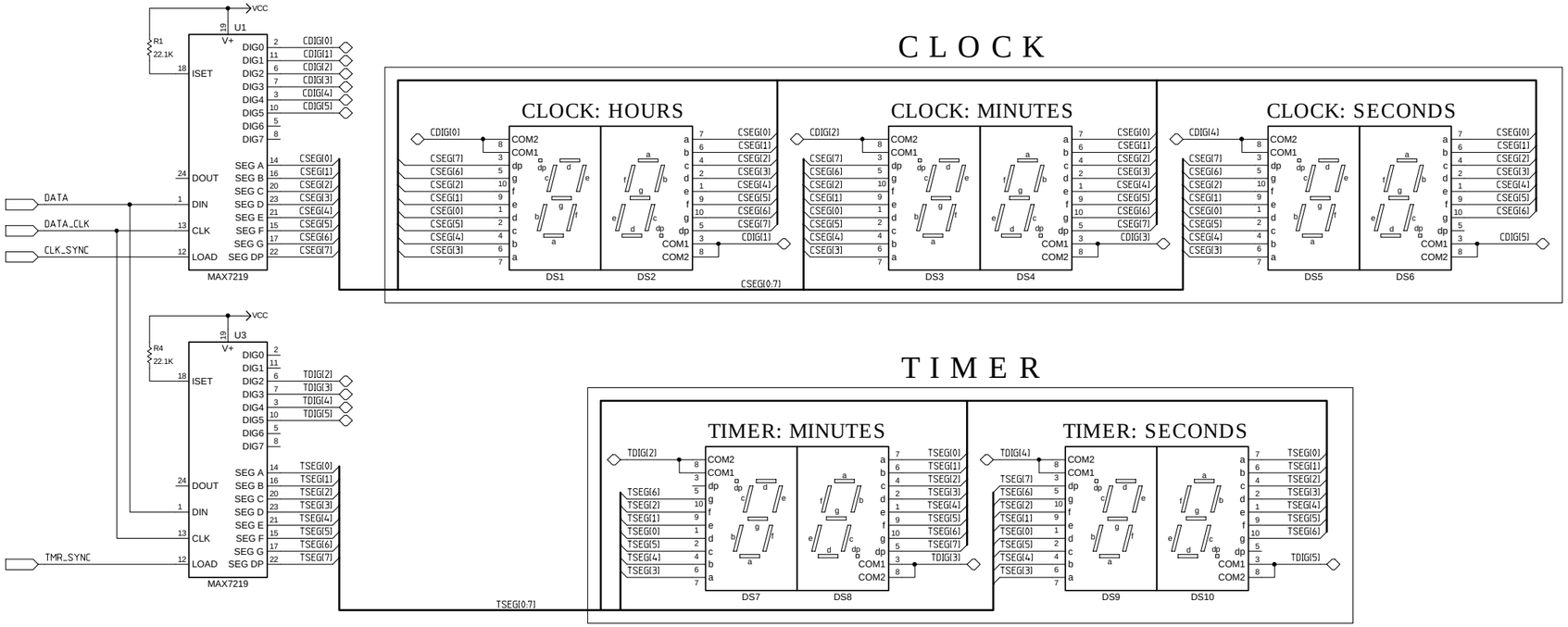


CONTRACT NO.		CLK-220		
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562		
DRAWN SA	4-8-02			
CHECKED	SA			
ISSUED	SA	SIZE D	FSCM NO.	DWG. NO. 29S0034 REV E
W# 700575		SCALE	CLK-220E PCB	SHEET 1 OF 1

CLK-70 Clock/Timer Schematic - Sheet 1 of 1

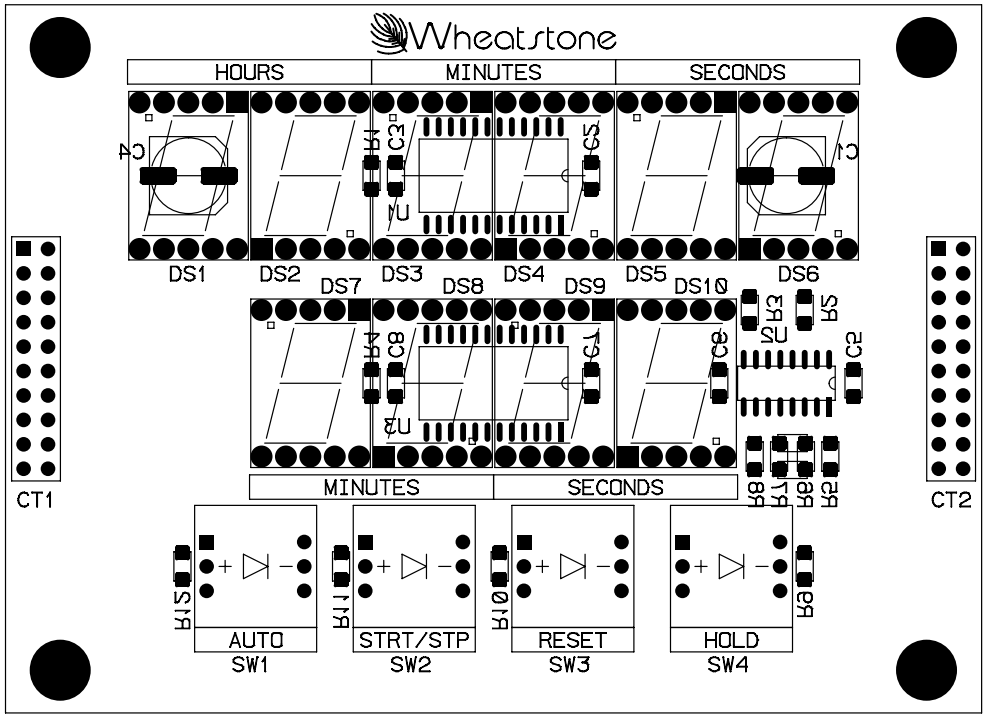


CLK-70 Clock/Timer - Load Sheet

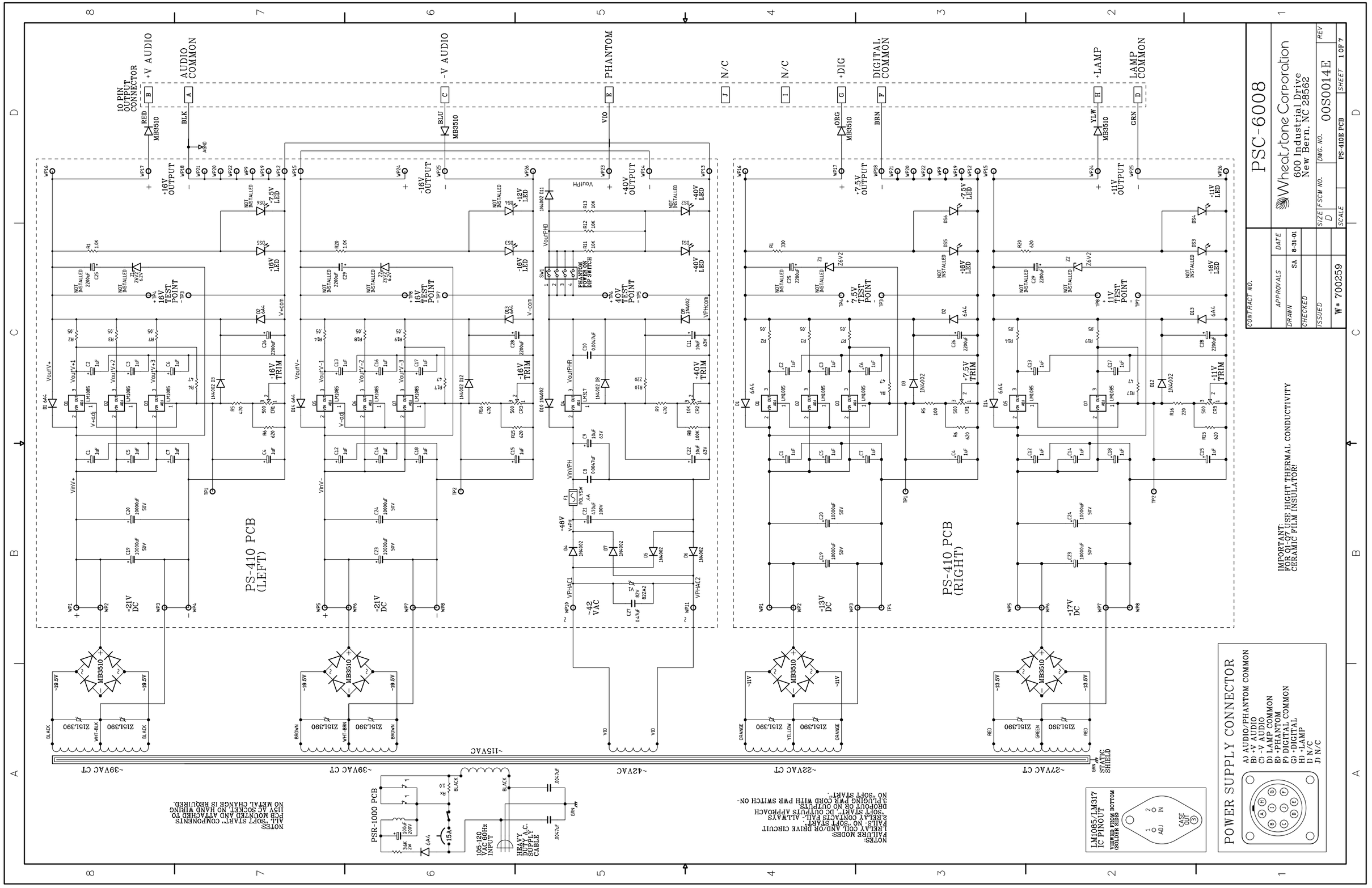


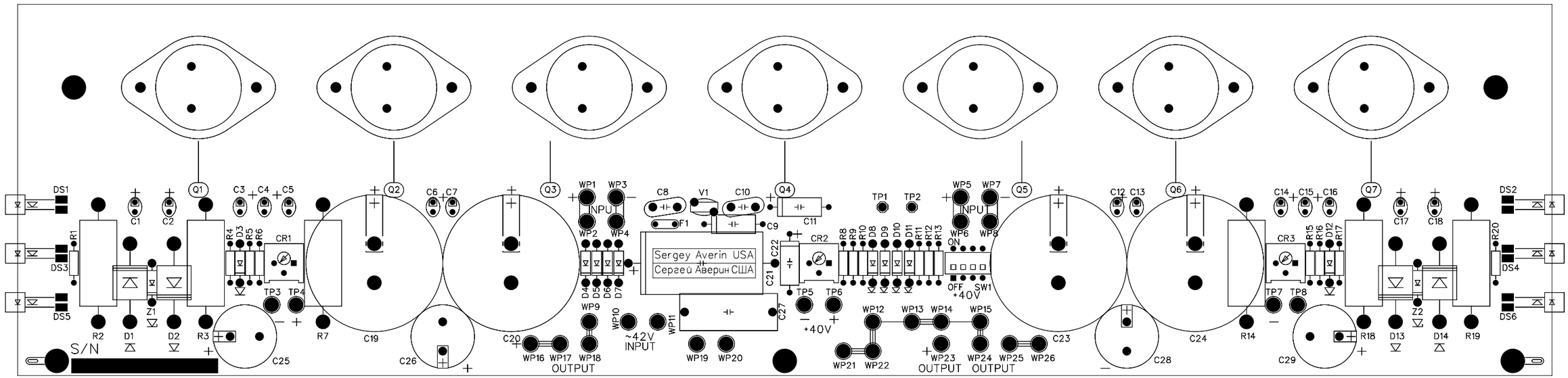
Clock/Timer Display Schematic Sheet 1 of 1

CONTRACT NO.	CLD-220
- Sergey Averin -	
APPROVALS / DATE	Wheatstone Corporation
DRAWN JBB 6-9-03	600 Industrial Drive
CHECKED SA	New Bern, NC 28562
ISSUED SA	SIZE D · FSCM NO. · DWG. NO. 29S0024 · REV C
W# 700575	SCALE CLD-220D PCB · SHEET 1 OF 1

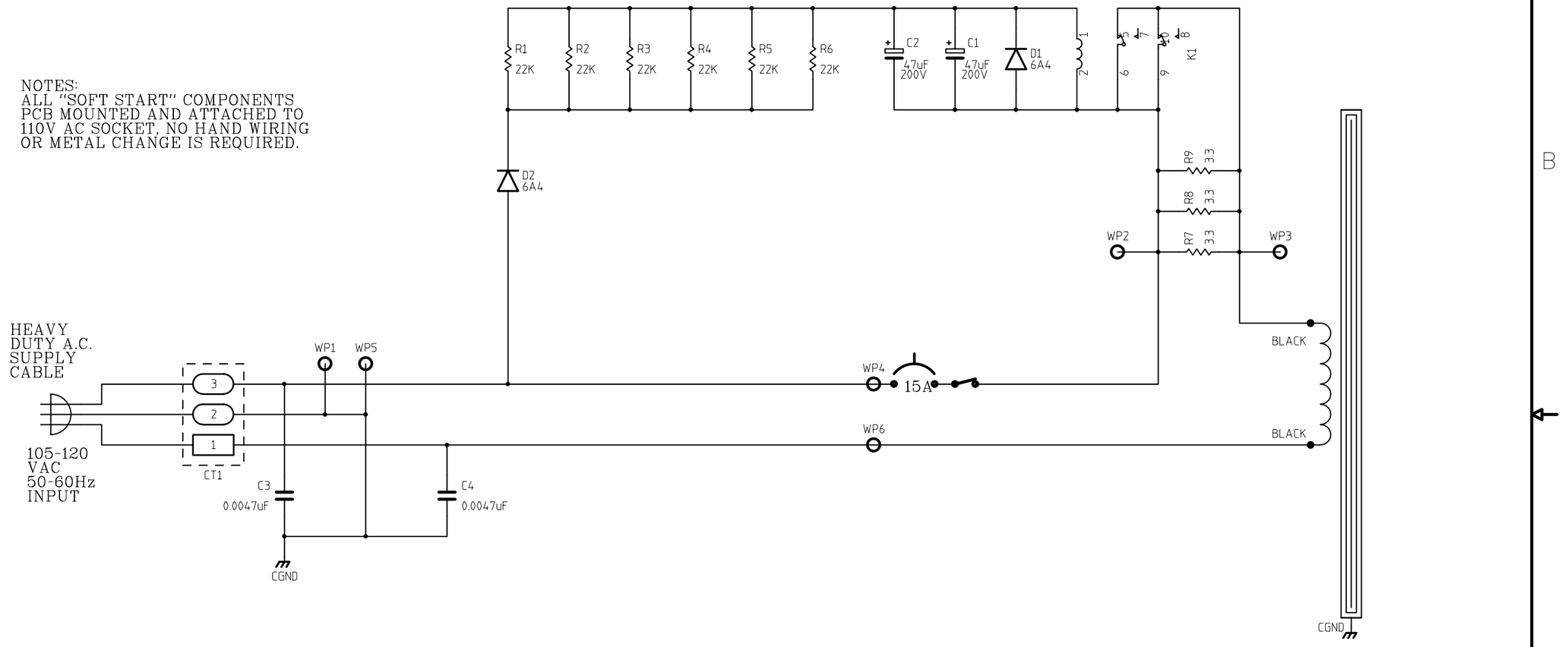


CLD-70 Clock/Timer Display - Load Sheet


PSC-6008
Wheatstone Corporation
600 Industrial Drive
New Bern, NC 28562
00S0014E
PS-410E PCB
1 OF 7
APPROVALS
DRAWN SA 8-31-01
CHECKED
ISSUED
W# 700259
10 PIN OUTPUT CONNECTOR
+V AUDIO
AUDIO COMMON
-V AUDIO
PHANTOM
N/C
N/C
+DIG
DIGITAL COMMON
+LAMP
LAMP COMMON
+16V OUTPUT
-16V OUTPUT
+40V OUTPUT
+7.5V OUTPUT
+11V OUTPUT
PS-410 PCB (LEFT)
PS-410 PCB (RIGHT)
~42 VAC
~11VAC
~39VAC CT
~42VAC
~22VAC CT
~27VAC CT
PSR-1000 PCB
105-120 VAC 60Hz INPUT
HEAVY DUTY A.C. SUPPLY CABLE
STATIC SHIELD
IMPORTANT:
FOR Q1-Q7 USE HIGHT THERMAL CONDUCTIVITY CERAMIC FILM INSULATOR!
POWER SUPPLY CONNECTOR
A) AUDIO/PHANTOM COMMON
B) +V AUDIO
C) -V AUDIO
D) LAMP COMMON
E) +PHANTOM
F) DIGITAL COMMON
G) +DIGITAL
H) +LAMP
I) N/C
J) N/C
LM1085/LM317 IC PINOUT
VIEWED FROM BOTTOM (SOLDER SIDE)
NOTES:
ALL "SOFT START" COMPONENTS PCB MOUNTED AND ATTACHED TO 115V AC SOCKET. NO HAND WIRING. NO METAL CHANGES IS REQUIRED.
NOTES:
FAILURE MODES:
1.RELAY COIL AND/OR DRIVE CIRCUIT FAILS- NO "SOFT START".
2.RELAY CONTACTS FAIL- ALWAYS "SOFT START". DC OUTPUTS APPROACH DROPOUT OR NO OUTPUTS.
3.PLUGING PWR CORD WITH PWR SWITCH ON- NO "SOFT START".


DS1
DS3
DS5
R1
R2
D1
D2
Z1
R3
C1
C2
C25
S/N
Q1
C3
C4
C5
R4
D3
R5
R6
CR1
TP3
TP4
R7
C19
Q2
C6
C7
C26
Q3
WP1
WP3
WP2
WP4
D4
D5
D6
D7
WP9
WP10
WP11
~42V
INPUT
C20
WP16
WP17
OUTPUT
WP18
WP19
WP20
C8
V1
C10
F1
C9
Q4
C11
Sergey Averin USA
Сергей Аверин США
C22
C21
C27
CR2
TP5
TP6
+40V
TP1
TP2
WP5
WP7
WP6
WP8
ON
OFF
SW1
+40V
R8
R9
R10
D8
D9
D10
D11
R11
R12
R13
WP12
WP13
WP14
WP15
WP21
WP22
WP23
OUTPUT
WP24
OUTPUT
WP25
WP26
C23
C28
Q5
C12
C13
Q6
C14
C15
C16
Q7
C17
C18
DS2
DS4
DS6
CR3
R15
R16
D12
R17
TP7
TP8
R14
C29
C24
R18
D13
Z2
D14
R19
R20

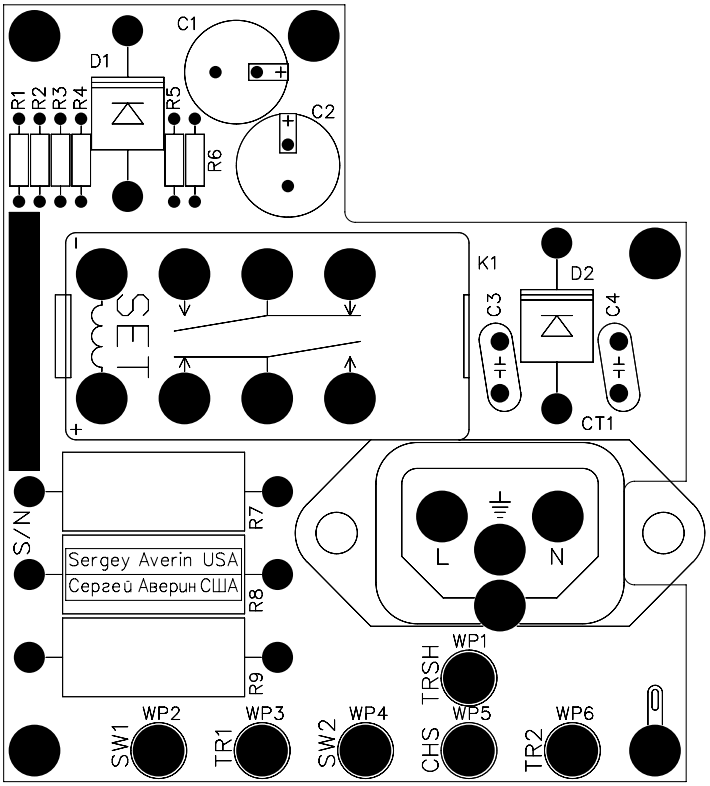
NOTES:
ALL "SOFT START" COMPONENTS
PCB MOUNTED AND ATTACHED TO
110V AC SOCKET, NO HAND WIRING
OR METAL CHANGE IS REQUIRED.



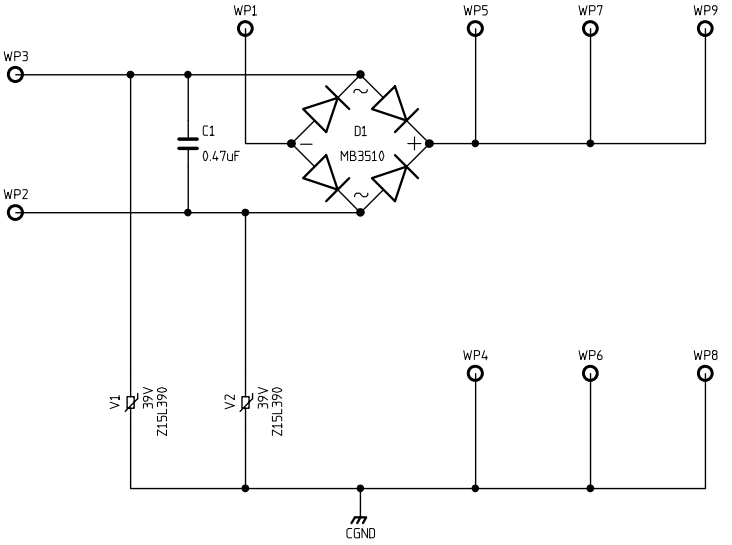
NOTES:
FAILURE MODES:
1.RELAY COIL AND/OR DRIVE CIRCUIT
FAILS- NO "SOFT START".
2.RELAY CONTACTS FAIL- ALLWAYS
"SOFT START", DC OUTPUTS APPROACH
DROPOUT.
3.PLUGING PWR CORD WITH PWR SWITCH ON-
NO "SOFT START".

CONTRACT NO.		PSR-1000
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562
DRAWN SA	12-2-99	
CHECKED		SIZE B | FSCM NO. | DWG. NO. 45S0108B | REV -
ISSUED		
W# 700340		SCALE | PSR-1000B PCB | SHEET 1 OF 1

Power Supply Relay Card Schematic - Sheet 1 of 1

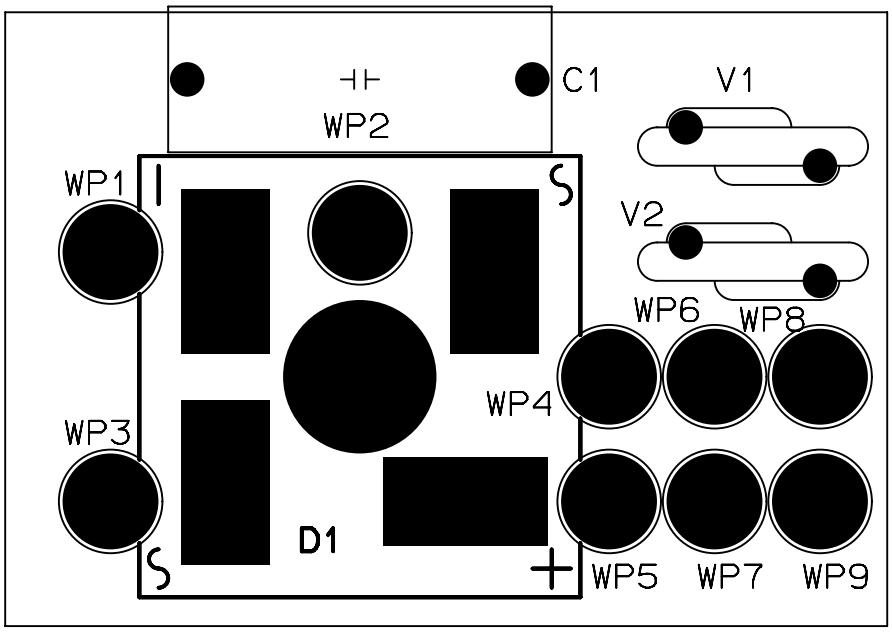


Power Supply Relay Card - Load Sheet

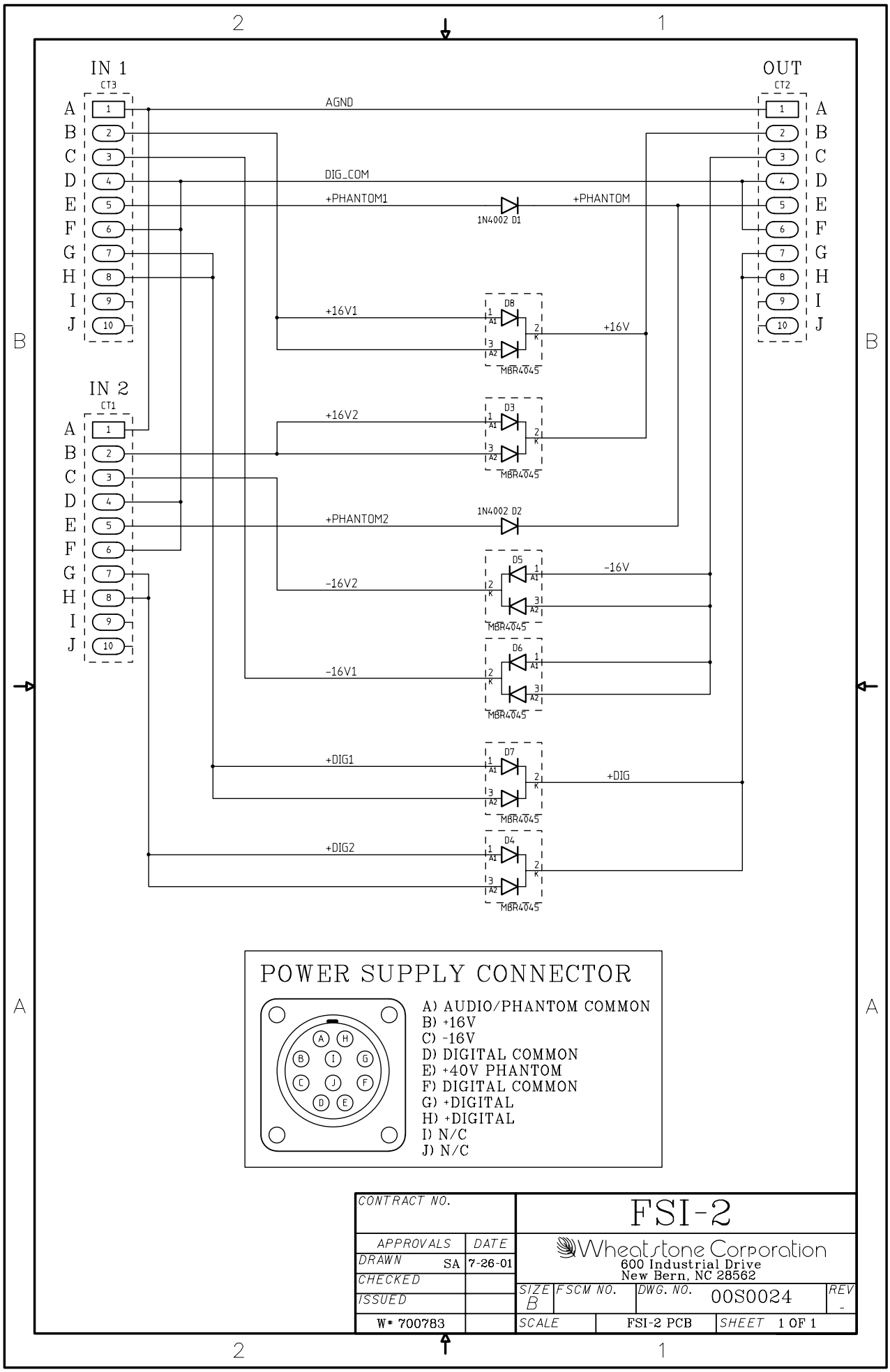


CONTRACT NO.		BRA-1	
APPROVALS	DATE	Wheatstone Corporation 600 Industrial Drive New Bern, NC 28562	
DRAWN SA	7-27-01		
CHECKED	SA		
ISSUED	SA	SIZE B / FSCM NO. / DWG. NO. 00S0021 / REV B	
W# 700355		SCALE BRA-1B PCB / SHEET 1 OF 1	

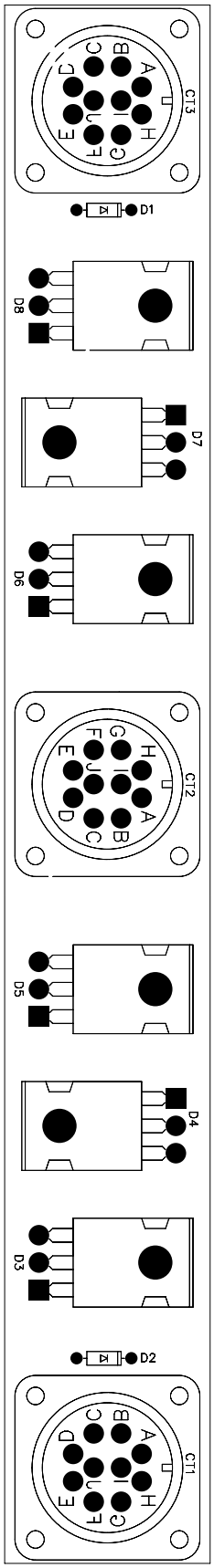
Bridge Adapter Card Schematic - Sheet 1 of 1



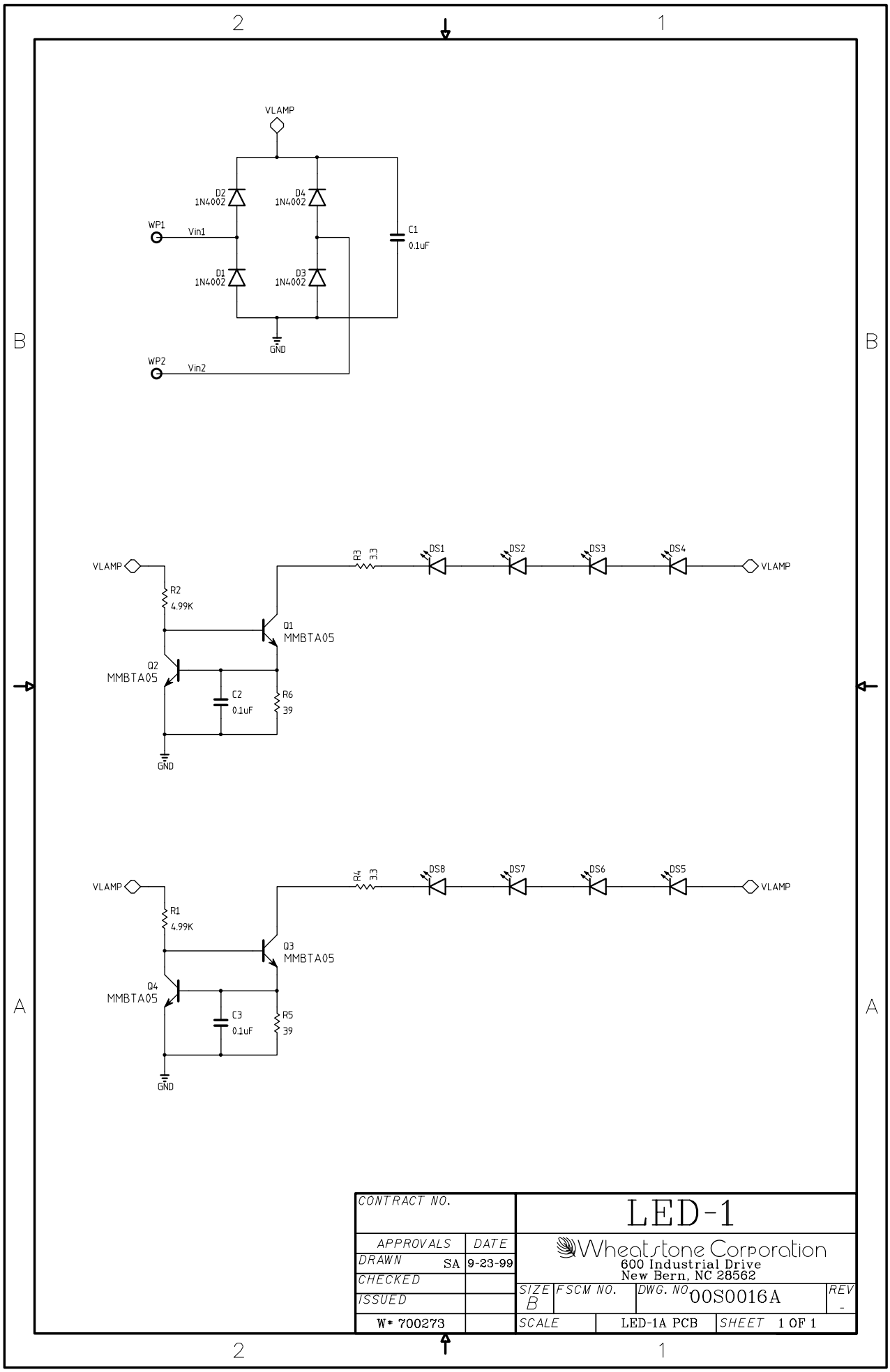
BRA1 Bridge Adapter Card - Load Sheet



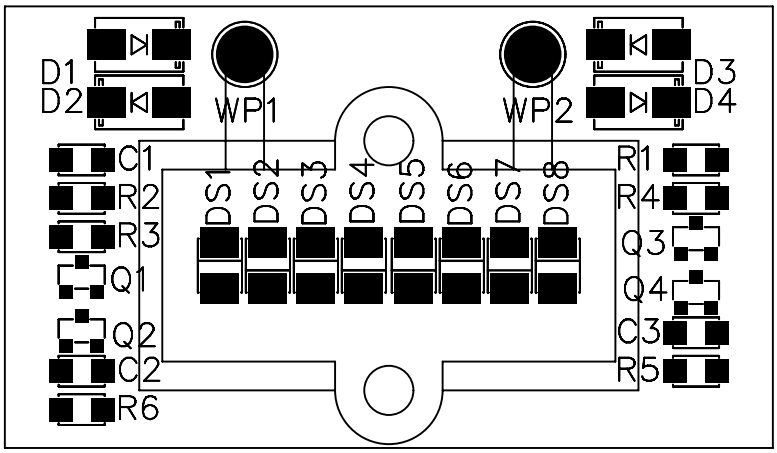
Fail Safe Interface Schematic - Sheet 1 of 1



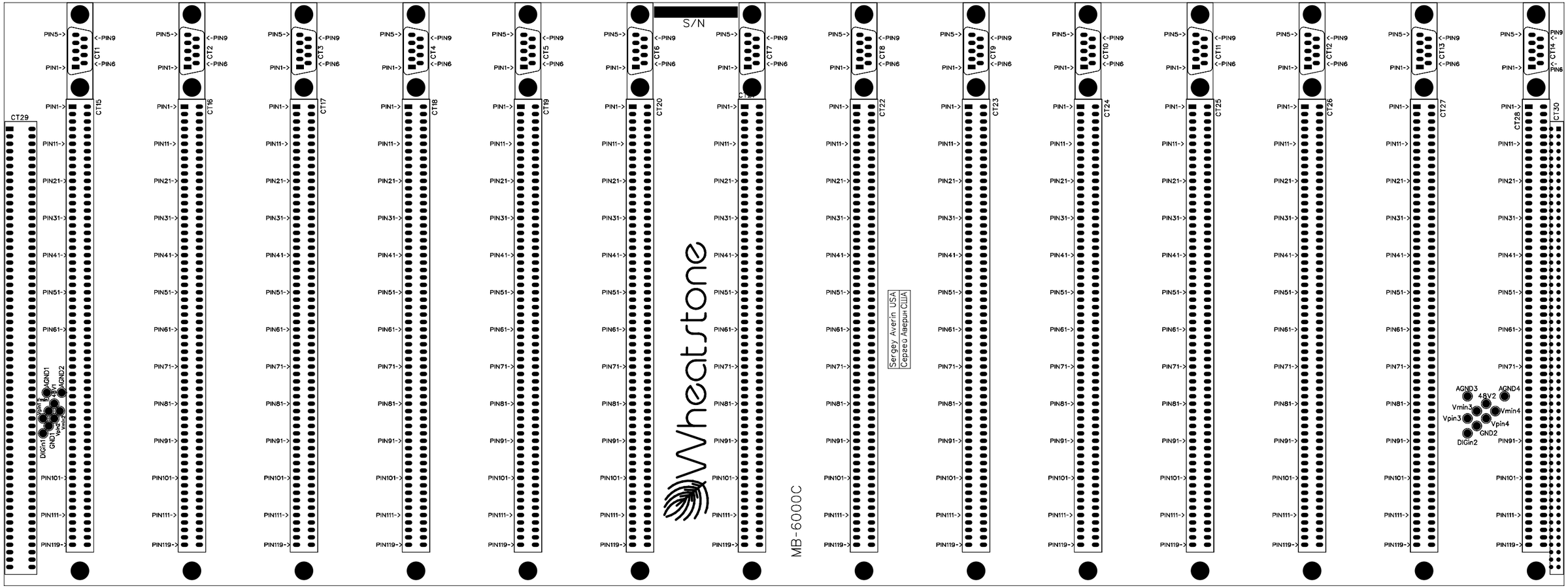
Failsafe Interface - Load Sheet



Meter Led Lamp Schematic - Sheet 1 of 1



LED-1 Meter LED Lamp - Load Sheet


CT29
CT1
CT2
CT3
CT4
CT5
CT6
CT7
CT8
CT9
CT10
CT11
CT12
CT13
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CT15
CT16
CT17
CT18
CT19
CT20
CT21
CT22
CT23
CT24
CT25
CT26
CT27
CT28
CT30
PIN1->
PIN5->
<-PIN9
<-PIN6
PIN11->
PIN21->
PIN31->
PIN41->
PIN51->
PIN61->
PIN71->
PIN81->
PIN91->
PIN101->
PIN111->
PIN119->
AGND1
48V1
AGND2
Vmin1
Vpin1
Vpin2
Vmin2
DIGin1
GND1
S/N
Wheatstone
MB-6000C
Sergey Averin USA
Сергей Аверин США
AGND3
48V2
AGND4
Vmin3
Vmin4
Vpin3
Vpin4
GND2
DIGin2

Appendix

Contents

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.

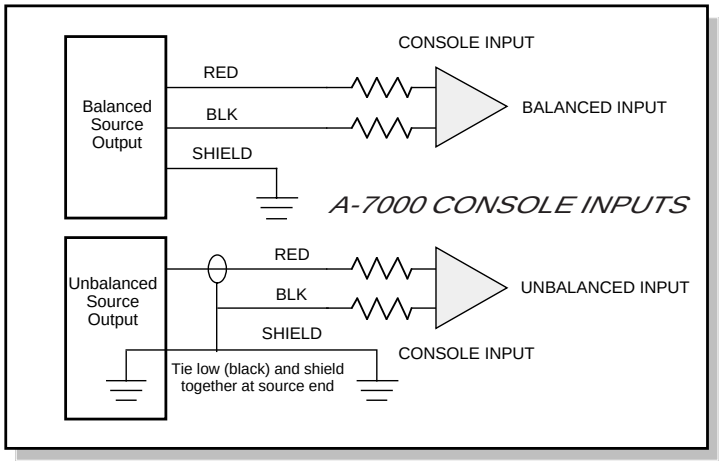
Not all equipment used in stations is balanced, however, and the most cost-effective devices often don't have +4 dBu output levels, either. Because of these realities, all Wheatstone consoles are designed to accept balanced or unbalanced sources with levels as low as -10 dBu.

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.*

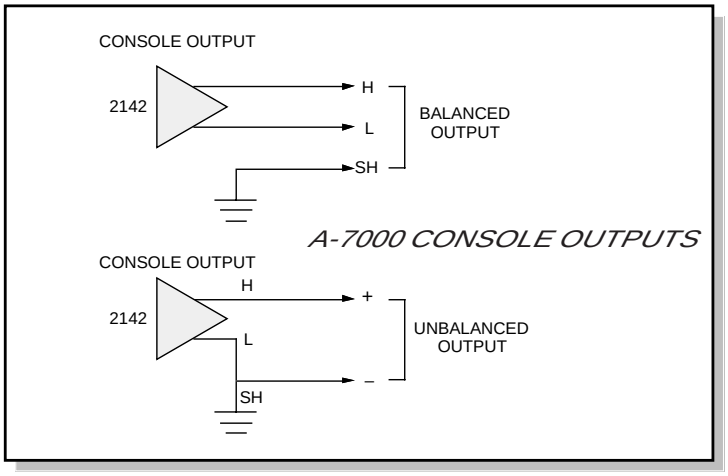
A-7000 consoles use a balanced output circuit which behaves exactly like the secondary of a high-quality transformer, with no center tap—this output is both balanced and floating. Either the HIGH or LOW side of the output should be strapped to ground, with the output taken from the other side. (Normally you'd strap LOW to ground, and take HIGH to feed your unbalanced equipment.)

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

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. If lightning ever strikes in your neighborhood, you know that nothing is totally immune to a close hit. It's comforting to know that you can simply unplug the left or right Program output stage, and swap in another (let's say, for example, from an Audition output or a CR module control room output), and be back up and running in minutes.



Typical unbalanced input and output connections to the A-7000 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.

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 pinout 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) 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.

(5) 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, A-7000 consoles are rugged and user friendly. I/O connections can be unplugged or plugged in while powered up with no damage, provided the precautions described above concerning removal and replacement of modules are carefully followed. Occasionally, this will 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 (252-638-7000) or fax (252-637-1285) the factory with any questions, problems, ideas, or suggestions regarding your A-7000 console. You can also email us at techsupport@wheatstone.com.