

# Operation

This chapter covers module and meter panel

component operation for the *BMXdigital* console.

Refer back to the illustration on page 2-2 for the

module and card placement within the mainframe.

## Module & Card Overview

### INPUT MODULES

*BMXdigital* has four types of input modules:

- **Microphone Preamplifier**
- **Universal Input**
- **Telco/Codec Input** (limited to six)
- **Remote Line Selector Input (RLS)**

One Mic Preamp module comes standard. A second Mic Preamp module can be installed next to the standard Mic Preamp. Any combination, or order, of Universal Input, Telco/Codec (up to six), and RLS modules may be installed into the input module positions.

Refer to these Quick Guide pages on using the various input modules:

- Mic Preamp module, page 3-2
- Universal Input module, pages 3-3 to 3-5
- Telco/Codec module, pages 3-6 to 3-10
- RLS module, page 3-11

### SESSION MODULE

The Session module is standard, installed immediately to the right of the input module positions. A Quick Guide to using the Session module is on pages 3-12 and 3-13.

### MONITOR MODULES

*BMXdigital* has two types of monitor modules:

- **Control Room**
- **Studio**

The Control Room module is standard, installed next to the Session module. The optional Studio module is installed next to the Control Room module. Refer to these Quick Guide pages on using the monitor modules:

- Control Room module, pages 3-14 & 3-15
- Studio module, page 3-16

### OUTPUT MODULES

*BMXdigital* has three standard output modules installed in dedicated positions at the right end of the mainframe. The Quick Guides to using the output modules are on pages 3-17 and 3-18.

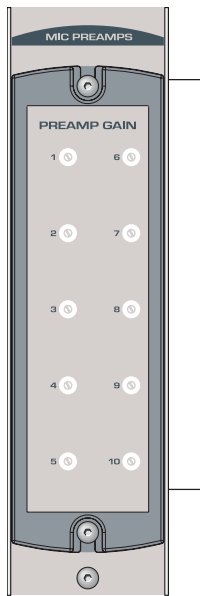
### DSP AND NET CARDS

One or more DSP cards and the optional Net Card are installed behind the modules, below the meter panel. There are no user controls on these cards.

- DSP Card, page 3-20
- Net Card, page 3-20

## Meter Panel Overview

The *BMXdigital* meter panel attaches at the rear of the mainframe and closes down over the upper part of the modules, hiding all of the module connectors from the board operator's view. It has the meters, a clock (except on the *BMXdigital-14*) and an event timer. A Quick Guide to the meter panel components is on pages 3-18 and 3-19.



## MICROPHONE PREAMPLIFIER MODULE QUICK GUIDE

This module amplifies five or ten low-level (-65 to -30 dBu) microphone signals up to line-level (+4 dBu). The BMXdigital-8 and BMXdigital-14 come standard with five mic preamps, the other frame sizes come standard with ten mic preamps.

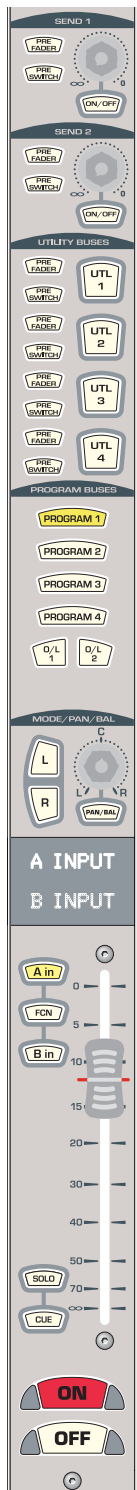
The line-level balanced mono output from each preamplifier can jumper directly to a Universal Input module; be routed through a patch bay; or connect to an external line-level mic processor. The trim controls set the gain as required for each microphone preamp. These are normally set during installation and should NOT be adjusted by the board operator.

Two Microphone Preamplifier modules may be installed in a BMXdigital frame to yield twenty microphone preamplifiers.

### MIC PREAMPS

*Remove the security cover to access the individual preamp gain trim pots. These adjust the preamp gain to yield a nominal +4 dBu output for microphone input levels between -65 dBu and -30 dBu.*

**PREAMP GAIN** — *Separate trim controls for each microphone preamp.*



## UNIVERSAL INPUT MODULE QUICK GUIDE

This module has two inputs (A and B). The Input Source Display shows the active input in bold in the top line (the alternate input source is shown in the bottom line). With a Net Card installed, the module's input can be a VistaMax source, which is set via the Session file. A VistaMax source is identified by a blinking dot in the display's left character. A full-featured module is shown. A limited-feature version (no Utility bus or Send controls) is also available.

### FADER SECTION

*This section has the Input Source Display, the buttons for input source selection, Solo, Cue, On and Off, and the module fader.*

**Input Source Display** — A two-line ten-character display that shows the current selected input in bold in the top line with the alternate input name in the bottom line.

**A in** — When lit, indicates the A input is selected, and its name is in the top line of the display. To change the input, the **FCN** button must be lit (see below).

**FCN** — Function button. Press for a full second (until it lights), then press the **A in** or **B in** button to change the input source. The **A in** and **B in** buttons can only be selected while the **FCN** button is lit. It automatically turns off after about three seconds.

**B in** — When lit, indicates the B input is selected, and its name is in the top line of the display. To change the input the **FCN** button must be lit (see above).

**Fader** — A 100mm module level control with dB indications along the left side to show the relative attenuation. Setting the fader to the red reference line (-12 dB) sets the module for unity gain. This means a nominal +4 dBu analog input signal will appear as a -20 indication on the meters. This is equivalent to a 0 VU indication on a mechanical meter.

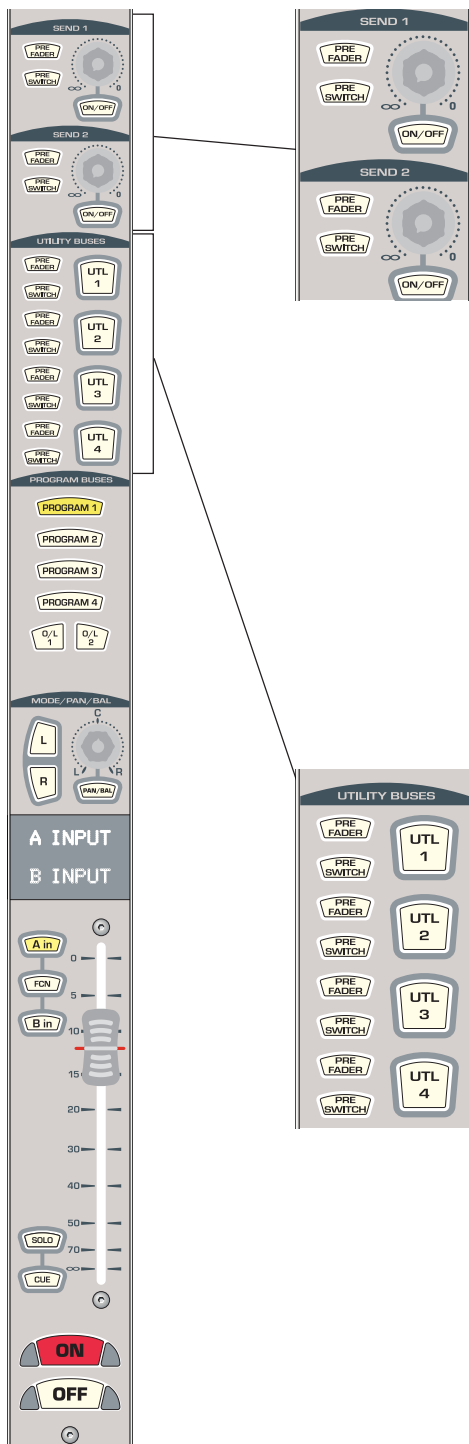
**SOLO** — When lit, adds the module's post-fader, post-switch audio to the Solo bus and interrupts the monitor and operator headphone outputs, but does not affect the on-line signal, the co-host, or guest outputs. Solo can be a momentary or a latched function. See page 2-33 (Session module DIP switch settings) for details.

**CUE** — When lit, routes the module's pre-fader, pre-switch audio to the Control Room module's cue output. This does not affect the on-line signal. When the module is set as a mic input, the Cue button is momentary. When the module is a line input, the Cue button is latched, toggling the cue feed on and off.

**ON** — When pressed, turns the module on, lighting the button and routing the module audio to the selected buses. Logic control commands (timer reset, start pulse, Cue reset, etc.), may be initiated, depending upon the SETUP DIP switch settings.

**OFF** — When pressed, turns the module off, removing the module audio from all selected buses (except for those set for pre-switch operation). Logic control commands (Stop Pulse, Off Tally, etc.) may be initiated, depending upon the SETUP DIP switch settings. This button can also be set to indicate peripheral device status, thus it may not light up when pressed.

### Universal Input, Telco/Codec & RLS Modules



### SEND 1 and SEND 2 (not present on limited-feature modules)

This section has the on/off control, level, and signal routing controls to feed the module's audio to the Send 1 and Send 2 buses. The controls are identical for each Send bus.

**PRE FADER** — When lit, the send audio feed is taken before the module's fader (thus adjusting the fader level does not affect the send output level). When unlit, the send level is affected by the module's fader setting.

**PRE SWITCH** — When lit, the send audio is always available (it is not affected by the module On/Off buttons). When unlit, the send output follows the module's on/off status.

**Rotary Volume Control** — Sets the level of the module audio feeding that send bus.

**ON/OFF** — When lit, connects the module to that send bus. If the module is on (or if the PRE SWITCH button is lit) and the volume control is turned up (and the module fader is up, if PRE FADER is not lit), then audio is applied to the bus. When unlit, no audio from this module is applied to that send bus.

### UTILITY BUSES (not present on limited-feature modules)

This section has the module controls for the four Utility buses: UTL 1, UTL 2, UTL 3, and UTL 4.

**UTL 1, UTL 2, UTL 3, UTL 4** — When lit, routes the module audio to Utility bus 1, 2, 3, or 4. The module can be assigned to any combination of buses. When the button is unlit, no audio is fed to that Utility bus.

**PRE FADER** — When lit, the audio feed to that Utility bus is taken before the module's fader (thus adjusting the fader level does not affect the level to the bus). When unlit, the feed level to the Utility bus is controlled by the module's fader setting.

**PRE SWITCH** — When lit, the audio feed to that Utility bus is always active (it is not affected by the module On/Off buttons). When unlit, the feed to the Utility bus follows the module's on/off status.

Both the **Pre Fader** and the **Pre Switch** buttons can be selected on any Utility or Send Bus.

## PROGRAM BUSES

*This section has the selectors for the four Program buses and the two off-line buses.*

**PROGRAM 1, PROGRAM 2, PROGRAM 3, PROGRAM 4** — When lit, routes the module audio to any combination of the Program 1, Program 2, Program 3, and Program 4 buses. When unlit, the module audio does not feed that bus. These outputs are always post-switch and post-fader.

**O/L 1, O/L 2 (Off-Line 1, Off-Line 2)** — When lit, routes the module audio to any combination of the Off-Line 1 and Off-Line 2 buses (which are used for building up off-air mix-minuses). The Off-Line feeds are always pre-switch, but whether they are pre-fader or post-fader is set for all Input and RLS modules through a DIP switch on the Session module. For details on setting this option, see page 2-33 (Session Module DIP switch settings).

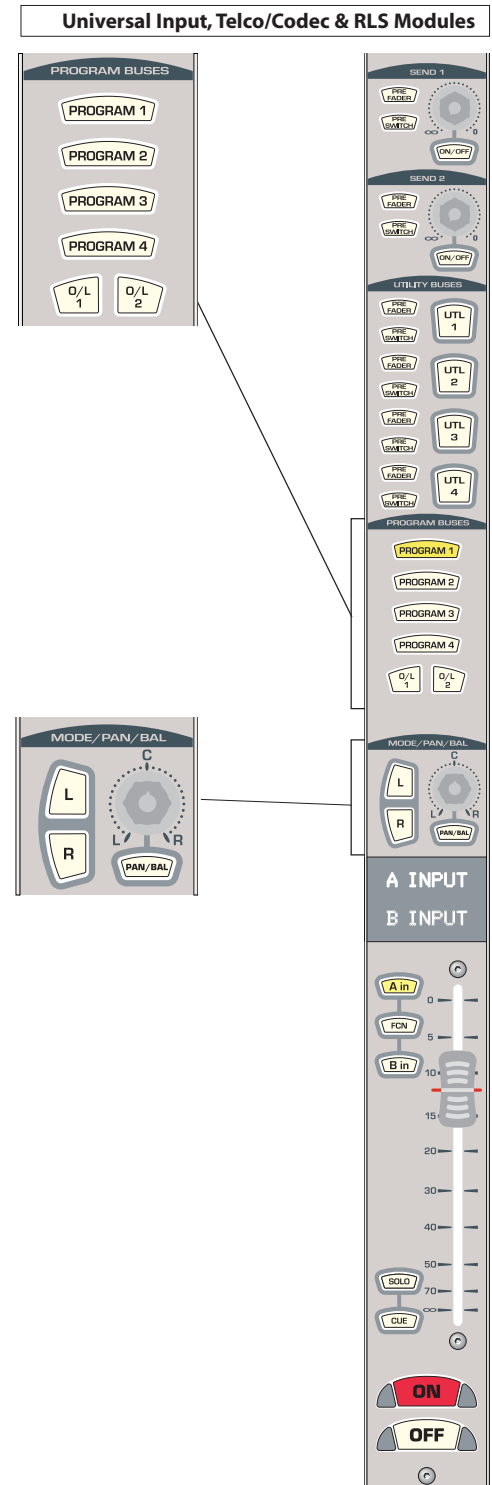
## MODE/PAN/BAL

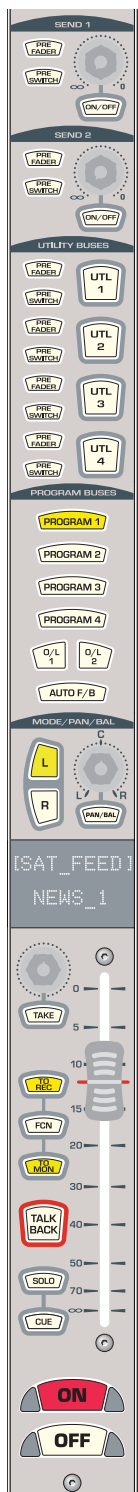
*This section has the controls for setting the module's mode (stereo or three mono modes) and the pan or balance of the module's bus outputs.*

**L and R** — These buttons set the mode (stereo or mono). When both buttons are unlit, the module is stereo. When the L (left) button is lit, the left input feeds both the left and right outputs. When the R (right) button is lit, the right input feeds both the left and right outputs. When both L and R buttons are lit, the left and right inputs are summed into a mono mix, which then feeds both the left and right outputs.

**Rotary Pan/Balance Control** — Controls where the input is placed in stereo aural space when the PAN/BAL button is lit. On a stereo signal, it functions as a balance control. On a mono signal (either L or R, or both, are lit), it functions as a pan pot.

**PAN/BAL** — When lit, the pan/balance control is active. When unlit, the pan/balance control does not affect the audio.





## TELCO/CODEC MODULE QUICK GUIDE

Up to six Telco/Codec modules may be installed in the console. Most controls are the same as a Universal Input module (On/Off, Fader, mode selection, and bus selection), but since the module may be connected to an External RLS or router, or may come from a VistaMax System, there is a Source Selector and Take button on this module (taking the place of the A/B selectors). There is also a Talkback button for talking to the caller or remote in addition to Telco record enable and monitor select buttons. Additional operational details on special Telco functions are presented on pages 3-8 to 3-10. A limited-feature version module is also available, which does not have the Send and Utility bus controls.

### SEND & UTILITY BUSES

*This section has the selectors for the four Utility outputs and the two Send. Refer to page 3-4 for their functions.*

### PROGRAM BUSES

*This section has the selectors for the four Program outputs and the two off-line buses. The AUTO F/B button sets up how the Foldback (the return feed to the caller) is selected.*

### PROGRAM 1, PROGRAM 2, PROGRAM 3, PROGRAM 4 —

*When lit, routes the module to any combination of the Program 1, Program 2, Program 3, and Program 4 buses. The “winking” button indicates the bus that is being used as the Foldback Mix source (see pages 3-8 and 3-9 for foldback details). When unlit, the module audio does not feed that bus. These outputs are always post-switch and post-fader.*

**O/L 1, O/L 2 (Off-Line 1, Off-Line 2) —** *When lit, routes the module audio to any combination of the Off-Line 1 and Off-Line 2 buses (which are used for building up off-air mix-minuses). A “winking” button indicates the bus that is being used as the Foldback Mix source (see pages 3-8 and 3-9). The Telco Off-Line feeds are always pre-switch and pre-fader.*

**Auto F/B —** *Automatic Foldback. When lit, automatically switches the Foldback Mix source between the “winking” off-line bus (when the module is off) and the “winking” program bus (when the module is on). For details on this function, see pages 3-8 and 3-9.*

### MODE/PAN/BAL

*This section has the controls for setting the module’s mode (stereo or mono) and the pan or balance of the module’s bus outputs. Refer to page 3-5 for their functions.*



## FADER SECTION

This section has the Input Source Display; input Source Selector and Take controls; Telco Monitor and Record Feed assignment buttons; the Talkback, Solo, Cue, On, and Off buttons; and the signal level fader.

**Input Source Display** — A two-line ten-character display that shows the module's name in the top line (TELCO 1). When the input is a Switcher, as shown in the full module illustration, the top line shows the current source (SAT\_FEED) and the bottom line shows the selected source (NEWS\_1).

**Source Selector** — A rotary encoder to scroll through the available VistaMax, router or Ext. RLS sources (shown in the Display's bottom line). Only active when the module is set as a Switcher (see page 2-25 for DIP switch settings).

**TAKE** — When pressed, "takes" the selected source shown in the display's bottom line. This makes it the current source, thus its name will be shown in both the top and bottom lines. The Take button and Source Selector are only active when the module is set as a Switcher (see page 2-25 for DIP switch settings).

**TO REC** — When lit solid, adds the module's audio to the Telco record output. When flashing, indicates the module is not feeding the record output (see pages 3-9 and 3-10 for additional information on this function). To select or deselect this button, the **FCN** button must be lit (see below).

**FCN** — Function button. Press for a full second to light, then press the **To Rec** or **To Mon** button to change the setting. The **To Rec** and **To Mon** buttons can only be changed while the **FCN** button is lit.

**TO MON** — When lit, adds the module to the Telco monitor mix that is available on the Control Room and Studio modules. To select or deselect, the **FCN** button must be lit (see above).

**TALKBACK** — A momentary press to talk button so the board operator can talk to the caller or remote on the left output of that Telco Input's mix-minus output.

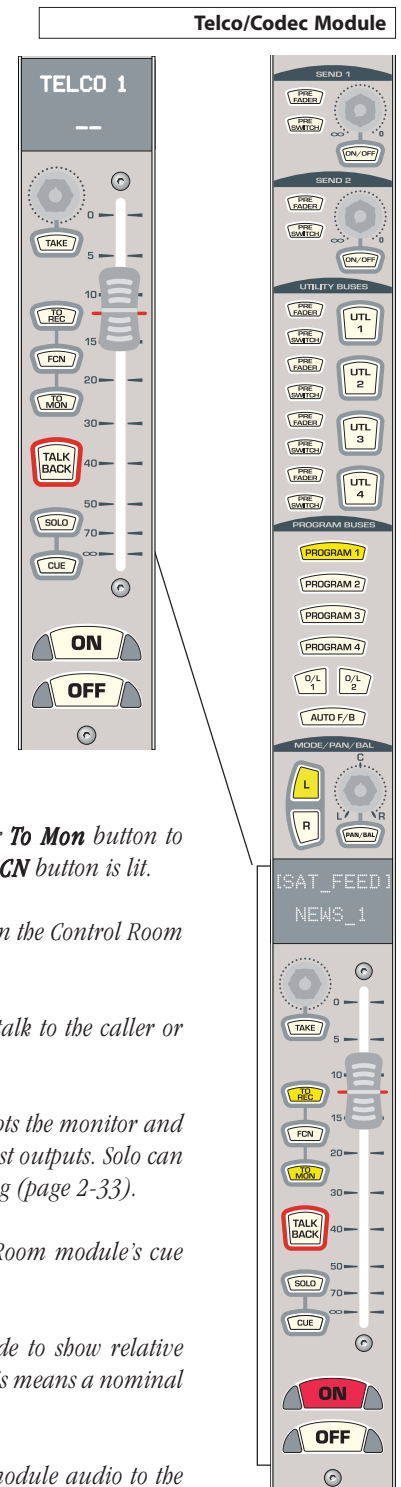
**SOLO** — When lit, adds the module's post-fader audio to the Solo bus and interrupts the monitor and operator headphone outputs, but does not affect the on-line signal, the co-host or guest outputs. Solo can be a momentary or a latched function, following a Session module DIP switch setting (page 2-33).

**CUE** — When lit, routes the module's pre-fader, pre-switch audio to the Control Room module's cue output. This does not affect the on-line signal.

**Fader** — A 100mm module level control with dB indications along the left side to show relative attenuation. Set the fader to the red reference line (-12 dB) for module unity gain. This means a nominal +4 dBu analog input will show a -20 indication on the meters (equivalent to 0 VU).

**ON** — When pressed, turns the module on, lighting the button and routing the module audio to the selected buses. Logic control commands (timer reset, start pulse, Cue reset, etc.), may be initiated, depending upon the SETUP DIP switch settings.

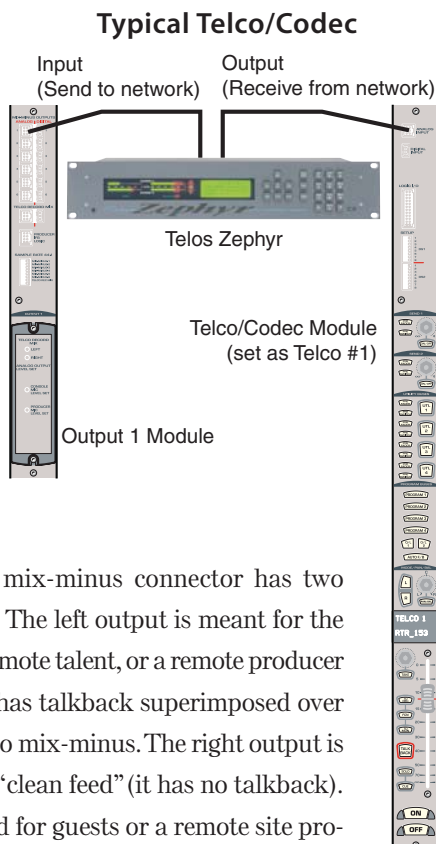
**OFF** — When pressed, turns the module off, removing the module audio from all selected buses (except those that are set for pre-switch operation). Logic control commands (Stop Pulse, Off Tally, etc.) may be initiated, depending upon the SETUP DIP switch settings.



### TELCO/CODEC MODULE OPERATION

Up to six “callers” (any remote send and receive device like a telephone hybrid, satellite transceiver, ISDN interface, etc.) can connect to six Telco/Codec modules (Telco), as illustrated below.

Each Telco is set to a unique Telco ID number (see page 2-25) and has two mono mix-minus outputs on the Output 1 module. The mono mix-minus outputs, also called Foldback mixes, send a sum of one of the program or off-line buses back to the caller—but always minus the caller’s audio. Hence the mix-minus nomenclature, and why there are six separate Foldback outputs.



Each mix-minus connector has two outputs. The left output is meant for the caller, remote talent, or a remote producer since it has talkback superimposed over the mono mix-minus. The right output is a mono “clean feed” (it has no talkback). It is used for guests or a remote site program feed. The board operator talks to any caller by pressing the Talkback button on that Telco module. A local Producer can talk to any caller using a custom switch panel or a Producer Talkback/IFB panel (PRE99-1188).

### TELCO FOLDBACK MIX

The Telco Foldback mix source, indicated by its “winking” assignment button on each Telco module, is derived from a program or off-line bus. The bus used is determined by which buses are assigned and by whether an Auto-Foldback button is on. If it is, then the Telco’s state (module On or Off) also affects which bus is the Foldback source.

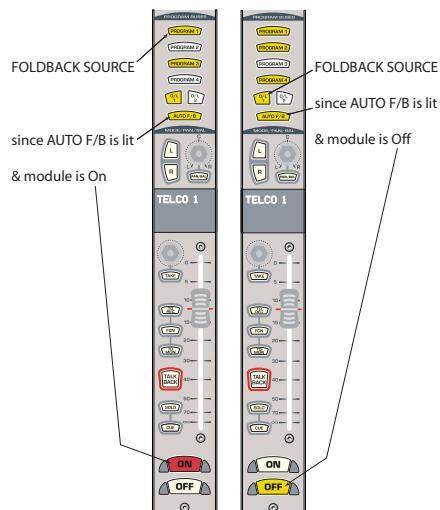
The program bus Foldback feeds are derived post-switch and post-fader, but the off-line bus feeds are pre-switch and either pre-fader or post-fader (determined by Session module DIP switch 6, see page 2-33). The Telco modules have a separate DIP switch (see page 2-25) active when pre-fader is selected on the Session module. This allows the Telco modules to be post-fader even when Universal and RLS modules are pre-fader.

**Note:** When a Telco is set for pre-fader O/L feed, this setting forces the active Send and Utility buses to also be pre-fader, when the module is off.

#### Auto-Foldback On

When the AUTO F/B button is lit, as shown below, that Telco’s Foldback mix automatically switches between the assigned program bus when the module is On, and the assigned off-line bus when the module is Off, using this bus priority:

#### Foldback Sources





While the Module is On: Program 1 is the Foldback mix source. If it's not assigned, then the source is selected in this order; Program 2, Program 3, Program 4, Off-Line 1, Off-Line 2.

While the Module is Off: Off-Line 1 is the primary Foldback mix. If it's not assigned, then Off-Line 2 is the source. If neither Off-Line is assigned, there will be no mix-minus audio (except for any talkback on the left output).

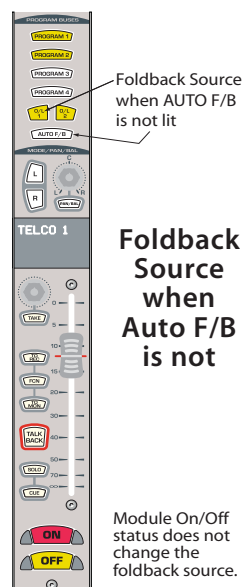
**Auto-Foldback On** is the most common setting for call-in contests or interviews where the caller will go live on-air. Typically, only the talent's mic input and the caller's Telco are assigned to O/L 1. With the Telco module Off, the caller can hear the talent thru the O/L 1 bus and the talent can hear the caller through either the Telco Monitor output or Cue. When the Telco module is turned on, the mix-minus switches to Program 1 (assuming the air feed is Program 1), so the caller can hear everything going to air—minus their voice.

#### Auto-Foldback Off

When Auto-Foldback is off (the AUTO F/B button is not lit), the module uses a different bus priority order.

While the Module is On  
or Off: The primary Foldback source is Off-Line 1. If it is not assigned, then Off-Line 2 is the source. If it is not assigned then the program buses are selected in this order; Program 1, Program 2, Program 3, Program 4.

**Auto-Foldback Off** is the most common setting for recording callers for later broadcast and for doing a live remote where a "broadcast" feed to the remote site is required. In a remote broadcast,



when the remote talent goes on-air, the mix-minus should not change, thus only Program 1 can be selected on the Telco and the Program 1 mix-minus will always be sent back to the remote, regardless of whether the module is On or Off. If a special remote broadcast mix is required, assign Off-Line 1 or Off-Line 2 as well, and it will be the return feed, regardless of the Program bus assignments and whether the module is On or Off.

#### TELCO RECORD MIX

A two-channel Telco Record Mix output is available on the Output 1 module.

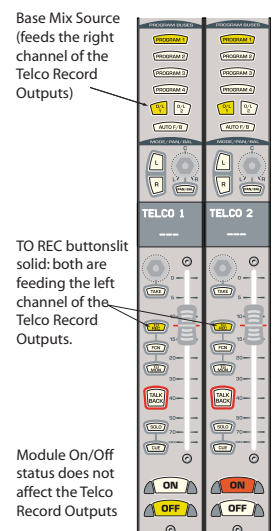
The left channel has only the callers from those Telco modules that have their TO REC buttons lit solid (see page 3-7 for more info on this button).

The right channel has a base mix from one of the program or off-line buses. The source for the base mix is determined through a bus priority order, similar to how the Foldback Mix source is selected. Again, the highest priority bus assigned on any TO REC Telco becomes the source for the base mix—even if more lower priority buses are assigned on more TO REC Telco modules.

Typically, only one caller is recorded at a time, but, because there can be up to six Telcos, and each module can have completely different assignments, the TO REC buttons not only record enable a module, they also indicate whether or not that Telco is actually being recorded.

When the TO REC buttons are lit solid, as shown above, those callers are feeding the left channel of

#### Typical Record Enabled Telco Button Settings



the record output. When the TO REC button is “winking,” (as shown to the right) it indicates that caller is NOT being recorded.

As with creating the Foldback Mix, the bus priority order changes when a TO REC Telco has Auto-Foldback enabled. But, there is added complexity since multiple modules can have AUTO F/B turned On! Thus, the easiest way to record a caller is to keep AUTO F/B turned off and only have one Telco module with TO REC active.

Here are the two Telco Recording priority orders and what happens in each condition:

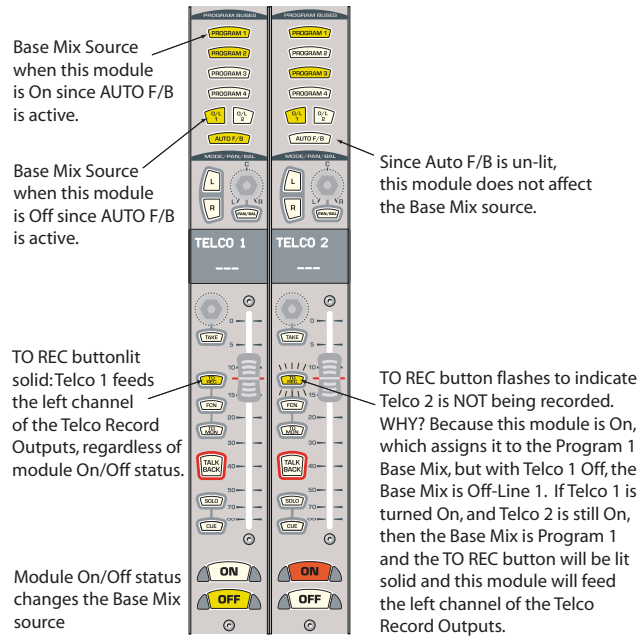
AUTO F/B is off on all TO REC Telcos: The Base Mix source is Off-Line 1. If it is not assigned, then Off-Line 2 is the source. When either of these buses are selected, the TO REC Telco module On/Off settings do not affect the record output as shown on the previous page. It is the easiest method to record callers.

When neither Off-Line bus is assigned, then the Program buses are used in this order; Program 1, Program 2, Program 3, Program 4. In this case the TO REC Telco module must be turned On in order to record the caller. If the TO REC module is Off, then TO REC will wink, indicating that caller is NOT being recorded.

AUTO F/B is lit on at least one TO REC Telco: In this case, the source is controlled by the On/Off state of any TO REC Telco with its AUTO F/B button lit. When all of the Telcos with AUTO F/B lit are On, then Program 1 is the primary base mix (followed by Program 2, Program 3, Program 4, Off-Line 1, Off-Line 2).

When any of these modules are Off, then Off-Line 1 becomes the base mix. If it's not assigned, then Off-Line 2 is the base mix. If neither Off-Line is assigned, there will be no callers recorded and all the TO REC buttons will be winking. This is summarized in the illustration on this page.

### Recording Functions with Auto Foldback Active on one or more Record Enabled Telcos

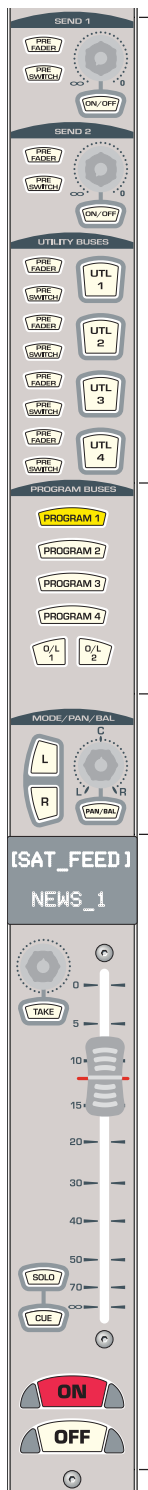


Here is a summary table of what is, or is not, recorded:

#### TELCO RECORD MIX, CHANNEL ASSIGNMENT SUMMARY

LEFT CHANNEL	Those Telco modules with their TO REC buttons lit solid
RIGHT CHANNEL	All modules assigned to the Base Mix bus, including those Telco modules that are not record enabled (TO REC button is not lit)
NOT RECORDED	Any module NOT assigned to the Base Mix bus, which includes any Telcos with a winking TO REC button

**Note:** Off-line feeds from Universal Input and RLS modules are always pre-switch and are set for either Pre- or Post-Fader by a Session module global DIP switch (see page 2-33 about this setting). The Telco modules' Off-Line bus feeds are also pre-switch, but each has a separate Post-/Pre-Fader DIP switch (see page 2-25 about this setting) when the Session module switch is set for Pre-fader.



## REMOTE LINE SELECTOR (RLS) MODULE QUICK GUIDE

This module has one input from a Switcher (VistaMax System, External RLS or Router). It has the same features as the Universal Input module, except that a Source Selector and Take button replace the A/B Input selector buttons. A limited-feature version is also available, which does not have the Send and Utility bus controls.

### SEND & UTILITY BUSES

*This section has the selectors for the four Utility outputs and the two Send. Refer to page 3-4 for their functions.*

### PROGRAM BUSES

*This section has the selectors for the four Program outputs and the two off-line buses. Refer to page 3-5 for their functions.*

### MODE/PAN/BAL

*This section has the controls for setting the module's mode (stereo or mono) and the pan or balance of the module's bus outputs. Refer to page 3-5 for their functions.*

### FADER SECTION

*This section has the Input Source Display, the controls for input Source Selection, the Solo, Cue, On and Off buttons, and the module fader.*

**Input Source Display** — A two-line ten-character display that shows the current source (SAT\_FEED) in the top line. The bottom line shows the selected source (NEWS\_1). The brackets on the current name indicate that the router source change is still pending. See Appendix B for details on router control functions.

**Source Selector** — A rotary encoder that scrolls through the available sources (shown in the Display's bottom line) when the module is set as a switcher. Used with the Take button (see below).

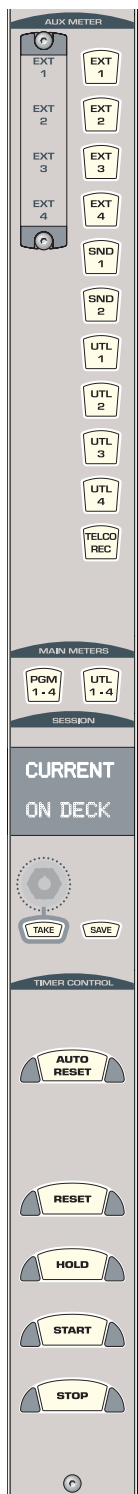
**TAKE** — Press to take the selected source shown in the display's bottom line. It then becomes the current source, and is thus shown in both lines. The Take button and Source Selector are only active with a Switcher input. For details, see page 2-25.

**SOLO** — When lit, adds the module's post-fader audio to the Solo bus and interrupts the monitor and operator headphone outputs, but does not affect the on-line signal, the co-host or guest outputs. Solo can be a momentary or a latched function. See page 2-33 for details.

**CUE** — When lit, routes the module's pre fader, pre switch audio to the Control Room module's cue output. This does not affect the on-line signal.

**ON** — When pressed, turns the module on, lighting the button and routing the module audio to the selected buses. Logic control commands (timer reset, start pulse, Cue reset, etc.), may be initiated, depending upon the SETUP DIP switch settings.

**OFF** — When pressed, turns the module off, removing the module audio from all selected buses (except those that are set for pre-switch operation). Logic control commands (Stop Pulse, Off Tally, etc.) may be initiated, depending upon the SETUP DIP switch settings.



## SESSION MODULE QUICK GUIDE

This module has the controls for the timer, and for saving and recalling Sessions (server files holding different console setups), and the Main and Auxiliary Meter source selectors.

### AUX METER

*This section allows one source to be selected for the Auxiliary meter. The selection is overridden by Cue or Solo, which display on the Auxiliary meter while active.*

**EXT 1, EXT 2, EXT 3, EXT 4** — When lit, assigns an External input to the Auxiliary meter.

**SND 1, SND 2** — When lit, assigns a Send bus to the Auxiliary meter.

**UTL 1, UTL 2, UTL 3, UTL 4** — When lit, assigns a Utility Bus to the Auxiliary meter.

**TELCO REC** — When lit, assigns the Telco Record output to the Auxiliary meter. See pages 3-9 and 3-10 for more information about this mix.

### MAIN METERS

*This section has the source selectors for the Main meters.*

**PGM 1-4** — When lit, assigns the four Program buses to the main meters on all size frames except for the BMXd-8. On the BMXd-8, each press displays the next PGM bus (the first press shows PGM 1, the next press shows PGM 2, then PGM 3, then PGM 4, etc.).

**UTL 1-4** — When lit, assigns the four Utility buses to the main meters on all size frames except for the BMXd-8. On the BMXd-8, each press shows the next UTL bus (the first press shows UTL 1, the next press shows UTL 2, then UTL 3, then UTL 4, etc.). Each Utility bus signal can also be sent individually to the Auxiliary meter.

### SESSION

*This section allows the console operator to recall or save Sessions. Sessions hold the console setup parameters (settings such as which Input module buttons are lit and the module input source names). Sessions are stored on the BMXdigital Server, which is on the Session module. Chapter 4 covers the BMXdigital Server in detail.*

**Session Display** — The top line shows the current Session name (the file that is currently loaded into the console). The bottom line shows the selected or “on deck” Session name, as dialed up by the Session Selector. This selected Session is loaded into the console by pressing the TAKE button.

**Session Selector** — A rotary encoder to alphanumerically show previously saved Session file names in the bottom line of the Session Display.

**TAKE** — Loads the Session file shown in the bottom line of the Session Display into the console. The current and selected names will then be the same, until the Session Selector is rotated.

**SAVE** — Saves all of the Input modules’ button settings, input source names and button lockout information as a new Session on the BMXdigital Server using the current session name with a new numerical suffix added (operators cannot overwrite existing sessions).

## TIMER CONTROL

*This section has the controls for the event timer, located at the right end of the meter panel.*

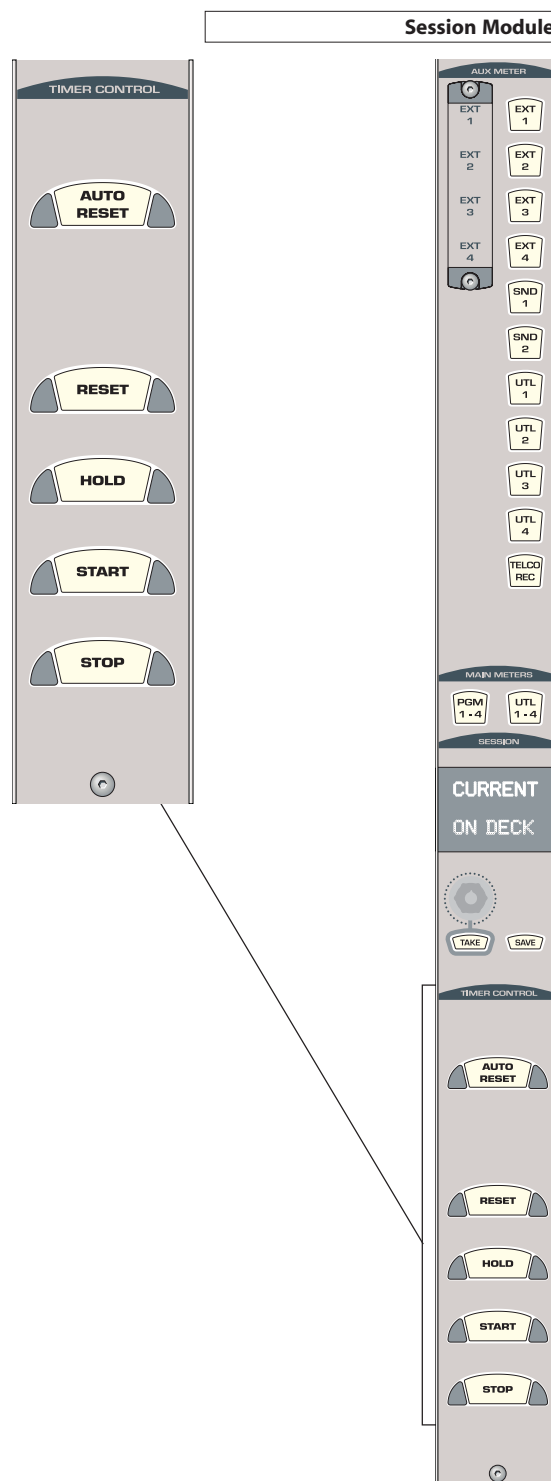
**AUTO RESET** — When lit, allows the timer to be automatically reset whenever an input module, with its timer reset function enabled, is turned on. When a reset command is detected, the timer resets to 00:00.0 and immediately starts counting upward. When inactive (not lit), the timer ignores module timer reset commands.

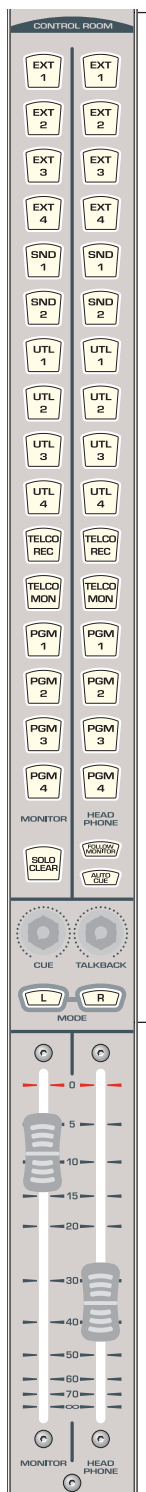
**RESET** — Manually resets the timer to 00:00.0. If the timer was already counting, the timer will continue to count up from 00:00.0.

**HOLD** — When pressed and held, stops the timer's display to show the elapsed time (the timer itself continues to run). Releasing HOLD returns the timer display to the current run time.

**START** — Immediately starts the timer from the displayed time.

**STOP** — Immediately stops the timer. The elapsed time remains on the timer display until cleared by the RESET button, or START is pressed to start the timer counting up from the displayed time.





## CONTROL ROOM MODULE QUICK GUIDE

This module has the monitor source selection and control facilities for the console operator's headphones and the control room monitor speakers.

### CONTROL ROOM

*This section controls the audio source(s) for the various Control Room outputs. The left column buttons select the audio for the monitor speakers, the co-host, and guest headphones; the right column buttons select the audio for the operator's headphones. Multiple buttons can be selected (hold down one button and press additional buttons), however, only two digital sources (the Send, Program, and Utility buses are all digital) can be selected simultaneously.*

**EXT 1, EXT 2, EXT 3, EXT 4** — Routes an External Input to the Control Room outputs.

**SND 1, SND 2** — Routes a Send bus to the Control Room outputs.

**UTL 1, UTL 2, UTL 3, UTL 4** — Routes a Utility bus to the Control Room outputs.

**TELCO REC** — Routes the Telco Record Base Mix to the Control Room outputs.

**TELCO MON** — Routes the Telco Monitor Mix to the Control Room outputs.

**PGM 1, PGM 2, PGM 3, PGM 4** — Routes a Program Bus to the Control Room outputs.

**SOLO CLEAR** — Flashes to indicate a module has Solo active. Press to clear the Solo function.

**FOLLOW MONITOR** — When lit forces the right column selector buttons (HEADPHONE) to follow the left column buttons (MONITOR). When unlit, the Headphone selector buttons function independently of the Monitor select buttons.

**AUTO CUE** — When lit, allows cue to interrupt the operator headphone output. When unlit, cue does not affect the operator headphone output.

**CUE Volume Pot** — Controls the level of the dedicated Cue output.

**TALKBACK Volume Pot** — Controls the level of the dedicated Talkback output.

**L & R MODE** — These buttons set the monitor mode (stereo or mono) for both the monitor speakers and headphones. When both buttons are unlit, the outputs are stereo. When the L (left) button is lit, the left input feeds both the left and right outputs. When the R (right) button is lit, the right input feeds both the left and right outputs. When both L and R buttons are lit, the left and right inputs are summed into a mono mix to feed both the left and right outputs.



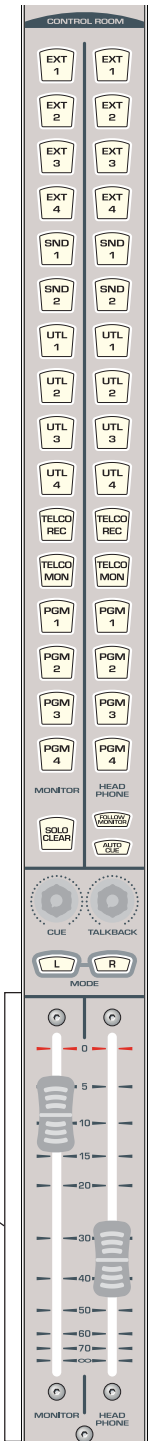
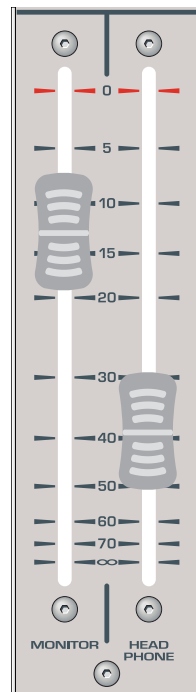
**Control Room Module**

**FADER**

*This section has the two faders to control the levels of the Monitor speakers and Operator headphones. The Co-Host and Guest headphone outputs are fixed-level outputs that are typically controlled by a headphone jack panel with volume control like the PRE99-103-2.*

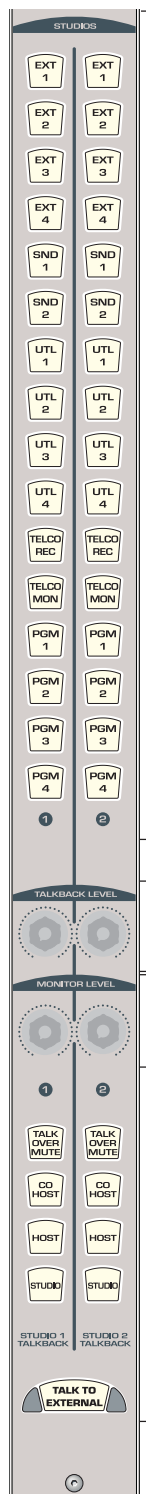
**MONITOR Fader** — 100mm fader to adjust the level of the Control Room monitor speakers. It controls the MONITOR output level.

**HEADPHONE Fader** — 100mm fader to adjust the level of the console operator's headphones. It controls the OPERATOR output level.



## STUDIO MODULE QUICK GUIDE

This optional module has the monitor source and talkback controls for two studio locations.



### STUDIO

*This section has the source selector buttons for all the outputs (monitor and headphone) for two air studios, voice booths, or other locations. The left column buttons control the source(s) for the Studio 1 outputs; the right column buttons control the source(s) for the Studio 2 outputs. Multiple sources can be selected simultaneously by holding down one source button while pressing additional buttons.*

**EXT 1, EXT 2, EXT 3, EXT 4** — Selects an External input for the Studio outputs.

**SND 1, SND 2** — Selects a Send bus for the Studio outputs.

**UTL 1, UTL 2, UTL 3, UTL 4** — Selects a Utility Bus for the Studio outputs.

**TELCO REC** — Selects the Telco Record Base Mix for the Studio outputs.

**TELCO MON** — Selects the Telco monitor mix for the Studio outputs.

**PGM 1, PGM 2, PGM 3, PGM 4** — Selects a Program Bus for the Studio outputs.

### TALKBACK LEVEL

*This section has the talkback level controls for the two studios. The left control is the talkback level for Studio 1; the right control is the talkback level for Studio 2.*

**TALKBACK Volume Pots** — Each pot sets the level for the associated studio's talkback.

### MONITOR LEVEL

*This section has the controls for the monitor levels for the studios. The left control is for Studio 1; the right control is for Studio 2. The control is not active when a Studio Selector panel (PRE99-1189) with a Volume Control panel (PRE99-1192) is connected to the console.*

**MONITOR Volume Pots** — Each pot sets the level for the associated studio's Monitor output.

### STUDIO 1 & 2 TALKBACK

*This section has the controls for talking to the two studios.*

**TALK OVER MUTE** — A latching button that, when lit, permits talkback audio to the studio's monitor output even when it is muted. When unlit, talkback is muted with the studio monitors.

**CO-HOST** — While pressed, routes the console talkback audio to the Co-Host output.

**HOST** — While pressed, routes the console talkback audio to the Host output.

**STUDIO** — While pressed, routes the console talkback audio to the studio's Monitor output.

**TALK TO EXTERNAL** — While pressed, routes the console talkback audio to the External audio output.



## OUTPUT 1 MODULE QUICK GUIDE

This module has the mix-minus outputs for up to six Telco modules and a telco record output. Separate trim controls set the analog record output level and the talkback levels for the producer and console mics. These controls are normally set once during installation so should NOT require adjustment by the board operator.

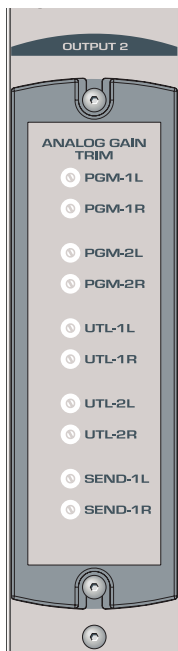
### OUTPUT 1

*Normally protected by a security cover. It has the separate trimpots for setting the Telco Record Mix outputs and the talkback levels for the console and producer.*

**TELCO RECORD MIX, LEFT & RIGHT** — Sets the analog output levels for the Telco Record Mix output.

**CONSOLE MIC LEVEL SET** — Sets the talkback level to the mix-minus outputs when the TALK BACK buttons are pressed on the Telco modules.

**PRODUCER MIC LEVEL SET** — Sets the talkback level of the producer's microphone on the Producer Talkback/IFB Panel (PRE99-1188) going to the mix-minus outputs.



## OUTPUT 2 MODULE QUICK GUIDE

This module has the outputs for Program 1, Program 2, Utility 1, Utility 2, and Send 1. Trim controls, for the analog outputs, set the left and right channels separately. These controls are normally set once during installation so should NOT require adjustment by the board operator.

### OUTPUT 2

*Normally protected by a security cover. Separate multi-turn trimpots set the left and right analog output levels for each bus.*

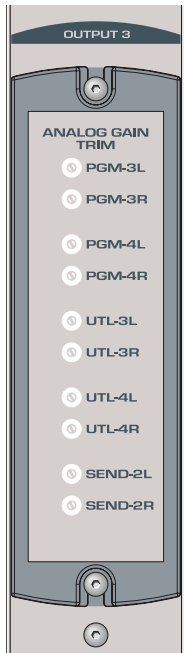
**PGM-1L/-1R** — Sets the left/right output levels for the Program 1 analog outputs. Both the Main and Aux output are affected equally.

**PGM-2L/-2R** — Sets the left/right output levels for the Program 2 analog outputs. Both the Main and Aux outputs are affected equally.

**UTL-1L/-1R** — Sets the left/right channel output levels for the Utility 1 analog output.

**UTL-2L/-2R** — Sets the left/right channel output levels for the Utility 2 analog output.

**SEND-1L/-1R** — Sets the left/right channel output levels for the Send 1 analog output.



## OUTPUT 3 MODULE QUICK GUIDE

This module has the outputs for Program 3, Program 4, Utility 3, Utility 4, and Send 2. Trim controls, for the analog outputs, set the left and right channels separately. These controls are normally set once during installation so should NOT require adjustment by the board operator.

### OUTPUT 3

*Normally protected by a security cover. Separate multi-turn trimpots set the left and right analog output levels for each bus.*

**PGM-3L/-3R** — Sets the left/right output levels for the Program 3 analog outputs. Both the Main and Aux outputs are affected equally.

**PGM-4L/-4R** — Sets the left/right output levels for the Program 4 analog outputs. Both the Main and Aux outputs are affected equally.

**UTL-3L/-3R** — Sets the left/right channel output levels for the Utility 3 analog output.

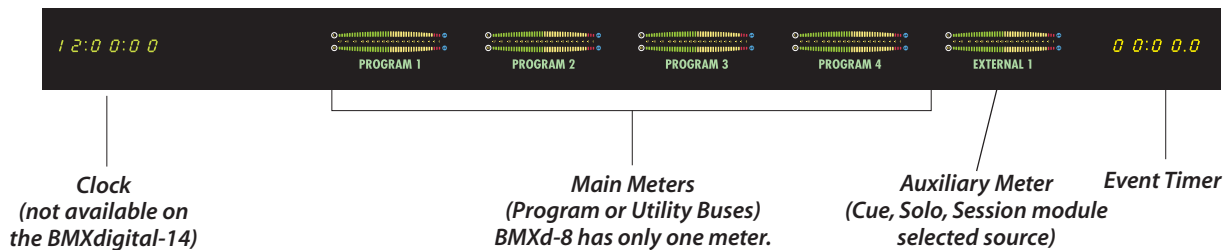
**UTL-4L/-4R** — Sets the left/right channel output levels for the Utility 4 analog output.

**SEND-2L/-2R** — Sets the left/right channel output levels for the Send 2 analog output.

## METER PANEL QUICK GUIDE

Each meter panel has a clock (except for the BMXdigital-14), an event timer, and five stereo bargraph meters (except for the BMXdigital-8, which has two meters).

### BMXdigital Meter Panel



### CLOCK

The clock displays time in hours:minutes:seconds in either 12- or 24-hour time. See page 2-5 for information on setting the clock and for the clock board's DIP switch functions.

### EVENT TIMER

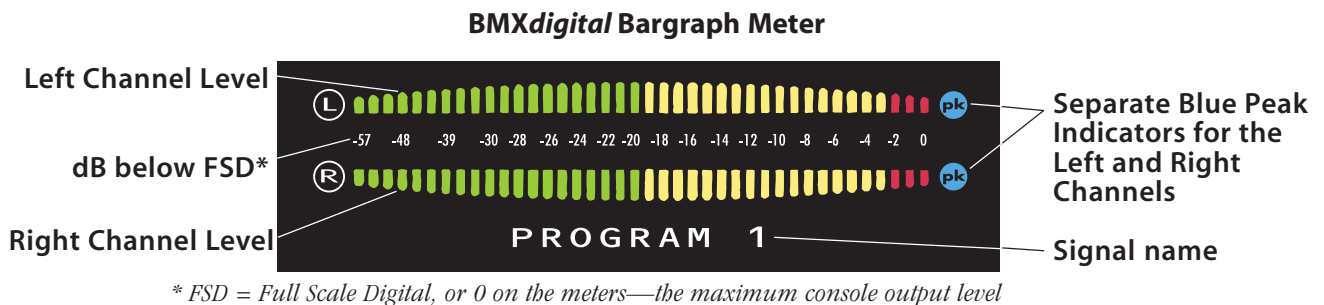
The event timer displays time in minutes:seconds:tenths of seconds. See page 2-6 for information on setting the timer board's DIP switches and page 3-13 for descriptions of the timer controls on the Session module.

## BARGRAPH METERS

Horizontal bargraph meters display stereo outputs as detailed below. The name of the signal being metered is shown below each meter.

The first four meters from the left, except for the BMXdigital-8, provide separate level monitoring for the four Program or four Utility buses (toggled by the PGM 1-4 and UTL 1-4 buttons on the Session module, see page 3-12). On the BMXdigital-8, the left hand meter shows one Program or Utility bus. Repeatedly press the PGM 1-4 or UTL 1-4 buttons to display each bus in numeric order on the left hand meter.

The fifth meter, Auxiliary (the right hand meter on the BMXdigital-8), shows the cue or solo bus level, or a source (an external input, a Send bus, a Utility bus, or the Telco Record Base Mix) set by the Source Selector buttons in the Aux Meter section of the Session module (see page 3-12). The meter's alphanumeric display identifies the name of the selected source (e.g., CUE, SOLO, SEND-2, EXTERNAL-1, etc.).



Each bar segment, from 0 down to -30 represents, a 1 dB level change between bars. From -30 to -57, each bar represents a 3 dB difference in level. The bars are green from -57 up to -20. The -20 level is equivalent to a 0VU setting on a mechanical meter. With a properly set up console this results in a +4 dBu analog output (analog outputs can be level trimmed, however). From -20 up to -3 the LEDs are yellow. Levels should always peak in this area. The 0, -1, and -2 bars are red to indicate the signal is dangerously close to clipping. To prevent digital distortion on the outputs, the red bars should rarely, if ever, light up—especially the 0 bar since this indicates the signal is at, or attempting to go beyond, Full Scale Digital (the digital clipping point).

A Session module DIP switch (see page 2-33) sets the meter displays for average only (a solid moving bargraph indicates the average signal level) or for average and peak (a solid bargraph represents the average level with a single bar, typically 6 to 10 dB higher than the average bargraph, representing the peak level).

The two blue peak indicators may light up in either mode to indicate the signal is too hot. The level at which the blue peak indicators turn on (0, -2, -4, or -6), and the meter display mode (peak hold, where the highest peak bar stays lit for about 3 seconds, or non-peak hold, where the peak more accurately follows the signal), is set separately for each meter using DIP switches on the edge of each meter PCA (see page 2-6).

## DSP CARDS

The DSP Cards (one in the BMXdigital-8, two in the BMXdigital-14, three in the BMXdigital-22, four in the BMXdigital-30 and five in the BMXdigital-38) mount into the console perpendicularly behind the input modules. They are hidden by the meter panel in normal use since there are no operator controls on the cards.

Each card has a “heartbeat” LED to indicate the card’s status. One DSP, typically the left hand card, is the master DSP, as evidenced by its heartbeat LED blinking at twice the rate of the remaining DSP Cards.

## NET CARD

The optional Net Card (shown below) mounts in line with the DSP cards at the right rear corner of the frame, behind the output modules. It is hidden by the meter panel in normal use since there are no operator controls on the card.

The Net Card has eight local inputs and eight local outputs from the VistaMax Audio Management System. These travel to/from the console to the VistaMax frame with the other console signals through the two Facet connectors on the Net Card.

The Net Card’s inputs are used as sources in the VistaMax system. They are made available to one or more VistaMax destinations depending upon how each input is published in the VistaMax system.

The eight Net Card outputs show up as VistaMax destinations. The source for each destination is selected via a Session file setting or are manually selected using a VistaMax hardware Selector Panel or an on-screen software panel, to select the source.

Refer to the VistaMax manual (Harris # 74-52) for additional information on VistaMax sources and destinations.

### BMXdigital Net Card

