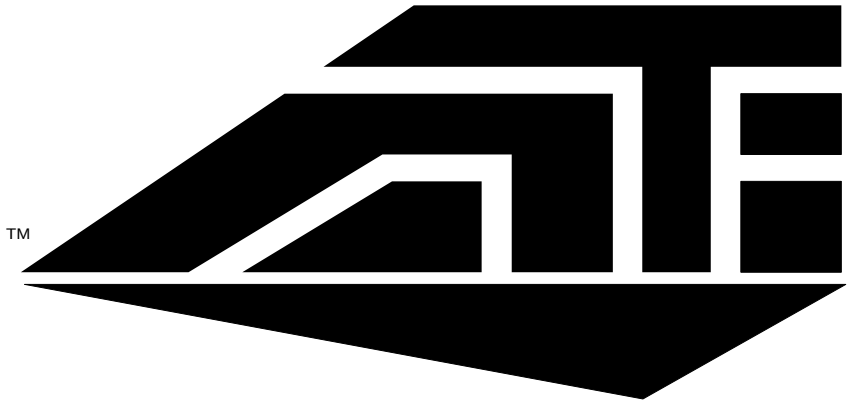

Paragon II Monitor

Operations Manual

Audio Toys, Inc.

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Paragon II Monitor

Operations Manual Table of Contents

The Paragon:

Since 1988, Audio Toys Inc. has been supplying the live performance industry with intuitive mixing console designs. The Paragon II Monitor represents the continuation of this design philosophy. It is the result of extensive research, development and hands-on experience by the ATI team and represents a great leap forward in sound reinforcement monitor console design.

Buss Intensive Design

In today's world of ever-growing tours, the Paragon II Monitor is equipped to handle virtually any task put before it. With the ability to generate anywhere from 20 stereo mixes to 10 stereo and 20 mono mixes or any combination in between it truly can handle the most complex in-ear and wedge combination tour of the day. The console has Mono outputs on every stereo mix and three variable direct-outputs from every channel. With the added capability of multiple pre fader and post fader selection on mix sends, the Paragon II Monitor is truly the most flexible desk in the market today.

Channel Dynamics Processing

The signal processing capability of the Paragon II Series is nothing less than spectacular. All inputs channels contain both an RMS compressor/limiter and a fully parametric noise gate. The simple convenience of having the compressor and gate on board is only surpassed by the sonic quality of not leaving the console via a *connector and cable* to a possibly *inferior headroom device* and then returning to the console again through a *connector and cable*. In addition the compressor, with an ATI patented key circuit, has been hailed by countless engineers as one of the most transparent around. External triggering is also available to both the gate and compressor.

Intensive Solo Features

The Paragon II Monitor offers two independent stereo solo busses. A global input and individual output solo level controls and routing switches allow for easy separation of in-ear and wedge solo signals for proper monitoring. The tremendously powerful master solo options allow for monitoring of practically every stage of the audio path. Individual channel input meters, gate and compressor state indicators and individual output meters in combination with the 20 segment solo level meters and full master gate and compressor attenuation meters provide visual indication to back up the audio solo systems. The VCA soloing and other solo logic functions are incredibly supportive in soloing groups of inputs and then isolating on particular signals inside that group.

Intuitive Control

Great efforts were taken to make the logic controls as intuitive as possible. Ultimate control of the channel mute is kept locally. There is no searching for a mute master, a SIP solo, a safe switch or any other external mute source. The Local On switch will override *ANY* external mute source allowing for quick recovery from an errant mute. In addition all of the controls as laid out in as user friendly a manner as possible. We make efforts to keep more used controls closer to you, we make sure all like functioning controls are described and grouped as similarly as possible and we use elaborate color coordination of mix faders and send knobs to make finding that send as easy as possible.

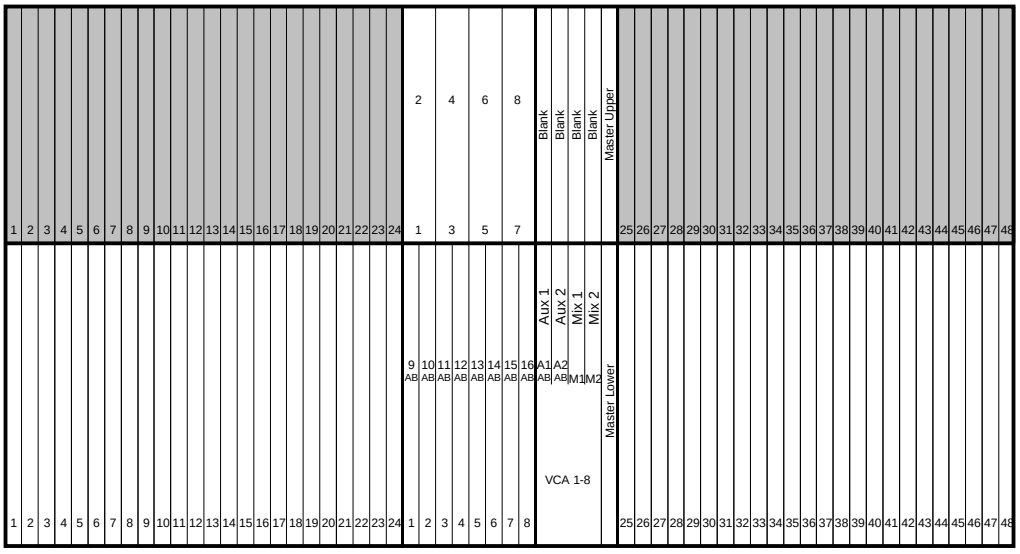
Internal Jumper Options

In addition to the tremendous flexibility offered by the Paragon II Monitors surface controls, every module offers a myriad of internal jumper options for further customizing the signal path for the ultimate performance for *your* particular application.

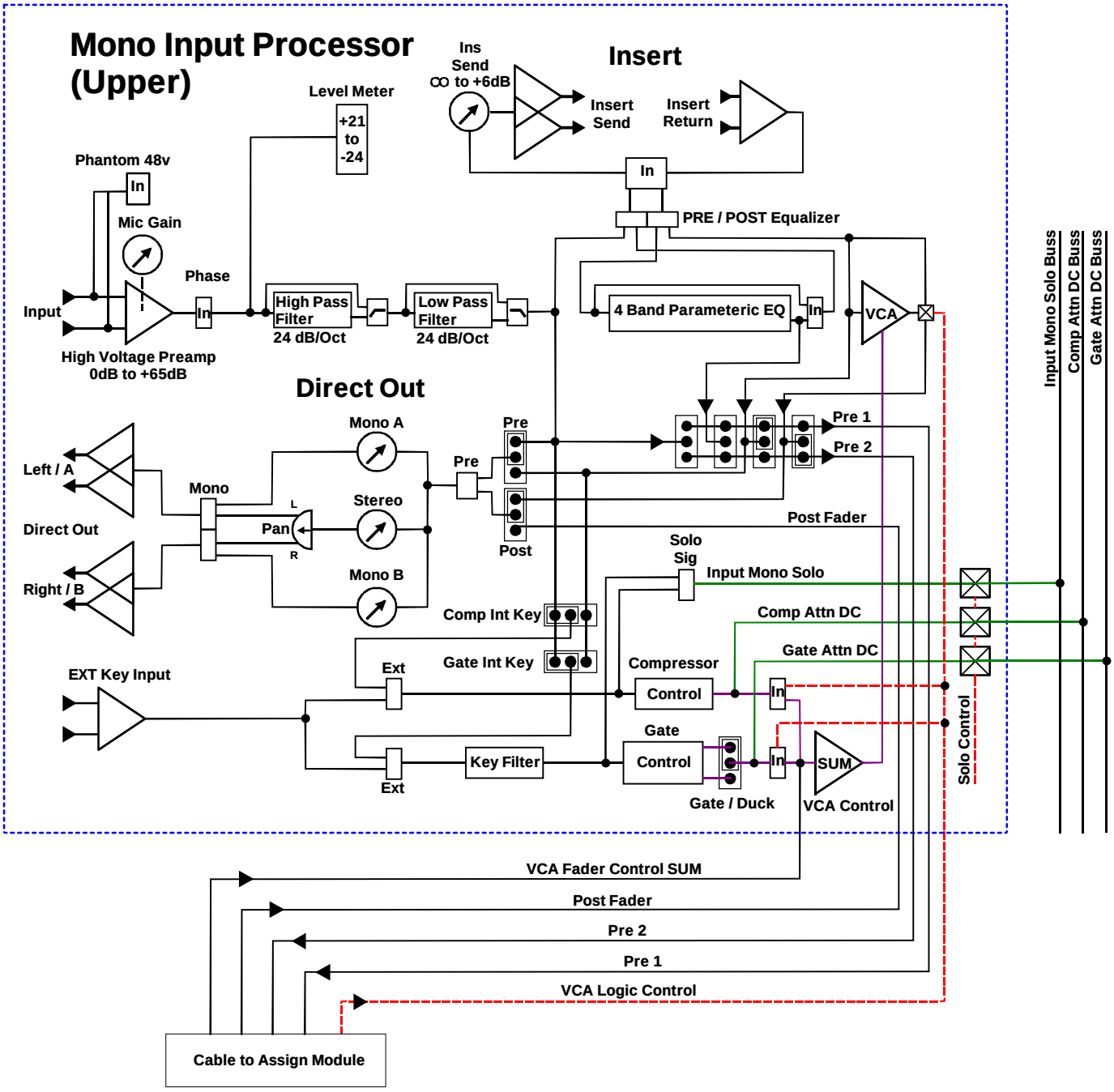
Highest Audio Quality

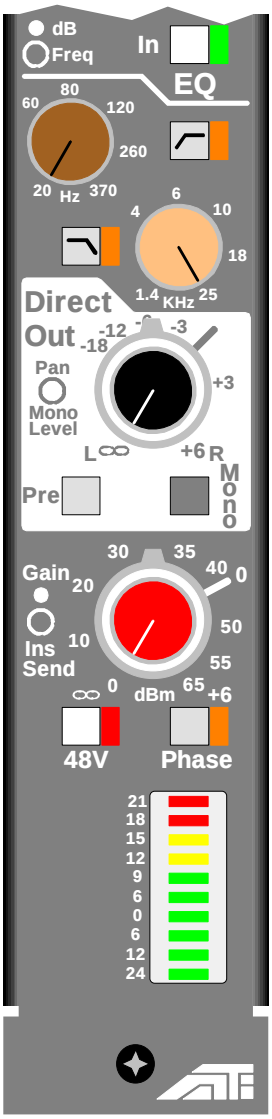
At ATI we are committed to providing the sound engineer with the highest possible audio circuits. This is achieved by many different aspects of the design from component selection to PCB layout. All analog audio PCB's are hand routed by our engineers for optimal performance. We spend the extra money on components because we believe that the ultimate benefits in audio quality are well worth it. Congratulations on your purchase of the Paragon II Monitor and don't hesitate to give us at ATI a call. If there is any way in which we can assist you with the performance of you console, we would be more than happy to do so.

Mono Input Processing Module



Block Diagram





Filters:

Low Pass

Variable 24dB/Oct. low pass filter 25KHz to 1.4KHz with in/out switch.

High Pass

Variable 24dB/Oct. high pass filter 20Hz to 370Hz with in/out switch.

Stereo Direct Out:

Inner

Stereo Direct Output level control OR 'A' output level control when Mono is selected. Control from infinity to +6dB max. gain.

Outer

Stereo Direct Output pan OR 'B' output level control when Mono is selected.

Pre

The signal source for the Direct Output can be jumper selected from a number of points. These include Post Filters, Post EQ/ Insert, Post VCA and Post Fader. The PRE switch allows the PCB jumper selected signals to be front panel selected. See Appendix-1 for more jumper information and standard settings.

Mono

Switches the Direct Output from stereo to two (A and B) Mono signals with individual level control.

Input Gain:

Inner

Microphone gain control. Max input level is +24 dBu, gain range is 0 to +65dB.

Outer

Insert Send level control. Control from infinity to +6dB maximum gain.

48 Volt

When depressed applies 48V Phantom voltage to the input. **Note when using phantom power, the ground lift switch on the rear connector panel MUST be in the grounded position (see page 12-1).**

Phase

When depressed reverses the input polarity.

Level Meter

Indicates peak signal level post microphone amplifier. The ten segment LED bar meter displays level over a 45dB range from –24dB to +21dB.

Insert:

In

When depressed channel insert return signal is utilized. The return signal is applied to either the VCA input or the EQ input depending on the position of the Insert Pre switch. The Insert Send jack is always active sending pre or post EQ signal again dependant upon the Insert Pre switch. The Insert Send signal is post the insert level control.

Pre

When depressed channel Insert Send and Return points are placed before the equalizer section.

Equalizer:

Peak Bandwidth Control

Controls the bandwidth of the EQ peak or dip. The bandwidth is adjustable from .2 to 2 octaves. When shelving is selected, this control is inactive.

Peak / Shelving Switch

This switch selects either peak (dip) type equalization or shelving type equalization for each of the four bands.

Level Control (Inner)

The inner control of the dual concentric adjusts the peak (dip) height or shelving level from 0 to +/- 18 dB for each band.

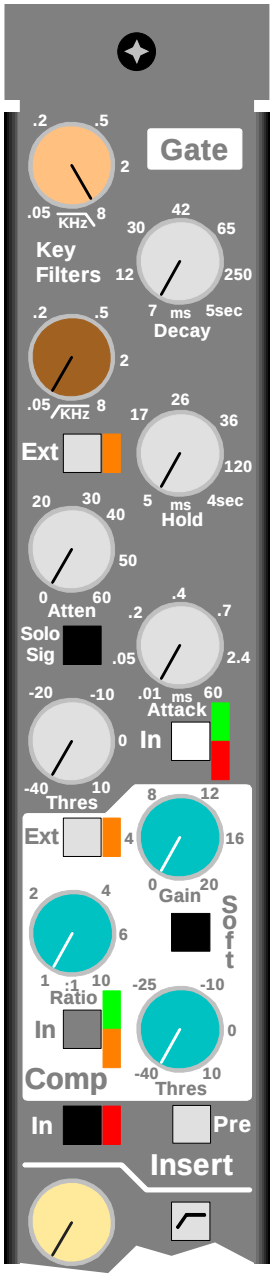
Frequency Control (Outer)

The outer control of the dual concentric selects the frequency of the EQ peak (dip) or 3dB down frequency of the EQ shelf for each band. Each of the four EQ bands are different but overlapping. Their ranges are as follows:

Low Frequency range 30Hz to 460Hz
Low Mid Frequency range 150Hz to 2.4KHz
High Mid Frequency range 550Hz to 8KHz
High Frequency range 1KHz to 16KHz

EQ In/Out Switch

In the down position, places the four band fully parametric EQ into the signal path. One of the jumper options for the Pre1 and Pre2 signal feeds to the assign module is post EQ but Pre EQ In/Out switch. The signal option is ALWAYS post the equalizer circuit, but allows you the option to have to continuation of the signal path NOT be effected by the equalizer.



Compressor:

External

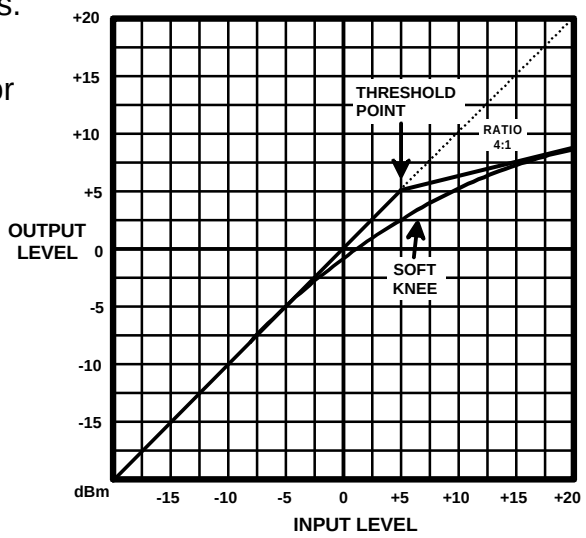
When depressed, the signal connected to the External input will be used in the side chain for the Compressor circuit. Normal side chain signal is jumper selected either post Filters or post EQ & Insert. This jumper is set standard in the post EQ & Insert location (see page 2-10).

Gain

This control adds a variable 0dB to +20dB of make-up gain to compensate for Compressor loss.

Ratio

This control sets the Compressor Ratio, which is variable from 1:1 to 10:1



Soft

When depressed compressor Threshold knee is “rounded” (see graph).

In

When depressed channel signal will be effected by the Compressor controls.

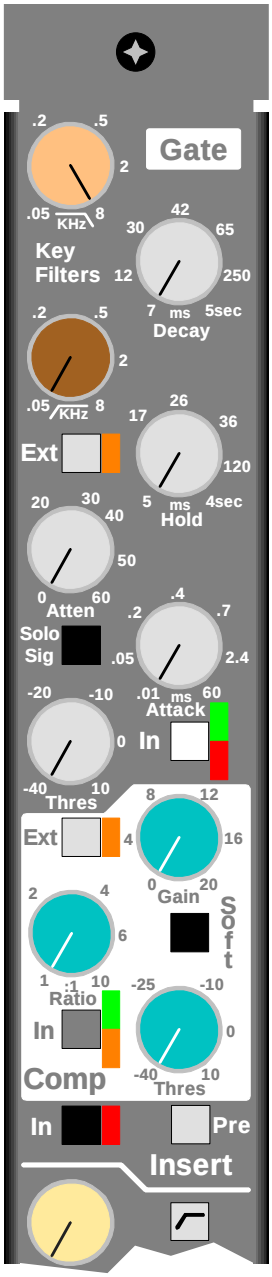
LED Indicators

Two LED’s beside the In switch indicate: Green for Compressor in circuit but not compressing, Green and Orange for compression up to –6dB, Orange only for compression greater the –6dB, No LED’s for compressor out of circuit. When the channel is soloed, a full attenuation meter is provided in the master section.

Threshold

The Threshold control sets the signal level above which compression will occur and can be adjusted from -40dBu to +10dBu

NOTE: If the Compressor In, Gate In and VCA Group assignments are OFF (up position) the VCA (gain cell) is switched out of circuit.



Gate:

Key Filter Controls

These controls set the frequency of the hi pass and low pass filters. Both filters are 24dB/octave and are sweepable from 50Hz to 8kHz. Together they create a selective variable band pass filter for the Gate key signal.

Decay

This control sets the fall time for the Gate to reach the set attenuation once the hold time has elapsed. Decay time is variable from 7mSec to 5Sec.

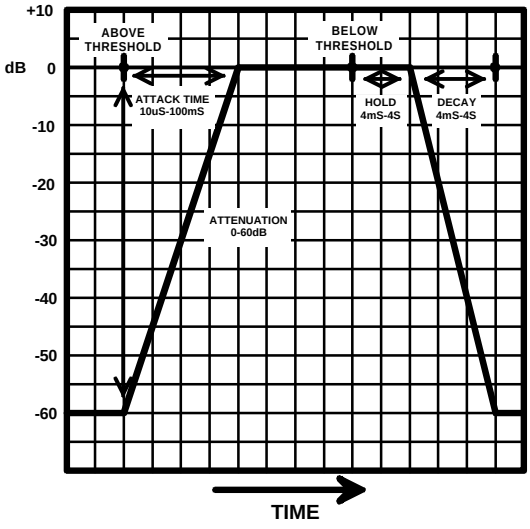
External

When depressed, the signal connected to the External input will be used in the side chain for the Gate circuit. Normal side chain signal is jumper selected either post Filter or post EQ & Insert. This jumper is set standard in the post Filter position (see page 2-10).

Hold

This control sets the amount of time the Gate remains open after the signal level drops below the set threshold point before triggering the decay circuit. Hold time is variable from 5mSec to 4Sec.

GATE CHARACTERISTICS



Attenuation

This control sets the amount of attenuation applied when the Gate is closed and is variable from 0dB to -60dB.

Solo Signal

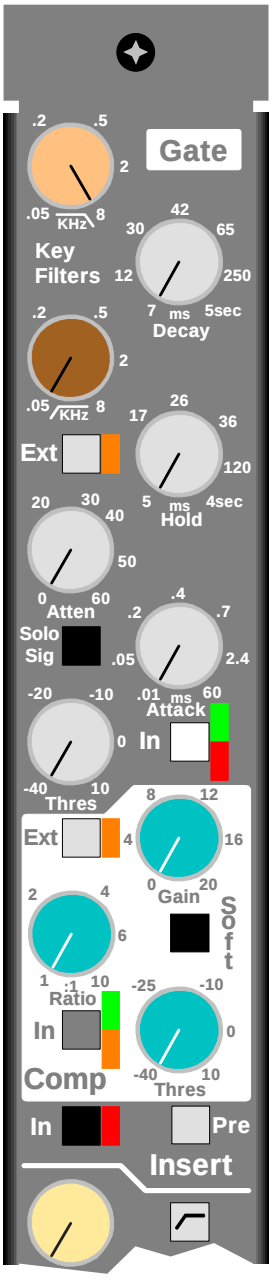
In the UP position the key signal for the Gate, post key filters, feeds the Input Mono Solo buss. In the depressed position the key signal for the Compressor feeds the Input Mono Solo buss.

Attack

The Attack control sets the rise time of the Gate and is variable from .01mSec to 60mSec.

Threshold

This control sets the signal level at which the Gate will open or close, and is variable from -40dBu to +10dBu.



Gate:

In

When depressed channel signal will be effected by the Gate and it's controls. This circuit is completely independent of the compressor circuit.

LED Indicators

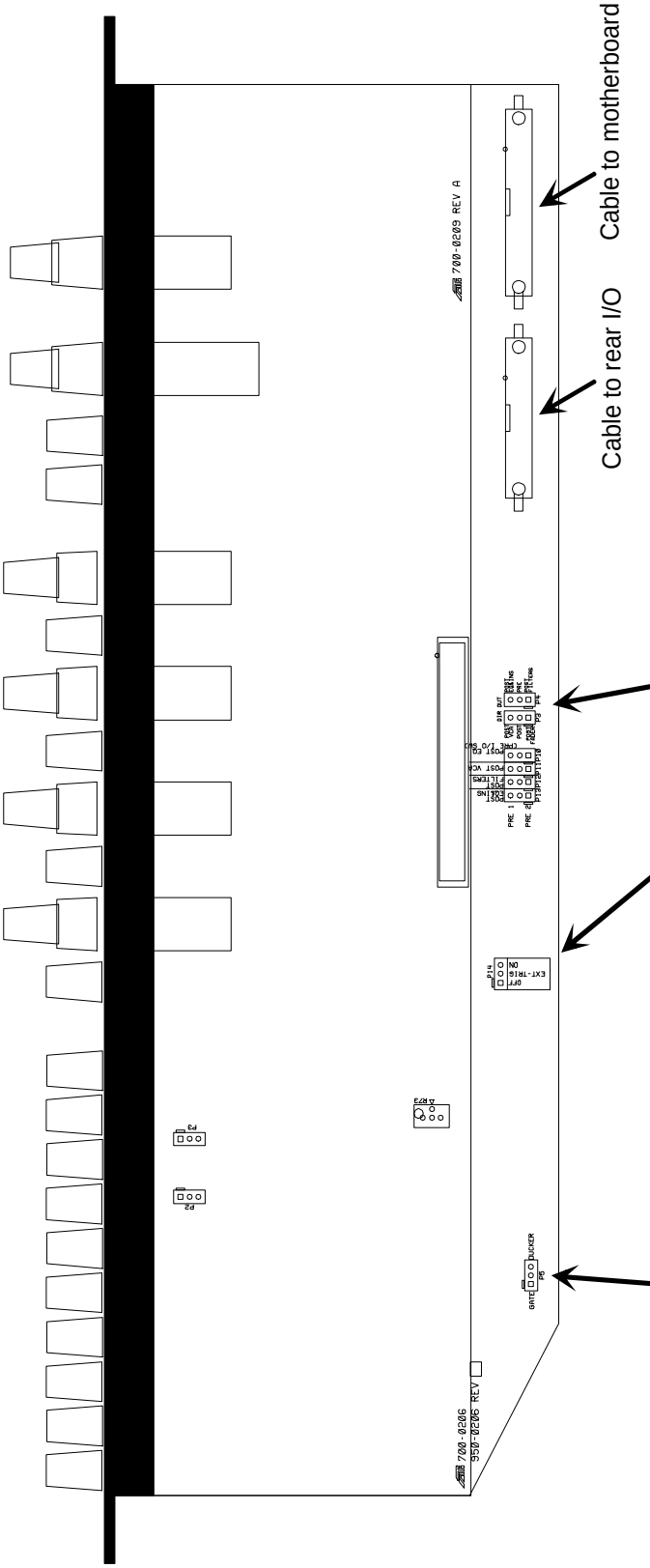
Two LED's beside the In switch indicate: Green for gate in circuit and OPEN, Red for gate closed and No LED's for gate out of circuit. When the channel is soloed there is a full gate attenuation meter in the master section.

NOTE: There is a jumper provided to allow the gate to be used as a Ducker possibly in combination with the External Key input (see pages 2-8 and 2-10).

NOTE: If the Compressor In, Gate In and VCA Group assignments are OFF (up position) the VCA (gain cell) is switched OUT of circuit.

Module Removal:

To remove the Mono Input Processor Module, first make sure that the console power is turned off. Next using a NO.2 Phillips head screwdriver, remove the two module screws at the top and bottom of the module. Now simply lift the module out of the frame. When the bottom edge of the PCB has cleared the frame, disconnect the two flat cable connects being careful not to lose the cables back into the frame. To replace the module, follow these steps in reverse making sure the console power is turned off first.



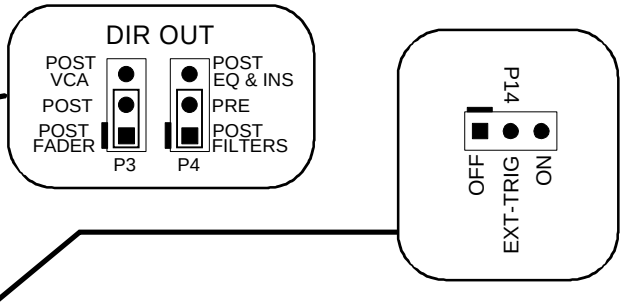
Direct Output Pre & Post Options:

Pre

The Direct Out Pre signal can be selected to be either post Filter or post EQ & Insert. This is done by moving the jumper at location P4. The jumper is shown and comes standard from the factory in the post Filter location.

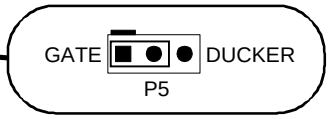
Post

The Direct Out Post signal can be selected to be either post VCA or post Fader. This is done by moving the jumper at location P3. The jumper is shown and comes standard from the factory in the post Fader location. Note that the Fader signal is selected by the Pre2 jumper described on the next page.



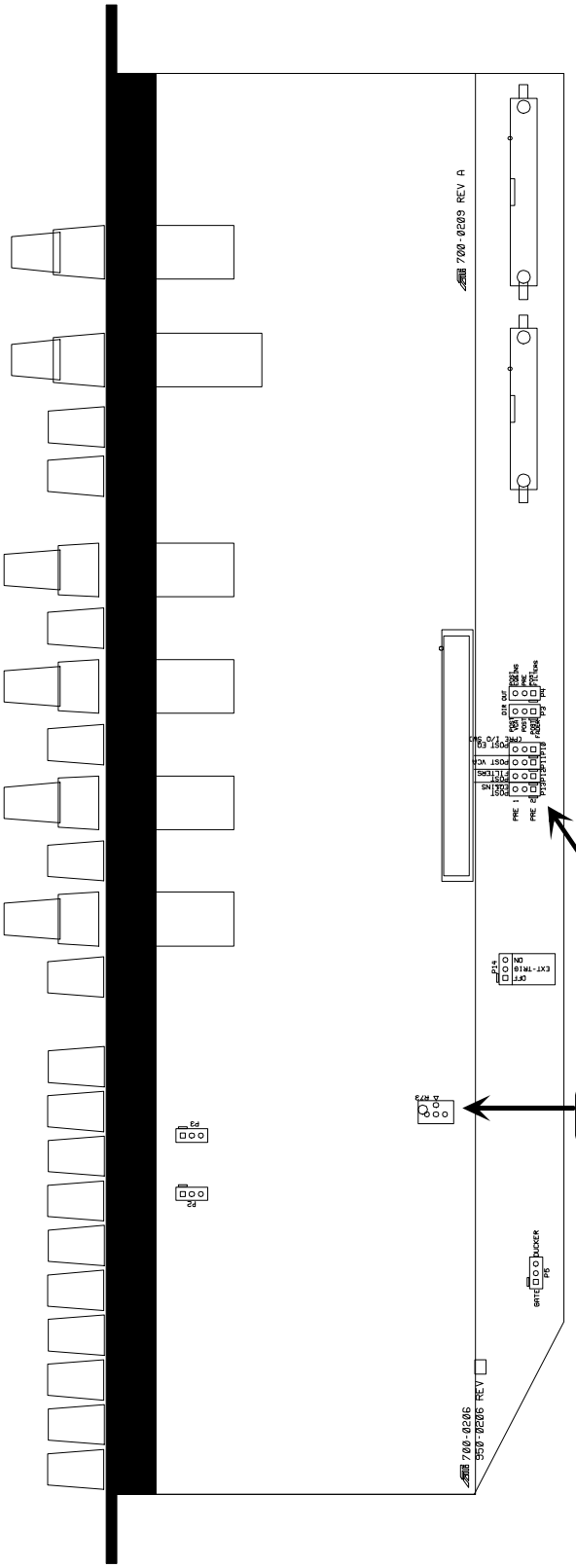
External Trigger Accept:

Placing this jumper in the ON position, the signal plugged into the External Trigger input is injected at nominal input level into the channel path pre VCA. Such an input can be used as an effect return into the channel audio. This jumper as standard is left off the PCB and does not appear prior to REV C assemblies.



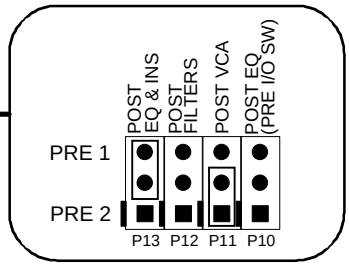
Gate / Ducker:

This jumper allows you to turn the Gate into a Ducker. This results in the audio being attenuated when the selected key signal (traditionally the External Audio signal) goes above the Threshold. The jumper is shown and comes standard from the factory in the Gate position.



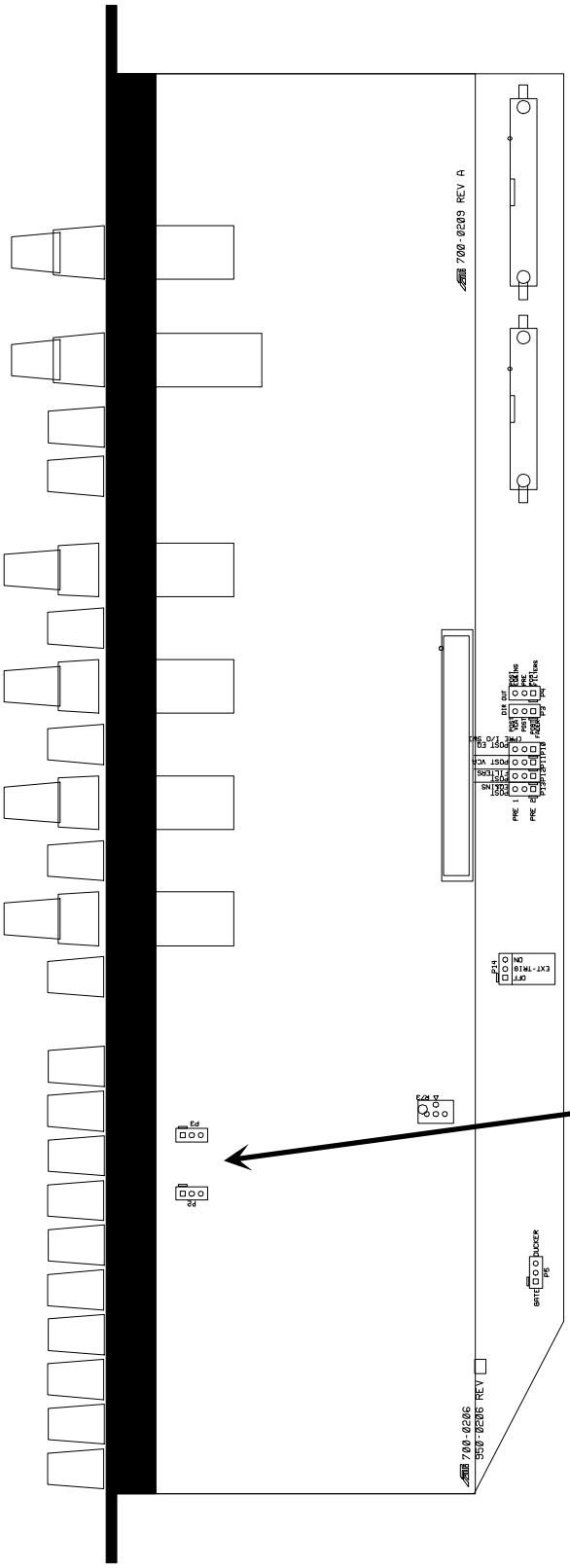
Pre 1 & Pre 2 Signal Selects:

Both Pre 1 & Pre 2 may be selected from any of four different signals: post Filter, post EQ (before the EQ In/Out switch), post EQ & Insert, and post VCA. The post EQ (before the EQ In/Out switch) was added so the onboard EQ may be used for one of the Pre signals while leaving the EQ In/Out switch OUT allowing the pre EQ signal to continue on the signal path, possibly so a second EQ may be Inserted allowing two separate EQ's to appear on the assign module. Pre 1 is chosen by placing the jumper in the upper position on the appropriate signal you would like. Pre 1 is shown and comes standard from the factory in the post EQ & Insert position. Pre 2 is chosen by placing the jumper in the lower position. Pre 2 is shown and comes standard from the factory in the post VCA position. NOTE that the Pre 2 signal is also the signal which goes to the channel Fader and thus creates the Post signal on the assign module. NOTE that assigning two of the four available signals to either Pre 1 (both in a upper location) or Pre 2 (both in a lower location) will result in two signals being shorted together and distortion will result.



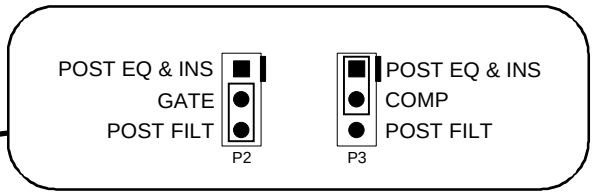
VCA THD Trim Control:

The VCA symmetry trim control R73, is accessible thru a hole on the secondary PCB. A distortion analyzer can be connected to the post Direct Out signal with a +4dB signal level and THD should be trimmed to <.007%. NOTE that the Compressor, Gate or VCA Fader MUST be selected otherwise the VCA is bypassed and the trim can not be analyzed.

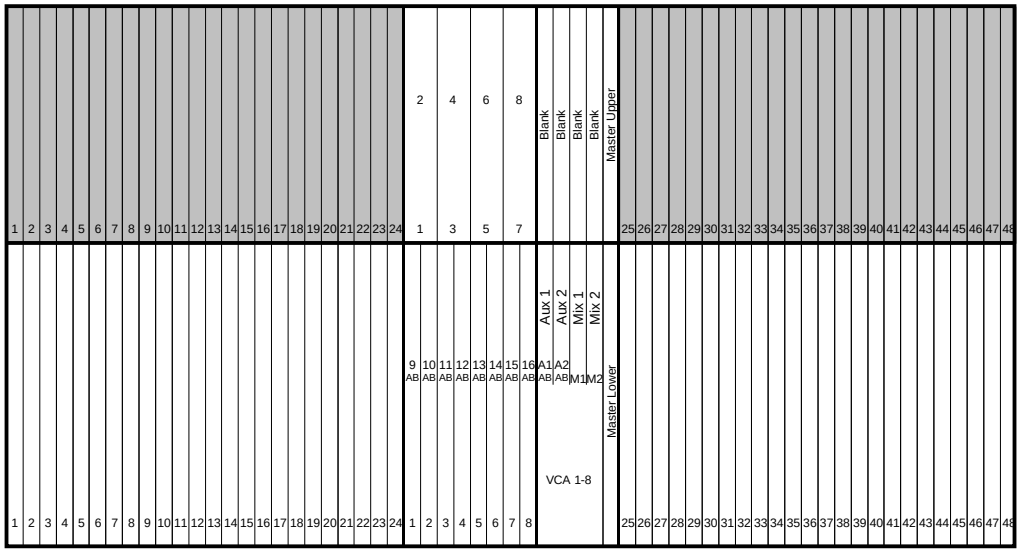


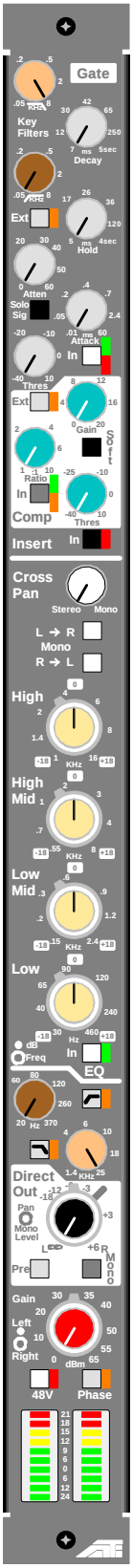
Compressor & Gate Sidechain Selects:

Both the Compressor and Gate internal sidechain signals can be selected to be either post Filters or Post EQ & Insert. The Compressor sidechain signal is set by using jumper P3. This jumper is shown and come standard from the factory in the post EQ & Ins position. The Gate sidechain signal is set by using jumper P2. This jumper is shown and comes standard from the factory in the post Filter position.

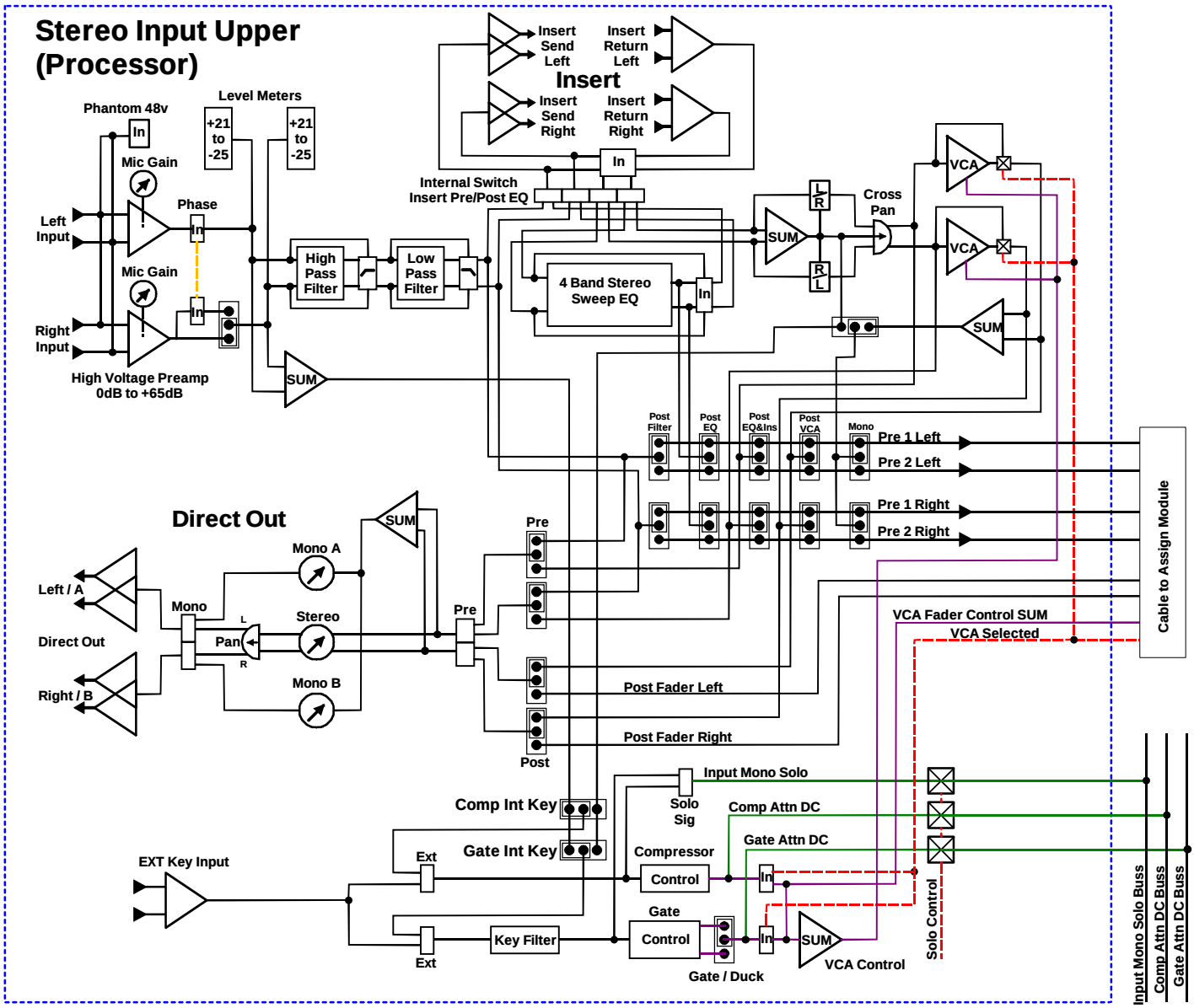


Stereo Input Processing Module





Block Diagram



Filters:

Low Pass

Variable 12dB/Oct. low pass filter 25KHz to 1.4KHz with in/out switch.

High Pass

Variable 12dB/Oct. high pass filter 20Hz to 370Hz with in/out switch.

Stereo Direct Out:

Inner

Stereo Direct Output level control OR 'A' output level control when Mono is selected. Control from infinity to +6dB maximum gain.

Outer

Stereo Direct Output balance OR 'B' output level control when Mono is selected.

Pre

The signal source for the Direct Output can be jumper selected from a number of points. These include Post Filters, Post EQ & Insert, Post VCA and Post Fader. The Pre switch allows the PCB jumper selected signals to be front panel selected.

Mono

Switches the Direct Output from stereo to two (A and B) Mono signals which are a mono sum of left and right with individual level control.

Input Gain:

Inner

Left input microphone gain control. Max input level is +24 dBu, gain range is 0 to +65dB.

Outer

Right input microphone gain control. Max input level is +24 dBu, gain range is 0 to +65dB.

48 Volt

When depressed applies +48V Phantom voltage to the input. **Note when using phantom power, the ground lift switch on the rear connector panel MUST be in the grounded position.**

Phase

When depressed reverses the input polarity of the left input. There is an internal jumper to reverse the right input as well.

Level Meters

Indicates peak signal level post microphone amplifier. The ten segment LED bar meter displays level over a 45dB range from –24dB to +21dB.

Insert:

In

When depressed channel Insert Return signal is utilized. The return signal is applied to the VCA input (or the EQ input, internally selectable). The Insert Send jack is always active sending post EQ signal (or pre EQ, same internal switch as above).

Cross Pan

This control is located post EQ & Insert and allows cross pan or image narrowing of the stereo signal variable from full stereo to mono.

L to R & R to L

These switches are located post EQ & Insert. The Left to Right switch, when depressed sends the left input signal to both left and right. The Right to Left switch, when depressed sends the right input signal to both left and right. When both switches are depressed, a mono sum of left and right is sent down both left and right.

Equalizer:

The EQ consist of a stereo 4-band sweepable peak/shelve EQ. The High and Low bands are shelving and the High Mid and Low Mid bands are peak (dip).

Level Control (Inner)

The inner control of the dual concentric adjusts the peak (dip) height or shelving level from 0 to +/- 18 dB for each band.

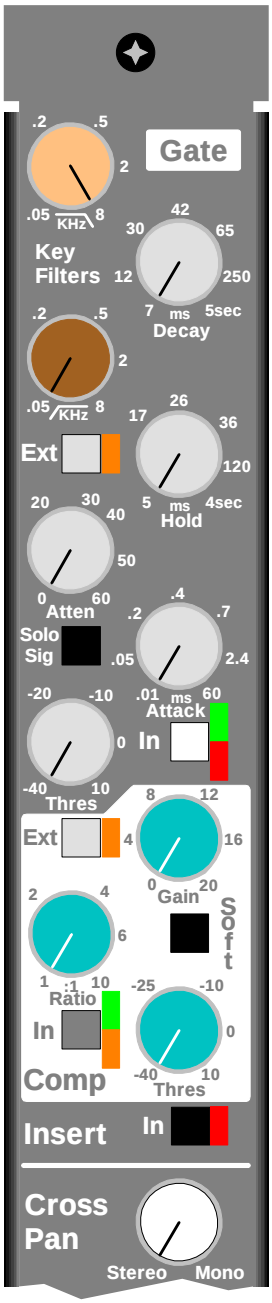
Frequency Control (Outer)

The outer control of the dual concentric selects the frequency of the EQ peak (dip) for the Mid bands or 3dB down frequency of the EQ shelf for the High and Low bands. Each of the four EQ bandwidths are different but overlapping. Their ranges are as follows:

Low Frequency range 30Hz to 460Hz
Low Mid Frequency range 150Hz to 2.4KHz
High Mid Frequency range 550Hz to 8KHz
High Frequency range 1KHz to 16KHz

EQ In/Out Switch

In the down position, places the four band stereo EQ into the signal path. One of the jumper options for the Pre1 and Pre2 signal feeds to the assign module is post EQ but Pre EQ In/Out switch. The signal option is ALWAYS post the equalizer circuit, but allows you the option to have to continuation of the signal path NOT be effected by the equalizer.



Compressor:

External

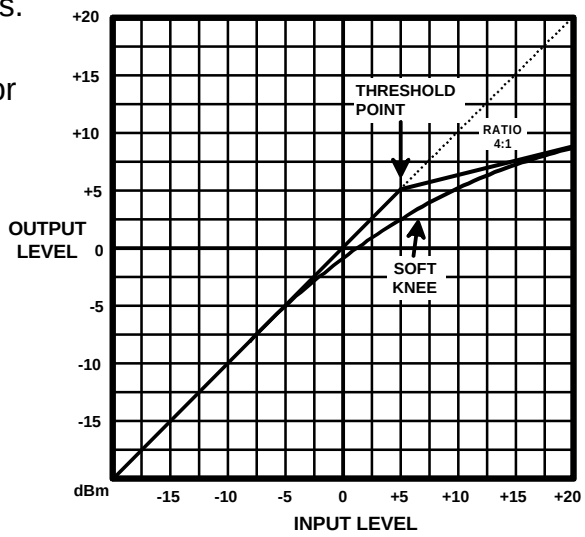
When depressed, the signal connected to the External input will be used in the side chain for the Compressor circuit. Normal side chain signal is jumper selected either post Filters or post EQ & Insert. This jumper is set standard in the post EQ & Insert location (see page 3-10).

Gain

This control adds a variable 0dB to +20dB of make-up gain to compensate for Compressor loss.

Ratio

This control sets the Compressor Ratio, which is variable from 1:1 to 10:1



Soft

When depressed Compressor Threshold knee is “rounded” (see graph).

In

When depressed channel signal will be effected by the Compressor controls.

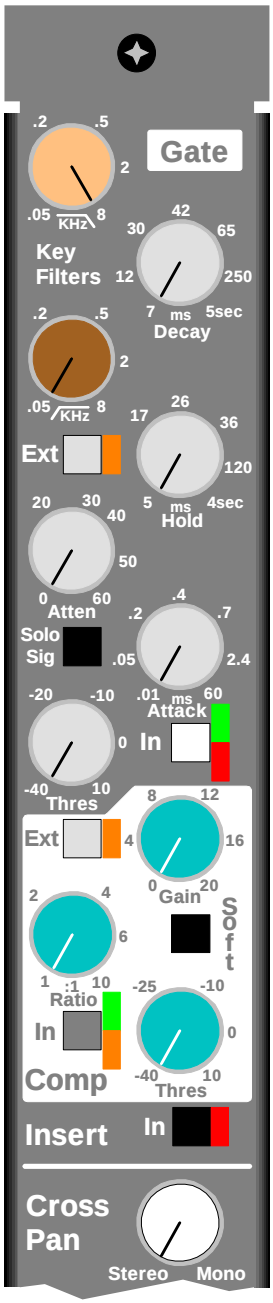
LED Indicators

Two LED’s beside the In switch indicate: Green for Compressor in circuit but not compressing, Green and Orange for compression up to –6dB, Orange only for compression greater the –6dB, No LED’s for compressor out of circuit. When the channel is soloed, a full attenuation meter is provided in the master section.

Threshold

The Threshold Control sets the signal level above which compression will occur and can be adjusted from -40dBu to +10dBu

NOTE: If the Compressor In, Gate In and VCA Group assignments are OFF (up position) the VCA (gain cell) is switched out of circuit.



Gate:

Key Filter Controls

These controls set the frequency of the hi pass and low pass filters. Both filters are 24dB/octave and are sweepable from 50Hz to 8kHz. Together they create a selective variable band pass filter for the Gate key signal.

Decay

This control sets the fall time for the Gate to reach the set attenuation once the hold time has elapsed. Decay time is variable from 7mSec to 5Sec.

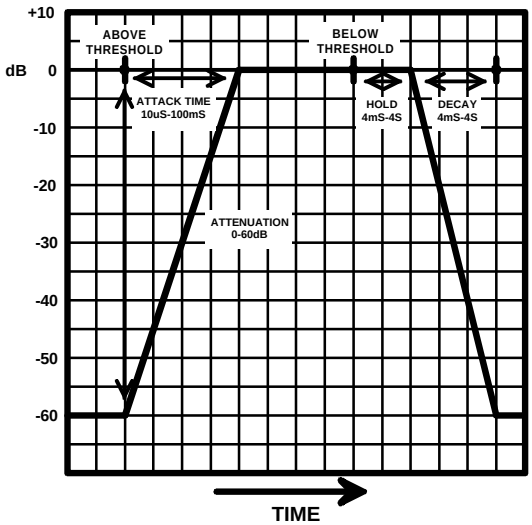
External

When depressed, the signal connected to the External input will be used in the side chain for the Gate circuit. Normal side chain signal is jumper selected either post Filter or post EQ & Insert. This jumper is set standard in the post Filter position (see page 3-10).

Hold

This control sets the amount of time the Gate remains open after the signal level drops below the set threshold point before triggering the decay circuit. Hold time is variable from 5mSec to 4Sec.

GATE CHARACTERISTICS



Attenuation

This control sets the amount of attenuation applied when the Gate is closed and is variable from 0dB to -60dB.

Solo Signal

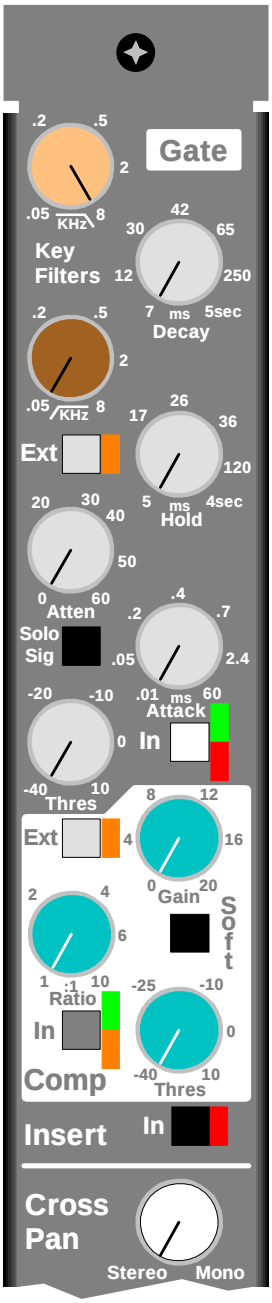
In the UP position the key signal for the Gate, post key filters, feeds the Input Mono Solo buss. In the depressed position the key signal for the Compressor feeds the Input Mono Solo buss.

Attack

The Attack control sets the rise time of the Gate and is variable from .01mSec to 60mSec.

Threshold

This control sets the signal level at which the Gate will open or close, and is variable from -40dBu to +10dBu.



Gate:

In

When depressed channel signal will be effected by the Gate and it's controls. This circuit is completely independent of the compressor circuit.

LED Indicators

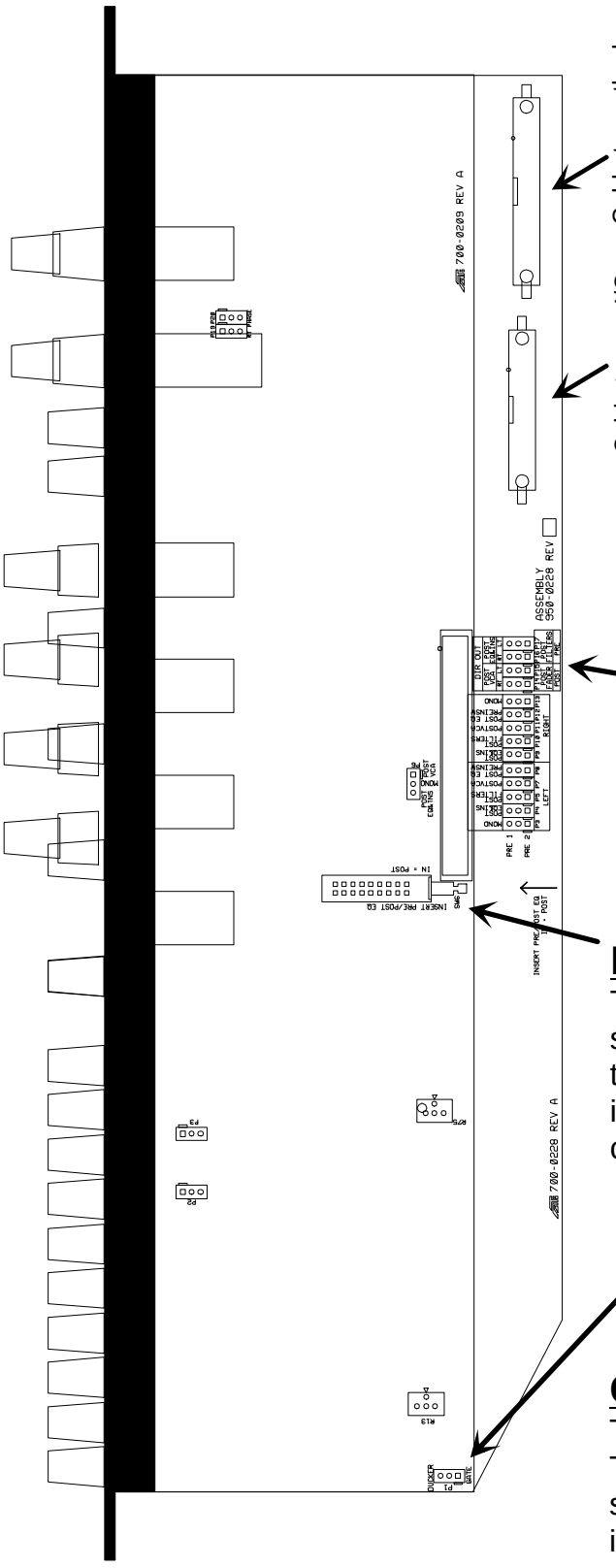
Two LED's beside the In switch indicate: Green for Gate in circuit and open, Red for Gate closed and No LED's for Gate out of circuit. When the channel is soloed there is a full Gate attenuation meter in the master section.

NOTE: There is a jumper provided to allow the gate to be used as a ducker possibly in combination with the External Trigger input (see page 3-8 and 3-10).

NOTE: If the Compressor In, Gate In and VCA Group assignments are OFF (up position) the VCA (gain cell) is switched OUT of circuit.

Module Removal:

To remove the Stereo Input Processor Module, first make sure that the console power is turned off. Next using a NO.2 Phillips head screwdriver, remove the two module screws at the top and bottom of the module. Now simply lift the module out of the frame. When the bottom edge of the PCB has cleared the frame, disconnect the two flat cable connects being careful not to lose the cables back into the frame. To replace the module, follow these steps in reverse making sure that the console power is turned off first.



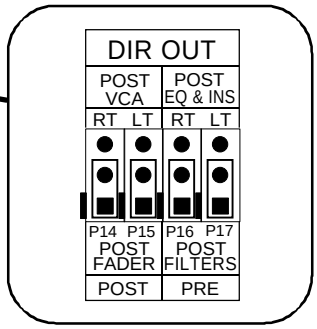
Direct Output Pre & Post Options:

Pre

The Direct Out Pre signal can be selected to be either post Filter or post EQ & Insert. This is done by moving the jumpers at location P16 (right) and P17 (left). The jumpers are shown and come standard from the factory in the post Filter location.

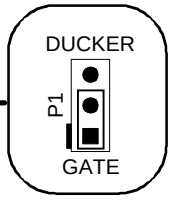
Post

The Direct Out Post signal can be selected to be either post VCA or post Fader. This is done by moving the jumpers at location P14 (right) and P15 (left). The jumpers are shown and come standard from the factory in the post Fader location. Note that the Fader signal is selected by the Pre 2 jumper described on the next page.



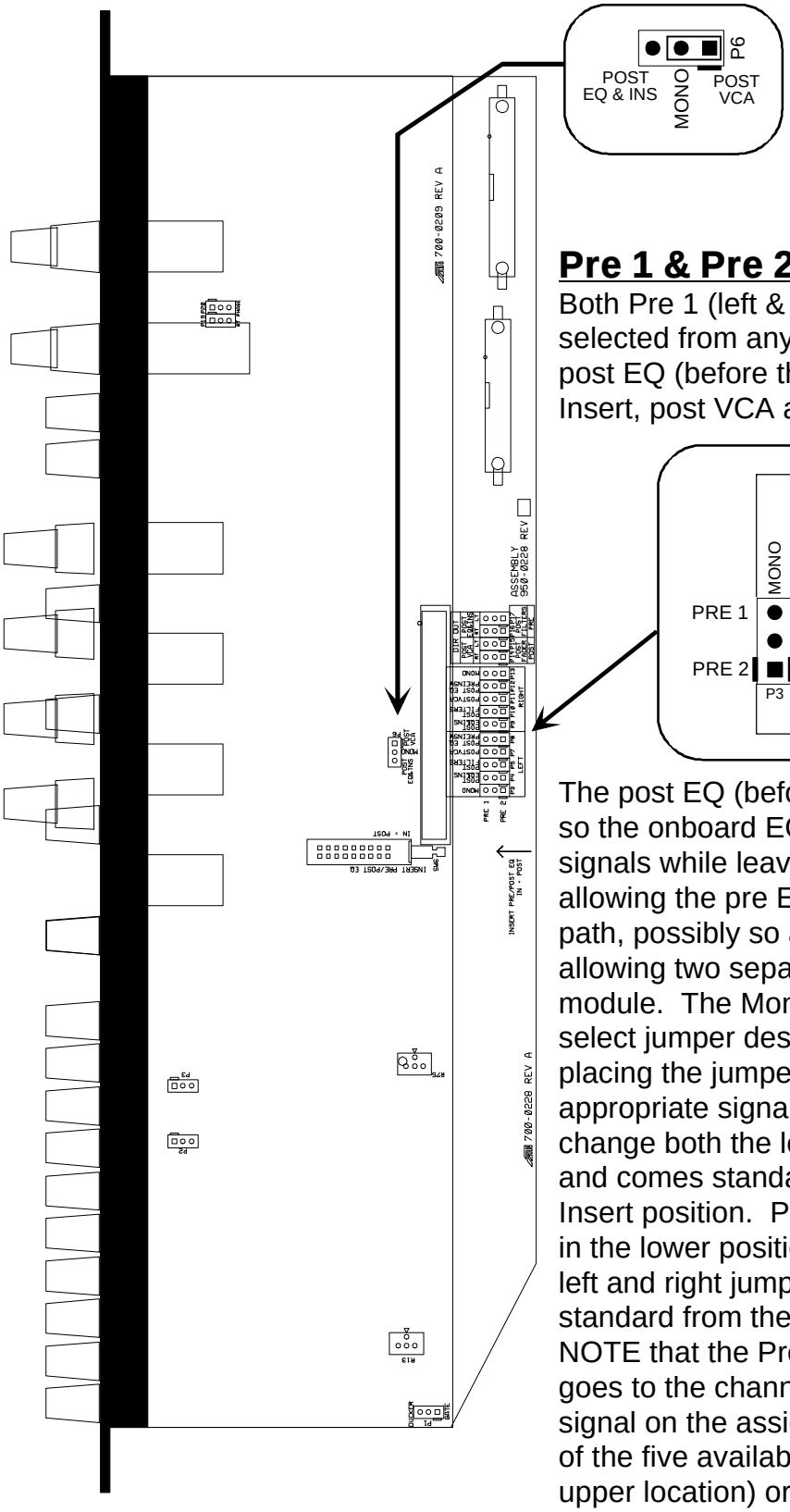
Insert Pre / Post EQ:

The Insert location pre or post EQ is selected by the switch located on the main PCB (700-0228). When this switch is in the in or depressed location the Insert is post EQ. This is the standard from factory configuration.



Gate / Ducker:

This jumper allows you to turn the Gate into a Ducker. This results in the audio being attenuated when the selected key signal (traditionally the External Trigger input) goes above the Threshold. The jumper is shown and comes standard from the factory in the Gate position.

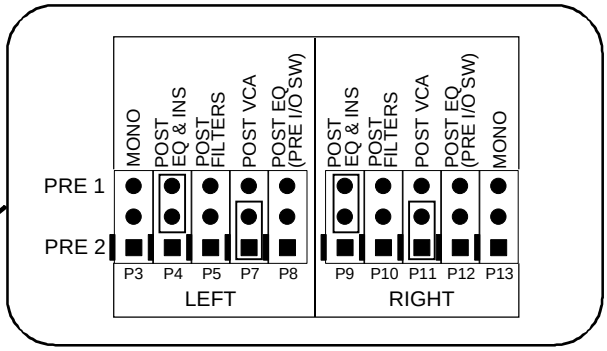


Mono Signal Select:

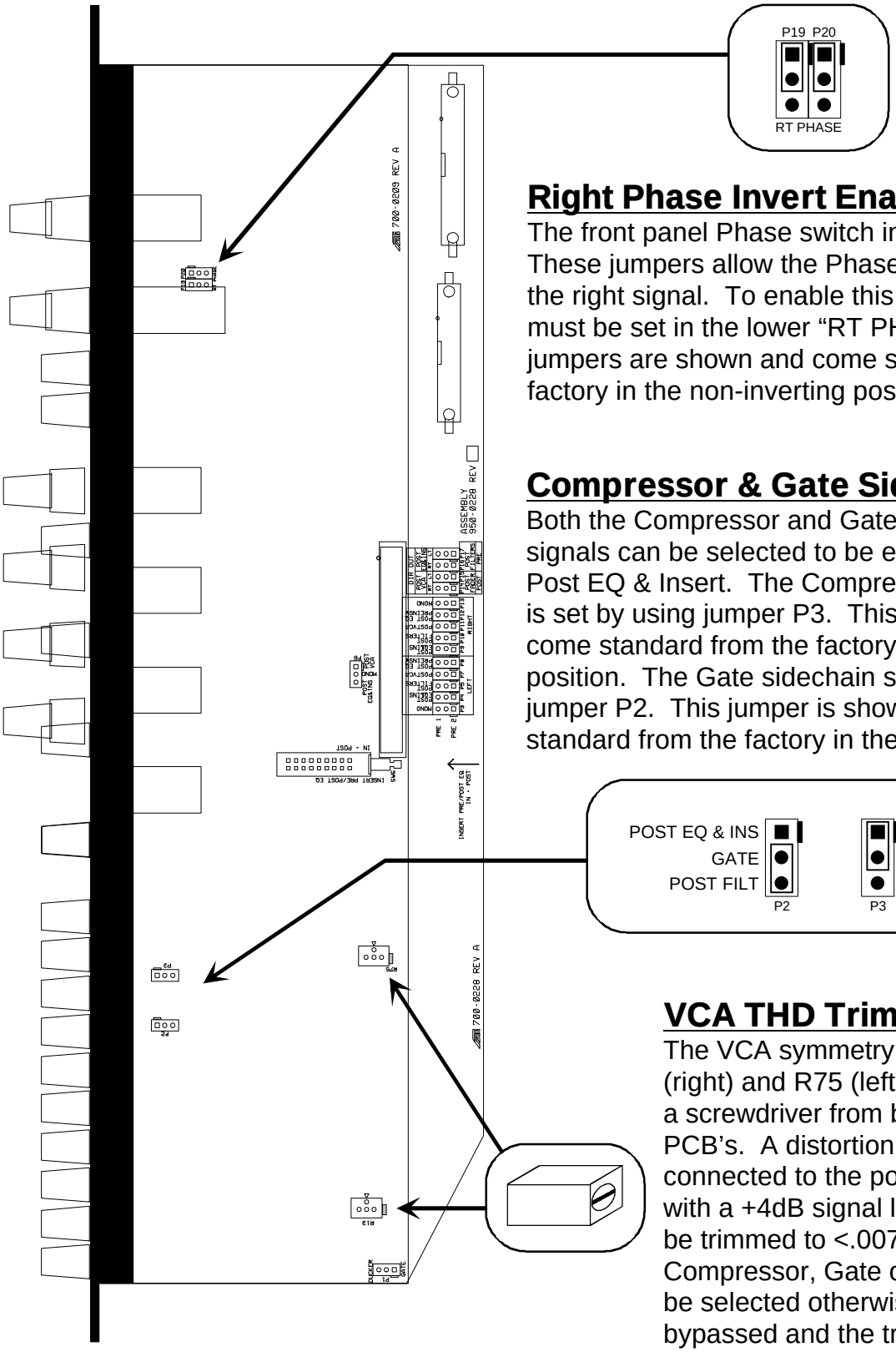
A Mono sum of left and right is created as one of the Pre 1 & Pre 2 options. This sum can be either post EQ & Insert or post VCA. The jumper is shown and comes from the factory in the post VCA position.

Pre 1 & Pre 2 Signal Selects:

Both Pre 1 (left & Right) & Pre 2 (left & Right) may be selected from any of five different signals: post Filter, post EQ (before the EQ In/Out switch), post EQ & Insert, post VCA and Mono.



The post EQ (before the EQ In/Out switch) was added so the onboard EQ may be used for one of the Pre signals while leaving the EQ In/Out switch OUT allowing the pre EQ signal to continue on the signal path, possibly so a second EQ may be Inserted, thus allowing two separate EQ's to appear on the assign module. The Mono signal is the output from the Mono select jumper described above. Pre 1 is chosen by placing the jumpers in the upper position on the appropriate signal you would like. Remember to change both the left and right jumpers. Pre 1 is shown and comes standard from the factory in the post EQ & Insert position. Pre 2 is chosen by placing the jumpers in the lower position. Remember to change both the left and right jumpers. Pre 2 is shown and comes standard from the factory in the post VCA position. NOTE that the Pre 2 signal is also the signal which goes to the channel Fader and thus creates the Post signal on the assign module. NOTE that assigning two of the five available signals to either Pre 1 (both in a upper location) or Pre 2 (both in a lower location) will result in two signals being shorted together and distortion will result.



Right Phase Invert Enable:

The front panel Phase switch inverts the left signal. These jumpers allow the Phase switch to also invert the right signal. To enable this option, BOTH jumpers must be set in the lower "RT PHASE" position. The jumpers are shown and come standard from the factory in the non-inverting position.

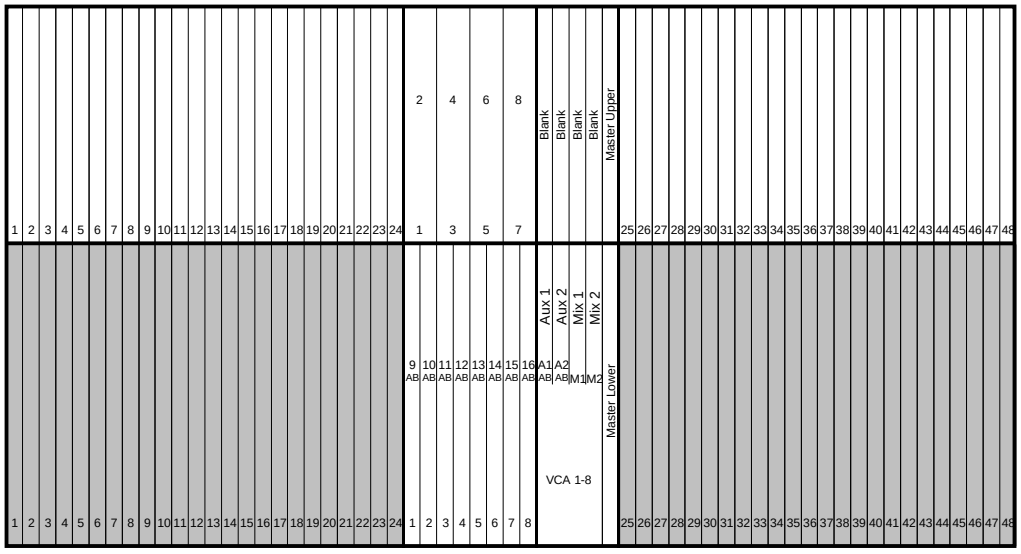
Compressor & Gate Sidechain Selects:

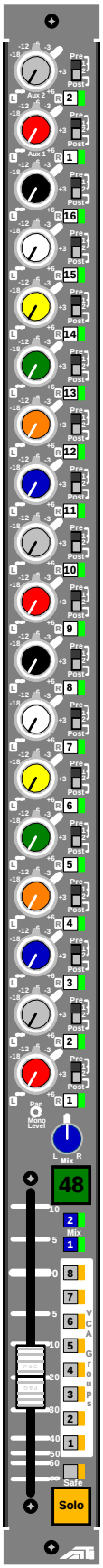
Both the Compressor and Gate internal sidechain signals can be selected to be either post Filters or Post EQ & Insert. The Compressor sidechain signal is set by using jumper P3. This jumper is shown and come standard from the factory in the post EQ & Ins position. The Gate sidechain signal is set by using jumper P2. This jumper is shown and comes standard from the factory in the post Filter position.

VCA THD Trim Controls:

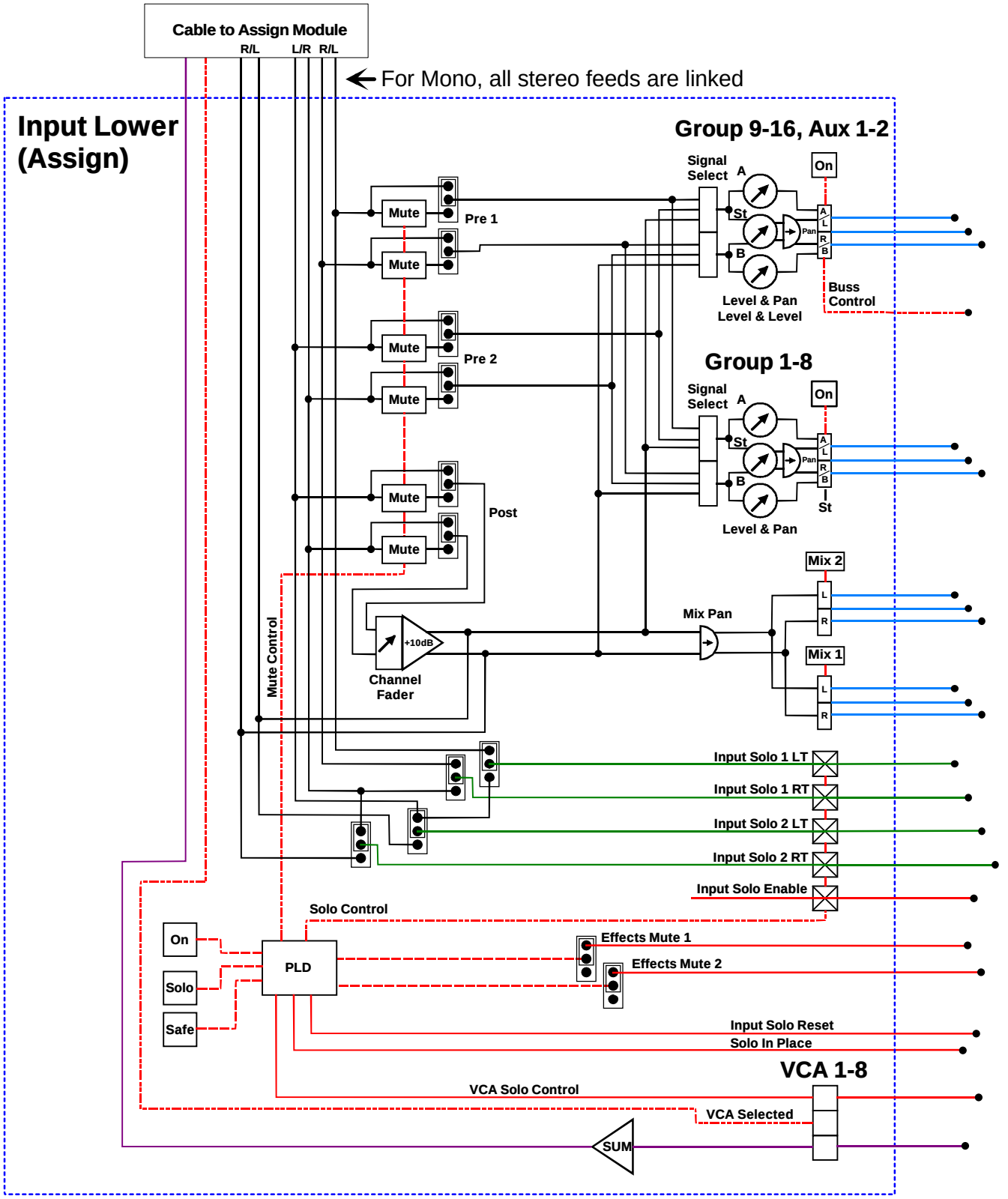
The VCA symmetry trim controls R13 (right) and R75 (left), are accessible with a screwdriver from between the two PCB's. A distortion analyzer can be connected to the post Direct Out signal with a +4dB signal level and THD should be trimmed to <.007%. NOTE that the Compressor, Gate or VCA Fader MUST be selected otherwise the VCA is bypassed and the trim can not be analyzed.

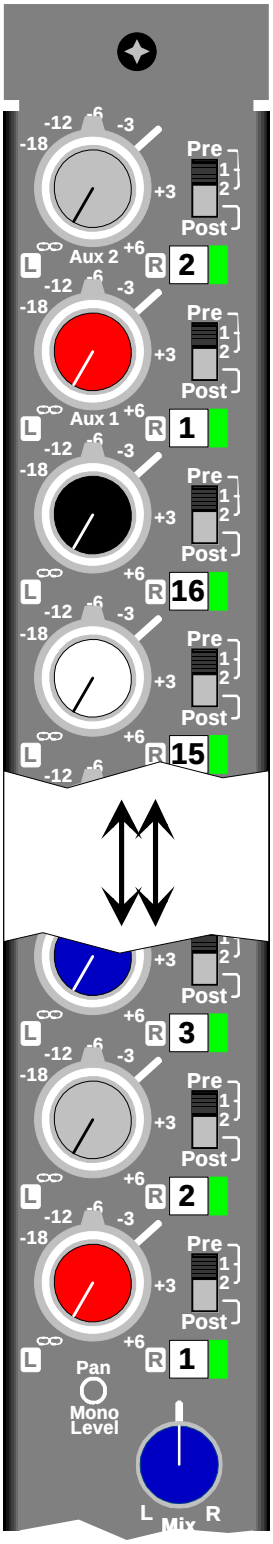
Channel Assignment Module





Block Diagram





Group / Auxiliary Sends:
Level & Pan Control

In a standard configuration there are **8 dedicated Stereo group mixes** (groups 1-8) **and 10 Stereo/dual Mono (20 Mono) group mixes (groups 9-16 and auxes 1-2).** Each non-dedicated mix is globally selectable to be either stereo or dual mono. Mixes in stereo mode or dedicated stereo mixes have an inner level and outer pan control. Mixes in dual mono have inner 'A' level and outer 'B' level. All Level controls are variable from +6dB to infinity. When in stereo mode, there is a 4dB pan drop.

ON

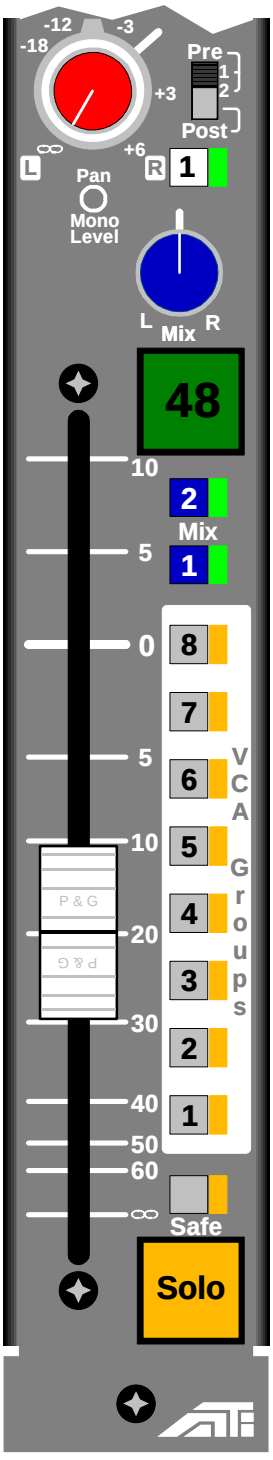
Numbered switches 1-16 and Aux 1-2 with associated LED's assign the send control output to the associated group buss. **NOTE: It is good general practice to always leave any unused group or aux sends un-assigned. This de-selects the send from the buss thus reducing noise on the buss and is preferable to setting the level control to full attenuation.**

Pre 1,2 & Post

This 3 way slide switch determines the signal that feeds the Send Control. Pre 1 & Pre 2, as described in the previous two sections can be any of the following: Post Filter, Post EQ BEFORE the EQ in/out switch, Post EQ & Insert, Post VCA, and Mono (stereo channels only). These selections are jumper selectable on the input upper main PCB. The Pre 2 selected signal is also the "Pre Fader" signal. All three signals, Pre 1, Pre 2 and Post can be either Pre or Post Channel On / Off Switch (internally jumper stlectable).

Note: *The 3 way slide switches are designed generally for pre-set use and not dynamic changes. They are make before break switches. Thus if they are not seated in one of the three positions properly, a short between two of the signals can occur, thus causing distortion in the channel module. If distortion is observed, exercise and re-seat all of the 3 way switches FIRST.*

Note: There are a number of possibilities for the Pre1, Pre2, and Post jumper configurations that can suit various touring and fixed installation configurations. See Appendix-1 for more jumper details and standard settings.



Mix Pan:

The Mix Pan control varies the pan of a mono and balance of left and right on a stereo input, down the two mix busses. The center position is detented and delivers equal signal down both left and right, 6dB down.

Channel On / Off:

This momentary switch turns the main channel signal feed on and off (depending on internal jumpers, some or all signals can be pre the on/off switch). The switch is illuminated when ON. This switch will also override any SIP mute, effects mute, group mute (if installed), or Uptown automation mute (if installed) that is currently active on the channel.

Mix Assign Switches:

There are 2 Stereo Mix busses. The channel Post signal, post Mix Pan is assigned by depressing the appropriate switch.

Channel Fader:

Penny and Giles 100mm Audio fader with infinity to +10dB gain. The fader level controls the Post level using the Pre 2 signal.

NOTE: A mono Assign Module uses only a mono fader with a white cap and a Stereo Assign Module uses a stereo fader with a gray cap. This is the only visible difference between a Mono and Stereo Assign Module.

VCA Groups Accept Switches:

There are 8 VCA group masters and control is accepted by depressing the associated numbered switch.

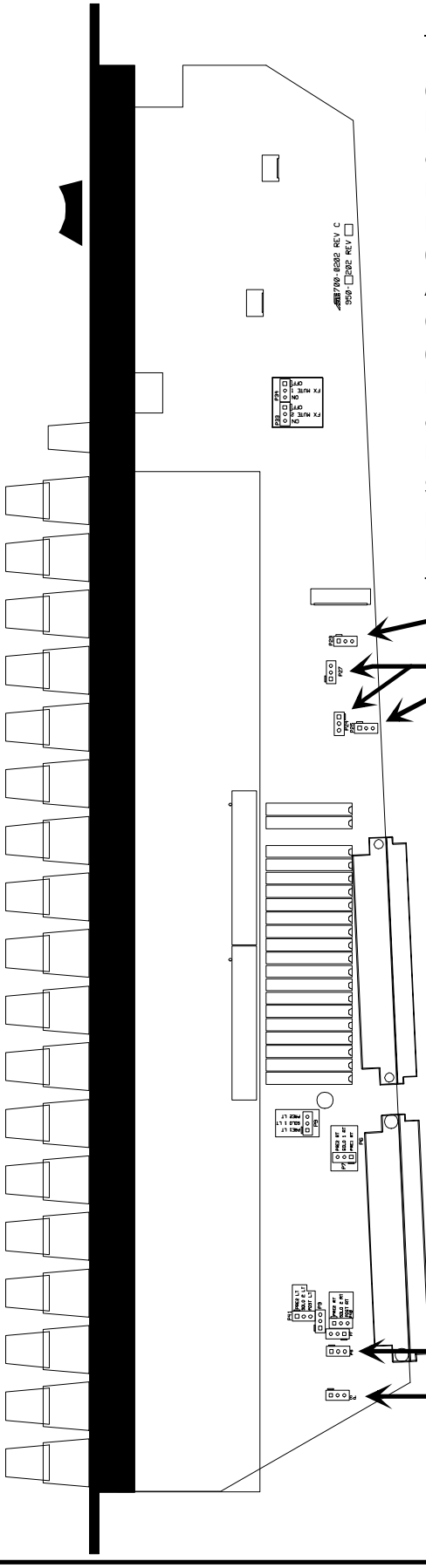
NOTE: If the Compressor In, Gate In and VCA Group assignments are all OFF (up position) the VCA (gain cell) is switched OUT of circuit.

Safe:

When depressed the channel will NOT be muted by a SIP, Effect mute, Group Mute (if installed) or Uptown Automation Mute (if Automation is installed). NOTE: that a VCA Mute controls the channel VCA and not the channel mute logic; therefor the Safe switch has NO EFFECT on VCA muting.

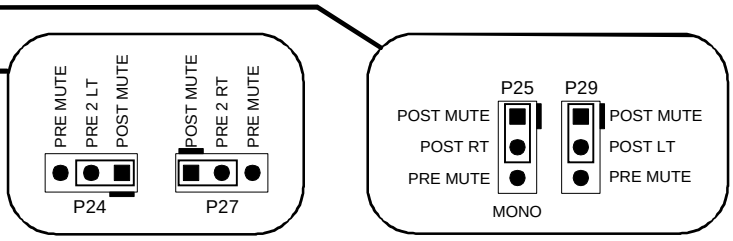
Solo:

Selects channel Input Solo 1 and Input Solo 2 signals to the master section for routing to the Wedge or In-Ear outputs, feeds the Mono solo buss with the selected channel side chain signal and feeds the Compressor and Gate DC control level to the attenuation meters in the master section. There are various solo modes; please see the solo description in the master section. Solo 1 and Solo 2 signals are jumper selectable between Pre 1, Pre 2 and Post. Jumper descriptions appear on page 4-6. A VCA solo will also activate all local solo circuits that are accepting that group.



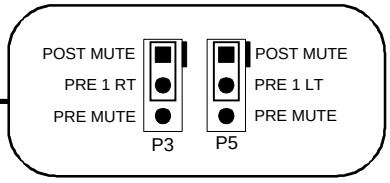
Module Removal:

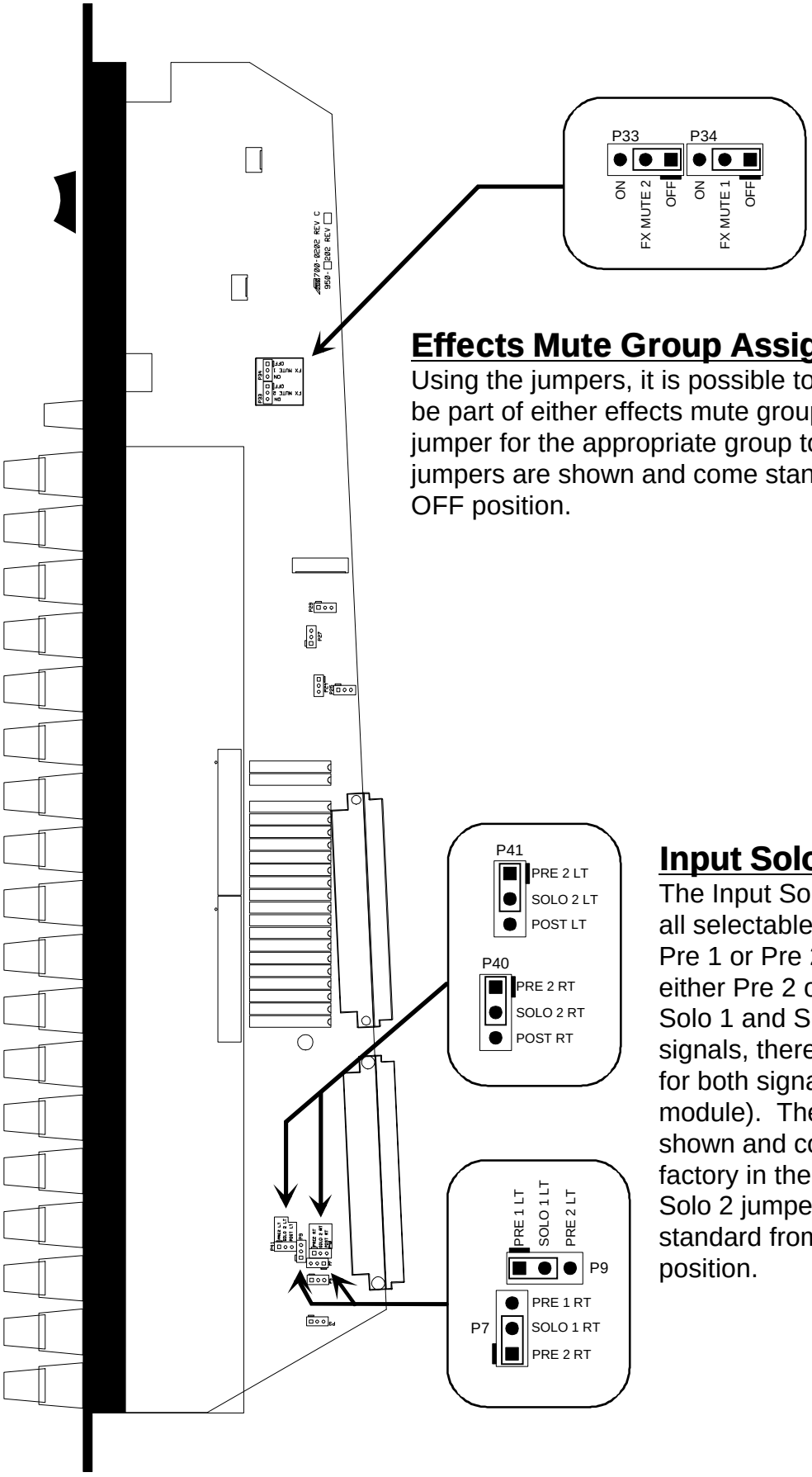
First make sure that the power to the console has been turned off. Then remove the two module screws using a NO.2 Phillips head screwdriver. Next, using the two module removal tools or an equivalent tool, hook through the mounting hole where the module screw goes on both ends and lift evenly. Be careful not to rock the module or only lift one side as this may bend or damage the connector pins. NOTE: If you have the Uptown Automation system installed, there will be an additional connecting cable attached to the PCB below the fader. Simply disconnect the cable when you are able. When replacing the module, gently lower it into place making sure that it is straight and even. When you feel that it has landed properly on the motherboard connectors, give it one final push down. You should feel the connectors seat solidly. If this is not felt, remove the module, check the pins and try again. Modules being placed in the 8th locations (8,16,24,32 etc.) must have the DIN connector mounting screws removed.



Pre or Post Mute Options:

All three assign choice signals Pre 1, Pre 2 and Post (both left and right for a total of six jumpers) have the ability to be assigned pre or post the channel on / off logic switch. This could possibly be done if you where driving both house and monitors from the console and you wanted to turn all of your channels off in the house (Pre 2 or Post feeds possibly) and still wanted your monitors live (Pre 1 feed). NOTE: that on the Mono Assign Module, since there is only a mono fader, P29 the left post jumper is omitted. P25 controls the Post option. All jumpers are shown and come standard from the factory in the Post Mute position.





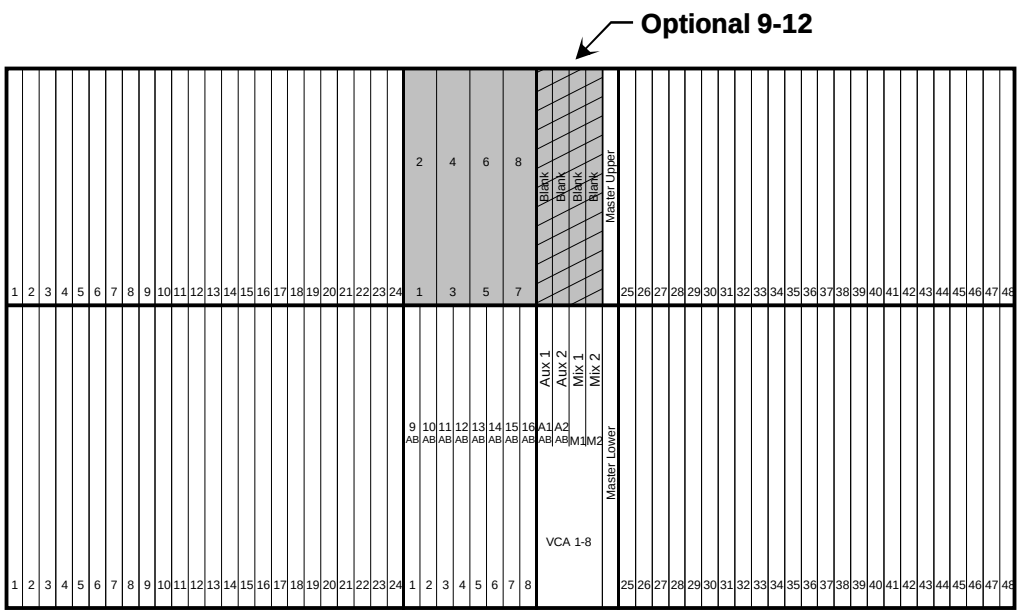
Effects Mute Group Assignment:

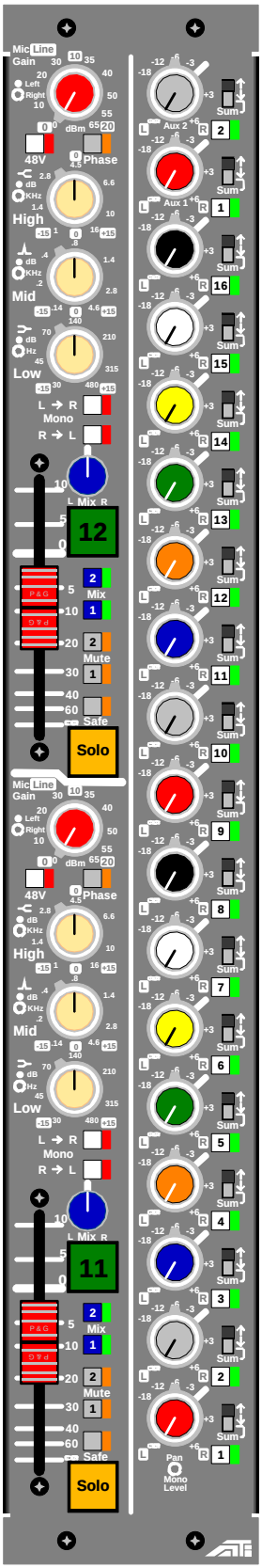
Using the jumpers, it is possible to assign any input channel to be part of either effects mute group 1 or 2. Simply set the jumper for the appropriate group to the ON position. Both jumpers are shown and come standard from the factory in the OFF position.

Input Solo 1 & 2 Signal Select:

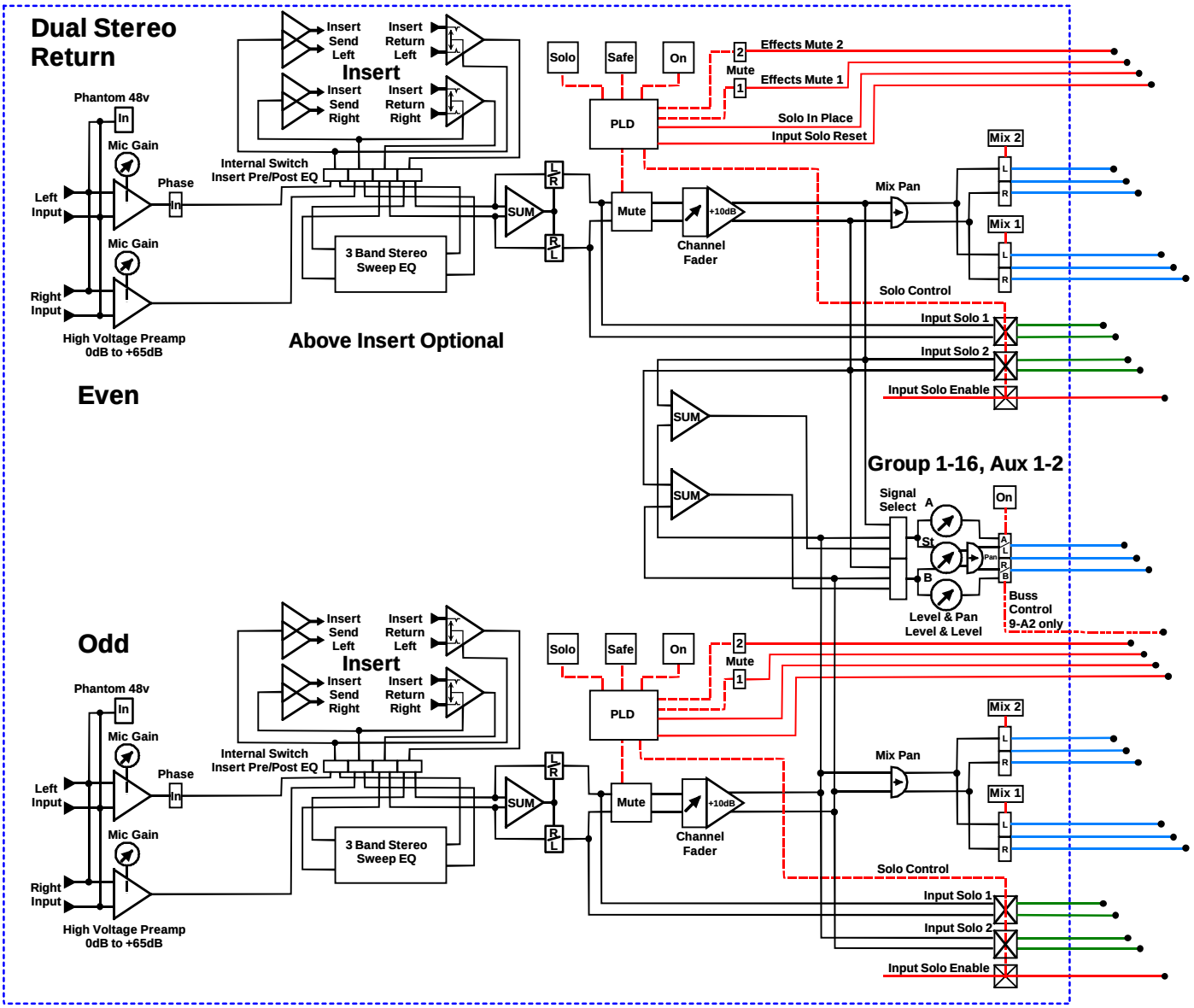
The Input Solo 1 & 2 stereo signals are all selectable. Input Solo 1 can be either Pre 1 or Pre 2 and Input Solo 2 can be either Pre 2 or Post. Note that since Solo 1 and Solo 2 are both stereo signals, there is a left and right jumper for both signals (even on the Mono module). The Input Solo 1 jumpers are shown and come standard from the factory in the PRE 1 position. The Input Solo 2 jumpers are shown and come standard from the factory in the PRE 2 position.

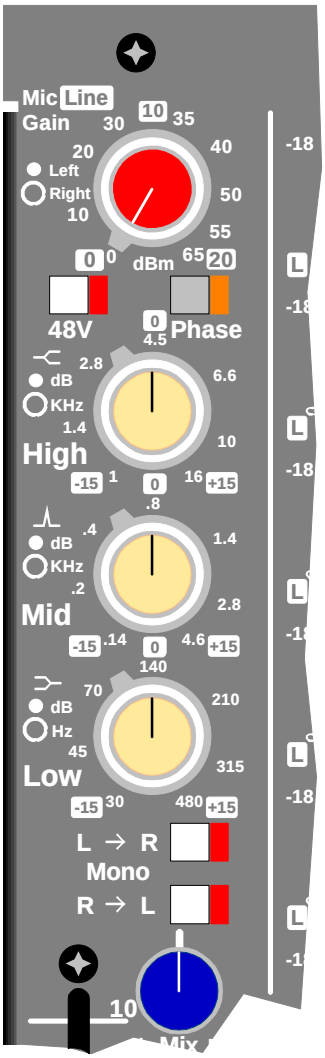
Dual Stereo Return Module





Block Diagram





Input Gain:

Inner

Left input microphone (line) gain control. Max input level is +24dBu, gain range is from 0 to +65dB (0 to +20dB line).

Outer

Right input microphone (line) gain control. Max input level is +24dBu, gain range is 0 to +65dB (0 to +20dB line).

48 Volts

When depressed applies +48V Phantom voltage to the input. Note when using phantom power, the ground lift switch on the rear connector panel **MUST** be in the grounded position.

Phase

When depressed reverses the input polarity of the **left** input only.

Equalizer:

The EQ consist of a stereo 3-band sweepable peak/shelve EQ. The High and Low bands are shelving and the Mid band is peak (dip). The EQ is always active in the signal path.

Level Control (Inner)

The inner control of the dual concentric adjusts the peak (dip) height or shelving level from 0 to +/- 15 dB for each band.

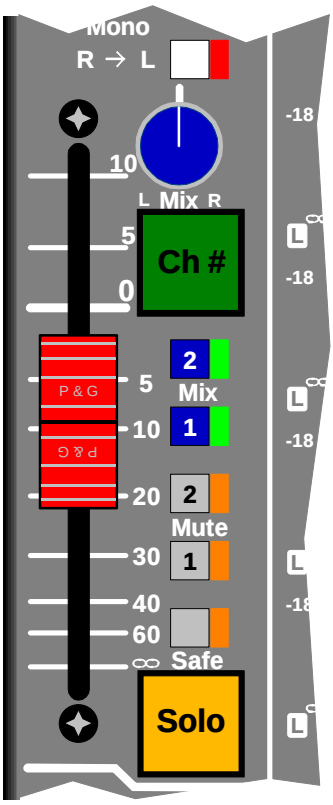
Frequency Control (Outer)

The outer control of the dual concentric selects the frequency of the EQ peak (dip) for the Mid band or 3dB down frequency of the EQ shelf for the High and Low bands. Each of the three EQ bands are different but overlapping. Their ranges are as follows:

Low Frequency range 30Hz to 480Hz
Mid Frequency range 140Hz to 4.6KHz
High Frequency range 1KHz to 16KHz

L to R & R to L

These switches are located post EQ (& Insert). The Left to Right switch, when depressed sends the left input signal to both left and right. The Right to Left switch, when depressed sends the right input signal to both left and right. When both switches are depressed, a mono sum of left and right is sent down both left and right.



Mix Pan

The Mix Pan control varies the balance of left and right down the two mix busses. The center position is detented and delivers equal signal down both left and right, 6dB down.

Channel On / Off

This momentary switch turns the main channel signal feed on and off. The switch is illuminated when ON. This switch will also override any SIP mute, effects mute, group mute (if installed), or Uptown automation mute (if installed) that is currently active on the channel.

Mix Assign Switches

There are 2 Stereo Mix busses. The channel post fader signal, post Mix Pan is assigned by depressing the appropriate switch.

Channel Fader

Penny and Giles 65mm Stereo Audio fader with infinity to +10dB gain. The fader level controls the level of the signal sent to the assign portion of the module.

Effects Mute Accept Switches

There are 2 Effects Mute Busses. Mute control is accepted by depressing the associated numbered switch. Any Effects mute can be overridden by pressing the Channel On/Off switch.

Safe

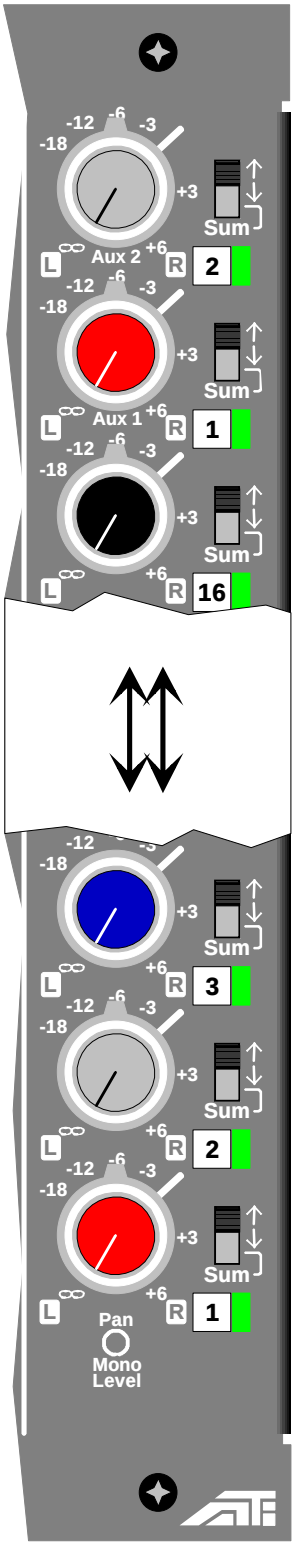
When depressed the channel will NOT be muted by a SIP, Effect mute, Group Mute (if installed) or Uptown Automation Mute (if Automation is installed).

Solo

Selects channel pre fader signal to Input Solo 1 buss and channel post fader signal to Input Solo 2 buss for routing to the Wedge or In-Ear outputs by way of the master section. There are various solo modes; please see the solo description in the master section.

Lower (Odd) Return:

The lower (odd) stereo input of the Dual stereo return is identical to the upper (even) stereo input just described with the addition of a stereo line insert point which is internally selectable pre or post EQ.
Up to 12 stereo return channels (6 modules) can be fitted per console (8 are standard). Each return can have Microphone amplifiers or line amplifiers. There are two returns per module.



Group / Auxiliary Sends:
Level & Pan Control

In a standard configuration there are **8 dedicated Stereo group mixes** (groups 1-8) **and 10 Stereo/dual Mono (20 Mono) group mixes (groups 9-16 and auxes 1-2).** Each non-dedicated mix is globally selected to be either stereo or dual mono. Mixes in stereo mode or dedicated stereo mixes have an inner level and outer pan control. Mixes in dual mono have inner 'A' level and outer 'B' level. Only the left signal of the return will feed the 'A' group and only the right signal will feed the 'B' group. All level controls are variable from +6dB to infinity. When in stereo mode, there is a 4dB pan drop.

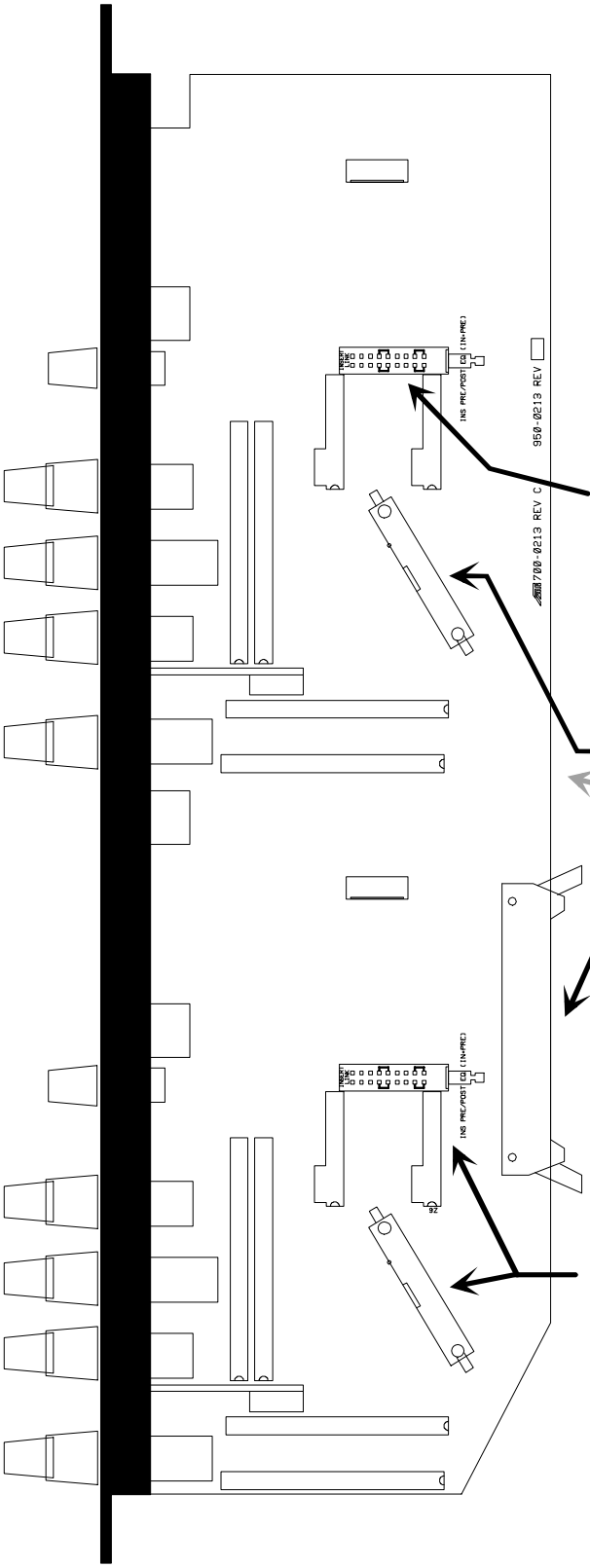
ON

Numbered switches 1-16 and Aux 1-2 with associated LED's assign the send control output to the associated mix buss. **NOTE: It is good general practice to always leave any unused group or aux sends un-assigned. This de-selects the send from the buss thus reducing noise on the buss and is preferable to setting the level control to full attenuation.**

↑, ↓ & SUM

This 3 way slide switch determines the signal that feeds the particular Send Control. In the ↑ position, the upper (even) post fader signal feeds the Send Control. In the ↓ position, the lower (odd) post fader signal feeds the Send Control. In the SUM position, the post fader sum of both the upper (even) and lower (odd) signals feeds the Send Control.

Note: *The 3 way slide switches are designed generally for pre-set use and not dynamic changes. They are make before break switches. Thus if they are not seated in one of the three positions properly, a short between two signals can occur, thus causing distortion in the channel module. If distortion is observed, exercise and re-seat all of the 3 way switches FIRST.*



Module Removal:

To remove the Dual Stereo Return Module, first make sure that the console power is turned off. Next, using a NO.2 Phillips head screwdriver, remove the four module screws at the top and bottom of the module. Now gently lift the module out of the frame. When the bottom of the PCB's have cleared the frame, disconnect the three cables (one of which is connected twice) and the ground wire. To replace the module, follow these steps in reverse making sure the power is turned off first.

Insert Pre / Post EQ:

The Insert location pre or post EQ is selected by the switch located on the main PCB (700-0213). When this switch is in the in or depressed location the Insert is pre EQ. The standard factory configuration is Insert post EQ.

Cable to rear I/O

Audio Buss cable on lower (700-0214) board

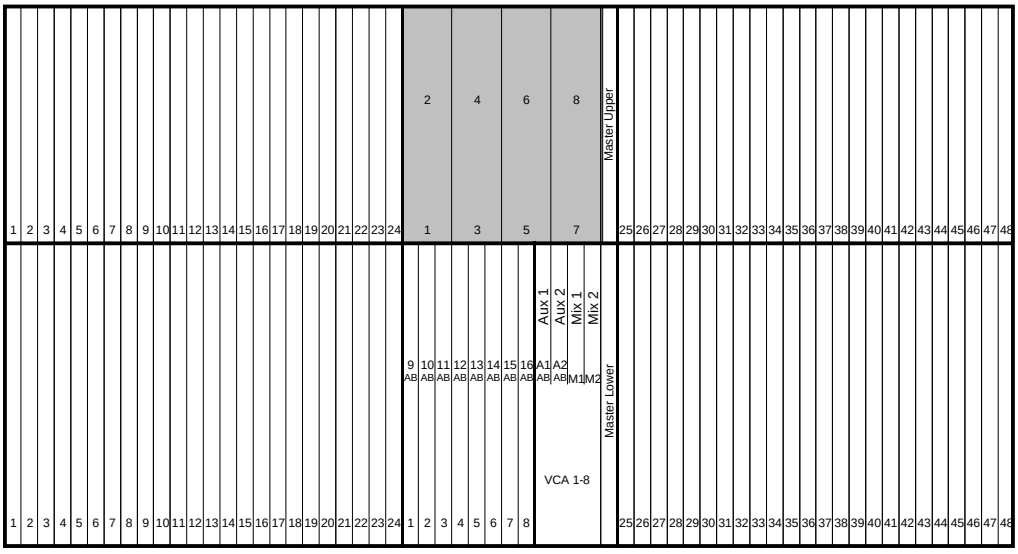
Power & Service Buss cable connectod to both upper and lower boards.

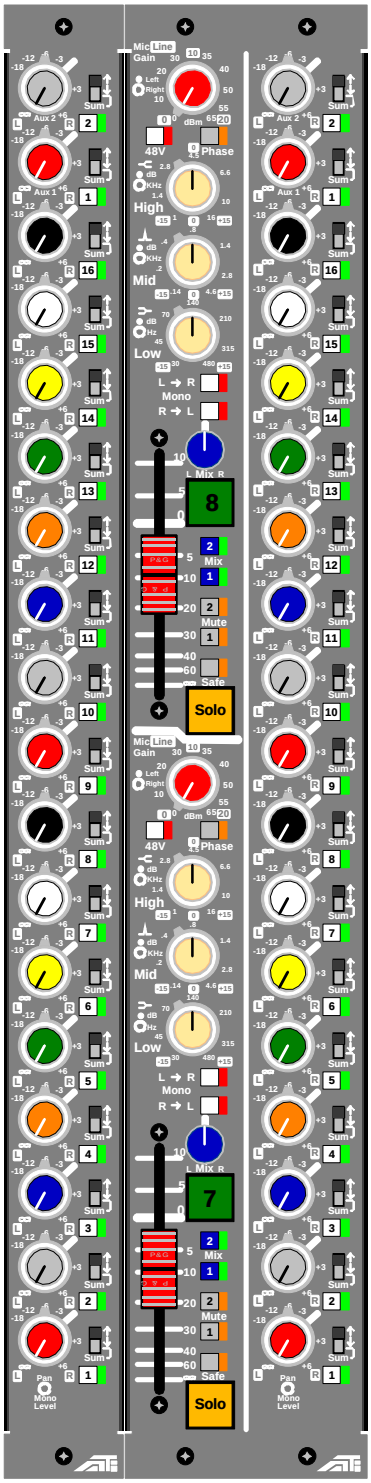
Second Insert Option:

A line level insert point can be added to the upper return with the same Insert Pre/Post EQ switch.

Dual Stereo Return Module with Individual Assign

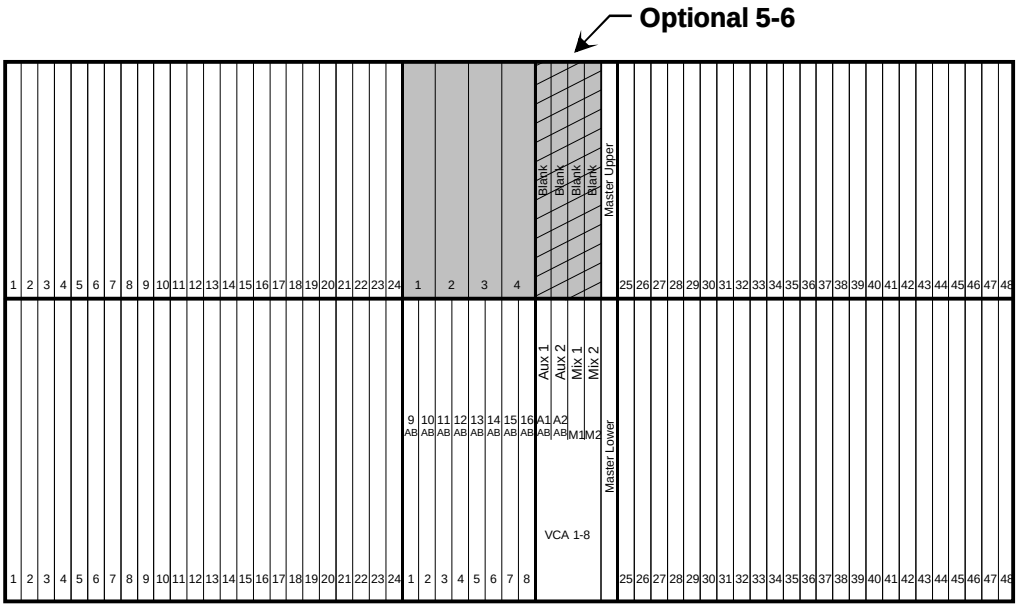
(contact ATI for details)

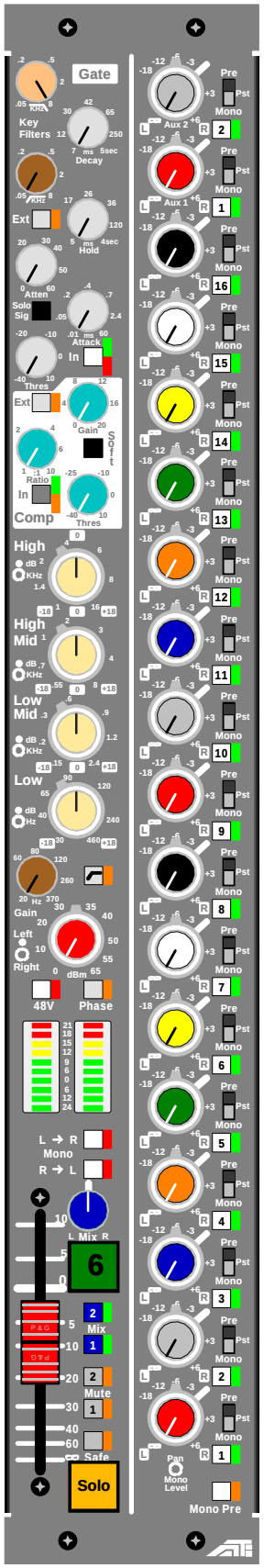




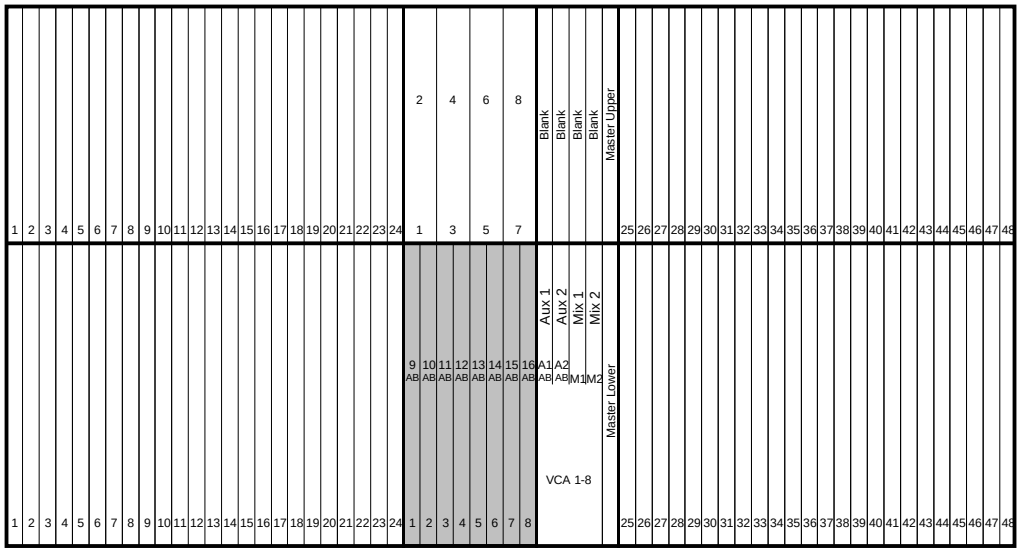
Stereo Return Module with Dynamics

(contact ATI for details)

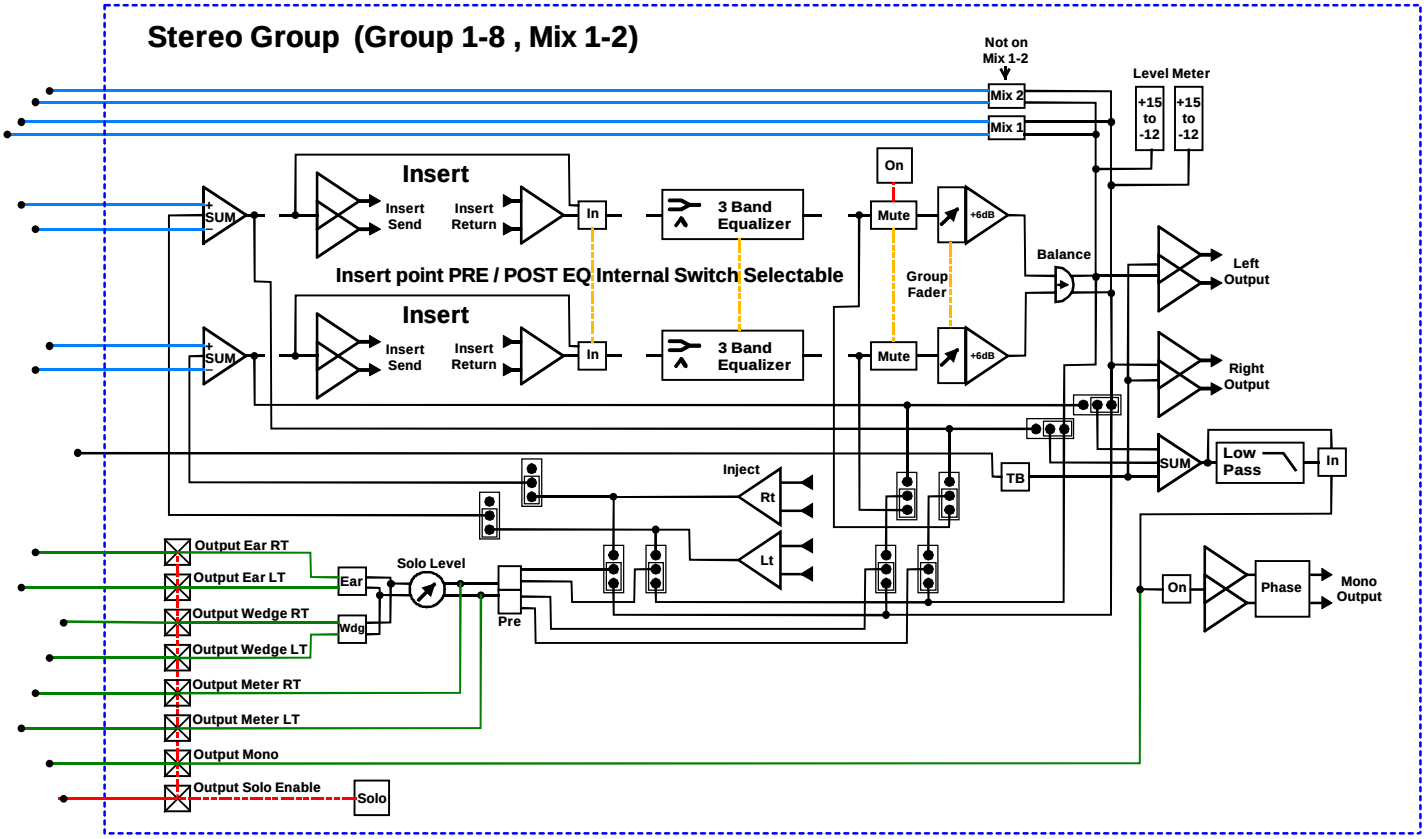




Stereo / Dual Mono Group Module



Stereo Block Diagram



Stereo Group:

The first 8 groups on the console are dedicated stereo groups. They are located on the lower portion of the 8 group modules. Each group has a balanced stereo inject in addition to the features described below.

Mono Output:

A mono sum of left and right is available from every group. The signal is set post fader and mute as standard but can be changed to post summing amp / pre EQ & Insert by internal jumpers.

Inner

Mono Output Level control. Level range is from infinity to +6dB with a center detent at unity. Maximum output level in +28dBu.

Outer

Low Past Filter frequency control. Frequency range is from 1600Hz down to 80Hz. The filter is a 24dB/octave Bessel filter.

Mono On

Turns the Mono Output on and off. Does not effect Group Mono Solo.

Low Pass

When depressed places the Low Pass filter into the Mono Output signal path. See above for Low Pass frequency.

Phase

When depressed reverses the polarity of the Mono Output.

Talkback

Accepts the selected Talkback signal from the Master Upper Module to the Group main and Mono Outputs post Fader and Mute controls.

Equalizer:

The EQ consist of a stereo 3-band sweepable peak/shelve EQ. The High and Low bands are shelving and the Mid band is peak (dip). The EQ is always active in the signal path.

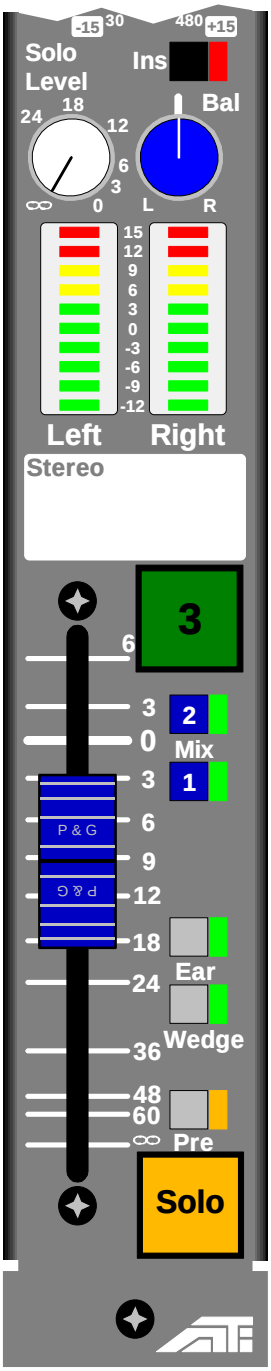
Level Control (Inner)

The inner control of the dual concentric adjusts the peak (dip) height or shelving level from 0 to +/- 15 dB for each band.

Frequency Control (Outer)

The outer control of the dual concentric selects the frequency of the EQ peak (dip) for the Mid band or 3dB down frequency of the EQ shelf for the High and Low bands. Each of the three EQ bands are different but overlapping. There ranges are as follows:

Low Frequency range 30Hz to 480Hz
Mid Frequency range 140Hz to 4.6KHz
High Frequency range 1KHz to 16KHz



Insert

When depressed Group Insert Return signal is utilized. The location of the Insert point is internally selectable Pre/Post EQ. The Insert Send jack is always active.

Balance

The Balance control varies the balance of left and right out the main Group output. The center position is detented and delivers equal signal down both left and right, 3dB down.

Solo Level

Controls the level of the Pre or Post Solo audio sent to the Wedge or Ear Solo Outputs. Range varies from infinity to unity. The control does NOT effect the Solo Meter signal.

Level Meters

Indicate peak signal level at the output of the console. The ten segment Led bar meter displays level over a 30dB range from –12db to +15dB.

Group On / Off

This momentary switch turns the Group Output signal on and off. The switch is illuminated when ON.

Mix Assign Switches

The Group post fader and balance signal can be assigned to either of the two stereo Mix busses by depressing the appropriate switch.

Group Fader

Penny and Giles 65mm Stereo Audio fader with infinity to +6dB gain.

Ear and Wedge Solo Assign Switches

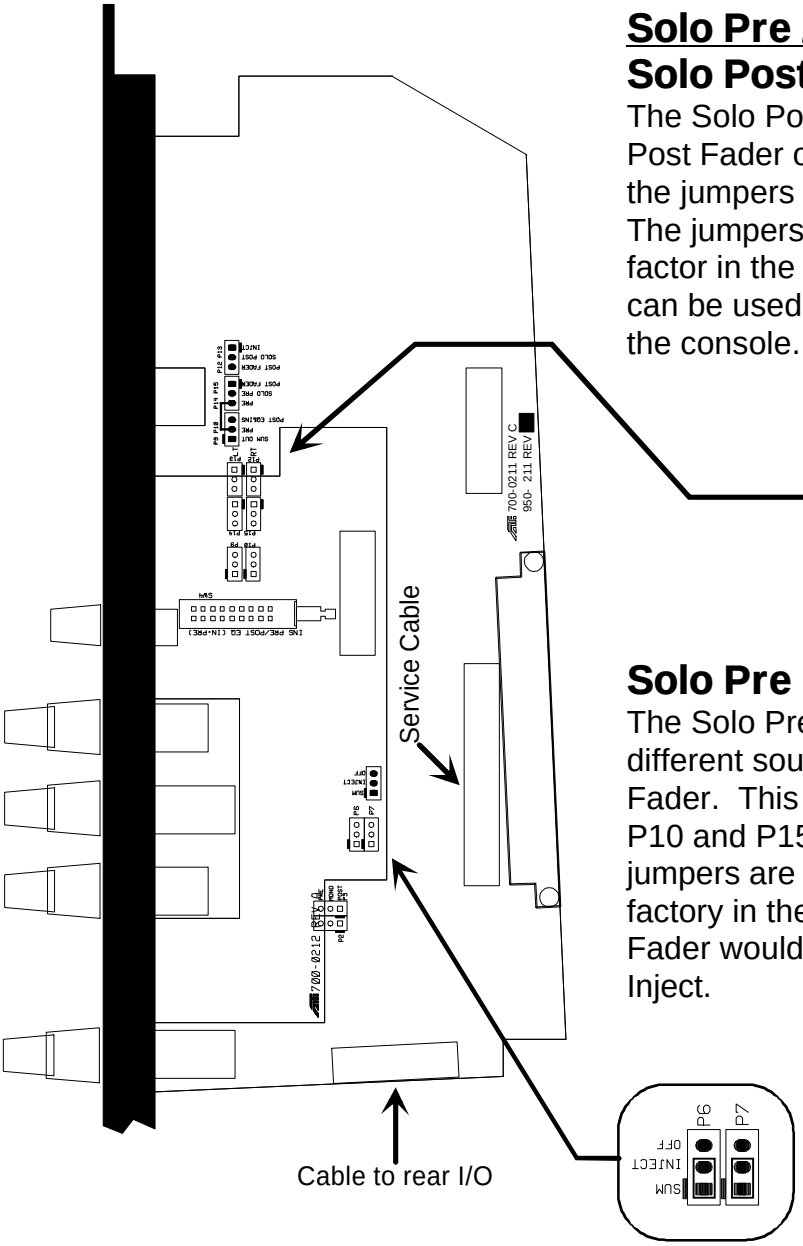
Pre and Post Group Solo signal can be assigned to either of the two stereo solo busses by depressing the switch for the desired buss. Mono Solo signal is assigned at the master module.

Pre

When depressed selects the Pre signal to the Solo system. The Pre signal can be selected internally from post summing amp, post EQ & Insert or post fader. The Post signal can be selected internally from post fader or Inject signal (for the purposes of monitoring an in-ear mix “off air” from inside the console, see page 8-5).

Solo:

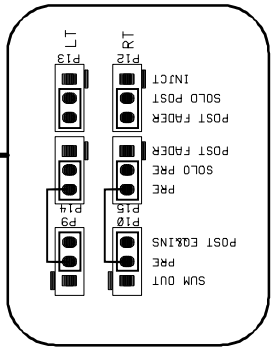
Activates the selected solo signal (Pre/Post) to the selected solo buss (Ear/Wedge) as well as to the master solo meters. There are various solo modes; please see the solo description in the master section.



Solo Pre / Post Signal Selects:

Solo Post

The Solo Post Signal can be selected to be either Post Fader or Inject Input. This is done by moving the jumpers at location P12 (right) and P13 (left). The jumpers are shown and come standard from the factor in the Post Fader location. The Inject option can be used for monitoring "off air" signal from inside the console.

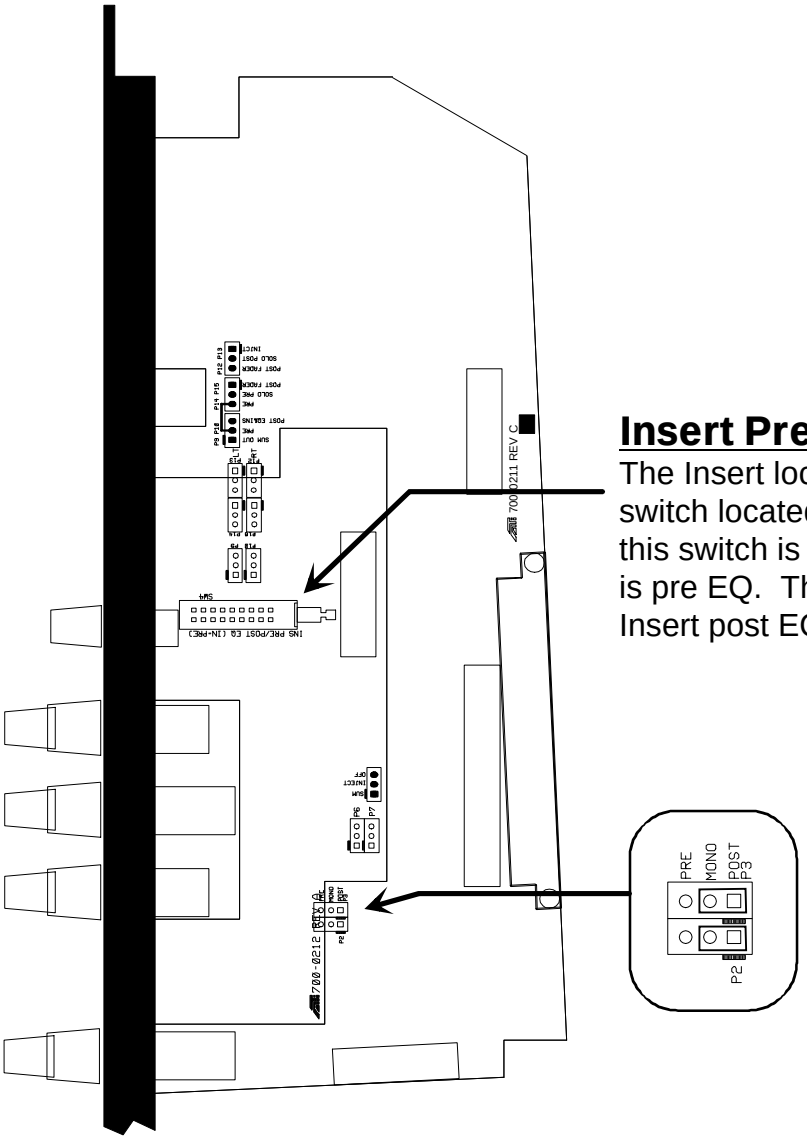


Solo Pre

The Solo Pre signal can be selected from three different sources; Sum Out, Post EQ & Insert or Post Fader. This is done by moving the jumper at location P10 and P15 (right) and P9 and P14 (left). The jumpers are shown and come standard from the factory in the Post EQ & Insert location. The Post Fader would be used if the Solo Post was selected to Inject.

Inject

The Inject signal can be removed from the summing buss by moving jumpers P6 (left) and P7 (right). The jumpers are shown and come standard from the factory in the Sum position. The Inject would be taken off the Sum if it were used for Solo reasons described above.



Insert Pre / Post EQ:

The Insert location pre or post EQ is selected by the switch located on the main PCB (700-0211). When this switch is in the in or depressed location the Insert is pre EQ. The standard factory configuration is Insert post EQ.

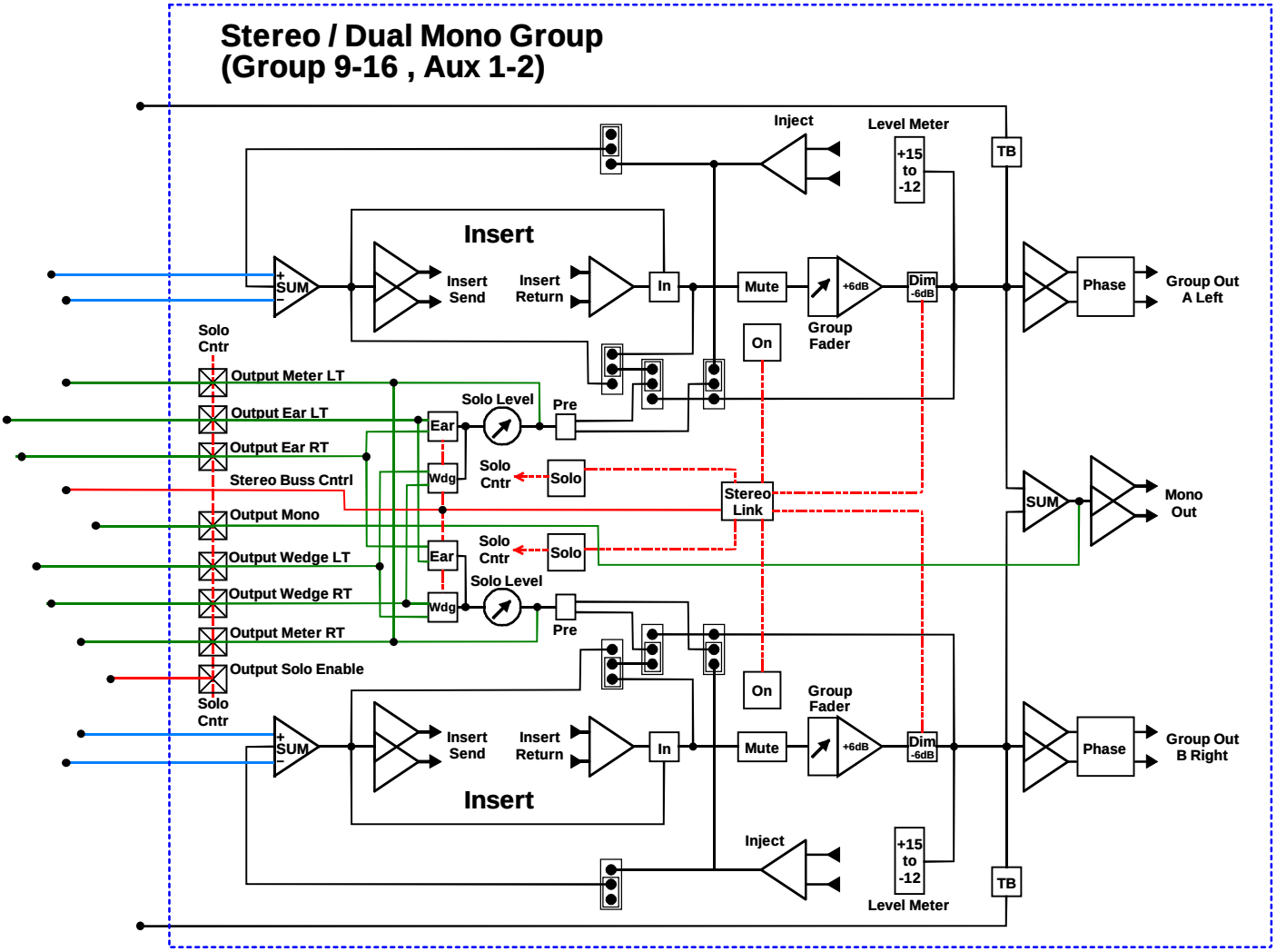
Mono Output:

The Mono Output signal can be chosen to be either the summing amp output “PRE” or post fader and mute “POST”. This is done by moving the jumpers located at P2 and P3. The jumpers are shown and come standard from the factory in the “POST” position.

Module Removal:

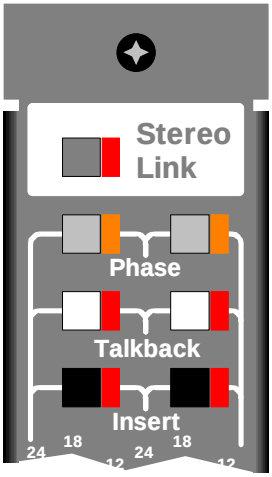
To remove the Group Module, first make sure that the console power is turned off. Next, using a NO.2 Phillips head screwdriver, remove the two module screws at the top and bottom of the module. Next using two module removal tools, or an equivalent tool, hook through the mounting holes were the module screws were on both ends and lift evenly. Be careful not to rock the module or only lift one side as it may bend or damage the connector pins. Once the module has been unseated from the motherboard connector, gently lift it out of the frame. Be careful of the service cable which runs parallel to the module as it has a tendency to hang-up on the module to the left. Once the module has cleared the frame, disconnect the two output cables, one with a single connector which runs halfway down the module to the stereo group, the other with two connectors at the top end. To replace the module, follow these steps in reverse making sure that the console power is turned off first. Due to the difficulty of the service cable hang-up problem, if time permits, we suggest that to remove any group module that you first remove channel assign modules 23 and 24 and then the group modules beginning with group 1 until you reach the desired group module. **NOTE: Make sure Stereo Control Assign jumper is set properly (see page 8-10).**

Dual Mono Block Diagram



Dual Mono Group:

The second 8 groups on the console (groups 9-16) are selectable dual mono or stereo groups. They are located on the upper portion of the 8 group modules. Each group has a balanced inject into the sum as well as a post fader and mute Mono Output. This Mono Output is always active and is a mono sum of the A and B groups. It can be used for a mono feed when the group is in stereo mode, or it can be used as a two buss sum output when feeding a mono source allowing the ability to feed stage wedges with a two sub group mix.



Stereo Link

The Stereo Link switch globally changes its associated group from independent dual mono to stereo. Locally this mode change links the controls of the Group On switch, Group Solo switch and DIM switch (only the depressed DIM switch LED will light but both sides will change level). All other local controls remain independent and will now control only there appropriate (left or right) side of the group. This mode change will also change the associated send controls from level/level to level/pan (see Channel Assign Module).

Phase

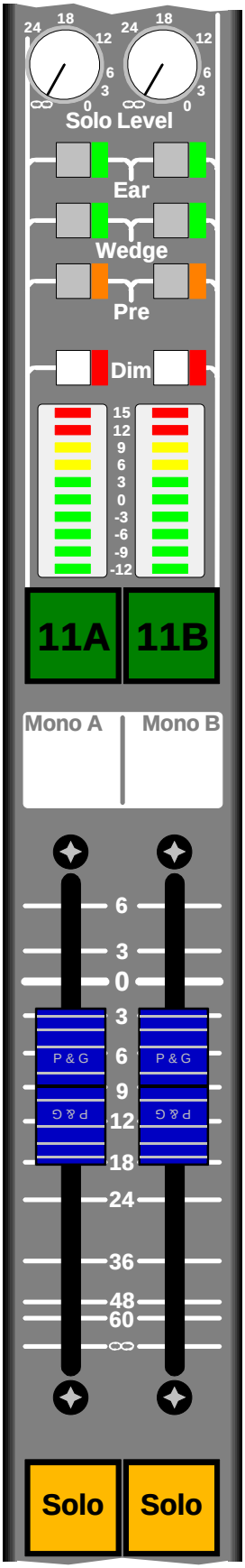
When depressed reverses the polarity of the Group Output.

Talkback

Accepts the selected Talkback signal from the Master Upper Module to the Group Output post Fader and Mute controls.

Insert

When depressed group insert return signal is utilized. The return signal is applied to the fader and mute circuit. The group insert send jack is always active sending summing amp output signal.



Solo Level

Controls the level of the Pre or Post Solo audio sent to the Wedge or Ear Solo Outputs. Range varies from infinity to unity. The control does NOT effect the Solo Meter signal.

Ear and Wedge Solo Assign Switches

Pre and Post Group Solo signal can be assigned to either of the two stereo solo busses by depressing the switch for the desired buss. Mono Solo signal is assigned at the master module.

Pre

When depressed selects the Pre signal to the Solo system. The Pre signal can be selected internally from post summing amp, post Insert or post fader. The Post signal can be selected internally from post fader or Inject signal (for the purposes of monitoring an in-ear mix "off air" from inside the console, see page 8-10).

DIM

When depressed reduces the group output signal by 6dB. Dim control is linked between A and B when in stereo mode.

Level Meters

Indicate peak signal level at the output of the console. The ten segment Led bar meter displays level over a 30dB range from –12db to +15dB.

Group On / Off

This momentary switch turns the Group Output signal on and off. The switch is illuminated when ON. On control is linked between A and B in stereo mode.

Group Fader

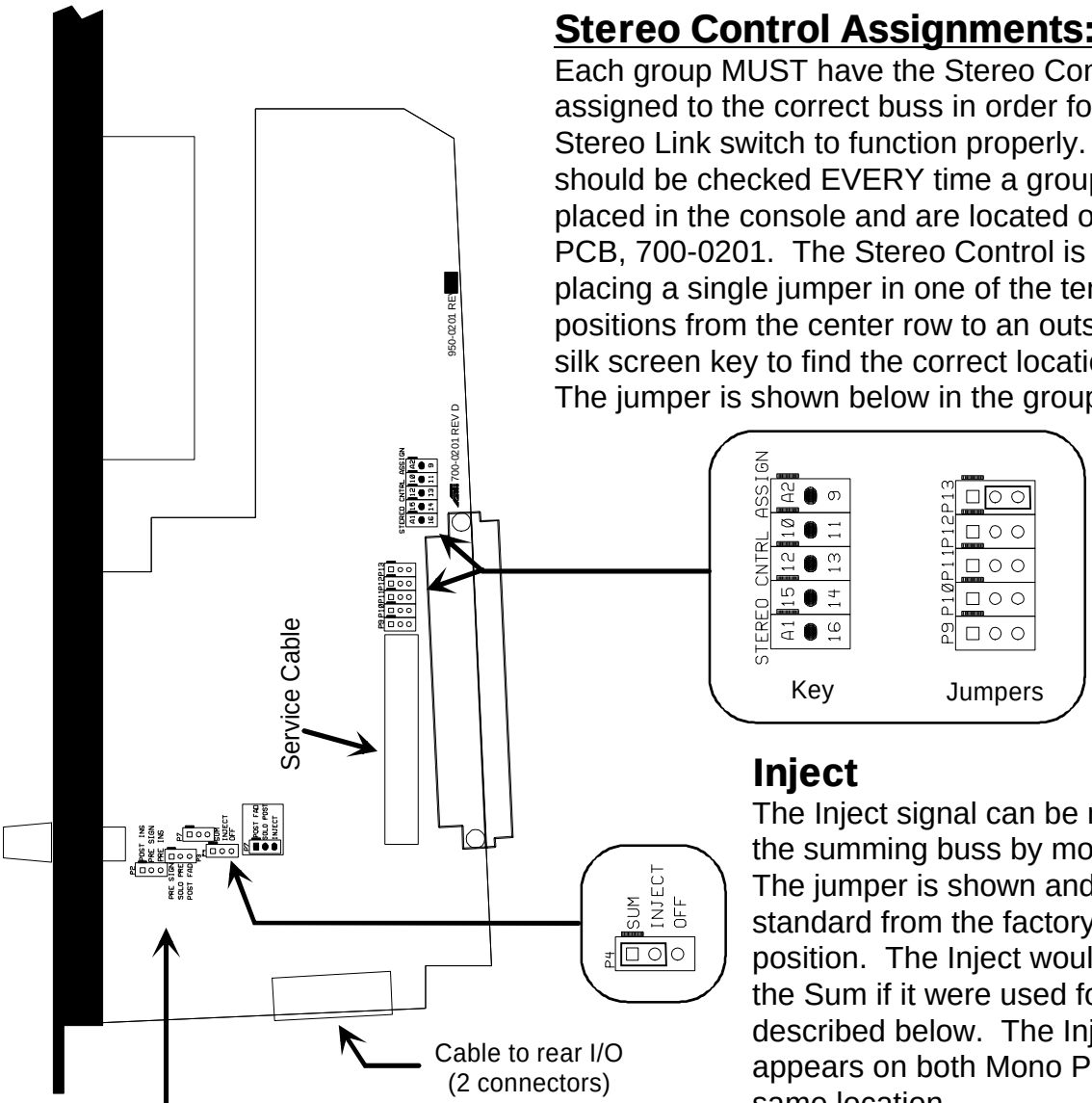
Penny and Giles 65mm Audio fader with infinity to +6dB gain.

Solo

Activates the selected solo signal (Pre/Post) to the selected solo buss (Ear/Wedge) as well as to the master solo meters. Solo control is linked between A and B in stereo mode. When not is stereo mode, only the A solo switch will active the group Mono solo signal. There are various solo modes; please see the solo description in the master section.

Stereo Control Assignments:

Each group MUST have the Stereo Control jumper assigned to the correct buss in order for the global Stereo Link switch to function properly. These jumpers should be checked EVERY time a group module is placed in the console and are located on the Mono B PCB, 700-0201. The Stereo Control is assigned by placing a single jumper in one of the ten possible positions from the center row to an outside pin. Use the silk screen key to find the correct location for each group. The jumper is shown below in the group 9 position.

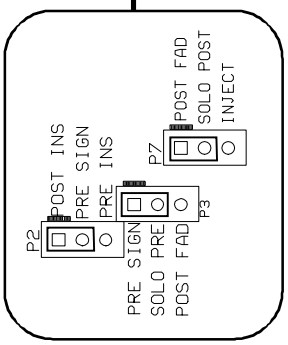


Inject

The Inject signal can be removed from the summing buss by moving jumper P4. The jumper is shown and comes standard from the factory in the Sum position. The Inject would be taken off the Sum if it were used for Solo reasons described below. The Inject jumper appears on both Mono PCB's in the same location.

Solo Pre / Post Signal Selects:

The Solo Pre/Post jumpers appear on both mono PCB's in the same location.



Solo Post

The Solo Post Signal can be selected to be either Post Fader or Inject Input. This is done by moving the jumper at location P7. The jumper is shown and come standard from the factor in the Post Fader location. The Inject option can be used for monitoring "off air" signal from inside the console.

Solo Pre

The Solo Pre signal can be selected from three different sources; Sum Out, Post Insert or Post Fader. This is done by moving the jumpers at location P2 and P3. The jumpers are shown and come standard from the factory in the Post Insert location. The Post Fader would be used if the Solo Post was selected to Inject.

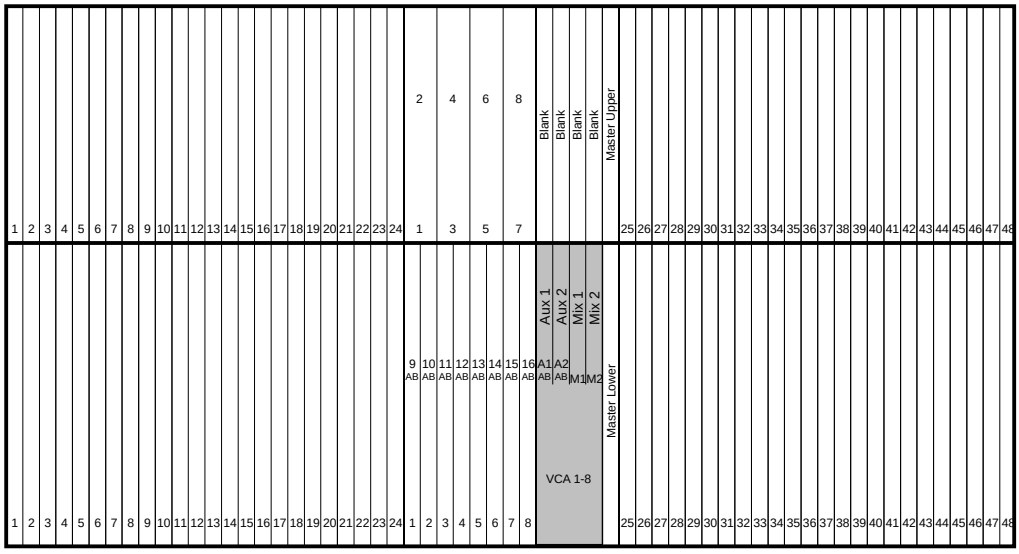
Stereo / Stereo Group Output Module:

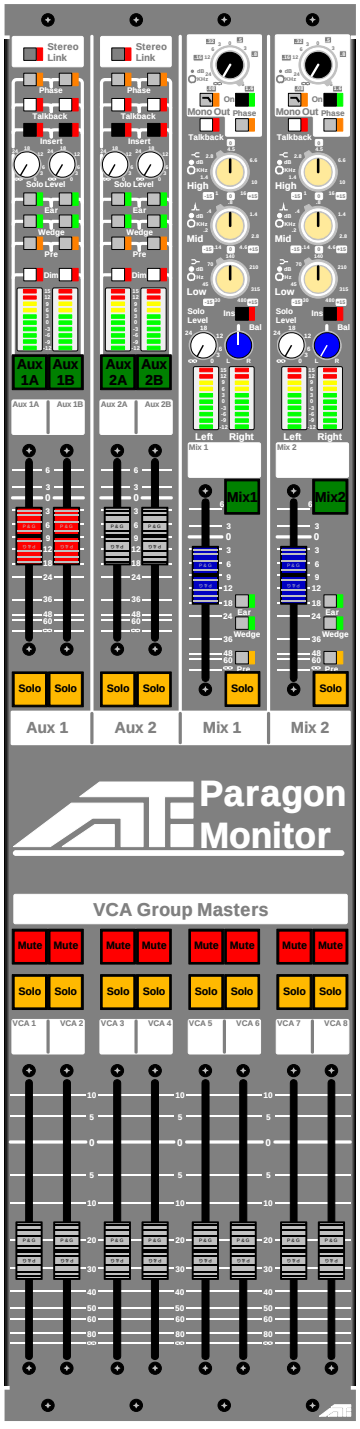
An optional Stereo / Stereo Group output Module can be placed in any of the eight group positions. There are obvious advantages and dis-advantages to each option. The loss being flexibility of group separation but the gains being the added control of the Mono output , the 3-band EQ and more that the stereo module gives. If you know that more than eight of your outputs will be stereo all of the time, it is worth looking into this option. Please contact ATI for details

Features

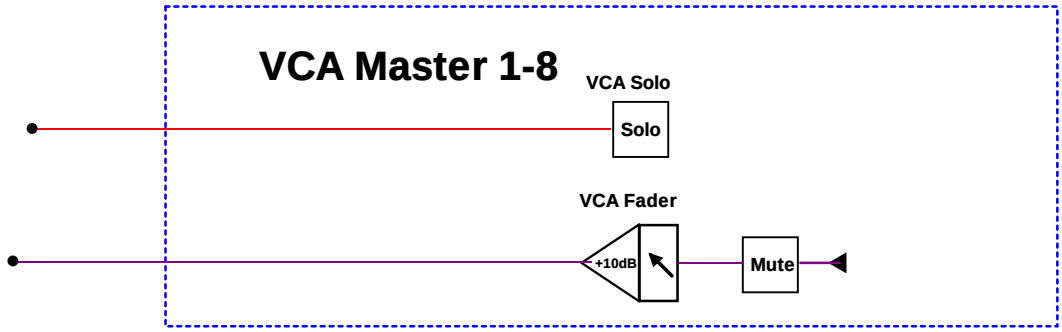
The features of the Stereo / Stereo group module are the same as the stereo portion of the Stereo / Dual Mono group module.

Mix / Aux / VCA Master Module



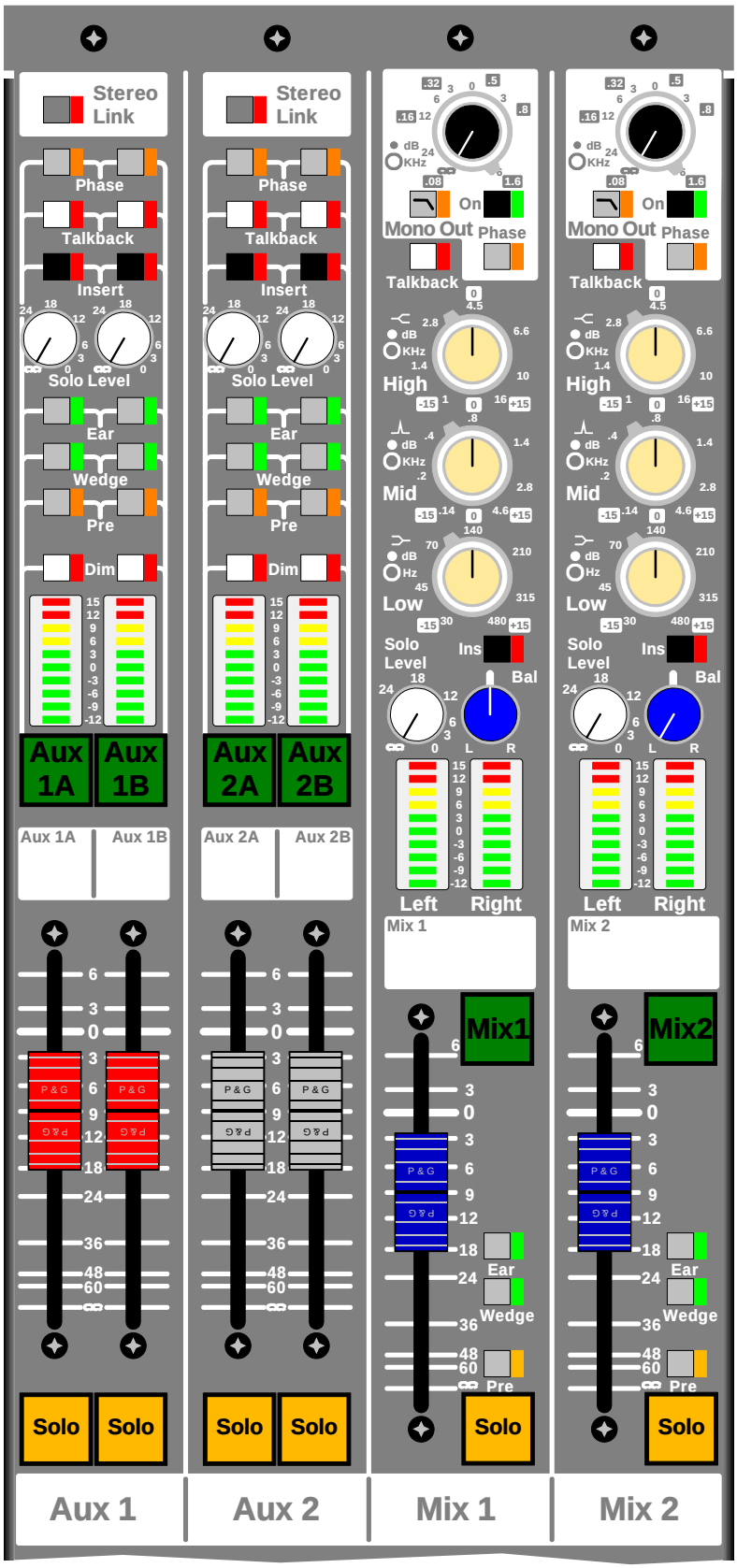


VCA Block Diagram



Mix / Aux / VCA Master Module:

The module is a 4-U wide panel (5-U in early consoles including the Master Lower Module). It houses the two stereo Mix masters, the two dual mono / stereo Aux masters as well as the 8 VCA master faders and their associated controls.

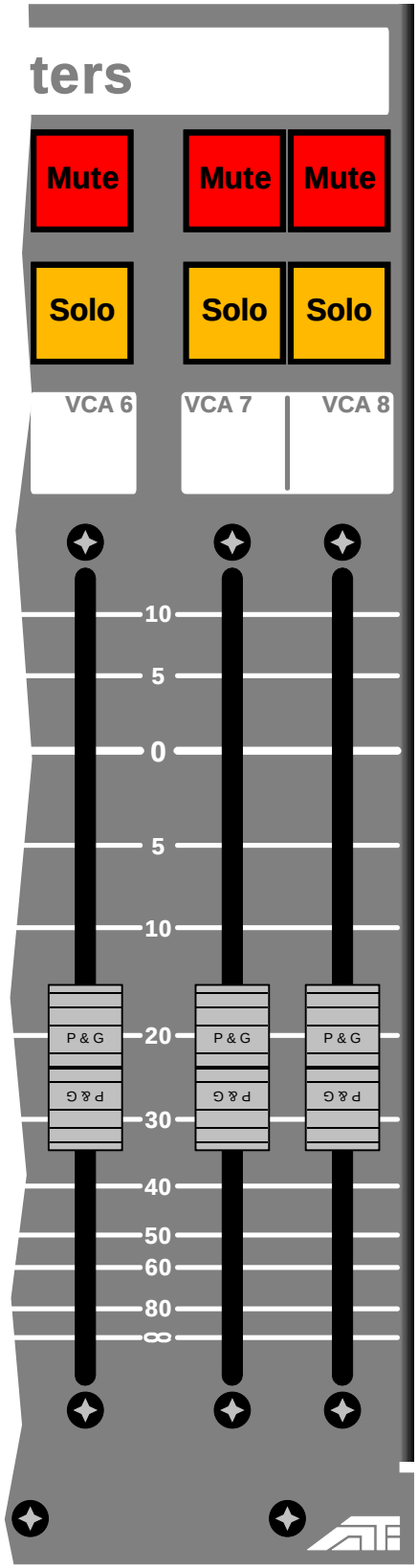


Aux Masters:

The two dual mono / stereo Aux masters are identical to the dual mono / stereo portion of the Group module (see page 8-7).

Mix Masters:

The two stereo Mix masters are identical to the stereo portion of the Group module with the omission of the two mix assign switches (see page 8-2).



VCA Master Faders:

The console consists of 8 VCA masters.

Mute

When Active (LED Illuminated) the VCA of all channels assigned to the associated VCA master will mute. This does not turn off the channel ON switch and any signals utilized that are pre VCA will NOT be affected.

Solo

When Active (LED Illuminated) all channels assigned to the associated VCA master will have there solos activated (If there is not any channel assigned to a VCA master and it is soloed, there will be not change in the Master Lower module solo control). The resulting solo situation is equivalent to pressing the Solo switch of every channel in the VCA group at the same time. In Solo Reset mode (Solo Add not active) pressing the Solo switch of a channel that was soloed by a VCA solo will cancel the VCA and all other active solos and leave active the channel whose Solo switch was pressed. This can be used to quickly isolate in your monitors a signal which is part of a VCA group. In Solo Add mode pressing the Solo switch of a channel that was soloed by a VCA solo will deactivate that channel's solo leaving the rest of the VCA group soloed. This can be used to disassemble a VCA group when looking for a particular signal. There are various solo modes; please see the solo description in the master section.

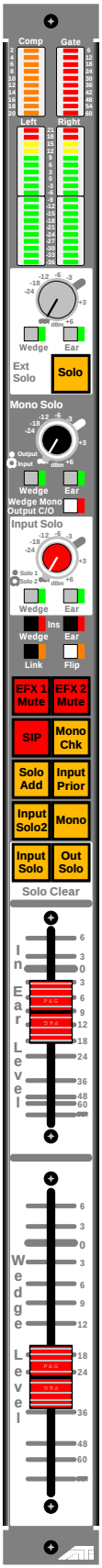
VCA Fader

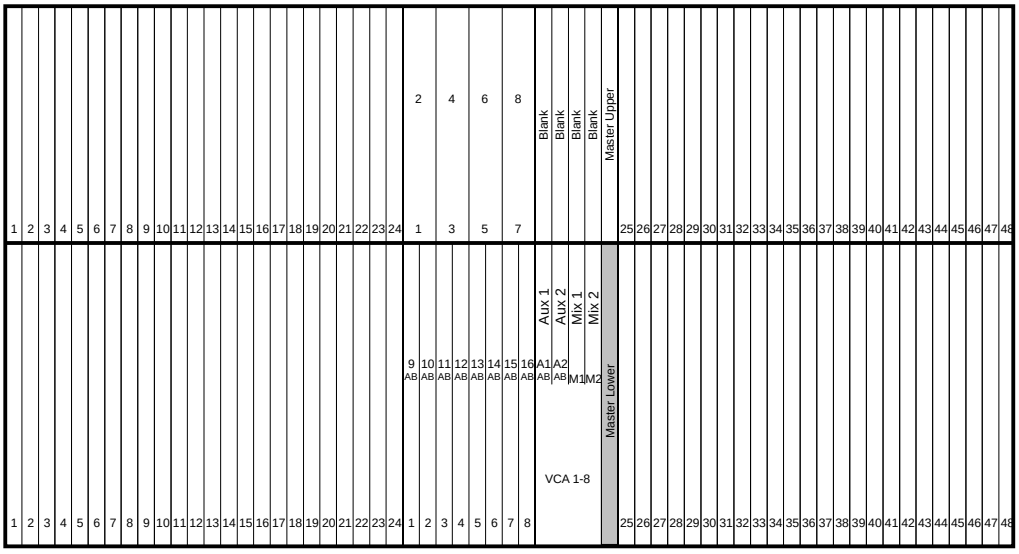
This Penny & Giles fader controls the VCA gain for all channels assigned to the associated VCA master. The normal operating position is at 0dB (nominal), with gain up to +10dB and attenuation to infinity.

Module Removal:

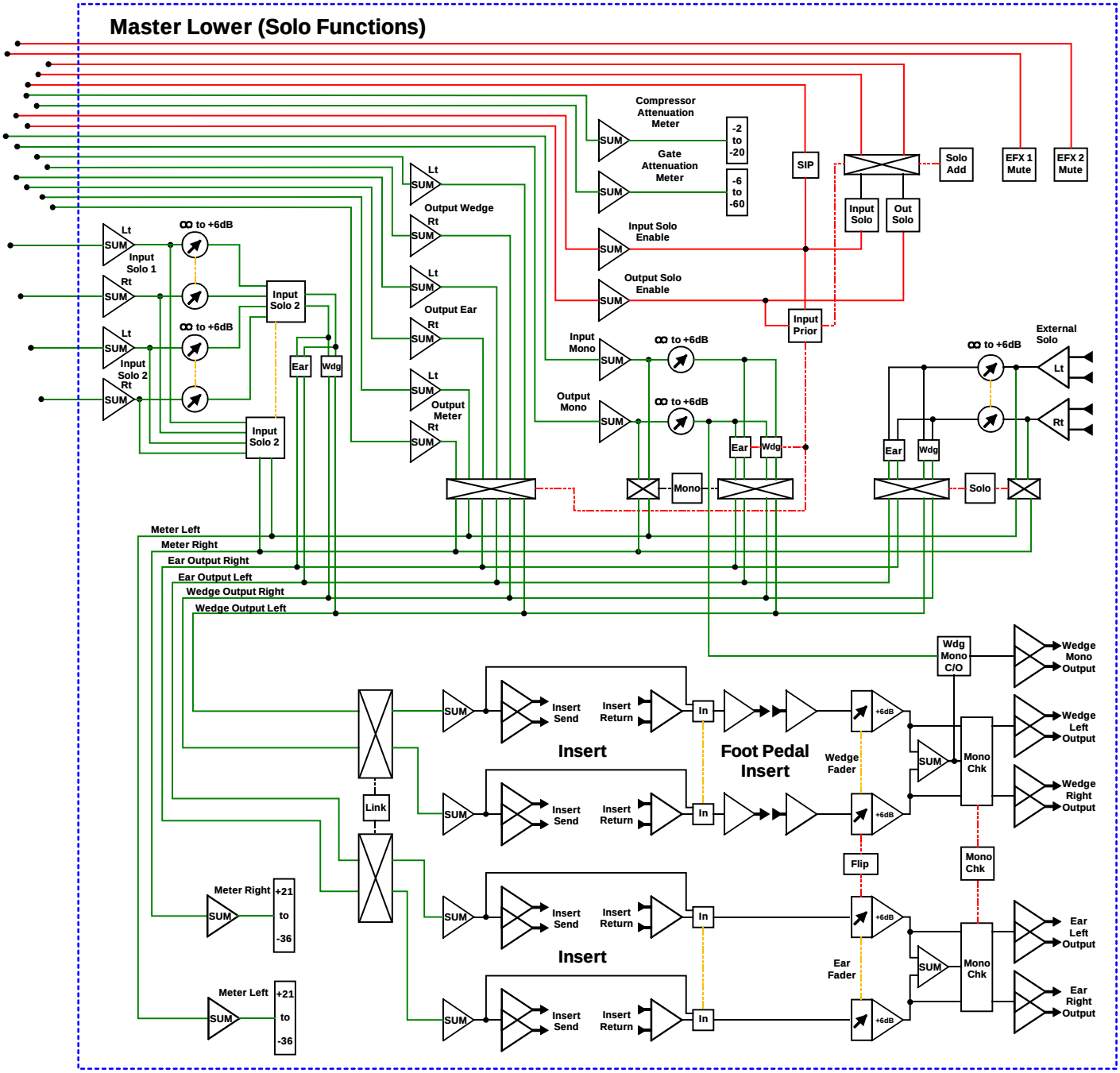
To remove the Mix / Aux / VCA Master Module, first make sure that the console power is turned off. It is recommended that you first remove at least 2 modules on either side of the moduel (see the related sections for removal instructions on adjacent modules). It is also recommended that the front vented bottom panel below the entire master section is also removed before proceeding. Next, using a NO.2 Phillips head screwdriver, remove the eight module screws (ten on earlier desks where the Master Lower module is included in the panel) at the top and bottom of the module. Now, from the bottom of the console, disconnect the two connectors on the cable going to the two VCA master PCB's. If you have not removed the bottom panel, this cable will have to be disconnected while the module is being removed. If you have an earlier desk with the Master Lower included in this module, disconnect the two cables below the Wedge master fader at this time as well. Grab the module firmly on both sides and lift it out of its motherboard connectors. Be careful not to rock the module or only lift one side as it may bend or damage the connector pins. Once the module has been unseated from the motherboard connector, gently lift it out of the frame. As you are lifting it from the frame, disconnect the four cables which run to the Mix and Aux output sections. Each Aux cable will have two connectors. To replace the module, follow these steps in reverse making sure that the console power is turned off first. When re-seating the module into the motherboard connectors, take great care to be sure that all connectors have made complete contact and no pins are bent. **NOTE: Make sure Stereo Control Assign jumpers on the Aux sections are set properly (see page 8-10).**

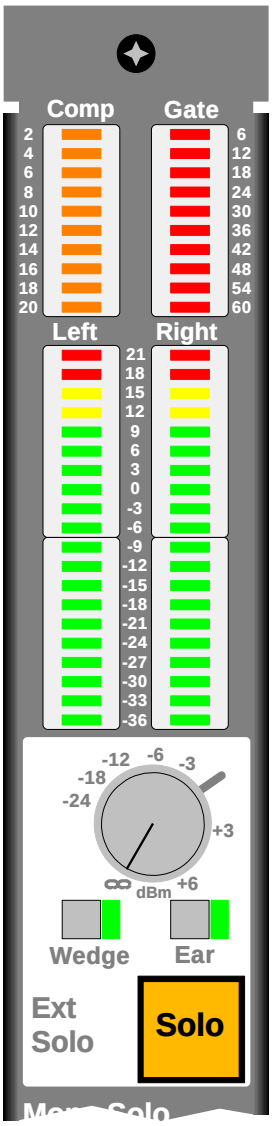
Master Lower Module





Master Lower Block Diagram





Master Lower Module:

The Master Lower Module contains all of the Solo and monitoring master controls. In early consoles, this module is part of a 5-U wide panel which includes the Mix / Aux / VCA Master module. The module contains the controls for the two stereo solo busses (Ear and Wedge).

Comp and Gate Meters

When an input module is soloed, any active Compressor and Gate attenuation is displayed on these two meters. The Compressor meter displays attenuation over a 20dB range from 0dB to 20dB. The Gate meter displays attenuation over a 60dB range from 0dB to 60dB. The Gate attenuation meter scale can also be changed by an internal jumper to display attenuation over a 20dB range from 0dB to 20dB.

Solo Master Meters

These two 20 segment LED bar meters show peak level of the current soloed signal. The level displayed is pre any solo level controls. The meters display level over a 60dB range from -36dB to +21dB.

External Solo:

This facility allows an external stereo device (such as a second console) to be added into the solo system of this console as well as the ability to activate this solo from the external device.

Level Control

Controls the level of the External Solo signal to the selected solo buss (Ear and/or Wedge).

Ear and Wedge Solo Assign Switches

When depressed assigns the External Solo signal post level control to the Ear and/or the Wedge stereo solo busses.

Solo

Activates the External Solo signal to the selected solo buss and displays the level (pre level control) on the Master Meters. This solo source is treated as an Input Solo by the master controls described later in this section. The Solo can be activated externally by either a switch closer between the tip and ring of a TRS ¼" jack, or by an externally powered switch state (through an opt-isolator). To use the externally powered switch option, two internal jumpers need to be changed to remove the console power from this jack.

Mono Solo:

Allows monitoring of the side-chain key signal for inputs and Mono Output for group outputs. The Mono signal is selected by the Mono switch in the Solo Switch options described later in this section.

Inner

Adjusts the level of the Output Mono Solo signal. Varies from infinity to +6db.

Outer

Adjusts the level of the Input Mono Solo signal. Varies from infinity to +6dB.

Ear and Wedge Solo Assign Switches

When depressed assigns the Input and Output Mono Solo signals, post level control, to the Ear and/or Wedge stereo solo busses.

Wedge Mono Output C/O

When this switch is depressed the Output Mono Solo signal is routed directly (post output mono level adjust) to the Wedge Mono Output on the rear panel. This allows for monitoring left, right and mono of a group output at the same time. With this selected, no input solo signals will appear on the wedge mono output.

Input Solo:

Master level and routing controls for the Input Solo 1 and Input Solo 2 signals created by all input sources. Input Solo 1 is the default choice with Input Solo 2 selected by the Input Solo 2 button in the Solo Switch options described later in this section.

Inner

Adjusts the level of the Input Solo 1 signal. Varies from infinity to +6db.

Outer

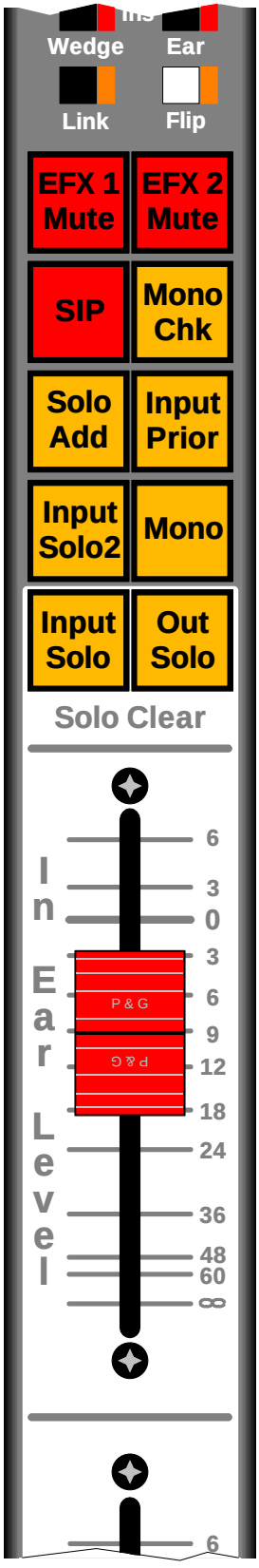
Adjusts the level of the Input Solo 2 signal. Varies from infinity to +6dB.

Ear and Wedge Solo Assign Switches

When depressed assigns Input Solo 1 and Input Solo 2 signals, post level control, to the Ear and/or the Wedge stereo solo busses.

Insert

When depressed either the Ear or Wedge Insert Return signal is utilized. The Insert Send jacks are always active. In addition to the stereo line level insert, the Wedge Output has a high impendance foot pedal insert point on the rear of the console. This insert point is wired tip-return, ring-send.



Link
When depressed combines the Ear and Wedge output busses together allowing for quick checking of audio assigned to one buss if you are monitoring the other.

Flip
When depressed the In-Ear fader becomes the Wedge fader and the Wedge fader becomes the In-Ear fader. All other controls remain un-changed.

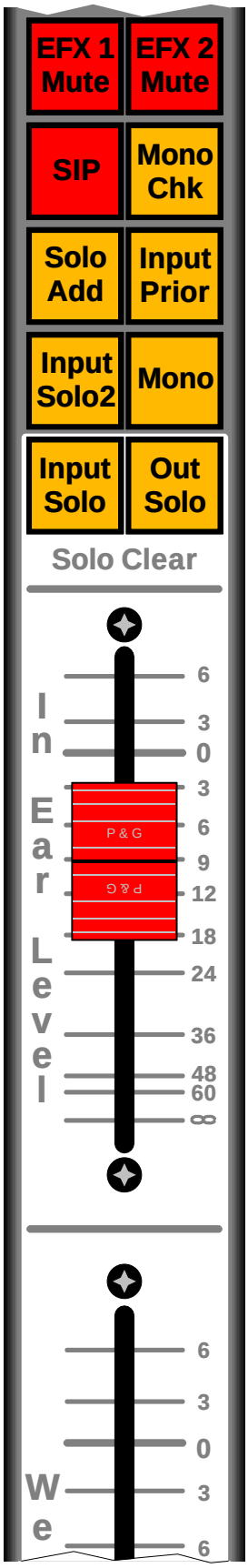
Effects Mute 1 and Effects Mute 2
When active (LED on) will mute and Stereo return assigned to that mute buss. Input channels are also able to be controlled by the Effects Mute busses by way of an internal jumper.

SIP (Solo In Place)
When active (LED on) will allow an input solo to mute all inputs that are not soloed or have safe selected. To enter SIP mode the SIP, Input Solo and Out Solo switches all mute be pressed at the same time. To exit SIP mode simply press the SIP button.

Mono Chk (Check)
When active (LED on) will mono the Ear and Wedge stereo outputs for phase and mix checking.

Solo Add
When active (LED on) disables the solo auto-cancel feature. When not active, pressing any Solo switch will cancel any active solo. Multiple channels can be soloed in this mode by pressing all of the desired Solo switches at the same time.

Input Prior (Priority)
When active (LED on) allows an Input Solo signal to override any active Output Solo signal while allowing the Output Solo to remain engaged. When all active Input Solos have been cleared, the Ear and Wedge buss outputs will revert to the remaining active Output Solo signals. In this mode, the solo auto cancel is separated between inputs and outputs i.e. inputs will only cancel other inputs and outputs will only cancel other outputs.



Input Solo 2

When active (LED on) selects the Input Solo 2 signal of the active Input Solo source to the assigned solo output buss. When not active the Input Solo 1 signal of the active Input Solo will be on the assigned buss.

Mono

When active (LED on) selects the Mono signal of the active Solo source to the assigned solo output buss.

Input Solo

When illuminated indicates that an Input Solo is active somewhere on the console. Input Solos can be a Mono or Stereo input channel, a Mono or Stereo input Soloed by a VCA, a Stereo Return input, the External Solo input or the ICOM Solo. Pressing this switch will clear all active input solos.

Output Solo

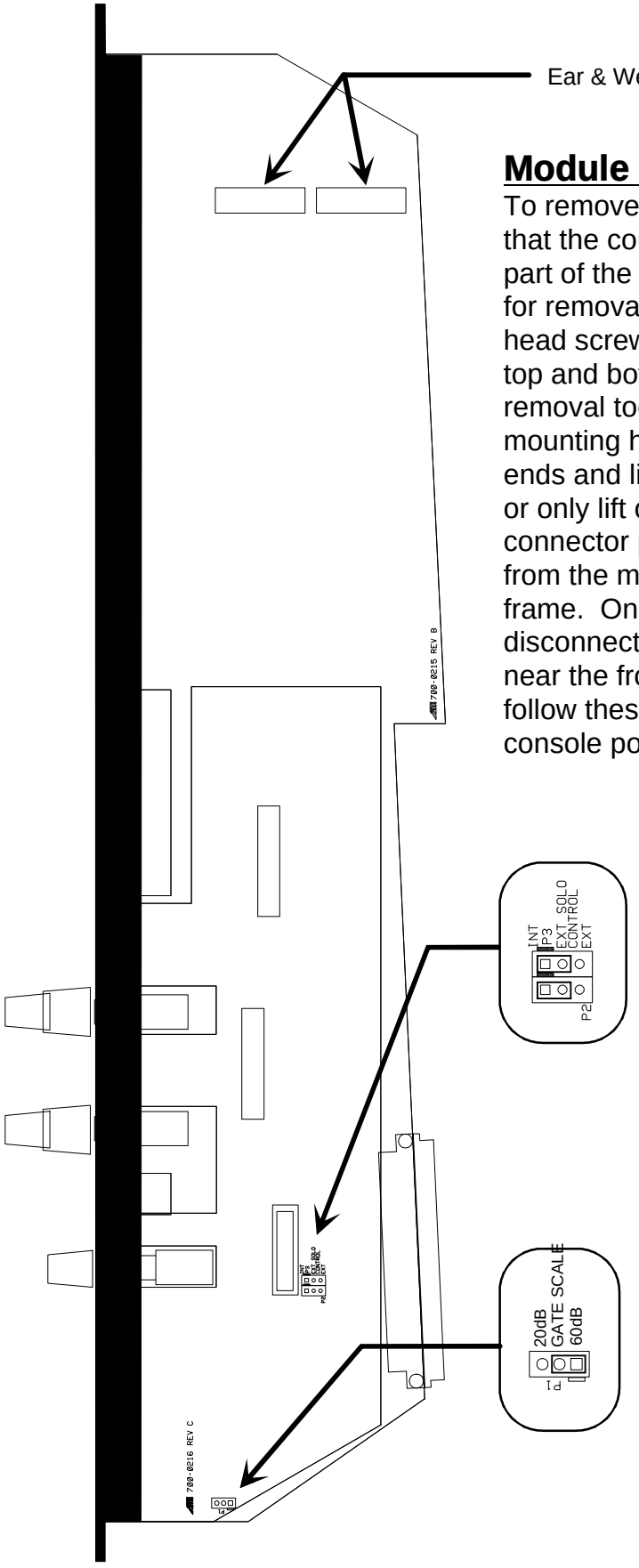
When illuminated indicates that an Output Solo is active somewhere on the console. Output Solos can be any Group Solo, Mix Solo or Aux Solo. Pressing this switch will clear all active input solos.

In Ear Level Fader

Penny an Giles 65mm Stereo Audio fader with infinity to +6dB of gain controlling the In Ear Solo buss output and headphone level. Controls the Wedge level if the Flip switch is depressed.

Wedge Level Fader

Penny an Giles 100mm Stereo Audio fader with infinity to +6dB of gain controlling the Wedge Solo buss output and headphone level. Controls the In Ear level if the Flip switch is depressed.



Module Removal:

To remove the Master Lower Module, first make sure that the console power is turned off. If the module is part of the Mix / Aux / VCA Master module see page 9-5 for removal instructions. Next, using a NO.2 Phillips head screwdriver, remove the two module screws at the top and bottom of the module. Next using two module removal tools, or an equivalent tool, hook through the mounting holes were the module screws were on both ends and lift evenly. Be careful not to rock the module or only lift one side as it may bend or damage the connector pins. Once the module has been unseated from the motherboard connector, gently lift it out of the frame. Once the module has cleared the frame, disconnect the Ear and Wedge output cables connected near the front of the module. To replace the module, follow these steps in reverse making sure that the console power is turned off first.

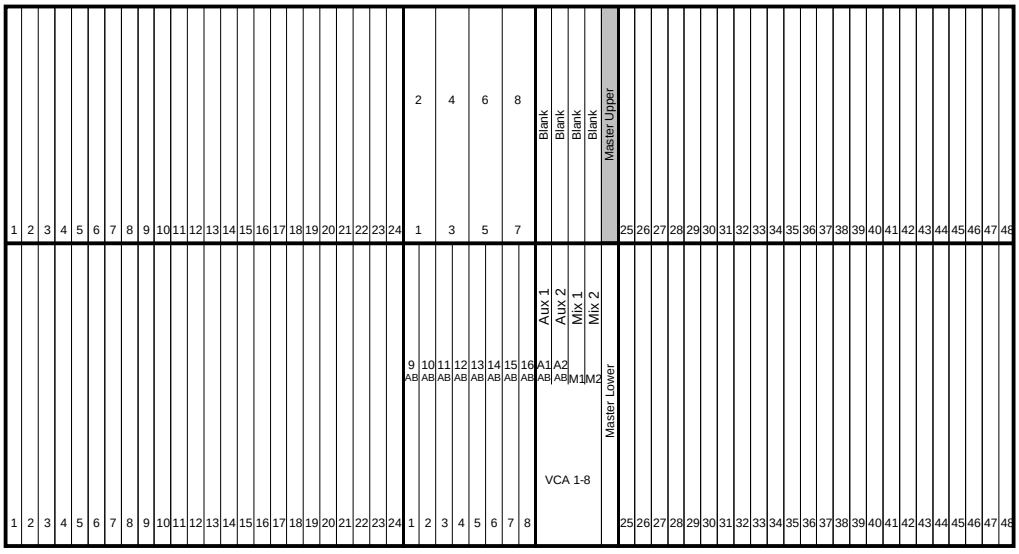
External Solo Control

The External Solo can be activated by a switch closure using internal console power or from an externally powered switch closure. This is changed by moving both the jumper located at P2 and P3 on the secondary PCB 700-0216. The jumpers are shown and come standard from the factory in the Int (internal Power) position.

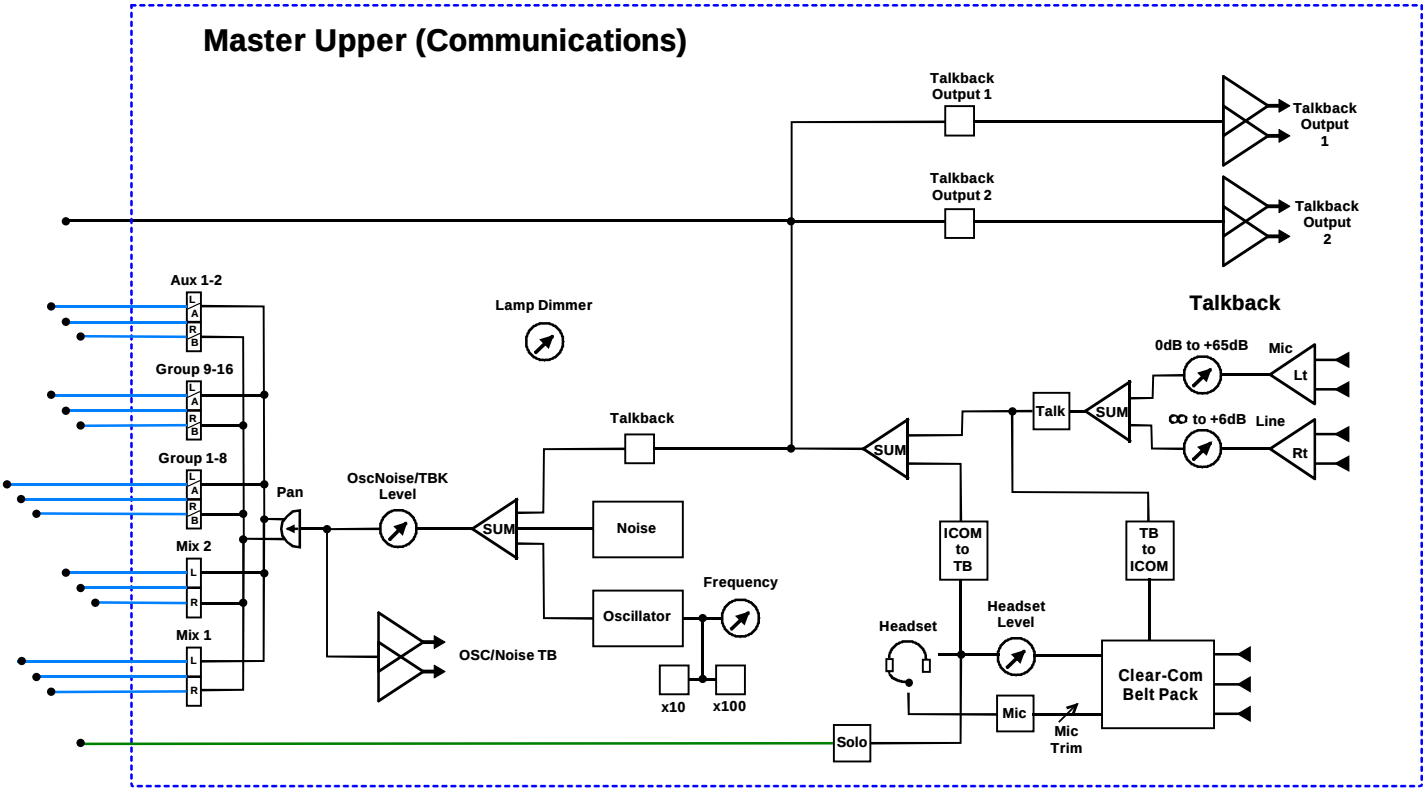
Gate Atten Meter Scale

The Gate attenuation meter scale can be changed from 60dB to 20dB by moving the jumper located at P1 on the main PCB 700-0215. The jumper is shown and come standard from the factory in the 60dB scale position.

Master Upper Module

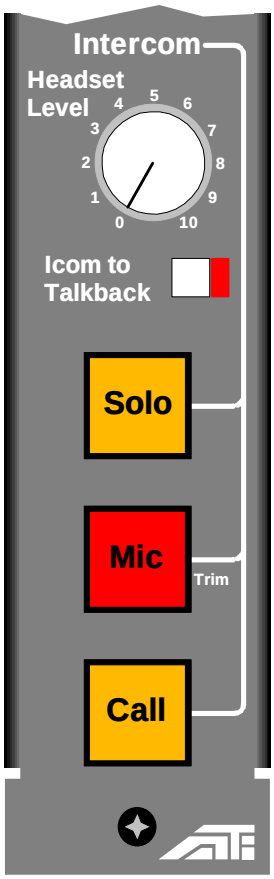


Master Upper Block Diagram



Master Upper Module:

The Master Upper Module contains all of the communication controls for the console. It has the Intercom station which emulates a Clear-Com belt pack, the Talkback controls and the Oscillator and Pink Noise generator.



Intercom:

The intercom station in the console is designed for direct use with Clear-Com systems. However, by reversing pins 2 and 3 on the Icom line plug into the rear panel, Chaos type systems will also be compatible.

Headset Level

This control sets the intercom headset volume level and is at full volume in the fully clockwise position. It also controls the intercom signal level sent to the Input Mono Solo buss when the solo is active.

Icom to Talkback

When depressed sends the intercom signal into the Talkback system pre Talkback ON switch to allow for routing to output groups.

Solo

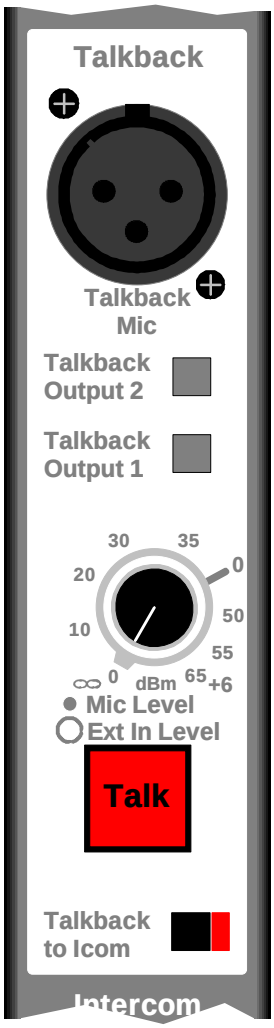
When active (LED on) sends the intercom signal post the Headset Level control to the Input Mono Solo buss. This solo is treated as an Input Solo by the master controls on the Master Lower module.

Mic

When active (LED on) activates the Mic on the intercom headset. Also allows any active Talkback signal to go to the intercom line if the Talkback to Icom switch is depressed (see above). The switch is a single press momentary and double press latching system with a single press release.

Call

Indicates a call on the Intercom line. Pressing this switch also initiates a call on the Intercom line.



Talkback:

There are three main ways into the Talkback system; the Talkback Mic, the Talkback External Line input and from the intercom system. There are four Talkback Mic inputs, two on the front armrest, one on the rear panel and one on the Master Upper module. **NOTE: there is +20volts phantom power on pins 2 and 3 of all Talkback Mic connectors at all times.**

Talkback Output 1 and 2 assign switches

When depressed send any active Talkback signal to the rear output connectors.

Talkback Level

Inner

Talkback Mic gain control. Max input level is +24dBu, gain range is 0 to +65dB.

Outer

Talkback External Line input level control. Max input level is +24dBu. Level is adjustable from infinity to +6dB.

Talk

When active (LED on) all current Talkback inputs are sent to the Talkback buss which appears directly at the Talkback accept switch on the Group Output modules. The Talkback signal is also sent to either of the two Talkback outputs if assigned. The Talkback signals are the Talkback Mic input, the Talkback Line input or the Icom signal if the Icom to Talkback switch is depressed (see page 11-3). The switch is a single press momentary and double press latching system with a single press release. The Talkback switch can also be activated externally by either a switch closer between tip and ring of a TRS ¼" jack or by an externally powered switch closure via an opto-isolator. To use the externally powered switch option, two internal jumpers need to be changed.

Talkback to ICOM

When depressed active Talkback signal is available to the intercom system. To be sent to the intercom system, the intercom Mic must be active as well.

Lamp Dimmer Control

Adjusts the level of the overhead lamps. Fully clockwise is lamps at full brightness. **NOTE: The overhead lamps are wired in a series/parallel combination. The two lamps on a common panel are wired in series and then the three panels are wired in parallel.**

Level and Frequency Control

Inner

Adjusts the level of the selected Oscillator, Pink Noise or Talkback signal to the rear output connector and to the buss assign switches described below. Level is adjustable from infinity to +18dB.

Outer

Adjusts the Oscillator frequency over a 1:10 range. When used with the range select switches below, the Oscillator frequency can vary from 18Hz to 20kHz.

Frequency Range Select Switches

Multiply the Oscillator frequency control range by 10 or 100 as indicated. The 100 multiplier switch will override the setting of the 10 multiplier switch.

Oscillator / Noise / Talkback Assign Switches

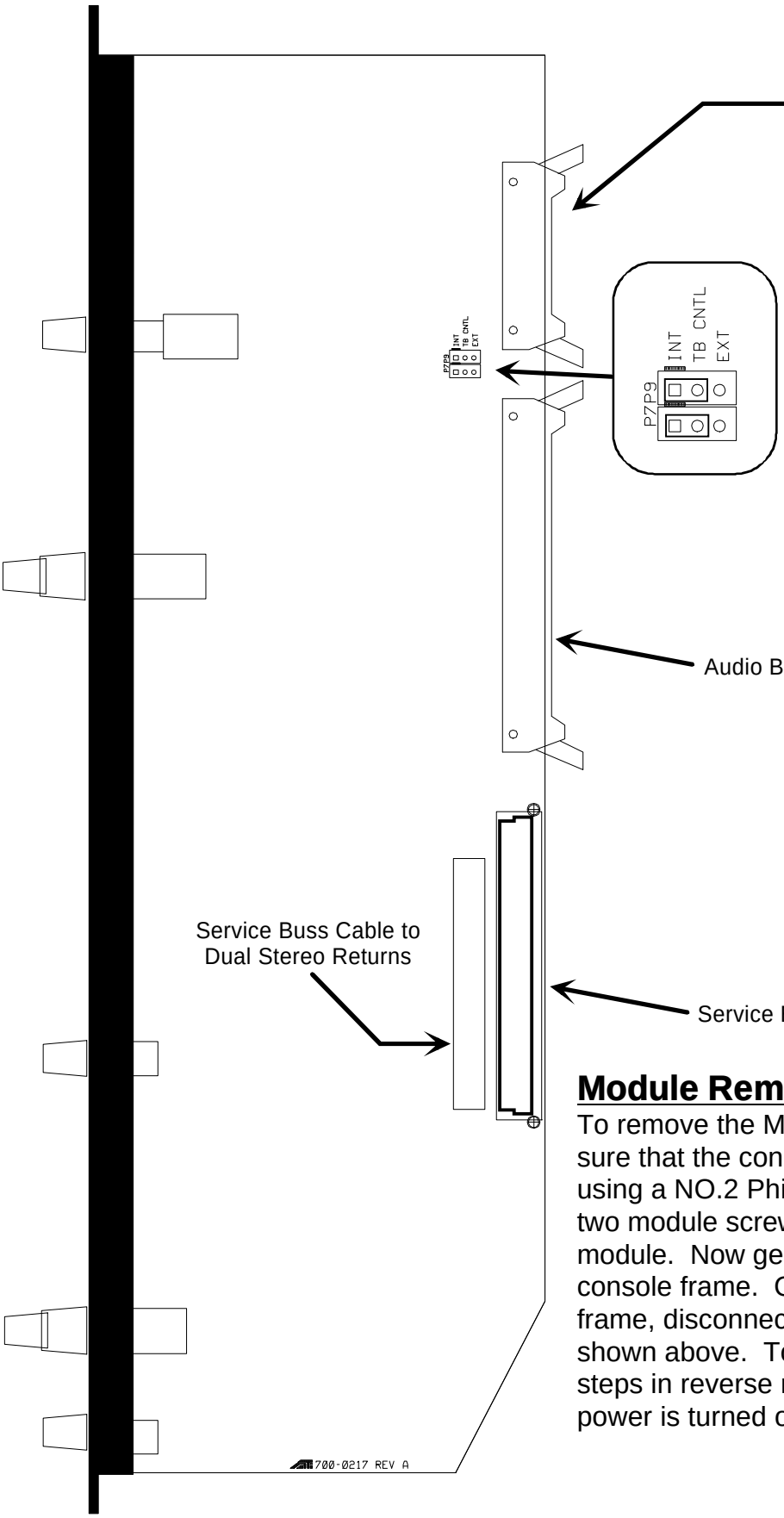
When depressed activates the indicated source post level to the rear output jack and to the buss routing switch, post pan, as described below. **NOTE: When the Oscillator and Noise switched are NOT depressed, the generators for the indicated switches are turned off.**

Pan

Varies the balance of the selected Oscillator, Pink Noise or Talkback signal to the left/A and right/B of the assigned busses.

Oscillator / Noise / Talkback buss assign switches

When depressed assigns the selected Oscillator, Pink Noise or Talkback signal, post level control to the indicated busses.



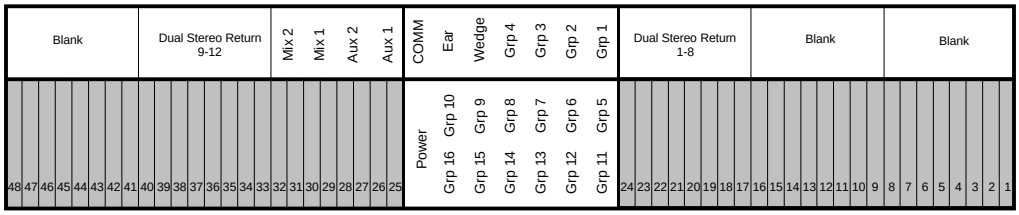
Talkback External Control

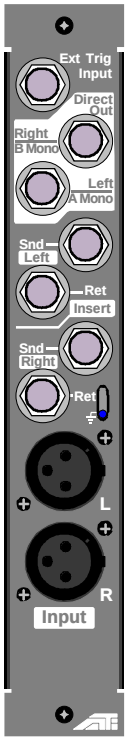
The Talkback system can be activated by a switch closure using internal console power or from an externally powered switch closure. This is changed by moving both the jumpers located at P7 and P9 on the PCB 700-0217. The jumpers are shown and come standard from the factory in the Int (internal Power) position.

Module Removal:

To remove the Master Upper Module, first make sure that the console power is turned off. Next, using a NO.2 Phillips head screwdriver, remove the two module screws at the top and bottom of the module. Now gentle lift the module from the console frame. Once the module has cleared the frame, disconnect the four cables connected where shown above. To replace the module, follow these steps in reverse making sure that the console power is turned off first.

Mono and Stereo Rear Input Module





Ext Trig Input
A balanced audio TRS input for Gate and/or Compressor side-chain signal.

Direct Output
Left / A and Right / B balanced audio TRS outputs for the channel Direct Output.

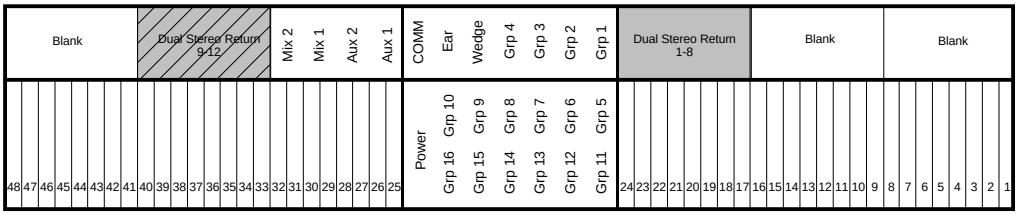
Insert
Balanced audio TRS Send jack(s) and balanced audio TRS Return jack(s) for audio Insert point.

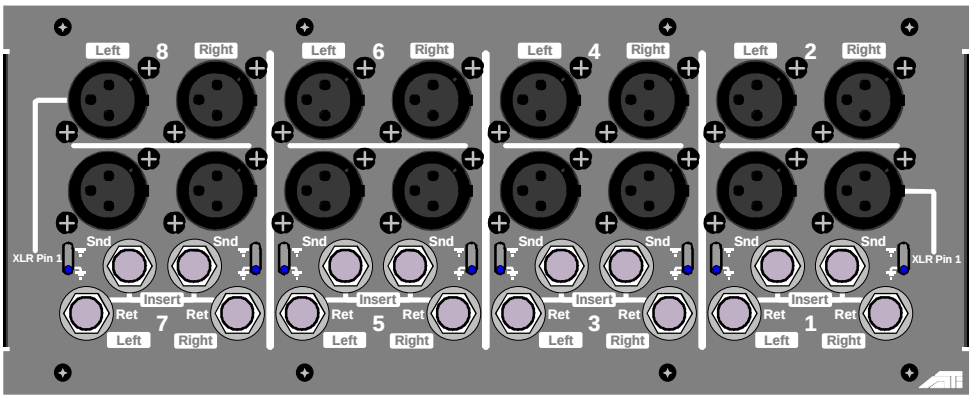
Ground Lift
When in the Lower position will connect the console ground to Pin 1 of the XLR. When in the upper position, console ground is separated from Pin 1. **NOTE: if 48V Phantom power is being supplied from the console, this switch MUST be in the lower, grounded position.**

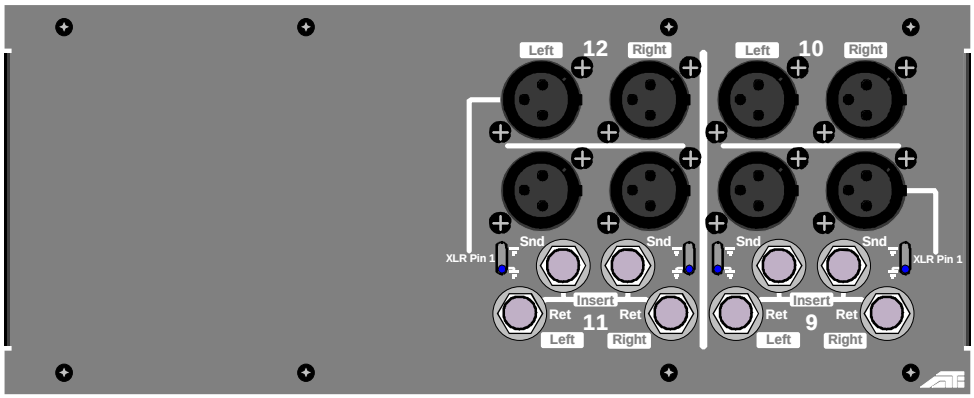
Input
Main channel input XLR, single XLR for mono, two XLR's (left and right) for stereo. Maximum input level is +24dB. Pin 2 is in phase (hot).

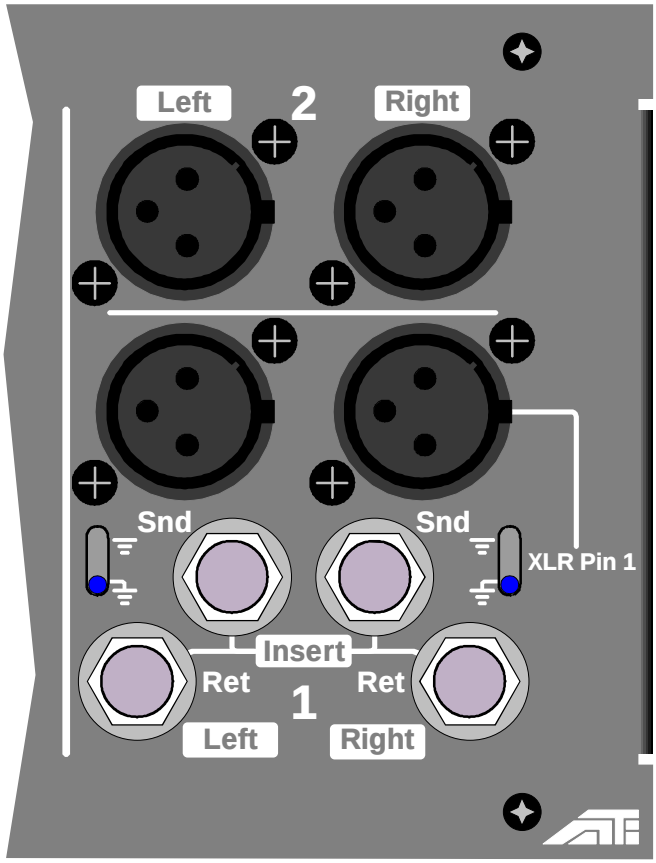
Module Removal
First remove the input upper module (see page 2-10 for mono and 3-7 for stereo). Next using a No. 2 Phillips head screwdriver remove the two mounting screws. Carefully pull out the module and expose the ground wire. Remove the ground wire screw. To replace a module follow these instructions in reverse.

Dual Stereo Return
Rear Input Panels









Even Input

Two female XLR's feed the left and right of the Even stereo return in the Dual Stereo Input module. Maximum input level is +24dB. Pin 2 is in phase (hot).

Ground Lift

The Even return Ground Lift switch is on the left portion of the input section. When in the Lower position will connect console ground to Pin 1 of the XLR. When in the upper position, console ground is separated from Pin 1. **NOTE: if 48V Phantom power is being supplied from the console, this switch MUST be in the lower, grounded position.**

Odd Input

Two female XLR's feed the left and right of the Odd stereo return in the Dual Stereo Input module. Maximum input level is +24dB. Pin 2 is in phase (hot).

Ground Lift

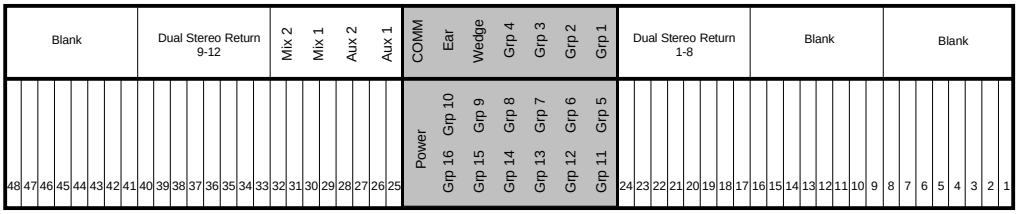
The Odd return Ground Lift switch is on the right portion of the input section. When in the Lower position will connect the input stage amp ground to Pin 1 of the XLR. When in the upper position, input stage ground is separated from Pin 1. **NOTE: if 48V Phantom power is being supplied from the console, this switch MUST be in the lower, grounded position.**

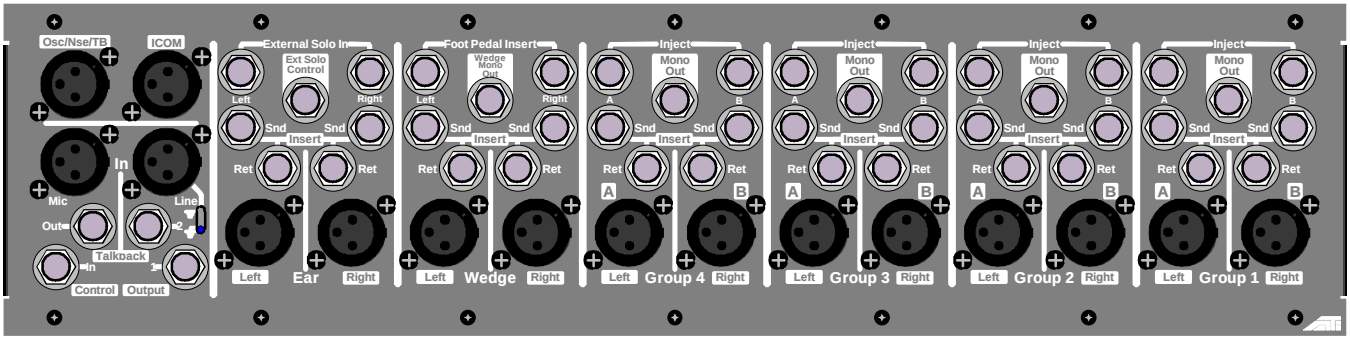
Insert

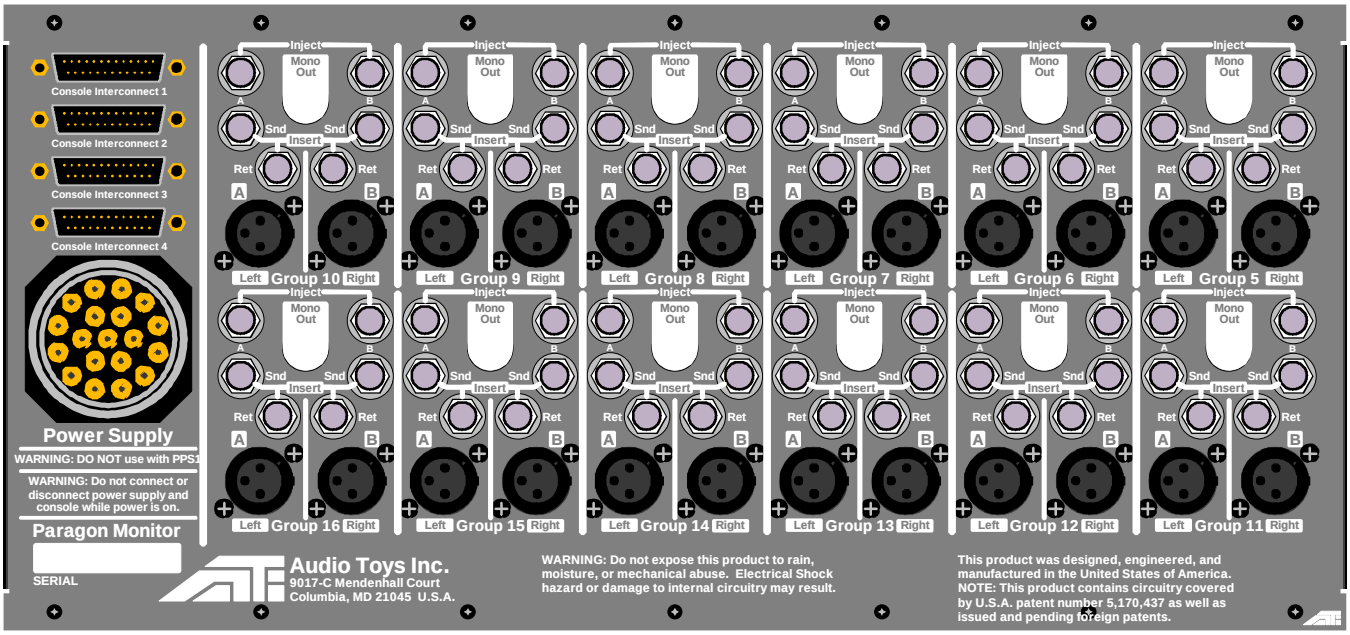
Balanced audio TRS Send jacks and balanced audio TRS Return jacks for audio Insert point of the odd return.

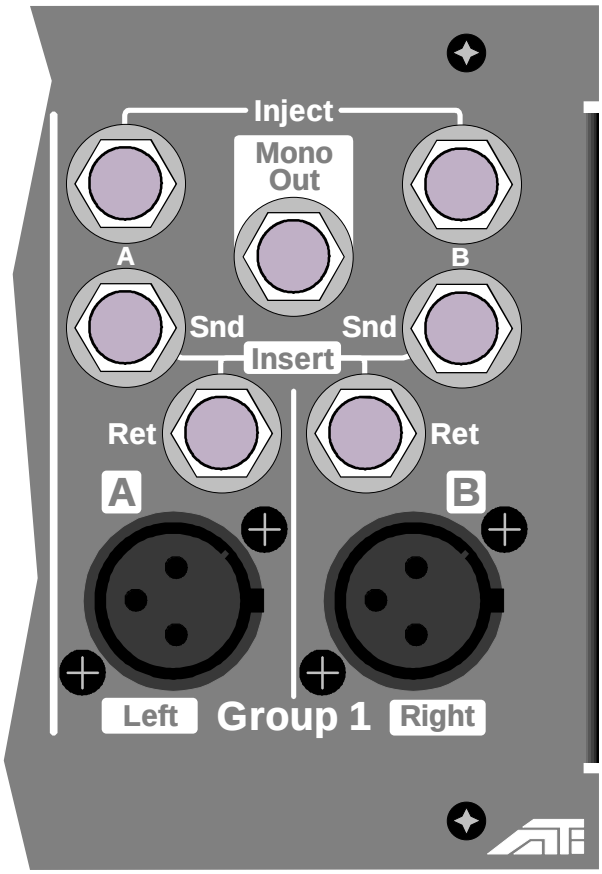
NOTE: An optional rear panel housing the Insert Points for the Upper Return is available.

Group, Wedge, Ear Communications Rear Output Panel









Inject

Two balanced ¼" TRS jacks for feeding audio directly into the associated group summing amp. The Inject input can also feed the Solo system, see the Group Output Module section. Maximum input level is +24dB.

Mono Out

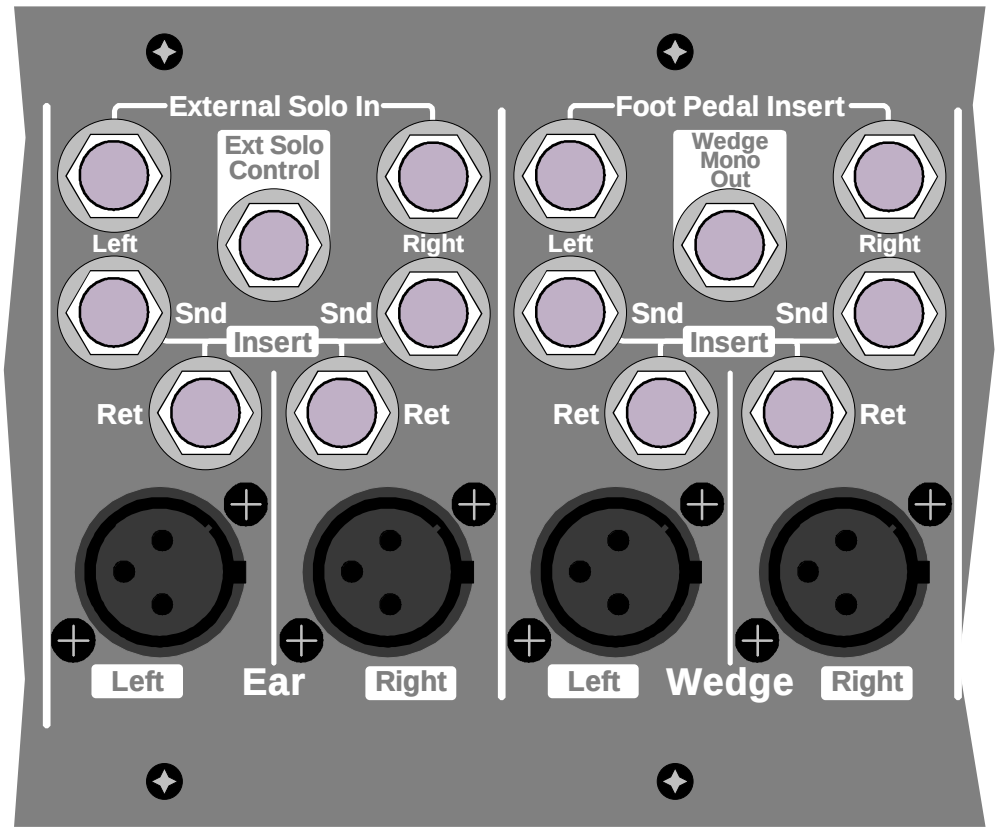
Balanced TRS audio output of group mono signal. Maximum output level +28dB.

Insert

Balanced audio TRS Send jacks and balanced audio TRS Return jacks for audio Insert point of the associated group.

Group Output

Two Male XLR's feed the left/A and right/B main group output signal. Maximum output level is +28dB. Pin 2 is in phase (hot).



External Solo In
Two balanced ¼" TRS jacks for External Solo audio input. Maximum input level is +24dB.

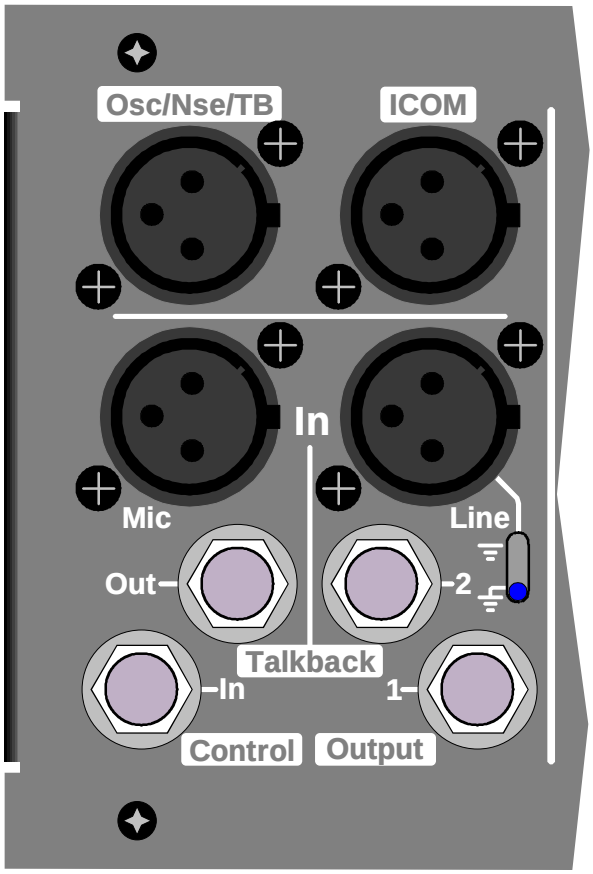
External Solo Control
TRS jack for External Solo Control input. Shorting Tip and Ring will activate solo. An externally powered switch closer can also be used, see section 10.

Wedge Foot Pedal Insert
Two TRS jacks for a high impedance foot pedal insert. Tip is return, Ring is send.

Wedge Mono Output
Balanced TRS audio output of Wedge mono signal. Can also be changed to be Output Mono Solo, See section 10. Maximum output level +28dB.

Insert
Balanced audio TRS Send jacks and balanced audio TRS Return jacks for audio Insert point of the associated group.

Group Output
Two Male XLR's feed the left/A and right/B max group output signal. Maximum output level is +28dB. Pin 2 is in phase (hot).



Osc/Nse/TB

Balanced TRS audio output of the Oscillator, Pink Noise and Talkback portion of the Master Upper Module. Maximum output level is +28dB.

ICOM

Female XLR for connecting external intercom systems to be connected to the console intercom station. This connector is setup for Clear-Com type intercoms. To connect a Chaos type intercom system, pins 2 and 3 must be flipped.

Talkback Mic In

Talkback Mic input XLR, paralleled with XLR on Master upper module and two XLR's on front armrest. Maximum input level is +24dB. Pin 2 is in phase (hot).

Talkback Line In

Female XLR for an external line input to the Talkback system. Maximum input is +24dB.

Ground Lift

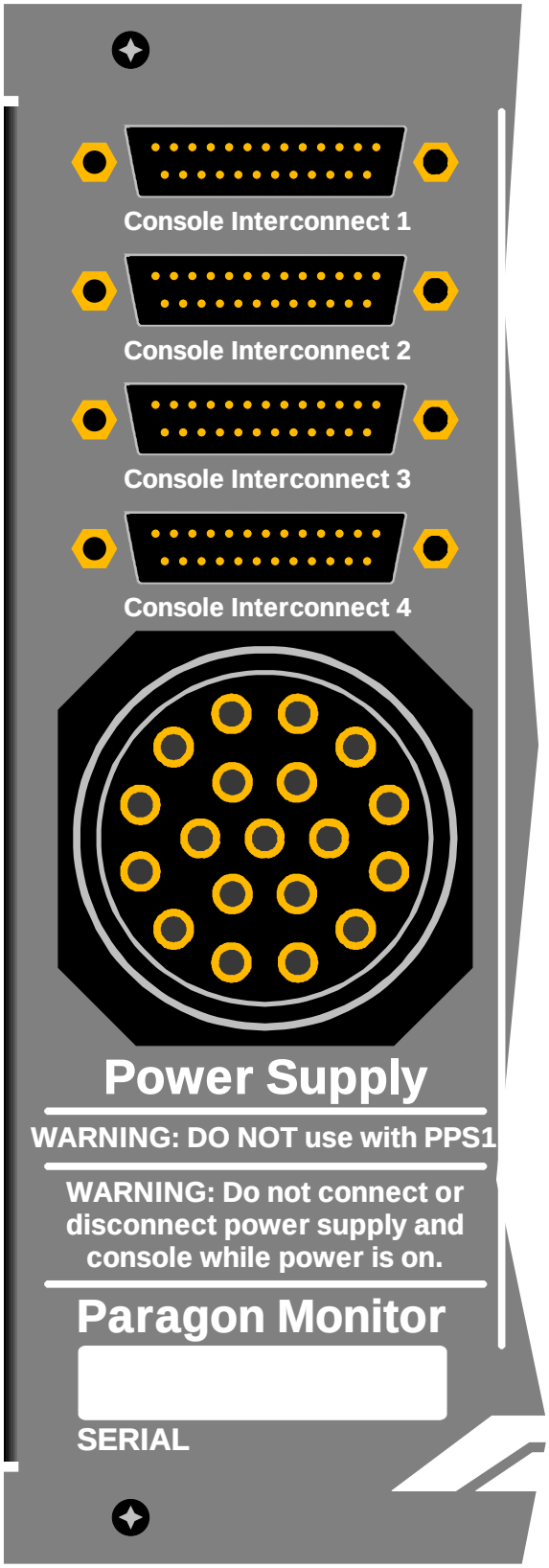
When in the Lower position will connect the Talkback Line input amp ground to Pin 1 of the XLR. When in the upper position, Talkback Line input amp ground is separated from Pin 1.

Talkback Control In and Out

The TRS jack for Talkback Control Output receives an opto-isolated logic output of the Talkback system state. For the TRS jack for Talkback Control input, shorting Tip and Ring will activate solo. An externally powered switch closer can also be used, see section 11.

Talkback Outputs 1 and 2

Two balanced TRS jacks feed the Talkback 1 and Talkback 2 output signals. Maximum output level is +28dB.



Console Interconnect 1-4

Optional 25-pin D-sub interconnect connectors for linking VCA Solo and control and other console functions between multiple consoles.

Power Supply Input

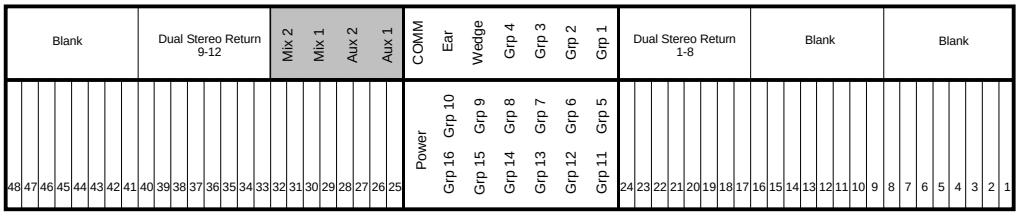
19-Pin Veam connector for DC-power input. Pin numbers are as follows:

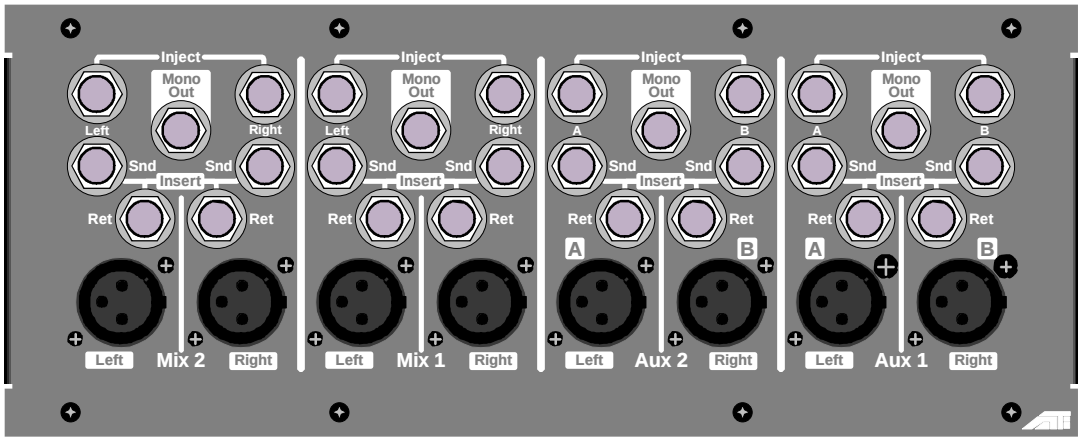
1 AC Chassis Ground
2 Neg 20 Volt Return
3 Pos 20 Volt Return
4 Positive 20 Volts
5 Positive 20 Volts
6 Negative 20 Volts
7 Negative 20 Volts
8 Positive 48 Volts
9 Negative 48 Volts
10 Pos 24 Volt Return
11 Pos 48 Volt Return
12 Pos 5 Volt Return
13 Neg 20 Volt Return
14 Pos 20 Volt Return
15 Positive 24 Volts
16 Positive 24 Volts
17 Pos 24 Volt Return
18 Neg 48 Volt Return
19 Positive 5 Volts

Console Serial Number

Please know this number when calling the factory for assistance.

Mix and Aux
Rear Output Panels

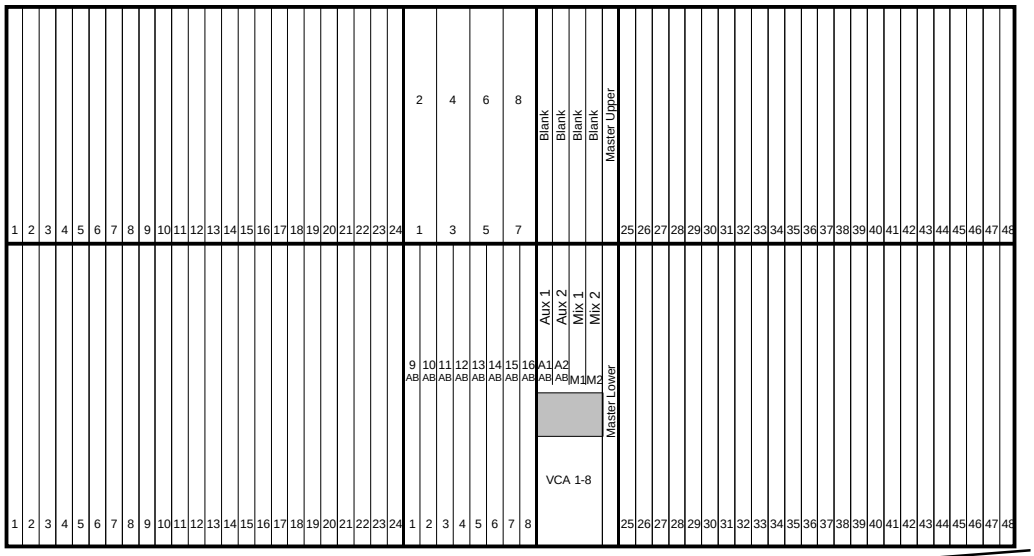


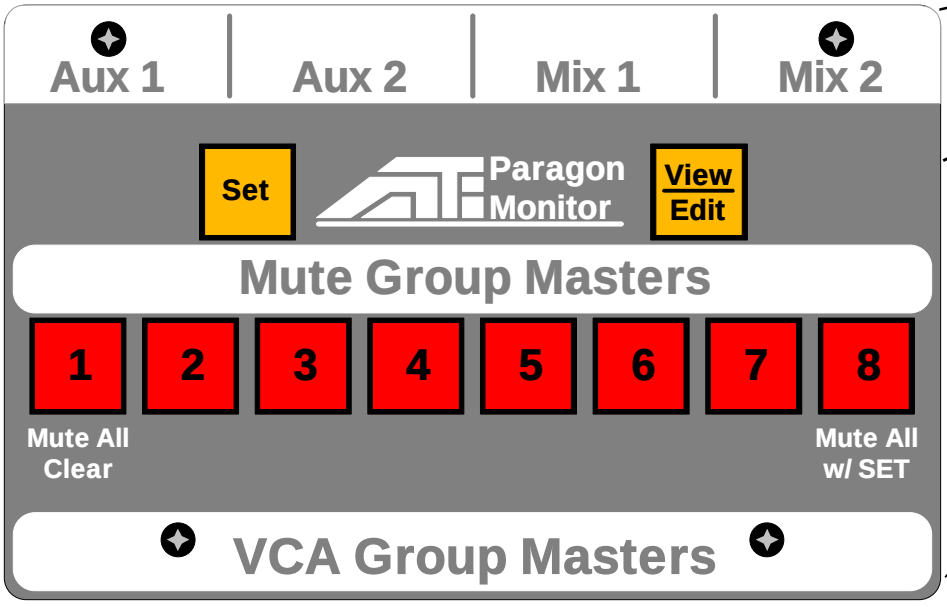


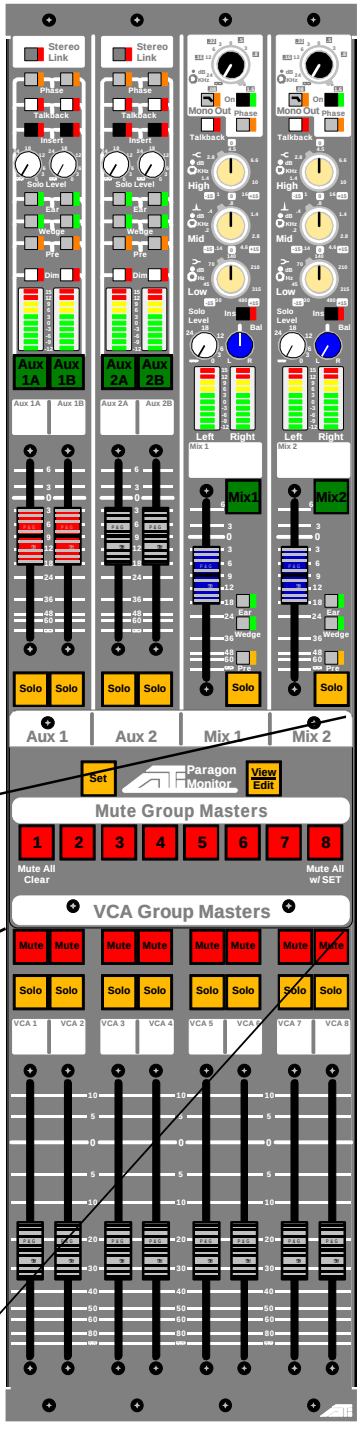
Mix 1 and 2 and Aux 1 and 2 Output Panel

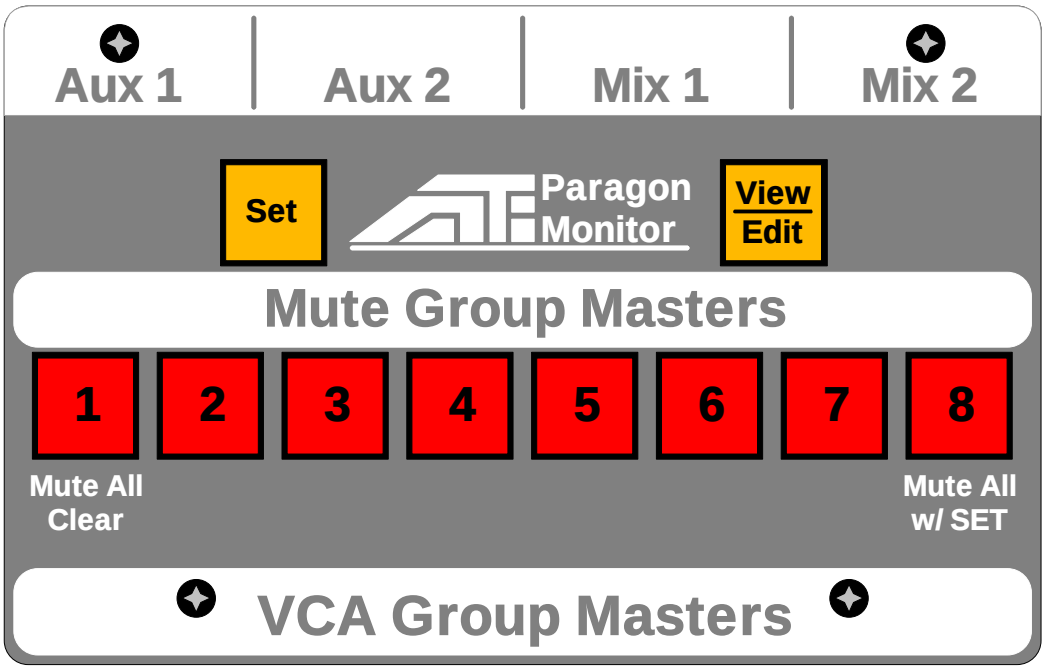
These output fields have the same connector layout as a group output (see page 12-5).

Mute Group System









Mute Group System:

This optional Mute Group system provides eight programmable mute groups and a mute all (inputs) feature. The mute groups functions similarly to the current effects mute. The group is muted when the Group Master switch is active (LED on). Any channel can temporarily override any mute group control by simply pressing the local channel On switch. The Safe switch will also isolate a channel from mute control.

Programming a Mute Group

- First press the View/Edit button. The View/Edit button will FLASH indicating to you that you are in programming mode. In this mode the local channel On switch does not indicate channel mute status but instead reflects it's association with any or all active mute groups. If the LED is off, the channel is part of the active mute group(s). If the channel LED is lit then the channel is not part of the active mute group(s). **NOTE: Any individual channel can locally return to channel audio control by simply pressing the Safe switch**.
- Select the mute group which you would like to review or change. Do this by simply activating it. The channel On switches will now show you which channels (if any) are currently in the active mute group(s). If no mute group is selected, all On LED's will be lit. Multiple mute groups can be viewed at the same time. What will be displayed by the channel On switches is the result of the combination of those groups.
- Now add or subtract channels from the active mute group(s) by pressing the channel On switch. The switch LED will display the changed status as described above.

Programming a Mute Group Continued

- Once you have finished selecting or changed the channels for the active mute group(s), press the Set button. This tells the console to accept the changes you have made. If you would like to keep the previous group set-up simply de-activate the mute group or exit from View/Edit without pressing the Set button.
- Repeat this processes for any other mute groups which you want to edit. When you have finished editing, de-active the View/Edit mode by pressing the View/Edit switch and the console will return to the exact state that it was before entering the View/Edit mode with the exception that any channels added to a Mute Group that is active when View/Edit is de-activated will mute. **NOTE: The console will NOT automatically return the mute groups to the state they were in before entering View/Edit. If you had a mute group active before entering View/Edit and you de-activated it in View/Edit to modify a different group. You Must re-activate the desired mute group BEFORE de-activating View/Edit.**

Note that when multiple mute groups are in View/Edit and Set is pressed, the resulting channel On switch picture will be programmed into BOTH mute groups.

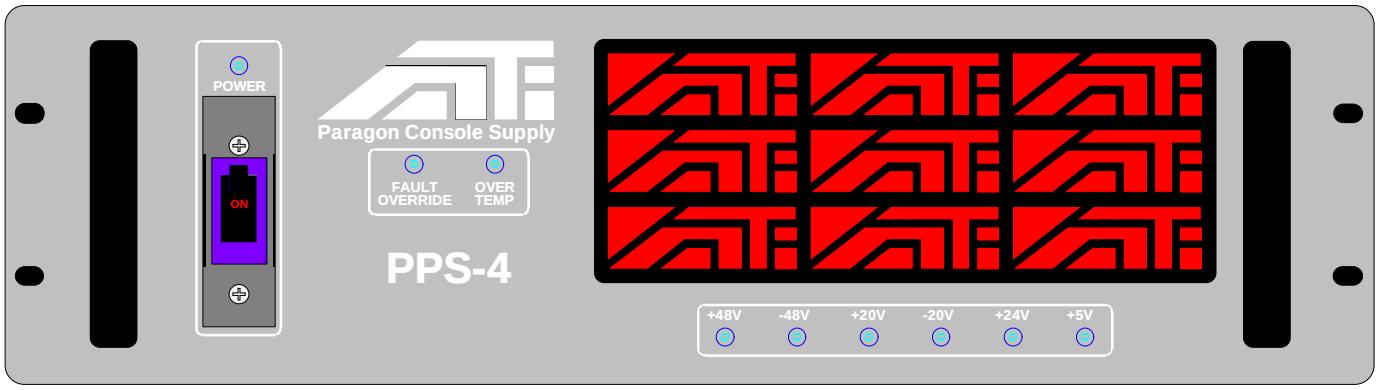
Mute All

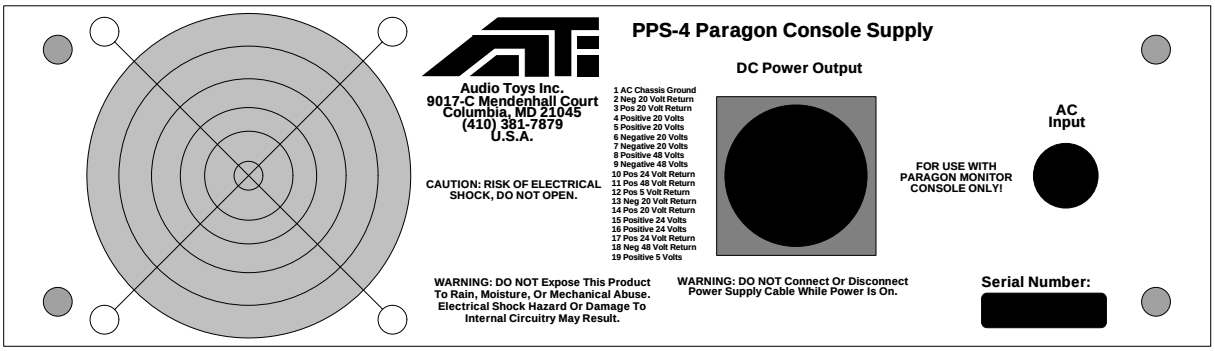
- To activate the Mute All, press the Set switch followed by the Mute 8 switch. This will mute all input channels whether they are programmed to any mute group or not. All eight mute switches will also illuminate to indicate that Mute All is active. Activating Mute All will NOT activate mute group 8 provided that the Set switch is pressed first.
- As with any other mute group, simply pressing the local channel On switch will override the Mute All. Activating the channel Safe switch will also isolate it from Mute All control.
- To de-activate Mute All, press the Mute 1 switch. All mute groups that were active when Mute All was engaged will still be active when Mute All is disengaged. Pressing any mute switch while Mute All is active will NOT change the state of the associated mute group. Also deactivating Mute All by pressing Mute 1 will NOT change the state of mute group 1.

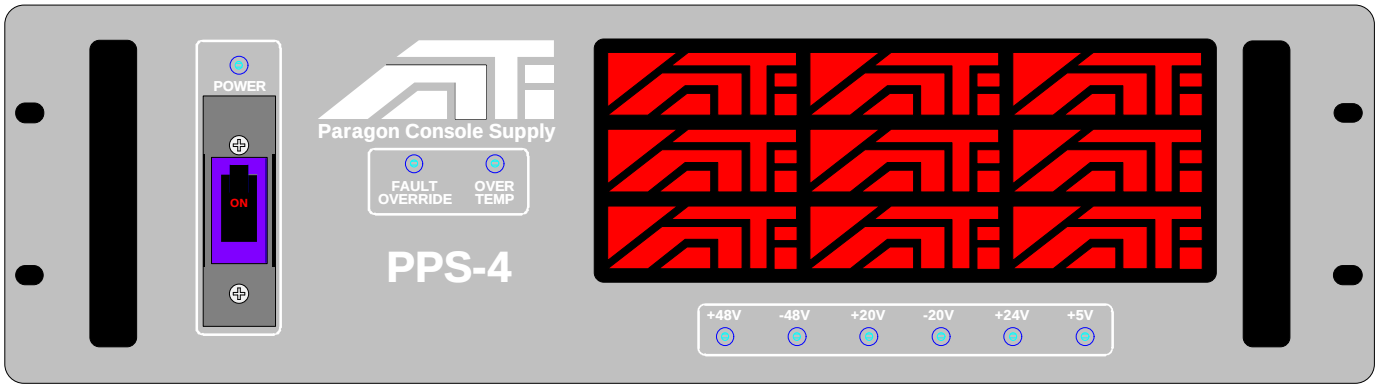
Mute Memory

The programmed mute groups are retained when console power is turned off. This is done with the help of a rechargeable battery pack located on the bottom panel below the VCA master faders. A 48 channel console will retain mute program memory for a minimum of 30 days without power with the battery pack in good working order.

PPS4 Power Supply







PPS4 Power Supply:

Only use a ATI PPS4 Power Supply with the Paragon II Monitor console. **NOTE: Supply is shipped from the factory wired for 115VAC input voltage!** Cooling occurs from air being sucked in the front of the power supply through the screen and hot air is pushed out the rear exhaust vents. Portions of the chassis are used from internal component heat sinking therefore it is normal of the chassis to run somewhat warm. The internal cooling fan is designed to turn on when the internal heatsink surface temperature reaches 70°C. **NOTE: Please clean the air input filter screen regularly.**

Power Supply On Switch

Pressing the switch to the up position turns the supply on. The On switch is also the circuit breaker which is designed to trip in an over voltage situation or an over temperature situation. The LED above the On switch indicates when the supply is on.

Fault Override

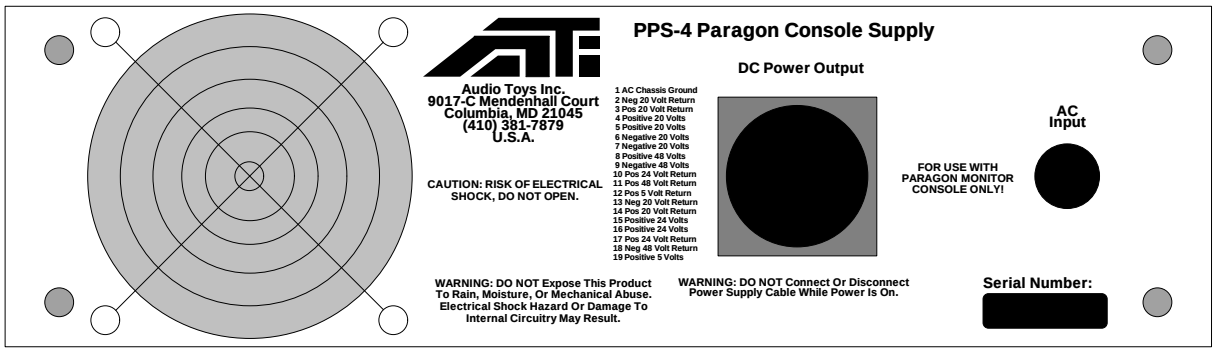
This LED is illuminated when the internal jumper has been changed to bypass all internal over temperature and over voltage protection circuits. This jumper should be used for service purposes only.

Over Temp

The LED is designed to begin flashing when the heatsink surface temperature reaches 100°C. The LED will shine steady when the heatsink surface temperature reaches 105°C and the unit will shutdown when the heatsink temperature reaches 110°C. The supply is designed to operate with ambient temperatures up to 50°C.

Output Indicators

Each power rail has an LED which illuminates when the output rail voltage is within +/- 5% of the designed level.



Rear Exhaust Vent

Never block the rear exhaust vent or the power supply may overheat. Also beware not to allow any foreign objects to fall into the supply.

Rear Mounting Support Points

ATI strongly suggest that you rear support your power supplies in your rack. To aid in this, there are four rear mounting points provided in the power supply chassis. They are 10/32 threaded holes.

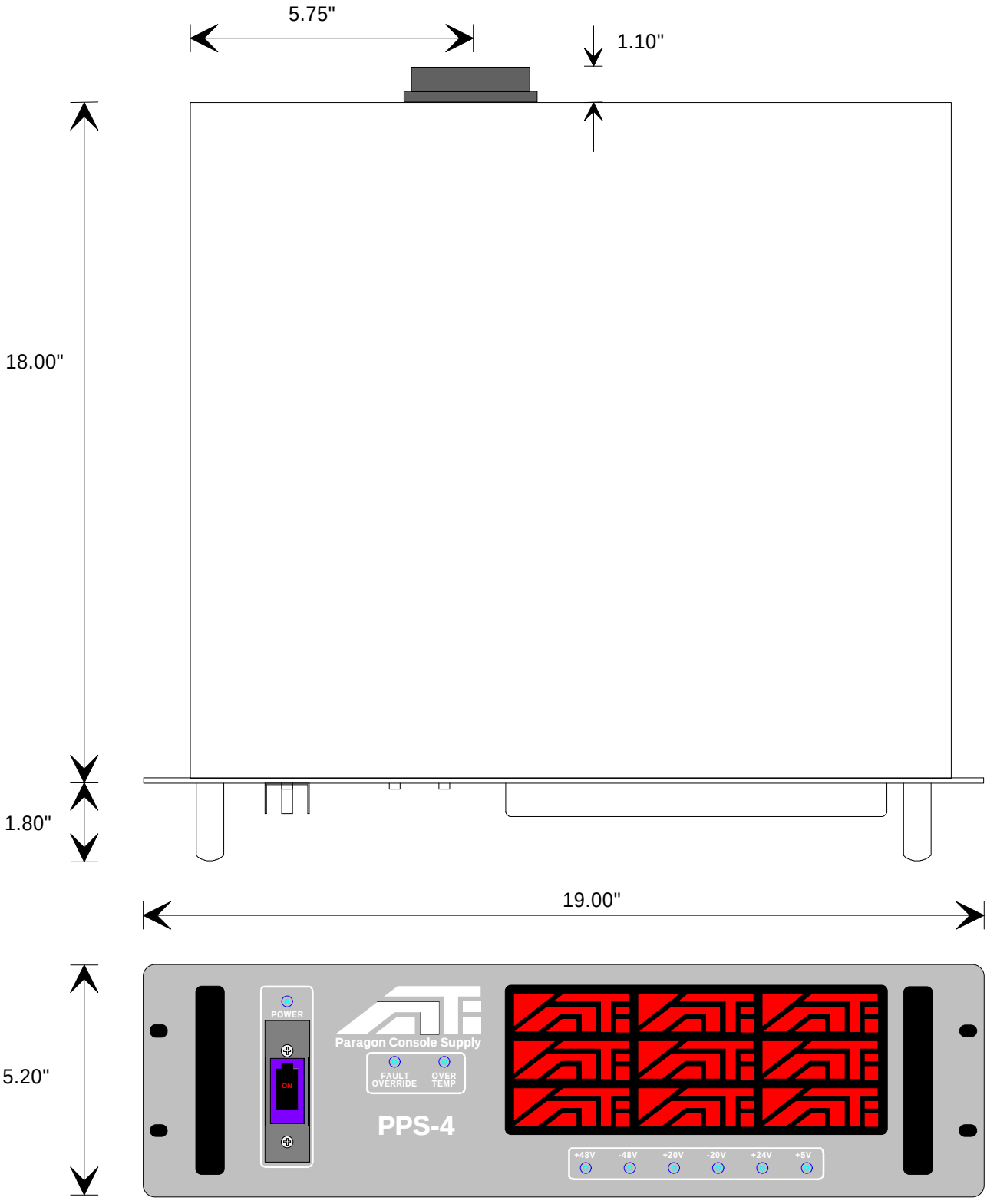
DC Power Output

Main DC power output to console. See the table at right for connector pin-out. Because of the tracking nature of related positive and negative rails, portions of the supply will not power up unless either the supply is plugged into the console or certain voltage return pins are shorted together. These lines are as follows: Neg 20V Return (pin 2 or 13) must be shorted to Pos 20V Return (pin 3 or 14) and Pos 48V Return (pin 11) must be shorted to Neg 48V Return (pin 18). **NOTE: Please use only the power cable supplied with the console. (ATI Part # 952-0001) A standard lighting cable will NOT work as a substitute.**

AC Input

Power supply power input. **NOTE: Supply is shipped from the factory wired for 115VAC input voltage!** The supply is designed to handle the following inputs: 115/230 VAC +/- 10%.

1 AC Chassis Ground
2 Neg 20 Volt Return
3 Pos 20 Volt Return
4 Positive 20 Volts
5 Positive 20 Volts
6 Negative 20 Volts
7 Negative 20 Volts
8 Positive 48 Volts
9 Negative 48 Volts
10 Pos 24 Volt Return
11 Pos 48 Volt Return
12 Pos 5 Volt Return
13 Neg 20 Volt Return
14 Pos 20 Volt Return
15 Positive 24 Volts
16 Positive 24 Volts
17 Pos 24 Volt Return
18 Neg 48 Volt Return
19 Positive 5 Volts

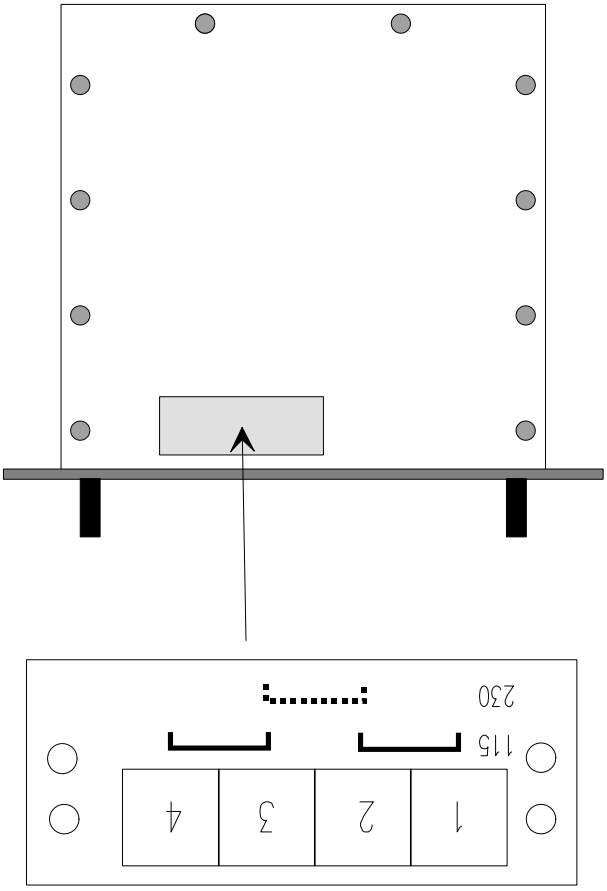


Weight
80 LBS

PPS4 Power Supply Specifications

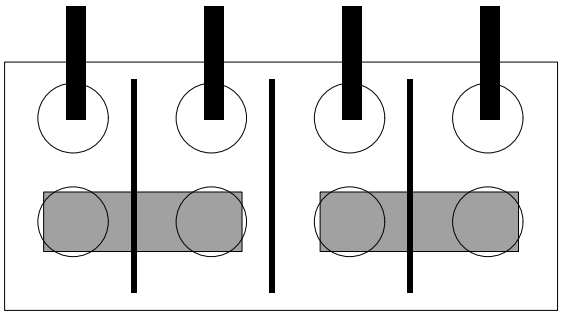
Output Voltage	Max Current	Function
+48Volts	2Amps	Mic Preamps & Phantom Power
-48Volts	2Amps	Mic Preamps
+20Volts	20Amps	Main Audio
-20Volts	20Amps	Main Audio
+24Volts	10Amps	All LED's and Lamps
+5Volts	3Amps	All Logic Control

PPS4 Input Voltage Changing Directions



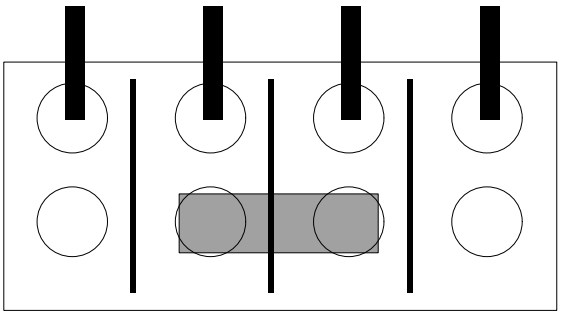
1. UN-PLUG SUPPLY FROM WALL!!
2. REMOVE 10 LARGE PHILLIPS HEAD SCREWS FROM THE TOP OF THE SUPPLY.
3. SLOWLY TAKE OFF THE LID, THERE WILL STILL BE A FAN CONNECTED TO THE LID, YOU MUST UN-PLUG THE FAN TO COMPLETELY REMOVE THE LID. THE PLUG IS ON THE WIRE.
4. FIND THE PLATE SHOWN AT THE LEFT WHICH INDICATES THE WIRE TAP JUMPER LOCATIONS. REMOVE THE 4 SCREWS HOLDING THE PLATE DOWN AND REMOVE THE PLATE. THE NUMBERS ON THE PLATE REFER TO TERMINAL POSITIONS AND NOT THE WIRE NUMBERS FROM THE TRANSFORMER.
5. IF GOING FROM 115 TO 230, REMOVE THE SHORTING CLIPS FROM BETWEEN 1&2 AND 3&4.
6. REPLACE ONE OF THE SHORTING CLIPS BETWEEN TERMINALS 2&3. KEEP THE UN-USED CLIP SAFELY OUTSIDE THE SUPPLY IN CASE THE SUPPLY NEEDS TO BE CONVERTED BACK.
7. IF YOU ARE GOING FROM 230 TO 115, PERFORM STEPS 5 AND 6 IN REVERSE ORDER.
8. REPLACE THE COVERING PLATE.
9. REPLACE THE LID, FIRST RE-CONNECTING THE FAN CABLE AND THEN SCREWING THE LID DOWN.
10. LABEL THE REAR OF THE SUPPLY WHAT VOLTAGE IT HAS BEEN SET FOR SO EVERYONE WILL KNOW.

TO TRANSFORMER



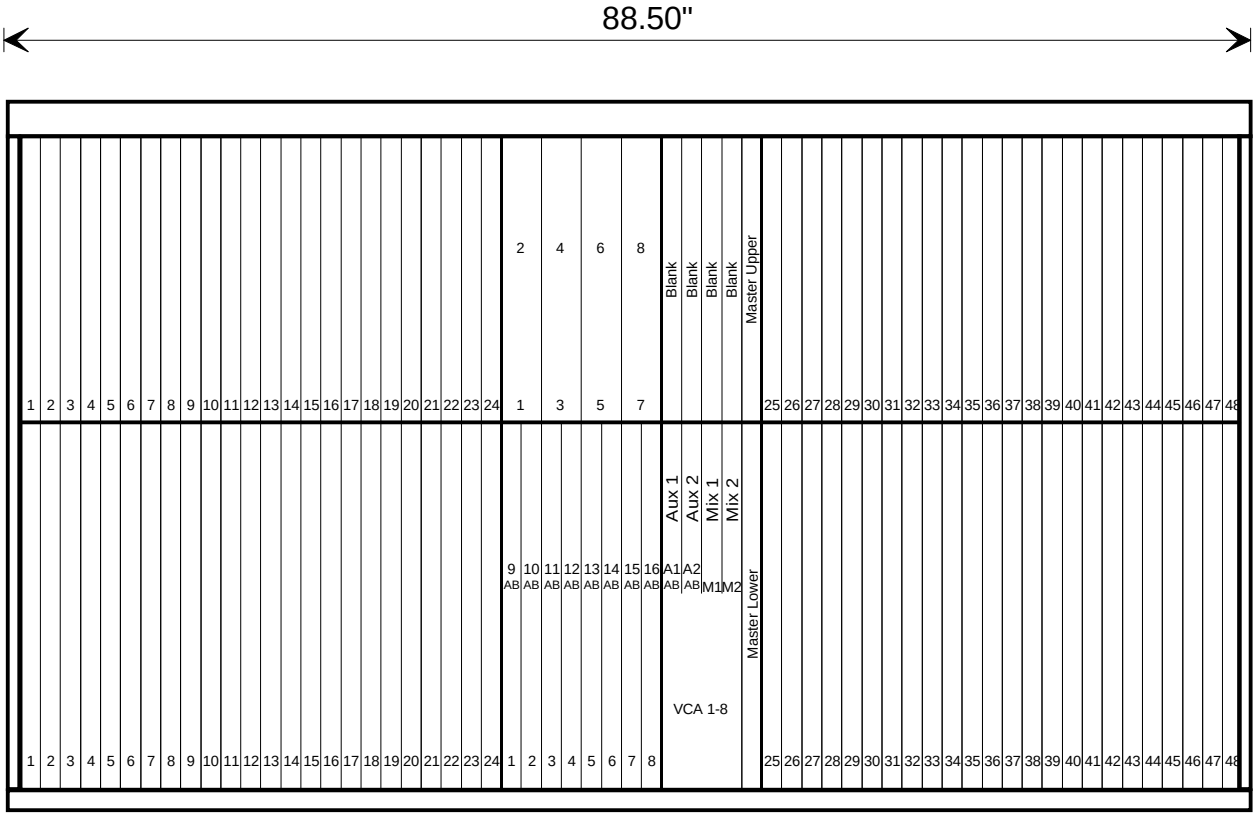
115 TERMINAL SETTING

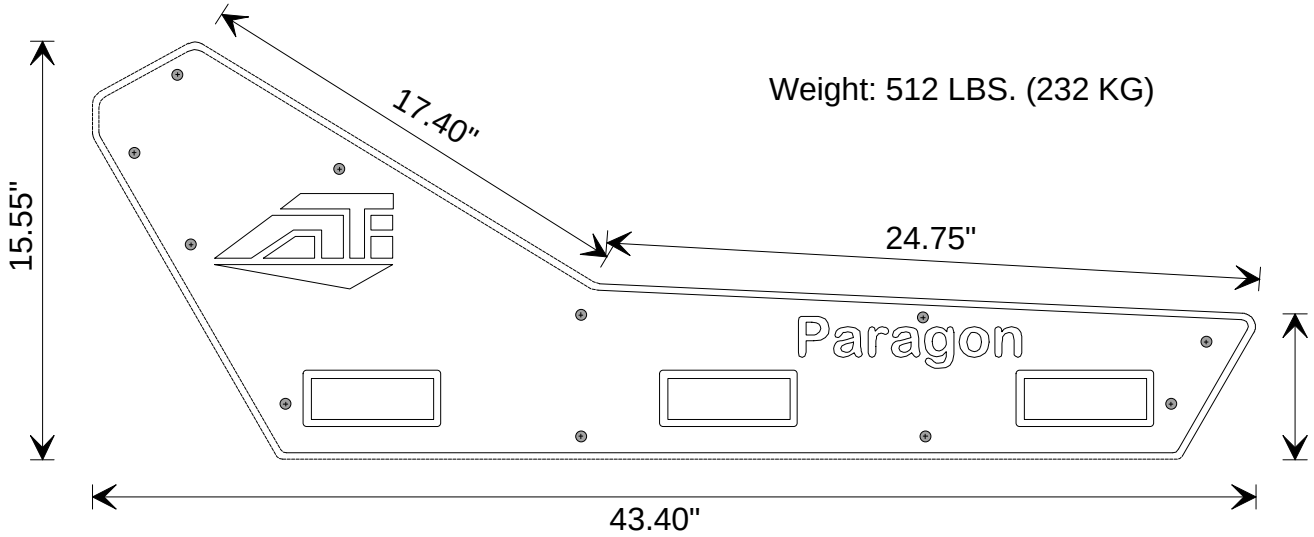
TO TRANSFORMER



230 TERMINAL SETTING

Paragon II Monitor 48CH
Console Dimensions





Weight: 512 LBS. (232 KG)

Paragon II Monitor 48CH Console Specifications

- Maximum Input level – ANY input: +24dBu
- Maximum Output level – ANY output: +28dBu
- Frequency Response: +0dB / -0.5dB 10Hz to 30KHz
- Gain Structure: -2dB internal level, +24dB clip point
- Crosstalk: -70dB at 10KHz
- Noise (20KHz bandwidth): -132dBm E.I.N. (shorted input)
  -129dBm E.I.N. (150ohm input)
- Residual Output Noise: -90dBm
- Group Output w/ fader at unity & all channels assigned: -80dBm
- Distortion: 0.008% THD+N @ +4dBu

General Specifications:

The Paragon II Monitor standard console is equipped with 48 channel input slots and 8 stereo returns (expandable to 12). All inputs have the ATI proprietary high voltage microphone preamp with gain adjustable from 0 to 65dB. Stereo Inputs are available to be installed in ANY input slot with a maximum of 24 in a standard frame. The console is also equipped with either 20 stereo or 10 stereo and 20 mono output groups.

Channel Input

ATI proprietary high voltage microphone preamp with +65dB of gain available (no pad)
10-segment LED bar graph showing input level
Stereo or dual mono direct output switchable Pre or Post
Individually switchable high and low pass filter
4 band fully parameteric EQ
Fully balanced insert point with variable insert send level to +6dB (pre or post EQ)
RMS Compressor with external audio key input on every input
Parametric Noise Gate with external audio key input on every input
18 stereo or 8 stereo/10 dual mono group assign dual concentric pots
All group assigns have individual on/off control and Pre1/Pre2/Post select
2 post fader stereo mix assigns with pan
8 VCA group assign for master VCA level and solo control
Stereo Input identical as mono with 4 band sweep EQ and stereo imaging controls
Penny & Giles conductive plastic audio fader with +10dB of gain available

Stereo Return

2 stereo returns per module
ATI proprietary high voltage microphone preamp with +65dB of gain available (no pad)
Left Phase invert and phantom power controls
3 band sweep EQ
Fully balanced insert point (pre or post EQ) on ODD returns only
Left to Right, Right to Left and mono controls
Channel On switch
Penny & Giles conductive plastic stereo audio fader with +10dB of gain available
2 post fader stereo mix assigns with pan
2 Effects mute buss accept switches
18 stereo or 8 stereo/10 dual mono group assign dual concentric pots
All group assigns have individual on/off control and Upper/Lower/Sum select

Stereo Group Output

Fully balanced inject at –6dB (can be used as additional solo input)
Fully balanced stereo insert point (pre or post EQ)
3 band sweep EQ
Penny & Giles conductive plastic stereo audio fader with +6dB of gain available
Output balance pot with center detent
2 post fader stereo mix assigns
Stereo 10-segment LED bar graph showing output level
Group on/off switch
Individual solo assign and level controls with local pre/post select
Mono output with level and mute control
Phase invert and low-pass filter selectable to mono output
Talkback accept switch places talkback signal on output post fader and mute
Stereo mix masters same as stereo group with the omission of mix assigns

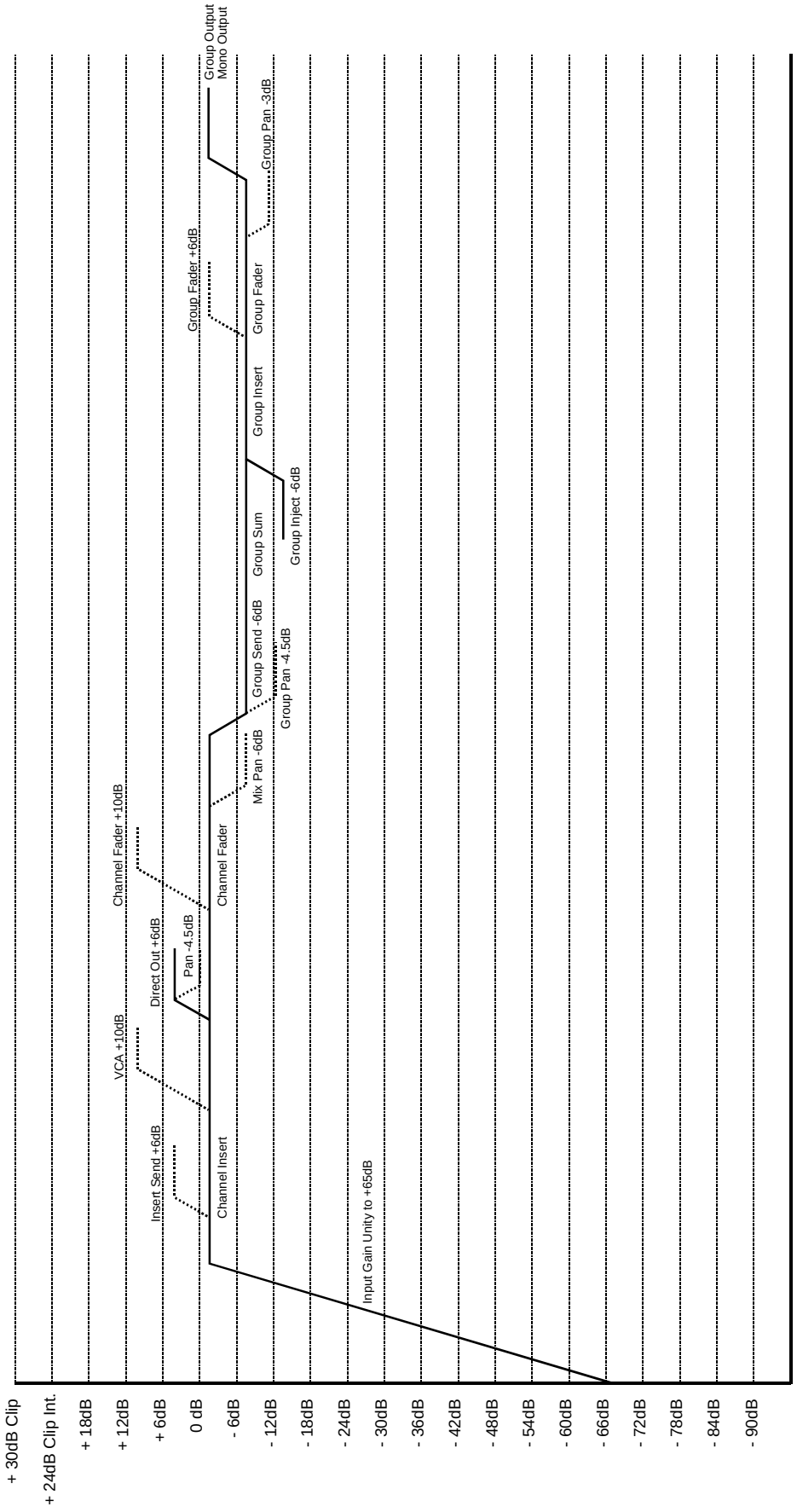
Mono Group Output

Fully balanced inject at –6dB (can be used as additional solo input)
Fully balanced insert point
DIM switch attenuates output 6dB
Penny & Giles conductive plastic audio fader with +6dB of gain available
10-segment LED bar graph showing output level
Group on/off switch
Output Phase invert
Individual solo assign and level controls with local pre/post select
Mono output of A and B groups follows group fader and mute
Stereo Link switch links On, Solo and Dim controls, channel send become level/pan
Talkback accept switch places talkback signal on output post fader and mute

Monitoring and Communications

2 independent stereo solo busses
Fully balanced stereo insert point on each solo buss
High impedance insert point for foot pedal level control on wedge solo buss only
Link control to combine the solo busses
Penny & Giles conductive plastic stereo audio fader with +6dB of gain available for each solo buss
Input and Output solo active indicators and clear controls
Multiple solo mode controls
Mono check control to mono solo outputs for phase checking
2 Effects mute buss master controls
Input solo level and buss assign controls
Input and Output mono solo level and buss assign controls
Stereo external solo input with external control capabilities
Stereo 20-segment LED bar graph to show solo level
10-segment LED bar graph showing compressor attenuation level
10-segment LED bar graph showing gate attenuation level
8 VCA masters with Mute and Solo controls
Internal Intercom beltpack control with the ability to solo the intercom signal
Mic and line talkback inputs with individual level control and master on control
Oscillator/Pink Noise/Talkback controls and routing to busses with pan
Overhead lamp dimmer control

Gain Structure Diagram



Appendix 1
Paragon Monitor Jumper Options

Mono Channel Processing Module:

On the Right Hand PCB there are five choices, Pre1, Pre2, Direct Out Pre, Direct Out Post and Gate Function.
Signals for lower buss sends Pre1 and Pre2 use four 3-pin headers. The options are as follows:

Post Filters	After the mic amp and high and low pass filters, pre everything else.
Post EQ	After mic amp, filters and EQ ***BEFORE*** the EQ in/out switch, the EQ is always in this path.
Post EQ & INS	After mic amp, filters, EQ and Insert including all in/out and pre/post switches but before VCA (processing).
Post VCA	Post all processing.

Pre1 and Pre2 can be any of these signals. Note that Pre2 is the signal that goes to the channel fader. "X"s below indicate standard configuration from factory.

	Post Filter P12	Post EQ P10	Post EQ & INS P13	Post VCA P11
Pre 1			X	
Pre 2				X

Direct Out Pre and Direct Out Post; They have similar options to Pre1 and Pre2 with one change. There is no "Post EQ" choice, but you do receive a "Post Fader" option which is the Pre2 signal post the fader control. "X"s below indicate standard configuration from the factory.

P4	Post Filter	Post EQ & Insert
Direct Out Pre	X	

P3	Post VCA	Post Fader
Direct Out Post		X

Gate Control allows the gate to function as either a gate or a ducker. "X" below indicates standard configuration from the factory.

P5	Gate	Ducker
Gate Controls	X	

On the Left Hand PCB there are two jumper to select the audio used in the compressor and gate key circuits. The choices are Post filters and Post EQ & Insert as described above. "X"s below indicate standard configuration from the factory.

	Post Filters	Post EQ & Insert
Compressor P3		X
Gate P2	X	

Stereo Channel Processing Module:

On the Right Hand PCB there are twelve choices, Pre1 and Pre2 Left and Right, Mono, Direct Out Pre and Post left and right, right phase, insert Pre or Post EQ and Gate Function. Signals for lower buss sends Pre1 and Pre2 use five 3-pin headers for each left and right signal. The options are as follows:

Post Filters	After the mic amp and high and low pass filters, pre everything else.
Post EQ	After mic amp, filters and EQ ***BEFORE*** the EQ in/out switch, the EQ is always in this path.
Post EQ & INS	After mic amp, filters, EQ and Insert including all in/out and pre/post switches but before VCA (processing).
Post VCA	Post all processing.
Mono	Output of Mono Jumper

Pre1 and Pre2 can be any of these signals. Note that Pre2 is the signal that goes to the channel fader. "X"s below indicate standard configuration from factory.

LEFT	Post Filter P5	Post EQ P8	Post EQ & INS P4	Post VCA P7	Mono P3
Pre 1			X		
Pre 2				X	

RIGHT	Post Filter P10	Post EQ P12	Post EQ & INS P9	Post VCA P11	Mono P13
Pre 1			X		
Pre 2				X	

The Mono option is chosen to be either post EQ & Insert or Post VCA. The "X" below indicates the standard configuration.

P6	Post EQ & Insert	Post VCA
Mono Signal		X

Direct Out Pre Left and Right and Direct Out Post Left and Right have the same choices as the Mono module. "X"s below indicate standard configuration from the factory.

LEFT / P17	Post Filter	Post EQ&Insert
Direct Out Pre	X	

RIGHT / P16	Post Filter	Post EQ&Insert
Direct Out Pre	X	

LEFT / P15	Post VCA	Post Fader
Direct Out Post		X

RIGHT / P14	Post VCA	Post Fader
Direct Out Post		X

The Insert point can be changed to either Pre or Post the EQ by pressing the internal switch on the Printed Circuit Board. When the switch is in the IN position, the insert point is Post EQ. This is also the position shipped form the factory.

The right side phase can be inverted by the phase switch by changing BOTH jumpers. The “X” indicates the standard configuration from the factory.

P19	Off	On
Right Phase	X	

P20	Off	On
Right Phase	X	

Gate Control allows the gate to function as either a gate or a ducker. “X” below indicates standard configuration from the factory.

P1	Gate	Ducker
Gate Controls	X	

On the Left Hand PCB there are two jumper to select the audio used in the compressor and gate key circuits. The choices are Post filters and Post EQ & Insert as described above. “X”s below indicate standard configuration from the factory.

	Post Filters	Post EQ & Insert
Compressor P3		X
Gate P2	X	

Channel Assign Module:

On the main PCB there are twelve jumpers to select various audio and control options.
First is the solo signals consisting of four jumpers; Solo 1 left, Solo 1 right, Solo 2 left and Solo 2 right. The audio choices are either Pre1, Pre2 or Post signals. “X”s below indicate standard configuration from the factory.

	Pre 1	Pre 2
Solo 1 Left P9	X	
Solo 1 Right P7	X	

	Pre 2	Post
Solo 2 Left P41	X	
Solo 2 Right P40	X	

Note that Pre1 and Pre2 solo signals will be pre Mute irregardless of the location of the Pre and Post Mute jumpers described below. Post solo signal will follow whatever location is chosen by the Pre and Post Mute jumpers described below.

Pre and Post Mute control is selectable for all three audio signals. They are as follows, “X”s below indicate standard configuration from the factory.

	Pre Mute	Post Mute
Pre 1 Left P5		X
Pre 1 Right P3		X
Pre 2 Left P24		X
Pre 2 Right P27		X
Post Left P25		X
Post Right P29		X

Thirdly there is Effects Mute 1 and Effects Mute 2 control. These are similar to the Assign buttons on the dual stereo return module. “X”s below indicate standard configuration from the factory.

	Off	On
Effects Mute 1 P34	X	
Effects Mute 2 P33	X	

Dual Mono Group, Part of the group Module or Master Lower Module:

Each side (A or B) of a dual mono group has four jumper options.
Solo Pre selection; first is the "Pre Sign" jumper which chooses either pre or post insert signal to feed one side of the "Solo Pre" jumper, the other side of which is post fader signal. "X"s below indicate standard configuration from the factory.

P2	Pre Insert	Post Insert
Pre Signal		X

P3	Pre Signal	Post Fader
Solo Pre	X	

Solo Post selection allows the solo post signal to be either the post fader signal or the inject signal (used possibly to monitor off air signals from in the console). "X"s below indicate standard configuration from the factory.

P7	Post Fader	Inject
Solo Post	X	

Inject signal jumper allows you to select whether or not the Inject signal is to be summed into the group or not. "X"s below indicate standard configuration from the factory.

P4	Sum	Off
Inject	X	

Note that the right hand board also has another bank of jumpers. These are used to indicate which location in the console the group is. They send the stereo link information to the proper buss. If you move a dual mono group or are having stereo link problems be sure to check the jumper location.

Stereo Group or Mix:

Each Stereo group location has several jumper options mostly similar to the mono group. Solo Pre selection left and right; first is the "Pre" jumper which chooses either summing amp output (pre EQ & INS) or Post EQ & INS signal to feed one side of the "Solo Pre" jumper, the other side of which is post fader signal. "X"s below indicate standard configuration from the factory.

	Sum Out	Post EQ & Insert
Pre Left P9		X
Pre Right P10		X

	Pre	Post Fader
Solo Pre Left P14	X	
Solo Pre Right P15	X	

Solo Post left and right selection allows the solo post signal to be either the post fader signal or the inject signal (used possibly to monitor off air signals from in the console). "X"s below indicate standard configuration from the factory.

	Post Fader	Inject
Solo Post Left P13	X	
Solo Post Right P12	X	

Inject signal left and right jumpers allow you to select whether or not the Inject signal is to be summed into the group or not. "X"s below indicate standard configuration from the factory.

	Sum	Off
Inject Left P6	X	
Inject Right P7	X	

Mono Signal left and right jumpers allow you to take the mono sum at either the summing amp outputs "Pre" (pre EQ & Insert, mute and fader) or "Post" (post EQ & Insert, Mute and fader). "X"s below indicate standard configuration from the factory.

	Pre	Post
Mono Left P2		X
Mono Right P3		X

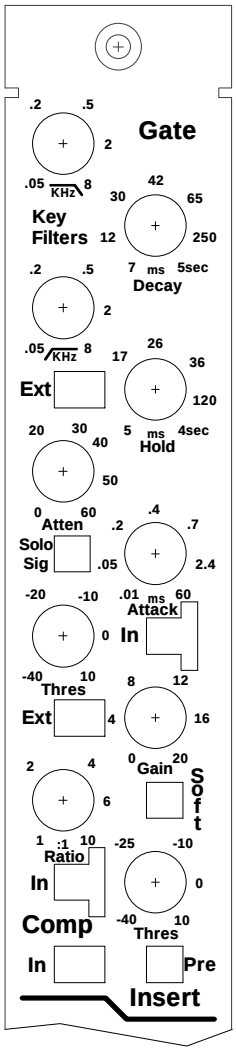
Insert Pre or Post EQ is selectable by a push switch on the right hand PCB. In the "IN" position, the insert is Pre EQ.

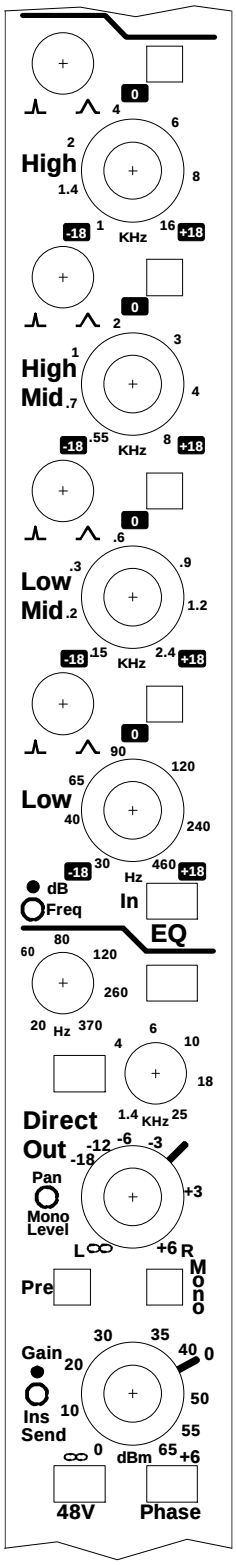
Note that on the Master Lower Module there is a single jumper to change the scale of the Gate Attenuation meter from 0-60dB to 0-20dB. The jumper is originally set in the 0-60dB position.

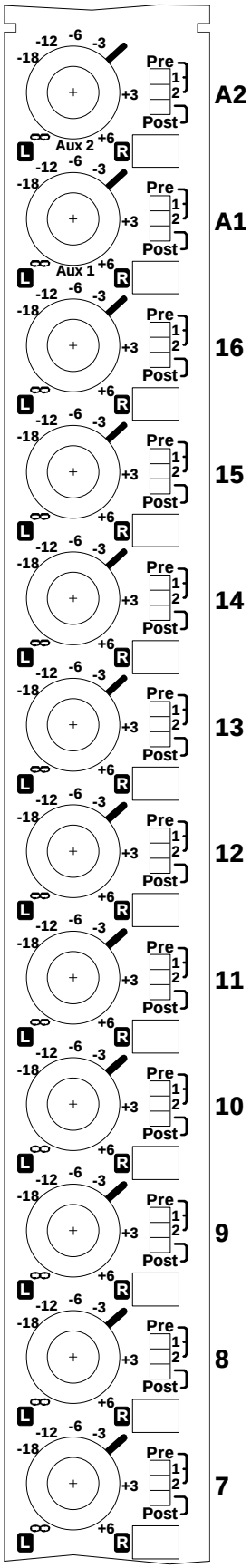
Master Lower	0-60dB	0-20dB
Gate Meter Scale	X	

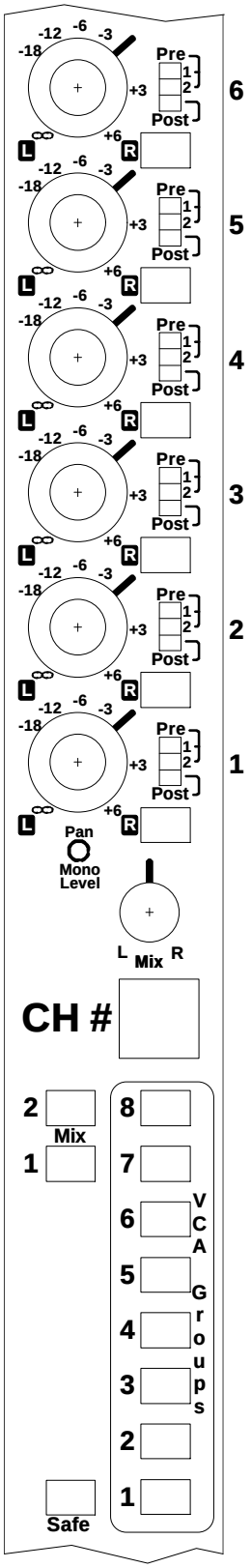
Paragon II Monitor
Mono Input Chart

Notes:



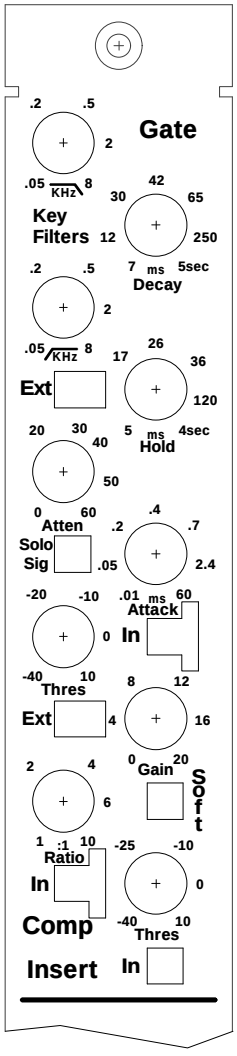


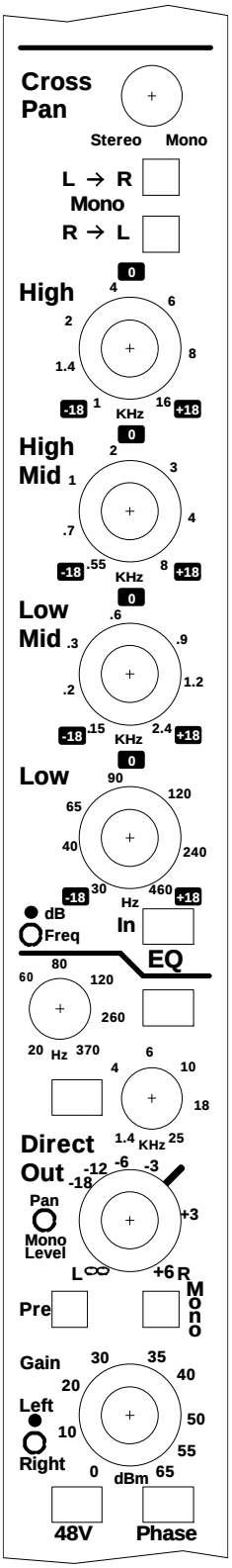


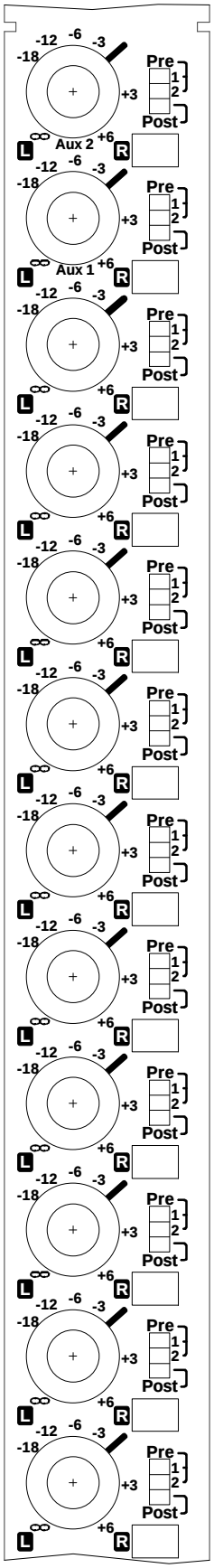


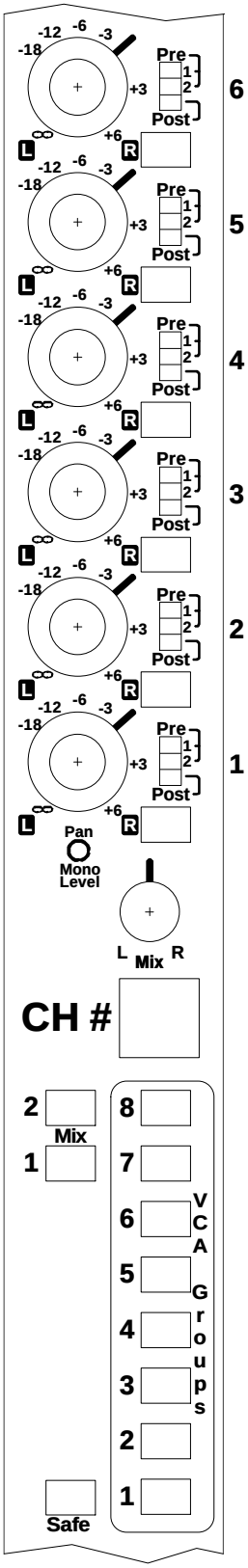
Paragon II Monitor
Stereo Input Chart

Notes:



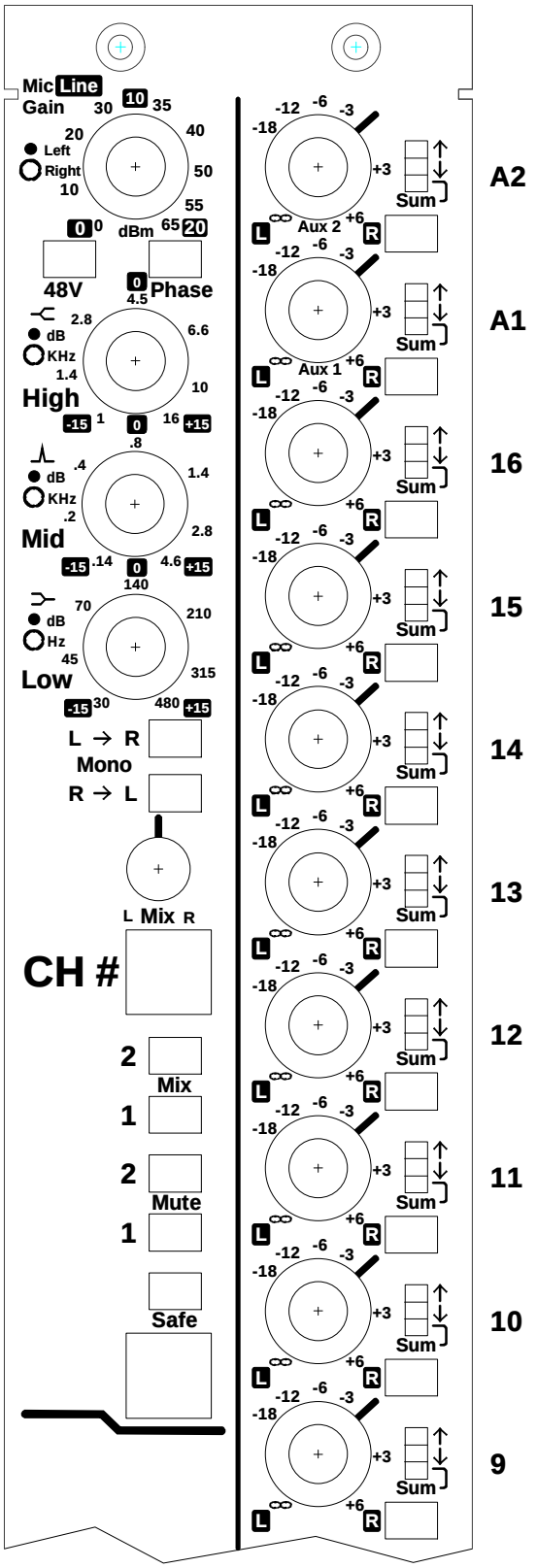


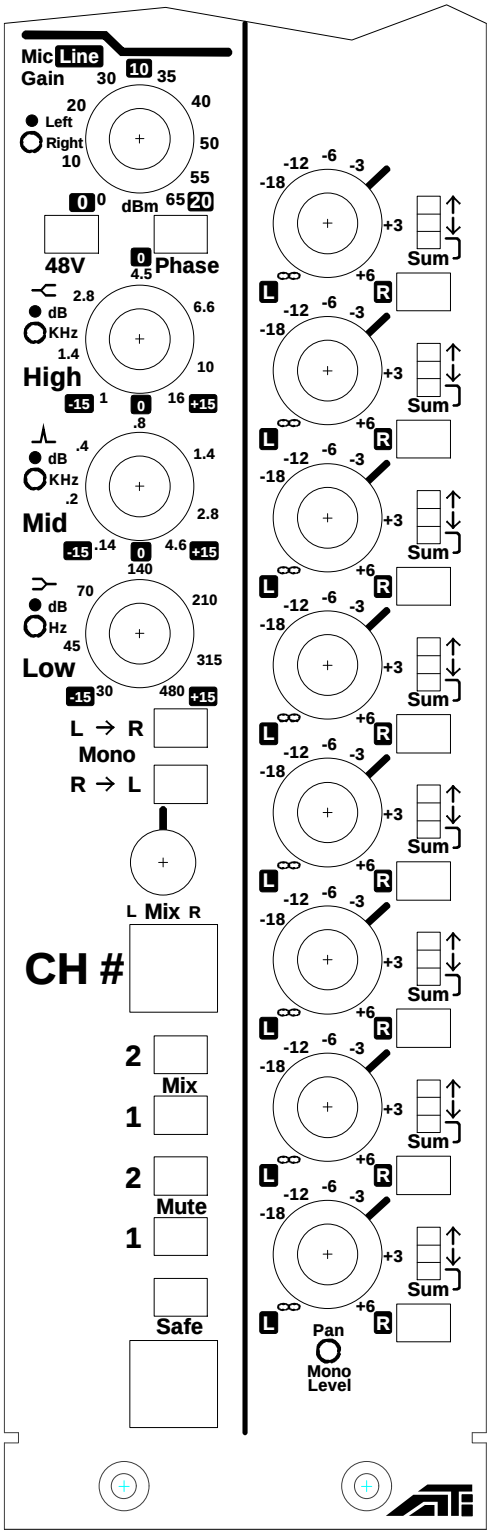




Paragon II Monitor
Dual Stereo Input Chart

Notes:





Paragon II Monitor
Group/Mix/Aux Chart

Notes: