

# Input Module & Facilities

## Input Stage

Electrically, The first three controls of the mic input are:

+48V phantom power switch (with voltage ramp-up and ramp-down to reduce the spikes inherent with direct switching). It has an associated red LED to show that phantom power is on.

C/O switch for change over from mic to line input

A polarity reversal switch (phase reverse) to flip the polarity by 180 degrees. The polarity switch affects both the mic and line inputs.

The transformer-coupled mic input stage is unique in modern consoles due to its multi-position impedance matching and level trimming switch. The 9 positions of the “Z”, or impedance, switch are split into 3 groups of input impedance (60 ohms, 200 ohms and 1500 ohms). Within each group there are 3 stages of level control, 0 (unity) followed by 2 steps of attenuation.

When coupled with the coarse gain steps of 10dB for the mic input amplifier, this combination of controls negates the need for a separate fine-trim or pad when setting levels for mic inputs.

The line level input is balanced and features a simple but low-noise circuit topology.

The line input gain steps are -12dB through to +12dB in 6dB steps.

The aforementioned polarity switch affects the line input when operated.

All signal switching in this part of the channel is done using relays. This allows the use of simple single-pole rotary switches on the front panel with the advantages of being able to locate the signal switching functions exactly where they are required on the PCBs, thus keeping the audio circuitry compact.

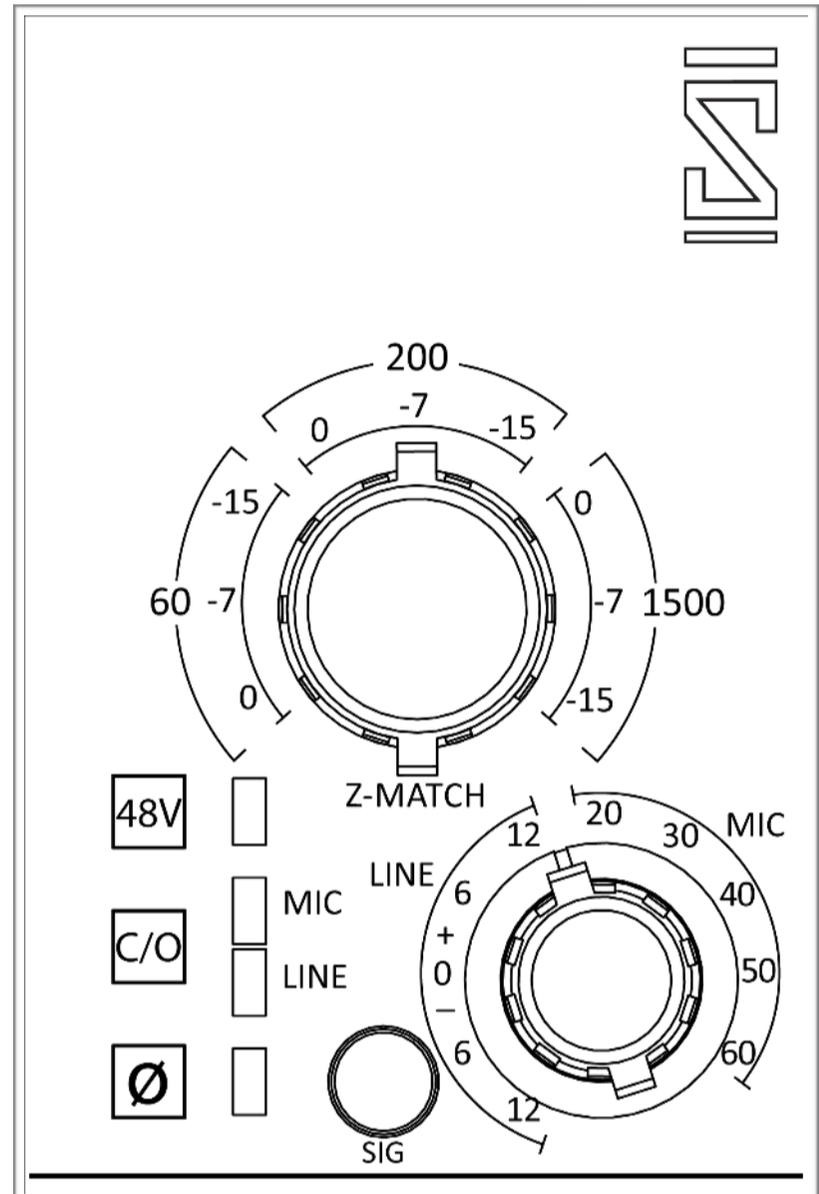
Mic or Line input selection is determined either locally via the Mic/Line momentary action push button switch, or via the centre-section’s Status panel (where the MIC/REC switch will set all channel inputs to Mic and the MIX switch will set all inputs to Line). Input selection is shown by a separate LEDs: red is mic/record input and green is line input.

The transformer-coupled balanced output of the input stage feeds the Pre EQ Insert Send (PREQ button at the bottom of the module).

Level monitoring within the channel is by the SIG LED placed at the top of the module. This is so that it is in good sight-line when the engineer is looking over the console into the live room. The LED and its driver replace the more usual peak level indicating LED, and is far more useful because the signal level at which the LED illuminates is set from the centre section and covers a range of signal levels between -30dBu and +20dBu: signal present to high-peak.

There are 4 monitoring sources to the signal LED driver:

1. Mic preamp output
2. Equaliser output
3. Monitor post-fade
4. Channel post fade.



# Equaliser Module & Facilities

## Equaliser

The input to the Channel Equaliser is determined by the C/O switch adjacent to the monitor fader in the monitor module

The signal sources are either:

Channel (Mic/Line input via the Pre-EQ insert) or Monitor Return (new-world DAW; old-world Tape).

This allows the EQ to be applied to either the Channel path or the Monitor path.

The 4-band equaliser is a combination of the Sound Techniques active-circuit mid-band EQ from the "Chelsea Console" and the passive RCL (resistor, capacitor, inductor) EQ circuit from the "Elektra" and "A-Range" consoles.

The high-frequency (TOP) band comprises of a 7-position frequency select switch with selections for hi pass filtering at 7.5 and 15 kHz. An associated 3-position Bandwidth switch (with Narrow, Wide & Medium settings) is also included. Cut at the selected frequency is from 0dB to -14dB and Boost is from 0dB to +18dB. Cut & Boost are on separate rotary switches.

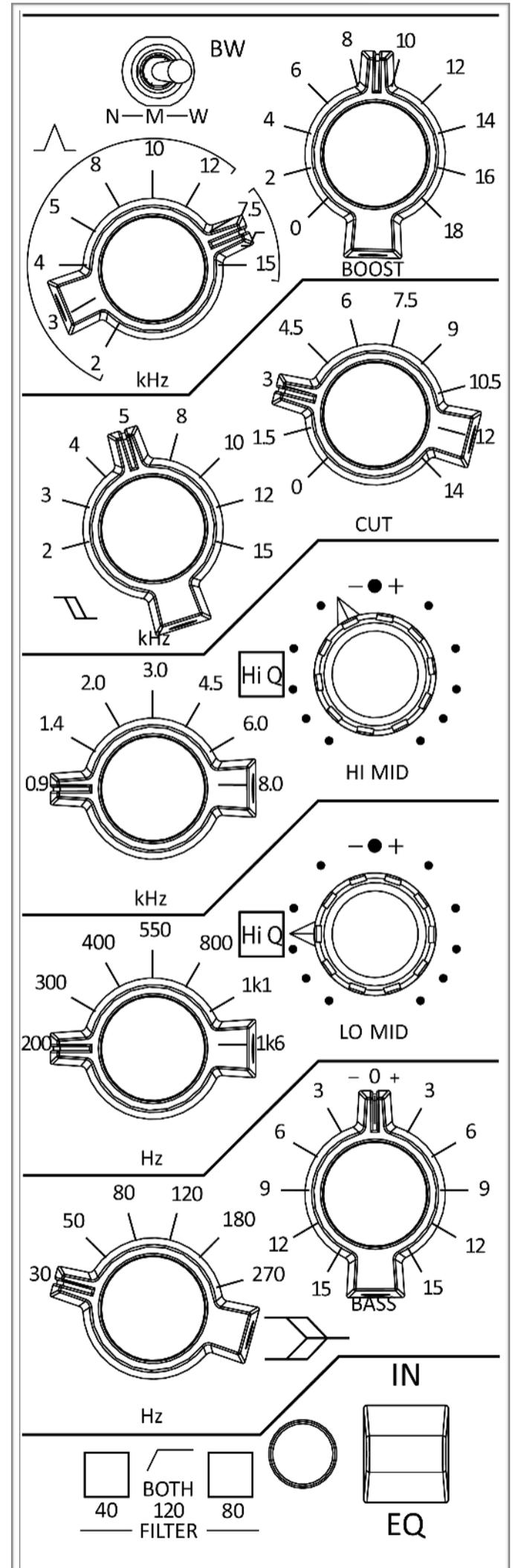
Hi and Lo Mid frequency processing is via a 7-position switch to select the frequency and a rotary pot giving around +/-15db of cut or boost. Hi Q switches are associated with each mid frequency selections

The low frequency section (Bass) has 2 rotary switches. One selects the amount of cut or boost; around +/-15dB with a centre-zero position. The second rotary switch selects the frequency.

Two filter switches are available located at the bottom of the EQ module. These allow for filtering at either 40Hz, 80Hz or, when both engaged, gives filtering at 120Hz

Finally, the entire equaliser section is switched in or out of circuit by the key lever switch. An associated amber stovepipe LED illuminates to provide visual indication of the EQ being IN.

The equaliser output goes to the transformer coupled Pre-Fade Insert Send (PREF button at the bottom of the module).



# Routing/Monitor

## Module & Facilities

### Monitor Section

The monitor section is fed by default from the Monitor Input (DAW or Tape). Alternatively it can be fed from the channel's Input Stage by operating the Change-over (C/O) switch. The selection can be globally set in the Centre Section as a choice between Mic and Mix modes. The C/O switch has a pair of LEDs to show the mode that the switch is set to MIC (record) or MIX. Additionally, a further pair of LEDs labelled FADER FROM [CHAN] [MON] highlight the signal source that is feeding the monitor fader.

The Monitor section fed from DAW/Tape in **MIC REC** mode.

The Monitor input fed from the channel input in **MIX** mode.

The monitor fader has 10dB in hand. The output of the fader buffer is the Monitor Post Fade signal. This feeds the monitor panpot. Pressing the top of the panpot operates an in-built switch that puts the panpot into circuit, as indicated by the green LED to the top left of the panpot.

The monitor signal can be routed to the main Mix left & right bus by the MON MIX switch.

Solo & Mute switches are provided for the monitor path.

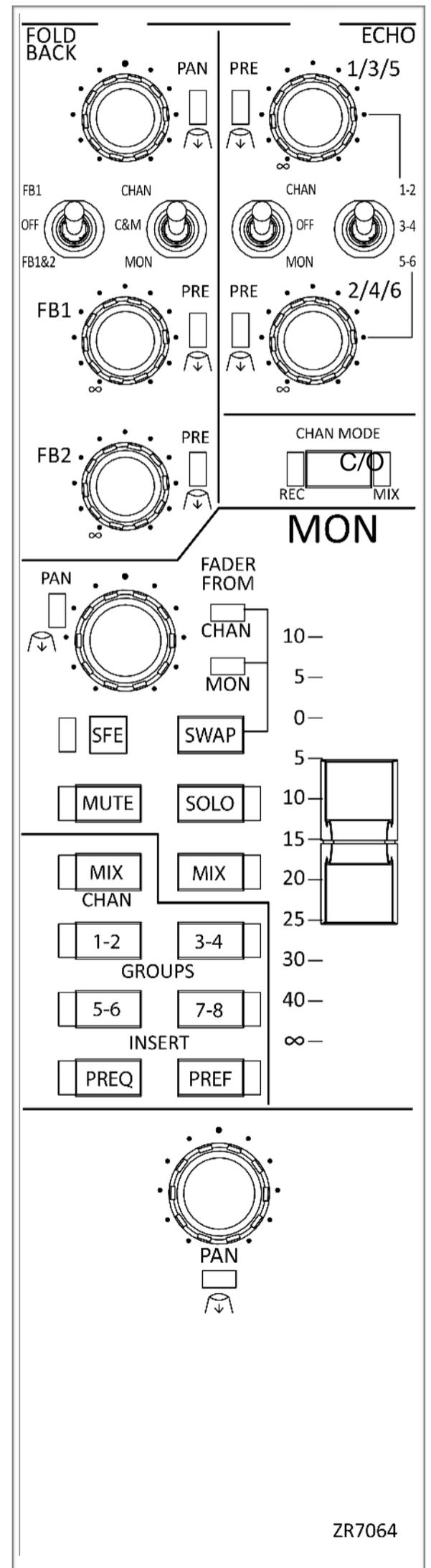
The SOLO switch is a non-destructive solo; operationally it is mono PFL or stereo AFL as determined on the console centre-section monitor module.

Solo SFE. When in destructive solo mode, channels can be made safe (i.e. they will not mute when a solo is activated) by pressing the SFE button.

The FADER FROM CHAN and MON LEDs provide visual indication of the signal path into which the monitor section is currently placed.

The SWAP switch is a fader reverse switch that swaps the monitor fader and channel fader. It has a pair of LEDs to show the status of the faders. Red signifies mic/record mode where the channel path goes to the large fader, green signifies Monitor mode to show that the monitor path goes to the large fader.

Group Routing is in stereo pairs. The routing matrix source is always the channel pan pot (discussed later).



# Foldback & Echo Sends

The console has 2 stereo foldback sends and 6 mono Echo (effects) sends.

**Foldback** is primarily used to create a headphones mix for the performers during record and overdub processes.

The foldback panpot sets the stereo image for both foldback buses 1&2. It is switched in/out by pressing the control knob. A green LED illuminates to show that Pan is in circuit.

The foldback sends are activated by a 3-position toggle switch. The centre position is off; up switches FB1 on whilst down switches both FB1 and FB2 on. The centre-off allows for a mix to be created and then contributing sources to be switched on/off without altering the balance of the mix.

FB signals are sourced by a 3-position toggle switch. The up position is Channel path, the down position is Monitor path and the centre position is both Channel and Monitor (C&M). C&M is used during overdub where the performer needs to listen to both the pre-recorded run-up to a drop-in point plus the current performance that will be dropped-in by the recording engineer.

Each FB pot can be switched pre-fade or post fade by pressing the respective control knob. A red LED illuminates to show pre-fade. The pre/post setting for each bus is globally selected in the centre section, but can be locally flipped by pressing the pot knob.

**Echo** sends are primarily used to create effects mixes to send to reverb or other effects processors.

There are 6 echo send buses on the console which are accessible in pairs.

A 3-position toggle switch selects Echo buses 1&2 in its up position, 3&4 in the mid position and 5&6 in the down position.

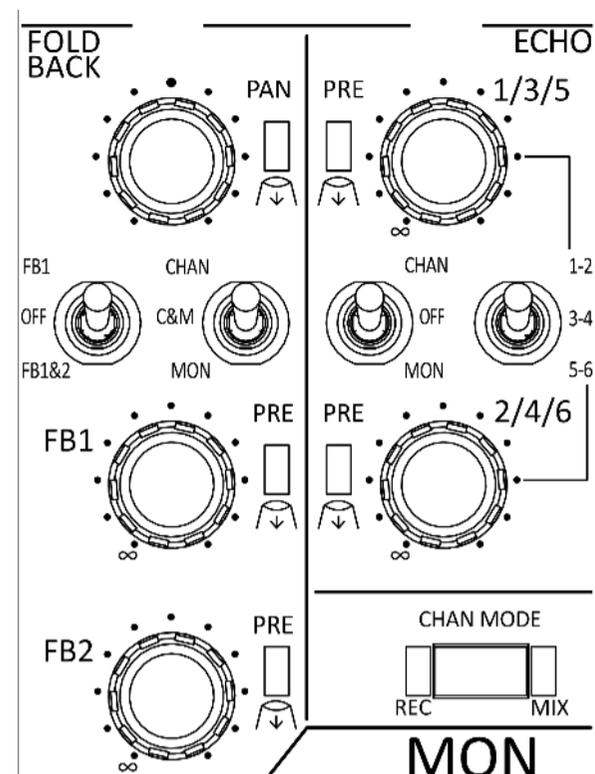
Another 3-position toggle switch selects the signal source and status:

- Up position is Channel path,
- Down position is Monitor path,
- Centre position is OFF.

The two Echo Send pots can be switched pre-fade or post fade by pressing the top of the respective pot knob. A red LED illuminates to show pre-fade. The pre/post setting for each bus is globally selected in the centre section, but can be locally flipped by pressing the pot knob.

The red pre/post indicator LEDs will always show the pre/post setting of the selected pair of buses. E.g. The odd buses could be set 1=pre, 3=pre, 5=post. Moving through the bus select toggle positions, the odd pot's LED will illuminate as bus 1=red, 3=red, 5=off.

The channel panpot is switched into circuit by pressing the panpot's knob. An associated green LED below the panpot lights to show that the panpot is in-circuit.



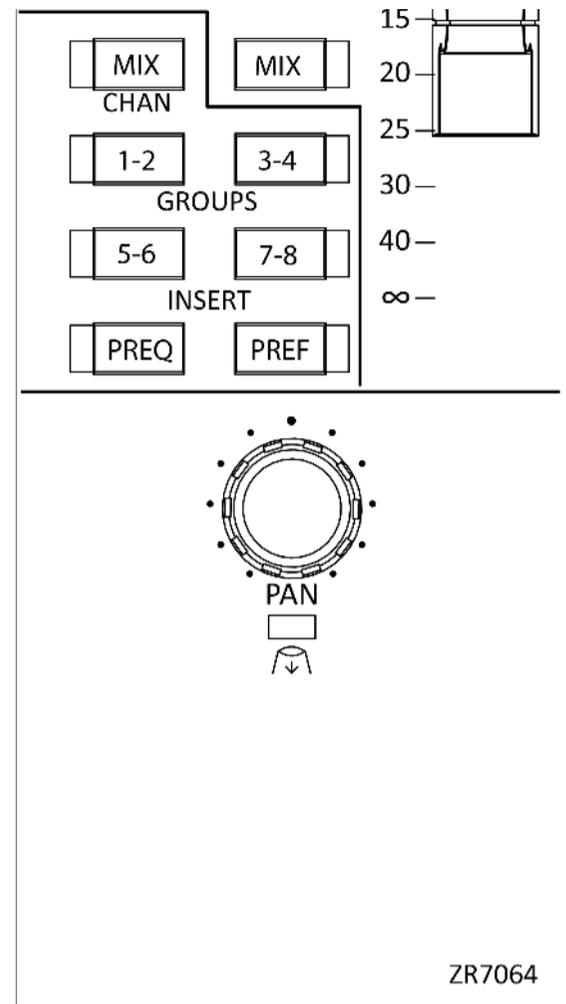
# Routing

The MIX/CHAN switch in the routing section allows for the...

4 group selection switches are provided and allow for bussing to any of the stereo master faders. Selections are 4 stereo pairs labeled GROUPS 1-2, 3-4, 5-6 and 7-8

Insert PREQ allows for an insert into the channel pre channel EQ

The PREF switch will...



ZR7064

