

GL2800M Architects Specification

The console shall be fully equipped for engineer driven live sound monitor mixing. It shall be available in three frame sizes: 24, 32 or 40 channels. Each channel shall be capable of accepting a microphone or line level signal and mixing to any combination 16 mix outputs. The console shall provide a dual feed engineer's wedge/IEM monitor system as well as stereo headphones.

All channel inputs shall be electronically balanced on 3-pin Neutrik XLRs with gold plated contacts capable of accepting signals over a 74dB range using a variable gain control and switched -20dB pad from -60dBu to +14dBu. Maximum input capability shall be +34dBu. A split output on 3-pin male XLR shall be available to feed an independent FOH mixer. This shall be by direct pin-to-pin connection with the input XLR, with a ground lift switch to disconnect the pin 1 link between the XLRs in situations where venue ground loops cause a problem. The preamp shall present an input impedance of 2k ohms, include a polarity reverse switch and per channel switching of +48V DC phantom power to the input XLR via 6.8k ohm series resistors. A pre-insert switched 100Hz 12dB/octave high pass filter shall be provided. The channel insert shall be pre-EQ and available from a single TRS jack socket with tip = send and ring = return operating at nominal 0dBu. A 4-band swept mid frequency EQ shall provide +/-15dB control of shelving HF and LF at 12kHz and 80Hz respectively, HM swept from 500Hz to 15kHz and LM swept from 35Hz to 1kHz with LM and HM Q of 1.8. The channel shall provide 16 rotary send controls mixing to the 16 mix outputs. These shall be configurable globally by the operator using recessed mode switches in the master section for mono or stereo operation in banks 1-8, 9-12 and 13-16. Additional mode switches shall configure these banks of sends for pre or post fader operation. Pre-fade sends shall be sourced post-EQ by default. In stereo mode the controls shall be arranged as separate level and centre detented pan. The level controls shall adjust from off to +6dB boost. A 60mm fader shall provide an overall level trim of all post-fade mix sends from off to +6dB boost. The normal operating 0dB position shall be clearly marked. The channel shall include an illuminated mute switch affecting all the pre and post-fade mix sends, 4-bar LED pre-fade signal meter, switches to assign the channel to any combination of the four mute groups, and an illuminated PFL switch to route the pre-fade, pre-mute signal to the engineer's monitor system.

The master section shall have the 16 mix outputs available on 3-pin differentially balanced Neutrik male XLRs operating at +4dBu and able to drive up to +26dBu. Each master shall provide a polarity reverse switch and a swept frequency high pass filter ranging from 20Hz to 400Hz to cut low end frequency stage noise. Masters 1-8 shall in addition provide a 2-band swept mid frequency EQ with +/-15dB cut/boost over the ranges 80Hz to 2kHz (LM) and 500Hz to 12kHz (HM) with a Q of 1.6 for adjusting the overall tone of the mix. A 100mm fader shall provide +10dB boost and a post-fade mute switch shall affect the signal at the mix output. A momentary switch shall be included so that the level may be attenuated by 6dB while pressed so providing a dim function to help the engineer identify a feedback or other mix problem. Each master shall include a post-filter, pre-fade TRS jack insert with tip = send, ring = return operating at -2dBu for connection of an outboard equaliser or processor. A 12-bar LED meter shall display the post-mute output level for each mix. An AFL switch shall send the post-fade pre-mute mix signal to the engineer's monitor system. These shall be configurable using recessed mode switches affecting banks 1-8, 9-12 and 13-16 to route to either the engineer's mono wedge or stereo IEM outputs. The AFL switch shall include two LEDs to indicate which output is active. If a pair of mixes has been configured for stereo operation then the two AFL switches shall route the signal in stereo when pressed together. Stereo configuration shall be displayed by illuminating an LED between the pairs of faders.

The engineer's monitor section shall comprise three outputs: a mono wedge feed, a stereo IEM feed and the console headphones amp output. The wedge and IEM monitors shall have differentially balanced male XLR outputs operating at +4dBu with a

maximum drive capability of +26dBu. Both the wedge and the IEM masters shall include pre-fade insert points on TRS jack with tip = send, ring = return operating at -2dBu. These shall be available for insertion of equalisers and other processors for use by the monitor engineer. Each master shall include a 100mm level trim fader with +10dB maximum boost and the normal operating 0dB position clearly marked, and a post-fade illuminated mute switch. The stereo IEM master shall provide a mono switch to sum the L and R outputs. A 12-bar LED meter shall display the level of the signal routed via the channel PFL or mix AFL switches. This shall not be affected by the wedge or IEM trim faders, nor the IEM mono switching.

The console headphones output shall be on three sockets: two ¼" TRS (one under the front armrest for convenience) and one 3.5mm for plugging in headphones and ear pieces equipped with standard or miniature jacks. A headphones level trim shall be provided. The headphones signal shall be derived from any AFL selection (whether configured wedge or IEM) interrupted by any PFL selection. A recessed mode switch shall let the operator change the headphones source so that it follows the post-fader, post-mute IEM monitor. This is to provide ear piece drive for checking the performers' in-ear mixes when an external engineer's IEM system is not available.

Pressing any channel PFL button shall automatically override any current AFL selection in the IEM and headphones monitors. A recessed mode switch shall let the operator enable PFL to override the wedge AFL selection and display its level on the wedge meter if required. An active PFL shall be indicated by an illuminated LED in the IEM and wedge monitor master section as appropriate. Selecting more than one PFL at the same time shall mix those signals together into the monitor. The true PFL signal level shall be displayed on the meters. The PFL audio signal heard shall be affected by a PFL trim control so that the operator can adjust the PFL level against the average AFL level as preferred. This trim shall have a centre detented 0dB position and range from -12dB to +6dB. The trim shall not affect the meter level.

Line level external inputs shall be provided for both the engineers wedge and IEM monitors. Both shall have input level trim controls ranging from fully off to +6dB boost, and on switches to route the signal to the AFL mix. These signals shall be overridden by any active PFL. The wedge external input shall be on a balanced 3-pin XLR. Its main purpose shall be to provide reverse talkback from the FOH console direct to the engineer's wedge monitor. The IEM external input shall be on unbalanced TRS jacks normalised for mono operation if just the L/M socket is plugged, and normalised from the wedge external input if nothing is plugged into either socket. The main purpose of these sockets is to return a monitor signal from an outboard IEM transmitter rack, or to route the FOH talkback signal from the wedge external input.

A comprehensive talkback / signal generator shall be provided. This shall include mix TB enable switches to allow the operator to talk to or route the generator to individual or combinations of the 16 outputs. A switched external TB facility shall be provided so that the operator can talk to or send the generator to a remote destination such as the FOH console or other equipment. This output shall be differentially balanced on 3-pin male XLR with a nominal operating level of +4dBu and maximum drive of +26dBu. A talkback microphone input shall be provided on a front panel mounted 3-pin XLR socket with +48V DC phantom power available by default. A level trim shall adjust the input sensitivity from -50dBu to -10dBu sensitivity. Pressing the momentary talk switch shall route the mic signal to any enabled output. Whilst held, the wedge monitor output and signal generator level shall be attenuated to prevent local feedback and to improve talkback intelligibility on stage. A recessed mode switch shall allow the operator to bypass the talk switch so that the microphone is permanently routed for situations where a switched hand held mic is used.

The signal generator shall remain disabled until its recessed on switch is pressed. An LED shall light to warn the operator that the generator is turned on. A switch shall determine whether the generator produces a 1kHz test tone or pink noise. The level of signal shall be adjusted using a rotary trim control. The generator shall route to any output whose TB enable switch is selected. Pressing the momentary talk switch shall attenuate the generator signal.

The master section shall include four mute group master switches. Each shall remotely activate the mute function on any channel currently assigned to the related group. The master switch shall illuminate to warn that the mute group is active.

The rear panel shall include two 4-pin XLR sockets for plugging in gooseneck lamps to illuminate the console surface. These shall be capable of powering a 5 watt 12V bulb or suitable LED lamp.

The console shall be constructed using an all steel chassis with a compact foot print convenient for location in a restricted space such as side of stage, and designed for easy flight casing without wasted space. The channels shall use individual double-sided circuit cards with nutted pots for optimum strength. Internal grounding will be based on a solid copper plate grounding strip securely bolted to each channel. An external 3U rack mounted linear power supply with 2.8m DC connecting cable shall be used. The console shall provide a second DC input socket for connection of a second power supply for redundant backup. The console shall operate with either or both supplies turned on.

The 16 mixes shall have their knobs and faders colour coded in pairs. All controls shall be clearly visible and identifiable in reduced stage lighting. All indicators and meters shall use a wide viewing angle design.

The console shall be no more than 0.65m (27") deep. The 32 channel model shall be less than 1.2m (47") wide. The console mounted in a suitable flight case shall be capable of being lifted by two able people.

The console shall be the Allen & Heath GL2800M with RPS11 power supply and LEDlamp gooseneck lamps.