

GB3

WHEN YOU'RE
MIXING WITH
PROFESSIONALS



ALLEN
&
HEATH

**Low Cost
Broadcast Console**

MONO INPUT



The GB3 is a high specification broadcast console designed for use by community, hospital and local radio stations.

Where financial constraints have previously restricted performance and features, the GB3 brings true professional engineering within the reach of the budget broadcaster.

The console includes an essential combination of mono, stereo, telephone inputs and master facilities. Designed with clear, uncluttered controls it will ensure trouble-free operation at your radio station.

The LINE INPUT is via a standard female XLR-3 connector. It is available when the LINE switch is depressed.

The MIC INPUT is via a standard female XLR-3 connector. It is available when the LINE switch is released.

The LINE switch selects the Line Input socket when depressed and the Mic Input socket when released. An LED in the switch glows red when the Line Input is selected.

AUXILIARY SEND

The AUX control routes the input channel signal onto the Auxiliary Mix bus. The input channel signal may be fed up to the Auxiliary control either pre-fade or post-fade. The factory default is pre-fade but this can be changed via a link on the pcb.

EQUALISER

The HF EQ control (above 8.5kHz) boost and cut of ± 10 dB. The MF EQ provides boost and cut of ± 10 dB at 3kHz. The LF EQ (below 180Hz) boost and cut of ± 10 dB. EQ IN/OUT SWITCH. A yellow LED glows to indicate status. When the switch is released the signal path bypasses the EQ section. 80Hz high-pass filter is switched into the signal path. This control is useful for filtering-out low frequency hum.

LEVEL CONTROL

The PAN control determines the position of the signal within the stereo image. The GAIN control provides ± 15 dB gain. The PEAK LED lights at -5dB below clipping.

The BAL control allows the stereo image to be balanced. It has a range of ± 6 dB.

The STRT switch works in conjunction with the Fader microswitch. There is a red LED in the STRT switch which glows at two levels of brightness. The LED will glow at half brightness if the Fader is down when the STRT button is pushed. The LED will glow at full brightness to indicate that the STRT circuit is active.

The REM (Remote) switch works in conjunction with the fader microswitch. There are two levels of operation - Preview and Active. The PFL (Pre-Fade Listen) switch allows you to listen, via the Monitors section, to an input on this channel. When the fader is moved away from the off position, the PFL circuit is automatically deactivated. A red LED glows to indicate that the PFL circuit is active.

OUTPUT TO THE PROGRAMME

100mm FADER, unity (0dB) in the fully up position. The fader microswitch detects when it is in the fully off position. Each Mono Input channel can be configured as a Local or Distant channel. This controls which monitor circuit will be muted when the channel's Fader is opened and the mic is selected.

REMOTE SOCKET SPECIFICATIONS

COUGH/REVERSE TALKBACK The Input Channel can be muted under certain conditions or additionally allows a Guest to force a PFL so they can talk to the Presenter.

CUE LAMP

A user-provided facility that can be controlled via relay contacts.

START RELAY

A relay can be controlled with the REM switch and the fader. The relay contacts can either close momentarily or they may latch.

STOP/RE-CUE RELAY

A relay can be closed momentarily when the REM switch is released and/or the Fader is down.

TALK-BACK SWITCH

Link for a User switch to route the pre-fade signal onto the T/B OUTPUT bus and to the Continuous Talkback Output socket of the Monitor section. This facility feeds the T/B OUTPUT bus to the Telco Channels and will allow the Presenter, Guest or Producer to talk to a telephone Caller off-air.

SEND/RETURN

Access point for an effects machine onto the mono input channel, e.g. voice processor, echo.

FOR STEREO INPUT

The LINE 1 + REMOTES 25-way D-type female socket provides the connections for the Line 1 Inputs and also the remote controls for Line 1 and 2 inputs. The inputs are electronically balanced.

STEREO INPUT



MASTER SECTION MONITOR SECTION

INPUT/OUTPUT SOCKETS

PROGRAMME OUTPUTS

The LEFT/RIGHT balanced male XLR outputs are sourced from the PGM L-R mix bus. The MONO OUT is sum of L-R.

AUXILIARY SEND AND RETURNS

AUX OUT 1/4" balanced jack. Aux RETURNS 1 and 2 balanced 1/4" jack.

MUTING AND REMOTES

The 9-way D-type male connector provides two 2-pole 1-way relay contacts. Control is from the LOCAL MUTE bus and the DIST MUTE bus. The relays may be used to provide 'On-Air' lamps, in the Control Room and the Studio.

DC POWER INPUT

The 5-way locking DC POWER INPUT connector. Connects to external rack power unit.

FX & AUX

AUX MASTER Level Control.

FX Returns 1 and 2.

PAN and LEVEL control the signal being fed to the PGM MIX L and R buses.

PEAK. Warning of possible overload.

PFL. When active the FX Return signal is passed to the PFL MIX L and R buses.

MONITOR SELECTOR

Both monitor/headphone circuits may select Ext as an input source. The Ext source has four inputs Ext1 to Ext4. A green LED indicates status. Note: Ext1 is the default input which is selected at power up.

MASTER OUTPUT CONTROL

STEREO MASTER FADER

Smooth-action 100mm fader.

MONO MASTER FADER

Smooth-action 100mm fader.

RPS9 POWER SUPPLY

The RPS9 is a linear power supply designed for minimum noise and absolute stability. The output provides $\pm 16V @ 2.5A$, and $+48V @ 100mA$. The RPS9 conforms to BS EN 60065 (equivalent to: IEC 65 [1985], BS415 [1990], with CENELEC deviations).

PRESENTER MONITORING

PRESENTER HEADPHONES

Two 3-pole 1/4" 'A' gauge jack sockets. The Presenter's Headphones have 4 sources of input. They are: Desk, Ext, Aux and PFL. The Desk is the default.

SPLIT PFL

When this switch is depressed any PFL selected from any of the channels will be summed and fed to the right-hand channel of the Presenter's Headphones. The existing source to the headphones is summed to the left-hand channel of the headphones.

When the switch is released, PFL signals, when present, will be fed to both sides of the Presenter's Headphones. If either of the reverse talkback inputs (TB INPUT 1 or 2) are being used they will over-ride all other signals to the Presenter's headphones.

LEVEL Control Level controls the output fed to the output socket.



INPUT/OUTPUT SOCKETS

EXT. TALKBACK INPUTS

The TB I/P1 and TB I/P2 are 3-pole 1/4" 'A' gauge jack sockets. Input for a Line Level Mic and activating switch. Talkback to control room monitor and presenter's headphones.

CONTINUOUS TB O/P

A 3-pole 1/4" 'A' gauge jack socket. The output is a mix of the inbuilt mic and the talkback signals from Mono-input channels, (activated by the cough switch).

STEREO OUT

3-pole 1/4" 'A' gauge jack socket. Provides buffered versions of the PGM L & R buses

MISC

Provides Chassis, Ref and Logic Ground, Audio and Logic power supply rails, MFM (Meter Follows Monitor) signals, PFL signals, Stereo Output signals, Local Mute control signal, Talkback output, PFL logic control signal. Typically used for custom configuration.

EXT INPUTS

15-way D-type male connector. Four Stereo channels 1 and 2 balanced, 3 and 4 unbalanced.

2 PPM or VU METERS are available.

STUDIO MONITOR

3-pole 1/4" 'A' gauge jack socket. The Studio Monitor has 4 input sources. Desk, Ext, Aux and PFL. The Desk is the default.

LEVEL CONTROL & MUTE

Controls O/P of talkback features to the O/P socket. A red LED indicates mute status. This operates when any mics connected to the Mono Input Channels and designated Distant are being used, this reduces the possibility of feedback.

AUTO PFL

When selected, the normal programme output is overridden by the signal on any selected PFL channel.

STUDIO HEADPHONES

3-pole 1/4" 'A' gauge jack socket. The Studio Headphones have 4 sources of input, Desk, Ext, Aux and PFL. Desk is the default. Use the EXT (green LED), AUX (red LED), AUTO PFL (red LED) to select the source for the studio headphones.

TALKBACK

When the STUD switch is depressed the Studio Headphones and Monitor circuits will have their existing sources replaced by the signal from the inbuilt MIC summed with the T/B MIX bus.

C/ROOM MONITOR

METER FOLLOW MONITOR

Switch up: Meters will follow the desk PGM output but interrupted by any PFL signal. Switch pressed meters follow the Control Room Monitor.

C/ROOM MONITOR & MUTE

3-pole 1/4" 'A' gauge jack socket. The Control Room Monitor has 4 sources of input. Desk, Ext, Aux and PFL. The Desk is the default source.

This red LED glows to indicate that the Control Room Monitor output has been muted. This occurs when any mics connected to Mono Input Channels which are designated as Local are being used, this reduces the possibility of feedback.

If either of the reverse talkback inputs (TB I/P1 or I/P2) are being used they will override all other signals to the Control Room Monitor.

AUTO PFL

When selected, the normal programme output is overridden by the signal on any selected PFL channel.

S P E C I F I C A T I O N S

INPUT STAGE

The Telco module must be connected to the telephone system via a telephone hybrid circuit.

LINE balanced female XLR. For input from the hybrid.

C/F (Clean Feed Mix Minus) balanced male XLR. For output to the telephone caller.

REMOTES SOCKET

This 25-way D-type female connector includes, Telephone Divert, Talkback Enable, External Talkback. Talkback Enable allows the Caller to hear a reduced programme output plus the signal on the T/B OUTPUT bus. EXTERNAL TALKBACK allows the producer to talk to the caller. This connection is via a balanced audio input with two additional contacts which may be shorted via a user-provided switch. When the switch is closed the Caller will hear a reduced programme plus the input to the External Talkback circuit.

LINE

(Coarse Adjust) allows the coarse adjustment of the Line input level. C/F Null to cancel the level of the caller's signal in the Clean Feed output.

DIVERT

1-pole 2-way switch (these connections are available on the Remote socket) and can be used to connect the Caller to a standard telephone (via a telephone hybrid).

AUXILIARY SEND

AUX routes the Caller's signal onto the Auxiliary Mix bus. The factory default is pre-fade. Changed via a link on the pcb.

EQUALISER

HF EQ control (above 8.5kHz) boost and cut of ± 10 dB. MF EQ control boost and cut of ± 10 dB at 3kHz. LF EQ control (below 180Hz) boost and cut of ± 10 dB.

EQ SWITCH

(Yellow LED).

80Hz HIGH-PASS FILTER

(Yellow LED). This control is useful for filtering-out low-frequency hum.

LEVEL CONTROL

PAN, GAIN (± 15 dB gain), PEAK LED.

CUEING

When the COMM circuit is active the Caller will hear a reduced programme plus the signal on the T/B OUTPUT bus. This bus will carry the signal from the inbuilt mic plus the signal from any of the Mono Input modules if their respective Talkback Switches are closed. In addition the Caller's input will be put on the PFL MIX L&R buses and a PFL condition is signalled on the PFL Enable bus. The Presenter will therefore hear the caller as a PFL. The COMM circuit will be deactivated when the Fader is moved away from the down position, or when the COMM switch is pushed a second time.

When the PFL circuit is active the Caller's input will be put onto the PFL MIX L&R buses. The Presenter will therefore hear the caller as a PFL. The PFL circuit will be deactivated when the Fader is moved away from the down position.

OUT TO THE PROGRAMME

100mm FADER, unity (0dB) in the fully up position. The fader microswitch detects when it is in the fully off position.

DEALER

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TELCO INPUT



SPECIFICATIONS:

0dBu = 0.775 Volts RMS 0 dBV = 1 Volt RMS

Eq
LF ± 10 dB shelving at 180Hz
MF 10dB cut and boost at 3KHz
HF ± 10 dB shelving at 8.5KHz

Frequency Response

Mic input +0, -1dB 40Hz to 20KHz
Line inputs +0, -0.5dB 20Hz to 20KHz

Noise Measured

Mic input E.I.N. -128dB 200R source
Line inputs -85dBu (1 channel and master faders at 0dB)

Distortion

THD and Noise 0.006% 1KHz 0dBu
0.002% 1KHz +20dBu

Crosstalk

Interchannel -85dBu
Stereo Right to Left -88dBu 1KHz -68dB 10KHz
Left to Right -88dBu 1KHz -72dB 10KHz

Input Levels

Mic input -70dBu to -23dBu
Max input level -2dB
Mono line input -10dBu to 0dBu
Telco line input -10dBu to 0dBu
Stereo line 1 -10dBu to 0dBu
Stereo line 2 0dBu to -10dBu selectable
Mic insert -6dBu

Input impedance

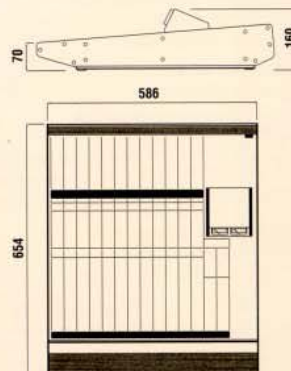
Mic input $> 1.5K\Omega$
Mono line input $> 20K\Omega$
Telco line input $> 20K\Omega$
Stereo line input $> 10K\Omega$

CMRR

Mic input > 100 dB at 70dB gain

Output levels

Max output level +21dBu
Output impedance $< 75R$
C/F output 0dBu



PACKED 29Kg 950 x 900 x 260mm