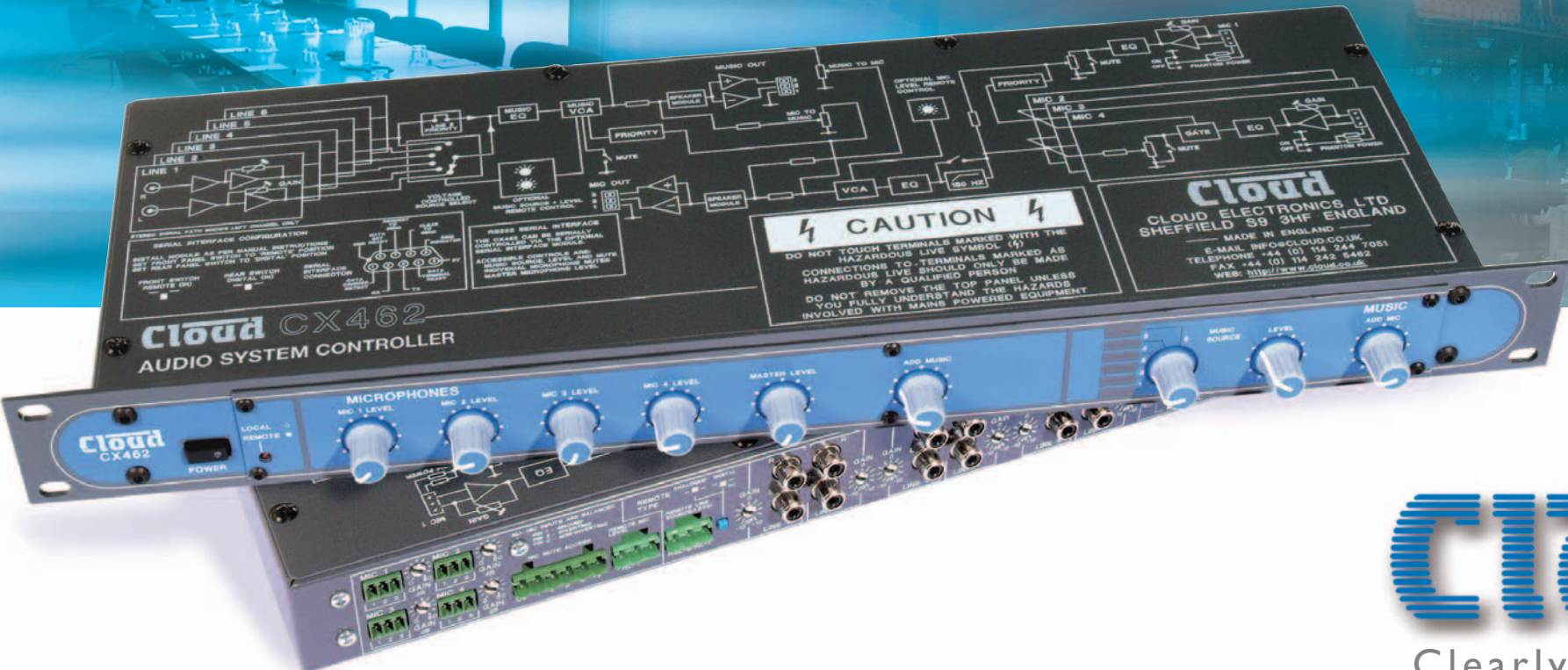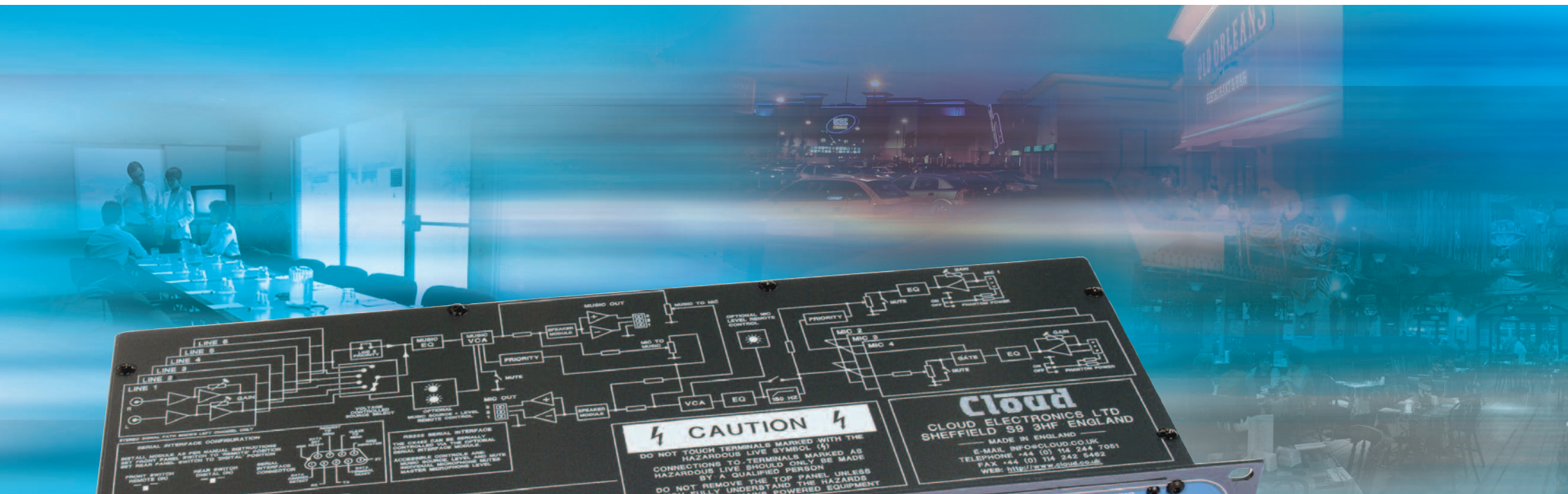# Cloud
Clearly better sound

CX462 Audio System Controller

'Unique' best describes the CX462 Audio System Controller; we have included a set of features and configuration options that bring great diversity and make the unit the appropriate choice for applications such as AV presentations, places of worship plus other sound systems often found in hotels, shops, bars and leisure venues.

In simple terms, the CX462 has a stereo music section with 6 inputs plus a mono microphone section with 4 inputs; the key to the versatility of the unit is its ability to route the microphone signals to the output of the stereo music section and similarly, a mono mix of the music signals can be added to the microphone section output.

We have paid a great deal of attention to the needs of the system designer, the system installer and the system operator. All the configuration options and installer presets are concealed from the operator by positioning them in tamperproof locations, leaving the front panel clear, functional and easy to use.

Remote control is an important feature of the CX462. The conventional Cloud RSL-6 control plate can be used to provide remote control of the music source and level functions and the RL-1 can also be used for control of the music level only and can also be used to remotely control the master microphone output level. For more comprehensive control of a variety of functions, the Cloud CDI S100 serial interface module can be used with any device that can communicate via RS232 such as AV controllers, touch panels and laptops etc.

Comprehensive control of gain, equalisation and priority options are provided for both the music and microphone sections and in addition, the music section can be configured to provide line 6 priority, ideal for a jukebox or spot announcements. A facility to mute the music signal via a fire alarm control panel is also provided. Any of the three outputs can be fitted with a plug-in EQ card designed to optimise the performance of certain Bose® loudspeakers.

The Cloud CX462 is manufactured in England to the highest professional standard, delivering the legendary 'Clearly Better Sound'. The high standards that we strive to achieve are your guarantee of audio quality and a long trouble free life.

Applications

The CX462 Audio system controller is a unique solution for a wide range of applications, such as:

- AV presentations
- Places of worship
- Retail Outlets
- Leisure/Licensed Venues
- Training Rooms
- Boardrooms
- Conference rooms

MUSIC SECTION

Line Inputs

The CX462 has 6 line inputs, which are suitable for most music sources such as CD players, hard disc music systems, satellite receivers & tape players etc. All inputs are unbalanced and use RCA type phono connectors.

Sensitivity and Gain Control

All six line inputs have pre-set gain controls that are accessible on the rear panel, adjacent to their respective input sockets. The input sensitivity can be varied from -17.6dBu (100mV) to + 5.7dBu (1.5V).

Music Control - Local or Remote

The music source and music level functions can be controlled from either the front panel or remotely, via the optional Cloud CDI S100 serial interface module or an optional remote control plate located up to 100m from the CX462. There are two remote control plates available for this

RSL-6 (far left) with RL-1 (left)

function, the RSL-6 and the RL-1. The RSL-6 should be used where remote control of music source and music level is required whereas the RL-1 can be used when the application calls for remote control of the level only (source selection via front panel).

The RSL-6A and RL-1A are available for the American market.

Music Equalisation

Equalisation for the music signals is provided via the front panel treble and bass pre-set controls, this enables the installer to tailor the response of the music signals to suit the acoustics and speakers of the system. The equalisation controls are concealed behind the removable anti-tamper facia. The HF control has a range of ±10dB at 10kHz and the LF control has a range of ±10dB at 100Hz.

Line 6 Priority

The line 6 input can be configured by an internal jumper to have priority over the selected source. This is intended for use with jukeboxes or spot announcement players etc.

Priority is only enforced when a signal is detected at line 6, at which point the selected music source will mute and the line 6 signal will be routed to the output. Once the signal on line 6 ceases, the selected music source will smoothly restore to its former level. The time taken for this restoration can be 3, 6 or 12 seconds dependant on internal jumper settings.

Add Mic

A front panel control allows a variable level of the output of the microphone section to be routed to the music outputs. A typically example could be where the CX462 is installed in a bar using only the signals from the stereo outputs and microphone content is required.

Outputs

The music outputs can operate in either stereo or mono mode. In mono mode, all stereo signal sources are mixed internally and the mono signal is present at both left and right channel music outputs. The stereo/mono mode is configured by setting the relevant internal jumpers.

Each output is balanced, using a 3 pole 'Phoenix' type connector that can operate into loads as low as 600 Ohm. The nominal output level is 0dBu (775mV) but the mixer can deliver a wide range of signals up to a maximum output level of +20dBu (7.75V).

MICROPHONE SECTION

Inputs

Four microphone inputs are provided each having electronically balanced, transformer-less circuitry, configured for optimum low noise performance. The input impedance is greater than 2kΩ and suitable for microphones in the 200Ω to 600Ω range. Inputs are via 3-pin plug in screw terminal type connectors (Phoenix type) located on the rear panel.
A facility to provide +15V phantom power is included for each microphone; this is activated by setting the relevant internal jumpers.

Microphone Gain/Level Controls

Pre-set gain controls are provided adjacent to the respective microphone input on the rear panel. The gain can be adjusted from 0dB to 60dB. A high overload margin is maintained at all gain settings.

On the front panel a level control is provided for each mic input along with a master mic level control. The master mic level can also be controlled remotely, either via an optional RL-1 remote plate or the optional internally fitted Cloud CDI S100 Serial interface module.

Mic access

Provision is made for the microphone inputs to operate in a "closed contact access" mode, this enables press to talk microphones to be used. Access to the mic inputs can also be
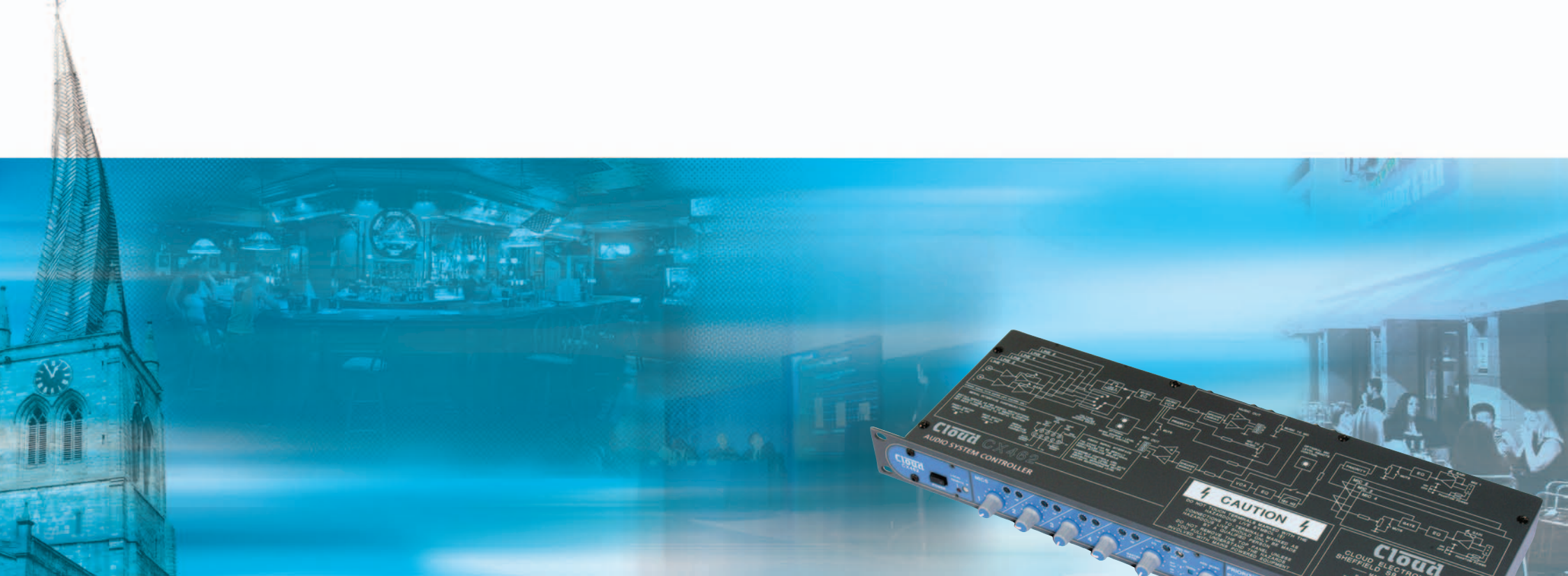
controlled remotely by sophisticated third party touch panel AV controllers when used in conjunction with the optional Cloud CDI S100 serial interface module or by simple switches. Internal jumpers are provided to allow access to any of the microphone inputs to be permanently enabled.

Microphone Equalisation

Two-band equalisation is provided for each individual microphone input, the HF control provides ±10dB at 5kHz whilst the LF control provides ±10dB at 150Hz. A single parametric equaliser is provided for the microphone section to allow the installer to optimize the systems vocal intelligibility, the equaliser provides a gain of ±10dB over a vocally optimised sweep frequency range of 300Hz - 3kHz. All microphone equalisation controls are concealed behind the removable anti-tamper facia.

High Pass Filter

All microphone channels can be configured to pass through a high pass filter. This filter operates at 150Hz and provides effective attenuation of breath blasts and LF handling noises. This filter can be switched in or out via a front-panel switch which is concealed behind the removable anti-tamper facia.

Priority
Microphone 1 Priority

A front panel switch enables microphone 1 to have priority over microphones 2-4. This feature can be configured to

operate in one of two ways, either by "Closed contact Access" mode or Voice Operated mode. The mode of operation is selected by an internal jumper.

Microphone Over Music Priority

A front panel switch enables any mic signals to have priority over the music programme. When priority is selected, the presence of any Microphone signal will attenuate the music programme by between 10dB and 60dB, the level of attenuation is set by the front panel preset.

An internal jumper can be configured to provide attenuation of the music programme when mic 1 is used in its "Closed contact access" mode.

All priority controls are concealed behind the removable anti-tamper facia.

Add Music

A front panel control allows a variable level of the output of the music section to be routed to the microphone section output. A typical example could be where the CX462 is installed in a house of worship using only the signals from the microphone output and music content is required.

Output

The output is balanced, using a 3 pole 'Phoenix' type connector and can operate into loads as low as 600 Ohm. The nominal output level is 0dBu (775mV) but the mixer can

deliver a wide range of signals up to a maximum output level of +20dBu (7.75V).

REMOTE MUSIC MUTE

Fire Alarm Interface

In certain installations, such as licensed premises or retail outlets within a shopping mall, there may be a local authority or fire service requirement to mute the music signals via a fire alarm control panel in an alarm condition. The CX462 provides a facility to mute the music signals only, by using a fully isolated pair of contacts, which can be configured by an internal jumper to operate with either normally open or normally closed contacts.

ACTIVE MODULES

Speaker Equalisation Modules

Each output channel has the facility to connect a plug-in equaliser module. Two speaker equalisation cards are available for the CX462:

Model 32 EQ card   Model 8 EQ card   CDI S100 Serial Interface Module

Model 8 card for use with Bose® model 8 speakers.

Model 32 card for use with Bose® model 25, 32 & 102 speakers.

Cloud CDI S100 Serial Interface Module

The CX462 can be used as part of an automated sound system through the use of the CDI S100 Serial Interface Module. The module has an RS232 interface and can control the following functions:

- Music source selection.
- Music level control.
- Music mute.
- Master microphone level control.
- Master microphone mute.
- Individual muting of all four microphones.

TECHNICAL SPECIFICATIONS

Line Inputs

Frequency response	20Hz-20kHz +0, -0.5dB
Distortion	<0.03% 80kHz Bandwidth
Sensitivity	100mV (-17.8dBu) to 1.5V (+5.7dBu)
Input impedance	48kΩ
Input gain control	24dB range
Headroom	>20dB
Noise	-91dB rms 22kHz Bandwidth (0dB gain)
Equalisation	HF ±10dB/10kHz
	LF ±10dB/50Hz

Microphone Inputs

Frequency response	-3dB@ 30Hz (without filter) 20kHz ±0.5dB -3dB@ 150Hz (with filter)
Distortion	<0.05% 20Hz-20kHz
Gain range	0dB-60dB
Input impedance	>2kΩ (balanced)
Common mode rejection	>70dB 1kHz typical
Headroom	>20dB
Noise	-128dB rms EIN 22kHz Bandwidth
Equalisation	HF ±10dB/5kHz
	LF ±10dB/150Hz

Outputs

Nominal output level	0dBu
Minimum load impedance	600Ω
Maximum output level	+20dBu

General Specifications

Power input	230V/115V ±10%
Fuse rating	230V – T100mA 115V – T200mA
Fuse type	20mm x 5mm 250V
Dimensions	482.6mm x 44.0mm (1U) x 152.5mm deep (+connectors)
Weight	2.5kg net
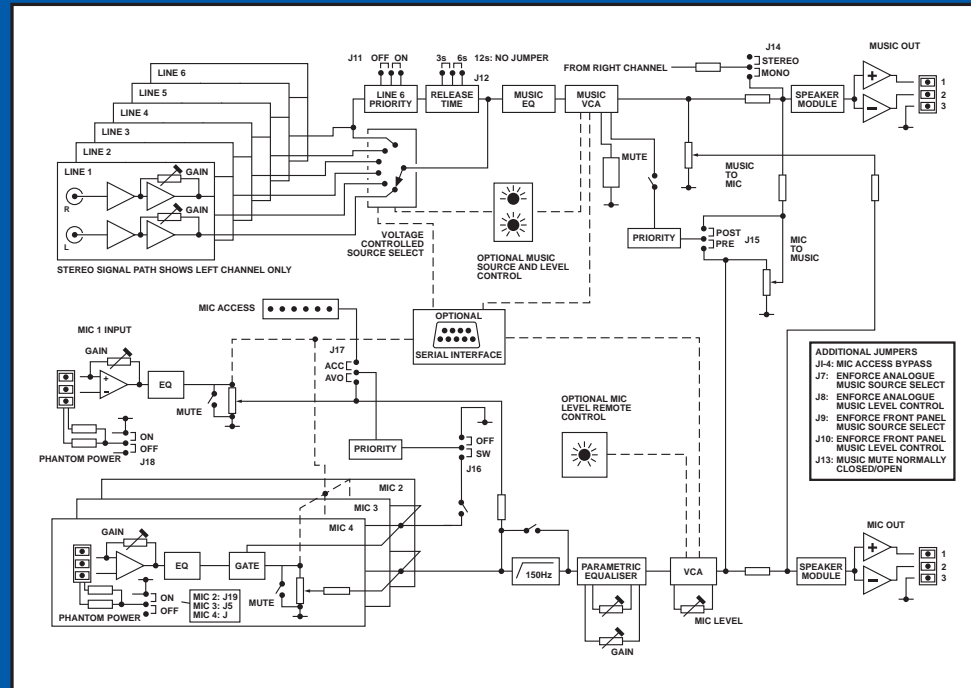
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