LM-2 SERIES
REMOTE MIC/LINE MIXER/CONTROL MODULES

Cloud
Clearly better sound

LM-2: UK version
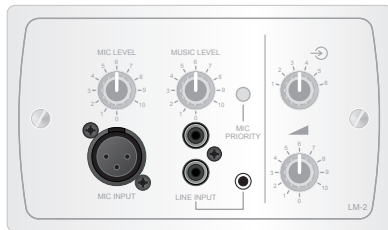
LM-2W*

LM-2: US version
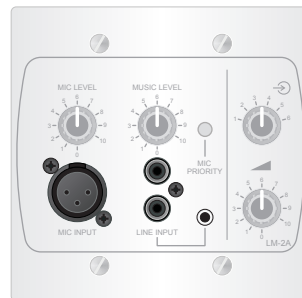
LM-2AW*

LM-2: German version

LM-2DPW*

* black modules also available.

General Description

The LM-2 Series is a range of remote modules for use with either the Cloud Z4MK4/Z8MK4 and Z4MK3/Z8MK3 Zone Mixers, or 46-120 and 46-120MEDIA Zone Mixing Amplifiers (see separate datasheets). An LM-2 module allows a microphone and/or a stereo music source to be connected physically within a Zone, mixed together with independent level controls and routed to the Zone's amplifier and speakers. Selectable mic-over-music priority is provided. The LM-2 also provides the same remote control functionality as the Cloud RSL-6, with selection of background music source and level control.

PLEASE NOTE: The LM-2 module can be used with the earlier Cloud Z4II and Z8II Zone Mixers, in addition to the 46-50 Integrated Mixer Amplifier. The connection procedure, and details of how to configure the units to suit, are explained in full in Cloud Technical Note TN-007, which may be downloaded as a PDF file from www.cloud.co.uk.

The LM-2 is available in three different form factors to suit various international styles of electrical back box. One or more LM-2s may be installed in a Zone, and are easily wired to the Zone Mixer's rear panel Facility Port for that Zone using screened Cat 5 cable and screened RJ45 plugs.

In many installations, the host unit will normally be located in a rack along with other audio equipment, and will not be readily accessible. Installing an LM-2 module in a Zone provides the user with the ability to plug in a microphone in the Zone itself, and also connect a wide variety of local stereo line level audio sources such as portable music systems, CD players, laptops, MP3 players, DJ mixers, radio mic receivers, etc. The music input is available both as a pair of phono sockets and as a 3.5 mm stereo jack socket. The L and R stereo channels are summed to mono, and the signal at the jack input is

combined with that at the phonos. Mic and music inputs are mixed, with independent control of mic and music level from faceplate controls. The mixing ability makes the LM-2 particularly useful for Karaoke.

A faceplate MIC PRIORITY button gives the microphone input priority (30 dB of ducking) over both the local music source connected at the LM-2 and the Zone's background music source selected at the host unit. If needed, the priority operation can be changed so that both the mic input and the local music input take priority (full muting) over the background music.

The remote control section of the LM-2 is identical to the Cloud RSL-6 remote control source and level control. Separate controls are provided to select the background music source in the Zone (from the six supported by the host units), and the background music level.

Multiple LM-2s may be "daisy-chained" together to provide additional input/control points in the same Zone; a second RJ45 LINK connector is provided for this purpose. Only one LM-2 in such a chain may control background music source selection and level; further jumpers may be set to determine which LM-2 has control. Standard Cloud RSL-6 or RL-1 remote control plates may be daisy-chained to LM-2s in the same way; please see the Technical Notes section at www.cloud.co.uk for full details.

LM-2 key features

- Single-Zone remote input/control module for Cloud Z4MK4, Z8MK4, Z4MK3, Z8MK3, 46-120 and 46-120MEDIA
- Easy connection to host unit via screened Cat 5 cable (up to 100 m)
- Balanced mic input (XLR) with level control
- Stereo, unbalanced line level input (phonos/RCA), with independent level control
- Alternative line input on 3-pole 3.5 mm jack socket
- Active mixing of mic and line signals

- Remote control of background music source and level (as Cloud RSL-6)
- Switchable music-under-mic ducking
- Alternative priority operation gives mic and/or local music full priority over background music
- Multiple LM-2s may be chained in same Zone; jumpers define remote control master
- Can also be chained to RSL-6 or RL-1 remote controls

Versions

Six versions of the LM-2 are available; they are electrically identical and differ only in style and appearance. Versions available are:

- LM-2W to fit UK back boxes, white finish
- LM-2B to fit UK back boxes, black finish
- LM-2AW to fit US back boxes, white finish
- LM-2AB to fit US back boxes, black finish
- LM-2DPW to fit German DIN-standard back boxes, white finish
- LM-2DPB to fit German DIN-standard back boxes, black finish

The LM-2W and LM-2B mount into a standard dual-gang UK-style electrical back box (85 x 145 mm).

The LM-2AW and LM-2AB mount into a standard dual-gang US-style box (114 x 114 mm/4½" x 4½").

The LM-2DPW and LM-2DPB have 150 x 80 mm faceplates and are designed to fit dual gang back boxes (requiring 2 x 68 mm dia. cutouts) used in several countries, including Germany.

All versions require a back box depth of 35 mm minimum.

## Dimensions

LM-2B

LM-2AB

LM-2DPB
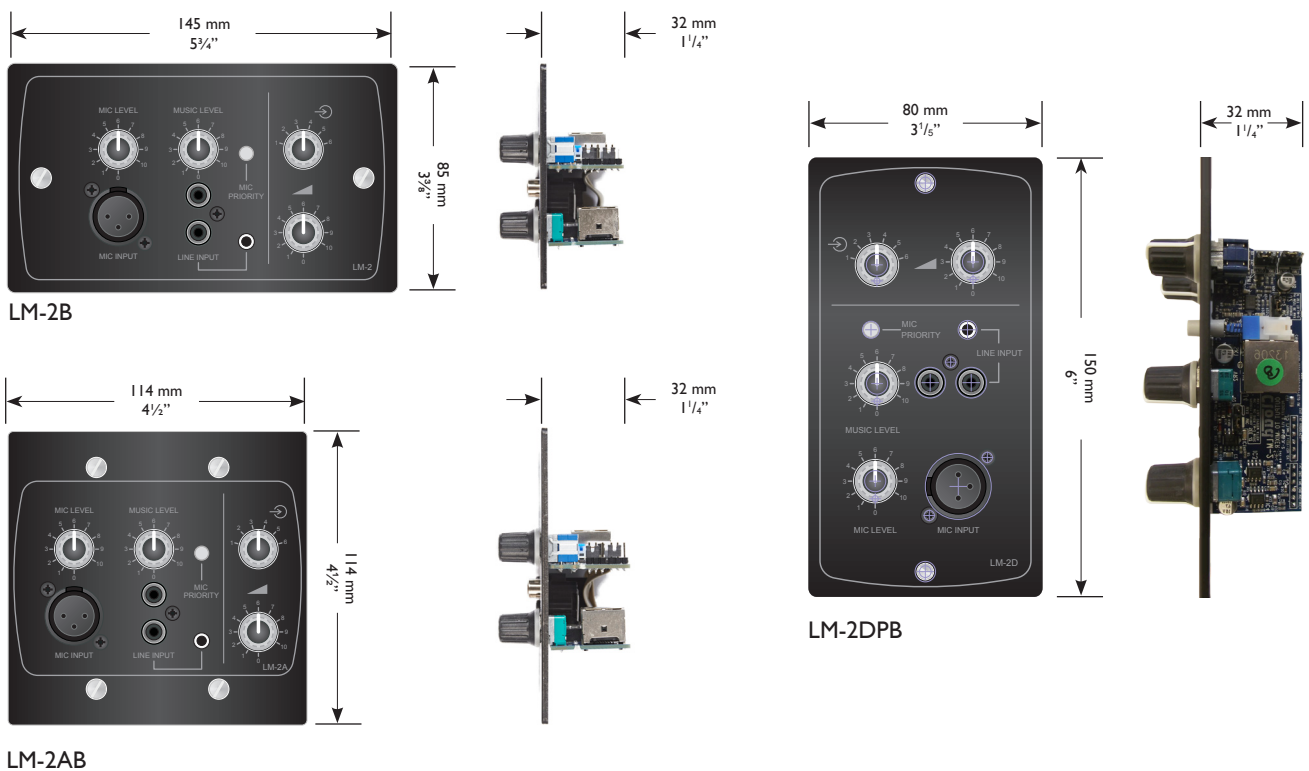
Connections

The LM-2 is exceptionally simple to install; the rear OUTPUT connector is wired to one of the host unit's Facility Ports with a single screened Cat 5 cable using standard shielded RJ45 connectors at each end. The Cat 5 cable carries DC power as well as balanced audio.

Each Zone on the host unit has its own Facility Port, and any LM-2s connected to a particular port will provide inputs to that Zone only, and source/level control of the background music in that Zone only.

A second RJ45 connector is provided to permit multiple LM-2s to be "daisy-chained" together, to provide insert points at different locations in the same Zone. Signals applied to modules wired in this way will be summed together to the Facility Port to which the "last" LM-2 in the chain is connected. An internal gating circuit on each module automatically disables the audio circuitry on any chained modules which are not in use, to minimise noise contribution.

LM-2s are powered from the host unit to which they are connected, and each takes 12 mA at +15 V and -15 V. In the vast majority of installations, the host unit will have ample spare power capacity for several LM-2s. Full details are provided in the host unit's documentation.

LM-2 (UK version illustrated)
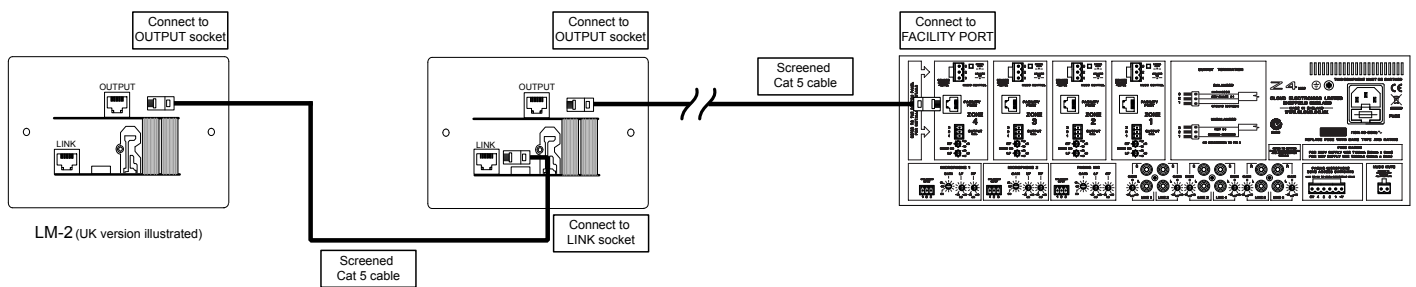
Block Diagram
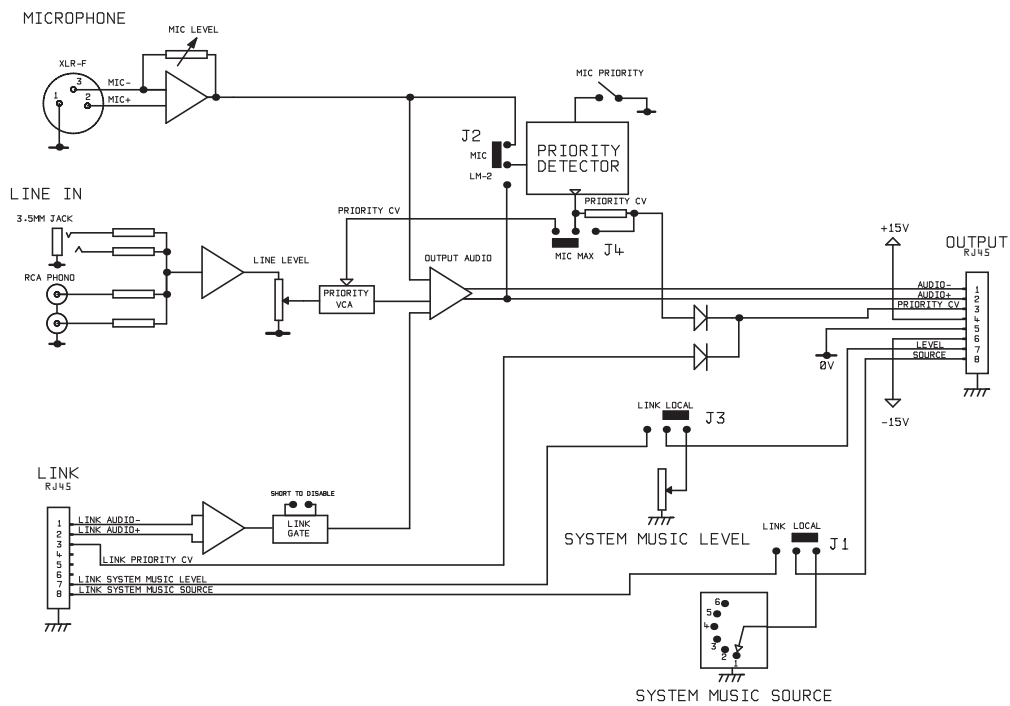
Architect's and Engineer's Specification

An optional remote module shall be available for the Cloud Z4MK4/Z8MK4 and Z4MK3/Z8MK3 Zone Mixers. It shall also be compatible with the Cloud 46-120 and 46-120MEDIA Zone Mixing Amplifiers. The module shall be provided with OUTPUT and LINK RJ45 connectors to permit connection to the host unit and other similar input modules via screened Category 5 data cable.

The remote module shall allow the connection of i) a balanced microphone via a 3-pin XLR connector and ii) a stereo unbalanced audio source on both phono (RCA) connectors and a 3.5 mm dia. 3-pole jack. All connectors shall be accessible from the front of the module. The microphone input shall have a gain control with a range of sufficient magnitude to allow dynamic microphones of any type to be used effectively. The stereo music input shall have a separate level control; the phono inputs shall be capable of accepting signals with a nominal level of 0 dBu, and the jack input signals with a nominal level of +8 dBu. The stereo channels shall be summed into mono and mixed with the microphone signal within the module.

A user-switchable priority facility will be provided to reduce the level of both the music signal connected at the module and the music source selected at the host unit for that Zone by 30 dB. It shall be possible to modify the priority operation by internal jumpers so that the sum of the microphone and music inputs mute the music source selected at the host unit for that Zone.

Circuitry shall be included such that interconnected modules which do not have microphones connected do not contribute any perceptible noise to the output signal.

The module shall also incorporate remote controls of the rotary type providing selection of i) music source and ii) music level, within the host unit. It shall be possible to disable either of these functions on a module when multiple modules are interconnected, so that only one linked module in a Zone has control of the host unit.

The remote module shall be available in versions suitable for fitment in standard UK, US or German electrical back boxes. The modules shall be available in a choice of finishes.

The remote modules shall be the Cloud LM-2W (UK version, white finish), the Cloud LM-2B (UK version, black finish), the Cloud LM-2AW (US version, white finish), the Cloud LM-2AB (US version, black finish), the Cloud LM-2DW (German version, white finish) and the Cloud LM-2DB (German version, black finish).