



CM812 INSTALLATION & USER MANUAL

The CM812 is an 8-input, 2-output mixer with remote control of volume and on/off switching for each input. It also provides 3 preset settings and bass and treble control for each input.

This manual details how to set up the mixer as well as instructions for use, guarantee information and technical specification.

The manual is divided into the following sections:

- | | | |
|----|-------------------------------------|--------|
| 1. | Safety information | page 2 |
| 2. | Operation of the mixer | page 2 |
| 3. | Setting up the main mixer | page 4 |
| 4. | Input and output connections | page 4 |
| 5. | Setting up the remote control panel | page 5 |
| 6. | Data Connections | page 6 |
| 7. | Guarantee information | page 7 |
| 8. | Technical specification | Page 7 |

1. Safety information

- 1.1 THIS UNIT MUST BE EARTHED TO A MAINS SAFETY EARTH BY WIRING TO A 3-PIN MAINS PLUG.
- 1.2 The audio input and output 'ground' connections are NOT connected to the metal casework of the unit.
- 1.3 The mains input fuse is a 20mm 500mA T type fuse situated in the pull-out drawer beneath the mains connector. This fuse must be replaced by one of the same type and rating for continued protection.
- 1.4 There are also 2 internal fuses mounted on the main circuit board near to the mains transformer. These are 20mm 1.6A T type fuses. If any fuse blows, take steps to ascertain the reason for it and proceed with caution - fuses do not normally blow for no reason!

2. Operation of the mixer

- 2.1 Power to the main mixer is controlled using the front panel rocker switch - there is a green LED to show when power is applied. The remote control panel is powered from the main unit via the 4-pair data cable if the system is cable connected - or from its own rechargeable batteries if the system is wireless.

For the radio connected system:

Power up the main unit FIRST and then the remote unit. If the remote is out of range, then all channel LEDs will flash three times and the remote will then switch OFF. Move to a position nearer the remote aerial unit and switch back on again. The unit will power up with the POWER button illuminated and all channels switched OFF.

Remember the remote is using batteries all the time it is switched on. The batteries should power the unit for up to 17 hours (when the batteries are new) and it is recommended that the unit be left attached to the mains charger adaptor when not in use. The batteries will fully charge in around 4 hours - during which time the small red CHARGE LED will be lit - but it is safe to leave the unit connected to the power adaptor whenever the unit is not in use (the charge current reduces automatically to a trickle charge value).

It is possible to use standard 'C' size cells to power the unit in an emergency. Unscrew the black end cap and ensure the 3 batteries are fitted with the Positive end towards the removable cap.

IMPORTANT NOTE: If you are using standard batteries do NOT attempt to recharge these or there will be a risk of damage to the unit or fire due to overheating.

NB Do not try to operate the system whilst the remote unit is on charge or the system will switch off as soon as you change any setting on the remote unit.

2.3 Inputs can be turned on and off individually using the push-button switches on the remote panel - these are illuminated when the channel is on. The level for each channel can be set using the slider controls.

2.4 Tone controls

The bass and treble controls for each input can be changed from the remote unit as follows:

With the channel switched OFF, press and hold the channel on/off button until its LED flashes and the bass/treble control buttons are illuminated.

Use the bass + and - and treble + and - buttons to step up or down the tone settings. If the control is set to the 'flat' position (factory default) then both + and - button LEDs will be ON steady. If the control is set to 'cut' then the '+' button will be flashing; if the control is set to 'boost' then the '-' button will be flashing.

If a button is not lit then you are at the limit of range (+ or - 14dB).

To return to normal mode press the channel on/off button again.

2.5 Preset mixer settings

Provision is made to be able to store up to three configurations of the mixer, which can be recalled at the touch of a button.

To recall a preset: just press the preset 1, 2 or 3 button as required. The respective button will remain lit and all other channel LEDs will be turned OFF. This will recall which channels were switched on and the volume (and tone) settings which were in use when the preset information was stored. Pressing any other button will return the

mixer to its condition before you pressed the preset button.

To store information in a preset: set the mixer to the required settings with regard to volume (and tone) on the required channels and switch on the required channels. Now press the STORE button and whilst it is depressed, press and release the appropriate PRESET button. Now release the STORE button.

3. Setting up the remote control panel

- 3.1 The signal from each input can be assigned to either or both outputs. This setting is carried out using switches on the pcb in the remote panel. Remove the four screws holding the front panel into the case and gently lift out the panel and pcb assembly. If you have the wireless version, be very careful as there are 3 cables connecting items on the casework to the printed circuit board.

In the case you will find a label detailing how to set up the switches to direct each input to the desired output.

Please note that you will have to re-power the remote by switching power off then back on at the remote unit.

4. Setting up the main mixer

- 4.1 Phantom power
Each mic input can have phantom power applied to both 'ring' and 'tip' connections. Looking from the front of the unit, there are 2-position jumpers just in front of the 2-part terminal blocks and these are for channels 1 to 8 reading from left to right. To enable phantom power on a channel, its jumper must be in the LEFT hand position.
- 4.2 Mic/line select
For each input you can select mic or line using the jumper sets PL9 to PL18. Looking from the front of the unit, the top position selects mic level, and the signal will be connected using the 2-part terminal block. The second position selects low level line input (nominal 225mV level) and will be connected using the stereo phono sockets. The third position selects high level line or CD (nominal 1V level) and will also be connected using the phono sockets. The bottom position is for

future enhancements when it may be possible to control the mixer from a pc rather than using the remote control unit and this position enables input selection to be made remotely from the pc.

The respective jumpers are as follows:

| | |
|--------------------|--------------------|
| PL9 for channel 1 | PL11 for channel 2 |
| PL15 for channel 3 | PL12 for channel 4 |
| PL16 for channel 5 | PL13 for channel 6 |
| PL18 for channel 7 | PL17 for channel 8 |

4.3 Line level adjust

For each line input there is a level adjustment control directly in front of the associated phono input sockets. This can be used to equalise the levels between different input sources or to adjust the effective sensitivity of the line input. Normally these should be left in the fully clockwise position.

5. Input and Output connections

5.1 Mic inputs

Microphones can be connected using the 3-way two-part terminal blocks. Inputs are balanced.

See instructions on the lid for the pin-out of these terminal blocks.

5.2 Line inputs

Line inputs are stereo and are connected using the phono connectors.

5.3 Output connections

There are two outputs: all inputs can be selected in the remote control panel to be directed to either or to both outputs.

Connection should be made using stereo 1/4" jack plugs.

The outputs can be configured to be stereo or mono using the jumpers on the main unit pcb near the output connectors. You need to set all 4 jumpers to either 'M' for mono or 'S' for stereo operation.

If stereo is selected, then the line inputs which are stereo will be correctly routed to left and right outputs: the TIP connection is the LH

channel and the RING connection is the RH channel. Mic input signals will of course appear as a mono signal on both channels.

6. Data connections

6.1 WIRELESS CONNECTED SYSTEM

The remote unit can be used anywhere within range of the main unit's remote aerial unit. The main control unit does not have a built-in aerial and the signal is transmitted from the remote aerial unit, which is connected to the main unit using CAT-5 4-pair data cable. This means that the aerial unit can be positioned for optimum coverage of the area in which the remote control is to be used.

The CAT-5 cable is connected to the main unit using an RJ45 connector and to the remote aerial unit using either an RJ45 connector or the terminal blocks provided. (See section 6.3 for details). The remote aerial unit should be mounted vertically with the aerial extending vertically above the unit.

6.2 CABLE CONNECTED SYSTEM

The remote control unit is connected to the main unit by a 4-pair data cable. This cable also carries power to the remote unit. The cabling needs to be terminated at both ends by an RJ45 connector.

You can either have a direct connection between the units, permanently wired or you can provide suitable RJ45 sockets at different places to allow the control unit to be plugged in where required. If you choose this method, the cabling should daisy chain from the main unit to the first remote position, then on to the next one rather than having multiple cables connected at the main unit - this is to prevent reflections in the cabling causing data corruption and subsequent malfunction of the system. You then connect the remote to the desired socket using a short RJ45 to RJ45 lead.

The 4-pair cabling should be carried out using category 5 cable. Short lengths connecting remotes to sockets should use patch cable (stranded) whereas the permanently installed cable can be solid-core or stranded. Patch leads, Cat.5 cable and RJ45 connectors (both plugs and sockets) are available from our service department.

6.3 CAT5 CABLE WIRING

Wiring should be as follows:

| | |
|--------------------|----------------|
| PIN 1 WHITE/Orange | +12v |
| PIN 2 ORANGE/White | +12v |
| PIN 3 WHITE/Blue | Main unit RX A |
| PIN 4 BLUE/White | Main unit RX B |
| PIN 5 WHITE/Green | Main unit TX A |
| PIN 6 GREEN/White | Main unit TX B |
| Pin 7 WHITE/Brown | 0v |
| PIN 8 BROWN/White | 0v |

If you hold an RJ45 plug, looking at the cable entry end with the contacts uppermost, then the pins number 1 to 8 from left to right.

7. **Guarantee information**

The unit is guaranteed against failures caused by faulty workmanship for one year from the date of purchase. Claims must be accompanied by suitable proof of purchase date. If the unit has to be returned to the factory, the original packing should be used if possible.

All repairs should be undertaken by qualified personnel only - KD Electronics may not be held responsible for damage to units caused by maltreatment or repairs carried out using non-approved components or methods.

Full technical assistance may be obtained by contacting the factory.

8. **Technical Specification**

INPUTS:

Mic: 3.5 mV balanced into 600 ohms (2-part terminal block)

Line: 1.00 V unbalanced into 10K ohms (stereo phono) CD/High level line
275 mV unbalanced into 10K ohms (stereo phono) Low level line

OUTPUTS:

775mV, 560 ohm unbalanced (1/4" stereo jack)

NOISE:

Mic inputs -60.5dB (10 - 100K Hz)

Line inputs -76.0dB (10 - 100K Hz)

POWER:

240v ac 50/60 Hz 15VA max. using IEC connector

MECHANICAL:

Main unit: 1u 19 inch rack casing 170mm deep, steel case with black paint finish

Remote unit: Black ABS case with painted aluminium front panel

KD Electronics
5 Sandown Centre
White Horse Business Park
Trowbridge
BA14 0XD
Tel: 01225 774077
Fax: 01225 774135