ZMR80 Modular Zoner Mixer

Introduction

The modular construction of the ZMR80 allows it to be tailored to the requirements of a wide range of different venues with a choice of 2 to 8 inputs, 2 to 12 outputs, paging options and optional remote panels. Take only the modules and options you require.

The chassis is 19" rackmount 4RU height and will take 1 PSU or 1 PSU/Page module, up to 4 twin input modules and up to 6 twin output modules. Unused positions are normally filled with blank modules, additional modules up to the maximum can be fitted at a later date.

PSU

If you require paging then the Page module is needed (which includes a PSU), without paging the PSU module is required.

The PSU module supplies the power to the rest of the modules and includes a mute/priority input on a 4 pin connector (mating part supplied) allowing system mute (fire alarm for example) and priority input (for example evacuation announcements) to all outputs.

The front panel has LED's showing supply and system mute status, the rear panel has the 4 pin mute/priority input connector and a priority input gain trim accessible by screwdriver. Internal options selectable by jumpers include phantom power for the priority input and connection of mains earth to 0V rail.

Paging Module

The paging module includes the standard PSU together with the paging facilities and is made up of three elements:

1. A standard PSU PCB with additional connections
2. Paging control PCB
3. Paging microphone input PCB

The front of the paging module is used for **Local Paging** and allows selection of Zones to be paged or page to all.

Pressing the **PAGE SEL** button on the front panel mutes the audio in the selected Zones and makes the local microphone live, releasing the button disables the local microphone and the audio fades back up.

Pressing the **PAGE ALL** button on the front panel mutes the audio in all Zones and makes the local microphone live, releasing the button disables the local microphone and the audio fades back up.

Paging can either be from a microphone directly into the paging module (**Local Paging)** or from a remote paging microphone (**Remote Paging**).

The REMOTE PAGING MICROPHONE unit is designed to sit on an office desk or bar and mimics the front panel with buttons to select Zones to page, page select and page all. Operation is the same as paging from the front panel.

The rear panel has XLR input for the local paging microphone (with recessed gain trim), RJ45 for the remote paging microphone unit, four way connector for priority input (with recessed gain trim) and USB connector for remote control (still under development).

The local paging microphone has the option of phantom power which is selected on a jumper within the paging module on the paging microphone input PCB.

Remote or local paging is set by jumpers within the paging module on the paging microphone input PCB.

Input Module

An input module will carry 2 stereo (or mono) inputs which may be balanced or unbalanced, you may have up to 4 input modules to provide up to 8 inputs.

Mono (Mic) input is on XLR and unbalanced stereo on phono, the selection of input is on a recessed 6 way switch on the rear panel (position 1 is phono input and position 2 – 6 give different gains on the microphone input).

Each input module can have one balanced stereo input, for balanced input use the XLR connections and set the internal jumper to balanced input. The channel at the top of the module controls the balanced input, the lower channel will still accept an unbalanced input on the Phono.

The ZMR 80 has 4 Stereo channels and 4 Mono channels; inputs are assigned to one of these channels by internal jumpers. The maximum number of stereo channels is 4.

On the front panel each input has volume control, clip indicator LED and screwdriver adjustable gain trim and two band EQ. On the rear panel inputs are on XLR and phono sockets, input is selectable by screwdriver operated six way switch which allows selection of line input in position 6 (Phono) or Mic and mic input gain in positions 1 to 5 (XLR).

Internal options include phantom power, balanced input, mixing two inputs (of one module) to one buss. Mixing the two inputs to one buss with voice over selected allows announcements or instruction etc to be clearly heard as the other audio is faded down during the voice over.

Output Module

An output module will carry two stereo (or mono) outputs which may be balanced or unbalanced, you may have up to 6 output modules to provide up to 12 Zones. There is the ability to connect a remote panel for each Zone, the remote panel provides input select and volume control.

On the front panel each output has volume control, input select button and led indicating which input is selected. There is also a led to indicate if a remote panel has been connected, connecting a remote panel disables the controls on the front panel.

On the rear panel the output connections are on a 6 pin (2 x 3) single in line connector (mating part supplied), the remote panel plugs into a 3 pin connector (mating part supplied). Screwdriver adjustable two band EQ is also accessible on the rear panel.

Internal option selectable on jumper is mono.

A custom version is available from the factory without paging that has 7 or 8 output module (14 or 16 Zones) with less input modules.

Blanking modules

Blanking modules are available for any unused slots.

Chassis

The Chassis is 19” and 4RU height.

Remote Panels

Remote panels may be connected as required to provide control of source selection and volume, selecting remote on the output module will enable the remote panel (flashing green LED means no remote panel connected).

Remote Paging Microphone

The remote paging microphone unit connects to the paging module via the RJ45 connection and requires jumpers within the paging module on the paging microphone XLR PCB to be set for remote microphone operation.

The remote microphone mimics the paging module front panel and allows paging to any selected Zones or all Zones.

The remote paging microphone is only live when a paging button (SEL or ALL) is pressed.

The microphone itself is plugged into an XLR connector on the remote paging microphone unit and is replaceable.

Configuration of internal options

PSU Module

The ZMR-80 PSU PCB drawing shows the position of the ground lift select. This will remove the mains ground from 0V. Removing mains earth is generally not recommend unless there is a good technical reason for it.

Also shown is the position of the Phantom power select for the priority input (adjacent is a pot which adjusts the priority input level if required).

Input Module

For phono input the recessed switch on the rear panel marked I/P SEL BAL GAIN must be fully anti clockwise (Position 1), only in this postion are the Phono inputs enabled.

For Microphone input on the XLR the recessed switch on the rear panel marked I/P SEL BAL GAIN must be in Position 2 – 6 (at least 1 step clockwise, the gain increases as you move from position 2 to 6), only in positions 2 – 6 is the XLR microphone input enabled.

For stereo balanced input selection the recessed switch on the rear panel marked I/P SEL BAL GAIN must be in Position 2 on Input A and Position 1 on input B and an internal jumper set (see ZMR-80 INPUT PCB drawing which shows the position), when selected the upper channel on the module utilises the both XLR connectors on the module. The lower channel may still be used via the phono input.

When using balanced input ensure the recessed switch is in position 2 for Input A and Position 1 for input B. Positions 3 – 6 still change the gain on the XLR, uneven L and R will mean a switch in the wrong position.

The ZMR-80 INPUT PCB drawing shows the position of the BUSS selection, each input is allocated to a buss which the output module will recognise as 1 – 8. Normally input 1 would be allocated to buss 1, input 2 to buss 2 up to the maximum of number 8.

Only one input can be allocated to each buss.

Buss 1 – 4 are stereo and buss 5 – 8 are mono. If a number of stereo balanced inputs are required it may be necessary to allocate inputs in a different order, for example module 1 may have one input allocated to buss 1 (stereo) and the second input allocated to buss 5 (mono). The output module would then see input module 1 as numbers 1 and 5, the buss number an input is allocated to is the source number the output module will recognise.

A custom option is available from the factory for 6 stereo input/6 stereo buss, reducing the overall maximum number of inputs but increasing the maximum number of stereo inputs.

Phantom power selection is shown for each input.

The two inputs of a module may be used together for voice over, the upper channel (A) with a voice (Mic) input and the lower channel (B) with music/voice. When a signal is present from input A the signal from input B will be automatically turned down and when the signal on A is stops B will fade back up. Select both voice over and mix A and B to channel A.

At the rear of the module are screwdriver adjustable gain trims for each input.

Output Module

The ZMR-80 OUTPUT PCB drawing shows the position of the Stereo or Mono selection.

Page ID selection is normally factory set, refer to Page Module below for details.

At the rear of the module is screwdriver adjustable two band EQ for each output (Zone).

Paging Module

The ZMR-80 PAGING MICROPHONE PCB drawing shows the position of local or remote microphone selection, also shown is the position for selecting phantom power in local mode.

Selection of phantom power for priority input and earth lift is as shown in the PSU Module section above, the PSU PCB in the paging module being the same as in the standard PSU Module.

The ZMR-80 OUTPUT PCB drawing shows the position of the Page ID (normally factory set), each Output Module is given an ID number 1 to 6

ID 1 corresponds to Output Module 1 which carries Zones 1 and 2.
ID 2 corresponds to Output Module 2 which carries Zones 3 and 4.
ID 3 corresponds to Output Module 3 which carries Zones 5 and 6.
ID 4 corresponds to Output Module 4 which carries Zones 7 and 8.
ID 5 corresponds to Output Module 5 which carries Zones 9 and 10.
ID 6 corresponds to Output Module 6 which carries Zones 11 and 12.

Do not give two output modules the same ID, give output module ID in ascending order starting with 1.

Jumpers (1 = Jumper present)	Module no	Zones
4 2 1		
0 0 1	1	1 and 2
0 1 0	2	3 and 4
0 1 1	3	5 and 6
1 0 0	4	7 and 8
1 0 1	5	9 and 10
1 1 0	6	11 and 12