ZMR 80

STEREO MODULAR ZONER

USERS MANUAL

ZMR80 Stereo 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” rack mount 4RU height and will take 1 PSU or 1 Page PSU module, up to 4 twin input modules and up to 6 twin output modules. Unused positions are filled with blank modules, additional modules up to the maximum can be fitted at a later date.

PSU

The standard PSU does not support paging, for paging a Page PSU is required plus the remote paging microphone unit.

The PSU module supplies the power to the other 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.

The Page PSU module has a RJ45 connector into which plugs the paging microphone.

Input Module (See drawing PC408 later in manual)

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 sockets, the selection of input is on a recessed 6 way switch on the rear panel (position 1 is phono socket 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 line input on the phono sockets.

The 8 channels consist of 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 1 (Phono socket) or Mic and mic input gain in positions 2 to 6 (XLR).

Internal options include phantom power (for microphones), 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 (See drawing PC409 later in manual)

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's indicating which input is selected. There is also the option to connect remote panels for input and volume controls, remote panels are enabled by the input select button and the remote LED illuminates when remote panel operation is selected.

Once the remote panel is enabled the input select button can be disabled by holding it down for about 3 seconds, the remote LED will flash once to indicate the control is locked (to prevent accidental changes). By holding the input select button down for another 3 seconds the control is unlocked.

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.

Mono operation is selectable on an internal jumper.

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.

Remote Panels

Remote panels may be connected as required to provide control of input selection and volume in the room (zone) where the audio is fed to, selecting remote on the output module will enable the remote panel (flashing green LED means no remote panel connected).

Blanking modules

Blanking modules are available for any unused slots.

Chassis

The Chassis is 19" and 4RU height.

Remote Paging Microphone

The remote paging microphone unit connects to the Page PSU module via the RJ45 connection.

The remote microphone 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 (See drawing PC408 later in manual)

For phono (line) 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 socket 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 socket input.

When using the 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 stops B will fade back up. Select both voice over and mix A and B to channel A.

Recessed in the front panel are screwdriver adjustable gain trims for each input and two band EQ.

Output Module (See drawing PC409 later in manual)

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

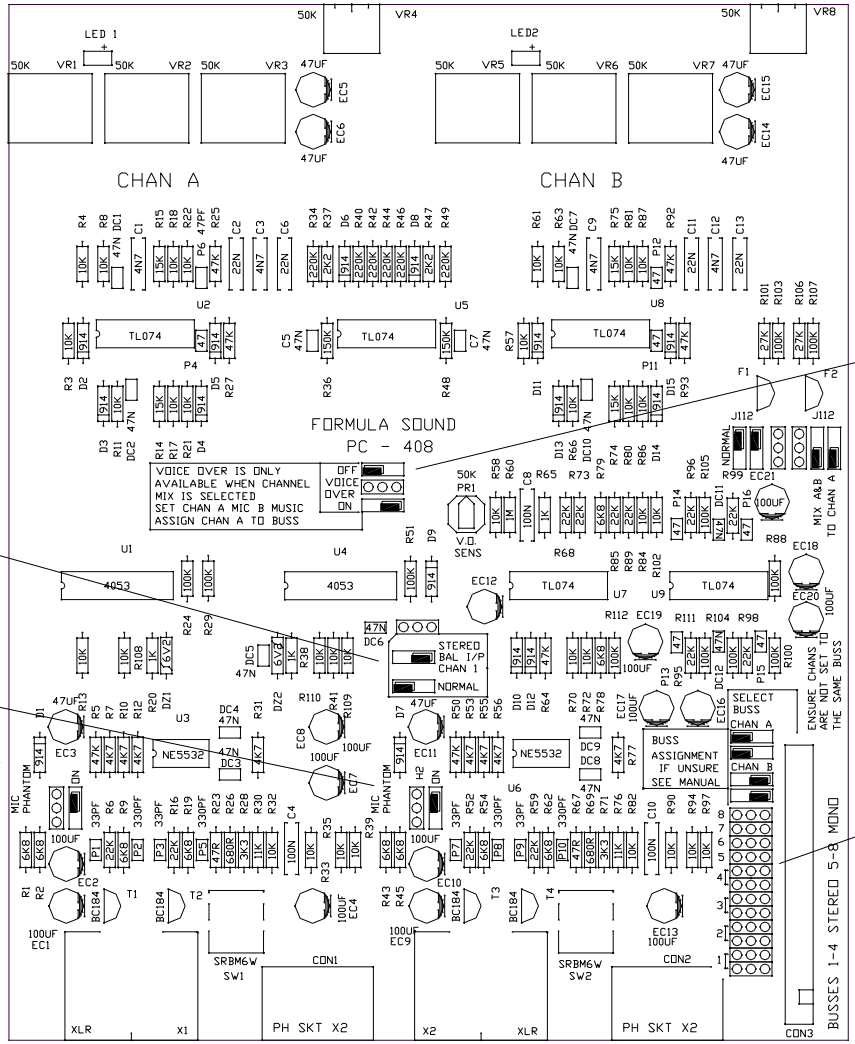
Page ID selection is factory set.

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

Remote Paging Microphone

The remote paging microphone unit connects to the Page PSU module via the RJ45 connection.

The microphone level is adjustable via a recessed adjustment on the back of the Page PSU module, the position is indicated by the module legend.



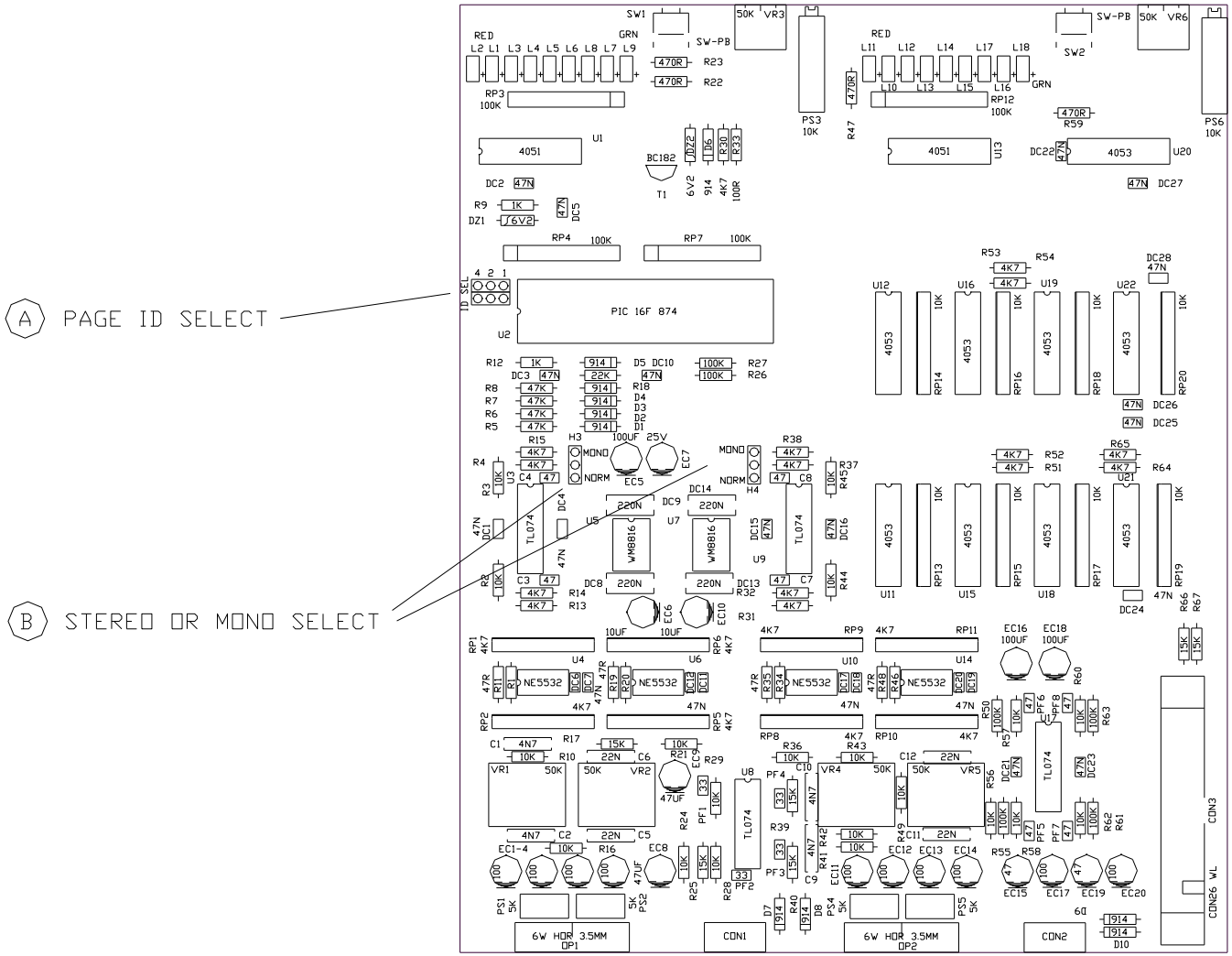
A BALANCED INPUT SELECT

B PHANTOM POWER SELECT

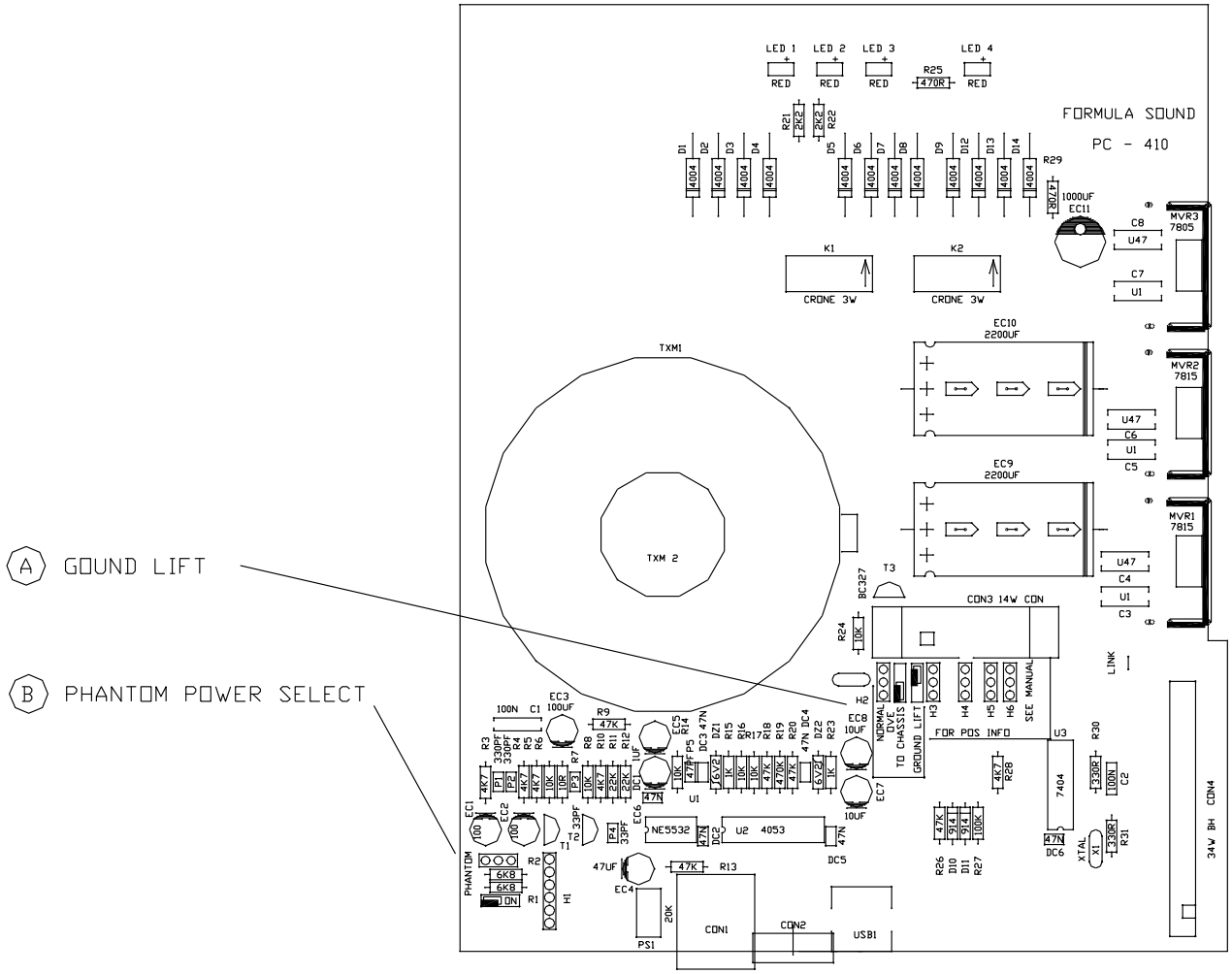
C CHANNEL MIX AND VOICE OVER SELECT

D BUSS SELECTION

FORMULA SOUND www.formula-sound.co.uk	TITLE	ZMR80 INPUT PCB	DRG No. PC408
			DATE 29-03-2012 ISSUE 01



FORMULA SOUND www.formula-sound.co.uk	TITLE ZMR80 OUTPUT PCB	DRG No. PC409
		DATE 29-03-2012 ISSUE 01



FORMULA SOUND www.formula-sound.co.uk	TITLE	ZMR80 PSU PCB	DRG No. PC410
			DATE 29-03-2012 ISSUE 01

TECHNICAL SPECIFICATION

Frequency Response (EQ. set flat)		20Hz - 20KHz +/- 0.5dB
Distortion THD @ 1KHz @ operating level +10dBu		<.005%
MICROPHONE/MONO INPUTS		
Connector type XLR		
Internally selectable phantom power (15V)		
Gain selection by 6 position rotary switch		
Gain Min / Max	Mic input	10dB/+60dB
Gain Min / Max	Line input	-25/+25dB
Noise ref 150R		EIN -124dB 20Hz-20KHz
Input impedance		>2K ohms active balanced
STEREO INPUTS		
Connector type gold plated phono sockets or XLR in balanced mode		
Gain selection continuously variable via rotary potentiometer		
Gain Min / Max		-25dB / +12dB
Nominal input level		0dBu 775mV
Maximum input level		+20dBu 7.7V
Input impedance		>10K ohms
Noise @max gain		EIN -100dB 20Hz 20KHz
Input Equalisation		HF (Treble) +/- 12dB @ 10KHz LF (Bass) +/- 12 dB @ 200Hz
PRIORITY INPUT		4 pin connector
Nominal input level		0dBu 775mV
MAIN OUTPUT		
Balanced output May be strapped for unbalanced		2 x pin connectors
Maximum output level		+20dBu 7.7V
Output impedance		<100ohms Balanced
Equalisation		HF (Treble) +/- 12dB @ 10KHz LF (Bass) +/- 12 dB @ 200Hz
Remote panel		3 Pin connector

Power
220-240V AC standard (115V to order. Or consult user manual to change)
Mains fuse 220-240v operation 315mA slow blow
Mains fuse 110-115v operation 1 A
I.E.C. Mains connector

Finish
Front and Rear panel anodised aluminium with ident labels, extruded aluminium chassis and black plastic coated steel casing strips.

Dimensions
19" rack mounting. 4RU
Width 482mm (19") Depth 210mm (8.25") Height 180mm (7.0")

Formula Sound reserve the right to alter the specification without notice.

FORMULA SOUND LIMITED
UNIT 23; STADIUM BUSINESS CENTRE; NORTH END ROAD; WEMBLEY; MIDDLESEX; HA9 0AT
TELEPHONE +44 (0)208-900-0947 FAX +44 (0)208-903-8657
www.formula-sound.co.uk email info@formula-sound.co.uk

CE

E.U. CERTIFICATE OF CONFORMITY

We declare that the products listed conform to the following directives and standards

89/336/EEC amended by 92/31/EEC and 93/68/EEC

BS EN 50082-1 BS EN 50081-1

PRODUCT TYPE

ZMR 80

The CE mark was first applied in 1995

Signed

B. J. Penaligon General Manager

Attention

The attention of the specifier, purchaser, installer, or user is drawn to the fact that good wiring practice must be observed when connecting the above equipment. Good quality connectors and screened cables must be used for all audio connections. Twin screened cables should be used for all balanced lines.

THIS EQUIPMENT MUST BE EARTHED

CONSULT THE USERS MANUAL FOR TECHNICAL DETAILS