



ZMR - 243

ZONER - MIXER

TECHNICAL MANUAL

ZMR – 243 ZONER MIXER

INTRODUCTION & OPERATION

The ZMR-243 is a zoner mixer which is intended for use in clubs, bars, hotels, retail establishments etc. It is a high quality unit with excellent technical performance. Its features include the ability to operate as a stand alone unit, or by the addition of inexpensive passive remote panels, which are available as optional extras, allows remote control of the music source and volume on any or all its outputs (zones).

The ZMR-243 has 2 low impedance balanced microphone inputs, 4 stereo line (music) inputs, and has 3 stereo (zone) outputs.

Front panel controls are logically laid out in 3 identical groups which relate to the 3 outputs. Each group of controls has 2 rotary controls for Mic 1 and Mic 2 volume; 1 rotary control for music volume; 1 push button selector switch along with 4 leds showing the music input selection, and 1 led showing if the remote panel is enabled.

A further group of 4 leds indicate microphone 1 & 2 enabled; priority signal present, and remote music dim/mute activated.

An illuminated mains power on off switch completes the front panel controls.

The microphone inputs can be mixed or routed in any combination to any or all outputs.

The stereo inputs can be individually selected to any output via the push button. Pressing the button cycles through the various inputs. The same button also enables the remote function, which allows selection of the music sources from an optional remote panel. Adjacent leds provide clear indication of this selection.

The volume of the music source may be adjusted either from the front panel or from a remote panel. The front panel control may be internally bypassed to allow the volume to only be controlled remotely if required.

Input gain controls are fitted to all inputs. These are accessible through holes in the rear panel.

Tone controls in the form of treble and bass (i.e. 2 band equalisation) are fitted to both microphone inputs and all of the 3 stereo outputs affecting music sources only. These are also accessible through holes in the rear panel.

The output sections of the ZMR-243 are on plug in cards, which gives it a two-fold advantage. Firstly, although the mixer has three outputs, one of the output cards may be left out to reduce the cost of the unit. This leaves the flexibility to add the output card at a later date to extend the facilities should the need arise. Secondly the unit is much easier to service in the unlikely event of breakdown.

Any or all outputs may be operated as a pair of mono outputs sharing the same sources but having the ability to operate at different volume levels, both remotely controlled, if required. One of the mono pair could also select the music source remotely.

Provision to connect the ZMR-243 to a fire alarm has been provided to satisfy the requirements of fire safety. This requires a fully isolated pair of contacts from the alarm panel. It is labelled as music dim / mute. The attenuation level of the music signal is fully adjustable via an internal pre-set.

Accidental operation

The selector push buttons can be easily disabled to prevent accidental operation by pressing selector buttons 1 and 3 together i.e. at the same time.

Pressing 1 & 3 together again reverts back to normal operation.

INSTALLATION

Installation of the ZM-243 should be carried out by experienced engineers wherever possible. Good wiring practice should be observed when connecting any audio equipment. Good quality connectors and screened cable should be used for all audio connections . Twin screened cable should be used for all balanced lines particularly microphone connections.

THIS UNIT MUST BE EARTHED

Several internally selectable options are provided:- See Drg947-8

PRIORITY INPUT Stereo music input 1 may be selected to be a priority input by internal jumper selection (see Drg 947-8). When a signal is present this input will take priority and mute any line source currently selected. The position of an internal jumper selects this facility to be specific to outputs (zones). Possible selections are 1, 1 & 2 or all. The control sensitivity and release time is also adjustable. See Drg947-8

The front panel led indicates the presence of a priority signal. Microphone inputs are not affected by this function.

Microphones 1 & 2 paging option. This function is enabled by the position of internal jumper links. See Drg 947-8. This provision allows microphones to be remotely switched on and off. The switching occurs after the microphone pre amp and generally provides a better solution than switching microphones at source. Connecting pins 3 or 4 to 0VE pin 1 on the 4 pin Aux connector will enable microphone channels 1 & 2 respectively. The front panel leds show the status

Note Microphone channels won't work if Mic status leds are not illuminated.

AVO. A voice override facility is provided for any or all outputs. This is internally selectable on the individual output cards. Any microphone can be selected and will dim the music signals routed to that output for announcements, talkover, etc.

Mono mode. Any output can be selected to operate in mono by the position of a jumper link on the individual output cards. Either half of the front panel music volume controls can be bypassed by the position of internal jumpers. This allows total flexibility over the control of music zones in either mono or stereo. Remote volume control of either split mono or stereo zones is also possible by internal jumper link selection. See Drg947-8

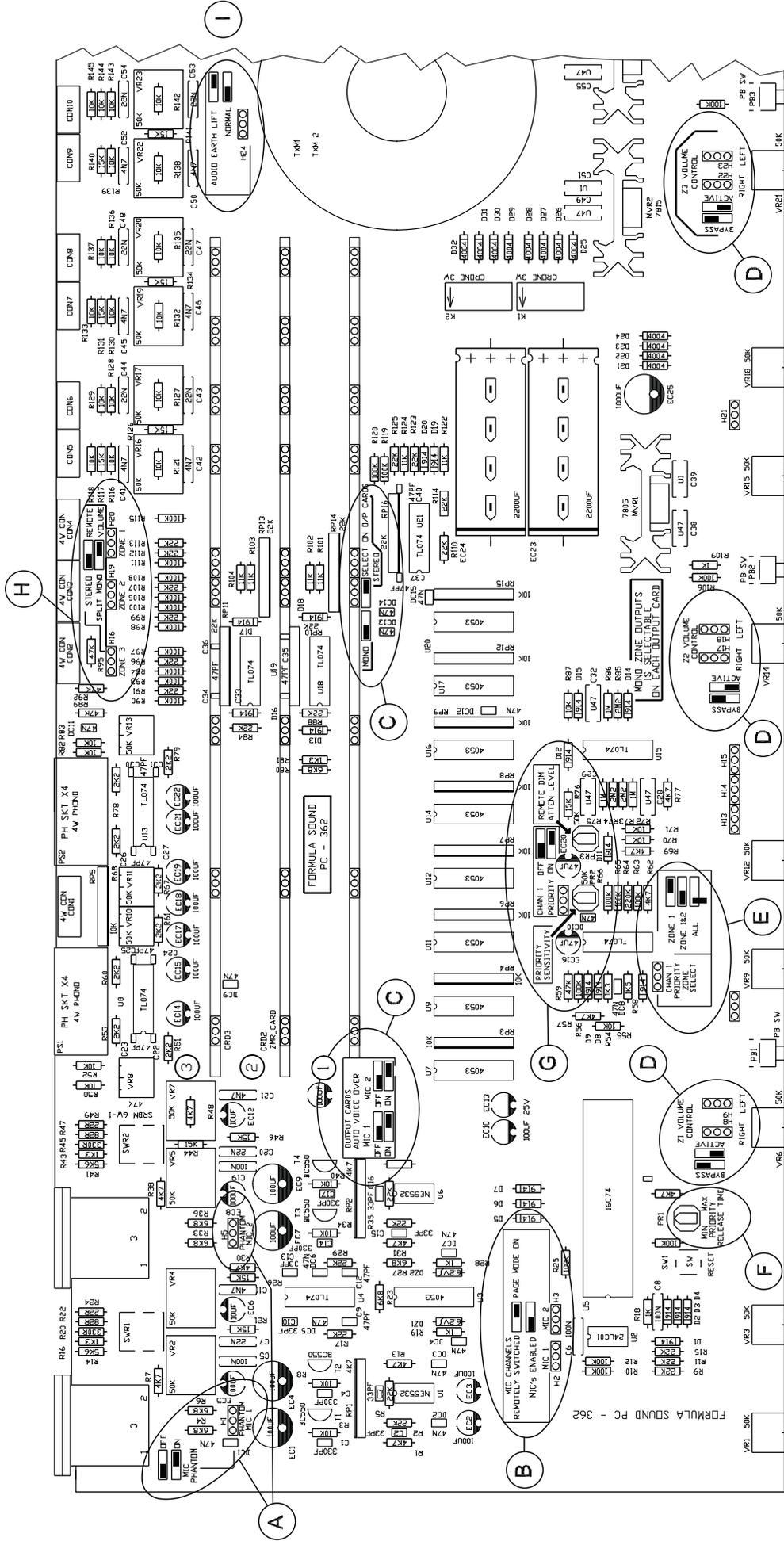
Remote music dim or mute. The remote music dim facility is triggered by connecting pin 2 to 0VE pin 1 on the AUX connector. The attenuation level is fully adjustable by an internal pre-set. See Drg 947-8

NOTE ON THE BEST USE OF GAIN

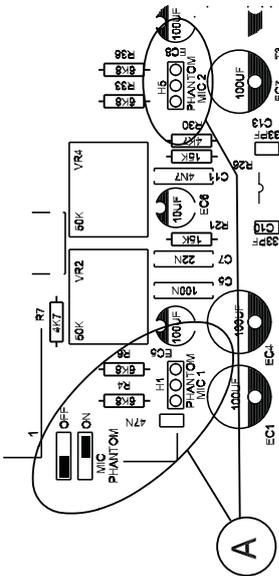
It is likely that more gain is available in the ZM-243 than you are likely to need. This is so that low output sources can be used. For best performance always use the minimum amount of gain to achieve the required volume. Never set the gain controls to maximum and hold gain on the front panel controls. This will degrade the signal to noise performance and may cause overload distortion (clipping). A good rule is never to have controls set lower than 3/4 of their full rotation for normal operation.

230V 115V OPERATION

The mains transformer fitted to the ZMR-243 has split primary windings that allows 230V or 115V AC operation. The unit may be ordered to operate on either voltage, if not specified 230V will be supplied. Existing 230V units may be rewired to 115V operation and this must only be undertaken by a technically competent engineer. Contact the factory for more details.

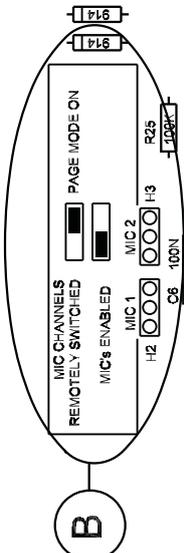


	TITLE ZMR-243 INTERNAL DETAIL ALSO SEE DRG 948	TEL 0161 494 5660 (+44 161 494 5660) FAX 0161 494 5651 (+44 161 494 5651)
DRG No. 947	DATE 22-04-2002	ASHTON ROAD, BREDBURY, STOCKPORT, CHESHIRE, SK6 2SR, UK
ISSUE 1		



A

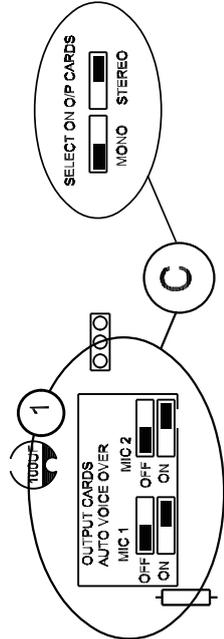
MICROPHONE CHANNELS PHANTOM POWER SELECT



B

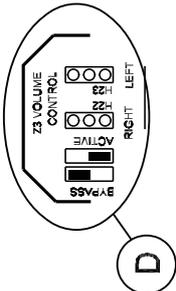
MICROPHONE CHANNELS PAGE MODE SELECT

WITH PAGE MODE SELECTED MICROPHONE CHANNELS ARE OFF UNTIL REMOTELY ENABLED EITHER OR BOTH MAY BE SELECTED TO PAGE MODE



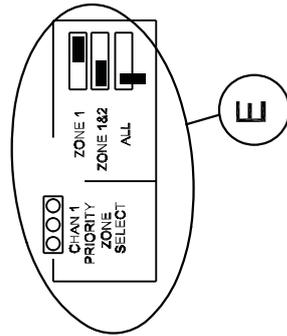
C

AUTOMATIC VOICE OVER SELECTION IS ON EACH OUTPUT CARD AND EITHER OR BOTH MICROPHONE CHANNELS MAY BE SELECTED TO DIM MUSIC CHANNELS WHEN A MICROPHONE SIGNAL IS PRESENT INDEPENDENT MONO OPERATION OF EACH OUTPUT IS ALSO SELECTED ON EACH OUTPUT CARD.



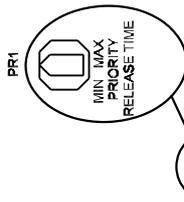
D

3 SETS OF SELECTION ARE PROVIDED TO DISABLE THE FRONT PANEL MUSIC VOLUME CONTROLS USE THIS FACILITY IN CONJUNCTION WITH REMOTE VOLUME CONTROLS.



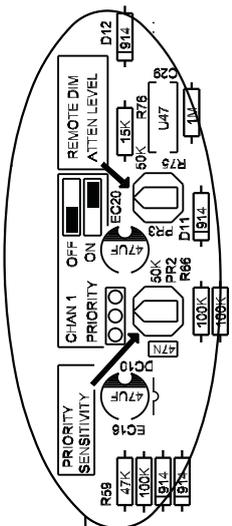
E

SELECTS IF THE PRIORITY INPUT IS OPERATIONAL IN ALL ZONES. SEE ALSO "G" TO ENABLE PRIORITY



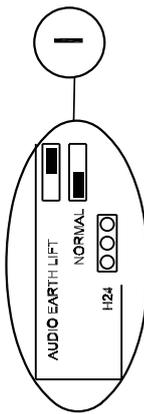
F

THIS PRESET ADJUSTS THE PRIORITY RELEASE TIME I.E. THE TIME AFTER THE PRIORITY SIGNAL IS NO LONGER PRESENT AND NORMAL OPERATION RESUMES



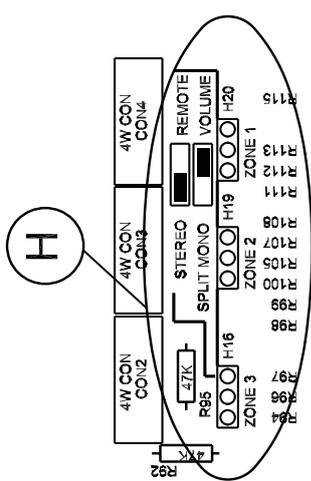
G

THIS SHOWS THE POSITIONS OF PR2 THE PRIORITY SENSITIVITY ADJUSTMENT PRE-SET THE CHANNEL 1 PRIORITY ON - OFF SELECTOR THE REMOTE MUSIC DIM, ATTENUATION LEVEL PRE-SET



I

EARTH LIFT SELECTION NORMAL = MAINS EARTH CONNECTED TO AUDIO COMMON



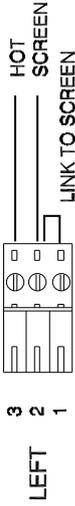
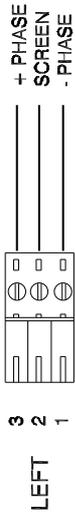
H

SELECTION OF THE REMOTE VOLUME CONTROL ACTION STEREO IS THE NORMAL POSITION 1 REMOTE VOLUME CONTROL ADJUSTS LEFT AND RIGHT SIGNALS

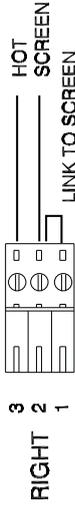
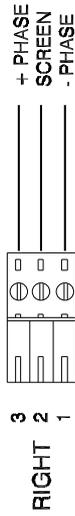
SPLIT MONO POSITION ALLOWS INDEPENDENT CONTROL OF LEFT AND RIGHT CHANNELS BY 2 REMOTE VOLUME CONTROLS (THIS WOULD ONLY BE USED IF THE OUTPUT CARDS WERE SELECTED TO MONO OPERATION)

	TITLE	ZMR 243 INTERNAL OPTIONS DETAIL
	DRG No.	948
ASHTON ROAD, BREDBURY, STOCKPORT, CHESHIRE, SK6 2SR, UK	DATE	22-02-2002
TEL 0161 494 5650 (+44 161 494 5650)		ISSUE 1
FAX 0161 494 5651 (+44 161 494 5651)		

AUDIO CONNECTIONS



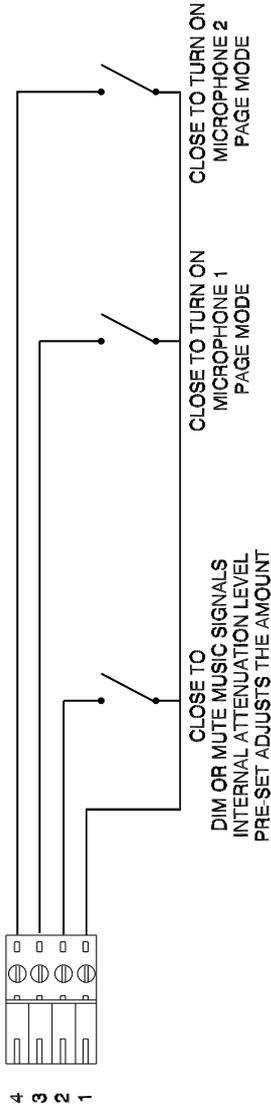
ZONE OUTPUTS BALANCED CONNECTIONS



ZONE OUTPUTS UNBALANCED CONNECTIONS

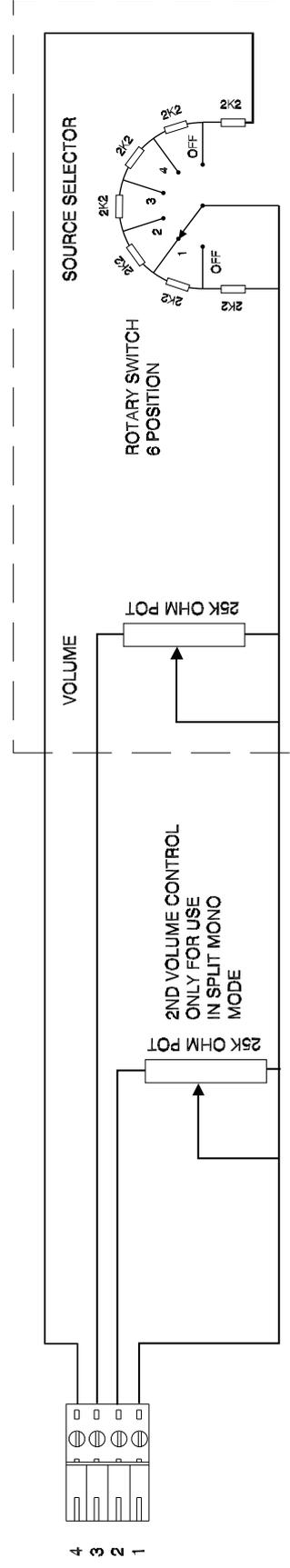
MUSIC INPUTS, 2 CONVENTIONAL RCA PHONO PLUGS PER CHANNEL FOR LEFT AND RIGHT INPUTS
MICROPHONE INPUTS 2 CONVENTIONAL XLR CONNECTORS, PIN 1 SCREEN PIN 2 +PHASE PIN 3 -PHASE

AUXILIARY CONNECTOR



REMOTE CONNECTORS

STANDARD REMOTE PANEL



TEL: 0161 494 5650 (+44 161 494 5650)
FAX: 0161 494 5661 (+44 161 494 5661)
ASHTON ROAD, BREDBURY, STOCKPORT, CHESHIRE, SK6 2SR, UK

TITLE ZMR-243 CONNECTIONS ETC

DRG No. 949

DATE 22-02-2002 ISSUE 1

TECHNICAL SPECIFICATION

Frequency Response (EQ. set flat) 20Hz - 20KHz +/- 0.5dB

THD + noise @ 1KHz MAX O/P <.02%
THD + noise @ 1KHz @ operating level 0dBu
<.01% Typically .005%

Microphone Inputs 1-2
Connector type XLR
Internally selectable phantom power (15V)
Gain selection by 6 position rotary switch
Gain Min 10dB
Gain Max 60dB
Noise ref 150R EIN -126dB 22Hz-22KHz
Input impedance >2K ohms active balanced
Maximum input level +10dBu 775mV
Equalisation Microphone channels HF (Treble) +/- 12dB @ 10KHz
LF (Bass) +/- 12 dB @ 200Hz

STEREO INPUTS (Channels 3-6)
Connector type twin gold plated phono sockets
Gain adjustment continuously variable
Gain Min -25dB Gain
Max +12dB
Nominal input level 0dBu 775mV
Maximum input level +20dBu 7.7V
Input impedance >10K ohms
Noise @max gain EIN -100dB 22Hz 22KHz

Zone Outputs X3

Audio Connector 2 X 3 pin connectors
(Mating connectors supplied)
Remote selection and volume 4 pole connector
(Mating connector supplied)
Balanced output
Maximum output level +20dBu 7.7V
Output impedance <100ohms Balanced < 50ohms Unbalanced
Equalisation music sources HF (Treble) +/- 12dB @ 10KHz
LF (Bass) +/- 12 dB @ 100Hz

Balanced outputs are self compensating and may be linked for unbalanced operation without any degradation in performance.

Power
220-240V AC standard (115V to order. Or consult technical manual to change)
Mains fuse 220-240v operation 250mA slow blow
Mains fuse 110-115v operation 500mA slow blow
I.E.C. Mains connector

Finish
Front and Rear panel Black anodised aluminium with silver notation
Case black plastic coated steel

Dimensions
19" rack mounting. 1RU
Width 482mm (19") Depth 200mm (7.9") Height 44mm (1.75")