



## INSTALLATION AND OPERATION MANUAL

# ES SERIES

*RACKMOUNT MIXER*    ESMIX



# IMPORTANT SAFETY INFORMATION

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Plug this apparatus to the proper wall outlet and make the plug to be disconnected readily operable.
17. Mainsplug is used as disconnected device and it should remain readily operable during intended use. In order to disconnect the apparatus from the mains completely, the mains plug should be disconnected from the mains socket outlet completely.
18. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
19. An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.
20. The apparatus should be disconnected from the mains completely before speaker wiring. The speaker output should be proper protected from direct contact and pay attention to speaker connections, terminals and speaker wiring during normal operation.

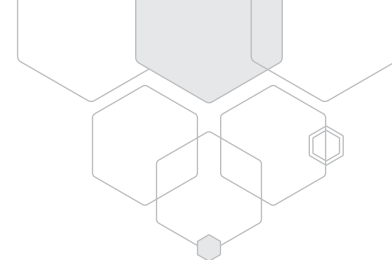


## PRÉCAUTIONS DURANT UTILISATION

1. LISEZ ces instructions.
2. Tenez ces instructions.
3. Notez tous les avertissements.
4. Suivez toutes les avertissements.
5. N'utilisez pas ce produit près de l'eau (la piscine, la plage, le lac, etc.).
6. Nettoyez seulement avec une étoffe sèche.
7. Ne bloquez aucuns trous de ventilation. Installez en accord avec les instructions du fabricant.
8. N'installez près aucunes sources de chaleur comme radiateurs, registres de chaleur, fours ou les autres équipements (y compris ampli cateurs) qui produisent la chaleur.
9. Ne défaites pas le but de sécurité de la fiche polarisée ou base-type. Une fiche polarisée a deux tranchants avec un plus large que l'autre. Une fiche de base type a deux a deux tranchants et une troisième pointe de base, le tranchant large ou la troisième pointe est fourni pour votre sécurité. Si la fiche donnée ne conforme pas votre prise de contact, consultez un électricien pour remplacement de la prise de contact obsolète.
10. Protégez le cordon de secteur contre être marchée dessus ou pincez en particulier aux fiches, aux douilles de convenance, et au point où ils sortent de l'appareil.
11. Seulement utilisez attachements/accessoires spécifiés par le fabricant.
12. Utilisez seulement avec un chariot, un stand, un trépied, un support ou une table indiquée par le fabricant, ou vendue avec l'appareil. Quand un chariot est utilisé, faites attention en déplaçant la combinaison d'appareil/chariot pour éviter de se déséquilibrer.
13. Arrachez la fiche du dispositif durant éclair et orage ou quand pas utilisé pour longues périodes de temps.
14. Référéz au personnel qualifié de service pour toutes réparations. La réparation est donnée quand le système a été endommagé à n'importe façon, par exemple un fil ou une fiche endommagé(e) de la source d'alimentation. Avoir été exposé à pluie ou humidité, n'opère pas normalement, ou avoir été tombé.
15. L'appareil ne doit pas être exposé aux écoulements ou aux éclaboussures et aucun objet ne contenant de liquide, tel qu'un vase, ne doit être placé sur l'objet.
16. Branchez l'appareil à une source appropriée et faire que la prise à débrancher soit facilement accessible.
17. La prise du secteur ne doit pas être obstruée ou doit être facilement accessible pendant son utilisation. Pour être complètement déconnecté de l'alimentation d'entrée, la prise doit être débranchée du secteur.
18. AVERTISSEMENT: Pour éviter le risque d'incendie ou de chocs électriques, ne pas exposer cet appareil à la pluie ou à l'humidité.
19. Un appareil avec la borne de terre de protection doit être connecté au secteur avec la connexion de terre de protection.
20. Assurez-vous que l'appareil est hors tension avant de connecter les hauts parleurs. Vérifiez que la sortie des enceintes soit protégées contre un contact physique. Respecter les polarités des terminaux ainsi que le câblage des enceintes pendant le fonctionnement afin d'assurer une utilisation sécurisée.



# INTRODUCTION & CONTENTS



## ES SERIES

Congratulations on choosing Australian Monitor for your professional audio requirements.

The design of our ESMIX embraces all the aspects of a well-designed commercial mixer. The visual design, mechanical, electrical and sonic parameters, along with our dedicated manufacturing process, have all been optimised to provide a professional tool that exhibits quality, reliability and longevity.

The ESMIX is 1.75" high, 19" wide, rack mountable unit. Featuring four input channels with XLR mic/dual RCA line, record and line outputs and 12V phantom power. The mixer also includes an embedded tone generator.

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Revision 1.1: Oct 2019

### WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT USE THE PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT & FULLY INSERT.

### CAUTION

THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



**WARNING**

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance



For European Union countries: This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. Please contact your local authority for further details of your nearest designated collection point.

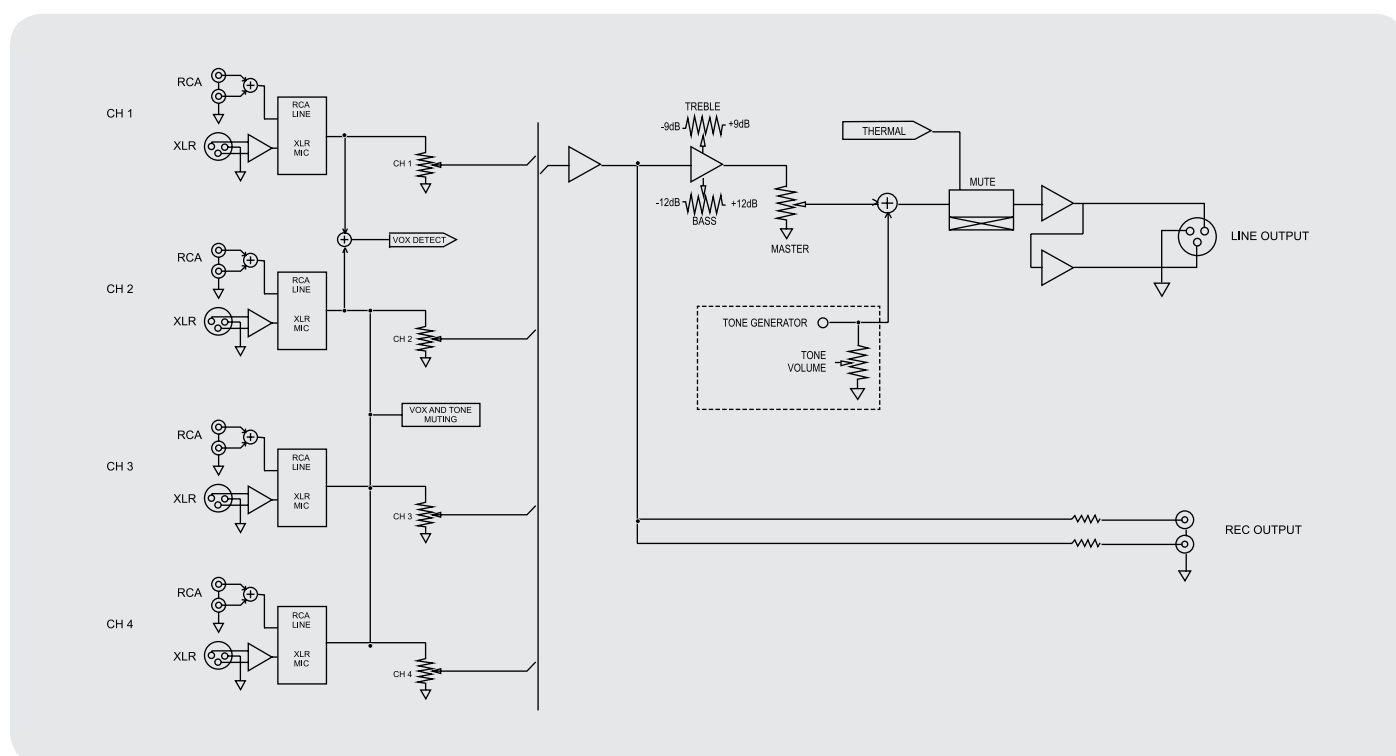
Rating plate and caution marking are marked on the back enclosure of the apparatus

# FEATURES & PROTECTION FEATURES

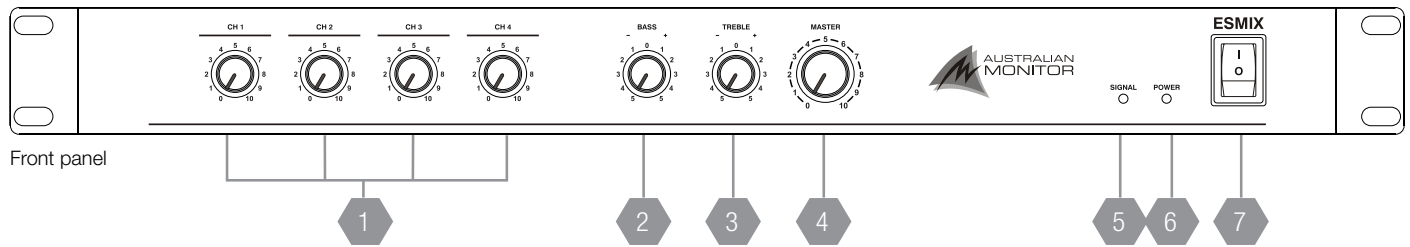
## FEATURES

- 4 Channel Mixer
- 4 XLR Microphone/Dual RCA Line Inputs
- 2 channel priority muting (VOX) (externally defeatable)
- 12VDC Phantom power
- Bass and Treble Tone Controls
- Record Output
- Line Output
- Integrated 5 Tone Generator with volume control
  - Evac
  - Alert
  - Intruder
  - Bell
  - Chime
- 1 Rack Unit Size

## ES MIXER BLOCK DIAGRAM



# FRONT PANEL



**1** CH 1-4  
These control the levels for each channel input.

**2** BASS  
There is 12dB of cut and boost at 100Hz.

**3** TREBLE  
There is 9dB of cut and boost at 10kHz.

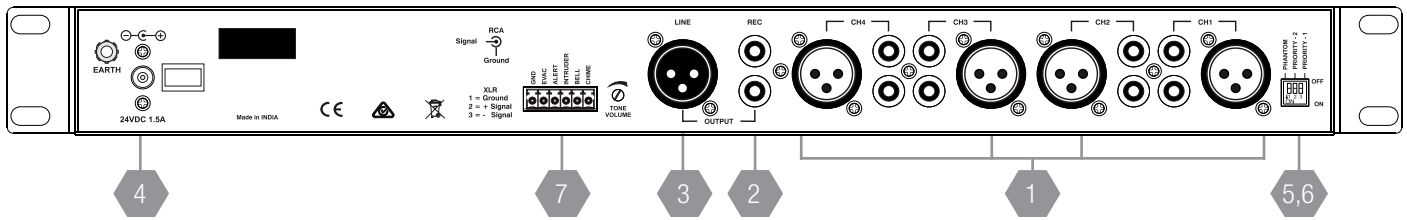
**4** MASTER  
This controls the overall mixed output level.

**5** SIGNAL  
This LED indicates the unit is outputting a signal.

**6** POWER  
This LED indicates the unit is on.

**7** POWER SWITCH  
This switches the power to the unit on and off. The up position is on.

# REAR PANEL



## 1 CH 1-4

Each channel input section has two inputs:

XLR input – This is a balanced microphone input with an input sensitivity of 1.2mV.

RCA input – This is an unbalanced line level input. It has an input sensitivity of 160mV. The two RCA sockets are summed to mono internally.

## 2 REC OUTPUT

The REC output is on unbalanced RCA connectors. The output level is 220mV into 10k $\Omega$  at rated output. The output is dual mono.

NOTE: The output is not affected by the MASTER volume control or the BASS and TREBLE controls.

The output also does not receive the signal from the tone generator.

## 3 LINE OUTPUT

The LINE output is on a balanced XLR connector. The output level is 0.775V into 1k $\Omega$  at rated output.

NOTE: The tone generator output will also be fed into the line output if activated.

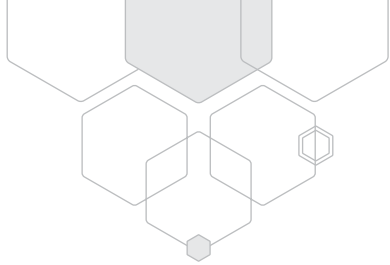
When wiring the LINE output as unbalanced, Pin2 should be wired as hot and Pin1 should be wired as ground/ shield. Do not wire Pin3.

## 4 POWER INPUT CONNECTOR

Your mixer is powered via a 24VDC 0.5A universal power adapter. The power adapter is included with your mixer. The DC input accepts a 5.5/2.1mm plug with tip positive and ring negative connection.

## 5 PHANTOM POWER

12V phantom power is available for condenser or electret microphones on the XLR input when this switch is pushed down.



# REAR PANEL (CONT.)

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## PRIORITY MODE

The ESMIX features priority mode detection which allows channels to be muted when audio is detected on channels 1 and 2. This can be used for applications like paging where background music is muted while the announcement occurs. The priority section consists of two DIP switches to set the required priority logic as shown below:

PHANTOM		PRIORITY		2	1	Priority Input	Mutes
OFF	↑	OFF	OFF	OFF	OFF	No Priority	
ON	↓	ON	ON	OFF	ON	CH1	CH2,CH3,CH4
		ON	OFF	ON	OFF	CH2	CH3,CH4
		ON	ON	ON	ON	CH1	CH2,CH3,CH4
				ON	ON	CH2	CH3,CH4
				N/A		TONE	CH2,CH3,CH4

- NOTES
1. RELEASE TIME. The release time is fixed and unmutes the audio after approx. 5 seconds
  2. LEVEL THRESHOLD. The level threshold is fixed and cannot be changed

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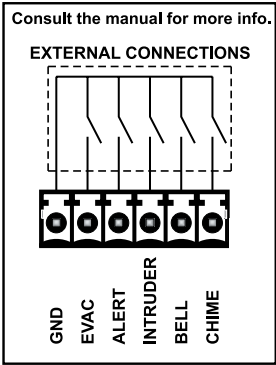
## 7 TONE GENERATOR

This 6 pin terminal allows tones to be internally triggered for playback. Simply connect any of the tone inputs to the ground terminal (GND). Adjust the volume control to increase or decrease the tone level. See the tone generator section of the manual for further information.

### TONE VOLUME

The tone volume is controlled using the 'TONE VOLUME' control on the back panel. Increase the volume by turning the POT clockwise and counter-clockwise to decrease the volume. The MASTER volume control does NOT affect the tone volume.

IMPORTANT: Do NOT drive external voltages into the pins as damage to the unit will occur.



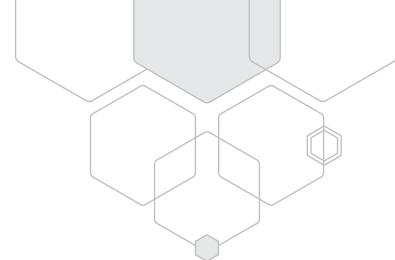
## TONES

1. 'EVAC': Temporal-Three signal (T-3). Three half second on/off pulses followed by 1.5s delay. Triggered by shorting EVAC to GND, the sound will continue to repeat until the short is released.
2. 'ALERT': A short tone burst tone repeated every 0.5s. Triggered by shorting ALERT to GND, the sound will continue to repeat until the short is released.
3. 'INTRUDER': A two tone 'low' 'high' alert repeating every 0.4s. Triggered by shorting INTRUDER to GND, the sound will continue to repeat until the short is released.
4. 'BELL': A short repeating tone burst with decay and reverb. Triggered by shorting BELL to GND, the sound will continue to repeat until the short is released.
- 5) 'CHIME': A four note increasing tone suitable for paging preannounce. Triggered by shorting CHIME to GND, it will sound only once for each time the trigger is activated. Please note: 'CHIME' tone must play to completion before it may be retriggered.

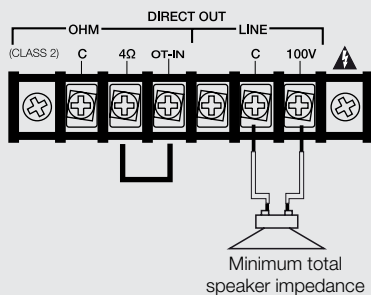
## NOTES

- To activate a tone trigger input, short the relevant input to GND. The selection must be stable for longer than 150ms.
- Each tone is played to completion even if the trigger selection is removed during playback.
- A higher priority tone trigger will interrupt a lower priority tone being played. EVAC - Highest to CHIME - Lowest
- After deselection and completion of playing a higher priority tone, any selected lower priority tone will be played. Exceptions are BELL and CHIME tones which will not be played.

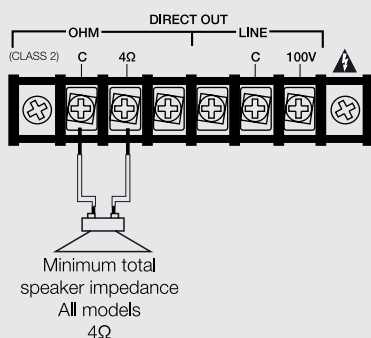
# INSTALLATION



## 100V LINE



## 4Ω VOICE-COIL



## LINE OUTPUT

The LINE output XLR can be used to connect up to 6 booster amplifiers.

Balanced wiring (shielded pair cable) is recommended.

NOTE: When wiring the LINE output as unbalanced, Pin2 should be wired as hot and Pin1 should be wired as ground/shield. Do not wire Pin3.

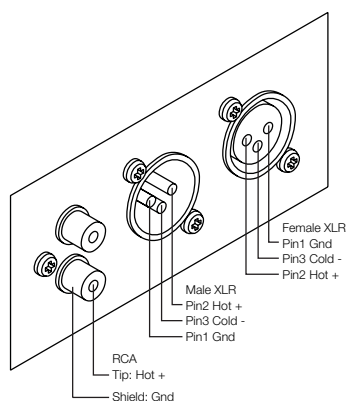
## REC OUTPUT

The REC output wiring should be kept as short as possible.

## INPUT CONNECTIONS

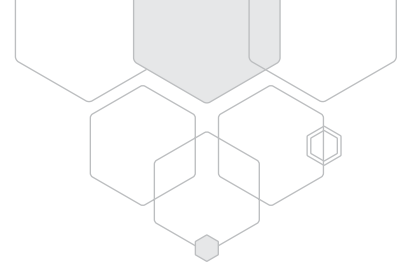
For wiring balanced in, pin 2 is hot. Unbalanced wiring on the microphone inputs is not recommended.

Balanced input wiring (shielded pair cable) is recommended. Unbalanced RCA wiring should be kept as short as possible.

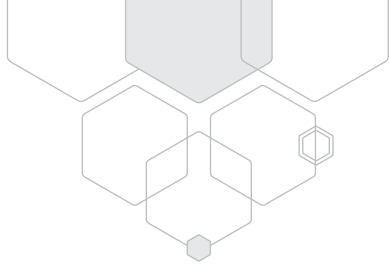




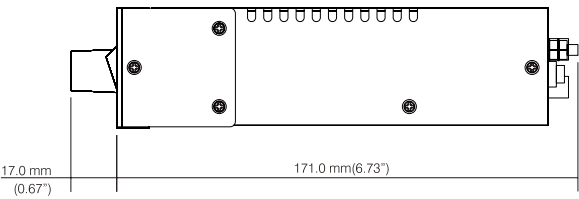
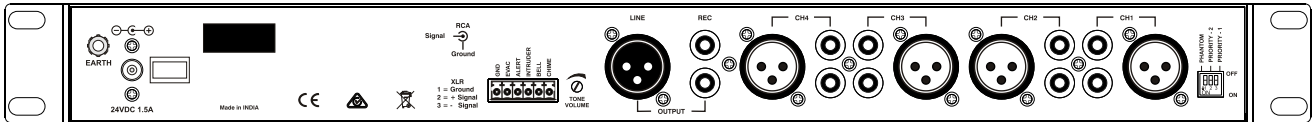
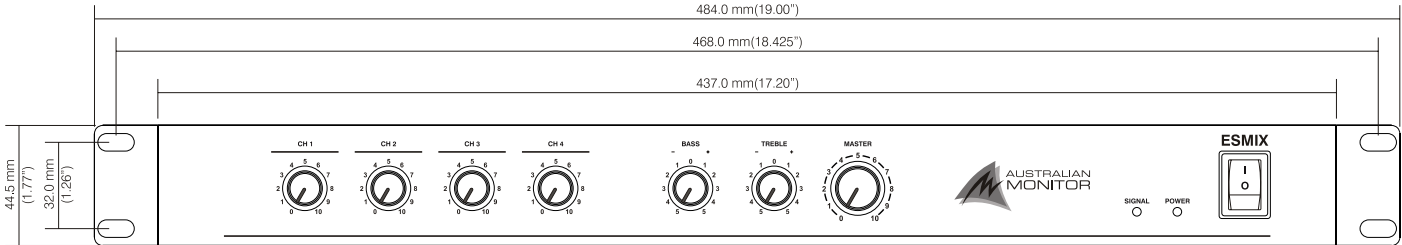
# TROUBLESHOOTING



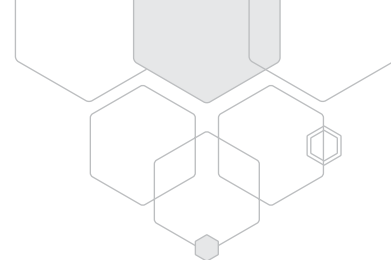
TROUBLE	LIKELY CAUSE	REMEDY
Power LED not on	Power not reaching mixer	Check power switch is on Check power supply is connected
Distorted sound	Input is overloaded Output is being over driven Bass control is turned up	Reduce input level at source Reduce volume levels on front panel Reduce Bass control level
No sound but amplifier is on	Volume controls down	Check volume controls
No sound from channels 3 and 4	Priority function is being used	Remove signal (disconnect input) from channel 1 and 2  OR Disable priority function using DIP switches on the rear panel.
Tones do not sound when triggered	Tone generator volume too low	Increase the volume by turning the tone volume clockwise



# DIMENSIONS



# SPECIFICATIONS



MODEL	ESMIX		CONDITIONS/COMMENTS
CHANNELS	1		
OUTPUTS	LINE INPUT	MIC INPUT	
FREQ. RESPONSE - LINE	10Hz ~ 35kHz	30Hz ~ 35kHz	0dBu Output, +0/-3dB (±5Hz Lower,±5kHz Higher)
FREQ. RESPONSE - RECORD	10Hz - 35kHz	20Hz - 35kHz	
SIGNAL TO NOISE RATIO	>80dBr		All pots centre, 1kHz, 20kHz BW, A-weighted
THD+N. 1kHz	<0.10%	<0.15%	0dBu Output, 1kHz. 20kHz BW, Unity Gain, A-Weighted, Unused Inputs at centre position
THD+N. FREQ BAND	<0.10%	<0.15%	0dBu Output, Freq Band. 20kHz BW, Unity Gain, A-Weighted, Unused Inputs at centre position
PHASE	In Phase		
PHANTOM POWER	12VDC @ 15mA per input pin		
INPUT/OUTPUTS			
AUDIO INPUT	MIC - Balanced XLR per channel LINE - Unbalanced Stereo RCA per channel		
RECORD OUTPUT	Unbalanced Stereo RCA		
LINE OUTPUT	Balanced XLR		
TONE OUTPUT	Dinkle - 6 Pin female adapter		
SENSITIVITY			
AUDIO INPUT SENSITIVITY	155mV	1.09mVrms	Rated 770mV Line Output
AUDIO INPUT MAX LEVEL	16Vrms	115mVrms	Input stage clipping
MAX. OUTPUT LEVEL (DBV/VRMS)	16.12Vrms		
RECORD OUTPUT	210mV		10kΩ Termination
LINE OUTPUT	770mV		1kΩ Balance Termination. Measured across hot and cold
RECORD OUTPUT MAX LEVEL	1.7V per leg		10kΩ Termination
LINE OUTPUT MAX LEVEL	2.89V per leg		1kΩ Balance Termination
TONE CONTROLS			
BASS @100Hz	±12dB		
TREBLE @10kHz	±9dB		
OTHER TONE	Evac, Alert, Intruder, Bell, Chime		
MISCELLANEOUS			
INPUT IMPEDANCE	20kΩ 10kΩ		Balanced, line-to-line Unbalanced, line-to-GND
INPUT SIGNAL DETECTION THRESHOLD	-40dBr		
LED STATUS	Signal - Green, Power - Blue		
POWER REQUIREMENTS			
POWER PACK AC INPUT	100-240Vac, 50-60Hz		±10%
DC INPUT	24VDC		Center = Positive, Sleeve = Negative. Input accepts 5.5mm/2.1mm plug
RMS CURRENT DRAW	0.05		230Vac, 50Hz, Max Output, 1kHz, Sine
POWER CONSUMPTION	3W		230Vac, 50Hz, Max Output, 1kHz, Sine
THERMAL DISSIPATION	10.24 BTU		Excludes Load Power (1W = 3.412BTU/Hr)
PRODUCT DIMENSIONS (WITH RACK EARS)	484mm x 188mm x 44.5mm (19.0"W x 7.4"D x 1.75"H)		
PRODUCT DIMENSIONS (WITHOUT RACK EARS)	437mm x 188mm x 44.5mm (17.2"W x 7.4"D x 1.75"H)		
SHIPPING DIMENSIONS	541mm x 281mm x 111mm (21.3"W x 11.1"D x 4.4"H)		
NET WEIGHT	2 Kg (4.4lbs)		
SHIPPING WEIGHT	3.1 Kg (6.8lbs)		
MOUNTING	1RU		
OPERATING TEMPERATURE	0°C to 40°C (95% RH)		
FINISH	Powder Coated Steel		
COLOUR	Black		
ACCESSORIES	24VDC Power pack, Rubber Feet x 4, 1 label sticker sheet, 1 Manual		
APPROVALS	CE, IEC, RCM		

Due to continuous improvements, all specifications are subject to change

