RM4460

4-INPUT, 4-ZONE MIXER-AMPLIFIER 4 x 60W

Item ref: 953.446UK

User Manual

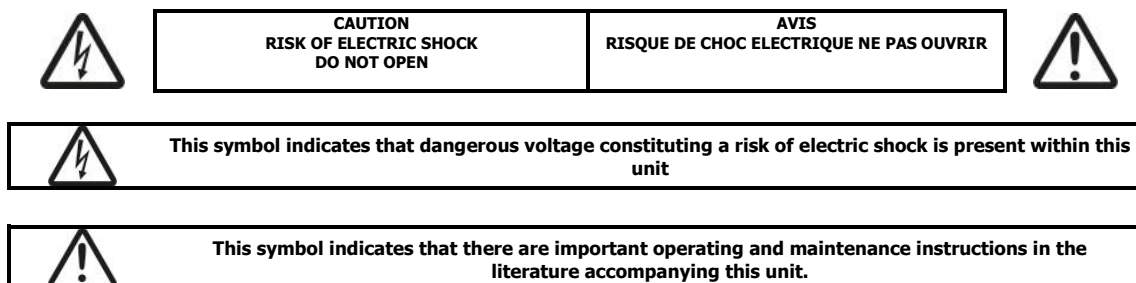Version 1.0

⚠	Caution: Please read this manual carefully before operating Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing an Adastra RM4460 4-zone mixer-amp as part of your sound system.
This mixer with 4 separate 100V amplifiers has the advantage of a 4 in / 4 out matrix with inbuilt media player.
Please read this manual to gain the best results from your product and avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	AVIS RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR	

	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit

	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

⚠ SAFETY NOTICE

1. Prior to use, read through this manual
2. Keep the manual in good condition
3. Pay attention to safety warnings
4. Observe all operating requirements
5. Do not use the device near water or wet areas
6. For cleaning, only use a lint-free, dry cloth
7. Install according to the specifications
8. Place away from heat sources or heating appliances
9. Use mains lead provided and avoid damage to cable or connectors
10. Unplug power from mains during stormy weather or if unused for long periods
11. In case of malfunction, water ingress or other damage, consult qualified service personnel
12. Do not place in damp areas or near liquids or moisture. Do not spill liquids on the housing
13. Please pay attention to warning symbols during transit and placement
14. Terminals marked with the ⚡ symbol are HAZARDOUS LIVE and should only be connected by qualified personnel
15. Ensure that the apparatus is connected to a mains socket with a protective EARTH connection
16. Ensure correct operation of the mains switch

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture.
If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use.
Avoid impact, extreme pressure or heavy vibration to the case
No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

• Check for correct mains voltage and condition of IEC lead before connecting to power outlet
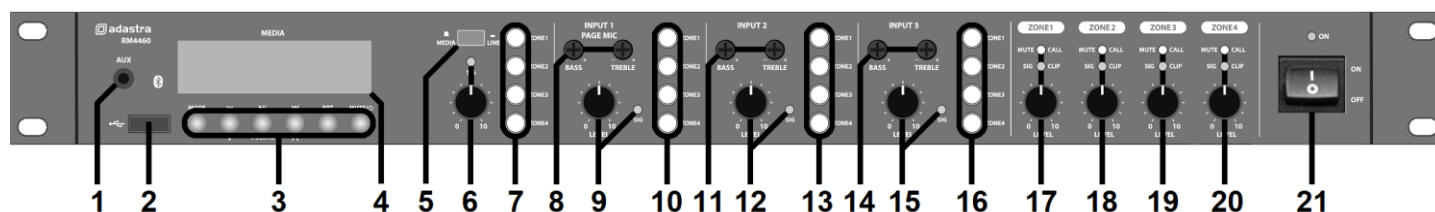
Placement

• This unit can be used free-standing or fixed into a 19" rack
• Ensure adequate support and access to controls and connectors when rack-mounting
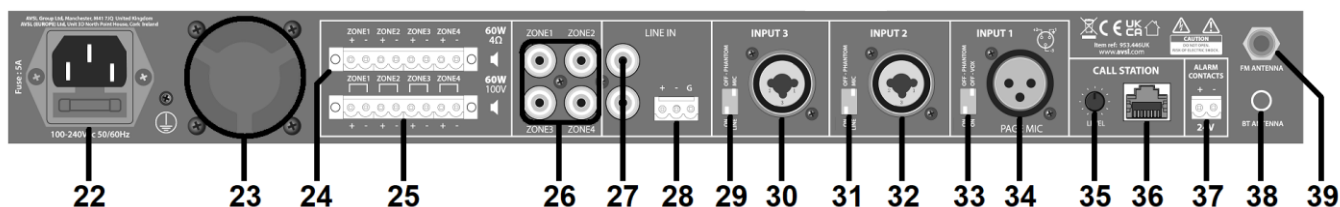
Cleaning

• Use a soft cloth with a neutral detergent to clean the housing as required
• Do not use strong solvents for cleaning the unit

Front panel

1.	AUX 3.5mm jack input
2.	USB port (for pen drive only)
3.	Media player controls
4.	Media player display
5.	Media/Line input selector
6.	Media/Line level control & signal LED
7.	Media/Line zone output selectors
8.	Input 1 paging mic EQ controls
9.	Input 1 paging mic level control & signal LED
10.	Input 1 paging mic zone output selectors
11.	Input 2 EQ controls
12.	Input 2 level control & signal LED
13.	Input 2 zone output selectors
14.	Input 3 EQ controls
15.	Input 3 level control & signal LED
16.	Input 3 zone output selectors
17.	Zone 1 level & signal/clip & mute/call LEDs
18.	Zone 2 level & signal/clip & mute/call LEDs
19.	Zone 3 level & signal/clip & mute/call LEDs
20.	Zone 4 level & signal/clip & mute/call LEDs
21.	Power on/off switch & LED

Rear panel

22.	IEC mains inlet & fuse holder
23.	Cooling fan vent (do not cover)
24.	Low impedance (4Ω) speaker output terminals
25.	100V speaker output terminals
26.	Individual zone line level signal outputs (RCA)
27.	Line input (2 x RCA)
28.	Line input (+/-/Ground screw terminals)
29.	Input 3 Phantom/Mic/Line DIP switches
30.	Input 3 combo jack/XLR connector
31.	Input 2 Phantom/Mic/Line DIP switches
32.	Input 2 combo jack/XLR connector
33.	Input 1 Phantom/Mic/Line DIP switches
34.	Input 1 combo jack/XLR connector
35.	Call station level control (for optional CS4)
36.	Call station RJ45 input (for optional CS4)
37.	24V emergency mute screw terminals
38.	Bluetooth antenna connection (SMA)
39.	FM radio aerial F-connector

Setting up

The RM4460 may be operated free-standing or mounted into a 19" rack. Ensure adequate ventilation and access to connectors and controls. Start with all LEVEL controls turned fully down and BASS/TREBLE EQ controls set mid-way (12 o'clock), then proceed to connect all required input sources.

If the optional CS4 call station is being used, connect this via the RJ45 connector on the rear panel (36)

Input 1 accepts a paging microphone on balanced XLR (34) and a VOX feature may be used to give this priority over other channels. To enable VOX, set the VOX DIP switch to ON (33), which will cause other channels to mute when the microphone is spoken into. Next to the VOX DIP switch is a PHANTOM DIP switch (34) which activates phantom power to the XLR connector for condenser mics.

Inputs 2 and 3 can accept a microphone or line input on a combo connector, which accepts either 6.3mm jack or XLR (30, 32) A DIP switch (29, 31) gives the option of selecting mic or line level sensitivity for the input. An adjacent DIP switch can enable phantom power to the XLR contacts of the combo connector to power a condenser microphone.

The LINE input can be connected via a pair of RCA connectors (27) or a 3-screw terminal connector. The screw terminal block is removable for easy connection and has terminals for +/-/G (28) Connect the "hot" signal to "+", "cold" signal to "–" and ground to "G" for a balanced input signal. Unbalanced signals only use 2 wires, so connect the signal (core) to "+" and connect the ground (braid) to "- and G" together.

A separate 3.5mm line input on the front panel can be fed through the media player for an mp3 player or smart phone.

Line level outputs from each zone may be connected from RCA connectors (26) for sending to further amplifiers if required.

Additional connectors include an SMA socket for a Bluetooth antenna. Carefully screw the supplied mini antenna onto this socket.

An F-connector (39) provides the option of connecting to an FM aerial for the radio tuner function of the internal media player.

A 24V screw terminal (37) may be connected from a fire or emergency panel that can send a 24V signal when triggered, which will mute all channels except the call station and paging microphone.
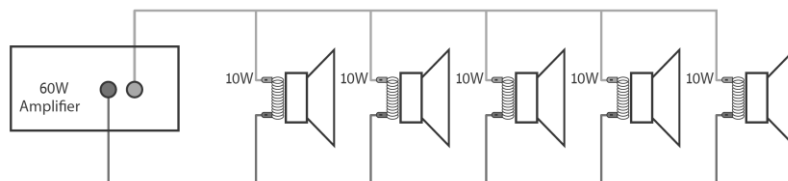
Speaker connection

Loudspeakers should be connected to the RM4460 via screw terminals on one of 2 removable modular connectors.
If the speaker(s) being connected is not 100V type, use the terminal block marked "4Ω" for this channel (14).
Connect + and – wires to each speaker as indicated, ensuring that there is no chance of strands shorting across terminals.

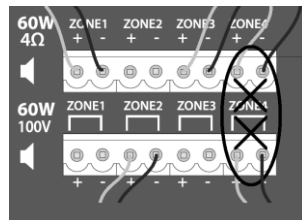Important: Ensure that the load is no lower than 4Ω for each output. This can be…

1 x 4Ω speaker	1 x 16Ω speaker
1 x 8Ω speakers	2 x 16Ω speakers wired in parallel (8Ω)
2 x 8Ω speakers wired in parallel (4Ω)	3 x 16Ω speakers wired in parallel (5.3Ω)
	4 x 16Ω speakers wired in parallel (4Ω)

          Ensure that the connected speakers can handle 60W from each output.

If the speaker(s) being connected to an output channel are 100V type, use the terminal block marked "100V" for this output channel. When connecting multiple 100V speakers to this output, connect all speakers in parallel and ensure that the total load is below 54W.

The wattage of each speaker can sometimes be adjusted via tappings on the speaker (check the speaker's documentation if unsure)

DO NOT connect to both 4Ω and 100V terminals for any individual output channel
DO NOT mix 4Ω and 100V speakers on any single output.

THERE SHOULD BE NO CONNECTION MADE VERTICALLY ABOVE OR BELOW ANY OTHER

When all signal and speaker connections are made, connect the rear IEC inlet (16) to the mains using the supplied mains lead (or an equivalent approved type).

Ensure that the supply voltage is correct for this equipment and that the mains outlet is switched on.

Operation

When all signal and speaker connections are made, power up the RM4460 and gradually increase the LEVEL control of Zone 1 part way for testing. You can repeat the same process for the remaining 3 zones after all inputs have been adjusted.

If a mic is connected to input 1 (34), press in the Zone 1 select button (10), speak into the mic and gradually increase the level (9)
The signal LED should light in response to the speech and the sound should be heard through speakers connected to Zone 1.
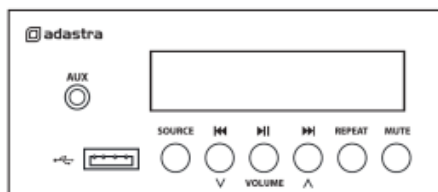
For any connections to inputs 2 and 3, repeat the above process whilst speaking into the mic or playing the audio for that input.

When the required level has been set for each of inputs 1, 2 and 3, the tone may be adjusted using BASS & Treble controls (8, 11, 14)
Turning the Bass control left from 12 o'clock cuts low frequencies, turning this control right from 12 o'clock boosts low frequencies.
Turning the Treble control left from 12 o'clock cuts high frequencies, turning this control right from 12 o'clock boosts high frequencies.

If an audio source is connected to the line input, press in the Zone 1 select button (7) and press in the MEDIA/LINE select button (5)
Play the audio, whilst gradually increasing the LEVEL control (6) until the required level.

This input can be switched over to the internal media player when the select button (5) is in the "out" position.
More information about the media player operation is detailed below.

Media player

The RM4460 mixer-amplifier is fitted with a built-in media player. This section comprises a Bluetooth receiver, USB audio player, FM tuner and AUX input. Pressing the SOURCE select button will step through Bluetooth, USB, AUX and FM tuner modes. Pressing the MUTE button for any source will mute the output.

Bluetooth

The Bluetooth function allows connection of a smart phone or tablet to the media player section for playback of stored files or streamed digital audio.
In order to enable this function, it will be necessary to pair the sending device to the receiver as follows.

1. Open the Bluetooth settings menu on the smart phone or tablet (or other sending device)
2. Scan for Bluetooth devices and look for "adastra_0000" in the list of available devices
(ensure that the UM amp is powered on and within reception range)
3. Select "adastra_0000" and the sending device should confirm that it is connected as an audio device.
(note that "0000" may be a different number if it has been edited – see below)
4. Play audio from the sending device, ensuring that volume controls are not turned down/muted
5. Turn up the MEDIA volume control on the amplifier to the required level.

The Previous ◄◄, Next ►► and Play/Pause ► ‖ buttons will operate in Bluetooth as remote playback controls.
Holding the Previous track or Next track buttons will adjust the output volume of the player down or up.

The Bluetooth name can be customized to enable identification of individual nearby amplifiers.
To customize the Bluetooth number press and hold the Play/Pause ► ‖ button until adastra_0000 is displayed with one of the characters flashing. Press Previous ◄◄ or Next ►► buttons to edit the number and Play/Pause ► ‖ to select another character. Hold Play/Pause ► ‖ to store the ID and exit.

Note: Android devices have the facility to re-name devices within the Bluetooth settings menu.
If the Bluetooth ID has been re-named on the Android device, editing the Bluetooth ID on the media player will not affect the name displayed on that Android device.

FM Tuner

The FM tuner function operates in the same way as a standard FM radio and benefits from the connection of an FM antenna to the rear panel 'F' type connector.

If no channels are tuned in, press the Play/Pause ► ‖ button to begin auto tuning, which scans available stations and stores them as channels within the FM tuner. Pressing Play/Pause again will abort auto-tuning.

To delete any selected station, press and hold the REPEAT button.
Repeat the auto tuning process to re-populate any missing presets.

To step through pre-set stations, press the Previous ◄◄ or Next ►► buttons.
Turn up the MEDIA volume control to hear the output from the speakers and increase to the required level.

Holding the Previous ◄◄ or Next ►► buttons will adjust the output volume of the player.

USB player

When a USB memory stick is inserted into the USB port, the track number and time will show in the display and audio files will start to play automatically.

If playback does not start automatically, press the SOURCE select button and Play/Pause ▸ ‖ button to check if the player is set to the correct mode. Try Previous ◂◂ and Next ▸▸ buttons if the selected track is unable to play. Also, check that the audio files are mp3 type.

Turn up the MEDIA volume control to hear the output from the speakers and increase to the required level.

There are 3 repeat modes: Repeat All tracks, Repeat Current track and Random.
Pressing the REPEAT button will cycle through these modes as shown in the top right of the display.

Pressing the Previous ◂◂ button briefly steps backwards through tracks on the memory device. Press and hold this button to decrease the playback volume.

Pressing the Next ▸▸ track button briefly steps forwards through tracks on the memory device.
Press and hold this button to increase the playback volume.

To pause the current track, press the Play/Pause ▸ ‖ button and press it again to resume playback.

AUX input

When a playback device is connected to the 3.5mm AUX input, the display will show "AUX".
Alternatively, this source can be selected by the SOURCE button.

The output level of this AUX input is controlled by the MEDIA volume control and is independent of the rear RCA line inputs. When other media player sources are selected, this AUX input is muted.

Specifications

Power supply	100-240Vac, 50/60Hz (IEC)
Fuse	T5AL (250V)
Output Per Channel RMS @ 100V	60Wrms
Output Per Channel RMS @ 4Ω	60Wrms
Output Per Channel RMS @ 8Ω	34Wrms
Output Per Channel RMS @ 16Ω	18Wrms
Inputs	1 mic (XLR), 2 mic/line inputs (combo), 1 line (RCA or +/-/GND terminals) + 1 Aux (3.5mm)
Speaker outputs	Ch1-4 100V or Ch1-4 4Ω (Euroblock screw terminals)
Input sensitivity	-24dBV (mic), -10dBV (line/aux)
Frequency response	100Hz – 20kHz
THD	1.0%
SNR	80dB (line), 75dB (mic)
Dimensions	482 x 283 x 44mm
Weight	6.85kg