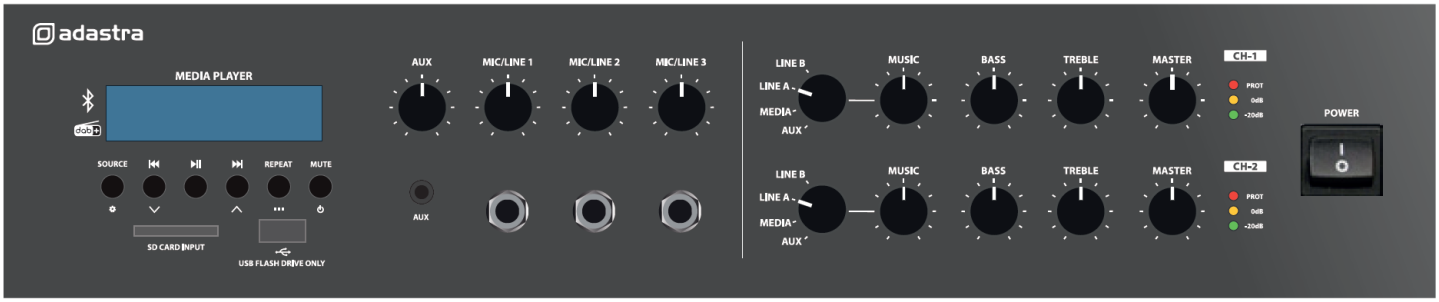
V-122 & V-242

DUAL ZONE 100V MIXER AMPLIFIERS WITH MEDIA PLAYER

Item ref: 953.251UK, 953.252UK

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 the Adastra V-series dual zone 100V mixer-amplifier as part of your public address system. This unit is designed to offer high quality, dependable service for mobile and installed systems. Please read this manual fully and follow the instructions to achieve the best results with your new purchase and to 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 ϟ 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
- Use double insulated speaker wire with adequate current rating for 100V speaker connections
- Do not use 4Ω, 8Ω or 100V terminals at the same time (choose only one output)
- Do not connect 4Ω or 8Ω speakers to the 100V terminal or 100V speakers to the 4Ω or 8Ω terminals
- Do not allow any foreign objects to enter the case or through the ventilation grilles.

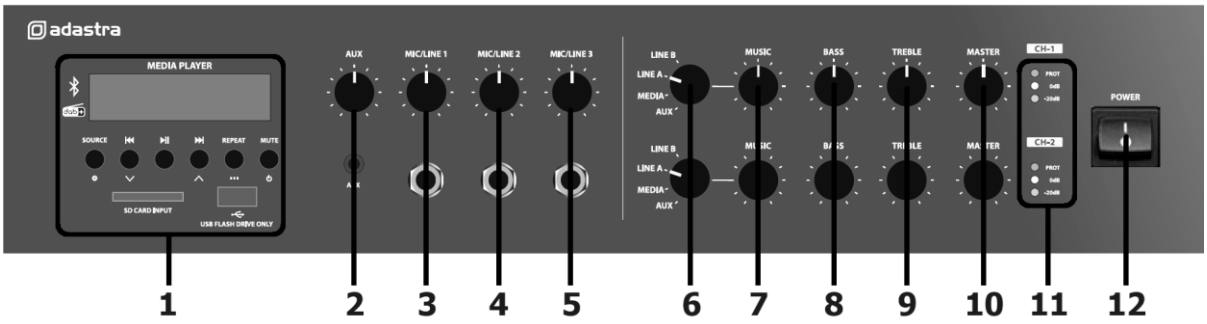
Placement

- For rack-mounting, ensure adequate support for the weight of the amplifier
- Ensure adequate air-flow and do not cover cooling vents at the front and rear of the amplifier
- Ensure adequate access to controls and connections

Cleaning

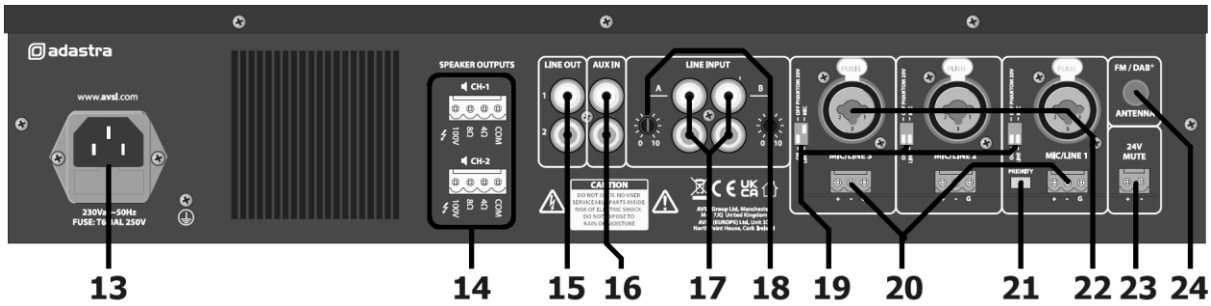
- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

Front panel



1. Media player section
2. AUX input (3.5mm) and level control
3. MIC/LINE 1 input (6.3mm) and level control
4. MIC/LINE 2 input (6.3mm) and level control
5. MIC/LINE 3 input (6.3mm) and level control
6. Music input source selectors (CH1 and CH2)
7. MUSIC Level controls (CH1 and CH2)
8. BASS EQ controls (CH1 and CH2)
9. TREBLE EQ controls (CH1 and CH2)
10. MASTER Level controls (CH1 and CH2)
11. Output status LEDs
12. POWER on/off switch

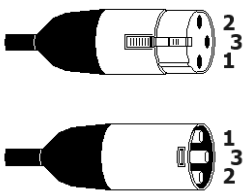
Rear panel

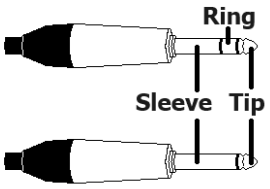


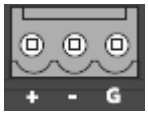
13. IEC mains inlet & fuse holder
14. Speaker connection terminals
15. LINE OUT connectors (RCA)
16. AUX input (RCA parallel with front 3.5mm jack)
17. LINE A & LINE B inputs (RCA)
18. LINE A & LINE B level trim controls
19. MIC/LINE 1, 2, 3 DIP switches
20. MIC/LINE 1, 2, 3 screw terminal inputs
21. PRIORITY switch for MIC/LINE 1 input
22. MIC/LINE 1, 2, 3 XLR/jack inputs
23. 24V mute screw terminals
24. FM/DAB+ ANTENNA connection (F-type)

Connection and setup

V-series mixer-amps have 3 main MIC/LINE inputs, which can be connected from the front 6.3mm jack inputs (3, 4, 5) or via XLR, 6.3mm jack or screw terminal at the rear (20, 22), offering comprehensive input options. Screw terminal inputs (20) are Euroblock plug-in type and can be removed for convenience during connection.







When using condenser mics that require phantom power, use balanced wiring via the XLR or screw terminals.

Connector	Balanced wiring			Unbalanced wiring		
	+	-	Ground	+	Ground	
XLR	Pin 2	Pin 3	Pin 1	Pin 2	Pin 3	Pin 1
6.3mm	Tip	Ring	Sleeve	Tip	Ring	Sleeve
Screw terminal	+	-	G	+	-	G

It is important to match the input level of the source, whether MIC or LINE level using the DIP switches (19) as shown opposite.

The switch next to MIC/LINE selection enables PHANTOM 20V power to the XLR and screw terminals. **Note:** If PHANTOM power is switched ON, use only balanced wiring to the input (not unbalanced).

MIC LINE inputs 1, 2, 3 each have a volume control above the relative front 6.3mm jack inputs (3, 4, 5)

Also on the rear panel are 2 LINE INPUTs A and B (17) which can be connected via RCA connectors and have individual LEVEL trim controls (18) to adjust the input level of each.

Another RCA input is the AUX IN (16) which is parallel with the 3.5mm AUX input on the front panel (2) This input has its own AUX level control directly above the front 3.5mm jack.

For DAB/DAB+/FM radio reception, it is advised to connect a suitable antenna (or aerial) to the rear panel F-type connector (24). Without this, radio reception will be very limited.

If a standard 24V trigger from an emergency panel is available, this may be connected to the 24V MUTE contacts on the rear panel (23) which will mute output of all channels except for MIC/LINE 1 in an emergency.

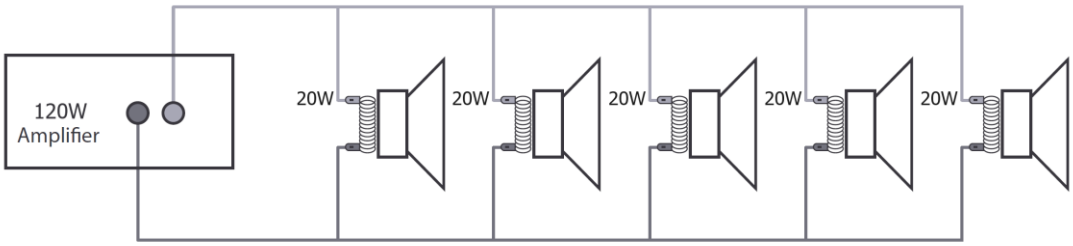
Speaker outputs

V-series amplifiers can be used either as 100V line amplifiers or standard low impedance power amplifiers. These 2 cannot be used together, so it is important to decide which method will be used at the start.

100V line systems

For 100V line systems, connect the amplifier to the first speaker in the system using double-insulated speaker wire which has adequate current rating to handle the total output of the amplifier.

Connect the "100V" output terminal to the positive (+) connection of the speaker and "COM" output to the negative (-) connection of the speaker. Connect further speakers in parallel to the first speaker with all positive terminals and connected together and all negative terminals connected together as shown below.



A 100V line speaker system can comprise of multiple speakers wired in parallel. The determining factor for how many speakers can be used on a single amplifier is the power rating. For most purposes, it is advised to connect as many speakers as needed with a combined wattage up to 90% of the amplifier's maximum output.

The terminals of a 100V speaker are connected via a small transformer and in some cases, this transformer may be "tapped" for different power ratings. These tappings can be used to adjust the wattage (and output volume) of each speaker in the system to help achieve the ideal total power of the system for the amplifier.

Low impedance systems

Alternatively, each zone output of a V-series amplifier is capable of powering one or more low impedance speakers. The benefit this offers is to improve the sound quality using less expensive speakers.
(100V speakers include the added cost of a transformer, which also effects the frequency response)

There is an option on each zone for either a 4Ω or 8Ω speaker output to determine the minimum impedance. It is essential to select the correct output terminal when opting for low impedance speakers.

For a single 8Ω speaker, connect the positive (+) wire to the "8Ω" terminal and the negative (-) wire to "COM"
For a single 4Ω speaker or for 2 x 8Ω speakers connected in parallel, connect the positive (+) wire to the "4Ω" terminal and the negative (-) wire to "COM"

To drive multiple low impedance speakers from a single 4Ω or 8Ω output, these can be connected in series or parallel to achieve the correct impedance, which should be no less than 4Ω or 8Ω, depending which is used.

3 examples: 2 x 8Ω speakers wired in parallel will present 4Ω to the output.
2 x 8Ω speakers wired in series will present 16Ω to the output.
2 pairs of series-wired 8Ω speakers (i.e. 2 x 16Ω) wired in parallel will present 8Ω to the output.

Most importantly, check total the combined impedance on the speaker wire to the amplifier before connecting it to the output. It is important to ensure that the total combined speaker load is no less than 4Ω or 8Ω (depending which output is used) and that the power handling of the speakers is equal to or greater than the output power of the amplifier.

When all other connections are made, connect the rear IEC inlet (13) to the mains using the supplied mains lead (or an equivalent approved type).
Ensure the POWER (12) is switched off until all input and speaker connections are in place.

Operation

When all connections are made, turn down both MASTER controls (10) and switch on the power (12).
The backlight on the media player display will light (1) confirming that power is on.
Turn BASS and TREBLE controls (8, 9) to the 12 o'clock position (pointing straight up) and turn MASTER rotary controls up part way for testing.

To check the system using one of the mic/line inputs 1, 2 or 3, ensure a signal or microphone is connected and gradually increase the volume for that channel until the output is heard through the speakers. Turn up the MASTER control to the maximum required volume level and adjust the individual volume as required.

LINE inputs A or B or the AUX input can also be used for the initial check, or even the internal MEDIA player. When checking audio through LINE A, LINE B or Aux, ensure that its level control is not turned fully down. See below for further information about music playback source selection and operation of the media player.

LED indicators for each channel (11) show when the signal is present (-20dB) or at maximum (0dB).
If the 0dB LED is lighting constantly rather than briefly on the loudest peaks in the sound, reduce the output level to where this lights only instantaneously to help avoid any damage to the system.
If the amplifier detects overload or a fault, the amplifier will enter Protect mode and the PROT LED will light. If this happens, power the amp down, check the speaker wiring for faults and re-start after a few minutes. If the amplifier stays in Protect mode permanently, have the unit checked by a qualified service technician.

Once initial system checks are complete, repeat the process for any other mic/line/aux inputs, playing a signal through each and gradually increasing the volume for each to the required level (3, 4, 5).

Note: Mic/Line 1 input also has a PRIORITY switch (21), which when pressed in, overrides (mutes) output of the other channels when a signal is present on Mic/Line 1. If there is no sound from any other channels, it is worth checking if this button is pressed in, which could cause the other channels to mute.

Music playback is served by a rotary source selector (6) for each zone, which can switch between AUX, MEDIA, LINE A or LINE B. This offers each zone to be able to "hear" the same or different music playback (which can equally be any line level input type).

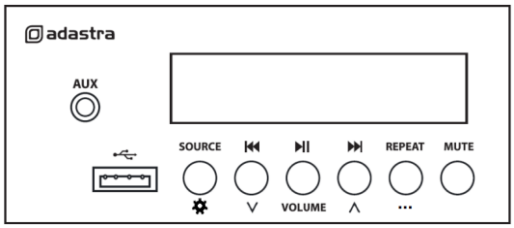
Selecting AUX, LINE A or LINE B will play any line level signal connected through that input into the MUSIC channel, governed by the MUSIC level control (7). Make sure the LINE input LEVEL controls (18) or AUX level (2) is turned up part way for checking. This can be increased to the required level after the initial test. Likewise, if MEDIA is selected, then playback from any of the selectable media player modes will be played through the MUSIC channel. Please see below for further details of the media player operation.

In addition to channel and MASTER volume controls, there are BASS and TREBLE EQ controls (8, 9) to adjust the tone of each amplifier output. At the 12 o'clock position, these controls are applying no effect to the signal (no boost or cut).

Moving the BASS control clockwise boosts the low frequencies in the audio, whilst moving it anticlockwise will cut these low frequencies. Likewise, moving the TREBLE control clockwise boosts the high frequencies in the audio, whilst moving it anticlockwise will cut these high frequencies. Adjust these EQ controls to suit the type of audio signal or compensate for the room acoustics.

Media player

V-series amplifiers are fitted with a built-in media player (1)
The media player has a Bluetooth receiver, USB/SD audio player and a DAB+ or FM radio tuner. Pressing the SOURCE select button will step through Bluetooth, SD, USB, DAB and FM tuner modes. Pressing the MUTE button for any source will mute the output. Holding the MUTE button powers down the media player and pressing it again powers it up again.



Settings menu

The media player has a menu for global settings, which can be accessed by holding down the SOURCE button. Press ⏮ and ⏭ to step through menu pages and ⏵⏸ to select an option. Press REPEAT / … to go back.

Setting	Press ⏵⏸	Press ⏵⏸ to step through settings and enter. Use ⏮ / ⏭ to adjust values
<Time >	<Set Time/Date >	DD-MM-YYYY… HH:MM
	<Set 12/24 hour >	<Set 24 hour> / <Set 12 hour>
	<Set date format>	<DD-MM-YYYY> / <MM-DD-YYYY>
	<Auto update >	<Update Any> / <No Update> / <Update from FM> / <Update from DAB>
<Backlight >	<Timeout >	< On / 10sec / 20sec / 30sec / 45sec / 60sec / 90sec / 120sec / 180sec >
	<On level >	<Low> / <Medium> / <High> (brightness)
<Language >	<English> / <Deutsch> / <Italiano> / <Français> / <Español> / <Português>	
<Factory Reset>	<No> / <Yes> ("Yes" will reset and start a re-scan for DAB. Bluetooth will need to be re-paired)	
<SW version >	Displays the current software version	

Bluetooth

Search available Bluetooth devices on your smart phone or other sending device for a device with Bluetooth ID "adastra-****" (where **** is a unique ID number for each unit). Select to pair and connect with this ID.

When paired and connected, set the volume low on the smart phone or other sending device and play a track to check the sound through the speakers, increasing the volume on the smart phone to the required level.

Playback controls on the media player can remotely operate the smart phone from the amplifier front panel. Pressing ⏵⏸ will pause or play the current track, or holding ⏵⏸ will disconnect the current paired device. Pressing ⏮ or ⏭ will select the previous or next track. Holding ⏮ or ⏭ will decrease or increase the volume. Pressing the REPEAT / … button will switch the display to show the current time or date on the lower text line.

If there is no Bluetooth playback for 15 minutes, the display will revert to show the current time and date.

SD and USB audio player

The media player can play mp3 or wma files stored on a USB stick or SD card (formatted FAT32 or exFAT)
Select SD or USB using the SOURCE button and insert the SD or USB storage device containing the tracks.
The display will show the play status, USB or SD and repeat status on the upper text line.

Pressing ⏵⏸ will pause or play the current track, whilst ⏮ or ⏭ will select the previous or next track.
Holding the ⏮ or ⏭ button will decrease or increase the output volume of the media player.

The repeat mode can be set by holding the REPEAT/… button, pressing ⏵⏸, and selecting using ⏮ or ⏭.
NR = Normal (no repeat), RA = Repeat All, R1 = Repeat One (current track), Rd = Random.

Pressing the REPEAT/… button selects the lower text line information, cycling through ID3 info, time & date.
If there is no SD or USB playback for 15 minutes, the display will revert to show the current time and date.

DAB / DAB+ tuner

The media player has a DAB radio receiver which decodes the DAB(+) signal for high quality radio reception.
To receive this signal, connect the DAB/FM ANTENNA 'F'-connector on the rear panel (24) to an external or indoor active antenna or aerial that can receive the DAB/DAB+ frequency band (174-240MHz).
Press and hold the ⏵⏸ button to initiate auto-tuning for the DAB radio tuner. The display will show "Scanning…" with a progress bar and the number of stations detected and stored.
The display will show the current station in the upper row of text and additional information on the lower row.
Select the station to be played using the ⏮ and ⏭ buttons.

Pressing the REPEAT/… button will cycle the display to show additional tuning, audio information, current time or date.
Holding this button opens a sub-menu for the FM tuner.

Setting	Press ⏵⏸ then use ⏮ and ⏭ to step through settings and ⏵⏸ again to select.
<Full scan >	Press ⏵⏸ to scan and store all available stations
<Preset Recall >	Select a stored station (use ⏮ and ⏭ to select 1-30)
<Preset Store >	Select memory slot (use ⏮ / ⏭ to select 1-30) and ⏵⏸ to store current station in the slot
<Manual tune >	Use ⏮ and ⏭ to step through DAB frequency band
<Prune >	<No> / <Yes> (removes any redundant stations from memory)
<DRC >	<off> / <low> / <high> setting for dynamic range compression (loud vs quiet sound balance)

FM Tuner

The FM tuner function operates in the same way as a standard FM radio and benefits from the connection of an FM compatible 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.
Pressing the REPEAT/… button will cycle the display to show additional tuning, audio information, current time or date.
Holding this button opens a sub-menu for the FM tuner.

Setting	Press ⏵⏸
<Preset Recall >	Select a stored station (use ⏮ and ⏭ to select 1-30)
<Preset Store >	Select a memory slot (use ⏮ and ⏭ to select 1-30) and ⏵⏸ to store current station in the slot
<Scan Setting >	<All stations> / <Strong station> (only stores stations with a strong signal)
<Audio Setting >	<Stereo allowed> / <Forced mono>

Specifications

Model	V-122	V-242
Power supply	170-264Vac, 50Hz (IEC)	
Audio source	DAB+/FM/USB/SD/BT audio player	
Inputs	3 x mic/line (Jack/XLR/screw), 2 x line (RCA), Aux (RCA/3.5mm)	
Zone outputs: line	2 x RCA	
Zone outputs: speaker	2 x terminal outputs 100V/8 Ohms/4 Ohms/COM	
Phantom power	+20V switchable to XLR inputs and screw terminals (balanced)	
Input impedance	1k Ohms (mic/line)	
Input sensitivity	-11dB (line), -46dB (mic)	
THD	<0.76% @ 1kHz	
SNR	84dB (line), 82dB (mic)	
Bluetooth version	5.0	
Frequency response	100Hz - 20kHz	
Dimensions	482 x 273 x 88mm (feet removed)	
Power output	2 x 120W rms	2 x 240W rms
Weight	6.76kg	7.20kg

Troubleshooting

No power LED on control panel	Ensure IEC lead is in good condition and connected properly
	Ensure POWER switch is on and check mains inlet fuse
Media player backlight is on but no other LEDs and no output	Check input signals and condition of input connection leads
	Check MASTER/MIC/LINE/AUX/MUSIC & media player volume controls.
Signal (-20dB) LEDs are lighting but no output	Check speaker output terminals are connected correctly
	Check speakers are working (test on another amp if available)
USB/SD player will not play audio from media	Press ⏵⏸ or ⏮ or ⏭ on transport controls to check track
	Press SOURCE button to ensure correct source is selected
	Check memory device is connected properly (remove and re-insert)
	Check file types – standard mp3 or wma files required
	Check memory device works on a PC or Mac for standard playback
No Bluetooth output	Press ⏵⏸ or ⏮ or ⏭ on transport controls to check track
	Press SOURCE button to ensure Bluetooth is selected
	Check that the sending device is paired correctly with the V-series amp
	Check volume control on the sending device (smart phone, tablet etc.)
No DAB / DAB+ / FM radio output	Press ⏮ or ⏭ to change station in case no signal on selected channel
	Press SOURCE button to ensure correct source is selected
	Check that an antenna (aerial) is connected to the rear panel F socket
	Perform the auto-tune procedure as detailed in the sections above
Output is very loud or distorted	Check level of input signal is not too high
	Lower MASTER/MIC/LINE/AUX/MUSIC & media player volume controls.
Output is working but at very low level	Check input audio source level is not too low
	Increase MASTER/MIC/LINE/AUX/MUSIC & media player volume controls.
	Check for quiet recording of mp3/wma files on USB or SD card
	Check PRIORITY on MIC1 is not accidentally muting music output
No microphone output	Check phantom power is enabled if using a condenser microphone
Amplifier overheating	Ensure cooling vents are clear from debris and dust
	Check that 4Ω/8Ω speakers are not connected to 100V terminals
	Ensure total 100V speaker wattage is lower than amplifier rating (90%)
	Ensure that 100V and 4Ω/8Ω speakers are not connected simultaneously
	Ensure that total load connected to 4Ω/8Ω output is not less than 4Ω/8Ω

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Hereby, AVSL Group Ltd. declares that the radio equipment type 953.251UK and 953.252UK are in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity for 953.251UK is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953251UK%20CE.pdf
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