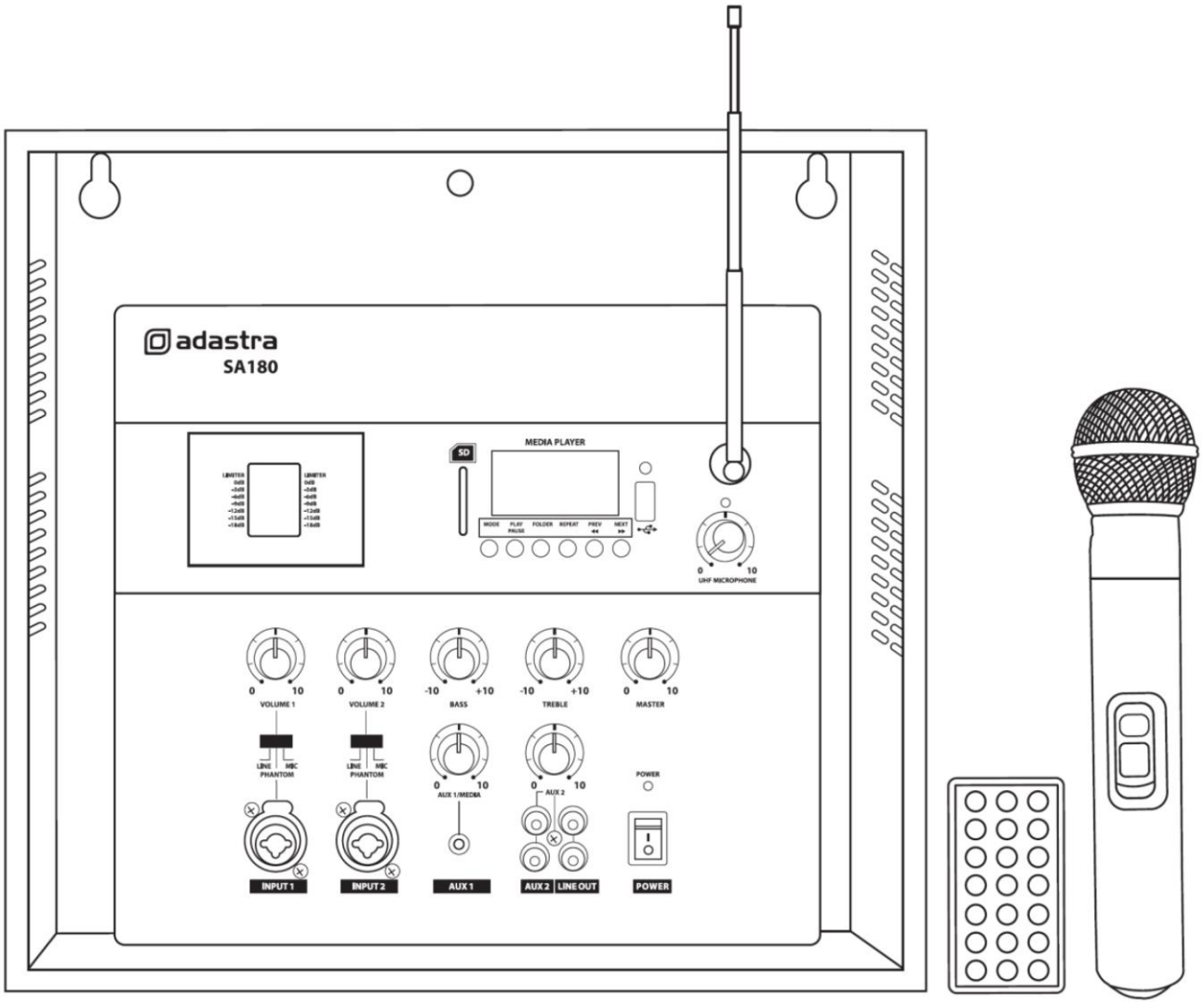
SA-180

Secure Wall Amplifier with UHF Microphone

Item ref: 953.148UK

User Manual



Version 1.1

⚠	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 SA180 secure wall amplifier as part of your public address system. This amplifier 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
Do not allow foreign objects into the CD slot or USB/SD inputs.
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
- Only use one type of output – i.e. 4 - 16Ω, 70V or 100V – do not mix or combine these outputs on a single zone or output
- Do not connect 4 - 16Ω speakers to the 100V or 70V terminal or 100V/70V speakers to the 4 - 16Ω terminal
- Do not allow any foreign objects to enter the case or through the ventilation grilles

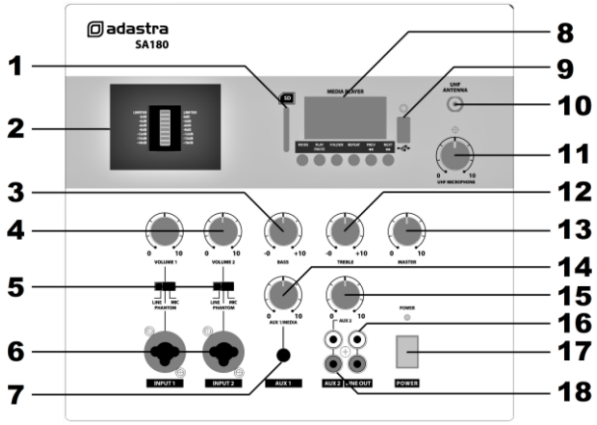
Placement

- Keep out of direct sunlight and away from heat sources
- Keep away from damp or dusty environments
- Ensure adequate support and strength of fixings to the wall for the weight of the amplifier
- Ensure adequate air-flow and do not cover cooling vents around the amplifier
- Ensure adequate access to controls and connections for authorised users

Cleaning

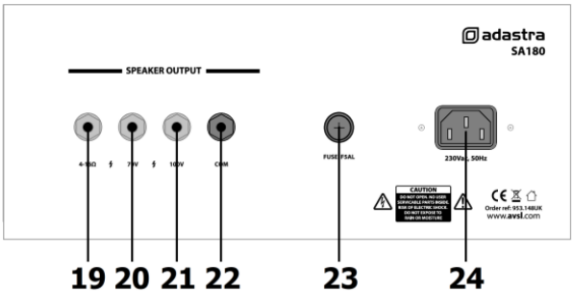
- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

Front panel



1. SD card slot
2. Output level meter
3. BASS EQ control
4. Input 1 + 2 VOLUME controls
5. Input 1 + 2 input type selector switches
6. Input 1 + 2 combo XLR/jack input sockets
7. AUX 1 mini jack input (3.5mm stereo)
8. Media player display
9. USB port
10. UHF wireless microphone receiver antenna
11. UHF wireless microphone volume control
12. TREBLE EQ control
13. MASTER volume control
14. AUX 1 / MEDIA volume control
15. AUX 2 volume control
16. LINE OUT RCA connectors
17. POWER on/off switch
18. AUX 2 RCA input connectors

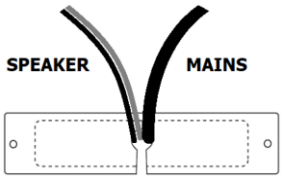
Bottom panel



19. Mains voltage switch
20. IEC mains inlet & fuse holder
21. DC power terminals
22. COM speaker terminal
23. 4 - 16Ω speaker terminal
24. 100V speaker terminals

Connections

Connect the bottom panel IEC inlet (24) to the mains using the supplied mains lead (or an equivalent approved type). Ensure that the mains voltage is correct (230Vac) and the mains outlet is switched on. Mains and speaker output connections are fed through the bottom of the cabinet and the wires can be bundled together and fed through a securing plate (supplied) to deter tampering with the connections.



The SA180 has a total of 4 input channels. INPUT 1 and INPUT 2 are connected by either XLR or 6.3mm jack to the combo connectors on the front panel (6). It is important to determine which type of input source is connected and make the appropriate selection on the input type selector switch (5).

If the input is a standard microphone, slide the switch to "MIC".
If the input is a condenser microphone which requires phantom power, slide the switch to "PHANTOM".
If the input is a line level input (CD player, MP3 player, electronic keyboard etc.), slide the switch to "LINE".

AUX 1 input is connected via a mini jack (3.5mm stereo) to accept a line input from smart phone, tablet or laptop etc. If the input is stereo, the left and right sides will be mixed (summed) to mono. This input shares a channel with the internal media player (see below) and is controlled by the AUX1/MEDIA volume control (14)

AUX 2 input is connected via a twin RCA connector to accept a line input. If the input is stereo, the left and right sides will be mixed (summed) to mono. This input is independent of the media player and is controlled by the AUX 2 volume control (15)

Further mixer-amplifiers or slave amplifiers can be connected from the LINE OUT RCA sockets (16).
This output carries the full mix of all channels, including the media player, as fed to the speakers.

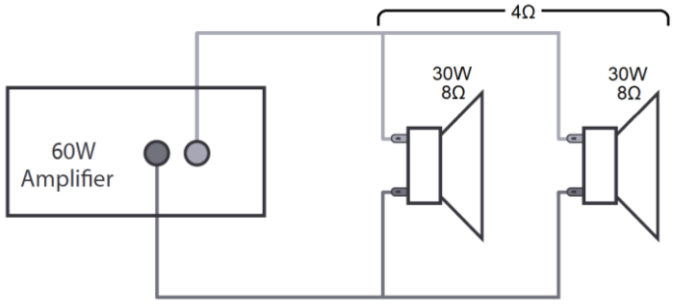
Speaker outputs

The SA180 can be used with standard low impedance speakers or 100V or 70V line speakers.
Only one type of speaker may be used, so it is important to decide which method will be used at the start.

Standard low impedance speakers

For standard low impedance speakers, connect the "4 - 16Ω" terminal (19) to the positive (+) speaker connection and "COM" terminal (22) to the negative (-) speaker connection.

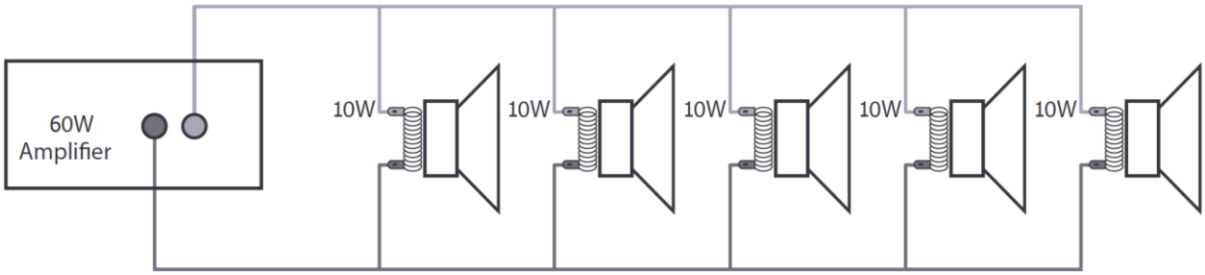
It is important to ensure that the total combined speaker load is no less than 4Ω and that the combined power handling of the speakers is equal to or greater than the output power of the amplifier.
(e.g. a pair of 8Ω speakers connected in parallel combine to make a 4Ω load)



100V or 70V line systems

For 100V or 70V 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.

Depending upon the speaker type, connect the "100V" (21) or "70V" (20) output terminal to the positive (+) connection of the speaker and "COM" output (22) to the negative (-) connection of the speaker.
Connect further speakers in parallel to the first speaker with all positive terminals connected together and all negative terminals connected together as shown below.



A 100V or 70V line speaker system can comprise of many speakers connected together. 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 of no more than 90% of the amplifier's output power rating.

The terminals of a 100V or 70V speaker are connected to a 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.

Do not use 4 - 16Ω and 100V or 70V at the same time.

Operation

When all connections to the amplifier are made, turn all rotary controls down and switch on the power (17) and a power "ON" LED will illuminate.

Turn BASS and TREBLE controls (3, 12) to the 12 o'clock position (pointing straight up) and turn the MASTER volume control (13) up part way for testing.

The SA180 is supplied with a built-in UHF wireless microphone. Install 2 x alkaline AA batteries by unscrewing the bottom of the housing and inserting the batteries with the base of each onto the spring, as indicated inside the compartment. Screw the bottom housing back in place and extend the UHF antenna on the SA180 front panel (do not close the cabinet door whilst the antenna is extended)

Slide the switch on the handheld microphone fully up (2 notches). Increase the UHF MICROPHONE volume control gradually whilst speaking into the handheld microphone until the voice can be heard through the speakers and increase to the required level. Sliding the microphone switch back to the centre position leaves it powered on but temporarily muted. Sliding the switch all the way down switches the microphone power off.

For wired microphones connected to INPUT 1 or INPUT 2, gradually increase the volume control for that input channel whilst speaking into the microphone until the voice is heard through the speakers.

The internal UHF wireless microphone or connected wired microphones should not be able to "hear" the speakers, which can cause feedback (squealing or howling). Ensure that microphones are pointed away from speakers and reduce the volume of any which are causing feedback.

For line inputs, such as a CD player, laptop or TV box, ensure that the audio source is playing and increase the volume control until it is heard through the speakers. Adjust the volume to the required output level.

Note: If a mic or line input is not connected, the initial test can be made using the built-in media player. See the "Media player" section for instructions.

Turn up the MASTER volume to the maximum required output level and reduce the various input channel volume controls if necessary.

The output of the amplifier is represented on the VU meter LEDs (2) and this indication is to help the user to avoid overloading the amplifier.

In addition to channel and MASTER volume controls, there are BASS and TREBLE EQ controls (7, 8) to adjust the tone of the overall output. At the 12 o'clock position, these controls apply no effect to the signal (no boost or cut).

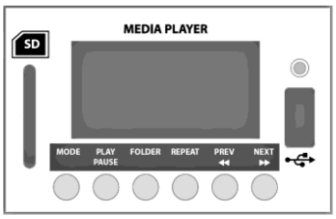
Moving the BASS control clockwise boosts the low frequencies in the audio, whilst moving it anticlockwise will cut these low frequencies. Likewise, moving the TREBLE control clockwise boosts the high frequencies in the audio, whilst moving it anticlockwise will cut these high frequencies.

Adjust these EQ controls to suit the type of audio signal or compensate for the room acoustics.

If the level goes above 0dB, the internal limiter will be activated to automatically control the output, helping to avoid damage to the amplifier or speakers. This should only be for a very short flash at any one time.

If the LIMITER LED flashes consistently or for longer than a brief instant, then the MASTER volume should be turned down until it is not as continuously active.

Media player



MODE	USB – SD – Bluetooth input select
PLAY/PAUSE	Play or pause current track
FOLDER	Folder select (USB or SD)
REPEAT	Select to repeat one track or all tracks
PREV	Navigate to previous track
NEXT	Navigate to next track

Pressing the MODE select button will step through USB, SD card or Bluetooth playback sources.
For playback of mp3 files stored on USB stick or SD card, insert the media into the relevant connector.
If playback does not start automatically, press the PLAY/PAUSE button and check the display for playback.
If the tracks cannot play, check that the files stored on the media are the correct format and not corrupted.
Gradually turn up the AUX 1/MEDIA volume control (14) and check for output through the speakers.
Increase the AUX 1/MEDIA volume to the required level.

Press PLAY/PAUSE to play or pause the current track and use PREV and NEXT buttons to navigate through stored tracks on the USB or SD storage media.

If the tracks are stored in separate folders, pressing FOLDER and using PREV and NEXT buttons will navigate between the stored folders. Press PLAY/PAUSE to select a folder, use PREV/NEXT to select a track within the folder and press PLAY/PAUSE to play it.

Press the REPEAT button to set up a repeated playback with options for Repeat Folder (all tracks in the current folder in order), Repeat One (repeat current track) Repeat ALL (all tracks on selected media in order) or Repeat Random (all tracks on media in random order)

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.

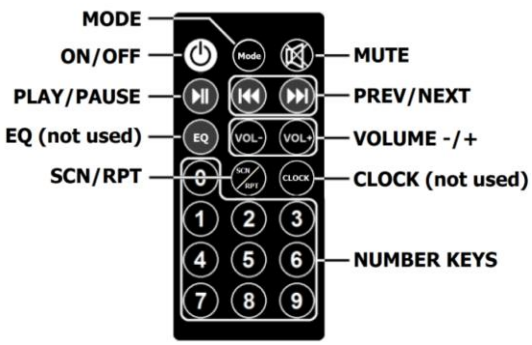
In order to use this function, it will be necessary to pair the sending device to the receiver as follows.

1. Open the Bluetooth settings menu on the smart phone or tablet (or other sending device)
2. Scan for devices and look for "Bluetooth" in the list of available devices
   (ensure that the SA180 is powered on with Bluetooth mode selected and within reception range)
3. Select "Bluetooth" and the SA180 media player display will show "Connected" if successful.
4. Play audio from the sending device, ensuring that volume controls are not turned down/muted
5. Turn up the AUX 1/MEDIA volume control (14) on the front panel to the required level.

The Previous, Next and Play/pause buttons will operate in Bluetooth as remote playback controls.

The SA180 is also supplied with a handheld remote control with functions as shown opposite and described below.

MODE	Select USB/SD/Bluetooth
ON/OFF	Switch media player on or off
PLAY/PAUSE	Play or pause current track
SCN/RPT	Select repeat mode
MUTE	Mute or un-mute output
PREV/NEXT	Navigate between tracks



To avoid loud pops through the speakers, turn down the MASTER control before powering down.

Specifications

Power supply	230Vac, 50Hz (IEC)
Fuse	F5AL
Power consumption max.	190W
Carrier frequency	864.1MHz (handheld UHF microphone)
Stability	±0.03%
Batteries: handheld transmitter	2 x AA (alkaline)
Frequency response	40Hz - 15kHz
Wireless range	50m (max)
Operating temperature	-20 to +50°C
Output power: rms	180W
Speaker: outputs	100V, 70V, 4-16 Ohms, COM
Music source	USB/SD or Bluetooth connection
Mic/line inputs	2 x combo XLR/jack
Line inputs	3.5mm (Aux 1), L+R RCA (Aux 2)
Line output	L+R RCA
Equalizer: bass	100Hz ±12dB
Equaliser: treble	10kHz ±12dB
Bluetooth version	2
THD	<0.1%
Dimensions	375 x 335 x 160mm
Weight	10kg

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
Power LED is on but no other LEDs and no output	Check input signals and condition of input connection leads
	Check MASTER, INPUT 1/2 & AUX 1/2 volume controls are turned up
Power light and output LEDs lighting but no output	Check speaker output terminals are connected correctly
	Check speakers are working (test on another amp if available)
No mp3 playback from USB or SD	Check memory device is connected properly (remove and re-insert)
	Check file types – standard mp3 digital audio files required
	Check memory device works on a PC or Mac for standard playback
Bluetooth cannot connect	Ensure that Bluetooth is enabled on sending device
	Ensure that the sending device is within Bluetooth range (5-10m)
	Check that "Bluetooth" is the connected device
	If there are more than one "Bluetooth" devices, check each in turn
No audio from Bluetooth device	Ensure that volume controls are not turned down on sending device
	Check volume and Play/Pause and Mute buttons on media player
Output too loud or distorted	Reduce INPUT, AUX, MEDIA and/or MASTER volume controls
	Ensure MIC or PHANTOM are not selected for line level inputs
Output too quiet or inaudible	Increase INPUT, AUX, MEDIA and/or MASTER volume controls
	Check for quiet recording of media files on USB
	Ensure LINE is not selected for microphone inputs
No microphone output	Check phantom power is enabled if using a condenser microphone
Feedback from microphone	Face microphone away from speakers and monitors and reduce level
Amplifier overheating	Ensure cooling vents are clear from debris and dust
	Ensure 4/8/16Ω speakers are not connected to 100V or 70V terminals
	Ensure total 100V speaker wattage is lower than amplifier rating
	Ensure that 100V and 4, 8 or 16Ω speakers are not both connected
	Ensure that total load connected to 4 - 16Ω output is not less than 4Ω

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 953.148UK is in compliance with Directive 2014/53/EU

The full text of the EU declaration of conformity is available at the following internet address:
http://www.avsl.com/assets/exportdoc/9/5/953148UK%20CE.pdf

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