

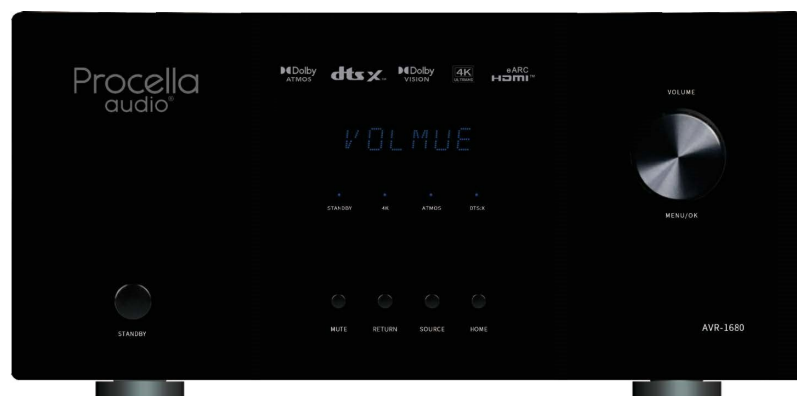
# Procella audio AVR-1680 Multi Channel Audio Amplifier Owner's Manual

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# Procella audio®

## Procella audio AVR-1680 Multi Channel Audio Amplifier



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ATMOS

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- 4K Ultra HD is a video resolution standard with a horizontal pixel count of 3840 and a vertical pixel count of 2160, commonly referred to as 4K. It is four times the resolution of traditional high-definition (HD) video, allowing for a clearer, more detailed, and more lifelike image.
- 4K Ultra HD is an advanced video technology that provides the main advantage of higher quality images. It can present more detail and depth and still maintain clarity on larger screens. This allows viewers to immerse themselves in the visual effects world and achieve a more realistic viewing experience.



- eARC stands for Enhanced Audio Return Channel, and it is a feature of the HDMI (High-Definition Multimedia Interface) protocol that allows for the transmission of high-quality audio signals between compatible devices.
- The purpose of eARC is to provide a more robust and efficient way to transmit audio signals, particularly for advanced audio formats like Dolby Atmos and DTS:X, which require more bandwidth than traditional audio formats. With eARC, the audio data can be transmitted in a more efficient manner, resulting in higher quality sound and fewer compatibility issues.

## Technical and Safety Notices

Please read the following important technical, safety and environmental notices before installing and using your multi-channel audio amplifier.

### Technical Notices

Your Procella multi-channel audio amplifier has been designed to provide a high level of performance when properly installed, configured and operated. In order to ensure this performance and maintain the product warranty, please note and follow these instructions.

### Important Safety Instructions

1. Read these
2. Follow all instructions.
3. Do not use this apparatus near
4. Clean only with a dry
5. Do not block any ventilation openings. Install in accordance with the manufacturer's
6. Do not install near any heat sources such as radiators, heat stoves, or other apparatus (including amplifiers) that produce heat.
7. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the
8. Only use attachments/accessories specified by the
9. Unplug this apparatus during lightning storms or when unused for long periods of time.

10. Refer all servicing to qualified service. 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.
11. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
12. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the
13. Do not connect the unit's output to any other voltage source, such as battery, mains source, or power supply, regardless of whether the unit is turned on or off.
14. Do not remove the top (or bottom) cover. Removal of the cover will expose hazardous voltages. There are no user serviceable parts inside and removal may void the
15. An experienced user shall always supervise this professional audio equipment, especially if inexperienced adults or minors are using the



16. This product can only safely use under elevation 2000m.



17. This product can only safely use on non-tropical climate area .

### Safety and Environmental Notices



- **Note:** The intent of the lightning flash with arrowhead symbol in a triangle is 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 humans.



- **Note:** The intent of the exclamation point within an equilateral triangle is to alert the user to the presence of important safety, and operating and maintenance instructions in this manual.

**WARNING!** TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

- **Ambient Temperature Note:** If this equipment is operated in a confined or multiple rack installation, the internal ambient operating temperature may exceed the external ambient temperature. It is important to ensure in these circumstances that the published maximum operating temperature for the equipment is not exceeded.
- **Reduced Air Flow:** Ensure that rack or other closed installation does not restrict the cooling airflow required for safe and reliable operation of the equipment.

### Environmental Statement



■ This product complies with international directives, including but not limited to the Restriction of Hazardous Substances (RoHS) in electrical and electronic equipment, the Registration, Evaluation, Authorization and restriction of Chemicals (REACH) and the disposal of Waste Electrical and Electronic Equipment (WEEE). Consult your local waste disposal authority for guidance on how properly to recycle or dispose of this product.

## FCC STATEMENT

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
  1. This device may not cause harmful interference
  2. This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## NOTE

- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.
- These limits are designed to provide reasonable protection against harmful interference in a residential installation.
- This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
- If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.

## Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body

## Overview

### Introduction

- The Procella AVR-1680 multi-channel audio amplifier has been designed to provide configurable, consistent and reliable high performance audio power amplification for residential and commercial applications. Please read this manual fully before installing and using the amplifier. If you have any questions regarding amplifier configuration, installation or operation please contact us.

- Following this introduction, the manual is divided into sections covering the following topics:
  - Overview
  - Carton Contents
  - Features
  - Front panel
  - Rear panel
  - Remote Control
  - Connecting Instruction
  - Basic Settings
  - Function and Settings
  - Mobile Phone Transmission
  - Specifications
  - limited warranty

### **Carton Contents**

The AVR-1680 multi-channel audio amplifier is shipped in a cardboard carton containing the amplifier unit, a mains cable appropriate for the sales territory and a document pack.

The full contents are listed below:

- AVR-1680 multi-channel audio amplifier User's manual: 1 pcs
- Power cord: 1 pcs
- Remote control: 1 pcs
- Battery: 1 pcs
- HDMI cable(4K): 1 pcs
- Test microphone: 1 pcs

### **Features**

1. Support Dolby Atmos, DolbyTrue HD and all backward Dolby audio formats.
2. Support DTS:X, DTS-Master and all backward DTS audio formats.
3. Support 4K/60Hz, RGB 4:4:4, 18GHz bandwidth HD video signal.
4. Support Dolby Vision and HDR 10 video signal.
5. Support HDMI2.1,HDCP2.2.
6. Support 7.3.6 and 9.3.4 decoding output.
7. Auto testings and compensations for Room EQ, speaker distance, delay and sound pressure. One button control , full auto calibration. Support manual adjustments, too.
8. Built-in digital Bluetooth audio receiver.
9. Built-in music playing device; support multi-level folder arrangement of music files from TF card & USB disk; support lossless & compressed audio formats including FLAC, APE, WAV,MP3, etc.
10. OSD layer menu.
11. Synchro-reading and display of music lists on mobile phone and TV.
12. Support more than 27 speaker configurations from 2.0 to 9.1 .4.
13. HDMI 6 in 2 out, 2 way coaxial, 2 way optical and 4 way analog inputs.
14. Built-in 11 channels amplifiers, URIC: 240W(80) ,other channels:120W(80) Big power Hi-Fi amplifier design

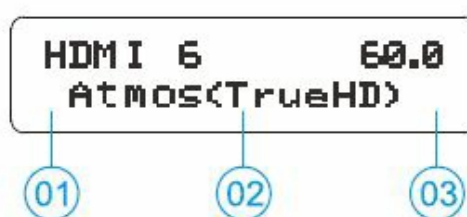
can drive 7.1 .4 speaker configuration.

15. Support RS232 protocol.
16. HDMI eARC and CEC.
17. Maximum 1 000ms lip-sync adjustment.
18. 5 to 11 band parameters EQ for each channel.
19. Support audio-video matrix subgroup output.
20. Dual-core DSP from ADI company.
21. Independent EQ settings and parameter storage for each input channel.

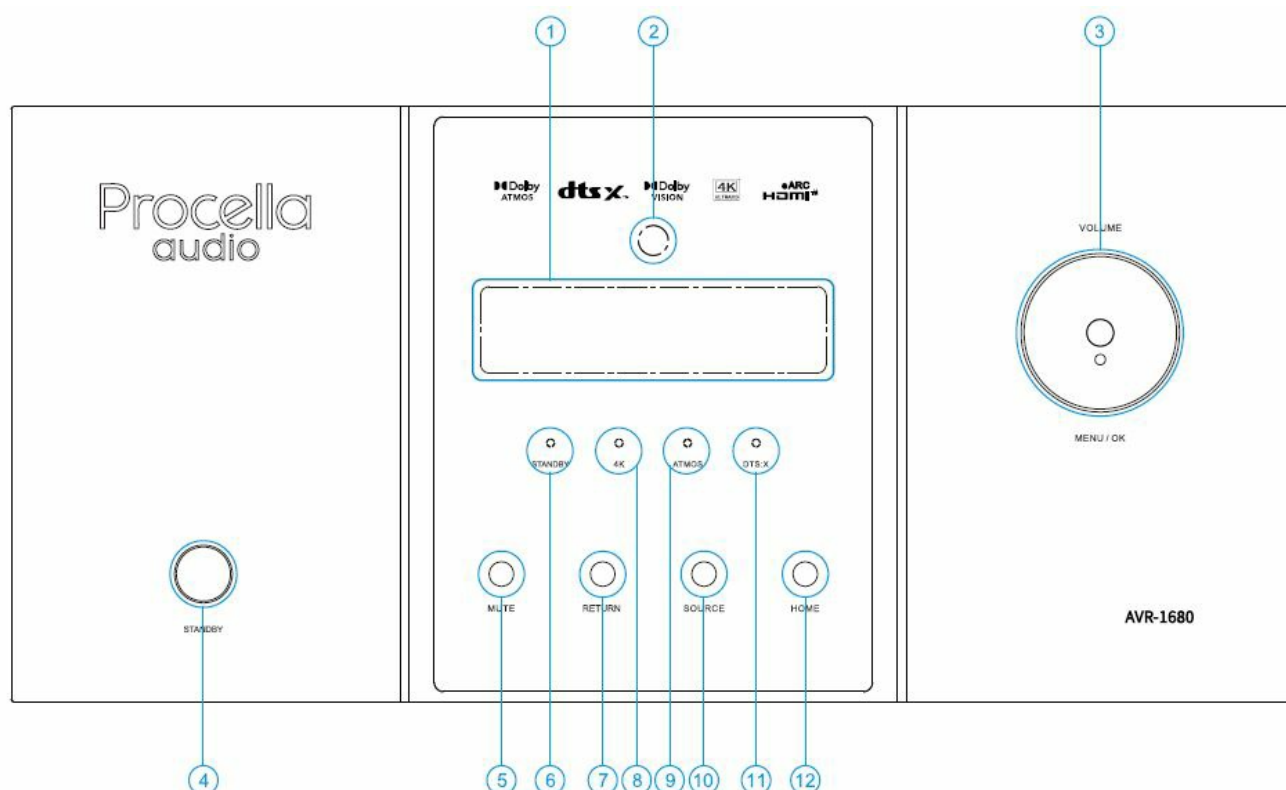
## Front panel

### Front Display Screen

1. Display screen: Display the input source, volume and current status.



1. Indicate the current input source.
  2. Indicate the current input signal.
  3. Indicate the current volume.
2. Remote control sensor
  3. **VOLUME/MENU/OK** knob: Turn the knob to adjust volume when it's on home interface. Press the knob to enter the menu.

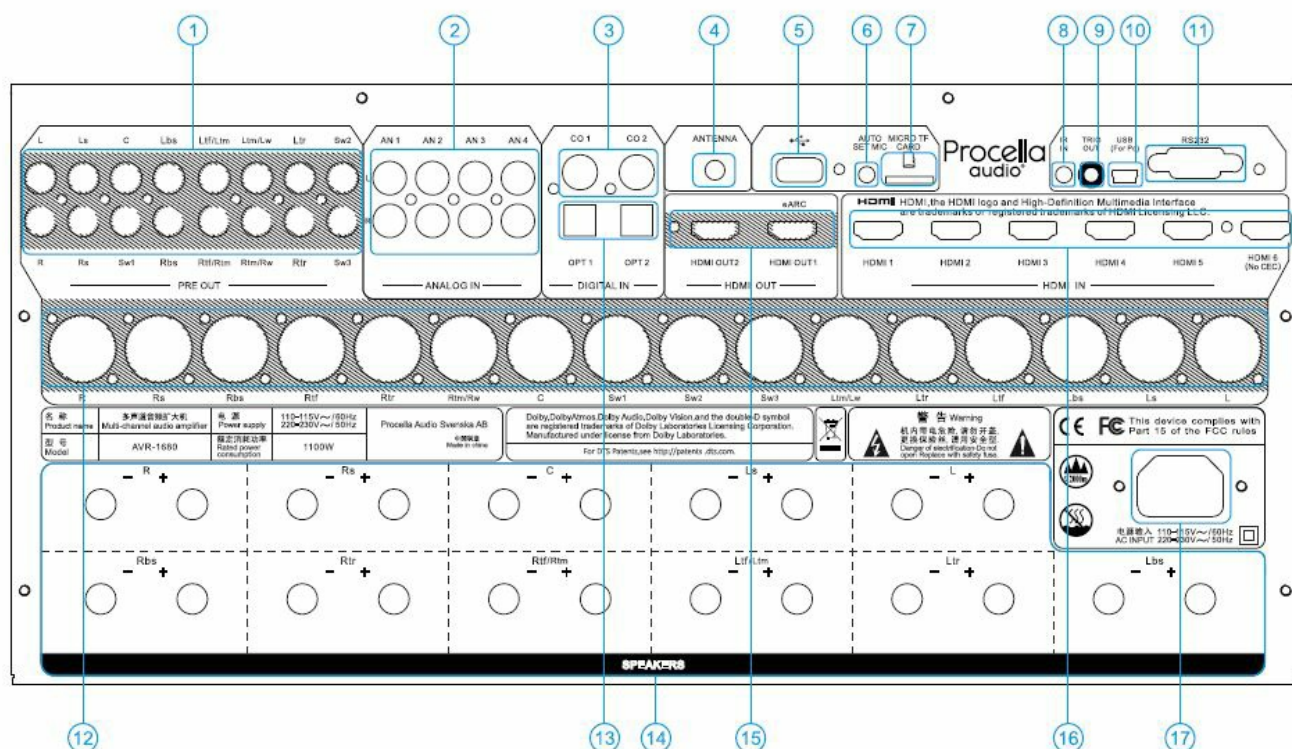


4. **STANDBY** button: Turn on/off the unit.
5. **MUTE** button

6. **STANDBY** indicator: Light up when the unit is in standby mode.
7. **RETURN** button
8. **4K** indicator: Light up when the input signal is 4K format.
9. **ATMOS** indicator: Light up when the input signal is Dolby Atmos format.
10. **SOURCE**: Turn the knob to select an input source.
11. **DTS:X** indicator: Light up when the input signal is DTS:X format.
12. **HOME** button: Switch between home interface and menu; directly return to home interface.

## Rear panel

1. **PRE OUT** jacks: Support 7.3.6 or Line output
2. **ANALOG IN** jacks: 4 way analog inputs AN1, 2, 3, 4.
3. **Coaxial** input jacks: 2 way coaxial inputs CO1, CO2.
4. **Bluetooth** ANTENNA
5. **USB** jack
6. **AUTO SEC MIC** jack: Connect to testing microphone to collect sound information of the room.
7. **MICRO TF CARD** port: For TF card input.
8. **IR IN jack**: Connect to an infrared receiver to extend the range of signal receiving.
9. **TRIG OUT jack**: 5V high level signal output for triggering out other related devices.
10. **USB (For PC)** jack
11. **RS232** port



12. **7.3.6** Fully balanced signal output
13. **Optical** input jacks: 2 way optical inputs OPT1, OPT2.
14. **Speakers** output sockets (Details to P.07)
15. **HDMI OUT** jacks: 2 way HDMI outputs for connecting to an HDMI-compatible devices.

The HDMI eARC jack is for devices with ARC or eARC. Only HDMI OUT 1 works when the unit is in standby mode.

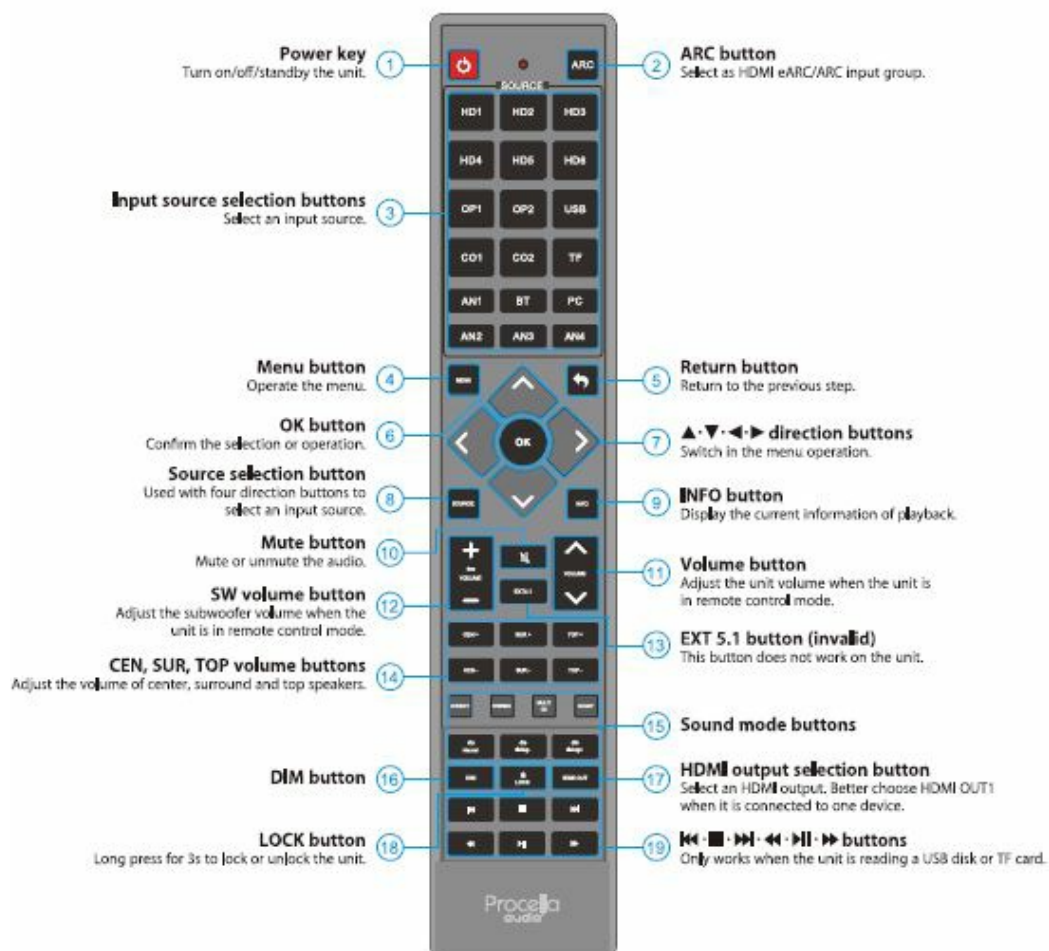


16. **HDMI IN jacks:** 6 way HDMI inputs for connecting to an HDMI-compatible devices.
17. **AC INPUT/Power:** Auto switch for connecting to 110V or 220V mains electricity.

## Remote Control

### Notice

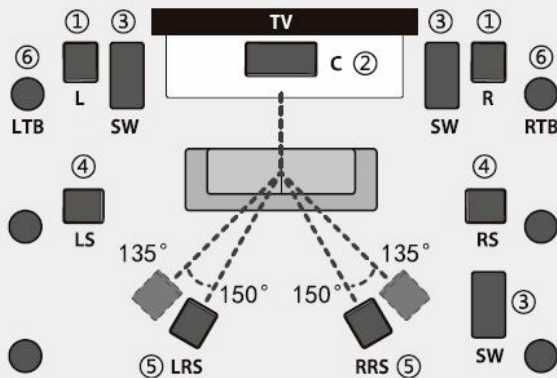
- Please make sure to put the positive and negative ends of batteries correctly. Please do not mix-use old & new batteries.
- Please take out all batteries if the remote is not in use for a long time to avoid damage caused by battery leakage.
- Please replace the batteries when the effective range of the remote is reducing or the signal transmission is not stable.
- Please use soft cloth to regularly clear the IR diode on the remote and the remote control sensor on the front panel.
- Please don't put the remote in a moist or sultry place and avoid hitting & shaking.



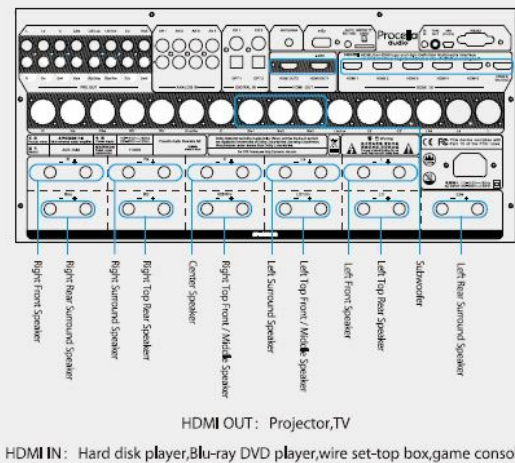
## Connecting Instruction



You can use the 7.3.6 system diagram above as a reference to arrange your speakers.



Theater system connecting diagram



## 1. Left and right speakers

Front left and right speakers can create the overall soundstage. Place the speakers in front of the user at ear-listening level. Toe-in the speakers inwards and create an equilateral triangle between the user and the two speakers so that they meet to a point that goes behind the user. Then adjust the angle to find the position where the audio has better soundstage and imaging.

## 2. Center speaker

The center speaker produces most of the dialogue and vocals and reinforces the sound effect of front left and right speakers. Place the center speaker under or above the display device and make sure it faces to the user at ear-listening level or at the same level as the front left and right speakers.

## 3. Subwoofer

The subwoofer adds emotion and impact, and handles the bass in the sound field. The sound quality and volume of the subwoofer are closely related to the shape of your audio room and the listening position. In general, place the subwoofer in the front corner, or the one-third width of the room, or anywhere you feel the best sound.

## 4. Left and right surround speakers

These speakers are used for precise positioning of sounds and to bring spatial sound effect from all directions. Place these speakers on the sides or slightly backward sides of the user at the height of about 60cm to 100cm above user's ears. The same distance between the speaker and the user brings ideal sound quality.

## 5. Left and right rear surround speakers

These speakers support you to enjoy best effect of Dolby HD and DTS HD by enhancing the surround sound and create a realistic immersive effect. Place these speakers in the back of the user at the height of 40cm to 100cm above user's ears.

## 6. Left and right top front speakers

Add another layer to create 3D sound effect which transports you with breakthrough, spatial and realistic audio experience and brings you a deeper connection to music and images.

## Basic Settings

### 1. OSD select language

Chinese/English, The factory default is Chinese; Remote control: SETTING?Option?Language.

### 2. Select an input source

1. Remote control: SETTING Source setup
2. Front panel: SOURCE VOLUME knob to select an input source.

### 3. **Speaker configuration**

1. Remote control: SETTING Speaker setup Speaker layout.
2. Front panel: HOME VOLUME knob to Setting Speaker setup Speaker layout. You can select 3.1/5.1/7.1 /5.1.2/5.1 .4/7.1.2/7.1 .4/7.1.6/7.3.4/9.1.4 etc.

### 4. **Speaker distance (latency)**

**Remote control:** SETTING Speaker setup Speaker distance. Front panel: HOME VOLUME knob to setup Speaker distance. You can adjust the distance between speakers and sitting position.

### 5. **Select Subwoofers**

Main menu system setting Speaker setting Subwoofer,  
here please select if you connect any sub in this system.

### 6. **INPUT SOURCE**

It offers input sources and displays  
the audio-video input port.

### 7. **MODE selection**

You can select pure, direct, stereo, multi-channel, Dolby up mix and DTS Neural: X modes. It only applies DSP processing to the current input source , and it will become default settings after rebooting.

### 8. **PARAMETER adjustment**

Independent output level/gain adjustment for each channel.  
The display differs based on different speaker configurations.  
Non-existent channels will be in grey color and can't be adjusted.

### 9. **Acoustic Test**

1. Auto Room Test: to auto-set the speaker EQ, distance and frequency response.
2. Advance Test: to set the speaker EQ, distance and frequency response at your will.

### 10. **SETUP**

It handles seven parts: source setup, audio mode, speaker setup, manual EQ, option, parameter save and recall & information about the unit.

## **About SET UP**

### **Source set up:**

- Settings of the enable switch, rename, video source, audio source, EQ selection, independent volume and trigger output of each channel, can reach any configuration effects.
- Enable: set the ON/OFF status for each input port. If it is off, input port will not be displayed. (suggest the default selection) 19 Input sources: HDMI 1,HDMI 2,HDMI 3, HDMI 4,HDMI 5, HDMI 6, HDMI eARC,OPTICAL1,OPTICAL 2,COAXIAL1,COAXIAL 2, ANALOG1 ,ANA LOG2,ANALOG3,ANALOG4, Bluetooth,UDISK, TF CARD & USB Audio. (suggest the default selection)
- Video source: No Video,HDMI1,HDMI 2,HDMI 3,HDMI 4 ,HDMI 5&HDMI 6. (suggest the default selection)
- Audio source: HDMI Audio, Optical 1,Optical 2,Coxial 1,Coaxial 2,Analog1,Analog2, Analog3 &Analog4.
- EQselect: Bypass, EQ1, EQ2, EQ3, Auto EQ, Not change. (suggest the default selection)
- Volume mode:OFF/ON (Independent/Unified/ Additional $\pm$ 20dB)
- Trigger out: OFF/ON (suggest the default selection)

**Audio mode:**

Can set any input signal to your expected effects. Input signals: can set as pure, Bypass, 2CH, Multi-ch, Dolby effect, DTS effect.

**Speaker setup:**

- Speaker layout: deselect 3.1 /5.1 /7.1 /5.1.2/5.1 .4/7.1.2/7.1 .4/7.1.6/7.3.6/9.1 .4 configuration.
- Top speaker type: to select ceiling or reflective speaker.
- Level test/ adjust: test the right position, adjust the gain of each channel and auto-turn-off the unnecessary parameters. Speaker distance: input the distance data between speaker & listening position and auto-adjust the latency. Subwoofer: select NO when there is no subwoofer connected and it will auto-transmit the subwoofer signal to other channels to avoid distortion. You can select one/two/three subwoofer(s).
- Speaker crossover: to adjust the frequency response for each channel.
- Filter slope: to adjust the crossover slope for each channel.
- Bass enhance: this selection will display on the list only after the UR crossover is set to Bypass. Turn on bass enhance for more stunning bass.

**Auto EQ testing:**

- Plug in the calibrated microphone to AUTO SET MICsocket.
- Put the mic in the best listening place.
- Confirm auto EQ testing (Enable).
- After level testing finish, go to frequency response tests.
- After tests finish for each channel, press confirm to apply test data. Or you can select QUIT if you don't want to apply the test data.

**Professional EQ testing:**

- Go to professional EQ testing and select Level compensation.
- After tests finish, press confirm to apply test data. Or you can select QUIT if you don't want to apply the test data.
- EQ test: every channel can do independent tests.
- All the testing steps of each channel are same as auto EQ calibration, you can see detail speaker distance data after tests.

**EQ settings:**

- 5 different modes: cinema, music, news, auto EQ and Bypass.
- Different parameter adjustments for each mode: 11 bands for UR and center channel, 7 bands for L/R surround, L/R back surround and top channels, 5 bands for subwoofer, and 7 bands for front top and rear top channels.

**Option:**

- Language, Startup state, Volume options, HDMI option, Information display, No signal standby, rigger out, Unit

& Driver Log.

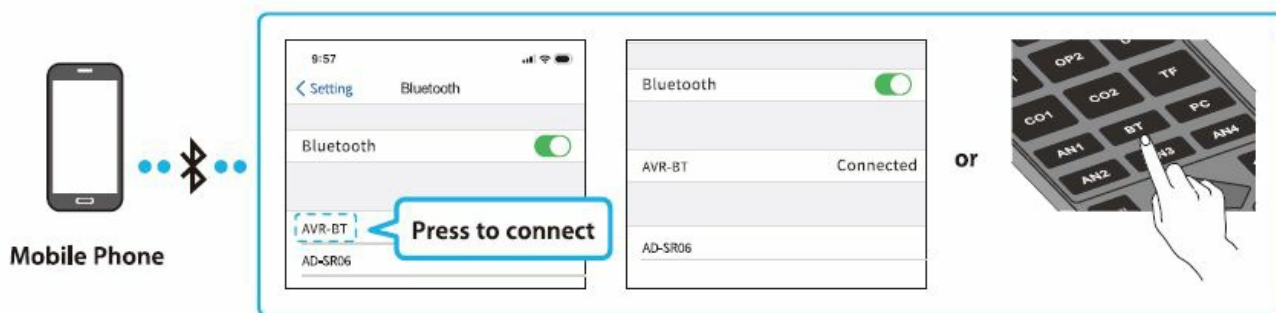
- Language: English/Chinese.
- Startup state: Power on is for auto-power-on; Standby is for manual-power-on needed; Remember is for the state when it powered off last time. Volume options – Power on volume: to set power on volume each time.
  - Max volume(IMPORTANT: set max volume limitation to avoid damage of wrong volume.Volume steps: how much volume will add or decrease when you press remote volume button for one time.
- Volume display: the way how volume show up in display screen when adjust volume.
- HDMI option : HDMI OUT Select, Sync to TV Power, Standby Video, CEC Source Control, CEC Control & HDMI Format.
  - HDMI OUT Select: select one/both of HDMI & HDMI 2. Better select HDMI2 when there is only one way HDMI output.
  - Sync to TV Power: ON/OFF is for sync-turn-on/manual-turn-on the TV & amplifier.
  - Standby Bypass: ON is for video signal transmitting directly to TV or other display devices.
  - CEC Source Control: ON means the amplifier will auto select HDMI port when it is connected with external HDMI CEC supported devices such as DVD player. Make sure it is connected properly. This only works for HDMI ARC output port and better select OFF to avoid wrong operation.
- CEC Control: ON means the playback buttons of the remote control also work for the external HDMI CEC supported devices. If the input source can be recognized, the name of it will be displayed on the screen.
- HDMI Format: Auto priority, HDMI1, HDMI 2, HDMI 3, HDMI 4,5,6 and Auto/Standard/Enhance.
  - Auto is for auto-adapt to the resolution of display device, only for 3D, HDR & Dolby.
  - Standard is for HDMI 1.4a video format.
  - Enhance is for HDMI 2.0 video format.
- Information display: Display DIM, OSD information, OSD info position & OSD Transparency.
  - Display DIM 1-10 to adjust the brightness of the display screen.
  - OSD information to select display all/none/only display volume.
  - OSD info position to select top/bottom information display place.
  - OSD Transparency 0-7 to set the transparency of the OSD menu.
- No signal standby : To set the time limit before the amplifier enters standby mode.
- Trigger out: Always ON/Always OFF/By source.
- Unit: Metric/Imperial, only for speaker distance.
- U Driver Log: Normally default OFF. When the unit breaks down, please insert a USB disk and it will auto-log the error information into a file in the disk. Please send the file to dealer or store where you purchased this unit and ask for solution.

### **Save and Recall:**

- save to back up : back up all the current parameter.
- Load from back up : Recall the parameter saved last time.
- Load from default : Reset the parameter to factory default.

### **Mobile Phone Bluetooth Wireless Transmission**

- Press SOURCE button on the front panel or remote control to select Bluetooth.
- Switch on Bluetooth on your mobile phone, search & connect with AVR-BT, and control music playback on your mobile phone .



## Specifications

<b>Model</b>	<b>AVR-1680</b>
Rated impedance	80
Rated power output (THD=1%, 1CH, 1kHz)	L/R/C, 240W Rms/80 120W Rms/80
Distortion(A-weighted, pure mode, 1kHz)	0.03%
Frequency response	10Hz-20kHz (+1/-3 dB, pure)
Dimensions (WxDxH)	<ul style="list-style-type: none"> <li>• 431x394x200mm (without feet, knobs, terminal posts)</li> <li>• 431x435x217mm (including feet, knobs, terminal posts) 557x531x334mm (Package size)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• =24.3kg (Net weight)</li> <li>• = 28.1kg (Gross weight)</li> </ul>
Gain	∞, 38dB (pure)
SN	∞, gsdB (A-weighted, pure)
Power	110-115V~60Hz, 220-230V~50Hz
Executive standard	<ul style="list-style-type: none"> <li>• GB4943.1-2022 GB/T9254.1-2021</li> <li>• GB17625.1-2012</li> </ul>

## PROCELLA AUDIO LIMITED WARRANTY

- Precella Audio components are warranted to be free from original manufacturing defects as follows:
- For all speaker and crossover components, for a period of five years from date of delivery to the original purchaser from an authorized dealer.
- For all amplifier components, for a period of two years from date of delivery to the original purchaser from an

authorized dealer.

- The Precella Audio obligation under this warranty is limited to repairing or replacing any component which it shall find defective in material or workmanship under normal noncommercial conditions of use. This warranty shall not apply to products which have been abused, modified, disassembled or repaired by anyone other than Precella Audio or one of its appointed service centers.
- Products to be repaired under this warranty must be returned to the factory or designated service center with all transportation and insurance charges prepaid.
- All warranties of whatever character are void and unenforceable if the component or any part thereof is not purchased from an authorized dealer.
- This warranty is in lieu of all other warranties, expressed or implied, and of all other obligations or liabilities on our part, and Precella Audio neither assumes nor authorizes any other person to assume for it, any other liability in connection with the sale, repair, or return of any product.
- We encourage all Precella owners to register their components. While this is not required to receive warranty benefits, it will allow you to receive warranty coverage without providing proof of purchase, and it will enable us to keep you advised of Precella product information, new products, and updates.
- Please contact your local Precella Audio dealer or Precella Audio directly should you have any further questions. We love to hear from our customers, especially with feedback on our loudspeaker products.


**Email:** [contact@procella.audio](mailto:contact@procella.audio)

**Website:** [www.procella.audio](http://www.procella.audio)

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Specifications may change without prior notice. V4.2 Aug 2018

## Documents / Resources

 <p>Precella audio</p> <p>AVR-1680</p> <p>Owner's Manual Multi-channel audio amplifier</p>	<p><a href="#">Precella audio AVR-1680 Multi Channel Audio Amplifier</a> [pdf] Owner's Manual 2BBMZ-AVR-1680, 2BBMZAVR1680, AVR-1680, AVR-1680 Multi Channel Audio Amplifier, Multi Channel Audio Amplifier, Audio Amplifier, Amplifier</p>
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