Note:

 The Coaxial, Optical and AES/EBU Digital Audio Inputs accept stereo PCM signals only. Compressed audio signals such as Dolby Digital or DTS are not supported.

USB (Type B) Audio Input

You can connect your computer directly to the HA-1 using a USB-A to USB-B cable. This will allow your computer to function as the digital source, and you will be able to use whatever playback software you prefer to output audio through the HA-1. The digital signal will be converted by the internal DAC and sent to the headphone and line level outputs. This input source is labeled **USB DAC** on the **Source Selection** screen and **USB** on the remote control.



Note:

 Depending on the operating system and playback software used, driver software, specific software settings and configurations may be required in order to enable the computer to play audio into the HA-1. Please visit the HA-1 Support page on the OPPO web site (<u>www.oppodigital.com</u>) for driver download and additional help guides.

Mobile USB Audio Input

You can connect a compatible iPod, iPhone, or iPad into the **Mobile USB Audio Input** port on the front panel of the HA-1. A 30-pin dock connector to USB cable or a Lightning[™] to USB cable that comes with your Apple product is required for this connection. The digital audio signal from your Apple product will be converted by the internal DAC and sent to the headphone and line level outputs. This input source is labeled **MOBILE** on both the **Source Selection** screen and the remote control.



Note:

USB works with iPhone 5S, iPhone 5C, iPhone 5, iPhone 4S, iPad (4th generation), iPad mini, iPod touch (5th generation).

Bluetooth Audio Connection

You can connect a Bluetooth-capable mobile device such as a smartphone or digital audio player by enabling Bluetooth on your mobile device and searching for and connecting to the OPPO HA-1. Once successfully paired and connected, the Bluetooth digital audio signal will be converted by the internal DAC and sent to the headphone and line level outputs. This input source is labeled **BLUETOOTH** on the **Source Selection** screen and **BT** on the remote control.



Notes:

- Bluetooth technology works with iPhone 5S, iPhone 5C, iPhone 5, iPhone 4S, iPad (4th generation), iPad mini, and iPod touch (5th generation).
- Bluetooth technology also works with any mobile device or computer that supports the Bluetooth A2DP profile.

Bluetooth Setup

When the **BLUETOOTH** input source is selected, the front panel screen displays the Bluetooth connection status. If a device has not yet been paired, or a previously paired device is not in range, the screen will display **Not Connected**. If this is the case, you will need to enable Bluetooth on your mobile device, search for the OPPO HA-1, and attempt to pair with it. After pairing successfully, the HA-1 will display that it is **Connected**.

Once you have paired a Bluetooth device, the HA-1 will attempt to reconnect to it when the device is in range and the **BLUETOOTH** input has been selected on the HA-1. If a new device needs to be paired, but the HA-1 is already connected to a device, you will need to disconnect that device in order to pair the new device. This can be done by unpairing the HA-1 from the existing device's Bluetooth menu or by temporarily turning off Bluetooth on the existing device.

If the pairing process fails, the HA-1's Bluetooth status will continue to show **Not Connected**. If that is the case, you will need to attempt the pairing process again.

Using the OPPO HA-1

Basic Operations

Power On / Off

When the HA-1 is initially connected to AC power, it stays in standby mode. Pressing the **Power Button** on the HA-1 will result in the **Power Status Indicator** turning blue, indicating the HA-1 has powered on. When the unit is powering on, the OPPO logo will appear on the screen. When it is fully ready, one of the pre-selected **Home Screens** (Status, Spectrum or VU Meter) will appear.

Once the HA-1 has powered on, pressing the **Power Button** again will turn the unit off, at which time the **Power Status Indicator** will turn off, indicating that it is in standby mode.



The **POWER** button on the remote control functions in the same way as the **Power Button** on the front panel of the HA-1.

The Front Panel Display

When the HA-1 is in its normal operational mode, it shows one of the pre-selected Status, Spectrum or VU Meter screen on its Front Panel Display. This is called the Home Screen Selection.



When there is any user operation, the **Front Panel Display** changes accordingly. Please use it as the visual aid for all operations.

Source Selection

The active input source can be selected by rotating the **Source Selector Knob**. The **Front Panel Display** will show a **Source Selection** screen, with the active input source highlighted. When the **Source Selector Knob** is rotated in either direction, a new input source is highlighted. Once you settle down on an input source by leaving the highlight cursor on it or by pressing the **Source Selector Knob**, the new input source becomes active and the **Front Panel Display** returns to the **Home Screen**.



You can also switch input sources by directly pressing the appropriate source button on the remote.

Volume Control

Rotating the **Volume Knob** clockwise or counter-clockwise will increase or decrease the volume level. The **Volume** screen will appear to provide a visual reference for the volume level. The HA-1 implements its volume control with a pure analog signal path. The numeric dB value displayed on the screen is based on the measurement of the **Volume Knob** position. It indicates the approximate gain or attenuation level of the **Pre-amplifier Output** relative to the input signal. It is normal for the display value to vary a few dB when the **Volume Knob** moves in the very low range due to the logarithmic nature of the volume control curve. The actual headphone volume depends on the headphones' sensitivity, the input signal level, and the **Headphone Gain** setting.



You can also adjust the volume level by using the **Volume +/-** button on the remote control. The **Front Panel Display** will show the **Volume** screen and the **Volume Knob** will also rotate accordingly.

Note:

It is possible that the Volume Knob may be inadvertently rotated when the HA-1 is off. In order to protect the output device, there is a protection mechanism built-in to the HA-1's volume control. When the device is powered on, if the Volume Knob position is higher than the previously used volume level before the unit was powered off, the Volume Knob will automatically return to the previous volume level. If the Volume Knob position is less than the volume level before it was powered off, the HA-1 will keep the new volume level.

Mute

Pressing the **MUTE** button on the remote control will disable audio output for the HA-1, and the **Front Panel Display** will show the **Mute** icon. You can cancel **Mute** by rotating the **Volume Knob**, pressing the **VOLUME +/-** button on the remote control, or by pressing the **MUTE** button again.



For those who use the HA-1 as both a headphone amplifier and a pre-amplifier, it is possible to assign the **MUTE** button to the **Pre-amplifier Output** only. This way the user can mute the large speakers with the **MUTE** button while still being able to listen to the headphones. Please refer to the *Mute Operation* section in the *Advanced Operations* chapter of this manual for details.

Playback Controls

When the active input source is the **USB DAC Audio Input**, **Mobile USB Audio Input**, or **Bluetooth Audio Input**, the **PLAY / PAUSE**, **PREV**, and **NEXT** buttons on the remote control are passed on to the computer or mobile device. This function allows you to control playback by starting, stopping, and skipping to the next or previous track. Not all software or devices support this function. This function does not control devices connected via the Coaxial, Optical, AES/EBU, RCA Stereo, or XLR Balanced Audio Inputs.



Advanced Operations

Advanced configuration of the OPPO HA-1 can be accessed by pressing and rotating the **Source Selector Knob**. The basic operations are:

- Press the Source Selector Knob to access advanced configuration screens.
- If the Source Selector Knob is pressed again immediately without any other operations occurring on the current configuration screen, the next configuration screen is shown. Repeatedly pressing the Source Selector Knob will eventually return you to the Home Screen after looping through all available configuration screens.
- In any configuration screen, the current selection is highlighted. Rotate the Source Selector Knob to move the selection cursor. The highlighted selection becomes active if you leave the selection cursor on it or press the Source Selector Knob to confirm your selection. The Front Panel Display returns to the Home Screen after a selection is made.



The following configuration screens are available:

Home Screen Selection

You can choose one of three screens to be the **Home Screen** for your HA-1. The **Home Screen** is displayed when the HA-1 is in its normal operation mode.

- Status (default text-based display) Status information about the current source and audio stream.
- **Spectrum** A dynamic spectrum display corresponding to the audio signal.
- VU Meter A pair of traditional VU meters indicating the audio signal level.



Screen Dimmer Setting

You can adjust the brightness of the Front Panel Display. The following selections are available:

- Normal (default) The Front Panel Display will operate at full brightness.
- Dim The Front Panel Display brightness will be dimmed.
- Off The Front Panel Display will be turned off. Any user interaction will turn on the display temporarily to provide you with visual aid. The display turns off again when the HA-1 returns to its normal operation mode.



COAX USB RCA COAX OPTI BT OTI AES/EBU MOBILE OMMER

Remote:

You can also quickly adjust the **Screen Dimmer** setting by pressing the **DIMMER** button on the remote control. Each press of the button moves to the next **Screen Dimmer** selection.

Mute Operation

When using the HA-1 as both a headphone amplifier and a pre-amplifier, it may be desirable to mute the **Pre-amplifier Output** while listening to headphones. For example, if the HA-1 is connected to a pair of active speakers, it may be easier to mute the **Pre-Amplifier Output** than to turn off both speakers when you want to listen with headphones. The **Mute Operation** setting is designed for this type of usage. It controls how the **MUTE** button on the remote control functions. The following selections are available:

- Mute All (default) Both the Headphone Jack and Pre-amplifier Output are muted when the MUTE button is pressed. This condition is indicated by a Mute icon on the Front Panel Display. Mute is cancelled if the MUTE button is pressed again, or if the Volume Knob is turned.
- Mute Pre Out Only the Pre-amplifier Output is muted when the MUTE button is pressed. This is indicated by the word "MUTE" displayed next to the volume level on the Front Panel Display. Mute is cancelled if the MUTE button is pressed again. Adjusting the Volume Knob does not cancel mute so that headphone volume can still be adjusted while the Pre-amplifier Output is muted. Please note that when mute is cancelled, the Pre-amplifier Output level is determined by the current Volume Knob position. Use caution if you listen to the headphones and speakers at significantly different volume levels.



Remote:



Headphone Gain Selection

For optimal sound quality, you can select the **Headphone Gain** setting between **High** and **Normal** in order to properly match the sensitivity and impedance of the headphones in use. The following selections are available:

- High (default) The headphone amplification circuit of the HA-1 applies the high gain level, which is about 18dB higher than Normal. This setting is recommended for headphones with low sensitivity or high impedance.
- **Normal** The headphone amplification circuit of the HA-1 applies the normal gain level. This setting is recommended for headphones with high sensitivity or low impedance.

HEADPHONE GAIN		
<u>HIGH</u>	NORMAL	
	HA1-1.x.x-1.x.x	

The rule of thumb for selecting the proper gain level is to find a comfortable listening volume that utilizes the upper range of the **Volume Knob**. It is generally better to have the Volume Knob set to a high volume level when using the Normal gain setting rather than having the Volume Knob set to a low volume level when using the High gain setting.

Note:

• In order to prevent a sudden loud sound from damaging your headphones and hearing, please turn down the volume before changing the Headphone Gain setting.

Home Theater Bypass Mode

Each of the HA-1's input sources can be individually configured to operate in a **Home Theater Bypass** mode. If an input source is in this mode, the HA-1's volume control is bypassed for the **Pre-Amplifier Output**. The **Pre-Amplifier Output** level will be exactly the same as the input signal level (unity gain). This feature helps when integrating the HA-1 as a high performance stereo pre-amplifier into a multi-channel home theater sound system. The following diagram shows the typical connection for such a system:



In the above system, when listening to stereo sources (such as the CD player), only the stereo power amplifier, the HA-1 and the source component need to be turned on. Volume is controlled by the HA-1. When listening to multi-channel sources, all components are turned on, and the volume is controlled by the surround sound processor. The HA-1's input source that is connected to the surround sound processor (**RCA Stereo Audio Input** in this example) is configured in **Home Theater Bypass** mode. The HA-1's **Pre-Amplifier Output** level will be exactly the same as the output level of the surround sound processor's front left and right channel output levels because the volume control of the HA-1 is bypassed.

It is important to configure an input source in **Home Theater Bypass** mode only if the connected device has its own volume control. Do not connect a source device (such as a CD player or DVD player) without volume control to an input source in **Home Theater Bypass** mode, since the high output level may cause damage to downstream amplifiers and speakers.

Although digital input sources can be configured to **Home Theater Bypass** mode, it is not recommended. This is because most digital source components do not offer volume control. However, if you intend to use the HA-1 as a pure DAC device connected to another pre-amplifier with proper volume control, you should configure the digital input source to **Home Theater Bypass** mode. This will ensure that the DAC output bypasses the HA-1's volume control.

Home Theater Bypass mode only affects the Pre-Amplifier Output. The Headphone Jack output volume is still controlled by the Volume Knob for sources in Home Theater Bypass mode.

The **Home Theater Bypass** setting applies to the current input source. Unlike the other settings, this setting is per input, not global. If you need to configure **Home Theater Bypass** mode for multiple input sources, please select each input source and then change the setting. The following selections are available:

- Standard (Variable Volume) (default) The current input source is in standard mode. The Pre-Amplifier Output level is controlled by the Volume Knob.
- Bypass (Fixed Level) The current input source is in Home Theater Bypass mode. The Pre-Amplifier
 Output level is fixed at the same level as the input signal, and the Volume Knob does not affect the PreAmplifier Output.

HOME THEATER BYPASS		
<u>STANDARD</u>	BYPASS	
(Variable Volume)	(Fixed Level)	

When the **Bypass (Fixed Level)** option is selected, you will be asked to confirm again due to the danger of sending a high signal level to the **Pre-Amplifier Output**. Please make your selection and push the **Source Selector Knob** to confirm.



The input sources that are in **Home Theater Bypass** mode are indicated with a "BYPASS" banner in the **Source Selection** screen.



Reset Factory Default Settings

If you need to reset the HA-1 to its factory default settings, please hold down the **Source Selector Knob** on the front panel while at the same time press the **MUTE** button on the remote control. All custom settings will be erased and the factory default settings will be loaded. The **Volume Knob** will automatically return to the minimum volume position. The HA-1 will automatically turn off after resetting to factory default settings.



Reference

Usage Notes

- In order to prolong the life of your headphone amplifier, it is recommended that you wait at least 30 seconds before you power it on after powering it off.
- In the case of a malfunction, please power the unit off, wait for 30 seconds, and then power it back on. If the issue persists, please consult the **Troubleshooting** table or contact an OPPO service center.
- Power the unit off after operation.

Troubleshooting

Use this chart to resolve general operational problems. If there are any problems that you cannot resolve, please contact your OPPO service center.

Symptom	Possible Cause	Solution	Reference Page
No sound	Mute is activated. The Front Panel Display shows the Mute icon.	Press the MUTE button or rotate the Volume Knob to unmute.	16
	Volume is too low.	Press the Volume +/- button or rotate the Volume Knob to increase the volume.	15
	The input source is not connected or is not actively playing audio.	Rotate the Source Selector Knob or press a source button on the remote to select an active input source.	15
	Audio cable is not properly connected.	Check audio cable. Reconnect if necessary.	9 , 10
Remote control	Remote control is out of range.	Use the remote control within the effective range.	7
failure	Low battery.	Replace the batteries.	6
Temporary malfunction	The protection mechanism is triggered.	Turn off the unit. Wait for 30 seconds, and then try again.	14
	Interference from other devices.	Identify interference by turning off other devices, and then relocate or replace the offending device.	2

User Manual Updates

An updated version of the User Manual may be available online at the OPPO Digital website (<u>www.oppodigital.com</u>). To read or download the latest version of the User Manual, click on the HA-1 from the Product list, and navigate to the Support tab.

Occasional updates are needed to reflect new features added to the device since the User Manual was printed. As future firmware updates provide new features and functions, the online version of the User Manual will be updated accordingly.

Specifications

Designs and specifications are subject to change without notice.

General			
Dimensions (W x H x D)	10.0 x 4.8 x 12.2 inches, 254 x 80 x 333 mm		
Mass	13.0 lbs, 5.9 kg		
Power Supply	AC 110-120 V~ / 220-240 V~, 50/60 Hz auto-sensing		
Power Consumption	70 W (operation), 0.5 W (standby)		
Trigger Input	3.5 V – 15 V, 10mA minimum		
Trigger Output	12 V, 100 mA maximum		
Operating Temperature	41 °F - 95 °F, 5 °C - 35 °C		
Operating Humidity	15% - 75% No condensation		
Recommended Headphone Impedance	32 ohm – 600 ohm		
Balanced Headphone Jack Output (XLR-4) Pin order	1: L+, 2: L-, 3: R+, 4: R-, Shell: GND		
6.35 mm Headphone Jack Output Pin order	Tip: L, Ring: R, Sleeve: GND		
XLR Balanced Audio Input			
Input Impedance	15k ohm		
Maximum Input Level	18 Vrms, +27.3 dBu (0 dBu = 0.775 Vrms)		
RCA Stereo Audio Input			
Input Impedance	10k ohm		
Maximum Input Level	9 Vrms, +21.3 dBu (0 dBu = 0.775 Vrms)		
Coaxial, Optical, AES/EBU Digital Inputs			
Input Format	Stereo PCM		
Sampling Fraguencias	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz,		
	176.4 kHz, 192 kHz		
Word Length	16-bit, 24-bit		
USB DAC Audio Input (USB B Type)			
Input Format	Stereo PCM, Stereo DSD (DoP v1.1 or native)		
DCM Sampling Fraguencias	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz,		
	176.4 kHz, 192 kHz, 352.8 kHz, 384 kHz		
PCM Word Length	16-bit, 24-bit, 32-bit		
DSD Sampling Fraguencies	2.8224 MHz (DSD64), 5.6448 MHz (DSD128),		
	11.2896 MHz (DSD256, native mode only)		
Profile	USB 2.0, USB Audio 2.0		
Mobile USB Audio Input (USB A Type)			
Input Format	Stereo PCM		
PCM Sampling Frequencies	44.1 kHz, 48 kHz		
Profile	USB 2.0, USB Audio 2.0		
VBUS Power Output	+5 V, 2.1 A		
Bluetooth Audio Input			
Standard	Bluetooth 2.1+EDR		
Profile	iAP, SPP, AVRCP, A2DP		
Audio Transmission Format	SBC, aptX		

DAC Performance Specifications

Specification	XLR Output	RCA Output
Output Level	4.4 ± 0.3 Vrms	2.2 ± 0.3 Vrms
Frequency Response	10 Hz – 170 kHz (+0/-3 dB)	10 Hz – 170 kHz (+0/-3 dB)
(Tested with -10 dBFS / 384 kHz)	20 Hz – 20 kHz (+0/-0.07 dB)	20 Hz – 20 kHz (+0/-0.07 dB)
THD+N at 1 kHz (A Weight, 20 Hz – 20 kHz)	< 0.00056% (< -105 dB)	< 0.00056% (< -105 dB)
Channel Separation	> 100 dB	> 100 dB
Signal-to-Noise Ratio (A Weight, 20 Hz – 20 kHz)	> 110 dB	> 108 dB
Dynamic Range (1 kHz -60 dBFS, A Weight, 20 Hz – 20 kHz)	> 120 dB	> 120 dB

Pre-amplifier Performance Specifications

Specification	XLR Input – XLR Output	RCA Input – RCA Output
Rated Output Level	4.4 Vrms	2.2 Vrms
Frequency Response	10 Hz – 200 kHz (+0/-2 dB)	10 Hz – 200 kHz (+0/-2 dB)
	20 Hz – 20 kHz (+0/-0.04 dB)	20 Hz – 20 kHz (+0/-0.04 dB)
THD+N at 1 kHz (A Weight, 20 Hz – 20 kHz)	< 0.0009% (< -101 dB)	< 0.0015% (< -97 dB)
Channel Separation	> 120 dB	> 102 dB
Signal-to-Noise Ratio		
(A Weight, 20 Hz – 20 kHz)	> 105 dB	> 100 dB
Dynamic Range		
(1 kHz -60 dB, A Weight 20 Hz – 20 kHz)	> 120 GB	> 120 GB
Maximum Gain (100 mVrms input)	6 dB	6 dB

Headphone Power Amplifier Specifications

Specification	Condition	XLR Input - Balanced Output	RCA Input - 6.35 mm Output
Maximum Output	600 Ohm loads	2400 mW (1% distortion)	600 mW (1% distortion)
Power (Per Channel)	32 Ohm loads	3500 mW (0.0077% distortion)	4200 mW (0.029% distortion)
Rated Output Power	600 Ohm loads	800 mW (0.0018% distortion)	200 mW (0.0043% distortion)
(Per Channel)	32 Ohm loads	1200 mW (0.01% distortion)	1200 mW (0.02% distortion)
Frequency Response at Rated Power		10 Hz – 200 kHz (+0/-1 dB)	10 Hz – 200 kHz (+0/-1 dB)
		20 Hz – 20 kHz (+0/-0.04 dB)	20 Hz – 20 kHz (+0/-0.04 dB)
THD+N at 1k Hz 50 mW		< 0.0016% (< -100 dB)	< 0.0013% (< -98 dB)
(A Weight, 20 Hz – 20 kHz)			
Channel Separation		> 120 dB	> 110 dB
Signal-to-Noise Ratio			5 440 JD
(A Weight, 20 Hz – 20 kHz)		> 114 dB	> 112 dB
Dynamic Range			
(1 kHz -60 dB, A Weight	20 Hz – 20 kHz)	> 120 dB	> 120 dB
Output Impedance		0.5 Ohm	0.7 Ohm

Limited Warranty

OPPO Digital, Inc. Limited Two Year Warranty

Your OPPO product has been manufactured to precise standards, and with rigid quality control through every process of manufacturing. It is warranted by OPPO DIGITAL, INC. against defective workmanship or materials for two (2) full years from the original date of purchase. This warranty applies only to OPPO brand products imported or manufactured by OPPO Digital, Inc. and sold to the original consumer purchaser in the U.S.A. or Canada by either OPPO Digital, Inc. or an OPPO authorized reseller. This warranty does not apply to OPPO brand products imported and sold by unauthorized dealers, distributors, or other sellers. This warranty does not apply to products purchased or shipped outside of the U.S.A. and Canada. OPPO Digital, Inc. may at its sole discretion, refuse to honor the warranty of any such unauthorized product that may be presented for service.

Warranty service can only be performed by OPPO Digital, Inc. or an OPPO authorized service center. The original dated bill of sale must be presented upon request as proof of purchase.

OPPO Digital, Inc. will, at its option and at no charge as stipulated herein, repair or replace product which is returned either in person or postpaid and insured to an OPPO service center, with new or reconditioned parts or products. Replacement parts and products assume the remaining original warranty, or ninety (90) days, whichever is longer.

This limited warranty covers noncommercial use of this product, and shall not apply to the following, including, but not limited to: applications and uses for which this product was not intended; altered product or serial numbers; cosmetic damage or exterior finish; batteries and cable accessories; accidents, abuse, neglect, fire, water, lightning or other acts of nature; incorrect electrical line voltage, fluctuations and surges; failure to follow operating or maintenance instructions. OPPO Digital, Inc. does not warrant uninterrupted or error-free operation of the product. This limited warranty shall not extend to anyone other than the original purchaser of the product. It is nontransferable and states your exclusive remedy.

THE FOREGOING WARRANTY IS THE ONLY WARRANTY WITH RESPECT TO THE PRODUCT AND OPPO DIGITAL, INC. MAKES NO OTHER WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, REGARDING THE PRODUCT INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT WILL OPPO DIGITAL, INC. OR ITS AUTHORIZED RESELLERS BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, EVEN IF SUCH DAMAGES RESULT FROM NEGLIGENCE OR OTHER FAULT.

Some states do not allow limitation on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

To register your purchase for warranty, please visit the following Web site: http://www.oppodigital.com/registration.asp

To obtain warranty service, please follow these instructions:

- Contact OPPO customer service via email at service@oppodigital.com or by phone at (650) 961-1118 with details of the defect claimed, product model, serial number, date and place of the original purchase.
- If it is determined that your product needs service, a Return Merchandise Authorization (RMA) number will be issued to you along with return instructions and address of an OPPO service center.
- Pack the product securely, preferably in the original packaging, with your assigned RMA number marked clearly on the outside of the package. Send the package postpaid and insured to the OPPO service center to obtain warranty service.

Thank you for choosing OPPO. Your satisfaction is our highest priority.

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