

# PCA1120

**Features**

- 1 x 120W at 4ohms, for commercial and industrial use
- Lo-Z(8/4/2 ohms) / Hi-Z(70/100V) compatible
- 1 input and loop out
- Preset EQ, HPF and LPF for loudspeakers
- Dynamic Loudness for comfortable BGM
- Setup done locally from rear panel
- Expandable with optional power amplifier PCA1 120
- 1U rack mountable (with optional IRK-44-3)

SN 29403547A



**Package Contents**

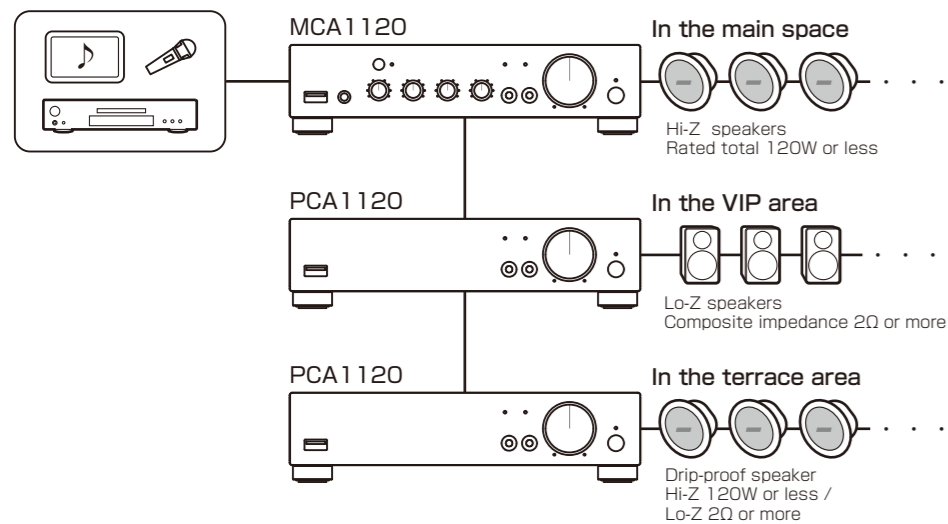
- Main Unit
- AC Power Cord
- 5-pin Euroblocks (2)
- Instruction Manual (This Document)
- Safety Information
- Warranty Card

**!** This product is intended for commercial/professional use. It should be installed only by a specially-trained technician.

## System Configuration Examples

See website for detailed connections.

**Example A**  
Expanding the system using the MCA1 120, PCA1 120(x2 shown) and additional speakers.

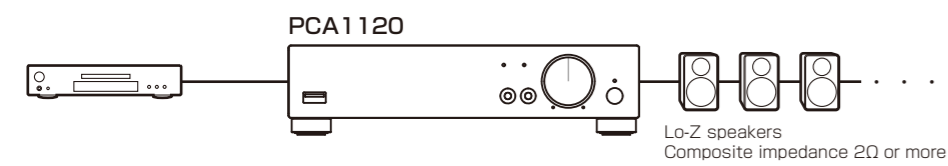


In this configuration with multiple rooms and speaker types, the MCA1 120 controls the overall volume of the system, while each PCA1 120 volume level can be adjusted for its room.

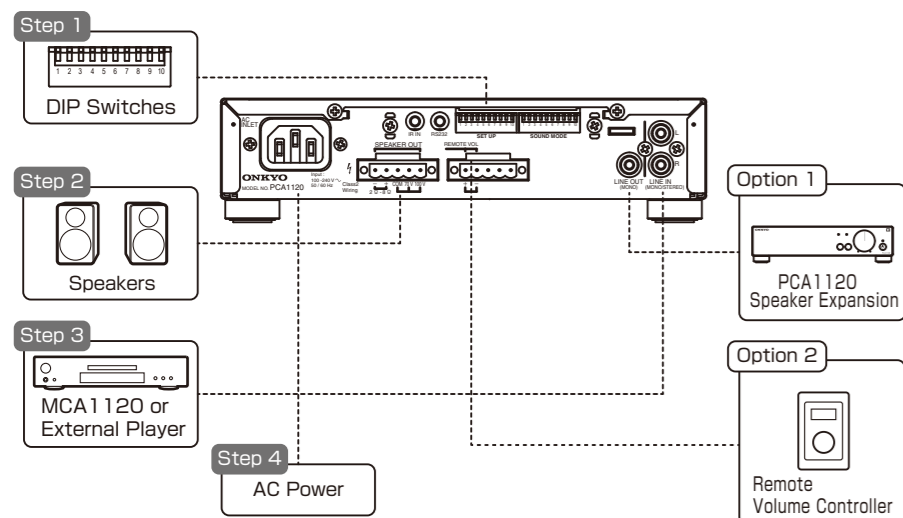
**Example B** (IMAGE NOT SHOWN)  
Driving a passive subwoofer with the PCA1 120.

The PCA1 120 has built-in crossover settings for this application.

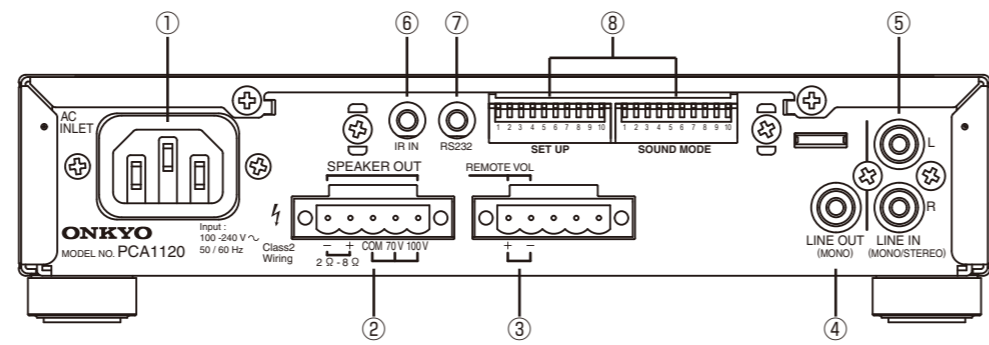
**Example C**  
Easy BGM system



## Setup Steps



## PCA1 120 Rear Panel



- ① **AC Inlet** (IEC C13, 100V-240V 50/60 Hz) (⇒ see Step 4)
- ② **SPEAKER OUT Terminals** (Euroblock)  
**NOTE**  
It is important to read "Step 2: Connecting Speakers" before attempting to use this terminal. IMPROPER SETUP CAN RESULT IN MALFUNCTION OR FIRE. (⇒ see Step 2)
- ③ **Remote Volume Controller Terminal** (Euroblock)  
Use for connecting a commercially available volume control. (⇒ see Option 2)

- ④ **LINE OUT Terminal** (RCA Mono)  
Use this output to link to expansion amplifier PCA1 120 like in Example A. (⇒ see Option 1 for Setup)
- ⑤ **LINE IN Terminals** (RCA Stereo)  
Use to connect MCA1 120 or an external player such as CD, Music Streamer, etc. (⇒ see Step 3)
- ⑥ **IR IN** (3.5mm Mini, Mono/2-pole)  
For use with an external infrared controller.
- ⑦ **RS232** (3.5mm Mini, Stereo/3-Pole)  
For use with an external controller, or for Custom EQ programming.  
**IMPORTANT:** To prevent damage, unplug the power cord when inserting/removing the RS232 cable.
- ⑧ **DIP Switches**  
See Step 1 for instructions on how to set the DIP switches.

## Step 1 : DIP Switch Settings

**Step 1-A : [ SET UP ] Initial Setup Switches**

**IMPORTANT:** Incorrect settings can damage your equipment.  
Set up carefully to ensure safe operation.  
**IMPORTANT:** DIP Switch setting changes will not apply until the unit is power cycled by removing the AC power cord for a while, and reinserting.

- #1 [ Keylock ]**  
Locks the front panel controls with the exception of the Power button and Master Volume.  

|   |                                 |
|---|---------------------------------|
| 1 | <input type="checkbox"/> Unlock |
|   | <input type="checkbox"/> Lock   |
- #2 [ Auto Standby ]**  
The PCA1 120 automatically goes into the standby state after two hours when there is no audio signal and no operation.  

|   |                              |
|---|------------------------------|
| 2 | <input type="checkbox"/> Off |
|   | <input type="checkbox"/> On  |
- #3 [ Auto Power On ]**  
When an audio signal is detected on LINE IN during Standby, the power is turned on automatically.  

|   |                                       |
|---|---------------------------------------|
| 3 | <input type="checkbox"/> On (LINE IN) |
|   | <input type="checkbox"/> Off          |
- #4 NOT USED**
- #5 [ Volume Control ]**  
Select which type of optional external volume controller: Volume Control (10kΩ, B-curve type), or Infrared Remote System.  

|   |   |
|---|---|
| 5 | <input type="checkbox"/> Using a Volume Control (10kΩ) or Unusing an External Control |
|   | <input type="checkbox"/> IR control   |
- #6, 7 [ IR Code ]**  
Set the IR ID of this unit to avoid mis-operation of multiple units.  

|   |   |  |
|---|---|--|
| 6 | 7 | <input type="checkbox"/> ID 1 (Same as MCA1120. This does not switch ID of MCA1120.) |
|   |   | <input type="checkbox"/> ID 2  |
|   |   | <input type="checkbox"/> ID 3  |

- #8 [ SPEAKER OUT ]**  
Select Hi-Z or Lo-Z depending on your speaker specifications.  

|   |   |
|---|---|
| 8 | <input type="checkbox"/> Hi-Z(70V / 100V) |
|   | <input type="checkbox"/> Lo-Z(2Ω / 4Ω)    |

**!** **NOTE:** It is important to read "Step 2: Connecting Speakers" before setting this switch. IMPROPER SETUP CAN RESULT IN MALFUNCTION OR FIRE. (⇒ see Step 2 for details)
- #9 [ Speaker Lo-Z ]**  
If Switch #8 is set to Lo-Z, you must adjust this switch according to your speaker specifications.  

|   |  |
|---|--|
| 9 | <input type="checkbox"/> Lo-Z : 4Ω minimum |
|   | <input type="checkbox"/> Lo-Z : 2Ω minimum |

**!** **NOTE:** It is important to read "Step 2: Connecting Speakers" before setting this switch. IMPROPER SETUP CAN RESULT IN MALFUNCTION OR FIRE. (⇒ see Step 2 for details)
- #10 NOT USED**

**Step 1-B : [ SOUND MODE ] Sound Preferences Switches**

Advanced configuration tools for EQ and DSP.  
TIP: These setting changes are instant. No power cycle is necessary.

- #1 [ Music Optimizer ]**  
Advanced DSP improves the sound of compressed music formats, such as MP3.  

|   |                              |
|---|------------------------------|
| 1 | <input type="checkbox"/> Off |
|   | <input type="checkbox"/> On  |
- #2 [ Subwoofer Mode ]**  
If PCA1 120 is used as a subwoofer amp, set to [ On ].  
**NOTE:** Subwoofer Mode [ On ] changes the HPF switches (3,4,5) to Low Pass Filter values.  

|   |                              |
|---|------------------------------|
| 2 | <input type="checkbox"/> Off |
|   | <input type="checkbox"/> On  |
- #3-5 [ HPF (High Pass Filter) ]**  
Depending on the purpose of this unit, settings are different. Please refer description below.  
  - When it is used as speaker amplifier,
    - Use this filter to limit bass frequencies to the SPEAKER OUT terminals. The DIP switches set the cutoff frequency.
    - Only if it is used as Subwoofer amplifier (When Switch #2 is [ On ])
      - These settings are for low pass filter.

|   |   |   |   |
|---|---|---|---|
| 3 | 4 | 5 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 50 Hz  |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 40 Hz  |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 60 Hz  |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 70 Hz  |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 90 Hz  |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 150 Hz   |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 200 Hz   |
|   |   |   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Off (No filter or using [Preset EQ for Loudspeaker]) |

**NOTE:** Do not set to [ Off ] when using Hi-Z speaker or the amplifier may go into protection mode.
- #6,7 [ BGM Mode ]**  
Select a Sound Mode based on the intended "mood" of the listening environment. If using this unit to expand the MCA1 120, set to [ Off ]. The Sound Mode of the MCA1 120 will carry over.  

|   |   |  |
|---|---|--|
| 6 | 7 | <input type="checkbox"/> <input type="checkbox"/> Off : Flat Frequency response (Select this when connecting to MCA1120) |
|   |   | <input type="checkbox"/> <input type="checkbox"/> Calm : A Relaxed, Laid-Back sound. Great for a Cafe, etc.              |
|   |   | <input type="checkbox"/> <input type="checkbox"/> Lively : An Upbeat sound. Great for a Gym, or Club                     |
|   |   | <input type="checkbox"/> <input type="checkbox"/> Natural : A Balanced Sound for most spaces                             |

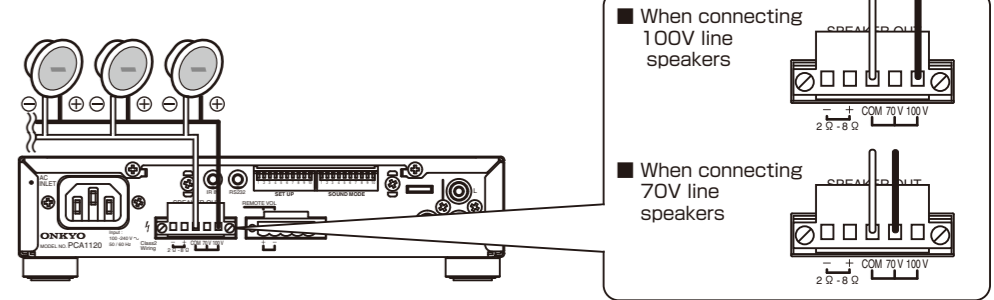
**NOTE:** Settings of DIP switch are different from MCA1 120.
- #8-10 [ Preset EQ for Loudspeaker ]**  
Select the EQ preset for your speaker type(see list below).  

|   |   |    |  |
|---|---|----|--|
| 8 | 9 | 10 | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Off                         |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 1 : Reserved for Onkyo |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 2 : Reserved for Onkyo |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 3 : Reserved for Onkyo |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 4 : Reserved for Onkyo |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 5 : B16                |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 6 : B40                |
|   |   |    | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Type 7 : J24CT              |

## Step 2 : Connecting Speakers

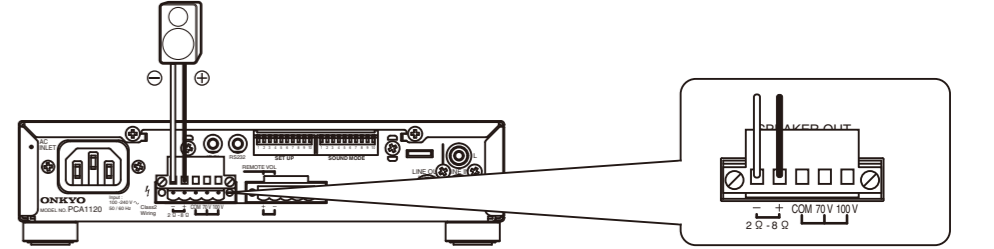
**!** **Pay close attention to speaker setting / connection!** It may cause malfunction or fire.  
 · Connect AC power cord in final step. Do not connect AC power cord before this step. It may cause electric shock.  
 · Check the connection pins of Euroblock and Lo-Z / Hi-Z settings of DIP switches according to speaker specifications.  
**If these are not matched, it may cause malfunction or fire.**

**Hi-Z (High Impedance) Connections**



1. Set #8 [ SET UP ] DIP switch [ SPEAKER OUT ] to [ Hi-Z ].
2. Connect the [ 100V ] or [ 70V ] terminal of SPEAKER OUT to the + terminal on your speakers. Next, connect the [ COM ] to the - terminal on your speakers.  
  - !** Do not use the high impedance 70V line and 100V line terminals at the same time.
  - Make sure that the total rated input power of the connected speakers is 120W or less.

**Lo-Z (Low Impedance) Connections**



1. Set #8 [ SET UP ] DIP Switch [ SPEAKER OUT ] to [ Lo-Z ].
2. Connect the + terminal of SPEAKER OUT to the + terminal on your speakers. Next, connect the - to the - terminal on your speakers.  
  - !** Do not connect the Lo-Z speakers to the Hi-Z terminals.
  - When connecting multiple speakers, make sure that the total impedance is more than the value of setting #9 [ Speaker Lo-Z ] of SET UP DIP switch.

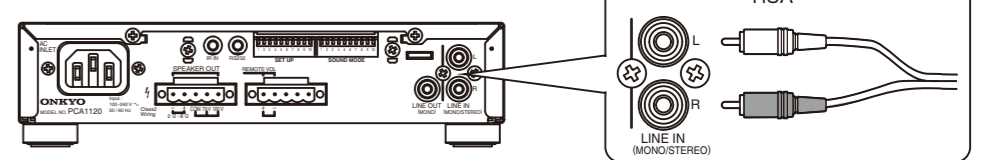
**Subwoofer Connections** (IMAGE NOT SHOWN)

- Confirm impedance of subwoofer. Then connect it by above either way.

## Step 3 : Connecting MCA1 120 or External Players

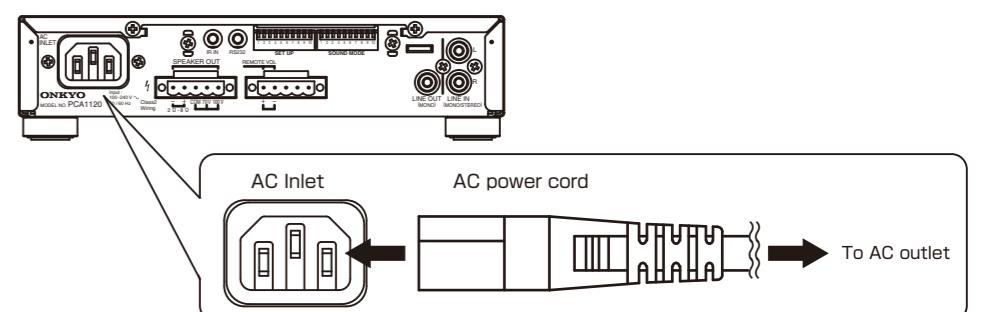
Stereo signals are internally mixed into mono.

**LINE IN Connection**



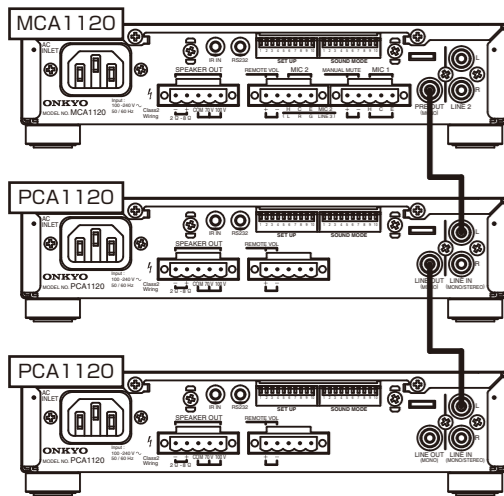
- Connect MCA1 120 or external player to LINE IN terminals by RCA cable. You can use either L or R terminal for the output of monaural player.

## Step 4 : Connecting Power Cord



- Connect the supplied AC power cord to the AC Inlet and plug to AC outlet.

## Option 1 : Expanding Speakers with MCA1120/PCA1120



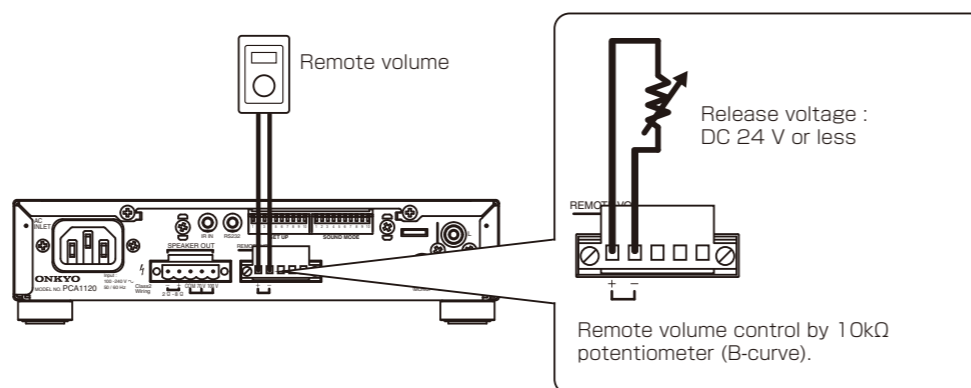
1. Connect the PRE OUT terminal of the MCA1120 and the LINE IN terminal (L or R) of PCA1120 with the monaural RCA cable.
2. Follow the instruction manual of the MCA1120, set the DIP switch and connect the speaker.
3. For further expansion, connect to another PCA1120 in series from the LINE OUT terminal of the PCA1120.

### Benefits of combining MCA1120 with one or more PCA1120(s).

- Additional speaker zones can be added (See Example A).
- A passive subwoofer can be added to the system (See Example B).
- Both the MCA1120 and PCA1120 include independent Preset EQ and HPF, allowing you to tailor the sound of each speaker area.
- The MCA1120 Master Volume control can be used to adjust overall system volume for all areas since its PRE OUT terminal is variable. In this application, set the PCA1120 volume control to the center position (12 o'clock). Alternatively, you can adjust each PCA1120 volume independently.

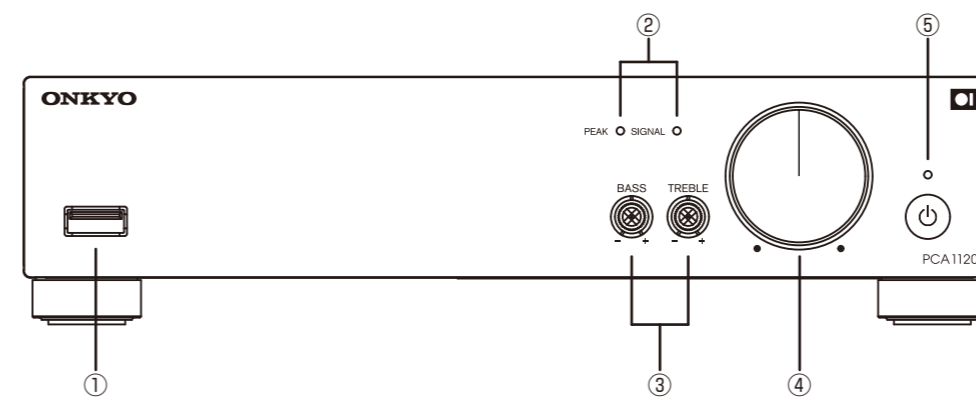
## Option 2 : Remote Volume Control

Remote volume control by 10kΩ potentiometer. Remote volume and master volume function in series. If either is at minimum, there will be no sound.



1. Set to [ Volume Control(10kΩ) ] of #5 [ Volume Control ] of SET UP DIP switch.
2. Connect the external volume(10kΩ, B-curve) to the Remote Volume Controller terminal with Euroblock.

## PCA 1120 Front Panel



- ① **USB Terminal** ( For service use)
- ② **SIGNAL / PEAK Indicator**  
**SIGNAL indicator**  
It lights up when the speaker output level becomes around -46 dB or more of the rated output.  
It may not light up when the output level is low. It is not malfunction. Blinks when muted. (Muting function is done only by IR IN or RS232. This unit does not have this operation.)  
**PEAK indicator**  
Lights up when the speaker output level reaches its peak (around -3 dB from the rated output).  
If it lights continuously, the sound maybe distorted. Lower the volume if necessary.
- ③ **BASS / TREBLE**  
You can adjust BASS (low frequency) and TREBLE (high frequency) from -10 dB to +10 dB. Use a small screwdriver, etc. .
- ④ **Master Volume**  
Adjust the output level to the speakers. Turning it to the right will increase the volume. If you connect MCA1120, center position is the same as MCA1120 volume level.
- ⑤ **[ Ⓞ ] Power Button / Indicator**  
Switch the Power Standby / On. The indicator lights up as follows.  
Standby Red  
On Green

## Troubleshooting

| Condition  | Cause  | Measures  |
|--|--|---|
| Cannot turn on the unit  | The power cord is not plugged.   | Make sure that the power cord is properly plugged into the wall outlet.   |
|  | The protective circuit function is activated.  | Unplug the power cord from the wall outlet.<br>Check speaker wires, then plug it in again after a few minutes.  |
| Cannot turn on the unit by Auto Power On   | Output music signal of connected player is very low.   | Turn up the volume of player.   |
|  | Pre out signal of connected MCA1120 is very low.   | Turn up the volume of MCA1120.  |
| No sound<br>- Volume is very low<br>- Sound is distorted<br>- Noise can be heard at all inputs | Volume level is not set correctly.   | Set the master volume at center.  |
|  | Speaker setting is not correct.  | Match the setting of impedance of Speakers.<br>- Check total rated power of speakers is not overrated power of this unit.   |
|  | Bass/Treble setting is not correct.  | Check settings of Bass/Treble.  |
| Power indicator blinks and<br>- No power<br>- No sound<br>- Sound interrupted                  | Specification of speakers, settings of DIP switch and connected speaker terminal position are not matched. | Match impedance and connection of speaker and this unit.<br>Check total rated power of speakers is not over rated power of this unit.   |
|  | Speaker cables are short-circuited.  | Make sure bare speaker wires are not touching each other.   |
| Volume is not up at certain level  | The temperature of the unit rose abnormally.   | Make sure the unit has plenty of space for ventilation around it, wait for the unit to cool down sufficiently, and then try turning it on again.                                      |
| Cannot operate   | Keylock is activated.<br>Only power button and master volume work.   | Set #1 [ Keylock ] of SET UP DIP Switch to [ Unlock ] position<br>Then unplug AC power plug.<br>Then plug AC power plug after more than 20 seconds.                                   |
| Operation is unstable  | -  | The issue may be fixed by restarting this unit.<br>During the power is on, press and hold power button for five or more seconds.<br>Indicator blinks in red, then release the button. |

More detailed information of "Troubleshooting" is posted on the Web.  
If symptoms do not improve even if referring to them, please contact Onkyo service.

Since some parts such as cooling fans are consumable parts, it is necessary to replace the parts according to deterioration.  
For replacement, please contact the store you purchased or Onkyo service.

## Specification

| Speaker Output        | Lo-Z (2Ω)                   | Lo-Z (4-8Ω)                                      | Hi-Z (70, 100V)                          | Measurement Condition      |
|-----------------------|-----------------------------|--|--|----------------------------|
| Rated Power           | 120W x 1ch                  | 120W x 1ch(4Ω)<br>80W x 1ch(6Ω)<br>60W x 1ch(8Ω) | 120W x 1ch                               | 1kHz                       |
| THD+N                 | ≤0.5%                       | ≤0.5%  | ≤1.0%                                    | 1kHz @ Full Rated Power    |
| Frequency Response    | 20 Hz - 20 kHz(+0dB, -6dB)  |  |  | Reference 0dB @ 3W, 1kHz   |
| Signal-to-Noise Ratio | ≤-90dB                      |  |  | with IEC-C filter          |
| <b>Input</b>          |                             |  |  |                            |
| Input Terminal        | Stereo RCA Unbalanced       | ---  | ---                                      | ---                        |
| Exclusive Input       | ---                         | ---  | ---                                      | ---                        |
| Input Sensitivity     | -10dBV                      | ---  | ---                                      | ---                        |
| Input Impedance       | 14kΩ                        | ---  | ---                                      | ---                        |
| <b>Output</b>         |                             |  |  |                            |
| Output Terminal       | Euroblock<br>Balanced (-/+) | Euroblock  | Euroblock<br>Balanced (COM / 70 or 100V) | Monaural RCA<br>Unbalanced |
| Max. Output Voltage   | 15.5Vrms                    | 22Vrms   | 70Vrms                                   | 100Vrms                    |
| Rated Load            | 2Ω                          | 4-8Ω   | 41Ω                                      | 82Ω                        |
|                       |                             |  |  | 2kΩ                        |

|                       |  |
|-----------------------|--|
| <b>General</b>        |  |
| Operating Temperature | 0 - 40 °C @ Non-condensing   |
| Power Supply          | AC100 - 240V(50/60 Hz)   |
| Power Consumption     | 215W @ Rated Power, 10W @ Idling   |
| Dimensions            | 1 RU high (w/o Feet), half rack wide<br>8.5 W x 2.2 H x 12.6 D [ inch ](w/o legs 1.75H)<br>215 W x 55 H x 319 D [ mm ](w/o legs 44.5H) |
| Product Weight        | 3.6kg(7.9lbs)  |
| Option                | Mixing Power Amplifier : MCA1120<br>Rack Mount Kit : IRK-44-3  |

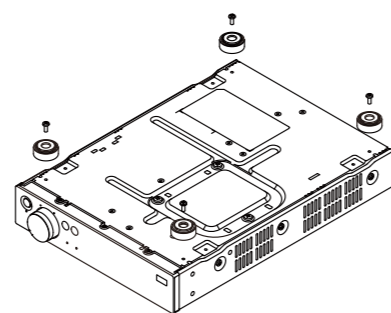
Specifications and features are subject to change without notice.

## Installing your amplifier

Do not block any ventilation openings.  
By playing your equipment at higher level for a long period, the protection circuit maybe activated by high temperature and the sound may drop.

### ■ Rack Mount

1. Remove four feet from the bottom of the unit.

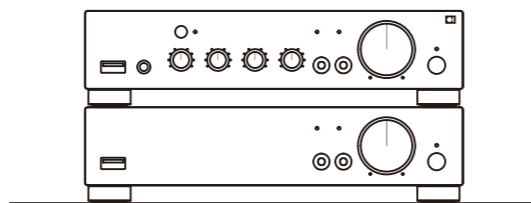


2. Attach the rack mount brackets IRK-44-3 by referring to the instruction manual.

3. Install the unit in your rack system.

### ■ Stacking Amplifiers

When stacking amplifiers without using a cabinet, keep enough space from the top surface of the unit.  
Do not remove feet for air ventilation.



## MEMO



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