



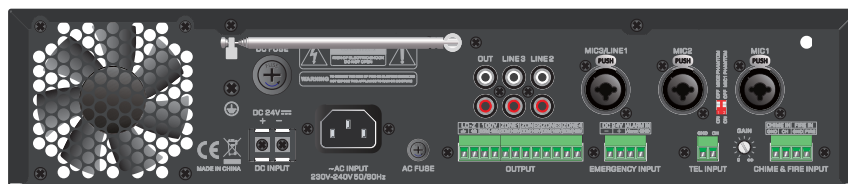
RPA60/120/240

Public Address Mixer Amplifier with
Integrated BT/Tuner/Media Player



Product Features

- 70V/4ohm Compatible
- 4 Zone 70V Speaker Outputs
- 6 Input Audio Mixer with Bass/Treble
- Integrated BT/Tuner/Media Player
- 3 Microphone Inputs
- 2 Aux Inputs
- Fire Alarm/Emergency/Chime/Telephone Inputs
- Phantom Power
- 24V DC Battery Power Input
- 120V AC Power Input



Precautions

READ FOLLOWING INSTRUCTIONS FOR YOUR OWN SAFETY

- ALWAYS KEEP THESE INSTRUCTIONS. DO NOT THROW THEM AWAY
- NEVER EXPOSE THIS EQUIPMENT TO RAIN, MOISTURE, ANY DRIPPING OR SPLASHING LIQUID. AND NEVER PLACE AN OBJECT FILLED WITH LIQUID ON TOP OF THIS DEVICE.
- DO NOT PLACE THIS UNIT IN AN ENCLOSED ENVIRONMENT SUCH AS A BOOKSHELF OR CLOSET. ENSURE THERE IS ADEQUATE VENTILATION TO COOL THE UNIT. DO NOT BLOCK THE VENTILATION OPENINGS.
- DO NOT STICK ANY OBJECTS THROUGH THE VENTILATION OPENINGS.
- DO NOT INSTALL THIS UNIT NEAR ANY HEAT SOURCES SUCH AS RADIATORS OR OTHER APPARATUS THAT PRODUCE HEAT
- DO NOT PLACE THIS UNIT IN ENVIRONMENTS WHICH CONTAIN HIGH LEVELS OF DUST, HEAT, MOISTURE OR VIBRATION
- THIS UNIT IS DEVELOPED FOR INDOOR USE ONLY. DO NOT USE IT OUTDOORS
PLACE THE UNIT ON A STABLE BASE OR MOUNT IT IN A STABLE RACK
ONLY USE ATTACHMENTS & ACCESSORIES SPECIFIED BY THE MANUFACTURER
- UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME
- ONLY CONNECT THIS UNIT TO A MAIN SOCKET OUTLET WITH PROTECTIVE GROUND CONNECTION

CAUTION

This product contains high voltage, please ensure you follow the safety guidelines when installing this product.



These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.



Rear panel description

AC Power Connection:

This connection is an IEC C14 power connector. Connect the included power cable from a 110-120V AC power outlet to the unit. A fuse holder with main fuse is located on the right of the AC power connector. When replacing the fuse, make sure the replacement matches the specifications of the original fuse.

FM antenna:

When using radio tuner, extend the antenna and position upwards for best reception.

Bluetooth antenna:

Attach the BT antenna and position it upwards for best reception

DC Power Battery Connector:

The DC power supply (24V) connection is to the left of the AC power connector. This is used to connect a standby 24V battery. A fuse holder with main fuse is located above the DC power connector.

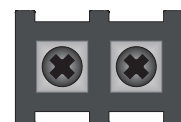


WARNING
DC POWER AND AC POWER CANNOT BE USED TOGETHER, THIS WILL DAMAGE THE EQUIPMENT

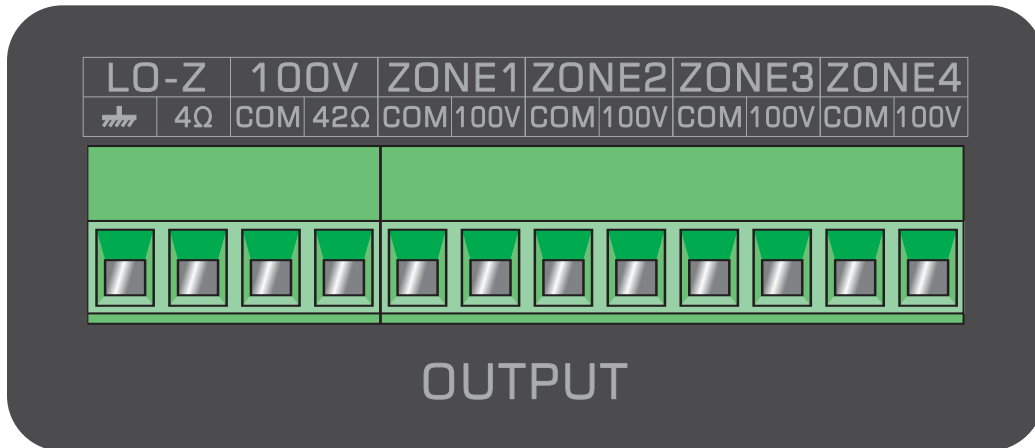
DC FUSE



DC 24V \equiv
 + -



DC INPUT



Loudspeaker output connections:

Main speaker output connections for both low impedance and constant voltage distributed are on the 4-pin terminal block connector. The zone (1-4) 70V constant voltage outputs are on an 8-pin terminal block connector. More information about loudspeaker output connections is described in a further chapter of this instruction manual.



Output connection (RCA jack connectors):

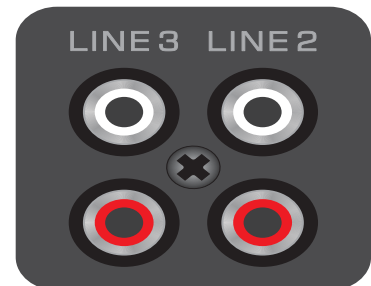
This connection can be used when expanding your system. Connect additional amplifiers using the 'OUT' of the master amplifier in your setup.

Balanced line1 / mic inputs 1, 2 & 3 (combination 6.3 mm & XLR jack):

Channels 1, 2 & 3 are combination connectors accepting both XLR and 6.3 mm jack plugs. Both inputs will mute all other channels when a signal is present on the connected microphones/inputs. Mic 1 and 2 phantom power switches enable 15V for capacitive microphones. Switch 2 will enable phantom power to Mic input 1, while switch 1 enables phantom power to Mic input 2.

Unbalanced line inputs 2 & 3 (RCA jack):

Line 2 and 3 stereo RCA inputs.



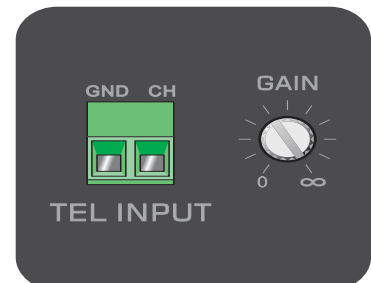
Chime & Fire inputs (Terminal block):

Chime & Fire inputs can be connected to any external source, such as call station, signal matrix, fire alarm system. The chime and fire outputs have priority over all other inputs.



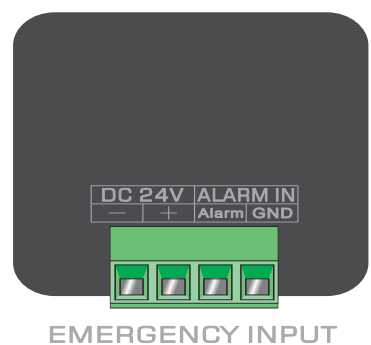
Telephone input (Terminal block):

The amplifier can be connected to any business telecom system using the telephone input, allowing announcements to be made from any handset. It is a line level input with priority, to be connected to the line output of the telecom system. Unbalanced input connections should be made to the 'CH' (Hot or Signal) and 'GND' (Ground) terminals.



Emergency input (Terminal block):

The amplifier can be connected to any output of alarm system with 24V DC remote control using the emergency input. When the DC 24V input is detected, the amplifier will switch all connected speakers (constant voltage output) to the priority alarm output.





Front panel description

Master volume control:

Master volume control overall volume for all output channels.

Input volume controls:

Using the input level controls, the individual level for each connected input can be adjusted to the preferred level.

Chime:

When the chime button is pressed the chime tone as pre-announcement for paging will be played once.

Fire:

When the fire button is pressed, the fire alarm tone will be heard until the fire button is pressed again.

Two band tone control:

The overall system frequency response can be adjusted within a range of ± 12 dB. Turn the treble and bass knobs left to decrease and the right to increase tone until the desired sound is achieved.

Microphone echo control:

Adds echo effect to microphone channels for Karaoke.

LED indicators:

The LED indicators correspond to the system output level. The normal operation LED indicator is green and the red LED indicator is a warning the output is clipping. Reduce the master volume, zone volume or source input volume until the red LED is no longer illuminated.

Zone 1-4 on/off button:

The different speaker zone outputs (1-4) can be switched on and off by pressing the on/off button of the corresponding zone. When the zone (1-4) is enabled the on/off button will illuminate green to indicate the zone is on. When the 'All' button is pressed all zones will turn on or off.

Zone 1-4 (output) volume control:

The output level of each zone (1-4) can be adjusted separately using the individual volume knob of each zone.

Power button:

The power button turns the system on or off. The power button will illuminate green to indicate the power is on and red when the power is off.

Digital Music player:

This is an All-In-One media source has 3 functions including an MP3 player, FM tuner and Bluetooth. Player supports MP3, WMA, WAV, FLAC, AAC audio formats.









USB/SD/MMC Connections:

Digital music can be played through these inputs, music will automatically start to play when the storage medium is connected.

**WARNING**

DO NOT USE USB PORT TO CHARGE OTHER DEVICES, THIS WILL DAMAGE THE EQUIPMENT

Media Player Button Functions

	Power button for media player, press and hold for on/off function
	Mode button press to select player functions
	Play and paused control for USB/SD/MMC and Bluetooth mode Press & Hold: Auto scan function for tuner mode
	Previous track when in USB,SD/MMC,Bluetooth Mode Previous stored FM radio station when in FM tuner Mode
	Next track when in USB,SD/MMC,Bluetooth Mode Next stored FM radio station when in FM tuner Mode
	Increase player volume
	Reduce player volume
	Repeat song, Repeat music folder, Repeat all and Repeat off

Setting up the system

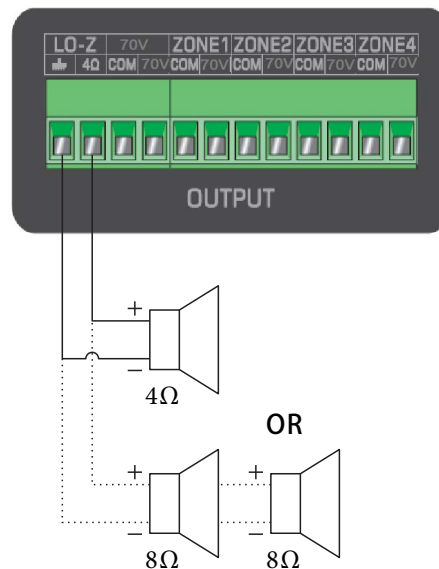
ATTENTION!

Make sure the power of the device is turned OFF before any wiring connections or adjustments are made.

1) Connecting the Speakers

The speakers connect to the 2 terminal blocks on the back panel of the device. This device is compatible with low impedance and constant voltage speakers depending on the projects requirements.

For operating using the low impedance output, speakers with a minimum impedance load of 4 ohms or greater can be used.



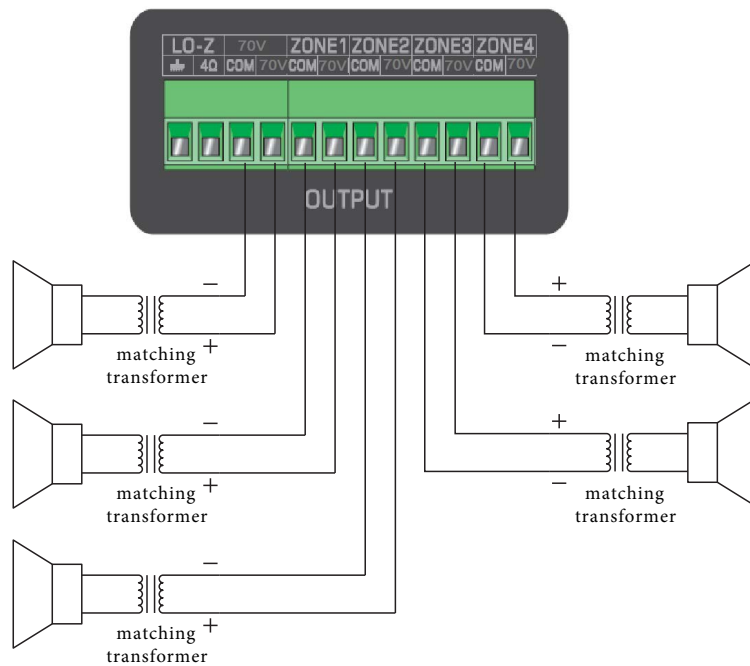
Example diagram low impedance connections

*Please note the positive amplifier output should be connected to the positive terminal of the speaker and the ground or negative terminal of the amplifier should be connected to the negative speaker terminal.



ATTENTION

THE TOTAL IMPEDANCE OF ALL CONNECTED SPEAKERS MUST BE GREATER THAN THE RATED IMPEDANCE OF THE AMPLIFIER



Example diagram constant voltage connections

2) Connecting the audio sources

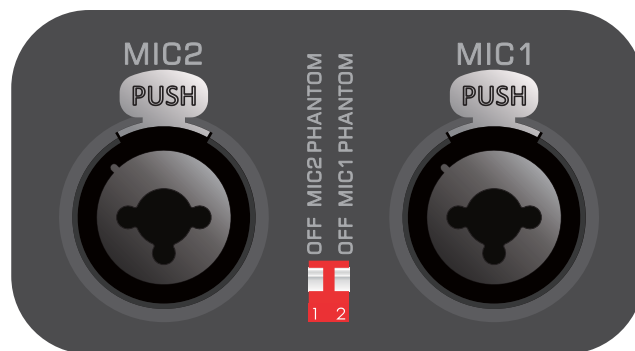
The next step is adding source input connections. Depending of the type, connect the output of the audio source to the corresponding input channel.

Before connecting, turn all the channel gain and master volume controls on the front and rear panel of the amplifier to their minimum setting. Connect all the audio sources to their corresponding channels. Turn on the power of the amplifier and all the connected audio sources.

Set the rear panel input gain levels to 50% then slowly raise the master volume control until the desired sound output level is achieved. Depending of the output level of the connected sources the input gain may need additional adjustment. If the signal is too loud or distorted, adjust the input level controls as necessary to achieve the desired speaker level.

3) Phantom power

MIC input 1 & 2 inputs have phantom power for powering condenser microphones. Enabling of the phantom power can be done by the switches located between MIC 1 & 2 connections. Switch 2 will enable phantom power to input 1, while switch 1 enables phantom power to input 2.



4) Audio Player



Insert a USB storage device or SD/MMC memory card into the front of the device. The MP3 player is compatible with MP3, WMA, WAV, FLAC, AAC audio formats. When the media is inserted, the device will automatically start playing. You can select the playing tracks using the control buttons on front of the device. For Bluetooth or Tuner audio press the “M” mode button to select.

5) Bluetooth

Adjust the Bluetooth antenna to a vertical position, and then press the M button on front to switch the operation mode to Bluetooth. Turn on the Bluetooth on your and search for Bluetooth devices, you'll find a device named “Bluetooth” in the list, select and connect to it. Once you connect successfully you can play music from your device. Use the Back, Forward and Play/Pause buttons to control the music.

6) Radio Tuner

Extent the tuner antenna out and up for best reception. Press and hold the play/pause button to scan and store available radio stations. After auto scan is complete use the forward and back buttons to select stations.

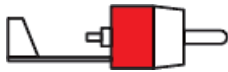
Pin connections and connectors

CONNECTION STANDARDS

The input and output connections correspond to international wiring standards for professional audio equipment.

RCA (Cinch):

For unbalanced line input connections.



Tip: Signal

Sleeve: Ground

White: Left

Red: Right

XLR:

For balanced signal input connections



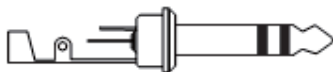
Pin 1: Ground

Pin 2: Signal +

Pin 3: Signal -

6.3 mm (1/4") balanced Jack:

For balanced line in & output connections.



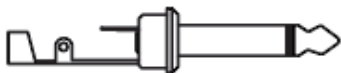
Tip: Signal +

Ring: Signal -

Sleeve: Ground

6.3 mm (1/4") unbalanced Jack:

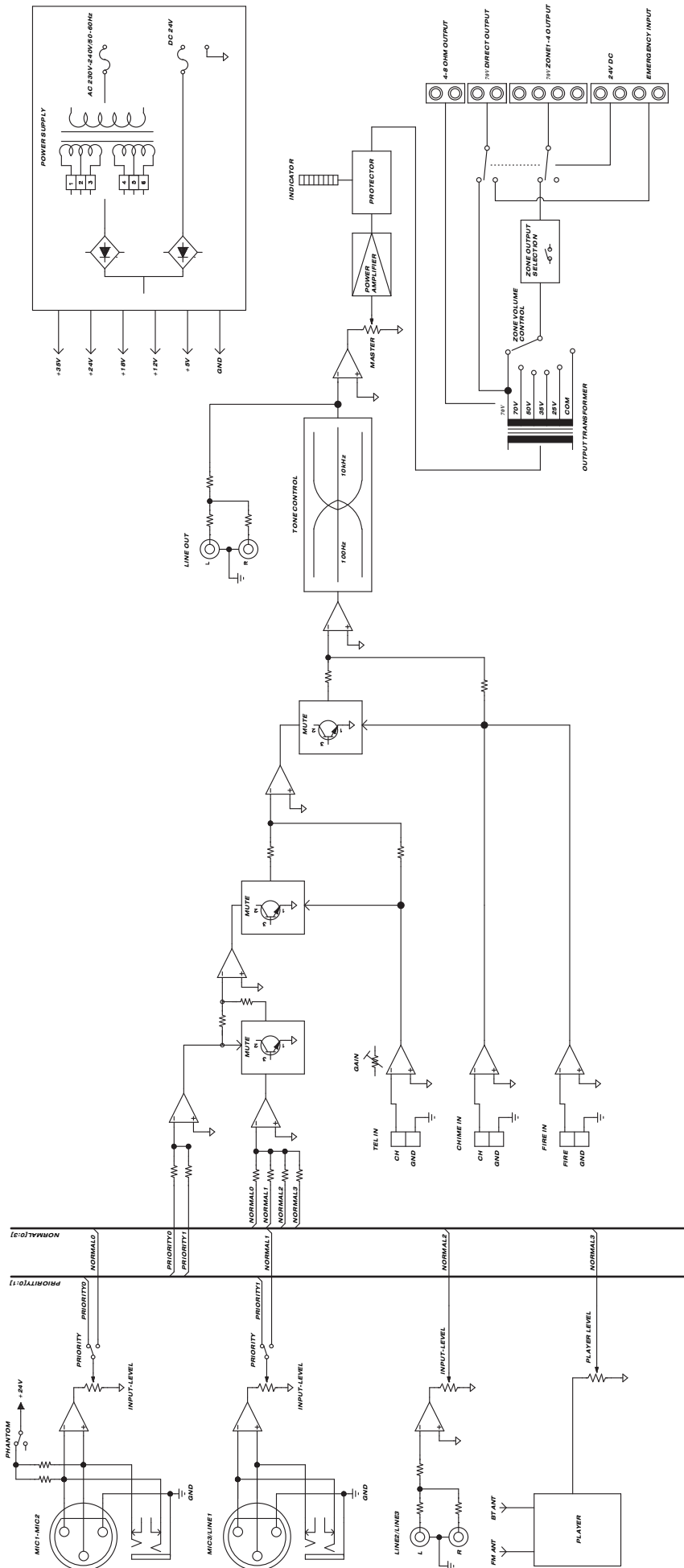
For unbalanced line in & output connections.



Tip: Signal

Sleeve: Ground

System Block diagram



Technical specifications

RMS Output Power (1 kHz, THD 1%)	RPA60 RPA120 RPA240		60 Watt 120 Watt 240 Watt
Frequency response			20Hz - 20kHz
Signal to Noise Ratio THD + N			> 90dB
Common Mode Rejection			< 0.5%
Cross talk			< 0.5%
			> 70dB
Inputs	MIC 1 - 2	Type Sensitivity Connectors Phantom power Priority	2 x Balanced mic / line -50dB 2 x XLR/6.3 mm Jack combo 15 V DC Yes
	LINE 1/MIC 3	Type Sensitivity Connectors Priority	Balanced mic / line -50dB XLR/6.3 mm Jack combo Yes
	LINE 2 - 3	Type Sensitivity Connectors	2 x Stereo line -30dB 2 x RCA
	Chime/Fire/TEL	Type Connectors	Priority mic inputs Terminal block ~ 5.08 mm
	Player	USB	Type Connector
SD/MMC		Connector	Non-self-locking SD card slot
Bluetooth		Version Maximun range Trans. Frequencies	Bluetooth Ver 2.0 + EDR 10m(without interference) 2402 - 2480 MHz
Music formats File system			MP3/WAV/WMA/FLAC(8/16/24bit) FAT16 or FAT32
FMS section		Tuning range Antenna input	87.5 MHz to 107.9 MHz 75 Ω unbalanced
Outputs	Low Impedance		4Ω
	Constant Voltage Impedance		167Ω - RPA60 84Ω - RPA120 42Ω - RPA240
Indicators	LED		Power /Zone/Output
	LCD		Player
	Sound		Protect
Protection			DC - Short Circuit Over Heating Over Load Limiter
Cooling system			Fan cooled
Amplifier technology			Class A/B
Power supply	Master Standby		AC 230V-240V / 50-60Hz DC 24V

1-Year Limited Warranty

Rave Technology products are warranted to be free from defects in workmanship and materials for a period of One (1) year from the date of purchase without charge for parts or labor. This warranty does not apply to units that have been subject to misuse, abuse, neglect or improper installation, and does not apply to repairs or alterations made by unauthorized professional. This warranty specifically excludes responsibility for consequential damage. Retention of your original bill of sale is required to obtain service under the terms of this warranty.

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