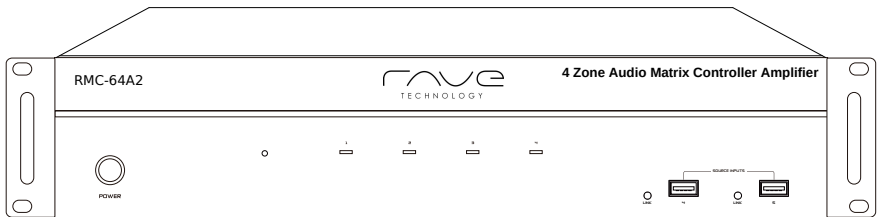




RMC-64A2

6 SOURCE/4 ZONE
Audio Distribution Amplifier
(2 x Streamer Inside)



DEAR CUSTOMER

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

WARNING

1. Do not expose this unit to water, moisture, or excessive humidity.
 2. Do not install or place this unit in a built-in cabinet, or other confined space without adequate ventilation.
 3. To prevent risk of electrical shock or fire hazard, due to overheating do not obstruct unit's ventilation openings.
 4. Do not install near any source of heat, including other units that may produce heat.
 5. Do not place unit near flames.
 6. Only clean unit with a dry cloth.
 7. Unplug unit during lightening storms or when not used for an extended period of time. A surge protector is strongly recommended.
 8. Protect the power cord from being walked on or pinched, particularly at the plugs.
 9. Use unit only with accessories specified by the manufacturer.
 10. Refer all servicing to qualified personnel.
-

CAUTION

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



INTRODUCTION

The RMC-64A2 home audio system brings you the advanced Generation D technology, it is a functional, easy-to-install, highly compatible, expandable and used-friendly audio distribution system. With few simple steps to install, it provides up to 50Wx2 power by class D amplifier and distribute at most to 12 zones which all can be controlled by packaged keypads, IR remote controller or APP.

Simply connecting the RMC-64A2 to the local Ethernet network, it let you access a wide variety of music from the Built-in streaming services or stored on the Smartphones. Two USB ports on the front panel for playing music files from USB storage devices. An Optical digital input to manage the sound of a flat screen or a CD player to have high resolution of sound quality in each zone. The overall distribution system including package device is easy-to-install, so every audiophile in every zone can use IR controller or keypads to enjoy the powerful audio. High functionality and performance bring you musical enjoyment just the way you want it.

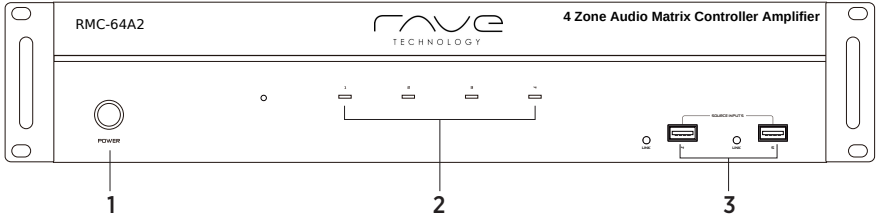
FEATURE

- * Each zone provides 50Wx2 (@ 4 Ohm) output power.
- * High efficiency more than 85% Class D amplification.
- * 6 Line input sources, including 2 Audio Streamers (Input 4, 5).
- * USB ports for playing music files from USB Flash Drive (Input 4, 5).
- * Each zone Stereo/Mono output selectable.
- * Enable control over Ethernet.
- * Support Control APP.
- * PRE-AMP output on Zone1-4.
- * Built-in IR receiver & IR remote controller for Source select/Volume/Treble/Bass.
- * 12V DC trigger output to external device when the system is power on.
- * 12V DC mute trigger input from the external devices.
- * RJ45 Ethernet port for the wired connection to the local network.
- * Another RJ45 Ethernet expansion port for connecting with smart TV or other device.
- * RS-232 port allows 2-way communication with the Home Automation system.
- * Expandable up to 12 Zones by additional 2 units.
- * 4 LEDs for 4 zones Power On, Standby and Mute.
- * Built in IR emitter.
- * AC 115V / 230V input power switchable.

SPECIFICATION

Output Power:	25W x 2 per zone (at 8Ω)
Output Power:	50W x 2 per zone (at 4Ω)
Output Power:	100W per zone (Bridged at 8Ω)
S/N:	>85dB A WTD
THD:	<0.1%
Frequency Response:	20Hz-20KHz
Input Impedance:	>47 K Ohm
Input Sensitivity:	250 mV
Protection Function:	Overload, Short Circuit
System on Voltage:	DC +12V
External Mute Voltage:	DC +12V
Power Supply:	AC115V/60Hz, 230V/50Hz
Output Connection:	4P Terminal Block
Input Connection:	Input 1, 2 - RCA Jacks Input 3 - 3.5mm Jack, S/PDIF Input 4,5 - Streamers or USB ports Input 6 - RJ-45. For connecting with WPA-BT, WPA-O35, WPA-KWS1.
Sampling Rate(Streamer):	24Bit / 48KHz
Audio Format(USB):	MP3/WMA/AAC/AAC+/ALAC/FLAC/APE/WAV
Streamer Support:	DLNA, AirPlay
USB type:	USB2.0, Support up to 64G.
Network:	RJ45, Standard 10/100Mb
Dimension:	430mm x 89mm x 416 mm (WxHxD)
Weight:	8.7KG

FRONT PANEL



1. Power ON/OFF/ STANDBY

Depress the power button to turn on the system. Press it again to release the latch and power the unit off. Note that even the Master Controller is powered on, each zone will remain in Standby mode until the zone keypad is activated.

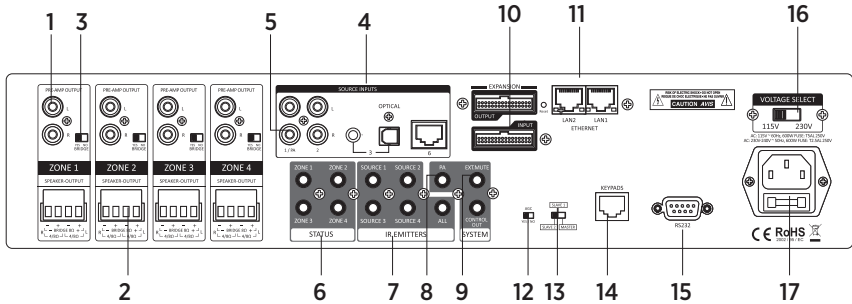
2. Standby/Zone ON LED

These four LEDs illuminate to indicate the status of each zone.
 Blue: In Standby mode.
 White: In Activate mode.
 Blue/White: In Mute mode.

3. USB Port 4/5

Two USB ports correspond to the built-in Streamers, as source input 4 and 5. Playing audio source from USB Flash Drives.

REAR PANEL



1. PRE-AMP OUTPUT

Stereo Line level output on each zone. Connect to additional amplifier with higher output, or powered Sub-woofers.

2.SPEAKER OUTPUTS

Removable terminal block connectors on each zone. Each zone provides 2x50W @ 4 Ohm or 100W @ 8 Ohm in bridge mode.

3.STEREO/BRIDGE SWITCH

4.SOURCE INPUTS

6 Stereo Analog/Digital inputs. Two Streamers are input 4 and 5.

5.Input 1/PA

Paging capability for Input 1 to broadcast to all zones when 12VDC is applied to the PA - IN jack.

6.STATUS

When the zone is activated, the corresponding jack will output 12VDC to trigger other device.

7.IR EMITTERS

IR Outputs 4 routed & 1 common

8.PA-IN

12VDC paging trigger input

9.EXT. MUTE/CONTROL OUT

Mute the entire system with the 12VDC MUTE IN. Use the 12VDC CONTROL OUT to trigger other equipment

10. EXPANSION IN/OUT PORT

Expandable to 12 zones with 3 x Multi-zone Controller systems.

11. ETHERNET PORTS

Dual LAN ports, one connects to the LAN port of local router. Another connects to network TV or other device which requires Ethernet.

12. AGC

Automatic Gain Control, brings low level up to a present-level.

13. MASTER/SLAVE SWITCH

Set the unit ID when connecting multi Controller systems

14. KEYPAD

RJ-45 jack Connects to the keypad hub for 4 keypads.

15. RS-232 port

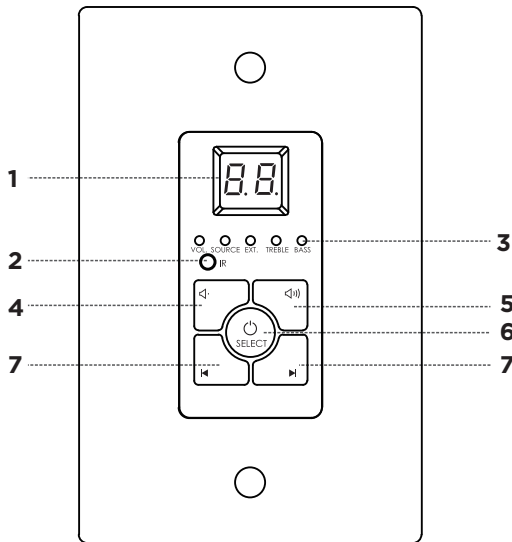
Complete control via serial commands.

16. VOLTAGE SELECT

Please set to correctly input voltage before turn on the amplifier.

17. AC INPUT

KEYPAD



1. Numeric LED Display

2. IR Receiver Target

3. Selection and Status LED's

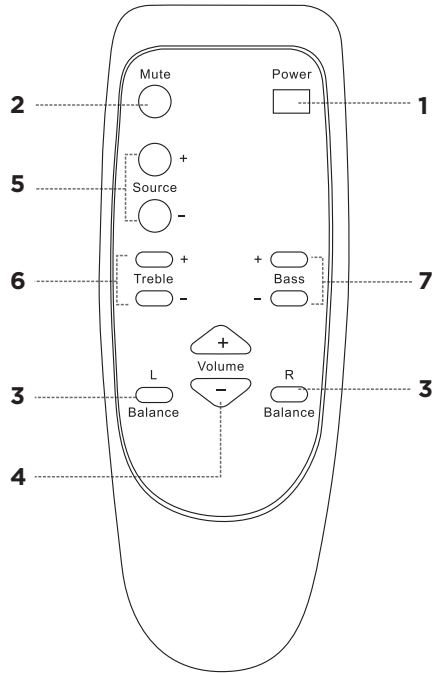
4. Power/Status. Press and Hold to Turn Zone ON/OFF. When ON, Press to toggle through settings

5. Increase Volume, Treble or Bass

6. Decrease Volume, Treble or Bass

7. Source Select

REMOTE CONTROL



1. Power: switches power (On/Off) for the certain zone.
2. Mute: allows you to mute a certain zone.
3. BAL: These L & R buttons can adjust the balance of L/R channel in stereo mode.
4. VOL: Volume adjustment
5. Source: Used to select signal input.
6. Treble: This allows you to enhance or reduce Treble of signal in individual zone.
7. Bass: This allows you to adjust the Bass for the individual zone

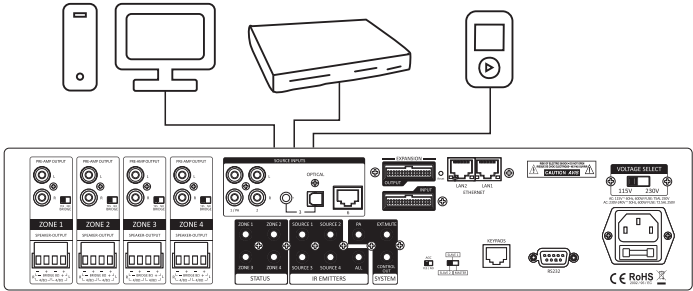
CONNECT AND OPERATE

Before you begin to install the RMC-64A2 , it is important to implement good installation practices:

1. Make sure that AC power is disconnected before making ANY connections to the main unit and attached devices.
2. Install in a well-ventilated environment
3. Ensure any vents are not blocked to allow for proper circulation
4. Do not install above or below sources of heat
5. Use good quality cabling
6. The unit can be installed within a rack using the provided mounting rack ears

CONNECTING THE SOURCES

Up to 6 sources can be connected to a single RMC-64A2 . Using RCA cables connect each source into one of the available Source Inputs.



Some sources such as MP3 players and Cell Phones may require a 3.5mm Stereo to RCA Cables in order to connect to the AMP

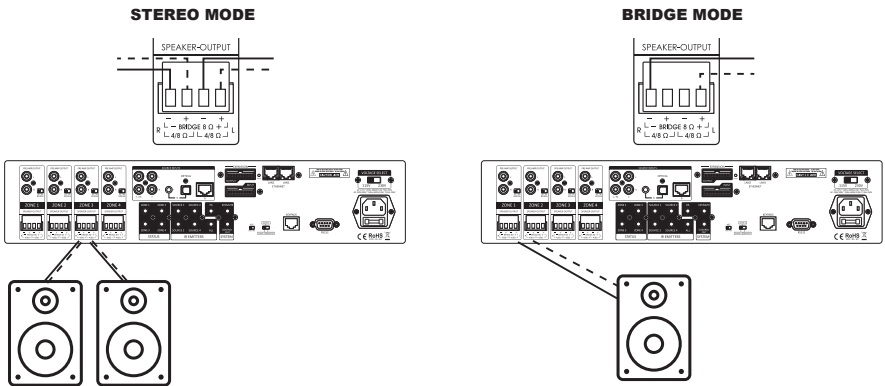


NOTE: Input 1 can be used as a global input for all zones when a source is connected to Input 1 and the 12VDC is applied to the PA-IN jack (tip is positive) then source 1 will broadcast to all zones. If no 12VDC is applied, then the first input will be operating under normal conditions.

CONNECTING THE SPEAKERS

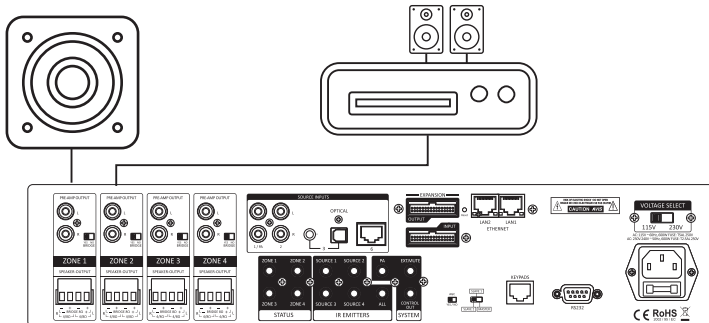
The RMC-64A2 can work with speakers that are 4-8 Ohm. There are two modes that can be set for different setups: Stereo or Bridge. An 8 Ohm speaker can only be used when in Bridge mode. To choose between modes, use the mode switch to determine modes for each zone (Number 2 Panel Descriptions, page 5)

Once you have properly identified the desired mode, strip about ¼” of insulation and twist the copper strands. Connect the speaker wire to three screw down terminal as indicated on the amp. To loosen the terminal turn counterclockwise and to tighten the terminal turn clockwise. For better quality, we recommend used 12-14 AWG stranded copper speaker wire.



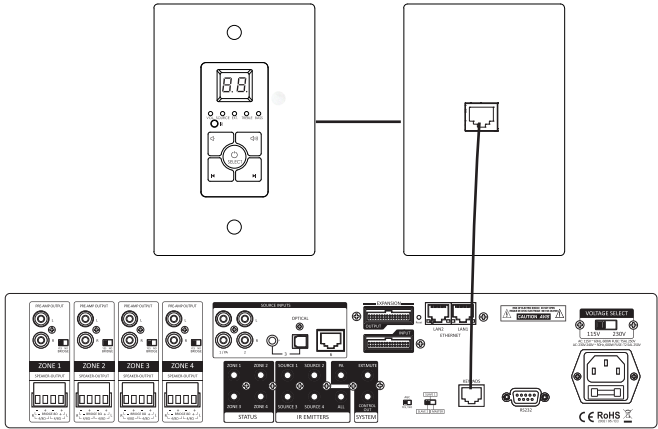
USING THE PRE-AMP OUTPUTS

There are unbalanced, line level Pre-Amp outputs that correspond to the Outputs. These can be used to connect an additional amplifier, expand zones, or to connect a powered subwoofer. The Pre-amp output levels are not fixed and are able to be controlled via IR, RS232, keypads and network.



CONNECTING THE KEYPADS

The RMC-64A2 can support up to 4 PoE enabled keypads. This allows for source control from each specific zone as well as IR routing to the appropriate source devices once selected. RMC-64A2 also comes with a hub that allows for all 6-keypads to be connected to the amp via Cat5e/6.



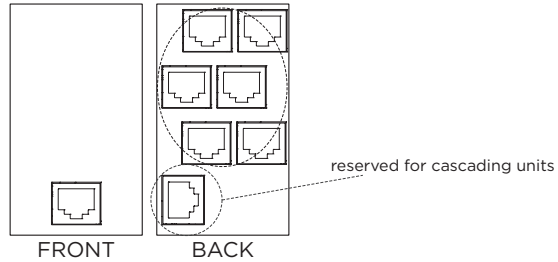
Without power being connected, connect a Cat5e/6 cable to the RJ45 port labeled KEYPADS on the back of the AMP We recommend terminating the Cat5e/6 using the 568B standard.



At this point it is also important to address your keypads. Refer to the chart below which is also found on the PCB board of the back of the keypad to set the dip switches according to the zone you would like it to control.

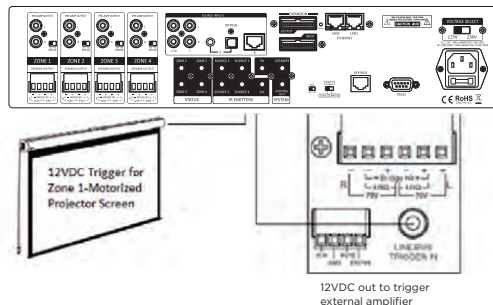
ZONE-1			ZONE-2			ZONE-3			ZONE-4		
ON	ON	OFF	ON	OFF	ON	ON	OFF	OFF	OFF	ON	ON
1	2	3	1	2	3	1	2	3	1	2	3

Connect the other end of the Cat5e/6 to the lone RJ45 port found on the front side of the Keypad Hub. The front is what fits into the provide decora plate. Note that the Cat5e/6 between the unit and the hub should only be between 7-10ft. The RJ45 ports on the back of the Keypad Hub are not assigned but the single RJ45 port isolated on the bottom of the hub is reserved for cascading units.



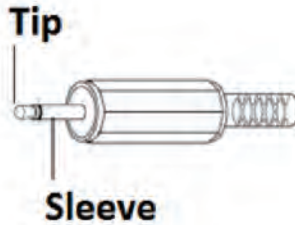
Connect the other end of the terminated Cat5e/6 to the RJ 45 port on the back of the assigned keypad and installation is complete. Complete zone and source control as well as IR and power are provided through the single Cat5e/6.

CONNECTING AND USING THE ZONE STATUS PORTS



There are four 12Vdc trigger outputs which correspond to the four output zones. When a zone is powered ON by the RMC-64A2 keypad, the corresponding zone sends 12Vdc to the trigger output jack. The triggers can be used to automatically switch peripheral equipment ON or OFF.

WIRING: 3.5mm Mono



Plug: Tip is Positive (+)

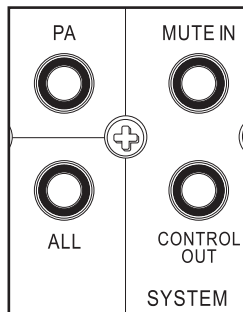
Trigger Outputs for Zones 1 - 4: Zone ON; 12Vdc applied to the TRIGGER OUTPUT, Zone OFF; 12Vdc removed from the TRIGGER OUTPUT.

CONTROL: When any zone is on, 12Vdc applied to the CONTROL OUT. When All zones are OFF, 12Vdc removed from the CONTROL OUT

Trigger Inputs:

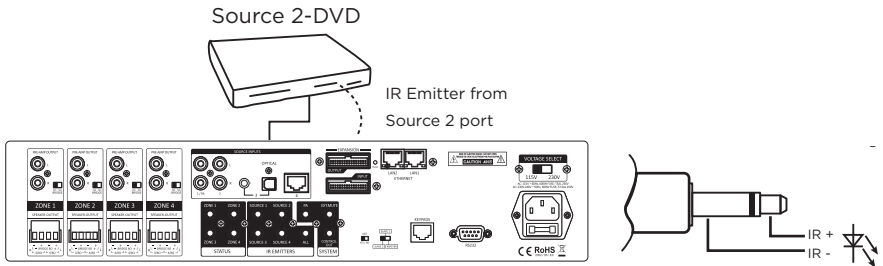
PA- IN: Apply 12Vdc for input #1 override on all four zones.

MUTE - IN: Apply 12Vdc to mute all zones.



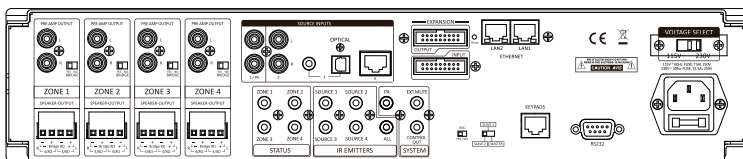
IR EMITTERS

When being used with keypads, the RMC-64A2 can receive IR signals from each zone, and routed back through the Cat5e/6 and Keypad up to the Amplifier to control the selected source. For example, if Source 2-DVD is selected in Zone 1, the user will be able to control the DVD player to power the device on/off, change settings ect. Since the amplifier has discreet routing, ONLY the Source that is selected on each zone can be controlled. This prevents other sources from accidentally be controlled when selected on other zones.



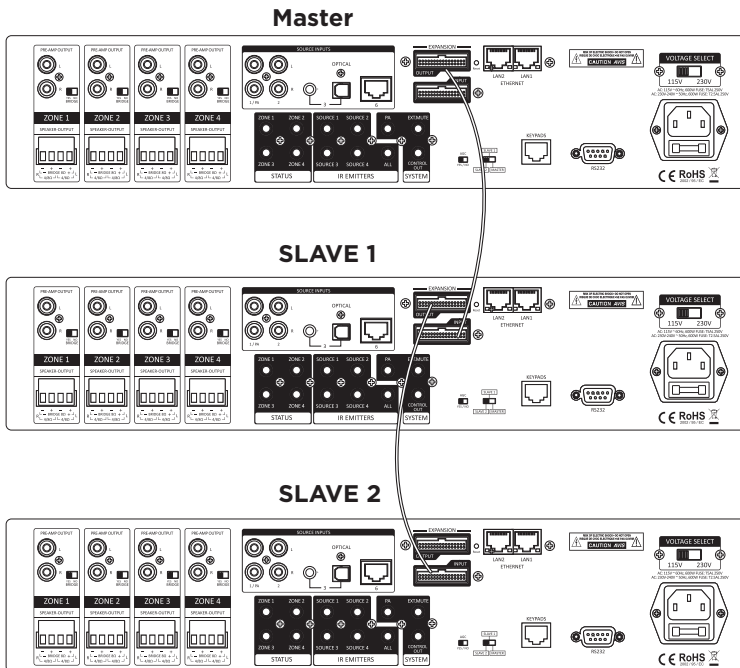
CASCADING SOURCES INTO ADDITIONAL ZONES

The RMC-64A2 can allow 6 sources to be distributed up to 12 zones on 3 different units using the provided ribbon cable to connect between units. To do this first each unit needs to be addressed according using the MASTER/SLAVE switch. There are 3 positions for this, Master, Slave 1, and Slave 2 which help identify each unit.

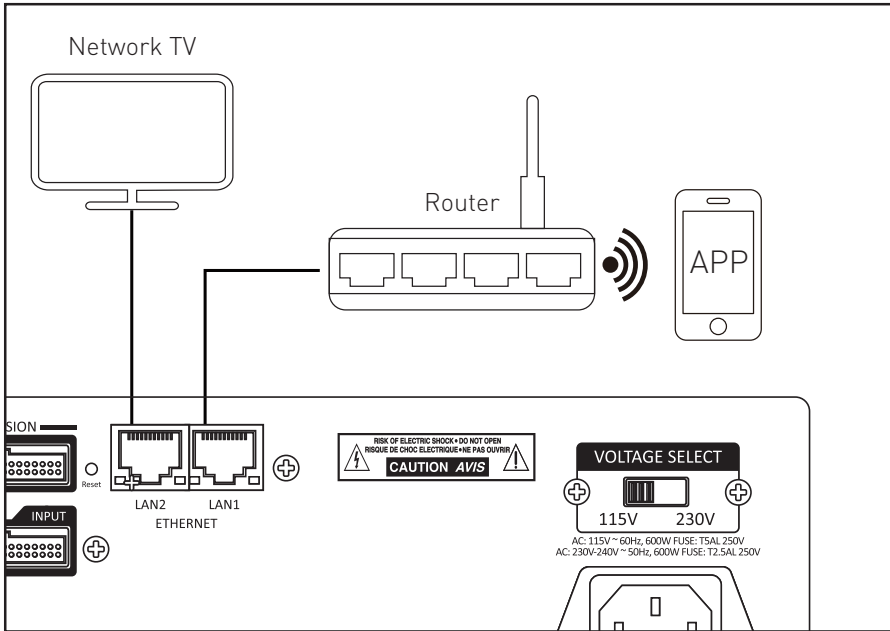


Once each unit is correctly addressed, use the provided ribbon cables to connect the OUTPUT of the original MASTER unit into the INPUT of Slave 1. To cascade the sources into a third unit, using the provided expansion ribbon cable, go out of the OUTPUT port from the device addressed as SLAVE 1 into the INPUT port of the device addressed as SLAVE 2.

In this mode, only connect all sources to the MASTER unit, and share these sources to Slav 1 and Slave 2 units. And the original source inputs on Slav 1 and Slave 2 will be disabled.



ETHERNET CONNECTION



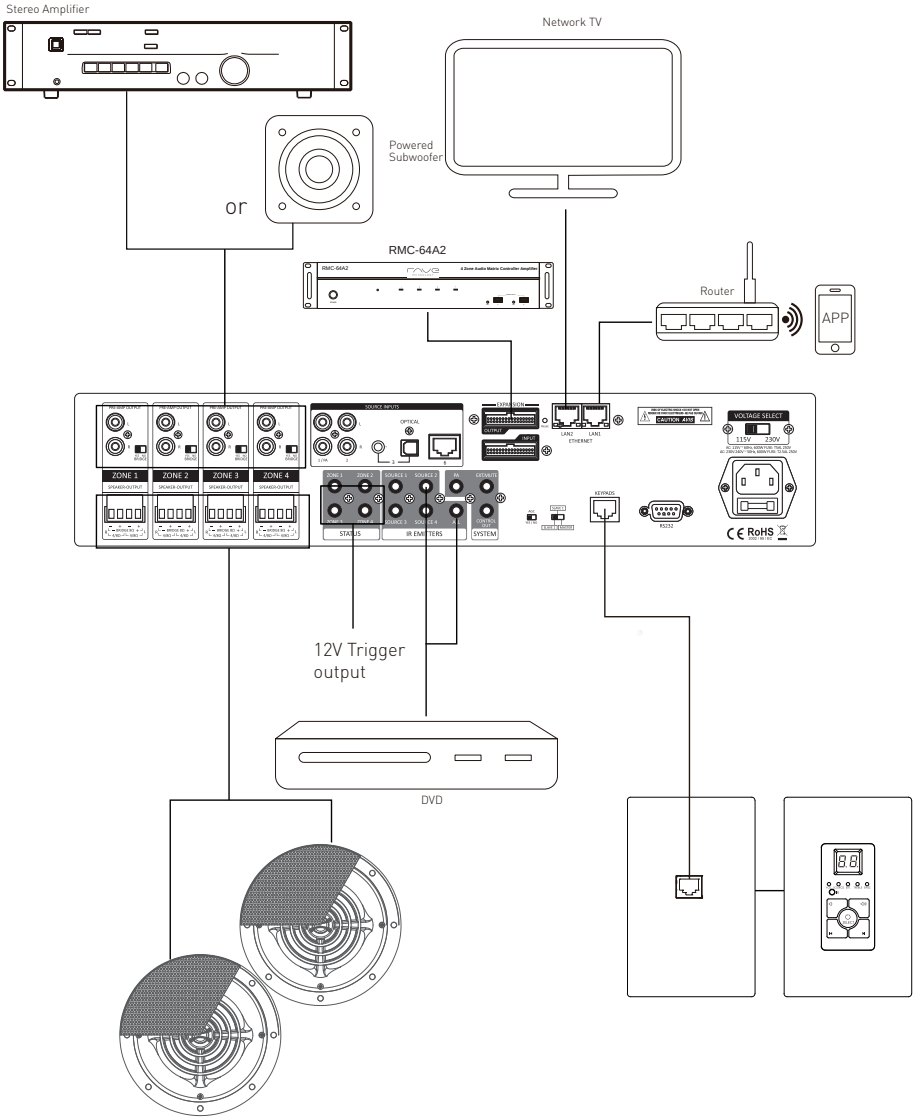
There are two RJ-45 jacks on the rear panel of this amplifier for the connection to Ethernet.

Please use a good quality Cat5e/5 cable, and follow the connecting diagram below.

1. Connect the LAN1 port on the rear panel of controller to the local Wi-Fi Router. The Ethernet connection mainly for Wi-Fi control via APP or other control devices.
2. Connect the LAN2 port on the rear panel of control to the smart TV or other Network devices.

The port simply works as SWITCH function as long as the LAN1 port enabled to Ethernet.

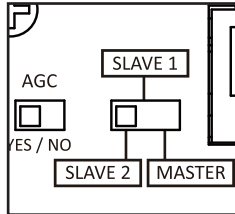
CONNECTION DIAGRAM



INTEGRATED NETWORK

The RMC-64A2 and APP are easy to install and connect to the local network, simply connect the RJ-45 IN port to the router via Cat5 cable, and also make sure your smart devices connect to the same local network. After connecting the RMC-64A2 to the router by Cat5 cable, the controller will connect with the local network automatically.

In case, having the problem for connecting to the network, please check the position of switches on the rear panel.



Please switch to MASTER .

Note. Please do not press “Reset” button.

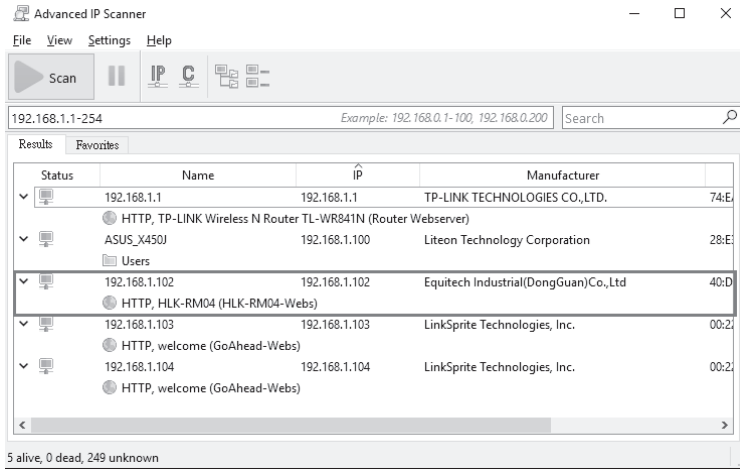
Note. Please do not connect the Ethernet port of RMC-64A2 to the computer directly.

1.Open the IE web browser of PC, log in to the WEB configuration page of local Router to find the IP address of RMC-64A2 (shown as below)

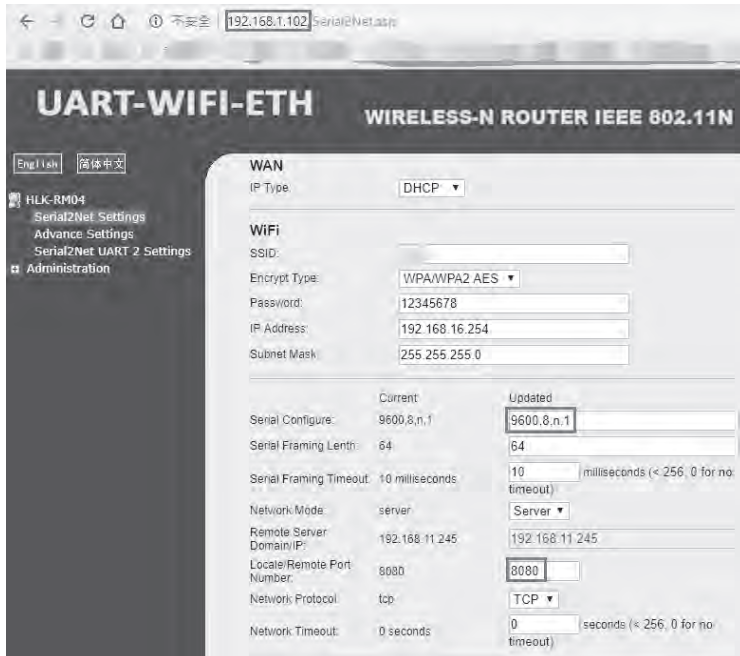
0450	IP: 192.168.100.8
MAC: 28-E3-47-C0-64-40	
5018	IP: 192.168.100.11
MAC: 00-22-5C-CA-B0-1B	
B3EC	IP: 192.168.100.9
MAC: 00-22-5C-CA-B3-EF	
RMC-64A2	IP: 192.168.100.7
MAC: 10-44-BE-FB-0C-07	
KENIVLAI	IP: 192.168.100.13
MAC: 4C-ED-FB-D9-D1-80	

2. Using “Advanced_IP_Scanner” software to find the IP address.

Please visit www.advanced-ip-scanner.com for free download.

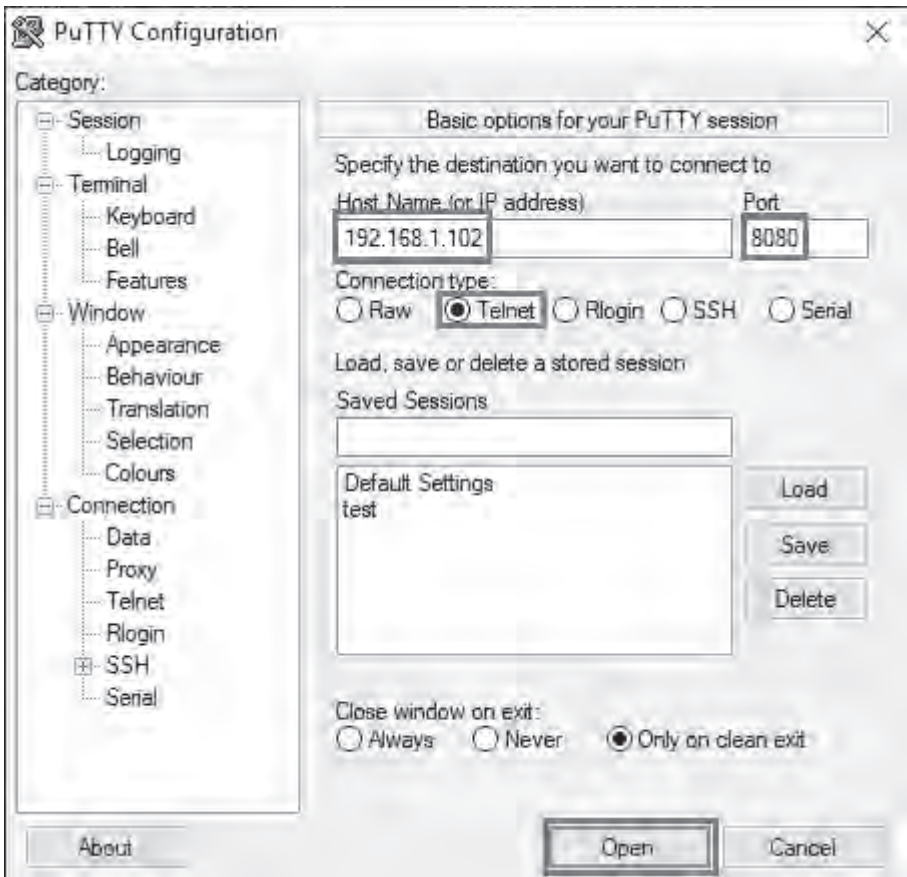


Then enter the IP address of RMC-64A2 to the IE browser (shown as below), ensure the Serial Configure is 9600,n,8,1. After finishing this step, RMC-64A2 could be controlled through the local Network.



FOR CONTROLLING VIA OTHER SOFTWARE

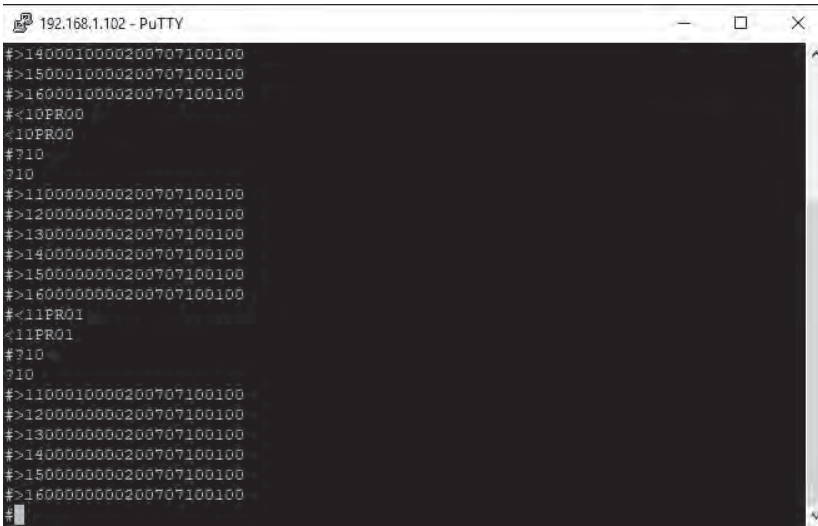
Download free software “PuTTY” Tool from the internet to control the device.
Operation diagram as below:



Click Telnet, enter the IP address of RMC-64A2 and port: 8080.

Click Open.

When the IP address connected, the operation diagram shows as below:



```
192.168.1.102 - PuTTY
#>1400010000200707100100
#>1500010000200707100100
#>1600010000200707100100
#<<10PR00
<<10PR00
#?10
?10
#>1100000000200707100100
#>1200000000200707100100
#>1300000000200707100100
#>1400000000200707100100
#>1500000000200707100100
#>1600000000200707100100
#<<11PR01
<<11PR01
#?10
?10
#>1100010000200707100100
#>1200000000200707100100
#>1300000000200707100100
#>1400000000200707100100
#>1500000000200707100100
#>1600000000200707100100
#
```

Key in the command code to control RMC-64A2.

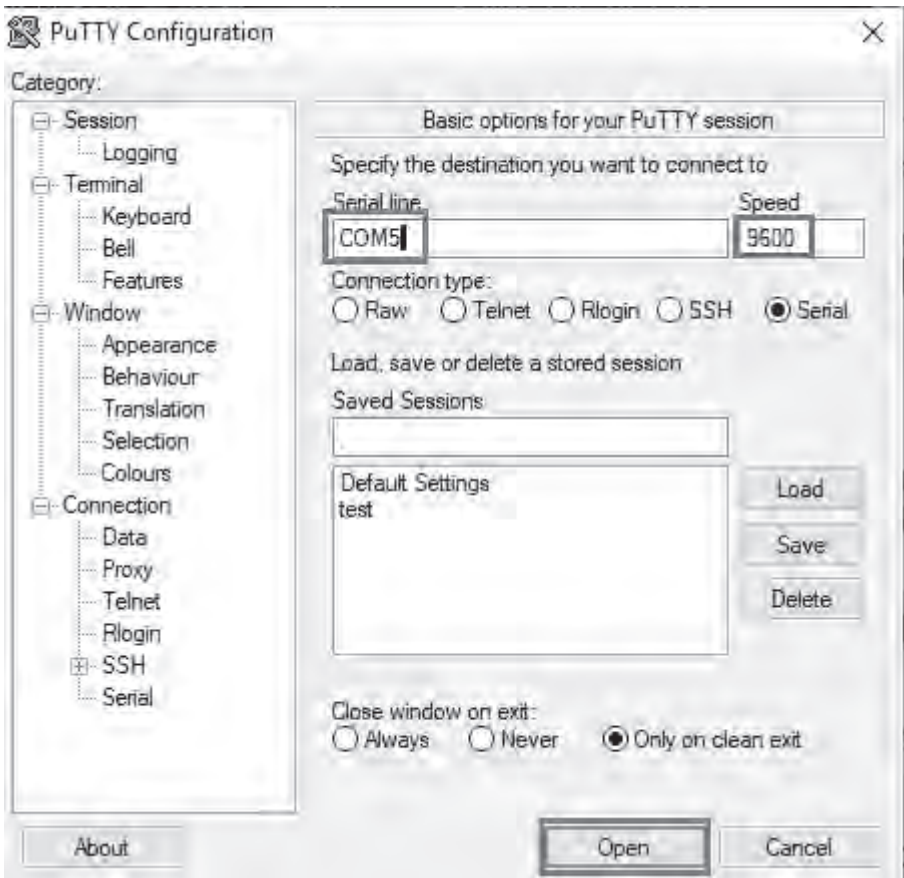
For the detail of command codes, please find the RS-232 command codes in this instruction manual.

RS232 CONTROL

The RMC-64A2 provides an RS-232 serial port connection located on the back panel and uses a USB-to- Serial Comm cable connection. The RMC-64A2 supports bi-directional RS-232 communication with third party automation systems. All keypad and remote control operations can be controlled via RS-232 in addition to system expands another 2 units linked together using the included 18 pin expansion cable.

Baud Rate 9600, 8, N, 1 , DB9 Connector Pin out, Tx, Rx, GND

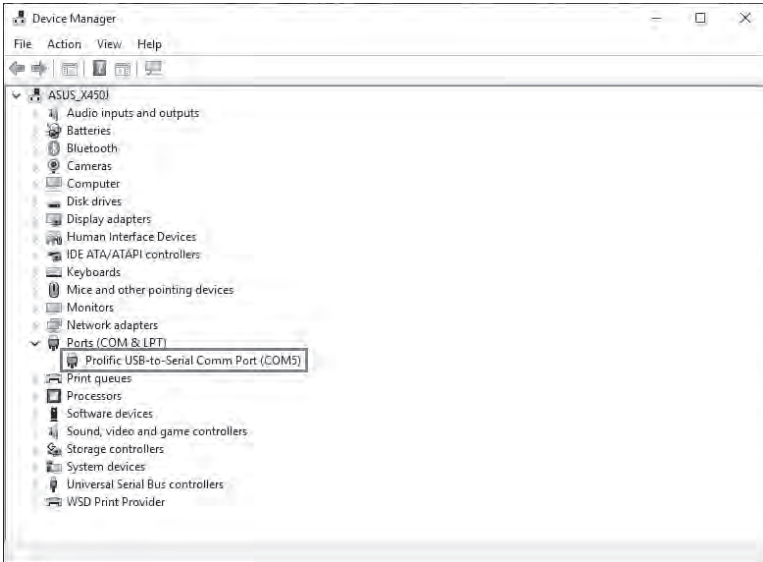
Using free software “PuTTY” Tool to control the device. Operation diagram as below:



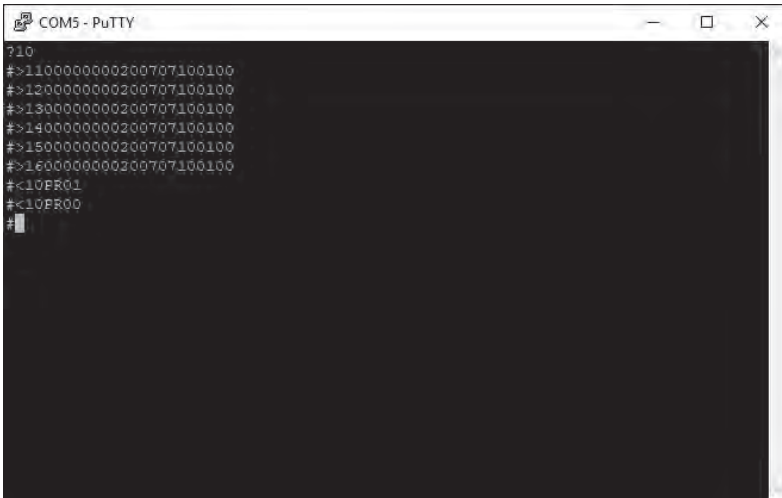
Click Serial, check the COM port and enter the Baud rate 9600.

Click Open.

Note: To find the information for the COM port, please open the device manager of the computer, shown as below:



When the IP address connected, the operation diagram shows as below:



Key in the command code to control RMC-64A2

RS232 SERIAL CONTROL

All keypad and remote control operations can be performed by a computer connected to the Master Controller/Amplifier using an RS232 connection. The communications standard uses:

Baud Rate: 9600, 8, N, 1

DB9 Connector Pinout Tx, Rx, GND

'CR': Carriage Return (0x0D)

No case capitalization/lowercase

Control order structure <xxPPuu'CR' Reply control order frame >

For xxPPuu'CR':

xx: stands for control object code

10: All Zones of Main unit 1.

20: All Zones of Main unit 2.

30: All Zones of Main unit 3.

11: Zone1 of Main unit 1.

12: Zone2 of Main unit 1.

13: Zone3 of Main unit 1.

PP: Stands for control action code.

PR: Power control

PR00: Power off

PR01: Power on

MU: Mute control

MU00: Mute off

MU01: Mute on

DT: Do Not Disturb control

DT00: DT control off

DT01: DT control on

VO: Volume control

VO (00-38): Volume control

TR: Treble control

TR (00-14): Treble control

BS: Bass control

BS (00-14): Bass control

BL: Balance control

BL (00-20): Balance control

CH: Source Channel control

CH (01-06): Source control

Inquiry command structure (1) ?xx'CR'

xx: stands for control object code

10: All Zones of Main unit 1.

20: All Zones of Main unit 2.

30: All Zones of Main unit 3.

11: Zone1 of Main unit 1

12: Zone2 of Main unit 1

13: Zone3 of Main unit 1

21: Zone1 of Main unit 2

22: Zone2 of Main unit 2

23: Zone3 of Main unit 2

Reply command: > xxaabbccddeeffgghhijj'CR'

aa: PA control status

bb: Power control status ([5]:Backup Zone Power Status only on zone)

cc: Mute control status

dd: DT control status

ee: Volume control status

ff: Treble control status

gg: Bass control status

hh: Balance control status

ii: Source control status

jj: keypad connecting status

(00: disconnect 01: connected)

Inquiry command structure (2) ?xxPP'CR'

xx: stands for control object code

10: All Zones of Main unit 1.

20: All Zones of Main unit 2.

30: All Zones of Main unit 3.

11: Zone1 of Main unit 1

12: Zone2 of Main unit 1

13: Zone3 of Main unit 1

14: Zone4 of Main unit 1

PP: Stands for control action code.

PA: PA control

PR: Power control

MU: Mute control

DT: DT control
VO: Volume control
TR: Treble control
BS: Bass control
BL: Balance control
CH: Source control
LS: keypad connecting status

Reply command: >xxPPuu'CR'

Key in 1<*****'CR' change Source 1 Name display; *****needs to be 8 valid ASCII codes

Key in 2<*****'CR' change Source 2 Name display

Key in 3<*****'CR' change Source 3 Name display

Key in 4<*****'CR' change Source 4 Name display

Key in 5<*****'CR' change Source 5 Name display

Key in 6<*****'CR' change Source 6 Name display

Key in M<*****'CR' change the name display on keypad when turned on.

Key in <9600'CR' change RS232 speed rate to 9600

Key in <19200'CR' change RS232 speed rate to 19200

Key in <38400'CR' change RS232 speed rate to 38400

Key in <57600'CR' change RS232 speed rate to 57600

Key in <115200'CR' change RS232 speed rate to 115200

Key in <230400'CR' change RS232 speed rate to 230400

The baud speed rate returns to 9600 when the Master Controller/Amplifier is disconnected from its power source.

ee: Volume control status

ff: Treble control status

gg: Bass control status

hh: Balance control status

ii: Source control status

jj: keypad connect status

(00: disconnect 01: connected)

Inquiry command structure (2) ?xxPP'CR'

xx: stands for control object code

10: All Zone of Main unit 1.

20: All Zone of Main unit 2.

30 : All Zone of Main unit 3.

11 : Zone1 of Main unit 1

12 : Zone2 of Main unit 1

13 : Zone3 of Main unit 1

14 : Zone4 of Main unit 1

PP: Stands for control action code.

PA: PA control

PR: Power control

MU: Mute control

DT: DT control

VO: Volume control

TR: Treble control

BS: Bass control

BL: Balance control

CH: Source control

LS: keypad connecting status

Reply command: >xxPPuu'CR' ;*****needs to be 8 ASCII codes.

Key in 1<*****'CR' change Source 1 Name display on the keypad when the keypad is turned on.

Key in 2<*****'CR' change Source 2 Name display on the keypad when the keypad is turned on.

Key in 3<*****'CR' change Source 3 Name display on the keypad when the keypad is turned on.

Key in 4<*****'CR' change Source 4 Name display on the keypad when the keypad is turned on.

Key in 5<*****'CR' change Source 5 Name display on the keypad when the keypad is turned on.

Key in 6<*****'CR' change Source 6 Name display on the keypad when the keypad is turned on.

Key in M<*****'CR' change the name in the display on the keypad when the keypad is turned on.

Key in <9600'CR' change RS232 speed rate to 9600

Key in <19200'CR' change RS232 speed rate to 19200

Key in <38400'CR' change RS232 speed rate to 38400

Key in <57600'CR' change RS232 speed rate to 57600

Key in <115200'CR' change RS232 speed rate to 115200

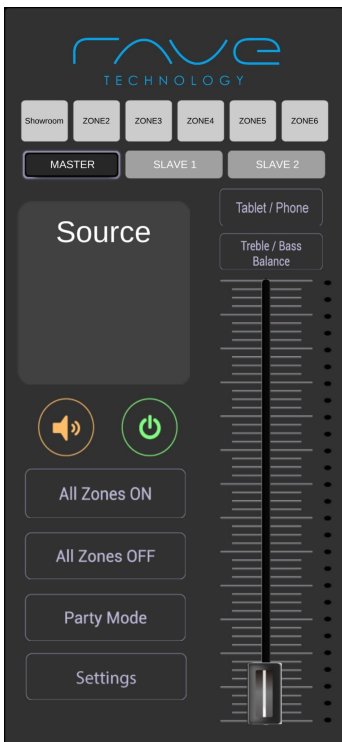
Key in <230400'CR' change RS232 speed rate to 230400

APP QUICK START

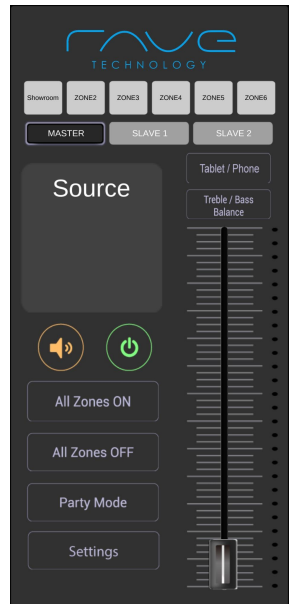
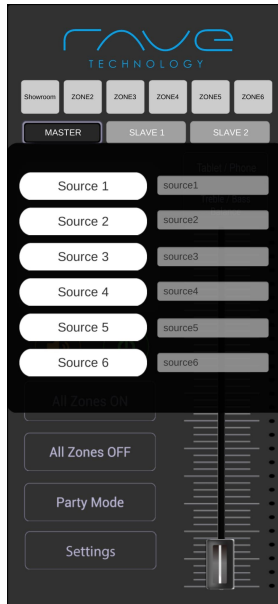
1. The APP can be found by searching “RAVE RMC” on the App Store or Google Play.



3. Download and install the APP



APP QUICK START - FUNCTION INSTRUCTION



1. Output Zone Selection

(Press and hold the button to change the zone name)

2. Input Source Selection

Press and select the input source. The name of input source could be changed.

3. Treble/Bass/Balance

4. Volume for individual zone

5. Mute for individual zone

6. Power ON/OFF for individual zone

7. All Zones ON

8. All Zones OFF

9. Party mode

All zones will be synchronize and controlled from the specific zone.

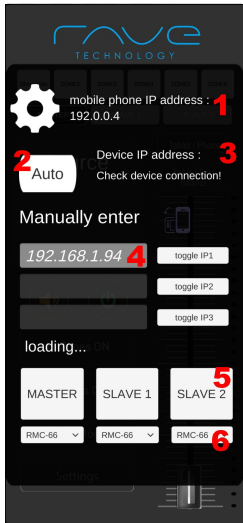
10. Settings and Connection

Please read the instruction in next page for properly connection.

11. Streamer icon

Press this icon to open the streamer APP.

APP QUICK START – SETTINGS AND CONNECTION



1. Mobile phone IP address

When the smart phone or Pad is connected to local network, the IP will automatically show on this area.

2. AUTO

Press AUTO to search the device IP.

3. Device IP address

When the IP is found, the APP will connect to the device automatically.

4. Manually Enter

Manually enter the device IP to connect to the device.

5. MASTER/SLAVE Selection

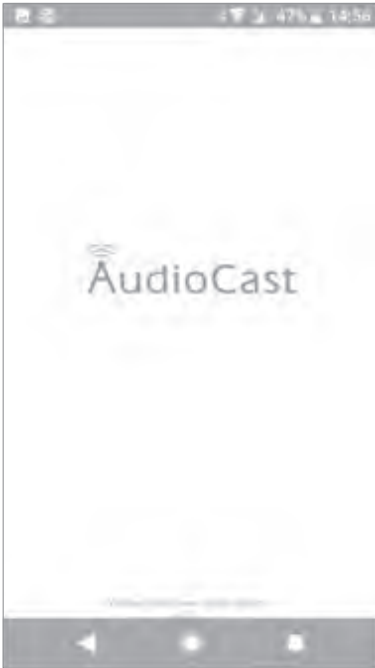
When the MASTER amplifier connecting with additional SLAVE1/SLAVE2 amplifiers, press one of these buttons to determine which amplifier will be controlled.

6. 6 Zones/4 Zones Selection

Select 6 Zones or 4 Zones for corresponding MASTER/SLAVE1/SLAVE2 amplifier.

STREAMING APP QUICK START

1. Please download and install “Audio Cast” APP on smartphone or tablet.
2. Please make sure your phone or tablets Wi-Fi is turned on and connected to your local network.
3. Please connect **RMC-64A2** to local router via Cat5 cable and then power on.
4. Open “Audio Cast” APP



5. Two streaming will be shown on “Audio Cast” APP.



6. Follow the instructions on “Audio Cast” APP to select and play music.