rave
TECHNOLOGY

Installation Manual

RMC-66A

6 Zone 6 Source Audio Matrix with Integrated Amplifier

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-66A is a functional, easy-to-install, highly compatible, expandable, and user-friendly audio distribution system. The RMC-66A provides 6 zones stereo or bridged speaker outputs power by class D integrated amplifier. With optional expansion cables the RMC-66A is expandable up to 18 zones. This system can be controlled with (optional) Keypads, RS232, IR or with the iOS and Android APP. Enjoy the quality and reliability of your new RAVE Technology RMC-66A.

FEATURES

- 6 Source 6 Zone Audio Matrix with Integrated Amplifier
- Multi-Room Audio Control System Expandable to 18 Zones
- APP Control with Wi-Fi or Ethernet Network Connection
- High Efficiency Class D Amplification
- Stereo or Bridged (mono) Speaker Outputs
- Optional Keypads and IR Remote
- 110V or 220V Selectable Power
- RS232 Communication Port
- 12V Trigger Inputs and Outputs
- Source 1 Priority PA Function with Trigger Input
- Built In IR Emitters Outputs
- Preamp Outputs Zone 1-3

Package Contents

- RMC-66A Matrix Controller Amplifier
- Product Manual
- AC Power Cable
- Rack Mounting Ears – 2 (Installed on Amp)
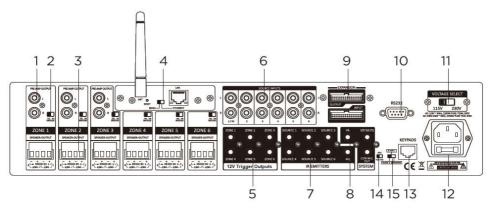- Speaker Terminal Blocks – 6 (Installed on Amp)

Note:

RMC-66K (Optional) Accessory Kit Includes:

- 6 Wall Plate Keypads
- 1 Wall Plate Keypad Hub
- 1 IR Remote Control
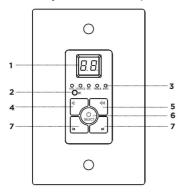- 1 Expansion Cable

PRODUCT FEATURES

1. Power ON/OFF Switch

2. Zone Status LED (White: ON - Blue: Standby - Blue/White: Mute)

1. Stereo RCA line level preamp outputs zones 1-3
2. Mode Switch: Stereo or Bridge (mono)
3. Speaker Outputs: Removable terminal block connectors
4. Integrated LAN and Wi-Fi Network
5. 12V Trigger outputs
6. Stereo RCA source inputs (Source 1 priority with PA trigger input)
7. IR Emitter outputs
8. PA trigger input-Mute trigger input-Control trigger output
9. Expansion input and output ports
10. RS232 Communications port
11. Voltage selector switch
12. AC Power connector
13. Keypad Hub RJ45 connector
14. Auto gain control (AGC) on/off switch
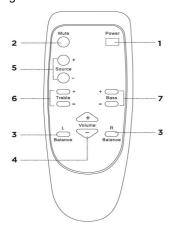15. Unit ID selector switch (Master-Slave1-Slave2)

KEYPAD AND IR REMOTE FEATURES

The optional keypads can control zone power on/off, volume up/down, selection of sources 1-6, zone treble, zone bass, zone un-mute and zone standby. The keypads have Infrared receivers which allows control with optional IR hand held remote. The IR system can also send IR commands to the IR output jacks of the RMC-66A for control of your source components.

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

The optional Infrared remote provides zone control through the (IR) receiver located in the center of the keypad. All keypad functions can be accessed with the remote. An additional mute button to temporarily mute audio in the zone. The keypad LED display will flash indicating the mute status. Press the mute button again to return to un-mute the zone.
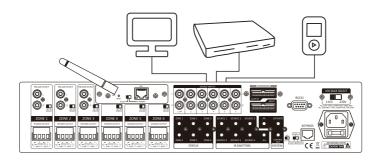
1. Power: switches power (On/Off) for the certain zone.

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

INSTALLATION

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

CONNECTIONS

Connect audio sources to the RMC-66A using the 6 stereo RCA inputs on the rear panel. Input 1 can be used as priority over all inputs. When 12VDC is applied (3.5mm tip+ sleeve -) to the PA-IN jack, source 1 will be sent to all zones. This can be used for party mode or paging.
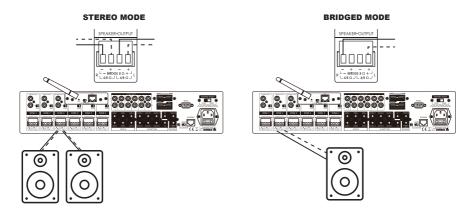
CONNECTING THE SPEAKERS

The RMC-66A is capable of driving 4-8 ohm speaker loads in stereo mode and 8ohm loads in bridge (mono) mode. Improper speaker installation can damage the amplifiers and void the warranty. Use good quality 12-14awg stranded copper speaker wire.

The speaker output terminal block connectors are removable. Remove the terminal block connector and make sure that all connections are open by turning each set screw counter clockwise. This insures that the speaker wire opening is completely open. Trim approx 1/4" of insulation from the speaker wire and twist the copper ends. Insert the speaker wires into the connector and tighten the set screws. Repeat for the remaining zones.
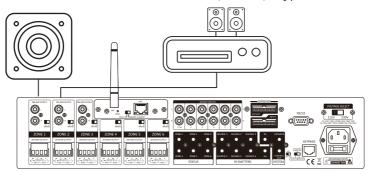
BRIDGE MODE:

Setting the amplifier mode switch to BRIDGE mode will combine the LEFT and RIGHT signals and power into one amplifier. The LEFT and RIGHT input signals will be summed to mono. The minimum speaker impedance in bridge mode is 8ohms.

STEREO MODE

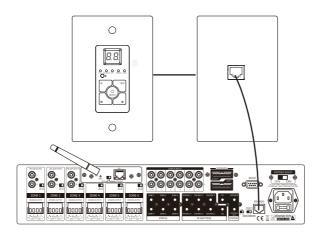BRIDGED MODE

USING THE PRE-AMP OUTPUTS

There are 3 unbalanced, line level Pre-Amp outputs that correspond to the first 3 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 APP.

CONNECTING THE KEYPADS

The RMC-66A has optional POE enabled keypads. This allows for source control from each specific zone as well as IR routing to the appropriate source devices once selected.
The RMC-66K (Optional Accessory Kit) 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.

T-568B

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		
ON	ON	OFF	ON	OFF	ON	ON	OFF	OFF
1	2	3	1	2	3	1	2	3

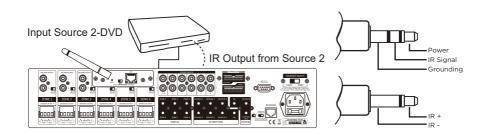| ZONE-4			ZONE-5			ZONE-6		
OFF	ON	ON	OFF	ON	OFF	OFF	OFF	ON
1	2	3	1	2	3	1	2	3

CONNECTING THE KEYPAD HUB

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.
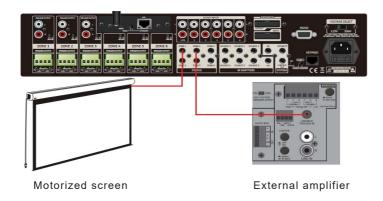

Expansion Port

FRONT   BACK

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.

IR EMITTERS

Each source has a corresponding Infrared (IR) emitter output. These outputs are use to control the connected source components remotely through the IR system. Connect an IR emitter to the output jack and then connect the flasher to the IR receiver window of the device. Now you can use an IR remote to control your source through the keypads.

Input Source 2-DVD

IR Output from Source 2

Power
IR Signal
Grounding

IR +
IR -

Trigger Inputs and Outputs

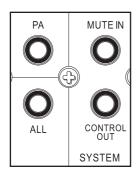Motorized screen   External amplifier
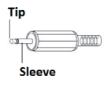
There is also a master control 12VDC trigger output which sends 12VDC to the CONTROL OUT jack when any zone is powered ON. The 12VDC CONTROL OUT signal is disengaged when all zones are powered OFF.

PA- IN- Insert 12VDC and Input 1 takes priority over all other inputs and broadcasts to all 6 zones.
MUTE - IN- Insert 12VDC and all zones will be muted.
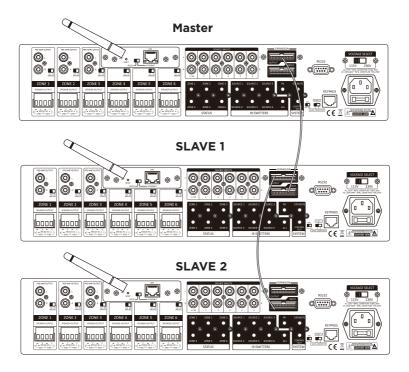WIRING: 3.5mm Mono Plug (Tip + / Sleeve -)

EXPANSION ZONES

The RMC-66A allows 6 sources to be distributed to 18 zones on 3 different units using the optional expansion cable to connect between units.
To do this 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 identify each unit.

Master

SLAVE 1

SLAVE 2

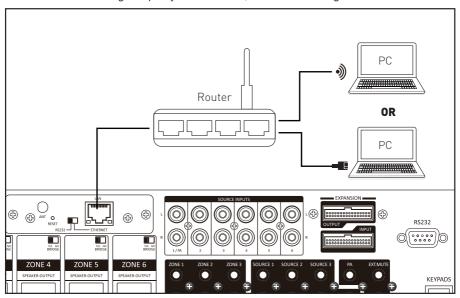All source audio information - All RS232 control data - All MCU communication from the master and slave units will be shared through the expansion cable.
Each RMC-66A unit must be connected to the network for APP control.

NOTE: The MASTER unit IR outputs will function as normal however the IR outputs from SLAVE 1 & 2 will not pass through the MASTER IR outputs. IR flashers from SLAVE 1 & 2 will need to added for IR control.

LAN NETWORK CONNECTION

There is a RJ-45 Ethernet jack on the rear panel of this amplifier for the connecting to the network. Please use a good quality Cat5e/5 cable, and follow the diagram below.

Connect the RMC-66A network LAN port on the rear panel to the LAN port of the Wi-Fi router.

When controlling via Network connection, please make sure the ETHERNET/RS232 switch is set at ETHERNET position. If you are using the RS232 port for control please set the switch to the RS232 position.

NOTE: The network router will automatically set the IP address DHCP default ON. Please check the local router configuration page for the RMC-66A IP information.

Wi-Fi NETWORK CONNECTION

Power on the RMC-66A in range of the Wi-Fi network.
Using a PC, Smart phone or Tablet (PC is recommended), search the Wi-Fi and connect to the RMC-66A.

SSID: **HLINK**
Password: **12345678**
Go to the (http://192.168.16.254) configuration web page and login
User name: **admin**
Password: **admin**

1. Select "Wi-Fi(client)-serial" from the NetMode menu options.
2. Press SCAN button in the SSID menu.
3. Select the wireless network you would like to connect and press APPLY.
4. Enter the password for the wireless network and press APPLY.
5. Visit the configuration web page of the local network of router
   to find the IP address information for the RMC-66A.

IR EMITTERS

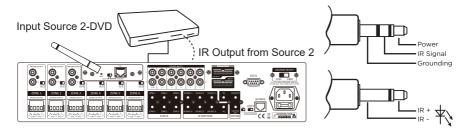Each source has a corresponding Infrared (IR) emitter output. These outputs are use to control the connected source components remotely through the IR system. Connect an IR emitter to the output jack and then connect the flasher to the IR receiver window of the device. Now you can use an IR remote to control your source through the keypads.

Input Source 2-DVD

IR Output from Source 2

Power
IR Signal
Grounding

IR +
IR -

RMC-66A RS-232 CONTROL CODES

(Baud Rate: 9600,8,N,1 , DB9 Connector Pin out, Tx, Rx, GND)
'CR':Carriage Return (0x0D)

Not case sensitive

Control Command Structure <xxPPuu'CR'

Reply Control Command Structure >xxPPuu'CR'

xx: Represent control command code

10 :All zones of host computer 1

20 :All zones of host computer 2

30 :All zones of host computer3

11 : Zone1 of host computer 1

12 : Zone2 of host computer 1

13 : Zone3 of host computer 1

....

PP: Represent 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

Ask command structure(1) ?xx'CR' xx:

Represent control command code 10 :All

Zones of host computer 1

20 :All Zones of host computer 2

30 :All Zones of host computer 3

11 :Zone1 of host computer1
12 :Zone2 of host computer1
13 : Zone3 of host computer1
21 : Zone1 of host computer2
22 : Zone2 of host computer2
23 : Zone3 of host computer2
....
Reply Command: >xxaabbccddeeffgghhiijj'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:The connection status of line control(00:unconnected 01:connected) Ask command structure (2) ?xxPP'CR'
xx: Control Command Structure
10 :All Zones of host computer 1
20 :All Zones of host computer 2
30 :All Zones of host computer 3
11 : Zone1 of host computer 1
12 : Zone2 of host computer 1
13 : Zone3 of host computer 1
14 : Zone4 of host computer 1
15 : Zone5 of host computer 1
16 : Zone6 of host computer 1
....
PP: Represent 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: The connection status of line control

Reply command: >xxPPuu'CR'

Enter1<********'CR' Change Source 1 display name;********It must be 8 effective

ASCII code

Enter2<********'CR' Change Source 2 display name

Enter 3<********'CR' Change Source 3 display name

Enter 4<********'CR' Change Source 4 display name

Enter 5<********'CR' Change Source 5 display name

Enter 6<********'CR' Change Source 6 display name

Enter M<********'CR' Change display name of connect control when it starts

Enter <9600'CR' Change RS232 to rate 9600

Enter <19200'CR' Change RS232 to rate 19200

Enter <38400'CR' Change RS232 to rate 38400

Enter <57600'CR' Change RS232 to rate 57600

Enter <115200'CR' Change RS232 to rate 115200

Enter <230400'CR' Change RS232 to rate 230400

When unplugging and re-plugging the AC power cord, the

Baud speed rate will return to 9600.

REPRESENT OF CONTROL ACTION CODE

Symbol	Master、Slave1、Slave2	Zone	Controlactioncode	ControlRange
<	1、2、3	1~6	PR(POWER)	(00-01)
<	1、2、3	1~6	MU(MUTE)	(00-01)
<	1、2、3	1~6	CH(SOURCE)	(01-06)
<	1、2、3	1~6	VO(VOLUME)	(00-38)
<	1、2、3	1~6	TR(TREBLE)	(00-14)
<	1、2、3	1~6	BS(BASS)	(00-14)
<	1、2、3	1~6	BL(BALANCE)	(00-20)

EXAMPLES OF RS-232 COMMAND CODE

AllZoneON	<10PR01	Zone1ON	<11PR01
AllZoneOFF	<10PR00	Salve1/Zone1OFF	<21PR00
AllZoneMuteON	<10MU01	Zone6MuteON	<16MU01
AllZoneMuteOFF	<10MU00	Salve2/Zone5MuteOFF	<35MU00
AllZoneSource01	<10CH01	Zone1Source01	<11CH01
AllZoneSource06	<10CH06	Zone6Source06	<16CH06
AllZoneVolume00	<10VO00	Zone1Volume00	<11VO00
AllZoneVolume38	<10VO38	Zone6Volume38	<16VO38
AllZoneTreble(-7)	<10TR00	Zone1Treble(-7)	<11TR00
AllZoneTreble(0)	<10TR07	Zone1Treble(0)	<11TR07
AllZoneTreble(7)	<10TR14	Zone1Treble(7)	<11TR14
AllZoneBass(-7)	<10BS00	Zone6Bass(-7)	<16BS00
AllZoneBass(0)	<10BS07	Zone6Bass(0)	<16BS07
AllZoneBass(7)	<10BS14	Zone3Bass(7)	<13BS14
AllZoneBalance(atLeftCH)	<10BL00	Zone1Balance(atLeftCH)	<11BL00
AllZoneBalance(atMiddle)	<10BL10	Zone1Balance(atMiddle)	<11BL10
AllZoneBalance(atRightCH)	<10BL20	Zone1Balance(atRightCH)	<11BL20
InquiryMasterAllZoneStatus	?10	InquirySlave1AllZoneStatus	?20

INQUIRY COMMAND STRUCTURE

Symbol	Master、Salve1、Salve2	Zone
?	1、2、3	1~6

InquiryMasterAllZoneStatus	?10
InquirySlave1AllZoneStatus	?20
InquirySlave2AllZoneStatus	?30

REPLY COMMAND

>xxaabbccddeeffgghhiijj

>110000000200707100100

xx:Unit/Zone

aa:PAINStatus

bb:PowerStatus

cc:MuteStatus

dd:DTStatus

ee:VolumeStatus

ff:TrebleStatus

gg:BassStatus

hh:BalanceStatus

ii:SourceStatus

jj:KeypadConnectionStatus(00:Unconnected,01:Connected)

SPECS AND WARRANTY

RMS Power @ 8 ohms	25 watts x 12
RMS Power @ 4 ohms	50 watts x 12
RMS Power @ 8 ohms Bridge Mode	100 watts x 6
S/N Ratio	>85dB A Weighted
THD	<0.1%
Frequency Response	20Hz - 20kHz
Input Impedance	>47 K Ohms
Input Sensitivity	250mv
Amplifier Protection	Overload, Short Circuit & Thermal
Trigger Systems ON Voltage	DC + 12V
Trigger External Mute Voltage	DC + 12V
Infrared Frequency	38kHz
Input Connectors	Stereo RCA, 3.5mm
Output Connectors	Terminal Block, Stereo RCA, 3.5mm
Ethernet	10/100MBps RJ45 Connector
Dimensions: Imperial / Metric	W- w/rack kit 19"/482.6mm W- no/rack kit 17"/430mm H - 3.5"/89mm D - 16.4"/416mm
Weight: Imperial / Metric	25lbs (11kg)
Warranty	5 Years

Contact Information:
Rave Technology
4100 East Baldwin Road
Holly, Michigan, 48442 USA
Tel: 866-303-2629
contact@ravetechnology.com
www.ravetechnology.com

Warranty:
Rave Technology products are warranted to be free from defects in workmanship and materials for a period of Five (5) years 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 personnel.
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.