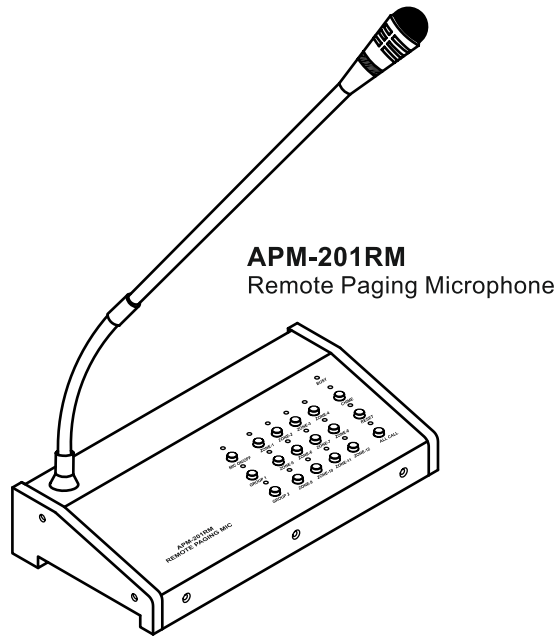
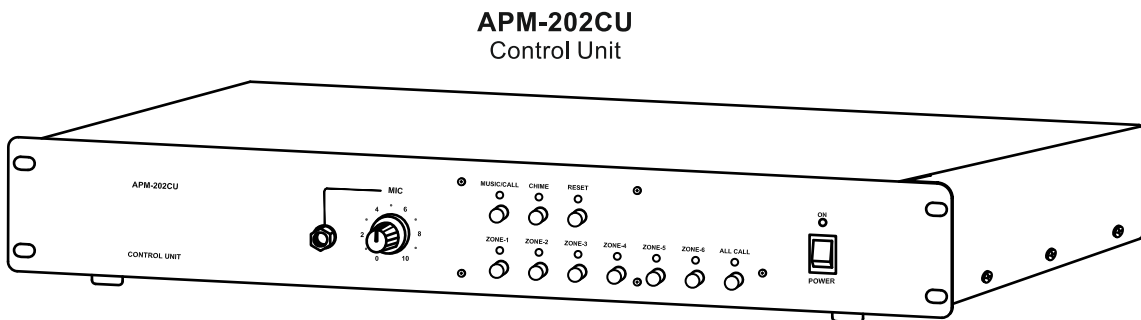


# Paging System



**APM-201RM**  
Remote Paging Microphone



**APM-202CU**  
Control Unit

- ◆ Thank you for purchasing the                    Paging Selector Control Unit.
- ◆ Please read this manual thoroughly before making connections and turning on the power. Following the instructions in this manual will enable you to obtain optimum performance from your new Paging Selector Control Unit.
- ◆ Please retain this manual for future reference.

## • **Safety Instructions**

**Read the Instructions:** Please read all the instructions in this section carefully before installation or use of the product. All the safety instructions must be followed.

**Retain the Instructions:** Please retain this Instruction Manual for future reference.



This symbol, wherever it appears, alerts you to the presence of uninsulated hazardous voltage that may be sufficient to constitute a risk of electric shock. External wiring to any terminal marked with this symbol must be done by a trained and instructed person only.



This symbol, wherever it appears adjacent to a component, alerts you that the concerned component can only be replaced by another of the exact same specifications.

### **WARNING**

- To reduce the risk of electric shock, do not open the enclosure. No user serviceable parts inside. Refer all servicing to qualified personnel only.
- Before replacing any fuse, make sure the set is switched off and disconnected from the power supply. Replace a fuse only with another of exactly same specification.

### **CAUTIONS**

**Water & Moisture:** To reduce the risk of fire or electrical shock, do not expose this set to rain or moisture. Do not use this set near water or in a wet location. Do not keep any object filled with liquid, such as a vase, on top of this set. Do not insert or remove the AC mains plug with wet hands.

**Power Source:** The voltage & frequency of the AC mains supply, and the voltage of the external battery, (if applicable) to which this set can be connected, is marked on the rear panel of the set. Do not connect this set to any power source other than those specified on the rear panel.

**Power Cord Protection:** Do not cut, kink, damage or modify the AC power cord supplied with this set. Keep the AC power cord away from heaters and harmful chemicals. Do not keep any heavy object on the power cord.

**Operation on Generator:** When operating this set on a generator, make sure the set is switched off till the generator voltage has stabilized.

**Stability:** This set must be kept in a stable and flat horizontal position, and never in a tilted position. Do not place this set on an unstable stand, tripod, bracket or mount. Do not use attachments which are not supplied or explicitly recommended by the manufacturer.

**Cover Strip:** The cover strip of the 100V / 70V audio output / input terminal strip, and of any other high voltage output terminal strip, must be replaced after making connections. Failure to do so may result in exposure to hazardous voltages.

**Earthing:** This set must be earthed properly before use. A wire from the Earth terminal on the rear panel must be connected to electrical earth.

**Cleaning:** Disconnect this equipment from the AC mains and external battery before cleaning. Clean with a damp cloth, but do not allow any liquid to enter the set. Do not clean with liquids or aerosols.

**Exposure to Heat:** Do not touch the heatsinks while the set is working.

## • **Table of Contents**

<b>Contents</b>	<b>Page No.</b>
<b>Features/General Description of Product .....</b>	<b>4</b>
<b>Top and Rear Panel Controls (APM-201RM) .....</b>	<b>5</b>
<b>Front and Rear Panel Controls (APM-202CU) .....</b>	<b>6</b>
<b>Functions and Operations (APM-201RM) .....</b>	<b>7</b>
<b>Functions and Operations (APM-202CU) .....</b>	<b>8</b>
<b>Interconnections.....</b>	<b>9</b>
<b>Specifications .....</b>	<b>12</b>

## • **Features/General Description of Product**

### **APM-201RM (Remote Paging Microphone)**

- A high performance 12 zone paging console housed in an elegant aluminium housing. It works with APM-202CU to make a 6 or 12 zone zonal paging system.
- Fitted with a 16"(40 cm) gooseneck.
- 12 Zone Selector Switches, plus ALL CALL switch
- Separate Mic ON/OFF switch.
- LED indication of zone selection.
- RESET switch to reset all zone selections.
- Group selection facility.
- Built in chime circuit.
- Chime & Mic level controls.
- Secure 8 pin and 4 pin lockable connectors.
- Can be used with one APM-202CU to make a 6 zone paging system, or with two nos APM-202CU to make a 12 zone paging system.
- Operates on 24V DC supply from APM-202CU.

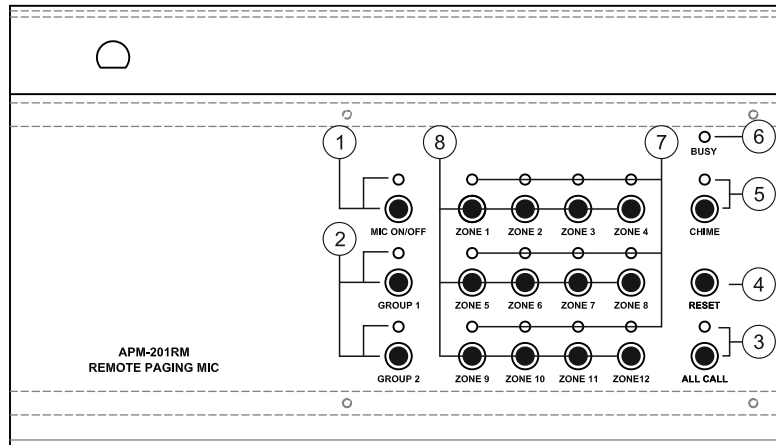
### **APM-202CU (Control Unit)**

- 6 Zone Switcher / Paging Control Unit for use with APM-201RM.
- APM-202CU is a rack mounting switcher / control unit which works with APM-201RM and upto 2 amplifiers to form a 6 zone zonal paging system with multi level priority and switchable background music.
- 6 Zone Selector switches, plus ALL CALL switch.
- Provision for two 100V input signals, one for speech and one for background music.
- Priority of speech over background music.
- Provision for routing background music source to selected zones.
- Provision to make announcements from the control unit. In case of 12 zone system using 2 nos. APM-202CU control unit, announcements should be made only from the master control unit (the control unit whose all four DIP switches are in top position).
- Status monitoring of all zones.
- Provision for emergency trigger input and alarm input with highest priority.
- Standard 19" rack mounting chassis.

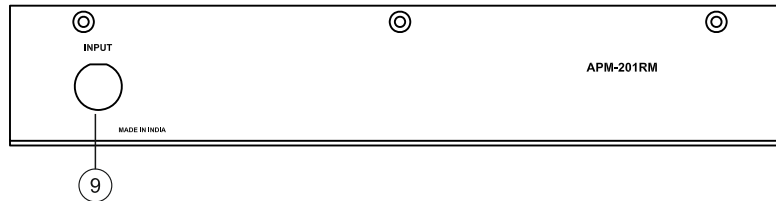


## • Front & Rear Panel Controls (APM-201RM)

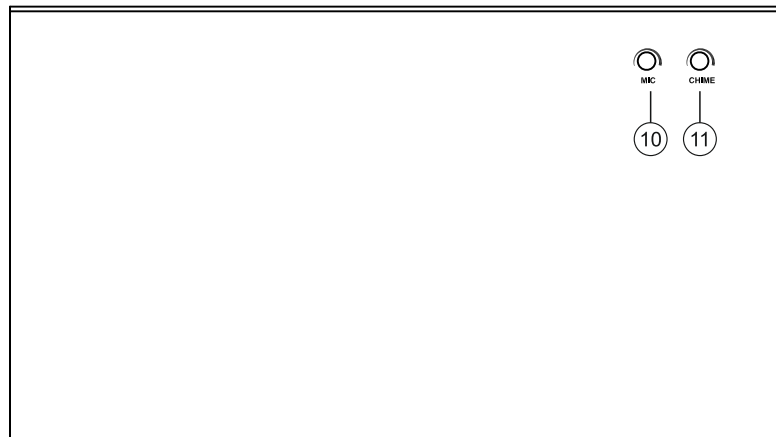
### Top Panel



### Rear Panel



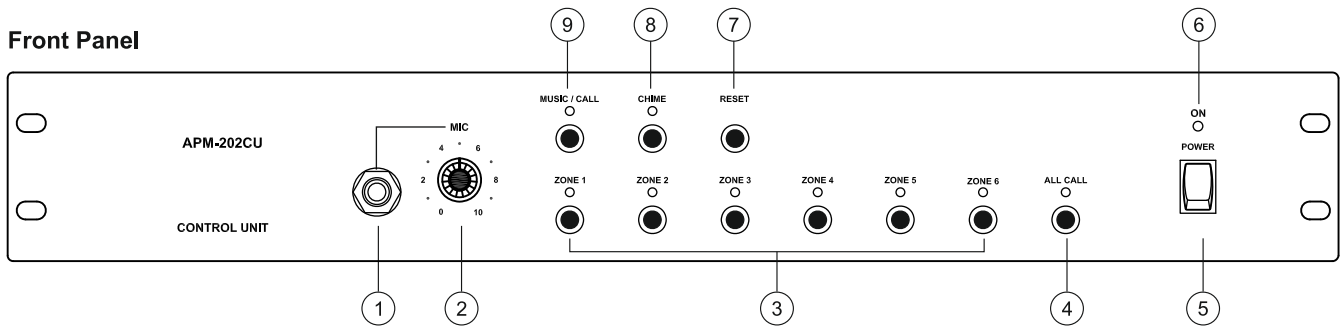
### Bottom Panel



- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. <b>MIC ON/OFF Button with Indicator.</b></li> <li>2. <b>Group Selection Button (Group 1,2)</b> with LED indicator to make group of zones.</li> <li>3. <b>ALL CALL</b> with LED indicator - To select all zones together for call.</li> <li>4. <b>RESET Button</b> to reset zone selections and group zones selection.</li> <li>5. <b>CHIME Button with LED Indicator.</b></li> </ol> | <ol style="list-style-type: none"> <li>6. <b>BUSY LED Indicator.</b></li> <li>7. <b>Zone Selection LED Indicator (Zone 1-12).</b></li> <li>8. <b>Zone Selection Buttons (Zone 1-12).</b></li> <li>9. <b>8 Pin Connector</b> for interconnecting the Paging Microphone with Control Unit.</li> <li>10. <b>MIC Volume Control</b></li> <li>11. <b>CHIME Volume Control</b></li> </ol> |
|--|---|

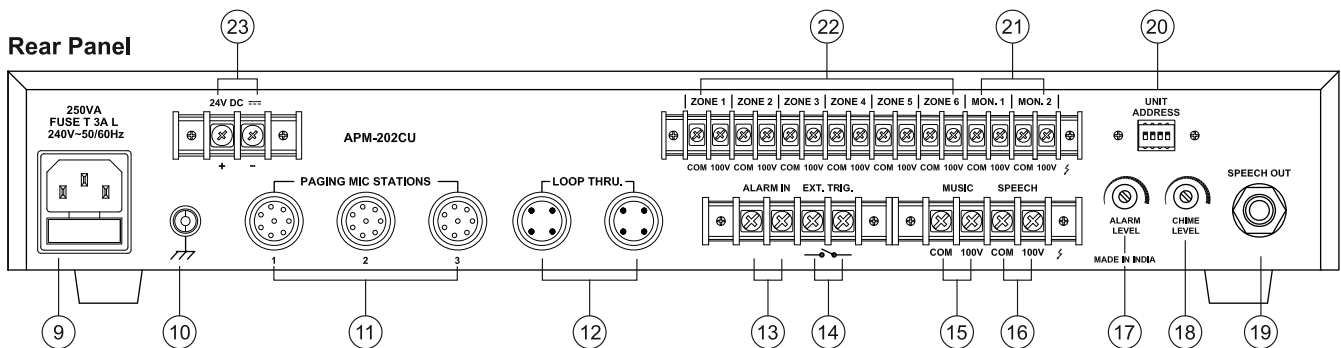
## • Front & Rear Panel Controls (APM-202CU)

### Front Panel



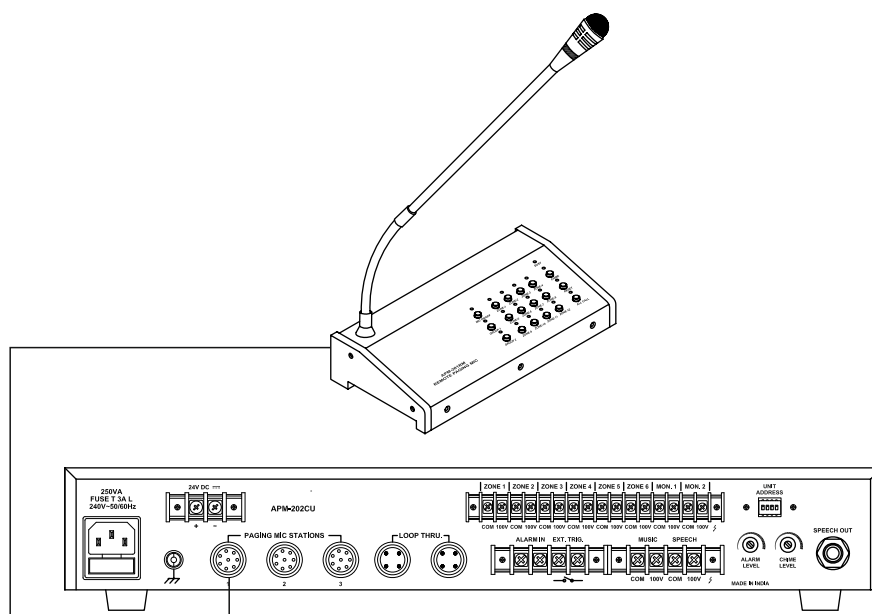
1. **MIC Input Jack Socket**
2. **MIC Volume Control** Adjusts level of the mic connected to jack (1).
3. **Paging Zone Buttons** with LED indicator (Zone 1-6) for individual zone selection.
4. **ALL CALL Button** with LED indicator to select all zones.
5. **POWER Switch** push the top part of the knob to switch the control unit ON. Push the bottom part of the knob to switch the control unit OFF.
6. **POWER LED**  
This LED glows when the control unit is switched ON.
7. **RESET Button** to reset the operation mode and zone selections.
8. **CHIME Button with LED Indicator.**
9. **MUSIC/CALL** command button with LED indication (to set the operation mode, Music or Call). When music/call LED is green, zones for background music routing can be selected. When this LED is red, zones for announcement from MIC (1) can be selected.

### Rear Panel



9. **IEC Mains Socket with 3 Amp Fuse** Connect the AC mains lead supplied to this socket.
10. **Earth Terminal**
11. **8 Pin Connector** to connect 3 paging microphones APM-201RM for multi location paging.
12. **4 Pin Connector** to loop a second control unit in order to make 12 zones.
13. **Alarm In**
14. **External Trigger**
15. **MUSIC Input Terminal** to connect 100V output of music amplifier.
16. **SPEECH Input Terminal** to connect 100V output of speech amplifier.
17. **ALARM LEVEL** to control the level of Alarm In signal.
18. **CHIME LEVEL** to control the level of chime signal.
19. **SPEECH OUT** for mixed audio signal output (MIC1, CHIME, ALARM and Remote Paging Microphone). Connect this to the AUX or LINE input of the amplifier used for SPEECH.
20. **UNIT ADDRESS** to set the console address ID as master/slave through unit address DIP switch in case of 12 zones system.
21. **Monitor Terminal Block.**
22. **Zone Speaker Out Terminal Block (100V)** for connecting speakers with 100V line matching transformer. Connect speaker for different zones here.
23. **24V DC Terminal** for connecting backup power supply 2x12V batteries.

## • Functions and Operations (APM-201RM)



- APM-201RM is a high performance zonal paging microphone that works with APM-202CU control unit.
- Connect APM-201RM with APM-202CU through an 8 core cable, with connections as shown in Fig. 2.
- To make an announcement from APM-201RM Remote Paging Mic, press the required zone buttons (or ALL CALL), followed by MIC ON button. (Always select the zones first, and then press MIC ON button). The relevant zonal LEDs on the control unit front panel will turn to flashing red (if no music was playing on that zone) or to flashing orange (if music was playing). If any music was playing on that particular zone, it will be muted and the announcement from the remote paging mic will be routed to that zone. After the announcement is completed, press RESET.

### GROUPING

- There are 2 group buttons (Group 1 and Group 2) to store two independent sets of zone numbers in the system memory. When button "Group 1" is pressed, all zones stored in the Group 1 memory will come ON automatically. Similarly for Group 2.
- To store selected zone numbers in Group memory.
  - Press the button "Group 1".
  - Press all the zone buttons you want to store in Group 1.
  - Press "RESET" button so that the zone numbers are stored in Group 1 memory.
  - Next time you want to make an announcement to all these selected zones, just press GROUP 1, followed by MIC ON.
- GROUP2 can be programmed and used in the same way as described above for GROUP1.

- When paging from APM-201RM, press the required zone buttons first. Then press MIC ON.
- Remember to press RESET after the announcement is completed.
- Use only speakers with 100V line matching transformers.

## • Functions and Operations (APM-202CU)

### INDICATOR LED'S ON FRONT PANEL OF APM-202CU

- On "MUSIC/CALL" Button, if LED is RED — Indicates SPEECH mode is selected
- On "MUSIC/CALL" Button, if LED is GREEN — Indicates MUSIC mode is selected.
- On "ZONE (1-6)" Buttons, if LED is RED — Zone is selected for CALL from Mic input of the Control Unit. Announcement will be routed to the selected zone.
- On "ZONE (1-6)" Buttons, if LED is GREEN — Zone is selected for Background Music. Background music will be routed to that particular zone.
- On "ZONE (1-6)" Buttons, if LED is ORANGE — Zone was selected for background music, but now the announcement is overriding the music.

### PRIORITY MUTING FUNCTION

APM-202CU has multiple level priority functions:

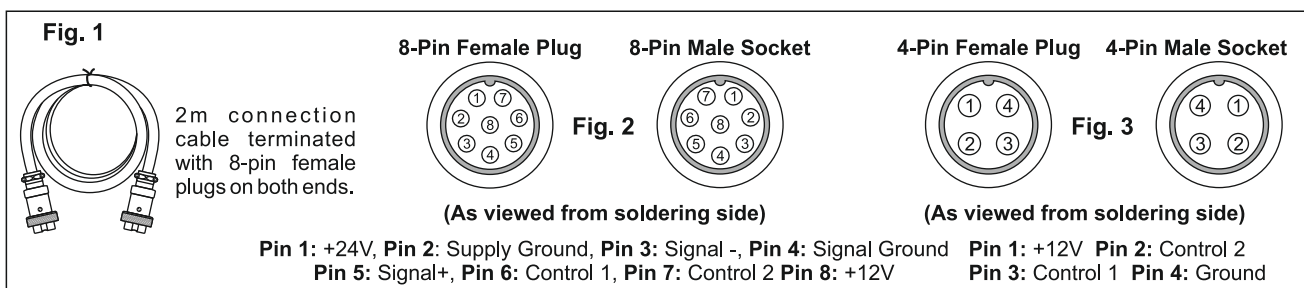
- ALARM IN has the highest priority.
- MIC 1 input on the control unit front panel has next highest priority.
- Announcements through Remote Paging Mic (APM-201RM) have the next priority.
- Background Music has least priority, or no priority.
- When a higher priority signal is present on a particular zone, all lower priority signals are muted on that particular zone. For eg., if background music is playing on zone-2, and a paging announcement is made on the same zone, music will be muted on zone-2 until the paging announcer resets the zone-2 button.

### OPERATIONS

- MUSIC/CALL Button on the front panel of the control unit can be used for selection of Music mode and Speech mode. Operator can select which zones require background music by putting the MUSIC / CALL button on MUSIC, and then pressing the zone buttons for those zones which require background music. The zone LEDs will be green if background music is being routed to that particular zone.
- To make announcement from APM-202CU, connect any standard microphone to MIC 1 input on the front panel of the APM-202CU Control Unit. Put "MUSIC/CALL" button on the Control Unit to CALL position. Then press the required zone buttons on the front panel of the Control Unit. The relevant zonal LEDs on the control unit front panel will turn to red (if no music was playing on that zone) or orange (if music was playing). As mic input on the control unit has priority over Remote Paging Microphone and music, any background music or APM-210RM announcement on that zone will be temporarily muted and the announcement from the MIC input will be routed to that zone. After the announcement is completed, press RESET. Background music will resume in the zones where it was playing earlier. In case of 12 zone system using 2 nos. APM-202CU control unit, announcements should be made only from the master control unit (the control unit whose all from DIP switches are in top position).

### INTERCONNECTIONS

- All connections must only be carried out or changed with the control unit switched OFF.
- Connection cable terminated with a suitable 8 pin female plug on both ends must be used to connect the Remote Paging Mic (APM-201RM) to Control Unit (APM-202CU) as shown in Fig. 2, (Pin connection as shown in Fig. 2).
- APM-202CU is a 6 Zone Control Unit. To make a 12 zone system, two nos. APM-202CU have to be used. The two nos of APM-202CU have to be connected together using the 4 pin sockets marked LOOP THRU on the rear panel of the Control Unit. See Fig.7, (Pin connection of 4 core cable as shown in Fig.3).
- Each control unit will have different address ID. Address IDs can be set by UNIT ADDRESS DIP switches given on rear panel of each control unit APM-202CU. The Control Unit to which the Remote Paging Mics are connected is called the Master Unit. All four DIP switches on the rear panel of Master Unit should be in UP position. The other Control Unit is the Slave Unit. For this, the last DIP switch should be in DOWN position, while the other three should remain in UP position. Interconnection of 12 zones system is shown in Fig. 7 on page no. 11.



## • Interconnections

### 6 Zone system setup, paging from one location without background music.

- Connect the APM-201RM to APM-202CU using 8 core cable as in Fig. 1.
- Connect the SPEECH OUT jack of APM-202CU to AUX jack of the speech amplifier.
- 100V output from speech amplifier should be connected to SPEECH terminal block on rear panel of APM-202CU as shown in Fig. 4.
- Speaker should be connected to output terminal strips of ZONE 1 to ZONE 6 of APM-202CU.

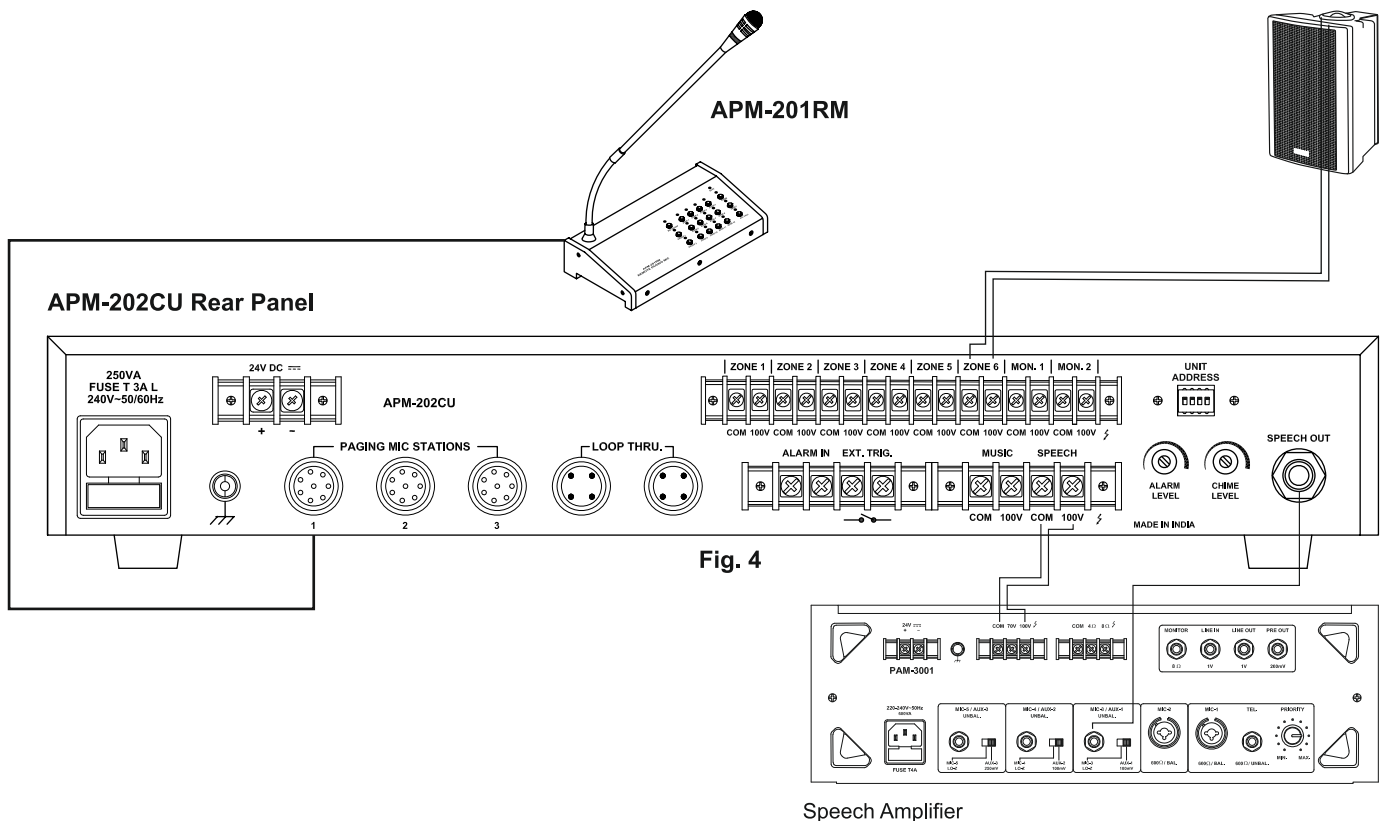


Fig. 4

### APM-202CU Front Panel

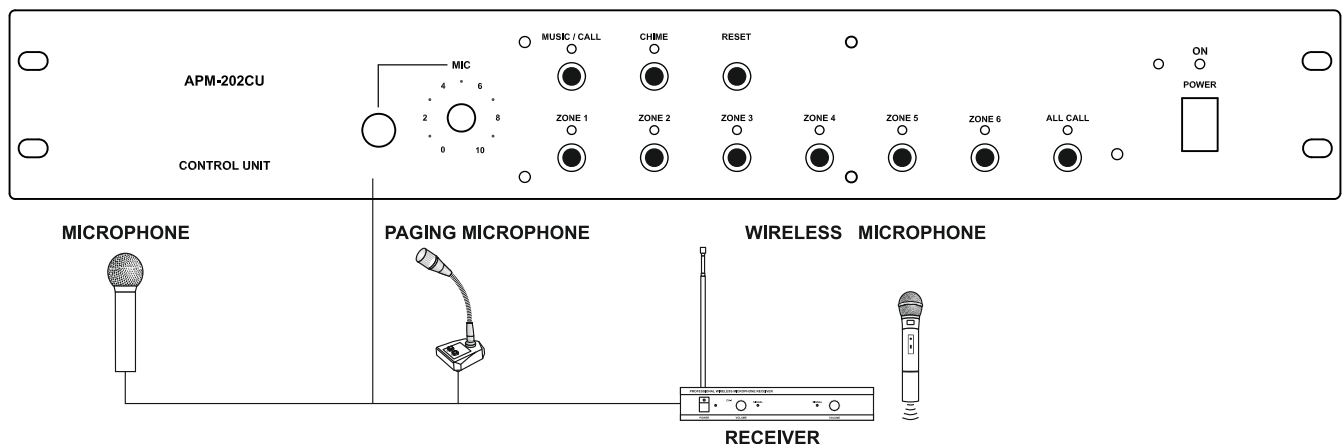


Fig. 5

# Interconnections....

## 6 Zone system setup, paging from one location with background music.

- Connect the APM-201RM to APM-202CU using 8 core cable as in Fig. 1.
- Connect the SPEECH OUT jack of APM-202CU to AUX jack of the speech amplifier.
- 100V output from speech amplifier should be connected to SPEECH terminal block on rear panel of APM-202CU as shown in Fig. 6.
- Connect the music source to the music amplifier for back ground music. 100V output from music amplifier will be connected to MUSIC terminal block on rear panel of APM-202CU as shown in Fig. 6.
- Speakers should be connected to output terminal strip of ZONE 1 to ZONE 6 of APM-202CU.

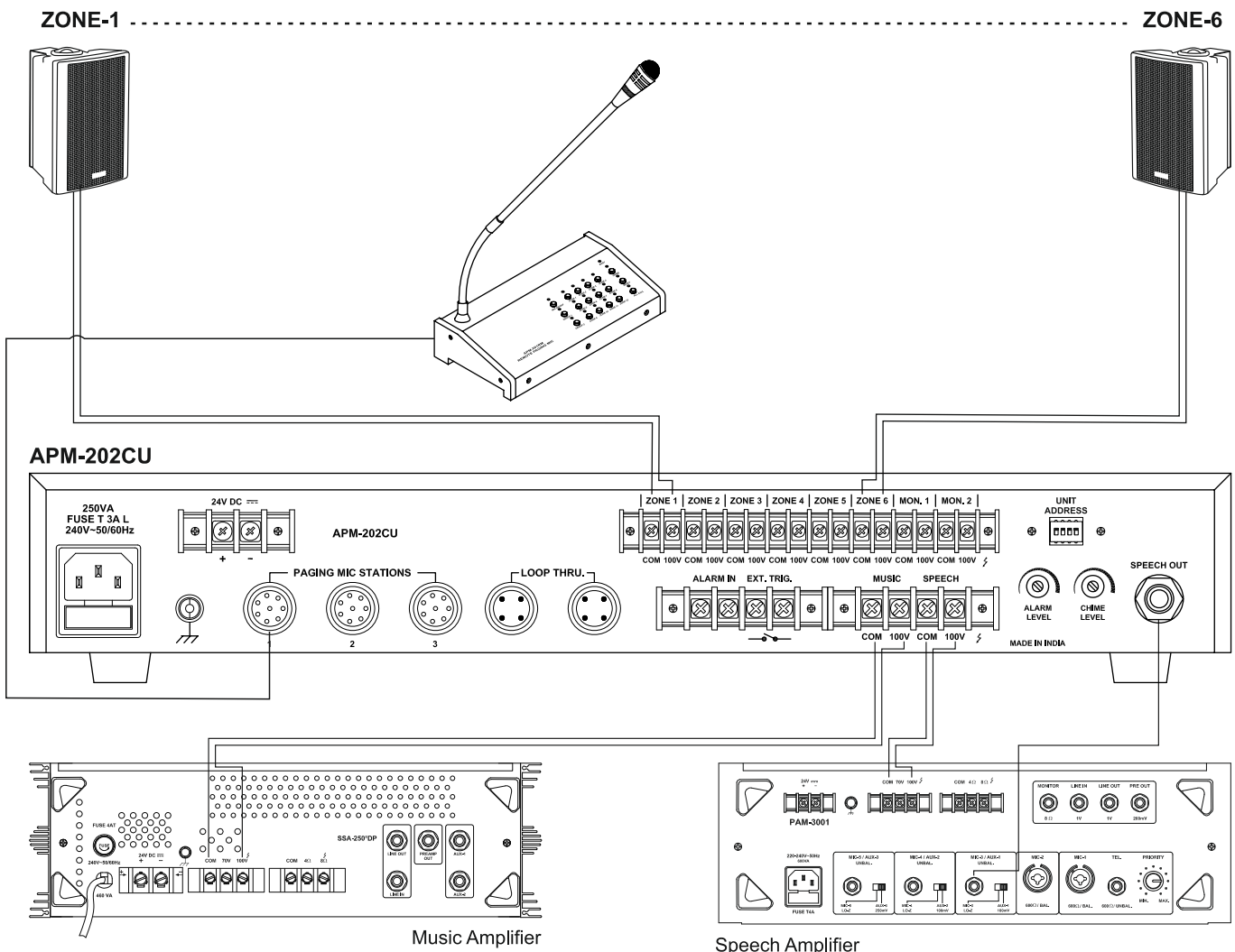


Fig. 6

## 12 Zone system setup, paging from two locations with background music.

- APM-202CU-1 (for Zone 1 to 6) will be looped to APM-202CU-2 (for Zone 7 to 12) using connection cable terminated with 4 pin female plug on both ends (cable pin connection as shown in Fig. 3).
- Connect the Remote Paging Mics to APM-202CU-1, which is called the Master Unit. All four DIP switches on the rear panel of this control unit should be in UP position. The other Control Unit is the Slave Unit. For this, the last DIP switch should be in DOWN position, while the other three should remain in UP position.
- MUSIC and SPEECH terminals on rear panel of APM-202CU-1 will be looped to MUSIC and SPEECH terminals on rear panel of APM-202CU-2.

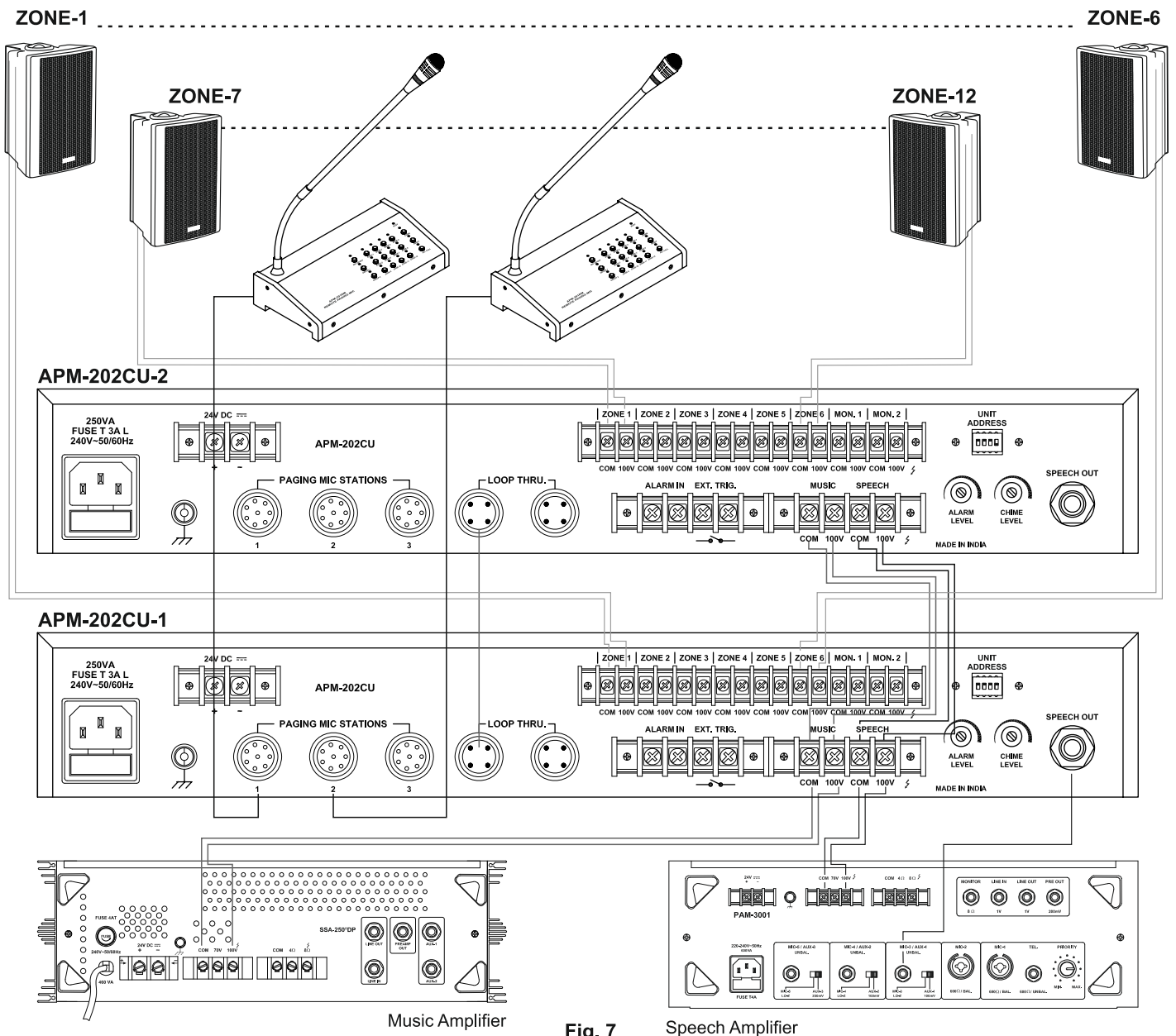


Fig. 7

Speech Amplifier

## • Specifications

### APM-201RM

<b>OUTPUT LEVEL</b>	250mV Balanced (nominal)
<b>SWITCHES</b>	12 Zone Selectors, All Call, Chime, Group 1, Group 2, Mic ON/OFF, Reset
<b>CONTROLS</b>	Mic level, Chime level.
<b>POWER SUPPLY</b>	DC 24V (from APM-202CU).
<b>DIMENSIONS</b>	W285 × H530 × D160 mm
<b>WEIGHT</b>	1.6kg

### APM-202CU

<b>SWITCHING SIGNAL LEVEL</b>	100V (nominal)
<b>INPUTS (Nominal)</b>	3 x APM-201RM (1V/10k balanced), 1 x Mic (1mV/4.7k),
	Speech Amp (100V), Music Amp (100V), Alarm (100mV).
<b>SWITCHES</b>	6 Zone Selector switches, All Call, Chime, Reset,
	Music/Call Selector, Power ON/OFF.
<b>CONTROLS</b>	Mic Level, Chime level, Alarm level
<b>POWER SUPPLY</b>	AC 220-240V, 50/60Hz ; DC 24V (2 x 12V Car Battery)
<b>DIMENSIONS</b>	W483 × H75 × D300 mm
<b>WEIGHT</b>	4.8kg

- Design and Specifications are subject to change without notice owing to continuous product upgradation.
- Technical specifications are subject to production tolerances.