

WMP-2100

Digital PA system



Installation Guide

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Before installation, please read this guide completely and keep it for your reference.

Safety Instructions

1. Please read and observe these instructions before installing and using the apparatus.
2. Use only accessories specified by the manufacturer. The manufacturer is not liable for damage caused by the use of non-specified accessories.
3. Install the apparatus and its accessories carefully. Strike and fierce shaking may damage the apparatus.
4. Make sure the power cord is fixed properly.
5. Do not overload wall outlets and extension cords as this can result in a risk of fire or short circuit.
6. To reduce the risk of damage from lightning strikes, it is important that all electric cables should be bonded to the same grounding point.
7. Do not block any ventilation openings to prevent overheating and malfunction.
8. Do not expose the apparatus to rain or moisture.

Humidity may lead inside components to damage. Appropriate shelter is necessary when placing it outside (Best working environment: Temperature 0°C ~ 40°C <32°F ~ 104°F>, humidity below 90%).

9. Please do not switch on and off the apparatus rapidly.

Rapid switch on and off the apparatus should be avoided all the time to prevent inside sensitive electronic circuits from being damaged by surges.

10. Do not clean the apparatus and its accessories with chemical solvents. Use only a clean, dry/dampish cloth.

11. Refer to maintenance technician when the apparatus has been damaged in any way, such as:

A• power-supply cord or plug is damaged

B• liquid has been spilled in

C• has been exposed to rain or moisture

D• has been dropped

E• objects have fallen into the apparatus

F• does not operate normally

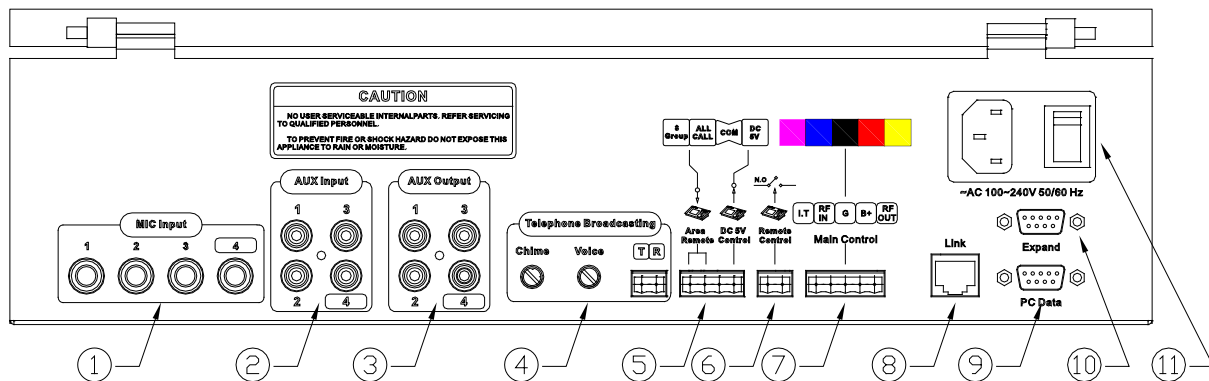
12. Note: When the printed circuit board is going through electric static treatment, correct ESD safety precaution and grounding should be assured.

13. **Note:** Before connecting the apparatus to main AC, please select the supply voltage in accordance with the wall voltage in your country to prevent damage. Refer to Installation and Setting (Page 8) for selecting.

14. **Warning:** Do not disassemble or remodel the product, as these actions may lead to electrical shock or damage. The guarantee on the product will become null if the product is ever disassembled.

System Installation Instructions

1. Rear Panel Function



Functions :

① ⇒ MIC-1~MIC-4: Microphone inputs (MIC1 has priority to broadcast)

② ⇒ AUX1~AUX4: Aux inputs (for CD, tape cassette, radio and timer...)

AUX 1 should be reserved for telephone broadcasting

③ ⇒ AUX OUTPUT : For external amplifiers or recorders

④ ⇒ Telephone broadcasting interface :

T R Connectors for telephone broadcast. System installers select an available line from the PBX (private branch exchange) to connect. After connected, you are able to broadcast via remote telephones.

VOICE : Telephone broadcast volume knob

CHIME : Chime volume knob

⑤ ⇒ External trigger: To activate enforced control connectors

Area Remote : **ALL CALL + COM** Enable ALL CALL, can be used with timer clock

8 Group + COM Enable Group 8, can be used with timer clock

DC 5V Control : **DC 5V + COM** DC 5V output trigger connector. When

broadcasting, the connector will output DC
5V which can be applied to flash alarm
(BXB WS-335T)

⑥ ⇒ Remote Control : Dry contacts trigger connector. When broadcasting, the
connector becomes a short circuit; it can be used to
switch on other equipments as well.

⑦ ⇒ Main Control : Connector for main cable (WMP-7c)

RF OUT (**Yellow**) : Signal output (from main console - decoders) connector

B+ OUT (**Red**) : DC-24V power connector for remote decoder (WMP-60)

G (**Black**) : Common ground for remote decoder (WMP-60) control signal

RF IN (**Blue**) : Signal input (from decoders - main console) connector

I.T (**Purple**) : Connector for intercom signal

⑧ ⇒ Link : Connector for other main console(s)

⑨ ⇒ PC-Data : RS-232 interface for BXB graphical control software

⑩ ⇒ EXPAND : Connector for extension control device (WMP-2100A)

⑪ ⇒ AC 110V- 240V (FUSE 250V 8A) : AC power socket and power switch (AC
90~240V 50/60Hz)

I. Main control cable and WMP-2100 configuration

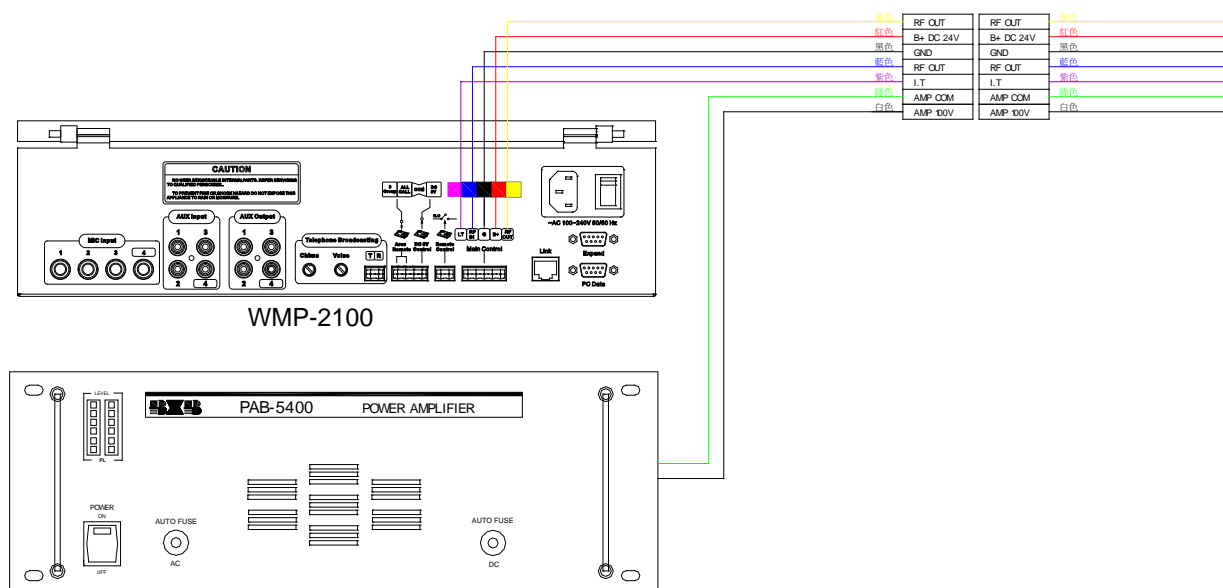


Fig . 1 Connection structure between WMP-2100 and WMP-7C

Wires configuration of WMP-2100 features color management, there are seven different control cables to transmit signals. Every colored cable is designed for a unique function as shown below.

Color	Abbreviation	Function
Yellow	RF OUT	RF control signal cable: output signal to decoder
Red	B+ OUT	DC 24V on WMP-60 Decoder
Black	GND	RF IN、RF OUT、B+ OUT、INTERCOM same ground wire signal cable
Blue	RF IN(KEY)	Return signal cable For example: N.O、N.C and self-detect
Purple	INTERCOM	Intercom signal cable: need connect the signal wiper and ground wire to control signal.
Green	COM	Power amplifier output AUX: No cathode or anode (No +/-different)
White	100V	Power amplifier output AUX: No cathode or anode (No +/-different)

Warning :

1. For maintenance and installation, please refer to the chart above.
2. Every wire has its unique function so please make sure the wiring is correct before turning on the unit. Otherwise, incorrect wiring might cause damage to it. (Please refer to Quick Check Installations).
3. To prevent damage, please use wires attached with WMP 2100 only.

II. Connection between Main Cable and Remote Decoder

Connection instructions:

1st. Remote Decoder (WMP-60) is built inside BXB speakers (e.g.

WS-665AM/60D & WS-817ALM/60D; WS-665T/60D & WS-817TL/60D)

2nd. Remote Decoder (WMP-60) is attached to the outside.

1. Remote Decoder (WMP-60) is built in BXB speakers :

a. Main controller and speakers operate in parallel; easily connect wires by colors according to the following chart.

b. 1 set of 7-colored quick connector is exposed to outside, connect them as the way above.

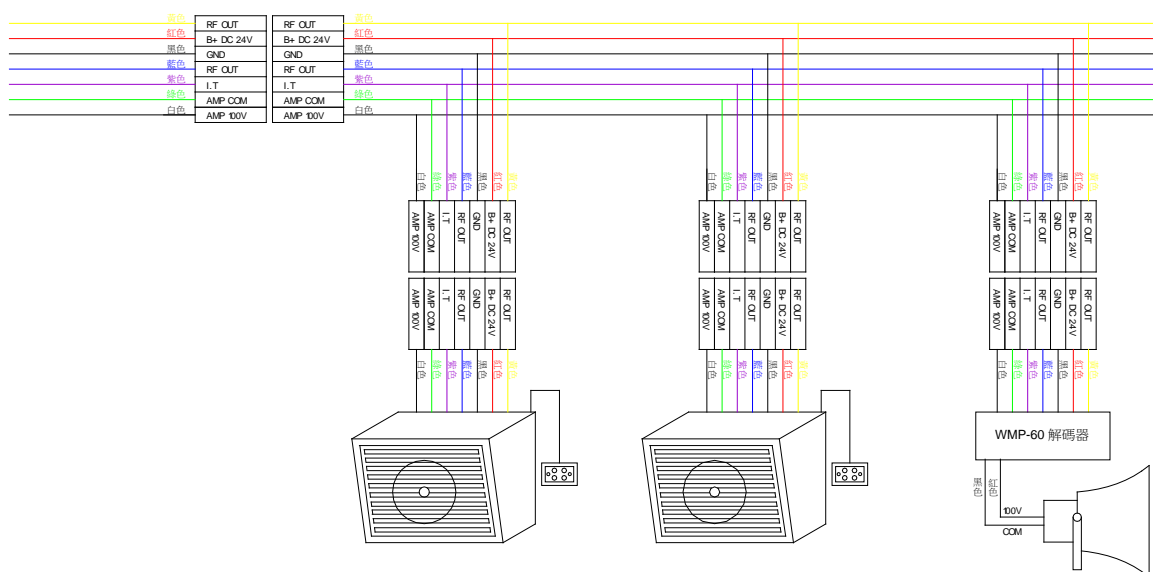


Fig. 2 Connection instructions for WMP-7c and BXB speaker (Build-in decoder)

2. Remote Decoder (WMP-60) is attached to the outside.

※ Note

The connection applies to any kind of high speakers. (Chart 3)

1. Parallel connection and color management is applied. Simply connect green to green, white to white, blue to blue, red to red...etc.
2. Users are able to connect external speakers (ceiling speakers, horn speakers...etc.), simply connect both red and black wires (Fig. 4) to the speaker's output autotransformer (there is no difference between cathode and anode)

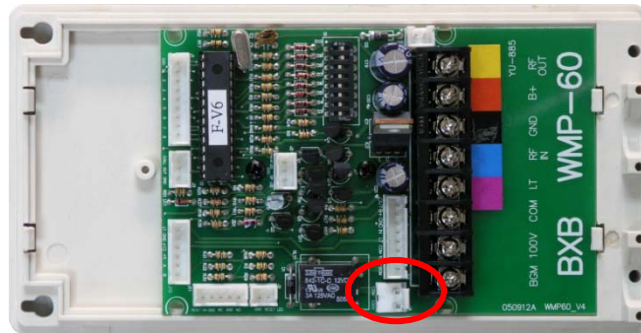


Fig. 3 external WMP-60

Both red and black wire are connected to the speaker (output: 100V/COM), and please neglect + or -. However, the speaker must be equipped with an autotransformer; otherwise it might be damaged.

3. Remote Decoder (WMP-60) is attached to the outside of BXB amplifier teaching speaker.

Please refer to Fig. 4 for connection instructions.

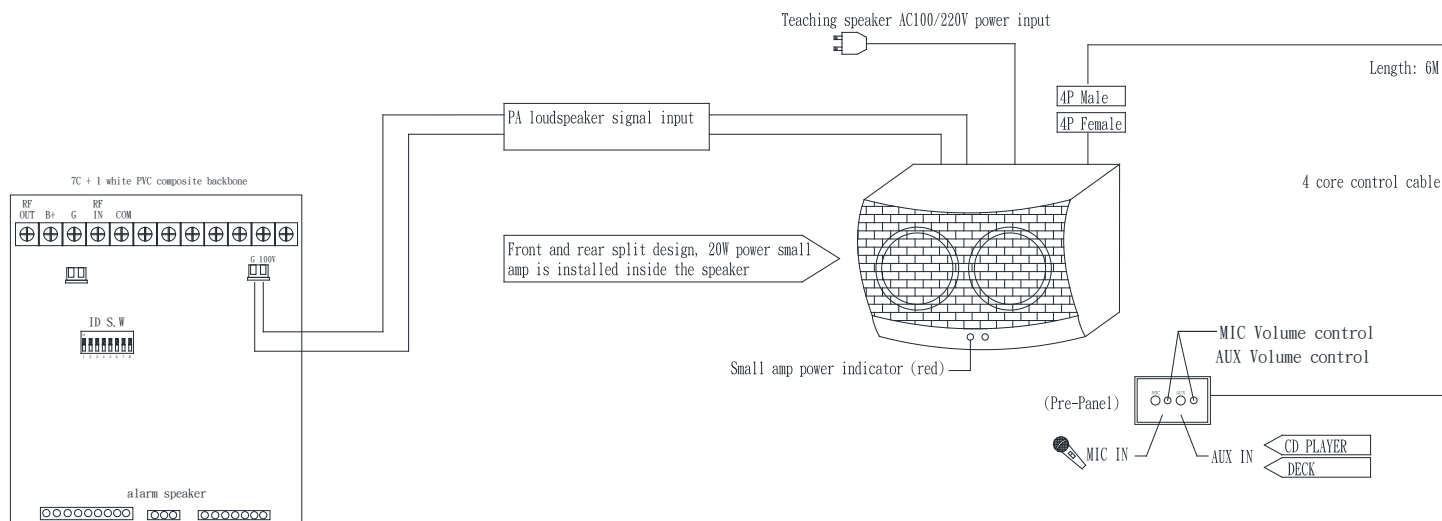


Fig. 4 Remote Decoder is used with BXB amplifier teaching speaker (WS-817AL, WS-665A)

4. WMP-60 Remote Decoder is used with BXB WS-335T vibrating buzzer

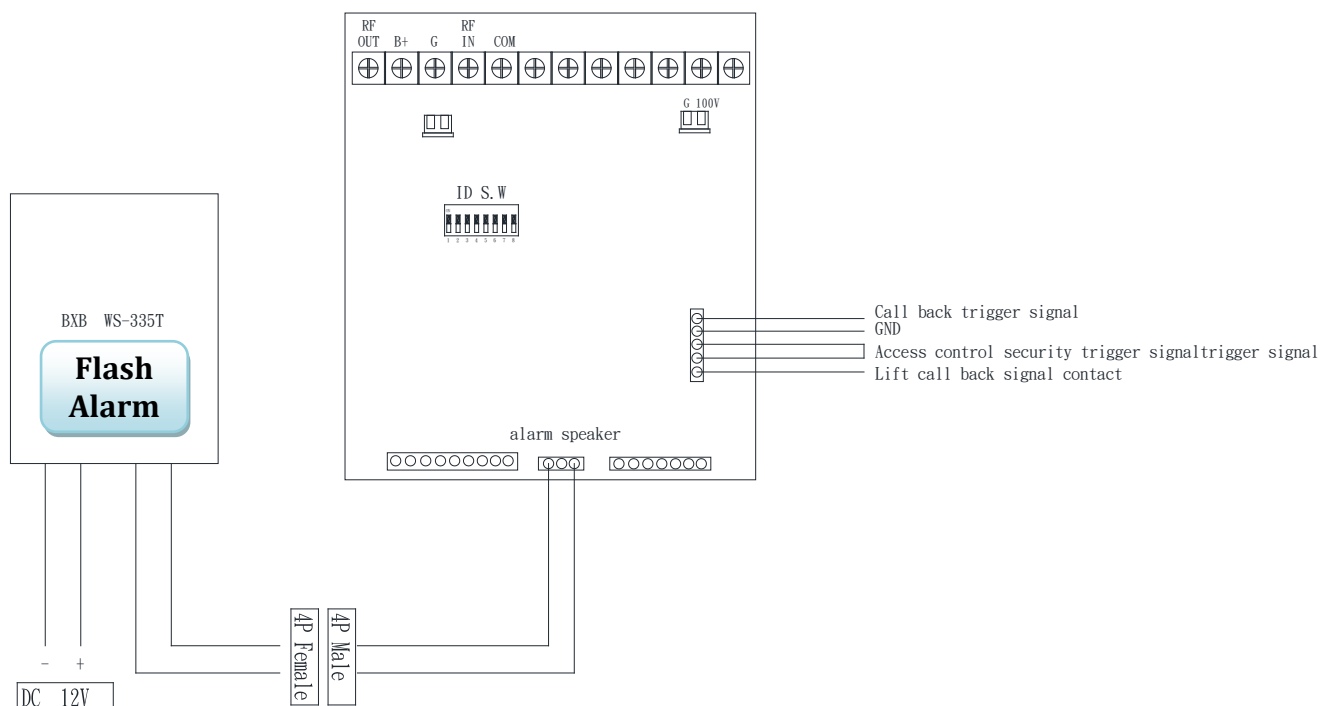
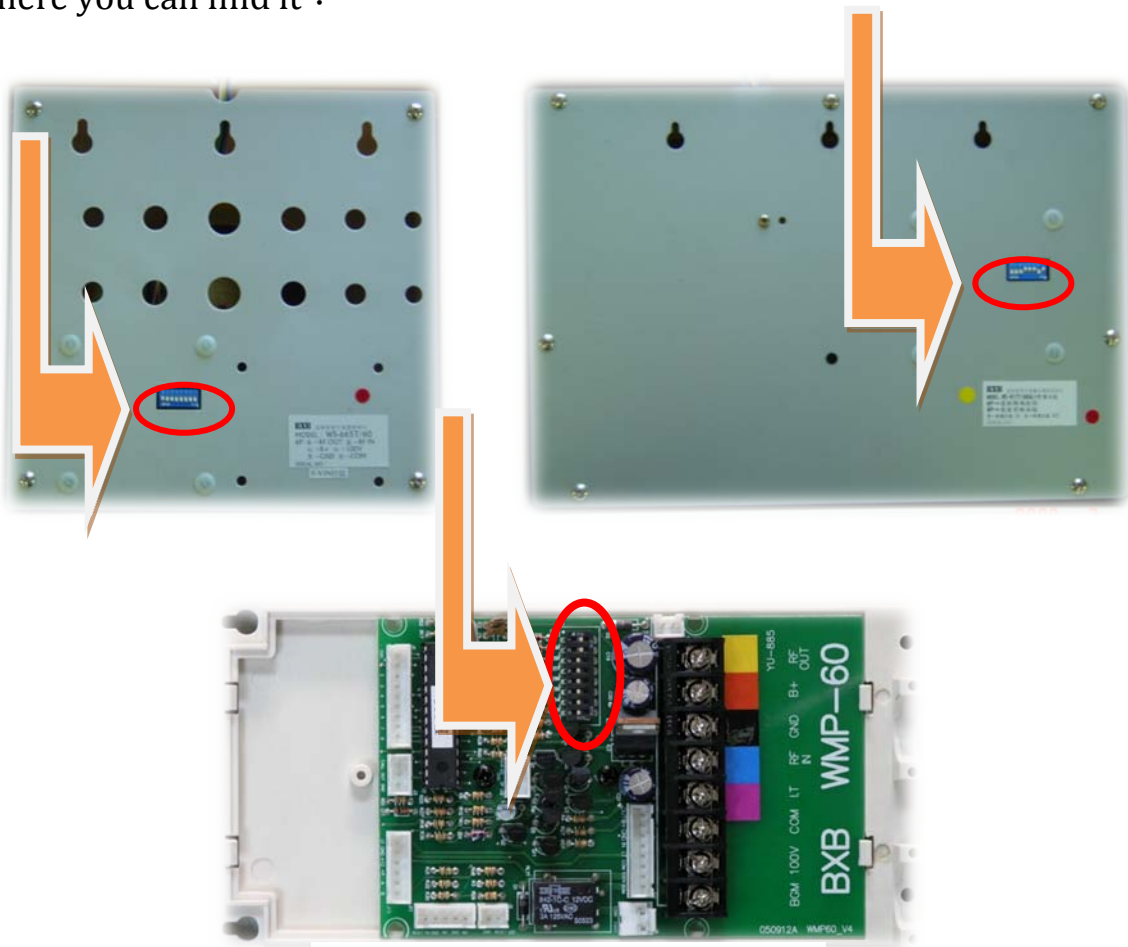


Fig 5. Remote Decoder (WMP-60) is used with BXB flash alarm (WS-335T)

5. Positions and setting of broadcast DIP switches

Easily change broadcasting zone from the back of BXB speaker or on remote decoder (WMP-60).

Where you can find it :



WMP-60 Remote Decoder

BXB Speakers with built-in decoder (WMP-60D)

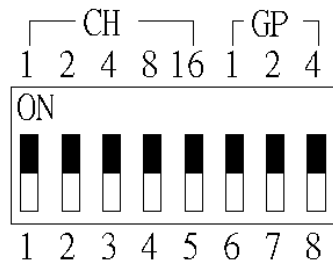
Amplifier Teaching Speakers:

WS-665Am/60D & WS-817ALM/60D

Box Speakers:

WS-665T/60D & WS-817TL/60D

a.WMP-60 DIP switch setting:



Each switch on decoder represents one-bit binary value.

The values of all switches in the DIP package are interpreted as one number.

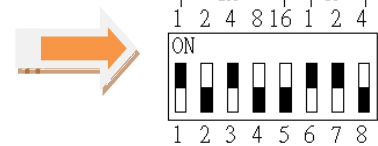
Definition:

GP= Group code (To set Group 1~8, all ON is 7, all OFF is 8)

Example 1 : Code 305 ⇒ Group 3 and area 5

GP 03 ⇒ DIP switch 6 、 7 are ON, 8 is OFF

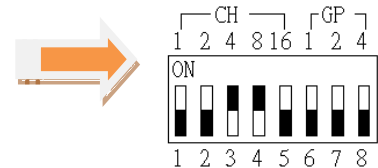
CH 05 ⇒ DIP switch 1 、 3 are ON, 2 、 4 、 5 are OFF



Example 2 : Code 812 ⇒ Group 8 and area 12

GP 08 ⇒ DIP switch 6 、 7 、 8 are OFF

CH 12 ⇒ DIP switch 3 、 4 are ON, 1 、 2 、 5 are OFF



b. WMP-60: 200 zones DIP switch chart

	1群	2群	3群	4群	5群	6群	7群	8群
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
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22								
23								
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25								

III. Linked control for two main console(s) (WMP-2100)

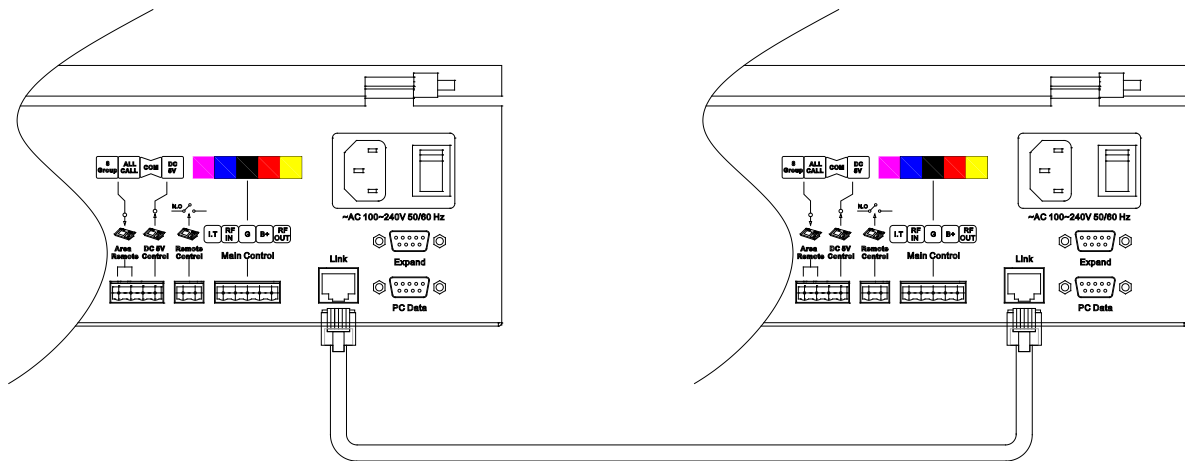


Fig. 6 connecting instructions for multiple WMP-2100s

※ Note

1. WMP-2100 is able to connect other WMP-2100(s) (Fig.6) and work mutually.
2. A 9-core control cable and a 2-core audio source cable are essential.
3. Distance between two consoles should be less than 1km (0.6 mile). If the length exceeds, please contact BXB Electronics for further assistance.

IV. Connection for extension control device (WMP-2100A)

※ Instructions :

- 1.WMP-2100 can connect up to 2 extension control units (64 zones each), in total supports 192 broadcast zones at most.
- 2.Every console has 8 memorable control group buttons, which means included 2 extension control devices; there are 24 group buttons at most.
- 3.If (there are) more than 192 zones, users can install another main console (WMP-2100) for extension.
- 4.Please refer to Figure 7 for connection instructions.

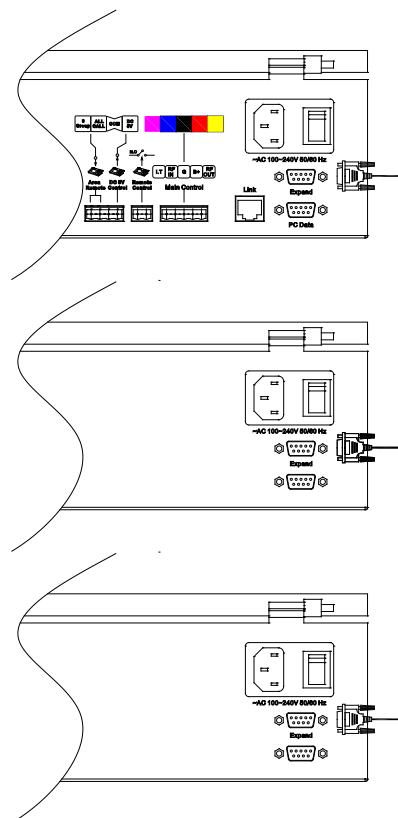


Fig. 7 WMP-2100A Connection

V. Connection for Graphical Control Software

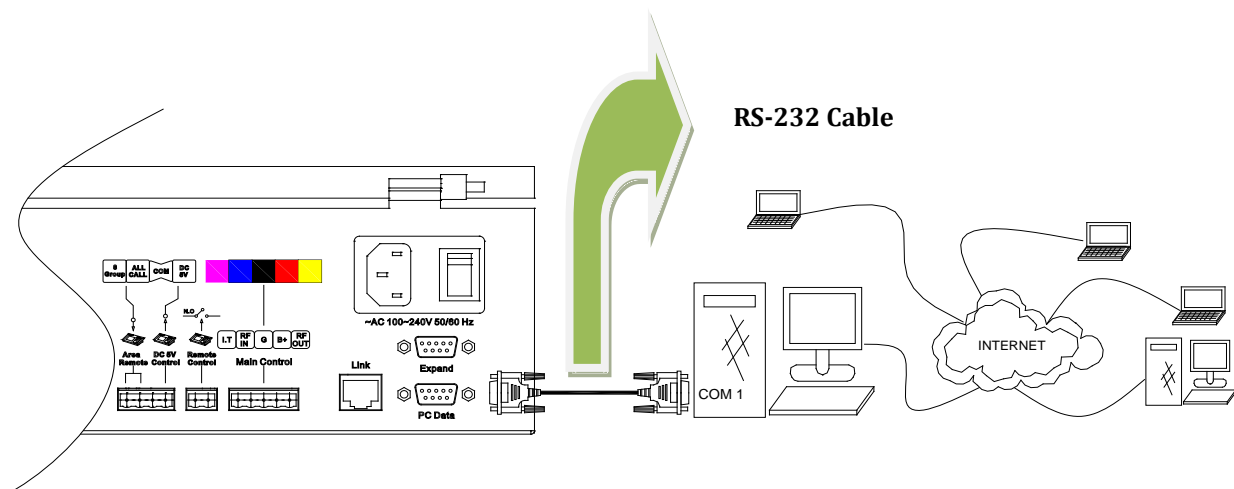


Fig. 8 Connection between Graphical Control Software and WMP-2100

※ Note

1. WMP-2100 is compliant to PA control software, refer to Fig. 8 for connection (Fig. 8).
2. Parallel RS-232 cable (without jump wire) is required.
3. Simply complete setup by connecting RS-232 on PC Server.
4. The system can be controlled through Internet/ Intranet. (Control software should be installed on remote computer.)
5. By installing Control Software on remote computers, you can also control the system via the Internet/ Intranet/ Wireless Lane.

VI. Connection for Telephone broadcasting system

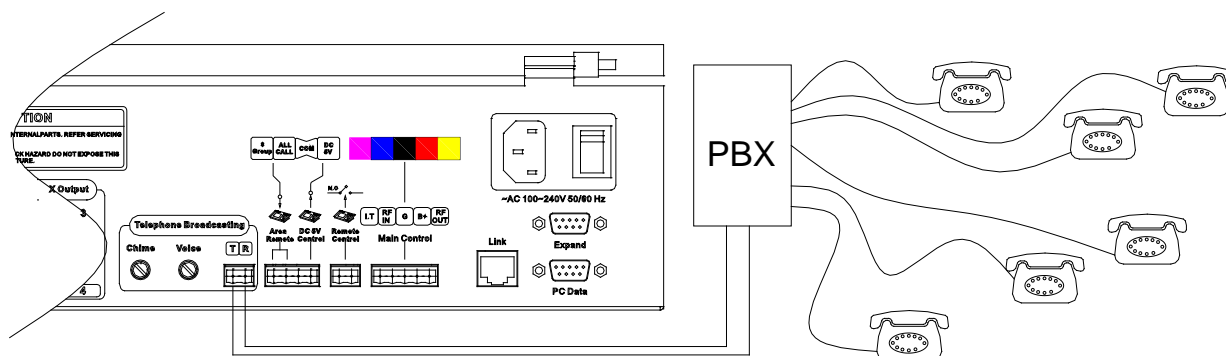


Fig 9. PBX (private branch exchange) and WMP-2100

Simply connect a 2-core cable to PBX external ports to activate telephone broadcasting, refer to Fig.9 for connection.

※ Note

1. You can activate telephone broadcasting on the phone without operating the main unit.
2. Please contact technician or your service provider to limit certain extensions for broadcasting.
3. Output volume might vary from different PBXs, chime and broadcasting volume can be adjusted separately from rear panel. Adjust the two knobs when installing, and adjust AUX1 from front panel in the future.

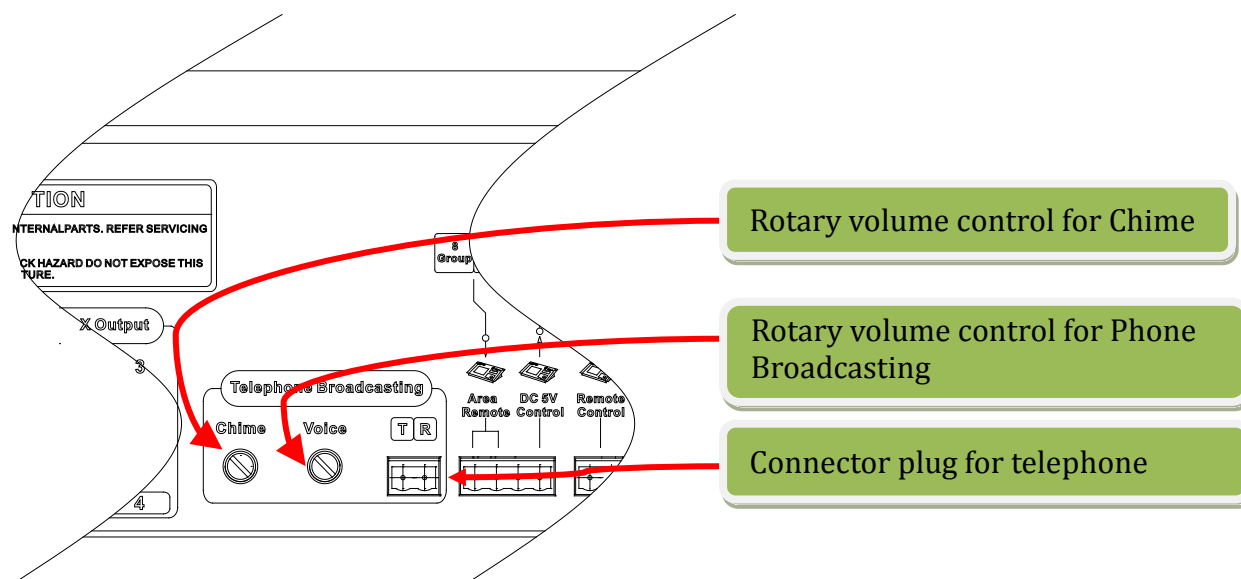


Fig. 10 Telephone broadcast interface

VII. External activated port and installation

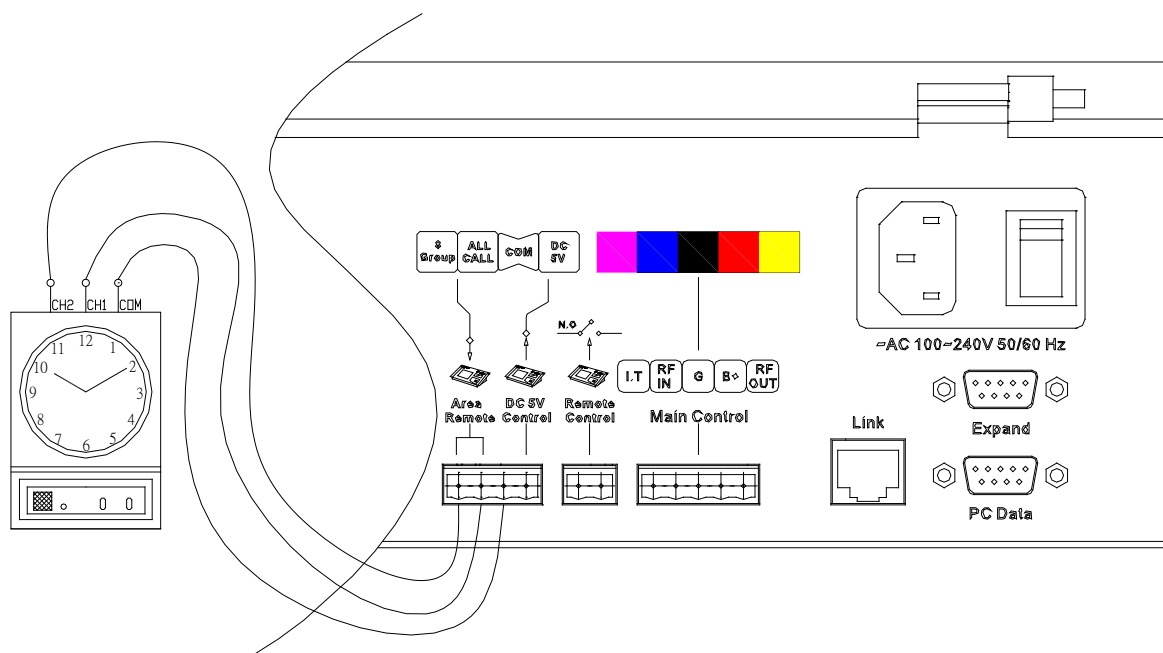
1. There are 2 external trigger connectors on main controller, which apply to a timer clock and other flip-flops.

2. Two external control wipers function :

◎ALL CALL+COM Broadcast to all zones

◎8 GROUP+COM Broadcast to Group 8

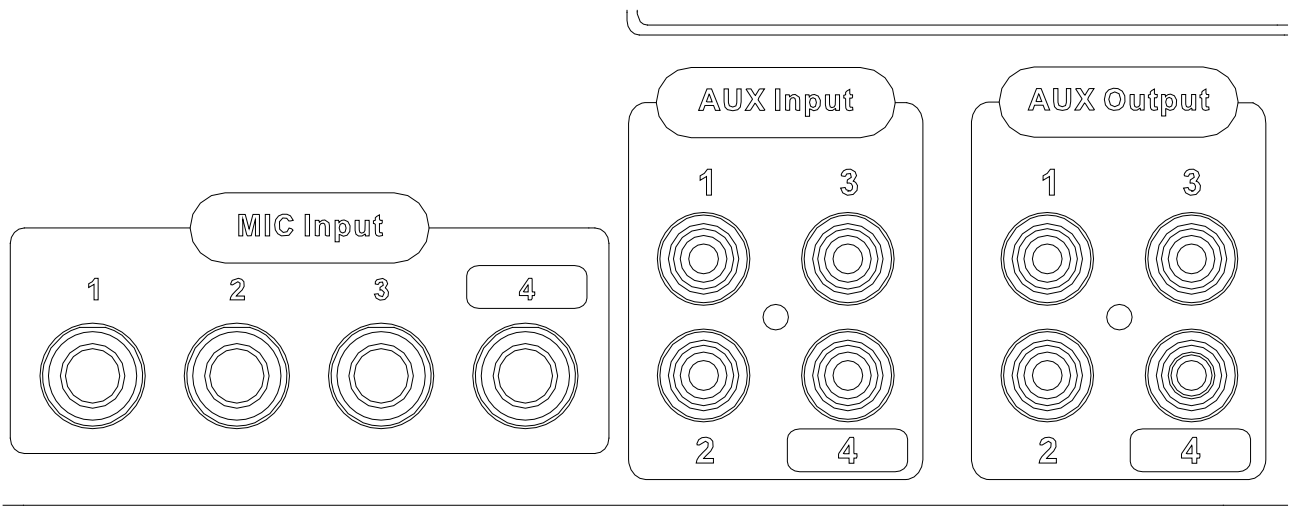
3. Connection for timer clock



◎Please refer to sound source input instructions for timer clock audio source connection to complete installation.

※BXB also provides digital multi-function music timer clock on PA Control Software. There are 24 groups of regular broadcasting, 8 groups of unlimited setting, mix/random track playing mode...etc. You can even broadcast through the Internet by it. Please contact us for more information.

VIII. AUX Input Description & Application



1. MIC Input :

- a. MIC-1 has priority to broadcast, which can be used for emergency broadcasting. When broadcasting, other audio source will be mute. Sounds will resume once finish.
- b. MIC-4 on the real panel and MICRO PHONE input on the front panel work in parallel. Thus, if both of them are used at the same time, the gain for them will be attenuated. In that case, turn up the volume (MIC-4 on the front panel) to balance.

2. External Aux input :

- a. AUX 1 should be reserved for telephone broadcasting only.
- b. AUX2~AUX4 are for CD player, tapes recorder, radio, MP3 player and other external equipments.

3. External Aux output :

- a. AUX Output (1, 2, 3, and 4) for output signal to amplifiers or recorders.

IX. Inspection for wire configuration

★ After the whole system is completely installed, connection and impedance value should be inspected carefully. If one of the cables is short-circuited, WMP-2100 will be seriously damaged and malfunction. Please refer to the following instructions:

Required tools :

◎ VOM (Volt-Ohm-Milliammeter): Measuring if the cables and high-pressure signal wires are short-circuited.

◎ VTVM (Vacuum Tube volt Meter): Measuring whether the high-pressure signal wires are short-circuited.

☆ Cross-inspecting among control signal lines, high-pressure signal lines, and control lines interaction checking.

1. Main control cables (WP-7C) should be checked by colors: **RF OUT**

(Yellow) 、 **B+ (Red)** 、 **RF IN (Blue)** 、 **G (Black)** . If intercom function

is activated, please inspect **INTERCOM (purple)** signal cable as well.

2. Switch the ammeter button to $\Omega \times 1$ position, measure following wire in pairs.

RF OUT (Yellow) & **B+ (Red)**

RF OUT (Yellow) & **RF IN (Blue)**

RF OUT (Yellow) & **G (Black)**

B+ (Red) & **RF IN (Blue)**

B+ (Red) & **G (Black)**

RF IN (Blue) & **G (Black)**

3. Please switch the ammeter to $\Omega \times 1$, and check control signals and high-pressure signals impedance value. High-pressure signals are **100V (White)** and **COM (Green)** . If the there are more than one high-pressure signals, please inspect these high-pressure signals as well.

100V (White) & 【 **RF OUT (Yellow)** 、 **B+ (Red)** 、 **RF IN (Blue)** 、 **G (Black)**】

COM (Green) & 【 **RF OUT (Yellow)** 、 **B+ (Red)** 、 **RF IN (Blue)** 、 **G (Black)**】

- ☆ Usually, positive and negative (+/-) impedance values are high (above 500 Ω) unless there are any short-circuits. If that happens, use 1/2 troubleshooting method to examine. Connect the cables to WMP-2100 after examining.
- ☆ After examining, turn on WMP-2100 and it will start auto-scanning. Make sure all the decoders work properly then connect high-pressure signal lines to a power amplifier.
- ☆ If more than two main consoles are connected, please make sure all the connected apparatuses work properly. Next, inspect connection on WMP-2100A according to [III. Linked control for two main consoles](#) on P.14.

X. System Structure

