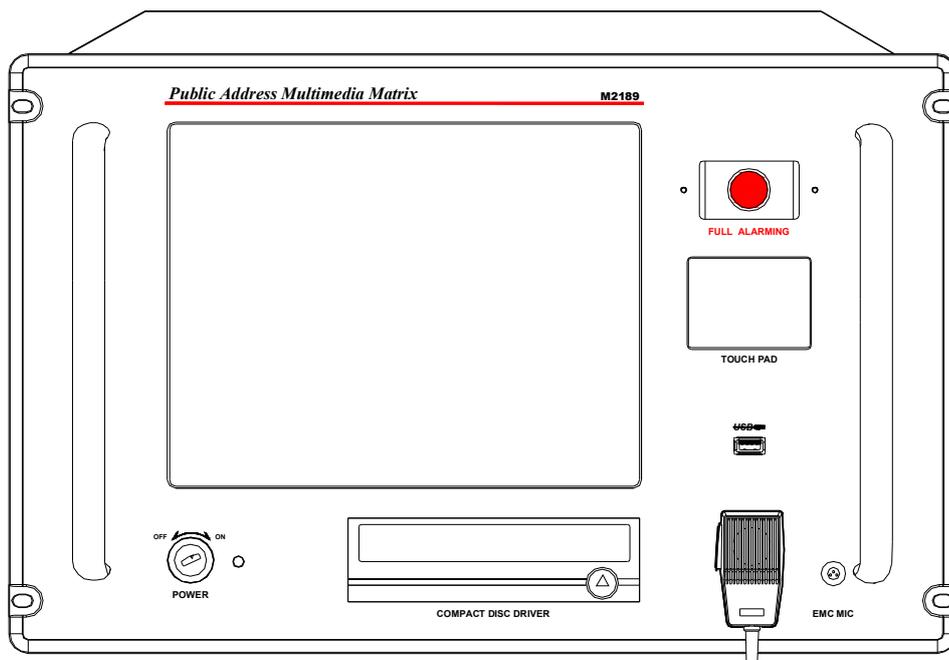




Public Address System

Public Address Multimedia Matrix M2189



User's Guide

Welcome to use our public address system. Please read this manual carefully before using this device for your better use.

LY International Electronics Co., Ltd.

<http://www.lyintlcorp.com>

About this Manual

This Manual is used since the date when the development of Intelligent Broadcast Center System is completed. The manual contains the system introduction, precautions, system connection instruction, product use instruction, product specification and so on. Please read this manual carefully before installation and use of the device. Follow the instructions in the manual.



All instructions with this mark on the back panel of the machine are matters needing attention. Be sure to use or operate the device according to these instructions.

Please keep the Specification properly for unexpected needs.

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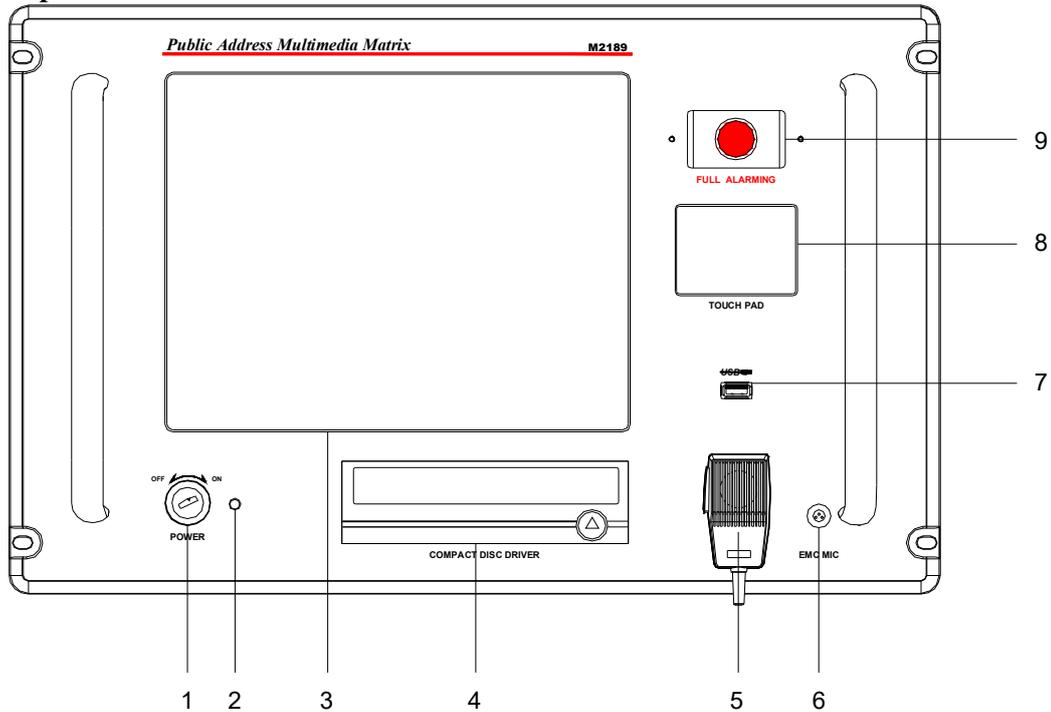
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Performance features

- Friendly big display screen.
- Easy to control the touch screen (or touch pad).
- Automatic Chinese/English display mode conversion.
- 50×250 strong digital broadcasting matrix.
- Built-in exclusive electroacoustic program sources. Background music broadcast is supported with no need to externally connect the sound source device (high capacity program memory that makes it possible to continuously broadcast programs without repetition for up to a week).
- Special program sources can be built in according to user needs, such as etiquette, gymnastics tracks, various bells, alarm whistles and guest greeting, seeing guests off, warnings and other broadcasting audio files.
- City call interface is available, and calls can be answered or rejected automatically. Convenient for a telephone remote control or holding a teleconference.
- 1-48 remote control partition paging channels.
- Fire control/disastrous alarms, paging, phone calls break in automatically.
- Module functions such as normal input, priority input, paging input, normal input of partition, monitoring, extend output/input modules can be selected.
- Green operating system. Host and peripheral equipment can be programmed for timing, to run while automatically saving energy.

I. Descriptions of front and back panels and modules of smart host

1—1 Front panel



1. Key switch (POWER)

The key switch is the machine's power switch. The power can be turned on by clockwise rotating the special key for network broadcasting system host. Before turning off the power, please enter the "system setting" interface, and use the "close the system" button to close the system.

2. Power indicator light

The indicator light will be on when turning on the power. When the power is just turned on, the indicator light will flash yellow, showing that the system is being started. After the system is started, the indicator light will turn solid green.

3. Display screen

Color display/touch screen, display various information of the machine in real time; directly touch the screen to operate the function items.

Prompt: USB interface can externally connect the mouse, to operate the device. Pin 2 of the EMC MIC is connected to the signal port, and pin 1 and 3 are grounded.

4. Built-in compact disk driver of CD player

Press the in and out key to open the disk driver, and put the CD disk in the disk driver, then press the in and out key again to close the disk driver. (note: please do not close the disk driver with your hands forcibly)

5. Handheld emergency paging microphone holder

Hang the microphone here facing forward when not using the emergency paging microphone.

6. Handheld emergency paging microphone jack (EMC MIC)

The handheld emergency paging microphone is the top priority. When pressing the speech switch of the microphone, all partitions will be opened automatically, and all other signals are under waiting state. (please see the instructions for use for the operations of emergency paging microphone CB-100, here we will not repeat it.)

7. USB interface (USB)

The USB interface is used to connect U disk, mobile hard disk or other memory devices to copy programs for the system. And also, it can connect keyboard or mouse with a USB interface to upgrade the software.

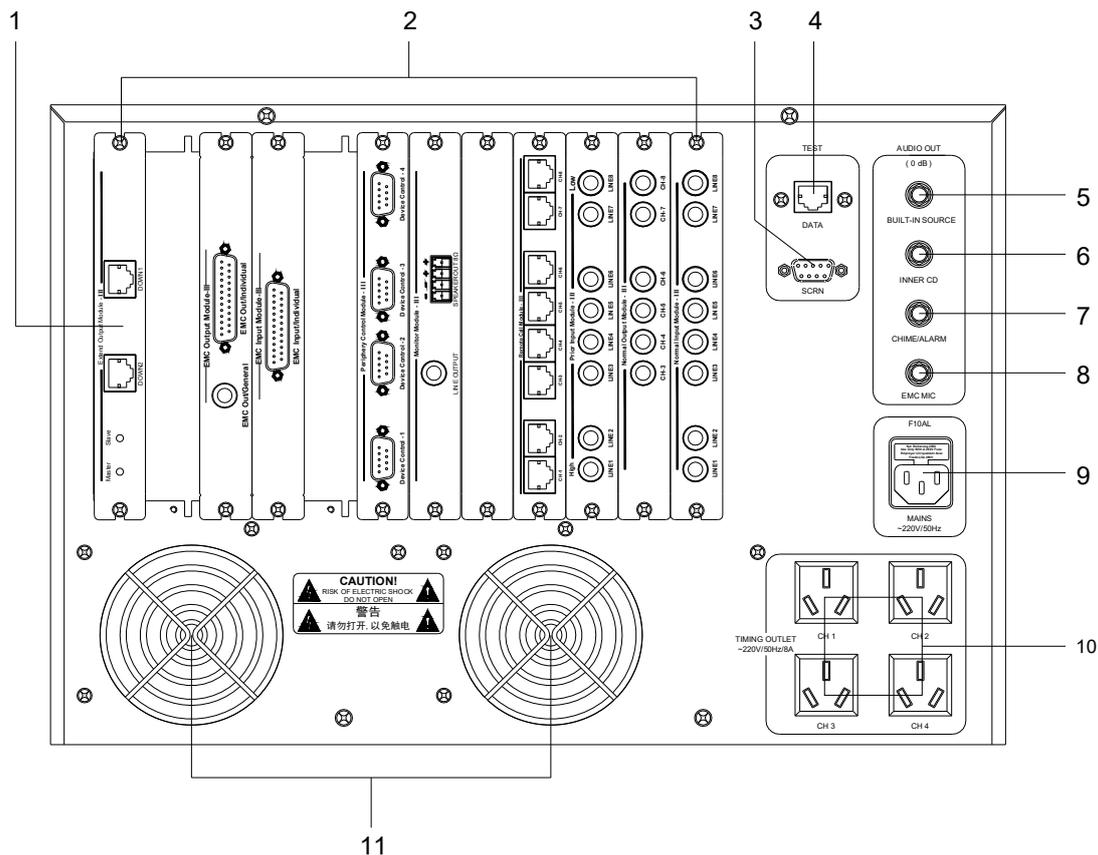
8. Touch pad

It is used to operate the system (which is equivalent to the computer mouse). Point contacting the touch pad with your finger can select the operation items, and touching it with your finger and move on it can move the selection cursor on the screen.

9. One-key alarming trigger key (FULL ALARMING)

After the key is pressed, the signals sent through it will be the second priority, just behind the emergency paging microphone (6). After the key is pressed when an emergency occurs, all partitions will be opened automatically, and warning signals will be sent to all partitions. The key will turn red when it is giving an alarm, and press it again, the alarm will be ended.

1—2 Back panel



- | | |
|--|--|
| 1. Data interface connecting extension box | 7. Bell/alarm signals audio out |
| 2. Function extension module | 8. Emergency microphone audio signal outlet |
| 3. VGA interface (mainly for debugging) | 9. Mains input and fuse holder (AC220-240V) |
| 4. Network interface | 10. Timing power outlet socket (output AC220-240V power) |
| 5. Built-in player audio signal outlet | 11. Heat-removing and ventilating window |
| 6. Built-in CD player audio signal outlet | |

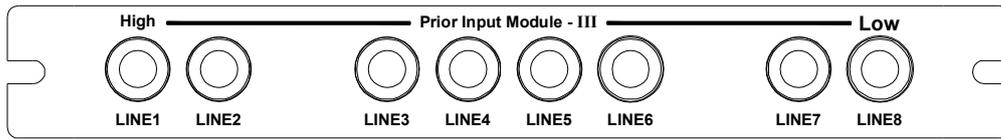
1—3 Function module

According to the needs of different application situations, the smart broadcasting center can configure the system functions with the function modules being chosen by users. The optional function modules, and functions of each module and quantity of modules selected are listed in the table below. To ensure the normal operation of the system, the function modules can only be assembled by the authorized distributor.

Module name	Functions and roles of modules	Quantity
Prior input module M2821	An indispensable module of the system. 8 lines of audio signal input (all lines are a line level port), with different priorities. Signals of the top priority are output first. Signals for fire control can break in.	1
Normal input module M2822	An indispensable module of the system. 8 lines of audio signal input (all lines are a line level port); signals from each line are processed independently, and can be distributed to any output channel.	0~6
Partition output module M2864	An indispensable module of the system (at least 1 module shall be provided). 8 lines of audio signal input, and any input sound source can be called for each line.	1~33
Alarm input module M2880	Each module can receive 16 lines of alarm signals from the fire control center, and can be programmed and compatible with high/low alarm level. (optional)	0~16
Break-in control module M2832	16 lines of break-in control signal output, used for activating alarms, paging and call break-in area. (optional)	0~16
Monitor module M2818	An indispensable module of the system. Automatically/manually monitor signals output from sound sources or partitions.	1
Remote call module M2826	8 lines of remote partition paging interfaces. Externally connect the remote terminals, and the remote control distance can be 1 kilometer. (optional)	0~6
Peripheral control module M2820	It can program or operate the peripheral sound sources, smart amplifiers and solid recorders. (optional)	0~6
Extend output module M2899	An indispensable module of the system. It can only access to the host, and can be used directly with the extend input module.	0~5
Extend input module M2898	It can only access to the extend machine, and can be used with the extend output module, and can also be cascaded.	0~10

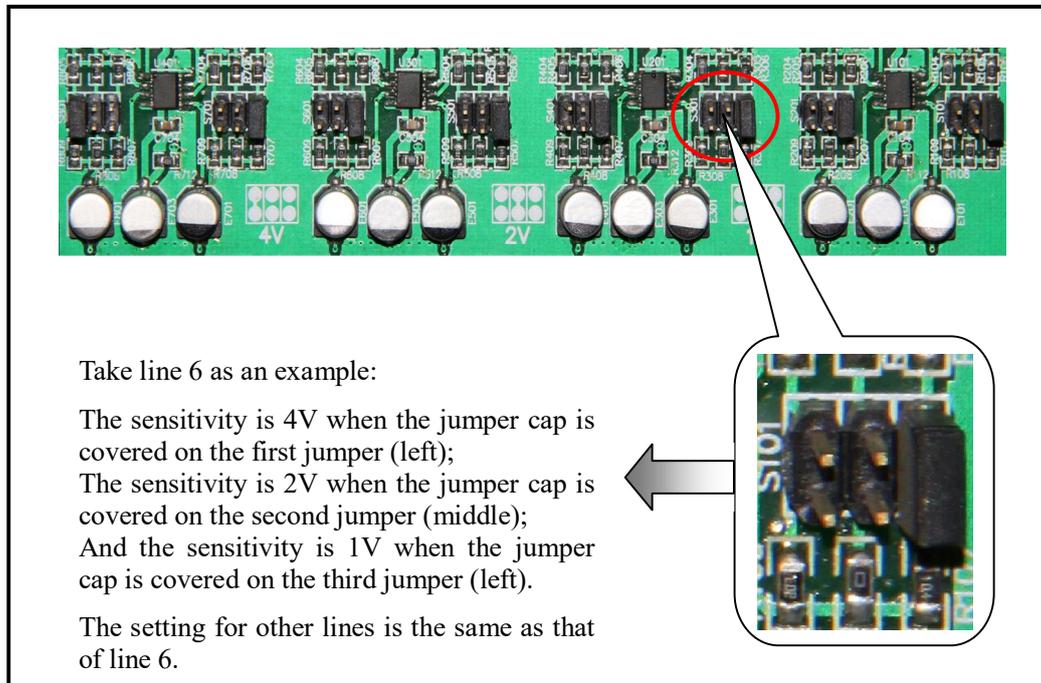
12 function module slots are provided on the back of each smart broadcasting center (host), and they can configure 12 function modules. If a system needs to install more than 12 extend modules, then it is necessary to connect a smart module extension box (M2800). A smart extension box can install 12 function modules. The extension box is linked to the host or other extension boxes via network. See page 3 descriptions of the machine's back panel for the linking interface of the extension box.

1—3.1 Prior Input Module (M2821)



LINE1~LINE8: the ex-factory default of input port sensitivity from line 1 to line 8 of this module is 4V. If the sensitivity needs to be improved, it can be set as 1V and 2V through jumper according to the operation method as follows:

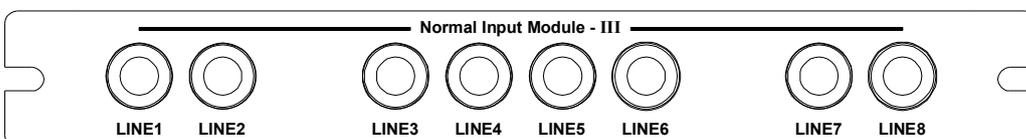
Perform operations shown in the figure below at the jumper setting position of the input module:



Input signals of 8 lines of the **prior input module** are different in priority. Line 1 is the top priority, followed by line 2, 3, 4, 5, 6, 7 and 8. When signals come from line 1, all signals from line 2, 3, 4, 5, 6, 7 and 8 will be mute; and others do analogically. After the input signals of 8 lines are sorted according to their priority, they enter the system as a sound source, which is the “**prior sound source**” on the main interface of the screen. When pressing the “**prior sound source**” button, you can operate the **prior input module** correspondingly, such as partition allocation and volume adjustment.

After the system receives the fire control/disaster alarms, it will forcibly allocate the prior sound source to partitions where alarms need to be given and the selected adjacent regions. Please refer to descriptions of item 4—9.

1—3.2 Normal Input Module (M2822)



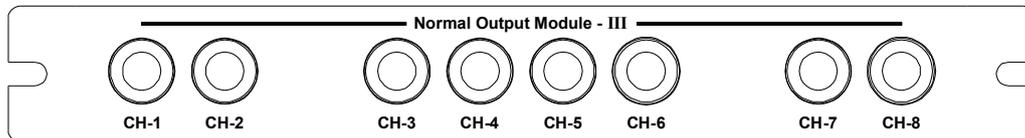
LINE1~LINE8: the ex-factory default of input port sensitivity from line 1 to line 8 of this module is 4V. If the

sensitivity needs to be improved, it can be set as 1V and 2V through jumper according to the operation method of the prior input module. Please refer to descriptions of item 1-3.1.

Input signals of 8 lines of the **normal input module** are processed separately as 8 independent sound sources to enter the system, and they correspond to the 8 sound sources on the main interface of the screen (default).

The users can choose to purchase 6 **normal input modules** at most, and these modules are set by the distributor, corresponding to No.“9 ~ 48” sound source.

1—3.3 Partition Output Module (M2864)

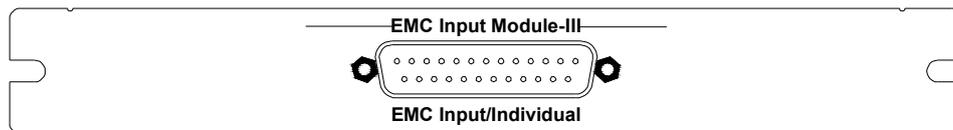


Each partition output module is provided with 8 signal output ports, respectively corresponding to 8 audio signal input interfaces that connect 8 primary and 1 standby smart amplifier, or connecting with audio input interfaces of other amplifiers.

The nominal output level of the partition output is 1V (0dBV).

When the system has only 1 output module, the 8 signal output ports correspond to No.“1, 2, 3, 4, 5, 6, 7 and 8” partition on the main interface of the screen (default). If there are more than 8 partitions in the user’s system, several **partition output modules** shall be used. One **partition output module** shall be added for every 8 partitions increase. The partition number to which each output module corresponds is determined by the distributor through hardware setting of the module. At most, 250 partitions can be set, requiring 33 **partition output modules** in total.

1—3.4 Fire control/disaster alarm input module (EMC Input Module – M2880)

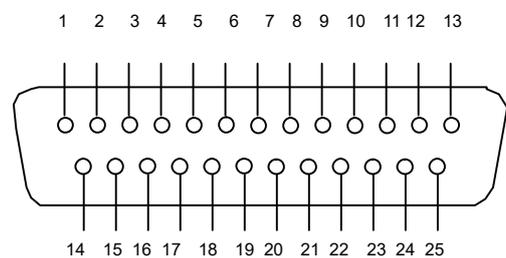


The module is the connector between the broadcasting system and the fire control center. Type D port with 25 pins (EMC Input Individual) should be connected to the fire control center, and each port can receive 16 lines of alarm signals.

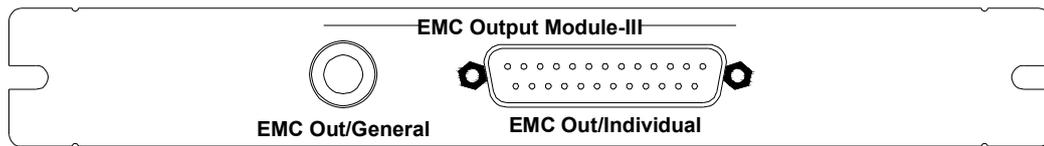
Functions of pins of the port are as follows:

Pin 1~16: hot end, respectively respond to control signals of line 1~16 of alarm input of this module; **pin 17~25:** cold end (common terminal), “ground” of the alarm signals.

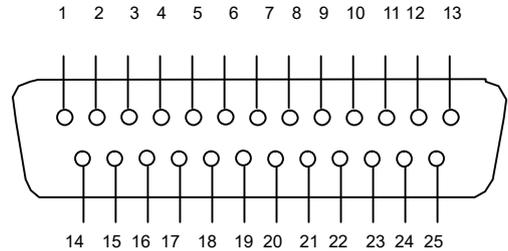
If there are more than 16 lines of alarm signals, then it is necessary to use several **alarm input modules**. At most 16 **alarm input modules** can be used to receive 256 lines of alarm signals of the fire control center. The serial number of each module is determined by the distributor through hardware setting of the module.



1—3.5 **Break-in control module** (EMC Output Module – M2832)



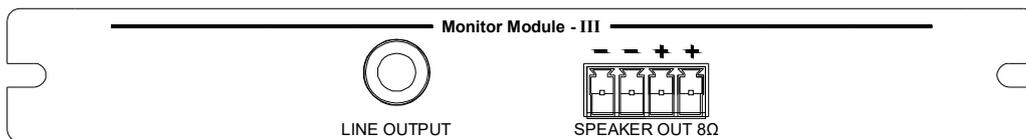
The module is used to activate the equipment (they may be closed currently) in alarm, paging and call break-in areas, to forcibly insert an emergency broadcast. Type D port with 25 pins (EMC Out/Individual) is the outlet of partition break-in activation signals, among which pins 1~16 respectively correspond to the hot ends of partition 1~16 of this module, and pins 17~25 are cold end (common terminal). When breaking in, short-circuit control signals are output, and the short-circuit control ability of each line is 100V/1A. Under typical conditions, these pins should be connected respectively to the ALARM connector of three-wire system partition amplifier.



6.3mm dual core port (EMC Out/General) also outputs break-in (short-circuit) control signals. When any line of the module outputs break-in signals, this port will output alarm signals (standby use), and the drive capability is also 100V/1A.

Generally, the optional quantity of **break-in control modules** in the system should be the same as that of the **alarm input modules**, and their serial numbers are also determined by the distributor through hardware setting.

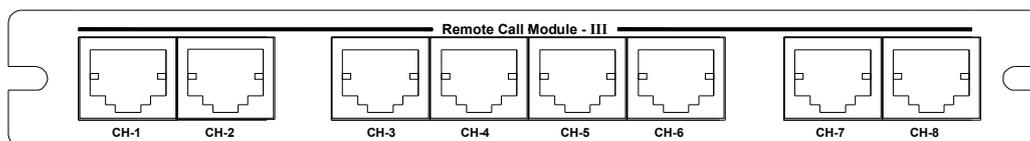
1—3.6 **Monitor Module** (M2818)



The module is used to monitor each link of the system, and the specific monitoring points are operated by the person on duty on the main interface of the screen. However, when there are alarm, call or paging signals, it will forcibly switch to monitor these emergency signals automatically according to the priority: alarms—paging—call. 6.3mm dual core port (MON) is the monitor outlet, which can externally connect the monitor earphone or small active speaker.

Output of the amplifier (10W) can directly connect the speaker (8Ω).

1—3.7 **Remote Call Module** (M2826)

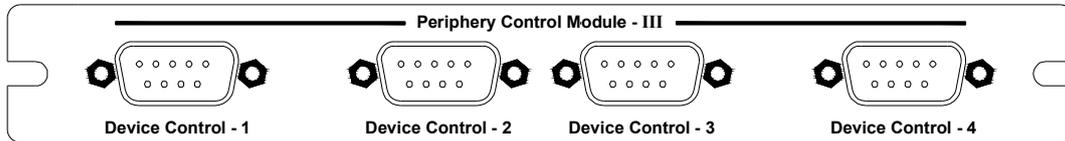


The module is a remote partition paging port, which shall externally connect the **remote partition paging terminal M2588**. A remote call module can connect 8 **remote partition paging terminals**. The connecting line is

MRS-8, with a maximum distance of 1 km.

1—3.8 Peripheral Control Module (M2820)

The module is a special interaction module for the public address system, which is connected from its control port to the link port of other devices of our broadcasting series (such as M series sound source device, M series amplifier and PM-9917, etc.) via MRS-9, so that these devices can be operated online together with the center. For example, the center can be used to program the reception/tape/CD in the M series sound source device; to monitor the running status of the M series amplifier; or to remotely play PM-9917, etc..

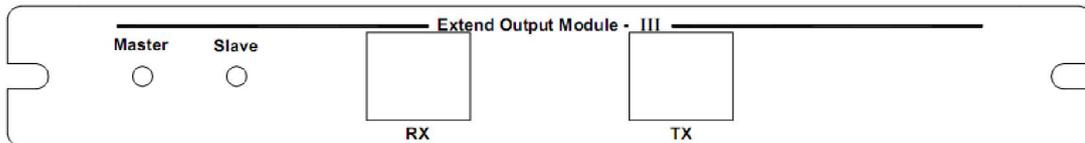


Control of eight primary and one standby smart amplifier by the periphery control module:

Periphery card control port is connected to the “DATA IN” port of one amplifier through MRS-9, and the “DATA OUT” port of the amplifier is connected to the “DATA IN” port of the next amplifier, and then several amplifiers or other devices can be connected like this.

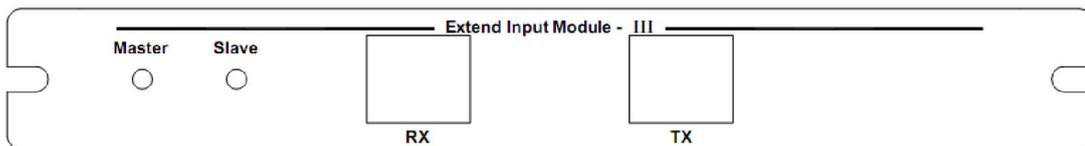
Click the periphery control button of the smart host, the addresses, names and working conditions of all online peripherals will be listed. If a fault occurs, fault phenomenon can also be displayed. If operation of the peripherals is needed, such as giving an alarm artificially, you can select the peripheral to be operated first, and click the set button, then you can conduct the corresponding operations.

1—3.9 Extend Output Module (M2899)



The module can only be used for a host. Its TX port is connected to the RX port of the extend input module on the extension box via a type 5 line (cross connection), and it can also connect the special Ethernet optical transceiver for remote extend use.

1—3.10 Extend Input Module (M2898)



The module can only be used for an extension box. Its RX port is connected to the TX port of the extend output module on the host via a type 5 line (cross connection), and it can also connect the next extension box for cascade connection not exceeding 5 boxes.

II. Minimum system

2—1 Structure of minimum system

See figure 2-1 for the structure of the minimum system

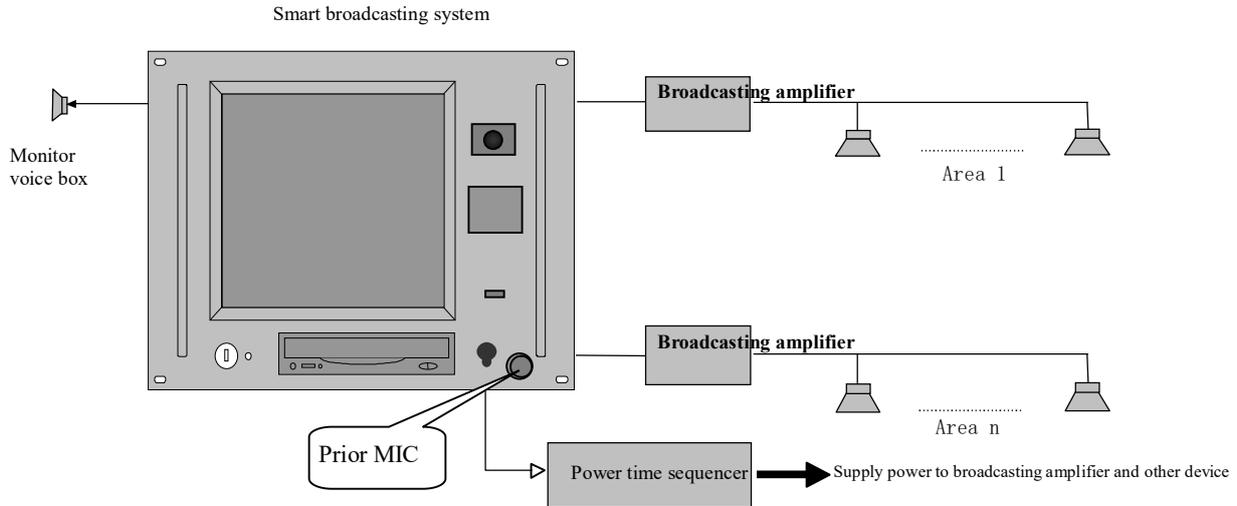


Figure 2—1 Block diagram of the minimum system

2—2 Major characteristics of minimum system

Only an input module is selected, and that is the **prior input module**. No sound source devices need to be added, and only 4 sound sources built in the main host are used: EMC MIC; CHIME/ALARM; INNER CD; and built-in SOURCE.

There are no **alarm input/output modules** (there may be no fire control center since the system is not large). When encountering a disastrous accident, the **full alarm** button on the host panel can be used to give an alarm. Save resources as many as possible. Telephone interface and remote partition paging are not provided.

2—3 Connection of minimum system

The jumper connection between the input port in the prior input card and the built-in sound source is not unique, the users can change it according to their own needs. **EMC MIC signal outlet** is exactly the transform interface of emergency microphone of the front panel.

The priority of 4 built-in sound sources is EMC MIC—CHIME/ALARM—INNER CD—Built-in SOURCE. As an example, 8 speaker areas are arranged for this minimum system, which share 1 amplifier.

2—4 Running of minimum system

2—4.1 After confirming that the line is connected well, start the power of the device with a special switch key, the power indicator light will begin to flash yellow; and the starting time will be about 40s. After it is started, the power indicator light will stop flashing, and turn green; a language selection interface will appear on the screen, then you can click the language selection button on the touch screen (optional), and you will enter the corresponding language's **main interface**. And also, you can operate it via the touch pad on the right side of the screen. Move on the touch pad with your finger, and the cursor on the

screen will move accordingly. After the cursor moves to the button that you need, you can just click the touch pad to complete the selection. The special version for Chinese Mainland has no language selection interface. After it is started up, it will directly enter the main interface.

2—4.2 Generally, the “program control” button below the main interface will shine (otherwise you can click it to let it shine), and the system will run under the program control (programming method is detailed below). The background music broadcast is usually supported by the **built-in special sound source**; chime will played punctually and automatically at program control timing points, and the corresponding power channel will be opened or closed automatically on time.

2—4.3 When it is necessary to publish a paging broadcast, take down the emergency microphone, press the switch on the microphone, then you can start to call (other programs will be mute automatically). If necessary, you can click “CHIME” button before paging, to publish the prompt chime.
When it is necessary to temporarily close/start some partition speakers, only need to click the corresponding partitions’ buttons.

When it is necessary to temporarily start the inner CD, touch the corresponding button at the lower edge of the CD disc drive below the front panel, then you can put in the disc or play CD. If you need to select programs in CD, you should call out the CD play interface (see details in 4-14).



(LY International Electronics Co., Ltd.;

Sound source area; Prior sound source Microphone; First sound source built-in sound source; Second sound source Inner CD; Third sound source Cassette; Fourth sound source External CD1; Fifth sound source External CD2; Sixth sound source Line 1; Seventh sound source Line 2; Eighth sound source Line 3.

Group 1; Group 2; Group 3; Group 4; Group 5; Group 6; Group 7; Group 8; Group 9; Group 10; Group 11; Group 12; Group 13; Group 14; Group 15; Group 16; Group 17; Group 18; Group 19; Group 20.

Partition 1-Partition 100.

Page selection; Whole area operation; Full open, Full close, Recover;
Power control; Other operations; Chime, Program control, System setting.

Operation wizard:

1. Click the sound source button, then select a partition to distribute the sound source.
2. Cancel the sound source selection state, and click the partition button to open or close the partition.
3. Click the grouping button to distribute sound sources to or open or close the groups.

Next timing point: 08:00:00 Friday; class ring of the first class.)

- 2—4.4 The above manual operations will not interfere with the “program control” running in the background, that is, hourly chime will still play at the timing points; the corresponding power channel will still automatically be opened or closed on time; and after a call is ended or stopping playing CD, the background music supported by BUILT-IN special sound source will still play as required by the program control. If you need to completely close these program control functions, you can click the “program control” button, the button displays “manual” meaning manual state.
- 2—4.5 There are 4 program control power buttons below the main interface, which respectively correspond to the current open/close state of 4 program control power sockets on the back of the host (bright color means it is opened). When necessary, you can click these buttons to manually change their status. However, after you change any of the four buttons manually, the system will change to manual control status, and the “system manual” button at the lower left corner will flash, reminding users that the system has already separated from program control. If you need to recover the program control function, you can click the “program control” button, making it not flash again, and turn to gate state (bright color).
- 2—4.6 When you need to publish a disastrous alarm, you can forcibly press the **full alarm** button at the upper right corner of the front panel; and the alarm whistle will let all programs be mute, the program control and interface control will also be prohibited. **Full alarm** button is protected by a fragile glass piece to avoid maloperation. Under a forced pressure, the glass piece will break and then the button will be pressed (fingers will not be injured). When you need to use the emergency microphone to give an on-the-spot command, you should press again the **full alarm** button to reset it. After it is reset for 1 second, the program control and the interface control will also be recovered.
- 2—4.7 There are operation tips at the lower left corner of the main interface, and program control information at the lower right corner for your reference. Additionally, gray button means that users do not select the corresponding hardware, and they can not operate it.
- 2—4.8 24-hour continuous operation of the device is allowed, but after unmanned operation for a period of time, it will automatically enter into energy saving state. Then the screen will turn black, but the power indicator light will still light and maintain green; and the program control is still running. Light touch the screen or touch the touch pad, then the screen display can be recovered. If not using it for a long time, you should completely power it off. When powering it off, you should not easily and directly use the key switch to turn off the power, instead you should first click the “**system setting**” button, entering the system setting interface, and then click the “**close the system**” button, and after the screen

reminds you can power it off safely, then you can use the key switch to power it off.

2—4.9 In case that the main processor of the system breaks down (system halted-unable to move the cursor-unable to operate the screen button), all broadcasting partition will automatically switch to the prior input sound source, and enter into the gate state. Then you can use the prior microphone or insert the **external sound sources** into the vacant inlet of the **prior input module** temporarily to support the system operation (the priority needs to be noted); at the same time, full alarm manual button is still effective.

2—5 Restrictions of minimum system

- The minimum system has already possessed basic functions of a public broadcast, but it does not have fire control, telephone, remote call ports, so it can not be linked to those systems;
- The partition functions are not complete: partition alarm giving, call, different programs publishing are unavailable. But partition gating is still available.

III. Typical system

3—1 Structure of typical system

See figure 3-1 for the structure of a typical system

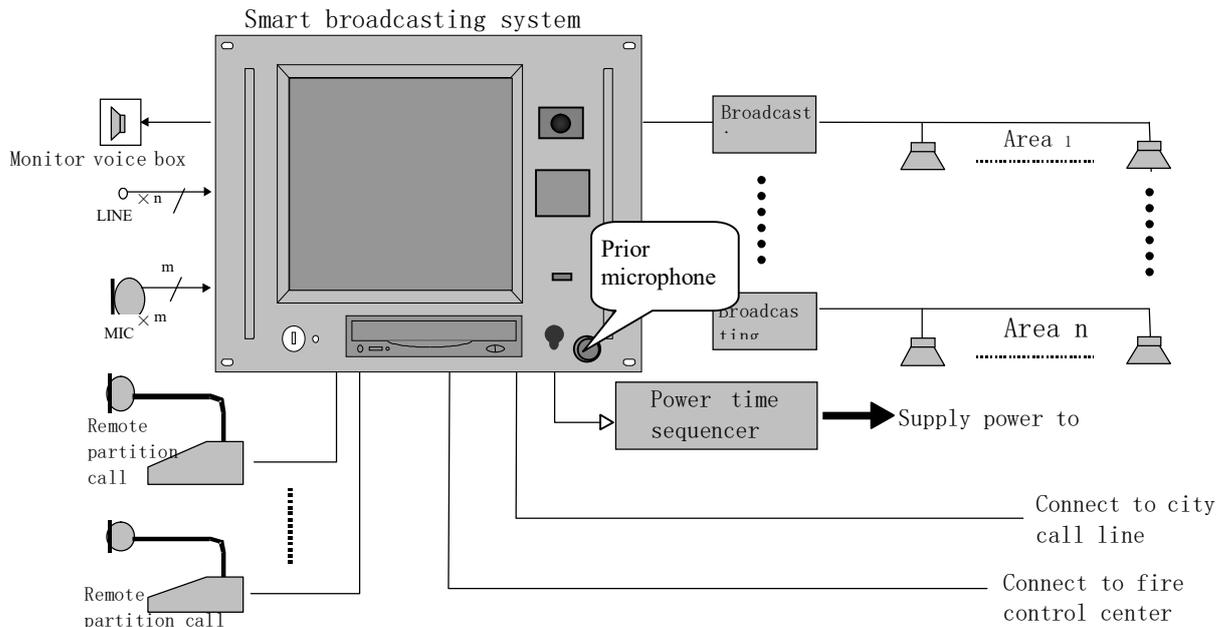


Figure 3-1 Block diagram of typical system

3—2 Connection of typical system

- Arrangement of prior input port: prior microphone and chime/alarm signals are still connected to prior input module like the minimum system, to develop its prior function.
- Arrangement of normal input port: only a on-duty microphone is arranged for the person on duty to publish notices or give calls. The microphone occupies the normal input port, and partition operation is available, not all background music will be mute. Notes: although the emergency microphone on the front panel can be used by the person on duty, it has the privilege of first class priority (only next to the “full alarm” manual button of the absolute priority), so conflicts may occur between it and alarms and other break-in broadcasts, thus it should not be used randomly and should be used at need.
- A normal input port is distributed to **BUILT-IN** special sound source and **CD** each, so that they will not restrict each other, and at the same time, provide different background music for different broadcasting partitions.
- Other normal input ports can be used by any external sound sources. For example, to provide several leisure programs to guest rooms (if any) in the broadcast service area, several CD players or tuners can be connected externally. Additionally, arrange a meeting room as a speaker partition, and distribute a standby input port to it (pre-embed lines in the field). When necessary, externally connect the sound console and provide several microphones, to be used for conference call. And if arrange a square as a speaker partition, and set a standby input port at a corner of the square. When necessary, externally connect the sound console and provide several microphones, to be used for public address of a temporary square meeting.
- Speaker partitions with a volume controller should better use a three-wire system broadcasting amplifier. By using this, plenty of pipelines can be saved. Especially important partitions should better use primary/standby

amplifier+amplifier automatic switchover, to ensure a reliable system.

- It is recommended to use timing power socket 1 to supply power for the system partition amplifier, but when the power consumption of the amplifier exceeds 400VA, a power time sequencer is needed, that is to say, the timing power socket 1 drives the power time sequencer, and the sequencer drives the amplifier. Timing power sockets 2, 3 and 4 can externally connect sound source devices for power supply.

3—3 Running of typical system

- 3—3.1 After confirming that the line is connected well, start the power of the device with a special switch key, the power indicator light will begin to flash yellow; and the starting time will be about 40s. After it is started, the power indicator light will stop flashing, and turn green; a language selection interface will appear on the screen, then you can click the language selection button on the touch screen (optional), and you will enter the main interface. And also, you can operate it via the touch pad at the right side of the screen. Move on the touch pad with your finger, and the cursor on the screen will move accordingly. After the cursor moves to the button that you need, you can just click the touch pad to complete the selection. Or you can connect a mouse to the USB interface to operate it. The special version for Chinese Mainland has no language selection interface. After it is started up, it will directly enter the Chinese main interface.
- 3—3.2 Generally, the “program control” button below the main interface will shine (otherwise you can click it to let it shine), and the system will run under the program control (programming method is detailed in section 4). Under this condition, the background music provided by the BUILT-IN special sound source and inner CD will play on time according to the programs preprogrammed by the user; chime will played punctually and automatically at program control timing points, and the corresponding power channel will be opened or closed automatically on time. And also, the system will correspond to the telephone, remote call, alarm partition breaking in.
- 3—3.3 Alarm signals from the fire control center will start the first class prior partition breaking in itself, and the scope of alarm breaking in is determined by the program. Within the alarm break-in area, all other programs are overridden by alarm whistles or voice files (e.g. evacuation command) determined by the program, until the alarm is cleared. However, the emergency microphone on the front panel can override the alarm whistles for easily giving on-the-spot commands.
- Alarm signals from the fire control center will also start the telephone module to dial an alarm call (special function).
- 3—3.4 Signals from the remote call terminal will start the second class prior partition breaking in, and the break-in area is determined by the remote call terminal. Only when an alarm is given in the called area, the call in this area will be prohibited. There can be 48 remote call terminals, of which the priority will be determined by the manufacturer. When a call area is occupied by a call terminal, the partition indicator lights of other call terminals will flash, and terminals with a low priority will have no right to occupy, while terminals with a high priority can take over it. Call volume can be adjusted by adjusting the **MIC VOLUME** at the back of the terminal (see details in M2588 specification), or by entering the "**call setting**" interface in the "**system setting**" (see 4-10).
- 3—3.5 Telephone can start the third class prior partition breaking in (second to alarms, partition calls), and the break-in area (phone receiving area) and speaking area will be determined by the preprogrammed

program. When the telephone module receives a phone call, it will automatically “lift off the hook”, and inquire/or not inquire the password according to the preprogrammed program, and the receiving area and speaking area will be connected after the caller gives a correct correspond, and they can communicate with each other. When the caller hangs up the call, the system will also automatically hang up.

3—3.6 When external sound source devices (such as PM-7000/8000 series, other CD players, tuners, cassettes) are powered by the machine’s timing power socket, they will be opened or closed automatically on time by the program control.

3—3.7 Under the condition that program control is running, manual intervention can also be performed according to the operation method as follows (refer to the prompts at the lower left corner of the main interface):

- When all sound source buttons are not pressed (or click them to bounce them), you can at any time click the partition button to open or close some partitions. (note: gray button shows that the users do not select to purchase the corresponding hardware, so they can not perform the operations.)
- The remote call terminal set in the machine room can be used for a paging broadcast of any partition (including those partitions that have been closed).
- Click any sound source buttons, and when they are pressed, click any partition buttons, then you can assign the sound source to the corresponding broadcasting partition.

For example, click the on-duty microphone sound source, adjust the volume, and then click some partition buttons, then you can assign the on-duty microphone to some partitions, and you can use the on-duty microphone to give calls or broadcasts to these partitions.

For another example, click “**LY**” sound source (or **inner CD**), and click some partitions, then you can play the “**LY**” sound source (or **inner CD**) immediately in those partitions. When necessary, you can enter the “**system setting**” to select needed programs.

- You can click **chime** button to publish chime to all currently gated partitions. When necessary, you can enter the “**system setting**” to select needed chimes.
- When performing the above manual interventions, the control program is still running in the background, that is to say, the timing power, hourly chime will still run according to the predetermined program (so chimes may ring out unexpectedly in the midway of the manual intervention); however, the timing programs of the built-in sound sources will be disorganized by relevant operations, until the next program controlled timing point after stopping manual intervention (refer to the prompts at the lower right corner of the main interface). If you need to completely prohibit program control from running, then you can click “**manual control**” button. If you want to recover the program control, you need to click the button again, and let it turn bright color.
- There are 4 program control power buttons below the main interface, which respectively correspond to the current program control state of 4 program controlled power sockets at the back of the host (bright color means it is opened). If you need to perform manual intervention (forcibly open or close the corresponding power channel), you can click these buttons to manually change their status. However, after you change any of the four buttons manually, the system will change to manual control status, and the “system manual” button will flash, reminding users that the system has already separated from program control. If you need to recover the program control function, you can click the “manual control” button, making it not flash again, and turn to gate state (bright color).

- 3—3.8 If encountering some emergency circumstances, and needing to give alarms, but not receiving the alarm signals from the fire control center, then you can press and break the **full alarm** glass switch on the panel, and the switch light will be lightened, all partitions on the screen will appear fire alarms instructions, and alarm whistles will be given to all partitions (note: the surface of the full alarm glass switch is covered with a protective film, and under normal operation, fingers will not get injured after pressing and breaking it, so you can use it safely). After the full alarm glass switch is pressed and broken, the emergency microphone on the panel can still be used to give an emergency command (voice in speech and alarm whistles coexist), but the screen control or trackball control will be completely ineffective. If pressing the **full alarm** switch again to extinguish the switch light, then after one second, all controls will be recovered completely.
- 3—3.9 In case that the main processor of the system breaks down (system halted-unable to move the cursor-unable to operate the buttons), all broadcasting partition will automatically switch to the prior input sound source. Then you can use the prior microphone or insert the **external sound sources** into the vacant inlet of the **prior input module** temporarily to support the system operation (the priority needs to be noted); at the same time, full alarm manual button is still effective.
- 3—3.10 24-hour continuous operation of the device is allowed, but after unmanned operation for a period of time, it will automatically enter into energy saving state. Then the screen will turn black, but the power indicator light will still light and maintain green; and the program control is still running. Light touch the screen or touch the touch pad, then the screen display can be recovered. If not using it for a long time, you should completely power it off. When powering it off, you should not easily and directly use the key switch to turn off the power, instead you should first click the “**system setting**” button, entering the system setting interface, and then click the “**close the system**” button, and after the screen reminds you can power it off safely, then you can use the key switch to power it off.
- 3—3.11 Some operations of the device may need password, and the password can be changed freely by the users.

IV. System setting

Click “system setting” button on the main interface, and enter the system setting interface. Then click the function button to be set, and enter the corresponding setting interface, then set it according to the methods below. After completing each setting, click “return” button to return to the “system setting” interface. After all are set, click the “return to main interface” button on the “system setting” interface to return back to the main interface.

4—1 System time setting

- 4—1.1 Click the “time setting” button, and enter the system time adjustment status.
- 4—1.2 In the “system time”, respectively use the up and down arrows to adjust year, month, day, hour, minute and second. The time adjusted and set is better a few tens of seconds ahead of the standard time. Click the “confirm” button the moment when the standard time equals to the set time, and then the system time is adjusted.

4—2 Resource status checking

- 4—2.1 Click “system resources” button, to view the function modules configured in the system.
- 4—2.2 After the function modules are replaced, or the users find that the function modules displayed on the list is different from the actual configuration, click “find the configuration modules” button. The

process of finding is automatic, so after ten seconds and more, the latest module configuration will be listed.

- 4—2.3 After finding it again, if the list is still different from the actual configuration, you should turn off the power according to the operating procedures for powering off, and check if the corresponding modules are installed in place, and then restart it to check. If there is still a problem, please contact with the distributor.
- 4—2.4 Please note: function modules should be inserted or pulled out when the power is disconnected!

4—3 Comprehensive setting

- 4—3.1 Click “system configuration” button to enter the system’s comprehensive setting interface.
- 4—3.2 There are 9 items to check. To be convenient for operation, it is recommended to select the following items (click the box to check it):

- Use automatic monitoring mode;
- Open the corresponding players when clicking the “**LY sound source**” or “**inner CD**” button;
- The sound source button will automatically bounce after no operations for X seconds (let X=30).

4—4 Sound source setting

- 4—4.1 Click “**sound source setting**” button to enter sound source naming or other sound source setting interface.
- 4—4.2 Click the inverted triangle drop-down symbol at the right side of the sound sources with serial numbers, and select a suitable name (i.e. a name consistent with the device matched and connected with the sound source module’s input port) in the drop-down list box.
- 4—4.3 After they are selected one by one, click “**confirm**” button.

4—5 Partition operation and setting

The partition operation is to distribute different sound sources to different broadcasting partitions, and adjust the volume of the sound source during distribution.

- 4—5.1 Click a sound source button on the main interface to let it shine. If the clicked one is the inner source or CD sound source, then you can immediately start to play or pop up the program play interface (depending on 4-3 comprehensive setting), and please see 4-14 for the operations of play interface; if the clicked one is the external sound sources, then you need to operate and control the sound source device to let it play sound. When “**use automatic monitoring mode**” is checked in the comprehensive setting (see 4-3), then the sound of this sound source can be heard through the monitor speaker.
- 4—5.2 Then click the partition button needing to use this sound source, and the partition button will immediately display the name of this sound source, then the sound source is distributed to the assigned partition. You can continuously click more than one partition buttons, and distribute the sound source to several partitions.
- 4—5.3 After finishing distributing a sound source to the partition, you can click another sound source to let it shine, and repeat the above steps to distribute the current sound source to another partitions. All sound sources are interlocked, and at any time, only one sound source button can be pressed. The system will not distribute two or more sound sources to a partition at the same time either, to avoid crosstalking.
- 4—5.4 After the sound sources are combined with and distributed to the partitions, you should click again the sound buttons that are still shining, to let it bounce (turn dark), then you can open or close the partition buttons. Click the partition buttons that do not shine to let it shine (that is to open the partition); and click the partition buttons shined to let it turn dark (that is to close the partition). Please note that when

opening or closing the partitions, if a sound source button does not bounce, it will be wrongly considered as a sound source distribution. So, before opening or closing the partitions, you should bounce all sound source buttons

So far, the partition operation has been completed. If necessary, you can continue the following operations, to perform **partition setting**.

- 4—5.5 Click “**system setting**” button to enter the system setting interface, and then click “**partition setting**” button to enter the partition setting interface.
- 4—5.6 Within the partition setting interface, the current partition schemes (sound source distribution, on-off state of partitions) can be saved. For this purpose, you can click “**save partition**” button to enter the save partition interface. The interface will display five save buttons, showing that there are 5 addresses available for saving. If the button bracket displays “empty”, it means that the address content is empty, otherwise meaning that a predetermined scheme is saved in the address (the save date of this scheme is also labeled). Click any save button and click “**confirm**” button, then you can save the scheme, and return back to the **partition setting** interface. If the clicked button is not empty, the original content will be replaced by a new scheme after clicking “**confirm**”; and if click “**empty**”, the content will be removed.
- 4—5.7 Click the “rename” button on the “partition setting” interface to enter the partition rename interface. Select the partition number to be modified in the list under “**partition selection**”, then the partition number that you want to modify will be displayed at the right side of the “**partition number to be modified**”. Click the character under “**partition naming character selection**”, then you can add the corresponding character to the textbox at the right side of the “**new partition name**” (Note: if you do not select the partition number to be modified before, then the selected character will not be added to the “**new partition name**”), which can consist of 9 unit characters at most. Note that, a Chinese character is two unit characters. If it is input incorrectly, you can click “**back**” button to delete the character that you just input, and after the new partition name is selected, please click “**change**” button, then the partition name is changed.

4—6 Timing setting

The timing sequence is used to manage the work and rest time of the system. A thousand time points can be set a day; and at each time point, 4 AC power supply channels on the back panel of the host can be opened and closed independently, and hourly chime can be published, and also, BUILT-IN programs and inner CD programs need to play can be set. As the above 4 AC powers usually supply power to the partition amplifiers and other peripheral devices, so the power program timing sequence controls the whole system’s operation.

The power program timing sequence can be established by week.

- 4—6.1 First establish a timetable according to the work and rest time, considering the system configuration.

We assume that the timing power channel 1 supplies power to the partition amplifiers; channel 2 to the external CD players, tuners, cassettes, and these external sound sources prepare to provide optional background music for the office building; and channel 3 and 4 are for standby use.

Then we assume that the time arrangement of the organization from Monday to Friday is:

8: 00 on duty; 12: 00 off duty; 14: 00 on duty; 16: 00 off duty.

Accordingly, the recommended timetable for the system operation is as follows (for a workday):

No.	Time	Power state	Prompt tone	Descriptions
1	7: 55	channel 1√		The amplifier is powered up.
2	8: 00	channel 2、3、4√	On duty ring	On duty. Begin to provide programs for the office building. Channel 3 and 4 are opened for standby use.
3	12: 00	channel 2 □	Off duty ring	Off duty. Stop providing programs for the office building.
4	12: 05	channel 1 □		The amplifier is closed; and channel 3 and 4 are still opened for standby use.
5	13: 55	channel 1√		The amplifier is powered up.
6	14: 00	channel 2√	On duty ring	On duty. Begin to provide programs for the office building.
7	16: 00	channel 2 □	Off duty ring	Off duty. Stop providing programs for the office building.
8	16: 05	channel 1, 3, 4 □		All power supplies are closed (the host power supply is not restricted by the program, so it is still waiting).

√ open; □ close

- 4—6.2 Click “timing point” button to enter the timing setting interface. During the operation, please notice the prompts of the “track operation wizard”.
- 4—6.3 Then, week options will appear on the left side of the screen, you should check the corresponding week. For example, if today is Wednesday, you should click the dot on the left side of Wednesday.
- 4—6.4 Input the starting time by using the “hour, minute” plus or minus button on the lower left of the screen. If you need to set the ending time of the program, you should first check it in the selection box of ending time, and use the “hour, minute” button at the lower middle to set the ending time. Click and select the program button, then you can select the BUILT-IN programs and inner CD programs needing to play. If power timing is needed, please select the external power channel, and check the power that should be connected at the current time point in the selection box of power channel at the lower middle of the screen, then click the right end of the “prompt tone” box at the lower right of the screen, and pull out the prompt tone (hourly chime) list, then click the needed prompt tone (including “mute”). When clicking a prompt tone, the monitor speaker will give out this tone for reference, if it is not suitable, you can click again, and the finally clicked one will prevail. So far, a time point has been set. Click “add” button again to enter another row of the timetable, and use the same method to set another timing point.
- 4—6.5 During the above operations, if it is input incorrectly, you can click “delete” button to remove it (the whole row). Additionally, during the operation, it is not required to sort the time at each row by sequences, so that the programmer can supplement omissions at any time, or add time occurred to him/her temporarily.
- 4—6.6 After a day’s time is programmed, you can click “save scheme” button to save it. If the timetables of several days in a week are the same, then you can click “copy” button to copy it. the 如果一个 upper of the copy interface shows the copy source (source files used to copy). Take the above text as an example, the copy source is Wednesday (see 4-6.3), so you should click the “Wednesday” button at the row. The lower of the copy interface shows the copy objective. We know that the organization implements a five-day work system, and the work and rest time from Monday to Friday are the same, so you should click Monday, Tuesday, Thursday and Friday buttons at the row, and click “copy” button, then the original contents in the objective will be saved, and the system will automatically switch the interface to the timing setting interface. Then a week’s power program timing program is established.

4—6.7 If the system has a suitable power program timing program before, then it can be used directly. You only need to click “call scheme” button on the programming interface to enter the calling interface. The operation method is similar to that described in 4-5.7.

Note: when timing programming, the ending time of program timing can not be the same as the starting time of programs at other timing points

4—7 Default programs editing

4—7.1 It is a program served for manually playing the BUILT-IN special sound source. Please see 3-3.7 for manual operation (manual intervention).

4—7.2 The manufacturer can prepare many BUILT-IN programs (able to be played continuously for a week) in advance according to the user requirements; and the users themselves can also prepare programs in advance. However, if selection from plenty of preprepared programs is needed every time when a manual playing, the it will be troublesome. So it is necessary to edit the default programs. These “default programs” will appear on the BUILT-IN program play interface for easy to select to play, replay repeatedly, play by order, out of order or circularly.

4—7.3 Click “system program library” in the “system setting” to enter the default program interface of BUILT-IN sound source. The preview area is at the right side of the interface, which lists all preprepared programs and their types; the selection area is at the left side of the interface, where the programs are default programs; and the operation button is in the middle of the interface. If programs in the selection area are not satisfactory, you can click “delete” button under the catalog operation to empty them, and this catalog will also be deleted. Click a type of program in the preview area, and select and click the program that you want, and then click “copy” button, then the selected contents will be added to the selection area. If there are programs that you do not want in the selection area, you can click “delete” button under the “program operation”.

4—8 Alarm setting

When the **alarm input module** receives a fire control/disastrous alarm, the system will forcibly distribute the prior sound source to the partitions needing to give an alarm and the selected adjacent areas, and forcibly open these partitions. At the same time, the preset alarm whistles and alarm audio files will be given out from the “**chime/alarm**” output port at the back panel of the host. So, it is recommended that the users send the signals of chime/alarm output ports to an input port of the prior sound source when system connection (see figure 2-2 and figure 3-2).

4—8.1 Click “alarm setting” in the “system setting” to enter the fire control/disastrous alarm parameter setting interface.

4—8.2 In the “adjacent regions where alarms are given at the same time” setting, you can check any several adjacent regions from six positive and negative adjacent regions of the alarm area according to the requirements of the fire control center. When any partition receives the fire control/disastrous alarms, the selected adjacent regions will also be given alarms at the same time; and meanwhile, the break-in control module will send out short-circuit control signals for linking of other peripherals of the system (see figure 3-2 for the hardware connection).

4—8.3 Please confirm the active level of alarm signals from the fire control center, and then make corresponding choice in the “active alarm level” (click the circle of the option).

4—8.4 Select an alarm whistle in the “alarm sound”. The operation method is similar to that of the selection of hourly prompt tone in the power timing (see 4-6.4). And finally, click “confirm” button and then return

back.

4—9 Language selection

The device provides two languages: Chinese and English. The specific operations are as follows:

Click the ‘select language’ item under the ‘system configuration’, and a dialog box will pop up to display the language options, then select a language (Chinese or English), click ‘OK’, and click ‘confirm’ in the confirmation dialog box popped up, then click the ‘close system’ under the ‘system configuration’ interface to close the system and restart it. Then, the selected language will be effective after restarting the system.

4—10 Paging setting

Paging is divided into normal paging and remote partition paging.

4—10.1 The normal paging is to page using a microphone channel of the prior input module or normal input module.

- If a prior input module is used, click the prior sound source button on the main interface, and click the partition requiring paging (note: please close the partitions that you do not want after the prior sound source button pops up), then you can use the emergency microphone to page (see the minimum system). When necessary, adjust the microphone volume before pressing the prior sound source button. Please note that, try not to use this mode to page under typical conditions, since it will hinder alarms from breaking in.
- If a normal input module is used, click the microphone sound source button on the main interface, and click the partition requiring paging, then operate using the on-duty microphone (see the typical system).

4—10.2 The remote partition paging is to page by using the system’s **remote paging terminal**. The remote paging terminal can be set within a range not exceeding 1km from the center (including in the machine room—provided to the on-duty person specially for partition paging). The “paging setting” is used to set the volume of each remote paging channel.

4—10.3 Click “paging setting” to enter the setting interface, and drag the 4 volume adjusting sliders, then you can adjust the volume of the 4 remote paging channels, which should cooperate with the volume adjustment of the back panel of **remote paging terminal**. In principle, the latter should be as large as possible (subject to distortionless terminal output). And the volume adjustment here is subject to the distortionless partition amplifier. And finally, click “confirm” button and return back.

4—11 Phone setting

Click the “phone setting” in the “systems setting” to enter the phone parameter setting interface. The partitions receiving phone calls and response entrances (sound sources) can be set in advance; and you can also set if the caller needs to enter the password.

4—11.1 Click the partitions receiving phone calls, and there will be a phone icon, showing that phone calls are received by these partitions. Click the sound sources responding phone calls, then these sound source entrances will respond phone calls. The prior sound source, normal sound sources 1, 2 and 3, and 4 remote paging sound sources can be set to respond phone calls, and other sound sources can not.

4—11.2 Press the “inquire password” or “not inquire password” button, to determine if a password is needed to automatically connect the phone calls. Press the “set password” button to set the call password. The password consists of four numbers, and it will be effective only when it is entered twice with the same numbers. And finally, click “confirm” button and return back.

4—11.3 If a password is inquired, the caller should enter the set password after hearing two beeps, and press # to

complete it, otherwise, the call will not be connected.

4—12 Chime setting

This is to set the chime to which the “chime” button on the main interface corresponds. The operation method is similar to that of the hourly chime setting (see 4-6.4). Finally click the “confirm” button and return back.

4—13 Monitor Selection

4—13.1 If you selects the auto- monitor mode in the “General Setting” (refer to 4-3), click on a partition or an audio source, the system will automatically track the corresponding partitions or audio source for monitoring without additional setting.

4—13.2 If you want to avoid the automatic monitoring, click on the “Monitoring selection” button in the “system setting” to pop up the monitor interface, click on any partition or audio source, the system will immediately monitor the corresponding partition or audio source (the monitoring pattern will appear on the screen); click on the monitor pattern again, to cancel the monitoring.

4—14 BUILT-IN player or built-in CD program playback

Open the play interface on the “System Setting” to select the programs, then operate it according to the steps as ordinary CD machine. The specific steps are as follows:

4—14.1 Click on “Inner player” or “built-in CD” button on the ‘system setting’, to pop-up the program playing window.

Or select “click on the built-in player or CD audio source pop-up program player window” in the "integrated settings", then directly click on the LY or CD audio button, to pop up the corresponding program playing window.

4—14.2 The program box is on the right side of the program play window, which lists the names of programs built into the system. Click or drag the vertical scroll bar on the right side of the program box, to see more program names. When you see a satisfactory program, click it, then the program name will be reversed, and the program will start playing immediately.

If a program name is blinking, it indicates that the program is playing.

4—14.3 If there is no program in the inside program box, you need to call up the "Edit Default Program" menu from "System Setting" (see 4-7.3). If there is no track in CD program box, it means CD is not installed. It is necessary to open the CD disc tray (at the lower part of the panel) to load the disc. After a moment, the track will appear automatically.

4—14.4 To stop or pause play, click the button Stop or Pause;

You can set whether the current program or all programs are played repeatedly, click on “Single Cycle” or “List of Cycle” or “No Cycle” to select them;

You can select the sequence of program playing, click on “Sequential Play” or “shuffle play” to play.

There is a playback progress bar below the playback control button, which displays the progress of the current program. By clicking or dragging the slider of the progress bar, you can adjust the play progress of the current program.

4—15 Production of build-in program and voice files

4—15.1 Click the "**Program Recording**" button on the "**System setting**", to enter the program recording window. The system can record audio files via an emergency microphone or record a program on a disc through an internal CD. Each can record up to 99 programs. All of these recordings are converted into a built-in program. The time for each program recording can be up to 10 hours. The recording time (year, month, day, hour, minute, second) can also be renamed.

The naming rule of programs recorded: When you select the program type suffix two digits (01- 99) (such as bell 01, alarm 01, alarm 02), the system will automatically provide the available program names in sequence. For example, if there is program **bell 01** and **bell 03** in program type "**Bell**", the next recorded program will be named as **bell 02** automatically.

4—15.2 Record the program (or voice file) by pressing the emergency microphone on the front panel of the host. Click the "**Start Recording**" button to start recording the program. Click the "**Stop Recording**" button to stop recording, and automatically (or manually) save the program recorded in the system; and the program name, program length and recording time appear in the system library. At this time, click "**Start Listening**" to listen to the recorded program.

4—15.3 Select the program you want to delete, click "**delete**" button to delete the program; click "**delete all**" to delete all types of self-recording programs, but the default programs at the delivery will not be deleted.

4—15.4 If you click "**Back**" or "**Return to main menu**" button during recording, the recording of program will stop and return to the previous interface or return to the main menu.

4—15.5 There is a progress bar below the recording volume, which shows the progress of the current recording or audition. You can adjust the progress of the current program by clicking or dragging the slider of the progress bar (only valid when audition).

4—15.6 Users may authorize the manufacturer to record without violating the relevant intellectual property rights.



Special Attention®

- Do not operate this machine before the system is fully started.
- Do not open the case by yourself. **Do not plug the power module and all internal plugs.** Otherwise, any damage to the system will not be covered in the warranty. The factory shall not be responsible for any personal electric shock incurred therefrom.
- Do not **pull on** the built-in or accompanied **DIP switch** of the function module. The factory will not be responsible for any damage or malfunction caused therefrom. If you have any problems, please contact the supplier to solve them.
- All built-in or accompanied function modules of this machine must be strictly coded before delivery, **which are only applicable to this machine and unable to be used in other PMM machines.** If it is required to be replaced, please contact the supplier to solve them.

For any problems not indicated in the Manual, please contact the distributors to solve it, or visit the website: <http://www.lyintlcorp.com>

Packing List

No.	Item	Quantity
1	6.35 audio converter	4 p
2	0.5 m audio cable with 6.35 plugs at both ends	4 P
3	International standard MP-P power cord	1P
4	Gaskets with the machine (Black)	4P
5	5 × 19 semi-countersunk head Phillips screw (silver)	4P
6	1.5 m audio cable with Lotus form plugs at both ends	1P
7	Small lock for intelligent system	1 Set
8	User's Guide	1P
9	CB100 Microphone (with plug)	1P
10	Certificate of conformity	1P
11	Warranty Card	1P

Performance Specification

Model	M2189
Display color	Color
Screen size	10.4 inches
Control mode	Touchpad + touch screen
Working environment	Ambient temperature: 5-35oC; relative humidity: \cong 75%; air pressure \approx 86-106kPa
Timing power with load capacity	Single-channel current 2A, 4-channel total current 5A
System audio signal SNR (A-weighted)	90dB
System audio signal distortion	0.1% (1kHz)
System audio signal input level range	1V _{rms} , 2V _{rms} , 4V _{rms} optional
System audio signal input impedance	10k Ω
System audio signal nominal output level	0dBV
Self-consumption	AC 220-240V/50-60Hz/120W
Dimension (L × W × H)	484×450×305mm
Gross weight	35.1kg
Net weight	27kg
Configuration	Manual 1; power cord 1; key 2; protective glass 1
System software	PMM package. All rights reserved. Reproduction or counterfeit is not allowed.

Performance specifications are subject to change without notice.

Note

- When the power switch of the device is in the "off" state, the machine is not completely disconnected from the mains power supply. For the sake of safety, unplug the power cord from the outlet when it is not in use.
- This device can not be subjected to water droplets or splashes, and items such as vases filled with water can not be placed on the device.
- Do not open the cover of the machine to avoid electric shock. If necessary, professionals with the certificates can repair it.

LY International Electronics Co., Ltd.