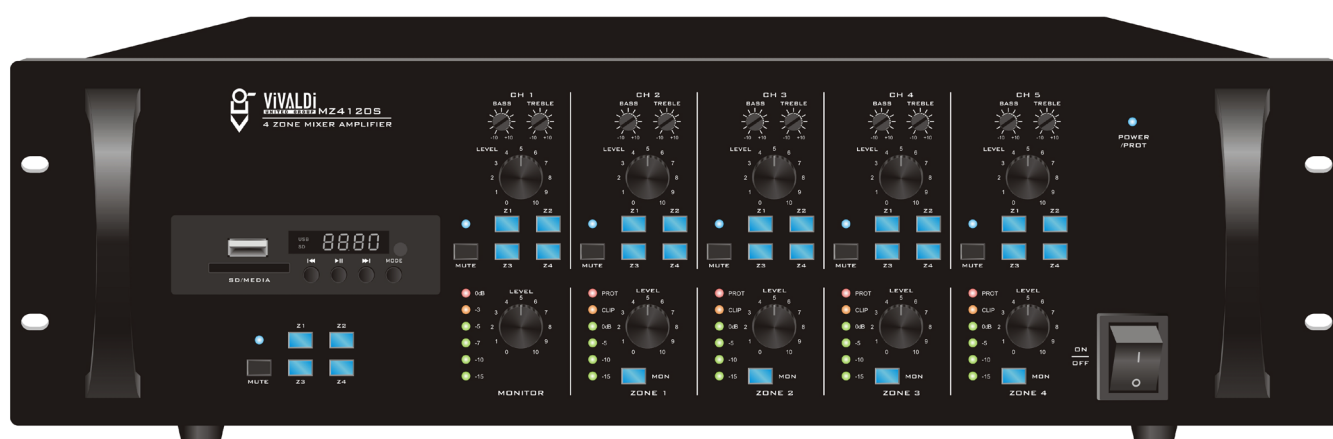




# 4 ZONE AMPLIFIER MIXER MZ4120S



## OPERATION MANUAL

Please follow the instructions in this manual to get the best results from this product.  
We also suggest that you keep this manual handy for future reference.



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## 1. SAFETY WARNINGS

- Before use, be sure to read carefully the instructions in this section.
- Be sure to observe the instructions contained in this manual, as well as the conventions of safety, the safety symbols and messages regarded as very important precautions.
- We also suggest that you keep this instruction manual handy for your own future reference.

### Safety symbols and conventional messages

The safety symbols and messages described below are used in this manual to prevent personal injury and property damage, which could be the improper use. Before putting the product into operation, read this manual and understand the safety symbols and messages, in order to be fully aware of the potential risks.



#### **WARNING**

It indicates a potentially hazardous situation, which, if mishandled, could result in death or serious personal injury.



#### **CAUTIONS**

It indicates a potentially hazardous situation, which, if mishandled, could result in minor or moderate damage to the person and/or property damage.



#### **WARNING**

#### **When installing the amplifier:**

- Do not expose the unit to rain or an environment where it could be wet by water and/or other liquids, since in this way could cause fire or electric shock.
- Use this device only with the voltage specified on the unit. Using a higher voltage than specified may result in fire or electric shock.
- Do not cut, bend, damage, or modify the power cord. Also, avoid using the power cord in the vicinity of heat sources and never place heavy objects (including the unit itself), on the power cord, since in this way could cause fire or electric shock.
- Be sure to replace the protective cover of the connection terminals once it has been completed. Because the speaker connections are of high voltage, never touch these terminals to avoid electric shock.
- Make sure the connection to the ground terminal is correctly made, in order to avoid electric shock.
- Do not install or mount the device in an unstable position, such as on a wobbly table or on an inclined surface. Could lead to the fall of the amplifier and cause injury and/or property damage.

### **While using the amplifier:**

- Should it occur the following abnormal situations while using the amplifier, turn off the power immediately, unplug the power cord from the AC outlet and contact your nearest dealer. Do not try to start up again the amplifier because it could lead to fire or electric shock.
  - ✓ Amplifier comes smoke or a strange smell.
  - ✓ Water or any metal object has entered in the amplifier.
  - ✓ The unit falls, or the frame of the appliance breaks down.
  - ✓ The power cord is damaged, as well as exposure of the core, disconnection etc.
  - ✓ The amplifier is malfunctioning (no Sound.).
- Do not open nor remove the cover of the unit to prevent fire or electric shock, because inside of the device contains high-voltage components. Contact your local dealer of trust for each maintenance.
- Do not place cups, bowls, or other containers with liquid or metal objects on the amplifier. If they accidentally filter inside the unit, possibly resulting in fire or electric shock.
- Do not insert or drop metallic objects or flammable materials in the ventilation slots of the unit, it could cause fire or electric shock.



### **CAUTIONS**

#### **Installation of the amplifier:**

- Do not insert or remove any plug from the electrical power supply with wet hands, may cause electric shock.
- By unplugging the power cord, be sure to grasp the plug. Do not act on the cable. Put the unit into operation, with the damaged cord can cause fire or electric shock.
- While moving the amplifier, be sure to remove its power cord from the wall outlet. Moving the unit with the power cord plugged in could damage the cord itself and cause a fire or electric shock.
- Do not block ventilation openings. May result in overheating and fire.
- Avoid installing the amplifier in humid and dusty areas, expose to direct sunlight, environments that generate smoke or steam, as well as locations near heat sources. This could cause a fire or electric shock.

**Using the amplifier:**

- Do not place heavy objects on the device, it could cause the fall or failure, causing bodily injury and/or property damage. In addition, the object itself can be damaged.
- Make sure that the volume control is set to minimum before turning on the power. The high audio product loud when power on, can damage your hearing.
- Do not operate the unit for extended duration of the sound distortion. This is a malfunction indication, which can cause overheating and fire.
- Contact your local retailer for periodic cleaning. The accumulation of dust for an extended period can cause fire or damage.
- If dust builds up on the power plug or the AC wall outlet, it could result in a fire. They should be cleaned periodically. Also, make sure the plug is inserted securely into the wall outlet.
- Turn off the power and unplug the power cord from the AC wall outlet for safety reasons, during cleaning or when you leave the unit unused for 10 days or more, otherwise it may cause fire or electric shock.

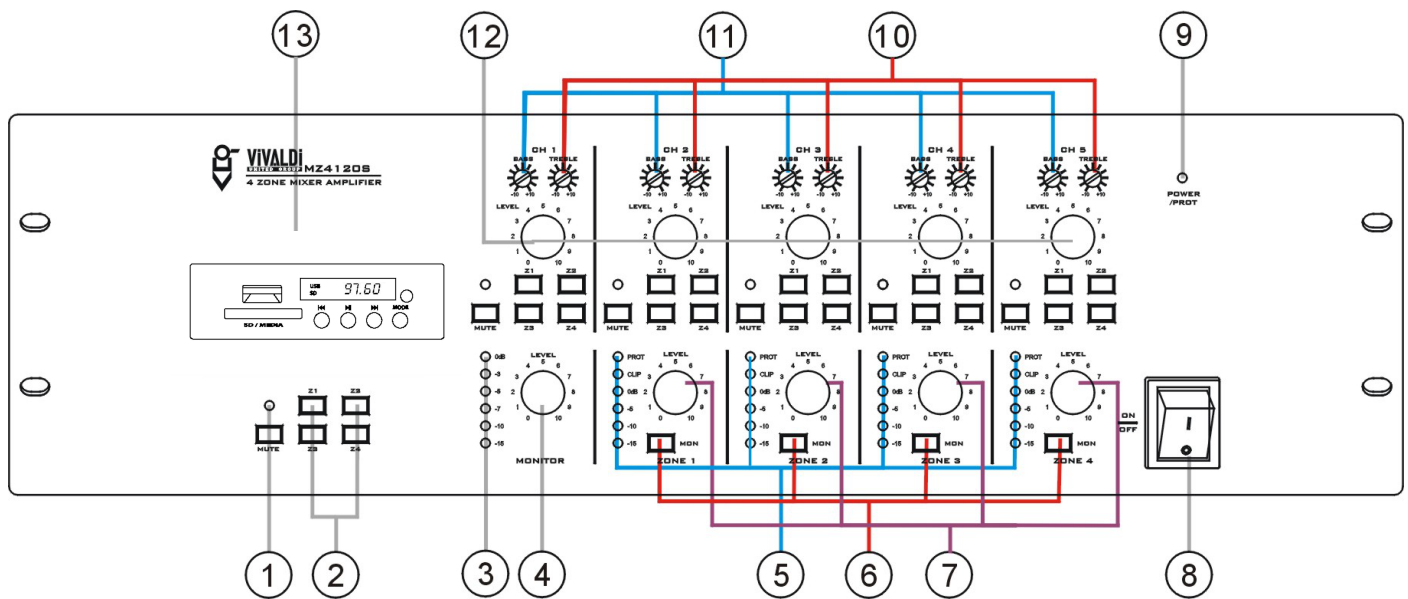
**The power supply must be protected by a magneto-thermal switch with a contact separation of at least 3 mm.**

## 2. CHARACTERISTICS

1. Four-channel amplifier designed for 3 units of 19" rack.
2. All input sources can be assigned to 4 different zone outputs simultaneously.
3. The five input channels are designed with separate control of bass, treble and volume.
4. Three microphone inputs / line with phantom power and sensitivity control.
5. Two aux inputs via RCA with sensitivity control.
6. USB/SD Card MP3 Player
7. Integrated FM Tuner.
8. A 4 zone remote microphone input through RJ45 port (BM4).
9. Four Balanced Output.
10. Versatile speaker outputs for each of the 4 channels: 70V, 100V e 4Ω.
11. A serial control port RS232 for communication with external systems.
12. A priority input to have priority over other input.
13. Priority level input high to low:  
Before closing the priority contact:  
TEL > MIC1 > Remote MIC > MIC2 = MIC3 = LINE4 = LINE5 = MP3  
After closing the priority contact:  
MIC1 > TEL > Remote MIC > MIC2 = MIC3 = LINE4 = LINE5 = MP3
14. Monitor output with integrated volume control.
15. Extended protection from thermal shock, short circuit, overload and clip indicators.
16. Provided with isolation switch earthing.

## 3. NAMES AND FUNCTIONS

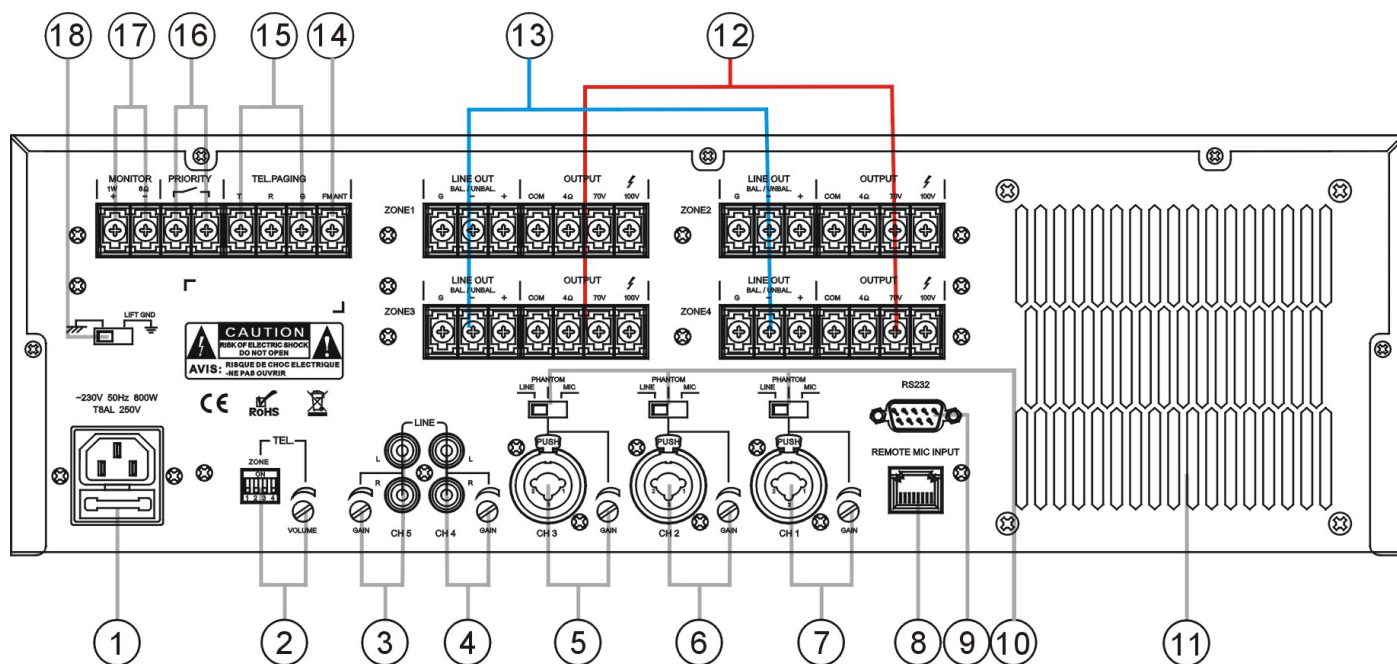
### 3.1 FRONT PANEL



1. Mute button and indicator.  
Mute on: the indicator is on.  
Mute off: the indicator is off.
2. 4 channels matrix amplifier select button
3. Monitor output volume level
4. Monitor output volume control.  
Clockwise rotation: increase volume.  
Counterclockwise rotation: decrease volume.
5. Zone 1-4 Volume level
6. Zone 1-4 Monitor select switch
7. Zone 1-4 Output level control
8. Main Power switch
9. Power On indicator
10. CH1-CH4 High tone control.  
Clockwise rotation: increase high frequencies.  
Counterclockwise rotation: decrease high frequencies.
11. CH1-CH4 Low tone control.  
Clockwise rotation: increase low frequencies.  
Counterclockwise rotation: decrease low frequencies.
12. CH1:CH5 input volume control
13. MP3 Player with USB,SD slot card and FM Tuner



## 3.2 BACK PANEL



1. AC Power input
2. Phone Input assignment area and volume control
3. CH5 Line input signal and control signal gain
4. CH4 Line input signal and control signal gain
5. CH3 Mic input or Line input signal and control signal gain
6. CH2 Mic input or Line input signal and control signal gain
7. CH1 Mic input or Line input signal and control signal gain
8. Remote Microphone base input (BM4)
9. RS232 port
10. CH1:CH3 signal input selector LINE, PHANTOM, MIC
11. Ventilation slots
12. 1-4 speaker output terminals; COM is the common terminal, it must be connected to the negative terminal of the speaker. The 4Ω terminal can be connected to speakers with constant impedance (4Ω minimum); the terminal 70V can be connected to speakers with constant voltage of 70V; the terminal 100V can be connected to speakers with constant voltage of 100V
13. ZONE 1-4 LINE output signal
14. FM radio antenna
15. Telephone input terminal
16. PRIORITY terminal, change the priority between phone and MIC 1
17. Monitor output terminal
18. Ground isolation switch.

## 4. OPERATIONS

### 4.1 FIRST TIME STARTUP

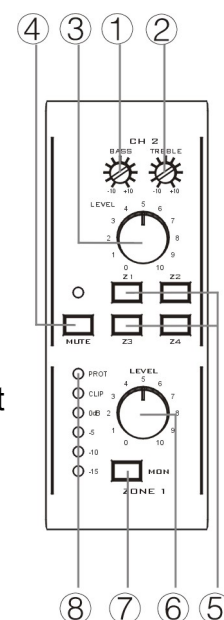
- 4.1.1 All volume knobs “LEVEL” are set to “0”.
- 4.1.2 GAIN Trimmer “CH1 a CH5”, on the back panel, must be set counterclockwise to the minimum.
- 4.1.3 Dip switch “TEL” all in OFF position. Trimmer “VOLUME” must be set counterclockwise to the minimum.
- 4.1.4 Switch the power button to the “ON” position, the indicator light will turn on. Blue means that the amplifier is working properly. Red means that the amplifier is going into protection. (Please check the connection of the outputs and if the main power reaches the default values.)

### 4.2 “CH1” : “CH5” OPERATING INSTRUCTIONS

- 4.2.1 The operating procedure is the same for all inputs “CH1” to “CH5”. Take the illustration “CH2” as an example:

1. Adjust the trimmer “BASS”: to change the gain of the low frequency.
2. Adjust the trimmer “TREBLE”: to change the gain of high frequencies.
3. Adjust the “LEVEL”: To change the volume of the connected source.
4. Button “MUTE”: press to mute the corresponding source.
5. Buttons “Z1” - “Z4”: Each button allows you to assign the input to the corresponding output, each input can be assigned to all four outputs.
6. Adjust the “LEVEL”, to change the volume of the general area.
7. Button “MON”: press button “MON”, to perform a pre-listening of the area through the use of a monitor speaker (rear terminals).
8. It indicates the signal level. The ignition of the CLIP LED indicates an output level too high with the possibility of distortion. The LED lights PROT may indicate a problem with the line speakers or amplifier area.

- 4.2.9 “ZONE 1 ZONE-4” are the four independent zone outputs.



### 4.3 MONITOR OUTPUT

1. Knob “LEVEL”: Volume control monitor spy.
2. LED bar: display output level.
3. You can monitor only one area at a time.

### 4.4 MICROPHONE BASE INPUT (BM4)

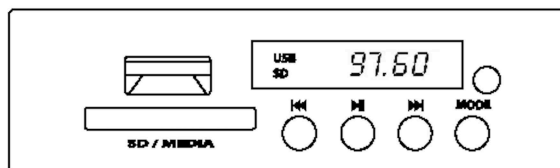
## 4.5 TELEPHONE INPUT OPERATING INSTRUCTIONS

Input "TEL.PAGING" input for connection of a telephone exchange.

1. "VOLUME" Adjusting telephone input signal.
2. "ZONE" Dip switch selection area: When set to ON enable audio in the area.

## 4.6 MULTISOURCE DEVICE OPERATING INSTRUCTIONS

If the device is on, the MP3 mode is started automatically when a USB memory or an SD card is plugged in.



1. "POWER" button: Press the "POWER" button to turn it on, press again to turn off.
2. "MODE" button: press the "MODE" button to switch between functions, FM tuner, USB and SD.
3. Button "PHP / SCAN" button dedicated to the function Play / Pause the MP3 player and selection of pre-set FM frequency. If held down, in tuner mode, auto scan will start automatically remembering frequencies found.
4. "NEXT" button: press "NEXT" to advance to the track or to the next frequency.
5. Button "PREV": press "PREV" to return to the track or the previous frequency.
6. "EQ" button: press the "EQ" to change the equalization curve (MP3 only).
7. Button "VOL +": press the "VOL+" to increase the volume.
8. Button "VOL-": press the "VOL-" to decrease the volume.



### NOTE

#### LAST MEMORY OF FM FREQUENCY:

To take advantage of the storage of the last FM frequency listened, you must turn off the player via the POWER button before diin switch (No. 8 on the front panel, page 8).

## 4.7 Serial Port RS232

Connect the equipment through the serial port to a computer where you installed a communications software, such as “serial debugging assistant V2.1.Exe”, set the baud rate to 9600, 8 bits, no parity, 1 stop bit stop (9600 8N1).

Insert commands in the command code, then click the “send” button, you can create commands and status of action according to the following specifications:

1. Command to get the status of the last modified button  
Command: FF 05 00 05

2. Command to get the status of the last modified LED  
Command: FF 05 01 06

3. Command to get the status of the priority  
Command: FF 05 02 07

4. Command to get the status of the telephone input  
Command: FF 05 04 09

5. Command to associate the MP3 channel to ZONE 1  
Command On: FF 06 81 87 Command Off: FF 06 01 07

6. Command to associate the MP3 channel to ZONE 2  
Command On: FF 06 82 88 Command Off: FF 06 02 08

7. Command to associate the MP3 channel to ZONE 3  
Command On: FF 06 83 89 Command Off: FF 06 03 09

8. Command to associate the MP3 channel to ZONE 4  
Command On: FF 06 84 8A Command Off: FF 06 04 0A

9. Command to associate the CH1 channel to ZONE 1  
Command On: FF 06 85 8B Command Off: FF 06 05 0B

10. Command to associate the CH1 channel to ZONE 2  
Command On: FF 06 86 8C Command Off: FF 06 06 0C

11. Command to associate the CH1 channel to ZONE 3  
Command On: FF 06 87 8D Command Off: FF 06 07 0D

12. Command to associate the CH1 channel to ZONE 4  
Command On: FF 06 88 8E Command Off: FF 06 08 0E

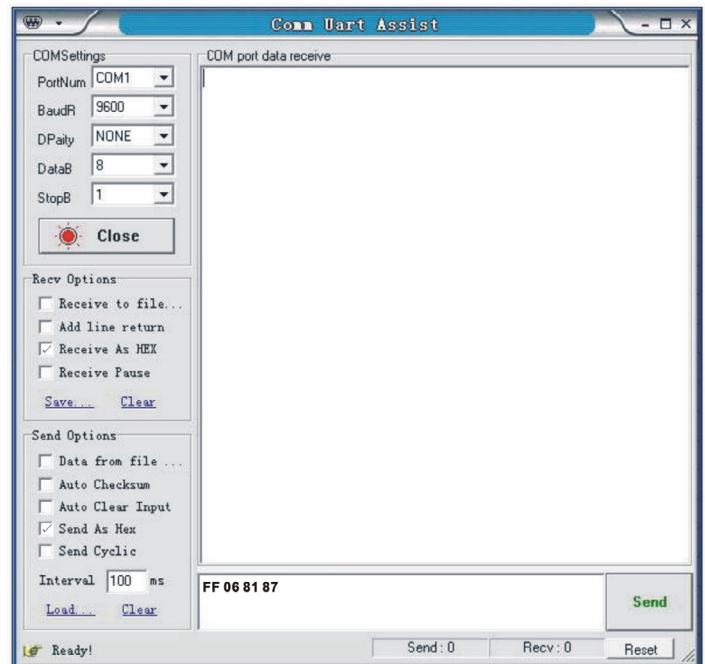
13. Command to associate the CH3 channel to ZONE 1  
Command On: FF 06 89 8F Command Off: FF 06 09 0F

14. Command to associate the CH3 channel to ZONE 2  
Command On: FF 06 8A 90 Command Off: FF 06 0A 10

15. Command to associate the CH3 channel to ZONE 3  
Command On: FF 06 8B 91 Command Off: FF 06 0B 11

16. Command to associate the CH3 channel to ZONE 4  
Command On: FF 06 8C 92 Command Off: FF 06 0C 12

17. Command to associate the MON channel to ZONE 1  
Command On: FF 06 8D 93 Command Off: FF 06 0D 13



18. Command to associate the MON channel to ZONE 2  
Command On: FF 06 8E 94 Command Off: FF 06 0E 14

19. Command to associate the MON channel to ZONE 3  
Command On: FF 06 8F 95 Command Off: FF 06 0F 15

20. Command to associate the MON channel to ZONE 4  
Command On: FF 06 90 96 Command Off: FF 06 10 16

21. Command to associate the CH2 channel to ZONE 1  
Command On: FF 06 91 97 Command Off: FF 06 11 17

22. Command to associate the CH2 channel to ZONE 2  
Command On: FF 06 92 98 Command Off: FF 06 12 18

23. Command to associate the CH2 channel to ZONE 3  
Command On: FF 06 93 99 Command Off: FF 06 13 19

24. Command to associate the CH2 channel to ZONE 4  
Command On: FF 06 94 9A Command Off: FF 06 14 1A

25. Command to associate the CH4 channel to ZONE 1  
Command On: FF 06 95 9B Command Off: FF 06 15 1B

26. Command to associate the CH4 channel to ZONE 2  
Command On: FF 06 96 9C Command Off: FF 06 16 1C

27. Command to associate the CH4 channel to ZONE 3  
Command On: FF 06 97 9D Command Off: FF 06 17 1D

28. Command to associate the CH4 channel to ZONE 4  
Command On: FF 06 98 9E Command Off: FF 06 18 1E

29. Command to associate the CH5 channel to ZONE1  
Command On: FF 06 99 9F Command Off: FF 06 19 1F

30. Command to associate the CH5 channel to ZONE 2  
Command On: FF 06 9AA0 Command Off: FF 06 1A 20

31. Command to associate the CH5 channel to ZONE 3  
Command On: FF 06 9B A1 Command Off: FF 06 1B 21

32. Command to associate the CH5 channel to ZONE 4  
Command On: FF 06 9C A2 Command Off: FF 06 1C 22

33. Command to control MUTE of the channel MP3  
Command On: FF 06 9D A3 Command Off: FF 06 1D 23

34. Command to control MUTE of the channel CH2  
Command On: FF 06 9E A4 Command Off: FF 06 1E 24

35. Command to control MUTE of the channel CH3  
Command On: FF 06 9F A5 Command Off: FF 06 1F 25

36. Command to control MUTE of the channel CH4  
Command On: FF 06 A0 A6 Command Off: FF 06 20 26

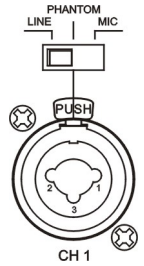
37. Command to control MUTE of the channel CH5  
Command On: FF 06 A1 A7 Command Off: FF 06 21 27

38. Command to control MUTE of the channel CH1  
Command On: FF 06 A2 A8 Command Off: FF 06 22 28

## 4.8 CH1, CH2, CH3 FUNCTION MODES

The inputs has three selectable modes: LINE, PHANTOM, MIC

- 1) The LINE input is used for audio sources such as CD, VCD, DVD and other audio devices.
- 2) The PHANTOM provides input power supply of 48V for condenser microphone.
- 3) The MIC input is used for ordinary microphones as dynamic microphones.



## 5. PRIORITY FUNCTION

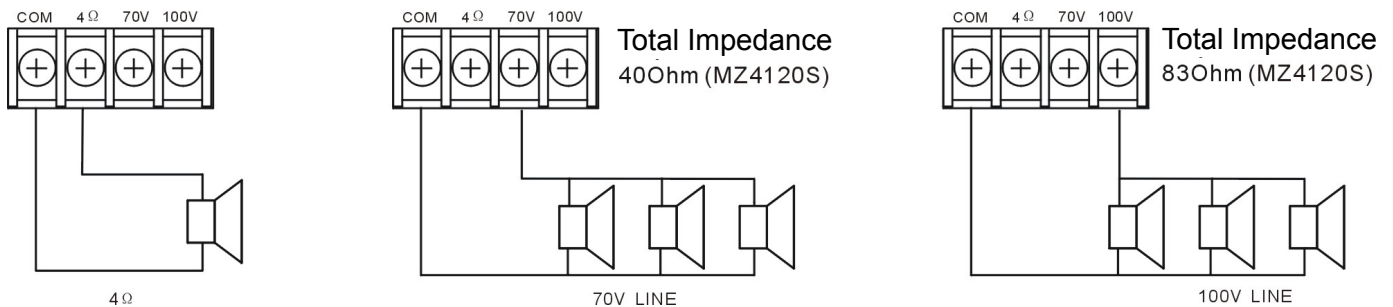
Dialogue priorities instructions:

The telephone input has the highest priority by default: Telephone > MIC1 > Remote MIC.

The priority can be changed through short circuit the terminal "PRIORITY" on the rear panel. MIC1 has the highest priority > Phone > Remote MIC when "PRIORITY" is in short circuit status.

## 6. CONNECTIONS

### 6.1 SPEAKER CONNECTIONS



Total Impedance 40Ω @ 70V - 83Ω @ 100V

NOTE:

\*4Ω outputs and 70V / 100V can not be used simultaneously.

\*Impedances shown in the figures represent the impedance of the speaker system (load) overall.



### WARNINGS

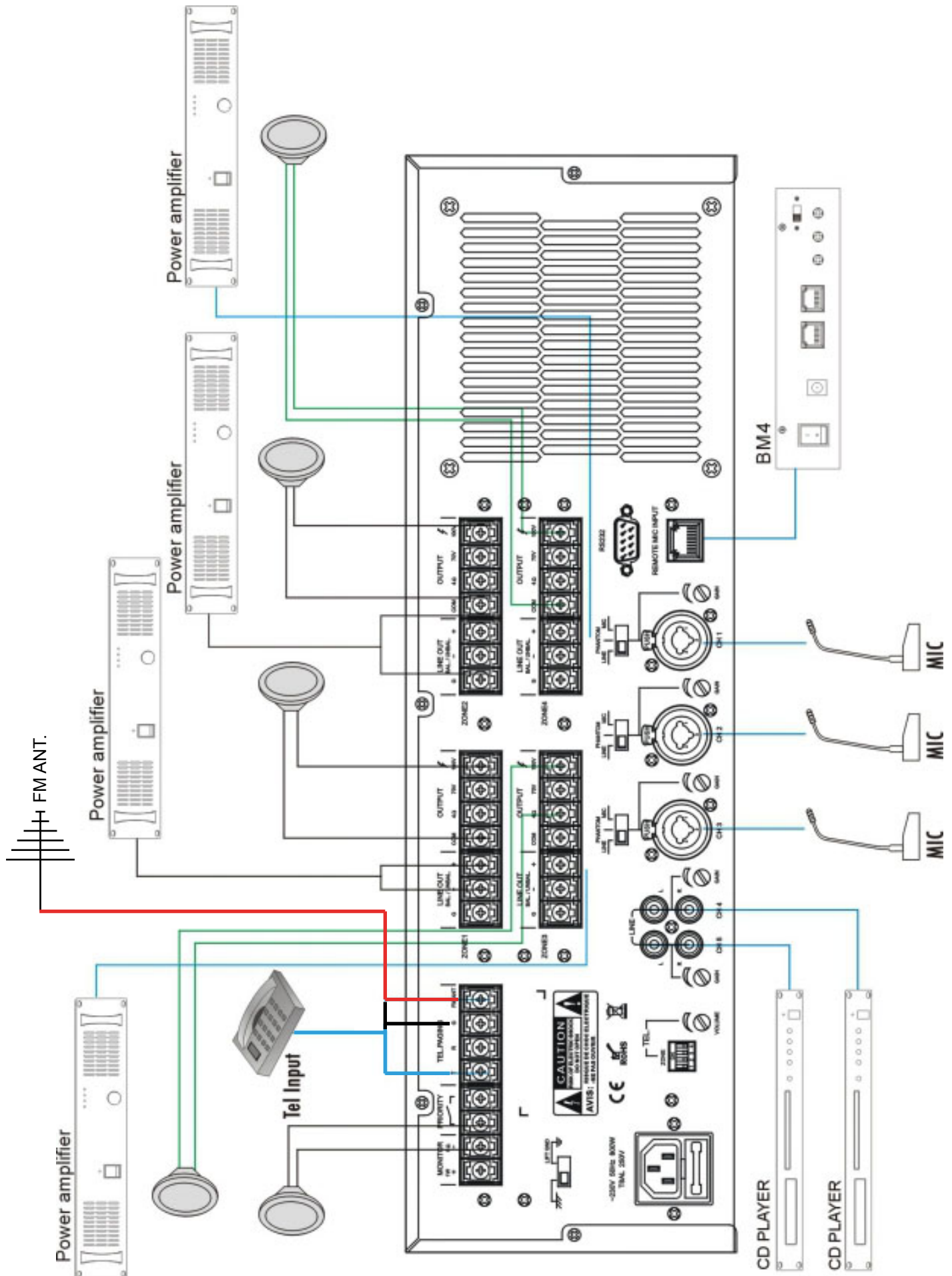
Be sure to close the terminal cover, after the connection is completed, because the terminals are subjected to high voltage. Never touch these terminals to avoid electric shock.

## 7. TROUBLESHOOTING

<b>Situation of malfunction</b>	<b>The cause of the problem</b>
There is no sound emission when the connection of line is good	<ol style="list-style-type: none"><li>1. The lack of electricity, or the quality of the connections can be of poor True quality.</li><li>2. The fuse has blown</li><li>3. The volume is too low</li><li>4. There is no signal input</li></ol>
Normal Startup, activation of the protection	<ol style="list-style-type: none"><li>1. Short-circuit load or damage</li><li>2. The power supply voltage is not stable, too high or too low</li><li>3. Overload</li></ol>
Under normal suddenly it occurs the absence of noise	<ol style="list-style-type: none"><li>1. Overheating, the amplifier is in thermal protection</li><li>2. Connect the loose cable</li></ol>

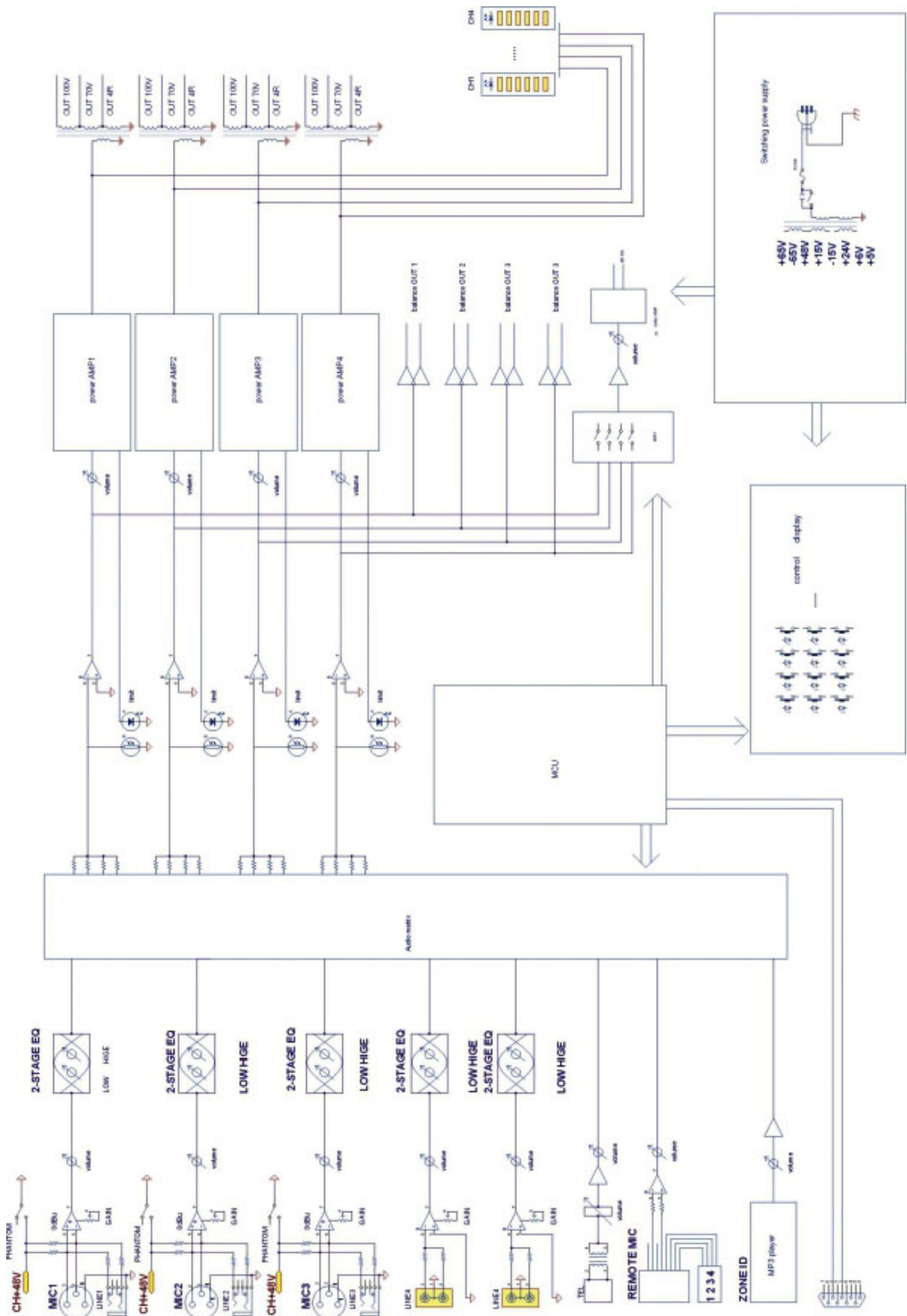


## 8. APPLICATIONS





## 9. BLOCK DIAGRAM

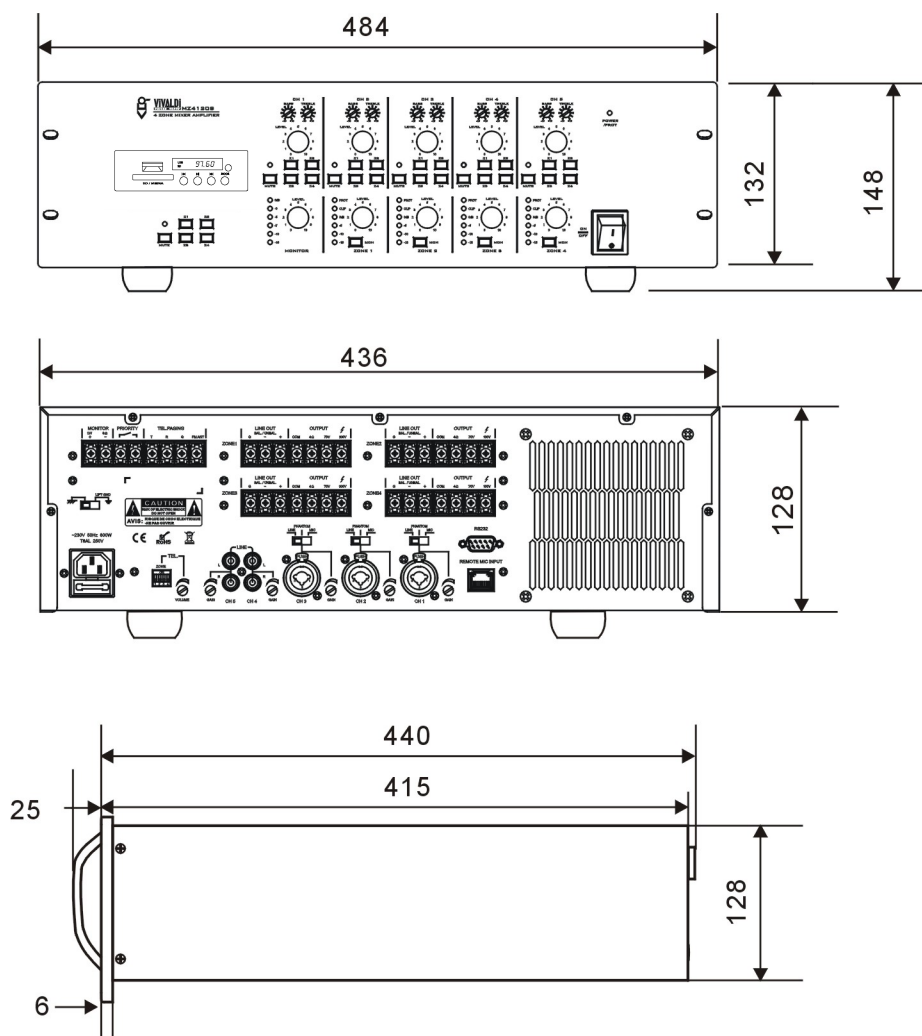


## 10. TECHNICAL SPECIFICATIONS

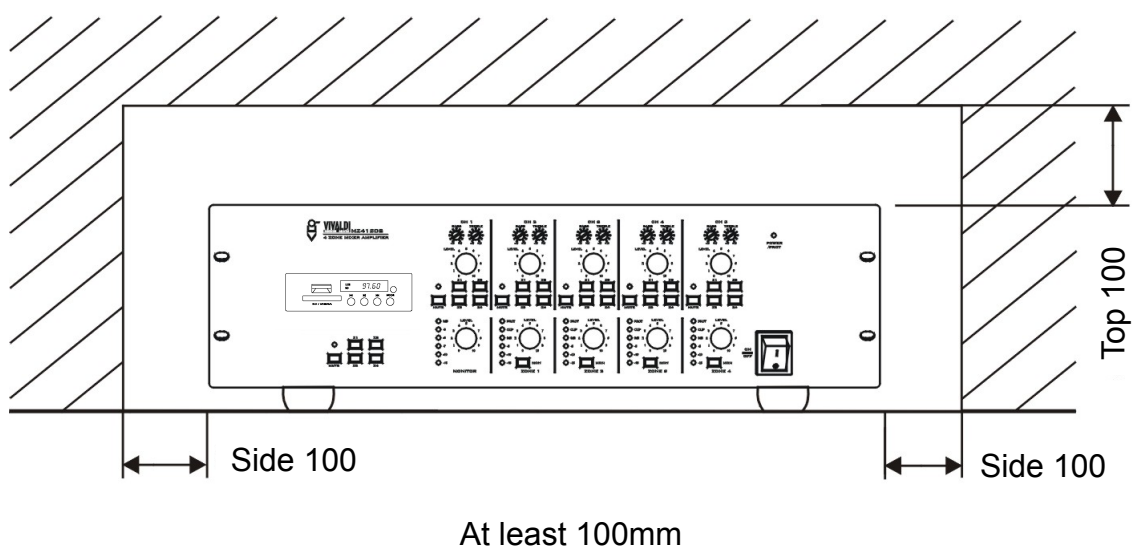
MODEL	MZ4120S
OUTPUT POWER	4x120W
OUTPUT INTERFACE	4Ω,70V/100V
MONITOR OUTPUT	1W/8Ω
INPUT IMPEDANCE AND SENSIBILITY	CH1,CH2,CH3: MIC: $\pm 2.5\text{mV}/600\Omega$ PHANTOM: $\pm 2.5\text{mV}$ LINE: $\sim 175\text{mV}/10\text{K}\Omega$ Balanced input CH5~6: $350\text{mV}/10\text{K}\Omega$ Balanced input TEL: $350\text{mV}/10\text{K}\Omega$ REMOTE MIC: $\pm 387\text{mV}/10\text{K}\Omega$
TONE	Bassi: $\pm 10\text{dB}$ a 500Hz Acuti: $\pm 10\text{dB}$ a 5000Hz
SNR	$\geq 65\text{dB}$
OUTPUT LINE 1-4 LEVEL	1V/600Ω(balanced)
FREQUENCY RESPONSE	80Hz-16KHz
MP3	Supporta formato MP3, capacità massima di 32 GB
SD CARD FILE SYSTES	Only FAT16, FAT32
THD	$\leq 1\%$
CONSUMPTION	750W
OWER SUPPLY	$\sim 230\text{VAC}$ 50Hz
DIMENSION	484x440x132mm
NET WEIGHT	11,68Kg
GROSS WEIGHT	13,48Kg

## 11. DIMENSIONAL SCHEME

Unit: millimeters



Keep all round at a distance of at least 10 cm from objects that may obstruct air flow to prevent an increase in internal temperature of the unit.





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