

# User's Manual

## CONSTANT VOLTAGE MIXER-AMPLIFIERS

MODEL :  
MA-120-USB



Specifications are subject to be changed without notice.



## IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions - All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions - The safety and operating instructions should be retained for future reference.
3. Heed all warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions - All operating and use instructions should be followed.
5. Do not use this apparatus near water - The appliance should not be used near water or moisture - for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/appliance combination to avoid injury from tip-over.
13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when



- the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Please keep the unit in a good ventilation environment.
  16. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall not be placed on apparatus.
  17. **WARNING:** The mains plug or appliance inlet is used as disconnect device, the disconnect device shall remain readily operable.
  18. **Power Sources** - This product should be operated only from the type of power source indicated on the rating label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer the operating instructions.
  19. **Safety Check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
  20. Don't touch conductive parts of output terminals to prevent hazardous electrical shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.
  21. This equipment is for commercial & professional use only.
  22. This product is in compliance with EU WEEE regulations. Disposal of end of life product should not be treated as municipal waste. Please refer to your local regulations for instructions on proper disposal of this product.
  23. To prevent hazardous electrical shock, do not touch the conductive parts of the output terminals. The external wiring connected to the terminals requires installation by an qualified technician or the use of ready made leads or cords.
  24. Please locate the apparatus at places nearby power socket for quick power disconnection in emergency.



Protective earthing terminal. The apparatus should be connected to a mains socket outlet with a protective earthing connection.



This lightning flash is intended to alert the user to the presence of non-insulated "dangerous voltage" on the output terminals that may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.



### CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**CAUTION:** To reduce the risk of electric shock, do not remove any cover. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this appliance.

**CAUTION:** To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

## Specifications

Performance	
	MA-120-USB
Input Sensitivity for full output at maximum gain	
Microphone Channels	-50dB ± 3dB
LINE , AUX Channels	-6dB ± 3dB
Frequency Response	
at 1 watt from speaker out tap, 80Hz ~17kHz	+1.0/-3dB
Tone Controls	
100Hz,10kHz	±10dB±3dB
Signal to Noise Ratio at rated power output	> 80dB
Crosstalk at all control maximum	-65dB at 1kHz
Rated Output Power at THD 1.0%	120 Watts
Total Harmonic Distortion(THD) at 1kHz rated power	Less than 1.0%
Power Band Width at 1kHz from speaker out tap	80Hz~17kHz with less than 1.0% THD
Mute Function Priority	SD Card>CH1 VOX>CH1,CH2,CH3,Media
Operating Temperature/Humidity at non-condensing	0°~40°C at 90% humidity
Output Voltage and Impedance	
4Ω	22V
70V	41Ω
100V	83Ω
Construction	
Cooling	Convection Cooled
Dimensions (Width/Height/Depth)	270 mm X 60 mm X 190 mm
Net Weight	3.30 kg

Necessary modifications are carried out without notice

## Operations

### Front panel

Display current status

Bluetooth mode: "BLUETOOTH" / AUX mode: "LINE" / USB mode: count up numbers  
 CH1, CH2, CH3, MASTER Volume up, down: "0" to "32"  
 BASS, TREBLE Volume up, down: "-10" to "+10" when volume adjust.  
 Recording mode: "REC"

Input channel, AUX and FM gain controls  
 Input channel gain controls:  $-\infty$  dB to 0 dB 32 steps  
 High Pass Filter butterworth -3dB at 80Hz  
 Low Pass Filter butterworth -3dB at 17kHz



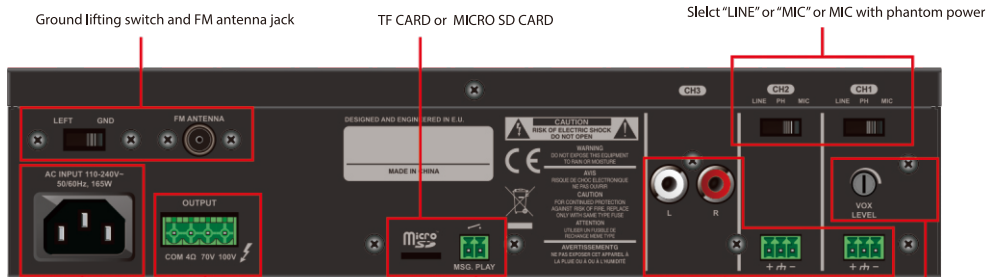
MENU: short press - select "USB" -> "AUX" -> "Bluetooth"  
 REC: short press - stop recording  
 long press - start recording  
 REP: short press - select repeat one -> repeat all -> stop repeat  
 ◀: short press - previous track (display track number)  
 long press - volume down (display volume level)  
 ▶: short press - next track (display track number)  
 long press - volume up (display volume level)  
 ⏸: short press - select play -> pause

Tone controls  
 BASS: 100Hz +/-10dB, 1dB step  
 TREBLE: 10kHz +/-10dB, 1dB step

Master controls  
 $-\infty$  dB to 0 dB 32 steps.

Bluetooth: Device name is "MPRO-AMP"

### Rear panel



SW on: Play the message in the TF card continuously  
 SW off: Stop to play the message in the TF card

signal inputs  
 LINE: -6dB  
 MIC: -36dB

VOX level control  
 CH1 has priority than other inputs

PRIORITY: CH1 > TF CARD > CH2, CH3, PLAYER(USB, AUX, Bluetooth)

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## Introductions

### Welcome

Congratulation and thank you for the purchasing MA-120-USB multi-function commercial amplifier. These amplifiers are designed to provide a big impact in sound reproduction and to produce the best and highest quality audio at an affordable price. We wish you great enjoyment and satisfaction when using your amplifier, whether you are an installation or reinforcement engineers.

### Unpacking and Installation

Although it is neither complicated to install nor difficult to operate your amplifier, a few minutes of your time is required to read this manual for properly wired installation and becoming familiar with its features and how to use them. Please take a great care may be needed when moving your set and are required if it ever becomes necessary to return your set for service. Never place the unit near radiator in front of heating vents, to direct sun light, in excessive humid or dusty location to avoid damages and to guaranty a long reliable use.

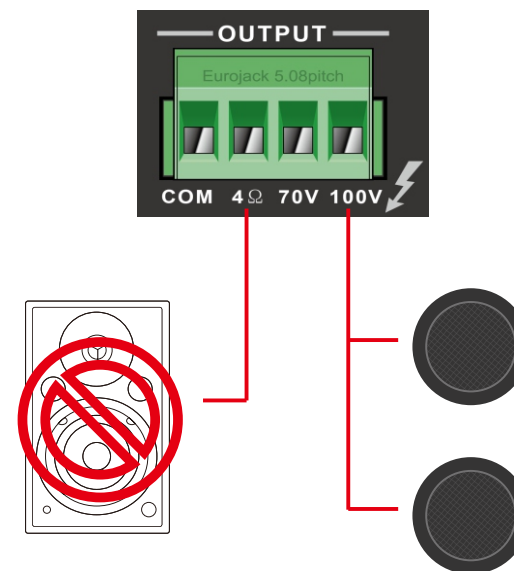
Connect your unit with the system components according to the description on the following pages.

## Features

The MA-120-USB amplifiers are comprehensive all-in-one mixer-amplifier solutions for commercial and industrial applications. These low-cost units provide all necessary features in a simple building.

- \* Three line and two microphone inputs with Euto block and RCA jacks.
- \* Acceptable wide range input level.
- \* USB MP3 Player , Blue tooth.
- \* 120W (MA-120-USB) rated power output.
- \* Advanced protection system includeds current limiting, over current and thermal protections.
- \* Two bands tone controls
- \* Low distortion and low noise level
- \* Compact size and light weight
- \* Ideal commercial and industrial use

CAUTION : Never use both the Low-Z(4Ω)and Hi-Z(70V, 100V) terminals at the same time



[ Figure 2.3 Wrong connection ]

## Connections

### Choose input wire and connectors

**INPUT :** Connect microphones or balanced line-level sources to mixer-amplifier inputs.

Set Gain volume accordingly. Connect unbalanced line-level signals to RCA input connectors.

**OUTPUT :** Maintain proper polarity on output connectors.

For each output channel, connect the output EURO block terminals to the loudspeaker loads.

Use terminals marked COM and 4Ω for a loudspeaker load, or use terminals marked 70V, 100V, COM for constant-voltage speaker loads.

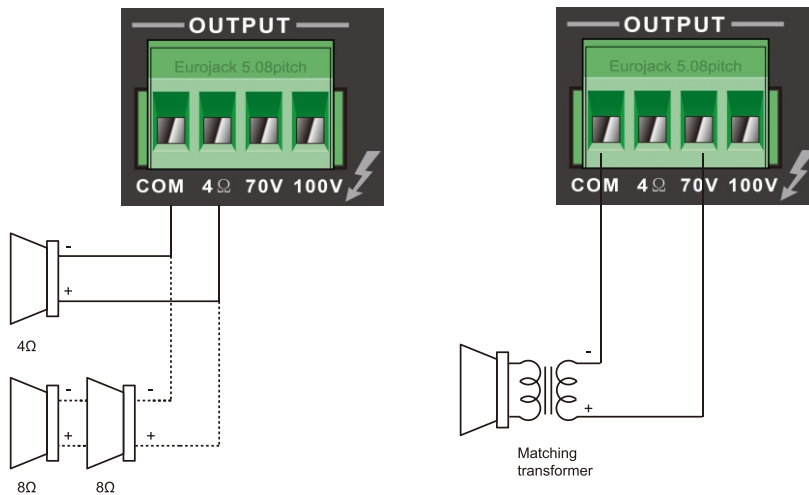
Connect the COM terminal to speaker negative(-) lead; connect one of the other terminals to speaker positive(+) lead.

The impedance and output voltage are same as following Table 2.1

MA-120-USB	4Ω / 22V	8Ω / Not use	41Ω / 70V	83Ω / 100V
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[ Table 2.1 Output voltage and impedance ]

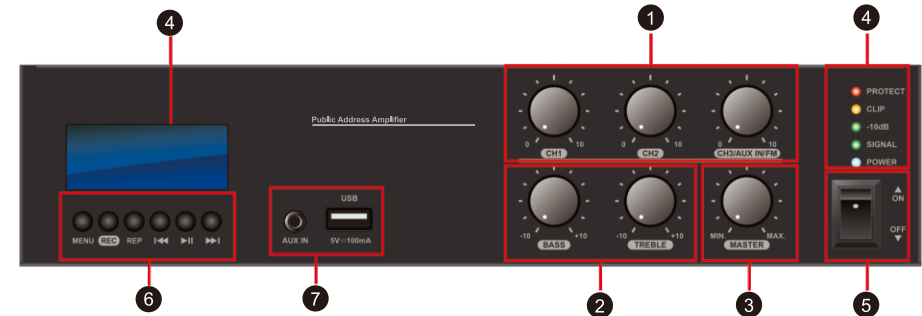
**NOTE :** Impedances indicated in the table 2.1 represent the total speaker system impedances. Speaker connection is shown in Figure 2.2



[ Figure 2.2 How to connect speakers ]

## Controls

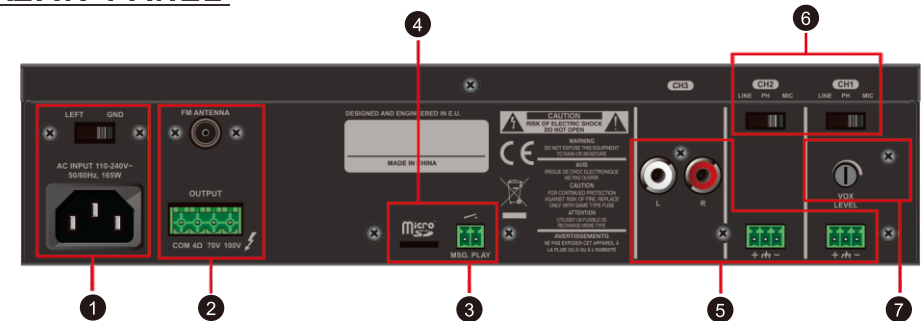
### FRONT PANEL



[ Figure 1.1 Front panel diagram ]

1. Input channel, AUX and FM volume.
2. Two bands tone controls ( 100Hz/10KHz ).
3. Master volume control.
4. Indicators ( Protection/Output level/Power/Segment for music source and volume level).
5. Power switch.
6. MP3 Player/Blue tooth/FM Tuner control.
7. AUX, USB input

### REAR PANEL



[ Figure 1.2 Rear panel diagram ]

1. AC Power input and Ground lifting switch.
2. Speaker outputs connector ( COM,4-ohm,70V and 100V ) and FM antenna input jack.
3. Contact closure for playing micro sd card.
4. Micro SD card or TF card input.
5. Signal input connectors.
6. PHANTOM ON / OFF and LINE/MIC select switch.
7. VOX level control volume.

## Setups

### Installation

**CAUTION :** Before you begin, make sure your mixer-amplifier is disconnected from the power source, with the power switch in the "OFF" position and all level controls turned completely down (counterclockwise). You may stack mixer-amplifiers without using a cabinet or you may place a single mixer-amplifier on a surface with 12-inches (about 30cm) of air space around the unit for convection cooling.

### Wiring guide

Choose input wire and connectors

We recommends using pre-built or professionally wired balanced line. 22 to 24 gauge cables. Figure 2.1 shows connector pin assignments for wiring. The RCA input connections can also be used for unbalanced inputs.

Choose output wire and connectors

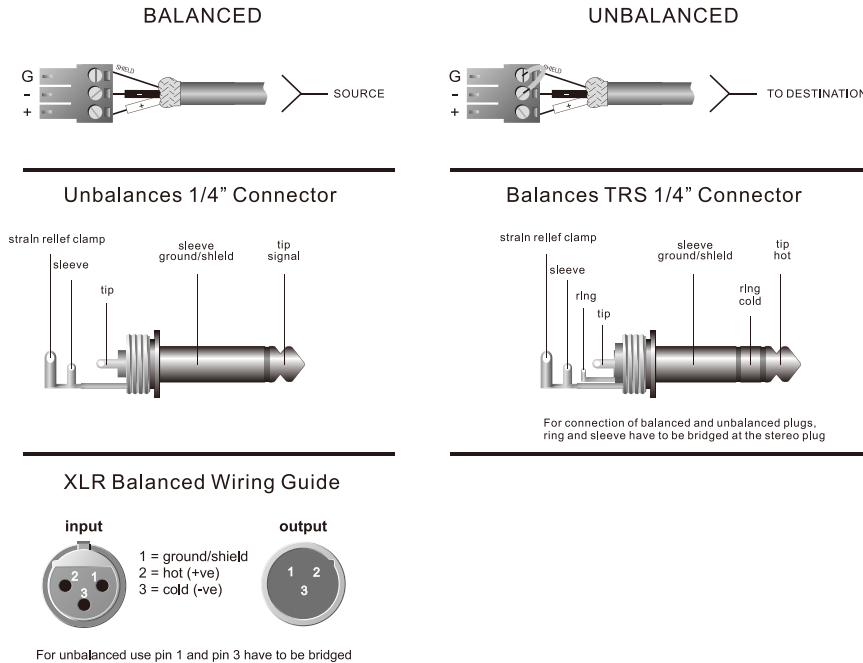
For the amplifier output connectors, We recommends using pre-built or professionally wired, high-quality, and heavy gauge speaker wires. You may use EURO blocks for your output connectors. To prevent the possibility of short-circuits, wrap or otherwise insulate exposed loud-speaker cable connectors.

Using the guidelines below, select the appropriate size wire based on the distance from amplifier to speaker. The wire sizes apply to the 4-ohm tap.

Distance	Wire Size
Up to 25 ft.	16 AWG
26~40 ft.	14 AWG
41~60 ft.	12AWG
61~100 ft.	10AWG
101ft~150 ft.	8AWG
151~200 ft.	6AWG

**NOTE :** Custom wiring should only be performed by qualified personnel. Class 2 wiring is required.

**CAUTION :** Never use shielded cable for output power wiring.



[ Figure 2.1 Input wire and connectors ]