

Operation Manual

Public Address Amplifier
MA-106



interM

Welcome

A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!



WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol 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 to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the 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.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.
Pour déconnecter complètement l'appareil du réseau d'alimentation, déconnecter le cordon d'alimentation de la prise murale.
La prise du réseau d'alimentation doit demeurer aisément accessible.

*WARNING FOR YOUR PROTECTION PLEASE READ THE FOLLOWING-WATER AND MOISTURE: Unit should not be used near water(e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

*CLASS 2 WIRING (Adjacent to speaker terminal): The speaker output of this apparatus can exceed 10 Watts and could be a shock injury. Connection to speakers should be performed by a skilled person.

*Do not install this equipment in a confined space such as a book case or similar unit.

*Warning : To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.

*This apparatus shall be connected to a mains socket outlet with a protective earthing connection.

*To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle.

*The mains plug of the power supply cord shall remain readily accessible.

CAUTION

*These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

NOTE

*This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Unpacking

Although your MA-106 is neither complicated nor difficult to operate, we recommend you take a few minutes to read this brief manual and familiarize yourself with the important information regarding product features, setup and operation.

As with most electronic devices, we strongly recommend you retain the original packaging. In the unlikely event the product must be returned for servicing, the original packaging (or reasonable equivalent) is required.

Installation

Environment

Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
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-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are 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 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/apparatus combination to avoid injury from tip-over.
13. Unplug this 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.



Features

- **COMPACT DESIGN**

Easy to install and operate with compact design of 1U size and functions.

- **DIGITAL AMPLIFIER CIRCUIT**

Take up the Digital Amplifier Circuit with High efficiency of the rated power 60W, High reliability, Low weight and Low temperature.

- **SUPPLY POWER BY SMPS**

Take up SMPS (Switching Mode Power Supply) for Low electric power and Low weight.

- **VARIOUS INPUT CONTROL FUNCTION**

Control the each input channel level using the sound control volume of INPUT 1~3.

- **INPUT SIGNAL LEDS**

Easy to check the inputted signal to INPUT 1~3.

- **TONE CONTROL FUNCTION**

Separate Bass(100Hz) and Treble(10kHz) controls to tailor your sound.

Easy to control the tone due to user frequency which is including bass and treble.

- **ADDITIONAL FUNCTIONS**

Easy to use with the various additional functions including power of phantom MIC, TEL IN.

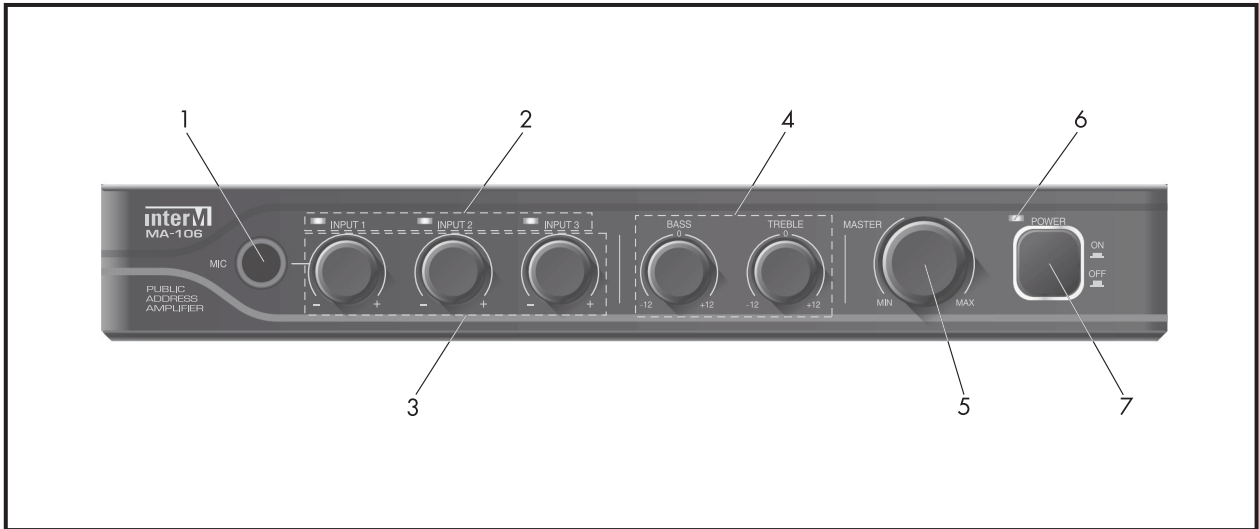
- **PRIORITY MUTING**

Adopted the priority muting function which control the other input signal, by TEL IN and INPUT 1 signal and external MUTE.

Operation

1. Before you plug the power cord to AC outlet, please set the power switch OFF, Tone Control center, and volume level minimum.
2. Please make sure the speakers and input jacks are properly connected before turn the power switch on.
3. Be sure the AC power is correct voltage before you plug into the power cord.
4. Please push the power switch, then the power input LED is on and the unit will be operated.
5. Please use your own with adjustment the volume using each input volume and master volume, the tone using the tone control.

Front Panel



1. MIC INPUT JACK FOR INPUT 1 (6.3ø Phone Jack, Balanced)

This input allow you to connect balanced 6.3ø Phone Jack plugs.
If this input is connected, Turn the inputting signal to INPUT 1 on the rear panel off.

2. INPUT SIGNAL LED

The SIGNAL LED is lighting by input signal of INPUT 1~3.

3. INPUT VOLUME

These knobs control the volume level of INPUT 1~3.

4. TONE CONTROL

These knobs provide continuous control of the high (10kHz) and low (100Hz) frequency response, by adding up to 12dB of cut (decrease) or boost (increase).

5. MASTER VOLUME LEVEL

This knob provides continuous control of the controlled overall signal level by each volume.

6. POWER LED

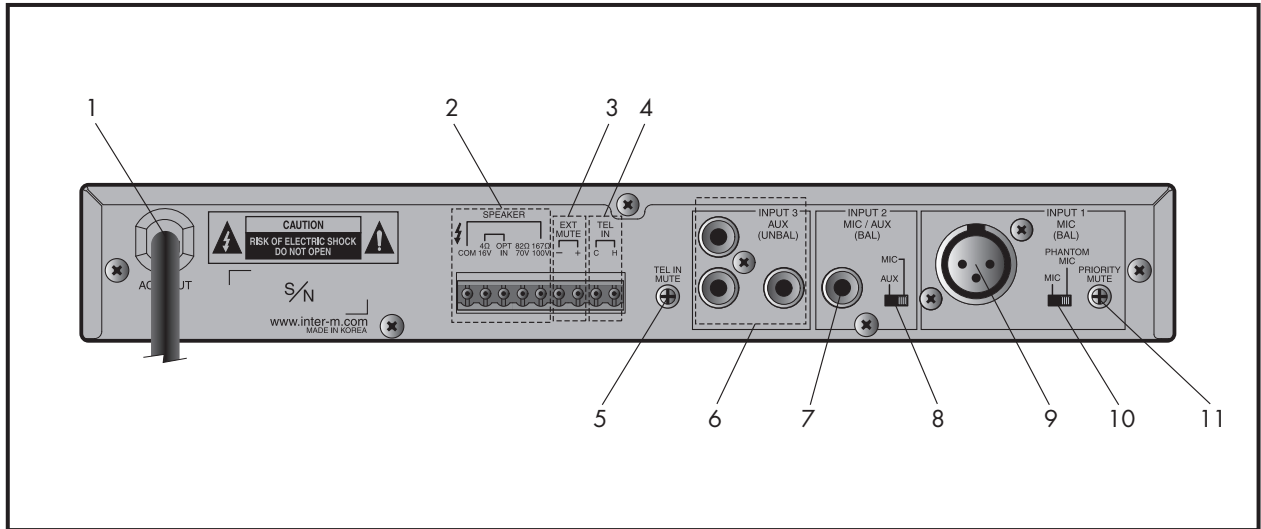
Display the power ON/OFF.

7. POWER SWITCH (PUSH TYPE)

Pressing the power switch turns the unit on. Pressing it again turns off.

* This switch makes up that one pole be cut off when power is off.

Rear Panel



1. AC POWER CORD

Connect this cable to an AC outlet.

2. SPEAKER OUTPUT TERMINAL

These terminals are used to connect speakers to the unit. You may select 4Ω conventional operation, or high impedance operation at either 70V/82Ω or 100V/167Ω.

(USA/CANADA & Associated : 25V/10.5Ω or 70V/82Ω)

Can't use these terminals at the same time.

NOTE: The unit is disable to operate in case of the total impedance is less than the rated impedance indicated. (If you're running speakers, you have to make sure total impedance does not go below the rated impedance.)

3. EXTERNAL MUTE CONTROL TERMINAL

Be able to use this terminal when you want to cut off the unit's output signal from the external equipment.

4. TEL IN TERMINAL

This is the audio signal input terminal of switchboard.

If the signal is inputted to the terminal, you are able to control the output of other input signals by the priority control volume of TEL IN.

5. TEL IN PRIORITY CONTROL VOLUME

This is able to control the mute level of INPUT 1~3 when the signal is inputted from the TEL IN terminal.

6. INPUT 3 TERMINAL

This is an unbalanced input terminal and connected with the external units.(CD, DVD, computer, etc.)

If you connect with computer, 'Y' jacks are required.

- 6.3ø Phone Jack : Unbalanced
- RCA Jack : Unbalanced

7. INPUT 2 TERMINAL

This is a balanced input terminal and connected with the mic signal or the external units.

8. INPUT 2 LEVEL SELECT SWITCH

This switch selects the input signal of INPUT 2.

9. INPUT 1 TERMINAL OF REAR PANEL

This is a balanced XLR input terminal that the signal is inputted.

If the front panel's MIC input terminal is connected with 6.3ø Phone Jack, the rear panel's MIC input terminal don't output the signal.

10. SELECT SWITCH OF INPUT 1 PHANTOM MIC

This switch selects a kind of INPUT 1's MIC on the rear panel.

Be able to use either DYNAMIC MIC or CONDENSER MIC, and the phantom power of +15V is supplied when using the condenser mic.

MIC : Select in case of using a general dynamic mic

PHANTOM MIC : Select in case of using a condenser mic

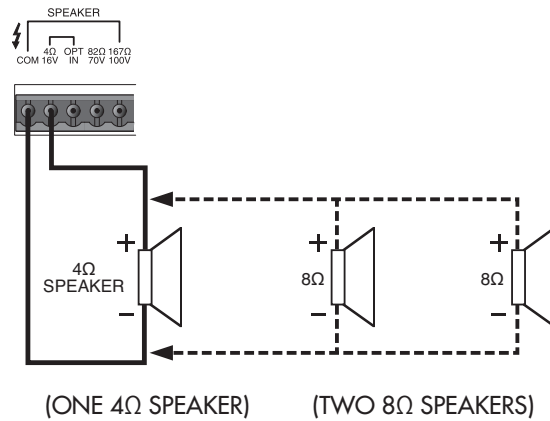
11. THE PRIORITY CONTROL VOLUME OF INPUT 1

The output of INPUT 2,3 is controlled by the priority control volume of INPUT 1 when the signal is inputted to the INPUT 1 terminal.

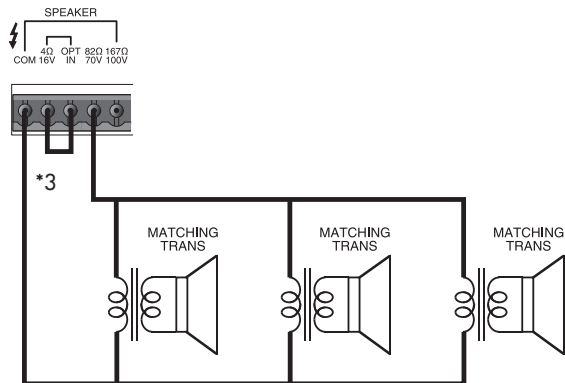
Connecting Speakers

Before connecting speakers to MA-106 unit, be sure to disconnect the AC power cable.

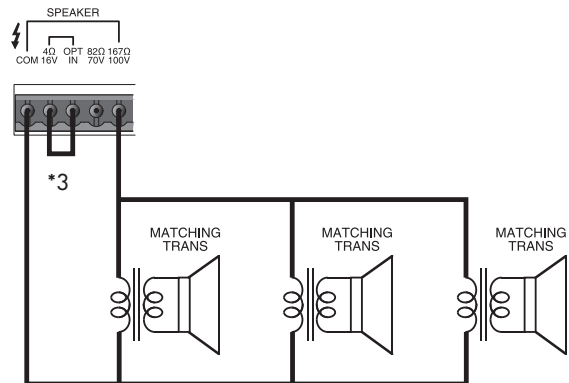
- FOR 4Ω TERMINAL



- FOR 70V TERMINAL

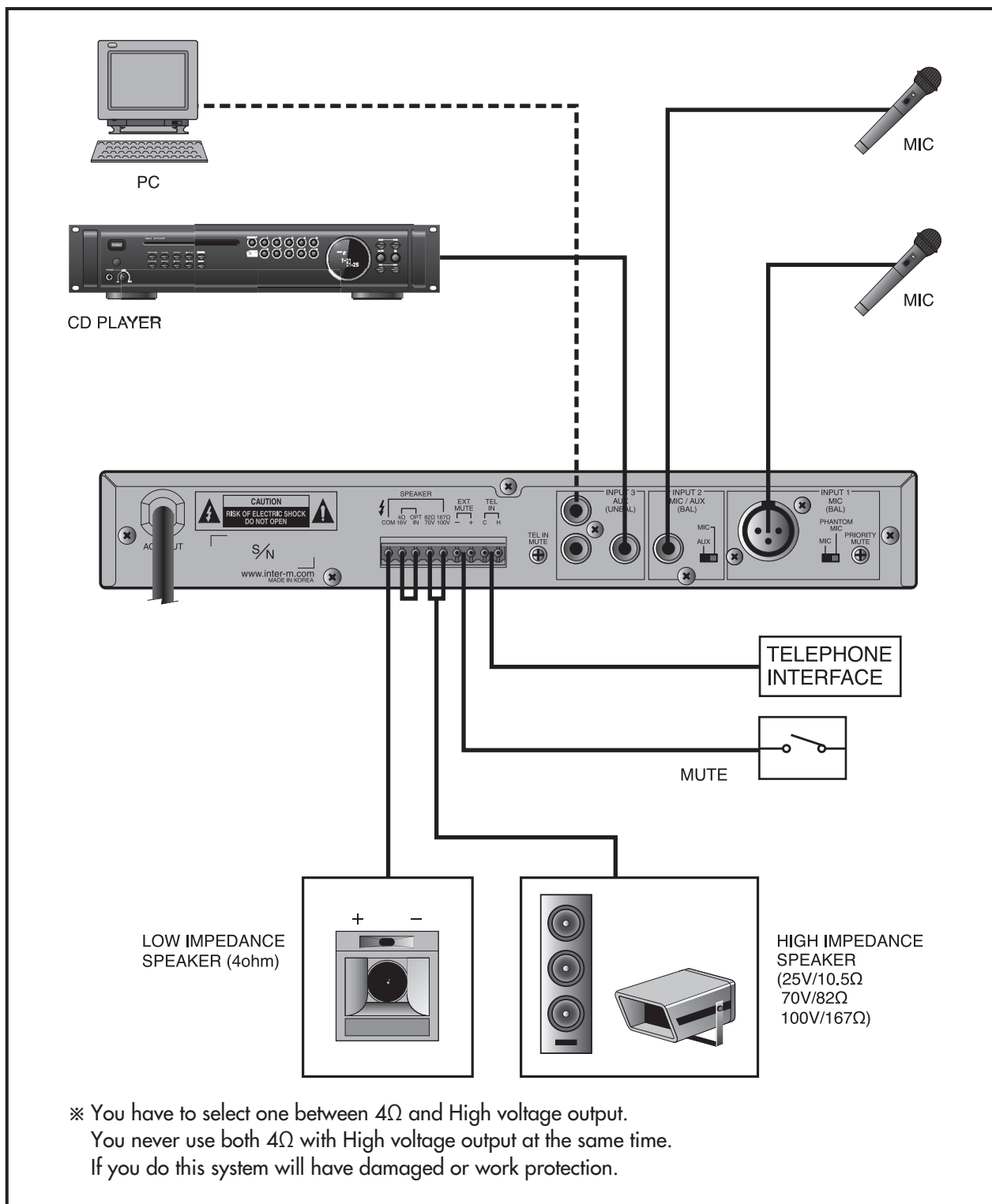


- FOR 100V TERMINAL

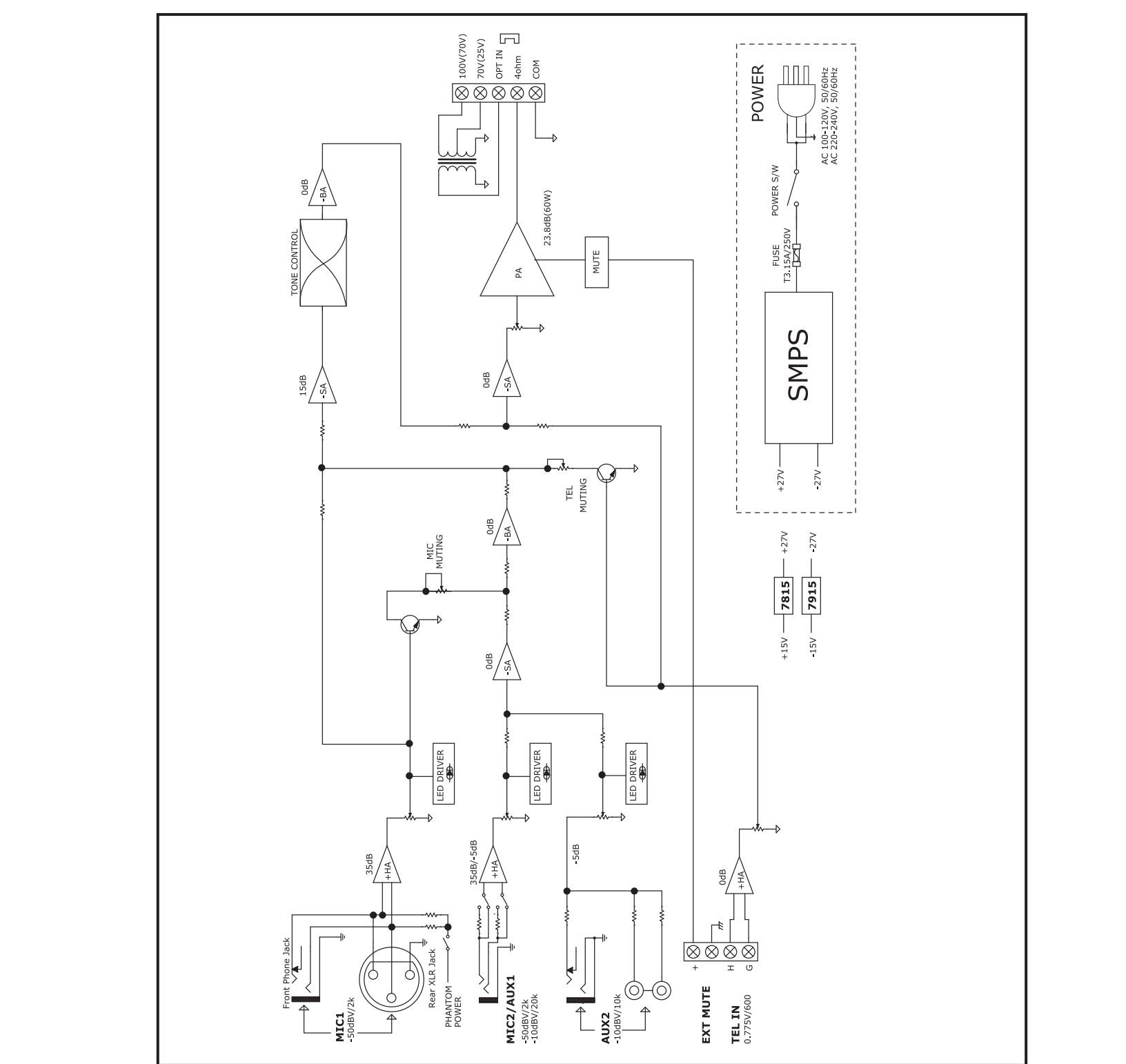


- NOTE :
1. Make certain that the total impedance is not less than the rated impedance indicated.
 2. Don't have to use several speaker terminals at the same time.
 3. If you're just dealing with the high impedance terminal, then make sure that 4Ω output terminal is connected with OPT-IN terminal.

Applications



Block Diagram



Specifications

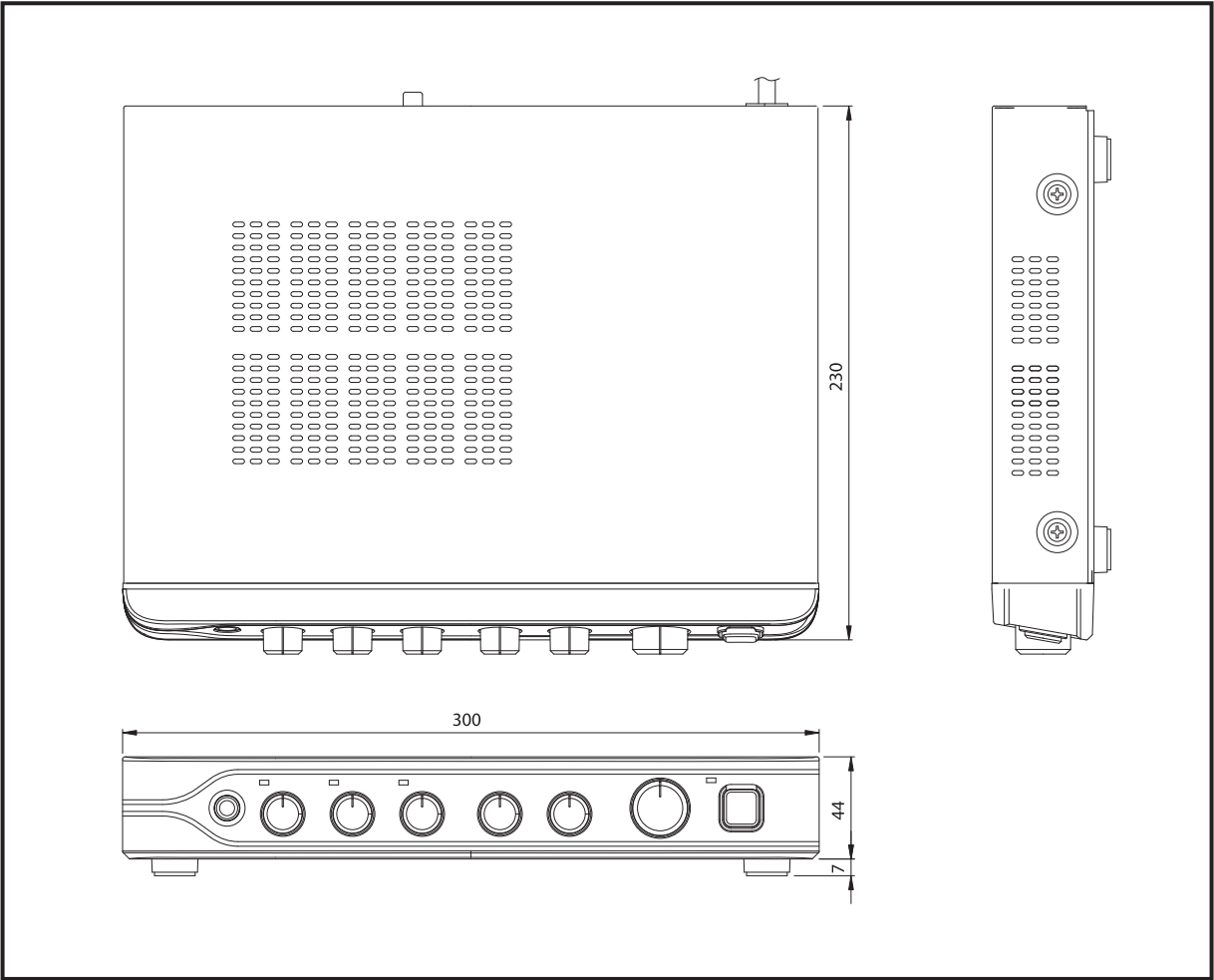
* 0dBV = 1.0Vrms

		MA-106
Rated Output Power		60W
Speaker Output Power / Impedance		15.5V/4Ω, 25V/10.5Ω, 70V/82Ω, 100V/167Ω
Input Sensitivity / Impedance	INPUT 1	-50dBV / 2kΩ
	INPUT 2(MIC)	-50dBV / 2kΩ
	INPUT 2(LINE)	-10dBV / 20kΩ
	INPUT 3	-10dBV / 10kΩ
	TEL IN	0.775 / 600Ω
Frequency Response (±3dB)		80Hz ~ 15kHz
T.H.D (at 1kHz Rated Output)		Less than 1% at 60W(with AES-17 filter)
S/N	INPUT 1,2	Better than 60dB
	INPUT 3, TEL IN	Better than 70dB
Tone Control	BASS (100Hz)	±12dB
	TREBLE (10kHz)	±12dB
Operating Temperature		-10°C ~ +40°C
Power Source		100–120VAC or 220–240VAC, 50/60Hz (Supplied AC mains depends on country requirements)
Power Consumption		24W
Weight		3.0kg/6.6lb
Dimensions		300(W) x 44(H) x 230(D)mm/11.8(H) x 1.7(H) x 9.1(D)in

* Specifications and design subject to change without notice.

- ※ **Remark:** 1. All specifications are measured with AES-17 filter.
 2. This sytem is used digital Amplifier (PWM Modulation) so the PWM leakage signal will appear to output terminal, but it doesn't matter. You can't hear the PWM leakage sound because of PWM frequencies is very higher than Audio frequencies.

※ DIMENSIONS



Service

Procedures

Take steps to insure the problem is not related to operator error or other products within the system. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Variations and Options

Variations

Variations of this product exist to reflect the variations in AC power requirements throughout the world. Product supplied through local sources are compatible with local AC power requirements.

Options

No optional items are available for this product.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact Inter-M directly or the authorized Inter-M Distributor for your specific country or region.



Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products, as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company that is truly international in scope, with factories and offices in Korea and China, and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe, Inter-M is well-poised for further growth and expansion.

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