

# Operation Manual

Digital Amplifier

**MA-103**



**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.

Atentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant on 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 than 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-103 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 30W, 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 & ADDITIONAL FUNCTIONS

Configured 3 channel inputs and various reception of inputs are available by 3.5mm 3P EURO input, 6.3Φ & 3.5Φ Phone Jack, RCA cable.

More convenient use via TEL-IN and Priority function.

### - TONE CONTROL FUNCTION

Separate Bass(300Hz) and Treble(10kHz) controls to tailor your sound. Easy to control the tone due to user frequency which is including bass and treble.

### - PRIORITY BROADCAST FUNCTION

Adopted the Priority broadcast function that can control other input signal by TEL IN & INPUT 1 input signal. (TEL IN >> INPUT 1 >> INPUT 2 = INPUT 3)

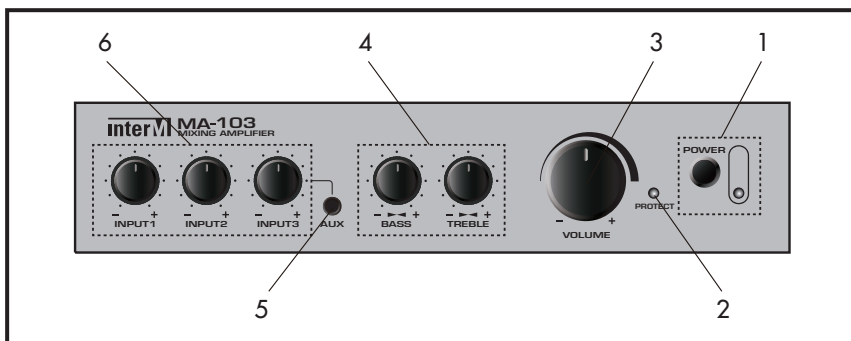
## Package and accessory includes

1. Euro terminal block (3.5mm pitch) 3P x 2EA
2. Euro terminal block (5.08mm pitch) 7P x 1EA
3. User manual x 1EA

## 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. (AC 100-240V)
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. POWER SWITCH

This switch turns the power on and off. Green LED is on when the amplifier is active and powered.

### 2. LED INDICATES ACTIVE STATUS OF AMPLIFIER PROTECTION NETWORK

LED indicates the operation status of protection network inside of equipment. Once the protection circuit is operated, LED is turned on and the output is blocked.

### 3. MASTER VOLUME CONTROL

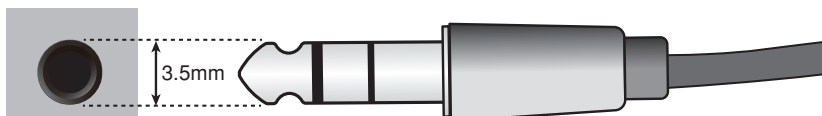
Control equipment that control overall volume of audio signals adjusted by each input audio volume control equipment. Clockwise turning will increase the audio volume.

### 4. TONE CONTROL

These control the bass(300Hz) and treble(10kHz) of the main output signal by  $\pm 10\text{dB}$ .

### 5. AUX 3.5Φ PHONE JACK INPUT TERMINAL

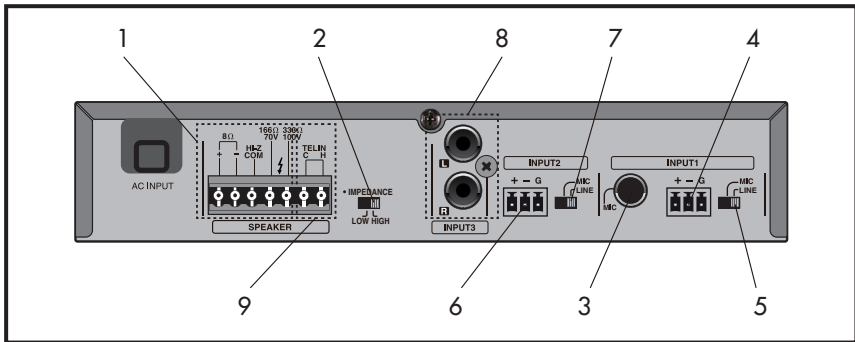
The unbalance input terminal to connect with external devices capable to connect with devices such as mobile phones, MP3 etc.



### 6. INPUT VOLUME CONTROL

The input volume control by which volume can be adjusted fit to each channel of INPUT 1, 2, 3.

## Rear Panel

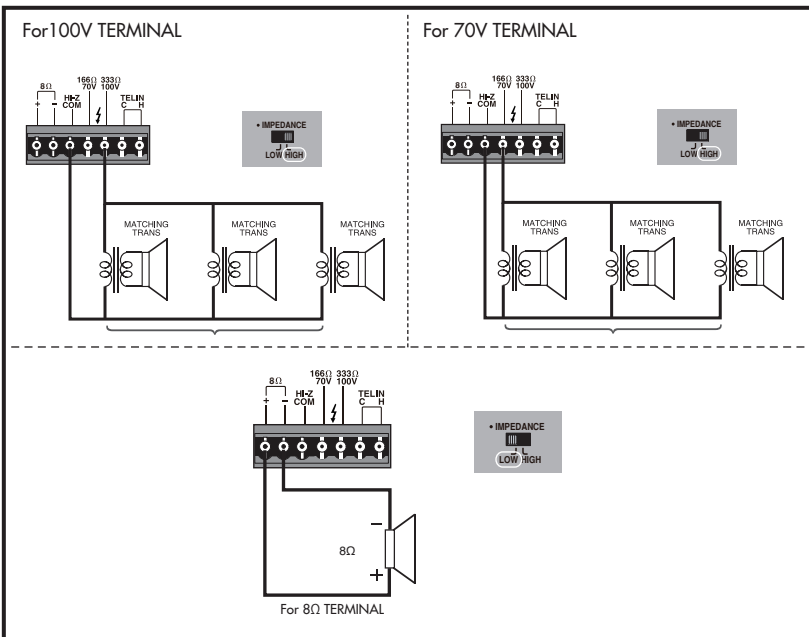


### 1. SPEAKER OUTPUT TERMINAL

This is the terminal for speakers. 8Ω, 70V(166Ω), 100V(333Ω) cannot be used at the same time. It may cause overload and malfunction.

※ Connecting Speakers

Before connecting speakers to MA-103 unit, be sure to disconnect the AC power cable.



- ※ NOTE: 1. Make certain that the total impedance is not less than the rated impedance indicated. (LOW-8Ω, 70V-166Ω, 100V-333Ω)  
 2. Please make sure not to use 8Ω, 70V, 100V terminals simultaneously.  
 3. Upon using 100V(333Ω), 70V(166Ω), please set impedance selection switch to HIGH, and for 8Ω speaker, set impedance selection switch to LOW.  
 ※ No sound is output upon the impedance selection switch is not set properly, thus please be careful upon install or using it.

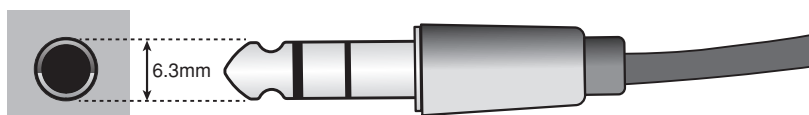
## 2. IMPEDANCE SELECTION SWITCH

This is LOW impedance or HIGH impedance selection switch. In case to use 8Ω speaker select LOW, and for 166Ω or 333Ω speaker, please select HIGH. (there will be no speaker output if the setting is not proper)

## 3. INPUT 1 MIC INPUT TERMINAL (6.3Φ, PHONE JACK, BALANCED)

Phone Jack terminal that inputs Mic signal to INPUT 1.

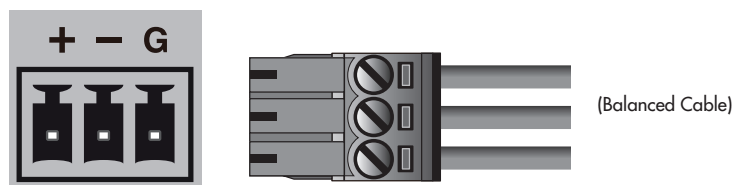
<6.3Φ, Phone Jack>



## 4. INPUT 1 TERMINAL (3P EURO)

This is the balance input terminal of INPUT 1. It can use Mic and line input.

<EURO Terminal>



Use 3.5mm 3P Euro terminal.

## 5. LINE / MIC INPUT TERMINAL & INPUT SELECTION SWITCH (INPUT 1)

Switch for selecting Mic and line signal input. The usage of input terminal differs from respective input selection switch.



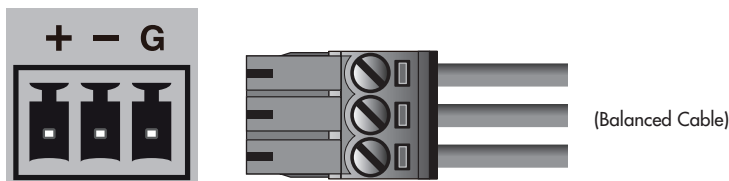
- LINE: Use for line input.
- MIC: Use for ordinary Dynamic or 6.3Φ Phone Jack mic input.



**6. INPUT 2 TERMINAL (3P EURO)**

Balance input terminal of INPUT 2. Mic and line input can be used.

<EURO Terminal>



Use 3.5mm 3P Euro terminal.

**7. LINE / MIC INPUT TERMINAL & INPUT SELECTION SWITCH (INPUT 2)**

Switch for selecting Mic and line signal input. The usage of input terminal differs from respective input selection switch.

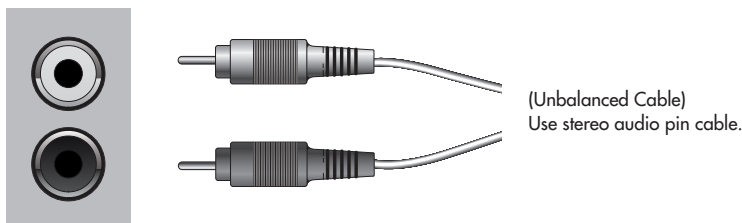


-LINE: Use for LINE input

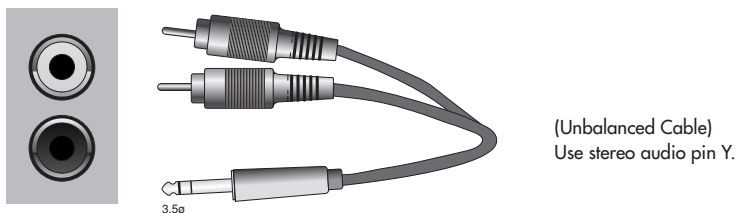
-MIC : Use for ordinary Dynamic MIC input

**8. INPUT 3 (RCA INPUT)**

The unbalance input terminal that connects external devices. It can be connected source devices such as computer, CD, DVD etc.

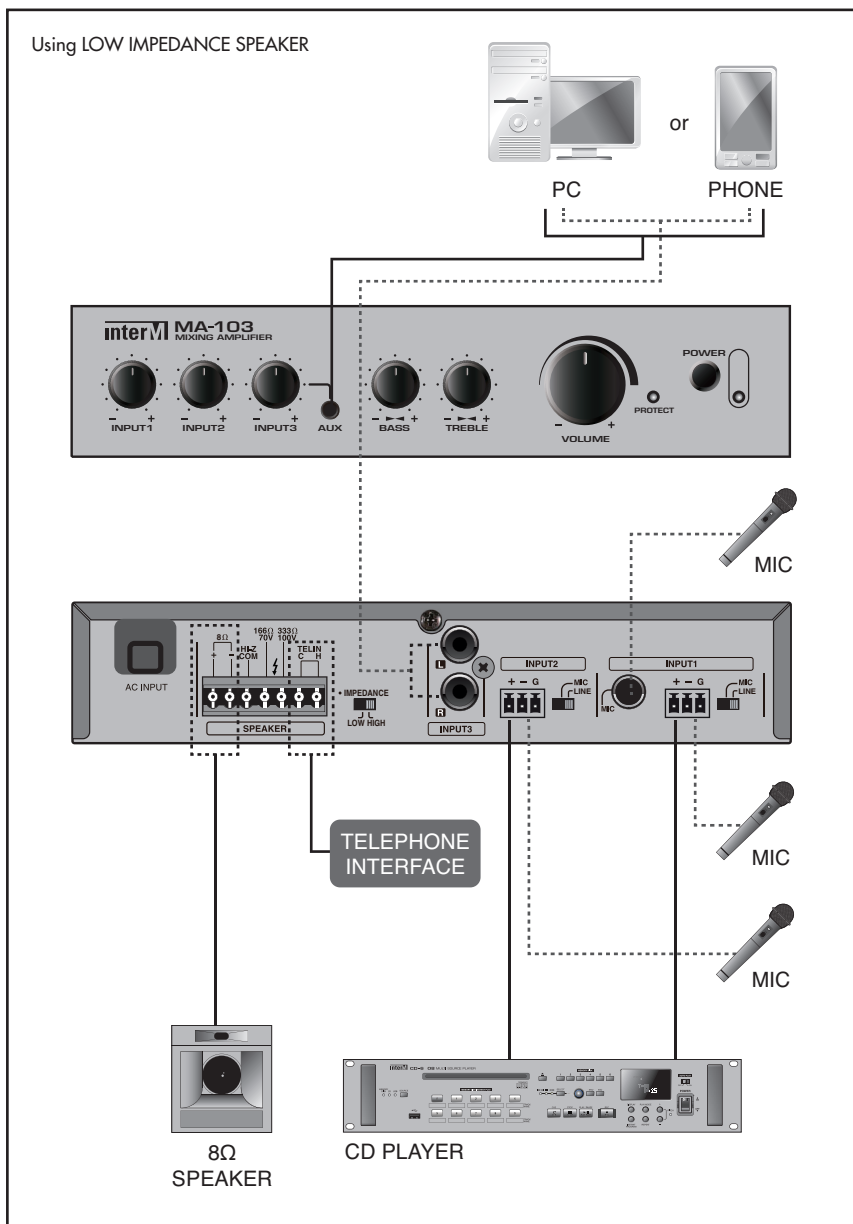


'Y' cable is needed when connecting to computers.

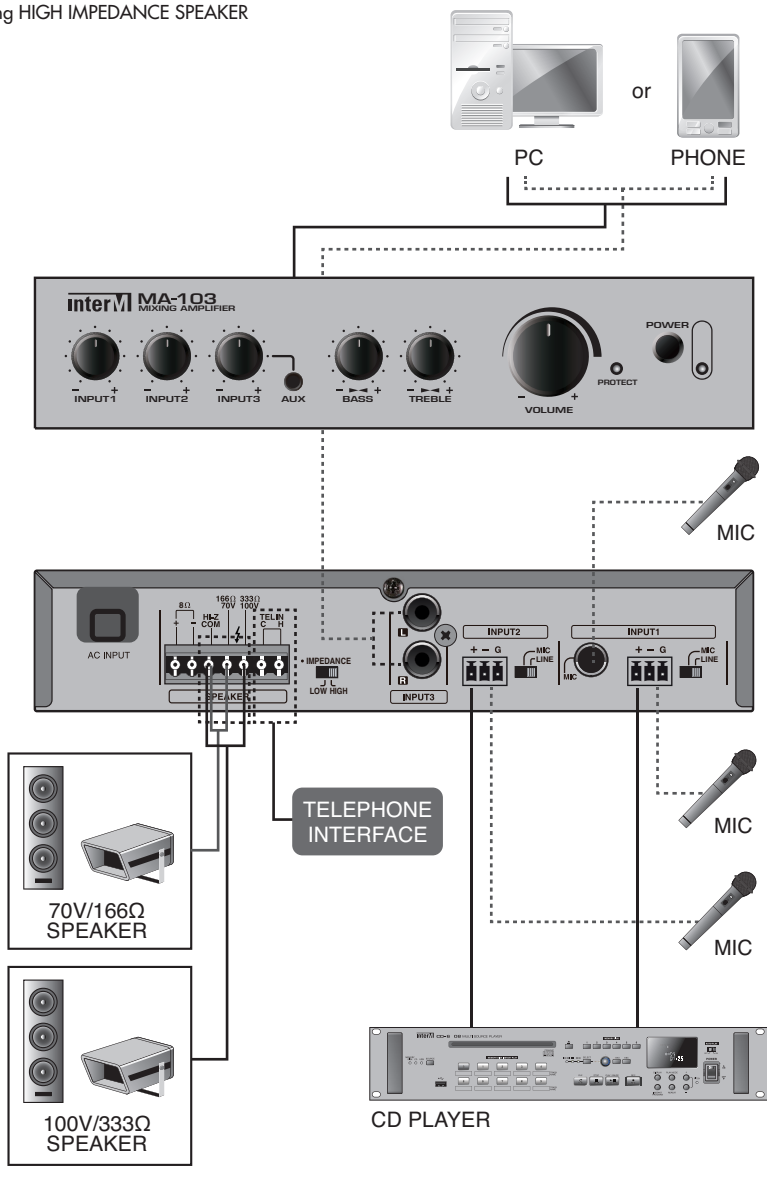
**9. TEL IN TERMINAL**

This is the audio signal input terminal of the Switch Board. Once a signal is input to terminal the output of other input signal is to be reduced in accordance with priority, and TEL IN input signal is to be output. (TEL IN >> INPUT 1 >> INPUT 2 = INPUT 3)

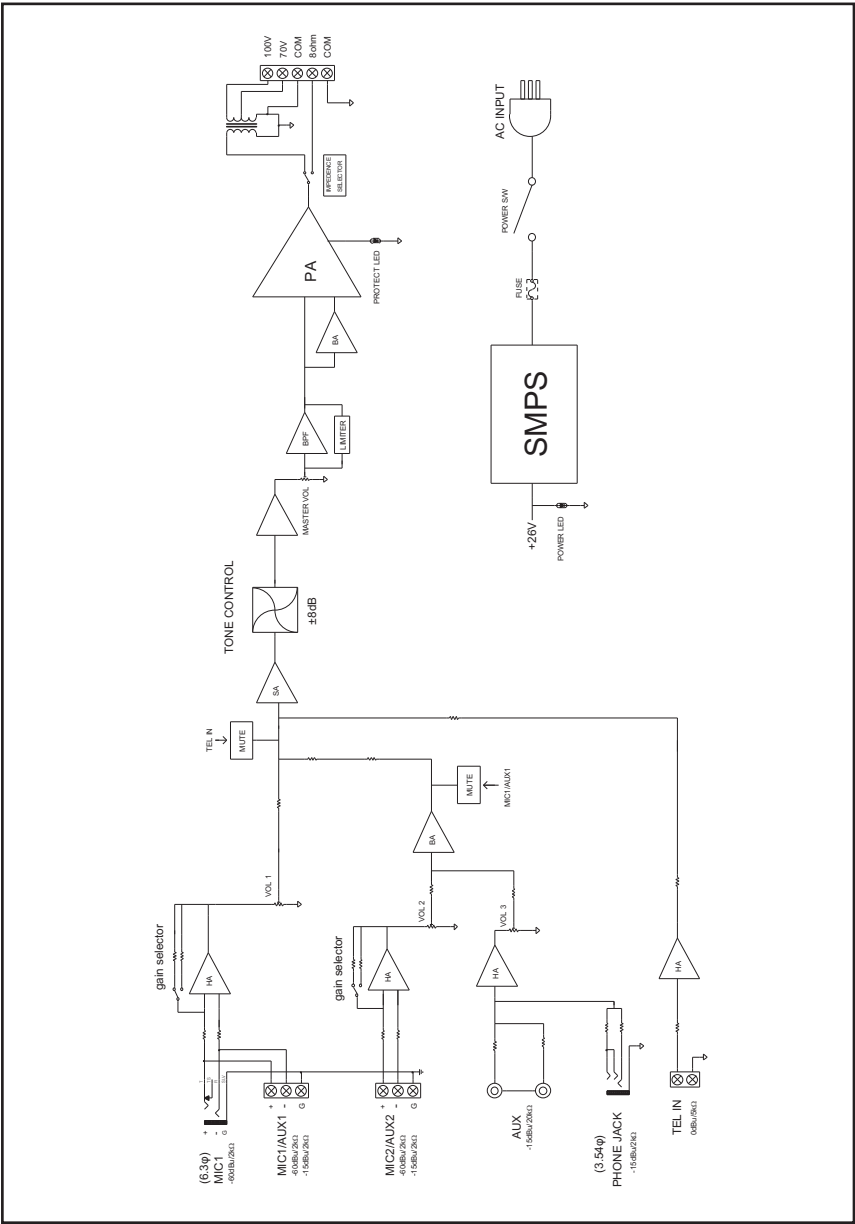
## Applications



Using HIGH IMPEDANCE SPEAKER



Block Diagram

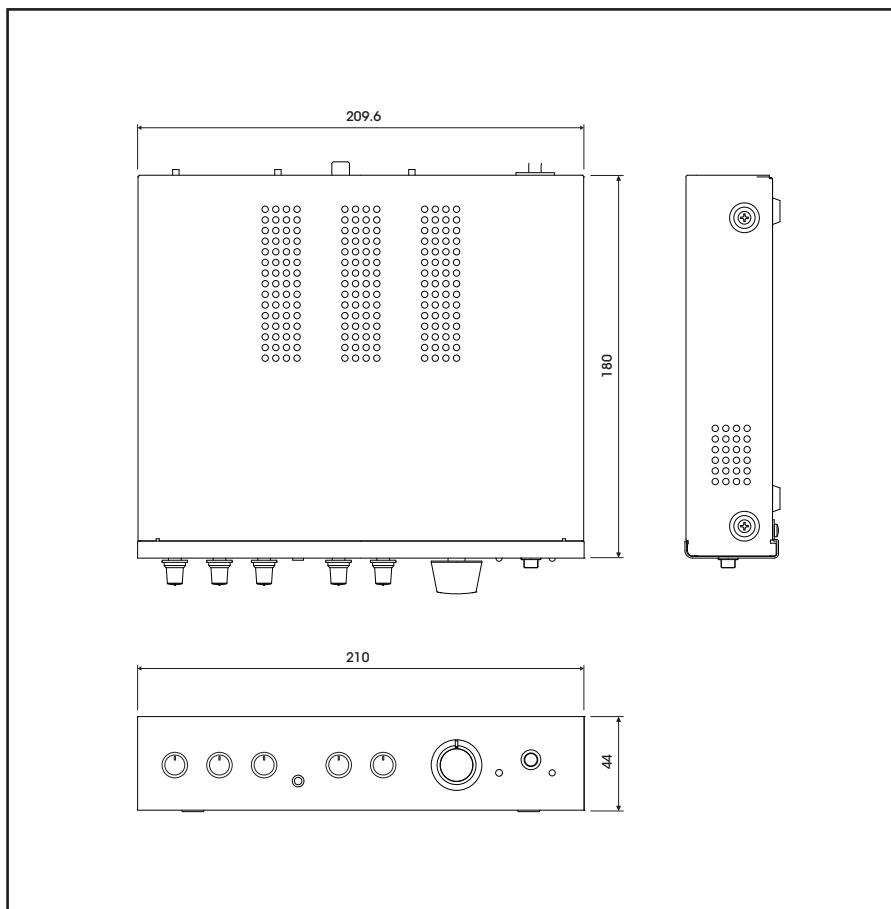


## Specifications

		MA - 103
Rated Output Power		30W
Speaker Output Power / Impedance		15.5V/8Ω, 70V/166Ω, 100V/333Ω
Input Sensitivity / Impedance	MIC (BALANCE)	-60dBu/2kΩ
	LINE (BALANCE)	-15dBu/2kΩ
	RCA (UNBALANCE)	-15dBu/20kΩ
	3.5Φ PHONE JACK (UNBALANCED)	-15dBu/2kΩ
	TEL IN	0dBu/5kΩ
LOW IMPEDANCE (8Ω) LINE,RCA,TEL IN Frequency Response (1W,±3dB)		200Hz ~ 18kHz
LOW IMPEDANCE (8Ω) MIC Frequency Response (1W,±3dB)		200Hz ~ 13kHz
T.H.D - 1/3Pwr		Less than 0.5%
S/N	MIC	Better than 55dB
	LINE, TEL IN,	Better than 75dB
	RCA, 3.5Φ PHONE JACK	Better than 75dB
Tone Control	BASS(300Hz)	±10dB
	TREBLE (10kHz)	±10dB
Operating Temperature		-10°C ~ +40°C
Power Source		AC 100 ~ 240V, 50/60Hz
Power Consumption		10.5W(1/8W)
Weight (SET)		1.5kg/3.3lb
Dimensions (SET)		210(W) x 44(H) x 180(D)mm/ 8.27(W) x 1.73(H) x 7.09(D)in

※ Design and specification are subject to be changed for the improvement of product quality without pre notice.

※ 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

Products supplied through legitimate 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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