

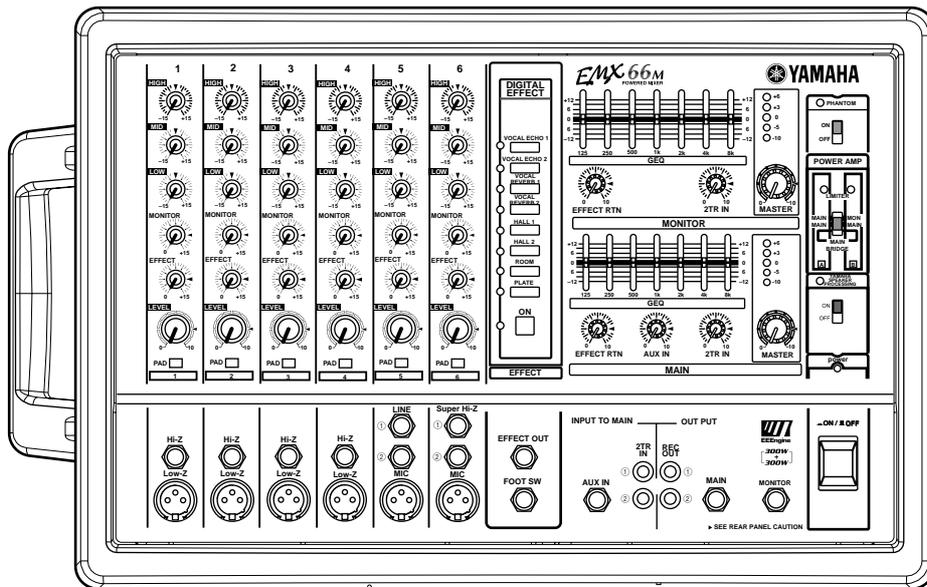


EMX 66M

POWERED MIXER



Owner's Manual



Keep This Manual For Future Reference.



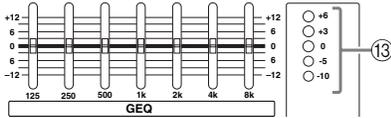
The Owner's Manual Revisions



Thank you for purchasing Yamaha EMX66M Powered Mixer. Parts of the EMX66M owner's manual have been revised. Please refer to the following revisions rather than the corresponding sections of the original owner's manual.

P.10

MAIN section



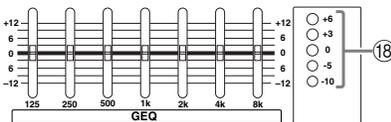
⑬ Level Meter

This LED display shows the level of signals received at the MAIN OUT jack (input/output panel ⑥).

Note: The SPEAKERS 1 & 2 jacks (rear panel ①) output the signals received at the MAIN OUT jack via the internal power amplifier. Check the output signal level via the LIMITER indicator (⑬).

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MONITOR section



⑱ Level Meter

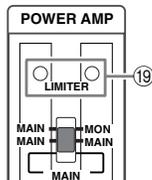
This LED display shows the level of signals received at the MONITOR OUT jack (input/output panel ⑥).

Note: The SPEAKERS 1 & 2 jacks (rear panel ①) output the signals received at the MONITOR OUT jack via the internal power amplifier. Check the output signal level via the LIMITER indicator (⑱).

POWER AMP section

⑲ LIMITER indicator

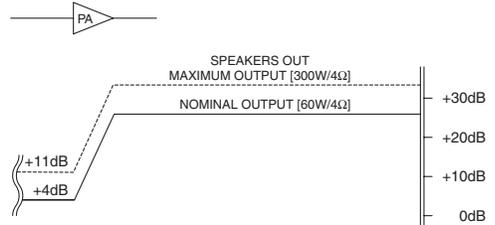
If the output level of signals received at the SPEAKERS output jacks (output of the internal power amplifier) reaches maximum, the indicator will light.



Caution: If the LIMITER indicator flashes continuously, the internal power amplifier section is being excessively overloaded and may malfunction. Reduce the output level at the Master control (⑫⑰) below the level that the indicator flashes only briefly on the highest transient peaks.

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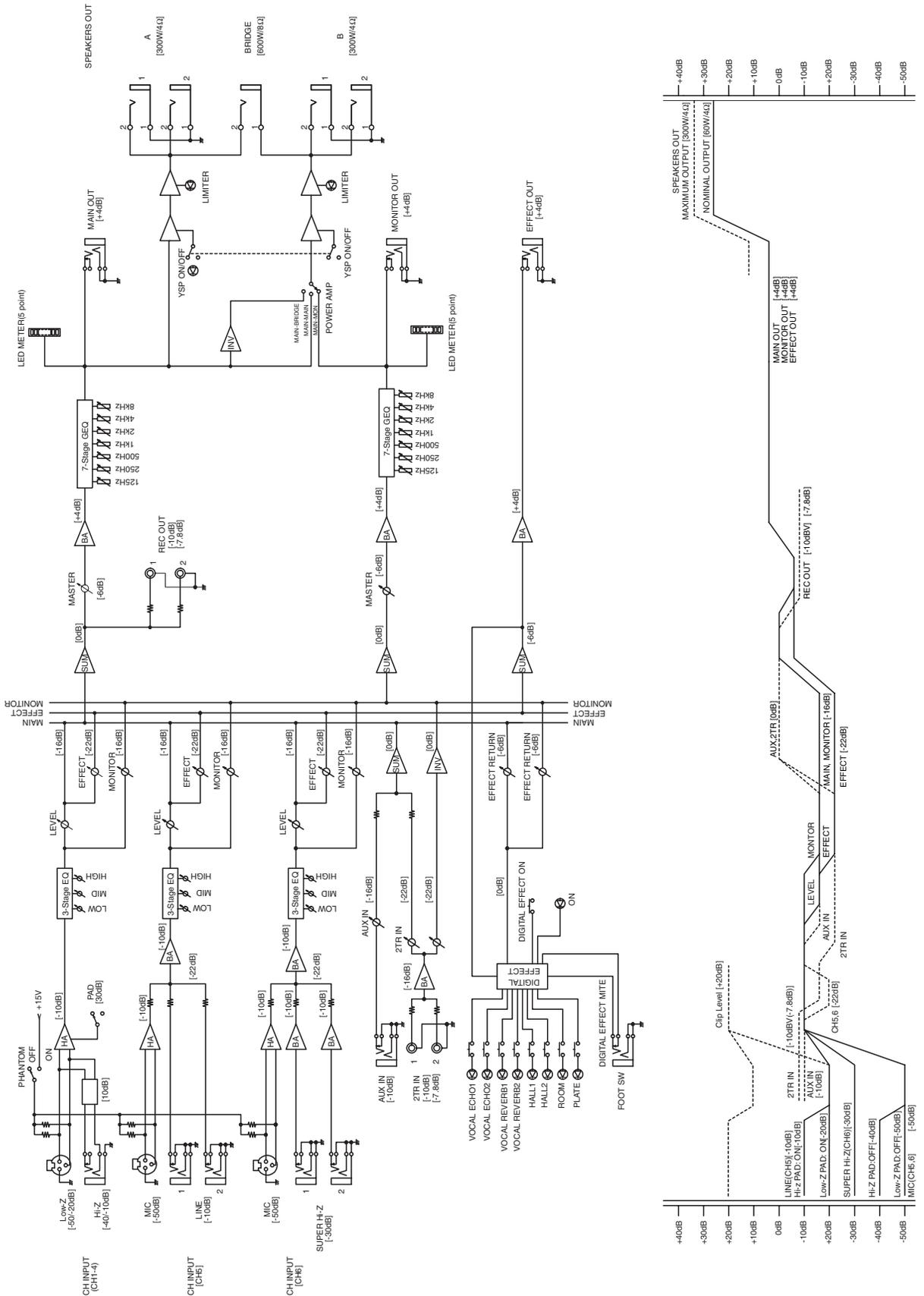
Block and Level diagram



Power Amplifier output section level diagram (bottom right)

These plots show the nominal output and maximum output levels of signals received at the SPEAKERS jacks. If the output level is +4dB (Level Meter "0"), the internal power amplifier will deliver 60W into a 4Ω load. If the output level is +11dB (LIMITER indicator lights), the internal amplifier will deliver a maximum of 300W into a 4Ω load. If you are using the BRIDGE jack, the internal power amplifier will deliver 120W into an 8Ω load with a +4dB signal, and a maximum of 600W into an 8Ω load with a +11dB signal.

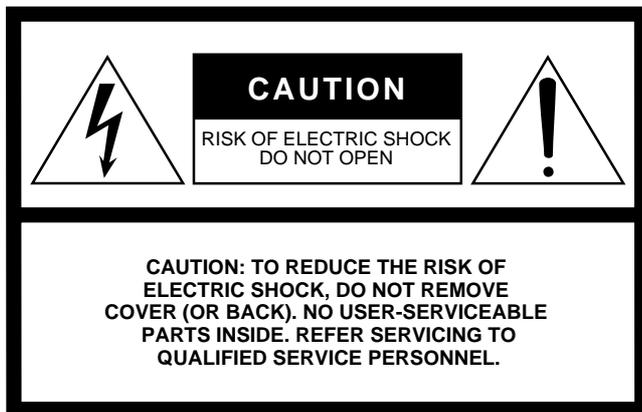
Block and Level diagram



FCC INFORMATION (U.S.A.)

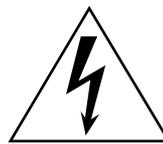
1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!** This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures: Relocate either this product or the device that is being affected by the interference. Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s. In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable. If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

The above statements apply **ONLY** to those products distributed by Yamaha Corporation of America or its subsidiaries.



The above warning is located on the rear of the unit.

• Explanation of Graphical Symbols



The lightning flash with arrowhead symbol within an 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 to persons.



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

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT

THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:

GREEN-AND-YELLOW :	EARTH
BLUE :	NEUTRAL
BROWN :	LIVE

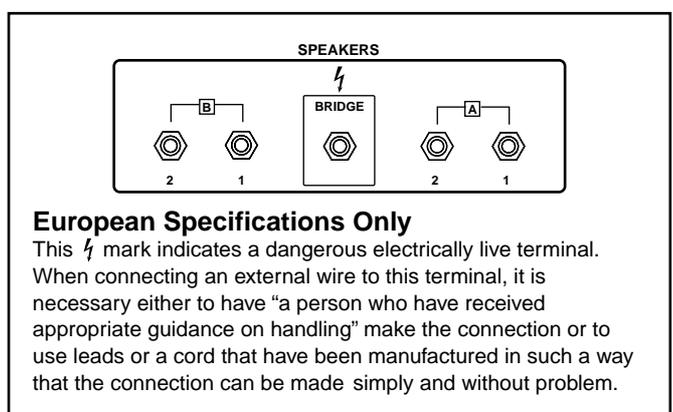
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol \perp or coloured GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

* This applies only to products distributed by YAMAHA KEMBLE MUSIC (U.K.) LTD.



European Specifications Only

This ⚡ mark indicates a dangerous electrically live terminal. When connecting an external wire to this terminal, it is necessary either to have "a person who have received appropriate guidance on handling" make the connection or to use leads or a cord that have been manufactured in such a way that the connection can be made simply and without problem.

Precautions

WARNING

Installation

- Connect this unit's power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.
- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.
- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.
- Do not place heavy objects, including this unit, on top of the power cord. A damaged power cord is a fire and electrical shock hazard. In particular, be careful not to place heavy objects on a power cord covered by a carpet.
- The power to this device is not completely shut off even when the power switch is turned off. Locate the device close to the AC outlet so you can easily reach the power plug.
- Use only the included power cord for this unit. Using other types may be a fire and electrical shock hazard.

Operation

- Do not scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard.

- Do not remove the unit's cover. You could receive an electrical shock. If you think internal inspection, maintenance, or repair is necessary, contact your dealer.
- Do not modify the unit. Doing so is a fire and electrical shock hazard.
- If lightning begins to occur, turn off the power switch of the unit as soon as possible, and unplug the power cable plug from the electrical outlet.
- If there is a possibility of lightning, do not touch the power cable plug if it is still connected. Doing so may be an electrical shock hazard.

In case an abnormality occurs during operation

- If the power cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the unit with a damaged power cord is a fire and electrical shock hazard.
- Should this unit be dropped or the cabinet be damaged, turn the power switch off, remove the power plug from the AC outlet, and contact your dealer. If you continue using the unit without heeding this instruction, fire or electrical shock may result.
- If you notice any abnormality, such as smoke, odor, or noise, or if a foreign object or liquid gets inside the unit, turn it off immediately. Remove the power cord from the AC outlet. Consult your dealer for repair. Using the unit in this condition is a fire and electrical shock hazard.

CAUTION

Installation

- Hold the power cord plug when disconnecting it from an AC outlet. Never pull the cord. A damaged power cord is a potential fire and electrical shock hazard.
- Do not touch the power plug with wet hands. Doing so is a potential electrical shock hazard.
- This unit has ventilation holes at the rear to prevent the internal temperature rising too high. Do not block them. Blocked ventilation holes are a fire hazard.
- When rack-mounting the unit, allow enough free space around the unit for normal ventilation. This should be 10 cm at the sides, 15 cm behind, and 25 cm above.
For normal ventilation during use, remove the rear of the rack or open a ventilation hole.
If the airflow is not adequate, the unit will heat up inside and may cause a fire.

Operation

- Use only speaker cables when connecting speakers to amplifier outputs. Using other types of cables is a fire hazard.

Maintenance

- Clean the contacts of the phone plug before connecting it to the SPEAKERS jack of this unit. Dirty contacts may generate heat.

PRECAUTIONS FOR OPERATION

– FOR CORRECT OPERATION –

Connector pin assignments

- XLR-type connectors are wired as follows: pin 1: ground, pin 2: hot (+), and pin 3: cold (-).

Replacing abrasive parts

- The performance of components with moving contacts, such as switches, rotary controls, faders, and connectors, deteriorates over time. The rate of deterioration depends on the operating environment and is unavoidable. Consult your dealer about replacing defective components.

Influence on cell phone usage

- Using a cell phone (mobile telephone) near this unit may induce noise. If noise occurs, use the telephone away from the unit.

Volume level setting

- Do not set all equalizer controls and faders to maximum. Doing so may cause oscillation depending on the condition of the connected unit and speakers, and may damage the speakers.

Introduction

Thank you for purchasing the Yamaha EMX66M Powered Mixer. In order to take full advantage of the EMX66M and enjoy long and trouble-free performance, please read this owner's manual carefully, and keep it in a safe place for future reference.

Features

- The EMX66M provides six input channels compatible with mic/line signals, including high-impedance input suitable for an electric-acoustic guitar. The EMX66M has ample power, with a maximum output of 300 W+300 W (600 W with bridge connection), and is suitable for a wide range of applications from installed systems to small-scale PA systems.
- A two-channel power amp is built-in. The input signals for the two channels can be selected as MAIN+MAIN, MAIN+MONITOR, or MAIN (bridge connection).
- Independent 7-band graphic EQ is provided for both the MONITOR section and the MAIN section. This allows the volume and frequency response to be adjusted separately for the main speakers and monitor speakers.
- The power amp section has a limiter circuit to prevent sound distortion and protect the speakers.
- A digital effect with eight selectable effect types is built-in. A variety of effects can be applied to add reverberation or ambiance to vocals or instrumental sounds.
- The EMX66M has implemented “EEEngine”, Yamaha's epochal amp drive technology to create an unrivaled high-efficiency drive. The EEEngine's energy-saver/low-heat-generation design has reduced power consumption to 50% or less, and reduced heat generation to 35% or less (in field applications, compared to Yamaha's previous models), and has led to a reduction in energy cost and to less-restrictive installation requirements related to heat generation.

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EMX66M Quick Guide

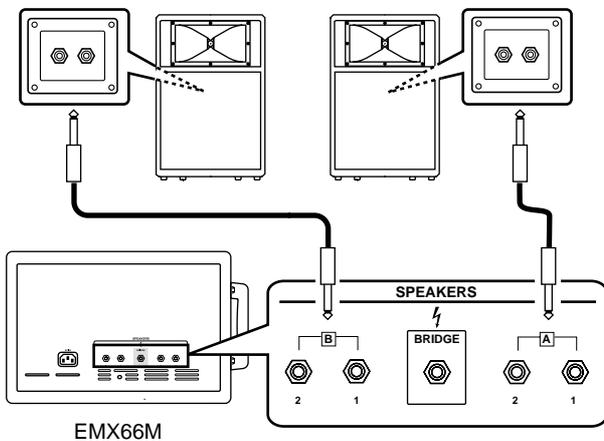
The following steps (1–5) explain the basic connection and operation of the EMX66M.

Also, please read “Front and Rear Panel” and “Basic Operation” following this Quick Guide section to learn more about using the EMX66M.

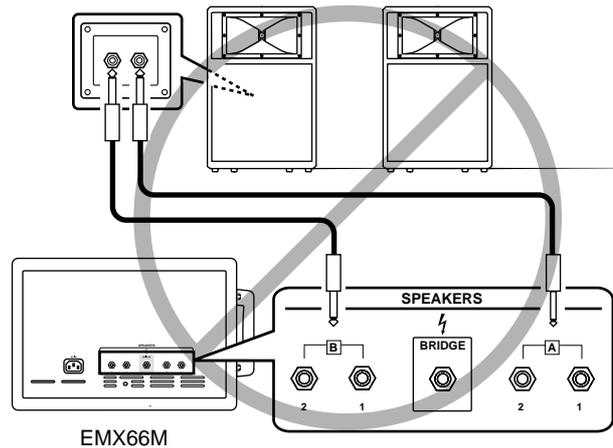
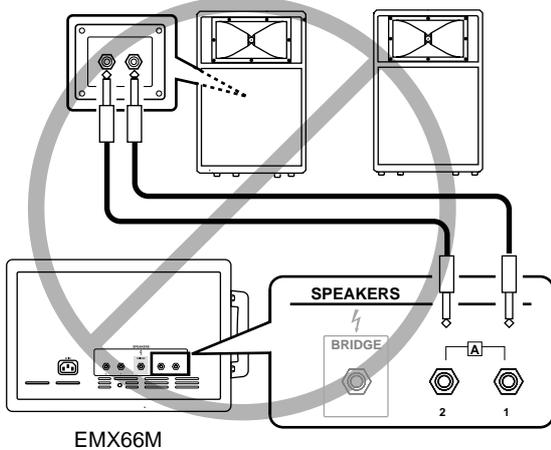
STEP 1 Connection

Connecting speakers

Using speaker cables, connect each speaker to the A 1 or 2 jack and to the B 1 or 2 jack in the SPEAKERS jack section on the rear panel of the EMX66M.

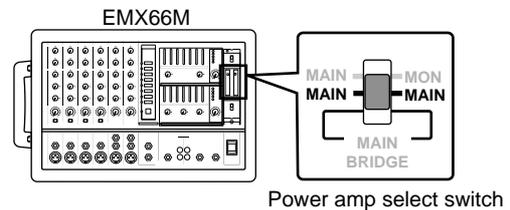


- You may connect to either of the two jacks on the speakers.
 - Be sure to use a cable designed for speaker connection.
- Never connect the speakers in the manner shown below. Otherwise, the EMX66M's built-in power amplifier will be damaged.



Setting the power amplifier mode

Set the power amp select switch (located on the right corner on the panel) to MAIN-MAIN.

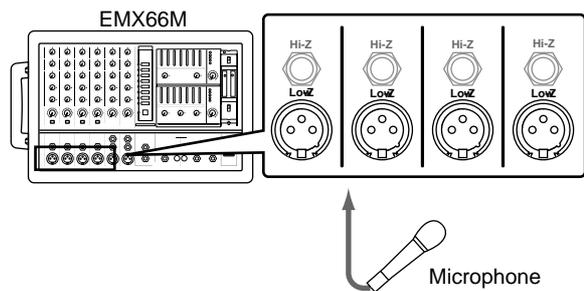


- This Quick Guide assumes that two main speakers are connected. Refer to pages 16–17 for other connections and power amp select switch settings.

Connecting a microphone

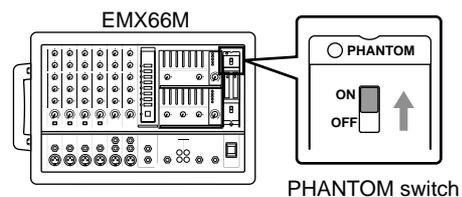
Make sure that the power is turned off to the EMX66M.

Connect a microphone to the Low-Z jack of channel 1–4.



Using a condenser microphone

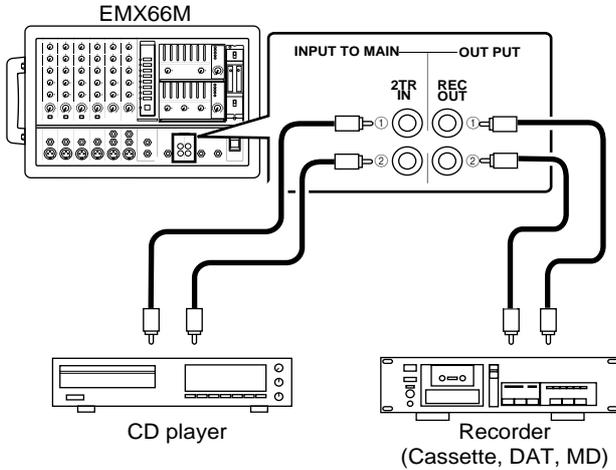
Turn on the PHANTOM switch (located in the upper right corner on the panel).



- Do not connect or disconnect a condenser microphone while the power to the unit is on and the PHANTOM switch has been turned on.

Connecting a CD player, MD player, and/or cassette deck

Connect a CD player or MD player to the 2TR IN jacks. Refer to the operation manual of the corresponding device for more information on the input and output of the device.

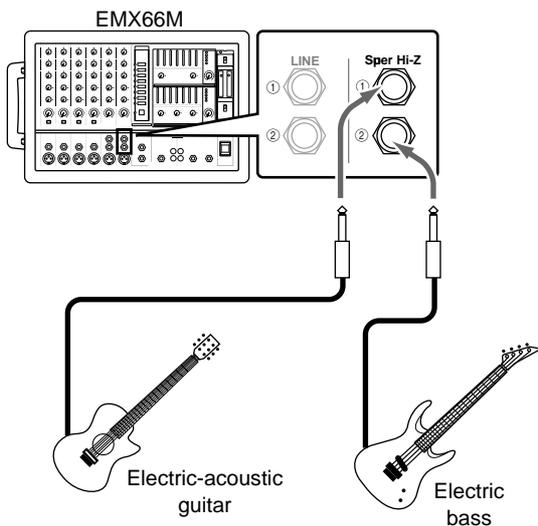


- To connect a second player, use the LINE jack or Hi-Z jack.
- You cannot use the Hi-Z jack and the Low-Z jack for the same channel at the same time. If a microphone has already been connected to the Low-Z jack of a channel, you cannot connect a player to the Hi-Z jack of the channel.
- Connect a recorder to the REC OUT jacks.

Connecting an electric acoustic guitar or electric bass

Connect an electric acoustic guitar or electric bass to the Super Hi-Z jacks.

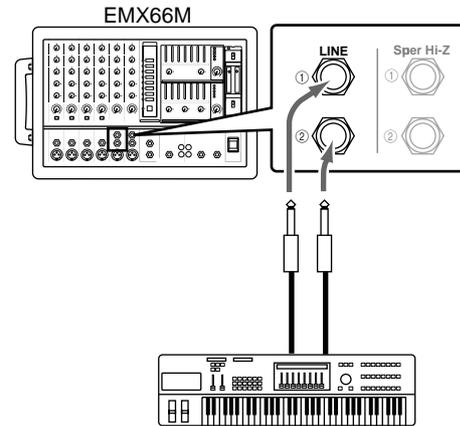
You can use either or both of the 1 and 2 jacks.



- If you wish to use a guitar signal processor or bass effect unit, connect them to the Hi-Z jack or LINE jack. You cannot use the Hi-Z jack and the Low-Z jack for the same channel at the same time. If a microphone has already been connected to the Low-Z jack of a channel, you cannot connect the effect unit to the Hi-Z jack of the channel.

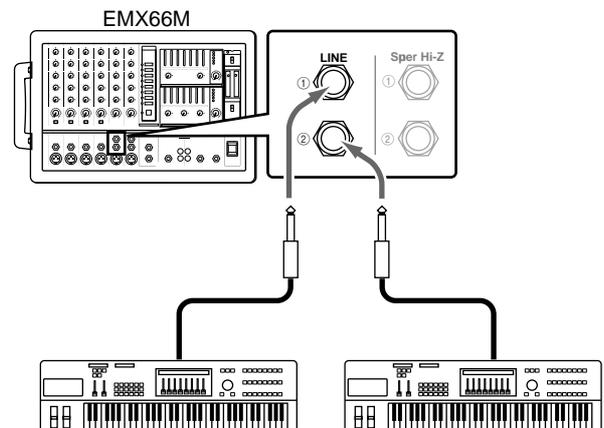
Connecting an electronic musical instrument

To the EMX66M's LINE jacks, you can connect an electronic musical instrument such as a synthesizer, drum machine, signal processor connected to an electric guitar, etc. Refer to the diagram below to make a stereo connection from the output jacks (such as L/MONO and R) of an electronic musical instrument to the LINE jacks in stereo.



Synthesizer, drum machine, guitar processor, etc.

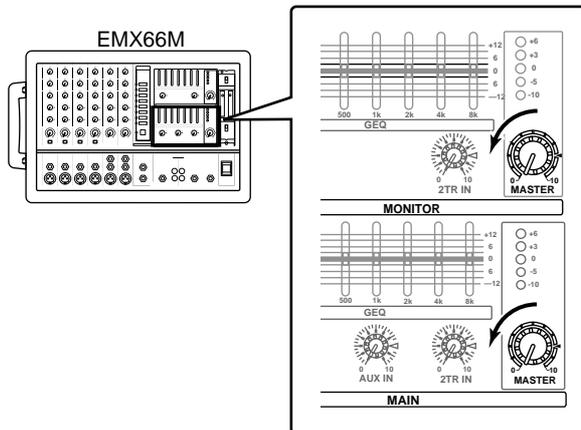
If you wish to connect multiple instruments, make a monaural connection as shown below.



- You can also use the Hi-Z jacks and Super Hi-Z jacks to connect multiple instruments. You cannot use the Hi-Z jack and the Low-Z jack for the same channel at the same time. If a microphone has already been connected to the Low-Z jack of a channel, you cannot connect an instrument to the Hi-Z jack of the channel.

STEP 2 Power on

- 1 Turn on the power to all external devices connected to the EMX66M.
- 2 Make sure that the MASTER controls in the MONITOR section and the MAIN section are set to “0,” then press the POWER switch on the EMX66M to turn on the power.

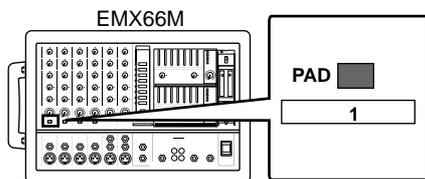


- Be sure to follow the power up sequence specified above to prevent the speakers from being damaged.

STEP 3 Sound output

Set the MASTER control in the MAIN section to “◀,” then while playing an instrument connected to a channel to be checked (or while speaking to a connected microphone), adjust the LEVEL control of the corresponding channel so that the 0 LED of the peak level indicator in the MAIN section will light up momentarily.

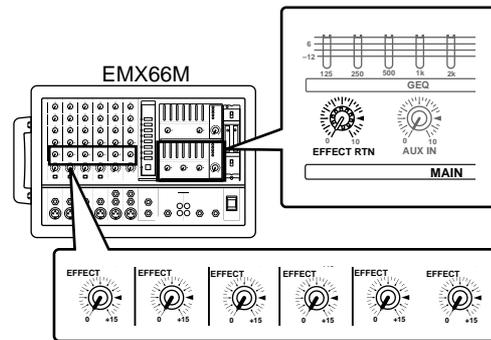
- Do not press the PAD switch if sound is input from the microphone. Otherwise, press the PAD switch on.



- To correct the low range, turn on the YAMAHA SPEAKER PROCESSING switch on the right of the panel.
- Note that if the LIMITER indicator stays lit for a long time, the built-in amplifier and speakers may be damaged.

STEP 4 Applying built-in effects

- 1 Turn on the ON switch in the DIGITAL EFFECT section. The ON switch indicator lights up.
- 2 Select one of eight effect types, then press the switch.
- 3 Adjust the amount of effect applied by using the EFFECT control of the target channel and the EFFECT RTN control in the MAIN section.

**STEP 5 Power off**

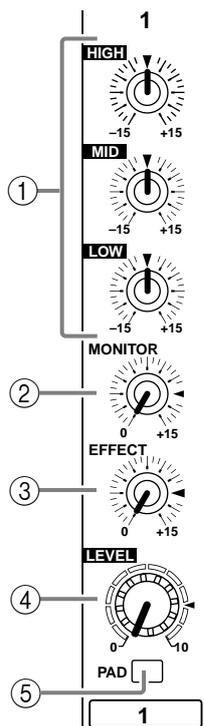
- 1 Press the POWER switch of the EMX66M to turn off the power to the unit.
- 2 Turn off the power to all connected devices.
 - Be sure to follow the power off sequence specified above to prevent the speakers from being damaged.
 - Set the MASTER controls in the MAIN section and the MONITOR section to “0” for use next time (so that a loud noise will not sound the next time you turn on the power to the unit).

Front and rear panel

Control panel

■ Channel section

In this section, you can adjust equalization (frequency response), volume level, effect and monitor output levels for the input signal of each channel.



① Equalizer controls (HIGH, MID, LOW)

This is a 3-band equalizer that adjusts the high frequency range, mid frequency range, and low frequency range of each channel. Response is flat when the knobs are in the “▼” position. Rotating it toward the right will boost the corresponding frequency band, and rotating it toward the left will cut it.

The base frequency (or center frequency), range of boost or cut, and equalizer type of each band are as follows.

HIGH:	10 kHz	±15 dB	shelving type
MID:	2.5 kHz	±15 dB	peaking type
LOW:	100 Hz	±15 dB	shelving type

② Monitor control (MONITOR)

For each channel, this controls the amount of signal that is sent to the MONITOR bus.

The signal of the MONITOR bus is sent to the speakers connected to the SPEAKERS B 1/2 jacks (only if the power amp select switch is in the MAIN-MON position) and to the MONITOR jacks (input/output panel ⑥).

Note: The signal is sent to the MONITOR bus from a location before the level control (④) of each channel. This means that it will not be affected by the setting of the LEVEL control.

③ Effect control (EFFECT)

For each channel, this controls the amount of signal that is sent to the EFFECT bus.

The signal of the EFFECT bus is sent to the built-in effect and to the EFFECT OUT jacks (input/output panel ③).

Note: The signal is sent to the EFFECT bus from a location after the level control (④) of each channel. This means that the amount of signal that is sent to the EFFECT bus will be affected not only by the setting of the effect control, but also by the setting of the level control.

④ Level control (LEVEL)

This control adjusts the level of signals routed from each channel to the MAIN bus and to the built-in power amplifier.

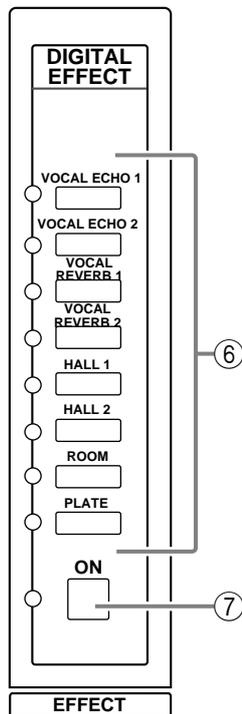
The MAIN bus signal is sent to the MAIN jacks (input/output panel ⑥) and the SPEAKERS jacks on the rear panel ①.

⑤ Pad switch (PAD) (Channel 1–4 only)

This switch attenuates the input signal by 30 dB. When connecting a line level device to channels 1–4, or if the mic input is distorted, turn this switch on (the pressed-in position).

DIGITAL EFFECT section

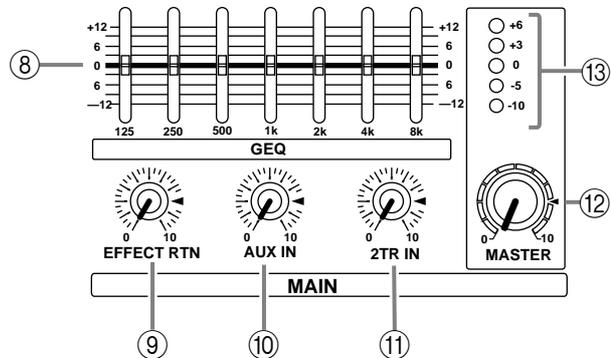
This section allows you to turn the built-in digital effect on/off and to select the effect type.



- ⑥ **Effect select switch and indicator**
Select the effect type for the built-in digital effect. The indicator of the selected effect type lights up.
- ⑦ **DIGITAL EFFECT ON switch and indicator**
When this switch is on (pressed), the indicator lights up and the built-in digital effect can be used. In that case, the signal processed by the digital effect will be sent to the MAIN/MONITOR bus. The mix level of the effect sound is adjusted by the EFFECT RTN control of the MAIN and MONITOR sections.
You can switch the built-in digital effect on and off by stepping on an optional foot switch connected to the FOOT SW jack.

MAIN section

This section allows you to adjust the tone and volume of the MAIN bus, the mix level of the built-in effect, and the mix level of the external input.

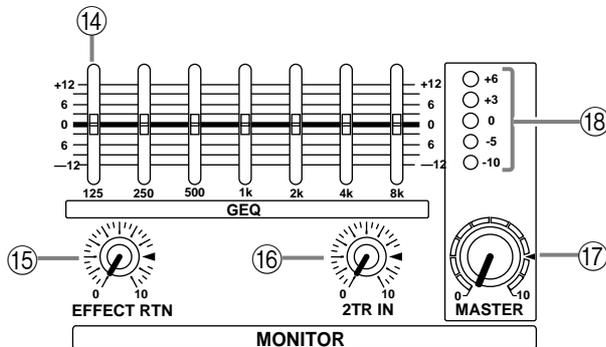


- ⑧ **Graphic equalizer**
This is a 7-band graphic equalizer that allows you to adjust the frequency response of the MAIN bus signal, providing a maximum of ± 12 dB of cut/boost for each frequency band.
This graphic equalizer affects both the MAIN bus signal that is output to the speakers and the line level signal which is output from the MAIN jack (input/output panel ⑥).
- ⑨ **EFFECT RTN control**
This adjusts the level of the effect signal which is returned from the built-in digital effect to the MAIN bus.
- ⑩ **AUX IN control**
This adjusts the amount of signal that is sent from the AUX IN jack to the MAIN bus.
- ⑪ **2TR IN control**
This adjusts the amount of signal that is sent from the 2TR IN jacks to the MAIN bus.
- ⑫ **MASTER control**
This adjusts the final level of the MAIN bus. It affects both the MAIN bus signal which is output from the speakers, and the line level signal which is output from the MAIN jack (input/output panel ⑥).
- ⑬ **Peak level indicator**
This indicator allows you to monitor the level of the signal which is output from the MAIN jack (input/output panel ⑥).

Note: To avoid distortion, adjust the MASTER control (⑫) so that the 0 indicator lights occasionally.

MONITOR section

This section allows you to adjust the tone and volume of the MONITOR bus, and specify the mix level of the built-in effect and the external input signals.



14 Graphic equalizer

This is a 7-band graphic equalizer that allows you to adjust the frequency response of the MONITOR bus signal, providing a maximum of ± 12 dB of cut/boost for each frequency band.

You can use these sliders to reduce the level of frequency bands at which feedback easily occurs. Frequency response is flat when a slider is in the center position. Moving a slider in the positive direction will boost, and in the negative direction will cut.

This graphic equalizer affects both the MONITOR bus signal that is output to the speakers and the line level signal which is output from the MONITOR jack (input/output panel 6).

15 EFFECT RTN control

This controls the level of the effect sound which is returned from the built-in digital effect to the MONITOR bus.

16 2TR IN control

This controls the level of the signal routed from the 2TR IN jack (input/output panel 5) to the MONITOR bus.

17 MASTER control

This adjusts the final level of the MONITOR bus. It affects both the MONITOR bus signal which is output to the speakers and the line level signal which is output to the MONITOR jack (input/output panel 6).

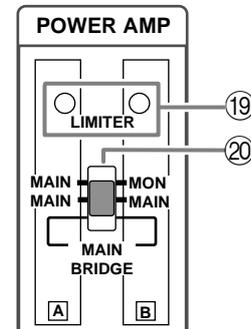
18 Peak level indicator

This indicator allows you to monitor the level of the signal which is output from the MONITOR jack (input/output panel 6).

Note: To avoid distortion, adjust the MASTER control (17) so that the 0 indicator lights occasionally.

POWER AMP section

This section allows you to select the signals that will be input to the built-in two-channel power amplifier.



19 LIMITER indicator

This indicator lights up when the level of the signal output from the power amp section reaches the maximum and the limiter is activated. Adjust appropriate control so that the indicator lights up for only a short while when the signal reaches the maximum level.

Note: The indicator lights up or flashes for a longer duration if the power amp section is significantly overloaded, which could result in malfunction. Avoid such a situation.

20 Power amp select switch

Select one of the following three settings to route the signals to the appropriate jacks, depending on the speaker connection at the SPEAKERS jacks (rear panel 1).

• MAIN-MON

With this setting, the MAIN bus signal will be output from the SPEAKERS A 1/2 jacks and the MONITOR bus signal is output from the SPEAKERS B 1/2 jacks. The MASTER controls (12, 17) in the MAIN and MONITOR sections are both effective.

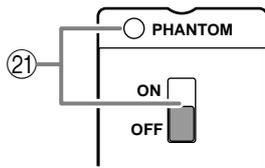
• MAIN-MAIN

With this setting, the MAIN bus signal will be output from the SPEAKERS A 1/2 jacks and from the SPEAKERS B 1/2 jacks. Only the MASTER control (12) in the MAIN section becomes effective.

• MAIN BRIDGE

With this setting, the MAIN bus signal will be output from the BRIDGE jack. The two power amp channels will be bridge connected. Only the MASTER control (12) in the MAIN section becomes effective.

■ PHANTOM switch and indicator



②1 PHANTOM switch and indicator

This switch turns the phantom power supply on/off for the Low-Z input jacks of channels 1–4 and MIC input jacks of channels 5–6. When the switch is turned on, the indicator lights up.

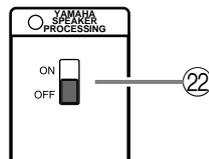
Turn this switch off if you do not use it.

■ YAMAHA SPEAKER PROCESSING

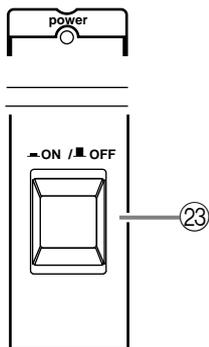
②2 ON/OFF switch

This switch enables you to compensate the low range of the speakers. The low range balance when this switch is on varies depending on the speakers.

First, check the low range balance by auditioning the resultant sound, then set this switch to on or off.



■ Power switch and indicator

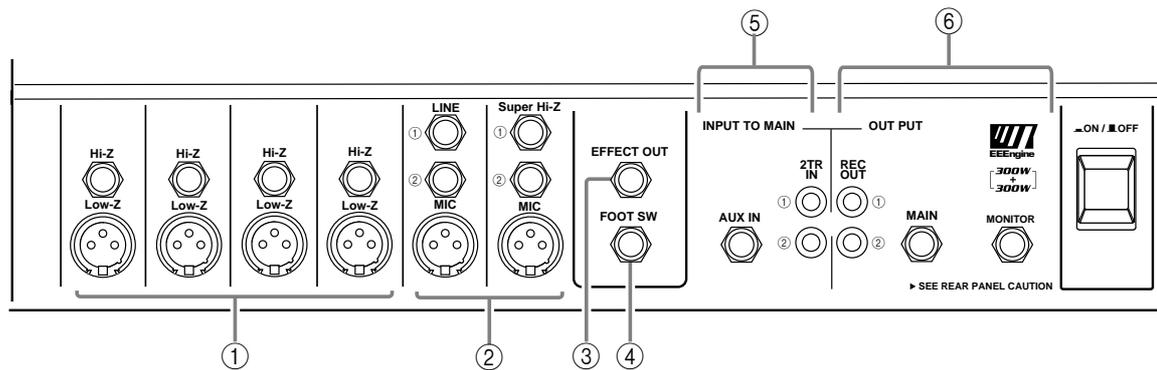


②3 Power ON/OFF switch and indicator

This switch turns the power of the EMX66M on/off. When the switch is turned on, the indicator lights up.

Note: Before turning the EMX66M on/off, turn down the MASTER controls of the MONITOR and MAIN section.

Input/output panel



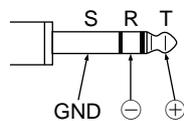
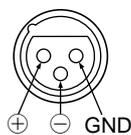
① Hi-Z, Low-Z input jacks

These are the input jacks for channels 1–4.

By using the PAD switches (control panel ⑤) you can connect any of the jacks to a wide range of sources from mics to line level devices (synthesizers or rhythm boxes etc.). The Low-Z jacks can provide +15 V phantom power, allowing you to use condenser microphones.

Both Hi-Z and Low-Z are balanced, and are compatible with microphones of output impedance 50–600 Ω or line level devices of 600 Ω . The nominal input level is –40 dB – –10 dB for the Hi-Z jacks, and –50 dB – –20 dB for the Low-Z jacks. Pin connections for the Hi-Z and Low-Z jacks are as follows.

Low-Z jacks (XLR type)	Hi-Z jacks (TRS phone jacks)
Pin 1: ground	Sleeve: ground
Pin 2: hot (+)	Tip: hot (+)
Pin 3: cold (–)	Ring: cold (–)



Note: It is not possible to simultaneously use both the Hi-Z and Low-Z inputs of a given channel. For each channel, use only one of the inputs as appropriate for the input source. Phantom power is switched on/off simultaneously for the Low-Z jacks of channels 1-4 and the MIC jacks of channels 5-6. For this reason, any devices other than condenser microphones must be connected to the Hi-Z or LINE jacks if the PHANTOM switch (control panel K) is on.

② MIC, LINE, Super Hi-Z input jacks

These are the input jacks for channels 5–6.

Microphones can be connected to the MIC jacks, and stereo line level devices (such as synthesizers or rhythm boxes) can be connected to the LINE jacks.

The MIC jacks are balanced, and are compatible with microphones of output impedance 50–600 Ω .

The LINE ① & ② jacks are unbalanced, and are compatible with line level devices of 600 Ω output impedance. These two input jacks can be used simultaneously.

Nominal input level is –50 dB for the MIC jacks and –10 dB for the LINE jacks.

Super Hi-Z ① & ② jacks are unbalanced, can be used simultaneously, and their high input impedance makes them ideal for use with instruments such as electric-acoustic guitar and electric bass. They can also be used with line-level sources, such as synthesizers and drum machines. Nominal input level is –30 dB.

Note: It is possible to simultaneously use both the MIC and LINE inputs for channel 5, and the MIC and Super Hi-Z inputs for channel 6.

③ Effect output jack (EFFECT OUT)

The input of an external effect such as a delay or echo can be connected to this jack.

The signal adjusted by the EFFECT control (control panel ③) of each channel will be sent to the EFFECT bus, and output from this jack.

The nominal output level and conforming impedance are +4 dB/10 k Ω .

④ Foot switch jack (FOOT SW)

A separately sold Yamaha FC5 foot switch can be connected to this jack. If a foot switch is connected to this jack, you can use your foot to switch the built-in digital effect on/off.

⑤ AUX IN/2TR IN—INPUT TO MAIN jacks

These are input jacks that allow the signal from an external device to be added to the MAIN output. Monaural output devices such as external effects can be connected to the AUX IN jack, and stereo output devices such as cassette recorder or CD players can be connected to the 2TR IN jacks. The nominal input level and impedance are $-10\text{ dB}/600\Omega$ for the AUX IN jack, and $-10\text{ dBV}/600\Omega$ for the 2TR IN jacks.

⑥ REC OUT/MAIN/MONITOR—OUTPUT jacks

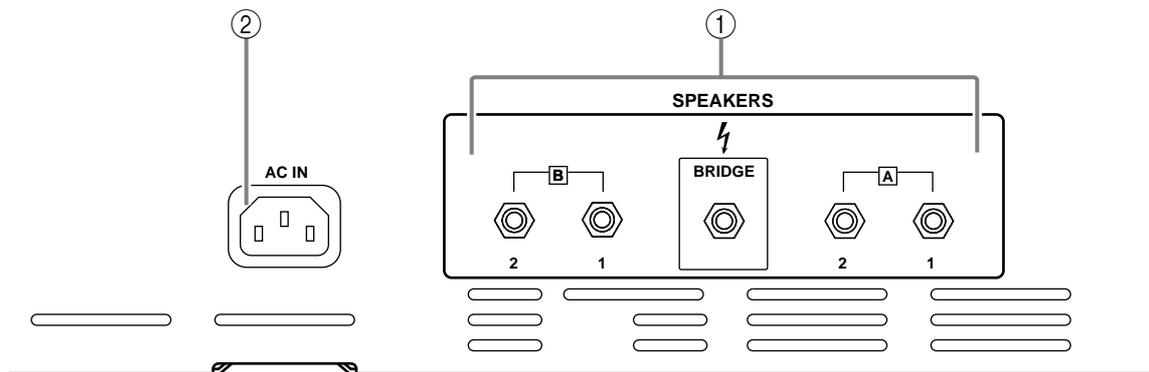
These are output jacks which send line level signals from the EMX66M to external devices.

A stereo recording device such as a cassette deck, DAT or MD recorder can be connected to the REC OUT jacks, and a playback device such as a power amp can be connected to the MONITOR and MAIN jacks. The signals sent from each jack are as follows.

- **REC OUT jacks:** The MAIN bus signal before it has passed through the MASTER control and graphic equalizer
- **MAIN jack:** The MAIN bus signal which has passed through the Main MASTER control and graphic equalizer
- **MONITOR jack:** The MONITOR bus signal which has passed through the Monitor MASTER control and graphic equalizer

The nominal output level and impedance are $-10\text{ dBV}/10\text{ k}\Omega$ for the REC OUT jacks, and $+4\text{ dB}/10\text{ k}\Omega$ for the MONITOR/MAIN jacks.

Rear panel



① Speaker output jacks (SPEAKERS)

Connect speakers here. The EMX66M has two internal power amplifiers. There are three ways in which speakers can be connected to the EMX66M.

- **Two-channel connection**
- **Two-channel parallel connection**
- **Bridge connection**

At this time, use the power amp select switch ② on the control panel to select a signal sent to the correct jacks.

Refer to the “Speaker connection” section on the next page.

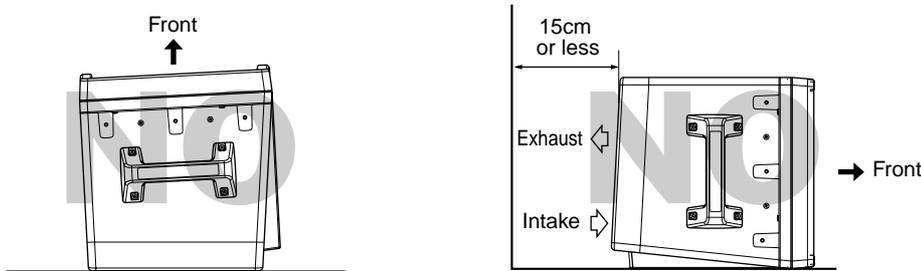
② AC IN socket

Connect the included power cord to this socket. Connect the plug of the power cord to an AC outlet that meets the requirements stated in the specifications in this document.

Installation/Connection

Installation

The EMX66M uses a forced cooling system with intake on the bottom of the rear panel and exhaust on the top of the rear panel to avoid blocking the heated air flow.



Connection

When connecting various devices, be sure to use cables and plugs of the appropriate standard. Use dedicated speaker cables to connect the speakers to the speaker jacks.

Speaker connection

There are three ways in which speakers can be connected to the EMX66M.

The speaker impedance requirement varies depending on how you connect the speakers. Refer to the diagrams below to make sure the speaker impedance will not be lower than the specified value.

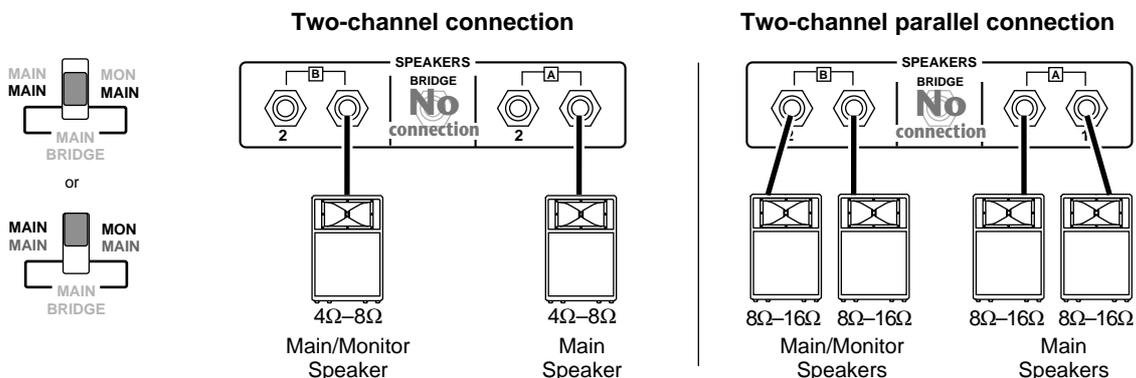
■ When the power amp select switch is set to **MAIN-MON** or **MAIN-MAIN**:

• **Two-channel connection**

Two 4-8Ω speakers can be connected to either SPEAKERS jack 1 or jack 2 of channels A and B. If you are using speakers rated at 4Ω, the maximum output would be 300W + 300W.

• **Two-channel parallel connection**

Two 8-16Ω speakers can be connected to both SPEAKERS jack 1 and jack 2 of channels A and B. If you are using speakers rated at 8Ω, the maximum output would be 300W + 300W.

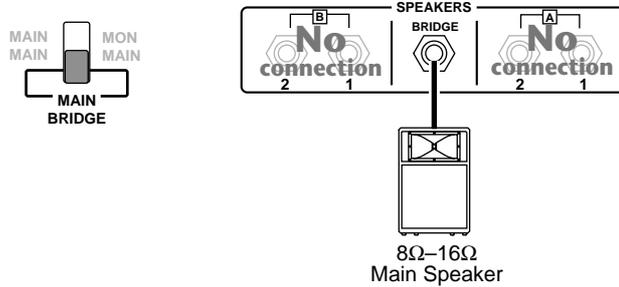


■ When the power amp select switch is set to MAIN BRIDGE

• Bridge connection

One 8-16Ω speaker can be connected to the BRIDGE jack. If you are using a speaker rated at 8Ω, the maximum output would be 600W.

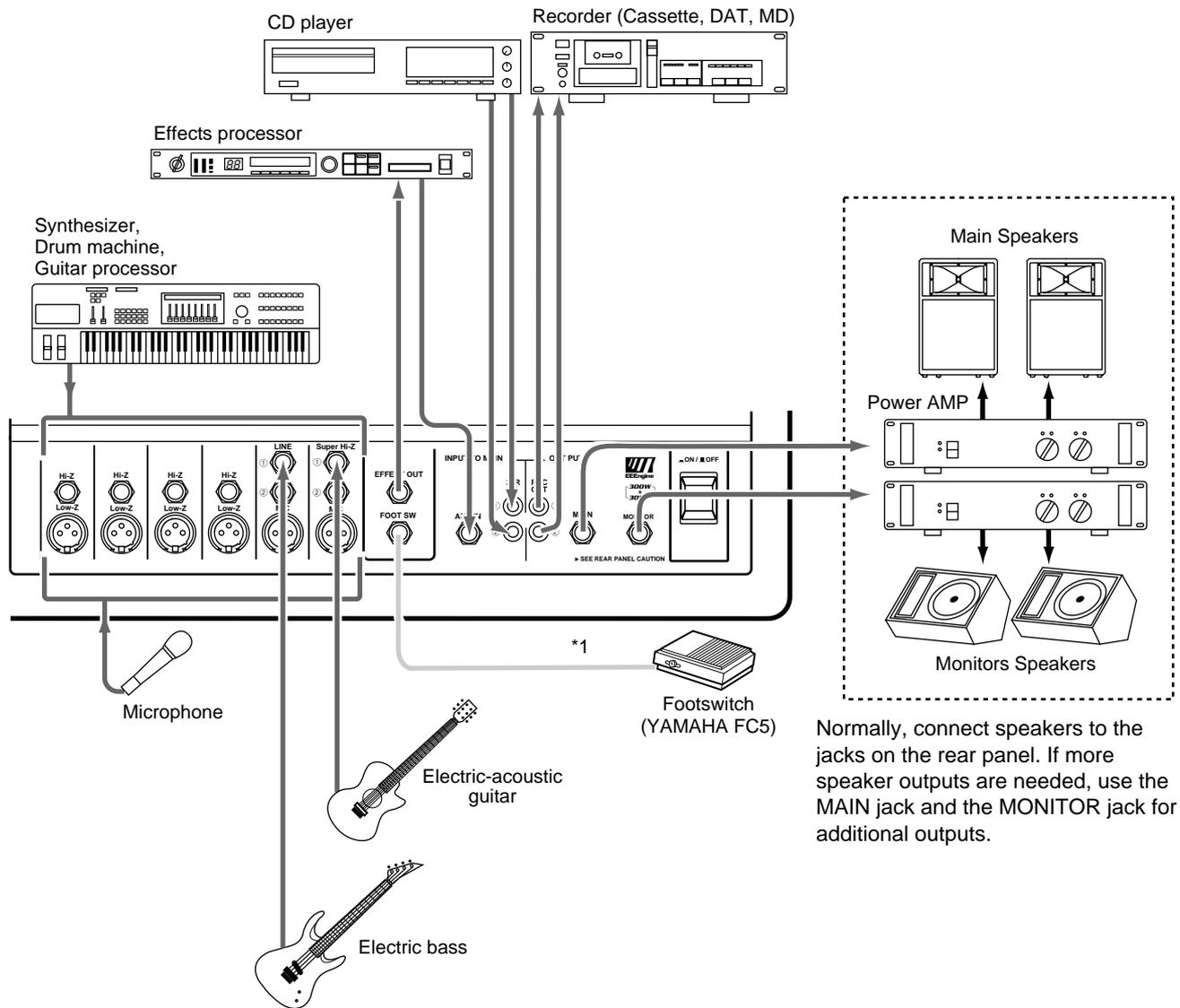
Bridge connection



Caution:

When using a bridge connection, do not connect anything to the SPEAKERS A and SPEAKERS B jacks. Likewise, when using the SPEAKERS A and/or SPEAKERS B jacks, do not connect anything to the BRIDGE jack. The BRIDGE jack has a protective cap that prevents a speaker from being accidentally connected to it when you are using two-channel or two-channel parallel connections. Remove this protective cap only when making a bridge connection.

■ Example connections



Normally, connect speakers to the jacks on the rear panel. If more speaker outputs are needed, use the MAIN jack and the MONITOR jack for additional outputs.

The figure above shows appropriate jacks to connect each instrument.

* The Low-Z and Hi-Z input of each channel cannot be used simultaneously.

*1. Although this example shows an external effects processor and footswitch, which is used to turn on and off the built-in digital effects processor, connected to the EMX66M, in practice, only one effects processor, internal or external, will be used at a time, so the footswitch is not required when using external effects.

Basic Operation

This section explains basic operation of the EMX66M.

Connecting microphones and instruments

- ① Before connecting mics or instruments, make sure that the power of all equipment (where applicable) is turned off. Also make sure that the level controls of each channel of the EMX66M and the MASTER control of the MAIN section are turned down.
- ② Connect cables to your mics and instruments, and insert the other end of the cable firmly into the appropriate Low-Z/Hi-Z jack (channels 1–4) or the MIC jack (channels 5–6), LINE jack (channels 5), Super Hi-Z jack (channels 6).

Note: When connecting a line level device to channels 1–4, turn on the PAD switch. You cannot use a channel's Low-Z and Hi-Z jacks at the same time. The MIC and LINE jacks, or the MIC and Super Hi-Z jacks, however, can be used at the same time.

- ③ Turn the power on in the order of peripheral devices → EMX66M.

Note: When turning the power off, reverse this sequence.

- ④ Set the MAIN section MASTER control to the “◀” position.
- ⑤ While speaking into the mic (while playing the instrument), adjust the channel LEVEL control so that the 0 LED of the MAIN section peak level meter lights occasionally. Repeat this step for each channel.
- ⑥ If you wish to adjust the tone of each channel, rotate the equalizer controls as desired.
- ⑦ Use the MAIN section graphic equalizer to adjust the tone.
- ⑧ Use the MAIN MASTER control to adjust the overall volume.

Monitoring

By connecting a powered monitor speaker to the MONITOR OUTPUT, you can create a monitor mix independent of the MAIN mix, since the input channel MONITOR controls are not affected by the LEVEL controls.

- ① Set the MONI MASTER control to the “◀” position.
- ② While speaking into a connected mic, or playing a connected instrument, adjust the MONITOR control of the input channel that you want to monitor. Repeat this procedure for each channel.
- ③ Use the MONI MASTER control to set the overall level of the monitor mix.

Using the digital effect

The EMX66M has a built-in digital effect, allowing reverberation or ambiance to be added to vocals or instrumental sounds.

- ① Press the DIGITAL EFFECT ON switch of the DIGITAL EFFECT section.
- ② Use the effect select switches of the DIGITAL EFFECT section to select the effect type.
 - VOCAL ECHO 1, 2Echo appropriate for vocals.
 - VOCAL REVERB 1, 2 ...Reverb appropriate for vocals.
 - HALL 1, 2Reverb typical of a hall.
 - ROOM.....Reverb typical of a room.
 - PLATEPlate echo-like reverberation
- ③ Set the MAIN EFFECT RTN control to the “◀” position.
- ④ Raise the EFFECT control of the channels to which you wish to apply the digital effect.
- ⑤ Use the MAIN/MONITOR section EFFECT RTN control to adjust the level of the sound processed by the effect.

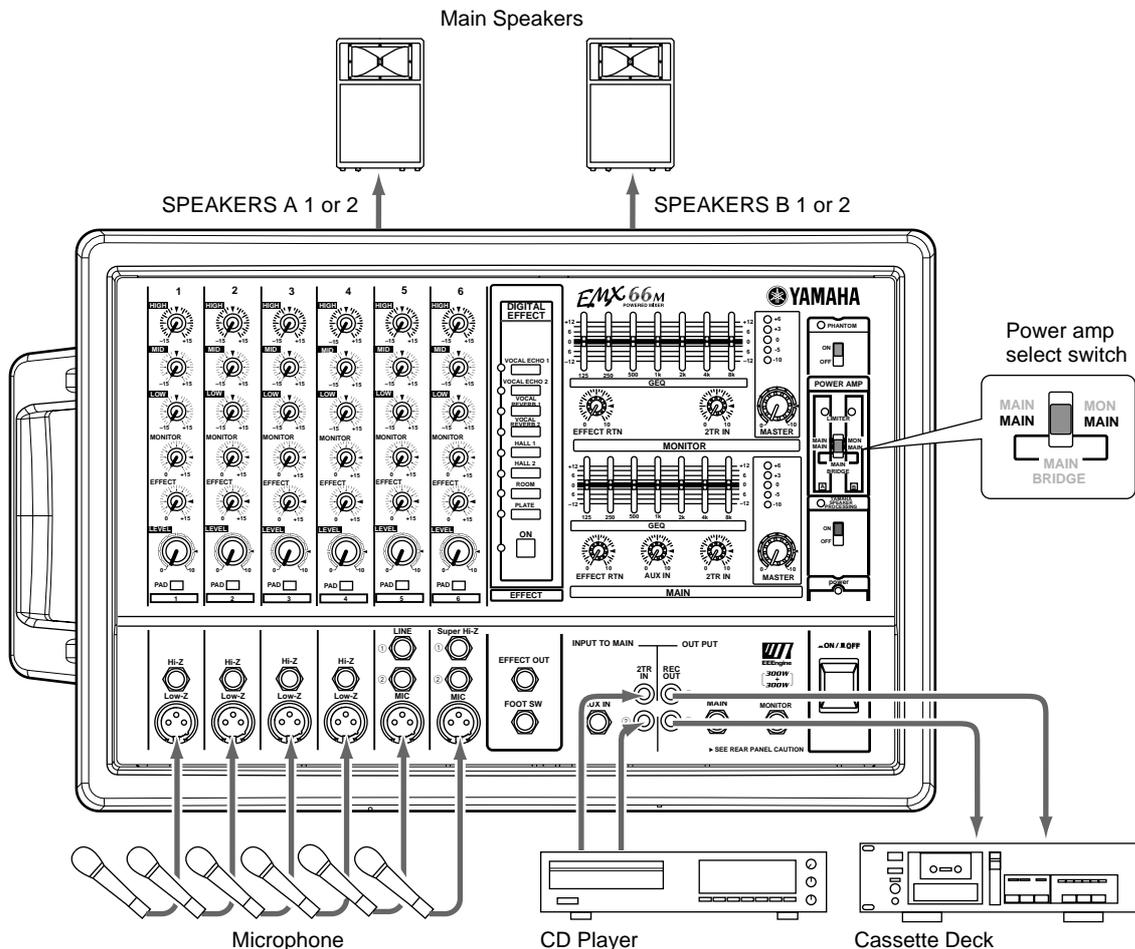
Note: If the effect sound is distorted even if the EFFECT RTN turned all the way down, lower the EFFECT controls of each channel.

Example setups

This section provides some ways in which the EMX66M can be used, and explains connections and operation.

As a conference PA system/installed sound system

Here is an example of using the EMX66M as a conference PA system or as an installed sound system.



Connections

- Connect mics to channel PAD inputs 1–6.
- If you wish to use an external device such as a CD player or MD player, connect the outputs of the device to the 2TR IN jacks of the EMX66M.

Note: A CD/MD player or cassette deck can also be connected to the LINE jacks of channel 5.

- If you wish to record the audio to a cassette deck, connect the REC OUT jacks of the EMX66M to the input jacks of the cassette deck.
- Connect the main speakers to the SPEAKERS A 1/2 and B 1/2 jacks, then set the power amp select switch to “MAIN-MAIN.”

Playing back a CD player

- ① Turn the power on in the order of peripheral devices → EMX66M.
- ② Adjust the MASTER control of the MAIN section to the “◀” position.
- ③ Start playback on the CD player, and use the MAIN section 2TR IN control to adjust the level so that the 0 LED of the MAIN section peak level meter does not light.

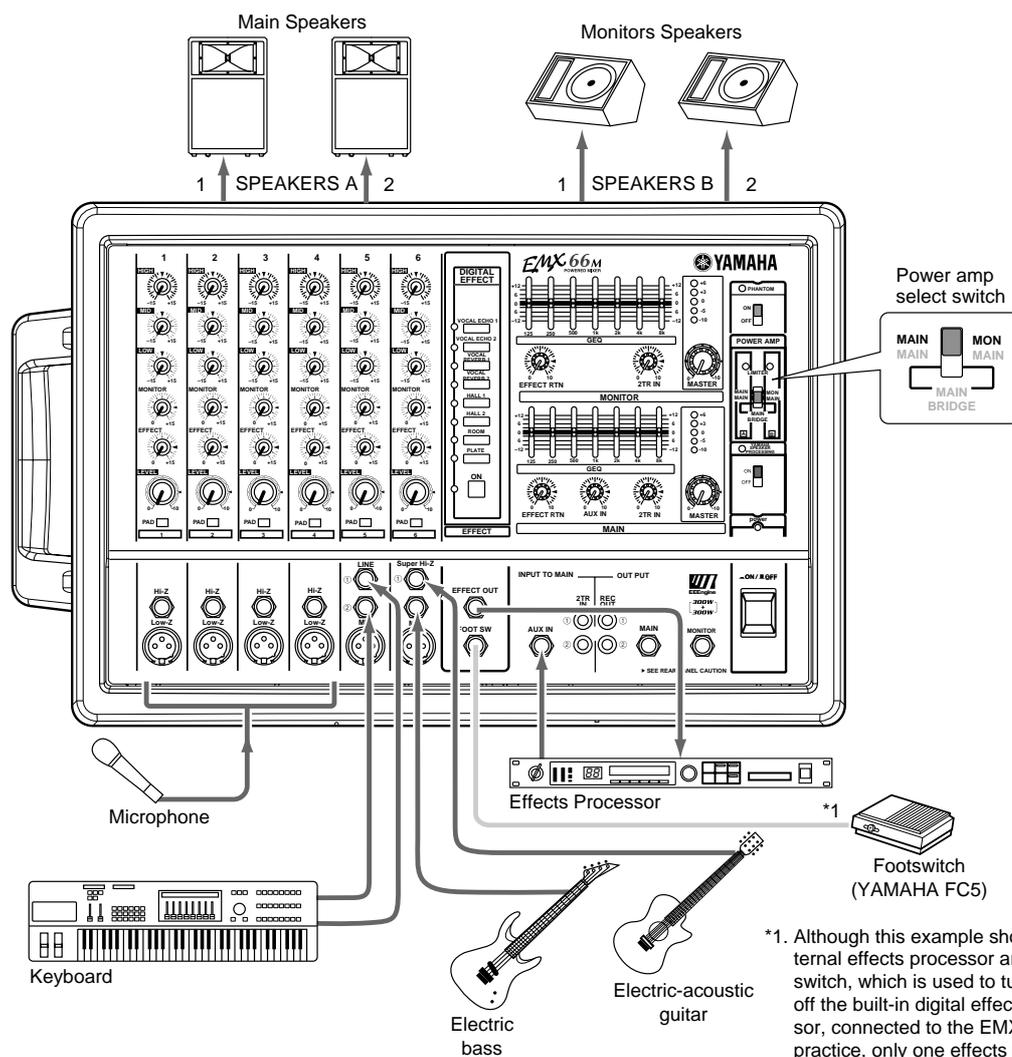
As a band PA

Here is an example of using the EMX66M as a small PA for a band. In this example, the monitor speakers are being sent a mix that is independent of the MAIN speaker mix. An external effect such as delay or reverb is also being used.

Connections

- Connect mics or instruments, such as keyboards, to the channel input jacks 1–6.
- Connect the main speakers to the SPEAKERS A 1/2 jacks, and connect the monitor speakers to the SPEAKERS B 1/2 jacks. Then, set the power amp select switch to “MAIN-MON.”
- If you will be using an external effect such as delay or reverb, connect the EMX66M’s EFFECT OUT jack to the input jack of the external effect, and connect the output jack of the external effect to the EMX66M’s AUX IN jack.

Note: Set the power amp select switch of the POWER AMP section to the “MAIN MON” position. If you are using an external effect, we recommend that you turn down the EFFECT RTN controls of the MAIN and MONITOR sections. If the external effect has a stereo output, it is possible to connect its output jacks to the LINE jacks of channels 5. However in this case, be sure that the EFFECT controls are turned all the way down for the channels into which the effect sound is being input. If the EFFECT controls are raised, feedback will occur, and your speakers may be damaged.



*1. Although this example shows an external effects processor and footswitch, which is used to turn on and off the built-in digital effects processor, connected to the EMX66M, in practice, only one effects processor, internal or external, will be used at a time, so the footswitch is not required when using external effects.

Sending an independent mix to the monitor speakers

- ① Set the MONITOR section MASTER control to the “◀” position.
- ② Raise the MONITOR controls for the channels that you wish to hear from the monitor speakers.

Note: The MONITOR controls are not affected by the level settings of each channel. This allows you to create a mix that is independent of the MAIN section.

- ③ Use the graphic equalizers and MASTER controls of the MAIN/MONITOR sections to adjust the overall volume and tone.

Using an external effect

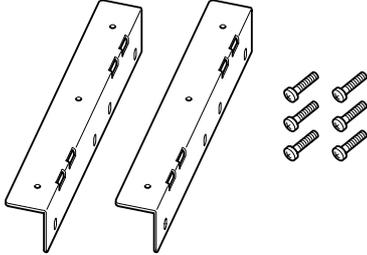
- ① Raise the EFFECT controls for the channels to which you want the external effect to be applied.
- ② Adjust the input level of the external effect so that the sound is not distorted at the input of the external effect.
- ③ Use the MAIN section AUX IN control to adjust the level of the sound processed by the effect.

Installing an optional rack mount kit

You can rack-mount the EMX66M using an optional rack mount kit (RK-88).

Rack mount kit RK-88

- Bracket × 2
- Screw × 6

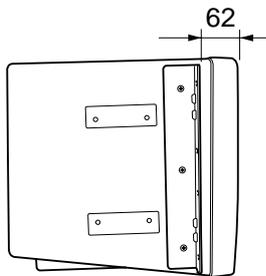


Before you rack-mount the EMX66M, make sure that sufficient ventilation will be maintained.

(Never install the unit in a sealed rack.)

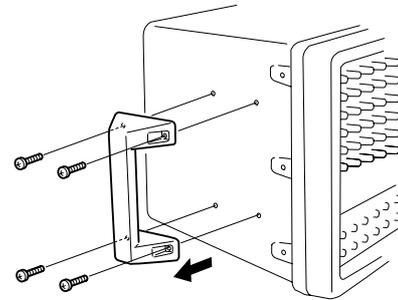
If you are going to install multiple devices including the unit in a rack, keep a 1U space or more between the devices. Use a blank panel with holes for ventilation if you wish to insert a panel between the devices.

You will need a 7U space to install the rack mount. After installation, the unit will project 62 mm from the front surface of the rack.

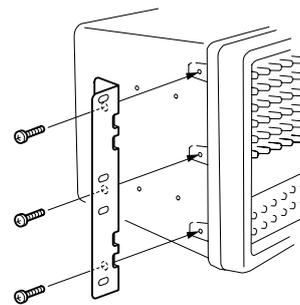


Installing the rack mount bracket

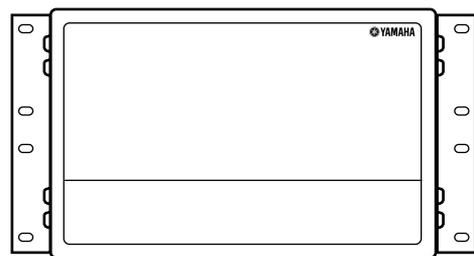
- 1 Remove the carrying handle by loosening and removing four screws.



- 2 Attach one of the rack mount brackets to the side of the EMX66M using three included screws.



- 3 Attach the other rack mount bracket in the same way.



Troubleshooting

The following table describes the possible malfunctions of this device, and the appropriate actions to be taken in each case.

Problem		Cause	Action
Sound is no longer output from the speakers.	The POWER indicator is lit.	The load on the amplifier of this device was too great, and the protection circuit for the amplifier has operated . Possible reasons for the excessive load are an excessive level setting in the channel control section or main section, insufficient ventilation, or insufficient load impedance of the connected speakers.	Please wait. When the device cools off, normal operation will resume automatically. However, please check the following three points to prevent the problem from recurring. <ul style="list-style-type: none"> • If the level setting is excessive, lower it to the nominal level. You can refer to the peak level indicators of the main section when doing so. • If the device is not ventilated sufficiently, refer to the cautions given at the beginning of this manual and take appropriate measures to insure adequate ventilation. • If the load impedance (including a short) is too low, refer to the chapter on connections (page 16) and change the connections so that the impedance is correct.
	Other	Connections between devices have come loose.	Inspect the connections, and correct any faulty connections.
		Other	The device may have malfunctioned. Please contact your dealer.

Powered Mixer Q&A

Q: The built-in effect is not effective.	A: The ON switch in the DIGITAL EFFECT section may not be turned on. Or, you have adjusted the EFFECT control in the Channel section or the EFFECT RTN control in the MAIN section.
Q: The monitoring sound from the speakers is not powerful enough relative to the level of the input sound.	A: The equalizer LOW control for each channel may be set to negative values.
Q: The stereo output from the synthesizer has been routed to the Super Hi-Z jack of channel 6, but the monitoring sound is not stereo.	A: You can use Super Hi-Z (or LINE) 1 and 2 jacks at the same time. However, they are internally routed into a mono channel, and therefore the signals from 1 and 2 jacks are output as mono signal.
Q: The signal is sent from the EFFECT OUT jack to the connected effect processor. Then the effect sound is returned to the AUX IN jack. However, no signal is input to the mixer.	A: The AUX IN control in the MAIN section may not be rotated to right.
Q: An external powered speaker is connected to the MONITOR-OUTPUT jack. However, the signal is not sent to the speaker even when the MASTER control in the MONITOR section is turned.	A: The MONITOR controls for input channels may not have been adjusted.
Q: Can the Low-Z jack and the Hi-Z jack be used at the same time?	A: You cannot use the Low-Z jack and the Hi-Z jack for the same channel at the same time.
Q: Can a single speaker be connected to the mixer?	A: Yes. Use a speaker with an impedance of 4–8 Ω .

Specifications

■ General specifications

Maximum output power	300 W + 300 W/4Ω @0.5% THD at 1 kHz (SPEAKERS OUT A, B) 205 W + 205 W/8Ω @0.5% THD at 1 kHz (SPEAKERS OUT A, B) 600 W/8Ω @0.5% THD at 1 kHz (BRIDGE)	
Frequency response	20 Hz–20 kHz +1 dB, –3 dB @1 W output into 8Ω (SPEAKERS OUT) 20 Hz–20 kHz +1 dB, –3 dB @+4 dB output into 10 kΩ (MAIN OUT, MONITOR OUT, EFFECT SEND)	
Total harmonic distortion	Less than 0.5% @20 Hz–20 kHz, 150 W output into 4Ω (SPEAKERS OUT A, B) Less than 0.3% @20 Hz–20 kHz, +14 dB output into 10 kΩ (MAIN OUT, MONITOR OUT, EFFECT OUT)	
Hum & noise (Average, Rs=150Ω) (with 20 Hz–20 kHz BPF)	–124 dB equivalent input noise, –65 dB residual output noise (SPEAKERS OUT)	
	–88 dB residual output noise (MAIN OUT, MONITOR OUT)	
	–79 dB (83 dB S/N) MAIN OUT, MONITOR OUT	Master level control at nominal level and all channel level controls at minimum.
	–69 dB (73 dB S/N) MAIN OUT, MONITOR OUT	Master level control at nominal level and 1 channel level control at nominal level.
	–75 dB (79 dB S/N) EFFECT SEND	All channel level controls at minimum.
Maximum voltage gain	–69 dB (73 dB S/N) EFFECT SEND	
	1 channel level control at nominal level.	
	88 dB CH IN (Low-Z) to SPEAKERS OUT (CH1–4) 66 dB CH IN (Low-Z) to MAIN OUT, MONITOR OUT (CH1–4) 72 dB CH IN (Low-Z) to EFFECT OUT (CH1–4) 48 dB CH IN (Low-Z) to REC OUT (CH1–4) 56 dB CH IN (Hi-Z) to MAIN OUT, MONITOR OUT (CH1–4) 26 dB AUX IN to MAIN OUT 24 dB 2TR IN to MAIN OUT 66 dB MIC IN to MAIN OUT, MONITOR OUT (CH5•6) 26 dB LINE IN to MAIN OUT, MONITOR OUT (CH5) 46 dB Super Hi-Z IN to MAIN OUT, MONITOR OUT (CH6)	
	65 dB adjacent input, 65 dB input to output	
	±15 dB Maximum HIGH 10 kHz shelving* MID 2.5 kHz peaking LOW 100 Hz shelving* *Turn over/roll-off frequency of shelving: 3 dB below maximum variable level.	
Meters	5 POINTS LED METER (–10, –5, 0, +3, +6 dB) (MAIN OUT, MONITOR OUT)	
Graphic equalizer	7 bands (125, 250, 500, 1 k, 2 k, 4 k, 8 kHz), ±12 dB Maximum (MAIN OUT, MONITOR OUT)	
Internal digital effect	8 programs (VO.ECHO 1, VO.ECHO 2, VO.REVERB 1, VO.REVERB 2, HALL 1, HALL 2, ROOM, PLATE)	
Phantom power	+15 V is supplied to electrically balanced inputs for powering condenser microphones via 2.4 kΩ current limiting/isolation resistors.	
Limiter	Comp. : THD≥0.5% (SPEAKERS OUT)	
LIMIT indicators	Turns on. : THD≥0.5% (SPEAKERS OUT)	
Protection Circuit (Power Amp.)	POWER Switch on/off Mute, DC Detection, Temp (Heatsink Temp≥90°C)	
Foot switch (FC5)	DIGITAL EFFECT MUTE : on/off	
Optional accessories	RK-88, FC5	
Power requirement/Power consumption	USA and Canada 120 V AC 60 Hz/250 W Europe 230 V AC 50 Hz/300 W Other 240 V AC 50 Hz/300 W	
Dimensions (WxHxD)	482 × 305 × 328 mm	
Weight	15 kg	
Supplied accessories	AC power cord, Owner's Manual	

- 0 dB=0.775 Vrms

Input specifications

Input connectors	PAD	Actual load impedance	Nominal impedance	Input level			Connector type
				Sensitivity ¹	Nominal level	Max. before clipping	
CH INPUT (Low-Z) (CH1–4)	OFF	3 k Ω	50–600 Ω Mics	–62 dB (0.616 mV)	–50 dB (2.45 mV)	–20 dB (77.5 mV)	XLR-3-31 type ²
	ON		600 Ω Lines	–32 dB (19.5 mV)	–20 dB (77.5 mV)	+10 dB (2.45 V)	
CH INPUT (Hi-Z) (CH1–4)	OFF	10 k Ω	50–600 Ω Mics	–52 dB (1.95 mV)	–40 dB (7.75 mV)	–10 dB (245 mV)	Phone jack (TRS) ²
	ON		600 Ω Lines	–22 dB (61.6 mV)	–10 dB (245 mV)	+20 dB (7.75 V)	
MIC INPUT (CH5•6)		3 k Ω	50–600 Ω Mics	–62 dB (0.616 mV)	–50 dB (2.45 mV)	–20 dB (77.5 mV)	XLR-3-31 type ²
LINE INPUT (CH5) (1, 2)		10 k Ω	600 Ω Lines	–22 dB (61.6 mV)	–10 dB (245 mV)	+20 dB (7.75 V)	Phone jack ³
Super Hi-Z (CH6) (1, 2)		470 k Ω	1 k Ω	–42 dB (6.16 mV)	–30 dB (24.5 mV)	0 dB (0.775 V)	Phone jack ³
AUX IN		10 k Ω	600 Ω Lines	–22 dB (61.6 mV)	–10 dB (245 mV)	+20 dB (7.75 V)	Phone jack ³
2TR IN (1, 2)		10 k Ω	600 Ω Lines	–22 dBV (79.4 mV)	–10 dBV (316 mV)	+17.8 dBV (7.76 V)	RCA phono jack ³

- Sensitivity is the lowest level that can produce an output of +4 dB (1.23 V) or the nominal output level when the unit is set at maximum gain. (All level controls are at maximum position.)
 - Balanced
 - Unbalanced
- 0 dB=0.775 Vrms, 0 dBV=1 Vrms.

Output specifications

Output connectors	Actual source impedance	Nominal impedance	Output level		Connector type
			Nominal	Max. before clipping	
POWER AMP OUT (1•2) (A, B)	0.1 Ω	4/8 Ω Speaker	60 W/4 Ω	(300 W/4 Ω)	Phone jack
BRIDGE OUT	0.1 Ω	8 Ω Speaker	120 W/8 Ω	(600 W/8 Ω)	Phone jack
MAIN OUT	600 Ω	10 k Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone jack
MONITOR OUT	600 Ω	10 k Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone jack
EFFECT OUT	600 Ω	10 k Ω Lines	+4 dB (1.23 V)	+20 dB (7.75 V)	Phone jack
REC OUT (1, 2)	600 Ω	10 k Ω Lines	–10 dBV (316 mV)	+10 dBV (3.16 V)	RCA phono jack

- All output jacks are unbalanced.
- 0 dB=0.775 Vrms, 0 dBV=1 Vrms.

Specifications are subject to change without prior notice.

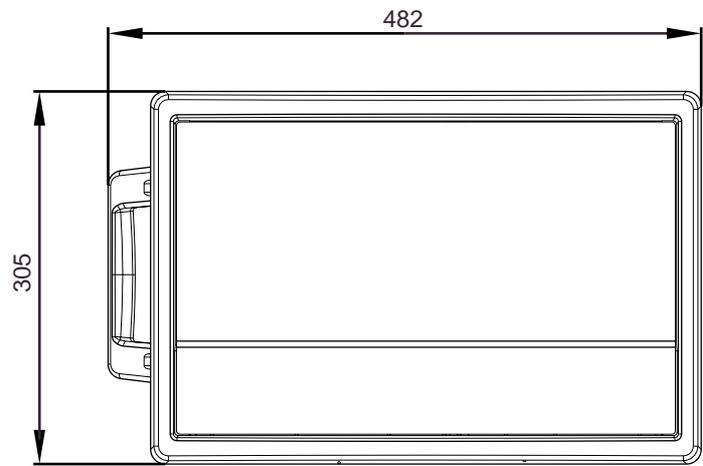
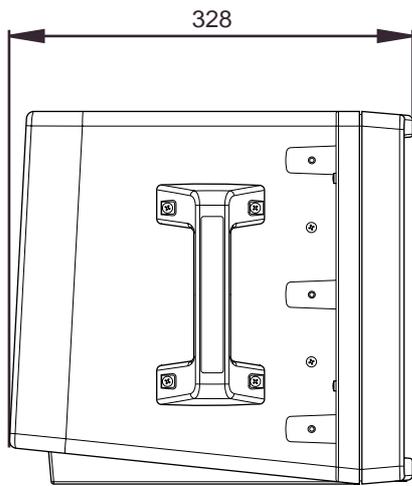
For European Model

Purchaser/User Information specified in EN55103-1 and EN55103-2.

Inrush Current: 85A

Conformed Environment: E1, E2, E3 and E4

■ Dimensions



Unit: mm

Block and Level diagram

