

POWER AMPLIFIER



Owner's Manual

ZT16280 EN

First, please carefully read the "IMPORTANT SAFETY INSTRUCTIONS" on the reverse side.

Thank you for your purchase of the Yamaha MA2120 power amplifier. Please read through this manual carefully before beginning use, so that you will be able to take full advantage of the device's various functions. After you have read the manual, keep it in a safe place.

- The illustrations as shown in this manual are for instructional purposes only.
- The company names and product names in this manual are the trademarks or registered trademarks of their respective companies.

Features

- Complies with the ENERGY STAR international standard for energy efficient products.
- Supports both high-impedance and low-impedance speaker connections. · Mixing/Routing function allows you to mix various sources and to output to one stereo channel, or two
- mono channels. Source and volume zoning capability for two zones in mono connection. • Equipped with an auto-wake function that turns the power on after detecting an input signal when in standby mode.
- Various digital signal processing and effects, including reverb, compressor, EQ, leveler, ducker and feedback suppressor
- Built-in "Speaker EQ" that allows for tuning the sound quality to be perfect for use with Yamaha
- speakers. • Remote controllable with up to two DCP control panels.

Accessories (Please confirm that all items are included)

- Power cord • Euroblock plugs (6-pin x 3, 3-pin x 1, both with a 3.5mm pitch)
- Setup Guide
- Owner's Manual (this sheet)

About Manuals

Owner's Manual (this leaflet)

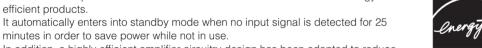
Explains about precautions, controls and functions on the panel, attaching Euroblock plugs, connecting speaker cables, and connecting external devices.

Setup Guide (separated)

Provides setup examples, explains settings to make after installation, and connecting control panels and remote controller.

ENERGY STAR Certification

This device complies with the ENERGY STAR international standard for energy efficient products



minutes in order to save power while not in use In addition, a highly efficient amplifier circuitry design has been adopted to reduce energy consumption while the device is in use.

Auto-Standby and Auto-Wake Functions

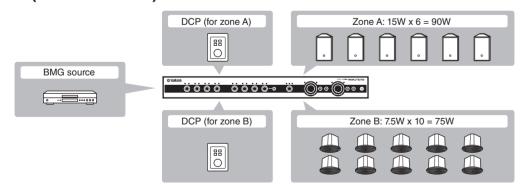
To reduce energy consumption, this device enters into standby mode when no input signal is detected for 25 minutes

It is also equipped with an auto-wake function that automatically turns the power on when an input signal is detected while in standby mode. Even when the device has been put into standby mode by the autostandby function, any microphone or BGM audio input will restore the power.

The auto-wake function is turned on by default. The auto-wake function can be turned on or off by changing the rear panel [SETUP] DIP switch setting. (Refer to "Controls and Functions.")

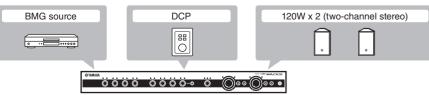
Setup Example

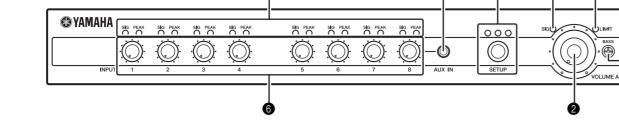
When multiple speakers are connected to the two zones: (MODE: MONO)



When two-channel stereo is used:

(MODE: STEREO)





7, **8**

● [⁽)] button (Standby/On)

Front Panel

ches the device mode between standby and on. **On:** Press the [\bigcirc] button when in standby mode. The button lights in green to indicate that the device is on. Standby: Press and hold the [0] button for at least one second when the device is on. The button lights in orange to indicate that the device is in standby mode.

- The button lights in lime green for a few seconds while the status is switched between on and standby.
- NOTE The device automatically enters standby mode when no input signal is detected for 25 minutes. The rear panel DIP switch can be set to enable the auto-wake function that turns the power on upon detecting an input signal.
 Rapidly turning the unit on and off in succession can cause it to malfunction. After turning the unit off, wait for about 6 econds before turning it on again

[VOLUME A] and [VOLUME B] knobs

- ed to adjust [SPEAKER A] and [SPEAKER B] output levels. BASS] and [TREBLE] controls
- Two-band equalizer used to adjust the tone of the output signal to [SPEAKER A] and [SPEAKER B]. They can be adjusted with a tool such as a screwdriver.
- 4 [SIG] indicator Lights up when the output signal to [SPEAKER A] or [SPEAKER B] is -42dBFS (42dB lower than the maximum output) or higher.
- 6 [LIMIT] indicator
- Lights up when the limiter that prevents excessive output to [SPEAKER A] and [SPEAKER B] compresses the signal more than 3dB, for example. Adjust the input and output levels as LIMIT indicators do not light.
- 6 Input level knobs 1 8
- Adjusts the input levels for [INPUT 1] [INPUT 8]. Turning to the right increases the input level. In usual mode, press the knob to blink the [SIG] indicator of the output which the pressed channel is assigned to. You can confirm the selected output by the [ROUTE] switch of the rear panel. In setup mode, press the knob to select the function to adjust, or to select a channel for adjustment.
- For more information regarding setup mode, refer to the "Setup Guide" [INPUT SIG] indicators 1 - 8
- Light up when the [INPUT 1] [INPUT 8] input signal levels exceed -40dBFS. Adjust the input levels to a point where these indicators light by the input level knobs.
- [INPUT PEAK] indicators 1 8
- Light up when the [INPUT 1] [INPUT 8] input signal levels exceed -3dBFS. 9 [AUX IN] jack
- Input jack of mini-stereo type (unbalanced input). Connect a stereo audio source such as portable audio players. The signal from the [AUX IN] jack mixes with the signal from the [INPUT] jack 8 in the same signal path. [SETUP] encoder/indicators 1 - 3
- Push encoders for the various inbuilt adjustment functions. Press and hold this button to enter setup mode. Indicators 1 - 3 show adjustment values for setup mode functions For more information regarding setup mode, refer to the "Setup Guide"
- AC IN connector
- Connect the supplied power cord.
- Caution

When connecting the power cord, connect the power cord to the connector and then plug it into an appropriate AC power outlet.

Before connecting or disconnecting the power cord, make sure that the device power is in standby mode. [SETUP] DIP switches Set the following functions of the device. The setting change will be applied after carrying out a power cycle by

pressing the [0] button on the front panel. DIP switch setting combinations are shown as follows.

DIP switches 1/2: Panel lock

Set knobs and controls to be locked on the panel.			
1	2	Setting	
		Panel lock off (All controls are enabled)	
		Locks the [SETUP] knob	
		Locks controls other than [VOLUME] knobs	
		Panel lock on (All controls are disabled)	

DIP switches 3/ 4: Auto-wake

Enable the function where the device automatically turns on from standby mode upon detection of an input signal 2 4

3	4	Seuing
		Auto-wake function on
		Auto-wake function on. Only when the system is switched from AC off to standby mode due to insertion of AC plug, or put into standby mode by the auto-standby function.
		Auto-wake function off

NOTE The auto-wake function is completely disabled if the device has been put into standby mode through operation via the [REMOTE] connector

Output Power	AMP MODE = 3Ω	100W x 2ch
(20msec Burst,	AMP MODE = 4Ω	120W x 2ch
THD+N=1%)	AMP MODE = 8Ω	100W x 2ch
	AMP MODE = 70V/120W	120W x 2ch
	AMP MODE = 100V/120W	120W x 2ch
	AMP MODE = 70V/200W	200W x 1ch
	AMP MODE = 100V/200W	200W x 1ch
Amplifier type (Output	ut circuitry)	Class D
THD+N	LINE IN to SPEAKER OUT,	
	Half power@1kHz	≤ 0.2%
	AMP MODE = 3Ω , 4Ω , 8Ω	
	LINE IN to SPEAKER OUT,	
	Half power@1kHz	≤ 0.2%
	AMP MODE = 70V, 100V/120W	
	LINE IN to SPEAKER OUT,	
	Half power@1kHz	≤ 0.2%
	AMP MODE = 70V, 100V/200W	

1



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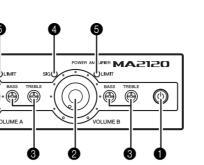


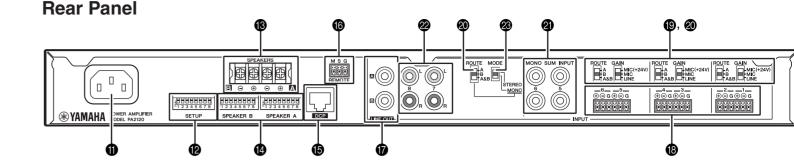






Controls and Functions





DIP switch 5: A - B volume link

Sets whether SPEAKER A and SPEAKER B volume is linked. When the link function is on, use the [VOLUME A] knob to control the volume

Setting

- Link off (SPEAKER A and SPEAKER B volume levels are independently controlled)
- Link on (SPEAKER A and SPEAKER B volume levels are both controlled via the [VOLUME A] knob

NOTE If you turn on "A - B volume link" when the function to allow control of the line out volume A and B by the [VOLUME] knob is enabled in setup mode, LINE OUT A and B are also linked.

DIP switch 6: DCP volume link

Sets whether the [SPEAKERS] and [LINE OUT] jack output levels are linked, when changing the volume via the DCP. Setting

Link off ([SPEAKERS] and [LINE OUT] jack volume levels are controlled separately)

Link on ([SPEAKERS] and [LINE OUT] jack output is controlled together)

NOTE When the link function is on, you can control the volume by using both of [SPEAKER] and [LINE OUT] on the control

DIP switches 7/8: Ducker

Configure the settings for the Ducker function. This can mute the microphone input of other channels, and lower the volume of line input when signals are input to [INPUT 1] or [INPUT 3].

8	Setting		
	Ducker off		
	Ducker on when signals are input to [INPUT 1].		
	Ducker on when signals are input to [INPUT 3].		
	Ducker on when signals are input to [INPUT 1] or [INPUT 3]. If signals are input to both of them, [INPUT 1] is given precedence.		
ERS	ERSI output terminals		

Barrier strip type speaker output connectors. Output connectors A and B are available. Refer to "Connecting Speaker Cables" for the installation instructio

(SPEAKER A) and [SPEAKER B] DIP switches

ets the amplifier mode and speaker EQ to match the type of speakers that are connected. The setting change will be applied after carrying out a power cycle by pressing the [0] button on the front panel.

DIP switches 1, 2, and 3: Amplifier mode setup

Sets the amplifier output power and impedance.

If the DIP switch settings do not match the actual speaker impedance or input power rating, the device may have poor performance, and it may even lead to malfunction or sound dropout. Always ensure that appropriate settings are chosen

2	3	Setting		
		Amplifier output 120W, High-impedance 100V		
		Amplifier output 120W, High-impedance 70V		
		Amplifier output 200W, High-impedance 100V, Output only from [SPEAKERS] output terminal A		
		mplifier output 200W, High-impedance 70V, Output only from [SPEAKERS] output terminal A		
		Amplifier output 100W, Low-impedance 8Ω or more		
		Amplifier output 120W, Low-impedance from 4Ω to less than 8Ω		
		Amplifier output 100W, Low-impedance from 3Ω to less than 4Ω		
		Output muted		

DIP switches 4, 5, and 6: Speaker EQ

Sets the speaker EQ that corrects the output signal to match the type of speakers that are connected.				
4	5	6	Setting	
			Off	
			igh pass filter 150Hz	
			ow pass filter 150Hz	
			ow pass filter 200Hz	
			Frequency correction tailored for Yamaha VXS series speakers	
			Frequency correction tailored for the Yamaha VXS10S/VXS10ST subwoofer (45–150Hz)	
			Frequency correction tailored for Yamaha VXC series speakers	

[DCP] connector

Allows you to connect up to two DCP1V4S, DCP4S, or DCP4V4S Yamaha Digital Control Panels. For more information regarding the connection method, refer to "Connecting a Control Panel" in the "Setup Guide" [REMOTE] connector

A Euroblock 3-pin plug can be inserted to remotely carry out control such as muting all channels or putting the device in and out of standby mode. For more information, refer to "Using the [REMOTE] Connector (Euroblock 3-pin)" in the "Setup Guide"

[LINE OUT] jacks

RCA type line output jacks (unbalanced output). The same signal that is output by the [SPEAKERS] jacks is output to these jacks. Output jacks A and B are available. The audio signal inputs for each [INPUT] connectors are passed through the built-in effects and mixed together. Then, the output is generated at the line level. These jacks can be used to connect an additional amplifier when the number of speakers is too much for this device to handle alone. (INPUT) connectors 1 - 6

Euroblock 3-pin input connector (balanced). Connect the line output connector of a microphone or other external

(GAIN) switches Set the gain for [INPUT] connectors 1 - 6. Each switch controls two channels.

Switch	Setting
MIC(+24V)	Microphone level, phantom power (+24V) on.
MIC	Microphone level, phantom power off.
LINE	Line level, phantom power off.

∠ Caution

 Only switch the phantom power on/off when the [VOLUME A] and [VOLUME B] knobs are turned all the way down. · Keep the phantom power turned off when it is not required, or if you wish to connect a non-supporting device Do not connect or disconnect the cable while phantom power is left on.

- NOTE When the [GAIN] switch is set to "MIC(+24V)" or "MIC", a noise gate (-72dBFS) is automatically applied to the input.
- This automatically reduces surrounding noise when the microphone is not being used. A noise gate is also applied to the [MONO SUM INPUT] when the [GAIN] switch for input 5 and 6 is set to "MIC(+24V)" or "MIC." Please set the [GAIN] switch to "LINE" when using the [MONO SUM INPUT] jacks.
- When changing the [GAIN] switch during the power standby status, the change will only be reflected after the
 power is turned on. Therefore, the Auto-wake function may not work properly because of an absence of input leve depending on the previous gain setting. Be sure to set the gain properly for the Auto-wake function to work properly.

(ROUTE] switches

Set the output destination for the signals from [INPUT] connectors 1 - 6. Each switch controls two channels. For [INPUT] jacks 7 and 8, these switch set the output destination only when the [MODE] switch is set to "MONO."

Switch	Setting	
А	Output to A	
В	Output to B	
A&B	Output to A and B	

(MONO SUM INPUT) jacks 5 and 6

RCA type line input jacks (unbalanced input). Two lines can be connected to [INPUT 5] and [INPUT 6]. All input signals are mixed to mono. All signals are mixed, even when there is simultaneous input via a Euroblock plug on [INPUT] connectors 5 and 6.

[INPUT] jacks 7 and 8

RCA type line input jacks (unbalanced input). Connect the line output connector of an external device.

(MODE) switch Sets the method in which input signals from [INPUT 7] and [INPUT 8] are sent as output to the [SPEAKERS] or [LINE

501].				
Switch L channel output destination R c		R channel output destination		
STEREO	Zone A	Zone B		
MONO	The L/R channel signals are mixed to mono. The resulting mono signal output destination depends on the [ROUTE] switch setting.			

Specifications

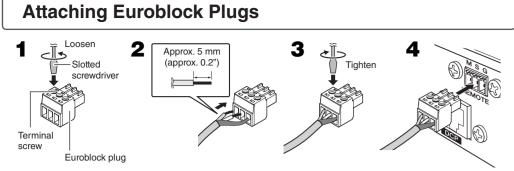
Frequency Response	LINE IN to SPEAKER OUT,	
	50Hz to 20kHz@1W	0dB, -3.0dB, +1.0dB
	AMP MODE = 3Ω , 4Ω , 8Ω	
	LINE IN to SPEAKER OUT,	
	90Hz to 20kHz@1W	0dB, -3.0dB, +1.0dB
	AMP MODE = 70V, 100V/120W	
	LINE IN to SPEAKER OUT,	
	90Hz to 20kHz@1W	0dB, -3.0dB, +1.0dB
	AMP MODE = 70V, 100V/200W	
	LINE IN to LINE OUT,	0dB, -2.5dB, +1.0dB
	20Hz-20kHz	00B, -2.30B, +1.00B
Crosstalk	MIC/LINE IN to other MIC/LINE IN	≤ -70dB
AC Power Requireme	nt	100V, 120V, 230V-240V 50Hz/60Hz (*1)
*1 It has confirmed th	at it is working with \pm 10% of the volta	ge of the rated supply voltage.
Power Consumption	Standby, default setting AMP MODE = All	≤ 1W
	AMP MODE = 3Ω , 4Ω , 8Ω	15W
	Idle	
	AMP MODE = 70V, 100V	20W
	1/8 Output, Pink noise	2011/
	AMP MODE = 4Ω	60W
	1/8 Output, Pink noise	60W
	AMP MODE = 70V/120W	0000

ENERGY STAR	 It automatically enters into standby mode when no input signal is detected for 25 minutes in order to save power while not in use. Amplifier efficiency: 44% and more. Less than 1W in standby.
Operating temperature	0°C to +40°C
Storage temperature	-20°C to +60°C
Dimensions (W x H x D, not including knob)	480 x 44 x 351mm (18.90 x 1.73 x 13.82 inch)
Net Weight	4.9kg
Included Accessories	AC power cord (2.0m) x1, 3.5mm Euroblock plug (6pin) x3, 3.5mm Euroblock plug (3pin) x1, Owner's Manual x1, Setup Guide x1
Optional accessories	Digital Control Panel (DCP1V4S-US/EU, DCP4V4S-US/EU, DCP4S-US/EU)

* The contents of this manual apply to the latest specifications as of the printing date. Since Yamaha makes continuous improvements to the product, this manual may not apply to the specifications of your particular product. To obtain the latest manual, access the Yamaha website then download the manual file. Since specifications, equipment or separately sold accessories may not be the same in every locale, please check with your Yamaha dealer.

European models

Purchaser/User Information specified in EN55103-2:2009. Conforms to Environments: E1, E2, E3 and E4



- NOTE You must use the supplied Euroblock plugs. If the plugs have been lost, please contact your Yamaha dealer • To prepare the cable for attachment to a Euroblock connector, strip the wire as shown in the illustration using stranded wire to make connections. With a Euroblock connection, stranded wires may be prone to breakage because of metal fatigue due to the weight of the cable or due to vibration. When rack mounting your device, use a lacing bar when possible to bundle and fasten the cables. • Do not tin (solder) the exposed end.
 - Loosen terminal screws.
- 2 Insert cables.
- 3 Securely tighten terminal screws.
- Insert the Euroblock plug into a terminal of this device.

Connecting Speaker Cables

The [SPEAKERS] output connectors on the rear panel are barrier strip type connectors. The connections are described below for two methods: using a spade lug and using a bare conductor.

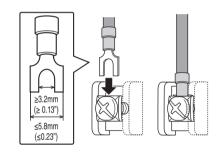
∠ Caution

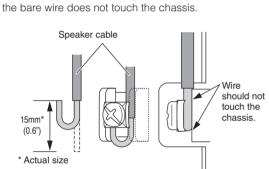
- Ensure that load is not applied to the speaker cable.
- This device uses a BTL (Balanced Transformer-Less) connection method for the amplifier output. As the amplifier output is sent to the positive and negative connectors, any contact with other terminals or the device chassis may lead to malfunction

NOTE Connect the cables so that the amplifier's "+" and "-" symbols match those of the speaker. If they are reversed, the phase will be reversed and the sound will not be output correctly

When using a spade lug Loosen the screw, insert the spade lug all

the way from below, and tighten the screw.





Loosen the screw, wrap the conductor wire around the

barrier strip terminal, and tighten the screw. Be sure that

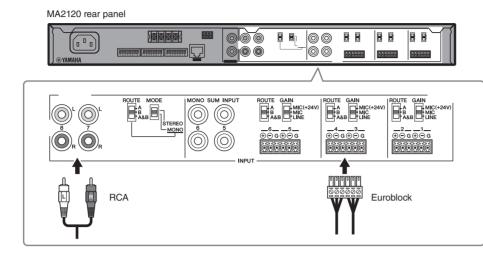
When using a bare conductor

Connecting External Devices

Connect a BGM (background music) tuner, a CD player, a portable audio player, etc. to the stereo input jacks of this device. After finishing all connections, connect the power cord to an AC outlet.

∕!\ Warning

When connecting the power cord to an AC outlet, an input signal will turn on the power of this device by the auto-wake function. To avoid unexpected loud sounds, be sure to connect microphones and external devices with the power off status.



NOTE Refer to "Attaching Euroblock Plugs" for Euroblock plug installation.

Precautions for Rack Mounting

This unit is rated for operation at ambient temperatures ranging from 0 to 40 degrees Celsius. When mounting the unit with other MA2120 unit(s) or other device(s) in an EIA standard equipment rack, internal temperatures can exceed the specified upper limit, resulting in impaired performance or failure. When rack mounting the unit, always observe the following requirements to avoid heat buildup:

• When mounting the unit in a rack with devices such as power amplifiers that generate a significant amount of heat, leave more than 1U of space between the MA2120 and other equipment. Also either leave the open spaces uncovered or install appropriate ventilating panels to minimize the possibility of heat buildup

To ensure sufficient airflow, leave the rear of the rack open and position it at least 10 centimeters from walls or other surfaces. If the rear of the rack can't be left open, install a commercially available fan or similar ventilating option to secure sufficient airflow. If you've installed a fan kit, there may be cases in which closing the rear of the rack will produce a greater cooling effect. Refer to the rack and/or fan unit manual for details

Troubleshooting

Symptom	Cause	Solution
The power does not turn on.	The power cord is disconnected.	Connect the power cord.
	The protection function of the device is activated.	Pull out the power cord to turn off the power, and make sure the connection is secure. Wait several minutes, and then turn on the power again. Be sure to install the device in a location not subject to high temperatures, such as a shaded, well-ventilated place.
	The [S] and [G] pins of [REMOTE] connector are shorted.	Use the controller connected to the [REMOTE] connector to turn on the power.
The power turns off.	The auto-power-off function has activated.	When there is no input signal for 25 minutes, the system automatically switches to standby mode. This function cannot be disabled.
The power automatically turns on.	The auto-wake function has activated.	The auto-wake function is turned on by default. If you wish to turn it off, set [SETUP] DIP switches 3 and 4 to their downward positions while the system is in standby mode. Then, turn the power on by the [O] button.
No sound is heard.	The volume is lowered too much with the [VOLUME A] or [VOLUME B] knobs.	Turn the applicable knob to the right.
	No audio signal is being input.	Check the output signal from an external device that has been connected.
	The input level has been lowered too much with the [INPUT] level knob.	Turn the [INPUT] level knob for the corresponding input channel to the right.
	Zone selection is not appropriate.	Check the input channel [ROUTE] switch setting.
	Phantom power is turned off, even when using a condenser microphone.	Set the [GAIN] switch for the condenser microphone channel to "MIC(+24V)."
	Zone B is being used while the amplifier output is set to 200W.	When the amplifier output is set to 200W, there is no signal output from zone B.
	The settings via a control panel are retained.	To initialize the settings, refer to "Initializing the settings via connected control panels (DCP Setup)" in the Setup Guide.
The volume is low.	The device is set to low-impedance connection; however, speakers with high- impedance input have been connected.	Match the impedance settings of this device and the connected speakers.
	The device is set to line level, even though a microphone has been connected.	Set the [GAIN] switch for the input channel to "MIC."
The sound is distorted.	The input level from microphones or external devices is too high.	Turn the [INPUT] level knob to the left and adjust the volume. Adjust the output level of the external device.
	The EQ level is too high.	For the input EQ, press and hold the [SETUP] knob for at least one second. Then, select input level 3 (BASS) or input level 4 (TREBLE). Select the desired input channel and appropriately adjust. For the output EQ, use a tool such as a screwdriver to adjust the [BASS] and [TREBLE] controls on the front panel.
The setting does not change even when turning a knob.	The panel is locked.	To turn off the panel lock, switch all [SETUP] DIP switches 1 and 2 to the upward position, then use the [O] button to reset the device.
The setting does not change even when turning the [SETUP] knob.	The [SETUP] knob is locked.	
The setting does not change even when turning knobs other than the [VOLUME] knob.	Knobs other than the [VOLUME] knob are locked.	
The stereo source connected to INPUT7 or INPUT8 is not providing a valid stereo signal.	The [MODE] switch is set to MONO.	Set the [MODE] switch to STEREO.
The stereo source connected to INPUT7 or INPUT8 is not being played correctly in each zone.	The [MODE] switch is set to STEREO.	Set the [MODE] switch to MONO, then set the [ROUTE] switch to an appropriate setting.
DIP switch settings are not applied to the device.	The $[0]$ button has not been used to turn the device on.	Changes to DIP switch settings are only applied after the device has been turned on by the [\oplus] button. They are not applied if the power is turned on by the auto-power-on function, or by control via the [REMOTE] connector. Use the [\oplus] button on the front panel to turn the device on.
The sound drops out, and the $[0]$ button and $[LIMIT]$ indicator flash three times.	The device is set to high-impedance connection; however, speakers with low- impedance input have been connected or too many speakers are connected.	Match the impedance setting and the input rating setting of this device and the speakers.
	When the device is set to low-impedance connection, the total impedance of the connected speakers is less than the impedance setting of this device.	Match the impedance settings of this device and the connected speakers.
	The speaker cable is shorted.	Inspect the connection of the speaker cables.
The $[0]$ button and [LIMIT] indicator continue	The internal temperature of the device is extremely high.	Pull out the power cord, leave the device at a well-ventilated place, and turn the device back on several minutes later.
to flash. The sound goes off.	Heat dissipation slits are covered or the device is placed in a confined place with poor ventilation.	The protection function of the device is activated. Check the installation location and surrounding environment. Be sure to install the device in a location not subject to high temperatures, such as a shaded, well-ventilated place.
	The device settings do not match speaker impedance.	The protection function of the device is activated. Match the impedance settings of this device and the connected speakers.
	Loud sound that exceeds the performance specifications of the device is continually generated.	Lower the volume.

Refer also to the Yamaha Pro Audio website that provides a FAQ (a list of frequently asked questions, with answers).

http://www.vamahaproaudio.com/ If taking the above steps does not solve the problem, contact your Yamaha dealer for repair. ubsidiaries.

PROCEEDING

- ver it

- Do not open
- Water warning
- Yamaha service personnel. Hearing loss

Fire warning

service personnel.

2. IMPORTANT:

. NOTE:

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE

Please keep this manual in a safe place for future reference.

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following: Power supply/power cord

- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything
- Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device. Use only the supplied power cord/plug.
- If you intend to use the device in an area other than in the one you purchased, the included power cord may not be compatible. Please check with your Yamaha dealer
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it. When setting up the device, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, as long as the power cord is not unplugged from the wall AC outlet, the device will not be disconnected from the power source. When installing in a rack, connect a power cut-off
- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical · Be sure to connect to an appropriate outlet with a protective
- grounding connection. Improper grounding can result in electrical shock, damage to the device(s), or even fire.
- This device contains no user-serviceable parts. Do not open the device or attempt to disassemble the internal parts or modify them in any way. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.
- Do not expose the device to rain, use it near water or in damp or wet conditions, or place on it any containers (such as vases, bottles or glasses) containing liquids which might spill into any openings. If any liquid such as water seeps into the device. turn off the power immediately and unplug the power cord from the AC outlet. Then have the device inspected by qualified
- Never insert or remove an electric plug with wet hands.
- Avoid setting all equalizer controls and volume controls to their maximum. Depending on the condition of the connected devices, doing so may result in feedback that can cause nearing loss and damage the speakers.
- Do not use speakers for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in
- When turning on the AC power in your audio system, always turn on the device LAST, to avoid hearing loss and speake damage. When turning the power off, the device should be urned off FIRST for the same reason.
- Do not place any burning items or open flames near the device, since they may cause a fire.

If you notice any abnormality

- If any of the following problems occur, immediately turn off the power switch and disconnect the electric plug from the outlet. The power cord or plug becomes frayed or damaged Unusual smells or smoke are emitted.
- ome object has been dropped into the device. There is a sudden loss of sound during use of the device.
- Cracks or other visible damage appear on the device.
 Then have the device inspected or repaired by qualified Yamaha service personnel.
- If this device should be dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:

- Power supply/power cord When removing the electric plug from the device or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it
 - FCC INFORMATION (U.S.A.)
- IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! his product, when installed as indicated in the instructions ontained in this manual, meets FCC requirements. odifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
- 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
- nstallation instructions. Failure to follow instructions could oid your FCC authorization to use this product in the USA. This product has been tested and found to comply with the ments listed in FCC Regulations, Part 15 for Class 3" 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 n harmful interference with other electronic devices. This quipment generates/uses radio frequencies and, if not nstalled 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 occu
- all installations. If this product is found to be the source of terference, 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. n the case of radio or TV interference, relocate/reori
- the antenna. If the antenna lead-in is 300 ohm ribbon lead, hange the lead-in to co-axial type cable. f these corrective measures do not produce satisfactory
- esults please contact the local retailer authorized to listribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of
- America, Electronic Service Division, 6600 Orangethorpe ve. Buena Park. CA90620
- The above statements apply ONLY to those products stributed by Yamaha Corporation of America or its
 - (class B)

- Location
- Do not place the device in an unstable position where it might accidentally fall over and cause injuries.
 Do not block the vents. This device has ventilation holes at the top/sides to prevent the internal temperature from becoming too high. In particular, do not place the device on its side or upside down. Inadequate ventilation can result in overheating basibly causing damage to the device(s), or even fire. Then attempting to dissipate heat on the device, when
- installing it: Do not cover it with any cloth
- Do not install it on a carpet or rug.
 Make sure the top surface faces up; do not install on its
- sides or upside down. Do not use the device in a confined, poorly-ventilated location.
- Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire. Make sure that there is adequate space around the device: at least 10cm
- bove, 10cm at the sides and 10cm behind. To not place the device in a location where it may come into contact with corrosive gases or salt air. Doing so may result in nalfunction.
- Before moving the device, remove all connected cables. . If the device is mounted in an EIA standard rack, carefully
- read the section "Precautions for Rack Mounting" on page 1. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), malfunction, or even fire. Connections
- Before connecting the device to other devices, turn off the power for all devices. Also, before turning the power of all devices on or off make sure that all volume levels are set to ne minimum. Failing to do so may result in electric shock, hearing loss, or equipment damage.
- Use only speaker cables for connecting speakers to the speaker jacks. Use of other types of cables may result in fire. Maintenance
- Remove the power plug from the AC outlet when cleaning the

Handling caution

- Do not touch or carry this device until it returns to normal temperature, if the device has become excessively hot during use or after using immediately. Prolonged contact may cause ow-temperature burns. Do not insert your fingers or hands in any gaps or openings on
- the device (vents, panel, etc.). Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings on the device (vents panel, etc.) If this happens, immediately turn off the power unplug the power cord from the AC outlet, and have the device
- Do not rest your weight on the device or place heavy objects on it, and avoid use excessive force on the buttons, switches r connectors to prevent injuries
- Yamaha cannot be held responsible for damage caused by mproper use or modifications to the device.

NOTICE

To avoid the possibility of malfunction/ damage to the product, damage to data, or damage to other property, follow the notices

- Handling and maintenance
- Do not use the device in the vicinity of a TV, radio, AV equipment, mobile phone, or other electric devices. Otherwise
- Do not expose the device to excessive dust or vibration, or extreme cold or heat (such as in direct sunlight, near a heater or in a car during the day), in order to prevent the possibility of panel disfiguration, unstable operation, or damage to the ternal components.
- Do not place vinyl, plastic or rubber objects on the device, since this might discolor the panel. When cleaning the device, use a dry and soft cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-
- impregnated wiping cloths. Condensation can occur in the device due to rapid, drastic
- changes in ambient temperature—when the device is moved from one location to another, or air conditioning is turned on or off, for example. Using the device while condensation is present can cause damage. If there is reason to believe that condensation might have occurred, leave the device for several hours without turning on the power until the Do not use this device for any purpose other than driving
- loudspeakers.
- Always turn the power off when the device is not in use.
- Even when the [(U)] (Standby/On) switch is in standby status (power lamp is off/ display is off), electricity is still flowing to the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the power cord from the wall AC outlet

Information

companies

- About this manual • The illustrations as shown in this manual are for instructional
- oses only • The company names and product names in this manual are the trademarks or registered trademarks of their respective

OBSERVERA Apparaten kopplas inte ur växelströmskällan (nätet) så änge som den ar ansluten till vägguttaget, även om själva

pparaten har stängts av. ADVARSEL: Netspændingen til dette apparat er IKKE

afbrudt, sålænge netledningen sidder i en stikkontakt, som e ændt – også selvom der er slukket på apparatets afbryde VAROITUS: Laitteen toisiopiiriin kytketty käyttökytkin ei irroita koko laitetta verkosta.

(standby)

IMPORTANT NOTICE FOR THE UNITED KINGDOM Connecting the Plug and Cord

- WARNING: THIS APPARATUS MUST BE EARTHED MPORTANT. The wires in this mains lead are coloured in ccordance with the following of
- GREEN-AND-YELLOW : EARTH : NEUTRAL BI UF
- BROWN : LIVE As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying he 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
- etter E or by the safety earth symbol 🕀 or colored GREEN o REEN-and-YELLOW. The wire which is coloured BLUE must be connected to
- ne terminal which is marked with the letter N or coloured LACK The wire which is coloured BROWN must be connected to

ne terminal which is marked with the letter L or coloured (3 wires)

In Finland: Laite on liitettävä suojamaadoituskoskettimilla n Norway: Apparatet må tilkoples jordet stikkontak

Sweden: Apparaten skall anslutas till jordat uttag (class I hokuo)

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Information for Users on Collection and Disposal of Old Equipment This symbol on the products, packaging, and/or accompanying documents means that used electrical and

electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling of old products, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC

By disposing of these products correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items. [For business users in the European Union]

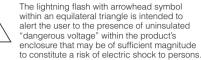
f you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information

[Information on Disposal in other Countries outside the European Union] This symbol is only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



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

Explanation of Graphical Symbols



(weee_eu_en_01)

(UL60065 03)

ASIA

THE PEOPLE'S REPUBLIC OF CHINA

2F, Yunhedasha, 1818 Xinzha-lu, Jingan-qu

INDIA Yamaha Music India Private Limited Spazedae Building, Ground Floor, Tower A

INDONESIA PT. Yamaha Musik Indonesia (Distributor) Yamaha Music Center Bldg. Jalan Jend. Gatot Subroto Kav 4, Jakart 12930, Indonesia Tel: +62-21-520-2577

Vamaha Music Korea Ltd. 8F, Dongsung Bldg. 21, Teheran-ro 87-gil, Gangnam-gu, Seoul, 135-880, Korea Tel: +82-2-3467-3300

AALAYSIA Yamaha Music (Malaysia) Sdn. Bhd. No.8, Jalan Perbandaran, Kelana Jaya, 47301 Petaling Jaya, Selangor, Malaysia Tel: +60-3-78030900

Yamaha Music (Asia) Private Limited Block 202 Hougang Street 21, #02-00, Singapore 530202, Singapore Tel: +65-6740-9200

2F., No.1, Yuandong Rd. Banqiao Dist New Taipei City 22063, Taiwan Tel: +886-2-7741-8888

891/1 Rama 1 Road, Wangma

Siam Music Yamaha Co., Ltd. 3, 4, 15, 16th Fl., Siam Motors Building,

Pathumwan, Bangkok 10330, Thailand Tel: +66-2215-2622

Tei, 1400-2215-2022 VIETNAM Yamaha Music Vietnam Company Limited 15th Floor, Nam A Bank Tower, 201-203 Cach Mang Thang Tam St, Ward 4, Dist.3, Ho Chi Minh City, Vietnam Tel: +84-8-3818-1122

OCEANIA

OTHER ASIAN COUNTRIES

Yamaha Music Australia Pty. Ltd.

COUNTRIES AND TRUST

Yamaha Corporation Sales & Marketing Division

Level 1, 99 Queensbridge Street, South Vic. 3006, Australia

TERRITORIES IN PACIFIC OCEAN

10-1, Nakazawa-cho, Naka-ku, Hamamats

PEAK

CONFERENCE

Yamaha Corporation Sales & Marketing Division

AUSTRALIA

apan 430-8650

HEAD OFFICE Yamaha Corporation, Audio Products Sales and Marketing Division

1: +81-53-460-2312

Yamaha Music & Electronics Taiwan Co.,Ltd

Shanghai, China Tel: +86-400-051-7700

KOREA

MALAYSIA

SINGAPORE

TAIWAN

THAILAND

Yamaha Music & Electronics (China) Co.,Ltd

Spazedge Building, Ground Floor, Tower A, Sector-47, Gurgaon-Sohna Road, Gurgaon-122002, Haryana, India Tel: +91-124-485-3300

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.

11 Only use attachments/accessories specified by the

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the

caution when moving the cart/

apparatus. When a cart is used, use

apparatus combination to avoid injury

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

have fallen into the apparatus, the apparatus has been

exposed to rain or moisture, does not operate normally

IMPORTANT SAFETY INSTRUCTIONS

O REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE

Olimpus Music Ltd. Valletta Road, Mosta MST9010, Malta Tel: +356-2133-2093

Yamaha Music Europe Branch Benelux Clarissenhof 5b, 4133 AB Vianen, The Netherlands

FRANCE Yamaha Music Europe 7 rue Ambroise Croizat, Zone d'activités de Pariest, 77183 Croissy-Beaubourg, France Tel: +33-1-6461-4000

Yamaha Music Europe GmbH, Branch Italy Viale Italia 88, 20020, Lainate (Milano), Italy

Ctra. de la Coruna km. 17,200, 28231 Las Rozas de Madrid, Spain

SWEDEN/FINLAND/ICELAND

GREECE Philippos Nakas S.A. The Music House 19th klm. Leof. Lavriou 190 02 Peania – Attiki

Yamaha Music Europe GmbH Germany filial

Scandinavia JA Wettergrensgata 1, 400 43 Göteborg, Sweden Tel: +46-31-89-34-00

Vamaha Music Denmark, Fillial of Yamaha Music Europe GmbH, Tyskland Generatory 8C, ST. TH., 2860 Søborg, Denmark Tel: +45-44-92-49-00

NORWAY Yamaha Music Europe GmbH Germany -Norwegian Branch Grini Næringspark 1, 1361 Østerås, Norway Tel: +47-6716-7800

Room 37, entrance 7, bld. 7, Kievskaya street, Moscow, 121059, Russia

ha Music Europe GmbH nsstrasse 22-34, 25462 Rellingen, Germany

OTHER EUROPEAN COUNTRIES

JAFZA-16, Office 512, P.O. Box 17328. Jebel Ali FZE, Dubai, UAE Tel: +971-4-801-1500

MIDDLE EAST

Maslak Meydan Sodak, Spring Giz Plaza Bagims

aha Music Europe GmbH ensstrasse 22-34, 25462 Rellingen, German

Merkezi Almanya Türkiye İstanbul Şubes

Yamaha Music (Russia) LLC

Tel: +49-4101-3030

Yamaha Music Gulf FZE

Yamaha Music Europe GmbH

Böl. No:3, Sanyer Istanbul, Turkey Tel: +90-212-999-8010

Yamaha Music Gulf FZE JAFZA-16, Office 512, P.O.Box 17328, Jebel Ali FZE, Dubai, UAE Tel: +971-4-801-1500

(rear_en_01)

a Music Europe GmbH Ibérica, Sucursa

NETHERLANDS/BELGIUM/

For details of products, please contact your nearest Yamaha representative or the authorized distributor listed below

LUXEMBOURG

el: +31-347-358040

SPAIN/PORTUGAL

Tel: +34-91-639-88-88

Tel: +30-210-6686168

DENMARK

RUSSIA

TURKEY

CYPRUS

el: +49-4101-303-0

OTHER COUNTRIES

n España

MALTA

ITALY

manufacturer.

rom tip-over.

or has been dropped.

Do not use this apparatus near water

Clean only with dry cloth. Do not block any ventilation openings. Install in

accordance with the manufacturer's instructions

Do not install near any heat sources such as radiators heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

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

pinched particularly at plugs, convenience receptacles

an electrician for replacement of the obsolete outlet. 10 Protect the power cord from being walked on or

and the point where they exit from the apparatus

NORTH AMERICA

Yamaha Corporation of America 6600 Orangethorpe Avenue, Buena Park, CA 90620,

CENTRAL & SOUTH AMERICA

RAZIL Yamaha Musical do Brasil Ltda. Rua Fidêncio Ramos, 302 - Cj 52 e 54 - Torre B - Vila Olimpia - CEP 04551-010 - São Paulo/SP, Brazil Tel: +55-11-3704-1377

amaha Music Latin America, S.A.,

Yamaha Musical de Venezuela, C.A. AV. Manzanares, C.C. Manzanares Plaza, Piso 4, Oficina 0401, Baruta, Caracas, Ver

Yamaha Music Latin America, S.A. Edif. Torre Banco General, Piso 7, Urbanizaci Marbella, Calle 47 y Aquilino de la Guardia, Ciudad de Panamá, República de Panamá Tel: +507-269-5311

EUROPE

THE UNITED KINGDOM/IRELAND Yamaha Music Europe GmbH (UK) Sherbourne Drive, Tilbrook, Milton Keynes, MK7 8BL, U K. Tel: +44-1908-366700

SWITZERLAND/LIECHTENSTEIN

CZECH REPUBLIC/HUNGARY/

Yamaha Music Europe GmbH Branch Austria Schleiergasse 20, 1100 Wien, Austria Tel: +43-1-60203900

ROMANIA/SLOVAKIA/SLOVENIA

Yamaha Music Europe GmbH Sp.z o.o. Oddział w Polsce ul. Wrotkowa 14, 02-553 Warsaw, Poland

MTI ZE KLAND/LLECH LEASTEAN Yamaha Music Europe GmbH, Rellingen, Branch Switzerland in Zürich Seefeldstrasse 94, 8008 Zürich, Switzerland

Yamaha Music Europe GmbH Branch Austria Schleiergasse 20, 1100 Wien, Austria Tel: +43-1-60203900

POLAND/LITHUANIA/LATVIA/ESTONIA

The model number, serial number, power requirements, etc.,

may be found on or near the name plate, which is at the top

of the unit. You should note this serial number in the space provided below and retain this manual as a permanent record

of your purchase to aid identification in the event of theft.

amaha Music Europe GmbH

el: +49-4101-303-0

el: +41-44-3878080

AUSTRIA/BULGARIA

el: +48-22-880-08-88

PA41

Model N

Serial No

Sucursal Argentina Olga Cossettini 1553, Piso 4 Norte, Madero Este-C1107CEK,

Buenos Aires, Argentina Tel: +54-11-4119-7000

Tel: +58-212-943-1877 PANAMA AND OTHER LATIN AMERICAN COUNTRIES/ CARIBBEAN COUNTRIES

MEXICO Yamaha de México, S.A. de C.V. Av. Insurgentes Sur 1647 Piso 9, Col. San José Insurgentes, Delegación Benito Juárez, México, D.F., C.P. 03000 Tel: +52-55-5804-0600

Yamaha Canada Music Ltd.

M1S 3R1, Canada Tel: +1-416-298-1311

U.S.A. Tel: +1-714-522-9011

ARGENTINA

VENEZUELA

GERMANY

35 Milner Avenue, Toronto, Ontario

- Read these instruction
- Keep these instructions
- Heed all warnings. Follow all instructions

WARNING

CANADA

U.S.A.