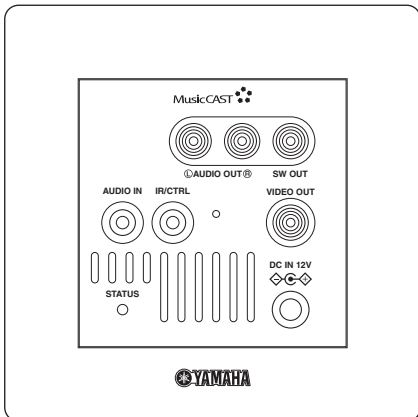


MusicCAST 

MCX-CA15

Distributed Audio Amplifier



OWNER'S MANUAL

COMPLIANCE INFORMATION STATEMENT

(DECLARATION OF CONFORMITY PROCEDURE)

Responsible Party: Yamaha Electronics Corporation, U.S.A.
Address: 6660 Orangethorpe Avenue
Buena Park, CA 90620
Telephone: 714-522-9105
Fax: 714-670-0108
Type of Equipment: Distributed Audio Amplifier
Model Name: MCX-CA15

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following conditions:

- 1) this device may not cause harmful interference, and
- 2) this device must accept any interference received including interference that may cause undesired operation.

See the "TROUBLESHOOTING" section at the end of this manual if interference to radio reception is suspected.

FCC INFORMATION (for US customers only)

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 Electronics Corporation, U.S.A. 6660 Orangethorpe Avenue, Buena Park, CA 90620.

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

CAUTION: READ THIS BEFORE OPERATING YOUR UNIT.

- 1 To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- 2 Install these units in a well ventilated, cool, dry, clean place — away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold. Allow ventilation space of at least 10 cm on the top, bottom, left and right. Also make sure the rear of these units is not touching the opposite wall.
- 3 Locate these units away from other electrical appliances, motors, or transformers to avoid humming sounds.
- 4 Do not expose these units to sudden temperature changes from cold to hot, and do not locate these units in an environment with high humidity (i.e. a room with a humidifier) to prevent condensation inside these units, which may cause an electrical shock, fire, damage to these units, and/or personal injury.
- 5 Avoid installing these units where foreign objects may fall onto these units and/or these units may be exposed to liquid dripping or splashing. On the top of these units, do NOT place:
 - Other components, as they may cause damage and/or discoloration on the surface of these units.
 - Burning objects (i.e. candles), as they may cause fire, damage to these units, and/or personal injury.
 - Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to these units.
- 6 Do not cover these units with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside these units rises, it may cause fire, damage to these units, and/or personal injury.
- 7 Do not plug these units into a wall outlet until all connections are complete.
- 8 Do not operate these units upside-down. They may overheat, possibly causing damage.
- 9 Do not use force on switches, knobs and/or cords.
- 10 When disconnecting the power cord from the wall outlet, grasp the plug; do not pull the cord.
- 11 Do not clean these units with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- 12 Only the voltage specified on these units must be used. Using these units with a higher voltage than specified is dangerous and may cause fire, damage to these units, and/or personal injury. YAMAHA will not be held responsible for any damage resulting from use of these units with a voltage other than that specified.
- 13 To prevent damage by lightning, disconnect the power cord from the wall outlet during an electrical storm.
- 14 Do not attempt to modify or fix these units. Contact qualified YAMAHA service personnel when any service is needed. The cabinet should never be opened for any reason.
- 15 When not planning to use these units for long periods of time (i.e. when going on vacation), disconnect the AC power plug from the wall outlet.
- 16 Be sure to read the “TROUBLESHOOTING” section in the MCX-C15 Owner’s Manual or MCX-CA15 Owner’s Manual on common operating errors before concluding that one or both of these units are faulty.
- 17 Before moving these units, press /1 on the MCX-C15 to place them in the sleep mode, and disconnect the AC power plug from the wall outlet.
- 18 Be sure to use the AC adaptor (LSE0215C1240) supplied with the MCX-C15. Using an AC adaptor other than the one provided may cause fire or damage to these units.
- 19 These units are designed for home use only. Never use these units in a car, etc. Doing so may cause these units to malfunction.

These units are not disconnected from the AC power source as long as they are connected to the wall outlet, even if the unit itself is turned off. This state is called the sleep mode. In this state, these units are designed to consume a very small quantity of power.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THESE UNITS TO RAIN OR MOISTURE.

IMPORTANT

Please record the serial number of these units in the space below.

MODEL:

Serial No.:

MODEL:

Serial No.:

The serial number is located on the rear of each unit. Retain this Owner's Manual in a safe place for future reference.

SPECIAL INSTRUCTIONS FOR U.K. MODEL

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 each unit 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 the safety earth symbol \perp , or coloured GREEN or 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.

For U.K. customers

If the socket outlets in your home are not suitable for the plug supplied with this appliance, it should be cut off and an appropriate 3 pin plug fitted. For details, refer to the instructions above.

Note: The plug severed from the mains lead must be destroyed, as a plug with a bared flexible cord is hazardous if engaged in a live socket outlet.

For Canadian Customers

To prevent electric shock, match the wide blade of the plug to the wide slot and fully insert.

This Class B digital apparatus complies with Canadian ICES-003.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

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FEATURES

The MusicCAST MCX-CA15 Distributed Audio Amplifier (hereafter, the “MCX-CA15”) is designed to output 34 W (17 W per channel) of high-quality power paired with a MusicCAST MCX-C15 Distributed Audio Controller (hereafter, the “client”) to complete the MusicCAST system, or as an amplifier integrated with an existing audio system. As a companion to your client, the MCX-CA15 is fully controllable from the client, and functions as a power amplifier and DC power distributor. It provides high-quality power to all connected speakers, and can display the client’s on-screen display (OSD) on a TV or monitor connected to the MCX-CA15. As a stand-alone amplifier, the MCX-CA15 offers flexibility with two different operation modes to choose from.

The MCX-CA15 is designed to bring you the following features:

- ◆ Operation mode selection switch with three settings for customized use
- ◆ Up to 34 W (17 W per channel) high-quality power output
- ◆ Modern in-wall design with paintable face plate to match every interior
- ◆ In-wall speaker and subwoofer output terminals
- ◆ Selectable pre-amp output for use with an external audio system
- ◆ On-screen video output for menu display on a TV or monitor when used with a client
- ◆ IR flasher output using YAMAHA AV link technology when used with a client
- ◆ DC power output to a client

About this manual

-  indicates a tip for your operation.
- For details regarding installation and network configuration, refer to the Install Manual provided.
- This manual is printed prior to production. Design and specifications are subject to change in part as a result of improvements, etc. In case of differences between the manual and the product, the product has priority.

This unit must be installed by a qualified technician as indicated in the Install Manual provided. Do not attempt to install this unit yourself.

■ We Want You Listening For A Lifetime

YAMAHA and the Electronic Industries Association’s Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion – and, most importantly, without affecting your sensitive hearing. Since hearing damage from loud sounds is often undetectable until it is too late, YAMAHA and the Electronic Industries Association’s Consumer Electronics Group recommend you to avoid prolonged exposure from excessive volume levels.



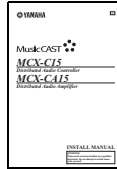
SUPPLIED ACCESSORIES

After unpacking, check that you received all of the following parts.

**Owner's Manual
(this manual)**



Install Manual



Spacers x 4

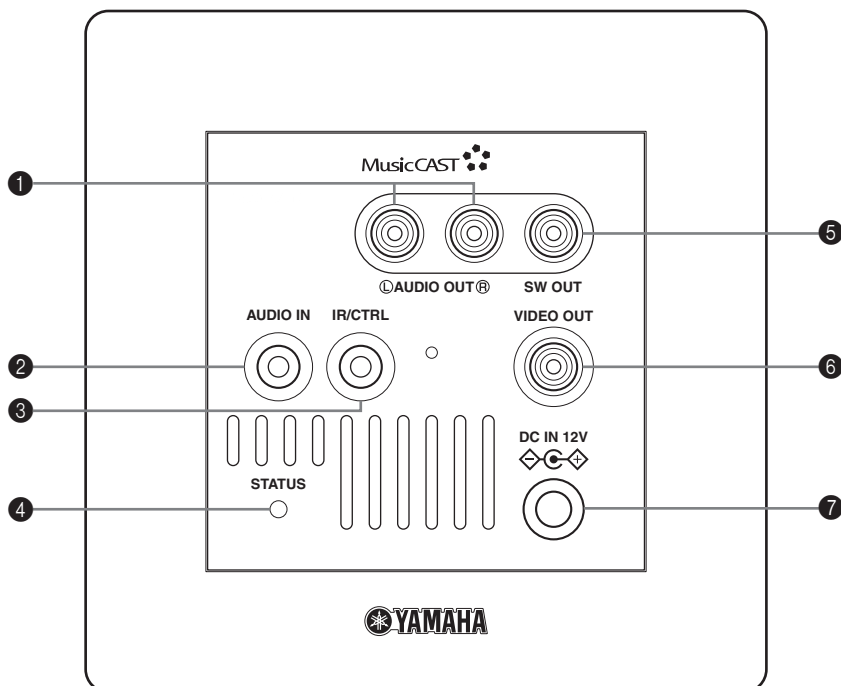


Pin/mini plug cable



CONTROLS AND FUNCTIONS

Front panel



1 AUDIO OUT jacks

Connect a receiver or amplifier (audio input source) to these jacks.

2 AUDIO IN jack

Connect an external stereo source, such as a DVD player or control amplifier if you want to listen to audio from that source.

3 IR/CTRL jack

Connect an IR flasher (infrared emitter) to this jack if you want to control a YAMAHA AV receiver registered on a client.

When this unit is connected to a client, this jack functions as an IR output jack.

When this unit is connected to an external component and the operation mode is set to "C", this jack functions as a control input jack.

4 STATUS indicator

Lights up when this unit is active (receiving a signal).

Dims when this unit is in sleep mode.

Flashes rapidly when the protection circuitry has been activated or an abnormality occurs.

Alternates between fully lit and dimmed for 10 seconds when this unit is first connected to a power source.

5 SW OUT jack

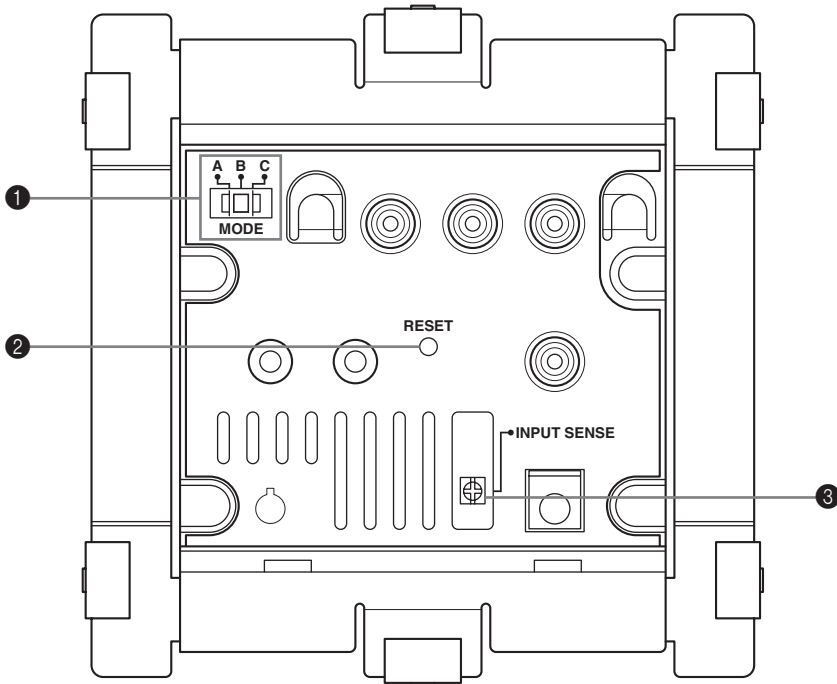
Connect a subwoofer to this jack to enhance bass frequencies.

6 VIDEO OUT jack

Connect a TV or monitor to this jack if you want to display the client on-screen menu on the TV/monitor.

7 DC IN 12V jack

Connect the AC adaptor to this jack to supply power to this unit or distribute power to a client.

Inside front panel**❶ MODE switch**

Switches between operation modes “A”, “B” and “C” (see page 10).

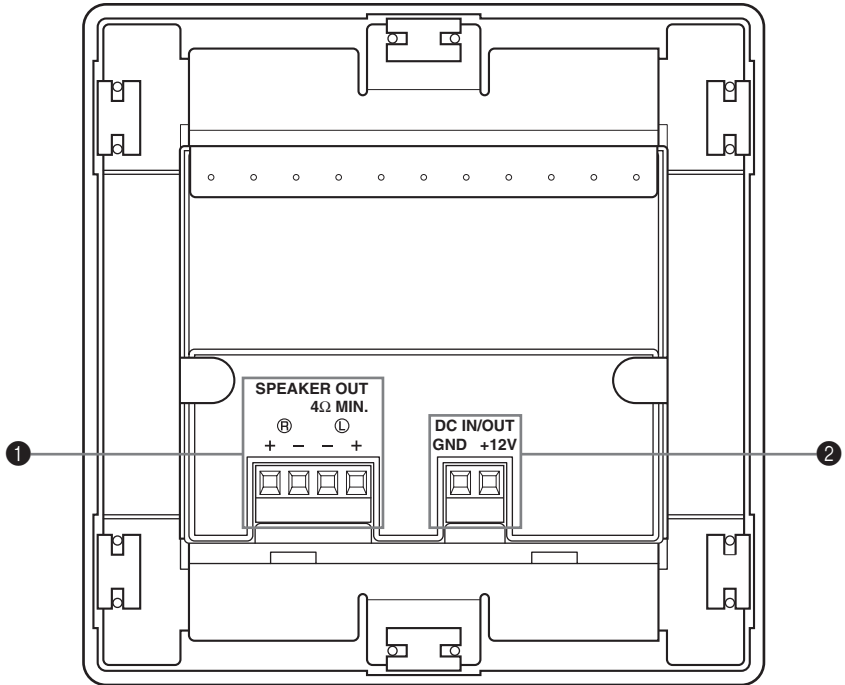
❷ RESET button

Resets this unit after the protection circuitry has been activated or the operation mode has been changed (see page 11).

❸ INPUT SENSE

Detects the presence of signals input through the AUDIO IN jack (see page 11).

Rear panel



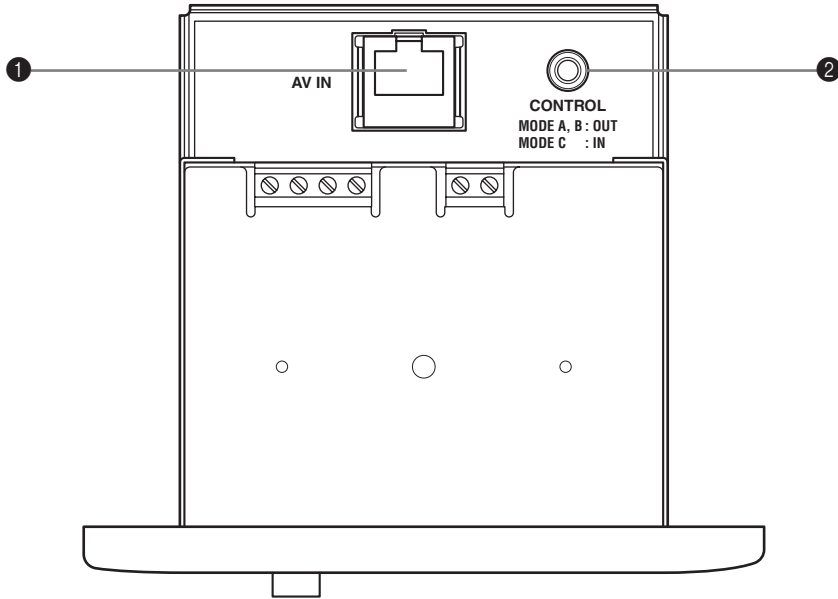
❶ SPEAKER OUT terminals

Connect speakers to these jacks using commercially available speaker cables.

❷ DC IN/OUT terminals

When this unit is connected to a client only, connect the DC power cable to these terminals to supply power to the client.

When this unit is connected to the I/O box, use these terminals to receive power from the I/O box.

Bottom panel**① AV IN jack**

Connect a client to this jack using the CAT-5 cable (straight) supplied with the client to input signals from the client.

② CONTROL OUT/IN jack

Connect another MCX-CA15 or an external component to this jack to control the power of this unit.

OPERATION




Operation modes

The MCX-CA15 features three different operation modes for user flexibility. Before using the MCX-CA15, you must set the operation mode to either “A”, “B” or “C” depending on your system configuration.

CAUTION

Be sure to set the operation mode before connecting the MCX-CA15 to a live power source.

■ Operation Modes

Mode	Usage
<p>A mode</p> 	Use this mode if you want to use the MCX-CA15 as a companion to a client. In this mode you can also control a YAMAHA AV receiver connected to the MCX-CA15 or I/O box from the client's remote control using YAMAHA AV link technology. In this mode, the MCX-CA15 is fully controllable from the client.
<p>B mode</p> 	Use this mode if you want to use the MCX-CA15 as an amplifier for a system other than the MusicCAST system and you also want to automatically turn the MCX-CA15 on or switches it to sleep mode using input signals using the input level sensing function*. In this mode, the MCX-CA15's power is controlled by audio signals input from the connected external component.
<p>C mode</p> 	Use this mode if you want to use the MCX-CA15 as an amplifier for a system other than the MusicCAST system and you do not want to use the input level sensing function*. In this mode, the MCX-CA15's power is controlled by control signals input from the connected external component.

* For details on the input level sensing function, see page 11.

CAUTION

In “B” and “C” modes, you cannot adjust the volume level from the MCX-CA15. Signals input through the AUDIO IN jack are not converted before being output. If loud sounds are output, your speakers may be damaged. Before listening to components for the first time, lower the volume on the component to minimum.

Notes

- In “B” mode, if no signal is detected for five minutes or longer, the MCX-CA15 enters sleep mode.
- In “B” and “C” modes, when a component is connected to the AUDIO IN jack, the input default setting is “AUDIO IN”. However, when no component is connected, the default setting is “AV IN”.
- Before connecting or disconnecting an external component to/from the AUDIO IN jack, be sure to unplug the MCX-CA15 from a live power supply.

■ Mode comparison and operation outline

Mode	IR/CTRL jack on the front panel	CONTROL IN/OUT jack on the bottom panel	Auto standby with input level sensing
A mode	IR output (using YAMAHA AV link technology)	Control output	No
B mode	(Not available)	Control output	Yes
C mode	Control input	Control input	No

The various functions of each jack are as follows:

IR output

The IR/CTRL jack on the front panel functions as an IR output jack in “A” mode. You can connect an IR flasher to this jack to control a YAMAHA AV receiver using YAMAHA AV link technology.

Note

This unit only supports IR modulation frequencies of 38 kHz.

Control output

The CONTROL IN/OUT jack on the bottom panel functions as a control output jack in “A” and “B” modes. In this case, this unit is capable of outputting power within the range 3 to 30 V from this jack. You can connect another MCX-CA15 to this jack to control the power of that MCX-CA15.

Control input

The IR/CTRL jack on the front panel and the CONTROL IN/OUT jack on the bottom panel function as a control input jack in “C” mode. In this case, this unit is capable of detecting signals within the range 3 to 30 V from these jacks. You can connect another MCX-CA15 or an external component to these jacks to control the power of this unit.

■ **To switch the operation mode**

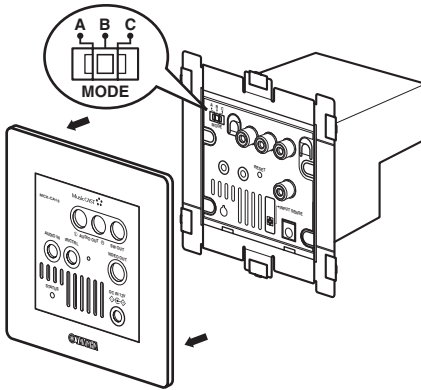
You can switch between the operation modes on the MCX-CA15 by sliding the MODE switch located on the inside front panel to the left and right.

CAUTION

- Always check that the operation mode is set correctly before performing automatic or manual configuration on the client.
- Make sure you press RESET after switching the operation mode.

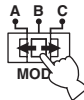
1 Gently grasp the edges of the front panel and pull it away from the main unit.

The MODE switch is now visible in the upper left corner of the inside front panel.



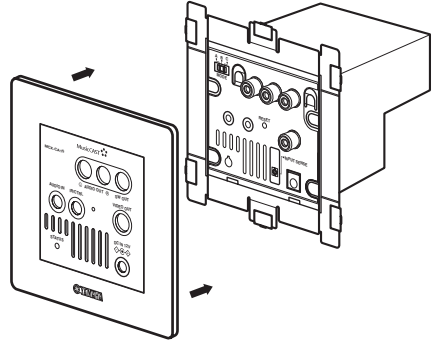
2 Slide the MODE switch to the left or right to make the desired operation mode setting.

For details about operation modes and their uses, see pages 8 and 9.



3 Press RESET using a ballpoint pen or similar object.

4 Replace the front panel by pressing it gently onto the main unit until it clicks into place.



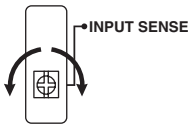
Input level sensing function

In “B” mode, the MCX-CA15 automatically activates (exits sleep mode) when its circuitry senses a signal input from an external source connected to the AUDIO IN jack.

You can use INPUT SENSE to change the detectable signal threshold.

Turn INPUT SENSE to the right to increase the detectable signal threshold.

Turn INPUT SENSE to the left to decrease the detectable signal threshold.

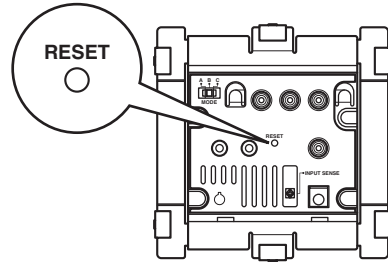


Notes

- If no input source is detected for five minutes or longer, this function automatically switches the MCX-CA15 to sleep mode.
- In sleep mode, output from the MCX-CA15 is muted.
- If you turn INPUT SENSE all the way to the left, the MCX-CA15 always remains in the active state. If you turn it all the way to the right, the MCX-CA15 always remains in sleep mode.
- This function is only available when the MCX-CA15 is set to “B” mode.

RESET button


The RESET button is located on the inside front panel.



Press the RESET button to restart the MCX-CA15 only if:

- The MCX-CA15’s protection circuitry has been activated and the unit has switched itself off.
- You have changed the operation mode using the MODE switch.

Note

When the MCX-CA15 is connected to a client and you want to reset the system, press and hold /I on the client for ten seconds.

TROUBLESHOOTING

Refer to the chart below if the MCX-CA15 does not function properly. If the problem you are experiencing is not listed below or if the instruction below does not help, disconnect the power cord, and contact the nearest authorized YAMAHA dealer or service center.

Problem	Cause	Remedy	Refer to page
The AV link technology function does not work correctly.	The signal is weak (for IR flasher connections only).	Position the IR flasher so that it is in clear view of the external component's remote control receiver.	—
The client does not output any sound.	The volume setting of the client is low.	Increase the volume setting.	Quick Manual, page 9
	The speakers are not correctly connected to the MCX-CA15.	Check the connections between the speakers and MCX-CA15.	Install Manual, page 11
Using the MCX-CA15 produces interference noise on nearby radios.	The MCX-CA15 and the radio are too close to each other.	Place the MCX-CA15 and the radio at least one meter apart.	—
The STATUS indicator on the front panel of the MCX-CA15 flashes rapidly.	The cables are not connected correctly.	Connect the cables correctly. When using the MCX-CA15 in the MusicCAST system, press ⏻/ on the client for 10 seconds to reset the system. When using the MCX-CA15 as an amplifier for another system, press RESET on the inside front panel of the MCX-CA15 to reset this unit.	11
	You are using low-impedance speakers.	Use speakers with an impedance of at least $4\ \Omega$. When using the MCX-CA15 in the MusicCAST system, press ⏻/ on the client for 10 seconds to reset the system. When using the MCX-CA15 as an amplifier for another system, press RESET on the inside front panel of the MCX-CA15 to reset this unit.	11

SPECIFICATIONS

AUDIO PERFORMANCE

- Minimum RMS output power
1 kHz, 1% THD..... 13 W + 13 W
- Maximum power (EIAJ)
1 kHz, 10% THD..... 17 W + 17 W or 18 W (1 ch)
- Frequency response (EIAJ) 20 Hz to 20 kHz, ± 1.0 dB
- Total harmonic distortion + noise (EIAJ)..... 0.008%
- Signal to noise ratio (EIAJ)..... 98 dB
- Dynamic range (EIAJ)..... 98 dB
- Input sensitivity/impedance (1 kHz, 1% THD)
Modes A and B..... 220 mV/3 k Ω
Mode C..... 780 mV/3 k Ω
- Output level/impedance
AUDIO OUT (1 kHz, 220 mV input from AUDIO IN)..... 1.0 Vrms/1 k Ω
AUDIO OUT (1 kHz, 0 dB, Volume -20 dB input from the MCX-C15 connected with a 2 m CAT-5 cable (straight))
..... 1.0 Vrms/1 k Ω
SW OUT (50 Hz, 220 mV input from AUDIO IN) 1.0 Vrms/2.1 k Ω

GENERAL

- Power supply AC 100 to 240 V, 50/60 Hz
- Power consumption 40 W
- Operation temperature +5°C to +35°C
- Dimensions (W x H x D)..... 120 x 120 x 105 mm (4-3/4" x 4-3/4" x 4-3/16")
- Weight (without AC adaptor) 0.6 kg (1 lb 5 oz)

* The above specifications are subject to change without notice.



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YAMAHA ELECTRONICS (UK) LTD. YAMAHA HOUSE, 200 RICKMANSWORTH ROAD WATFORD, HERTS WD18 7GQ, ENGLAND
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