

A T H E M<sup>®</sup>

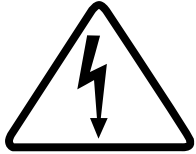
**MCA** 525/325/225  
POWER AMPLIFIERS



OPERATING MANUAL

# SAFETY PRECAUTIONS

Read this section carefully before proceeding

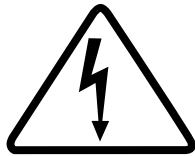


## CAUTION

**RISK OF ELECTRIC SHOCK DO NOT OPEN**



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL**



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 APPLIANCE.

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE, AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.

**CAUTION:** TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

**CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE THE FUSE ONLY WITH THE SAME AMPERAGE AND VOLTAGE TYPE. REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL.

**WARNING:** UNIT MAY BECOME HOT. ALWAYS PROVIDE ADEQUATE VENTILATION TO ALLOW FOR COOLING. DO NOT PLACE NEAR A HEAT SOURCE, OR IN SPACES THAT CAN RESTRICT VENTILATION.

### IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use the attachments/accessories specified by the manufacturer.
12. Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Avoid installing this unit where foreign objects may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:

- Burning objects (i.e. candles), as they may cause fire, damage to this unit, 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 this unit.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Do not install this equipment in a confined space such as a case or similar. Install it away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold.

Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.

Install this unit near the AC outlet and where the AC power plug can be reached easily.

This unit is not disconnected from the AC power source when it is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.

**NOTE:** This product is not an auto voltage Amplifier. Connect only to the prescribed AC outlet, i.e., 120V 60Hz or 240V 50/60Hz.

**CAUTION:** Top surface can become hot.

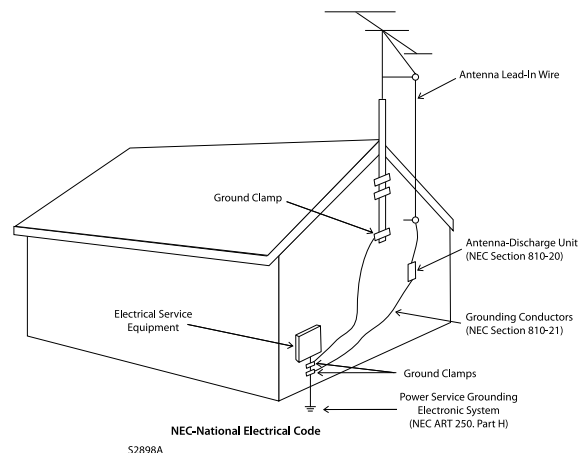
**CAUTION:** These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

**CAUTION:** Changes or modifications to this equipment not expressly approved by Paradigm Electronics for compliance could void the user's authority to operate this equipment.

**FCC WARNING:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and amplifier.
- Connect the equipment into an outlet on a circuit different from that to which the amplifier is connected.
- Consult the dealer or an experienced radio / TV technician for help.



**IMPORTANT INFORMATION FOR UK CUSTOMERS:** DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer. If, nonetheless, the mains plug is cut off, REMOVE THE FUSE and dispose of the PLUG immediately, to avoid possible shock hazard by inadvertent connection to the mains supply. If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

IMPORTANT: DO NOT make any connection to the larger terminal which is marked with the letter "E" or by the safety earth symbol or colored GREEN or GREEN AND YELLOW.

The wires in the mains lead on this product are colored in accordance with the following code:

BLUE – NEUTRAL  
BROWN – LIVE

As these colors may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

The BLUE wire must be connected to the terminal marked with the letter "N" or colored BLACK.

The BROWN wire must be connected to the terminal marked with the letter "L" or colored RED.

When replacing the fuse, only a correctly rated and approved type should be used, and be sure to re-fit the fuse cover. If in doubt consult a competent electrician.

## NOTES ON ENVIRONMENTAL PROTECTION

At the end of its useful life, this product must not be disposed of with regular household waste but must be returned to a collection point for the recycling of electrical and electronic equipment. The symbol on the product, user's manual and packaging, point this out. The materials can be reused in accordance with their markings. Through re-use, recycling of raw materials or other forms of recycling of old products, you are making an important contribution to the protection of our environment. Your local administrative office can advise you of the responsible waste disposal point.

## RECYCLING AND REUSE GUIDELINES (Europe)

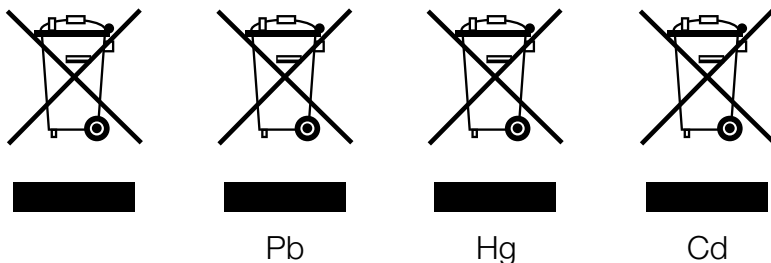
In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) directive effective August 13, 2005, we would like to notify you that this product may contain regulated materials which, upon disposal, require special reuse and recycling processing. For this reason Paradigm Electronics Inc. (the manufacturer of Paradigm speakers and Anthem electronic products) has arranged with its distributors in European Union member nations to collect and recycle this product at no cost to you. To find your local distributor please contact the dealer from whom you purchased this product or go to our website at [www.paradigm.com](http://www.paradigm.com).

Please note that only the product falls under the WEEE directive. When disposing of packaging and other shipping material we encourage you to recycle through the normal channels.

## INFORMATION ABOUT COLLECTION AND DISPOSAL OF WASTE BATTERIES (DIRECTIVE 2006/66/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF EUROPEAN UNION) (for European customers only)

Batteries bearing any of these symbols indicate that they should be treated as "separate collection" and not as municipal waste. It is encouraged that necessary measures are implemented to maximize the separate collection of waste batteries and to minimize the disposal of batteries as mixed municipal waste. End-users are exhorted not to dispose waste batteries as unsorted municipal waste. In order to achieve a high level of recycling waste batteries, discard waste batteries separately and properly through an accessible collection point in your vicinity. For more information about collection and recycling of waste batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

By ensuring compliance and conformance to proper disposal of waste batteries, potential hazardous effects on human health is prevented and the negative impact of batteries and waste batteries on the environment is minimized, thus contributing to the protection, preservation and quality improvement of the environment.



Anthem and any related party assume no liability for the user's failure to comply with any requirements.

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# INTRODUCTION

Thank you for purchasing the Anthem MCA series amplifier.

All Anthem products are engineered to recreate the passion of a live musical performance and emotional involvement experienced in the best movie theaters by utilizing the highest level of circuit design, superior parts and manufacturing techniques, innovative features, and intuitive ergonomics. We are confident that their inclusion in your system will significantly enhance your enjoyment of recordings for years to come.

## 1.1 BEFORE MAKING CONNECTIONS

Check that you have received all items listed below and report discrepancies to your dealer as soon as possible. In case the unit needs to be transported in the future, keep the packing materials. **Retain the invoice that you received from your authorized Anthem dealer at time of purchase – without it, service will not be provided under warranty.**

### Packing List:

- Amplifier
- Operating manual
- Power cord (North America only)

### Safety Instructions:

- Read all safety precautions and instructions at the beginning of this manual.
- Do not connect power if there are any signs of damage to any part of the exterior.
- The front panel power button does not disconnect the product from the AC line. Ensure that the power cord remains readily accessible at all times.
- To connect power, only use the supplied double-insulated power cord.
- Allow adequate ventilation to ensure reliable operation and to prevent overheating. The amount of space required above the unit for radiation depends on ambient air temperature and circulation. Installation inside a cabinet with a front that can be closed is not recommended unless a fan is also installed to adequately draw air away from the top of the unit.
- Failing to comply with any safety instruction, precaution, or warning in this manual is in violation of the intended use of the product.
- Anthem and any related party assume no liability for the user's failure to comply with requirements.

## 1.2 IN-USE NOTICES

- Disconnect the power cord before connecting or disconnecting any components.
- If the amplifier was transported or stored in the cold, let it reach room temperature before use.
- Do not remove the top cover.
- Do not modify the product.
- Due to continuing advances, operational characteristics may change. If this manual contains discrepancies please check [www.anthemAV.com](http://www.anthemAV.com) for the latest manual.

## 1.3 RACK-MOUNTING

An optional rack-mount kit is available to custom installers.

# CONNECTIONS AND OPERATION

## 2.1 INPUT CONNECTIONS

Balanced XLR connection offers the highest transmission quality, particularly over long cable lengths, because it rejects noise and hum pickup. If your preamplifier does not have XLR outputs, use the RCA inputs.

Do not use “RCA-compatible” connectors that have a hollow center pin with a hole at its tip. They can damage the amplifier’s RCA jack internally while being inserted.

## 2.2 SPEAKER CONNECTIONS

Depending on the level of the input signal, the voltage at the outputs can be high enough to cause electric shock – be sure that power is turned off when connecting or disconnecting anything. As well, be sure that the speakers are rated for use with this amplifier – an overdriven speaker can pose a fire hazard.



Connect the red (+) connection on the speaker to the red (+) binding post on the amplifier, and the black (-) connection on the speaker to the black (-) binding post on the amplifier using cable that is insulated to handle the maximum output of the amplifier. Do not overtighten the binding posts as this may cause damage. The binding post pair accepts a connection from one speaker.

## 2.3 ON MODES

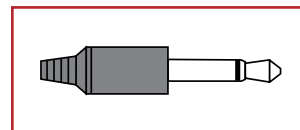
With the three-way switch located on the rear panel, you can set the way the amplifier is turned on and off. To use Trigger-On, connect a standard 3.5mm (1/8”) mono mini plug cable between the amplifier and the preamplifier or control component. Once all other connections are made, connect the power cord to the amplifier and then the wall outlet.

### Manual-On:

When in this position, the amplifier is turned on/off via the power button on the front panel.

### Trigger-On:

This feature allows the amplifier to be turned on or off remotely via the trigger. The 3.5mm (1/8”) mini-jack IN receives power (5-24 volts DC) from an upstream component or system controller. The same trigger signal can be linked to trigger inputs on other units through the OUT jack. When using Trigger mode, leave the front power button in the “on” position.



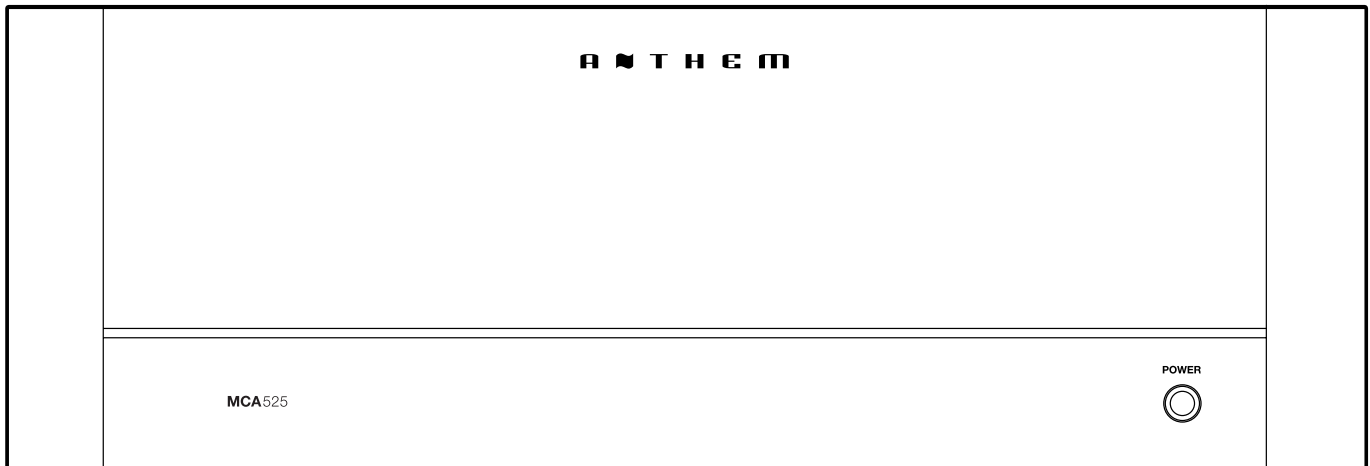
### Auto-On:

This feature also eliminates the need to manually operate the power button. Auto-On turns the amplifier on when it senses an input signal, and switches off approximately 20 minutes after input signal stops. When using Auto-On mode, leave the front power button in the “on” position..



## 2.4 FRONT PANEL

MCA 525 model shown. MCA 225, MCA 325 models are similar.



### Power Button LED

This is blue when the amplifier is operating normally. It also indicates abnormal operation according to the codes below. In most cases only the abnormal channel is shut down so the others can keep playing, and it resumes playing automatically once normal conditions are restored.

**Rapid flashing (less than 1 second) - short-circuited channel.** Inspect the speaker cables and connectors and make sure they do not touch other wires or amplifier chassis or any piece of metal.

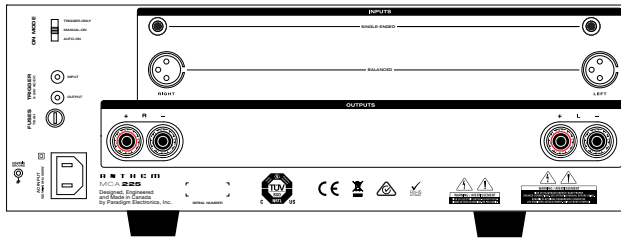
**Slow flashing (more than 1 second) - thermal protection.** Allow amplifier to cool and ensure that ventilation is adequate. In an over-temperature condition the temperature must drop before output resumes. This could take several minutes depending on ambient temperature.

**Red LED - total shutdown.** This can be caused by a ground fault or DC protection. Verify whether the cause is in the amplifier by disconnecting all inputs and the power cord. Reconnect the power cord only and turn on the amp. If the LED is still red, contact your dealer or Anthem Technical Support. For the MCA 525, the LED will also be red if either fuse on the rear panel is open.

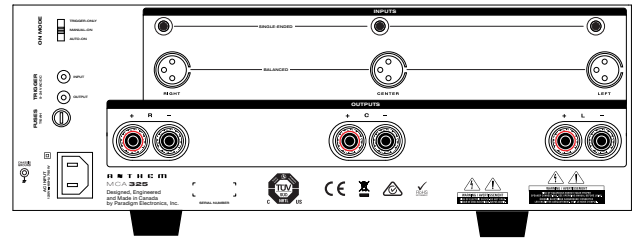
## 2.5 REAR PANEL

120V models shown. 240V models are similar.

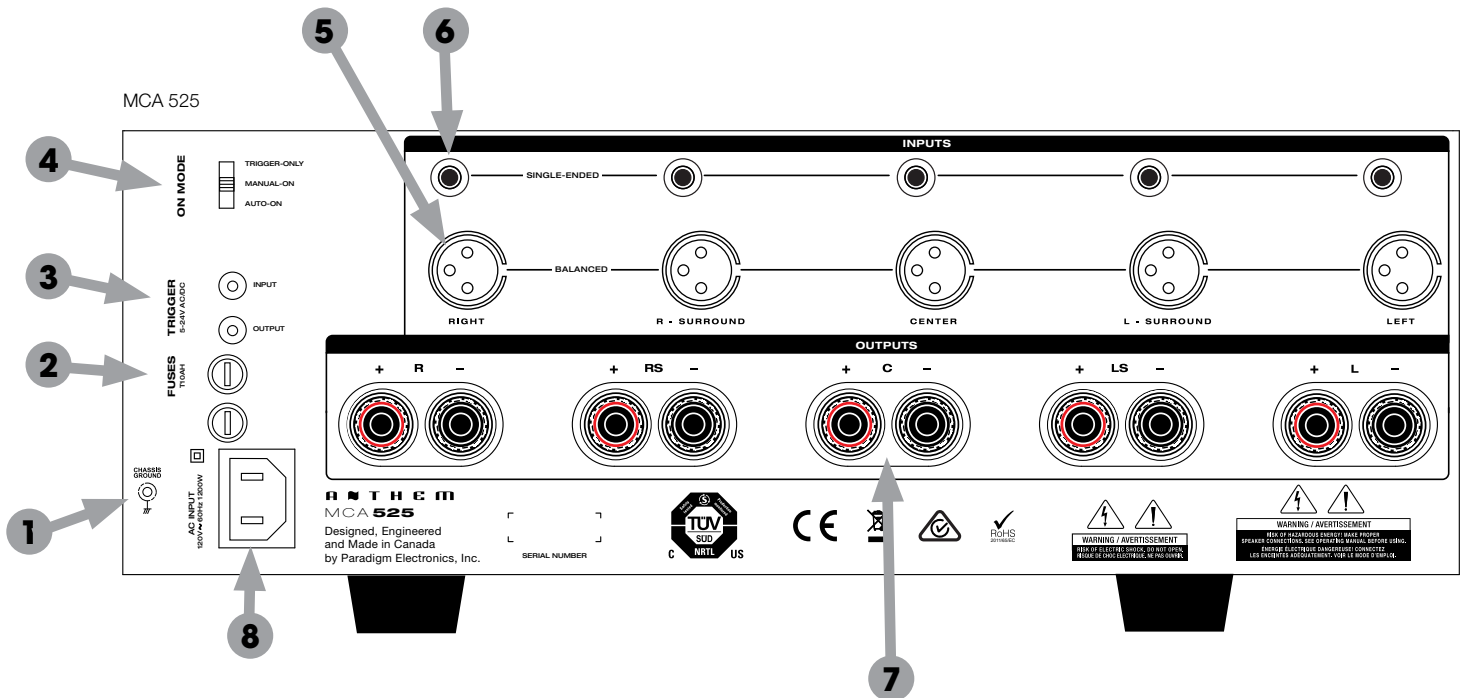
MCA 225



MCA 325



MCA 525



- 1 – Chassis ground screw
- 2 – Fuses
- 3 – Trigger input and output
- 4 – On-mode Switch (trigger / manual / auto)
- 5 – XLR inputs
- 6 – RCA Inputs
- 7 – Binding posts
- 8 – Power cord inlet (IEC C18 type)

# MEASURED PERFORMANCE

## POWER OUTPUT

Continuous 20 Hz to 20 kHz, <1% THD (*all models*)

Load	Watts
8 ohms	225 W
4 ohms	400 W
2 ohms	600 W

### THD at 100 W

at 1 kHz	0.0010%
at 20 kHz	0.015%

### IMD at 100 W

ITU-R (19 kHz + 20 kHz)	0.0005%
SMPTE (60 Hz + 7 kHz)	0.002%

SNR, IEC-A, ref. 225 W	120 dB
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### Frequency Response, 20 Hz to 20 kHz

open circuit	± 0.1 dB
8 Ω	± 0.1 dB
4 Ω	± 0.1 dB
2 Ω	± 0.2 dB

Power Bandwidth, -3 dB at 200 W into 8 ohms	90 kHz
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Slew Rate	30 V/μs
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Damping Factor, 20 Hz to 1 kHz	300
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Channel Separation, 100 Hz to 10 kHz	>65 dB
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### Input Impedance

RCA	10 kΩ
XLR	15 kΩ

Input Sensitivity, 225 W into 8 Ω	1.5 Vrms
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Voltage Gain	29 dB
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## POWER REQUIREMENT

Consumption	standby	idle	typical	high output
MCA 525	2.0 W	80 W	550 W	1200 W
MCA 325	1.4 W	47 W	350 W	750 W
MCA 225	1.0 W	35 W	240 W	500 W

This product operates from a single phase AC power source that supplies 108V-132V at a frequency of 60 Hz for the 120V version and 198V-264V at a frequency of 50/60 Hz for the 220V-240V version.

## DIMENSIONS

Height	6-5/8" (16.9 cm)
Rackmounted Height	4U
Width	17-1/4" (43.8 cm)
Depth	18-1/8" (46 cm)
Weight (unpacked)	
MCA 525	61 lb (27.5 kg)
MCA 325	43 lb (19.5 kg)
MCA 225	40 lb (18.0 kg)

# LIMITED WARRANTY

## CANADA & USA

The warranty period on new Anthem products is:

5 years: Separate power amplifiers and integrated amplifiers

3 years: Audio/Video preamplifiers and receivers

Please register your product at [www.anthemAV.com](http://www.anthemAV.com)

The warranty period begins on the date of purchase from Anthem or an Authorized Anthem Dealer. This warranty is offered only to the original owner and is not transferable. Demonstration and display units are covered by the same warranty except that the period commences on the date of dealer invoice, not the purchaser's invoice, and cosmetic flaws are excluded.

If Anthem determines that the product has a defect in materials or manufacturing during the warranty period Anthem will at its option repair, replace or provide the necessary replacement parts without charging for parts or labor. Repaired or replaced equipment or parts supplied under this warranty are covered by the unexpired portion of the warranty.

Warranty is void if the serial number has been removed, altered or defaced, if the product has been operated, installed or handled other than in accordance with the intended application, tampered with, modified, or damaged by accident, while in transport or by failure of electric power, or has been repaired by a non-authorized party. Anthem shall have no obligation to correct any defect that is not reproducible by Anthem. If inspection by Anthem discloses that the repair required is not covered by this warranty, regular repair charges shall apply.

If a problem is discovered in your Anthem product, please contact the Authorized Anthem Dealer from whom you purchased the product. Your dealer will help to determine the cause of the problem and arrange for the appropriate action. Alternatively, follow the procedure below for factory service.

A Return Authorization (RA) number must be obtained from Anthem Technical Support before a product can be shipped to Anthem for any reason. Product shipped to Anthem without its RA Number clearly visible on the outside of the shipping carton will be refused and returned to the sender, freight collect. Product shipped to Anthem must have shipping and insurance prepaid by the sender, be packaged in the original carton and packing material and accompanied by a written description of the defect. Service will not be given under warranty without an accompanying copy of the sales invoice. Product repaired under warranty will be returned with shipping and insurance prepaid by Anthem (within Canada and continental USA only).

## DISCLAIMER OF LIABILITY

Under no circumstances shall Anthem, its agents, representatives or employees assume liability or responsibility for injury or damages sustained in the use or operation of Anthem products or for damages to connected products. Some jurisdictions do not allow limitations of incidental or consequential damages so this exclusion may not apply to you.

Anthem reserves the right to make design changes without obligation to revise prior versions. All specifications are subject to change without notice.

This warranty shall be the sole and exclusive remedy to you. No other warranty or condition, statutory or otherwise, expressed or implied, shall be imposed upon Anthem nor shall any representation made by any person, including a representative or agent of Anthem, be effective to extend the warranty coverage provided herein.

On the expiration of the warranty all liability of Anthem in connection with the product shall terminate.

## INTERNATIONAL

Terms and conditions are set and maintained by the Authorized Anthem Distributor, not Anthem.

**A  T H E M<sup>®</sup>**



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[www.anthemAV.com](http://www.anthemAV.com)