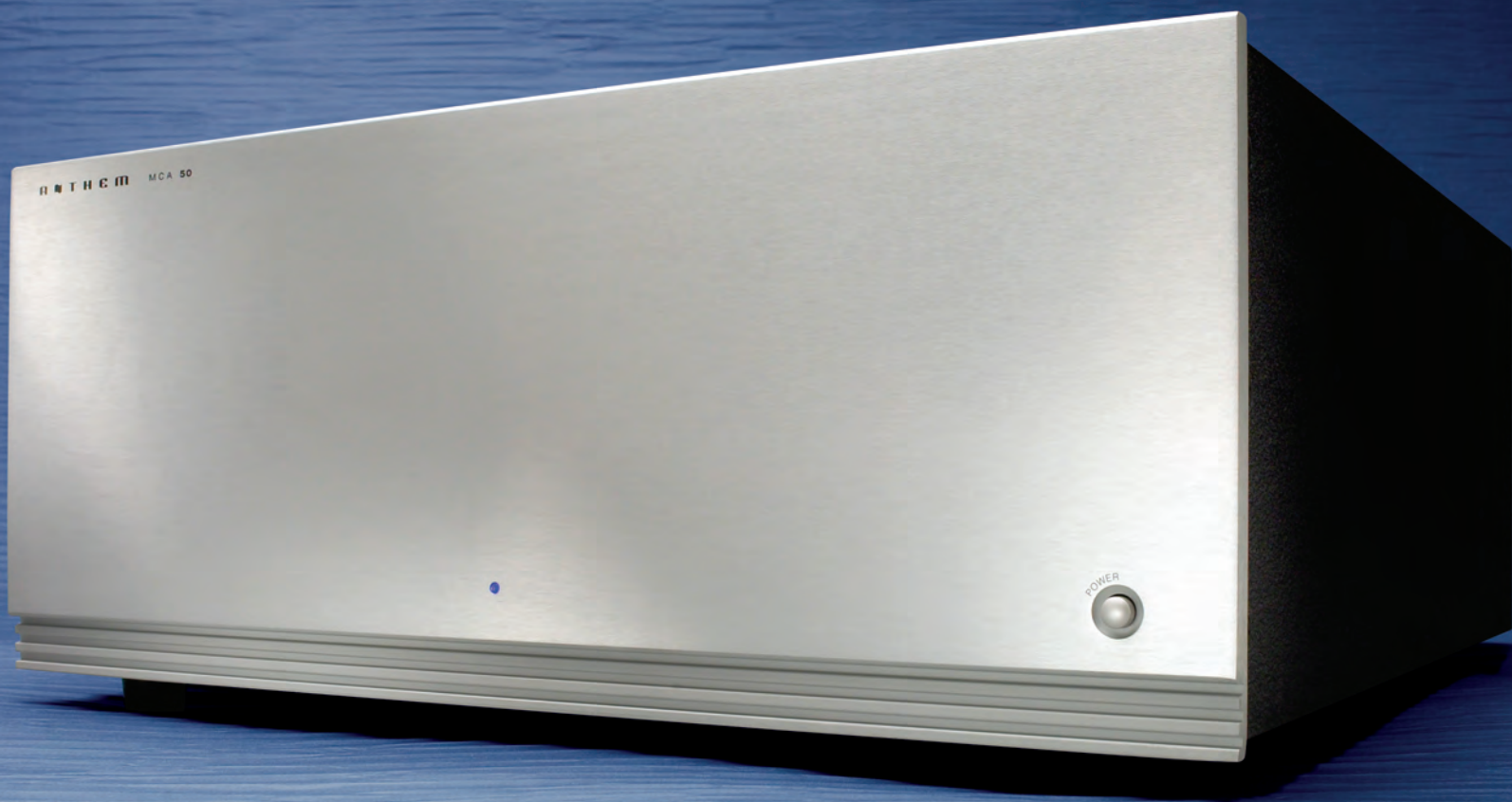


MCA SERIES

OPERATING MANUAL

ANTHEM®



www.anthemAV.com



SONIC FRONTIERS
INTERNATIONAL

BREAKING THE SOUND BARRIER™

SAFETY PRECAUTIONS

READ THIS SECTION CAREFULLY BEFORE PROCEEDING!

	WARNING RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



The lightning flash with arrowpoint within an equilateral triangle warns of 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 warns users of 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 PRODUCT TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS PRODUCT.

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

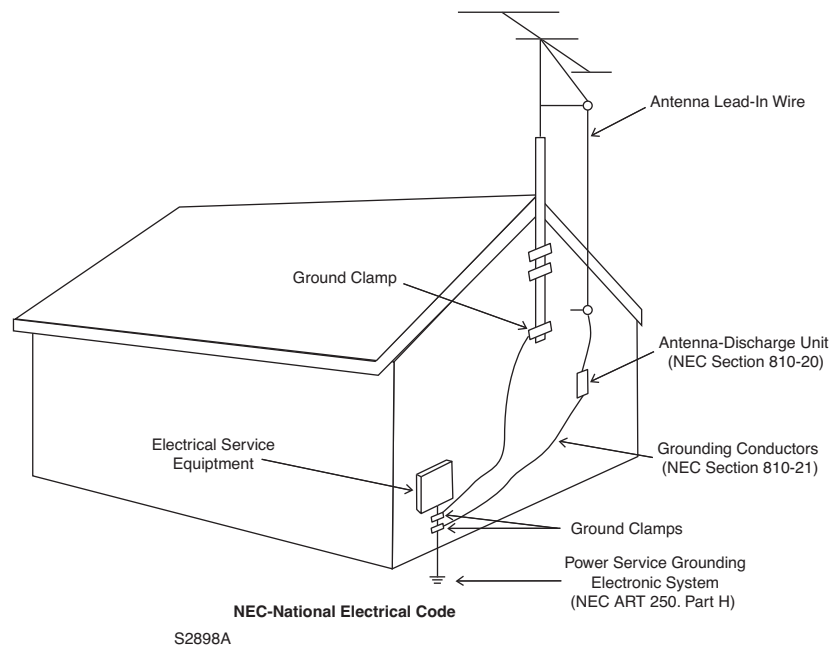
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE THE FUSE ONLY WITH THE SAME AMPERAGE AND VOLTAGE TYPE. REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL.

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 Instructions** – All the safety and operating instructions should be read before the product is operated.
- 2. Retain Instructions** – The safety and operating instructions should be retained for future reference.
- 3. Heed Warnings** – All warnings on the product and in the operating instructions should be adhered to.
- 4. Follow Instructions** – All operating and use instructions should be followed.
- 5. Cleaning** – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp, soft cloth for cleaning.
- 6. Water and Moisture** – Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
- 7. Accessories** – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

8. **Ventilation** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
9. **Power Sources** – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
10. **Grounding and Polarization** – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
11. **Power-cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
12. **Outdoor Antenna Grounding** – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to the proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



13. **Lightning** – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable systems. This will prevent damage to the product due to lightning and power-line surges.
14. **Power Lines** – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
15. **Overloading** – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

- 16. Object and Liquid Entry** – Never push objects of any kind through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Do not expose this product to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the product.
- 17. Servicing** – Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- 18. Damage Requiring Service** – Unplug this product from the wall outlet and refer servicing to qualified personnel under the following conditions:
- When power-supply cord or plug is damaged.
 - If liquid has been spilled, or objects have fallen into the product.
 - If the product has been exposed to rain or water.
 - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will require extensive work by a qualified technician to restore the product to its normal operation.
 - If the product has been dropped or damaged in any way.
 - If the product exhibits a distinct change in performance – this indicates a need for service.
- 19. Replacement Parts** – When replacement parts are required, be sure the technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- 20. Safety Check** – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- 21. Heat** – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.



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.

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.

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1. INTRODUCTION

Thank you for purchasing the Anthem MCA Power Amplifier.

MCA series amplifiers are made in 2, 3, and 5-channel versions. Anthem products are engineered to recreate the passion of a live musical performance and thrill of the best movie theaters by using the highest level of circuit design, superior build quality, innovative features, and intuitive ergonomics.

1.1 BEFORE OPERATING THE AMPLIFIER

Check that you have received everything in the Packing List below and report any discrepancies to your dealer as soon as possible. Retain all packing materials and use them for any future shipment.

Packing List:

- Amplifier
- Power Cord (North America only)
- Operating Manual

Keep the invoice that you received from your authorized Anthem dealer at time of purchase – without it, service will not be provided under warranty.

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 buttons and the Rear Panel switch do 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 Operating Manual is in direct violation of the standards of design, manufacture, and 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.
- Do not remove the top cover.
- Do not modify the product.

2. 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. Note that if an RCA plug is inserted into the RCA jack, that channel's XLR input is disabled. If your preamplifier does not have XLR outputs, use the Single-Ended RCA inputs.

Do not use 'RCA-compatible' connectors that have a hollow center pin with a hole at the tip – inserting them into the MCA amplifier's RCA jacks can cause internal damage.

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 appropriate amplifier channel, and the black (–) connection on the speaker to the black (–) binding post on the same amplifier channel, using cable that is insulated to handle the maximum output of the amplifier. Do not overtighten the binding posts as this may cause damage. Each binding post accepts a connection from one speaker.

2.3 ON MODES

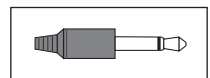
With the three-way switch located on the rear panel, you can set the way the amplifier is turned on and off. To use Trigger-On, connect a standard 3.5mm (.125") mono mini plug cable between the amplifier and the preamplifier or control component. Once all other connections are made, connect the power cord to the amplifier and then the wall outlet. Some 'clicks' should be heard from relays inside the amplifier a few seconds after power is turned on.

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 (.125") mini-jack INPUT receives power (5-24 volts, AC or DC) from an upstream component or system controller. The same trigger signal can be linked to other components through the OUTPUT. 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 whenever it senses an input signal on any channel, and switches off 20 minutes after the input signal stops. The power button on the front panel must be left 'on'.

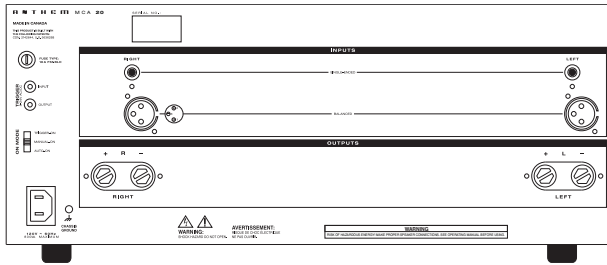
2-Color LED:

In Manual mode, the LED on the front panel is lit blue when the amplifier is on. In Auto or Trigger mode, the LED is lit red to indicate standby mode, and blue to indicate operate mode.

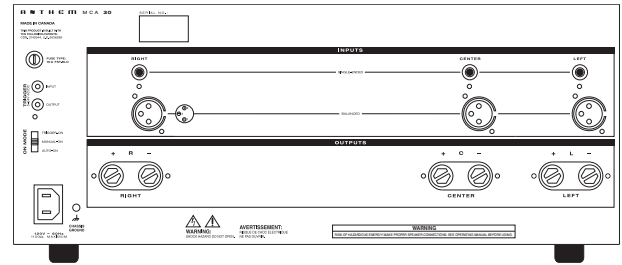
Note: The amplifier is equipped with a thermal shut off feature. If it overheats, the affected channel will remain off until the temperature falls below the shut off threshold.

2. CONNECTIONS AND OPERATION continued ...

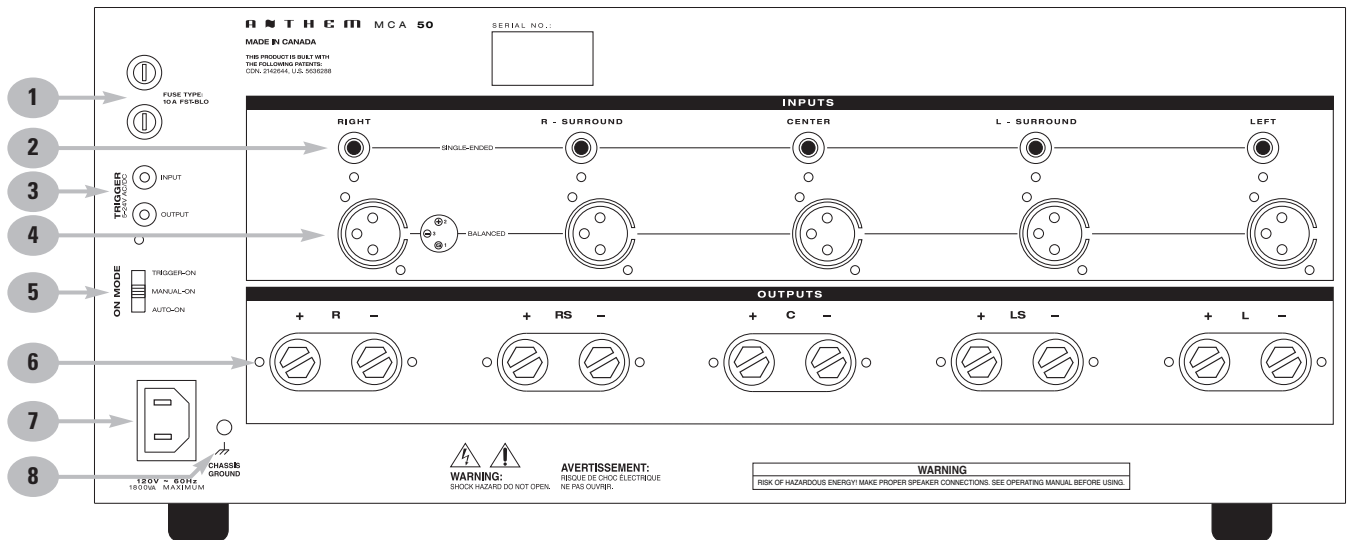
2.4 REAR PANEL LAYOUT



MCA 20



MCA 30



MCA 50

- 1 – Fuses (one in MCA 20/30, two in MCA 50)
- 2 – Single-Ended RCA Inputs
- 3 – Trigger Input and Output
- 4 – Balanced XLR Inputs

- 5 – On-Mode (Trigger / Manual / Auto)
- 6 – Speaker Binding Posts
- 7 – Power Cord Socket
- 8 – Chassis Ground

SPECIFICATIONS

Power Output (Continuous RMS, 20 Hz to 20 kHz, <1.0% THD)

MCA 20:	One Channel Driven (8 Ω , 4 Ω , 2 Ω)	225 W, 370 W, 535 W
	All Channels Driven (8 Ω , 4 Ω , 2 Ω)	200 W, 300 W, 410 W
MCA 30:	One Channel Driven (8 Ω , 4 Ω , 2 Ω)	225 W, 375 W, 550 W
	All Channels Driven (8 Ω , 4 Ω , 2 Ω)	180 W, 265 W, 340 W
MCA 50:	One Channel Driven (8 Ω , 4 Ω , 2 Ω)	225 W, 370 W, 535 W
	All Channels Driven (8 Ω , 4 Ω , 2 Ω)	180 W, 265 W, 340 W*

*Special Test Conditions Required for 2 Ω

Frequency Response	20 Hz to 20 kHz (+0, -0.15 dB), 5 Hz to 100 kHz (+0, -2 dB)
THD+N	0.0015% at 1 kHz, 0.03% at 20 kHz (100 W into 8 Ω)
Power Bandwidth	10 Hz to 80 kHz (+0, -3 dB, 200 W into 8 Ω)
Slew Rate	20 V/ μ s
Headroom	1.45 dB (8 Ω), 2.3 dB (4 Ω)
Input Sensitivity	1.5 Vrms in for 225 W out into 8 Ω
Input Impedance	10 k Ω (RCA), 15 k Ω (XLR)
Damping Factor	130 at 1 kHz (ref. 8 Ω)
S/N Ratio (ref. 225 W, IEC-A filter)	120 dB
Crosstalk	>65 dB (100 Hz to 10 kHz)
Voltage Gain	29 dB

POWER REQUIREMENT

Power Consumption at maximum power output (8 Ω load)

MCA 20	800 W
MCA 30	1100 W
MCA 50	1800 W

Low voltage version: In countries where the line voltage is 120V, this product operates from a single phase AC power source that supplies between 108V and 132V at a frequency of 60 Hz.

High voltage version: In countries where the line voltage is 220, 230, or 240V, this product operates from a single phase AC power source that supplies between 216V and 264V at a frequency of 50 or 60 Hz.

DIMENSIONS

Height	7 ⁵ / ₈ inches (19.4 cm) including feet, rackmounting – 4 rack units without feet
Width	17 ¹ / ₄ inches (43.8 cm)
Depth	
	MCA 20 12 ¹ / ₄ inches (31 cm)
	MCA 30 12 ¹ / ₄ inches (31 cm)
	MCA 50 17 ¹ / ₂ inches (44.5 cm)
Weight	
	MCA 20 35 lb (16 kg)
	MCA 30 41 lb (18.5 kg)
	MCA 50 61 lb (27.5 kg)

WARRANTY

CANADA & USA

Anthem Electronics warrants to the original purchaser that each Anthem MCA amplifier is free from defects in workmanship and materials, during normal use, for a period of five (5) years from the date of sale. During the warranty period, Anthem Electronics will repair or replace any defective components free of charge.

This warranty is not transferable unless the product is traded-in with an Authorized Anthem Dealer, who may resell the product with the remaining warranty if it is cosmetically acceptable, in perfect working condition, and has not been internally or externally altered.

Warranty is void if the Anthem product is not purchased from an Authorized Anthem Dealer, if the serial number has been removed, altered, or defaced, if the product has been operated or handled other than in accordance with the instructions in its Operating Manual or otherwise abused, misused, damaged by accident or while in transport, tampered with, modified, or repaired by anyone other than Anthem Electronics or an authorized Anthem Electronics service center. If inspection by Anthem Electronics discloses that the repair required is not covered by this warranty, regular repair charges shall apply.

Display products sold by an Authorized Anthem Dealer are covered under the same warranty terms, except that the warranty period commences from the date of the dealer invoice, not the purchaser's invoice, and cosmetic flaws, if there are any, are excluded.

If a problem or defect is discovered in your Anthem product, please contact your Authorized Anthem Dealer. It is the Dealer's responsibility to determine the nature of the problem and arrange for the appropriate replacement parts, or the return of the product to Anthem Electronics.

A Return Authorization (RA) number must be obtained from Anthem Technical Support before any product can be returned to Anthem Electronics for any reason. The RA Number must be clearly visible on the outside of the shipping carton for Anthem Electronics to accept the return. Product shipped to Anthem Electronics without a RA Number will be refused and returned to the sender, freight collect. Product shipped to Anthem Electronics for repair must have shipping and insurance prepaid by the sender, be packaged in the original carton and packing material, and should be accompanied by a written description of the defect. Anthem Electronics will accept no responsibility for any damage occurring to a product that is shipped in any type of carton and packing material other than the original carton and packing material.

To receive service under warranty, an accompanying copy of the original sales receipt is required. Product repaired under warranty will be returned with shipping and insurance prepaid by Anthem Electronics (within Canada and USA only). All other repairs are subject to charges for labor, parts, return shipping, and insurance.

Disclaimer of Liability

Under no circumstances does Anthem Electronics assume liability or responsibility for injury or damages sustained in the use or operation of Anthem products, or for damages to any other connected products.

In no event shall Anthem Electronics, its agents, representatives, or employees, be responsible for any incidental or consequential damages. Some jurisdictions do not allow limitations of incidental or consequential damages, so this exclusion may not apply to you.

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

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

This warranty constitutes the only warranty applicable to products sold by Anthem Electronics. No other warranty or condition, statutory or otherwise, expressed or implied, shall be imposed upon Anthem Electronics, nor shall any representation made by any person, including a representation by a representative or agent of Anthem Electronics, be effective to extend the warranty coverage provided herein.

INTERNATIONAL

Outside of Canada and USA, warranty coverage terms are set and maintained by the Authorized Anthem Distributor, not Anthem Electronics. Terms and conditions may vary.



DESIGNED AND MANUFACTURED IN NORTH AMERICA

tel. (+1) 905-362-0958 M-F 9:00 am - 5:30 pm (ET)

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