

AQUATIC AV[®]

products with a watertight reputation

AQ-AD300.2-MICRO 2 CHANNEL WATERPROOF AMPLIFIER

USER / INSTALLATION MANUAL



**PLEASE READ THIS INSTRUCTION MANUAL BEFORE
INSTALLATION AND OPERATION**

1 Getting Started..... 3

 1.1 Important Information..... 3

 1.2 Contents..... 3

2 Installation..... 4

 2.1 Installation Precautions..... 4

 2.1.1 Positioning the Amplifier..... 4

 2.1.2 Cutting Cables..... 4

 2.2 Connecting the Amplifier..... 4

 2.2.1 Connecting Inputs with Low-Level (RCA) Cables..... 4

 2.2.2 Connecting Inputs with High-Level (Speaker) Cables..... 5

 2.2.3 Connecting Speakers..... 5

 2.2.4 Connecting Speaker/Subwoofer in Bridged Mode..... 7

 2.2.5 Connecting the Remote (Ignition) Wire..... 8

 2.2.6 Connecting the Battery..... 8

 2.3 Testing the System..... 8

3 Setting Amplifier Controls..... 8

 3.1 Setting the Gain Control..... 8

 3.2 Cross-Over Mode Switch (Filter)..... 9

 3.3 Cross-Over Frequency Control (Freq)..... 9

 3.3.1 High Pass Filter Mode..... 9

 3.3.2 Low Pass Filter Mode..... 10

 3.3.3 Full Range Mode..... 10

 3.4 Bass Boost..... 11

4 Troubleshooting..... 12

5 Specifications & Dimensions..... 13

 5.1 Specifications..... 13

 5.2 Dimensions..... 13

6 Warranty Information..... 14

Congratulations on your purchase of an Aquatic AV AQ-AD300.2-MICRO amplifier. It has been designed, engineered and manufactured to bring you the highest level of performance and quality, and will afford you years of listening pleasure.

1.1 Important Information

Check your battery and electrical system

Low battery conditions and/or poor electrical systems need to be diagnosed and corrected prior to installation of your amplifier. Old batteries may be good enough to start your engine, but may NOT be adequate to power a high-output audio system. Running your amplifier in a low-voltage situation may cause premature distortion, fuse blowout, and system shutdown.

Working safely with your battery

Disconnect the negative battery terminal before doing any electrical work. Always disconnect the negative (–) battery terminal first, followed by the positive (+) terminal. When reconnecting terminals, connect the positive (+) terminal first followed by the negative (–) terminal. This can minimize the chance of sparks and voltage spikes, and is a good general practice when dealing with any DC electrical system.

Ensure proper power and ground connections

Never connect or disconnect the control cables while the amplifier(s) is powered on.

Always disconnect your battery before working with your electrical system, and keep it disconnected until you are ready to test the audio system.

Cover all exposed wires to avoid short circuits.

Make your power and ground connections properly, failure to do so can cause damaged to the amplifier.

Grounding

Inadequate grounds are number one cause of problem installations.

The ground wire and power wire are equally important; if either one of them become damaged it could result in damage to the amplifier.

1.2 Contents

When first unpacking your new amplifier please check first that the package contains all of the items below. If something is missing, contact the store where you purchased the product.

- AQ-AD300.2-MICRO Amplifier
- User/Installation Manual
- RCA male-to-male Adaptor (x2)
- Wiring Harness
- High-Level Input Adaptor

2.1 Installation Precautions

2.1.1 Positioning the Amplifier

The AQ-AD300.2-MICRO amplifier dissipates high levels of heat. As a result we suggest keeping the amplifier in a well-ventilated area. We do not recommend keeping the amplifier in enclosed areas.

2.1.2 Cutting Cables

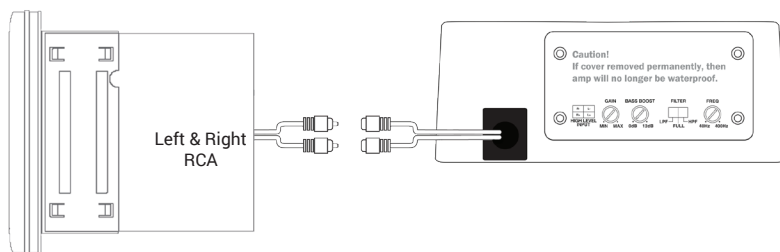
Always route wires and cables safely, avoid sharp edges and burns along the way. Always check the length of a wire before cutting.

2.2 Connecting the Amplifier

Use only cables and the supplied accessories discussed in this manual. Failure do so may cause damage to the amplifier. The cable for speakers can ONLY be used for connecting the amplifier to the speakers. The cable for power can ONLY be used for connecting the amplifier to the battery.

2.2.1 Connecting Inputs with Low-Level (RCA) Cables (recommended)

1. Connect your source unit's RCA outputs (left and right) to the amplifier's left and right RCA input cables.

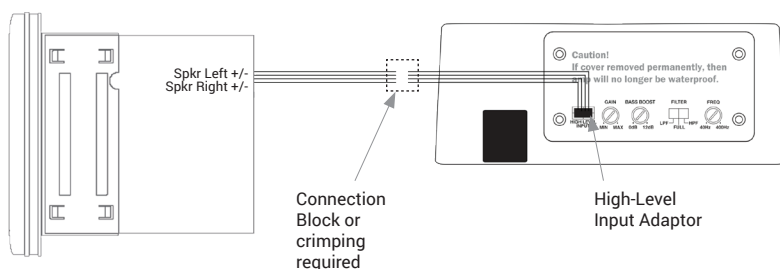


2.2.2 Connecting Inputs with High-Level (Speaker) Cables

⚠ Using High-Level signal inputs requires the removal of the control panel cover and will significantly reduce the amplifiers ingress performance for both water and dust. This will also void warranty cover.

We recommend using Low-Level (RCA) input connections (as detailed in 2.2.1) however, should RCA outputs not be available from your stereo the AQ-AD300.2-MICRO allows for signal input using your stereo's speaker output cables.

1. Open the control panel cover by removing the four screws securing the cover and connect the supplied High-Level Input Adaptor.
2. Connect your stereo's speaker output cables (front left + & - and front right + & -) to the corresponding High-Level Input Adaptor cables (FL+, FL-, FR+ and FR-) using either a connection block or by securely crimping the cables together.

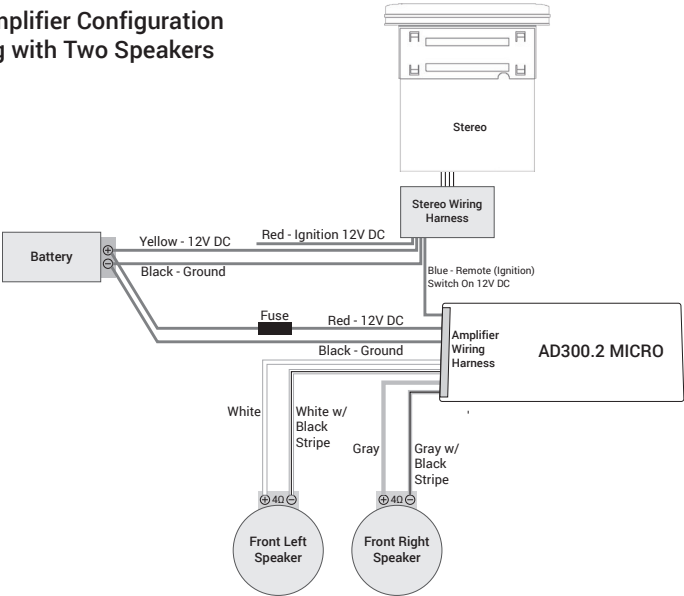


2.2.3 Connecting Speakers

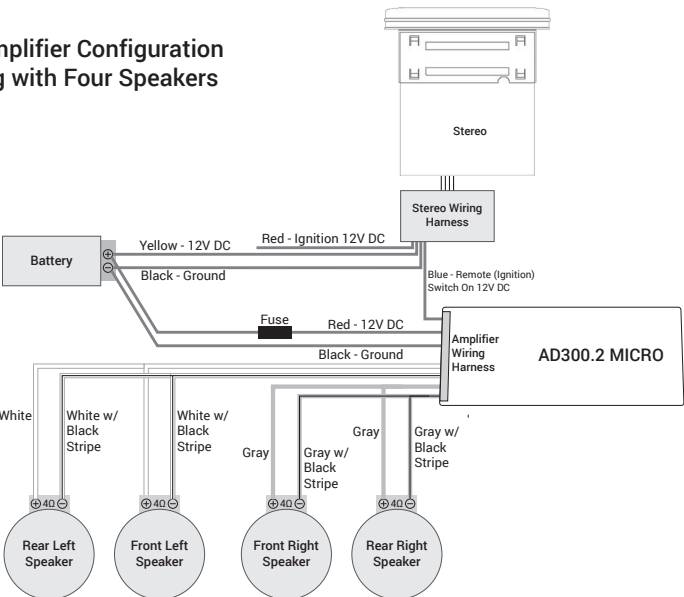
1. Verify the impedance of each of your speakers is 2 Ohms or above.
2. Install the desired speakers if not already installed.
3. Route and connect the speaker wires from each speaker of your system to the corresponding speaker output terminal on the amplifiers wiring harness, as shown below.

Failure to connect properly may damage your speakers.

Typical Amplifier Configuration
and Wiring with Two Speakers



Typical Amplifier Configuration
and Wiring with Four Speakers



2.2.4 Connecting Speakers in Bridged Mode

Bridged mode allows for the two output channels to be combined into a single channel with the maximum power output of 300W RMS. This is typically used to drive a subwoofer.

1. Verify the impedance of your speaker/subwoofer is 4 Ohms or above.
2. Install the desired subwoofer if not already installed.
3. Route and connect the Left(+) and Right(-) cables from the amplifier wiring harness to the input terminals on the speaker/subwoofer as follows:

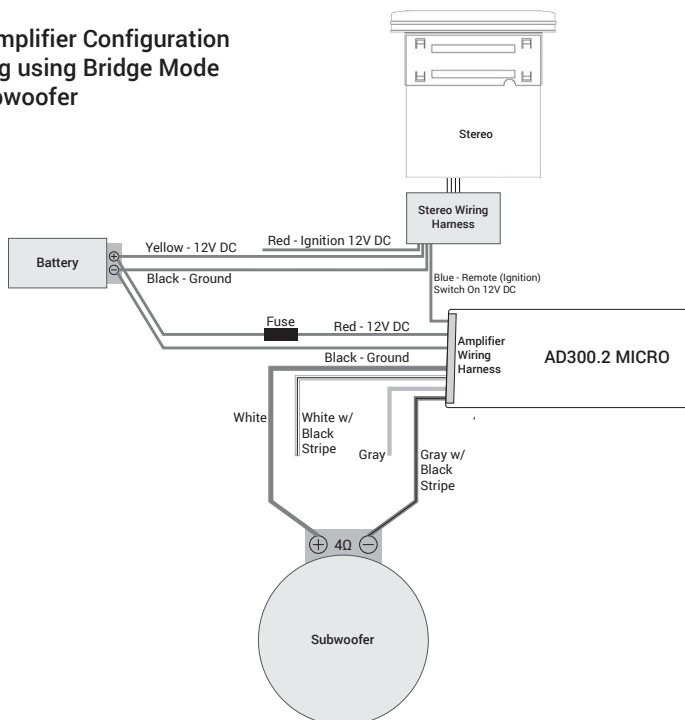
Amplifier Left(+) output (grey cable): connect to subwoofer (+) input terminal

Amplifier Right(-) output (white/black): connect to subwoofer (-) input terminal

4. The Left(-) and Right(+) cables (grey/black and white respectively) from the amplifier should then be individually covered up or sealed off to avoid shorting the circuit and damaging the amplifier.

Failure to connect properly may damage your subwoofer.

**Typical Amplifier Configuration
and Wiring using Bridge Mode
and a Subwoofer**



2.2.5 Connecting the Remote (Ignition) Wire

1. Connect the blue Remote cable from the amplifier wiring harness to the blue Remote (Ignition) terminal on the stereo. See diagrams shown in sections 2.2.3 and 2.2.4.

Alternatively, you can also connect the blue Remote (Ignition) wire to the vehicles ignition switch.

2.2.6 Connecting the Battery

1. Route and connect the power wire from the positive (+) battery terminal to the main amplifier terminal. See diagrams shown in sections 2.2.3 and 2.2.4.

2. Route and connect the ground wire from chassis ground to the amplifier terminal. See diagrams shown in sections 2.2.3 and 2.2.4.

3. Verify power cables and audio cables are not making contact as they can cause interference.

2.3 Testing the System

You have completed the connection, now it's time to check that the power supply is correct with everything working as one system.

1. Install the fuse into the in-line fuse holder on the power side.

2. Verify the amplifier powers up and the speakers function properly. If they do not, proceed directly to Troubleshooting section.

Setting Amplifier Controls

3.1 Setting the Gain Level

1. Set all tones (bass, treble) and equalization controls (balance, fade) on your stereo to "flat" or "0," and turn off any "loud" or "loudness" setting.

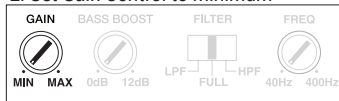
2. Set the Gain on the amplifier to the minimum value (fully counter-clockwise).

3. Set gain to 1/3 of the way (approx. 10 o'clock position).

4. Turn on the stereo and verify the amplifier is also turned on, indicated by a green LED on the amplifier.

5. Slowly increase the gain control on the amplifier until you hear a slight distortion of the audio playback and then dial back the Gain slightly until the distortion is no longer heard.

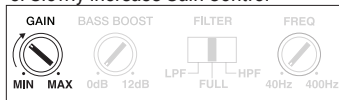
2. Set Gain Control to minimum



3. Set Gain Control to 1/3

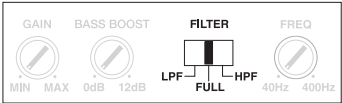


5. Slowly increase Gain Control



3.2 Cross-Over Mode Switch (Filter)

This Filter switch allows a specific range of frequencies to be removed (filtered). Typically, tweeters require filtering of low range frequencies while subwoofers require a filtering of mid to high range frequencies.



- HPF (High Pass Filter) is best for driving mid and high range speakers or tweeters.
- LPF (Low Pass Filter) is best for driving subwoofers or low range speakers only.
- FULL is best suited for driving full range speakers.

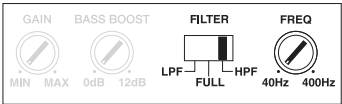
3.3 Cross-Over Frequency Control (Freq)

3.3.1 High Pass Filter Mode

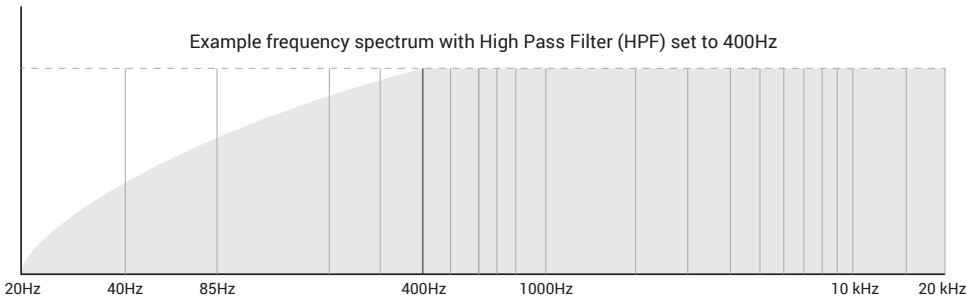
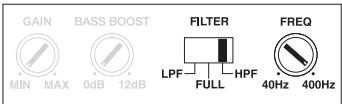
The Frequency control knob is used to set the frequency at which the electronic cross-over operates.

When the Cross-Over Filter switch is set to HPF (High Pass Filter) the adjustable frequency range is 40Hz-400Hz.

When in the minimum position (turned fully counter-clockwise) all frequencies less than 40Hz will be filtered from the output signal and all frequencies above 40Hz will be heard from the speakers.



When in the maximum position (turned fully clockwise) all frequencies less than 400Hz will be filtered from the output signal and all frequencies above 400Hz will be heard from the speakers.

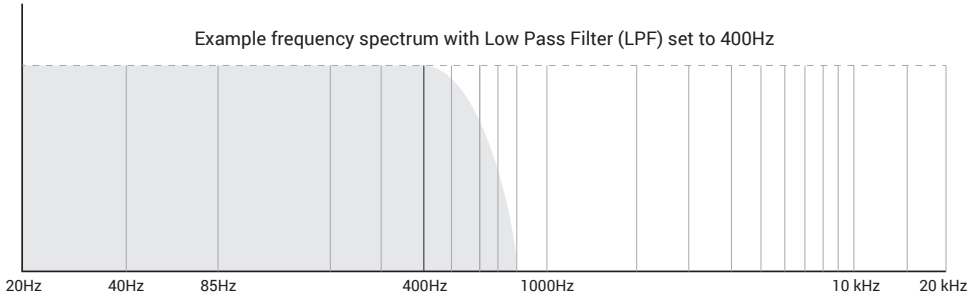
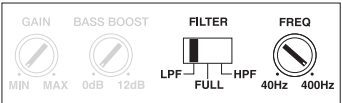
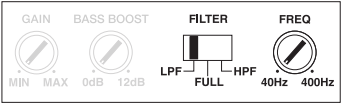


3.3.2 Low Pass Filter Mode

When the Cross-Over Filter switch is set to LPF (Low Pass Filter) the adjustable frequency range is 40Hz-400Hz.

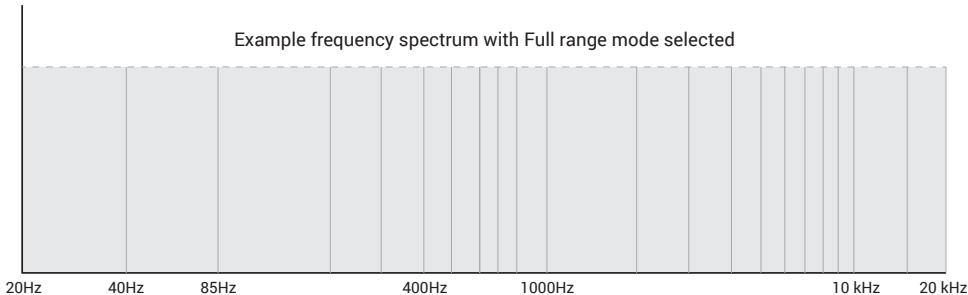
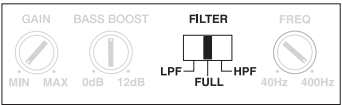
When in the minimum position (turned fully counter-clockwise) all frequencies less than 40Hz will be filtered from the output signal and all frequencies above 400Hz will be heard from the speakers.

When in the maximum position (turned fully clockwise) all frequencies less than 400Hz will be filtered from the output signal and all frequencies above 400Hz will be heard from the speakers.



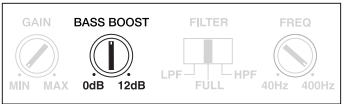
3.3.3 Full Range Mode

When the Cross-Over Filter switch is set to FULL no frequencies will be filtered and the speakers will output all frequencies of the audio signal.

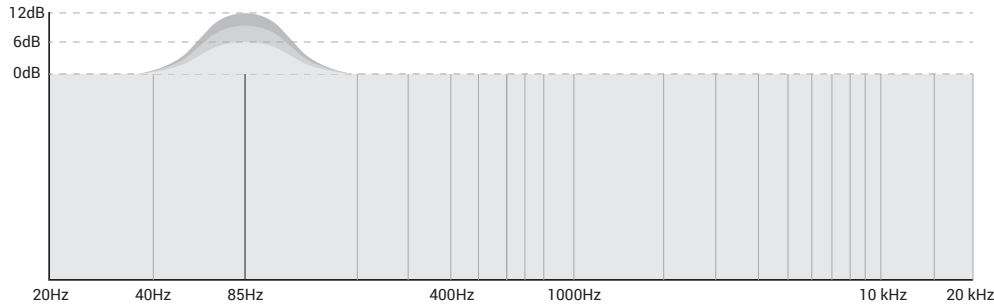


3.4 Bass Boost

The Bass Boost setting allows for additional Bass to be added to the output signal. The boost is applied to 85Hz frequency and allows for 0-12dB of boost.



Example frequency spectrum showing varying amounts of Bass Boost at 85Hz



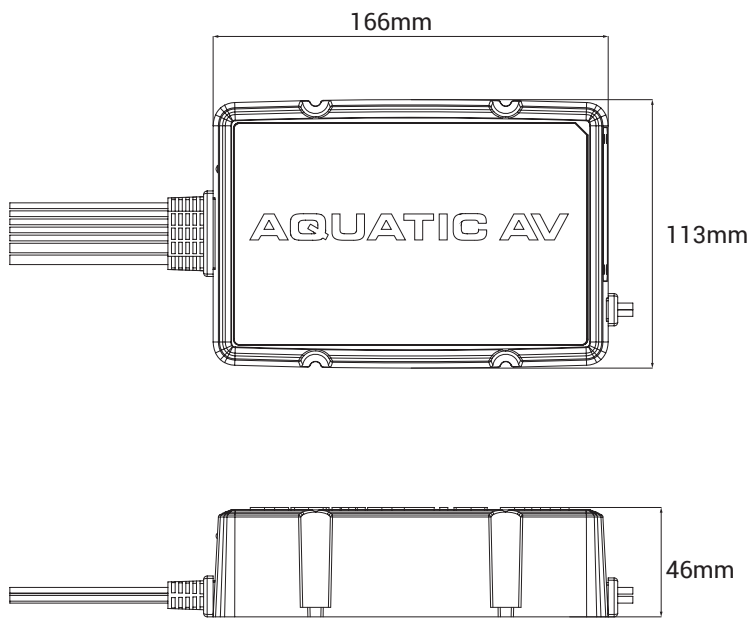
4 Troubleshooting

Problem	Probable Cause	Solution
Amplifier doesn't power up (LED is off).	Power (+) wire is not providing +12V to the amplifier	Check the wire is connected or that it's not making a proper connection. Verify fuses aren't blown. Check continuity on the cables to verify all cables are still making contact.
	Remote wire is not providing +12 V to the amplifier	Check the wiring for remote turn-on wire. Make sure the turn-on source is providing 12V.
	Ground/Power (-) wire is not providing -12V ground to amplifier	Check the wire connected to ground is making proper connection. Verify there is no additional residue. Check continuity on the cables to verify cables are still making contact.
Amplifier powers up, but makes no sound (LED is illuminated red).	Speaker wires are not connected or shorted	Check wiring from the amplifier to each speaker in the system. Make sure the wire terminals are not shorting.
	Input from source unit is not connected properly	Check High or Low Level input wiring from the source unit to the main amplifier
	Source unit has no output	Check source unit is functioning properly all by itself. Refer to the manufacturer's instructions if necessary.
Speaker output sounds low or distorted.	Input gain level is set incorrectly	Set the gain levels using the 'Test and Tune' section of this manual. If already completed this step, lower the gain slightly until the distortion stops
	Low battery condition	Check your battery for proper charge and replace if necessary.
	Overheating	Turn off the system and let it cool. Resume the system and verify all is well. Make sure the amp is not in direct contact with the stereo use mounting bracket.

5.1 Specifications

Type.....	2 Channel Digital (Class D) Bridgeable Amplifier
Waterproof.....	Yes - IP65
Input Channels.....	Stereo Low-Level (RCA) Input Stereo High-Level (Speaker) Input with Auto-Detect
Output Channels.....	2
Output Impedance (per channel).....	2 Ohm & 4 Ohm stable
Power Output (RMS) @ 4 Ohms.....	100W per channel
Power Output (RMS) @ 2 Ohms.....	150W per channel
Power Output (RMS) - bridged @ 4 Ohms.....	300W
THD.....	<1%
THD (Bridged mode).....	1%
Frequency Response.....	10 - 45kHz
High-Pass/Low-Pass Cross-Over Frequency.....	Configurable from 40Hz - 400Hz
Bass Boost (@ 85Hz).....	Configurable from 0 - 12dB
Overload Protection.....	Yes

5.2 Dimensions



Aquatic AV offers a limited warranty of our products on the following terms:

Length of warranty

2 years on audio systems, electronics, speakers, and accessories (receipt required).

Coverage

This warranty covers only the original purchaser of a Aquatic AV product purchased from an authorized Aquatic AV dealer in the United States. In order to receive service, the purchaser must provide Aquatic AV with a copy of the receipt stating the customer name, dealer name, product purchased and date of purchase.

Defective products

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Aquatic AV's discretion.

What is not covered

Damage caused by accident, abuse, improper operations, theft. Any cost or expense related to the removal or reinstallation of product. Service performed by anyone other than an authorized Aquatic AV service center. Any product with the serial number or tamper labels defaced, altered, or removed. Subsequent damage to other components. Any product not purchased from an authorized Aquatic AV dealer.

Limit on implied warranties



Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Aquatic AV any other liability in connection with the sale of the product.

How to obtain service

You must obtain a return material authorization number (RMA) to return any product to Aquatic AV. You are responsible for shipping charges of returned products to Aquatic AV.

Please record the model and serial number[s] of your equipment in the space provided below as your permanent record and will assist us with your factory warranty coverage. These numbers can be found on the underside of the amplifier.

Model number[s]:	Serial number[s]:

**California Proposition 65 Warning**
WARNING: This product contains chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm.
For more information: www.P65Warnings.ca.gov

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