



Digital Wireless Speakers

RF-WS01/WS01-W/WS02

User Guide

Rocketfish

RF-WS01/WS01-W/WS02

Digital Wireless Speakers

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Introduction

Congratulations on your purchase of the Rocketfish RF-WS01, RF-WS01-W, or RF-WS02 Digital Wireless Speakers. This kit represents the state of the art in wireless speaker design, and is designed for reliable and trouble-free performance.

This manual explains how to correctly install, operate, and get the best performance from your digital wireless speakers. Read this user guide carefully before installing your system, then keep it near your system for quick reference.



Your RF-WS01, RF-WS01-W, or RF-WS02 Digital Wireless Speakers use a proprietary 2.4GHz wireless communication system to transmit low-latency, high fidelity audio from an audio source to wireless speakers, providing a superior level of audio quality and resistance to interference.

The system accepts line-level inputs, and is compatible with a complete range of multi-channel home theatre systems or AV receivers.

Safety information



CAUTION
Risk of Electric Shock
Do Not Open



This lightning flash with the 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 product.

CAUTION

To reduce the risk of electric shock, do not remove the cover (or the back). There are no user-serviceable parts inside. Refer servicing to qualified service personnel.

Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a 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 is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments or accessories specified by the manufacturer.
- Use only with the 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 and apparatus combination to avoid injury from tip-over. 
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- 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.
- The apparatus shall not be exposed to dripping or splashing and no objects with liquids such as vases, shall be placed on the apparatus.
- The AC power adapter is used as the disconnect device. This disconnect device shall remain readily operable.
- Read the Rating labels on the bottom of the base station and wireless speaker for power input and other safety information.



Features

- 2.4 GHz wireless sender and speaker
- Transmits high quality audio over a radio frequency communication link
- Compact size
- Hidden antennas
- Low power consumption

Package contents

Examine the contents of the box for your Rocketfish Digital Wireless Speakers. The box should contain.

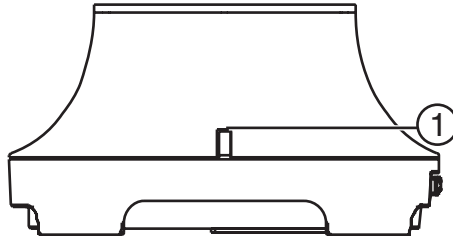
- A sender unit
- One speaker (RF-WS02) or two speakers (RF-WS01, and RF-WS01-W)
- An AC power adapter for the sender unit
- One (RF-WS02) or two (RF-WS01 and RF-WS01-W) AC power adapter(s) for the speakers
- A User Guide

Sender

The sender transmits audio signals over a 2.4 GHz radio frequency carrier to the speaker.

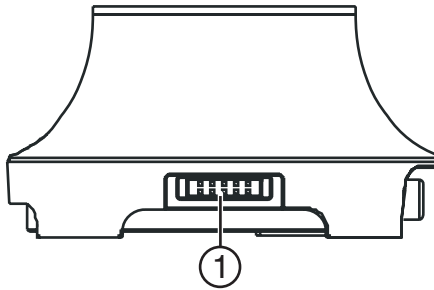


Front view



Item	Description
1	Power and link Status LED—GREEN

Side view

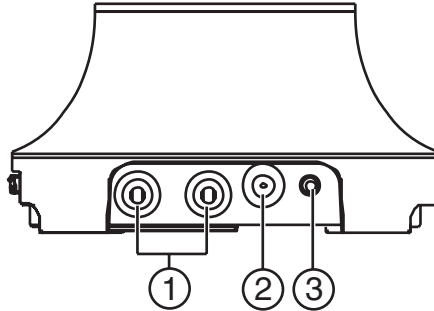


Item	Description
1	Power ON/OFF switch with Status LED





Back view



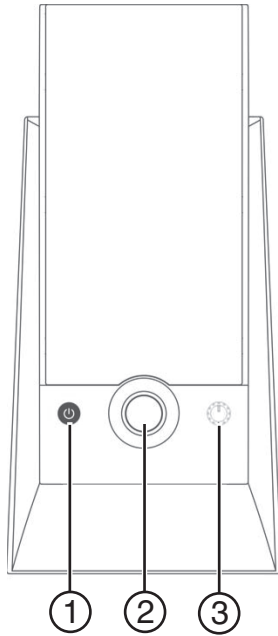
Item	Description
1	RCA audio input terminals
2	DC IN jack
3	Pairing (manual connect) button

Speaker

The speaker receives the 2.4 GHz audio signals from the sender and plays out the sound using the built-in amplifier and speakers. The speaker can operate from the supplied AC adapter or from batteries.



Front (RF-WS01/RF-WS01-W)

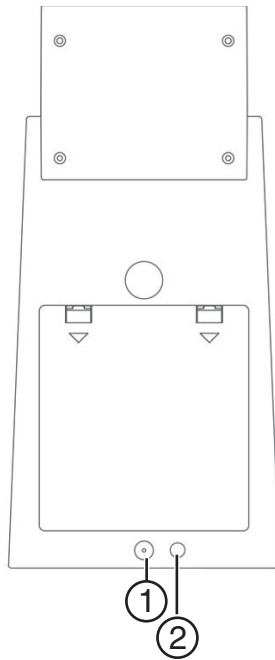


Item	Description
1	Power ON/OFF switch with Status LED
2	Volume control
3	Left/Mono/Right control



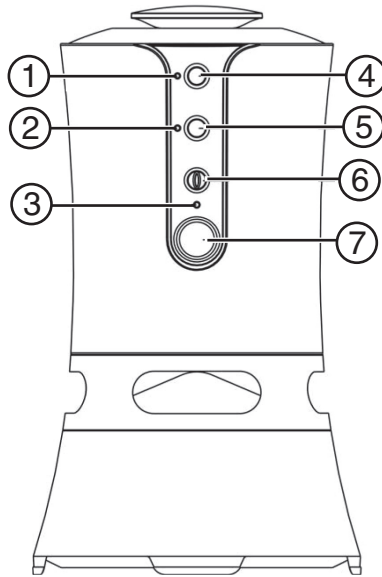


Back (RF-WS01/RF-WS01-W)



Item	Description
1	DC IN jack
2	Pairing (manual connect) button

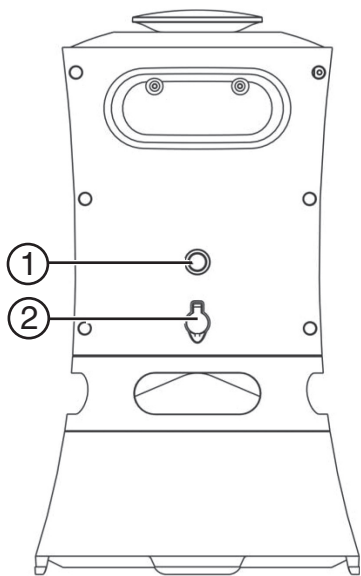
Front (RF-WS02)



Item	Description
1	LED: <ul style="list-style-type: none"> • Solid green—Connected to AC power • Quick flashing—Pairing mode • Slow flashing—No link • Red—Low battery
2	Bass Boost LED—RED
3	Charging LED: <ul style="list-style-type: none"> • Flashing green—Charging • Solid green—Charging complete
4	Power ON/OFF switch
5	Bass Boost control button
6	Speaker output selector (Left/Mono/Right) switch
7	Volume control



Back (RF-WS02)



Item	Description
1	Pairing (manual connect) button
2	DC IN jack

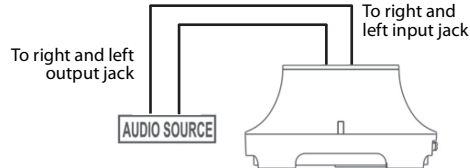
Setting up your system

Caution: Turn off your audio source while connecting the units

Connecting the sender

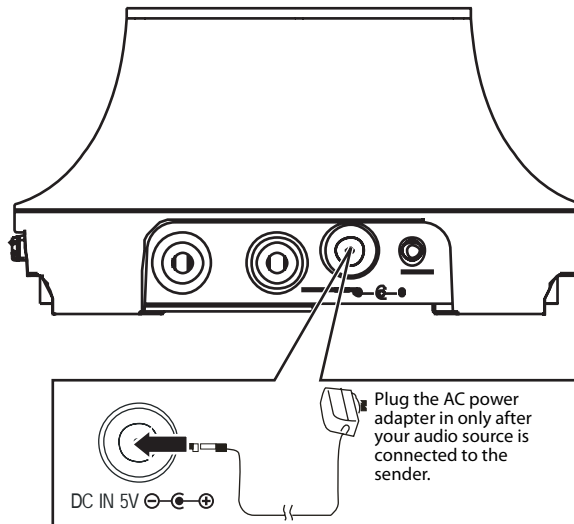
To connect the sender to an audio source:

- 1 Connect a stereo RCA cable from an audio source to the sender taking care to match white and red colors at both ends. Make sure that the cable is connected to an audio source and not a video source.



- 2 Connect the AC adapter connector to the sender DC IN jack.

Caution: To avoid risk of fire, and to prevent damage, only use the AC adapter supplied with your digital wireless speakers. Make sure that power supply outlet matches the AC adapter's 120V before making the connection.





Connecting the speakers

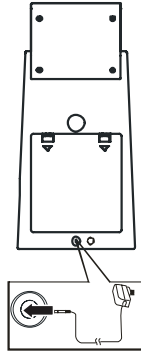
Plug the AC power adapter in if batteries are not being used or if the batteries are discharged.

Caution: To avoid risk of fire, and to prevent damage, only use the AC adapter supplied with your digital wireless speakers. Make sure that power supply outlet matches the AC adapter's 120V before making the connection.

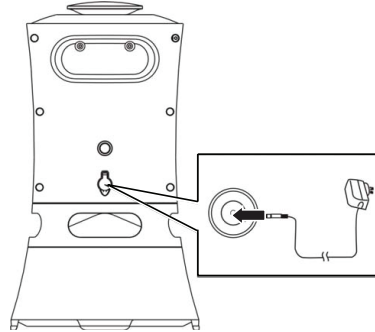
To connect the AC adapter to your speakers:

- Connect the AC adapter connector to the speaker DC IN jack.

RF-WS01 & RF-WS01-W



RF-WS02



Installing batteries into the speakers

Caution: Do not mix battery types. Do not use old and new batteries together. Remove all batteries if the unit is not going to be used for a long period of time.

- 1 With the speaker AC adapter disconnected, open the battery cover.
- 2 Install eight (8) C size batteries taking care to follow the battery polarity markings on the battery compartment.
- 3 For WS02, set the Alkaline/NiMH battery switch to the type of C size batteries being used. The switch is inside the battery compartment. Use the Alkaline setting if you are using standard non-rechargeable alkaline batteries. Use the NiMH setting if you are using rechargeable NiMH batteries.
- 4 Replace the battery cover. When charging (speakers on or off), the LED flashes green slowly. When charging is complete, the LED lights solid green. If the LED flashes green quickly, the charger cannot charge the batteries. Replace the batteries with new ones. Full battery charging can take up to 24 hours.

Warning: Do not try to recharge alkaline batteries. Use C size NiMH rechargeable batteries. Failure to do so may damage the speakers or cause a fire. The speaker will try to charge batteries if the battery switch is set to NiMH.

Note: Rechargeable batteries can be recharged with the speakers on or off. RF-WS01 and RF-WS01-W cannot recharge any type of batteries. If you want to use rechargeable batteries in the RF-WS01 or RF-WS01-W, you must use a regular standalone charger to recharge batteries.

Positioning the speakers

Caution: To avoid the risk of electric shock and fire, and to prevent damage, locate the sender and speakers with no obstructions in front of the ventilation holes.

Caution: Do not use the WS01 in a wet environment. If you use the WS02 outdoors or in wet environment, do not connect the AC adapter.

Note: if you need to mount the speakers, make sure that the left and right speakers are switched to the correct left, right, or mono setting for speaker output sound.

Note: For best performance, the sender LED should face the general direction of the area where you plan to place the speakers.



Using your system

Turning on your system

To turn on the system:

- 1 Move the Power switch to the ON position on the side panel of the sender. The green Link Status LED starts to blink slowly to indicate the sender is plugged in and in Standby mode.
- 2 Press the Power switch on the front panel of the speakers. The green Status LED starts to flash to indicate the receiver is plugged in and in Standby mode.

Note: If the speaker is operated by batteries and battery capacity is too low to power the speakers, the Low Battery Warning LED turns red to indicate a low battery warning.

The sender and speakers were pre-paired in the factory. When an active link is established between them the green Link Status LEDs turn solid.

Note: If the LEDs continue to blink after 30 seconds, it means there is no active link between the sender and speakers. Try to connect the system manually using the PAIR button. For more information see "Troubleshooting" on page 17.

Listening to your system

To listen to the system:

- 1 Turn on the system. Make sure that there is an active link between the sender and speakers. When an active link is established between them the green Link Status LEDs turn solid.
- 2 Turn on your audio source, then play the audio.

To adjust the volume on the RF-WS01 or RF-WS01-W:

- Turn the volume knob on the speaker. The volume is adjusted independently regardless of channel setting (left, right, or mono).

To adjust the volume on the RF-WS02:

- Turn the volume knob on the speaker. Make sure the speaker is switched to the correct left, right, or mono setting for speaker output sound.

Turning off the system

To turn off the system:

- 1 Move the sender Power switch to the OFF position. The Green Link Status LED goes off indicating that the sender is turned off.
- 2 Push the Power switch on the front panel of each speaker. The Green Link Status Power LED goes off to indicate that the speaker is turned off.

Speaker auto shut-off on RF-WS02 speakers

When the speakers are running on battery power, they turn off automatically when the device they are connected to is turned off or does not send audio for more than five minutes. This feature conserves battery life.

Optimizing your surround sound

Your Rocketfish digital wireless speakers use state-of-the-art 2.4 GHz technology to digitally send audio data from the sender to the speakers. Wireless links create a small latency between the sender and receiver, and many A/V receivers let you adjust the delay between various speakers in your surround system. If using Rocketfish digital wireless speakers as part of a surround system, you can optimize your system when tuning your speaker setup by shortening the delay to the wireless speakers by 15-20ms.

Low Battery warning

The red Low Battery Warning LED is lit when there is no AC power and the battery capacity is not enough to power the speaker. Replace the old batteries with fresh Alkaline batteries, or charge your rechargeable batteries.

Using Bass Boost (RF-WS02 only)

Bass Boost enhances the low-end sound. If the Bass Boost button is pressed once, the unit enters Bass Boost mode, and the red Bass Boost LED is lit. If the Bass Boost button is pressed again, the unit exits Bass Boost mode and the red Bass Boost LED turns off.



Maintaining your system

Use a soft cloth dampened with a weak solution of mild detergent and water. Dry the apparatus immediately afterwards with a clean cloth. Do not use abrasive cloth, thinners, alcohol, or other chemical solvents, because they may damage the finish or remove the panel lettering.

Cautions:

- Do not cover the ventilation openings with items, such as newspapers, table clothes, and curtains.
- If the power cord is damaged, it must be repaired by a qualified repairer.

Note:

- If the RS-WS02 becomes wet, you can drain water by gently tipping it slightly to one side for a few seconds.

Troubleshooting

Read this User Guide carefully before using your digital wireless speakers. Check this list for a possible troubleshooting solution before calling for service.

Problem	Solution
No sound	<ul style="list-style-type: none"> • Make sure the sender AC adapter is connected to the sender, and either the speaker AC adapter is connected or fresh or charged batteries are installed in the speakers. • Make sure that all cables are connected correctly. Check to see if the green Link Status LEDs illuminate on the front of both the sender and speaker units. If the green Link Status LEDs are lit solidly, the communication is working correctly and the audio cables from audio source to the sender should be checked. If the green Link Status LEDs are flashing or off, refer to the "No communication between sender and speaker" section below.



Problem	Solution
Sound interference	<ul style="list-style-type: none"> • Move your sender and speaker slowly to find the best reception position for your system. • Shorten the distance to between your sender and speakers. The maximum distance is 55 feet (RF-WS01 or RF-WS01-W) or 100 feet (RF-WS02). • Check to determine if there are any obvious radio frequency interference sources near your system.
No communication between the sender and speaker	<ul style="list-style-type: none"> • Make sure that the power cords and/or batteries are connected or installed correctly. • After the power switch is ON position and turn on both the sender and speaker, the front panel green Link Status LEDs should light. If they are lit solidly on, a communication link has been established between the units. If they are flashing or off on any of the units, press and hold the PAIR button on either the sender or speakers for more than three seconds. (The sender's and speakers PAIR buttons are located on rear panel of unit.) This will put the unit into "connection mode" for about 30 seconds. During this period the PAIR button on the other units must also be pressed for more than three seconds so that it will also enter "connection mode". The system proceeds with the connection process between sender and speaker. While in "connection mode", the green Link Status LEDs blink at a faster rate. When an active link is established between the sender and receiver, the LEDs will be solid on and will not blink. <p>Note: Try pressing the PAIR buttons again if the green Link Status LEDs keep blinking after 30 seconds.</p>

Specifications

Sender

Audio Input: Stereo, line level	Maximum 1Vrms or 2Vrms
Audio Output: Wireless	<ul style="list-style-type: none"> • Stereo, 48 kHz uncompressed • Bit-rate: 2.465 Mbps • Raw wireless bit-rate: 2Mbps
Supply Voltage	5V @ 200mA
Transmission Delay	15-20mS





Speakers (RF-WS01 and RF-WS01-W)

Audio Input: Wireless	<ul style="list-style-type: none"> • Stereo, 48 kHz uncompressed • Bit-rate: 1.465 Mbps • Raw wireless bit-rate: 2Mbps
Audio Output	<ul style="list-style-type: none"> • 8W (RMS) 2-way speaker full range system (10% THD) • High Efficiency Class D speaker amplifier driving internal full range speakers
Supply Voltage	12V @ 1.0A
Power Consumption	12W
Transmission Delay	15-20mS

Speakers (RF-WS02)

Audio Input: Wireless	<ul style="list-style-type: none"> • Stereo, 48 kHz uncompressed • Bit-rate: 1.465 Mbps • Raw wireless bit-rate: 2Mbps
Audio Output	<ul style="list-style-type: none"> • 20W (RMS) bi-amp speaker full range system (10% THD) • High Efficiency Class D speaker amplifier driving internal full range speakers
Supply Voltage	15V @ 1.2A
Power Consumption	18W
Transmission Delay	15-20mS

Legal notices

FCC Part 15

This device complies with Part 15 of the FCC Rules. Operation of this product is subject to the following two 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.

Note: Changes or Modifications not expressly approved by the party responsible could void the user's authority to operate this device.

This equipment has been tested and found to comply within 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.

IC RSS210 STATEMENT

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Canada ICES-003 statement

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



Information for Users on Disposal of Old Equipment

[European Union]

Note: This symbol is only valid in the European Union.



This symbol indicates that the electrical and electronic equipment should not be disposed as general household waste at its end-of-life. Instead, the product should be handed over to the applicable collection point for the recycling in accordance with your national legislation.

By disposing of this product correctly, you will help to conserve natural resources and will help prevent potential negative effects on the environment and human health that could otherwise be caused by inappropriate waste handling of this product. For more information about collection point and recycling of this product, please contact your local municipal office, your household waste disposal service or the shop where you purchased the product.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

[Other Countries Outside the European Union]

If you wish to dispose of this product, please do so in accordance with applicable national legislation or other rules in your country for the treatment of old electrical and electronic equipment.





One-Year Limited Warranty

Rocketfish Products ("Rocketfish") warrants to you, the original purchaser of this new **RF-WS01/RF-WS01-W/WS02** ("Product"), that the Product shall be free of defects in the original manufacture of the material or workmanship for one (1) year from the purchase of the Product ("Warranty Period"). This Product must be purchased from an authorized dealer of Rocketfish brand products and packaged with this warranty statement. This warranty does not cover refurbished Product. If you notify Rocketfish during the Warranty Period of a defect covered by this warranty that requires service, terms of this warranty apply.

How long does the coverage last?

The Warranty Period lasts for one year (365 days), beginning on the date you purchased the Product. The purchase date is printed on the receipt you received with the product.

What does this warranty cover?

During the Warranty Period, if the original manufacture of the material or workmanship of the Product is determined to be defective by an authorized Rocketfish repair center or store personnel, Rocketfish will (at its sole option): (1) repair the Product with new or rebuilt parts; or (2) replace the Product at no charge with new or rebuilt comparable products or parts. Products and parts replaced under this warranty become the property of Rocketfish and are not returned to you. If service of Products and parts are required after the Warranty Period expires, you must pay all labor and parts charges. This warranty lasts as long as you own your Rocketfish Product during the Warranty Period. Warranty coverage terminates if you sell or otherwise transfer the Product.

How to obtain warranty service?

If you purchased the Product at a retail store location, take your original receipt and the Product to the store you purchased it from. Make sure that you place the Product in its original packaging or packaging that provides the same amount of protection as the original packaging. If you purchased the Product from an online web site, mail your original receipt and the Product to the address listed on the web site. Make sure that you put the Product in its original packaging or packaging that provides the same amount of protection as the original packaging.

Where is the warranty valid?

This warranty is valid only to the original purchaser of the Product in the United States, Canada, and Mexico.

What does the warranty not cover?

This warranty does not cover:

- Customer instruction
- Installation
- Set up adjustments
- Cosmetic damage

- Damage due to acts of God, such as lightning strikes
- Accident
- Misuse
- Abuse
- Negligence
- Commercial use
- Modification of any part of the Product, including the antenna

This warranty also does not cover:

- Damage due to incorrect operation or maintenance
- Connection to an incorrect voltage supply
- Attempted repair by anyone other than a facility authorized by Rocketfish to service the Product
- Products sold as is or with all faults
- Consumables, such as fuses or batteries
- Products where the factory applied serial number has been altered or removed

REPAIR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS YOUR EXCLUSIVE REMEDY. ROCKETFISH SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR THE BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT, INCLUDING, BUT NOT LIMITED TO, LOST DATA, LOSS OF USE OF YOUR PRODUCT, LOST BUSINESS OR LOST PROFITS. ROCKETFISH PRODUCTS MAKES NO OTHER EXPRESS WARRANTIES WITH RESPECT TO THE PRODUCT, ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE WARRANTY PERIOD. SOME STATES, PROVINCES AND JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

Contact Rocketfish:

For customer service please call 1-800-620-2790

www.rocketfishproducts.com

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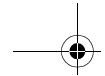
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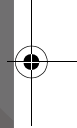
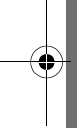






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