



VRHDUA100
HD Radio

Dear Customer,
CONGRATULATIONS. The VRHDUA100 HD Radio™ Receiver, when used as described, will give you years of dependable service in your car, truck, RV, or mini-van. We have taken numerous measures in quality control to ensure that your product arrives in top condition and will perform to your satisfaction. In the rare event that your VRHDUA100 HD Radio Receiver contains a damaged or missing item, does not perform as specified, requires warranty service, or you have an installation problem, **DO NOT RETURN THIS PRODUCT TO THE STORE. PLEASE CALL OUR TOLL FREE NUMBER FROM THE U.S.A. AND CANADA 1-800-445-1797** and ask to speak with a member of our technical service team, or submit your questions by e-mail to customerservice@vr-3.com and a member of our technical service team will respond by e-mail to your questions. Our in-house technical service team will expedite delivery of your part, advise you on installation, or help troubleshoot a problem with you. If your product needs warranty service, our technical service team representative will help you obtain the fastest remedy possible under the warranty.

Before You Install

Automotive audio equipment installations can be challenging at times, even to the most experienced of installation technicians. If you are not confident working with 12 Volt DC vehicle wiring, removing and reinstalling interior panels, carpeting, dashboards or other components of your vehicle, please call our Toll-Free Help Line 1-800-445-1797 and our in-house technical service team will answer your installation questions. If you have vehicle specific questions, contact the vehicle's manufacturer, or consider having the VRHDUA100 professionally installed.

Parts



This device complies with Part 15 of the FCC rules. Operation 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. Changes or modification to this device are not approved by the party responsible for compliance and will void the warranty and user's authority to operate this device.

Installation & Operation

How HD Radio™ Technology Works

Basically, digital HD Radio receivers work the same as a conventional radio. There's a signal on one end and a receiver on the other. But there are a few key differences.

1. Instead of sending out one analog signal, stations send out a bundled signal – both analog and digital. Because it is digital, textual data such as traffic, stock info and song titles can be sent out, as well.
2. HD Radio technology enables FM broadcasters to offer several new channels of digital programming in addition to their main station. To discover all of the new FM stations in your city, please visit www.hdradio.com.
3. Inevitably, radio signals bounce off objects, causing what is called multi-path distortions. This is what causes the static in conventional radio receivers. Digital HD Radio receivers are designed to sort through reflected signals, reducing static, hiss, pops and fades.
4. Finally, the signals reach their destination. Both HD Radio broadcasts are free, with no subscription fee. To hear the digital broadcast, all you need is a digital HD Radio receiver. To learn more about HD Radio technology, and to find HD Radio stations, please visit www.hdradio.com.

Features:

- Analog FM/AM/RDBS and HD Radio Reception.
- Upgrades Existing Car FM/AM Analog Radio to digital HD Radio Reception.
- Automatic Audio Blending for Hybrid Modes.
- Auto Tuning and Manual Tuning.
- Display that shows song title, artist, station name, and other broadcast data.
- Memory tuning for 20 of your favorite presets - 10 AM and 10 FM.

Before You Install

To insure that the unit can be installed properly, temporarily layout the Cradle for the Control Module, Goose Neck Mount with Suction Base, and all modules and cables in the locations you have chosen to install them. Make sure the length of the cables is sufficient. Before final installation of the unit, temporarily connect the wiring and operate the unit to make sure the unit works properly.

- Please read and follow all instructions in this manual.
- Disconnect the vehicle's negative battery terminal before starting installation. Consult the vehicle's owner's manual for proper instructions.
- The unit is designed for a 12 Volt DC negative ground operation system. Before installing the unit, make sure your vehicle is a 12 Volt DC negative ground system.
- Be sure to connect the wires according to the wiring diagram. Incorrect connections may damage the unit, cause the unit to malfunction, or cause damage to the vehicle's electrical system.
- Make sure all the connections are completely correct before turning on your unit.
- Do not open the unit. Modifying the unit will void the warranty and may damage the unit or cause the unit to malfunction or cause damage to the vehicle's electrical system.
- Use only the parts included with this unit to ensure proper installation. The use of unauthorized parts may cause damage to the vehicle or unit and void the warranty.
- If installation requires the drilling of holes or other modifications to the vehicle, consult with your vehicle's nearest dealership to avoid damaging your vehicle.
- Install the unit in a location where it shall not obstruct driver's ability to safely operate the vehicle, and cannot injure any passengers if there is a sudden stop, like an emergency stop.
- Do not block this unit's vents or heater panels. Blocking them will cause excessive heat to build up inside the unit and may result in fire.
- To avoid interference, keep the power supply away from the radio and antenna while in use.
- Please fasten all cables between the Power Adaptor, HD Radio Control Panel and the HD Radio Main module after installation.



GIVE US A CALL, WE'LL HELP YOU INSTALL.

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Visit us on the WEB

www.vr-3.com

For Information and Technical Assistance,
Call Toll-Free in U.S.A. and Canada.

1-800-445-1797

Installation & Operation

Installation

1. Mount the Main Module and Power Adaptor/Noise Suppressor in the locations you have chosen to install them.
2. Attach the Cradle for the Control Module to the end of the Goose Neck Mount as shown in Fig. 1.
3. Press the suction cup on the base of the Goose Neck against the windshield.
4. Move the lever on the suction base as shown in Fig. 2.
5. Place the Control Module in the cradle as shown in Fig. 3, then adjust the Goose Neck so you can see the front of the Control Module.
6. Insert the plug on the end of the Control Module's cable into the jack on the main module labeled Controller.
7. Insert the RCA plugs on one end of the supplied RCA cable into the Line Out Jacks of the Main Module. Make sure you insert the Red plug into the Right Channel and the White plug into the Left Channel.
8. Insert the RCA plugs on the other end of the supplied RCA cable into the Auxiliary IN Jacks of the vehicle's FM stereo receiver. Make sure you insert the Red plug into the Right Channel and the White plug into the Left Channel.
9. Insert the Vehicle's antenna cable into the Main Module's Antenna IN jack.
10. Insert the Main Module's Antenna Cable into the vehicle's antenna jack.
11. Insert the Power Module's DC power cable into the Main Module's DC IN jack.
12. Insert the 12V Adaptor into the vehicle's power port or cigarette lighter socket.



Fig. 1

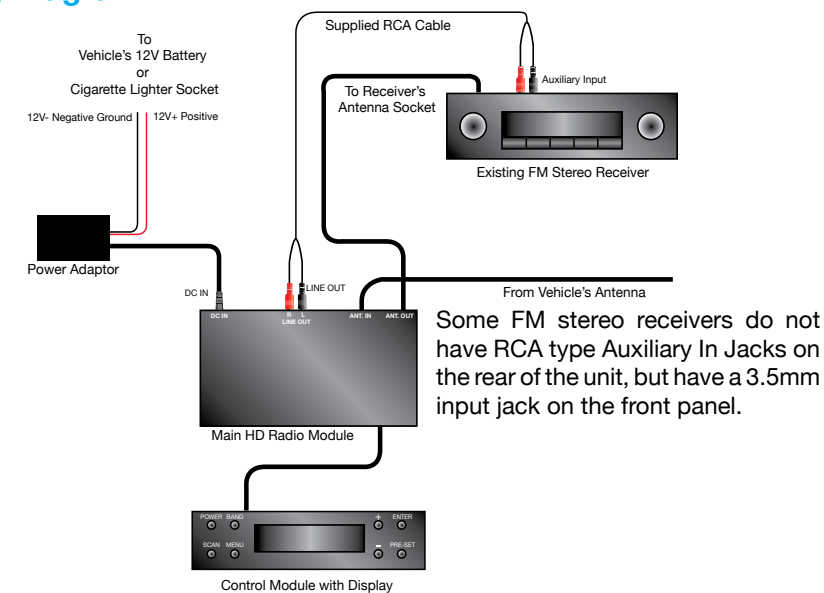


Fig. 2

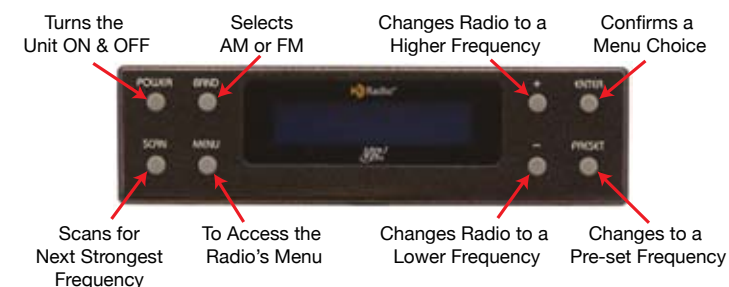


Fig. 3

Wiring Diagram



Controls



Control Module with Display

Installation & Operation

Changing the Frequency

Scanning for available FM/AM/HD channels

1. Press the SCAN button to scan for available analog FM/AM channels and/or digital HD channels, one after one, till you find your favorite station.
2. Press and hold the SCAN button for less than 2 seconds, it will search forward for the next strongest frequency, then stop.
3. Press and hold the SCAN button for more than 2 seconds, it will search backward for the next strongest frequency, then stop.

Manual Tuning

1. Press the BAND button to select either AM or FM.
2. Change the frequency with the "+" or "-" button.

Saving Preset Stations

To save a frequency in your radio's memory, complete the following steps:

1. Press the BAND button to select either AM or FM.
2. Press the SCAN button until you find a station you want to save as a pre-set.
3. Press the PRESET button to start setting up Preset. You will see P01 - P10, press either the "+" or "-" button to navigate the pre-set list.
4. Stop at one of the pre-set numbers (P01-P10) on the list, then press the PRESET button to assign the frequency you have tuned to that pre-set number.

Note: Your radio provides 10 preset positions for each band, AM or FM, for a total of 20.

Selecting Preset Station

To select a Preset Station saved in your radio's memory:

1. Press the BAND button to select either AM or FM.
2. Press the PRESET button, you will see the the first pre-set on the list P01, and the frequency will be blinking.
3. Press "+" or "-" to go up or down the list until you find the pre-set you wish to tune to, for example P05 FM100.7,
4. Press the ENTER button. Then the radio will tune to the frequency stored at that pre-set. You can change the station saved to any pre-set by saving a different station to that pre-set number.

Enter Button

Press the ENTER button to see the data from the HD Radio broadcaster, including <Artist>; <Song Name>, <Signal Strength Indicator>, <Frequency>, <Scrolling Text> etc.

Menu Button

Press Menu button repeatedly to access the Display or Scan Menus:

1. Display – Choose between FIXED or SCROLLING text on the display.
2. Scan – Choose between scanning ALL channels or HD channels only.

Press the ENTER button again to return to the display to normal.

Multicast Channels

In addition to digital sound quality, FM HD Radio broadcasters can offer multiple programming channels simultaneously using their existing frequency on the radio dial. These additional channels can offer expanded news, talk and music formats. When your radio tunes in the HD Radio channel, if a number appears on the right side of the station frequency (for example: 89.3-1) this indicates the existence of multicast services. Use the TUN-/+ to select a multicast channel for the frequency.

System Delay

Digital systems inherently produce an audio delay. To overcome this delay, HD Radio technology uses a station's analog signal to enable fast tuning of an AM or FM station. After approximately 5 seconds, the audio from the analog signal changes to a digital HD Radio signal. If the radio station has implemented the HD Radio broadcast correctly, the blend is smooth. However, if the station has not, you will experience a skip in content of up to 5 seconds for a - 2 or higher channel. This is not an issue with your HD Radio receiver. This is an HD Radio broadcaster's implementation issue, which should be corrected by the station over time. Today's analog is only present on the main channel. Should you tune directly to a station's multicast channel, the HD Radio Adaptor will delay playing audio or content for up to 5 seconds. This is a normal operation.



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Frequently Asked Questions

Q. Why does my audio quality change after a few seconds on some HD Radio stations?

A. HD Radio stations blend analog signals to the digital HD Radio signal. The blend is typically smooth, but in some cases, the audio quality can take a few seconds to reach enhanced digital levels. This is not an issue with your HD Radio receiver it is the broadcaster's HD Radio implementation.

Q. Why is the display lit and showing information, but there is no sound?

A. Your FM stereo receiver may be muted, or the Auxiliary In jack is not enabled.

Q. What can I do if my audio is distorted or I don't hear any radio?

A. Keep the power cable away from the radio and antenna while in use. Make sure the FM antenna and power cable are not touching each other or the radio (except where they connect to the radio).

If your radio is still distorted or you don't hear any audio, you may be experiencing one of the following conditions:

- Is the radio muted? If so, unmute the radio or turn up the volume.
- Is the radio in AUX mode? If so, your auxiliary device may not be sending audio signals or may not be correctly connected.
- Change your vehicle's location.
- Check all connections, including the power and antenna.
- The signal is too weak, tune to a stronger station or move your vehicle.
- If you are using an amplified antenna with adjustable gain, turn down the gain all the way and adjust slowly upward.

NOTES

SPECIFICATIONS

GeneralAnalog FM/AM/RDS and Digital HD Radio Receiving
Frequency Range AM 530~1710 KHz, FM 87.9~108 MHz
Tuner SensitivityAM -87 dBm , FM -91 dBm
Input Connector DC IN, ANT IN,
Output ConnectorANT OUT, LINE OUT
Control Functions.....Power, Band, Enter, Auto, Tuner +, Tuner -, Scan, Menu, Preset
LCD Display..... 16 x 2 characters with backlight
AntennaCar ANT Socket
Power Supply DC 12 ~ 14.4 Volt
Dimensions.....Display 130mm (W) x 35mm (H) x 15mm (D)
Please read this user's manual before installing, setting up, or using your new HD Radio receiver.

FCC & Industry Canada Information

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

NOTE: 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules, and applicable Industry Canada regulations. Operation 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 of device. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate this equipment.

(For Canada)

This Class A/B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Limited Warranty

Virtual Reality Video Labs® warrants, to the original purchaser, that its products are free from defects in material and workmanship for 30 days from the date of original purchase, as part of our commitment to product excellence. Virtual Reality Video Labs® and/or its affiliates routinely improve the designs, materials or production methods of its existing products. Because it is impractical to publicize all changes in every product, we reserve the right to make such changes without notice.

CONDITIONS OF WARRANTY:

If during the 30 day warranty period your new product is found to be defective, Virtual Reality Video Labs® will repair such defect, or replace the product, without charge for parts or labor subject to the following conditions:

1. All repairs must be performed by Virtual Reality Video Labs® and/or its affiliates in Eatontown, New Jersey.
2. The equipment must not have been altered or been damaged through negligence, accident, or improper operation.
3. The replacement of parts are exempted from this warranty when replacement is necessary due to normal wear and tear.
4. All warranty claims must be accompanied by a copy of the sales receipt or bill of sale.
5. Repair or replacement parts supplied by Virtual Reality Video Labs® under this warranty are protected only for the unexpired portion of the original warranty.
6. In the case of car stereos, this warranty does not extend to the elimination of car static or motor noise; correction of antenna problems; costs incurred for the removal or reinstallation of the product; damage to tapes, speakers, accessories or car electrical systems.
7. Virtual Reality Video Labs® will not be responsible for any charge incurred for installation.

OWNER'S RESPONSIBILITIES:

Virtual Reality Video Labs® will make every effort to provide warranty service within a reasonable period of time. SHOULD YOU HAVE ANY QUESTIONS ABOUT SERVICE RECEIVED, OR IF YOU WOULD LIKE ASSISTANCE IN OBTAINING SERVICE, PLEASE CALL TOLL FREE 1-800-445-1797, 8:30am - 4:30pm EST.

In order to provide you with the proper warranty service, we request that you adhere to the following procedure:

1. Include a copy of your sales receipt or bill of sale with your unit when it is returned for warranty service.
2. If it is necessary to return your product for service, please return it securely packed, preferably in the original shipping carton, and freight and insurance prepaid to the following address: Virtual Reality Video Labs, Service Department, 41 James Way, Eatontown, New Jersey 07724.
3. Please include a detailed explanation of the problem you are having.
4. If your product is found by Virtual Reality Video Labs® to have a defect in material or workmanship, within the warranty period, it will be repaired or replaced at no charge and returned to you prepaid. Where permitted by law Virtual Reality Video Labs® liability shall be limited to that set forth in this warranty. This warranty shall be the exclusive remedy of the purchaser.

Virtual Reality Video Labs® makes no other warranty of any kind, expressed or implied; and all implied warranties, are hereby disclaimed by Virtual Reality Video Labs® and excluded from this warranty, Virtual Reality Video Labs® and/or its affiliates, the manufacturer, distributor and seller shall not be liable for any injury, loss or damage, incidental or consequential, arising out of the use or intended use of the product.

As part of our commitment to excellence in Virtual Reality Sound Labs® products, Intellectual Solutions and/or its affiliates routinely improve the designs, materials or production methods of its existing products. Because it is impractical to publicize all changes in every product, we reserve the right to make such changes without notice.

This product is covered by one or more of the following U.S. Patents: 5278826; 5278844; 5315583; 5465396; 5517535; 5559830; 5566214; 5579345; 5633896; 5646947; 5703954; 5745525; 5764706; 5809065; 5828705; 5850415; 5878089; 6108810; 6148007; 6178317; 6259893; 6292511; 6295317; 6317470; 6345377; 6400758; 6430227; 6452977; 6480536; 6487256; 6510175; 6523147; 6532258; 6539063; 6549544; 6556639; 6563880; 6570943; 6590944; 6622008; 6639949; 6671340; 6891898; 6895060; 6898249; 6901242; 6970685; 6982948; 7043681; and 7127008

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