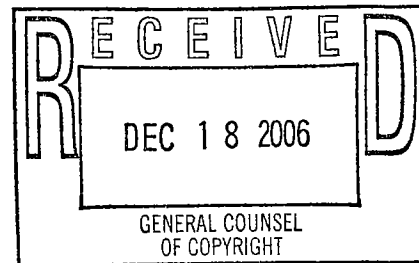


Before the
COPYRIGHT OFFICE
LIBRARY OF CONGRESS
Washington, D.C.



_____)
In the Matter of)
Retransmission of Digital)
Broadcast Signals Pursuant)
to the Cable Statutory License)
_____)

Docket No. RM 2005-5

REPLY COMMENTS OF NATIONAL PUBLIC RADIO

National Public Radio, Inc. ("NPR") hereby submits its reply comments regarding the retransmission of digital broadcast signals pursuant to the cable statutory license. *See* Notice of Inquiry, 71 Fed. Reg. 54948 (Sept. 20, 2006) ("NOI"). *See also* 71 Fed. Reg. 67508 (Nov. 22, 2006) (extending the time for filing reply comments to December 18, 2006). In its initial comments, NPR addressed the retransmission of digital audio broadcast ("DAB") signals and the portion of the NOI devoted to those cable carriage issues. In these reply comments, we respond to the comments of Capitol Broadcasting Company, Inc. ("Capital").¹

As NPR's initial comments explained, in-band, on-channel ("IBOC") DAB technology, commonly known as HD Radio, enables an individual terrestrial radio station to offer multiple digital services, program related data services, as well as its longstanding analog service, all utilizing its previously authorized spectrum. *See* Comments of National Public Radio, Inc. at 2

¹ NPR also supports the joint reply comments filed by the Joint Sports Claimants, the Program Suppliers, and others.

(filed Nov. 6, 2006). The principal difference between the television and radio digital transitions is that television stations were given additional spectrum temporarily to permit dual analog and digital operations. That "loan" of spectrum requires a fixed transition date by which analog television transmissions must cease. The digital radio transition, by contrast, is ongoing and open-ended, such that many radio stations are now broadcasting analog and digital signals and are likely to continue broadcasting analog signals for the foreseeable future. As of April 2006, among noncommercial educational stations that receive funding from the Corporation for Public Broadcasting, 457 stations are in the process of converting to HD Radio, and 159 digitally converted public radio transmitters are already broadcasting digitally. *See* www.cpb.org/grants/06digitalradioconversion/update060421.html.

Capitol urges the Copyright Office to disregard the digital radio transition for purposes of Section 111 of the Act for two reasons, neither of which have any merit. First, Capitol points out that there is no mandate for digital radio stations to convert to HD Radio. As discussed above and in NPR's comments, that fact is irrelevant. The digital television transition requires a mandate so that the Federal government can recoup and auction the temporarily loaned spectrum. There is no need for a mandate in the case of the digital radio transition because there is no loan of spectrum. More fundamentally, the presence or absence of a mandate has nothing to do with the retransmission of radio station broadcast signals for purposes of Section 111.

Second, Capitol claims that HD Radio is an experimental service and therefore may be ignored. Capitol is mistaken. The Federal Communications Commission ("FCC") has definitively authorized radio stations to transmit digitally. *In the Matter of Digital Audio Broadcasting Systems And Their Impact on the Terrestrial Radio Broadcast Service*, 17 FCC Rcd 19990 (2002) [*"DAB Report and Order"*]. How the FCC authorizes individual stations to

commence digital operations -- whether by *pro forma* special temporary authority, individual license application, or blanket approval -- is irrelevant to whether the cable retransmission of HD Radio is authorized and compensable under Section 111.

Finally, Capitol urges the Copyright Office to "forego creating a new regulatory framework for DAB until the service. . . is more widely available in the marketplace." Capitol Comments at 4. We submit that the service is widely available now. Of the approximately 15,000 commercial and noncommercial AM and FM stations licensed by the FCC, *Broadcast Station Totals as of September 30, 2006*, www.fcc.gov/mb/audio/totals/index.html, there are already 1,125 HD Radio stations in operation across the country. www.ibiquity.com/hd_radio/hdradio_find_a_station. In addition, HD Radio receivers are available through a number of major retailers. See www.hdradio.com/available_products.php. We also attach several HD Radio receiver product manuals, which address how a consumer may utilize the radio to receive FM radio programming retransmitted by a cable system. See Recepter Radio® Owner's Manual at 11 (Attachment A); Accurian HD Radio User's Guide at 4 (Attachment B); Radiosophy multistream™ HD User's Guide at 10 (Attachment C).²

That said, we also do not believe the advent of HD Radio requires a fundamentally new regulatory framework. A given station's digital service area is comparable to its analog service coverage area, *DAB Report and Order*, 17 FCC Rcd at 20001; cable retransmissions of radio station signals are likely to continue on an all-band or select signal basis; and the incidence of a cable retransmission requires the reporting of that retransmission and is a prerequisite to a cable royalty claim. Accordingly, it is sufficient and appropriate for the Copyright Office to confirm

² While the attached product manuals indicate that the digital component of the radio station signal is currently not receivable, see, e.g., Accurian HD Radio User's Guide at 4, the Copyright Office rules should accommodate all retransmissions radio station signals, whether analog or digital, including all multicast digital signals.

that its rules continue to govern the cable retransmission of FM radio station analog broadcast signals, to clarify that the retransmission of radio stations transmitting digitally is covered by the Section 111 license, and to require the reporting of all such retransmissions of analog and digital radio broadcast signals.

Conclusion

For the foregoing reasons, and as addressed in NPR's initial comments, NPR urges the Copyright Office to clarify its regulations to expressly encompass the retransmission of digital FM radio stations.

Respectfully submitted,

NATIONAL PUBLIC RADIO, INC.



Neal A. Jackson
Vice President for Legal Affairs
General Counsel and Secretary

Michael Riksen,

Vice President, Government Relations

Dana Davis Rehm

Vice President for Member and Program Services

Michael Starling

Vice President, Chief Technology Officer

Gregory A. Lewis

Associate General Counsel

National Public Radio, Inc.
635 Massachusetts Avenue, N.W.
Washington, DC 20001

December 18, 2006

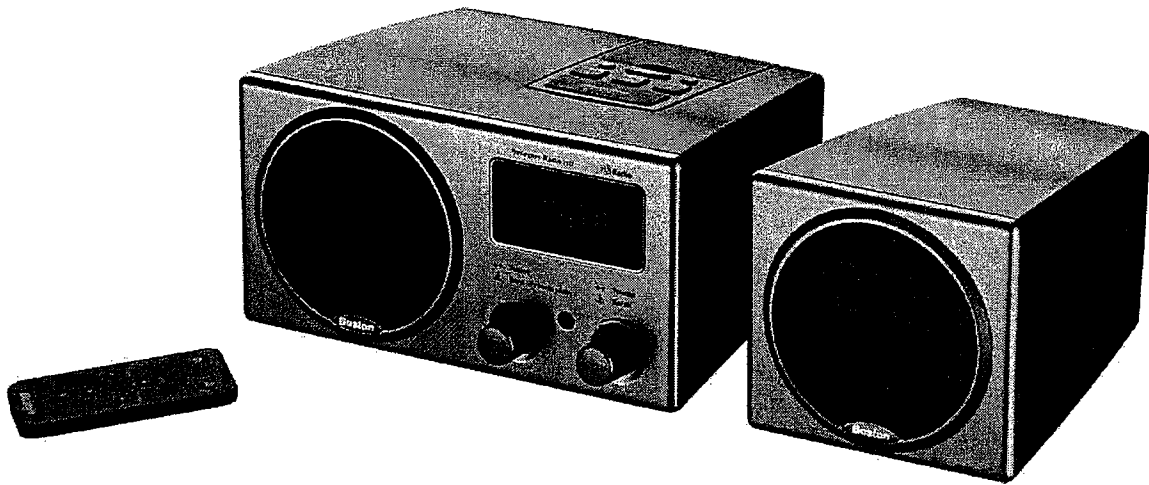
Attachment A

Boston
Boston Acoustics

Your Sound Solution™

Recepter Radio® HD

Owner's Manual



Shown with second speaker for stereo operation.



IMPORTANT SAFETY INSTRUCTIONS



This symbol found on the apparatus indicates hazards arising from dangerous voltages.



This symbol found on the apparatus indicates the user should read all safety statements found in the user manual.



This symbol found on the apparatus indicates double insulation.



Warning!

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

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 dry cloth.
7. Do not block any 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. If 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 attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the 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.

14. Maintain a minimum distance of 2" (50mm) around the front, rear, and sides of the apparatus for sufficient ventilation. The ventilation should not be impeded by covering the ventilation openings or placing on or around the apparatus items such as newspapers, table cloths, curtains, etc.
15. No open flame sources, such as lighted candles, should be placed on the apparatus.
16. The apparatus should not be exposed to dripping or splashing. No objects filled with liquids, such as vases, should be placed on the apparatus.

U.S. Users

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 connected.
- Consult the dealer or an experienced radio/TV technician for help.

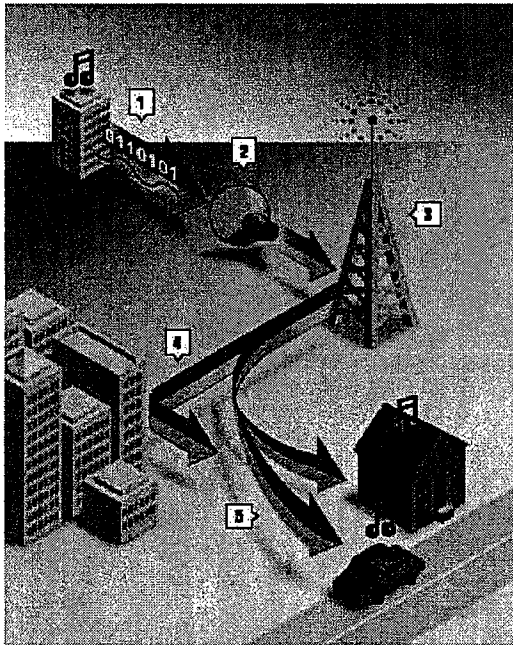
Caution: Unauthorized changes or modifications to the receiver could void the user's authority to operate the equipment.

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Thank you for choosing the Boston Acoustics® Receptor Radio® HD. We have designed this product to provide rich, lifelike musical sound and simple operation in a compact, tabletop stereo radio. Across the country, AM and FM radio stations are upgrading to digital HD Radio™ broadcasting, which the Boston Acoustics Receptor Radio HD is specially designed to receive. In addition to greatly enhanced digital quality sound, HD Radio stations will soon broadcast multiple channels and data simultaneously on their same, familiar position on the radio dial. The Receptor Radio HD sorts it all out to bring you your favorite current programming, or new and expanding choices – with a clarity you’ve never experienced before.

iBiquity Digital’s HD Radio technology will enhance both the AM and FM bands’ audio fidelity. AM will sound more like FM does today, and FM will have CD-like audio quality. The static, hiss, pops, and fades heard on today’s analog radios will be virtually eliminated, thus ensuring crystal-clear reception. To learn more about HD Radio technology and find an HD Radio Station On-the-Air, visit www.hdradio.com.



Copyright © 2000-2005 iBiquity Digital Corporation.

How HD Radio™ works

1. Stations bundle both analog and digital audio signals (with text data, such as artist and song information, weather, traffic, and more).
2. The digital signal is compressed using iBiquity’s HD Radio compression technology.
3. The combined analog and digital signals are transmitted.
4. The most common form of interference, multi-path distortion, occurs when part of a signal bounces off an object and arrives at the receiver at a different time than the main signal. HD Radio receivers are designed to sort through the reflected signals and reduce static, hiss, pops, and fades.
5. The signal will be compatible with both HD Radio receivers and analog radios.

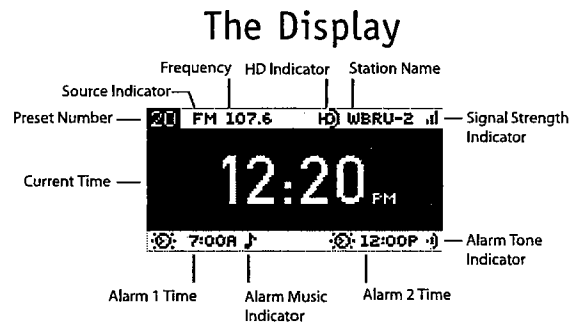
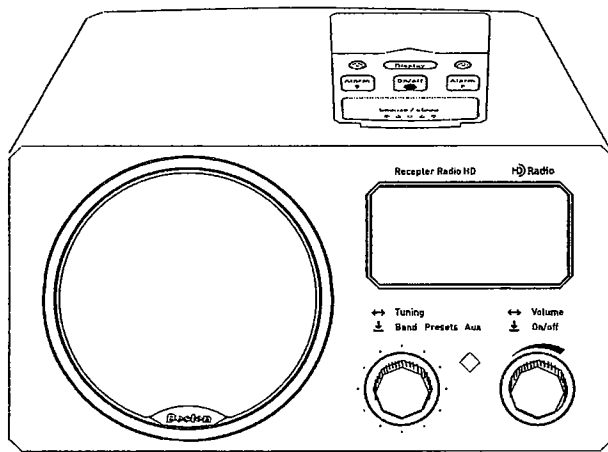
The Receptor Radio HD’s surprising performance is made possible by Boston Acoustics’ many years of experience in designing and manufacturing high-performance audio equipment. The key to the Radio’s sound is its Boston-designed wide-range driver. Optimized specifically for the Radio, it is combined with a digitally equalized amplifier that uses proprietary BassTrac® circuitry for full, satisfying bass even at low volume.

The result is smooth, natural response and room-filling sound that belies its small size. This outstanding audio performance is coupled with an HD Radio AM/FM tuner with a 20 preset-station memory for clear, distortion-free reception.

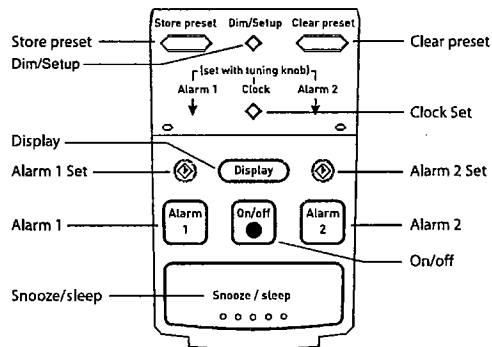
The Receptor Radio® HD also has two independent wake-up alarms. Either alarm can be set to music or tone. A large, easy-to-read LCD clearly presents the station, clock, and alarm/sleep status, while a built-in sleep function lets the Radio play for up to 60 minutes before turning off automatically.

The Radio is fast and easy to use and set, since times and stations can be rapidly selected by spinning a knob rather than repeatedly pressing buttons. And once you have stored your favorite stations in memory, the tuning knob can be set to tune in only those stations.

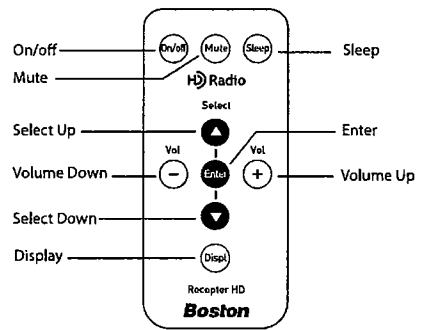
The Receptor Radio HD also features an auxiliary input that allows the connection of any device with a headphone output. Simply connect the device to the 1/8" input jack (located in the rear of the Radio) and you can listen to your iPod®, MP3 player, CD player, or other source through the Receptor Radio HD.



The Control Panel



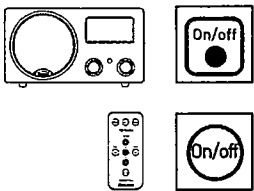
The Remote Control



Owner's Manual

Please save this owner's manual for future reference. If you should need an additional copy, it may be downloaded from the Boston Acoustics website: www.bostonacoustics.com/RRHD.

Owner's Manual Legend



Some operations may be accomplished with either the Remote Control or the Radio. Icons will represent where the buttons are located. Text in quotes (e.g., "Alarm") are indicators shown on the display, while bold words (e.g., **Tuning knob**) refer to buttons and knobs.

Unpacking the Receptor Radio® HD

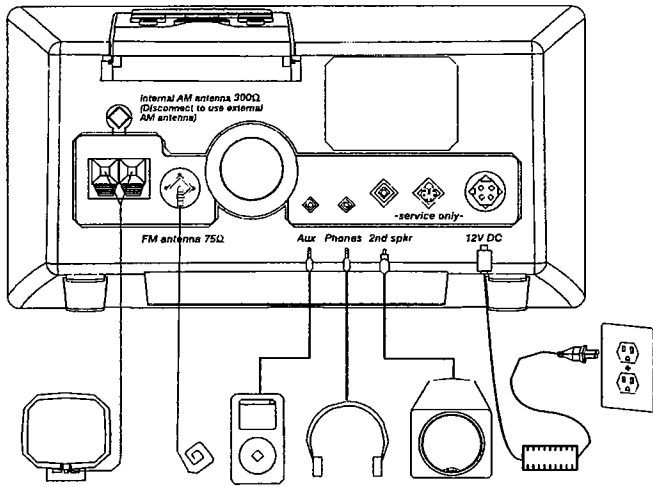
Please save all the original packaging. It provides the safest way to transport your unit.

Connecting the power cord

1. Insert the power supply cord into the port labeled **12V DC** on the rear of the Radio.
2. Insert the AC cord into the power supply and insert the AC plug into the wall outlet.

Be sure to keep the power supply away from the Radio while in use, as it may cause interference.

Note: The Receptor Radio HD is not designed for automotive use.



Connecting the FM antenna wire

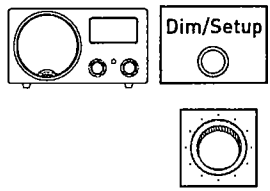
The FM antenna comes attached. If the antenna is disconnected or you wish to attach an external indoor FM antenna, follow these steps:

1. Push the Type F connector plug on the end of the antenna wire on the receptacle on the Radio marked **FM antenna 75Ω**.
2. Straighten out the antenna to its full length and orient the wire for the best reception.

Connecting the second speaker

1. Remove the second speaker from the packaging.
2. Insert the speaker plug into the jack labeled **2nd spkr**.

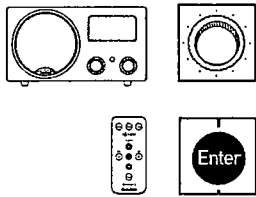
The Radio's default setting is stereo; however, if you do not hear stereo sound from the system, please follow this procedure:



1. Press and hold the **Dim/Setup** button for three seconds to bring up the "SETUP MENU."
2. Using the **Tuning knob**, scroll down to "2ND SPKR" and push the knob in to select. The selection will flash.
3. Turn the **Tuning knob** to select "YES (STEREO)." Press the Tuning knob to accept.

Note: If you choose to operate the radio without the second speaker, please set the radio to "NO (MONO)."

Connecting an auxiliary device (iPod®/MP3 Player/CD Player)



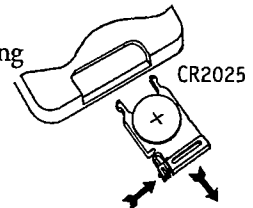
1. Turn down the volume level on the device you would like to connect to the Radio and connect the device to its cable (not included).
2. While both units are off, insert the plug into the input labeled **Aux** on the rear of the Radio.
3. Turn on the Radio and press the **Tuning** knob to select “-AUX-” or press the **Enter** button on the remote.
4. Raise the volume of the device to find the best sound without distortion. If the volume is too soft, raise the volume on the Receptor Radio® HD.

Connecting headphones

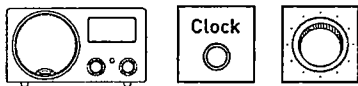
Insert the headphones plug into the stereo minijack labeled **Phones** on the rear of the radio. When you are listening to headphones, the speakers will be muted except for the alarms. **Note:** The headphone jack is also designed to be used as a stereo line output for connecting to another system. Headphones are in stereo mode, even when the second speaker is not attached.

Installing the remote battery

Place the remote control face down on a flat surface. Using your thumb, push the locking tab to the right and pull the battery compartment open with your finger. Insert the battery with positive side (+) up. Carefully close the compartment until it clicks.



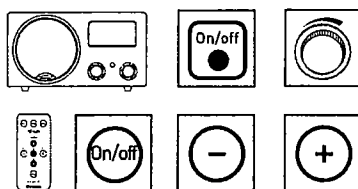
The Basics – Setting the clock



1. Lift the door of the control panel and push the **Clock** button to bring up the “Clock Set” display.
2. Turn the **Tuning** or **Volume** knob to the desired time and press the **Clock** button, **Tuning** or **Volume** knob to set.

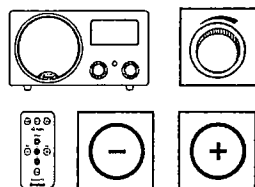
Note: This radio is equipped with a supercapacitor. The supercapacitor will keep the clock time, preset/alarm settings, and stored presets for up to two days when AC power is interrupted. The Radio and alarm will not operate without AC power. Clock display, radio operation, and alarm functionality will resume when AC power is restored.

Turning on/off the radio



Press the **On/off** button on the Receptor Radio HD or on the Remote Control to turn the unit on or off. The Radio can also be turned on by pressing the **Volume** knob or the + or – buttons on the Remote Control.

Adjusting the volume



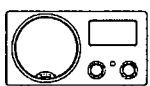
Turn the **Volume** knob on the Receptor Radio HD or press the + or – buttons on the remote to adjust the volume. When the Radio is turned on, the volume will return to the previous setting unless it was very loud, in which case it will go to volume level 40.

Muting the system



Pressing the **Mute** button on the Remote Control will mute all sound. The Radio will remain silent until the **Mute** button or a volume control is used. Turning off the Radio will also cancel the mute command.

Radio – Choosing the AM/FM band

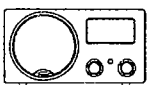


Push the **Tuning** knob or the **Enter** button on the Remote Control to select the source: “-AM-”, “-FM-”, “-Presets-”, and “-AUX-”.

The **Tuning** knob tunes the radio, sets the time, and controls the Setup Menu.



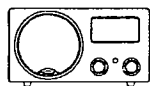
Manually tuning to a station



After choosing either the AM or FM band, turn the **Tuning** knob until the desired station is selected or press the **Select Up** or **Select Down** buttons on the Remote Control.

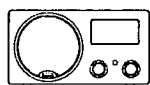


Entering stations into preset memory



1. Tune the Radio to a desired station.
2. Press and hold the **Store Preset** button for 2 seconds.
3. The display will show the preset station number in the upper-left corner of the display. **Note:** Stations will store in the order that they were entered into memory, regardless of whether they are FM or AM stations.

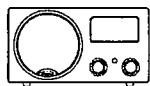
Listening to preset stations



1. Push the **Tuning** knob until the “-Presets-” display appears.
2. Turn the **Tuning** knob or **Select Up** or **Select Down** buttons on the Remote Control to select the preset you wish to listen to.



Clearing stations from preset memory



1. Push the **Tuning** knob until the “-Presets-” display appears.
2. Turn the **Tuning** knob to the preset you wish to clear.
3. Press and hold the **Clear Preset** button for 2 seconds until the “-Presets Empty-” display appears. When a station is cleared from memory, the Radio will mute until the tuning knob is turned again.

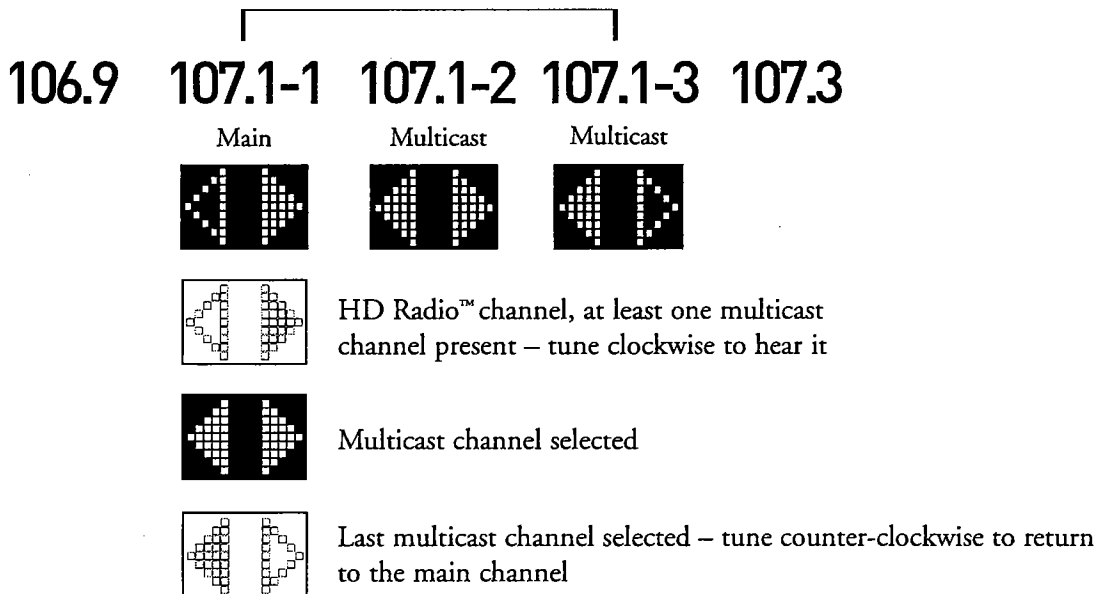


Note: Holding the clear preset button for 10 seconds will clear **ALL** the preset stations.

HD Radio™ multicast channels (FM only)

In addition to digital sound quality, HD Radio technology gives broadcasters the opportunity to offer more than one programming channel simultaneously using their existing frequency on the radio dial. If the Receptor Radio® HD recognizes an HD Radio channel, the HD Radio logo starts blinking until the signal is tuned in. After the Receptor Radio HD is tuned to an HD channel, arrows will appear on the right side of the display. The arrows will indicate the existence of multicast services. Use the **Tuning** knob to select the multicast channels.

Example: 107.1 has two multicast channels.



Special information about delay in the HD Radio™ system

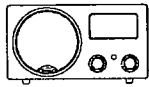
Digital systems inherently produce a delay in audio. To overcome this delay, HD Radio utilizes a station's current analog signal to enable fast tuning of an AM or FM station. After approximately 5 seconds, the audio will blend from analog to digital HD Radio. If the blend is smooth, the radio station has implemented the HD Radio broadcast correctly. However, if the station has not, you will experience a skip in content of approximately 5 seconds. This is not a problem with your Receptor Radio® HD. 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 Receptor Radio HD will delay playing audio or content for approximately 5 seconds. This is normal operation.



RBDS (Radio Broadcast Data System)

This radio supports RBDS, Program Identification and Radio Text. This function allows a radio station to transmit free-form textual information that can be either static e.g. station slogans or in sync with the programming such as the title and artist of the currently-playing song.

Alarms

Setting the alarms



1. Press the **Alarm 1** or **Alarm 2** button to choose the desired alarm mode — one press for Music , two presses for Tone , and three presses to turn it off. The display will indicate if an alarm is set and its mode of operation.



2. Press the **Alarm Set** button above the **Alarm 1** (or **Alarm 2**) button.

3. Turn the **Tuning** knob to the desired time.

4. Turn the **Volume** knob to adjust the alarm volume.

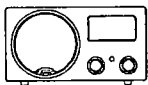
Music Mode



Tone Mode



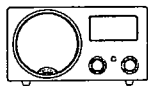
Displaying the alarm time



When an alarm is set, press the **Alarm Set** button above the appropriate **Alarm 1** or **Alarm 2** button to check the respective alarm time setting.

The alarm time will display for 3 seconds. The display will revert to its normal readout (either current clock time or radio frequency if the Radio power is on, or current clock time if the Radio power is off).

Turning off the alarm when it is sounding



1. To turn off the alarm, press the **On/off** button on either the top or front of the Radio or on the Remote Control. The alarm will reset.

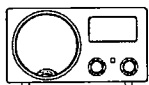
2. To disable the alarm completely, press the **Alarm 1** (or **Alarm 2**) button repeatedly until the “Alarm” indicator is no longer visible in the display.



Dual alarms

If one alarm is sounding or in the Snooze/sleep mode when the second alarm sounds, the first alarm is reset.

Using the Snooze function



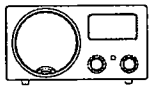
1. When the alarm sounds, push the **Snooze/sleep** button (or the **Sleep** button on the Remote Control) once to silence the alarm for 10 minutes.

2. If the **Snooze/sleep** button is pushed again within 3 seconds of the first push, 5 minutes will be added to Snooze/sleep time, up to a maximum of 60 minutes. **Example:** If the button is pushed rapidly three times, the Radio will go into Snooze/sleep mode for 20 minutes (10 + 5 + 5 minutes).

3. Once the Radio is in Snooze/sleep mode, tapping the **Snooze/sleep** button will display the remaining Snooze/sleep time for 5 seconds.



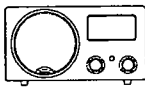
Using the Sleep function



This function will turn the Radio off automatically after a predetermined time.

1. When the Radio is on (no alarm is sounding), hold down the **Snooze/sleep** button (or the **Sleep** button on the Remote Control) for 1 second.
2. The words “-SLEEP TIME SET-” are shown in the display, and the time “60:00” is shown temporarily.
3. Each additional press of the **Snooze/sleep** button will reduce the remaining Sleep time in 10-minute increments, to the nearest 10 minutes. **Example:** If there are 59:48 minutes remaining in Sleep time, pressing the button once will reduce the Sleep time to 50 minutes, twice will reduce it to 40 minutes, etc.

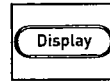
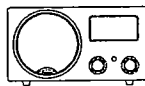
Displaying the remaining Sleep time



While the Radio is in Sleep mode, press the **Snooze/sleep** button once. The remaining Sleep time will be temporarily displayed, after which the display will revert to its normal readout (either current clock time or radio frequency, depending on which has been selected).

More Features

Changing the display mode (station frequency/song info*/clock time)



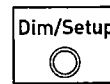
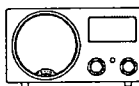
The Radio normally displays the station frequency when the power is on. To recall the clock time:

1. Tap the **Display** button.
2. When the power is off, the Radio displays the current clock time, even if the default display mode is the station frequency.



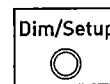
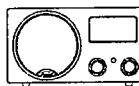
* **Note:** Song artist and title may be available as an additional display mode if the station broadcasts in HD Radio.

Dim/Setup button



The bright display mode is the default setting. Tap the **Dim/Setup** button to change the display from dim to medium or bright.

Bass Trim



When the Receiver Radio® HD is near a wall, the bass may be more pronounced.

To reduce the bass:

1. Press the **Dim/Setup** button for three seconds to bring up the “SETUP MENU.”
2. Select with Bass Trim with the **Tuning** knob. Press the **Tuning** knob to enter Bass Setup. Adjust to achieve the desired amount of bass output. The range is: 0 (Normal) to -6. Press the Tuning knob to accept changes.

Other Connections

Connecting the Receptor Radio® HD to a cable radio signal

The Radio's FM antenna connector is a standard "F" connector and will accept the cable FM feed from most cable systems that provide FM programming. To connect your radio to the FM signal available from some cable TV providers, contact your cable TV provider for assistance.



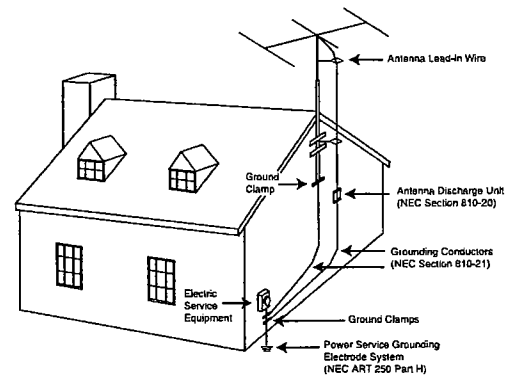
Be sure that the installation includes a splitter that filters the signal to prevent any re-emission of the TV spectrum through the Radio, so only the FM band, not the cable TV signal, is transmitted to the Radio. As of the writing of this manual, HD signals are not being rebroadcast via cable providers.

Antenna grounding

Example of antenna grounding, per the National Electrical Code, ANSI/NFPA 70.

Notice for Cable TV System Installer

Please make note of Article 820-40 of the NEC (of USA) that provides guidelines for proper grounding. In particular, this standard specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as is practical.



Connecting the supplied external AM antenna

If AM reception is weak, you may improve the AM reception by connecting the provided antenna.

1. Disconnect the built-in internal AM antenna wires by pressing the spring terminals and pulling the wires out of the slot.
2. Connect the wires of the external AM antenna to these terminals.
3. Position the antenna for the best reception.

Specifications

Receptor Radio® HD

Dimensions:	4 $\frac{3}{8}$ x 7 $\frac{7}{8}$ x 6 $\frac{3}{4}$ " (H x W x D) (111 x 194 x 172mm)
Weight:	2.8 lbs (1.2kg)
Second Speaker Dimensions:	4 $\frac{3}{8}$ x 4 $\frac{3}{8}$ x 6" (H x W x D) (111 x 111 x 153mm)
Weight:	1.6 lbs (.8kg)
Remote Control Dimensions:	1 $\frac{1}{16}$ x 3 $\frac{3}{8}$ x $\frac{1}{4}$ " (H x W x D) (40 x 86 x 6mm)
Remote Battery:	CR2025 3-volt

Limited Warranty

For one year from the date of purchase, Boston Acoustics will repair for the original owner any defect in materials or workmanship that occurs in normal use of the Recepter Radio® HD, without charge for parts and labor.

Your responsibilities are to use the unit according to the instructions supplied, to provide safe and secure transportation to an authorized Boston Acoustics service representative, and to present proof of purchase in the form of your sales slip when requesting service.

Excluded from this warranty is damage that results from abuse, misuse, accidents, shipping, or repairs or modifications by anyone other than an authorized Boston Acoustics service representative.

This warranty is void if the serial number has been removed or defaced.

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

If service seems necessary:

First, contact the retailer from whom you purchased the system. If that is not possible, write to:

Boston Acoustics, Inc., 300 Jubilee Drive, Peabody, MA 01960 U.S.A.

Call 978.538.5000 or email: parts@bostonacoustics.com.

We will promptly advise you of what action to take. If it is necessary to return the product to the factory, please ship it prepaid. After it has been repaired, we will return it freight prepaid in the U.S. and Canada.

Boston
Boston Acoustics

300 Jubilee Drive
Peabody, MA 01960 U.S.A.
978.538.5000
www.bostonacoustics.com

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Specifications subject to change without notice.

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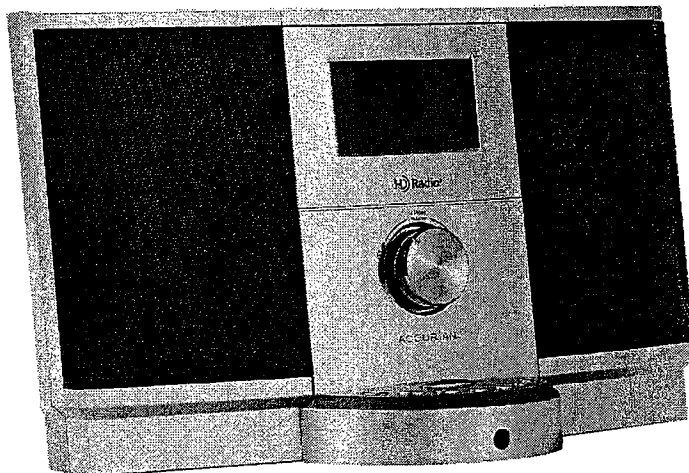
Attachment B

ACCURIAN®

HD Radio

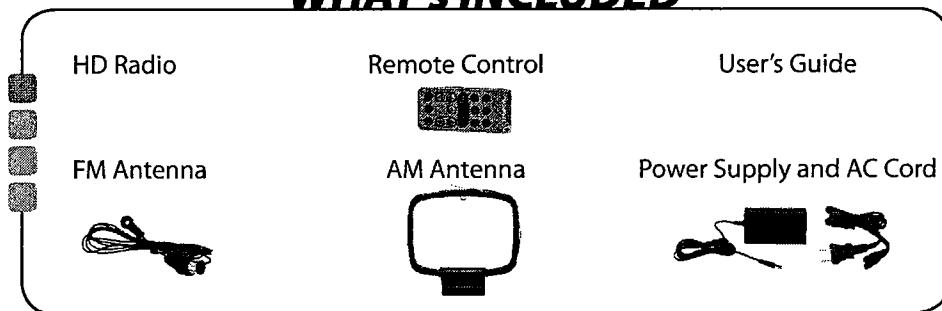
12-1686

User's Guide



Thank you for purchasing this Accurian HD Radio. Your HD Radio plays your favorite programming, plus new, expanding choices and amazing clarity. It enhances audio fidelity for both AM and FM bands, providing digital-quality sound and simple operation in a compact, tabletop stereo radio. AM sounds more like current FM, and FM has CD-like audio quality, virtually eliminating the static, hiss, pops, and fades of today's analog radios.

WHAT'S INCLUDED



Please read this user's guide before installing, setting up, or using your new HD Radio.

ACCURIAN®

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How HD Radio works

HD Radio produces a smooth, natural response and room-filling sound that belies its compact size. HD Radio stations can broadcast data (artist and song information, weather, traffic, and more) and multiple channels at their same, familiar position on the radio dial.

1. The digital signal is compressed using HD Radio compression technology.
2. Stations bundle both analog and digital audio signals, and the combined analog and digital signals are transmitted. The signal will be compatible with both HD Radio receivers and analog radios.

HD Radio receivers are designed to reduce static, hiss, pops, and fades by sorting through reflected signals and multi-path distortion. Multi-path distortion is the most common form of interference, and occurs when part of a signal bounces off an object and arrives at the receiver at a different time than the main signal.

To learn more about HD Radio technology and to find HD Radio Stations, visit www.hdradio.com.



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Quick Start

Connecting Your Radio

To avoid interference, keep the power supply away from the radio while in use.

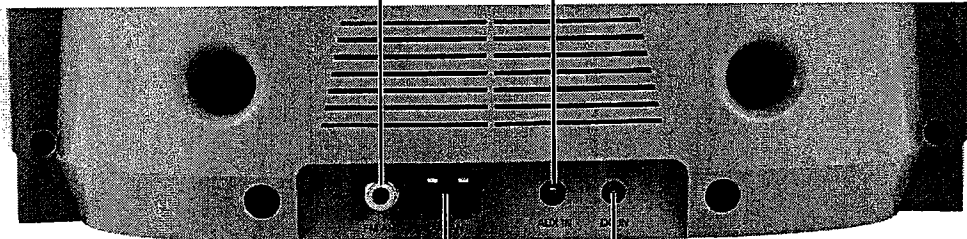
FM ANT

Connect FM antenna. Use the "T" shaped antenna in more remote areas.



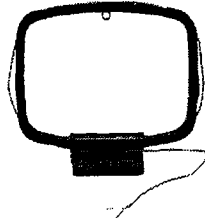
AUX IN

Connect auxiliary devices with headphone output. To listen to auxiliary devices, select **AUX** mode.



AM Antenna

Press down the two spring terminals, connect the AM antenna wires, and position the antenna for the best reception.



DC IN

Plug the power supply into the DC IN port, plug the AC cord into the power supply, and then plug the AC plug into the wall outlet.



Cable Radio Signals

The Radio's FM antenna connector is a standard F-connector and will accept cable FM feeds from most cable systems that provide FM programming. To connect your radio to the FM signal from some cable TV providers, contact your cable TV provider for assistance.

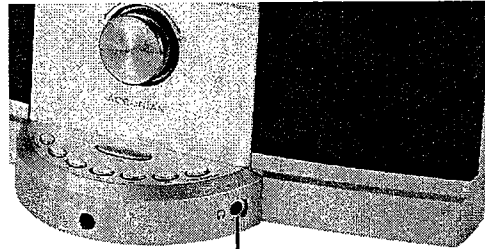
The installation must include a splitter that filters the signal to prevent any re-emission of the RF spectrum through the radio, so only the FM band, not the cable TV signal, is transmitted to the Radio. HD signals are not currently rebroadcast via cable providers.

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Connecting Headphones

Insert the headphones plug into the stereo minijack on the front of the radio. Connecting headphones mutes the speakers.

Note: The headphone jack can be used as stereo output to another system.



Headphones

Your Radio Controls

POWER

Press to turn the radio on or off.

MODE / VOLUME

Press once to select the source:
AM1, AM2, FM1, FM2, and AUX IN.

Turn to adjust the volume

PRESET STORE

Lets you save stations in the radio memory. See **Saving Preset Stations.**

CH - / +

Press to select a preset frequency.

TUN - / +

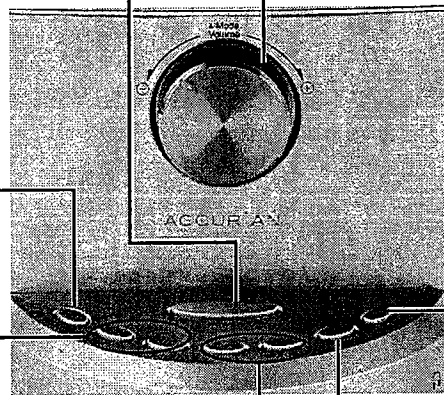
Press to tune a station up or down incrementally. Hold down to search for a frequency up or down.

CLOCK

Press to toggle between station information and date / time information. Hold to set the time and date.

DSP

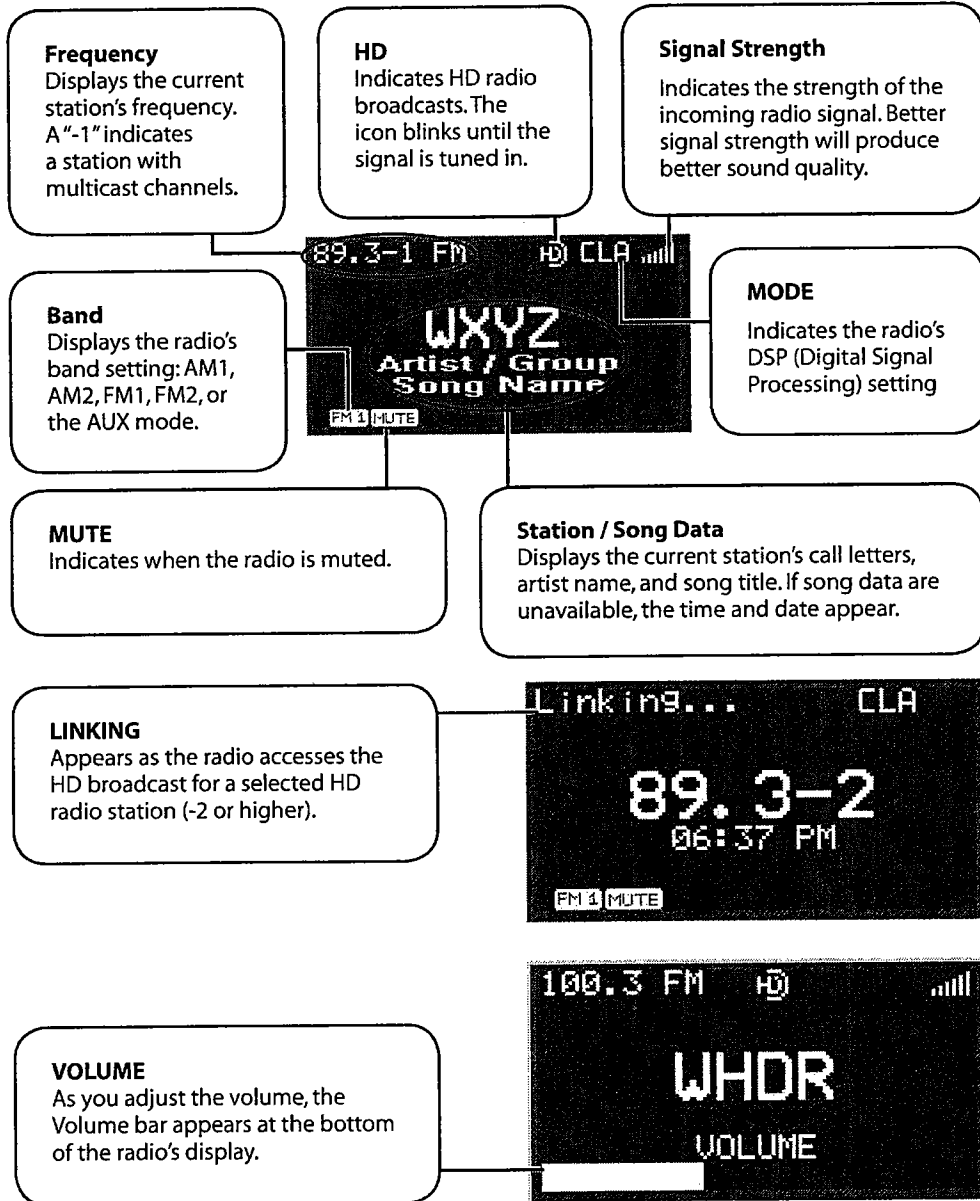
Press to set equalizer levels:
Normal / Classic / Rock / Jazz / Pop



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Your Radio Display

Your HD Radio's display provides valuable information to help you access the radio's many features and functions.



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Seeking

When you hold down the Tune - / + buttons, the radio scans for the next available station.



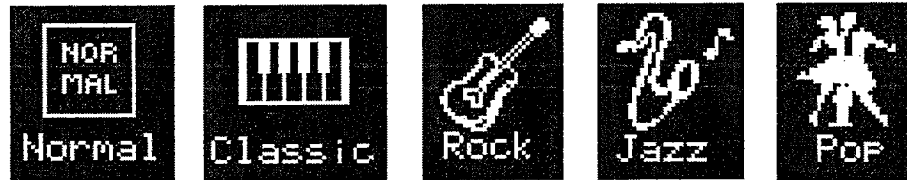
Mode

When you change the radio's mode, the station information appears, or **AUX IN** for auxiliary input mode.



DSP

When you set the equalizer levels, the following icons appear in the radio display:

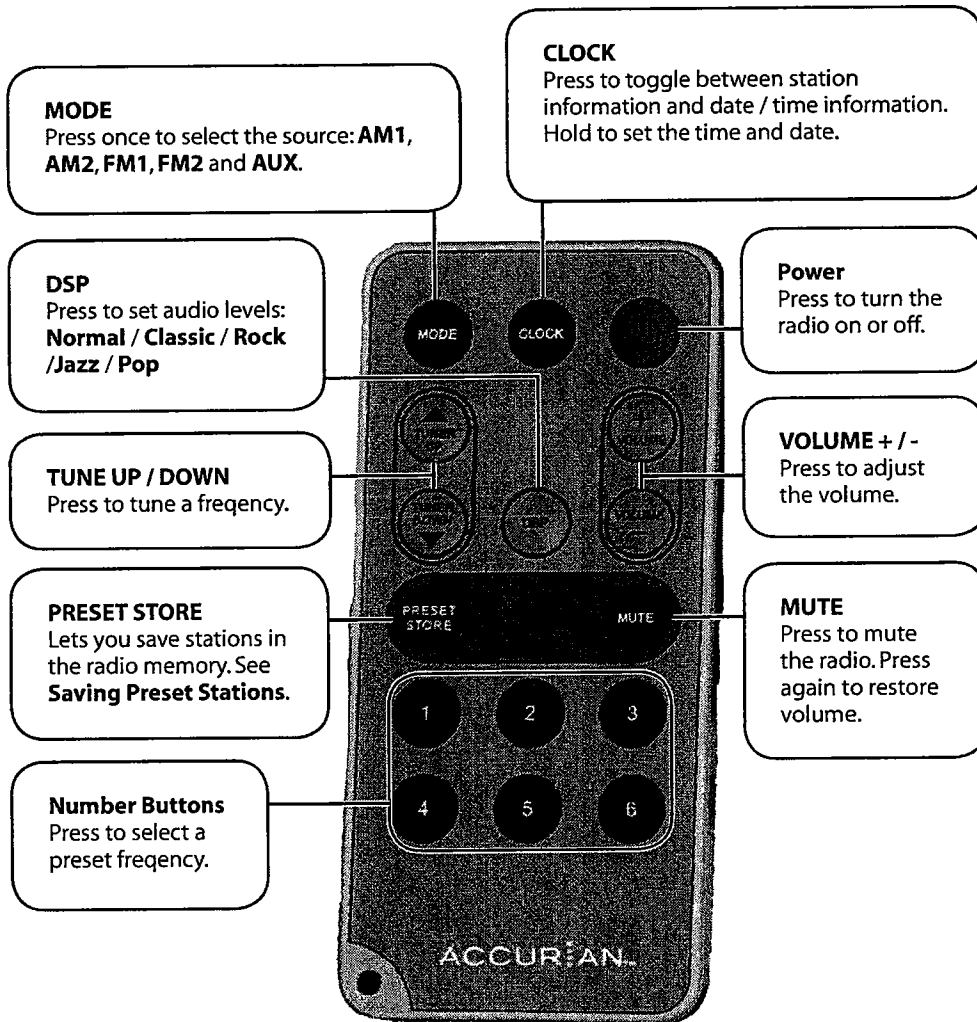
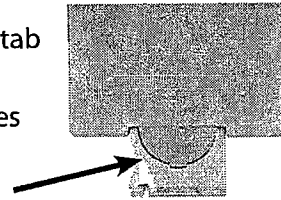


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Your Remote Control

To use your remote control the first time, pull the plastic tab out of the battery compartment.

Your remote control helps you access your radio's features from a distance.



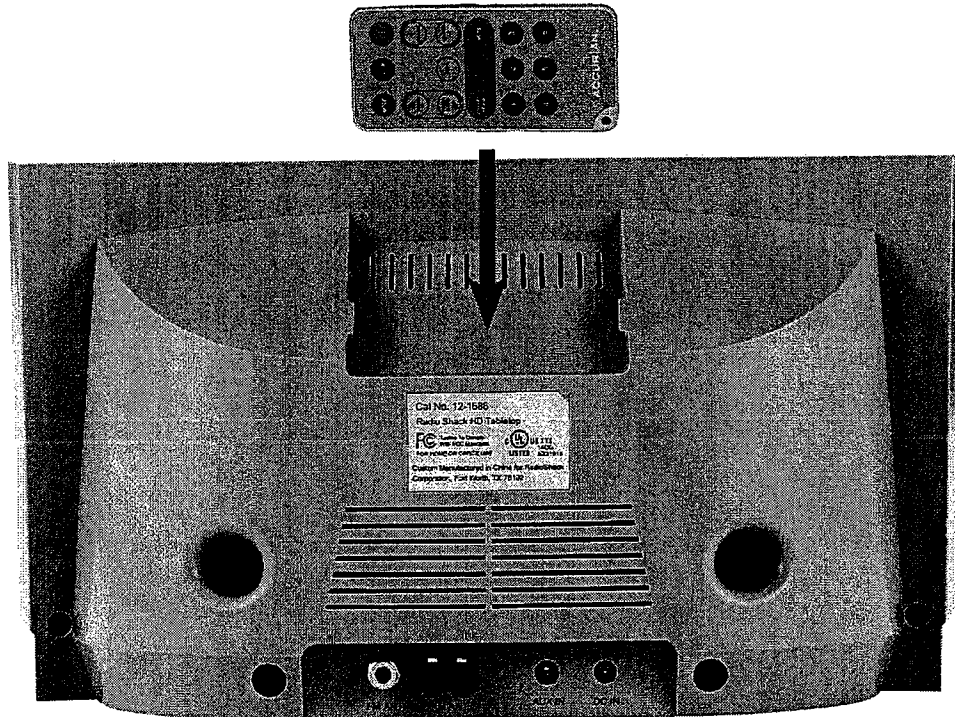
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Replacing the Remote Control Battery

To replace the battery, use your thumb to push the battery compartment locking tab to the right and pull the compartment open. Insert the battery with the positive side (+) up and carefully close the compartment until it clicks. See the diagram on the remote for more information.

Storing Your Remote Control

To store your remote control, slide it under the available tabs on the back of your radio.



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The Basics

Setting the Clock

To set your radio's clock, complete the following steps:

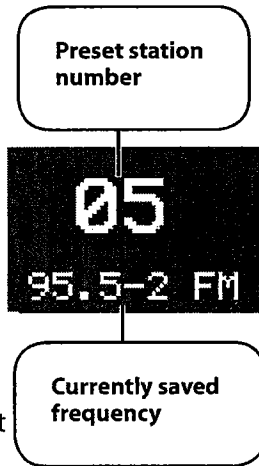
1. Turn on your radio.
2. Press and hold the **CLOCK** button until the time display appears with the hour blinking.
3. Use the **TUN - / +** buttons to set the hour and press the **CLOCK** button. The minutes value starts blinking.
4. Repeat step 3 for the minutes, AM/PM, date, month, and year. After you set the year, the radio display returns to normal with the updated date and time information.



Saving Preset Stations

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

1. Press **MODE** to select the band (AM1, AM2, FM1, FM2).
2. Select the frequency.
3. Press **PRESET STORE**.
4. Use the **CH- / +** buttons on the radio or use the number buttons on the remote control to select a preset station number.
5. Press **PRESET STORE** to save the preset station. If you don't press **PRESET STORE** again within a few seconds, the radio returns to normal mode without saving the frequency in memory.



Note: Your radio provides six preset positions for each band (AM1, AM2, FM1,

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and FM2) for a total of 24.

Beyond the Basics

Multicast Channels

In addition to digital sound quality, 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 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 **TUNE - / +** to select a multicast channel for the frequency.

System Delay

Digital systems inherently produce an audio delay. To overcome this delay, HD Radio 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 digital HD Radio. 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. 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 Tabletop will delay playing audio or content for up to 5 seconds. This is normal operation.

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FAQ

Why does my audio quality change after a few seconds on some HD Radio stations and on some other stations skip when I first tune in?

HD Radio stations blend analog signals to digital HD Radio. 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. This is an HD Radio broadcaster's implementation issue, which the station should correct over time.

What can I do if my audio is unclear or I don't hear any audio?

If your radio audio is unclear 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.
- Is anything plugged into the headphone jack? If so, unplug it.
- Check all connections, including power and antenna.
- Is the signal too weak? If so, tune to a stronger station or reposition your radio and/or antenna.
- If you are using an antenna other than the one supplied, make sure the antenna supports FM reception. If the antenna uses an FM trap, make sure the FM trap is off.

Note: If you are using an amplified antenna with adjustable gain, turn down the gain all the way and adjust slowly upward.

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 dry cloth.
7. Do not block any 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. If 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 attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the 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.
14. Maintain a minimum distance of 2" (50mm) around the front, rear, and sides of the apparatus for sufficient ventilation. The ventilation should not be impeded by covering the ventilation openings or placing on or around the apparatus items such as newspapers, table cloths, curtains, etc.
15. No open flame sources, such as lit candles, should be placed on the apparatus.
16. The apparatus should not be exposed to dripping or splashing. No objects filled with liquids, such as vases, should be placed on the apparatus.

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RF EMISSIONS INFORMATION

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.
 - Connect the equipment to an outlet on a circuit different from the device.
- Consult your local **RadioShack** or an experienced radio/TV technician for help.

If you cannot eliminate the interference, the FCC requires that you stop using your radio.

WARNING: Changes or modifications not expressly approved by **RadioShack** may cause interference and void the user's authority to operate the equipment.

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.

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

LIMITED 90-DAY WARRANTY

This product is warranted by **RadioShack** against manufacturing defects in material and workmanship under normal use for ninety (90) days from the date of purchase from **RadioShack** company-owned stores and authorized **RadioShack** franchisees and dealers. For complete warranty details and exclusions, check with your local **RadioShack** store.

RadioShack Customer Relations
300 RadioShack Circle, Fort Worth, TX 76102

04/04

Actual product may vary from images contained in this document.

©2006 **RadioShack, Inc.** All rights reserved. **Accurian** is a trademark used by **RadioShack**. HD Radio is a registered trademark of iBiquity Digital Corporation.

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Printed in China

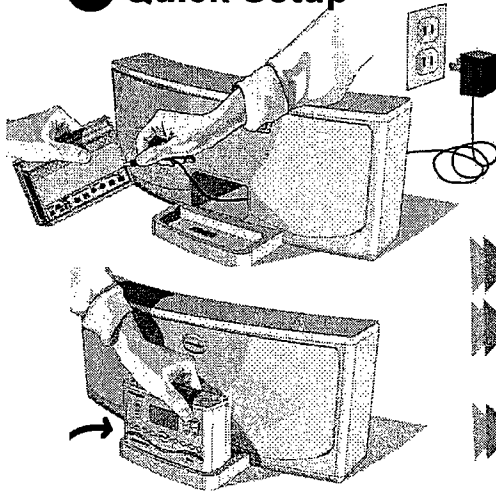
Attachment C

radiosophy™
Intelligent Radios™

multistream™ HD

User's Guide

1 Quick Setup



1. Pass plug through speaker base and then attach to receiver.

NOTE: Also thread any other cables through the speaker base at this time.

2. Plug into wall.

3. Rock the receiver into the speaker base dock.

4. Push the 'ON/OFF' button.

2 Register Online

Register online NOW to be automatically entered into a drawing for a chance to win a **FREE MultiStream HD**.

Registered users receive immediate support and automatic email notification of any software updates. See full details at www.radiosophy.com/register.

3 Protect  Extend PLAN

Protect Your Investment with the **Radiosophy Extended Protection Plan**. Visit www.radiosophy.com/store or call 877-443-7234.

Customer Service:
www.radiosophy.com/help

 **We Know HD Radio®**

Model: MPA0001

Congratulations on your purchase!

We're sure you'll enjoy your MultiStream HD for years to come. To get the most from it, please take a few minutes to read through this manual and learn about all the special features this radio offers.

Selecting a Location:

- Place the base on a table or other flat surface.
- Put the unit on a non-metal surface (metal interferes with AM reception).
- Don't put the unit on a heat-sensitive surface. Like all electrical equipment it generates some heat.
- Do not get the radio or speaker base wet.
- When using the receiver separately from the base, be sure to place it where it will not be easily bumped or dropped.

Updating Your MultiStream HD

As HD technology evolves, improvements to the software that controls your radio (firmware) may become available. The MultiStream HD can be connected to a computer with an Internet connection to download updates. When an update occurs, all registered users will be notified and provided with instructions.

Important: to be sure you are notified, register now at www.radiosophy.com/register.

TIP: Keep your sales receipt here.

For your records:

Should you need to contact Customer Service, please have this information ready.

Serial Number (on the bottom of the receiver)

Purchase Date

Important Safety Instructions are on page 11.

All safety and operating instructions should be read before the radio is operated.

Specifications subject to change without notice.

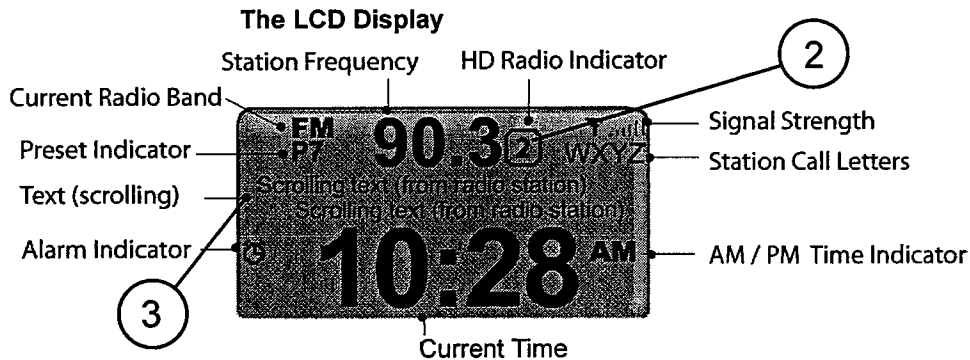
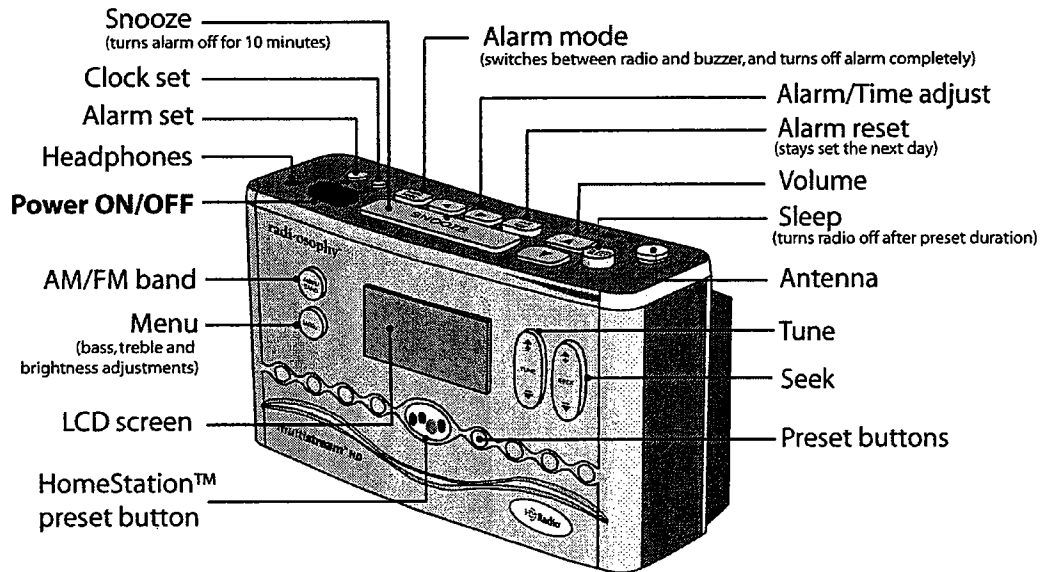
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Radiosophy MultiStream HD User's Guide

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MultiStream HD at a Glance

The front controls are for radio operation.
Most of the top controls are for the clock and alarm.



Setting Clock Time

To set the clock, press and hold CLOCK SET until you hear a beep. The hour will flash in the display. Press ALARM/TIME until the desired hour appears. Holding the button down moves the time rapidly.

Press CLOCK SET once to set hour. Repeat to set minute and second.

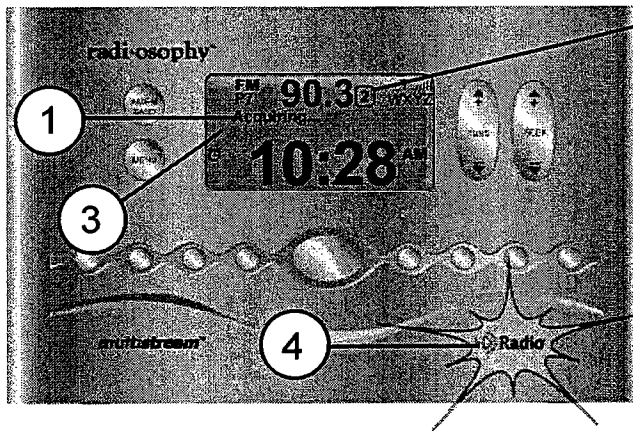
Setting Sound and Brightness Preferences

Bass, treble and display brightness levels on the MultiStream HD radio can be customized to suit your tastes. To change these settings, press the MENU button on the front of the receiver. Adjust using the TUNE buttons. Press MENU again to move to the next setting.

Multiple Streams Mean More Channels

As you tune through stations, you'll notice a great HD Radio feature - more channels! Many FM stations are moving from broadcasting to multicasting by adding additional streams to their frequency. (see below)

HD Radio® Indicators



90.3 | Regular Analog
90.3 □ Digital (single stream)

Multistreaming:

90.3 ① Digital (1st stream)
e.g., All Classical
90.3 ② Digital (2nd stream)
e.g., All News
90.3 ③ Digital (3rd stream)
e.g., All talk radio

- 1 Acquiring... (you will briefly hear analog while a digital signal is being acquired)
 - 2 A circle indicates that you are receiving a digital signal. If there is no circle you are receiving an analog signal. If the station is multicasting, each stream will have a number in a circle. (see examples above)
 - 3 If your station provides it, your MultiStream HD can display text with song title, artist, weather alerts, news, sports or other information. This text appears when "Acquiring..." goes away. (also see page 3)
- PLEASE NOTE:** Text is provided at the option of each radio station. Only the radio station can answer questions about information displayed in the text.
- 4 The HD Radio logo lights up as the analog signal smoothly blends into a digital signal.

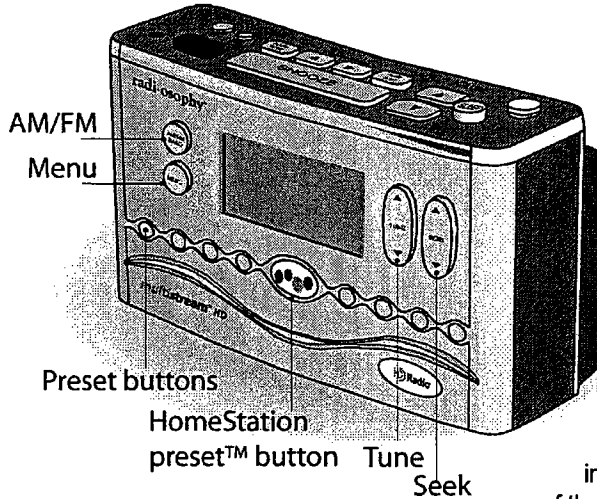
If you do not see any HD Radio indicators, stations in your area may not yet be broadcasting HD Radio.
Visit www.radiosophy.com/abouthdradio/hd_radio_map.html for a list of stations broadcasting in HD Radio in your area.

Tuning and Seeking

You can receive regular analog AM/FM signals plus the newer **HD Radio** and **multiple stream** signals.

Tune moves up or down one frequency at a time (including multiple streams.) Holding down the button moves up or down more quickly.

Seek moves up or down to the next station (including multiple streams.)



Press **AM/FM** button to switch between AM and FM.

Preset your favorites!

There are eight small and one large preset buttons on the front of your MultiStream HD. The large one is the HomeStation™ preset which can display the logo of your favorite radio station. (Call your station to get their logo sticker.) If your radio already has a station logo, your local stations may be pre-set for you.

Set a preset by tuning to a station and holding until you hear two short beeps. The number of the preset will flash on the display for three seconds to show that it has been set.

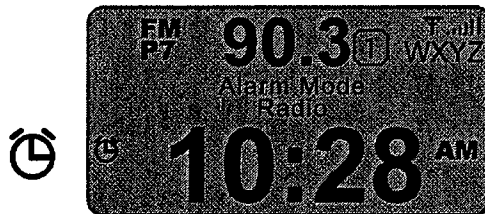
You may program up to nine FM and another nine AM presets.

Cycling through Streams

Press a preset repeatedly to cycle through that station's streams.

Setting alarm time

The MultiStream HD has three alarm modes - radio, buzzer and radio+buzzer. Be sure to set the clock before setting the alarm.



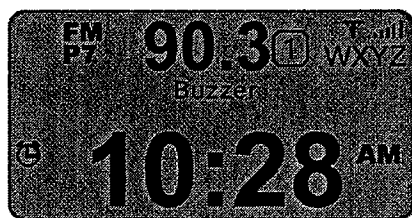
To set the alarm, press and hold **ALARM SET** until you hear a beep. The "ALARM" icon and hour will flash on the display.

Press **ALARM/TIME** until the desired hour appears. Holding the button down moves the time rapidly. Press **ALARM SET** once to set the hour. Repeat to set minutes. Two short beeps will confirm the settings.

To check the alarm settings, press **ALARM SET** once to display the alarm time.

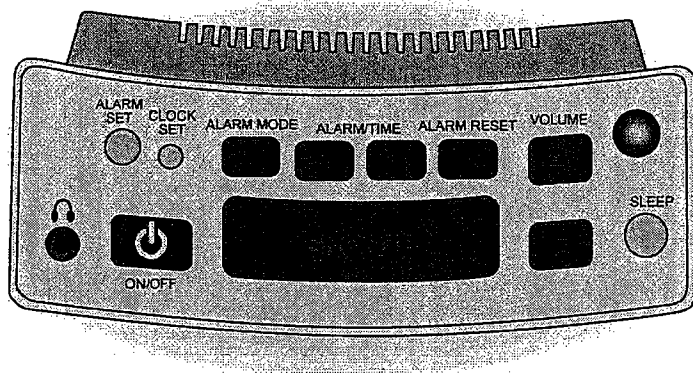
Using the alarm

You may wake to the radio, a buzzer or radio + buzzer. In the radio+buzzer mode, the radio will come on at the set time and the buzzer will sound after five minutes. To select your method, press the ALARM MODE button. Continue pressing ALARM MODE until you reach the method you prefer. Your choice will be displayed on the screen. When the alarm is on, an alarm icon will be visible in the display.



The MultiStream HD features a Gentle Wake function. If the alarm is set to radio, the volume will begin low and gradually increase for one minute. If the alarm is set to buzzer, the buzzer will gradually increase in volume.

Note: If headphones are connected, the alarm will sound only through the headphones and not the external speakers.



Snooze

Press SNOOZE to shut off the alarm for ten minutes. You can repeat this each time SNOOZE expires.

Alarm Off

Press ALARM RESET to silence the alarm. The alarm will sound at the same time the next day.

To turn the alarm off so that it is not set for the next day, press ALARM MODE repeatedly until "OFF" appears on the display.

Sleep

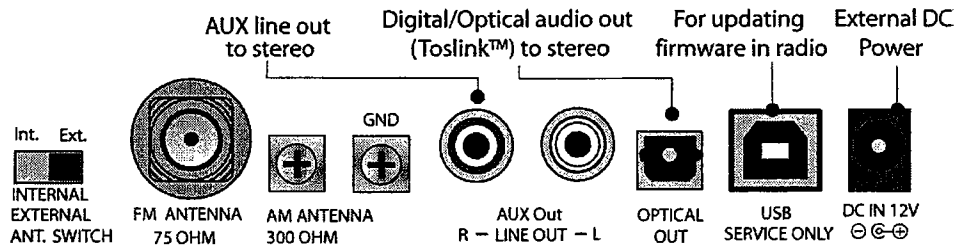
The MultiStream HD includes a built-in sleep timer that will automatically shut off the radio after a preset duration. Press SLEEP. If the radio is off it will turn on. Continue pressing SLEEP to select from 15, 30, 60 or 90 minutes of sleep time.

"Sleep duration time" only appears in the display while it is being set. After a few seconds the display will return to normal and the radio will play for the set length of time. When the timer is nearing its last few seconds the Gentle Sleep function will activate, gradually decreasing the volume. The radio will shut off automatically when the time is up.

To stop the Gentle Sleep function from lowering the volume, press the VOLUME button. To turn the radio off before the preset time, press ON/OFF.

Portable

The MultiStream HD receiver can be removed from its base and connected to audio equipment that accepts an input, including car and boat radios. You can take it with you!



Internal and External AM and FM Switch

To use an external AM and FM antenna, set the switch to 'Ext.'. The switch must be on 'Int.' when using the built-in telescoping antenna. Extend the antenna to its full length for best reception.

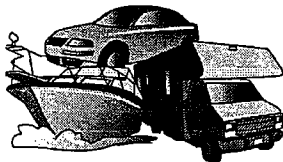
Cable and Connection Options (see next page).

Connecting to Audio Equipment

Remove your MultiStream HD receiver from its base unit. Re-connect POWER to the receiver and connect either the AUX OUT or OPTICAL OUT to the input of your audio device. (Refer to the manufacturer's instructions on the device to determine the proper connection point.) You can now listen to the radio through your stereo system.

Connecting to Vehicles

Connecting the MultiStream HD receiver to a car or boat stereo requires a 12VDC car power adapter that plugs into the cigarette lighter. Remove the receiver from the base unit. Connect the 12VDC adapter to POWER on the MultiStream HD receiver. **Do not** use a power adapter rated higher than 12VDC.



Vehicles with AUX (RCA) Connections

Connect **AUX Out** on the Multistream HD to **AUX LINE IN** on the vehicle's radio. (See owner's manual for details.) The Multistream HD will play through your vehicle's stereo speakers.

Vehicles with Cassette Players


















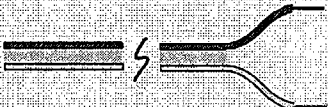



You will need a cassette adapter. Connect the adapter to **HEADPHONE** on the receiver and plug the cassette into your cassette player. (See your owner's manual for details.) The MultiStream HD will play through your vehicle's stereo speakers.

Vehicles without Cassette Players or RCA Connections

You will need a mobile FM transmitter. Connect the mobile FM transmitter to the **HEADPHONE** connection on the MultiStream HD. (Refer to the manufacturer's instructions for tuning the mobile FM transmitter.) The MultiStream HD will play through your vehicle's stereo speakers.

This device sends the signal to your vehicle's radio antenna. It is the sound quality of "regular" radio, but you will be able to access multiple streams.

Note: Some locations have too much FM congestion for this to work well.

What You Need	Connections	Notes
	Back of receiver  DC IN 12V 	Connect the male power plug to the 12 volt (DC only) female power socket on the back of the receiver. Connect the other end to any 120VAC power supply.
Optical Toslink™ to Toslink™  For the the highest quality sound	DIGITAL/OPTICAL AUDIO OUT Back of receiver 	Connect the Toslink™ cable to the Toslink OPTICAL OUT jack on the back of the receiver. Connect the other end to the optical input of a home stereo component or computer.
Stereo audio cable 	AUX Out  AUX Out R - LINE OUT - L	Connect the stereo audio cable to the AUX OUT jacks on the back of the receiver. Connect the other end to the audio inputs of a home stereo component, CD or cassette player, computer or television.
3.5mm Mini play-to-stereo audio cable 		Connect the stereo audio end to the AUX OUT jacks on the back of the receiver. Connect the 3.5mm mini phone jack to the audio in on a computer.
12 volt car power adapter 	Back of receiver  DC IN 12V 	Connect the male power plug to the 12 volt (DC only) female power socket on the back of the receiver. Connect the large adapter plug into the car's cigarette lighter.
Tape cassette adapter  Mobile FM transmitter  Headphones 	3.5mm STEREO MINI PHONE  Located on top of receiver	Connect the 3.5mm mini phone jack to the top of the receiver. Insert the cassette adapter into the cassette deck. Connect the 3.5mm mini phone jack to the top of the receiver. Connect the 3.5mm mini phone jack to the top of the receiver.
USB cable 	USB SERVICE ONLY  Located on back of receiver	Connect the USB type B cable to the USB port on the back of receiver. Connect the other end to the USB port on a computer. Note: This port is used <u>only</u> for updating the receiver's firmware.
AM cable 	AM ANTENNA  300 OHM GND	Connect the AM Antenna cable to the AM ANTENNA connections on the back of the receiver. Switch the Internal - External Ant. (Antenna) Switch to the 'EXT' position. Note: Be sure to connect the Ground to the connection marked 'GND'.
FM cable 	FM ANTENNA  FM ANTENNA 75 OHM	Connect the FM Antenna cable to the FM ANTENNA connections on the back of the receiver and position the antenna to get the best reception. Switch the Internal - External Ant. (Antenna) Switch to the 'EXT' position.

Using External Antennas

Depending on your location, you may find it necessary to use an external antenna to receive some radio signals. External AM and FM antennas are included with your MultiStream HD for this purpose.

Using an external antenna

Connect the external AM or FM antenna to the corresponding connection on the back of the receiver. When connecting an AM antenna, be sure the + and - (ground) connectors are attached to the correct posts on the receiver. (See diagram on page 7)

Slide the INTERNAL / EXTERNAL ANT. SWITCH to EXT and position the antenna, extending it to full size for best reception. If you are not using external antennas for both AM and FM, be sure to move the INTERNAL / EXTERNAL ANT. SWITCH to the proper position when you change bands. (See diagram on page 7)

About Signal Coverage Area and Interference

Useful Coverage Area

How far away can you be and still receive an HD digital radio signal? That depends on the local terrain, other radio stations in your area, and man-made interference. All of these things can affect how well you receive a given station. Plus, a radio signal travels for distances well beyond the area where it sounds acceptable. Each radio station has a local, distant and fringe coverage area defined by the Federal Communications Commission (FCC).

Local coverage is the area where the radio signal is strong and almost any radio should get good reception.

Distant coverage often requires a radio with a good antenna; smaller portable radios may not receive the signal.

Fringe coverage is the area where reception is possible only with a good external antenna, if at all.

An HD capable radio should get reliable digital signals in the local coverage area and may get digital signals in distant coverage areas, depending on the environment. Radios in fringe areas usually don't receive digital signals because, unlike a traditional analog signal that fades out as you travel away from it, digital will simply disappear when the signal isn't strong enough.

Improving reception

Interference can cause radio reception to vary significantly from one location to another, even in the same room. The following suggestions may help improve your radio reception:

Consider using an external antenna. Passive antennas, rather than powered ones, may work better. Make sure the INTERNAL / EXTERNAL ANT. SWITCH on the back of the receiver is in the correct position for the antenna you are using. If you are using an external AM antenna, be sure the + and - GND (ground) are connected to the proper posts.

Move the radio near a window or place it on a higher surface like a shelf or desk. Do not place the radio or antenna on or near metal, like a filing cabinet, especially when listening to AM.

Avoid placing the radio or antenna near items that may generate electrical interference, such as fluorescent lighting, fish tanks, computers, refrigerators and other appliances. Also, try plugging the radio into a different outlet.

For more information on coverage areas and reception, visit www.radiosophy.com/help.

Frequently Asked Questions (FAQ)

Visit www.radiosophy.com/help for an up-to-date list of frequently asked questions and downloadable files.

Q. How do I know if I'm receiving an HD digital radio signal?

A. If you are tuned to a radio station broadcasting an HD signal, the HD Radio logo on the front of the receiver will be lit. The LCD display will also include a circle next to the station frequency. If there are multiple streams (subchannels), the circle will have a number inside it corresponding to the stream. It will take a few seconds for the receiver to lock on to the digital signal.

Q. Why doesn't the HD Radio signal come up right away?

A. It takes a few seconds for the receiver to find and convert the HD digital signal, which is normal. During this time you will hear an analog signal if it's available. Once the digital signal is converted, the receiver will "blend" the two signals as it switches to digital.

Q. Why can't I receive an HD signal on an AM station at night?

A. The Federal Communications Commission (FCC), which regulates US radio transmissions, prohibits AM radio stations from transmitting in HD digital after sunset. This is due to the greater distances that AM signals can travel at night. At night, a strong HD signal from one location could interfere with distant stations that are on a similar frequency. Some AM stations are required to reduce the power of their analog signal at night for the same reason.

Q. Why is the information stream scrolling across the LCD display wrong or incomplete?

A. The text is made available by each radio station. Contact your local station with any questions regarding the content of their text stream.

Q. Can I plug a USB memory stick into the receiver?

A. No, the USB connection is only used for updates to the firmware in your receiver. Register online at www.radiosophy.com/register to be notified when firmware updates become available.

Q. Why is there no sound (or the sound cuts out) from the base speakers?

A. First, check the volume. Make sure there are no headphones plugged into the receiver. Using the HEADPHONE connection prevents sound from playing through the base speakers. If you still have no sound, the receiver may not be sitting flush or making a good contact with the base connection. Check to make sure all cables are running through the base speaker opening and into the back of the receiver. Be sure to place the base unit on a level surface. It may be necessary to clean the contacts on the speaker base and receiver. Use a small dry pencil eraser to remove any dirt from the metal contacts. Remove any dirt or obstructions before replacing the receiver in the speaker base.

Q. I have connected an external antenna. Why hasn't the reception improved?

A. Check to be sure that the INTERNAL / EXTERNAL ANT. SWITCH on the back of the receiver is set to Ext. When using an AM antenna, be sure the + and - GND(ground) are connected to the proper posts. Next, try readjusting the antenna by a quarter turn to see if the reception improves. When using an FM dipole antenna, be sure both "arms" are fully extended to form a T. Try adjusting the antenna a quarter turn to see if the reception improves. If reception still hasn't improved, you may have a source of interference nearby. For more information on improving reception, see Improving Reception on the previous page, or visit our online support center at www.radiosophy.com/help.

Receiving Cable TV Radio Signals

Some cable companies provide an FM radio signal. (Contact your cable provider for assistance.)

To connect your radio to a cable FM signal, you **must** use an FM signal splitter. Connect their coaxial cable to the 75 OHM FM antenna connector on the back of the MultiStream HD. This connection is easier if you obtain a *screw-on-to-push-on* RF adapter (available at electronic stores). Move the INTERNAL/EXTERNAL ANT. SWITCH to the external position.



IMPORTANT SAFETY INSTRUCTIONS

Regulatory Notices

Complies with FCC Part 15 , class A digital device. UL listed for US

RF Interference Advisory

If this product is placed too close to a high level source of RF energy, RF interference may be experienced which can cause some audio disturbance. If this happens, move the product as far away as possible from the source until the disturbance is eliminated. Using an audio input cable with good shielding is also helpful in reducing or eliminating interference.

	<div style="border: 1px solid black; padding: 5px; text-align: center;"> CAUTION <small>RISK OF ELECTRIC SHOCK DO NOT OPEN</small> </div>	
<p>The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.</p>	<p>CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER- SERVICE-ABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	<p>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.</p>

Read Instructions - All safety and operating instructions should be read before the appliance is operated.

Retain instructions- The operating instructions should be retained for future references

Heed Warning - All warnings on the appliance and in the operating instructions should be followed.

Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

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. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

Cleaning - The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with or use furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

Damage Requiring Service - The appliance should be serviced by qualified service personnel when:

- The power-supply cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the appliance.
- The appliance has been exposed to rain.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped or the enclosure damaged.

Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

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

Location - The appliance should be installed in a stable location.

Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be placed in a built-in installation, such as a closed bookcase or cabinet that may impede the flow of air through the ventilation openings.

Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

Non-Use Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

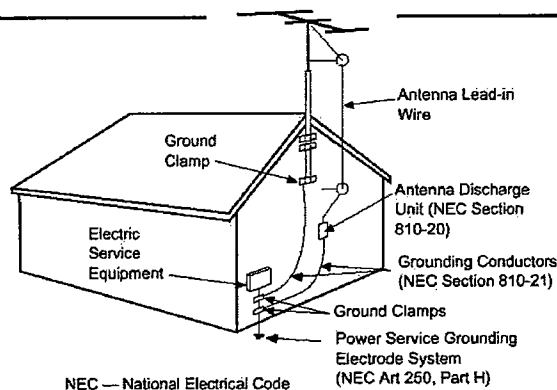
Servicing - The user should not attempt to service the appliance. Servicing should be referred to qualified service personnel or returned to the dealer.

Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

Communications Notice

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart B of Part 15 of FCC Rules, which are designated to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 the receiving antenna
- Relocate the receiver with respect to the TV
- Move the receiver away from the TV
- Plug the radio into a different outlet so that the TV and radio are on different branch circuits.



NEC — National Electrical Code

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio/TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

FCC Warning

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC Rules.

Outdoor Antenna Grounding

If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to 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. See figure on right.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio/TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

FCC Warning

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Radiosophy Limited Warranty

HARDWARE

Radiosophy™, LLC ("Radiosophy" or "the company") warrants to the original purchaser of a new product that is not sold "as is" ("Customer") that this product will be free from defects in workmanship and materials, under normal use, for a period of one (1) year which starts at the original purchase date.

EXCLUSIONS

This limited warranty **ONLY COVERS** failures due to defects in materials and workmanship, and **DOES NOT COVER** normal wear and tear or cosmetic damage. The limited warranty **ALSO DOES NOT COVER** damages which occurred in shipment, or failures which are caused by products not supplied by the Company, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, introduction of sand, humidity or liquids, commercial use such as hotel, office, restaurant, or other business or rental use of the product or service by anyone other than a Company Authorized Servicer, or damage that is attributable to acts of God. **THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED HEREIN.**

Any third party products, including software, included with Radiosophy products are not covered by this Radiosophy limited warranty and Radiosophy makes no representations or warranties on behalf of such third parties. Any warranty on such products is from the supplier or licensor of the product.

This limited warranty is void if the factory serial number/bar code label(s) have been removed or defaced.

EXCLUSIVE REMEDIES

Should a covered defect occur during the limited warranty period and you notify Radiosophy, your sole and exclusive remedy shall be, at Radiosophy's sole option and expense, to repair or replace the product. If Radiosophy cannot reasonably repair nor replace then Radiosophy may, in its sole discretion, refund the purchase price paid for the product. Replacement products or parts may be new or reconditioned or comparable versions of the defective item. Radiosophy warrants any replaced or repaired product, part, or software for a period of ninety (90) days from shipment, or through the end of the original warranty, whichever is longer.

OBTAINING WARRANTY SERVICE

Customer must contact Radiosophy Technical Support or Customer Service within the applicable warranty period to obtain warranty service authorization. Dated proof of original purchase will be required. Products or parts shipped by customer to Radiosophy must be sent postage-paid and packaged appropriately for safe shipment. Radiosophy is not responsible for Customer products received without a warranty service authorization and may be rejected. Repaired or replacement products will be shipped to Customer at Radiosophy's expense. All products or parts that are replaced become the property of Radiosophy.

WARRANTIES EXCLUSIVE

THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED BY RADIO SOPHY AND ITS SUPPLIERS. ALL THE EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

LIMITATION OF LIABILITY

NEITHER RADIO SOPHY NOR ITS SUPPLIERS SHALL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE OR USE OF THIS PRODUCT, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE) OR ANY OTHER THEORY, EVEN IF RADIO SOPHY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE AND, IN NO EVENT, SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE CUSTOMER FOR THE PRODUCT.

DISCLAIMER

Some states do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damage so the above limitations or exclusions may not apply to you. When implied warranties may not be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE THE RESPONSIBILITY OF CUSTOMER.

Contacting Us

Sales and Customer Service

Sales Department

Hours: Monday - Friday, 8am - 5pm Central
Phone: 877-443-7234 or 605-217-4100
Fax: 605-217-4120
Email: www.radiosophy.com/contact
Web: www.radiosophy.com/store

Customer Service

Hours: Monday - Friday, 8am - 5pm Central
Phone: 605-217-4115
Email: www.radiosophy.com/contact
Web: www.radiosophy.com/help

Change of Address

To change or update your mailing or email address online, visit:
www.radiosophy.com/addresschange
or send a letter including your old and new address to:

Radiosophy
Attn: Customer Service
PO Box 709
North Sioux City SD 57049-0709

Product Registration

Please take a few minutes to register your product online at:
www.radiosophy.com/register
or return the product registration card included with your purchase.

Technical Support

Phone Support

Hours: Monday - Friday, 8am - 5pm Central
Phone: 605-217-4115
Please have your serial number or customer ID ready when you call.

Online Support

Visit www.radiosophy.com/help to search our Information Library of frequently asked questions or to download manuals and software updates.

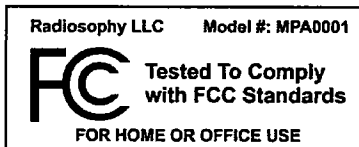
For one-on-one help with a specific question click on Ask a Question. Please include your product serial number or customer ID in your message. Questions are answered during regular business hours.

Product Feedback

We welcome your feedback on our products and documentation. Please submit your comments using our online feedback form at:
www.radiosophy.com/feedback.

Specifications

Overall Dimensions	WxDxH 15 3/4" x 7 1/4" x 8" (400 x 185 x 201mm)
Receiver Dimensions	WxDxH 6 1/8" x 3" x 4" (156 x 77 x 102mm)
Weight	Total with power supply 5.5 lbs. (2.5kg) Receiver only 1.5 lbs. (.69kg)
Multicasting Capability	Receives multiple streams on a single channel
Bands	Receives standard AM/FM and digital AM/FM (HD Radio™) Excellent FM sensitivity to pull in distant stations Excellent AM sensitivity to pull in distant stations
Channel Presets	9 Presets (HomeStation™ Preset) w/subchannel cycling
Speakers	Stereo Speakers (built-in 8 watt RMS per channel) Excellent freq. response 150 Hz to 20 kHz +/- 3dB Speaker impedance (4 ohms)
Outputs	Stereo Headphone Mini Jack Optical Out (Toslink Digital Audio) AUX Line Out (Stereo RCA Out)
LCD Graphic Display	(128 x 64 pixels) Backlight display Fully interactive display
Digital Clock	Full Functionality 3v internal button battery backup Alarm with radio, buzzer and radio + buzzer
Service Port	Standard USB type B upgrade port
Antennas	Internal AM/FM antenna, and external connections
Controls	Adjustments for bass, treble and brightness
Power Supply	12VDC @ 3A or any external 12V source



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