SATellite DIGITAL AUDIO
CONTROL AND
RECEIVER SYSTEM

SIRIUS® SATELLITE RECEIVER
SYSTEM  MODEL SRSIR-001
and
MODEL SRSIR-001FM

OWNER'S MANUAL

128-6374
1 of 12

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How To Subscribe to SIRIUS® Radio

Listeners can subscribe by visiting SIRIUS® on the Web at www.sirius.com, or you may contact SIRIUS® Customer Care 24 hours a day, 7 days a week, by calling (888) 539-7474, by e-mail at: customercare@sirius-radio.com or by writing to:

Sirius Satellite Radio
1221 Avenue of the Americas
New York, NY 10020

Attention: Customer Care

Customers should have their Radio ID ready; for details, see DISPLAYING THE IDENTIFICATION (ID) CODE.

Introduction

SIRIUS® Satellite Radio is a new and exciting audio experience on your radio dial; it provides you with digital audio programming at the touch of a button. By using two geostationary satellites, SIRIUS® Radio provides digital quality sound, with a choice of 100 channels of diverse programming, including music, news, history, sports, and talk.

To make this system available to the motoring public, Audiovox has engineered a state-of-the-art SIRIUS® Satellite Radio System, consisting of a Satellite Antenna (purchased separately), a Satellite Radio Receiver Unit (RRU), a Satellite Radio FM Switching Box, a Satellite System Control Unit (SCU) and an optional wireless remote control. By using the FM section of any car stereo system, the RF signal information is demodulated and produces the audio output to your existing stereo system speakers. Since SIRIUS® Satellite Radio will operate through the FM stereo system, adjustment of the audio functions (volume, tone, balance, etc.) is made by using the controls on the car radio, while selection of the desired audio channel is made using the Satellite System Control Unit (SCU).

How the System Operates

Control of system functions is achieved by the wired SCU, which can be conveniently mounted to the dashboard in a number of configurations. In addition, an optional wireless remote (Audiovox P/N SAT-RC) to control SCU functions is also available. The SIRIUS® Satellite Radio signals are received by the antenna and are routed to the RRU, whose RF output is supplied to the FM Switching Box.
The SCU provides for complete control of the system by means of its Liquid Crystal Display (LCD) and associated function buttons.

1. **Liquid Crystal Display (LCD):** Presents a display of various broadcast, song title, performer(s), advisory/error messages, etc.

2. **Down Directional (↓) Button:** When momentarily pressed and released, the channel number will decrease with each press; when pressed and held, the channel number will decrease continuously. Release the button when the desired channel number is displayed. When used in conjunction with the Shift (SFT) button, the MUTE function is enabled. (See Mute Function Button section below)

3. **Keypad Buttons 0-9:** These buttons are used to directly enter a desired channel number. Momentarily press the Shift (SFT) button followed by the desired channel number then the Shift (SFT) Button. They are also used when entering and recalling preset channel numbers into memory.

4. **Up Directional (↑) Button:** When momentarily pressed and released, the channel number will increase with each press; when pressed and held, the channel number will increase continuously. Release the button when the desired channel number is displayed. When used in conjunction with the Shift (SFT) button, the SCAN function is enabled. (Refer Mute Function Button section)

5. **Shift (SFT) Button:** When momentarily pressed, this button provides access to additional functions, such as audio MUTE, Channel SCAN, Direct Channel Access, Category Select, Parental Lock-Out etc.

The FM Switching Box, in turn, is capable of transmitting on seven (7) FM frequencies; namely, 88.1MHz, 88.3MHz, 88.5MHz, 88.7MHz, 88.9MHz, 89.1MHz and 89.3MHz. The frequency is selected using the FM band of the existing vehicle radio. (The default FM frequency is 88.5MHz.) Select the FM frequency having the least noise or static, and then use the SCU to choose the SIRIUS® channel for your listening pleasure.
SATELLITE RADIO RECEIVER (RRU)
The RRU is a central data-receiving unit, which is required to process the satellite signals received by the externally mounted antenna (purchased separately). The RRU contains the processing logic needed to recognize, decode the incoming SIRIUS® program information and then distribute a recognizable RF signal to the FM Switching Box.

NOTE: The SIRIUS® signal can be received and processed virtually anywhere as long as there are no obvious Satellite Signal Obstructions such as some parking garages, tunnels, tall structures and mountains as illustrated in Figure A Possible Satellite Signal Obstructions.

The RRU is typically installed under the seat or in the trunk/rear of the vehicle.

SATELLITE RADIO RF MODULATOR
The RF Modulator receives the satellite RF signals from the RRU and provides the necessary FM pass-band logic to recognize and pass these signals on to your existing vehicle’s FM stereo system. So, when your radio is tuned to one of the FM frequencies between 88.1MHz and 89.3MHz, you can enjoy SIRIUS® programming. The FM Switching Box is typically mounted behind or under the dashboard.

When pressed and held, this button allows you to switch between pre-set channel groups 1 and 2.

7. Power On/Off ( ) Button: Press this button to apply power to the Satellite Radio Receiver system. The associated radio must be turned on and off separately using its power switch. This button is also used to back light the number keys when the system is on. To do so, momentarily pressed and release the Power On/Off Button. The back lighting will last for 10 seconds.

8. Mute Function Button: Momentarily press the shift (SFT) button; then press and hold the down directional ( ) button to enable the audio mute function. When enabled, the audio program is muted and the Mute icon ( ) appears in the lower right corner of the SCU display. Press any button to exit the mute function.

9. Scan Functions:
   Scanning All Channels – [enter code (SFT)+0+9+6+0+(SFT)] Momentarily press the Shift (SFT) button; then press and hold either directional button ( ) for 2 seconds to enable the Channel Scan function. When enabled, each channel is scanned in the either direction for 10 seconds before moving on to the next active channel. This permits channel preview or introductory sampling of channel programming. The channel (CH) icon on the SCU screen will appear in reverse image (white-on-black) format. Press any button to exit the Scan function.
   Scanning Preset Channels - [enter code (SFT)+0+9+6+1+(SFT)] This function works in the same way as the Scanning All Channels mode, except this mode will only scan the preset channels. You can configure up to 20 preset channels (two groups of 10 channels, upper and lower). Preset channel being previewed are displayed in the lower right corner. A black number on white background indicates that it is part of the lower group of channels and a White number on a Black background indicates that it is part of the upper group. When scanning these channels an indicator will appear in the right corner of the screen.
   · (SR1) = Lower Preset Channel Group (first 10 channels)
   · (SR2) = Upper Preset Channel Group (next 10 channels)
To switch between the two groups of preset channels press and hold the Shift (SFT) button for 2 seconds until a tone is heard indicating the switch was made.

Figure 3. Possible Satellite Signal Obstructions
Functional Operation

Functional operation of the system is controlled by the buttons on the SCU; i.e., the sequence in which they are pressed and the length of time button activation occurs.

POWERING UP THE SYSTEM

After the system has been properly installed it can be powered on in the following manner:

1. Apply power to the vehicle’s radio.
2. Apply power to the Satellite System Control Unit SCU by momentarily pressing (2 seconds) the Power On/Off button ( ); the SIRIUS® logo will appear and then slowly fade out.
3. Tune the vehicle’s radio to a selected FM frequency between 88.1MHz and 89.3MHz. If you are not sure which frequency to select, use the radio’s SEEK, SCAN or TUNE function to scroll through the frequencies until the satellite signal is played through the speakers.
   NOTE: The default FM frequency is 88.5MHz.
4. Enter this frequency into memory using one of the preset buttons on the vehicle’s radio; make note of the FM band and preset number.

SELECTING A SATELLITE CHANNEL

Selecting a satellite channel can be accomplished in four ways;

1. Scrolling channel-by-channel
2. Selecting a group or category of channels
3. Scrolling and Selecting a Preset channel
4. Direct channel access.

The following subsections describe the procedure for each of the options.

NOTE: If the SIRIUS® signal reception appears to be noisy or contains audible background static, try switch to another FM frequency. Refer to Direct FM Frequency Selection for details on how to select another FM frequency.

5. After the correct frequency is identified and entered into the radio’s memory, the SCU will display the preview channel (CH184) if the SIRIUS® service is being activated for the first time (see DISPLAYING THE IDENTIFICATION (ID) CODE). If the SIRIUS® service was previously activated, the SCU will return to the SIRIUS® channel used when the system was last turned off.

DISPLAYING THE IDENTIFICATION (ID) CODE

Once the system is installed you must first subscribe to the SIRIUS® Radio service to activate the system. The SIRIUS® Radio service uses an ID code to identify your radio. This code is needed to subscribe to SIRIUS® Radio, and if needed, is also used to report any problems should there be any in the future.

To display the radio ID code, proceed as follows:

1. To display the ID Code enter SFT+0+SFT
2. Make a note of your radio ID Number
3. Contact SIRIUS® Radio on the web, or by phone, to subscribe to the service.

Figure 4. The SIRIUS® Logo Appears-and-Satellite Program is Loaded

Figure 5. SIRIUS® ID Code
DIRECTLY ACCESSING A CHANNEL

This section describes the procedure used to directly access a specific channel, proceed as follows:

1. With the system powered up, momentarily press the Shift (SFT) button causing the first channel number in the current category to flash for 5 seconds.

2. While the number is flashing, use the number buttons on the keypad to enter the desired channel. The selected channel number will flash for 5 seconds and then remain steady.

NOTE: If the selected channel is not available, (→) will appear on the display and the system will remain tuned to the previous channel.

Confirmation Tone(s) Function

There are three basic functions of this feature; the Command Confirmation Tone, the Station Pre-Set Program Confirmation Tones and the In-Process or Busy Tone. The following is a description of each of these functions:

1. Command Confirmation Tone - This function utilizes a single High Tone signal that is heard each time a button is pressed to confirm that the command was executed. This tone is implemented each time the user presses the Power, Mute, Scan, Shift or Directional (WXWXWXWXWX) button(s) as well as for each of the numbered buttons.

2. Station Pre-Set Program Confirmation Tones - This function utilizes two High Tone signals that are heard each time the user programs a Pre-Set channel. When the user enters a channel into memory (Refer to Presetting A Desired Channel below) a High Tone will be heard as the selected number button is pressed and held. A second High Tone Signal is heard confirming that the Pre-Set command was executed. It is only after the second tone that the user can release the button (approximately two seconds).

3. In-Process or Busy Tone - This function utilizes a single Low Tone signal. This low tone signal is heard only when the user presses a button too quickly following the activation of another button. In short, pressing two different buttons or the same button too quickly will negate the desired function and a low tone signal will be heard. In this case wait several seconds and re-enter the desired command.

USING THE UP/DOWN BUTTONS

This section describes two ways the Up (WWW) and Down (XXXXX) directional buttons are used to select an SIRIUS® channel. Proceed as follows:

1. To advance one channel at a time in the chosen direction (Up or Down), momentarily press and release either directional button (WXWXWXWXWX) until a desired channel is reached.

2. To advance rapidly in the chosen direction (Up or Down), press and hold either directional button (WXWXWXWXWX). Release the directional button when a desired channel is reached.

NOTE: A low tone busy signal may be heard if the directional buttons are pressed too quickly indicating that the system has not yet completed the previous command to advance. See Confirmation Tone(s) Function.

NOTE: When an invalid (no broadcast) channel is encountered, the channel is automatically skipped.
PRESETTING DESIRED CHANNELS

This section describes how to preset up to 20 channels on your SCU (two groups of 10 channels, upper and lower) for rapid and easy access. Proceed as follows:

1. Select the desired channel you wish to save in memory by using the directional buttons ( WXWXWXWXWX ), direct access method, or category select tuning method.

2. With the desired channel displayed, press and hold any one of the numbered keypad buttons for until the confirmation tone (or second tone) is heard (Refer to Confirmation Tone(s)Function). Continue with this process until the first group of 10 preset channels is loaded (lower group).

3. To program the second group of 10 preset channels (upper group) press and Hold the Shift (SFT) button for 2 seconds until a tone is heard. By doing this you have entered the second bank (upper group) and the SCU is ready to accept an additional group of 10 channels into memory.

4. Select the desired channel you wish to save in memory by using the directional buttons ( WXWXWXWXWX ), direct access method, or category select tuning method.

5. With the desired channel displayed, press and hold any one of the numbered keypad buttons for until the confirmation tone (or second tone) is heard. Continue with this process until the second group of 10 preset channels is loaded (upper group).

Preset channels being previewed are displayed in the lower right corner. A black number on white background indicates that it is part of the lower group of channels and a White number on a Black background indicates that it is part of the upper group.

NOTE: If a directional button is Pressed and Held channels will begin to scroll in numerical sequence through all categories until the button is released. This navigation mode will continue to function in the same manner in the new category. The user must exit this mode before attempting to perform any other function. To exit this mode, enter Shift (SFT) 0980 Shift (SFT).

SELECTING CHANNEL CATEGORIES (only in Category Mode)

This section describes the procedure used to select a specific group or category of entertainment, proceed as follows:

1. With the system powered up, momentarily press the Shift (SFT) button causing the first channel number in the current category to flash for 5 seconds.

2. While the number is flashing, momentarily press and release either directional button ( WXWXWXWXWX ) a desired category is reached. The category will advance one at a time and will also flash for 5 seconds. If no further advance is made, the flashing will stop and the category will then remain steady.

3. To advance rapidly in the chosen direction (Up or Down) and while the channel number is flashing, momentarily press and release either directional button ( WXWXWXWXWX ) in a rapid manner. Release the directional button when a desired channel is reached.

NOTE: A low tone busy signal may be heard if the directional buttons are pressed too quickly indicating that the system has not yet completed the previous command to advance. Refer to Confirmation Tone(s) Function.

Each category or group is assigned a sequential block of channels. To navigate within a category, enter Shift (SFT) 0981 Shift (SFT). This mode will allow the user to switch between channels within a chosen category, the channel tuning will automatically wrap around from the last to the first channel in that category or vice-versa. When a new category is chosen, the radio will automatically select the first channel in that category.

NOTE: If a directional button is Pressed and Held channels will begin to scroll in numerical sequence through all categories until the button is released. This navigation mode will continue to function in the same manner in the new category. The user must exit this mode before attempting to perform any other function. To exit this mode, enter Shift (SFT) 0980 Shift (SFT).
SPECIAL FUNCTIONS USING THE SHIFT BUTTON

There are a number of user preference functions that can be adjusted simply by using the Shift (SFT) button with a specific number code. These functions are explained in the following paragraphs.

In general, a shift/code is entered in the following manner:

\[ SFT \ 0 \ 9 \ XX \ SFT \], where:

(SFT) represents Shift button activation and XX represents the specific function code. (The 4-digit code always starts with 09.)

4. Repeat the procedure in steps 2 and 3 to save nine other desirable channels for quick access.

DIRECT FM FREQUENCY SELECTION

The selection of a specific FM frequency can be directly accessed using the appropriate code; these codes are presented as follows:

<table>
<thead>
<tr>
<th>CODE</th>
<th>SELECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>88.1MHz</td>
</tr>
<tr>
<td>22</td>
<td>88.3MHz</td>
</tr>
<tr>
<td>23</td>
<td>88.5MHz</td>
</tr>
<tr>
<td>24</td>
<td>88.7MHz</td>
</tr>
<tr>
<td>25</td>
<td>88.9MHz</td>
</tr>
<tr>
<td>26</td>
<td>89.1MHz</td>
</tr>
<tr>
<td>27</td>
<td>89.3MHz</td>
</tr>
</tbody>
</table>

**Figure 11. Modulator Frequency Codes**

NOTE: The default frequency is 88.5MHz

SYSTEM DEFAULT SHIFT CODE

Defaults refer to the settings that are entered at the factory. When code 31 is entered, the system is reset to the following defaults:

1. All channel presets cancel and revert to channel 184.
2. The LCD backlighting reverts to Green.
3. Button confirmation tone is turned on.
4. All channels that were previously Locked Out or Skipped are reinstated.

LCD CONTRAST SHIFT CODE

To change the LCD contrast:

1. Enter code 35.
2. Use the Up and Down directional buttons to increase or decrease display contrast, respectively.
3. Press the SFT button to exit LCD contrast mode.
**CHANNEL SKIP SHIFT CODE**
If you wish to prevent acquisition of a particular channel during the channel selection process:

1. **Recover Skipped Channels—90:** Regain access to the channel by using the direct selection method to select the skipped channel; then enter code 90. *(SFT+090+SFT)* NOTE: This function can only be selected when directly accessing the channel(s) to be skipped.

2. **Skip Channel—91:** The channel will be skipped over during channel selection. *(SFT+091+SFT)*

3. **Current Channel Parental Lock Out—92:** Lock out the current channel so that it may only be accessed with a chosen password. *(SFT+092+SFT)* NOTE: This function can only be selected when directly accessing the channel(s) to be locked out.

4. **Parental Lock Out Security Code Change—93:** This code allows the user to change the Lock Out Security Code. *(SFT+093+SFT)*

5. **Release Parental Lock Out—94:** This code is used to Release the current Locked channel. *(SFT+094+SFT)*

6. **Initialize Security Code—98:** This code is used to set and use a security code (password) into memory. *(SFT+098+SFT)*

**DISPLAY MESSAGES**
When problems are encountered during SIRIUS® system operation, a message may appear on the display. The following table outlines the most common problems and provides a probable cause(s) for each and a suggested corrective action(s) to restore normal operation.

<table>
<thead>
<tr>
<th>MESSAGE</th>
<th>DEFINITION</th>
<th>ACTION NEEDED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACQUIRING INFO</strong></td>
<td>This message indicates that the system is acquiring program information. This message should be monitored.</td>
<td>Wait until the system has received all of the program information.</td>
</tr>
<tr>
<td><strong>ACQUIRING SIGNAL</strong></td>
<td>This message indicates the loss of or weak signal.</td>
<td>Check the Antenna connections. Change vehicle location.</td>
</tr>
<tr>
<td><strong>CHECK ANTENNA</strong></td>
<td>This message indicates that the antenna cable is disconnected.</td>
<td>Verify if the antenna cable is disconnected and if so, reconnect.</td>
</tr>
</tbody>
</table>
Specifications

GENERAL
Power Source: 12 Vdc, Negative Ground
Max. Current Consumption: 1.2 A
Dimensions:
- Satellite System Control Unit (SCU): 133mmL x 21.0 mm W x 47.5 mmH (5.24") x (0.83") x (1.87")
- Satellite Radio Receiver Unit (RRU): 170mmL x 114.9 mm W x 30.5mmH (6.7") x (4.5") x (1.03")

Weight:
- Satellite System Control Unit (SCU): 9.5 Oz (0.269Kg)
- Satellite Radio Receiver Unit (RRU): 23.0 Oz (0.652Kg)

RRU
Frequency Range: 2,322.293 - 2,330.207MHz
Usable Sensitivity:
- Satellite: -94.0 dBm
- Terrestrial: -90.0 dBm

AUDIO
Signal-to-Noise Ratio: 92 dB (IHF-A Network)
Separation: 75 dB

FM Switching Box (For SRSIR-001FM)
Usable Frequencies: 88.1MHz, 88.3MHz, 88.5MHz, 88.7MHz, 88.9MHz, 89.1MHz, 89.3MHz

Troubleshooting Considerations

The following table presents a few possible causes of system operating faults, their probable causes and the remedial action suggested to restore the system to normal operating conditions.

<table>
<thead>
<tr>
<th>FAULT</th>
<th>PROBABLE CAUSE</th>
<th>CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCU Does not Turn On</td>
<td>Blown fuse, power cable not</td>
<td>1. Check fuses. 2. Check power cable. 3. Check DIN cable connection between</td>
</tr>
<tr>
<td></td>
<td>connected correctly, and/or</td>
<td>SCU and RRU.</td>
</tr>
<tr>
<td></td>
<td>SCU not connected to RRU.</td>
<td></td>
</tr>
<tr>
<td>Check Antenna Display</td>
<td>The Satellite Antenna is not</td>
<td>Check satellite antenna connections to the RRU.</td>
</tr>
<tr>
<td>Message</td>
<td>connected.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The antenna itself or the antenna</td>
<td>Contact system installer or vendor.</td>
</tr>
<tr>
<td></td>
<td>cable is faulty.</td>
<td></td>
</tr>
<tr>
<td>Audio Static or Loss</td>
<td>Vehicle antenna cable not</td>
<td>Check antenna cable.</td>
</tr>
<tr>
<td>of Clarity</td>
<td>connected to Switch Box or vehicle radio.</td>
<td></td>
</tr>
<tr>
<td>No Received Signal on</td>
<td>Check for obstacles over or</td>
<td>Change your location to eliminate nearby obstacles (bridges, tunnels, etc.).</td>
</tr>
<tr>
<td>SCU Display</td>
<td>around antenna.</td>
<td></td>
</tr>
<tr>
<td>No Sound</td>
<td>1. Audio cables not connected.</td>
<td>1. Check audio cables at RRU and in dash radio.</td>
</tr>
<tr>
<td></td>
<td>2. Switch Box antenna connection.</td>
<td>2. Check RF antenna cable connections between Switch Box and vehicle radio antenna.</td>
</tr>
<tr>
<td></td>
<td>3. Radio not tuned to proper FM</td>
<td>3. Tune radio to proper frequency.</td>
</tr>
<tr>
<td></td>
<td>Modulator frequency.</td>
<td>4. Deactivate Mute mode at SCU.</td>
</tr>
<tr>
<td></td>
<td>4. Mute mode selected on SCU.</td>
<td></td>
</tr>
</tbody>
</table>
AUDIOVOX CORPORATION (the Company) warrants to the original retail purchaser of this product that should this product or any part thereof, under normal use and conditions, be proven defective in material or workmanship within 36 months from the date of original purchase, such defect(s) will be repaired or replaced with new or reconditioned product (at the Company's option) without charge for parts and repair labor.

To obtain repair or replacement within the terms of this Warranty, the product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), specification of defect(s), transportation prepaid, to an approved warranty station or the Company at the address shown below.

This Warranty does not extend to the elimination of externally generated static or noise, to correction of antenna problems, to costs incurred for installation, removal or reinstallation of the product, or to damage to tapes, compact discs, speakers, accessories, or vehicle electrical systems.

This Warranty does not apply to any product or part thereof which, in the opinion of the Company, has suffered or been damaged through alteration, improper installation, mishandling, misuse, neglect, accident, or by removal or defacement of the factory serial number/bar code label(s). 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 PURCHASER FOR THE PRODUCT.

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