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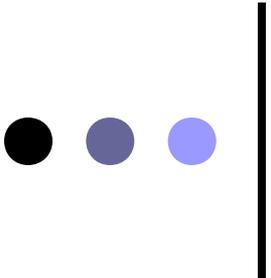
# SIRIUS Starmate 4

## Satellite Radio Receiver and Car Kit

**\$99.99 USD**

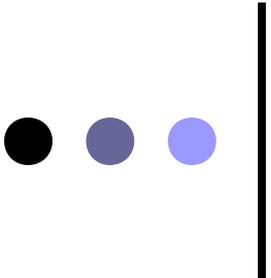


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Usability Specialist  
12/10/2007



# Overview

- How It Works
- Sirius Programming
- Starmate 4 Features
- Installation
- Alternative Satellite Radios
- Starmate 4 User Reviews
- Usability Tests
- Interface Design Issues
- Recommendations



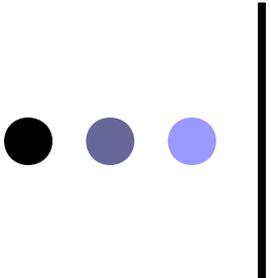
## How It Works

- The satellite signal is picked up by the antenna on the roof of the vehicle.
- The signal is sent to the Sirius radio by wire routed through the vehicle cabin.
- The Starmate 4 transmits the signal via a wireless or wired connection to the car radio.
- The car radio processes the signal and outputs through the car speakers.

# Sirius Programming

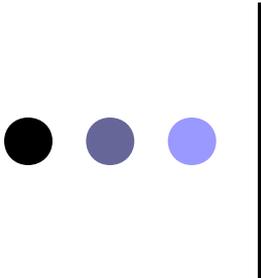
- Over 130 Channels of Programming
- Music is 100% Commercial Free
- NFL, NBA and NASCAR Channels
- Martha Stewart and Howard Stern





# Starmate 4 Features

- Blue wide-screen display for easy viewing and use
- Pause, rewind and replay up to 44 minutes of live radio
- FM transmitter or stereo audio output to connect to your vehicle's radio
- FM preset function to store the best FM frequencies
- 30 Presets for favorite channels



# Starmate 4 Features

(continued)

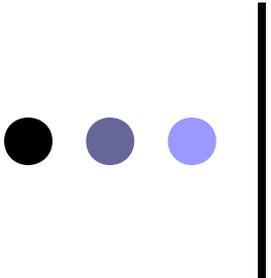
- Push-button navigation
- S-Seek Alert (notifies the user their favorite artists, songs and sports are playing on another channel)
- One-Touch Jump button jumps to a weather, traffic or a preset channel
- Game Alert tracks favorite team scores

# Starmate 4 Features

(continued)

- Track favorite sports teams and games
- Parental controls to lock and unlock channels
- Portable between the house and vehicle
  - Purchase of a “Home Kit” required





# Optional Car Kit

- The vehicle kit includes:
  - Sirius Radio
  - Dock with suction cup and vent mounts
  - Remote Control
  - Power Adapter
  - Magnetic Mount Satellite Antenna
  - FM Extender Antenna

# Vehicle Kit Contents



**Starmate ST4 Radio**



**Remote Control**



**Vehicle Docking Station**

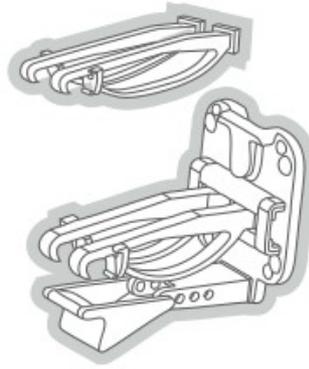


**Docking Station Adapter**

# Vehicle Kit Contents



**Suction Cup Mount**



**Vent Mount &  
Extended Vent Hooks**



**Cigarette Lighter  
Adapter**



**Magnetic Antenna**



**Antenna  
Cover/Tail**



**Mounting Screws**



**Alcohol Swab**

# Vehicle Kit Contents



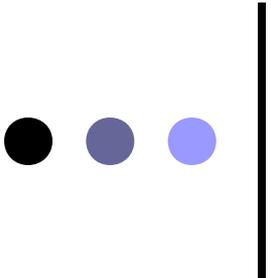
**FM Extender Antenna**



**Suction Cups (2)**



**Self Adhesive  
Cable Guides (3)**

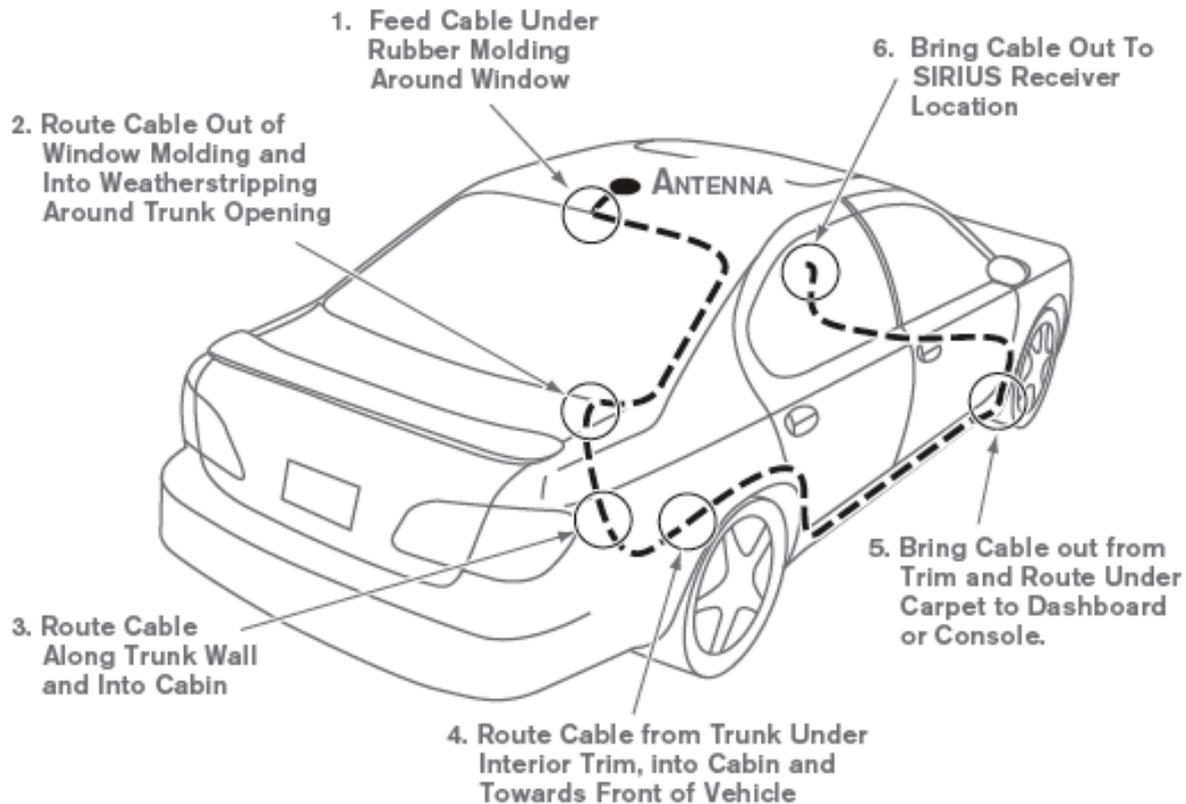


# Installation

- Insert the Starmate 4 power cable into the cigarette lighter or accessory jack.
- Set the car radio to a non-broadcasting FM radio station and set the same station on the Starmate 4.
  - Navigate channels until you hear static.
  - If connecting radios via direct connection this step is not necessary.
- Mount the antenna to the roof of the vehicle.

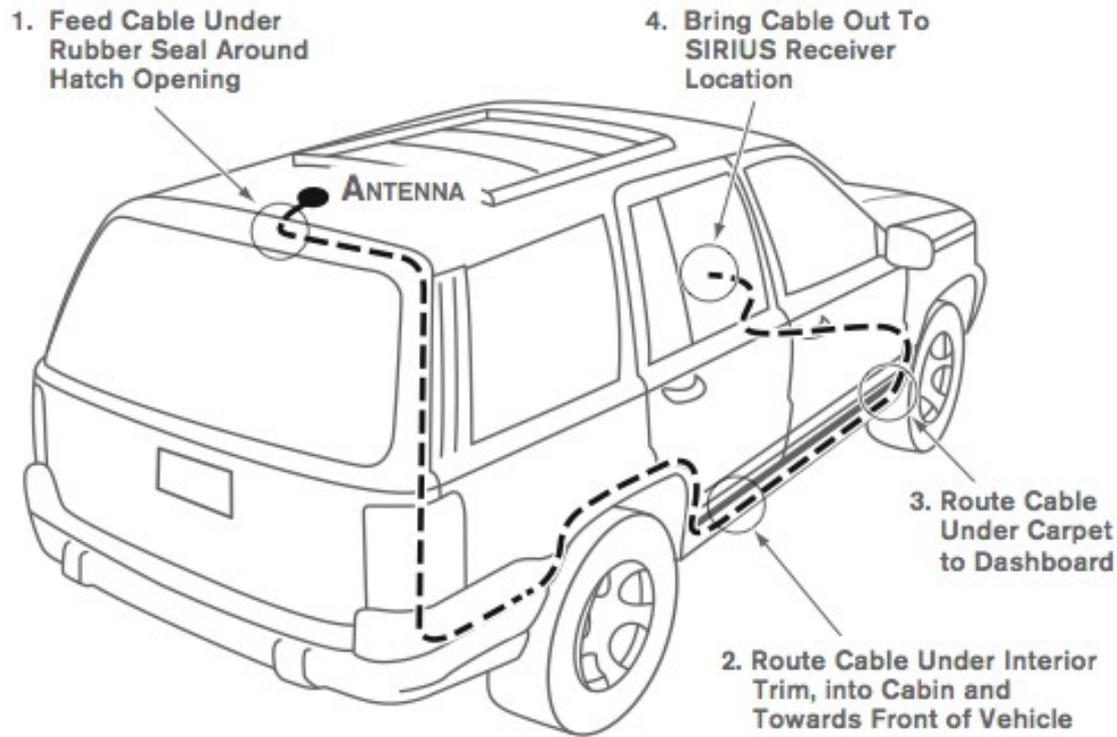
# Installation (continued)

## ○ Routing the antenna wire through a sedan



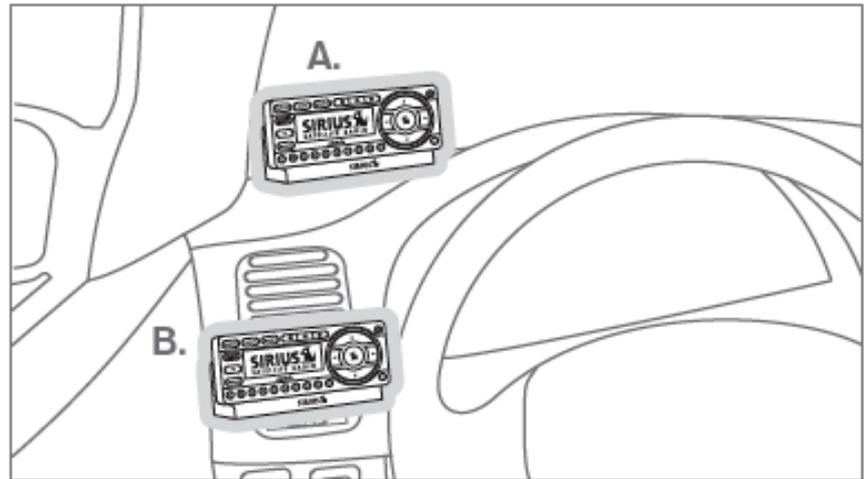
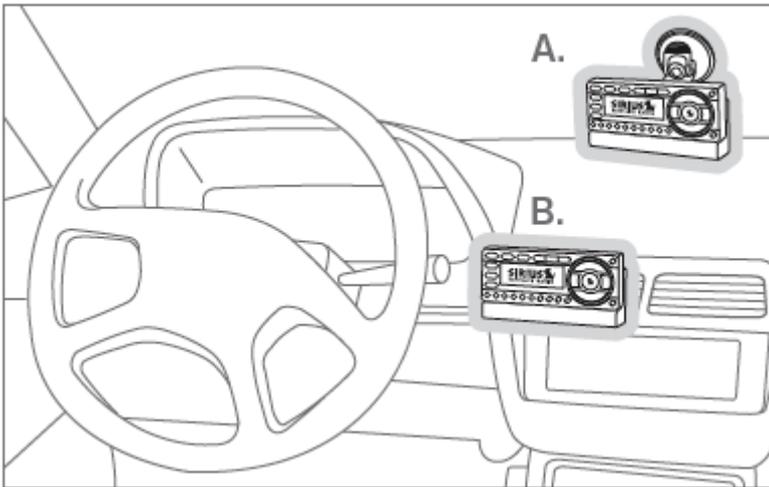
# Installation (continued)

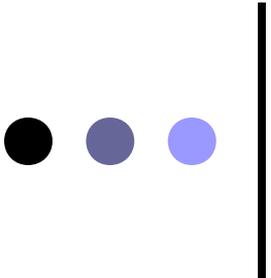
## ○ Routing the antenna wire through a SUV



# Installation (continued)

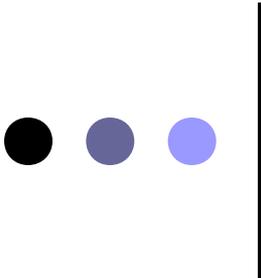
- Location of Starmate 4 within vehicle
  - Suction cup mount to window
  - Attach mount to air vent





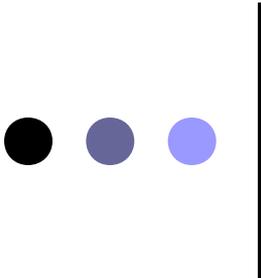
# Installation (continued)

- Connecting the Starmate 4
  - There are two primary ways to connect the Sirius radio to the car stereo:
    - **Wireless Connection**
      - Lower Quality Sound
    - **Direct Connection**
      - Higher Quality Sound



# Installation: Wireless Connection

- The Sirius radio has a built in FM Transmitter. The satellite signal is sent to the FM Transmitter and then to the vehicle's existing antenna.
- The car's antenna sends the signal to the car radio on the non-broadcasting FM frequency set by the user.
- When traveling changing the channel to one not broadcasting may be required.
- Antenna extenders and amplifiers are popular methods for boosting the FM transmitter signal.



# Installation: Direct Connection

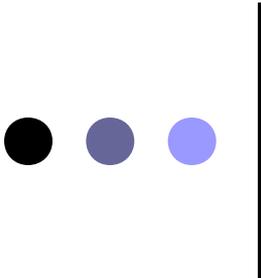
- An “Aux In” or “Line In” connection is required on the car stereo to directly connect the Sirius radio.
- If you have a satellite ready car stereo with a front aux port then direct connect is the preferred method.
- The signal is sent directly from the Starmate 4 to the car stereo via the audio cable, bypassing the FM transmitter.

# Installation: Direct Connection (continued)

- Sony Stereo with front “Aux” port

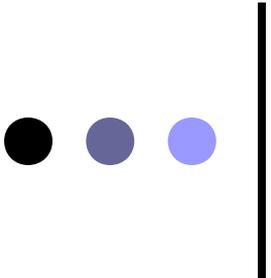


Aux Input Jack



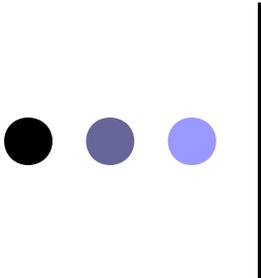
# Installation: Achieving Better Sound

- Install the FM Extender Antenna
  - The Extender Antenna brings the FM Transmitter signal closer to the car's antenna, hopefully improving transmission of signal.
  - Included in the car kit
- Purchase an FM Modulator
  - FM Modulator amplifies the strength of the FM Transmitter lessening interference.
  - Average cost is around \$20.00
- Purchase an Audio Cable
  - Direct connection = higher quality sound
  - Average audio cable costs \$5.00



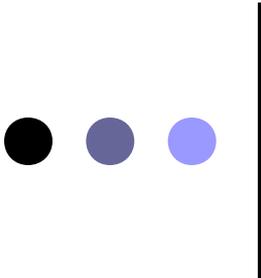
# Alternative Satellite Radios

- Sportster 4
- In-Dash Options
- Portable Satellite Radios



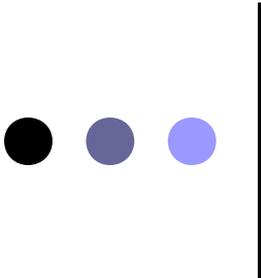
# Alternative Satellite Radios: Sportster 4

- Price-point \$149.99
- Slimmer sleek design
- Includes a dial to choose stations
- FM frequency list short cut button
- Improved MEMO with S-Seek, which stores and alerts by artist and song
- Most features are the same as the Starmate 4 model
- The \$50 dollar increase on the Sportster 4 pays for aesthetics



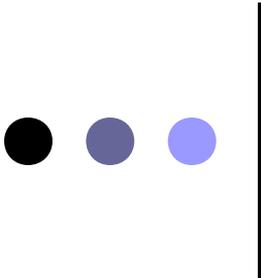
# Alternative Satellite Radios: In-Dash Options

- Price-point \$79.99 to \$299.99 depending on vehicle
- Additional costs:
  - Professional Installation price range \$170.00 to \$200.00 (including all additional parts for install)
  - Satellite ready or compatible car stereo price range \$150.00 to \$200.00
- No wires or separate Sirius Radio showing in the vehicle cabin
- Display features are subject to car stereo capabilities



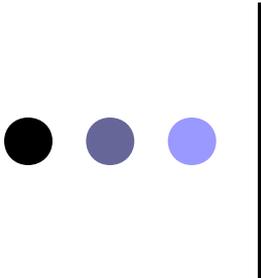
# Alternative Satellite Radios: Portable Radios

- Price-point \$99.99 to \$329.99
- Several models to choose from
- Features vary by model
- Some common features include:
  - Record programming
  - WiFi connectivity
  - Onboard memory
  - Bookmark songs
  - Pause, rewind and replay



# Starmate 4 User Reviews: Overall Ratings

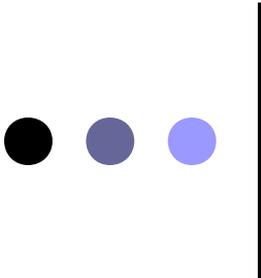
- **www.Amazon.com**
  - 3 1/2 out of 5 stars
  - 19 customer reviews
  - 9 users rated 5 stars
  - 3 users rated 4 stars
  - 2 users rated 3 stars
  - 3 users rated 2 stars
  - 2 users rated 1 stars



# Starmate 4 User Reviews: Overall Ratings

## ○ [www.CircuitCity.com](http://www.CircuitCity.com)

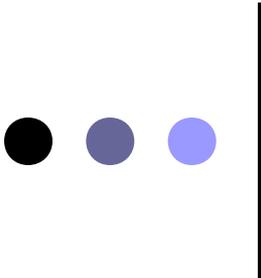
- Overall Rating 4.2 out of 5.0 stars
- 117 reviews
- Ease of Use 4.3
- Design 4.3
- Sound Quality 4.1
- Cost-Benefit 4.1



# Starmate 4 User Reviews: Overall Ratings

- **www.CNet.com**

- 6.0/10 rating
- Average User Rating “good”
- 7 user reviews
- Reviews all over the board
- First 3 Reviews:
  - 5/10 Average
  - 10/10 Perfect
  - 1/10 Abysmal



# Starmate 4 User Reviews: Overall Ratings

## ○ [www.PCWorld.com](http://www.PCWorld.com)

- 4 out of 5 stars
- Average User Rating “very good”
- 5 reviews

## ○ [www.BestBuy.com](http://www.BestBuy.com)

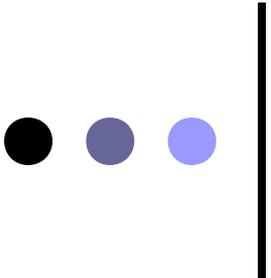
- 4.7 out of 5.0 stars
- 18 reviews
- 18 out of 18 would recommend to a friend

# What did the users say?

## ○ Best Features

- Blue Display easy to read
- Display offers lots of information

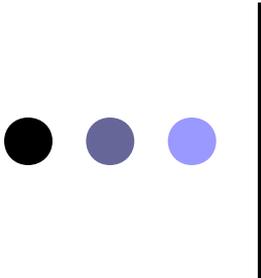




# What did the users say?

## ○ **Best Features** (continued)

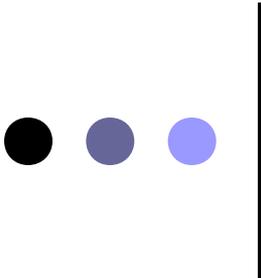
- Easy to install
- Pause and rewind feature
- Commercial free programming
  - “Hard to go back to regular radio!”
- Subscribers can listen online for free



# What did the users say?

## ○ Common Complaints

- **The FM Transmitter provides weak signal.**
- Why does the FCC regulate the strength of FM Transmitters?
  - FM Transmitter signal is set at approx. 3 feet to reduce interference with commercial broadcasting stations.
  - The FCC could provide a default frequency for FM Transmitter use but is unlikely due to loss of income.

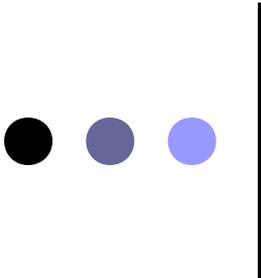


# What did the users say?

## ○ **Common Complaints** (continued)

### ● **Sirius Car “Kits”**

- Users complained they had to pay for extra accessories for a quality installation.
- They suggested actually including everything needed to acquire good sound.
- Additional items needed to successfully install the Sirius Starmate varies from user to user.

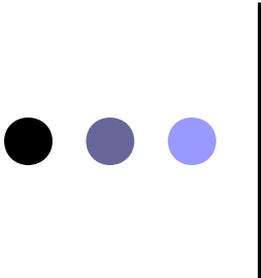


# What did the users say?

## ○ **Common Complaints** (continued)

### ● **Inadequate Radio Mounts**

- Users complained regarding the two mount choices: window suction cup or air vent mount.
  - Most users didn't like either choice.
- Some users wanted Velcro included in the vehicle kit to stick the radio to the dash.



# What did the users say?

## ○ **Common Complaints** (continued)

### ● **Absence of Radio Ports/Jacks**

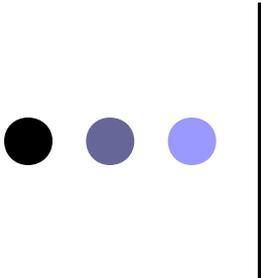
- Users wished to see aux ports or jacks on the front of the Sirius radio to allow connection of MP3 players.
- The dock included has an audio out jack, however, according to users not all docks sold include the jack.

# ● ● ● | What did the users say?

## ○ **Common Complaints** (continued)

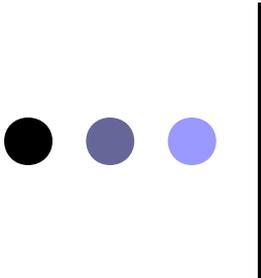
- **Style and size of the Starmate 4 and dock is too large.**

- Users compared the Starmate 4 to the Sportster, a smaller radio.
- The Sportster was considered to be sleeker in design.
- Docking station of Starmate 4 larger than expected.



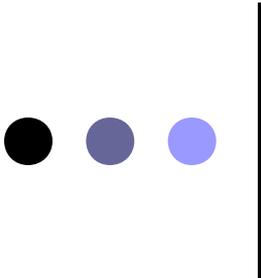
# Usability Tests: Setting the Clock

- The actual time is set via the satellite signal.
- Setting options for the clock include: format, time zones and Daylight Savings Time observations.
- The Select button is the middle button with the Sirius dog graphic.



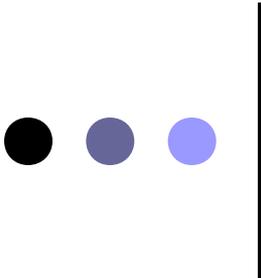
# Usability Tests: Setting the Clock

1. Press the Menu button
2. Press the down arrow button four times to highlight Time Based Feature
3. Press the Select button to select Time Based Feature
4. Press the Select button to select Clock
5. Press the Select button to select Format
6. Choose 12 hour or 24 hour with the arrow buttons
7. Press the Select button to select choice
8. Press the down arrow once to highlight Time Zone



# Usability Tests: Setting the Clock

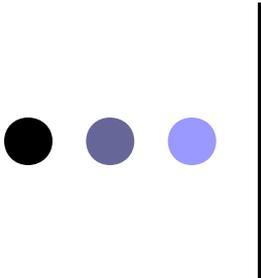
9. Press the Select button to select Time Zone
10. Press the down arrow to highlight correct Time Zone from list
11. Press the Select button to select Time Zone
12. Press the down arrow to highlight Daylight Savings Time
13. Press the Select button to select Daylight Savings Time
14. Choose DST Observed or DST Not Observed with the arrow buttons
15. Press the Select button to select choice
16. Press the Menu button three times to exit all menus



# **Usability Tests:**

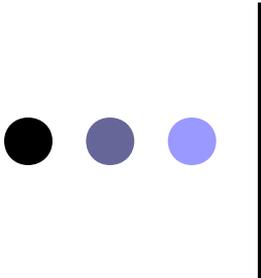
## **Setting an FM Preset Frequency**

- Five FM frequency presets can be programmed into the Starmate 4.
- Programming five presets aides in changing frequencies when experiencing interference.



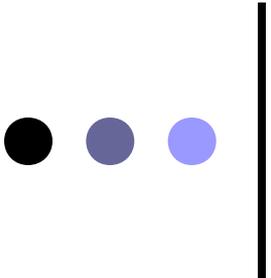
# Usability Tests: Setting an FM Preset Frequency

1. Press the Menu button
2. Press the down arrow button one time to highlight FM Transmitters
3. Press the Select button to select FM Transmitters
4. Press the Select button to select FM Presets
5. Choose the FM Preset to change or set new frequency



# Usability Tests: Setting an FM Preset Frequency

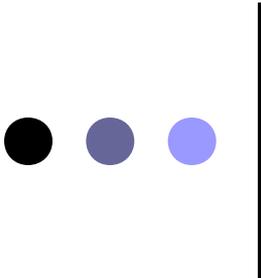
6. Use the up or down arrow buttons to move the frequency by 0.1
7. Use the right or left arrow buttons to move the frequency by 1.0
8. Set radio to desired FM frequency
9. Press the Select button to set frequency
10. Press the Menu button three times to exit all menus



# **Usability Tests:**

## **Changing Channels and Categories**

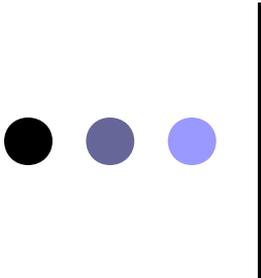
- General Navigation
- Programming Categories
- Alternate Paths
- Display Button
- Accessibility Features



# Usability Tests:

## Changing Channels and Categories

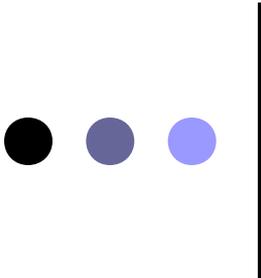
- General Channel and Category Navigation
  - Left and right arrow buttons navigate through categories.
  - Up and down arrow buttons navigate through channels within a category.
  - Press the Select button to select a channel from the list.



# Usability Tests: Changing Channels and Categories

- Programming Categories

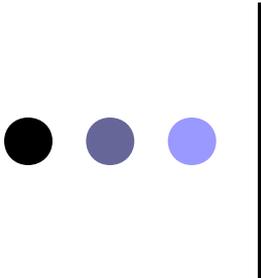
Howard Stern	News/Talk	Electronic/ Dance	Standards
Comedy	Religion	Hip-Hop	Classical
Entertainment	Traffic & Weather	R&B	Latin
Martha Stewart	College Basketball	Country	Pop/Rock
Family & Kids	Pop	Christian	
Sports	Rock	Jazz & Blues	



# Usability Tests:

## Changing Channels and Categories

- Alternate Paths
  - From any channel press the up and down arrow buttons to select the next channel in number sequence.
  - Press the Select button twice to enter channel by numbers on Sirius radio or by remote.



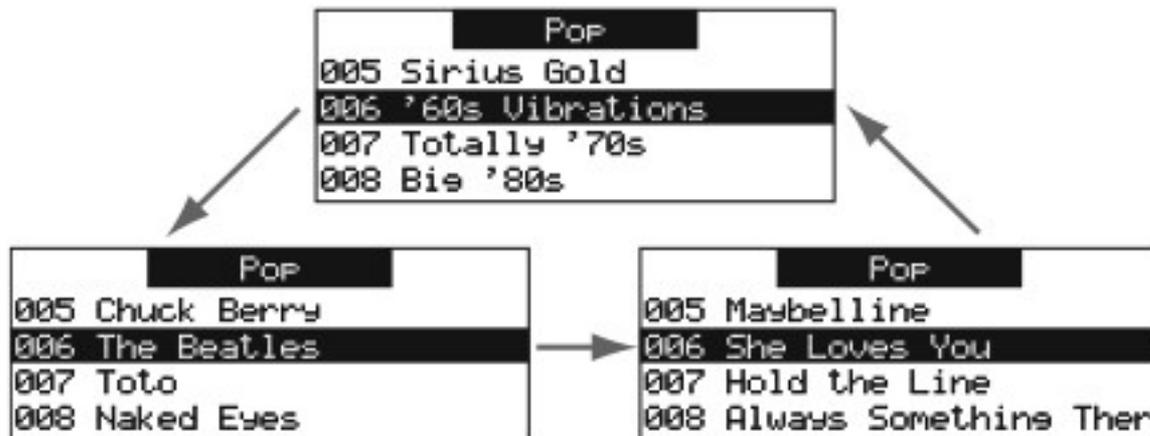
# Usability Tests: Changing Channels and Categories

## ○ Display Button

- The Display button when pressed several times in the categories menu cycles through details.
- For example:
  - press it once the display will show channel names
  - press it twice the display provides artist names
  - press it a third time and song titles are displayed

# Usability Tests: Changing Channels and Categories

- Display Button (continued)
  - This example shows the varied information the Display button cycles through.

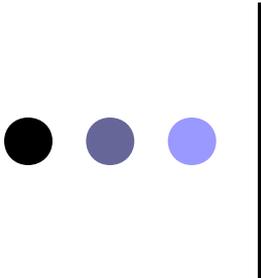


# Usability Tests: Changing Channels and Categories

## ○ Accessibility Features

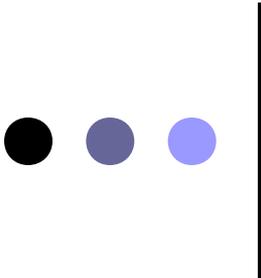
- Press the Display button to enlarge or reduce the text on screen.
- The number '5' key has a tactile key aiding navigation of the preset keys.





# Interface Design Issues

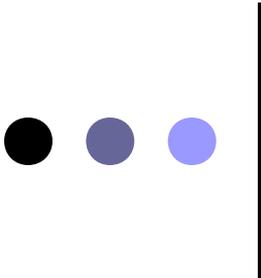
- **The blue display is very bright during night driving.**
  - An option is available within the Settings Menu to dim brightness and contrast but to adjust while driving would be difficult.
- **The Starmate 4 is difficult to remove from the dock.**
  - Removing the Sirius radio from the dock often requires force that moves the vent mount.



# Interface Design Issues

(continued)

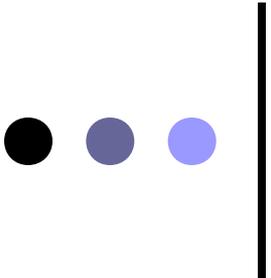
- **The vent mount is poorly designed and doesn't stay in place.**
  - The clip that attaches the mount to the air vent is not a spring loaded clip and depending on the vehicle may not function well.
- **The antenna cable is difficult to remove from the back of the dock.**
  - The force required to remove the cable could accidentally break the unit.



# Interface Design Issues

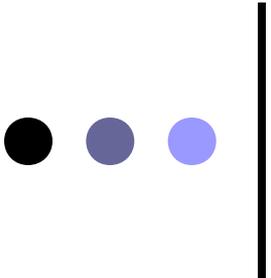
(continued)

- **If the antenna doesn't have a clear path to the satellite it loses signal.**
  - Garages, banks and heavy foliage sometimes interferes with the satellite signal.
  - Most Sirius radios try to fix this issue by supplying programming from the memory buffer but this feature doesn't seem to consistently function properly.



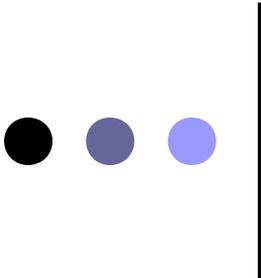
# Recommendations

- **Indicate on the display button functions improving ease of use.**
  - The display is large enough to include detail and visual indicators as to how each button functions for the particular task.
- **Provide an eject button to assist radio removal from the docking station.**
  - Aiding users in easy removal assists in portability of the device.



## **Recommendations** (continued)

- **Alter the antenna cable end for easier removal and improved grip.**
  - Accidentally breaking the device is avoided when cables are able to be easily removed.
- **Add dial to adjust the intensity of the digital display's light.**
  - A dial would aid in quickly adjusting the brightness of light for night-time driving.



## **Recommendations** (continued)

- **Improve the vent mount clip for sturdier installation.**
  - Creating a clip that better holds to the air vent would avoid movement of the Starmate 4 during operation.
- **Auto shut down when car is turned off.**
  - Providing an option to auto shut off when vehicle is turned off would provide convenience to the user.