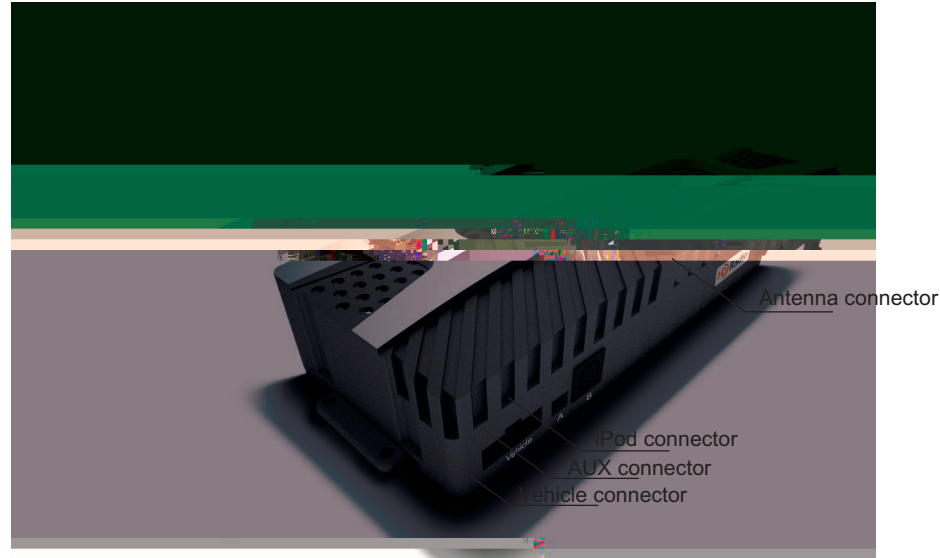


## HD DICE for BMW



### What does HD Radio technology have to offer ?

Your favorite local station remains in the same place on the radio dial, but provides dramatically higher audio quality through digital reception of AM and FM stations.

More content, more program choices via HD2 multicast channels.

Program text information may include titles, artists, album info and even weather and traffic alerts as chosen by the broadcaster.

HD Radio listening is subscription free!

### What is Multicasting?

HD Radio technology enables an FM broadcaster to offer more than one program stream on its existing spectrum. Simultaneously, one station can offer several audio channels as well as program associated text information. Stations may run one channel of music and one of news, or even two different music program. Be prepared to experience new music and news formats, showcase by young artists and local bands, or even foreign language programs.

### Stations in your area

Please see a list of your local HD Radio stations please review the included station list booklet. For the most up to date listing please visit <http://www.hddice.com>.

Remember that more and more stations are switching on HD Radio programming, so expect to hear more!

HD Radio is a trademark of, and the HD Radio logo is a registered trademark of, iBiquity Digital Corp. U. S. and Foreign patents.

### HD DICE Technology overview

HD Radio technology is a new broadcast standard requiring compatible digital radio tuners. The HD DICE enables HD Radio reception by connecting to the external device connection port of your vehicle's radio or entertainment bus.

Accessing the HD DICE interface is simple, all you need to do is to select CDC mode by pressing the source selector button on the radio. The HD DICE functions as a factory integrated device. Specifically, the button presses of the radio and steering wheel are interpreted by HD DICE, which in turn sends station information back to the factory radio display.

If your radio is equipped with a single or multi CD in-dash player, you'll be able to use it even after the HD DICE module is connected, however if your vehicle is equipped with an external CD changer (located in the glove box or trunk), it will have to be permanently disconnected.

Since your radio does not have a built-in support for HD Radio reception, the HD DICE interface must use the radio's limited buttons and functions to control the HD Radio module. The HD DICE user interface can be learnt quickly, as its functionality is similar to the regular radio tuner.

### Warning!

- Please always keep your eyes on the road and obey all traffic signs while driving.
- Do not operate the HD DICE module until you become fully familiar with all its features.
- Do not let the operation of the HD DICE receiver distract you from driving.
- If ever in doubt, please ask your passenger to operate the device or wait until the vehicle is stationary.



HDL 2203-1.0

### HD DICE audio source option list

The HD DICE is not only an HD Radio receiver, but a complete mobile entertainment solution. The following is a list of entertainment options supported by the HD DICE interface:

- iPod interface (optional iPod cable is required!)
- AUX input (optional 1/8" AUX cable is required!)
- FM HD Radio reception
- AM HD Radio reception

#### Features for iPod:

Change tracks / albums / playlists using the controls of the radio, or the steering wheel and the iPod. Charges the iPod while connected. Displays music tag (text) information on the vehicle's entertainment system.

#### Features for AUX:

Connects any external device such as an Mp3 player, PlayStation, DVD player, etc. by simply using a 1/8" AUX cord. Audio setting optimization.

#### Features for HD FM Radio:

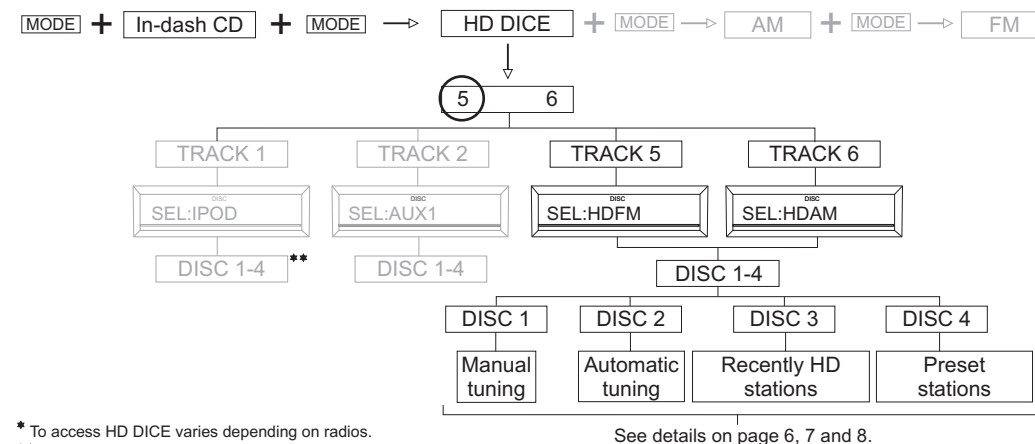
Listen to regular FM radio stations, tune them manually, seek stations or select them from memory presets. If HD station is detected the unit will automatically switch to HD Digital. Radio text information (PAD data) and FM radio text (RBDS) displayed on the screen. Multicast compatibility allows switching to HD2. Acquire HD channels in approximately 4-6 seconds.

#### Features for HD AM Radio:

Listen to regular AM radio stations, tune them manually, seek stations or select them from memory presets. If HD station is detected the unit will automatically switch to HD Digital. Radio text information (PAD data) is displayed on the screen while in HD mode.

### General operation

Press the MODE button to access the HD DICE interface and its features. On some radios this button may be labeled as CD. Pressing this button repeatedly will cycle through sources\*. When HD DICE is active, use DISC5 to select audio sources.



\* To access HD DICE varies depending on radios.  
\*\* Refer to iPod integration user's manual if iPod integration cable is purchased.

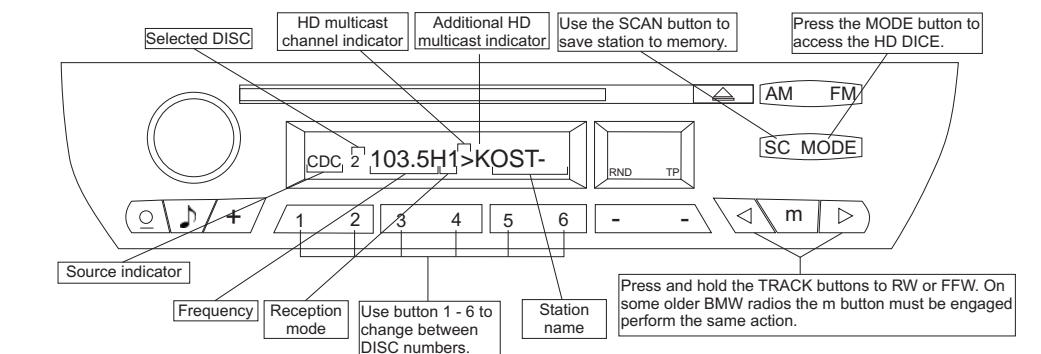
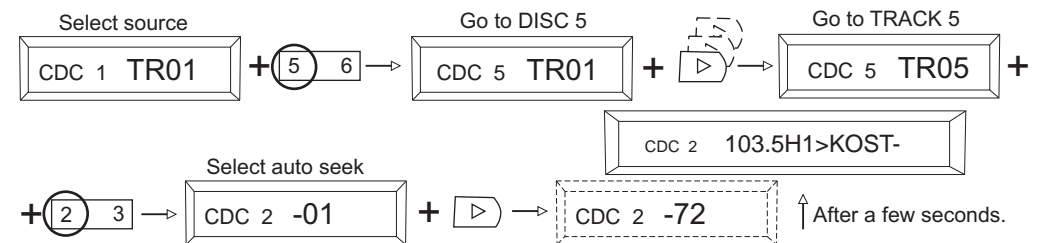
See details on page 6, 7 and 8.

### Specific note for BMW and/or Mini Cooper vehicles

BMW vehicles manufactured in 2002 or before require pressing the buttons twice for each command. The first press clears the displayed text and the second registers the command. Note that on some BMW and Mini Cooper radios the SCAN button's command is accessed with the RANDOM(RND) button.

### Illustration of general operation in HD FM

BMW Radio Controls.



## HD FM / HD AM Operation

To select HD FM, press the **MODE** button to select DISC 5, then press the **PREV** button until "CD 5-05" appears on the radio. (After a few seconds it will show "SEL:HDFM")

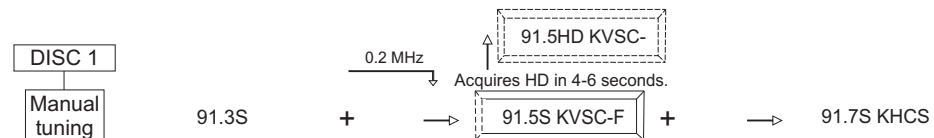
To select HD AM, press the **MODE** button to select DISC 6, then press the **PREV** button until "CD 5-06" appears on the radio. (After a few seconds it will show "SEL:HDAM")

Several options are available to find a station:

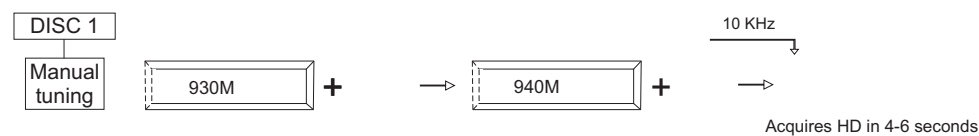
### Manual frequency tune (DISC 1)

Select DISC 1 by pressing the **MODE** button and the display will show: "CD1 1-01". Press the **PREV** or **NEXT** to tune to the next or previous frequency respectively.

Manual tuning in HD FM to an HD station without multicasting:



Manual tuning in HD AM:

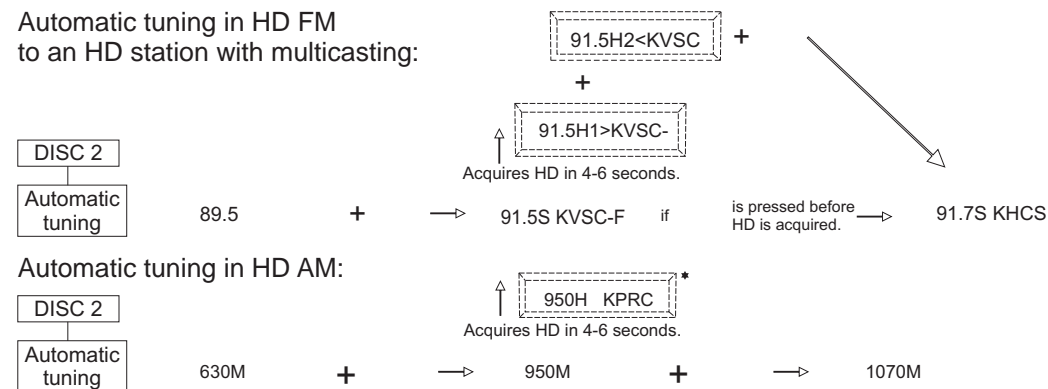


\* Multicasting is not available in (HD) AM mode.

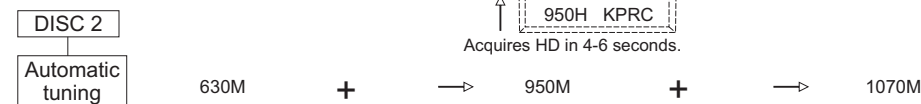
### Station seek (DISC 2)

Select DISC 2 by pressing the **MODE** button and the display will show: "CD 2-01". Press the **PREV** or **NEXT** to tune to the next or previous station. If HD is acquired on a multicasting station or is used to navigate between the multicast channels.

Automatic tuning in HD FM to an HD station with multicasting:



Automatic tuning in HD AM:



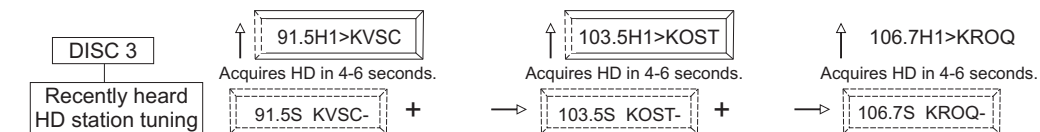
\* Multicasting is not available in HD AM mode.

### Saving to preset

### Recent HD stations (DISC 3)

To expedite tuning between HD stations, the HD DICE remembers the frequency where HD broadcast is detected. This list is blank at first, and filled as HD stations are detected. List is refreshed from time to time to remove unavailable stations.

Select DISC 3 by pressing the **MODE** button and the display will show: "CD 3-01". Press the **PREV** or **NEXT** to jump to the next or previous station on the list.



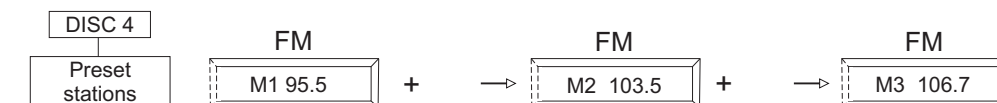
### Preset stations (DISC 4)

Select DISC 3 by pressing the **MODE** button and the display will show: "CD 4-01".

Press the **PREV** or **NEXT** to jump to the next or previous station on the list.

Press the **PREV** or **NEXT** to select between the presets.

When accessing an HD2 station, the text "Linking" is displayed and the audio muted until the digital signal is acquired. AM and FM stations have separate presets banks accessible only when appropriate HDAM or HD FM mode is selected.



## AUX audio source

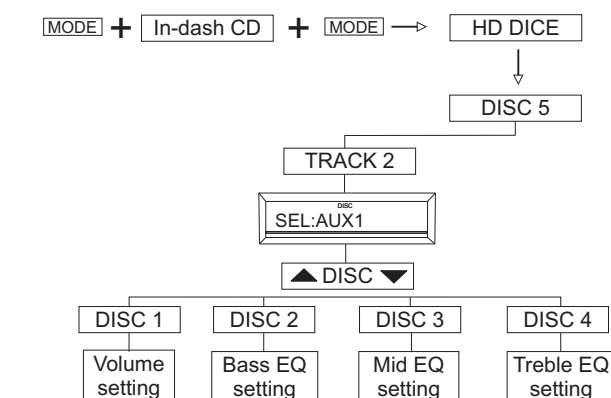
Selecting the AUX source.

The HD DICE is equipped with a 1/8" AUX jack connection to connect an auxiliary device, such as an MP3 player, DVD player or other music source. To access the AUX mode, select DISC 5 Track 2 (After a few seconds it will show "SEL:AUX1").

AUX Source Settings.

The auxiliary input has settings for gain, bass, mid and treble in order to optimize sound. Volume (Gain) should be adjusted if the audio level from the auxiliary device is too low or too high. If you hear distorted audio while playing the auxiliary device, you need to reduce (-) the gain. If you notice that the audio is too quiet then the gain setting should be increased (+). Default settings are "50" ("68" for gain) and values may be adjusted in increments between 01-99. Bass, Mid and Treble should be adjusted to compensate for the acoustic presets of the radio.

Note: If you are using an AUX device that is using the vehicle's power source and not its own battery, you may have to use a GROUND-LOOP isolator to avoid grounding and engine noise.



Making the Adjustments.

While listening to the auxiliary device, the next/previous buttons adjust the volume (gain), bass, mid and treble. DISC 1-4 modes select what adjustment the next/previous buttons perform. See the illustration for details.

## iPod interface

Apple iPod music players with a dock connector may be attached using an optional DICE-iPod connection cable. Simply connect the 8 pin din connector to the HD DICE box, and connect the dock connector to the iPod. Choose iPod interface mode by selecting DISC 5 TRACK 1. (After a few seconds it will show "SEL:IPOD")

The iPod will automatically start playing the last played song. For complete guide of the iPod interface, please refer to the manual provided with the optional DICE iPod interface cable.

### Supported iPod models

Currently, all DOCK connector equipped 4G, photo, 5G(video), mini and nano iPods are supported. Please visit <http://support.diceelectronics.com> for details on iPod firmware requirements.



### Band resolutions

Q: When I am on HD2, the audio goes away from time to time.

A: HD2 only transmits in digital. If the signal fades away, it will simply mute the audio. The HD2 program will resume 4-6 seconds once a strong signal is acquired.

Q: The radio keeps switching between H and S.

A: Digital reception requires a strong, steady signal. If the signal fades away, the HD DICE tuner will temporary switch back to analog stereo or mono reception.

Q: Why is there a delay before switching to an HD channel?

A: It takes approximately 4-6 seconds for the receiver to decode the HD digital signals. Once the HD signals are decoded the unit will automatically switch from the analogue station to digital station.

