

The Radiosophy HD-100 Philosophy

By Ken Reitz

In April of this year, *MT* published an exclusive on-line preview of Radiosophy's HD-100 just prior to its introduction at the NAB convention in May. Since then, the product has undergone a few changes and a price reduction.

Two years ago, the company introduced a higher priced, multi-functional model called the Multistream HD, which gained a lot of attention and took top awards at the Consumer Electronics Show. But Radiosophy has been promoting this smaller, less ambitious and more attractively priced model, while it works on revamping the original Multistream HD. There may be more about the Multistream HD model next year.

❖ Stripped Down HD Radio

Until now HD Radio table-top sets were showoffs with tasty features piled up like toppings on a sundae. But, here comes Radiosophy's bare-bones, no frills, HD-100 which makes tuning into the future of AM and

FM radio as cheap as it gets.

Compared to the dressed-up table-top HD sets, the HD-100 looks a little anemic, but don't let that mislead you. It's still an effective HD receiver. It just doesn't have the built-in CD player, extraordinary audio, remote control, or other added features that run up the cost on the competition. That's because the heart of the HD-100 – the HD receiver chip-set and blue display – are virtually the same as used in all the other HD radios.

The question is: How does it play? As expected, the audio is not spectacular. The small 2.5" speakers won't amaze you with their slight-of-ear deception. But, its crisp, clean audio compares favorably, by my ears, to Radio Shack's Accurian HD radio.

How does it receive? Picking up AM HD signals is totally dependent on the AM HD signals available in your area. There are only a few where I live, and, with the aid of a tunable AM loop antenna, I can lock in one AM HD station. Unfortunately, it's an all-talk station, so the great audio fidelity of the iBiquity sys-

tem is wasted. A small non-tunable AM loop is provided and may help if you're in an urban or suburban location, but I found it of no use. Spring loaded antenna terminals are provided on the back of the radio for attaching the AM antenna. There are five AM station presets. Don't look for AM HD DX with this or any other model, as the digital signal won't hold together much past ground wave reception.

Tuning the FM band is far more interesting. The proliferation of FM HD stations nationwide and the increased use of supplemental channel broadcasting give listeners something to hope for. Here the HD-100 does rather well. This radio comes with a telescoping whip antenna for FM reception which, when removed, reveals a 75 ohm coax "F" connector to which an external FM antenna may be attached.

A common T-shaped folded dipole is packed with the radio but, like its AM counterpart, is useful mostly in urban or suburban locations. With the whip in place I could pick up only the closest HD radio station. But, with a rotatable, amplified, 10 element FM antenna, I was able to tune in a half dozen or more HD stations in all directions. The limit seemed to be about 50 miles for reliable HD reception. I could occasionally pick up HD stations 100 miles away when conditions were good, but such conditions were not reliable.

There is a mini-headphone jack on the front of the radio. When I plugged in a set of Bose headphones the audio was excellent: full bass response, great treble and gratifying channel separation. So, that got me to thinking. Why not plug the audio output from the headphone jack into my stereo as I would an MP3 player? Now I can use the HD-100 as an HD tuner and let the stereo do the heavy lifting in the audio department. This lets me keep my old, but great stereo and up-grade it to HD. It also give me access to the second and third audio channels of HD stations and sound quality of HD radio without having to shell out the big bucks for a more capable receiver.

❖ HD-100's Other Features

The menu on the HD-100 allows changing the display from static to scrolling, setting the clock, and setting the "seek" mode to look for all stations or only HD stations. There is an "Aux" input which lets you play an MP3 player, portable CD player or the output of your computer's sound card for listening to Internet radio stations. Access to the Aux input is possible by pressing the "band" button until



Radiosophy's HD-100: It's small, it's cheap and it's a great way to get into HD Radio without spending a lot of money. (Courtesy: Radiosophy)

the display shows "aux in."

There are two LEDs on the front panel. The left-hand red LED indicates the receiver is picking up an analog stereo signal, while the right-hand blue LED indicates the receiver is picking up an HD Radio signal either on AM or FM. When the HD signal is detected the blue LED will start to blink. That means the receiver is decoding the digital signal. After the fourth blink, it will switch into HD mode and the audio will change from plain old analog stereo to HD stereo.

The difference on FM is remarkable. The audio sounds wide and full with a nearly live presence. On AM the HD audio will sound like analog FM, which is still nice to hear. If the blue LED continues to blink but does not lock on, it means that you're just slightly out of range for full HD reception. Try a better antenna. The red stereo LED remains lit even when you have locked onto an HD FM signal.

The backlit LCD display panel is small, but the contrast is good, making it easy to read.

MANUFACTURER SPECIFICATIONS

- Tuning:**
 - AM 530-1710 kHz in 10 kHz increments
 - FM 87.9-107.9 MHz in .2 MHz increments
- Station Presets:**
 - AM: 5
 - FM: 5
- Dimensions:**
 - 6.5" H x 12" W x 3" D
- Weight:** 2 lbs. 12 oz. (without power supply)
3 lbs. 14 oz. (with power supply)
- Antenna:**
 - AM:** Internal ferrite loop
External 300 Ohm spring terminals for use with AM passive loop (included) or AM tunable loop antenna (not included).
 - FM:** Telescoping whip 30" with "F" connector attached at the base. The antenna can be removed to expose an external 75 Ohm coax connector which can be attached to a folded dipole "T" antenna (included) or any external FM antenna terminated with a 75 Ohm fitting (not included).
- Input:**
 - Mini-plug AUX input on rear panel for MP3 player, external CD player or connected to the sound card of your computer for Internet audio.
- Output:**
 - Mini-plug 8 Ohm headphone jack. This jack may also be used to feed the HD audio into a stereo.
- Features:**
 - Blue LCD Display: 2 line scrolling or static text
 - LED: Red indicates analog stereo and Blue indicates a digital AM or FM signal.

The blue display is standard on all HD Radio sets and Radiosophy has managed to tame the brightness of the display so that when the unit is shut off it doesn't light up the room. But, the red and blue LEDs are so bright I actually found them annoying.

But, wait a minute! You'd expect a radio this small and cheap to really be a clock radio and so it is. You can program the radio to tune into commercial free channels (while *that* lasts) and wake you up in the morning. Sleepy, but want to listen to your favorite classical station while you drift off? Pressing the "sleep" button and "enter" lets you set the time for the radio to stay on from 1 to 120 minutes before it shuts itself off.

❖ Last Word

If you've not been following the HD Radio series in *MT* throughout the year, there are a few reception caveats of which you need to be aware. You should know that reception of HD Radio signals is much harder than it is with analog. If you're used to enjoying distant FM signals and putting up with a little hiss and fading, you should know that such weak stations will not be receivable in HD mode. All HD radios require a much more robust signal to decode the digital transmission.

If you can lock onto a secondary HD signal on an FM station whose signal fades, the channel will switch to the primary analog signal. When the signal comes back up, it switches to HD and you'll have to re-tune to go back to the second channel. If you want full time access to the secondary channel of a station that comes and goes, you'll have to get a better antenna. FCC rules don't allow AM HD stations to transmit second or third audio channels. And, finally, the display information on this and all HD Radio receivers is dependent on what is being sent on the data stream by the station.

The HD-100 works well as a table-top or bedside radio, letting you tune into local HD channels (provided you have a good enough antenna) and second or third audio channels. You can also use it on your desk-top to catch your favorite Internet radio stations.

No one is going to confuse the HD-100 with its high ticket competitors selling at two, three, and four times the price of the HD-100. But, this radio provides newcomers to HD Radio with the chance to see what all the buzz is about.

The Radiosophy HD-100 retails for \$99.95 (plus shipping) directly from the Radiosophy web site: www.radiosophy.com or call 800-4HD-RADIO (443-7234). For a complete list of HD radio stations in your state, go to www.hdradio.com and click on "find stations in your area." This takes you to a map of the U.S. where you'll click on your state. The list changes frequently, so be sure to check back often. Keep in mind that the list is very optimistic as it lists all stations that have signed up for iBiquity's HD Radio system, whether or not they actually have the transmitters – let alone are transmitting in HD Radio or have second or third channels.

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clear and or easily decodable. Their modems use a characteristic lead-in of:

#####0123456789 or
^ ^

Frequencies:
3065, 3372.5, 4055, 4070, 4400, 4465, 4515, 4722, 4865, 5116, 5255, 5400, 5417.5, 6895, 7720, 8230, 9004.5, 9148.5, 9334, 14740, 19105, 18305kHz USB

That's it for this month. Enjoy your decoding and keep the letters and questions coming.

RESOURCES

- RFSM2400 Mirror Site - rfsm2400.aanesland.com
- Hoka Decoders - www.hoka.net
- WaveCom Decoders - www.wavecom.ch
- SkySweeper Decoders - www.skysweep.com
- 110A Serial Tone Audio - www.signals.taunus.de/WAV/MIL188-110A.HTML
- 110A 16 Tone Audio - www.signals.taunus.de/WAV/MIL188-110A_AppA.HTML
- 110A 39 Tone Audio - www.signals.taunus.de/WAV/MIL188-110A_AppB.WAV
- 141A ALE Audio - www.signals.taunus.de/WAV/MIL188-141A_ALE.HTML
- Tadiran ALE Audio - www.signals.taunus.de/WAV/TADIRAN-AUTOCALL.WAV

** Any hardware or software which decodes paging modes such as POCSAG and GOLAY are not legal for import or consumer use in the U.S.*

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