

XHDATA D-808: A DX Central Review

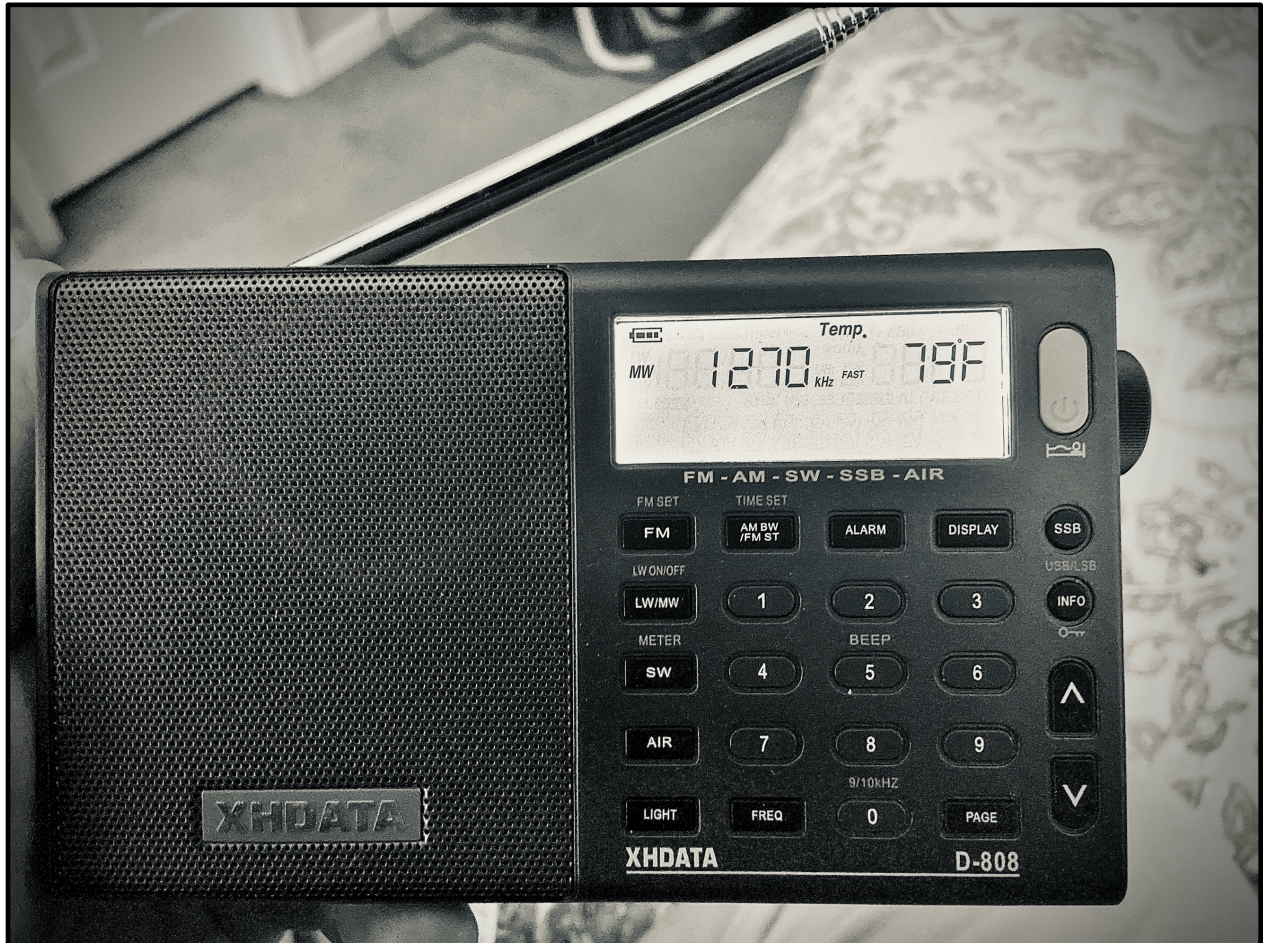


Figure 1: The XHDATA D-808 is a great blending of performance, price and size

Small package, BIG DX

While small, the XHDATA D-808 proves that bigger isn't always better for a DX portable

By Loyd Van Horn, W4LVH

In my early days of AM and FM DXing, my favorite radios were portables. A GE Superradio III, a Panasonic RF-B300 and of course the venerable Sony ICF-2010. I logged many a radio station and spent many an hour turning the dials on these radios in search of rare and exotic AM DX!

Later, I turned more to desktop receivers and SDRs for my DX but I continued searching for a portable radio to add to my arsenal that would carry a small form-factor,

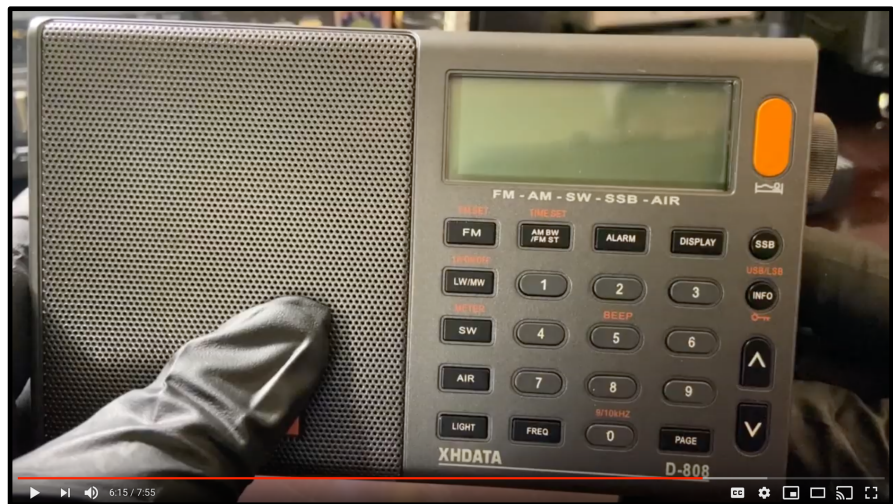
high performance and still remain cost effective. Something I could just as easily stow away in my luggage for a flight on a vacation as I could carry with me along the beach for coastal AM Transatlantic / FM Tropo DX.

It was through the work of transoceanic DX expert Gary DeBock in Puyallup, Washington that I first heard of the XHDATA D-808. It seemed to be a mainstay of his ultra-light, Trans-Pacific DXpeditions along the coast in Washington/Oregon. I figured if this radio was good enough for a hardcore DXer such as Gary, I had to give it a shot.

UNBOXING

I found a D-808 on eBay for roughly \$105 (US) shipped. It was coming from China (supposedly by way of Israel) so it took probably 3-4 weeks or so to come in.

The radio came packaged along with a USB cable used for recharging the radio (It comes with a single lithium-ion battery but can also be operated with a single AA alkaline battery, if desired), as well as a small wire antenna with a 1/8" mono, phono plug which fits the antenna jack on the side of the radio. There was also a very nice, soft carry case for the radio.



VIDEO: A full unboxing of the XHDATA D-808

I have read online that the D-808 is also supposed to come shipped with a manual, although mine did not. Never fear if you also are missing the manual, I have made it available on [DX Central here](#).

The radio was packaged in both bubble wrap and an inner cover on the radio itself. The first thing you will want to do is open the battery compartment and remove the plastic that put in place during shipping and is keeping the battery from making contact. I didn't realize this was in there at first, until I couldn't get the battery to take a charge.

The official specifications show the radio is 6.18 inches (157 mm) wide, 3.62 inches (92 mm) tall and 1.26 inches (32 mm) deep. Also according to specs, the radio weighs 0.58



pounds/9.28 ounces (265 grams) which puts it at roughly the same weight as my iPhone 11 with a heavy Otterbox case.

The radio comes with a hand strap pre-installed.

THE LAYOUT

The radio's small size and light weight means it can easily fit in a single hand for most which frees up the other hand for operation, although it is possible to tune the tuning knob with the same hand that is holding the radio. The main radio face is split into two halves: a speaker grille (with an orange XHDATA name plate at the bottom) and the LCD screen/buttons. While the screen can be backlit, the buttons are not. This is one of the features I noticed was missing from this radio the first time I took it to a nearby beach after sunset while attempting to pull in Trans-Atlantic DX, as I still needed to carry a small flashlight to be able to use the buttons.

The radio comes default with a button beep, which is quite loud. To turn it off, make sure the radio is powered OFF and then depress and hold for three seconds the "5" button (you will see the word "Beep" in orange above it). This was the very first feature I looked up in the manual, if that tells you anything.

The LCD screen is small, as you would imagine (roughly 2.18 in./55.37 mm wide and .875 in./23.23 mm tall) but is still very easy to read (especially when backlit). The buttons have a nice feel and click response, so you know for sure you have depressed the key. This is a nice add, as many portables have very soft buttons and I find myself having to press them multiple times to get the desired operation. The D-808 does not feel like that will be an issue for me. I did notice that there can be a delay within the radio on some buttons before the operation will complete, but that is in the software of the radio itself, not the mechanical button.

The dominate button on the face is the orange on/off button in the upper right-hand corner. Along the left side of the keypad are the buttons to change modes and to toggle on/off the backlight for the LCD. Your mode options are: FM, Longwave/Mediumwave, Shortwave and Air band. Along the top row includes a button for MW bandwidth (this button toggles FM stereo, as well), an alarm and a display toggle (which has different options for the LCD display depending on if the unit is on or off).

The far, right hand side of the button layout includes a button to toggle SSB on/off, a button for switching between USB and LSB, and up/down arrow buttons for tuning.



The middle of the button layout are your direct-key entry numerical buttons. These also serve as memory buttons (you can store up to 500 memories, per the manual) if you wish to save favorite frequencies in each band.

Many of the buttons have an orange word/function indicated above the button. To access some of these, you will need to ensure the radio is powered off, the rest require you to hold the button down). Review the manual for instructions on how to use each.

One example of this is a feature you will want to most likely use right away, if you are in the United States: the tuning step. You can toggle between 9 kHz (the default from the factory) and 10 kHz by making sure the radio is powered off, then holding down the “0” button (above it in orange it states 9/10khz). It will flash “MW -- _____” and whatever the current tuning step is set to. To change, just depress the button again and it will switch between the tuning steps. For U.S. users, do not fear, for even set at 10kHz, the radio has a way for you to still fine tune 1kHz at a time for transoceanic DX!

Setting the tuning step will change how both the tuning knob on the side and the up/down arrows on the interface adjust frequency. Further, the tuning knob on the side can be depressed to offer different options as well: Fast (this uses whatever tuning step you have set), Slow (changes 1kHz at a time) and Stop (deactivates the tuning knob). Changing the settings on the tuning knob itself between fast, slow and stop do not change the up/down arrows, though, on the keypad. These remain at the default of whatever you are using for your tuning step.

There are two additional ways to tune the D-808: the direct keypad entry method and the fine-tuning knob on the side. When you are using the direct keypad entry method, you would first press the “FREQ” button on the bottom row, then enter your freq. If you are on the mediumwave band, for instance, and want to tune to 1089 kHz, your sequence would be: FREQ + 1 + 0 + 8 + 9. The radio would then automatically tune to 1089 kHz.

The fine-tuning button on the right side of the radio (under the main tuning knob) allows you to slowly tune the radio to zero-beat a heterodyne, or use a different tuning step than the main tuning knob. Depending on the band you are on, it will tune a different width. For instance, on the mediumwave band while in AM mode, will tune 1kHz at a time. On mediumwave while in SSB tunes 100 Hz at a time. In FM mode, the fine tune changes 10kHz at a time.

On the left side of the radio you will find the hand strap, an input for an antenna (using a 1/8” phono plug, which matches the wire antenna that comes packaged with the radio), a rotating volume knob and an input for earphones. On the right side of the radio, in



addition to the tuning knob and fine-tuning job, is the micro-USB port for the charging cable.

On the top of the radio is the telescopic whip antenna for FM/SW and AIR bands. If you are setting the radio upright, it should be no problem. If you are laying the radio down horizontally on a table or in your lap, trying to turn the whip antenna into the vertical causes the whip to get a bit wobbly. I do worry about repeated use of the antenna in this way and what effect that would have. I would say the whip antenna is probably the weakest point of the entire radio, which is common among portables.

On the back side of the radio is the door to the battery compartment and a fold-out kick stand for tabletop use. I have found getting my fingernails under the kickstand to be a bit of a challenge and usually have to resort to some sort of prying device to get it open. That being said, I do not use this feature too often.

On the very bottom of the radio (when standing vertically) is a recessed reset button. Using a paper clip or similar to depress this button will restore the unit to factory defaults.

WHAT TO EXPECT

Per the owner's manual, the radio boasts $>0.5\text{mV/m}$ sensitivity on the AM bands and $>3\mu\text{V}$ on FM. It also indicates a selectivity on AM of $>80\text{dB}$. Through my research online, I have found that users report this radio to be decently sensitive (especially during sunrise/sunset and at night) on mediumwave while doing a fair job at rejecting co-channel interference. Performance on FM reports to be fair at pulling in weaker signals and fair at rejecting co-channel splatter. Since I live in proximity to both AM and FM towers in my local area, I was anxious to see just how good it would actually do.

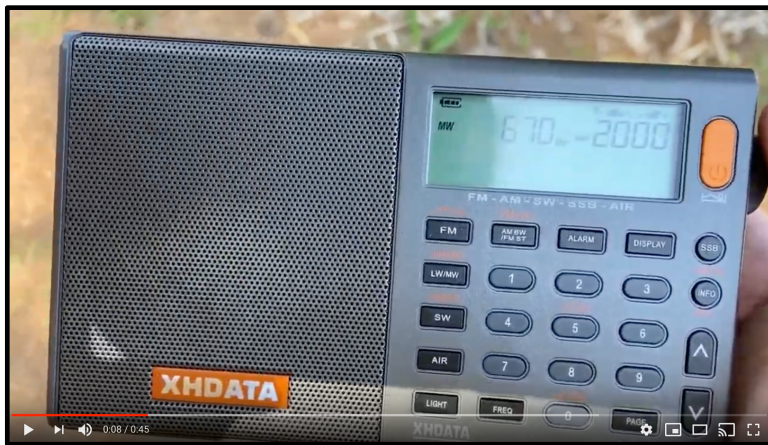
PERFORMANCE TEST

Once you turn off the maddening button beep, get a good charge on the radio and set your tuning step for mediumwave use, you are ready to get started!

My main focus was trying out the radio for mediumwave and FM use and that is what I will focus on here. I did try out the shortwave and AIR bands as well, and found their performance to be roughly what I would expect of a small portable. On shortwave, larger broadcasters and stations such as WWV were able to be received. Living near an airport certainly helps the Airband chatter come through pretty easily, too.

Starting with mediumwave, during daytime, I did a sweep of the band looking to see both how sensitive and selective this radio is. I have several local stations which can cause some problems during the day including 730 WLTQ and 1250 WTMA. These

would be my test stations to determine the ability of the radio to reject co-channel interference. In looking at how the radio pulled in weak signals, I would test against 670 WWFE – Miami, FL (485 miles) and 1150 WNDB – Daytona Beach, FL (255 miles). Both of these stations are audible here during the daytime in Charleston on my desktop receiver and SDR at moderate signal levels, despite being outside of the ‘fringe’ contour of their daytime ground wave signals. I would only use the internal ferrite-coil antenna within the radio, no coupling with a Select-a-Tenna or Quantum Loop for this test.



VIDEO: 1 Pulling in WWFE 670 from Miami, FL during the daytime in Charleston, SC on the D-808

The first thing I had to do was get out of the house. Inside the house, due to noise, only my local stations and a few other semi-locals were audible. WWFE and WNDB were nowhere to be found from inside the house, however 690 WOKV – Jacksonville, FL (198 miles) and 630 WBMQ – Savannah, GA (84 miles) were audible.

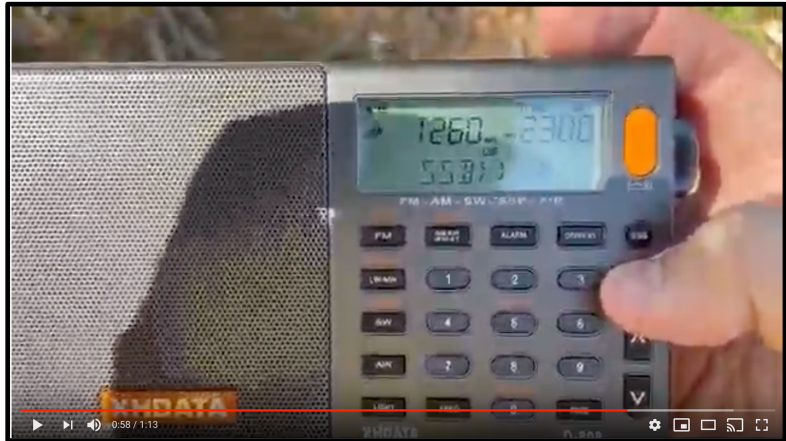
WNDB and WWFE were audible, though a bit weak. While not as strong as my desktop receiver with an outdoor antenna, as one would expect, both were strong enough to be readable. You can check out a full, legal ID I captured of WWFE on the D-808 at around 3pm local time in my backyard, by [clicking here](#).

Once outside and far enough away from the house, both

A quick scan of the bands found weak stations in Florence, SC (96.5 miles) and Hilton Head Island (62 miles) among others. While it isn't exactly a barn burner during daytime DX, there is adequate sensitivity here to make it worth at least doing a quick bandscan for your area to level set normal conditions. An additional boost from coupling an external loop antenna would really give this a punch for daytime DX.

In testing selectivity, I started by tuning to 730kHz as WLTQ on this frequency has a transmitter site close to my QTH. Checking 720 and 740kHz found normal amounts of co-channel interference one would expect for a local station. However, it was nothing that couldn't be alleviated by switching to USB/LSB and turning the radio a bit.

I found the same when checking co-channel interference from 1250 WTMA a strong local (5 kw) station here in Charleston. 1240 and 1260 had predictable amounts of splatter, but both could be mitigated enough with use of USB/LSB, turning the radio a bit to null the local station as well as through use of the DSP filters. In doing so, I was able to pull a weak signal from 1240 WFOY in St. Augustine, FL (216 miles) from my backyard using the D-808. Not too shabby for a portable radio on a graveyard frequency! You can watch a video I made, demonstrating this by [clicking here](#).



VIDEO: Co-channel interference rejection from the D-808

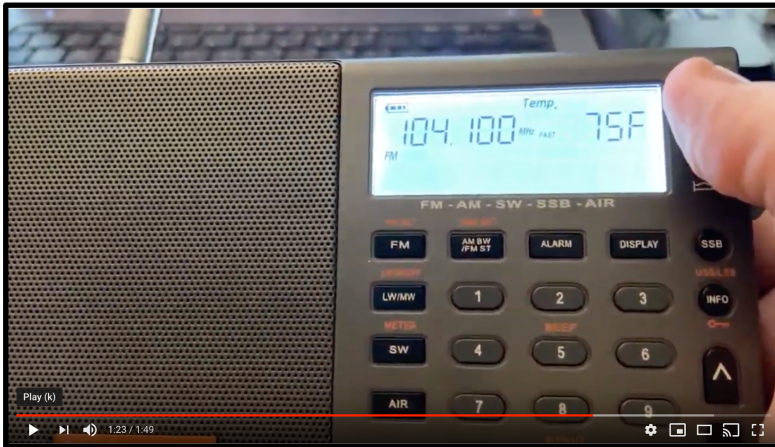
If you really need to reduce co-channel interference from adjacent channels, the filtering (bandwidth button) is really impressive – especially for a portable radio. It is one of the things that I feel separates this radio from so many of the others on the market, especially at this price point. The digital signal processing (DSP) does a fantastic job at cleaning everything up, something you would normally find only in radios costing 3 to 4 times as much!

The filtering is selectable in AM mode steps of 6, 4, 3, 2.5, 2, 1.8 and even down to 1kHz in width. While in SSB mode, the filtering is available in steps of 4, 3, 2.2, 1.2, 1kHz and all the way down to 500 Hz. This comes in really handy when trying to pull in transoceanic DX on split frequencies, as you can substantially reduce the splatter from domestic stations to pull audio out of the hidden DX!

While it does a good job during the daytime, this radio really begins to sing on mediumwave during sunset skip and into nighttime conditions. At roughly an hour-and-a-half before local sunset, I was hearing stations into the upstate of South Carolina such as 1090 WCZZ in Greenwood, SC (160.5 miles), up the coast line with 770 WLWL in Rockingham, NC (148.6 miles) and down the coast into Florida with 540 WFLF in Orlando, FL (305 miles). As the sunset period continues and skywave conditions begin to pop up, stations further up the coast start coming in such as 660 WFAN in New York, NY (634 miles) and further to the West with 650 WSM in Nashville, TN (454 miles). Again, this was all before skywave had fully taken over the propagation of the band.

Nighttime DX is quite enjoyable on this radio. While in bed, at around 0230 EDT, I logged for the first time from Charleston, 740 KTRH in Houston, Texas (934 miles) as

well as nightly dominate CFZM Toronto, ON (750 miles) both on the same radio by merely turning it horizontally 90 degrees. In fact, when I heard KTRH ID, I ran into my shack and they were louder on my portable than they were on my SDR with outdoor loop antenna oriented roughly East/West (the same general direction I had the D-808 oriented). To say I was surprised is an understatement!



VIDEO: FM performance on the D-808 is strong as well. In this video, I am pulling in 104.1 FM, WYAV in Myrtle Beach (176 miles) better than on my RSPdx SDR with a 3-element beam!

On FM, the D-808 performs admirably as well, especially during periods of propagation enhancement such as Tropospheric ducting and Sporadic Es openings.

During deadband conditions, I can pull in all of my local stations, even those low-powered stations and tiny FM translator stations. I can even pull in stations just outside of my immediate area such as 104.1 WYAV in Myrtle Beach, SC (176.2 miles). You can

see a comparison video of the D-808 going head-to-head with my RSPdx and 3-element FM beam by [clicking here](#).

During tropospheric ducting conditions, the radio did not disappoint, with signals from 105.1 WOMX in Orlando, FL (304.9 miles) and 107.7 WMGF in Mount Dora, FL (293.6 miles). I have not had any Sporadic Es openings yet to test out on this radio, but this summer hopefully will allow plenty of opportunities for that.

It does a decent job at rejecting co-channel interference on FM, but could be a bit better. On the D-808, local station WWWZ on 93.3 MHz can be heard all the way up into 93.7 MHz and down to 92.9 MHz. For comparison, my SDR Play RSPdx contains this station splatter to only 93.5 and 93.1 MHz.

OVERALL IMPRESSIONS

I have to say, I am impressed with this little radio. Is it as sensitive and robust as a Sony ICF-2010? Obviously not, but the Sony's internal AM antenna is nearly 2-3 times the size of that in the D-808, so it isn't a fair comparison. However, the D-808 is much more portable than an ICF-2010, has far better filtering (the Sony has no DSP) and it is much more portable (not to mention does not have the voracious battery appetite of a 2010).



One could easily add-on a much larger ferrite coil antenna or couple this with a loop antenna to achieve dramatically improved results. The previously mentioned Mr. DeBock has experimented with both of those approaches with his D-808 arsenal to pull in super-exotic Trans-Pacific DX from coastal locations in the upper Northwest United States (see the links below for more information on his exploits).

When comparing this against many of the smaller, portable DX radios on the market today, I have to say the D-808 stacks up quite nicely. This radio seems to have been made specifically with a DXer in mind, especially those that like to take their DX into a portable environment.

One area that was very impressive to me was the battery life, I was able to run this between charges some 24 hours or more (the less you use the LCD backlight, the longer you can run the radio, as you would expect). The added bonus of this radio being easily recharged with a USB cable (uses a microUSB to USB cable, as many devices these days use, so I have these cables all around the house) means the over-the-life cost of the radio is significantly lower than most other portables that are coveted by DXers.

The small size makes it extremely easy to stow away in luggage for vacations, or to use bedside for nighttime listening. On a recent vacation, this radio tucked in nicely in a side pocket of one of my overnight bags. The efficiency was increased since I didn't have to bring any extra wall-wart or other plug to recharge (again, I used a microUSB to USB cable I was already bringing for other uses). The size also makes one-handed operation relatively easy. I can hold the radio and tune the band all with the same hand, but of course, your hand size may not allow this.

The overall build of the radio seems quite sturdy. The buttons seem to be both very responsive and able to take repeated use. The tuning knob isn't obtrusive or prone (for me at least) to random hits that would cause me to detune from a frequency. As with any radio, you will want to make sure to keep it out of moisture and wet conditions. If you keep it clean (the included carry case helps with that) and do not abuse it, there is no reason you wouldn't be able to still be getting fantastic results from the D-808 many years from now!

That is not to say there aren't a few annoyances. One gripe I have found is that when you change the display settings on the LCD screen (by hitting the "Display" button to cycle through the options) they do not stay in place during the next use. I like to keep my display set to show the signal strength and signal-to-noise ratio, however when I turn the radio off, it defaults back to displaying the temperature. The temp can be



handy, for sure, but I would much rather be able to either set the default myself or have the display stay on the last-used setting.

As I previously mentioned, I am not very confident in the long-term survivability of the telescopic whip antenna, but that can be said with most portable radios.

I do find the way the keypad interfaces to use the memory function to be a bit annoying, but that is really down to me not being used to it. I am used to being able to just start keying in a frequency by typing in the numbers directly. On the D-808, you first have to press the "FREQ" key. So, I have many times accidentally changed frequencies to what is stored in my "1" or "8" memory slot, because I forgot this step. Again, it is a minor annoyance and one that happens less frequently with repeated use, but wanted to mention it here in case others may encounter it.

Others have found some grievances when changing frequencies that the audio will momentarily mute or even have an audible sound. Some complain the automatic gain control is not fast enough. For my purposes of AM and FM DX neither of these even were noticeable for me.

Honestly, those are the only gripes I could muster for this little gem. From a purely performance-based standpoint, I have no complaints. When you consider the fact that this radio's price will often come in under \$100 USD and will fit in the palm of your hand, it is hard to beat the XHDATA D-808.

FINAL RATING

4.5 out of 5.0

While a barefoot D-808 cannot compete with most of the "big gun" portables on its own, the performance is actually nothing to sneeze at. And for those that do not mind doing a little tweaking, you can match or exceed the performance of those 'big guns' while still at a fraction of their cost. For those that prefer to not tweak, you should find enough here to keep yourself enjoying the AM and FM bands for many DX sessions to come.

HELPFUL LINKS

SHORTWAVE CENTRAL: A closer look at the XHDATA D-808 Radio

<http://mt-shortwave.blogspot.com/2018/09/a-closer-look-at-xhdata-d-808-radio.html>

SWL POST: Gary DeBock pulls apart and examines the XHDATA D-808:

<https://swling.com/blog/2018/05/gary-pulls-apart-and-examines-the-xhdata-d-808/>

SWL POST: August 2019 Rockwork DXpedition

<https://swling.com/blog/2019/08/august-2019-rockwork-dxpedition/>



SWL POST: Supercharging the XHDATA D-808 with a 7.5" loopstick

<https://swling.com/blog/2018/09/guest-post-supercharging-the-xhdata-d-808-with-a-7-5-loopstick/>