Home Patrol "*Extreme*" Firmware Update

By Bob Grove, W8JHD

Released just this year, Uniden's HP-1 HomePatrol has established for itself a special place in the VHF/UHF scanner market. Its giant color touch screen is unique to this consumer application and is a giant step in easing programming of sophisticated technologies.

While the HP-1 already includes a U.S. nationwide and Canada-wide frequency database which will self-load for your location, a recently-released firmware update allows a number of useful additional functions to be unleashed.

Let's Take a Look

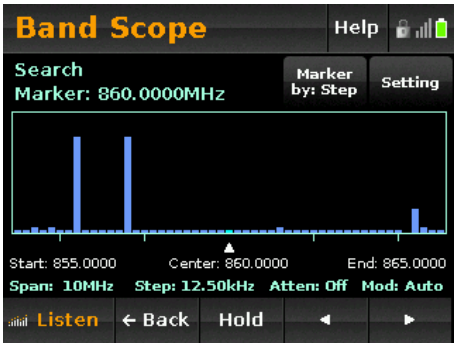
This composite of new updates may only be downloaded from the Uniden website, and they aren't free, but they are under $100 (actually $99.99!).

The download will work on all HomePatrol scanners. You need to provide your serial number so that the key for the download will unlock your particular scanner; the download to your scanner won't work on another.

So what are some of these new features enabled by the *Extreme* firmware?

Band Scope

Probably my favorite new function – since I'm addicted to spectrum analyzers which reveal all the signals at once on a chunk of spectrum – is the band scope. Simply enter a center frequency and the bandwidth on either side (up to 2 MHz wide) that you wish to visually examine for activity. As signals come on the air, the sweep of the screen will show spikes on their respective frequencies.



It's not in real time, but just so long as the span of spectrum isn't too wide, you have a good likelihood of seeing signals as they come and go. A press of a screen key allows you to hold and monitor the contents of any of those signals as they are discovered.

RF Power Plot

It is often useful to reveal the relative strengths of signals across the band. You can use this to determine the best antenna for your application, the best location for that antenna, even for direction finding, assuming you have a directional antenna.

Trunked System Analysis

Extreme provides enormous power for analyzing and filling in database gaps. A system status monitor indicates how well the HomePatrol is receiving and decoding the data on the control channel as well as overall system activity level. Details include channelgrams, radio on/off affiliations, and logging information.

A talk group converter allows you to easily switch formats for group IDs.

Since the Home Patrol allows up to three minutes of audio recording from its received signals, you can review the users audibly to determine which channels may be missing from the preloaded frequencies and fill them in from the chart generated by the analyzer.

The same feature can be used for conventional transmissions as well as trunking.

Activity

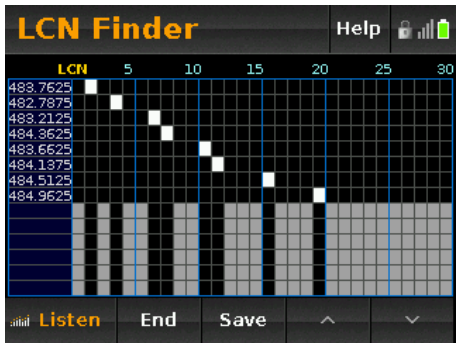
How busy is each of the system frequencies? *Extreme* generates a visual log to show on/off activity of any particular channel frequency. System commands that are sent over the control channel are recorded on the HomePatrol internal SD card.

EDACS/LTR LCN Finder/ Analyzer

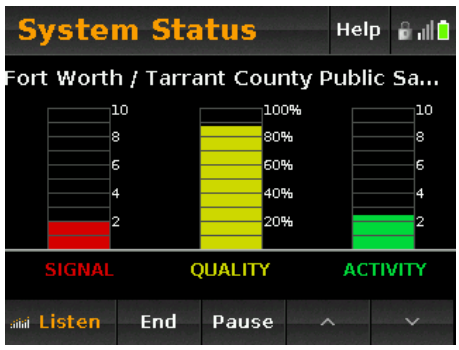
This feature enables you to determine a system frequency and its logical channel number that might not have been included in the database. A visual chart is generated to show trunking channel activity with on/off times.

And More Features

One of the chief complaints from initial HomePatrol users was the difficulty of, or even inability to customize the autoloaded files. Now you can create and edit your own files. With *Extreme*, you have the capability of full manual programming to create new systems, edit existing systems, and edit your favorites list.



New channel options have been added as well, like time-selectable per-channel delay, audio alert for specific channel activity, adding channels to existing trunked systems, and performing user-selectable geographical searches.



Extreme also allows you to export Google-map points of interest (KML files) and share them, as well as create multiple favorites lists to expand coverage areas.

You can also identify unknown signals between manually-entered frequencies by recording audio and DCS/CTCSS subtones.

The Bottom Line

Sales figures and customer comments show the remarkable success of the new HomePatrol, and now Uniden has provided a means of expanding even further the features of this fine scanner.

While not all of the features will be of interest to all users, certainly the ability to customize files and the ability to see tables and spectrum signal details should have wide appeal.

For your download of this latest software, log in or register at **my.uniden.com**.

MT LOOK BACK

PAR EndFedZ EF-SWL Antenna

By Larry Van Horn, N5FPW

This is a moment of true confession for me. I have to admit that I love using wire antennas for my HF monitoring. And among the many types of wire antennas I really like using the longwire style of antenna. Those who know me best know that I love low prices, simplicity and performance. The random length longwire antennas are very economical, easy to install and provide a lot of bang for the buck, meeting all these parameters.

But, the simple longwire does have one major drawback. Due to the higher impedance at the feed point (random length longwire antennas are end fed), coax is not normally used. Most often you will see longwire antennas fed with single conductor insulated wire to the high impedance input of HF receivers. This can be a problem in noisy RF environments. If we can get that feed point impedance of a longwire down to 50 or 75 ohms, then we can use low loss coax in our installation. By doing so we can reduce – and in some instances even eliminate –man-made noise that is picked up by the feedline. If only someone would develop an inexpensive longwire antenna that can deliver 50 or 75 ohms impedance to the receiver so I can use low loss coax!

Dale Parfitt, W4OP, developed an end fed longwire that can use a 50 or 75 ohm coax feed – the PAR Endfedz EF-SWL antenna.

The EF-SWL is optimally designed for 1-30 MHz reception. The heart of the EF-SWL is the UV resistant ABS matchbox that houses a wideband 9:1 transformer wound on a binocular core. This transformer has external stainless studs on the matchbox that allows the user to configure the primary and secondary grounds for best noise reduction at the receiving location. The antenna's output to the receiver is via a silver/Teflon SO-239 UHF connector that can accept a standard PL-259 coaxial connector. Lead-in coax cable is not provided by the manufacturer and will have to be purchased separately.

The basic configuration out of the box is a radiator that uses 45-feet of virtually-indestructible #14 black polyethylene coated Flex-Weave wire. The wire itself consists of 168 strands of #36 gauge woven copper. This material is very strong, yet can be easily coiled like a rope for portable work.

The radiator also attaches via stainless stud (#3) on the matchbox that allows it to be removed or replaced. You can attach any length of wire you want to the matchbox. This allows you the opportunity to experiment with different lengths for the radiator. If you need a shorter antenna for your particular installation or a longer run if you have the space, the EF-SWL matchbox can accommodate it.

The manual that comes with this unit shows typical radiation patterns for selected frequencies throughout the HF spectrum in the two primary mounting configurations: as a horizontal or sloper end fed longwire. This is a ***receive-only*** antenna.

❖ Antenna Construction-Installation

This antenna has a lot of the same characteristics as the monoband versions of the popular Cushcraft and HyGain half-wave or no-ground vertical antennas. The big difference between the no-ground verticals and this antenna is that the EF-SWL does not need any base radial wires.

My first impression after I opened the box was the quality of the antenna and its individual components – simply superb.

Since the radiator uses polyethylene coated Flex-Weave wire, environmental corrosion problems we normally associate with using uninsulated copper wire will not be an issue. A major failure location in most longwire installations is at the point where the user attaches the antenna's lead-in wire to the uninsulated radiator wire. If care is not taken to properly seal this connection, dissimilar metal corrosion will eventually cause a break where these two wires are connected. Fortunately, that will not be an issue with the EF-SWL, thanks to the polyethylene coated wire used as a radiator. To further protect our outdoor test installation of this antenna we used rubber tape to seal the PL-259 connector to the SO-259 matchbox connection.

Bottom line – once you get this antenna up, Mother Nature will be hard pressed to take it back down through corrosion.

The antenna comes assembled right out of the box, but you do have two decisions to make. The instructions that come with the antenna fully discuss the pros and cons to help you choose the option which will best work at your location.

First, you have several options on how to hang the antenna. Choices range from horizontal, sloper, inverted-L, inverted vee, or even as a vertical.

Next, you have to decide how you are going to configure the ground, and this will vary from installation to installation. We were able to use the factory default configuration – connectors #1 (SO-259 shield) and #2 (ground lead of the antenna side of the 9:1 transformer) shorted. Basically, this leaves the connection to the antenna ungrounded, and you should ground the receiver in the shack.

Even though we did not observe it during our test, this installation may pick up man-made noise. If this is the case, you can also take out the short between connections #1 and #2 and ground one or both of these connections (#2 direct to ground and #1 grounded back to the receiver). This installation works very well in noisy, man-made environments.

Installation of the EF-SWL is very easy to perform. My son Loyd assisted me in installing this antenna and it actually took us longer to get the ladder set up so we could climb on the roof than it did to put the antenna up. We ran our test EF-SWL antenna configured horizontally at 35 feet above ground level and we oriented the axis of the radiator north-south.

❖ How Well Does it Perform?

In a word: fantastic!

We put the EF-SWL head-to-head with some of the antennas on the N5FPW 2-acre antenna farm. We compared the PAR longwire with two102-foot G5RV antennas, two end-fed (insulated wire lead-ins) longwire antennas that were 150 and 250 feet long, a full size Grove Skywire sealed in the roof of my radio shack, and an MFJ amateur radio ten band vertical antenna.

While some of these antennas outperformed the EF-SWL over the entire tuning range we tested (1-30 MHz), there were some nice surprises.

In the AM broadcast band, the G5RV antennas with their 102-foot capture areas had a distinct advantage over both the EF-SWL and the Grove Skywire. We did notice that the PAR antenna seemed to come alive in the upper portions of the AM band when compared to the Skywire as we tuned higher in frequency.

On shortwave frequencies below 10 MHz, the PAR antenna was equal to or in some cases consistently better than our Grove Skywire on signals from selected shortwave stations we used for measurement. One notable exception was around 40 and 15-meters. Since the Skywire is cut for 40-meters, there was a noticeable difference between the two antennas in these two frequency ranges. Above 10 MHz, EF-SWL really shined. Signal levels were comparable on selected shortwave bands to our longer G5RV antennas.

Our final test was a head-to-head comparison of the EF-SWL to our 150 foot north-south end fed longwire. Since both antennas were oriented in the same direction, we felt this test would give us a realistic idea of how good the PAR EF-SWL really was. I must point out that the height above ground for our 150-foot longwire antenna was not optimized, whereas the EF-SWL was.

Consistently across the entire 1-30 MHz tuning range, the EF-SWL delivered a 5dB to 20dB signal over my 150-footer. But the real surprise was how quiet the EF-SWL was. In fact, at one point during the test, my wife Gayle, who helped me with this portion of the testing, questioned if the PAR end fed was even connected to the receiver. It was that quiet!

❖ In Conclusion

If you are looking for a good broadband, passive shortwave wire antenna for use in restricted space (i.e. attic, small city lot, etc), then the Par EF-SWL is your ticket. This antenna is especially ideal for portable operations, since it is compact, easy to install and does not take up a lot of space.

You can purchase the PAR EF-SWL from Grove Enterprises. It sells for $74.95 plus shipping and handling. This review of an "oldie but goodie" is still as valid as when it was originally published in September 2003.