MT HELP DESK

SPECIFIC FREQUENCY AND EQUIPMENT QUESTIONS

Larry Van Horn, N5FPW
larryvanhorn@monitoringtimes.com

Q. *I have a customer who purchased a BC250 on eBay. She bought a new P25 digital card for it. She wants to listen to the Douglas County Nebraska Motorola P25 system. The DC system uses a 9600 baud control channel and as I remember the BC250 can only do 3600 baud P25 stuff. I've heard that Uniden has a flash upgrade to enable 9600 baud decode if you send them the scanner. Is my recollection correct on the control channel baud rate issue? Have you heard of the flash upgrade? (Rick Brown, Mobile Communications, Inc.)*

A. The news for your customer is not good. On the older Uniden digital scanners, the card has absolutely nothing to do with what trunk system the scanner will decode. That is a function of the scanner itself. Older units such as the BC250 will only handle a 3600 baud mixed mode system. They cannot handle the newer 9600 baud systems. The only thing the card does is change the digital APCO stream from 1s and 0s to an analog voice. According to Mr. Paul Optiz of Uniden, these older units "cannot" be flashed, so no upgrades can be done to them.

And there is a double whammy for the owners of those radios. Since they cannot be flashed, they will also no longer be usable on analog trunk systems if their area is subject to rebanding.

Q. *Just wanted to know if there was a review on the BR330T Uniden Radio. I have the 396T receiver and it is an excellent unit, but it doesn't do HF. I am just wondering how this unit works on HF as compared to the Yaesu VR-500, which I use for a handheld for HF. Its sensitivity (VR-500) is great on AM and USB. I also own a couple of Icoms, but they're not as good as the VR-500.*

What would you personally recommend for a good handheld, or what do you own, because if something happen to my VR-500, I would be out of luck. (Eric Reynolds, Las Vegas, Nevada)

A. This question strikes a real raw nerve with me. You do not get something for nothing. How do you judge the performance of a $259.95 handheld scanner to another radio covering the same range at ten times the price? There is absolutely a review on the BR-330T, from the December 2005 issue of *MT* when I performed a *First Look* review. It is available at **www.monitoringtimes.com/html/mtfirstlook-br330t.pdf**.

But do not look for a favorable review on this unit's HF performance. Quite frankly, it is horrible and not worth the purchase if you are looking for good HF listening. In fact, to be brutally honest, across the board there is not a single wideband HF handheld I would recommend for HF monitoring based on their performance in that band. Here are the reasons why (in general terms):

1. The wider the bandwidth, the worse the sensitivity and dynamic range. These are two significant figures by which we judge radios. They equate to whether you will hear the station or not. In order to improve dynamic range, it takes more circuitry (and, therefore, cost) to increase that dynamic range.
   There is a reason why WinRadio charges around $2,000 dollars for a 150 kHz-1.5 GHz receiver (and it isn't just added features boosting that cost). How do you think a $500 handheld that covers the same range will perform? Admittedly, it doesn't take much of a radio to hear a 500 kilowatt shortwave broadcast transmitter sending the BBC World news out of Antigua. But how sensitive of a receiver do you need to hear my 100 watt ham transceiver in the crowded 20 meter ham band?
2. Antennas are everything. Typically, in the HF spectrum we use horizontal wire antennas that start in the 10-30 foot range and go up in size as the frequency goes down. You can't avoid this fact of basic physics, and there are no shortcuts. The better the antenna, the better the reception. Also, any antenna that is vertical is not good in the HF range. Noise loves receptors that are vertically polarized. How do you think your six inch rubber duck antenna (which is 3dB shy of a dead short anyway) will compare with my 105 foot longwire on HF? Who do you think will hear more?
3. Buying any scanner handheld that has HF reception capability but is AM only (no SSB), and that is like going into battle with only one boot on. Over 75 percent of the HF spectrum covered by your shiny new scanner uses a mode other than AM. If you want to buy a decent shortwave receiver, there are some cheaper ways to do it (such as a Kaito1102 at $79.95), that will outperform most of these handheld wonders!

So let's boil this down: In general, as you move up in price, you get a better receiver (i.e., more reception). A better receiver has more of what we should judge radios by: sensitivity, selectivity, dynamic range and audio. Lower any of these four criteria and you run the risk of not hearing the stations you want to hear.

HF demands bigger and better antennas to hear the weak stations. Six-inch rubber ducks and (in most cases) vertically polarized active antennas are not the best choices to yank in the DX on wideband handheld scanners. Ignorance is bliss, so you guys using these little HF radios as your primary HF receiver have to ask yourselves: "How much am I *not* hearing due to my poor performance specs?"

I think the *Passport 2007* said it best at the end of their Icom R20 review: "Radios with broadband frequency coverage simplify engineering, production, shipment, and inventory control – no wonder they keep cropping up. Alas this tantalizing concept keeps falling short except with costly receivers, and the handheld Icom IC-R20 is no exception."

Q. *Have the Marine channels changed designators recently? I've been hearing CG Station Monterey (in California) using 165.3125 calling it channel 21, but as far as I know channel 21 is on 157.0500. I thought at first maybe it was some odd harmonic but I've monitored both frequencies at the same time using two different radios and they definitely carry different traffic. Any thoughts or ideas on this? Tim Schaffer via email.*

A. Nothing new, and, no, the designators have not changed. You are hearing a US Coast Guard Law Enforcement/Intelligence net repeater that repeats 157.050 Marine Channel 21 from San Pedro Coast Guard Integrated Support Command in California. There are quite a few of these links or backbone repeaters that the Coast Guard uses around the country. In Maine, they have one on 165.3375 MHz that repeats 156.800 Marine channel 16. Down New Orleans way they have one of these LE/Intel repeaters also on 165.3375 MHz. In fact, I would recommend to anyone along the coast in VHF range of a CG facility to check 165.3375 MHz.

Q. *I know Stridesberg make a filter that will pass 225 and up. Does anyone make one that will pass ONLY 225-400? Randy True via email.*

A. I have never seen one. Given the frequency range, it would probably have a very limited market and not be profitable for a company to make or sell.