07-Dec-2016

When the packet radio digipeater on the ISS changed to 70cm recently, the only option I had to continue working ISS passes was my FT-60R HT. That worked very well, but it was not terribly convenient to connect the antenna & TNC cables each time. Also, while 5 watts might be fine for most FM satellite work, I was hoping that a little more power might extend my range.

I had previously seen reviews and YouTube videos of a low-cost dual-band radio that is sold under a variety of models: Juentai JT-6188, QYT KT8900, and others. While reviews are mixed, for under $100 U.S. I thought that this radio might make a decent rig dedicated to packet.

I'm not writing this to debate the quality of these radios, but rather to simply share my experience.

First, most of these radios that you will find online do not have a speaker out jack which of course is needed to get RX audio to your TNC. The internet has a number of helpful guides which show how to add an external speaker jack. I chose another route -- buy a radio with a speaker jack already installed.

Another shortcoming that many of these radios have is that a computer programming cable is an additional purchase. As luck would have it, after a great deal of searching I found a radio that not only came with the external speaker jack but also included the programming cable.

The link to the unit I purchased is:

https://www.amazon.com/QYT-KT8900-Transceiver-400-480MHz-Programming/dp/B01LYIDJI3

The manual is only slightly useful and even the programming software is fairly cryptic, but hams are used to accomplishing great things with minimal information. One excellent resource is a review that includes numerous links to things that you will need such as the mic cable pin-out (to build a TNC cable), explanations of the programming options, and a link to download the programming software itself. All that info can be found at:

http://www.miklor.com/COM/Review_KT8900.php

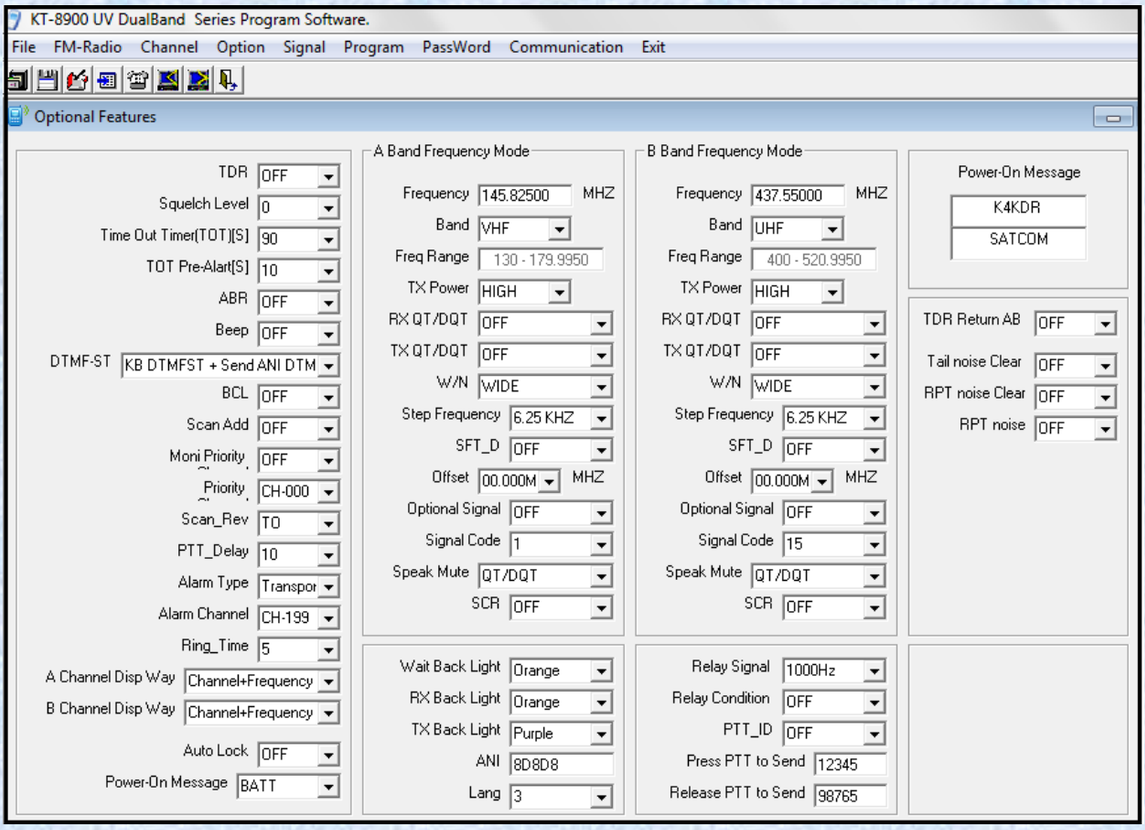
So, with the 70cm ISS frequencies programmed in, a suitable antenna attached, a cable to my TNC-X, and the menu options set to my best guess at what was appropriate (squelch off, etc.), I attempted to reach the ISS digipeater on a favorable pass.

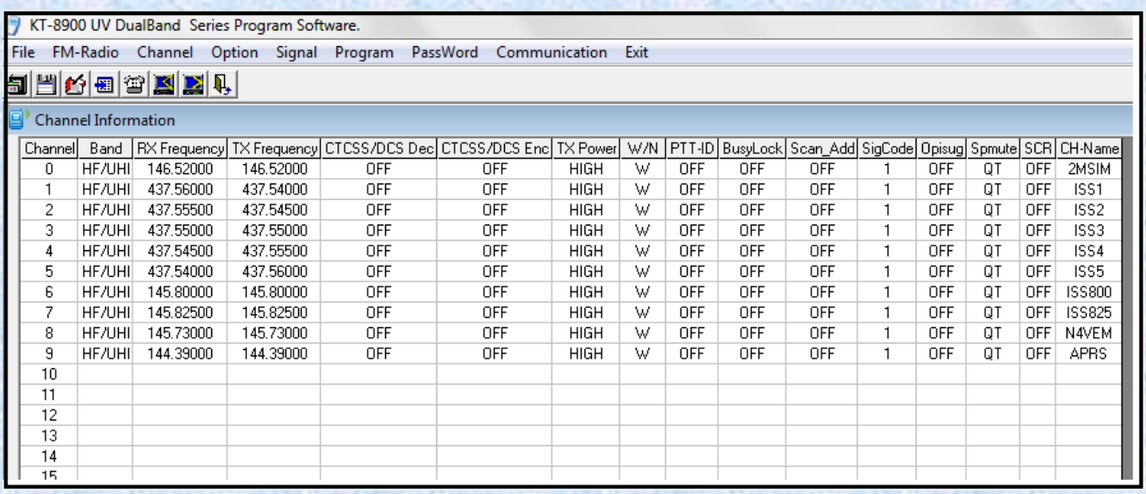
The results: terrible.

I was not seeing a single packet digipeated back to me. However, on occasion I did show up on the ariss.net website after iGate stations received digipeats of my efforts. So, I was reaching the ISS but it seemed that the receiver on this radio was worthless.

But that didn't make sense because I was seeing digipeats of **other** stations from the ISS. What was up? I finally determined that there was not one, but several programming options that were putting a delay on the RX after each TX. While eliminating repeater tails and other unsquelched noise might be fine for voice work, that kind of delay was a disaster for successful packet exchanges.

After much trial and error, I finally got the options programmed for what has turned out to be a fine dedicated packet radio. For the reference of anyone who might want to give this radio a try, I will include screen prints of the "Optional Features" as well as the "Channel Information" screen from the programming software so that you can see what settings work for me on packet frequencies. FYI, it also works very well for terrestrial 144.39 APRS and regular packet to a local ground digipeater.





Channel	Band	RX Frequency	TX Frequency	CTCSS/DCS Dec	CTCSS/DCS Enc	TX Power	W/N	PTT-ID	BusyLock	Scan_Add	SigCode	Opisug	Spmute	SCR	CH-Name
0	HF/UHI	146.52000	146.52000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	2MSIM
1	HF/UHI	437.56000	437.54000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS1
2	HF/UHI	437.55500	437.54500	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS2
3	HF/UHI	437.55000	437.55000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS3
4	HF/UHI	437.54500	437.55500	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS4
5	HF/UHI	437.54000	437.56000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS5
6	HF/UHI	145.80000	145.80000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS800
7	HF/UHI	145.82500	145.82500	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	ISS825
8	HF/UHI	145.73000	145.73000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	N4VEM
9	HF/UHI	144.39000	144.39000	OFF	OFF	HIGH	W	OFF	OFF	OFF	1	OFF	QT	OFF	APRS
10															
11															
12															
13															
14															
15															

I hope that my false starts, mistakes, and especially my final menu settings might be helpful if anyone is looking for an inexpensive way to dedicate a radio to 2m / 70cm packet.

73!

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