

## Remote Virtual Radio Connection Presentation April 27, 2017 Q&As

### Background

Bill Tugend, N4VMC, and Margie Spangenberg, KK4AGN, created a club presentation entitled "Remote Virtual Radio Connection, Windows and Android," and presented it to their Anderson Radio Club (<http://www.andersonradioclub.com/>) on April 27, 2017. Jim Millner (WB2REM) and I (Gene Hinkle, K5PA) provided content support based on our *QST* article entitled, "DIY Remote Radio," April 2017. Based on questions asked at the club meeting and follow-up answers, we helped put together this Q&A list that will address some commonly asked questions. This information is being reprinted with permission from Bill and Margie.

**Question #1:** Charges made for user time on station? Is it on a time or contact basis? In order to be heard, does one have to join several of the remote sites?

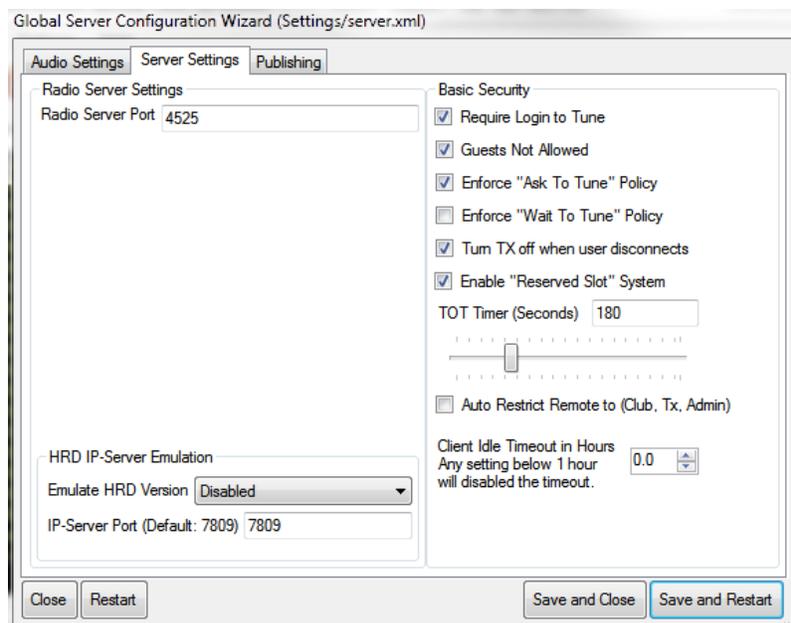
**Answer:** There are many RemoteHams sites that are totally free to use. One just needs to request permission and operate within the procedures stated. [Gene Hinkle, K5PA] In all my usage of RemoteHams, I have never had to pay anything other than contributing to the cause for program development. You do come across some sites that want you to join but as you know we do not like that approach at all. So I would not stress this payment other than you do come across it and it is up to the ham to decide whether to participate in this type of business. If someone in the audience is thinking this is a way to pay for their hobby, they need to realize that once you charge for something there is a reasonable expectation of something in return. It is like a contract. So beware.

Remote Radio access should be at no-charge to the users. This is in the spirit of *Amateur* Radio. We do not encourage charging others to join the remote-base radio club to use a remote base. This is similar to repeater usage that has a heritage of decades of free and open use. Users are encouraged to join a club to assist in the maintenance and upkeep but usually it is not required for use. There are other software/ham-related radio companies that charge a fee to use their systems. We encourage a model of *hams-helping-hams* to learn, experiment, and become part of the community without insistence on *pay-to-play*. Making someone pay is a non-starter for getting a new generation of hams interested in remote operation, be it HF radio, Echolink, IRLP, D-Star or other Internet connected radios.

Another aspect for the RemoteHams software itself is that it is free but the developers do accept contributions to offset development. Ask yourself about the remote base clubs that are charging users, do you think they are redirecting these fees back to RemoteHams.com. I would say they are not. So instead, hams should consider the wide usage of RemoteHams and if a user likes it and use it, contribute to the developers who are doing this on their own. That would be the better use of these funds.

**Question #2:** If setting up one's own radio for remote operation (whether for self or to share) is it necessary to configure the TOT (Transmit Time Out) feature (usually buried in the configuration menus of most modern radios) so that the radio should hopefully cease transmitting automatically if it is commanded to transmit but fails to receive the command to cease transmitting or the software/PC crashes. Ideally there should also be a means to forcibly remove power from the radio if it hangs (such as from high RF fields due to a cut/damaged coax that essentially locks up the radio) -- particularly if nobody is home and on-call to pull the plug on a runaway transmitter. Essentially, to cover one's but for Murphy's Law since we are required to be able to promptly kill a remotely controlled transmitter in the event of a runaway transmitter.

**Answer:** Yes, there is a watch dog timer (look under the *Server Settings* menu) that will keep the transmitter from being keydown all the time. It is a requirement of FCC regulations and it is built into the RemoteHams Server software.



I suppose if the PC crashes totally, there might be a possibility that the transmitter would continue. This is where a hardware based transmitter time-out would be of interest. All risks should be considered when setting up a remote base.

**Question #3:** How does Remote Radio count for contesting / DXCC?

**Answer:** DX Awards - Yes one can use remotes for DXCC per the ARRL by following their rules. Here is the clip from our article in QST.

### **DXCC and Remote Operating**

In January 2015, the ARRL Board of Directors addressed specific rule changes concerning remote operation and obtaining DXCC credit for countries worked (see [www.arrl.org/news/arrl-board-okays-changes-to-dxcc-program-vhf-and-above-contesting-rules](http://www.arrl.org/news/arrl-board-okays-changes-to-dxcc-program-vhf-and-above-contesting-rules) for more details). The rules state that an operator can be physically located anywhere in the world — land, sea, or air — and work through a remote station. Transmitter location continues to define a station's location, and, for DXCC purposes, all transmitters and receivers must be located within a 500-meter diameter circle, excluding antennas.

Contesting - Contesting is also allowed if you follow the specific rules for each contest. As always, you should look at the rules for a contest or for awards. Several years ago the whole contesting team was operating remotely from their home countries while the remote base station was unmanned except for a service tech. Each operator operating from their country needs to abide by all of their own country's license regulations. An alternative is for the foreign hams to earn their US FCC ham license so it is easy for them to operate remotely into a US based station. We will discuss these topics in our CQ Magazine article next month. They would be operating as if they had a long microphone cord (i.e., the Internet)

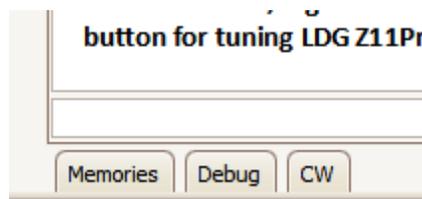
connected from their home to the remote base station in the US during the contest.

For some references, look up the National Contesting Journal (NCJ), ARRL publication, March 2016, January 2010 and March 2010. Back issues can be found on the DVD for ARRL Publications in the year they appeared. Better, ask a friend!

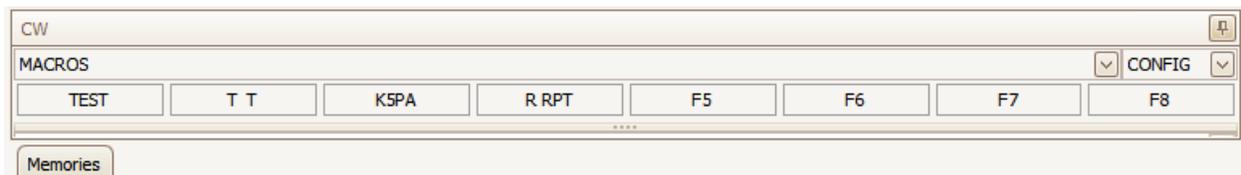
**Question #4:** Can you do CW?

**Answer:** Absolutely! With RemoteHams, there is already a CW panel built into a GUI where you add your personal macros for common phrases to be sent. You can also use a piece of hardware, called the ORB Control Device and sold on their website (look at the RemoteHams website), that provides audio (TX and RX), Push-to-Talk, and a CW Morse key interface. It is very cool. CW does take some practice but it does work and the ORB device or their program CW panel GUI provides an elegant solution.

Look for the CW tab at the GUI bottom



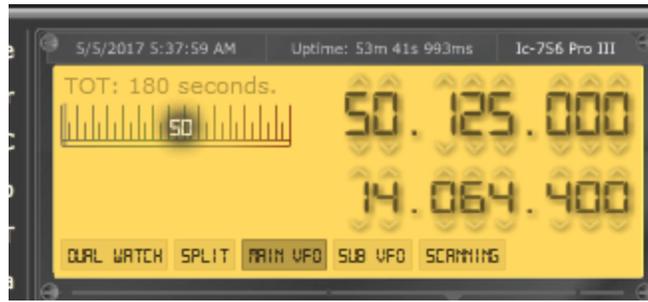
Clicking the tab brings up this GUI window



**Question #5:** Why are there two frequencies (one on top, one below) on the Radio Control?

**Answer:** There are 2 frequencies because most ham transceivers are designed to have 2 VFOs, an A and B unit. An operator can then tune each to a different frequency to quickly go between them by selecting A/B that will swap the two. AND, most important, while working a DX station is it common to operate SPLIT. This keeps everyone in the world from calling

back on the DX station's radio frequency. That means one would listen on VFO A but transmit on VFO B. You might hear someone say he is operating SPLIT UP 5 to 10 on SSB. It means tune the transmit VFO (B) to 5-10 KHZ higher than the VFO A Frequency which is where one is listening to the DX station since he is transmitting there. Split operation is essential for working pileups during DX-pedition operations.



Notice MAIN VFO is highlighted in lower part of the figure this is the 50125.000 MHz frequency of the VFO A. The 14064.400 MHz frequency is the SUB VFO frequency which is the VFO B. SPLIT is also shown and DUAL watch is shown. Split allows transmitting on VFO B while listening on VFO A. DUAL allows monitoring another frequency while working the other frequency. Many times this must be within the same ham band for the transceiver but is model dependant.

**Question #6:** Can the club's repeater interface with the remote radio software?

**Answer:** Club repeaters are normally opened to all classes of licenses. With remote base HF radio, the transmit capability must be carefully controlled because of frequency, mode, and sub-band privilege differences between license classes. That is the reason a registered user upload their license to the owner of the remote so they know the user is licensed and their operating privileges. That would be impossible to do for a repeater where you do not have control of who is accessing the repeater. Technically it is possible if you can restrict all users to the proper license class and you have control over the remote base. You could operate a remote base at VHF or UHF only and then cross link them on an *ad hoc* basis. That would keep all users within their license class. Something I have not considered just now is the legality of cross banding in the VHF or UHF so it stays within the FCC regulations.

**Question #7:** Might want to mention that there are also free SDR radio receiver websites around the world where people may listen to their own, or

others, transmissions to verify they are getting out if they have no operational receiver of their own with which to listen. Such might could compliment a service like this when operating remote. These can also be much fun, especially in HF.

**Answer:** Yes, very true. Here is a link to one of my favorite that you can check out yourself. <http://websdr.org/>

**Question #8:** What control does a remote radio have concerning HF contacts, the radio's filters, RIT/XIT controls, frequency and transmit and to operate split on HF, such as rare DX, special events?

**Answer:** The RemoteHams server software allows the owner to setup the server to restrict certain buttons from the menu displayed to the end user. That way it is easy to simplify the GUI or to restrict modes or other radio operation as needed. Look at the Security Manager settings. These are shown in the GUI below.

There are Allowed Features, Buttons, Dropdowns, Sliders, Messages, and Statuses.

The screenshot shows the 'Global Security Manager' window with the following settings:

- Allowed RX Frequencies: 100000-56000000,76000000-167000000,4  Enabled ...
- Allowed TX Frequencies: 144000000-148000000,420000000-450000  Enabled ...
- Blocked Frequencies: 26965000-27405000  Enabled ...
- Blocked Features:  Enabled ...
- Allowed Buttons:  None Get List ...
- Allowed Dropdowns:  None Get List ...
- Allowed Sliders:  None Get List ...
- Allowed Messages:  None Get List ...
- Allowed Statuses:  None Get List ...
- Disable Remote on Local Radio Activity Disabled Duration (Seconds) 300
- Auto Power Radio Off When No Clients Connected
- Enable User Level Permission for Other Devices (Amp, Rotator, Switch, etc.)

**\* ADMINs BYPASS ALL SECURITY.  
only assign yourself as admin.**

Buttons at the bottom: Import, Export, Cancel, Save

**Question #9:** How much control does the user have of the remote stations rig to optimize reception?

**Answer:** If all the buttons are available, then full control over the transceiver functions. In addition, if other equipment is also enabled for the site, then Rotators, Amplifiers and Antenna Switches are remoted as well.

**Question #10:** How would one share a remote station with several users simultaneously?

**Answer:** All users that are allowed to listen or transmit on the remote can be logged on simultaneously. It is then a first to the PTT to transmit. Listen only users can only do that. Many times multiple hams are logged into the remote for the purpose of listening to enhance their capability to hear during nets. So not everyone wants to transmit all the time.

Here is a twist that we have not discussed before. If you contribute to the RemoteHams to support their software development, that can earn you minutes on a remote that will give you sole access that will lock others out. But this is of little interest to the authors but should be mentioned. Refer to the RemoteHams.com website for details on donations and earning credits.

**Question #11:** If running DX in CW how long can one continue to hold the remote station before letting someone else use the station?

**Answer:** See answer above. It is a first to PTT to transmit if the user is allowed transmit privileges by the owner. Also note refer to the donations to RemoteHams.com to earn credits.

**Question #12:** What is the difference between Echolink and Remote Radio since both require the Internet?

**Answer:** All are remotely linked via the Internet. Echolink, IRLP, AllStar, DMR, etc., use a connection for selection, control, voice over the Internet. Most are VHF/UHF radios only. RemoteHams and several others are for HF Radio Remote operations. RemoteHams provides all the software required on either the Client (User) side or the Radio Server side. This makes connectivity of any supported radio very easy for a ham to do him/herself.

**Question #13:** Does an international remote radio host have a reciprocal licensing agreement?

**Answer:** It should if transmissions are envisioned. However, listen only remotes are also possible where no license is needed. In all cases, the regulations imposed by the remote's host country need to be adhered to.

**Question #14:** How would one share a remote station with several users simultaneously?

**Answer:** Each user would need to be allowed onto the remote by the remote owner. First a person wanting access request permission to use the remote and the owner will add them to the RCForb (Server) software. Once added and the license has been uploaded for verification, the requester may be able to transmit. Multiple users can log onto the remote station simultaneously and a first to transmit capability. If you are setting up your own remote station, then you can limit access to just yourself or your friends.

**Question #15:** If running DX in CW how long can one continue to hold the remote station before letting someone else use the station?

**Answer:** If not one else is logged onto the remote, then for as long as you want and the remote owner will let you. If others are also logged on, then you all share the capability to transmit on a first to PTT basis. You can get credits to allow sole access by making donations to the RemoteHams development team via their website.

**Question #16:** Can a remote radio repeater link to another remote radio repeater?

**Answer:** You could but you would want to control who is accessing the radio and restrict access to their license privileges. That can be tricky and you don't see that very often. Also, any cross banding access restriction based on a country's regulations must be adhered to.

THE END