

HF Terminal Module Operations

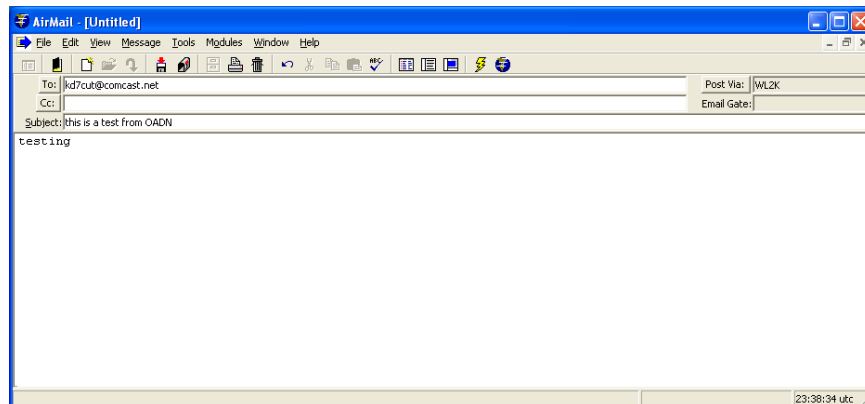
There are two things you can do with the HF Terminal module. One is to connect to an HF RMS Gateway to send and receive messages with internet email addresses or other winlink users using the winlink 2000 system. The second thing you can do with the HF Terminal module is to connect peer-to-peer with another amateur and send messages direct to each other.

Related to the HF Terminal Module operations there are a couple tools to help the Airmail user. One is the propagation tool which aids the user in predicting the likelihood of a connection to an RMS gateway and the other updates the pre-loaded list of HF RMS Gateways and Frequencies. These tools are explained at the end of this document.

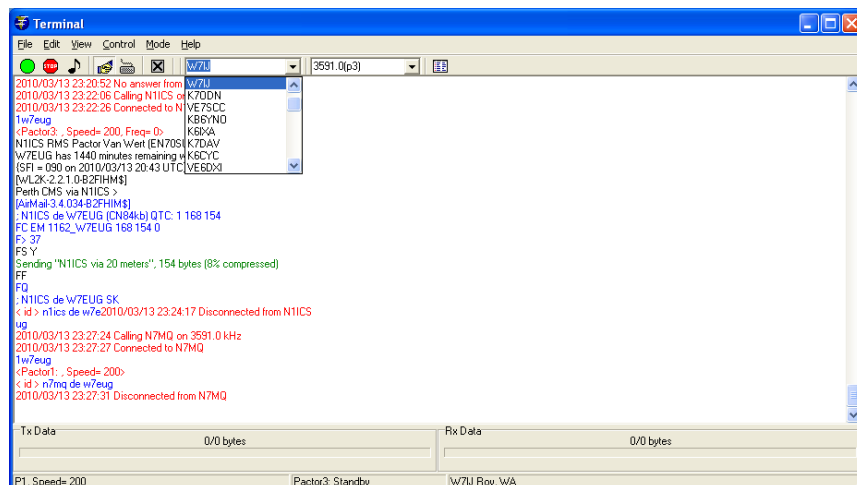
****This document assumes that you have the HF Module correctly configured to control the HF radio mode/frequency already and that your radio is tuned to the correct frequency. ****

Connect to an RMS Gateway

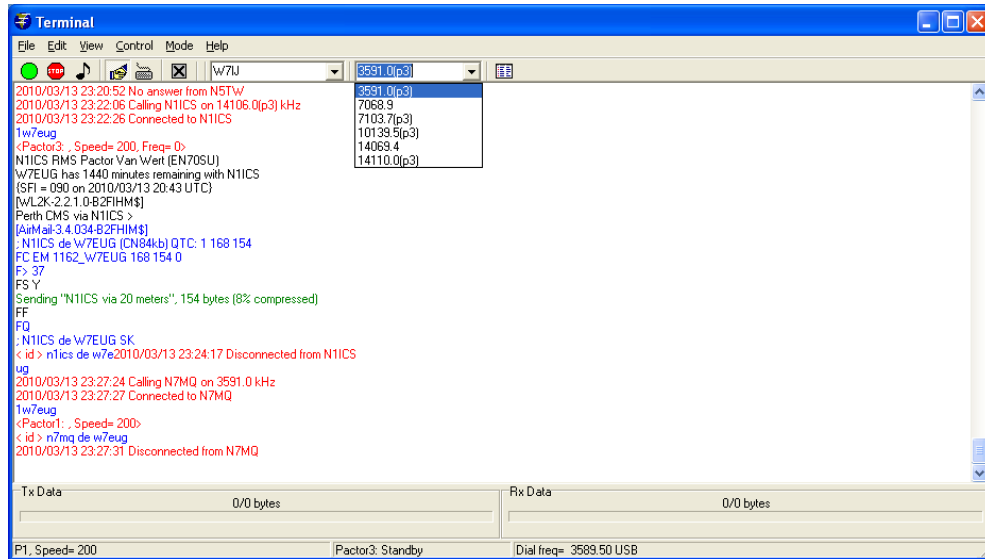
1. Open Airmail
2. Author a message to a winlink user or an internet email address and make sure that "Post Via:" shows "WL2K"



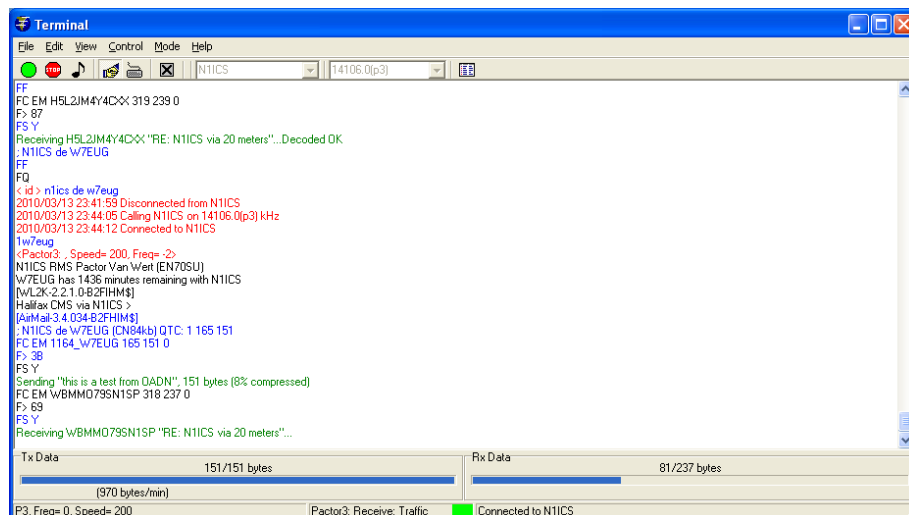
3. Post the message to the outbox of Airmail
4. Open the HF Terminal through the Modules menu or by hitting the toolbar button
5. Select the callsign of the RMS Gateway you want to connect to from the first drop down list on the left



6. Select the frequency/band you want to use to connect to that RMS Gateway with the second drop down from the left.
 - a. If (p3) is noted to the right of the frequency then this connection will be capable of Pactor 3 if your equipment is capable of Pactor 3 and band conditions allow



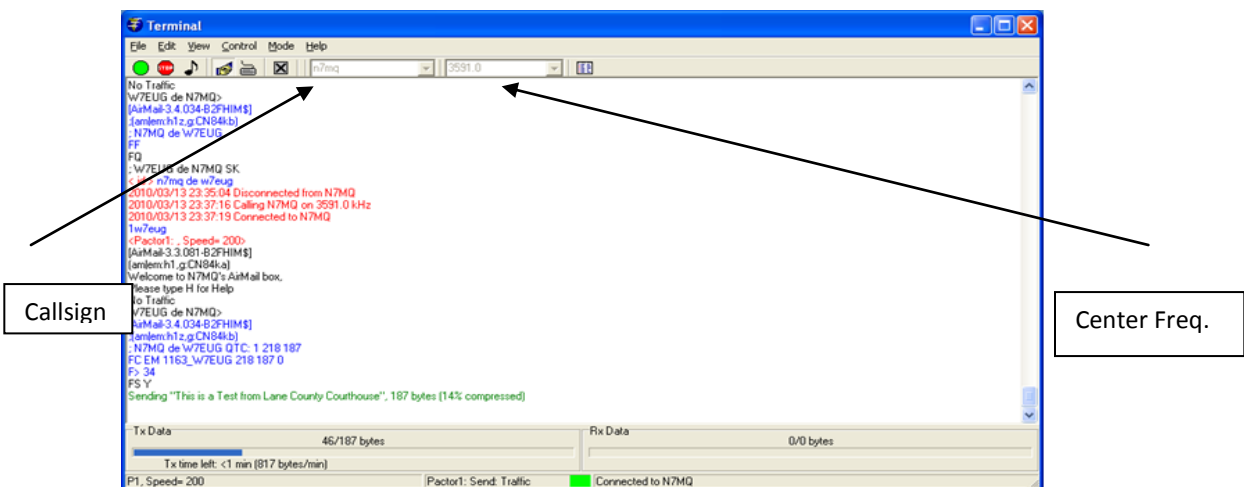
7. Turn the volume up a little on the HF to listen for traffic.
 - a. If you hear traffic then wait until it finishes (you will hear beeps and tones)
 - b. If you don't hear traffic but just consistent white noise then continue
8. **Tune your radio if necessary** (OADN Stations auto tune)
9. Click on the Green connect button on the far left of the HF Terminal Toolbar and then Airmail will start the connection attempt
 - a. Most HF RMS Gateways are listening on multiple frequencies by scanning and only have one HF Transciever. Therefore you may try to connect to a Gateway but have no luck. This could be due to band conditions (more on this in the Propagation section) but could also mean that the station is busy with a connection on another band
10. If a connection is established you will see the standard connect strings and you should see your message queue up to be sent in the "TX Data" bar at the lower left of the screen. You will also see any incoming messages queue up in the "RX Data" bar at the lower right of the screen.



11. Once it is finished it will disconnect automatically and the HF Terminal window will be in a Monitor mode
12. You can now close the HF Terminal module or keep it open to monitor or accept incoming connections
13. If you look at your outbox after this connection you will notice the message you just sent has a green check on it indicating that it was sent successfully.

Peer-To-Peer

1. Open Airmail and author a message to another amateur radio callsign and make sure the "Post Via:" field shows only the callsign of the amateur you are trying to send to.
 - a. If not click on the "Post Via:" button and de-select everything from the list except for the amateur callsign you are sending to and click on "Ok".
 - b. Now your "To:" field and your "Post Via:" field should match with the same callsign
2. Post the message to the outbox of Airmail
3. Open the HF Terminal through the Modules menu or by hitting the toolbar button
4. Type the callsign of the station you want to connect with in the first drop down list from the left
5. Type the "Center Frequency" you will attempt a connection with into the second drop down list from the left.



6. Turn the volume up a little on the HF to listen for traffic.
 - a. If you hear traffic then wait until it finishes (you will hear beeps and tones)
 - b. If you don't hear traffic but just consistent white noise then continue
7. **Tune your radio if necessary** (OADN Stations auto tune)
8. Click on the Green connect button on the far left of the HF Terminal Toolbar and then Airmail will start the connection attempt
9. If a connection is established you will see the standard connect strings and you should see your message queue up to be sent in the "TX Data" bar at the lower left of the

screen. You will also see any incoming messages queue up in the “RX Data” bar at the lower right of the screen. (Shown in picture in step #5)

10. Once it is finished it will disconnect automatically and the HF Terminal window will be in a Monitor mode
11. You can now close the HF Terminal module or keep it open to monitor or accept incoming connections
12. If you look at your outbox after this connection you will notice the message you just sent has a green check on it indicating that it was sent successfully.

HF Propagation/RMS Gateways

One of the issues with making Airmail connections on HF either peer-to-peer or to an RMS Gateway is whether band conditions/propagation will allow it. In regards to connecting to an RMS Gateway Airmail has a propagation tool that will show you the likelihood of a connection to an RMS Gateway in the Frequency list. In order to effectively use this tool you need to have your “station location” in Lat:, Lon:, and Grid: set in the settings tab of the options window in Airmail.

Hitting F8 while in Airmail will popup the “Propagation” window and show you all of the selected stations from the Frequency List in the left pane. When an RMS station callsign is highlighted in the left pane it will show the list of frequencies that RMS station is available on and show the likelihood of connection with each frequency at a specified UTC time. The current hour column has a border around it to show current likelihood of connection based on the time of day and the Solar Flux Index (SFI).

Station	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
K7DAV																								
K8CYC																								
VE6DXI																								
W6IM																								
W0BJI																								
K0SI																								
WD8DHF																								
N5TW																								
W5SEG																								
KL7EDK																								
KB9MMC																								
NK5Z																								
W80TAX																								
KB5HCD																								
W9MR																								
AE5R																								
N1ICS																								
VA3LKJ																								
KC4TVO																								

The SFI is an indicator of band conditions and helps the propagation window determine the likelihood of a connection with an RMS Station at a certain frequency and time. The

propagation windows predictions are based solely on distance between the two stations and the SFI meaning that other band conditions and local noise are other factors that can lead to conditions being better or worse than predicted. The SFI changes each day and is updated every time a connection is made to an RMS Gateway via the HF Terminal module.

Use this tool as a guide but not as Fact.

Frequency List

The pre-populated RMS Gateway list for the HF Terminal module is not automatically kept up to date and needs updating periodically due to new RMS Gateways coming online/offline or re-organization. To do this you will need a working internet connection.

To update the frequency list:

1. Open your web browser and navigate to <http://www.winlink.org>
2. Hover over "Maps & Reports"
3. From the drop down menu click on "Public Frequency Lists"
4. Right-click on "PublicPMBOs.txt" and click on "Save Target As"
5. Save this to the desktop of your computer
6. Open Airmail and make it smaller than full screen so you can see the "PublicPMBOs.txt" file on your desktop
7. Click on the "Inbox" in Airmail so your inbox is shown
8. Drag and Drop the "PublicPMBOs.txt" file from your desktop onto the "Inbox" folder of the navigation tree in Airmail
9. You will now have a new message in your inbox
10. Open the new message
11. Click on the "Tools" menu and then click on "Make Frequency List"
12. Click on "update" at the bottom of the window that pops up
13. Click on "Save" at the bottom of the window
14. Click on "Ok" at the bottom of the window
15. Click on the "View" menu and click on "Frequency List"
16. At the top of the body in the window that pops up you will see today's date and the time stamp of when the Frequency list was updated as verification that the update was successful.
17. Click on "Ok"