

# SalCo ARES Digital Data Messaging

## Yaesu FT-857D set up and configuration

With CAT control

November 24, 2020 V 2.0

## Forward

I would like to thank S. Porter, KT5H and J. Bratton, AA5AD for their assistance in testing and preparation of this guide. It takes a team!

Some additional notes about Winlink Gateways: You may get frustrated or think you can't connect to \_\_\_\_\_\_ gateway when it doesn't respond on your first connection attempt (usually 10 tries), but don't give up! The way the Winlink Gateway software works is it "scans" each frequency for approximately 6 seconds before moving to the next. So, for example, our Gateway (AD5EO) has (in essence) four possible gateways – 80 meters narrow and wide modes; and 40 meters narrow and wide modes. The narrow and wide modes reside on different frequencies within the same band. (In our case, 3.584.00 (80m narrow); 3.590.00 (80m wide); 7.096.00 (40m narrow); and 7.103.00 (40m wide). So it takes approximately 24 seconds to complete the cycle. When you click "start" to start the connection from your radio it is probable you will not hit perfectly within the scanning software of the gateway.

At the time of this writing, we have not included VARA FM in the guide since there are no VARA FM gateways within our reach and we have not completed our own testing to create one as yet. Please be patient!

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## Signalink



The Signalink is required for this operation since the FT-857D does not have a built in sound card. The Signalink acts as the "modem" between the computer and the radio converting the information from digital to analog and vice-versa. You can purchase a Signalink USB interface from many different sources for around \$129.00 (February 2019) including the appropriate cable to connect to your specific radio. (For Yaesu FT-857D the cable is an RJ45 to a 6 pin Mini DIN connector) The Signalink is powered by the USB port from your computer.

Ensure you look at the configuration of the jumper wires for your specific radio (Also available at many sources).

SIGNALINK JUMPER SETTINGS Yaesu FT-857D 6-pin Mini-DIN Data Port (use part # SLUSB6PM, SL1+6PM, or SLCAB6PM)

| JP-1  | Pin-out   | Radio Models | Notes |
|---|---|--------------|-------|
| C 0 0 8<br>C 0 7<br>G 0 6<br>FWR 0 6<br>FWR 0 6<br>F<br>PWR 0 6<br>F<br>F<br>PWR 0 6<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F<br>F | $\overline{Pin 1} - Data In$ $Pin 2 - Ground$ $Pin 3 - PTT$ $Pin 4 - 9600 Out$ $Pin 5 - 1200 Out$ $Pin 6 - Squelch$ | DR-735T/E    |       |

Ensure you radio is powered off. Connect the 6 pin Mini Din connector to the Data port on the back of the radio. Connect the other end of that cable to the RJ45 port on the back of the Signalink. Connect a USB cable (USB A to USB B just like the cable to connect to a printer) to any USB port on your computer, then plug the USB connector on the other end of that cable into the USB B port on the back of the Signalink. (In Windows 7 and above, the computer already has the appropriate drivers and will install them automatically.)

For CAT Control: Procure the Yaesu CT-62 USB CAT cable (one source others are available): <u>https://www.amazon.com/gp/product/B0041LNISK/ref=ppx\_yo\_dt\_b\_asin\_title\_o02\_\_o00\_s00?ie=UTF</u> <u>8&psc=1</u>

Connect the mini Din connector to the CAT/Linear port on the back of the radio, turn the radio on, then connect it to a USB port on your computer.

To ensure you assign the correct COM port number during the software setup, click the window (Orb) at the bottom left of the computer, then click on [Computer] [System Properties] [Device Manager] [Ports (COM & LPT)] make note of the COM port "USB Serial Port (COM x)" where "X" is the number assigned. This will be the COM port number you use in the software setup process. [Close all windows].



NOTE: If you plug the USB cable(s) into different computer USB ports (or add a USB hub), the COM port number WILL change and the USB Audio CODEC name will change. Please keep this in mind as you set up in different locations!

If you do not wish to use computer control (frequency selection) the above steps are unnecessary.

## FT-857D Radio Menu Settings

There are a few menu settings on the radio that need to be checked or adjusted:

Menu 19: [CAT RATE] set to 9600 Menu 20: [CAT/LIN/TUN] set to CAT Menu 71: [PKT 1200] set to 50 (audio input level) Menu 73: [PKT RATE] set to 1200

## **Winlink Express**

Download RMS Express from <u>https://winlink.org/ClientSoftware</u>; Winlink Express (right side of page), then scroll to bottom of page for download (do not install yet).

#### Winlink Express Installation

Install the RMS (Winlink) Express software using the default location for file storage and location. When you start Winlink Express for the first time, you will see: (fill in the items circled in red)

| Winlink Express Properties   | 8   |
|--|---|
| Call Signs   | Contact Information (Optional)  |
| Callsion suffix (potional): (Used for country code)                          | Name:   |
| Show password  | Street address 1:   |
| Password recovery e-mail:  | Street address 2:   |
| (Non-Winlink e-mail address where lost password will be sent when requested) | City:   |
| Remove Callsign Request password be sent to recovery e-mail                  | State/Province:   |
|  | Country:  |
| Auxiliary Callsigns and Tactical Addresses                                   | Postal code:  |
| Add Entry  | Web Site URL (optional):  |
| Remove Entry   | Phone number:   |
| Edit Entry   | Non-Winlink e-mail:   |
|  | Additional information (optional):                                      |
| My Grid Square: Lat/Lon to Grid Square                                       |   |
| Winlink Express registration key:  |   |
| Path to propagation forecast program: C:\itshfbc\                            | Recalculate HF path quality if SFI changes more than: 30                |
| Service Codes  | Keep logs for 1 🚖 weeks. Keep deleted messages for 30 days.             |
| PUBLIC   | Display list of pending incoming messages prior to download             |
| (Use PUBLIC for ham call signs. Separate multiple service codes by spaces.)  | Warn about connections to stations holding messages                     |
| If you change service codes, you must update the list of channels.           | Allow diagnostic information to be sent to the Winlink Development Team |
| Update Cancel  |   |

NOTE: a Winlink registration key is not required! (However if you decide to donate to further the research and development of Winlink, the registration fee is currently \$24.00)

Finally, click "Update" to save the changes you made, then click "Close" to close this window. If you prefer to have distances indicated in miles instead of kilometers, "click" on Settings > Preferences Near the bottom of the new window, you will see radio buttons for kilometers and miles. Click on the button next to miles, then click Update.

| Preferences 23   | J |
|--|---|
| Message Reading Options  |   |
| Viewing seconds before marking message read: 2                     |   |
| Automatically move read items to Read items folder                 |   |
| Message acknowledgement options                                    |   |
| Default to requesting message read acknowledgements                |   |
| Automatically send message read acknowledgements without prompting |   |
| Ignore read acknowledgement requests on incoming messages          |   |
| Message sending options  |   |
| Automatically add contact entry for each destination address       |   |
| Add "//WL2K" to the subject of messages                            |   |
| Line wrapping  |   |
| Wrap print lines after this many characters: 72                    |   |
| Distance Units   |   |
|  |   |
| Update Cancel  |   |
|  |   |
|  |   |

To verify the program was installed correctly (and to complete the installation),

On the pull-down menu near the top of the window, select "Telnet Winlink" from the options:

| KG5DNF Settings     Message     Attachments     Move To::     Saved Items     Date/Time     Message ID     Size     Source     Sent Items     Olders     Global Folders     Cortacts     Cortacts  | Winlink Express 1.5.11.0 - KG5D | INF     |             | _          |             |        | and the second |                        |         |        |      |
|--|---------------------------------|---------|-------------|------------|-------------|--------|----------------|------------------------|---------|--------|------|
| Image: Second Secon | KG5DNF • Settings               | Message | Attachments | Move To:   | Saved Items | -      | Delete         | Open Session: Telnet W | /inlink | - Logs | Help |
| No active session           System Folders           Inbox (0 unread)           Read lems (0)           Outbox (0)           Sent litems (0)           Deleted litems (0)           Deleted litems (0)           Personal Folders           Global Folders           Contacts  |                                 | 눈 📙     | /∄ ≫ 🕜      |            |             |        |                |                        |         |        |      |
| System Folders     Date/Time     Message ID     Size     Source     Sender     Recipient     Subject       Read Items (0)<br>Outbox (0)<br>Sent Items (0)<br>Deleted Items (0)<br>Drafts (0)     August and the sentence of  | No active session               |         |             |            |             |        |                |                        |         |        |      |
| Inbox (0 unread)         Read Items (0)         Outbox (0)         Sent Items (0)         Deleted Items (0)         Drafts (0)         Personal Folders         Global Folders         Contacts  | System Folders                  | D       | ate/Time 🔍  | Message ID | Size        | Source | Sender         | Recipient              | Subject |        |      |
| Read Items (0)       Outbox (0)         Sent Items (0)       Saved Items (0)         Deleted Items (0)       Drafts (0)         Personal Folders       *         Global Folders       *         Contacts       *   | Inbox (0 unread)                |         |             |            |             |        |                |                        |         |        |      |
| Sound (c)         Saved Items (0)         Deleted Items (0)         Deleted Items (0)         Orafts (0)         Global Folders         Contacts   | Read Items (0)                  |         |             |            |             |        |                |                        |         |        |      |
| Saved Items (0)<br>Deleted Items (0)<br>Drafts (0)<br>Personal Folders  Global Folders  Contacts   | Sent Items (0)                  |         |             |            |             |        |                |                        |         |        |      |
| Deleted Items (0)<br>Drafts (0)<br>Personal Folders<br>Global Folders<br>Contacts  | Saved Items (0)                 |         |             |            |             |        |                |                        |         |        |      |
| Personal Folders       Global Folders       Contacts   | Deleted Items (0)               | J       |             |            |             |        |                |                        |         |        |      |
| Global Folders Contacts  | Drams (0)                       |         |             |            |             |        |                |                        |         |        |      |
| Global Folders Contacts  | Personal Folders                |         |             |            |             |        |                |                        |         |        |      |
| Global Folders Contacts  |                                 |         |             |            |             |        |                |                        |         |        |      |
| Giobal Folders Contacts  |                                 |         |             |            |             |        |                |                        |         |        |      |
| Giobal Folders  Contacts   |                                 |         |             |            |             |        |                |                        |         |        |      |
| Contacts   | Global Folders                  |         |             |            |             |        |                |                        |         |        |      |
| Contacts   | Ciobal Folders                  |         |             |            |             |        |                |                        |         |        |      |
| Contacts   |                                 |         |             |            |             |        |                |                        |         |        |      |
| Contacts   |                                 |         |             |            |             |        |                |                        |         |        |      |
|  |                                 |         |             |            |             |        |                |                        |         |        |      |
|  | Contacts                        |         |             |            |             |        |                |                        |         |        |      |
|  |                                 |         |             |            |             |        |                |                        |         |        |      |
|  |                                 |         |             |            |             |        |                |                        |         |        |      |
|  |                                 |         |             |            |             |        |                |                        |         |        |      |
|  |                                 |         |             |            |             |        |                |                        |         |        | -    |

Then "click" on the "Open Session" text (it actually is a button).

| Winlink Express 1.5.11.0 - KG5DN | VF        |                             | the state  |             | 18-    | and the second |                  |         |      |
|----------------------------------|-----------|-----------------------------|------------|-------------|--------|----------------|------------------|---------|------|
| KG5DNF - Settings                | Message   | Attachments                 | Move To:   | Saved Items | •      | Delete Open Se | ssion: Telnet Wi | nlink   | Help |
|                                  | 2   🛃   6 | 4   <del>&gt;&gt;</del>   🕜 |            |             |        |                |                  |         |      |
| No active session                |           |                             |            |             |        |                |                  |         |      |
| System Folders                   | Date      | e/Time 🔍 🔍                  | Message ID | Size        | Source | Sender         | Recipient        | Subject |      |
| Inbox (0 unread)                 |           |                             |            |             |        |                |                  |         |      |
| Outbox (0)                       |           |                             |            |             |        |                |                  |         |      |
| Sent Items (0)                   |           |                             |            |             |        |                |                  |         |      |
| Saved Items (0)                  |           |                             |            |             |        |                |                  |         |      |
| Deleted Items (0)                |           |                             |            |             |        |                |                  |         |      |
| Pemenal Foldern                  |           |                             |            |             |        |                |                  |         |      |
| reisonal rolders                 |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
| Global Folders                   |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
| Contacts                         |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |
|                                  |           |                             |            |             |        |                |                  |         |      |

On the window that opens up, press "Start" to begin the session You will then connect to one of the RMS (Radio Message Servers) via your internet connection.



(NOTE: You may receive a pop-up notification that your password was changed)

After Winlink completes its connection press either Exit or the Red "X" to exit the session. Your call sign (Winlink User Name) has now been registered!

Close this window (click the red [X]).

#### Winlink VARA HF Setup

VARA HF is a relatively new (to us) mode of high-speed Digital HF messaging software. It is usable without a license key (\$69.00 at time of writing) but higher speeds will not be available without the license.

Before setting up Winlink Express for VARA HF, you must first close Winlink express, and download the VARA HF software: <u>https://rosmodem.wordpress.com/</u>. Once the software has downloaded, install following the screen prompts.

The option at the end of the install is to "Launch Application". This will allow you to setup VARA HF.



## Select [Settings] [VARA Setup]



The Main VARA settings screen will be as follows:

| 🎄 VARA Setup                         | ×                               |
|--------------------------------------|---------------------------------|
| Command D                            | ata<br>8301                     |
| VARA Licenses<br>Callsign:<br>KG5DNF | Begistration Key:               |
| Callsign:<br>AD5E0                   | Registration Key:               |
| Callsign:                            | Registration Key:               |
| Callsign:                            | Registration Key:               |
| Allow VARA of internet serve         | check for updates via<br>r      |
| ☐ 500<->2300 ( ☑ Tuner enhand        | Gateway Compatibility<br>cement |
| CVV ID                               | т                               |
| Retries:                             |                                 |
| [                                    | Close                           |

Enter your calls sign (and registration key if you have one) and ensure the indicated boxes are checked. Then press [CLOSE].

Select [Settings] [Soundcard Setup]



In the two pull-down lists, select the USB Audio CODEC (NOTE: I have renamed my CODECs to appropriately indicate which Soundcard is being used since I have multiples; If you have multiple USB Audio CODECS you may have to try a few times to select the correct one).

When finished, press [CLOSE]

Providing your radio (and soundcard) are turned on, the main screen of VARA should look similar to the following image:



Please note the "VU" meter should have the needle pointing in the green section at or below the midway point. If it is higher than that, you will need to adjust the microphone level.

To do so, leave the VARA main screen up on your display, move your mouse to the lower right corner of the display and [Right Click] on the speaker icon. Click on [Open Sound Settings]

## Sound

Output

Choose your output device



Select the appropriate USB Audio CODEC from the [Input] pull down box, then click [Device Properties]

### 

| Signalink  | Rename |
|------------|--------|
| Disable    |        |
| Volume     |        |
| Q 51       |        |
| Start test |        |

Adjust the [Rx Knob] on the Signalink until the VU meter is adjusted appropriately (at or slightly below the midpoint on the VU meter).



#### Please note the screenshots for computer settings are from a machine running Windows 10.

Now you may close all these open windows. (VARA and Sound Settings)

Now, restart Winlink Express, Select [VARA HF Winlink] from the pull down:

| 🗱 Winlink Express 1.5.32.1 - K   | G5DNF         |                   |               |                              |               | - 0  |   | × |
|--|---------------|-------------------|---------------|------------------------------|---------------|--|---|---|
| KG5DNF - Setting<br>Logs Help  | gs Message At | tachments Move To | : Saved Items | <ul> <li>✓ Delete</li> </ul> | Open Session: | Vara HF Winlink<br>Telnet Winlink  | ~ |   |
|  | 1 2 3         | ≫  @              |               |                              |               | Pactor Winlink   |   |   |
| No active session  |               |                   |               |                              |               | Robust Packet Winlin<br>Winmor Winlink   | ¢ |   |
| System Folders Inbox (0 unread) Read Items (0) Outbox (0) Sent Items (0) Saved Items (0) Deleted Items (2) Drafts (0) Personal Folders | Date/Time     | Message ID        | Size Source   | Sender                       | Recipient     | Ardop Winlink<br>Vara HF Winlink<br>Iridium GO Winlink<br>Packet P2P<br>Pactor P2P<br>Robust Packet P2P<br>Winmor P2P<br>Ardop P2P<br>Vara HF P2P<br>Vara HF P2P<br>Vara FM P2P<br>Telnet P2P<br>Pactor Radio-only | • |   |
| Contacts Contacts ALAN_CATE_KD5QNL DAVID_WILMOT_KF5TOC JOE_BRATTON_AA5AD MARK_BARNHARD_KD5AI SALCOARES STEVE_PORTER_KT5H               |               |                   |               |                              |               |  |   |   |

Then press the "Open Session" button:

| Winlink Express 1.5.11.0 - KG5D   | NF                  |            | 1           | 11     |                  |                |          |      |      | x |
|---|---------------------|------------|-------------|--------|------------------|----------------|----------|------|------|---|
| KG5DNF - Settings   | Message Attachments | Move To:   | Saved Items | •      | Delete Open Sess | ion: Winmor Wi | inlink 👻 | Logs | Help |   |
|   | ≿   🛃   🎒   ≫   🔞   |            |             |        |                  |                |          |      |      |   |
| No active session   |                     |            |             |        |                  |                |          |      |      |   |
| System Folders  | Date/Time           | Message ID | Size        | Source | Sender           | Recipient      | Subject  |      |      |   |
| Inbox (0 unread)<br>Read Items (0)<br>Outbox (0)<br>Sent Items (0)<br>Saved Items (0)<br>Deleted Items (0)<br>Dechter (0) |                     |            |             |        |                  |                |          |      |      |   |
| Personal Folders  |                     |            |             |        |                  |                |          |      |      | ~ |
| Global Folders  |                     |            |             |        |                  |                |          |      |      |   |
| Contacts  |                     |            |             |        |                  |                |          |      |      |   |
|   |                     |            |             | -      |                  |                |          |      |      | Ŧ |

#### Yes, [Open Session] is an actual button not text!

A new window will appear entitled VARA Winlink Session. Click on [Settings]:

| 🗱 Vara Winlink Session - KG5DNF   | -     | - 🗆 | × |
|---|-------|-----|---|
| Exit Settings Switch to Peer-to-Peer Channel Selection Map Forecast Best chan. Next chan. Start Stop  | Abort |     |   |
| AD5EO Center Freq. (kHz): 7103.000 Dial Freq. (kHz): 7101.500 Bearing: 270 Quality: 96  |       |     |   |
| Favorites:  |       |     |   |
| Channel Free In: 0/0 Out: 0/0 BPM: 0/0 Disconnected   |       |     |   |
| *** Launching VARA TNC<br>*** Successfully connected to VARA TNC.<br>*** Vara signal bandwidth is 2300 Hz.<br>*** Using Icom 7100, COM13, 19200 baud<br>*** Ready<br>*** This is a registered version of Vara TNC that can operate at full speed. |       |     | ~ |

Select [VARA TNC Setup]

| 🗱 Vara Setup  |   |
|---|---|
| Virtual TNC host address/name:<br>Virtual TNC Command Port: | 127.0.0.1           8300  |
| Session Bandwidth:  | 2300 ~  |
| VARA Modem location:  | C:\VARA\Vara.exe  |
| Automat     Identify v                                      | tically launch Vara TNC when session is opened<br>with Morse code at end of session |
| Update  | e Cancel  |

Ensure all items are as indicated in the above screenshot. When finished, Click [Update] then click [Close]

Next, click on [Settings] [Radio Setup]

| Select Radio Mo    | odel Yaesu F   | T-857   | ~     | Antenna   | Selection [ | Default     |            |
|--------------------|----------------|---------|-------|-----------|-------------|-------------|------------|
| Icom Addres        | s 88           | USB 🔘   | USB I | Digital 🔘 | FM 🔾        | Use Interna | al Tuner 📃 |
| Codan login        | and optionl pa | ssword: |       |           |             |             |            |
|                    |                |         |       |           |             |             |            |
| Radio Control Port |                |         |       |           |             |             |            |
| Serial Port to Use | COM13          | Baud    | 9600  | ✓ Enabl   | e RTS 🗹     | Enable DTR  | TTL        |
| TT Port (Optional) |                |         |       |           |             |             |            |
| Serial Port to Use | External       | ~       | Baud  | 9600      | - Enabl     | e RTS 🔽     | Enable DTR |
|                    |                |         |       |           |             |             |            |

Select Yaesu FT-857 from the [Select Radio Model] pull down

Ensure [USB Digital] is selected

Select the Radio Control (Com Port) that was identified earlier (NOTE: If you do not wish to use CAT Control, this step is unnecessary)

Set the Baud rate to 9600

And finally, Set the PTT Port to [External] from the pull down options

(NOTE: The Yaesu FT-857D does not use USB-D (Upper Side Band – Data) since the signal is being transmitted through a Signalink!) then click [Update], then [Close].)

The next step is to click on [Channel Selection]:

| 🗱 Winmor Winlink Session - KG5DNF   |   |
|---|---|
| Exit Settings Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC Start Stop Abort |   |
| Center Freq. (kHz): 0.000 Dial Freq. (kHz): Bearing: Quality:   |   |
| Favorites: KB5LZK @ 3595.000 (99) - Select Add to favorites Remove from favorites                               |   |
| Channel Busy In: 0/0 Out: 0/0 BPM: 0/0 Disconnected   |   |
| *** Ready   |   |
|   | - |

A new window will appear. Select (click) on [Update Table Via Internet]:

| 😸 HF Chanr | nel Selector       | - Long            | -              |            | land here   | - 1000           | -                    | ten in                          | Σ                           | 3 |
|------------|--------------------|-------------------|----------------|------------|-------------|------------------|----------------------|---------------------------------|-----------------------------|---|
| Exit Sele  | ct Update T        | able Via Internet | Update Tab     | ole Via Ra | dio Forecas | t SFI All        | RMS                  |                                 | •                           |   |
|            |                    |                   | -              | _          |             |                  |                      |                                 |                             |   |
| Callsign   | Frequency<br>(kHz) | Mode              | Grid<br>Square | Hours      | Group       | Distance<br>(km) | Bearing<br>(Degrees) | Path<br>Reliability<br>Estimate | Path<br>Quality<br>Estimate | Ô |
| AD5E0      | 3590.000           | 1600              | EM34QN         | 00-23      | PUBLIC      | 8                | 270                  | 99                              | 99                          |   |
| KB5LZK     | 3598.500           | 1600              | EM34UT         | 00-23      | PUBLIC      | 36               | 039                  | 99                              | 99                          |   |
| AD5E0      | 7103.000           | 1600              | EM34QN         | 00-23      | PUBLIC      | 8                | 270                  | 96                              | 96                          |   |
| KB5LZK     | 7101.200           | 1600              | EM34UT         | 00-23      | PUBLIC      | 36               | 039                  | 96                              | 96                          |   |
| KD7UHR     | 3588.500           | 1600              | EM58BQ         | 00-23      | PUBLIC      | 516              | 027                  | 89                              | 55                          |   |
| KOSI       | 3586.500           | 1600              | EM39UA         | 00-23      | PUBLIC      | 496              | 002                  | 89                              | 56                          |   |
| KC5GOI     | 3598.000           | 1600              | EM13KG         | 00-23      | PUBLIC      | 447              | 253                  | 89                              | 54                          |   |
| W9FE       | 3597.000           | 1600              | EM59AA         | 00-23      | PUBLIC      | 546              | 024                  | 89                              | 55                          |   |
| K5LAM-10   | 3587.500           | 1600              | EM52AF         | 00-23      | PUBLIC      | 352              | 137                  | 88                              | 54                          |   |
| N4JGW      | 3597.000           | 1600              | EM74LR         | 00-23      | PUBLIC      | 686              | 086                  | 87                              | 53                          |   |
| NSOA       | 3510.000           | 500               | EN41WK         | 00-23      | PUBLIC      | 793              | 015                  | 86                              | 53                          |   |
| KG5KS-10   | 3595.000           | 1600              | EM45JP         | 00-23      | PUBLIC      | 171              | 045                  | 86                              | 56                          |   |
| NF9D       | 3595.000           | 1600              | EN51TW         | 00-23      | PUBLIC      | 896              | 023                  | 85                              | 52                          |   |
| WX4PCA-10  | 3591.000           | 1600              | EM73NU         | 00-23      | PUBLIC      | 708              | 094                  | 85                              | 51                          |   |
| WW4MSK     | 3592.500           | 1600              | EM74UW         | 00-23      | PUBLIC      | 754              | 084                  | 85                              | 52                          |   |
| KF5FNP     | 3583.500           | 1600              | EM30WI         | 00-23      | PUBLIC      | 469              | 175                  | 85                              | 50                          |   |
| WEIDS      | 3577.500           | 500               | EM79NV         | 00-11      | PUBLIC      | 900              | 047                  | 84                              | 52                          | - |

Once the table has been updated you select which station you wish to connect to by double clicking on the call sign. Please note that considerable information is provided here: The frequency used by the RMS station, where it is located, distance from your location, bearing (in degrees) from your location and the path reliability and quality projected at the current time.



Note that the information from the channel selection window has been propagated into the fields on the Winmor Winlink Window, AND your radio should have been automatically set to match the frequency and mode (USB) ONLY if you are using CAT control

At this point, I usually manually enable the tuning on my AT-100ProII to ensure it doesn't attempt to tune while the Winlink program is attempting to establish communications with the RMS server. Also, it is extremely important to note that LDG recommends a power level setting of 35 watts OR lower to ensure the tuner is not damaged by the intensity of the signal. (You may be surprised how little power is required to make contact! I usually start at 5 watts and increase only if band conditions are unfavorable.)

When ready, press "Start" on the VARA Winlink screen to initiate contact. If all settings are correct, your radio will switch between transmit and receive is indicated by the Winmor TNC Soundcard screen with the waterfall. Do not assume program problems if you do not initially make contact with a station. All the facets of USB communication come into play including band fading.

Sit back and enjoy the show! This type of message transmit and retrieval is nowhere near as fast as an internet connection, however, it will get through when internet infrastructure is inoperable.

When the connection has completed, you may exit all windows back to the main Winlink Express window. If you have received a message you will see it in the System Folders (Inbox) section of the main Winlink Express screen.

#### Winlink ARDOP Setup

Winlink ARDOP Setup is the similar to the VARA HF setup! But you will have to configure the same settings the first time you open the ARDOP window.

Select [Ardop Winlink] from the main screen

| 🗱 Winlink Express 1.5.32  | 2.1 - KG5DNF          |                     |                    |               | - 0  | × |
|---|-----------------------|---------------------|--------------------|---------------|--|---|
| KG5DNF • S<br>Logs Help   | Settings Message Atta | chments Move To: Sa | ved Items 🗸 Delete | Open Session: | Ardop Winlink  V Telnet Winlink  |   |
|   | •   + 🗉 ≿   🔙   🦪     | ≫   00              |                    |               | Packet Winlink<br>Pactor Winlink   |   |
| No active session.  |                       |                     |                    |               | Robust Packet Winlink<br>Winmor Winlink  |   |
| System Folders Inbox (0 unread) Read Items (0) Outbox (0)   | Date/Time             | Message ID Size     | Source Sender      | Recipient     | Ardop Winlink<br>Vara HF Winlink<br>Vara FM Winlink<br>Iridium GO Winlink  |   |
| Sent Items (0)<br>Saved Items (0)<br>Deleted Items (2)<br>Drafts (0) ~<br>Personal Folders  |                       |                     |                    |               | Packet P2P<br>Pactor P2P<br>Robust Packet P2P<br>Winmor P2P<br>Ardop P2P<br>Vara FM P2P<br>Vara FM P2P<br>Telnet P2P |   |
| Global Folders  |                       |                     |                    |               | Pactor Radio-only Y  | ^ |
| Contacts<br>ALAN CATE KD5GNL<br>DAVID WILLON XK5TOC<br>JOE BRATTON AASAD<br>MARK BARNHARD KD5AI<br>SALCOARES<br>STEVE_PORTER_KT5H |                       |                     |                    |               |  | ~ |

Then press [Open Session] - the Ardop session window opens. Select [Settings] [Ardop TNC Setup].



A new screen (Ardop Setup) opens. Select your appropriate Ardop Cature Device and Ardop Playback Device from the pull-down options. Everything else should remain at default values.

| 🗱 Ardop Setup                  |   | × |
|--------------------------------|---|---|
| Identi                         | fy with Morse Code 🗹                                |   |
| Ardop Capture Device:          | Signalink (USB AUDIO CODEC)-3f $\qquad \qquad \lor$ |   |
| Ardop Playback Device:         | Signalink (USB AUDIO CODEC)-67 $\qquad \lor$        |   |
| Virtual TNC host address/name: | 127.0.0.1   |   |
| Virtual TNC Command Port:      | 8600 🛨 Data Port: 8601                              |   |
| Session Bandwidth:             | 2000 ∨ Drive Level: 90 ▲                            |   |
| Update                         | Cancel  |   |

When changes have been completed, click [Update] then click [Close]

Next, click [Settings] [Radio Setup]

| 🗱 Ar      | dop Winlink Session - KG5DNF    |   | — | × |
|-----------|---------------------------------|---|---|---|
| Exit      | Settings Switch to Peer-to-Peer | Channel Selection Map Forecast Best chan. Next chan. Start Stop Abort |   |   |
| 4         | Ardop TNC Setup                 | 3590.000 Dial Freq. (kHz): 3588.500 Bearing: 270 Quality: 99          |   |   |
| Favor     | Radio Setup                     | <ul> <li>Select Add to favorites Remove from favorites</li> </ul>     |   |   |
| Channe    | Transmit Level Test             | Disconnected  |   |   |
|           | DSP Speed Test                  |   |   |   |
| *** Using | Best channel setup              |   |   | ^ |
| *** Read  | to start calling.               | -   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |
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|           |                                 |   |   |   |
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|           |                                 |   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |
| 1         |                                 |   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |
| 1         |                                 |   |   |   |
|           |                                 |   |   |   |
|           |                                 |   |   |   |

|   | taesu F         | 1-857                    | ~            | Antenna                       | Selection | nternal 1  |            |
|---|-----------------|--------------------------|--------------|-------------------------------|-----------|------------|------------|
| Icom Address  | 88              | USB 💿                    | USB          | Digital 🔘                     | FM 🔾      | Use Intern | al Tuner 📃 |
| Codan login   | and optionl pas | sword:                   |              |                               |           |            |            |
|   |                 |                          |              |                               |           |            |            |
| Radio Control Port  |                 |                          |              |                               |           |            |            |
|   |                 |                          |              |                               |           |            |            |
| Serial Port to Use  | COM13           | <ul> <li>Baud</li> </ul> | 9600         | <ul> <li>Enablight</li> </ul> | le RTS 🗹  | Enable DTF |            |
| Serial Port to Use  | COM13           | ✓ Baud                   | 9600         | ✓ Enab                        | e RTS 🗹   | Enable DTF |            |
| Serial Port to Use  | COM13           | ✓ Baud                   | 9600         | ✓ Enable                      | le RTS 🗹  | Enable DTF |            |
| Serial Port to Use<br>PTT Port (Optional)<br>Serial Port to Use | COM13           | > Baud                   | 9600<br>Baud | Enable                        | le RTS 🗹  | Enable DTF |            |

Set [Select Radio Model] to Yaesu FT-857

Set mode to [USB] (again since you are using a Signalink as your TNC, USB Digital is not supported). Set [Serial Port to Use] to the Com port number previously identified. (NOTE: If you do not wish to use CAT control, this step is unnecessary.) Set Radio Control Port Baud Rate to [9600].

Set Ptt Port Serial Port to use to [External].

Click [Update] then click [Close].

The next step is to click on [Channel Selection]:

| Winmor Winlink Session - KG5DNF  | 23 |
|--|----|
| Exit         Settings         Switch to Peer-to-Peer         Channel Selection         Forecast         Best chan.         Next chan.         Hide TNC         Start         Stop         Abort           Center Freq. (kHz):         0.000         Dial Freq. (kHz):         Bearing:         Quality:         Quality: <t< th=""><th></th></t<> |    |
| Favorites: KB5LZK @ 3595.000 (99)  |    |
| Channel Busy In: 0/0 Out: 0/0 BPM: 0/0 Disconnected  |    |
| *** Using Kenwood Amateur; NONE, 9600 baud<br>*** Ready  | ~  |

24

A new window will appear. Select (click) on [Update Table Via Internet]:

| HF Chan   | nel Selector       | -                 | -              |            | land here   |                  |                      | then the                        | Σ                           | 3 |
|-----------|--------------------|-------------------|----------------|------------|-------------|------------------|----------------------|---------------------------------|-----------------------------|---|
| Exit Sele | ect Update T       | able Via Internet | Update Tak     | ole Via Ra | dio Forecas | t SFI All        | RMS                  |                                 | •                           |   |
| Callsign  | Frequency<br>(kHz) | Mode              | Grid<br>Square | Hours      | Group       | Distance<br>(km) | Bearing<br>(Degrees) | Path<br>Reliability<br>Estimate | Path<br>Quality<br>Estimate | Â |
| AD5E0     | 3590.000           | 1600              | EM34QN         | 00-23      | PUBLIC      | 8                | 270                  | 99                              | 99                          |   |
| KB5LZK    | 3598.500           | 1600              | EM34UT         | 00-23      | PUBLIC      | 36               | 039                  | 99                              | 99                          |   |
| AD5E0     | 7103.000           | 1600              | EM34QN         | 00-23      | PUBLIC      | 8                | 270                  | 96                              | 96                          |   |
| KB5LZK    | 7101.200           | 1600              | EM34UT         | 00-23      | PUBLIC      | 36               | 039                  | 96                              | 96                          |   |
| KD7UHR    | 3588.500           | 1600              | EM58BQ         | 00-23      | PUBLIC      | 516              | 027                  | 89                              | 55                          |   |
| KOSI      | 3586.500           | 1600              | EM39UA         | 00-23      | PUBLIC      | 496              | 002                  | 89                              | 56                          |   |
| KC5GOI    | 3598.000           | 1600              | EM13KG         | 00-23      | PUBLIC      | 447              | 253                  | 89                              | 54                          |   |
| W9FE      | 3597.000           | 1600              | EM59AA         | 00-23      | PUBLIC      | 546              | 024                  | 89                              | 55                          |   |
| K5LAM-10  | 3587.500           | 1600              | EM52AF         | 00-23      | PUBLIC      | 352              | 137                  | 88                              | 54                          |   |
| N4JGW     | 3597.000           | 1600              | EM74LR         | 00-23      | PUBLIC      | 686              | 086                  | 87                              | 53                          |   |
| NSOA      | 3510.000           | 500               | EN41WK         | 00-23      | PUBLIC      | 793              | 015                  | 86                              | 53                          |   |
| KG5KS-10  | 3595.000           | 1600              | EM45JP         | 00-23      | PUBLIC      | 171              | 045                  | 86                              | 56                          |   |
| NF9D      | 3595.000           | 1600              | EN51TW         | 00-23      | PUBLIC      | 896              | 023                  | 85                              | 52                          |   |
| WX4PCA-10 | 3591.000           | 1600              | EM73NU         | 00-23      | PUBLIC      | 708              | 094                  | 85                              | 51                          |   |
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| WEIDS     | 3577,500           | 500               | EM79NV         | 00-11      | PUBLIC      | 900              | 047                  | 84                              | 52                          | - |

Once the table has been updated you select which station you wish to connect to by double clicking on the call sign. Please note that considerable information is provided here: The frequency used by the RMS station, where it is located, distance from your location, bearing (in degrees) from your location and the path reliability and quality projected at the current time.

| ſ | Winmor Winlink Session - KG5DNF   | 8 |
|---|---|---|
|   | Exit Settings Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC Start Stop Abort |   |
| K | ADSED Center Freq. (kHz): 3590.000 Dial Freq. (kHz): 3588.500 Bearing: 270 Quality: 99                          |   |
|   | Favorites:    Select Add to favorites Remove from favorites   |   |
|   | Channel Free In: 0/0 Out: 0/0 BPM: 0/0 Disconnected   |   |
|   | Using Icom 7100, COM13, 19200 baud<br>Ready   | * |
|   |   |   |
|   |   |   |
|   |   |   |
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|   |   |   |
| ľ |   | - |

Note that the information from the channel selection window has been propagated into the fields on the Winmor Winlink Window, AND your radio should have been automatically set to match the frequency and mode (USB) ONLY if you are using CAT control.

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#### Winlink Express Packet

In order to be able to connect to a Winlink RMS Packet Gateway, you'll need an additional piece of software which can be found here: <u>http://uz7.ho.ua/packetradio.htm</u>. Once to the page, scroll down until you see a link entitled soundmodemXX.zip (the XX indicates the highest number listed). Download and use the standard installation options.

Open the newly created desktop shortcut [soundmodem]. Traverse your way to [Settings] [Devices]

| Settings                     | ×                       |
|------------------------------|-------------------------|
| Sound Card                   |                         |
| Output device Signalink (USB | AUDIO CODEC)            |
| Input device Signalink (USB  | AUDIO CODEC)            |
| 🗖 Dual channel               | TX SampleRate 11025     |
| ✓ TX rotation                | TX corr. PPM            |
| Single channel output        | RX SampleRate 11025     |
| Color waterfall              | RX corr. PPM            |
| 🔲 Stop waterfall on minimize | Priority Highest 💽      |
| Server setup                 |                         |
| AGWPE Server Port 8000       | 🔽 Enabled               |
| KISS Server Port 8100        | 🔽 Enabled               |
| □<br>□ PTT Port              |                         |
| Select PTT port NONE 💌       | 🗖 Dual PTT              |
|                              | 🔲 Swap COM pins for PTT |
| ОК                           | Cancel                  |

Select the appropriate CODEC for your USB connection to the Signalink. Double check that the remaining items are as indicated, then click [OK].

Next click [Settings] [Modems]

| Modem settings               |                              |
|------------------------------|------------------------------|
| Modem filters ch: A          | Modem filters ch: B          |
| BPF Width 1400 Show          | BPF Width 2400 Show          |
| TXBPF Width 1600 Show        | TXBPF Width 2500 Show        |
| LPF Width 650 Show           | LPF Width 900 Show           |
| BPF Taps 256                 | BPF Taps 256                 |
| LPF Taps 128                 | LPF Taps 128                 |
| Default settings             | Default settings             |
| PreEmphasis filter 🛛 🔽 🗹 All | PreEmphasis filter 🛛 🔽 🖉 All |
| KISS Optimization            | KISS Optimization            |
| non-AX25 filter              | non-AX25 filter              |
| Modem type ch: A             | Modem type ch: B             |
| Mode AFSK AX.25 1200bd 💌     | Mode BPSK AX.25 1200bd 💌     |
| TXDelay 400 msec             | TXDelay 250 msec             |
| TXTail 100 msec              | TXTail 50 msec               |
| Add. RX 0 pairs              | Add. RX 0 pairs              |
| Add. RX shift 30 Hz          | Add. RX shift 30 Hz          |
| Bits Recovery NONE           | Bits Recovery NONE           |
| Ok                           | Cancel                       |

Ensure all settings are as pictured above, then click [OK].

Since packet operation uses the AX.25 protocol, soundmodem MUST be running before you start Winlink Express. First start Soundmodem then start Winlink Express. Select [Packet Winlink] as the operating mode, then press [Open Session] to open the Packet Winlink window.

Click on [Settings]

| TNC Connection              |                    |               |          |               |                  |
|-----------------------------|--------------------|---------------|----------|---------------|------------------|
| Packet TNC Type:            | KISS               |               |          | •             |                  |
|                             | Packet             | TNC Model:    | ACKN     | IODE 🔻        | AutoConnect Time |
|                             |                    | Serial Port:  | TCP      | •             | Disabled         |
|                             | тс                 | P Host/Port   | 127.0    | .0.1          | 8100             |
| 🔲 If Auto Conne             | ct is enabled, ope | n session whe | n Winlii | nk Express is | started          |
| TNC Parameters              |                    |               |          |               |                  |
|                             |                    | 1200 Bau      | ıd       | 9600 Ba       | bud              |
| TX Del                      | ay (Milliseconds): | 400           | •        | 300           | •                |
| Maximun                     | Packet Length:     | 128           | •        | 255           | •                |
| I                           | Maximum Frames:    | 4             | •        | 7             | •                |
|                             | Frack:             | 2             | •        | 2             | •                |
|                             | Persistance:       | 160           | •        | 224           | •                |
|                             | Slot time:         | 30            | •        | 20            | •                |
|                             | Maximum Retries:   | 5             | •        | 5             | •                |
| Disable Xmt<br>Level Adjust | Transmit Level:    | 300           | A V      | 300           | A V              |
|                             | Enable IPoll       |               |          |               |                  |
| ſ                           | Enable IPoll       | <u> </u>      |          |               | r                |

Ensure all fields are as indicated, then click [Update]

Click on [Channel Selection]

If you haven't already done so, update the table via the internet.

| 🗱 Packet Chan  | nel Selector       | in the           |                |               |                  |                      | x |
|----------------|--------------------|------------------|----------------|---------------|------------------|----------------------|---|
| Exit Select    | Channel Up         | date Table Via I | Internet Up    | date Table Vi | a Radio          |                      |   |
| Stations found | l within 160 kil   | ometers of you   | r grid square. |               |                  |                      |   |
| Callsign       | Frequency<br>(MHz) | Baud             | Grid<br>Square | Group         | Distance<br>(mi) | Bearing<br>(Degrees) |   |
| AD5EO-10       | 145.030            | 1200             | EM34QN         | PUBLIC        | 005              | 270                  |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |
|                |                    |                  |                |               |                  |                      |   |

Double click to the station you wish to connect to, then this window will close.

| Packet Winlink Session   |   |
|--|---|
| Exit     Settings     Switch to Peer-to-Peer Session     Channel Selection     1200 Baud     Stop       Connection type:     Direct <ul> <li>ADSEO-10</li> <li>Via</li> <li>Edit script</li> <li>Add script</li> <li>Remove script</li> </ul> <ul> <li>Edit script</li> <li>Add script</li> <li>Remove script</li> </ul> | ] |
| Connection script Performance Connection Script Add Script Remove Script ATTENTION: Set the packet radio frequency to 145.030 MHz Time to next Autoconnect = Disabled  |   |
| <ul> <li>Starting WL2K packet session</li> <li>Initialization complete</li> <li>Ready</li> </ul>   |   |
|  |   |

You should see that the station field has been populated from your previous selection, AND your radio tuned to the correct frequency.

To connect to the selected RMS Packet Gateway, click the [Start] text.

After the two stations have completed their business, "Disconnect Reported" will be at the bottom of the text in the main window.

Close the Winlink Packet window by clicking on the red [X]. Then (if finished) close Winlink Express by clicking on the red [X].

BUT you're not done! **Soundmodem is still running**. You may or may not see the soundmodem window currently on your screen (this happens). If this is the case, open the hidden icon section, right click on the soundmodem icon, then click [close]. If you do not do this, Soundmodem will stay running in the background and the next time you wish to connect to a Packet RMS Gateway you'll have issues.

## FLDIGI/FLARQ/FLRIG/FLMSG

Download fldigi files from: <u>https://sourceforge.net/projects/fldigi/files/</u> (fldigi-#### setup.exe). Save to your desktop, then move to a convenient location. While you are at sourceforge, also download FLMSG and FLRIG (save to your desktop, then move to a convenient location.)

| Name 🗘           | Modified \$ | Size 🖨 | Downloads/Week ≑ |
|------------------|-------------|--------|------------------|
| C flamp          | 2019-01-31  |        | 388 🖵            |
|                  | 2019-01-31  |        | 443 🛄            |
| (Cfing)          | 2019-01-31  |        | 2,179 🖿          |
|                  | 2019-01-29  |        | 1,786 🖿          |
| Containing tasts | 2010-01-10  |        | 4                |

Double click FLRIG and allow for standard installation (adding the desktop icon). When installation is done, close the program window, we'll comeback to configuration shortly.

Next, double click FLMSG and allow for standard installation (adding the desktop icon). When installation is done, close the program window, we'll comeback to configuration shortly.

#### **FLRIG Configuration**

Open FLRIG then click on [Config] [Setup] [Transceiver].

| Configuration               |                             |
|-----------------------------|-----------------------------|
| Xcvr Trace TCPIP PTT Aux Po | oli Send Cmds Restore Close |
| Rig: FT-857D                | Retries                     |
| Ser Port COM18              | Retry intvi                 |
| Baud: 9600                  | Cmds 4 5 00                 |
| 🗆 1 🗹 2 -StopBits           | Poli intvi 🕊 1 200 🕨        |
| 🖸 Echo                      | Byte Intvi                  |
| PTT via CAT RTS/CTS         | CLV adr Default             |
| OPTT via RTS ORTS +12 v     |                             |
| OPTT via DTR DTR +12 v      | USB audio                   |

Configure these settings into the appropriate places (using the correct COM port number!). When finished making the settings (with your radio on), click the [Init] button. If any of the configuration settings are incorrect an error message will appear.

When finished and tested, click the red [X] to exit the program.

#### **FLMSG Configuration**

Click on the shortcut you made when installing FLMSG to open it for configuration. Then click on [Config] [Personal Data].

| flmsg config |                                | : |
|--------------|--------------------------------|---|
| Personal Dat | te/Time Files Radiogram ARQ UI |   |
|              |                                |   |
| Tal          | <u></u>                        | ╡ |
| Tel.         |                                | = |
| Name:        | <u></u>                        | 4 |
| Addr:        |                                | 4 |
| City/St/Zip  |                                | 4 |
| Email addr   | <u>}</u>                       |   |
|              |                                |   |
|              |                                |   |
|              |                                |   |
|              |                                |   |

Fill in the blanks with the appropriate information, then click on the [UI] tab.



Marking this checkbox will give you full access to all FLMSG form functions. When finished, you may exit the entire program by clicking on the red [X] twice.

#### **FLDIGI Configuration**

Double click on the FLDIGI setup file. Once the program opens, click on [Configure] [UI] [Operator]

| Fldigi   | confi  | iguration  |              |        |       |    |           |           |         |       |     |           | X            |
|----------|--------|------------|--------------|--------|-------|----|-----------|-----------|---------|-------|-----|-----------|--------------|
| Operator | UI     | Waterfall  | Modems       | Rig    | Audio | ID | Misc      | Web       | Autosta | rt IO | PSM |           |              |
| Sta      | tion , | Operator / |              |        |       |    |           |           |         |       |     |           |              |
|          |        | Stat       | ion Callsigr | $\leq$ |       |    | $\supset$ | )         |         |       |     |           |              |
|          |        | S          | tation QTH   |        |       |    |           |           |         |       |     | $\supset$ |              |
|          |        | Stat       | ion Locator  | <      |       |    | D         |           |         |       |     |           |              |
|          |        | Opera      | tor Callsign |        |       |    |           | 2         |         |       |     |           |              |
|          |        | Ope        | rator Name   | <      |       |    |           | $\supset$ | )       |       |     |           |              |
|          |        |            | Antenna      | •      |       |    |           |           |         |       |     |           |              |
|          |        |            |              |        |       |    |           |           |         |       |     |           |              |
|          |        |            |              |        |       |    |           |           |         |       |     |           |              |
|          |        |            |              |        |       |    |           |           |         |       |     |           |              |
|          |        |            |              |        |       |    |           |           |         |       |     |           |              |
| Re       | estore | e defaults |              |        |       |    |           |           | 5       | Save  |     | Close     | <br><u> </u> |

Fill in the indicated areas, Station QTH is the name of your city and State, Station Locator is your maidenhead grid location. Once completed, click [Save]

Next, click on the [RIG] tab.

| erator UI Waterfall Modems F<br>RigCAT Hamilo XML-RPC Har            | tig Audio ID Mec Web Autostart IO PSM dware PTT GPIO |
|--|--|
| frie<br>Penable firia xovr control with fi                           | a is the preferred method of tranceiver control      |
| rig xmirpc server parameters<br>hese controls are mirrored on the IO | configuration tab                                    |
|  |  |
| Disable  | are connected to a single firig (server).            |
| Trisable   | are connected to a single firig (server).            |
| Trisable   | are connected to a single firig (server).            |

Once these settings are made/verified, click [SAVE].

Click on the [Audio] Tab.

| Operator | UI Wa     | aterfall  | Modems       | Rig    | Audio  | ID                        | Misc     | Web   | Autos | tart | IO    | PSM |   |           |           |   |
|----------|-----------|-----------|--------------|--------|--------|---------------------------|----------|-------|-------|------|-------|-----|---|-----------|-----------|---|
| Devices  | Settings  | Right     | channel [    | Wav    | Alerts |                           |          |       |       |      |       |     |   |           |           |   |
|          | ⊖oss      | ;         |              |        |        |                           |          |       |       | De   | vice: |     |   |           |           |   |
|          | ⊘Port     | tAudio    |              | Cap    | oture  | Line (4- USB AUDIO CODEC) |          |       |       |      |       |     |   | $\supset$ |           |   |
|          |           |           |              | Play   | /back: | Speak                     | kers (4- | USB A | UDIO  | CODE | EC)   |     |   |           | $\supset$ |   |
|          |           | eAudio    |              |        | Se     | erver                     | string:  |       |       |      |       |     |   |           |           |   |
|          | ⊖File     | I/O only  | /            |        |        |                           |          |       |       |      |       |     |   |           |           |   |
|          | ⊘Dev      | vice supp | oorts full d | luplex |        |                           |          |       |       |      |       |     |   |           |           |   |
|          |           |           |              |        |        |                           |          |       |       |      |       |     |   |           |           |   |
|          |           |           |              |        |        |                           |          |       |       |      |       |     |   |           |           |   |
|          | estore de | faulte    |              |        |        |                           |          | ſ     |       | 6-11 |       |     | 1 | Clea      |           | 1 |

Select the appropriate entry associated with the USB Audio CODEC listed on your computer. (The number will probably be different on your computer.) Once completed, click [Save].

You can minimize FLMSG once it has started. If you wish to receive and audio alert when a new message arrives, click on the [Audio][Alerts] tab.

| Fldigi configuration  |                                     | -   |                            |
|---|-------------------------------------|---|----------------------------|
| Operator UI Waterfall Modems Rig Audio ID Misc  | Web Autos                           | tart IO PSM                                   |                            |
| Devices Settings Right channel Wav Alerts   |                                     |   |                            |
| REGEX detected wav Regex Match in   | n Browser                           | Frank   | Enable                     |
| dnner_bel   | Select                              | dinner_bel                                    | 🗢 Test                     |
| MYCALL detected way MYCALL Match i  | in Browser                          |   | Enable                     |
| dmer_bel  | Select                              | Sound:<br>dinner_bell                         | t Test                     |
| finsg inter   | face                                |   |                            |
|   | )                                   | Sound:  |                            |
|   |                                     |   |                            |
| desel   | Select                              | diesel  | 🗢 Test                     |
| desel   | Select                              | diesel  | CEnable                    |
| desel   | Select                              | diesel<br>Sound:<br>beeboo                    | Test     UEnable      Test |
| desel Imag uned out wav beeboo RsID audo alert wav RsID dete                              | Select<br>Select                    | diesel<br>Sound:<br>beeboo                    |                            |
| desel Imag uned out wav beeboo RsID audo alert wav RsID dete phone                        | Select<br>Select<br>ction           | diesel<br>Sound:<br>beeboo<br>Sound:<br>phone |                            |
| desel   | Select<br>Select<br>ction<br>Select | diesel<br>Sound:<br>beeboo<br>Sound:<br>phone |                            |
| desel  Imag anec out wav beeboo  RsID audio alert wav  RsID dete  phone  Restore defaults | Select<br>Select<br>ction<br>Select | diesel Sound: beeboo Sound: phone Save        |                            |

In flmsg received wav, click on the arrows in the Sound box to choose which sound you wish to assign. Once done, click [Save]. Now click on the [Autostart] tab. (This is a feature that allows you to have different modules automatically start when you start FLDIGI.

| Fidigi c | onfi                            | guration     |             |        |           |       |      |     | 1         |    |      |     | -     | 23               |
|----------|---------------------------------|--------------|-------------|--------|-----------|-------|------|-----|-----------|----|------|-----|-------|------------------|
| Operator | UI                              | Waterfal     | Modems      | Rig    | Audio     | ID    | Misc | Web | Autostart | 10 | PSM  |     |       |                  |
|          | Auto start programs with fidigi |              |             |        |           |       |      |     |           |    |      |     |       |                  |
| firig:   | C:\                             | Program Fil  | es (x86)\fi | ig-1.3 | 1.42\firi | g.exe |      |     |           | Lo | cate | ÌÒ  | Test  | $\triangleright$ |
| flamp:   |                                 |              |             |        |           |       |      |     |           | La | cate | ] 0 | Test  |                  |
| finet:   |                                 |              |             | _      |           | _     |      |     |           | Lo | cate | ] 0 | Test  |                  |
| flog:    |                                 |              |             | _      |           | _     |      |     |           | Lo | cate | 0   | Test  |                  |
| Prog 1:  | <b>C:</b> \                     | Install Pack | ages\CAT7   | 200\(  | AT720     | ).exe |      |     |           | Lo | cate | ] 🗆 | Test  |                  |
| Prog 2:  | C:\                             | Program Fil  | es (x86)\fi | nsg-4  | .0.8\fim  | sg.ex | e    |     |           | Lo | cate | ) 🛛 | Test  | $\geq$           |
| Prog 3:  |                                 |              |             |        |           |       |      |     |           | La | cate | ] 0 | Test  |                  |
|          |                                 |              |             |        |           |       |      |     |           |    |      |     |       |                  |
|          |                                 | 10.0         |             |        |           |       |      |     |           |    |      | 1   | -     | 451              |
| Re       | store                           | edetaults    |             |        |           |       |      | L   | Sa        | ve |      |     | Close | <u> </u>         |

All the executable files will be in the [Program Files (x86)] folder! For FLRIG and FLMSG, click [Locate] then browse your way to the appropriate folder and file. Once located, click open and the blank field should be populated. For these programs to automatically execute, click on the "Enable" box.

NOTE: It makes no difference which Program Number box you place the FLMSG executable file in. Once all this is done, click [Save].

#### **FLDIGI Main Screen setup**

| fldigi ver4.1.00  | / IC-7100 - KG5DNF        |                               |                                      |                   | ×                    |
|-------------------|---------------------------|-------------------------------|--------------------------------------|-------------------|----------------------|
| File Op Mode      | <u>Configure View Log</u> | book <u>H</u> elp             | L                                    | Spot 💽 R          |                      |
| 50                | 21200                     | Freq 50319.5                  |                                      | f 0957 In 599 Out | 599 Cnty/Cntry Notes |
| 50                | 210.00                    | V 🍆 cal                       | 0                                    | Az Az             |                      |
| USB 🔽             | 3000 -                    | S 🕒 🕑 Qth                     | s                                    | E Pr L            |                      |
|                   | Read macros from: (       | :\Users\John\fidigi.files\mac | ros\macros.mdf<br>missions will be o | displayed here    |                      |
| CQ<br>3.4 🏷 Clear |                           | Keyboard to keyb              | oard text will be t                  | vped here         |                      |
| CQ H ANS          | И   QSO ₩   К             |                               | h Brag                               | T/R Tx >>         |                      |
|                   |                           |                               |                                      |                   |                      |
| PSK500R           |                           |                               |                                      | QSY    Store    L | k Rv [FT/R ] □       |

Please ensure that both RxID and TxID are checked to allow for automatic mode switching. If using HF or 6 meters, ONLY Upper Side Band is used (6 meter FM can also be used).

NOTE: you will see a red rectangle on your waterfall. This is the center frequency for the passband. It is easy to change by clicking with your mouse (or tapping with your finger), but changing this location will make the difference between being able to decode incoming transmissions/messages and not (conversely, transmitting with the center of the passband changed will make it difficult for other stations to decode your transmission.) The small Lock [Lk] button will lock your center frequency in place.

Once you have either typed a message or pasted text into the blue window for transmitting, then press the indicated transmit [Tx] button.

Receiving is simple – watch the yellow part of the screen.

You have now completed the configuration settings for the FLDIGI suite.

## WJST-X Setup and configuration.

WSJT-X implements communication protocols or "modes" called FT8, JT4, JT9, JT65, QRA64, ISCAT, MSK144, and WSPR, as well as one called Echo for detecting and measuring your own radio signals reflected from the Moon. These modes were all designed for making reliable, confirmed QSOs under extreme weak-signal conditions.

You can download WJST-X here: <u>https://physics.princeton.edu/pulsar/k1jt/wsjtx.html</u> Once the download has finished, click on the executable file to extract the program and use the standard installation locations (adding a desktop shortcut icon).

You can opt to start WJST-X at the completion of the installation.

Once the program is open, click on [File] [Settings] then the General tab. (Fill in the appropriate information.)

| Settings                                   | ?   | ×        |
|--|---|----------|
| General Radio Audio Tx Macros              | Reporting Frequencies Colors Adv              | anuel    |
| Station Details                            |   |          |
| My Call: My Grid:                          | AutoGrid IARU Region: All                     | •        |
| Message generation for type 2 compound cal | sign holders: Full call in Tx3                | •        |
|  |   | Ξ        |
| Blank line between decoding periods        | Foot  |          |
| V Display distance in miles                |   |          |
| Tx messages to Rx frequency window         | Decoded Text Font.                            | ••       |
| Show DXCC, grid, and worked-before sta     | tus   |          |
| Show principal prefix instead of country n | ame   |          |
|  |   |          |
| Behavior                                   |   |          |
| Monitor off at startup                     | Enable VHF/UHF/Microwave features             |          |
| Monitor returns to last used frequency     | Allow Tx frequency changes while transmitting | 1        |
| Double-click on call sets Tx enable        | Single decode                                 |          |
| Disable Tx after sending 73                | Decode after EME delay                        |          |
|  | Tx watchdog: 6 minutes                        | <b>÷</b> |
| CW ID after 73                             | Periodic CW ID Interval: 0                    | <b>-</b> |
|  |   |          |
|  |   |          |
|  | OK Can  | cel      |

| Settings   | ? X  |
|--|--|
| General Radio Audio Tx Macros R                                      | eporting Frequencies Colors Advanted   |
| Rig: Yaesu FT-857  | 🔹 Poll Interval: 1 s 🚔   |
| CAT Control  | PTT Method   |
| Serial Port: COM18   | O VOX O DTR  |
| Serial Port Parameters   | O CAT  |
| Baud Rate: 9600 🔹  | Port: COM12 🔻  |
| Data Bits<br>Default  Seven  Eight<br>Stop Bits<br>Default  One  Two | Transmit Audio Source<br>Rear/Data  Front/Mic<br>Mode<br>None  USB  Data/Pkt |
| Handshake<br>Default      None<br>XON/XOFF      Hardware             | Split Operation<br>None Rig Fake It  |
| Force Control Lines  | Test CAT Test PTT  |
|  | OK Cancel  |

Next, click on the Radio tab. Fill in the values (specific to your COM port) as indicated.

Once finished filling in this information, press the [Test CAT] button, this will check the connectivity between the software and your radio.

Next, click on the Audio Tab. Fill in the appropriate values associated with your USB CODEC.

| Settings ? X   |
|--|
| General Radio Audio Tx Macros Reporting Frequencies Colors Advance |
| Soundcard  |
| Input: Line (3- USB AUDIO CODEC)   Mono                            |
| Output: Speakers (3- USB AUDIO CODEC)                              |
| Save Directory   |
| Location: C:/Users/John/AppData/Local/WSJT-X/save/samples          |
| AzEl Directory   |
| Location: C:/Users/John/AppData/Local/WSJT-X                       |
| Remember power settings by band                                    |
| Transmit Tune  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
| OK Cancel  |
|  |

Finally, click on the Reporting TAB. IF you want the signals you receive to be automatically uploaded to PSK Reporter, check the box indicated.

| Settings                 |                  |           |                    |              | ? ×      |
|--------------------------|------------------|-----------|--------------------|--------------|----------|
| General Radio Audi       | Tx Macros        | Reporting | Frequencies        | Colors       | Advante  |
| Logging                  |                  |           |                    |              |          |
| Prompt me to log QSO     |                  |           | Op Call:           |              |          |
| Log automatically        |                  |           |                    |              |          |
| Convert mode to RTTY     | ,                |           |                    |              |          |
| dB reports to comment    | S                |           |                    |              |          |
| Clear DX call and grid a | fter logging     |           |                    |              |          |
| Network Services         |                  |           |                    |              |          |
| Enable PSK Reporter S    | potting          |           |                    |              |          |
| Chable PSK Reporter 3    | potung           |           |                    |              |          |
| UDP Server               |                  |           |                    |              |          |
| UDP Server:              | 127.0.0.1        |           | cept UDP request   | S            |          |
| UDP Server port number:  | 2237             |           | tify on accepted I | JDP request  | t        |
|                          |                  | E Ac      | cepted UDP reque   | est restores | window   |
| N1MM Logger + Broadcast  | S                |           |                    |              |          |
| Enable logged contact    | ADIF broadcast   |           |                    |              |          |
| N1MM Server name or IP a | ddress: 127.0.0. | 1         |                    |              |          |
| N1MM Server port number  | 2333             |           |                    |              | <b>÷</b> |
| (                        |                  |           |                    |              |          |
|                          |                  |           |                    |              |          |
|                          |                  |           |                    | ж П          | Cancel   |
|                          |                  |           |                    |              |          |

Lastly, click [OK}, you're all set up and ready to run!

## **JS8 Call**

JS8Call is a derivative of the WSJT-X application, restructured and redesigned for keyboard-to-keyboard message passing. It is not supported by nor endorsed by the WSJT-X development group. While the WSJT-X group maintains copyright over the original work and code, JS8Call is a derivative work licensed under and in accordance with the terms of the GPLv3 license. Source code can be found in this public repository: https://bitbucket.org/widefido/wsjtx/

Set-up is very similar to WJST-X.