



## **Winlink VHF Setup and Operation**

### **Using the Yaesu FT-991/A**

April 2019

## Winlink VHF Setup and Operation using the FT-991

Setup and Instructions are for Winlink **VHF** Setup and Operation using the FT-991  
Winlink HF Setup and Operation can be found on YouTube Videos and other Sites on the Internet

### Download and Install Programs - Windows 7/10

#### Winlink Express

- Download and Install **Winlink Express** program from <https://www.winlink.org/WinlinkExpress>

#### UZ7HO SoundModem

- Download **soundmodem100.zip**, from [uz7.ho.ua/packetradio.htm](http://uz7.ho.ua/packetradio.htm)
- Download the **user\_guide\_v045b\_EN.pdf**, from [uz7.ho.ua/packetradio.htm](http://uz7.ho.ua/packetradio.htm)
- Follow Instructions in the **user\_guide\_v045b\_EN.pdf** to install UZ7HO SoundModem software

#### Yaesu SCU-17 Drivers

- From the Yaesu Website, download the SCU-17 USB Driver Installation Manual
- From the Yaesu Website, download and install SCU-17 Drivers on your PC
- Recommended Cable for PC to Radio is the Tripp-Lite U023-006
- Follow the SCU-17 Driver Installation Instructions
- When it is OK to connect the Cable to the Radio, go to the CODEC Sound Level Setup

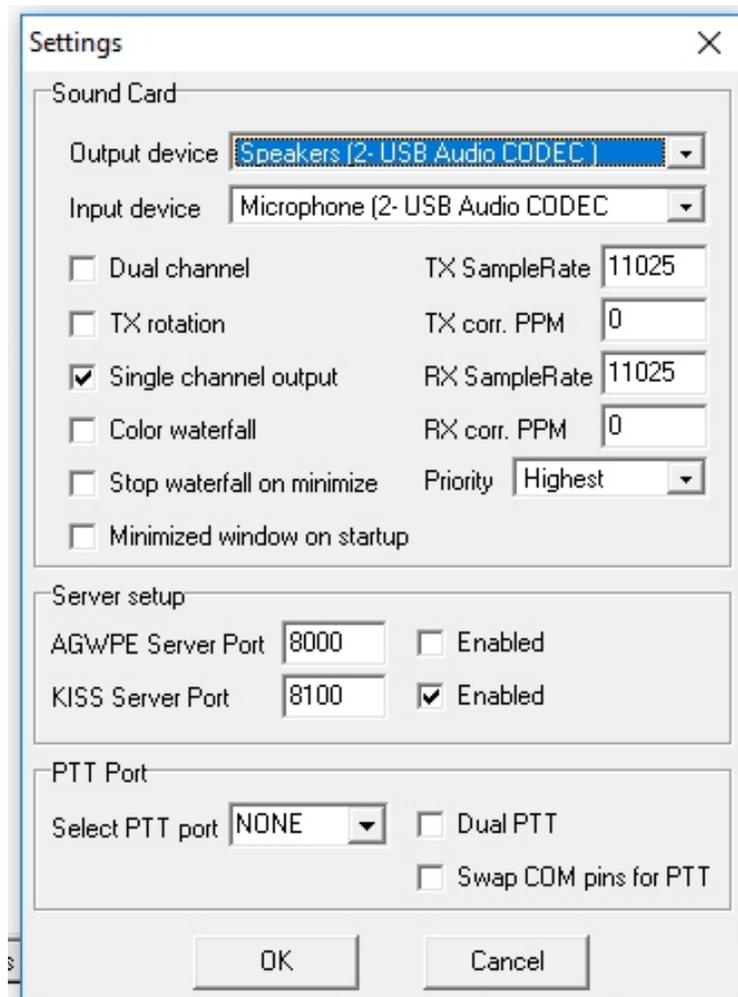
### CODEC Sound Level Setup - Windows 7/10

- Make sure FT-991 is turned **ON**, with Data Cable from Computer to FT-991 connected
- Winlink and SoundModem programs do not need to be running at this point
- At the Computer, click on the Windows Icon, then Click on **Control Panel**
- At the Control Panel, under **Hardware and Sound**, click on **View Devices and Printers**
- **Right Click** on the **USB Audio CODEC** Icon, and select **Sound Settings**
- Screen should show **Speakers 2 - USB Audio CODEC** as the **Default Device**
- If not, check that FT-991 is **ON**, with Data Cable connected
- Double-click **Speakers**, then click **Levels**
- Set **Speakers** level to 100, then click **OK**
- From the **Sound** Window, click **Recording**
- Screen should show **Microphone 2 - USB Audio CODEC** as the **Default Device**
- Double-click **Microphone**, then click **Levels**
- Set **Microphone** level to 75, then click **OK**
- Close all Windows to Exit Control Panel
- This sets the sound levels for optimum performance using the SoundModem program

## Winlink VHF Setup - UZ7HO Soundcard

Start up the UZ7HO SoundModem program

- Click Settings
- Select **Devices**
- Match the Settings exactly as shown here:

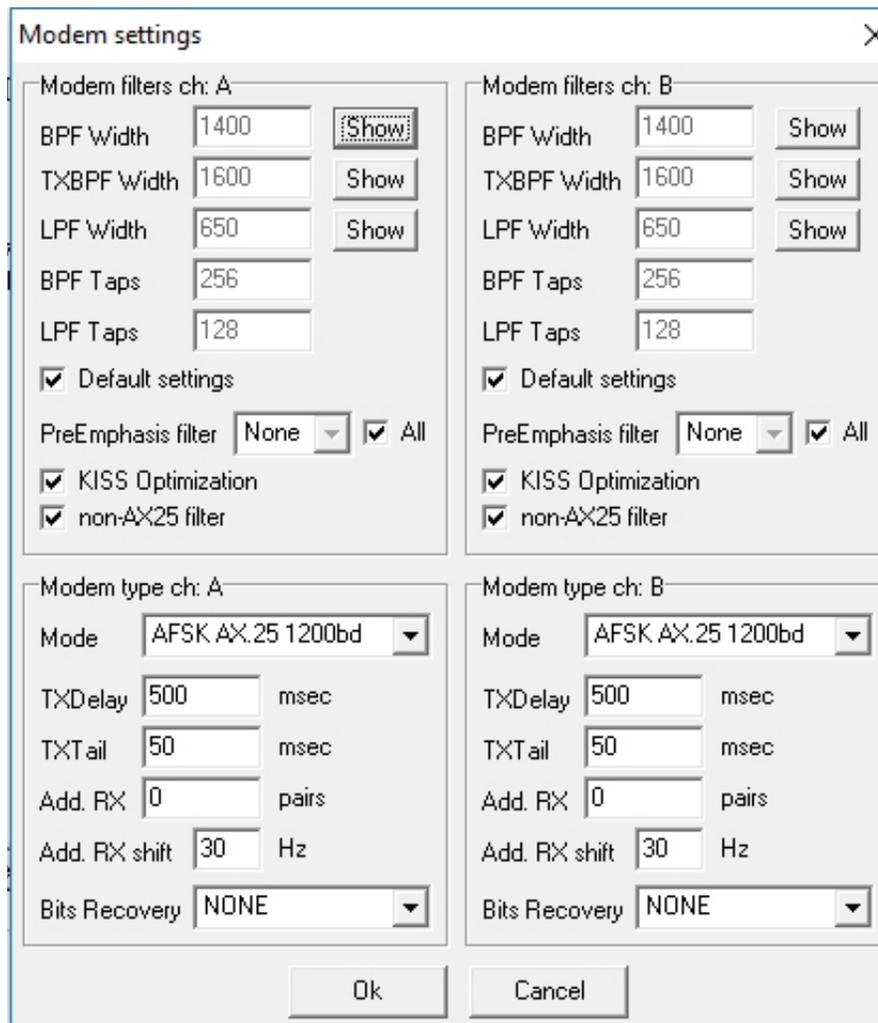


- If changes were made, Click OK
- You must Close the program, and Start it up again, for the changes to take effect
- If NO changes were made, Click Cancel
- No need to restart program

## Winlink VHF Setup - UZ7HO SoundModem program

Start up the UZ7HO SoundModem program

- Click Settings
- Select **Modems**
- Match the Settings exactly as shown here:



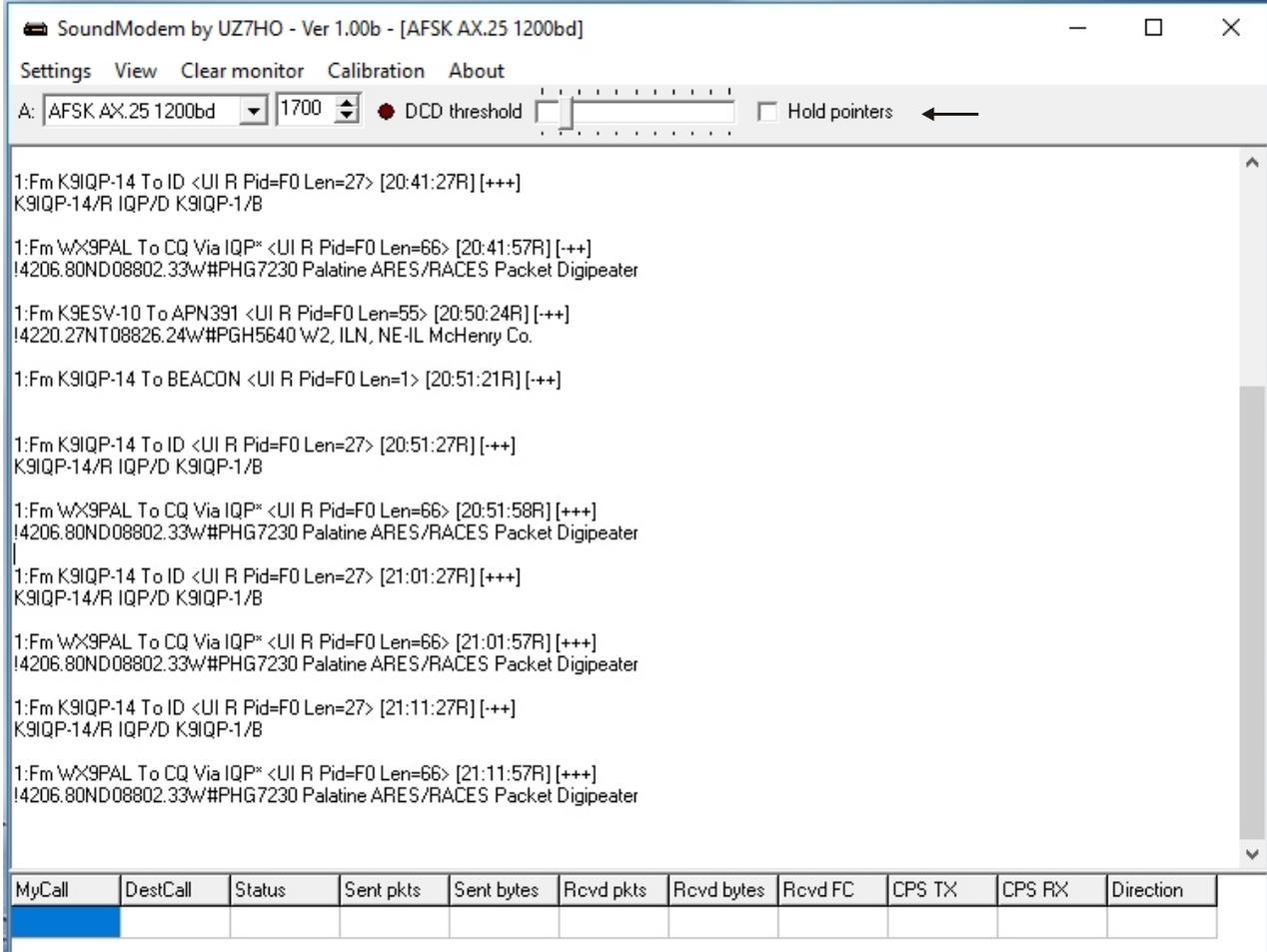
- If changes were made, Click OK
- You must Close the program, and Start it up again, for the changes to take effect
- If NO changes were made, Click Cancel
- No need to restart program
- Note: Modem B is not used, but keep settings the same to avoid confusion

## Winlink Express VHF Setup - SoundModem Monitor Screen

On the SoundModem Monitor Screen at the top, match the settings in the drop-down boxes

A: **AFSK AX.25 1200bd 1700** DCD Threshold bar - **just above two divisions** Hold Pointers **unchecked**

You can change View parameters to your liking, but turning on waterfalls uses more computer resources



The screenshot shows the SoundModem Monitor window with the following settings at the top:

- Mode: AFSK AX.25 1200bd
- Speed: 1700
- DCD threshold: A slider bar set to approximately 2 divisions.
- Hold pointers: Unchecked.

The main display area shows a list of received packets:

```
1:Fm K9IQP-14 To ID <UI R Pid=F0 Len=27> [20:41:27R] [+++]  
K9IQP-14/R IQP/D K9IQP-1/B  
1:Fm W4X9PAL To CQ Via IQP* <UI R Pid=F0 Len=66> [20:41:57R] [+++]  
!4206.80ND08802.33W#PHG7230 Palatine ARES/RACES Packet Digipeater  
1:Fm K9ESV-10 To APN391 <UI R Pid=F0 Len=55> [20:50:24R] [+++]  
!4220.27NT08826.24W#PGH5640 W2, ILN, NE-IL McHenry Co.  
1:Fm K9IQP-14 To BEACON <UI R Pid=F0 Len=1> [20:51:21R] [+++]  
  
1:Fm K9IQP-14 To ID <UI R Pid=F0 Len=27> [20:51:27R] [+++]  
K9IQP-14/R IQP/D K9IQP-1/B  
1:Fm W4X9PAL To CQ Via IQP* <UI R Pid=F0 Len=66> [20:51:58R] [+++]  
!4206.80ND08802.33W#PHG7230 Palatine ARES/RACES Packet Digipeater  
1:Fm K9IQP-14 To ID <UI R Pid=F0 Len=27> [21:01:27R] [+++]  
K9IQP-14/R IQP/D K9IQP-1/B  
1:Fm W4X9PAL To CQ Via IQP* <UI R Pid=F0 Len=66> [21:01:57R] [+++]  
!4206.80ND08802.33W#PHG7230 Palatine ARES/RACES Packet Digipeater  
1:Fm K9IQP-14 To ID <UI R Pid=F0 Len=27> [21:11:27R] [+++]  
K9IQP-14/R IQP/D K9IQP-1/B  
1:Fm W4X9PAL To CQ Via IQP* <UI R Pid=F0 Len=66> [21:11:57R] [+++]  
!4206.80ND08802.33W#PHG7230 Palatine ARES/RACES Packet Digipeater
```

At the bottom, there is a table with the following columns:

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd bytes	Rcvd FC	CPS TX	CPS RX	Direction

With the Cable connected and correct parameters in the FT-991, tune to 145.610 Mhz, **Data-FM Mode**

Whether Winlink is running or not, you should see packets similar to these shown on the Screen

## Winlink Express VHF Setup - FT-991 Settings

Set these **MENU** Parameters for Winlink VHF Operation

Note: Menu Item Numbers may be different than listed, depending on Firmware Version

029 232C RATE = 9600bps  
031 CAT RATE = 9600bps  
033 CAT RTS = ENABLE  
062 DATA MODE = OTHERS  
070 DATA IN SELECT = REAR  
071 DATA PTT SELECT = RTS  
072 DATA PORT SELECT = USB  
073 DATA OUT LEVEL = 50  
074 FM MIC SELECT = REAR  
075 FM OUT LEVEL = 50  
076 FM PKT PTT SELECT = RTS  
077 FM PKT PORT SELECT = USB  
077 FM PKT MODE = 1200  
078 FM PKT TX GAIN = 50  
084 ARS 144 MHz = OFF  
142 VOX SELECT = DATA

For **Packet Winlink** Operation:

- Press V/M Button for **VFO-A**
- Press BAND Button, Select 144, Enter **145.610.00**
- Press MODE Button, Select **DATA-FM**
- Press F M-List Button, Set **TONE/DCS** to **OFF**, and **VOX** to **ON**
- Set SQL (Squelch) to Zero

Return to normal FM Voice and Repeater Operation:

- VOX **OFF**, MODE **FM**, (074) **MIC**, (084) **ARS 144 Mhz ON**

## Winlink VHF Operation using the FT-991

### NOTE: SoundModem program must be started first

- Start UZ7HO SoundModem Program
- Start Winlink Express Program
- Prepare an e-mail message to any e-mail address, and post to Outbox
- Select **Packet Winlink** in the Open Session dropbox, then click to open the Session
- Click Settings and match the parameters to those shown here:

Packet Winlink/P2P Setup

TNC Connection

Packet TNC Type: KISS

Packet TNC Model: ACKMODE

Serial Port: TCP

TCP Host/Port: 127.0.0.1 8100

AutoConnect Time: Disabled

TNC Parameters

1200 Baud (selected) 9600 Baud

TX Delay (Milliseconds): 400 300

Maximum Packet Length: 128 255

Maximum Frames: 4 7

Frack: 2 2

Persistence: 160 224

Slot time: 30 20

Maximum Retries: 5 5

Disable Xmit Level Adjust  Transmit Level: 300 300

Enable IPoll:

Update Cancel

Very Important

Make sure to check this Box

- Click Update (no need to restart program)

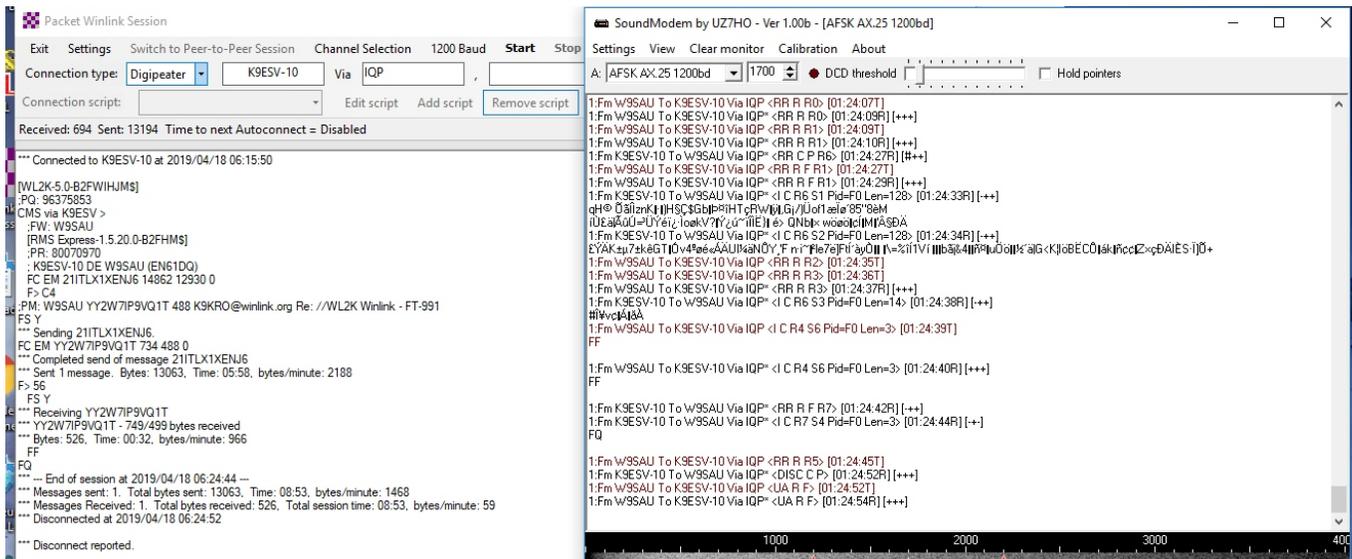
Packet Winlink Session Window should show:

```
***Starting WL2K packet session...
***Initializing KISS over TCP Host 127.0.0.1 Port 8100
***Initialization Complete
***Ready
```

- Select a RMS Gateway Station from the Channel Selection Menu
- Tune the FT-991 to the Gateway Station frequency (146.610 is the Winlink Call Frequency)
- DATA-FM Mode, TONE/DCS = OFF, VOX = ON
- Press Start on the **Packet Winlink** Session

# Winlink VHF Operation using the FT-991

- If a connection is made, the process will be similar to that shown here:



- If a direct connection does not work, try using a Digipeater, which will relay to a Gateway
- In the above example, a Digipeater is used to make the connection
- 1 message was sent, and 1 message received for this Session
- The sent message included an attachment

## Important Tips

Sequence for starting Winlink VHF, always in this order:

1. Data Cable **Connected**, Computer and FT-991 **ON**
2. Start **UZ7HO SoundModem** program
3. Start **Winlink Express** program

Make sure to select **Packet Winlink** from Open Session Dropdown Box

Use **VFO** to set Frequency, do not set it to a Memory Channel

Set frequency to the Gateway Station frequency, indicated in the Channel Selection list

Keep messages short. Maximum of 130kb file is allowed. Larger files take longer to send

Attachments are allowed, but total, including e-mail text, must not exceed the 130kb limit

## Important Information

FCC Regulations apply. Profanity and obscene, or encrypted messages, are prohibited

Business correspondence, and Spam, are not allowed, and will be rejected

No e-mails of a personal nature should be sent, other than Greetings or Well Wishes

Winlink e-mails are public, and reviewed regularly