

Quick Setup Guide for Packet Winlink on VHF/UHF with Signalink on Windows

By Oliver K6OLI

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Thank you, **Mike KM6KAQ**, **Scott KI6SC**, **Brian KM6IGY**, **Lew AC6LS**, **Keith KD6PYD**, **Jim KM6TGJ**, **Ken KI7EIH**, **Joe AH0A**, **Tom N5TW**, **Mike XE2/N6KZB** and **Scott NS7C** for testing, for your suggestions, insights and encouragement. And special thanks to **Phil W4PHS** and **Andy UZ7HO** whose programming skills, smart work and dedication make Winlink and soundcard Packet the powerful and robust combination that it is.

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Get the Software

Download

- Soundmodem: soundmodem###.zip from here <http://uz7.ho.ua/packetradio.htm> and extract the files in a location you can find easily. We recommend creating a folder¹ called C:\UZ7HO\
- Winlink Express: <https://winlink.org/WinlinkExpress>

(Always check any downloads with your antivirus before executing)

¹ If using DireWolf C:\Direwolf\ , for example

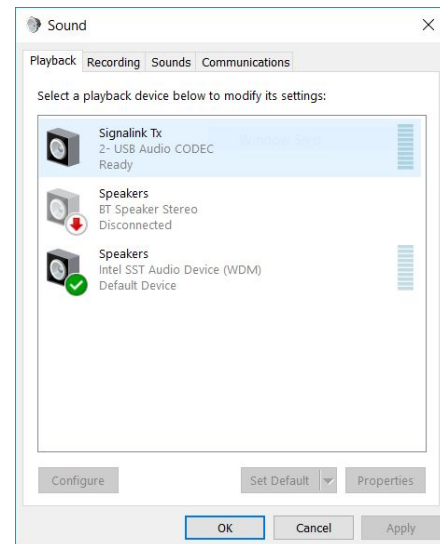
Soundcard Considerations

After you have hooked up your Signalink please make sure it is not selected as the default audio device by right mouse clicking on the speaker icon



and selecting **Open Sound Settings**,
Select **USB Audio CODEC**
Click on **Device Properties**
Click on **Additional Device Properties**
Click on **Levels**

Then select **Playback**. Right-click your computer's internal soundcard and **Set as Default Device** and then right-click again and **Set as Default Communication Device**. There should be a green check mark on the internal soundcard device now.



Do the same for **Recording**.

Then click **OK**.

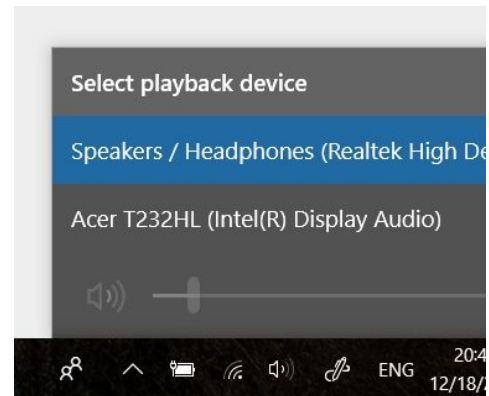
Quick Tip: Build a direct shortcut to your soundcards for quick access:

- Right-click on **Desktop**
- Select **Create Shortcut**
- In "Type the location of the item" copy and paste **control mmsys.cpl**
- Click **Next**
- Type **Soundcards**
- Click **Finish**

Customize your Soundcards Shortcut icon:

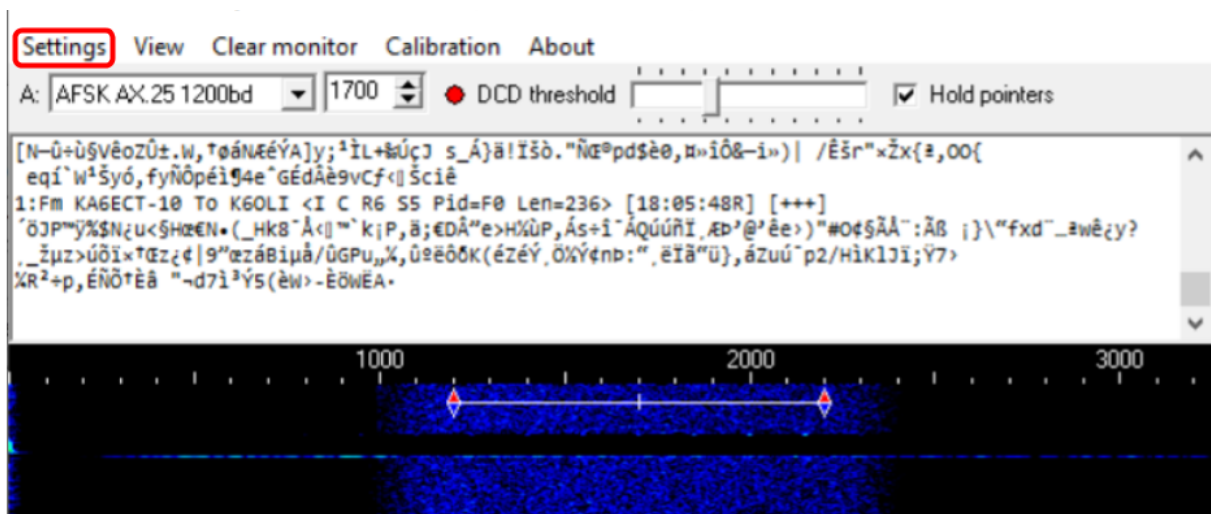
Properties -> Shortcut -> Change Icon -> paste **C:\Windows\system32\SHELL32.dll**

Also make sure that Signalink is not your active Playback Device. You can select your active playback device by left clicking on the speaker icon and selecting any playback device other than USB Audio CODEC. Selecting Speakers/Headphones in the example here is a good idea.



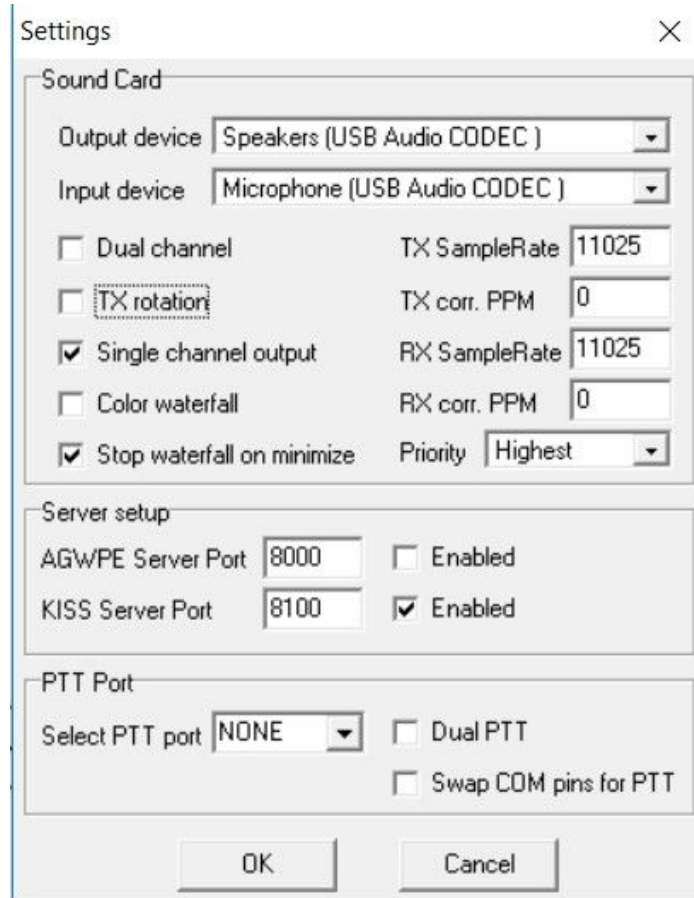
Setting up Soundmodem###

Go to the soundmodem.exe file you extracted earlier. Double-click to run the program.



On the Soundmodem screen, click **Settings** then **Devices**.

You will see this screen:



Output device: **Speakers (USB Audio CODEC)**

Input device: **Microphone(USB Audio CODEC)**

Note: This selects your Signalink as the Output and Input device for soundmodem and Winlink Express. The Signalink may sometimes show up as 2-USB Audio CODEC or similar.

Set the TX and RX dials on your Signalink to the 9 o'clock position. You can adjust that later if needed. Set DLY(delay) to the lowest setting, i.e. no Signalink delay. In Windows your USB Audio CODEC Speaker setting should be at 100%.

Uncheck **TX rotation**

Check **Single channel output**

Optional: Check **Color Waterfall** (on older and slower computers leave this unchecked)

Check **Stop waterfall on minimize**

AGWPE Server Port 8000 **Uncheck Enabled**

KISS Server Port **8100 Check Enabled**

Select PTT Port: **NONE** (for the Signalink USB)

Uncheck **Dual PTT**

Uncheck **Swap COM pins for PTT**

Click **OK**

Click **Settings** then **Modems**

You will only have to change settings in “Modem filters ch:A”, ignore “ch:B”

Modem settings

Modem filters ch: A

BPF Width 1400 Show

TXBPF Width 1600 Show

LPF Width 650 Show

BPF Taps 256

LPF Taps 128

☒ Default settings

PreEmphasis filter None ☒ All

☒ KISS Optimization

☒ non-AX25 filter

Modem filters ch: B

BPF Width 500 Show

TXBPF Width 500 Show

LPF Width 155 Show

BPF Taps 256

LPF Taps 128

☒ Default settings

PreEmphasis filter None ☒ All

☐ KISS Optimization

☒ non-AX25 filter

Modem type ch: A

Mode AFSK AX.25 1200bd

TXDelay 500 msec

TXTail 50 msec

Add. RX 0 pairs

Add. RX shift 30 Hz

Bits Recovery NONE

Modem type ch: B

Mode AFSK AX.25 300bd

TXDelay 250 msec

TXTail 50 msec

Add. RX 0 pairs

Add. RX shift 30 Hz

Bits Recovery NONE

Ok Cancel

Check – **Default settings**

Check – **KISS Optimization**

Check – **non-AX25 filter**

Under Modem type ch: A

Set Mode to **AFSK AX.25 1200bd**

Enter TXDelay **500** msec

Note: TXDelay and TXTail can be adjusted over time. 500 and 50 are good starting numbers, your radio may support lower or higher numbers.

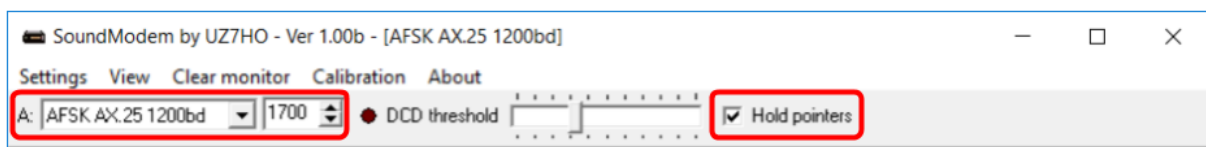
Click **OK**

In the main Window make sure to select

A: AFSK AX.25 1200bd

and set to **1700**

Check Hold pointers (which ensures that 1700 stays set)



Winlink Express

Leave soundmodem running and start RMS Express.

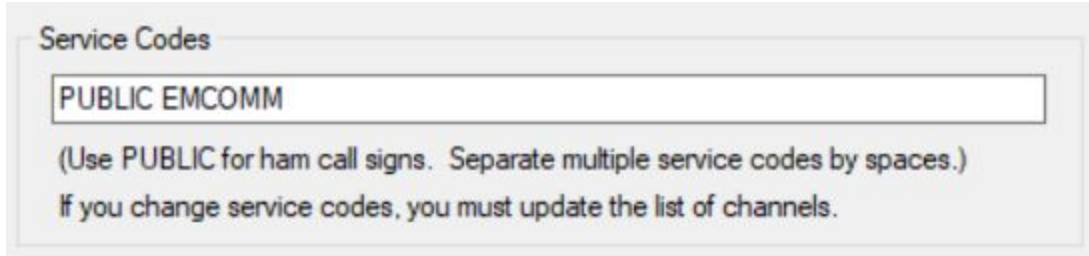
Quick Tip: Winlink Express Setup

If you have not setup Winlink Express, go to **Settings -> Winlink Express Setup** and fill in the appropriate fields.

You only have to do this once (unless your personal information or location changes, e.g. Call Sign, Registration Number, Locator, etc. then update in Winlink Express Setup).

Entering your locator here will help you later finding Winlink Gateways near you. You can look up your Maidenhead Locator at http://www.levinecentral.com/ham/grid_square.php

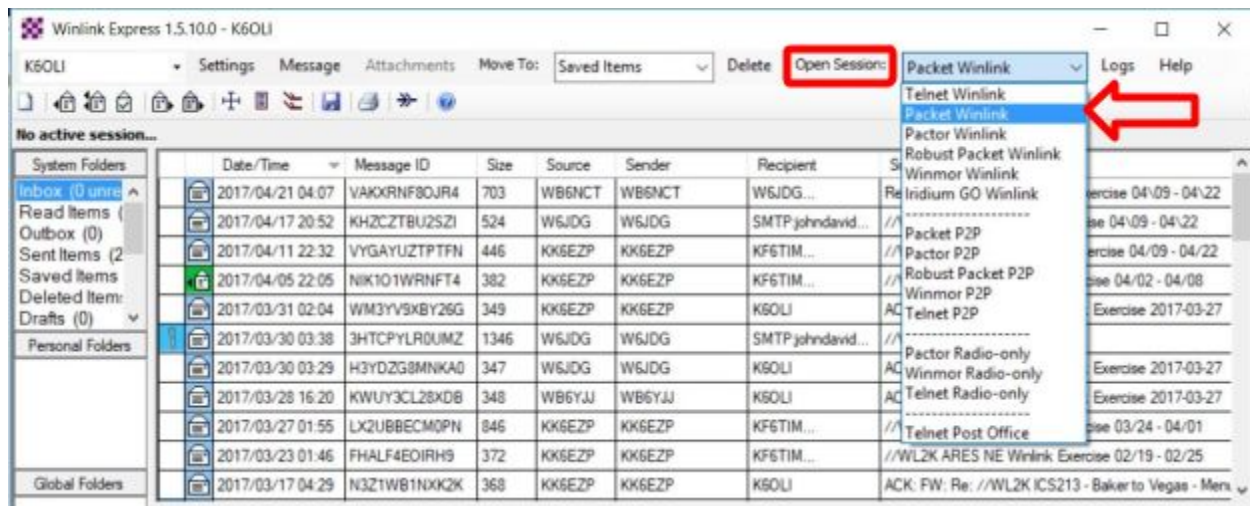
If you are an Emcomm station you may want to add EMCOMM to the **Service Codes** field. It will then also show EMCOMM gateways in your area.



The screenshot shows a web form titled "Service Codes". It contains a text input field with the text "PUBLIC EMCOMM". Below the input field, there is a note in parentheses: "(Use PUBLIC for ham call signs. Separate multiple service codes by spaces.)". Below that, there is another line of text: "If you change service codes, you must update the list of channels."

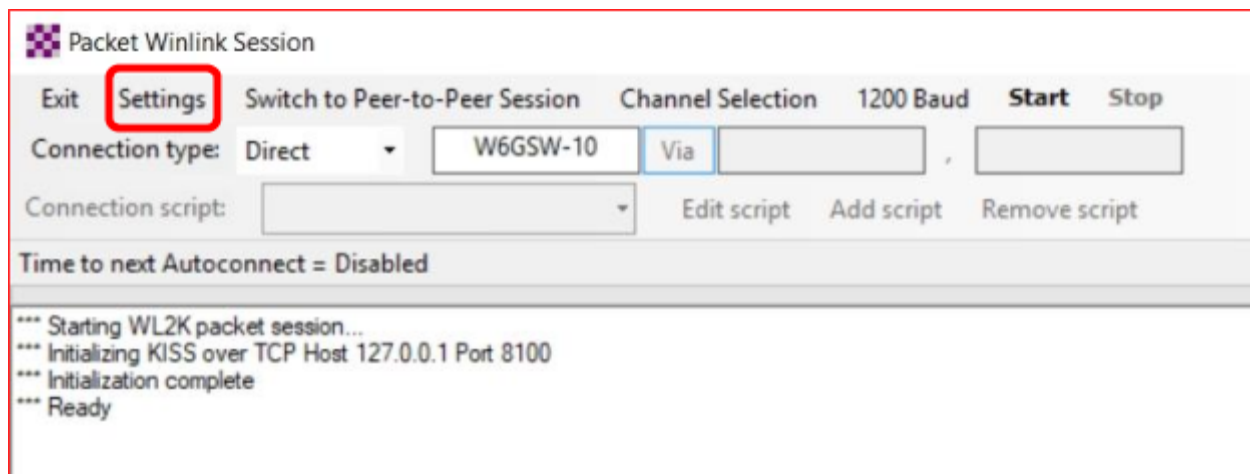
Packet Winlink

Select Open Session: **Packet Winlink**



Click on **Open Session**:

You are now in the Winlink Packet Session



Click **Settings**

Packet Winlink/P2P Setup

TNC Connection

Packet TNC Type: **KISS**

Packet TNC Model: **NORMAL** Serial Port: **TCP**

Autoconnect time: **Disabled**

TCP Host/Port: **127.0.0.1** **8100**

Packet sound modem: **C:\UZ7HO\soundmodem.exe** **Browse**

(For KISS mode) ☒ Automatically launch packet sound modem

TNC Parameters

☒ 1200 Baud ☐ 9600 Baud

Parameter	1200 Baud	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
Transmit Level:	100	100

Disable Xmt Level Adjust ☐ ☒ Enable IPoll

Update **Cancel**

Select Packet TNC Type: **KISS**

Select Packet TNC Model: **NORMAL**

Note: Choose NORMAL for most instances. However, when troubleshooting a connection you may want to try ACKMODE.

Select Serial Port: **TCP** (instead of COM port options in the dropdown menu)

Set TCP Host / Port: **127.0.0.1 / 8100**

Packet Soundmodem: **C:\UZ7HO\soundmodem.exe**

Check Automatically Launch Soundmodem

Note:

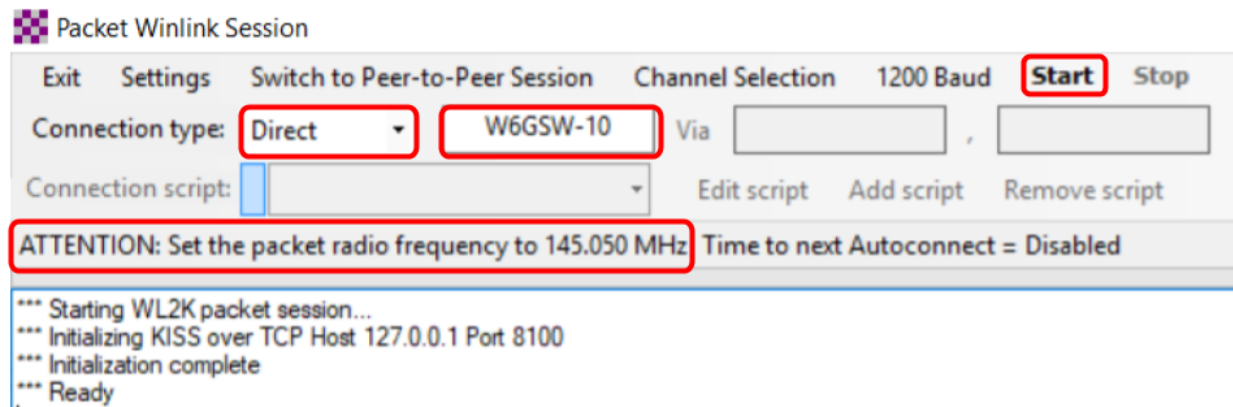
1. Enter the path to the folder to which you extracted UZ7HO Soundmodem or Direwolf, in this example C:\UZ7HO\soundmode.exe.
2. If you choose to run Packet Soundmodem manually, then leave “Automatically Launch Soundmodem” unchecked.
3. Running two instances of of Soundmodem on the same port will return an error: “ KISS Server Port Busy”. Close all instances of Soundmodem and start only one instance of Soundmodem.
4. Some users prefer to start Soundmodem and VARA FM manually, keep them running and switch between Packet and VARA FM sessions. Soundmodem and VARA FM work fine running concurrently.

Select TNC Parameters **1200 Baud**

Check **Enable IPoll**

Click **Update**

Connecting to a gateway



Select Connection Type: **Direct**

Enter Gateway name, in this example: **W6GSW-10**

On your radio set the frequency to the gateway frequency, in this example 145.050MHz. This frequency will be different for different gateways! Use Channel Selection (see Quick Tip below) to make sure you have the correct gateway and frequency for your area.

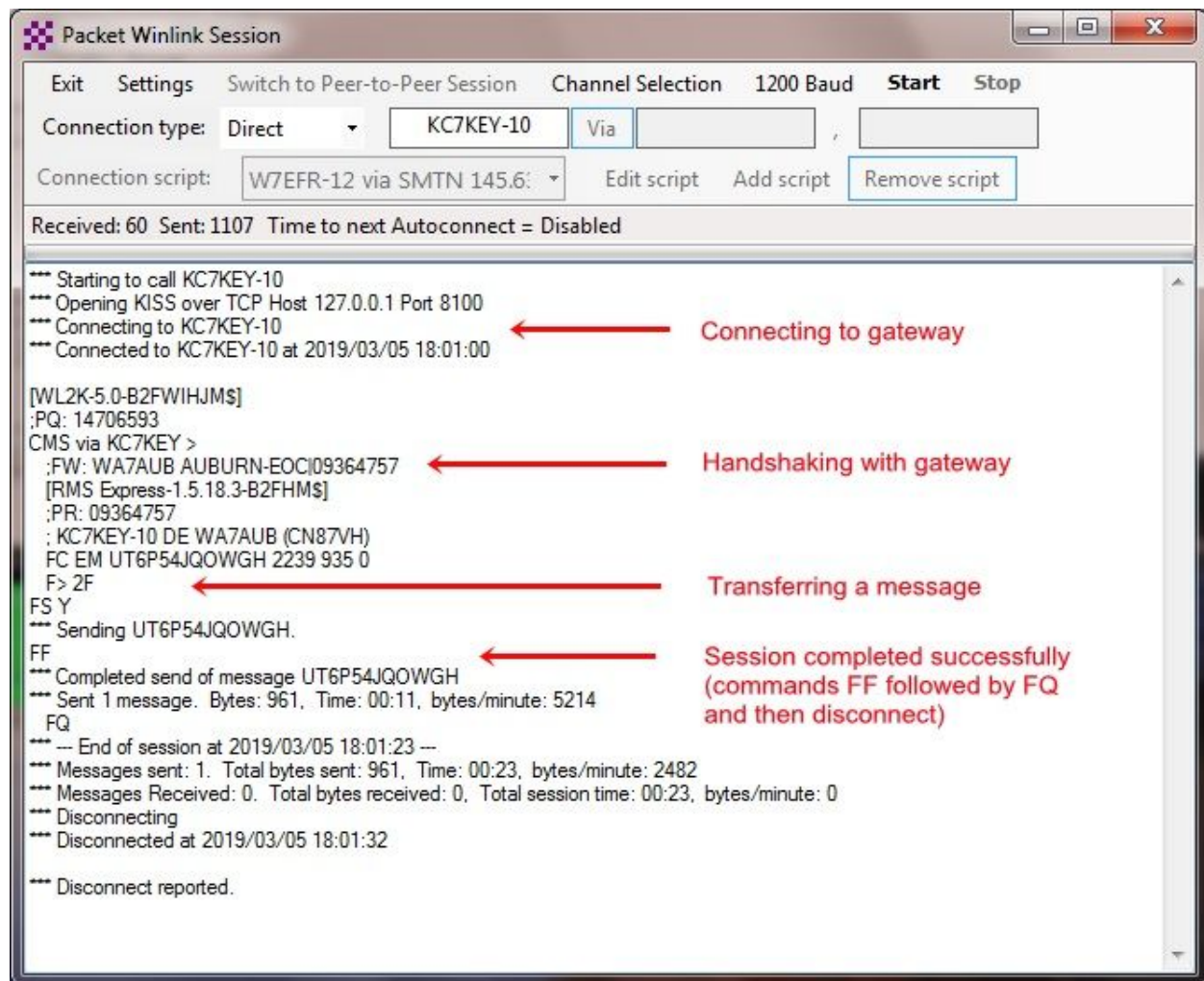
Note: Some radios require digital mode to be enabled before you can make a digital connection on the selected frequency. Please refer to your radio manual for details.

Click **Start**

Successful Exchange

Here is an excellent example of a successful Packet exchange with explanations courtesy of **Scott NS7C**.

For details please see: <https://www.winlink.org/B2F>



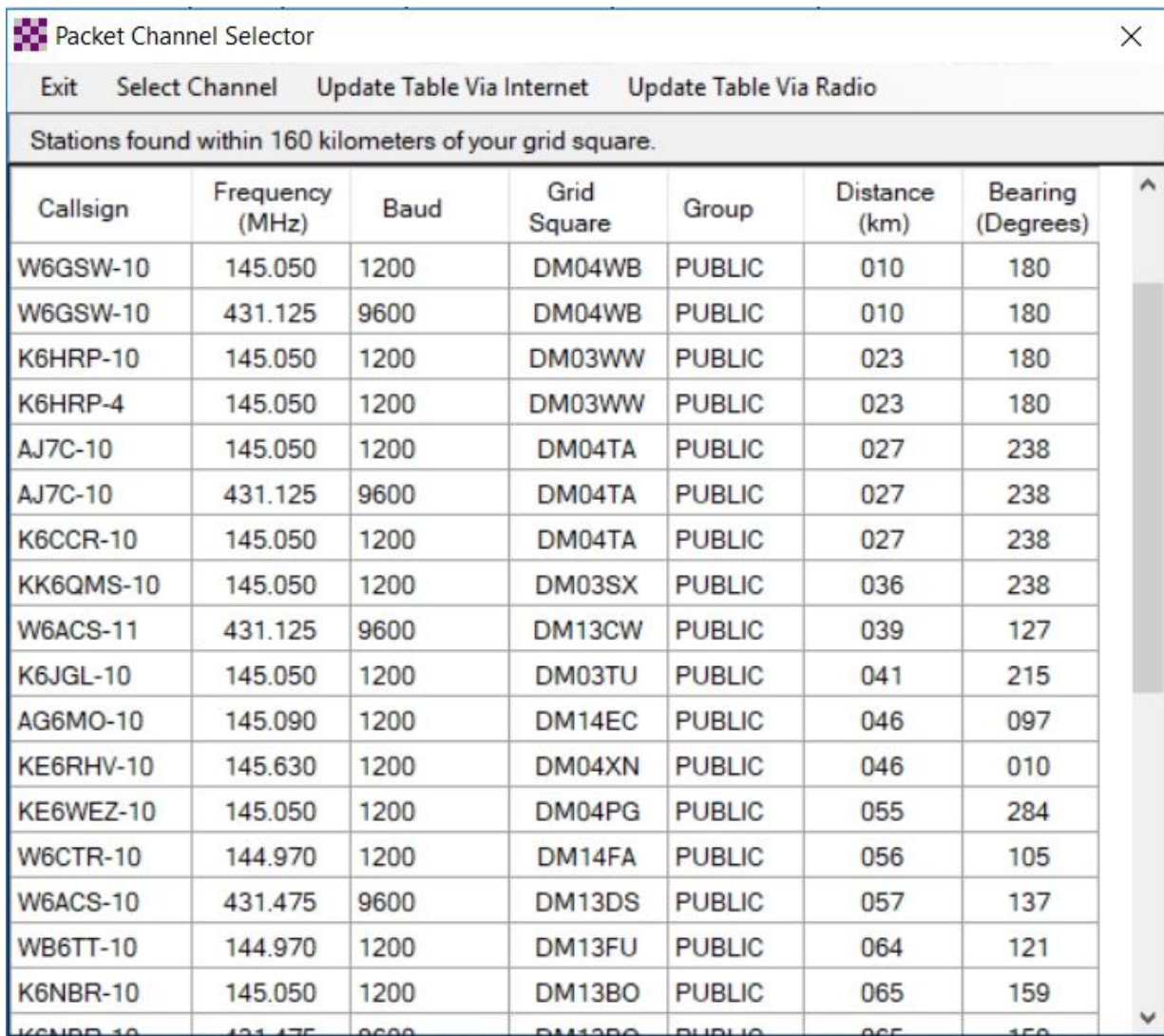
Quick Tip: Channel Selection

Update your available channels on a regular basis, once a month at the very least. Using Channels automatically populates the relevant fields in the Packet Winlink Session window.

Click **Channel Selection**

Click **Update-via-Internet**

(if you have filled in your grid square correctly in Winlink Express Setup, the Channel list auto-populates)



The screenshot shows a window titled "Packet Channel Selector" with a close button (X) in the top right corner. Below the title bar is a menu bar with four options: "Exit", "Select Channel", "Update Table Via Internet", and "Update Table Via Radio". A status bar at the top of the main area reads "Stations found within 160 kilometers of your grid square." Below this is a table with seven columns: "Callsign", "Frequency (MHz)", "Baud", "Grid Square", "Group", "Distance (km)", and "Bearing (Degrees)". The table contains 20 rows of station data. A vertical scrollbar is on the right side of the table.

Callsign	Frequency (MHz)	Baud	Grid Square	Group	Distance (km)	Bearing (Degrees)
W6GSW-10	145.050	1200	DM04WB	PUBLIC	010	180
W6GSW-10	431.125	9600	DM04WB	PUBLIC	010	180
K6HRP-10	145.050	1200	DM03WW	PUBLIC	023	180
K6HRP-4	145.050	1200	DM03WW	PUBLIC	023	180
AJ7C-10	145.050	1200	DM04TA	PUBLIC	027	238
AJ7C-10	431.125	9600	DM04TA	PUBLIC	027	238
K6CCR-10	145.050	1200	DM04TA	PUBLIC	027	238
KK6QMS-10	145.050	1200	DM03SX	PUBLIC	036	238
W6ACS-11	431.125	9600	DM13CW	PUBLIC	039	127
K6JGL-10	145.050	1200	DM03TU	PUBLIC	041	215
AG6MO-10	145.090	1200	DM14EC	PUBLIC	046	097
KE6RHV-10	145.630	1200	DM04XN	PUBLIC	046	010
KE6WEZ-10	145.050	1200	DM04PG	PUBLIC	055	284
W6CTR-10	144.970	1200	DM14FA	PUBLIC	056	105
W6ACS-10	431.475	9600	DM13DS	PUBLIC	057	137
WB6TT-10	144.970	1200	DM13FU	PUBLIC	064	121
K6NBR-10	145.050	1200	DM13BO	PUBLIC	065	159
K6NBR-10	431.475	9600	DM13BO	PUBLIC	065	159

Double-click the channel you want to use.

The Packet Winlink Session window will read **ATTENTION: Set the packet radio frequency to xxx.xxxMHz**, this also gives you the frequency you should set your radio to.

Quick Tip: Winlink Screen Resolution Fix

In some cases Winlink resizes, making the font painfully small to read. You can keep this from happening by following these steps:

Right mouse-click on the RMS Express icon.

Select <Properties>

Select the <Compatibility> tab.

Check <Disable full screen optimizations>.

Click on <Change high DPI settings>

Check <Override high DPI scaling behavior>.

In the <Scaling performed by> drop-down box **select** <System>

Click **OK**.

