



Winlink Express – Installation And Configuration



What is Winlink

- Worldwide system for sending e-mail via radio.
- Provides e-mail from almost anywhere in the world.
- Entirely supported and operated by amateur radio volunteers (Amateur Radio Safety Foundation, Inc.).
- Winlink Express software is the preferred client application.
- Adopted for contingency communication by many government agencies.
- Used by infrastructure-critical NGOs such as International & American Red Cross, Southern Baptist Disaster Relief, DHS Tiered AT&T Disaster Response & Recovery, FedEx, Bridgestone Emergency Response Team, etc.

Winlink Connection Modes

- **Telnet** – Non-radio connection through the Internet. Good for training (no radio equipment required) and use if radio is down or network is busy.
- **VHF/UHF Packet** (local LOS propagation) –
 - **9600 baud** – Fast, reliable, range may be limited and requires \$400 modem (Kantronics or SCS Tracker) or a good soundcard (non-Signalink) modem. Radio must be 9600 capable.
 - **1200 baud** – Slower, but can use inexpensive TNC like Byonics TinyTrak-4, TNC-X, or even soundcard modems. Will work with virtually any FM radio.

Winlink Connection Modes

- **HF WINMOR** – “Poor man’s Pactor”. Not as good as Pactor, but operates with an inexpensive sound card device (\$100), speeds between Pactor 2 and 3.
 - This mode will soon be replaced by the ADROP software TNC that is currently in test
- **HF Pactor 1, 2, 3 and 4** – Fast and reliable but requires an expensive modem (\$1500+).
- All RF modes can be Peer-to-Peer.

Resources Needed for Winlink Express

VHF/UHF Packet Radio

- Computer running Windows XP through Windows 10.
- Microsoft .NET 3.5 framework.
- V/UHF radio with data port (1200/9600) or speaker/mic connection (1200 only).
- Packet TNC (Kantronics, TNC-X, MFJ, etc.), or Signalink or similar USB soundcard interface. Might require a USB to Serial dongle.
- Note: Some new radios have built-in soundcards/TNC's.
- Software downloads:
 - <ftp://autoupdate.winlink.org/User%20Programs/>
- All software is free, donation is suggested.

Packet TNC

- Can be simple KISS mode, or full function.
- Cost from about \$100 to \$1500.
- Radio needs to have a data port (1200/9600), or use microphone and speaker connections (1200 only).
- Some radios include a built-in TNC or sound card.
- Might require a USB to serial adapter (built-in on TNC-X)
 - Use FTDI chipset devices for best results



Packet TNC

- Prolific chipset USB to serial converters have driver issues.
- Counterfeit Chinese products used Prolific product ID and “piggy backed” on official Prolific drivers.
- Prolific countered by changing the hardware/drivers so the counterfeit devices would not work with their drivers.
- This website may help:
<http://www.ifamilysoftware.com/news37.html>
- Adapters based on the FTDI chipset do not have this problem (yet anyway).

Signalink Soundcard Interface

- Simple device powered by USB connection.
- Cost is about \$100 including radio-specific cable.
- Radio needs to have a data (sound) port, or use microphone and speaker connections.
- Need to run “Software TNC” application such as Direwolf, or UZ7HO soundmodem.



Hardware TNC or Sound Card?

There are advantages to both

Hardware TNC

- Relatively low cost (TNC-X), old one in the closet?
- Probably the simplest connection.
- No additional software needed.

Sound Card

- Can be used for other digital modes besides Winlink.
- Software TNC has superior decode over older hardware TNC.
- Can be used for both Packet and Winmor.

Hardware TNC or Sound Card?

There are disadvantages to both

Hardware TNC

- Only does packet (or maybe Pactor too).
- Older units do not perform as well, no new development.
- Will require USB to serial adapter.

Sound Card

- Sound levels and other settings may be changed unexpectedly.
- Requires additional software, and a slightly more complex operation (more training?).

Hardware TNC or Sound Card?

Presenter Soapbox

1200b AFSK Packet must die!

While this mode is relatively easy to setup and get working, and we must retain this capability for certain conditions, it is time to move up to faster modes.

UZ7HO soundmodem provides several options for higher speed communications. 4800b should be easy to achieve for most setups.

Both Direwolf and UZ7HO support G3RUH 9600b support and modern radios should handle this speed.

Installing Winlink Express

- Download zip file:
 - <ftp://autoupdate.winlink.org/User%20Programs/>
 - www.winlink.org – Client Software, Winlink Express
 - Watch for false downloads
- Extract the .msi installer from the zip file and run it.
- Complete the setup screens (call sign, location, etc.).
- Browse C:\RMS Express\, right click on.
 - RMS Express.exe and select option to create a shortcut.
 - Change the name to Winlink Express.

Winlink Express Initial Setup

Winlink Express Properties

Call Signs

My Callsign: My Password:

Callsign suffix (optional): (Used for country code) Show password

Password recovery e-mail: ←

(Non-Winlink e-mail address where lost password will be sent when requested)

Auxiliary Callsigns and Tactical Addresses

AUBURN-EOC ←

My Grid Square:

Winlink Express registration key: ← **Please Donate**

Path to propagation forecast program:

Service Codes

←

(Use PUBLIC for ham call signs. Separate multiple service codes by spaces.)
If you change service codes, you must update the list of channels.

Contact Information (Optional)

Name:

Street address 1:

Street address 2:

City: ←

State/Province:

Country:

Postal code:

Web Site URL (optional):

Phone number:

Non-Winlink e-mail:

Additional information (optional):

Recalculate HF path quality if SFI changes more than:

Keep logs for weeks. Keep deleted messages for days.

Display list of pending incoming messages prior to download

Warn about connections to stations holding messages

Disable Peer-To-Peer Message Transfer

Allow diagnostic information to be sent to the Winlink Development Team

Automatically install field-test (beta) versions of Winlink Express

Use Amazon cloud server (AWS) -- beta version

User Preferences

- Click “Files” followed by “Preferences/Message Notification”

The 'Preferences' dialog box is shown with the following settings:

- 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:**
 - km:
 - Miles:

Buttons: Update, Cancel

The 'Message Notification and Forwarding' dialog box is shown with the following settings:

- New Message Notification:**
 - Make sound if message priority is at least this high: Priority
 - New message notification sound: (none)
 - Repeat sound until message is read:
 - Stop the sound: [Button]
- Automatic Message Forwarding:**
 - Automatically forward messages to the specified addresses:
 - Forward if the message priority is at least this high: Priority
 - Forward via CMS if Internet is available, otherwise put in Outbox:
 - Addresses to forward to (separate with comma or semicolon): [Text Field]

Buttons: Save, Cancel

Installing Winlink Express

- The first time you originate a message using Winlink Express, you will be registered in the Winlink system and will have a `callsign@winlink.org` address. This account remains active as long as you use it regularly. Inactive accounts will be purged after about 1 year.
- You will also have access to the Winlink Webmail system and other good tools on the Winlink.org website.

Initial Packet Setup

Hardware TNC

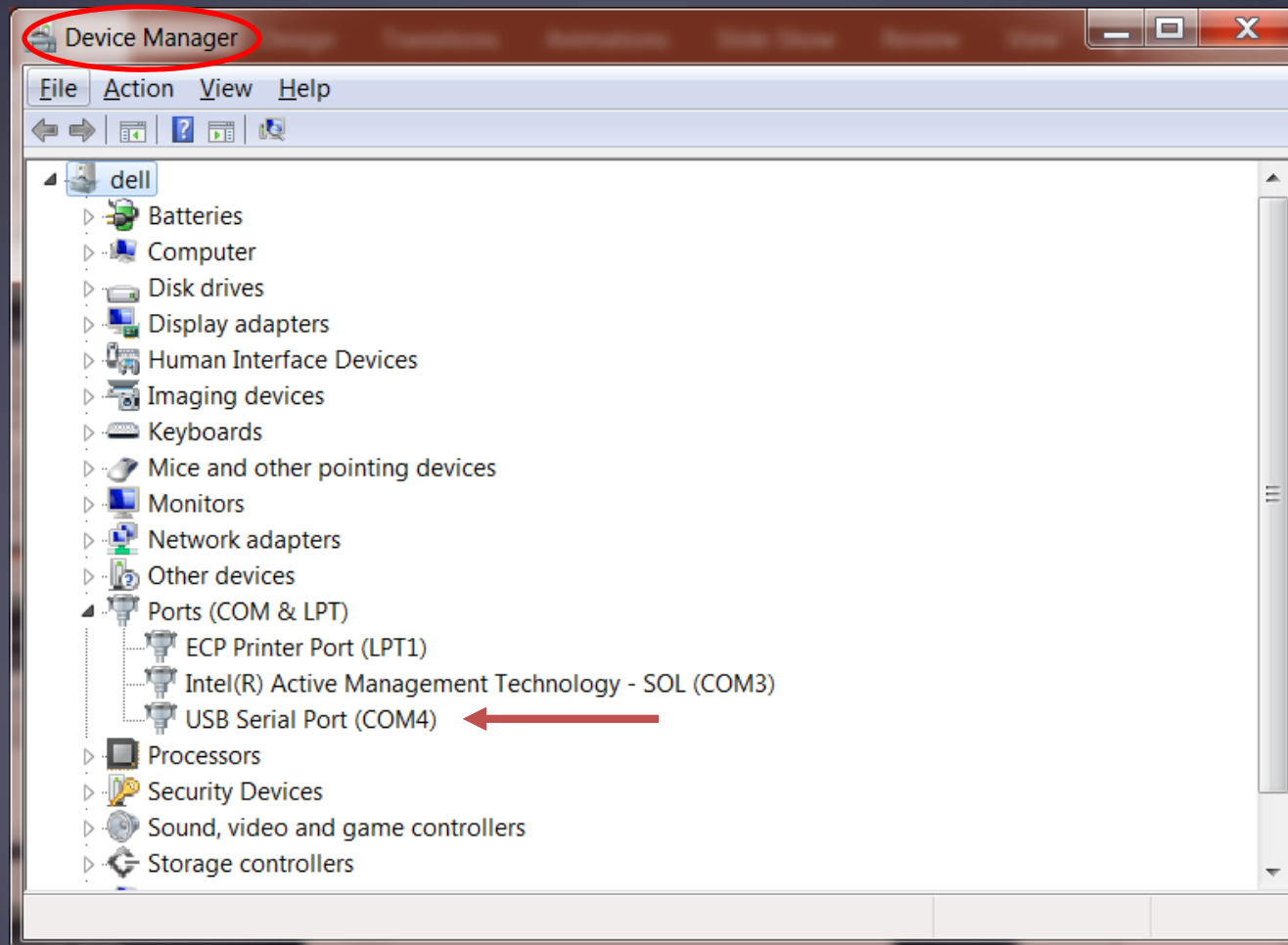
The screenshot displays the Winlink Express 1.5.2.0 - NS7C interface. The main window shows a list of folders on the left and a message pane on the right. The 'Open Session:' dropdown menu is set to 'Packet Winlink' and is circled in red. A 'Packet Winlink Session' dialog box is open, with the 'Setup' button circled in red. The 'Packet Winlink/P2P Setup' dialog box is also open, showing the following settings:

- TNC Connection: Packet TNC Type: TNC-X (indicated by a red arrow)
- Packet TNC Model: (empty)
- Serial Port: COM4 (indicated by a red arrow)
- Serial Port Baud: 9600 (indicated by a red arrow)
- AutoConnect Time: Disabled
- TNC Parameters:
 - 1200 Baud (selected) / 9600 Baud
 - TX Delay (Milliseconds): 200 / 300
 - Maximum Packet Length: 128 / 255
 - Maximum Frames: 4 / 2
 - Frack: 2 / 3
 - Persistence: 160 / 224
 - Slot time: 30 / 20
 - Maximum Retries: 5 / 5
 - Disable Xmit Level Adjust: (indicated by a red arrow)
 - Transmit Level: 100 / 100

The 'Update' and 'Cancel' buttons are visible at the bottom of the dialog box.

Initial Packet Setup

Hardware TNC COM Port



Initial Packet Setup

Sound Card Interface

- Download zip file (UZ7HO low speed):
 - http://uz7.ho.ua/modem_beta/soundmodem97.zip
 - Extract the program from the zip file and run it.
 - Configuration settings from the drop down menus.
 - Windows only, firewall message.
- Download zip file (UZ7HO high speed):
 - http://uz7.ho.ua/modem_beta/hs_soundmodem15.zip
 - Extract the program from the zip file and run it.
 - Configuration settings from the drop down menus.
 - Windows only, firewall message.

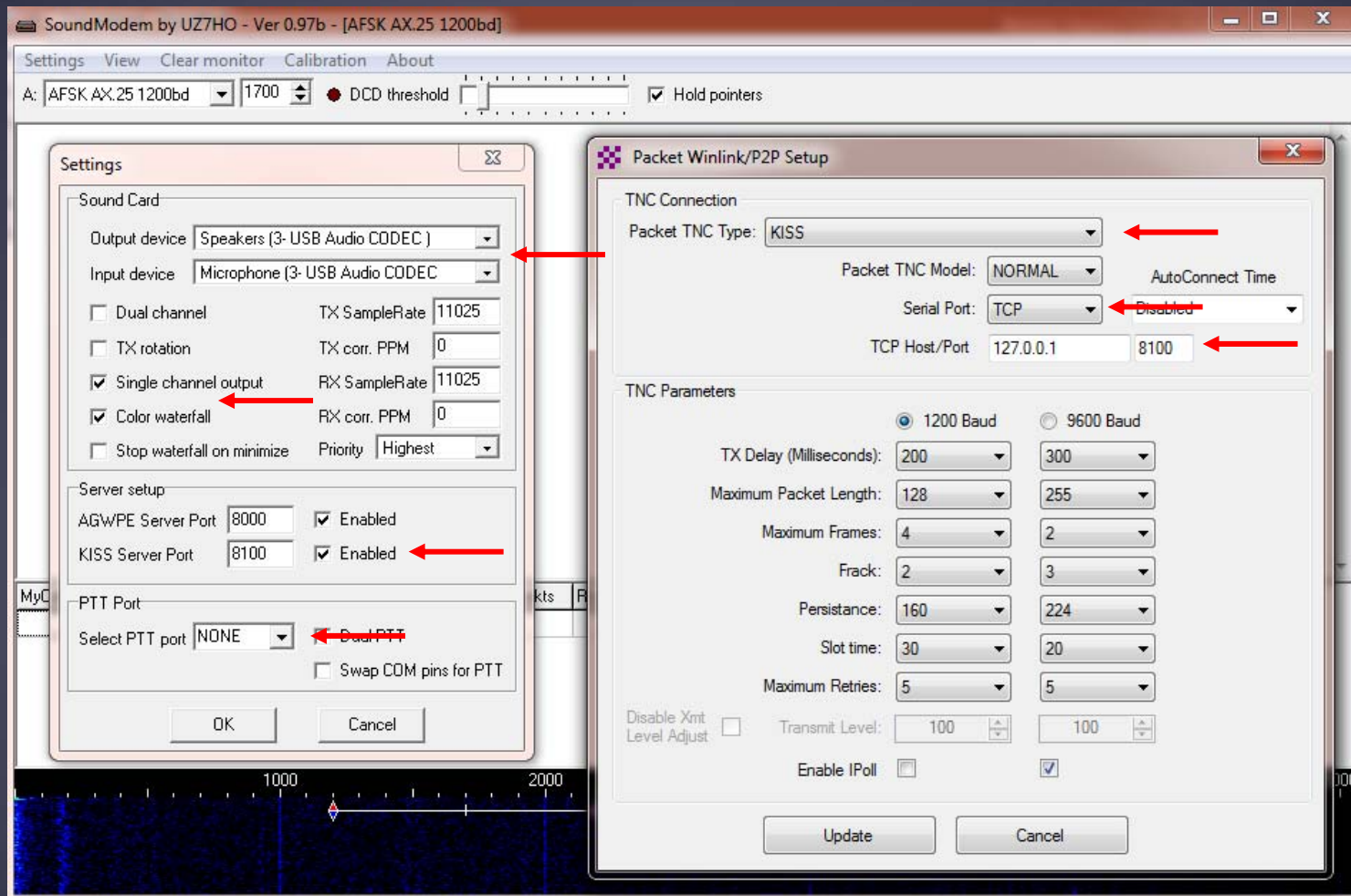
Initial Packet Setup

Sound Card Interface

- Download zip file (Direwolf):
 - <https://github.com/wb2osz/direwolf/releases/download/1.3-dev-K/direwolf-1.3-dev-K-win.zip>
 - Extract the program files from the zip file and run the app.
 - Edit the INI file to configure.
 - Multi-platform capable.

Initial Packet Setup

Sound Card Interface (UZ7HO and Signalink)



Initial Packet Setup

Sound Card Interface (UZ7HO High Speed)

The screenshot displays the 'High-Speed SoundModem by UZ7HO - Ver 0.15b - [FSK G3RUH 9600bd]' application window. It features two main configuration panels: 'Settings' and 'Packet Winlink/P2P Setup'. The 'Settings' panel includes sections for 'Sound Card' (Output device: Speakers (3- USB Audio CODEC), Input device: Microphone (3- USB Audio CODEC)), 'Server setup' (AGWPE Server Port: 8000, KISS Server Port: 8100), and 'PTT Port' (Select PTT port: COM12). The 'Packet Winlink/P2P Setup' panel includes 'TNC Connection' (Packet TNC Type: KISS, Packet TNC Model: NORMAL, Serial Port: TCP, TCP Host/Port: 127.0.0.1 8100) and 'TNC Parameters' (1200 Baud / 9600 Baud, TX Delay, Maximum Packet Length, Maximum Frames, Frack, Persistence, Slot time, Maximum Retries, Transmit Level, and Enable IPoll). Red arrows point to specific settings: 'Speakers (3- USB Audio CODEC)', 'KISS', 'TCP', '8100', '9600 Baud', '8100', 'COM12', and 'Enabled' for KISS Server Port.

High-Speed SoundModem by UZ7HO - Ver 0.15b - [FSK G3RUH 9600bd]

Settings View Clear monitor About

FSK G3RUH 9600bd DCD A FSK G3RUH 9600bd

Settings

Sound Card

Output device: Speakers (3- USB Audio CODEC)

Input device: Microphone (3- USB Audio CODEC)

Dual channel TX SampleRate: 48000

TX rotation TX corr. PPM: 0

Single channel output RX SampleRate: 48000

Color waterfall RX corr. PPM: 0

Priority: Highest

Server setup

AGWPE Server Port: 8000 Enabled

KISS Server Port: 8100 Enabled

PTT Port

Select PTT port: COM12

Swap COM pins for PTT

OK Cancel

Packet Winlink/P2P Setup

TNC Connection

Packet TNC Type: KISS

Packet TNC Model: NORMAL

Serial Port: TCP

TCP Host/Port: 127.0.0.1 8100

AutoConnect Time: Disabled

TNC Parameters

1200 Baud 9600 Baud

TX Delay (Milliseconds): 200 100

Maximum Packet Length: 128 255

Maximum Frames: 4 2

Frack: 2 3

Persistence: 160 224

Slot time: 30 20

Maximum Retries: 5 5

Disable Xmit Level Adjust Transmit Level: 100 100

Enable IPoll

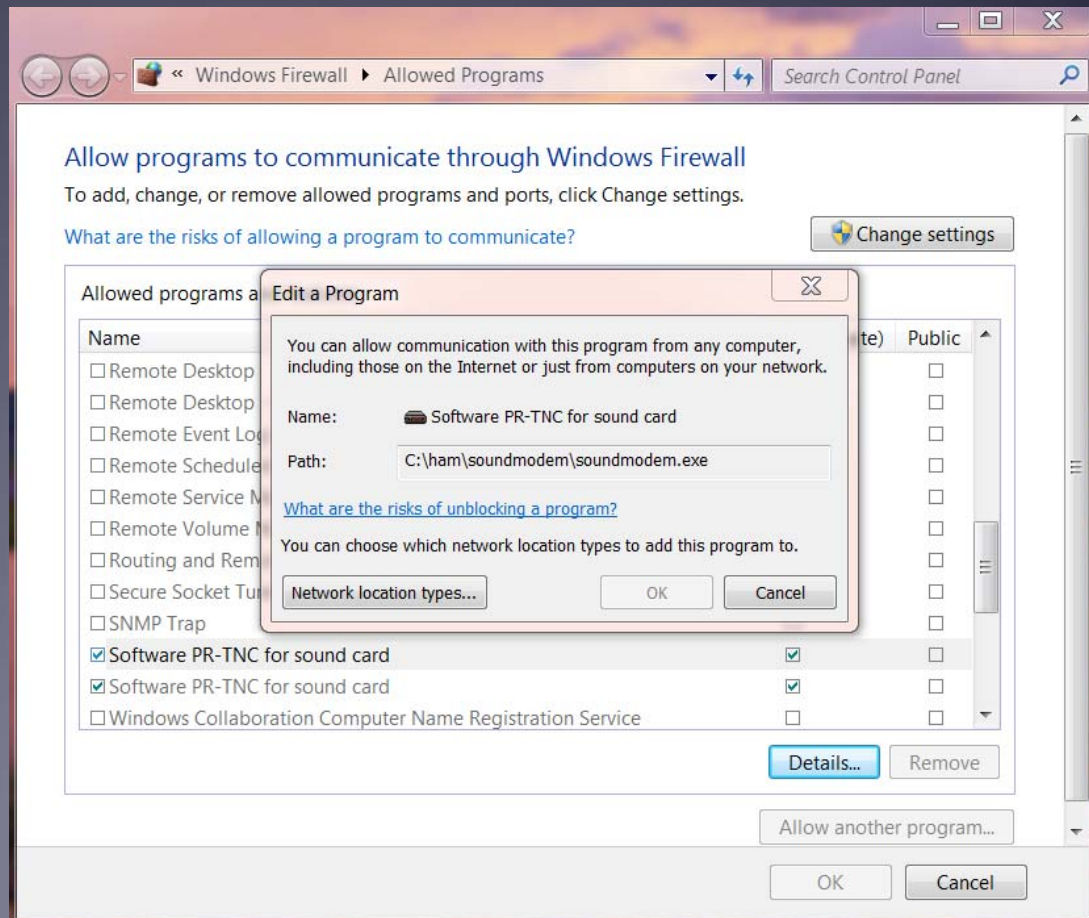
Update Cancel

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000

Initial Packet Setup

Sound Card Interface (UZ7HO)

UZ7HO and Direwolf both create “KISS TNC” servers within the network stack, ports on the firewall must be opened to allow Winlink Express (and other applications) to use the virtual TNC.



Initial Packet Setup

Sound Card Interface (UZ7HO and Signalink)

UZ7HO and Direwolf both allow for multiple modems using a “stereo” sound card, for Signalink, only modem “A” is available. Set to AFSK AX.25 1200bd modem.

The screenshot shows a 'Modem settings' dialog box with two columns for 'Modem filters ch: A' and 'Modem filters ch: B', and two columns for 'Modem type ch: A' and 'Modem type ch: B'. Channel A is configured for AFSK AX.25 1200bd, while Channel B is configured for AFSK AX.25 300bd. Both channels have 'Default settings', 'KISS Optimization', and 'non-AX25 filter' checked. Channel A has 'PreEmphasis filter' set to 'None' and 'All' checked, while Channel B has 'PreEmphasis filter' set to 'None' and 'All' unchecked. Channel A has 'Bits Recovery' set to 'SINGLE', while Channel B has it set to 'NONE'. The 'Ok' and 'Cancel' buttons are at the bottom.

Modem filters ch: A	Modem filters ch: B
BPF Width: 1400	BPF Width: 500
TXBPF Width: 1600	TXBPF Width: 500
LPF Width: 650	LPF Width: 155
BPF Taps: 256	BPF Taps: 256
LPF Taps: 128	LPF Taps: 128
<input checked="" type="checkbox"/> Default settings	<input checked="" type="checkbox"/> Default settings
PreEmphasis filter: None <input checked="" type="checkbox"/> All	PreEmphasis filter: None <input type="checkbox"/> All
<input checked="" type="checkbox"/> KISS Optimization	<input type="checkbox"/> KISS Optimization
<input checked="" type="checkbox"/> non-AX25 filter	<input checked="" type="checkbox"/> non-AX25 filter

Modem type ch: A	Modem type ch: B
Mode: AFSK AX.25 1200bd	Mode: AFSK AX.25 300bd
TXDelay: 250 msec	TXDelay: 250 msec
TXTail: 50 msec	TXTail: 50 msec
Add. RX: 2 pairs	Add. RX: 0 pairs
Add. RX shift: 30 Hz	Add. RX shift: 30 Hz
Bits Recovery: SINGLE	Bits Recovery: NONE

Initial Packet Setup

Sound Card Interface (UZ7HO High Speed)

UZ7HO and Direwolf both allow for multiple modems using a “stereo” sound card. For initial setup, only use modem ch “A”. Set to FSK G3RUH 9600bd modem.

The screenshot shows a 'Modem settings' dialog box with two columns for 'Modem filters ch: A' and 'Modem filters ch: B'. Channel A settings include LPF1 Width (7000), LPF1 Taps (64), LPF2 Width (9000), LPF2 Taps (16), TXLPF Width (8000), and checkboxes for Default settings, non-AX25 filter, and KISS Optimization. Channel B settings are identical but include a 'Show' button for each filter parameter. Below the filter settings, 'Modem type ch: A' and 'Modem type ch: B' are shown with a 'Mode' dropdown set to 'FSK G3RUH 9600bd', TXDelay (100 msec for A, 150 msec for B), and TXTail (50 msec for both). 'Ok' and 'Cancel' buttons are at the bottom.

Parameter	Channel A	Channel B
Modem filters ch: A		
LPF1 Width	7000	7000
LPF1 Taps	64	64
LPF2 Width	9000	9000
LPF2 Taps	16	16
TXLPF Width	8000	8000
Default settings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
non-AX25 filter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
KISS Optimization	<input type="checkbox"/>	<input type="checkbox"/>
Modem type ch: A		
Mode	FSK G3RUH 9600bd	FSK G3RUH 9600bd
TXDelay	100 msec	150 msec
TXTail	50 msec	50 msec

Initial Packet Setup

Sound Card Interface (Direwolf and Signalink)

```
direwolf - Notepad
File Edit Format View Help

#####
#                               #
#          TEXT TO SPEECH COMMAND FILE          #
#                               #
#####
#SPEECH dwespeak.bat

#####
#                               #
#          VIRTUAL TNC SERVER PROPERTIES          #
#                               #
#####
#
# Dire Wolf acts as a virtual TNC and can communicate with
# client applications by different protocols:
#
#   - the "AGW TCP/IP Socket Interface" - default port 8000
#   - KISS protocol over TCP socket - default port 8001
#   - KISS TNC via serial port
#
AGWPORT 8000
KISSPORT 8100

#
# Some applications are designed to operate with only a physical
# TNC attached to a serial port. For these, we provide a virtual:
# port that appears to be connected to a TNC.
#
# Take a look at the User Guide for instructions to set up
# two virtual serial ports named COM3 and COM4 connected by
# a null modem.
```

Packet Winlink/P2P Setup

TNC Connection

Packet TNC Type: KISS

Packet TNC Model: NORMAL

AutoConnect Time: Disabled

Serial Port: TCP

TCP Host/Port: 127.0.0.1 8100

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 Xmt Level Adjust Transmit Level: 100 100

Enable IPoll

Update Cancel

Initial Packet Setup

Sound Card Interface (Direwolf High Speed)

The image shows a Notepad window titled "direwolf.conf - Notepad" and a "Packet Winlink/P2P Setup" dialog box. The Notepad window contains configuration text for Direwolf, with two red arrows pointing to specific lines: "MODEM 9600" and "PTT COM1 RTS -DTR". The Packet Winlink/P2P Setup dialog box has two sections: "TNC Connection" and "TNC Parameters". In the "TNC Parameters" section, the "9600 Baud" radio button is selected, indicated by a red arrow. The "Update" and "Cancel" buttons are at the bottom of the dialog.

```
# 9600 High speed - Can't use Microphone and Speaker connections.
# In the simplest form, just specify the speed.
#
#MODEM 1200
#MODEM 300
MODEM 9600 ← Uncomment 9600
#
# These are the defaults should be fine for most cases. In special situations,
# you might want to specify different AFSK tones or the baseband mode which does
# not use AFSK.
#
#MODEM 1200 1200:2200
#MODEM 300 1600:1800
#MODEM 9600 0:0
#
# On HF SSB, you might want to use multiple demodulators on slightly different
# frequencies to compensate for stations off frequency. Here we have 7 different
# demodulators at 30 Hz intervals. This takes a lot of CPU power so you will
# probably need to reduce the audio sampling rate with the /n option.
#MODEM 300 1600:1800 7@30 /4
#
# Uncomment line below to enable the DTMF decoder for this channel.
#
#DTMF
#
# If not using a VOX circuit, the transmitter Push to Talk (PTT)
# control is usually wired to a serial port with a suitable interface circuit.
# DON'T connect it directly!
#
# For the PTT command, specify the device and either RTS or DTR.
# RTS or DTR may be preceded by "-" to invert the signal.
# Both can be used for interfaces that want them driven with opposite polarity.
#
PTT COM4 RTS ← Specify PTT port used
#PTT COM1 RTS -DTR
#
# The Data Carrier Detect (DCD) signal can be sent to the same places
# as the PTT signal. This could be used to light up an LED like a normal TNC.
```

Packet Winlink/P2P Setup

TNC Connection

Packet TNC Type: KISS

Packet TNC Model: NORMAL

AutoConnect Time: Disabled

Serial Port: TCP

TCP Host/Port: 127.0.0.1 8100

TNC Parameters

1200 Baud 9600 Baud ←

TX Delay (Milliseconds): 200 100

Maximum Packet Length: 128 255

Maximum Frames: 4 2

Frack: 2 3

Persistence: 160 224

Slot time: 30 20

Maximum Retries: 5 5

Disable Xmt Level Adjust Transmit Level: 100 100

Enable IPoll

Update Cancel

Initial Packet Setup

Sound Card Interface (Direwolf)

Direwolf startup shows available audio devices. Signalink shows as USB Audio Codec

```
C:\Ham\Direwolf\direwolf.exe
Dire Wolf DEVELOPMENT version 1.3 K (Jan 30 2016)

Reading config file direwolf.conf
Available audio input devices for receive (*=selected):
  0: Microphone Array (Realtek High
  * 1: Microphone (USB Audio CODEC ) (channel 0) ←
Available audio output devices for transmit (*=selected):
  0: Speakers / Headphones (Realtek
  * 1: Speakers (USB Audio CODEC ) (channel 0) ←
Channel 0: 1200 baud, AFSK 1200 & 2200 Hz, E+, 44100 sample rate.
Note: PTT not configured for channel 0. (Ignore this if using UOX.)
Ready to accept KISS client application on port 8100 ...
Ready to accept AGW client application 0 on port 8000 ...
```

Initial Packet Setup

Sound Card Virtual TNC

```
C:\Ham\Direwolf\direwolf.exe

Reading config file direwolf.conf
Available audio input devices for receive (*=selected):
  0: Microphone Array (Realtek High
  * 1: Microphone (USB Audio CODEC ) (channel 0)
Available audio output devices for transmit (*=selected):
  0: Speakers / Headphones (Realtek
  * 1: Speakers (USB Audio CODEC ) (channel 0)
Channel 0: 1200 baud, AFSK 1200 & 2200 Hz, E+, 44100 sample r
Note: PTT not configured for channel 0. (Ignore this if using
Ready to accept KISS client application on port 8100 ...
Ready to accept AGW client application 0 on port 8000 ...

W7EFR-10 audio level = 64(30/19) [NONE] | | | | | | | | | |
[0.3] W7EFR-10>BEACON:EF&R Winlink RMS Packet Server<0x0d>
Unknown message type E, motorcycle

W7EFR-1 audio level = 63(30/18) [NONE] | | | | | | | | | |
[0.3] W7EFR-1>ID:Network Node (COUGAR)<0x0d>
Unknown message type N, Ambulance

K7CST-10 audio level = 92(44/23) [NONE] | | | | | | | | | |
[0.4] K7CST-10>BEACON:Winlink 2000 RMS Packet Server<0x0d>
```

SoundModem by UZ7HO - Ver 0.94b

Settings View Clear monitor About

Ch A 1700 Ch B 1700 DCD threshold H

1:Fm NS7C-5 To CQ <UI R Pid=F0 Len=19> [20:56:28R] [+++]
Making packets....

1:Fm NS7C-5 To CQ <UI R Pid=F0 Len=23> [20:56:38R] [+++]
And more packets.....

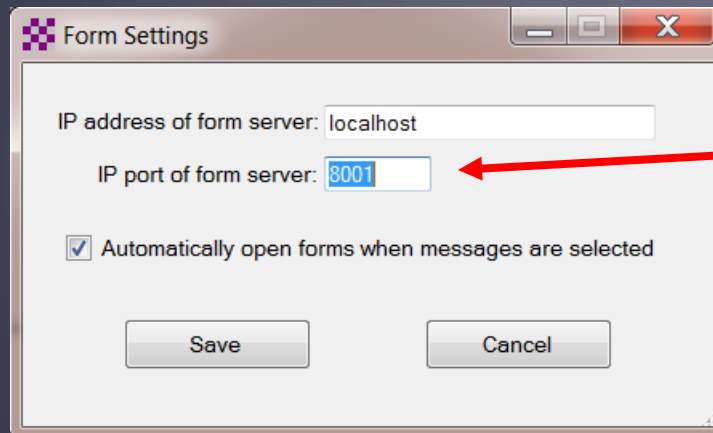
1:Fm W7EFR-1 To ID <UI R Pid=F0 Len=22> [20:56:41R] [+++]
Network Node (COUGAR)

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd byte	Rcvd FC	CPS TX	CPS I

Initial Packet Setup

Sound Card Virtual TNC

Make sure your Virtual TNC server TCP ports do not conflict with the Winlink Express forms server.



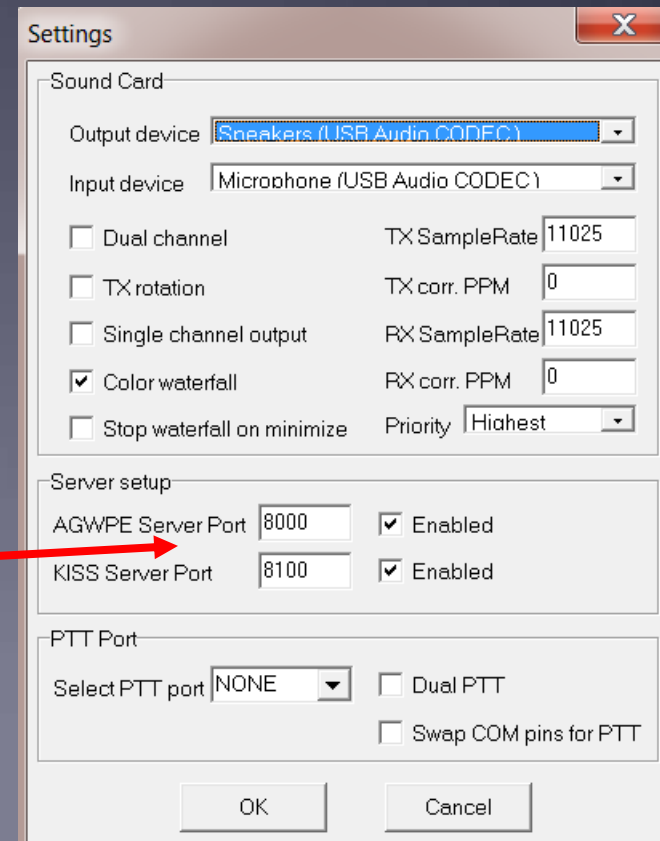
Form Settings

IP address of form server: localhost

IP port of form server: 8001

Automatically open forms when messages are selected

Save Cancel



Settings

Sound Card

Output device: Sneakers (USB Audio CODEC)

Input device: Microphone (USB Audio CODEC)

Dual channel TX SampleRate: 11025

TX rotation TX corr. PPM: 0

Single channel output RX SampleRate: 11025

Color waterfall RX corr. PPM: 0

Stop waterfall on minimize Priority: Highest

Server setup

AGWPE Server Port: 8000 Enabled

KISS Server Port: 8100 Enabled

PTT Port

Select PTT port: NONE Dual PTT

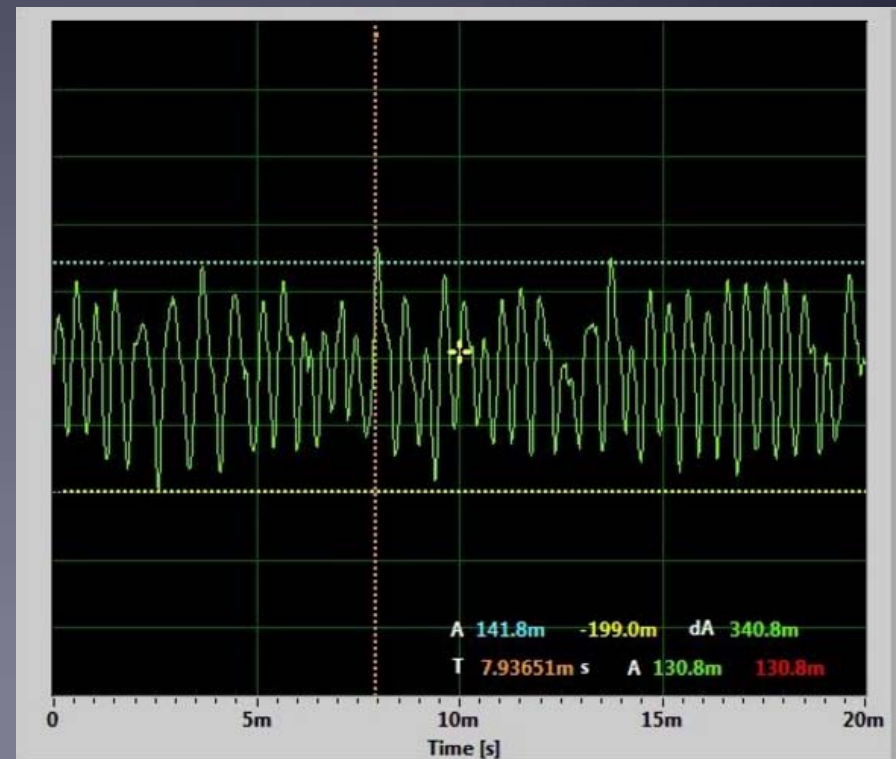
Swap COM pins for PTT

OK Cancel



Initial Packet Setup

Set your transmit levels correctly! (It is not plug and play)



- <http://www.febo.com/packet/layer-one/transmit.html>
- http://www.zeitnitz.de/Christian/scope_en

Initial Packet Setup

Important Parameters

- TX Delay (TXD)
- Packet Length
- Max Frames
- Frack
- Max Retries
- AutoConnect Time

Note: For soundcard configurations, TXD is set in the Software TNC application.

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

TNC Parameters

1200 Baud (selected) 9600 Baud

TX Delay (Milliseconds): 300 300

Maximum Packet Length: 128 255

Maximum Frames: 4 7

Frack: 2 2

Persistence: 160 224

Slot time: 30 20

Maximum Retries: 5 5

Disable Xmt Level Adjust

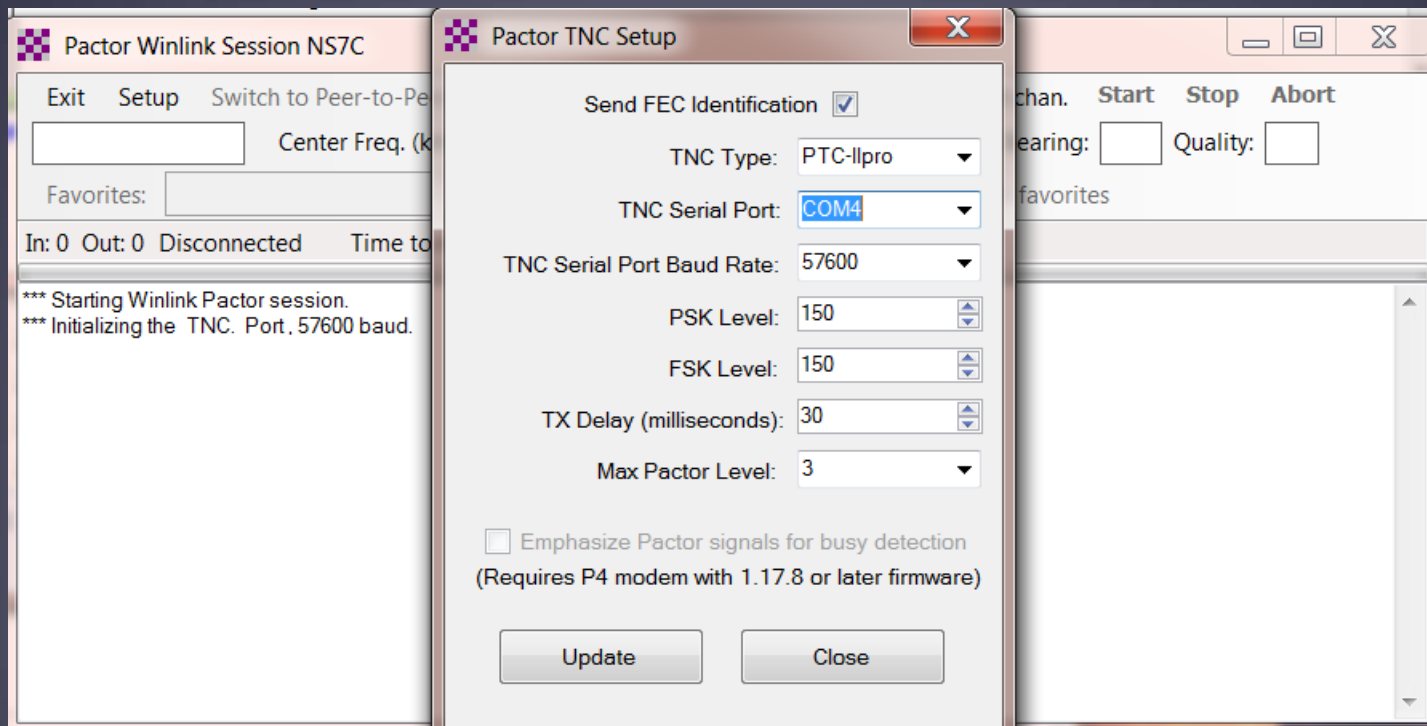
Transmit Level: 100 100

Enable IPoll

Update Cancel

Initial Pactor Setup

PTC modem



Resources Needed for Winlink Express

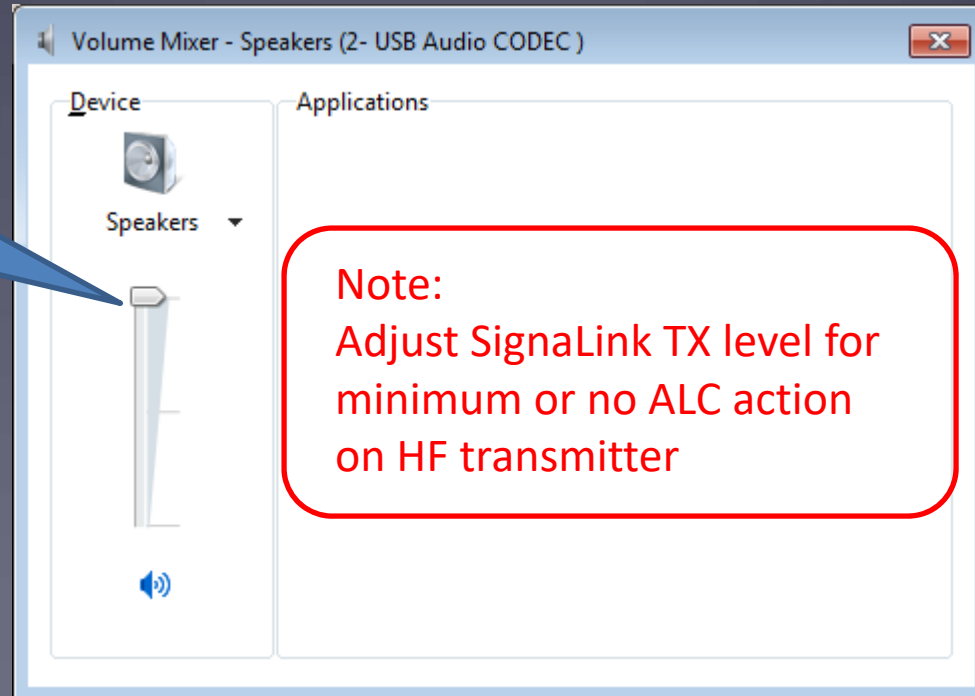
HF Winmor

- Same computer and software requirements as V/UHF Packet. Winmor modem is included with Winlink Express.
- ITSHF propagation prediction program. Note, you will be prompted to download this on first Winmor run. A link to the software will be provided.
- HF radio with data (sound) port and optionally computer control (CI/V, CAT, etc. for rig control).
- Signalink or similar soundcard interface, may be built-in on newer radios.
- All software is free, donation is suggested.

Configuring Sound Levels

Watch drive/ALC levels on transmitter

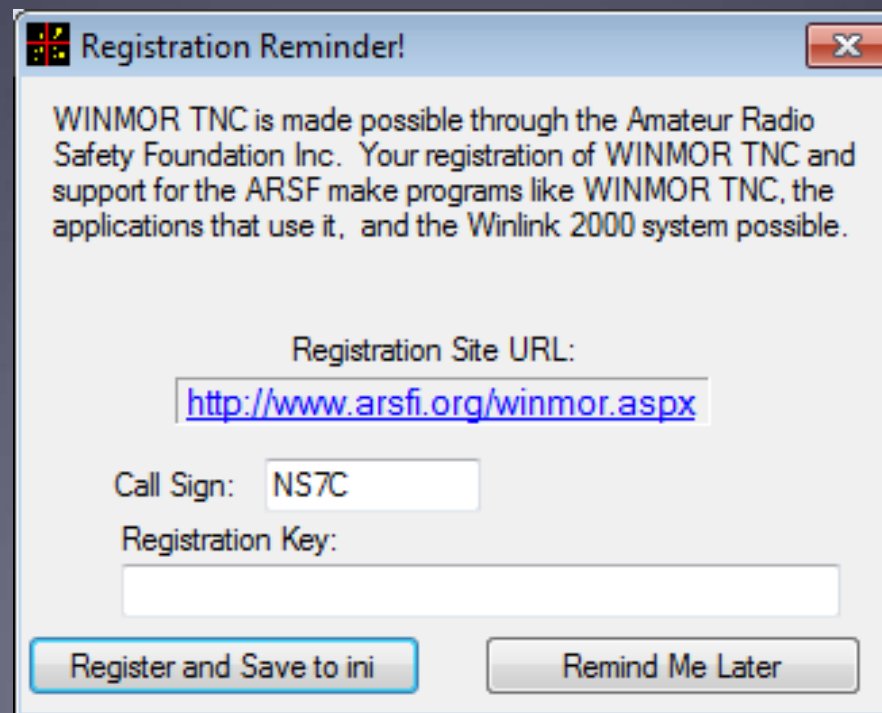
Set to
Max



Note:
Adjust SignalLink TX level for
minimum or no ALC action
on HF transmitter

Winmor Registration Screen

Appears each time you start Winmor until you register and get a key.



The image shows a Windows-style dialog box titled "Registration Reminder!". The text inside reads: "WINMOR TNC is made possible through the Amateur Radio Safety Foundation Inc. Your registration of WINMOR TNC and support for the ARSF make programs like WINMOR TNC, the applications that use it, and the Winlink 2000 system possible." Below this text, there is a label "Registration Site URL:" followed by a text box containing the URL <http://www.arsfi.org/winmor.aspx>. Underneath, there is a label "Call Sign:" followed by a text box containing "NS7C". Below that is a label "Registration Key:" followed by an empty text box. At the bottom of the dialog, there are two buttons: "Register and Save to ini" and "Remind Me Later".

Registration Reminder!

WINMOR TNC is made possible through the Amateur Radio Safety Foundation Inc. Your registration of WINMOR TNC and support for the ARSF make programs like WINMOR TNC, the applications that use it, and the Winlink 2000 system possible.

Registration Site URL:
<http://www.arsfi.org/winmor.aspx>

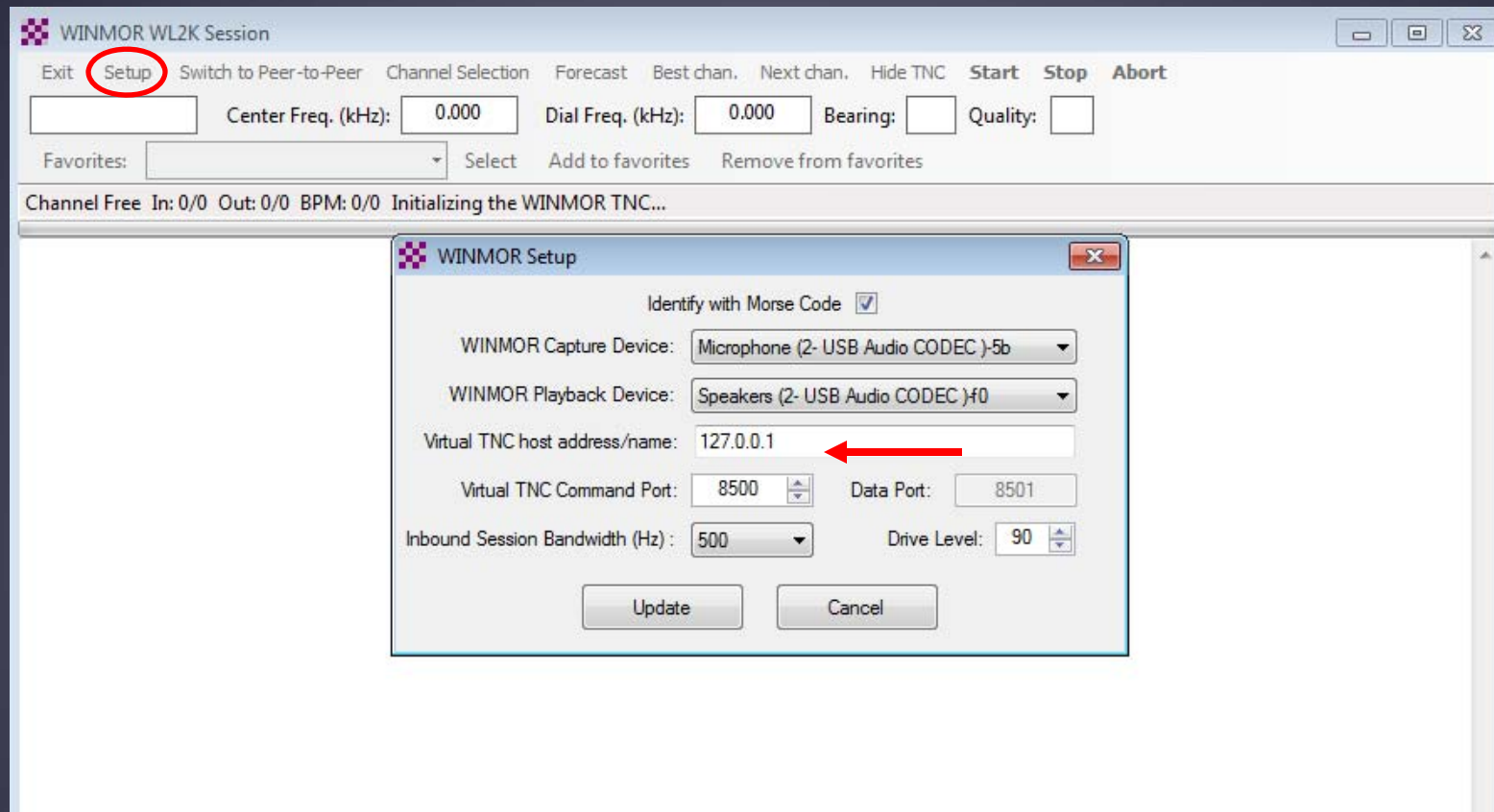
Call Sign: NS7C

Registration Key:

Register and Save to ini Remind Me Later

Initial Winmor Setup

Selecting the Audio Device



Winmor Radio Setup

Rig Control Parameters

Winmor WL2K Settings [X]

Radio Selection

Select Radio Model: Icom Amateur Radios [v]
Antenna Selection: Default [v]

Icom Address: 00
USB USB Digital FM Use Internal Tuner

Radio Control Port

Serial Port to Use: COM7 [v] Baud: 19200 [v] Enable RTS Enable DTR TTL

PTT Port (Optional)

Serial Port to Use: External [v] Baud: 38400 [v] Enable RTS Enable DTR

Update Close

Composing A Message

New Message Button

Click "To" or "CC" for contacts

Multiple recipients and CC

File attachments

Post to Outbox

Request Read Receipt

The screenshot shows the Winlink Express 1.5.2.0 - NS7C interface. The main window displays a message list with columns for Date/Time, Message ID, Size, Source, Sender, Recipient, and Subject. A dialog box titled 'Enter a new message' is open, showing fields for From, To, Cc, Subject, and Attach. The 'Post to Outbox' button is highlighted in the dialog box. The 'Request Read Receipt' checkbox is also visible.

Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
2017/04/10 02:19	QIKZ4QFHIOEX1	348	KG7EGS	KG7EGS	NS7C	Re: //WL2K AAECT Net Check In
2016/12/31 19:51	5WQ0MVJRRM...	514	W7JKC	W7JKC	NS7C	FW: //WL2K EOC to EOC - 12-31-16 - Exercise Traffic

System Folders:
Inbox (0 unread)
Read Items (0)
Outbox (0)
Sent Items (41)
Saved Items (1)
Deleted Items (0)
Drafts (0)

Personal Folders

Global Folders

Contacts:
AUBURN_EOC
BELLEVUE_EOC
EASTSIDE_FIRE_AND_RESCL
FAIRBANK_MEMORIAL_HOSP
FEDERAL_WAY
ISLAND_COUNTY_EOC
ISLAND_HOSPITAL
ISSAQUAH_EOC
KENT_EOC
KING_COUNTY_ECC
KING_COUNTY_SAR
KIRKLAND_CITY_HALL
KIRKLAND_FIRE_DEPARTMEI
LANGLEY_BC_EOC
MAPLE_VALLEY_EOC
MARS_STATION_WHIDBEY

Pending Message In Outbox

Open Session

The screenshot shows the Winlink Express 1.5.2.0 - NS7C interface. The window title is "Winlink Express 1.5.2.0 - NS7C". The menu bar includes "Settings", "Message", "Attachments", "Move To:", "Saved Items", "Delete", "Open Session:", "Packet Winlink", "Logs", and "Help". The toolbar contains various icons for navigation and actions. The main window is divided into three panes. The left pane shows a folder tree with "System Folders" (Inbox (0 unread), Read Items (0), Outbox (1), Sent Items (41), Saved Items (1), Deleted Items (1), Drafts (0)), "Personal Folders", "Global Folders", and "Contacts" (listing various EOC locations like AUBURN_EOC, BELLEVUE_EOC, etc.). The middle pane displays a table of messages. The top row is highlighted in blue and contains the following data:

Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
2017/04/10 22:44	IDAOHYIHSV9G	2064	NS7C	NS7C	WA7AUB	FW: //WL2K WA R4 EOC Sitrep-12/31/16 Quarterly Activation-

The right pane shows the details of the selected message:

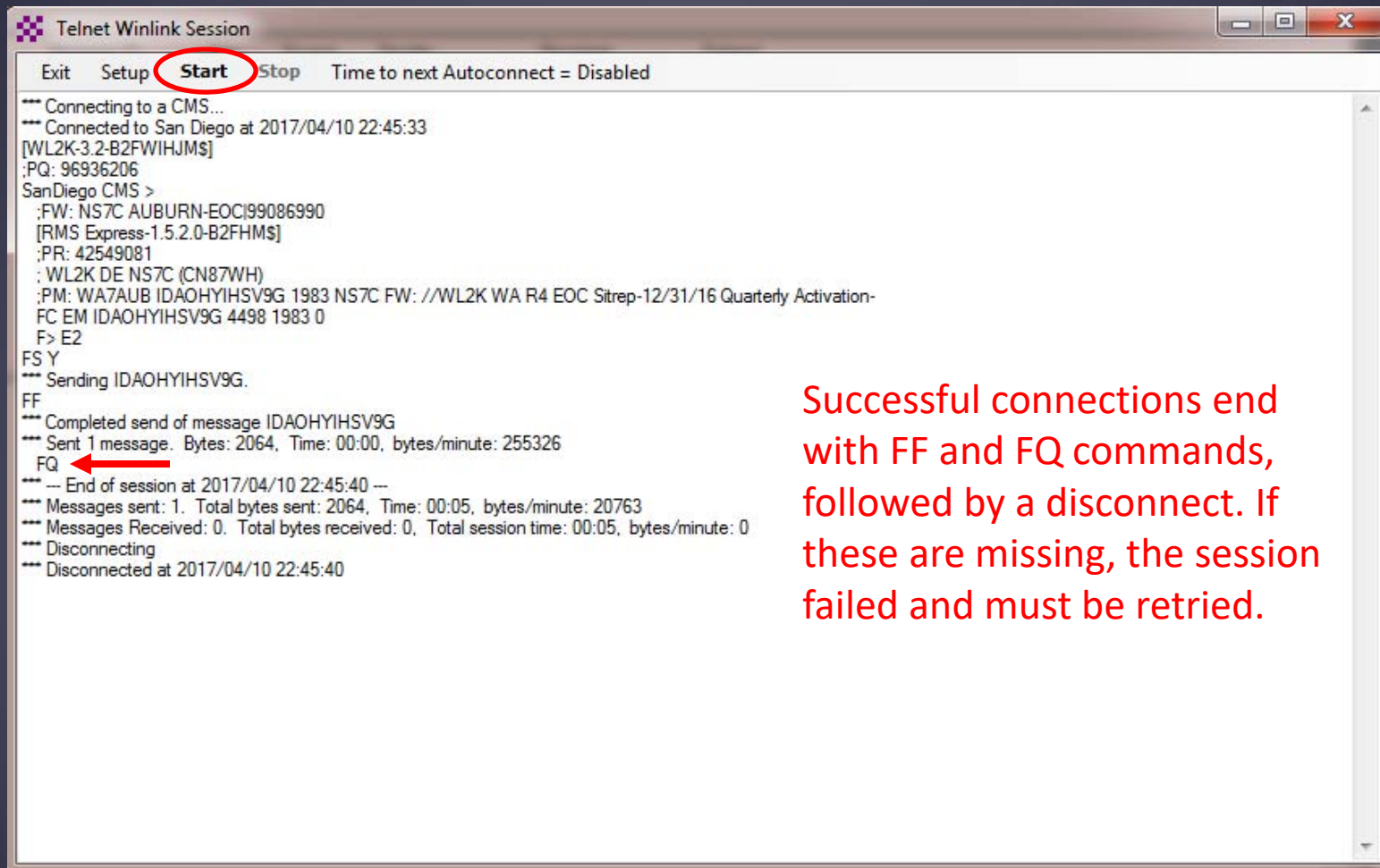
Message ID: IDAOHYIHSV9G
Date: 2017/04/10 22:44
From: NS7C
To: WA7AUB
Source: NS7C
Subject: FW: //WL2K WA R4 EOC Sitrep-12/31/16 Quarterly Activation-

----- Message from KF7UXB sent 2016/12/31 18:31 -----
Message ID: PZ0BG2KK0913
Date: 2016/12/31 18:31
From: KF7UXB
To: NS7C
Source: KF7UXB
Subject: //WL2K WA R4 EOC Sitrep-12/31/16 Quarterly Activation-

Originating EOC: [Region 4]
To: NS7C

Telnet Session

Connect, login, send message, log off



```
Telnet Winlink Session
Exit Setup Start Stop Time to next Autoconnect = Disabled
*** Connecting to a CMS...
*** Connected to San Diego at 2017/04/10 22:45:33
[WL2K-3.2-B2FWIHJMS]
:PQ: 96936206
SanDiego CMS >
:FW: NS7C AUBURN-EOC|99086990
[RMS Express-1.5.2.0-B2FHMS]
:PR: 42549081
:WL2K DE NS7C (CN87WH)
:PM: WA7AUB IDAOHYIHSV9G 1983 NS7C FW: //WL2K WA R4 EOC Sitrep-12/31/16 Quarterly Activation-
FC EM IDAOHYIHSV9G 4498 1983 0
F> E2
FS Y
*** Sending IDAOHYIHSV9G.
FF
*** Completed send of message IDAOHYIHSV9G
*** Sent 1 message. Bytes: 2064, Time: 00:00, bytes/minute: 255326
FQ
*** -- End of session at 2017/04/10 22:45:40 --
*** Messages sent: 1. Total bytes sent: 2064, Time: 00:05, bytes/minute: 20763
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:05, bytes/minute: 0
*** Disconnecting
*** Disconnected at 2017/04/10 22:45:40
```

Successful connections end with FF and FQ commands, followed by a disconnect. If these are missing, the session failed and must be retried.

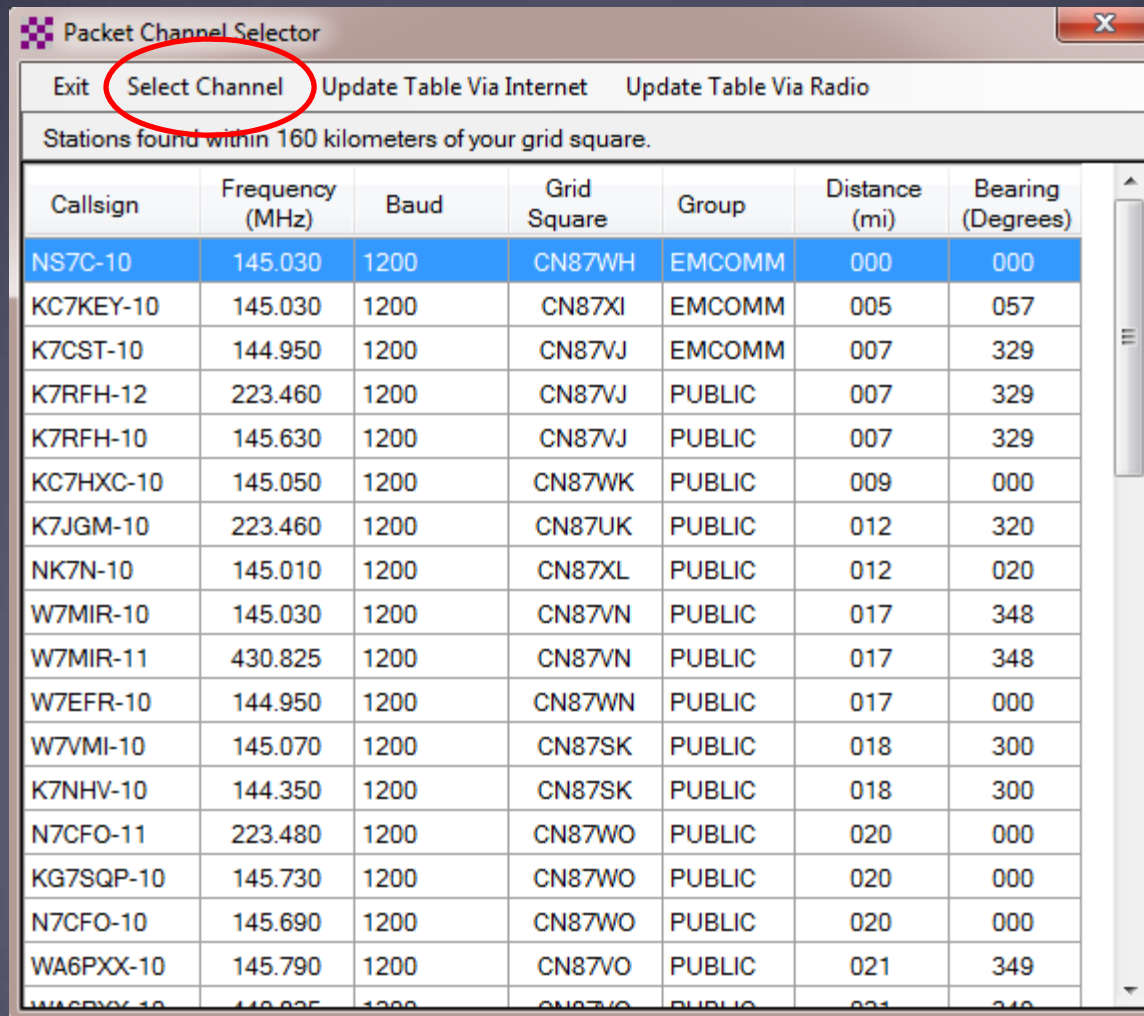
Packet Radio Session

Select Mode and Open Session

The screenshot displays the Winlink Express 1.5.2.0 - NS7C application interface. The main window has a menu bar with 'Settings', 'Message', 'Attachments', 'Move To: Saved Items', 'Delete', 'Open Session: Packet Winlink', 'Logs', and 'Help'. Below the menu bar is a toolbar with various icons. The left sidebar shows a folder tree with 'System Folders' (Inbox, Outbox, Sent, Saved, Deleted, Drafts), 'Personal Folders', 'Global Folders', and 'Contacts'. The 'Contacts' list includes 'AUBURN_EOC' (highlighted) and other locations like 'BELLEVUE_EOC', 'EASTSIDE_FIRE_AND_RESCL', etc. The main area shows an 'In Packet Winlink session.' status. A 'Packet Winlink Session' dialog box is open, showing connection settings: 'Exit', 'Setup', 'Switch to Peer-to-Peer Session', 'Channel Selection' (NS7C-10), '9600 Baud', 'Start', and 'Stop'. The 'Connection type' is 'Direct' and the 'Connection script' is 'Long Beach'. The dialog also shows 'Time to next Autoconnect = Disabled' and a log window with the following text: '*** Starting WL2K packet session...', '*** Initializing KISS over TCP Host 127.0.0.1 Port 8100', '*** Initialization complete', and '*** Ready'. Three red arrows point from the main window's 'Open Session' dropdown, the 'Packet Winlink Session' dialog's 'Start' button, and the 'Channel Selection' dropdown to the 'Open Session' dropdown in the main window.

Packet Channel Selection

Based on your grid square



Packet Channel Selector

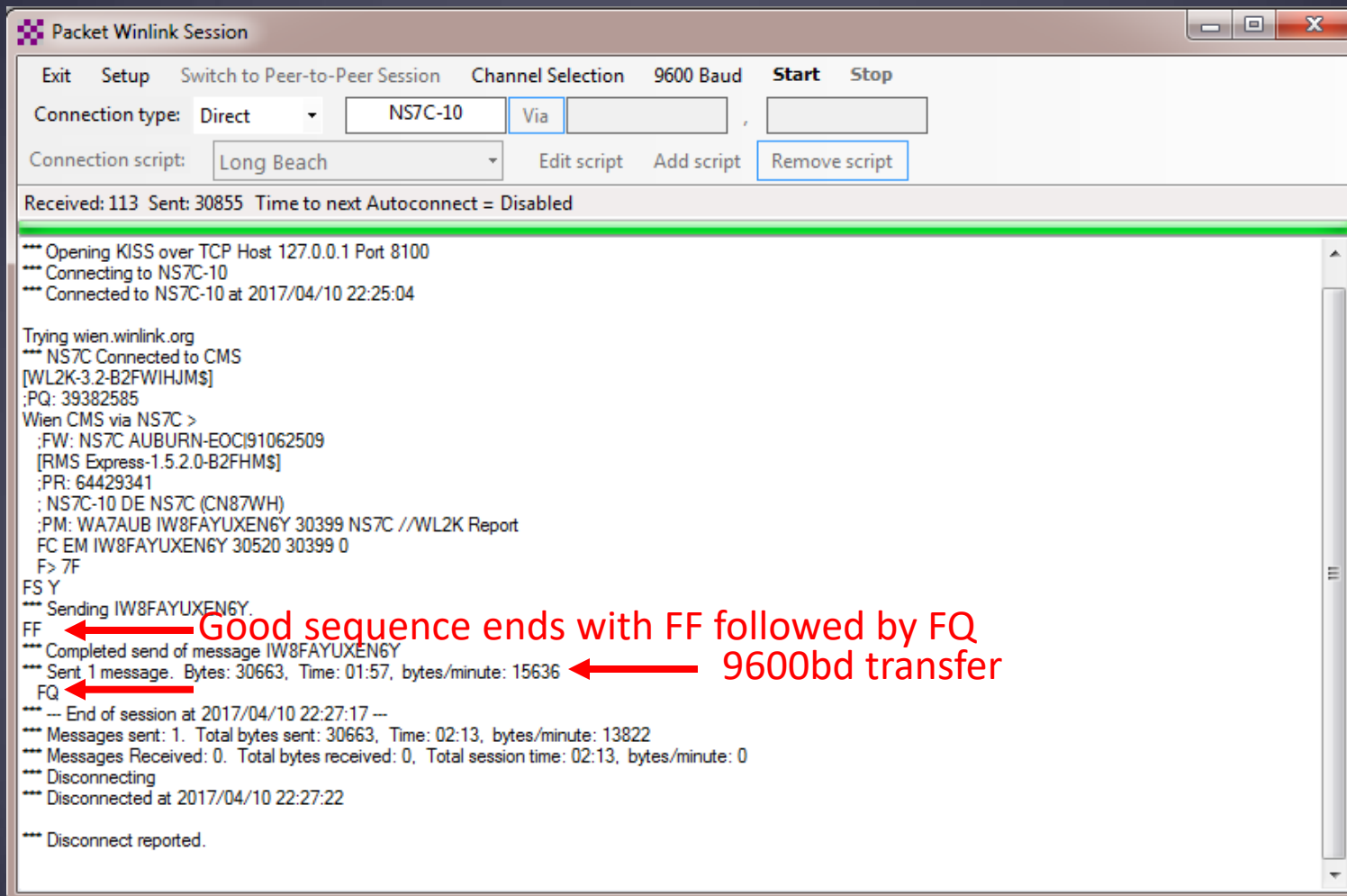
Exit **Select Channel** Update Table Via Internet Update Table Via Radio

Stations found within 160 kilometers of your grid square.

Callsign	Frequency (MHz)	Baud	Grid Square	Group	Distance (mi)	Bearing (Degrees)
NS7C-10	145.030	1200	CN87WH	EMCOMM	000	000
KC7KEY-10	145.030	1200	CN87XI	EMCOMM	005	057
K7CST-10	144.950	1200	CN87VJ	EMCOMM	007	329
K7RFH-12	223.460	1200	CN87VJ	PUBLIC	007	329
K7RFH-10	145.630	1200	CN87VJ	PUBLIC	007	329
KC7HXC-10	145.050	1200	CN87WK	PUBLIC	009	000
K7JGM-10	223.460	1200	CN87UK	PUBLIC	012	320
NK7N-10	145.010	1200	CN87XL	PUBLIC	012	020
W7MIR-10	145.030	1200	CN87VN	PUBLIC	017	348
W7MIR-11	430.825	1200	CN87VN	PUBLIC	017	348
W7EFR-10	144.950	1200	CN87WN	PUBLIC	017	000
W7VMI-10	145.070	1200	CN87SK	PUBLIC	018	300
K7NHV-10	144.350	1200	CN87SK	PUBLIC	018	300
N7CFO-11	223.480	1200	CN87WO	PUBLIC	020	000
KG7SQP-10	145.730	1200	CN87WO	PUBLIC	020	000
N7CFO-10	145.690	1200	CN87WO	PUBLIC	020	000
WA6PXX-10	145.790	1200	CN87VO	PUBLIC	021	349
WA6PXX-10	145.825	1200	CN87VO	PUBLIC	021	349

Packet Session (TNC)

Connect, login, send message, log off



The screenshot shows the Packet Winlink Session window. The title bar reads "Packet Winlink Session". The menu bar includes "Exit", "Setup", "Switch to Peer-to-Peer Session", "Channel Selection", "9600 Baud", "Start", and "Stop". The "Connection type" is set to "Direct", the channel is "NS7C-10", and the connection script is "Long Beach". The status bar shows "Received: 113 Sent: 30855 Time to next Autoconnect = Disabled". The main window displays a log of the session:

```
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Connecting to NS7C-10
*** Connected to NS7C-10 at 2017/04/10 22:25:04

Trying wien.winlink.org
*** NS7C Connected to CMS
[WL2K-3.2-B2FWIHJMS]
:PQ: 39382585
Wien CMS via NS7C >
:FW: NS7C AUBURN-EOCI91062509
[RMS Express-1.5.2.0-B2FHMS]
:PR: 64429341
: NS7C-10 DE NS7C (CN87WH)
:PM: WA7AUB IW8FAYUXEN6Y 30399 NS7C //WL2K Report
FC EM IW8FAYUXEN6Y 30520 30399 0
F> 7F
FS Y
*** Sending IW8FAYUXEN6Y.
FF
*** Completed send of message IW8FAYUXEN6Y
*** Sent 1 message. Bytes: 30663, Time: 01:57, bytes/minute: 15636
FQ
*** -- End of session at 2017/04/10 22:27:17 --
*** Messages sent: 1. Total bytes sent: 30663, Time: 02:13, bytes/minute: 13822
*** Messages Received: 0. Total bytes received: 0, Total session time: 02:13, bytes/minute: 0
*** Disconnecting
*** Disconnected at 2017/04/10 22:27:22

*** Disconnect reported.
```

Good sequence ends with FF followed by FQ
9600bd transfer

Packet Session (sound card)

Connect, login, check for message, log off

The image shows two windows from a Packet Winlink session. The left window is 'High-Speed SoundModem by UZ7HO - Ver 0.15b - [FSK G3RUH 9600bd]' and the right window is 'Packet Winlink Session'.

High-Speed SoundModem by UZ7HO - Ver 0.15b - [FSK G3RUH 9600bd]

Settings View Clear monitor About

FSK G3RUH 9600bd DCD A FSK G3RUH 9600bd DCD B

Y@0YB#e%K@B#A]E 4%lj
P/|U6mS}1ul#5}2io0guV oje>x0aa%qQyMB mo0&c=1 3|BF,|l|ai'«@i }ja|Vyu/66G1>
o(+@An+! %\$xun@&u p4SN .:aRFx&A'u'Za1*%^Aiz|l|K/<6A|F|e|l|IGE~<.j)0?uL S'yU0B
1:Fm NS7C-10 To NS7C <RR R F R5> [15:27:09R] [AA] [+++++++]
1:Fm NS7C To NS7C-10 <l C R5 S5 Pid=F0 Len=255> [15:27:09T]
HMB «DNA2@xh0|*4E|YcfU|+0E|cE|j)02y'663|80|u0'5c#aa%Q0%â|N0:7b|0|Q|FZL_gc
Y|ue0â)âe0x|460%4 |IEH6C|P'4ka |ew\$?3x0|A6|zeâ&â>1z#7|K ph|l|k/Q|j|p40s:1ic41'
1:Fm NS7C To NS7C-10 <l C P R5 S6 Pid=F0 Len=255> [15:27:09T]
EÂÄE^|8D0^Ucl0| .|B_Ä_e|e|R?â0|ëeb|T'âh|ÉTRm|'1â|H|%Bâpa_ e0|Pu 2v|ANpaEh b
%u0YR-|e'jU 7>0*Y|l|Vâs|f0Q'60niL00h|x9|kâçA|Y|Y'N&|A|E|D|C0B1-xD\$6P_f'
1:Fm NS7C-10 To NS7C <RR R F R7> [15:27:10R] [AA] [+++++++]
1:Fm NS7C To NS7C-10 <l C R5 S7 Pid=F0 Len=63> [15:27:10T]
i |f0|UR|<+7TY#æw|s'â|)P|0|IS0 f|8G|u|LgâQ|f|37C|Aâ)ü ö
1:Fm NS7C-10 To NS7C <l C P R0 S5 Pid=F0 Len=3> [15:27:13R] [AA] [+++++++]
FF
1:Fm NS7C To NS7C-10 <RR R F R6> [15:27:13T]
1:Fm NS7C To NS7C-10 <l C R6 S0 Pid=F0 Len=3> [15:27:13T]
FQ
1:Fm NS7C-10 To NS7C <RR R R1> [15:27:16R] [AA] [+++++++]
1:Fm NS7C-10 To NS7C <DISC C P> [15:27:22R] [AA] [+++++++]
1:Fm NS7C To NS7C-10 <UA R F> [15:27:22T]
1:Fm NS7C-1 To ID <UI C Pid=F0 Len=0> [15:32:54R] [AA] [+++++++]

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

Packet Winlink Session

Exit Setup Switch to Peer-to-Peer Session Channel Selection 9600 Baud Start Stop

Connection type: Direct NS7C-10 Via

Connection script: Long Beach Edit script Add script Remove script

Received: 113 Sent: 30855 Time to next Autoconnect = Disabled

*** Starting to call NS7C-10
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Connecting to NS7C-10
*** Connected to NS7C-10 at 2017/04/10 22:25:04

Trying wien.winlink.org
*** NS7C Connected to CMS
[WL2K-3.2-B2FWIHJMS]
:PQ: 39382585
Wien CMS via NS7C >
:FW: NS7C AUBURN-EOC|91062509
[RMS Express-1.5.2.0-B2FHMS]
:PR: 64429341
: NS7C-10 DE NS7C (CN87WH)
:PM: WA7AUB IW8FAYUXEN6Y 30399 NS7C //WL2K Report
FC EM IW8FAYUXEN6Y 30520 30399 0
F> 7F
FS Y
*** Sending IW8FAYUXEN6Y.
FF
*** Completed send of message IW8FAYUXEN6Y
*** Sent 1 message. Bytes: 30663, Time: 01:57, bytes/minute: 15636
FQ
*** --- End of session at 2017/04/10 22:27:17 ---
*** Messages sent: 1. Total bytes sent: 30663, Time: 02:13, bytes/minute: 13822
*** Messages Received: 0. Total bytes received: 0, Total session time: 02:13, bytes/minute: 0
*** Disconnecting
*** Disconnected at 2017/04/10 22:27:22
*** Disconnect reported.

Winmor HF Session

The screenshot displays the RMS Express 1.3.10.0 - NS7C software interface. The main window has a menu bar with 'NS7C', 'Files', 'Message', 'Attachments', 'Move To: Saved Items', 'Delete', 'Open Session: Winmor Winlink', and 'Logs'. A red circle highlights the 'Open Session: Winmor Winlink' dropdown menu.

Below the main window, there is a 'WINMOR Sound Card TNC Ver:1.5.8.0 Port:8500' window. It features a 'Connection State' section with a 'DISCONNECTED' button, 'TCP' and 'Capture OK' buttons, and a 'Transmit' section with an 'Avg ACK Percentage' slider. The 'Receive' section includes 'Rcv Level' and 'Remote Station Offset: 0 Hz' controls. The 'Busy Detector' section has a 'Channel Clear' button and a 'Squelch' control set to 5. A 'Waterfall' display is visible at the bottom.

At the bottom, the 'Winmor Winlink Session - NS7C' window is shown. It has a menu bar with 'Exit', 'Setup', 'Switch to Peer-to-Peer', 'Channel Selection', 'Best chan.', 'Next chan.', 'Hide TNC', 'Start', 'Stop', and 'Abort'. A red circle highlights the 'Start' button. Below the menu bar, there are input fields for 'N7MO', 'Center Freq. (kHz): 3597.000', 'Dial Freq. (kHz): 3595.500', 'Bearing: 112', and 'Quality:'. A 'Favorites' section includes 'Select', 'Add to favorites', and 'Remove from favorites' options. The status bar shows 'Channel Free In: 0/0 Out: 0/0 BPM: 0/0 Disconnected'. The main text area displays '*** Ready'.

HF Channel Selection Screen

The screenshot shows the 'HF Channel Selector' application window. The title bar includes a close button and the text 'HF Channel Selector'. The menu bar contains: Exit, Select, Update Table Via Internet, Update Table Via Radio, Forecast, SFI, All RMS. The main area is a table with the following columns: Callsign, Frequency (kHz), Mode, Grid Square, Hours, Group, Distance (mi), Bearing (Degrees), Path Reliability Estimate, and Path Quality Estimate. The table lists 20 channels with varying quality estimates. The last two rows are highlighted in red, indicating poor quality.

Callsign	Frequency (kHz)	Mode	Grid Square	Hours	Group	Distance (mi)	Bearing (Degrees)	Path Reliability Estimate	Path Quality Estimate
K6ETA	14105.000	1600	CM88QF	14-02	PUBLIC	628	182	57	43
KD7NHC	7107.000	1600	DM08HT	00-23	PUBLIC	603	166	63	43
KD6OAT	7097.000	500	DN40BO	00-23	PUBLIC	687	129	60	43
K6ETA	7085.000	1600	CM88QF	14-05	PUBLIC	628	182	59	42
KF7RSF	3585.500	1600	CN73TD	00-23	PUBLIC	307	202	59	42
AE6LA	7080.000	500	CM98TF	00-23	PUBLIC	633	171	59	42
K2RDX	7102.500	1600	CM97AH	00-23	PUBLIC	690	179	52	40
WA7ODN	3589.500	1600	CN82LN	00-23	PUBLIC	331	188	50	40
KM3N	10146.200	1600	DM43CF	00-23	PUBLIC	1112	147	43	39
W6SH	10113.000	500	DM12JQ	00-23	PUBLIC	1041	164	45	39
W6SH	10149.000	1600	DM12JQ	00-23	PUBLIC	1041	164	45	39
XE2BNC	10144.000	1600	DM12KM	00-23	PUBLIC	1054	164	44	39
KE7XO	7103.000	1600	DM26JG	00-23	PUBLIC	840	153	39	38
VE7RBH	14081.500	1600	CO64JT	00-23	PUBLIC	562	339	44	38
KE7XO	7101.000	1600	DM26JG	00-23	PUBLIC	840	153	39	38
N9LOH-5	10134.500	500	EN52RS	00-23	PUBLIC	1655	088	26	36
K5CW	10148.500	1600	DM61RU	00-23	PUBLIC	1347	137	27	36

Update channel list

Double click to select

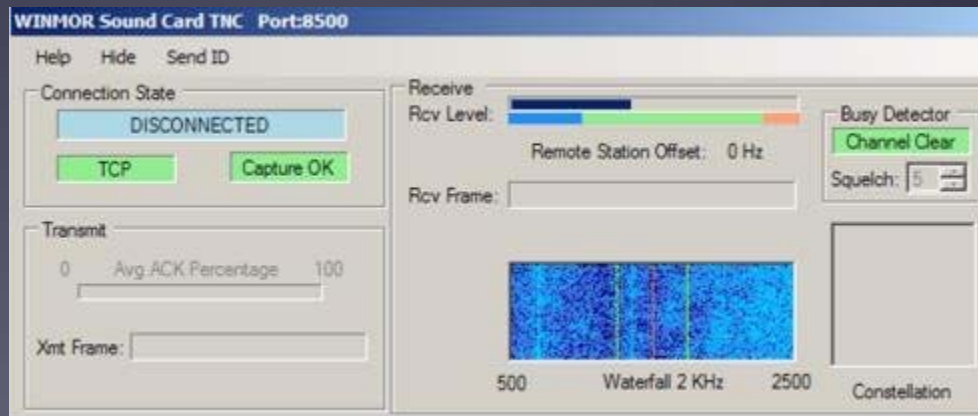
All RMS or radio-only

Click Header to Sort

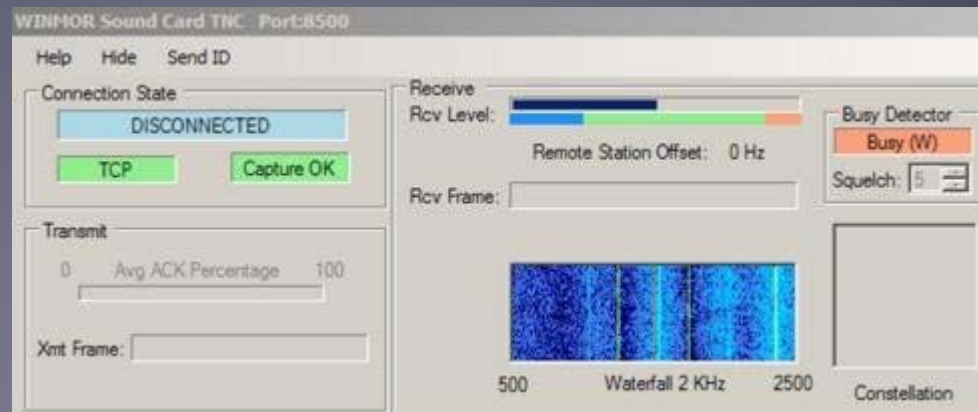
Green: good
Yellow: fair
Red: bad

Check If Channel Is Free

Free Channel:



Busy Channel:



Active Winmor Connection

WINMOR Sound Card TNC Ver:1.5.8.0 Port:8500 NS7C / VA7DEP


Help Hide Send ID

Connection State

IRS

TCP Capture OK

Receive


Rcv Level: 

Remote Station Offset: -23.7 Hz

Rcv Frame: 2 Car 4FSK FEC Data

Transmit

0 Avg ACK Percentage 100

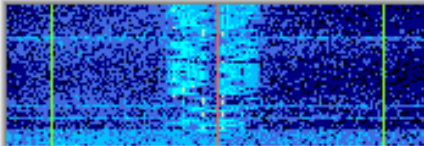


Xmt Frame:

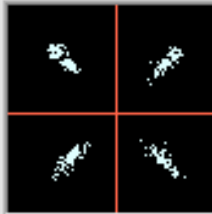
Busy Detector

Squelch: 5

Waterfall
 Spectrum
 Disable



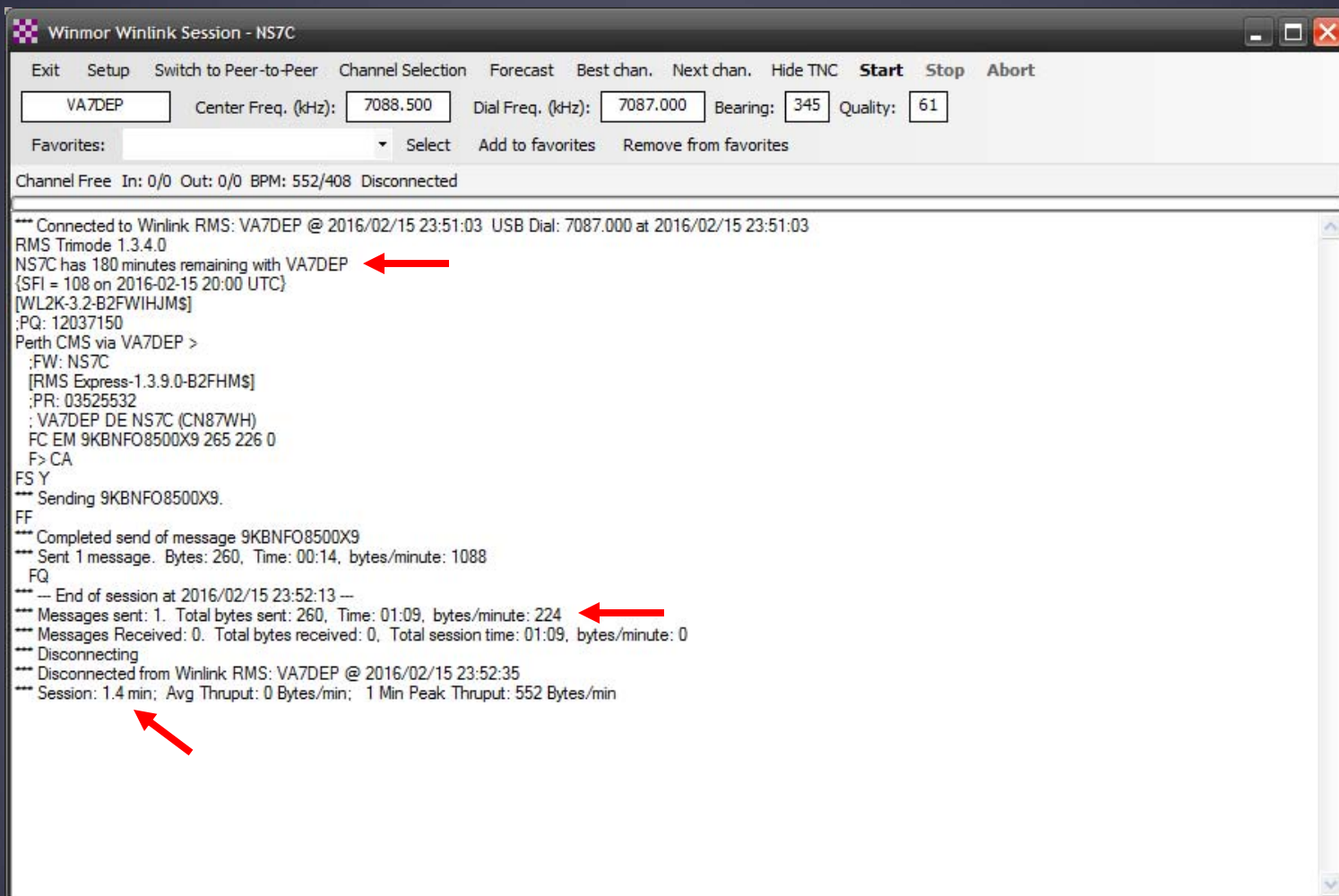
500 Waterfall 2KHz 2500



4FSK / 74

Winmor Session Log

Connect, login, send message, log off



Winmor Winlink Session - NS7C

Exit Setup Switch to Peer-to-Peer Channel Selection Forecast Best chan. Next chan. Hide TNC **Start** Stop Abort

VA7DEP Center Freq. (kHz): 7088.500 Dial Freq. (kHz): 7087.000 Bearing: 345 Quality: 61

Favorites: [dropdown] Select Add to favorites Remove from favorites

Channel Free In: 0/0 Out: 0/0 BPM: 552/408 Disconnected

```
*** Connected to Winlink RMS: VA7DEP @ 2016/02/15 23:51:03 USB Dial: 7087.000 at 2016/02/15 23:51:03
RMS Trimode 1.3.4.0
NS7C has 180 minutes remaining with VA7DEP ←
{SFI = 108 on 2016-02-15 20:00 UTC}
[WL2K-3.2-B2FWIHJM]
:PQ: 12037150
Perth CMS via VA7DEP >
:FW: NS7C
[RMS Express-1.3.9.0-B2FHMS]
:PR: 03525532
:VA7DEP DE NS7C (CN87WH)
FC EM 9KBNFO8500X9 265 226 0
F> CA
FS Y
*** Sending 9KBNFO8500X9.
FF
*** Completed send of message 9KBNFO8500X9
*** Sent 1 message. Bytes: 260, Time: 00:14, bytes/minute: 1088
FQ
*** -- End of session at 2016/02/15 23:52:13 --
*** Messages sent: 1. Total bytes sent: 260, Time: 01:09, bytes/minute: 224 ←
*** Messages Received: 0. Total bytes received: 0, Total session time: 01:09, bytes/minute: 0
*** Disconnecting
*** Disconnected from Winlink RMS: VA7DEP @ 2016/02/15 23:52:35
*** Session: 1.4 min; Avg Thruput: 0 Bytes/min; 1 Min Peak Thruput: 552 Bytes/min ←
```

Packet P2P Session Log

Connect, login, send message, log off

RMS Express 1.3.10.0 - NS7C

NS7C Files Message Attachments Move To: Saved Items Delete Open Session: Packet P2P Logs

Help

In Packet P2P session.

Date/Time	Message ID	Size	Source	Sender	Recipient	Subject
-----------	------------	------	--------	--------	-----------	---------

System Folders

- Inbox (0 unread)
- Read Items (0)
- Outbox (0)
- Sent Items (10)

Packet Peer-to-Peer Session (NS7C)

Exit Setup Switch to Winlink Session Channel Selection 1200 Baud Start Stop

Connection type: Direct K7WVI via **K7WVI** Must match message destination

Connection script: Edit script Add script Remove script

Received: 65 Sent: 251 Time to next Autoconnect = Disabled

```
.FW: NS7C
[RMS Express-1.3.10.0-B2FHMs]
: K7WVI DE NS7C (CN87WH)
FC EM XD5LHA2IZMTX 138 135 0
F> 5F
FSY
*** Sending XD5LHA2IZMTX.
FF
*** Completed send of message XD5LHA2IZMTX
*** Sent 1 message. Bytes: 148, Time: 00:02, bytes/minute: 2980
FQ
*** --- End of session at 2016/03/14 00:02:39 ---
*** Messages sent 1. Total bytes sent: 148, Time: 00:14, bytes/minute: 620
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:14, bytes/minute: 0
*** Disconnecting
```

Conclusion

- Winlink Express use continues to grow, especially for EmComm.
- The Winlink Development Team continues to enhance capabilities to adapt to changing needs.
- Installation and set up is relatively easy.
- Familiar “e-mail” like interface.
- Supports multiple radio transfer modes.
- Support for both hardware and software interfaces.



Questions?