

Winlink Express
Windows 11
Signalink
Baofeng BF-F8HP
WK0C

<https://wk0c.org/documents>

Introduction

- Why Winlink?
 - Exercises
 - Gateways
 - Packet
 - Vara FM

Setup Issues

- PC Audio Settings
- Signalink TX and RX

System Components

- Windows 11 System Software
 - Winlink Express
 - Soundmodem
 - Vara FM (optional)
 - EasyTerm (for Testing)
- Signalink “Modem”
 - Cable to Baofeng (Kenwood HT)
 - Jumper for Baofeng
 - Pigtail to antenna
 - Battery Replacement

Hardware



Antenna: J-Pole



Hardware

Manufacturer	Description	Cost
Baofeng	BF-F8HP	\$45
TigerTronics	SLUSBHTW Signalink	\$120
TigerTronics	SLCABHTW - Cable	\$23
TigerTronics	SLMOD6PM- Jumper	\$9
BMAX	Bmax B3 Mini PC	\$120
Baofeng	AC to DC Converter	\$10
Yelesley	Baofeng Battery Eliminator	\$8
DHT Electronics	SMA Male to UHF SO-239	\$7
	Total (w/o the king's tax)	\$342

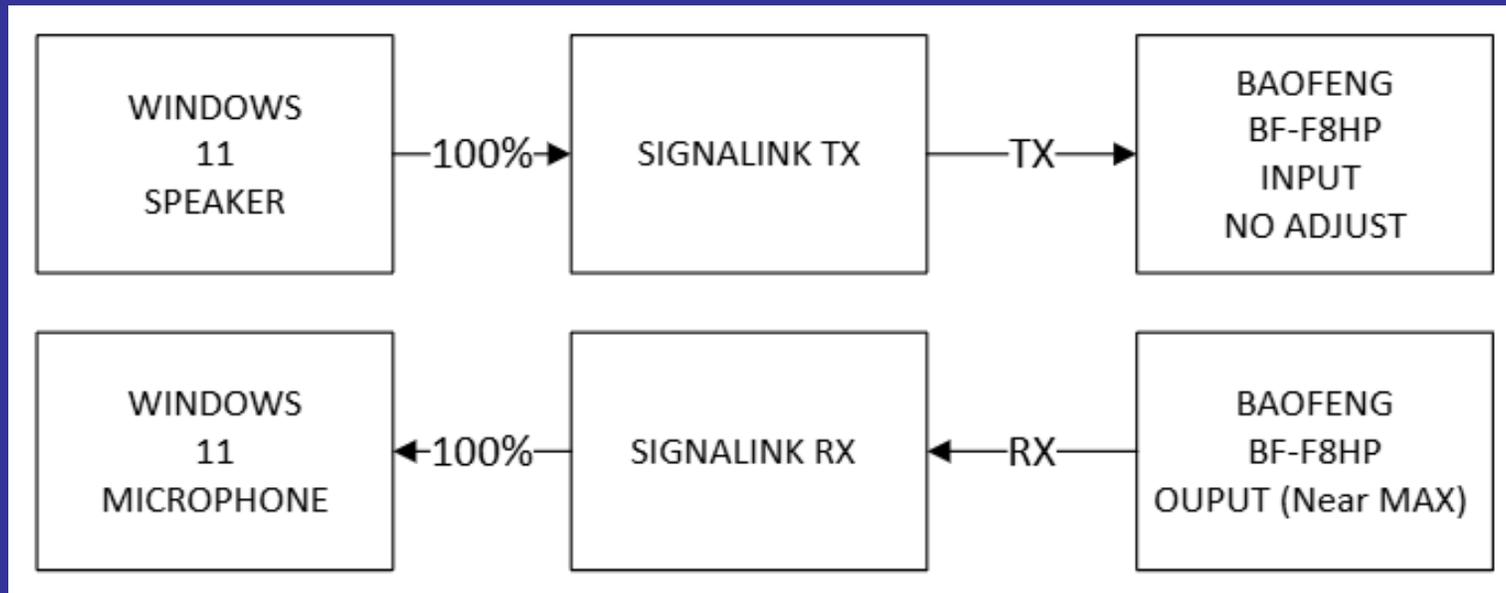
Software

Software	Purpose	URL
Soundmodem	Software TNC	https://uz7.ho.ua/packetradio.htm
EasyTerm	Packet Station - Test Connections	https://uz7.ho.ua/packetradio.htm
Vara FM	Vara TNC	https://downloads.winlink.org/VARA%20Products/
Winlink Express	Winlink Email	https://downloads.winlink.org/User%20Programs/

Software

Software	Install
Soundmodem	Unzip to C:\soundmodem\ - Make shortcut to Taskbar
EasyTerm	Unzip to c:\easyterm\ - Make shortcut to Taskbar
Vara FM	Unzip to temp folder - run VARA FM setup (Run as Administrator).exe
Winlink Express	Unzip to temp folder - run Winlink_Express_install.exe

The Hard Packet Part - Levels



1. Adjust RX and Windows AUDIO LINE IN until Packet Traffic is VIEWED on Sound Modem
2. Adjust TX and Windows AUDIO SPEAKER until Packet Connection with Digipeater Occurs

Soundmodem Setup

SoundModem by UZ7HO - Ver 1.14 - [AFSK AX.25 1200bd]

Settings View Clear monitor Calibration About

A: AFSK AX.25 1200bd 1700 DCD threshold Hold pointers

Settings

Sound Card

Output device: Speakers (3- USB AUDIO CODEC)

Input device: Line (3- 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

Minimized window on startup

Server setup

AGWPE Server Port: 8000 Enabled

KISS Server Port: 8100 Enabled

PTT Port

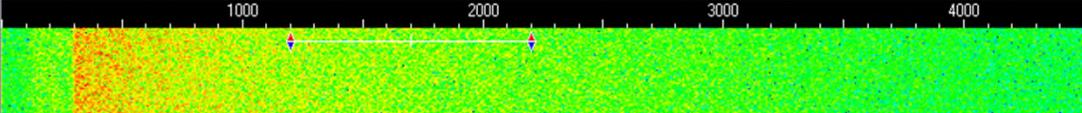
Select PTT port: NONE Dual PTT

Swap COM pins for PTT

Advanced PTT settings

OK Cancel

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



Modem settings

Modem filters ch: A

BPF Width: 1400

TXBPF Width: 1600

LPF Width: 650

BPF Taps: 256

LPF Taps: 128

Default settings

PreEmphasis filter: None All

KISS Optimization

non-AX25 filter

Modem filters ch: B

BPF Width: 1400

TXBPF Width: 1600

LPF Width: 650

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: 250 msec

TXTail: 50 msec

Add. RX: 0 pairs

Add. RX shift: 30 Hz

Bits Recovery: NONE

FX.25 Mode: RX+TX

Modem type ch: B

Mode: AFSK AX.25 1200bd

TXDelay: 250 msec

TXTail: 50 msec

Add. RX: 0 pairs

Add. RX shift: 30 Hz

Bits Recovery: NONE

FX.25 Mode: RX-ONLY

Ok Cancel

Soundmodem Setup

The screenshot shows the SoundModem software interface. At the top, the title bar reads "SoundModem by UZ7HO - Ver 1.14 - [AFSK AX.25 1200bd]". Below the title bar is a menu bar with "Settings", "View", "Clear monitor", "Calibration", and "About". The main window contains a settings area with a dropdown menu set to "AFSK AX.25 1200bd", a frequency field set to "1700", a "DCD threshold" slider, and a checked "Hold pointers" checkbox. Below the settings is a log window displaying several lines of packet traffic, including "Fm KC5RUJ To BEACON <UI R Pid=F0 Len=26> [12:29:45R] [+++] EAST MTNS RAVEN ROAD NODE", "Fm W5SCA-11 To ID <UI R Pid=F0 Len=22> [12:30:32R] [+++] Network Node (SCREST)", "Fm K5CQH-11 To ID <UI R Pid=F0 Len=22> [12:30:45R] [+++] Network Node (RAVNRD)", and "Fm WKDC-10 To BEACON <UI R Pid=F0 Len=62> [12:31:12R] [++] Winlink 2000 RMS Packet Server/Winlink 2000 RMS Packet Server". A "Calibration" dialog box is open in the center, featuring two columns for "Channel A" and "Channel B". Each column has four buttons: "Low Tone", "High Tone", "Both Tones", and "Stop TX". Below the log window is a table with columns: "MyCall", "DestCall", "Status", "Sent pkts", "Sent bytes", "Rcvd pkts", "Rcvd bytes", "Rcvd FC", "CPS TX", "CPS RX", and "Direction". The table is currently empty. At the bottom of the window is a frequency spectrum display with a scale from 0 to 4000 Hz, showing a signal between 1000 and 2000 Hz.

INPUT-----

If Microphone (PC) and RX (Slink) set correctly, then you should start to see Packet Traffic in the Soundmodem window.

OUTPUT-----

Output is VOX
Calibration tones should PTT the Radio. Test with Handheld

Easyterm Setup (term.exe)

Station Setup

Terminal Callsign: WK0C-3
Mailbox Callsign: WK0C-2

Beacon Setup

Destination: BEACON
Digipeaters:
Interval: 10 Min. (Info in beacon.bt)
Ports: 1 (Separated with comma)

TNC Setup

Host: 127.0.0.1
Port: 8000
Paclen: 80

OK Cancel

SoundModem by UZ7HO - Ver 1.14 - [AFSK AX.25 1200bd]

Settings View Clear monitor Calibration About

A: AFSK AX.25 1200bd 1700 DCD threshold Hold po

```
1:Fm WK0C-3 To SCREST <SABM C P> [12:52:38T]
1:Fm SCREST To WK0C-3 <UA R F> [12:52:40R] [+++]
1:Fm WK0C-3 To SCREST <I C P R0 S0 Pid=F0 Len=2> [12:52:49T]
B
1:Fm SCREST To WK0C-3 <RR R F R1> [12:52:51R] [+++]
1:Fm SCREST To WK0C-3 <DISC C P> [12:52:51R] [+++]
1:Fm WK0C-3 To SCREST <UA R F> [12:52:51T]
```

EasyTerm by UZ7HO - Ver 0.49b - Terminal: WK0C-3 - ...

File Settings View Stations About

Connect Disconnect Beacon YAPP MHeard Ma

```
*** Connected to station SCREST 3/2/2026 12:52:40 PM
:>B
*** Disconnected from station SCREST 3/2/2026 12:52:51
PM
```

Connect

CallFrom: WK0C-3
CallTo: SCREST + X B
Digipeaters: (Separate with comma)

Radio Ports

Port1 with SoundCard Ch: A

Connect Cancel

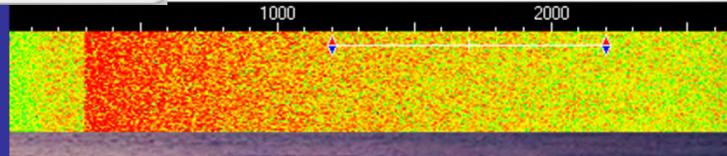
Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd bytes	Rcvd FC

1 2 3 4 5 6 7 8 Mo...

```
1:Fm WK0C-3 To SCREST <SABM P>[12:52:38]
1:Fm SCREST To WK0C-3 <UA F >[12:52:40]
1:Fm WK0C-3 To SCREST <I P R0 S0 pid=F0 Len=2 >
[12:52:49]
B
1:Fm SCREST To WK0C-3 <RR P/F R1 >[12:52:51]
1:Fm SCREST To WK0C-3 <DISC P>[12:52:51]
1:Fm WK0C-3 To SCREST <UA F >[12:52:51]
```

Not connected Buffer: 0 TERM: ON MBX: ON TNC: ON

SCREST 145.010 mHz



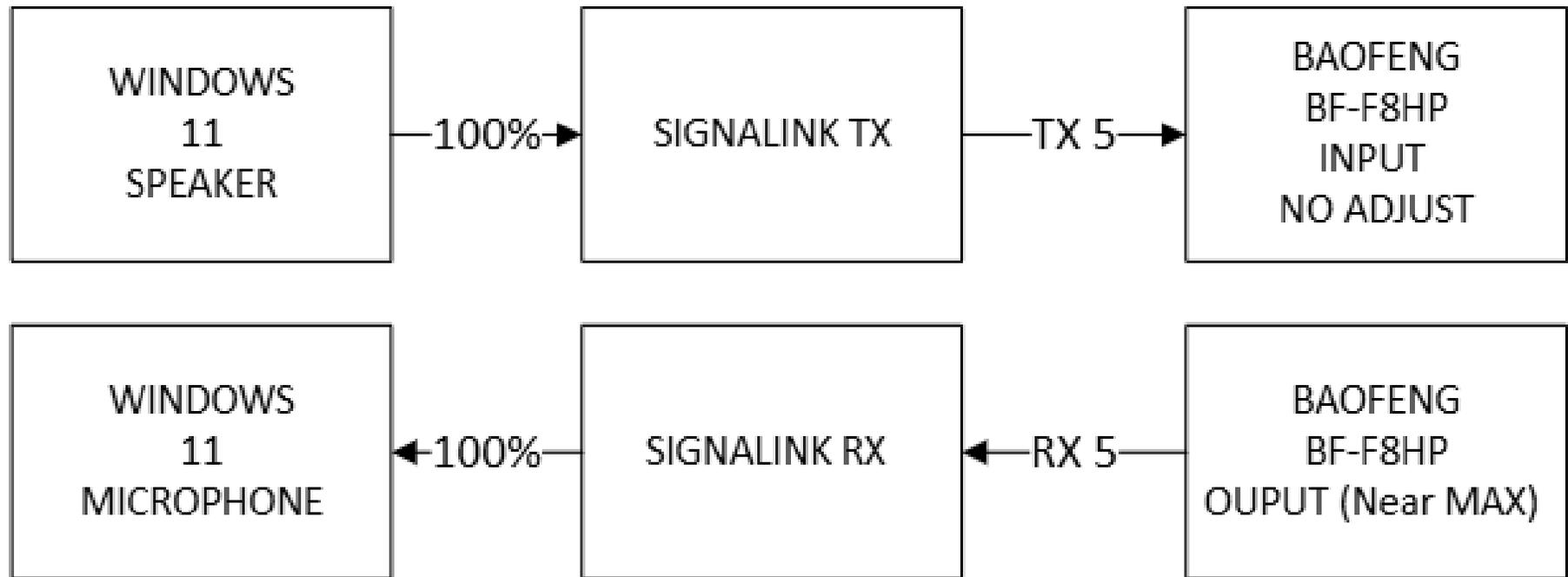
Connecting to SCREST

- Connect to SCREST
- ? For command list
- Mheard to see stations heard
- B for Bye

- Video: 1_PACKET_TUNE_TEST.mp4

Final Packet Parameters

Final Packet Parameters



Winlink Express Setup

Main Menu Bar->Settings->Winlink Express Setup

Winlink Express Properties for WK0C

Call Signs

My Callsign: My Password:
(Case sensitive)

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

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

Auxiliary Callsigns and Tactical Addresses

My Grid Square:

Winlink Express registration key:

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.

Registration Contact Information

Name:

Street address 1:

Street address 2:

City:

State/Province:

Country:

Postal code:

Phone number:

Web Site URL (optional):

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

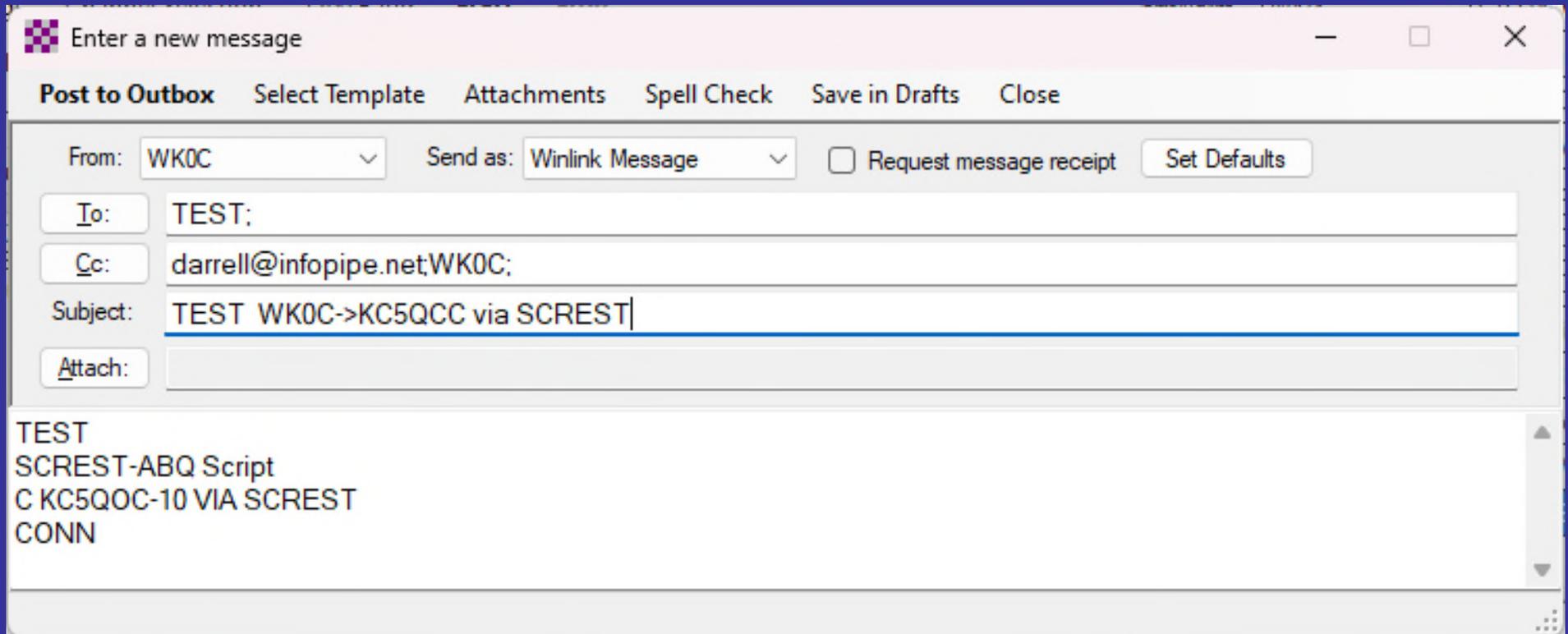
Automatically install field-test (beta) versions of Winlink Express

Automatically install updates without prompting

To and Cc list should not contain monthly/training/clearinghouse addresses. not ETO-06@winlink.org

Winlink Express New Message

Main Menu Bar->Messages->New



The screenshot shows a window titled "Enter a new message" with a standard Windows-style title bar (minimize, maximize, close buttons). Below the title bar is a menu bar with the following items: "Post to Outbox", "Select Template", "Attachments", "Spell Check", "Save in Drafts", and "Close".

The main content area contains the following fields and options:

- From:** A dropdown menu showing "WK0C".
- Send as:** A dropdown menu showing "Winlink Message".
- Request message receipt
-
- To:** A text field containing "TEST:".
- Cc:** A text field containing "darrell@infopipe.net;WK0C;".
- Subject:** A text field containing "TEST WK0C->KC5QCC via SCREST|".
- Attach:** An empty text field.

Below the fields is a large text area containing the following text:

```
TEST
SCREST-ABQ Script
C KC5QOC-10 VIA SCREST
CONN
```

NOTE To: TEST and SCRIPT to go over the hill.

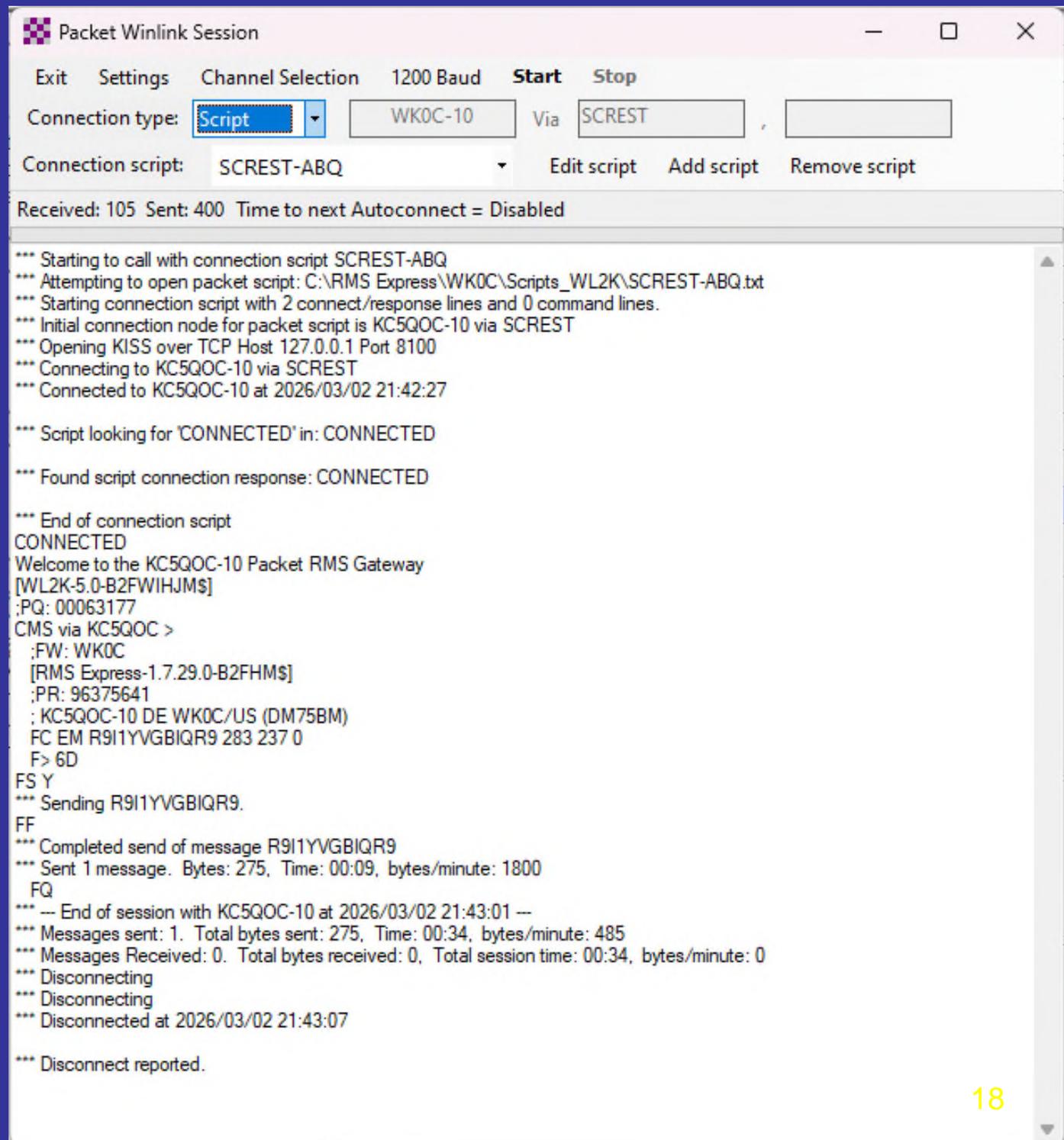
Send Message

Press Start

Message Sent

Press Start

Test Message comes back.



The screenshot shows the Packet Winlink Session application window. The title bar reads "Packet Winlink Session". The interface includes a menu bar with "Exit", "Settings", "Channel Selection", "1200 Baud", "Start", and "Stop". Below the menu bar, there are several input fields: "Connection type:" set to "Script", "WK0C-10" in a box, "Via" set to "SCREST", and an empty box. Below that, "Connection script:" is set to "SCREST-ABQ", with buttons for "Edit script", "Add script", and "Remove script". A status bar shows "Received: 105 Sent: 400 Time to next Autoconnect = Disabled". The main text area contains the following log output:

```
*** Starting to call with connection script SCREST-ABQ
*** Attempting to open packet script: C:\RMS Express\WK0C\Scripts_WL2K\SCREST-ABQ.txt
*** Starting connection script with 2 connect/response lines and 0 command lines.
*** Initial connection node for packet script is KC5QOC-10 via SCREST
*** Opening KISS over TCP Host 127.0.0.1 Port 8100
*** Connecting to KC5QOC-10 via SCREST
*** Connected to KC5QOC-10 at 2026/03/02 21:42:27

*** Script looking for 'CONNECTED' in: CONNECTED
*** Found script connection response: CONNECTED

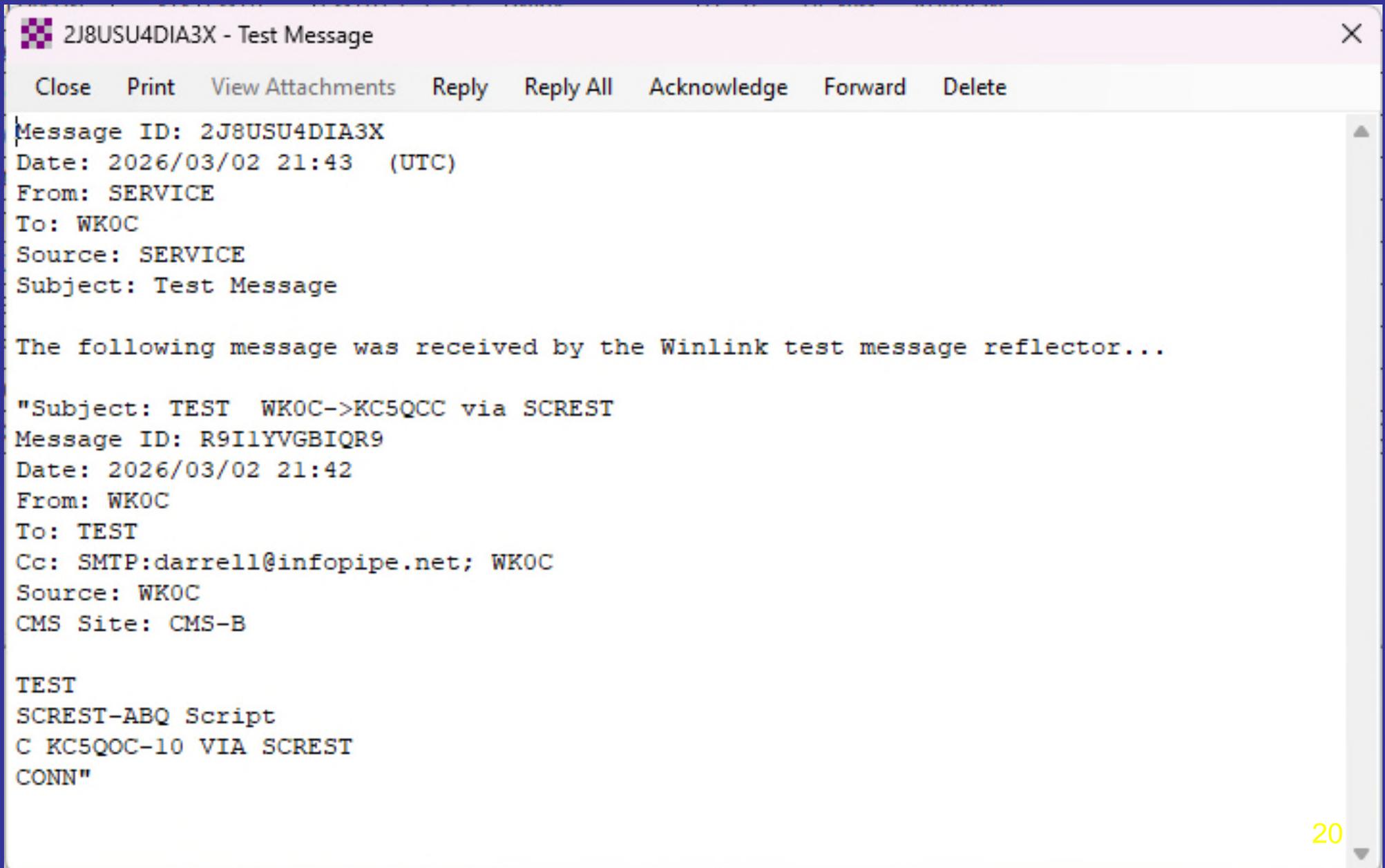
*** End of connection script
CONNECTED
Welcome to the KC5QOC-10 Packet RMS Gateway
[WL2K-5.0-B2FWIHJM$]
:PQ: 00063177
CMS via KC5QOC >
:FW: WK0C
[RMS Express-1.7.29.0-B2FHM$]
:PR: 96375641
:KC5QOC-10 DE WK0C/US (DM75BM)
FC EM R9I1YVGBIQR9 283 237 0
F> 6D
FS Y
*** Sending R9I1YVGBIQR9.
FF
*** Completed send of message R9I1YVGBIQR9
*** Sent 1 message. Bytes: 275, Time: 00:09, bytes/minute: 1800
FQ
*** -- End of session with KC5QOC-10 at 2026/03/02 21:43:01 --
*** Messages sent: 1. Total bytes sent: 275, Time: 00:34, bytes/minute: 485
*** Messages Received: 0. Total bytes received: 0, Total session time: 00:34, bytes/minute: 0
*** Disconnecting
*** Disconnecting
*** Disconnected at 2026/03/02 21:43:07

*** Disconnect reported.
```

Sending and Receiving Winlink Packet

- Sending Msg: KC5QOC-10 via SCREST on 145.010 MHz
- Using Script: SCREST-ABQ
 - C KC5QOC-10 VIA SCREST
 - CONN
- Video: 2_PACKET_MSG.mp4

Msg from Winlink Test Message Reflector



2J8USU4DIA3X - Test Message

Close Print View Attachments Reply Reply All Acknowledge Forward Delete

Message ID: 2J8USU4DIA3X
Date: 2026/03/02 21:43 (UTC)
From: SERVICE
To: WK0C
Source: SERVICE
Subject: Test Message

The following message was received by the Winlink test message reflector...

"Subject: TEST WK0C->KC5QCC via SCREST
Message ID: R9I1YVGBIQR9
Date: 2026/03/02 21:42
From: WK0C
To: TEST
Cc: SMTP:darrell@infopipe.net; WK0C
Source: WK0C
CMS Site: CMS-B

TEST
SCREST-ABQ Script
C KC5QOC-10 VIA SCREST
CONN"

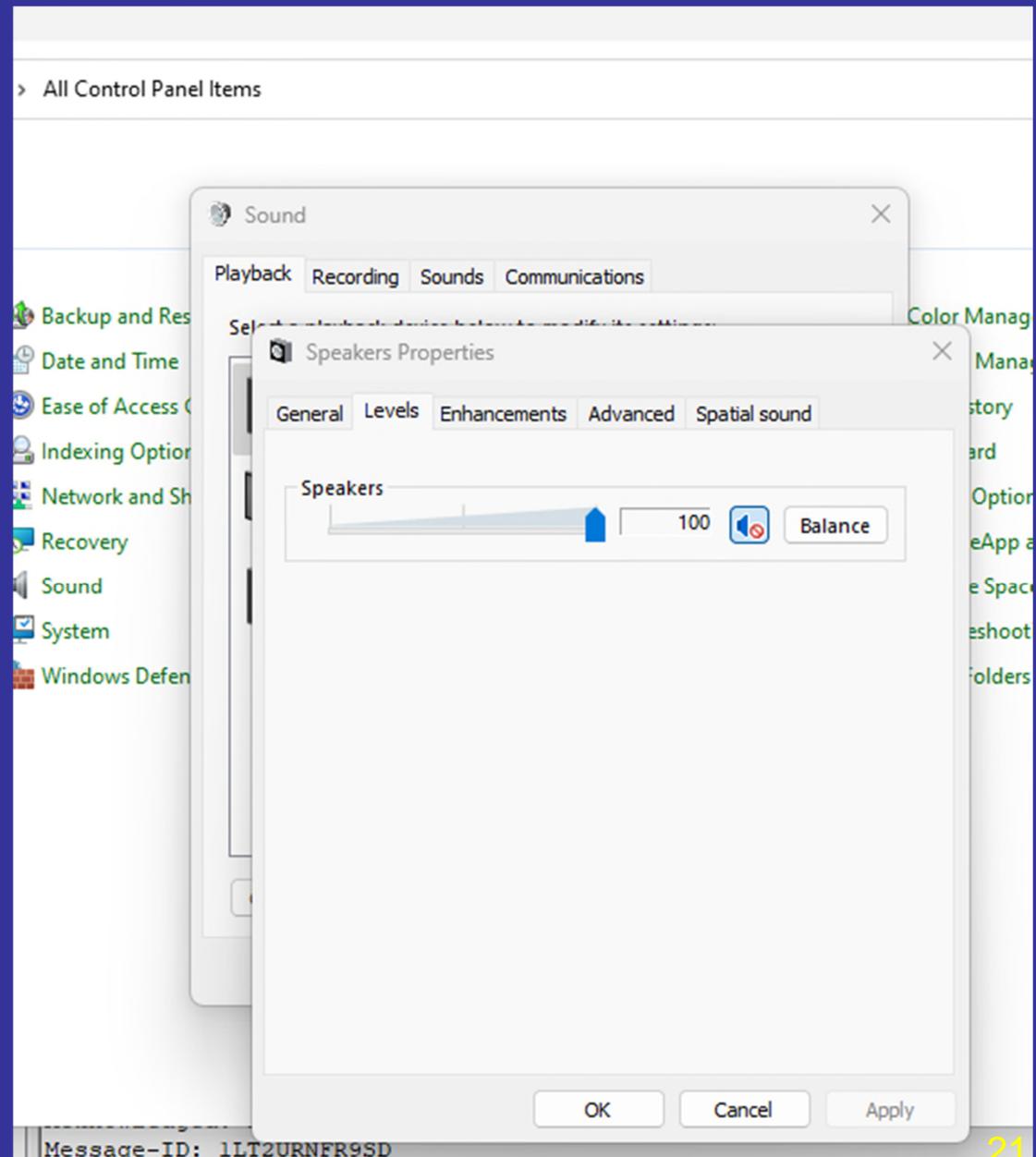
20

Weird Muting on Startup

Make sure Speaker and
Microphone (Line)
Don't get muted by

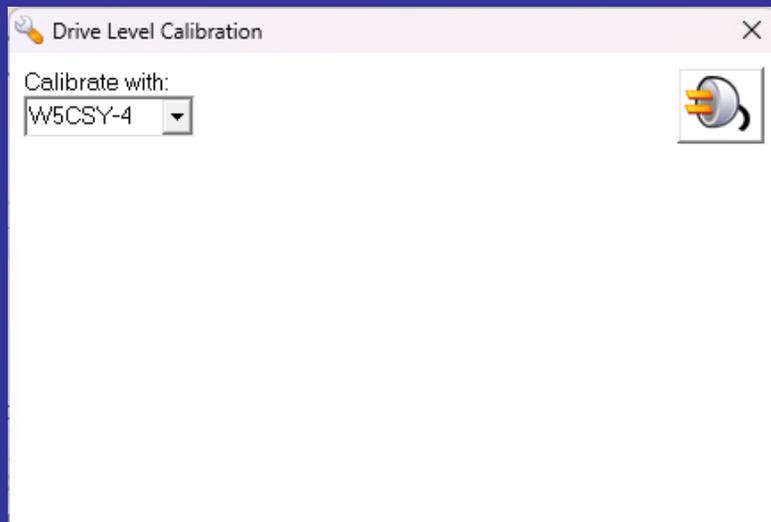
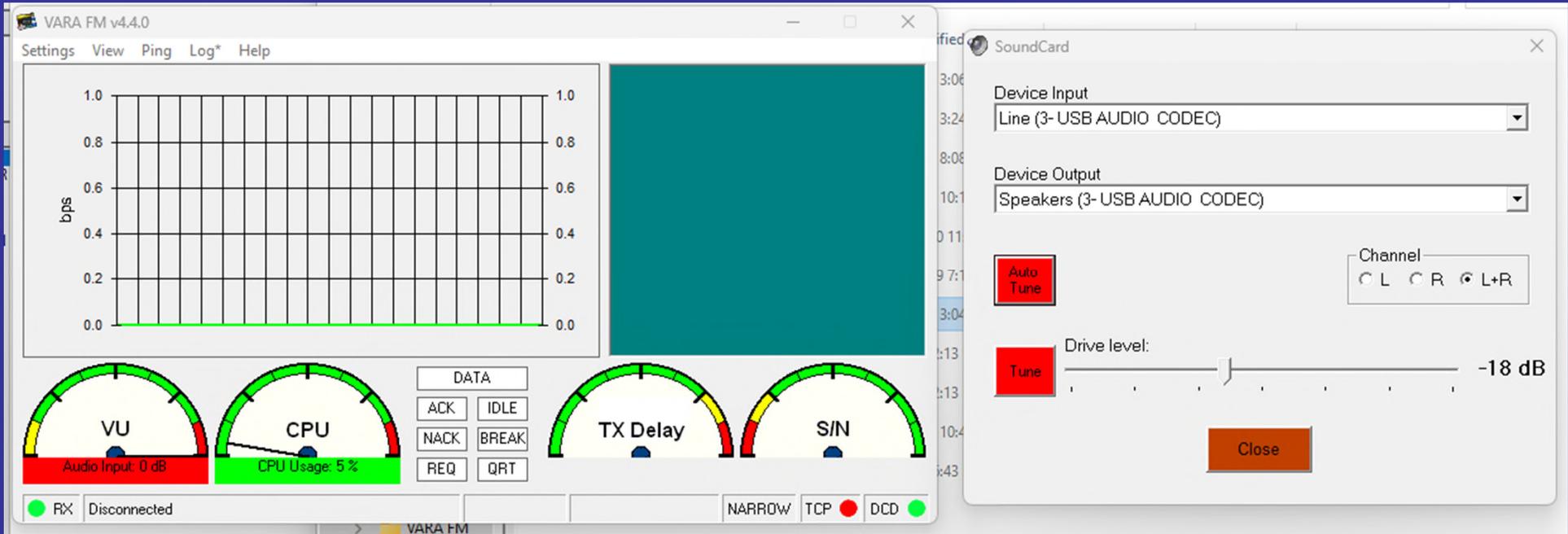
“SOMETHING”

Sometimes the system
stops communicating with
Signalink- REBOOT!



Vara FM – It's all in the Tuning

Open VaraFM.Exe from Install Loc ->Settings – Sound Card – Press Auto



Enter Vara Repeater on Sandia Crest
On 145.070 mHz

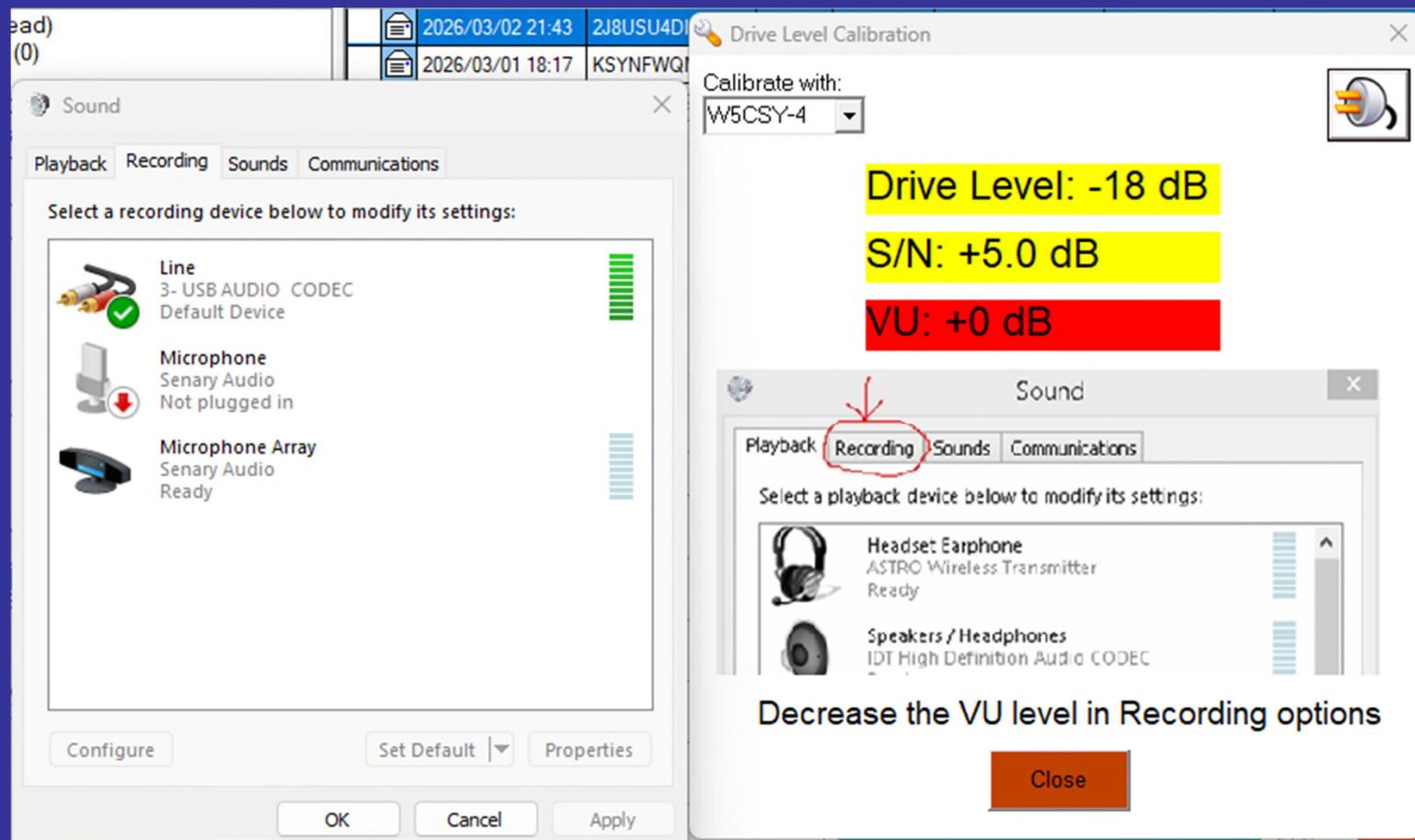
W5CSY-4

Press the Plug!

Vara FM – It's all in the Tuning

It opens the Recording Line Sound Panel and tells me to lower the VU Level.

I lowered from 100% to 50% and tried again.



Vara FM – It's all in the Tuning

Now it tells me to turn the TX knob to the left.
I move it to 9 o'clock from 12 o'clock and Try again.

Drive Level Calibration

Calibrate with:
W5CSY-4

Drive Level: -18 dB

S/N: +8.3 dB

VU: -9 dB



Turn the TX knob to the left

Close

Drive Level Calibration

Calibrate with:
W5CSY-4

Drive Level: -15 dB

S/N: +10.9 dB

VU: -9 dB

APPROVED

Close

Vara FM – It's all in the Tuning

You can now run a PING test.

The screenshot shows a 'Ping' window with the following details:

- Ping to:** W5CSY-4
- Via1:** (empty)
- Via2:** (empty)

The test results are displayed between two radio towers:

- Left Tower (WK0C):**
 - S/N: +3.0 (yellow background)
 - VU: -10 dB (green background)
- Right Tower (W5CSY-4):**
 - S/N: +10.9 (green background)
 - VU: -17 dB (green background)

A 'Close' button is located at the bottom center of the window.

Vara FM Tuning

- Tuning to Vara Digi on Sandia Peak:
W5CSY-4 on 145.070 MHz
- Video: [3_VAREFM_TUNING.mp4](#)

Vara FM Final Parameters

VARA FM Parameters



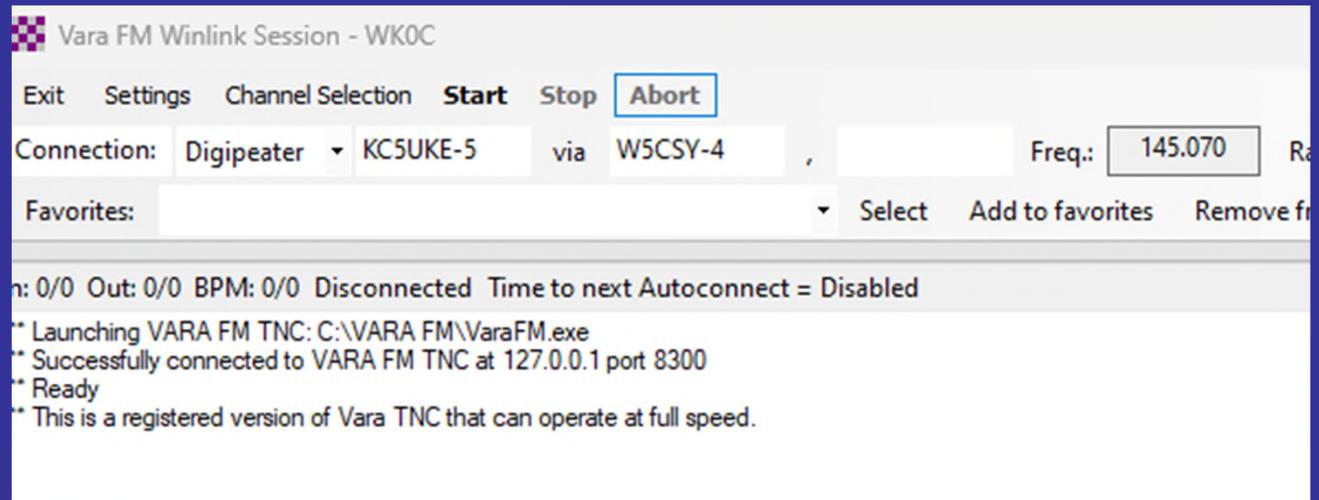
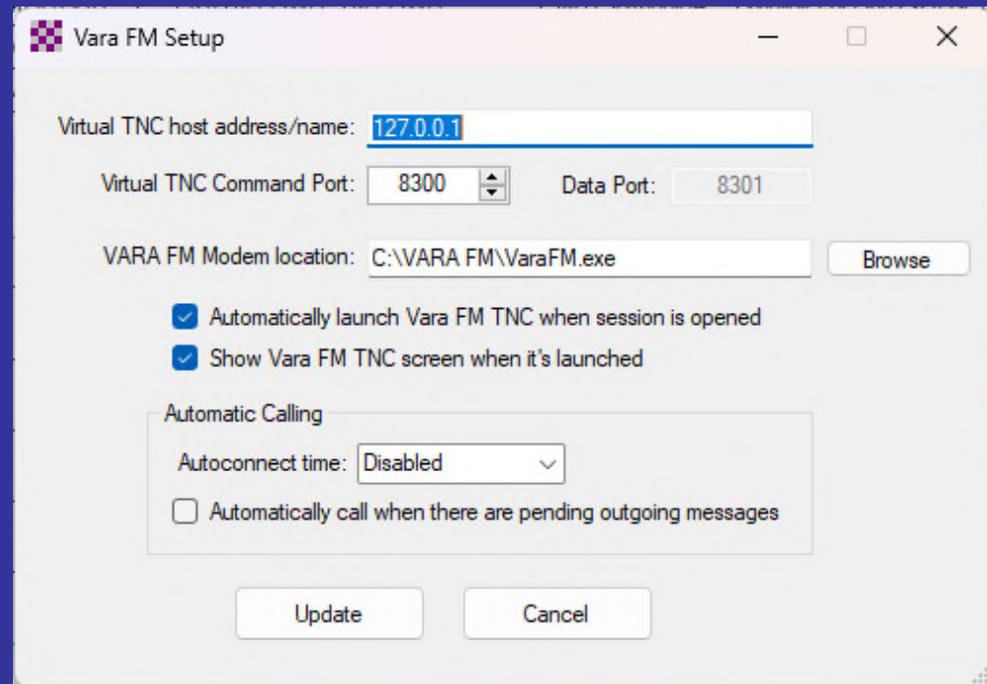
Send Message Vara FM

Main Menu Bar-
>Choose Vara
FM Winlink and
Open Session

Add the location
of the
VaraFM.exe file in
the Vara FM
Setup. Update.

Setup Path as
Digipeater
KCUKE-5 via
W5CSY-4
Press Start.

Magic Happens!!



Sending VARA FM Message

- Sending Msg: KC5UKE-5 via W5CSY-4 on 145.070 mHz
- Gateway: KC5UKE-5 in ABQ
- Vara Digi on Sandia Peak: W5CSY-4
- Video: [4_VARAFM_MSG.mp4](#)

Summary

- Setup Software
- Use Digipeaters for Tuning and Connections
- Packet harder to setup
- VARA FM helps you
- Signalink Modem stops sometimes (hours)

Questions? Comments?