

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

By Oliver K6OLI

Last Update 2019-03-11 A

Thank you, **Mike KM6KAQ**, **Scott KI6SC**, **Brian KM6IGY**, **Lew AC6LS**, **Keith KD6PYD**, **Jim KM6TGJ** and **Scott NS7C** for testing, for your suggestions, insights and encouragement.

Quick Setup Guide for Winlink on VHF/UHF with Signalink on Windows	1
Get the Software	1
Soundcard Considerations	2
Setting up Soundmodem100	2
Winlink Express	6
Quick Tip: Winlink Express Setup	6
Packet Winlink	7
Connecting to a gateway	10
Quick Tip: Channel Selection	10
Quick Tip: Winlink Screen Resolution Fix	12

Get the Software

Download

- Soundmodem: soundmodem100.zip from here <http://uz7.ho.ua/packetradio.htm> and extract the files in a location you can find easily (e.g. folder on Desktop)
- Winlink Express: <https://winlink.org/WinlinkExpress> Mind you, once installed it might show up as “RMS Express” on your desktop. (As of Winlink version 1.5.15 and later the icon will show up as “Winlink Express”. They are the same program, just different shortcut names.)

(Always check any downloads with your antivirus before executing)

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

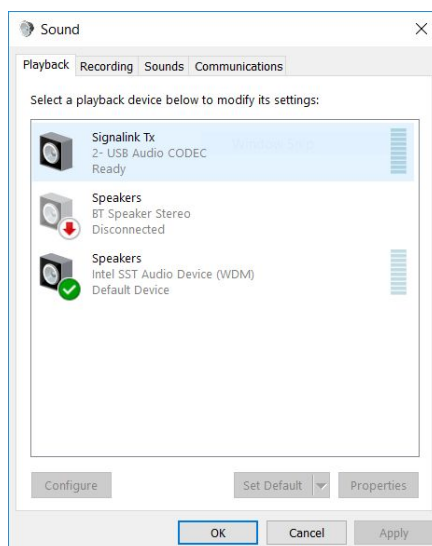


and selecting **Sounds**.

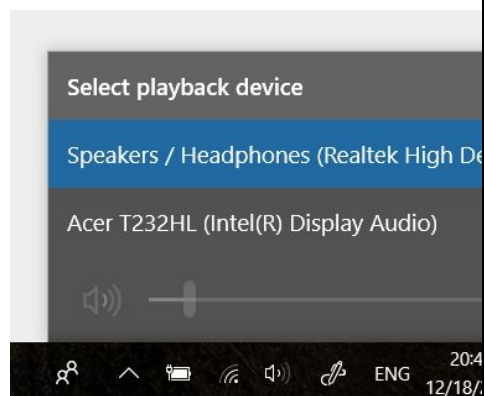
Then select **Playback**. Right-click your computer's internal soundcard and **Set as Default Device** and then right-click again and **Set as Default Communication Device**. There should be a green check mark on the internal soundcard device now.

Do the same for **Recording**.

Then click **OK**.

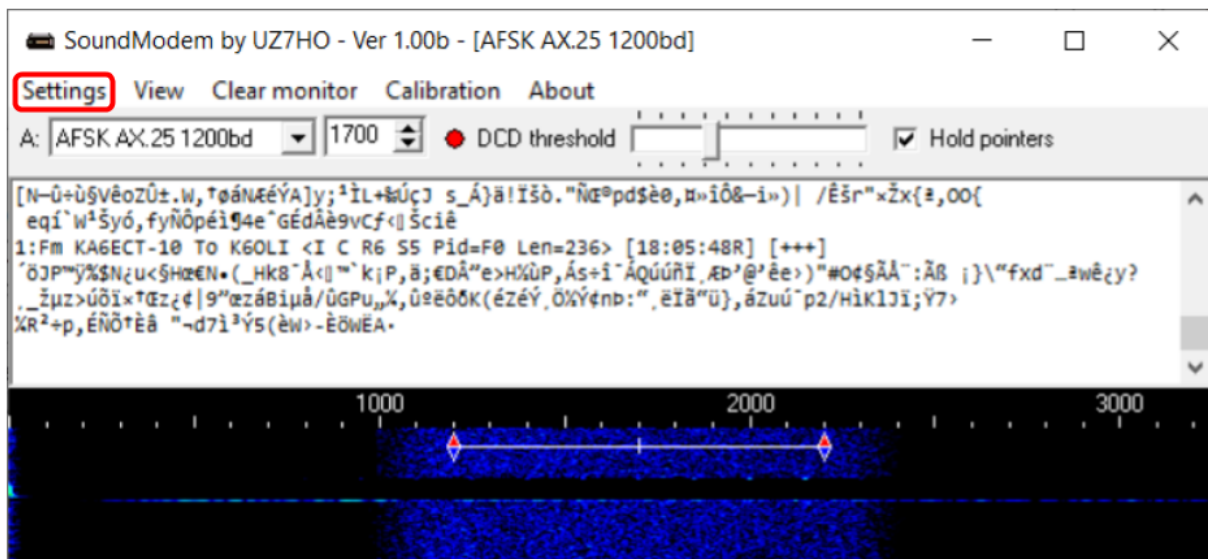


Also make sure that Signalink is not your active Playback Device. You can select your active playback device by left clicking on the speaker icon and selecting any playback device other than USB Audio CODEC. Selecting Speakers/Headphones in the example here is a good idea.



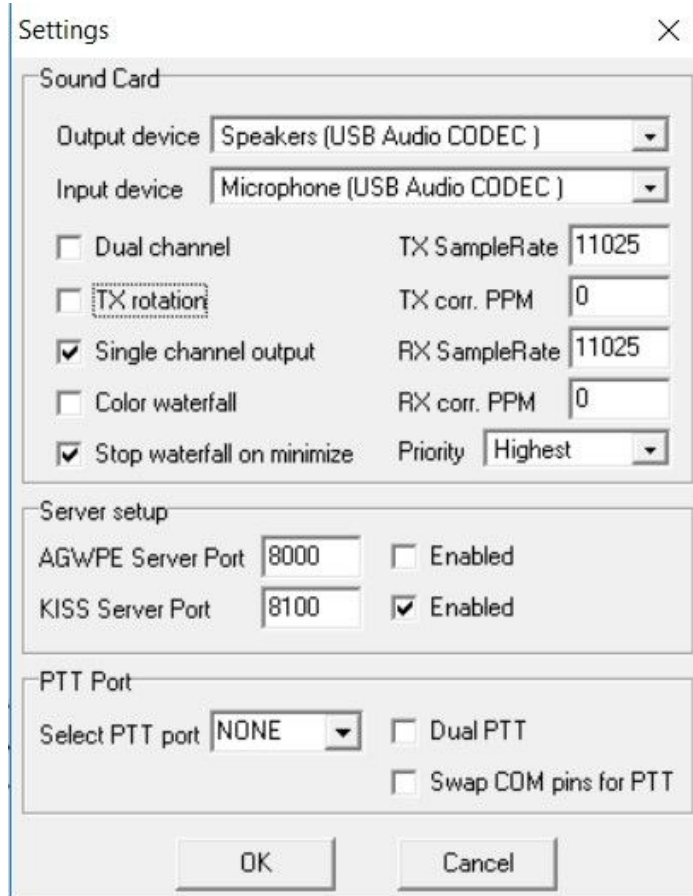
Setting up Soundmodem100

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	Modem filters ch: B
BPF Width <input type="text" value="1400"/> <input type="button" value="Show"/>	BPF Width <input type="text" value="500"/> <input type="button" value="Show"/>
TXBPF Width <input type="text" value="1600"/> <input type="button" value="Show"/>	TXBPF Width <input type="text" value="500"/> <input type="button" value="Show"/>
LPF Width <input type="text" value="650"/> <input type="button" value="Show"/>	LPF Width <input type="text" value="155"/> <input type="button" value="Show"/>
BPF Taps <input type="text" value="256"/>	BPF Taps <input type="text" value="256"/>
LPF Taps <input type="text" value="128"/>	LPF Taps <input type="text" value="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 checked="" 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 <input type="text" value="500"/> msec	TXDelay <input type="text" value="250"/> msec
TXTail <input type="text" value="50"/> msec	TXTail <input type="text" value="50"/> msec
Add. RX <input type="text" value="0"/> pairs	Add. RX <input type="text" value="0"/> pairs
Add. RX shift <input type="text" value="30"/> Hz	Add. RX shift <input type="text" value="30"/> Hz
Bits Recovery NONE	Bits Recovery NONE

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.

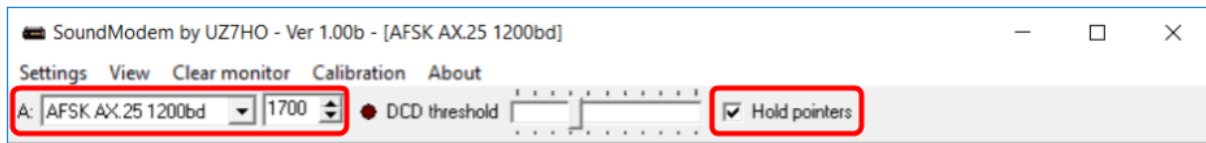
Click **OK**

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.

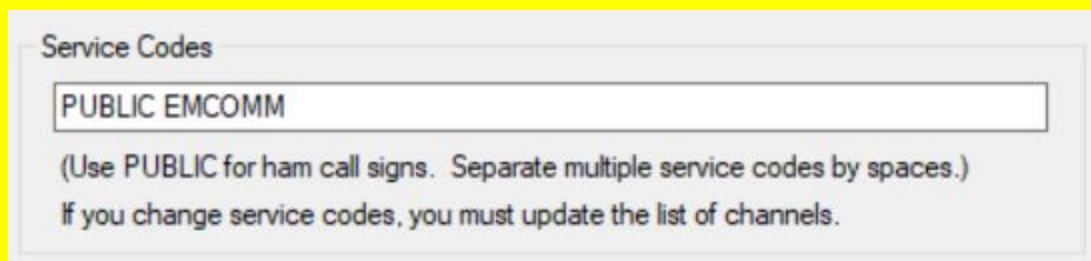
Quick Tip: Winlink Express Setup

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).

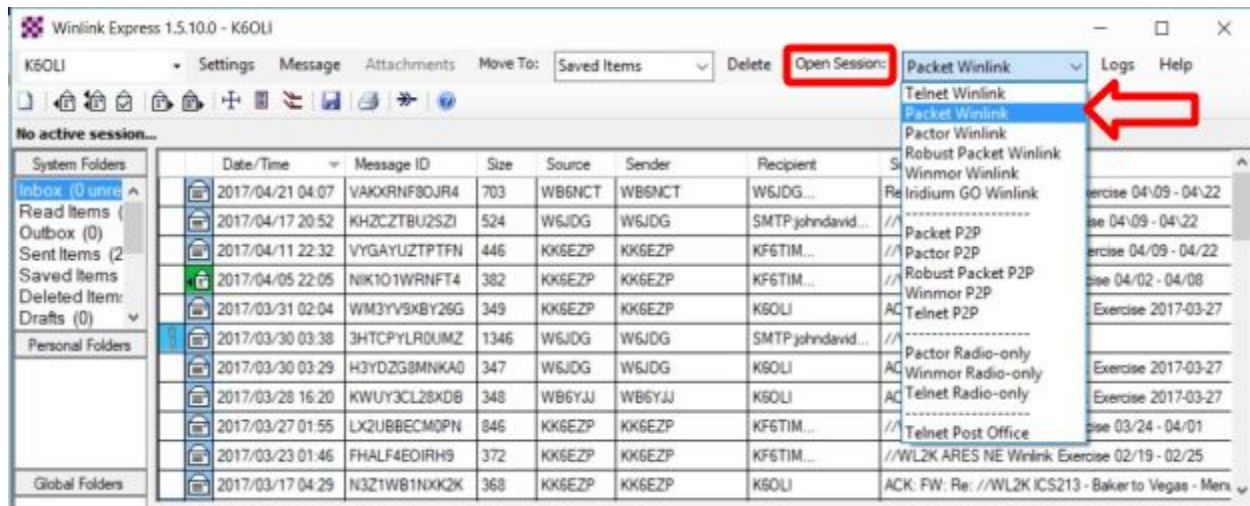
Entering your locator here will help you later finding Winlink Gateways near you. You can look up your Maidenhead Locator at http://www.levinecentral.com/ham/grid_square.php

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.



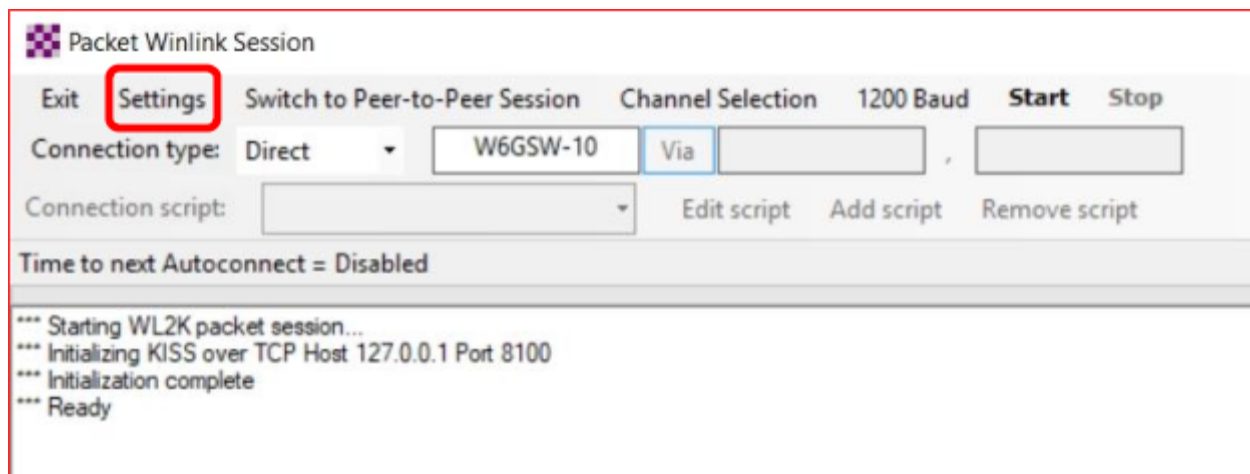
Packet Winlink

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: **ACKMODE**

Serial Port: **TCP**

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

☐ If Auto Connect is enabled, open session when Winlink Express is started

TNC Parameters

☒ 1200 Baud ☐ 9600 Baud

TX Delay (Milliseconds): 500 300

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: 100 100

Enable IPoll ☒

Update Cancel

Select Packet TNC Type: **KISS**

Select Packet TNC Model: **ACKMODE**

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

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

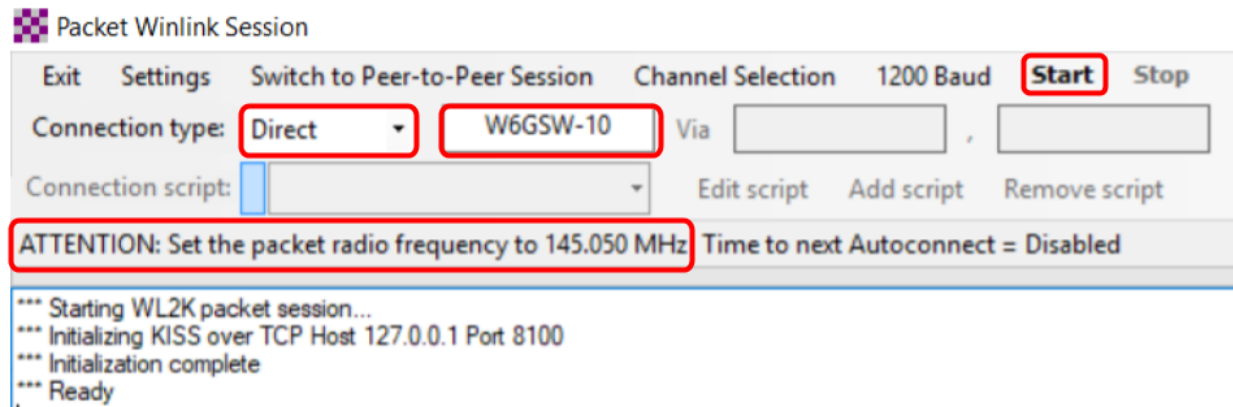
Set TCP Host / Port: **127.0.0.1 / 8100**

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>

The screenshot shows the 'Packet Winlink Session' window. The interface includes a menu bar (Exit, Settings, Switch to Peer-to-Peer Session, Channel Selection, 1200 Baud, Start, Stop) and a status bar (Received: 60 Sent: 1107 Time to next Autoconnect = Disabled). The main text area displays the session log, which is annotated with red arrows and labels explaining the steps:

- Connecting to gateway:** Indicated by a red arrow pointing to the log lines: '*** Starting to call KC7KEY-10', '*** Opening KISS over TCP Host 127.0.0.1 Port 8100', '*** Connecting to KC7KEY-10', and '*** Connected to KC7KEY-10 at 2019/03/05 18:01:00'.
- Handshaking with gateway:** Indicated by a red arrow pointing to the log lines: '[WL2K-5.0-B2FWIHJM\$]', ':PQ: 14706593', 'CMS via KC7KEY >', ':FW: WA7AUB AUBURN-EOC109364757', '[RMS Express-1.5.18.3-B2FHM\$]', ':PR: 09364757', '; KC7KEY-10 DE WA7AUB (CN87VH)', 'FC EM UT6P54JQOWGH 2239 935 0', and 'F> 2F'.
- Transferring a message:** Indicated by a red arrow pointing to the log lines: 'FS Y', '*** Sending UT6P54JQOWGH.', and 'FF'.
- Session completed successfully (commands FF followed by FQ and then disconnect):** Indicated by a red arrow pointing to the log lines: '*** Completed send of message UT6P54JQOWGH', '*** Sent 1 message. Bytes: 961, Time: 00:11, bytes/minute: 5214', 'FQ', '*** -- End of session at 2019/03/05 18:01:23 --', '*** Messages sent: 1. Total bytes sent: 961, Time: 00:23, bytes/minute: 2482', '*** Messages Received: 0. Total bytes received: 0, Total session time: 00:23, bytes/minute: 0', '*** Disconnecting', '*** Disconnected at 2019/03/05 18:01:32', and '*** Disconnect reported.'

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 autopopulates)

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 (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 <Override high DPI scaling behavior>.

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

Check <Disable full screen optimizations>.

Click **OK**.

