



SignaLink[™] Support

- <u>SignaLink USB Product Guide</u> --- Look here to see what part numbers you need for your radio
- SignaLink Jumper Settings and Radio Wiring Information
- <u>Communication Program Setup for the SignaLink USB</u> --- Click here for help configuring your communication program. Instructions for WSJT-X, for the popular FT8 mode, were just added!
- VARA WIDE Information
- <u>Windows 10 Information</u> --- Click here if you are having an issue after a Windows 10 update
- Mac Setup Guide for the SignaLink USB
- <u>Windows Vista Audio Level Setting Procedures</u>
- <u>SignaLink USB FAQ</u> (non technical questions)
- <u>SignaLink USB Troubleshooting, Technical FAQ and Tips</u> --- Click here for help resolving an issue with your SignaLink USB!
- <u>SignaLink SL-1 and SL-1+ FAQ</u>
- <u>SignaLink SL-1 and SL-1+ Troubleshooting FAQ</u>
- <u>SignaLink Installation Manuals</u> --- Download the latest revision of the SignaLink USB manual for Windows 7 / 8.x / 10
- SignaLink Detailed Jumper Installation Procedure
- Download Communication Programs for Digital & Voice modes
- Contacting Technical Support

Op Tips

- Using the SignaLink USB and SL-1+ with the Yaesu FT-817 QRP Radio
- <u>Packet Operation</u>
- <u>SSTV Operation</u>
- Weak Signal Communications with WSJT
- Linux information and software

Modifications

- Increasing the PTT sensitivity of the original SignaLink Model SL-1
- Increasing the transmit & receive audio output of the original SignaLink Model SL-1

VARA WIDE Information

IMPORTANT: There are a number of variables that can affect the performance of VARA WIDE, so you should expect that individual results may vary depending on the equipment used, quality of the radio path, etc. We are still testing this mode and receiving feedback from customers (please use our <u>Contact Form</u> to provide your feedback), but our recent ''real world'' testing, as well as that reported by other users, indicates that the stock (unmodified) SignaLink USB with the newer SMT transformers works very well. Please see below for details.

Update - August 29, 2020

We just completed some "real world" testing of VARA WIDE across our local valley (~10 mile path - QRM free) and are happy to report that it worked very well. Our test setup consisted of two stock (unmodified) SignaLink USB units (both with the newer SMT transformers and JP3 enabled) connected to the Data Port of a Kenwood TM-V71A and a Yaesu FT-8900R. Power was 10 watts (2m VHF) into a short mobile whip on one end, and a moderate gain vertical on the other. With this configuration we were able to consistently achieve speeds between 22,000 bps to 25,000 bps with no issues. Even while driving (safely of course!) we were consistently right at 20,000 bps.

We are also happy to report that we have received feedback from other users that have been able to achieve speeds of 19,000 to 20,000 bps in various urban environments using the stock SignaLink USB (newer SMT transformers) and other radios. One user also reported speeds of up to 20,000 bps using the SignaLink USB with the older through-hole mounted transformers. Prior to this, the max reported speed using the older transformers was ~15,000 bps.

It should be noted that our testing was done with both radios underdeviated. We used the VARA program's Auto Tune feature to set the TX level both ways, but regardless of the adjustments we made (both TX and RX levels were experimented with) we always ended up with a deviation of approximately 1.5KHz. Since the recommended deviation is 2.5KHz, we plan to do some additional testing to see what affect deviation has on throughput, and what might be done to get the Auto Tune mode to actually set it there. We would also like to note, that as previously mentioned, some Kenwood radios appear to need more audio than the stock SignaLink USB can provide to reach the recommended 2.5KHz deviation. This is the case with the TM-V71A that we are now testing with. However, when we use a SignaLink USB that has been modified for more output and is capable of driving the radio to 2.5KHz deviation (TX modulation was verified to be clean and undistorted), the Auto Tune feature still lowers the level back down, and the resulting deviation is around 1.5KHz. We will be looking into this too so that we better understand what is happening, but as noted from our testing, the lower deviation still works very well.

SignaLink USB Audio Transformers and Other Changes

We have been shipping wider bandwidth <u>surface mount (SMT) isolation transformers</u> (click for a picture) in the SignaLink USB since ~June 2018. The .25db bandwidth of the transformers is 200Hz to 4000Hz. The normally specified 3db bandwidth of these transformers and the SignaLink USB as a whole, actually extends out much further than 4Khz and will be updated shortly. If your SignaLink USB is an older model with the red colored "through hole" transformers (see above link to confirm), then please note that the 3db bandwidth is narrower (~300-3300Hz) and it may not support the fastest speeds that VARA WIDE offers (see testing notes above).

For those asking about the possibility of upgrading their current SignaLink USB, please note that the SignaLink USB circuit board was redesigned to fit the new surface mount transformer. *The new transformer will NOT fit the old circuit board*. It should also be noted that other improvements were made to the circuit design including better filtering of the USB power bus and internal bias voltages (this *may* lower the noise floor on some systems). A change was also made to the more readily available PCM2906C sound card chip (same family as the previously used PCM2904) in early 2017.

SignaLink USB Setup

1. The SignaLink USB must be the newer unit with the black colored surface mount (SMT) transformers in order to take advantage of the fastest speeds offered by the VARA WIDE mode. If your SignaLink USB is an older unit with the red colored through-hole transformers, then your max speed will likely be limited to somewhere between 15,000-20,000 bps. See the above link to confirm which transformers your SignaLink has.

2. The SignaLink USB must be connected to the radio's 6-pin mini-DIN Data Port so that it can use the wider bandwidth 9600 baud signal provided by the radio. *Mic connections will not work with the faster speeds that VARA WIDE offers (use VARA NARROW for mic connections)*.

3. You *MUST use jumper wires to configure the SignaLink USB* for use with the radios 6-pin mini-DIN Data Port, and *you MUST connect the JP1 "SPK" jumper to JP1 pin #4 (NOT #5)*. This configuration uses the radio's 9600 baud output which has a flatter, wider bandwidth frequency response which is required. Note that the SLMOD6PM jumper module *cannot* be used because it is wired for the 1200 baud output. If there is enough demand, we will offer a special jumper module preconfigured to use the 9600 baud output so that customers can use a jumper module to simplify installation.

4. *You MUST enable special jumper JP3 inside the SignaLink* to increase the TX Audio level going to the radio. This is a simple push-on shorting jumper located behind the SignaLink's TX potentiometer and marked "JP3" (see the above link or the SignaLink manual for a picture of the circuit board showing this jumper). To enable JP3, simply pull the black shorting jumper straight up to remove it (don't twist it!) and then reinstall across the two pins marked "JP3".

5. We set the SignaLink's DLY control fully counter-clockwise for minimum TX hang time delay. This makes the switching time very fast and should maximize throughput. While this can occasionally cause the PTT relay to chatter, this usually happens only at the beginning of an Auto Tune sequence. With that said, the DLY knob could be turned up just a *little* to minimize relay chatter and this will probably not have much impact on throughput. Online VARA docs indicate that a setting of 7-8 o'clock is acceptable, but it should *NOT* be set any higher. *Note that if the DLY knob is set too high, then you'll be unable to communicate because your system will still be in transmit when the receiving stations sends its reply.*

6. See below for setup of the SignaLink's RX and TX controls.

Radio Setup

1. The radio's "Packet Rate" or "On air baud rate" menu setting *MUST be set to 9600* (NOT 1200 baud). This is sometimes called "9600 baud mode" and in this case, it must be turned ON. *Note that if you see other baud rates besides 1200/9600 mentioned, then you're looking at the wrong menu item.*

2. The radio's Squelch should be OPEN so that noise / audio is always present. This will help reduce the switching time. Note that this is sometimes controlled by a separate menu setting in the radio specifically for the Data Port.

VARA Program Setup

1. We adjusted the SignaLink's RX knob so that with no signal present, the VARA VU meter was at max green with no peaking into the red (\sim -6db).

NOTE: We were recently forwarded this advice by Martin, HB9AUR... The RX gain should be adjusted <u>with a modulated RX signal</u>, e.g. when the partner is sending the VARA FM Tune signal, and not with the noise of a free channel. It appears that some radios have very high levels for the RX noise. When you reduce the RX gain until the noise level is in the green range of the VU meter, it is possible that the amplitude of the modulated signal will be too low - leading to bad S/N. I experienced this with a professional radio (Motorola), where I had to set the level such that the VU meter was in the red range when no signal was present. It is OK to initially set the RX level as described by Tigertronics, but then you must check with a received signal and correct the setting if necessary.

2. We set the SignaLink's TX knob to 100% (MAX) and then used the program's "Auto Tune" feature on both ends to set the TX Level. Note that the auto adjusted transmit level that you end up with after using the Auto Tune feature is also dependent upon the receive volume level (VU meter) at the receiving station. If it's too low, then Auto Tune may tell you to keep increasing the TX level when you really need more RX audio.

WinLink Express Test File Size

We have been told that the "real world" file size when sending traffic/messages is normally no more than 100KB. Our testing is done with larger text files (~2-5MB) so that we have time to make adjustments during the transmission, and so that we can better see what the sustained transfer rate is.

Windows 10 Information

<u>Click here if you are experiencing a "Sound Card Error" when you open your communication</u> program (generally after a Windows 10 update)

General Windows 10 Issues, Tips and Information

- Windows updated and now the SignaLink / comms program doesn't work If the above steps don't resolve the issue, then you may simply need to unplug your SignaLink and move it to a new USB port to force the driver to reload. You may also need to (1) uninstall the comms program, (2) delete the folder that it was installed in (do NOT skip this step or the reinstall won't help), and then (3) re-install and reconfigure. *Be sure that your BACKUP YOUR DATA BEFORE uninstalling and deleting the folder or you will lose your log files.*
- Before connecting the SignaLink to a new computer running Windows 10 As with any operating system, be sure that your computer is fully updated <u>BEFORE</u> you plug in the SignaLink. Then, with the computer turned ON and sitting idle, plug the SignaLink directly into the computer (not a USB hub**) using the USB cable that we provided. If you have a desktop computer (this does not apply to laptops), then you should use a rear panel USB port. If using a USB 3.0 Port, please be sure that your computer is fully updated with any available updates from the computer manufacturer. Some USB 3.0 drivers shipped with new PCs do not function correctly with all devices and need to be updated.
- Windows 10 Reset If none of the above steps resolve the issue then a "Windows Reset" may be needed to correct a problem with the Windows 10 OS. A number of customers have reported doing this when all else failed and it has resolved the issue in every case. Please note that we recommend doing a Windows 10 reset only as a last resort and only if you know what you are doing, since something could go wrong and you might lose your data. Tigertronics does not provide support for doing a Windows Reset or any Windows install/repair as this is a Microsoft issue (see Microsoft's website for support information). As with any Windows update/install/repair, we always suggest that you **BACKUP YOUR DATA** in case something goes wrong.

******<u>NOTE:</u> If you need to use a USB hub, then the hub MUST be designed for "high power" USB devices and externally powered. A port-powered USB hub will NOT work properly (operation will be intermittent at best). Note that not all externally powered USB hubs are designed for high power USB devices. If your hub doesn't specifically say that it is, then check the specifications for a "total available port current" of at least 2-3 amps. If your hub can provide that much total current then it is likely designed for high power USB devices and should work fine with the SignaLink USB.

Windows Vista - Audio Level Setting Procedures

NOTE: Windows Vista is no longer supported by Microsoft as of April 11, 2017.

Setting the Default Sound Card

- 1. Right-click the speaker icon located on the Windows Task Bar near the system clock (lower right hand corner of your screen).
- 2. Select "Sounds"
- 3. In the "Sounds" window that opens, select the "Playback" tab.
- 4. Select your computer's sound card in the list of sound cards shown (single left-click).
- 5. Click the "Set Default" button to set your computer's sound card as the default card for playback.
- 6. Select the "Recording" tab.
- 7. Select your computer's microphone in the list of sound cards shown (single left-click).
- 8. Click the "Set Default" button to set your computer's microphone as the default card for recording. Note that you must have a microphone plugged in if you are going to select it as the default. If you are using the SignaLink USB, then you can simply leave its "Microphone USB Audio Codec" sound card set as the default if you'd like. It will not have any negative impact on performance or operation of the unit.
- 9. Click OK to save your settings and close the Sounds window.

Setting the Transmit Audio Levels ("Playback" controls)

<u>NOTE</u>: Do NOT use your communications program's "Set Transmit Levels" ("Transmitter Drive", etc.), or "Set Receive Levels" ("Waterfall Drive", etc.) menus, as these do not seem to work properly for Windows Vista.

Your communication program MUST be properly configured and in Transmit before proceeding. If you're not sure how to configure your program then please click <u>here</u>.

- 1. Right-click the speaker icon located on the Windows Task Bar near the system clock (lower right hand corner of your screen).
- 2. Select "Open Volume Mixer" and a new window will open.
- 3. If using the SignaLink USB, click "Device" in the upper left hand corner and select "Speakers (USB Audio Codec)". If you are using our SignaLink SL-1+, then you'll want to select your computer's sound card.

- 4. The far left volume control is the equivalent of the "Master Volume" control referred to in our documentation, and earlier versions of Windows. Set this control as suggested in our level setting procedure (100% for the SignaLink USB).
- 5. When transmitting (your communication program MUST be in Transmit), you will see another volume control to the right labeled with the same (or similar) name of the communications program that you are using. This control is the equivalent of the "Wave" volume control referred to in our documentation and earlier versions of Windows. Set this control as suggested in our level setting procedure (50% for the SignaLink USB). Note that this control is only visible when your program is transmitting and the exact name depends on the software you are using. With the DigiPan program for example, this control appears as "Tune TX" in the "Tune" mode, and as "Callsign DigiPan" in the normal Transmit mode.
- 6. Close the Volume Mixer window and switch your communication program back to Receive.

Setting the Receive Audio Levels ("Recording" controls)

<u>NOTE</u>: Do NOT use your communications program's "Set Transmit Levels" ("Transmitter Drive", etc.), or "Set Receive Levels" ("Waterfall Drive", etc.) menus, as these do not seem to work properly for Windows Vista.

- 1. Right-click the speaker icon located on the Windows Task Bar near the system clock (lower right hand corner of your screen).
- 2. Select "Recording Devices"
- 3. If using the SignaLink USB, click the "Microphone (USB Audio Codec)" sound device one time to select it. If you are using the SignaLink SL-1+, then you'll need to click one time on your computer's microphone to select it.
- 4. Click the "Properties" button.
- 5. In the Microphone properties window, select the "Levels Tab"
- 6. If using the SignaLink USB, adjust the Level slider to "0.0db" or as close as Windows permits**. If using the SL-1+, then you'll need to adjust the "Mic" slider control to set your Receive Audio level to a good level.

**NOTE: If you are using the SignaLink USB, please see latest version of the SignaLink USB manual for detailed information on setting the Recording Level slider.

Installation Manuals

 SignaLink USB Installation & Operation Manual

 Windows 10
 SignaLink USB Installation & Operation Manual

 Windows 7 / 8.x
 SignaLink USB Installation & Operation Manual

SignaLink USB Installation & Operation Manual -Windows ME / 2000 / XP

SignaLink SL-1+ Installation & Operation
 Manual - Windows ME / 2000 / XP
 SignaLink SL-1 Installation & Operation Manual
 Windows ME / 2000/ XP

If you don't have Adobe's Acrobat Reader, click on the icon to get it.

Running Packet with the SignaLink

Ralph Milnes, NM5RM, has an excellent web site on running <u>Sound Card Packet</u>. His site gives step-by-step instructions on how to configure and use the AGW Packet Engine, with various packet and APRS® programs, including WinAPRS, APRSplus, UI-View, WinPack, AGWTerm, AGWMonitor, and AGWCluster. Links to other sound card Packet programs including the UZ7HO Soundmodem and DireWolf, are also included. If you would like to run packet with the SignaLink, Ralph's web site will show you how. Thank you Ralph!

<u>TOP</u>

Get Acrobat Reader

Running SSTV with the SignaLink

SSTV is one of the few modes where you frequently switch between Digital operation (sending pictures) and Voice operation (talking about the cool picture that you just sent!). Because of this, if you plan on operating SSTV, we suggest that you attach the SignaLink to your radio's Data or Accessory Port instead of the Mic connector. This will allow you to keep your microphone plugged into the front of the radio, so that you can talk between pictures. For detailed information on operating SSTV, check out this great <u>SSTV</u> <u>Primer</u> by Michael Tondee, W4HIJ. A list of the main SSTV HF frequencies can be found below.

1					
160 Meters	80 Meters	40 Meters	20 Meters	15 Meters	10 Meters
1.916	3.845	7.170	14.230	21.340	28.680
	3.857	7.172	14.233		28.690
			14.236		28.700

Main SSTV HF Frequencies

Weak signal communications with WSJT-X, WSJT, MAP65, and WSPR - By K1JT

Joe Taylor, K1JT, is the expert on weak signal modes. He has written a number of very popular programs for weak signal work on the HF, VHF and UHF bands, and his original WSJT program from 2001 is still very popular today.

Joe continues to develop new modes that push the envelope for weak signal operation using EME ("moonbounce"), meteor scatter, and ionospheric scatter. His latest program, WSJT-X, offers a number of new modes including FT8, JT4, JT9, JT65, QRA64, ISCAT, MSK144, and WSPR.

If you'd like to explore the world of weak signal communication, or if local antenna restrictions are limiting your Ham activity, then WSJT/WSJT-X is probably just what you're looking for. Most WSJT programs are available for Windows, Linux and the Mac, and the User Guides and other WSJT support information is superb. Visit Joe's web site for details and program downloads, and please be sure to thank him for all his hard work and for making the WSJT programs free!

<u>TOP</u>

Linux information and software for the SignaLinkTM

- Ken Hopper, N9VV has written a nice <u>article</u> about his experience installing and operating the SignaLink USB in Linux. We would like to express our thanks to Ken for sharing this with us, and to the authors of <u>fldigi</u> and <u>gMFSK</u>, W1HKJ - David Freese and OH2BNS - Tomi Manninen, for their tireless effort in developing and updating these programs.
- Bill Leonard, KF8GR, has put together a very extensive web site for Amateur Radio operators who are interested in the Linux Operating System. <u>Bill's web site</u> is loaded with ham related Linux information, including links to programs that you can run with your SignaLink[™] and BayPac BP-2M! Bill's site also has information on amateur radio satellite operation, weather monitoring, QRP operation, and non-ham Linux apps like web browsers, and business programs. If you can do it with Linux, then you'll probably find it on Bill's web site! Thank you Bill for providing this valuable resource to the ham community.

<u>NOTE</u>: The Linux operating system is not officially supported by our chipset manufacturer, or Tigertronics. We will do our best to help you get your SignaLink working in Linux if you call for Tech Support, but please understand that we do not run this OS ourselves so support

for it will be very limited. If you are not familiar with installing and configuring software/hardware in Linux, then we strongly suggest that you use a different OS with your SignaLink.

<u>TOP</u>

Increasing the PTT sensitivity of the SignaLink Model SL-1

<u>NOTE</u>: This modification is for the original SignaLink Model SL-1 only. It does not apply to the SignaLink SL-1+ or SignaLink USB.

While the SignaLink's Auto-PTT[™] circuit works perfectly with nearly every sound card on the market, there are a few odd laptop computers that cannot activate the circuit without setting the volume controls to maximum, and distorting the transmit signal. To address this issue, we have provided information on a simple modification that can be performed to increase the sensitivity of the SignaLink's PTT circuit nearly five times. This increase in sensitivity will allow these "problem" laptops to activate the circuit at lower volume levels, which will provide a clean signal to the radio. Instructions for this modification can be found <u>here</u>.

<u>TOP</u>

Increasing the transmit & receive audio output of the SignaLink Model SL-1

<u>NOTE</u>: This modification is for the original SignaLink Model SL-1 only. It does not apply to the SignaLink SL-1+ or SignaLink USB.

When used in conjunction with your computer and radio volume controls, the SignaLink's transmit and receive attenuation circuits provide the correct amount of audio for most installations. However, with some equipment combinations, you may find that you need more transmit or receive audio than the stock unit can provide. For these situations, there are two special jumpers that you can install inside the SignaLink to increase the transmit and receive audio levels. The location of these jumpers and instructions for installing them can be found here.

<u>TOP</u>

Contacting Technical Support

Free telephone Technical Support is available for the SignaLink. If you need technical assistance, please click <u>here</u> for instructions on contacting our Technical Support Staff.

Communication Program Setup Instructions (SignaLink USB only)

Our Technical Support Staff is often asked how to configure various sound card communication programs for use with the SignaLink USB. While our printed manual has always provided general guidelines for doing this, we have never attempted to provide detailed instructions for any specific program because there are simply too many, and it's really the responsibility of the end user to learn how to use the particular program that they are interested in. While we will not be taking on the responsibility of providing support for third party programs (you'll need to contact the program author for that!), we have decided to provide specific setup instructions for some of the programs that we are most often asked about.

You will find setup instructions for these programs listed below. If you do not find the particular program that you are interested in, then you will need to see the "General Setup Instructions" section. The instructions there can be applied to virtually any program if you just take a little time to familiarize yourself with the basic concepts, as well as the program's menu's and Help file. Please note that we will expand the contents of this page as time allows, but Tigertronics is NOT responsible for providing support for any third party software. This information is provided "as is" for your convenience only, and without warranty of any kind. If you need further assistance with any third party program, then you will need to contact that program's author, or a related internet forum, or user group for help.

Most of the instructions shown below assume that the communication program you want to use has already been installed on your computer and is actively running. If you do not know how to download, install, or run software on your computer, then you will need to seek help from a friend. We cannot teach you how to do this. Note that our instructions typically cover only those items that directly relate to the operation of the SignaLink. Most programs will also require you to set other parameters such as your Callsign, QTH, etc., so please refer to the program's Help documentation, or an appropriate internet forum if you're not sure what else needs to be configured.

<u>IMPORTANT</u> - Configuring the communication program is only part of the setup process. Please be sure to complete our Windows Setup instructions when you are done configuring your program. Failure to do this may result in a system that doesn't work properly and/or unwanted and potentially illegal transmissions.

- <u>General Setup Instructions</u> Look here if your program isn't listed!
- DigiPan v2.0
- EasyPal
- EchoLink
- FLdigi
- HamScope
- HRD / DM-780 / Digital Master 780
- <u>MMTTY</u>
- <u>MRP40</u>
- <u>RMS Express / WinLink Express WINMOR</u>
- WSJT-X Look here for the new FT8 mode!

General Setup Instructions

Every communication program has a "Setup" or "Options" type menu where various operating parameters can be selected. The setup menus within each program often look different, but the same basic elements or settings (identified below) exist in all programs. You will need to locate each of these settings within your program's setup menu and make sure that they are set as noted below. Please note that if you have changed other settings in your program that we do not address below, then it's possible that you may have done something that could prevent the program from functioning even if the items that we cover are set correctly. If you suspect that this might be an issue, then you should uninstall the program, delete the program's folder, and then re-install (be sure to first backup any data created that you may wish to save).

- Sound Card Selection This MUST always be set to the SignaLink's "USB Audio Codec" sound card, and you will usually need to set both the output / playback (Transmit) and input / capture (Receive) sound card separately. In Windows Vista/7/8.x/10, the SignaLink USB's sound card is shown as "Microphone USB Audio Codec" for the input / capture (Receive) side, and "Speakers USB Audio Code" for the output / playback (Transmit) side. NOTE: The latest sound card chipset used in the SignaLink USB is displayed as "Line USB Audio Codec" instead of "Microphone USB Audio Codec". Be sure to select this as the input / capture / receive sound card if applicable to your SignaLink.
- PTT This should be set to something like "VOX", or "External". The SignaLink NEVER uses a serial port, so you should set any COM Port settings that relate to PTT to "None", "COMO", "Disabled", or the equivalent. If you are using an old program that doesn't allow you to select this as an option, then you'll have to select a COM Port that is available on your computer, but not in use. Note that if you are using a CAT / CIV interface and you have the SignaLink attached to your radio's rear panel Data or Accy Port, then you must disable PTT by the CAT / CIV interface. It is OK for the CAT / CIV interface to tune the radio, change modes, etc., but the SignaLink MUST key the radio if it is connected to the radio's Data or Accy Port or you'll have no transmit audio. Note also that your radio's VOX setting should always be OFF as it is not needed by the SignaLink.
- Built-in Output Level Slider or Attenuator Some communication programs have built-in controls to adjust the transmit audio output level. For example, most versions of WSJT / WSJT-X have a "PWR" slider, and some older versions of DM-780, have an "Output Attenuator" setting. These types of controls must be set so that they do NOT lower the transmit audio output level or the SignaLink's PTT circuit will not work. This generally requires these types of controls to be set to "Odb".
- AFSK vs FSK (RTTY / CW) Virtually all sound card modes use AFSK (Audio Frequency Shift Keying) where the modulating tones are injected into the radio. However, RTTY and CW programs often support both AFSK and FSK. The SignaLink supports AFSK only, so you will need to configure your communication program for AFSK operation when running RTTY or CW. This is usually worded as "Send RTTY as tones", "AFSK RTTY", "Send CW as tones", "MCW" (modulated CW), "CW SSB", or something similar. Note that if you see a COM Port option for RTTY or CW, you do not want to use it, as that would be for FSK only.

CAT / CIV Rig Control - The SignaLink does not provide CAT / CIV rig control but it can be used with a separate CAT / CIV interface if you have one. As noted above, if you have the SignaLink attached to your radio's Data or Accy Port, then you need to disable PTT by the CAT / CIV interface or you'll have no transmit power. If the SignaLink is attached to your radio's Mic jack, then either the SignaLink or the CAT interface can control PTT. Note that you should not enable CAT / CIV rig control unless you have a separate CAT / CIV interface cable connected between your computer and radio, or you'll receive a "Can't connect to radio" type message and/or lockup the program.

<u>TOP</u>

DigiPan v2.0

- 1. Click the Configure menu and then click Soundcard.
- 2. In the new window that opens, select "Computer Sound card" from the Type drop-down menu. Note that this selection is for the type of interface being used. The SignaLink USB has its own built-in sound card so "Computer sound card" is the correct type of interface.
- Select "USB Audio Codec" in both the Input and Output drop-down menus. If using Windows Vista/7/8.x/10, then you'll need to select "Microphone - USB Audio Codec" for Input and "Speakers - USB Audio Codec" for Output.
- 4. Click OK when done.

Notes / Tips

- If you are running Windows ME/2000/XP then you should change the Sample Rate shown in the Configure-Soundcard window to 12000 to avoid any possible sample rate offset errors. The default setting of 11025 is fine for newer versions of Windows.
- In the Mode menu, you'll normally want to select "BPSK31". This is the most common mode for PSK31.
- As mentioned in the SignaLink USB manual, you can use DigiPan's "Tune" feature to transmit a steady test tone to aid in adjusting your transmit power. To do this, click the Mode menu and select Tune. Note that the modulation frequency is determined by the location of the red diamond marker in the waterfall display. If the marker is at the 1000 mark (or xx.xx1Khz mark if you have DigiPan set to show the band frequency), then you'll transmit a 1Khz tone. Click the OK button when done transmitting.
- As with virtually all digital modes, you'll want to stay within the range of approximately 500 Hz to 2500 Hz in the waterfall display, or you'll be outside of the (typically) radio's audio band pass and signals will be attenuated. This is true for both transmit and receive. If you get too far out of this range, then your transmit power will decrease and the receive signal you are trying to decode will be attenuated.

<u>TOP</u>

EasyPal

- 1. Click Setup and select C/S-SoundCard-PTT, then click Soundcard.
- 2. In the new window that opens, click on "USB Audio Codec" in BOTH the RX and TX menus, and then click the "Assign" button. If using Windows Vista/7/8.x/10, then you'll need to select "Speakers USB Audio Codec" for TX and "Microphone USB Audio Codec" for RX.
- 3. Click Setup and select C/S-SoundCard-PTT, then click VOX. Note that your radio's VOX feature should be OFF. This setting simply allows the SignaLink USB to control PTT.
- 4. Close EasyPal and restart it so that the setup changes take affect.

<u>TOP</u>

EchoLink

Initial Installation

NOTE: You can skip this section and go to "Program Options" below if you have already installed EchoLink for Sysop mode

- 1. Select "Sysop" mode and click Next
- 2. Select your Internet Connection type and click Next
- 3. Select "Direct Controlled" and click Next. Note that the com port selection is not used and will be changed later, so the default (COM1) is fine.
- 4. Enter your Callsign and other information, and click Next
- 5. Select your geographic location and click Next
- 6. Fire Wall Test You can perform this test now, or do it later if you have connection problems.
- 7. The initial setup of EchoLink is now complete. Please see the steps below to configure EchoLink to work with the SignaLink.

Program Options

- 1. Click the "Tools" menu and select "Setup".
- On the "Audio" tab, select "USB Audio Codec" for BOTH the "Input Device" and the "Output Device". If using Windows Vista/7/8.x/10, then you'll need to select "Speakers - USB Audio Codec" for the "Output Device" and "Microphone - USB Audio Codec" for the "Input Device".
- 3. Enable the "300Hz TX High-Pass Filter" option and click OK when done.
- 4. Click the "Tools" menu and select "Sysop Settings".
 - On the "RX Ctrl" tab, select "VOX". Note that you can adjust the VOX threshold with the slider that appears below the Audio Level indicator at the bottom of the EchoLink screen. Audio coming from the EchoLink internet connection will transmitted by the SignaLink when it is above the VOX slider level.
 - On the "TX Ctrl" tab, select "External VOX". On the "Signals" tab, under "Tone Burst", select "Send at the beginning of each TX". The default frequency is fine, but the duration should be set to 50-100ms. Note that we are using this "tone burst" feature to switch the SignaLink into transmit before the voice is passed to the unit for transmission. This will prevent the first part of the voice transmission from being cutoff, which can sometimes happen if audio levels are too low, or the radio switches to transmit slowly. If you set the tone burst duration properly (you may need to experiment with it), then the tone will activate PTT but not actually be transmitted by the radio due to its short duration.

5. Click OK when done.

Notes / Tips

- For EchoLink and other voice modes, we generally suggest that you install special jumper "JP4" inside the SignaLink USB. This will increase the PTT sensitivity of the unit and improve operation on low level voice signals. You can also increase the Windows "Wave" or "Application" control to improve the overall level of the signal and PTT operation. However, this will likely require you to decrease the SignaLink's "TX" knob to lower the drive to the radio, and you may find that the TX knob is a little "touchy" to adjust.
- EchoLink is one of the more complicated applications supported by the SignaLink. Because of this, we strongly suggest that you confirm that the SignaLink is able to Transmit and Receive using DigiPan (or a similar, simple PSK31 program) BEFORE attempting to use EchoLink. If you can receive PSK31 with DigiPan (or at least see the audio on the waterfall display) and transmit a steady test tone, then any problems you experience with EchoLink will likely be due to incorrect EchoLink setup, a problem with the server connection, or operator error.
- EchoLink is used with the SignaLink when you cannot be in front of the computer/radio system that the SignaLink is attached to. This means that you will be using a mobile radio/HT to remotely communicate with your base radio that has the SignaLink and computer attached. If you are going to be sitting at the computer/radio system that has the SignaLink attached, then you would normally use a headset (plugged into the computer's soundcard) to talk through the EchoLink system without using the SignaLink.

<u>TOP</u>

FLdigi

<u>NOTE:</u> Do NOT use the Setup Wizard interface to configure FLdigi. Close the Wizard by clicking Finish and follow the steps below.

- 1. Click the "Configure" menu and select "Config Dialog".
- 2. In the new window that opens, click the "+" symbol next to the "Soundcard" section to expand it.
- 3. Click "Devices".
- 4. On the right-hand side of the configuration window, click the "PortAudio" check-box to enable it.
- 5. Select the SignaLink's "Line USB Audio Codec" sound card for Capture.
- 6. Select the SignaLink's "Speakers USB Audio Codec" sound card for Playback.
- 7. Click the SAVE button to save your settings, then click the CLOSE button (be sure to save your settings before closing this window!).

<u>TOP</u>

HamScope

- 1. Click the "Settings" menu and select "General Setup".
- Select "USB Audio Codec" for BOTH the "Input" and "Output" soundcard (upper right corner of setup screen). If using Windows Vista/7/8.x/10, then you'll need to select "Speakers - USB Audio Codec" for "Output" and "Microphone - USB Audio Codec" for "Input".
- 3. In the "PTT Control Setup" box, select "None" for the COM Port, "PTT Using" and "Hard Key CW using". Uncheck the "PTT to Rig Control" selection box.
- 4. On the left side of the setup window, uncheck the "MMTTY FSK mode" selection box.
- 5. Rig Control Setup should be set to "None" unless you have a CAT interface.
- 6. Click OK when done.

Notes / Tips

• If you are running Windows ME/2000/XP then you should change the Sample Rate shown to 12000 to avoid any possible sample rate offset errors. The default setting of 11025 is fine for newer versions of Windows

<u>TOP</u>

MMTTY

- 1. Click the "Options" menu and the click "Setup MMTTY".
- 2. In the Setup window that opens, click on the SoundCard tab.
- 3. Under "Reception", select "USB Audio Codec".
- 4. Under "Transmission", select "USB Audio Codec"
- 5. Click OK.

Notes / Tips

• If the "Digital Output" slider on the TX tab (Setup page) is set too low, then the SignaLink will not transmit. The default setting of 75% works just fine.

<u>TOP</u>

MRP40

- 1. At the top of the MRP40 main screen click the "Options" menu, then click "TX Settings", and then click "Send via soundcard".
- 2. In the "Soundcard" window that opens, click the "Select Rx Soundcard" drop down menu and select "Line USB Audio Codec". Next, click the "Select Tx Soundcard" drop down menu and select "Speakers USB Audio Codec". Once you have selected both the RX and TX sound card, click the "X" in the upper right corner of the window to close it.
- 3. In the RS232 Com Port Configuration window that is open, the default settings should be used so that no COM Port is selected (the SignaLink does *NOT* use a COM Port). The "COM Port Number" should be "0" and "Disable PTT function" should be checked. Click the "X" in the upper right corner of the window to close it.

4. This completes the setup of MRP40. Please take some time to read the program's documentation so that you know how to use it properly.

<u>TOP</u>

RMS Express / WinLink Express - WINMOR

- 1. Click the drop-down menu to the right of "Open Session" and select "WINMOR WL2K".
- 2. Click "Open Session". (click on the text)
- In the new window that opens, select "USB Audio Codec" for the "WINMOR Capture Device" and "WINMOR Playback Device". If using Windows Vista/7/8.x/10, then you'll need to select "Speakers - USB Audio Codec" for the "WINMOR Playback Device" and "Microphone -USB Audio Codec" for the "WINMOR Capture Device".
- 4. Click the Update button.

<u>TOP</u>

HRD / DM-780 / Digital Master 780

- 1. Press the F8 key to open the Program Options screen, or go to "Tools" then "Program Options".
- 2. In the new window that opens, click the "Soundcard" tab.
- 3. Under "Input", select "USB Audio Codec". If using Windows Vista/7/8.x/10, then you'll need to select "Microphone USB Audio Codec" for Input.
- 4. Under "Output", check the "Use Input Device" check box to set the output sound card to the same one used for the input side.
- 5. If available in your version of DM-780 (newer versions don't have this option), under the "Output" attenuator, select "Odb". Do NOT select any other setting here, or the audio output will be lowered and the SignaLink's PTT circuit may not function correctly.
- 6. Click the "PTT" tab and select "ROC" if your version of DM-780 displays this option. If it does not, then select "None Via soundcard PTT or radio VOX".
- 7. Close the setup window when done.

Notes / Tips

- The SignaLink doesn't handle CAT / CIV rig control, so if you want to use the CAT / CIV rig control feature offered by HRD, you MUST have a separate CAT / CIV interface cable connected between your computer and radio.
- Do not click the "Connect" button in HRD unless you have a separate (and properly configured) CAT / CIV interface, or you will receive a "Can't connect" type error message.
- The SignaLink can be used with DM-780 / Digital Master 780 part of HRD to operate all supported sound card modes. If you do not have a separate CAT / CIV interface, then you will not be using HRD except to start DM-780. To start DM-780 from within HRD, simply

close the "Connect" window you see when HRD first starts, and then click the DM-780 icon in the upper left corner of the HRD screen.

• For CW operation, depending on the program version that you have, you must select either "MCW" or "CW (SSB)".

<u>TOP</u>

WSJT-X

- 1. Click File, then click Settings.
- 2. In the new window that opens, click the General tab and enter your call in the My Call text box.
- 3. Click the Radio tab and select "None" in the Rig drop-down menu. Select "Vox" as the PTT Method. Note that your radio's VOX setting should be OFF. This setting simply allows the SignaLink USB to control PTT
- Click the Audio tab and select "USB Audio Codec" for both the Input and Output sound card. If using Windows Vista/7/8.x/10, then you'll need to select "Microphone - USB Audio Codec" for "Input" and "Speakers - USB Audio Codec" for "Output".
- 5. Click the OK button to close the Settings window.
- 6. Set the "PWR" slider on the WSJT-X main window (right-hand side of screen) to the second notch from the top (roughly -5.1db). Note that if you lower this slider too much the SignaLink USB will NOT switch into transmit! See details below.
- 7. WSJT-X is a complex program so please take some time to read the WSJT-X users guide!

Notes / Tips

- The WSJT-X "PWR" slider can be lowered from the above recommended setting if adjustment
 of the SignaLink's TX knob is touchy. However, it should be understood that the "PWR" slider
 directly affects the Window's Playback "Application" level slider for the SignaLink's sound
 card, so lowering it too much will prevent the SignaLink's PTT circuit from activating. A PWR
 slider setting of roughly -5.9db is about equal to the normally recommended setting of 50%
 on the "Application" slider, and you can lower the PWR slider to around -18db before PTT
 stops working. We would recommend that you keep the PWR slider at least a couple db
 above this threshold so that PTT activates reliably.
- Your computer's clock MUST be synchronized using a free clock synchronizing utility or you will be unable to make any contacts. See the <u>WSJT-X website</u> for details.
- The SignaLink doesn't handle CAT / CIV control, so if you want to use the CAT / CIV rig control feature offered by WSJT-X, then you MUST have a separate CAT / CIV interface cable connected between your computer and radio. You will need to configure the various CAT / CIV parameters on the "Radio" tab according to your radio manual and/or the instructions provided with your CAT / CIV interface.
- If applicable to your radio (some options may be grayed out), the "Transmit Audio Source" setting should be set to "Rear/Data" if the SignaLink is attached to your radio's Data or Accy Port. Otherwise, if applicable to your radio, it should be set it to "Front/Mic". Also, if applicable to your radio, the "Mode" selection should be set to "Data/Pkt" if your radio

provides a "Data" type mode and the SignaLink is attached to the radio's Data or Accy Port. Otherwise, if applicable to your radio, the "Mode" selection should be set to "USB" or "None".

- The PTT Method MUST be set to VOX if the SignaLink is attached to the radio's Data or Accy Port. If the SignaLink is attached to your radio's Microphone jack then you can use the "CAT" PTT option if you prefer.
- Please note that Tigertronics does not provide support for CAT / CIV interfaces. You will need to refer to your radio manual and/or the instructions provided with your CAT / CIV interface.

<u>TOP</u>

Introduction

This page contains links to many different programs that can be used with the SignaLink interface. Tigertronics in no way endorses or supports any of the programs listed here. We have compiled this list only to help you in locating programs that are known to work with sound card interfaces. Most programs work very well and provide excellent performance, but as you should expect, some programs will work better than others and some will not work at all with certain computer / sound card configurations. We recommend that you download and evaluate several programs to determine which ones work best for you. If you have questions about a specific program, or if you have trouble getting it to work with your system, then you will need to contact the author of the program directly for help. Questions or problems with the operation of the SignaLink should of course be directed to our <u>Technical Support</u> <u>Department</u>.

How To Find What You Are Looking For

The programs on this page are listed in alphabetical order by program name. To the right of each program name you will find information about the program, such as the modes and Operating Systems supported. To help you find what you are looking for, we recommend that you use your web browsers "Find" feature (Netscape/Mozilla users press "CRTL-F") to search this page for specific "key words". These keywords can be the mode that you are interested in (PSK, MT63, etc.), the program name (or any part of it), the operating system you want to use, etc. When you find a program that you would like to download, simply click on the program name. You will then be transferred automatically to the authors web site or another page where the program can be downloaded.

Windows OS Compatibility

We have found that most communication programs that work in Windows XP also work just fine in Windows Vista, Windows 7, Windows 8.x, and Windows 10. However, some programs cannot access the Windows software volume controls properly in these later versions of Windows. Because of this, we suggest that you adjust the software volume controls only through Windows instead of your program's "Adjust Waterfall Drive" or "Adjust Transmitter Drive" (or similarly worded) menus. Instructions for doing this in these newer versions of Windows can be found on our <u>SignaLink Support</u> page.

Please note that we have marked programs as being compatible with newer version of Windows (7/8.x and 10) when the program's specifications say that it's compatible, or when testing and/or customer feedback indicates that it is. Again, most communication programs that work in Windows XP also function just fine in Windows 7, 8.x and Windows 10, so

please don't think that a program won't work simply because we haven't yet marked it as being compatible.

Sound card program setup for the SignaLink USB

Be sure to see our <u>instructions for configuring your communication program</u>. If we don't have the program that you are using listed, then be sure to see the "<u>General Setup</u>" section as it applies to ALL sound card programs.

<u>AALog</u>	Shareware Windows 9x/ME/NT/2000/XP/Vista/7/8
	Logging & PSK31, CW, RTTY, Voice
	Note: Some modes require the CWType, CWGet, TrueTTY, and AAVoice programs from the same author.
<u>AAVoice</u>	Shareware Windows 9x/ME/NT/2000/XP/Vista/7/8
	Digital voice processor. Uses prepared wav- files for voice transmission.
<u>AGW Packet</u> <u>Engine</u>	Freeware & Shareware Windows 9x/2000/NT/XP/Vista/7/8/10
	300, 1200 & 9600 baud Packet, TCP/IP, APRS
	NOTES:
	1. You will also need the "AGW Terminal" program to operate Packet. This program displays what you see on the screen.
	2. APRS requires a Windows APRS program such as AGWTracker, WinAPRS, UIView, etc.

AGWTracker	Shareware Windows 98/ME/2000/XP/Vista/7/8
	APRS with many features including weather, bread crumb trails, distance calculator, zoom, and more.
<u>AirNav ACARS</u>	Commercial Demo Windows 9x/ME/NT/2000/XP/Vista/7/8
	Real-time ACARS decoding with downloaded aircraft pictures
<u>AirNav Selcal</u>	Commercial Demo Windows 9x/ME/NT/2000/XP/Vista/7/8
	Real-time Aviation HF Selcal transmission decoding
Analyzer 2000	Shareware Windows 9x/ME/NT/2000/XP/Vista
	Audio Frequency Analyzer, CW and PSK31
<u>ChromaPIX</u>	Freeware Windows 9x/ME/NT/2000/XP
	SSTV
<u>ChromaSOUND</u>	Beta Windows 9x/ME/NT/2000/XP
	AF DSP Filter
<u>cocoaModem</u>	Freeware Mac OS X 10.4 or newer
	RTTY, PSK31, MFSK, Hellschreiber, CW, Sitor-B, HF Fax, and Synchronous AM reception.
	NOTE: Earlier versions of cocoaModem are available for older OS X operating systems.
<u>CWGet</u>	Shareware Windows 9x/ME/NT/2000/XP/Vista/7/8
	CW (reception only)

<u>CWType</u>	Freeware Windows 9x/ME/NT/2000/XP/Vista/7/8
	CW
<u>DAQARTA</u>	Shareware Windows 9x/ME/NT/2000/XP/Vista/7/8
	Data Acquisition and Real-Time Analysis Scope - Spectrum - Spectrogram - Signal Generator
<u>Digipan</u>	Freeware Win9x/ME/2000/XP/Vista/7/8/10
	PSK31(BPSK/QPSK), FSK31, PSK63
	NOTE: The digipan website appears to be down as of June 2020, so we have provided a direct download link.
DTMF Real-	Shareware DOS
Time Decoder	DTMF
<u>EchoLink</u> ®	Freeware Windows 9x/ME/NT/2000/XP/Vista/7/8/10
	VoIP (Voice Over IP). Communicate with other Hams around the world through the Internet.
EchoStation	Shareware Windows 9x/ME/NT/2000/XP/Vista/7/8
	Repeater control program (duplex or simplex operation). Can also be used to automatically announce club events or ARRL bulletins. Makes a great emergency simplex repeater.
<u>Fldigi</u>	Freeware Linux, Free-BSD, OS X, Windows XP/Vista/7/8/10
	CW, DominoEX 4/5/8/11/16/22, Feld-Hell, FSK-Hell, FSK-Hell 105, MFSK-8/16/16- pix, PSK31, QPSK31, PSK63, QPSK63, PSK125, QPSK125, PSK250, QPSK250,

	Olivia, RTTY, Throb1/2/4, ThrobX-1/X- 2/X-4, Thor4/5/8/11/22, 8-PSK		
	Based on customer feedback, FLdigi is one of the most popular multi-mode programs available today. This is due to the wide range of modes that it supports and the fact that it's available for multiple Operating Systems. It's also gaining popularity for EMCOMM (Emergency Communications) use with MT-63 and the new 8-PSK mode.		
<u>FFTDSP</u>	Shareware DOS		
	AF DSP software for detecting weak radio signals in real-time (EME, SETI, etc.)		
FFT Properties	Shareware Windows 9x/ME/NT/2000/XP/Vista/7/8		
	Real time Scope/Spectrum analyzer		
<u>FFT Spectra</u> SofTest Series	Commercial Demo Windows 9x/ME/NT/2000/XP/Vista/7/8		
	Audio Frequency generator and analyzer - Acoustic Real Time Analyzer/Sound Monitor, FFT Audio Spectrum Analysis & Data Acquisition Software, Ultra-High Resolution Complex Signal Analysis High- Performance Data Acquisition Software, Multimedia/Audio Test Software		
<u>Flexnet</u>	Freeware/Shareware DOS, Windows 9x/ME/NT4/2000		
	1200 & 9600 baud Packet		
	NOTE: Click <u>here</u> to go directly to the Flexnet download page.		
<u>GNASP1</u>	Freeware Windows 9x/ME/NT/2000/XP		
	DSP filter & analyzer		
<u>Ham Radio</u> <u>Deluxe</u>	Commercial Windows ME/2000/XP/VISTA/7/8/10		

	CAT control (tuning, memories, etc.), built- in logbook, integrated DX cluster, customizable band layouts, satellite tracking interface and scanning. Multiple instances of HRD can be ran at the same time. Ham Radio Deluxe is a suite of programs providing CAT control and digital sound card operation. A "CAT" / CIV interface is required if you want to control your radio, but it is NOT required for digital			
	operation (see Digital Master 780 below). <u>NOTE:</u> HRD / DM-780 was purchased by <u>HRDSoftwareLLC.com</u> in 2011 and is now a commercial program.			
<u>Ham Radio</u> <u>Deluxe / Digital</u> Master 780	Commercial Windows ME/2000/XP/VISTA/7/8/10			
Master 780	PSK31, CW, DominoEx, MFSK, MT63, Olivia, RTTY and Throb. Logbook with eQSL, ADIF, Cabrillo, Callsign Lookup and Google Earth interfaces.			
	Digital Master 780 is the digital operations part of the Ham Radio Deluxe (HRD) suite. It can be used with the SignaLink to operate all of the supported modes WITHOUT the need for a CAT interface. Click <u>here</u> for setup information.			
<u>HamScope</u>	Freeware Win9x/ME/2000/XP/VISTA/7/8/10			
	PSK31(BPSK/QPSK), MFSK16, RTTY, CW, ASCII, Packet (requires <u>AGW Packet</u> <u>Engine</u>)			
<u>Hellschreiber</u>	Freeware Win9x/NT			
	Feldhell			
<u>HFTerm</u>	Freeware Beta Linux			
	Pactor 1 (Transmit & Receive!), Amtor, GTOR and RTTY			

<u>JT65-HF</u>	Freeware	Win9x/NT/2000/XP/Vista/7/8
	Transmit an the HF band quite popula performance	d Receive the JT65A protocol on ls. This new mode is becoming ar due to its excellent e on HF.
JVComm32	Shareware	Win9x/NT/2000/XP/Vista/7/8/10
	WeFax (RX RTTY, SYN	Conly), SSTV, (RX / TX), NOP and NAVTEX
MIXW	Shareware 9x/ME/NT4/	Windows 2000/XP/Vista/7/8/10
	SSB, AM, F FSK31, RT (RX only), A Hellschreibe MT63	FM, CW, BPSK31, QPSK31, TY, Packet (HF/VHF), Pactor AMTOR (FEC), MFSK, er, Throb, Fax (RX only), SSTV,
<u>MMSSTV</u>	Freeware	Windows XP/Vista/7/8/10
	SSTV	
<u>MMTTY</u>	Freeware	Windows XP/Vista/7/8/10
	RTTY	
<u>MRP 40</u>	Commercial 9x/ME/2000	Windows /XP/Vista/7/8/10
	Transit and 60WPM. A say that this	receive CW from .4 to uto Tuning. Many customers is the best CW program ever.
<u>Mscan Meteo</u>	Commercial 9x/ME/2000	Windows /XP/Vista/7/8/10
	FAX, NAV	TEX, RTTY reception
MT63 Terminal	Freeware	Windows 9x/ME/ 2000/XP
	MT63 - The operation!	e mode of choice for MARS

<u>MultiKeyer</u>	Freeware	Windows 9x/ME/NT/2000/XP
	CW/Voice H Scatter. Sim	Keying for EME and Meteor ilar to WSJT.
<u>Multimode</u>	Shareware	Mac OSX 10.1 or later
	PSK31, RT ACARS, Pa	ΓΥ, Fax, WeFax, SSTV, cket, DTMF and more
	NOTE: A v available for	ersion of Multimode is also MacOS 8 and 9.
<u>MultiMon</u>	Freeware	Linux
	This program following m 2400 Baud A HAPN, 9600 POCSAG (5 Miscellaneo	n supports reception of the odes: AX.25, 1200 Baud AFSF AFSK (2 variants), 4800 Baud 0 Baud FSK (G3RUH), 512, 1200 & 2400 Baud), us, DTMF, ZVEI
<u>Oscope</u>	Freeware	Unix (X, DOS)
	AF Scope &	FFT
PED	Freeware	DOS
	CW Pileup	Frainer
<u>POC32</u>	Shareware	Win9x / NT
	POCSAG	
PrecisionCW	Freeware & S 9x/ME/NT/20	Shareware Windows 200/XP/Vista/7/8/10
	Coherent CV	W
PSK31LX	Freeware	Linux
	PSK31	
<u>QSSTV</u>	Freeware	Linux
	SSTV	

<u>QuickMix</u>	Freeware	Win9x/ME/NT/2000/XP
	Nice utility th and restore m settings. Sup discontinued, a new link fo	hat allows you to quickly save hany different sets of mixer port for this program has been but the developers have posted r downloading <u>here</u> .
<u>RadioCom</u>	Commercial Demo Win	9x/ME/NT/2000/XP/Vista/7/8
	Filter-Analyz Scope, Audic SSTV, PSK (Synop-Decoc	er, Time Spectroscopes, Dual p-Recorder, RTTY, CW, FAX, PSK31, Q- and B-PSK), der, 3D Scanner and Sattracking
RMS Express	Freeware	Windows XP/Vista/7/8/10
	Send and rece 2000 system HF, and 1200 See our <u>FAQ</u>	eive email through the WinLink using the WINMOR mode on) baud Packet on VHF/UHF. for more details on this.
<u>SeaTTY</u>	Shareware	Windows 9x/NT/2000/XP/Vista
	RTTY, NAV	TEX, and WEFAX (HF)
<u>Software for</u> Sound Analysis	Freeware [(9x/NT/2000)	OOS & Windows Versions
	Audio Freque	ency Analyzer
	NOTE: Thes slower compo- version).	e programs are good for older, uters (486 processor for DOS
<u>Spectran</u>	Shareware(?)	Windows 9x/NT/2000/XP
	Real time or waterfall disp modes. Can	deferred spectral analysis and blay for weak signal work with WSJT.
<u>SSTV32</u>	Shareware	Windows 9x/ME/2000/XP
	SSTV	

Swezey Filter	Shareware	Windows 9x/ME/2000/XP
	Audio Freque and SWLs	ency DSP filtering for Hams
<u>TrueTTY</u>	Shareware 9x/ME/NT/200	Windows 00/XP/Vista
	RTTY (Baud PSK31 (BPS) (SITOR-B, N AMTOR-AR decoding, and and UHF-PA supported in 1	ot code), ASCII (7 or 8 bits), K and QPSK), AMTOR-FEC AVTEX), SELFEC SITOR, Q (SITOR-A), DTMF I MultiFSK-16. HF-PACKET CKET (AX25) are also KISS-TNC emulation mode.
<u>UZ7HO</u>	Freeware W	indows XP/Vista/7/8/10
soundhouen	300, 600, 120 special Packe	0, 2400 baud Packet plus other t mode.
	Soundmodem programs that Engine (AGV WinLink Exp also be used v BBS, Satellite work.	a is compatible with all t work with the AGW Packet VPE). It can be used with ress for EMCOMM. It can with other software for APRS, e Packet, and regular Packet
<u>W95SSTV</u>	Shareware	Windows 9x/NT/2000
	SS1V	
<u>WinFMS /</u> FMS32	Commercial De 9x/ME/2000/X	emo Windows (P
	FMS	
<u>WinPSK</u>	Freeware	Win9x/NT
	PSK31 & PS satellite mode	K63 (includes a full duplex e).
<u>WinWarbler</u>	Freeware	Windows XP/Vista/7/8
	PSK31, PSK	53, and RTTY

<u>WriteLog for</u> <u>Windows</u>	Shareware Windows 9x/NT/2000/XP/7/8/10
	CW, RTTY, PSK31, and SSB, plus Contest Logging
<u>WSJT / WSJT-X</u>	Freeware Windows XP/Vista/7/8/10, Linux, Mac
	Very popular program for weak signal communications. WSJT supports Meteor Scatter, Tropospheric Scatter, and Earth- Moon-Earth (EME) operation.
	Modes include FT8, JT4, JT9, JT65, QRA64, ISCAT, MSK144, WSPR, JTMS, FSK441, FSK315, ISCAT, and JT6M.
<u>WXSat</u>	Freeware Win3.x / Win9x / NT
	HF and VHF WeFax (direct satellite reception!)
<u>Xmit ID</u>	Freeware DOS
	FM Transmitter Identification
<u>Zello</u>	Free / Commercial
	Windows 7/8/10 on the SignaLink or "radio gateway" side and iPhone/iPad or Android phone/tablet app on the other end.
	Zello is a popular "walkie talkie" / push-to-talk (RoIP / VoIP) program / app that lets you establish a voice link between a two way radio and a telephone, tablet or PC. It is available in both a free (personal) version and a paid (work) version.

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