

NN4ZZ SDR-Bridge V3 & CwSkimmer V2 SETUP – A quick start guide

Revision History

1-Nov-2022 - Initial version for updates to support FLEX SDR V3.x software

This guide is NOT for versions of SDR-Bridge prior to V3

This guide is NOT for versions of Flex SDR prior to V3.x

This guide is NOT for versions of CW Skimmer previous to V2.1

Table of Contents

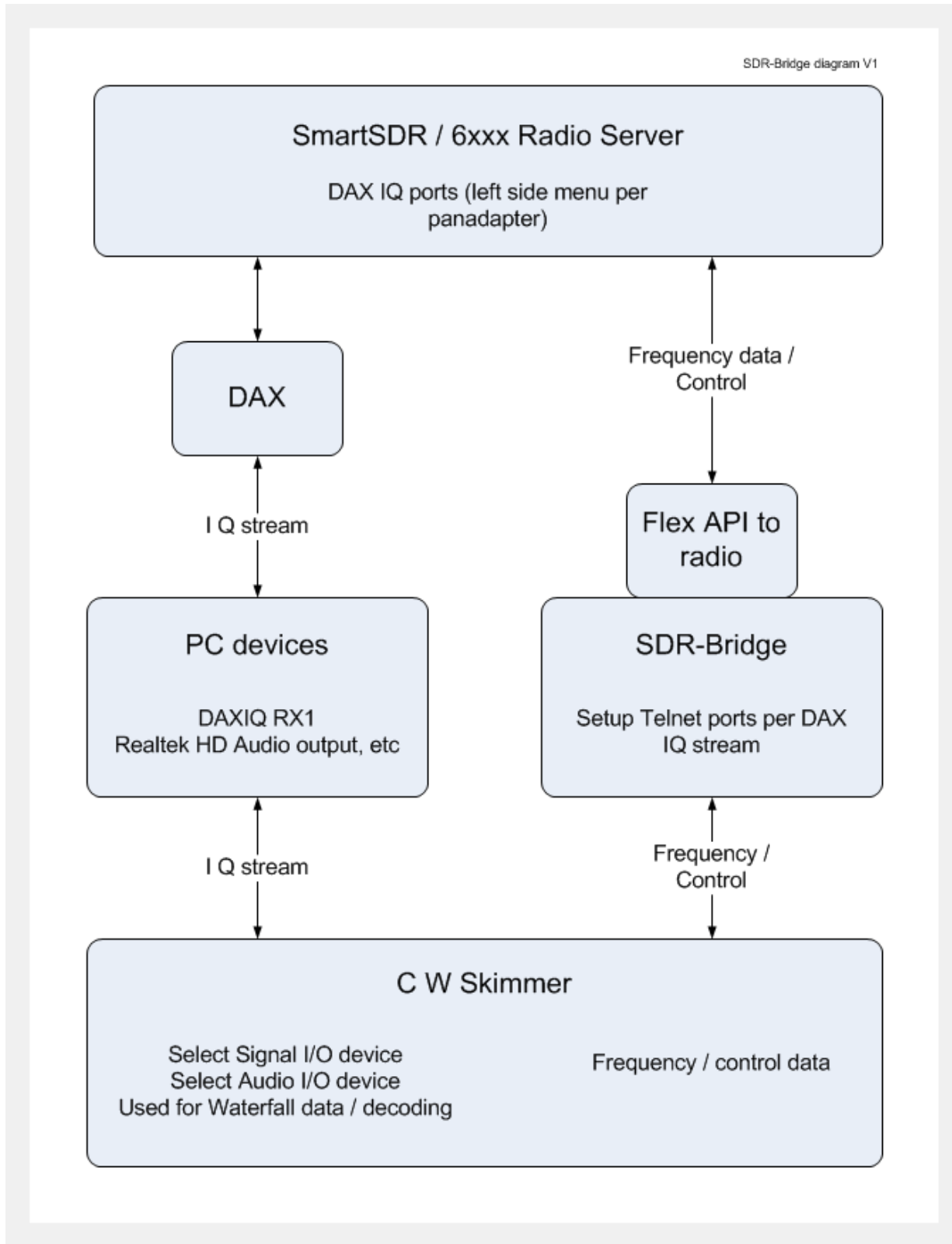
- Version information for all programs – Page 3
- Download information for CW Skimmer – Page 4
- Download information and setup for SDR-Bridge – Page 5
- SmartSDR and DAX setup information – Pages 7
- Setup information for CW Skimmer – Pages 9
- Using SDR-Bridge – Page 12
- Troubleshooting notes – Pages 13

Document Overview

This updated guide is to the new version of SDR-Bridge that supports the SDR versions V3.x and later. It works with version 2.1 of CW Skimmer. The capabilities of each program are extensive, this document will not attempt to address all of them. It is recommended that you start by getting just one instance of CW skimmer running with SDR-Bridge and then explore the possibilities and capabilities of each program. The setup is not difficult but there are a number of minor things that can cause problems. In addition to the recommended settings for each program, there is a troubleshooting section that can help if you run into difficulty.

Regards, Al / NN4ZZ - email: Al (at) nn4zz (dot) com

Simplified data flow diagram

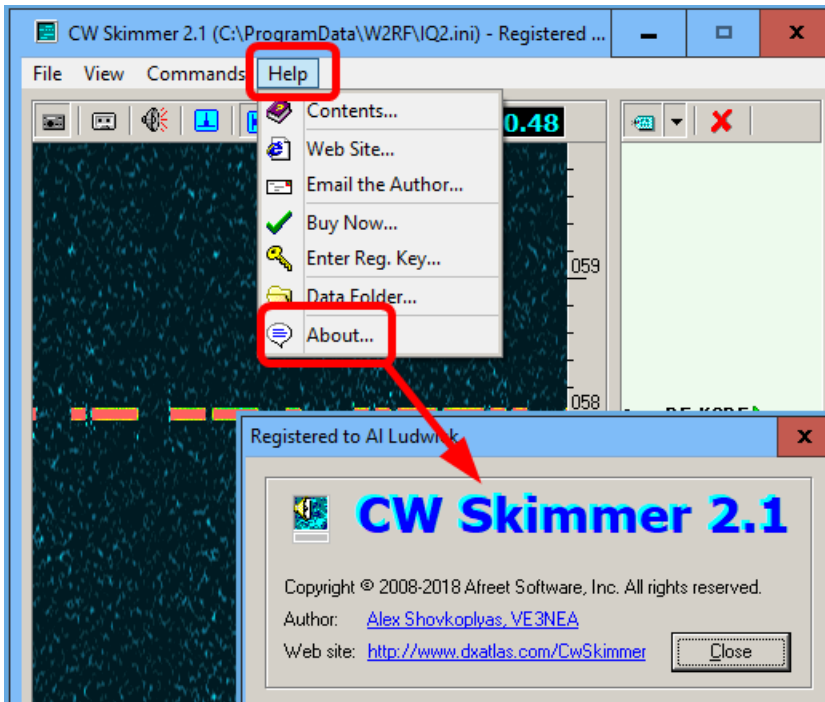


Version information for CW Skimmer, SDR-Bridge, and Flex SDR

- CW Skimmer – Version 2.1 or later
- SDR-Bridge – Version 3 or later
- SmartSDR - Version 3.x or later

CwSkimmer

Down load and install the latest version of CwSkimmer into the default directory.

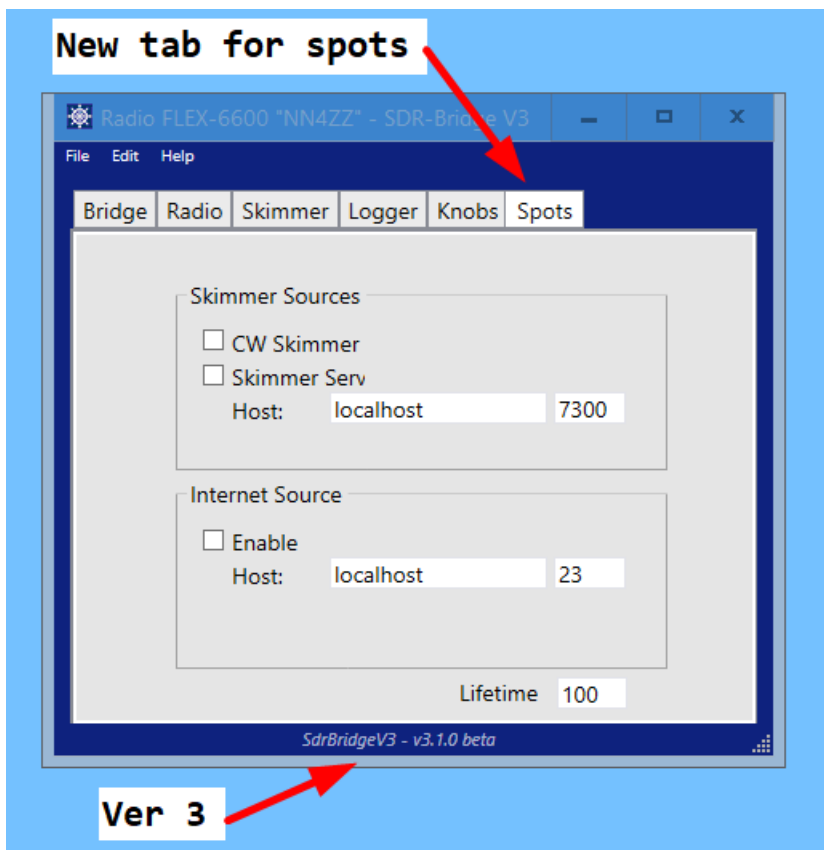


SDR-Bridge

Down load and install SDR-Bridge from:

<http://www.qrv.com/sdrbridge.html>

Ver 3 has a new feature for spots.



Note: The **Telnet port in CW Skimmer** must match the port shown here. For example IQ1 is 7310. See the CW Skimmer telnet port setup later in the document.

If you need to reset the values in this screen to the defaults, the process is described in the troubleshooting section.

Access this screen from the EDIT dropdown on the main screen.

The screenshot shows the 'SDR-Bridge Settings' window. At the top, there are two checked options: 'Feature set: Full' and 'Always on top'. Below this is the 'Skimmer assignment' section, which contains a table with four rows (IQ 1 to IQ 4). Each row has columns for 'DAX', 'Host', 'Port', and 'Call'. Below each row is a 'Path' field. At the bottom, there is an 'App paths' section with two fields: 'Skimmer:' and 'WriteLog:'.

| DAX | Host | Port | Call |
|------|-----------|------|------|
| IQ 1 | localhost | 7310 | F1EX |
| IQ 2 | localhost | 7320 | F2EX |
| IQ 3 | localhost | 7330 | F3EX |
| IQ 4 | localhost | 7340 | F4EX |

Path: %allusersprofile%\W2RF\IQ1.ini
Path: %allusersprofile%\W2RF\IQ2.ini
Path: %allusersprofile%\W2RF\IQ3.ini
Path: %allusersprofile%\W2RF\IQ4.ini

App paths
Skimmer: %programfiles%\Afreed
WriteLog: %programfiles%\WriteLog

SmartSDR

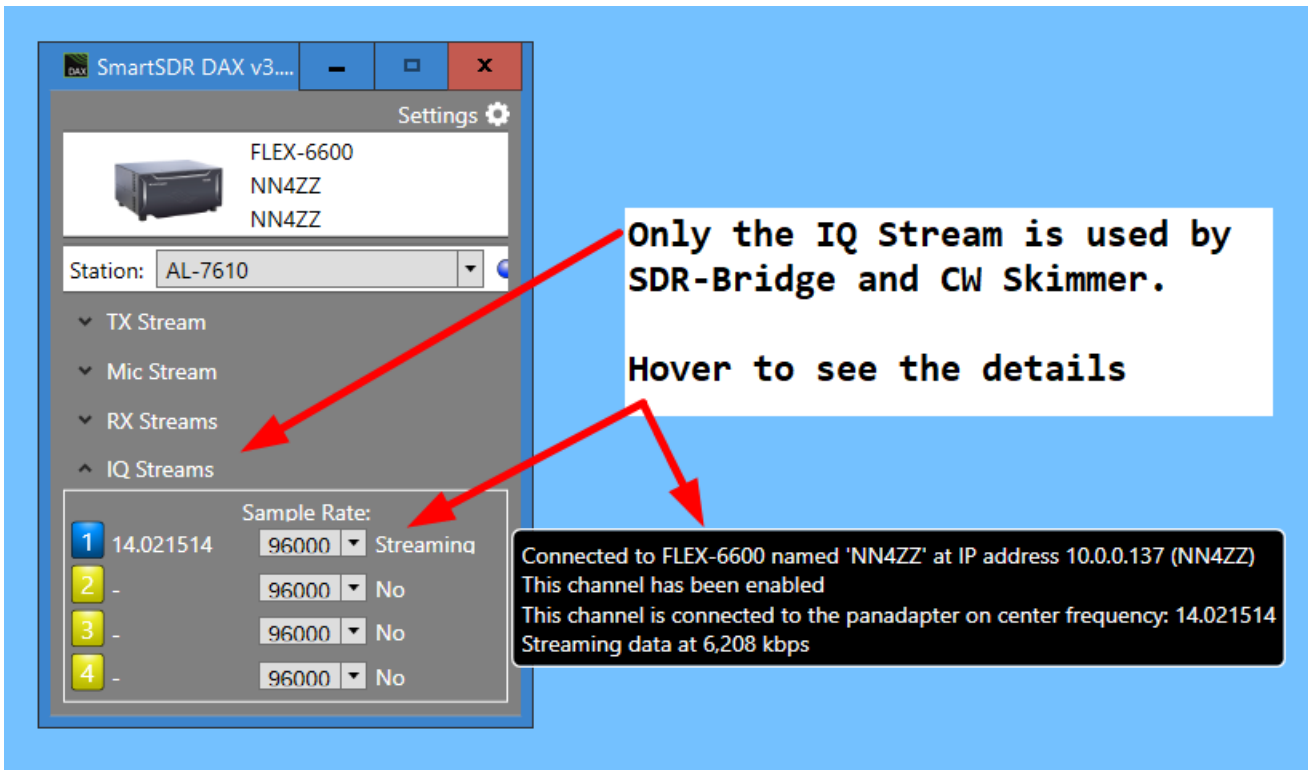
Set the DAXIQ channel on the DAX dropdown on the left side of the SDR screen.

Note: The DAX settings in the SLICE are not used for CW Skimmer, only the DAX IQ setting on the left side of the SDR screen is used.



DAX control panel

The DAX V3 control panel should look like this:

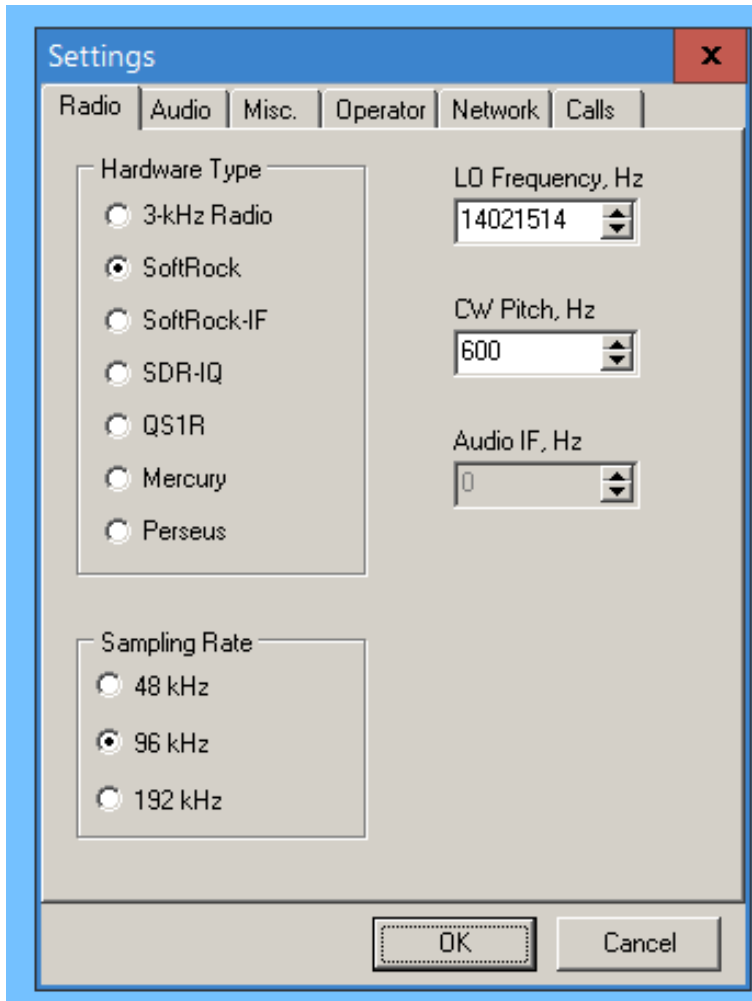


The only DAX setup needed for CW Skimmer is the IQ stream. Set the Sample rate to 96000. Note about the FREQUENCY displayed in the DAX control panel. It is the **center frequency of the PANADAPTER**, not the frequency of the slice receiver.

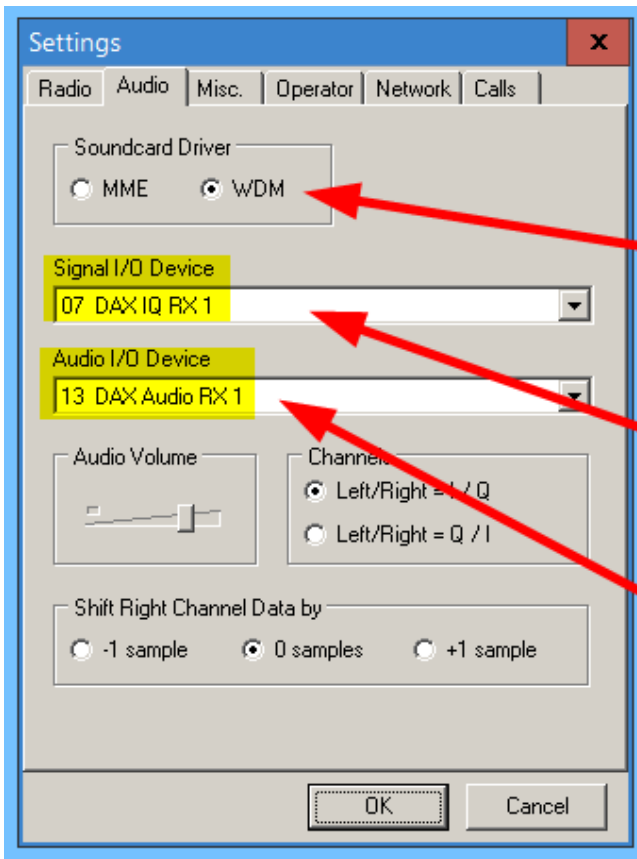
CW Skimmer Setup

Radio – SoftRock, Sampling 96KHZ, CW Pitch to match SmartSDR

RADIO Tab



Audio TAB – your DAX IQ device may be named slightly different.



WDM is the preferred driver. MME is an older driver and may cause latency issues or a jittery screen

Look for something similar with DAX IQ RX in the name.

Note: Do NOT set the Audio I/O device to the same device as the Signal I/O device. This will cause issues. It should be set to one of your PC audio

Network TAB

Settings

Radio | Audio | Misc. | Operator | Network | Calls

Enable Telnet Server
Port: 7310

Require Password
Password:

Do not send callsigns without "CQ"

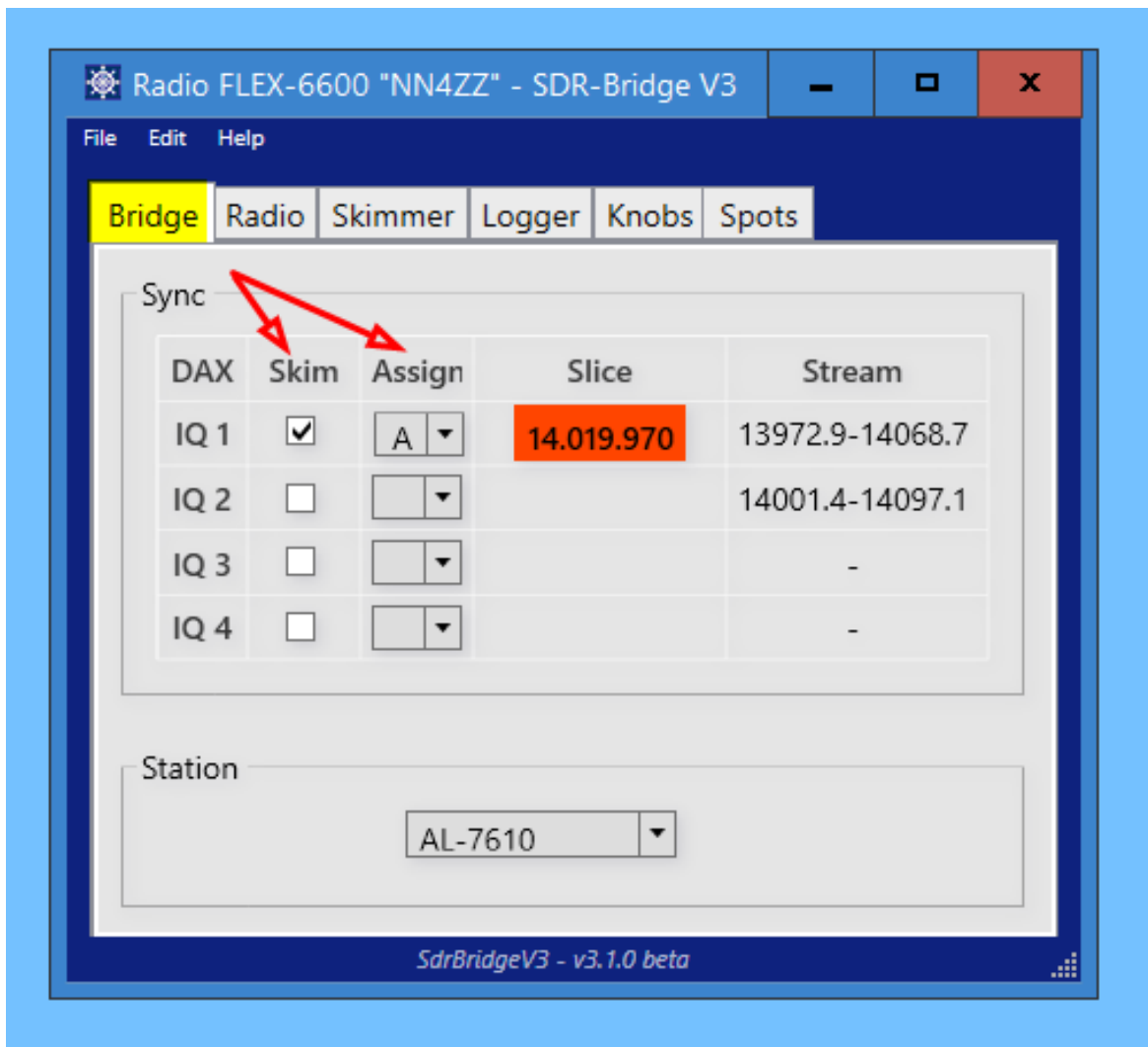
Allow SKIMMER commands
 Only to/from this User:

Send Spectrum via UDP
Source Name:
Destination Address:
Destination Port:

OK Cancel

Using SDR-Bridge

Start your testing by setting up just one CW Skimmer window.



Steps to set up a CW Skimmer window

- Select/Assign a SLICE
- Check the SKIM box to start up the window

NOTE: There are options on the Radio and Skimmer tabs that affect how the program operates. There are options you can set by RIGHT clicking on the SLICE frequency. To get started you can just use the defaults. Review the official SDR-Bridge documentation to see what works best for the way you operate.

Troubleshooting notes:

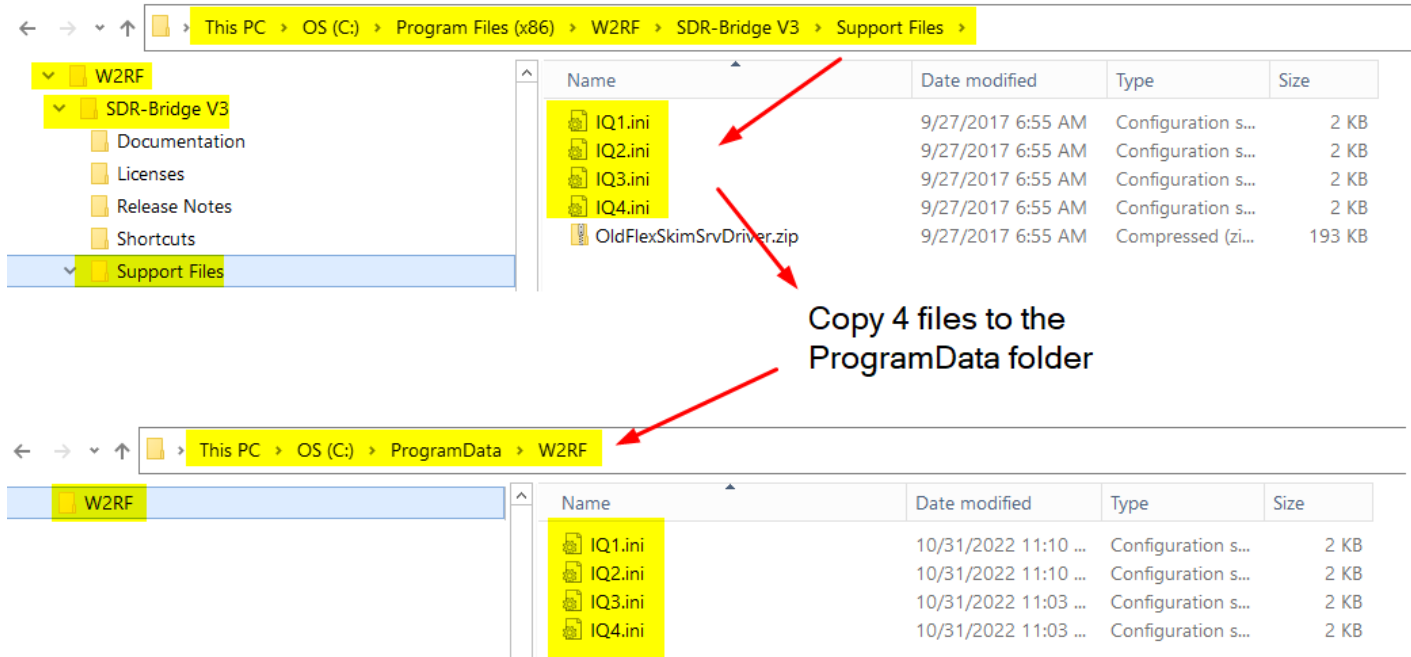
- Verify the versions of SDR-Bridge, CW Skimmer, and Flex SDR. It is easy to get an older copy loaded that will probably not work. It's also easy to launch an older copy since you may have multiple versions on your PC.
- Don't start up CW Skimmer from a shortcut. Let SDR-Bridge start up CW Skimmer when it starts. Otherwise you can have multiple copies and some confusion.
- If there is no data being sent to CW Skimmer, check to be sure the DAX IQ channel is set.



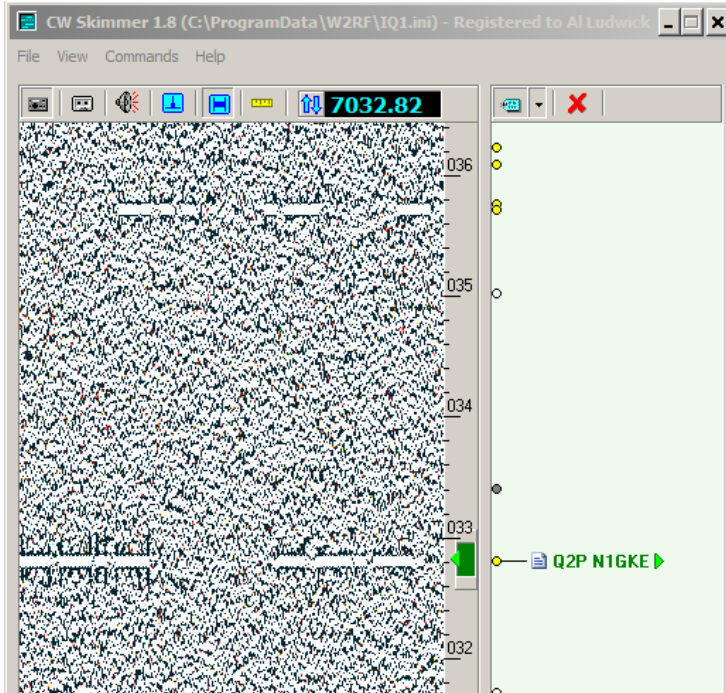
- Sometimes the CW Skimmer instance needs to be manually closed and re-opened to start working. It may even be hard to close (give errors) and have to be stopped with the task manager. Usually after closing the skimmer it will start up normally from the check box in SDR-Bridge.

- Win 10 users – it has been reported in one case SDR-Bridge and CWS were working fine but stopped transferring IQ data on just one of the IQ channels. After much checking no cause was found but a PC reboot corrected the issue.
- If rebooting doesn't fix the flaky channel problem, another option is to change to another channel. For example if you are using DAXIQ1 then try 2 or 3. You have to set that in 2 places.
 - o Select the DAXIQ channel in the SDR screen
 - o Activate the skimmer with the slice desired in the IQ option on the SDR-Bridge "Bridge" tab.
- If skimmer is up but not displaying the calls and other data, be sure to check the TELNET settings tab on CW Skimmer. Be sure they match the telnet settings in SDR-Bridge. Also check program versions.
- If the SDR-Bridge settings are wrong, or get set wrong, you can reset them to the defaults by doing the following. **To restore default settings, delete the contents of [user]\appdata\local\w2rf.**
- If the skimmer frequency is slightly off from the slice receiver, check to see if your CW Skimmer CW Pitch matches the pitch setting in SmartSDR. Be aware that Skimmer currently may be off a bit due to the granularity for synching.
- Sometime the Skimmer does not display the same frequency data as your slice receiver. You can often re-synch them by shaking the slice receiver. (click and hold in the panadapter and move side to side)

- Sometime the Skimmer .ini file get corrupted by changing settings. If you suspect this is the problem you can overwrite them with a fresh copy the Ed provides. See the snapshot below to show where to get the fresh copy and where to paste it to overwrite the corrupted copy.

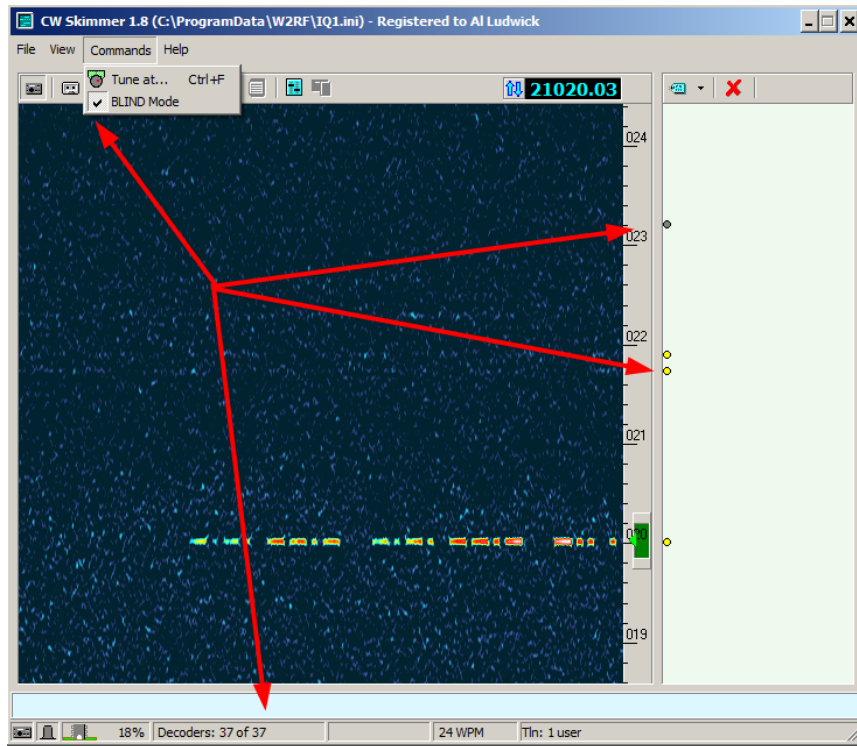


If CW Skimmer is displaying but it looks bad, check to verify that the sample rate in the DAX Control panel isn't set to 48,000. It should be 96,000

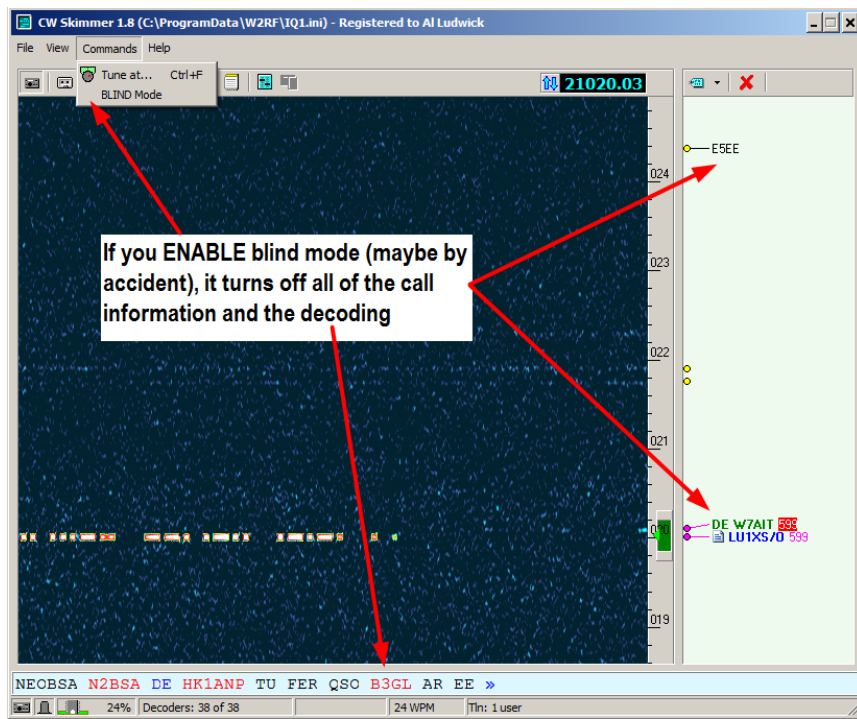


- If your CW Skimmer screen doesn't show the call information or decoded text you may have accidentally ENABLED BLIND mode. You will see the frequency displayed, the code steam, and the "dots" but NO text.

BLIND MODE = ON

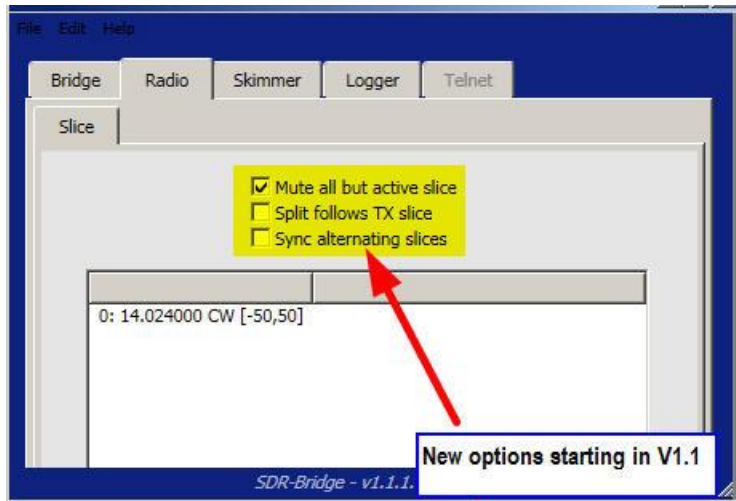


BLIND MODE = OFF

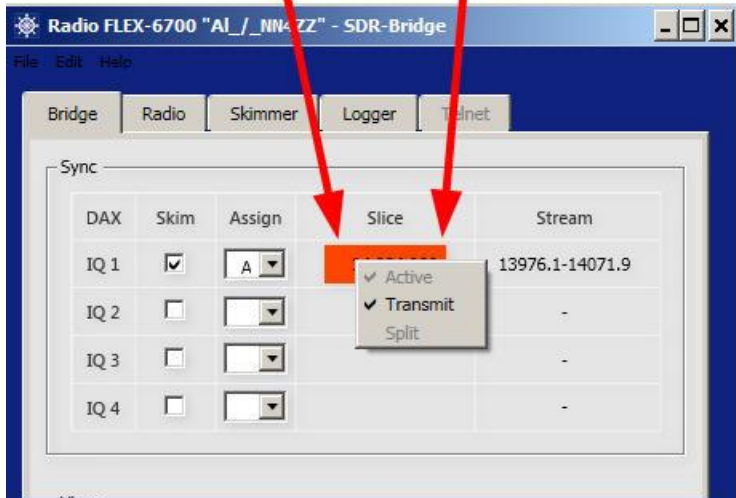


- There are some new options for working split on SDR-Bridge starting in V1.1.1. If you notice some things like muting or TX Active working differently, take a look at the new options to see if you need to make changes for your operating style.

The changes are on the BRIDGE tab and the RADIO tab.

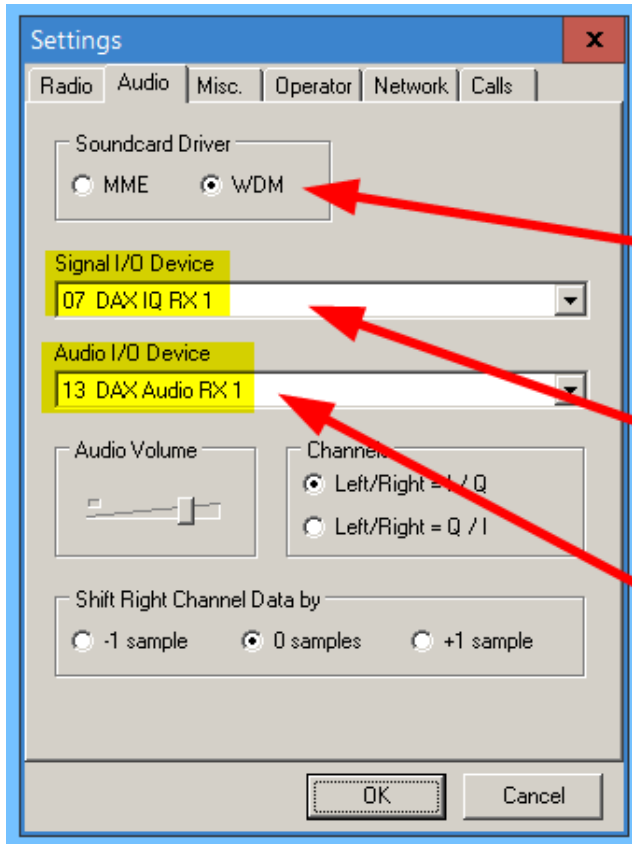


Right click on Frequency to bring these options up



- When CW Skimmer starts up you get this continuously repeating error: **Output sample rate out of range.**

Check the CW Skimmer **Audio I/O Device** on the Audio tab of the CW Skimmer settings. It should **NOT** be set to the same device as listed in the **Signal I/O Device**. Typically it is set to your audio output device but you may have to try some other settings.



WDM is the preferred driver. MME is an older driver and may cause latency issues or a jittery screen

Look for something similar with DAX IQ RX in the name.

Note: Do NOT set the Audio I/O device to the same device as the Signal I/O device. This will cause issues. It should be set to one of your PC audio

- Several users of CW Skimmer have reported that the following error message appears on program startup:

"Access violation at address 00404DD3 in module CwSkimmer.exe. Read of address 00000000."

The error occurs only on those systems where the Skimmer was installed using a regular user account on Windows, with standard privileges. The installer has to put some executable files in the Program Files folder, and some data files in the user data folder. Since the regular users are not allowed to write to Program Files, the installer runs as Administrator. As a result, the data files are placed in the administrator's data folder, not in the user's folder. This is how MS designed their security system, and this cannot be bypassed.

To fix the problem, log in as Administrator and copy the data files from admin's folder to your user's folder. For example, if your admin name is AlexAdmin, and your regular user name is AlexUser, then you copy all files from this directory

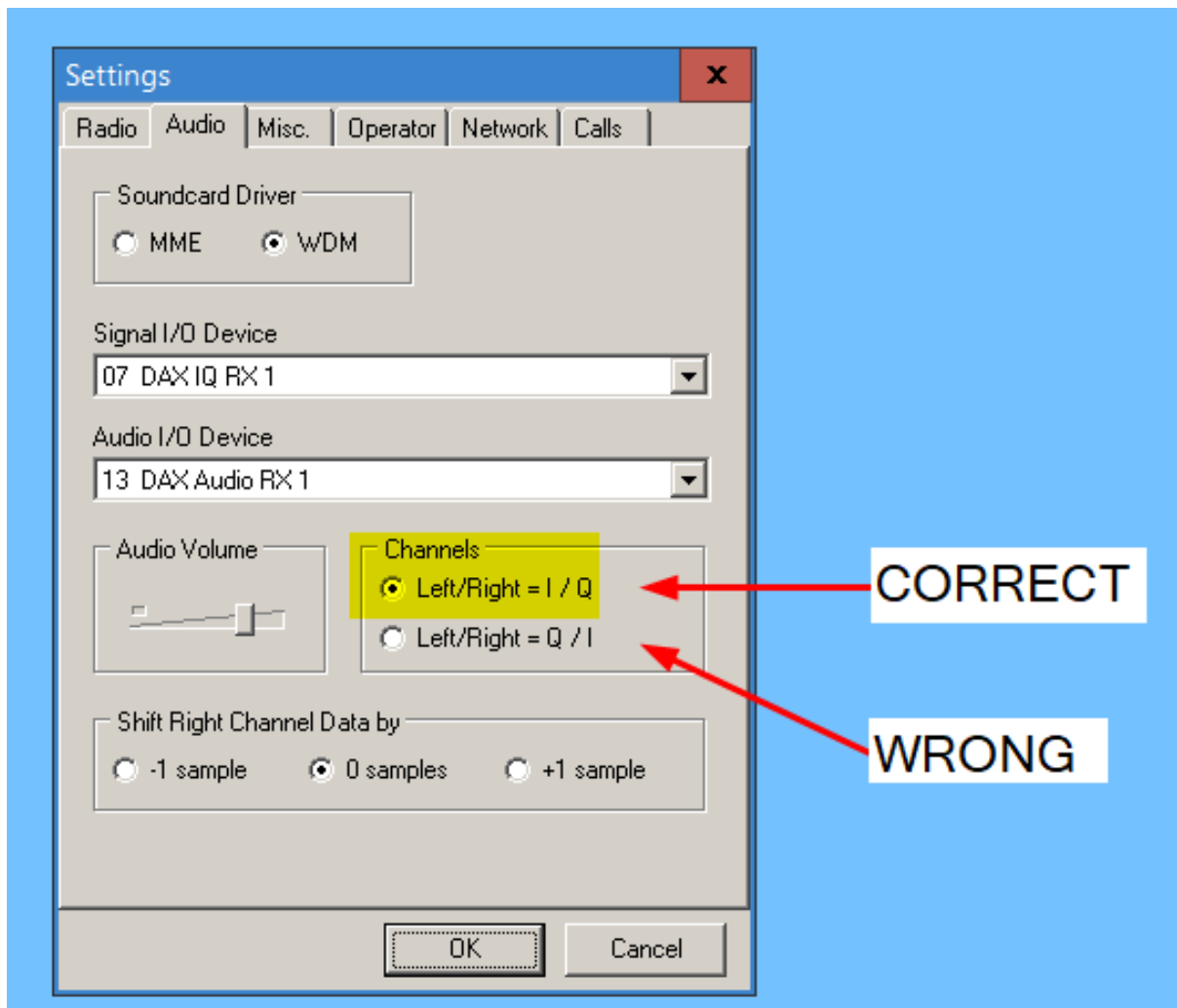
C:\Users\AlexAdmin\AppData\Roaming\Afrete\Reference

to this one:

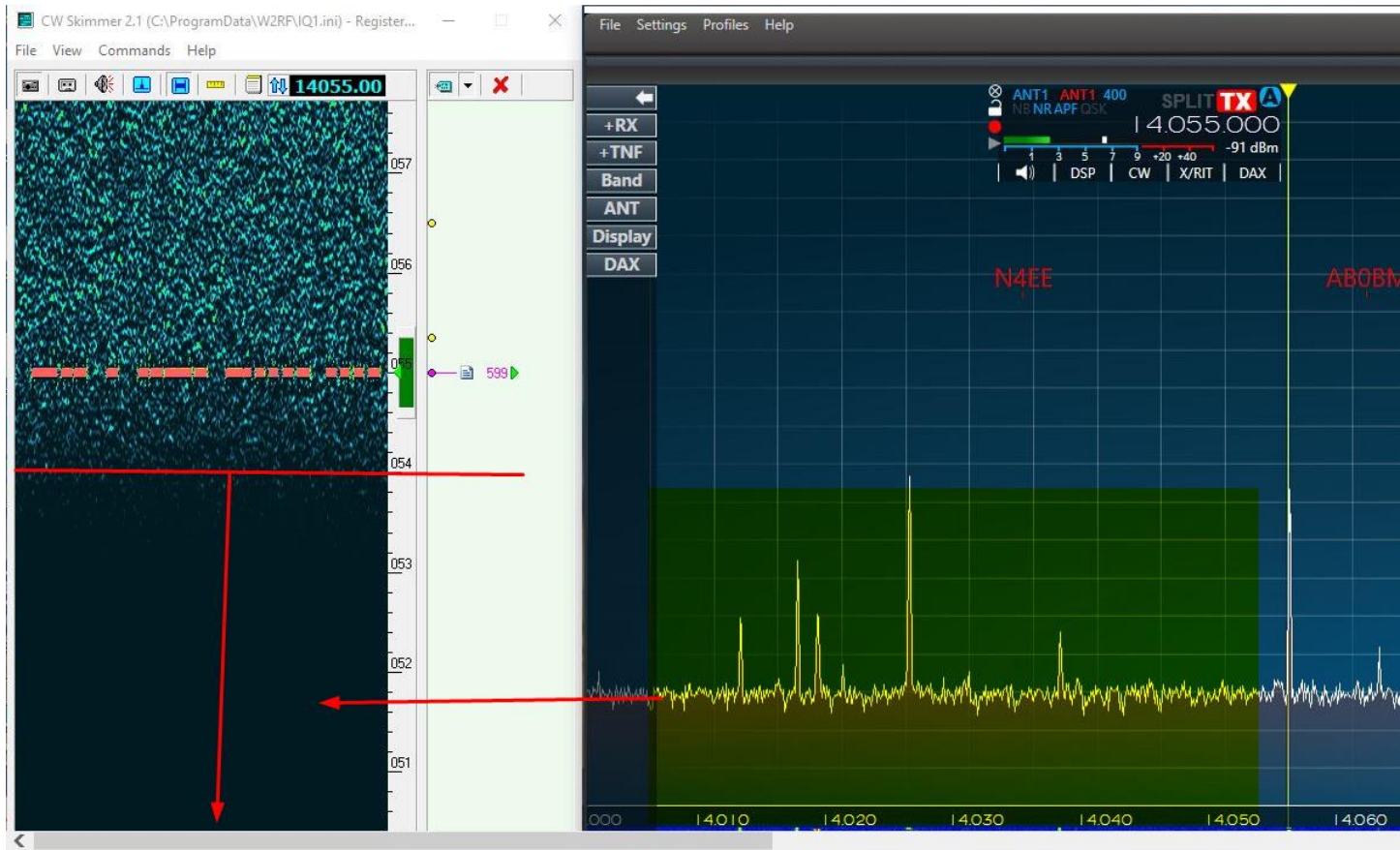
C:\Users\AlexUser\AppData\Roaming\Afrete\Reference

Chuck / W9WLX reported this issue. All frequencies sync and follow--the slice receiver, SDR Bridge and the TX frequency on CW Skimmer. If I set the TX frequency on skimmer to the center frequency of the DAX IQ stream, it works as expected. However, if I change the slice frequency, off the center stream frequency, it shifts in the opposite direction. For example, if my center stream frequency is 7.020 and I double click on a station at 7.022 on the Skimmer waterfall, the slice receiver will follow and go to 7.022, however the station is really at 7.018.

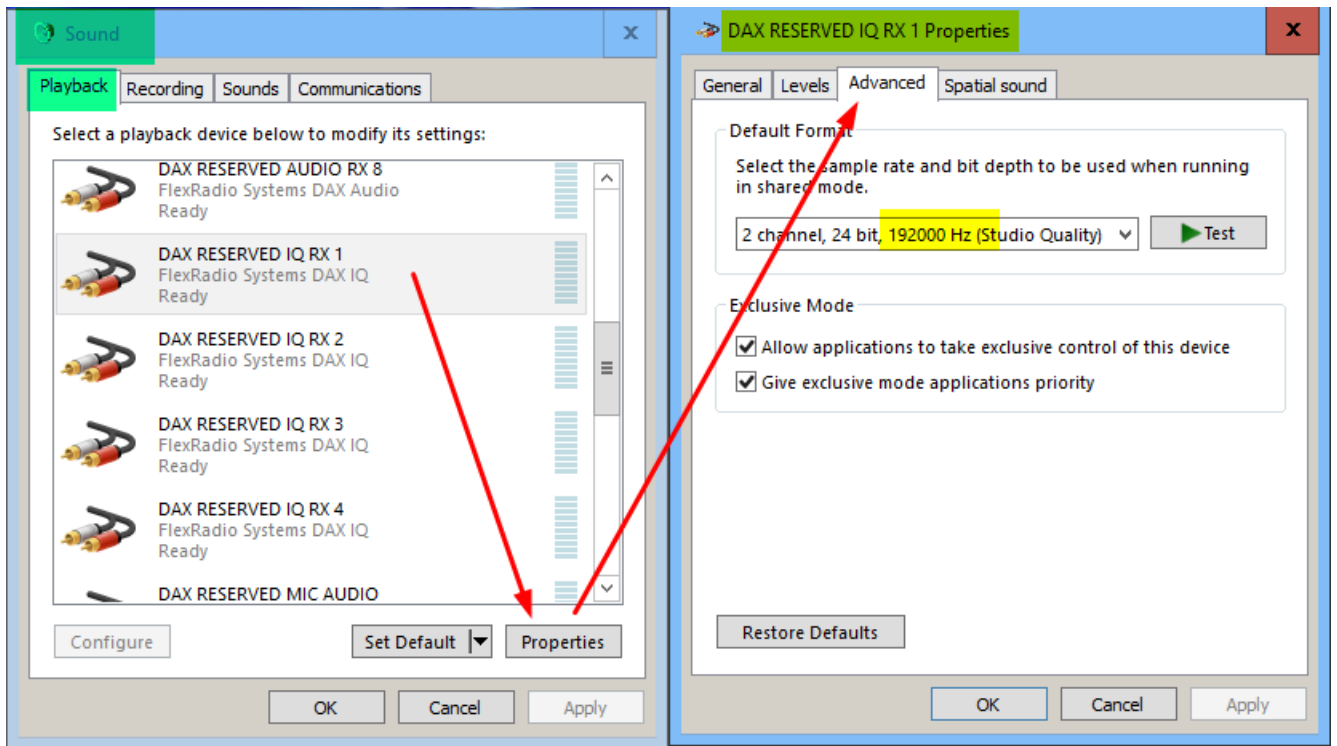
The problem was the “left / right” channel was set up incorrectly in the CQ Skimmer Audio panel. It should be set to I / Q.



George / K3GBB reported the skimmer display was not showing the full bandwidth shown on the SDR screen. Note in the snapshot below signals below 14.054 do not display on the skimmer screen.



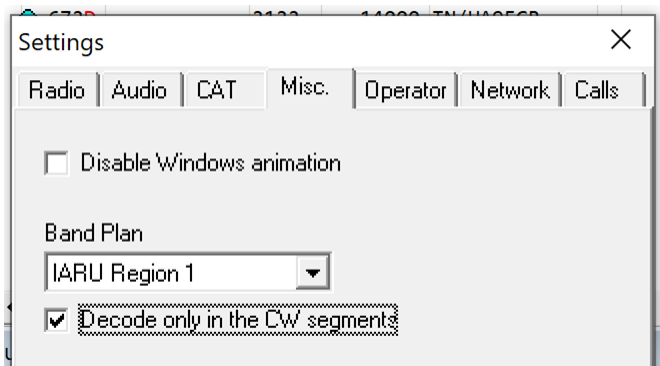
The problem was the DAXIQ bandwidth setting in Windows. It should be 192000 hz and was set to a lower value. [Open the Sound Control Panel.](#) For the active DAX IQ and RESERVED DAX IQ devices make sure BOTH are set to 192khz.



Problem – Skimmer shows some spots that looks like dupliates. This issue noted by Ed / W2RF -- This problem happens when users have DAX IQ channels that are covering out of band frequencies. This happens most often with 192khz, but can happen with others if the center of the panadapter is near the band edge. The Flex produces very weak images outside the band, especially in WIDE mode. However CW Skimmer is sensitive enough to pick them up. So you get out of band spots, that look like duplicates of an in band spot. (So the symptom looks a lot like a wrong sample rate setting, but it isn't.)

There are several things you can do to avoid this.

- 1 - One is to have calls verified by the master dta file, but it only contains the calls of contesters.
- 2 - Another helpful thing is to make sure the noise blanker is on. It's the first blue icon on the option bar. (I also always make sure the key click filter, the second blue icon, is on.)
- 3 - But the best solution is to select a band plan and tell it to only skim in band:



Finally, since there is some tailoring of the INI file, once they get everything the way they want it users might find it useful to back them up from Program Data/W2RF.