

# Flex Cadre Users Guide

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## Introduction

Are you a new ham? Do you wish to operate the HF bands? Do you lack equipment? Do you live in a HOA that restricts antennas? Do you want to have fun with Ham Radio?

Thanks to the generosity of Burt Krain a deployment of Flex Radios and Maestro units have been implemented. It is the mission of this group to form a small cadre of hams to collaborate on learning the Flex Radio and its related software suites. Currently the Flex Radio software is free for users of Windows based PC's and Tablets. There is a small fee to operate using Apple OS on iPads and Mac's. We shall create a collaborative environment where we can learn from each other and just generally have a good time using state of the art software defined radios on a remote basis. It is the commitment of the group to ensure everyone has a great experience. We have 4 Flex Radio stations at locations in Northfield (EN62CC), Northbrook (EN62CD), Skokie(EN62DB) and Waukegan (EN62BI). To allow for greater participation we are looking for hosts for a Flex Radio station with versatile antenna systems and strong internet service.

This guide will provide information needed to operate different models of Flex Radios from just about anywhere in the world. The requirements are very simple. A good Wi-Fi internet connection and either a Maestro unit loaned from the Burt Krain or your Windows Operating System PC. Using our Google calendar for current system use you will be able to choose the available base stations for operation. For all purposes the radio used is independent of the model or features installed. Experienced operators in the group will provide Elmer services as needed to enjoy the experience. All classes of operators may make use of the equipment but must operate in the bands and frequencies allowed by their FCC license. Only licensed hams will be allowed to operate the radios.

Scheduling of the use of the remote Flex Radios is done via a calendar. The calendar belongs to the account of [NS9RC.Flex2019@Gmail.Com](mailto:NS9RC.Flex2019@Gmail.Com).

<https://calendar.google.com/calendar?cid=MW91dGNudWRiNnN0ZGRtZWltdm83ZG1mN29AZ3JvdXAuY2FsZW5kYXluZ29vZ2xILmNvbQ.>

Try to plan your usage and let people know when you will be operating. This will help the group see when radios will be in use and avoid operating conflicts. The first time accessing the calendar will require a Gmail account. Sign in with your account or create an account. If you sign-in with your own account you will have an opportunity to add the Flex2019 calendar to your own list of viewable calendars.

## Flex Maestro Units



The Flex Maestro is the easiest way to make use of a remote Flex Radio. A good Wi-Fi connection is the only requirement. It is recommended that you download and read through page 6, the latest version of the Maestro User's Guide before obtaining a unit. <https://www.flexradio.com/downloads/maestro-user-guide-pdf/>. All first time users will be given hands on help with the device to ensure a good experience.

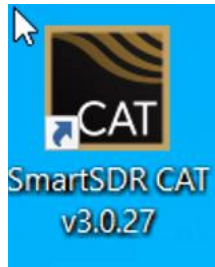
Currently all Flex Maestro units are owned by Burt Krain. Please contact Burt to make arrangements to borrow a unit. Burt will also provide Flex Radio login information that may be needed to allow the Maestro to connect a remote radio.

## PC Access

Before installing SmartSDR please download and read SmartSDR Software User Guide v2

<https://www.flexradio.com/downloads/smartsdr-software-user-guide-pdf/>.

Remote Flex radios are accessed using Windows based software SmartSDR, Smart CAT, and SmartDAX.



Install SmartSDR from the Flex download page

<https://www.flexradio.com/downloads/>

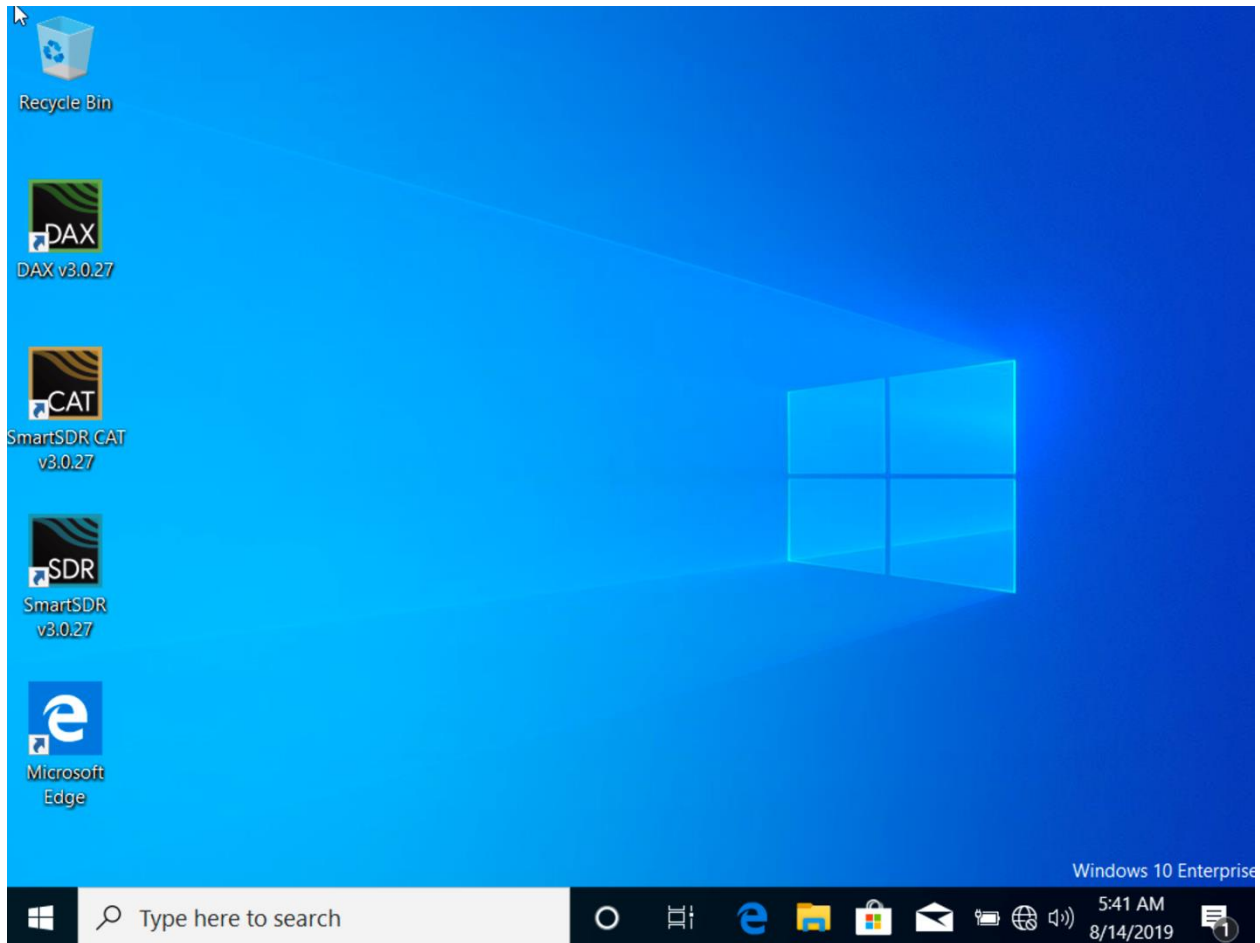
Scroll down until you see the Directory of Files.

### Directory Listing of Files

- API
- Commercial Products
- Discontinued Products
- Flex Signature Series (FLEX-6000)
- FlexRadio Press Releases
- Maestro
- Power Genius XL (PGXL)
- SmartSDR for iOS
- SmartSDR SDR for Windows
- SmartSDR SDR for Windows v1.x
- SmartSDR SDR for Windows v2.x
- SmartSDR SDR for Windows v3.x
  - Documentation
  - Installers and Release Notes
    - SmartSDR v3 Changelog
    - SmartSDR v3.0.19
    - SmartSDR v3.0.19 Release Notes
    - SmartSDR v3.0.27
    - SmartSDR v3.0.27 Release Notes

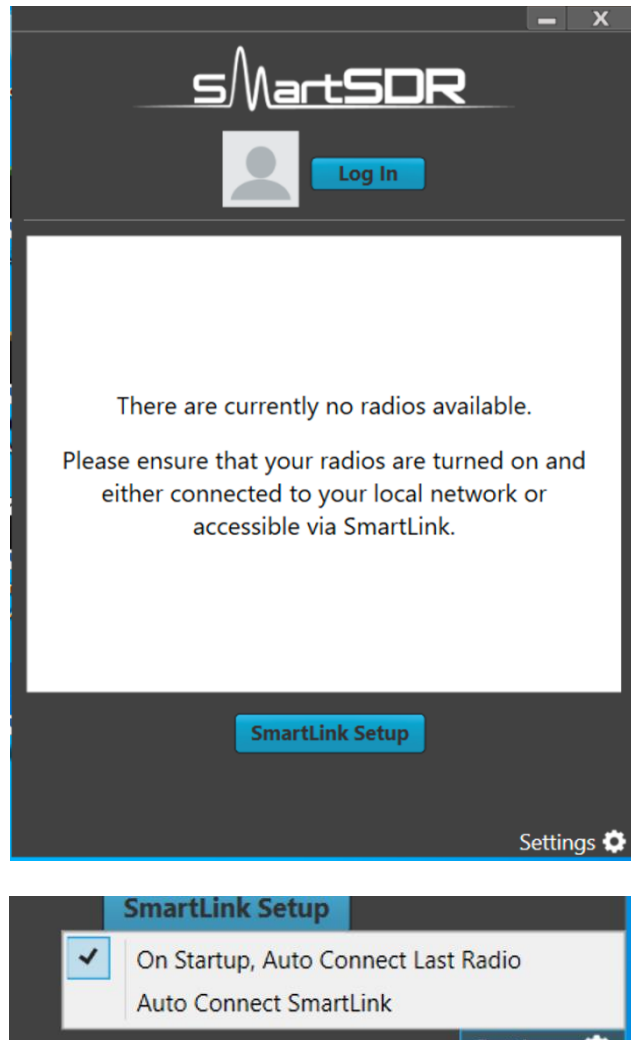
Click on the latest version of SmartSDR for Windows. Continue click until the highest release number is displayed. Double click on the file to download.

Running the download four applications will be installed. SmartSDR, SmartCAT, and SmartDAX will install desktop icons. FlexVSP will be installed but no icon will be created.



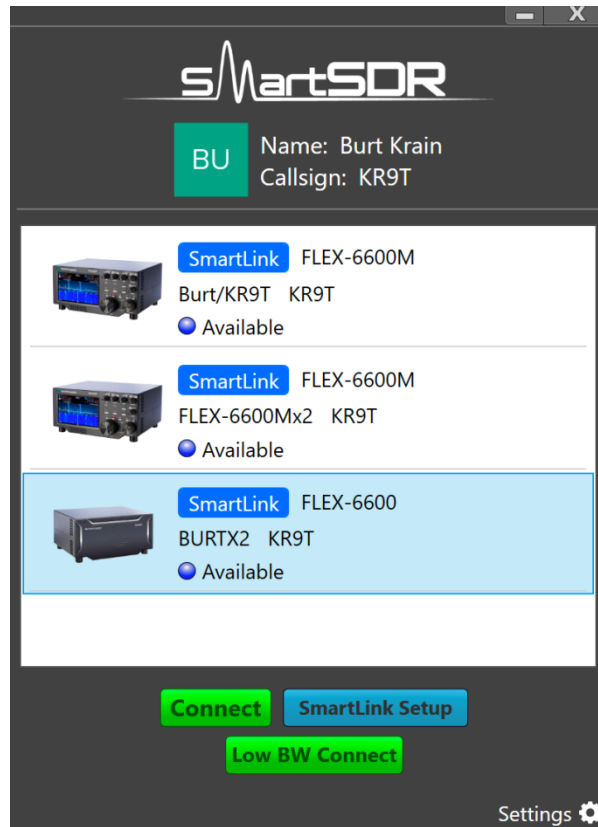
Double click the SmartSDR icon to start the connection. SmartSDR will automatically start SmartCAT and SmartDAX.

It is suggest setting should be changed on each application so that they do not connect to the same radio last used. Click on the Settings sprocket in the lower right corner.

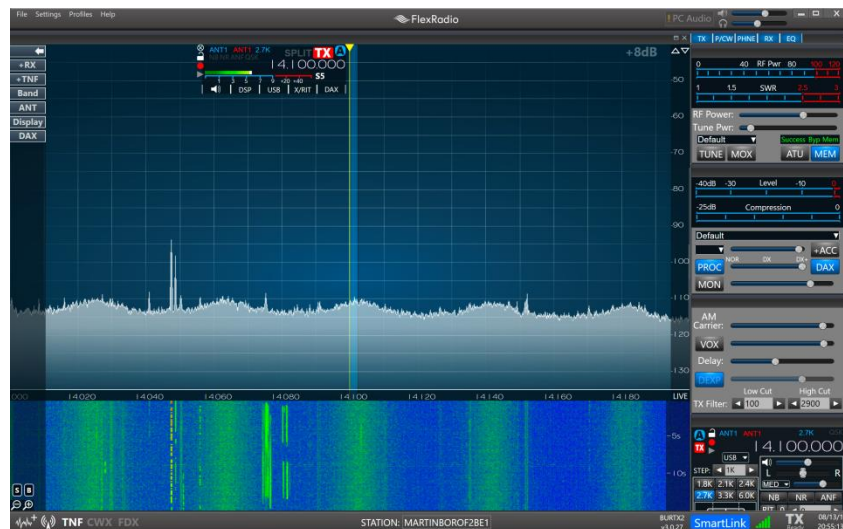


Anytime the Log In button is displayed click on it and follow the login process. Login id and password are managed by Burt Krain.

Once logged in a radio selection is displayed on each application. Click on the radio to be connected and a connect button will appear. Select the same radio for each application.



The radio will appear once connected.



## Using a VPN

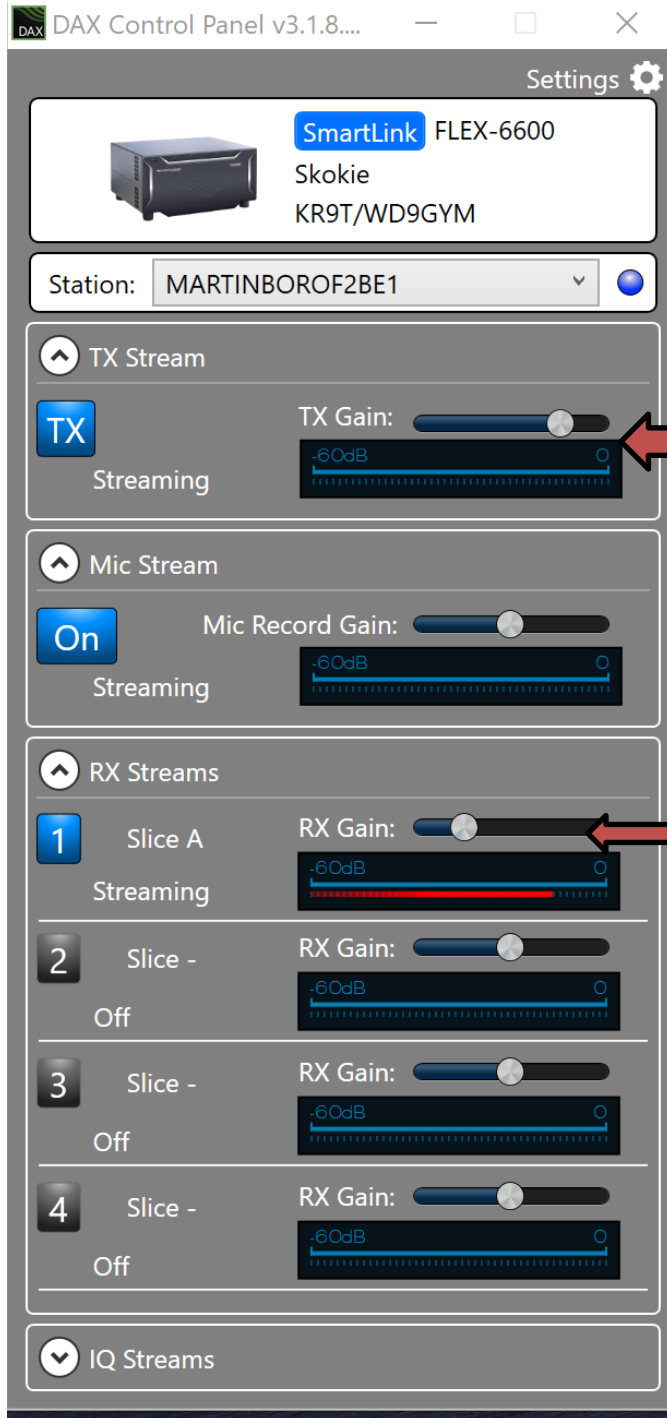
When attempting to access a Flex radio from a public Wi-Fi you may find you can not connect to the radio. This is caused by blocking certain channels used by Flex as they transmit or receive packets over the internet. Free Wi-Fi spots are noted for only letting limited types of traffic. To overcome this you must use a VPN client. A VPN client sends packets over the internet in an encrypted way and on an open port to a VPN data center where you end up with a new address on the internet that is open and free. The VPN sets up what is called a tunnel.

A good write up on VPNs is located at [https://en.wikipedia.org/wiki/Virtual\\_private\\_network](https://en.wikipedia.org/wiki/Virtual_private_network). It is recommended that the first paragraph be reviewed.



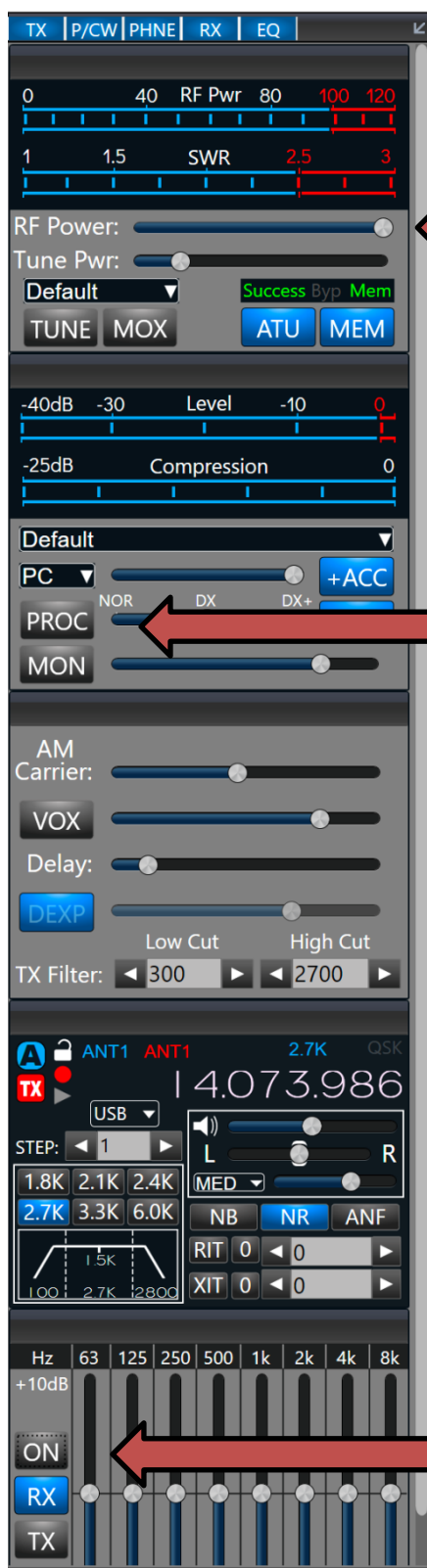
## FT8 Radio Settings

This guide was developed using the suggested settings from Don Whitman KK9H



The transmit output level should be adjusted by the DAX "TX Gain" slider. This will ensure the cleanest signal.

Adjust the RX Gain so the receive signal on the FT8 screen hovers around 30dB when no signals are present.



Leave the "RF Power" slider all the way to the right at the 100 watt setting. The 100 watt Flex radio transmitter output should be limited to 50 watts maximum when used with continuous duty modes like PSK31, FT4, FT8, RTTY, etc.

Ensure that the processor is turned off.

The mixer sliders at the should be set to a flat response or simply set the "ON" button so it is not highlighted in blue.