

Improving My Flex Experience

This paper describes how I improved my operating SmartSDR with two Serial interfaces. One interface provides PTT and the other provides for remote keyer operation.

In 2015, I purchased an Apache Labs Anan-10e SDR. The radio, like the Flex 6000 series has one button, the Power button. The software that controls the Anan-10e is a version of PowerSDR. The Flex 1500 series used a variation of PowerSDR. The bottom line is I have become extremely comfortable operating 90% of the time using a mouse.

In 2019, I placed one of Burt Krain's Flex 6600 in my Skokie QTH. This allowed me to run operations remotely while I wintered in Florida. In 2020 I purchased a Flex 6600 for my QTH in Mundelein. Again I have been operating 90% of the time using a mouse.

I use digital modes most of the time with an occasional appearance on SSB. I use an external Mic and headphones connected to my laptop with a USB soundcard. I was required to turn on the VOX and set the delay. I could toggle the VOX with the mouse or the space bar (if the VOX was the last clicked item). Operating this way isn't pretty.

When operating SmartSDR remotely you do not have access to the PPT hardware on the radio. The MOX COM Port feature allows you to use a hand or foot switch to key the transmitter using your remote PC's serial port (or USB port using an inexpensive USB to RS232 Converter). This feature has two modes:

1. Hold - keys the transmitter when the switch is closed and un-keys the transmitter when the switch opens.
2. Toggle - keys the transmitter on the switch's transition from open to closed and continues transmitting when the switch opens. A second switch transition from open to closed un-keys the transmitter. You can use DSR or CTS on your serial port to signal the switch position.



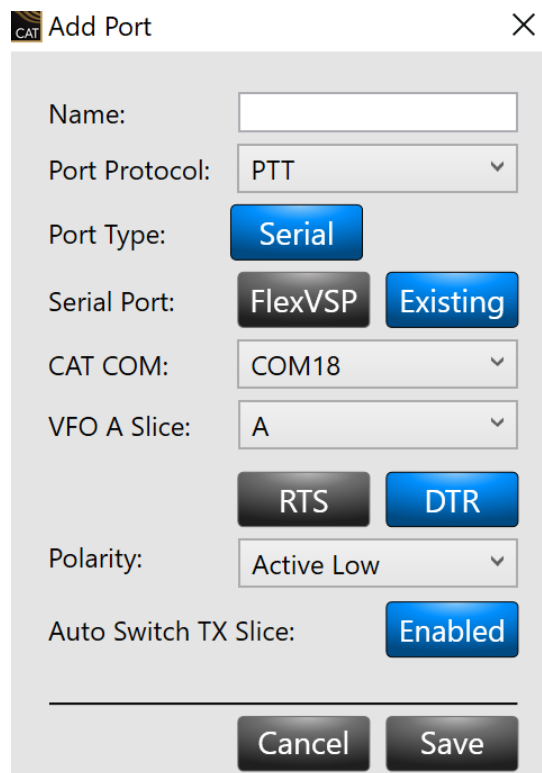
RS232 and Mic Interface

Using a standard RS232 serial port, the switch contacts should be connected as follows:

1. Switch shield/ground to DB9 ground pin 5.
2. Switch PTT line to DB9 Pin 6 (DSR).
3. Place a 2K resistor between pin 6(DSR) and pin 4 (DTR).

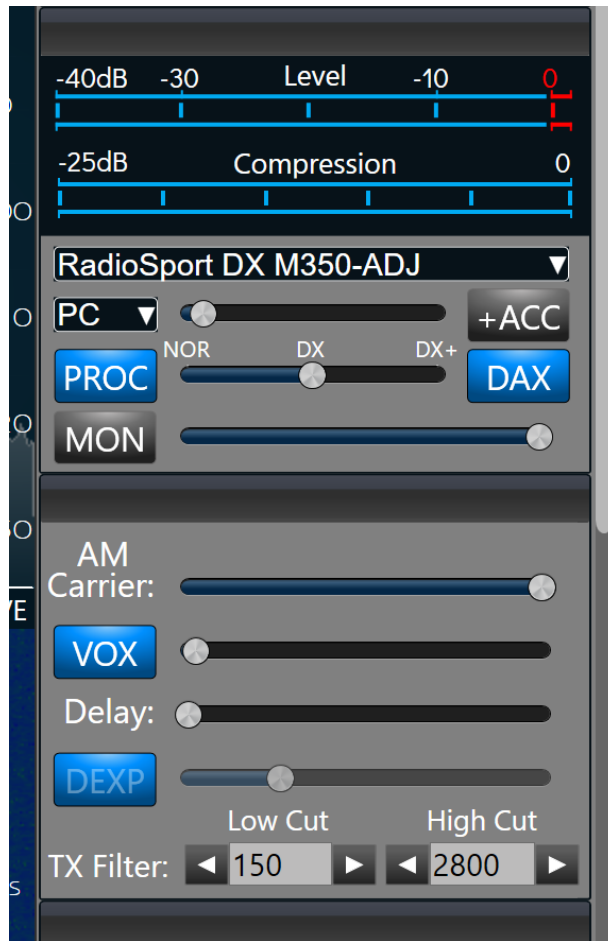
Note that my USB adapter, with the Prolific chipset, when moved to a different USB plug a different COM port may be assigned. My USB adapter with a FDTI chipset does not change the COM port. The PTT and ground wires for the Mic are connected to and RCA jack to match the connector on my Flex Mic. Mic audio is connected to a sound USB adapter.

- I prefer the FDTI chipset in this USB adapter because the COM port is consistent.
https://www.amazon.com/gp/product/B0769HDT58/ref=ppx_yo_dt_b_asin_title_o02_s01?ie=UTF8&psc=1



Using the CAT software Add a type PTT as follows:

1. Point to an existing com port used by the RS232 USB interface.
2. Select DTR as active.
3. Click Save.

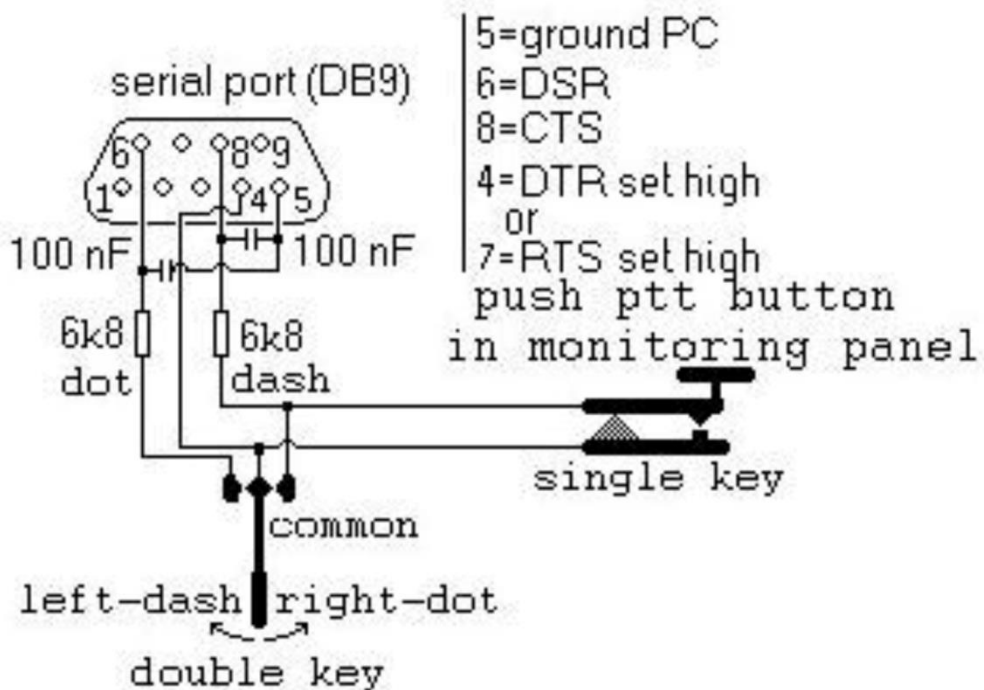


In SmartSDR click on the VOX with the lowest delay option. Now when you press the switch or PTT on your Mic that is wired to the adapter, MOX will go on and when you speak the radio will transmit. With the VOX set to the lowest settings it is providing an open Mic connection. To use the processor turn, on the DAX option. Finally, play around with Mic profiles. Even though I use the HM3 Mic provide with the radio, I use the Radiosport 350 profile to start my tweaking.



Mic and Headphones connected to USB Sound Card
PTT connected RS232 Interface

Interfacing a remote keyer uses a similar interface. Dot and Dash paddles requires two lines that serve as separate PTT switches with a common ground. In this circuit I used 6.8K resistors from each paddle key. Dash connects to pin 8 (CTS) and Dot connects to pin 6 (DSR). A 100nF cap is connecting from the CTS and DSR pins to PC ground. I connect a Pico keyer as though I am using a straight key. The keyer provides the timing of the dots and dashes.



Wiring for paddles found in photos section of RemoteKeyerInterface on Groups.io



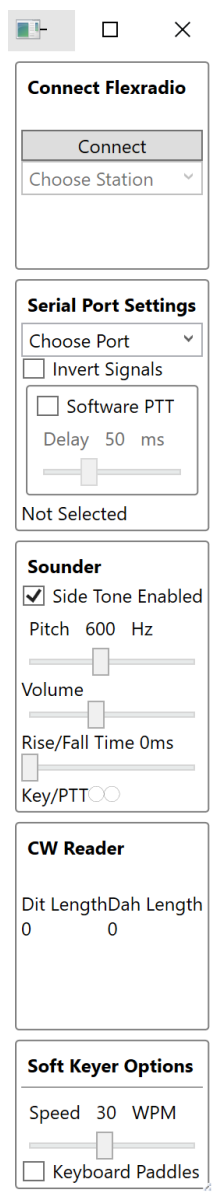
I wired for straight key

The remote keyer software must be installed. I found the latest version in the files section of the "RemoteKeyerInterface" on "Groups.io". To obtain access to the file section you must ask to join the group. Alternately the version I used may be down loaded from the Cadre Wiki:

<http://ns9rc-wiki.ddns.net/mediawiki/docs/RemoteKeyerInterface1.0.0.5.zip>

It is not my intention to maintain the current version on the Wiki site.

The interface is quite intuitive. Clicking on the connect presents the radio selection screen. If using multilink to get access to multiple Flex radios, click the login option first. Then select the com port of the USB interface.



The screenshot shows a software window titled "Connect Flexradio" with standard window controls (minimize, maximize, close). The interface is organized into several sections:

- Connect Flexradio**: Contains a "Connect" button and a "Choose Station" dropdown menu.
- Serial Port Settings**: Includes a "Choose Port" dropdown, an "Invert Signals" checkbox, a "Software PTT" checkbox, and a "Delay" slider set to 50 ms. Below this section, it says "Not Selected".
- Sounder**: Features a checked "Side Tone Enabled" checkbox, a "Pitch" slider set to 600 Hz, a "Volume" slider, a "Rise/Fall Time" slider set to 0ms, and a "Key/PTT" selector with two radio buttons.
- CW Reader**: Displays "Dit Length" and "Dah Length" both set to 0.
- Soft Keyer Options**: Shows a "Speed" slider set to 30 WPM and a "Keyboard Paddles" checkbox.



Operating Remote Keyer

This was a very fun project that was completed using parts from my junk box. It has changed the way I operate.