VARAC TIP- Auto FM-D on Transmit

Tuesday, March 19, 2024   7:12 PM
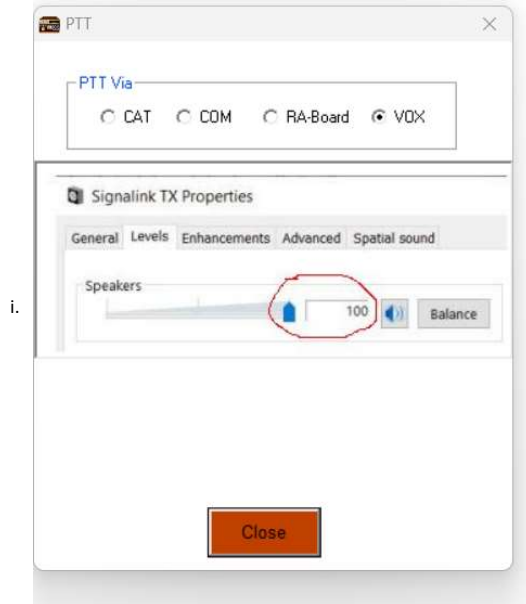
VARAC TIP from W1JKU-Rob

Background:

I wanted VARAC to automatically put my radio in FM-D mode when it transmits messages and auto return to FM Mode after digital transmission, so I can immediately talk on my microphone without having to manually toggle the radio.
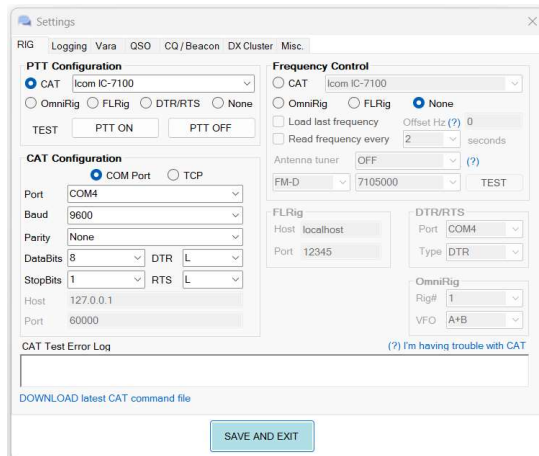
Irad Deutsch, 4Z1AC, from VARC provided me the answer within 24hours of me sending him an email requesting an enhancement. Turns out the capability is already baked into the solution…

Prerequisites:

1. Make sure VARA-FM is not enabled for CAT Control (using com Port) and ensure it is set for VOX. From VARA-FM, click **Settings** and **PTT** and adjust your settings like this below:
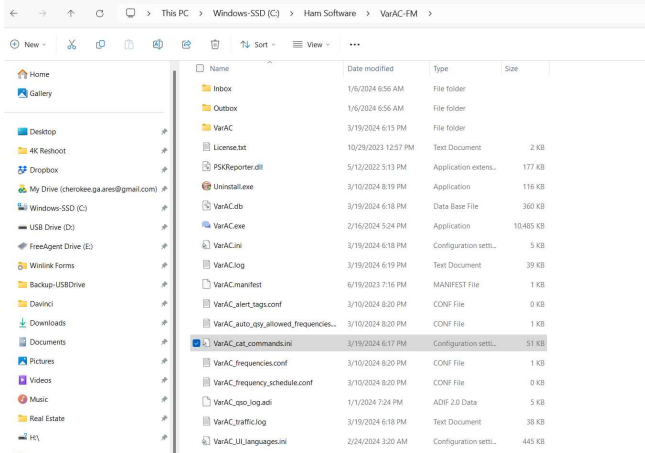
    i.

2. From VARAC, Click **Settings**, then click **RIG Control and VARA Configurations.**
    a. **Set PTT Configuration as CAT and your selected Radio**
    b. **Set your Com Port to your Radio, Baud, Parity, Databits, StopBits, then click SAVE and Exit**

Steps to update VARAC Cat Control:

1. Go to the directory where VARAC is installed. In my case, I installed in C:\Ham Software\VarAC-FM

2. Then go to the file VARAC_cat_commands.ini and edit that file in text editor (notepad)

3. Scroll down to you find your radio and the cat commands supported for your radio. In my case IC-7100

```
[Icom IC-7100]
CmdType=HEX
PTTOn=FEFE88E01C0001FD
PTTOff=FEFE88E01C0000FD
ModeUSB=FEFE88E00601FD
ModeUSB_D=FEFE88E02600010103FD
#For different USB-D filters, Replace ModeUSB_D value with:
#Filter1: FEFE88E02600010101FD
#Filter2: FEFE88E02600010102FD
#Filter3: FEFE88E02600010103FD
ModeFM=FEFE88E00605FD
ModeFM_D=FEFE88E02600050101FD
SetFreq_Data_method=BCD
SetFreqVfoA_Cmd=FEFE88E005{}FD
SetFreqVfoA_param_length=10
SetFreqVfoA_hz_res=1
ReadFreqVfoA_Cmd=FEFE88E003FD
ReadFreqVfoA_Result_Data_method=BCD
ReadFreqVfoA_Result_hz_res=1
ReadFreqVfoA_Result_Length=22
ReadFreqVfoA_Result_Freq_Start_Pos=11
ReadFreqVfoA_Result_Freq_Length=10
VarACStartCmd=
VarACExitCmd=
```

4. Next Step, I wanted to modify PTTOn to execute the CAT Command for ModeFM_D every time VARAC attempted to Transmit. I also wanted to modify PTTOff to execute the CAT command to return radio to ModeFM after transmission.
    a. To do this, I copied the appropriate Cat command in blue, for Mode FM-D, and then place a comma before the CAT Command of **PTTOn**. This will ensure the Radio is in FM-D before digital transmission.
    b. Then for **PTTOff**, I placed a comma after the PTT CAT Command and pasted the CAT Command for **FM Mode**, returning the radio to voice mode after Digital Transmission is complete.
    c. VARAC allows you to string multiple cat commands together separated by a comma as you see fit. If you compare Step 3 to Step 4, you will see the Before and After changes I made...

```
[Icom IC-7100]
CmdType=HEX
PTTOn=FEFE88E02600050101FD,FEFE88E01C0001FD
PTTOff=FEFE88E01C0000FD,FEFE88E00605FD
ModeUSB=FEFE88E00601FD
ModeUSB_D=FEFE88E02600010103FD
#For different USB-D filters, Replace ModeUSB_D value with:
#Filter1: FEFE88E02600010101FD
#Filter2: FEFE88E02600010102FD
#Filter3: FEFE88E02600010103FD
ModeFM=FEFE88E00605FD
ModeFM_D=FEFE88E02600050101FD
SetFreq_Data_method=BCD
SetFreqVfoA_Cmd=FEFE88E005{}FD
SetFreqVfoA_param_length=10
SetFreqVfoA_hz_res=1
ReadFreqVfoA_Cmd=FEFE88E003FD
ReadFreqVfoA_Result_Data_method=BCD
ReadFreqVfoA_Result_hz_res=1
ReadFreqVfoA_Result_Length=22
ReadFreqVfoA_Result_Freq_Start_Pos=11
ReadFreqVfoA_Result_Freq_Length=10
VarACStartCmd=
VarACExitCmd=
```

5. After saving the file, I restarted VARAC and magically all works as expected! Now when I am on a NET, I do not have to worry about manually changing by radio to transmit VARAC as **FM-D Mode** and once transmissions is over, my radio returns to **FM Mode** and is ready for me to continue communicating via Voice.

Enjoy the Tip!