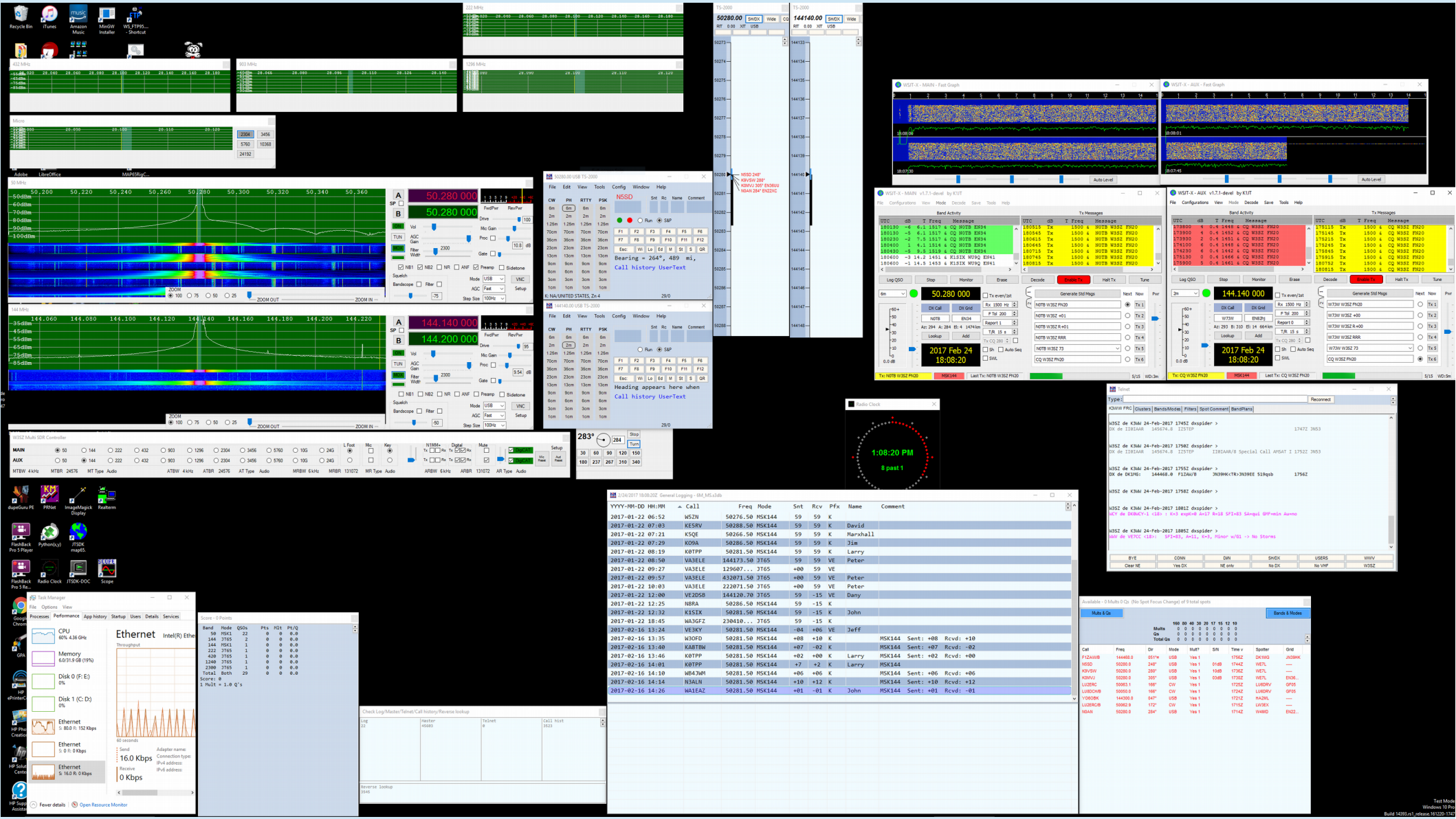
Station Automation

--W3SZ



CAT Control (Rig Control) "Computer Aided Transceiver"

- Modern radios have serial ports that allow control of transceiver frequency, mode, etc. by computer software
- Communications protocol used varies by manufacturer
  - You just select radio in logging program, it handles protocol
- The principle:
  - Changes in a parameter made in logging program change that parameter on radio
  - Changes in a parameter made on radio change that parameter in logging program

CAT Control (Rig Control)

- CAT Control when introduced had very limited instruction set, was unidirectional (commands sent from computer to radio but no feedback from radio to computer)
- CAT Control now quite sophisticated, bidirectional (Kenwood TS2000 has more than 100 CAT commands)
- Most SDRs will emulate CAT commands of another radio (often Kenwood TS-2000)
  - With SDR can use virtual serial ports for communications with radio (e.g. com0com)

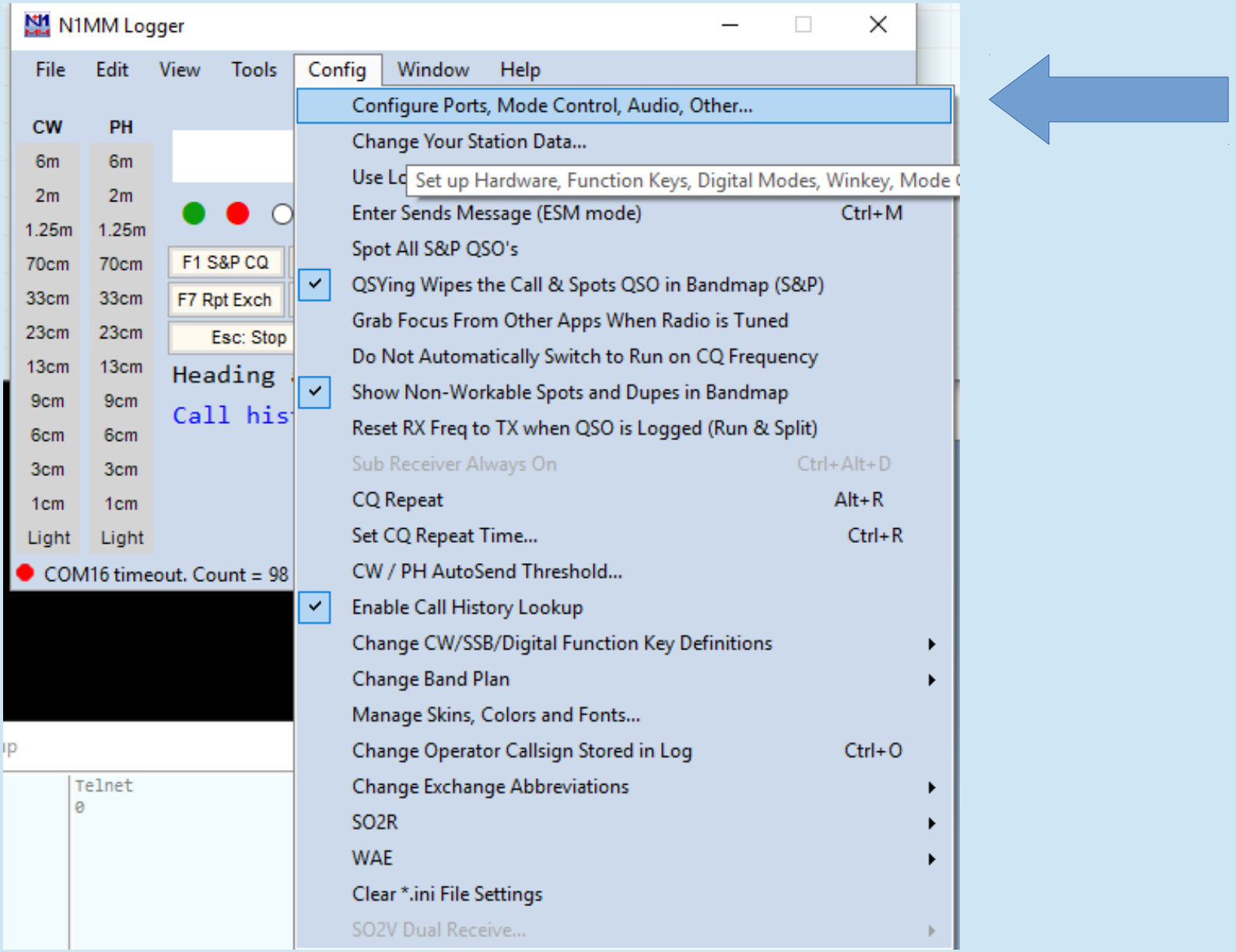
CAT Control (Rig Control)

- CAT Control is extremely important for contest operation because with CAT Control:
  - Logger and radio are always on same frequency and same band...No “Wrong Band” logging errors
  - Clicking on “Spots” from DX Cluster moves radio to spot frequency
  - Can QSY to any frequency just by typing it in logger entry window
  - PTT activated for logger’s voice keyer or CW keyer without need for operator intervention
  - Some radios (Elecraft, Flex) can bandswitch transverters using frequency information obtained via CAT control
- CAT Control essential for EME Doppler control

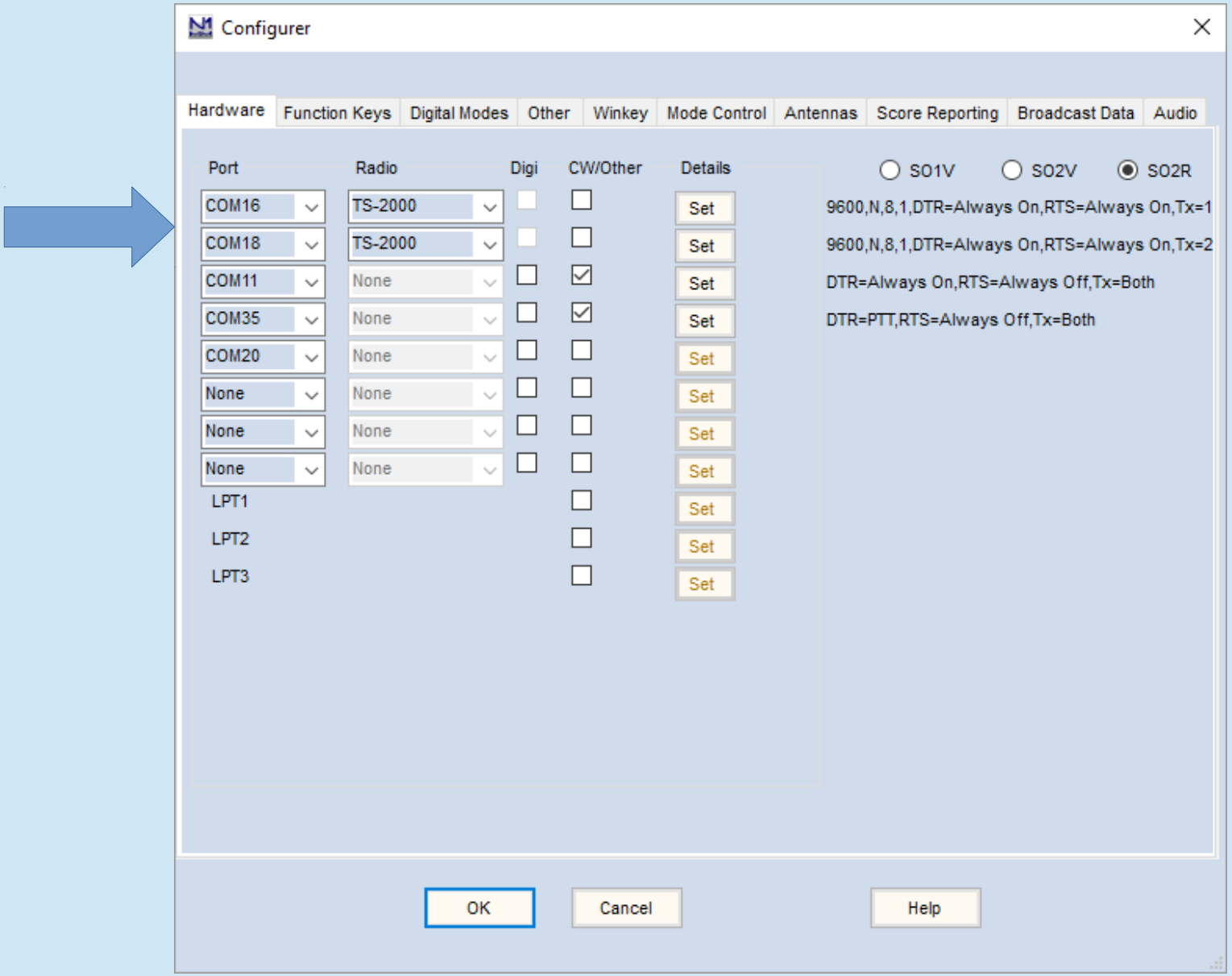
CAT Control (Rig Control)

- These VHF & Up contest logging programs have CAT control:
  - N1MM
  - WriteLog
  - Win-Test
- I use N1MM; I stopped using WriteLog about 10 years ago because I felt (and still feel) that N1MM was vastly superior
  - Thus comments to follow are focused on N1MM and CAT Control

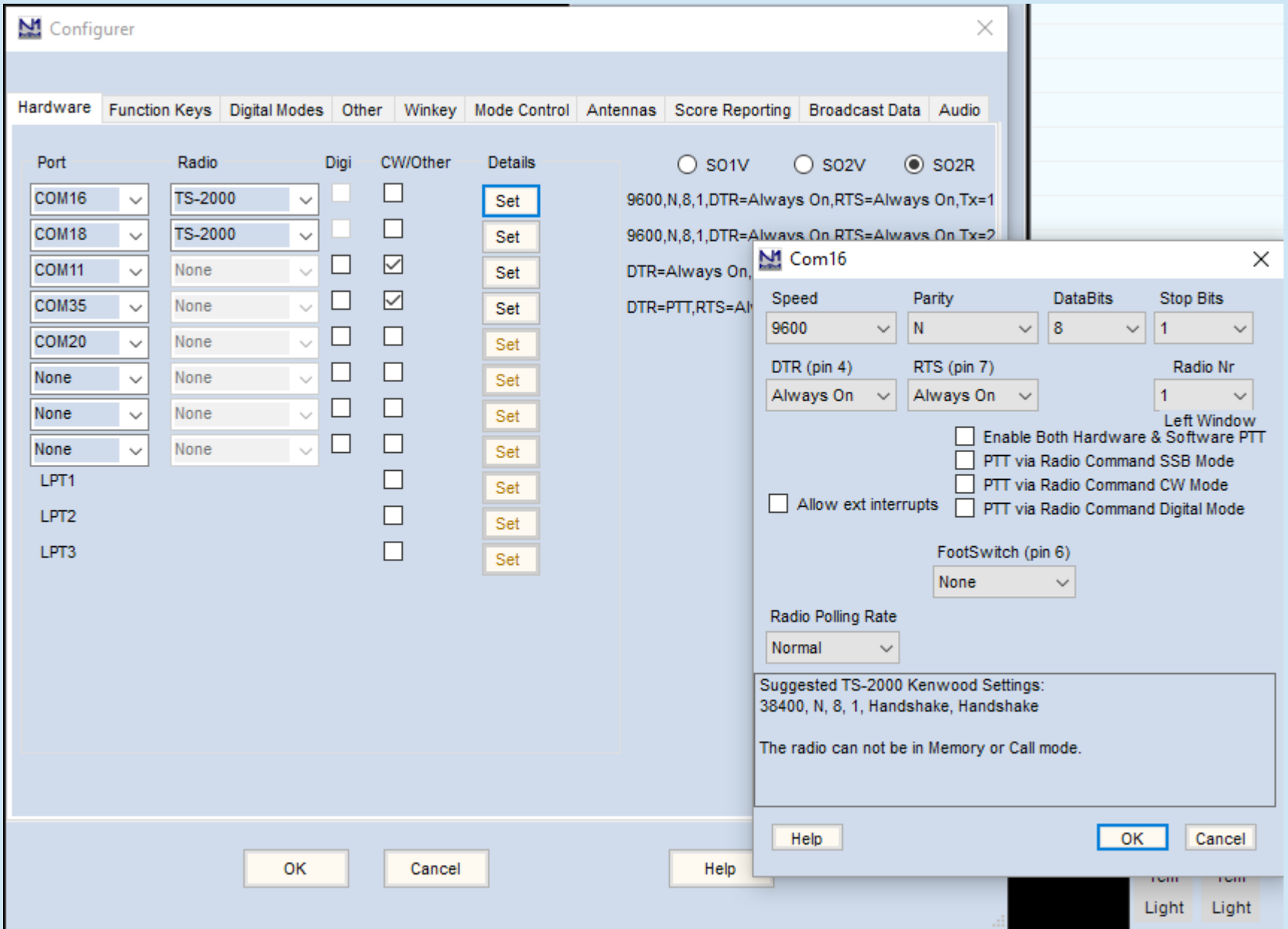
N1MM CAT Control Setup



N1MM CAT Control Setup

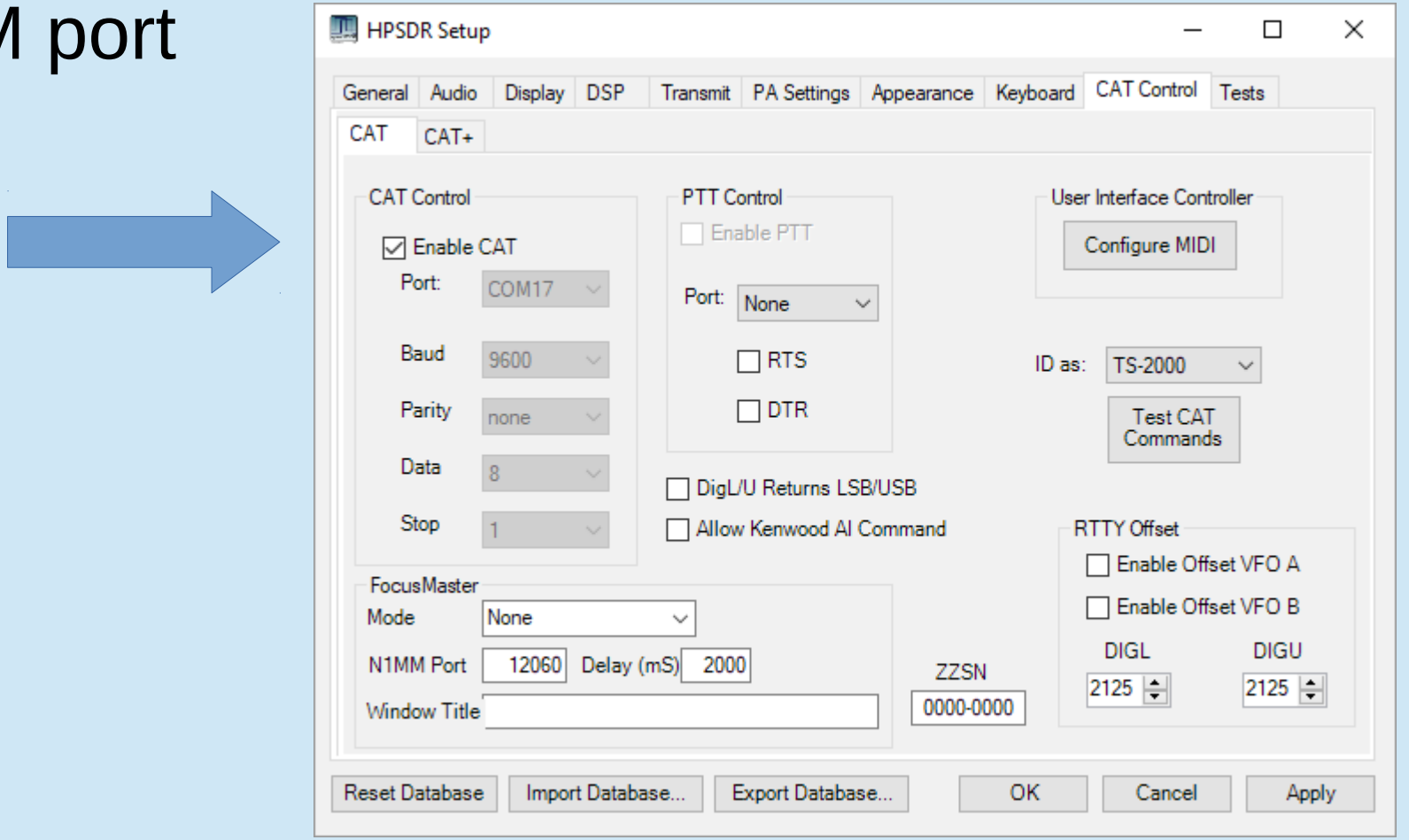


N1MM CAT Control Setup



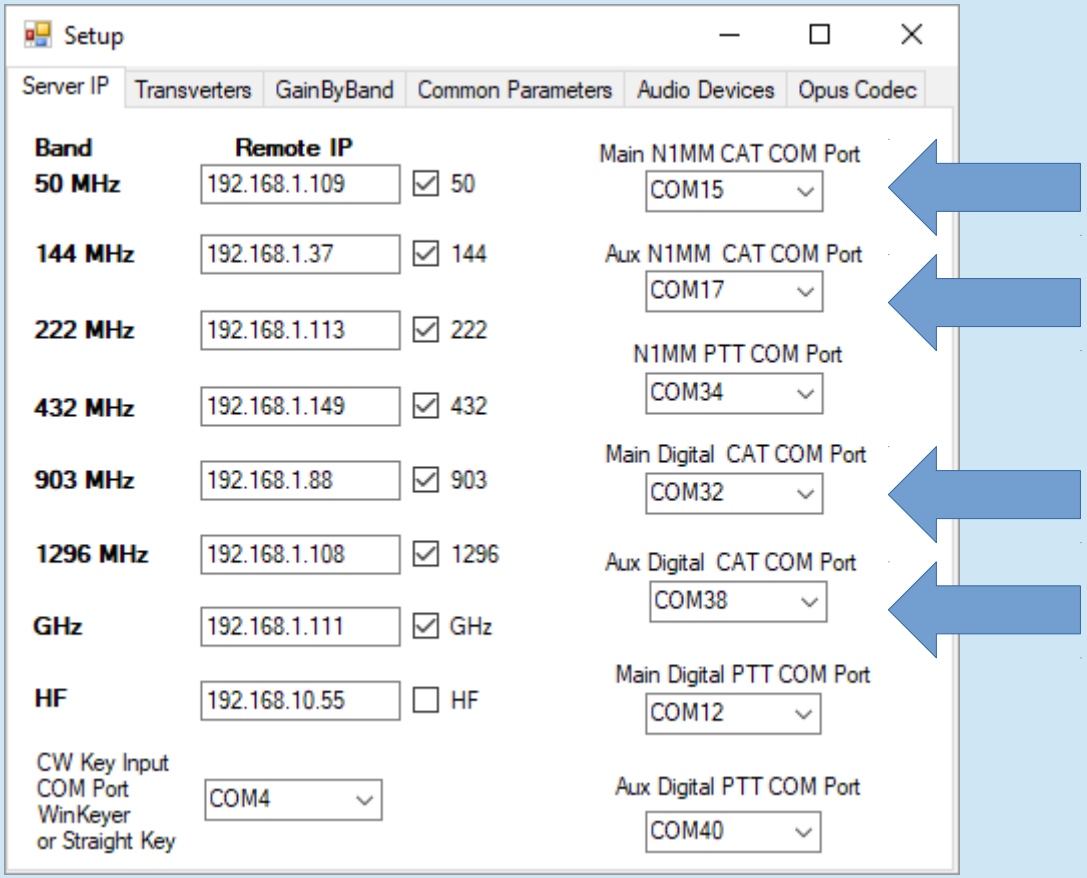
PowerSDR CAT Control Setup

- **Match baud rate, parity, data bits, stop bits to N1MM settings**
- Set COM port number



W3SZ SDR CAT Control Setup

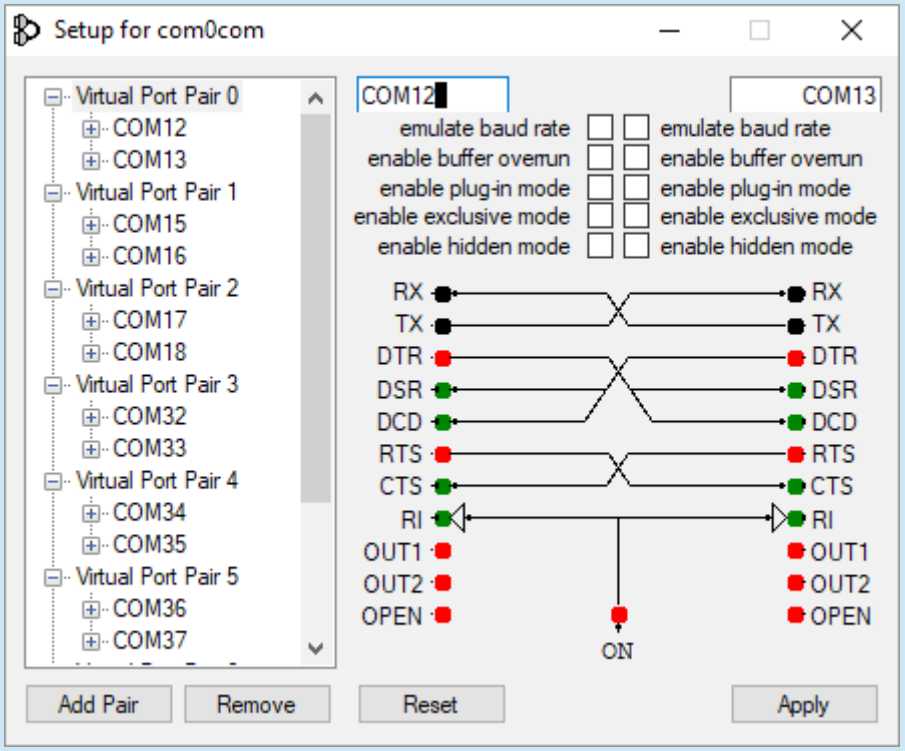
- Match baud rate, parity, data bits, stop bits to N1MM settings
- **Set COM port numbers**



SDR CAT Control – Virtual Serial Ports (com0com)

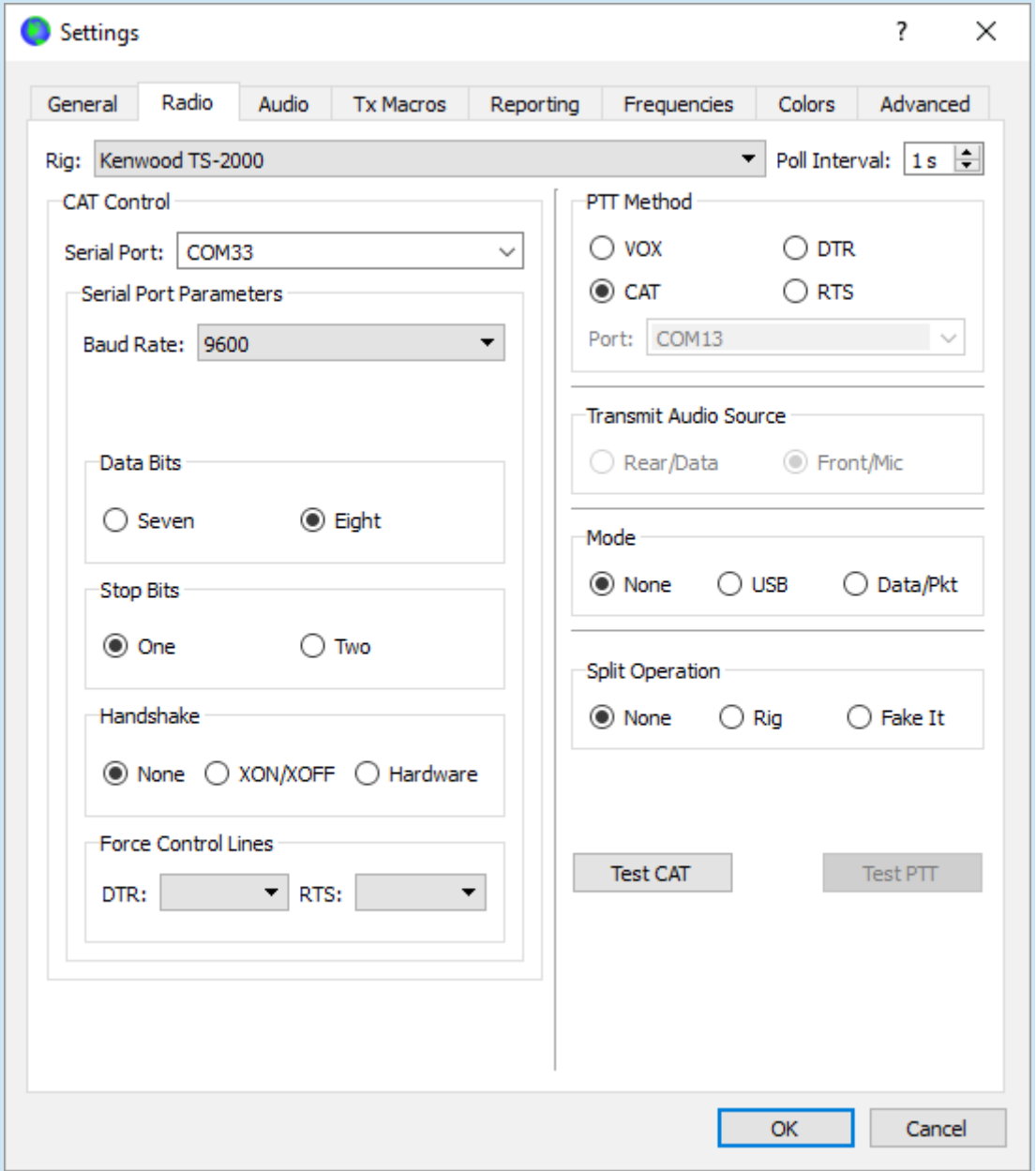
Virtual Serial Ports Travel in Pairs

- http://com0com.sourceforge.net/



CAT Control - WSJTX

- Can use for digital mode PTT
- Can use if frequency control by WSJTX is desired
- Requires separate COM port from the COM port shared by radio and N1MM, or use of COM port sharing



COM Port Sharing

- Allows radio CAT port to be used by more than one program:
  - e.g., both logging program (N1MM) and WSJTX

COM Port Sharing

- With com0com/hub4com, do this by creating a .bat file
- Run the bat file when starting PC
  - If radio is COM15, N1MM is COM16, WSJTX is COM33, and com0com virtual serial port pair is COM32<>COM33:
  - Bat file contains one command:

    hub4com - -route=1,2:0 - -route=0:1,2 –baud=9600 \\.\COM15 \\.\COM16 \\.\COM32

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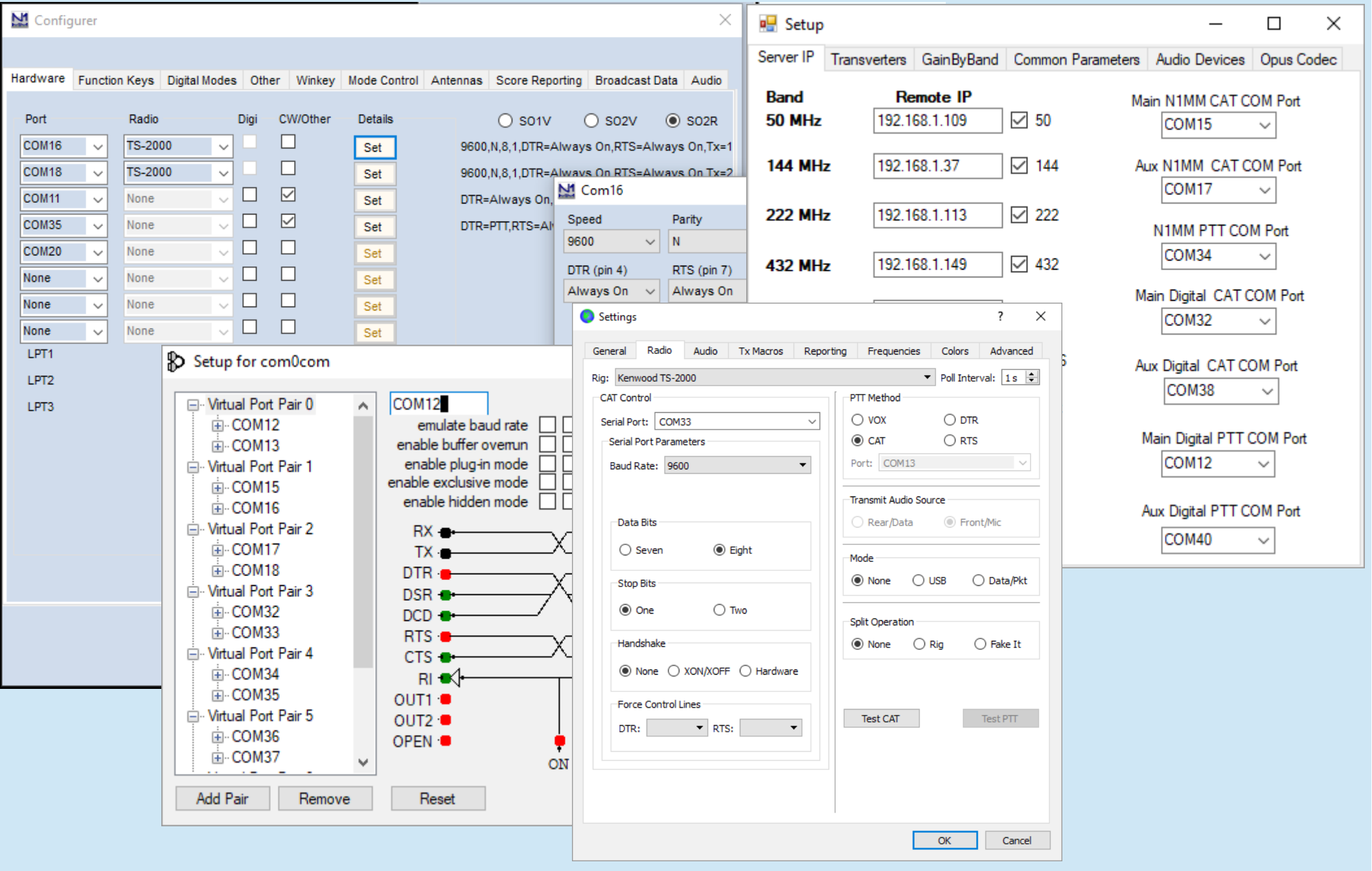
COM Port Sharing

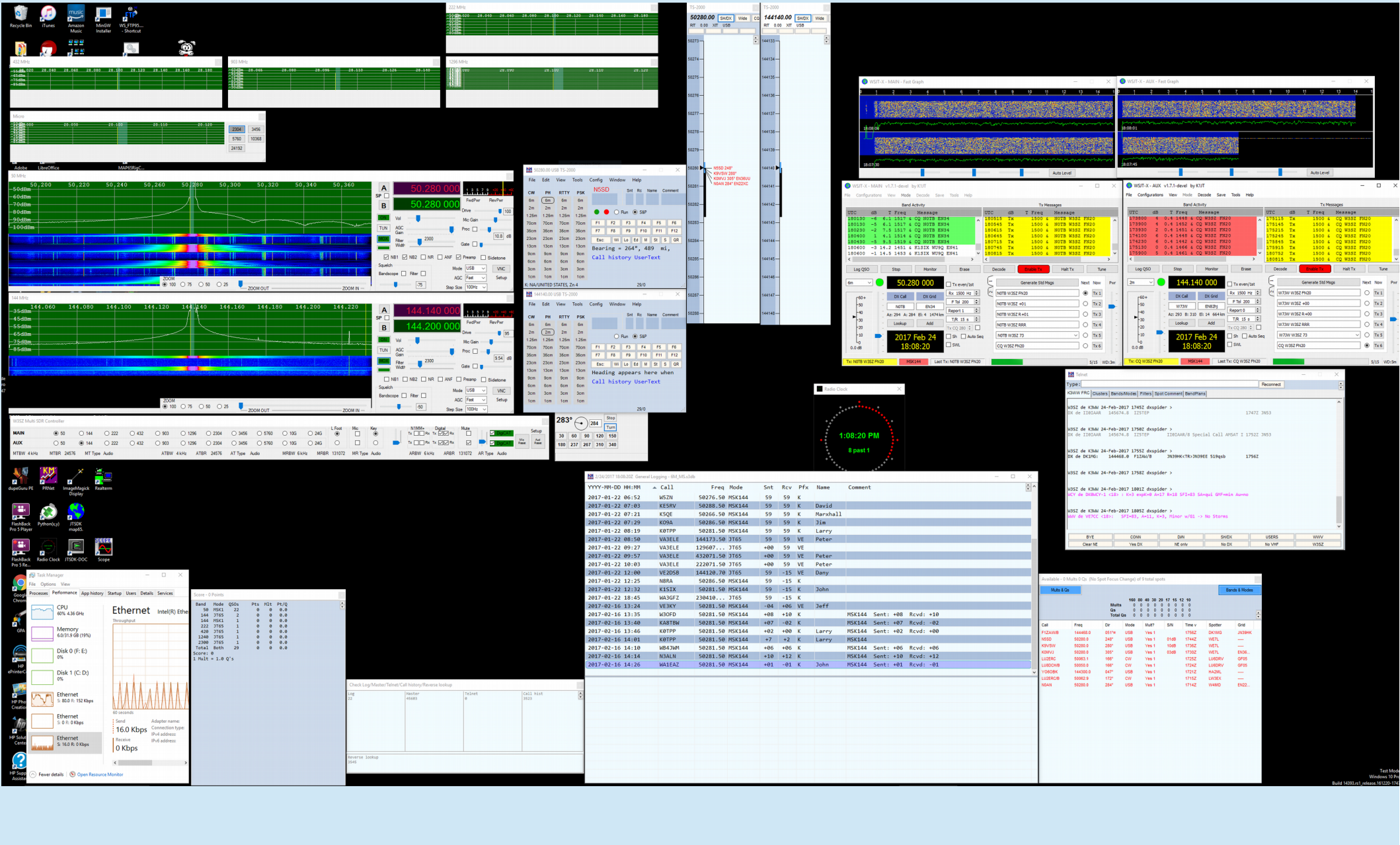
- Other possible choices: LP-Bridge, VSPE, DDUTIL
  - I have used all of them and decided that com0com was best for me
  - Now, I use none of them because I just add serial ports as needed to my SDR software

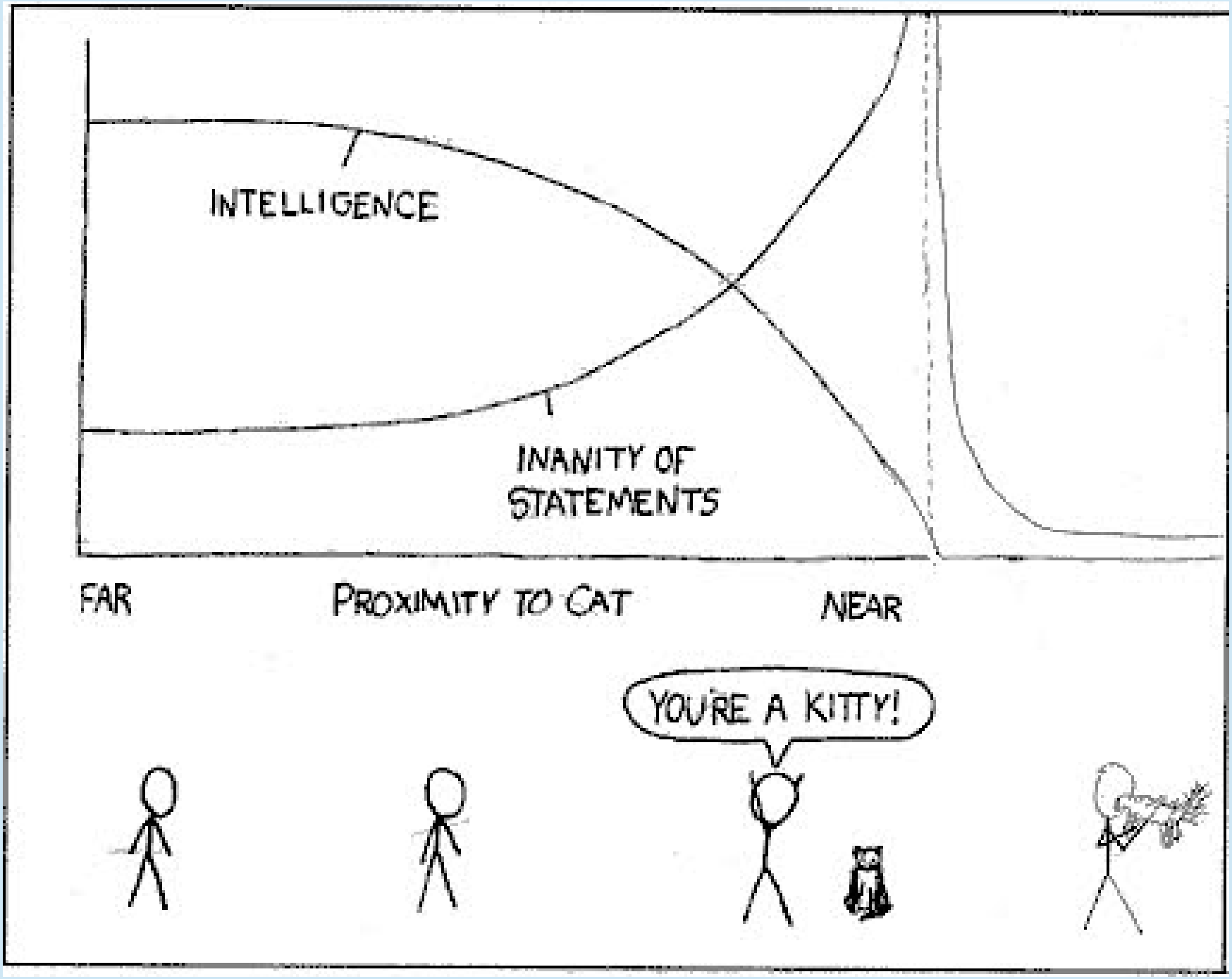
SDR CAT Control – Virtual Serial Ports (com0com)



Multiple Virtual COM Ports for One SDR

COM15-16 : Main Radio-N1MM
COM17-18: Aux Radio-N1MM
COM32-33: Main Radio-WSJTX
COM38-39: Aux Radio-WSJTX




INTELLIGENCE
INANITY OF STATEMENTS
FAR
PROXIMITY TO CAT
NEAR
YOU'RE A KITTY!