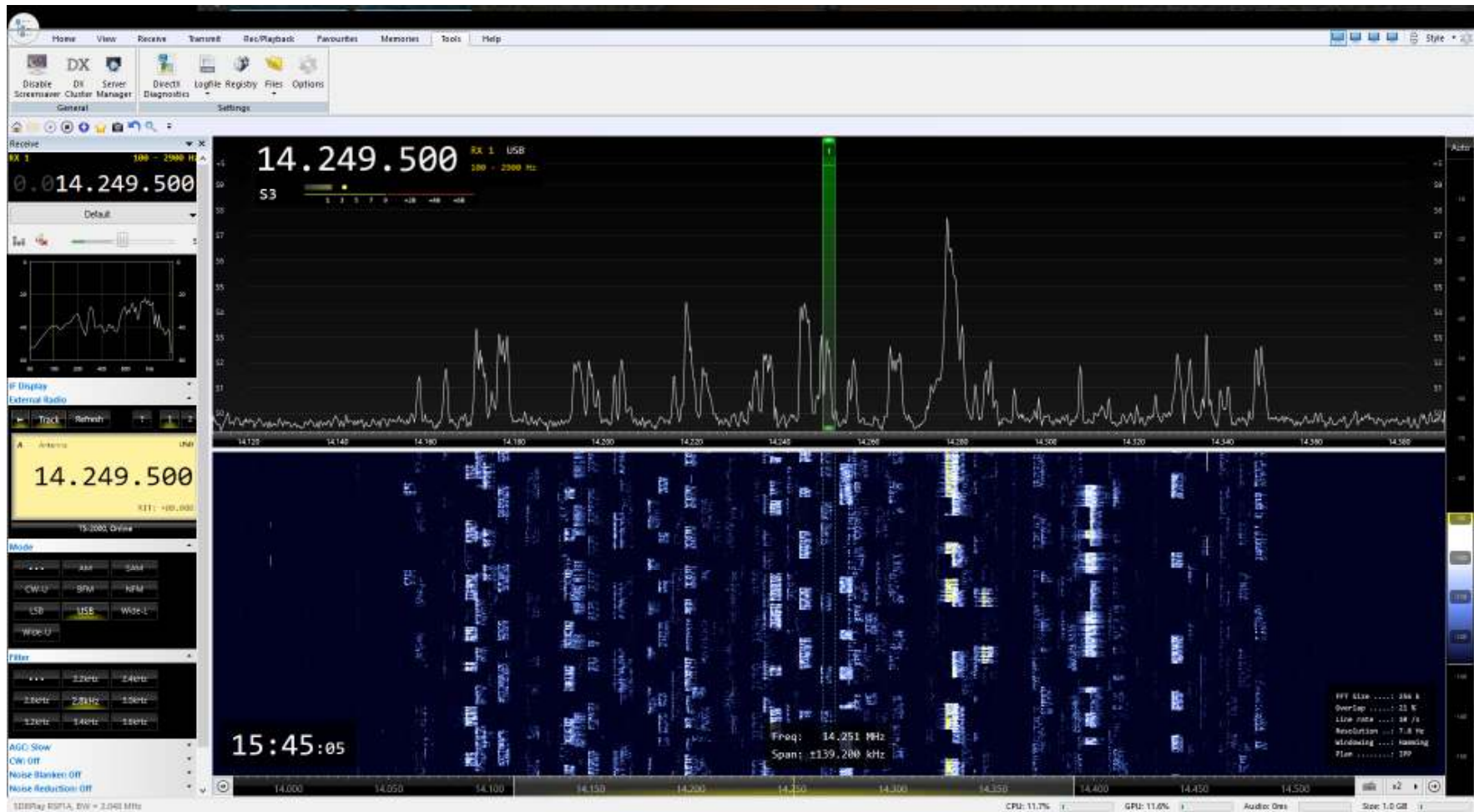


A PANADTER for EVERY HAM SHACK



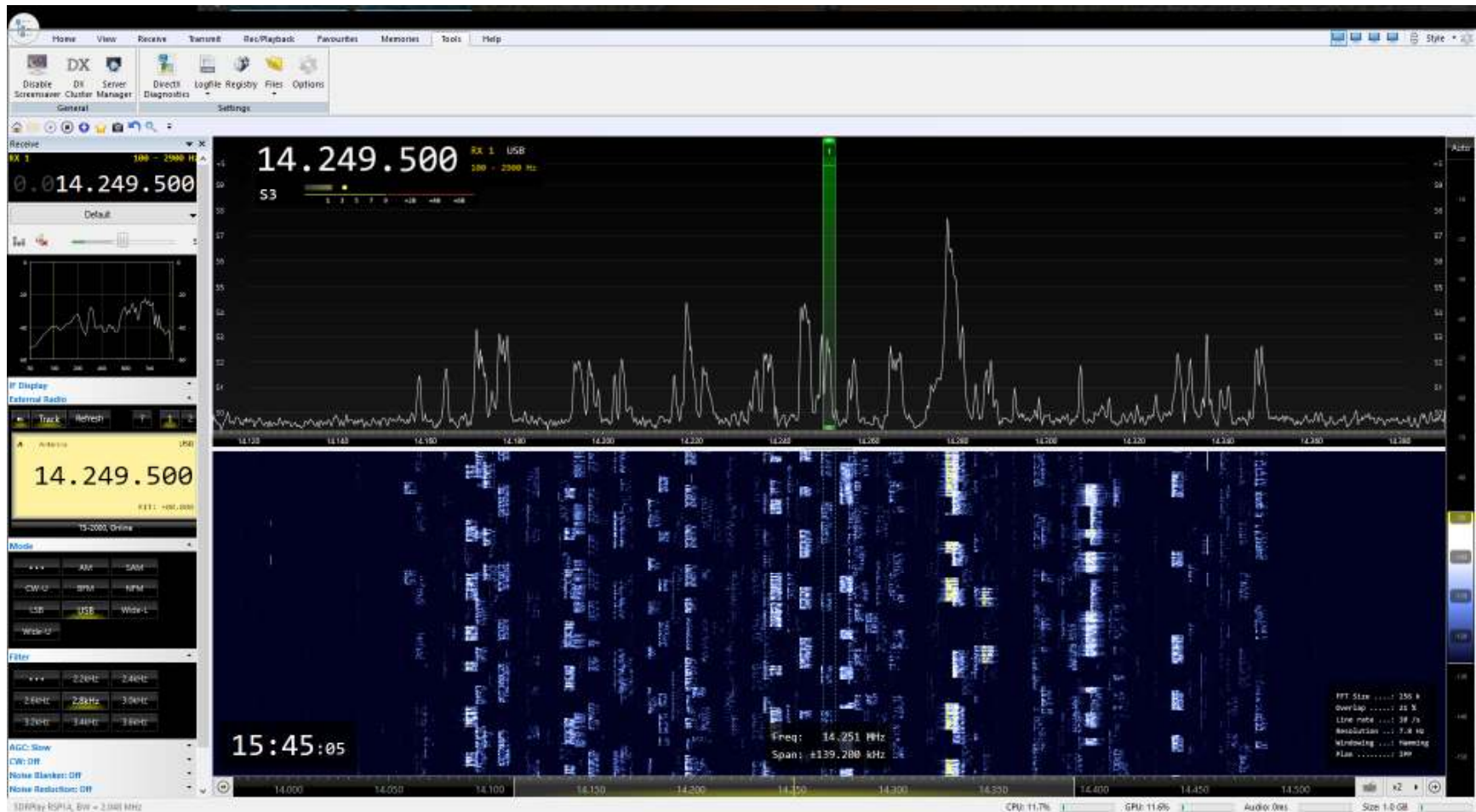
What is a PANADAPTER

- Visual display of signals on a band or multiple bands using a band scope and waterfall
- Can be hardware or software based or combination
- Can be driven by a ham receiver or separate receiver
- Can share an antenna with a transceiver or use a separate receiver
- This presentation will focus on using a SW based PA using a separate receiver (SDR) and shared antenna(s)

Objectives for this project

- Fully functional Panadapter at low cost
- Point and click radio tuning
- Mouse wheel tuning
- Integration with radio control and logging programs
- Total investment assuming existing radio and computer less than \$250
- Totally free and flexible software

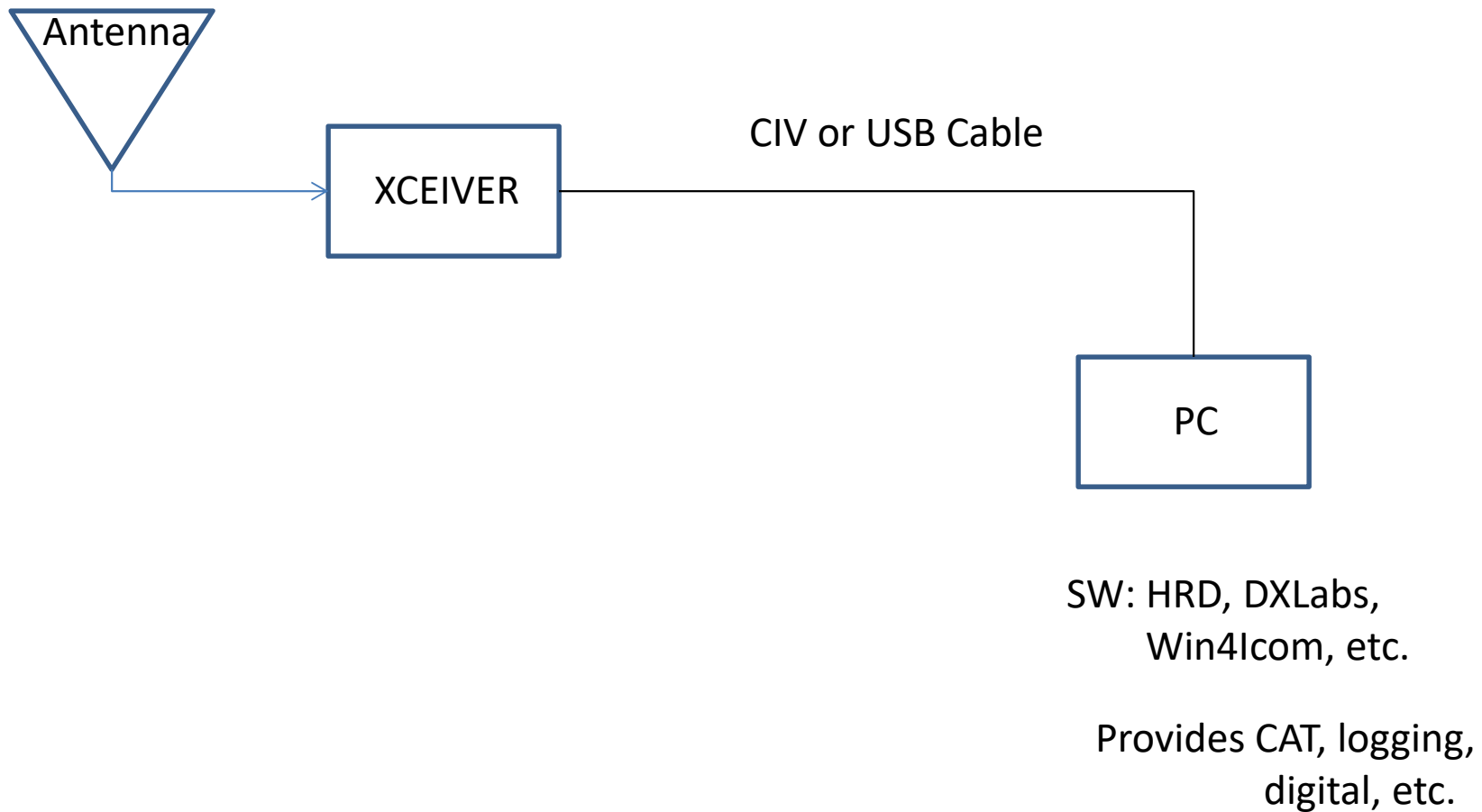
Components of PA Display



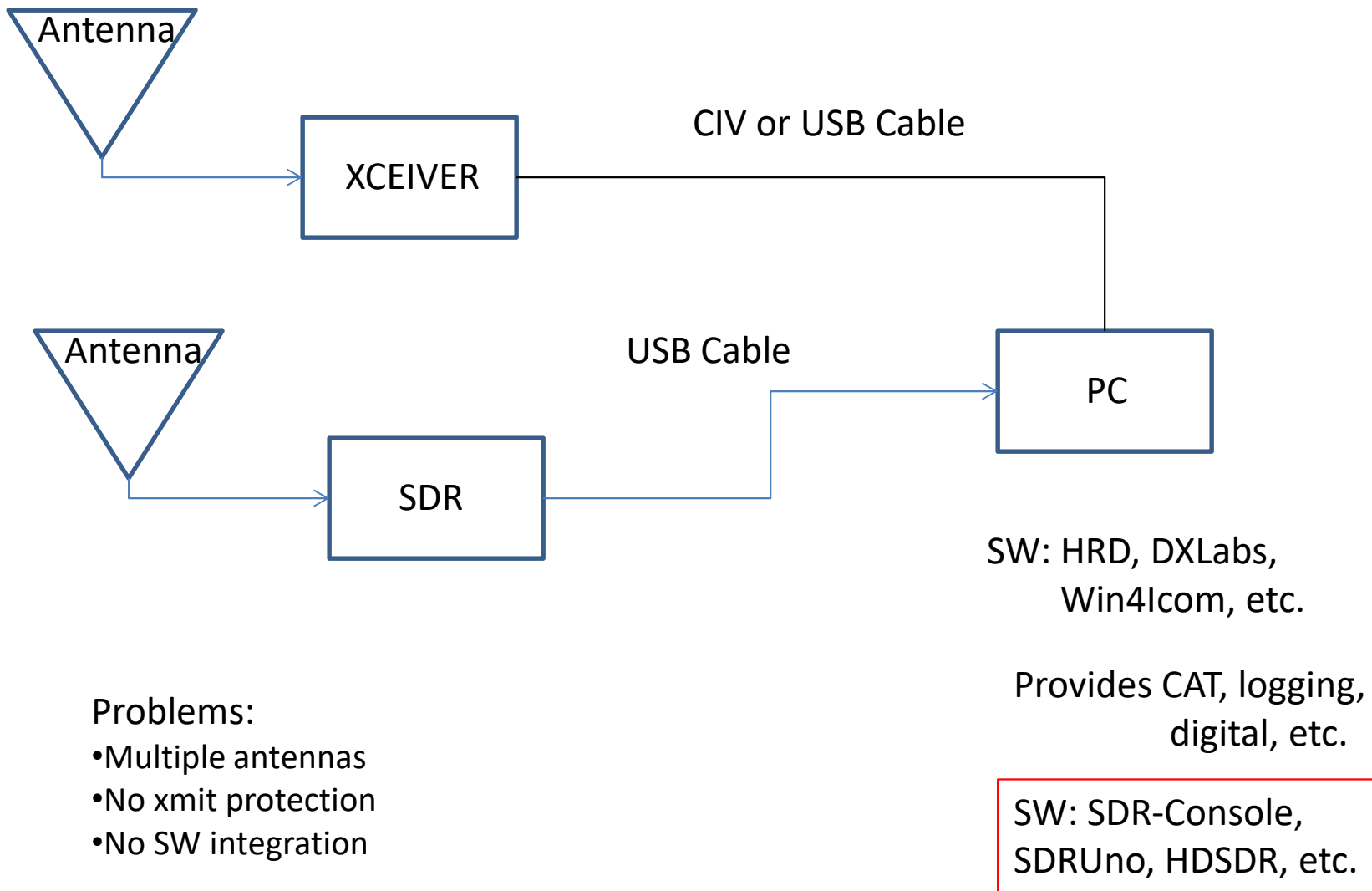
What is a SDR?

- Receiver with a very wide front end (1kHz-2GHz)
- Converts analog RF to digital representation
- Can be Direct Digital Conversion (DDC) or superhet (single conversion)
- Usually contain HW filters
- Outputs digitally converted RF to a computer
- Software controls receiver functions (tuning, detection, DSP, Panadapter)

Basic CAT Connections



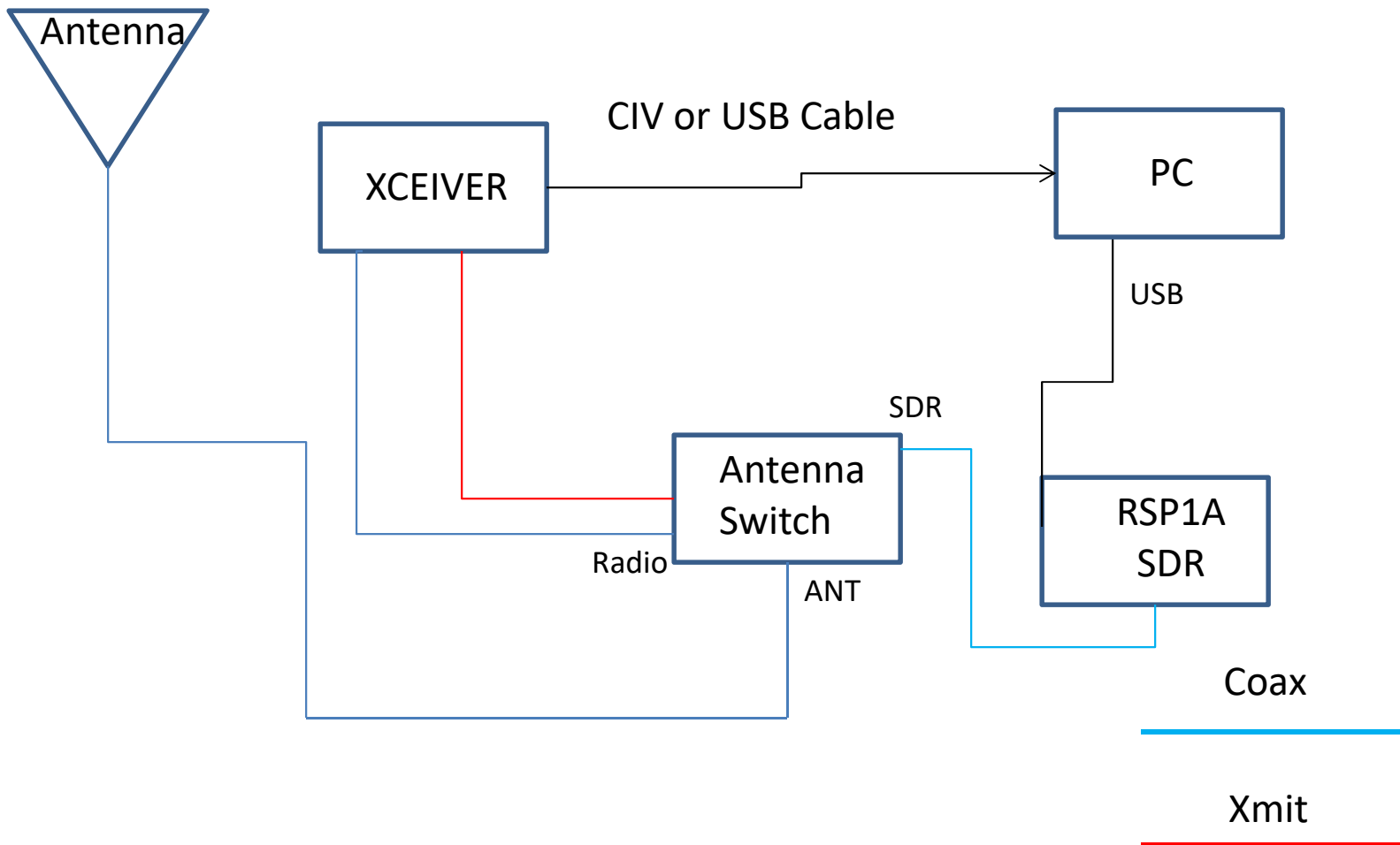
Add SDR



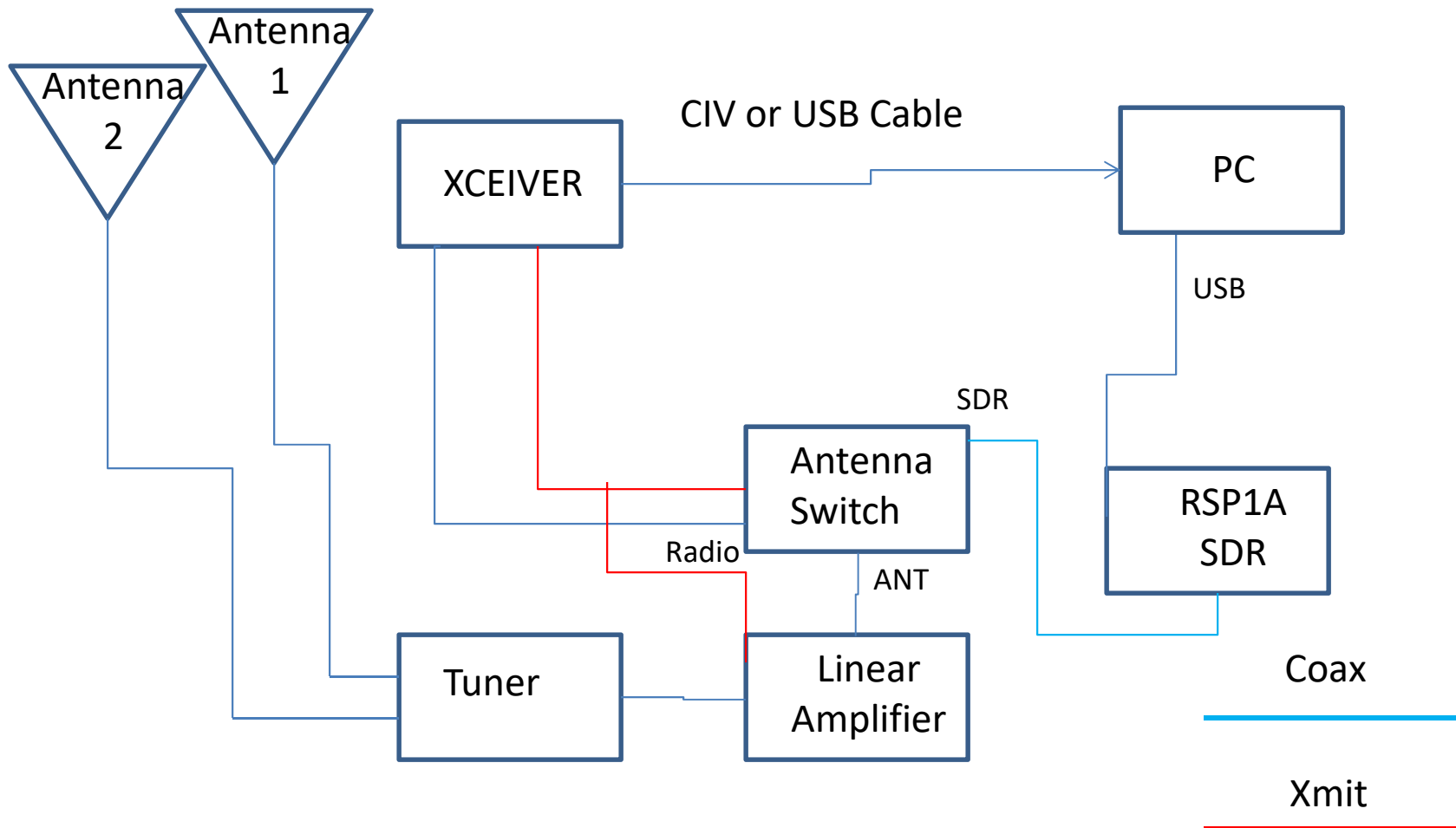
Problems:

- Multiple antennas
- No xmit protection
- No SW integration

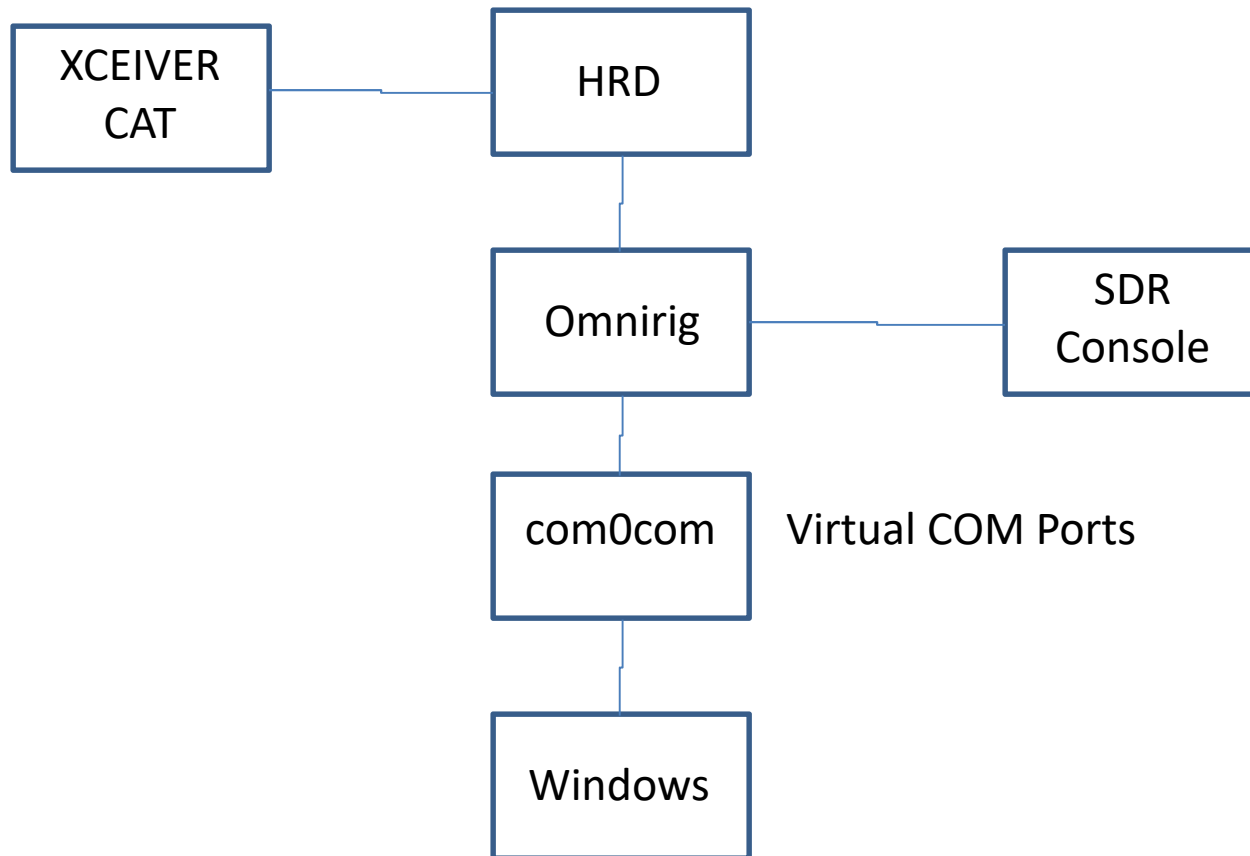
SDR Panadapter Hardware Connections



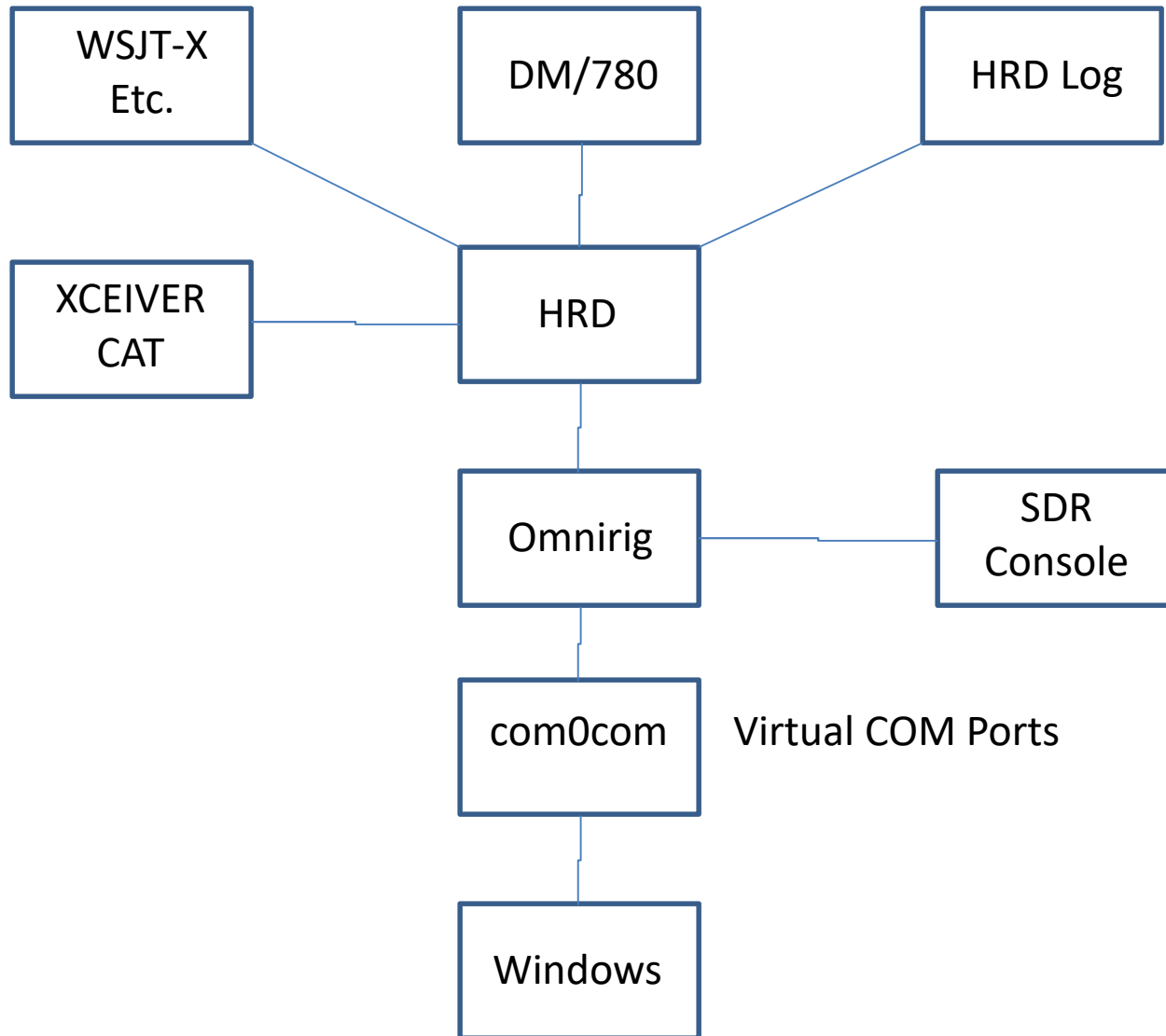
SDR Panadapter Hardware Connections With Tuner and Amplifier



SDR Panadapter Software Stack



SDR Panadapter Software Stack +



Web Links

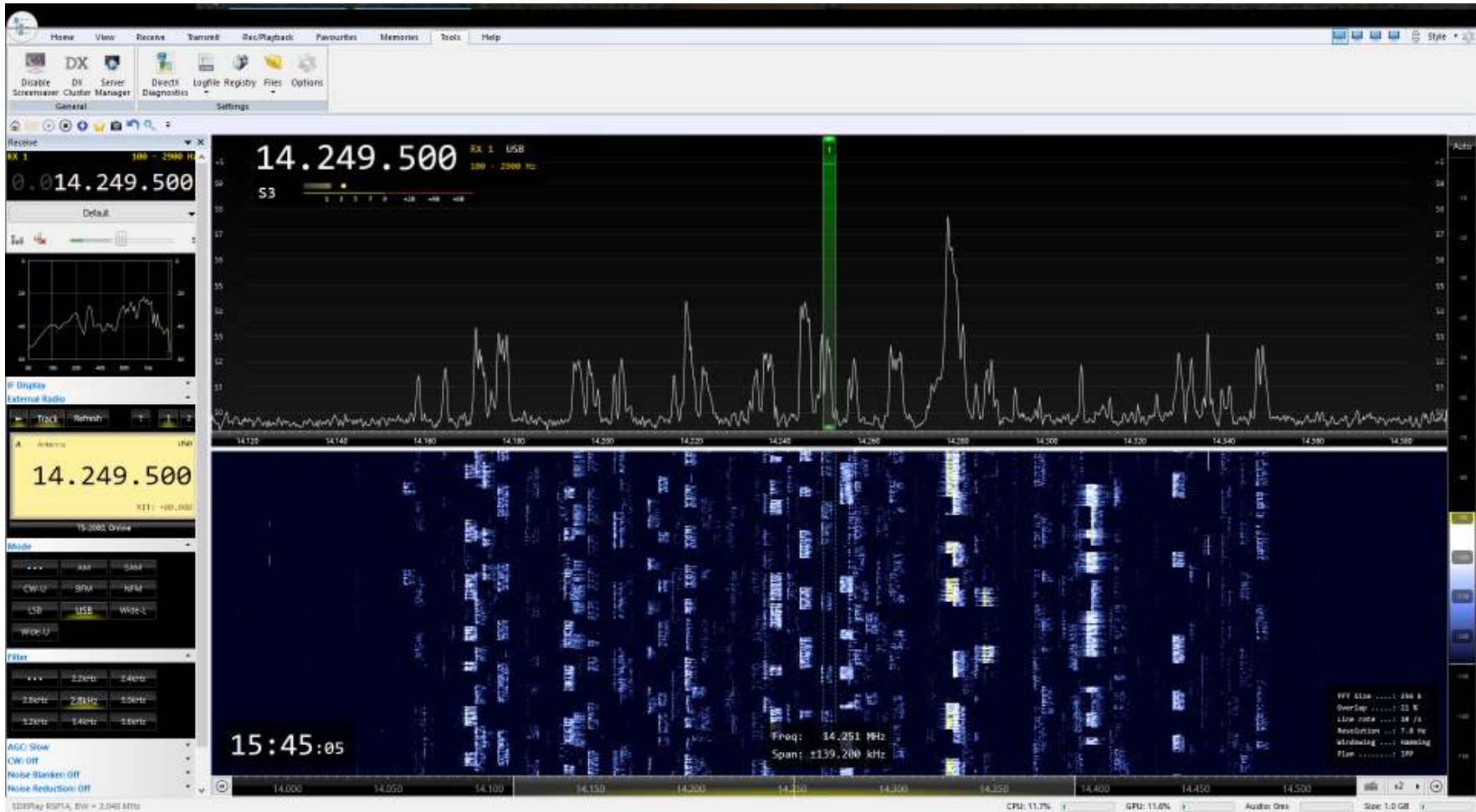
- Hardware

- SDR Ant Switch: www.mfjenterprises.com/Product.php?productid=MFJ-1708SDR
- SDR Receiver: www.hamradio.com/detail.cfm?pid=H0-015965

- Software

- COM0COM: sourceforge.net/projects/com0com/
- Omnirig: dxatlas.com/Download.asp
- Ham Radio Deluxe: www.egr.msu.edu/msuarc/software/ham-radio-deluxe/
- SDR-Console (ver. 3): www.sdrplay.com/downloads/

Let's Have Some Fun!



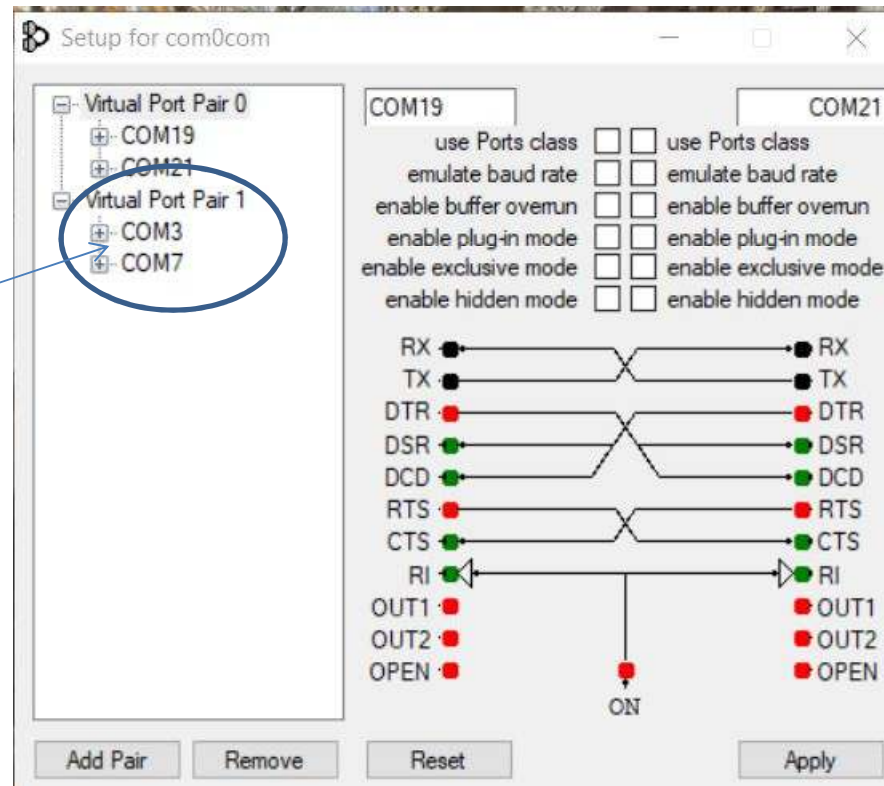
Appendix

Software configuration examples

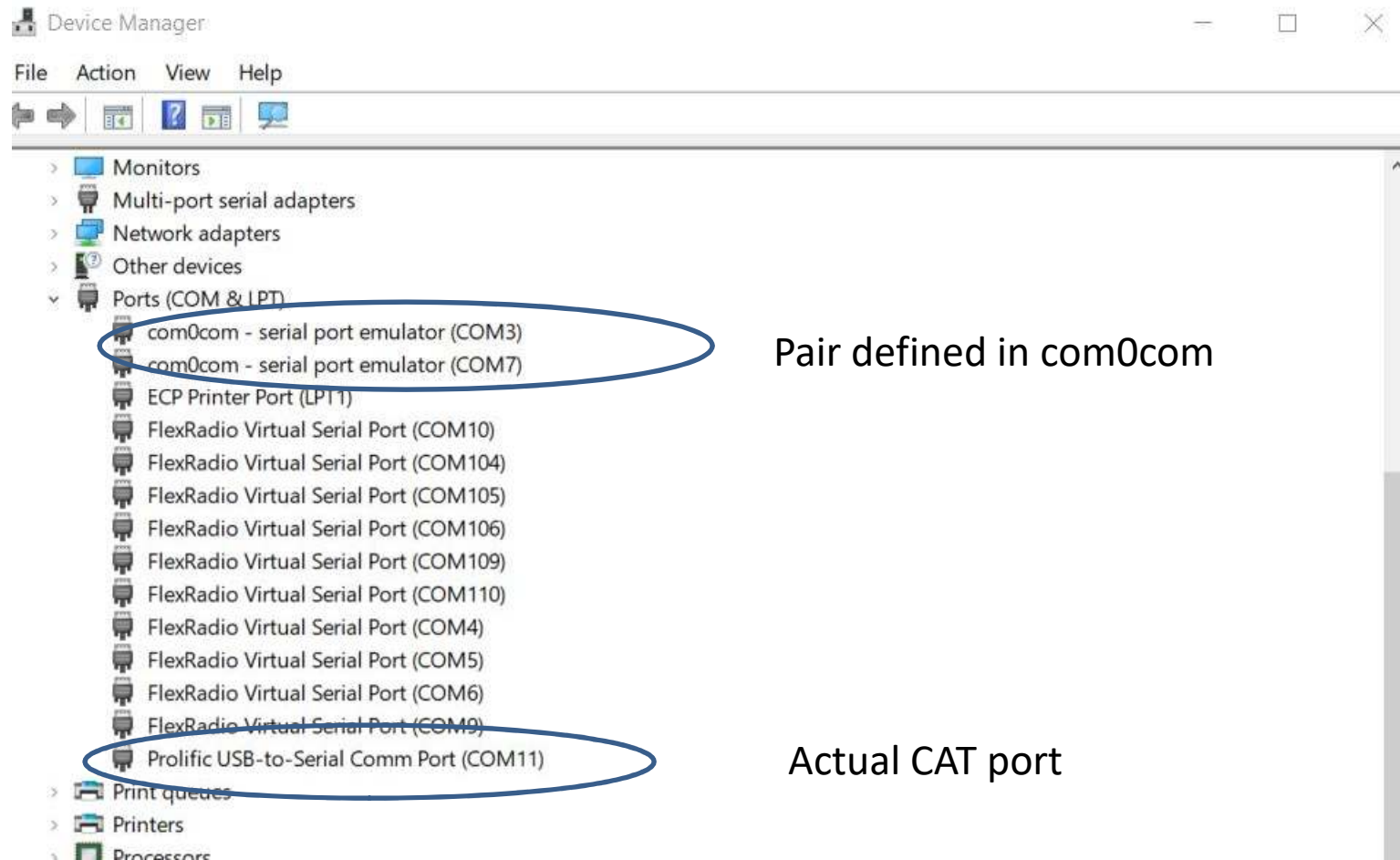
com0com

- Note: 2 pairs defined

This pair will be used



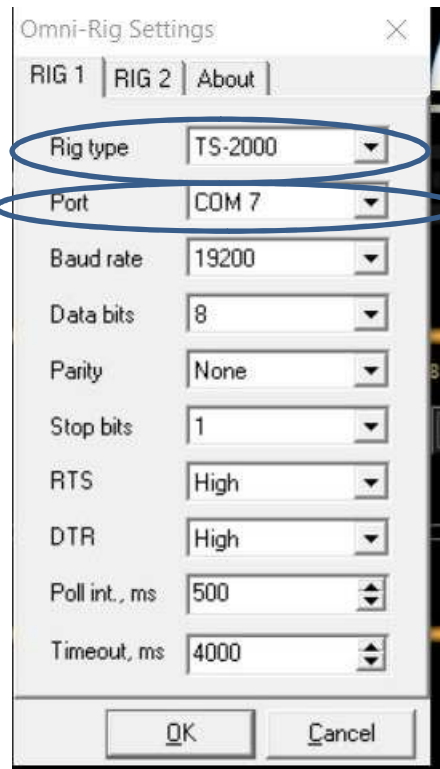
Device Manager Display



Omnirig

- Always TS-2000 regardless of actual rig

1 end of the virtual port pair



Ham Radio Deluxe

Connection config

Connect: Unregistered - Registration

Select a Preset or New definition

New	Preset	Serial Ports	He
Company: ICOM			
Radio: IC-706MkIIIG			
COM Port: COM11			
Speed: 19200			
CI-V Add: 58			
Flow control / Interface power			
<input type="checkbox"/> CTS <input type="checkbox"/> DTR <input type="checkbox"/> RTS			
<input checked="" type="checkbox"/> Always connect to this radio when starting			
<input type="checkbox"/> Start HRD in Full Screen mode			
<input type="button" value="Connect"/>			

WYSIWYS Web Builder

Tools → Hardware → 3rd party serial port

3rd-Party Serial Port

Introduction

Ham Radio Deluxe supports 3rd-party programs such as logbooks via a virtual serial port.

An example of a virtual serial port is available from Phil Covington N8VB, this will be available from the Ham Radio Deluxe downloads page <http://hrd.ham-radio.ch/downloads.html> when it has finished data

Enable

Connect when Ham Radio Deluxe starts

Port: COM3 Reads: 0

Mode: Default Writes: 0

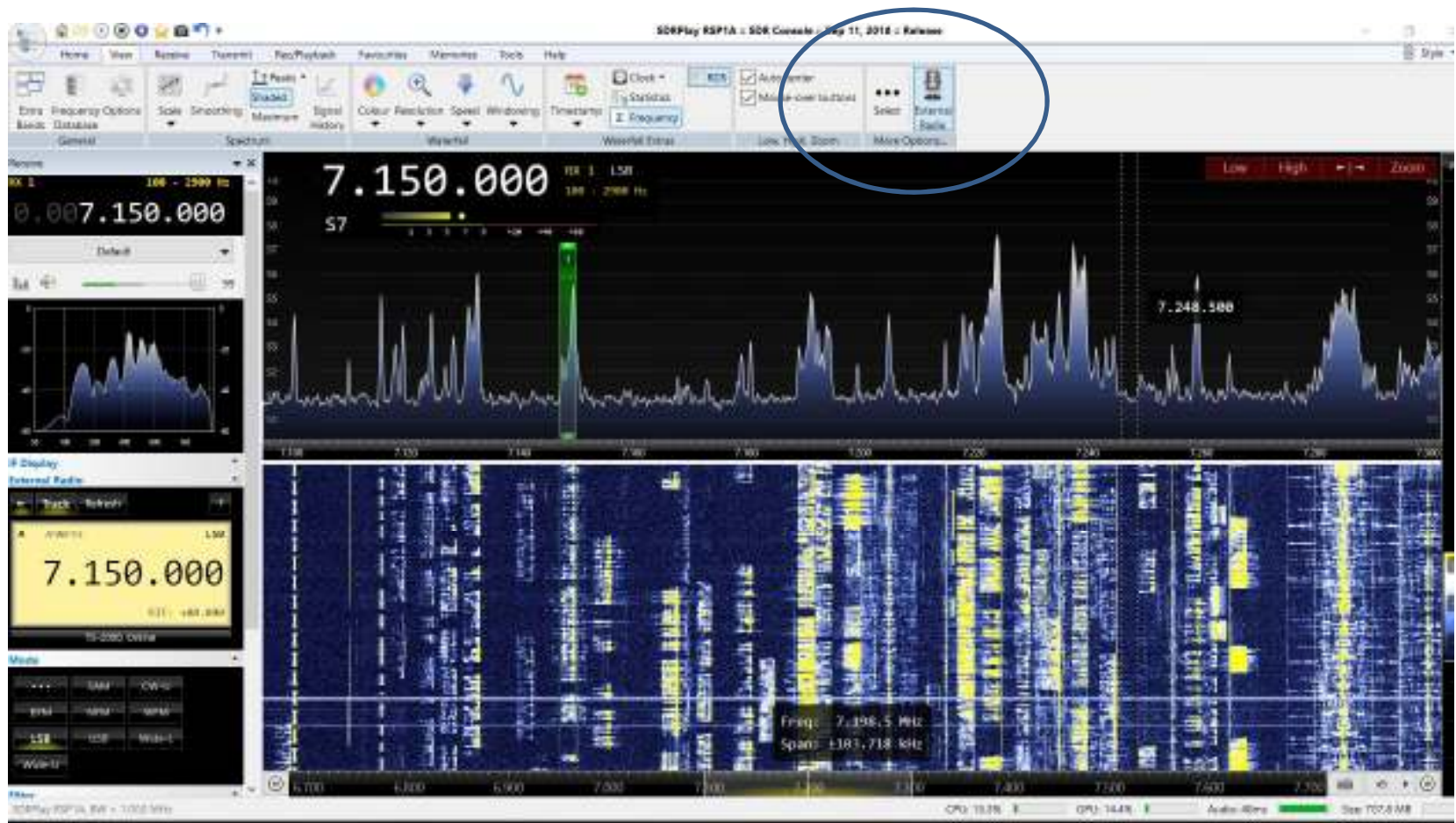
Speed: 19200 Default is 57,600

Status: 17-Oct-2018 12:42:43 [COM3] Connected

Other end of virtual pair

SDR Console View Menu

- Make sure External Radio is selected



SDR Console – External Radio Config

