Controlling Radio with MultiPSK

(procedure by Andrea Dalbagno IN3IWZ)

Introduction

MultiPSK is a software created by Patrick Lindecker **F6CTE** and aimed at decoding a very large number of digital modes, both amateurish and professional.

MultiPSK is able to interact directly (i.e. to modify frequency and reception mode) with some receiver models, including RTL-SDRs, SDRPlay and Funcube.

The procedure described below will allow you to manage *other* receivers in the same way, using the **Commander** software (part of the DXLAB Suite by Dave Bernstein **AA6YQ**), **SDRConsole** software (by Simon Brown **G4ELI**) and **com0com** software (a null-modem emulator or virtual serial port emulator by Vyacheslav Frolov ***vfrolov***)

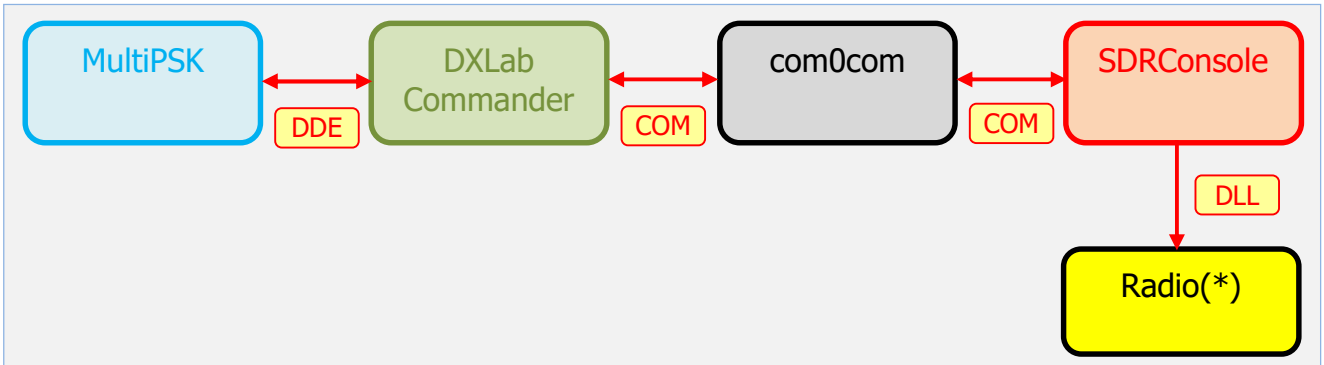
The first program (**Commander**) allows you, using the third one (**com0com**), to connect **MultiPSK** to the second one (**SDRConsole**) letting you to impose on it and detect from it frequency and mode changes.

The second program (**SDRConsole**) allows you to manage *any* device connected to it and working, including remote devices.

BEWARE: this procedure is tested only on a 64 bit machine, as I don't have a 32 Bit one.

I assume you have MultiPSK and SDRConsole up and running and in particular that one or more radio or remote radio are correctly connected to SDRConsole[1]

Concept



(*) whatever (and how many) radio or remote radio you have, supported by SDRConsole

Software needed

Below I describe the list of necessary software and the respective download links

1. **MultiPSK**4.48.5 (of course!) http://f6cte.free.fr/index
2. **Commander**8.5.9 from DXLab Suite https://www.dxlabsuite.com
3. **com0com** 3.0.0.0 64 bit signed version https://com0com.sourceforge.net
4. **SDRConsole** V 3.3 64 bit https://www.sdr-radio.com

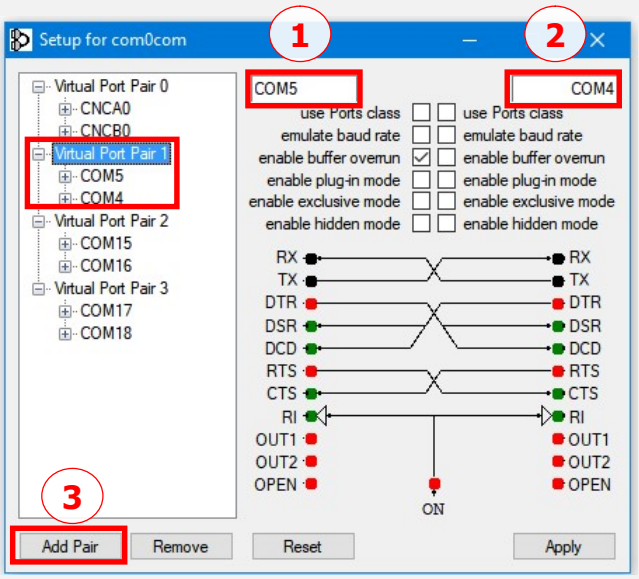
Procedure: installation and configuration (needed only once)

[1] Radio supported by SDRConsole V 3.3 are a.t.m. : Afedri, ARINST, BladRF, CCW SDR-4+, DXPatrol, Ettus Research, hackRF, Hermes Lite 2, Icom R 8600, Perseus, Red Pitaya, RF Space, RTL Dongles, RX-666/888, SDRPlay, Spectran V6, WinRadio, Airspy, ANAN, ELAD, LimeSDR, Pluto.

Here are the steps to configure the "Team":

com0com

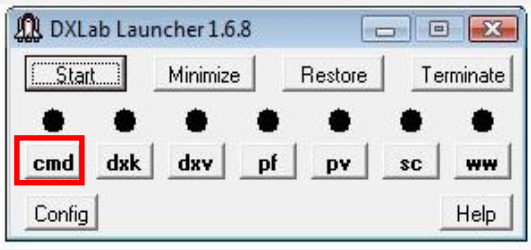
1. (*If you don't already have a copy installed and working)* download and install **com0com 3.0.0.0 64 bit signed version**, following the *readme.txt* file inside the zip.
2. Create a virtual com pair with com0com:
   a. run **setupg.exe** (the Graphic interface of com0com you find in the installation folder);
   b. in the windows that will appear, choose as follows (in this example COM4 and COM5).



   c. close **com0com** and reboot (for good measure).

Commander

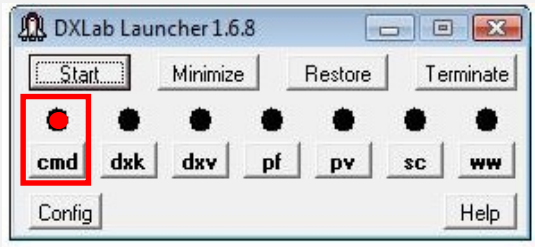
1. (*If you don't already have a copy installed and working)* download and install **DXLab Launcher**, following the instruction given on the webpage;
2. When done, run**DXLab Launcher** and, in the window that will appear, push "*cmd*" as follows:



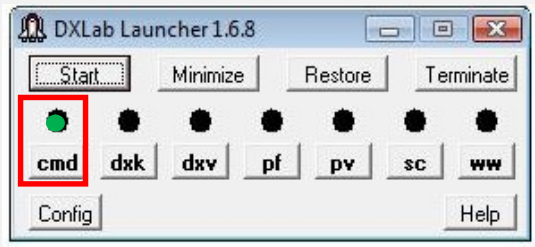
Note: if you have previously installed any of the DXLab Applications, the LED-like display above corresponding button is shown in red.

3. **DXLab Launcher** will now download and install **Commander**: follow the instructions given during installation, also referring to the webpage (It's really straightforward!);

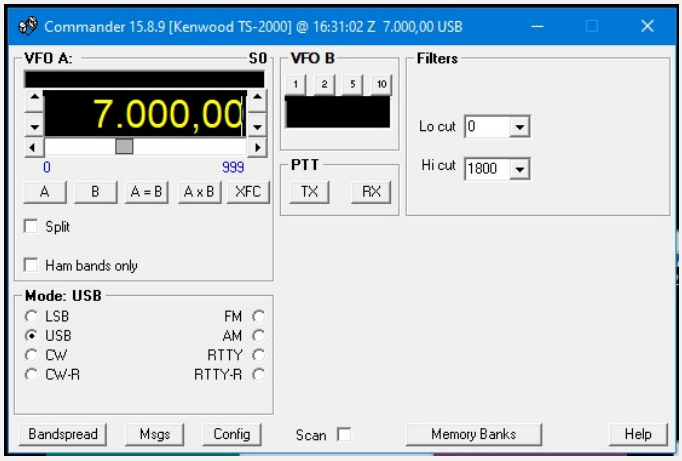
4. **DXLab Launcher** will now show e red LED-like display over the "*cmd*" button:



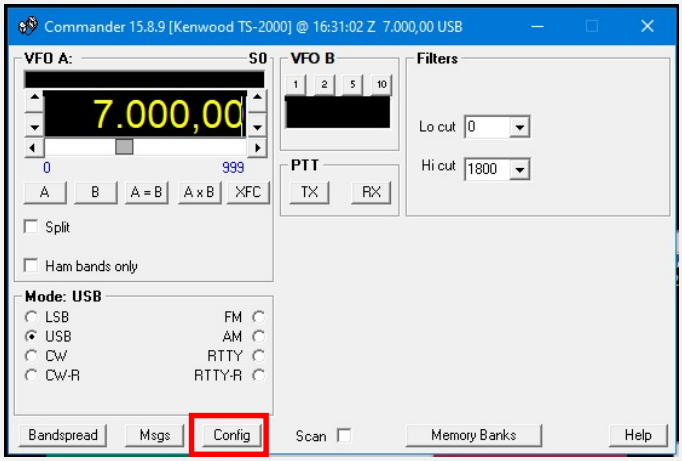
5. Push "*cmd*" button to launch **Commander**; the LED-like display switch to green…

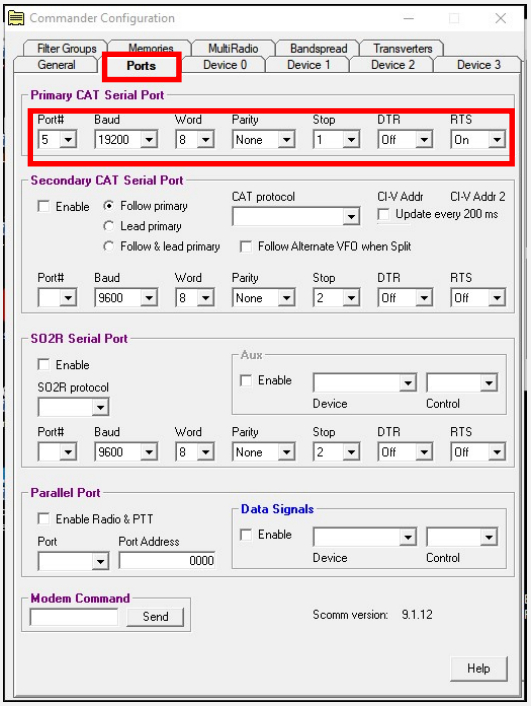


… and the main window of Commander appears



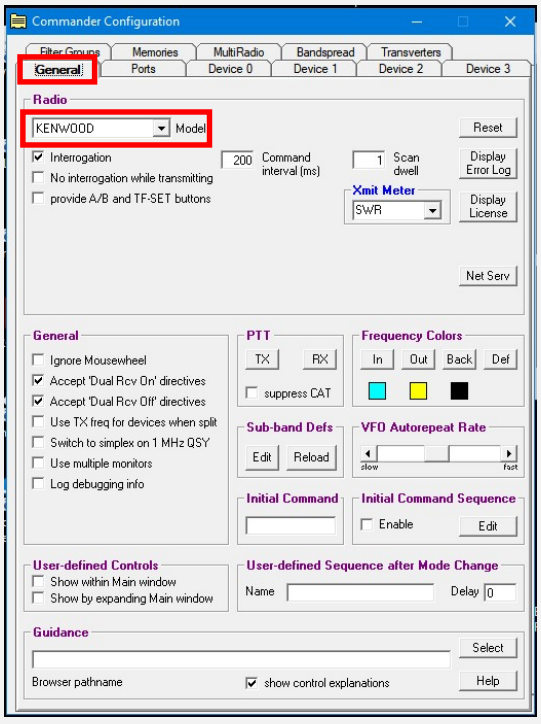
6. Push "*Config*" button and Select "*Ports*" tag:





Note: Port# is one of the pair you previously created with **com0com** (in this example, it is COM5).

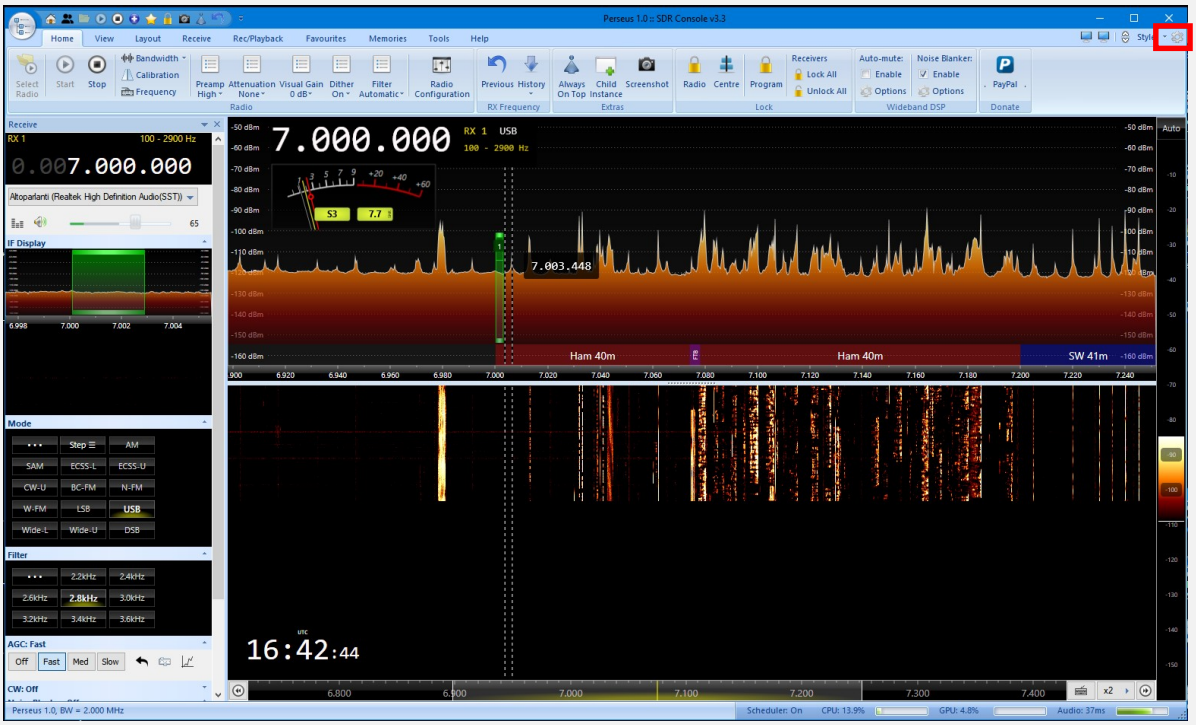
7. Insert values as shown in the picture above: Port# 5, 57600 Bd, 8, None, 2, DTR Off, RTS, On.
8. Select "*General*" tag and choose "KENWOOD" model for the Radio:



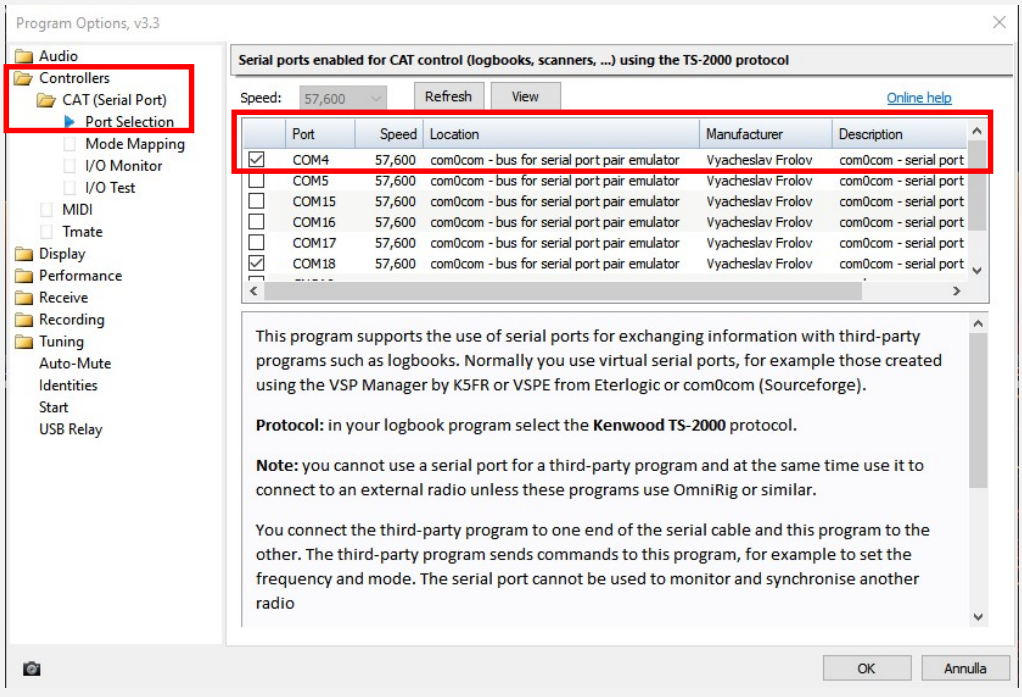
9. Close "*Config*" window;
10. Shut down **Commander**.

SDRConsole

1. In **SDRConsole**, push "*Program option*" button:



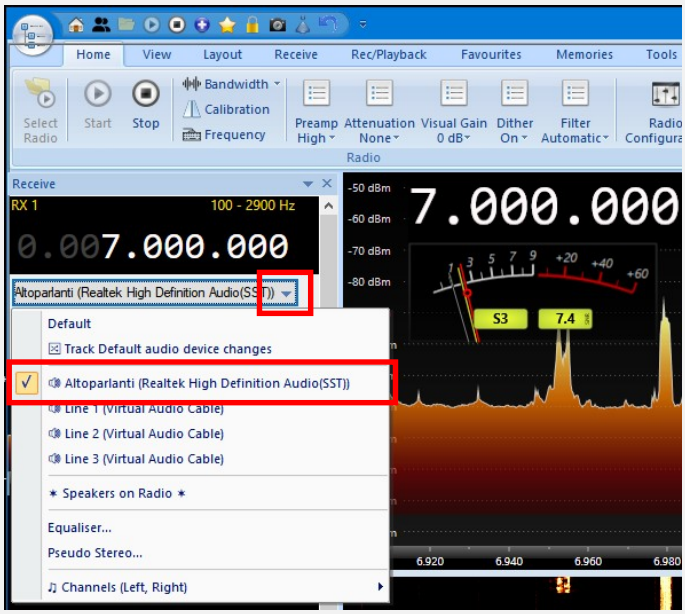
2. Select "*Port Selection*" under "Controllers "CAT (Serial Port)" and flag, as shown in the picture, COM 4



Note: Port# is one (other that one you choose in commander) of the pair you previously created with com0com (in this example, it is COM4).

3. close General option window.

4. in the man window, choose the audio channel you want to carry out the audio signal

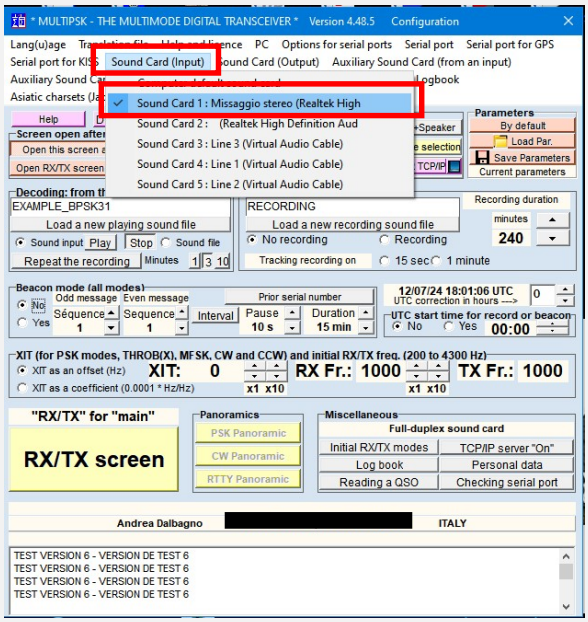


Note: in this procedure, the standard Windows audio devices used, no Virtual Audio Cable (VAC) is needed. Anyway you could use any VAC you have up and running. The procedure is the same: make sure to choose the same audio channel both in SDRConsole and MultiPSK.

5. Shut down **SDRConsole**.

MultiPSK

1. Start **MultiPSK**.
2. Under the "*Sound Card Input*" menu choose the **same** audio channel you have chosen in **SDRConsole**:



Note: in this procedure, the standard Windows audio device is used, no Virtual Audio Cable (VAC) is needed. Anyway you could use any VAC you have up and running. The procedure is the same: make sure to choose the same audio channel both in SDRConsole and MultiPSK.

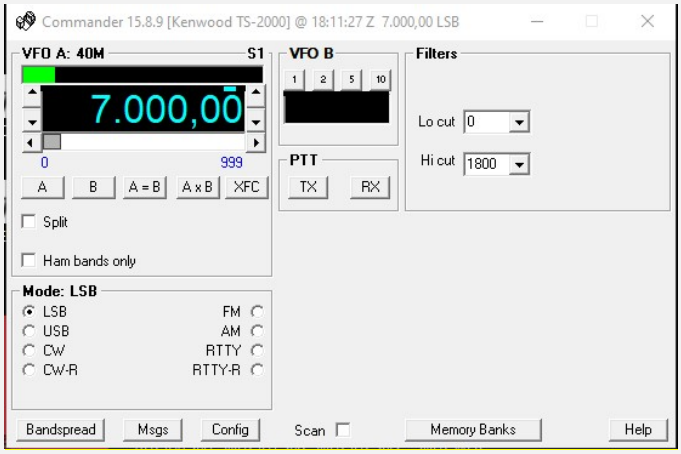
3. Shut down **MultiPSK**.

Coffee break

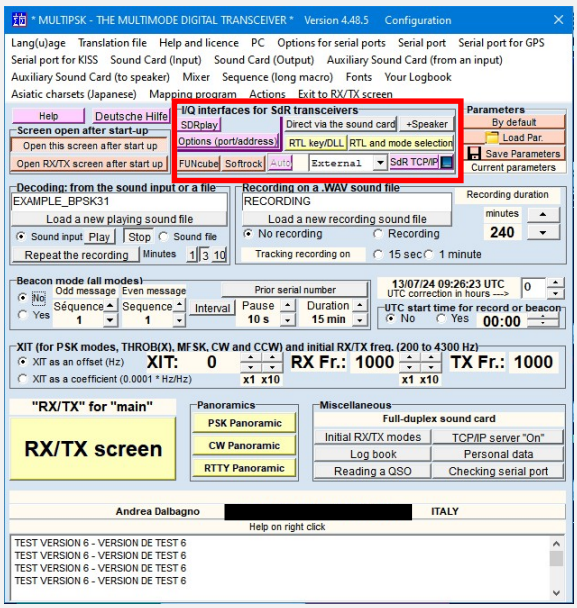
1. Close all and take your time to drink your favorite relax beverage.

Procedure: use

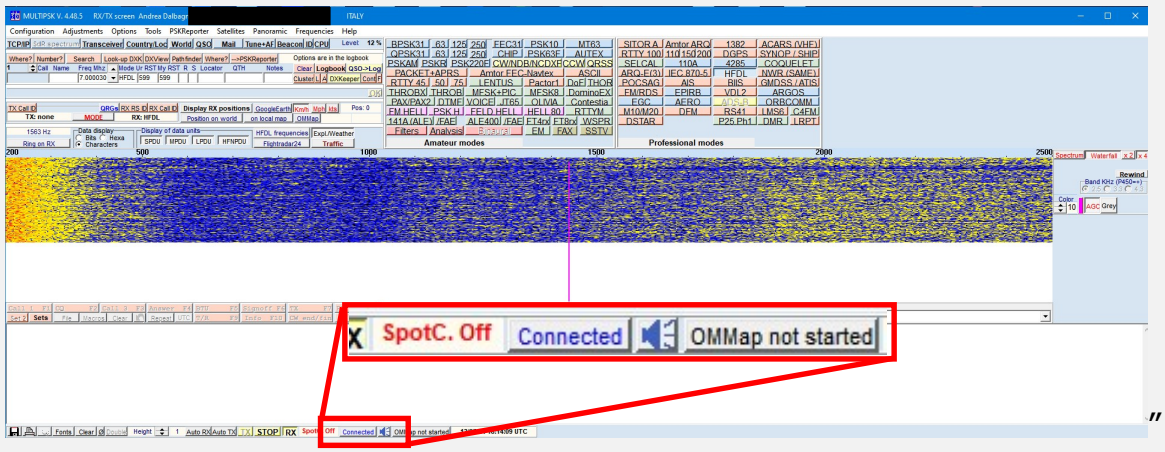
1. Start **Commander**: it is important to start Commander **before** MultiPSK so that MultiPSK can recognize the presence of **Commander**, establishing DDE communication.



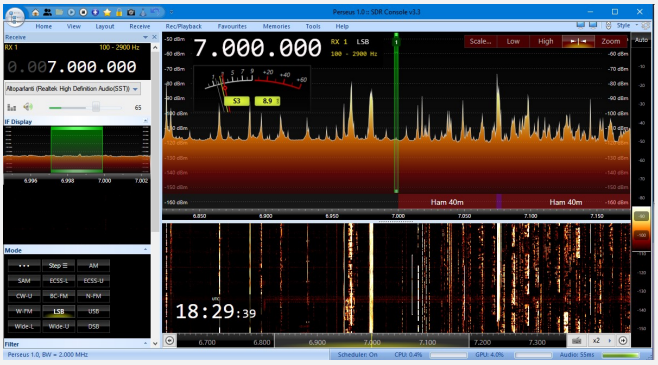
2. *Optional but highly recommended: start **OMMap**, a great interactive map software by Patrick F6CTE that come with MultiPSK*
3. Start **MultiPSK** and be sure that options look as in the picture option as follows.



4. Push "*RX/TX*" button and in the window that appears, check that "*Connected*" button is illuminated in blue.



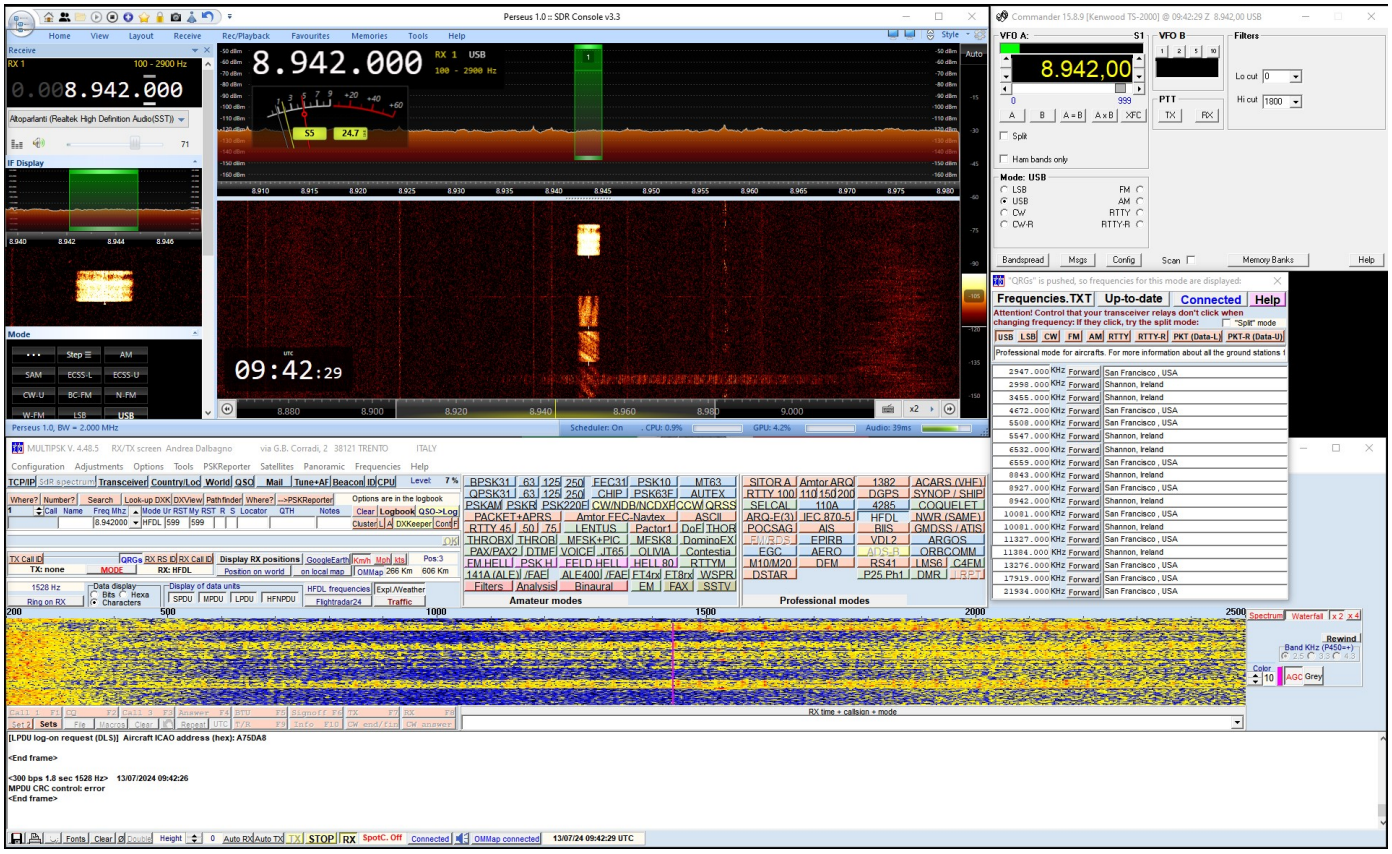
5. Start **SDRConsole**.

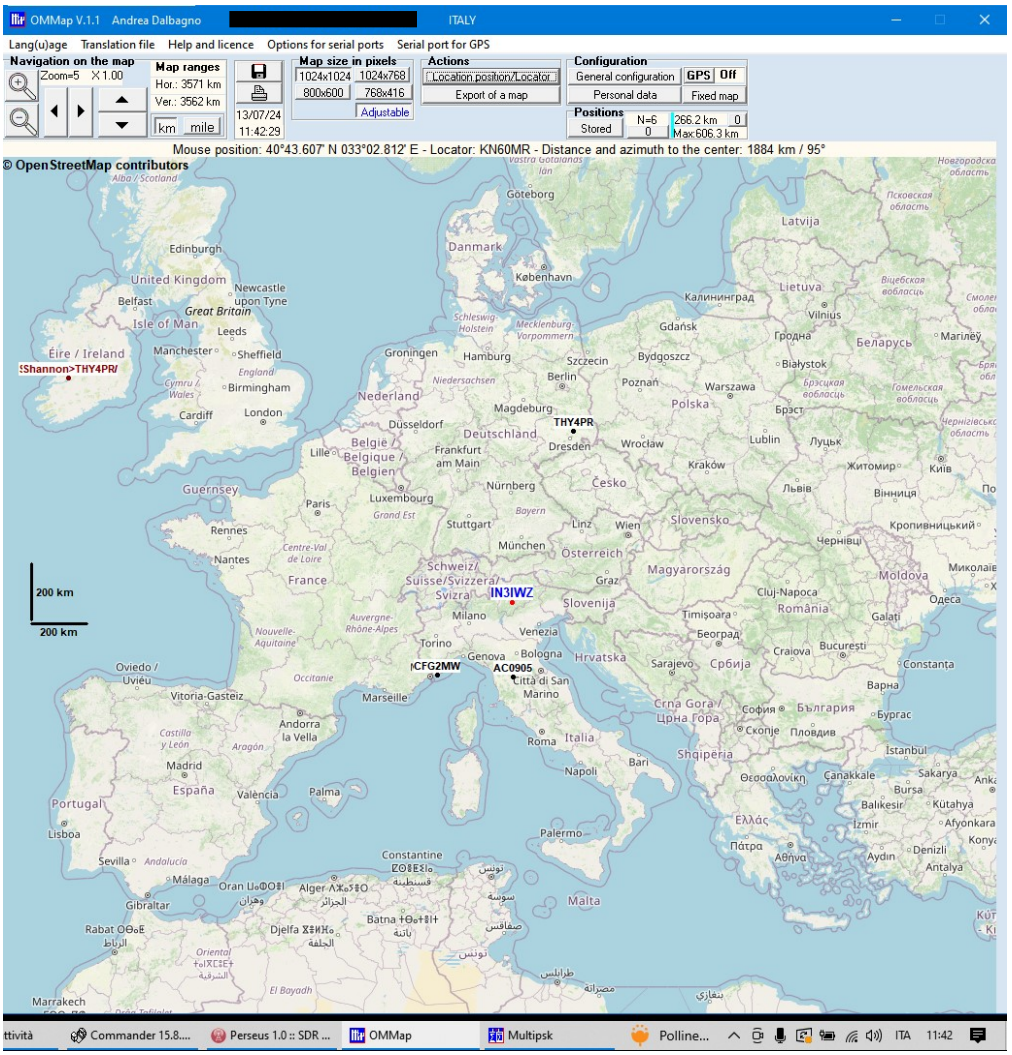


6. from now on every change in mode or frequency set in **<u>one of the activated software</u>** (**MultiPSK, Commander, SDRConsole**) will be reflected **in the others** and **in the radio connected to SDRConsole**.
7. Enjoy.

73
Andrea Dalbagno
IN3IWZ

Note: Modes that need an I/Q signal (FM/RDS, LRPT, VDL2, etc.) coming from SDRConsole, will be covered in the next procedure as they need a little more in-depth study. In fact, SDRConsole seems to allow an I/Q output specifically engineered to interface with CW-Skimmer (software by by Alex Shovkoplyas, VE3NEA, https://www.dxatlas.com/CwSkimmer/), but I hope to discover a way to route it to MultiPSK.


Perseus 1.0 :: SDR Console v3.3
8.942.000
09:42:29
Commander 15.8.9 [Kenwood TS-2000] @ 09:42:29 Z 8.942,00 USB
8.942,00
Frequencies.TXT
Up-to-date
Connected
Help
MULTIPSK V. 4.48.5
Amateur modes
Professional modes
[LPDU log-on request (DLS)] Aircraft ICAO address (hex): A750A8
<End frame>
<300 bps 1.8 sec 1528 Hz> 13/07/2024 09:42:26
MPDU CRC control: error
<End frame>


OMMap V.1.1 Andrea Dalbagno [redacted] ITALY
Lang(u)age
Translation file
Help and licence
Options for serial ports
Serial port for GPS
Navigation on the map
Map ranges
Map size in pixels
Actions
Configuration
Positions
Mouse position: 40°43.607' N 033°02.812' E - Locator: KN60MR - Distance and azimuth to the center: 1884 km / 95°
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!Shannon>THY4PR/
THY4PR
IN3IWZ
!CFG2MW
AC0905
200 km
200 km