Interfacing diagram with SUN DR2 CW Skimmer and a Logger Program

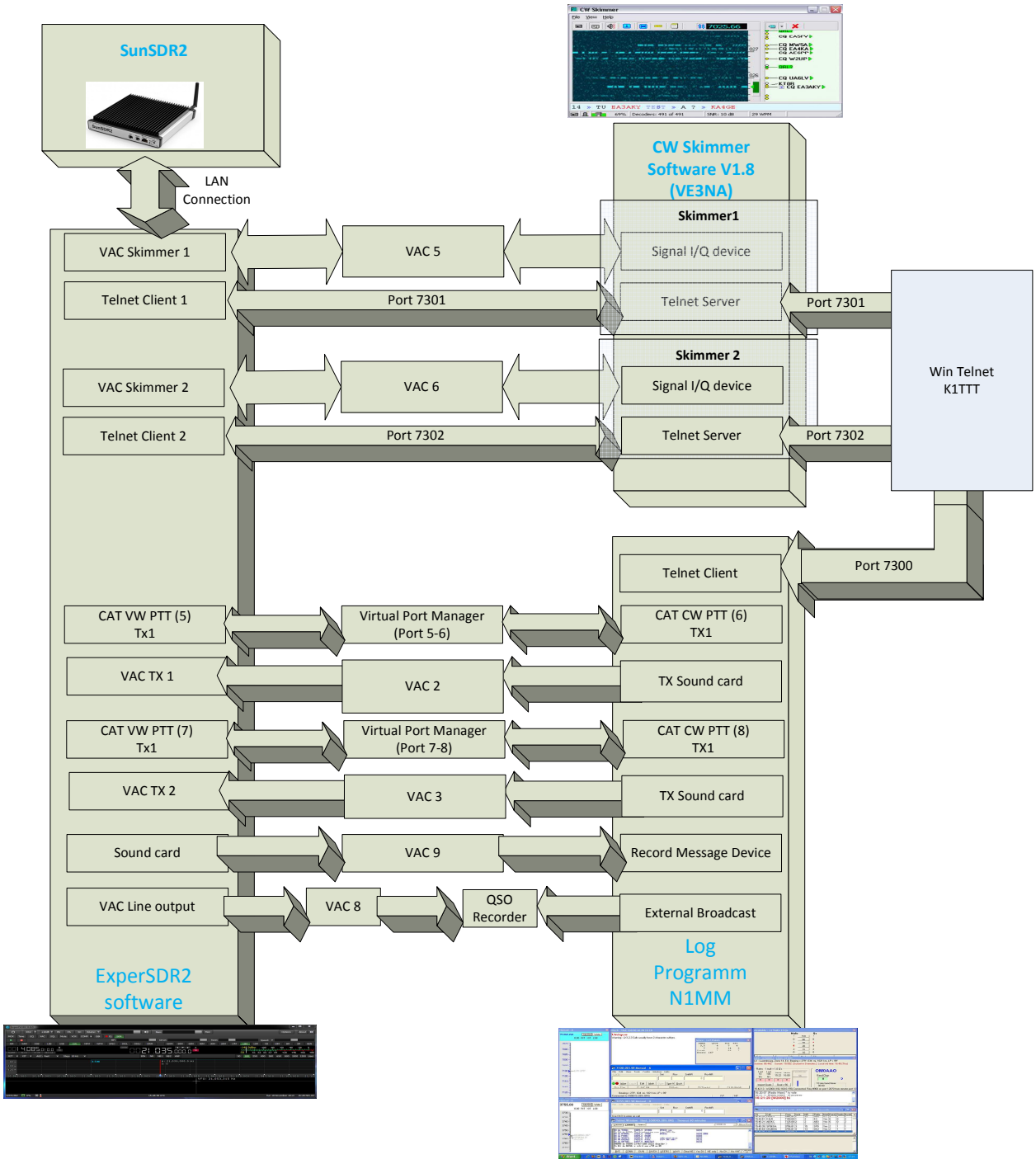

Figure 1 - General overview – connection and data flow

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1 Introduction

The data flow I/Q from the Expert SDR program is transmitted through a virtual audio cable interface to the CW Skimmer software for decoding the signal in the bandwidth. In parallel, The Sun SDR2 is connected via a telnet connection on the telnet server located on CW Skimmer software. CW Skimmer software manage also a telnet connection bridge to the logger program. The CAT connection between the SUN SDR2 and the logger program are managed through a virtual Port manager. Software used for this task are available to the links below.

Expert Electronic software

VAC (Virtual Audio Cable)

CW Skimmer

VSPM (Virtual Serial Port Manager) by Steve Nance **K5FR**

Win TelnetX by David Robbins **K1TTT**

Logger software

- N1MM software
- TR4W
- LogHX And others…

2 Installation procedure CW Skimmer and Expert SDR2

It's necessary to install VAC (Virtual Audio cable) on your computer for managing the Data flow.

2.1 Virtual Audio cable VAC

2.1.1 Installation

After downloading the VAC software click on install icon

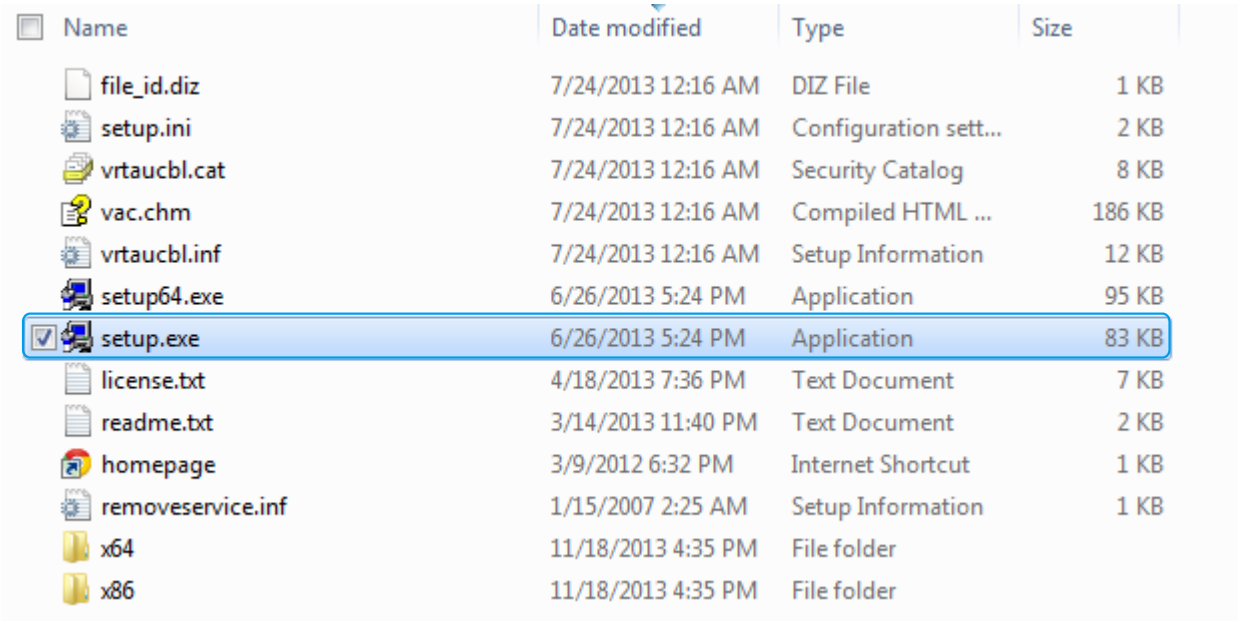


Figure 2 - Installer

- Continue by a click on Yes

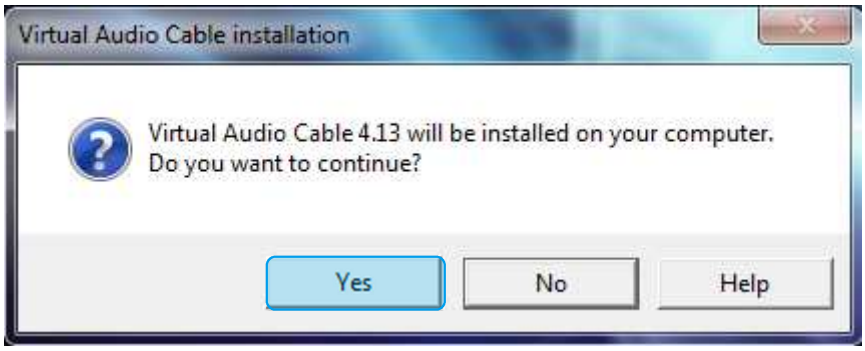


Figure 3 - Virtual Audio Cable Installation

- Then click on I accept

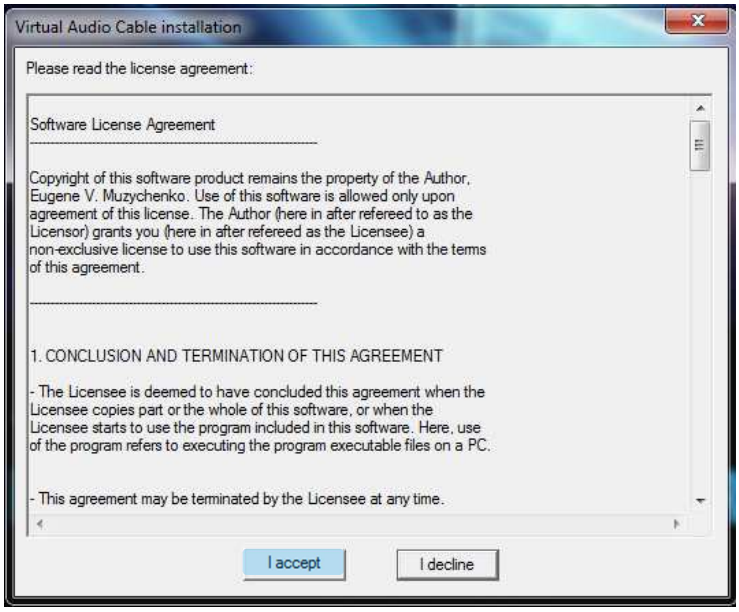


Figure 4 - License Agreement

- Click on Install, if necessary modify the Path program

Figure 5 - VAC Path Location

- This window will opened, let running the install process

Figure 6 - VAC Process Installation

- Then click on OK the Virtual Audio Cable installation is completed

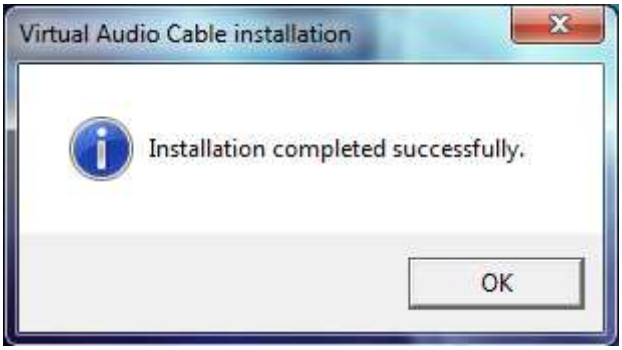


Figure 7 - VAC - Installation Completed

2.1.2 Configuration

To allow the connection between Expert SDR software and CW Skimmer it's necessary to create up to 9 virtual audio connections through the VAC software.

- Click on start, program to reach the virtual Audio Cable software, start the program

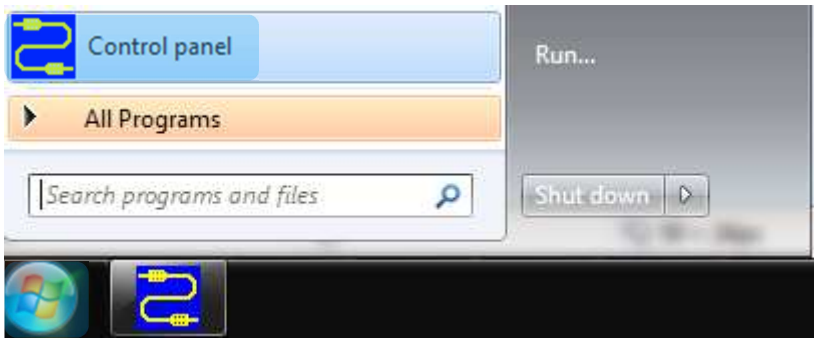


Figure 8 - Starting VAC Software

- The VAC is open

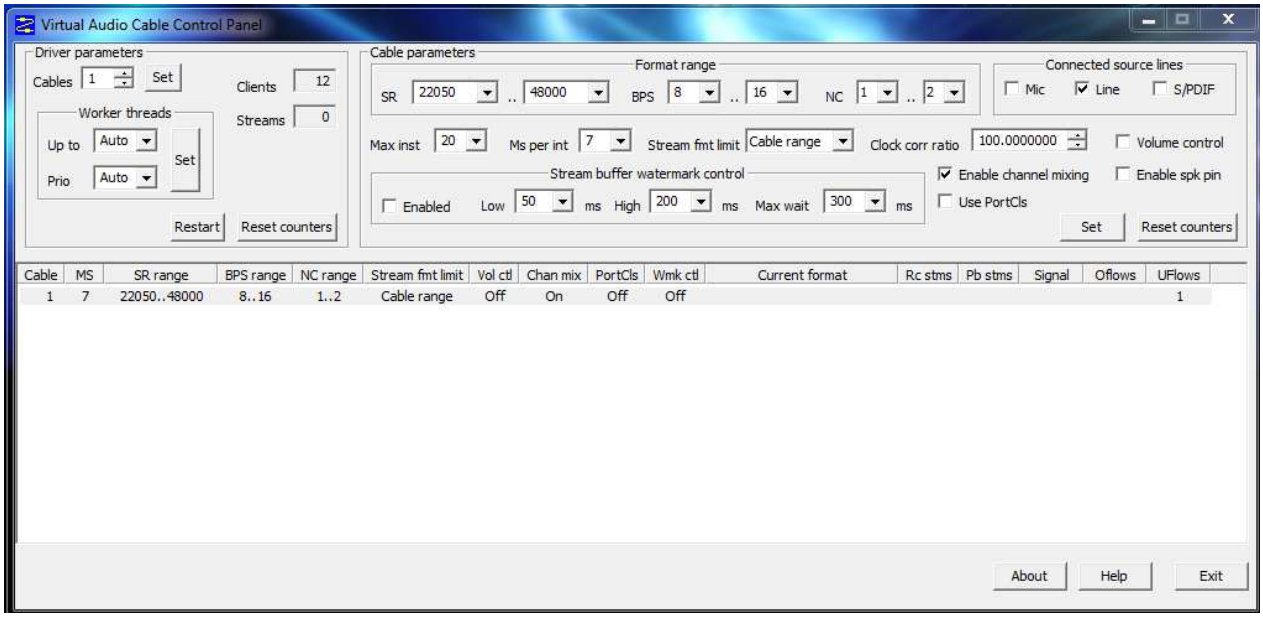


Figure 9 - VAC Window

2.1.3 Virtual cable creation

- In driver parameter window set the value 2 for the cable
- In Cable parameters
  - Format Range set the values as below
    - SR 8000 .. 19200 BPS 8 .. 24 NC 1 .. 2 (for VAC 1 to 4)
    - SR 22050 .. 19200 BPS 8 .. 24 NC 1 .. 2 (for VAC 5 and 6)
    - SR 22050 .. 96000 BPS 8 .. 24 NC 1 .. 2 (for VAC 7 to 9)
  - Connected source line
    - Check Line

➢ Then click on Set to validate the configuration

➢ Do this same task to declare the other virtual cable

➢ Virtual cables are created.

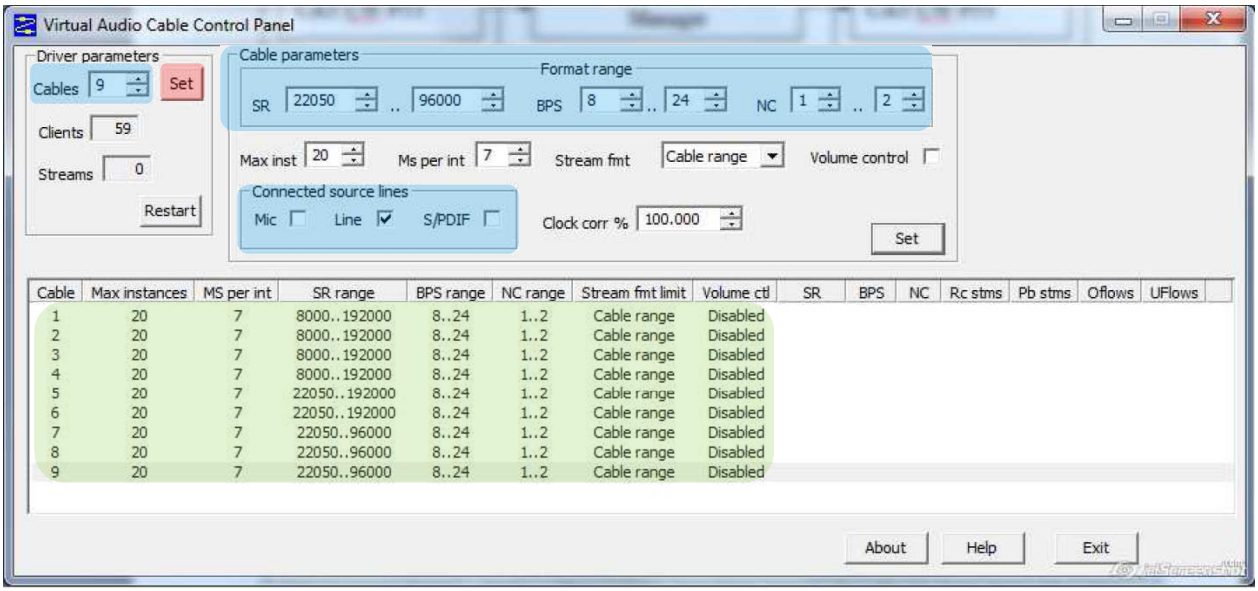


Figure 10 - VAC Cable Creation

Remark:

VAC 1 to 4 are used for Numeric communications TX, RX

VAC 5 and 6 are used for I/Q Skimmer

VAC 7 is used for connection «Audio I/O» Skimmer

VAC 8 is used for output line ESDR2

VAC 9 is used for SSB connection macros (need to be confirm the translation)

2.2 VSP Manager

2.2.1 Installation

After downloading the VAC software click on install icon

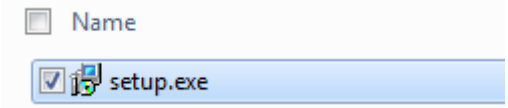


Figure 11 – VSPM Installer

- This window will open, then click on Next

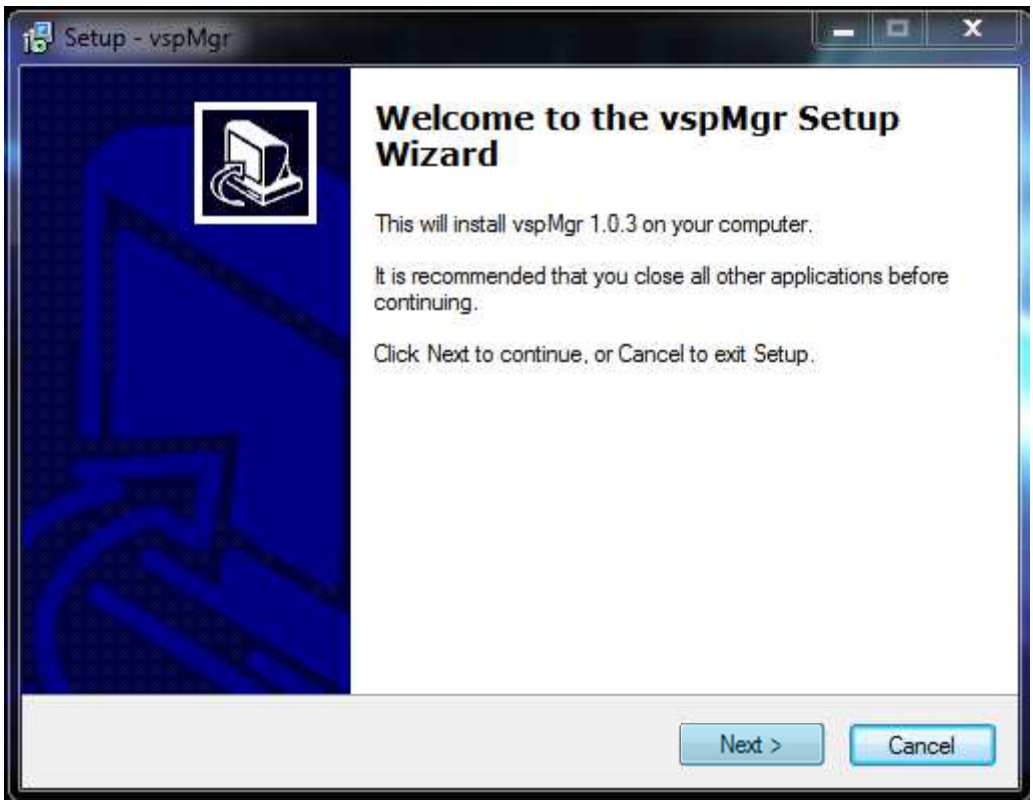


Figure 12 - VSPM Setup

- Check I accept the agreement, then click on Next

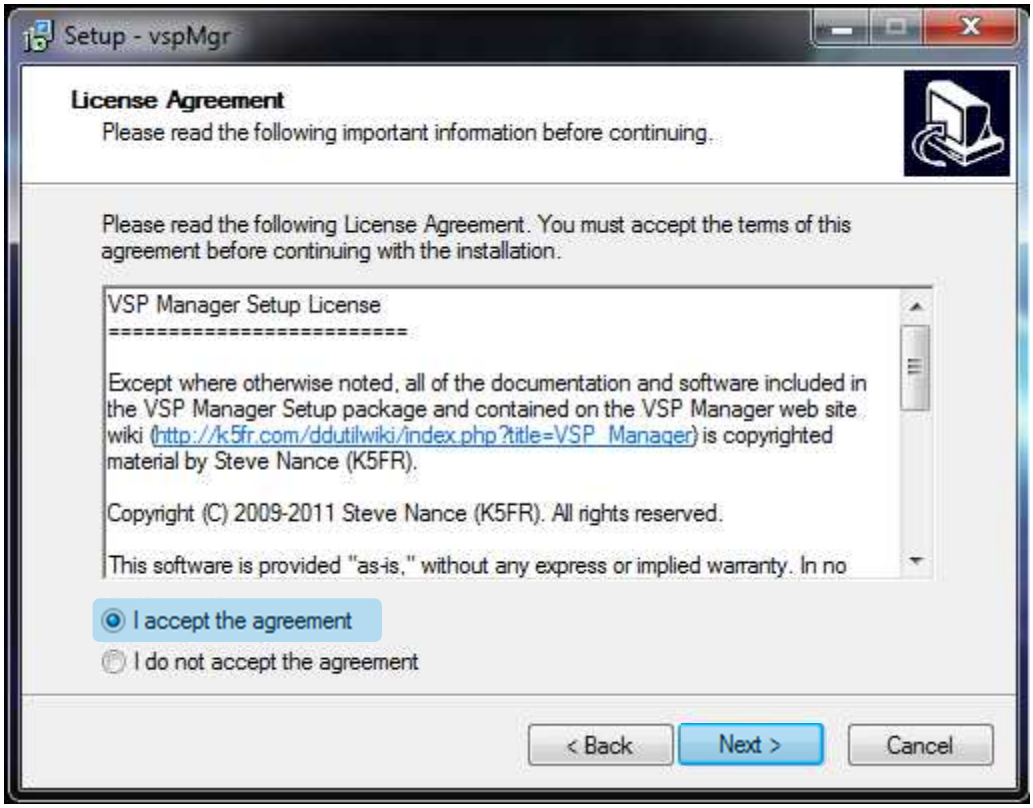


Figure 13 - VSPM License Agreement

- Path installation is proposed by default, modify it if necessary, then click on Next

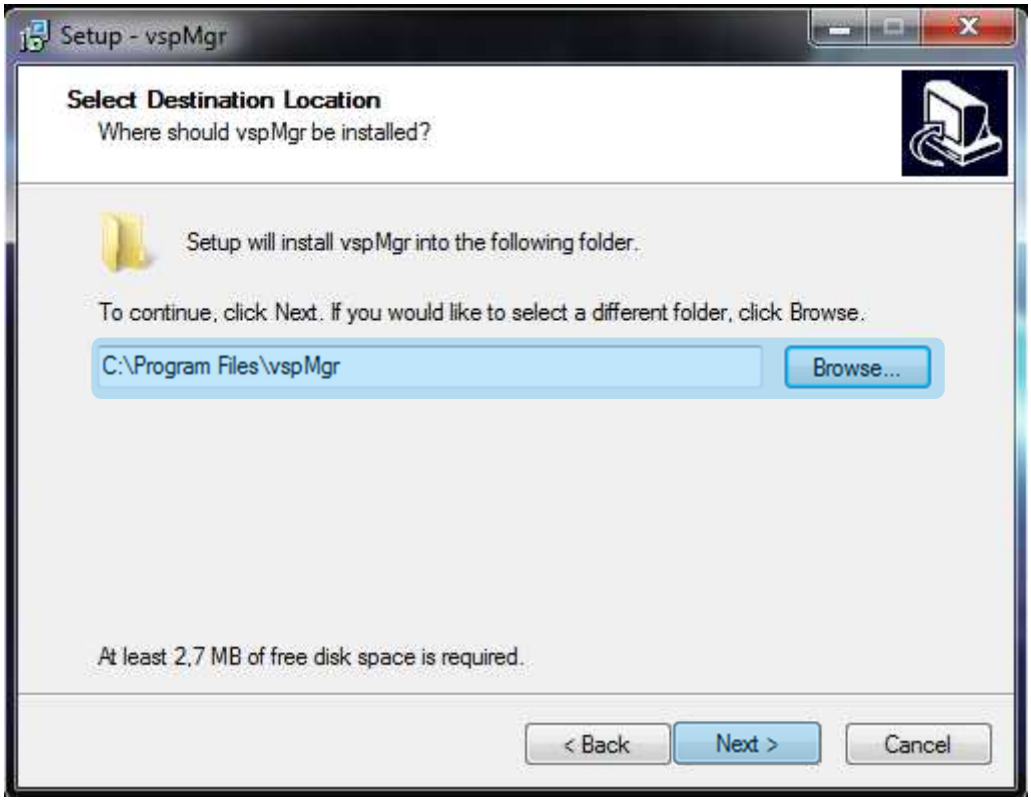


Figure 14 - VSPM Path Installation

- A short cut will be created rename it if necessary, then click on Next

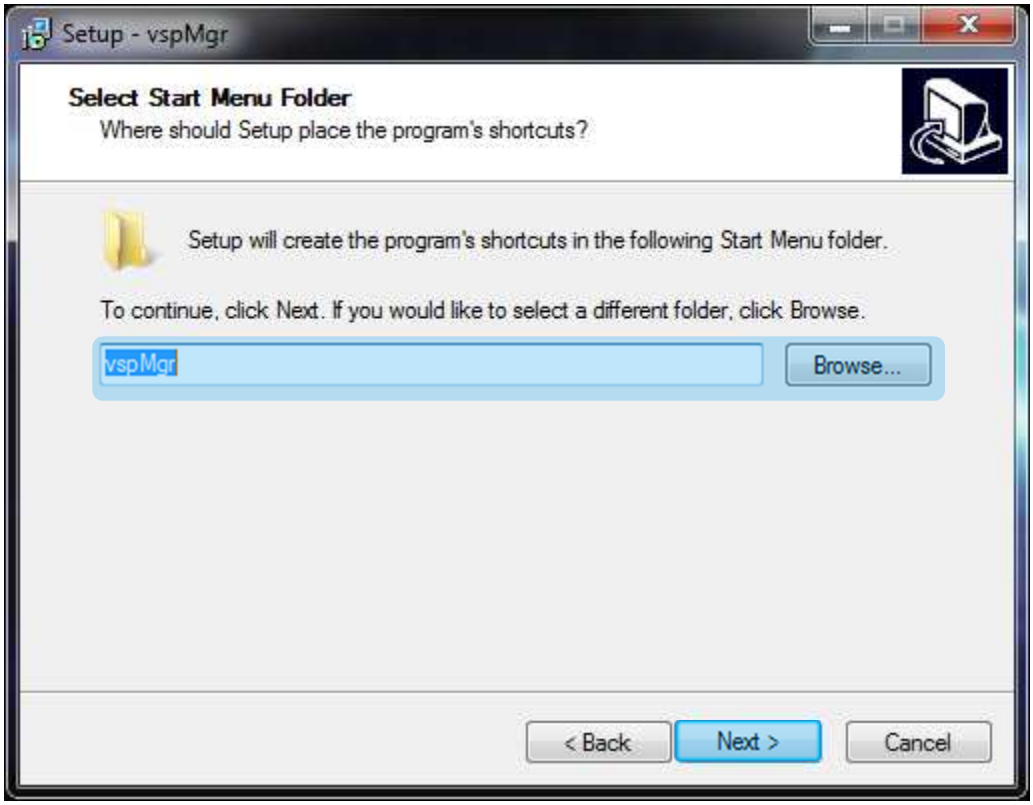


Figure 15 - VSPM Folder Creation

- Select Create a desktop icon and Create a Quick Launch icon if desired, then click on Next

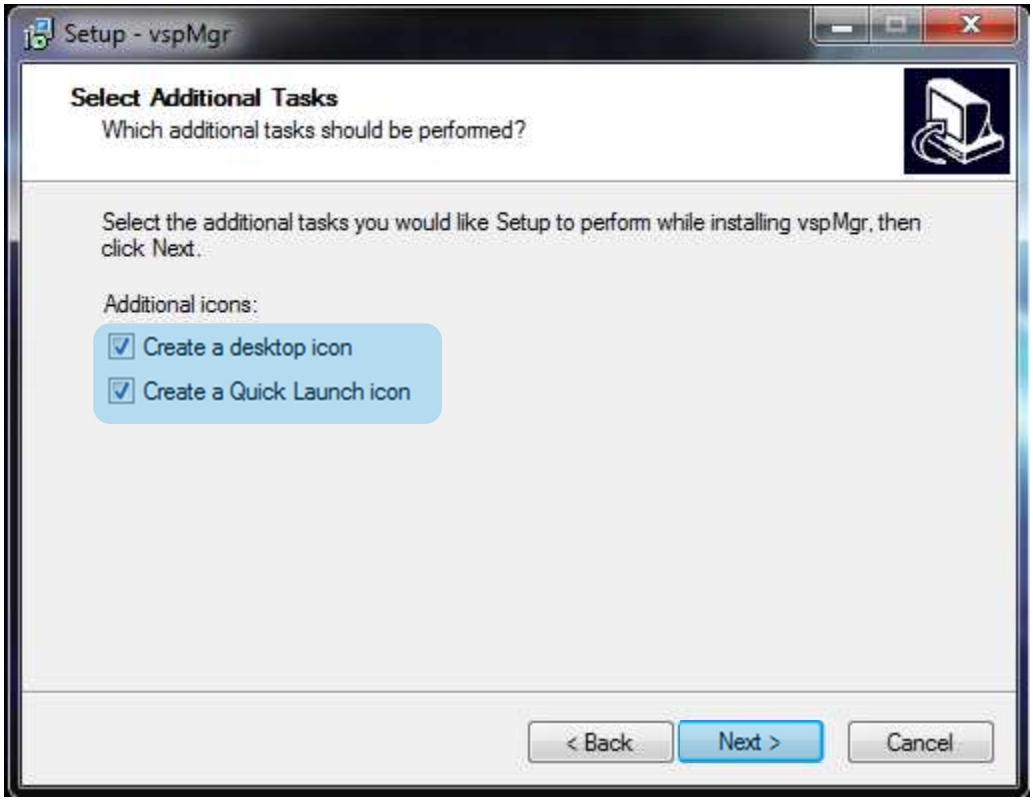


Figure 16 - VSPM Icon Creation

- Setting information's are displayed before installation, Click on install

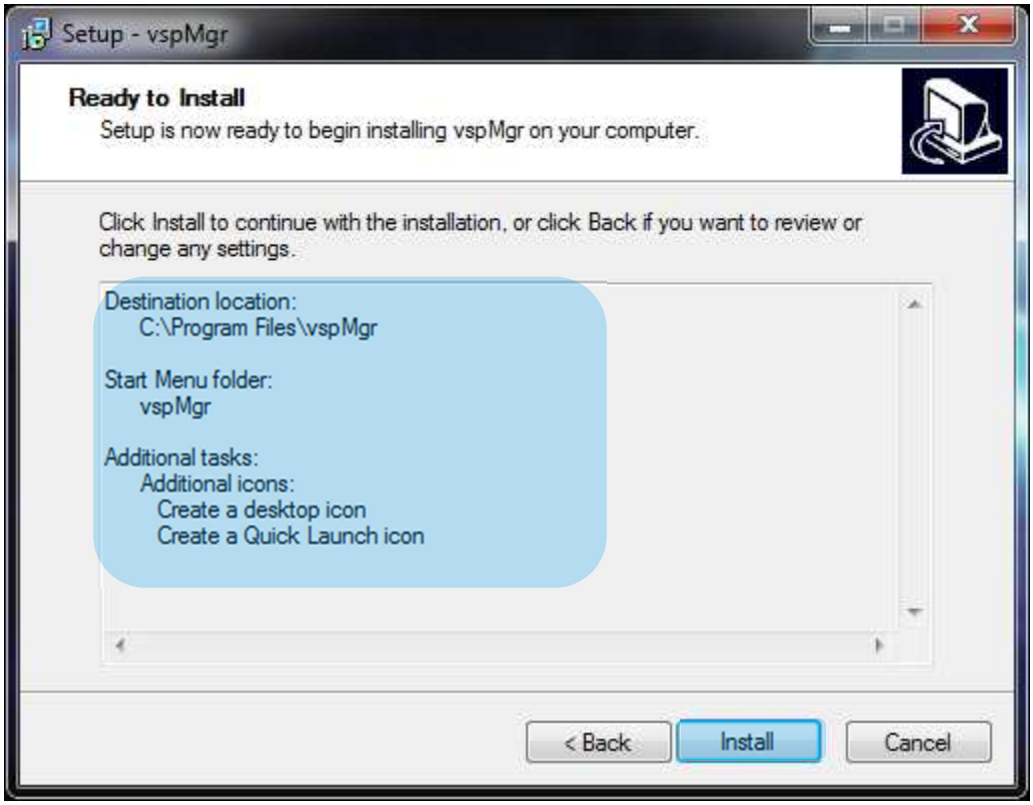


Figure 17 - VSPM Resume Installation

- Let running the installation process

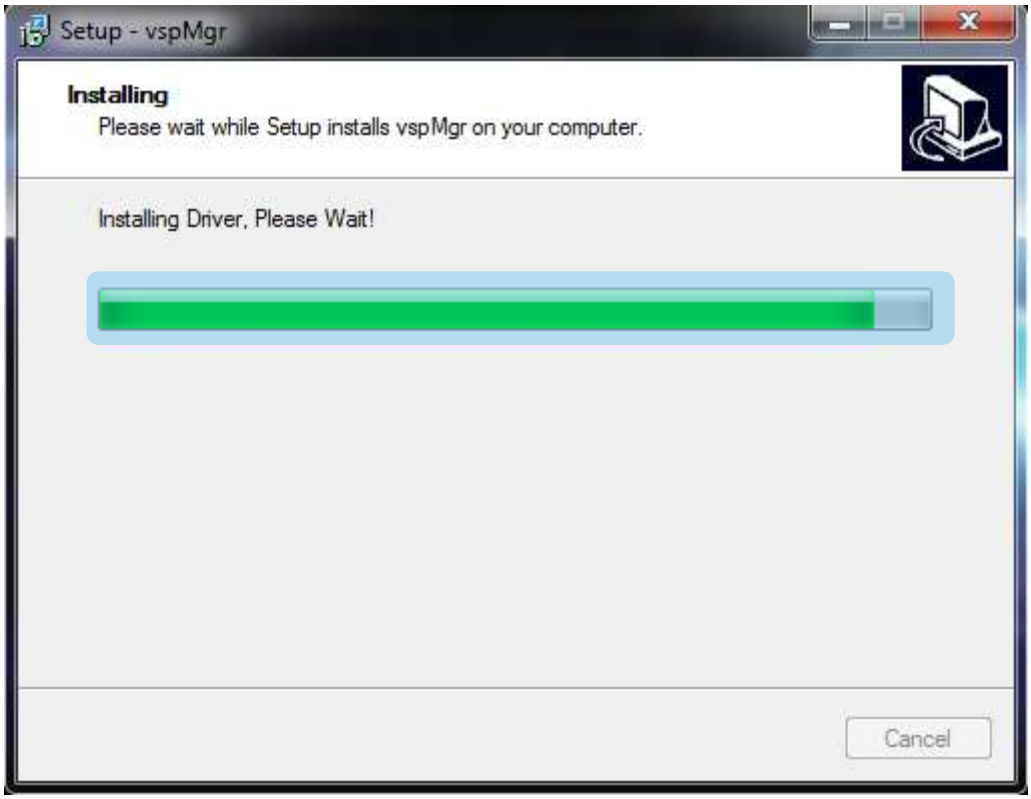


Figure 18 - VSPM Installation Process

- Click on Finish for the installation

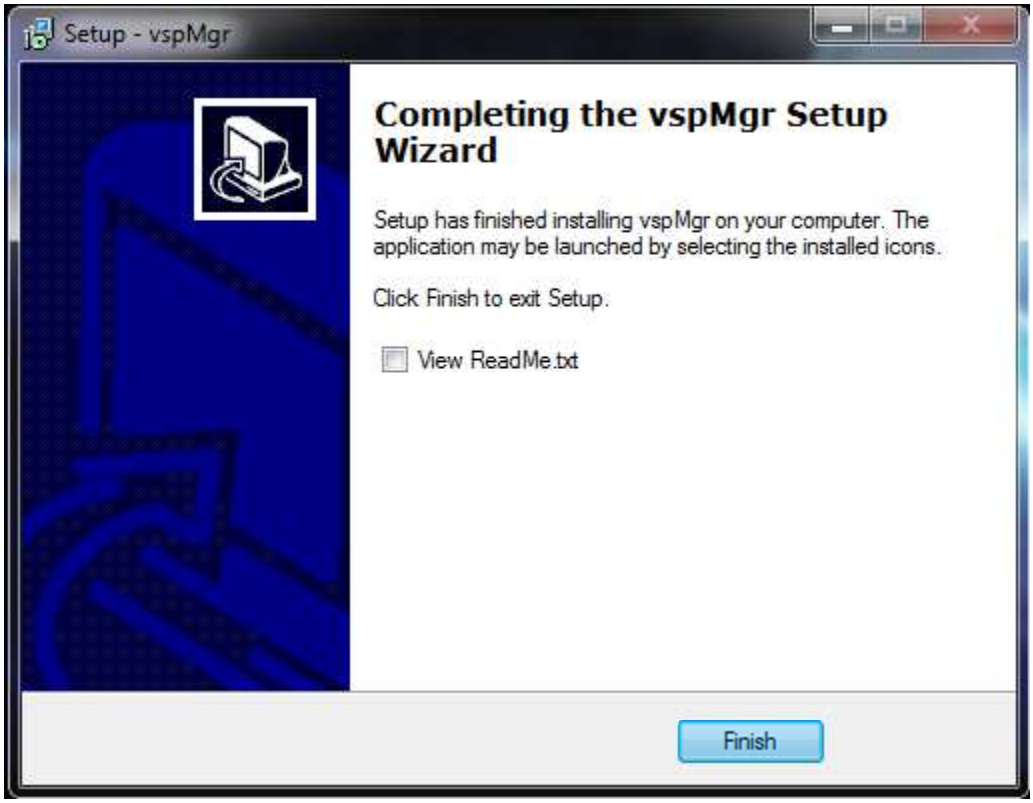


Figure 19 - VSPM Installation Completed

Remark: For more information to refer to the web site author program

2.2.2 Configuration

- Click on start, al programs, deploy vspMgr folder and open vspMgr.exe

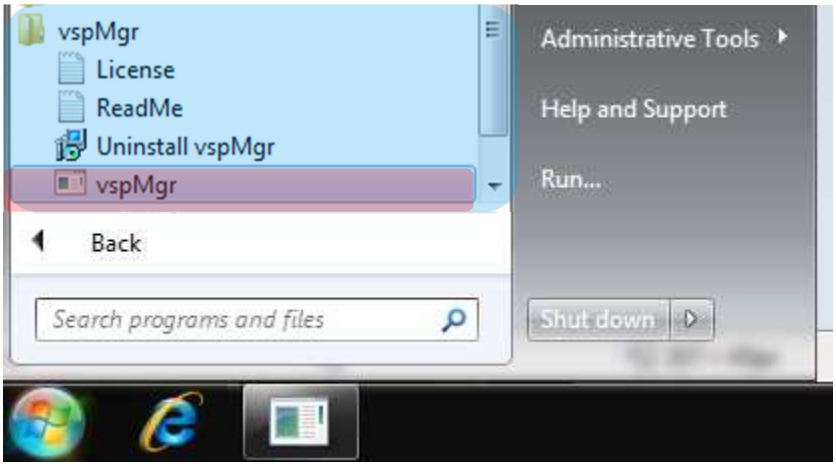


Figure 20 - Starting VSP Mgr

- This window will open
- For the configuration it's necessary to create a bridge (pair of COM) we will declare COM"X" and COM"Y", Click on CreatePair

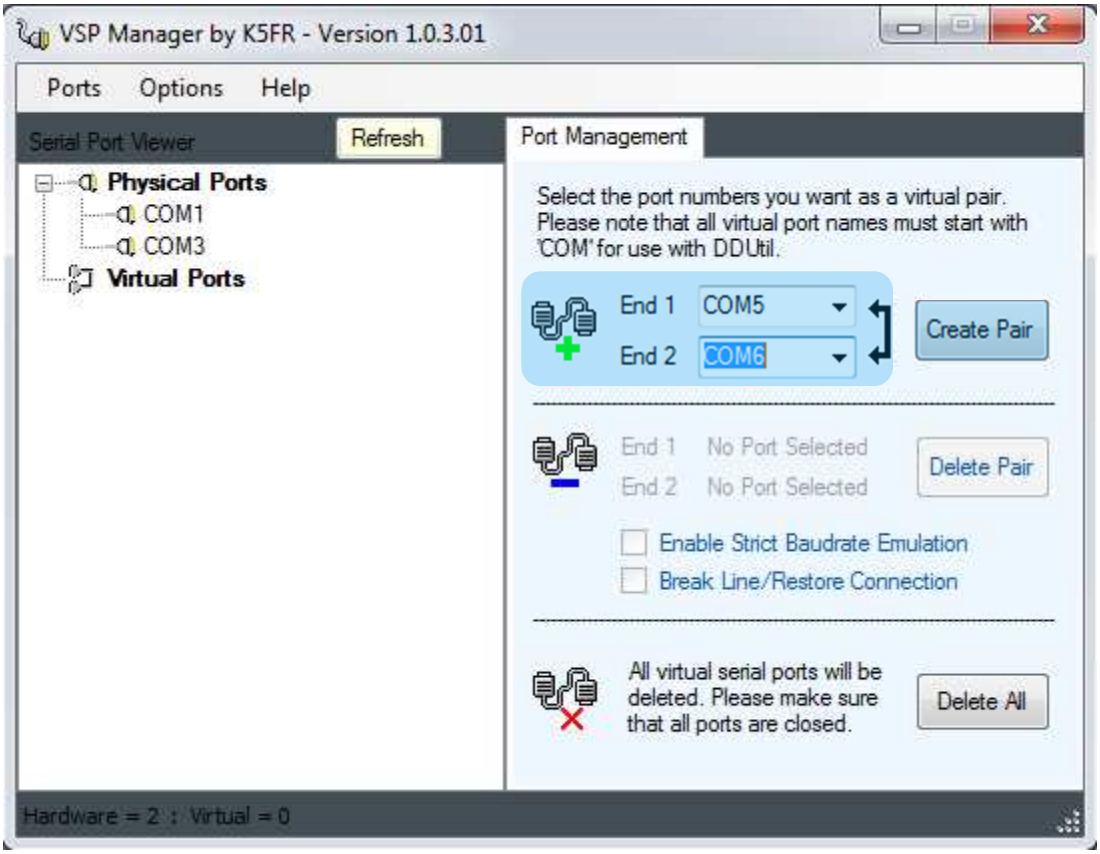


Figure 21 - VSP Mgr - Port Creation

- The Pair is created

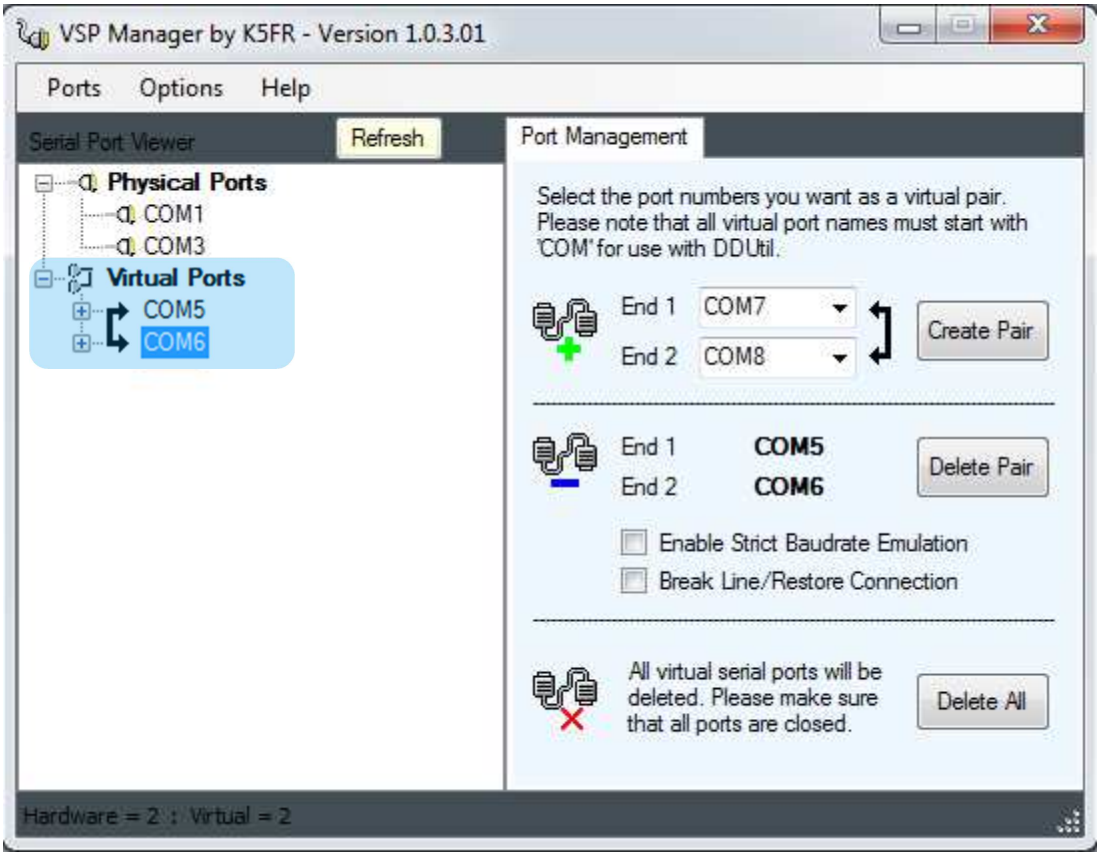
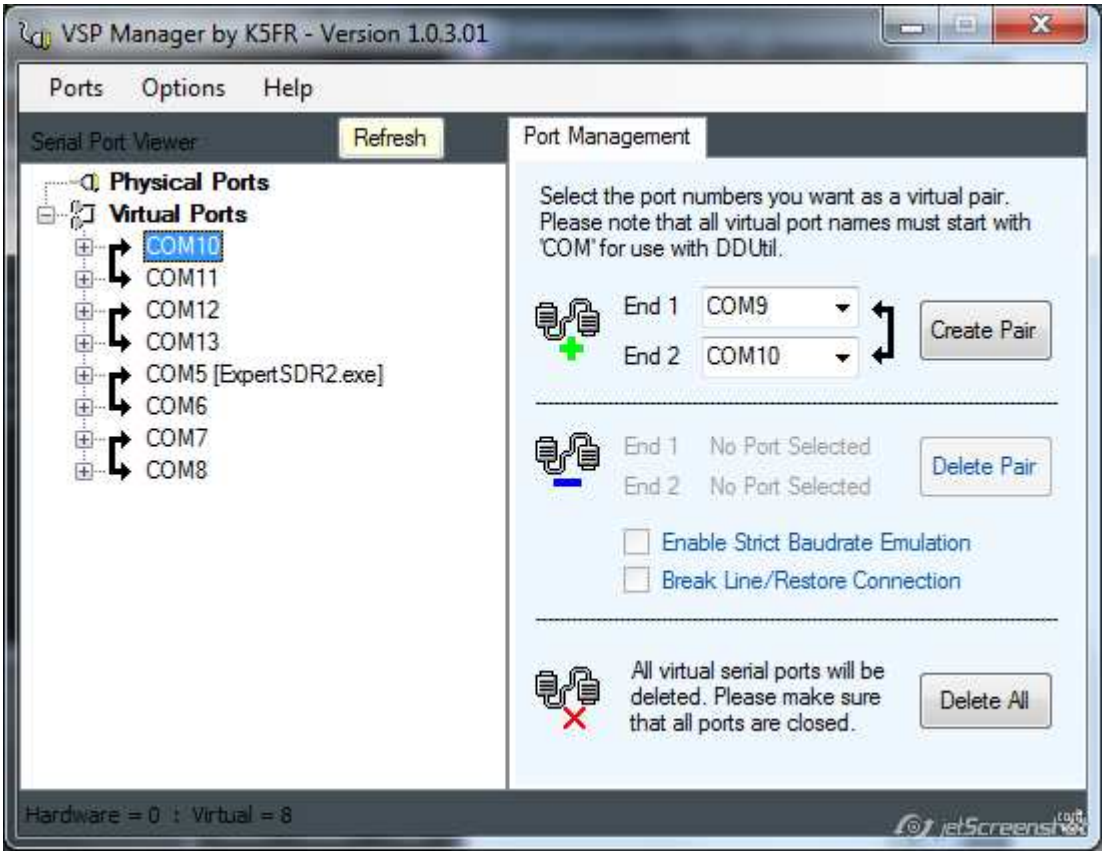


Figure 22 - VSP Mgr - Virtual Port displayed

For the configuration it's necessary to create a pair of com:

5 -> 6 for transceiver 1, (Com 5 associated to Receiver 1 in CAT folder of expert SDR2 software, Com 6 associated to N1MM software) and

7->8 for transceiver 2 (Com 7 associated to Receiver 2 in CAT folder of expert SDR2 software, Com 8 associated to N1MM software)



2.3 CW skimmer

2.3.1 Installation

- After downloading the CW Skimmer software click on Setup.exe

Figure 23 - CW Skimmer Installer

- The following window opens, then click on Next

Figure 24 - CW Skimmer Setup

- Select I Accept the agreement and click on Next

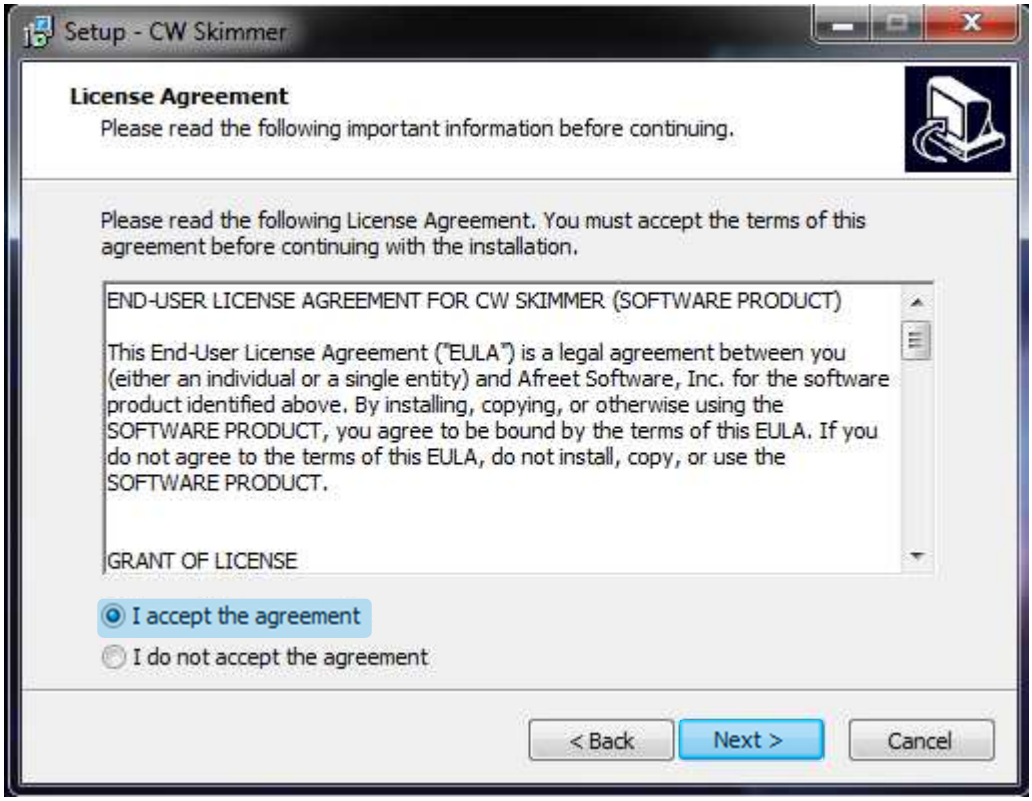


Figure 25 - CW Skimmer License Agreement

- Select the software path, modify if it's necessary by Browse, then click on Next

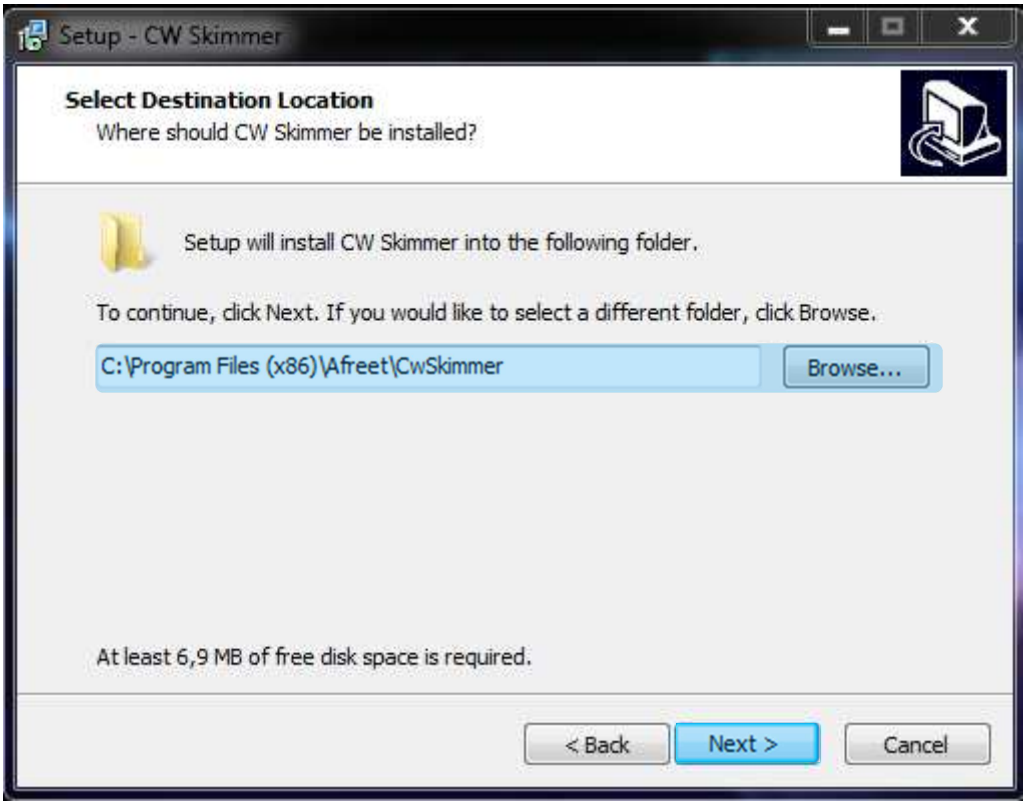


Figure 26 - CW Skimmer Destination

- Let the installation process

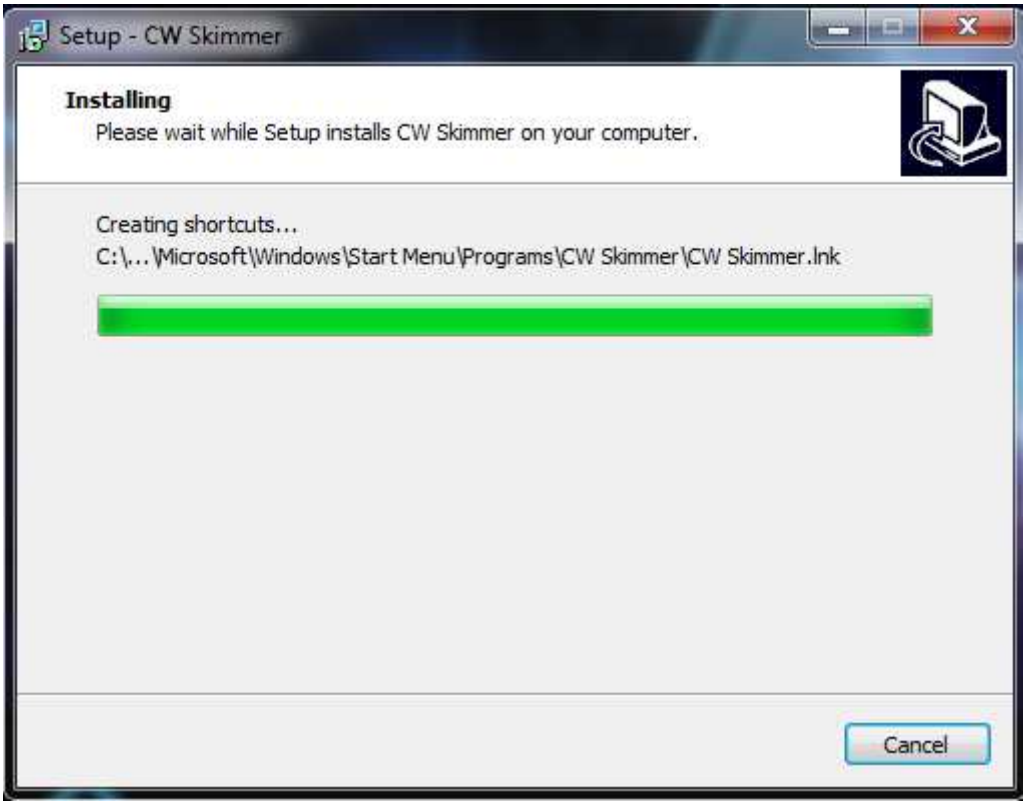


Figure 27 - CW Skimmer Installation Process

- The following window opens, then click on Finish to complete the installation

Figure 28 - CW Skimmer Installation Completed

- CW Skimmer software starts automatically

Figure 29 - CW Skimmer Main Window

2.3.2 Configuration

- Click on View to deploy the scroll tab menu and select setting

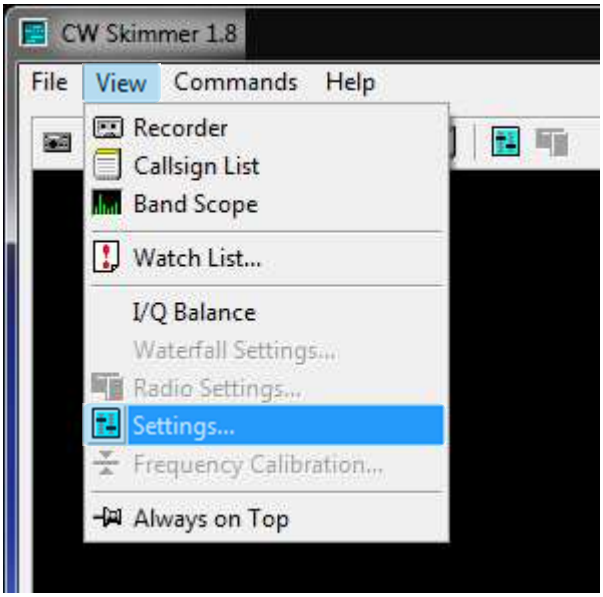


Figure 30 - CW Skimmer View Tab Sheet - Setting

- This windows opens,
  - Select Radio tab sheet
    - In Hardware Type select SoftRok
    - Define the sampling rate (48KHz, 96 KHz or 192Khz of bandwidth)

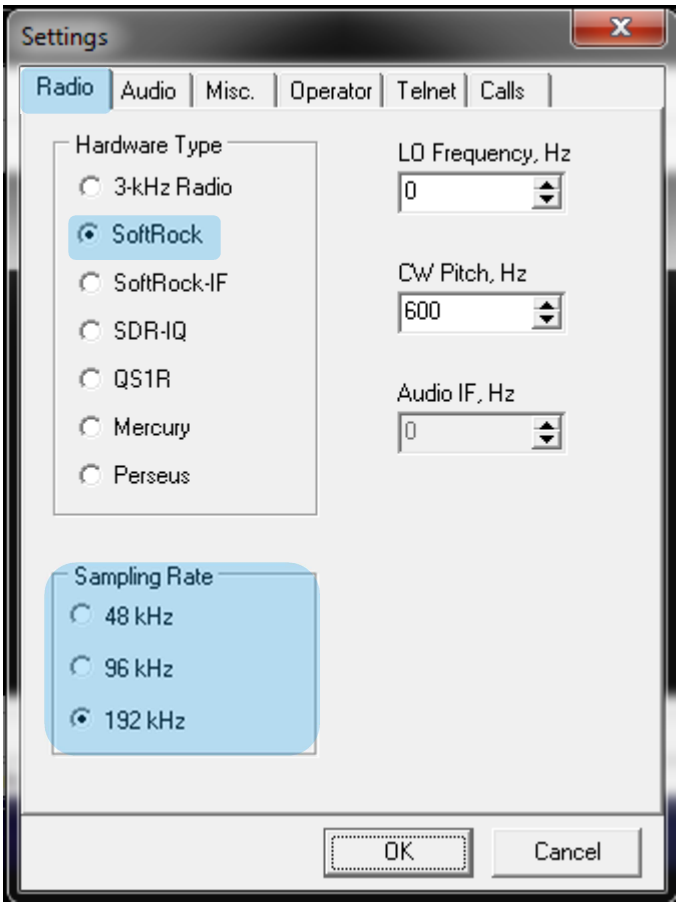


Figure 31 - CW Skimmer Setting - Radio Tab Sheet

- Select Audio Tab sheet
  - Tag on Soundcard Driver window VDM
  - Select on Signal I/O Device the virtual cable 5 in the scroll menu
  - Select on Audio I/O Device virtual cable 6 in the scroll menu (need to be confirm)

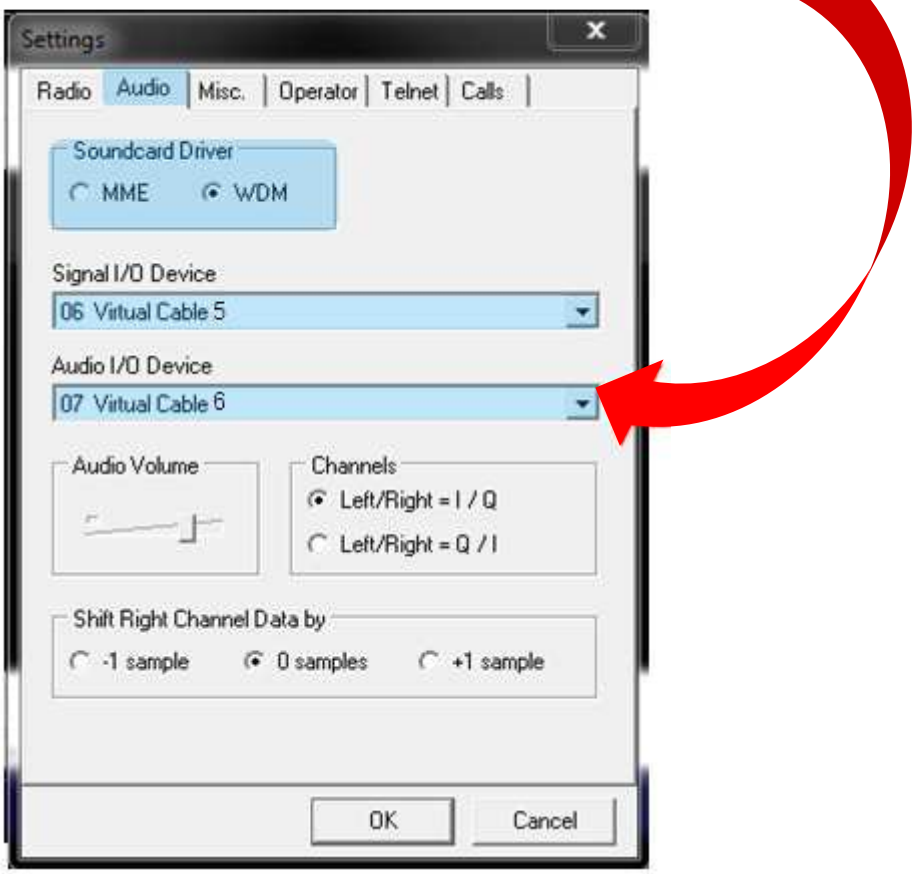


Figure 32 - CW Skimmer Setting - Audio Tab Sheet

Remark

for SO2R function configure on the other skimmer Signal I/Q with virtual cable 6

- Select Telnet Tab sheet
  - Check Enable Telnet Server and use the port 7300 (for SO1V) or use other port if you are running in SO2R configuration
  - Check allow SKIMMER commands

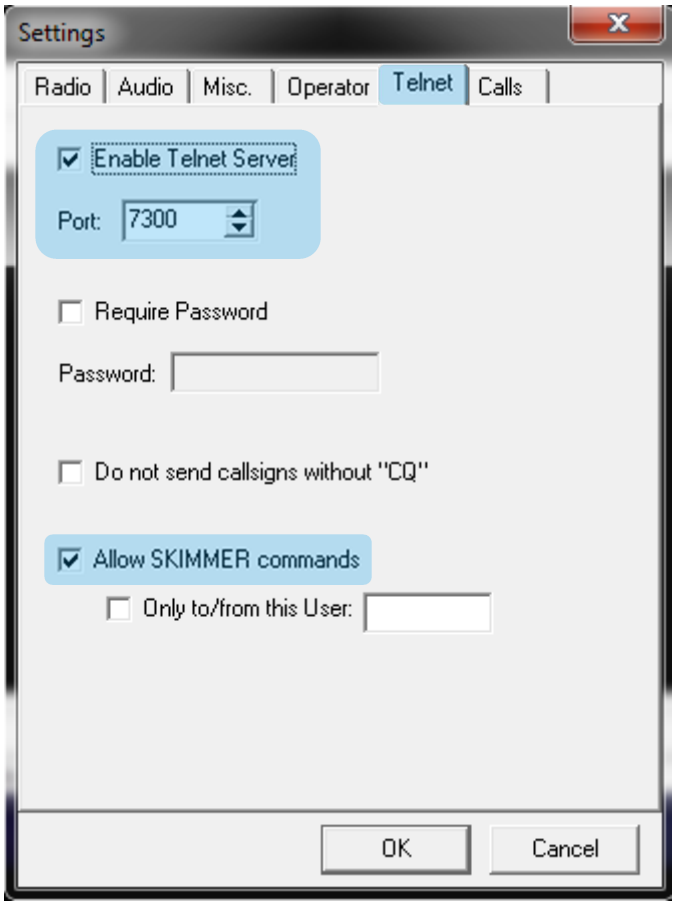


Figure 33 - CW Skimmer Setting - Telnet Tab Sheet

Remark: for more information to refer to the web site author or the introduction to CW Skimmer

By Pete Smith, **N4ZR**

Remark

For SO2R operation configure Skimmer 1 with port 7301 and skimmer 2 with 7302, adapt the skimmer folder on Expert SDR and install WinTelnetX David K1TTT

2.4 Win TelnetX

2.4.1 Introduction

This software is only used 2 skimmer for SO2R operation

2.4.2 Installation

Download the WinTelenetX from the K1TTT website (http://www.k1ttt.net/software.html) and unzip the folder

2.4.3 Configuration

The aim of this software is to combine 2 ports in another port. This software is able to root the 2 skimmers port in a general port for a general telnet

- Start the software

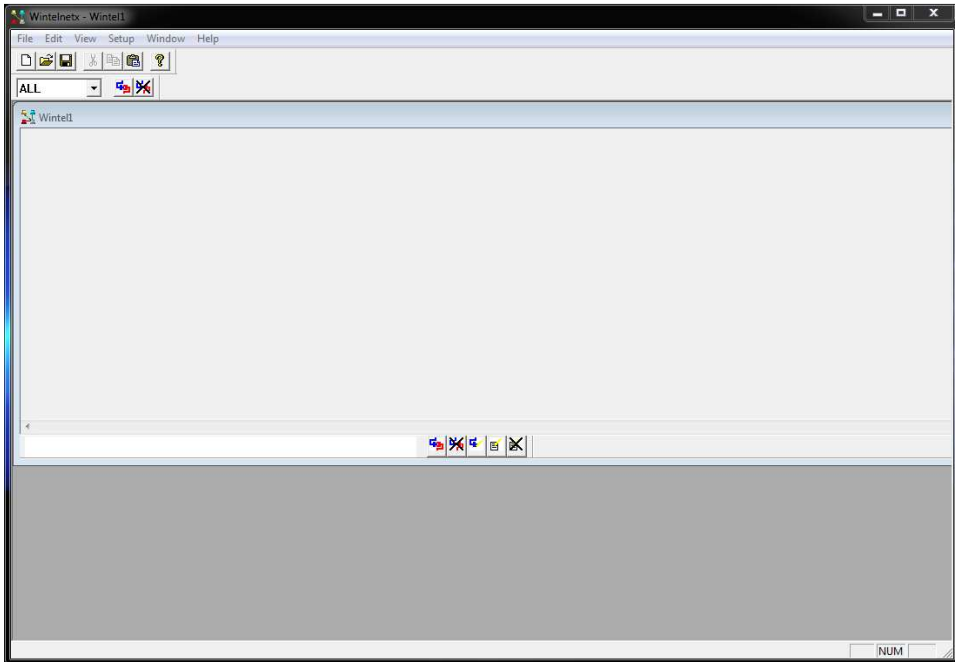


Figure 34 – Win TelnetX general windows

- Create a new connection (port 7300)
    - Click on setup
    - Select Add new
    - Select Rx Network Connect

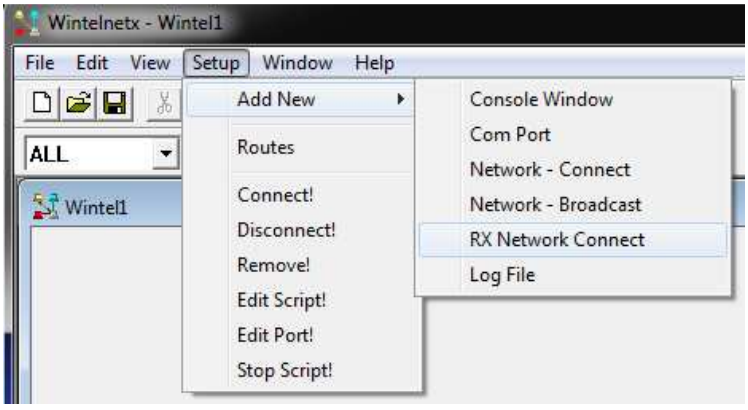


Figure 35 – Win TelnetX Setup Rx connect

- This windows will open
- Change Host Name or IP by 127.0.0.1
- Change the port to assign the port 7300
- Change the Name to 7300
- In Port data type deploy to select Direct
- Click on OK

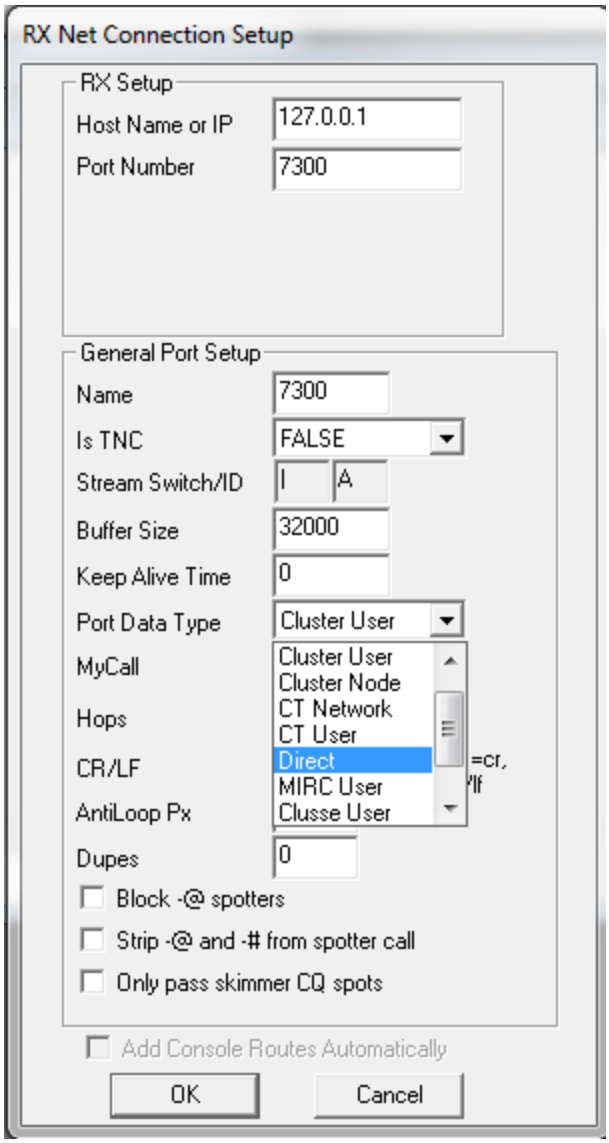


Figure 36 – Win TelnetX Rx Net connection Setup

- This windows will appear

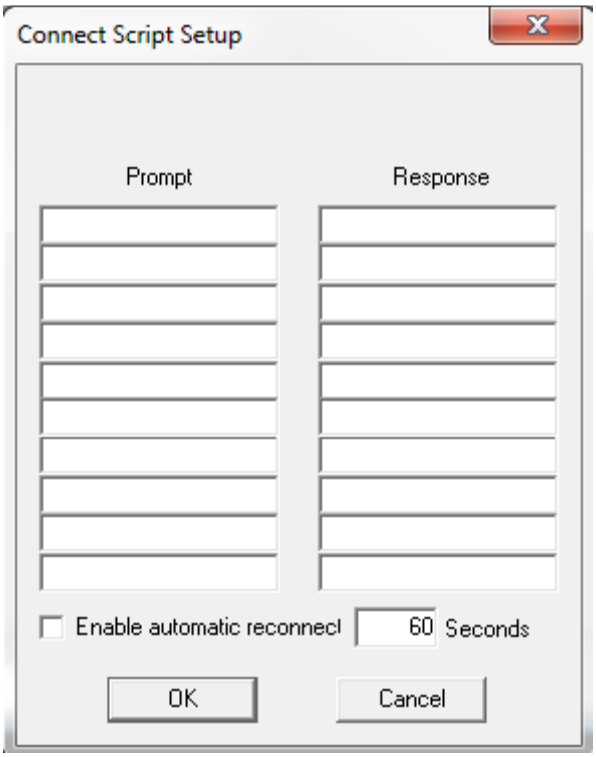


Figure 37 – Win TelnetX RX net connect script

- Click on ok
- The port connection 7300 is created

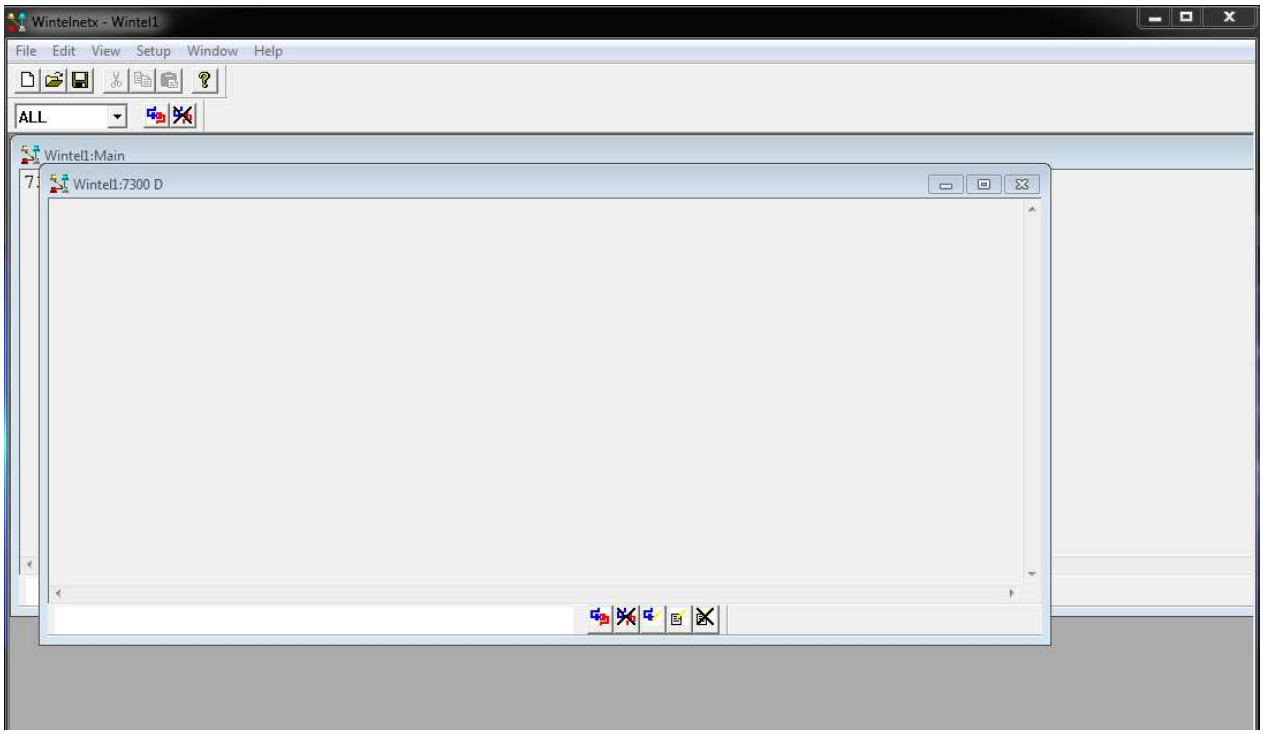


Figure 38 – Win TelnetX general windows Port 7300 created

- Create a new connection port (7301 & 7302)
    - Click on setup
    - Select Add new
    - Network connect

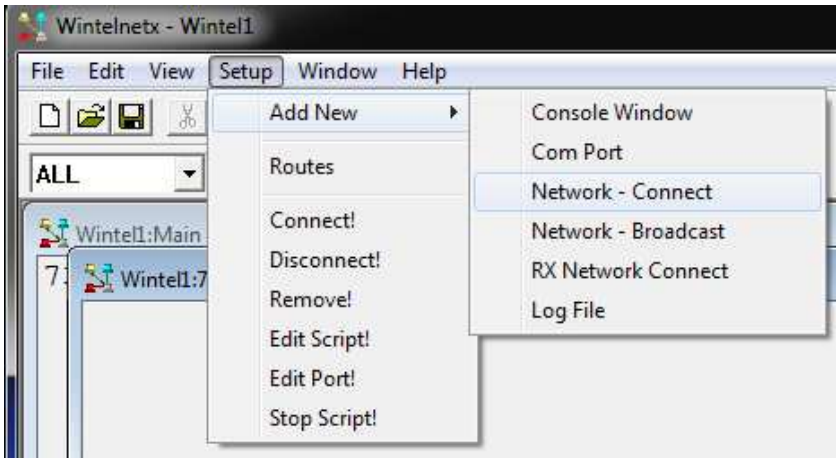


Figure 39 – Win TelnetX Setup Network connect

- This windows will appear
- Change Host Name or IP by 127.0.0.1
- Change the port to assign the port 7300
- Change the Name to 7300
- In Port data type deploy to select Direct
- Select Only pass Skimmer CQ Spots
- Click on OK

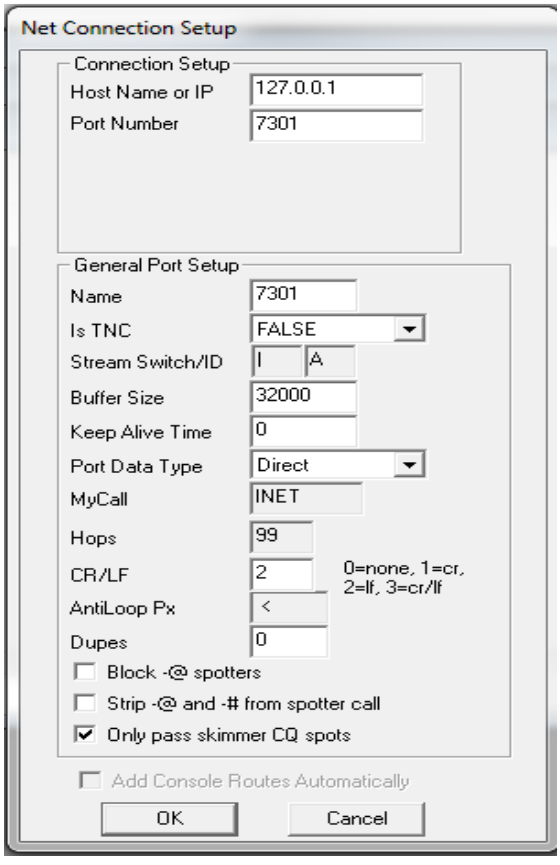


Figure 40 – Win TelnetX Setup Network connection setup

- Tag Enable automatic reconnect

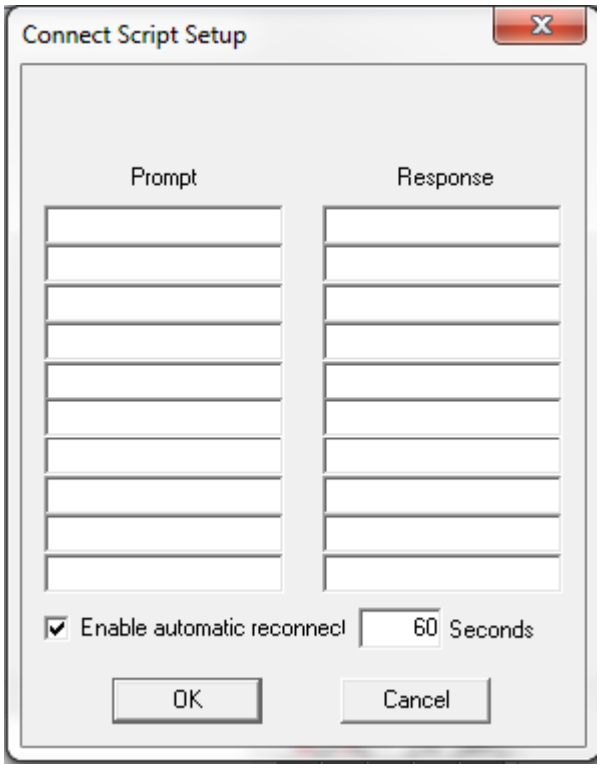


Figure 41 – Win TelnetX Setup Network connection script setup

- Then click on OK
- The 7301 connection is created
- Do one more time the procedure to create the port 7302

Remark:

After reorganization windows the result is shown below with port 7300, 7301 and 7302 created

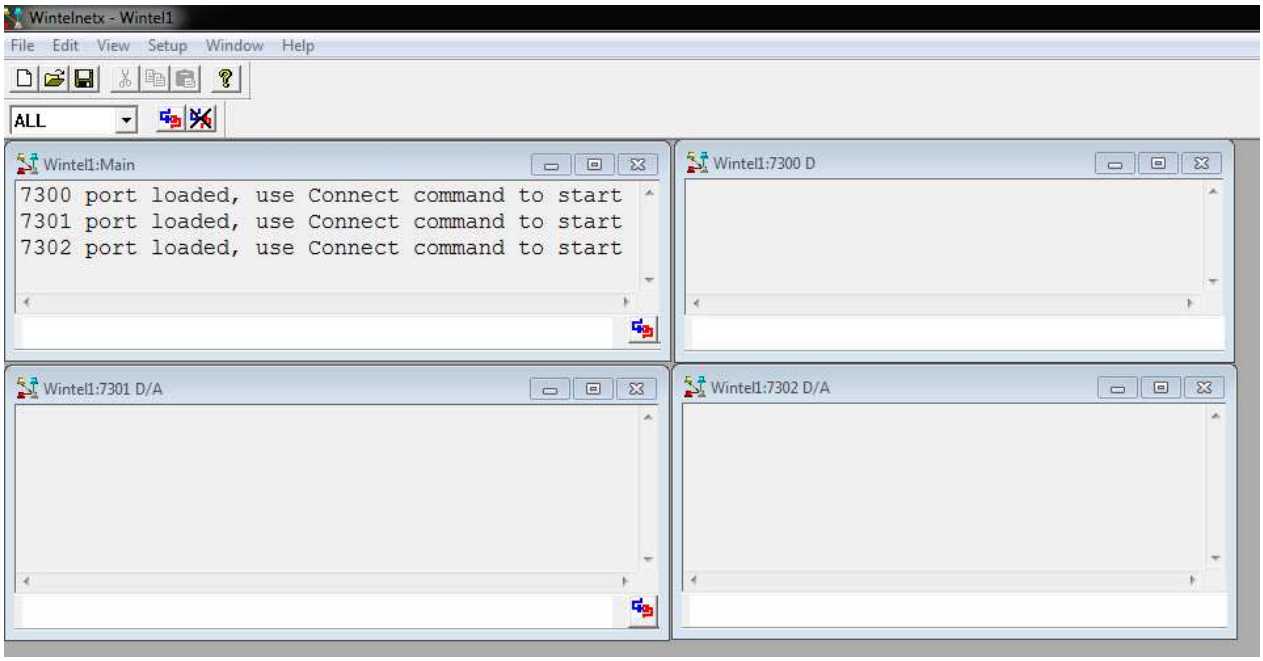


Figure 42 – Win TelnetX Port created

- Then click on Setup and select Routes

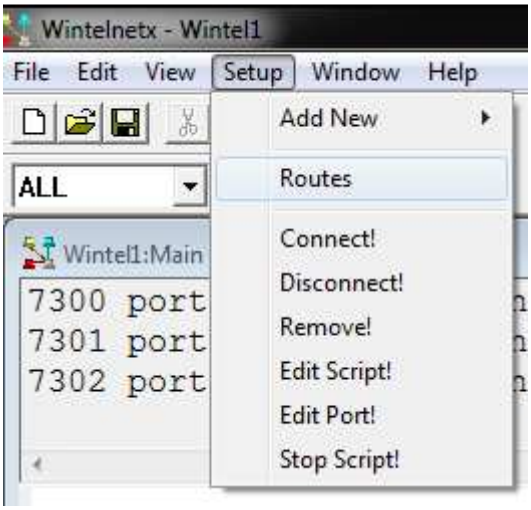


Figure 43 – Win TelnetX Route declaration

- This windows appears

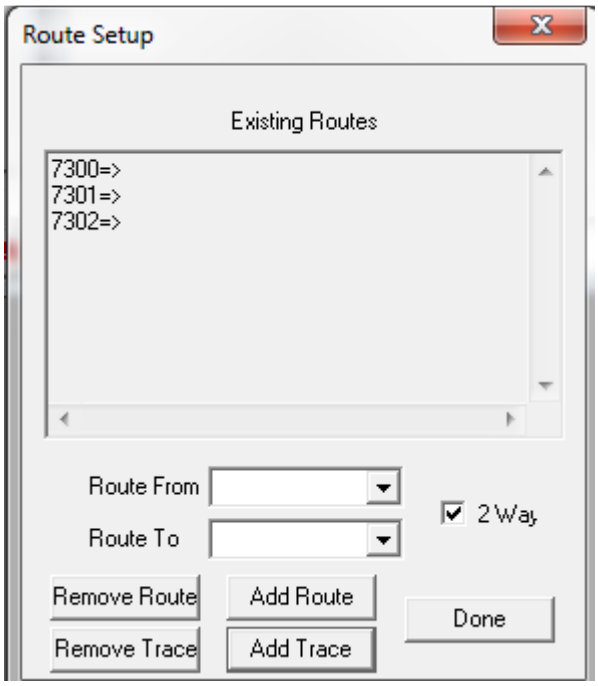


Figure 44 – Win TelnetX Route display

- Deploy route from to display 7300
- Deploy route to to display 7301
- Click on Add route

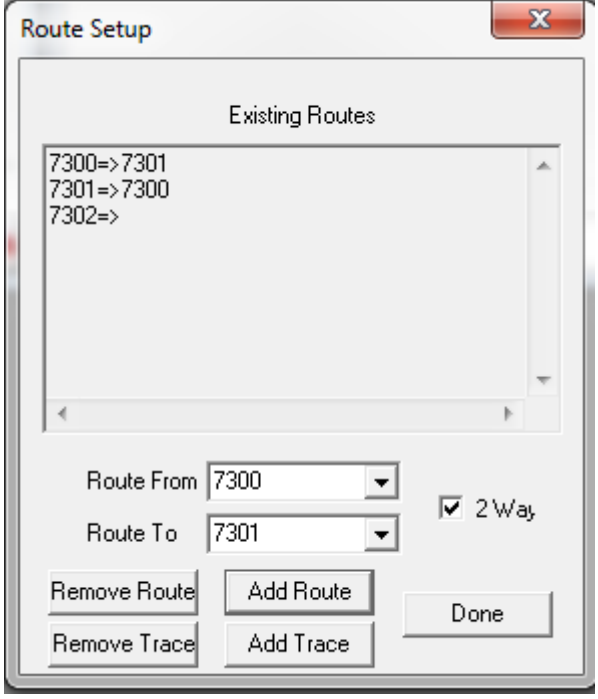
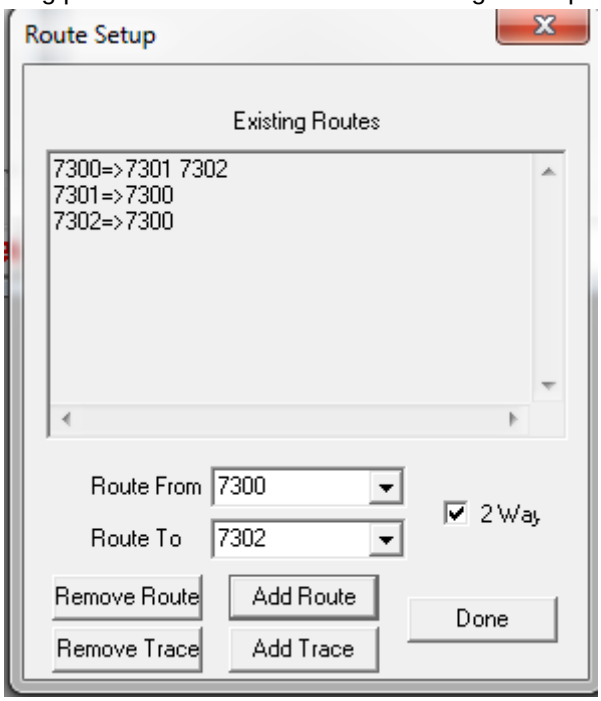


Figure 45 – Win TelnetX routing 7301 to 7300

- The routing port from 7301 to 7300 is created
- Do the same procedure for the port 7302

- The routing port 7301 and 7302 are now routing to the port 7300



- Figure 46 – Win TelnetX routing 7301& 7302 to 7300

- Click on Done
- When the complete configuration is done (Expert SDR, Cw Skimmer and N1MM)

- Click on the connection button

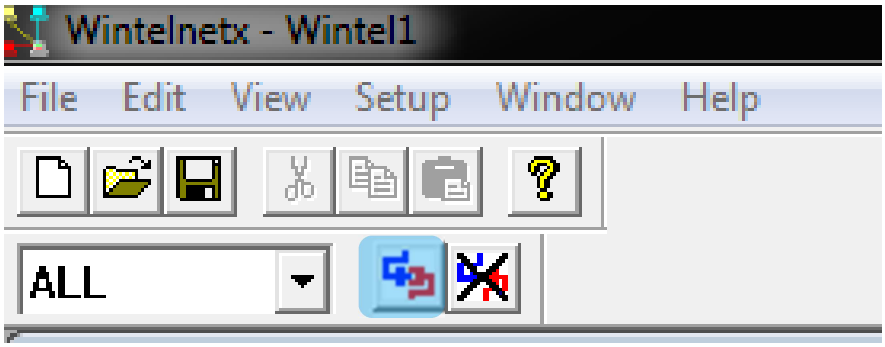


Figure 47 – Win TelnetX connections

- This windows will be displayed

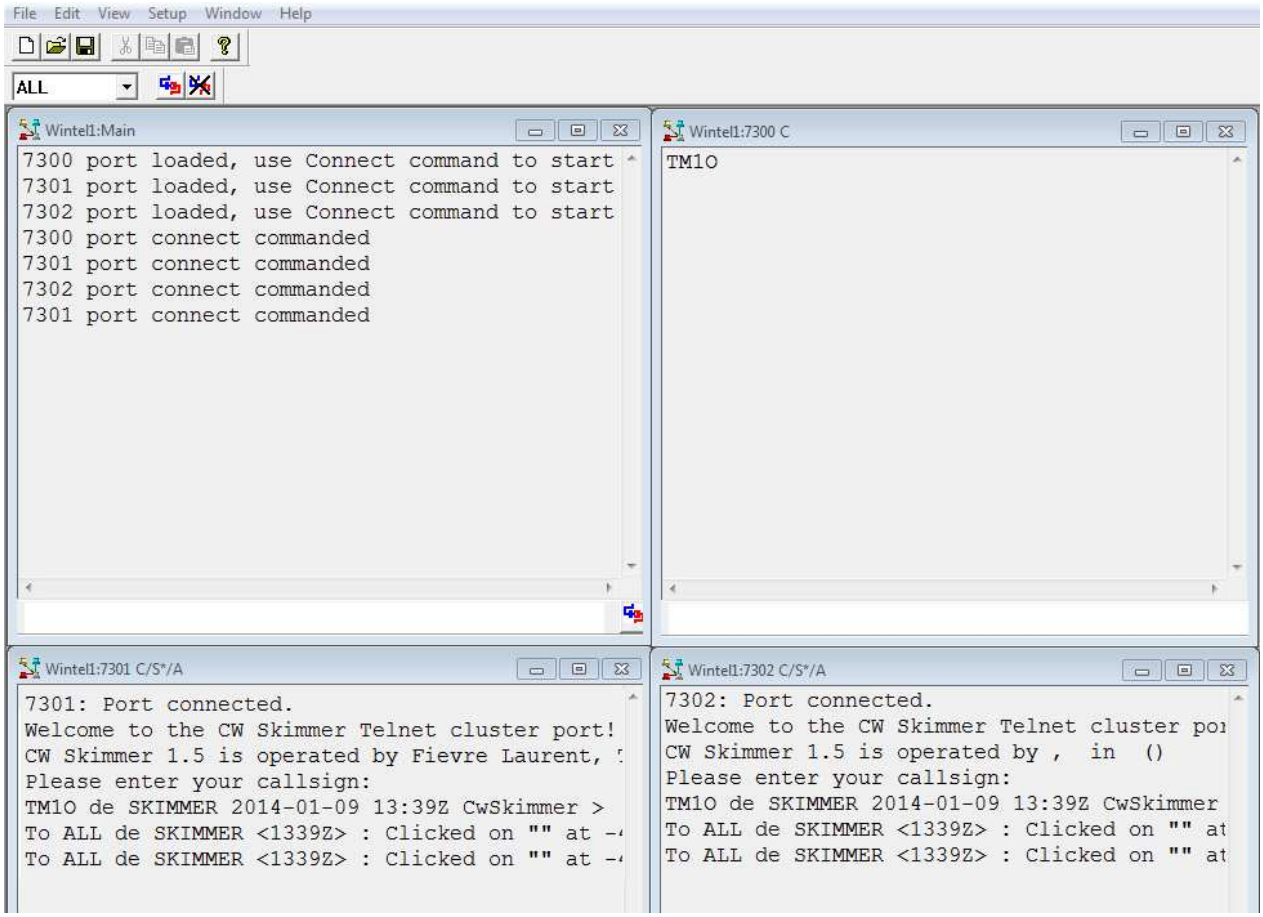


Figure 48 – Win TelnetX routing 7301 to 7300 result

2.5 Expert SDR2

2.5.1 Installation

- After downloading the Expert SDR2 software click on the installer.exe

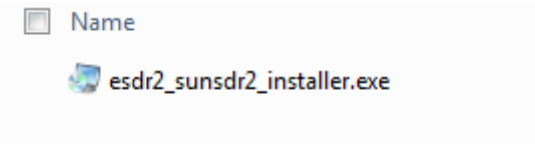


Figure 49 - ExpertSDR2 Installer

- The following window opens, Select the language and then click on Next

Figure 50 - ExpertSDR2 - Setup

- The following window opens, then click on Next

Figure 51 - ExpertSDR2 - Setup Installation

- Define the path installation if necessary, then click on next

Figure 52 - ExpertSDR2 Path Install

- The following window opens, tag Create shortcuts on Desktop if necessary, then click on Next

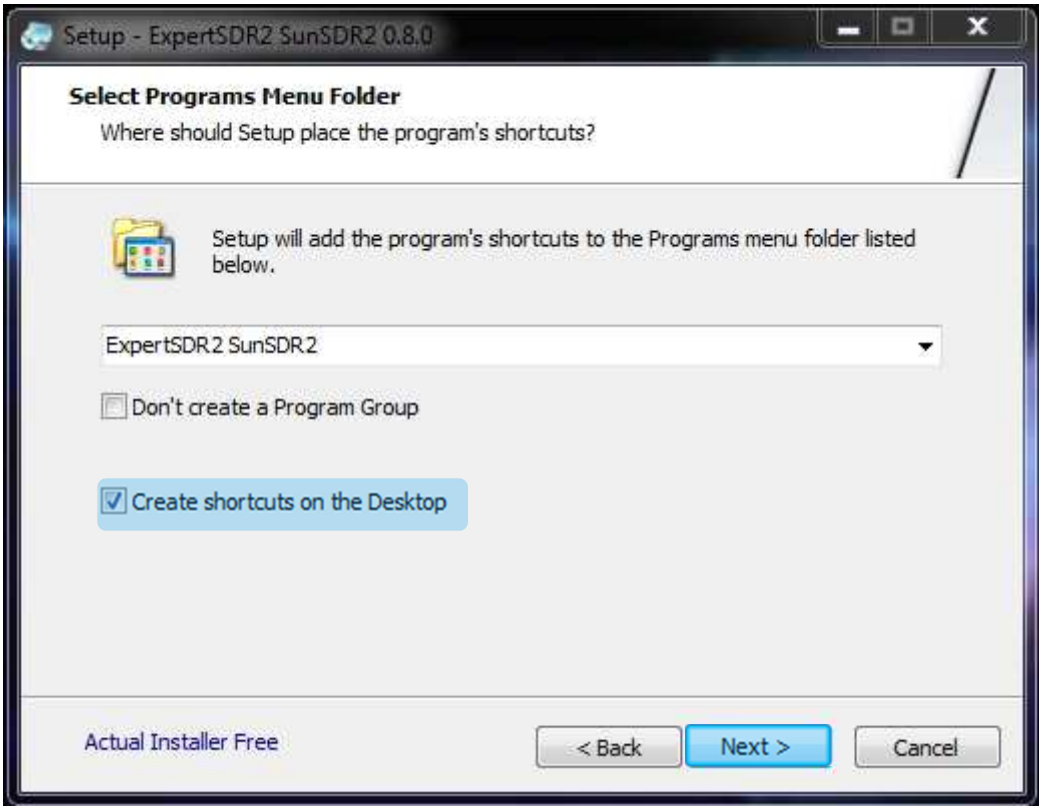


Figure 53 - ExpertSDR2 - Short Cut Creation

- The following window is displayed to resume the task, then click on Install

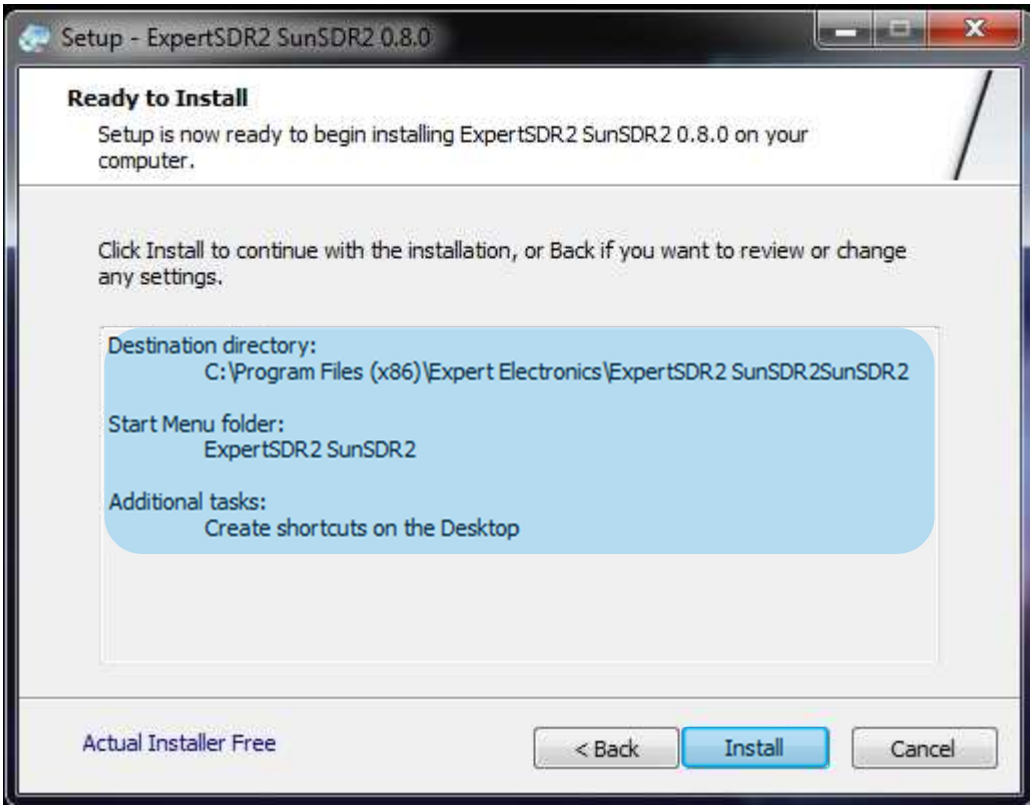


Figure 54 - ExpertSDR2 - Resume Install

- Let running the process installation

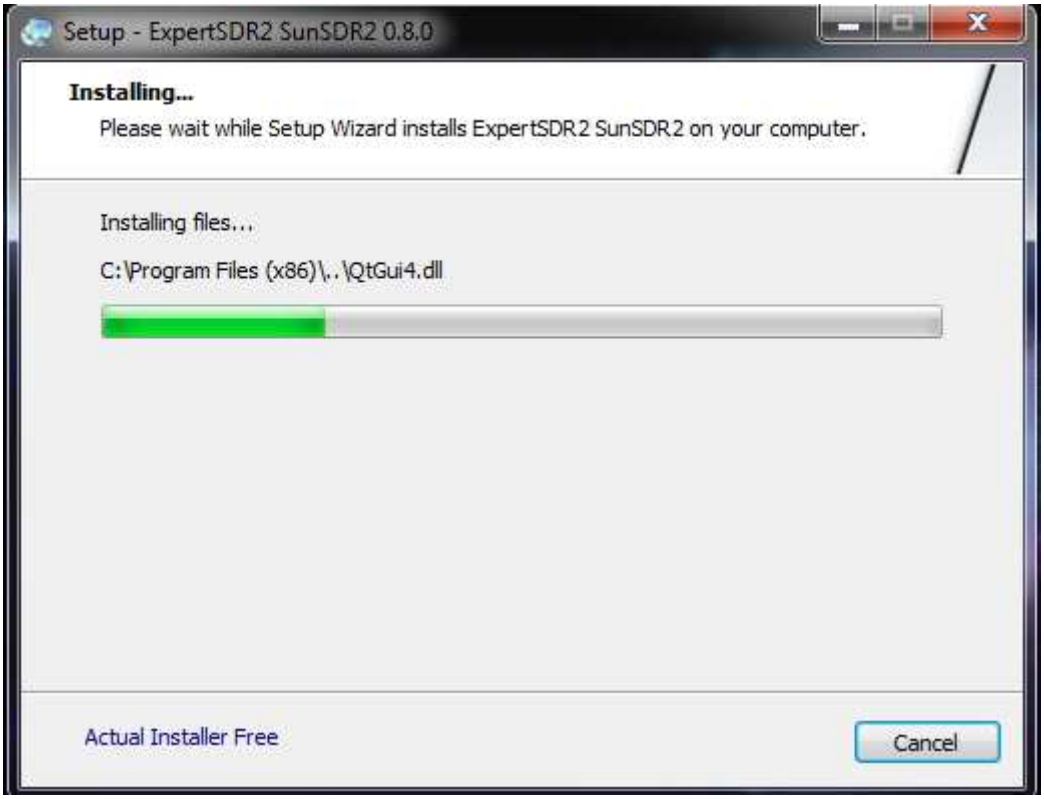


Figure 55 - ExpertSDR2 - Install Process

- The following window is displayed Click on Finish

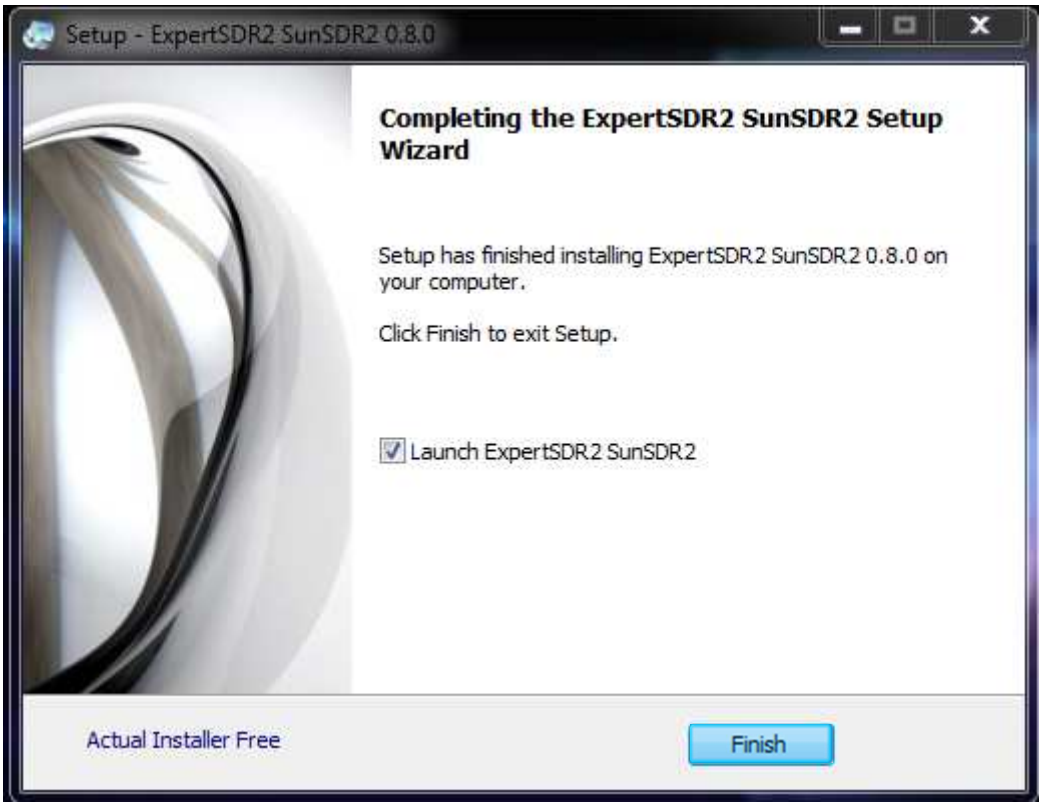


Figure 56 - ExpertSDR2 – Install Completed

- Expert SDR2 Starts automatically

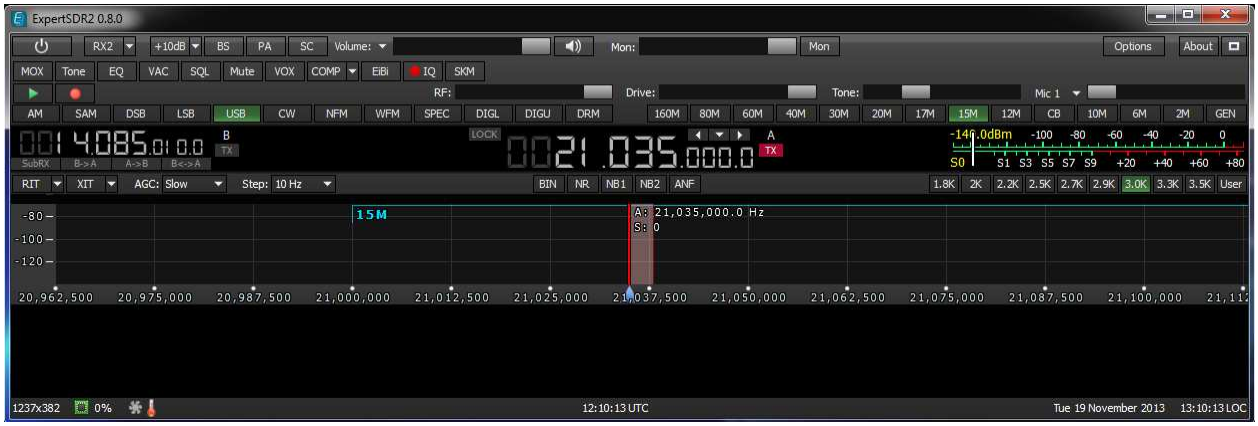


Figure 57 - ExpertSDR2 - Main Window

2.5.2 Configurations

- Click on Options

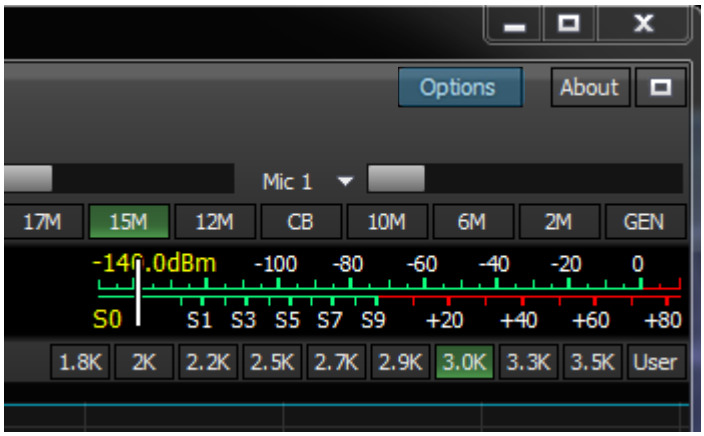


Figure 58 - ExpertSDR2 – Option Folder

- This window is displayed
  - Select Device Tab sheet
    - Use the scroll Tab to define the Sample Rate (depending of the bandwidth required)
    - Click apply

      Remark : if on CW skimmer 96Khz is tagged, then select 78120, if on CW Skimmer 192KHz is tagged, then select 156250

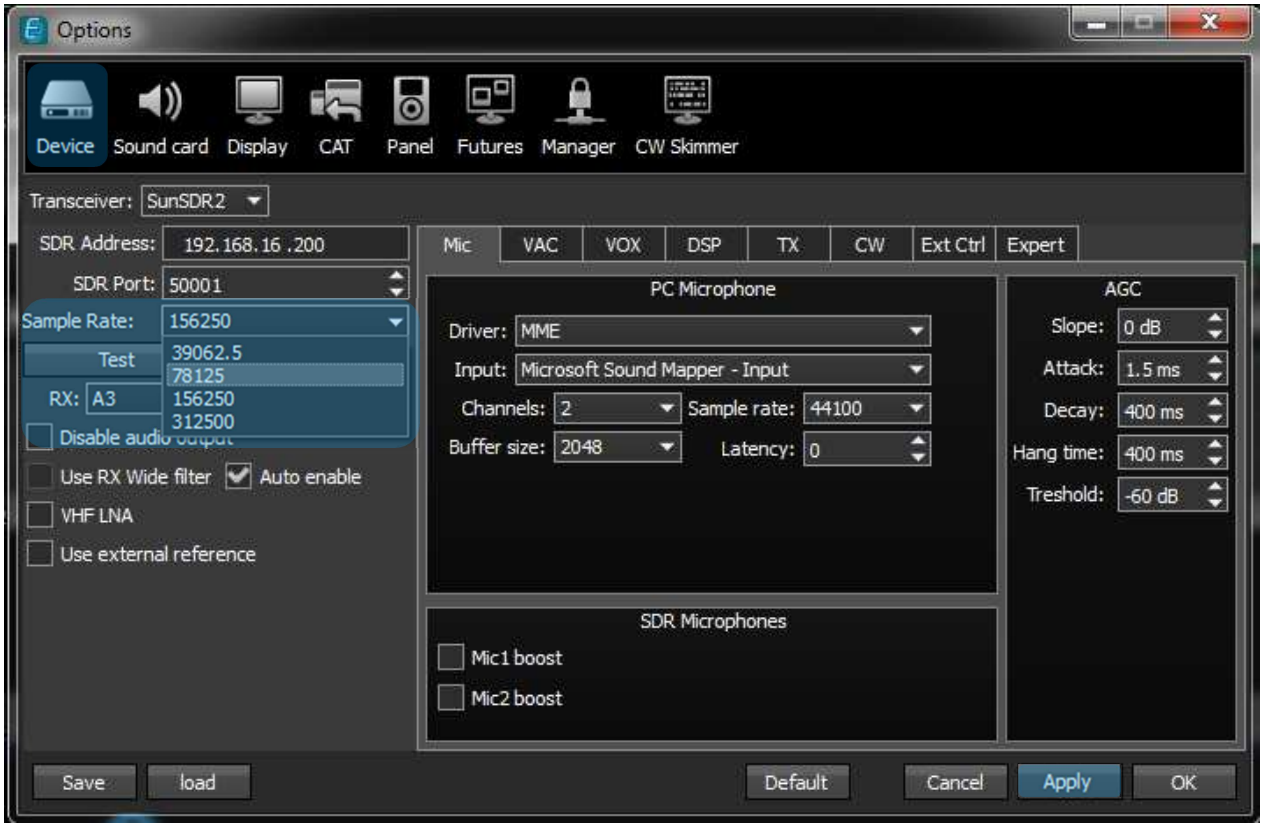


Figure 59 - ExpertSDR2 - Option – Device Folder - Sample Rate Configuration

- Select CAT Tab sheet for configuring the port for ESDR2
  - Open CAT tab sheet
  - Apply the Port Name to COM5
  - Apply the CAT configuration as below
  - Check Enable CAT

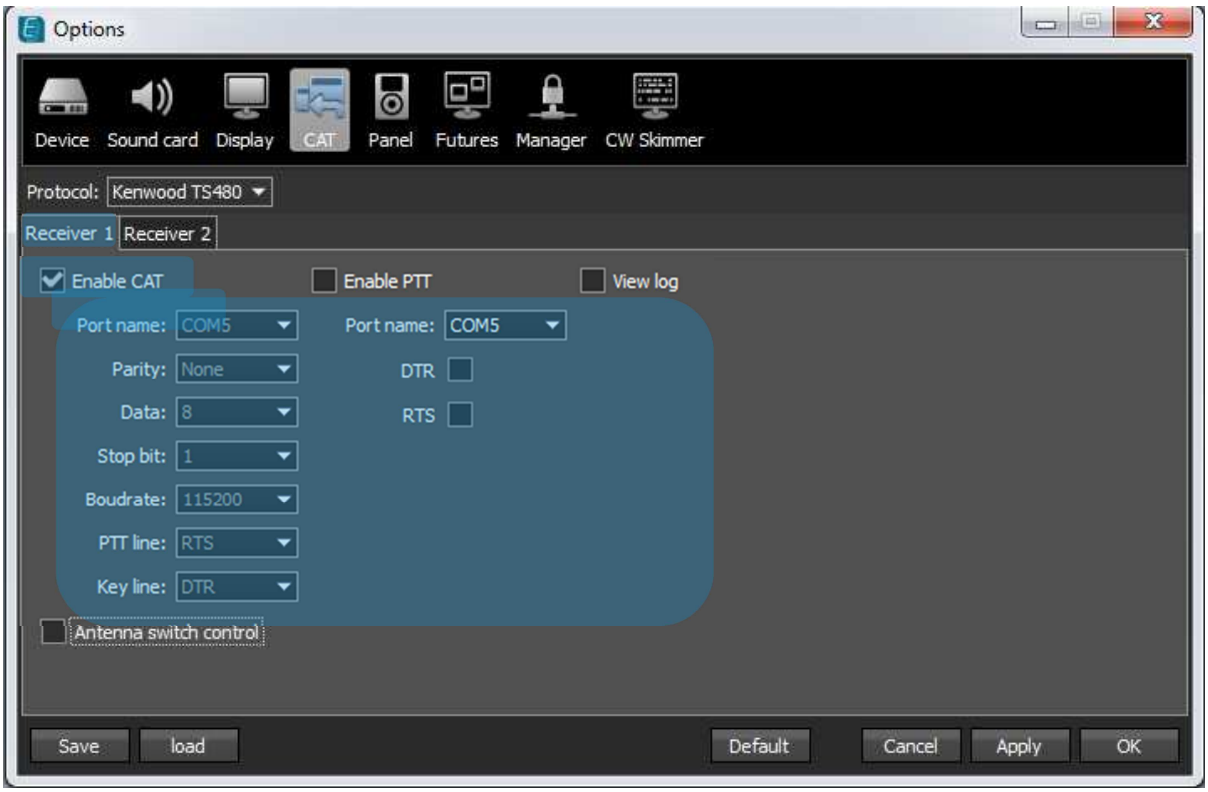


Figure 60 - ExperSDR2 – Receiver 1CAT Configuration

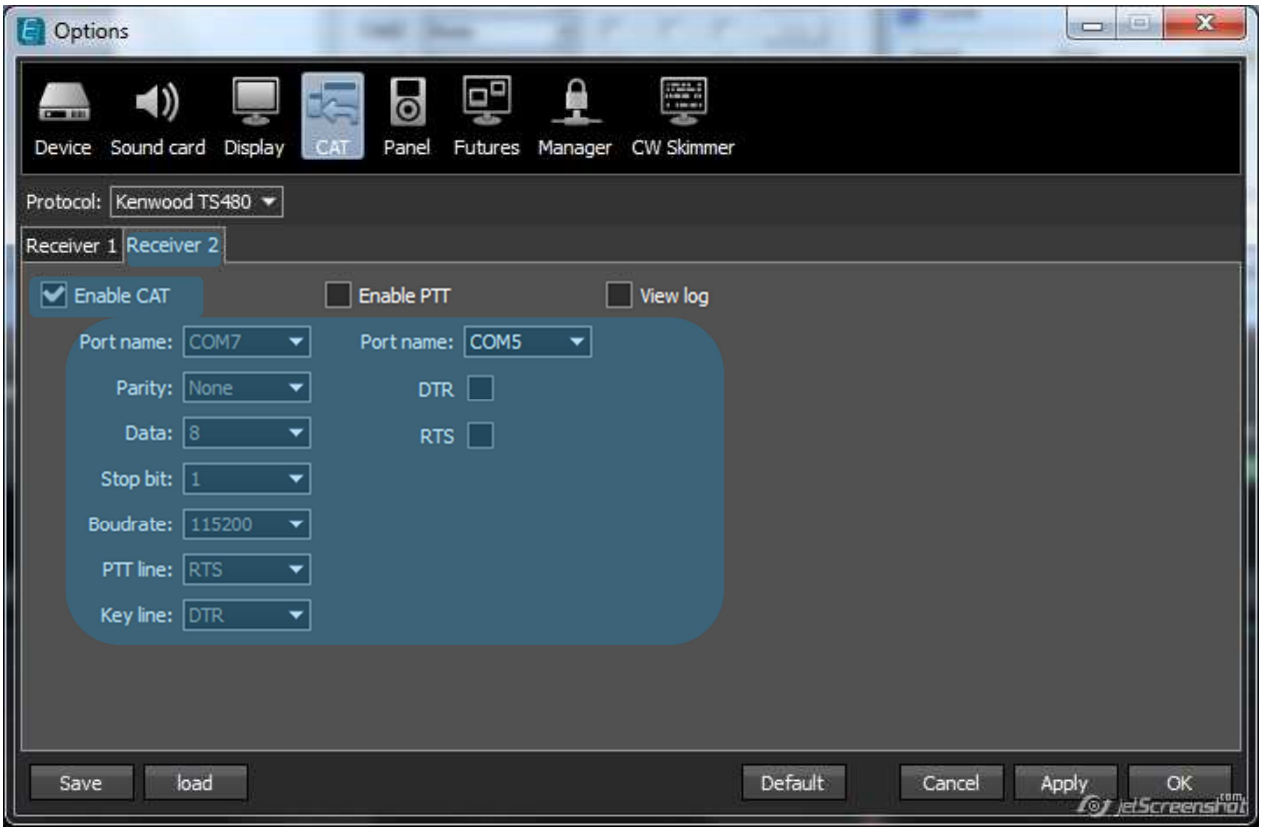


Figure 61 - ExperSDR2 – Receiver 2CAT Configuration

- Select CW Skimmer tab sheet
  - Insert your Call sign
  - Define the port (in correspondence with CW Skimmer Telnet tab sheet)

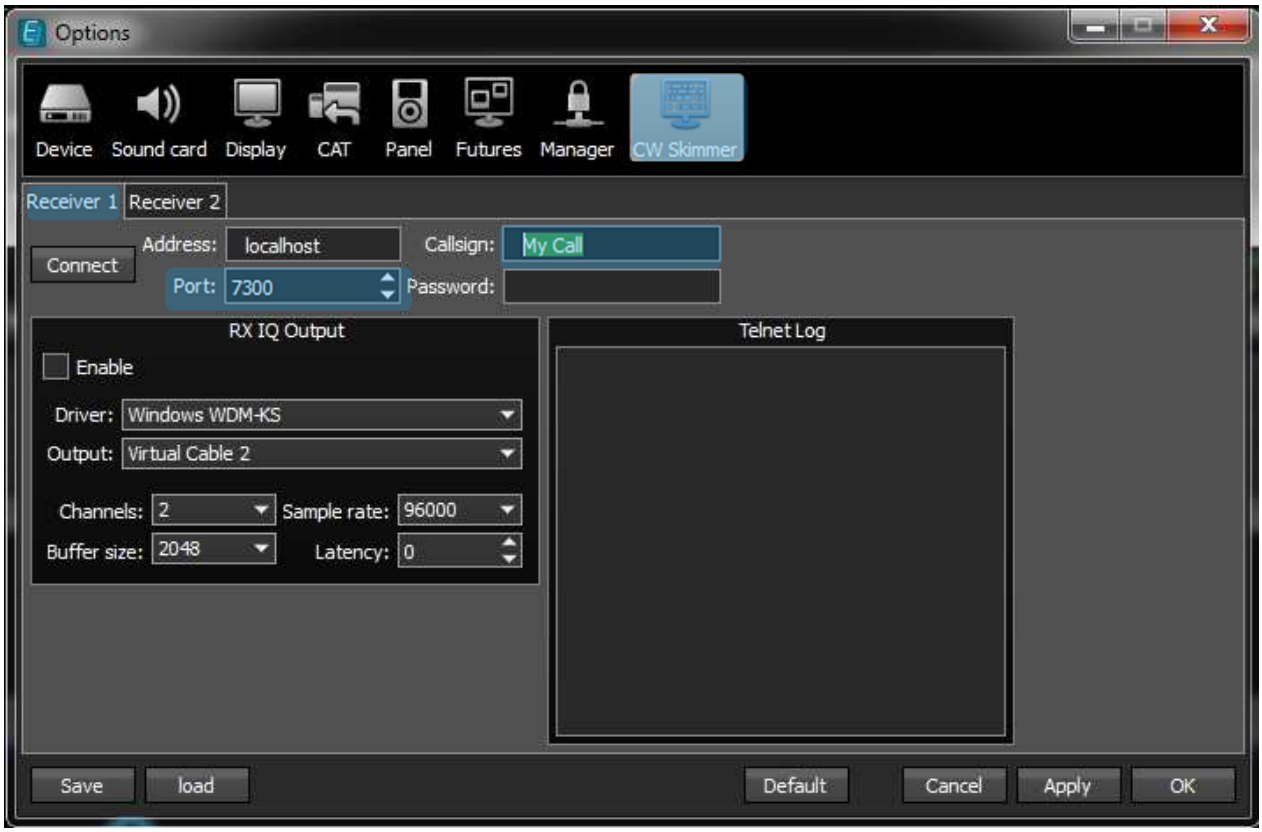


Figure 62 - ExpertSDR2 - Option – CW Skimmer Folder – Port Configuration

Remark

if you are using only one receiver, associated to one skimmer use port 7300

if you are using 2 receivers (as SO2R) configure port 7301 for receiver 1 and 7302 for receiver 2

the ports must match with the CW skimmer configuration (see Cw skimmer tabsheet telnet configuration)
in this case we need to use WintelnetX software for mixing the 2 ports

- In RX IQ output window
  - Deploy the Driver scroll tab to select WDM-KS

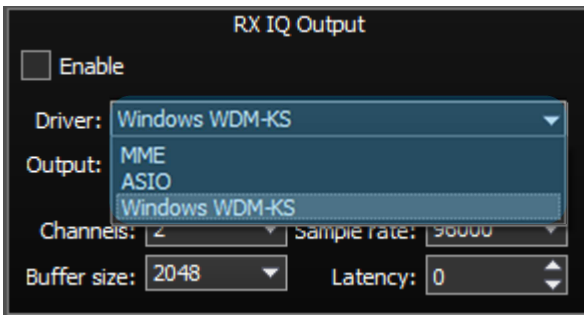


Figure 63 - ExpertSDR2 - Option – CW Skimmer Folder – RX IQ Driver Configuration

  - Deploy Output scroll tab to select Virtual cable 5

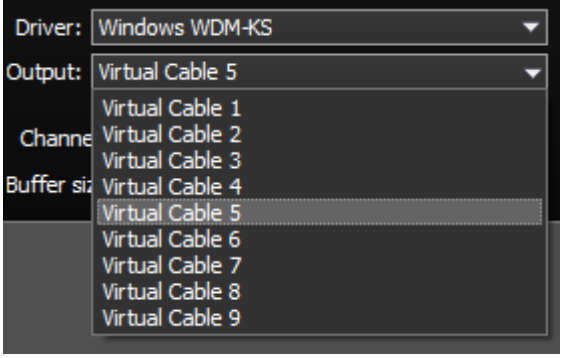


Figure 64 - ExpertSDR2 - Option – CW Skimmer Folder – RX IQ Output Configuration

- Check Enable

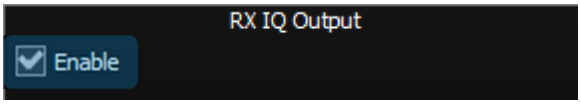


Figure 65 - ExpertSDR2 - Option – CW Skimmer Folder – RX IQ Validation

- Click to Apply and OK to save the configuration

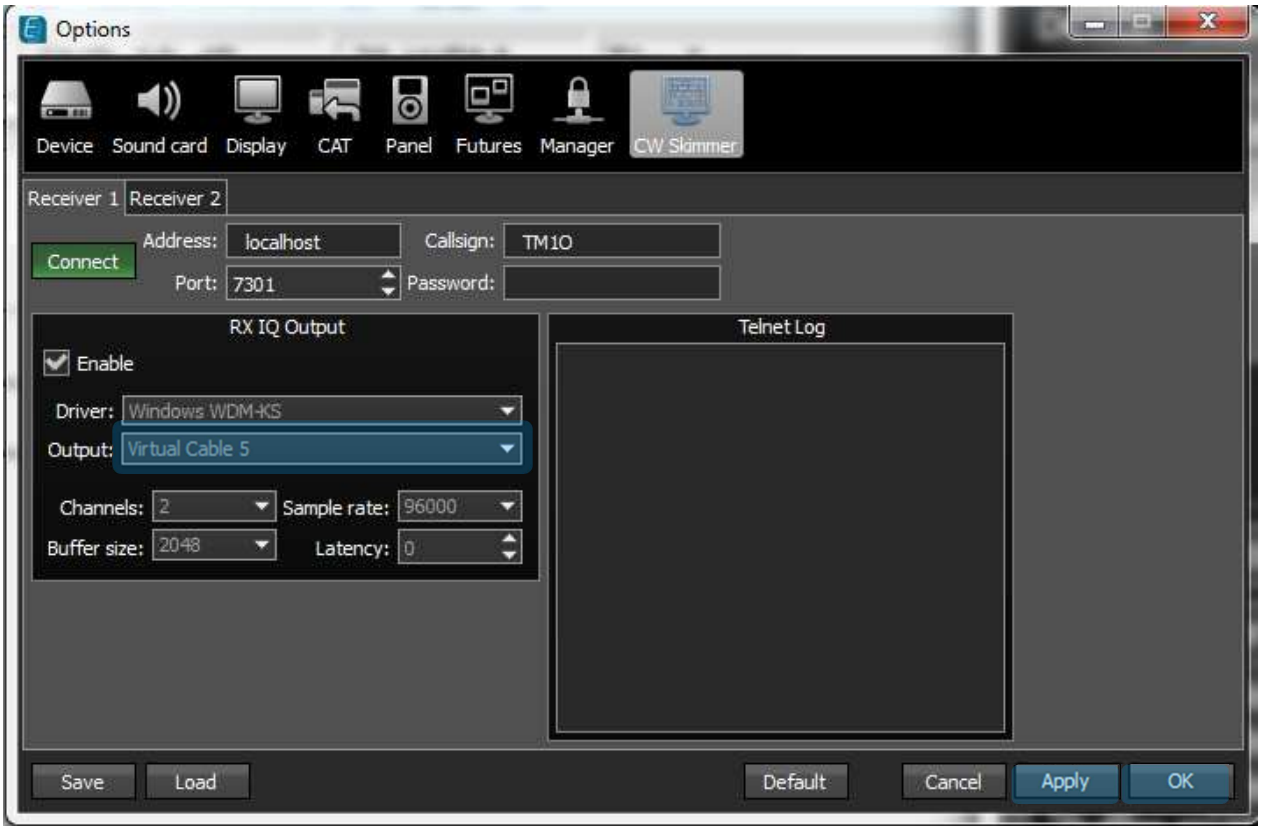


Figure 66 - ExpertSDR2 - Option – CW Skimmer Folder – Receiver 1 Parameters Validation

If the second receiver is used it's necessary to declare the Virtual cable 6

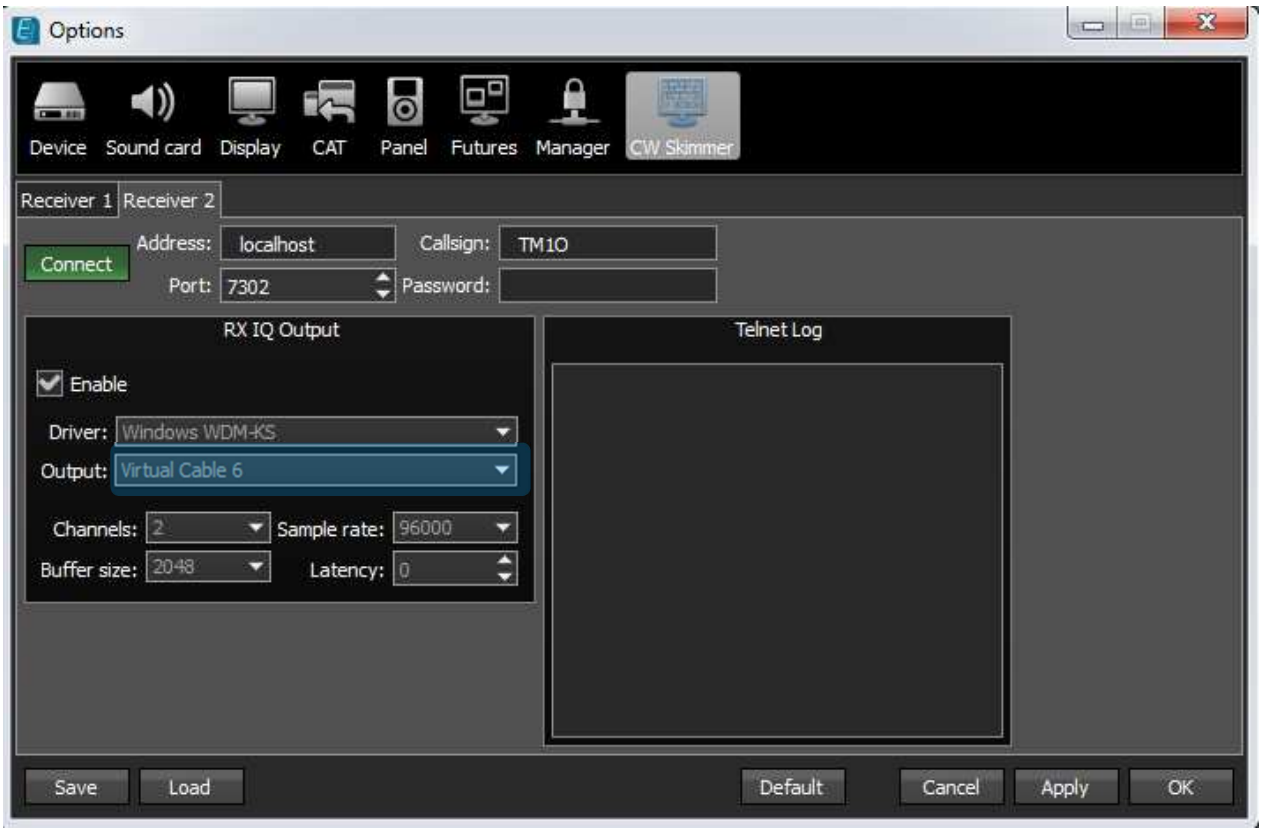


Figure 67 - ExpertSDR2 - Option – CW Skimmer Folder – Receiver 2 Parameters Validation

- Select Futures tab sheet
  - Define the path software's who need to run with Expert SDR2
  - Check them if necessary, these software's will start automatically with Expert SDR2

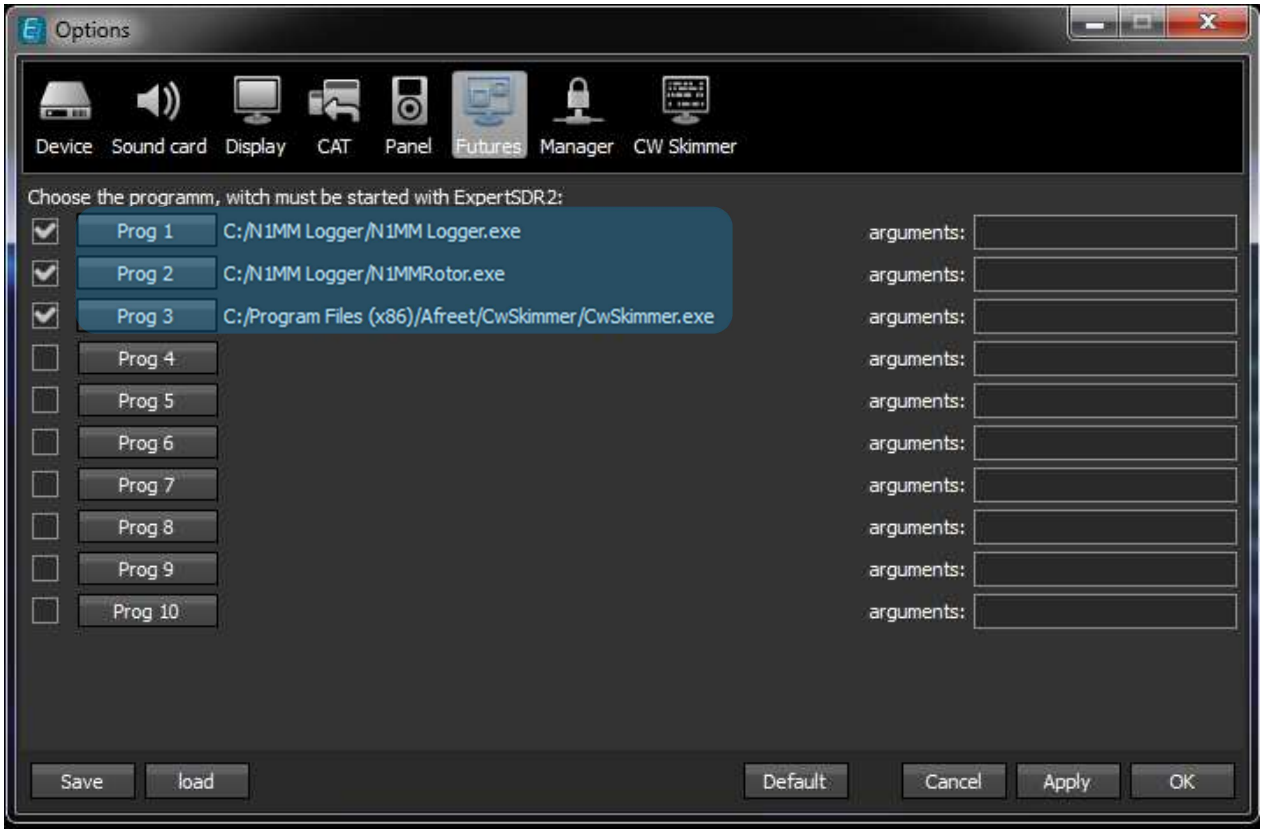


Figure 68 - ExpertSDR2 - Option – Futures folder - Started Programs

- On the main window, select SKM to run in this mode manually

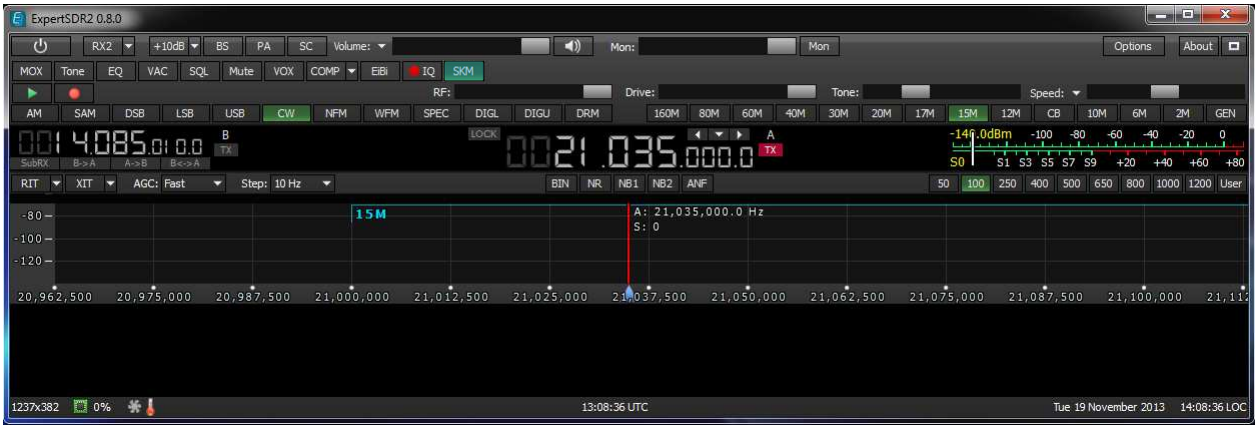


Figure 69 - ExpertSDR2 - Option – Main window - Skimmer Declaration

3 Contest Logger configuration

3.1 Introduction

This is a non-exhaustive list we can't explain a configuration for each logger software. This list could be updated by the feed-back of all users.

3.2 N1MM Software

- When N1MM software is started, select Config tab sheet and open Configure ports, Mode Control, Audio, Other

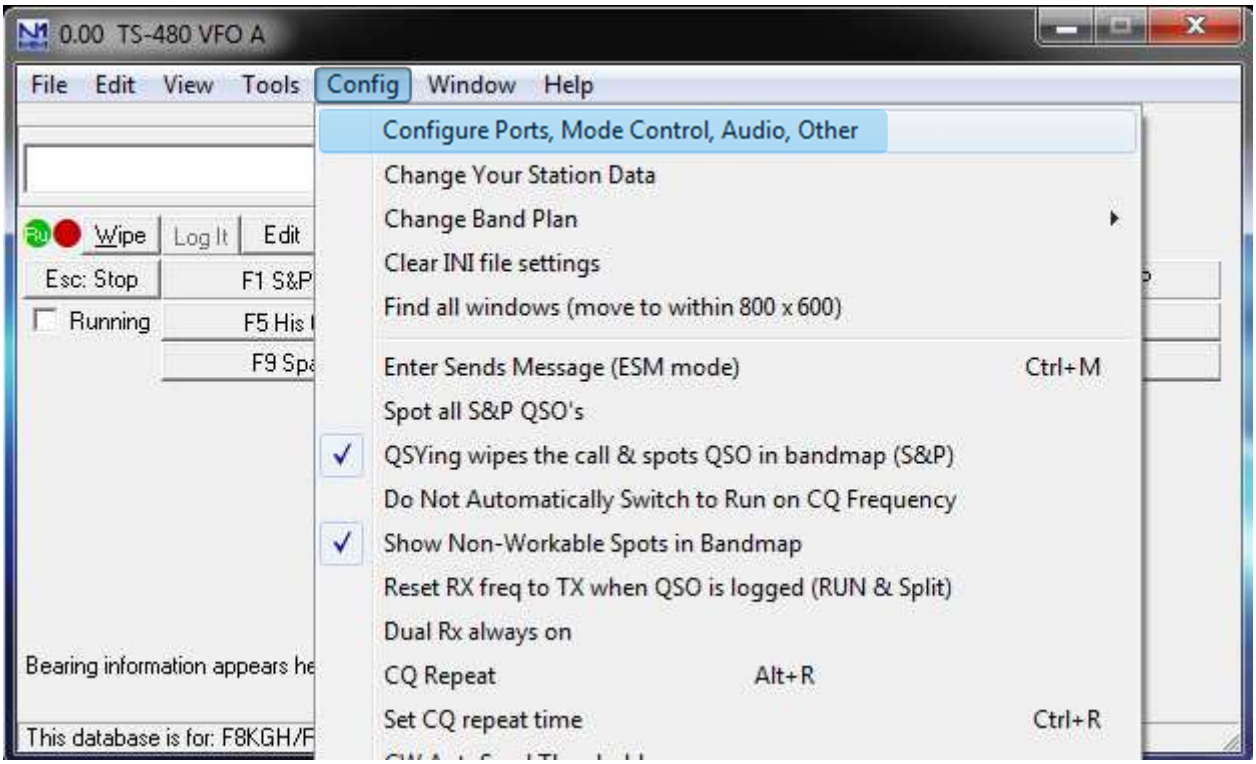


Figure 70 - N1MM Software - Config Ports, Mode, Audio

3.3 SO1V configuration

- COM configuration for N1MM
  - This configuration will manage the SunSDR2, the CW and the PTT
    - Select Hardware Tab sheet
    - On COM6 Select TS-480
    - Check CW
    - Click on Set for displaying the Com6 parameters
    - Apply the COM Parameters as below
    - Then click on OK for saving the COM configuration

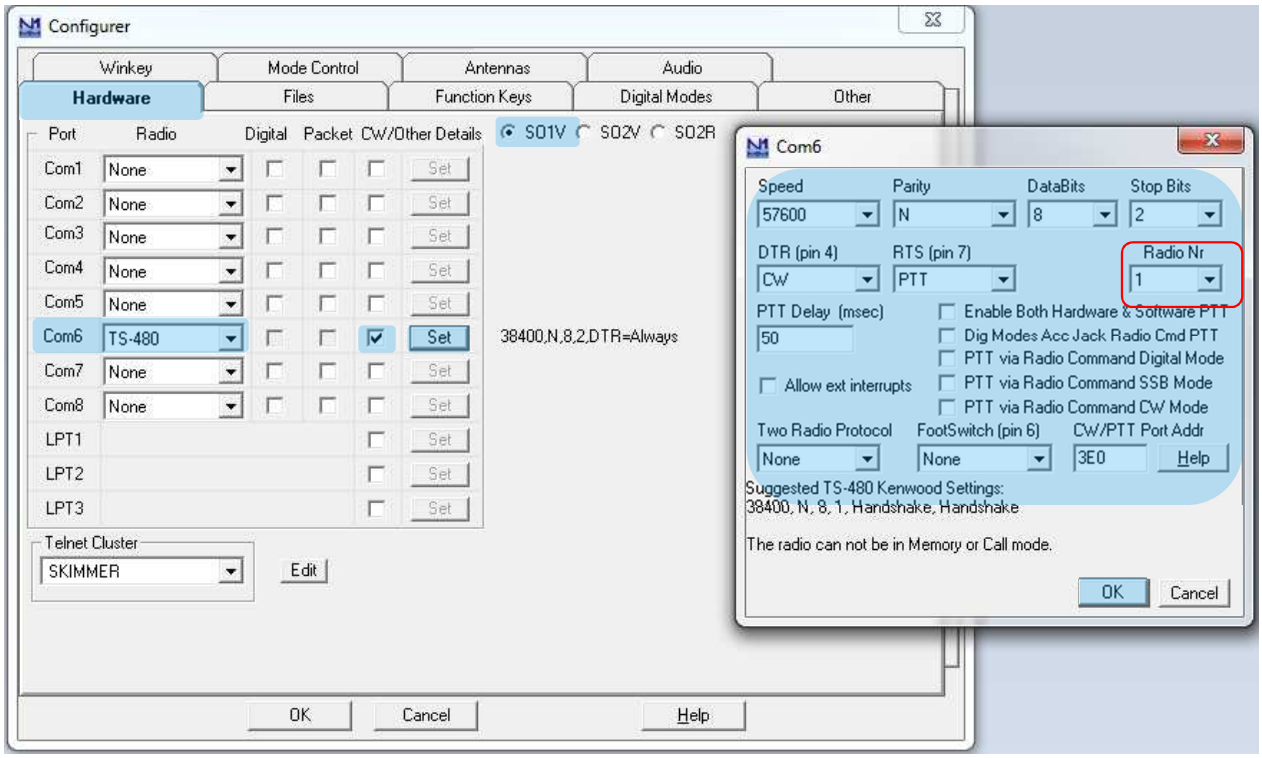
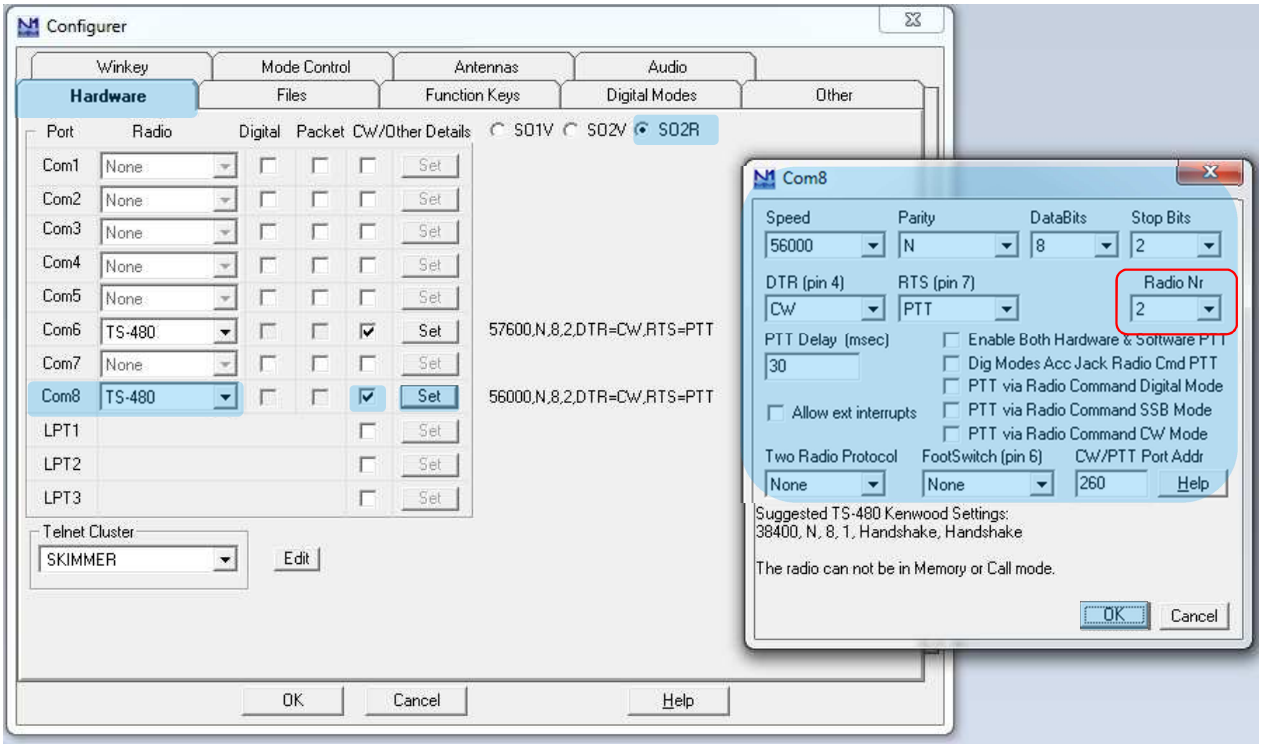


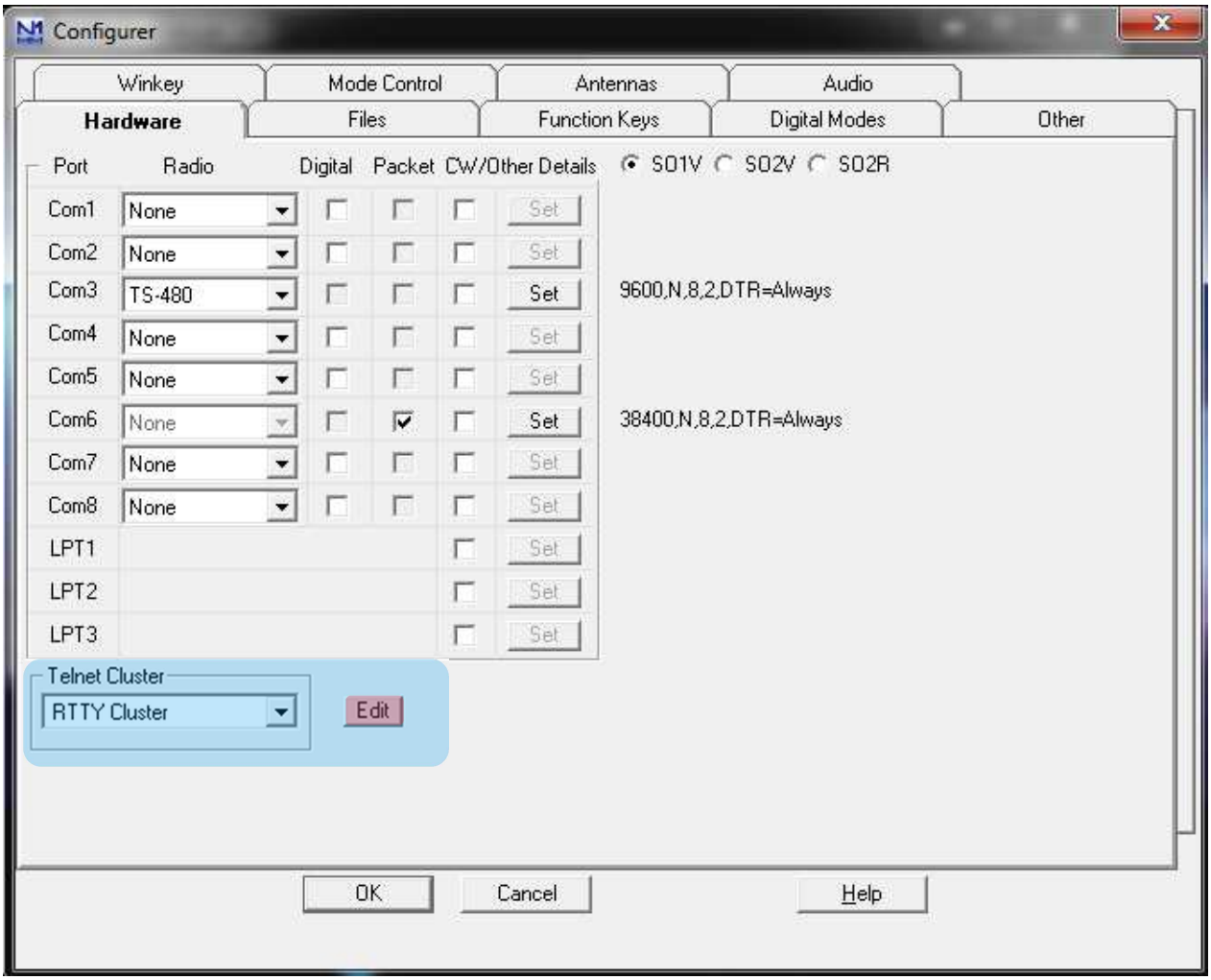
Figure 71 - N1MM Com Configuration

3.4 SO2R configuration

- COM configuration for N1MM
  - This configuration will manage the SunSDR2, the CW and the PTT
    - Select Hardware Tab sheet
    - On COM8 Select TS-480
    - Check CW
    - Click on Set for displaying the Com8 parameters
    - Apply the COM Parameters as below
    - Then click on OK for saving the COM configuration



- This window will open
  - In the Telnet Cluster click on Edit



.Figure 72 - N1MM Software - Config - Telnet Cluster Windows Location

- This window will open
  - Add a new Cluster named SKIMMER, use the local host 172.0.0.1 with the port 7300, then click on OK

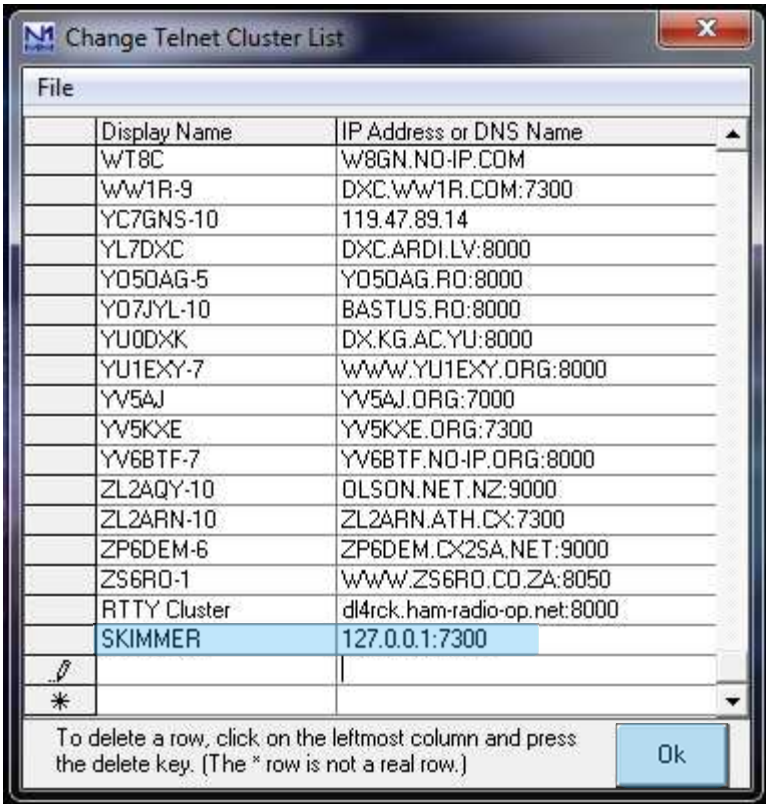


Figure 73 - N1MM Software - Telnet Window - Skimmer Declaration

- On Telnet cluster with the scroll tab select Skimmer

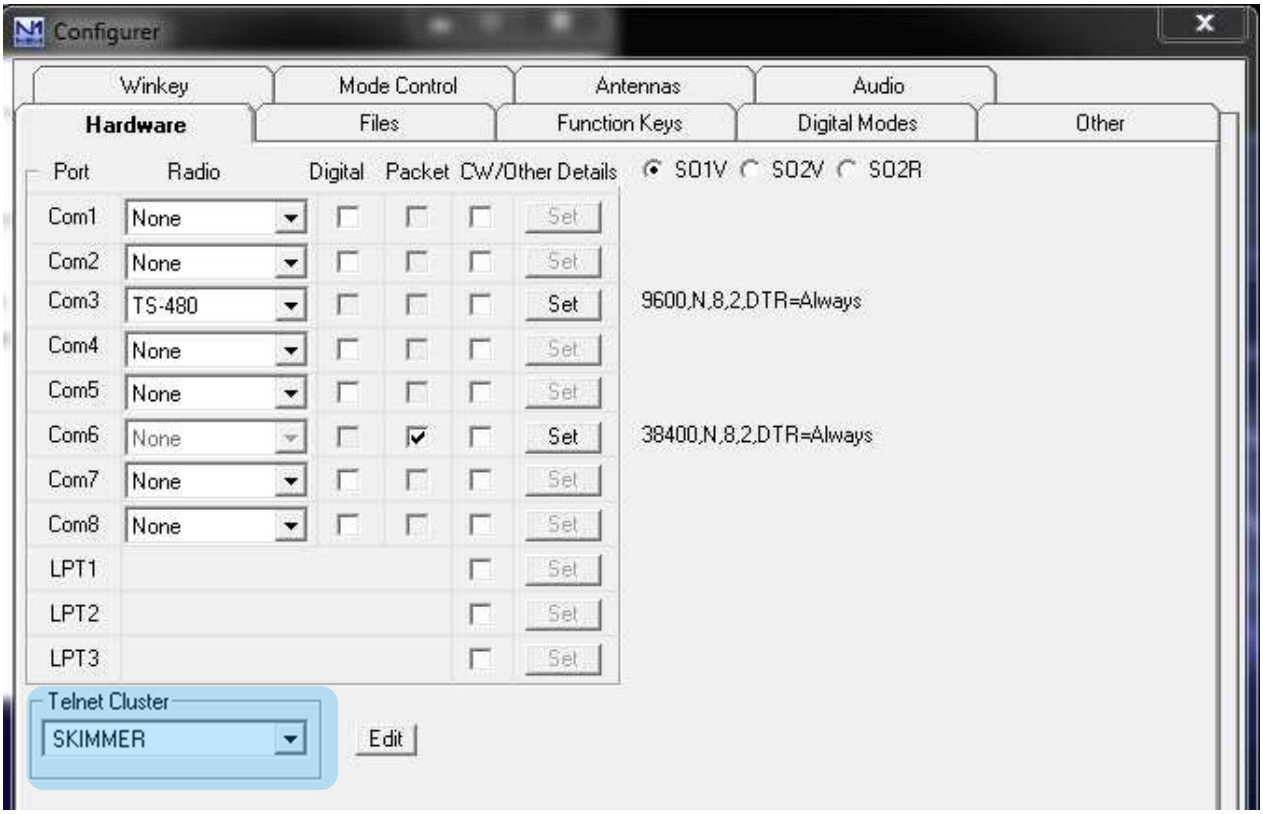


Figure 74 - Hardware Window - Skimmer Declaration

- The Telnet window will receiving data flow

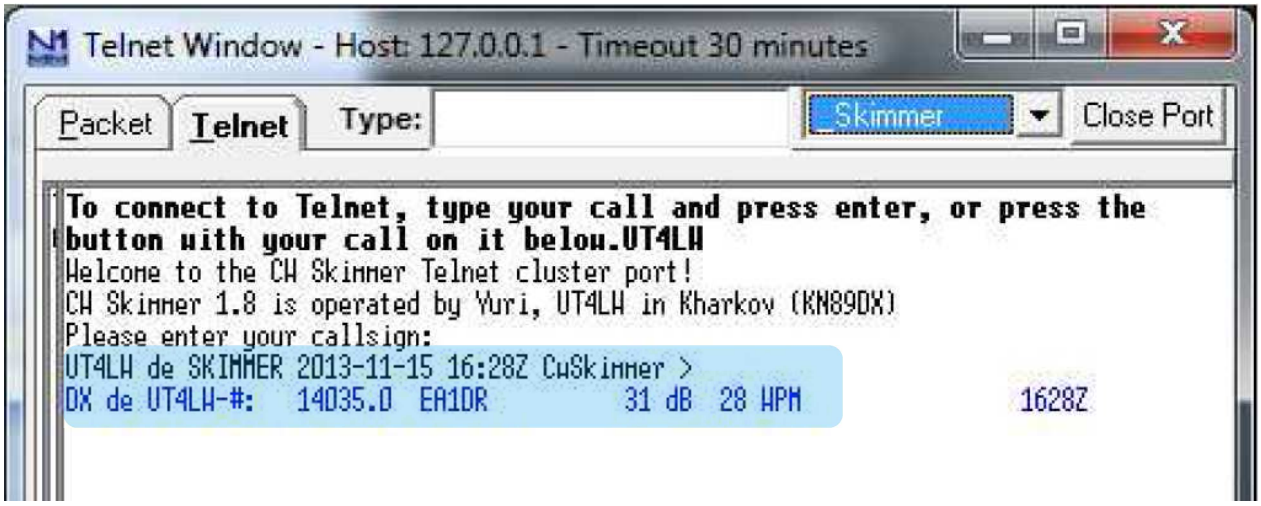
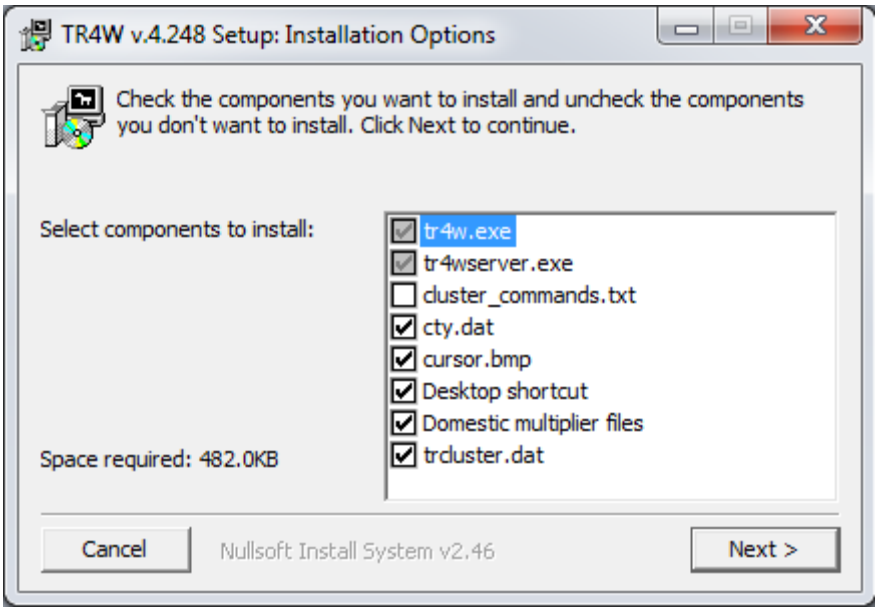
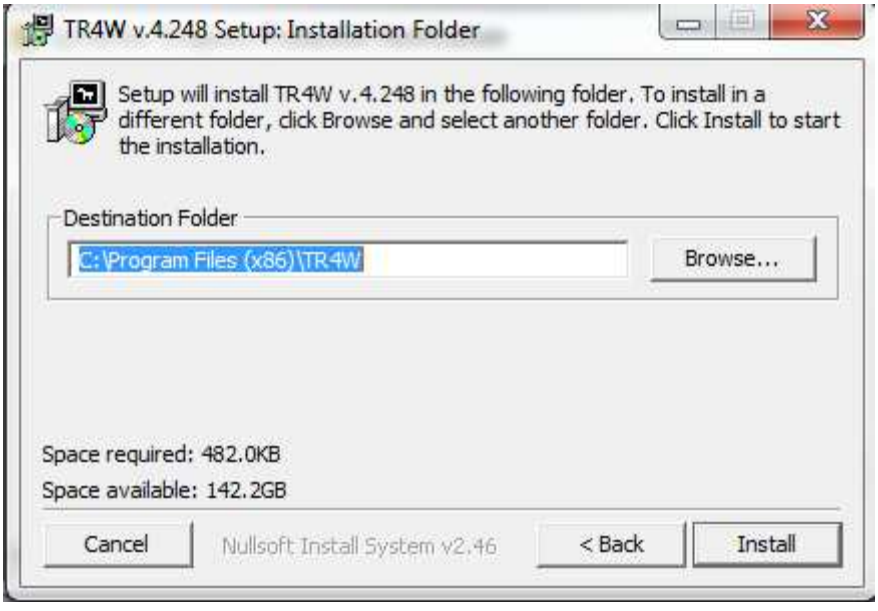


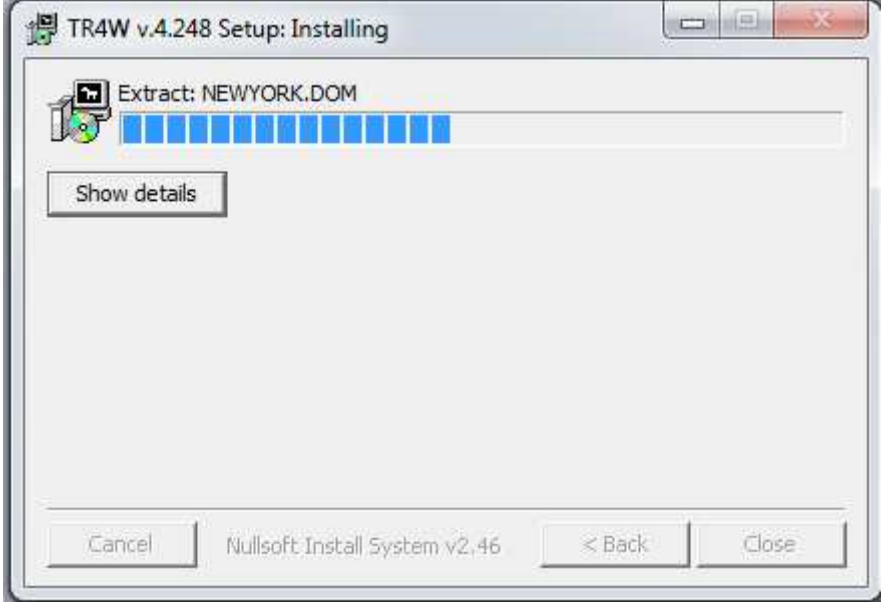
Figure 75 - Telnet Data Flow

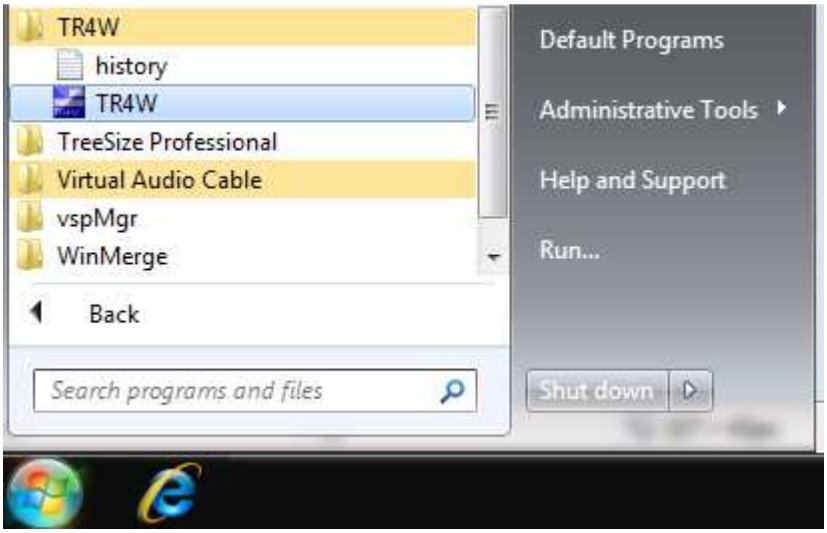
3.5 TR4W

3.5.1 Installation





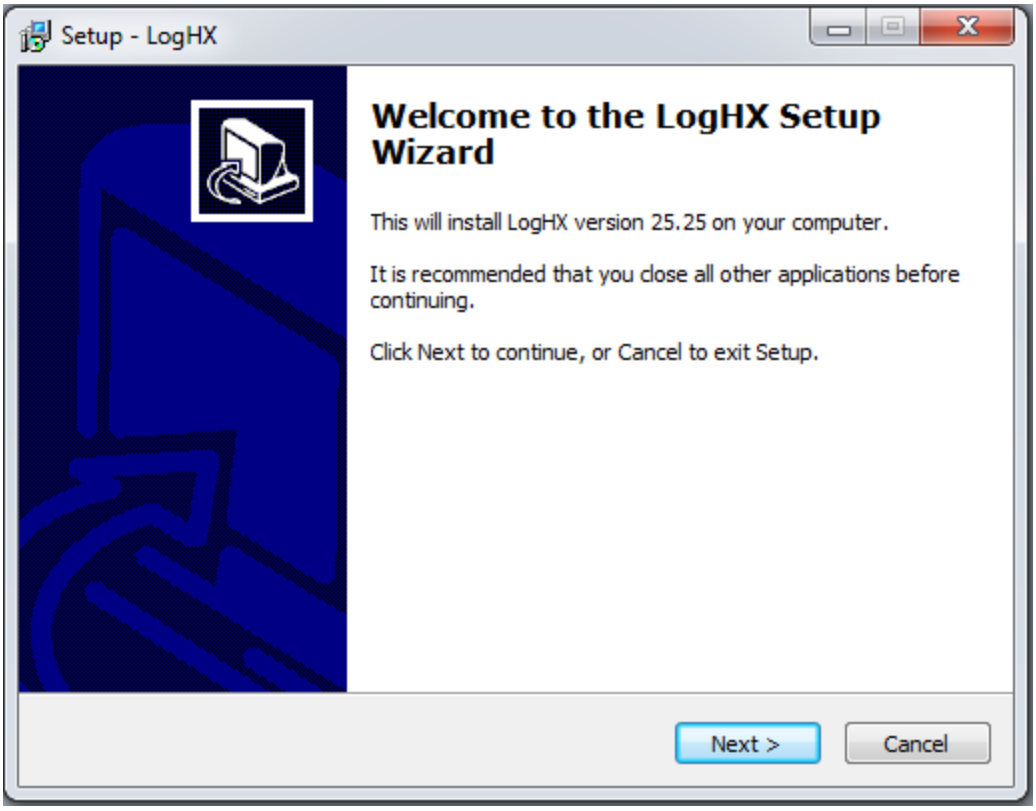


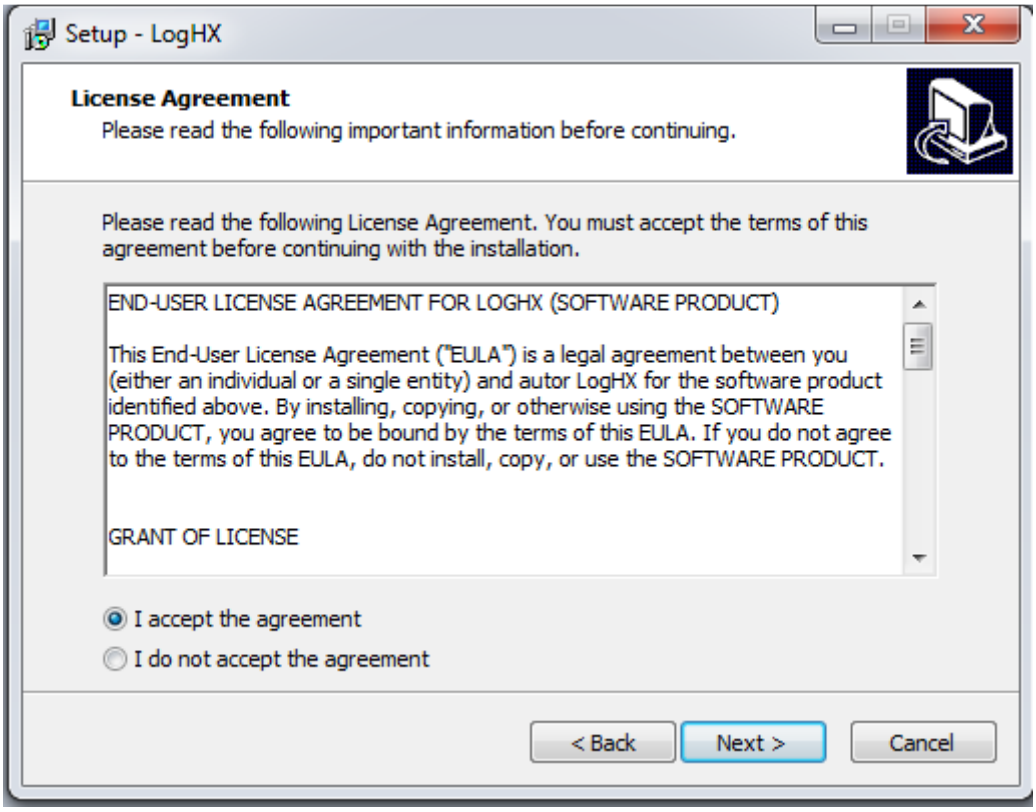


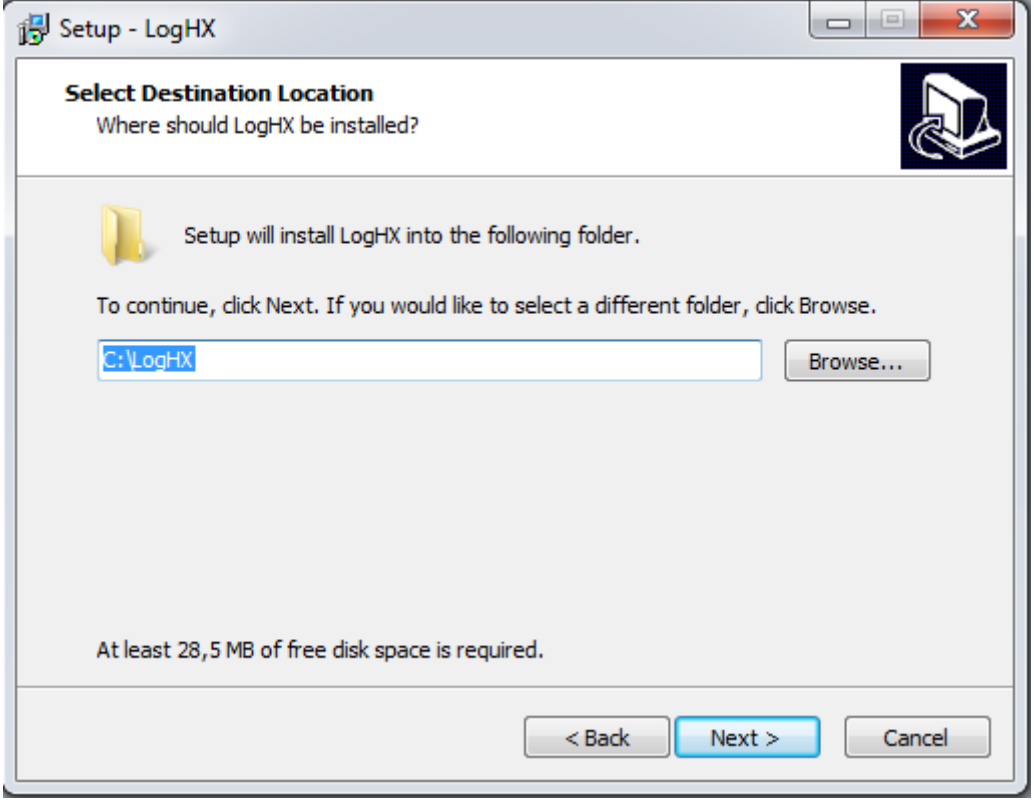
3.5.2 Configuration

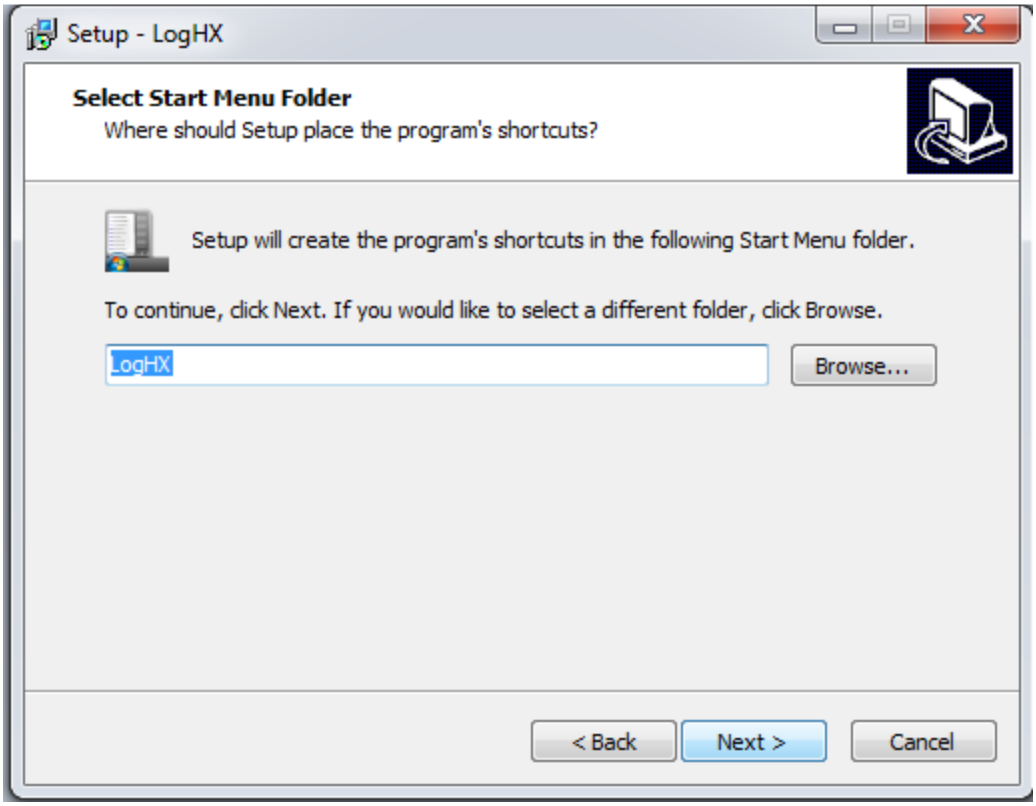
3.6 LogHX

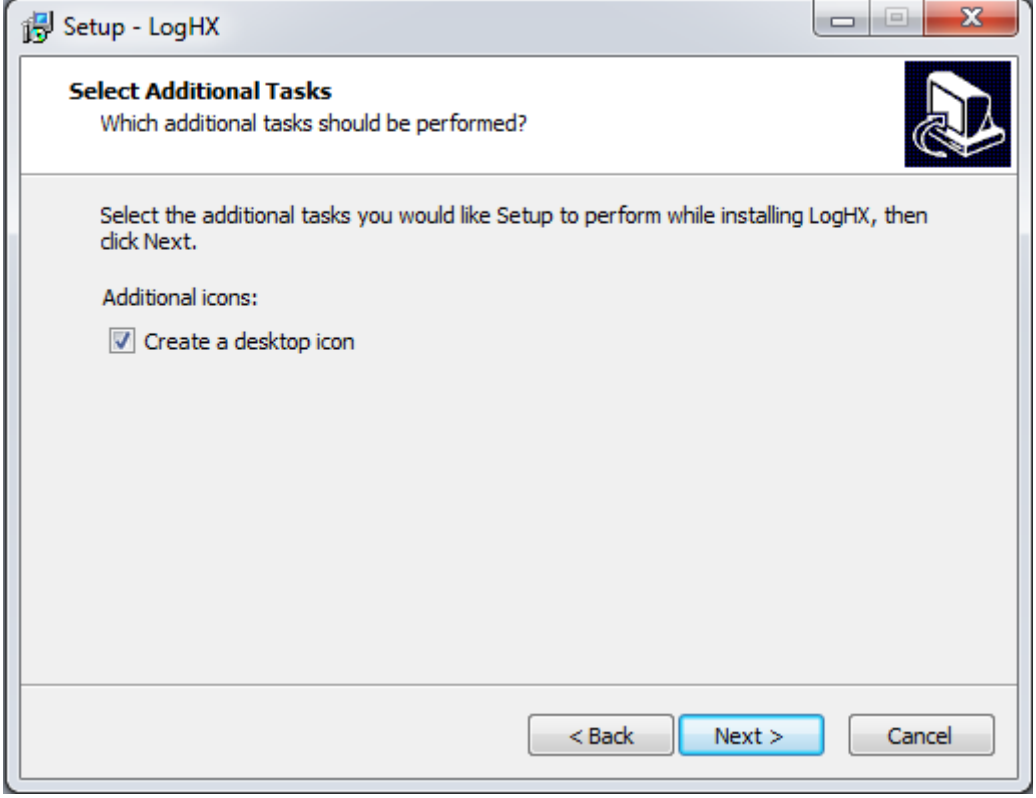
3.6.1 Installation

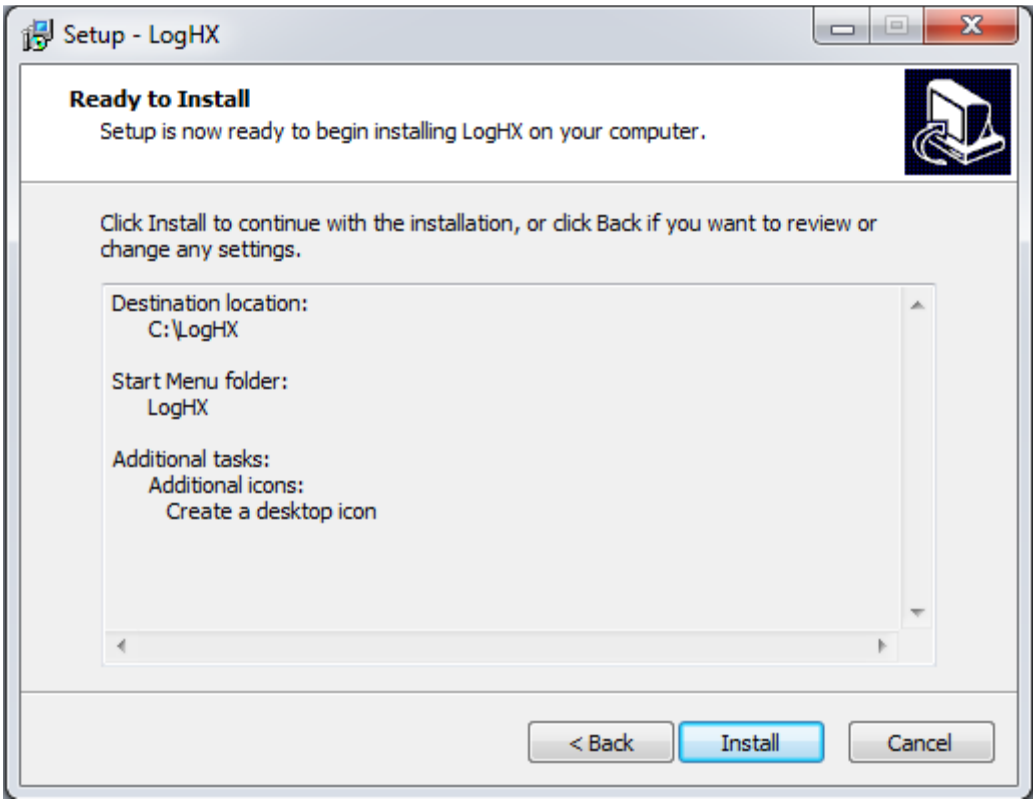


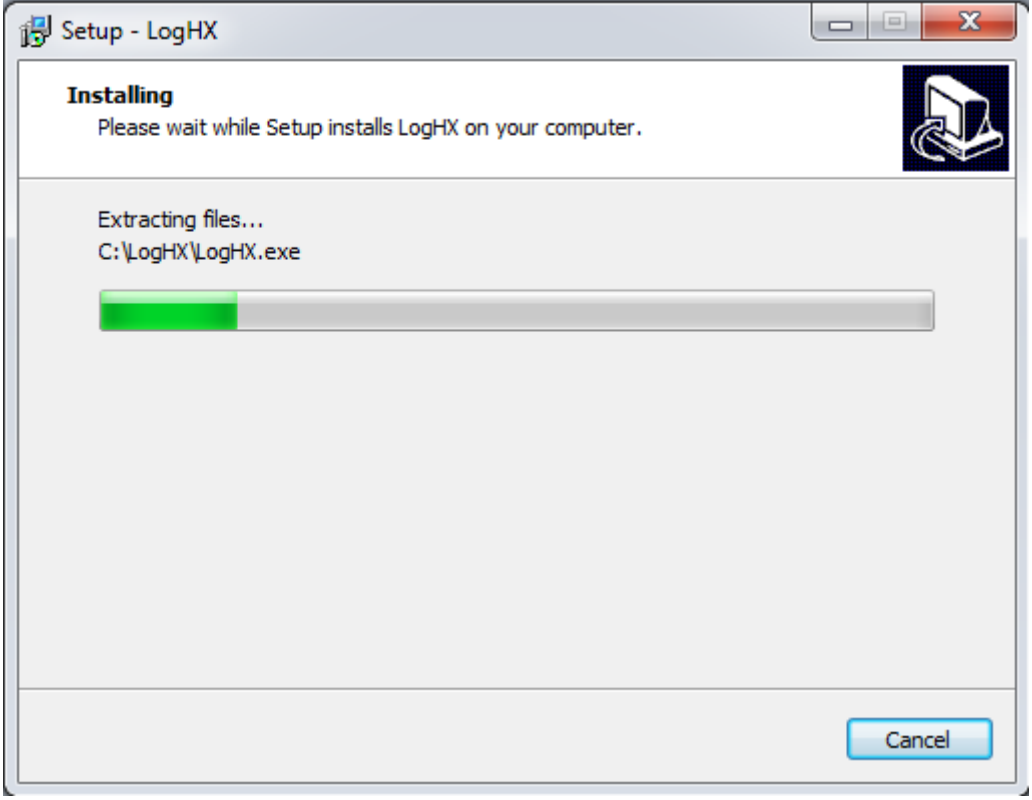


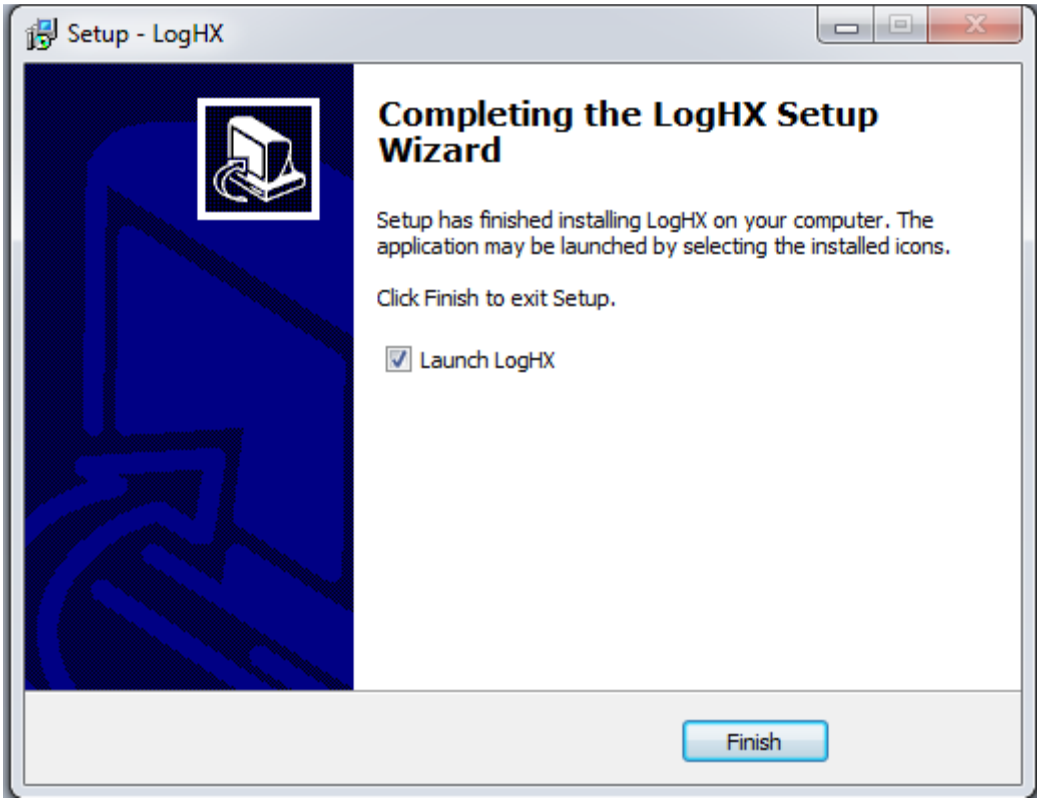

Setup - LogHX
Select Destination Location
Where should LogHX be installed?
Setup will install LogHX into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\LogHX
Browse...
At least 28,5 MB of free disk space is required.
< Back
Next >
Cancel


Setup - LogHX
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
LogHX
Browse...
< Back
Next >
Cancel


Setup - LogHX
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing LogHX, then click Next.
Additional icons:
Create a desktop icon
< Back
Next >
Cancel


Setup - LogHX
Ready to Install
Setup is now ready to begin installing LogHX on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\LogHX
Start Menu folder:
LogHX
Additional tasks:
Additional icons:
Create a desktop icon
< Back
Install
Cancel





3.6.2 Configuration