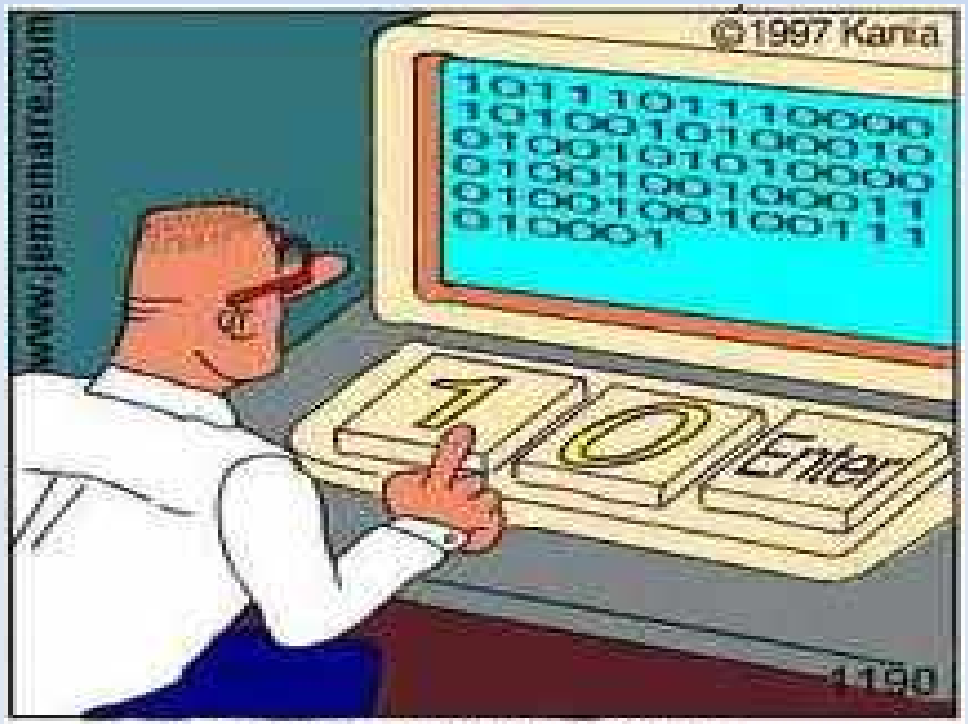
Programming Portable Radios with CHIRP



Le vrai programmeur ...

Jay Marcucci, KC2YSK

Presentation 2013

Agenda

- Introduction
- Programs
- CHIRP
- System requirements
- Programming
- Conclusion

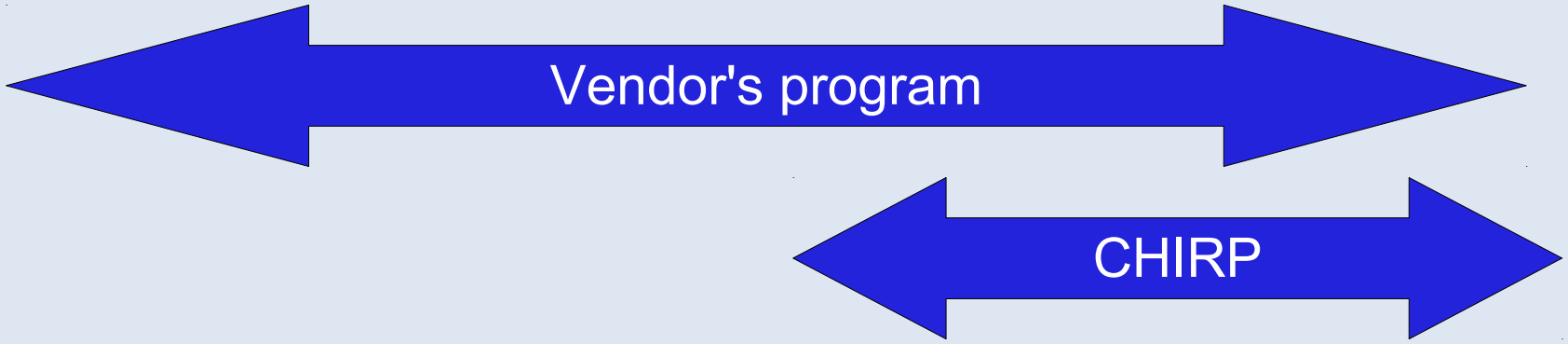
Introduction

- Modern radios can be programmed by using a computer, a program and a cable:
  - Easier than on the (small) radio
  - Multiple configurations can be saved
  - Easy to exchange with fellow hams

Introduction

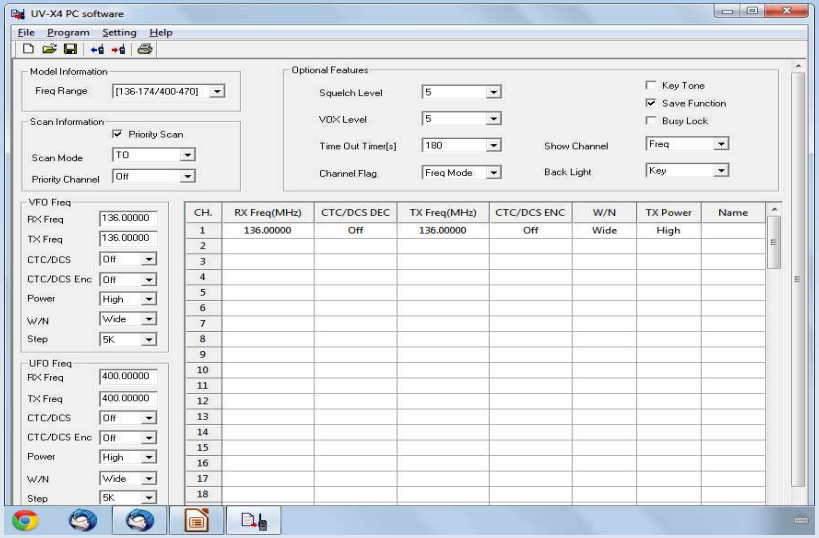
Progamming radios

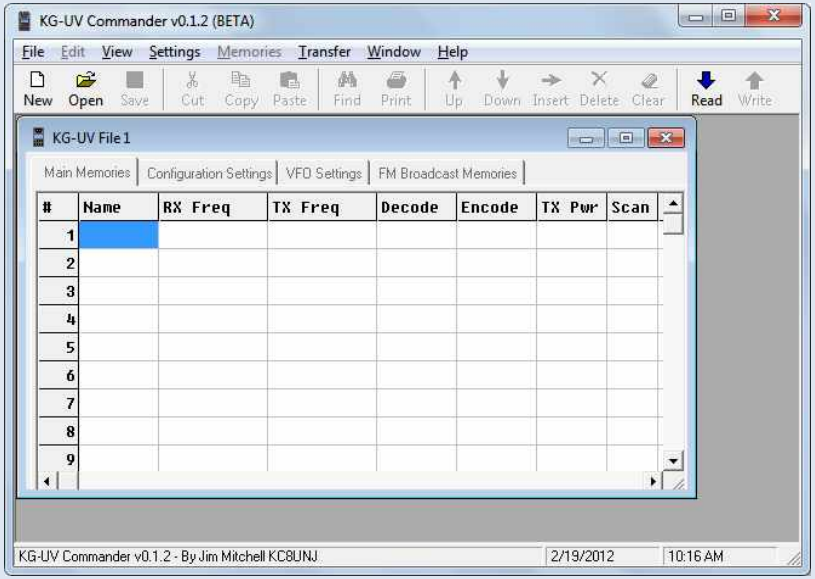
Specific	Generic
FM channels Display colors Squelch level VFO mode Frequency limitations Etc.	Channel frequency Repeater offset CTCSS tone DCS setting Channel name Etc.



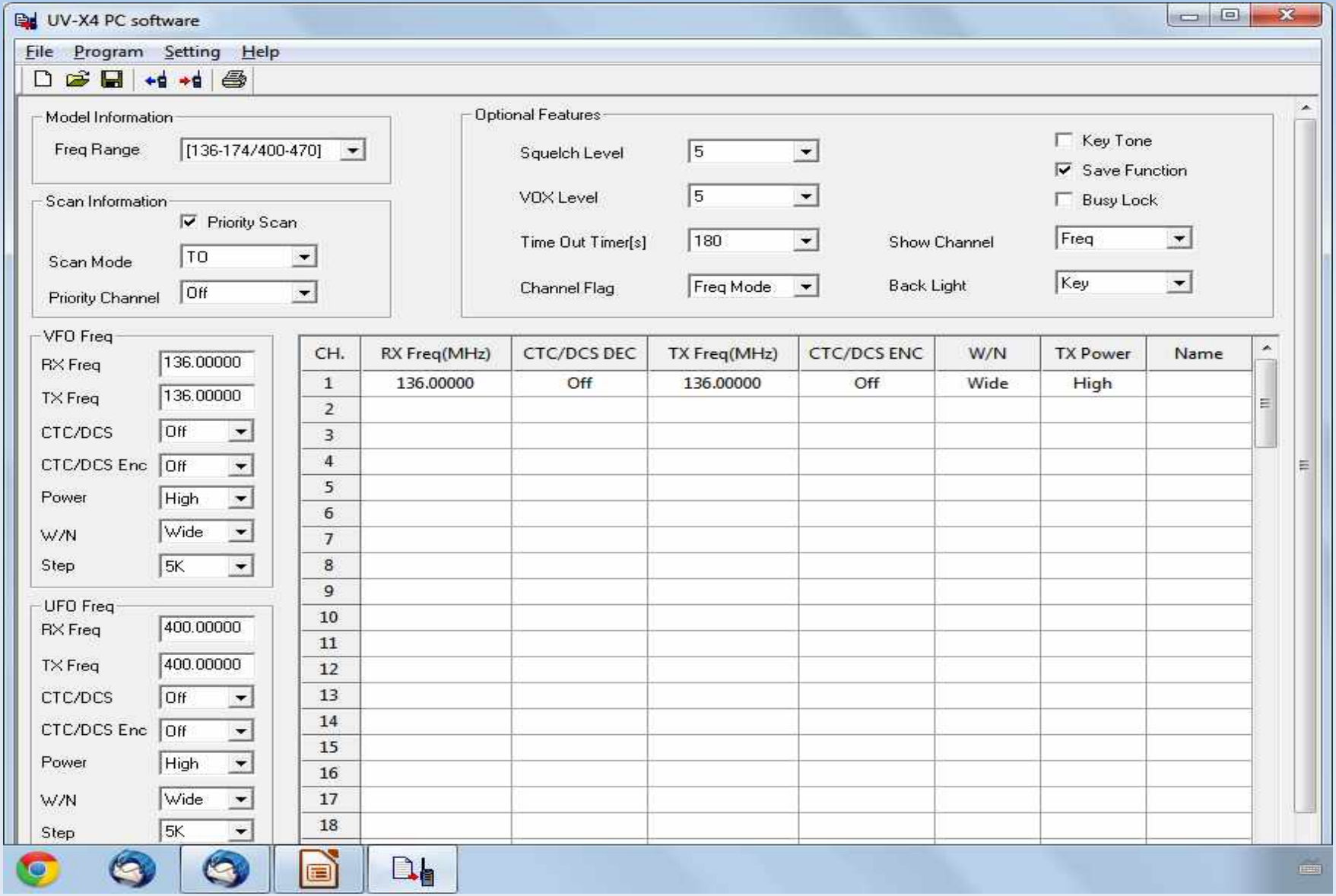
CHIRP is restricted to generic programming, but can easily exchange information.

Specific programs





Baofeng UV-3R



UV-3R, frequency expansion

SETTING.INI
[setup]
com=1
searchcom=1
name=0

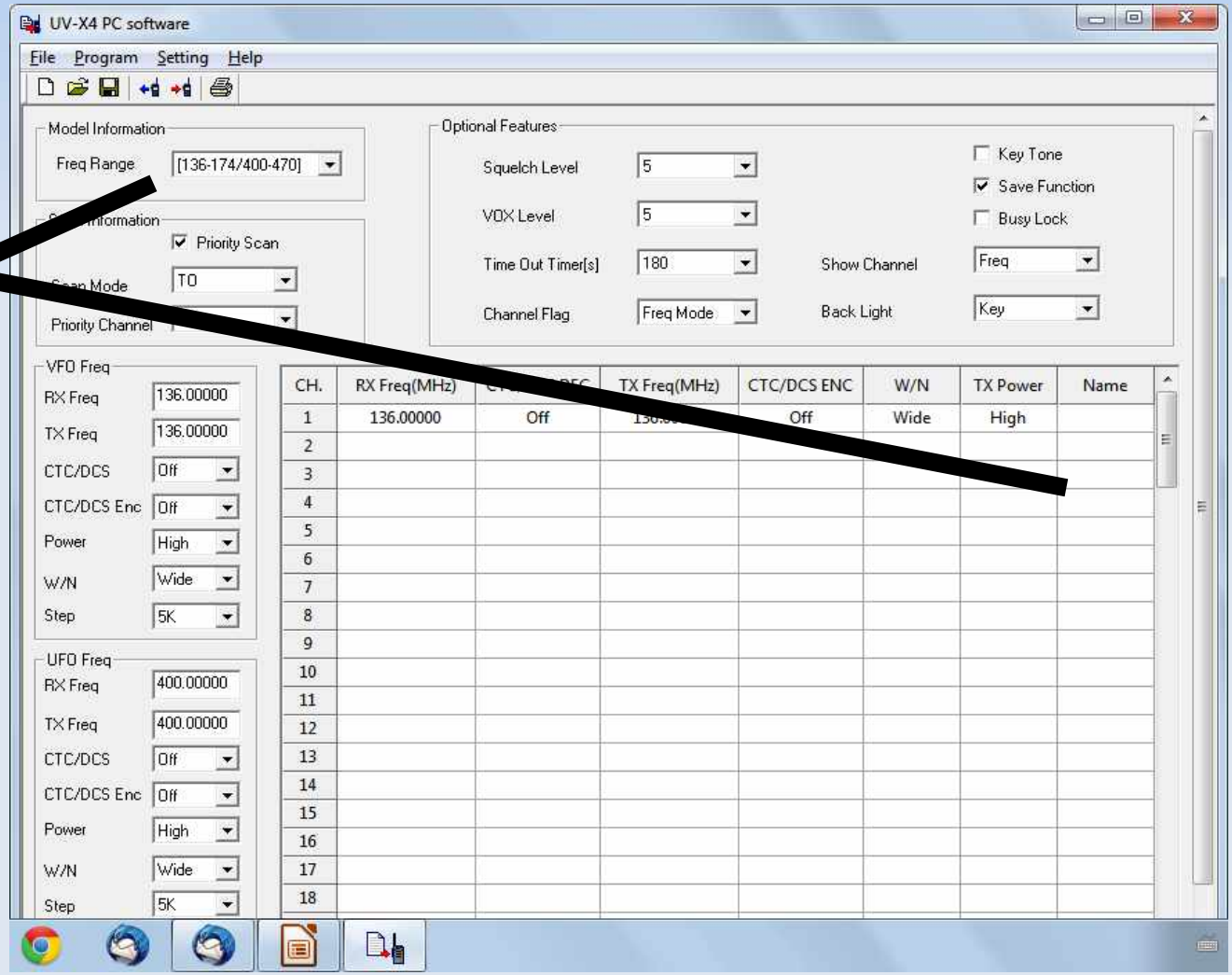
language=english

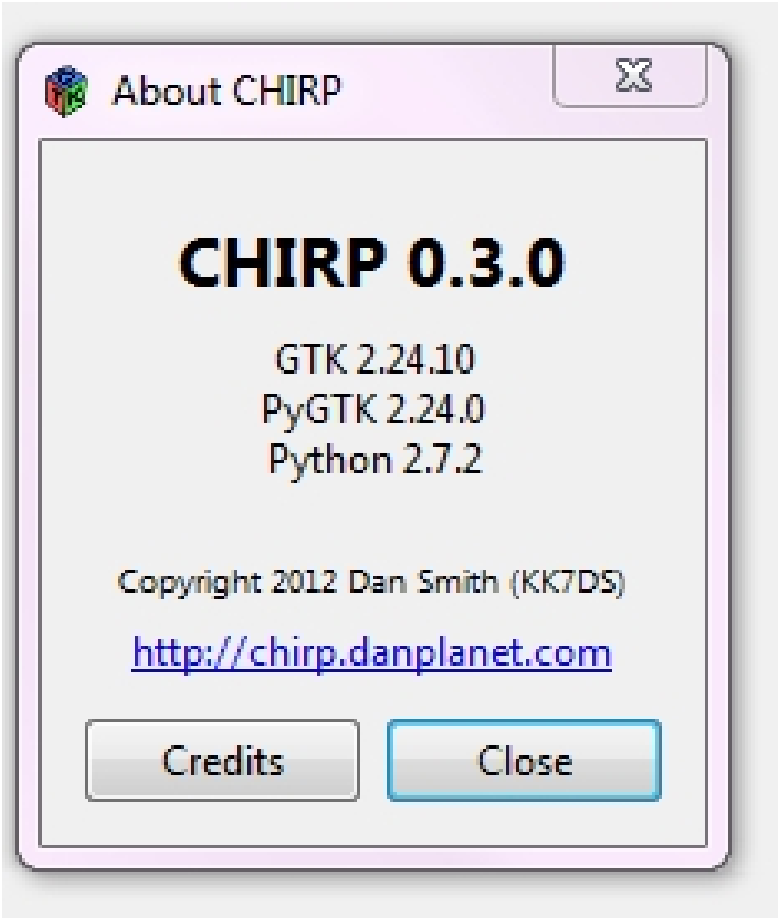
[ModelInfo]

Freq0=[136-174/400-470]
data0=6013401700400047

Freq1=[144-146/430-440]
data1=4014601400430044

Freq2=[144-148/430-450]
data2=4014801400430045

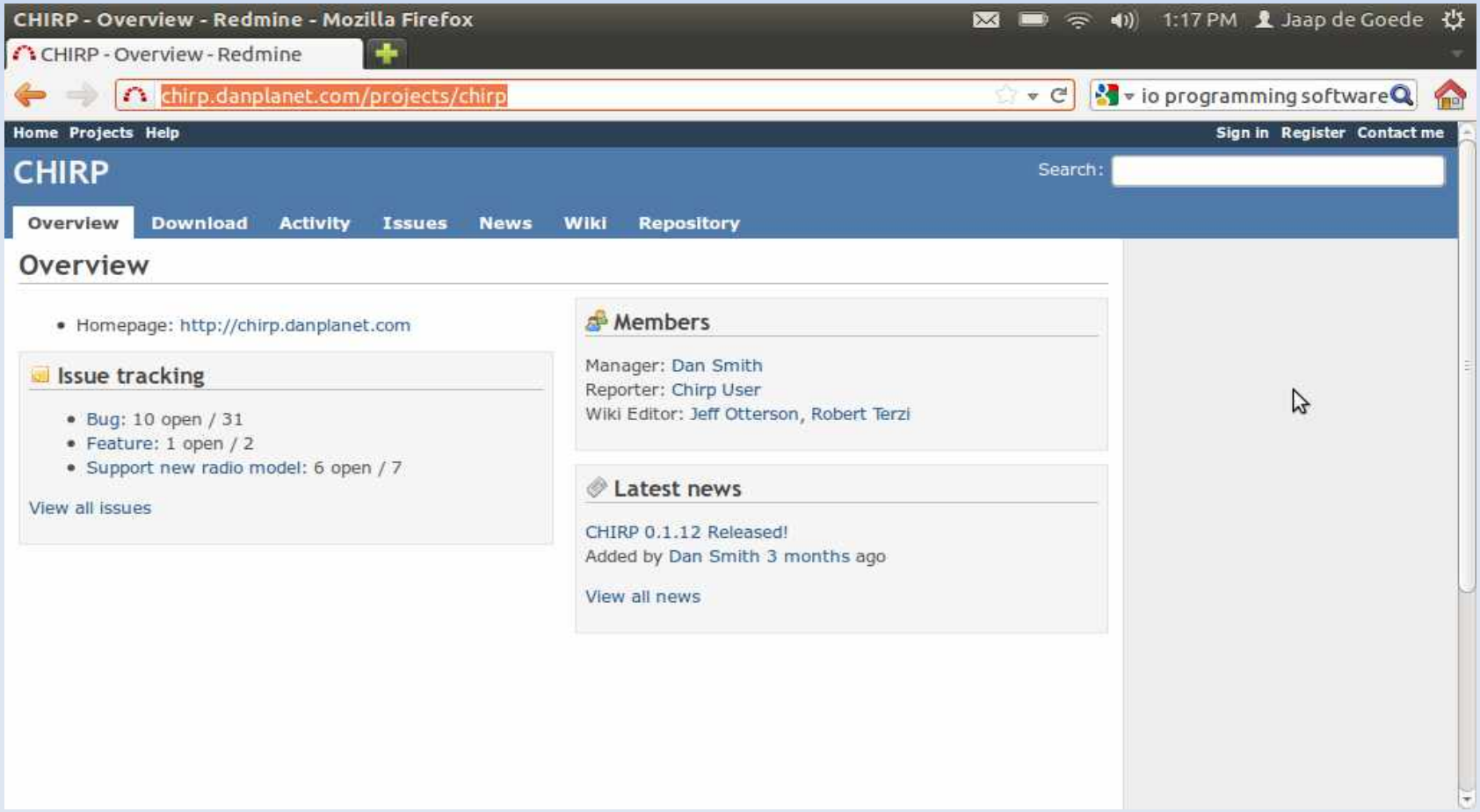



About CHIRP
CHIRP 0.3.0
GTK 2.24.10
PyGTK 2.24.0
Python 2.7.2
Copyright 2012 Dan Smith (KK7DS)
http://chirp.danplanet.com
Credits
Close


TAIDU
YOUR LOGO
144.075
WOUXUN
ALINCO
145000
KENWOOD

CHIRP on the Internet

- http://chirp.danplanet.com/projects/chirp



CHIRP v 0.3.0: Radios

Alinco
- DR-03T, 06T
- DR135T, 235T
- DR435T
- DJ596T

Baofeng
- UV-3R, UV-5R

Jetstream
- JT220M

Puxing
- PX-2R (UHF)
- PX-777

Icom
- IC-2820H
- ID-800H, 880H
- IC-2200H
- IC-91/92AD
- IC-V/U82
- IC-2100H, 2720H
- IC-T70
- IC-Q7A
- IC-W32A
- IC-7000, 7200
- ID-32A
- ID-RP2000V/RP4000V/RP2V/RP2D

Kenwood
- TH-D7A
- TM-D700, D710
- TM-V7A, V71A
- TH-F6A
- TH-D72
- TH-K2
- TM-271A

Yaesu
- FT-2800M
- FT-7800R
- FT-7900R
- FT-8800R
- FT-8900R
- VX-3R, 5R, 6R, 7R, 8R
- FT-60R
- FT-817/857/897

Wouxun
- KG-UVD1P/UV2D/UV3D

CHIRP, system requirements

- CHIRP
  - Microsoft Windows 2000/XP/Vista/7
  - Apple Mac OS
  - Linux: Fedora, Ubuntu, ..
- USB- of Serial specific cable
  - Windows: USB-driver
  - Linux: USB to serial is standard

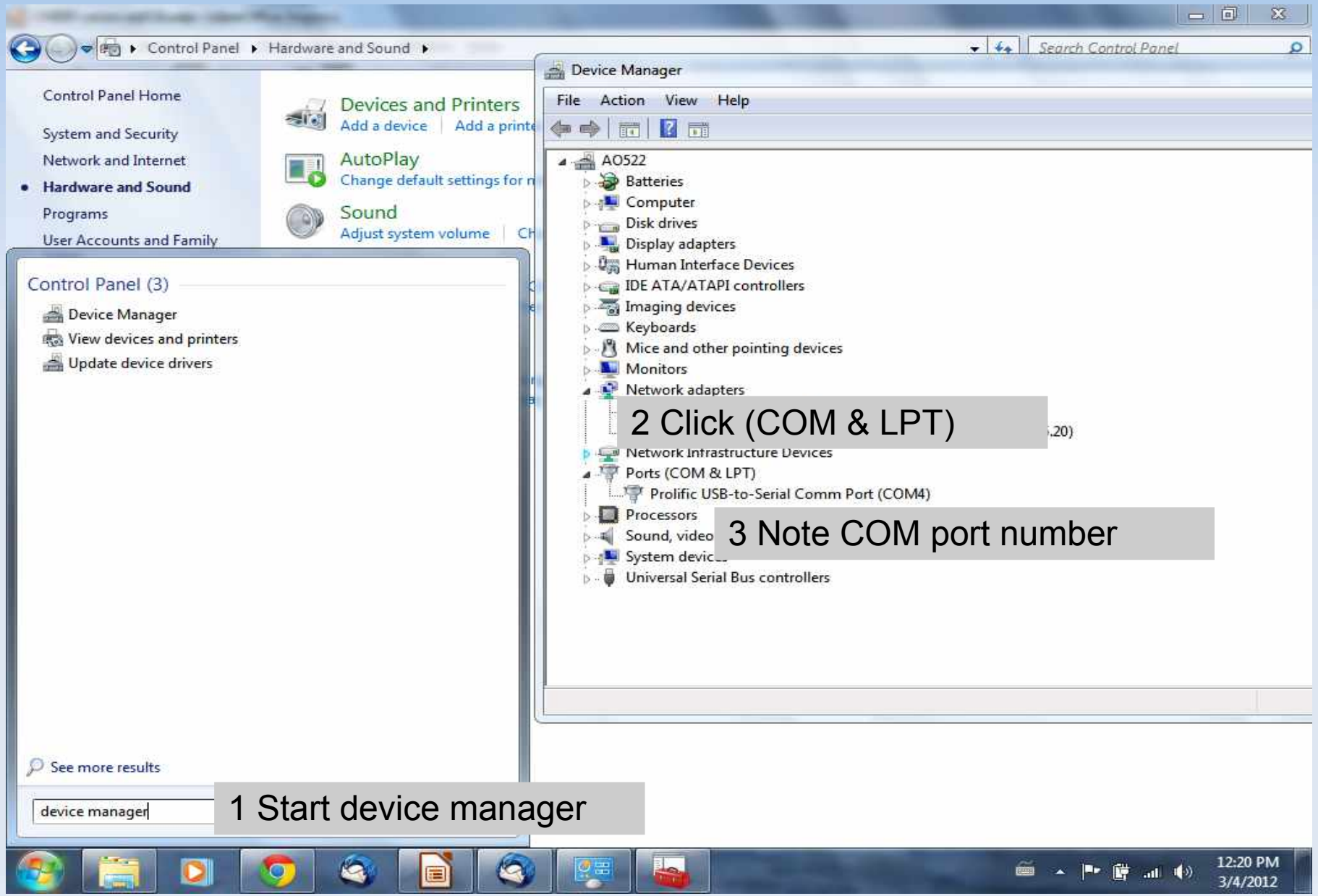
CHIRP runs fine with Linux.
Even with a Pentium class CPU and 512 Megabyte memory!

CHIRP, tips

- WINE (Linux WINdows Emulator)
  - USBtoserial cable = /dev/ttyUSB0
  - Associate WINE COM1 with Linux /dev/ttyUSB0
    - ln -s /dev/ttyUSB0 ~/.wine/dosdevices/com1

- Windows Prolific Driver
  - Latest driver does not support counterfeit
- UBUNTU HAM programs
  - https://launchpad.net/~ubuntu-hams-updates/+archive/ppa

CHIRP, Windows (USB) COM port

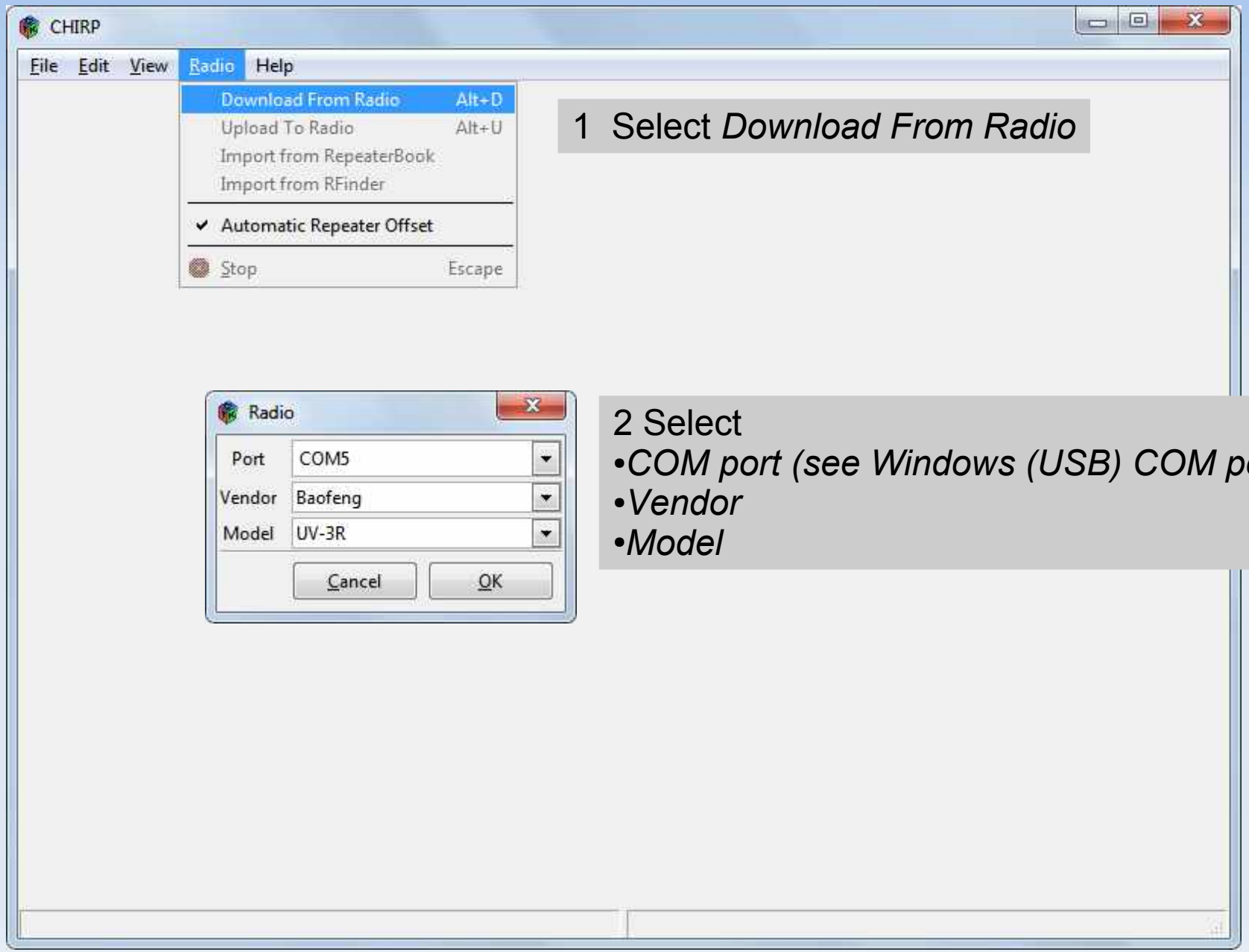


CHIRP, programming

- Get data from radio(s), Data Sources, etc.
- Cut, Copy, Paste across tabs then save data
- Send modified data back down to radio(s)
- Export data to CSV for other program

- Each radio/Source opens in a separate Tab

Get Data from Radios

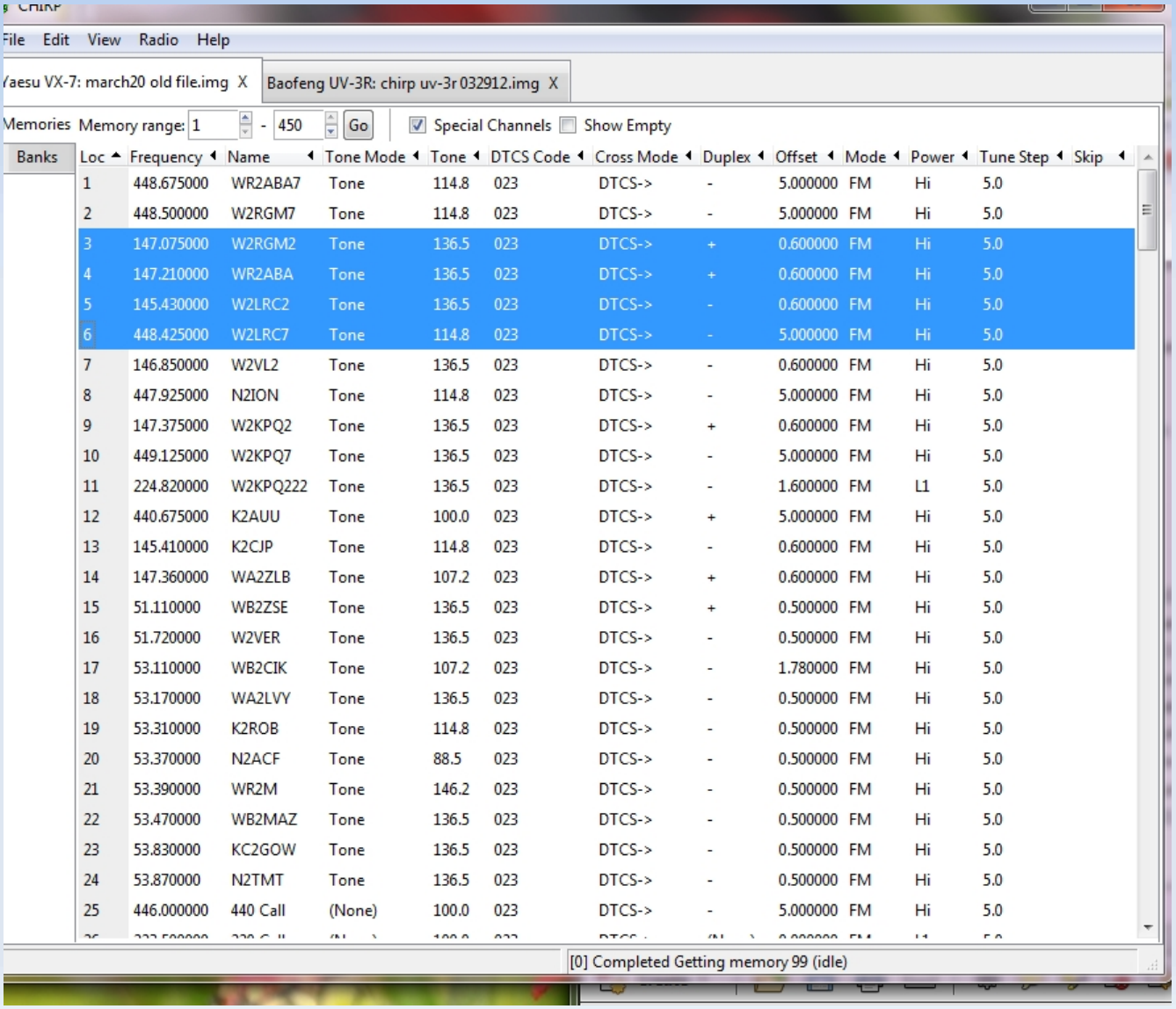


1 Select *Download From Radio*

2 Select
- *COM port (see Windows (USB) COM port)*
- *Vendor*
- *Model*

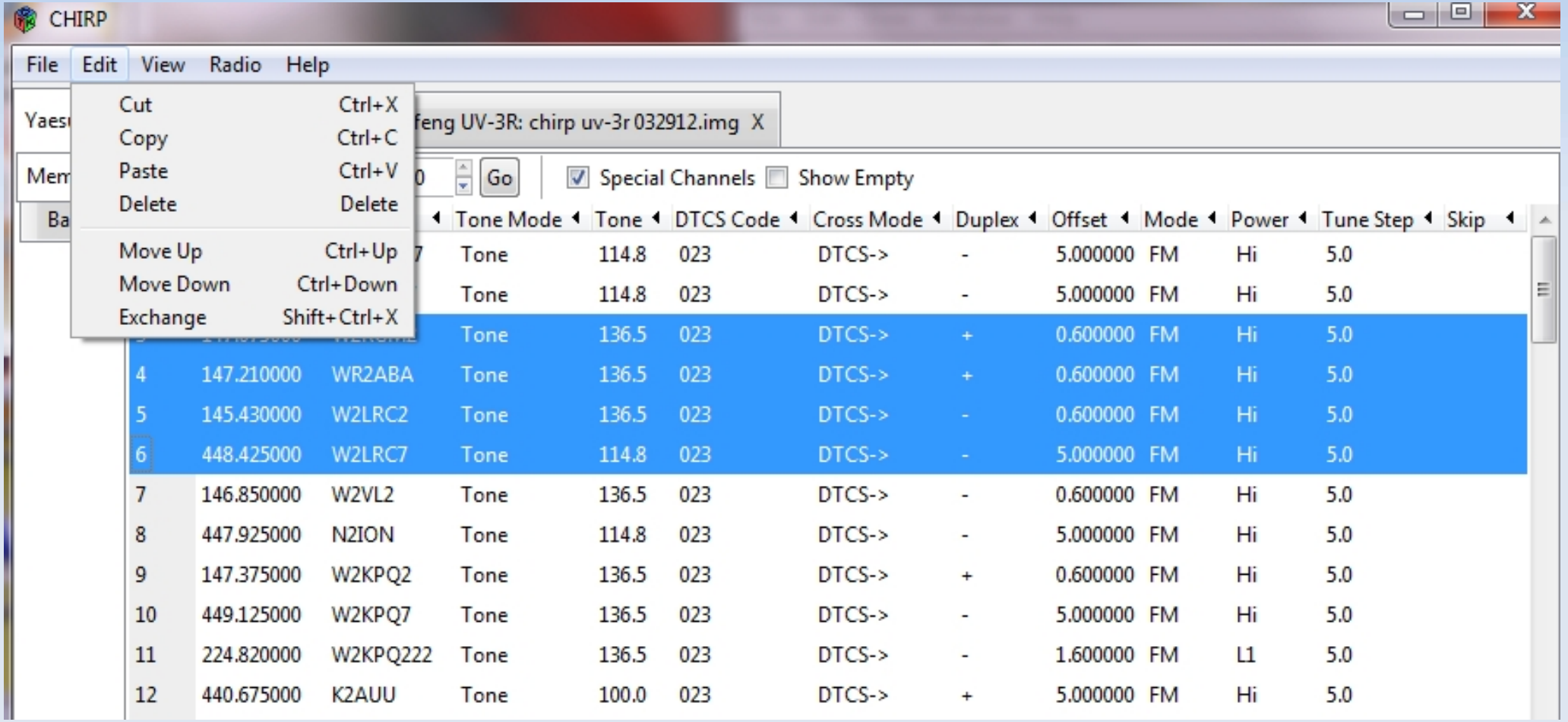
A - Highlight and Copy Data

- Select the rows of data to copy from first source, Click on Copy under Edit



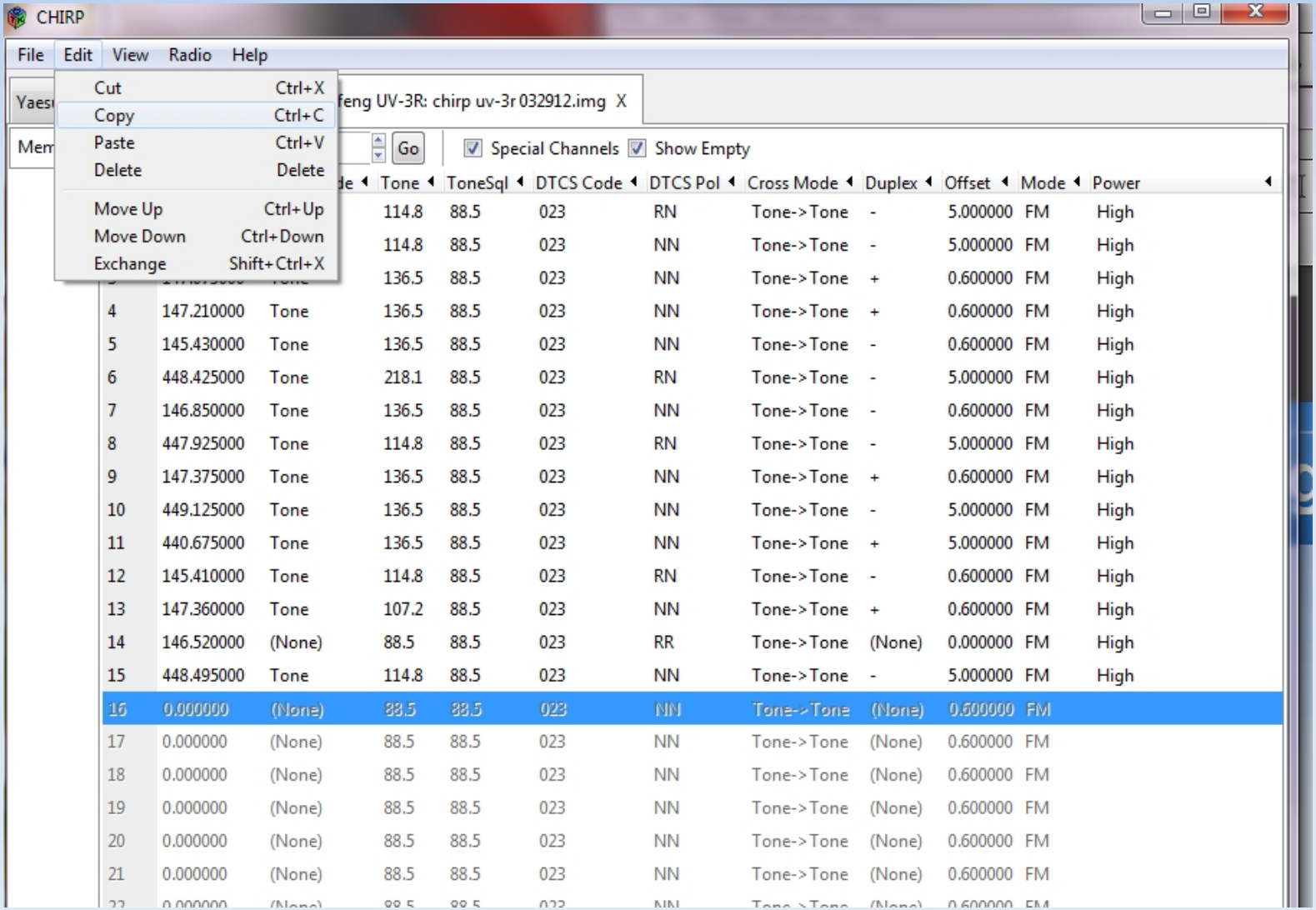
B- Highlight and Copy Data

- Click on Copy under Edit, Then click on Radio Tab you want to add it to

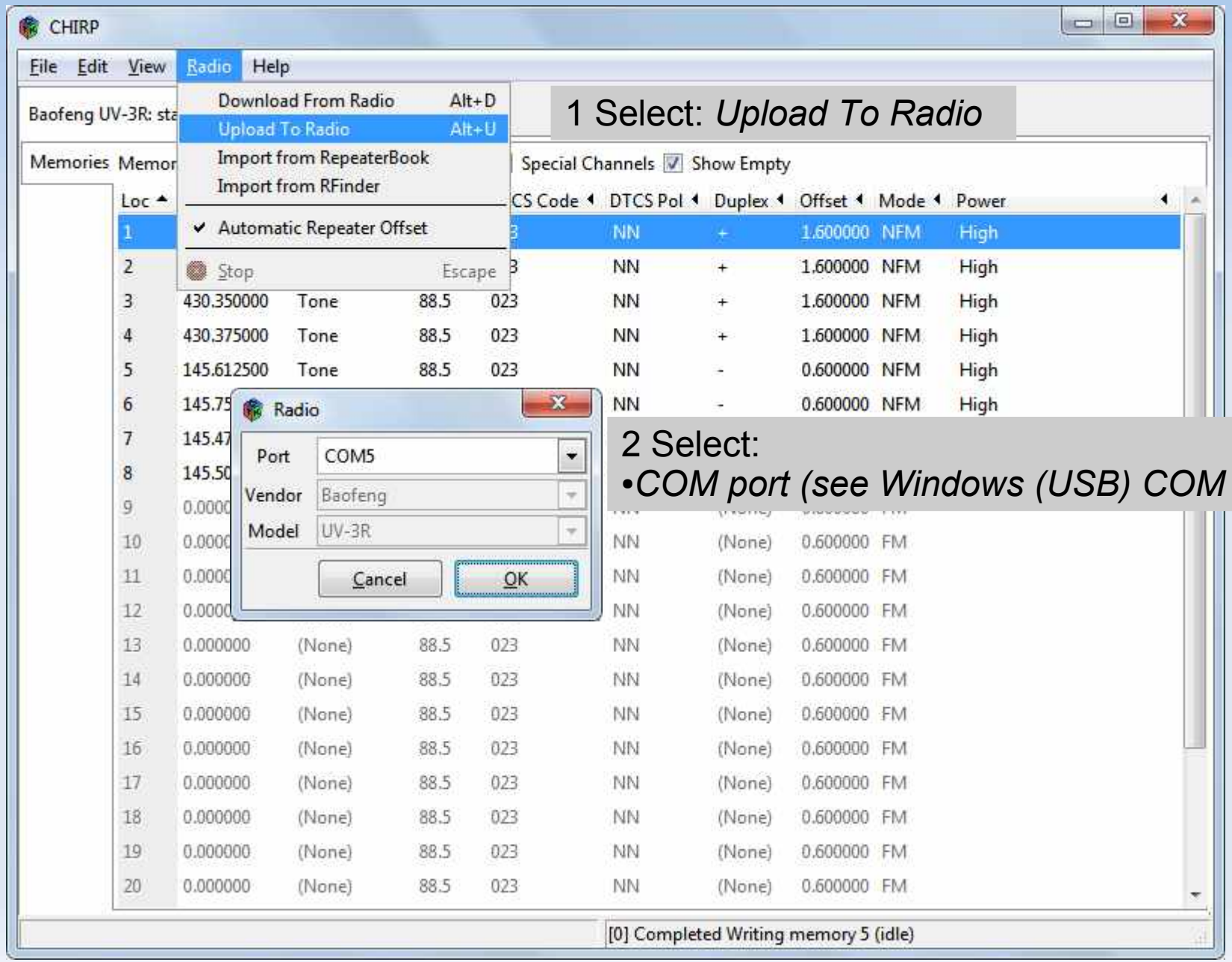


C- Locate and Paste Data

- Click on location you want to add it to , then click on Paste under Edit,

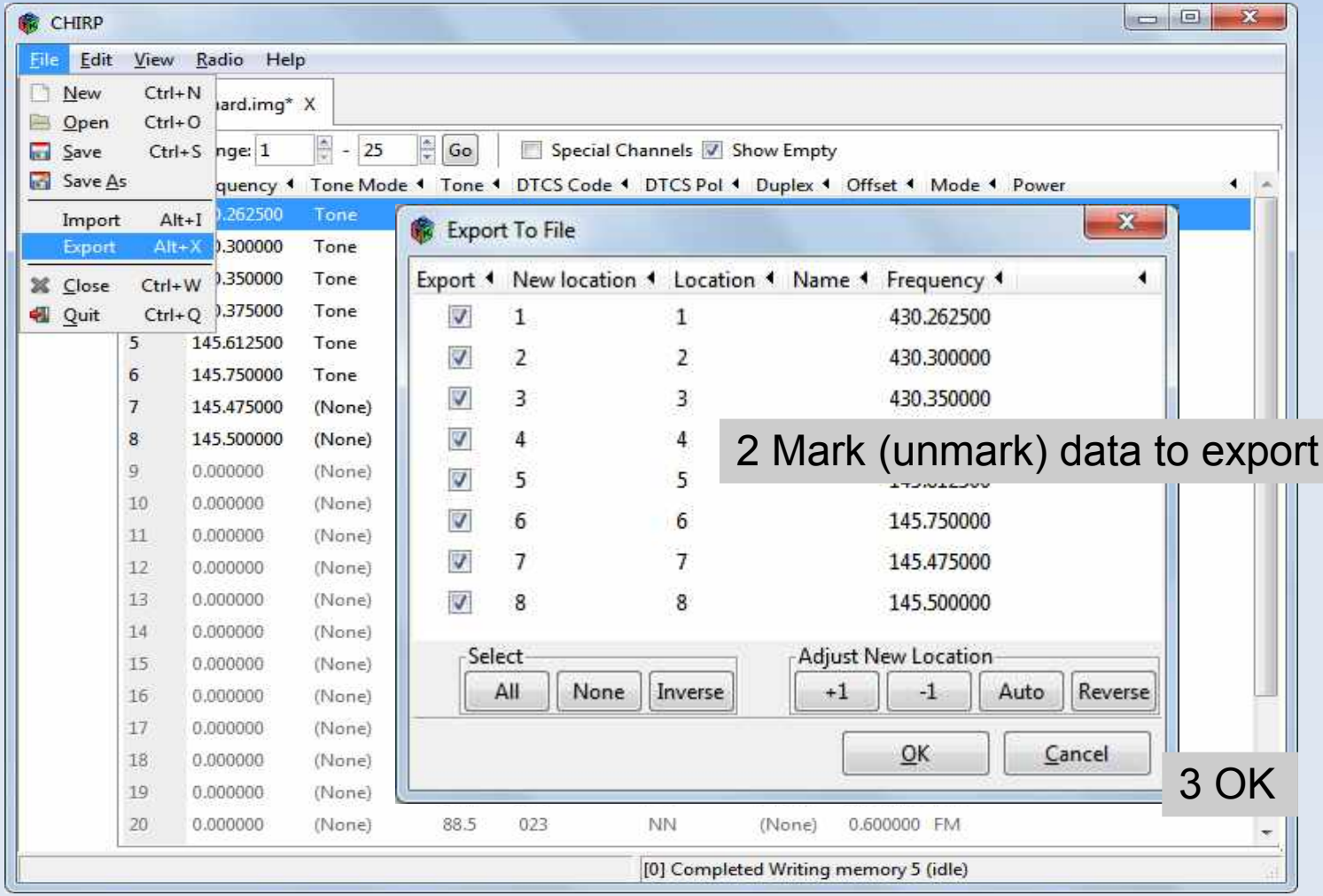


Send New Data to Radio(s)



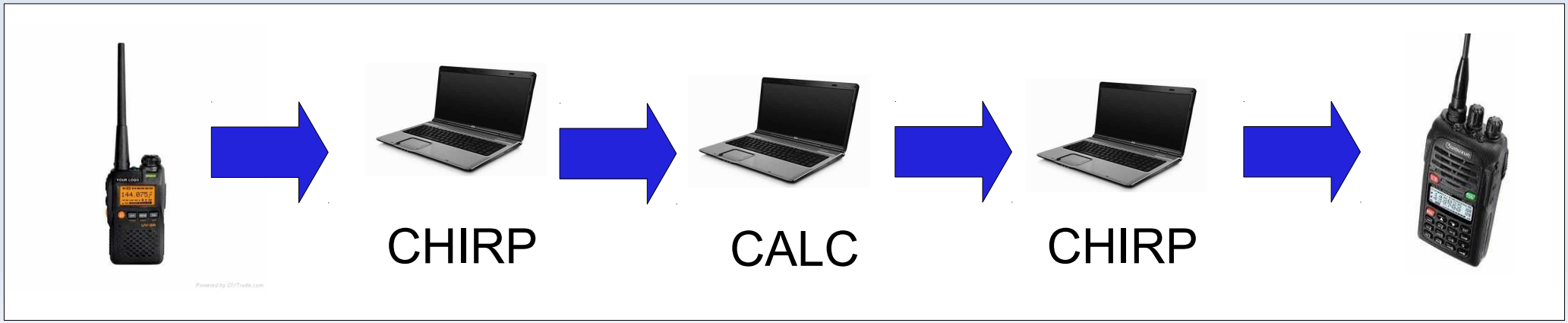
Export data to CSV

1 Select:
- *File*
- *Export*



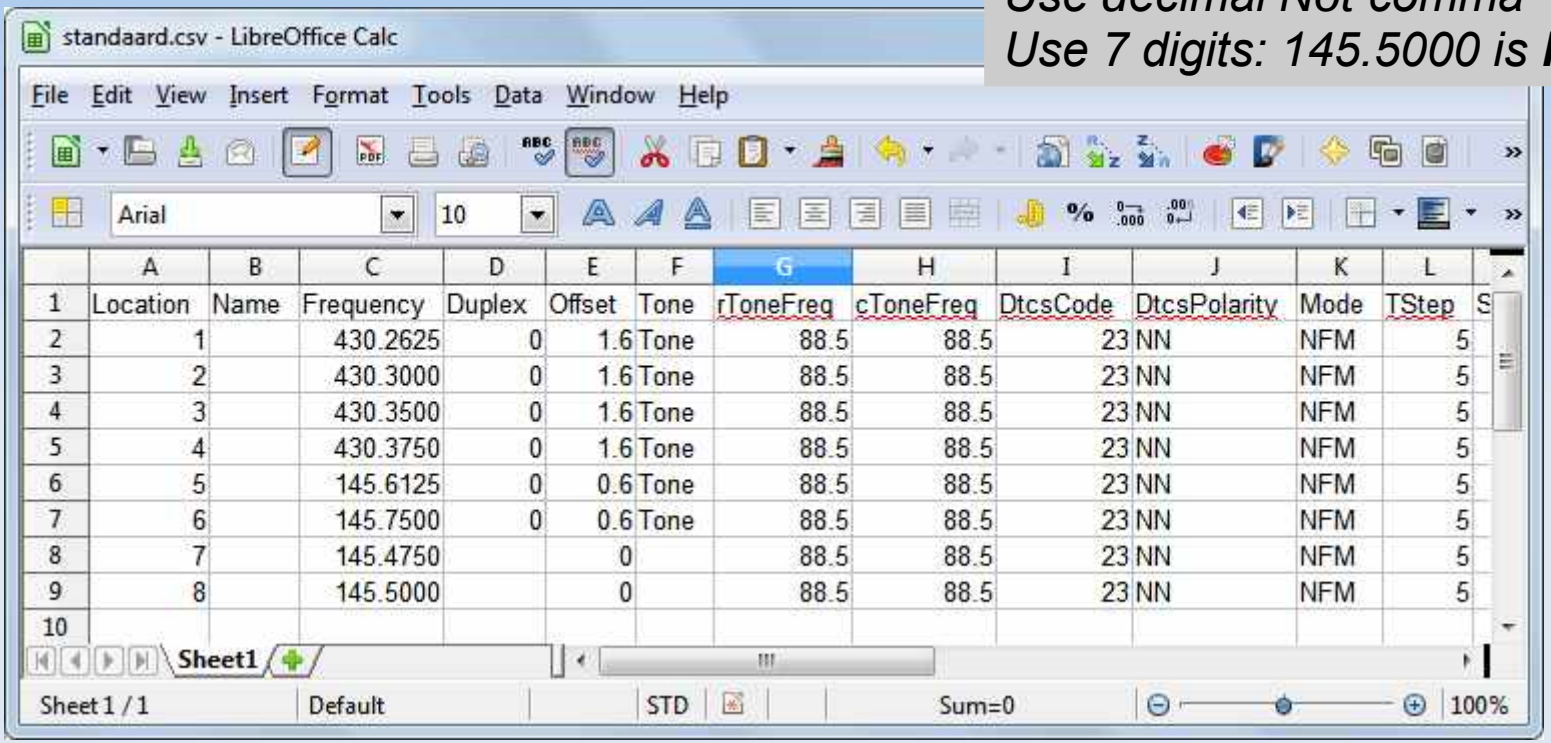
Exchanging data

- Comma Separated Value (CSV)
  - Example
    - 145.475,PI4GAZ, low,88.5
  - File name ends in ”.CSV”
    - Microsoft Excel
    - LibreOffice Calc
    - CHIRP

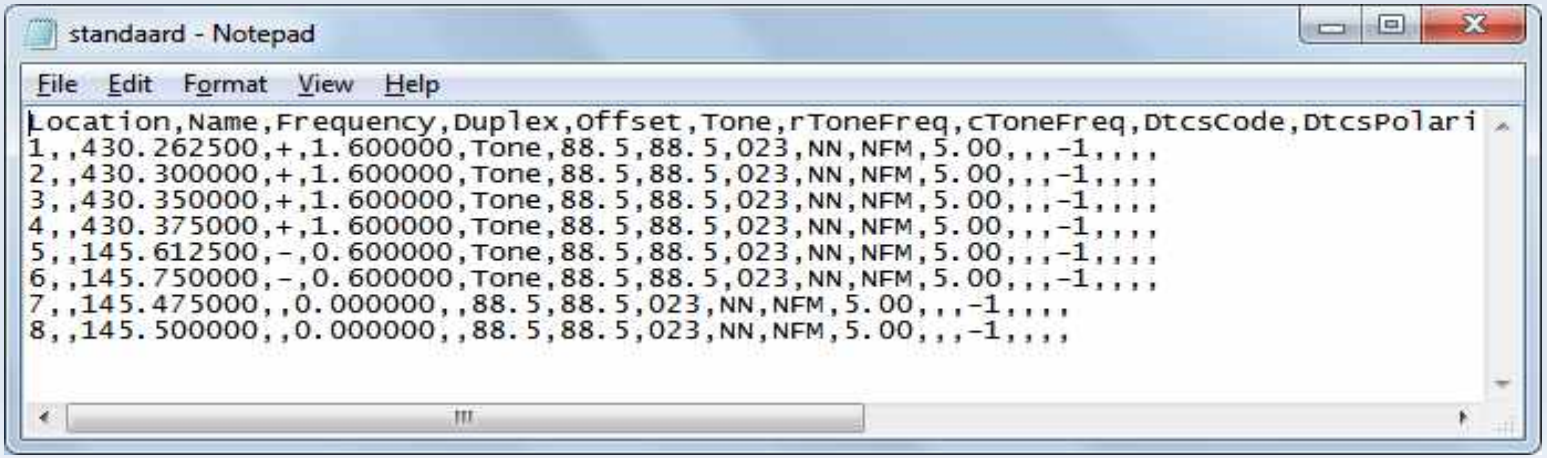


CSV examples

Attention:
Use decimal Not comma
*Use 7 digits: 145.5000 is **NOT** 145.5*



	A	B	C	D	E	F	G	H	I	J	K	L
1	Location	Name	Frequency	Duplex	Offset	Tone	rToneFreq	cToneFreq	DtcsCode	DtcsPolarity	Mode	TStep
2	1		430.2625	0	1.6	Tone	88.5	88.5	23	NN	NFM	5
3	2		430.3000	0	1.6	Tone	88.5	88.5	23	NN	NFM	5
4	3		430.3500	0	1.6	Tone	88.5	88.5	23	NN	NFM	5
5	4		430.3750	0	1.6	Tone	88.5	88.5	23	NN	NFM	5
6	5		145.6125	0	0.6	Tone	88.5	88.5	23	NN	NFM	5
7	6		145.7500	0	0.6	Tone	88.5	88.5	23	NN	NFM	5
8	7		145.4750		0		88.5	88.5	23	NN	NFM	5
9	8		145.5000		0		88.5	88.5	23	NN	NFM	5
10												




```
Location,Name,Frequency,Duplex,Offset,Tone,rToneFreq,cToneFreq,DtcsCode,DtcsPolari
1,,430.262500,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
2,,430.300000,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
3,,430.350000,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
4,,430.375000,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
5,,145.612500,-,0.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
6,,145.750000,-,0.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
7,,145.475000,,0.000000,,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
8,,145.500000,,0.000000,,88.5,88.5,023,NN,NFM,5.00,,,-1,,,,
```

Conclusion

- Specific programs
  - Every radio uses a different program
  - All functions are programmable
  - Only can exchange between same radio
- Generic CHIRP program
  - One program for any radio
  - Only radio channels programmable
  - Easy to exchange between different radios
- Not only Microsoft Windows
  - Linux and Apple work as well

Supported Radio Models as of 3-15-13

AnyTone

- AT-5888UV *(in daily builds)*

Alinco

- DR-03T
- DR-06T
- DR135T
- DR235T
- DR435T
- DJ596T
- DJ175T

Baofeng

- F-11 *(in daily builds)*
- UV-3R
- UV-5R

Icom

- IC-80AD
- IC-2820H
- ID-800H
- ID-880H
- IC-208H
- IC-2200H
- IC-91/92AD
- IC-V/U82
- ID-RPx000V/RP2x
- IC-2100H
- IC-2720H
- IC-T70
- IC-T7H
- IC-T8A
- IC-Q7A
- IC-W32A
- IC-746
- IC-7200
- IC-7000
- ID-31A
- ID-51A *(in daily builds)*

Jetstream

- JT220M

Kenwood

- TH-D7A/G
- TH-D72
- TH-F6A
- TH-F7E
- TH-K2
- TK-7102/8102/7108/8108 *(in daily builds)*
- TM-271A/281A
- TM-D700
- TM-D710
- TM-G707
- TM-V7A
- TM-V71A

Puxing

- PX-2R (UHF)
- PX-777

TYT

- TH-UV3R
- TH-UVF1

Yaesu

- FT-60R
- FT-817/ND
- FT-857/D
- FT-897
- FT-1802M
- FT-2800M
- FT-7800R
- FT-7900R
- FT-8800R
- FT-8900R
- FTM-350R *(in daily builds)*
- VX-3R
- VX-5R
- VX-6R
- VX-7R
- VX-8R

Wouxun

- KG-UVD1P/UV2D/UV3D
- KG-UV6D/UV6X

Other Data Sources

File Formats

- Comma Separated Values (.csv)
- Comma Separated Values generated by RT Systems (.csv) *(in daily builds)*
- EVE for Yaesu VX-5 (.eve)
- Kenwood HMK format (.hmk)
- Kenwood commercial ITM format (.itm) *(in daily builds)*
- Icom Data Files (.icf)
- ARRL TravelPlus (.tpe)
- VX5 Commander Files (.vx5)
- VX7 Commander Files (.vx7)

Internet

- RadioReference
- RepeaterBook
- przemienniki.net *(in daily builds)*
- RFinder

Thank you!