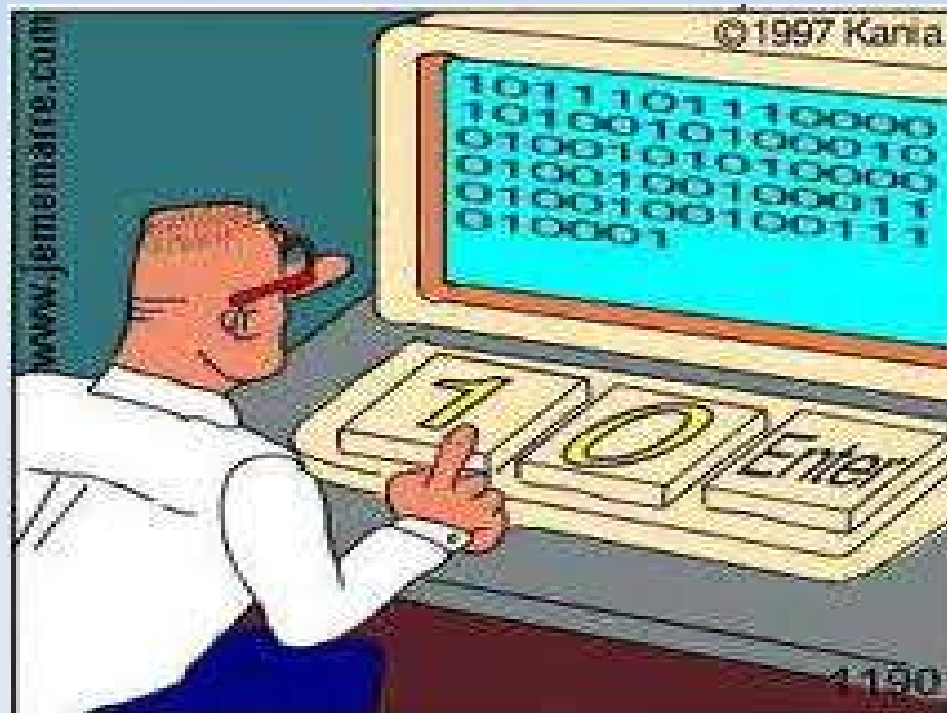


Programming (portable) radios



Le vrai programmeur ...

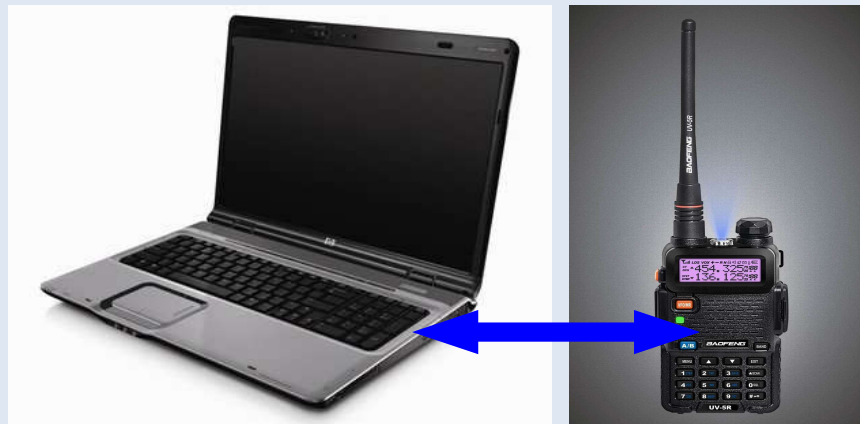
Agenda

- 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

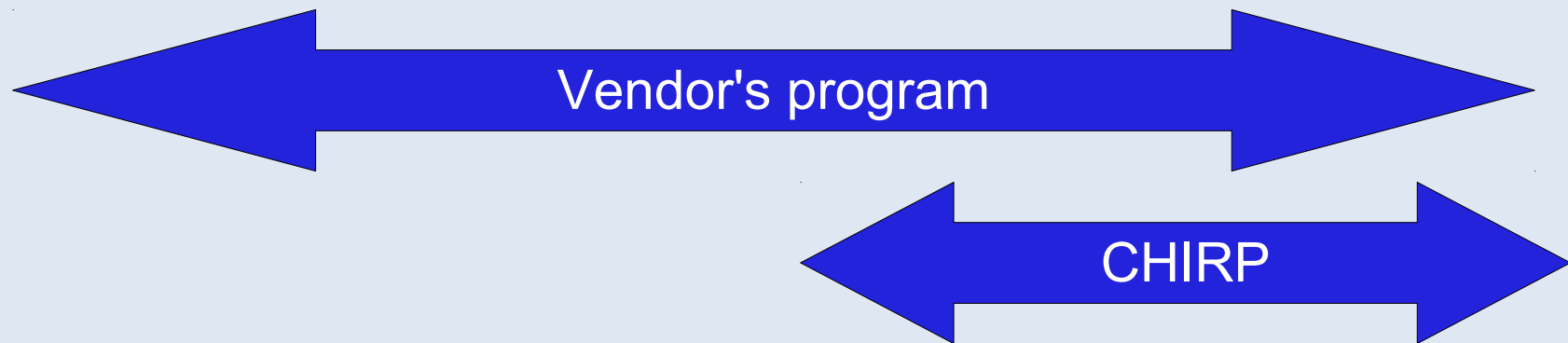
Programming radios

Specific

FM channels
Display colors
Squelch level
VFO mode
Frequency limitations
Etc.

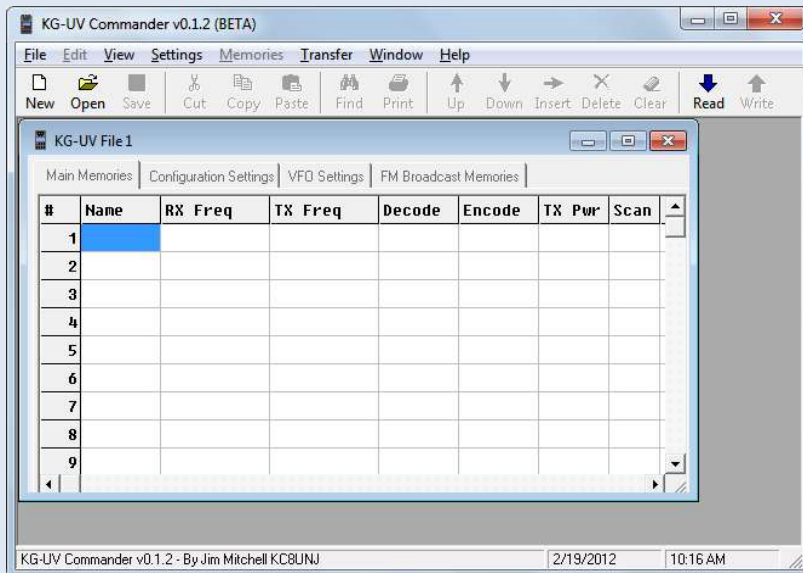
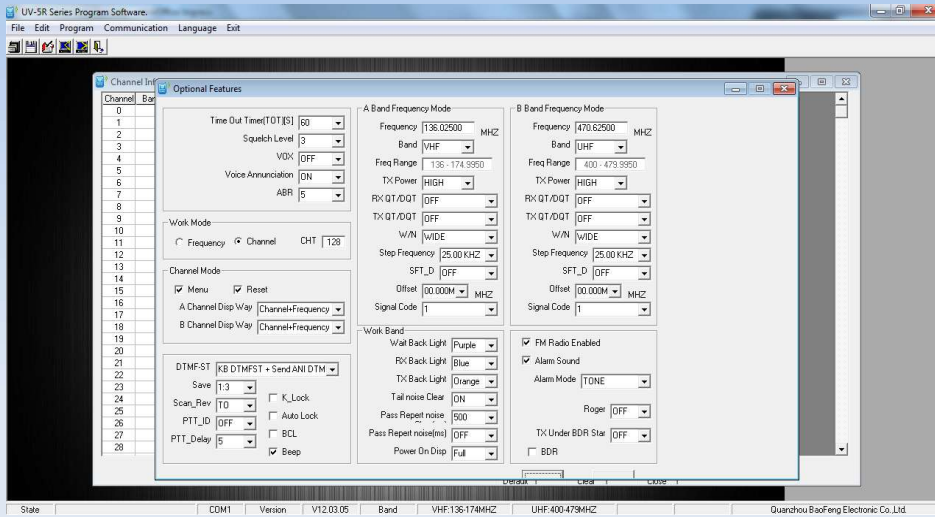
Generic

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-5R

The screenshot displays the 'Optional Features' dialog box within the 'UV-5R Series Program Software' application. The dialog is organized into several sections for configuring various features:

- Time Out Timer(TOT)[S]:** Set to 60.
- Squelch Level:** Set to 3.
- VOX:** Set to OFF.
- Voice Annunciation:** Set to ON.
- ABR:** Set to 5.
- Work Mode:** Radio buttons for Frequency and Channel; Channel is selected with CHT 128.
- Channel Mode:** Checkboxes for Menu and Reset are checked. A and B Channel Disp Way are both set to Channel+Frequency.
- DTMF-ST:** Set to KB DTMFST + Send ANI DTM. Save is set to 1:3. Scan_Rev is TO. PTT_ID is OFF. PTT_Delay is 5. Checkboxes for K_Lock, Auto Lock, BCL, and Beep are present.
- A Band Frequency Mode:** Frequency 136.02500 MHz, Band VHF, Freq Range 136 - 174.9950, TX Power HIGH, RX QT/DQT OFF, TX QT/DQT OFF, W/N WIDE, Step Frequency 25.00 KHZ, SFT_D OFF, Offset 00.000M MHz, Signal Code 1.
- B Band Frequency Mode:** Frequency 470.62500 MHz, Band UHF, Freq Range 400 - 479.9950, TX Power HIGH, RX QT/DQT OFF, TX QT/DQT OFF, W/N WIDE, Step Frequency 25.00 KHZ, SFT_D OFF, Offset 00.000M MHz, Signal Code 1.
- Work Band:** Wait Back Light Purple, RX Back Light Blue, TX Back Light Orange, Tail noise Clear ON, Pass Repeat noise 500, Pass Repeat noise(ms) OFF, Power On Disp Full.
- Other Features:** FM Radio Enabled, Alarm Sound (Alarm Mode TONE), Roger OFF, TX Under BDR Star OFF, BDR unchecked.

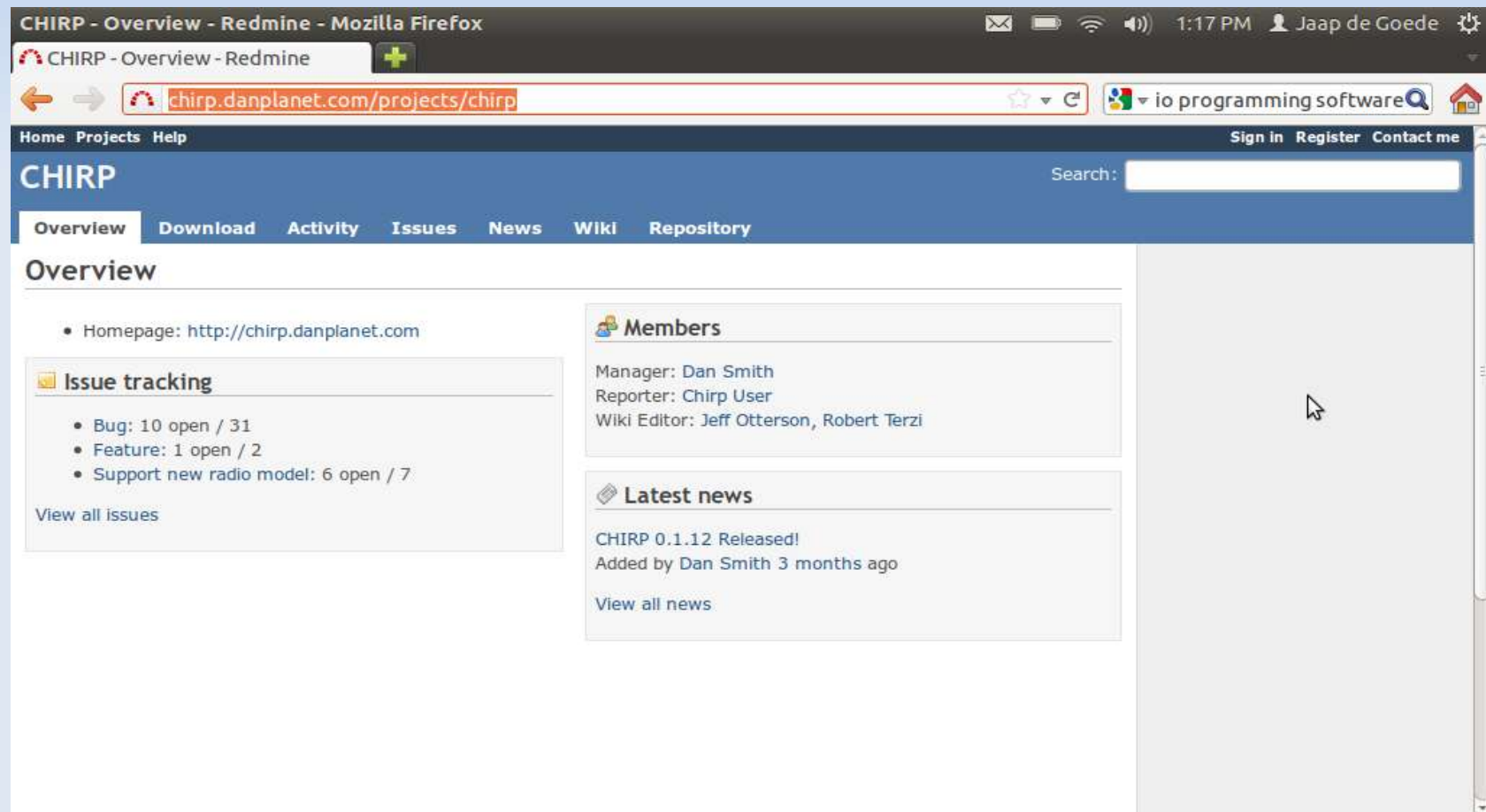
The background shows a 'Channel Info' table with 29 channels (0-28) and a status bar at the bottom with fields for State, COM1, Version (V12.03.05), Band (VHF:136-174MHZ, UHF:400-479MHZ), and Quanzhou BaoFeng Electronic Co.,Ltd.

Generic program



CHIRP on the Internet

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



The screenshot shows a web browser window displaying the CHIRP project overview page. The browser's address bar shows the URL <http://chirp.danplanet.com/projects/chirp>. The page features a navigation menu with links for Home, Projects, and Help, and a search bar. The main content area is titled "Overview" and includes a list of links, an "Issue tracking" section with a list of open bugs and features, a "Members" section listing the Manager, Reporter, and Wiki Editor, and a "Latest news" section with a recent release announcement.

CHIRP - Overview - Redmine - Mozilla Firefox

CHIRP - Overview - Redmine

[chirp.danplanet.com/projects/chirp](#)

io programming software

Home Projects Help Sign in Register Contact me

CHIRP

Search:

Overview Download Activity Issues News WIKI Repository

Overview

- Homepage: <http://chirp.danplanet.com>

Issue tracking

- Bug: 10 open / 31
- Feature: 1 open / 2
- Support new radio model: 6 open / 7

[View all issues](#)

Members

Manager: Dan Smith
Reporter: Chirp User
Wiki Editor: Jeff Otterson, Robert Terzi

Latest news

CHIRP 0.1.12 Released!
Added by Dan Smith 3 months ago

[View all news](#)

CHIRP v0.2.2: radios

Alinco

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

Baofeng

- UV-3R
- UV-5R

DAILY BUILD

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



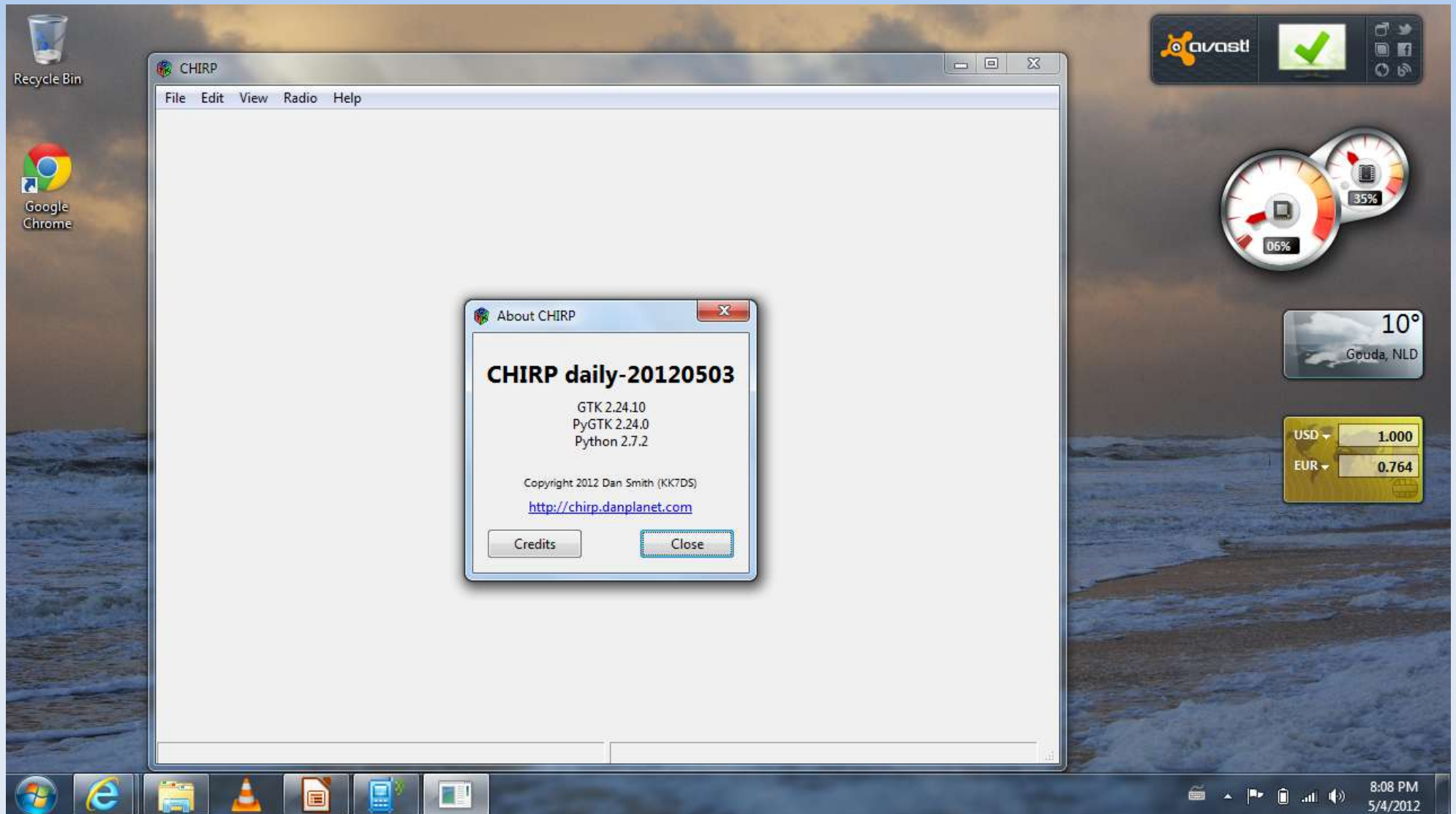
CHIRP, system requirements

- 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

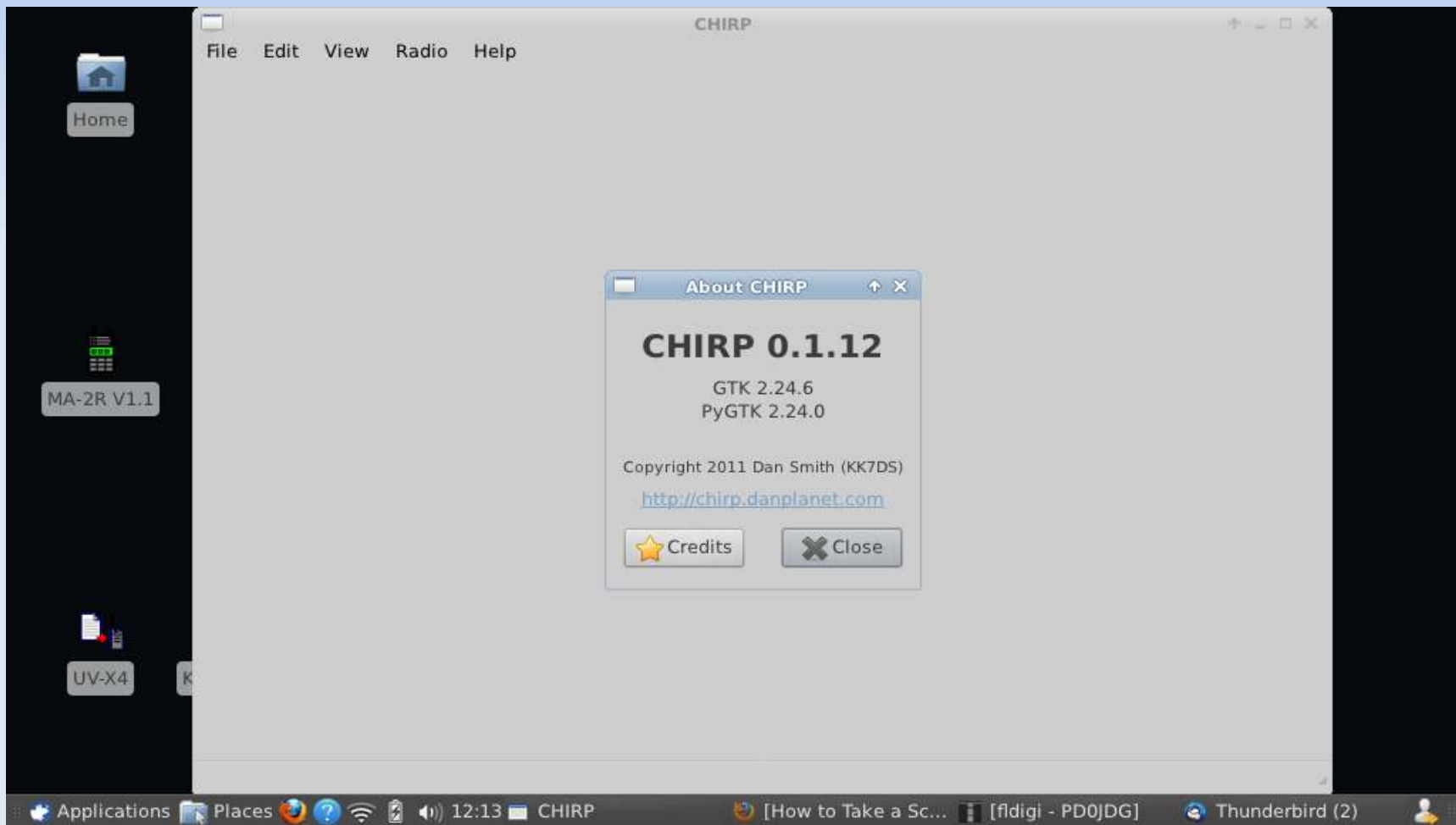


CHIRP runs fine with Linux.
Even with a Pentium class CPU and 512 Megabyte memory!

CHIRP, Windows 7



CHIRP, XUBUNTU (linux)



CHIRP, tips

- WINE (Linux WINdows Emulator)



- USBtoserial cable = /dev/ttyUSB0

- Associate WINE COM1 with Linux /dev/ttyUSB0

- In -s /dev/ttyUSB0 ~/.wine/dosdevices/com1

- Windows Profilic Driver

- Latest driver does not support counterfeit

- Windows 7 use v3.2.0.0 or below



- UBUNTU HAM programs

- <https://launchpad.net/~ubuntu-hams-updates/+archive/ppa>



CHIRP, Windows (USB) COM port

The image shows a Windows 7 desktop environment. The Control Panel window is open to 'Hardware and Sound', with 'Device Manager' highlighted in the search results. The Device Manager window is also open, showing a tree view of hardware categories. A 'Prolific USB-to-Serial Comm Port (COM4)' is listed under 'Ports (COM & LPT)'. Three grey callout boxes provide instructions: '1 Start device manager' points to the search box in the Control Panel; '2 Click (COM & LPT)' points to the 'Ports (COM & LPT)' category in Device Manager; and '3 Note COM port number' points to the 'Prolific USB-to-Serial Comm Port (COM4)' device.

Control Panel (3)

- Device Manager
- View devices and printers
- Update device drivers

device manager

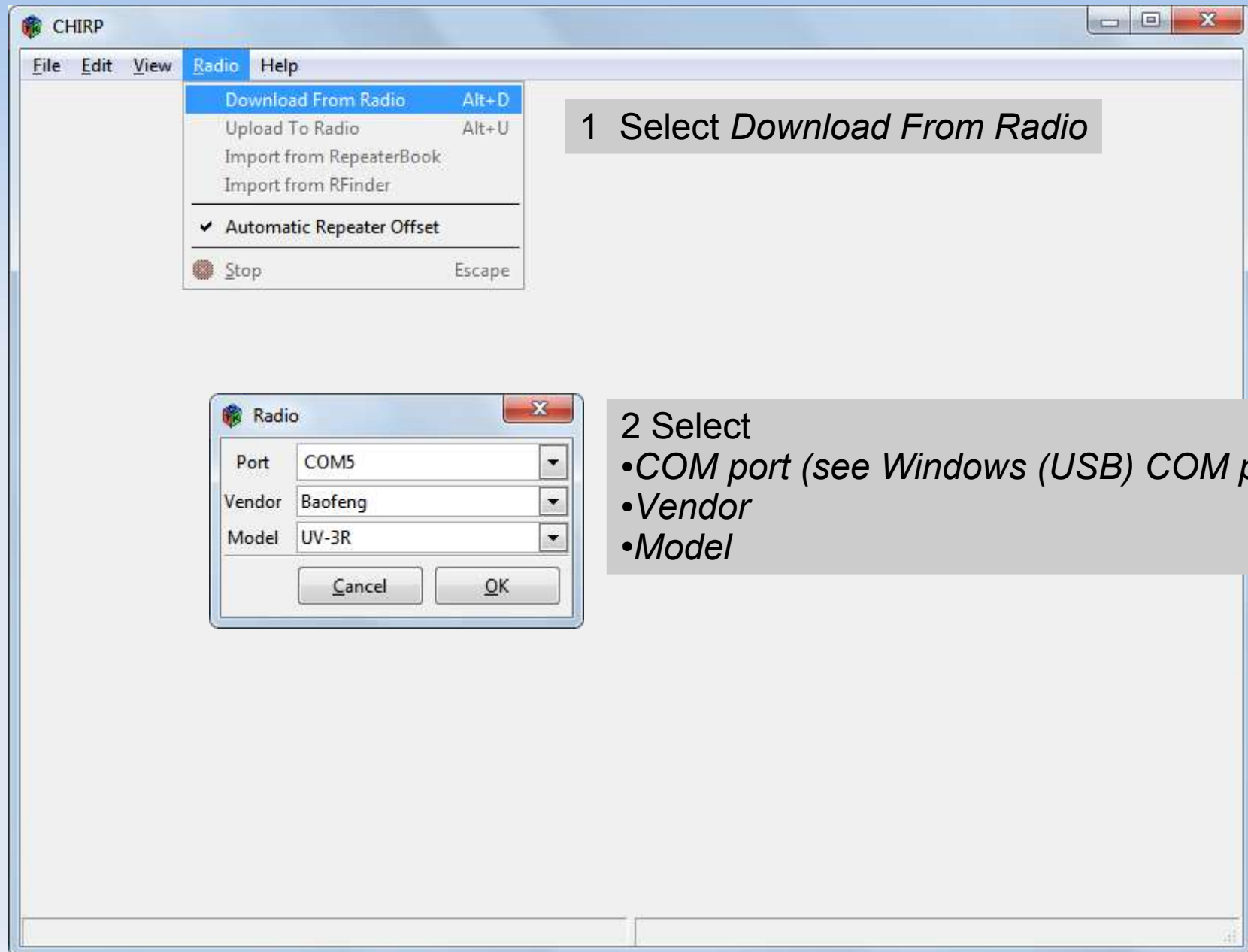
1 Start device manager

2 Click (COM & LPT)

3 Note COM port number

12:20 PM
3/4/2012

Get data from radio



1 Select *Download From Radio*

2 Select

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

Adapt and save data

2 Select

- File
- Save As

The screenshot shows a software window with a menu open. The 'File' menu is open, and 'Save As' is highlighted. The main window displays a table of radio channel data. The table has columns for Frequency, Tone Mode, Tone, DTCS Code, DTCS Pol, Duplex, Offset, Mode, and Power. The first row is highlighted in blue.

	Frequency	Tone Mode	Tone	DTCS Code	DTCS Pol	Duplex	Offset	Mode	Power
	145.262500	Tone	88.5	023	NN	+	1.600000	NFM	High
	145.300000	Tone	88.5	023	NN	+	1.600000	NFM	High
	145.350000	Tone	88.5	023	NN	+	1.600000	NFM	High
	145.375000	Tone	88.5	023	NN	+	1.600000	NFM	High
5	145.612500	Tone	88.5	023					
6	145.750000	Tone	88.5	023					
7	145.475000	(None)	88.5	023	NN	(None)	0.000000	NFM	High
8	145.500000	(None)	88.5	023	NN	(None)	0.000000	NFM	High
9	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
10	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
11	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
12	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
13	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
14	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
15	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
16	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
17	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
18	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
19	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	
20	0.000000	(None)	88.5	023	NN	(None)	0.600000	FM	

[0] Completed Writing memory 5 (idle)

1 Select the row of choice to adapt or add data

Send data to radio

The screenshot shows the CHIRP software interface. The 'Radio' menu is open, and the 'Upload To Radio' option is selected. A 'Radio' dialog box is also open, showing the following settings:

- Port: COM5
- Vendor: Baofeng
- Model: UV-3R

Buttons for 'Cancel' and 'OK' are visible in the dialog box.

1 Select: Upload To Radio

2 Select:

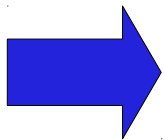
- COM port (see Windows (USB) COM port)

Loc	CS Code	DTCS Pol	Duplex	Offset	Mode	Power
1						
2						
3	3	NN	+	1.600000	NFM	High
4	3	NN	+	1.600000	NFM	High
5	3	NN	+	1.600000	NFM	High
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

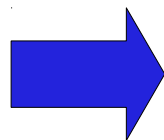
[0] Completed Writing memory 5 (idle)

Exchanging data

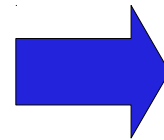
- Comma Separated Value (CSV)
 - Example
 - 145.475,PI4GAZ, low,88.5
 - File name ends in ".CSV"
 - Microsoft Excel
 - LibreOffice Calc
 - CHIRP



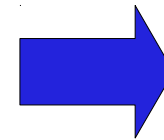
CHIRP



CALC



CHIRP



Export data to CSV

- 1 Select:
- File
 - Export

CHIRP

File Edit View Radio Help

New Ctrl+N
Open Ctrl+O
Save Ctrl+S
Save As

Import Alt+I
Export Alt+X
Close Ctrl+W
Quit Ctrl+Q

Export To File

Export	New location	Location	Name	Frequency
<input checked="" type="checkbox"/>	1	1		430.262500
<input checked="" type="checkbox"/>	2	2		430.300000
<input checked="" type="checkbox"/>	3	3		430.350000
<input checked="" type="checkbox"/>	4	4		145.612500
<input checked="" type="checkbox"/>	5	5		145.750000
<input checked="" type="checkbox"/>	6	6		145.475000
<input checked="" type="checkbox"/>	7	7		145.500000
<input checked="" type="checkbox"/>	8	8		

Select: All None Inverse

Adjust New Location: +1 -1 Auto Reverse

OK Cancel

3 OK

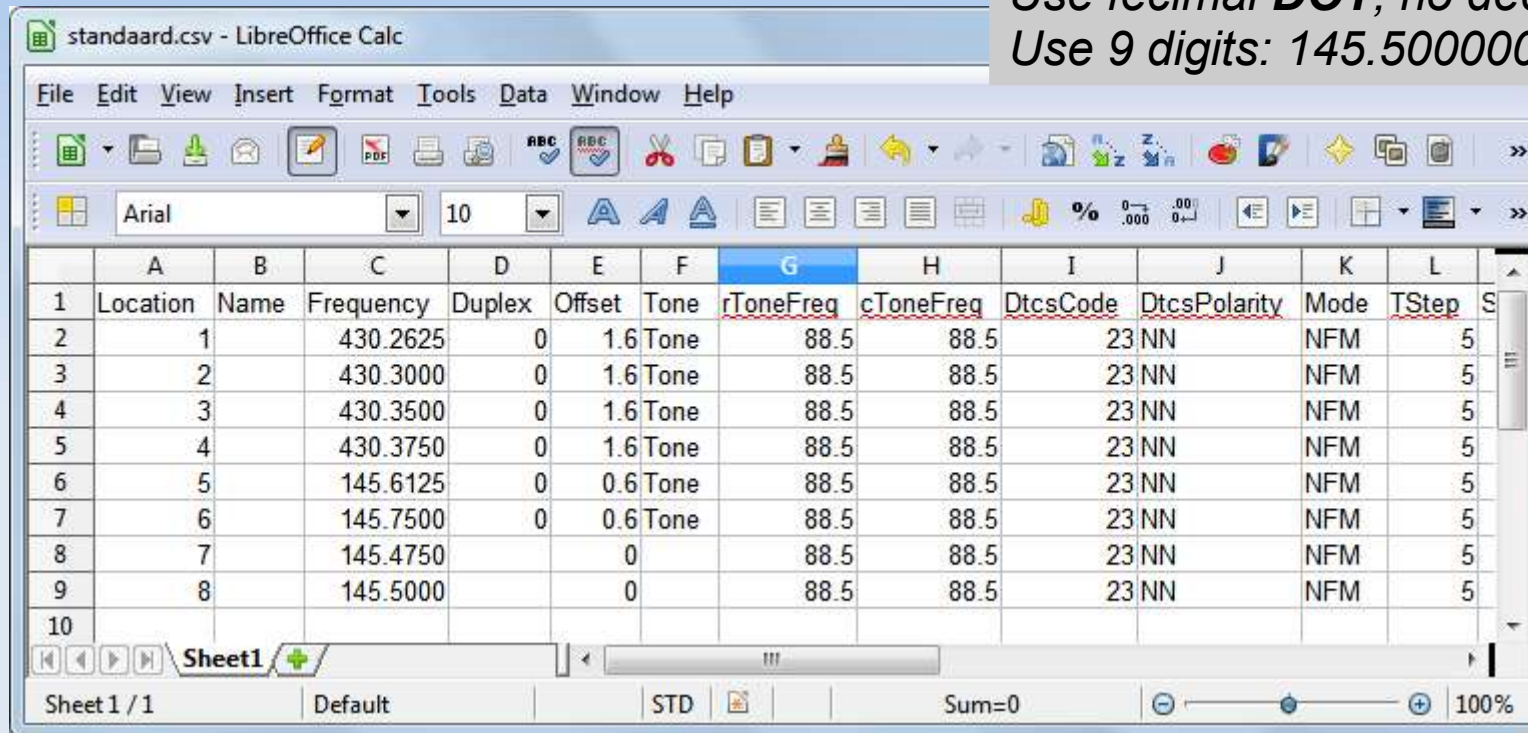
88.5 023 NN (None) 0.600000 FM

[0] Completed Writing memory 5 (idle)

CSV examples

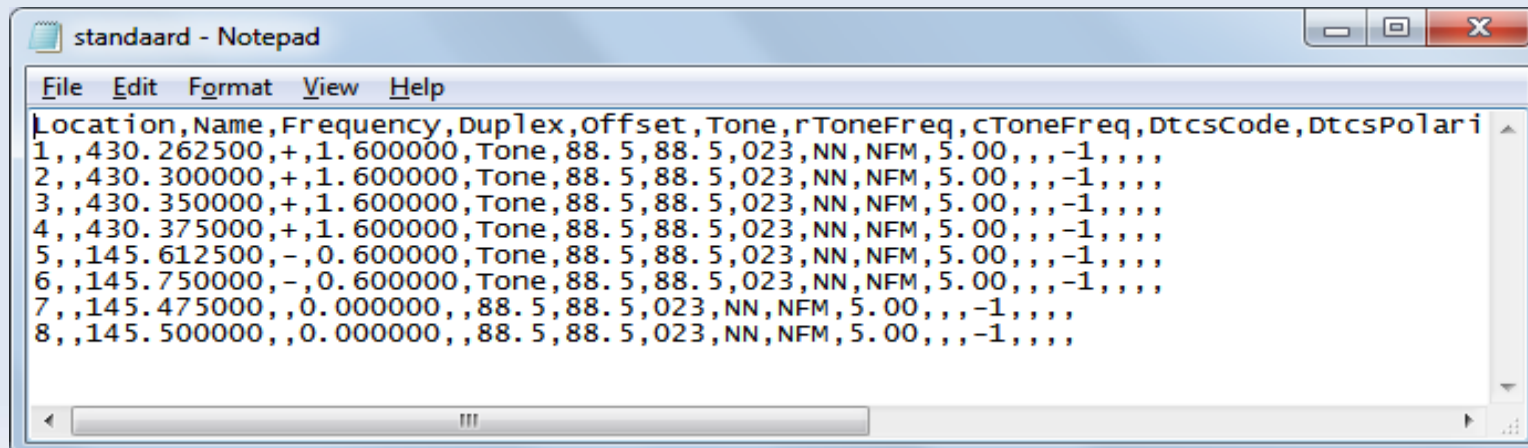
Attention:

Use fecimal **DOT**, no decomal comma
Use 9 digits: 145.500000 is **NOT** 145.5



standaard.csv - LibreOffice Calc

	A	B	C	D	E	F	G	H	I	J	K	L	S
1	Location	Name	Frequency	Duplex	Offset	Tone	rToneFreq	cToneFreq	DtcsCode	DtcsPolarity	Mode	TStep	S
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													



standaard - Notepad

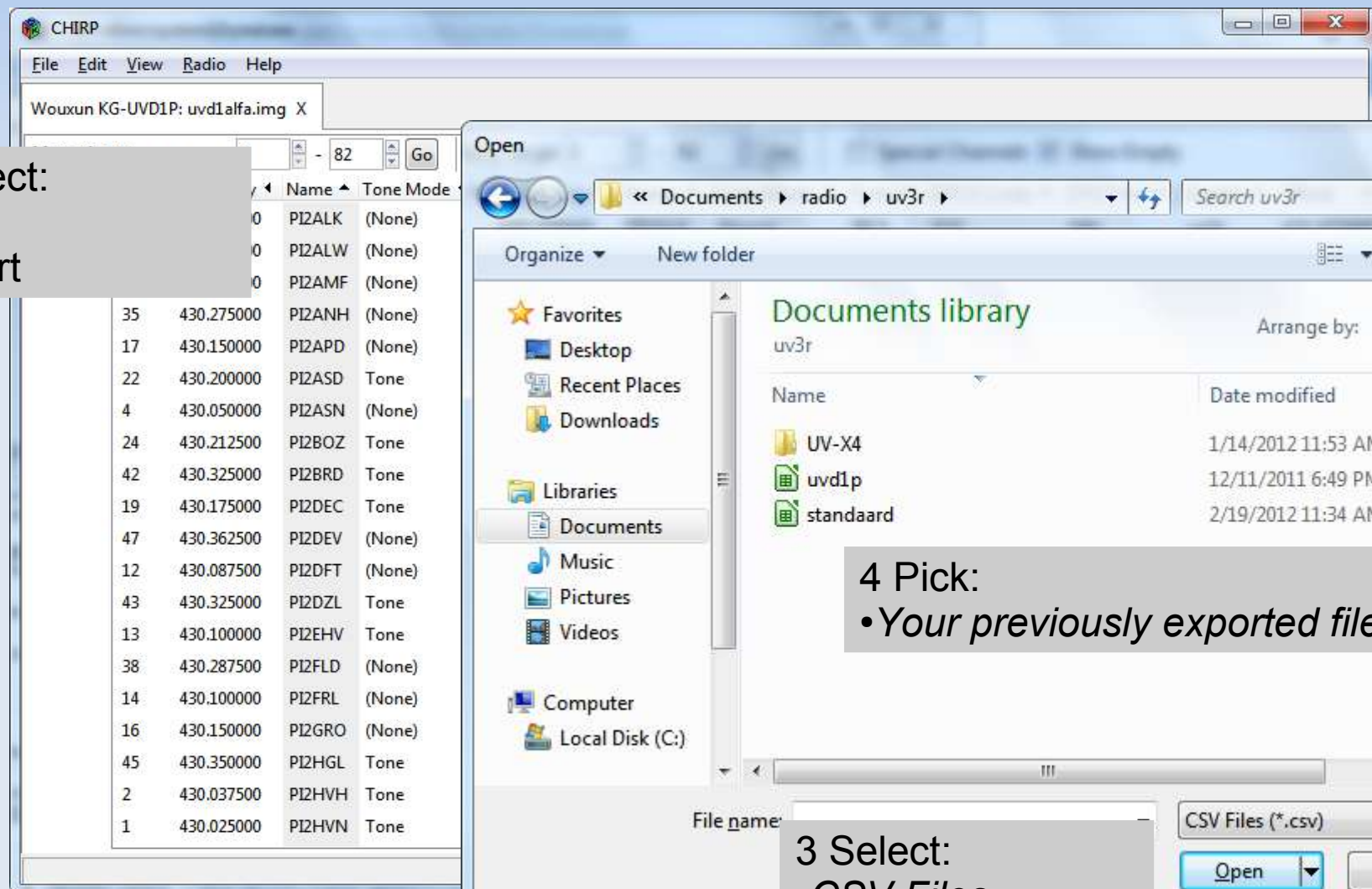
```
Location,Name,Frequency,Duplex,Offset,Tone,rToneFreq,cToneFreq,DtcsCode,DtcsPolar i
1,,430.262500,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,, -1,,,,
2,,430.300000,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,, -1,,,,
3,,430.350000,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,, -1,,,,
4,,430.375000,+,1.600000,Tone,88.5,88.5,023,NN,NFM,5.00,,, -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,,,,
```

Import data in other radio, part I

1 Get data form other radio

2 Select:

- File
- Import



4 Pick:

- Your previously exported file

3 Select:

- CSV Files

5 Open

Import data in other radio, part II

3 Send data to radio

Wouxun KG-UVD1P: uvd1alfa.img X

Memories Memory range: 1 - 82 Go Special Channels Show Empty

Loc	Frequency	Name	Tone Mode	Tone	DTCS Code	DTCS Pol	Duplex	Offset	Mode	Power	Skip
49	430.375000	PI2ALK	(None)	88.5	023	NN	split	431.975000	NFM	High	
7	430.062500	PI2ALW	(No								
5	430.050000	PI2AMF	(No								
35	430.275000	PI2ANH	(No								
17	430.150000	PI2APD	(No								
22	430.200000	PI2ASD	Ton								
4	430.050000	PI2ASN	(No								
24	430.212500	PI2BOZ	Ton								
42	430.325000	PI2BRD	Ton								
19	430.175000	PI2DEC	Ton								
47	430.362500	PI2DEV	(No								
12	430.087500	PI2DFT	(No								
43	430.325000	PI2DZL	Ton								
13	430.100000	PI2EHV	Ton								
38	430.287500	PI2FLD	(No								
14	430.100000	PI2FRL	(No								
16	430.150000	PI2GRO	(No								
45	430.350000	PI2HGL	Ton								
2	430.037500	PI2HVV	Ton								
1	430.025000	PI2HVN	Tone	82.5	023	NN	split	431.625000	NFM	High	

Import From File

Import	New location	Location	Name	Frequency
<input checked="" type="checkbox"/>	1	1		430.262500
<input checked="" type="checkbox"/>	2	2		430.300000
<input checked="" type="checkbox"/>	3	3		430.350000
<input checked="" type="checkbox"/>	4	4		
<input checked="" type="checkbox"/>	5	5		
<input checked="" type="checkbox"/>	6	6		145.750000
<input checked="" type="checkbox"/>	7	7		145.475000
<input checked="" type="checkbox"/>	8	8		145.500000

Select: All None Inverse Adjust New Location: +1 -1 Auto Reverse

OK Cancel

2 OK

[0] Completed Writing memory 82 (idle)

Conclusion

- Specific programs
 - Every radio a different program
 - All functions programmable
 - Only exchange between same radio
- Generic 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



Thank you!