Amateur Radio and Linix

(Presentation: at West Placer ARC meeting)

By: Clay Abrams
K6AEP
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Ham Radio and Linux Talk Agenda

- Suggest what Linux Distribution to use for Ham Radio.
- Linux Ham Radio Software Available
- Suggest some hardware interfaces
- Recommend some software to use

What is a Linux Distribution

A linux distribution is a packaged version of Linux with numberous software applications.
http://distrowatch.com/

- Hundreds of Distibutions are available
- By far the most popular is Ubuntu Linux
- For this talk I will use Mint 7 Linux which is a variation of Ubuntu. http://www.linuxmint.com/
- Mint 7 runs on almost any PC and very popular.

- Derrived for Ubuntu 9.04.
- Boots up in Live mode, on any PC without a install.
- Install from a simple icon click in live mode
- Allows for the immediate install of about 88 Ham Radio Software Applications

- ”Linux Mint's purpose is to produce an elegant, up to date and comfortable GNU/Linux desktop distribution.”
- ”It is compatible with and uses Ubuntu repositories. This gives Linux Mint users access to a huge collection of packages and software.”
- ”It comes with a lot of desktop improvements which make it easier for the user to do common things.”

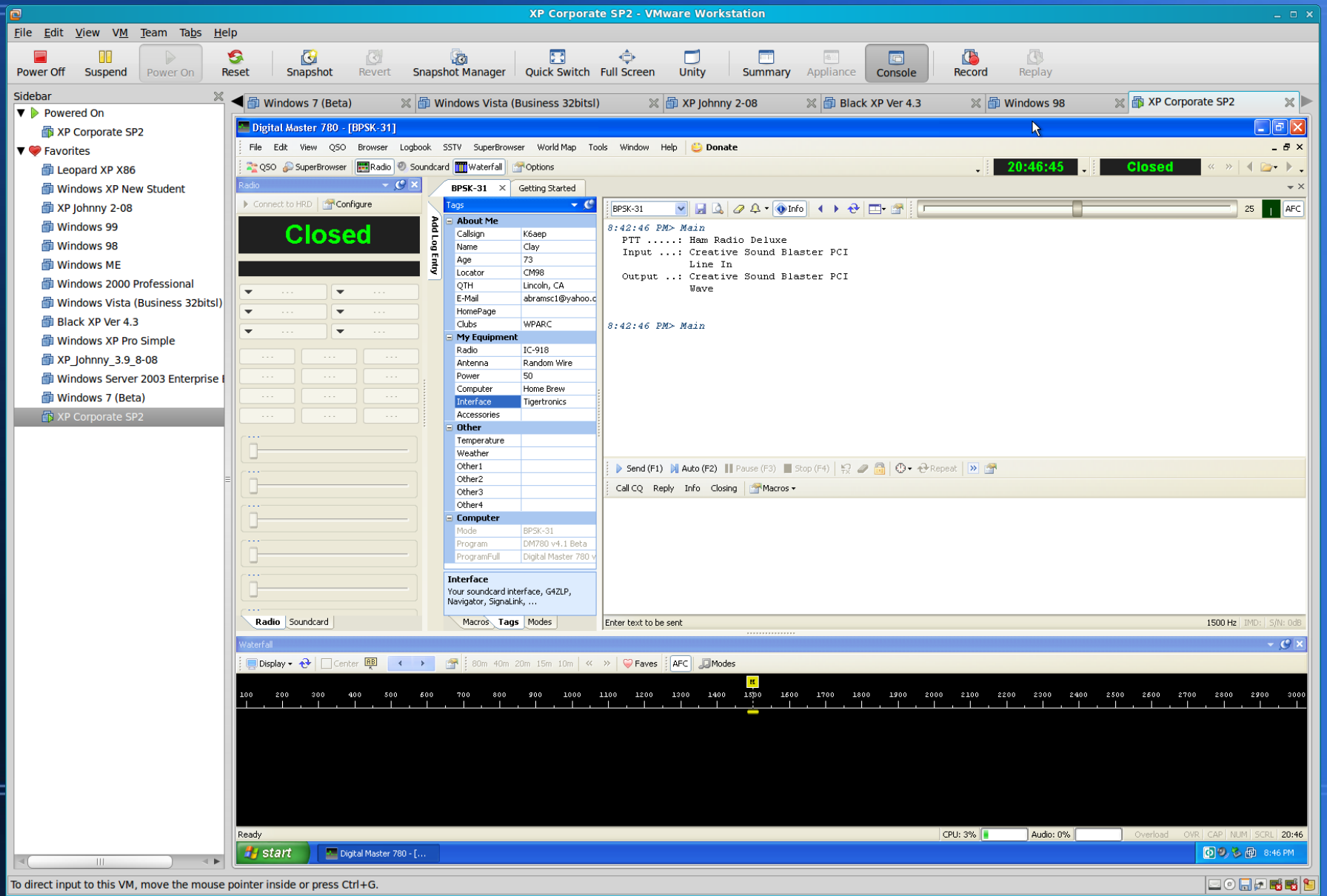
K6AEP Main System

Ham Radio XP Emulation

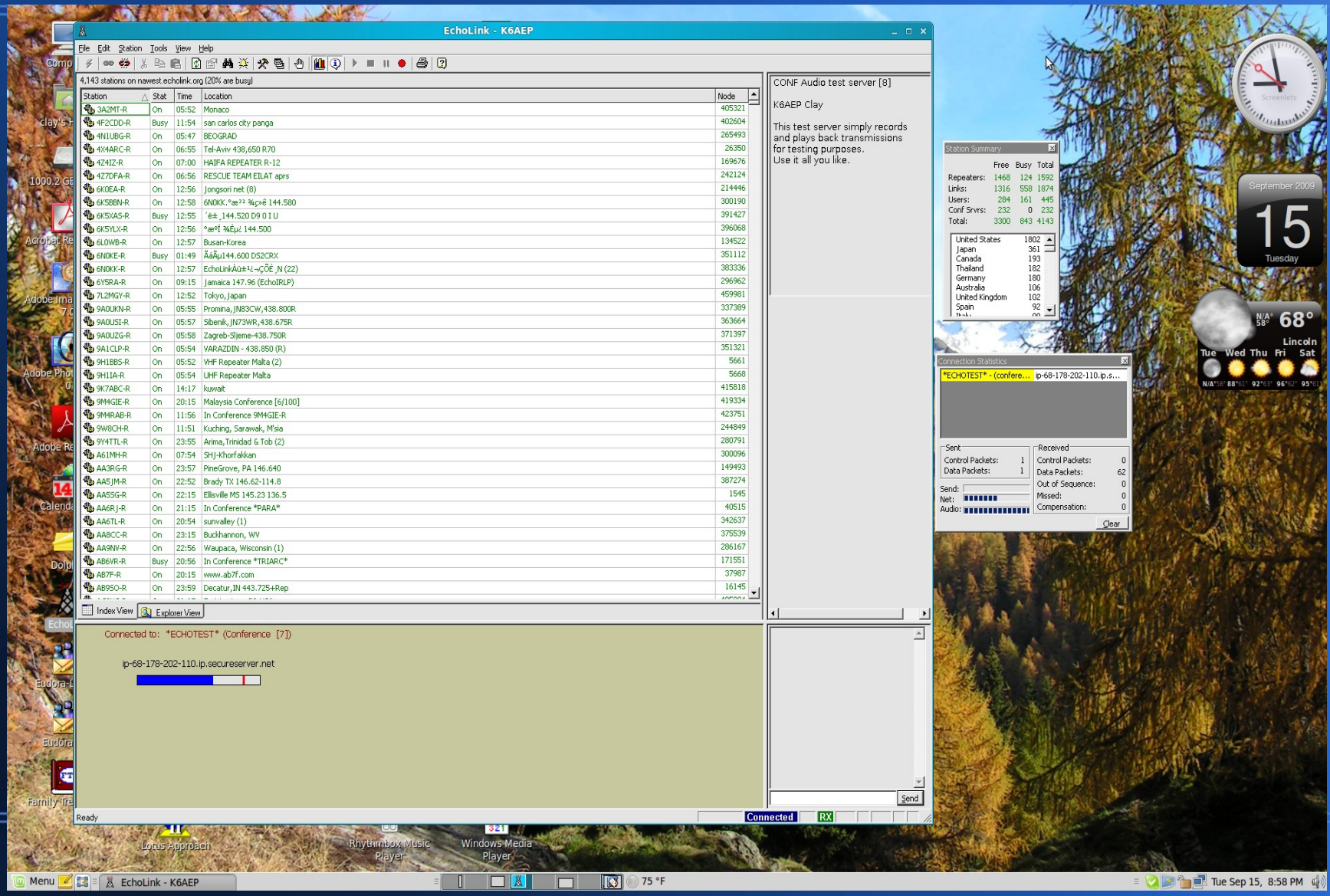
- A simple method of getting started is to use your old Windows HR Applications
- Ham Radio Deluxe is a favorite application package which runs only on Windows XP etc.
- Vmware and Sun's Virtualbox allow XP to be installed on Linux http://www.virtualbox.org/
- You need a fast computer to run Vmware etc. http://www.vmware.com/products/workstation/
- Crossover allow popular Windows packages to run natively on Linux. Linux.http://www.codeweavers.com/
- Echolink and Digipan are two ham apps. which run on crossover.
- Echolink in crossover is tricky to set up.
- Trial and error is the best method to see if a windows app. runs on crossover.

Vmware XP Emulation

Running Digital Master 780



Crossover running Windows Echolink Software on Linux



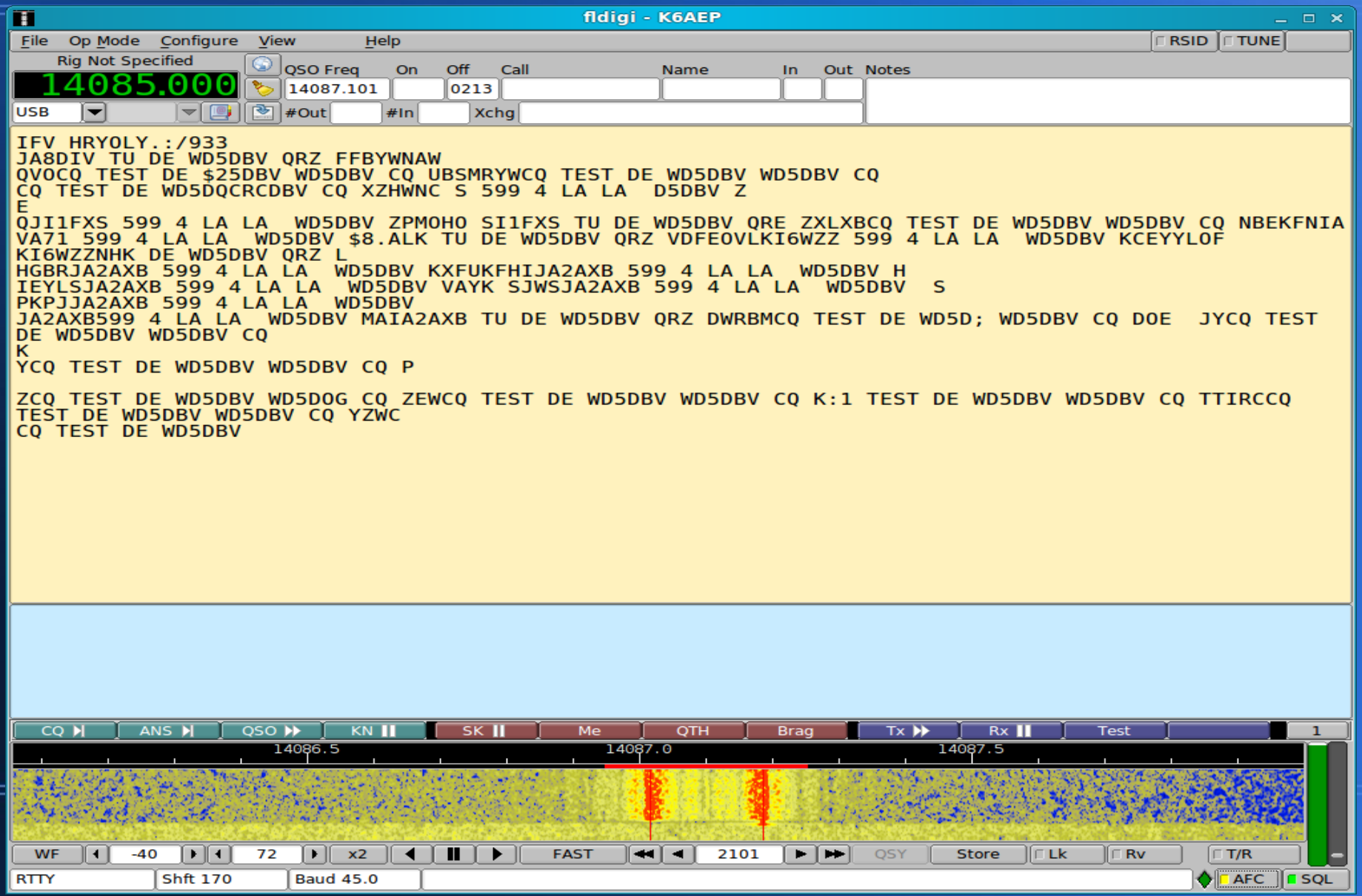
Ham Radio Hardware Interfaces

- Sound card interfaces very popular
- Low cost
- Uses standard hardware in PC
- Cabling can be messy
- RF can cause problems
- Commerical products much cleaner
- Lots of choices
- Mode used reduces selection choices
- USB interfaces popular for multi mode
- VHF mostly RS-232

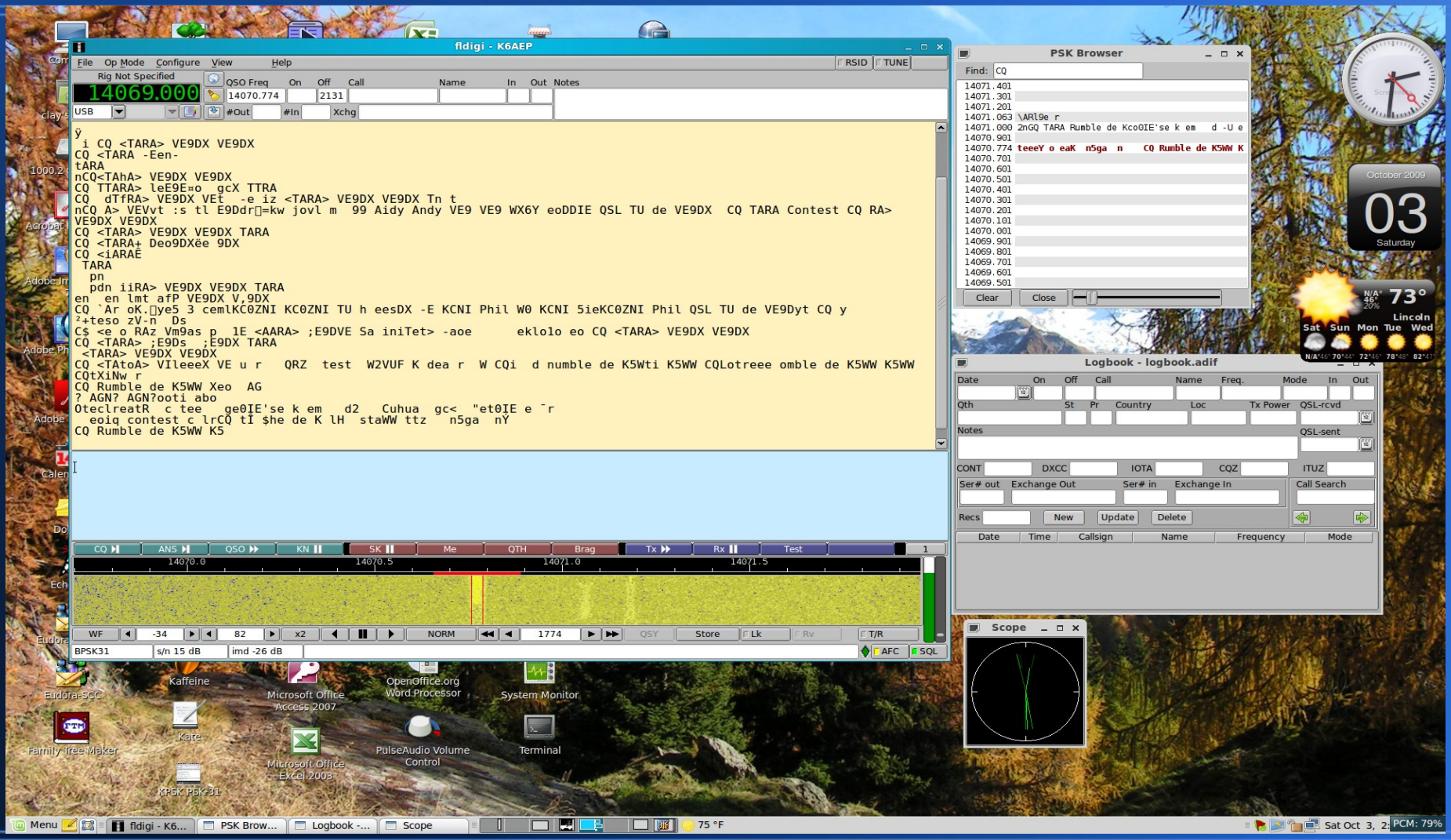
My HF Interface
SignalLink - USB

- Very simple to connect to hardware
- Comes with a cable for your rig
- Plugs into any USB port
- Lots of linux software support
- Eliminated a 40 mtr RF problem I had with Sound Card interface
- No external power required, USB provides power
- Small in size
- Order and receive in a week.

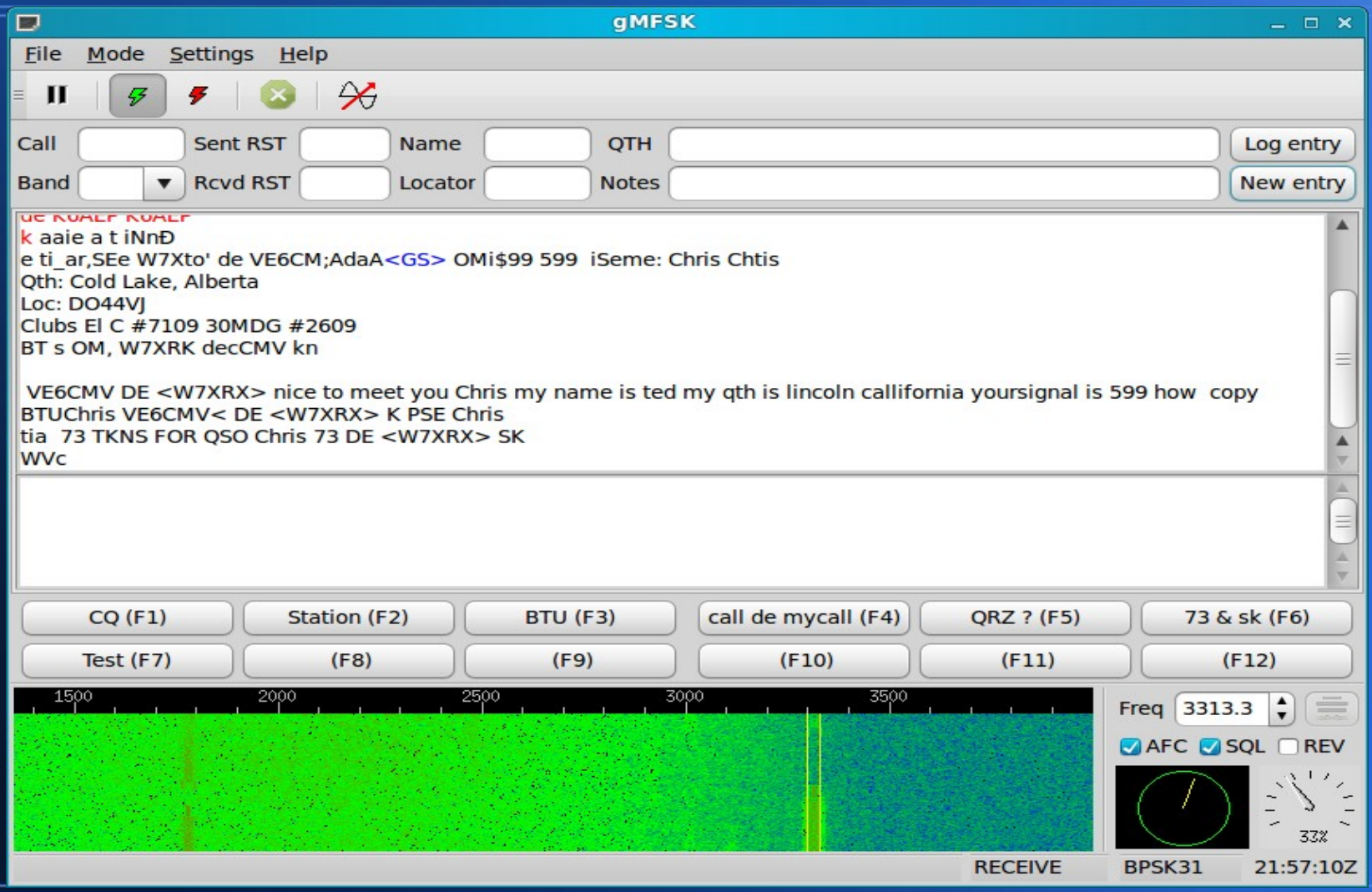
SignalLink using Fldigi on 20 Mtr (RTTY Contest)



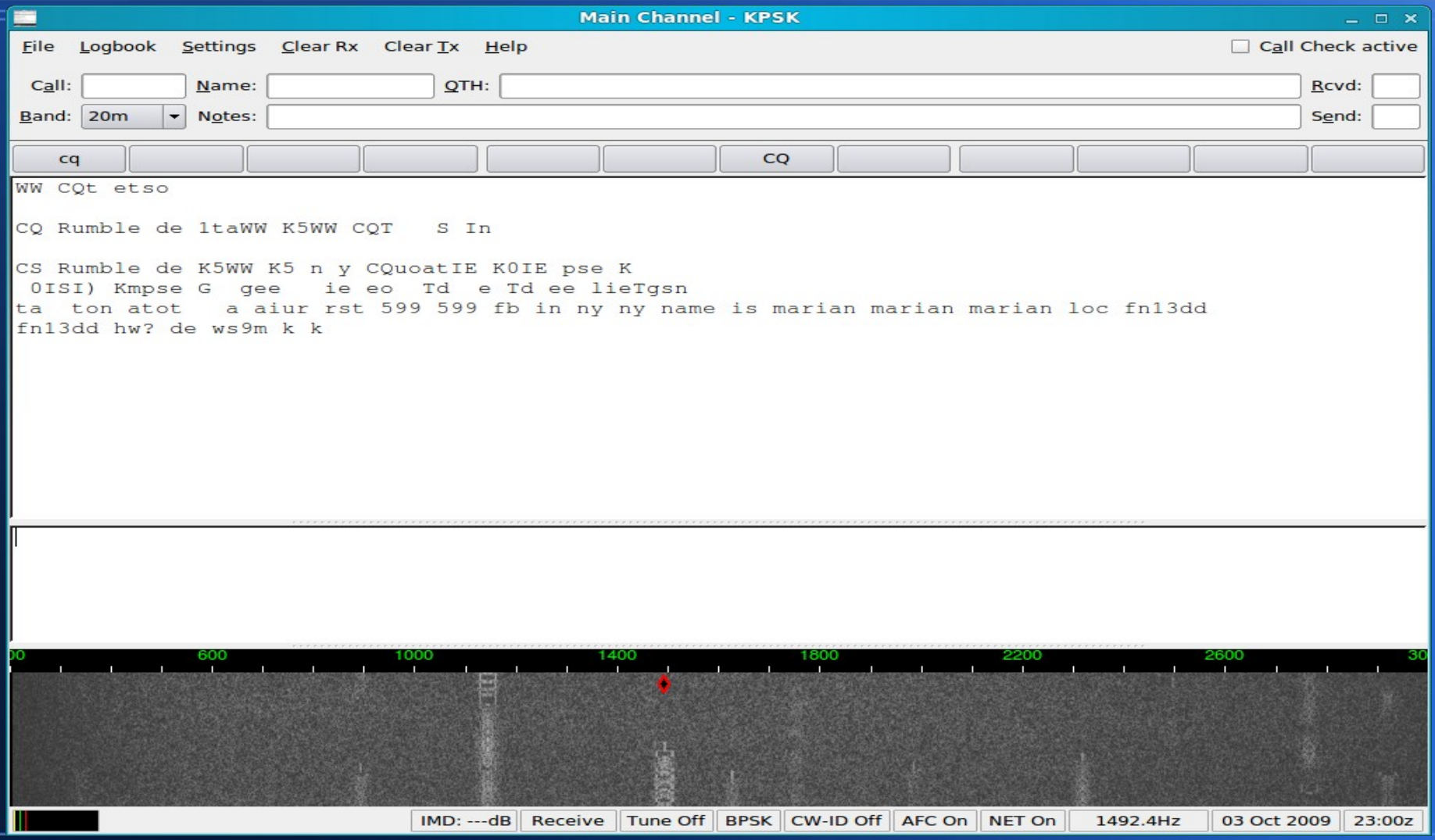
Fldigi – BPSK-31
20 meters



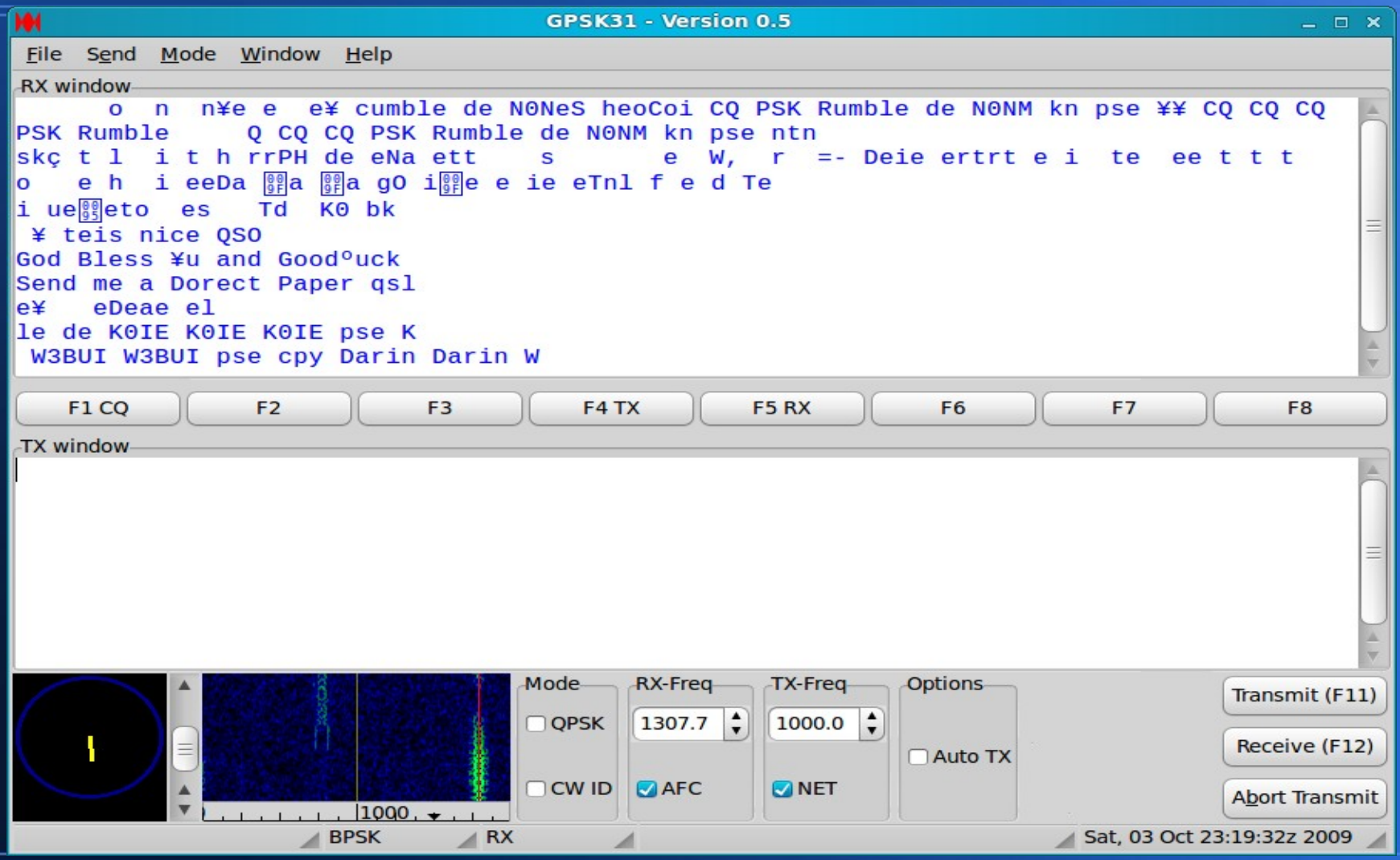
Gmfsk 20 meters



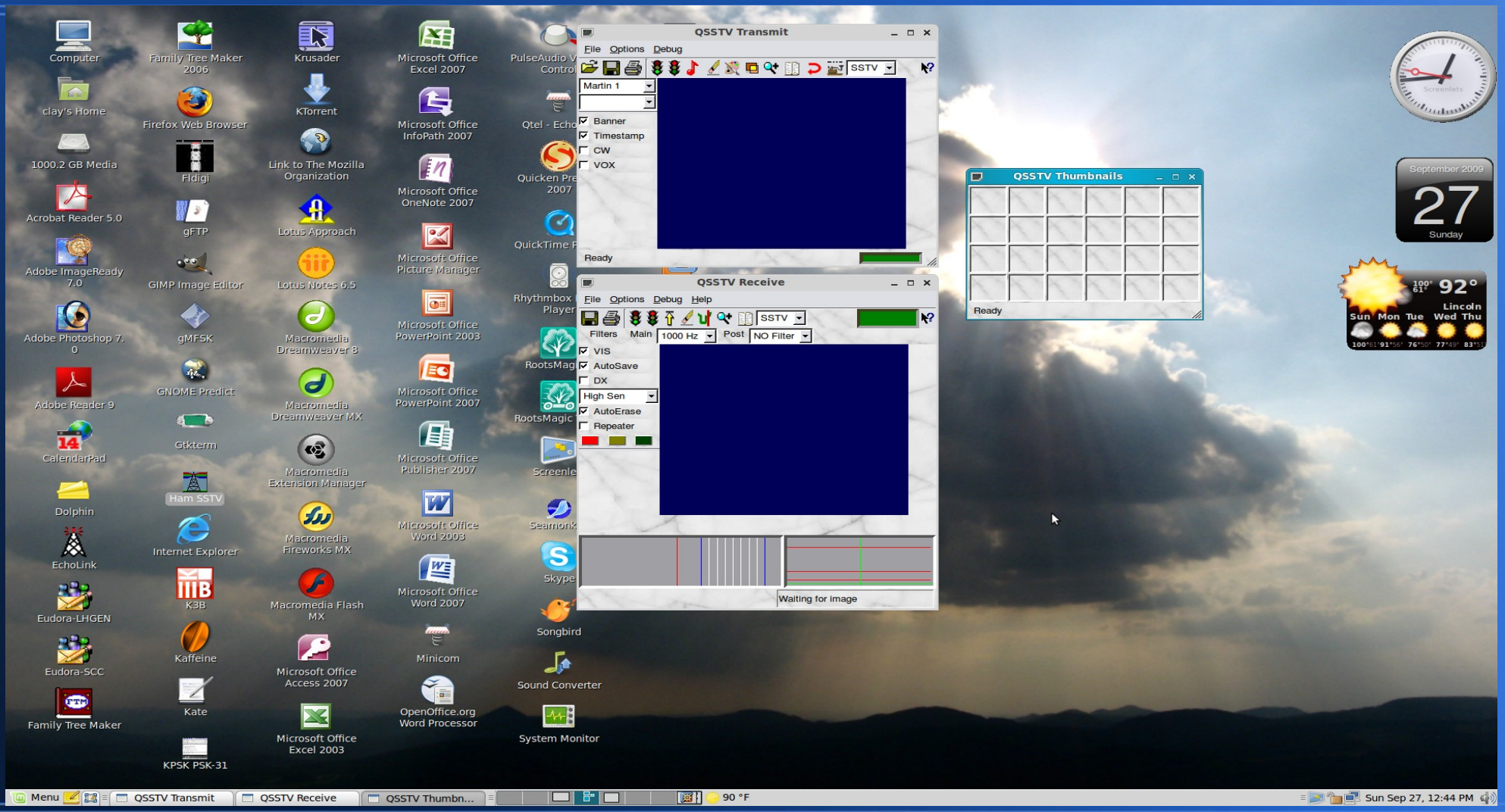
Kpsk 20 meters



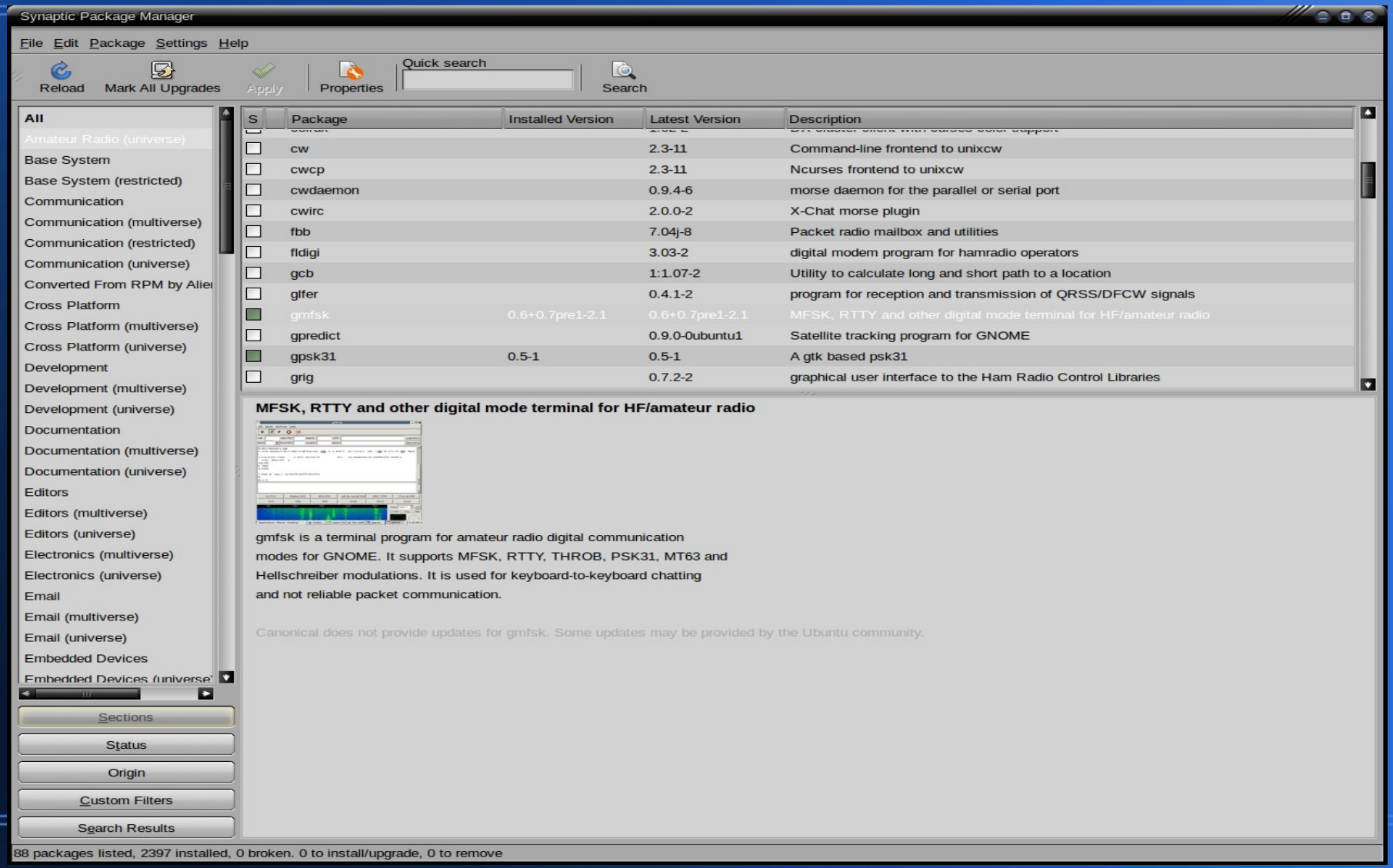
Gpsk31 20 Meters



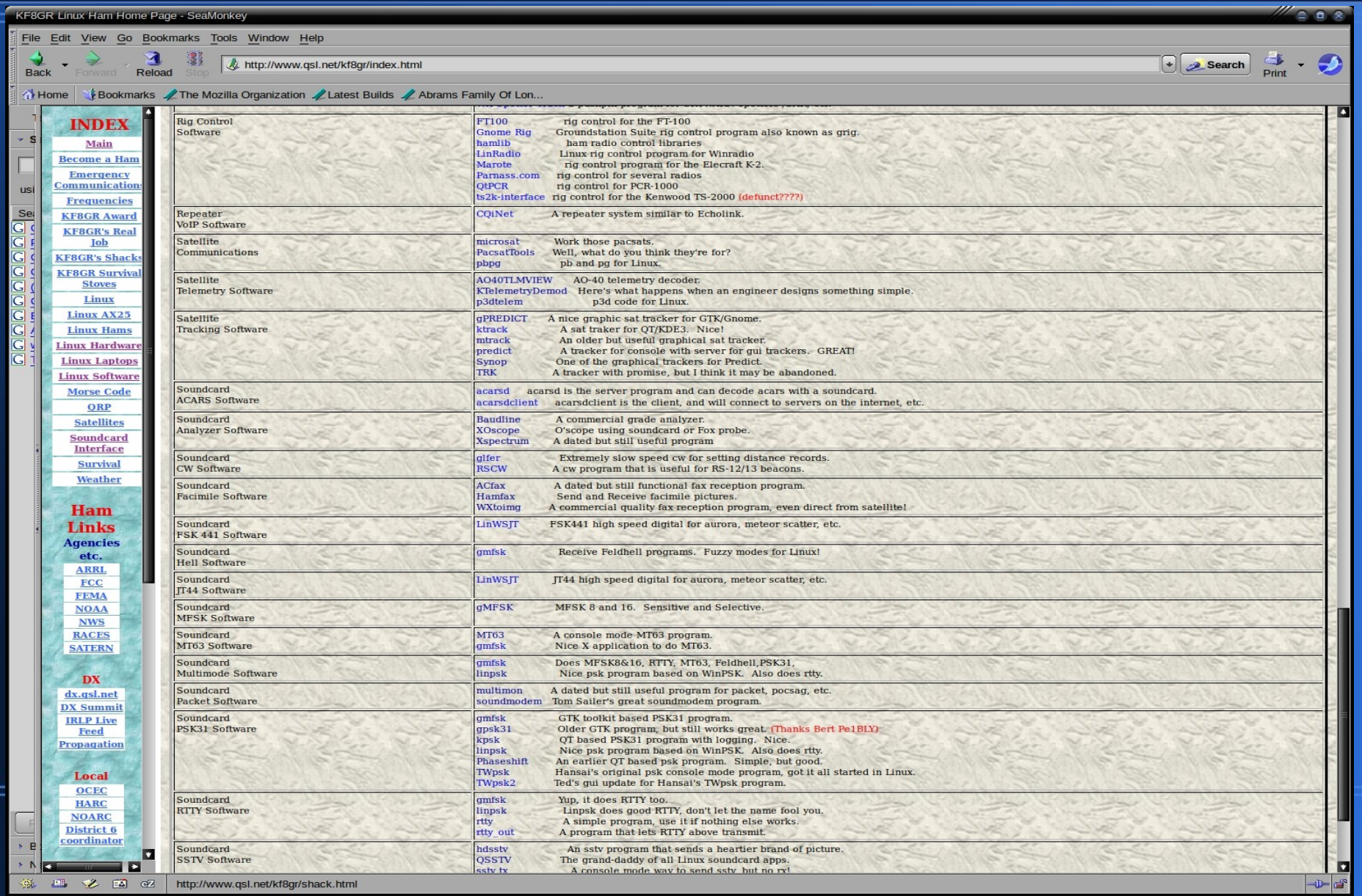
Linux QSSTV Software Uses SignalLink USB



Linux Ham Software Install from Mint 7



Linux Ham Software



HF Setup
Icom 718 and SignalLink

Donner SoundCard Interface

Icom 718 (13 pin Din)

http://home.att.net/~n8st/DDI-index.html

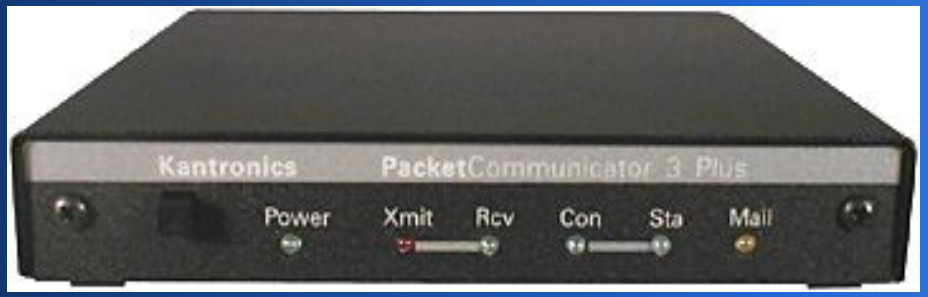
VHF Digital Ham Radio (Packet and APRS)

- TNC required.
- Two possibilities:
  - Hardware
  - Soundcard
- Soundcard least expensive.
- Hard to set up
- Soundmodem TNC can be installed by Mint Linux

- I decided to us Kantronics KPC-3+ TNC
- Configuration Easy and very widely used
- Interfacing Radio and Computer easy
- Minicom and GTKterm can be installed

VHF interface
Kantronics KPC-3+

- I have been using Kantronics KPC since 1980's, my old one reciently died.
- One of the most popular TNC's for Packet and APRS
- Simple to connect to rig and computer.
- Uses RS-232 serial interface
- Low power demand
- All Linux software supports it directly

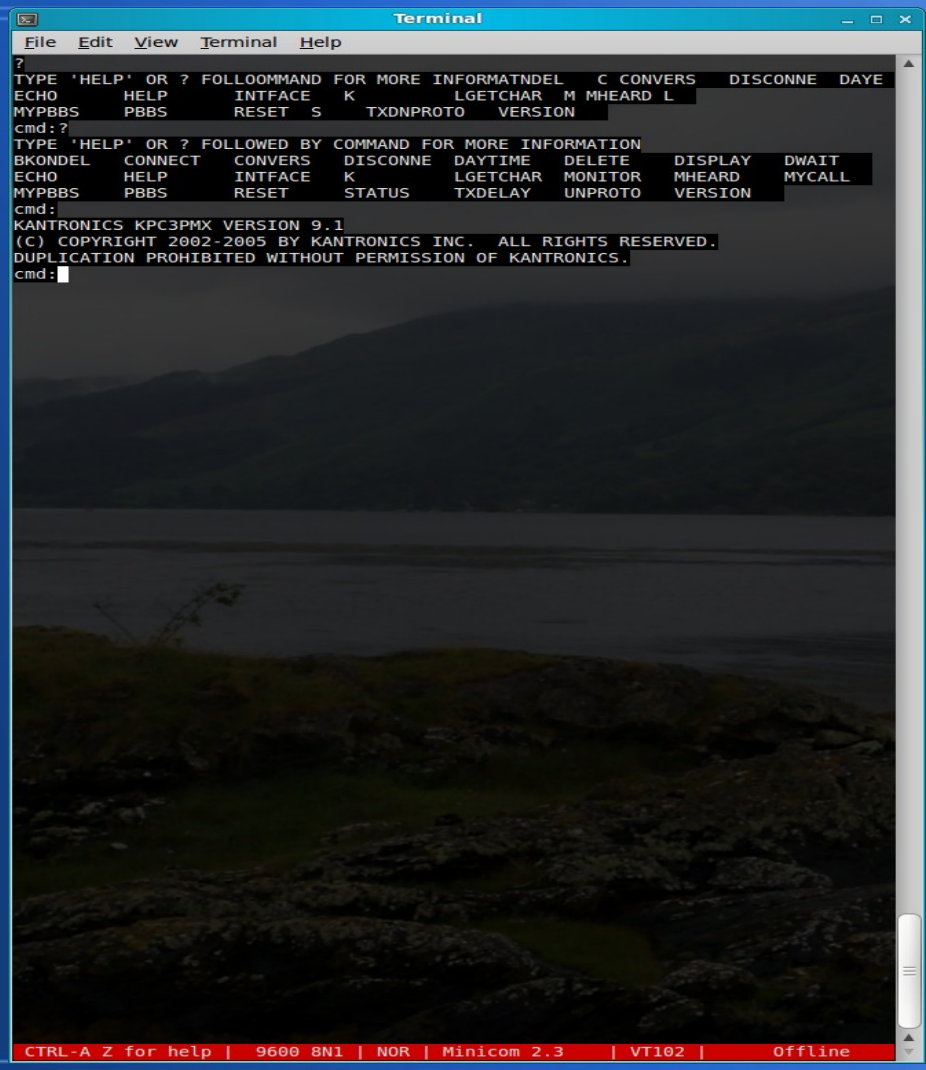


VHF Ham Setup

Kenwood TM-G707, KPC-3

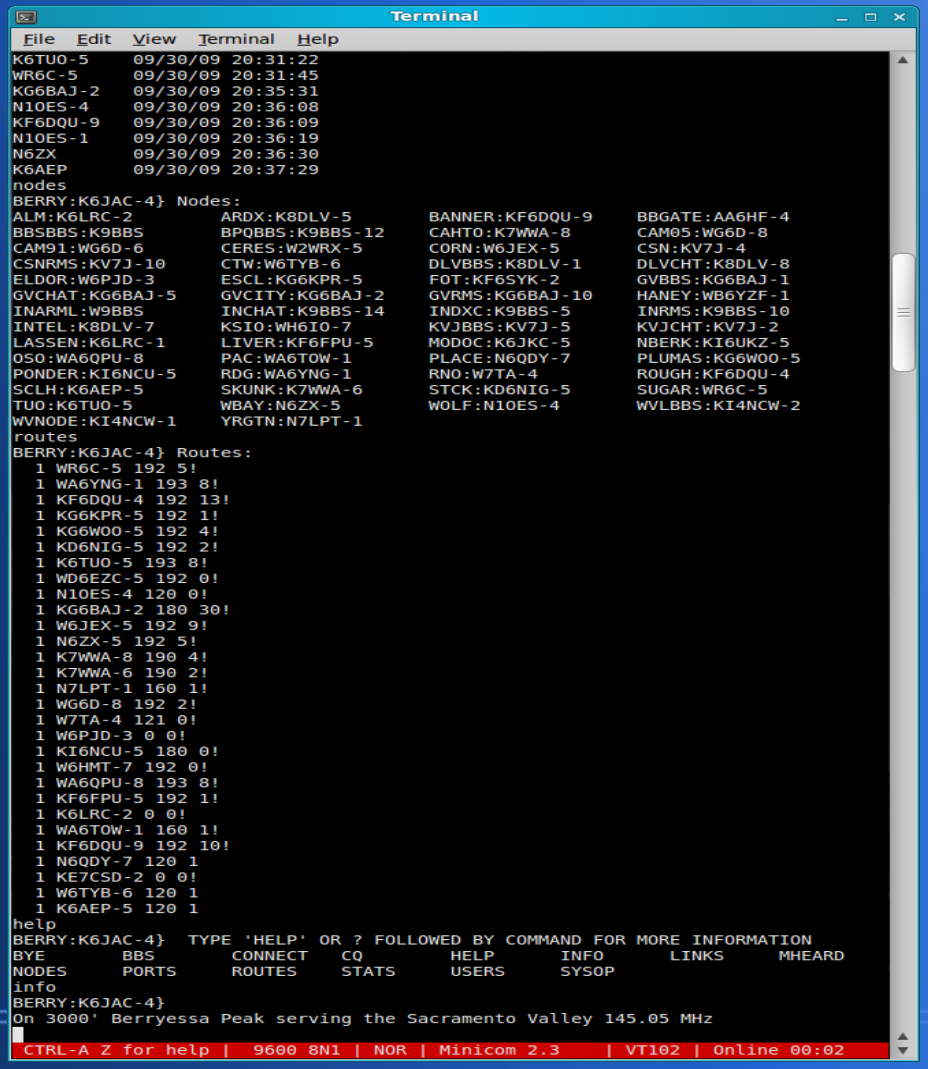
Minicom Communications Setup

- Minicom feature of Gnome desktop terminal.
- Open a Linux terminal, issue (minicom -c -m on)
- First configure Port and speed (/dev/ttyS0, 9600 8N1)
- Serial port now connected to COM1 port on Linux system.
- To bring up terminal in future issue (minicom -c on) in terminal session.

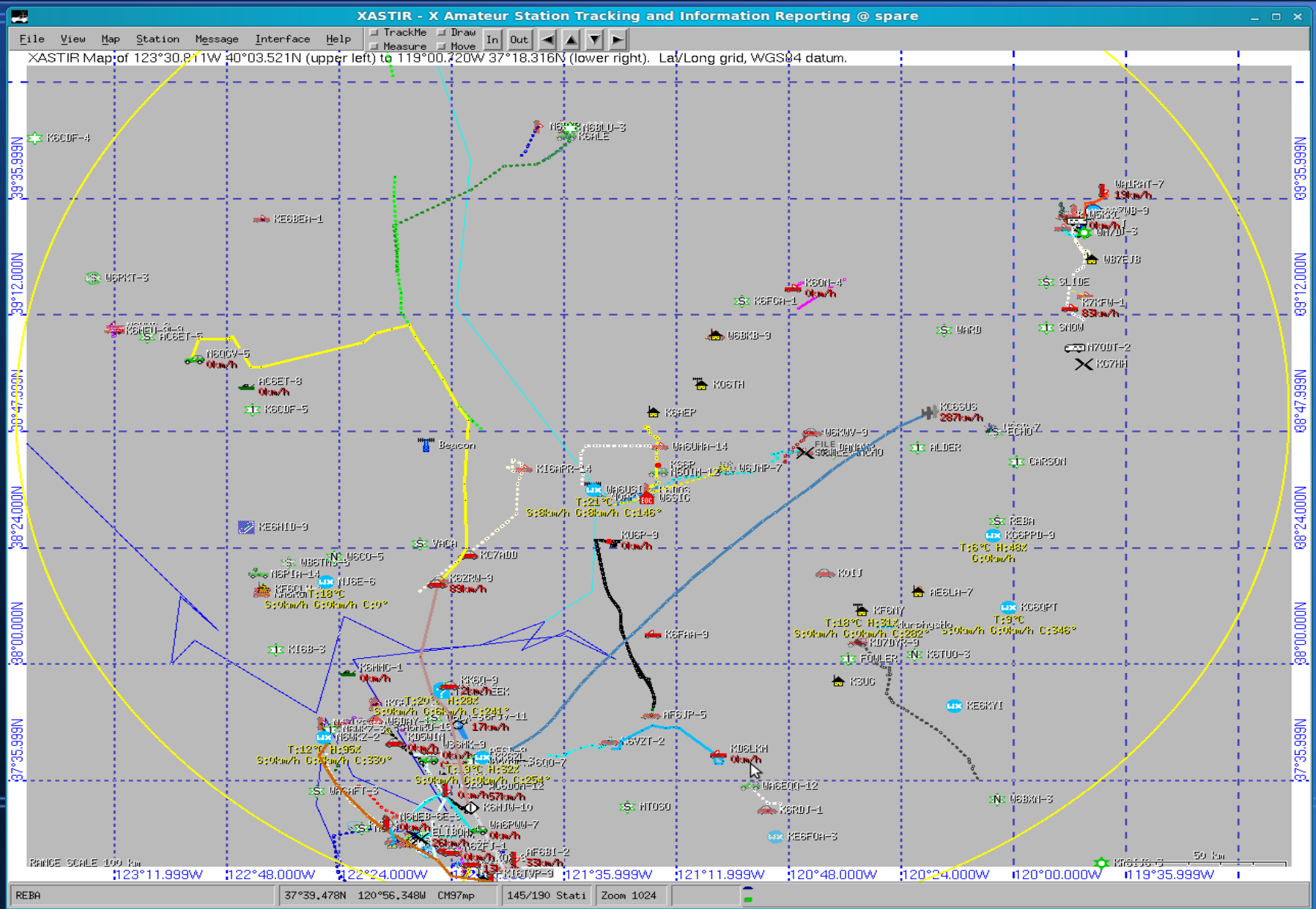


Packet Radio Connection

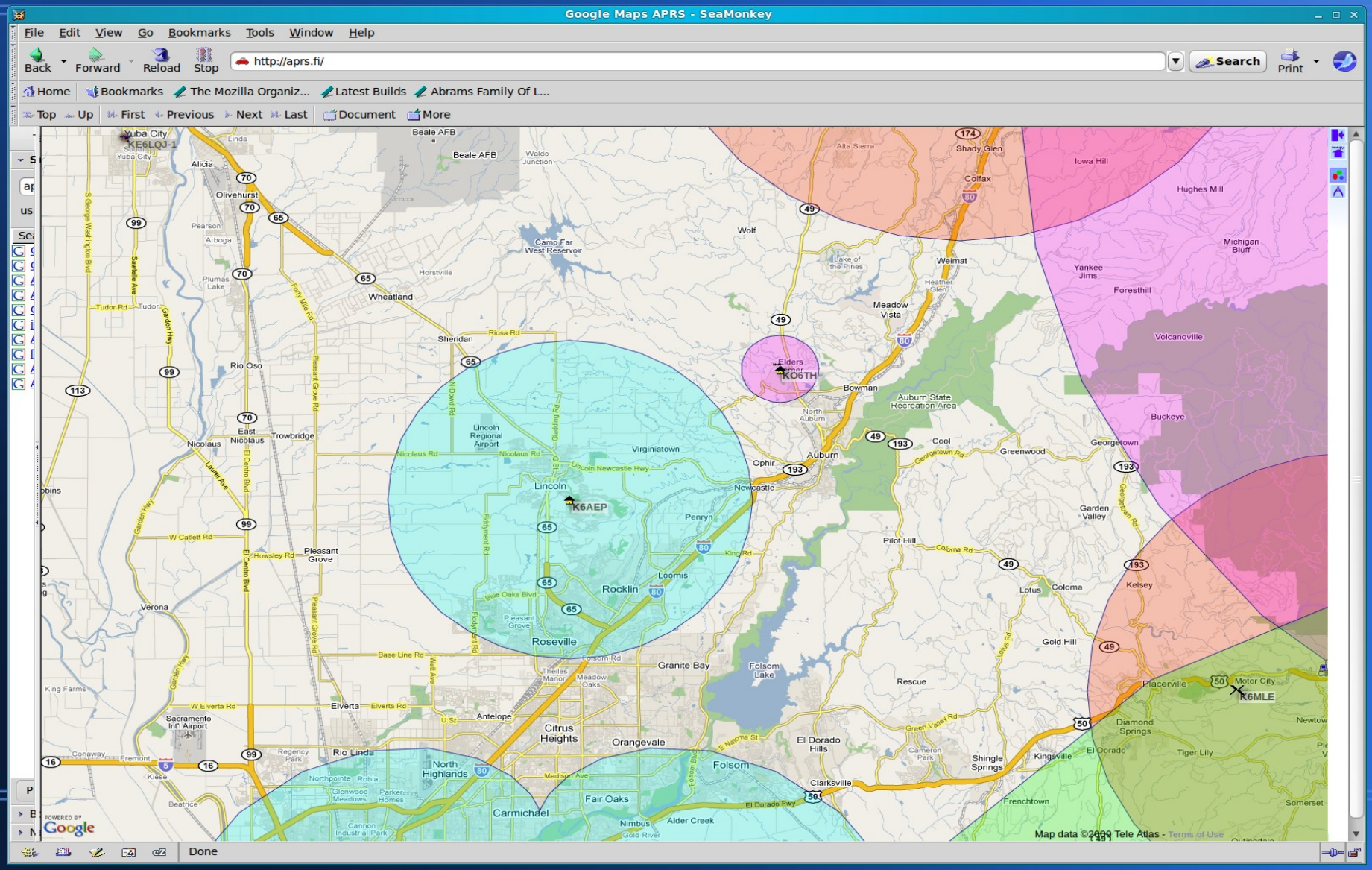
- Connected to Berry
- Freq 145.05
- Beryessa Peak, 3000 Ft
- Serving the Sacramento Valley, CA



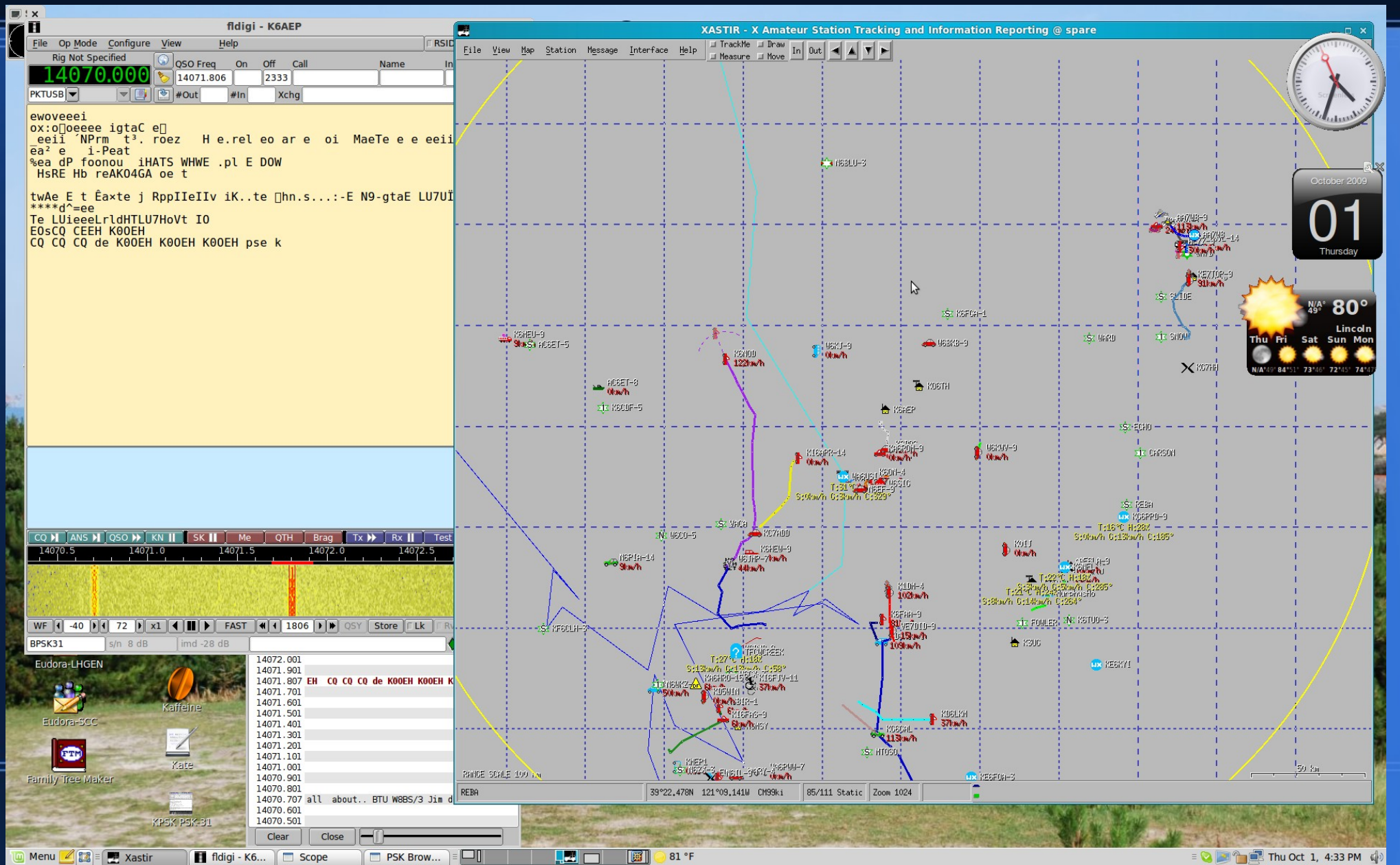
KPC-3+ APRS
Running Xastr



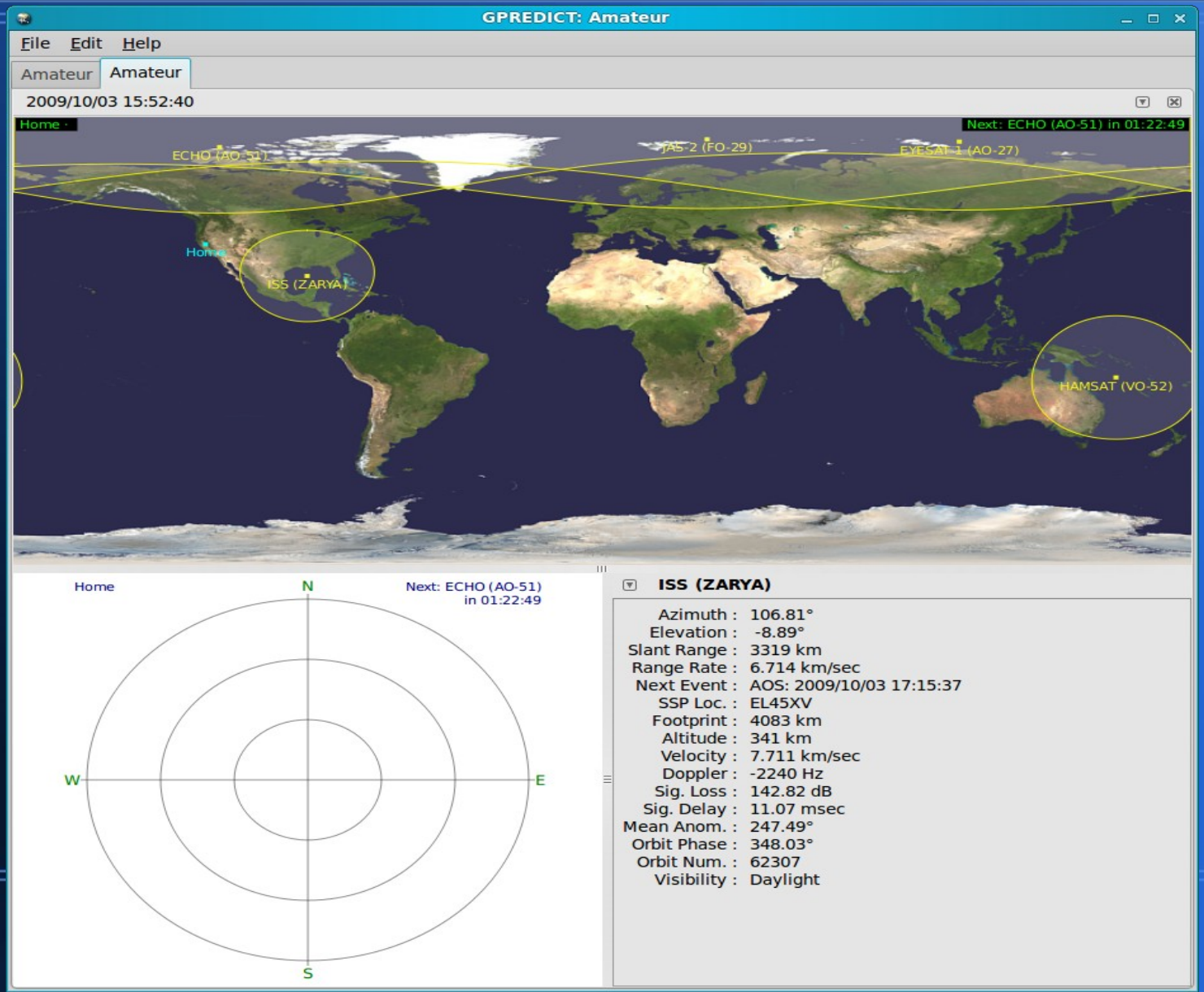
Internet Display (APRS)
http://aprs.fi/



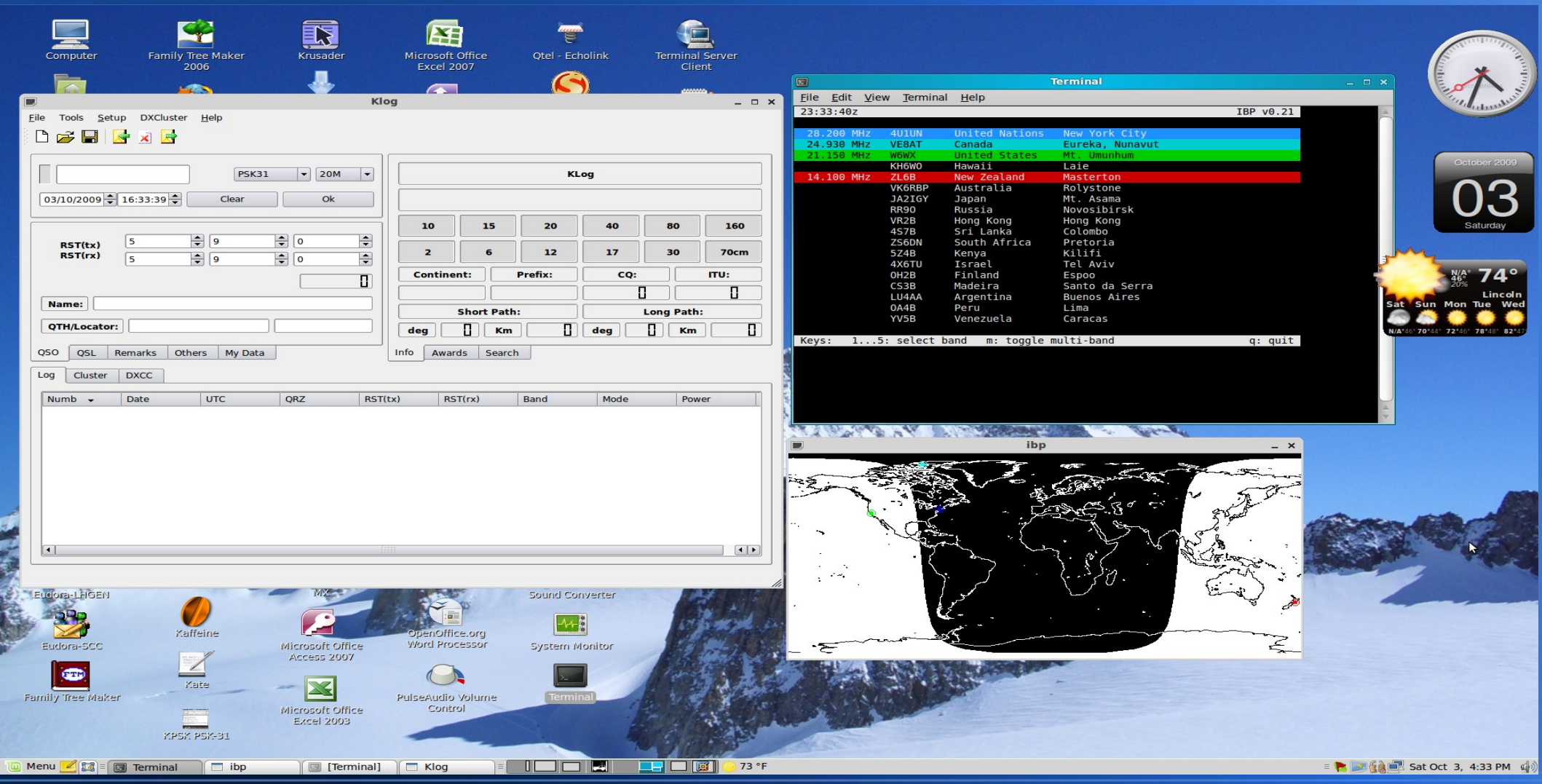
APRS and PSK 31



Gpredict Satellite Tracking

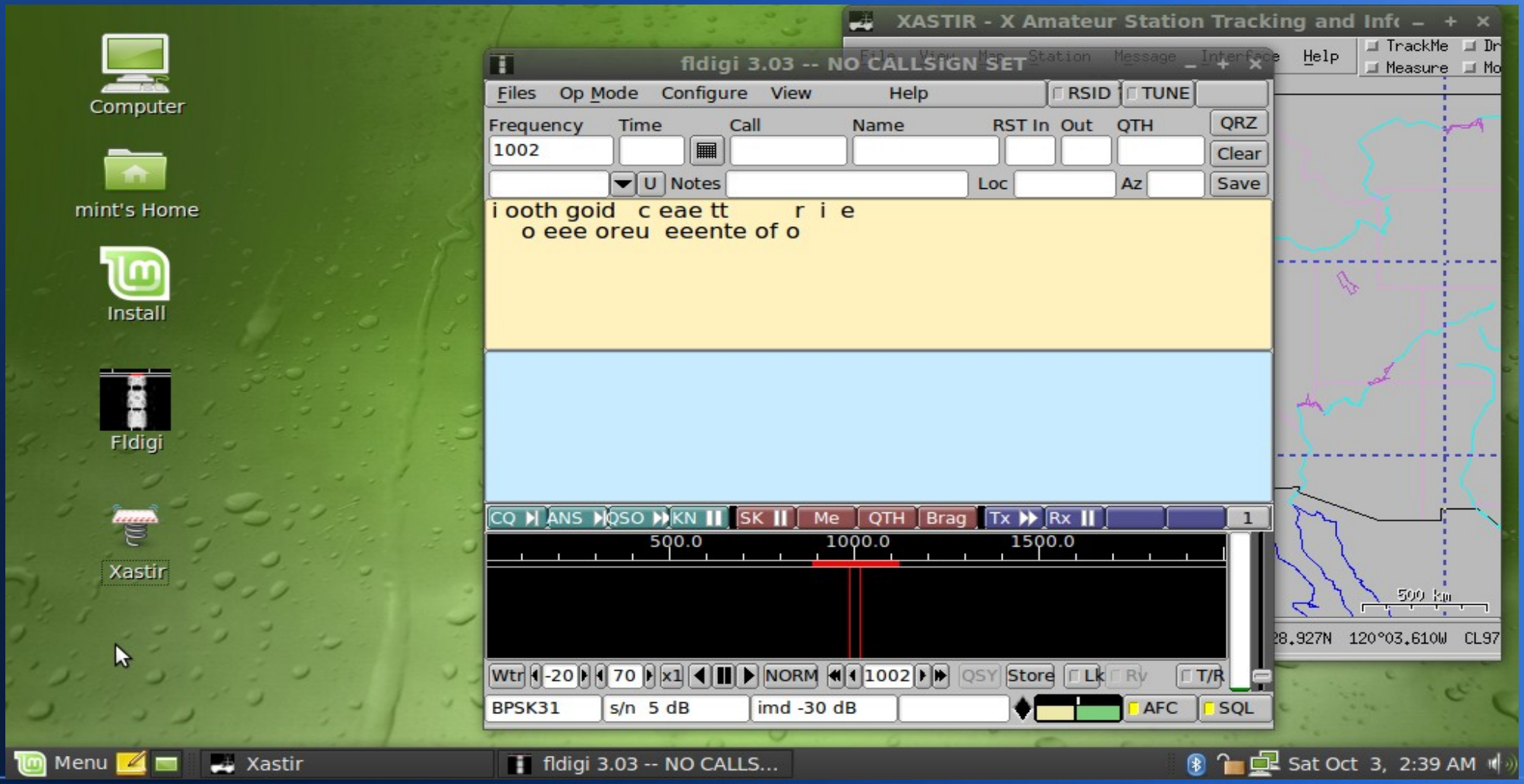


Klog – logging Program & IBP – Ham Beacons



Running Mint from Live CD

Xastir and Fdigi installed and running on EEEpc 1000He Laptop.
Sound interface was detected all that is need is Rig Audio.



Conclusion

- Linux makes a great OS platform for Ham Radio.
- Linux can run Ham Applications without a hard disk install from a CD in live mode.
- Mint 7 Linux is ideal because it is:
  - User Friendly
  - Very Stable
  - Easy to use and configure
- Give it a try, you will love it!
- Any Questions?