

Remote Station SM7LCB

VHF-meeting 2008
Ulf / SM0LCB

Remote Control



SM7LCB



Remote site (station)



- Radio (ICOM IC-706).
- Computer (old Dell).
- WLAN to Internet.
- Coax to antenna house.



Remote Site (antenna)



QRV on
-1.3 GHz
-2.3 GHz
-3.4 GHz (soon)
-10 GHz
-24 GHz (OH2AXH)

VHF-meeting 2008
Ulf / SM0LCB

What was needed for my remote project?

-Remote front panel operation.



-Full control of transverter system.



-Full control of antenna system.

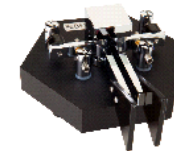


-Good audio transfer.

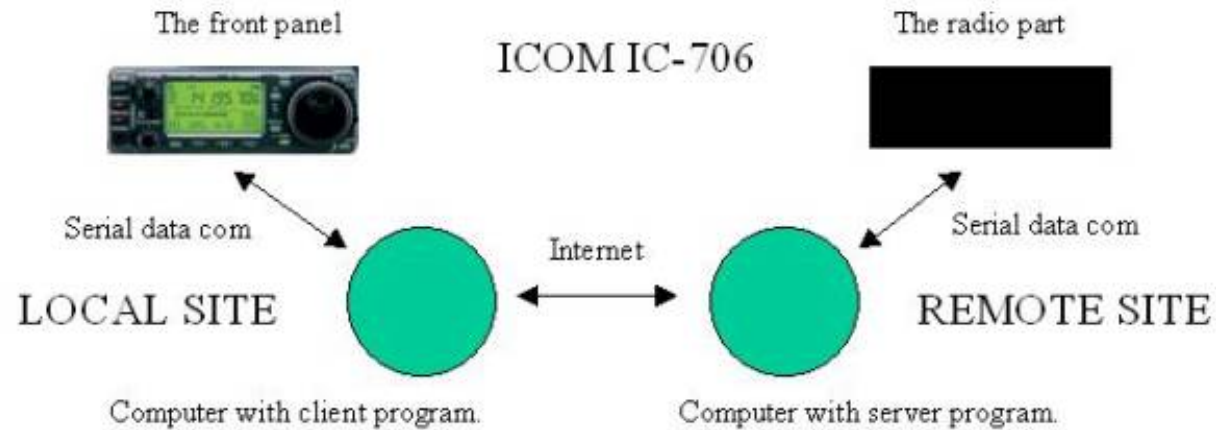


-Full CW operation via manipulator key and hand key.

All today implemented and fully operational!



Remote Front Panel



Feature

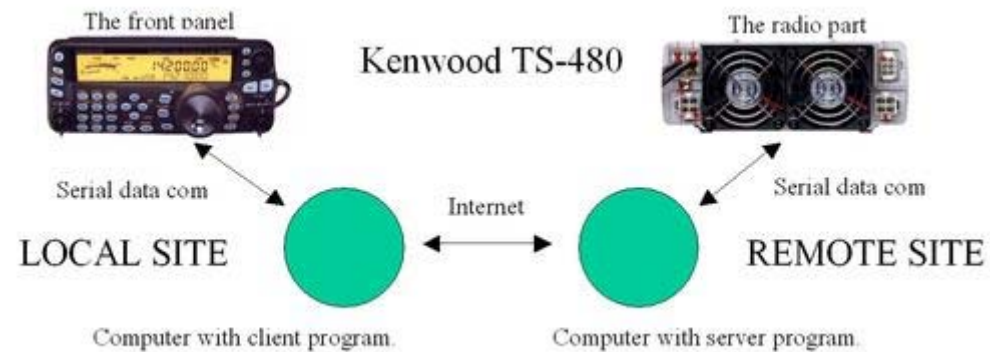
- Easy control of radio
- Frequency wheel tuning!



Serial communication

- 19.2 kbits
- Similar to ICOM bus protocol

Remote Front Panel



Feature

- Easy control of radio
- Frequency wheel tuning!



Serial communication

- 57.6 kbits
- Similar to Kenwood CAT protocol

Transverter System

- Easy wiring.
- Easy add a new unit to the system.
- Easy control and supervision.
- Easy adding new features.

1.3 GHz

2.3 GHz

3.4 GHz

5.6 GHz

10 GHz

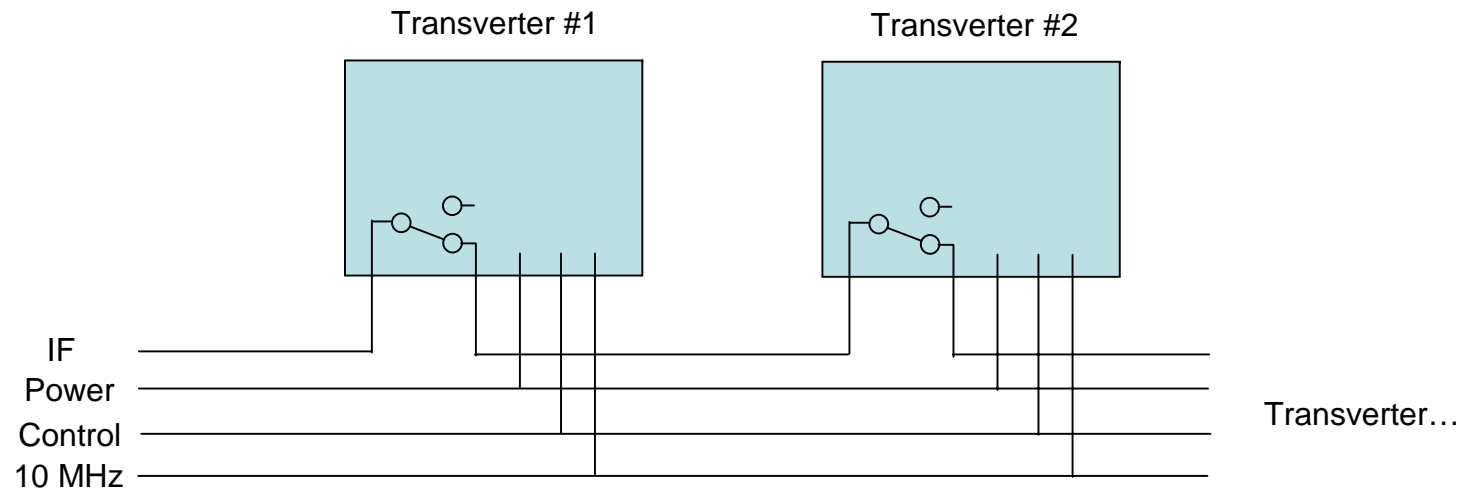
24 GHz

Remote Control

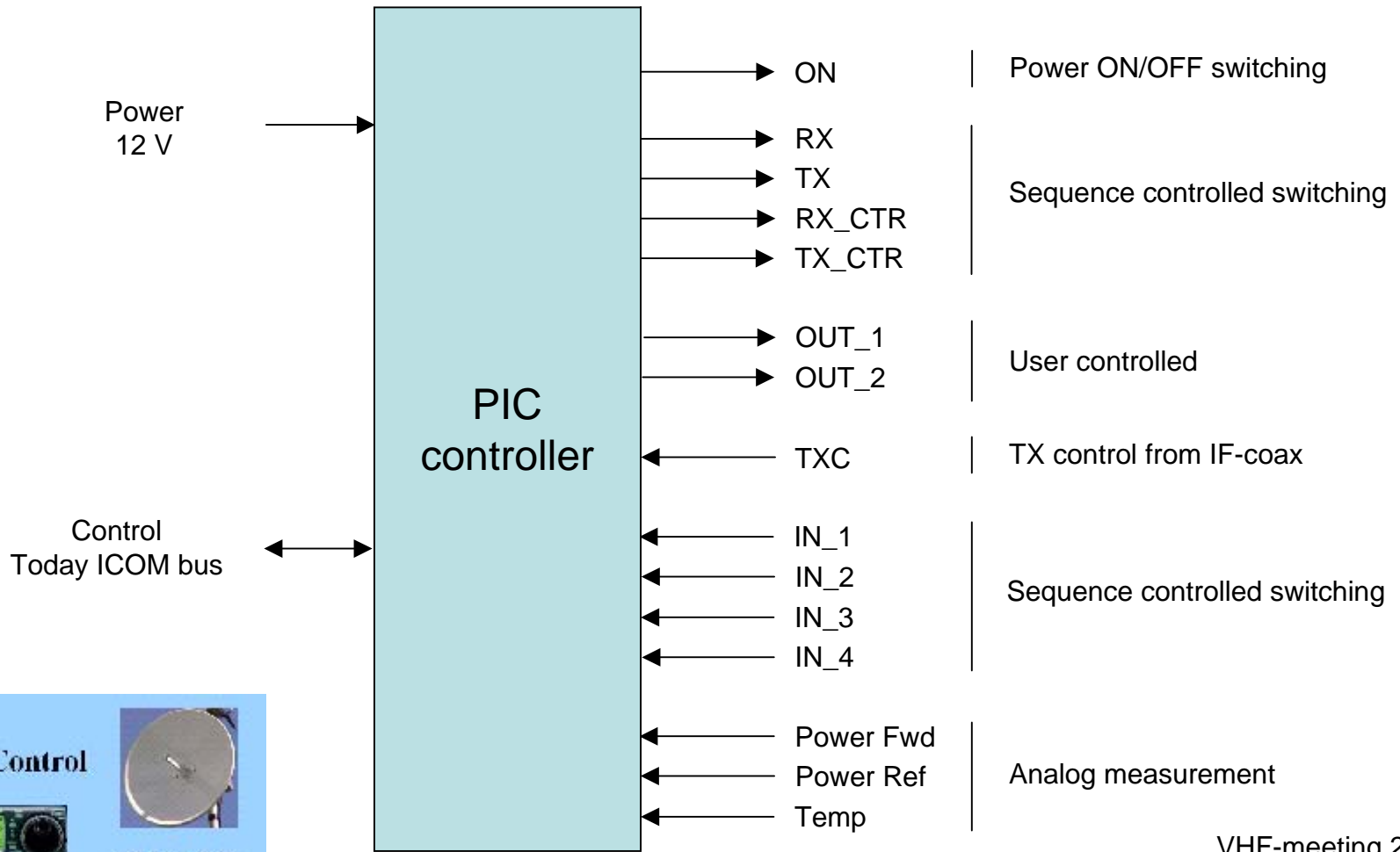


SM7LCB

Simple Transverter Wiring

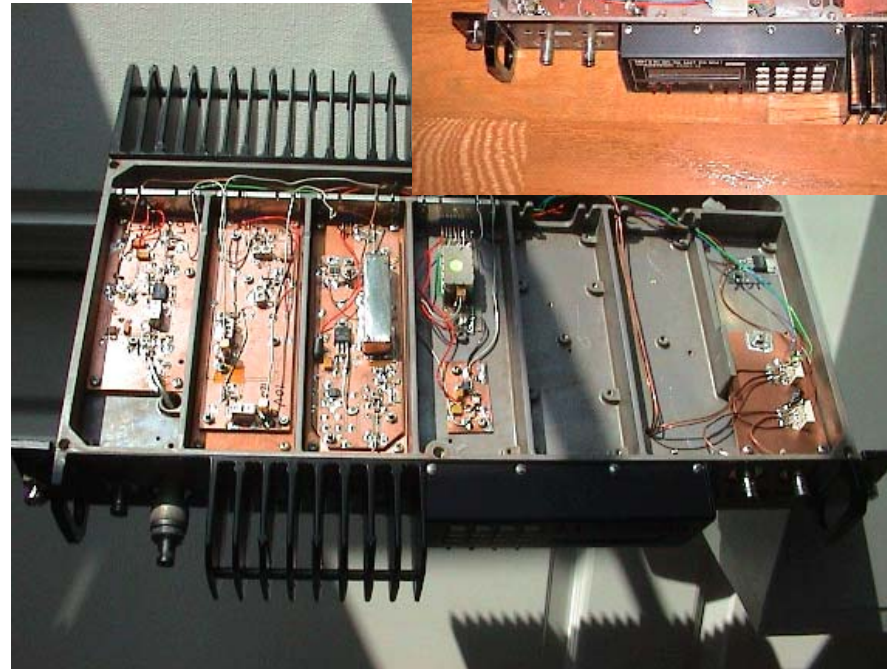


Simple Transverter Control



Transverter 23cm (version 2)

- IQC/PC transverter.
- Ericsson TUG 55W.
- Ericsson 1800 preamp.
- Ericsson 96 MHz LO.
- Ericsson 10MHz REF.
- LCB PIC controller.



Remote Control

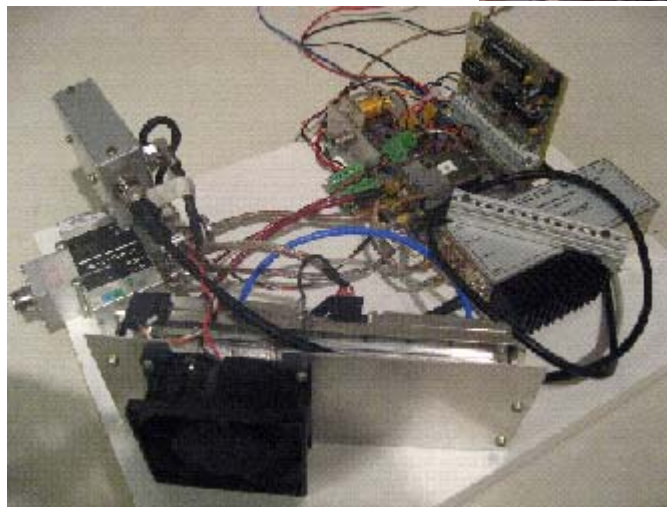
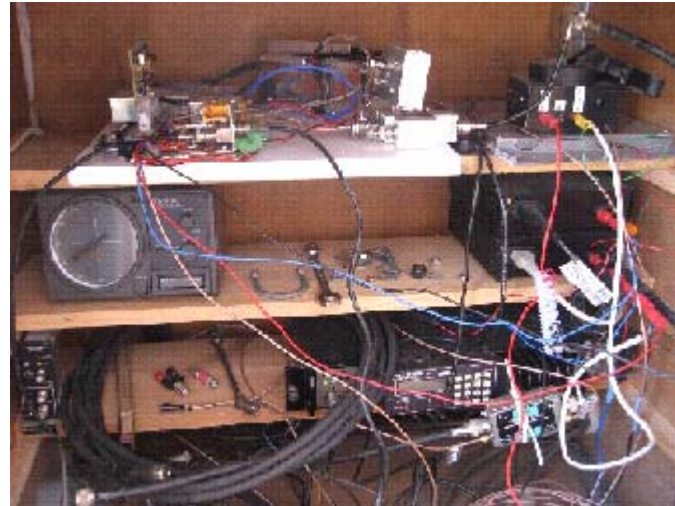


SM7LCB

VHF-meeting 2008
Uif / SM0LCB

Transverter 13cm

- DB6NT transverter.
- Ericsson 40W.
- Ericsson power measurement.
- LCB PIC controller.



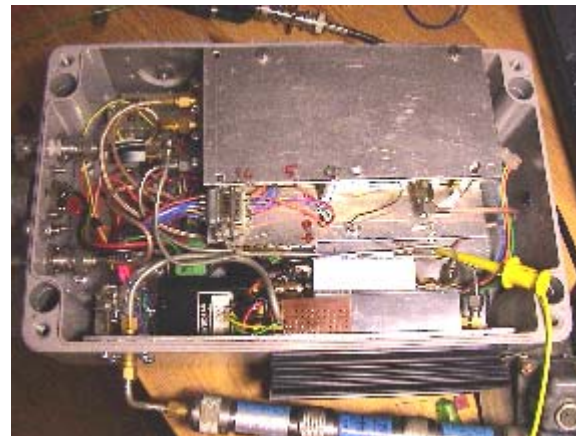
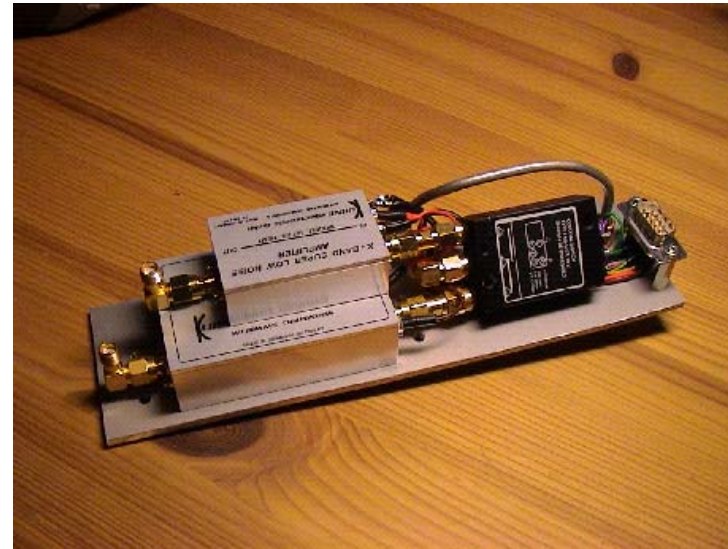
Transverter 9cm

- DB6NT transverter.
- Toshiba 40W.
- LCB PIC controller.



Transverter 3cm (version 3)

- DB6NT transverter.
- DB6NT PA 5W.
- DB6NT preamp.
- Ericsson 106.5 LO.
- R&S 10MHz REF.
- LCB PIC controller.



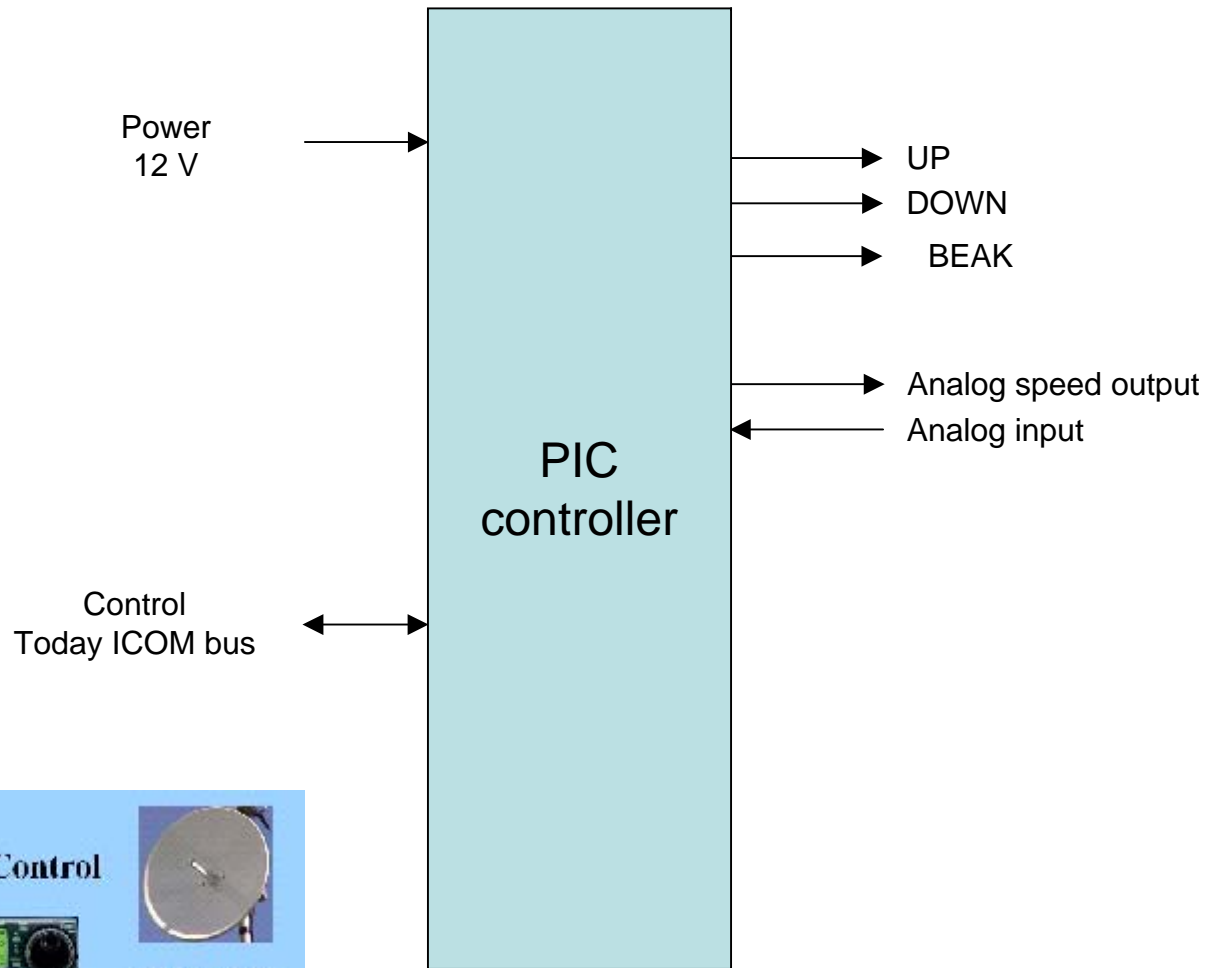
VHF-meeting 2008
Uif / SM0LCB

Antenna Control System

- Easy wiring.
- Easy add a new unit to the system.
- Easy control and supervision.
- Easy adding new features.

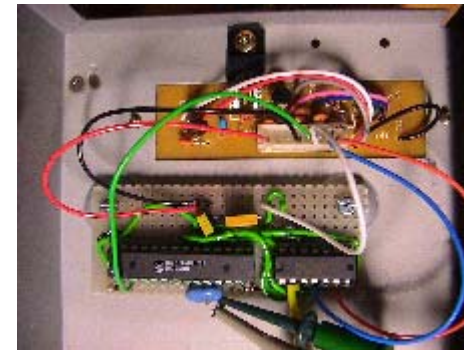


Antenna Rotor Control



Modification G-800SDX

- YAESU G-800SDX.
- Easy adding external control.
- LCB PIC controller.



Audio Transfer

- TeamSpeak
Client/Server with conference mode.
Both on Windows and Linux.
- IHU (I Hear You)
Very low latency!!!
Only Linux (wmWare on Windows)
- Skype
Not tested by me.
- Picophone
Not tested by me.

-And many more...



Remote Control



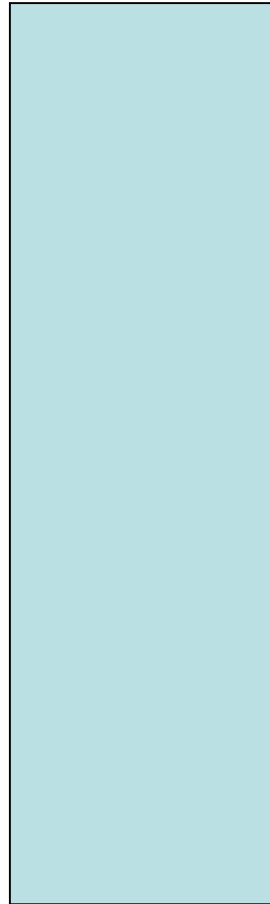
SM7LCB

Hardware

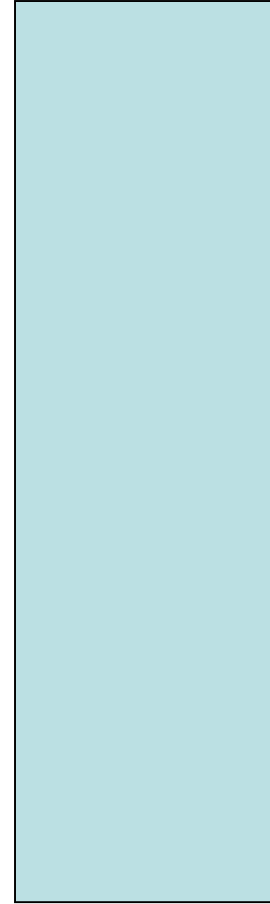
VHF-meeting 2008
Ulf / SM0LCB

Home

Computer
Windows



Computer
Linux



Internet

Site

Remote Control



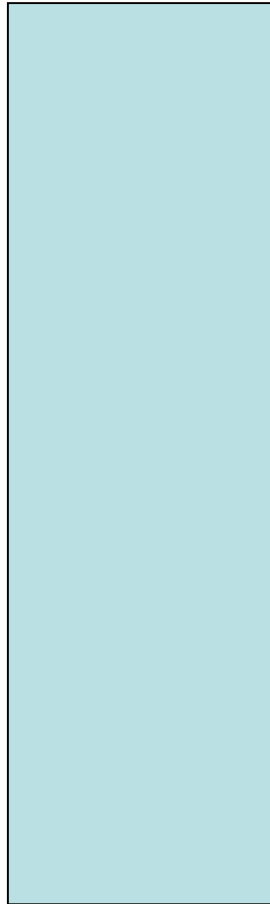
SM7LCB

Hardware

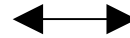
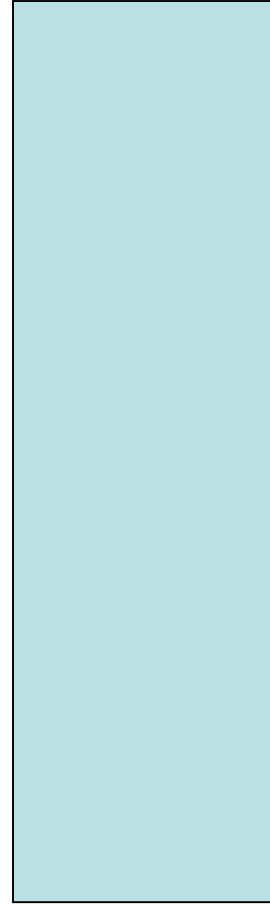
VHF-meeting 2008
Ulf / SM0LCB

Home

Computer
Windows

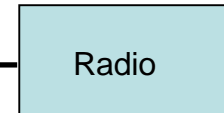
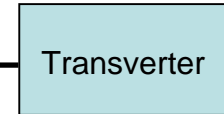


Computer
Linux



Site

ICOM BUS
COM



Remote Control



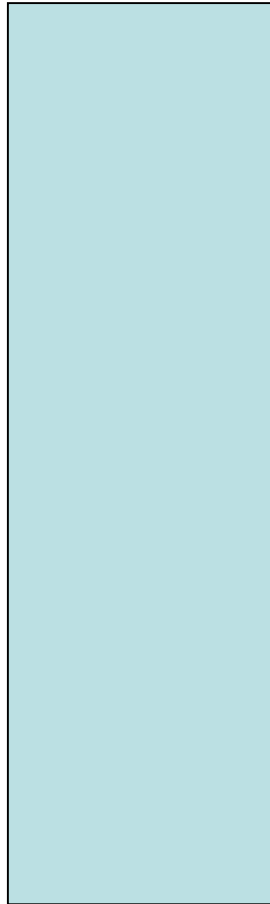
SM7LCB

VHF-meeting 2008
Ulf / SM0LCB

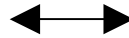
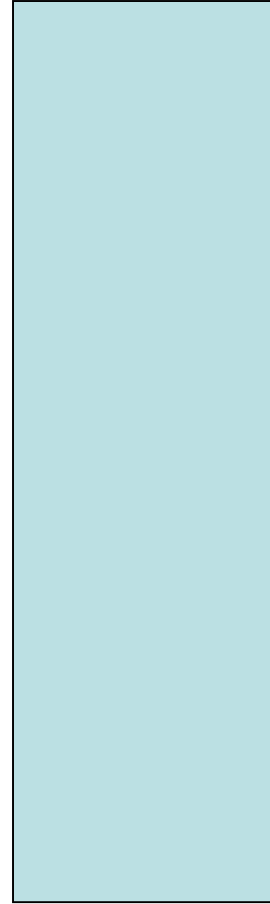
Hardware

Home

Computer
Windows



Computer
Linux

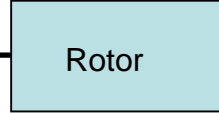


Site

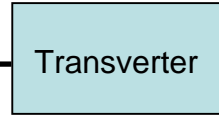
ICOM BUS

COM

Rotor



Transverter



COM

Front Panel

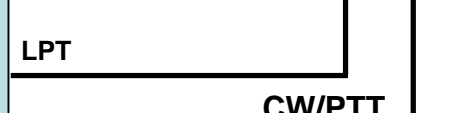
Radio



LPT

CW/PTT

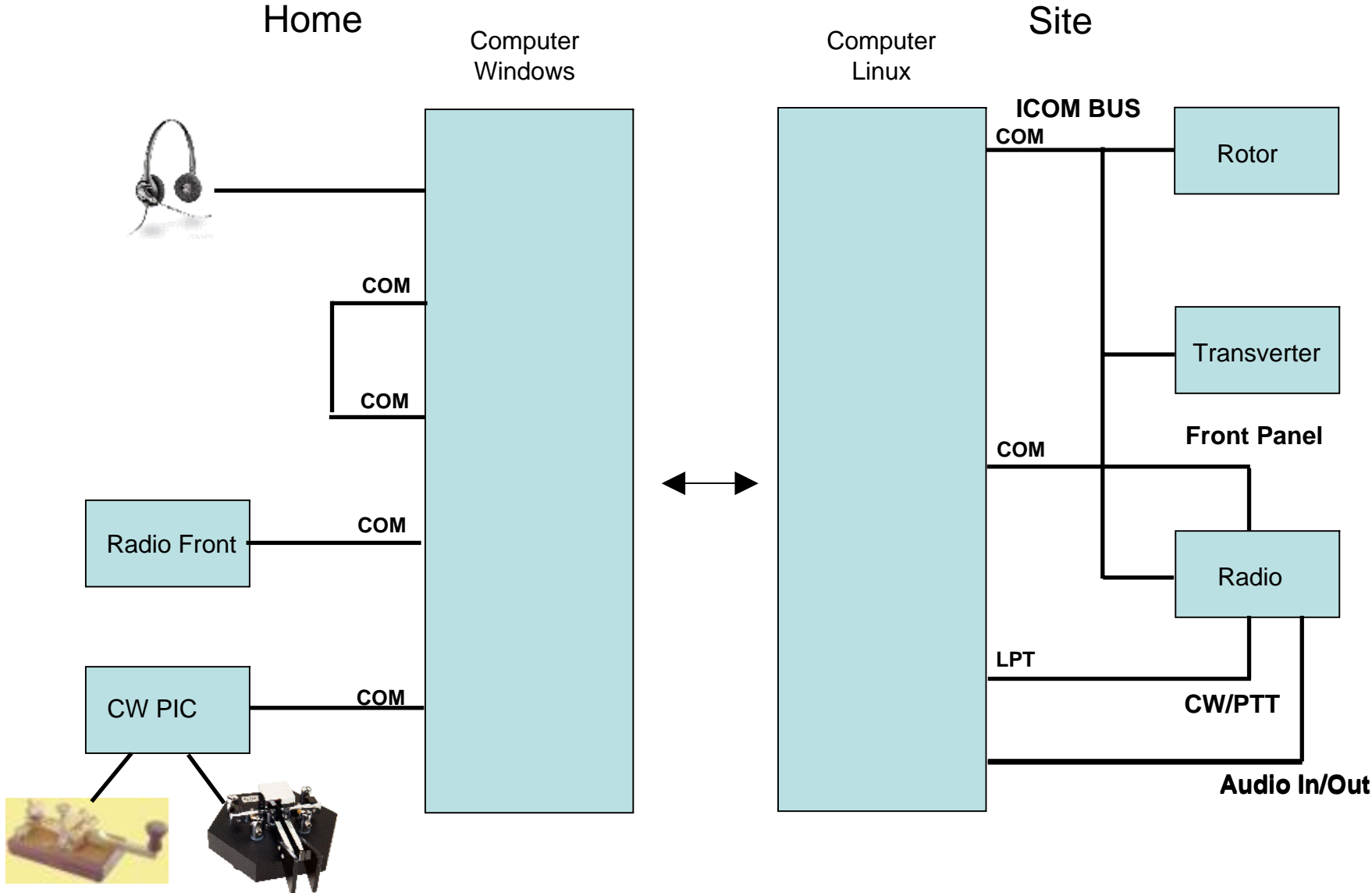
Audio In/Out





VHF-meeting 2008
Ulf / SM0LCB

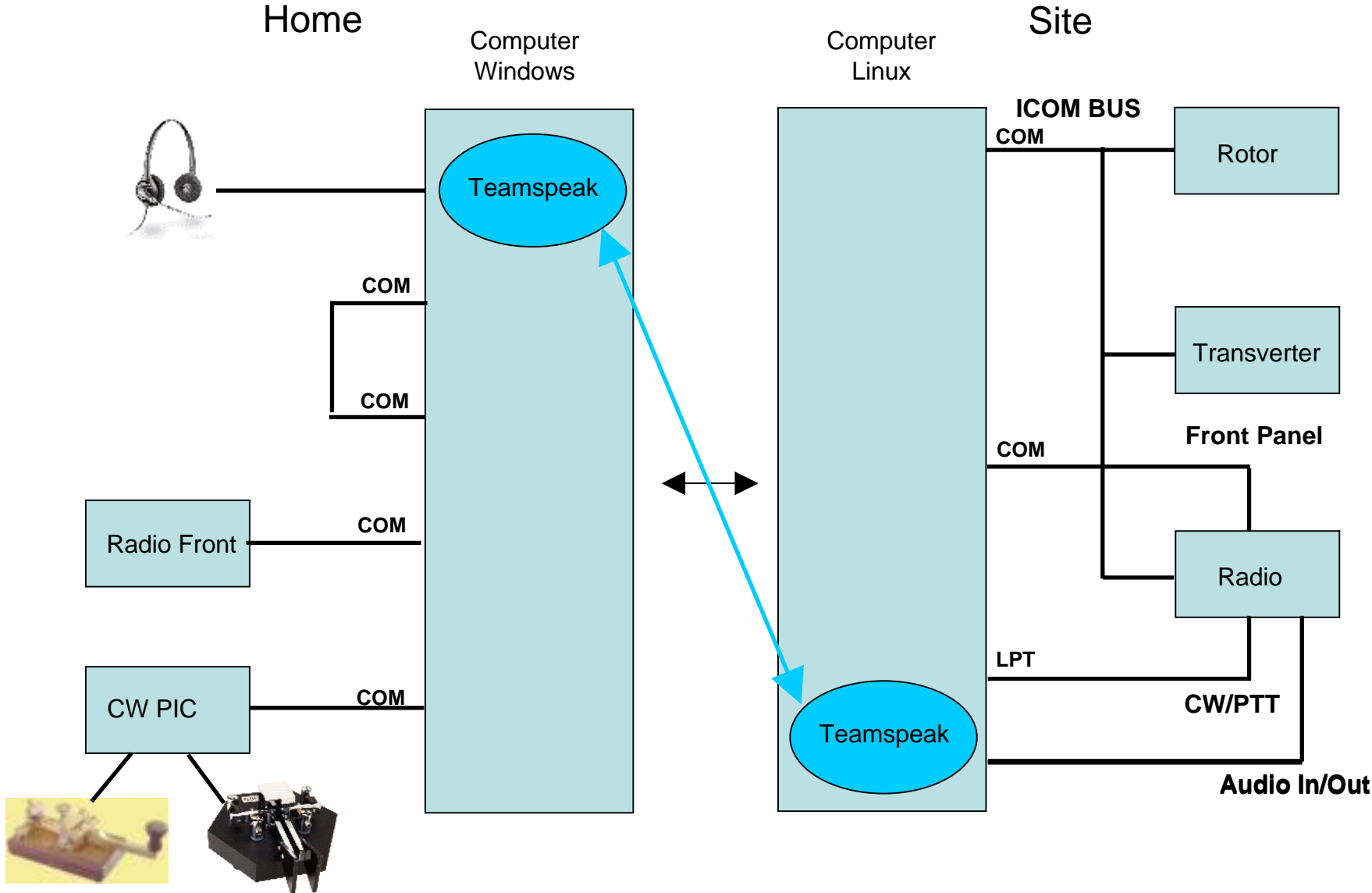
Hardware





VHF-meeting 2008
Ulf / SM0LCB

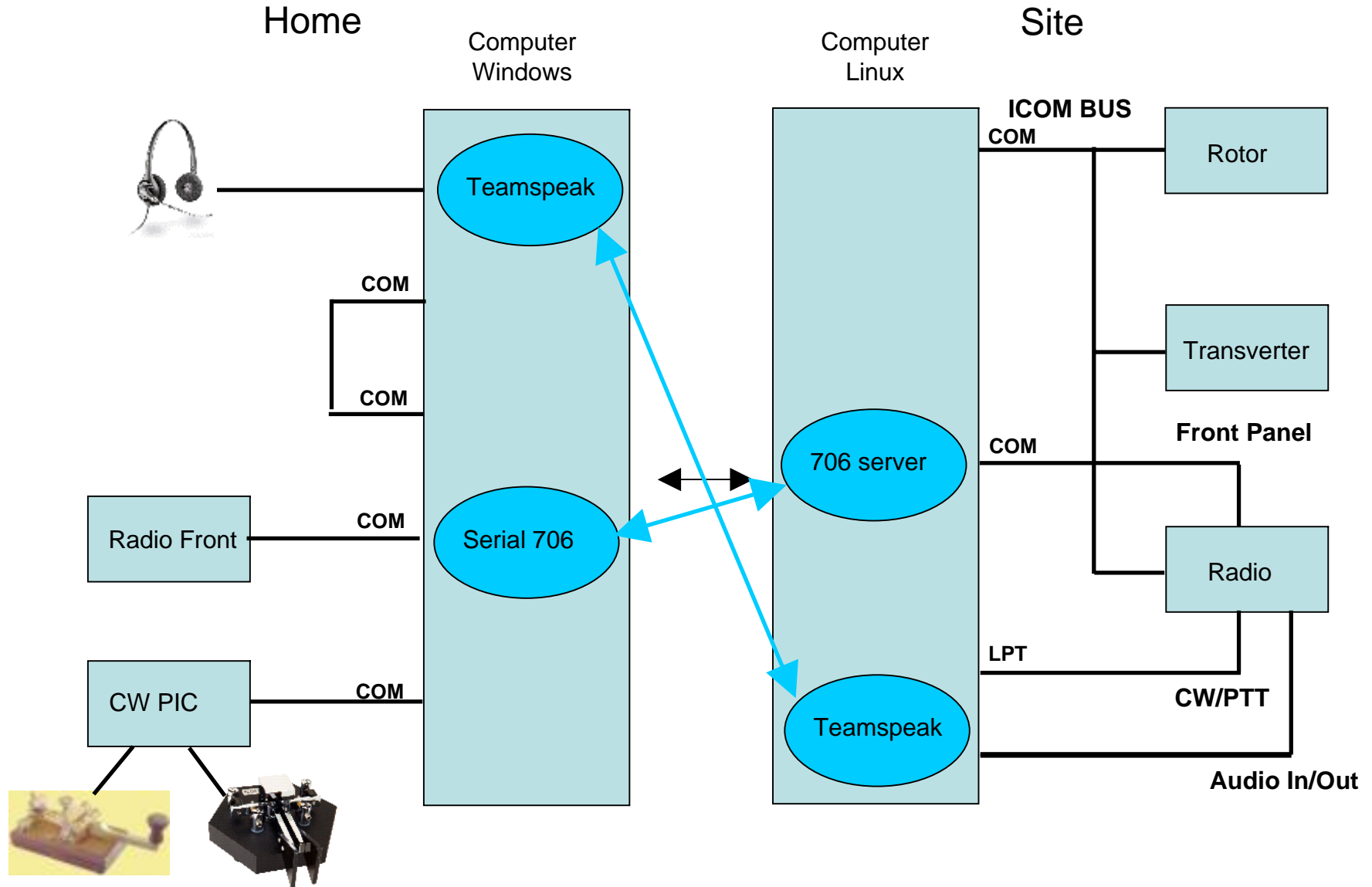
Software





VHF-meeting 2008
Ulf / SM0LCB

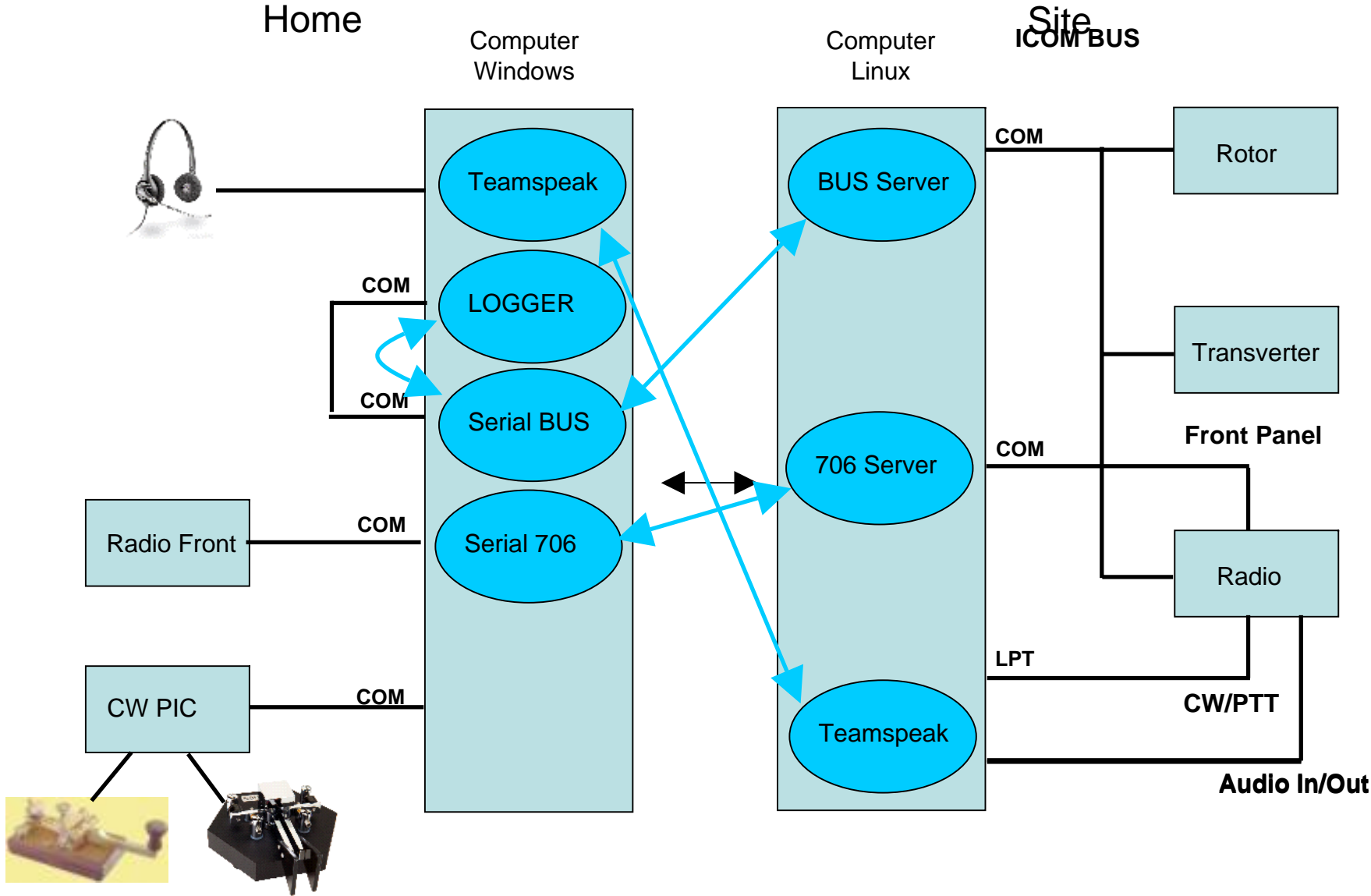
Software





VHF-meeting 2008
Ulf / SM0LCB

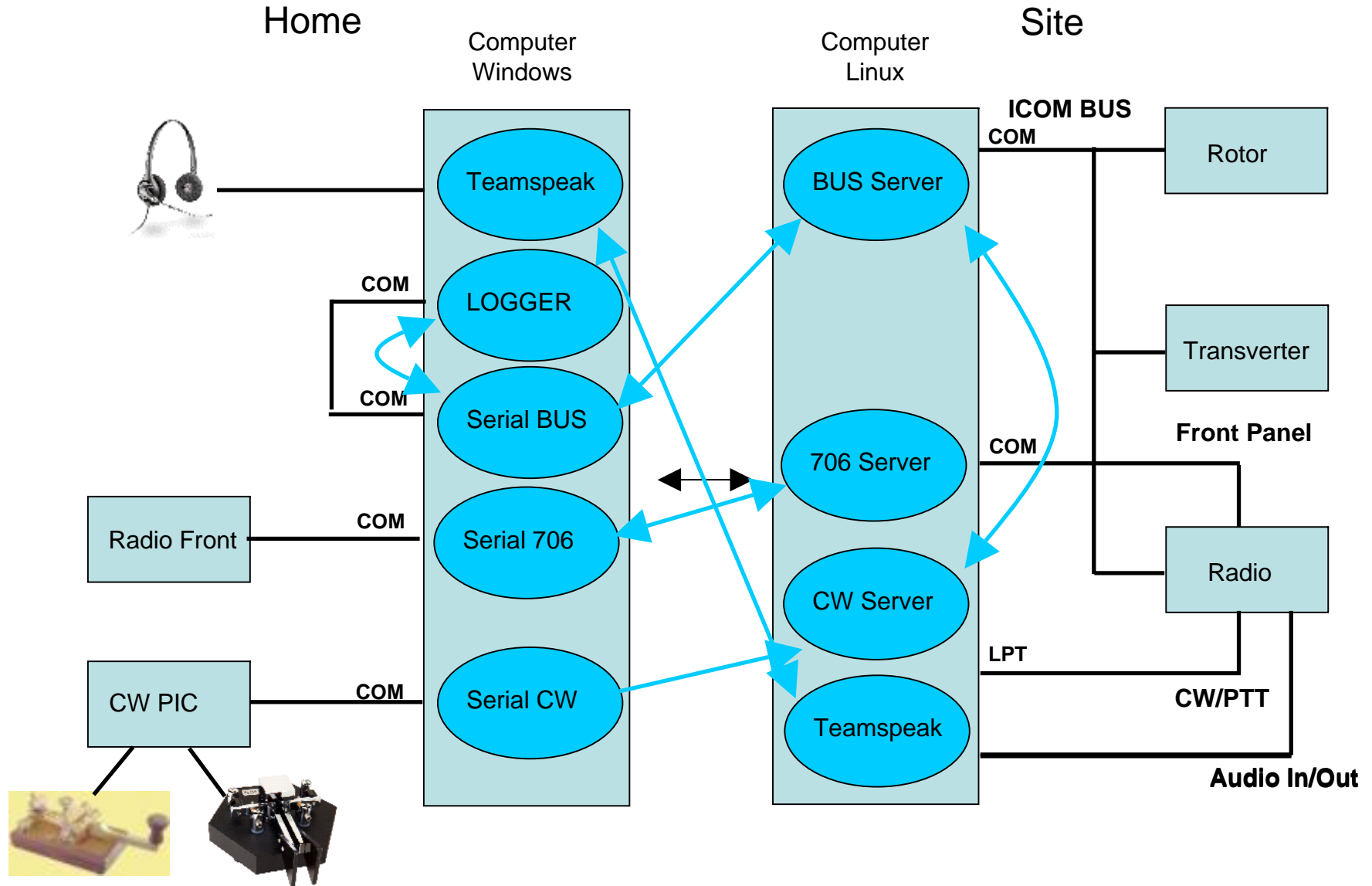
Software





VHF-meeting 2008
Ulf / SM0LCB

Software



CW operation

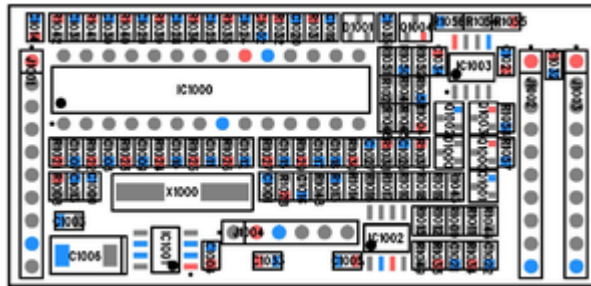
See separate power point...



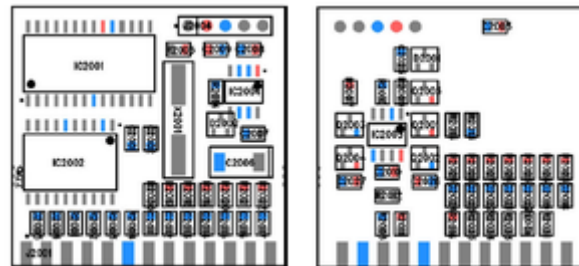
VHF-meeting 2008
Uif / SM0LCB

PIC board

General PIC board (PIC16F876A)



Small PIC board (PIC16F876A)



Remote Station SM7LCB

END

DEMO....



For more information see

<http://sm0lcb.shacknet.nu>

VHF-meeting 2008
Ulf / SM0LCB