

Antenna site

Antenna

"Patriot" 12m
Surface RMS: 0.38 mm
Slew rates:
Az: 5 deg/s
El: 1.25 deg/s

Feed & LNAs

Room-temperature system
"Patriot" S/X coaxial feed
Miteq LNAs

Band	Freq range (GHz)	Aperture Efficiency with (without) Ohmic losses	Tsys (K)	SEFD (Jy)
S	2.1 - 2.4	60% (67%)	85	3500
X	8.1 - 9.1	64% (70%)	90	3400

Receiver & Calibration

UTAS (Peter McCulloch)
Room temperature
Dual polarisation
Cross-over switch (swap pols)

LOs:
S: 1900 MHz
X: 7600 MHz

"Old" Phase cal units
Noise diodes
Large & small amplitude

Cabling

All coax

Elevated Work Platform / Scaffold

Trenching, conduit
Coax for reference signals, IF, optical fiber for ethernet

Equipment/Control Building

IF Unit

- Cable compensators
- Amplifiers
- Variable attenuators
- Broad-band power sensor (Agilent U2001A 10 MHz - 6 GHz USB)
- Spectrum analyser (on network)

Sampler/digitiser

HAT-Lab DBBC

Recorder & Media

- Mark5B+
- Media depends on expected IVS participation

Computing

- Use of RAID, mirrored disks for redundancy.
- PCFS PC (Linux) for control/monitoring
- Timing PC (Windows) for GPS clock, Maser, antenna control GUI (from manufacturer, maintenance mode), anemometer display

H Maser

Vremya-CH VCH-1005A
In climate-controlled room

Other

- Network switches etc (3G backup)
- UPS
- Backup generator
- Tools, spare connectors, cables etc
- Webcameras for remote monitoring of antenna
- All-sky camera useful for monitoring sky conditions
- Network-enabled KVM for low-level console access
- Internet Power Switches for cycling power
- IR light for illuminating antenna at night

Software

- PCFS. Most interfaces are standard.
- antcn (UTAS and Himwich versions avail)
- Receiver and IF unit have PIC units on serial ports for control and monitoring.
- OpenMONICA used for logging and monitoring parameters
- eRemoteControl for remote control/monitoring

GPS

CNS Clock II for:
GPS PPS
NTP server

Counters

Delays through the system:
2 x Agilent 53131A counters with GPIB interface for control/monitoring from PCFS
1. Maser - GPS
2. Formatter - GPS

Weather

MET4 for Temp, Humid, Pres
Anemometer for wind (automatic wind stow trigger)