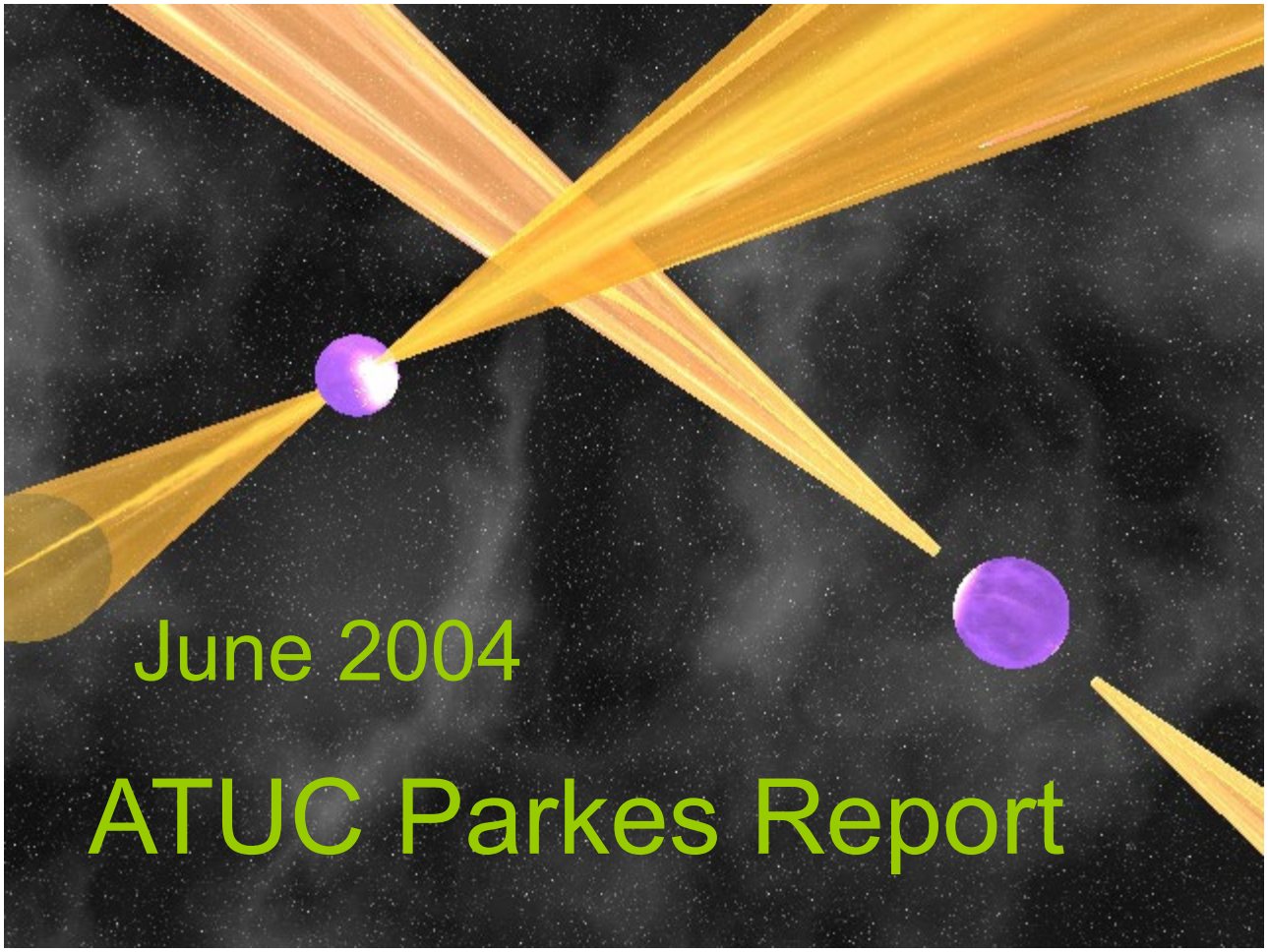
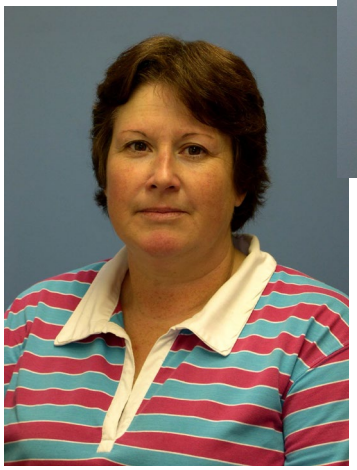

June 2004
ATUC Parkes Report

Staff changes

- Departed:
  - David Catlin (receiver technician)
- New staff
  - Dion Lewis : Support scientist
  - Jess Lees: Admin trainee
  - Anne Evans: cleaning



Parkes Observing statistics

(2004; cf 2003, 2002)

- Scheduled observing
  75% (64.5%, 82%)
- NASA tracking : 3.6% (9.4%)
- Unallocated : 8.9% (6.7%)
- Maintenance/tests/shutdown
  11.5% (26.1% 18.0%)

Parkes downtime statistics
(YTD 2004, full year 2003)

- 1.2% (1.3% 1.4%) equipment faults
- 2.3% (3.8% 3.8%) weather
- > 1% RFI

Parkes observer feedback

2003 (2002, 2001)

- 37 (26,34) responses (WWW form)
- Extreme scores
  - 9.2 (9.2, 9.1) Tech support (in/out normal hours)
  - 9.0 (9.1, 9.2) Admin support
  - 8.9 (8.5, 8.8) Overall

    ……
  - 7.6 (7.4, 7.6) Documentation
  - 7.2 (6.1, 6.7) RFI (freedom from)
  - 8.3 (7.4, 7.7) Offline software (spectral-line reduction)
  - 6.9 (8.3, 7.7) Library

MARS tracking

- New receiver (~GHz bandwidth)
- Surface upgrade to 54.5m

- Tracking Operations, Sep03 – Feb04
  - $AU1.15M gross income
  - 2.8% downtime (mostly wind)
  - “in-house” support model

Receivers

- H-OH upgrade, December 2003
  New LNAs give ~1dB improvement at 1.4GHz
- 21cm Multibeam returns Sep 2004
- 7-beam 6GHz MB, May 2005?
- K-band upgrade/new receiver 2005-2006?
- E-VLBI: ~1GHz BW compatibility?

See separate receiver document

Other developments

- 4,8MHz filters for full 13 beams of MB
  - Dec 2004 target
- New pulsar timing correlator
- AIPS++ spectral-line package
- E-VLBI (1Gb/s Observatory data links this year!)

Data archiving

- Observations database
  - Pulsar & spectral line
  - Single pointings, sky-subtraction, MB, scans, rasters, MX mode …..

target completion: November 2004

- Recovery of archived pulsar data
- Archival of new data (incl. MB filterbank)
  - Implementation paper, July 2004 (JER)

Multibeam refurbishment

Primary goals: - replace faulty LNAs
- 7 year service

Phase 1: by Sep 2004

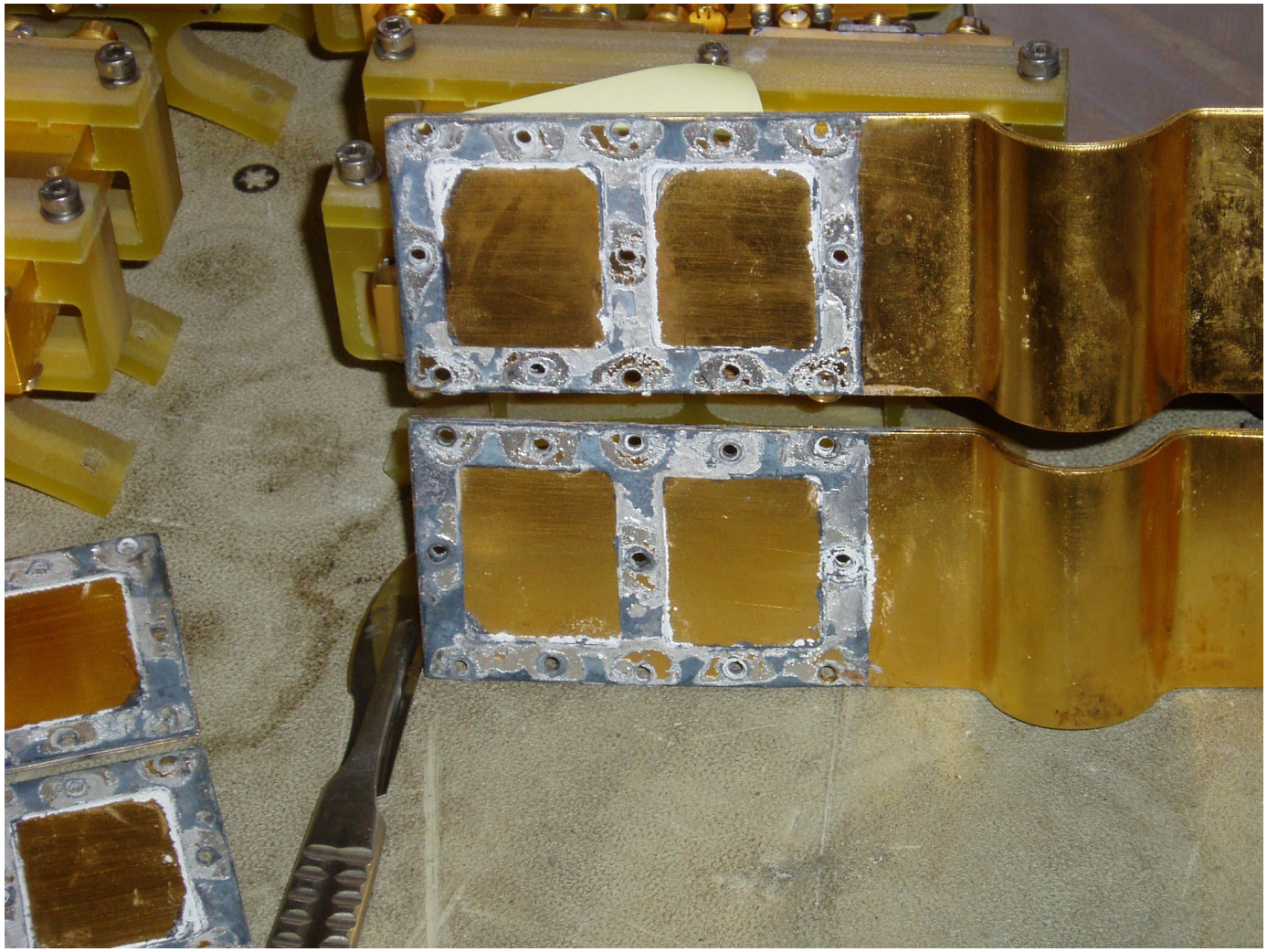
- 10 new LNAs (16 recycled)
- Replace LNA mounts (corroded)
- Clean air gaps & other parts (corrosion)
- Repair heat shield

Phase 2: late 2005

- Replace remaining 16 LNAs
- Upgrade cryodynes (1020s -> 1050s)
- Retrofit other improvements (i.e. the rest)

Multibeam refurbishment II

Multibeam: corrosion



RFI activities

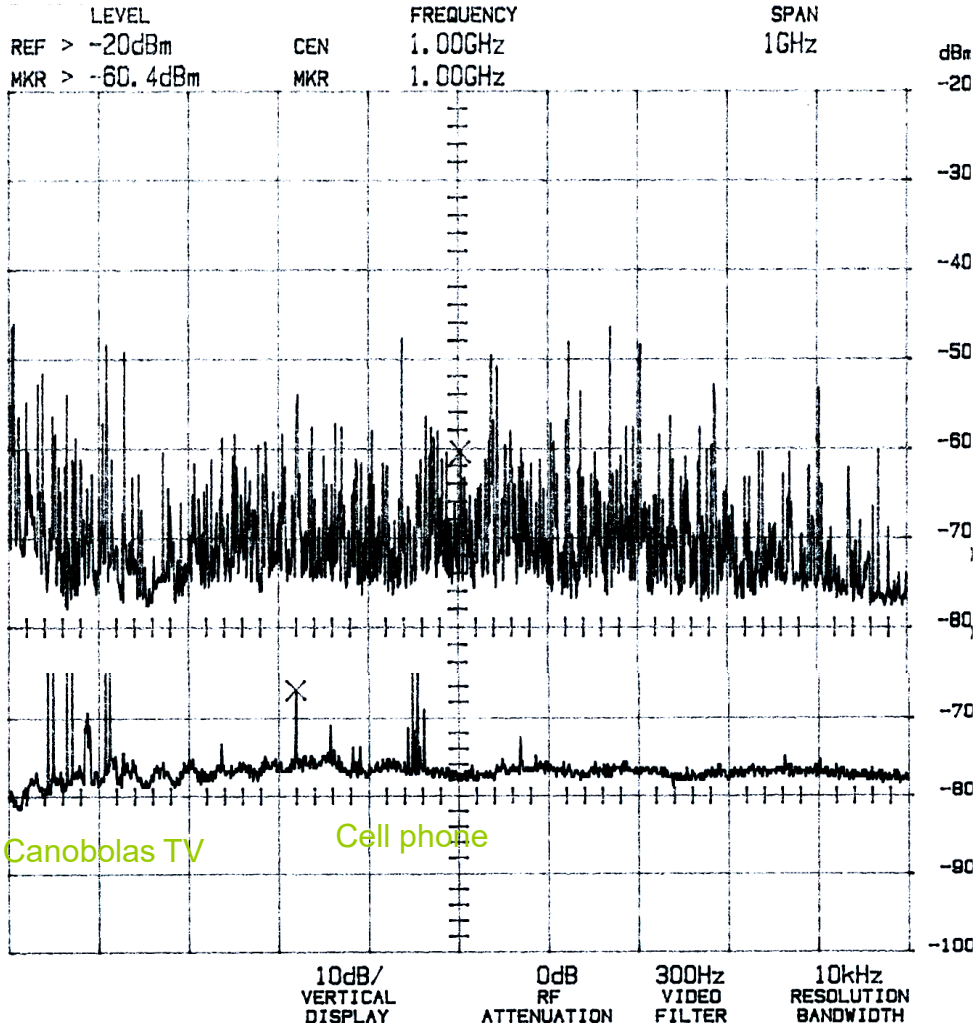
- WWW pages www.parkes.atnf.csiro.au/people/msmith/rfi
- Local characterisation, mitigation
- Active cancellation (50cm TVI)
  - Kesteven & Hobbs
  - Briggs & Little

Local RFI measurements

PC Shielding

Uncaged
Dell P3

Box caged;
CRT, KB, Mouse uncaged



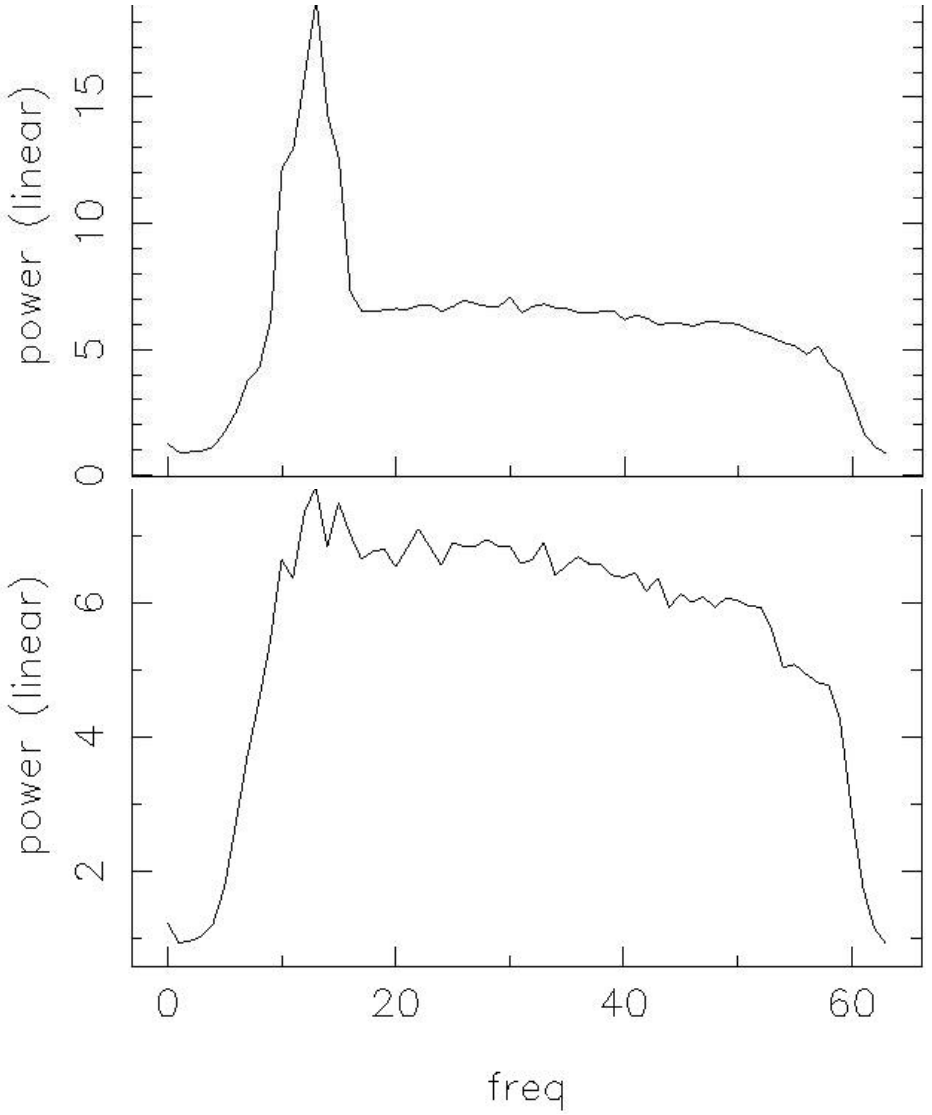
Parkes
PC cage
Mk I

50cm RFI monitoring

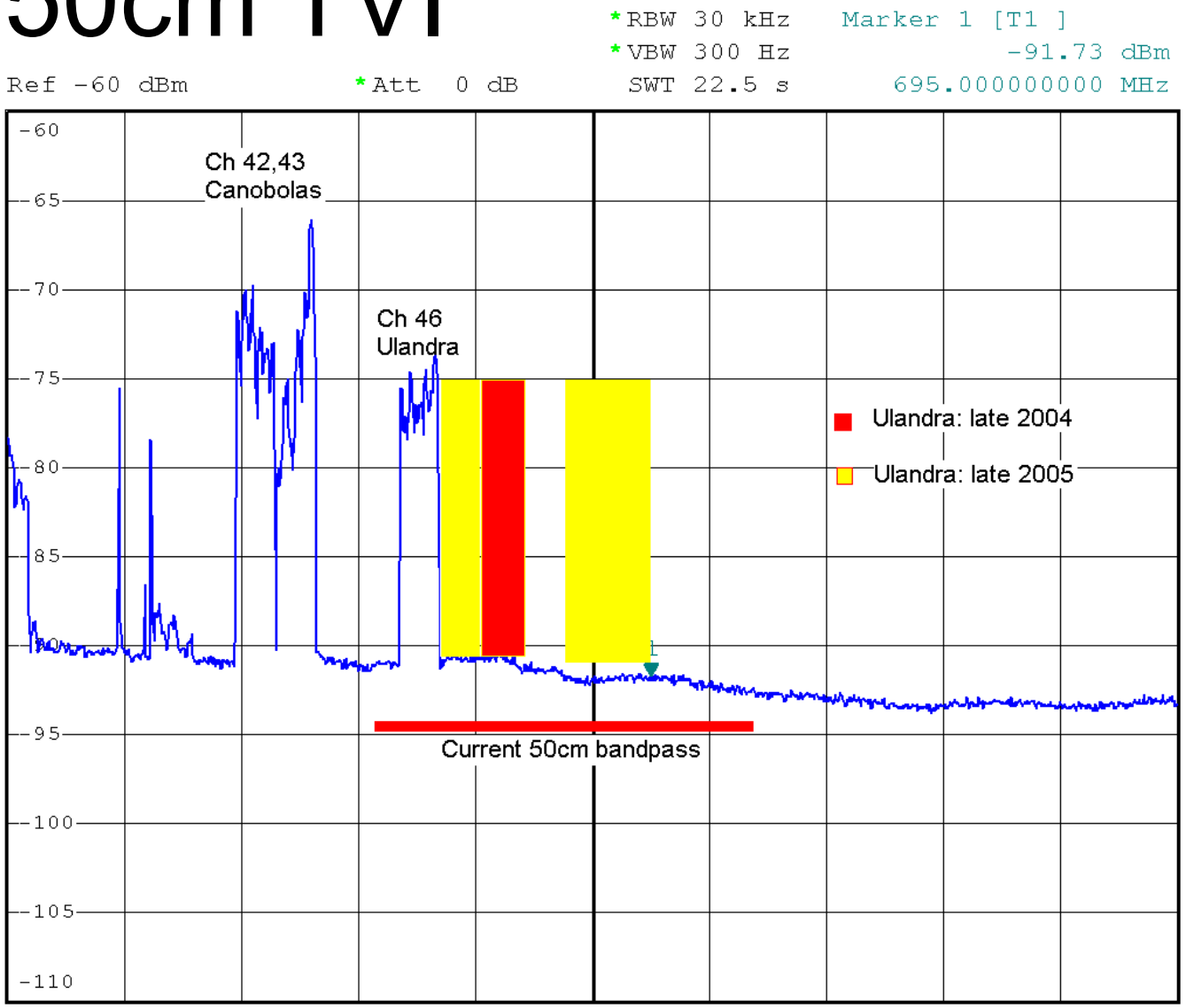
RFI mitigation

Raw 50cm spectrum
(Mt Ulandra Ch46)

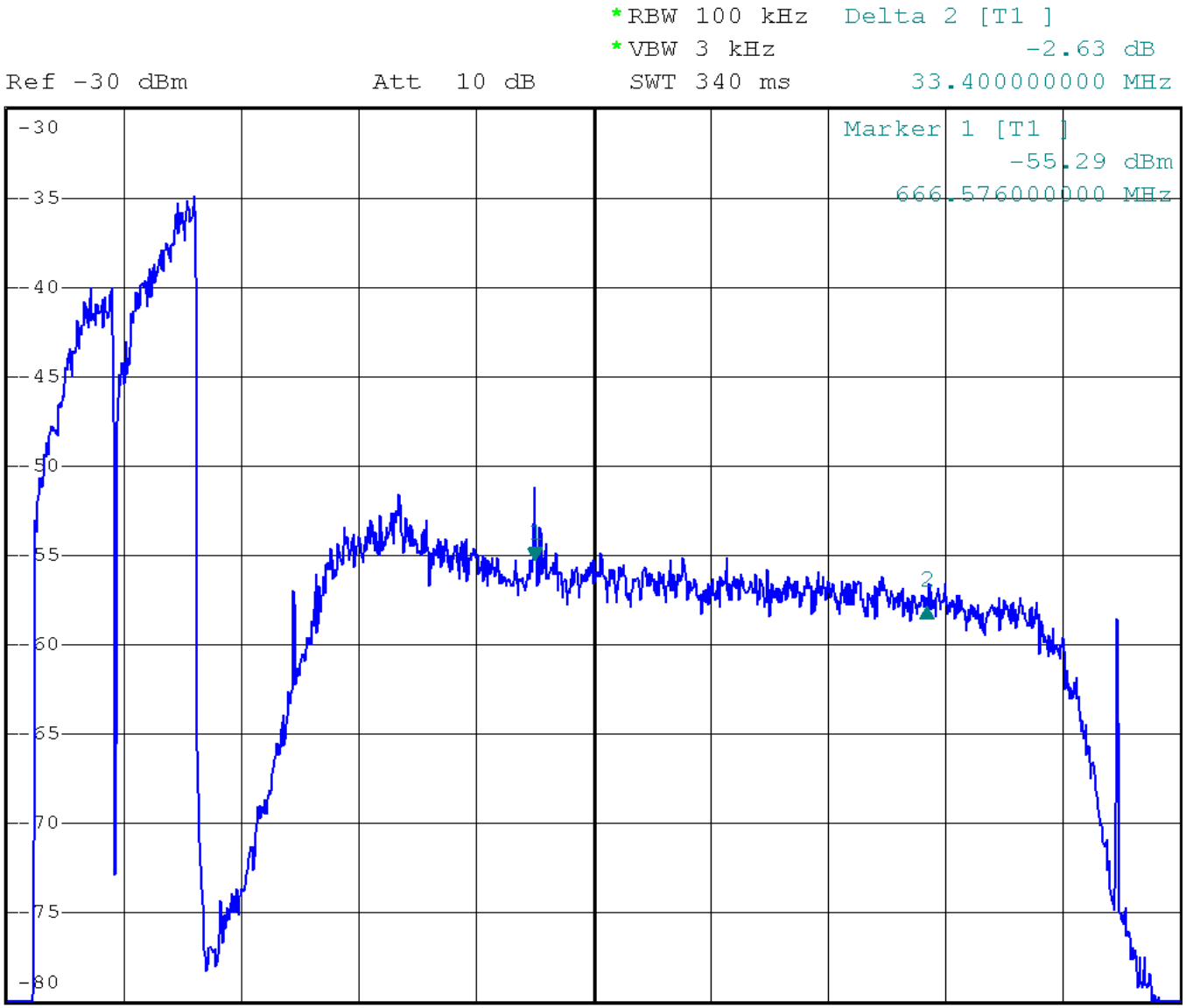
Cleaned spectrum
(Kesteven/Hobbs)



50cm TVI


*RBW 30 kHz
*VBW 300 Hz
SWT 22.5 s
Marker 1 [T1]
-91.73 dBm
695.000000000 MHz
Ref -60 dBm
*Att 0 dB
-60
-65
-70
-75
-80
-85
-90
-95
-100
-105
-110
Ch 42,43
Canobolas
Ch 46
Ulandra
Ulandra: late 2004
Ulandra: late 2005
Current 50cm bandpass

Robust receivers



Library / Users area

Quarters

- New roller blinds & curtains
- New beds
- New ladies' bathroom
- New laundry

- New kitchen (almost) under construction
- Works on site access road to start soon