

iSat Tracking Feed Product Launch

The IET Milsatcoms Seminar
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iSat Background

- World class innovator in RF terminals, feeds and tracking.
- ISO 9000 and AEO
- Broadcast, Government and Oil & Gas markets
- Exports to Gulf, Africa and Europe
- 6 years. Offices and I&T facilities at Cody Technology Park, Farnborough

Partners

- HSBC
- ESA (European Space Agency) supporting innovation.
- UK Research and Development
- Highly experienced sector specialist board of directors

iSat's X-band terminals

- iSat provide COTS terminals adjusted for X-band
 - C-COM vehicle and flyaway systems
 - Fixed hub and spoke networks
 - Deployable equipment cabins and earth station infrastructure

iSat's Ka-band terminals

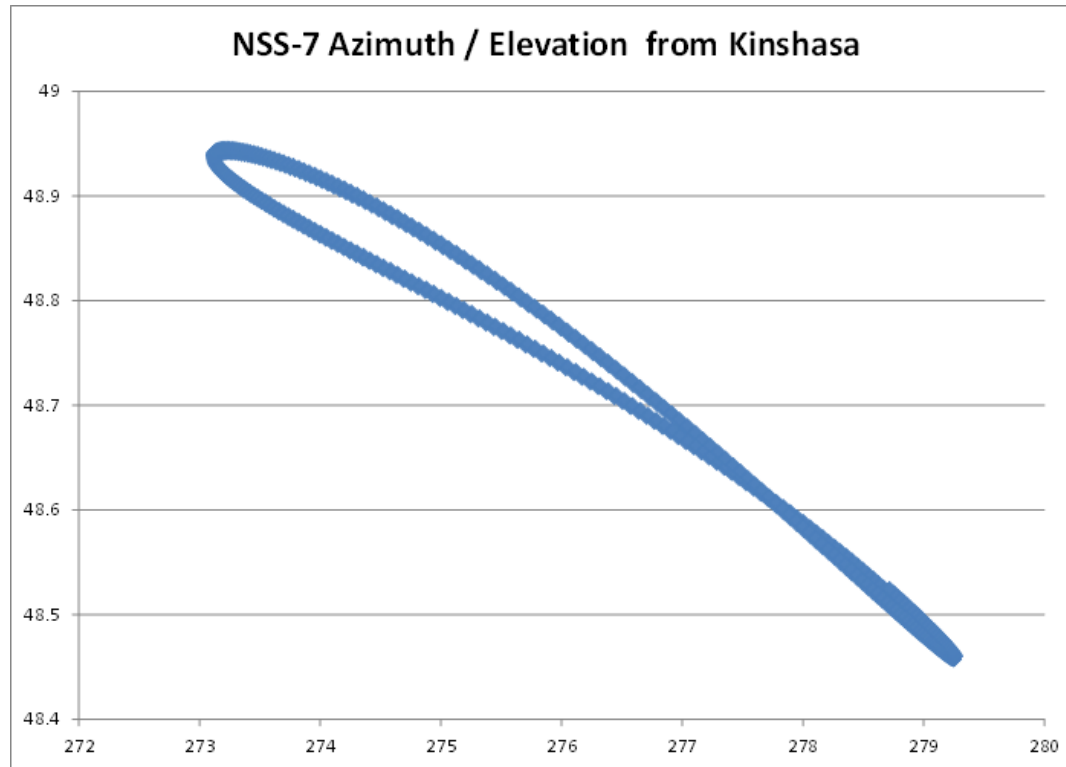
- iSat provide innovative terminals for:-
 - Oil & Gas (Maersk).
 - Broadcast (Al Jazeera Ka-band 110MHz backhaul).
 - DBS (Es'hailSat's M4 band) Mini Hub product for government use.



Innovative Incline Tracking Feed

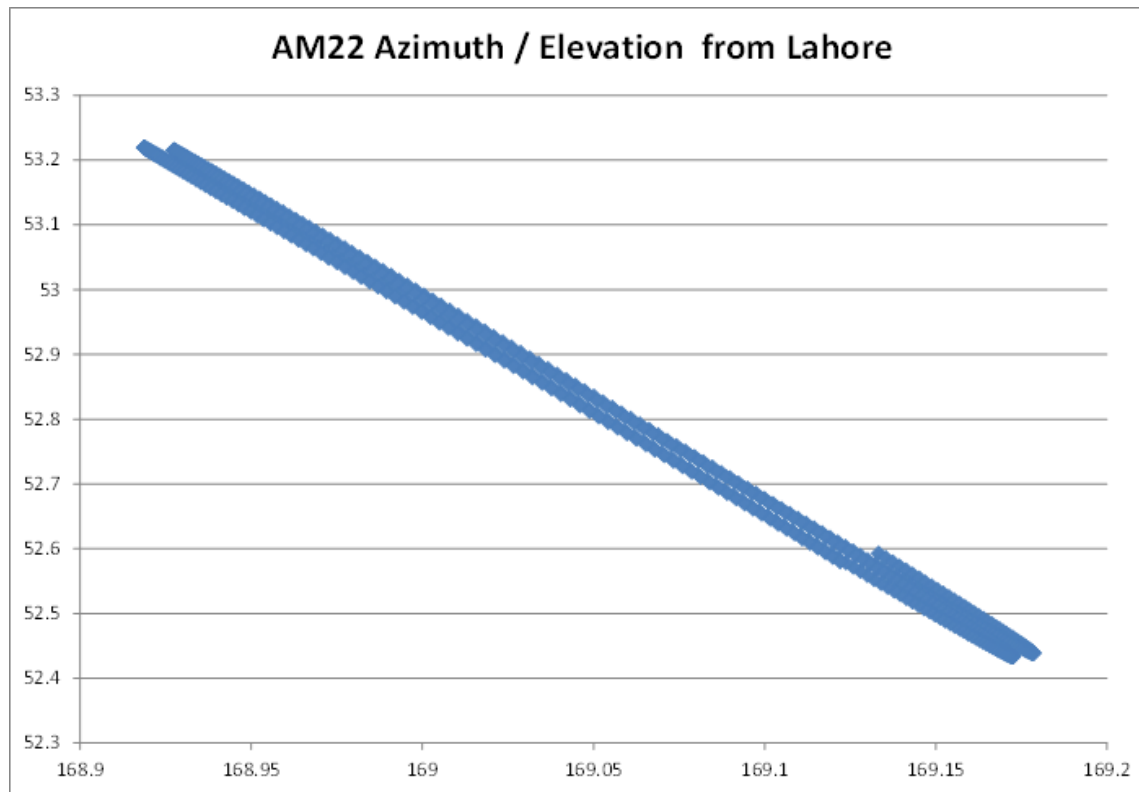
Tracking requirement

NSS7 C-band hemisphere connects UK with all of Africa



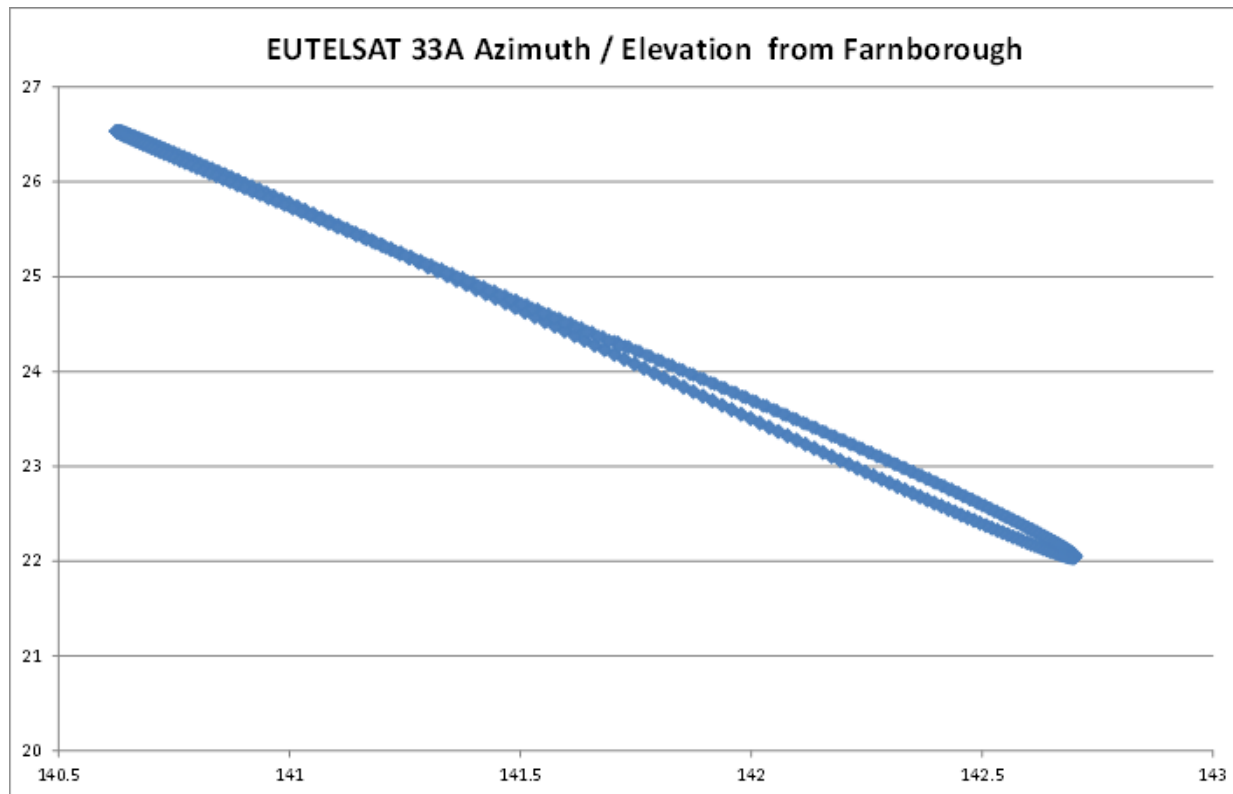
Tracking requirement

AM22 covers from Pakistan to Central Europe in Ku band.



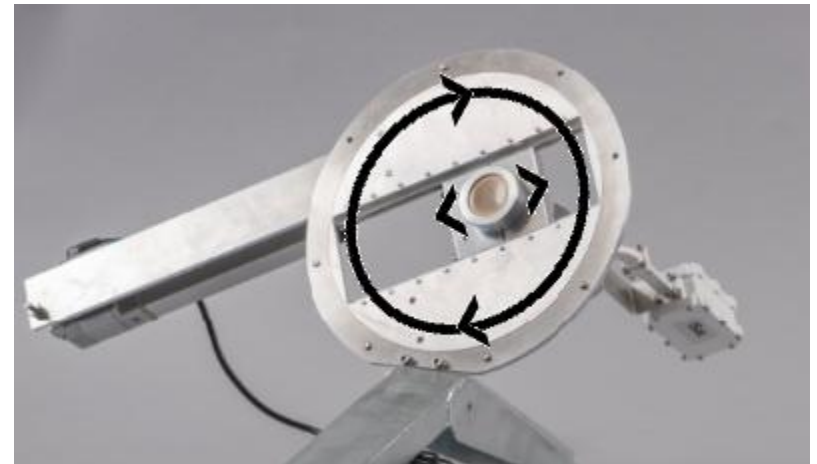
Tracking requirement

Eutelsat 31A connects Europe to North Africa and Gulf.



Tracking Feed

- Rotate the track within its holder to line up with the feed movement with the satellite.
- Retrofit to existing antenna.
- Retain wind loading.

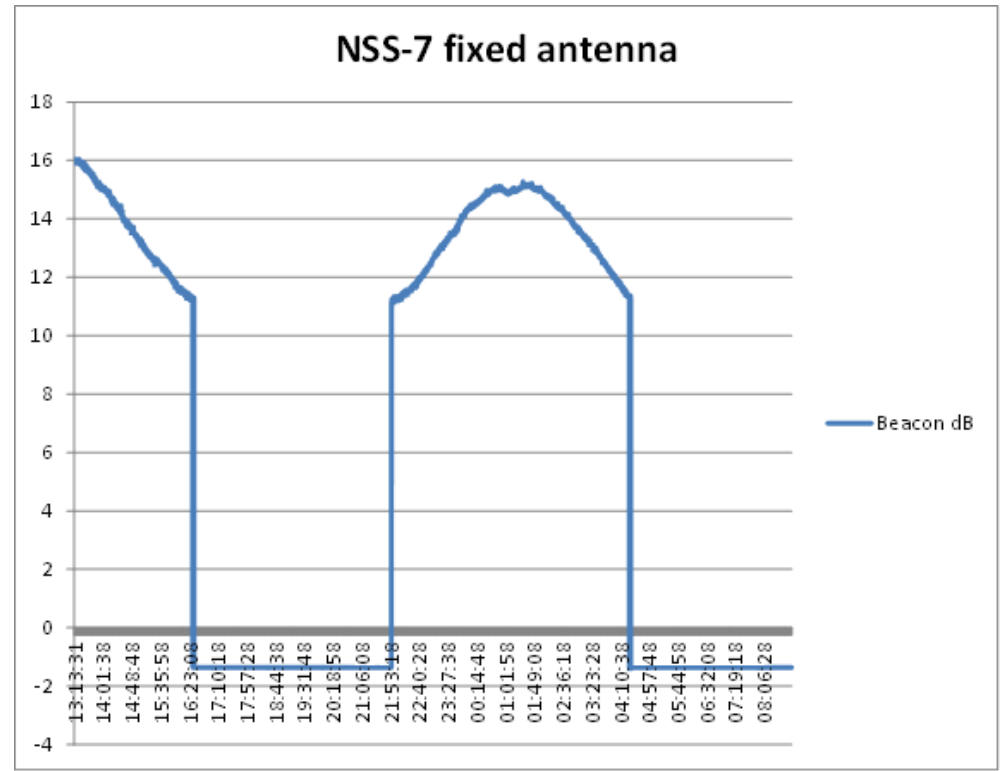
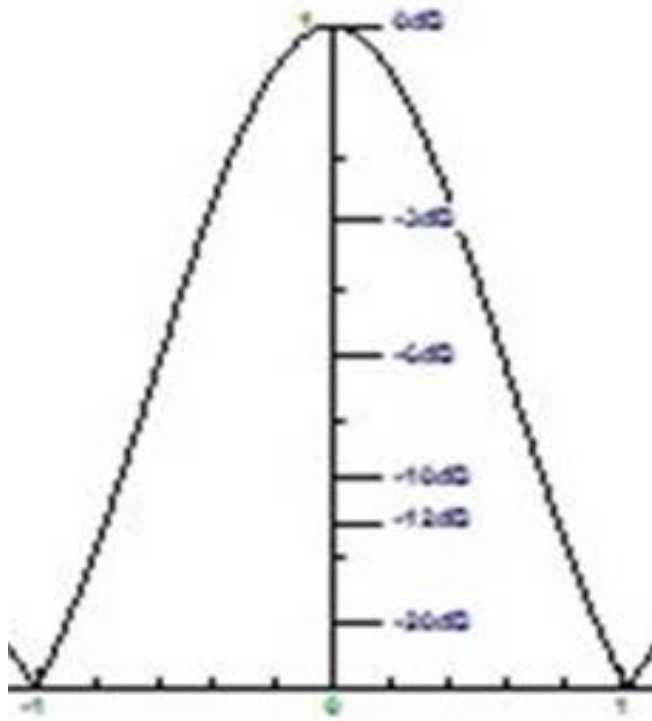


Add the controller and the GUI



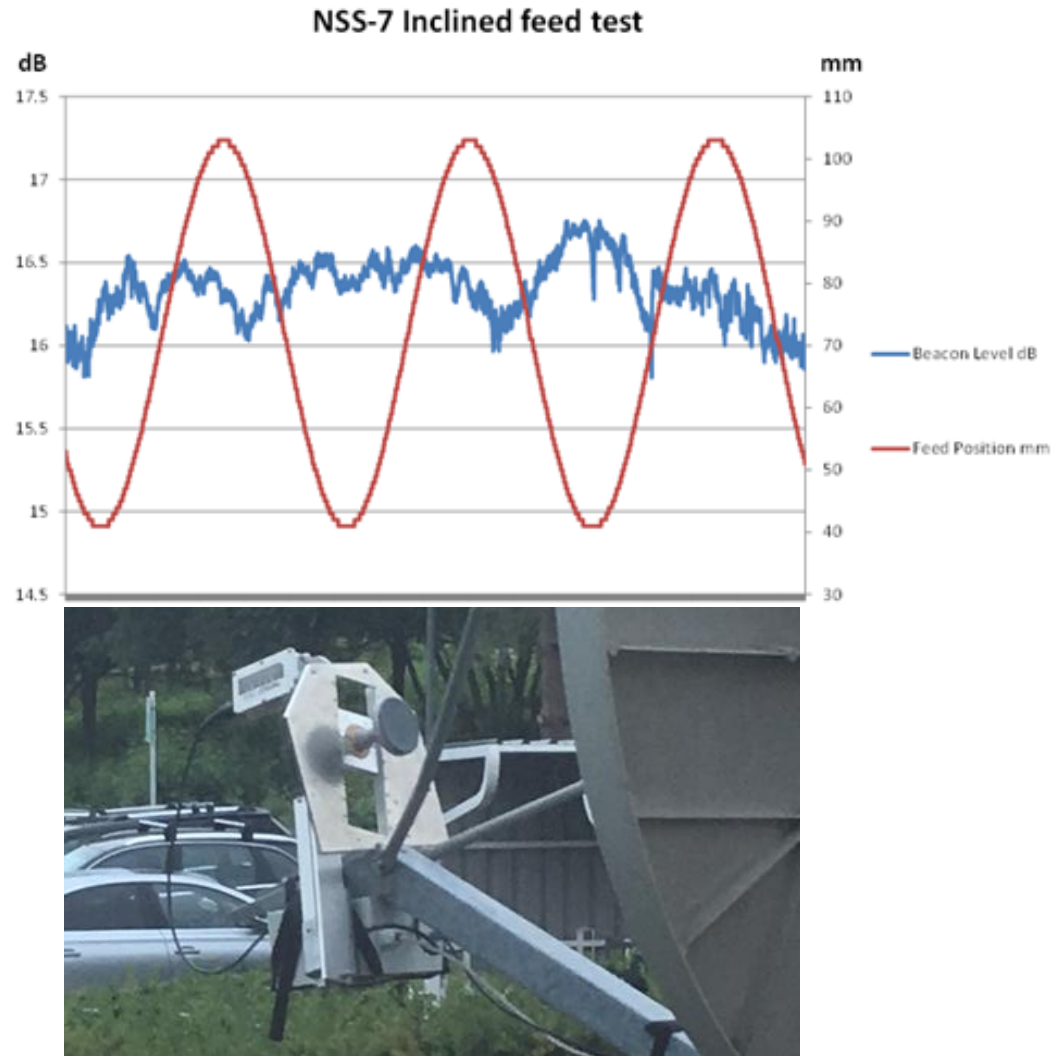
Results of testing without tracking on 1.8mtr NSS 7 Ku band

- Signal loss at 1 degree is more than 20dB
- When monitoring the beacon, the signal is lost.



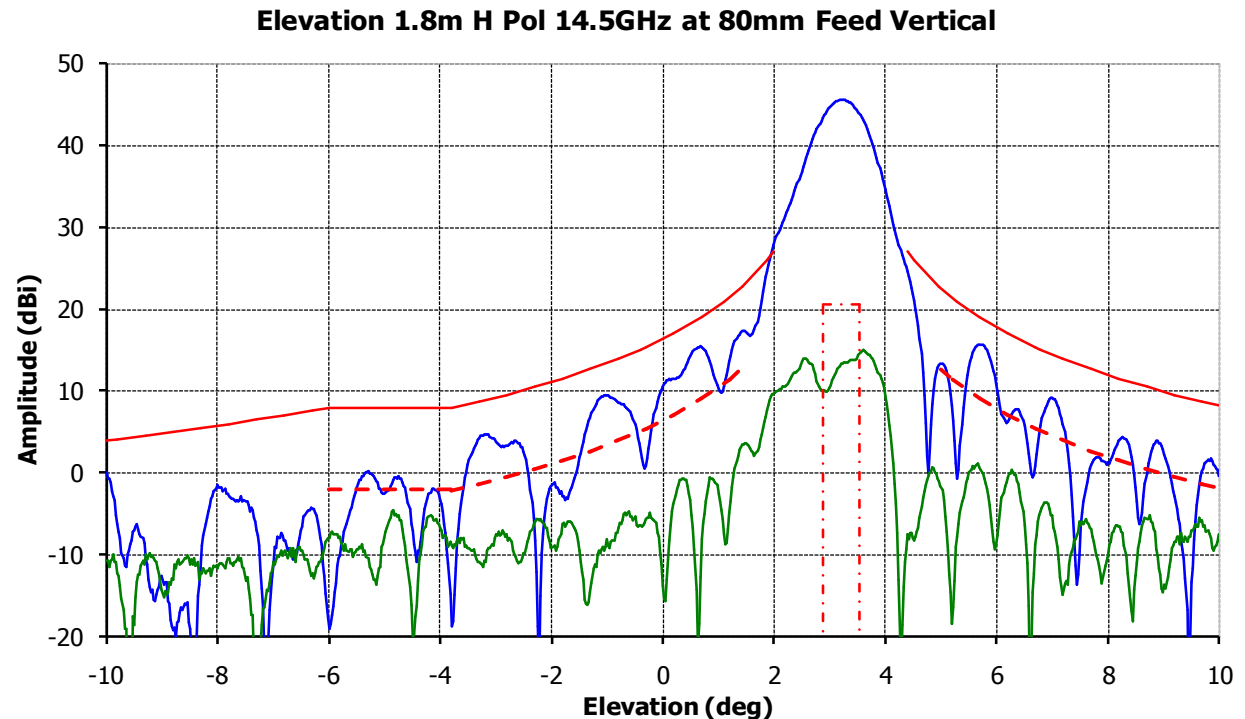
Results of tests with feed tracking

- With iSat feed tracking enabled, the signal strength is stable.
- The prototype has been tracking non-stop for nearly 1 year.



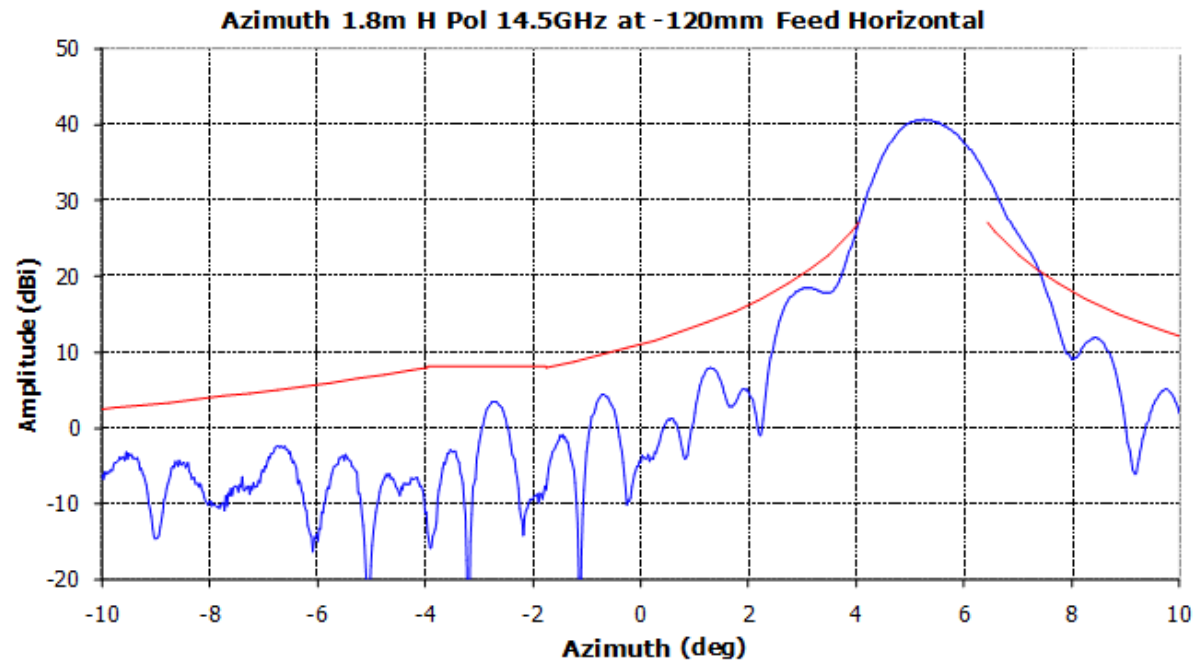
Actual 1.8mtr Ku band range test

- At 80mm (over 3 degrees) moving the feed vertically up, elevation within spec



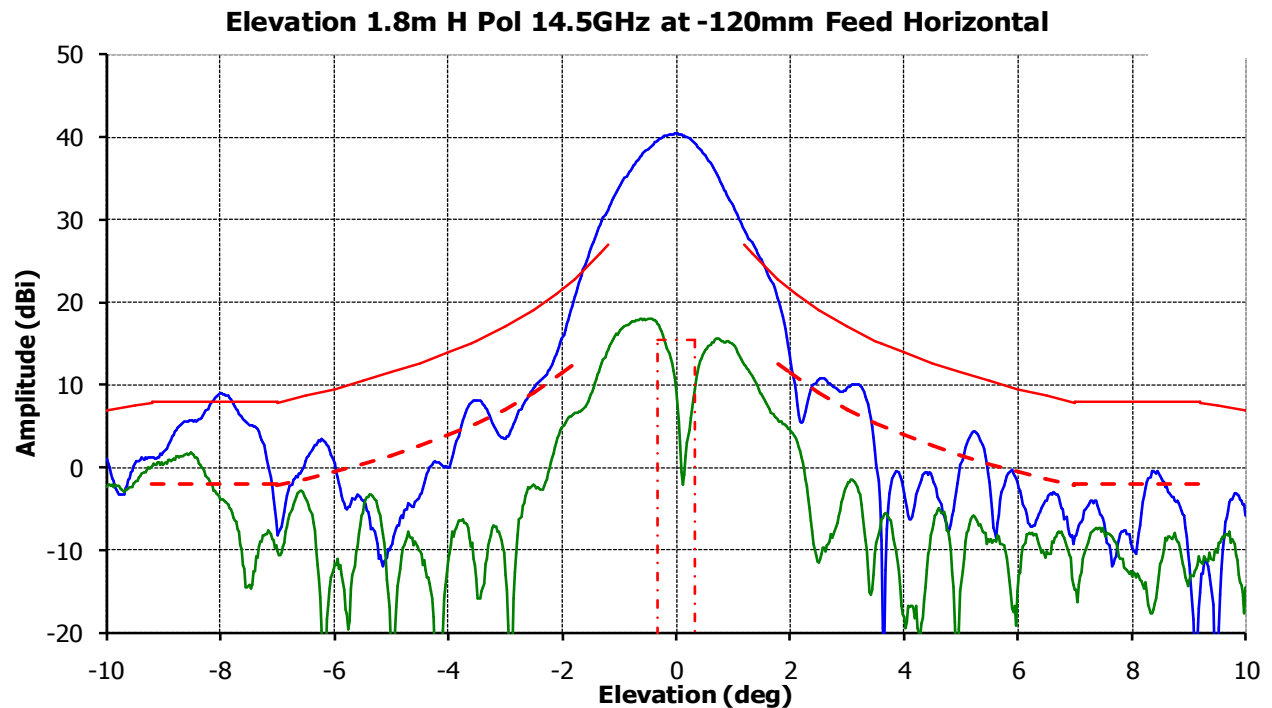
Actual 1.8mtr Ku band range test

- At 120mm moving the feed horizontally (over 5 degrees) Azimuth within spec (maximum 6dB allowed)



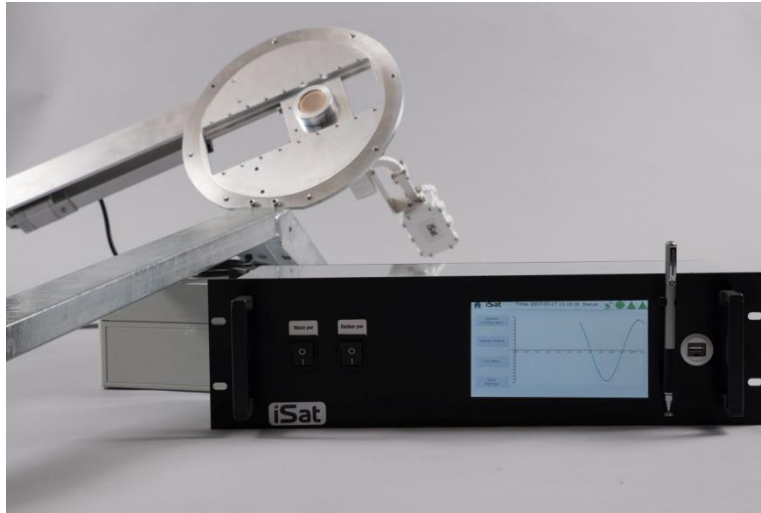
Actual 1.8mtr Ku band range test

- At 120mm, the range was reconfigured to check cross pol- compliance.



Innovative Touchscreen GUI

- Configuration
- Status
- Licence
- Alarms



Live demo at the show

Applications

- Satellite life extension:- alternative to re-fuel or replacement.
- Cost reduction of satellite bandwidth.
- Off-set single axis reflector from 1.2 to 3.8mtr

Satellite Life Extension worked example

- Re-fuel costs \$60M
- Satellite replacement \$200M
- Verus \$10M for feed tracking retrofit 1000 sites
 - \$4M hardware costs
 - Freight and bolting on allow \$4m
 - 3 years program subscription cost \$1.8M
 - Budget \$10M
- 20% greater revenue over initial 15 investment

Cost reduction worked example

- 2MHz bandwidth used on each site
- Cost of certain GEO = 2000/mth/MHz
- Cost of inclined = 1000/mth/MHz
- Saving per month = 2000/mth
- Time for payback investment = 2 mths
- Benefit on one year contract, 50 sites = \$1M

Conclusions

- Higher returns on investment are required in the satellite industry- this is a means to achieve that result.
- Contact iSat today and return to profitable thinking.