System Testing

Overview

All complex systems need testing, and in particular Satellite and RF systems what have such a wide range of sub-system from software through power, fire and other ancillary systems to the more complex Antenna and RF component.

Over the many years of system integration we have developed the skills and tools to enable us to test systems comprehensively, efficiently and accurately, with root cause analysis and trouble shooting being key.

We can offer our testing capabilities either as part of a delivered system (FAT and SAT) or as a stand alone service.

We have tested systems for Inmarsat, Intelsat, SES Astra, Eutelsat and may others.

Test Equipment

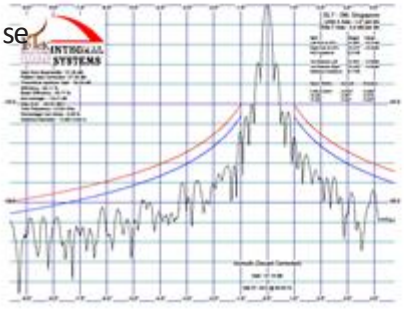
We have a wide range of test equipment, with the ability to test up to 44GHz, including:

- Vector Network Analysers
- Signal Analysers
- Hand held and work bench Scalar analysers
- Hand held and Workbench Spectrum analysers
- Frequency counters
- RFI analysis software
- Signal generators
- RF power meters
- Radiation meters
- Fibre Power meters and Inspection probes
- Theodolite

Testing

Our Testing capabilities range from software through to the RF Systems, including:

- Antenna Radition patterns, Gain, AR, X-Pol
- G/T and System Noise
- Intermodulation
- Spectral Regrowth
- BER
- RADHAZ
- Functional and commissioning
- Customer requested…….



All testing is fully documented and detailed reports generated.

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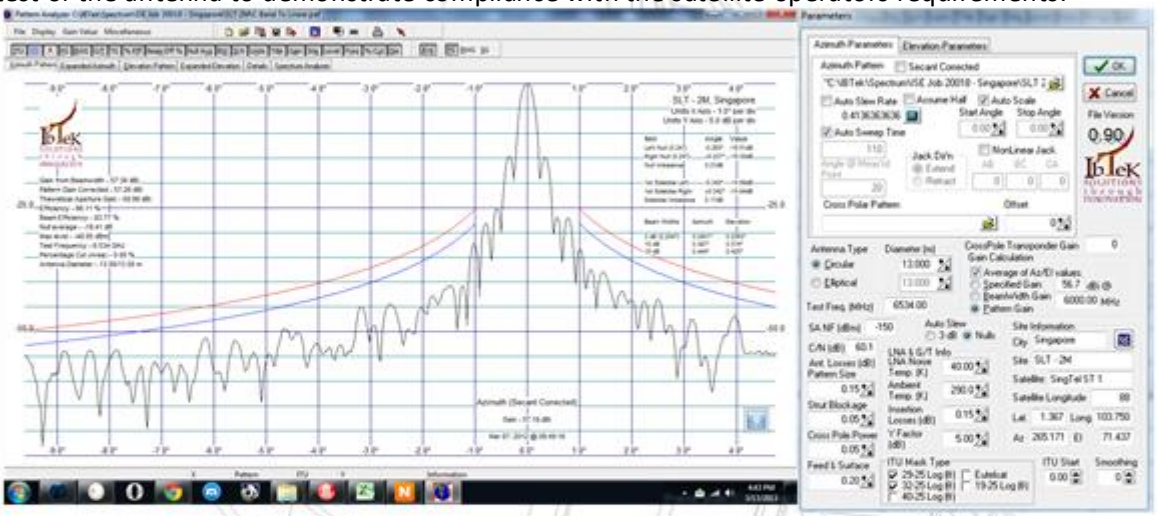
System Testing

KRATOS®

Antenna Testing

For installations that involve a new or refurbished satellite antenna we can offer a Far Field Radiation test of the antenna to demonstrate compliance with the satellite operators requirements.



- The test software we use is based on Intelsat 220g 210e
- The gain of the antenna can be calculated using: Pattern Integration, 3dB/ 10dB beamwidth and also using an estimate of the antenna slew speed from the null beadwidths and assuming uniform illumination of the aperture.
- Antenna efficiency is calculated based on the theoretical antenna again
- Antenna slew rate non-linearity correction are made within the software, and for antennas with jack screws, the inherent non-linearity due to the change from linear motion to circular motion is corrected
- The ITU curves as determined by user are automatically applied and the peak excursions (if any) computed. The Carrier to Noise of the data is taken into account for determining the length of the curve. When the signal level is very close to the analyzer or satellite transponder noise floor, the C+N/N correction is optionally applied to the data for all computations
- If the information is available, the G/T at the test frequency is also computed using the Y factor (Hot load / Cold Sky) method
- Secant correction for El over Az mounts are applied to the azimuth axis pattern data
- Expanded Az and El patterns are made available from either multiple plots (i.e. a long pattern and a short pattern) or expanded model plots (extrapolated from the long pattern data)
- All the input data and the computed data are presented in a easy to read format
- Data is usually captured direct from the Spectrum Analyzer. Currently the following spectrum analyzers are supported: All Agilent models, R&S and Anritsu. If other analyzers become available during testing, these can also be incorporated in the program. Alternately, the program will also take as input CSV files generated by analyzers

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