

SAT CORPORATION

SAT-DSP™

Upgrading your Monics® system to SAT-DSP provides you the latest in Digital Signal Processing and unlocks the full Potential of your Monics System. With 85MHz of instantaneous bandwidth allows you to analyzer a full transponder in one snapshot. With one measurement you can determine the modulation type, symbol rate, measured Eb/No and whether you have an interfering carrier lurking underneath.



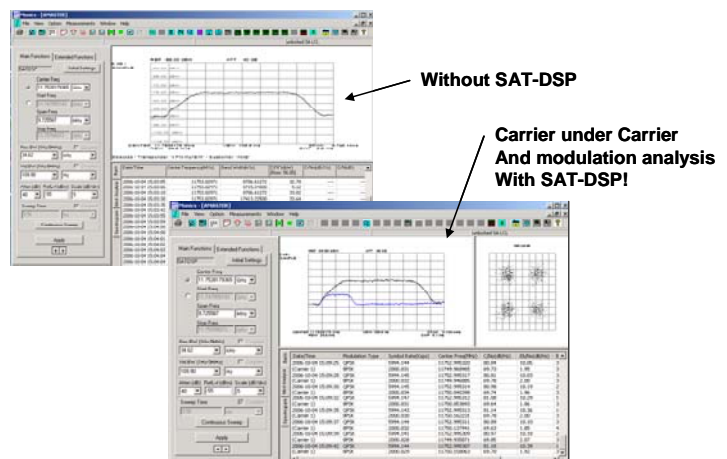
SAT Corporation's SAT-DSP consists of a Digitizer assembly and L-band Tuner and the SAT-DSP Software.

Hardware Features:

- 85MHz instantaneous bandwidth
- L-Band tuner input of 950-2150MHz
- Measures speed up to ten-times faster than a typical Spectrum-Analyzer for typical carriers

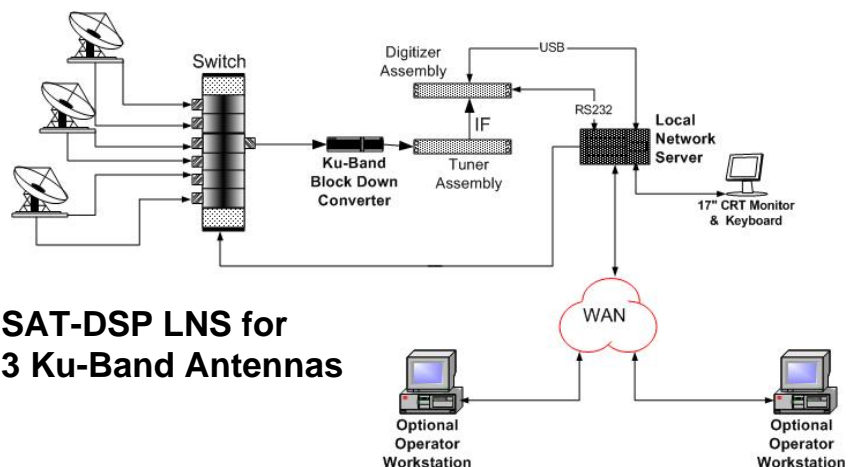
Software Features added to Monics:

- Carrier under Carrier Analysis for interference detection
- Modulation Type Determination
- Symbol Rate Determination
- Eb/No Measurement
- Automatic Interference Detection
- Constellation display diagram is provided to assist the operator's with carrier analysis
- Accurate results for CW, FM/FSK, BPSK, QPSK, OQPSK, 8PSK, 16QAM and TV type carries



Digitizer and Tuner Assemblies

The Digitizer and Tuner Assemblies are each, 1-RU (1.75"), rack-mount configuration. The Tuner Assembly converts the L-Band output from the block down converter to 160 MHz for the Digitizer input. The Tuner Assembly center frequency is controlled by the LNS. A 10 MHz output from the tuner provides a stable reference for the block downconverter; otherwise, any down converter drift would result in an incorrect frequency report.



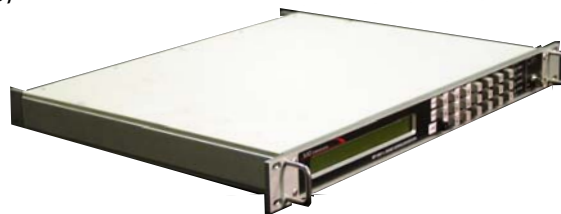
SAT-DSP LNS for 3 Ku-Band Antennas

The Digitizer Assembly converts the tuners 160 MHz IF to a digital stream for processing in the SAT-DSP computer. The digitizer is flexible to accommodate various customer requirements: The Digitizer can be set (by the factory) to either 160 MHz or 70 MHz. For example, some Monics users monitor the output of an existing earth station's tunable down converter that has a 70 MHz output. But, the use of a 70 MHz IF is not common. Most users use the Monics Tuner Assembly with the 160 MHz. In either case, the input to the digitizer must be in the frequency range of 950 to 2,150 MHz. The Digitizer output is a USB interface to the computer. All measurement and display processing occurs in this computer using SAT's digital signal processing algorithms.

DSA Tuner Assembly

Input Frequency:	L-Band (950 – 2,150MHz)
Output Frequency:	160MHz (85MHz IB) or 70 MHz (35MHz IB)
Step Size:	125kHz
Reference Output:	10MHz
Conversion Gain:	50dB
Noise Figure	14 dB
Attenuator Range:	0 to 40 dB
Size:	1 RU (1.75"H x 19"W x 18"D)
Power:	110/220 50/60 Hz
RF Connector	SMA/BNC
Data Interface:	RS-232

The operating temperature range for all assemblies is 0 to 50°C.



Tuner Assembly

DSA Digitizer Assembly

IF Input	160MHz or 70 MHz
Sampling Rate:	213 MS/s
Instantaneous Bandwidth	85 MHz or 35MHz
Symbol Rates	up to 30Mbps
Size:	1 RU (1.75"H x 19"W x 18"D)
Power:	110/220 VAC 50-60 Hz
RF Connector:	SMA
Data Interface:	USB 2.0



Digitizer Assembly

SAT-DSP Software

Algorithms for

- Carrier under Carrier Analysis
- Transponder Surveillance
- Modulation Analysis and Symbol rate
- TDMA Spectrogram
- Constellation Diagrams

SAT Corporation is a worldwide supplier of automatic signal monitoring systems and networks for satellite and terrestrial monitoring applications. The systems are used by:

Satellite Operations Companies
Earth Station Operators
Communications Service Providers
Regulatory and Security Agencies

SAT Corporation is a wholly owned subsidiary of Integral Systems, Inc. (ISI) a leading provider of satellite ground systems

Other SAT Products

MonicsCSM
SAT-DSA
SAT-SA
SigMon 1000, 4000, 4100, 4200 for Terrestrial Monitoring

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