SAT Corporation

Digital Spectrum Analyzer

SAT-DSA

Digital Spectrum Analyzer - SAT-DSA

The SAT Digital Spectrum Analyzer (SAT-DSA) is a modern spectrum analyzer with advanced features; made possible by digitizing large portions of the spectrum. The DSA's unique signal characterization is not possible with a traditional spectrum analyzer. Characterization parameters help to maintain traffic quality and to determine the Identification of interfering carriers. Carriers, up to 85 MHz in bandwidth, can be characterized.

Interference: Detection, display and alarming of interfering carriers makes the DSA ideal for satellite users and operators. When an interfering carrier is present in an unused portion of the transponder, or under the desired carrier, the DSA will produce an alarm and traces and measured data are stored. Then, the operator can view the offending carrier, even those under the desired carrier. Automatic monitoring repeatedly tests carriers designated by a user initiated plan. Alarms alert the operator when abnormal carriers are detected.

Automatic Operations
Basic parameter measurement: RF Power, CF, BW, Eb/No, C/No **Unique Parameter measurements:** Modulation type, symbol rate, BER & Eb/No
Alarming for abnormal carriers: Reference Trace or carrier parameter measurement
Measurement & Trace Storage: Stores carrier measurements and traces for later viewing
Reporting and Displays
Spectrum trace: Displays a single trace or multiple traces simultaneously
Trace & Measurement History: Stores data for replay over any period of time.

SAT-DSA Architecture

The SAT-DSA is available for 70 MHz or L-Band (950 to 2,150 MHz) applications.

►**L-Band Input:** L-Band (950 to 2,150 MHz) is converted to a second IF before digitizing. This configuration provides 85 MHz of instantaneous bandwidth.

►**70 MHz Input:** The input is applied directly to the Digitizer Assembly. This configuration provides 40 MHz of instantaneous bandwidth.

►**Computer:** The DSA software will run on various computers including: laptops, servers and consumer grade computers; Windows 2000 and later operating system.

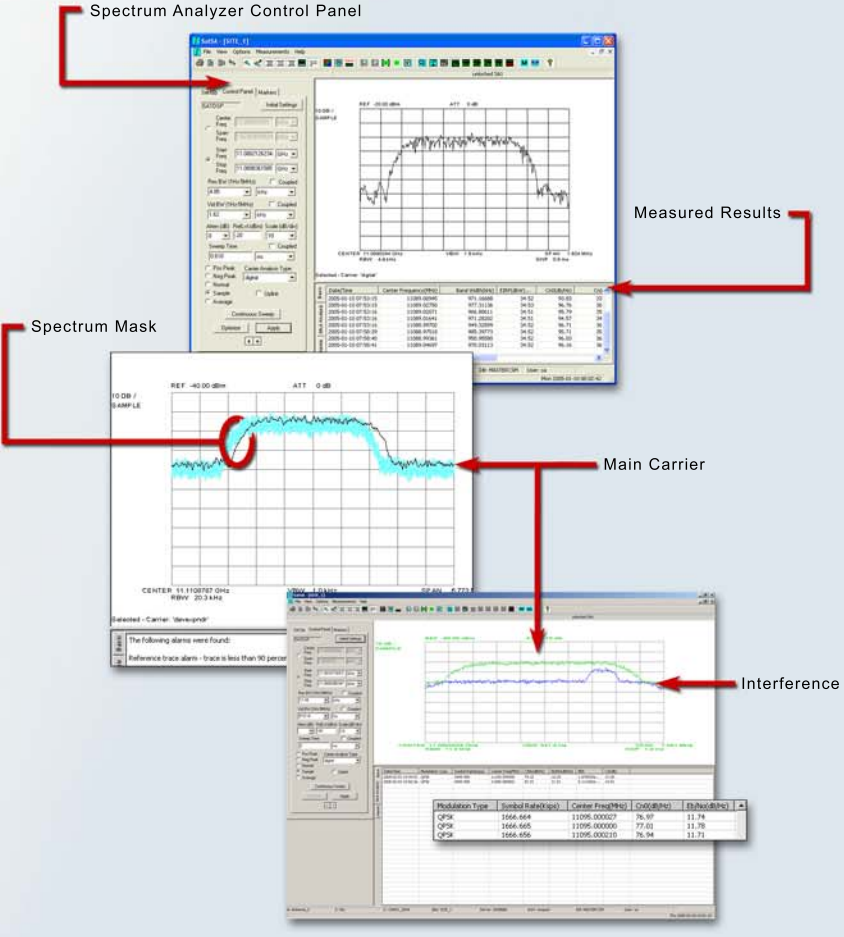
►**Switch Control:** An input switch can be provided to allow multiple paths to be connected to the DSA. The DSA automatically selects the correct path appropriate for the selected carrier.

SAT-DSA - DIGITIZER & L-BAND TUNER

Remote Access

The User Interface software can be loaded on a Windows computer to provide remote or local control. The DSA includes a Laptop Computer that is loaded with DSA and User Interface application software. The User Interface software can run concurrently with other non-DSA software; thus remote control can be accomplished on an existing computer running other applications. The operator can view carrier information, spectrum traces, automatic monitoring, alarms and gather historical information.

DSA Monitoring Windows



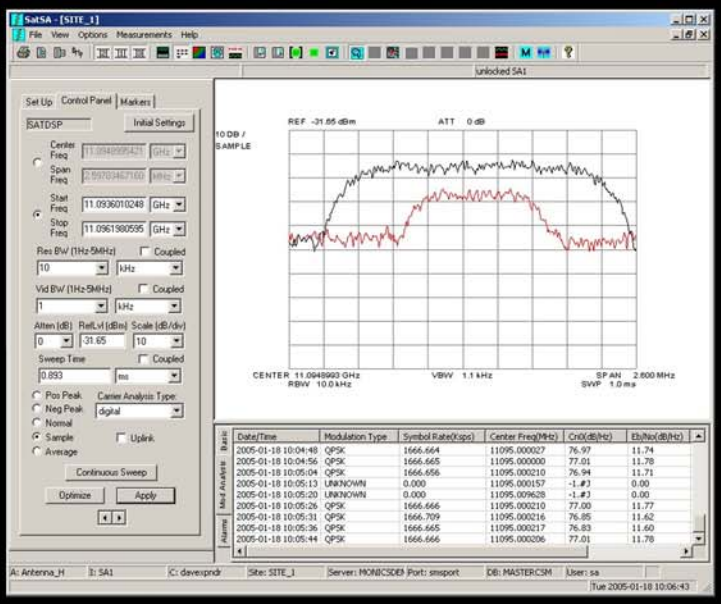
Spectrum Analysis
The DSA has spectrum analyzer style controls and provides automatic carrier measurements: RF Power, Bandwidth, Frequency and C/No are reported. The display profile can be stored under an operator defined name

Reference Trace Window
The measured spectrum trace is compared to the spectral mask (referred to as a Reference Trace). The mask - created by a mouse-click- is stored for recall as needed. The trace color main and mask trace- is defined by the operator.

Automatic Carrier Measurements
RF Power, Bandwidth, Frequency and C/No for analog and digital carriers User configurable to display frequency measurements as L-Band or RF.

Modulation Analysis
Signal Characterization includes: Modulation Type, Symbol Rate, BER and Eb/No for Digital carriers (16QAM, BPSK, QPSK, OQPSK and 8PSK)

DSA Monitoring Windows



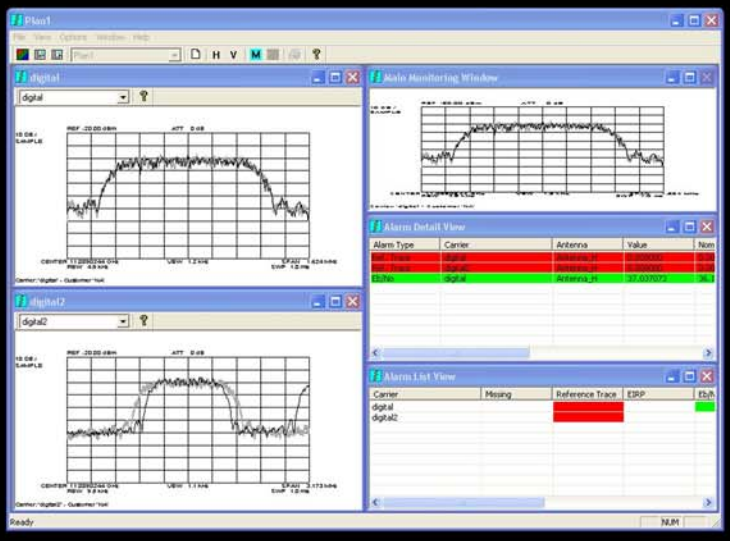
Carrier under Carrier Interference Display

The interfering carrier is shown in red; the desired (traffic) carrier is in black. The interfering carrier is displayed properly, even when its bandwidth is as wide as the traffic (desired) carrier. An interfering carrier-under-carrier condition will cause an Eb/No alarm.

Alarm and Spectrum Display

The operator can organize various windows to simultaneously view spectrum displays, automatic processes and alarms. Two windows display operator selected carriers (carrier lineup for example). The remaining spectrum window displays the automatic monitoring process. Alarms are and alarm conditions are also displayed.

The operator can assign an "Alarm Action" to any carrier. An Operator defined action can be initiated to: Dial a phone number; send an email; send an SNMP trap; or run an executable file.



Alarms occur for abnormal conditions:

- **RF Power**
- **Bandwidth**
- **Frequency**
- **C/No**
- **Eb/No**

For more information contact SAT Corporation. (408) 530 1020 extension 232 or email *dkrudop@sat.com*