DVStation

DVStation: Advanced Monitoring for Digital Networks

DVB-S.2 ASLF

_service integrity_
signal integrity
remote monitoring

Multi-Standard Monitoring For DVB-S.2, DVB-DSNG and DVB-S

The Pixelmetrix DVB-S.2 Advanced Satellite Line Interface (ASLF) is a multi-standard solution for the monitoring of digital satellite transmission. It supports DVB-S.2, DVB-DSNG and DVB-S modulations of MPEG-2 transport stream transmission.

The ASLF is a standard DVStation family module available for DVStation-Remote Controller, DVStation-210 as well as portable DVStation-Pod applications.

An ASI connector provides transport stream output for detailed TS analysis using the Pixelmetrix TSP100 Transport Stream Processor.

In conjunction with the TSP-100, the module pair performs multi-standard signal demodulation and a comprehensive suite of continuous RF, modulation, transport stream and content validation tests.
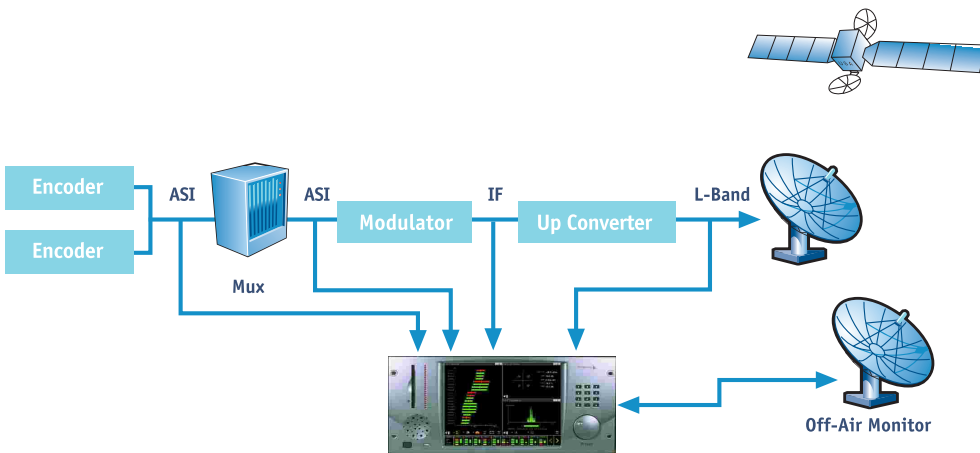
Key Features

- DVB-S.2 (EN 302 307) QPSK/8PSK/16APSK/32APSK
- DVB-DSNG (EN 301 210) QPSK/8PSK/16QAM options
- DVB-S (EN 300 421) QPSK
- DVB-S.2 CCM mode capable
- Both pilot and no pilot mode support
- DVB-S.2 short and normal frames capable
- Modulation fidelity analysis via SNR and MER
- Pre-RS BER and post-RS/BCH BER monitoring
- Constellation visualization
- Long-term logging of all measurements
- Multiple configuration profiles and round-robin scheduler for monitoring multiple transponders
- Multi-user remote access over LAN, internet or modem connection

RF Measurements

The ASLF provides signal integrity measurements of individual transponders on the L-Band feed.

Carrier level measurements provide a signal strength indication.

When a signal of sufficient quality to achieve FEC lock is present, symbol rate offset and center frequency offset measurements are available.

Bit error ratio measurement can help classify impairments as Gaussian or impulse noise.

Short duration losses of FEC lock can be detected using the lock counter.

RF measurements performed by the modules are integrated into the DVStation physical Status-at-a-Glance display.

Constellation Graphical Displays

A high resolution graphical display of the constellation scatter plot can help the broadcast engineer to classify types of noise impairments such as Gaussian and phase noise.

The user can control the density of the display from 512 to 2048 points.

Alarms and Remote Access

All measured parameters can be monitored unattended through user-definable alarms. The comprehensive DVStation Alarm Sub-System can trigger actions that include log entries, audible alarms, SNMP traps, contact closures, transport stream recording and even user-programmable actions (email notification, SMS paging, etc).
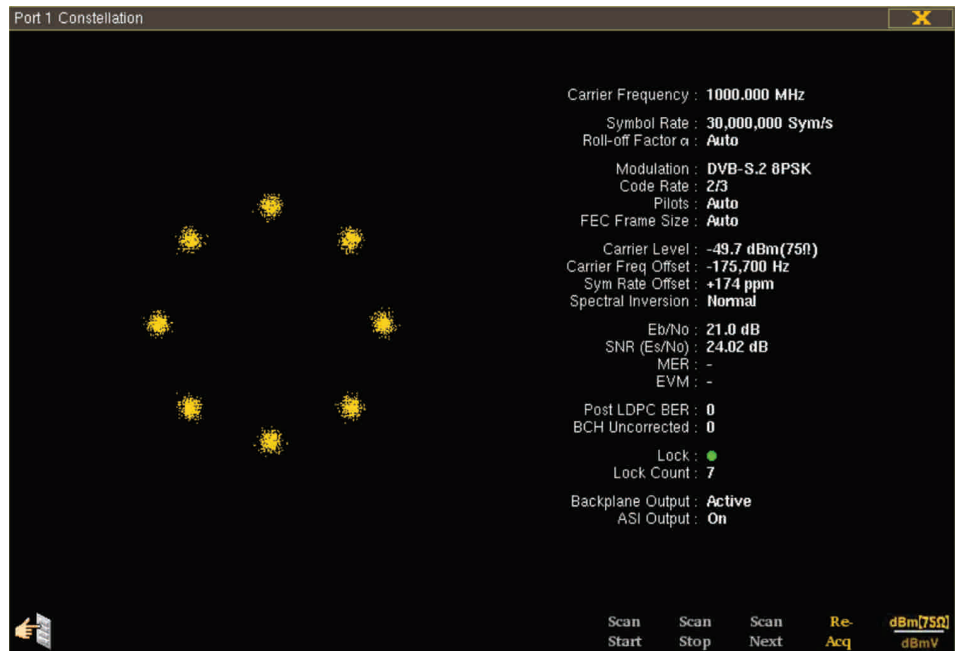
All configuration parameters can be accessed via the local DVStation touch screen GUI, HTML browser, VNC, X Windows Terminal, SNMP client or CORBA compliant management application.

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Comprehensive Transport Stream Monitoring

When used in conjunction with the Pixelmetrix TSP-100 transport stream processor, comprehensive real-time transport stream operational monitoring tests can be performed in parallel with the RF signal integrity tests:

- TR 101 290 health checks, priorities 1, 2 and 3
- Video thumbnails with freeze and blackout detection
- MHP and DSM-CC data carousels
- Bandwidth of services and individual PIDs
- Stream capture
- Automatic On-air Content Validation

Port 1 Constellation

Carrier Frequency : 1000.000 MHz
Symbol Rate : 30,000,000 Sym/s
Roll-off Factor α : Auto

Modulation : DVB-S.2 8PSK
Code Rate : 2/3
Pilots : Auto
FEC Frame Size : Auto

Carrier Level : -49.7 dBm(75Ω)
Carrier Freq Offset : -175,700 Hz
Sym Rate Offset : +174 ppm
Spectral Inversion : Normal

Eb/No : 21.0 dB
SNR (Es/No) : 24.02 dB
MER : –
EVM : –

Post LDPC BER : 0
BCH Uncorrected : 0

Lock : ●
Lock Count : 7

Backplane Output : Active
ASI Output : On

Scan Start   Scan Stop   Scan Next   Re-Acq   dBm(75Ω) dBmV

Specifications

Standards
- ETSI EN 302 307 (DVB-S.2)
- ETSI EN 301 210 (DVB-DSNG)
- ETSI EN 300 421 (DVB-S)
- ETSI TR 101 290 (Measurement Guidelines for DVB Systems)

Form Factor
- Standard DVStation series hot-swappable, single slot Card1 module
- DVStation-Remote Controller compatible module
- DVStation-Pod module

RF Input
- Connector: F -connector
- Impedance: 75Ω
- Return loss: > 9 dB
- Signal level: -65 to -25 dBm
- Center frequency: 950 to 2150 MHz

Transport Stream Output
- ASI interface on front panel, BNC connector
- Backplane output (for Card1 module form factor)

Demodulation
- Symbol rate: 1 to 30 MSym/s
- Baseband filter roll-off: 0.20, 0.25, 0.35
- All code rates applicable to selected modulation standard

LNB Power and Control
- Power: on / off
- Voltage: 13 and 18 volts
- 22 kHz tone: on / off
- Maximum current: 350 mA with current limiting

Reported Demodulation Parameters
- Signal lock and lock count
- Code rate
- Spectral inversion

Measurements
- Carrier level
- Carrier frequency offset
- Symbol rate offset
- SNR
- Eb/No
- MER and EVM
- Pre/Post-Viterbi (DVB-S/DVB-DSNG)
- Post-LDPC (DVB-S.2)
- RS/BCH uncorrected count

Graphical Presentation
- High resolution constellation display

Alarms
- Matching against expected values for all reported demodulation parameters
- Threshold alarms on all measurements

Options
- 16APSK/16QAM support
- 32APSK support
- 45 MSyms/s support

Distributor Contact

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SIGNAL INTEGRITY   SERVICE INTEGRITY   REMOTE MONITORING