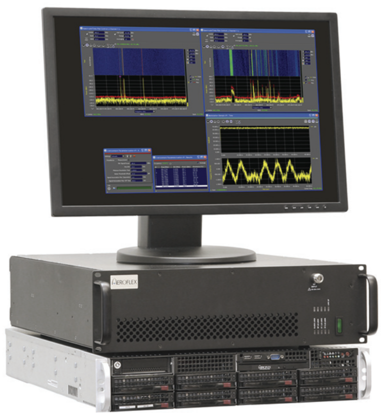
Broadband

Explorer CS1247 Broadband Signal Analyzer



Other analyzers tell you what happened. The BSA shows you why.

The Explorer CS1247 Broadband Signal Analyzer (BSA) instrument is designed to find and to solve the toughest RF issues. It combines live and off-line signal analysis capabilities to address multiple test applications, including:

- Communications
- Radar
- Satellite
- Electronic Warfare (EW)
- Electromagnetic Environment (EME)
- Drive (mobile collections)

The Aeroflex BSA is used to record, process and analyze RF signals.

The system consists of:

Tunable RF downconverter:
Convert RF signals from RF to baseband IF

A/D converter:
Digitize baseband signal

Digital tuner:
Focus on signal of interest and reduce unnecessary data

Processing:
Process raw digitized samples with various algorithms such as advanced triggering, filtering, scaling, statistics

Signal storage:
Store digitized signal for analysis or archiving

Controller:
Computer used to control the system, perform analysis, display results and write data from RAM to archival storage (disk, RAID, USB device)

The CS1247 BSA supports collecting contiguous recordings up to a 400 MHz instantaneous bandwidth (IBW) with user selected 400 MHz or 70 MHz IBW. It also supports scanning across wider bandwidths using sequential recordings. As it is capable of simultaneously processing and coherently displaying time, spectral, and modulation domain data, the CS1247 BSA is ideal for R&D, validation and verification, and general RF testing. The rich set of analysis tools and features below are included with the CS1247.

- Tunable frequency coverage from 2 MHz to 6 GHz (10 MHz lower range for 400 MHz IBW)
- Live signal monitoring (display and processing)
- Contiguous signal recording and archiving into 32 GB RAM (80 sec @ 70 MHz BW, 28 sec @ 400 MHz BW)
- Scanned sequential mode for monitoring ranges wider than the IBW
- Digital tuners from 70 MHz to 41 kHz bandwidth
- Interactive spectrum/spectrogram/time plots
- Results strip charting
- Signal notepad for recording plots and data
- Channel Power and Adjacent Channel Power Ratio (ACPR) analysis functions
- Modulation domain analysis function with simple modulation classification (AM, FM, CW, pulse, other)

Optional features* available for the CS1247 include:

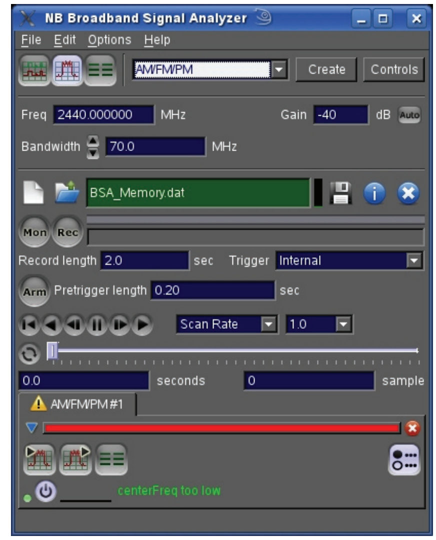
- GPS
- Additional input or output channel
- Scanned sequential mode for recording and archiving
- Spectrum Allocation Table (SAT)
- AM/FM/PM analysis functions
- ASK/FSK/PSK/QAM analysis functions
- ASK Burst/FSK Burst/PSK Burst analysis functions
- Pulse/Radar analysis function
- Environmental Signal Parameterization identifies and measures parameters for signals in the environment
- Remote control
- Sequenced recording control (FACS and SW Sequencer)

* All features subject to export restriction

Contact Aeroflex to investigate additional custom capabilities. All Aeroflex products come with the support of highly-experienced and solution-oriented technical staff.

BSA Features and Functions

This section briefly presents some of the BSA features and functions.



Standard BSA software allows the operator to record signals to RAM and then to archive them to internal and external disk drives. These recorded signals can be post-processed by the BSA software suite.

Application Matrix

How BSA features and functions apply to typical BSA applications.

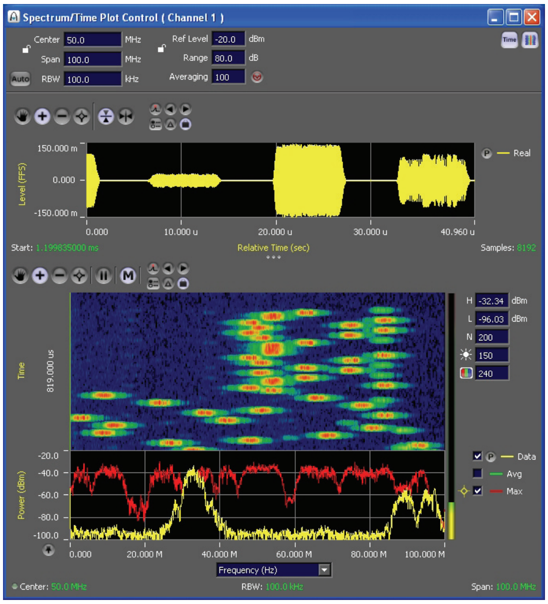
Applications and Descriptions	BSA Functions and Features									
	Spectrum/Spectrogram /Time plot	Strip Chart	Signal Notepad	Channel Power & ACPR	Modulation Domain	Pulse Analysis	Digital Modulations Analysis (PSK/QAM/FSK/ASK)	Burst/Agile Signal (FSK/ASK/PSK/QAM)	Environment Signal Parameterization	Spectrum Allocation Table (SAT)
Communications Test This includes testing radios and radio subsystems. The BSA has had the most impact in engineering design, verification and test (DVT) in the lab and in the field. Both commercial and military radio manufacturers should be targeted along with organizations that specialize in testing radios. The BSA is an excellent fit to emerging standards or proprietary radio waveforms where there is no test equipment yet.	•	•	•	•	•		⊕	⊕		
Radar Test The BSA has been valuable in a number of radar applications, including DVT, field tests, ECM/ECCM tests, stability measurements, and radar cross section measurements. Radar manufacturers, test labs and test ranges have been our best customer for these applications.	•	•	•	•	•	⊕				
Satellite Test The BSA has been used in a variety of satellite payload, ground station and operational monitoring. The system has been used to test communications satellites, XM and Sirius Radio satellites, radar satellites, photo satellites and others.	•	•	•	•	•	⊕	⊕			
Electromagnetic Environment (EME) Test BSAs have been used to characterize the EME in many places around the world for a wide variety of missions. We have additional software aimed at this application, please contact us for details.	•	•	•	•	•	⊕	⊕	⊕	⊕	⊕
EW Test The BSA has been used for a number of EW tests, including radar, ECM/ECCM and CREW.	•	•	•	•	•	⊕		⊕	⊕	⊕
Drive Test BSAs have been used to measure signal characteristics (such as RF power) from a moving vehicle for both civilian and military applications.	•	•	•	•	•	⊕		⊕	⊕	⊕
General test and debug	•	•	•	•	•					

• Useful standard software for applications

⊕ Useful software option for applications

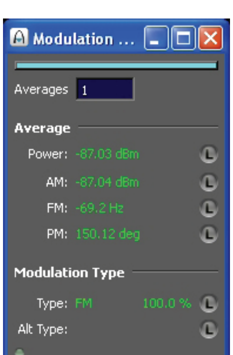
Spectrum/Spectrogram/Time Plot

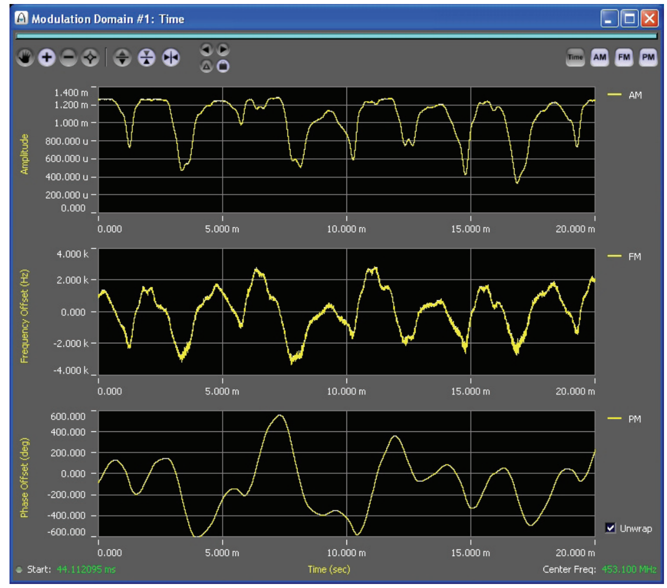
Interactive display of the spectrum, spectrogram (waterfall plot) and the time domain waveform. This analysis tool provides a multi-dimensional tool for viewing data that is valuable for every BSA application.



Modulation Domain

Plots and coherently measures parameters on the AM, FM and PM demodulated waveforms. Estimates the basic modulation type. This is one of the most used functions in BSA and is highly recommended for most applications.



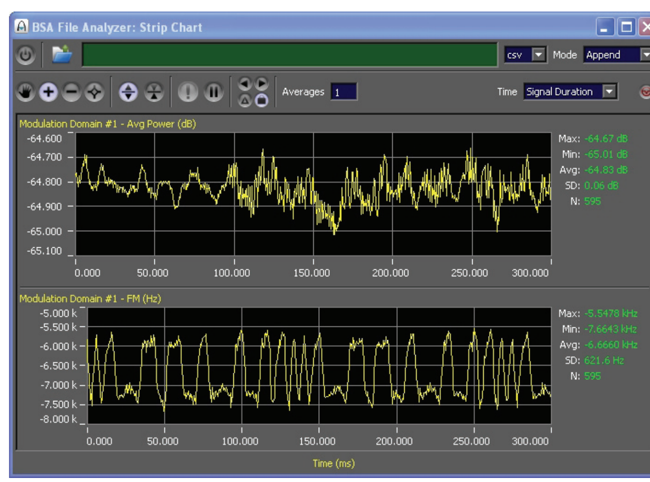


Pulse Analysis

Measures and plots pulse parameters, including carrier frequency, power, pulse width, PRI and modulation (chirp, Barker, etc.) characteristics. This is used for pulse tasks such as radar applications.

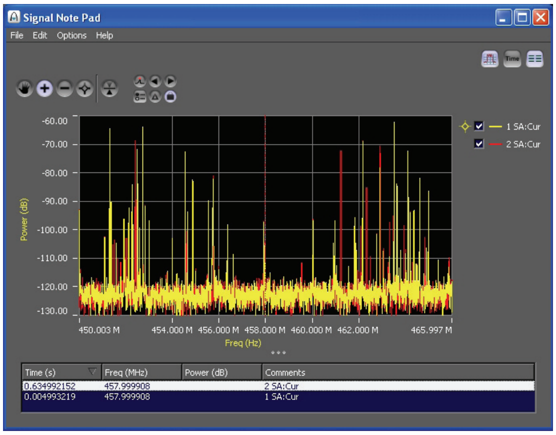
Strip Chart

Various analysis functions calculate numeric values (carrier frequency, power, etc.). Any value from any analysis function can be sent to the strip cart to display the value over time.



Signal Notepad

Any spectrum trace can be stored and viewed with the signal notepad. This allows different traces to be overlaid for easy comparison. The traces can be stored to disk in ASCII format.



Analog and Digital Modulations

AM/FM/PM Perform AM, FM and PM demodulation on a signal. The resultant waveforms can be plotted and analyzed or written to an audio (.wav) or raw binary file. This function is useful in radio test and spectrum monitoring.

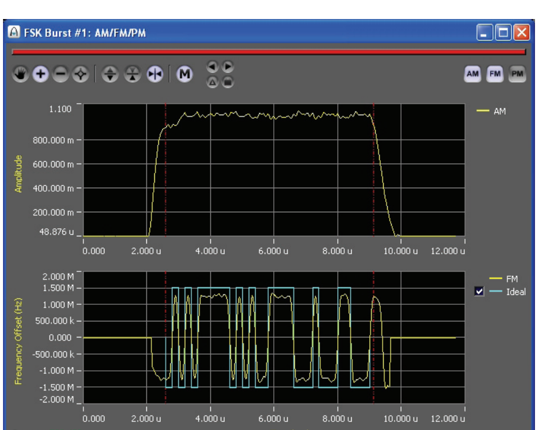
ASK Demodulates amplitude shift keyed signals. Plots the demodulated waveforms. Generate, display and write to disk the message symbols. This would be used by communications radio test applications.

FSK Demodulates and plots FSK signals. Generates waveform plots and symbol stream. This function is useful in many digital communications applications.

Burst/Agile Signal Analysis

ASK Burst Uses the same core software as the ASK analysis function, except it processes ASK burst signals such as frequency hoppers. The software adds the pulse width, PRI and carrier frequency of every burst. This function is useful in many digital communications applications.

FSK Burst Uses the same core software as the FSK analysis function, except it processes FSK burst signals such as frequency hoppers. The software adds the pulse width, PRI and carrier frequency of every burst. This function is useful in many digital communications applications.



Channel Power

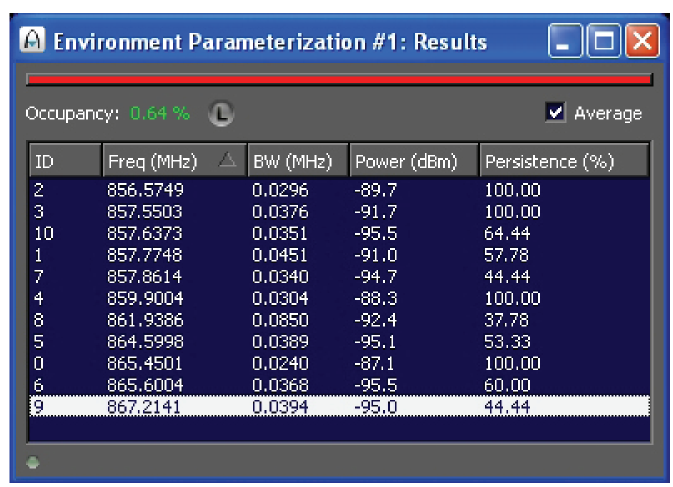
Measures the power in a user defined frequency band. This function is useful in many applications.

ACPR

The Adjacent Channel Power Ratio (BSA-ACPR) instrument measures the power and ratio of the powers in a main frequency band and bands on either side of this band. This can also be used to estimate the SNR of signals for many applications.

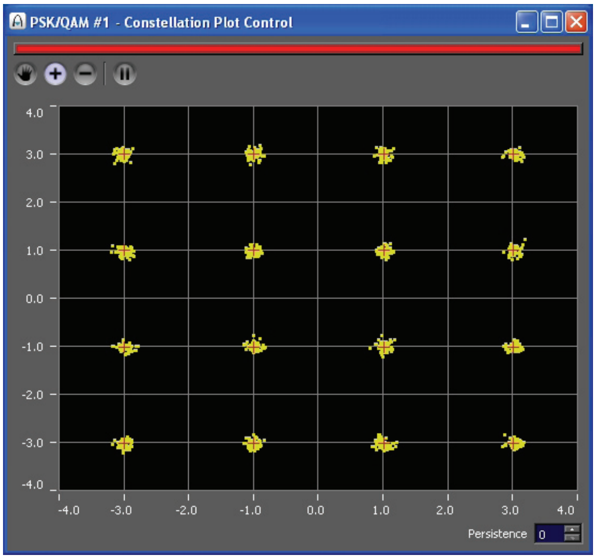
ESP

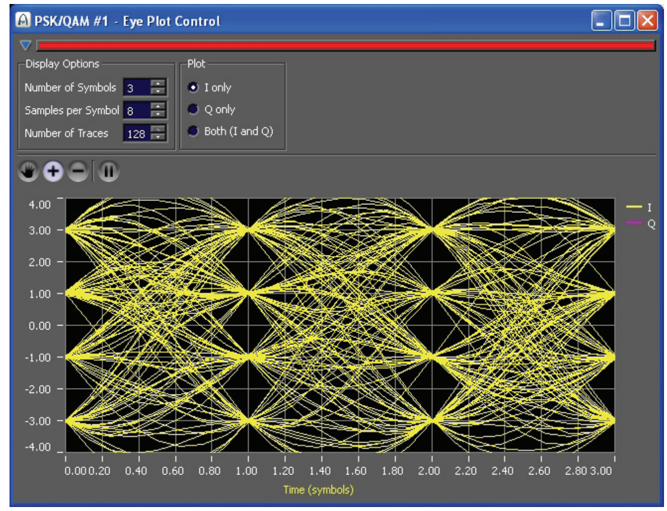
Environment Signal Parameterization detects all signals in a band and measures the signal frequency, power, bandwidth and on-time statistics. This function is used in spectrum monitoring and EME characterization applications.

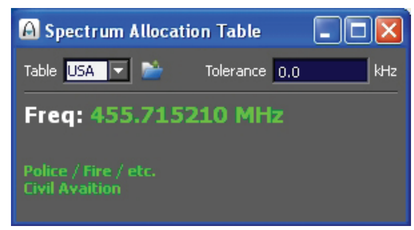


PSK/QAM Suite

The Vector Signal Analyzer demodulates, plots and characterizes PSK and QAM signals. Plots eye diagram, constellation, spectrum and timing offset data. Operates on continuous or burst signals. One function will estimate the PSK/QAM signal type order and its fundamental parameters. This function is useful for digital communications applications.

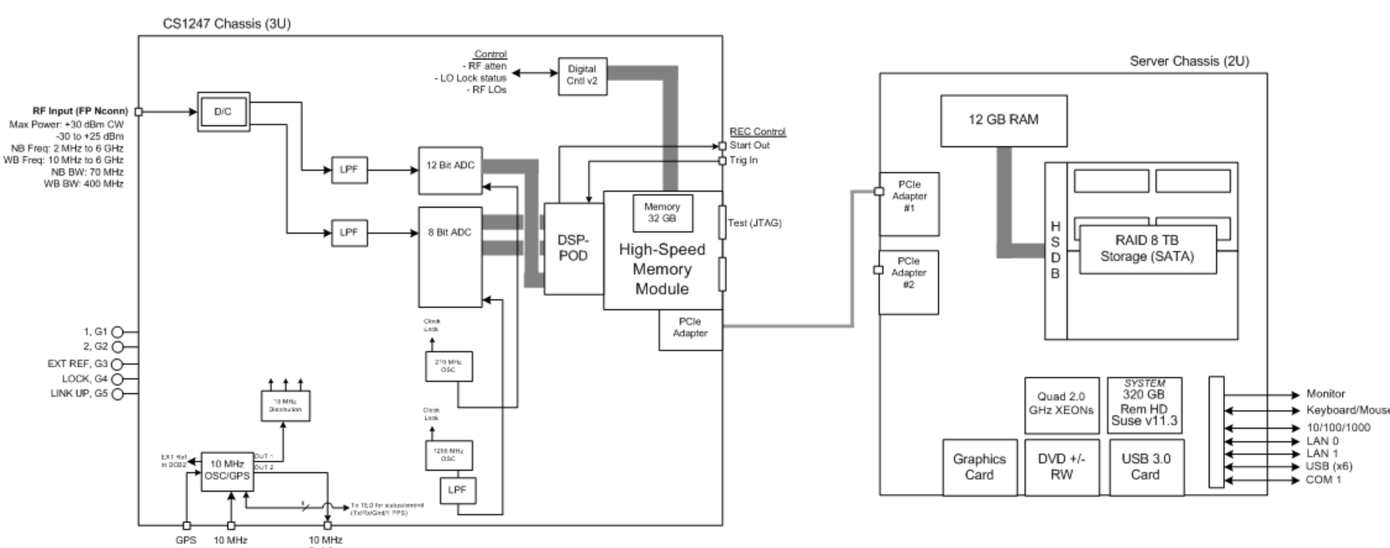






Spectrum Allocation Table (SAT)

The Spectrum Allocation Table (SAT) displays text associated with the spectrum marker frequency. This tool is useful for signal search applications such as spectrum management and EME analysis, but it could be creatively used by all applications.



CS1247 System Block Diagram

SPECIFICATION

FREQUENCY RANGE AND TUNING

FREQUENCY RANGE

Narrowband	*2 MHz to 6 GHz*
Wideband	*10 MHz to 6 GHz*

Consists of two signal paths, 'Downconverted' and 'D/C Bypass.' The path used is automatically selected based on requested center frequency.

Downconverted

Narrowband	*88 MHz to 6000 MHz (tunable center frequency range)*
Wideband	*500 MHz to 6000 MHz (tunable center frequency range)*

RF tuning range.

Actual low-end of downconverted range extends to (Bandwidth/2) below the lowest tuned center frequency.

Digital tuners also usable for narrowing bandwidth (and reducing output sample rate) within this range.

D/C Bypass

Narrowband	*2 MHz to 88 MHz (bypasses downconverter)*
Wideband	*2 MHz to 500 MHz (bypasses downconverter)*

Tuning within the d/c bypass range is available only using digital tuners.

TUNING RESOLUTION

Narrowband	*1 Hz*
Wideband	*1 Hz*

FREQUENCY ACCURACY

Dependent on 10 MHz reference accuracy

BANDWIDTH

MAXIMUM INSTANTANEOUS BANDWIDTH

Narrowband: When set to center frequency above 88 MHz, max. bandwidth setting is 70 MHz and bandwidth can be set lower if desired using digital tuners.

Downconverted

Narrowband	*70 MHz minimum 3 dB BW*
Wideband	*400 MHz minimum 3 dB BW*

D/C Bypass

Narrowband	*84 MHz minimum 3 dB BW at 46 MHz center*
Wideband	*490 MHz minimum 3 dB BW (10 to 500 MHz)*
	540 MHz typical 3 dB BW (10 to 550 MHz

Narrowband: Maximum BW in bypass path set by digital tuner bandwidth, center frequency and fixed band edge limits of 2 MHz and 88 MHz.

Example: At center frequency = 12.5 MHz, max. BW = 2 * (12.5-2) = 21 MHz

PASSBAND AMPLITUDE FLATNESS

Downconverted

Narrowband	*3.0 dB p-p variation, worst-case* *1.8 dB p-p variation, typical*
Wideband	*3.0 dB p-p variation, worst-case* *2.4 dB p-p variation, typical*

Within instantaneous passband (70 MHz narrowband, 400 MHz wideband)

In wideband mode, flatness applies for RF center frequencies from 500 MHz to 5800 MHz (passbands start rolling off above 6 GHz)

(See Plot 1 for typical narrowband passbands 88-6000 MHz; see Plot 2 for typical wideband passands 500-5800 MHz.)

D/C Bypass

Narrowband	*2.0 dB p-p, worst-case 10-88 MHz* *3.0 dB p-p, typical 3-88 MHz (decimation = 2, tuned to 46 MHz)*
Wideband	*2.5 dB p-p, worst-case 10-500 MHz* *2.0 dB p-p, typical 10-500 MHz*

Maximum rolloff in narrowband bypass path is at 2 MHz. Typically, 1.5 dB of rolloff from 10 MHz to 3 MHz, 4 dB of rolloff from 10 MHz to 2 MHz.

See Plots 3 and 4 for typical narrowband d/c bypass passband 10-88 MHz and 2-10 MHz; see Plot 5 for typical wideband d/c bypass passband 10-500 MHz.)

SELECTABLE DIGITAL TUNER BANDWIDTHS

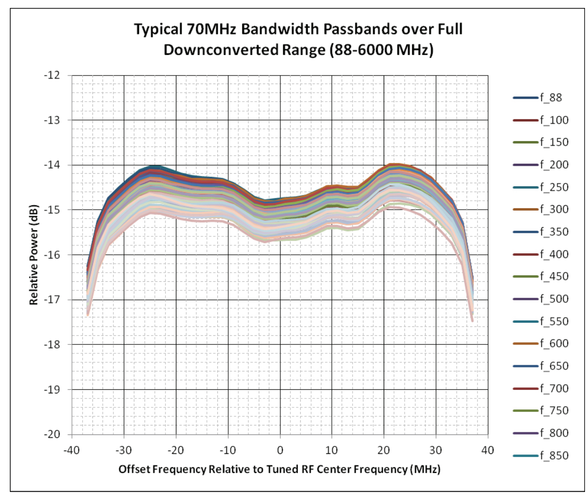
Currently digital tuners only used in narrowband mode

Downconverted

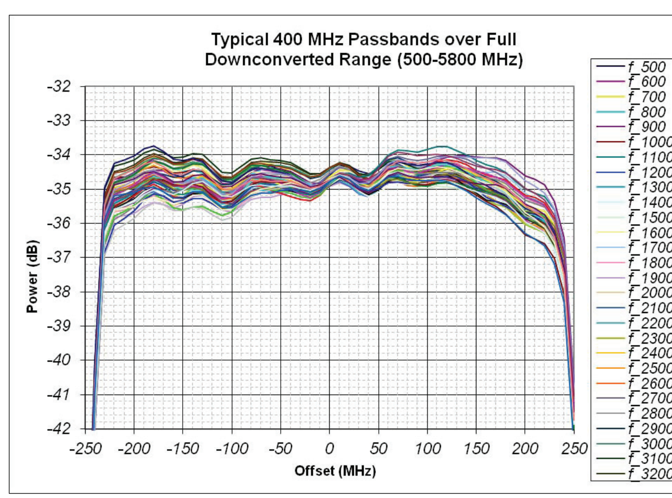
Narrowband	*70 MHz, 42 MHz down to 41 kHz*
Wideband	*N/A*

D/C Bypass

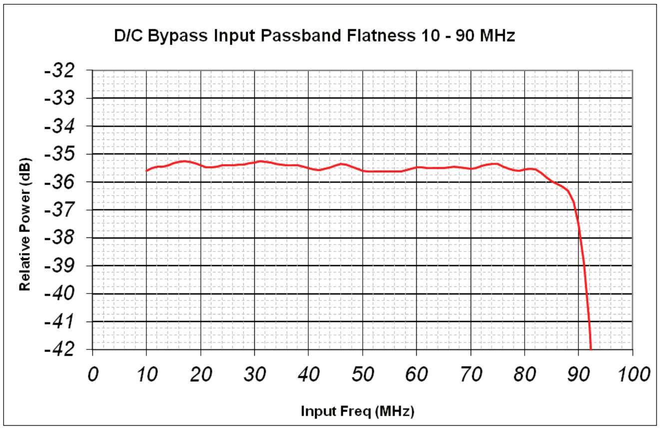
Narrowband	*84 MHz down to 41 kHz*
Wideband	*N/A*



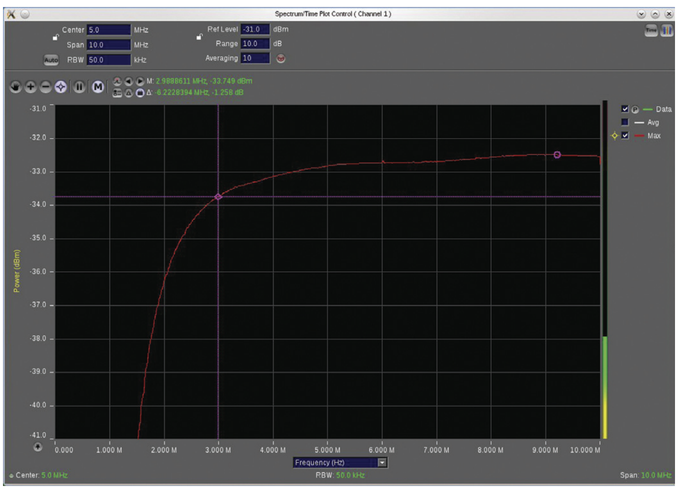
Plot 1. Typical narrowband passbands over full downconverted range (88-6000 MHz)



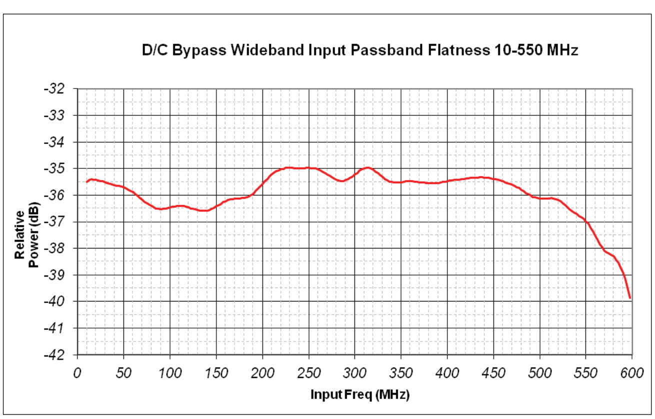
Plot 2. Typical wideband passband over full downconverted range (500-5800 MHz)



Plot 3. Typical narrowband D/C bypass passband from 10 to 88 MHz



Plot 4. Typical narrowband D/C bypass passband rolloff below 10 MHz



Plot 5. Typical wideband D/C bypass passband from 10-500 MHz

INPUT

RF Input

50 ohms, ac coupled

Input Return Loss

13.0 dB (1.58:1) typical worst-case

In instantaneous passband, any tuned RF center frequency

Max RF Input Power, CW Operational

+25 dBm

Gain set to -25 dB or lower (low enough to avoid full-scale overrange at ADC).

Max RF Input Power, CW Damage Level

+30 dBm

Minimum CW Input Power for Full-Scale at ADC

≤-30 dBm over full frequency range

Maximum gain at all tuned frequencies is at least +30 dB, where (analog-to-digital) gain is measured as:
(Power of signal in dB Full-Scale [dBFS] at ADC) minus
(Power of signal at RF Input [dBm]).

GAIN

Max. Gain

>30 dB

At least 30 dB gain in D/C bypass path and at all tuned RF frequencies.

Gain Range, min.

70 dB, min. (≥+30 to ≤-40 dB)

Gain controlled via programmable RF input attenuator and solid state attenuation at RF

Gain Step

1 dB

Nominal

Gain Linearity

Narrowband	*For 15 dB < Gain ≤Max Gain: ±1.0 dB (typical)* *For -20 dB < Gain ≤15 dB: ±1.5 dB (typical)* *All measurements at room temp ±5°C, -50 dBFS < CW Power <0 dBFS*
Wideband	*For 15 dB < Gain ≤ Max Gain: ±1.3 dB (typical)* *For -20 dB < Gain ≤15 dB: ±2.0 dB (typical)* *All measurements at room temp ±5°C, -40 dBFS < CW Power <0 dBFS*

Gain linearity is a function of programmable attenuator linearity, RF path linearity, and ADC linearity.

LINEARITY AND DISTORTION

Input IP3

+43 dBm typical (at gain = -15 dB over full RF range)

Two input tones separated by 1 MHz at +8 dBm (peak power = +14 dBm) and gain = -15 dB, so that combined peak is approx. -1 dBFS. Third order intermods will typically be less than +8 - 2* (43-8) = -62 dBm, or <-70 dBc relative to each tone.

3rd order intermod levels of -70 dBc or lower for any two tone input with combined peak level of -1 dBFS at ADC, for all input gain settings from +30 to -20 dB.

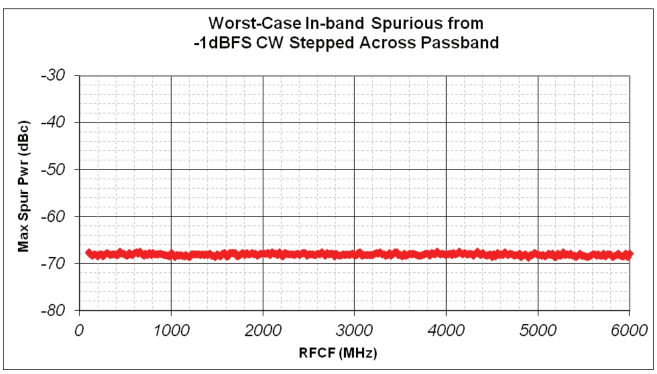
In-band Spurious Free Dynamic Range

Narrowband — *66 dB, typical worst-case in-band spurious*

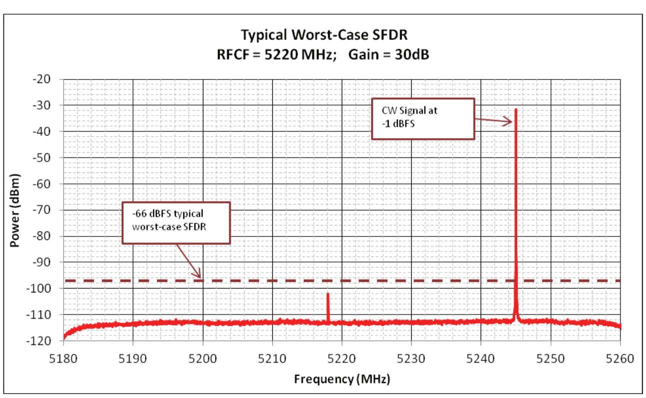
Wideband — *48 dB, typical worst-case in-band spurious*

Typical represents a common worst-case in-band spurious from any in-band tone at -1 dBFS, when varying the input tone frequency across the full passband (measured with gain = +30 dB, CW input power = -31 dBm).

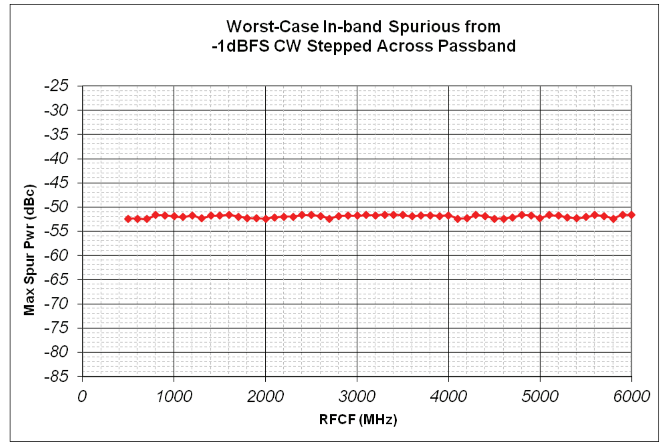
(See Plot 6 for typical worst-case narrowband in-band spurious plot over the full RF range; Plot 7 for typical downconverted narrowband -1 dBFS single-tone spectrum; Plot 8 for typical worst-case wideband in-band spurious plot over the full RF range.)



Plot 6. Typical worst-case narrowband SFDR across the full RF range



Plot 7. Typical worst-case narrowband single-tone spectrum with signal power at -1 dBFS



Plot 8. Typical worst-case wideband SFDR across the full RF range

SPECTRAL PURITY

PHASE NOISE

Typicals

Offset(Hz)	Phase Noise (dBc/Hz)
100	-63
1 K	-77
10 K	-88
100 K	-111
1 M	-124

At RF center frequency of 6 GHz

LO SPURIOUS

Narrowband — *Typical peak spurious levels*

-60 dBc for offset >200 Hz

-70 dBc for offset >25 kHz

-75 dBc for offset >100 kHz

-85 dBc for offset >1 MHz

Wideband — *Typical peak spurious levels*

-60 dBc for offset >200 Hz

-70 dBc for offset >25 kHz

-75 dBc for offset >100 kHz

See Plots 9a-d for typical phase noise and spurious performance (both narrowband and wideband)

FREQUENCY REFERENCE

Internal

10 MHz high stability TCXO

5 min. warmup

Stability 1.e-9/day, 1.e-7/year

System will automatically lock to either an external 10 MHz reference input, or to an applied GPS signal via the GPS antenna port. If neither are applied, it will run from its internal 10 MHz TCXO.

External 10 MHz Ref. Input

0 to +14 dBm, 50 ohm BNC rear panel input

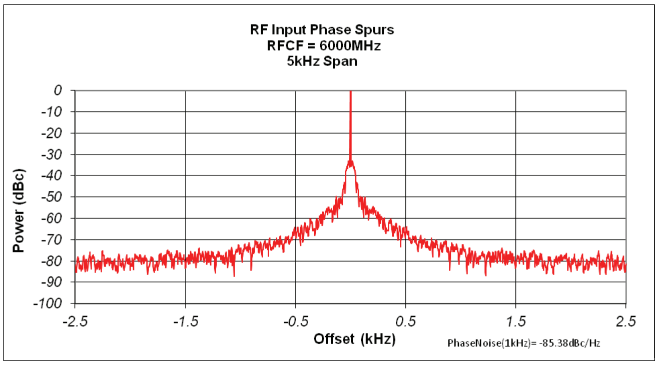
External GPS Input

Rear panel BNC connector for GPS antenna input, with +5 Vdc bias for active antenna

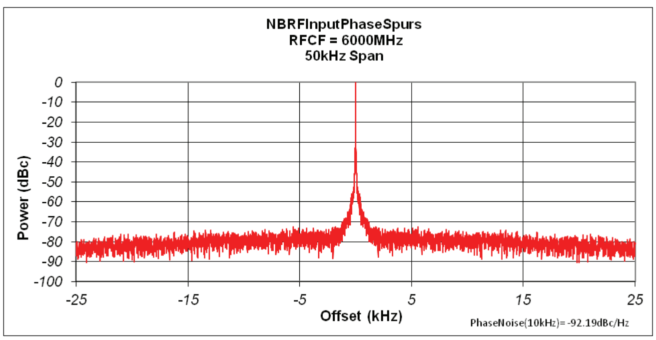
Ref. Output

Rear panel BNC output; +6 dBm sine wave

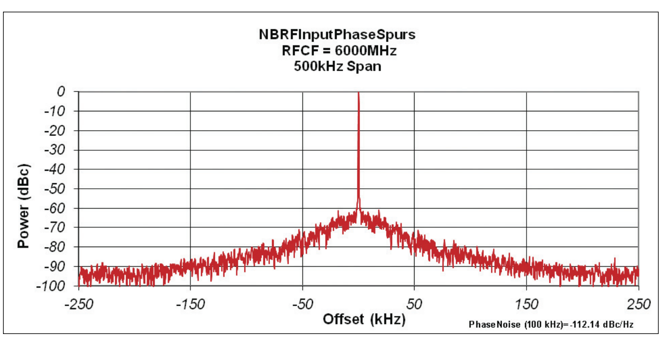
Extra output of 10 MHz; can be used to lock external equipment to the same reference used by the system.



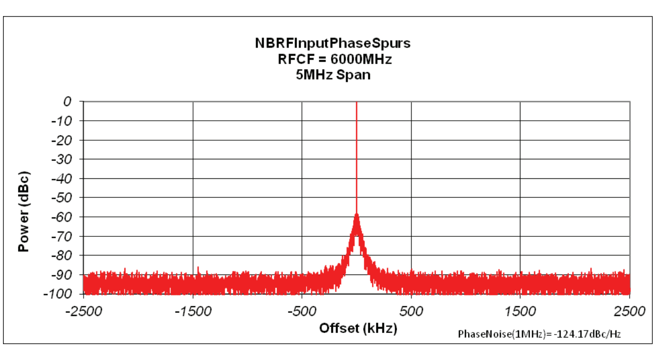
Plot 9a. Typical phase noise and spurs at 5 kHz span



Plot 9b. Typical phase noise and spurs at 50 kHz span



Plot 9c. Typical phase noise and spurs at 500 kHz span



Plot 9d. Typical phase noise and spurs at 5 MHz span

RESIDUAL AND NOISE

RESIDUAL SPURIOUS

Downconverted

Narrowband *-105 dBm, typical worst-case in passband*

Wideband *-95 dBm, typical worst-case in passband*

D/C Bypass

Narrowband *-113 dBm, typical worst-case 2-10 MHz*
-120 dBm, typical worst-case 10-88 MHz

Wideband *-100 dBm, typical worst-case 10-500 MHz*

This is the typical maximum level of non-signal-related spurious, usually related to leakages and/or mixing products of LOs and/or internal spurious products.

Referenced to RF Input, Gain = +30 dB

See Plot 10 for typical narrowband downconverted residual spurious; Plot 11 shows typical wideband downconverted residual spurious.

See Plot 12 for typical narrowband d/c bypass residual spurious. Plot 13 shows typical wideband d/c bypass residual spurious.

DISPLAYED AVERAGE NOISE LEVEL

Downconverted

Narrowband *<-153 dBm/Hz, typical worst-case*

Wideband *<-150 dBm/Hz, typical worst-case*

Referenced to RF Input, at maximum gain setting.

Typical narrowband worst-case Noise Figure = 20 dB at 6 GHz;

Noise figure improves at lower frequencies, typically 4-6 dB better at 100 MHz than at 6 GHz, at maximum gain setting.

D/C Bypass

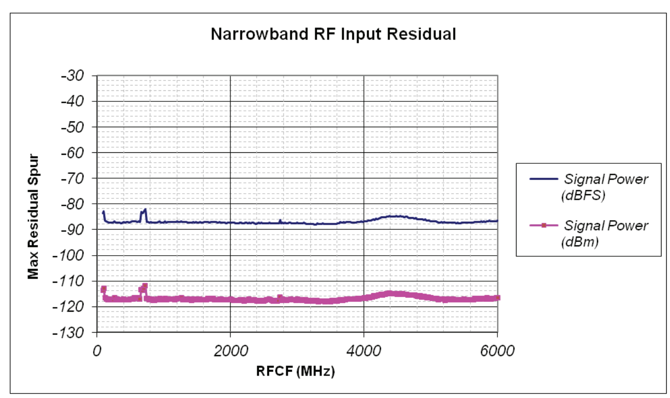
Narrowband *<-159 dBm/Hz, typical 10-88 MHz*

Wideband *<-153 dBm/Hz, typical 10-500 MHz*

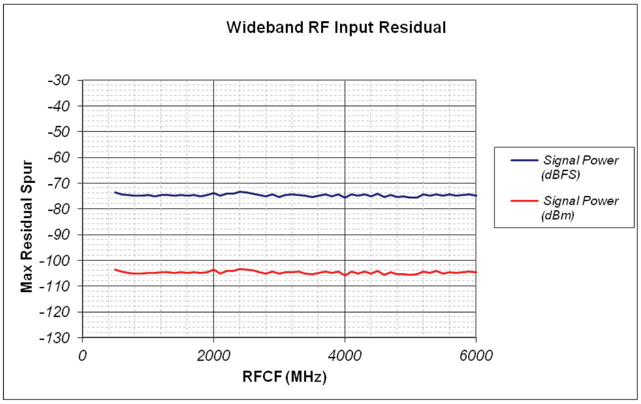
Reverse Leakage

<-100 dBm, typical, all tuned RF frequencies

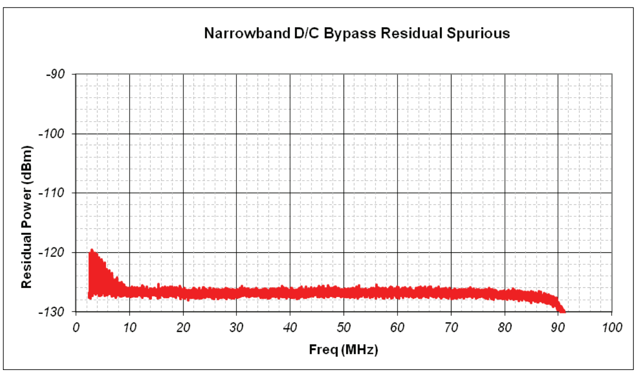
This is the typical worst-case leakage out of the RF input, at any gain setting, when tuned anywhere in the RF range, at any frequencies from 2 MHz to 18 GHz.



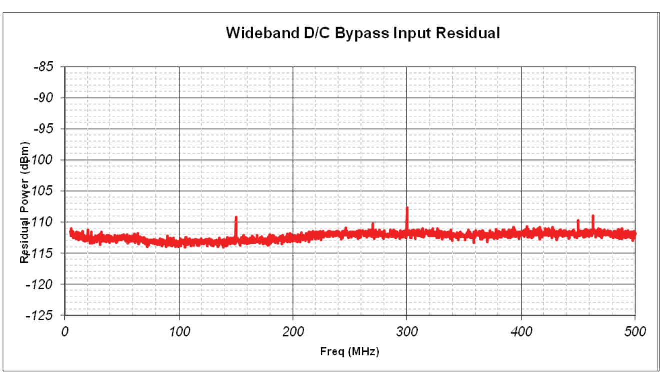
Plot 10. Typical narrowband residual spurious; worst-case at each RF center frequency



Plot 11. Typical wideband residual spurious; worst-case at each RF center frequency



Plot 12. Typical narrowband residual spurious in D/C bypass path



Plot 13. Typical wideband residual spurious in D/C bypass path

FILTERING

To achieve high levels of near-band and out-of-band rejection, system includes front-end lowpass (6 GHz), two IF bandpass filters and anti-aliasing filtering prior to ADC.

IMAGE REJECTION

>80 dB, typical for downconverted path

Image Freq = RFCF + 14300 MHz (narrowband)

Image Freq = RFCF + 14400 MHz (wideband)

IF REJECTION

>75 dB, typical for downconverted path

Rejection of interfering signal at:

7150 ±35 MHz (narrowband)

7200 ±200 MHz (wideband)

OOB REJECTION

>80 dB, typical for downconverted path

Other non-harmonic related out-of-band signals

SUB-HARMONIC REJECTION

>52 dB, typical worst-case at 30 dB gain, -30 dBm input power at RFCF/2

CW signal at 1/2 of the tuned RF center frequency, with input power = -30 dBm, will typically create an in-band spur no higher than -82 dBm.

DIGITAL SAMPLING

ADC Resolution

Narrowband	*12 bits (narrowband ADC)*
Wideband	*8 bits (wideband ADC)*

Narrowband: RF signal is digitized at 12 bits per real sample; then converted through the internal digital downconverter to I/Q samples at 16 bits per sample, with decimation rates from 2 through 4096.

Wideband: RF signal is digitized at 8 bits per real sample.

ADC Sample Rate

Narrowband	*210 MSamples/sec*
Wideband	*1200 MSamples/sec*

Narrowband: Signals are sampled at 210 MSamples/sec. Effective sample rate of 16-bit I/Q samples out is 210.e6/DecimationFactor, where DecimationFactor can be any power-of-2 from 2 through 4096, for an output complex sample rate of 105 MSamples/sec down to 51.3 kSamples/sec, for both I and Q output.

Wideband: Signals are sampled at 1200 MSamples/sec.

Sample Memory

32 GBytes

Narrowband: 8 GSamples of 16-bit complex samples.

Wideband: 32 GSamples of 8-bit real samples.

Continuous Record Time

Narrowband	*>81 seconds at full 70 MHz instantaneous bandwidth;* *>46.5 hours of recording at minimum signal bandwidth of 41 kHz*
Wideband	*>28.6 seconds at full 400 MHz instantaneous bandwidth;*

Narrowband: Output complex sample rates from the digital tuner range from 105 MS/sec (at full dec-by-2 bandwidth) to 51.27 kS/sec (at minimum dec-by-4096 bandwidth).

TRIGGERING

Sources

Internal (software or user-generated) and external (trigger input on rear panel)

Type

Rising edge, falling edge

Functions

Pre-trigger, snapshot

Uncertainty

Narrowband	*±1 sample from digital tuner (e.g ±9.5 nS at 70 MHz bandwidth)*
Wideband	*±8 samples from ADC; ±6.7 nS*

SPECTRUM ANALYZER FUNCTION

Frequency Span

Narrowband	Defaults to current selected bandwidth (70 MHz to 41 kHz), can be set from 4 Hz to Nyquist (105 MHz)
Wideband	Defaults to 400 MHz, can be set from (TBD) Hz to Nyquist (600 MHz)

Resolution Bandwidth

Narrowband	0.4 Hz to 10.0 MHz
WIdeband	572 Hz to 20 MHz

Plots

Power vs frequency spectrum, time vs frequency spectrogram, amplitude vs time, interactive signal notepad

Spectral Plot Controls

Center frequency, span, ref level, res BW, gain, power range, # of averages, absolute or relative frequency display

Traces

Live data with selectable persistence, max hold, average N, reference trace

Markers

Current cursor position, delta cursor positions, >20 auxiliary markers, channel markers, event trigger threshold and mask

Marker Functions

Peak search, next peak left/right, cursor readout, nudge left/right, lock

GUI Control

Mouse-enabled multi-level zoom out, pan, markers, custom color controls

SYSTEM COMPONENTS

SERVER CHASSIS

2U chassis containing CPUs, 8 GB RAM standard (OS and application memory), OS+system drive, RAID/Data storage, graphics card, optical drive, server I/O and PCIe interface to aux/RF chassis

Monitor

24" included

Peripherals

Keyboard, mouse included

System Drives

Removable system/OS drive included

Data Drives

8 TB removable RAID

Optical Drive

DVD ±RW standard

SERVER CHASSIS CONNECTORS

USB

USB 2.0 (x4) rear panel standard

Keyboard/Mouse/Monitor

DVI standard, PS2 keyboard, mouse

Ethernet

10/100/1000 x2

Data Interface to RF

Control and data interface to RF/aux chassis

RF CHASSIS

3U chassis containing signals I/O, RF downconverter, 32 GB high-speed signal memory module, filtering and reference distribution, NB+WB A-to-D converters, DSP and control firmware and hardware.

Both narrowband and wideband share one RF chassis

RF CHASSIS CONNECTORS

RF In

Front panel precision Type N

Ext Reference In

Rear panel BNC, 50 ohm, 0 to +15 dBm

Locks internal 10 MHz to this external 10 MHz input

External GPS Input

Rear panel BNC connector for GPS antenna input, with +5 Vdc output bias for active antenna

Uses this input if no external 10 MHz Reference is provided, to discipline iinternal 10 MHz reference to the GPS signal.

Additional Reference Out

Rear panel BNC, 50 ohm, +6 ±3 dBm

Can be used to lock additional chassis or external equipment to the same reference used by the system.

Trigger In

Rear panel BNC, LVCMOS, >100 nS pulse width

Start Record Sync Out

Rear panel BNC, 50 ohm, LVCMOS

Data Interface to Server

Control and data interface to server chassis

PHYSICAL

Power Consumption

450 VA @ 110 or 220 VAC

Combined server + RF chassis power

Dimensions

RF:	3U: 19" W x 5.25" H x 27.25" D (483 x 133 x 692 mm)
Server:	2U: 19" W x 3.5" H x 27.5" D (483 x 89 x 699 mm)

Weight

RF:	37 lbs (17 kg)
Server:	46 lbs (21 kg)

ENVIRONMENTAL

Operating Temperature

0 to +35°C

Based on spec'd server temperature range

Operating Humidity

10% to 90%, non-condensing

Storage Temperature

-40 to +75°C

Storage Humidity

5% to 95%, non-condensing

SOFTWARE

Included Functions

Spectrum, spectrogram, time waveform plot and analysis

Strip chart plot and analysis

Signal notepad

Channel power and ACPR

Modulation domain plot and analysis

Optional Functions

Spectrum allocation table

Digital modulations (PSK/QAM/FSK/ASK) demodulation and analysis

Environment signal parameterization

Burst/agile signal analysis (ASK/FSK/PSK)

High resolution spectrum plot and analysis

Pulse parameterization and analysis

Recommended Calibration Cycle

24 months

ORDERING AND CONTACT INFORMATION

www.aeroflex.com/BSA

bsa@aeroflex.com

+1.408.873.1001

CHINA Beijing
Tel: [+86] (10) 6539 1166
Fax: [+86] (10) 6539 1778

CHINA Shanghai
Tel: [+86] 21 2028 3588
Fax: [+86] 21 2028 3558

CHINA Shenzhen
Tel: [+86] (755) 3301 9358
Fax: [+86] (755) 3301 9356

FINLAND
Tel: [+358] (9) 2709 5541
Fax: [+358] (9) 804 2441

FRANCE
Tel: [+33] 1 60 79 96 00
Fax: [+33] 1 60 77 69 22

GERMANY
Tel: [+49] 89 99641 0
Fax: [+49] 89 99641 160

HONG KONG
Tel: [+852] 2832 7988
Fax: [+852] 2834 5364

INDIA
Tel: [+91] 80 [4] 115 4501
Fax: [+91] 80 [4] 115 4502

JAPAN
Tel: [+81] (3) 3500 5591
Fax: [+81] (3) 3500 5592

KOREA
Tel: [+82] (2) 3424 2719
Fax: [+82] (2) 3424 8620

SCANDINAVIA
Tel: [+45] 9614 0045
Fax: [+45] 9614 0047

SINGAPORE
Tel: [+65] 6873 0991
Fax: [+65] 6873 0992

TAIWAN
Tel: [+886] 2 2698 8058
Fax: [+886] 2 2698 8050

UK Stevenage
Tel: [+44] (0) 1438 742200
Fax: [+44] (0) 1438 727601
Freephone: 0800 282388

USA
Tel: [+1] (316) 522 4981
Fax: [+1] (316) 522 1360
Toll Free: 800 835 2352

A passion for performance.

www.aeroflex.com

info-test@aeroflex.com

Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.

Part No. 46891/492, Issue 1, 06/12