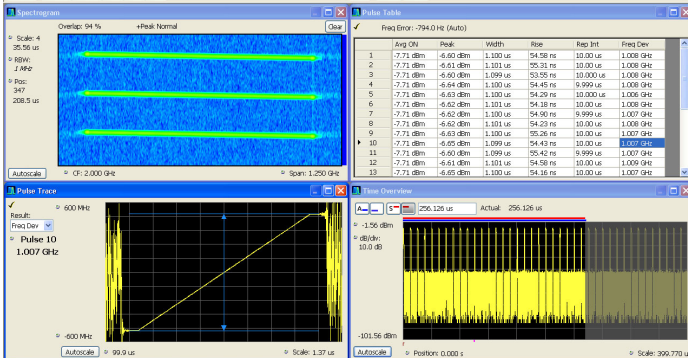


Vector Signal Analysis Software

SignalVu™ Data Sheet



Features & Benefits

- Trigger
 - Integrated RF signal analysis package lets you take full advantage of oscilloscope settings
 - Pinpoint™ triggering offers over 1400 combinations to address virtually any triggering situation
- Capture
 - Direct observation of microwave signals to 20 GHz without need of an external down converter
 - All signals up to the analog bandwidth of oscilloscope are captured into memory
 - Customize oscilloscope acquisition parameters for effective use of capture memory
 - FastFrame segmented memory captures signal bursts without storing the signal's off time
 - Supports RF, I and Q, and differential I and Q signals using the oscilloscope's 4 analog inputs

Analyze

- Extensive time-correlated, multidomain displays connect problems in time, frequency, phase, and amplitude for quicker understanding of cause and effect when troubleshooting
- Power measurements and signal statistics help you characterize components and systems: ACLR, Multicarrier ACLR, Power vs. Time, CCDF, OBW/EBW, and Spur Search
- Settling Time Measurements, Frequency, and Phase (Opt. SVT) for characterization of wideband frequency-agile oscillators
- Advanced Signal Analysis Suite (Opt. SVP) – Automated pulse measurements including rise time, pulse width, and pulse-to-pulse phase provide deep insight into pulse train behavior
- General Purpose Digital Modulation Analysis (Opt. SVM) provides vector signal analyzer functionality
- Flexible OFDM analysis (Opt. SVO) of 802.11a/g/j and WiMAX 802.16-2004 signals
- Frequency offset control for analyzing baseband signals with near-zero intermediate frequencies (IF)
- Tektronix OpenChoice® makes for easy transfer to a variety of analysis programs such as Excel and Matlab

Applications

- Wideband Radar and Pulsed RF Signals
- Frequency Agile Communications
- Broadband Satellite and Microwave Backhaul Links



Powerful oscilloscope triggers allow the user to capture only the relevant portion of wideband signals. Pinpoint trigger functions such as combining A and B events with Edge with Holdoff can capture a pulse train during a specific transmitter mode of operation.

SignalVu™ Vector Signal Analysis Software for MSO/DPO5000, DPO7000C, and DPO/DSA/MSO70000C Series Oscilloscopes

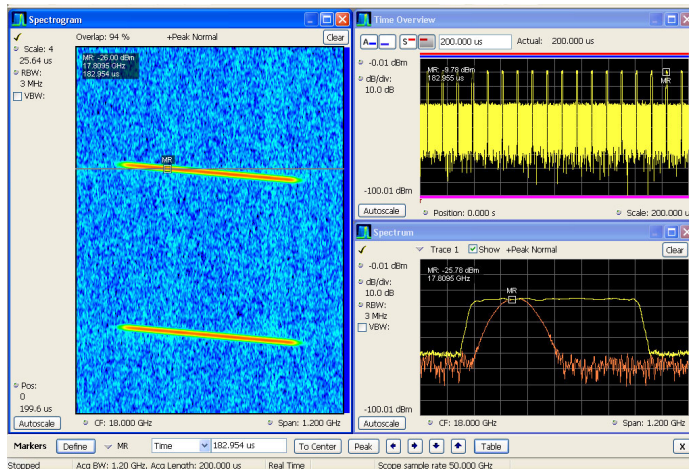
Wideband Signal Characterization

SignalVu vector signal analysis software helps you easily validate wideband designs and characterize wideband spectral events. By combining the signal analysis engine of the RSA6000 Series real-time spectrum analyzer with that of the industry's widest bandwidth digital oscilloscopes, designers can now evaluate complex signals up to 20 GHz without the need of an external down converter. You get the functionality of a vector signal analyzer, a spectrum analyzer, and the powerful trigger capabilities of a digital oscilloscope – all in a single package. Whether your design validation needs include wideband radar, high data rate satellite links, or frequency-hopping communications, SignalVu vector signal analysis software can speed your time-to-insight by showing you time-variant behavior of these wideband signals.

SignalVu is an integrated software application for MSO/DPO5000, DPO7000, and DPO/DSA/MSO70000 Series digital oscilloscopes. Users can easily switch between the SignalVu application and the oscilloscope's user interface to optimize the collection of wideband signals.

Trigger

SignalVu software works seamlessly with the oscilloscope allowing users to utilize all of its powerful triggering capabilities. The ability to trigger on



Once captured into memory, SignalVu provides detailed analysis in multiple domains. The spectrogram display (left panel) shows the frequency of an 800 MHz wide LFM pulse changing over time. By selecting the point in time in the spectrogram during the On time of the pulse, the chirp behavior can be seen as it sweeps from low to high (lower right panel).

time- and amplitude-varying events of interest is paramount in wideband system design, debug, and validation. The Tektronix oscilloscopes' trigger systems allow selection of virtually all trigger types on both A and B trigger events whether they be transition, state, time, or logic qualified triggers. Once triggered, SignalVu processes the acquisition for analysis in multiple domains.

Capture

Capture once – make multiple measurements without recapturing. All signals in an acquisition bandwidth are recorded into the oscilloscope's deep memory. Up to four channels can be captured simultaneously; each of which can be independently analyzed by SignalVu software. Channels can be RF, I and Q, or differential inputs. Users can also apply math functions to the acquisition prior to analysis by SignalVu. Acquisition lengths vary depending upon the selected capture bandwidth – up to 25 ms can be captured on a single channel with the MSO/DPO5000 Series, up to 12.5 ms can be acquired on a single channel with the DPO7000C Series, and up to 2.5 ms can be captured on a single channel with the DPO/DSA/MSO70000C Series. Significantly longer capture times can be realized with lower oscilloscope sample rates.

Using the FastFrame segmented memory feature in SignalVu enables you to capture events of interest, such as low duty cycle pulsed signals, while conserving acquisition memory. Using multiple trigger events, FastFrame captures and stores short-duration, bursty signals and passes them to SignalVu vector signal analysis functions. Capturing thousands of frames is possible, so long-term trends and changes in the bursty signal can be analyzed.

Analyze

SignalVu vector signal analysis software utilizes the same analysis capabilities found in the RSA6000 Series real-time spectrum analyzers. SignalVu advances productivity for engineers working on components or in wideband RF system design, integration, and performance verification, or operations engineers working in networks, or spectrum management. In addition to spectrum analysis, spectrograms display both frequency and amplitude changes over time. Time-correlated measurements can be made across the frequency, phase, amplitude, and modulation domains. This is ideal for signal analysis that includes frequency hopping, pulse characteristics, modulation switching, settling time, bandwidth changes, and intermittent signals.

SignalVu can process RF, I and Q, and differential I and Q signals from any one of the four available oscilloscope inputs. Math functions applied by the oscilloscope are also utilized by SignalVu allowing users to apply custom filtering prior to vector signal analysis.

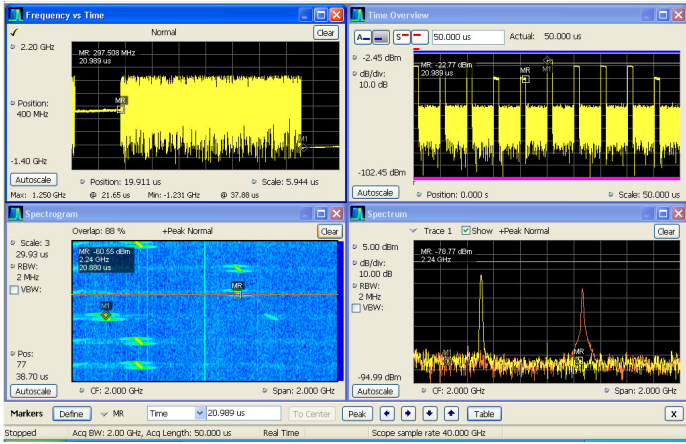
Options Tailored for Your Wideband Applications

SignalVu vector signal analysis software is available for all MSO/DPO5000, DPO7000, and DPO/DSA/MSO70000 Series oscilloscopes and offers options to meet your specific application, whether it be wideband radar characterization, broadband satellite, or spectrum management. SignalVu Essentials (Opt. SVE) provides the fundamental capability for all measurements and is required for pulse analysis (Opt. SVP), settling time (Opt. SVT), digital modulation analysis (Opt. SVM), and flexible OFDM analysis (Opt. SVO).

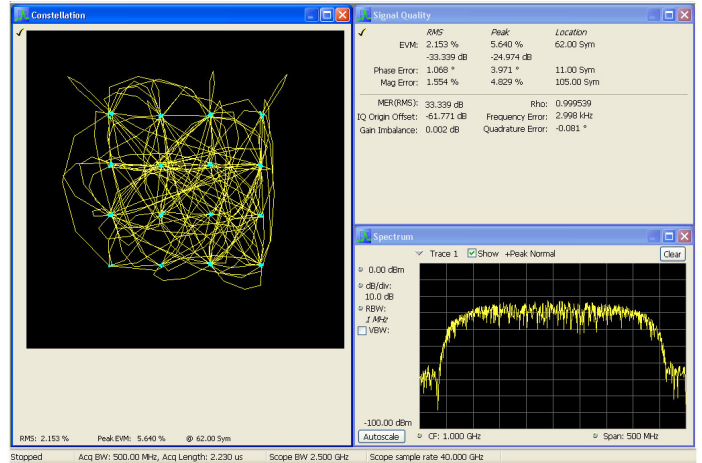
Measurement Functions

Measurements	Description
Spectrum Analyzer Measurements (Opt. SVE)	Channel Power, Adjacent Channel Power, Multicarrier Adjacent Channel Power/Leakage Ratio, Occupied Bandwidth, xdB Down, dBm/Hz Marker, dBc/Hz Marker
Time Domain and Statistical Measurements (Opt. SVE)	RF IQ vs. Time, Amplitude vs. Time, Power vs. Time, Frequency vs. Time, Phase vs. Time, CCDF, Peak-to-Average Ratio, Amplitude, Frequency, and Phase Modulation Analysis
Spur Search Measurement (Opt. SVE)	Up to 20 ranges, user-selected detectors (peak, average, CISPR peak), filters (RBW, CISPR, MIL) and VBW in each range. Linear or Log frequency scale. Measurements and violations in absolute power or relative to a carrier. Up to 999 violations identified in tabular form for export in CSV format
Settling Time (Frequency and Phase) (Opt. SVT)	Measured Frequency, Settling Time from last settled frequency, Settling Time from last settled phase, Settling Time from Trigger. Automatic or manual reference frequency selection. User-adjustable measurement bandwidth, averaging, and smoothing. Pass/Fail Mask Testing with 3 user-settable zones
Advanced Signal Analysis (Opt. SVP)	Average On Power, Peak Power, Average Transmitted Power, Pulse Width, Rise Time, Fall Time, Repetition Interval (seconds), Repetition Interval (Hz), Duty Factor (%), Duty Factor (ratio), Ripple (dB), Ripple (%), Droop (dB), Droop (%), Overshoot (dB), Overshoot (%), Pulse-Pulse Frequency Difference, Pulse-Pulse Phase Difference, RMS Frequency Error, Max Frequency Error, RMS Phase Error, Max Phase Error, Frequency Deviation, Phase Deviation, Impulse Response (dB), Impulse Response (time), Time Stamp
Flexible OFDM Analysis (Opt. SVO)	Analysis of 802.11a/g/j and WiMAX 802.16-2004 signals
Flexible OFDM Analysis (Opt. 22)	OFDM analysis for WLAN 802.11a/g/j and WiMAX 802.16-2004. Constellation, Scalar Measurement Summary, EVM or Power vs. Carrier, Symbol Table (Binary or Hexadecimal)
General Purpose Digital Modulation Analysis (Opt. SVM)	Error Vector Magnitude (EVM) (RMS, Peak, EVM vs. Time), Modulation Error Ratio (MER), Magnitude Error (RMS, Peak, Mag Error vs. Time), Phase Error (RMS, Peak, Phase Error vs. Time), Origin Offset, Frequency Error, Gain Imbalance, Quadrature Error, Rho, Constellation, Symbol Table FSK only: Frequency Deviation, Symbol Timing Error

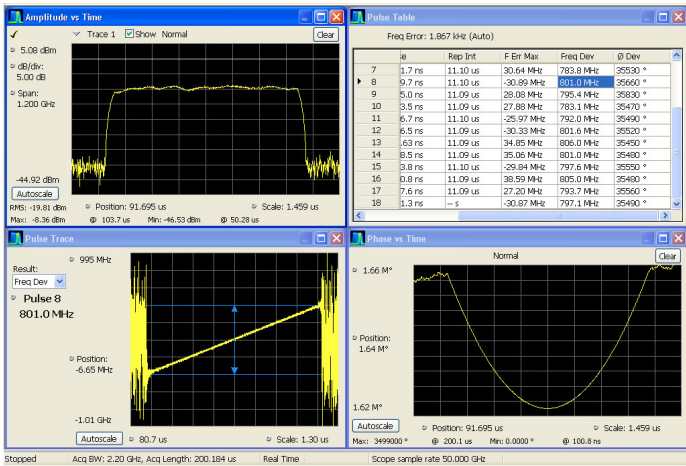
The Microsoft Windows environment makes this multidomain analysis even easier with an unlimited number of analysis windows, all time-correlated, to provide deeper insight into signal behavior. A user interface that adapts to your preferences (keyboard, front panel, touch screen, and mouse) makes learning SignalVu easy for both first-time users and experienced hands.



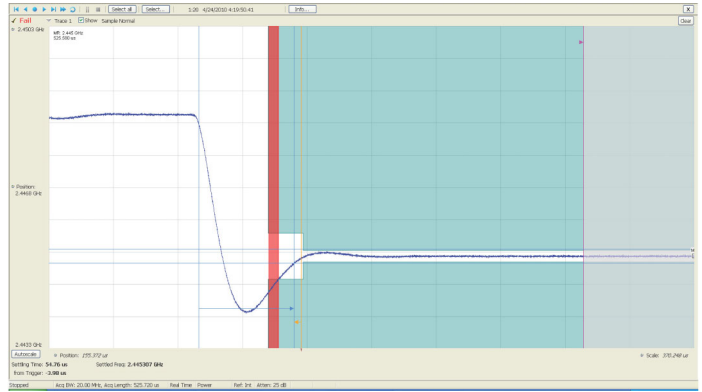
Time-correlated, multidomain view provides a new level of insight into design or operational problems not possible with conventional analysis solutions. Here, the hop patterns of a narrowband signal can be observed using Spectrogram (lower left) and its hop characteristics can be precisely measured with Frequency vs. Time display (upper left). The time and frequency responses can be observed in the two right-hand views as the signal hops from one frequency to the next.



Wideband satellite and point-to-point microwave links can be directly observed with SignalVu analysis software. Here, General Purpose Digital Modulation Analysis (Opt. SVM) is demodulating a 16QAM backhaul link running at 312.5 Ms/s.



The Advanced Signal Analysis package (Opt. SVP) provides 21 individual measurements to automatically characterize long pulse trains. An 800 MHz wide LFM chirp centered at 18 GHz is seen here with measurements for pulses 7 through 18 (upper right). The shape of the pulse can be seen in the Amplitude vs. Time plot shown in the upper left. Detailed views of pulse #8's frequency deviation and parabolic phase trajectory are shown in the lower two views.



Settling time measurements (Opt. SVT) are easy and automated. The user can select measurement bandwidth, tolerance bands, reference frequency (auto or manual), and establish up to 3 tolerance bands vs. time for Pass/Fail testing. Settling time may be referenced to external or internal trigger, and from the last settled frequency or phase. In the illustration, frequency settling time for a hopped oscillator is measured from an external trigger point from the device under test.

Characteristics (Typical)

The following is typical performance of SignalVu™ running on any MSO/DPO5000, DPO7000, or DPO/DSA/MSO70000C Series oscilloscopes.

Frequency Related

Characteristic	Description
Frequency Range	See appropriate oscilloscope data sheet
Initial Center Frequency Setting Accuracy	Equal to time-base accuracy of oscilloscope
Center Frequency Setting Resolution	0.1 Hz
Frequency Offset Range	0 Hz to the maximum bandwidth of the oscilloscope
Frequency Marker Readout Accuracy	$\pm(\text{Reference Frequency Error} \times \text{Marker Frequency} + 0.001 \times \text{Span} + 2)$ Hz
Span Accuracy	$\pm 0.3\%$
Reference Frequency Error	Equal to oscilloscope reference frequency accuracy, aging, and drift. Refer to appropriate DPO/DSA/MSO data sheet

3rd Order Intermodulation Distortion*1

Center Frequency	MSO/DPO5000	DPO7000	DPO/DSA/MSO70000C
2 GHz	-38 dBc	-40 dBc	-55 dBc
10 GHz	—	—	-48 dBc
18 GHz	—	—	-50 dBc

*1 Conditions: Each signal level -5 dBm, reference level 0 dBm, 1 MHz tone separation. Math traces off. DPO7054/7104 and MSO/DPO5034/5054/5104 performance not listed.

Residual Responses*2

Characteristic	Description
DPO/DSA70000B, MSO70000 Series (All spans)	-60 dBm
DPO7000 Series (All spans)	-65 dBm
MSO/DPO5000 Series (All spans)	-70 dBm

*2 Conditions: RF input terminated, reference level 0 dBm, measurements made after specified oscilloscope warm-up and SPC calibration. Does not include zero Hz spur.

Displayed Average Noise Level*3

Span	MSO/DPO5000	DPO7000	DPO/DSA/MSO70000C
DC - 500 MHz	-94 dBm	-100 dBm	-103 dBm
>500 MHz - 3.5 GHz	—	-102 dBm	-103 dBm
>3.5 GHz - 14 GHz	—	—	-101 dBm
>14 GHz - 20 GHz	—	—	-88 dBm

*3 Conditions: RF input terminated, 10 kHz RBW, 100 averages, reference level -10 dBm, trace detection average. Measurements made after specified oscilloscope warm-up and SPC calibration. MSO/DPO5034 and MSO/DPO5054 performance not listed.

Input Related

Characteristic	Description
Number of Inputs*4	4
Input Signal Types	RF, I and Q (single ended), I and Q (differential)
Maximum Input Level	+26 dBm for 50 Ω input (5 V_{RMS})

*4 SignalVu can process acquisitions from any one of the oscilloscope channels. Users can also apply custom math and filter functions to each of the oscilloscope's acquisition channels. The resulting Math channel can then be selected by SignalVu for signal processing.

Trigger Related

Characteristic	Description
Trigger Modes	Free Run and Triggered. Trigger sensitivity and characteristics can be found in the appropriate oscilloscope data sheet

Acquisition Related

SignalVu provides long acquisitions of waveform captures with high time and frequency resolution. Maximum acquisition time will vary based on the oscilloscope's available memory and analog bandwidth. The following table highlights each model's single-channel capabilities given its maximum available memory configuration.

Model* ⁵	Max Span	Max Acquisition Time at Max Sample Rate	Min RBW at Max Sample Rate	Min IQ Time Resolution	Max Number of FastFrames* ⁶			
DPO/DSA/MSO72004C	20 GHz	2.5 ms	1.2 kHz	20 ps	65,535			
DPO/DSA/MSO71604C	16 GHz							
DPO/DSA/MSO71254C	12.5 GHz	5 ms	600 Hz	80 ps				
DPO/DSA/MSO70804C	8 GHz							
DPO/DSA/MSO70604C	6 GHz							
DPO/DSA/MSO70404C	4 GHz							
DPO7354C	3.5 GHz					12.5 ms	300 Hz	50 ps
DPO7254C	2.5 GHz							
DPO7104C	1 GHz							
DPO7054C	500 MHz							
MSO/DPO5204	2 GHz	25 ms	100 Hz	200 ps				
MSO/DPO5104	1 GHz							
MSO/DPO5054	500 MHz							
MSO/DPO5034	350 MHz							

*⁵ With maximum available record length option and maximum sample rate.

*⁶ Maximum number of frames available will depend upon the oscilloscope's record length, sample rate, and the acquisition length settings.

Analysis Related

Displays by Domain	Views
Frequency (Opt. SVE)	Spectrum (Amplitude vs. Linear or Log Frequency) Spectrogram (Amplitude vs. Frequency over Time) Spurious (Amplitude vs. Linear or Log Frequency)
Time and Statistics (Opt. SVE)	Amplitude vs. Time Frequency vs. Time Phase vs. Time Amplitude Modulation vs. Time Frequency Modulation vs. Time Phase Modulation vs. Time RF IQ vs. Time Time Overview CCDF Peak-to-Average Ratio
Settling Time, Frequency, and Phase (Opt. SVT)	Frequency Settling vs. Time Phase Settling vs. Time
Advanced Measurements Suite (Opt. SVP)	Pulse Results Table Pulse Trace (Selectable by pulse number) Pulse Statistics (Trend of Pulse Results, FFT of Trend, and Histogram)
Digital Demod (Opt. SVM)	Constellation Diagram EVM vs. Time Symbol Table (Binary or Hexadecimal) Magnitude and Phase Error vs. Time, and Signal Quality Demodulated IQ vs. Time Eye Diagram Trellis Diagram Frequency Deviation vs. Time
Flexible OFDM (Opt. SVO)	EVM vs. Symbol, vs. Subcarrier Subcarrier Power vs. Symbol, vs. Subcarrier Subcarrier Constellation Symbol Data Table Mag Error vs. Symbol, vs. Subcarrier Phase Error vs. Symbol, vs. Subcarrier Channel Frequency Response

Supported File Formats – SignalVu can recall saved acquisitions from MSO/DPO5000, DPO7000, DPO/DSA/MSO70000, RSA5000, and RSA6000 Series instruments. Both WFM and TIQ file extensions can be recalled for postprocessing by SignalVu.

RF and Spectrum Analysis Performance

Bandwidth Related

Characteristic	Description
Resolution Bandwidth	
Resolution Bandwidth (Spectrum analysis)	1, 2, 3, 5 sequence, auto-coupled, or user selected (arbitrary)
Resolution Bandwidth Shape	Approximately Gaussian, shape factor 4.1:1 (60:3 dB) ±10%, typical
Resolution Bandwidth Accuracy	±1% (Auto-coupled RBW mode)
Alternative Bandwidth Types	Kaiser Window (RBW), -6 dB Mil, CISPR, Blackman-Harris 4B Window, Uniform Window (none), Flat-top Window (CW Ampl.), Hanning Window

Video Bandwidth

Video Bandwidth Range	Dependent on oscilloscope record length setting. Approximately 500 Hz to 5 MHz
RBW/VBW Maximum	10,000:1
RBW/VBW Minimum	1:1
Resolution	5% of entered value
Accuracy (Typical)	±10%

Time Domain Bandwidth (Amplitude vs. Time Display)

Time Domain Bandwidth Range	At least 1/2 to 1/10,000 of acquisition bandwidth
Time Domain BW Shape	Approximately Gaussian, shape factor 4.1:1 (60:3 dB), ±10% typical Shape factor <2.5:1 (60:3 dB) typical for all bandwidths
Time Domain Bandwidth Accuracy	±10%

Spectrum Display Traces, Detectors, and Functions

Characteristic	Description
Traces	Three traces + 1 math trace + 1 trace from spectrogram for spectrum display
Detector	Peak, -peak, average, CISPR peak
Trace Functions	Normal, Average, Max Hold, Min Hold
Spectrum Trace Length	801, 2401, 4001, 8001, or 10401 points

Advanced Measurement Suite (Opt. SVP)

Characteristic	Description
Measurements	Average On Power, Peak Power, Average Transmitted Power, Pulse Width, Rise Time, Fall Time, Repetition Interval (seconds), Repetition Interval (Hz), Duty Factor (%), Duty Factor (ratio), Ripple (dB), Ripple (%), Droop (dB), Droop (%), Overshoot (dB), Overshoot (%), Pulse-Pulse Frequency Difference, Pulse-Pulse Phase Difference, RMS Frequency Error, Max Frequency Error, RMS Phase Error, Max Phase Error, Frequency Deviation, Phase Deviation, Impulse Response (dB), Impulse Response (time), Time Stamp
Number of Pulses	1 to 10,000
System Rise Time (Typical)	Equal to oscilloscope rise time

Settling Time, Frequency, and Phase (Opt. SVT)*7

Settled Frequency Uncertainty, 95% Confidence (Typical), at Stated Measurement Frequencies, Bandwidths, and # of Averages

Measurement Frequency, Averages	Frequency Uncertainty at Stated Measurement Bandwidth			
	1 GHz	100 MHz	10 MHz	1 MHz
1 GHz				
Single Measurement	20 kHz	2 kHz	500 Hz	100 Hz
100 Averages	10 kHz	500 Hz	200 Hz	50 Hz
1000 Averages	2 kHz	200 Hz	50 Hz	10 Hz
9 GHz				
Single Measurement	20 kHz	5 kHz	2 kHz	200 Hz
100 Averages	10 kHz	2 kHz	500 Hz	50 Hz
1000 Averages	2 kHz	500 Hz	200 Hz	20 Hz

Settled Phase Uncertainty, 95% Confidence (Typical), at Stated Measurement Frequencies, Bandwidths, and # of Averages

Measurement Frequency, Averages	Phase Uncertainty at Stated Measurement Bandwidth			
	1 GHz	100 MHz	10 MHz	1 MHz
1 GHz				
Single Measurement	2°	2°	2°	2°
100 Averages	0.5°	0.5°	0.5°	0.5°
1000 Averages	0.2°	0.2°	0.2°	0.2°
9 GHz				
Single Measurement	5°	5°	5°	5°
100 Averages	2°	2°	2°	2°
1000 Averages	0.5°	0.5°	0.5°	0.5°

*7 Settled Frequency or Phase at the measurement frequency. Measured signal level > -20 dBm, Attenuator: Auto.

Minimum Pulse Width for Detection*8

Model	Minimum PW
DPO/DSA72004B MSO72004	400 ps
DPO/DSA71604B MSO71604	500 ps
DPO/DSA71254B MSO71254	640 ps
DPO/DSA70804B MSO70804	1 ns
DPO/DSA70604B MSO70604	1.3 ns
DPO/DSA70404B MSO70404	2 ns
DPO7354	2.25 ns
DPO7254	3 ns
DPO7104	8 ns
DPO7054	16 ns
MSO/DPO5204	4 ns
MSO/DPO5104	8 ns
MSO/DPO5054	16 ns
MSO/DPO5034	25 ns

*8 Conditions: Approximately equal to 10/(IQ sampling rate). IQ sampling rate is the final sample rate after digital down conversion from the oscilloscope. Pulse measurement filter set to max bandwidth.

Pulse Measurement Accuracy*9

Measurement	Accuracy (Typical)
Average On Power	±0.3 dB + Absolute Amplitude Accuracy of oscilloscope
Average Transmitted Power	±0.4 dB + Absolute Amplitude Accuracy of oscilloscope
Peak Power	±0.4 dB + Absolute Amplitude Accuracy of oscilloscope
Pulse Width	±(3% of reading + 0.5 × sample period)
Pulse Repetition Rate	±(3% of reading + 0.5 × sample period)

*9 Conditions: Pulse Width > 450 ns, S/N Ratio ≥30 dB, Duty Cycle 0.5 to 0.001, Temperature 18 °C to 28 °C.

Digital Modulation Analysis (Opt. SVM)

Characteristic	Description
Modulation Formats	π/2DBPSK, BPSK, SBPSK, QPSK, DQPSK, π/4DQPSK, D8PSK, 8PSK, OQPSK, SOQPSK, CPM, 16/32/64/128/256QAM, MSK, GMSK, GFSK, 2-FSK, 4-FSK, 8-FSK, 16-FSK, C4FM
Analysis Period	Up to 80,000 Samples
Filter Types	
Measurement filters	Square-root raised cosine, raised cosine, Gaussian, rectangular, IS-95, IS-95 EQ, C4FM-P25, half-sine, None, User Defined
Reference filters	Raised cosine, Gaussian, rectangular, IS-95, SBPSK-MIL, SOQPSK-MIL, SOQPSK-ARTM, None, User Defined
Alpha/B × T Range	0.001 to 1, 0.001 step
Measurements	Constellation, Error Vector Magnitude (EVM) vs. Time, Modulation Error Ratio (MER), Magnitude Error vs. Time, Phase Error vs. Time, Signal Quality, Symbol Table, rho FSK only: Frequency Deviation, Symbol Timing Error
Symbol Rate Range	1 kS/s to (0.4 * Sample Rate) GS/s (Modulated signal must be contained entirely within the acquisition bandwidth)

16QAM Residual EVM (Typical)*10 for DPO7000 and DPO/DSA/MSO70000 Series

Symbol Rate	RF	IQ
100 MS/s	<2.0%	<2.0%
312.5 MS/s	<3.0%	<3.0%

*10 CF = 1 GHz, Measurement Filter = root raised cosine, Reference Filter = raised cosine, Analysis Length = 200 symbols.

16QAM Residual EVM (Typical)*11 for MSO/DPO5000 Series

Symbol Rate	RF	IQ
10 MS/s	1.5%	1.0%
100 MS/s	4.0%	2.0%

*11 Carrier frequency 700 MHz. MSO/DPO5054 and MSO/DPO5034 performance not listed. Use of external reference will degrade EVM performance.

OFDM Residual EVM, 802.11g Signal at 2.4 GHz

Characteristic	DPO7000 Series	DPO/DSA/MSO70000 Series
Input Level Optimized for Best Performance	-33 dB	-38 dB

General Characteristics

Characteristic	Description
GPIB	SCPI-compatible, see programmer's manual for exceptions

Ordering Information

SignalVu™ Vector Signal Analysis software is compatible with all DPO/MSO5000 Series digital oscilloscopes with firmware version 6.1.1 and DPO7000, DPO/DSA/MSO70000 Series digital oscilloscopes with firmware version V5.1.0 or higher. SignalVu Essentials (Opt. SVE) provides basic vector signal analysis and is required for all other analysis options.

All SignalVu Options Include: Quick-start Manual (Printed), Printable Online Help File, and Programmer's Manual (on CD).

Options

Option	Description
Opt. SVE	SignalVu Essentials – Vector Signal Analysis Software
Opt. SVP	Advanced Signal Analysis (including pulse measurements). Requires Opt. SVE
Opt. SVM	General Purpose Digital Modulation Analysis. Requires Opt. SVE
Opt. SVT	Settling Time, Frequency, and Phase. Requires Opt. SVE
Opt. SVO	Flexible OFDM with support for 802.11a/j/g and 802.16-2044 (fixed WiMAX) modulation types. Not available on the MSO/DPO5000 Series. Requires instruments with Windows 7 operating system

SignalVu Ordering and Upgrade Guide for New and Existing Instruments

Option ordering nomenclature for all oscilloscopes. Option SVE is required for all other options listed. Option SVO is not available on MSO/DPO5000 models.

Model	Ordering on New Instrument	Upgrade Existing Instrument
MSO/DPO5000 Series	Opt. SVE (Essentials)	DPO-UP Opt. SVEE
DPO7000C Series	Opt. SVE (Essentials)	DPO-UP Opt. SVEM
DPO/DSA/MSO70000C Series ≤8 GHz	Opt. SVE (Essentials)	DPO-UP Opt. SVEH
DPO/DSA/MSO70000C Series >8 GHz	Opt. SVE (Essentials)	DPO-UP Opt. SVEU
Option SVE required for all other options listed	Opt. SVT (Settling Time)	DPO-UP Opt. SVT
	Opt. SVP (Pulse Measurements)	DPO-UP Opt. SVP
	Opt. SVM (GP Modulation Analysis)	DPO-UP Opt. SVM
	Opt. SVO (OFDM)	DPO-UP Opt. SVO

Legacy Models

DPO7000 Series	Earlier DPO7000 and DPO/DSA/MSO70000 Series oscilloscopes may be retrofitted with SignalVu. These instruments use a Microsoft Windows XP operating system, have oscilloscope firmware version 5.1 or above, and are compatible with SignalVu version 2.3.0072. See upgrade nomenclature table above for ordering information. Option SVO (OFDM) is not available on instruments with Microsoft Windows XP.
DPO/DSA/MSO70000 Series	



Product(s) are manufactured in ISO registered facilities.



Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

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