Tektronix®

스펙트럼 분석기
RSA600A 시리즈 실험실 스펙트럼 분석기 데이터 시트

RSA600A 시리즈 USB 스펙트럼 분석기는 작고 매우 이동 가능한 패키지로 고 대역폭 실험실 스펙트럼 분석을 제공합니다.

주요 특징 및 장점

- 9kHz ~ 3.0 / 7.5GHz 주파수 범위는 광범위한 분석 요구를 충족합니다.
- 40 MHz 수집 대역폭으로 순간 포착 및 벡터 분석을 위한 실시간 분석 가능
- 0.2dB ~ 3GHz의 진폭 정확도 (95 % 신뢰도)
- 빠른 설정 및 검색을 위한 고속 풀 스팬 스위프 (25.0GHz / 초)
- 표준 GPS / GLONASS / Beidou 수신기
- 게인 / 손실, 안테나 및 케이블 측정을 위한 옵션 트래킹 제너레이터
- DataVu-PC 소프트웨어는 다양한 대역폭에서 다중 장치 기록 가능
- SignalVu-PC 소프트웨어는 DPX Spectrum / Spectrogram으로 실시간 신호 처리 기능을 제공하여 일시적인 문제를 찾는 데 소요되는 시간을 최소화합니다
- 100 % 확률로 27µsec의 최소 신호 지속 시간으로 매번 처음으로 문제를 확인할 수 있습니다.
- 맞춤형 프로그램 개발을 위해 포함 된 응용 프로그래밍 인터페이스 태블릿 PC, 교정 키트, 어댑터 및 위상 안정 케이블을 포함한 액세서리는 설계, 특성화 및 제조를 위한 완벽한 솔루션을 제공합니다.

응용 분야

- RF 장치, 서브 시스템 및 시스템의 특성 분석 and
- 제조생산 테스트
- 모바일 현장 운영

RSA600 시리즈는 성공에 필요한 대역폭 및 분석 도구입니다.

RSA600 시리즈는 실시간 스펙트럼 분석 및 넓은 분석 대역폭을 제공하여 설계의 특성을 분석, 검증 및 제조해야하는 엔지니어의 문제를 해결합니다. 이 시스템의 핵심은 USB 기반 RF 스펙트럼 분석기로 40MHz 대역폭을 충실하게 캡처합니다. 70dB의 다이나믹 레인지와 주파수 범위 7.5GHz, 최대 40MHz 대역폭의 광대역 신호를 완전히 특성화 할 수 있습니다. USB 폼 팩터는 처리 능력을 선택한 PC로 이동하므로 처리 능력이나 메모리가 더 필요한 시점을 결정합니다.

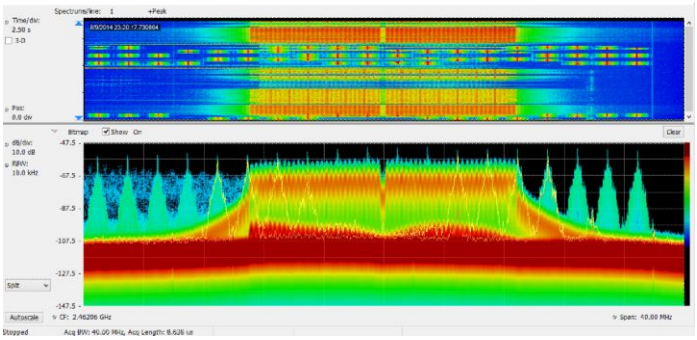
선택 품목 인 추적 생성기는 필터, 증폭기, 듀플렉서 및 기타 구성 요소의 빠른 테스트를위한 게인 / 손실 측정을 가능하게하며 VSWR, 리턴 손실, 결함 거리 및 케이블 손실의 케이블 및 안테나 측정을 추가 할 수 있습니다.

연구개발실에 풍부한 분석 기능을 제공하는 SignalVu-PC 소프트웨어

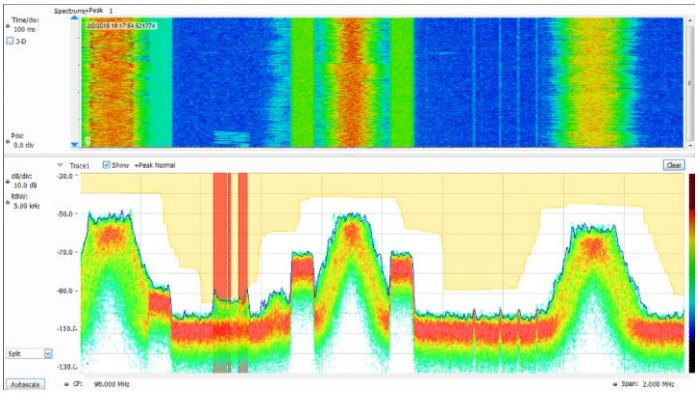
RSA600 시리즈는 Tek의 전통적인 스펙트럼 분석기의 기초로 사용되는 강력한 프로그램 인 SignalVu-PC와 함께 작동합니다. SignalVu-PC는 이전에 저비용 실험실 솔루션에서 사용할 수 없었던 심층 분석 기능을 제공합니다. DPX 스펙트럼 / 스펙트로 그램의 실시간 처리가 PC에서 가능 해져 하드웨어 비용이 더욱 절감됩니다. 계측기에 프로그래밍 방식으로 액세스해야 하는 고객은 SignalVu-PC 프로그래밍 방식 인터페이스를 선택하거나 풍부한 명령 및 측정 세트를 직접 제공하는 포함 된 API (응용 프로그래밍 인터페이스)를 사용할 수 있습니다. 무료 SignalVu-PC 프로그램의 기본 기능은 기본과 다릅니다. 기본 버전 측정은 다음과 같습니다.

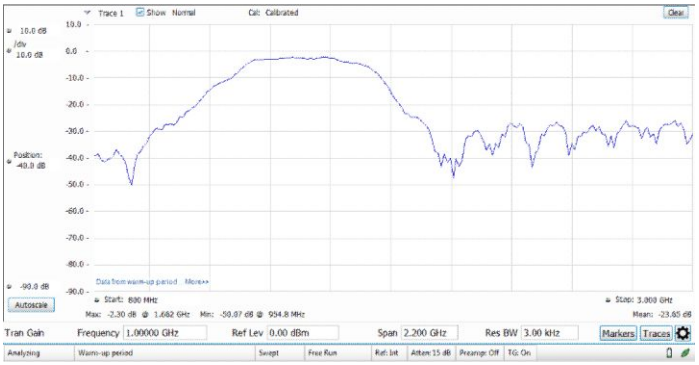
SignalVu-PC와 결합 된 RSA600A는 고급 측정 기능을 제공합니다

40MHz의 실시간 대역폭을 갖춘 고유 한 DPX 스펙트럼 / 스펙트로그램은 간섭 또는 알려지지 않은 신호의 모든 인스턴스를 27µs까지 유지합니다. 다음 이미지는 WLAN 전송 (녹색 및 주황색)을 보여 주며 화면에서 반복되는 좁은 신호는 Bluetooth 액세스 프로브 입니다. 스펙트로그램 (화면 상단)은 신호 충돌을 나타내기 위해 이러한 신호를 시간에 따라 명확하게 분리합니다.



무인 마스크 모니터링으로 예기치 않은 신호를 쉽게 찾을 수 있습니다. DPX 스펙트럼 디스플레이에서 마스크를 만들 수 있으며, 중지, 사진 저장, 획득 저장 또는 경고음을 보내는 등의 모든 위반에 대해 취할 수 있는 조치입니다. 아래 그림에서 마스크 위반이 마스크에서 빨간색으로 발생하여 결과적으로 화면 그림이 저장되었습니다. 마스크 테스트는 무인 모니터링 및 기록 된 신호를 재생할 때 사용할 수 있으므로 동일한 신호에 대해 다른 위반을 테스트 할 수 있습니다.

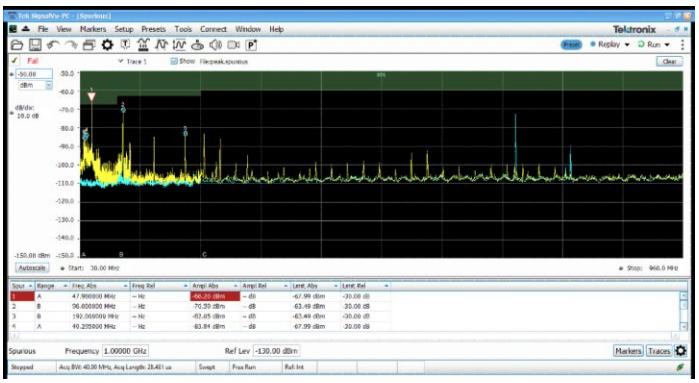




EMC/EMI

계측기와 SignalVu-PC를 통해 EMI 사전 준수 및 진단 측정이 용이합니다.
트랜스 듀서, 안테나, 프리 앰프 및 케이블 게인 / 손실을 수정 파일에 입력하고 저장할 수 있으며 SignalVu-PC의 표준 스퓨리어스 측정 기능을 사용하여 테스트의 한계 라인을 설정할 수 있습니다. 다음 그림은 음영 처리 된 FCC Part 15 Class A 제한에 대한 30MHz ~ 960MHz의 테스트를 보여줍니다. 파란색 추적은 주변 환경의 캡처입니다. 위반은 그래프 아래 결과 표에 기록됩니다. SVQP 옵션을 사용하여 CISPR 준 피크 및 평균 검출기를 추가 할 수 있습니다.

EMC 사전 규정 준수 솔루션은 EMCVU 옵션으로 추가 할 수 있습니다. 많은 사전 정의 된 한계선을 지원합니다. 또한 원 버튼 푸시로 권장 안테나, LISN 및 기타 EMC 액세서리를 쉽게 설정할 수 있는 마법사가 추가되었습니다. 새로운 EMC-EMI 디스플레이를 사용하는 경우 시간이 많이 소요되는 준 첨두를 장애시 에만 적용하여 테스트를 가속화 할 수 있습니다. 이 디스플레이는 또한 푸시 버튼 주변 측정을 제공합니다. 검사 도구를 사용하면 관심 있는 주파수를 로컬로 측정하여 스캔 할 필요가 없습니다.



SignalVu-PC 애플리케이션 별 라이센스

SignalVu-PC는 계측기에 설치하거나 계측기간에 이동하거나 PC에 연결할 수 있는 유동 라이센스로 사용할 수 있는 다양한 애플리케이션 지향 옵션을 제공합니다. 응용 분야는 다음과 같습니다.

- 범용 변조 분석 (16/32/64/256 QAM, QPSK, O-QPSK, GMSK, FSK, APSK를 포함한 27 가지 변조 유형)
- CISPR 피크, 준 피크 및 평균 검출기를 사용한 EMC / EMI 분석
- 기본 속도, 저에너지 및 Bluetooth의 Buetooth® 분석 5. 향상된 데이터 속도
- 위상 I 및 위상 2 신호의 P25 분석
- 802.11a / b / g / j / p, 802.11n, 802.11ac의 WLAN 분석
- LTE ™ FDD 및 TDD 기지국 (eNB) 셀 ID 및 RF 측정
- 매핑
- 펄스 분석
- SINAD, THD를 포함한 AM / FM / PM / 직접 오디오 측정
- 모든 도메인에서 완전한 분석을 포함하여 기록 된 파일 재생
- 신호 분류 및 조사

자세한 내용과 주문 정보는 별도의 SignalVu-PC 데이터 시트를 참조하십시오. 선택된 응용 프로그램은 다음과 같습니다.

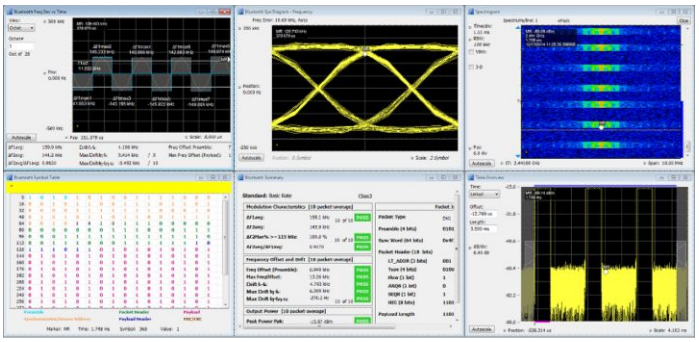
범용 변조 분석

SignalVu-PC 애플리케이션 SV21은 27 가지 변조 유형을 단일 분석 패키지로 묶고 별자리 디스플레이, 아이 다이어그램, 심볼 테이블, 격자 다이어그램, 변조 품질 요약 등을 제공합니다. 심볼 레이트 및 필터 유형은 조정 가능하며 신호 최적화를 위해 내부 이퀄라이저가 포함되어 있습니다. 아래 그림은 18.0 ksymbols / sec에서 pi / 4DQPSK 변조로 변조 된 TETRA 표준 신호입니다.

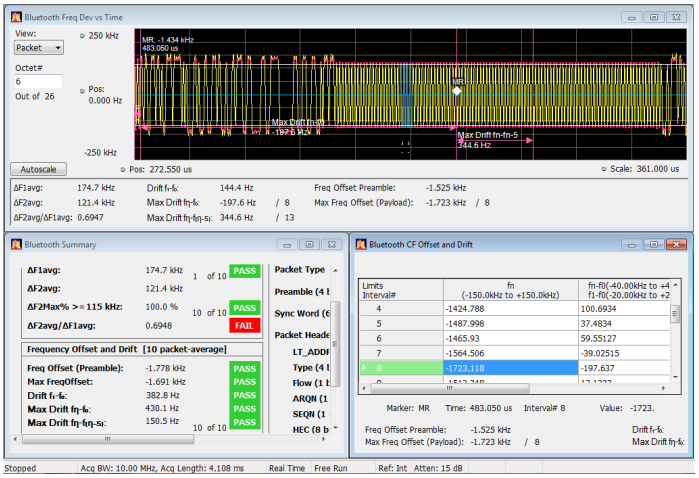
위 그림에서 500 MSymbols / sec pi / 4-QPSK로 변조 된 5GHz 캐리어는 RSA7100A 옵션 B800 및 SignalVu-PC 애플리케이션 라이센스 SVMH로 분석되었습니다. DPX 스펙트럼의 지속적인 모니터링과 함께 측정 요약, EVM 대 시간 및 성좌 표시가 표시됩니다.

블루투스

시간, 주파수 및 변조 영역에서 Bluetooth SIG 표준베이스 송신기 RF 측정에 도움이되는 두 가지 새로운 옵션이 추가되었습니다. 옵션 SV27은 RF.TS.4.2.0 및 RF-PHY.TS에 의해 정의 된 기본 속도 및 저에너지 송신기 측정을 지원합니다. 4.2.0 시험 규격. 또한 Enhanced Data Rate 패킷에 대한 심볼 정보를 복조 및 제공합니다. 옵션 SV31은 Bluetooth 5 표준 (LE 1M, LE 2M, LE Coded) 및 핵심 사양에 정의 된 측정을 지원합니다. 두 옵션 모두 전송 된 물리 계층 데이터를 디코딩 하고 명확한 식별을 위해 심볼 테이블에서 패킷 필드를 색상으로 인코딩 합니다.

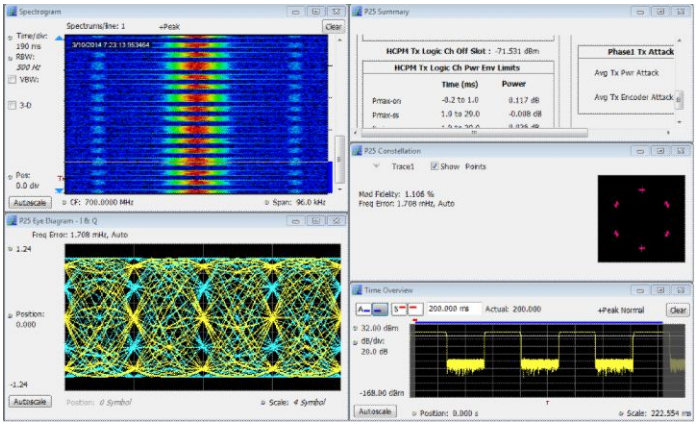


합격 / 불합격 결과에는 사용자 정의 가능한 한계가 제공됩니다. 아래 측정은 편차 대 시간, 주파수 오프셋 및 드리프트 및 합격 / 불합격 결과가 있는 측정 요약을 보여줍니다.



APCO 25

SignalVu-PC 애플리케이션 SV26을 사용하면 APCO P25 신호를 분석 할 수 있습니다. 다음 이미지는 TIA-102 표준 사양에 따라 송신기 전력, 변조 및 주파수 측정을 수행하는 동안 스펙트로그램의 이상에 대해 모니터링 되는 Phase II HCPM 신호를 보여줍니다.



LTE

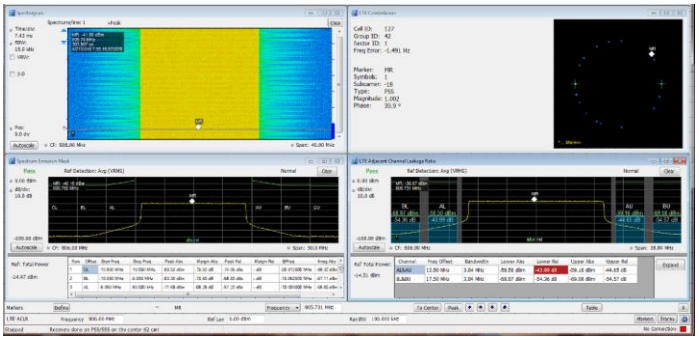
응용 프로그램 SV28은 다음과 같은 LTE 기지국 송신기 측정을 가능하게 합니다.

- 셀 ID
- 채널 파워
- 점유 대역폭
- 인접 채널 누설 률 (ACLR)
- 스펙트럼 방출 마스크 (SEM)
- TDD의 송신기 전원 끄기
- 기준 신호 (RS) 전력

측정은 3GPP TS 버전 12.5의 정의를 따르며 피코 셀 및 펨토셀을 포함한 모든 기지국 범주를 지원합니다. 통과 / 실패 정보가 보고 되고 모든 채널 대역폭이 지원됩니다.

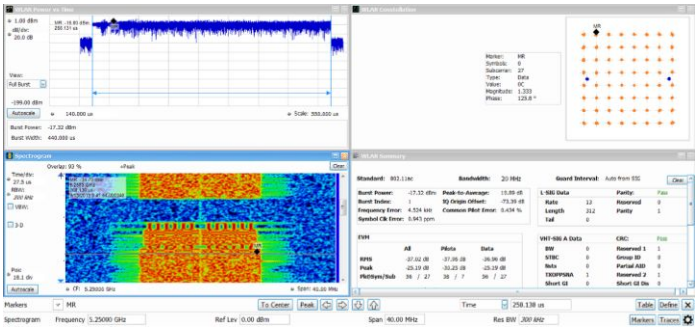
셀 ID 사전 설정은 별자리 다이어그램에 기본 동기화 신호 (PSS) 및 보조 동기화 신호 (SSS)를 표시합니다. 주파수 오류도 제공합니다.

아래 그림은 셀 ID / 별자리, 스펙트럼 방출 마스크 및 ACLR 측정과 결합 된 스펙트로 그램 디스플레이를 사용한 스펙트럼 모니터링을 보여줍니다.



WLAN 802.11a/b/g/j/p/n/ac

SV23, 24 및 25 옵션을 사용하면 정교한 WLAN 측정이 쉽습니다. 표시된 802.11ac (20MHz) 신호에서 스펙트로그램은 초기 파일럿 시퀀스 다음에 주 신호 버스트가 표시됩니다. 변조는 패킷에 대해 64 QAM으로 자동 감지되어 성상 도로 표시됩니다. 데이터 요약은 -37.02 dB RMS의 EVM을 나타내며 버스트 전력은 -17.32 dBm에서 측정됩니다. SignalVu-PC 애플리케이션은 802.11a / b / j / g / p, 802.11n 및 802.11ac ~ 40MHz 대역폭에 사용할 수 있습니다.



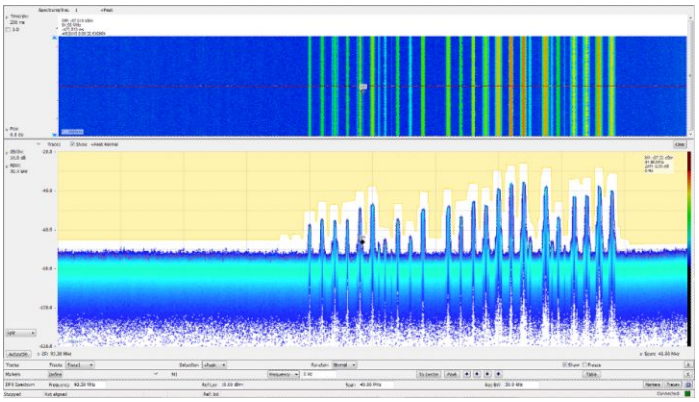
Playback

응용 프로그램 SV56, 기록 된 신호 재생은 기록 된 데이터를 검토하는 책상에서 스펙트럼 위반을 보고 기다리는 시간을 분 단위로 줄일 수 있습니다.

기록 길이는 저장 매체 크기에 의해서만 제한되며 기록은 SignalVu-PC에 포함 된 기본 기능입니다. SignalVu-PC 어플리케이션 SV56 (재생)을 통해 DPX 스펙트로그램을 포함한 모든 SignalVu-PC 측정으로 완벽한 분석이 가능합니다.

재생하는 동안 최소 신호 지속 시간 사양이 유지됩니다. AM / FM 오디오 복조를 수행 할 수 있습니다. 가변 범위, 해상도 대역폭, 분석 길이 및 대역폭을 모두 사용할 수 있습니다.

아래 그림에서 92.3 MHz의 중심 주파수에서 FM 신호를 듣는 동시에 스펙트럼 위반을 감지하기 위해 마스크를 적용하여 FM 대역을 재생하고 있습니다.



R1 개 또는 2 개의 RSA600 용 랙 마운트

다중 기기 기록 및 대용량 기록 분석을 위한 DataVu-PC

DataVu-PC 소프트웨어는 독립적 인 설정으로 두 개의 스펙트럼 분석기를 동시에 제어 할 수 있습니다. 이를 통해 계측기 범위의 모든 주파수에서 최대 40MHz 대역폭으로 기록하면서 넓은 범위를 모니터링 할 수 있습니다.
DataVu-PC는 일단 기록되면 진폭 및 주파수 마스크 특성을 기반으로 관심 신호를 찾아 표시 할 수 있으므로 긴 기록을 수동으로 검사 할 필요가 없습니다. 펄스 측정은 최대 2,000,000 펄스에서 가능합니다.

Specifications

All specifications are guaranteed unless noted otherwise. All specifications apply to all models unless noted otherwise.

Frequency

Frequency range

RSA603A	9 kHz to 3 GHz
RSA607A	9 kHz to 7.5 GHz

Frequency marker readout accuracy	±(RE × MF + 0.001 × Span) Hz RE: Reference Frequency Error MF: Marker Frequency [Hz]

Reference frequency accuracy

Initial accuracy at Cal (30 min warm-up)	$\pm 1 \times 10^{-6}$
First year aging, typical	$\pm 1 \times 10^{-6}$ (1 year)
Cumulative error (Initial accuracy + temperature + aging), typical	3×10^{-6} (1 year)
Temperature drift	$\pm 0.9 \times 10^{-6}$ (-10 to 60 °C)
External reference input	BNC connector, 50 Ω nominal
External reference input frequency	Every 1 MHz from 1 to 20 MHz plus the following: 1.2288 MHz, 2.048 MHz, 2.4576 MHz, 4.8 MHz, 4.9152 MHz, 9.8304 MHz, 13 MHz, and 19.6608 MHz. The spurious level on the input signal must be less than -80 dBc within 100 kHz offset to avoid on-screen spurious.
External reference input range	± 5 ppm
External reference input level	-10 to +10 dBm

GNSS

Accuracy, when locked to GNSS [1]	±0.025 ppm [2]
GNSS Trained Accuracy, when GNSS antenna is disconnected [3] , [4]	±0.025 ppm [5] ±0.08 ppm [6]

RF input

RF input

RF Input Impedance	50 Ω
RF VSWR (RF Attn = 20 dB), typical	< 1.2 (10 MHz to 3 GHz) < 1.5 (>3 GHz to 7.5 GHz)
RF VSWR preamp ON, typical	< 1.5 (10 MHz to 6 GHz, RF ATT=10 dB, preamp on) < 1.7 (> 6 GHz to 7.5 GHz, RF ATT=10 dB, preamp on)

Maximum RF input level

Maximum DC voltage	±40 V (RF input)
Maximum safe input power	+33 dBm (RF input, 10 MHz to 7.5 GHz, RF Attn ≥ 20 dB) +13 dBm (RF input, 9 kHz to 10 MHz) +20 dBm (RF input, RF Attn < 20 dB)
Maximum safe input power (Preamp On)	+33 dBm (RF input, 10 MHz to 7.5 GHz, RF Attn ≥ 20 dB) +13 dBm (RF input, 9 kHz to 10 MHz)
Maximum measurable input power	+30 dBm (RF input, ≥10 MHz to Fmax, RF ATT Auto) +20 dBm (RF input, <10 MHz, RF ATT Auto)

Input RF attenuator	0 dB to 51 dB (1 dB step)

1 Tested using GPS system.

2 For use to a stability of ±0.025ppm, the unit should be powered on continuously for 2 to 5 days after initial unpacking.

3 Tested using GPS system.

4 For 24 hours continuous operation within temperature limits (see footnotes 5 and 6) after GNSS training. Refer to cumulative error specification if operating in GNSS trained mode beyond 24 hours since last training.

5 For less than 3 °C ambient temperature change after training.

6 For less than 10 °C ambient temperature change after training.

Sweep speed

Full span sweep speed, typical mean [7]	25.0 GHz/sec (RBW = 1 MHz) 24.7 GHz/sec (RBW = 100 kHz) 15.7 GHz/sec (RBW = 10 kHz) 2.0 GHz/sec (RBW = 1 kHz)
Tuning step time via API	2.5 ms

Amplitude and RF

Amplitude and RF flatness

Reference level setting range -170 dBm to +40 dBm, 0.1 dB step, (Standard RF input)

Amplitude accuracy at all center frequencies

	18 ºC to 28 ºC
9 kHz ≤ 3.0 GHz	±0.8 dB
> 3 to 7.5 GHz	±1.5 dB

Amplitude Accuracy at All Center Frequencies - Preamp ON (18 ℃ to 28 ℃ , 10 dB RF Attenuator)

Center frequency range	18 ºC to 28 ºC
100 kHz to ≤3.0 GHz	±1.0 dB
> 3 to 7.5 GHz	±1.75 dB

Preamp gain

27 dB at 2 GHz

21 dB at 6 GHz (RSA607A)

Channel response (amplitude and phase deviation), typical

For these specifications, use a flat top window for maximum CW amplitude verification accuracy with the RF attenuator setting at 10 dB.

Characteristic		Description		
Measurement center frequency	Span	Amplitude flatness, typical	Amplitude flatness, RMS, typical	Phase linearity, RMS, typical
9 kHz to 40 MHz	≤40 MHz [8]	±1.0 dB	0.60 dB	
>40 MHz to 4.0 GHz	≤20 MHz	±0.10 dB	0.08 dB	0.3°
>4 GHz to 7.5 GHz	≤20 MHz	±0.35 dB	0.20 dB	0.7°
>40 MHz to 4 GHz	≤40 MHz	±0.15 dB	0.08 dB	0.6°
>4 GHz to 7.5 GHz	≤40 MHz	±0.40 dB	0.20 dB	1.0°

Channel response (Amplitude flatness)

For these specifications, use a flat top window for maximum CW amplitude verification accuracy with the RF attenuator setting at 10 dB. The specifications are valid for the test center frequencies listed at the end of the table.

Characteristic		Description
Amplitude flatness		
	Span	
	≤20 MHz	±0.5 dB
	≤40 MHz	±0.5 dB
Test center frequencies (in MHz)		21, 30, 500, 1000, 1500, 2000, 2500, 3000, 3500, 3950, 4050, 4500, 4850, 4950, 5500, 5750, 5850, 6200, 6650, 6750, 7000, 7450

7 Measured using a Panasonic Toughpad FZ-G1, Intel® Core™ i5-5300U 2.3GHz Processor, 8GB RAM, 256GB SSD, Windows®7 Pro, power management set to "High Performance". Spectrum display is only measurement on screen.

8 Span extents cannot exceed lower frequency limit of the instrument

Trigger

Trigger/Sync input, typical	Voltage range: TTL, 0.0 V to 5.0 V Trigger level (Schmitt trigger): Positive-going threshold voltage: 1.6 V min, 2.1 V max Negative-going threshold voltage: 1.0 V min., 1.35 V max Impedance: 10 k ohms with schottky clamps to 0 V, +3.4 V
External trigger timing uncertainty	>20 MHz to 40 MHz acquisition bandwidth: ±250 ns Uncertainty increases as acquisition bandwidth is decreased.
Power trigger	
Power trigger, typical	Range: 0 dB to -50 dB from reference level, for trigger levels > 30 dB above the noise floor. Type: Rising or falling edge Trigger re-arm time: ≤ 100 µsec
Power trigger position timing uncertainty	>20 MHz to 40 MHz acquisition bandwidth: ±250 ns Uncertainty increases as acquisition bandwidth is decreased.
Power trigger level accuracy	±1.5 dB for CW signal at tuned center frequency for trigger levels > 30 dB above the noise floor. This specification is in addition to the overall amplitude accuracy uncertainty for SA mode.

Noise and distortion

All noise and distortion measurements are made with the Preamp off, except where noted.

3rd Order IM intercept (TOI)	+12 dBm at 2.130 GHz
3rd Order IM intercept (TOI),	
Preamp off, typical	+10 dBm (9 kHz to 25 MHz) +15 dBm (25 MHz to 3 GHz) +15 dBm (3 GHz to 4 GHz, RSA607A) +10 dBm (4 GHz to 7.5 GHz, RSA607A)
Preamp on, typical	-20 dBm (9 kHz to 25 MHz) -15 dBm (25 MHz to 3 GHz) -15 dBm (3 GHz to 4 GHz) -20 dBm (4 GHz to 7.5 GHz, RSA607A)
3rd Order Inter-modulation distortion	-74 dBc at 2.130 GHz Each signal level -25 dBm at the RF input. 2 MHz tone separation. Attenuator = 0, Reference level = -20 dBm.

Noise and distortion

3rd Order inter-modulation distortion

Preamp off, typical

< -70 dBc (10 kHz to 25 MHz)

< -80 dBc (25 MHz to 3 GHz)

< -80 dBc (3 GHz to 4 GHz)

< -70 dBc (4 GHz to 6 GHz, RSA607A)

< -70 dBc (6 GHz to 7.5 GHz, RSA607A)

Each signal level -25 dBm at the RF input. 2 MHz tone separation. Attenuator = 0, Reference level = -20 dBm.

Preamp on, typical

< -70 dBc (9 kHz to 25 MHz)

< -80 dBc (25 MHz to 3 GHz)

< -80 dBc (3 GHz to 4 GHz)

< -70 dBc (4 GHz to 6 GHz, RSA607A)

< -70 dBc (6 GHz to 7.5 GHz, RSA607A)

Each signal level -55 dBm at the RF input. 2 MHz tone separation. Attenuator = 0, Reference level = -50 dBm.

2nd Harmonic distortion, typical

2nd Harmonic distortion

< -75 dBc (40 MHz to 1.5 GHz)

< -75 dBc (1.5 GHz to 3.75 GHz, RSA607A)

2nd Harmonic distortion, Preamp on

< - 60 dBc , 40 MHz to 3.75 GHz, input frequency

2nd Harmonic distortion intercept (SHI)

+35 dBm, 40 MHz to 1.5 GHz, input frequency

+35 dBm, 1.5 GHz to 3.75 GHz, input frequency

2nd Harmonic distortion intercept (SHI), Preamp on

+15 dBm, 40 MHz to 3.75 GHz, input frequency

Displayed average noise level (DANL)

(Normalized to 1 Hz RBW, with log-average detector)

Frequency range	Preamp on	Preamp on, typical	Preamp off, typical
500 kHz to 1 MHz	-138 dBm/Hz	-145 dBm/Hz	-130 dBm/Hz
1 MHz to 25 MHz	-153 dBm/Hz	-158 dBm/Hz	-130 dBm/Hz
>25 MHz to 1 GHz	-161 dBm/Hz	-164 dBm/Hz	-141 dBm/Hz
>1 GHz to 2 GHz	-159 dBm/Hz	-162 dBm/Hz	-141 dBm/Hz
>2 GHz to 3 GHz	-156 dBm/Hz	-159 dBm/Hz	-138 dBm/Hz
>3 GHz to 4.2 GHz, RSA607A	- dBm/Hz	- dBm/Hz	-138 dBm/Hz
>4.2 GHz to 6 GHz, RSA607A	-159 dBm/Hz	-162 dBm/Hz	-147 dBm/Hz
>6 GHz to 7.5 GHz, RSA607A	-155 dBm/Hz	-158 dBm/Hz	-145 dBm/Hz

Phase noise

Phase noise

Offset	1 GHz CF	1 GHz CF (typical)	2 GHz CF (typical)	6 GHz CF, (RSA607A) (typical)	10 MHz (typical)
10 kHz	-94 dBc/Hz	-97 dBc/Hz	-96 dBc/Hz	-94 dBc/Hz	-120 dBc/Hz
100 kHz	-94 dBc/Hz	-98 dBc/Hz	-97 dBc/Hz	-96 dBc/Hz	-124 dBc/Hz
1 MHz	-116 dBc/Hz	-121 dBc/Hz	-120 dBc/Hz	-120 dBc/Hz	-124 dBc/Hz

Integrated Phase (RMS), typical

7.45×10^{-3} radians @ 1 GHz

8.24×10^{-3} radians @ 2 GHz

9.34×10^{-3} radians @ 6 GHz

Integrated from 10 kHz to 10 MHz

Spurious response

Residual spurious response (Reference = -30 dBm, RBW = 1 kHz)

<-75 dBm (500 kHz to 60 MHz), typical

< -85 dBm (>60 MHz to 80 MHz), typical

<-100 dBm (>80 MHz to 7.5 GHz), typical

Spurious response with Signal (Image suppression)

< -65 dBc (10 kHz to < 3 GHz, Ref= -30 dBm, Atten = 10 dB, RF input Level = -30 dBm, RBW = 10 Hz)

< -65 dBc (3 GHz to 7.5 GHz, Ref= -30dBm, Atten = 10 dB, RF input Level = -30 dBm, RBW = 10 Hz)

Spurious response with signal at CF

Offset ≥ 1 MHz

Frequency	Span ≤40 MHz, swept spans >40 MHz	
		Typical
1 MHz - 100 MHz		-75 dBc
100 MHz - 3 GHz	-72 dBc	-75 dBc
3 GHz - 7.5 GHz (RSA607A)	-72 dBc	-75 dBc

Spurious response with signal at CF

(100 kHz ≤ offset <1 MHz, Span=2 MHz):

Frequency P-TYP(PRI)	Typical
1 MHz - 100 MHz	-76 dBc
100 MHz - 3 GHz	-76 dBc
3 GHz - 7.5 GHz (RSA607A)	-74 dBc [9]

Spurious response with signal at other than CF, typical

Frequency	Span ≤40 MHz, swept spans >40 MHz
1 MHz – 25 MHz (LF Band)	-73 dBc
25 MHz – 3 GHz	-73 dBc
3 GHz – 7.5 GHz (RSA607A)	-73 dBc

9 Power supply sidebands, 620-660 kHz: -67 dBc, typical

Spurious response

Spurious response with signal at half-IF [10]	
RSA603A, RSA607A	< 75 dBc, (CF: 30 MHz to 3 GHz, Ref = -30 dBm, Atten = 10 dB, RBW = 10 Hz, Span = 10 kHz) Signal frequency = 2310 MHz, RF input level = -30 dBm
RSA607A	< 77 dBc, (CF 3 G Hz to 7.5 GHz, Ref= -30 dBm, Atten = 10 dB, RBW=10 Hz, Span=10 kHz) RF input Level = -30 dBm
Local oscillator feed-through to input connector, typical	< -70 dBm, preamp off. < -90 dBm, preamp on. Attenuator = 10 dB.

Acquisition

IF bandwidth	40 MHz.
A/D converter	14 bits, 112 Ms/s.
Real-Time IF Acquisition Data	112 Ms/s, 16-bit integer samples.

ACLR

ACLR for 3GPP Down Link, 1 DPCH (2130 MHz)	-57 dB (Adjacent Channel) -68 dB w/Noise Correction (Adjacent Channel) -57 dB (First Alternate Channel) -69 dB w/Noise Correction (First Adjacent Channel)
ACLR LTE	-58 dB (Adjacent Channel) -61 dB w/Noise Correction (Adjacent Channel) -61 dB (First Alternate Channel) -63 dB w/Noise Correction (First Adjacent Channel)

GPS location

Format	GPS/GLONASS/BeiDou
GPS antenna power	3 V, 100 mA maximum
Time to first fix, maximum	Lock time ranges from 2 sec (hot) to 46 sec (cold start). -130 dBm input signal power.
Horizontal position accuracy	GPS: 2.6 m Glonass: 2.6 m BeiDou: 10.2 m GPS + Glonass: 2.6 m GPS + BeiDou: 2.6 m Test conditions: 24 hr. static, -130 dBm, full power

10 This is an input signal at half of the IF frequency.

Tracking generator (Option 04)

Tracking Generator (Option 04)

Frequency range	9 kHz to 3 GHz
	9 kHz to 7.5 GHz
Sweep speed, typical mean	0.192 sec/sweep, 101 points, 50 kHz RBW, 980 to 1020 MHz sweep (1.9 mS per point)
	Measured using a Panasonic Toughpad FZ-G1, Intel® Core™ i5-5300U 2.3 GHz Processor, 8 GB RAM, 256 GB SSD, Windows®7 Pro,power management set to "High Performance". Transmission Gain display is only measurement on screen.
Frequency resolution	100 Hz
TG output connector	N type
VSWR	< 1.8:1, 10 MHz to 7.5 GHz, -20 dBm output level
Maximum output power	-3 dBm,10 MHz to 7.5 GHz
Output power level setting range	40 dB, 10 MHz to 7.5 GHz
Output power level step size	1 dB, 10 MHz to 7.5 GHz
Output power level step size accuracy	± 0.5 dB
Output level accuracy	± 1.5 dB, 10 MHz to 7.5 GHz, -20 dBm output level
Harmonics	< -22 dBc, ≥20 MHz
Non-harmonic spurious	< -30 dBc; spurious < 2 GHz from TG output frequency
	< -25 dBc; spurious ≥ 2 GHz from TG output frequency
Reverse power without damage	40 Vdc, +20 dBm RF

SignalVu-PC standard measurements and performance

Measurements included.

SignalVu-PC/RSA607A key characteristics

Maximum span	40 MHz real-time
	9 kHz - 3 GHz swept
	9 kHz - 7.5 GHz swept
Maximum acquisition time	2.0 s
Minimum IQ resolution	17.9 ns (acquisition BW = 40 MHz)
Tuning Tables	Tables that present frequency selection in the form of standards-based channels are available for the following.
	Cellular standards families: AMPS, NADC, NMT-450, PDC, GSM, CDMA, CDMA-2000, 1xEV-DO WCDMA, TD-SCDMA, LTE, WiMax
	Unlicensed short range: 802.11a/b/j/g/p/n/ac, Bluetooth
	Cordless phone: DECT, PHS
	Broadcast: AM, FM, ATSC, DVBT/H, NTSC
	Mobile radio, pagers, other: GMRS/FRS, iDEN, FLEX, P25, PWT, SMR, WiMax

DPX spectrum display

Spectrum processing rate (RBW = auto, trace length 801)	≤10,000 spectrums per second
DPX bitmap resolution	201 pixels vertical x 801 pixels horizontal
DPX Spectrogram minimum time resolution [11]	1 ms
	≤10,000 per second (span independent)

SignalVu-PC standard measurements and performance

Marker information
Amplitude, frequency, signal density

Minimum signal duration for 100% probability of intercept (POI), typical [11]

Minimum signal duration for 100% POI	Test controller
27	Dell Desktop (Windows® 10 Enterprise, Intel® Core™ i7-4790 CPU, 3.6GHz, 8GB RAM, 256GB SSD)
34	Dell Desktop (Windows® 7 Enterprise, Intel® Core™ i7-2600 CPU, 3.4GHz, 8GB RAM, 256GB SSD)
36	Dell Desktop Latitude E6430 (Windows® 10 Enterprise, Intel® Core™ i7-3520M CPU, 2.9GHz, 8GB RAM, 750GB HD)
35	Dell Laptop Precision M4700 (Windows® 8 Enterprise, Intel® Core™ i7-3520M CPU, 2.9GHz, 8GB RAM, 750GB HD)
37	Panasonic ToughPad SAPL-TP-04 (Windows® 7 Pro, Intel® Core™ i5-5300U CPU, 2.3GHz, 8GB RAM, 256GB SSD)

DPX settings: Span=40 MHz, RBW=300 kHz (Auto)

Span range (continuous processing)
1 kHz to 40 MHz

Span range (swept)
Up to maximum frequency range of instrument

Dwell time per step
5 ms to 100 s

Trace processing
Color-graded bitmap, +Peak, -Peak, average

Trace length
801, 2401, 4001, 10401

RBW range
1 kHz to 4.99 MHz

DPX spectrogram display

Trace detection
+Peak, -Peak, Average(V_{RMS})

Trace length, memory depth
801 (60,000 traces)

2401 (20,000 traces)

4001 (12,000 traces)

Time resolution per line
1 ms to 6400 s, user selectable

Spectrum and Spurious display

Traces
Three traces + 1 math trace + 1 trace from spectrogram for Spectrum display; four traces for Spurious display

Trace functions
Normal, Average (VRMS), Max Hold, Min Hold, Average of Logs

Detector
Average (VRMS), Average (of logs), CISPR peak, +Peak, Sample for Spectrum only -Peak; when Option SVQP is enabled, CISPR Quasi Peak and Average

Spectrum trace length
801, 2401, 4001, 8001,10401, 16001, 32001, and 64001 points

RBW range
1.18 Hz to 8 MHz for Spectrum display

11 Due to the non-deterministic execution time of programs running under the Microsoft Windows™ OS, this specification may not be met when the host PC is heavily loaded with other processing tasks.

SignalVu-PC standard measurements and performance

Analog modulation analysis (standard)

AM demodulation accuracy, typical	±2% 0 dBm input at center, carrier frequency 1 GHz, 1 kHz/5 kHz input/modulated frequency, 10% to 60% modulation depth 0 dBm input power level, reference level = 10 dBm, Atten=Auto
FM demodulation accuracy, typical	±1% of span 0 dBm input at center, carrier frequency 1 GHz, 400 Hz/1 kHz input/modulated frequency 0 dBm input power level, reference level = 10 dBm, Atten=Auto
PM demodulation accuracy, typical	±3% of measurement bandwidth 0 dBm input at center, carrier frequency 1 GHz, 1 kHz/5 kHz input/modulated frequency 0 dBm input power level, reference level = 10 dBm, Atten=Auto

Signal Strength display

Signal strength indicator	Located at right side of display
Measurement bandwidth	Up to 40 MHz, dependent on span and RBW setting
Tone type	Variable frequency based on received signal strength

Sweep speed

Full-span sweep speed

Full span sweep speed, typical	5500 MHz/sec (RBW = 1 MHz) 5300 MHz/sec (RBW = 100 kHz) 3700 MHz/sec (RBW = 10 kHz) 950 MHz/sec (RBW = 1 kHz) Measured using a Panasonic Toughpad FZ-G1, Intel® Core™ i5-5300U 2.3 GHz Processor, 8 GB RAM, 256 GB SSD, Windows®7 Pro. Spectrum display is only measurement on screen
Tuning step time via API	1 ms

SignalVu-PC applications performance summary

AM/FM/PM and direct audio measurement (SVAxx-SVPC)

Carrier frequency range (for modulation and audio measurements)	(1/2 × audio analysis bandwidth) to maximum input frequency
Maximum audio frequency span	10 MHz
FM measurements (Mod. index >0.1)	Carrier Power, Carrier Frequency Error, Audio Frequency, Deviation (+Peak, -Peak, Peak-Peak/2, RMS), SINAD, Modulation Distortion, S/N, Total Harmonic Distortion, Total Non-harmonic Distortion, Hum and Noise
AM measurements	Carrier Power, Audio Frequency, Modulation Depth (+Peak, -Peak, Peak-Peak/2, RMS), SINAD, Modulation Distortion, S/N, Total Harmonic Distortion, Total Non-harmonic Distortion, Hum and Noise

SignalVu-PC applications performance summary

PM measurements

Carrier Power, Carrier Frequency Error, Audio Frequency, Deviation (+Peak, -Peak, Peak-Peak/2, RMS), SINAD, Modulation Distortion, S/N, Total Harmonic Distortion, Total Non-harmonic Distortion, Hum and Noise

Audio filters

Low pass, kHz: 0.3, 3, 15, 30, 80, 300, and user-entered up to 0.9 × audio bandwidth

High pass, Hz: 20, 50, 300, 400, and user-entered up to 0.9 × audio bandwidth

Standard: CCITT, C-Message

De-emphasis (µs): 25, 50, 75, 750, and user-entered

File: User-supplied .TXT or .CSV file of amplitude/frequency pairs. Maximum 1000 pairs

Performance characteristics, typical	**Conditions: Unless otherwise stated, performance is given for: Modulation rate = 5 kHz AM depth: 50% PM deviation 0.628 Radians**			
	FM	**AM**	**PM**	**Conditions**
Carrier Power accuracy	Refer to instrument amplitude accuracy			
Carrier Frequency accuracy	± 0.5 Hz + (transmitter frequency × ref. freq. error)	Refer to instrument frequency accuracy	± 0.2 Hz + (transmitter frequency × ref. freq. error)	FM deviation: 1 kHz / 10 kHz
Depth of Modulation accuracy	NA	± 0.2%+(0.01 * measured value)	NA	Rate: 1 kHz to 100kHz Depth: 10% to 90%
Deviation accuracy	± (1% × (rate + deviation)+50 Hz)	NA	± 100% * (0.01 + (measured rate/1 MHz))	FM Rate: 1 kHz to 1 MHz
Rate accuracy	± 0.2 Hz	± 0.2 Hz	± 0.2 Hz	FM deviation: 1 kHz to 100 kHz
Residual THD	0.10%	0.13%	0.1%	FM Deviation: 5 kHz Rate: 1 kHz to 10 kHz Depth: 50%
Residual SINAD	43 dB	58 dB	40 dB	Deviation 5 kHz Rate: 1 kHz to 10 kHz Depth: 50%

APCO P25 Measurements Application (SV26xx-SVPC)

Measurements

RF output power, operating frequency accuracy, modulation emission spectrum, unwanted emissions spurious, adjacent channel power ratio, frequency deviation, modulation fidelity, frequency error, eye diagram, symbol table, symbol rate accuracy, transmitter power and encoder attack time, transmitter throughput delay, frequency deviation vs. time, power vs. time, transient frequency behavior, HCPM transmitter logical channel peak adjacent channel power ratio, HCPM transmitter logical channel off slot power, HCPM transmitter logical channel power envelope, HCPM transmitter logical channel time alignment, cross-correlated markers

Modulation fidelity, typical

CF = 460 MHz, 815 MHz

C4FM ≤ 1.0%

HCPM ≤ 0.5%

HDQPSK ≤ 0.25%

Input signal level is optimized for best modulation fidelity.

Bluetooth Measurements Application (SV27xx-SVPC and SV31xx-SVPC)

Supported standards

Bluetooth® 4.2 Basic Rate, Bluetooth® 4.2 Low Energy, Bluetooth® 4.2 Enhanced Data Rate. Bluetooth® 5 when SV31 is enabled.

Measurements

Peak Power, Average Power, Adjacent Channel Power or InBand Emission mask, -20 dB Bandwidth, Frequency Error, Modulation Characteristics including ΔF1avg (11110000), ΔF2avg (10101010), ΔF2 > 115 kHz, ΔF2/ΔF1 ratio, frequency deviation vs. time with packet and octet level measurement information, Carrier Frequency f0, Frequency Offset (Preamble and Payload), Max Frequency Offset, Frequency Drift f_1-f_0, Max Drift Rate f_n-f_0 and f_n-f_{n-5}, Center Frequency Offset Table and Frequency Drift table, color-coded Symbol table, Packet header decoding information, eye diagram, constellation diagram

SignalVu-PC applications performance summary

Output power (BR and LE), typical mean	Supported measurements: Average power, peak power
	Level uncertainty: refer to instrument amplitude and flatness specification
	Measurement range: signal level > –70 dBm
Modulation characteristics, typical mean	Supported measurements: ΔF_1avg, ΔF_2avg, ΔF_2avg/ ΔF_1avg, ΔF_2max%>=115kHz (basic rate), ΔF_2max%>=115kHz (low energy)
	Deviation range: ±280 kHz
	Deviation uncertainty (at 0 dBm):
	<2 kHz [12] + instrument frequency uncertainty (basic rate)
	<3 kHz [12] + instrument frequency uncertainty (low energy)
	Measurement range: Nominal channel frequency ±100 kHz
Initial Carrier Frequency Tolerance (ICFT) (BR and LE), typical mean	Measurement uncertainty (at 0 dBm): <1 kHz [13] + instrument frequency uncertainty
	Measurement range: Nominal channel frequency ±100 kHz
Carrier Frequency Drift (BR and LE), typical mean	Supported measurements: Max freq. offset, drift f_1- f_0, max drift fn-f_0, max drift fn-f_{n-5} (BR and LE 50 µs)
	Measurement uncertainty: <1 kHz + instrument frequency uncertainty
	Measurement range: Nominal channel frequency ±100 kHz
In-band emissions (ACPR) (BR and LE)	Level uncertainty: refer to instrument amplitude and flatness specification

General purpose digital modulation analysis (SVMxx-SVPC)	
Modulation formats	BPSK, QPSK, 8PSK, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM, π/2DBPSK, DQPSK, π/4DQPSK, D8PSK, D16PSK, SBPSK, OQPSK, SOQPSK, 16-APSK, 32-APSK, MSK, GFSK, CPM, 2FSK, 4FSK, 8FSK, 16FSK, C4FM
Analysis period	Up to 163,500 samples
Measurement filter	Root Raised Cosine, Raised Cosine, Gaussian, Rectangular, IS-95 TX_MEA, IS-95 Base TXEQ_MEA, None
Reference Filter	Gaussian, Raised Cosine, Rectangular, IS-95 REF, None
Filter rolloff factor	α : 0.001 to 1, in 0.001 steps
Measurements	Constellation, Demod I&Q vs. Time, Error Vector Magnitude (EVM) vs. Time, Eye Diagram, Frequency Deviation vs. Time, Magnitude Error vs. Time, Phase Error vs. Time, Signal Quality, Symbol Table, Trellis Diagram
Maximum symbol rate	240 M symbols/s
	Modulated signal must be contained entirely within the acquisition bandwidth
Adaptive equalizer	Linear, Decision-Directed, Feed-Forward (FIR) equalizer with coefficient adaptation and adjustable convergence rate. Supports modulation types BPSK, QPSK, OQPSK, DQPSK, π/2DBPSK, π/4DQPSK, 8PSK, D8SPK, D16PSK, 16/32/64/128/256-QAM, 16/32-APSK
QPSK Residual EVM (center frequency = 2 GHz), typical mean	0.6 % (100 kHz symbol rate)
	0.8 % (1 MHz symbol rate)
	0.8 % (10 MHz symbol rate)
	0.8 % (30 MHz symbol rate)
	400 symbols measurement length, 20 Averages, normalization reference = maximum symbol magnitude
256 QAM Residual EVM (center frequency = 2 GHz), typical mean	0.6 % (10 MHz symbol rate)
	0.7 % (30 MHz symbol rate)
	400 symbols measurement length, 20 Averages, normalization reference = maximum symbol magnitude

12 At nominal power level of 0 dBm

13 At nominal power level of 0 dBm

SignalVu-PC applications performance summary

LTE Downlink RF measurements (SV28xx-SVPC)

Standard Supported	3GPP TS 36.141 Version 12.5
Frame Format supported	FDD and TDD
Measurements and Displays Supported	Adjacent Channel Leakage Ratio (ACLR), Spectrum Emission Mask (SEM), Channel Power, Occupied Bandwidth, Power vs. Time showing Transmitter OFF power for TDD signals and LTE constellation diagram for Primary Synchronization Signal and Secondary Synchronization Signal with Cell ID, Group ID, Sector ID, RS (Reference Signal) Power and Frequency Error.
ACLR with E-UTRA bands (typical, with noise correction)	1st Adjacent Channel 60 dB (RSA607A) 2nd Adjacent Channel 62 dB (RSA607A)

Mapping (MAPxx-SVPC)

Supported map types	Pitney Bowes MapInfo (*.mif), Bitmap (*.bmp), Open Street Maps (.osm)
Saved measurement results	Measurement data files (exported results)
Map file used for the measurements	Google Earth KMZ file
Recallable results files (trace and setup files)	MapInfo-compatible MIF/MID files

Pulse measurements (SVPxx-SVPC)

Measurements (nominal)	Pulse-Ogram™ waterfall display of multiple segmented captures, with amplitude vs time and spectrum of each pulse. Pulse frequency, Delta Frequency, 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- Ref Pulse frequency difference, Pulse- Ref Pulse phase difference, 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.
Minimum pulse width for detection, typical	150 ns
Average ON power at 18 °C to 28 °C, typical	±0.4 dB + absolute amplitude accuracy For pulses of 300 ns width or greater, duty cycles of .5 to .001, and S/N ratio ≥ 30 dB
Duty factor, typical	±0.2% of reading For pulses of 450 ns width or greater, duty cycles of .5 to .001, and S/N ratio ≥ 30 dB
Average transmitted power, typical	±0.5 dB + absolute amplitude accuracy For pulses of 300 ns width or greater, duty cycles of .5 to .001, and S/N ratio ≥ 30 dB
Peak pulse power, typical	±1.2 dB + absolute amplitude accuracy For pulses of 300 ns width or greater, duty cycles of .5 to .001, and S/N ratio ≥ 30 dB
Pulse width, typical	±0.25% of reading For pulses of 450 ns width or greater, duty cycles of .5 to .001, and S/N ratio ≥ 30 dB

Playback of recorded signals (SV56)

Playback file type	R3F recorded by RSA306, RSA500, or RSA600
Recorded file bandwidth	40 MHz

SignalVu-PC applications performance summary

File playback controls	General: Play, stop, exit playback
	Location: Begin/end points of playback settable from 0-100%
	Skip: Defined skip size from 73 µs up to 99% of file size
	Live rate: Plays back at 1:1 rate to recording time
	Loop control: Play once, or loop continuously
Memory requirement	Recording of signals requires storage with write rates of 300 MB/sec. Playback of recorded files at live rates requires storage with read rates of 300 MB/sec.

WLAN Measurements, 802.11a/b/g/j/p (SV23xx-SVPC)

Measurements	WLAN power vs. time; WLAN symbol table; WLAN constellation; spectrum emission mask; error vector magnitude (EVM) vs. symbol (or time), vs subcarrier (or frequency); mag error vs symbol (or time), vs. subcarrier (or frequency); phase error vs symbol (or time), vs. subcarrier (or frequency); channel frequency response vs. symbol (or time), vs. subcarrier (or frequency); spectral flatness vs. symbol (or time), vs. subcarrier (or frequency)
Residual EVM - 802.11a/g/j /p (OFDM), 64-QAM, typical	2.4 GHz, 20 MHz BW: -39 dB
	5.8 GHz, 20 MHz BW: -38 dB
	Input signal level optimized for best EVM, average of 20 bursts, ≥16 symbols each
Residual EVM - 802.11b, CCK-11, typical	2.4 GHz, 11 Mbps: 1.3 %
	Input signal level optimized for best EVM, average of 1,000 chips, BT = .61

WLAN Measurements 802.11n (SV24xx-SVPC)

Measurements	WLAN power vs. time; WLAN symbol table; WLAN constellation; spectrum emission mask; error vector magnitude (EVM) vs. symbol (or time), vs subcarrier (or frequency); mag error vs symbol (or time), vs. subcarrier (or frequency); phase error vs symbol (or time), vs. subcarrier (or frequency); channel frequency response vs. symbol (or time), vs. subcarrier (or frequency); spectral flatness vs. symbol (or time), vs. subcarrier (or frequency)
EVM performance - 802.11n, 64-QAM, typical	2.4 GHz, 40 MHz BW: -38 dB
	5.8 GHz, 40 MHz BW: -38 dB
	Input signal level optimized for best EVM, average of 20 bursts, ≥16 symbols each

WLAN Measurements 802.11ac (SV25xx-SVPC)

Measurements	WLAN power vs. time; WLAN symbol table; WLAN constellation; spectrum emission mask; error vector magnitude (EVM) vs. symbol (or time), vs subcarrier (or frequency); mag error vs symbol (or time), vs. subcarrier (or frequency); phase error vs symbol (or time), vs. subcarrier (or frequency); channel frequency response vs. symbol (or time), vs. subcarrier (or frequency); spectral flatness vs. symbol (or time), vs. subcarrier (or frequency)
EVM performance - 802.11ac, 256-QAM, typical	5.8 GHz, 40 MHz BW : -38 dB
	Input signal level optimized for best EVM, average of 20 bursts, ≥16 symbols each

EMC pre-compliance and troubleshooting (EMCVUxx-SVPC)

Standards	EN55011, EN55012, EN55013, EN55014, EN55015, EN55025, EN55032, EN60601, DEF STAN, FCC Part 15, FCC Part18, MIL-STD 461G
Features	EMC-EMI display, Wizard to setup accessories and limit lines, Inspect, Harmonic Markers, Level Target, Compare Traces, Measure Ambient, Report generation, Re-measure Spot
Detectors	+Peak, Avg, Avg (of logs), Avg (VRMS), CISPR QuasiPeak, CISPR Peak, CISPR Average, CISPR Average of Logs, MIL +Peak, DEF STAN Avg, DEF STAN Peak
Limit lines	Up to 3 Limit Lines with corresponding margins
Resolution BW	Set per standard or user definable
Dwell time	Set per standard or user definable
Report format	PDF, HTML, MHT,RTF, XLSX, Image File format

SignalVu-PC applications performance summary

Accessory type	Antenna, Near Field Probe, Cable, Amplifier, Limiter, Attenuator, Filter, Other
Correction format	Gain/Loss Constant, Gain/loss table, Antenna Factor
Traces	Save/recall up to 5 traces, Math trace (trace1 minus trace2), Ambient trace

Return Loss, Distance-to-Fault, and Cable Loss measurements

Measurements	Return Loss, Cable Loss, Distance-to-Fault (DTF)
Frequency range	10 MHz to 3 GHz (RSA603A) 10 MHz to 7.5 GHz (RSA607A)
Sweep speed [14]	5 ms/point, Return Loss measurement 5 ms/point, Distance-to-Fault measurement 5 ms/point, Cable Loss measurement
Frequency resolution	500 Hz
Return Loss measurement error	Return Loss of 0 to 15 dB: ±0.5 dB Return Loss of 15 to 25 dB: ±1.5 dB Return Loss of 25 to 35 dB: ±4.0 dB
Return Loss measurement error at 14 dB Return Loss	±1.5 dB from 10 MHz to 6.8 GHz ±3.0 dB from 6.8 GHz to 7.5 GHz
Return Loss measurement range	50 dB
Interference immunity	Return Loss Measurement Error within specifications for the following conditions: +5 dBm interferer power within 800 kHz of measurement point +5 dBm interferer power more than 800 kHz away from measurement point (High power test level. Interferer not included in accuracy assessment.)
Distance-to-Fault range	1500 m or 15 dB one-way cable loss capable, user defined Maximum range is a function of the cable velocity factor and the frequency step size as follows: $\text{Range} = \left(\frac{Vp \times c}{2}\right) \times \left(\frac{N - 1}{F_{stop} - F_{start}}\right)$ Where: V_p = Cable velocity factor relative to the speed of light c = Speed of light (m/s) F_{start} = Sweep start frequency (Hz) F_{stop} = Sweep stop frequency (Hz) N = number of sweep points
Distance-to-Fault resolution	RSA603A, (RG-58Vp=0.66): 0.03 m (User Definable) RSA607A, (RG-58Vp=0.66): 0.01 m (User Definable) Minimum resolution is a function of the cable velocity factor and the frequency step size as follows: $\text{Resolution} = \left(\frac{Vp \times c}{2}\right) \times \left(\frac{1}{F_{stop} - F_{start}}\right)$ or $\text{Resolution} = \left(\frac{\text{Range}}{N - 1}\right)$

14 201 point sweep Measured using a Panasonic Toughpad FZ-G1, Intel® Core™ i5-5300U 2.3GHz Processor, 8GB RAM, 256GB SSD, Windows®7 Pro. Return Loss,Cable Loss, or Distance-to-Fault display is the only measurement on screen.

28 Volt noise source drive

28 Volt noise source drive output

Output Level	28 VDC @ 140 mA
Output voltage turn ON/OFF time	Turn on: 100 µS Turn off: 500 µS

Input and output ports

Inputs, outputs, and inferfaces

RF input	N type, female
External frequency reference input	BNC, female
Trigger/Sync input	BNC, female
Tracking Generator Source Output	N type, female
GPS Antenna	SMA, female
USB Device Port	USB 3.0 – Type A
USB Status LED	LED, dual color red/green LED states: Steady Red: USB power applied, or resetting Steady Green: Initialized, ready for use Blinking Green: Transferring data to host

Installation requirements

Maximum power dissipation (fully loaded)	RSA600A: 45 W maximum.
Surge current	2 A peak maximum, at 25 °C (77 °F) for ≤ 5 line cycles, after the product has been turned off for at least 30 seconds.
Cooling clearance	Bottom, top 0 mm (0 in.) with feet installed 6.3 mm (0.25 in.) without feet installed Sides 0 mm (0 in.) Rear: 38.1 mm (1.5 in.)

Physical characteristics

Physical characteristics

Height	75.0 mm (2.95 in)
Width	222.3 mm (8.75 in)
Depth	358.6 mm (14.12 in)
Net weight	2.79 kg (6.15 pounds)

Environmental and safety

Temperature

Operating	-10 °C to +55 °C (+14 °F to +131 °F)
Non-operating	-51 °C to +71 °C (-60 °F to +160 °F)

Humidity

MIL-PRF-28800F Class 2

Operating:

5% to 95±5%RH (relative humidity) in the temperature range of +10 °C to 30 °C (+50 °F to 86 °F)

5% to 75±5% RH above +30 °C to 40 °C (+86 °F to 104 °F)

5% to 45±5% RH above +40 °C up to +55 °C (+86 °F to +131 °F)

<10 °C (+50 °F) humidity is uncontrolled; non-condensing

Altitude

Operating	Up to 3000 m (9,842 ft.)
Non-operating	Up to 12000 m (39,370 ft.)

Dynamics

Vibration

Operating	Tektronix Class 3 Random Vibration Test at 0.31 GRMS: 5-500 Hz, 3 Axes at 10 min/axis
Non-Operating	MIL-PRF-28800F Class 3
	2.06 GRMS, 5 500 Hz, 10 minutes per axis, 3 axes (30 minutes total)

Shock

Operating	Test method per Military Standard MIL-PRF-28800F 1-4
Non-Operating	Exceeds the requirements of Military Standard MIL-PRF-28800F

Handling and transit

Bench handling, operating	MIL-PRF-28800F Class 3
Transit drop, non-operating	MIL-PRF-28800F Class 2

Ordering information

Instrument models

RSA603A: USB real time spectrum analyzer, 9 kHz - 3.0 GHz, 40 MHz acquisition bandwidth

RSA607A: USB real time spectrum analyzer, 9 kHz - 7.5 GHz, 40 MHz acquisition bandwidth

The RSA600 series instruments require a PC with Windows 7, Windows 8/8.1, or Windows 10, 64-bit operating system and a USB 3.0 connection. 8 GB RAM and 20 GB free drive space is required for installation of SignalVu-PC. For full performance of the real time features of the RSA600, an Intel Core i7 4th generation processor is required. Processors of lower performance can be used, with reduced real-time performance. Storage of streaming data requires that the PC be equipped with a drive capable of streaming storage rates of 300 MB/sec.

Includes: USB 3.0 cable (2 M), A-A connection, screw lock, quick-start manual (printed), connector covers, power cord, (see power plug options), USB memory device with SignalVu-PC, API and documentation files. A GPS antenna is not included with the instrument. See Accessories for available GPS antennas.

Instrument options

Option	Description
Option 04	Tracking generator, 9 kHz to maximum frequency of instrument

Controller ordered as an option to your instrument	Description
Option CTRL-G1-B	Portable controller, Brazil power, see country list for availability
Option CTRL-G1-C	Portable controller, China power, see country list for availability
Option CTRL-G1-E	Portable controller, Europe power, see country list for availability
Option CTRL-G1-I	Portable controller, India power, see country list for availability
Option CTRL-G1-N	Portable controller, North American power, see country list for availability
Option CTRL-G1-U	Portable controller, UK power, see country list for availability

Options

RSA600A power plug options

Opt. A0	North America power plug (115 V, 60 Hz)
Opt. A1	Universal Euro power plug (220 V, 50 Hz)
Opt. A2	United Kingdom power plug (240 V, 50 Hz)
Opt. A3	Australia power plug (240 V, 50 Hz)
Opt. A4	North America power plug (240 V, 50 Hz)
Opt. A5	Switzerland power plug (220 V, 50 Hz)
Opt. A6	Japan power plug (100 V, 50/60 Hz)
Opt. A10	China power plug (50 Hz)
Opt. A11	India power plug (50 Hz)
Opt. A12	Brazil power plug (60 Hz)
Opt. A99	No power cord

RSA600A language options

Opt. L0	English manual
Opt. L1	French manual
Opt. L2	Italian manual
Opt. L3	German manual
Opt. L4	Spanish manual
Opt. L5	Japanese manual
Opt. L6	Portuguese manual
Opt. L7	Simplified Chinese manual
Opt. L8	Traditional Chinese manual
Opt. L9	Korean manual
Opt. L10	Russian manual
Opt. L99	No manual

RSA600A service options

Opt. C3	Calibration Service 3 Years
Opt. C5	Calibration Service 5 Years
Opt. D1	Calibration Data Report
Opt. D3	Calibration Data Report 3 Years (with Opt. C3)
Opt. D5	Calibration Data Report 5 Years (with Opt. C5)
Opt. R5	Repair Service 5 Years (including warranty)

Warranty

- RSA600 series warranty: 3 years.
- FZ-G1 tablet: 3-year warranty with Business Class Support (provided by Panasonic in region of purchase).

Tablet

Tablet controller available

A tablet controller intended for portable applications using the Tektronix RSA306B and RSA500A series spectrum analyzers can also be used with the RSA600A series. The Panasonic ToughPad FZ-G1 is available in limited geographies from Tektronix as shown in the ordering information below.

Item	Description	Regional availability
FZ-G1-N	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, battery, digitizer pen and tether, battery charger with power cord.	Canada, Columbia, Ecuador, Mexico, Philippines, Singapore, United States
FZ-G1F	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, digitizer pen and tether, battery charger with power cord	China
FZ-G1-I	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, battery, digitizer pen and tether, battery charger with power cord	India
FZ-G1-E	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, battery, digitizer pen and tether, battery charger with power cord.	Austria, Baltic States, Belgium, Bosnia, Bulgaria, Chile, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Indonesia, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, South Africa, Spain, Sweden, Thailand, Turkey
FZ-G1-U	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, battery, digitizer pen and tether, battery charger with power cord.	Egypt, Kenya, Malaysia, United Kingdom
FZ-G1-B	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, battery, digitizer pen and tether, battery charger with power cord	Brazil
FZ-G1-J	Controller for USB Spectrum Analyzers, Panasonic ToughPad FZ-G1. Includes tablet, battery, digitizer pen and tether, battery charger with power cord	Japan

Panasonic FZ-G1 accessories

Item	Description
FZ-VZSU84U [15]	Li-ion battery, standard capacity
FZ-VZSU88U [15]	Long-life battery pack for Panasonic ToughPad FZ-G1
FZ-BNDLG1BATCHRG[9]	Single battery charger bundle for FZ-G1. 1 charger and 1 adapter
CF-LNDDC120[9]	Lind 120 W 12-32 Volt input vehicle adapter for Tough Pad and RSA500A
TBCG1AONL-P	Panasonic Toughmate always on case for FZ-G1
TBCG1XSTP-P	Infocase Toughmate X-strap for Panasonic FZ-G1

15 Not available in China, Hong Kong, Macau or Mongolia

Licenses

Licenses

A variety of optional, licensed applications are available for purchase for SignalVu-PC. These licenses can be associated with and stored on either your PC or any RSA300 series, RSA500 series, RSA600 series, and RSA7100A spectrum analyzers. Licenses can be purchased as an option to your hardware or separately as a Node-locked or a Floating license.

Contact your local Tektronix Account Manager to purchase a license. If your purchased license is not ordered as an option to your instrument, you will receive an email with a list of the applications purchased and the URL to the Tektronix Product License Web page, where you will create an account and can then manage your licenses using the Tektronix Asset Management System (AMS): http://www.tek.com/products/product-license.

AMS provides an inventory of the license(s) in your account. It enables you to check out or check in a license and view the history of licenses.

Optional applications are enabled by one of the following license types.

License type	Description
Node locked license (NL) purchased as an option to your instrument	This license i s initially assigned to a specific host id, which can be either a PC or an instrument. It can be reassociated to either a PC or another spectrum analyzer two times using Tek AMS. When associated with an instrument, this license is factory-installed on that instrument at the time of manufacture. It will be recognized by any PC operating with SignalVu-PC when the instrument is connected. However, the licensed application is deactivated from the PC if the licensed instrument is disconnected. This is the most common form of licensing, as it simplifies management of your applications.
Node locked license (NL) purchased separately	This license is initially assigned to a specific host id, which can be either a PC or an instrument. It can be reassociated to either a PC or instrument two times using Tek AMS. This license is delivered via email and is associated with either your PC or with an instrument when you install the license. This license should be purchased when you want your license to stay on your PC, or if you have an existing USB instrument on which you would like to install a license.
Floating license(FL) purchased separately	This license can be moved between different host ids, which can be either PCs or instruments. It can be reassociated to different PCs or instruments an unlimited number of times using Tek AMS. This license is delivered via email and is associated with either your PC or with an instrument when you install the license. This is the most flexible license and is recommended in applications where the license needs to be moved frequently.

SignalVu-PC application-specific modules

The following SignalVu-PC license options are available.

Application license	Description
SVANL-SVPC	AM/FM/PM/Direct Audio Analysis - Node Locked License
SVAFL-SVPC	AM/FM/PM/Direct Audio Analysis - Floating License
SVTNL-SVPC	Settling Time (frequency and phase) measurements - Node Locked License
SVTFL-SVPC	Settling Time (frequency and phase) measurements - Floating License
SVMNL-SVPC	General Purpose Modulation Analysis to work with analyzer of acquisition bandwidth <= 40 MHz or MDO - Node Locked License
SVMFL-SVPC	General Purpose Modulation Analysis to work with analyzer of acquisition bandwidth <= 40 MHz or MDO- Floating License
SVPNL-SVPC	Pulse Analysis to work with analyzer of acquisition bandwidth <= 40 MHz or MDO - Node Locked License
SVPFL-SVPC	Pulse Analysis to work with analyzer of acquisition bandwidth <= 40 MHz or MDO- Floating License
SVONL-SVPC	Flexible OFDM Analysis - Node Locked License
SVOFL-SVPC	Flexible OFDM Analysis - Floating License
SV23NL-SVPC	WLAN 802.11a/b/g/j/p measurement - Node Locked License

Application license	Description
SV23FL-SVPC	WLAN 802.11a/b/g/j/p measurement - Floating License
SV24NL-SVPC	WLAN 802.11n measurement (requires SV23) - Node Locked License
SV24FL-SVPC	WLAN 802.11n measurement (requires SV23) - Floating License
SV25NL-SVPC	WLAN 802.11ac measurement to work with analyzer of acquisition bandwidth <= 40 MHz (requires SV23 and SV24) or MDO - Node Locked License
SV25FL-SVPC	WLAN 802.11ac measurement to work with analyzer of acquisition bandwidth <= 40 MHz (requires SV23 and SV24) or MDO - Floating License
SV26NL-SVPC	APCO P25 measurement - Node Locked License
SV26FL-SVPC	APCO P25 measurement - Floating License
SV27NL-SVPC	Bluetooth measurement to work with analyzer of acquisition bandwidth <= 40 MHz or MDO - Node Locked License
SV27FL-SVPC	Bluetooth measurement to work with analyzer of acquisition bandwidth <= 40 MHz or MDO- Floating License
SV31NL-SVPC	Bluetooth 5 measurements (requires SV27) - Node Locked License
SV31FL-SVPC	Bluetooth 5 measurements (requires SV27) - Floating License
MAPNL-SVPC	Mapping - Node Locked License
MAPFL-SVPC	Mapping - Floating License
SV56NL-SVPC	Playback of recorded files - Node Locked License
SV56FL-SVPC	Playback of recorded files - Floating License
CONNL-SVPC	SignalVu-PC connection to the MDO4000B series mixed-domain oscilloscopes - Node Locked License
CONFL-SVPC	SignalVu-PC connection to the MDO4000B series mixed-domain oscilloscopes - Floating License
SV2CNL-SVPC	WLAN 802.11a/b/g/j/p/n/ac and live link to MDO4000B to work with analyzer of acquisition bandwidth <= 40 MHz - Node Locked License
SV2CFL-SVPC	WLAN 802.11a/b/g/j/p/n/ac and live link to MDO4000B to work with analyzer of acquisition bandwidth <= 40 MHz - Floating License
SV28NL-SVPC	LTE Downlink RF measurement to work with analyzer of acquisition bandwidth <= 40 MHz or MDO - Node Locked License
SV28FL-SVPC	LTE Downlink RF measurement to work with analyzer of acquisition bandwidth <= 40 MHz or MDO - Floating License
SV54NL-SVPC	Signal survey and classification - Node Locked License
SV54FL-SVPC	Signal survey and classification - Floating License
SV60NL-SVPC	Return loss, distance to fault, VSWR, cable loss - Node Locked License (requires Option 04 on RSA500A/600A)
SV60FL-SVPC	Return loss, distance to fault, VSWR, cable loss - Floating License (requires Option 04 on RSA500A/600A)
SV30NL-SVPC	WiGig 802.11ad measurements - Node Locked License (only for offline analysis)
SV30FL-SVPC	WiGig 802.11ad measurements - Floating License (only for offline analysis)
EMCVUNL-SVPC	EMC pre-compliance and troubleshooting (includes EMI CISPR detectors) - Node Locked License
EMCVUFL-SVPC	EMC pre-compliance and troubleshooting (includes EMI CISPR detectors) - Floating License
SVQPNL-SVPC	EMI CISPR detectors - Node Locked License
SVQPFL-SVPC	EMI CISPR detectors - Floating License
EDUFL-SVPC	Education-only version of all modules for SignalVu-PC - Floating License

Recommended accessories

Tektronix offers a wide variety of adapters, attenuators, cables, impedance converters, antennas and other accessories for the RSA600A series.

General purpose RF cables	
012-1738-00	Cable,50 Ω, 40 inch,type-N(m) to type-N(M)
012-0482-00	Cable, 50 Ω, BNC (m) 3 foot (91 cm)
Adapters	
103-0045-00	Adapter, coaxial, 50 Ω type-N(m) to type-BNC(f)
013-0410-00	Adapter, coaxial, 50 Ω type-N (f) to type-N (f)
013-0411-00	Adapter, coaxial, 50 Ω type-N (m) to type-N (f)
013-0412-00	Adapter, coaxial, 50 Ω, type-N(m) to type-N(m)
013-0402-00	Adapter, coaxial, 50 Ω type-N (m) to type-N 7/16(m)
013-0404-00	Adapter, coaxial, 50 Ω type-N(m) to type-7/16 (f)
013-0403-00	Adapter, coaxial, 50 Ω type-N(m) to type DIN 9.5(m)
013-0405-00	Adapter, coaxial, 50 Ω type-N(m) to type-DIN 9.5(f)
013-0406-00	Adapter, coaxial, 50 Ω type-N(m) to type-SMA(f)
013-0407-00	Adapter, coaxial, 50 Ω type-N(m) to type-SMA(m)
013-0408-00	Adapter, coaxial, 50 Ω type-N(m) to type-TNC(f)
013-0409-00	Adapter, coaxial, 50 Ω type-N(m) to type-TNC(m)
Attenuators and 50/75 Ω pads	
013-0422-00	Pad, 50/75 Ω, minimum loss, type-N(m) 50 Ω to type-BNC(f) 75 Ω
013-0413-00	Pad, 50/75 Ω, minimum loss, type-N(m) 50 Ω to type-BNC(m) 75 Ω
013-0415-00	Pad, 50/75 Ω, minimum loss, type-N(m) 50 Ω to type-F(m) 75 Ω
015-0787-00	Pad, 50/75 Ω, minimum loss, type-N(m) 50 Ω to type-F(f) 75 Ω
015-0788-00	Pad, 50/75 Ω, minimum loss, type-N(m) 50 Ω to type-N(f) 75 Ω
011-0222-00	Attenuator, fixed, 10 dB, 2 W, DC-8 GHz, type-N(f) to type-N(f)
011-0223-00	Attenuator, fixed, 10 dB, 2 W, DC-8 GHz, type-N(m) to type-N(f)
011-0224-00	Attenuator, fixed, 10 dB, 2 W, DC-8 GHz, type-N(m) to type-N(m)
011-0228-00	Attenuator, fixed, 3 dB, 2 W, DC-18 GHz, type-N(m) to type-N(f)
011-0225-00	Attenuator, fixed, 40 dB, 100 W, DC-3 GHz, type-N(m) to type-N(f)
011-0226-00	Attenuator, fixed, 40 dB, 50 W, DC-8.5 GHz, type-N(m) to type-N(f)
Antennas	
119-8733-00	Antenna, Active. GPS & GLONASS, magnetic mount, 5M cable, 3V, 8ma SMA connector, RG-174 Cable
119-8734-00	Antenna, Active, GPS and Beidou, magnetic mount, 5M cable, 3V, 8ma SMA connector, RG-174 Cable
Filters, probes, demonstration board	
119-7246-00	Pre-filter, general purpose, 824 MHz to 2500 MHz, type-N (f) connector

119-7426	Pre-filter, general purpose, 2400 MHz to 6200 MHz, type-N (f) connector
119-4146-00	EMCO E/H-field probes
E/H field probes, lower cost alternative	Available from Beehive http://beehive-electronics.com/
RSA-DKIT	RSA Version 3 demo board with N-BNC adapter, case, antenna, instructions
011-0227-00	Bias-T, type N(m) RF, type N(f) RF+DC, BNC(f) Bias, 1 W, 0.5 A, 2.5 MHz-6 GHz
EMC accessories	
EMI-DEBUG-HWPARTS	Bundle of EMI accessories for debug (includes EMI-NF-Probe & EMI-NF-AMP)
EMI-RE-HWPARTS	Bundle of EMI accessories for radiated pre-compliance test (includes: EMI-BICON-ANT, EMI-CLP-ANT, EMI-PREAMP, EMI-TRIPOD, CABLE-5M, CABLE-1M)
EMI-BICON-ANT	25 MHz to 300 MHz Biconical antenna
EMI-CLP-ANT	300 MHz to 1 GHz Compact Log Periodic antenna
EMI-PREAMP	1 MHz to 1 GHz Preamplifier
EMI-TRIPOD	Antenna Tripod 0.8 to 1.5 m
EMI-LISN50uH-US [16]	50uH AC line impedance stabilization network to test devices that use a US (United States) NEMA 5-15 power plug, 120V Max
EMI-LISN50uH-EU [16]	50uH AC line impedance stabilization network to test devices that use an EU (European) Schuko CE7/4 power plug, 240V Max
EMI-LISN50uH-GB [16]	50uH AC line impedance stabilization network to test devices that use a GB (Great Britian) BS1363 power plug, 240V Max
EMI-LISN5uH	5uH DC line impedance stabilization network
EMI-NF-PROBE	Near Field Probe set
EMI-TRANS-LIMIT	Transient Limiter 150 kHz to 30 MHz
CABLE-1M	Cable, 1 m
CABLE-3M	Cable, 3 m
CABLE-5M	Cable, 5 m
EMI-NF-AMP	Near Field Probe Amplifier
Chargers, Additional batteries, Cables, Cases	
RSA5600RACK	Rackmount for RSA500 and RSA600 series. Holds 1 RSA500A or 2 RSA600A models.
WFMBA200	Replacement battery pack for RSA500A series
WFMBC200	External battery charger for WFMBA200, charges two batteries
CF-LNDDC120	Lind 120 W 12-32 Volt input vehicle adapter for RSA500A series and Panasonic Tough Pad (not available in China)
016-2109-01	Additional soft carry-case with shoulder strap
174-6810-00	Additional USB 3.0 cable (2 M), A-A connection, screw lock

16 Not available in Canada

Tracking generator accessories

A variety of calibration kits and phase-stabilized cables are available for the RSA600 tracking generator when used with the optional cable and antenna measurements software.

Calibration kits can be used to improve the factory calibration of the tracking generator when equipped with application SV60-Return loss, VSWR, cable loss, and distance to fault.

These phase-stabilized cables are high performance cables that are phase-stable to +- 2 degrees at 7.5 GHz, with return loss less than -20 dB. Velocity constant is 0.78. Loss at 7.5 GHz specified to be less than -1.05 dB (0.6 m), -1.61 dB (1.0 m), -2.30 dB (1.5m) (all values nominal).

Calibration Kits for one-port measurements

Phase-stabilized cables from Tekronix for cable and antenna measurements

Calibration kits	
CALOSLNM	Calibration kit, 3-in-1, open, short, load, DC to 6 GHz, Type-N(m), 50 ohm
CALOSLNF	Calibration kit, 3-in-1, open, short, load, DC to 6 GHz, Type-N(f), 50 ohm
CALOSLNF	Calibration kit, 3-in-1, open, short, load, DC to 6 GHz, 7/16 DIN(m)
CALOSL716F	Calibration kit, 3-in-1, open, short, load, DC to 6 GHz, 7/16 DIN(f)
CALSOLT35F	Calibration kit, 4-in-1 3.5 mm (f) short, open, load, through, 13 GHz
CALSOLT35M	Calibration kit, 4-in-1 3.5 mm (m) short, open, load, through, 13 GHz
CALSOLTNF	Calibration kit, 4-in-1 type-N (f) short, open, load, through, 9 GHz
CALSOLTNM	Calibration kit, 4-in-1 type-N (m) short, open, load, through, 9 GHz
CALSOLT716F	Calibration kit, 4-in-1 7/16 (f) short, open, load, through, 6 GHz
CALSOLT716M	Calibration kit, 4-in-1 7/16 (m) short, open, load, through, 6 GHz
Phase-stabilized cables	
012-1745-00	Type-N (m) to type-N (f), 5 ft or 1.5 m
012-1746-00	Type-N(m) to type-N(m), 5 ft or 1.5 m
012-1747-00	Type-N(m) to 7/16(f), 60 cm (23.6 in.)
012-1748-00	Type-N(m) to 7/16(f), 3.28 ft or 1 m
012-1749-00	Type-N(m) to 7/16(f), 5 ft or 1.5 m
012-1750-00	Type-N(m) to 7/16(m), 3.28 ft or 1 m
012-1751-00	Type-N(m) to 7/16(m), 5 ft or 1.5 m
012-1752-00	Type-N(m) to 7/16(m), 60 cm (23.6 in.)
012-1753-00	Type-N(m) to DIN 9.5(f), 60 cm (23.6 in.)
012-1754-00	Type-N(m) to DIN 9.5(f), 3.28 ft or 1 m
012-1755-00	Type-N(m) to DIN 9.5(f), 5 ft or 1.5 m

012-1756-00	Type-N(m) to DIN 9.5(m), 3.28 ft or 1 m
012-1757-00	Type-N(m) to DIN 9.5(m), 5 ft or 1.5 m
012-1758-00	Type-N(m) to DIN 9.5(m), 60 cm (23.6 in.)
012-1759-00	Type-N(m) to TNC(f), 3.28 ft or 1 m
012-1760-00	Type-N(m) to TNC(f), 5 ft or 1.5 m
012-1761-00	Type-N(m) to TNC(f), 60 cm (23.6 in.)
012-1762-00	Type-N(m) to TNC(m), 60 cm (23.6 in.)
012-1763-00	Type-N(m) to TNC(m), 3.28 ft or 1 m
012-1764-00	Type-N(m) to TNC(m), 5 ft or 1.5 m
012-1765-00	Type-N(m) to type-N(f), 60 cm (23.6 in.)
012-1766-00	Type-N(m) to type-N(f), 3.28 ft or 1 m
012-1767-00	Type-N(m) to type-N(m), 3.28 ft or 1 m
012-1768-00	Type-N(m) to type-N(m), 60 cm (23.6 in.)
012-1769-00	Type-N(m) to type-SMA(f), 60 cm (23.6 in.)
012-1770-00	Type-N(m) to type-SMA(f), 3.28 ft or 1 m
012-1771-00	Type-N(m) to type-SMA(f), 5 ft or 1.5 m
012-1772-00	Type-N(m) to type-SMA(m) 60 cm (23.6 in.)
012-1773-00	Type-N(m) to type-SMA(m), 3.28 ft or 1 m
012-1774-00	Type-N(m) to type-SMA(m), 5 ft or 1.5 m

CE

Tektronix is registered to ISO 9001 and ISO 14001 by SRI Quality System Registrar.

GPIB IEEE-488

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

Product Area Assessed: The planning, design/development and manufacture of electronic Test and Measurement instruments.

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For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tek.com.

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