WT-200

无线网络测试仪器

Wireless Connectivity Tester

Technical Specifications

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Shenzhen iTest Technology Co., Ltd.
文件编号：ITEST-WI-YX-16/A

Analyzer		
Input frequency range	2400 to 2500 MHz	
	4900 to 6000 MHz	
IF bandwidth	120 MHz	
Input power range	+30 dBm peak(+25 dBm average)	
Input power accuracy	Specification:	±0.5 dB
	Typical:	±0.3 dB
Input return loss	>13 dB	
Spurious (signal applied)	<-60 dBc (CW, for signal levels greater than -10 dBm)	
Spectral flatness	Specification:	≤±0.5 dB (±40 MHz)
	Typical:	±0.3 dB (±40 MHz)
Inherent spurious floor (no signal)	≤-80 dBm	
Quantization	14 bits	
Noise figure	≤30 dB at minimum input attenuation	
Integrated phase noise	≤0.4 degrees (100 Hz to 1 MHZ) (2400 to 2500 MHz)	
	≤0.6 degrees (100 Hz to 1 MHZ) (4900 to 6000 MHz)	
Signal to noise ratio	≥55 dB 100 KHz RBW	
Sampling data rate	120 MHz	
Waveform capture duration	10 ms	

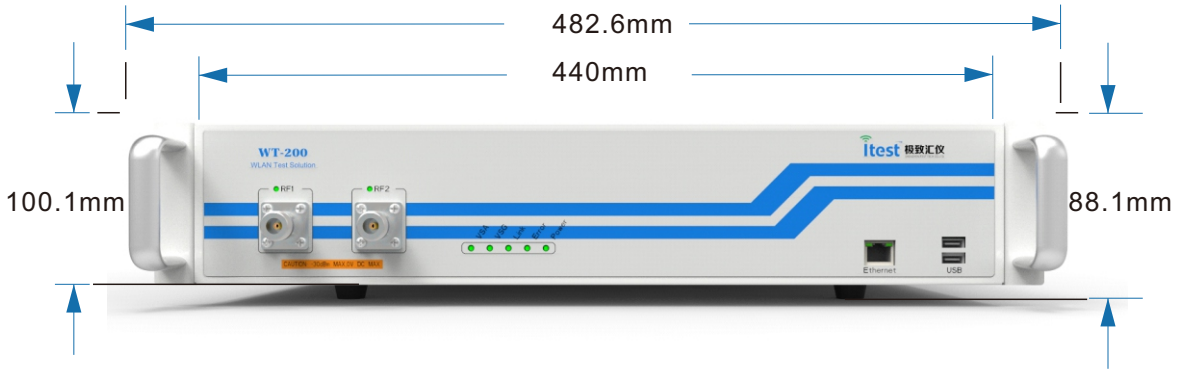
RF Generator		
Output frequency range	2400 to 2500 MHz	
	4900 to 6000 MHz	
IF bandwidth	120 MHz	
Output power range(CW)	10 to -100 dBm	
Output power accuracy	Specification:	±0.75 dB(0 to -90 dBm)
		±1.50 dB(-90 to -100 dBm)
		±1.50 dB(0 to 10 dBm)
	Typical:	±0.50 dB(0 to -90 dBm)
		±1.00 dB(-90 to -100 dBm)
		±1.00 dB(0 to 10 dBm)
Output return loss	>13 dB	
Spurious (in channel)	Specification:	≤-40 dBc (80 MHz, >-55 dBm) (CW)
	Typical:	≤-50 dBc (80 MHz, >-55 dBm) (CW)
Spectral flatness	Specification:	≤±0.5 dB (±40 MHz)
	Typical:	±0.3 dB (±40 MHz)
Integrated phase noise	≤0.4 degrees (100 Hz to 1 MHZ) (2400 to 2500 MHz)	
	≤0.6 degrees (100 Hz to 1 MHZ) (4900 to 6000 MHz)	
Signal to noise ratio	Specification:	≥60 dB (100 KHz signal BW), power level -10 dBm
	Typical:	≥70 dB (100 KHz signal BW), power level -10 dBm
Quantization	16 bits	
Carrier leakage	≤-40 dBc	
Gap power	≤-90 dBm/100 kHz	
Sampling data rate	120 MHz	
Waveform capture duration	20 ms	

RF Analyzer – Signal Trigger	
Absolute minimum value	-40 dBm
Absolute maximum value	Limited by the maximum input power
Trigger relative threshold	-10 to -40 dBmax
Level accuracy	<±2 dB
Port	
Port to Port Isolation	>60 dB
VSA switching time	≤1 ms
VSG switching time	≤1 ms
Timebase	
Oscillator type	OCXO
Frequency	10 MHz
Initial accuracy (25°C, after 60 minute warm-up)	<±0.05 ppm
Maximum aging	<±0.1 ppm per year
Temperature stability	<±0.01 ppm,referenced to 25°C
Warm-up time (to within ±0.1 ppm at 25°C)	<5 minutes
MIMO System Performance	
VSA capture trigger accuracy	≤±50 ns
VSA start trigger accuracy	≤±50 ns
General and Environmental	
Dimensions	440 mm W x 501.4 mm D x 88.1 mm H
Net weight	11.1 kg
Power requirements	110 to 240 VAC, 50 to 60Hz
Power consumption	<100 W (maximum), <5W (standby)
Operating temperature	+10°C to +55°C
Storage temperature	-20°C to +70°C
Specification validity temperature	+20°C to +30°C
Operating humidity	15% to 95% relative humidity, non-condensing
EMC	EN 61326, FCC PART 15B
Safety	EN 61010-1, IEC 61010-1
Mechanical vibration	IEC 60068, IEC 61010
Mechanical shock	ASTM D3332-99, Method B
Recommended calibration cycle	24 months
Warranty	12 months hardware 12 months software updates
Recommended PC	Intel Core i5 2.5 GHz with 4 GB of RAM or better

WLAN (802.11a/b/g/n/ac/p)		
EVM	Residual VSA/VSG EVM (full packet channel estimation)	≤-44 dB for 20 M(Typical: -49 dB)
		≤-42 dB for 40 M(Typical: -46 dB)
		≤-40 dB for 80 M(Typical: -43 dB)
Peak power	Peak power over all symbols (dBm)	VSA power accuracy: ±0.5 dB (+20 to -45 dBm)
RMS power	All: average power of complete datacapture (dBm)	
	No gap: average power over all symbols after removal of any gap between packets (dBm)	
I/Q amplitude error	Residual VSA I/Q imbalance:	≤1% (+20 to -30 dBm)
	Residual VSGI/Q imbalance:	≤1% (-5 to -95 dBm)
I/Q phase error	Residual VSA I/Q imbalance:	≤0.5 degree (+20 to -30 dBm)
	Residual VSGI/Q imbalance:	≤0.5 degree (-5 to -95 dBm)
Frequency error	VSA measurement error:	≤ ±0.2 ppm calibrated
RMS phase noise	VSA integrated phase noise:	≤0.3 degrees (100 Hz to 1 MHz)
PSD	Power spectral density (dBm/Hz) versus frequency offset center frequency ±40 MHz	
Spectral mask	Transmit spectrum mask	Spectral mask view: ±60 MHZ
Spectral flatness	VSA flatness over 80 MHz BW: ±0.5 dB	
Sidelobe analysis (spectral mask, LO leakage)	Center peak and peaks of 1st and 2nd upper/lower sidelobes (dB) 802.11b/g DSSS signals only	
CCDF (complementary cumulative distribution function)	Probability of peak signal power being greater than a given power level versus peak-to-average power ratio (dB)	
Power on ramp	Power-on time from 10% to 90% Power-on time from 90% power level to start of packet	
Power down ramp	Power-off time from 90% to 10% Power-off time from 90% power level to end of packet	
Eye diagram	I and Q channels versus time(802.11b/g DSSS signals only)	
PSDU data	Recovered binary data sequence,including the MAC header and Frame Check Sequence, if present	
Raw capture data	I and Q signals versus time	
General waveform analysis	DC offset, RMS level, minimum/maximum amplitude, peak-to-peak amplitude, RMS I- and Q-channel levels	
CW frequency analysis	Frequency of CW tone	

Bluetooth® (1.0, 2.0, 2.1, 3.0)		
TX output power	Transmit DUT output power (dBm)	VSA power accuracy: ±0.5 dB (+20 to -45 dBm)
TX output spectrum	Transmit DUT power spectral density	
20 dB bandwidth	VSA frequency accuracy:	≤±0.2 ppm calibrated
In-band emissions (Adjacent channel)	VSA spurious:	<-60 dBc (100 KHz RBW) (CW)
Modulation characteristics	Average and peak frequency deviation (Hz)	(For EVM better than -25 dB) VSA measurement error: ≤±0.2 ppm calibrated
Carrier frequency tolerance	Carrier frequency offset (Hz)	
Carrier frequency drift	Carrier frequency change over the Bluetooth burst (Hz)	
Relative transmit power(EDR)	VSA power accuracy:	±0.5 dB (+20 to -45 dBm)
Carrier frequency stability(EDR)	Frequency drift over the Bluetooth EDR burst duration (Hz)	
Receive sensitivity	Receive sensitivity test. Includes Dirty Packets.	VSG power accuracy: ±0.75 dB (0 to -90 dBm)
Maximum input signal level	Assuming single-ended BER measurement	
RMS EVM (EDR)	RMS EVM for Bluetooth EDR	Residual VSA EVM: ≤-35 dB (+20 to -30 dBm) Residual VSG EVM: ≤-35 dB (-10 to -70 dBm)
Peak EVM (EDR)	Peak EVM for Bluetooth EDR	
Bluetooth® (4.0, 4.1, 4.2)/BLE		
Output power at NOC		VSA power accuracy: ±0.5 dB (+20 to -45 dBm)
Output power at EOC		
In-band emissions at NOC	Spurious emission measured at ±5 MHz of DUT TX frequency only	VSA spurious: <-60 dBc (100 KHz RBW) (CW)
In-band emissions at EOC		
Modulation characteristics	Average and peak frequency deviation (Hz)	
Carrier frequency offset and drift at NOC	Carrier frequency offset (Hz) and change over the Bluetooth burst (Hz)	VSA frequency accuracy: ≤±0.2 ppm calibrated
Carrier frequency offset and drift at EOC		
Receiver sensitivity at NOC	Receive sensitivity test using user-generated waveforms	VSG power accuracy: ±0.75 dB (0 to -90 dBm)
Receiver sensitivity at EOC		
C/I and receiver selectivity performance		VSA spurious: <-60 dBc (100 KHz RBW) (CW)
Blocking performance		
Intermodulation performance		
Maximum input signal level	VSG maximum output power:	0 to -100 dBm CW
Bluetooth® (5.0)		
In-band emissions	VSA spurious: < -60 dBc (100 KHz RBW) (CW)	
Modulation characteristics	VSA frequency accuracy: ≤ ± 0.2 ppm calibrated	
Carrier frequency offset and drift		
Stable modulation characteristics		
Receiver sensitivity	VSG power accuracy:±0.75 dB (0 to -90 dBm)	
Receiver sensitivity – stable modulation index		
Maximum input signal level	VSG maximum output power:0 to -100 dBm CW	
Maximum input signal level – stable modulation index	VSG maximum output power:0 to -100 dBm CW	
C/I and receiver selectivity performance	VSG maximum output power:0 to -100 dBm CW	
Blocking performance		
Intermodulation performance		
PER report integrity	VSA spurious: < -60 dBc (100 KHz RBW) (CW)	

ZigBee (802.15.4)		
Output power	Transmit DUT output power (dBm)	VSA power accuracy: ±0.5 dB (+20 to -45 dBm)
Power spectral density	Transmit DUT power spectral density	
Center frequency tolerance	VSA frequency accuracy:	≤ ±0.2 ppm calibrated
EVM	Offset: compensate the I and Q offset in OQPSK Normal: no compensation applied	
Other modulation quality measurements	LO leakage, clock error, phase error,symbol clock error	
CCDF (complementary cumulative distribution function)	Probability of peak signal power being greater than a given power level versus peak-to-average power ratio (dB)	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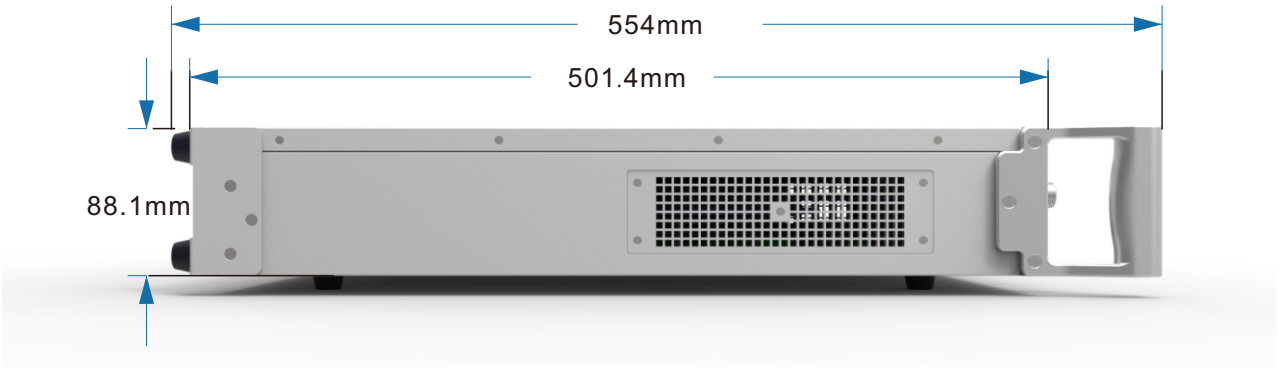
440mm
100.1mm
88.1mm
WT-200
WLAN Test Solution
RF1
RF2
Itest 极致汇仪
Ethernet
USB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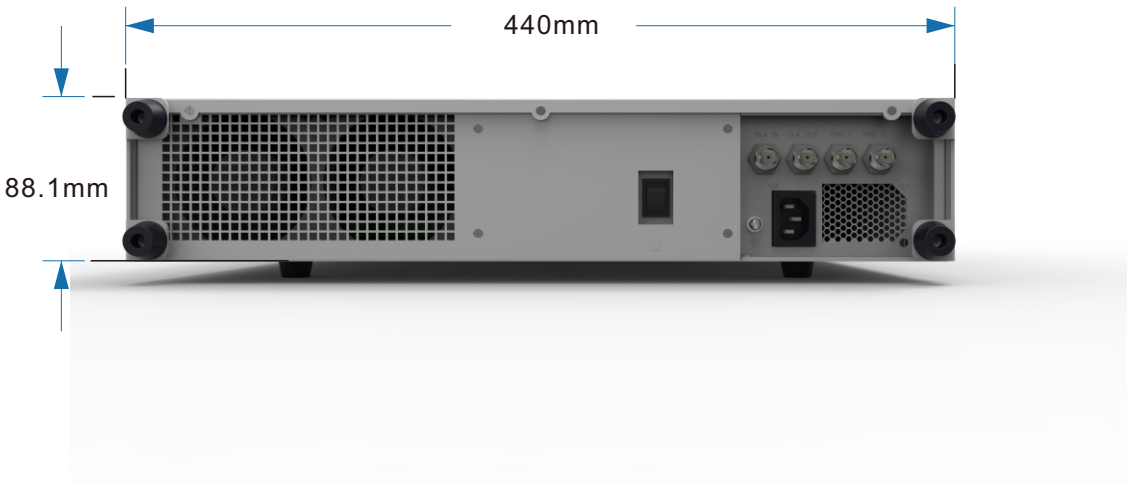
501.4mm
88.1mm


440mm
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