DATA SHEET

WaveJudge 4900

This document describes the performance parameters and the main specifications of the WaveJudge 4900. First, the general specifications are described, and then more details are provided for each module.

Specifications

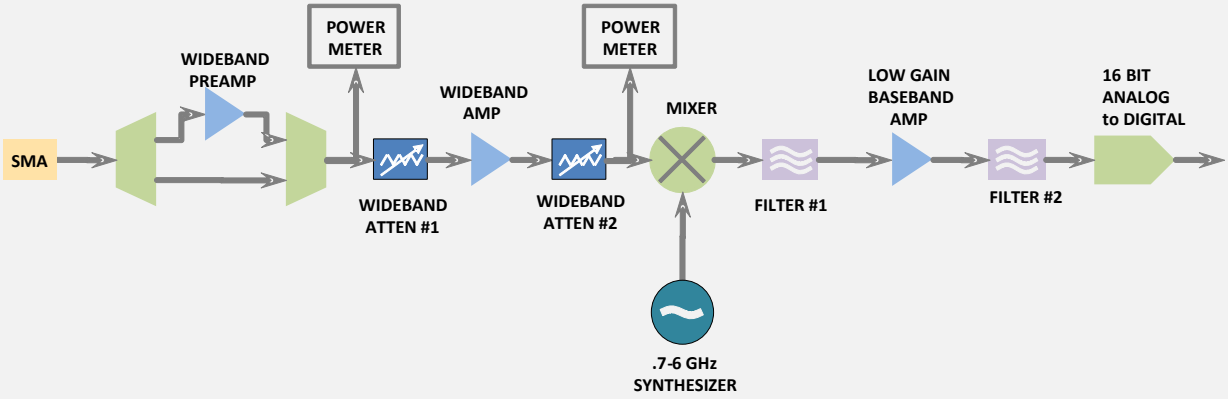
- Four independent configurable RF ports
- Low-noise highly accurate oven-controlled crystal oscillators (OCXOs)
- Maximum flexibility in test configurations requiring multiple ports
- Wide range of frequencies supported (400 MHz to 4 GHz)
- Flexible channel BW support (up to 20 MHz)
- Superior dynamic range and sensitivity
- Capture up to 17 seconds @ 10 MHz of wireless communication for analysis or troubleshooting
- 3GPP LTE, LTEA and WiMAX support
- Carrier aggregation, DL TM9 and UL TMZ support
- TDD and FDD support
- 2x2, 4x4, 8x8 analysis
- Best in class close-in phase noise

KEYSIGHT TECHNOLOGIES

Frequency specifications

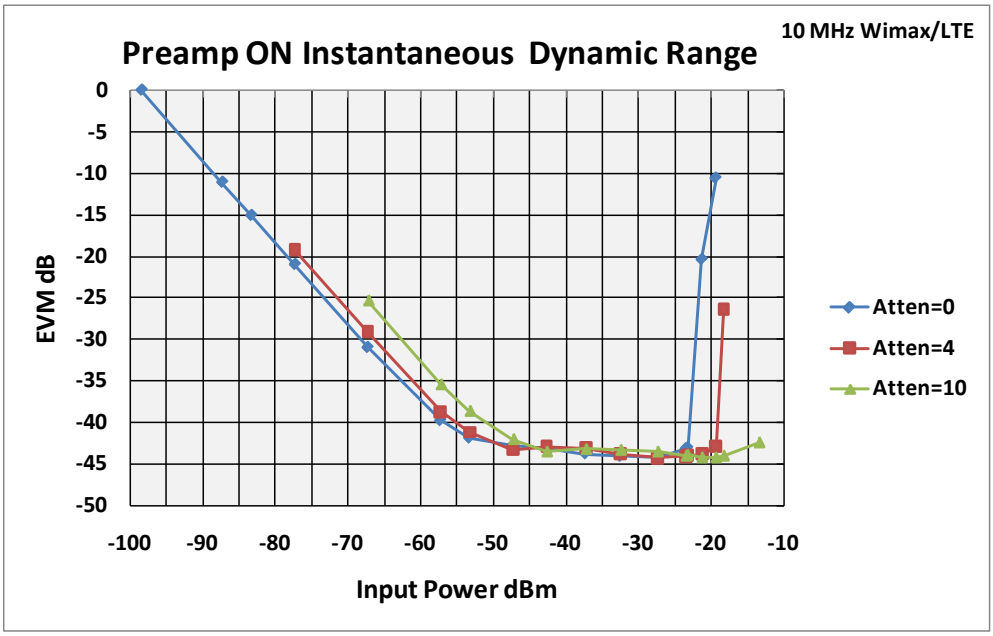
Frequency specifications			
General	Synthesizer	Frequency range	.4 to 4GHz
		Center frequency resolution	4Hz
	Spectral Purity, Single Sideband Phase Noise (normalized to 2GHz)	1 kHz offset	-96 dBc/Hz
		10 kHz offset	-106 dBc/Hz
		100 kHz offset	-111 dBc/Hz
		1 MHz offset	-121 dBc/Hz
Reference Frequency	100 MHz TXCO	External Input (optional)	10 MHz SMA, AC coupled, 50 ohm Terminated, Level: 0.8V – 3.3 Vp-p (max)
		Source	10 MHz TXCO
		Frequency Stability (0 ºC to +50 ºC)	± 0.25 ppm
		Aging per year	± 1 ppm
		Aging over 10 years	± 5 ppm
		Temperature stability (0 to 70 ºC)	± 1 ppm
Receiver Amplitude	PreAmp On or Off	Limiter protected maximum input level (destructive)	± 27 dBm
		Absolute Amplitude Accuracy	± 2.5 dB
		Relative Amplitude Accuracy (adjacent tones approx. 11kHz)	± 2 dB
		Attenuation range	0 to 63 dB, 1 dB steps
		Instantaneous dynamic range	82 dB (90 dB including PAPR)
	PreAmp On	Maximum usable input level (EVM -40 dBm)	-2 dBm
		Noise figure (no attenuation)	3.6 dB
		Attenuator 0-63 dB	Located after preamp
	PreAmp Off	Maximum usable input level (EVM -40 dBm)	22 dBm
		Noise figure	14 dB
	AtoD effective number of bits	16	

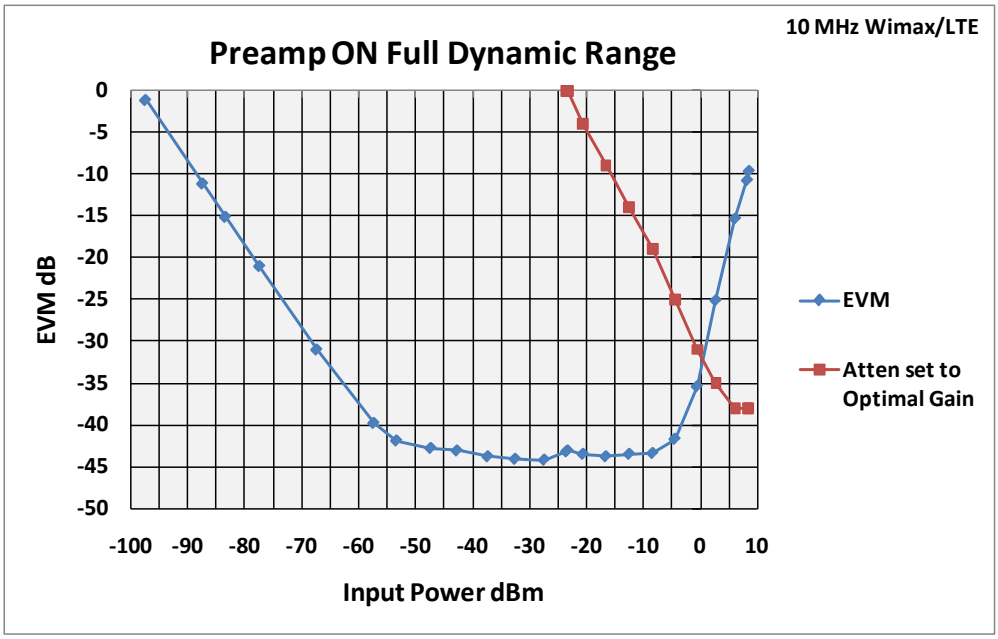
Receiver Block Diagram



Preamp ON measured performance

Measured performance		
10 MHz Channel Parameter	Measured EVM noise level	-98.4 dBm
	PHY estimator noise	2 dB
	Actual noise floor	-100.4 dBm
	Theoretical noise floor	-104 dBm
	Noise figure (Atten = 0)	3.6 dB


10 MHz Wimax/LTE
Preamp ON Instantaneous Dynamic Range
EVM dB
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-100
-90
-80
-70
-60
-50
-40
-30
-20
-10
Input Power dBm
Atten=0
Atten=4
Atten=10


10 MHz Wimax/LTE
Preamp ON Full Dynamic Range
EVM dB
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-100
-90
-80
-70
-60
-50
-40
-30
-20
-10
0
10
Input Power dBm
EVM
Atten set to Optimal Gain

Preamp OFF measured performance

Measured performance		
10 MHz channel parameter	Measured EVM noise level	-88 dBm
	PHY estimator noise	2 dB
	Actual noise floor	-90 dBm
	Theoretical noise floor	-104 dBm
	Preamp OFF noise figure (Atten = 0)	14 dB

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