

## Data Sheet

# VIAVI

## CX100 ComXpert

### General Specifications

<b>General</b>	
<b>Size</b>	
Weight	11 lbs (5 kg)
Dimensions	12 in x 9.5 in x 4.3 in 30.5 cm x 24.1 cm x 10.9 cm
<b>Display</b>	
Size	5 in (12.7 cm), diagonal
<b>Timebase</b>	
Frequency drift	0.05 ppm (0 to 50 °C)
Aging	0.5 ppm/year
Warm-up time	3 minutes: within $\pm 0.01$ ppm
<b>RF Generator</b>	
<b>Frequency</b>	
Range	1 MHz to 6 GHz
Resolution	1 Hz
Accuracy	Same as timebase
<b>Level</b>	
TR Duplex Port Range	-120 to -30 dBm (CW)
SWR / Ant Duplex Port Range	-100 dBm to 0 dBm CW
Resolution	0.1 dB
TR Duplex Port Accuracy	$\pm 2.0$ dB for level $> -100$ dBm, $\pm 3.0$ dB for level $< -100$ dBm
SWR / Ant Duplex Port Accuracy	$\pm 2.0$ dB for level $> -100$ dBm, $\pm 3.0$ dB for level $< -100$ dBm
<b>Bandwidth</b>	
VSG	8 MHz
<b>VSWR</b>	
TR Duplex Port	$\leq 1.4$ (1 MHz to 6 GHz)
<b>Spectral Purity</b>	
Phase noise	$< -105$ dBc/Hz at 10 kHz offset, RF = 900 MHz $< -95$ dBc/Hz at 10 kHz offset, RF = 1000 MHz $< -80$ dBc/Hz at 10 kHz offset, RF = 6 GHz
Harmonics	-30 dBc

Non-Harmonics	-60 dBc, output level $> -50$ dBm
Residual AM	$< 0.20\%$ RMS, post detection BW 15 kHz
Residual FM	$< 20$ Hz RMS, post detection BW 3 kHz
<b>Analog Modulation</b>	
<b>Modulation</b>	
Modes	AM, FM
<b>AM</b>	
Range	0.1% to 100%
Resolution	0.10%
Accuracy (internal source)	$< \pm 3\%$ of setting from 10% to 90%
<b>FM</b>	
Range	0 to 100 kHz
Resolution	0.1 Hz
Accuracy (internal source)	$< \pm 3\%$ of setting (from 1 kHz to 100 kHz deviation, 20 Hz to 15 kHz rate)
<b>Internal Modulation Sources</b>	
Number of sources	2
<b>Sources</b>	
Waveforms	Sine
<b>Sine Wave</b>	
Range	0 to 100 kHz
<b>RF Receiver</b>	
<b>Frequency</b>	
Range	1 MHz to 6 GHz
<b>Maximum Input Power</b>	
SWR / Ant Port	+10 dBm dBm (de-rated below 50 MHz)
TR Duplex Port	+43 dBm (Duty-cycled)
<b>VSWR</b>	
TR Duplex Port	$\leq 1.4$ (1 MHz to 6 GHz)

<b>Harmonic Response</b>	
2nd Harmonic	<-30 dB
3rd Harmonic	<-50 dB
<b>Spurious Response</b>	
1 MHz to 1 GHz	<-45 dB (Note: exceptions may apply)
1 GHz to 6 GHz	<-55 dB (Note: exceptions may apply)
<b>Phase Noise</b>	
900 MHz	<-105 dBm/Hz at 10 kHz offset
1000 MHz	<-95 dBc/Hz at 10 kHz offset
<b>Dynamic Range</b>	
2/3 * (TOI-DANL) at 900 MHz	110 dB (0 dB attenuation), 107 dB (preamp)
2/3 * (TOI-DANL) at 1000 MHz	107 dB (0 dB attenuation), 106 dB (preamp)
<b>TOI</b>	
900 MHz	>+19 dBm (0 dB attenuation), >-1 dB (preamp)
1000 MHz	>+19 dBm (0 dB attenuation), >-1 dB (preamp)
<b>DANL</b>	
900 MHz	<-146 dBm (0 dB attenuation), <-162 dBm (preamp)
1000 MHz	<-142 dBm (0 dB attenuation), <-160 dBm (preamp)
<b>Sensitivity</b>	
Analog	10 dB SINAD for -100 dBm input level
RF Bandpass Filter (IF Filters)	5 kHz, 6.25 kHz, 8.33 kHz, 10 kHz, 12.5 kHz, 25 kHz, 30 kHz, 100 kHz, 300 kHz
<b>Power Meter</b>	
<b>Frequency</b>	
Range	1 MHz to 6 GHz
<b>Level</b>	
Range	Up to 43 dBm into TR Duplex, (20 mW to 20 W)
Resolution	1% of full scale or 1 mW
<b>Accuracy</b>	
TR Duplex Port	±10%
<b>RF Frequency Counter / RF Frequency Meter</b>	
<b>Frequency</b>	
Range	1 MHz to 6 GHz
Resolution	1 Hz
Accuracy	Frequency Reference
<b>Input Level Range</b>	
TR Duplex Port	-50 to 43 dBm
SWR/Ant Duplex Port	-80 to +10 dBm (-80 to -20 dBm w/pre-amp and over-the-air)
<b>Analog Modulation Measurements</b>	
<b>FM</b>	
Measurement Range	0 to 100 kHz
Accuracy	±2% ±1.0% from 1.5 to 3 kHz at 1 kHz rate
FM Distortion	<1%, 1 to 5 kHz deviation (50 Hz to 3 kHz rate) ≤0.5%, 1.5 to 3 kHz deviation (1 kHz rate)
Residual FM	≤5 Hz rms (300 to 3000 Hz)

AF Frequency Range	10 Hz to 20 kHz
<b>AM</b>	
Measurement Range	0 to 100%
Accuracy	<1%
AM Frequency Response	±0.1 dB 50 Hz to 6 kHz ±0.05 dB 50 Hz to 6 kHz rate for Subscriber testing
AM Distortion	<1%, 1 to 5 kHz deviation (50 Hz to 3 kHz rate) ≤0.5%, 1.5 to 3 kHz deviation (1 kHz rate)
AF Frequency Range	10 Hz to 20 kHz
Residual AM	<0.1% (30 MHz to 3 GHz)
<b>Audio and Demodulation Meters</b>	
<b>Distortion Meter</b>	
Frequency Range	DC to 100 kHz
Measurement Range	0% to 100%
Accuracy	<3% of reading +0.1% distortion, 1% to 20%
<b>SINAD Meter</b>	
Frequency Range	DC to 100 kHz
Measurement Range	0 to 63 dB
Accuracy	<1 dB at 12 dB SINAD
<b>S/N Meter</b>	
Frequency Range	DC to 100 kHz
Measurement Range	0 to 63 dB
Accuracy	<1 dB
<b>AF Counter</b>	
Frequency Range	DC to 100 kHz
Accuracy	Timebase +0.1 Hz
<b>Audio Analyzer</b>	
Frequency Range	DC to 100 kHz
FFT Windows	Blackman-Harris
<b>Frequency</b>	
Range	0 (DC), 50 Hz to 21 kHz
<b>Level</b>	
Range	2 mV to 20 Vpk
Accuracy	DC Accuracy: ±1% of reading (>200 mV), ±2 mV (<200 mV) AC Accuracy: ±2% of reading (200 mV to 2 V, 20 Hz to 20 kHz), ±5% (200 mV to 20 V, 20 Hz to 100 kHz)
<b>Purity</b>	
THD+Noise	<80 dB (20 Hz to 20 kHz)
<b>Audio Filters</b>	
Lowpass	300 Hz, 3 kHz, 3.4 kHz, 5 kHz, 15 kHz, 20 kHz
Highpass	20 Hz, 50 Hz, 300 Hz
Other	C-MSG, CCITT

<b>Spectrum Analyzer</b>	
Frequency Range	1 MHz to 6 GHz
<b>Span</b>	
Range	1 kHz/Div, full span and zero span
Accuracy	±5% of span width
<b>Vertical</b>	
Scale	10 dB/div and 2 dB/div; All available ranges in dB/div: 1, 2, 5, 10, 20
Range	80 dB
RBW Range	100 Hz to 5 MHz
VBW Range	100 Hz to 5 MHz
Sweep Time Range	1 µs to 100 s
Detector	Normal, positive peak, negative peak, sample, Average (RMS)
<b>AF Generator</b>	
<b>Output</b>	
Impedance	<4 Ω
Max Output Current	20 mA
<b>Frequency</b>	
Range	DC to 100 kHz (±0.5 dB), 20 Hz to 20 kHz (±0.1 dB).
Resolution	0.1 Hz
Accuracy	Timebase +0.5 Hz
<b>Level</b>	
Range	0 to ±8 Vpk into 600 Ω, 4 Vpk into 50 Ω
Accuracy	DC Accuracy: ±1% (>200 mV), ±2 mV (<200 mV) AC Accuracy: ±2% (>200 mV, 20 Hz to 20 kHz), ±5% (>2 mV, 20 Hz to 100 kHz)
<b>Distortion</b>	
THD+N	<80 dB (20 Hz to 20 kHz)
<b>Oscilloscope</b>	
<b>Display</b>	
Traces	2
Markers	2
<b>Horizontal</b>	
Sweep per div	20 µs to 1 s/div
Bandwidth	100 kHz Audio Input
Input Accuracy	<5%
<b>Trigger</b>	
Modes	Single, Normal, Automatic, Free run

<b>Vector Network Analyzer</b>	
<b>Frequency</b>	
Range	1 MHz to 6 GHz
Resolution	0.1 Hz
Accuracy	Same as timebase
<b>Test Port Power</b>	
Port	+5 dBm
Dynamic Range	90 dB
<b>Measurements</b>	
Parameters	S <sub>11</sub>
Graph Type	Log Magnitude (dB), SWR (Linear)
Domains	Frequency, Distance
Calibration Type	Full S <sub>11</sub>
Calibration Method	Short-Open-Load
Corrected Accuracy	Source Match >30 dB Reflection Tracking ±0.5 dB
<b>Distance Domain</b>	
Maximum Distance	100 m (328 ft) or 40 dB Return Loss whichever comes first for a 6 GHz span
Measurement Display	Return Loss, VSWR
Measurement Format	dB, VSWR

## Environmental/Physical

Temperature, Not Operating	-20 to +60°C
Temperature, Operating	-10 to +40°C
Relative Humidity	95% RH (noncondensing)
Altitude	4600 m
Vibration	MIL-PRF-28800F Class 2
Shock, functional	MIL-PRF-28800F
Bench handling	MIL-PRF-28800F
Transit Drop	MIL-PRF-28800F Class 2
<b>Battery</b>	
Type	Lithium Ion, 14.4 V, 6.8 Ah
Operating Time	3+ hours
Battery Charging Limits	0 to 45°C (32 to 113°F) ≤85% RH