C4209 Specifications[1]

Primary Specifications

Impedance	50 Ohm
Test port connector	N-type Female
Number of test ports	2
Frequency extender compatible	Yes; CobaltFx (2 ports)
Frequency range	100 kHz to 9.0 GHz
Full CW Frequency	$\pm 2 \times 10^{-6}$
Frequency setting resolution	1 Hz
Number of measurement points	2 to 500,001
Measurement bandwidths with 1/1.5/2/3/5/7 steps	1 Hz to 2 MHz
Dynamic range	
100 kHz to 1 MHz; 1 Hz IF BW	115 dB
1 MHz to 8 GHz; 1 Hz IF BW	158 dB/162 dB, typ.
8 GHz to 9 GHz; 1 Hz IF BW	148 dB/152 dB, typ.
Time per point (Typ.)	10 µsec
Port switchover time (Typ.)	0.2 msec

Measurement Accuracy

Transmission[2]	**(Magnitude/Phase)**
100 kHz to 1 MHz	
5 dB to 15 dB	0.2 dB/2°
-30 dB to 5 dB	0.1 dB/1°
-50 dB to -30 dB	0.2 dB/2°
-70 dB to -50 dB	1.0 dB/6°
1 MHz to 8 GHz	
5 dB to 15 dB	0.2 dB/2°
-70 dB to 5 dB	0.1 dB/1°
-90 dB to -70 dB	0.2 dB/2°
-110 dB to -90 dB	1.0 dB/6°
8 GHz to 9 GHz	
5 dB to 15 dB	0.2 dB/2°
-60 dB to 5 dB	0.1 dB/1°
-80 dB to -60 dB	0.2 dB/2°
-100 dB to -80 dB	1.0 dB/6°
Reflection	**(Magnitude/Phase)**
-15 dB to 0 dB	0.4 dB/3°
-25 dB to -15 dB	1.0 dB/6°
-35 dB to -25 dB	3.0 dB/20°
Trace noise magnitude (3 kHz IF BW)	
100 kHz to 1 MHz	0.005 dB RMS
1 MHz to 9 GHz	0.001 dB RMS
Temperature dependence	0.020 dB/°C, 0.010 dB/°C typ.

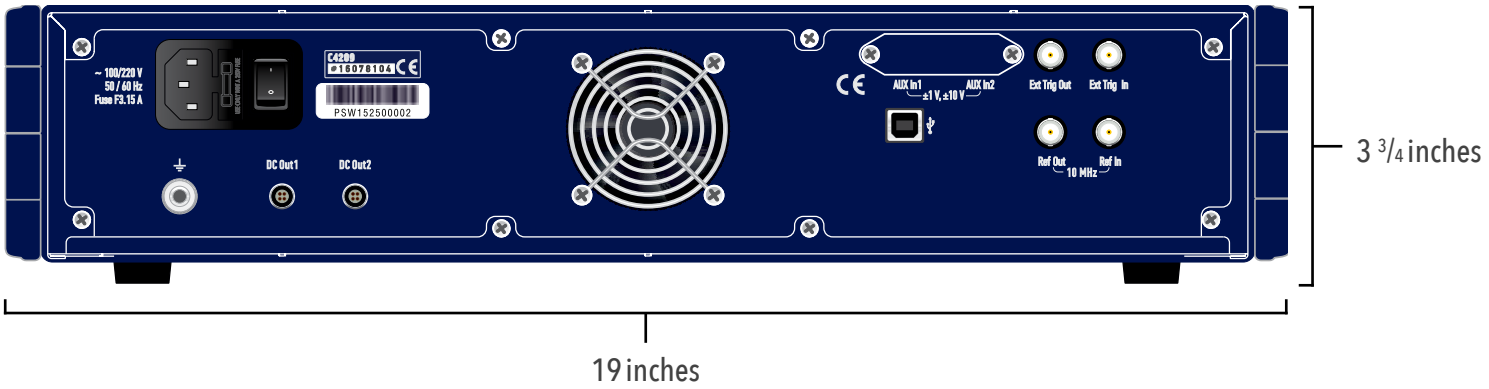
Effective System Data

Effective directivity	46 dB
Effective source match	40 dB
Effective load match	46 dB

Test Port

Directivity (without system error correction)	
100 kHz to 1 MHz	12 dB
1 MHz to 9 GHz	18 dB

[1] All specifications subject to change without notice.
[2] At 23 ° C +/- 5 ° C after warmup time, with +/- 1°C ambient deviation from calibration temperature, at high output power



Test Port Output

Match (without system error correction)	
100 kHz to 1 MHz	12 dB
1 MHz to 9 GHz	20 dB
Power Range	-60 dBm to +15 dBm
Power Accuracy	±1.5 dB
Power Resolution	0.050 dB
Harmonic distortion (Power out 0 dBm)	-25 dBc
Non-harmonic spurious (Power out 0 dBm)	-30 dBc

Test Port Input

Match (without system error correction)	
100 kHz to 1 MHz	12 dB
1 MHz to 9 GHz	20 dB
Damage Level	+26 dBm
Damage DC Voltage	35 V
Noise Floor	
100 kHz to 1 MHz	-100 dBm/Hz
1 MHz to 8 GHz	-143 dBm/Hz
8 GHz to 9 GHz	-133 dBm/Hz

Measurement Speed

Number of points (IF bandwidth 1 MHz)	Uncorrected	2-Port Calibration
51	1.0 ms	2.0 ms
201	2.6 ms	5.0 ms
401	4.6 ms	9.0 ms
1601	16.7 ms	33.3 ms

External Reference Input

Connector type	BNC Female
External reference frequency	10 MHz
Input level	-2 dBm to 4 dBm
Input impedance at <<Ref IN 10 MHz>>	50 Ohm

External Reference Output

<<OUT 10 MHz>> connector type	BNC Female
Output reference signal level at 50 Ohm impedance	0 dBm to 2 dBm

External Trigger Input

Type	BNC, Female
Input level low threshold voltage	0.8 V
Input level high threshold voltage	2.7 V
Input level range	0 to 5 V
Pulse width	2 µsec
Polarity	Positive or Negative

External Trigger Output

Type	BNC, Female
Maximum output current	20 mA
Output level low threshold voltage	0.4 V
Output level high threshold voltage	3.0 V
Polarity	Positive or Negative

System & Power

Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	-50°C to 70°C (-58°F to 158°F)
Humidity	90% at 25°C (77°F)
Atmospheric pressure	84.0 kPa to 106.7 kPa
Power Supply	110-240 V, 50-60 Hz
Power Consumption	75.0 W
Weight	7.0 kg/247 oz

Factory Adjustment

Recommended Factory Adjustment Interval	3 Years