

Jitter Results



Jitter measurements were performed on a Lecroy Wavemaster 8600A oscilloscope. The measurements were recorded by testing the devices on an evaluation board with an AC coupled output. The evaluation board was connected to the 8600A with an SMA bullet and 90k samples were taken. The values in the table represent typical values and are in the units of pS.

Period Jitter: Period jitter compares the length of each cycle to the average period of an ideal clock using the long term averaging frequency.

Cycle to Cycle Jitter: Cycle to cycle jitter compares the difference in the cycle length of adjacent cycles.

Time Interval Error Jitter: TIE Jitter is the variation in the clock's transition from its ideal position over many cycles.

Also included is the integrated jitter for the 12 kHz to 20 MHz offset band, using an Agilent E5052A.

Output MHz	Period		Cycle to Cycle		TIE		Measured on Agilent E5052A RMS 12kHz - 20MHz ¹ (fs)
	RMS ps	P/P Ps	RMS ps	P/P ps	RMS ps	P/P ps	
10.000	1.8	17	3.0	31	3.1	22	578
16.384	2.8	21	4.5	31	2.3	16	242
24.576	2.6	18	4.6	31	1.9	15	260
34.368	2.2	19	4.0	32	2.1	14	242
44.736	2.3	17	3.5	27	2.5	16	126
51.840	2.5	18	3.7	29	2.3	15	138
65.536	2.8	19	4.2	29	2.6	18	115
77.760	3	20	4.5	32	2.4	16	104
90.000	3.2	19	5.2	34	2.6	15	94
106.250	2.7	19	4.0	29	2.5	16	73
125.000	1.4	13	2.4	25	3.4	23	66
155.520	2.5	15	4.4	27	2.0	14	117
166.000	2.3	14	4.2	25	1.6	12	90
189.000	2.3	17	3.4	29	2.4	16	139

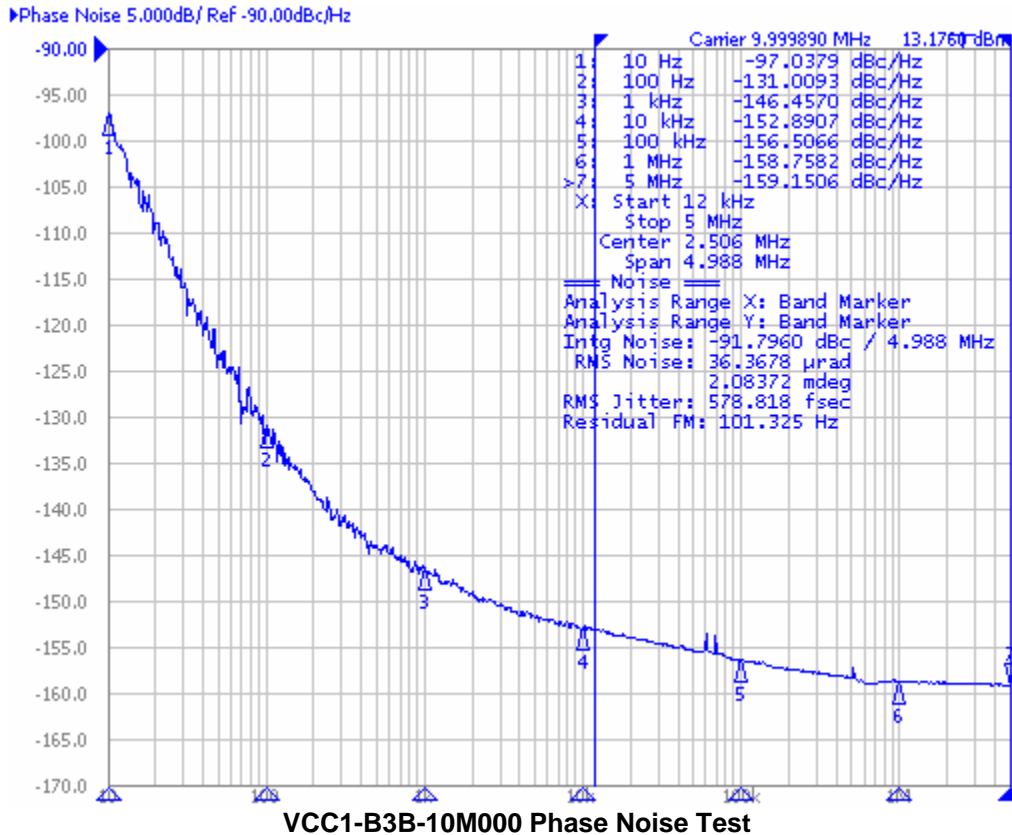
1. Data is based on 12kHz-5MHz for output frequencies < 44.736MHz

Table of typical jitter values for the VCC1 series of oscillators

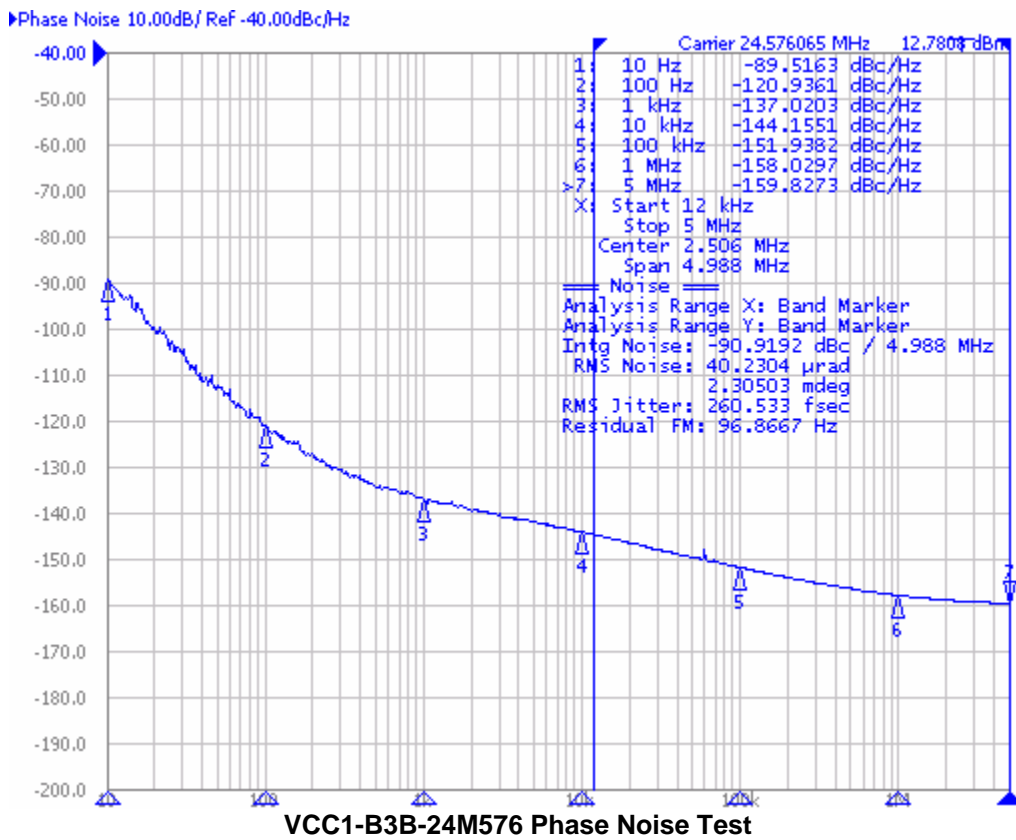
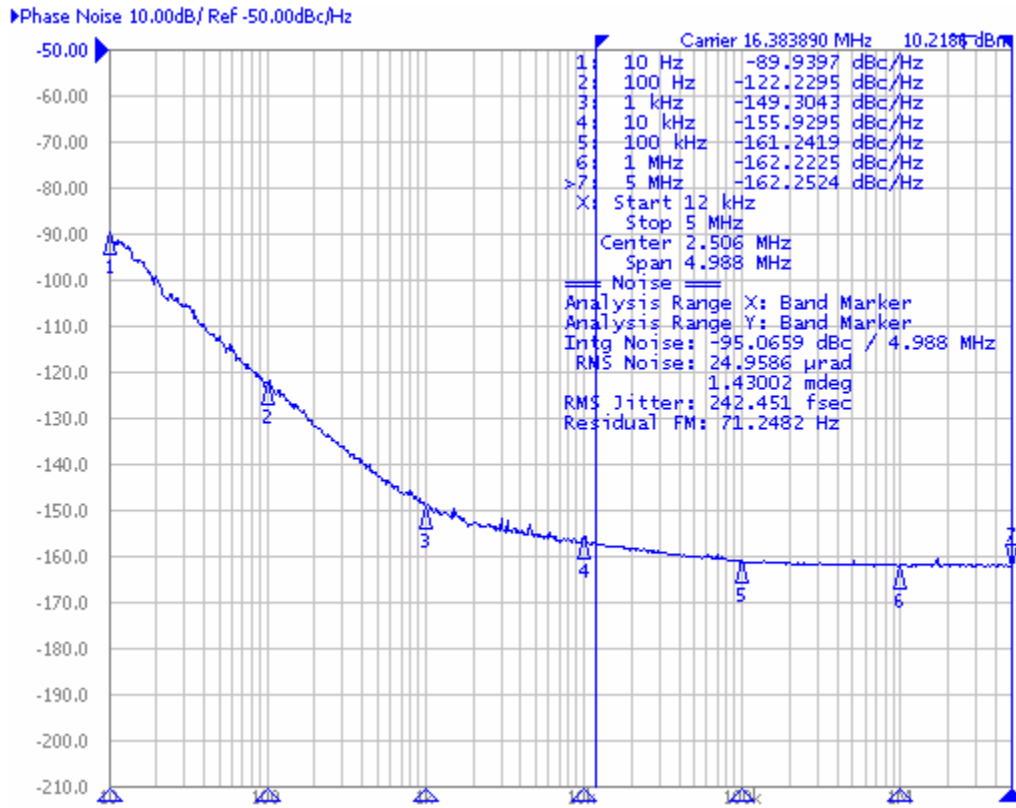
Typical Phase Noise for the VCC1 Series

Phase Noise Results

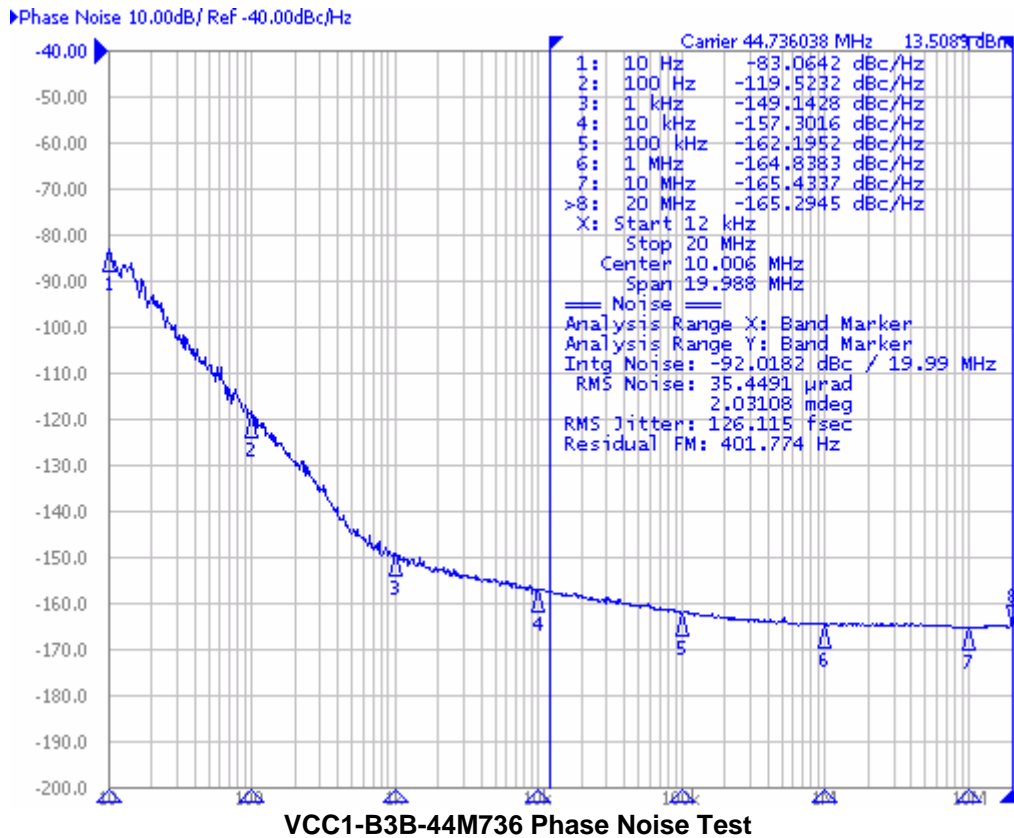
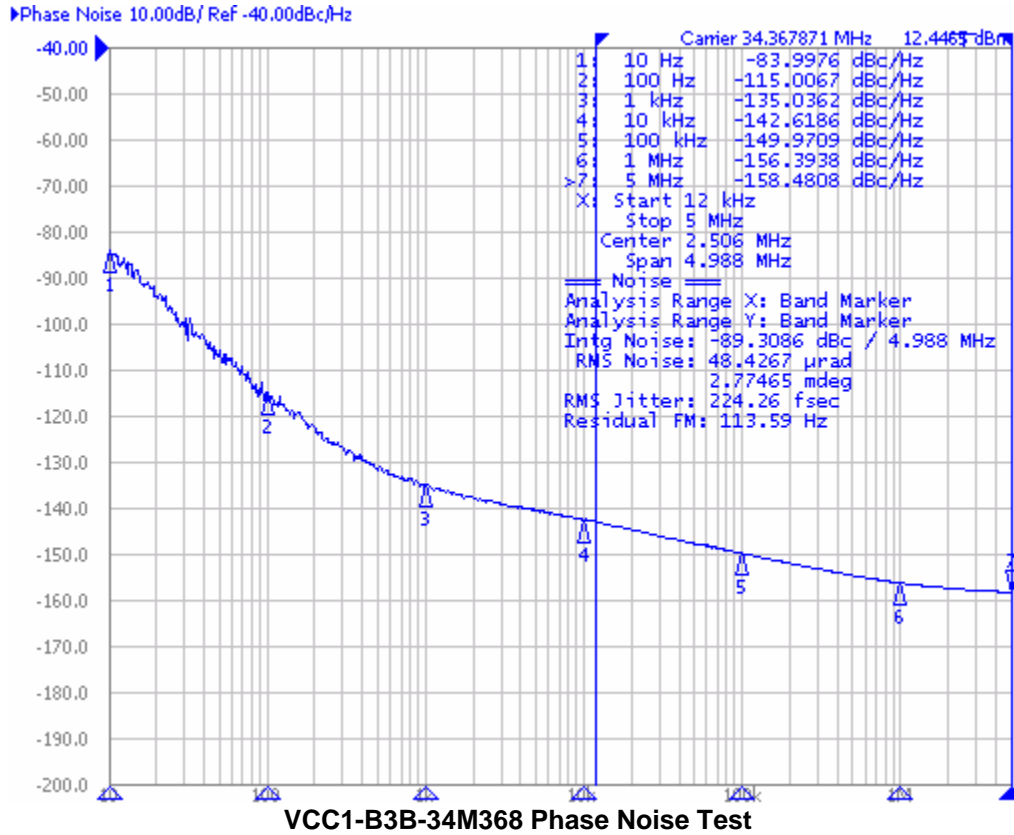
Phase noise measurements were performed on an Agilent E5052A signal source analyzer (SSA). The E5052A has a phase noise to jitter integration calculation feature and devices were characterized in the 12kHz-20MHz band (except for the lower frequencies where the equipment limitations prevented measurement to 20 MHz – see graphs for frequency band). Please contact Vectron for other offset integration bands.



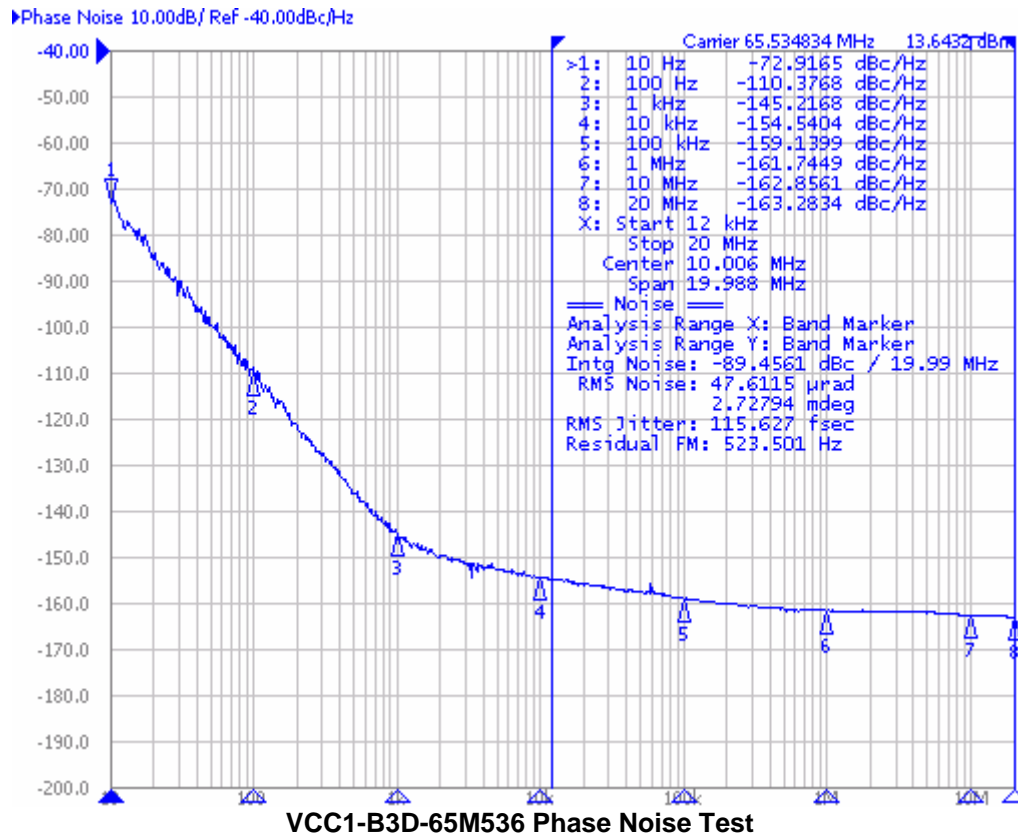
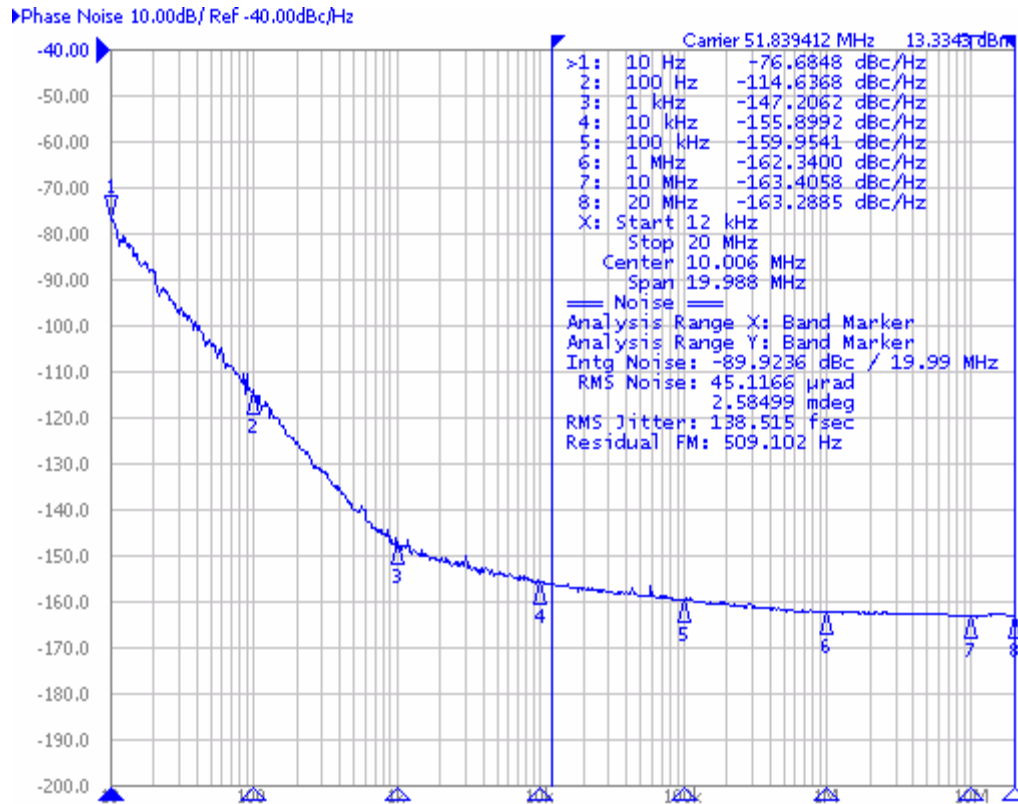
Typical Phase Noise for the VCC1 Series



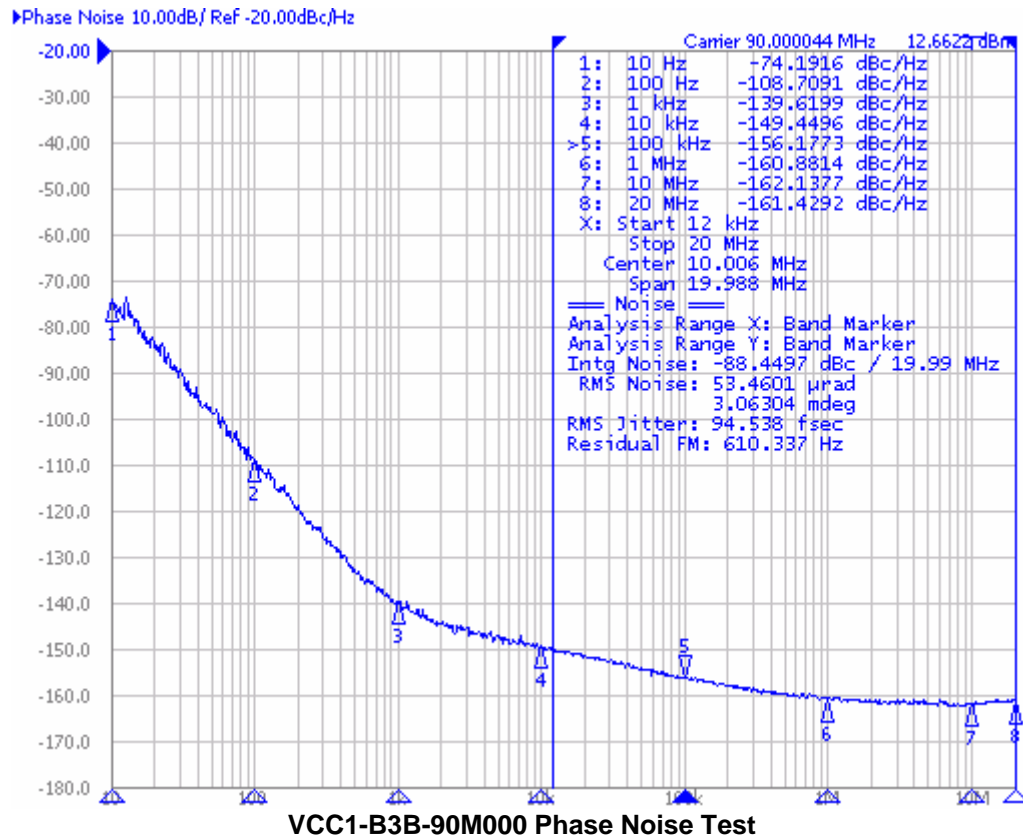
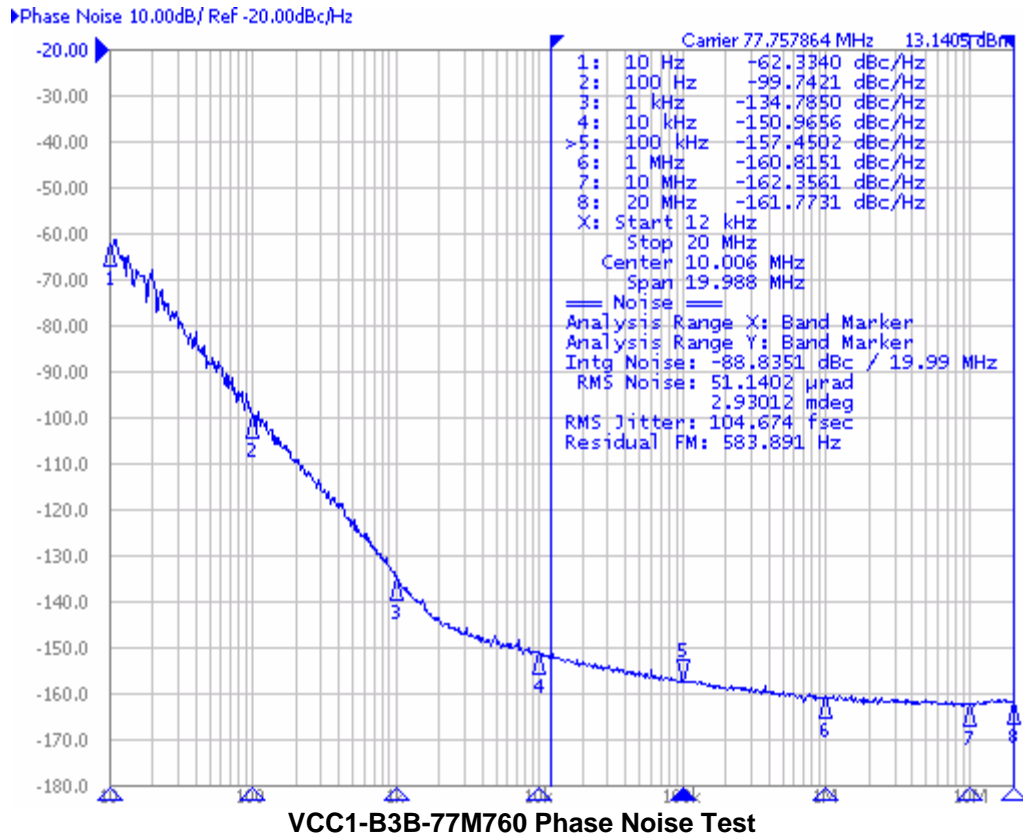
Typical Phase Noise for the VCC1 Series



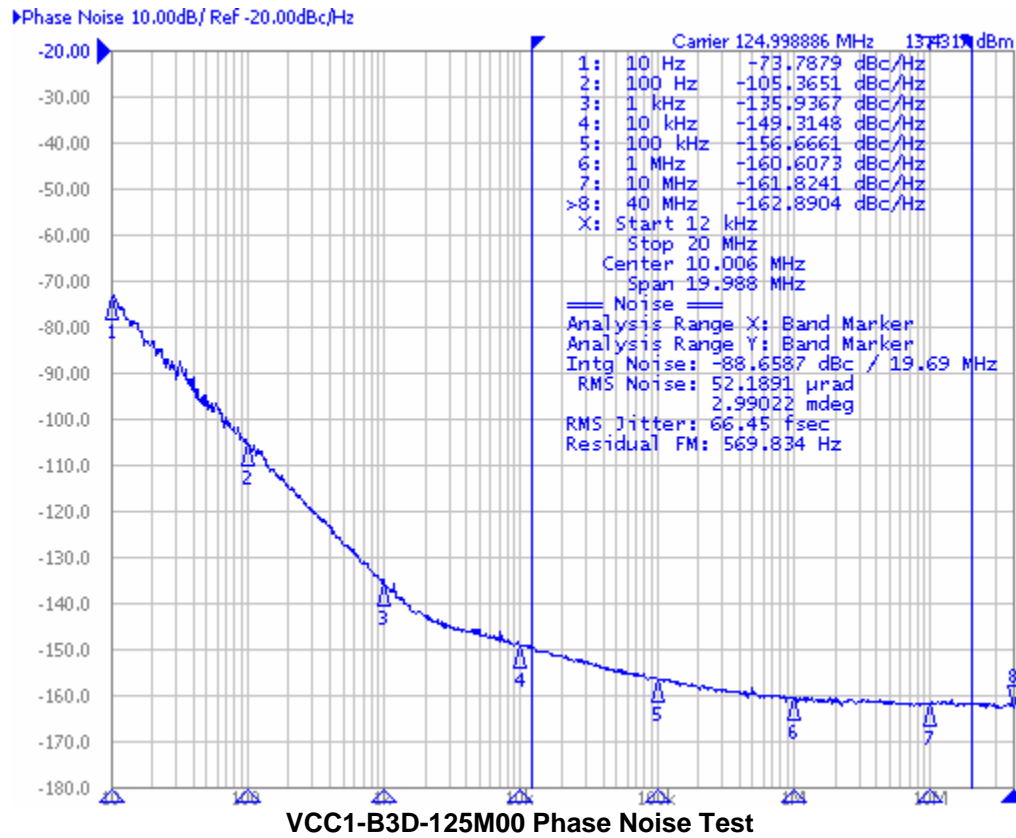
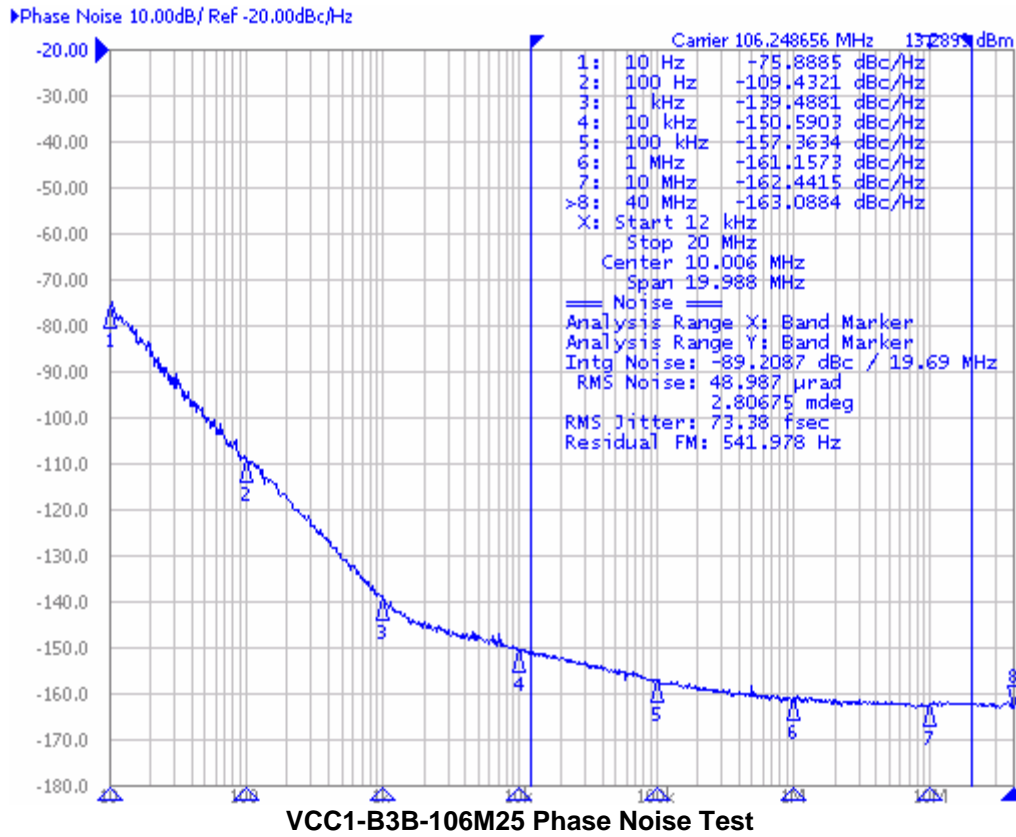
Typical Phase Noise for the VCC1 Series



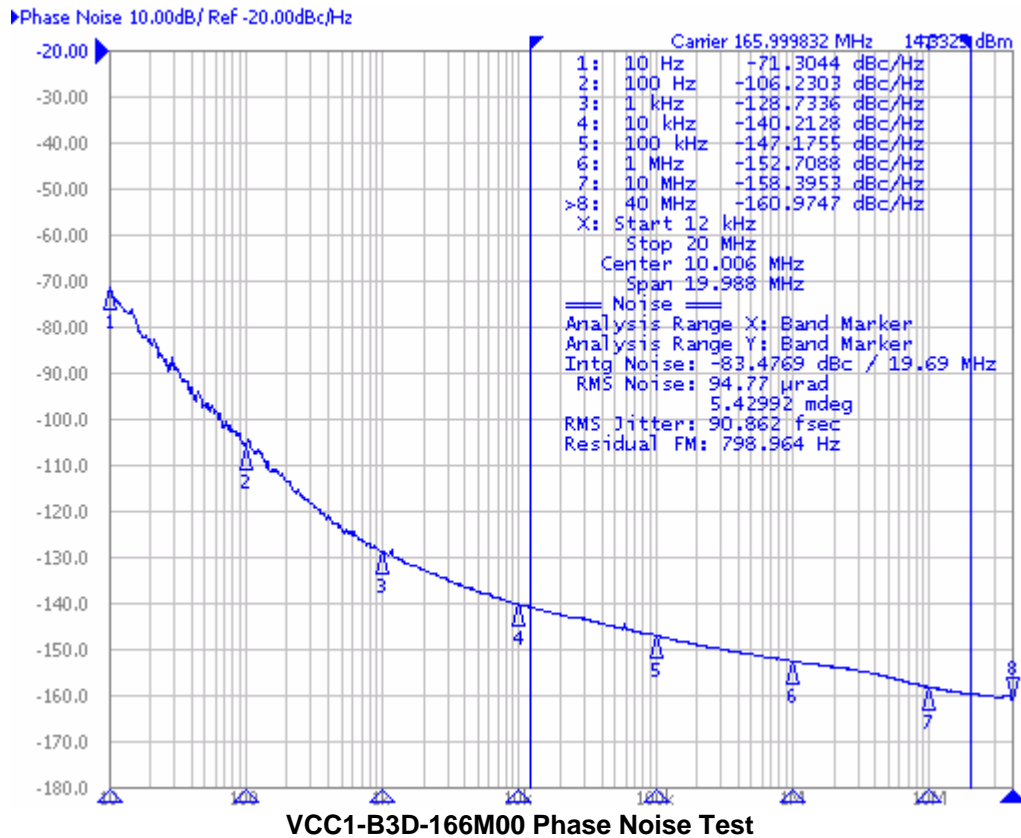
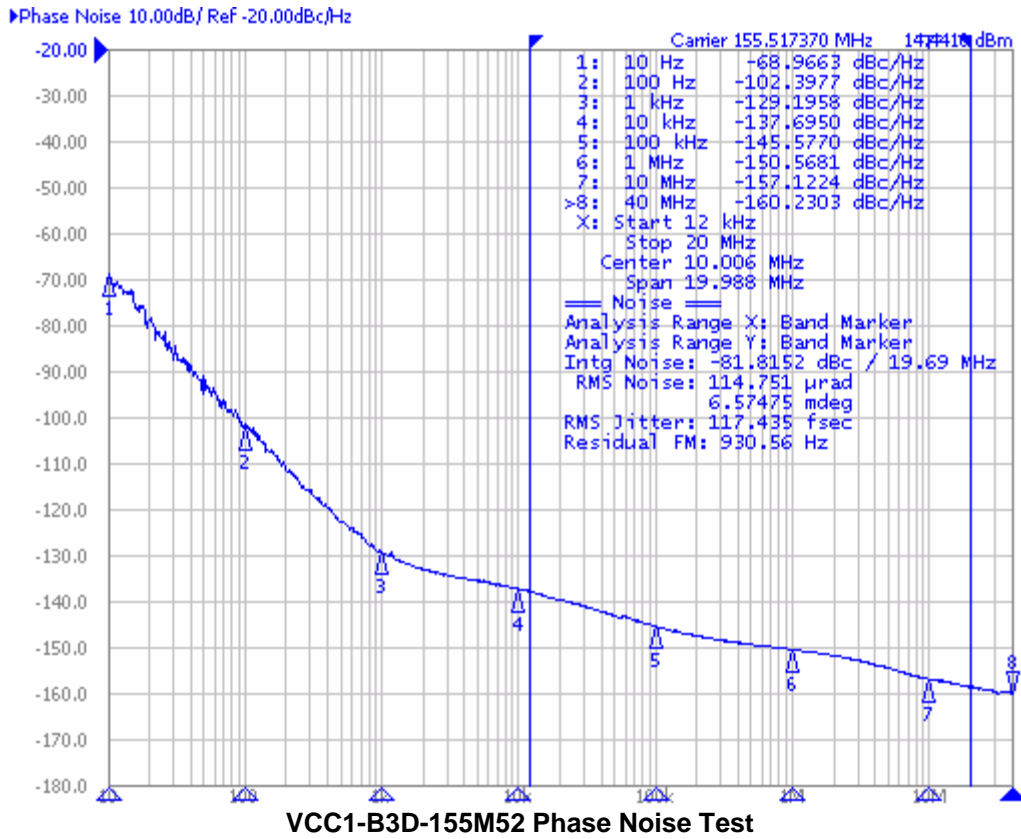
Typical Phase Noise for the VCC1 Series



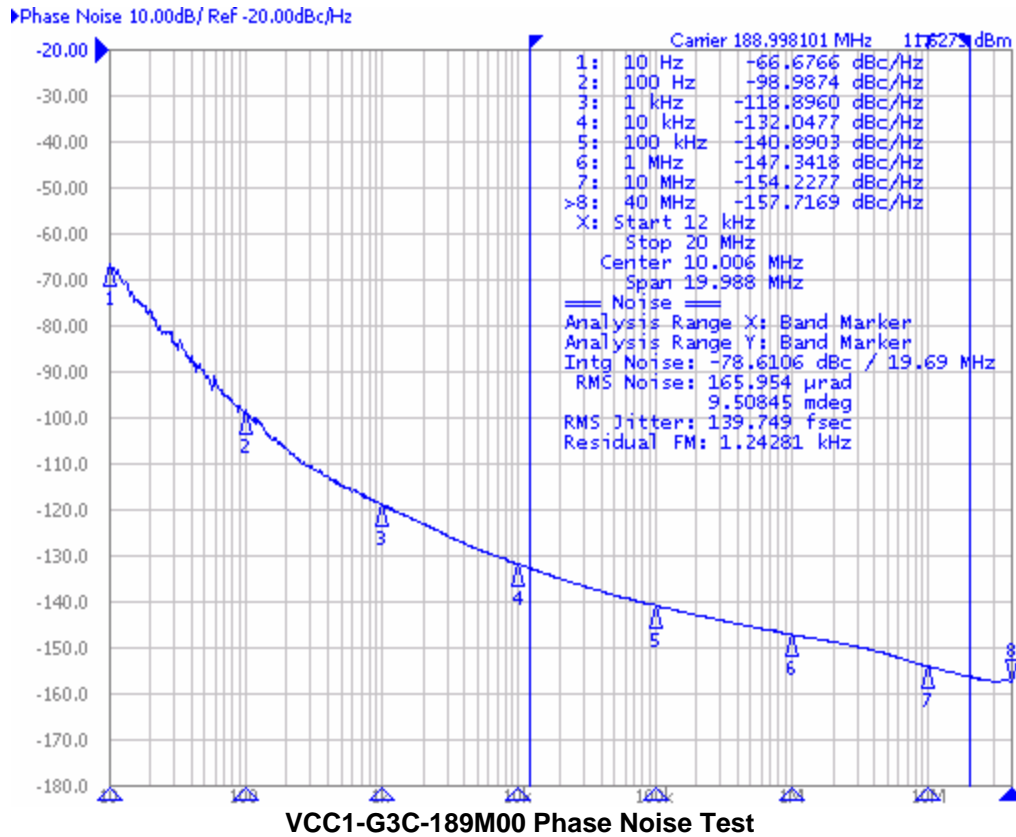
Typical Phase Noise for the VCC1 Series



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Typical Phase Noise for the VCC1 Series



Contact Application Engineering for any phase noise/jitter data on frequencies not listed.

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