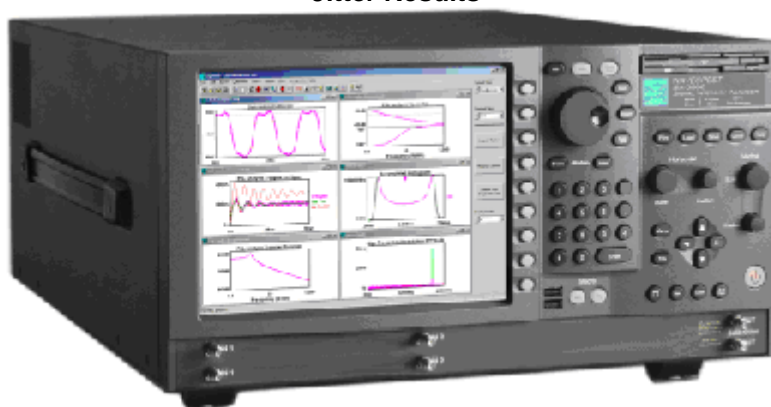


### Jitter Results



Jitter measurements were performed on a Wavecrest SIA-3300C signal integrity analyzer. The measurements were recorded by testing the devices on an evaluation board with an AC coupled output. The evaluation board was connected to the SIA-3300C with an SMA bullet and 90k samples were taken. The values in the table represent typical values.

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

**Random Jitter:** Unbounded and unpredictable jitter.

**Deterministic Jitter:** Bounded and predictable jitter.

**Total Jitter:** The sum of all of the jitter, measured to a  $1 \times 10^{-12}$  BER or confidence level.

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

| Output<br>MHz | Measured on         |           |                     |                            |                    | Measured on<br>Agilent E5052A<br>RMS 12kHz - 20MHz <sup>1</sup><br>fs |
|---------------|---------------------|-----------|---------------------|----------------------------|--------------------|---|
|               | Period<br>RMS<br>ps | P/P<br>ps | Random<br>P/P<br>ps | Deterministic<br>P/P<br>fs | Total<br>P/P<br>ps |   |
| 10.000        | 2.9                 | 25.2      | 2.9                 | 50                         | 40.5               | 465   |
| 16.384        | 3.2                 | 28.1      | 3.2                 | 40                         | 44.6               | 432   |
| 20.000        | 3.2                 | 26.8      | 3.2                 | 60                         | 43.8               | 337   |
| 27.000        | 3.3                 | 28.2      | 3.3                 | 20                         | 45.6               | 296   |
| 35.328        | 2.7                 | 24.3      | 2.7                 | 60                         | 37.2               | 223   |
| 50.000        | 1.8                 | 16.1      | 1.9                 | 20                         | 26.0               | 130   |
| 55.000        | 1.8                 | 15.9      | 1.9                 | 40                         | 25.7               | 159   |
| 66.000        | 1.9                 | 16.9      | 1.9                 | 20                         | 27.1               | 113   |
| 100.00        | 1.9                 | 16.9      | 1.9                 | 5                          | 26.7               | 53  |
| 125.00        | 1.9                 | 16.9      | 1.9                 | 25                         | 26.0               | 48  |

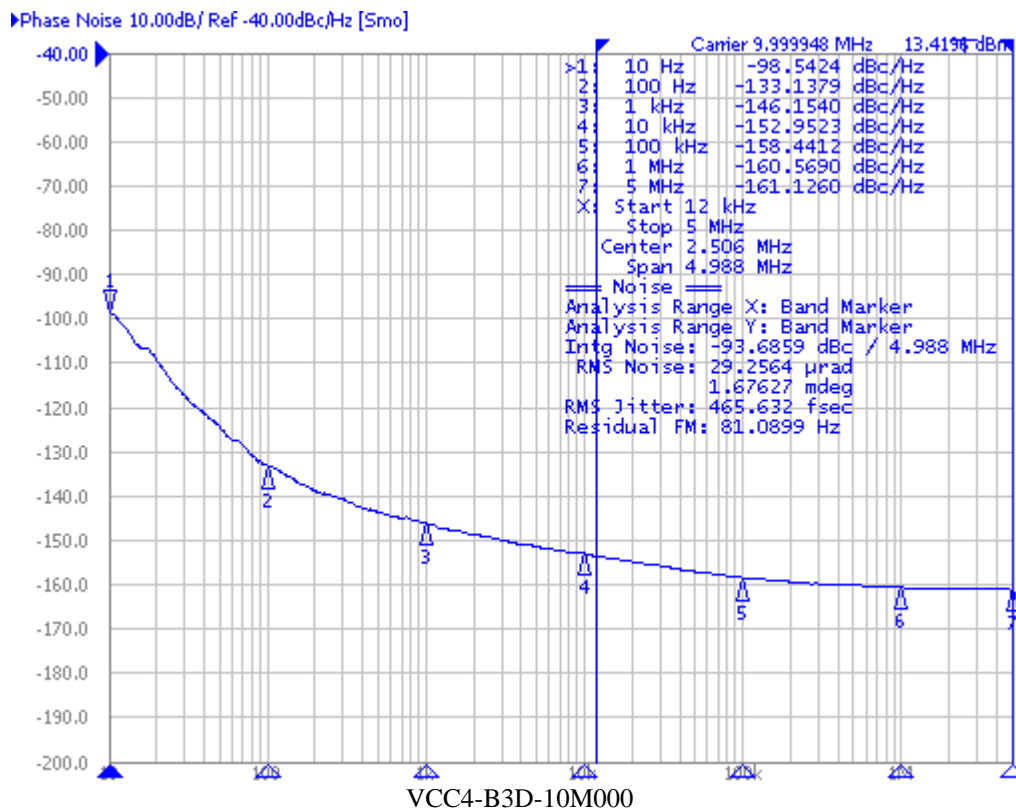
1. Data is based on 12kHz-5MHz for output frequencies < 50.000 MHz

**Table of typical jitter values for the VCC4 series of oscillators**

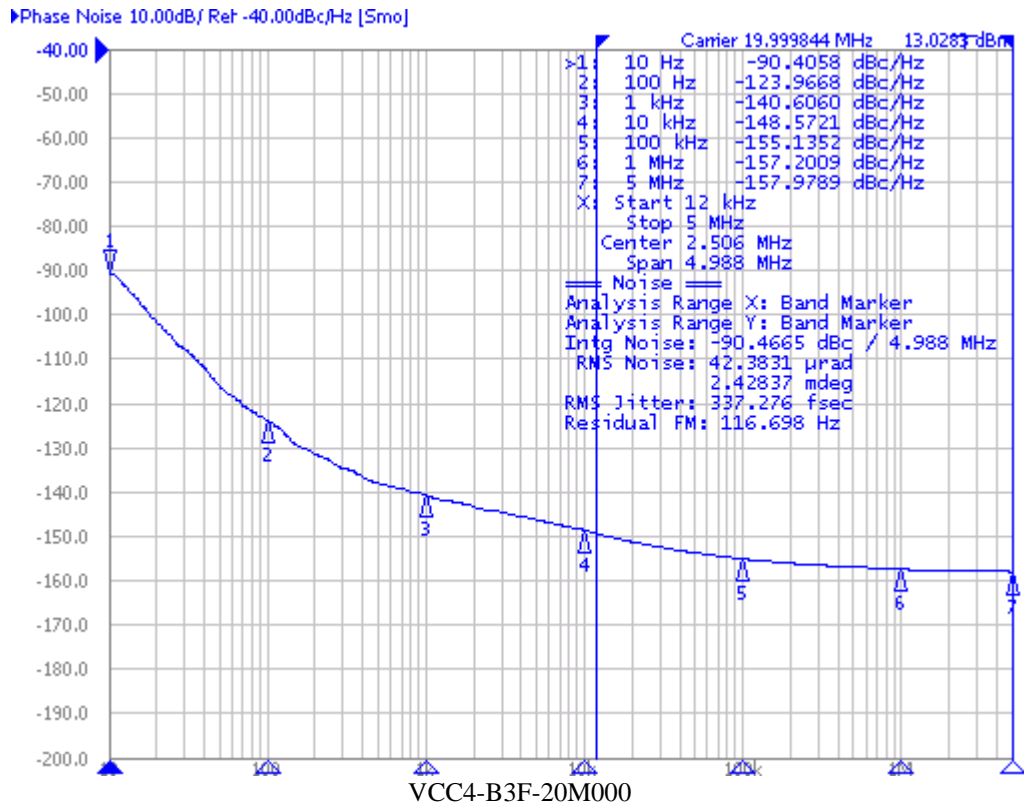
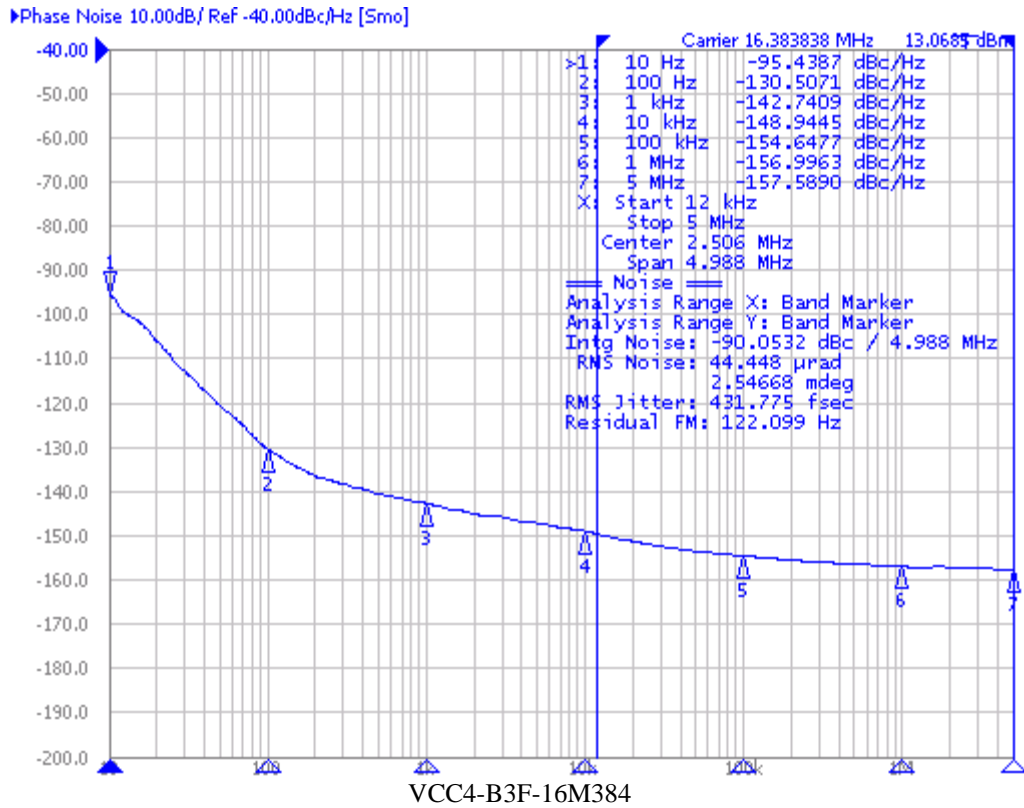
## Typical Phase Noise for the VCC4 Series

### Phase Noise Results

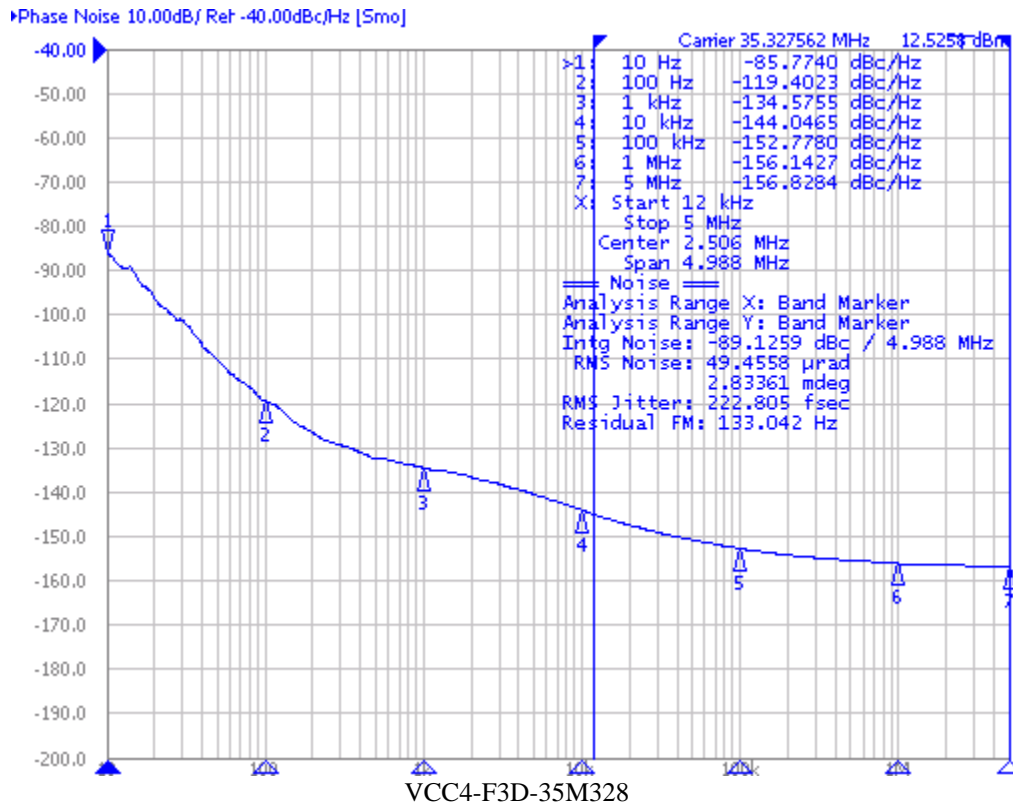
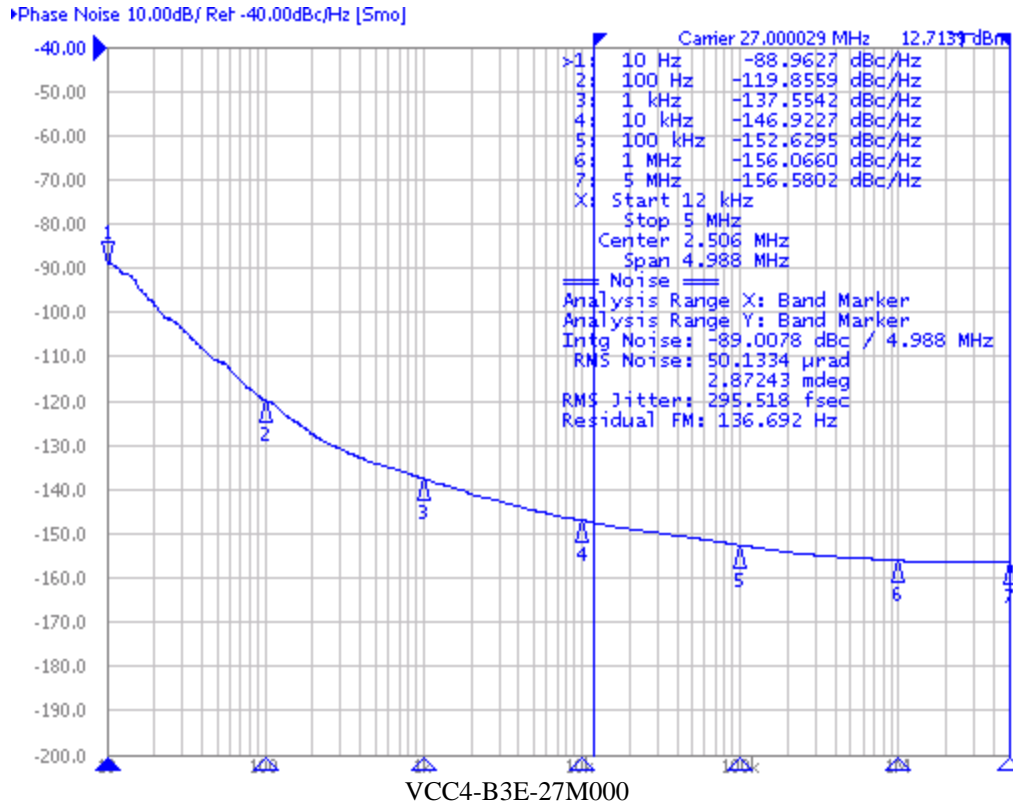
Phase noise measurements were performed on an Agilent E5052A signal source analyzer (SSA). The E5052A has a phase noise to jitter integration calculation feature and devices were characterized in the 12kHz-20MHz band (except for the lower frequencies where the equipment limitations prevented measurement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



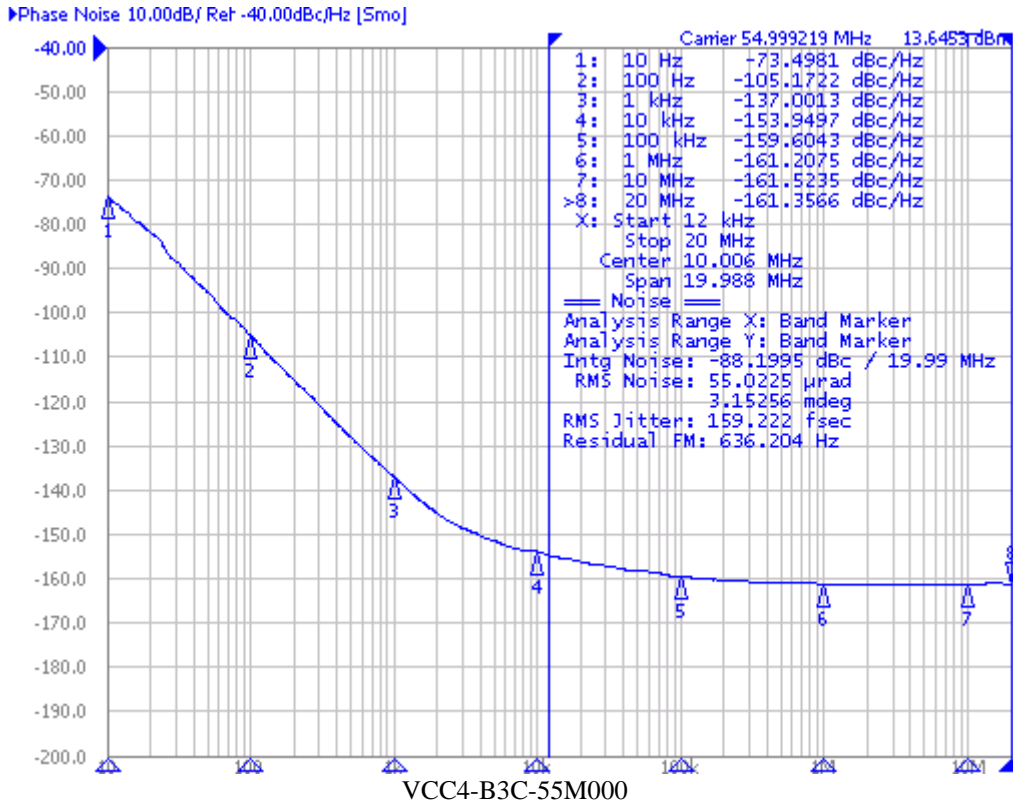
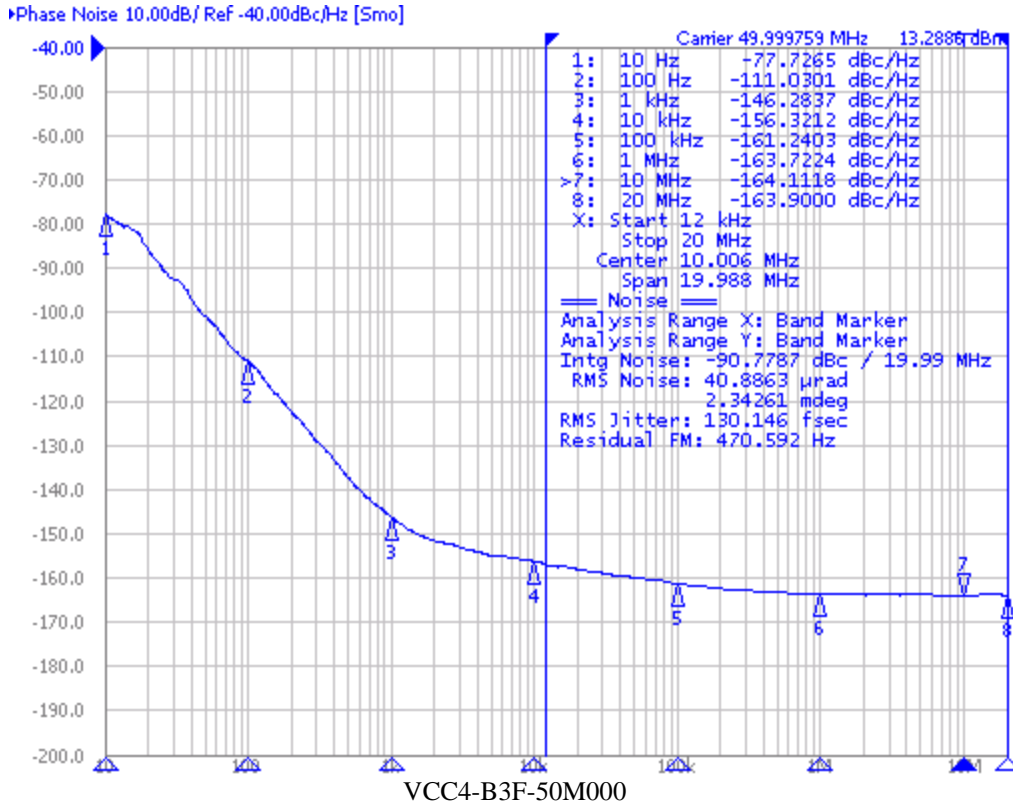
# Typical Phase Noise for the VCC4 Series



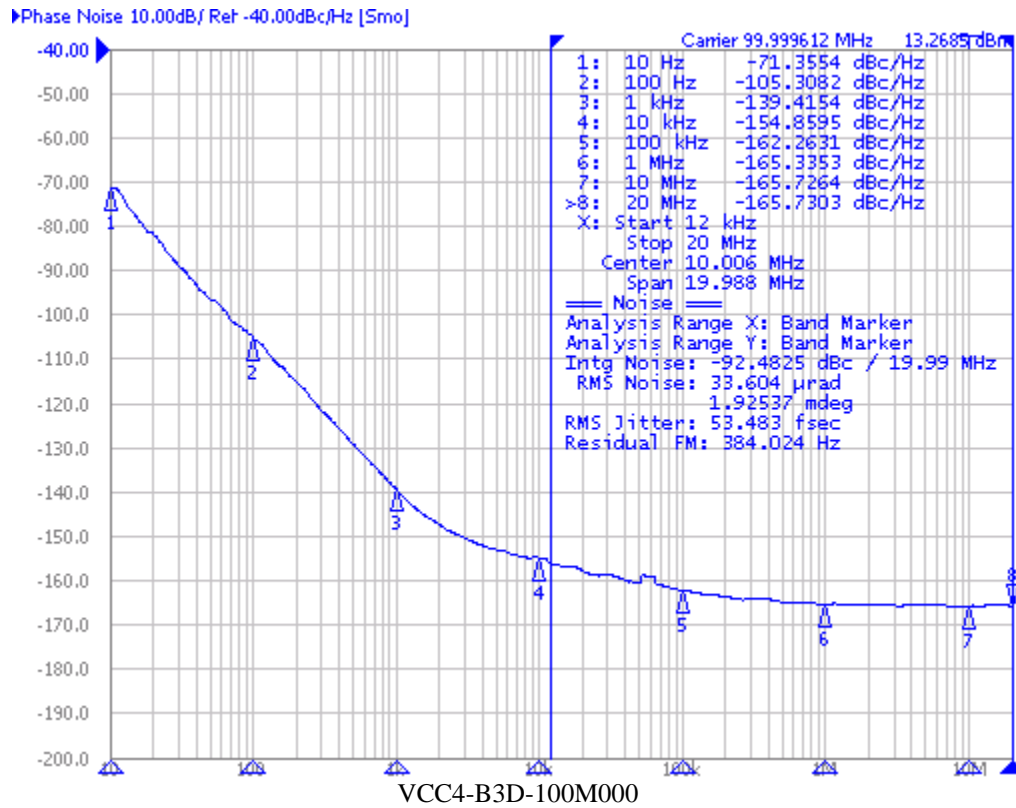
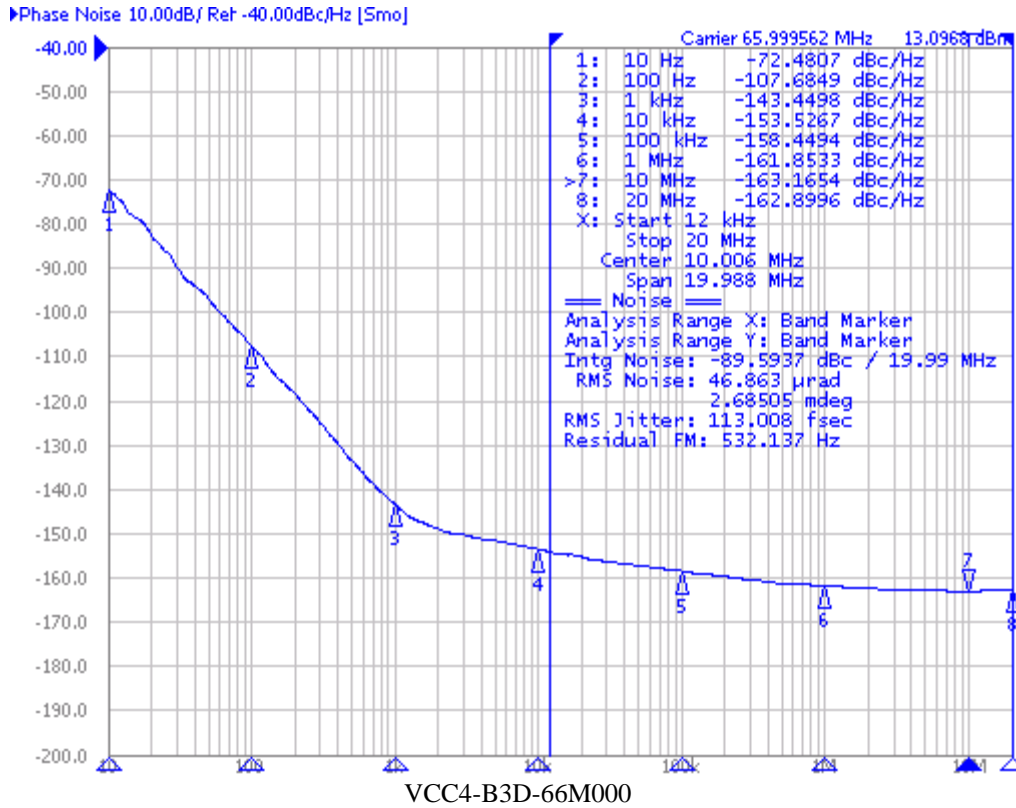
## Typical Phase Noise for the VCC4 Series



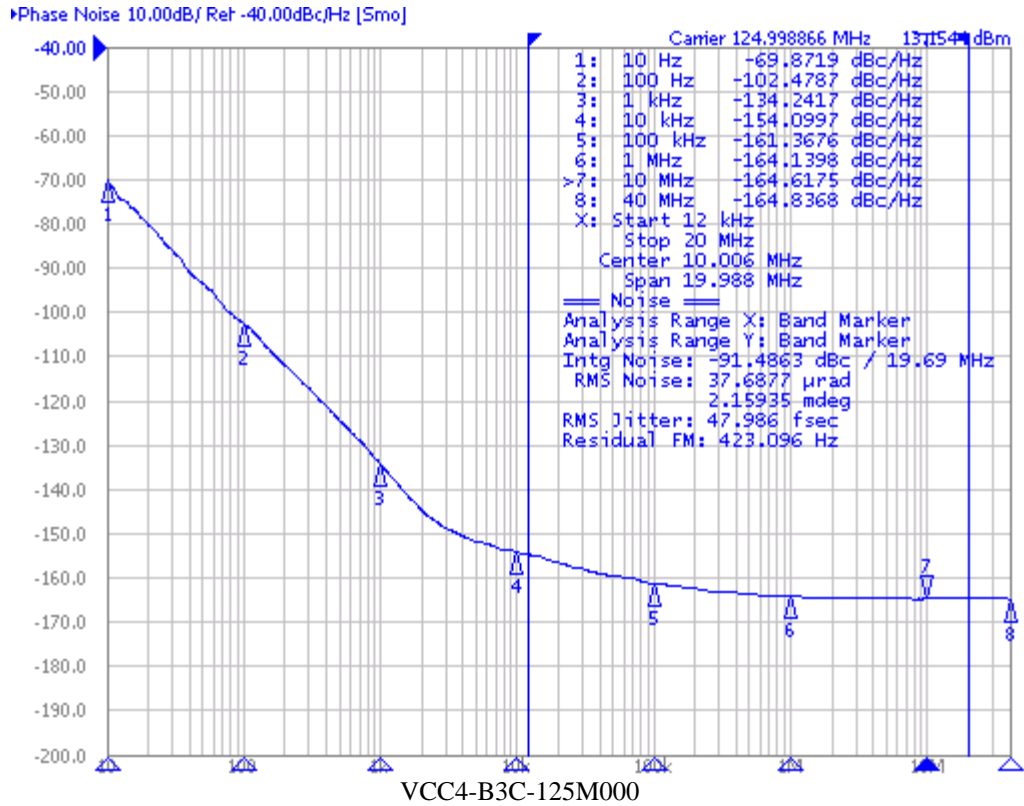
# Typical Phase Noise for the VCC4 Series



## Typical Phase Noise for the VCC4 Series



## Typical Phase Noise for the VCC4 Series



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

### For Additional Information Please Contact:



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