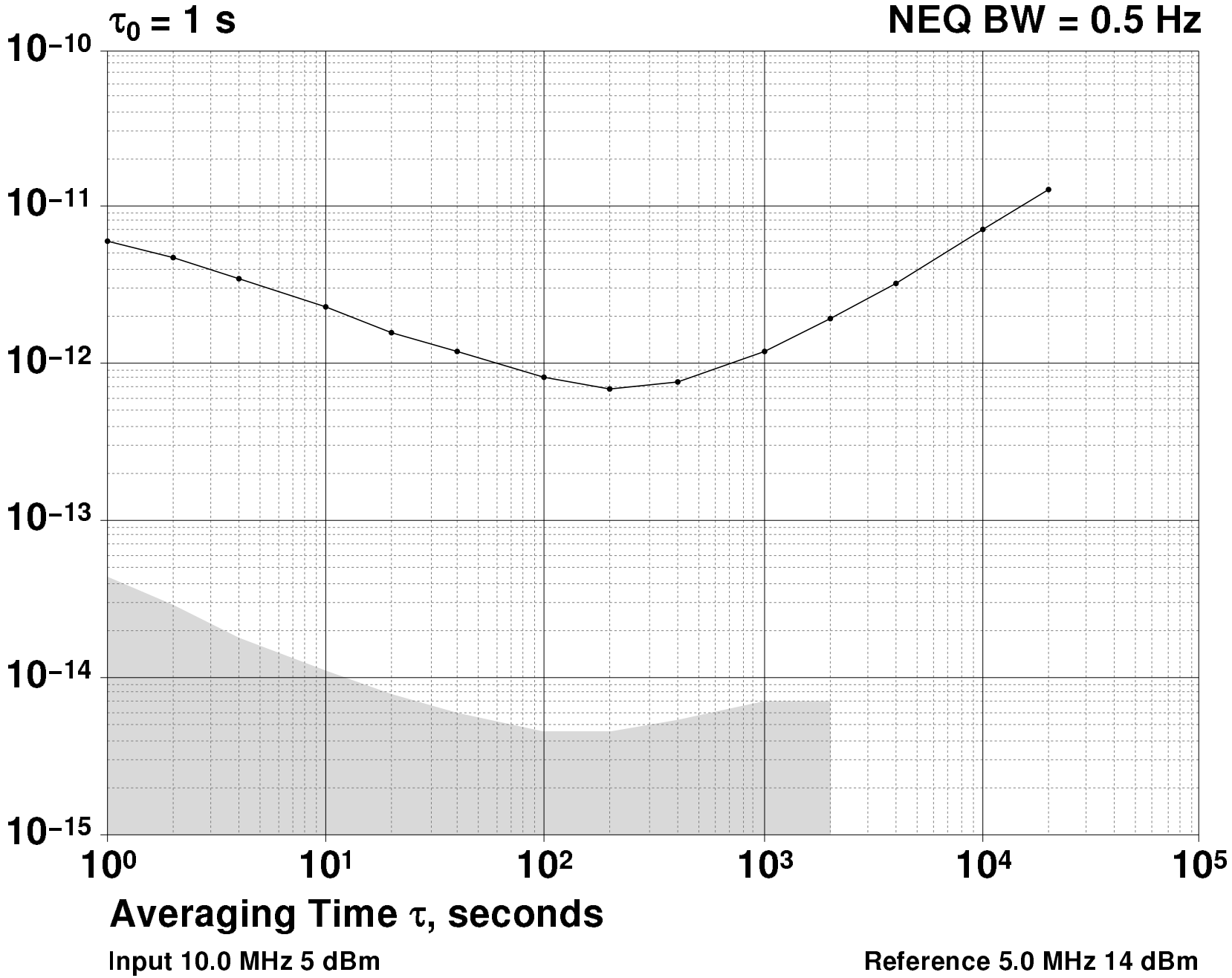
06/02/2012 09:26:57
15h 0m

TSC 5120A

# Allan Deviation $\sigma_y(\tau)$




Input 10.0 MHz 5 dBm

Reference 5.0 MHz 14 dBm

# Allan Deviation $\sigma_y(\tau)$



| Avg. Time (s) | Allan Deviation $\sigma_y(\tau)$ | Noise Floor |
|---|---|---|
| 1 | $5.894 \times 10^{-12}$ | $4.34364 \times 10^{-14}$ |
| 2 | $4.753 \times 10^{-12}$ | $2.91161 \times 10^{-14}$ |
| 4 | $3.463 \times 10^{-12}$ | $1.76701 \times 10^{-14}$ |
| 10 | $2.251 \times 10^{-12}$ | $1.10138 \times 10^{-14}$ |
| 20 | $1.588 \times 10^{-12}$ | $7.91327 \times 10^{-15}$ |
| 40 | $1.204 \times 10^{-12}$ | $5.96118 \times 10^{-15}$ |
| 100 | $8.20 \times 10^{-13}$ | $4.55494 \times 10^{-15}$ |
| 200 | $6.78 \times 10^{-13}$ | $4.57241 \times 10^{-15}$ |
| 400 | $7.7 \times 10^{-13}$ | $5.43079 \times 10^{-15}$ |
| 1000 | $1.18 \times 10^{-12}$ | $7.02246 \times 10^{-15}$ |
| 2000 | $1.92 \times 10^{-12}$ | $7.02158 \times 10^{-15}$ |
| 4000 | $3.2 \times 10^{-12}$ | |
| 10000 | $7.0 \times 10^{-12}$ | |
| 20000 | $1.3 \times 10^{-11}$ | |

$\tau_0 = 1$ s  NEQ BW = 0.5 Hz

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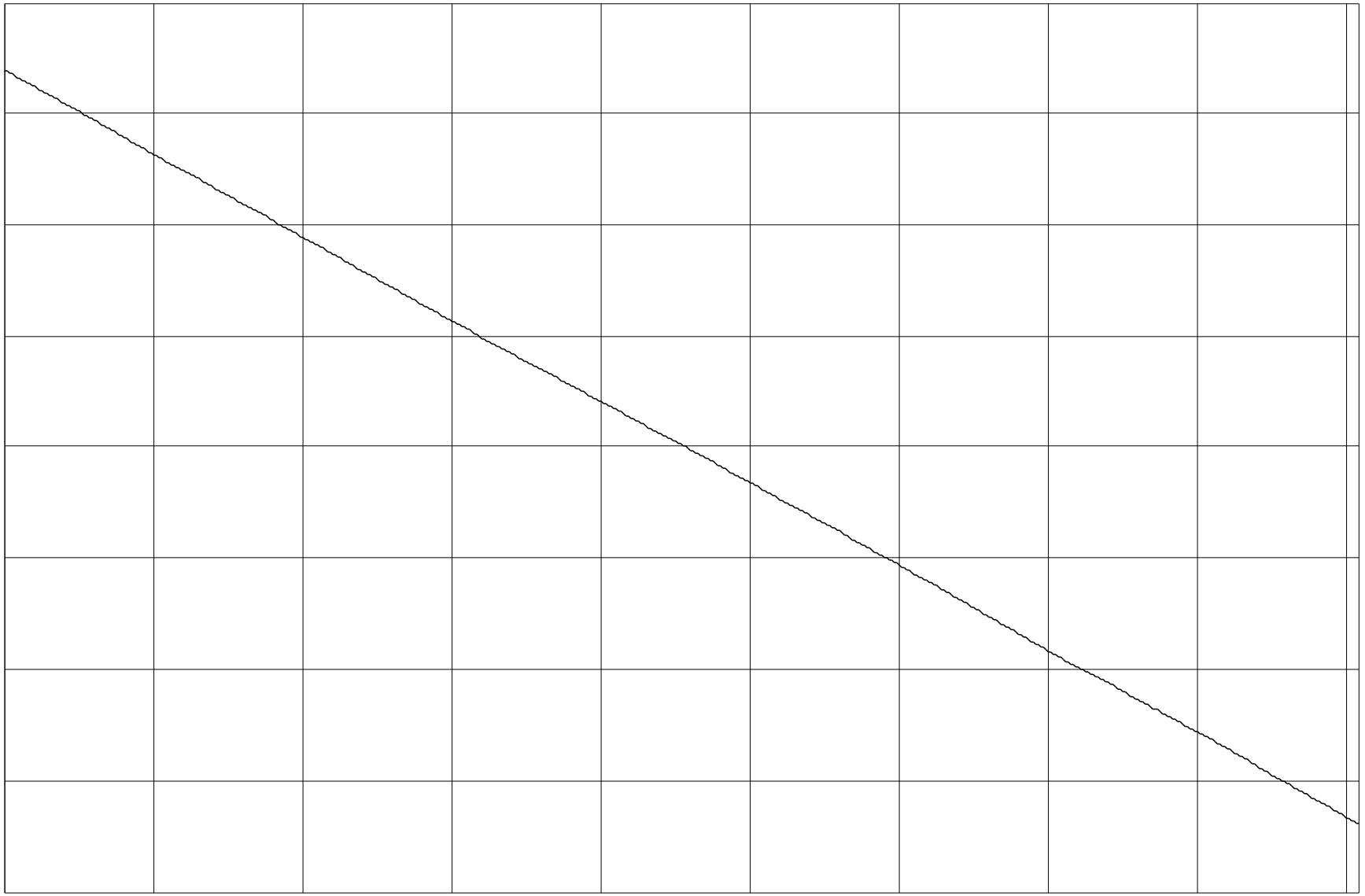
# Phase Difference

5.0x10$^{-09}$ s/div

Center: –2.56683x10$^{-06}$ s



60s/div

Input 10.0 MHz 5 dBm

Reference 5.0 MHz 14 dBm

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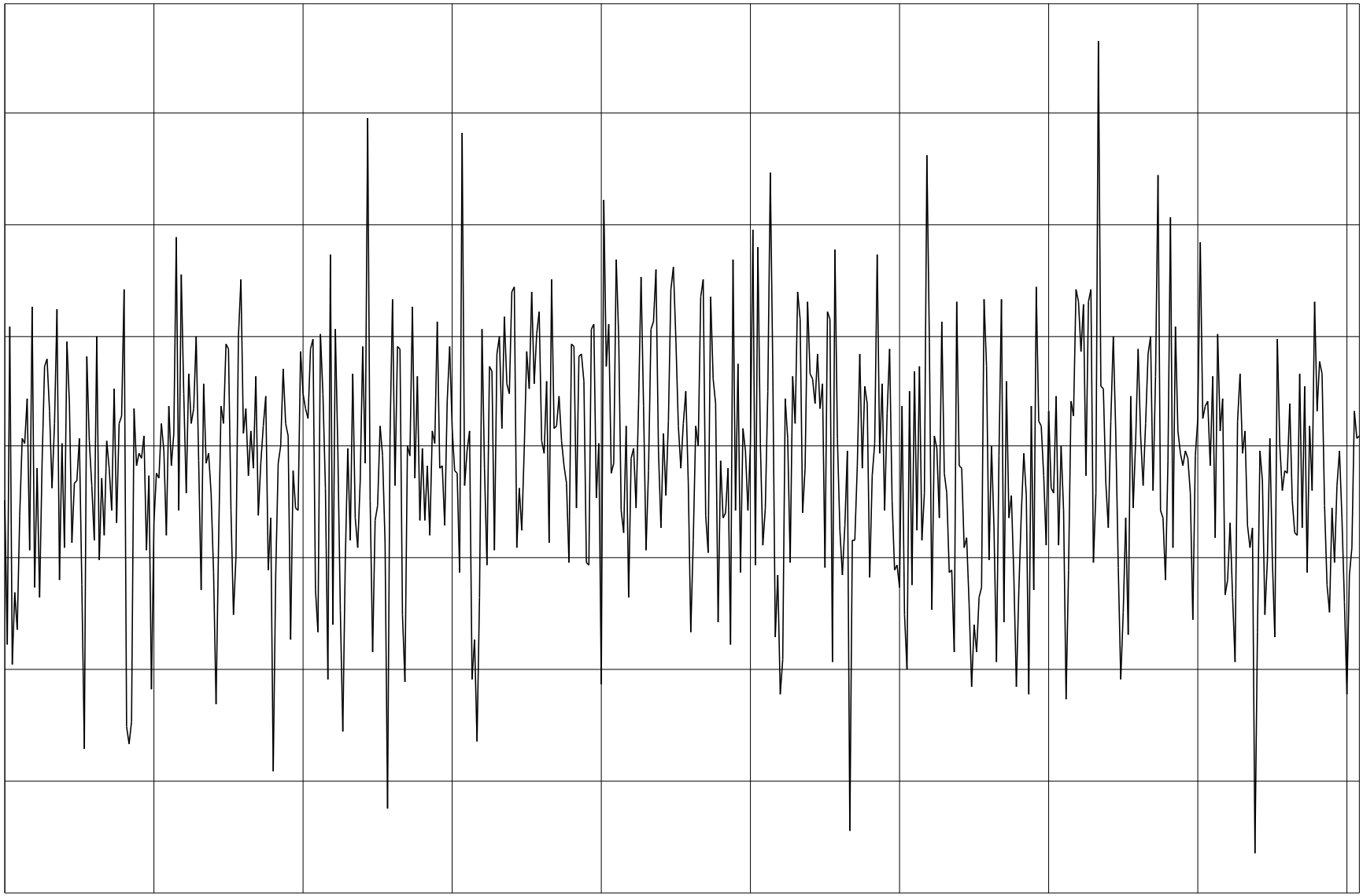
# Frequency Difference

6.0x10$^{-12}$ /div

Center: –6.128x10$^{-11}$



60s/div

Input 10.0 MHz 5 dBm

Reference 5.0 MHz 14 dBm

# Frequency Counter



| Sample Time (s) | Frequency (MHz) |
|---|---|
| 1 | 10.0000000069069 |
| 10 | 10.00000000698467 |
| 100 | 10.000000007013746 |
| 1000 | 10.000000007001390 |

Reference Frequency: 5.0 MHz (auto)

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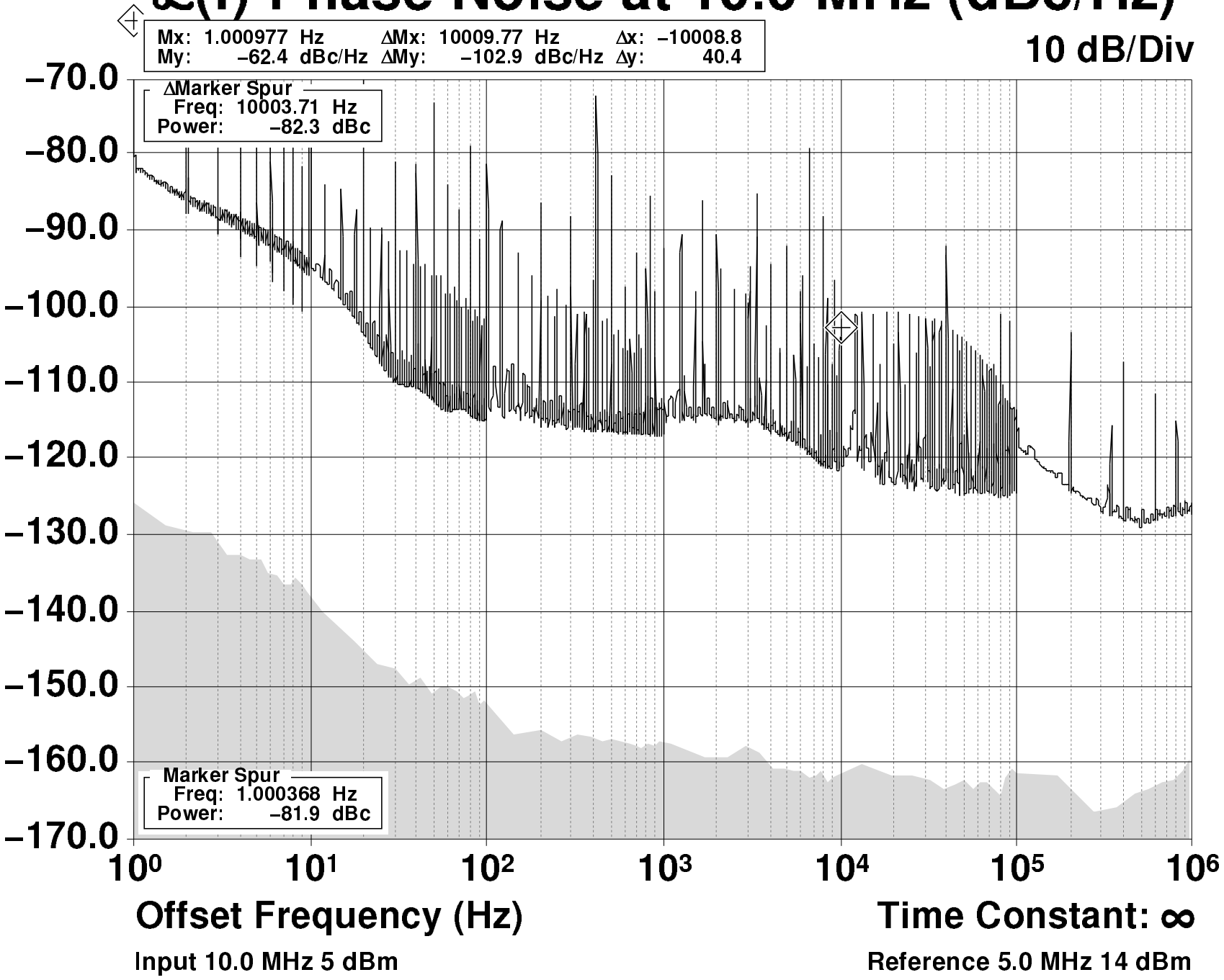
# ℒ(f) Phase Noise at 10.0 MHz (dBc/Hz)




**Offset Frequency (Hz)**

**Time Constant: ∞**

Input 10.0 MHz 5 dBm

Reference 5.0 MHz 14 dBm