

XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

| Features | Applications |
|---|--|
| Frequency: 10MHz Vibration Compensated Low Phase Noise Low Aging | Radar Satcom Electronic Warfare Munitions |

Electrical Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|-------------------|----------------|-------------|-------------|-------------|--------------|-------------------|
| Nominal Frequency | F ₀ | 10.000000 | | | MHz | |

Frequency Stabilities

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|--------------------------------|---------------|--------------|-------------|--------------|--------------|--------------------------------------|
| Frequency Stability | $\Delta F/F$ | -30 | | +30 | ppb | Over the operating temperature range |
| vs. Supply Voltage variation | | -5 | | +5 | ppb | ±5% change in V |
| vs. Load Change | | -5 | | +5 | ppb | |
| Aging (After 30-days power on) | | -0.5 -100 | | +0.5 +100 | ppb ppb | Daily Yearly |

RF Output

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|------------------|---------------|-------------|-------------|-------------|--------------|-------------------------|
| Output Type | | Sinewave | | | | |
| Output Level | | +5 | +7 | +9 | dBm | Into a nominal 50Ω load |
| Output Load | | | 50 | | Ω | ±5% |
| Harmonics | | | | -30 | dBc | |

XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

Frequency Adjustment

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|--------------------|-------------------|------------------|------|------|-------|------------|
| Adjustment Method | | External Voltage | | | | |
| Adjustment Voltage | V _{TUNE} | 0 | | +5 | V | |
| Adjustment Range | | ±0.8 | | | ppm | |
| Tuning Bandwidth | | 500 | | | Hz | |
| Linearity | | | | 10 | % | |
| Input Impedance | | 50 | | | kΩ | |
| Adjustment Slope | | Positive | | | | |

Phase Noise

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|--|--------|------|------|--------|----------------|----------------|
| SSB Phase Noise (Under Static Conditions) | | | | -120 | dBc/Hz | 10 Hz Offset |
| | | | | -140 | dBc/Hz | 100 Hz Offset |
| | | | | -155 | dBc/Hz | 1 kHz Offset |
| | | | | -155 | dBc/Hz | 10 kHz Offset |
| | | | | -155 | dBc/Hz | 100 kHz Offset |
| SSB Phase Noise – With Random Vibration (operational, any axis) | | | | -116 | dBc/Hz | 10 Hz Offset |
| | | | | -128 | dBc/Hz | 40 Hz Offset |
| | | | | -128 | dBc/Hz | 52 Hz Offset |
| | | | | -133 | dBc/Hz | 100 Hz Offset |
| | | | | -152 | dBc/Hz | 1 kHz Offset |
| | | | | -155 | dBc/Hz | 2 kHz Offset |
| | | | | -155 | dBc/Hz | 10 kHz Offset |
| | | | -155 | dBc/Hz | 100 kHz Offset | |

Random Vibration (operational)

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|---------------------------|--------|------|---------|------|--------------------|------------|
| Power Spectral Density | | | 0.012 | | g ² /Hz | 10 Hz |
| | | | 0.012 | | | 40 Hz |
| | | | 0.020 | | | 52 Hz |
| | | | 0.020 | | | 500 Hz |
| | | | 0.00126 | | | 2000 Hz |

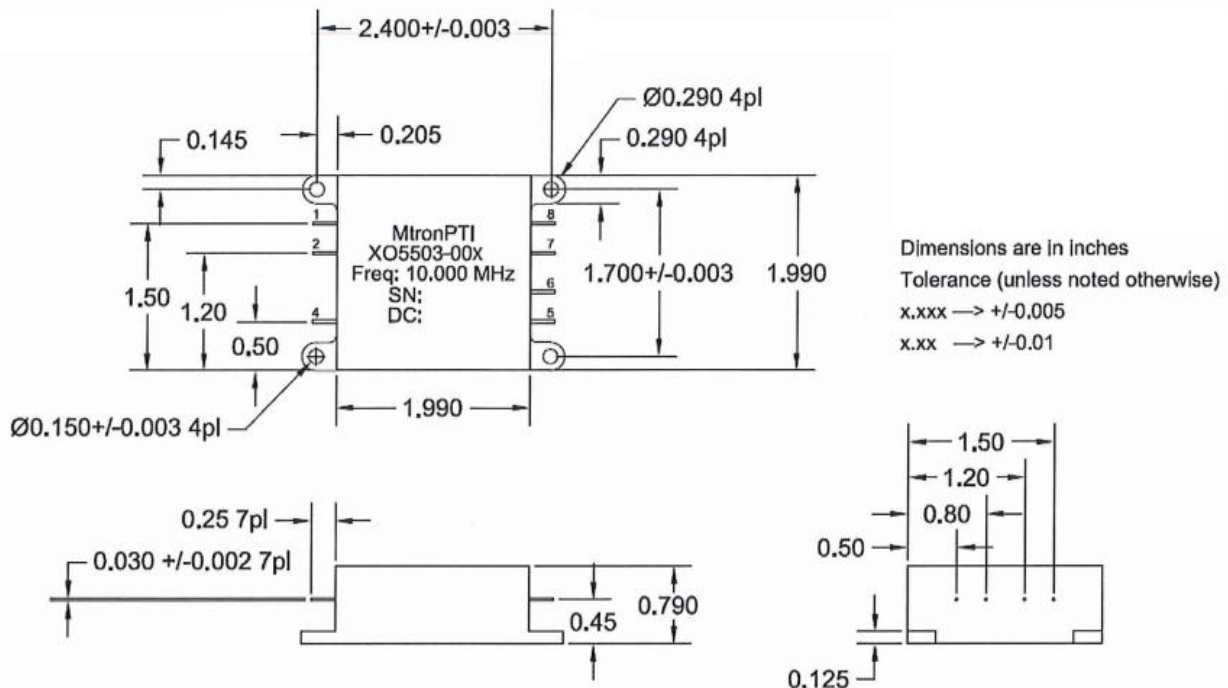
XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

Temperature, Supply Voltage & Power Consumption

| Parameter | Symbol | Min. | Typ. | Max. | Units | Conditions |
|-----------------------|-----------------|-------|------|-------|-------|-----------------------------------|
| Operating Temperature | OTR | -40 | | +85 | °C | Full Specification Compliance |
| Operating Voltage | V _{CC} | +4.75 | +5.0 | +5.25 | V | |
| Power Consumption | | | | 3 | W | Steady state @ 25°C, In Still Air |
| | | | | 5 | W | @ Start-up |

Mechanical & Pin Out Information

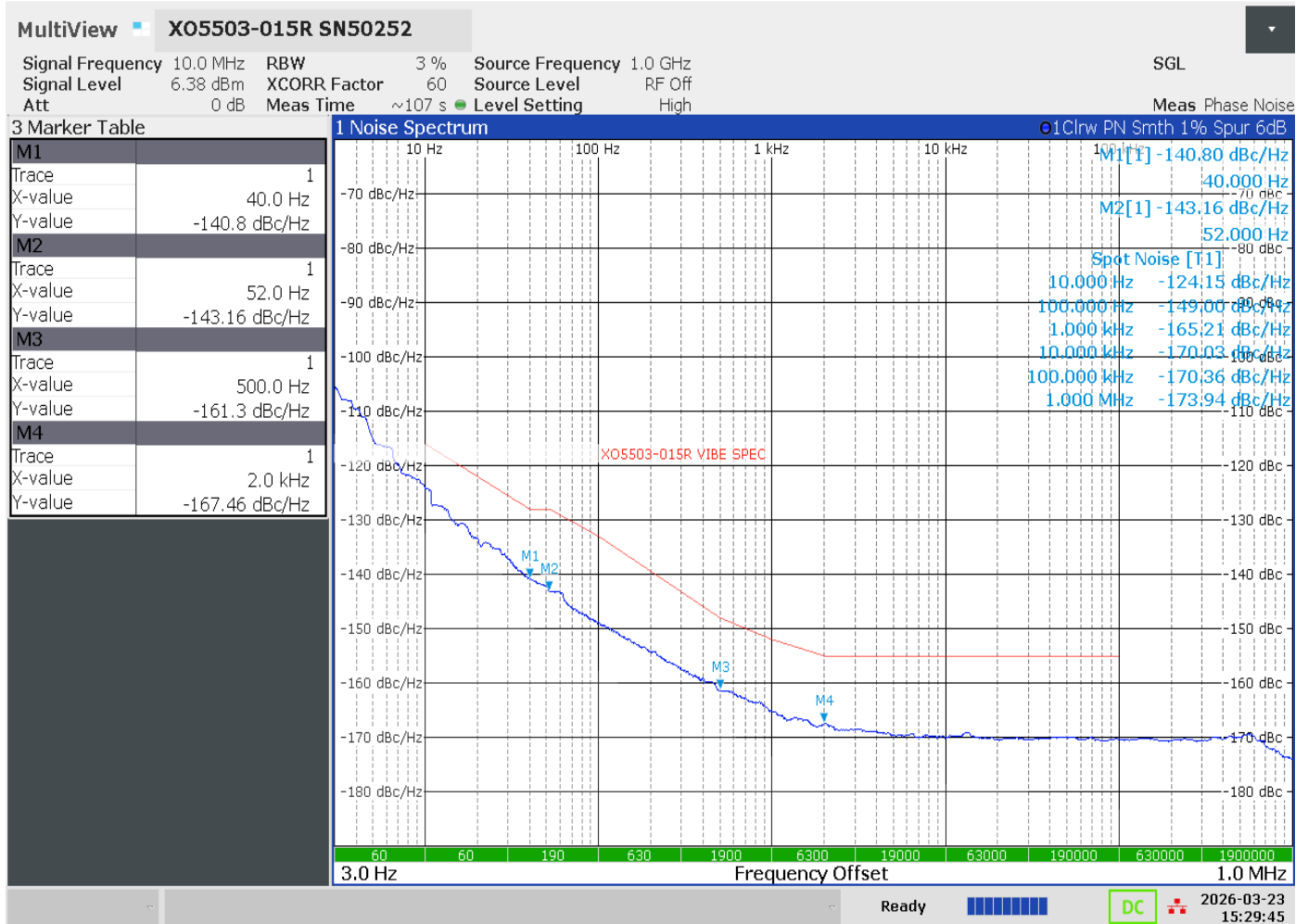
| Part Marking |
|---------------|
| Mtron |
| XO5503 |
| 10.000MHz |
| Serial Number |
| Date Code |



XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

Phase Noise Performance

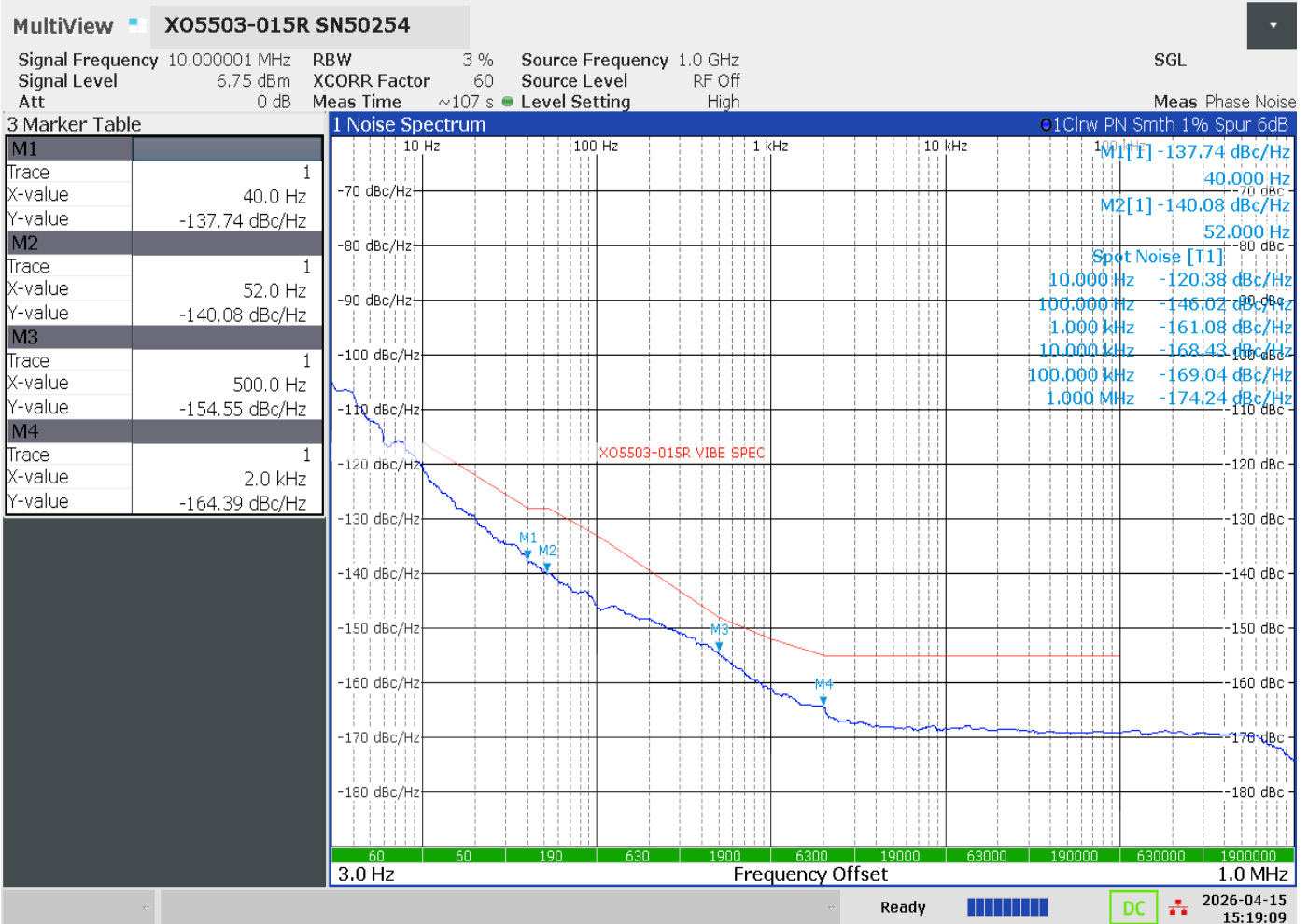
SN50252 STATIC VIBE ROOM



03:29:45 PM 03/23/2026

XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

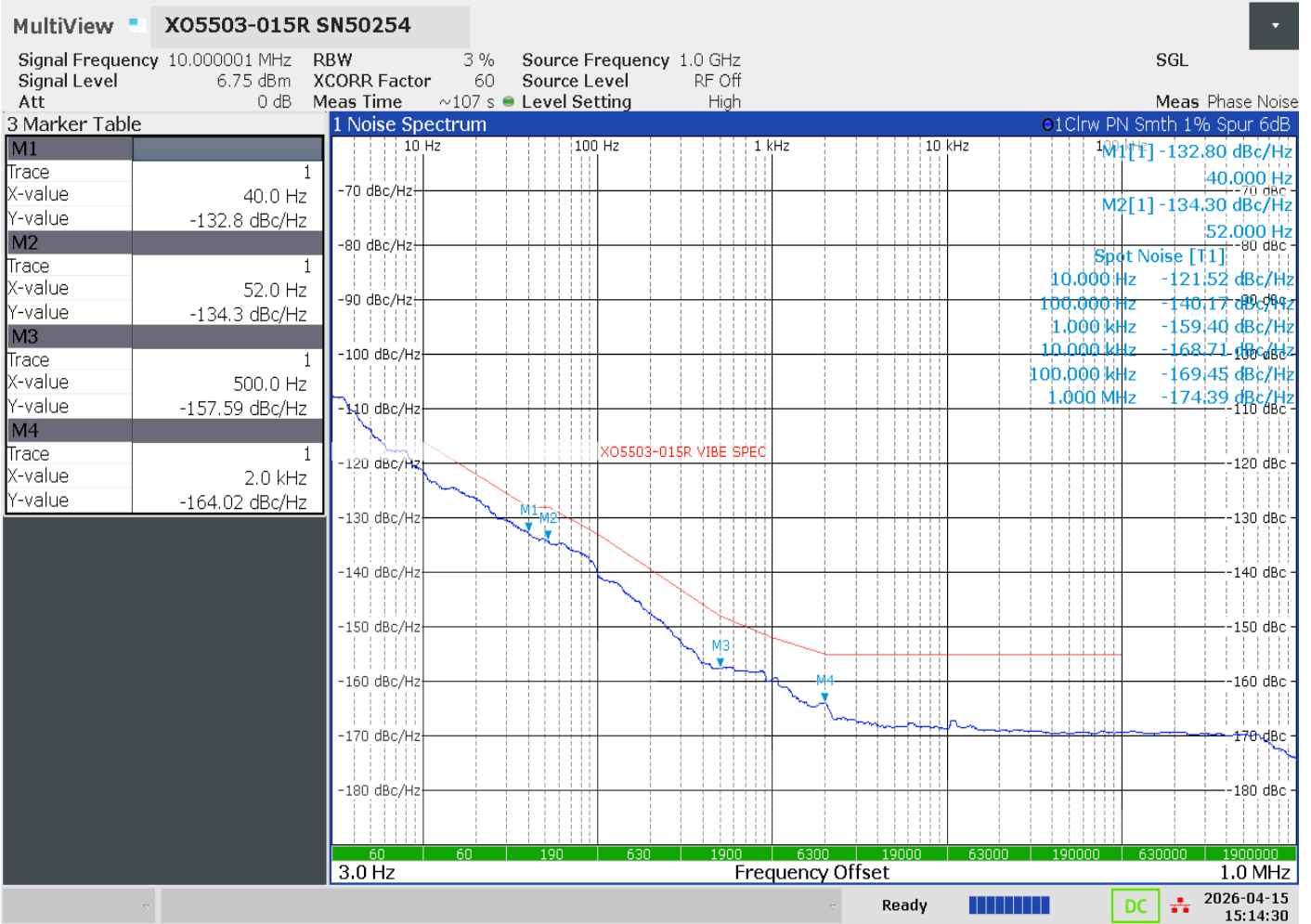
SEALED X AXIS DPR 90



03:19:10 PM 04/15/2026

XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

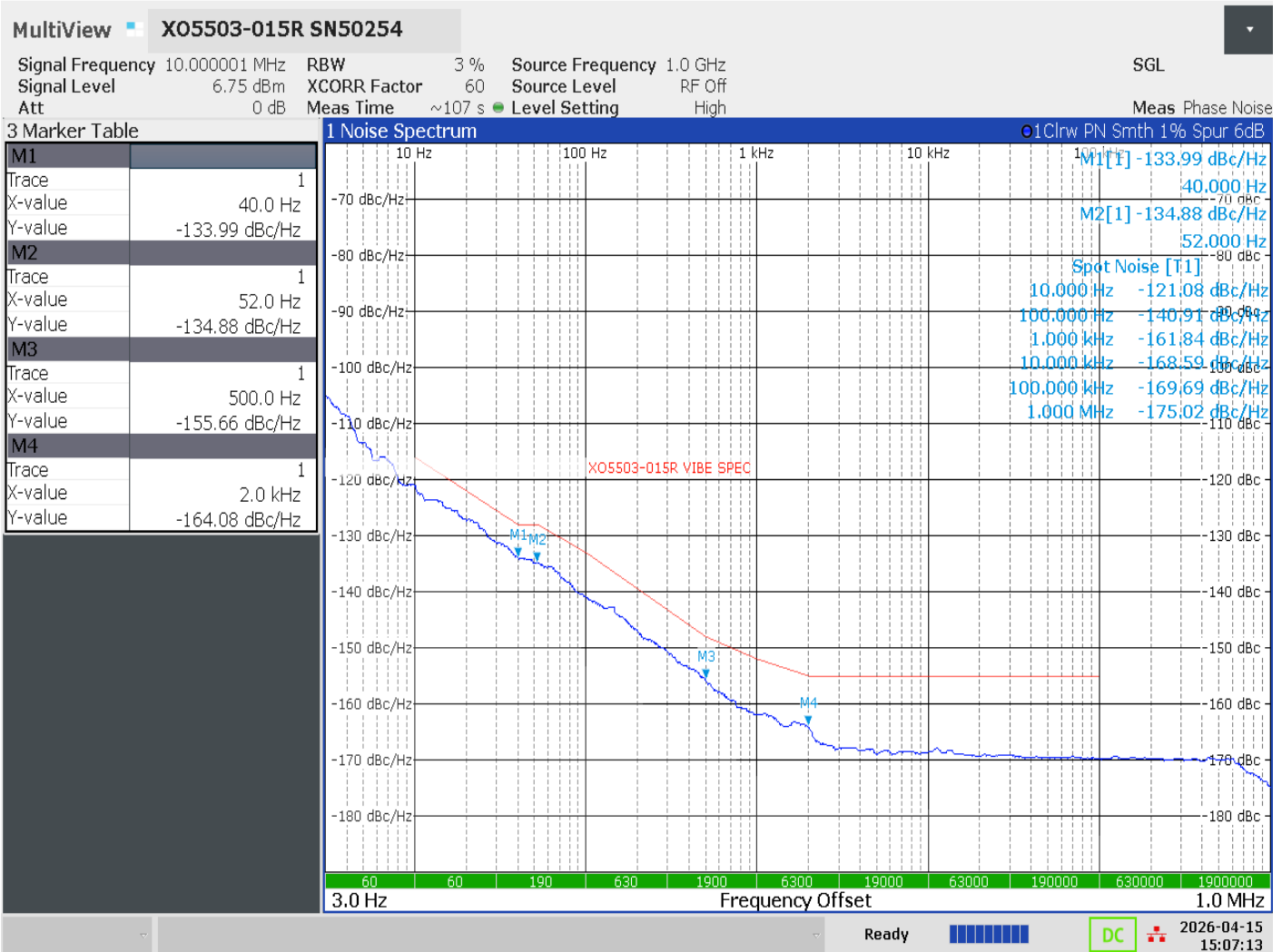
SEALED Y AXIS DPR 140



03:14:31 PM 04/15/2026

XO5503 – 10.000 MHz e-Vibe® Compensated OCXO

SEALED Z AXIS DPR 100



03:07:13 PM 04/15/2026