

Transmitter Linearity Specification

55.5.4 Transmitter signal to noise plus distortion (full power)

When in Test mode 4 and transmitting on a single pair into a 100Ω differential resistive load per the test configuration shown in Figure 55-22, the signal to noise plus distortion ratio of the differential signal at the MDI output shall be greater than the limit specified in Figure 55-x, which corresponds to:

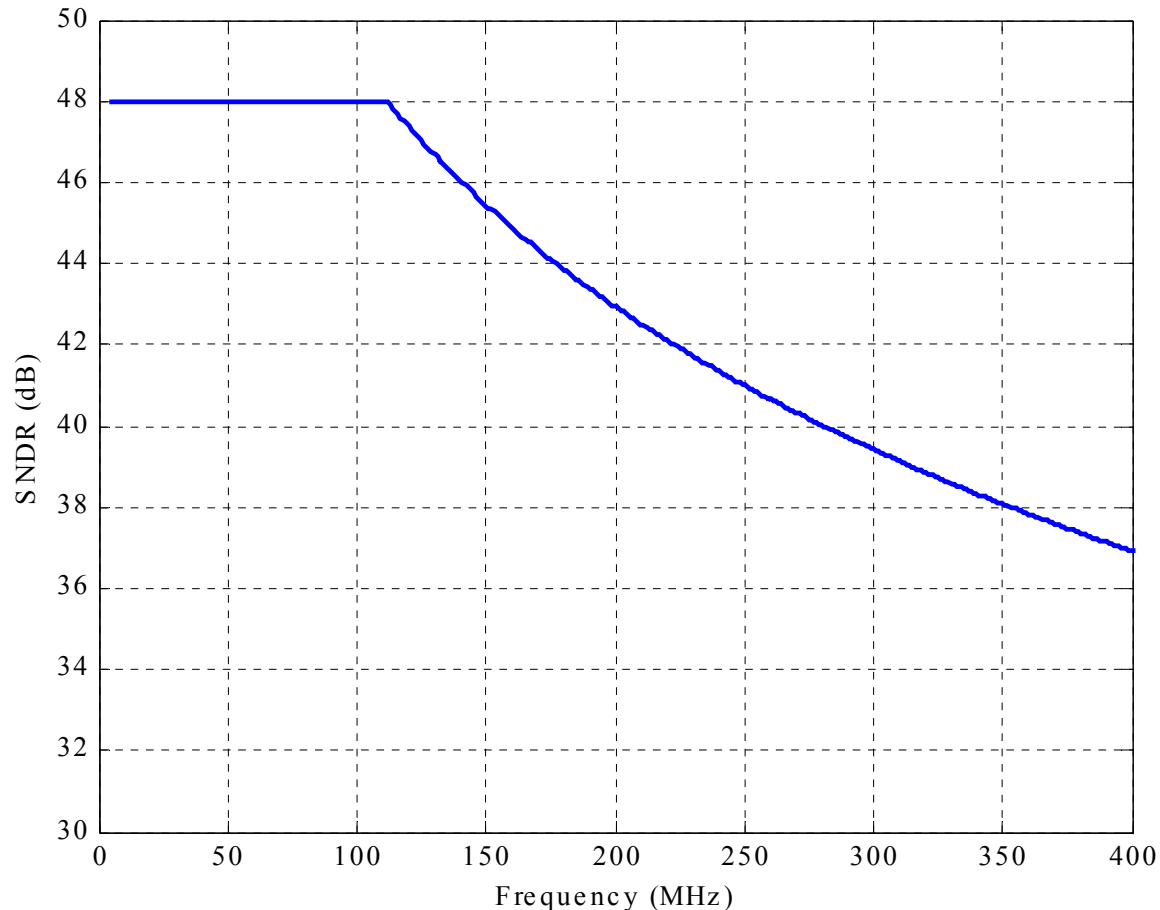
$$\min\{48, 61 - 20 * \log(f_{\text{MHz}} / 25)\} \text{dB}, \quad 5 \leq f_{\text{MHz}} \leq 400$$

Measurements of signal to noise plus distortion ratio shall be made with sinusoidal output waveforms; or alternatively, shall be made using precoded DSQ output waveforms via a system identification approach.

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55.5.4 Transmitter signal to noise plus distortion (cont.)

Signal-to-Noise-plus-Distortion versus Frequency Limit





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55.5.4 Transmitter signal to noise plus distortion

For sinusoidal measurements, the MDI shall be configured to output single-tone and two-tone waveforms at the frequencies specified for the five test cases given in Table 55-x, such that the peak-to-peak output of the sinusoidal signal corresponds to ± 16 with respect to a DSQ output signal. The measured signal to noise plus distortion ratio shall be greater than the values specified in Table 55-x. For two-tone waveforms, signal power shall be defined as the total (sum) power of both tones. Signal to noise plus distortion ratio measurements shall be made across a 1 MHz to 400 MHz band, using a resolution bandwidth of less than or equal to 100 kHz.



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Table 55-x: Signal to Noise Plus Distortion Requirements

Output Waveform Frequencies	SNDR Specification (dB) (full power)
Single tone:	
(101/1024)*800 MHz	48
(167/1024)*800 MHz	46
Two tone:	
(179/1024)*800 MHz, (181/1024)*800MHz	46
(277/1024)*800 MHz, (281/1024)*800MHz	42
(397/1024)*800 MHz, (401/1024)*800MHz	39

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55.5.4 Transmitter signal to noise plus distortion

For precoded DSQ output signals, the MDI shall be configured to output a random, precoded DSQ output signal conforming to the PSD and power levels specified in paragraph 55.5.6. Signal to noise plus distortion, defined as signal power spectral density minus noise plus distortion power spectral density, measured versus frequency using a system identification approach per the procedure given below (TBD), shall be greater than the limit specified in Figure 55-x.

