

Test Abbreviations

RX NF (MDS) = The purpose of the **Receiver Noise Floor (NF) Test** [also known as "**Minimum Discernible Signal**" or (MDS)], is to determine the level of signal input to the receiver that will produce an audio output where the power in the signal is equal to the power in the noise ($S + N = N + 3 \text{ dB}$). The test is conducted with the receiver in the CW mode using the 500 Hz, or closest available, IF filters (or audio filters where IF filters are not available). For receivers that have appropriate IF filters, all audio filtering is disabled. Set the AGC to the OFF position if possible. The test is performed at frequencies of 1.020 MHz, 3.520 MHz, 14.020 MHz, 50.020 MHz, 144.020 MHz and 432.020 MHz.

RX BDR = The purpose of the **Receiver Blocking Dynamic Range (BDR)** [also known as **Blocking Gain Compression (BGR)**] is to determine the level of gain compression, or desensitization, that occurs as a result of another signal on a nearby frequency. The blocking dynamic range is the difference between the level of the noise floor from the level of undesired signal that produces a 1 dB decrease in a weak desired signal. IF filters (or audio filters) where IF filters are not available. For receivers that have appropriate IF. **Example: Receiver Blocking Gain Compression (BGC) = Blocking Level - Noise Floor (MDS) = (-25) - (-135) = 110 dB**

RX IMD-DR = The purpose of the **Receiver Intermodulation Distortion (IMD) Dynamic Range Test** [also known as **Receiver Two-Tone Dynamic Range (RX-TTDR)**] is to determine the range of signals that can be tolerated by the Device Under Test (DUT) while producing essentially no undesired spurious responses. To perform the 3rd Order test, two signals of equal amplitude and spaced 20 kHz apart, are injected into the input of the receiver. If we call these frequencies f1 and f2, the third-order products will appear at frequencies of (2f1-f2) and (2f2-f1). Similarly, the 2nd order test also requires two input signals of equal amplitude. The product, however, appears at a frequency of (f1+f2). The **Intercept Points (IP2 & IP3)** are calculated for each test point. This test is performed on 3.5 MHz, 14 MHz, 50 MHz, 144 MHz and 432 MHz as appropriate for the DUT. Calculate the Dynamic Range by subtracting the MDS noise floor from the IMD figure. **Example: Receiver IMD Dynamic Range = IMD Level - Noise Floor (MDS) = (-44 dBm) - (-135 dBm) = 91 dB**

TX Typical Output Power = The purpose of the Transmitter Output Power Test is to measure the RF output power of the DUT across each band in each of its available modes. A two-tone audio input, at a level within the manufacturer's microphone-input specifications, will be used for the SSB mode. No modulation will be used in the AM and FM modes. DC current consumption at the manufacturer's specified supply voltage is also measured, if applicable.

TX Spectral Purity Test = The purpose of the Spectral Purity Test is to determine and measure the content of any spurious emissions in the output of the transmitter. Full-power carriers will be examined and minimum power checked on all available bands.

TX Two-Tone Transmit IMD Test = The purpose of the Two-Tone Transmit Test is to measure the **intermodulation-distortion (IMD)** products present in the RF output of the DUT transmitter. The transmitter will be operated in the SSB mode at 3.900 MHz and 14.250 MHz initially and then on all other available bands subsequently. A two-tone audio input at frequencies of 700 and 1900 Hz, within the manufacturer's amplitude specifications, will be used.

Notes on Test results and Comparisons:

* indicates that the measurement was noise limited at the value shown.

Test data was taken with the preamplifier on. For Kenwood rigs with the AIP feature, this is equivalent to AIP off.

TTDR measured at 20 kHz spacing.

Note - There is typically a variation of several dB between any two units of the same model number for each test parameter. Keep this in mind when comparing test results of similar radios. There is typically a measurement tolerance of a dB or two on these measurements.

Note - Some of this data does not warrant direct comparison (Example: radios that do not have a preamplifier can't be fairly compared to those that do when the preamp is on for those tests.)

Note - Transmit spurious and transmit IMD as listed in this table are worst case for all radios. A radio with a fair worst case can be worse on other bands than a radio with a poor worst case).