MDS

The **MDS** tests are totally arbitrary and completely unspecific test as applied to communications receivers. It is speculative in nature and indefinite in function. It sounds good in conversation but means very little in valid test specifications. Its use is a carry-over from Radar test and evaluation technology. For communications receivers the valid tests are, signal plus noise to noise (S+N:N) and gain.
SEE: testing-receiver-gain-2.4.pdf

The term minimum discernible signal is used when the echo signal of a target to be recognized by an operator on the screen. The signal then has to be only a little larger than the noise level. The minimum discernible signal is defined as the useful echo power at the antenna, which gives on the screen a discernable blip.

Its value is determined at an A-scope or a PPI and is generally expressed in dBm; typical values are between -110 dBm ... -113 dBm which represents very small signals. Unfortunately this measurement is falsified often by subjective estimation.

The measurement conditions for the receiver sensitivity at radar device are not standardized. These depend on predetermined by the manufacturer measurement and test requirements. The result of the measurement itself is often referred to by the acronym **MDS**.
Minimum Detectable Signal (MDS) is a specific value of minimum receivable power (P_{rmin}) The minimum detectable signal is defined as the useful echo power at the antenna, which gives at the output of the IF amplifier (just before detection), a signal which lies 3 dB above the mean noise level. The MDS is generally expressed in dBm; typical values are between −100 and −103 dBm.
But the actual value of MDS (or P_{rmin}) depends on a number of factors and choices which are ultimately related to the statistics of radar detection.