

SSB-12

Blocking Trends of Different RX Technologies

Any radio with a roofing filter has an advantage from a blocking or ADC overload standpoint. The blocking of a classic superhet, or a hybrid superhet like the FTdx-101D or TS-890S, is better than a direct sampling radio's ADC overload point.

TX composite noise and RMDR aside for the moment, the best superhets block between 140 to 150 dB above the receiver's noise floor.

The range of direct sampling radios ADC overload point vs. RX noise floor are 116 to 130 dB, with the 130 dB being the Flex 6700.

For instance the FTdx-101D blocks at more than 147 dB, the FTdx10 at 141 dB and the new direct sampling FT-710 goes into ADC protection mode at 129 dB.

The new FT-710 is interesting as it has an out-of-passband AGC that keeps the ADC from crashing at +2 dBm, but the gain ahead of the ADC gets reduced, call it *on purpose desense*.

A typical direct sampling radio has an ADC overload of around 127 dB above the RX noise floor.

One caveat of these big blocking values (K3S at 150 dB for instance) is these numbers are taken with a very low phase noise crystal oscillator signal source. In the real world no one's transmitter composite noise is going to be that clean. So, the real-world limit will likely be the transmit composite noise of received signals.