

The NCDXC Elmering Project

Course Description for 'What Makes a Receiver Great?'

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Your transceiver has two main parts. There is the transmitter section which sends out radio signals with CW, SSB or digital modulation. And then there is the receiver which hears weak signals from other stations often with strong adjacent channel interference. The receiver is clearly the key portion of any modern transceiver. Any QSO depends on being able to hear the other station. The ability of your receiver to pull out the weak ones is discussed in this presentation.

Most modern receivers are limited by sensitivity, spurious free dynamic range, reciprocal mixing dynamic range and receiver selectivity. Each of these fancy sounding terms are based on simple principles. Learn how these things affect your ability to hear and which receiver specifications are the most critical. The presentation starts out with the definition of decibels and progress through how receiver sensitivity is ultimately set by its noise figure. However sensitivity may be severely degraded by reciprocal mixing. Reciprocal mixing is governed by receiver synthesizer phase noise which become an absolutely key receiver specification. Synthesizer phase noise limits sensitivity in the presence of large interfering signals possibly far removed from the desired signal.

Another issue with large signals often far from the signal you are trying to hear are intermodulation products generated in the receiver. These may end up on top of the weak signal you are trying to hear. Learn which receiver specifications minimize the level of intermodulation products. "Intermod" is a term often thrown around without much of an idea of what it is or what causes it. Intermodulation and the other important specifications that make your receiver hear well will be brought down to earth with simple explanations and clear illustrations.

Some other factors as mundane as how the front panel of the receiver is laid out and your choice of filtering, really drive satisfaction with a radio. Come learn what is really important in selecting your transceiver.