

SUBSCRIBER UNIT INTERMODULATION REJECTION SPECIFICATION

Major Disappointment

The ability of the current 800 MHz CCCS Motorola subscriber units, particularly the portables, to reject intermodulation (IM) is simply inadequate in light of the intense signals present from wireless carrier sites operating in the 800 MHz band, i.e., AT&T, Nextel, and Verizon, representing a “Major Disappointment.”

The “Best Practices Guide” (Guide) indicates that Public Safety users should purchase only equipment with high receiver IM specifications, of 75 decibels (dB) minimum for “on street” coverage, and relaxed somewhat to 70 dB for systems designed for portable coverage inside large buildings. As is widely known, the “15 dB” margin incorporated into the 800 MHz CCCS is only for medium buildings, and should, therefore, require somewhere between 70 and 75 dB IM specifications.

The SPECTRA mobile and control station subscriber units have an advertised receiver IM specification of 80 dB, or 5 dB (some three times the power ratio) in excess of the recommended 75-dB specification in the Guide.

The XTS3000 portable units have an advertised receiver IM specification of 74 dB, just about at or perhaps a little better than the recommended 70-75 dB specification in the Guide.

Even the new XTS5000 portable units only have an advertised receiver IM specification of 75 dB, again just about at or perhaps a little better than the recommended 70-75 dB specification in the Guide.

It is noted that the advertised Coverage Acceptance Test Procedure (CATP) “test” receiver sensitivity is 0.3 microvolt (uV), or approximately -117.5 dBm.

It is the experience of OCSD/Communications that the recommended receiver specifications—perhaps one of the highest specifications on the market today—is simply inadequate to operate in the presence of the 800 MHz wireless carriers that have been measured as high as -20 dBm, which would appear to require IM specifications of at least 97.5 dB. The current IM specification for the XTS3000 portables is some 23.5 dB lower than field observations made by OCSD/Communications would indicate as being necessary to mitigate IM due to signals present within Orange County from the 800 MHz wireless carriers, and some 27.5 dB less than recommended in the Guide for systems designed for portable coverage inside large buildings.