

Data Necessary to Perform a Site Intermodulation Study

To perform an intermodulation study a detailed survey of the site is needed. This is to determine the location and configuration of all existing communications systems at the site. Information collected during the site survey will need to include, as minimum, the following information for each existing system:

- C Specific frequencies, both transmit and receive that are used or proposed to be used at this site.
- C Site layout map with all sites located and correctly scaled with topographic depiction of elevation variations of the site. Also, there should be an elevation drawing of the towers showing antenna types and mounting details.
- C Location (in three dimensions), configuration (mounting, orientation, polarization, electrical or mechanical downtilt, etc.), and type (manufacturer/model number) of all transmitting and receiving antennas. Actual antenna locations will be plotted on a site layout map, and on more detailed tower drawings, as required. Reference must be specified to a known point on each antenna, the tip, the radiation center, or the base. Each antenna will be located using an X, Y and Z coordinate grid.
- C Transmission line type and length, connector make and model number, and transmission line surge suppressor make and model number for all transmission lines used in each system.
- C Manufacturer and model number for all receiver multicoupler and transmitter combiner systems. Noise figure and third order intercept specifications for receiver multicouplers used at the site. Transmitter-to-transmitter and transmitter-to-antenna isolation specifications for all transmitter combiners.
- C Manufacturer, model number and measured frequency response for all preselector filters, receiver bandpass and/or reject cavities, and other filters used on the receive side of each system.
- C Manufacturer and model number for all transmitters and receivers used in each system. Receiver information should include: specifications for useable sensitivity [referenced to a specific signal and noise plus distortion level for analog FM receivers and to a specific bit error rate (BER) for digital receivers]; nominal receive channel bandwidth, adjacent channel selectivity of ACIPR (Adjacent Channel Interference Protection Ratio); and intermodulation and spurious signal rejection ratio.
- C Transmitter information will need to include output power (or range if variable) nominal occupied bandwidth, and harmonic and spurious signal suppression (or certification of compliance with a specific emission mask specified by the FCC).

The same information is necessary for the proposed radio facilities. If there is an option for frequency use, an alternate channel or set of channels (transmit and receive) and any channel grouping restrictions (caused, for example by combiner or multicoupler limitations) should be given.

The Site Survey will require access by Hatfield & Dawson to every installed communications facility on the site property, including those operated by the public safety providers, those operated by the cellular providers, and those operated by commercial entities such as private and common carrier paging operations.