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Antenna Registration Question 4:

EIRP calculations and Tx front-end description:

The front-end portion of the RN-530 Tx comprises of an integrated RF module from Qualcomm that includes 64 antenna pairs for both Horizontal and Vertical Polarizations for 2 MIMO layers. The modulated signal for this module is from the BB and low level SoC also from Qualcomm.
There are 8 RFIC' and each RFIC feeds an 8x8 phased array antenna that is integrated into the module. The Pin for each antenna feed is at 1 dBm (including the antenna coupling loss) and each antenna patch gain is 3 dB.
The EIRP of the entire module is given as follows

EIRP = 3 (antenna gain) + 1 (PA output + antenna coupling loss) + 3 (dual-pol) + 10 log (64 = antennas used) + 10 log (64 = PA pairs used) => 43 dBm or 20 Watts

The RN-530 will be mounted on a ceiling inside the office space of the SpiderCloud in Milpitas with the coordinates listed in the form 442 application.

Question 4: Directional antenna information:

The 64 pair antennas in the Tx module generate a phased array beam with the following beam information and the beam is steered by SW both in horizontal and vertical pols as per the info below.

   a) Width of beam in degrees at half power points = 30 degrees
   b) Orientation in horizontal plane = +/- 60 deg from boresight
   c) Orientation in vertical plane = +/- 60 deg from boresight