Magnetek's VHF MLTX / SLTX Transmitter Antenna Gain

It can be shown that the E field, is related to the power output of an isotropic radiator three meters away by the following equation:

$$P_{trans\_dBm} = E_{dB\mu V/m} - 95.23$$

The attached test report, published by L.S. Research, dated 4/15/05, shows maximum field strength of 81.65 dBμV/m for our 100mW MLTX transmitter. The 750mW MLTX transmitter uses the identical antenna. Using the above equation we get:

$$P_{trans\_dBm} = 81.65\ dB\mu V/m - 95.23 = -13.58\ dBm$$

Or, in mW:

$$P_{trans\_mW} = 10^{-13.58dBm/10} = 0.044mW$$

The antenna gain would be calculated as follows:

$$Antenna\_Gain = 10 \times Log\left(0.044mW/100mW\right) = -33.6dB$$

Our SLTX antenna uses the same antenna structure as the MLTX and should perform similarly.

Please note that the original antenna gain submitted in the MPE calculation was an estimate. The above calculation is based on an actual measurement of field strength.

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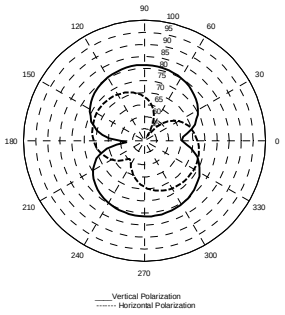
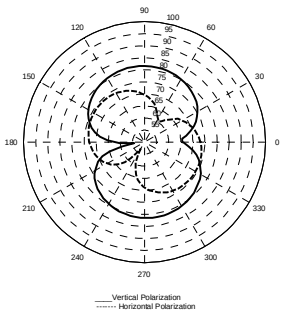
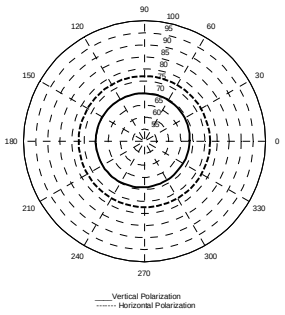
Equipment Under Test: MLTX (72.16 MHz, nominal frequency).



Blue Magnetek 72.16 MHz			
Device Orientation	polarization	[dBuV/m]	
		Max	Avg
(V)	vertical	81.53	76.26
(V)	horizontal	73.63	68.56
(H)	vertical	81.65	76.20
(H)	horizontal	74.46	69.64
(F)	vertical	70.23	69.47
(F)	horizontal	77.39	77.19





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