



SPECTRUM

Perimeter Surveillance Radar

Thursday, the 4th of October

To: Whom it may concern

From: André Gagnon, P. Eng.

This letter is to certify that the radiation power and modulation techniques of K&G Spectrum's family of Perimeter Surveillance Radar, SR4505, SR0303 and SR3030 comply with FCC (Federal Communication Commission), Part 15.249, license free regulation.

Here are the engineering facts:

The total power at the antenna port is 0 dBm (1 milliwatt). The maximum power is reduced by the spectrum spreading, i.e. the amount by which the maximum spectral line is reduced by the power in the other spectral lines, which in our case is 17 dB, giving the power in the highest spectral line (i.e. as measured by a spectrum analyzer in accordance with FCC procedures) of -17 dBm (20 microwatt).

FCC Title 47, Volume 1, Part 15.249 requires a field strength of not greater than 250 mV/m, measured at 3m from the antenna, for the fundamental component. This translates to +12.73 dBm (20 milliwatt) at the output of the antenna, i.e. including the antenna gain.

The SR4505 antenna gain is approximately 21 dB. The antenna gain is reasonably derived from $G = 2700 / (VBW \times HBW)$, where VBW is the vertical 3 dB beamwidth of 45 degrees and HBW is the horizontal 3 dB beamwidth of 5 degrees. Note that vertical and horizontal are interchangeable.

Thus the SR4505 radiation level is below the FCC requirement by a margin of 8.73 dB, calculated as: 12.73 dBm - (-17 dBm + 21 dB), which in general term, below the FCC license free requirement by a factor of 8 in the linear scale.

Please, do not hesitate to contact the undersigned if you have any question.

Best regards

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President

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(Your expert in Perimeter Surveillance Radar)

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