MPE Calculations
Co-Location of PKRNVWE725 and E2K512ANHMW

The WLAN module E2K512ANHMW is designed to be installed into laptop host systems with a minimum separation distance of at least 20cm from the antennas to persons.

Frequency	MPE Limit (mW/cm^2)	Output Power (mW)	Max. Antenna Gain (dBi)[1]	EIRP (mW)	Pd at 20cm (mW/cm^2)	Distance where Pd = limit (cm)
2412 to 2462 MHz	1.00	72.4	3.2	151.4	0.03	3.5
5180 to 5320 MHz	1.00	45.7	5.0	144.5	0.03	3.4
5500 to 5700 MHz	**1.00**	**70.8**	**5.0**	**223.9**	**0.04**	**4.2**
5745 to 5825 MHz	1.00	61.7	5.0	195.0	0.04	3.9

The maximum power spectral density 20cm from the antenna is highlighted in the table and is 0.04 mW/cm^2, 4% of the allowed limit.

The WWAN module PKRNVWE725 is also designed be installed into laptop hosts. The MPE calculation submitted as part of its approval is shown below.

Band	Channel	Frequency (MHz)	Power (mW)	Antenna Gain (dBi)	Pd at 20cm (mW/cm^2)	MPE Limit (mW/cm^2)	Pd as % of limit
Cellular CDMA	1013	824.70	285.80	2.00	0.114	0.55	20.7%
	384	836.52	291.10	1.90	0.11	0.558	19.7%
	777	848.31	269.80	1.98	0.106	0.566	18.7%
PCS CDMA	25	1851.25	278.00	2.10	0.116	1	11.6%
	600	1880.00	277.30	1.96	0.108	1	10.8%
	1175	1908.75	289.70	1.82	0.105	1	10.5%

The highest power density relative to the MPE limit is highlighted and is 20.7% of the limit at a distance 20cm from the module's antenna.

When the two devices are co-located the total power density 20cm from both antennas, expressed as a ratio of the allowable rf exposure, is the sum of the individual percentages of the limits for each module. This sum is 24.7%. As this value is below 100% of the limit the two devices may be collocated and used in applications with a separation distance of at least 20cm from persons.

[1] Antenna gain is the highest antenna gain in each band for the antennas covered by this application.