RF Exposure REPORT

2.4GHz and 5.7GHz Bands

Company:	3e Technologies International 9715 Key West Ave. Suite 500 Rockville, MD 20850
Contact:	Rich Brazda
Product:	DCMA-82 PCI Transmitter Module
FCC ID:	QVT-525-V21
Test Report No:	RFE101309-02
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RF Exposure Calculations:
The minimum separation distance is calculated from FCC OET 65 Appendix B, Table 1B "Guidelines for General Population/Uncontrolled Exposure." This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain.

RF Power Measurement
The RF output of the transceiver was connected to a power sensor and power meter. Measurements were made with the transmitter continuously active. The highest power settings were chosen from the 2.4GHz and the 5.7GHz bands.

Frequency (GHz)	Output Power dBm	Output Power mW
2.437	20.60	114.81
5.745	24.53	283.79

Power measurements taken from NCEE Labs report R101309-02-01

Test Equipment Used

DESCRIPTION AND MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CALIBRATION DATE
Hewlett Packard Power Meter	4378	100307	20 Jan 2009
Hewlett Packard Power Sensor	8481A	2702A63981	20 Jan 2009

Test Environment
Testing was performed at the NCEE Labs Lincoln facility. Laboratory environmental conditions varied slightly throughout the test:
        Relative humidity of $40 \pm 5\%$
        Temperature of $20 \pm 2º$ Celsius

Exposure Limit (mW/cm^2) = F/1200	2.03 mW/cm^2	4.79 mW/cm^2
Frequency (MHz)	2437	5745
Maximum peak output power (mW)	114.81	283.79
Antenna Gain (Numeric)	251.19 (24dBi)	158.49 (22dBi)
Antenna type	HG2424G	HG5822G

$$P_d = (P_{out} \times G) / (4\pi \times R^2)$$

$$R = \sqrt{(P_{out} \times G) / (4\pi \times P_d)}$$

P_d = Power density limit, mW/cm^2
P_{out} = Peak power output, mW
G =Numeric Antenna Gain
R = Distance from antenna, cm

P_{out} mW	G Numeric	P_d mW/cm^2	R cm	Frequency MHz	Calculation
114.81	251.19	2.03	**33.62**	2437	Minimum distance to meet limit
114.81	251.19	**5.74**	20.00	2437	Power density at 20 cm
283.79	158.49	4.79	**27.34**	5745	Minimum distance to meet limit
283.79	158.49	**8.95**	20.00	5745	Power density at 20 cm

Notes:
1. The minimum safe distance is based on a conservative "worst case" prediction, i.e. using the formula shown above and no duty factor. In practice the minimum distance will be much shorter. (Ref. 2)

References:
1. FCC OET Bulletin 65, Edition 97-01
2. FCC Supplement C to OET Bulletin 65, edition 01-01
3. IEEE C95.1, 1999