



March 13, 2014

TUV SUD BABT
Octagon House, Concorde Way
Segensworth Rd N, Fareham
PO15 5RL

Attention: Director of Certification

RE: Analysis of RF Exposure for Portable and Mobile use per KDB 447498 D01 Mobile Portable RF Exposure v05r01

FCC ID: QNG-BE2811

1. Mobile MPE Calculation Summary using a 20cm separation distance:

Mode	Output Power	Power Density (mW/m ²)
802.11 b	13.86 dBm	0.0024
802.11 g	13.98 dBm	0.0025
Bluetooth + EDR	6.35 dBm	0.0004
CDMA 1x EV-DO (Cell)	30.16 dBm	0.4621
CDMA 2000 1xRTT (PCS)	25.85 dBm	0.1713

2. Co-Located Transmitters transmission table:

Transmitter type	Transmitter type that can transmit at the same time
WiFi	Bluetooth and CDMA
Bluetooth + EDR	WiFi and CDMA
CDMA	WiFi and Bluetooth

3. Simultaneous Transmission MPE (worst-case):

Transmitter type	MPE (mw/cm ²)	Limit (mW/cm ²)	MPE ratio (MPE/Limit)
WiFi (802.11 b)	0.0025	1.0	0.0025
Bluetooth + EDR	0.0004	1.0	0.0004
CDMA 1x EV-DO (Cell)	0.4621	0.566	0.817
Sum of the ratios (should be <1.0)			0.8199



4. Mobile MPE Calculation using a 20cm separation distance (802.11 b):

Using Power Density formula:

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to isotropic

R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal:	13.86	(dBm)
Maximum peak output power at antenna input terminal:	24.32	(mW)
Antenna gain(typical):	-3	(dBi)
Maximum antenna gain:	0.501	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2462	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0024	(mW/cm ²)
Power density at prediction frequency:	0.024	(W/m ²)
Margin of Compliance:	-26.15	(dB)

5. Mobile MPE Calculation using a 20cm separation distance (802.11 g):

Maximum peak output power at antenna input terminal:	13.98	(dBm)
Maximum peak output power at antenna input terminal:	25.00	(mW)
Antenna gain(typical):	-3	(dBi)
Maximum antenna gain:	0.501	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2462	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0025	(mW/cm ²)
Power density at prediction frequency:	0.025	(W/m ²)
Margin of Compliance:	-26.03	(dB)



6. Mobile MPE Calculation using a 20cm separation distance (Bluetooth + EDR):

Maximum peak output power at antenna input terminal:	6.35	(dBm)
Maximum peak output power at antenna input terminal:	4.32	(mW)
Antenna gain(typical):	-3	(dBi)
Maximum antenna gain:	0.501	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2441	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0004	(mW/cm ²)
Power density at prediction frequency:	0.004	(W/m ²)
Margin of Compliance:	-33.66	(dB)

7. Mobile MPE Calculation using a 20cm separation distance (CDMA 1x EV-DO Cell):

Maximum peak output power at antenna input terminal:	30.16	(dBm)
Maximum peak output power at antenna input terminal:	1037.53	(mW)
Antenna gain(typical):	3.5	(dBi)
Maximum antenna gain:	2.239	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	848.31	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	0.566	(mW/cm ²)
Power density at prediction frequency:	0.4621	(mW/cm ²)
Power density at prediction frequency:	4.621	(W/m ²)
Margin of Compliance:	-0.88	(dB)

8. Mobile MPE Calculation using a 20cm separation distance (CDMA 2000 1xRTT PCS):

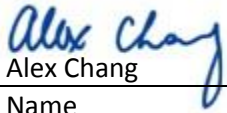
Maximum peak output power at antenna input terminal:	25.85	(dBm)
Maximum peak output power at antenna input terminal:	384.59	(mW)
Antenna gain(typical):	3.5	(dBi)
Maximum antenna gain:	2.239	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	1880	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.1713	(mW/cm ²)



America

Power density at prediction frequency:	1.713	(W/m ²)
Margin of Compliance:	-7.66	(dB)

Sincerely,


Alex Chang

Name

Authorized Signatory

Title: EMC/Wireless Test Engineer