



June 12, 2015

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 v05r02 and RSS-102 Issue 5 March 2015.

FCC ID: R68XPSWF

IC: 3867A-XPSWF

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

Mode	Output Power	Frequency	Power Density (mW/m ²)
WLAN (802.11 b/g / n)	23.04 dBm	2412 MHz	0.0516
Bluetooth EDR	6.060 dBm	2440 MHz	0.0010
Bluetooth LE	1.353 dBm	2402 MHz	0.0003
U-NII (802.11 n / ac)	15.52 dBm	5825 MHz	0.0148

2. Co-Located Transmitters transmission table:

Transmitter type	Transmitter type that can transmit at the same time
WLAN (802.11 b/g / n)	None
Bluetooth EDR	None
Bluetooth LE	None
U-NII (802.11 n / ac)	None

3. Mobile MPE Calculation using a 20cm separation distance (WLAN 2.4GHz DTS):

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:	23.04	(dBm)
Maximum peak output power at antenna input terminal:	201.37	(mW)
Antenna gain(typical):	1.1	(dBi)
Maximum antenna gain:	1.288	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2412	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0516	(mW/cm ²)
Power density at prediction frequency:	0.516	(W/m ²)
Margin of Compliance:	-12.87	(dB)

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

Maximum peak output power at antenna input terminal:	6.06	(dBm)
Maximum peak output power at antenna input terminal:	4.04	(mW)
Antenna gain(typical):	1.1	(dBi)
Maximum antenna gain:	1.288	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2440	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0010	(mW/cm ²)
Power density at prediction frequency:	0.010	(W/m ²)
Margin of Compliance:	-29.85	(dB)



5. Mobile MPE Calculation using a 20cm separation distance (Bluetooth LE):

Maximum peak output power at antenna input terminal:	1.35	(dBm)
Maximum peak output power at antenna input terminal:	1.37	(mW)
Antenna gain(typical):	1.1	(dBi)
Maximum antenna gain:	1.288	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2402	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0003	(mW/cm ²)
Power density at prediction frequency:	0.003	(W/m ²)
Margin of Compliance:	-34.56	(dB)

6. Mobile MPE Calculation using a 20cm separation distance (WLAN 5.0GHz U-NII):

Maximum peak output power at antenna input terminal:	15.52	(dBm)
Maximum peak output power at antenna input terminal:	35.65	(mW)
Antenna gain(typical):	3.2	(dBi)
Maximum antenna gain:	2.089	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	5825	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0148	(mW/cm ²)
Power density at prediction frequency:	0.148	(W/m ²)
Margin of Compliance:	-18.29	(dB)

Sincerely,

A handwritten signature in black ink, appearing to read 'Ferdie S. Custodio', is written over a horizontal line.

Ferdie S. Custodio

Name

Authorized Signatory

Title: Senior EMC/Wireless Test Engineer