April 29, 2016

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: XM5-SMG2SMT

1. Limits

Limits for General Population/Uncontrolled Exposure (Title 47 Subpart J §2.1091 and KDB 447498 D01 referring to limits under §1.1310)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Electric Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time (minutes)
0.3 - 1.34	614	1.63	*(100)	30
1.34 - 30	824/f	2.19/f	*($180/f^2$)	30
30 - 300	27.5	0.073	0.2	30
300 - 1500	-	-	f/1500	30
1500 - 100,000	-	-	1.0	30

f = frequency in MHz
**Plane-wave equivalent power density*

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

Mode (Worst Case)	Output Power	Power Density (mW/cm^2)
Mobile Satellite Service	0.813 watt	0.0647
WLAN	0.079 watt	0.0315

3. Simultaneous Transmission MPE:

Transmitter type	MPE (mW/cm^2)	FCC Limit (mW/cm^2)	FCC MPE ratio (MPE/Limit)
Mobile Satellite Service	0.0647	1	0.0647
WLAN	0.0315	1	0.0315
		Sum of the ratios (should be <1.0)	0.0962

4. *Mobile MPE Calculation using a 100cm separation distance (Mobile Satellite Service):*

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:	**29.10**	(dBm)
Maximum peak output power at antenna input terminal:	**812.831**	(mW)
Antenna gain(typical):	**10**	(dBi)
Maximum antenna gain:	**10.000**	(numeric)
Prediction distance:	**100**	(cm)
Source Based Time Average Duty Cycle:	**100**	(%)
Prediction frequency:	**1643.7**	(MHz)
FCC MPE limit for uncontrolled exposure at prediction frequency:	**1.000**	(mW/cm^2)
Power density at prediction frequency:	**0.0647**	(mW/cm^2)
Power density at prediction frequency:	**0.647**	(W/m^2)
FCC Margin of Compliance:	**-11.89**	(dB)

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

Maximum peak output power at antenna input terminal:	**19.0**	(dBm)
Maximum peak output power at antenna input terminal:	**79.43**	(mW)
Antenna gain(typical):	**3**	(dBi)
Maximum antenna gain:	**1.995**	(numeric)
Prediction distance:	**20**	(cm)
Source Based Time Average Duty Cycle:	**100**	(%)
Prediction frequency:	**2412**	(MHz)
FCC MPE limit for uncontrolled exposure at prediction frequency:	**1.000**	(mW/cm^2)
Power density at prediction frequency:	**0.03153**	(mW/cm^2)
Power density at prediction frequency:	**0.315**	(W/m^2)
FCC Margin of Compliance:	**-15.01**	(dB)

Sincerely,

Alex Chang
Name
Authorized Signatory
Title: Senior EMC/Wireless Test Engineer