



October 27, 2016

TUV SUD BABT
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Attention: Director of Certification

RE: Analysis of RF Exposure for Portable and Mobile use per KDB 447498 D01 Mobile Portable RF Exposure v06 and RSS-102 Issue 5 March 2015.

FCC ID: SGWIPS2016SC
IC: 11583A-IPS2016SC

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

Mode	Output Power	Power Density (mW/cm ²)
RFID	39.9 dBμV/m @ 3 meters	0.00000058
BLE	0.0011 watt	0.00030*
CDMA (22H –worst case)	0.292 watt	0.06512**

* MPE calculation from original filing using the same antenna and same gain

** MPE calculation from original filing using custom antenna with less gain (0.5 dBi)

2. Co-Located Transmitters transmission table:

Transmitter type	Transmitter type that can transmit at the same time
RFID	BLE and CDMA
BLE	RFID and CDMA
CDMA	RFID and BLE

3. Simultaneous Transmission MPE:

Transmitter type	MPE (mw/cm ²)	Limit (mW/cm ²)	MPE ratio (MPE/Limit)
RFID	0.00000058	0.2	0.0000029
BLE	0.00030	1.0	0.00030
CDMA	0.06512	0.550	0.11840
Sum of the ratios (should be <1.0)			0.1187029



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

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:	24.65	(dBm)
Maximum peak output power at antenna input terminal:	291.74	(mW)
Antenna gain(typical):	0.5	(dBi)
Maximum antenna gain:	1.122	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	825	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	0.550	(mW/cm ²)
Power density at prediction frequency:	0.06512	(mW/cm ²)
Power density at prediction frequency:	0.651	(W/m ²)
Margin of Compliance:	-9.27	(dB)

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

Measured Field Strength --Radiated:	39.9	(dBuV/m)
Maximum peak output power --Radiated:	0.0000029	(W)
Antenna gain(typical):	0.00	(dBi)
Maximum antenna gain:	1.00	(numeric)
Prediction distance:	20.00	(cm)
Prediction frequency:	13.56	(MHz)
Limit at prediction frequency	0.2	(mW/cm ²)
Power density at prediction frequency:	0.00000058	(mW/cm ²)
Margin of Compliance:	-55.35	(dB)



America

Sincerely,

Ferdie S. Custodio

Name

Authorized Signatory

Title: Senior EMC/Wireless Test Engineer