March 14, 2014

TUV SUD BABT
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Attention: Director of Certification

RE: Prediction of MPE limit at a given distance as per KDB 447498 D01 Mobile Portable RF Exposure V04 using a PIFA (Planar Inverted F-Antenna) 0dBi trace antenna.

FCC ID: SGWIPS2010M800
IC: 11583A-IPS2010M800

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

Mode	Output Power	Power Density (mW/m^2)
RFID	-79.33 dBm	0.000000000002
GPRS 850	29.79 dBm	0.3088
EGPRS 850	26.29 dBm	0.1380
WCDMA (Band V)	24.47 dBm	0.0970
GPRS 1900	23.28 dBm	0.0868
EGPRS 1900	21.88 dBm	0.0629
WCDMA (Band II)	23.70 dBm	0.0957

2. Co-Located Transmitters transmission table:

Transmitter type	Transmitter type that can transmit at the same time
RFID	GSM
GSM	RFID

3. Simultaneous Transmission MPE (worst-case):

Transmitter type	MPE (mw/cm^2)	Limit (mW/cm^2)	MPE ratio (MPE/Limit)
RFID	0.000000000002	0.978933335	0.000000000002
GPRS 850	0.3088	1.0	0.3088
		Sum of the ratios (should be <1.0)	0.308800000002

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

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:	**-79.33**	(dBm)
Maximum peak output power at antenna input terminal:	**0.00**	(mW)
Antenna gain(typical):	**0**	(dBi)
Maximum antenna gain:	**1.000**	(numeric)
Prediction distance:	**20**	(cm)
Sourse Based Time Average Duty Cycle:	**100**	(%)
Prediction frequency:	**13.56**	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	**0.978933335**	(mW/cm^2)
Power density at prediction frequency:	**0.00000000000232**	(mW/cm^2)
Power density at prediction frequency:	**0.00000000002321**	(W/m^2)
Margin of Compliance:	**-116.25**	(dB)

5. Mobile MPE Calculation using a 20cm separation distance (GPRS 850):

Maximum peak output power at antenna input terminal:	**29.79**	(dBm)
Maximum peak output power at antenna input terminal:	**952.80**	(mW)
Antenna gain(typical):	**2.12**	(dBi)
Maximum antenna gain:	**1.629**	(numeric)
Prediction distance:	**20**	(cm)
Sourse Based Time Average Duty Cycle:	**100**	(%)
Prediction frequency:	**848.8**	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	**0.56586667**	(mW/cm^2)
Power density at prediction frequency:	**0.3088**	(mW/cm^2)
Power density at prediction frequency:	**3.088**	(W/m^2)
Margin of Compliance:	**-2.63**	(dB)

Sincerely,

Alex Chang

Name

Authorized Signatory

Title: EMC/Wireless Test Engineer