RF Exposure

FCC ID: PJ7-N2110-AM

Applicant: Shenzhen Neoway Technology Co., Ltd.
Exposure category: General population/uncontrolled environment
EUT Type: Production Unit

Device Type: LTE OBD dongle
Refer Standard: FCC Part 2.1091: Radio Frequency (RF) Exposure Compliance of Radio
communication Apparatus (All Frequency Bands)

FCC MPE Limited:

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Test Data

Predication of MPE limit at a given distance

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

Where: S = power density
      P = power input to the antenna
      G = power gain of the antenna in the direction of interest relative to an isotropic radiator,
            the power gain factor, is normally numeric gain.
      R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

SRD Antenna Gain information
BLE :2dBi

Worst-Case mode Conducted Output Power Results for BT /BLE

Bluetooth				
Band	Mode	Test Frequency	Power(dBm)	Tune-up tolerance(dBm)
BLE	GFSK	2402	2.014	2±1
	GFSK	2440	1.594	2±1
	GFSK	2480	0.948	1±1

Calculation results (for BT/BLE): Worst-case mode

Bluetooth					
Band	Mode	Test Frequency	Power(dBm)	Result (mW/cm2)	Limit (mW/cm2)
BLE	GFSK	2402	3	0.0006	1.0
	GFSK	2440	3	0.0006	
	GFSK	2480	2	0.0005	

Calculation results (for WWAN): Worst-Case mode

Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm^2)	limit (mW/cm^2)	PASS / FAIL
GSM 850	824.2	GMSK	1	32.5	222.29	0.0557	0.55	PASS
GSM 1900	1850.2	GMSK	2	29.5	111.41	0.0351	1.00	PASS
Mode	Frequency (MHz)	Operating Mode	Antenna Gain (dBi)	Tune-up Power (dBm)	Tune-up Power (mW)	Power Density (mW/cm^2)	limit (mW/cm^2)	PASS / FAIL
Band2	1850.7	QPSK	2	24.0	251.19	0.0792	1.00	PASS
Band4	1710.7	QPSK	2	23.5	223.87	0.0706	1.00	PASS
Band5	824.7	QPSK	1	23.0	199.53	0.05	0.55	PASS
Band12	699.7	QPSK	1	23.0	199.53	0.05	0.47	PASS
Band13	779.5	QPSK	1	23.0	199.53	0.05	0.52	PASS
Band14	790.5	QPSK	1	22.5	177.83	0.0445	0.53	PASS
Band25	1850.7	QPSK	2	23.0	199.53	0.0629	1.00	PASS
Band26	814.7	QPSK	1	23.0	199.53	0.05	0.54	PASS
Band66	1710.7	QPSK	2	23.5	223.87	0.0706	1.00	PASS
Band85	700.5	QPSK	1	22.5	177.83	0.0445	0.47	PASS

Note:The wwan Calculation results refers to FCC ID: PJ7-N27-W3

Simultaneous Transmission Calculation (Worst-case mode)

No.	Transmitter Combinations	Scenario Supported or not
1	WWAN+BLE	Yes

Max Simultaneous Transmission Calculation (Worst-case mode)

No.	Worst Mode	MPE Ratio	Results
1	LTE Band 2 +BLE	0.0792+0.0006	0.0798<1.0(pass)