

MPE Calculations

The exposure condition of this device is compliant with FCC Rule.

Specification: Part 2.1091, Part 1.1310

Table 1—Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure				
Frequency range (MHz)	Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averaging time (minutes)
0.3 ~ 3.0	614	1.63	*100	6
3.0 ~ 30	1842/f	4.89/ f	*900/f ²	6
30 ~ 300	61.4	0.163	1.0	6
300 ~ 1,500	-	-	f/300	6
1,500 ~ 100,000	-	-	5.0	6
(B) Limits for General Population/Uncontrolled Exposure				
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 ~ 1,500	-	-	f/1500	30
1,500 ~ 100,000	-	-	1.0	30

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

● EUT Description

FCC ID : BEJTM03LNNATY0

EUT Type : RF Module

Model Name : TM03LNNATY0

Host Product Model Name : TL19BNN

Note: This module is limited to be installed in the specific host product.

● MPE Calculation

The MPE calculation for this exposure is shown below.

$$S = \text{EIRP} / (4\pi R^2)$$

Where,

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna

Note: The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

● Result

Band	Mode	Frequency range (MHz)	Tune-up Max. Conducted Power(dBm) ^{Note1}	Measured Conducted Power(dBm)	Measured EIRP(dBm)	Adjusted EIRP to Tune-up Max(dBm)	Distance (Cm)	Power density (mW/cm ²)	Requirement (mW/cm ²)
WCDMA 850	RMC	826.4 ~ 846.6	24.00	22.30	22.89	24.59	20	0.057	0.550
WCDMA 1700	RMC	1712.4 ~ 1752.6	24.00	22.81	22.02	23.21	20	0.042	1.000
WCDMA 1900	RMC	1852.4 ~ 1907.6	24.00	22.90	24.77	25.87	20	0.077	1.000
LTE Band 26	QPSK	814.7 ~ 823.3	24.00	22.93	22.74	23.81	20	0.048	0.543
LTE Band 5(26)	QPSK	824.7 ~ 848.3	24.00	23.35	22.70	23.35	20	0.044	0.549
LTE Band 12(17)	QPSK	701.5 ~ 713.5	24.50	23.69	22.29	23.10	20	0.041	0.467
LTE Band 12	QPSK	699.7 ~ 715.3	24.50	23.62	22.81	23.69	20	0.047	0.466
LTE Band 13	QPSK	779.5 ~ 784.5	24.00	22.65	21.56	22.91	20	0.039	0.519
LTE Band 4	QPSK	1712.4 ~ 1752.6	24.50	23.70	22.04	22.84	20	0.038	1.000
LTE Band 2	QPSK	1850.7 ~ 1909.3	24.50	23.18	22.55	23.87	20	0.049	1.000

Note1: Please refer to the tune-up procedure.