MPE Calculations

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

Specification: Part 2.1091, Part 1.1310, KDB 447498 D01

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/cm2)**	**Averageing time (minutes)**
0.3 ~ 3.0	614	1.63	*100	6
3.0 ~ 30	1842/f	4.89/ f	*900/f2	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/f2	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 : BEJTF24SENI2

  Model : TF24SENI

- **EUT Capabilities**

  This device supports the following capabilities:

  Multi-Band LTE, LTE up-link carrier aggregation(UL CA_2A-12A, 4A-12A, 12A-66A, 2A-5A, 5A-66A), 5G NR(FR1) and ENDC

  5G NR supports SCS 15 kHz for FDD Band and SCS 30 kHz for TDD Band.

- **MPE Calculation**

  The MPE calculation for this exposure is shown below.

  ▪ $S = EIRP / (4\pi R^2)$

  Where,

  S= Maximum power density(mW/cm^2)

  EIRP= Equivalent Isotropic Radiated Power(mW)

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

RF feature (Worst Mode)	Frequency range (MHz)	Nominal Target Power(dBm) Note1	Tolerance (dB)	ANT Gain (dBi) Note2	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm^2)	Requirement (mW/cm^2)
NR Band n2 or LTE B2 (Internal ANT1)	1850.0 ~ 1910.0	23.0	2.7	1.9	27.60	575.440	0.114 5	1.000 0
NR Band n5 or LTE B5 (Internal ANT1)	824.0 ~ 849.0	23.0	2.7	0.4	26.10	407.381	0.081 1	0.549 0
NR Band n12 or LTE B12 (Internal ANT1)	699.0 ~ 716.0	23.0	2.7	-0.9	24.80	301.996	0.060 1	0.466 0
NR Band n66 or LTE B66, 4 (External ANT2)	1710.0 ~ 1780.0	23.0	2.7	0.2	25.90	389.046	0.077 4	1.000 0
NR Band n77 (External ANT2)	3450.0 ~ 3550.0	22.5	2.5	0.6	25.60	363.079	0.072 3	1.000 0
NR Band n77 (External ANT2)	3700.0 ~ 3980.0	22.5	2.5	-0.2	24.80	301.996	0.060 1	1.000 0
LTE Band14 (External ANT1)	788.0 ~ 798.0	23.0	2.7	-0.3	25.40	346.737	0.069 0	0.525 0

Note1: Please refer to the operation description for Max tune-up power.

Note2: The antenna gain was corrected for path loss from the conducted feed point to the antenna terminal.

Note3: The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

- **RF Exposure Compliance for simultaneous operations**

This device supports LTE inter-band CA.

Max tune-up power for CA is the same as LTE single carrier.

And the power of LTE single carrier covers the power of one component carrier for CA.

The following Σ of MPE ratios for CA was calculated Based on LTE single carrier target power.

Σ of MPE ratios = 0.115(LTE B2) + 0.148(LTE B5) = 0.263