

- FCC regulation: Table 1 to §1.1310(e)(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 <sup>2</sup> )	Averaging time (minutes)
0.3 ~ 3.0	614	1.63	*(100)	≤ 6
3.0 ~ 30	1842/f	4.89/ f	*(900/f <sup>2</sup> )	< 6
30 ~ 300	61.4	0.163	1.0	< 6
300 ~ 1,500	-	-	f/300	< 6
1,500 ~ 100,000	-	-	5	< 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 <sup>2</sup> )	< 30
30 ~ 300	27.5	0.073	0.2	< 30
<b>300 ~ 1,500</b>	-	-	<b>f/1500</b>	<b>&lt; 30</b>
<b>1,500 ~ 100,000</b>	-	-	<b>1.0</b>	<b>&lt; 30</b>

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

- EUT Capabilities

This device supports WLAN and integrated certified transmitter modules for LTE/WCDMA.

- 802.11b/g/n/ac WLAN(2.4 GHz), 802.11a/n/ac WLAN(5GHz)
- Certified transmitter module 1 (FCC ID: BEJTM12ANNAGM0);
- 850/1900 WCDMA, LTE Single Transmitting for band 2/4/5/12
- Certified transmitter module 2 (FCC ID: BEJTM12ANNAGM1);
- LTE Single transmitting for band 2/4/5/13
- Certified transmitter module 3 (FCC ID: BEJTM12ANNAGM2);
- 1700/1900 WCDMA, LTE Single transmitting for band 2/4/12

Note: WALN and WWAN(WCDMA,LTE) can not transmit simultaneously.

The MPE calculation for this exposure is shown below.

- EIRP (Adjusted EIRP to Tune-up Max) = Tune-up power + Antenna gain
- $S = \text{EIRP} / (4\pi R^2)$

Where, S= Maximum power density (mW/cm<sup>2</sup>)

EIRP= Equivalent Isotropic Radiated Power (mW)

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

MPE Ratio: Power Density / Requirement

### - MPE Calculations for WLAN

Band(mode)	Frequency range (MHz)	Tune-up Max power (dBm)	Antenna Gain including cable(dBi)	Adjusted EIRP to tune-up max(dBm)	Max power density at 20cm (mW/cm <sup>2</sup> )	Requirement (mW/cm <sup>2</sup> )
802.11ac(VHT20)	2 412 ~ 2 462	16.00	4.11	20.11	0.0205	1.000
802.11ac(VHT20)	5 180 ~ 5 240	12.50	4.27	16.77	0.0095	1.000
802.11ac(VHT20)	5 240 ~ 5 320	12.50	4.07	16.57	0.0091	1.000
802.11ac(VHT80)	5 500 ~ 5 720	11.00	3.97	14.97	0.0063	1.000
802.11ac(VHT20)	5 745 ~ 5 825	12.50	4.22	16.72	0.0094	1.000
802.11ac(VHT20)	2 412 ~ 2 462	16.00	4.11	20.11	0.0205	1.000

### - MPE Calculations for Simultaneous transmission

Scenario for simultaneous operations: Module 1 + Module 2 + Module 3

Certified transmitter module 1 (FCC ID: BEJTM12ANNAGM0)

Band(mode)	Frequency range (MHz)	Tune-up Max power (dBm)	Antenna Gain including cable(dBi)	Adjusted EIRP to tune-up max(dBm)	Max power density at 20cm (mW/cm <sup>2</sup> )	Requirement (mW/cm <sup>2</sup> )
WCDMA 850	826.4 ~ 846.6	23.70	2.19	25.89	0.077	0.550
WCDMA 1900	1852.4 ~ 1907.6	23.70	2.28	25.98	0.079	1.000
LTE Band 2	1850.7 ~ 1909.3	23.70	2.28	25.98	0.079	1.000
LTE Band 4	1710.7 ~ 1754.3	23.70	1.32	25.02	0.063	1.000
LTE Band 5	824.7 ~ 848.3	23.70	2.19	25.89	0.077	0.549
LTE Band 12	699.7 ~ 715.3	23.70	1.79	25.49	<b>0.071</b>	0.466

\*Worst case MPE Ratio: 0.071 / 0.466 = 0.152

Certified transmitter module 2 (FCC ID: BEJTM12ANNAGM1)

Band(mode)	Frequency range (MHz)	Tune-up Max power (dBm)	Antenna Gain including cable(dBi)	Adjusted EIRP to tune-up max(dBm)	Max power density at 20cm (mW/cm <sup>2</sup> )	Requirement (mW/cm <sup>2</sup> )
LTE Band 2	1850.7 ~ 1909.3	23.70	0.76	24.46	0.056	1.000
LTE Band 4	1710.7 ~ 1754.3	23.70	-1.46	22.24	0.033	1.000
LTE Band 5	824.7 ~ 848.3	23.70	1.92	25.62	<b>0.073</b>	0.549
LTE Band 13	779.5 ~ 784.5	23.70	-0.31	23.39	0.044	0.518

\*Worst case MPE Ratio: 0.073 / 0.549 = 0.133

Certified transmitter module 3 (FCC ID: BEJTM12ANNAGM2)

Band(mode)	Frequency range (MHz)	Tune-up Max power (dBm)	Antenna Gain including cable(dBi)	Adjusted EIRP to tune-up max(dBm)	Max power density at 20cm (mW/cm <sup>2</sup> )	Requirement (mW/cm <sup>2</sup> )
WCDMA 1700	1712.4 ~ 1752.6	23.70	-0.04	23.66	0.046	1.000
WCDMA 1900	1852.4 ~ 1907.6	23.70	-0.76	22.94	0.039	1.000
LTE Band 2	1850.7 ~ 1909.3	23.70	-0.76	22.94	0.039	1.000
LTE Band 4	1710.7 ~ 1754.3	23.70	-0.04	23.66	0.046	1.000
LTE Band 12	699.7 ~ 715.3	23.70	0.91	24.61	<b>0.058</b>	0.466

\*Worst case MPE Ratio: 0.058 / 0.466 = 0.124

Σ of MPE ratios = 0.152+0.133+0.124 = 0.409

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