

## FCC §1.1307(b) – RF EXPOSURE

### Applicable Standard

According to KDB 447498 D04 Interim General RF Exposure Guidance v01, clause 2.1.4 –MPE-Based Exemption:

An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to  $\lambda/2\pi$ , where  $\lambda$  is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power. For this case, a RF source is an RF exempt device if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

Table to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$ .
1.34-30	$3,450 R^2/f^2$ .
30-300	$3.83 R^2$ .
300-1,500	$0.0128 R^2 f$ .
1,500-100,000	$19.2 R^2$ .

f = frequency in MHz;

R = minimum separation distance from the body of a nearby person (appropriate units, e.g., m);

## Test Result

For worst case:

Mode	Frequency Range (MHz)	Tune-Up Conducted Average Output Power (dBm)	Antenna Gain		ERP		Evaluation Distance (cm)	MPE-Based Exemption (mW)
			(dBi)	(dBd)	(dBm)	(mW)		
LTE B2	1850-1910	18.5	3.21	1.06	19.56	90.36	20	768
LTE B4	1710-1755	18.5	3.25	1.1	19.60	91.20	20	768
LTE B5	824-849	20.5	0.28	-1.87	18.63	72.95	20	421.9
LTE B12	699-716	20.5	-1.35	-3.5	17.00	50.12	20	357.9
LTE B13	777-787	19.5	1.23	-0.92	18.58	72.11	20	397.8
LTE B25	1850-1915	18.0	3.21	1.06	19.06	80.54	20	768
LTE B26 (Part 90S)	814-824	20.0	0.28	-1.87	18.13	65.01	20	416.8
LTE B26 (Part 22H)	824-849	20.0	0.28	-1.87	18.13	65.01	20	421.9
LTE B66	1710-1780	19.0	3.25	1.1	20.10	102.33	20	768
LTE B85	698-716	20.5	-1.35	-3.5	17.00	50.12	20	357.4

Note1: Tune-Up power was declared by applicant.

Note2: 0dBd=2.15dBi

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

**Result:** Compliant.