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MPE Evaluation

FCC

Maximum exposure limits from CFR 47, FCC Part 1.1310:

Table 1—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
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	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

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Occupational/Controlled	
General Population/uncontrolled	YES

EN 1262HT							
Frequency	**Antenna Gain**	**Power Conducted**	**Power (conducted) +10% for tolerance**	**Power Density**	**Limit at specified distance**	**% of limit**	**Result**
MHz	**numerical**	**mW**	**mW**	**mW/cm^2**	**mW/cm^2**		
2405 - 2475	1.000	6.70	7.37	0.001467	1.000000	0.15%	PASS

Distance	20	**cm**

Note: The user's manual will stipulate that a 20cm distance from the user is to be maintained.

Power values in mW were multiplied by 1.1 to account for a 10% tolerance

The power density is calculated as shown below:

S = (P x G)/(4 x π x D^2) – used to calculate exposure at 20 cm

EIRP = P x G, measured as field strength

d = √(S/(P x G) x 4 X π) – used to calculate minimum distance to meet limits

S = power density
P = transmitter conducted power (in mW) – taken from value in original grant, which was highest.
G = antenna numeric gain
D = distance to radiation center (20 cm)

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IC / ISED

Using RSS-102, Issue 5, Section 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

• below 20 MHz6 and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

• at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 4.49/ƒ0.5 W (adjusted for tune-up tolerance), where ƒ is in MHz;

• at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);

• at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1.31 x 10-2 ƒ^(0.6834) W (adjusted for tune-up tolerance), where ƒ is in MHz;

• at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance). In these cases, the information contained in the RF exposure

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Table 1 - Power Density Calculations, IC/ISED

TBA Module				
Frequency	**Peak Conducted Power***	**Peak Conducted +10% for tolerance**	**Exemption Limit****	**Compliant**
MHz	**mW**	**mW**	**mW**	
2405 - 2475	6.70	7.37	2678.708	YES

*Peak power was used to show compliance, as it would be equal to or higher than the source-based, time averaged maximum EIRP. Antenna gain is less than 0 dBi, so peak conducted power was higher and therefore used for evaluation. BValue taken from original grant, which was higher than the value measured for the Class 2 permissive change.

**Lowest limit shown from the specified frequency range.