



WiBear11n-DF1 MPE calculation

Model number: WiBear11n-DF1

FCC ID PV7-WIBEAR11N-DF1

IC: 7738A-WB11NDF1

According to FCC §15.247(b)(4) and §1.1307(b)(1), systems operation under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

MPE Prediction

Frequency range (MHz)	Power density (mW/cm ²)
300 – 1,500	f/1500
1,500 – 100,000	1.0

Limits specified per RSS-102, Issue 5.

Frequency range (MHz)	Power density (W/m ²)	Power density (mW/cm ²)
300 – 6000	$0.02619 f^{0.6834}$	$mW/cm^2 = W/m^2 * 0.1$

Equation for calculation

Equation OET bulletin 65, page 18, edition 97-01: $S = \frac{PQ}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$

Where:

- S – Power density
- P – Power input to antenna
- G – Antenna gain relative to isotropic radiator
- R – Distance to antenna



Intermediate results:

Operational Bands	Frequency (MHz)	Antenna Gain (dBi)	G	Output Power -conducted- (dBm)	P	IC Limit (mW/cm ²)	FCC Limit (mW/cm ²)	Power Density value (mW/cm ²)
			Antenna Gain -numeric- (mW/cm ²)		Output Power -conducted- (mW)			
UNII Subband 1 (20 MHz)	5220	4.6	2.8840	14.90	30.90	0.9095	1.0000	0.0177
UNII Subband 1 (40 MHz)	5190	4.6	2.8840	14.20	26.30	0.9059	1.0000	0.0151
UNII Subband 2A (20 MHz)	5320	4.6	2.8840	15.00	31.62	0.9213	1.00	0.02
UNII Subband 2A (40 MHz)	5270	4.6	2.8840	14.90	30.90	0.9154	1.00	0.02
UNII Subband 2C (20 MHz)	5500	4.6	2.8840	13.80	23.99	0.9425	1.00	0.01
UNII Subband 2C (40 MHz)	5510	4.6	2.8840	13.50	22.39	0.9437	1.00	0.01
UNII Subband 3 (20 MHz)	5745	4.6	2.8840	13.30	21.38	0.9710	1.0000	0.0123
UNII Subband 3 (40 MHz)	5755	4.6	2.8840	12.20	16.60	0.9722	1.0000	0.0095
2402-2480 MHz BT	2442	3	1.9953	6.83	4.82	0.5412	2.0000	0.0019
2412-2462MHz WLAN	2442	3	1.9953	25.80	380.19	0.5412	3.0000	0.1509

Distance to Antenna (R) in cm:	20
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Margin to FCC Limit (mW/cm ²)	Margin to IC Limit (mW/cm ²)	Minimum Distance to be ensured cm (FCC)	Minimum Distance to be ensured cm (IC)
0.9823	0.8917	2.6631	2.7925
0.9849	0.8908	2.4569	2.5814
0.9819	0.9032	2.6940	2.8066
0.9823	0.8977	2.6631	2.7835
0.9862	0.9288	2.3464	2.4168
0.9872	0.9309	2.2667	2.3333
0.9877	0.9588	2.2151	2.2479
0.9905	0.9627	1.9516	1.9793
1.9981	0.5392	0.6186	1.1891
2.8491	0.3902	4.4857	10.5617

Best Regards

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