FCC §1.1307(b) & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating 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.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
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
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

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

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	Frequency Band(MHz)	Antenna Gain		Cable Loss	Maximum Conducted Power		Evaluation Distance	Power Density	MPE Limit
		(dBi)	(numeric)	dB	(dBm)	(mW)	(cm)	(mW/cm^2)	(mW/cm^2)
Uplink	698-716	1.5	1.41	0	23	200	20.00	0.056	0.465
	776-787	1.5	1.41	0	23	200	20.00	0.056	0.517
	824-849	1.5	1.41	0	23	200	20.00	0.056	0.549
	1710-1755	1.5	1.41	0	23	200	20.00	0.056	1
	1850-1915	1.5	1.41	0	23	200	20.00	0.056	1
Downlink	728-746	9	7.94	2.3	-3	0.5	20.00	0.001	0.485
	746-757	9	7.94	2.4	-3	0.5	20.00	0.001	0.497
	869-894	9	7.94	2.6	-3	0.5	20.00	0.001	0.579
	2110-2155	10	10.00	4.3	-3	0.5	20.00	0.001	1
	1930-1995	10	10.00	4.0	-3	0.5	20.00	0.001	1

Note: the power was used for evaluation is rated power including tolerance.
The worst antenna kitting, please refer the user manual.
Downlink Cable loss=inside cable loss+Power supply Insertion loss

Result: The device meet FCC MPE at 20 cm distance.