

6. Safety Human exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:

Passed

Test standard : FCC KDB Publication 447498 D01, FCC Part 2.1093

Limit:

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

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Justification for SAR test exclusion:

The Conducted Power of the device is **22.54** dBm, which corresponds to **179.47** mW.
Antenna gain is **-1.81** dBi.

The worst case duty cycle as declared by the manufacturer is as follows:

- 1 frame = 208bits
- Transmission speed = 600dps
- 1 Message = 3 Frames = $(208/600) * 3 = 1.04$ s
- Maximal send one message every 30 seconds
- Worst case of Duty cycle = $(1.04/30) * 100 = 3.47\%$

The maximum conducted timebased-averaged output power is: **6.23** mW
The maximum radiated timebased-averaged output power is: **4.12** mW

The table below gives the calculated maximal power that could be used for source based time averaged conducted or radiated power. If this is below the calculated value the DUT is exempted from SAR evaluation.

Frequency (MHz)	separation distances (mm)	Calculation Result (mW)	Limit (mW)	Result
900	5	4.12	16	Pass

The DUT is exempted from SAR evaluation with a declared minimum distance of 5 mm to the antenna for body worn operation or any hand-held or standalone use.