

RF Exposure

From KDB 447498 D01 v05:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [v_f(\text{GHz})] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

*Note: minimum separation distance was defined as the closest point from the transmitting antenna to human tissue. It is assumed that the user could hold the remote from any point on the outside case.

Peak Output Power

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	AVG POWER OUTPUT* (dBm)	+ 0.4 dB power tolerance**
1	907.0	23.09	16.39	16.79
2	915.4	22.58	15.88	16.28
3	923.8	22.20	15.50	15.90

Taken from NCEE Labs test report R20170216-20C, Section 4.4.

*Averaging factor of 6.7 dB was subtracted based on the duty cycle measurements in Section 4.2 of the report. $10 \cdot \log(21.37/100) = -6.7$ dB.

**power tolerance was declared by the manufacturer



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		+10% tolerance	+10% tolerance	Rounded	Rounded			
Frequency	Power	Power	Power	Power	Seperation	Calculated		
GHz	dBm	dBm	mW	mW	mm	value	Limit	Pass/fail
0.9070	16.39	16.80	47.91	48	20	2.2812156	3	PASS
0.9154	15.88	16.29	42.60	43	20	2.0378309	3	PASS
0.9238	15.50	15.91	39.03	39	20	1.87564943	3	PASS

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR}$$

20mm of separation or greater is expected because the device is not intended to be held by the antenna.