RF Exposure

Applicant: Lester Electrical
Device: 28170 Bluetooth LE Module

From KDB 447498 D01 v06:

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:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·
[√f(GHz)] ≤3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR, where
 ・ f(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.

Maximum peak output power

CHANNEL	CHANNEL FREQUENCY (MHz)	EIRP PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	RESULT
1	2402	5.55	30	PASS
2	2440	6.67	30	PASS
3	2480	4.86	30	PASS

Taken from NCEE Labs test report R20150916-22-01, Section 4.4.

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Lowest Channel

f(GHz) = 2.402

Power = 5.55 dBm = 3.59 mW, round to nearest mW = 4 mW

Minimum separation distance = 5.00 mm (device is handheld and transmitting antenna can be less than 5 mm, so the 5 mm minimum was used)

[4.00 mW] / [5.00 mm] • [√2.402] = 1.24   Limit = 3.0

2.60 dBm was taken from NCEE Labs test report R20140505-23-FCC, Section 4.4.

Middle Channel

f(GHz) = 2.440

Power = 6.67 dBm = 4.65 mW, rounded to nearest mW = 5 mW

Minimum separation distance = 5.00 mm (device is handheld and transmitting antenna can be less than 5 mm, so the 5 mm minimum was used)

[5 mW] / [5.00 mm] • [√2.440] = 1.56   Limit = 3.0

4.51 dBm was taken from NCEE Labs test report R20140505-23-FCC, Section 4.4.

Highest Channel

f(GHz) = 2.480

Power = 4.86 dBm = 1.63 mW, rounded to nearest mW = 2 mW

Minimum separation distance = 5.00 mm (device is handheld and transmitting antenna can be less than 5 mm, so the 5 mm minimum was used)

[3 mW] / [5.00 mm] • [√2.480] = 0.94   Limit = 3.0

3.24 dBm was taken from NCEE Labs test report R20140505-23-FCC, Section 4.4.