

## RF EXPOSURE EVALUATION

### EUT Specification

<b>EUT</b>	PinCard Ultra
<b>Model Number</b>	BR19
<b>FCC ID</b>	2ANBQ-BR19
<b>Antenna gain(Max)</b>	2.91dBi
<b>Operation Frequency</b>	2402-2480MHz
<b>Input Rating</b>	DC 3.7V from Battery or DC 5V from wireless charger
<b>Classification Per Stipulated Test Standard</b>	§ 15.247(i), § 2.1093
<b>Modulation</b>	GFSK
<b>Max.outputpower</b>	2Mbps: 2.37dBm (0.001726 W)

### TestRequirement:

According to §15.247(i) and §1.1307(b)(1), 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 guide lines.

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

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{24} \text{ where}$$

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>25</sup>
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  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 according to 5) in section 4.1 is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by §2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters without put power greater than the applicable low threshold require SAR evaluation to quality for TCB approval.

One antenna is available for the EUT. The minimum separation distance is 5mm.

BLE DTS:

Transmit Frequency (MHz)	Bit Rate of Transmitter	Mode	Measured Power (dBm)	Tune up Power (dBm)	Max tune up power(dBm)	Calculation Result	1-g SAR
2402	1Mbps	GFSK	2.36	2±1	3	0.618467	3
2440	1Mbps	GFSK	1.37	1±1	2	0.495136	3
2480	1Mbps	GFSK	0.56	1±1	2	0.499178	3
2402	2Mbps	GFSK	2.37	2±1	3	0.618467	3
2440	2Mbps	GFSK	1.42	1±1	2	0.495136	3
2480	2Mbps	GFSK	0.63	1±1	2	0.499178	3

According to KDB 447498, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.