

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	Bluetooth 5.1 ultra-low power module
Model Name	HJ-131IMH, HJ-135IMH
IC	26719-HJ131IMH

2. EVALUATION METHOD AND LIMIT

Human exposure to RF emissions from mobile devices (RSS-102 section 4) may be evaluated based on the MPE limits adopted by the ISED for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

RSS-102 section 4 Exemption Limits for Routine Evaluation – RF Exposure Evaluation

**Table 4: RF Field Strength Limits for Devices Used by the General Public
(Uncontrolled Environment)**

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10 ²¹	83	90	-	Instantaneous*
0.1-10	-	0.73/ <i>f</i>	-	6**
1.1-10	87/ <i>f</i> ^{0.5}	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ <i>f</i> ^{0.25}	0.1540/ <i>f</i> ^{0.25}	8.944/ <i>f</i> ^{0.5}	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 <i>f</i> ^{0.3417}	0.008335 <i>f</i> ^{0.3417}	0.02619 <i>f</i> ^{0.6834}	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ <i>f</i> ^{1.2}
150000-300000	0.158 <i>f</i> ^{0.5}	4.21 x 10 ⁻⁴ <i>f</i> ^{0.5}	6.67 x 10 ⁻⁵ <i>f</i>	616000/ <i>f</i> ^{1.2}

Note: *f* is frequency in MHz.
 *Based on nerve stimulation (NS).
 ** Based on specific absorption rate (SAR).

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3. CLASSIFICATION OF THE ASSESSMENT METHODS

According to user manual, The antenna of the product, under normal use condition is at least 166.9cm away from the body of the user. Warning statement to the user for keeping at least 166.9cm separation distance and the prohibition of operating to a person has been printed on the user’s manual. So, this product under normal use is located on electromagnetic far field between the human body.

$$S=PG/4\pi R^2$$

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

4. CALCULATION

Note: report the worst result in this part

Antenna Gain=3.5 dBi (Numeric 2.24), $\pi=3.141$

Frequency	Output Power	Output Power	Power Density	PowerDensity Limit	Result
MHz	dBm	W	W/m ²	W/m ²	Pass/Fail
2402	-5.308	0.0007	0.00000031	1	Pass

Note: According to the user manual, the minimum separate distance which used for MPE calculate is 20cm

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