RF EXPOSURE EVALUATION

EUT Specification

EUT	**Silvair Mesh Module**
Frequency band (Operating)	☐WLAN: 2.412GHz ~ 2.462GHz ☐WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐WLAN: 5.745GHz ~ 5.825GHz ☒Others(Bluetooth: 2.402GHz ~ 2.480GHz)
Device category	☒Portable (<20cm separation) ☐Mobile (>20cm separation) ☐Others ___
Antenna diversity	☒Single antenna ☐Multiple antennas ☐Tx diversity ☐Rx diversity ☐Tx/Rx diversity
Max. output power	9.06dBm(8.05mW)
Antenna gain	0dBi (declared by manufacturer)
Evaluation applied	☐MPE Evaluation ☒SAR Evaluation

Standard Requirement

Portable Device

According to §15.247(i) and §1.1307b(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 levels in excess of the Commission's guidelines. See KDB 447498 D01 General RF Exposure Guidance v05, section 4.3.1.

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,[16] 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.

Measurement Result

Channel	Channel Frequency (MHz)	Max Output power (dBm)	Max Output power (mW)	Calculation Value (Note 1)	Threshold Value
For BLE GFSK					
Low	2402	9.06	8.05	2.4964	3.0
Middle	2442	8.89	7.74	2.4964	3.0
High	2480	8.72	7.45	2.3456	3.0

Channel	Channel Frequency (MHz)	Max Output power (dBm)	Max tune up power (mW)	Calculation Value (Note 1)	Threshold Value
For BLE GFSK					
Low	2402	9.50	8.91	2.7626	3.0

Note 1: Calculation Value =[(max. power of channel, mW)/(min. test separation distance, mm)] • [√f(GHz)].
Fox example: 8.05/5* √2.402=2.4964 ≤ 3.0

According to KDB447498D01V06, threshold at which no SAR required is ≤3.0 for 1-g SAR, separation distance is 5mm, and no simultaneous SAR measurement is required.