

Maximum Permissible Exposure Evaluation

FCC ID: 2AX3R-LISACOMPACTBT

1. Client Information

Applicant	:	Streamit BV
Address	:	Zandven 26, 5508 RN Veldhoven, The Netherlands
Manufacturer	:	Shenzhen Allcomm Electronic Company Limited
Address	:	101A, 302, 401 Building B, Building A , No. 272 Guangtian Road, Tangxiayong ,Yanluo street , Bao'an District, Shenzhen, China

2. General Description of EUT

EUT Name	:	Lisa Compact BT;	
Model(s) No.	:	Lisa Compact BT;	
Model Different	:	----	
Sample ID	:	TBBJ-20200923-12-1#& TBBJ-20200923-12-2#	
Product Description	:	Operation Frequency:	Bluetooth 5.0(BLE): 2402MHz~2480MHz
		Number of Channel:	Bluetooth 5.0(BLE): 40 channels
		RF Output Power:	5.997dBm (Max)
		Antenna Gain:	4 dBi PIFA Antenna
		Modulation Type:	GFSK
		Bit Rate of Transmitter:	1&2Mbps
Power Supply	:	DC 5V from adapter: Input: 100V-240V,50Hz~60Hz,0.3A Output: DC 5V,0.6A	
Software Version	:	N/A	
Hardware Version	:	V2.1	
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.			

TB-RF-075-1.0

MPE Calculations for BLE

1. Antenna Gain:

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)
1	N/A	N/A	PIFA Ant.	4

2. EUT Operation Condition:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. Exposure Evaluation:

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where

S: power density

P: power input to the 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. Test Result:

Worst Maximum MPE Result							
Mode	N _{TX}	Power(max) (dBm) [P]	Turn-up Power Tolerance (dB)	Max tune up power (dBm) [P]	ANT Gain (dBi) [G]	Distance (cm) [R]	Power Density (mW/ cm ²) [S]
GFSK(1Mbps)	1	5.976	6±1	7	4	20	0.0025
GFSK(2Mbps)	1	5.997	6±1	7	4	20	0.0025
Note: (1) N _{TX} = Number of Transmit Antennas (2) RF Output power specifies that Maximum Conducted Peak Output Power.							

5. Conclusion:

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE),

Limits for General Population/ Uncontrolled Exposure

Frequency Range (MHz)	Power density (mW/ cm ²)
300-1,500	F/1500
1,500-100,000	1.0

For : 2402MHz~2480MHz

MPE limit S: 1 mW/ cm²

The MPE is calculated as $0.0025\text{mW} / \text{cm}^2 < \text{limit } 1 \text{ mW} / \text{cm}^2$.

So, RF exposure limit warning or SAR test are not required.

The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR2.1091 (b).

The RF Exposure Information page from the manual is included here for reference.

Note

For a more detailed features description, please refer to the RF Test Report.

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