

RF Exposure Evaluation

FCC ID: XMF-MID1024

1. Client Information

Applicant : Lightcomm Technology Co., Ltd.
Address : RM 1708-10, 17/F, PROSPERITY CENTRE, 25 CHONG YIP STREET, KWUN TONG, KOWLOON, HONG KONG
Manufacturer : Huizhou Hengdu Electronics Co., Ltd.
Address : DIP South Area, Huiao Highway, Huizhou, Guangdong, China

2. General Description of EUT

EUT Name	:	MID
Models No.	:	MID1024-Z, TM1088
Model Difference	:	All models are identical in the same PCB layout, interior structure and electrical circuits, The only difference is model name for commercial purpose.
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11b/g/n(HT40): 2422MHz~2452MHz Bluetooth with BLE: 2402MHz~2480MHz
	Number of Channel:	802.11b/g/n(HT20):11 channels 802.11b/g/n(HT40): 7 channels Bluetooth:79 Channels Bluetooth (BLE): 40 Channels
	Max Peak Output Power:	802.11b: 9.54 dBm 802.11g: 8.94 dBm 802.11n (HT20): 9.20 dBm 802.11n (HT40): 9.47 dBm Bluetooth: GFSK:7.62 dBm 8-DPSK: 6.72 dBm BLE(GFSK):0.074 dBm
	Antenna Gain:	0 dBi PIFA Antenna
	Modulation Type:	802.11b: DSSS (CCK, QPSK, BPSK) 802.11g: OFDM 802.11n: OFDM GFSK 1Mbps(1 Mbps) π /4-DQPSK(2 Mbps) 8-DPSK(3 Mbps) BLE (GFSK)
Power Supply	:	DC power supplied by AC/DC Adapter DC Voltage supplied from Li-Polymer battery.

TB-RF-074-1.0

Power Rating	:	USB DC 5V form PC. AC/DC Adapter(TEKA012-0502000UK) (DC Power Jack): Input: AC 100~240V 50/60Hz 0.35A Max. Output: DC 5V 2A DC 3.7V 5000mAh from Li-Polymer battery
Connecting I/O Port(S)	:	Please refer to the User's Manual

Note:

More test information about the EUT please refer the RF Test Report.

SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v05r02.

- (1) Clause 4.3: General SAR test reduction and exclusion guidance

- Sub clause 4.31: Standalone SAR test exclusion considerations

- 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 50 mm are determined by:

- $$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 3.0 \text{ for 1-g SAR}}$$

- $$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{(\text{GHz})}}]}{\leq 7.5.0 \text{ for 10-g SAR}}$$

2.

Calculation:

802.11b Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.54	0	8.995	5	2.794	3.0
2.437	9.23	0	8.375	5	2.615	3.0
2.462	9.01	0	7.962	5	2.499	3.0
802.11g Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	8.79	0	7.568	5	2.351	3.0
2.437	8.94	0	7.834	5	2.446	3.0
2.462	8.78	0	7.551	5	2.369	3.0
802.11n(HT20) Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.08	0	8.091	5	2.513	3.0
2.437	9.20	0	8.318	5	2.597	3.0
2.462	9.08	0	8.091	5	2.539	3.0
802.11n(HT40) Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.422	9.24	0	8.395	5	2.613	3.0
2.437	8.72	0	7.447	5	2.325	3.0
2.452	9.47	0	8.851	5	2.772	3.0
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	7.48	0	5.598	5	1.735	3.0
2.441	7.62	0	5.781	5	1.806	3.0
2.480	7.58	0	5.728	5	1.804	3.0
Bluetooth Mode (8-DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	6.55	0	4.519	5	1.401	3.0
2.441	6.72	0	4.699	5	1.468	3.0
2.480	6.72	0	4.699	5	1.480	3.0

Bluetooth Mode (BLE)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	-2.559	0	0.5548	5	0.172	3.0
2.442	-1.962	0	0.6365	5	0.198	3.0
2.480	-1.821	0	0.6575	5	0.207	3.0

So standalone SAR measurements are not required.

Remark: WiFi and Bluetooth can't transmit at the same time.