Shenzhen Toby Technology Co., Ltd.

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:

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

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

2.

Calculation:

<table>
<tr><td colspan="7" align="center">802.11b Mode</td></tr>
<tr>
<th>Frequency
(GHz)</th>
<th>Conducted
Power
(dBm)</th>
<th>Ant Gain
(dBi)</th>
<th>TX Power
(mW)</th>
<th>Distance
(mm)</th>
<th>Calculation
Value</th>
<th>Threshold
Value</th>
</tr>
<tr><td>2.412</td><td>9.54</td><td>0</td><td>8.995</td><td>5</td><td>2.794</td><td>3.0</td></tr>
<tr><td>2.437</td><td>9.23</td><td>0</td><td>8.375</td><td>5</td><td>2.615</td><td>3.0</td></tr>
<tr><td>2.462</td><td>9.01</td><td>0</td><td>7.962</td><td>5</td><td>2.499</td><td>3.0</td></tr>
<tr><td colspan="7" align="center">802.11g Mode</td></tr>
<tr>
<th>Frequency
(GHz)</th>
<th>Conducted
Power
(dBm)</th>
<th>Ant Gain
(dBi)</th>
<th>TX Power
(mW)</th>
<th>Distance
(mm)</th>
<th>Calculation
Value</th>
<th>Threshold
Value</th>
</tr>
<tr><td>2.412</td><td>8.79</td><td>0</td><td>7.568</td><td>5</td><td>2.351</td><td>3.0</td></tr>
<tr><td>2.437</td><td>8.94</td><td>0</td><td>7.834</td><td>5</td><td>2.446</td><td>3.0</td></tr>
<tr><td>2.462</td><td>8.78</td><td>0</td><td>7.551</td><td>5</td><td>2.369</td><td>3.0</td></tr>
<tr><td colspan="7" align="center">802.11n(HT20) Mode</td></tr>
<tr>
<th>Frequency
(GHz)</th>
<th>Conducted
Power
(dBm)</th>
<th>Ant Gain
(dBi)</th>
<th>TX Power
(mW)</th>
<th>Distance
(mm)</th>
<th>Calculation
Value</th>
<th>Threshold
Value</th>
</tr>
<tr><td>2.412</td><td>9.08</td><td>0</td><td>8.091</td><td>5</td><td>2.513</td><td>3.0</td></tr>
<tr><td>2.437</td><td>9.20</td><td>0</td><td>8.318</td><td>5</td><td>2.597</td><td>3.0</td></tr>
<tr><td>2.462</td><td>9.08</td><td>0</td><td>8.091</td><td>5</td><td>2.539</td><td>3.0</td></tr>
<tr><td colspan="7" align="center">802.11n(HT40) Mode</td></tr>
<tr>
<th>Frequency
(GHz)</th>
<th>Conducted
Power
(dBm)</th>
<th>Ant Gain
(dBi)</th>
<th>TX Power
(mW)</th>
<th>Distance
(mm)</th>
<th>Calculation
Value</th>
<th>Threshold
Value</th>
</tr>
<tr><td>2.422</td><td>9.24</td><td>0</td><td>8.395</td><td>5</td><td>2.613</td><td>3.0</td></tr>
<tr><td>2.437</td><td>8.72</td><td>0</td><td>7.447</td><td>5</td><td>2.325</td><td>3.0</td></tr>
<tr><td>2.452</td><td>9.47</td><td>0</td><td>8.851</td><td>5</td><td>2.772</td><td>3.0</td></tr>
<tr><td colspan="7" align="center">Bluetooth Mode (GFSK)</td></tr>
<tr>
<th>Frequency
(GHz)</th>
<th>Conducted
Power
(dBm)</th>
<th>Ant Gain
(dBi)</th>
<th>TX Power
(mW)</th>
<th>Distance
(mm)</th>
<th>Calculation
Value</th>
<th>Threshold
Value</th>
</tr>
<tr><td>2.402</td><td>7.48</td><td>0</td><td>5.598</td><td>5</td><td>1.735</td><td>3.0</td></tr>
<tr><td>2.441</td><td>7.62</td><td>0</td><td>5.781</td><td>5</td><td>1.806</td><td>3.0</td></tr>
<tr><td>2.480</td><td>7.58</td><td>0</td><td>5.728</td><td>5</td><td>1.804</td><td>3.0</td></tr>
<tr><td colspan="7" align="center">Bluetooth Mode (8-DPSK)</td></tr>
<tr>
<th>Frequency
(GHz)</th>
<th>Conducted
Power
(dBm)</th>
<th>Ant Gain
(dBi)</th>
<th>TX Power
(mW)</th>
<th>Distance
(mm)</th>
<th>Calculation
Value</th>
<th>Threshold
Value</th>
</tr>
<tr><td>2.402</td><td>6.55</td><td>0</td><td>4.519</td><td>5</td><td>1.401</td><td>3.0</td></tr>
<tr><td>2.441</td><td>6.72</td><td>0</td><td>4.699</td><td>5</td><td>1.468</td><td>3.0</td></tr>
<tr><td>2.480</td><td>6.72</td><td>0</td><td>4.699</td><td>5</td><td>1.480</td><td>3.0</td></tr>
</table>

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.