RF Exposure Evaluation

FCC ID: XMF-MID1008

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.	:	MID1008-L, DL1010Q	
Model Difference	:	All the other 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: 9.56 dBm 802.11g: 9.46 dBm 802.11n (HT20): 9.45 dBm 802.11n (HT40): 9.56 dBm Bluetooth: GFSK:2.918 dBm 8-DPSK: 2.179 dBm BLE(GFSK):-4.171 dBm
		Antenna Gain:	0 dBi FPC 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.	

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Power Rating	**:**	USB DC 5V form PC. AC/DC Adapter(TEKA012-0502000UK): Input: AC 100~240V 50/60Hz 0.35A Max. Output: DC 5V 2.0A 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:

802.11b Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.35	0	8.610	5	2.674	**3.0**
2.437	9.12	0	8.166	5	2.550	**3.0**
2.462	9.56	0	9.036	5	2.836	**3.0**
802.11g Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.46	0	8.831	5	2.743	**3.0**
2.437	9.25	0	8.414	5	2.627	**3.0**
2.462	9.26	0	8.433	5	2.647	**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	9.45	0	8.810	5	2.737	**3.0**
2.437	9.29	0	8.492	5	2.651	**3.0**
2.462	9.29	0	8.492	5	2.665	**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	9.15	0	8.222	5	2.559	**3.0**
2.437	9.56	0	9.036	5	2.821	**3.0**
2.452	9.22	0	8.356	5	2.617	**3.0**
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	2.918	0	1.958	5	0.607	**3.0**
2.441	2.505	0	1.780	5	0.556	**3.0**
2.480	1.931	0	1.560	5	0.491	**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	2.179	0	1.652	5	0.512	**3.0**
2.441	1.889	0	1.545	5	0.483	**3.0**
2.480	1.230	0	1.327	5	0.418	**3.0**

Bluetooth Mode (BLE)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	-4.171	0	0.383	5	0.119	**3.0**
2.442	-4.551	0	0.351	5	0.110	**3.0**
2.480	-5.545	0	0.279	5	0.088	**3.0**

So standalone SAR measurements are not required.
Remark: WiFi and Bluetooth can't transmit at the same time.