RF Exposure Evaluation

FCC ID: XMF-MID713

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.	:	MID713-L, MID721-L, DL701Q, DL701Q(B)	
Model Difference	:	MID721-L with different shells of the same material, 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: 9.49 dBm 802.11g: 9.43 dBm 802.11n (HT20): 9.23 dBm 802.11n (HT40): 9.30 dBm Bluetooth: GFSK:4.824 dBm 8-DPSK: 4.819 dBm BLE(GFSK):-2.7 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(TEKA006-0501500UKU): Input: AC 100~240V 50/60Hz 0.35A Max. Output: DC 5V 1.5A DC 3.7V 2100mAh 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	9.40	0	8.709	5	2.705	**3.0**
2.437	9.49	0	8.892	5	2.776	**3.0**
2.462	9.20	0	8.318	5	2.610	**3.0**
802.11g Mode						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.412	9.43	0	8.770	5	2.724	**3.0**
2.437	9.08	0	8.091	5	2.526	**3.0**
2.462	8.91	0	7.780	5	2.442	**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	9.23	0	8.375	5	2.601	**3.0**
2.437	9.01	0	7.962	5	2.486	**3.0**
2.462	8.79	0	7.568	5	2.375	**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	9.30	0	8.511	5	2.649	**3.0**
2.437	9.11	0	8.147	5	2.544	**3.0**
2.452	9.02	0	7.979	5	2.499	**3.0**
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	4.716	0	2.962	5	0.918	**3.0**
2.441	4.824	0	3.037	5	0.949	**3.0**
2.480	4.803	0	3.022	5	0.952	**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	4.714	0	2.961	5	0.918	**3.0**
2.441	4.819	0	3.033	5	0.948	**3.0**
2.480	4.808	0	3.026	5	0.953	**3.0**

Bluetooth Mode (BLE)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	TX Power (mW)	Distance (mm)	Calculation Value	Threshold Value
2.402	-2.756	0	0.530	5	0.164	**3.0**
2.442	-2.700	0	0.537	5	0.168	**3.0**
2.480	-3.097	0	0.490	5	0.154	**3.0**

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