

# RF Exposure Evaluation

## FCC ID: XMF-MID1016-MK

### 1. Client Information

<b>Applicant</b>	:	Lightcomm Technology Co., Ltd.
<b>Address</b>	:	RM 1808 18/F FO TAN INDUSTRIAL CENTRE NOS. 26-28, AU PUI WAN STREET FO TAN SHATIN NEW TERRITORIES, HONGKONG
<b>Manufacturer</b>	:	Huizhou Heng Du Electronics Co., Ltd.
<b>Address</b>	:	No.8 Huitai Road, Huinan High-tech Industrial Park, Huiao Avenue, Huizhou, China

### 2. General Description of EUT

<b>EUT Name</b>	:	Tablet PC
<b>Models No.</b>	:	MID1016-MK, DL1016, MID1016-MA, MID1016-L, DL1016-MK, DL1016MK, DL10XXXXXX (X can be 0~9, A~Z)
<b>Model Difference</b>	:	All models are in the same PCB layout interior structure and electrical circuits, The only difference is model name.
<b>Product Description</b>	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz Bluetooth 4.2(BT): 2402MHz~2480MHz
	RF Output Power:	802.11b: 8.69dBm 802.11g: 8.66dBm 802.11n (HT20): 7.46dBm 802.11n (HT40): 5.74dBm GFSK:-0.386dBm π /4-DQPSK: -0.377dBm 8-DPSK: -0.935dBm BLE:-0.392 dBm
	Antenna Gain:	1.81dBi FPC Antenna
<b>Power Supply</b>	:	DC Voltage Supply from Adapter(TEKA012-0502000UK). DC Voltage supplied by Li-ion battery.
<b>Power Rating</b>	:	TEKA012-0502000UK: Input: AC 100-240V 50/60Hz 0.35A(MAX) Output: DC 5.0V 2A by adapter DC 3.7V by 5000mAh Li-ion battery
<b>Software Version</b>	:	N/A
<b>Hardware Version</b>	:	N/A
<b>Connecting I/O Port(S)</b>	:	Please refer to the User's Manual

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

TB-RF-074-1.0

## SAR Test Exclusion Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

(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  $\leq 5$  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:

Test separation: 5mm						
WiFi Mode(802.11b)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	8.54	8±1	9	7.943	2.467	3.0
2.437	8.69	8±1	9	7.943	2.480	3.0
2.462	8.29	8±1	9	7.943	2.493	3.0
WiFi Mode(802.11g)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	8.40	8±1	9	7.943	2.467	3.0
2.437	7.96	8±1	9	7.943	2.480	3.0
2.462	8.66	8±1	9	7.943	2.493	3.0
WiFi Mode(802.11n(HT20))						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	7.46	7±1	8	6.310	1.960	3.0
2.437	6.93	7±1	8	6.310	1.970	3.0
2.462	6.68	7±1	8	6.310	1.980	3.0
WiFi Mode(802.11n(HT40))						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2422	5.62	5±1	6	3.981	1.239	3.0
2437	5.18	5±1	6	3.981	1.243	3.0
2452	5.74	5±1	6	3.981	1.247	3.0

Test separation: 5mm						
Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-0.386	-1±1	0	1.000	0.310	3.0
2.441	-0.377	-1±1	0	1.000	0.312	3.0
2.480	-0.935	-1±1	0	1.000	0.315	3.0
Bluetooth Mode (π/4-DQPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-1.080	-1±1	0	1.000	0.310	3.0
2.441	-0.972	-1±1	0	1.000	0.312	3.0
2.480	-1.530	-1±1	0	1.000	0.315	3.0
Bluetooth Mode (8-DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-1.118	-1±1	0	1.000	0.310	3.0
2.441	-1.014	-1±1	0	1.000	0.312	3.0
2.480	-1.484	-1±1	0	1.000	0.315	3.0
BLE Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (dbm)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-1.029	-1±1	0	1.000	0.310	3.0
2.442	-0.392	-1±1	0	1.000	0.312	3.0
2.480	-0.899	-1±1	0	1.000	0.315	3.0

Test separation: 5mm			
The worst RF Exposure Evaluation			
Worst Calculation Value		Total Calculation Value	Threshold Value
WiFi Mode	Bluetooth Mode		
2.493	0.315	2.808	3.0

Because the WiFi and Bluetooth can be operated simultaneously, So the worst RF Exposure Evaluation is calculated as  $2.493+0.315=2.808 / cm^2 < limit 3.0$ , So standalone SAR measurements are not required.

-----END OF REPORT-----