

RF Exposure Evaluation

FCC ID: 2ABEPTW1066

1. Client Information

Applicant : Shenzhen Tianzheng Hongye Technology Co.Ltd.
Address : Building C, Guancheng High-tech Science and Technology Park,
Zhenxing Road, Carp River Industrial Zone, Lou Village, Gongming
Town, Guangming New District, Shenzhen City, Guangdong
Province, China
Manufacturer : Shenzhen Tianzheng Hongye Technology Co.Ltd.
Address : Building C, Guancheng High-tech Science and Technology Park,
Zhenxing Road, Carp River Industrial Zone, Lou Village, Gongming
Town, Guangming New District, Shenzhen City, Guangdong
Province, China

2. General Description of EUT

EUT Name	:	10.1 inch MID
Models No.	:	TM101A550L, TM101A530L, TM101A520L, TW1066G
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: Bluetooth:2402~2480MHz WIFI: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
	Number of Channel:	Bluetooth:79 Channels BLE: 40 channels WIFI: 802.11b/g/n(HT20):11 channels 802.11n(HT40): 7 channels
	Max Peak Output Power:	Bluetooth: 4.745 dBm(GFSK) BLE: -2.725 dBm WIFI: 802.11n (HT20): 9.50 dBm
	Antenna Gain:	2.09 dBi FPC Antenna
	Modulation Type:	Bluetooth: GFSK(1 Mbps) π /4-DQPSK(2 Mbps) 8-DPSK(3 Mbps) BLE:GFSK WIFI: 802.11b: DSSS 802.11g: OFDM 802.11n: OFDM
Power Supply	:	DC Voltage supplied from AC/DC adapter DC power by Li-ion Battery

Power Rating	:	Adapter 1#(TEKA018-0502500UK 1509): Input: AC 100~240V 50/60Hz 0.5A Output: 5V/2.5A Adapter 2#(TEKA018-0502500UK 1510): Input: AC 100~240V 50/60Hz 0.5A Output: 5V/2.5A DC 3.7V from 45.6Wh Li-ion 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 ≤ 5 mm are determined by:

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

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

2.

Calculation:

Test separation: 5mm						
WiFi Mode(802.11b)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.23	3	± 0.5	9.397	2.919	3.0
2.437	9.22	3	± 0.5	9.376	2.927	3.0
2.462	9.28	3	± 0.5	9.506	2.983	3.0
WiFi Mode(802.11g)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.18	3	± 0.5	9.290	2.885	3.0
2.437	9.11	3	± 0.5	9.141	2.854	3.0
2.462	9.28	3	± 0.5	9.506	2.983	3.0
WiFi Mode(802.11n(HT20))						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.412	9.12	3	± 0.5	9.204	2.846	3.0
2.437	9.12	3	± 0.5	9.204	2.861	3.0
2.462	9.20	3	± 0.5	9.333	2.929	3.0
WiFi Mode(802.11n(HT40))						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.422	9.14	3	± 0.5	9.204	2.865	3.0
2.437	9.14	3	± 0.5	9.204	2.874	3.0
2.452	9.26	3	± 0.5	9.462	2.963	3.0

Bluetooth Mode (GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	4.564	3	±0.5	3.209	0.995	3.0
2.441	4.745	3	±0.5	3.346	1.045	3.0
2.480	4.724	3	±0.5	3.330	1.049	3.0
Bluetooth Mode (π/4-QPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	4.532	3	±0.5	3.186	0.987	3.0
2.441	4.739	3	±0.5	3.341	1.044	3.0
2.480	4.694	3	±0.5	3.307	1.041	3.0
Bluetooth Mode (8-DPSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	3.441	3	±0.5	2.478	0.768	3.0
2.441	3.552	3	±0.5	2.542	0.794	3.0
2.480	3.454	3	±0.5	2.485	0.783	3.0
BLE(GFSK)						
Frequency (GHz)	Conducted Power (dBm)	Ant Gain (dBi)	Turn-up Power Tolerance (dB)	Max power of tune up tolerance (mw)	Calculation Value	Threshold Value
2.402	-2.749	3	±0.5	0.596	0.185	3.0
2.442	-2.725	3	±0.5	0.599	0.187	3.0
2.480	-3.450	3	±0.5	0.507	0.160	3.0

So standalone SAR measurements are not required.