

RF Exposure Evaluation

FCC ID: 2ANYB-ATG-508

1. Client Information

Applicant : Advanced Technologies Group, LLC
Address : 1601 48th St #220, West Des Moines, IA 50266, USA
Manufacturer : Shenzhen Ployer Electronics Co., Ltd
Address : Building 8, Dongfang Jianfu Yusheng Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, 518000, China.

2. General Description of EUT

EUT Name	:	SCORE 5
Models No.	:	ATG 508
Model Difference	:	N/A
Product Description	:	Operation Frequency: 2.4G: 802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz 5G: U-NII-1: 5180MHz~5240MHz U-NII-3: 5745MHz~5825MHz
		Modulation Type: 802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM, 64QAM) 802.11a: OFDM (QPSK, BPSK, 16QAM)
Power Supply	:	DC Voltage Supply from AC/DC Adapter DC Voltage supplied by Li-ion battery.
Power Rating	:	Input: DC 5V 2A DC 3.7V 4000mAh by Li-ion battery
Software Version	:	V01
Hardware Version	:	V02
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 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 ≤ 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						
2.4G 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	9.04	9±0.5	9.5	8.913	2.768	3.0
2.437	9.12	9±0.5	9.5	8.913	2.783	3.0
2.462	9.16	9±0.5	9.5	8.913	2.797	3.0
2.4G 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	8.41	8±0.5	8.5	7.079	2.199	3.0
2.437	8.50	8±0.5	8.5	7.079	2.210	3.0
2.462	8.46	8±0.5	8.5	7.079	2.222	3.0
2.4G 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	7.06	7±0.5	7.5	5.623	1.747	3.0
2.437	7.02	7±0.5	7.5	5.623	1.756	3.0
2.462	7.16	7±0.5	7.5	5.623	1.765	3.0
2.4G 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
2.422	7.08	7±0.5	7.5	5.623	1.750	3.0
2.437	7.04	7±0.5	7.5	5.623	1.756	3.0
2.452	7.19	7±0.5	7.5	5.623	1.761	3.0

Test separation: 5mm	
The worst RF Exposure Evaluation	
Worst Calculation Value	Threshold Value
2.4G WiFi Mode	
2.797	3.0

Test separation: 5mm						
5G WiFi						
Mode	Worst 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
U-NII-1 (5180MHz)	6.42	6.5±0.5	7	5.012	2.281	3.0
U-NII-3 (5825MHz)	6.57	6.5±0.5	7	5.012	2.419	

Test separation: 5mm	
The worst RF Exposure Evaluation	
Worst Calculation Value	Threshold Value
5G WiFi Mode	
2.419	3.0

Conclusion:

The 2.4g Band and 5G Band of the product share the same antenna, so they will not be launched at the same time.

The MPE is calculated as 2.797 < limit 3.0. So, SAR test are not required.

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