

RF Exposure Evaluation

FCC ID: 2AMSK-4200NB

1. Client Information

Applicant : EGLOBAL TECHNOLOGY CO.,LIMITED
Address : 2D, QUANZHI Science & Technology Building, Maozhoushan Industrial Park, Sha Jing Street, Bao'an District, Shenzhen, China
Manufacturer : DONGGUAN MINI TREE COMPUTER MANUFACTURE CO.,LTD
Address : NO.8 Bomei, RenMin North Road, Humen, Dongguan, GuangDong, China

2. General Description of EUT

EUT Name	:	Laptop
Models No.	:	4200NB, Y1, Y2, Y3, Y4, Y5, Y6, Y7, Y8, Y9, Y100, Y200, Y300, Y400
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is CPU and boxes size.
Product Description	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz Bluetooth 4.0: 2402MHz~2480MHz
	RF Output Power:	802.11b: 8.42dBm 802.11g: 7.87dBm 802.11n (HT20): 7.31dBm GFSK: 1.906dBm π /4-DQPSK: 1.681dBm 8-DPSK: -0.837dBm
	Antenna Gain:	2dBi FPC Antenna
Power Supply	:	DC Voltage Supply from AC/DC Adapter. DC Supply by the Battery.
Power Rating	:	AC/DC Adapter (JY-190300): Input: AC 100~240V, 50/60Hz, 1.5A. Output: DC 19V, 3.0A. DC 11.1V by 3900mAh 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 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:

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

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

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	8.42	8±1	9	7.943	2.467	3.0
2.437	7.69	8±1	9	7.943	2.480	3.0
2.462	7.73	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	7.64	7±1	8	6.310	1.960	3.0
2.437	7.87	7±1	8	6.310	1.970	3.0
2.462	7.32	7±1	8	6.310	1.980	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	7.31	7±1	8	6.310	1.960	3.0
2.437	7.29	7±1	8	6.310	1.970	3.0
2.462	6.43	7±1	8	6.310	1.980	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	1.906	1±1	2	1.585	0.491	3.0
2.441	1.500	1±1	2	1.585	0.495	3.0
2.480	1.231	1±1	2	1.585	0.499	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	1.681	1±1	2	1.585	0.491	3.0
2.441	1.460	1±1	2	1.585	0.495	3.0
2.480	1.331	1±1	2	1.585	0.499	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	-0.837	-1.5±1	-0.5	0.891	0.276	3.0
2.441	-1.153	-1.5±1	-0.5	0.891	0.278	3.0
2.480	-2.289	-1.5±1	-0.5	0.891	0.281	3.0

Test separation: 5mm			
The worst RF Exposure Evaluation			
Worst Calculation Value		Total Calculation Value	Threshold Value
WiFi Mode	Bluetooth Mode		
2.493	0.499	2.992	3.0

Because the WiFi and Bluetooth can be operated simultaneously, So the worst RF Exposure Evaluation is calculated as $2.493+0.499=2.992 / cm^2 < limit 3.0$, So standalone SAR measurements are not required.

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