

RF Exposure Evaluation

FCC ID: 2AA4I -ECCH0052

1. Client Information

Applicant : Seal Electronics Asia Limited
Address : Room E, 6th Floor, Eastern Commercial Centre, 395-399 Hennessy Road, Wan Chai, Hong Kong
Manufacturer : ATION ELECTRIC CO. LTD.
Address : No.82, Huize Road, Shuikou Town, Huicheng District, Huizhou, China

2. General Description of EUT

EUT Name	:	Tablet PC
Models No.	:	E-CCH-0052, BC-290
Model Difference	:	The different models are identical in schematic, structure and critical component, the only different is the appearance.
Product Description	:	Operation Frequency: 802.11b/g/n(HT20): 2412MHz~2462MHz
	:	Number of Channel: 802.11b/g/n(HT20):11 channels
	:	Out Power: 802.11b: 9.00 dBm 802.11g: 8.59 dBm 802.11n (HT20): 9.36 dBm
	:	Antenna Gain: 0 dBi Chip Antenna
	:	Modulation Type: 802.11b: DSSS (CCK, QPSK, BPSK) 802.11g: OFDM 802.11n: OFDM
	:	Bit Rate of Transmitter: 802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps
Power Supply	:	DC Power from AC/DC Adapter. DC power from Hostsystem. DC Voltage supplied from Li-Polymer battery.
Power Rating	:	AC/DC Adapter(SJ-0520-U): Input: AC 100~240V 50/60 Hz 0.5A Output: DC 5V 2A USB DC 5.0V power from Hostsystem. DC 3.7V 2300mAh from Li-Polymer battery

Connecting I/O Port(S)	:	Please refer to the User's Manual
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Note

For a more detailed features description, please refer to the RF Test Report.

MPE Calculations

1. FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies V05.

(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:

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

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

Calculation:

The maximum power is 9.36 dBm(8.629mW) @2.462GHz

Separation Distance: 5mm

For 1-g SAR Result: $2.71 \leq 3.0$

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So standalone SAR measurements are not required.

(2) Appendix A: SAR Test Thresholds for 100MHz~6GHz and ≤ 50 mm.

SAR can be exempted if the output power is less than the SAR exclusion Threshold: For F=2450, and Distance=5mm, the output power is less than 10mW (10 dBm).

Please see the follow table:

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	
MHz	30	35	40	45	50	mm
150	232	271	310	349	387	SAR Test Exclusion Threshold (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

2. Calculation:

$$\text{EIRP} = P + G$$

Where P=Conducted Output Power (dBm)

G=Power Gain of the Antenna (dBi)

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802.11b/g/n(HT20)				
Test Mode	Conducted Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)
802.11b	9.00	0	9.00	7.9432
802.11g	8.59	0	8.59	7.2277
802.11n(HT20)	9.36	0	9.36	8.6298

3. Conclusion:

No SAR Evaluation required since Transmitter output power is bellow FCC threshold and IC standards.