

FCC Test Report FCC ID: 2ACPR-W710

Product: Tablet PC

Trade Name: N/A

Model Number: W710

W7102,W7103,W7104,W7105,W7106,

Serial Model: W7107,W7108,W7109,W7110,W7111,

W7112,W7113,W7114,W7115,W7116,

W7117,W7118,W7119

Report No.: NTEK-2015NT01161091F3

Prepared for

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Applicant's name: Shenzhen Bmorn Technology Co., Ltd.





TEST RESULT CERTIFICATION

Address:		gfang Veteran Industrial Shenzhen, China.	Park, Xingye	Road, Xixiang,
Manufacturer's Name:	Shenzher	n Bmorn Technology Co.,	Ltd.	
Address:	5/F, Heng Bao'an, S	gfang Veteran Industrial Shenzhen, China.	Park, Xingye	Road, Xixiang,
Product description				
Product name:	Tablet PC	;		
Model and/or type reference :	W710			
Standards:	FCC Part ANSI C63	15B:01 Oct.2014 3.4:2003		
This device described above ha equipment under test (EUT) is ir the tested sample identified in the	n complian	•		
This report shall not be reproducted document may be altered or revithe document. Date of Test	ised by N⁻			
Date (s) of performance of tests	:	16 Jan. 2015 ~26 Jan. 2	015	
Date of Issue	:	26 Jan. 2015		
Test Result	:	Pass		
.		Dann Green	4	
Testing Engine	eer :	Darry Grun		
		Denny Huan	g	
Technical Man	ager :	Brown L	И	
		(Brown Lu)		
Authorized Sig	inatory :	(Bill Yao)		



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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission								
Standard Test Item Limit Judgment R								
FCC Part15B:2014 ANSI C63.4: 2003	Conducted Emission	Class B	PASS					
	Radiated Emission	Class B	PASS					

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.



1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add.: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registration Number:238937; IC Registration Number:9270A-1

CNAS Registration Number:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expended uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k=2}$, providing a level of confidence of approximately 95 %.

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
NTEKC01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
NTEKA01	ANSI	30MHz ~ 1000MHz	4.7	
		1GHz ~12.4GHz	5.0	



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Tablet PC					
Model Name	W710	W710				
Additional Model	1	7105,W7106,W7107,W7108,				
Number(s)	W7109,W7110,W7111,W7 W7116,W7117,W7118,W7	7112,W7113,W7114,W7115,				
()	All the model are the sam					
Model Difference		,				
	except the model name a	na colour.				
	The EUT is a Tablet PC.	The EUT is a Tablet PC.				
	Connecting I/O port:	USB, DC in ,HDMI				
	Operation Frequency:	BT:2402~2480 MHz				
		WIFI: 802.11b/g/n(20MHz): 2412~2462MHz				
Product Description		802.11n(40MHz):2422~2452MHz				
	Modulation Type:	BT(1Mbps): GFSK				
		BT EDR(2Mbps): π /4-DQPSK				
		BT EDR(3Mbps): 8-DPSK				
		WIFI: CCK/OFDM/DBPSK/DAPSK				
Power Source	DC Voltage					
	Model: PS10C050K2000U	JU				
Adapter	Input: 100-240V~,50/60H					
	Output: 5.0V, 2000mA					
Battery	DC 3.7V ,3000mA					



2.1.1 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

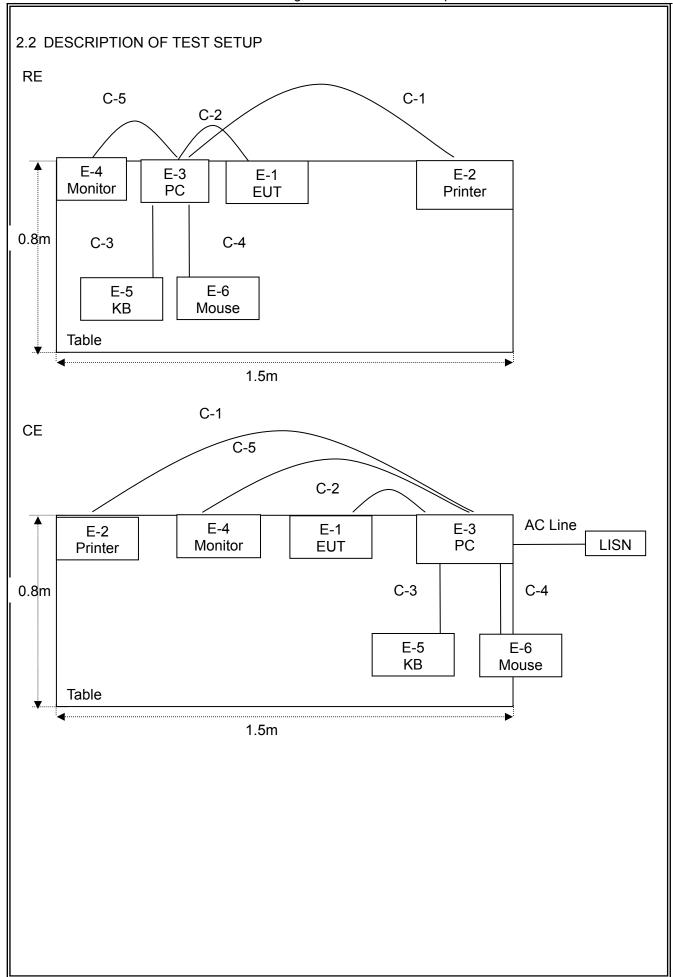
Pretest Mode	Description
Mode 1	Data Exchange Mode
Mode 2	BT Mode
Mode 3	WiFi Mode
Mode 4	REC Mode
Mode 5	TF Card Playing Mode

For Conducted Test					
Final Test Mode	Description				
Mode 1	Data Exchange Mode				
Mode 2	BT Mode				
Mode 3	WiFi Mode				
Mode 4	REC Mode				
Mode 5	TF Card Playing Mode				

For Radiated Test					
Final Test Mode	Description				
Mode 1	Data Exchange Mode				
Mode 2	BT Mode				
Mode 3	WiFi Mode				
Mode 4	REC Mode				
Mode 5	TF Card Playing Mode				

Note: Final Test Mode: Through Pre-scan, find the mode 1 is the worse case. Only the worst case mode is recorded in the report.







2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	Tablet PC	N/A	W710	N/A	EUT
E-2	Printer	Canon	L11121E	LBP2900	
E-3	Personal computer	DELL	FT4Y23X	34413561645	
E-4	Monitor	DELL	IN2020MB	cn-0y6mhx-74261-11f- 67es	
E-5	Keyboard	DELL	SK-8185	OY526KUS	
E-6	Mouse	DELL	MS111-P	cn-011d3v-71581-11e- 1th7	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2m	
C-2	NO	NO	1.0m	
C-3	NO	NO	1.0m	
C-4	NO	NO	1.0m	
C-5	NO	NO	1.0m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in <code>"Length_"</code> column.
- (3) "YES" means "shielded" "with core"; "NO" means "unshielded" "without core".



2.4 MEASUREMENT INSTRUMENTS LIST

2.4.1 CONDUCTED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibra tion period
1	LISN	R&S	ENV216	101313	Jul. 06, 2014	Jul. 05, 2015	1 year
2	LISN	SCHWARZBE CK	NNLK 8129	8129245	Dec. 25, 2014	Dec. 24, 2015	1 year
3	Pulse Limiter	SCHWARZBE CK	VTSD 9561F	9716	Dec. 25, 2014	Dec. 24, 2015	1 year
4	50Ω Switch	ANRITSU CORP	MP59B	6200983704	Jul. 06, 2014	Jul. 05, 2015	1 year
5	Test Cable	N/A	C01	N/A	Jul. 06, 2014	Jul. 05, 2015	1 year
6	Test Cable	N/A	C02	N/A	Jul. 06, 2014	Jul. 05, 2015	1 year
7	Test Cable	N/A	C03	N/A	Jul. 06, 2014	Jul. 05, 2015	1 year
8	EMI Test Receiver	R&S	ESCI	101160	Jul. 06, 2014	Jul. 05, 2015	1 year
9	Passive Voltage Probe	ESH2-Z3	R&S	100196	Jul. 06, 2014	Jul. 05, 2015	1 year
10	Absorbing Clamp	R&S	MDS-21	100423	Jul. 08, 2014	Jul. 07, 2015	1 year

2.4.2 RADIATED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibra tion period
1	Bilog Antenna	TESEQ	CBL6111D	31216	Jul. 06, 2014	Jul. 05, 2015	1 year
2	Test Cable	N/A	R-01	N/A	Dec. 25, 2014	Dec. 24, 2015	1 year
3	Test Cable	N/A	R-02	N/A	Dec. 25, 2014	Dec. 24, 2015	1 year
4	EMI Test Receiver	R&S	ESCI-7	101318	Jul. 06, 2014	Jul. 05, 2015	1 year
5	Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
6	Turn Table	EM	SC100	060531	N/A	N/A	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	Jul. 06, 2014	Jul. 05, 2015	1 year
8	Spectrum Analyzer	Aglient	E4407B	MY45108040	Jul. 06, 2014	Jul. 05, 2015	1 year
9	Horn Antenna	EM	EM-AH-10180	2011071402	Jul. 06, 2014	Jul. 05, 2015	1 year
10	Amplifier	EM	EM-30180	060538	Jul. 06, 2014	Jul. 05, 2015	1 year
11	Loop Antenna	ARA	PLA-1030/B	1029	Jul. 06, 2014	Jul. 05, 2015	1 year



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
FREQUENCT (MHZ)	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



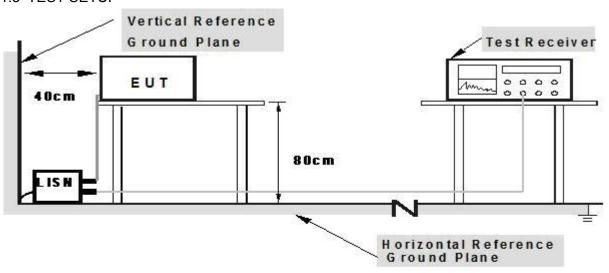
3.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

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- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISM.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.



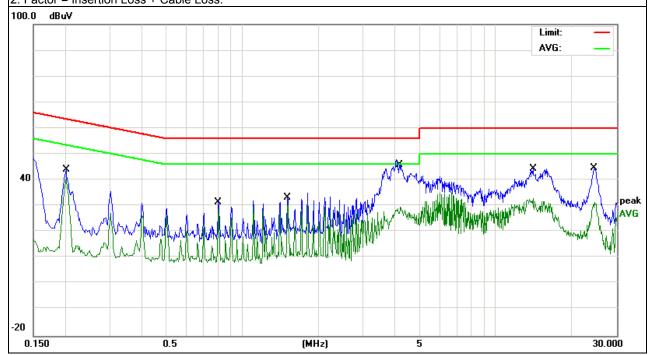
3.1.5 TEST RESULTS

EUT:	Tablet PC	Model Name. :	W710	
Temperature :	26 ℃	Relative Humidity:	54%	
Pressure :	1010hPa	Test Date :	2015-01-23	
Test Mode:	Mode 3	Phase :	L	
Test Voltage :	DC 5V From PC AC 120V/60Hz			

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.2020	34.66	9.49	44.15	63.52	-19.37	QP
0.2020	31.62	9.49	41.11	53.52	-12.41	AVG
0.8059	21.82	9.53	31.35	56.00	-24.65	QP
0.8059	19.34	9.53	28.87	46.00	-17.13	AVG
1.5140	23.82	9.54	33.36	56.00	-22.64	QP
1.5140	20.95	9.54	30.49	46.00	-15.51	AVG
4.2019	35.64	9.59	45.23	56.00	-10.77	QP
4.2019	20.03	9.59	29.62	46.00	-16.38	AVG
13.9977	32.89	9.82	42.71	60.00	-17.29	QP
13.9977	23.04	9.82	32.86	50.00	-17.14	AVG
24.5656	29.79	10.19	39.98	60.00	-20.02	QP
24.5656	21.13	10.19	31.32	50.00	-18.68	AVG

Remark:

All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.





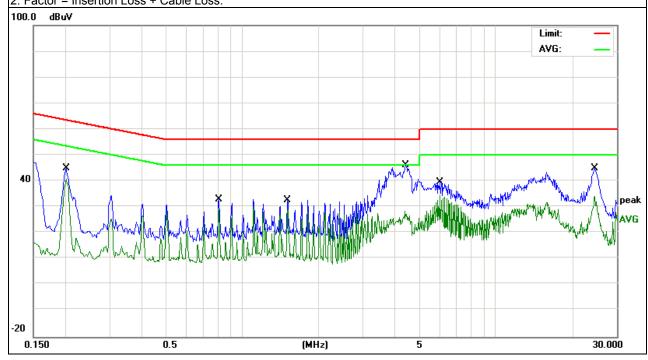
EUT: Tablet PC Model Name. : W710 Temperature: 26 ℃ Relative Humidity: 54% Pressure: 1010hPa Test Date: 2015-01-23 Test Mode: Phase: Ν Mode 3 Test Voltage : DC 5V From PC AC 120V/60Hz

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Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Damark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.2020	35.59	9.50	45.09	63.52	-18.43	QP
0.2020	31.34	9.50	40.84	53.52	-12.68	AVG
0.8100	23.36	9.54	32.90	56.00	-23.10	QP
0.8100	19.73	9.54	29.27	46.00	-16.73	AVG
1.5140	22.94	9.56	32.50	56.00	-23.50	QP
1.5140	19.43	9.56	28.99	46.00	-17.01	AVG
4.3939	35.64	9.60	45.24	56.00	-10.76	QP
4.3939	18.96	9.60	28.56	46.00	-17.44	AVG
6.0179	31.02	9.64	40.66	60.00	-19.34	QP
6.0179	24.67	9.64	34.31	50.00	-15.69	AVG
24.6297	32.37	10.29	42.66	60.00	-17.34	QP
24.6297	23.95	10.29	34.24	50.00	-15.76	AVG

Remark:

- All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

	Class A (at 10m)	Class B (at 3m)
FREQUENCY (MHz)	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

- (1) The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.



Note: For the hand-held device, the EUT should be measured for all 3 axes and only the worst case is recorded in the report

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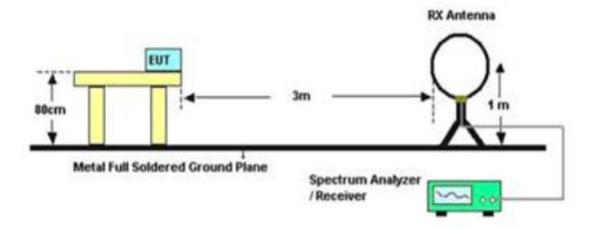
During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
	Peak	1 MHz	1 MHz
Above 1000	Peak	1 MHz	10 Hz

3.2.3 TEST SETUP

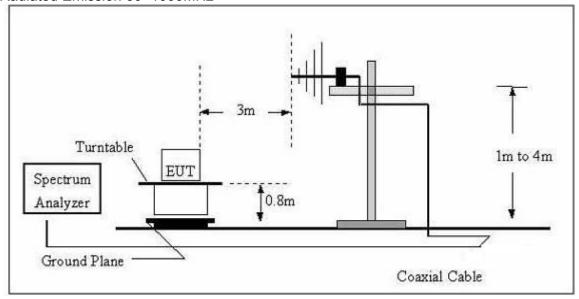
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz

For radiated emissions below 30MHz

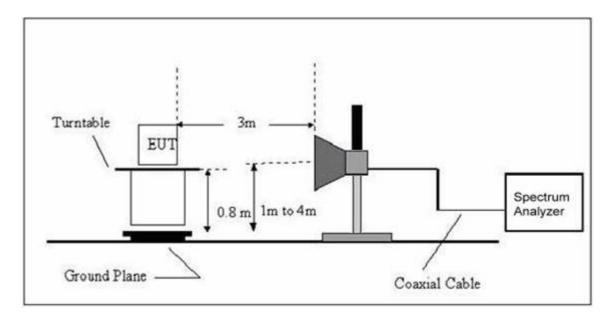




For Radiated Emission 30~1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.



3.2.5 TEST RESULTS TEST RESULTS (Below 30 MHz)

EUT:	Tablet PC	Model Name :	W710
Temperature :	20 ℃	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	
Test Mode :	TX	Polarization :	

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
				Р
				Р

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =20 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



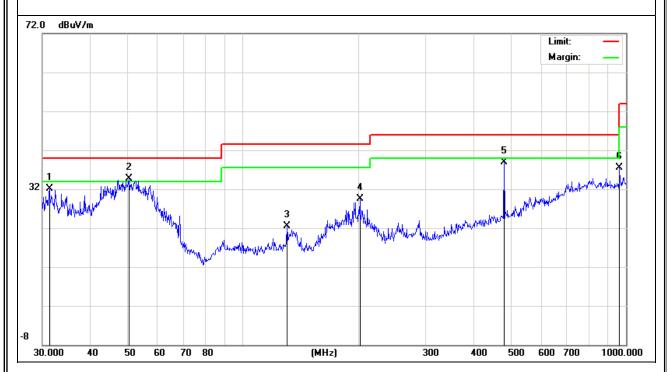
TEST RESULTS (30~1000 MHz)

EUT:	Tablet PC	Model Name :	W710	
Temperature :	24 ℃	Relative Humidity:	54%	
Pressure:	1010 hPa	Test Date :	2015-01-23	
Test Mode :	Mode 3	Polarization :	Horizontal	
Test Power :	DC 5V From PC AC 120V/60Hz			

Freq.	Reading	Factor	Measurement	Limit	Over	Remark
(MHz)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	Kemark
31.2893	13.43	18.72	32.15	40.00	-7.85	QP
50.4089	24.19	10.57	34.76	40.00	-5.24	QP
130.3788	10.62	11.87	22.49	43.50	-21.01	QP
202.1005	18.66	10.92	29.58	43.50	-13.92	QP
480.5276	19.07	19.91	38.98	46.00	-7.02	QP
962.1623	10.03	27.38	37.41	54.00	-16.59	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.





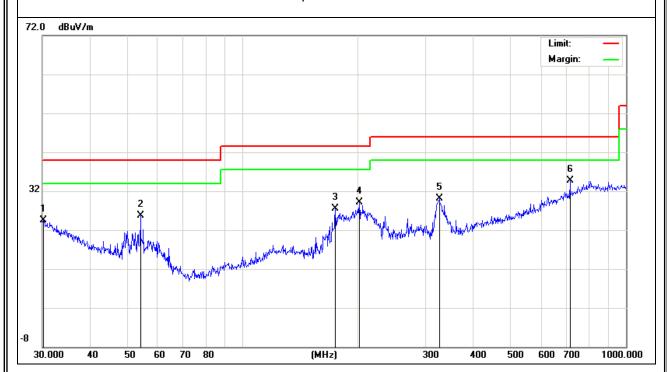
EUT: Tablet PC Model Name : W710 Relative Humidity: 54% Temperature: **24** ℃ Pressure: 1010 hPa Test Date: 2015-01-23 Test Mode : Mode 3 Polarization: Vertical Test Power : DC 5V From PC AC 120V/60Hz

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Freq.	Reading	Factor	Measurement	Limit	Over	Remark	
(MHz)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	Kemark	
30.2110	5.18	19.31	24.49	40.00	-15.51	QP	
54.0711	16.11	9.53	25.64	40.00	-14.36	QP	
174.4241	16.84	10.58	27.42	43.50	-16.08	QP	
201.3930	18.14	10.88	29.02	43.50	-14.48	QP	
325.5958	14.88	15.22	30.10	46.00	-15.90	QP	
714.1734	9.55	25.17	34.72	46.00	-11.28	QP	

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.





3.2.6 TEST RESULTS(1000~12400MHz)

Polar	Frequency Meter Reading		Factor	Emission Level	Limits	Margin	Remark	
(H/V)	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		
V	1135.942	61.94	-15.25	46.69	74	-27.31	peak	
V	1135.942	39.54	-15.25	24.29	54	-29.71	AVG	
V	1948.033	60.21	-10.28	49.93	74	-24.07	peak	
V	1948.033	38.76	-10.28	28.48	54	-25.52	AVG	
V	2273.419	59.75	-10.03	49.72	74	-24.28	peak	
V	2273.419	37.16	-10.03	27.13	54	-26.87	AVG	
V	2673.226	60.48	-8.82	51.66	74	-22.34	peak	
V	2673.226	37.48	-8.82	28.66	54	-25.34	AVG	
V	2873.317	59.13	-8.94	50.19	74	-23.81	peak	
V	2873.317	39.12	-8.94	30.18	54	-23.82	AVG	
V	3998.128	55.95	-2.98	52.97	74	-21.03	peak	
V	3998.128	34.53	-2.98	31.55	54	-22.45	AVG	
Н	1336.432	56.98	-14.41	42.57	74	-31.43	peak	
Н	1336.432	36.58	-14.41	22.17	54	-31.83	AVG	
Н	1536.058	57.16	-13.48	43.68	74	-30.32	peak	
Н	1536.058	37.35	-13.48	23.87	54	-30.13	AVG	
Н	1947.947	55.53	-10.28	45.25	74	-28.75	peak	
Н	1947.947	34.96	-10.28	24.68	54	-29.32	AVG	
Н	2723.326	55.42	-8.59	46.83	74	-27.17	peak	
Н	2723.326	34.09	-8.59	25.5	54	-28.5	AVG	
Н	3811.111	52.01	-4.23	47.78	74	-26.22	peak	
Н	3811.111	30.41	-4.23	26.18	54	-27.82	AVG	
Н	4785.955	49.91	-0.53	49.38	74	-24.62	peak	
Н	4785.955	28.81	-0.53	28.28	54	-25.72	AVG	

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



4. EUT TEST PHOTO





