



FCC TEST REPORT

Report No: STS1503082F04

Issued for

Kintech Co., Ltd.

1F-5F, Bldg 22, Chen Tian Industrial Zone, Xi Xiang, Bao An District, Shenzhen, Guang Dong, China

Product Name:	tablet pc
Brand Name:	Kinwei,Titan
Model No.:	PC8020
Series Model:	PC8020ME, PC8020Y, PCXXXX (XXXX represents 0000~9999), PCXXXXME (XXXX represents 0000~9999), PCXXXXY (XXXX represents 0000~9999;Y represents A~Z), KW-PC8020I, KW-PC8020, KW-PCXXXXI (XXXX represents 0000~9999), KW-PCXXXX(XXXXX represents 0000~9999)
FCC ID:	BRCPC8020
Test Standard:	FCC Part 15.247(2014)

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TEST RESULT CERTIFICATION

Applicant's name : Kintech Co., Ltd.

Address..... : 1F-5F, Bldg 22, Chen Tian Industrial Zone, Xi Xiang, Bao An District,
Shenzhen, Guang Dong, China

Manufacture's Name : Kintech Co., Ltd.

Address..... : 1F-5F, Bldg 22, Chen Tian Industrial Zone, Xi Xiang, Bao An District,
Shenzhen, Guang Dong, China

Product description

Product name : tablet pc

Model and/or type reference : PC8020

Serial Model : See the front page.

Standards : FCC Part15.247(2014)

Test procedure KDB558074v03r02,ANSI C63.10: 2009

This device described above has been tested by STS, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test :

Date (s) of performance of tests..... : 12 Mar. 2015 ~18 Mar. 2015

Date of Issue : 19 Mar. 2015

Test Result : **Pass**

Testing Engineer : _____

(Jin Ming)

Technical Manager : _____

(Sunny zheng)

Authorized Signatory : _____

(Bovey Yang)





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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

1.1 TEST FACILITY

Shenzhen STS Test Services Co., Ltd.

Add. : 1/F, Building 2, Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China.

FCC Registration No.: 842334; IC Registration No.: 12108A-1

1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	tablet pc	
Trade Name	Kinwei, Titan	
Model Name	PC8020	
Serial Model	See the front page	
Model Difference	All the same except for the model name.	
Product Description	The EUT is a tablet PC	
	Operation Frequency:	2402~2480 MHz
	Modulation Type:	GFSK
	Radio Technology	Bluetooth 4.0
	Number Of Channel	40
	Antenna Designation:	Please see Note 3.
	Antenna Gain (dBi)	0 dBi
Frequency Bands	☒ GSM 850 ☒ PCS 1900 (U.S. Bands) ☒ GSM 900 ☒ DCS 1800 (Non-U.S. Bands) U.S. Bands: ☒ UMTS FDD Band II ☒ UMTS FDD Band V Non-U.S. Bands: ☒ UMTS FDD Band I ☐ UMTS FDD Band VIII	
Channel List	Please refer to the Note 2.	
Adapter	Adapter Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5V, 2A	
Battery	Rated Voltage: 3.7V Charge Limit: 4.2V capacity :3500mAh	
Hardware version number	P628A-MB-V2.0.0	
Software versioning number	Q828_Vh5015_20150128	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.



2.

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	10	2422	20	2442	30	2462
01	2404	11	2424	21	2444	31	2464
02	2406	12	2426	22	2446	32	2466
03	2408	13	2428	23	2448	33	2468
04	2410	14	2430	24	2450	34	2470
05	2412	15	2432	25	2452	35	2472
06	2414	16	2434	26	2454	36	2474
07	2416	17	2436	27	2456	37	2476
08	2418	18	2438	28	2458	38	2478
09	2420	19	2440	29	2460	39	2480

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	PIFA Antenna	N/A	0	BT 4.0 ANT





2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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	TX CH1/CH20/CH40
Mode 2	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 2	Link Mode

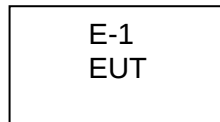
For Radiated Emission	
Final Test Mode	Description
Mode 1	TX CH1/CH20/CH40
Mode 2	Link Mode

Note:

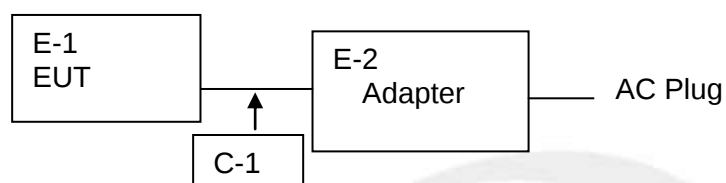
- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test





2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	tablet pc	Kinwei,Titan	PC8020	N/A	EUT
E-2	Adapter	N/A	JKY0212-0502000UL	N/A	Accessories

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.5m	

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 『Length』 column.



2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Spectrum Analyzer	Agilent	E4407B	MY50140340	2014.10.25	2015.10.24
Test Receiver	R&S	ESCI	101427	2014.10.25	2015.10.24
Bilog Antenna	TESEQ	CBL6111D	34678	2014.10.27	2015.10.26
50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.06	2015.06.05
Horn Antenna	R&S	9120D	152265	2014.10.27	2015.10.26
Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05
Amplifier	EM	EM-30180	060538	2014.12.22	2015.12.21
Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07
Power Meter	Anritsu	ML2495A	1204003	2014.10.25	2015.10.24
Power Sensor	Anritsu	MA2411B	100309	2014.10.25	2015.10.24
Low frequency cable	MURATA	R-03	130627	2014.10.25	2015.10.24
High frequency cable	HARBOUR	R-02	FL0000175	2014.10.25	2015.10.24

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	102086	102086	2014.10.25	2015.10.24
LISN	R&S	ENV216	101242	2014.10.25	2015.10.24
LISN	EMCO	3810/2NM	000-23625	2014.10.25	2015.10.24
50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2014.06.06	2015.06.05
Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.06	2015.06.05
Absorbing clamp	R&S	MDS-21	100668	2014.10.27	2015.10.26
Conduction Cable	EM	C01	N/A	2014.10.25	2015.10.24

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

operating frequency band. In case the emission fall within the restricted band specified on Part 15.247&207(a) limit in the table below has to be followed.

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

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.

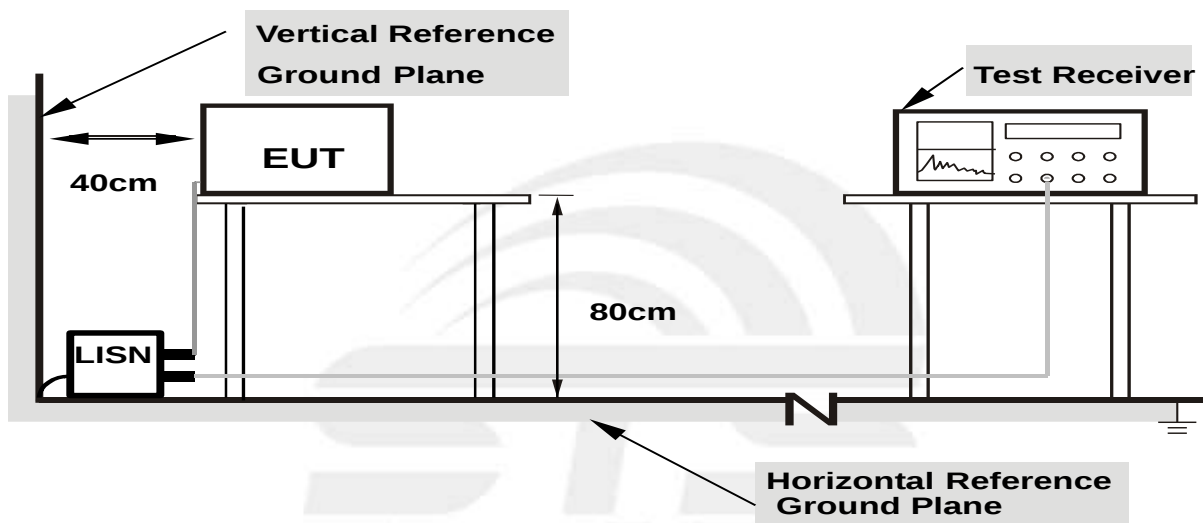
The following table is the setting of the receiver

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

3.2 TEST PROCEDURE

- The EUT was placed 0.4 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.
- 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.
- 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.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



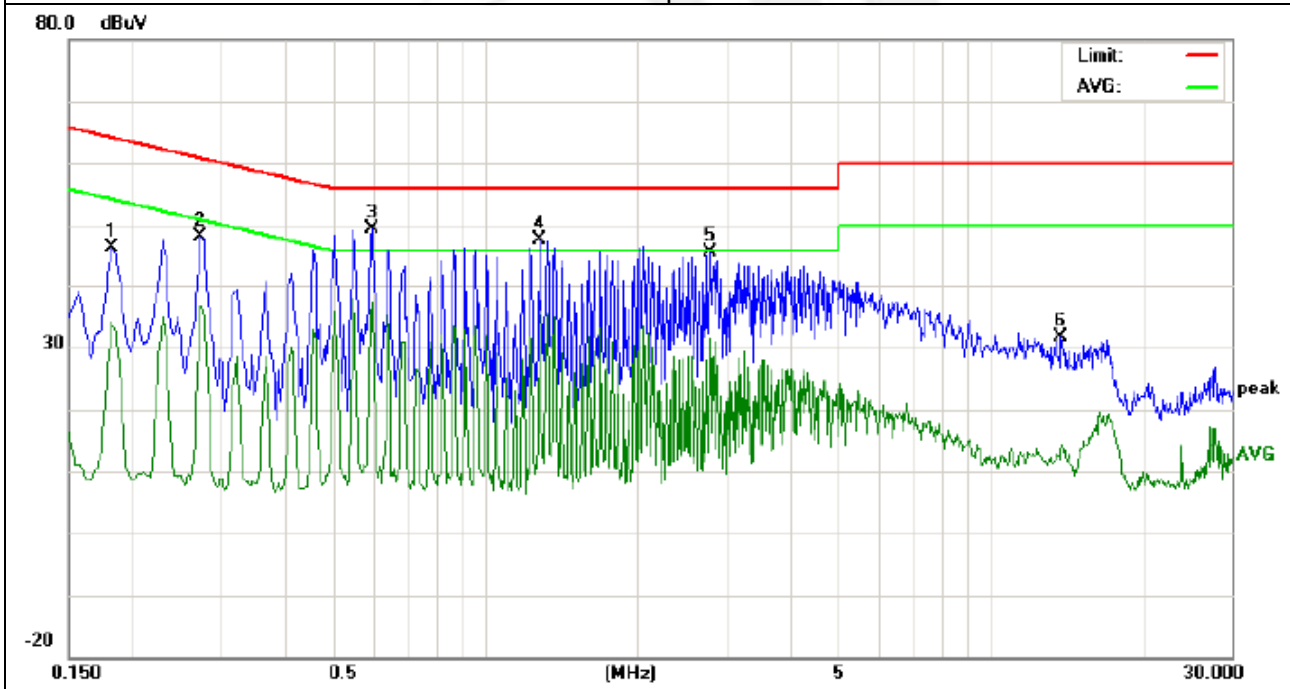
3.5 TEST RESULTS

EUT :	tablet pc	Model Name. :	PC8020
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter with AC 120V/60Hz	Test Mode :	Mode 2

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor (dB)	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1819	36.27		23.83	10.20	46.47		34.03	64.39	54.39	-17.92	-20.36	P	
2	0.2740	37.83		26.43	10.28	48.11		36.71	60.99	50.99	-12.88	-14.28	P	
3	0.5980	38.98		26.95	10.31	49.29		37.26	56.00	46.00	-6.71	-8.74	P	
4	1.2820	37.36		24.85	10.38	47.74		35.23	56.00	46.00	-8.26	-10.77	P	
5	2.7940	35.20		20.87	10.50	45.70		31.37	56.00	46.00	-10.30	-14.63	P	
6	13.7900	24.80		6.27	10.12	34.92		16.39	60.00	50.00	-25.08	-33.61	P	

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



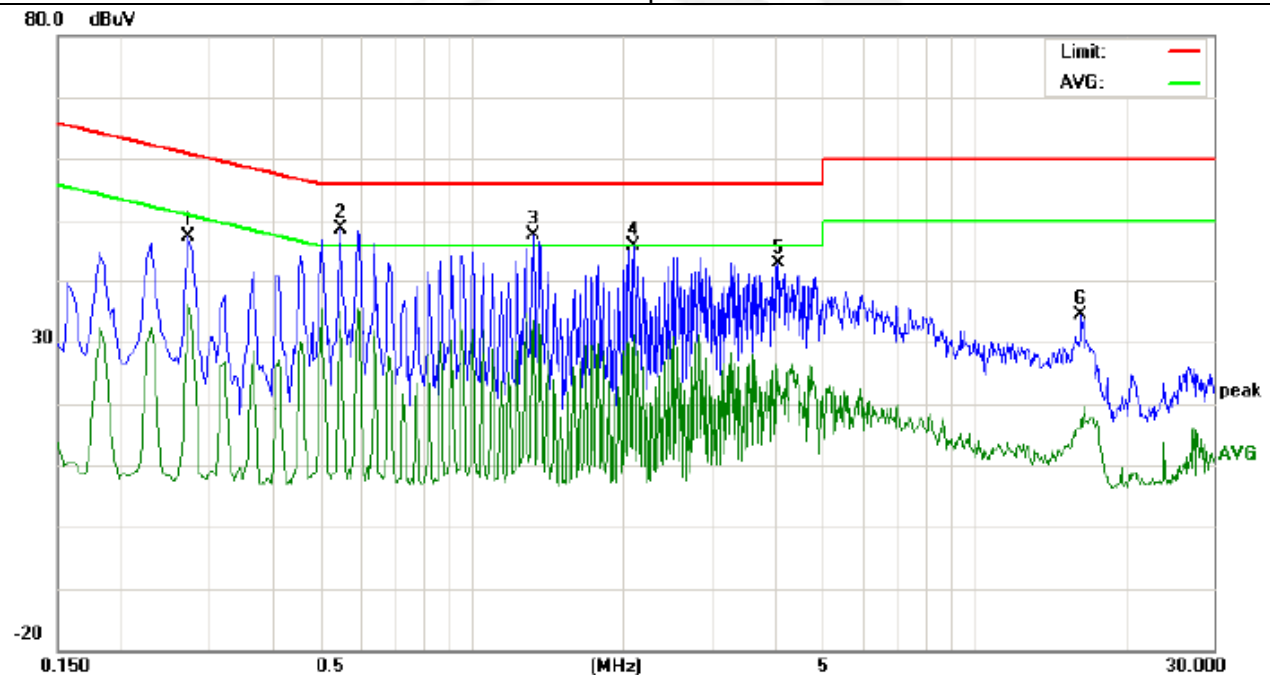


EUT :	tablet pc	Model Name. :	PC8020
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter with AC 120V/60Hz	Test Mode :	Mode 2

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2740	36.98		25.78	10.28	47.26		36.06	60.99	50.99	-13.73	-14.93	P	
2	0.5500	38.28		24.43	10.35	48.63		34.78	56.00	46.00	-7.37	-11.22	P	
3	1.3260	37.27		22.88	10.38	47.65		33.26	56.00	46.00	-8.35	-12.74	P	
4	2.1020	35.52		20.75	10.26	45.78		31.01	56.00	46.00	-10.22	-14.99	P	
5	4.0739	32.37		11.78	10.40	42.77		22.18	56.00	46.00	-13.23	-23.82	P	
6	16.3819	24.20		7.31	10.12	34.32		17.43	60.00	50.00	-25.68	-32.57	P	

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.





4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMITS

6dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on Part 15247&205(a), then the Part 15 247&209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (30MHz - 1000MHz)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz , AV=1 MHz / 10Hz

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP



4.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

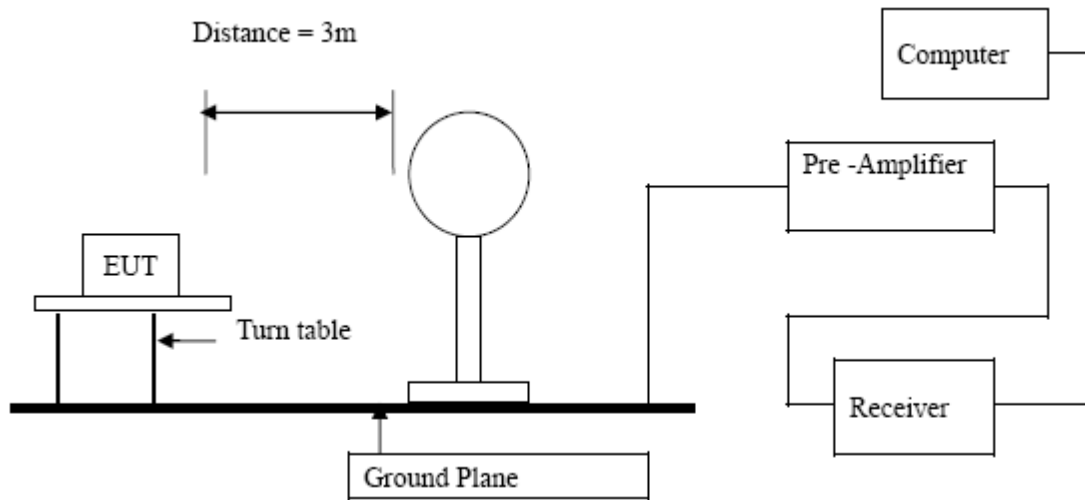
Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

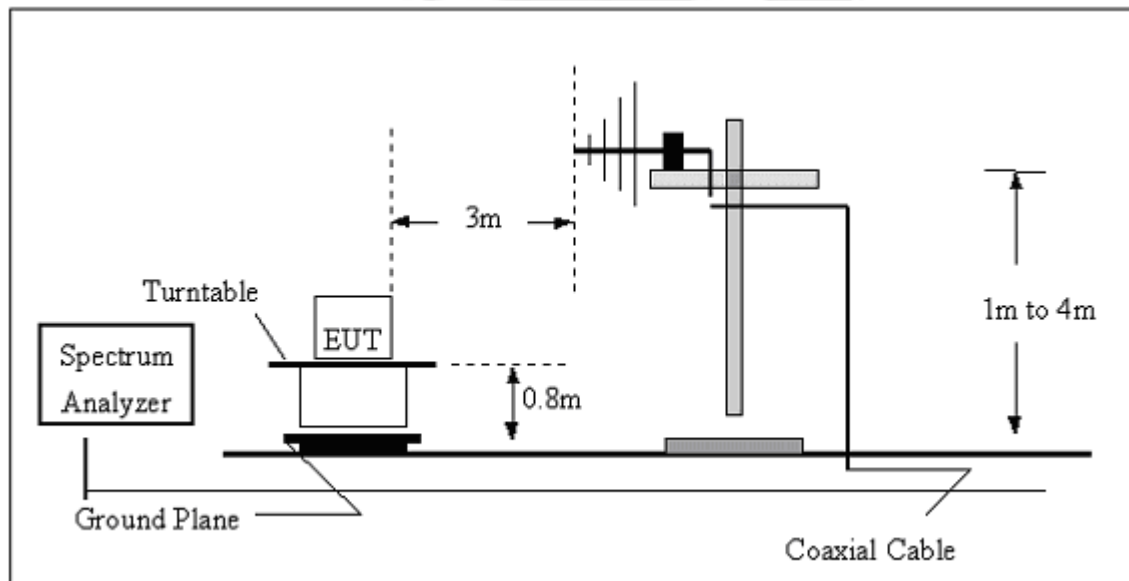


4.3 TEST SETUP

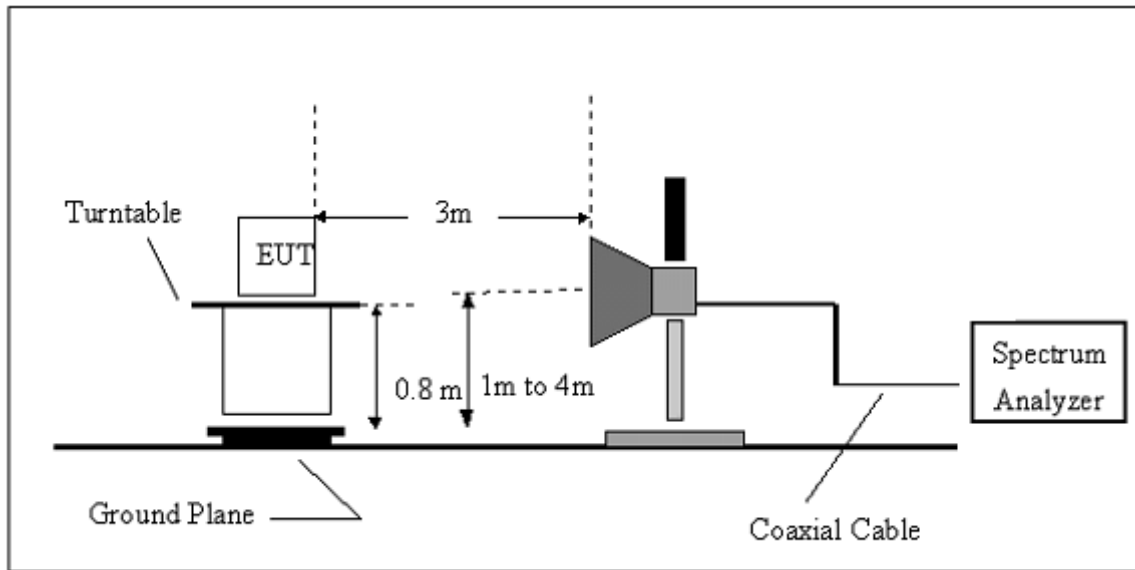
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz

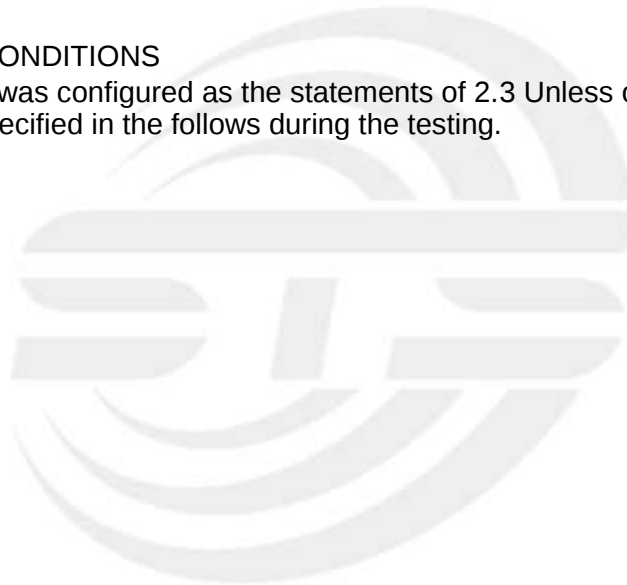


(C) Radiated Emission Test-Up Frequency Above 1GHz



4.4 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.





4.5 TEST RESULTS

(Between 9KHz – 30 MHz)

EUT:	tablet pc	Model Name. :	PC8020
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	Link mode	Polarization :	--

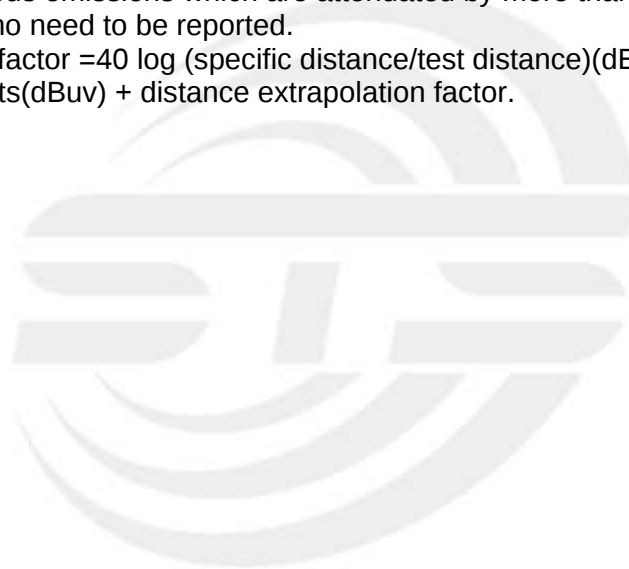
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

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 = $40 \log (\text{specific distance/test distance})$ (dB);

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





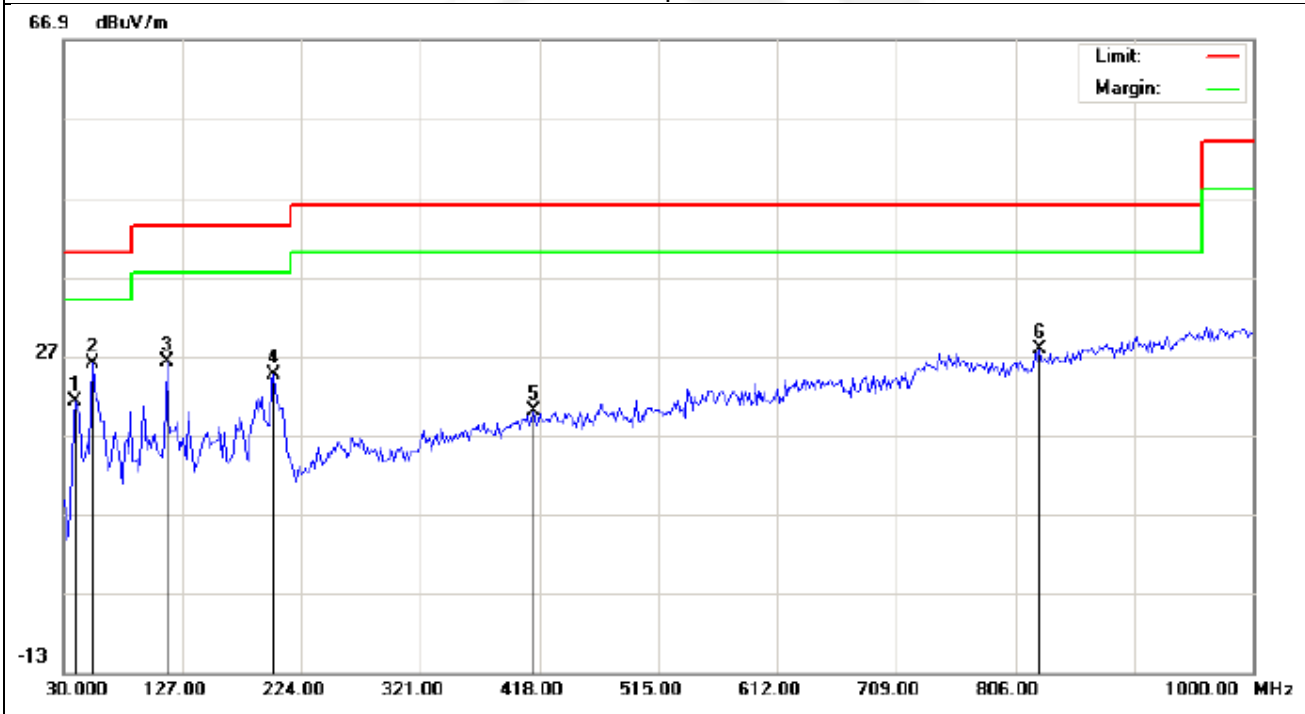
Between 30MHz – 1GHz

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	Link mode	Polarization :	Horizontal

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		39.7000	9.60	11.51	21.11	40.00	-18.89	peak			
2	*	54.2500	14.72	11.20	25.92	40.00	-14.08	peak			
3		114.0667	14.79	11.45	26.24	43.50	-17.26	peak			
4		201.3667	12.48	12.05	24.53	43.50	-18.97	peak			
5		413.1500	0.51	19.47	19.98	46.00	-26.02	peak			
6		825.4000	0.47	27.31	27.78	46.00	-18.22	peak			

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



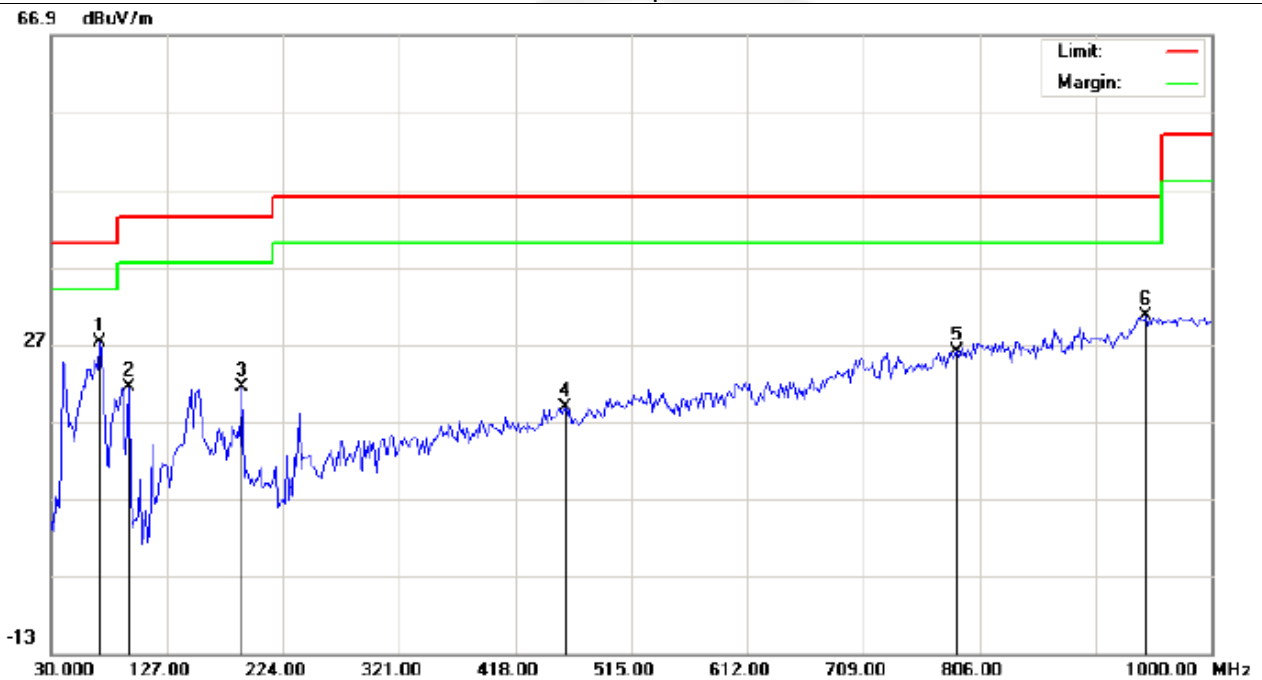


EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	Link mode	Polarization :	Vertical

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	70.4167	23.12	4.16	27.28	40.00	-12.72	peak			
2		94.6667	20.05	1.42	21.47	43.50	-22.03	peak			
3		190.0500	9.96	11.52	21.48	43.50	-22.02	peak			
4		460.0333	-1.84	20.70	18.86	46.00	-27.14	peak			
5		786.6000	-1.11	27.14	26.03	46.00	-19.97	peak			
6		945.0333	0.67	29.86	30.53	46.00	-15.47	peak			

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.





Above 1000 MHz

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH1:2402MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4804	43.62	10.44	54.06	74	-19.94	peak
4804	32.47	10.44	42.91	54	-11.09	AVG
7206	41.35	12.39	53.74	74	-20.26	peak
7206	31.78	12.39	44.17	54	-9.83	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH1:2402MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4804	41.63	10.4	52.03	74	-21.97	peak
4804	29.48	10.4	39.88	54	-14.12	AVG
7206	31.29	12.75	44.04	74	-29.96	peak
7206	25.45	12.75	38.2	54	-15.8	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH20:2440MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4884	43.52	10.4	53.92	74	-20.08	peak
4884	32.61	10.4	43.01	54	-10.99	AVG
7326	41.74	12.75	54.49	74	-19.51	peak
7326	32.32	12.75	45.07	54	-8.93	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH20:2440MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4884	45.64	10.39	56.03	74	-17.97	peak
4884	32.28	10.44	42.72	54	-11.28	AVG
7326	32.39	12.68	45.07	74	-28.93	peak
7326	32.42	12.68	45.1	54	-8.9	AVG

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. No emission detected above 18GHz



EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH40:2480MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4960	36.61	10.39	47	74	-27	peak
4960	25.81	10.39	36.2	54	-17.8	AVG
7440	42.93	12.68	55.61	74	-18.39	peak
7440	31.42	12.68	44.1	54	-9.9	AVG

Remark:

1 Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2 No emission detected above 18GHz

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH40:2480MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4960	36.62	10.39	47.01	74	-26.99	peak
4960	34.49	10.39	44.88	54	-9.12	AVG
7440	44.41	12.68	57.09	74	-16.91	peak
7440	25.73	12.68	38.41	54	-15.59	AVG

Remark:

1 Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2 No emission detected above 18GHz



4.6 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH00: 2402	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
GFSK							
2399.9	77.46	-13	64.46	74	-9.54	peak	Vertical
2399.9	55.82	-13	42.82	54	-11.18	AVG	Vertical
2400	78.73	-12.99	65.74	74	-8.26	peak	Vertical
2400	56.64	-12.99	43.65	54	-10.35	AVG	Vertical

EUT :	tablet pc	Model Name :	PC8020
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH40: 2480	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
GFSK							
2483.5	78.53	-12.78	65.75	74	-8.25	peak	Vertical
2483.5	56.26	-12.78	43.48	54	-10.52	AVG	Vertical
2483.6	78.21	-12.77	65.44	74	-8.56	peak	Vertical
2483.6	55.59	-12.77	42.82	54	-11.18	AVG	Vertical

5. CONDUCTED SPURIOUS EMISSIONS

5.1 REQUIREMENT

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.2 TEST PROCEDURE

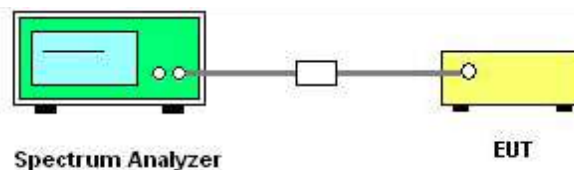
According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2310 – 2404 MHz Upper Band Edge: 2478 – 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

5.3 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

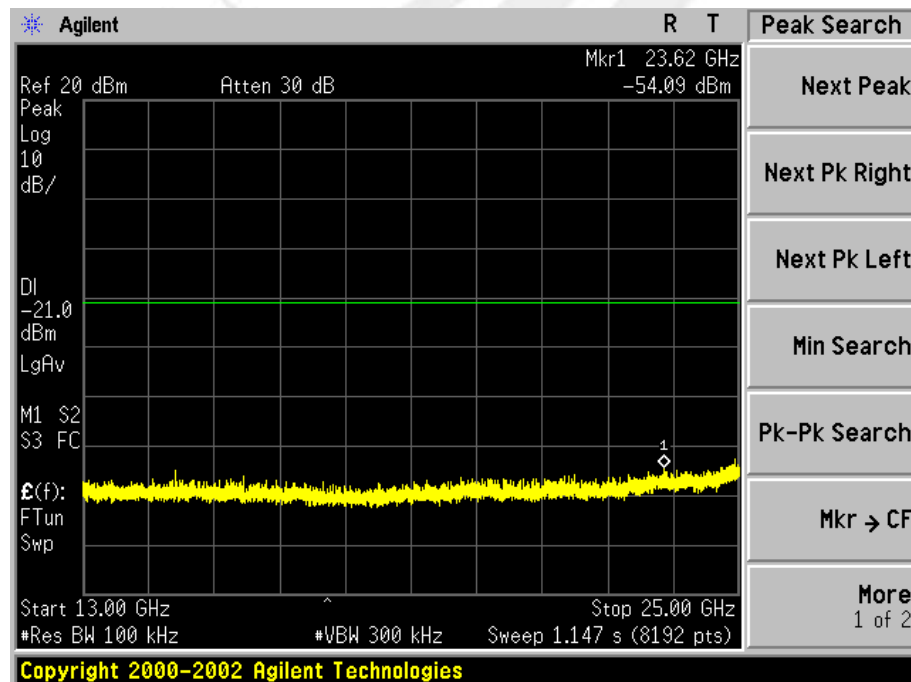
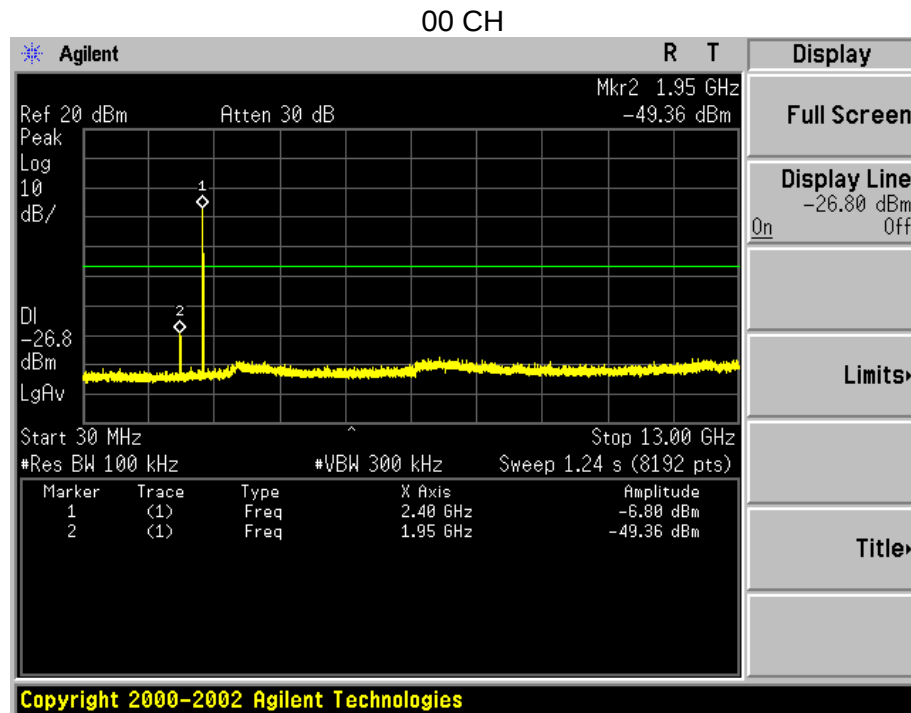
5.4 EUT OPERATION CONDITIONS

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.



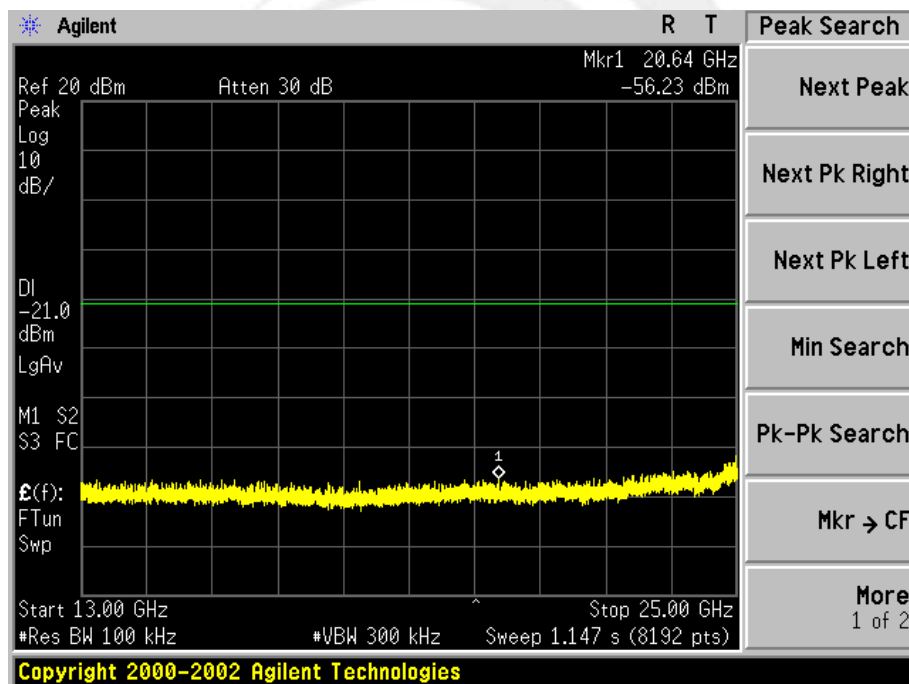
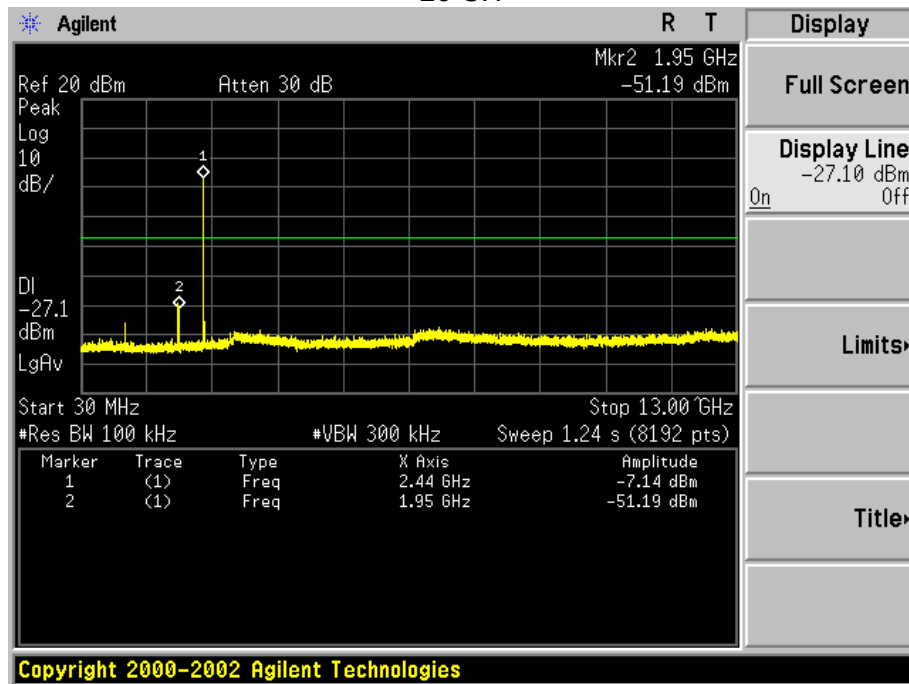
5.5 TEST RESULTS

EUT :	tablet pc	Model Name :	PC8020
Temperature :	25 °C	Relative Humidity :	50%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V
Test Mode :	TX Mode /CH02, CH20, CH40		



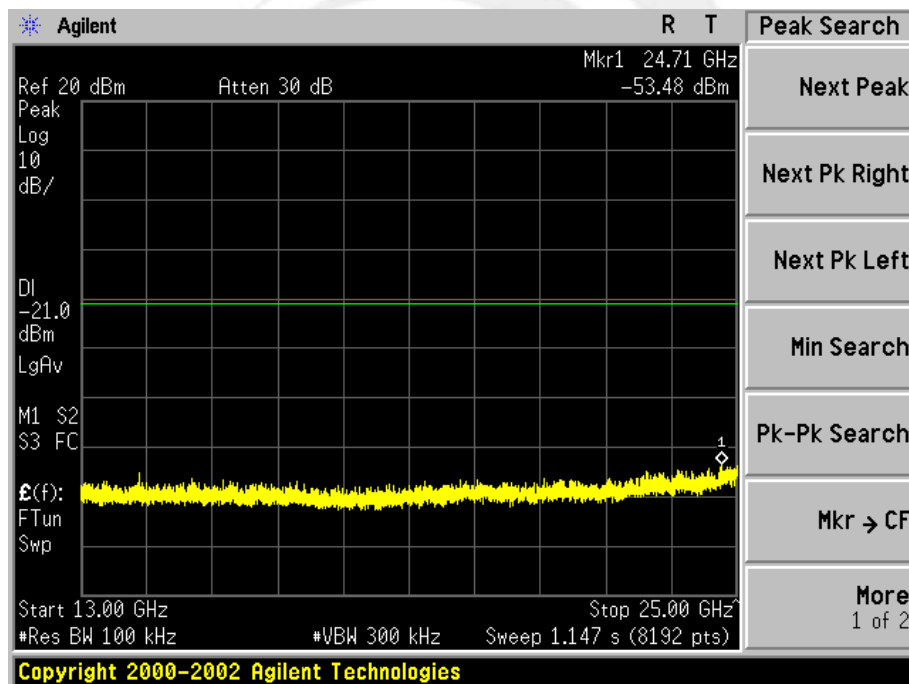
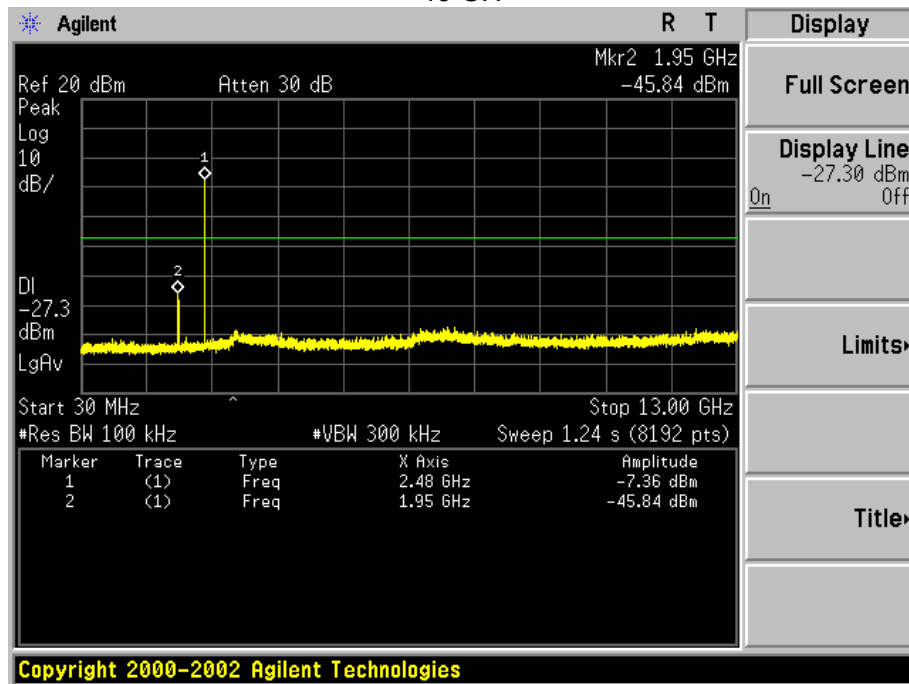


20 CH





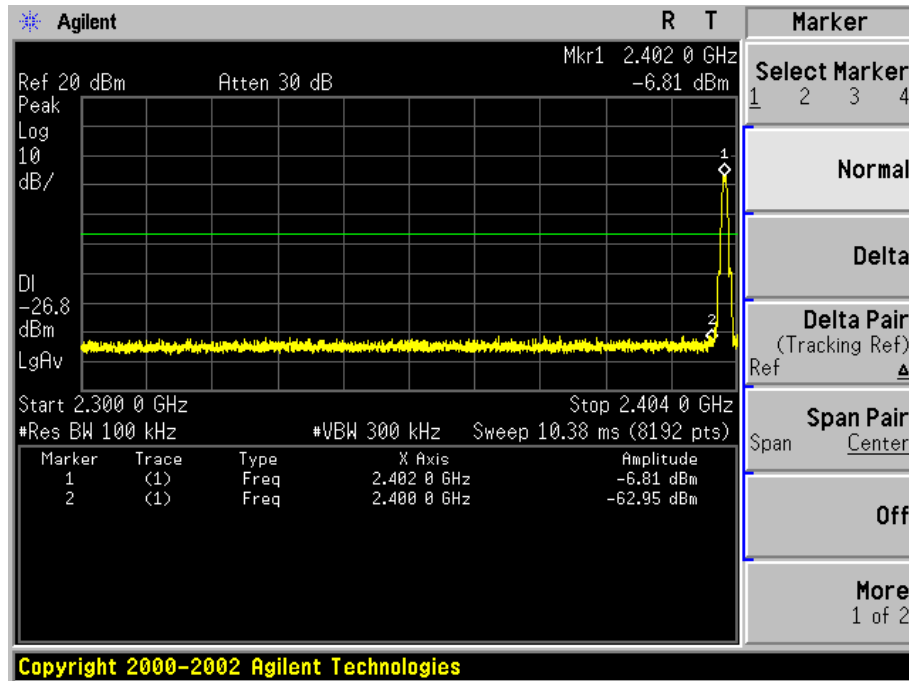
40 CH



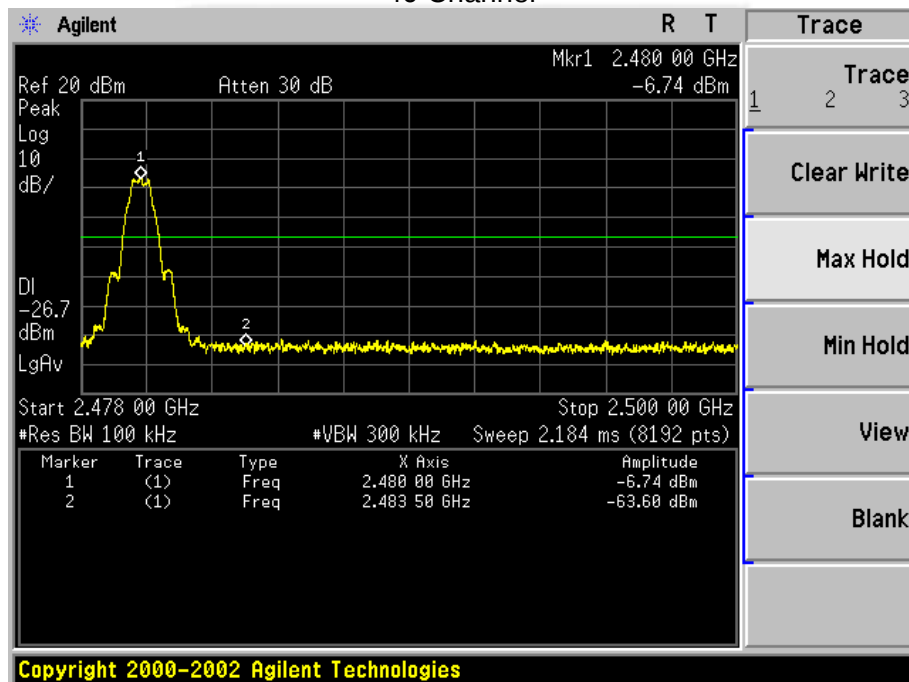


For Band edge

00 Channel



40 Channel





6. POWER SPECTRAL DENSITY TEST

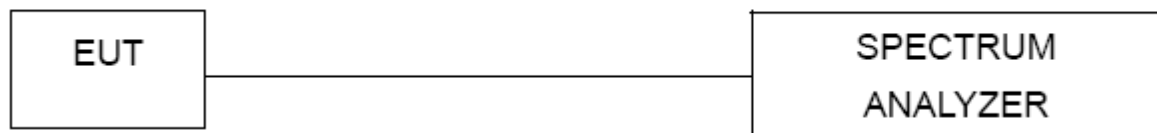
6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

6.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 3 kHz.
4. Set the VBW $\geq 3 \times$ RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 TEST SETUP



6.4 EUT OPERATION CONDITIONS

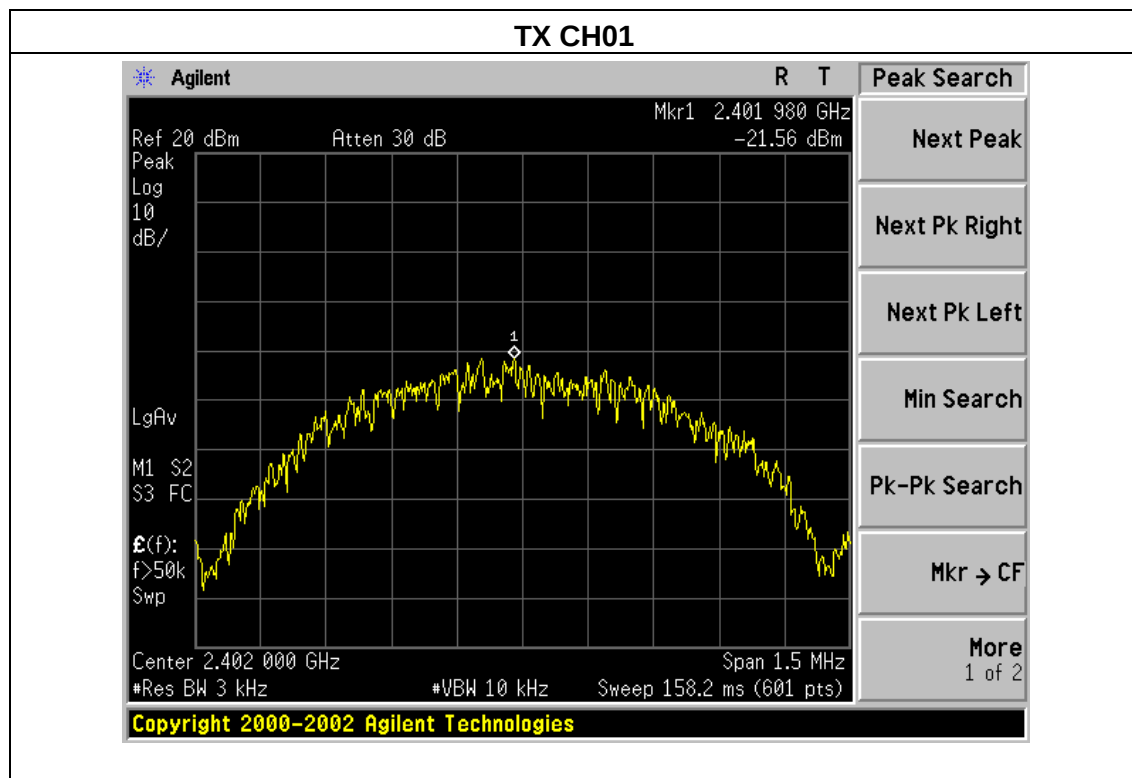
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

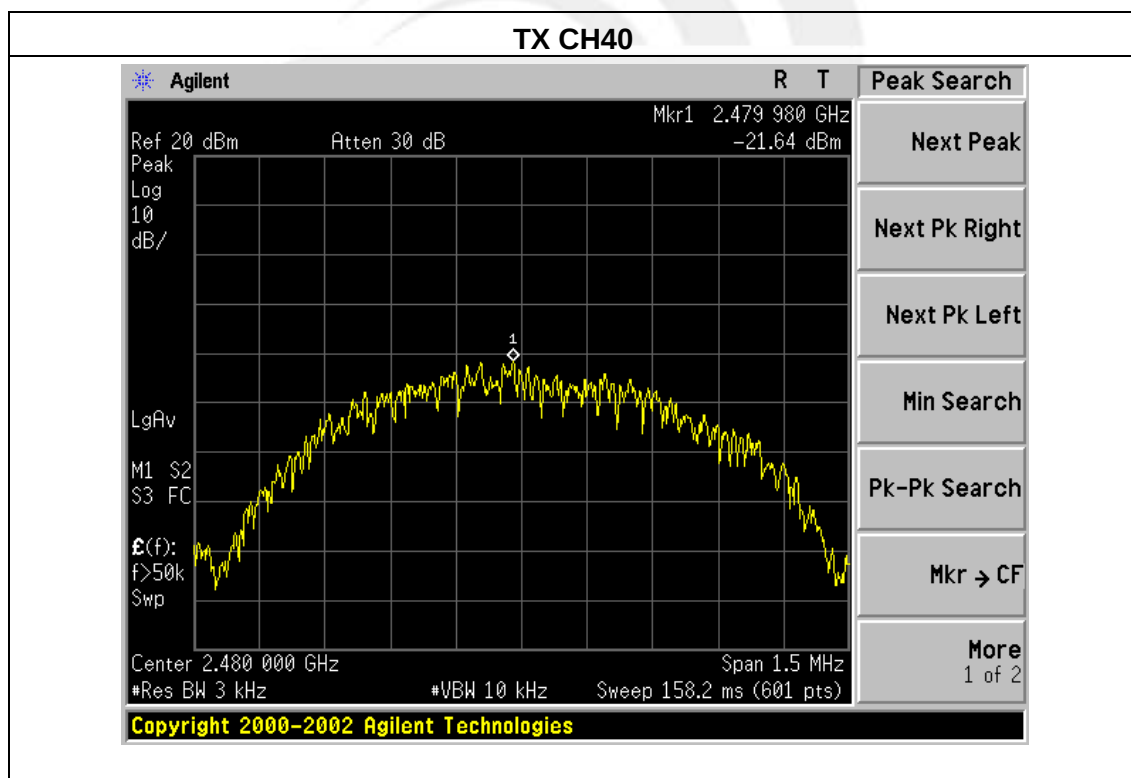
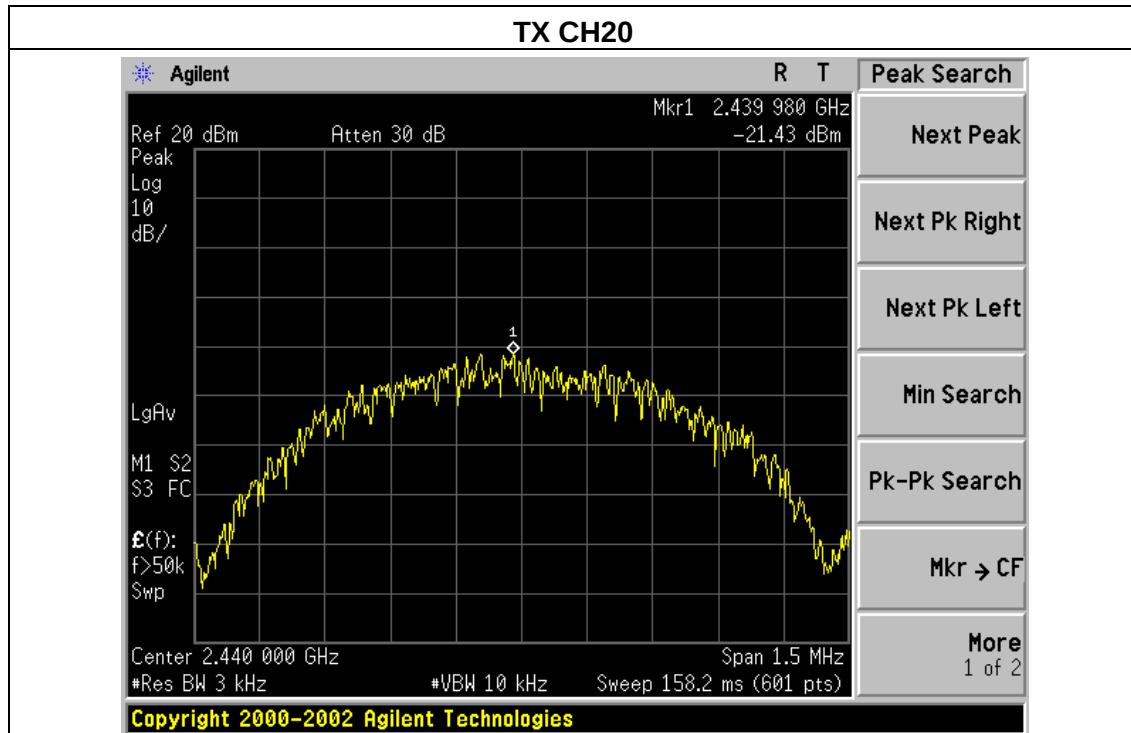


6.5 TEST RESULTS

EUT :	tablet pc	Model Name :	PC8020
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH02, CH20, CH40		

Frequency	Power Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
2402 MHz	-21.56	8	PASS
2440 MHz	-21.43	8	PASS
2480 MHz	-21.64	8	PASS





7. BANDWIDTH TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS

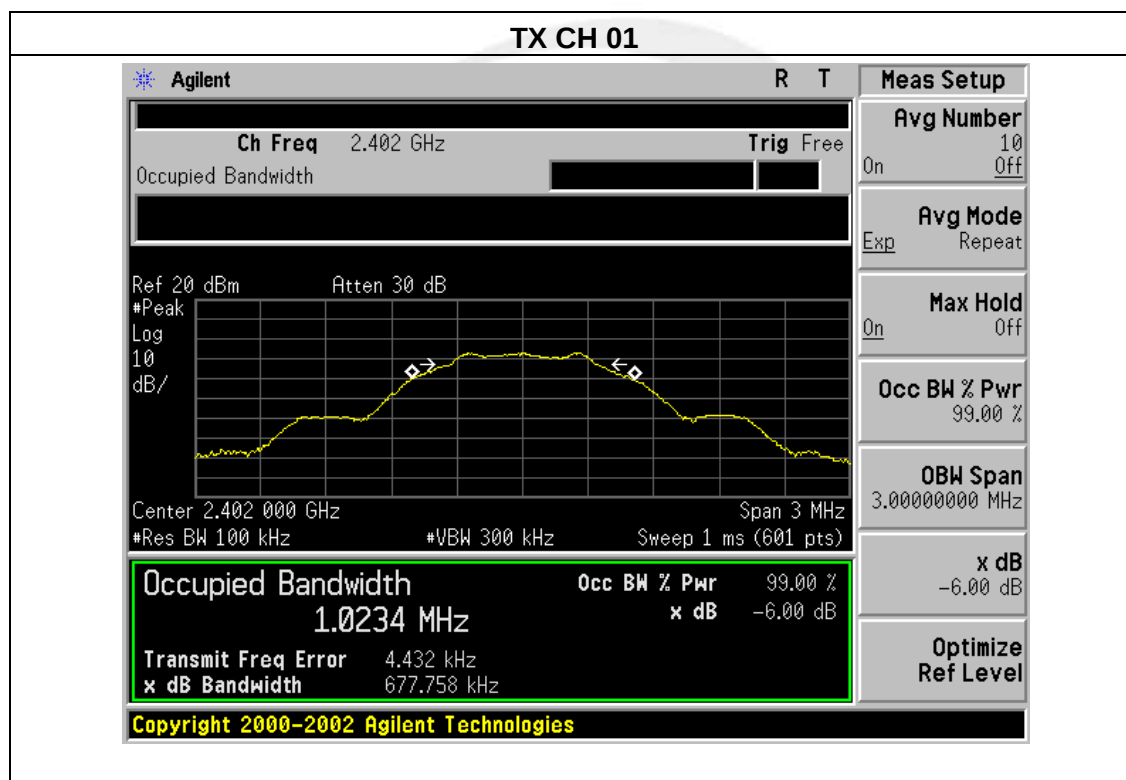
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



7.5 TEST RESULTS

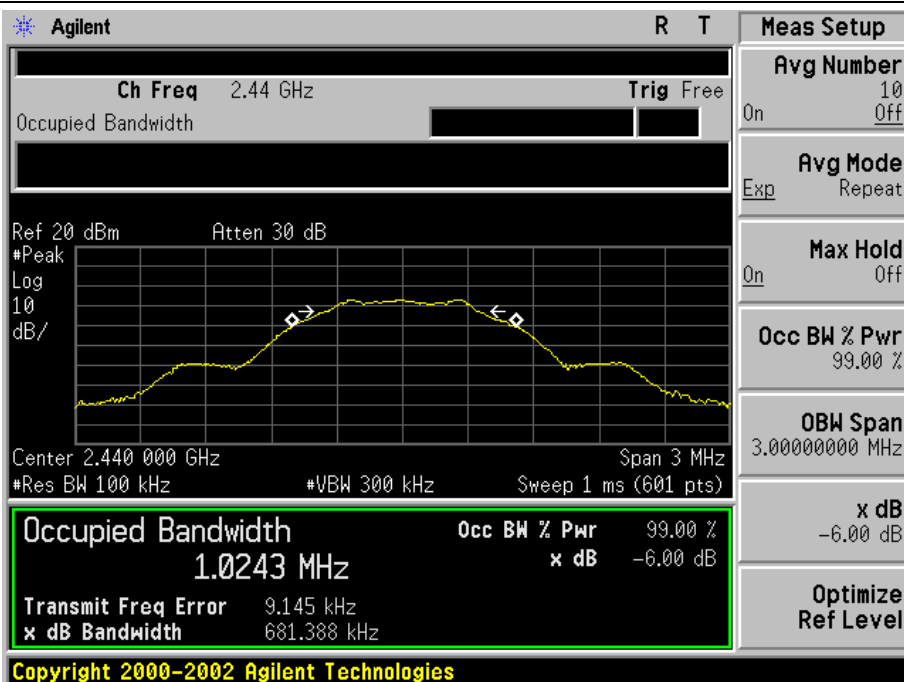
EUT :	tablet pc	Model Name :	PC8020
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH01, CH20, CH40		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2402 MHz	0.678	>=500KHz	PASS
2440 MHz	0.681	>=500KHz	PASS
2480 MHz	0.687	>=500KHz	PASS

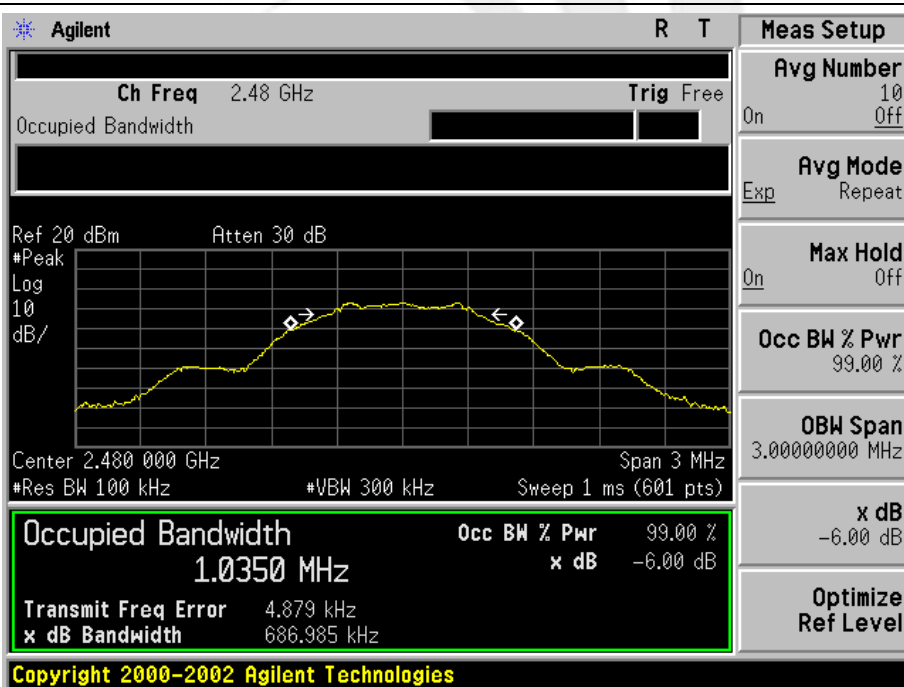




TX CH 20



TX CH 40





8. PEAK OUTPUT POWER TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.2 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

8.3 TEST SETUP



8.4 EUT OPERATION CONDITIONS

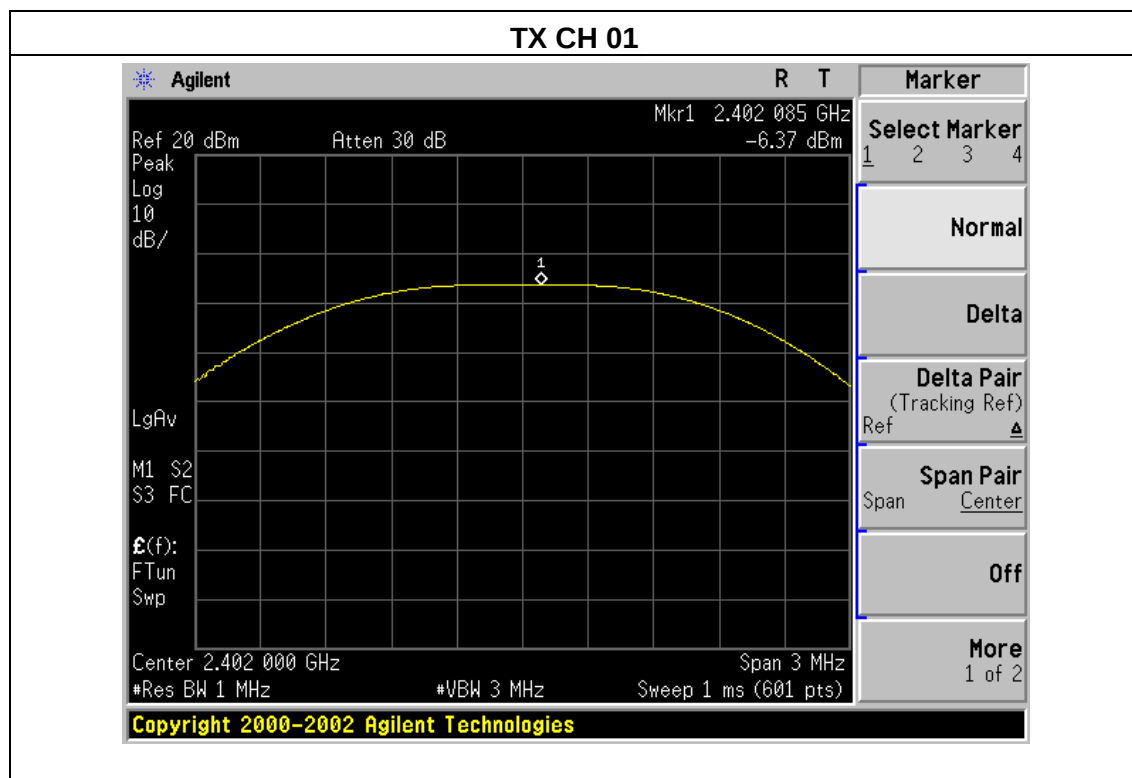
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.



8.5 TEST RESULTS

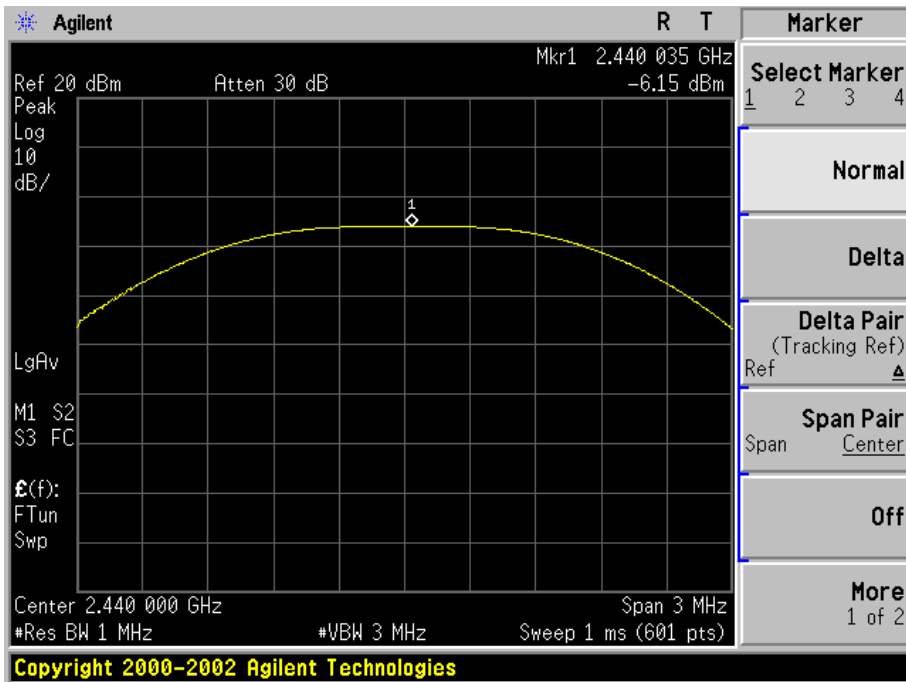
EUT :	tablet pc	Model Name :	PC8020
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 3.7V from battery
Test Mode :	TX Mode /CH01, CH20, CH40		

TX Mode			
Test Channe	Frequency	Peak Conducted Output Power	LIMIT
	(MHz)	(dBm)	dBm
CH01	2402	-6.37	30
CH20	2440	-6.15	30
CH40	2480	-6.37	30

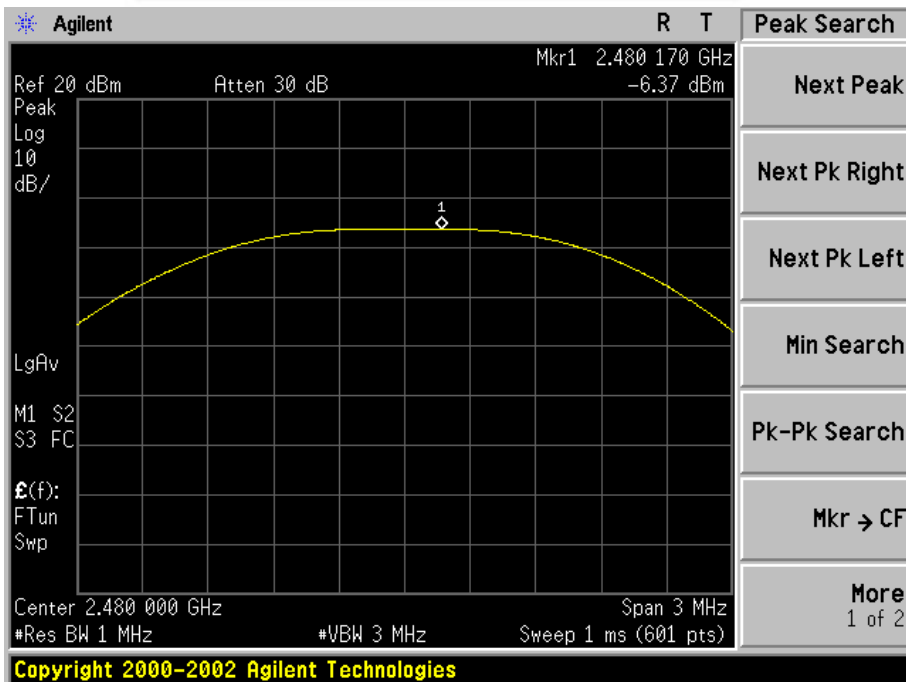




TX CH 20



TX CH 40





9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

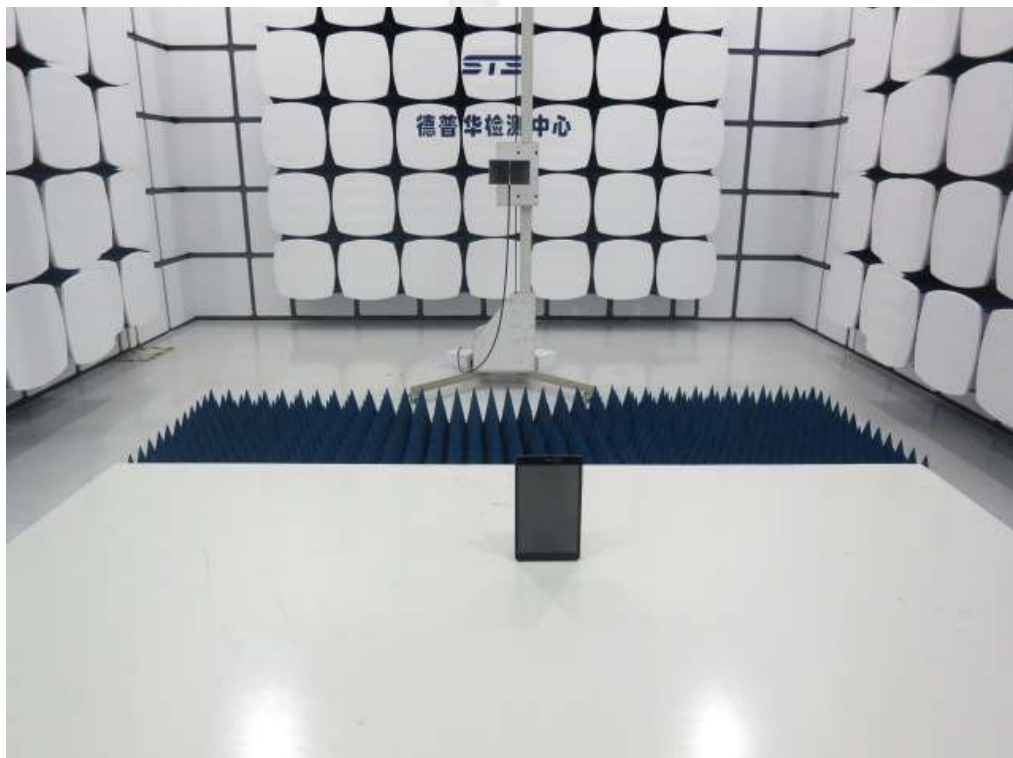
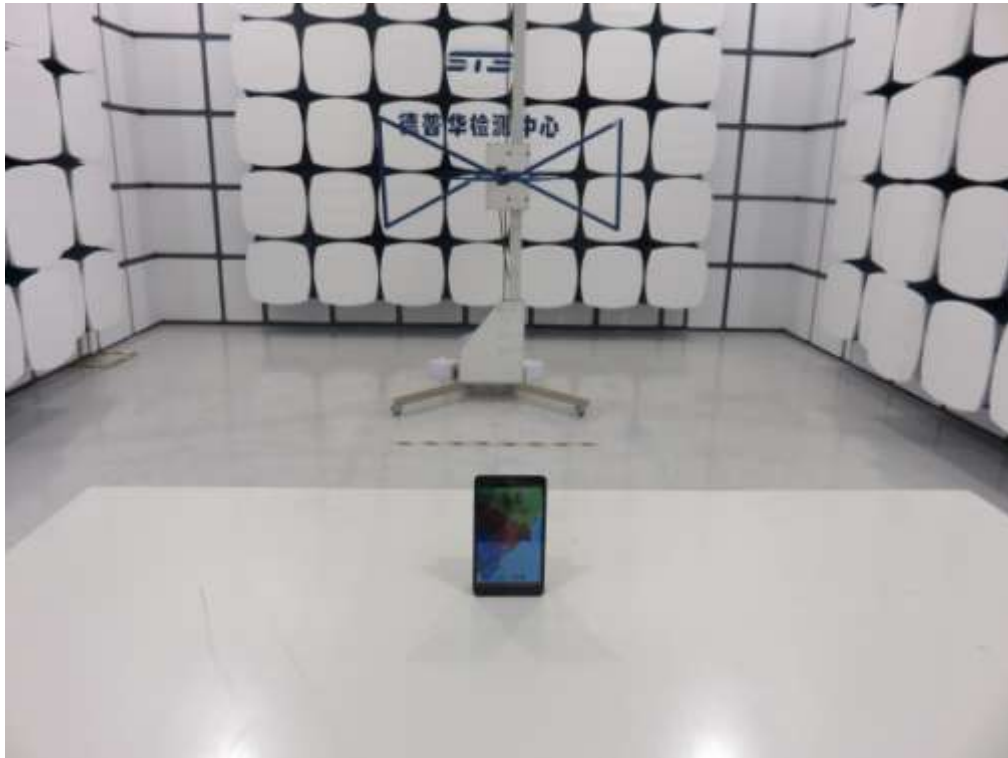
9.2 EUT ANTENNA

The EUT antenna is Chip antenna. It comply with the standard requirement.



10. EUT TEST PHOTO

Radiated Measurement Photos



Conducted Measurement Photos

