

Report No.: AGC00119140206FE08 Page 1 of 49

# **FCC Test Report**

Report No.: AGC00119140206FE08

FCC ID : BRCPC7080ME

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION**: Tablet PC

**BRAND NAME** : Titan, Kinwei

**MODEL NAME** : See the section 1

**CLIENT** : Kintech Co., Ltd.

**DATE OF ISSUE** : Mar. 06, 2014

**STANDARD(S)** : FCC Part 15 Rules

**REPORT VERSION**: V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

# **CAUTION:**

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.

Page 2 of 49

# **Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes		
V1.0	/	Mar. 06, 2014	Valid	Original Report		

# **TABLE OF CONTENTS**

1. VERIFICATION OF COMPLIANCE	
2.1PRODUCT DESCRIPTION	
2.2 RELATED SUBMITTAL(S)/GRANT(S)	
2.3TEST METHODOLOGY	
2.4 TEST FACILITY	
2.5 SPECIAL ACCESSORIES	7
2.6 EQUIPMENT MODIFICATIONS	7
3. SYSTEM TEST CONFIGURATION	8
3.2 EQUIPMENT USED IN TESTED SYSTEM	
4. SUMMARY OF TEST RESULTS	
5. DESCRIPTION OF TEST MODES	
6.1. STANDARD APPLICABLE	
6.2. TEST RESULT	
7. RADIATED EMISSION	
7.1 MEASUREMENT PROCEDURE	11
7.2 TEST SETUP	
7.3 LIMITS AND MEASUREMENT RESULT	
7.4 TEST RESULT	13
8. BAND EDGE EMISSION	
8.2. TEST SET-UP	26
8.3. TEST RESULT	27
9. 6DB BANDWIDTH	
9.2. TEST PROCEDURE	31
9.3. SUMMARY OF TEST RESULTS/PLOTS	31
10.1. MEASUREMENT PROCEDURE	<b>34</b>
10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	34
10.3. LIMITS AND MEASUREMENT RESULT	34
11. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSIT	
11.1 MEASUREMENT PROCEDURE	
11.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	37

Page 4 of 49

	11.3 MEASUREMENT EQUIPMENT USED	37
	11.4 LIMITS AND MEASUREMENT RESULT	37
12	2. FCC LINE CONDUCTED EMISSION TEST	
	12.1 LIMITS	40
	12.2 TEST SETUP	40
	12.3 PRELIMINARY PROCEDURE	41
	12.4 FINAL TEST PROCEDURE	41
	12.5 TEST RESULT OF POWER LINE	42
Α	APPENDIX A: PHOTOGRAPHS OF TEST SETUP	44
Α	APPENDIX B: PHOTOGRAPHS OF EUT	45

Page 5 of 49

# 1. VERIFICATION OF COMPLIANCE

	TO TELLIN TO TATION OF COMM EDITION				
Applicant	Kintech Co., Ltd.				
Address	Bldg.22,Chentian Industrial Zone, Baomin 2nd Road, Xixiang, Bao'an District, Shenzhen, China				
Manufacturer	Kintech Co., Ltd.				
Address	Bldg.22,Chentian Industrial Zone, Baomin 2nd Road, Xixiang, Bao'an District, Shenzhen, China				
Product Designation	Tablet PC				
Brand Name	Titan, Kinwei				
Date of test	Feb.27, 2014 to Mar.5, 2014				
Deviation	None				
Condition of Test Sample	Normal				
Report Template	AGCRT-US-BLE/RF (2013-03-01)				

# WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Prepared By

Wall Huang Mar. 06, 2014

Checked By

Kidd Yang Mar. 06, 2014

Authorized By

Solger Zhang Mar. 06, 2014

Page 6 of 49

Model name	PC7080ME ,PC7080B,PC7080,PC7081ME,PC7081B,PC7081,PC7082ME, PC7082B,PC7082,PC7083ME,PC7083B,PC7083,PC7084ME,PC7084B, PC7084,PC7085ME,PC7085B,PC7085,PC7086ME,PC7086B,PC7086, PC7087ME,PC7087B,PC7087,PC7088ME,PC7088B,PC7088, PC7089ME,PC7089B,PC7089,PC70XXME(XX represents 00~99), PC70XXB(XX represents 00~99), PC70XXB(XX represents 00~99), PC70XXB(XX represents 00~99), KW-PC7080J,KW-PC7080J,KW-PC7081J,KW-PC7081, KW-PC7082J,KW-PC7082J,KW-PC7083J,KW-PC7085, KW-PC7084J,KW-PC7086J,KW-PC7085J,KW-PC7086J,KW-PC7086J,KW-PC7088J,KW-PC7087J,KW-PC7089J,KW-PC7089J,KW-PC7089J,KW-PC7089J,KW-PC7089J,KW-PC7089J,KW-PC70XXJ(XX represents 00~99))
Difference description	All the same except for the model name and brand name, the test model is PC7080ME.

Page 7 of 49

# 2.GENERAL INFORMATION 2.1PRODUCT DESCRIPTION

The EUT is designed as a "Tablet PC". It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
Bluetooth Version	V4.0
Modulation	GFSK
Number of channels	40 Channel(37 Hopping Channel,3 advertising Channel)
Antenna Designation	Integrated Antenna
Antenna Gain	1.2dBi
Hardware Version	N/A
Software Version	N/A
Power Supply	DC3.7V by Built-in Li-ion Battery

## 2.2 RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: BRCPC7080ME** filing to comply with Section 15.247of the FCC Part 15, Subpart C Rules.

## 2.3TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three orthogonal planes and the worse case was showed.

## 2.4 TEST FACILITY

All measurement facilities used to collect the measurement data are located at Attestation of Global Compliance (Shenzhen) Co, Ltd

2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China.

FCC register No.: 259865

#### 2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

#### 2.6 EQUIPMENT MODIFICATIONS

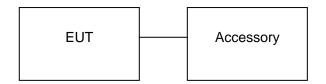
Not available for this EUT intended for grant.

Page 8 of 49

# 3. SYSTEM TEST CONFIGURATION

# 3.1 CONFIGURATION OF TESTED SYSTEM

# Configuration:



# 3.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment Model No.		ID or Specification	Note
1	Tablet PC	PC7080ME	FCC ID: BRCPC7080ME	EUT
2	Adapter	JKY0212-0502000UL	DC5V /2A	Accessory
3	Battery	N/A	DC3.7V/ 2800mAh	Accessory
4	Earphone PC7080ME		N/A	Accessory
5	USB Cable	PC7080ME	N/A	Accessory

Page 9 of 49

# 4. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 15.203	Antenna Requirement	Compliant
§15.209 §15.247(d)	Radiated Emission	Compliant
§15.247(d)	Band Edges	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247(b)	Conducted Power	Compliant
§15.247(e)	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.207	Line Conduction Emission	Compliant

# 5. DESCRIPTION OF TEST MODES

The EUT has been operated in three modulations: GFSK independently.

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX
4	Normal Operating (BT)

# Note:

<sup>1.</sup> All the test modes can be supply by Built-in Li-ion battery, only the result of the worst case was recorded in the report if no any records.

<sup>2.</sup> For Radiated Emission, 3axis were chosen for testing for each applicable mode.

Page 10 of 49

#### 6. ANTENNA REQUIREMENT

#### **6.1. STANDARD APPLICABLE**

According to FCC 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

#### **6.2. TEST RESULT**

This product has a permanent antenna, fulfill the requirement of this section.

Page 11 of 49

## 7. RADIATED EMISSION

#### 7.1 MEASUREMENT PROCEDURE

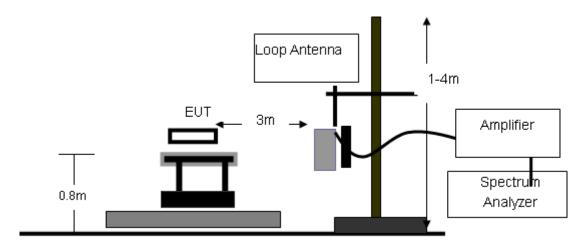
 Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.

- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

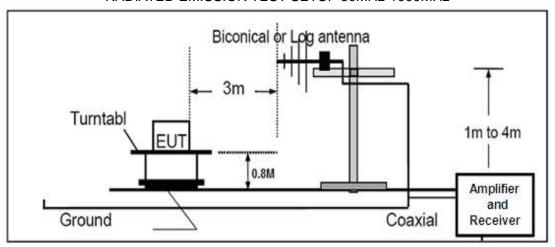
Page 12 of 49

# 7.2 TEST SETUP

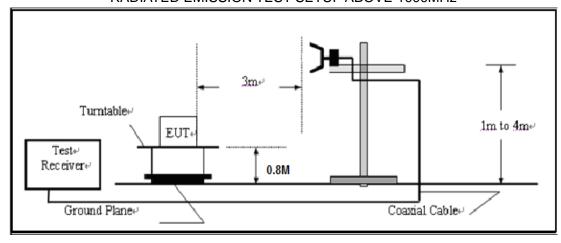
# RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



# RADIATED EMISSION TEST SETUP ABOVE 1000MHz



Page 13 of 49

# 7.3 LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

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

Note: All modes were tested For restricted band radiated emission,

the test records reported below are the worst result compared to other modes.

# 7.4 TEST RESULT

# **RADIATED EMISSION BELOW 30MHZ**

No emission found between lowest internal used/generated frequencies to 30MHz.

Page 14 of 49

# **RADIATED EMISSION BELOW 1GHZ**

# RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL-HORIZONTAL



Site: site #1 Limit: FCC Class B 3M Radiation

EUT: tablet pc

M/N: PC7080ME Mode: Low Channel TX

Note:

Polarization: Horizontal Temperature: 26
Power: Humidity: 60 %

Distance:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1	į	109.2167	26.89	11.12	38.01	43.50	-5.49	peak			
2		217.5330	26.93	12.67	39.60	46.00	-6.40	peak			
3	İ	353.3333	21.58	18.76	40.34	46.00	-5.66	peak			
4	*	469.7332	20.71	20.80	41.51	46.00	-4.49	peak			
5	İ	597.4500	17.54	23.67	41.21	46.00	-4.79	peak			
6		717.0833	11.23	25.68	36.91	46.00	-9.09	peak			

Page 15 of 49

# RADIATED EMISSION TEST- (30MHZ-1GHZ)-LOW CHANNEL -VERTICAL



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation Power: Humidity: 60 %

EUT: tablet pc Distance:

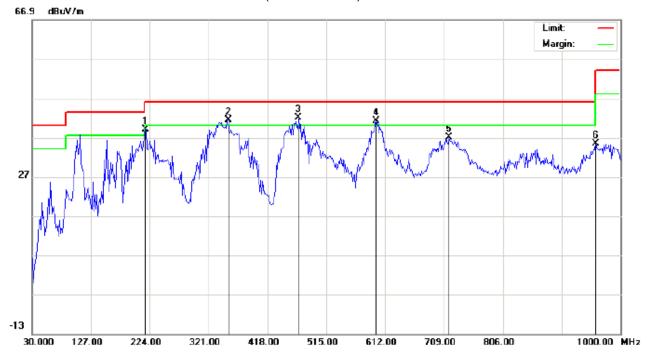
M/N: PC7080ME Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		104.3666	37.19	-0.93	36.26	43.50	-7.24	peak			
2		154.4832	20.88	15.29	36.17	43.50	-7.33	peak			
3		236.9333	23.25	12.62	35.87	46.00	-10.13	peak			
4	*	348.4832	23.11	18.64	41.75	46.00	-4.25	peak			
5	į	466.5000	20.51	20.77	41.28	46.00	-4.72	peak			
6		896.5333	8.91	28.52	37.43	46.00	-8.57	peak			

Page 16 of 49

# RADIATED EMISSION TEST- (30MHZ-1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1 Limit: FCC Class B 3M Radiation

EUT: tablet pc M/N: PC7080ME

Mode: Middle Channel TX

Note:

Polarization: Horizontal Temperature: 26
Power: Humidity: 60 %

Distance:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		217.5329	26.43	12.67	39.10	46.00	-6.90	peak			
2	į	353.3333	22.58	18.76	41.34	46.00	-4.66	peak			
3	*	469.7332	21.21	20.80	42.01	46.00	-3.99	peak			
4	ļ	597.4500	17.54	23.67	41.21	46.00	-4.79	peak			
5		717.0833	11.23	25.68	36.91	46.00	-9.09	peak			
6		959.5833	5.52	29.91	35.43	46.00	-10.57	peak			

Page 17 of 49

# RADIATED EMISSION TEST- (30MHZ-1GHZ)- MIDDLE CHANNEL -VERTICAL



Site: site #1 Limit: FCC Class B 3M Radiation

EUT: tablet pc

M/N: PC7080ME

Mode: Middle Channel TX

Note:

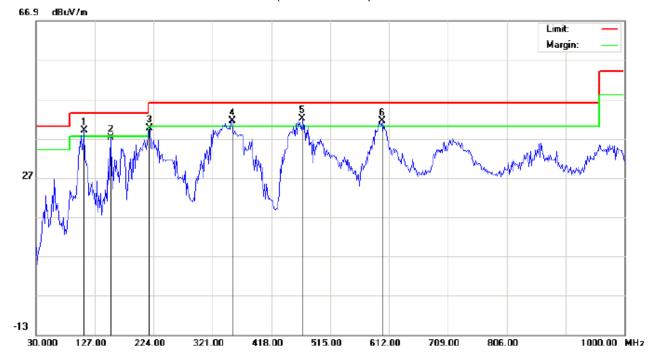
Polarization: Vertical Temperature: 26
Power: Humidity: 60 %

Distance:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		104.3666	37.19	-0.93	36.26	43.50	-7.24	peak			
2		154.4832	21.88	15.29	37.17	43.50	-6.33	peak			
3		236.9333	25.25	12.62	37.87	46.00	-8.13	peak			
4	İ	348.4832	22.11	18.64	40.75	46.00	-5.25	peak			
5	*	466.5000	20.01	20.77	40.78	46.00	-5.22	peak			
6		896.5333	8.41	28.52	36.93	46.00	-9.07	peak			

Page 18 of 49

# RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1 Limit: FCC Class B 3M Radiation

EUT: tablet pc

M/N: PC7080ME

Mode: High Channel TX

Note:

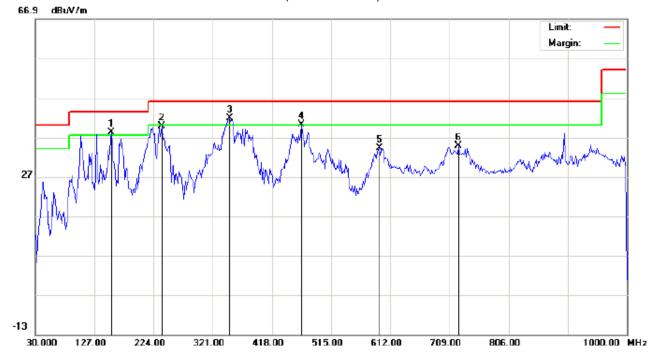
Polarization:	Horizontal	Temperatui	re: 26
Power:		Humidity:	60 %

Distance:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1	į	109.2167	27.89	11.12	39.01	43.50	-4.49	peak			
2		152.8667	21.96	15.28	37.24	43.50	-6.26	peak			
3		217.5329	26.93	12.67	39.60	46.00	-6.40	peak			
4	İ	353.3333	22.58	18.76	41.34	46.00	-4.66	peak			
5	*	469.7332	21.21	20.80	42.01	46.00	-3.99	peak	·		
6	į	600.6833	17.63	23.73	41.36	46.00	-4.64	peak			

Page 19 of 49

# RADIATED EMISSION TEST- (30MHZ-1GHZ)-HIGH CHANNEL -VERTICAL



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation Power: Humidity: 60 %

EUT: tablet pc Distance:

M/N: PC7080ME

Mode: High Channel TX Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBuV/m	dBu∀/m	dB		cm	degree	
1	İ	154.4832	22.88	15.29	38.17	43.50	-5.33	peak			
2		236.9333	27.25	12.62	39.87	46.00	-6.13	peak			
3	*	348.4832	23.11	18.64	41.75	46.00	-4.25	peak			
4	İ	466.5000	19.51	20.77	40.28	46.00	-5.72	peak			
5		594.2164	11.41	22.70	34.11	46.00	-11.89	peak			
6		723.5498	8.96	25.87	34.83	46.00	-11.17	peak			

# **RESULT: PASS**

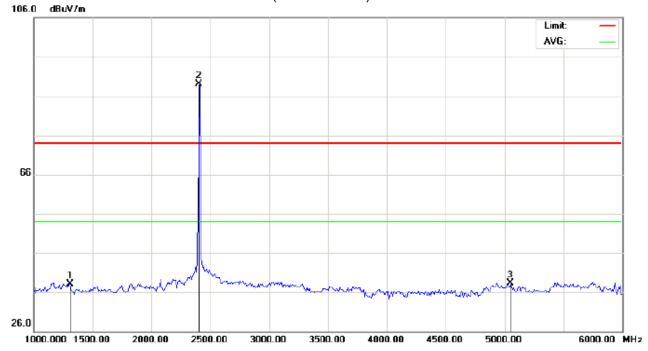
**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The "Factor" value can be calculated automatically by software of measurement system.

Page 20 of 49

# **RADIATED EMISSION ABOVE 1GHZ**

RADIATED EMISSION TEST- (ABOVE 1GHZ)-LOW CHANNEL-HORIZONTAL



Site: site #1 Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

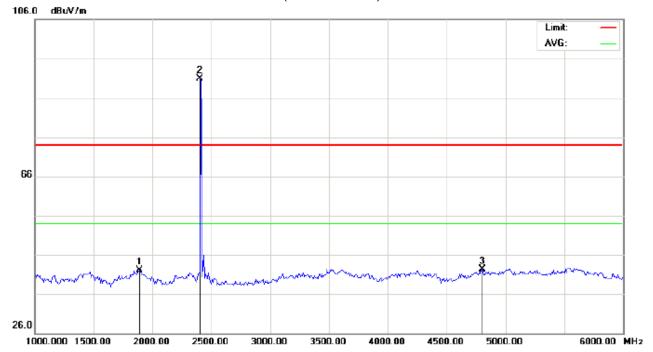
Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		1308.333	53.62	-15.46	38.16	74.00	-35.84	peak			
2	*	2402.000	98.83	-9.68	89.15	74.00	15.15	peak			
3		5050.000	40.16	-1.80	38.36	74.00	-35.64	peak			

Page 21 of 49

# RADIATED EMISSION TEST-(ABOVE 1GHZ)-LOW CHANNEL-VERTICAL



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

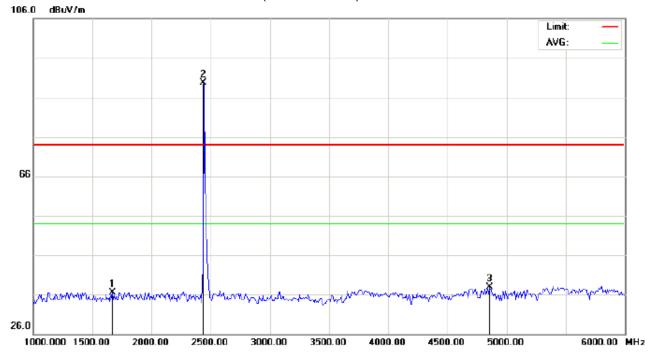
Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		1891.667	53.43	-11.26	42.17	74.00	-31.83	peak			
2	*	2402.000	100.58	-9.68	90.90	74.00	16.90	peak			
3		4800.000	44.59	-2.32	42.27	74.00	-31.73	peak			

Page 22 of 49

# RADIATED EMISSION TEST-(ABOVE 1GHZ)-MIDDLE CHANNEL-HORIZONTAL



Site: site #1 Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

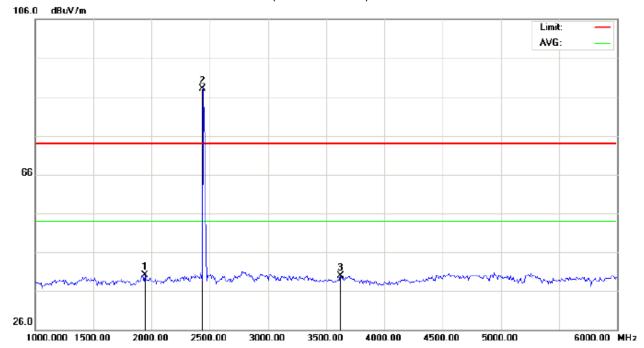
Mode: Middle Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu\//m	dBu∀/m	dB		cm	degree	
1		1666.667	50.22	-13.63	36.59	74.00	-37.41	peak			
2	*	2440.000	99.38	-9.64	89.74	74.00	15.74	peak			
3		4858.333	40.11	-2.17	37.94	74.00	-36.06	peak			

Page 23 of 49

# RADIATED EMISSION TEST-(ABOVE 1GHZ)-MIDDLE CHANNEL-VERTICAL



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

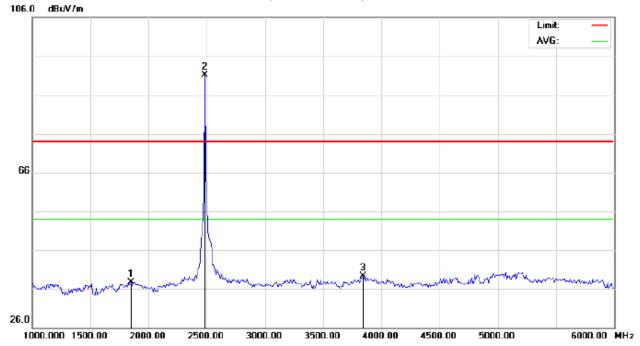
Mode: Middle Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	l
		MHz	dBu∀	dB/m	dBu\//m	dBu∀/m	dB		cm	degree	
1		1941.667	50.80	-10.73	40.07	74.00	-33.93	peak			
2	*	2440.000	97.81	-9.64	88.17	74.00	14.17	peak			
3		3625.000	46.94	-7.12	39.82	74.00	-34.18	peak			

Page 24 of 49

# RADIATED EMISSION TEST-(ABOVE 1GHZ)-HIGH CHANNEL-HORIZONTAL



Site: site #1 Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

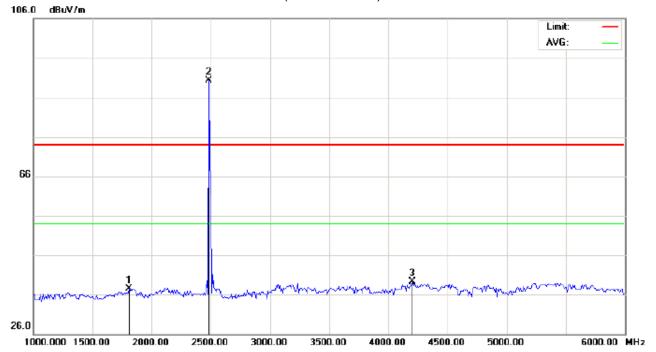
Mode: High Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu\//m	dBu∀/m	dB		cm	degree	
1		1850.000	49.45	-11.70	37.75	74.00	-36.25	peak			
2	*	2480.000	100.67	-9.59	91.08	74.00	17.08	peak			
3		3841.667	45.18	-5.79	39.39	74.00	-34.61	peak			

Page 25 of 49

# RADIATED EMISSION TEST-(ABOVE 1GHZ)-HIGH CHANNEL-VERTICAL



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

Mode: High Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu\//m	dBu∀/m	dB		cm	degree	
1		1808.333	49.71	-12.14	37.57	74.00	-36.43	peak			
2	*	2480.000	99.88	-9.59	90.29	74.00	16.29	peak			
3		4200.000	43.42	-4.13	39.29	74.00	-34.71	peak			

# **RESULT: PASS**

**Note:** 6~25GHz at least have 20dB margin. No recording in the test report.

Factor=Antenna Factor+ Cable loss-Amplifier gain,

Margin=Measurement-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

Page 26 of 49

# 8. BAND EDGE EMISSION

# **8.1. MEASUREMENT PROCEDURE**

- 1. Set the EUT Work on the top, the bottom operation frequency individually.
- 2. Set SPA Start or Stop Frequency = Operation Frequency, RBW>=1%span, VBW>=RBW
- 3. The band edges was measured and recorded.

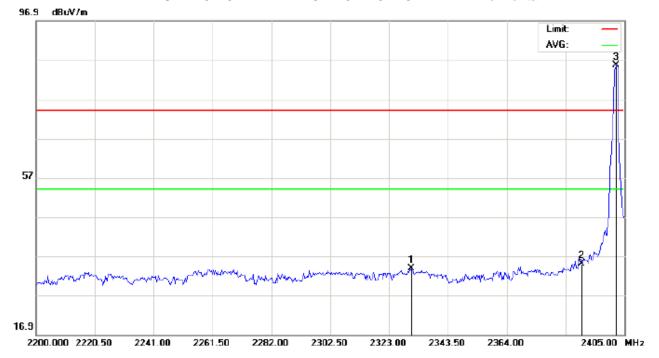
# 8.2. TEST SET-UP

Radiated same as 6.2

Page 27 of 49

# 8.3. TEST RESULT

# TEST PLOT OF BAND EDGE FOR LOW CHANNEL -Horizontal



Site: site #1 Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

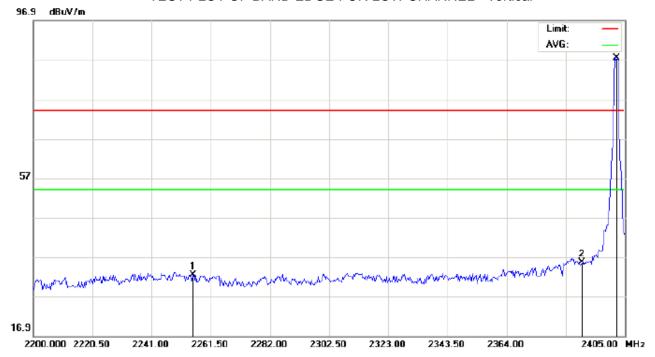
Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		2330.858	43.51	-9.76	33.75	74.00	-40.25	peak			
2		2390.000	44.71	-9.69	35.02	74.00	-38.98	peak			
3	*	2402.000	95.24	-9.68	85.56	74.00	11.56	peak			

Page 28 of 49

# TEST PLOT OF BAND EDGE FOR LOW CHANNEL - Vertical



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

Mode: Low Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1		2255.350	42.29	-9.84	32.45	74.00	-41.55	peak			
2		2390.000	45.34	-9.69	35.65	74.00	-38.35	peak			
3	*	2402.000	96.99	-9.68	87.31	74.00	13.31	peak			

Page 29 of 49

# TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Horizontal



Site: site #1 Polarization: Horizontal Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

Mode: High Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBu∀	dB/m	dBu\//m	dBu∀/m	dB		cm	degree	
1	*	2480.000	95.96	-9.59	86.37	74.00	12.37	peak			
2		2483.500	45.56	-9.59	35.97	74.00	-38.03	peak			
3		2491.017	44.41	-9.58	34.83	74.00	-39.17	peak			

Page 30 of 49

#### TEST PLOT OF BAND EDGE FOR HIGH CHANNEL -Vertical



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %

EUT:tablet pc Distance:

M/N:PC7080ME

Mode: High Channel TX

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBu∀/m	dBu∀/m	dB		cm	degree	
1	*	2480.000	94.76	-9.59	85.17	74.00	11.17	peak			
2		2483.500	44.62	-9.59	35.03	74.00	-38.97	peak			
3		2490.760	44.94	-9.58	35.36	74.00	-38.64	peak			

# **RESULT: PASS**

Note: The other modes radiation emission have enough 20dB margin.

Factor=Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

Page 31 of 49

# 9. 6DB BANDWIDTH

# 9.1. TEST EQUIPMENT LIST AND DETAILS

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/17/2013	07/16/2014
RECEIVER ANTENNA	ETS	2175	57337	07/17/2013	07/16/2014

# 9.2. TEST PROCEDURE

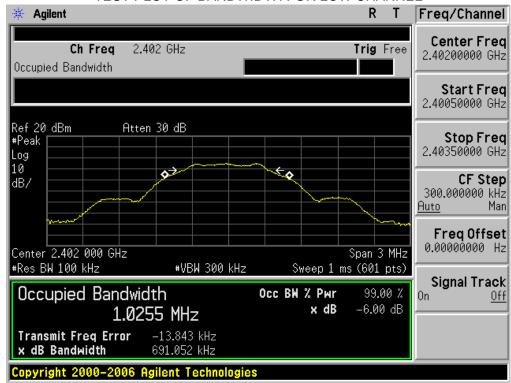
- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW≥RBW.
- 4. Set SPA Trace 1 Max hold, then View.

# 9.3. SUMMARY OF TEST RESULTS/PLOTS

Channel	6dB Bandwidth (KHz)	Minimum Limit (KHz)	Pass/Fail
Low	691.052		Pass
Middle	698.679	500KHz	Pass
High	694.413		Pass

Page 32 of 49

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

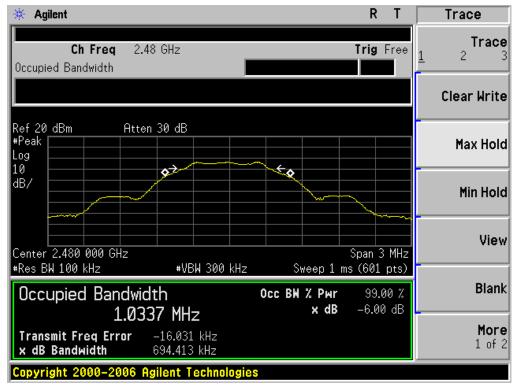


#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



Page 33 of 49

# TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



Page 34 of 49

## 10. CONDUCTED OUTPUT POWER

## 10.1. MEASUREMENT PROCEDURE

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 3. Set the EUT Work on the top, middle and the bottom operation frequency individually.
- 4. Use the following spectrum analyzer settings:

Set the RBW = 1 MHz

Set the VBW ≥ 3 RBW

Set the span  $\geq$  1.5 x DTS bandwidth

Detector = peak

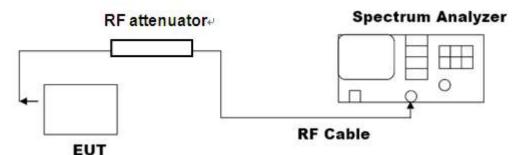
Sweep time = auto couple

Trace mode = max hold

- 5. Allow the trace to stabilize. Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges.
- 6. Record the result form the Spectrum Analyzer.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

# 10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

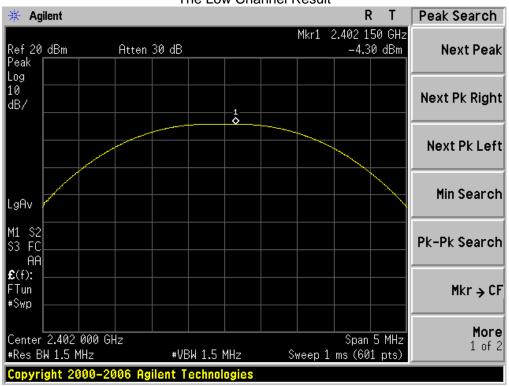


#### 10.3. LIMITS AND MEASUREMENT RESULT

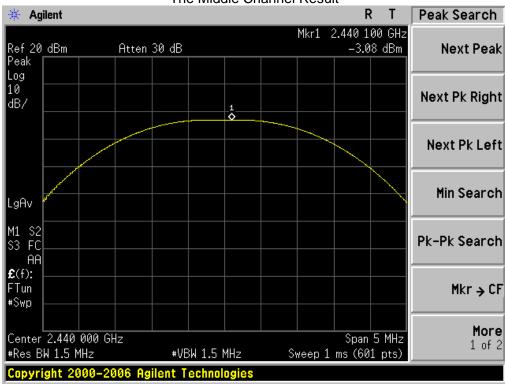
Channel	Peak Power (dBm)	Applicable Limits (dBm)	Pass/Fail	
Low Channel	-4.30	20	Pass	
Middle Channel	-3.08	20	Pass	
High Channel	-2.67	20	Pass	

Page 35 of 49

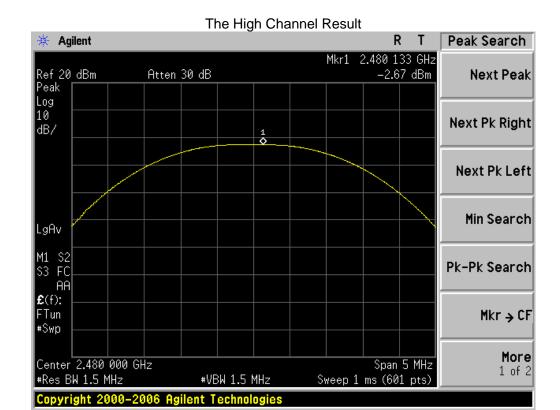
The Low Channel Result



The Middle Channel Result



Page 36 of 49



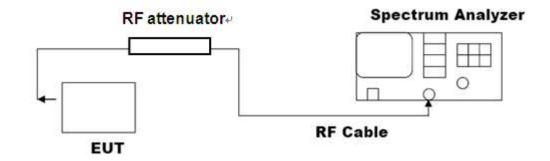
Page 37 of 49

# 11. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY 11.1 MEASUREMENT PROCEDURE

- (1). The EUT was placed on a turn table which is 0.8m above ground plane.
- (2). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (3). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (4). Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

### 11.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



#### 11.3 MEASUREMENT EQUIPMENT USED

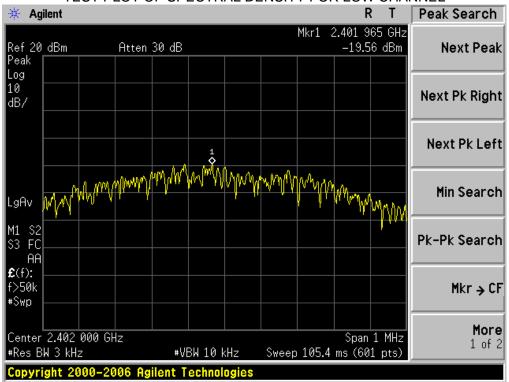
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due	
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/17/2013	07/16/2014	
RECEIVER ANTENNA	ETS	2175	57337	07/17/2013	07/16/2014	

#### 11.4 LIMITS AND MEASUREMENT RESULT

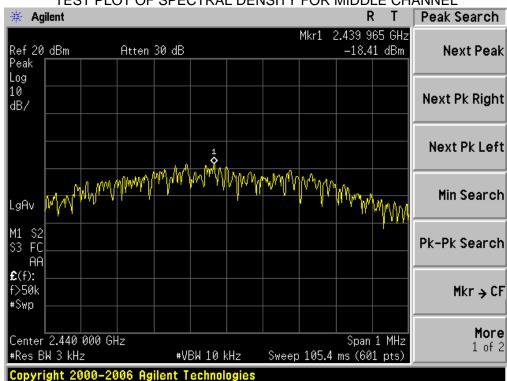
Channel No.	PSD (dBm)	Limit (dBm)	Result		
Low Channel	-19.56	8	Pass		
Middle Channel	-18.41	8	Pass		
High Channel	-17.99	8	Pass		

Page 38 of 49

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

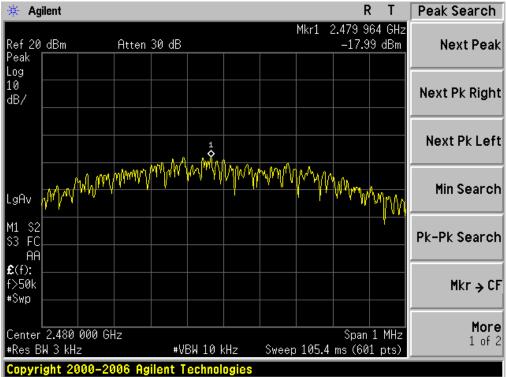


#### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



Page 39 of 49

#### TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



Page 40 of 49

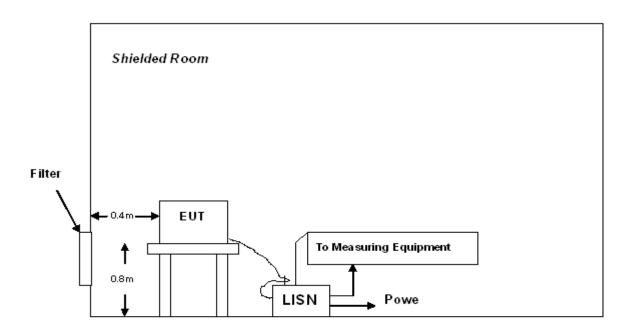
### 12. FCC LINE CONDUCTED EMISSION TEST

### **12.1 LIMITS**

Fraguency	Maximum RF Line Voltage							
Frequency	Q.P.( dBuV)	Average( dBuV)						
150kHz~500kHz	66-56	56-46						
500kHz~5MHz	56	46						
5MHz~30MHz	60	50						

<sup>\*\*</sup>Note: 1. The lower limit shall apply at the transition frequency.

## **12.2 TEST SETUP**



A: Powered through filter

<sup>2.</sup> The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

Page 41 of 49

#### 12.3 PRELIMINARY PROCEDURE

- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) All support equipments received AC120V/60Hz power from a LISN, if any.
- 5) The EUT received power by adapter which received power by a LISN.
- 6) The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test. Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

#### **12.4 FINAL TEST PROCEDURE**

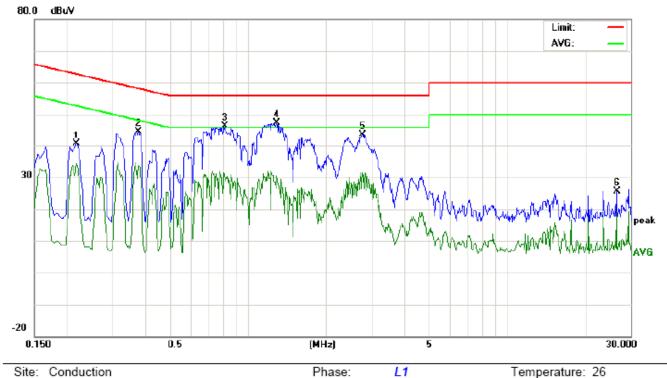
- 10) EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 11) 2) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 12) 3) The test data of the worst case condition(s) was reported on the Summary Data page.

Humidity: 60 %

Page 42 of 49

### 12.5 TEST RESULT OF POWER LINE

### Line Conducted Emission Test Line 1-L



Site: Conduction Phase: L1
Limit: FCC Class B Conduction(QP) Power:

EUT: tablet pc M/N: PC7080ME

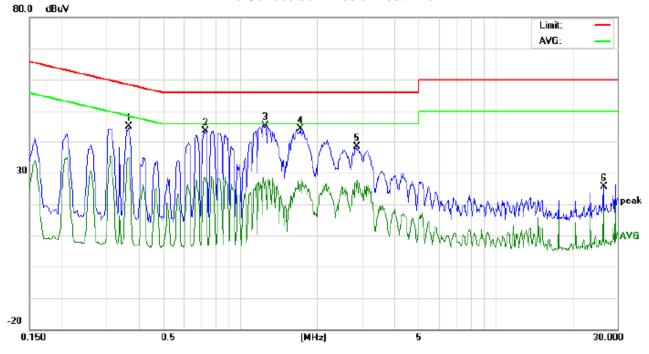
Mode: Normal Operating(BT)

Note:

No.	No. Freq.		Reading_Level (dBuV)		Correct Measurement Factor (dBuV)		Limit (dBuV)		Margin (dB)		P/F	Comment		
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2180	30.39		24.15	10.23	40.62		34.38	62.89	52.89	-22.27	-18.51	Р	
2	0.3780	34.22		23.19	10.32	44.54		33.51	58.32	48.32	-13.78	-14.81	Р	
3	0.8139	36.03		19.08	10.30	46.33		29.38	56.00	46.00	-9.67	-16.62	Р	
4	1.2900	37.11		20.09	10.38	47.49		30.47	56.00	46.00	-8.51	-15.53	Р	
5	2.7780	33.12		20.86	10.50	43.62		31.36	56.00	46.00	-12.38	-14.64	Р	
6	26.5180	15.49		8.80	10.11	25.60		18.91	60.00	50.00	-34.40	-31.09	Р	

Page 43 of 49





Site: Conduction Phase: N Temperature: 26
Limit: FCC Class B Conduction(QP) Power: Humidity: 60 %

EUT: tablet pc M/N: PC7080ME

Mode: Normal Operating(BT)

Note:

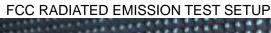
No.	Freq.		ding_L (dBuV)		Correct Factor		asuren (dBuV)		1	nit uV)		Margin (dB)		Comment
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.3660	34.72		24.64	10.32	45.04		34.96	58.59	48.59	-13.55	-13.63	Р	
2	0.7340	33.39		17.68	10.33	43.72		28.01	56.00	46.00	-12.28	-17.99	Р	
3	1.2540	34.95		17.05	10.37	45.32		27.42	56.00	46.00	-10.68	-18.58	Р	
4	1.7220	34.04		15.07	10.31	44.35		25.38	56.00	46.00	-11.65	-20.62	Р	
5	2.8820	27.87		16.70	10.52	38.39		27.22	56.00	46.00	-17.61	-18.78	Р	
6	26.5140	15.55		8.61	10.11	25.66		18.72	60.00	50.00	-34.34	-31.28	Р	

Page 44 of 49

## **APPENDIX A: PHOTOGRAPHS OF TEST SETUP**

FCC LINE CONDUCTED EMISSION TEST SETUP







Page 45 of 49

## **APPENDIX B: PHOTOGRAPHS OF EUT**

TOTAL VIEW OF EUT



TOP VIEW OF EUT



Page 46 of 49









Page 47 of 49





LEFT VIEW OF EUT



Page 48 of 49



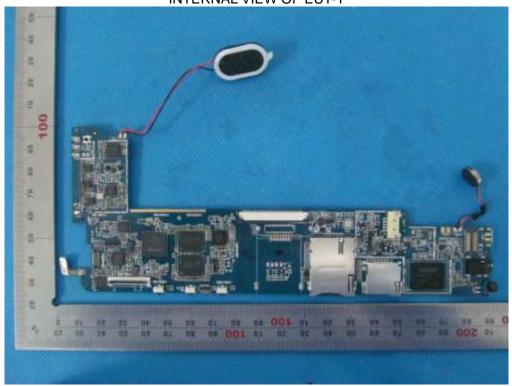


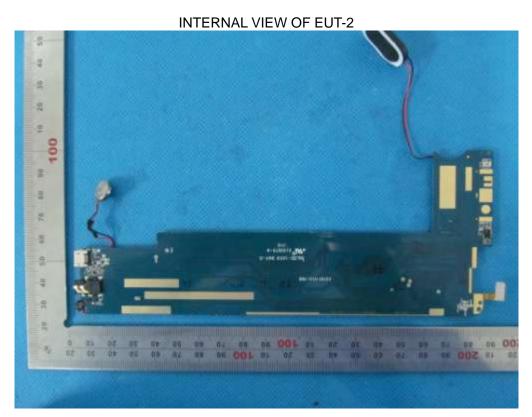
OPEN VIEW OF EUT



Page 49 of 49







----END OF REPORT----