

Page 1 of 75

# **FCC Test Report**

# Report No.: AGC01173140502FE04

FCC ID	:	2AASJSTP-103
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Tablet PC
BRAND NAME	:	DAEWOO
MODEL NAME	:	STP-103
CLIENT	:	Daewoo International Corp.
DATE OF ISSUE	:	June 05, 2014
STANDARD(S)	:	FCC Part 15 Rules
<b>REPORT VERSION</b>	:	V1.0



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# **Report Revise Record**

<b>Report Version</b>	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	June 05, 2014	Valid	Original Report

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Applicant	Daewoo International Corp.			
Address	84-11, Namdaemunno 5-ga, Jung-gu, Seoul 100-753 Korea			
Manufacturer	SGMC Co., Ltd.			
Address	5F Media Tower, 108-9 Sungsan 1-dong, Mapo-gu, Seoul 121-844 Korea			
Product Designation	Tablet PC			
Brand Name	DAEWOO			
Test Model	STP-103			
Series Model	N/A			
Difference description	N/A			
Date of test	May 28, 2014 to June 04, 2014			
Deviation	None			
Condition of Test Sample	Normal			
Report Template	AGCRT-US-BGN/RF (2013-03-01)			

# 1. VERIFICATION OF CONFORMITY

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

Matt Zhang Matt Zhang June 05, 2014

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Kidd Yang June 05, 2014

Authorized By

Solger 2hang

Solger Zhang June 05, 2014

# 2. GENERAL INFORMATION

# 2.1. PRODUCT DESCRIPTION

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

A major technical description of EOT is described as following				
2.412 GHz~2.462GHz				
IEEE 802.11b:9.74dBm; IEEE 802.11g:6.64dBm;				
IEEE 802.11n(20):6.78dBm; IEEE 802.11n(40):4.14dBm				
DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)				
11				
ZX-A10-V1.0-131102				
N/A				
Integrated Antenna				
1.0dBi				
DC3.7V by Built-in Li-ion Battery				

A major technical description of EUT is described as following

#### 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency		
	1	2412 MHZ		
	2	2417 MHZ		
	3	2422 MHZ		
	4	2427 MHZ		
	5	2432 MHZ 2437 MHZ		
2400~2483.5MHZ	6			
	7	2442 MHZ		
	8	2447 MHZ		
	9	2452 MHZ		
	10	2457 MHZ		
	11	2462 MHZ		

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11 For 40MHZ bandwidth system use Channel 3 to Channel 9

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NCBPS NDBPS			ata Mbps) nsGI
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

#### 2.3. IEEE 802.11N MODULATION SCHEME

Symbol	Explanation	
NSS	Number of spatial streams	
R	Code rate	
NBPSC	Number of coded bits per single carrier	
NCBPS	S Number of coded bits per symbol	
NDBPS	Number of data bits per symbol	
GI	Guard interval	

## 2.4. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AASJSTP-103** filing to comply with the FCC Part 15 requirements.

#### 2.5. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters. Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules.

#### 2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

#### 2.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

# **3. MEASUREMENT UNCERTAINTY**

Conducted measurement: +/- 2.75dB Radiated measurement: +/- 3.2dB

# 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION					
1	Low channel TX					
2	Middle channel TX					
3	High channel TX					
4	Normal operating					
Note:	Note:					
Transm	Transmit by 802.11b with Date rate (1/2/5.5/11)					
Transm	Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54)					
Transm	Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)					

Transmit by 802.11n (40MHz) with Date rate

(13.5/27/40.5/54/81/108/121.5/135)

#### Note:

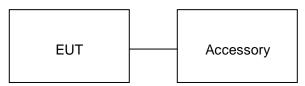
1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency individually.

- 2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
- 3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

# **5. SYSTEM TEST CONFIGURATION**

## **5.1. CONFIGURATION OF EUT SYSTEM**

# Configure:



#### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Tablet PC	STP-103	2AASJSTP-103	EUT
2	Adapter	STP-103	DC5V/2A	Accessory
3	USB Cable	N/A	N/A	Accessory
4	Laptop	Dell	INSPIRON	A.E

Note: All the accessories have been used during the test in conduction emission test.

## 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Peak Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

Note: The EUT received power from DC3.7V lithium battery.

# 6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd		
Location	2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China		
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003.		

#### ALL TEST EQUIPMENT LIST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Power Probe	R&S	NRP-Z23	100323	07/17/2013	07/16/2014
RF attenuator	N/A	RFA20db	68	N/A	N/A
Spectrum Analyzer	Agilent	E4440A	US41421290	07/17/2013	07/16/2014
Amplifier	EM	EM30180	0607030	02/27/2014	02/26/2015
Horn Antenna	EM	EM-AH-10180	67	04/19/2014	04/18/2015
Horn Antenna	A.H. Systems Inc.	SAS-574		07/17/2013	07/16/2014
EMI Test Receiver	Rohde & Schwarz	ESCI	100694	07/17/2013	07/16/2014
Biological Antenna	A.H. Systems Inc.	SAS-521-4	26	06/07/2013	06/06/2014
Loop Antenna	A.H.	SAS-526B	264	07/14/2013	07/13/2014
LISN	R&S	ESH3-Z5	8389791009	07/17/2013	07/16/2014

# 7. PEAK OUTPUT POWER

## 7.1. MEASUREMENT PROCEDURE

#### For peak power test:

- 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  $\geq$  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.

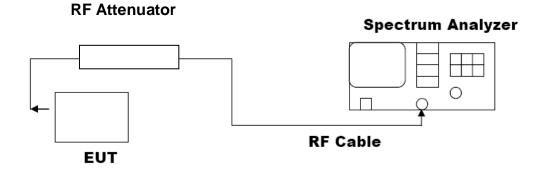
For average power test:

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Connect EUT RF output port to power probe through an RF attenuator.
- 3. Connect the power probe to the PC.
- 4. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 5. Record the maximum power from the software.
- 6. The maximum peak power shall be less 1 Watt (30dBm).

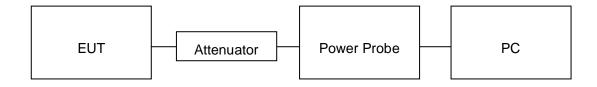
Note : The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

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

## PEAK POWER TEST SETUP



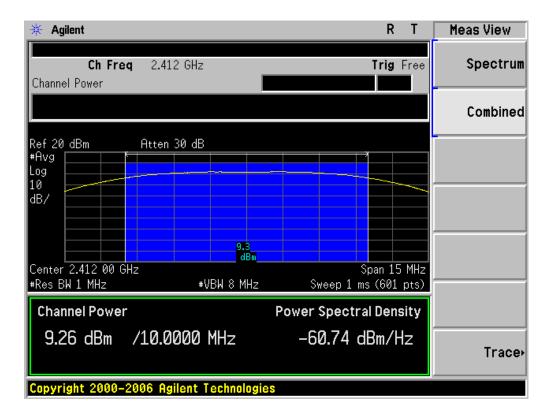
#### AVERAGE POWER SETUP

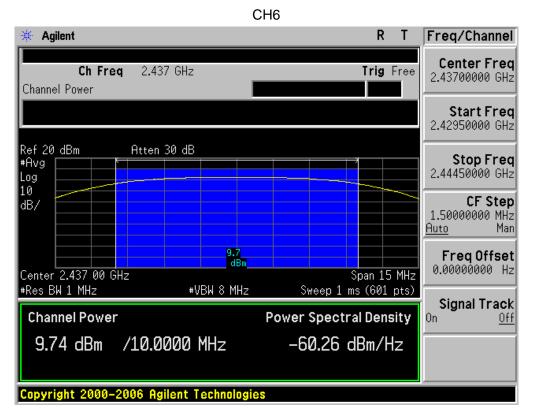


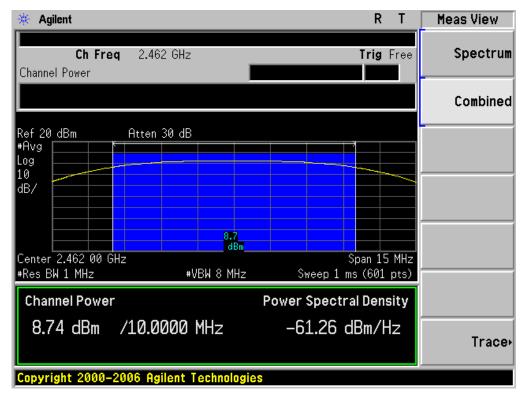
#### 7.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	PEAK POWER
TEST MODE	802.11b with data rate 1

LIMITS AND MEASUREMENT RESULT					
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail	
2.412	7.28	9.26	30	Pass	
2.437	7.76	9.74	30	Pass	
2.462	6.76	8.74	30	Pass	

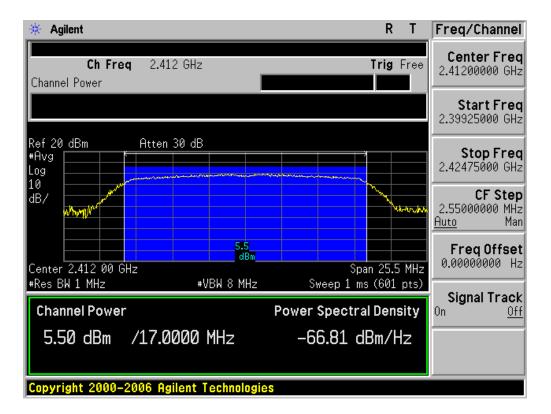


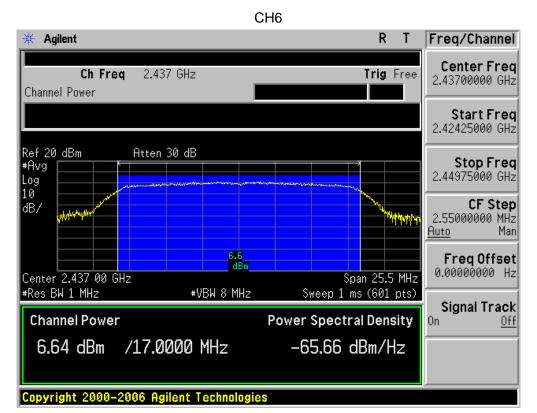


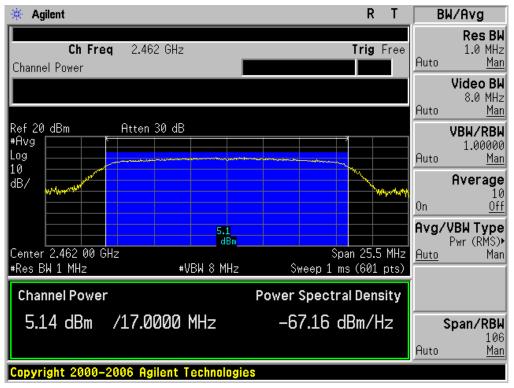


TEST ITEM	PEAK POWER
TEST MODE	802.11g with data rate 6

LIMITS AND MEASUREMENT RESULT				
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	3.52	5.5	30	Pass
2.437	4.66	6.64	30	Pass
2.462	3.16	5.14	30	Pass

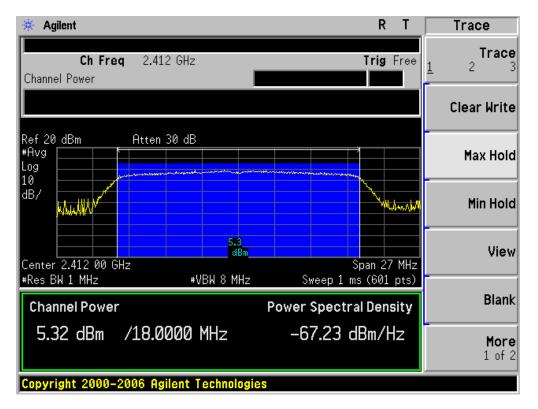


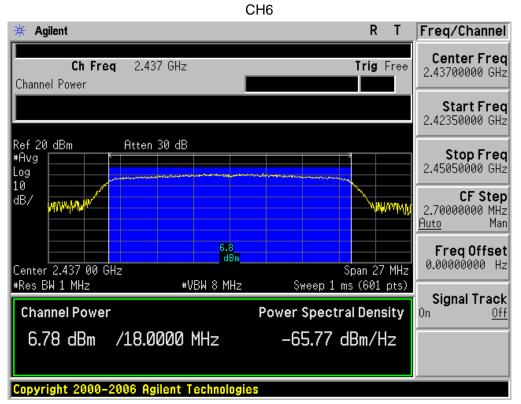


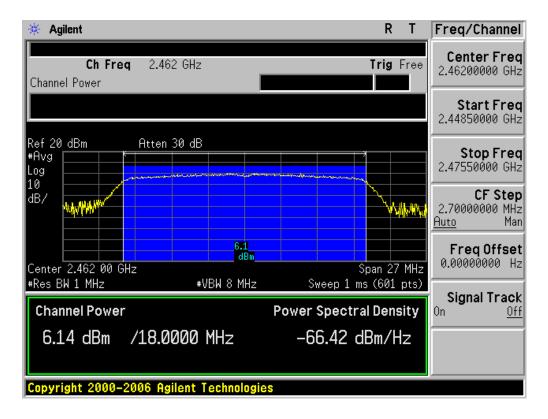


TEST ITEM	PEAK POWER
TEST MODE	802.11n 20 with data rate 6.5

LIMITS AND MEASUREMENT RESULT				
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	3.34	5.32	30	Pass
2.437	4.8	6.78	30	Pass
2.462	4.16	6.14	30	Pass

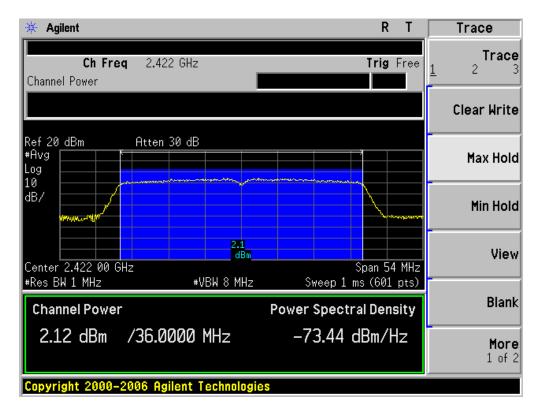


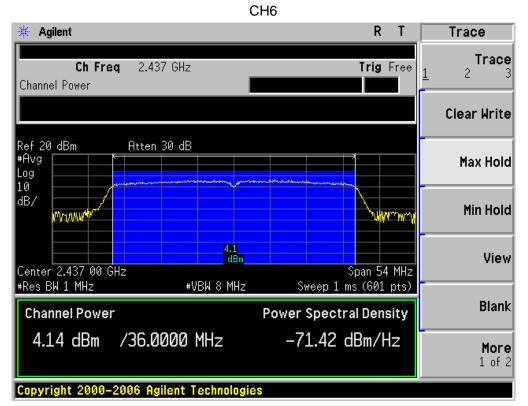


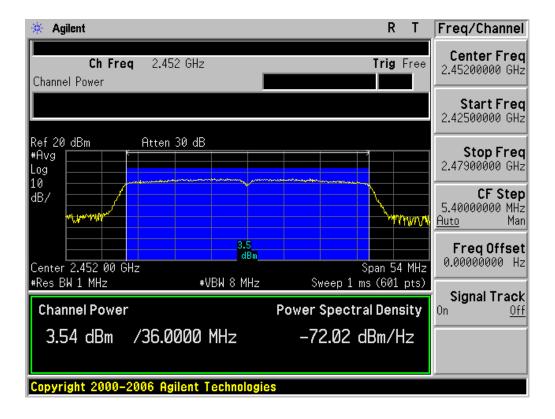


TEST ITEM	PEAK POWER
TEST MODE	802.11n 40 with data rate 13.5

LIMITS AND MEASUREMENT RESULT				
Frequency (GHz)	Average Power (dBm)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.422	0.14	2.12	30	Pass
2.437	2.16	4.14	30	Pass
2.452	1.56	3.54	30	Pass







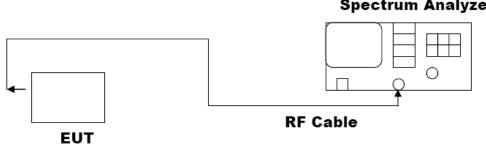
# 8. 6DB BANDWIDTH

#### **8.1. MEASUREMENT 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.
- 4. Set SPA Centre Frequency = Operation Frequency, RBW = 100 KHz, VBW ≥ RBW.
- 5. 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.

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



#### Spectrum Analyzer

# 8.3. LIMITS AND MEASUREMENT RESULTS

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11b with data rate 11

LIMITS AND MEASUREMENT RESULT				
Appliachia Limita	Applicable Limits			
Applicable Limits	Test Data (MHz) Criteria			
	Low Channel	9.134	PASS	
>500KHZ	Middle Channel	9.595	PASS	
	High Channel	9.600	PASS	

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11g with data rate 54

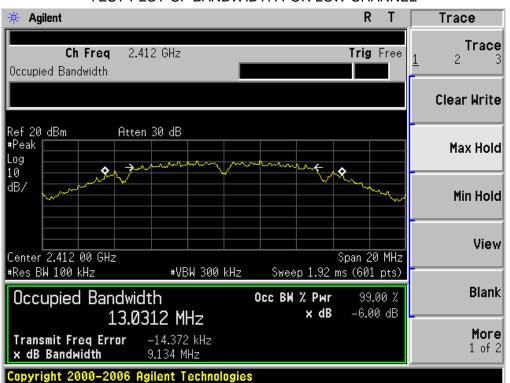
LIMITS AND MEASUREMENT RESULT								
Annlinghle Limite	Applicable Limits							
Applicable Limits	Test Da	Criteria						
	Low Channel	16.320	PASS					
>500KHZ	Middle Channel	15.117	PASS					
	High Channel	15.411	PASS					

TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11n 20 with data rate 65

LIMITS AND MEASUREMENT RESULT									
Annlinghla Limita	Applicable Limits								
Applicable Limits	Test Dat	Criteria							
	Low Channel	16.017	PASS						
>500KHZ	Middle Channel	17.144	PASS						
	High Channel	16.879	PASS						

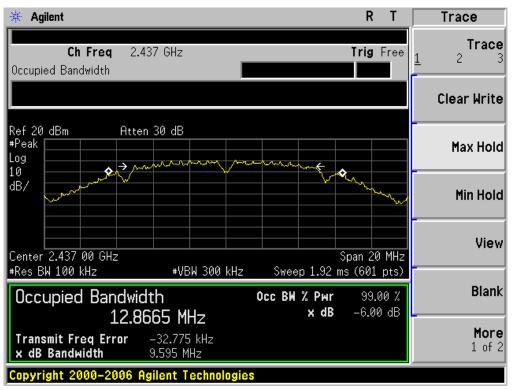
TEST ITEM	6DB BANDWIDTH
TEST MODE	802.11n 40 with data rate 135

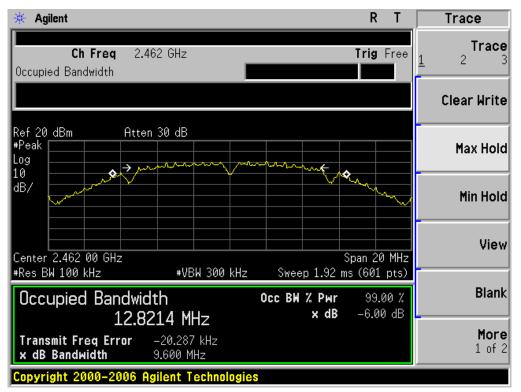
LIMITS AND MEASUREMENT RESULT									
Annlinghle Limite	Applicable Limits								
Applicable Limits	Test Dat	Criteria							
	Low Channel	35.120	PASS						
>500KHZ	Middle Channel	35.154	PASS						
	High Channel	35.196	PASS						



#### 802.11b TEST RESULT TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

## TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

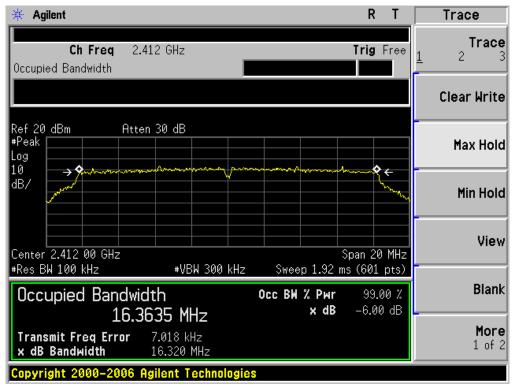


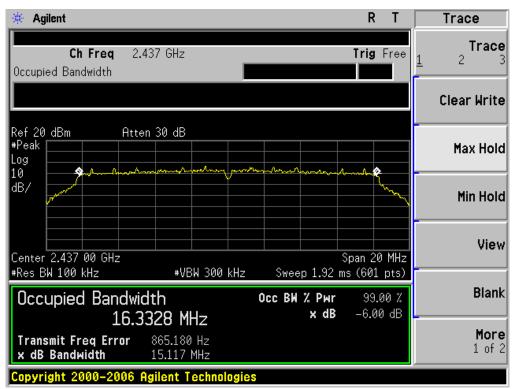


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

## 802.11g TEST RESULT

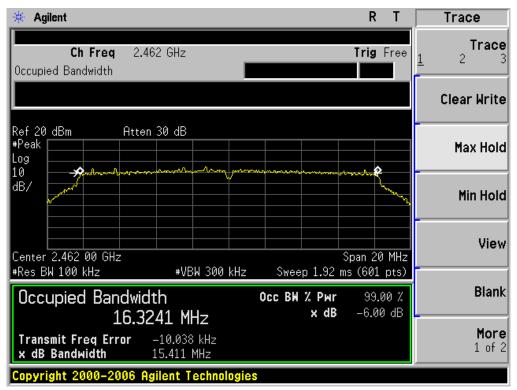
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

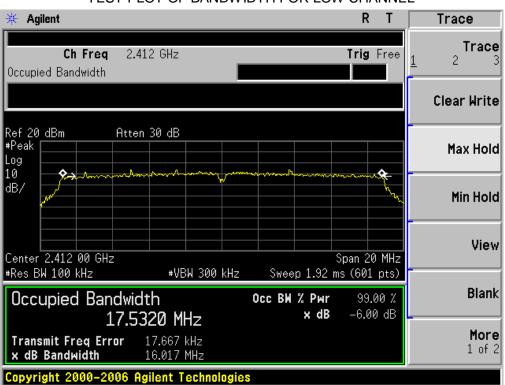




TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

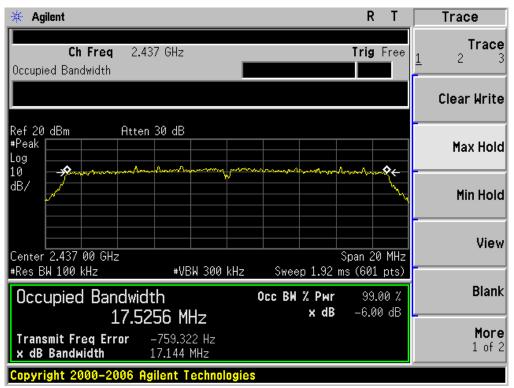


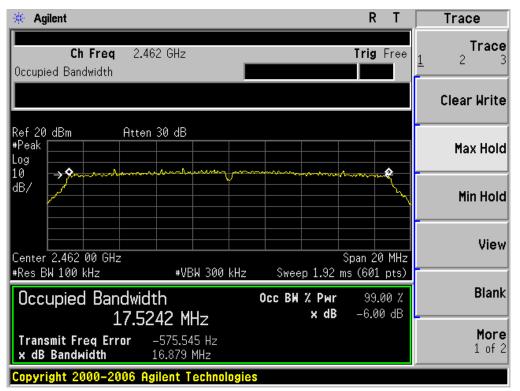


#### 802.11n (20) TEST RESULT

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

## TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

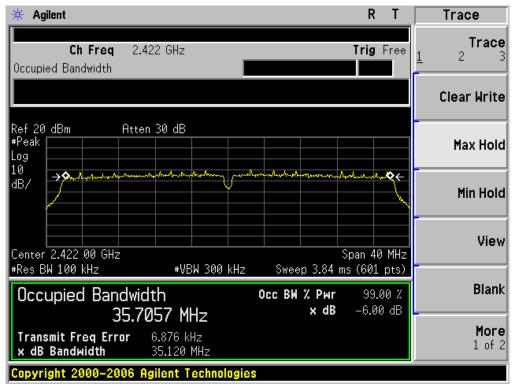


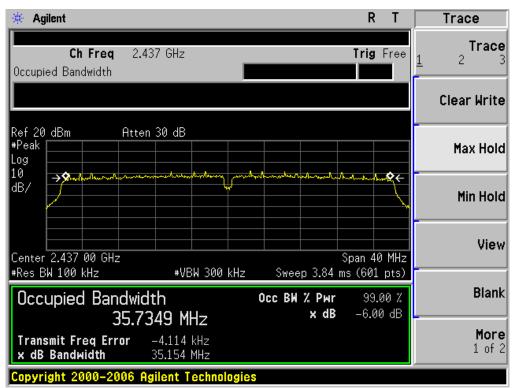


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

## 802.11n(40) TEST RESULT

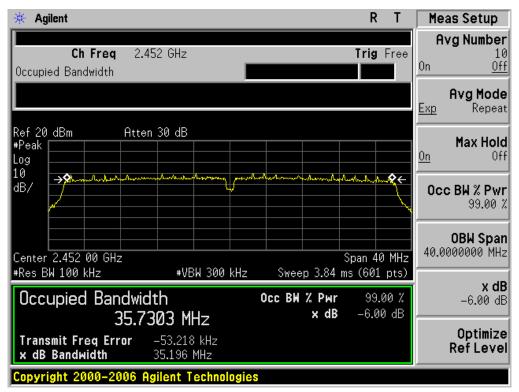
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



# 9. CONDUCTED SPURIOUS EMISSION

#### 9.1. 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. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW > RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW > RBW) are conform to the requirement.

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

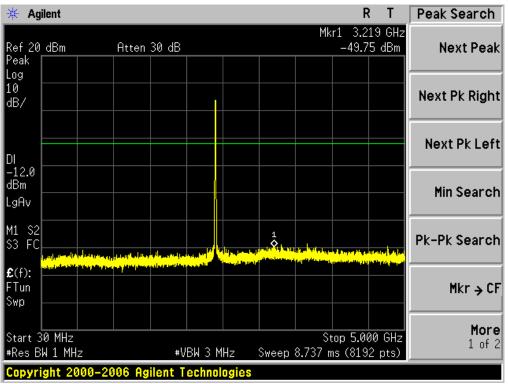
The same as described in section 8.2.

#### 9.3. MEASUREMENT EQUIPMENT USED

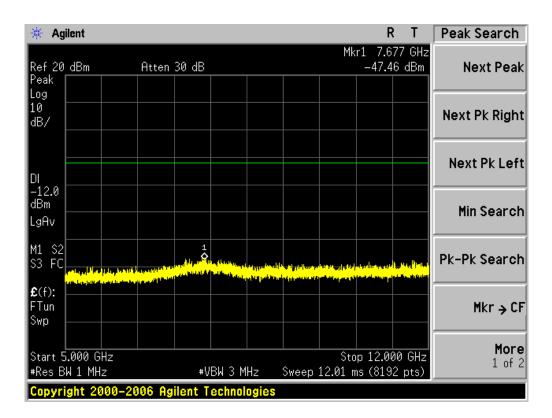
The same as described in section 6.

#### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT									
Annlinghia Limita	Measurement Re	sult							
Applicable Limits	Test Data	Criteria							
In any 100 KHz Bandwidth Outside the	At least -20dBc than the limit								
frequency band in which the spread spectrum	Specified on the BOTTOM	PASS							
intentional radiator is operating, the radio frequency	Channel								
power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))	At least -20dBc than the limit Specified on the TOP Channel	PASS							

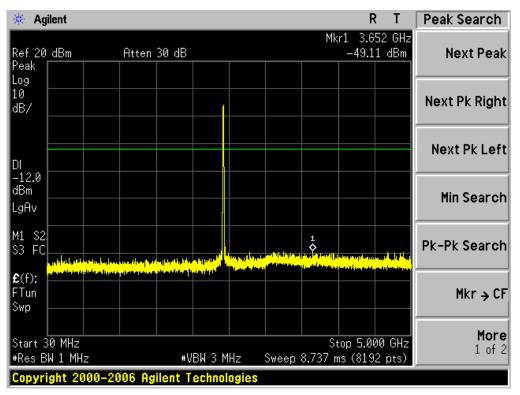


## TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 802.11b FOR MODULATION IN LOW CHANNEL



🔆 Agi	ilent								R	T	Peak Search
Ref20 Peak	dBm		Atten	30 dB				Mkr:	1 17.0 -46.2	60 GHz 4 dBm	
Log 10 dB/											Next Pk Right
DI											Next Pk Left
-12.0 dBm LgAv											Min Search
		the sector of the sector		la Bildela a Lesses di Tanan (Japana) - A	da da da dida a Mana antara di		, beddin Sylin Alex y Despela		a des policios plat <sup>19</sup> marca policio de la		Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 1 #Res Bl				#V	вы з м	Hz	Sweep		p 19.00 ns (819)		More 1 of 2
Copyri	ght 20	00-20	)06 Ag	ilent T	echnol	ogies					

🔆 Agi	ilent								F	2 T	Peak Search
Ref 20 Peak	dBm		Atten	30 dB				Mkr		00 GHz 1 dBm	
Log 10 dB/											Next Pk Right
DI											Next Pk Left
-12.0 dBm LgAv											Min Search
M1 S2 S3 FC	dad dadka a				1 Alexandria Alexandria Alexandria Alexandria Alexandria	dia perindra il da Nacionalista di Statu		dia da la da base	a da la paga di ta bana di Panan nga ta baha di		Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 1 #Res Bl				#\	ви з м	  Hz	Sweep	Sto 15.29 n		00 GHz 2 pts)	More 1 of 2
Copyri	ght 20	000-2	006 As	ilent T	echnol	ogies					

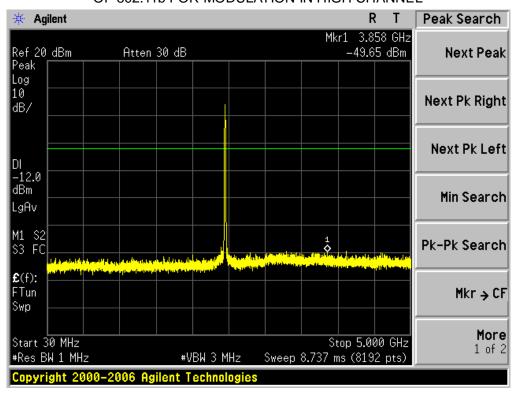


#### TEST PLOT OF OUT OF BAND EMISSIONS OF 802.11b FOR MODULATION IN MIDDLE CHANNEL

🔆 Agile	ent							F	₹ T	Peak Search
Ref 20 d Peak	dBm	Atten	30 dB				Mk		19 GHz 1 dBm	Next Peak
Log 10 dB/										Next Pk Right
DI -12.0										Next Pk Left
dBm LgAv										Min Search
M1 S2 S3 FC	n ha sa ka na sa ka ka sa sa ka ka sa sa na ka pana sa ka pangana sa na ka sa	) i i generali se si dati Processi se si dati se s			1 ¢	ata talapat kan Kana kana kata				Pk-Pk Search
£(f): FTun Swp										Mkr → CF
Start 5.0 #Res BW	000 GHz 1 MHz		#V	вы з м	Hz	Sweep	Sto 12.01 m		00 GHz 2 pts)	More 1 of 2
Copyrig	ht 2000-20	006 Agi	lent T	echnol	ogies					

Att	en 30 dB				Mkr1	15.9 -45.9	71 GHz 9 dBm	Next Peak Next Pk Right
								Next Pk Right
								Next Pk Left
								Min Search
				totopalati odba Pris Silva odba	un an	lini sindandi Sanaya sana		Pk-Pk Search
								Mkr → CF
Hz Z		/BW 3 <u>M</u>	Hz	Sweep				<b>More</b> 1 of 2
SI SI	Hz	Hz #	n, <sub>alter</sub> sign der Graden in der einer einer Hz	Hz #VBW 3 MHz	Hz #VBW 3 MHz Sweep	Hz Stop #VBW 3 MHz Sweep 14.2 m	Hz Stop 19.00 #VBW 3 MHz Sweep 14.2 ms (8192	#VBW 3 MHz Sweep 14.2 ms (8192 pts)

🔆 Agi	ilent								R	Т	Peak Search
Ref 20 Peak	dBm		Atten	30 dB				Mkr		66 GHz 6 dBm	Next Peak
Log 10 dB/											Next Pk Right
DI											Next Pk Left
-12.0 dBm LgAv											Min Search
M1 S2 S3 FC			a disebut dan <mark>Antonia dan sebut dan s</mark>		aldan Iranaka Jumi anakata	a la la faca da la seconda da seco Presenta da seconda da	ut all sains	a da a cara da seda A cara da seda da s	historen herde Anto-productor		Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 1 #Res Bl				#\	ВИЗМ	Hz	Sweep		p 25.00 ns (819		<b>More</b> 1 of 2
Copyri	ght 20	00-20	006 Ag	ilent T	echnol						



# TEST PLOT OF OUT OF BAND EMISSIONS OF 802.11b FOR MODULATION IN HIGH CHANNEL

🔆 Agilent		R T Peak S	earch
Peak 🛛 👘	Mkr1		(t Peak
Log 10 dB/		Next P	k Right
DI -12.0		Next	Pk Left
dBm		Min	Search
M1 S2 S3 FC		Pk-Pk	Search
£(f): FTun Swp		M	kr → CF
Start 5.000 GHz #Res BW 1 MHz	Stop #VBW 3 MHz Sweep 12.01 ms 6 Agilent Technologies	12.000 GHz (8192 pts)	More 1 of 2

🔆 Agi	ilent								R	Т	Peak Search
Ref 20 Peak	dBm		Atten	30 dB				Mkri	1 16.41 -45.7	19 GHz 3 dBm	Next Peak
Log 10 dB/											Next Pk Right
DI											Next Pk Left
-12.0 dBm LgAv											Min Search
M1 S2 S3 FC		la tana ang alla Ng panglapan		a da ang san ang Tang san ang				a benda blada en d Telefa ( bet s <sub>eren</sub> er		hi an tha thirth an Ionn an an an Air	Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 1 #Res Bl				#\	ви з м	Hz	Sweep	Sto 14.2 m	p 19.00 is (819)		<b>More</b> 1 of 2
Copyright 2000–2006 Agilent Technologies											

🔆 Ag	ilent							F	х т	Peak Search
Ref 20 Peak	dBm	Atten	30 dB				Mkr		611 GHz 19 dBm	Next Peak
Log 10 dB/										Next Pk Right
DI -12.0										Next Pk Left
dBm LgAv									1	Min Search
				و مرا المربية المربية المربية الم محمد المربية و المربية المربية		halootikaalihku Yy		de the participant market provide the pro-		Pk-Pk Search
£(f): F⊤un Swp										Mkr → CF
	9.000 GHz W 1 MHz		#V	ВМЗМ	IHz	Sweep			00 GHz 2 pts)	More 1 of 2
Copyri	Copyright 2000–2006 Agilent Technologies									

# **10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY**

### **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, the middle and the bottom operation frequency individually.
- (4). Set SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 10.2 was used in this testing.

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

Refer To Section 8.2.

### **10.3 MEASUREMENT EQUIPMENT USED**

Refer To Section 6.

### **10.4 LIMITS AND MEASUREMENT RESULT**

TEST ITEM	POWER PECTRAL DENSITY	
TEST MODE	802.11b with data rate 1	

Channel No.	PSD (dBm)	Limit (dBm)	Result
Low Channel	-13.32	8	Pass
Middle Channel	-12.81	8	Pass
High Channel	-13.31	8	Pass

TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11g with data rate 6

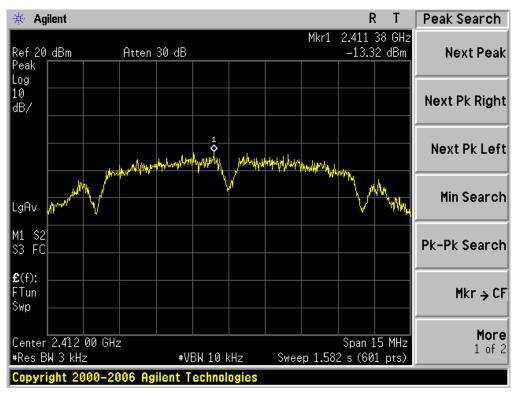
Channel No.	PSD (dBm)	Limit (dBm)	Result
Low Channel	-18.77	8	Pass
Middle Channel	-18.55	8	Pass
High Channel	-19.08	8	Pass

TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11n 20 with data rate 6.5

Channel No.	PSD (dBm)	Limit (dBm)	Result
Low Channel	-20.5	8	Pass
Middle Channel	-19.82	8	Pass
High Channel	-19.36	8	Pass

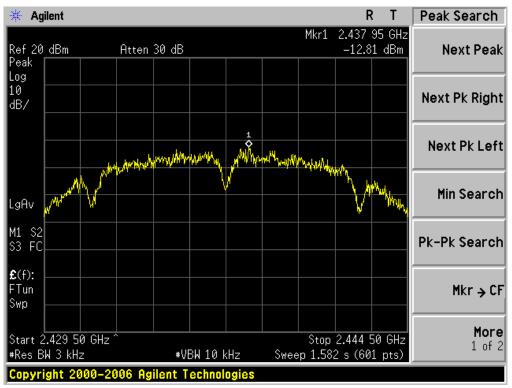
TEST ITEM	POWER PECTRAL DENSITY
TEST MODE	802.11n 40 with data rate 13.5

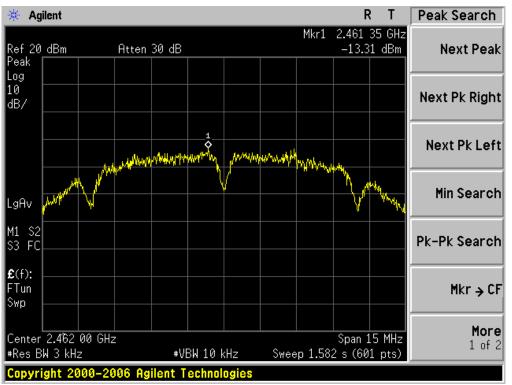
Channel No.	PSD (dBm)	Limit (dBm)	Result
Low Channel	-25.88	8	Pass
Middle Channel	-23.33	8	Pass
High Channel	-25.09	8	Pass



### 802.11b TEST RESULT TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

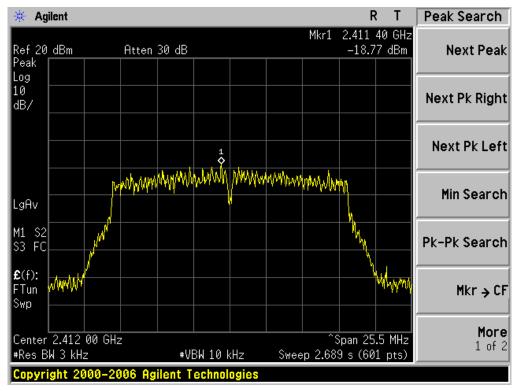


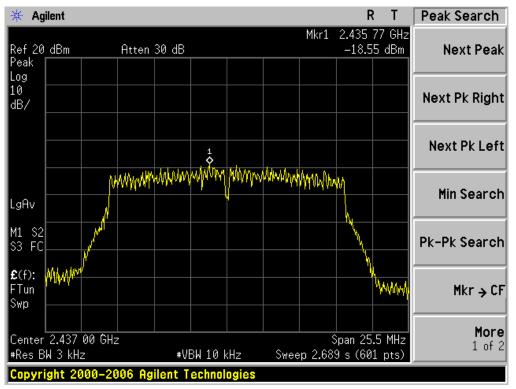


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

### 802.11g TEST RESULT

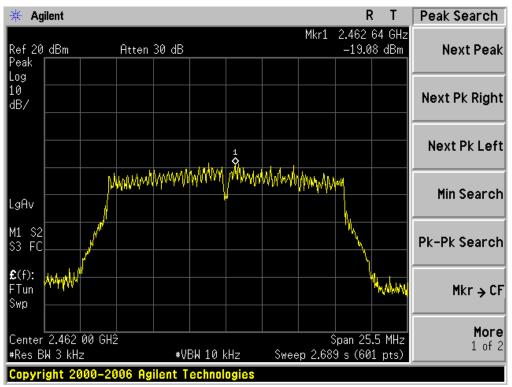
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

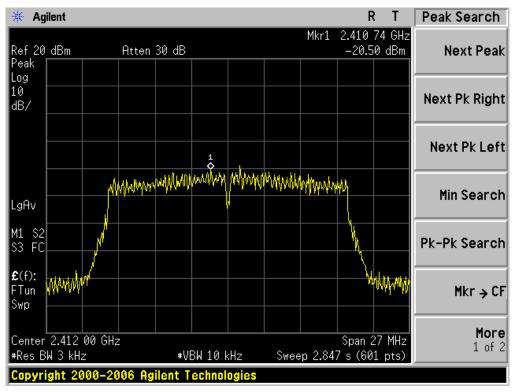




### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

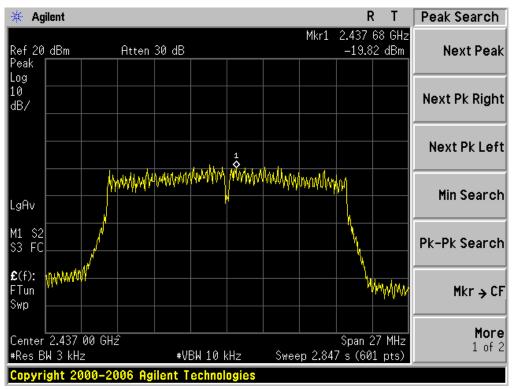
#### TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

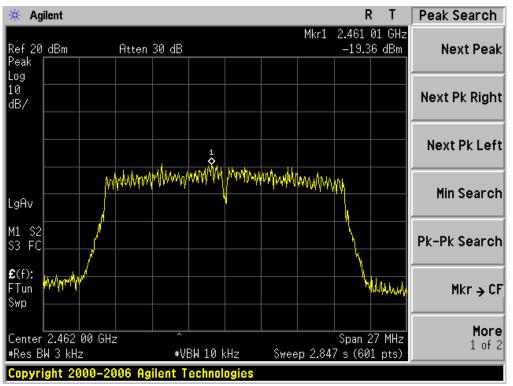




### 802.11n 20 TEST RESULT TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

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

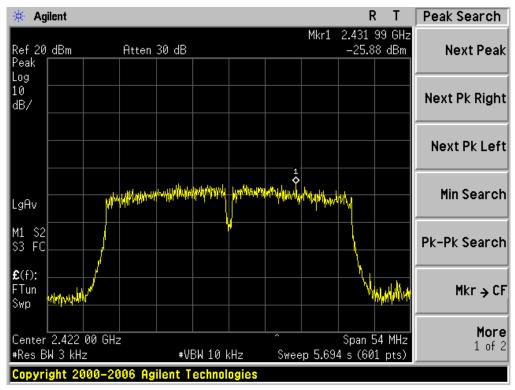


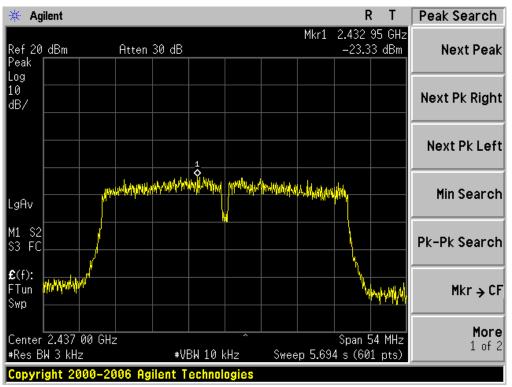


TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

### 802.11n 40 TEST RESULT

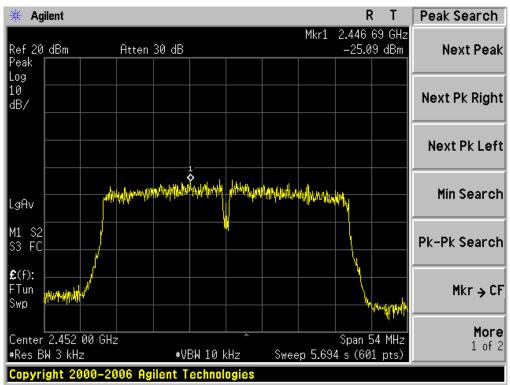
TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL





### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



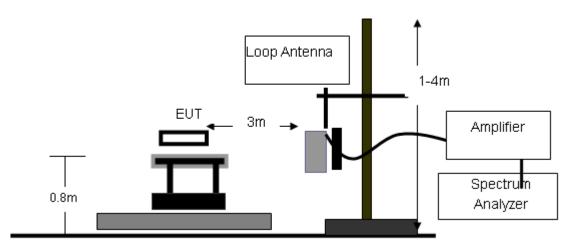
## **11. RADIATED EMISSION**

### **11.1. MEASUREMENT PROCEDURE**

- 1. 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.
- 6. 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.

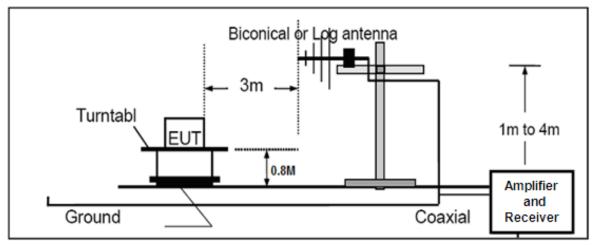
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

### 11.2. TEST SETUP

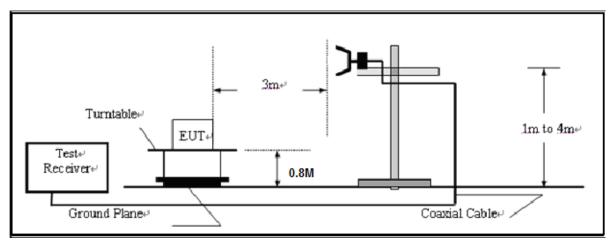


### RADIATED EMISSION TEST SETUP BELOW 30MHz

### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



### RADIATED EMISSION TEST SETUP ABOVE 1000MHz



### 11.3. LIMITS AND MEASUREMENT RESULT

15.209(a) 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.

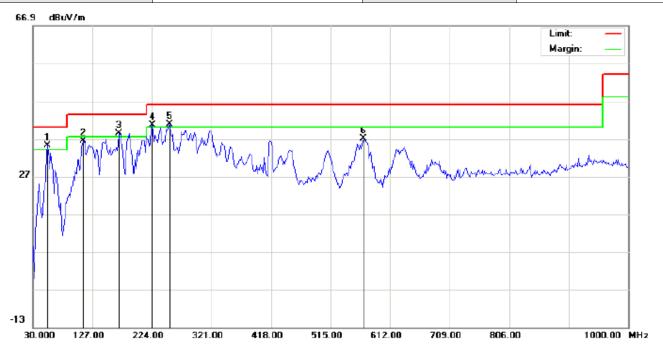
### 11.4. TEST RESULT

### **RADIATED EMISSION BELOW 30MHZ**

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

### **RADIATED EMISSION BELOW 1GHZ**

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal



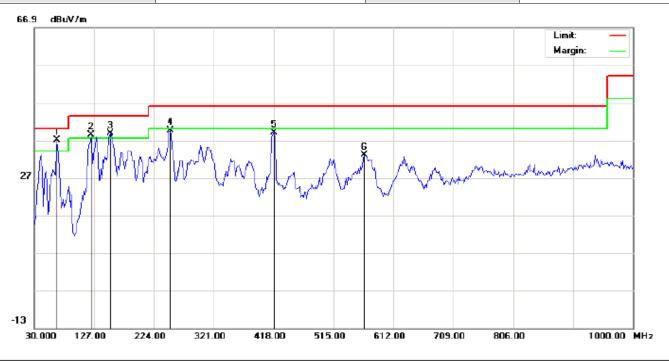
Site: site #1 Limit: FCC Class B 3M Radiation EUT: Tablet PC M/N: STP-103 Mode: Low Channel TX Note: Polarization: *Horizontal* Power: AC 120V/60Hz Temperature: 26 Humidity: 60 %

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	*	54.2500	24.03	11.20	35.23	40.00	-4.77	peak			
2		112.4500	25.05	11.34	36.39	43.50	-7.11	peak			
3	İ	170.6500	25.37	13.06	38.43	43.50	-5.07	peak			
4	İ	224.0000	27.68	12.91	40.59	46.00	-5.41	peak			
5	İ	253.1000	26.88	13.99	40.87	46.00	-5.13	peak			
6		568.3500	13.99	22.94	36.93	46.00	-9.07	peak			

Distance:

#### Report No.: AGC01173140502FE04 Page 49 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical

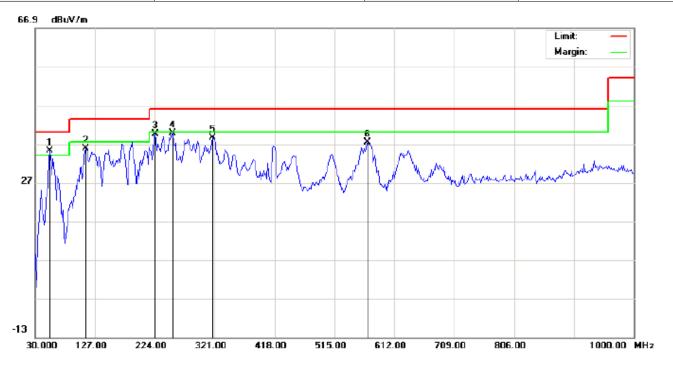


Site: site #1 Limit: FCC Class B 3M Radiation EUT: Tablet PC M/N: STP-103 Mode: Low Channel TX Note: Polarization: Vertical Power: AC 120V/60Hz Distance: Temperature: 26 Humidity: 60 %

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	*	67.1833	31.61	5.36	36.97	40.00	-3.03	peak			
2	İ	122.1500	30.61	7.76	38.37	43.50	-5.13	peak			
3	İ	152.8667	23.58	15.28	38.86	43.50	-4.64	peak			
4		249.8667	25.64	13.89	39.53	46.00	-6.47	peak			
5		418.0000	19.29	19.62	38.91	46.00	-7.09	peak			
6		565.1167	10.53	22.56	33.09	46.00	-12.91	peak			

#### Report No.: AGC01173140502FE04 Page 50 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Horizontal

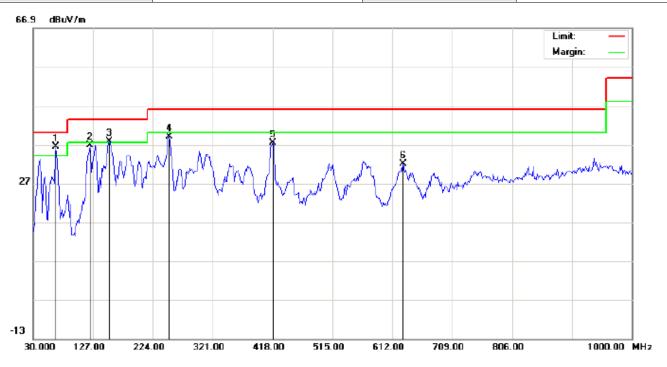


Site: site #1 Limit: FCC Class B 3M Radiation EUT: Tablet PC M/N: STP-103 Mode: Middle Channel TX Note: Polarization: *Horizontal* Power: AC 120V/60Hz Distance: Temperature: 26 Humidity: 60 %

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	*	54.2500	24.03	11.20	35.23	40.00	-4.77	peak			
2		112.4500	24.55	11.34	35.89	43.50	-7.61	peak			
3		224.0000	26.68	12.91	39.59	46.00	-6.41	peak			
4		253.1000	25.88	13.99	39.87	46.00	-6.13	peak			
5		317.7667	22.00	16.59	38.59	46.00	-7.41	peak			
6		568.3500	14.49	22.94	37.43	46.00	-8.57	peak			

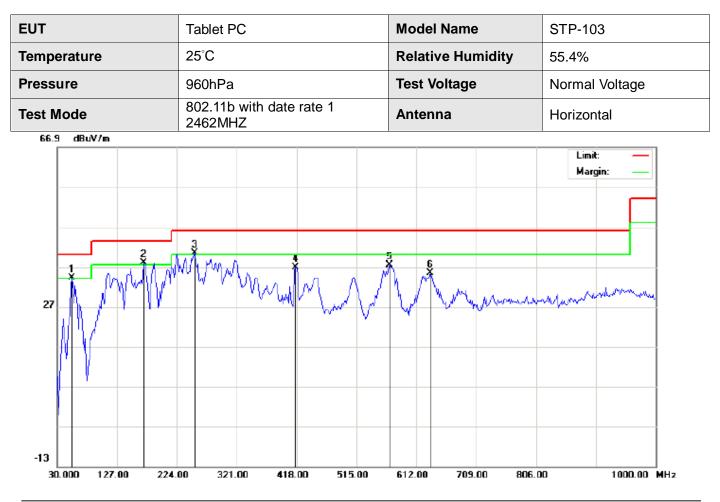
#### Report No.: AGC01173140502FE04 Page 51 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Vertical



Site: site #1 Limit: FCC Class B 3M Radiation EUT: Tablet PC M/N: STP-103 Mode: Middle Channel TX Note: Polarization: Vertical Power: AC 120V/60Hz Distance: Temperature: 26 Humidity: 60 %

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	*	67.1833	31.11	5.36	36.47	40.00	-3.53	peak			
2		122.1500	29.11	7.76	36.87	43.50	-6.63	peak			
3	İ	152.8667	22.58	15.28	37.86	43.50	-5.64	peak			
4		249.8667	25.14	13.89	39.03	46.00	-6.97	peak			
5		418.0000	17.79	19.62	37.41	46.00	-8.59	peak			
6		629.7833	8.66	23.40	32.06	46.00	-13.94	peak			

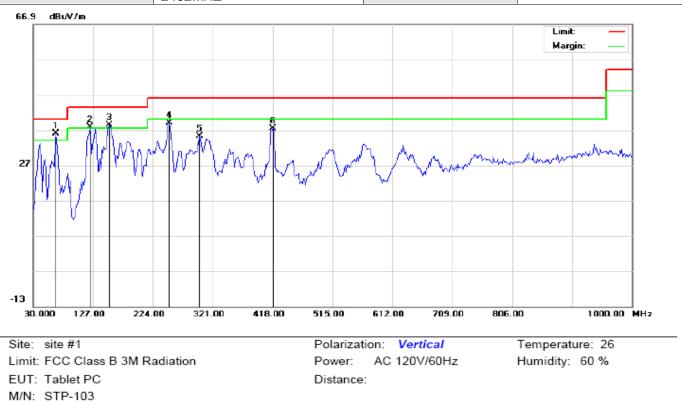


Site: site #1 Limit: FCC Class B 3M Radiation EUT: Tablet PC M/N: STP-103 Mode: High Channel TX Note: Polarization: *Horizontal* Power: AC 120V/60Hz Temperature: 26 Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height		Comment
	•	MHz	dBu∨	dB/m	dBu\//m	dBuV/m	dB		cm	degree	
1	i	54.2500	23.03	11.20	34.23	40.00	-5.77	peak			
2	*	170.6500	24.87	13.06	37.93	43.50	-5.57	peak			
3	İ	253.1000	26.38	13.99	40.37	46.00	-5.63	peak			
4		416.3833	17.25	19.57	36.82	46.00	-9.18	peak			
5		568.3500	14.49	22.94	37.43	46.00	-8.57	peak			
6		634.6333	11.55	23.81	35.36	46.00	-10.64	peak			

Distance:

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Vertical



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	*	67.1833	30.61	5.36	35.97	40.00	-4.03	peak			
2	İ	122.1500	30.11	7.76	37.87	43.50	-5.63	peak			
3	İ	152.8667	23.08	15.28	38.36	43.50	-5.14	peak			
4		249.8667	25.14	13.89	39.03	46.00	-6.97	peak			
5		299.9833	19.74	15.41	35.15	46.00	-10.85	peak			
6		418.0000	17.79	19.62	37.41	46.00	-8.59	peak			

### **RESULT: PASS**

Mode: High Channel TX

Note:

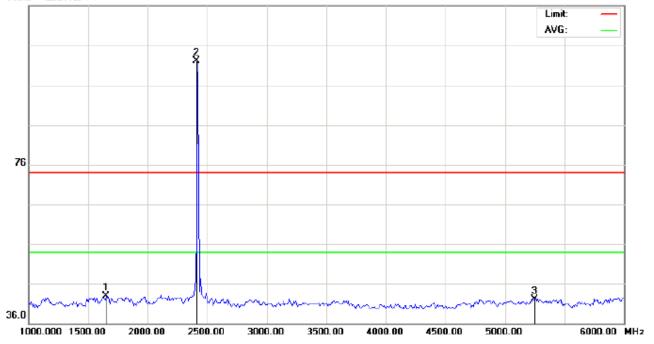
**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

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

### **RADIATED EMISSION ABOVE 1GHZ**

EUT	Tablet PC	Model Name	STP-103		
Temperature	25°C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal		

116.0 dBuV/m



 Site:
 site #1
 Polarization:
 Horizontal
 Temperature:
 26

 Limit:
 FCC Class B 3M Radiation above 1GHZ(PK)
 Power:
 Humidity:
 60 %

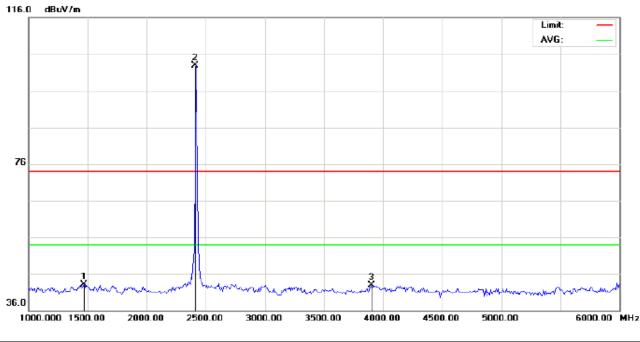
 EUT:
 Tablet PC
 Distance:
 3m

 M/N:
 STP-103
 STP-103
 Vote:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1650.000	56.73	-13.80	42.93	74.00	-31.07	peak			
2	*	2412.000	111.78	-9.67	102.11	74.00	28.11	peak			
3		5250.000	43.88	-1.81	42.07	74.00	-31.93	peak			

#### Report No.: AGC01173140502FE04 Page 55 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical



 Site:
 site #1
 Polarization:
 Vertical
 Temperature:
 26

 Limit:
 FCC Class B 3M Radiation above 1GHZ(PK)
 Power:
 Humidity:
 60 %

 EUT:
 Tablet PC
 Distance:
 3m

 M/N:
 STP-103
 STP-103
 Vertical

 Mode:
 802.11b Low Channel TX
 Vertical
 Vertical

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		1466.667	58.42	-15.39	43.03	74.00	-30.97	peak			
2	*	2412.000	112.57	-9.67	102.90	74.00	28.90	peak			
3		3900.000	48.25	-5.43	42.82	74.00	-31.18	peak			

### **RESULT: PASS**

Note: The other modes radiation emissions have more than 20dB margin.

All modes radiation emission from 6GHz to 25GHz at least have 20dB margin.

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

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

## 12. BAND EDGE EMISSION

### **12.1. 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.

### 12.2. TEST SET-UP

Radiated same as 11.2

### 12.3. TEST RESULT

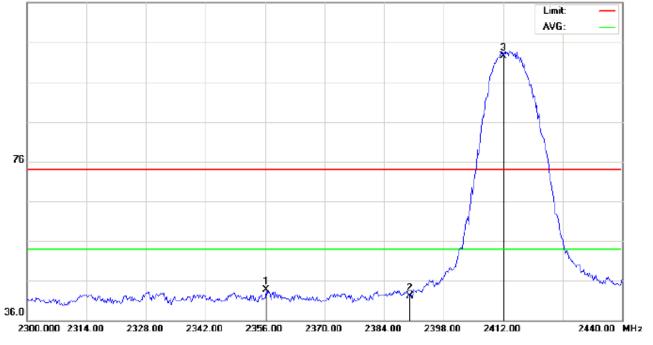
Т			Tablet P	С			Model	Name		STP-10	)3	
mpei	rature		25°C				Relativ	e Hum	idity	55.4%		
essu	re		960hPa				Test Vo	ltage		Norma	Voltage	
st Mo	ode		802.11b 2412MH	with data Z	rate 1		Antenna			Horizontal		
116.0	0 dBuV/m											
										Limi AVG		
76									-	-		
									/	٩	A Lawrence	
36.0 23		00 232	8.00 234	2.00 235	i6.00 23		2384.00	2398.0	10 2412		2440.00 MH	Hz
	: site #1 it: FCC Clas	s B 3M R	adiation al	bove 1GHZ		olarizati ower:	on: Hoi	rizontal		Temperat Humidity:		
	: Tablet PC					istance:	3m					
	: STP-103				-							
Mod	le: 802.11b	Low Cha	nnel TX									
Note	e:											

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∨	dB/m	dBu\//m	dBuV/m	dB		cm	degree	
1		2349.000	52.54	-9.74	42.80	74.00	-31.20	peak			
2		2390.000	52.40	-9.69	42.71	74.00	-31.29	peak			
3	*	2412.000	112.36	-9.67	102.69	74.00	28.69	peak			

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EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical

116.0 dBuV/m

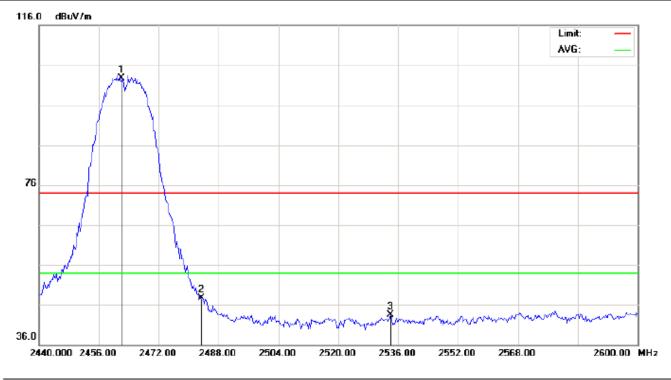


Site: site #1	Polarization: Vertical	Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)	Power:	Humidity: 60 %
EUT: Tablet PC	Distance: 3m	
M/N: STP-103		
Mode: 802.11b Low Channel TX		
Note:		

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		2356.233	53.42	-9.73	43.69	74.00	-30.31	peak			
2		2390.000	51.77	-9.69	42.08	74.00	-31.92	peak			
3	*	2412.000	112.08	-9.67	102.41	74.00	28.41	peak			

#### Report No.: AGC01173140502FE04 Page 59 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal



 Site:
 site #1
 Polarization:
 Horizontal
 Temperature:
 26

 Limit:
 FCC Class B 3M Radiation above 1GHZ(PK)
 Power:
 Humidity:
 60 %

 EUT:
 Tablet PC
 Distance:
 3m

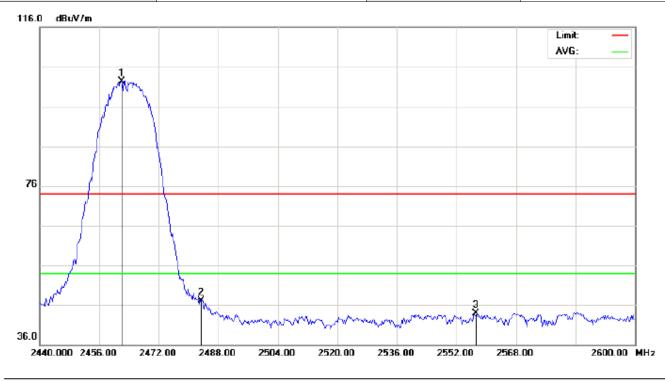
 M/N:
 STP-103
 Mode:
 802.11b High Channel TX

 Note:
 Note:
 Note:
 Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBuV	dB/m	dBu\//m	dBuV/m	dB		cm	degree	
1	*	2462.000	112.39	-9.61	102.78	74.00	28.78	peak			
2		2483.500	57.31	-9.59	47.72	74.00	-26.28	peak			
3		2533.867	52.97	-9.49	43.48	74.00	-30.52	peak			

#### Report No.: AGC01173140502FE04 Page 60 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical



 Site:
 site #1
 Polarization:
 Vertical
 Temperature:
 26

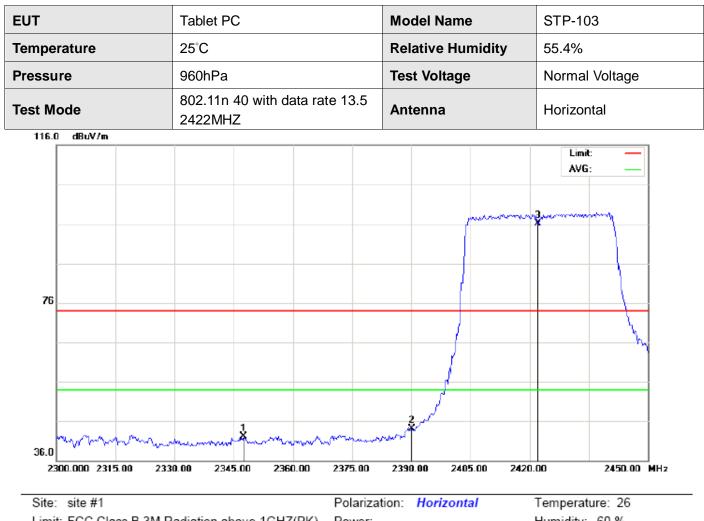
 Limit:
 FCC Class B 3M Radiation above 1GHZ(PK)
 Power:
 Humidity:
 60 %

 EUT:
 Tablet PC
 Distance:
 3m

 M/N:
 STP-103
 Mode:
 802.11b High Channel TX

 Note:
 State
 State
 State

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBu∨	dB/m	dBu\//m	dBuV/m	dB		cm	degree	
1	*	2462.000	111.92	-9.61	102.31	74.00	28.31	peak			
2		2483.500	56.72	-9.59	47.13	74.00	-26.87	peak			
3		2557.333	53.39	-9.43	43.96	74.00	-30.04	peak			



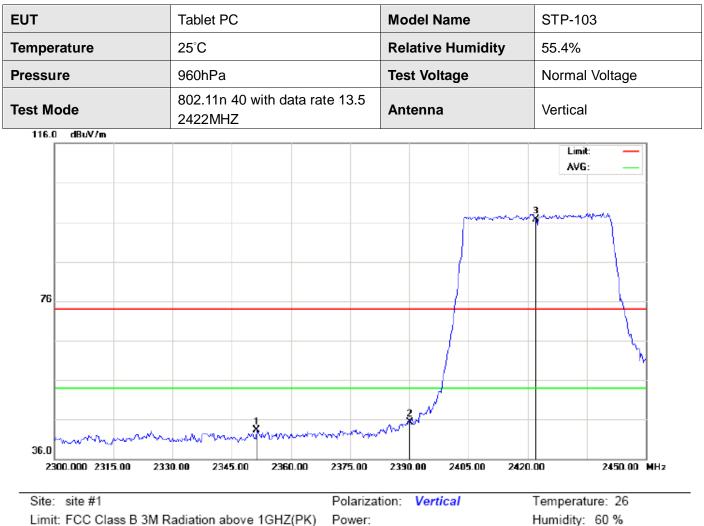
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: EUT: Tablet PC Distance: 3m M/N: STP-103

Mode: 802.11n(40) Low Channel TX Note:

Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height		Comment
	-	MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2347.500	51.90	-9.74	42.16	74.00	-31.84	peak			
2		2390.000	53.71	-9.69	44.02	74.00	-29.98	peak			
3	*	2422.000	105.82	-9.66	96.16	74.00	22.16	peak			

#### Report No.: AGC01173140502FE04 Page 62 of 75



Limit: FCC Clas

EUT: Tablet PC

M/N: STP-103

Mode: 802.11n(40) Low Channel TX

Note:

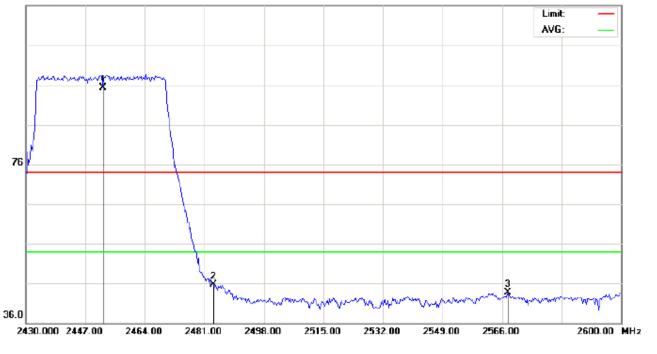
No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	-	MHz	dBu∀	dB/m	dBuV/m	dBu∨/m	dB		cm	degree	
1		2351.250	53.01	-9.73	43.28	74.00	-30.72	peak			
2		2390.000	54.90	-9.69	45.21	74.00	-28.79	peak			
3	*	2422.000	106.37	-9.66	96.71	74.00	22.71	peak			

Distance: 3m

#### Report No.: AGC01173140502FE04 Page 63 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2452MHZ	Antenna	Horizontal

116.0 dBuV/m



Site: site #1	Polarization: Horizontal	Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)	Power:	Humidity: 60 %
EUT: Tablet PC	Distance: 3m	
M/N: STP-103		
Mode: 802.11n(40) High Channel TX		
Note:		

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBu∨	dB/m	dBu\//m	dBuV/m	dB		cm	degree	
1	*	2452.000	104.97	-9.62	95.35	74.00	21.35	peak			
2		2483.500	55.29	-9.59	45.70	74.00	-28.30	peak			
3		2567.700	53.18	-9.41	43.77	74.00	-30.23	peak			

#### Report No.: AGC01173140502FE04 Page 64 of 75

EUT	Tablet PC	Model Name	STP-103
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2452MHZ	Antenna	Vertical

116.0 dBuV/m



 Site:
 site #1
 Polarization:
 Vertical
 Temperature:
 26

 Limit:
 FCC Class B 3M Radiation above 1GHZ(PK)
 Power:
 Humidity:
 60 %

 EUT:
 Tablet PC
 Distance:
 3m

 M/N:
 STP-103
 STP-103
 Mode:
 802.11n(40) High Channel TX

Antenna Table Measurement Freq. Reading Factor Limit Over Mk Height Degree No. Detector Comment MHz dBu∨ dB/m dBuV/m dBuV/m dB cm degree 1 \* 2452.000 106.40 -9.62 96.78 74.00 22.78 peak 2 2483.500 56.53 -9.59 46.94 74.00 -27.06 peak 3 52.34 -9.50 42.84 2530.867 74.00 -31.16 peak

### **RESULT: PASS**

 $\label{eq:Note:Theorem} \textbf{Note}: The other modes radiation emission have enough 20 dB margin.$ 

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

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

## **13. FCC LINE CONDUCTED EMISSION TEST**

## **13.1. LIMITS OF LINE CONDUCTED EMISSION TEST**

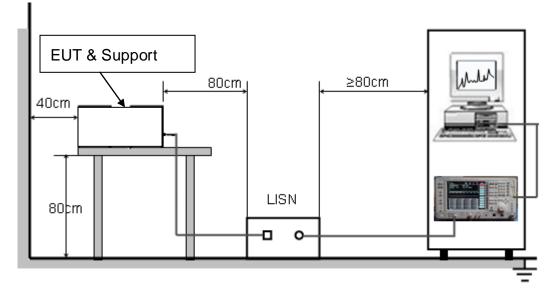
Frequency	Maximum RF Line Voltage							
Frequency	Q.P.( dBuV)	Average( dBuV)						
150kHz~500kHz	66-56	56-46						
500kHz~5MHz	56	46						
5MHz~30MHz	60	50						

Note:

1. The lower limit shall apply at the transition frequency.

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

### 13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



### 13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. 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 charging voltage by adapter which received 120V/60Hzpower 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 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.

### 13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 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.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

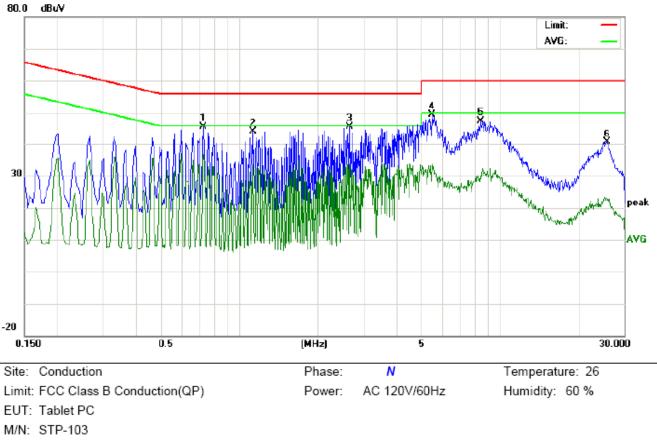
## 80.0 dBuV Limit: AVG: 6 30 peak AVG -20 0.150 0.5 (MHz) 5 30.000 Site: Conduction Phase: L1 Temperature: 26 Limit: FCC Class B Conduction(QP) Humidity: 60 % Power: AC 120V/60Hz EUT: Tablet PC M/N: STP-103 Mode: Normal Operating(WIFI)

#### 13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Note:

No. Freq.				Correct Factor	Measurement (dBuV)		Limit (dBuV)		Margin (dB)		P/F	Comment		
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2020	34.74		20.14	10.22	44.96		30.36	63.52	53.52	-18.56	-23.16	Ρ	
2	0.8020	30.30		15.67	10.28	40.58		25.95	56.00	46.00	-15.42	-20.05	Ρ	
3	1.5100	31.11		14.69	10.38	41.49		25.07	56.00	46.00	-14.51	-20.93	Ρ	
4	5.3659	37.42		17.15	10.25	47.67		27.40	60.00	50.00	-12.33	-22.60	Ρ	
5	8.0460	35.22		15.31	10.35	45.57		25.66	60.00	50.00	-14.43	-24.34	Р	
6	25.5580	31.26		12.40	10.11	41.37		22.51	60.00	50.00	-18.63	-27.49	Ρ	

### LINE CONDUCTED EMISSION TEST LINE 1-L



### Line Conducted Emission Test Line 2-N

Mode: Normal Operating(WIFI)

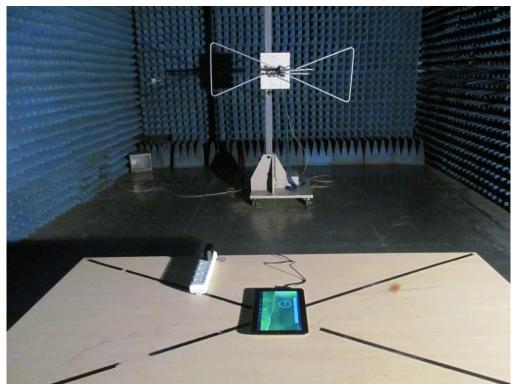
Note:

No.	No. Freq.						Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG			
1	0.7300	35.40		26.42	10.33	45.73		36.75	56.00	46.00	-10.27	-9.25	Р		
2	1.1300	33.76		22.93	10.37	44.13		33.30	56.00	46.00	-11.87	-12.70	Ρ		
3	2.6580	35.20		23.12	10.47	45.67		33.59	56.00	46.00	-10.33	-12.41	Ρ		
4	5.4780	39.12		23.55	10.25	49.37		33.80	60.00	50.00	-10.63	-16.20	Ρ		
5	8.4660	37.12		18.90	10.34	47.46		29.24	60.00	50.00	-12.54	-20.76	Р		
6	25.7500	30.58		12.30	10.11	40.69		22.41	60.00	50.00	-19.31	-27.59	Р		

## APPENDIX A: PHOTOGRAPHS OF TEST SETUP FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP



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# APPENDIX B: PHOTOGRAPHS OF EUT

All VIEW OF EUT

TOP VIEW OF EUT





### BOTTOM VIEW OF EUT

FRONT VIEW OF EUT









**RIGHT VIEW OF EUT** 

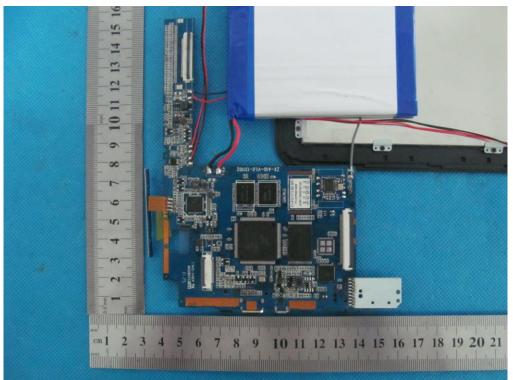
**OPEN VIEW OF EUT-1** 

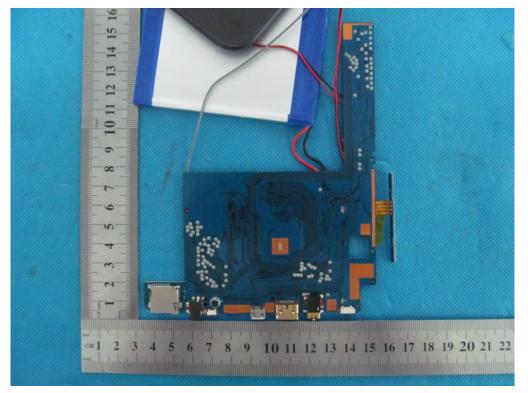




OPEN VIEW OF EUT-1

INTERNAL VIEW OF EUT-1





INTERNAL VIEW OF EUT-2

----END OF REPORT----