



Report No: File reference No:	FCC 1606178-01 2016-07-15
Applicant:	Shenzhen Jingwah Information Technology Co., Ltd.
Product:	Tablet PC
Model No:	F102, ST1009, ST1009x, M10
Trademark:	Polaroid, Smartab
Test Standards:	FCC Part 15.247
Test result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10, FCC Part 15.247 for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated:

July 14, 2016

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

# SHENZHEN TIMEWAY TESTING LABORATORIES

Room 512-519, 5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen, Guangdong, China Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



# **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

# CNAL-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

# FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

# IC- Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

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#### 1.0 **General Details**

1.0	General Detai	etans			
1.1	Test Lab Detai	ls			
	Name :	SHENZHEN TIMEWAY TESTING LABORATORIES.			
	Address:	Room 512-519,5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen,			
		Guangdong China			
	Telephone:	(755) 83448688			
	Fax:	(755) 83442996			
	Site on File wi	th the Federal Communications Commission – United Sates			
	Registration N	umber: 899988			
	For 3m & 10 n	n OATS			
	Site Listed with	h Industry Canada of Ottawa, Canada			
	Registration N	umber: IC: 5205A-02			
	For 3m & 10 n	n OATS			
1.2	Applicant Deta	uls			
	Applicant:	Shenzhen Jingwah Information Technology Co., Ltd.			
	Address:	4F, Bldg 4, Jinghua Square, No.1 Huafa North Road, Futian District, Shenzhen, China			
	Telephone:				
	Fax:				
1.3	Description of	EUT			
	Product:	Tablet PC			
	Manufacturer:	Shenzhen Jingwah Information Technology Co., Ltd.			
	Address:	4F, Bldg 4, Jinghua Square, No.1 Huafa North Road, Futian District,			
		Shenzhen, China			
	Brand Name:	Polaroid, Smartab			
	Model Number	r: F102			
	Additional Mo	del Number: ST1009, ST1009x, M10			
	Type of Modul	ation IEEE 802.11b : DSSS (CCK, QPSK, DBPSK)			
		IEEE 802.11g/n (HT20) : OFDM(64QAM, 16QAM, QPSK, BPSK)			
	Frequency rang	ge IEEE 802.11b/g/n (HT20) : 2412-2462MHz			
	Channel Spacing	ng 5MHz for IEEE 802.11b/g/n(HT20)			
	Air Data Rate	IEEE 802.11b : 11, 5.5, 2, 1 Mbps			
		IEEE 802.11g : 54, 48,36, 24, 18, 12, 9, 6 Mbps			
		IEEE 802.11n HT20 : 150, 135, 117 ,104, 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6.5 Mbps			
	Frequency Sele	-			
	Channel Numb	5 ( )			
	Antenna:	Integral Antenna and the maximum Gain of this antenna is 2.0dBi;			
	Power Adapter				
		Input: 100-240V, 50/60Hz, 0.3A; Output: 5.0V, 1.5A			

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#### Remark: There are alternative manufacturers for TP, Camera and Panel. EUT are configured as following

Name	Manufacturer	Model						
Configure a)								
TP HOTATOUCH F102 P+G								
Camera	Shenzhen Best Camera Electronic Technique	F102 GC0310+GC2355						
Panel	20811010280028							
	Configure b)							
TP	Shenzhen Leheng Electronic	F102 P+G						
Camera	Shenzhen BOPENGFA ELEC&TECHNOLOGY	F102 GC0310+GC2355						
Panel	Shenzhen K&D Technology	KD101N66-40NI-K2						
Configura a)	and b) are tested and only worse case are recorded in t	he test non out						

- Submitted Sample: 2 Samples 1.4
- Test Duration 1.5 2016-06-23 to 2016-07-14
- Test Uncertainty 1.6 Conducted Emissions Uncertainty =3.6dB Radiated Emissions Uncertainty =4.7dB
- 1.7 Test Engineer

Terry lang

The sample tested by

Print Name: Terry Tang

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2.0 Test Equipments					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2015-08-22	2016-08-21
TWO Line-V-NETW	R&S	EZH3-Z5	100294	2015-08-22	2016-08-21
TWO Line-V-NETW	R&S	EZH3-Z5	100253	2015-08-22	2016-08-21
Ultra Broadband ANT	R&S	HL562	100157	2015-08-23	2016-08-22
ESDV Test Receiver	R&S	ESDV	100008	2015-08-22	2016-08-21
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2015-08-22	2016-08-21
System Controller	СТ	SC100	-		
Printer	EPSON	РНОТО ЕХЗ	CFNH234850		
Computer	IBM	8434	1S8434KCE99BLXLO*	-	-
Loop Antenna	EMCO	6502	00042960	2015-08-23	2016-08-22
ESPI Test Receiver	R&S	ESI26	838786/013	2015-08-22	2016-08-21
3m OATS			N/A	2015-08-24	2016-08-23
Horn Antenna	R&S	BBHA 9170	BBHA9170265	2015-08-24	2016-08-23
Horn Antenna	R&S	BBHA 9120D	9120D-631	2015-08-24	2016-08-23
Power meter	Anritsu	ML2487A	6K00003613	2015-08-22	2016-08-21
Power sensor	Anritsu	MA2491A	32263	2015-08-22	2016-08-21
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2015-08-23	2016-08-21
LISN	AFJ	LS16C	10010947251	2015-08-22	2016-08-21
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2015-08-23	2016-08-22
9*6*6 Anechoic			N/A	2015-08-24	2016-08-23
EMI Test Receiver	RS	ESCS30	100139	2015-08-22	2016-08-21
Pre-amplifier	EM	EM30265	2727A05017	2015-08-24	2016-08-23

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#### **3. DESCRIPTION OF TEST MODES**

#### IEEE 802.11b, 802.11g, 802.11n (HT20) mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 1Mbps data rate (worst case) was chosen for full testing. IEEE 802.11g mode: 6Mbps data rate (worst case) was chosen for full testing. IEEE 802.11n (HT20) mode: 6.5Mbps data rate (worst case) were chosen for full testing

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#### 3.0 **Technical Details**

#### 3.1 Summary of test results

The EUT has been tested ac	cording to the following speci	fications:	
Standard	Test Type	Result	Notes
CC Part 15, Paragraph 15.107 & 15.207	Conducted Emission Test	PASS	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	PASS	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	PASS	Complies
FCC Part 15, Paragraph 15.109,15.205 & 15.209	Transmitter Radiated Emission Limit: Table 15.209	PASS	Complies
FCC Part 15, Paragraph 15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Complies
FCC Part 15, Paragraph 15.247(d)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit: Table 15.209	PASS	Complies

#### 3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247 and KDB558074 D01 DTS Meas Guidance v03r05

#### 4.0 **EUT Modification**

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

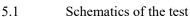
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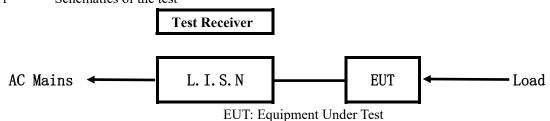
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## 5.0 Power Line Conducted Emission Test



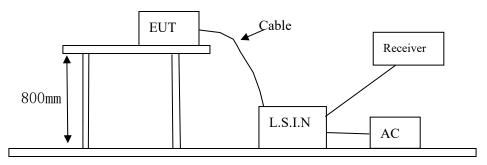


## 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 500hm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



## 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

#### A. EUT

Device	Manufacturer	Model	FCC ID
Tablet PC	Shenzhen Jingwah Information	F102, ST1009,	ECC ID - BDD E102
	Technology Co., Ltd.	ST1009x, M10	FCC ID : RBD-F102

#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

#### C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable

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5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10 -2013.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition
- 5.5 Power line conducted Emission Limit according to Paragraph 15.207 and 15.107

6 61					
Frequency	Class A Lim	its (dB µ V)	Class B Lim	nits (dB µ V)	
(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
$0.15~\sim~0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
$0.50~\sim~5.00$	73.0	60.0	56.0	46.0	
$5.00~\sim~30.00$	73.0	60.0	60.0	50.0	

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

## 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

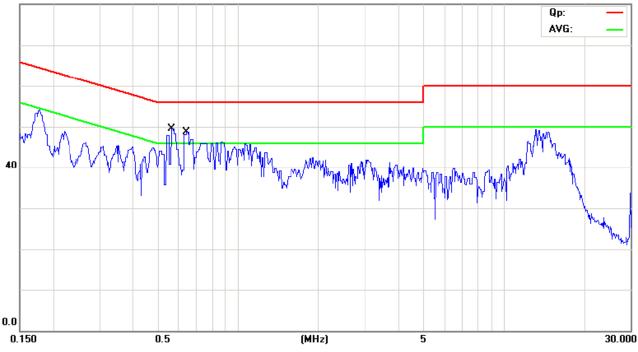
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 A: Conducted Emission on Live Terminal (150kHz to 30MHz) EUT Operating Environment Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa EUT set Condition: Keep WIFI Transmitting Equipment Level: Class B Results: PASS Please refer to following diagram for individual
80.0 dBuV/m



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.5658	34.80	11.44	46.24	56.00	-9.76	QP	
2	0.5658	7.30	11.44	18.74	46.00	-27.26	AVG	
3	0.6440	33.90	11.52	45.42	56.00	-10.58	QP	
4	0.6440	5.00	11.52	16.52	46.00	-29.48	AVG	

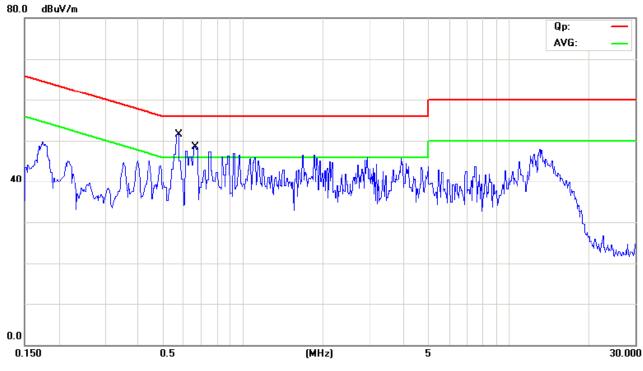
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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)
EUT Operating Environment
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa
EUT set Condition: Keep WIFI Transmitting
Equipment Level: Class B
Results: Pass
Please refer to following diagram for individual



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.5678	32.40	11.44	43.84	56.00	-12.16	QP	
2	0.5678	5.60	11.44	17.04	46.00	-28.96	AVG	
3	0.6610	30.80	11.54	42.34	56.00	-13.66	QP	
4	0.6610	8.30	11.54	19.84	46.00	-26.16	AVG	

The report refers only to the sample tested and does not apply to the bulk.

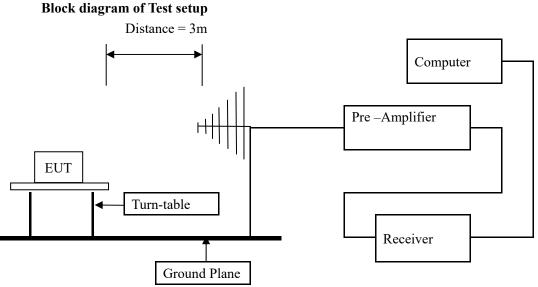
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#### 6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- The EUT was tested according to ANSI C63.10 –2013. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. F For measurement above 1GHz, peak values with RBW=1MHz VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.



- 6.2 Configuration of The EUT
  - Same as section 5.3 of this report
- 6.3 EUT Operating Condition
  - Same as section 5.4 of this report.

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## 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

#### Frequencies in restricted band are complied to limit on Paragraph 15.209 and 15.109 and RSS-210

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note: 1. RF Voltage  $(dBuV) = 20 \log RF$  Voltage (uV)

2. In the Above Table, the higher limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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# **Test result** General Radiated Emission Data and Harmonics Radiated Emission Data

#### Radiated Emission In Horizontal/ In Vertical (30MHz----1000MHz)

**EUT set Condition: Keep Transmitting** 

**Results:** 

Pass

Frequency	Reading	Antenna	Cable Loss	Level@3m	Antenna	Limit@3m
(MHz)	$(dB \ \mu V)$	Factor	(dB)	$(dB \ \mu \ V/m)$	Polarity	$(dB \ \mu \ V/m)$
		(dB/m)				
377.160	17.53	13.06	4.76	35.35	Н	46.00
239.920	22.18	9.11	3.03	34.32	Н	46.00
179.520	17.20	8.20	2.55	27.95	V	40.00
293.720	16.85	10.81	1.40	29.06	V	46.00

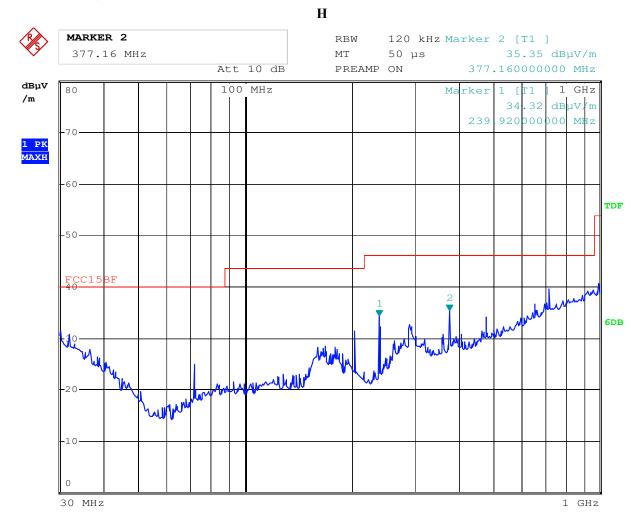
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Test Figure:



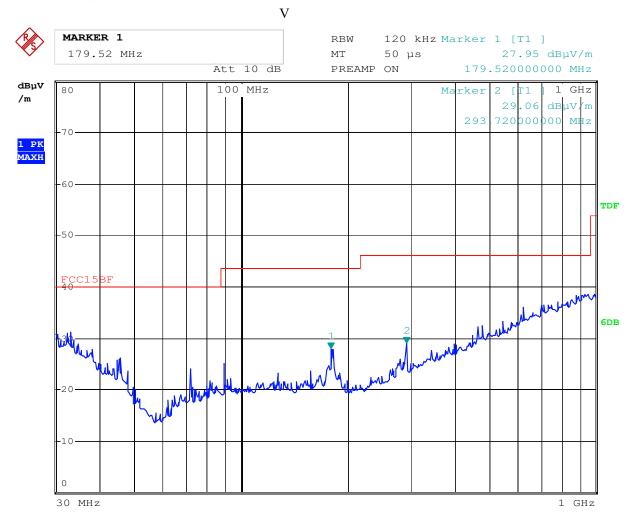
Date: 24.JUN.2016 18:21:02

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Test Figure:



Date: 24.JUN.2016 18:23:41

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$
		(dB/m)					
4824.00	51.00	30.8	4.64	35.16	51.28 (PK)	Н	74(Peak)/ 54(AV)
4824.00	52.04	30.8	4.64	35.16	52.32 (PK)	V	74(Peak)/ 54(AV)
7236.00						H/V	74(Peak)/ 54(AV)
9648.00						H/V	74(Peak)/ 54(AV)
12060						H/V	74(Peak)/ 54(AV)
14472						H/V	74(Peak)/ 54(AV)
16884						H/V	74(Peak)/ 54(AV)
19296						H/V	74(Peak)/ 54(AV)
21708						H/V	74(Peak)/ 54(AV)
24120						H/V	74(Peak)/ 54(AV)

#### **Operation Mode: Transmitting under CH01 for 11g at 6Mbps**

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 6Mbps

# **Operation Mode: Transmitting under CH06 for 11g at 6Mbps**

Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$
		(dB/m)					
4874.00	49.94	30.9	4.70	35.22	50.32 (PK)	V	74(Peak)/ 54(AV)
4874.00	50.09	30.9	4.70	35.22	50.47 (PK)	Н	74(Peak)/ 54(AV)
7311.00						H/V	74(Peak)/ 54(AV)
9748.00						H/V	74(Peak)/ 54(AV)
12185						H/V	74(Peak)/ 54(AV)
14622						H/V	74(Peak)/ 54(AV)
17059						H/V	74(Peak)/ 54(AV)
19496						H/V	74(Peak)/ 54(AV)
21933						H/V	74(Peak)/ 54(AV)
24370						H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 6Mbps

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$
		(dB/m)					
4924	51.11	31.20	4.71	35.44	51.58 (PK)	Н	74(Peak)/ 54(AV)
4924	50.67	31.20	4.71	35.44	51.14 (PK)	V	74(Peak)/ 54(AV)
7368						H/V	74(Peak)/ 54(AV)
9848						H/V	74(Peak)/ 54(AV)
12310						H/V	74(Peak)/ 54(AV)
14772						H/V	74(Peak)/ 54(AV)
17234						H/V	74(Peak)/ 54(AV)
19696						H/V	74(Peak)/ 54(AV)
22158						H/V	74(Peak)/ 54(AV)
24620						H/V	74(Peak)/ 54(AV)

#### Operation Mode: Transmitting under CH11 for 11g at 6Mbps

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11g mode 6Mbps

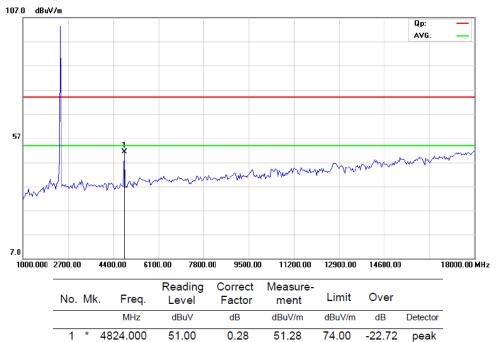
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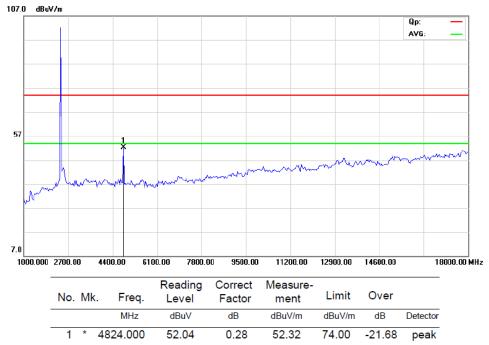
adopt any other remedies which may be appropriate.



## Please refer to the following test plots for details: CH01 for 11g at 6Mbps: Horizontal



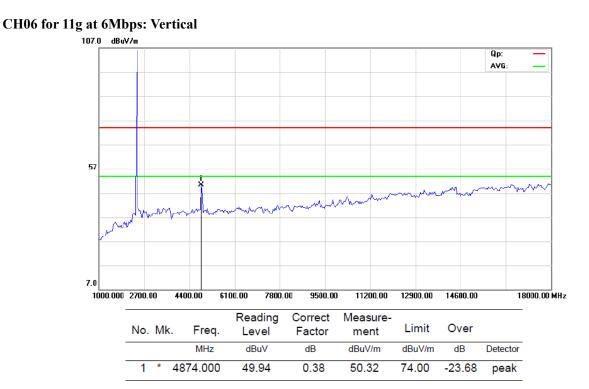
## CH01 for 11g at 6Mbps: Vertical



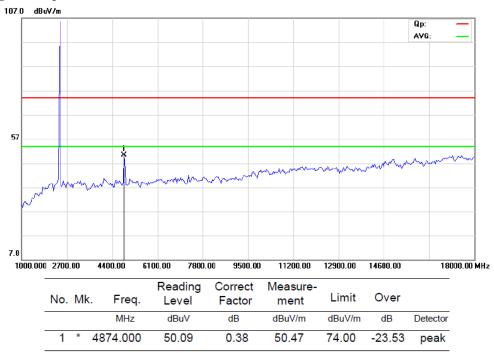
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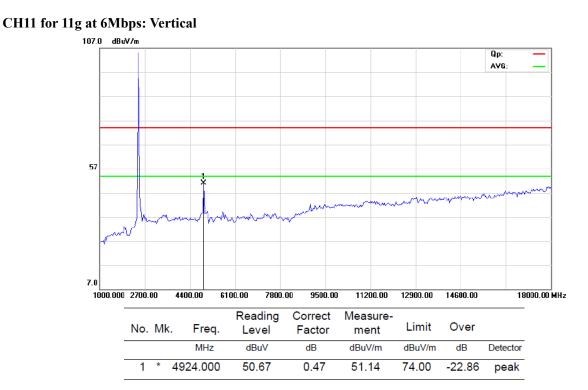
#### CH06 for 11g at 6Mbps: Horizontal



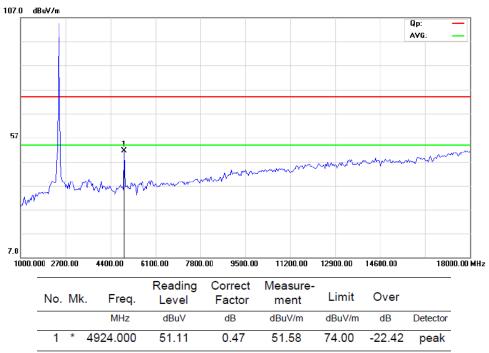
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#### CH11 for 11g at 6Mbps: Horizontal



#### Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	(dBµV/m)	Polarity	$(dB\mu V/m)$
		(dB/m)					
4824.00	52.04	30.8	4.64	35.16	52.32 (PK)	Н	74(Peak)/ 54(AV)
4824.00	51.81	30.8	4.64	35.16	52.09 (PK)	V	74(Peak)/ 54(AV)
7236.00						H/V	74(Peak)/ 54(AV)
9648.00						H/V	74(Peak)/ 54(AV)
12060						H/V	74(Peak)/ 54(AV)
14472						H/V	74(Peak)/ 54(AV)
16884						H/V	74(Peak)/ 54(AV)
19296						H/V	74(Peak)/ 54(AV)
21708						H/V	74(Peak)/ 54(AV)
24120						H/V	74(Peak)/ 54(AV)

#### **Operation Mode: Transmitting under CH01 for 11b at 1Mbps**

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11b mode 1Mbps

#### **Operation Mode: Transmitting under CH06 for 11b at 1Mbps**

Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	(dBµV/m)
		(dB/m)					
4874.00	48.43	30.9	4.70	35.22	48.12 (PK)	V	74(Peak)/ 54(AV)
4874.00	47.74	30.9	4.70	35.22	48.81 (PK)	Н	74(Peak)/ 54(AV)
7311.00						H/V	74(Peak)/ 54(AV)
9748.00						H/V	74(Peak)/ 54(AV)
12185						H/V	74(Peak)/ 54(AV)
14622						H/V	74(Peak)/ 54(AV)
17059						H/V	74(Peak)/ 54(AV)
19496						H/V	74(Peak)/ 54(AV)
21933						H/V	74(Peak)/ 54(AV)
24370						H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11b mode 1Mbps

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$
		(dB/m)					
4924	49.82	31.20	4.71	35.44	50.29 (PK)	Н	74(Peak)/ 54(AV)
4924	50.16	31.20	4.71	35.44	50.63 (PK)	V	74(Peak)/ 54(AV)
7368						H/V	74(Peak)/ 54(AV)
9848						H/V	74(Peak)/ 54(AV)
12310						H/V	74(Peak)/ 54(AV)
14772						H/V	74(Peak)/ 54(AV)
17234						H/V	74(Peak)/ 54(AV)
19696						H/V	74(Peak)/ 54(AV)
22158						H/V	74(Peak)/ 54(AV)
24620						H/V	74(Peak)/ 54(AV)

#### **Operation Mode: Transmitting under CH11 for 11b at 1Mbps**

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11b mode 1Mbps

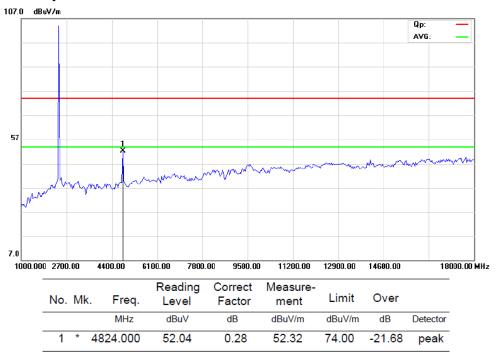
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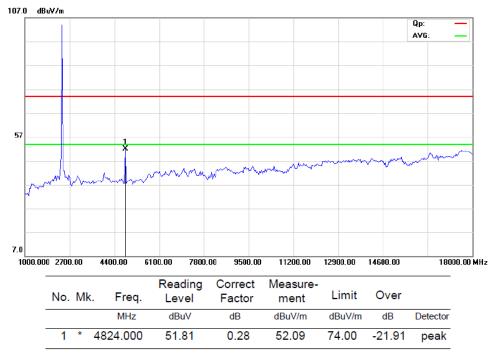
adopt any other remedies which may be appropriate.



## Please refer to the following test plots for details: CH01 for 11b at 1Mbps: Horizontal



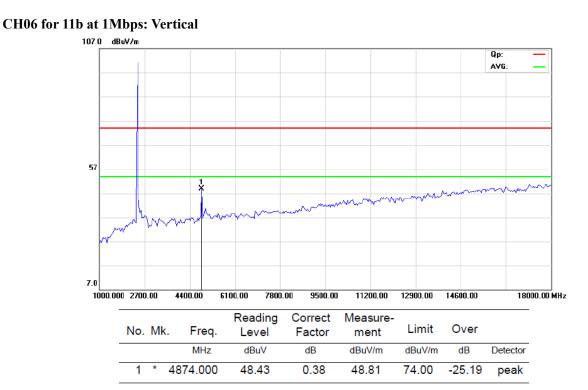
## CH01 for 11b at 1Mbps: Vertical



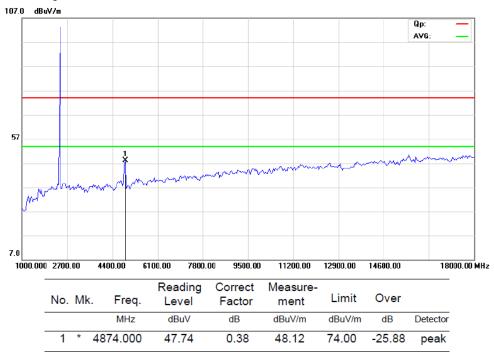
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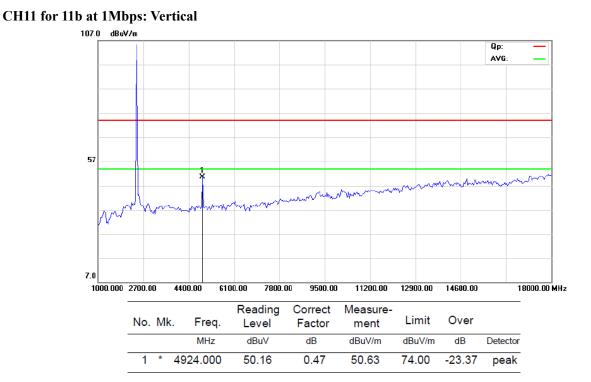
#### CH06 for 11b at 1Mbps: Horizontal



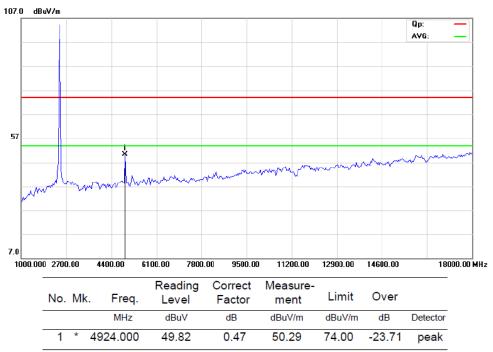
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#### CH11 for 11b at 1Mbps: Horizontal



#### Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$
		(dB/m)					
4824.00	51.07	30.8	4.64	35.16	51.35 (PK)	Н	74(Peak)/ 54(AV)
4824.00	51.31	30.8	4.64	35.16	51.59 (PK)	V	74(Peak)/ 54(AV)
7236.00						H/V	74(Peak)/ 54(AV)
9648.00						H/V	74(Peak)/ 54(AV)
12060						H/V	74(Peak)/ 54(AV)
14472						H/V	74(Peak)/ 54(AV)
16884						H/V	74(Peak)/ 54(AV)
19296						H/V	74(Peak)/ 54(AV)
21708						H/V	74(Peak)/ 54(AV)
24120						H/V	74(Peak)/ 54(AV)

#### **Operation Mode: Transmitting under CH01 for 11n HT20 at 6.5Mbps**

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11n (HT20) mode 6.5Mbps

#### Limit@3m Cable Level@3m Frequency Reading Antenna Pre-amp Antenna (MHz) (dBµV) Factor Loss (dB) (dB) $(dB\mu V/m)$ Polarity $(dB\mu V/m)$ (dB/m)4874.00 49.19 (PK) 74(Peak)/ 54(AV) 48.81 30.9 4.70 35.22 V 74(Peak)/ 54(AV) 4874.00 48.66 30.9 4.70 35.22 49.04 (PK) Н H/V 7311.00 ---74(Peak)/ 54(AV) ------------9748.00 H/V --74(Peak)/ 54(AV) ------------12185 H/V 74(Peak)/ 54(AV) ---------------14622 H/V 74(Peak)/ 54(AV) ---------------17059 H/V 74(Peak)/ 54(AV) --------------19496 --------H/V 74(Peak)/ 54(AV) -----21933 H/V --------------74(Peak)/ 54(AV) H/V 24370 --------\_\_\_ ---74(Peak)/ 54(AV)

#### Operation Mode: Transmitting under CH06 for 11n HT20 at 6.5Mbps

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11n (HT20) mode 6.5Mbps

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#### Frequency Reading Cable Pre-amp Level@3m Antenna Limit@3m Antenna (MHz) (dBµV) Factor Loss (dB) (dB) $(dB\mu V/m)$ Polarity $(dB\mu V/m)$ (dB/m)4924 49.72 35.44 31.20 4.71 50.19 (PK) Η 74(Peak)/ 54(AV) 4924 50.17 31.20 4.71 35.44 50.64 (PK) V 74(Peak)/ 54(AV) 7368 ---H/V 74(Peak)/ 54(AV) -----------H/V 9848 ---74(Peak)/ 54(AV) ------------12310 H/V ------------74(Peak)/ 54(AV) ---14772 H/V 74(Peak)/ 54(AV) --------------17234 H/V 74(Peak)/ 54(AV) ---------------19696 H/V 74(Peak)/ 54(AV) ---------------22158 ---------------H/V 74(Peak)/ 54(AV) 24620 H/V 74(Peak)/ 54(AV) --------------

## Operation Mode: Transmitting under CH11 for 11n HT20 at 6.5Mbps

Note: 1. Level = Reading + AF + Cable - Preamp, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

3. For 802.11n (HT20) mode 6.5Mbps

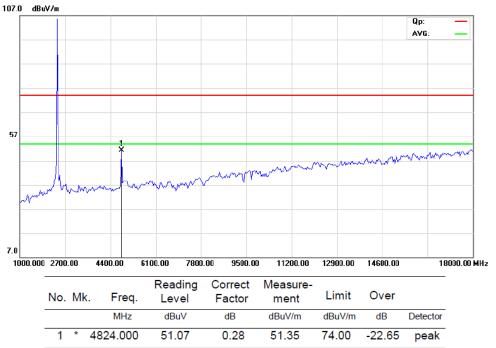
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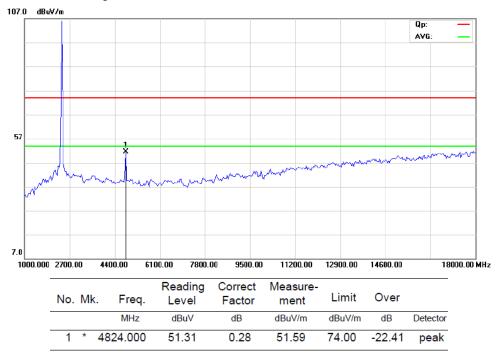
discussion of correspondence with any third party concerning the contents of the report. In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.



# Please refer to the following test plots for details: CH01 for 11n HT20 at 6.5Mbps: Horizontal



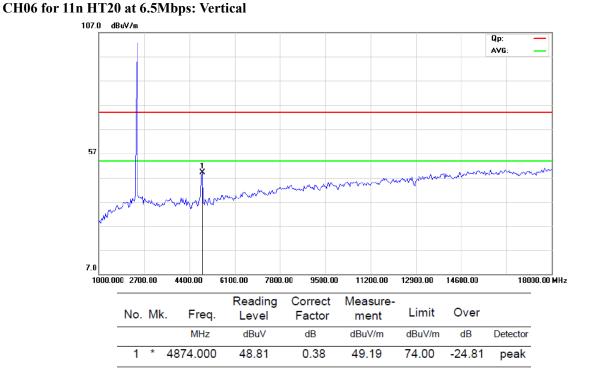
#### CH01 for 11n HT20 at 6.5Mbps: Vertical



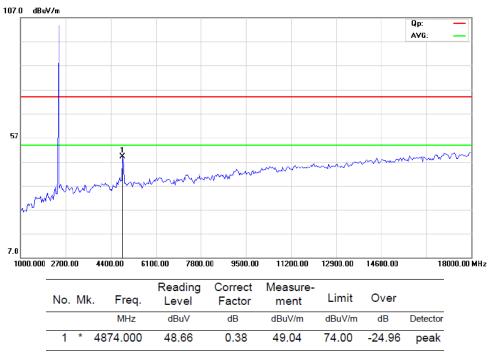
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#### CH06 for 11n HT20 at 6.5Mbps: Horizontal

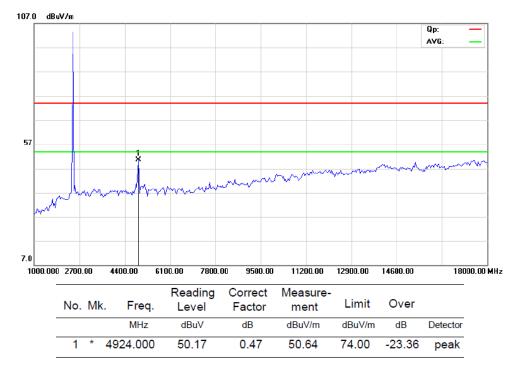


The report refers only to the sample tested and does not apply to the bulk.

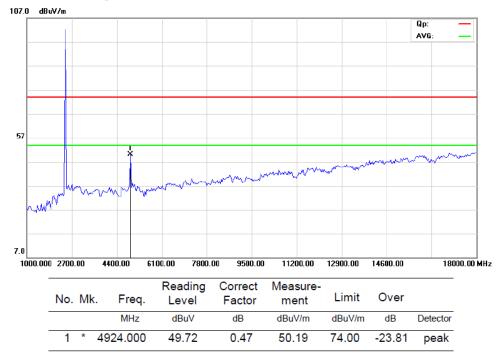
This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report. In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to



# CH11 for 11n HT20 at 6.5Mbps: Vertical



CH11 for 11n HT20 at 6.5Mbps: Horizontal



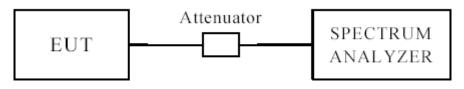
Note: For radiated Emissions from 18-25GHz, it is only the floor noise.

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# 7.0 6dB and 99% Bandwidth Measurement7.1 Test Setup



# 7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

# 7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW)  $\geq$  3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

# 7.4 Test Result

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#### 6dB Occupied Bandwidth

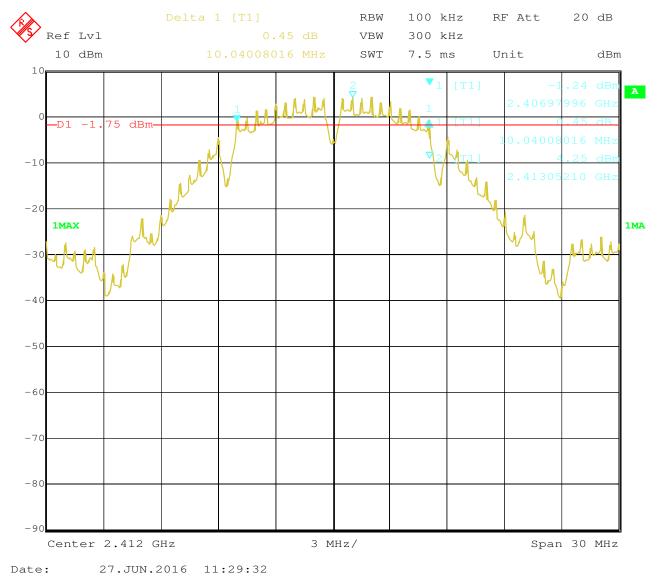
EUT		Ta	ablet PC		Model		F102	
Mode		8	302.11b		Input Voltage		DC3.7V	
Temperature		24	4 deg. C,		Humidity	r	56%	6 RH
Channel		annel Frequency Data (MHz) Rate (Mbps		6 dB Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail
1		2412 1		10.04		0.5		Pass
6		2437	1	10.04		0.5		Pass
11		2462	1	10	.04		0.5	Pass
1		2412	11	9.	32	0.5		Pass
6		2437	11	9.	9.32		0.5	
11		2462 11		9.	9.32		0.5	Pass

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#### 1. 802.11b at 1Mbps of CH01



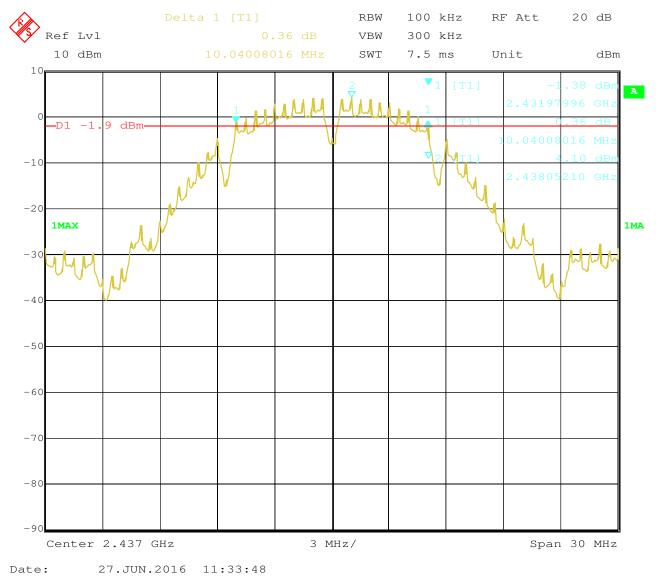
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#### 2. 802.11b at 1Mbps of CH06



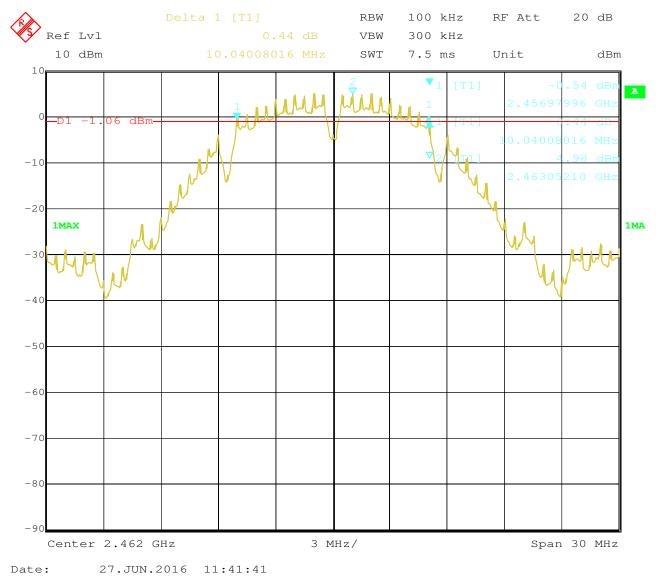
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# 3. 802.11b at 1Mbps of CH11



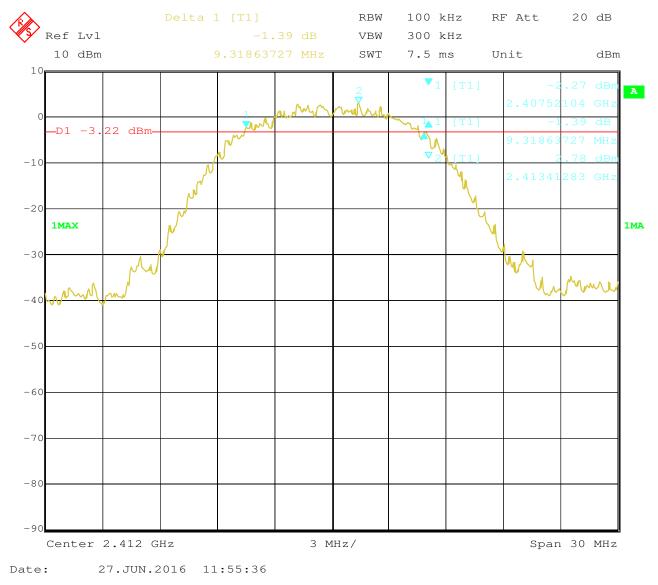
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# 4. 802.11b at 11Mbps of CH01



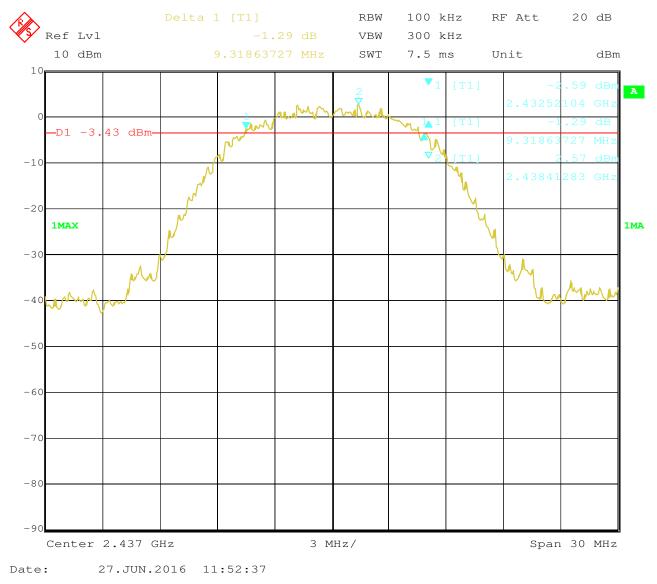
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# 5. 802.11b at 11Mbps of CH06



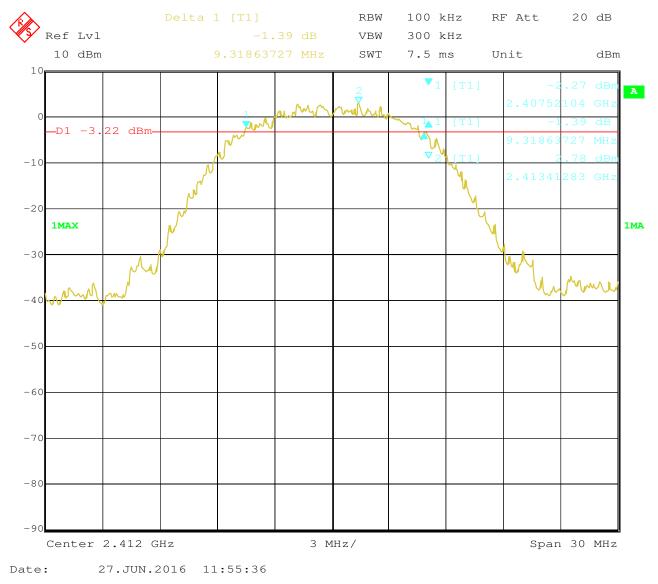
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# 6. 802.11b at 11Mbps of CH11



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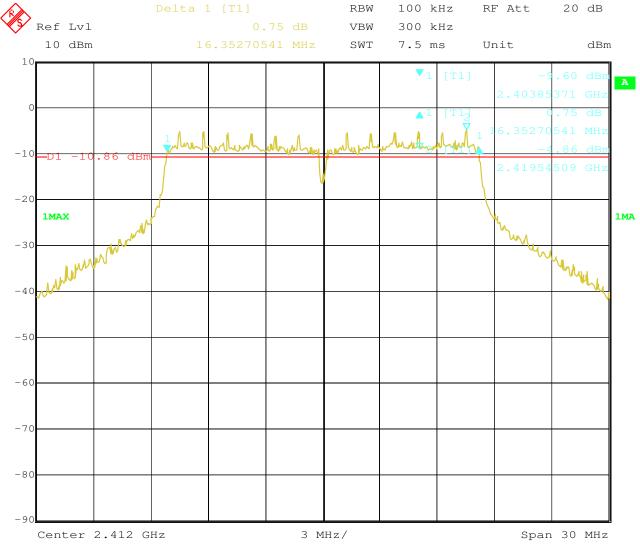
### 6dB Occupied Bandwidth

EUT		Ta	ablet PC		Model			F102
Mode	802.11g Input Voltage		tage	Ι	DC3.7V			
Temperat	Temperature		4 deg. C,		Humidity		56% RH	
Channel		el Frequency (MHz)	ency Data Transfer 6 dB Bandwidth Mi Rate (MHz) (Mbps)			num Limit MHz)	Pass/ Fail	
1		2412	6	16	.35		0.5	Pass
6		2437	6	16	16.35		0.5	Pass
11		2462	6	16	.35		0.5	Pass

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# **Test Plots:** 1. 802.11g at 6Mbps of CH01



Date:

27.JUN.2016 11:01:00

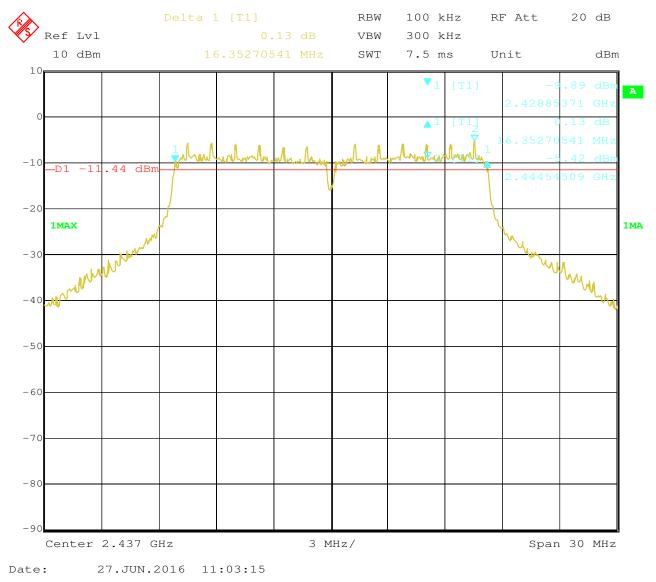
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### 2. 802.11g at 6Mbps of CH06



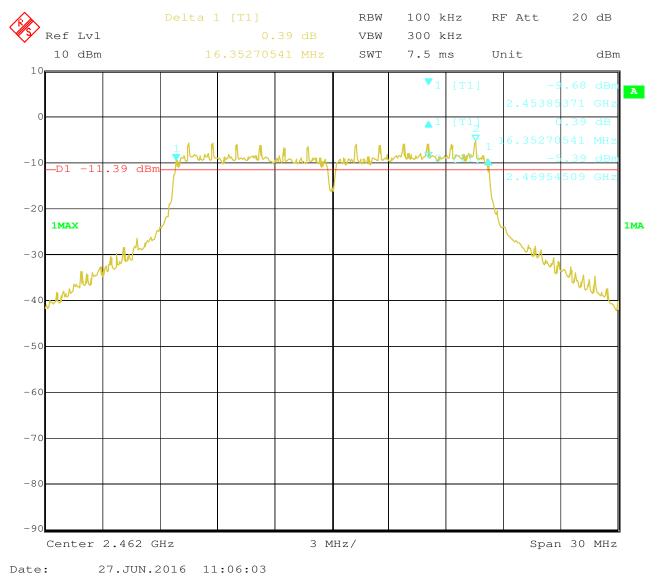
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# 3. 802.11g at 6Mbps of CH11



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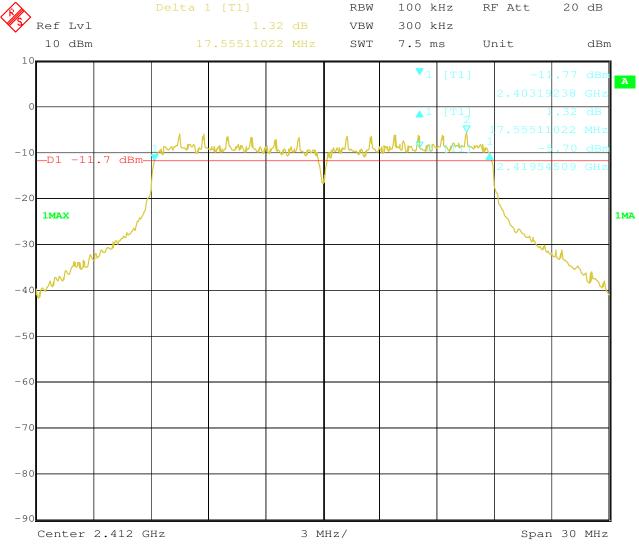
### 6dB Occupied Bandwidth

EUT		T	ablet PC		Model		F102	
Mode		802.11n HT20			Input Voltage		DC3.7V	
Temperat	Temperature		24 deg. C,				56%	6 RH
Channel		el Frequency (MHz)	y Data Transfer 6 dB Bandwidth Rate (MHz) (Mbps)			Minimum Limit (MHz)		Pass/ Fail
1		2412	6.5M	17	.56		0.5	Pass
6		2437	6.5M	17	17.56		0.5	Pass
11		2462	6.5M	17	.56		0.5	Pass

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# **Test Plots:** 1. 802.11n at HT20 of CH01





27.JUN.2016 11:26:47

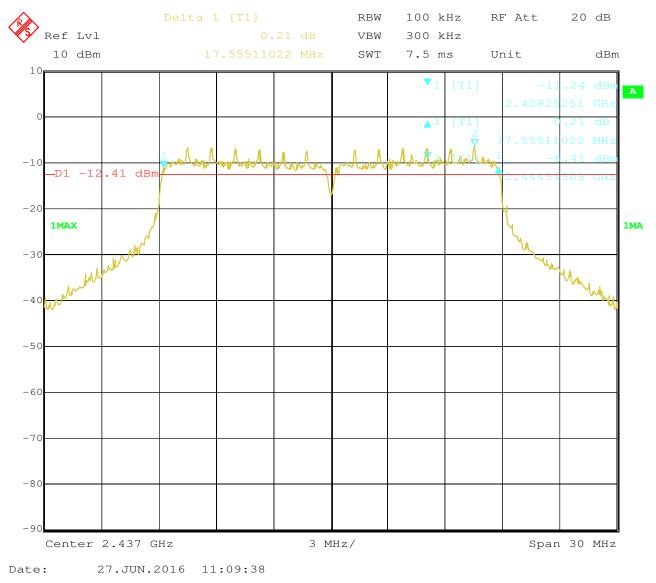
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### 2. 802.11n at HT20 of CH06



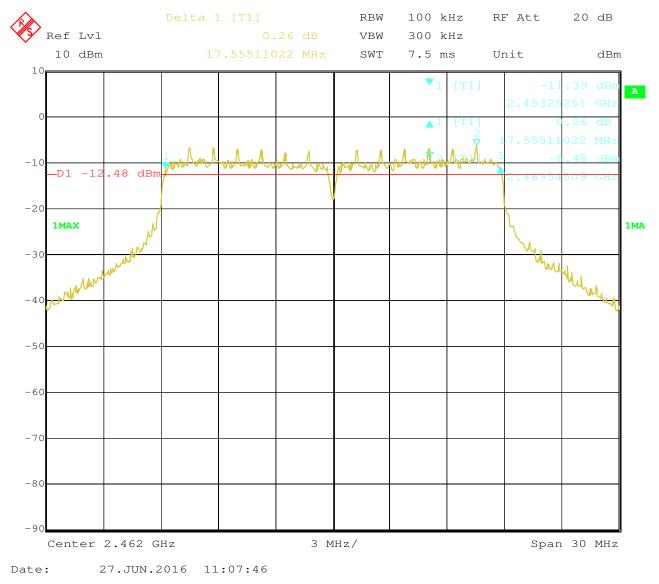
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# 3. 802.11n at HT20 of CH11



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#### 99% Occupied Bandwidth

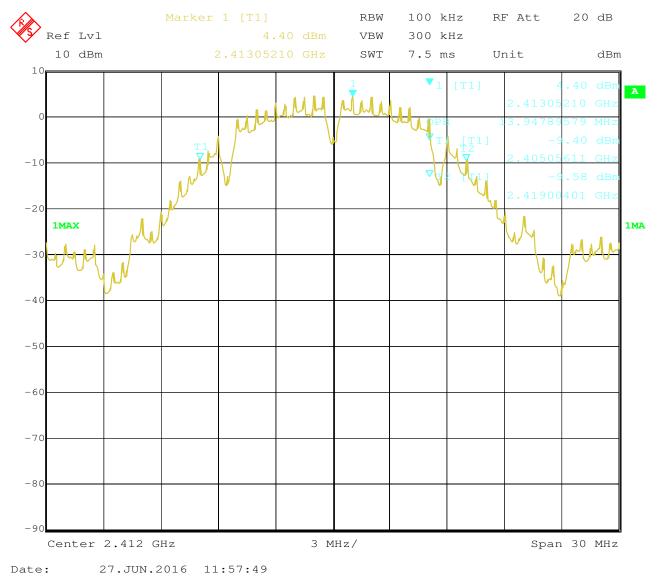
EUT		Ta	ablet PC		Model		F	102		
Mode		8	302.11b		Input Vol	ltage		3.7V		
Temperature		24	24 deg. C,			Humidity		6 RH		
Channel		el Frequency (MHz)	1 5		ndwidth Hz)	h Minimum Limit (MHz)		Pass/ Fail		
1		2412	1	13	.95		Pass			
6		2437	1	13	.71			Pass		
11		2462	1	13	.59			Pass		
1		2412	11	12	12.69		2.69			Pass
6		2437	11	12	12.75			Pass		
11		2462	11	12	.81			Pass		

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### 1. 802.11b at 1Mbps of CH01



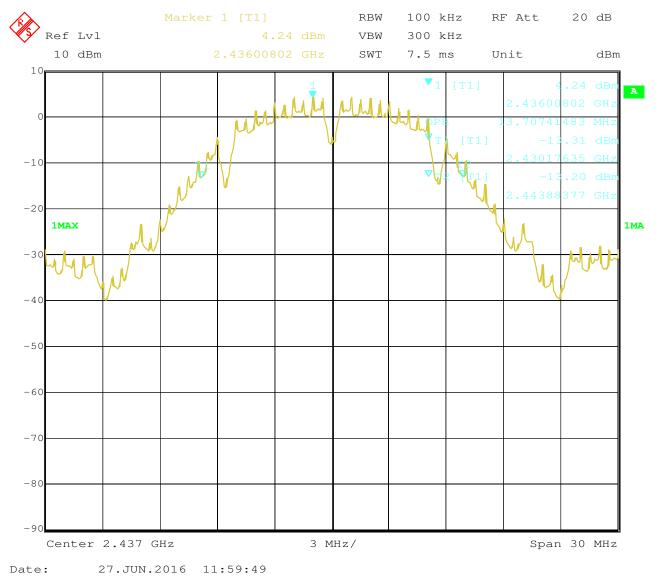
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### 2. 802.11b at 1Mbps of CH06



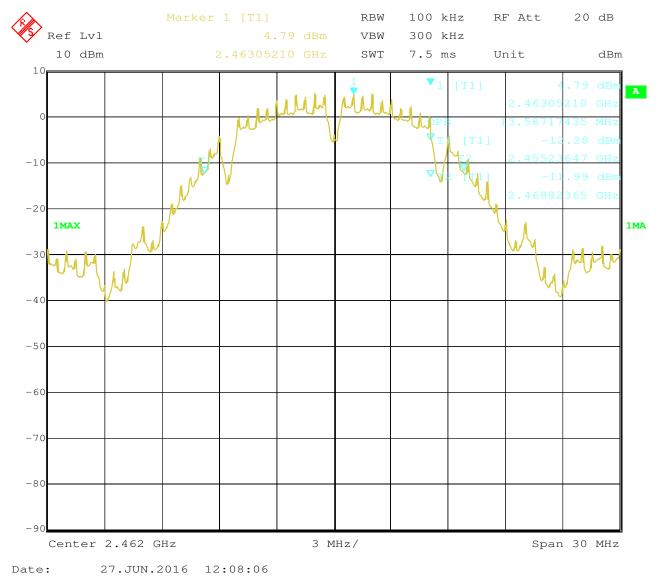
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### 3. 802.11b at 1Mbps of CH11



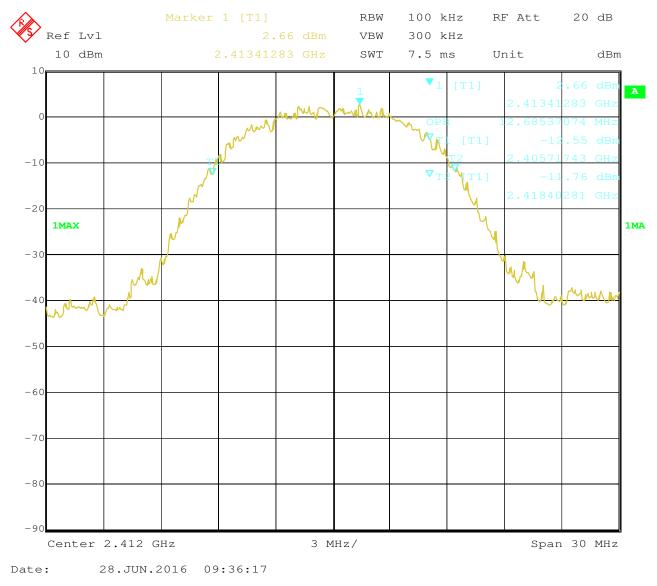
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### 4. 802.11b at 11Mbps of CH01



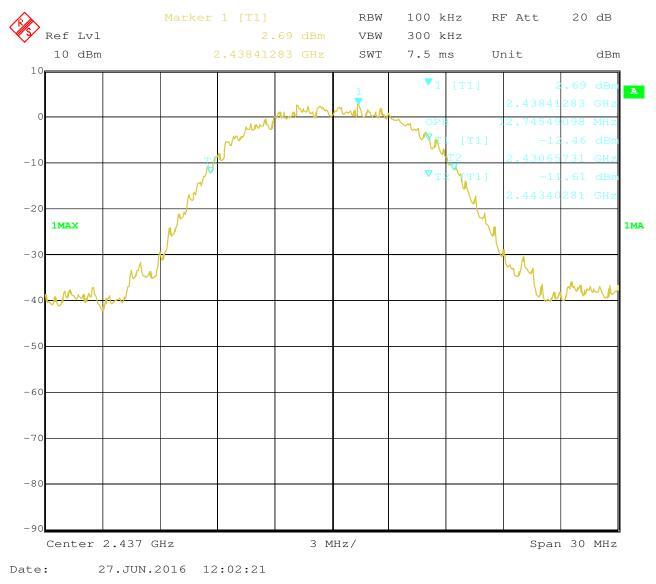
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# 5. 802.11b at 11Mbps of CH06



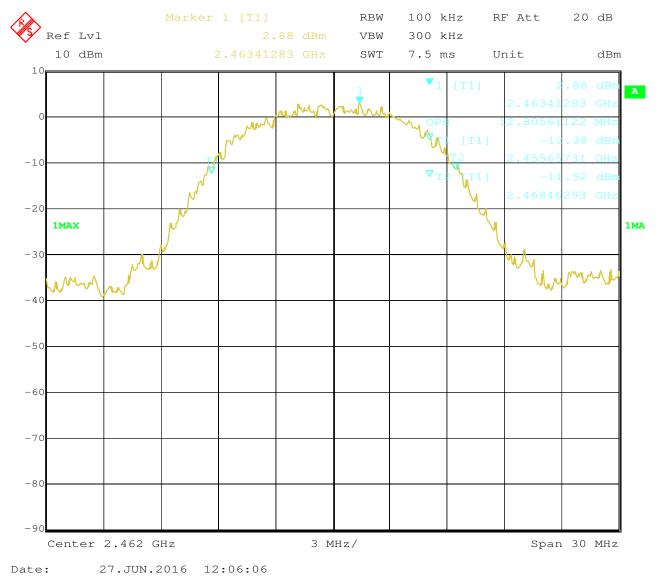
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# 6. 802.11b at 11Mbps of CH11



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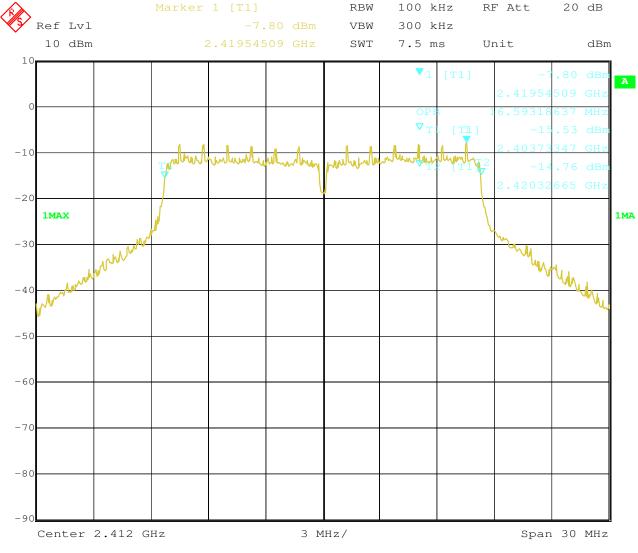
### 99% Occupied Bandwidth

EUT		Ta	ablet PC		Model			F102
Mode		8	802.11g		Input Voltage		DC3.7V	
Temperat	Temperature		4 deg. C,		Humidity		56% RH	
Channel		el Frequency (MHz) Rate (MHz) (Mbps)		Minimum Limit (MHz)		Pass/ Fail		
1		2412	6	16.59			0.5	Pass
6		2437	6	16	16.59		0.5	Pass
11		2462	6	16	.59		0.5	Pass

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# **Test Plots:** 1. 802.11g at 6Mbps of CH01



Date:

27.JUN.2016 12:14:19

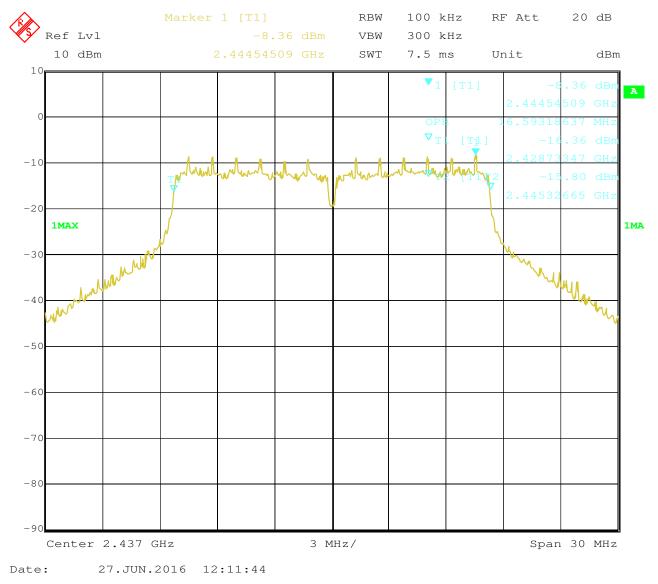
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### 2. 802.11g at 6Mbps of CH06



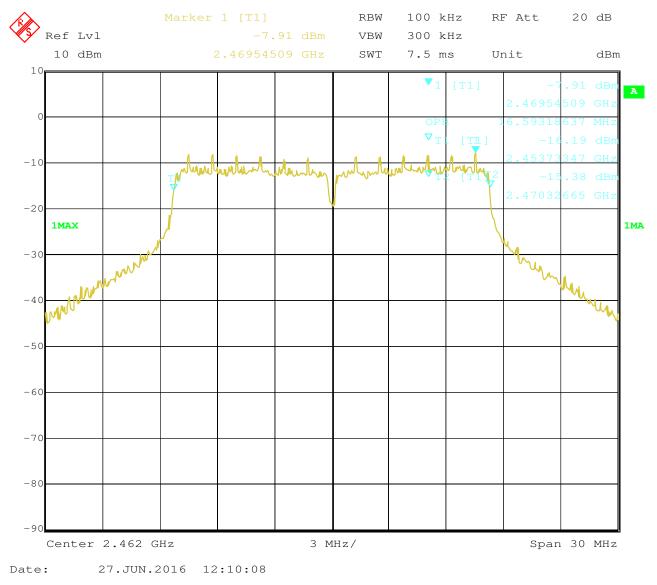
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# 3. 802.11g at 6Mbps of CH11



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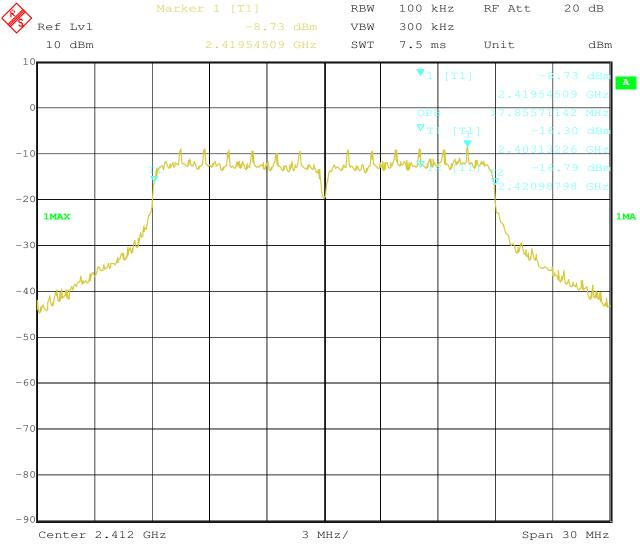
### 99% Occupied Bandwidth

EUT		T	ablet PC		Model		F102	
Mode	Mode		802.11n HT20			Input Voltage		3.7V
Temperat	Temperature		24 deg. C,				56%	6 RH
Channel		el Frequency (MHz)				Minimum Limit (MHz)		Pass/ Fail
1		2412	6.5M	17	.86		0.5	Pass
6		2437	6.5M	17	17.86		0.5	Pass
11		2462	6.5M	17	.86		0.5	Pass

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# **Test Plots:** 1. 802.11n at HT20 of CH01



Date: 27.JUN.2016 12:18:20

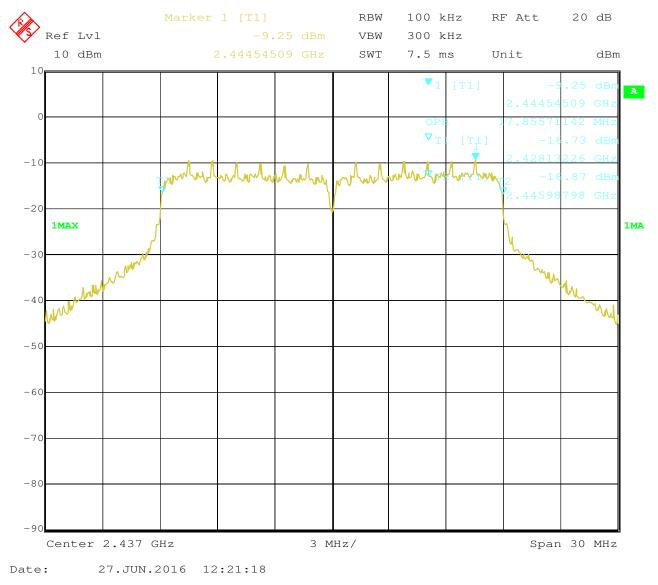
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### 2. 802.11n at HT20 of CH06



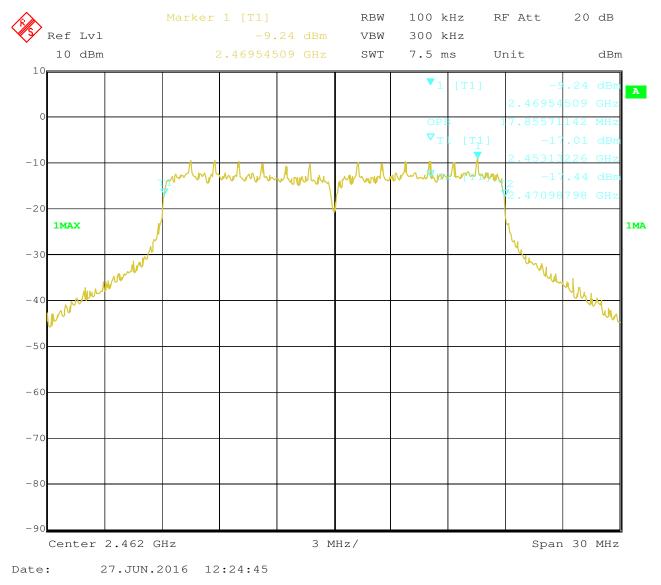
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# 3. 802.11n at HT20 of CH11

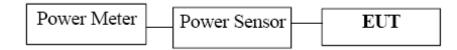


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8. Maximum Output Power 8.1 Test Setup



# 8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

### **8.3 Test Procedure**

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the Peak and Average power was measured

The report refers only to the sample tested and does not apply to the bulk.

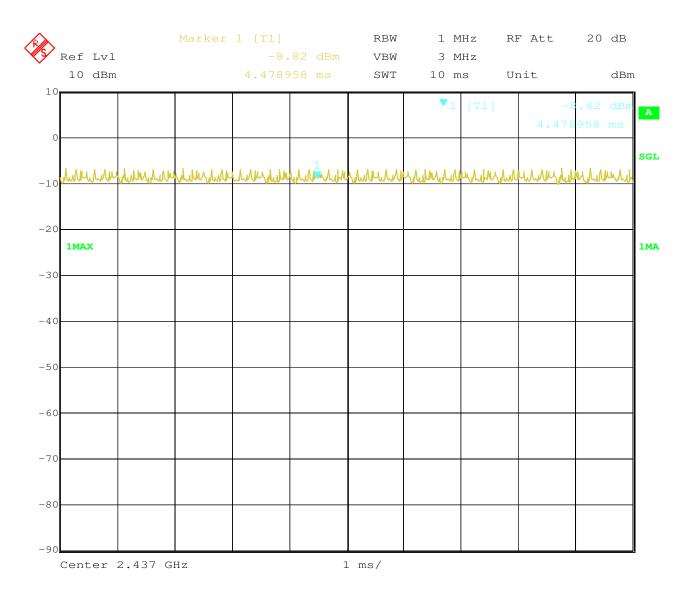
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# Duty Cycle test plot:



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# **8.4Test Results**

EUT		Tablet	PC	М	odel		F102
Mode	Mode 802.		1b	Input	Input Voltage		DC3.7V
Temperat	Temperature 24 de		g. C,	Hur	Humidity		56% RH
Channel	Channel		nnel Frequency (dB		- Power		Pass/ Fail
		(MHz)	Peak Average			)	
1		2412	15.27	11.67	30		Pass
6		2437	16.82	13.25	30	)	Pass
11		2462	17.40	13.76	30	)	Pass

Note: 1. At finial test to get the worst-case emission at 1Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EUT		Tablet	PC		M	odel		F102
Mode	Mode 802.		lg	In	Input Voltage			DC3.7V
Temperat	Temperature 24 de		g. C,		Humidity			56% RH
Channel	Channel Frequency		Max. Power Output (dBm)		ıt	Power Limit (dBm)		Pass/ Fail
		(MHz)	Peak	Avera	ge	(dB)	m)	
1		2412	11.13	5.77	'	30		Pass
6		2437	11.07	5.68	1	30	)	Pass
11		2462	11.11	5.74	ļ	30	)	Pass

Note: 1. At finial test to get the worst-case emission at 6Mbps for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

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EUT		Tablet	PC		М	odel	F102	
Mode	Mode 802.11n		(HT20)	I	Input Voltage			DC3.7V
Temperat	Temperature 24 d		g. C,		Humidity		56% RH	
Channel	Channel Frequency		Max. Pov (dF	ver Outp 3m)	ut	Power		Pass/ Fail
		(MHz)	Peak	Avera	ge	(dBm)		
1		2412	10.69	5.41	5.41 30		)	Pass
6		2437	10.64	5.33	3	30	)	Pass
11		2462	10.84	5.52	2	30	)	Pass

Note: 1. At finial test to get the worst-case emission at 6.5Mbps of 11n HT20 for CH01, CH06 and CH11

2. The result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

3. The worse case was recorded

The report refers only to the sample tested and does not apply to the bulk.

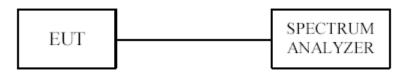
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# 9. Power Spectral Density Measurement

9.1 Test Setup



# 9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

# 9.3 Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.

- 2. Set the RBW = 10 kHz.
- 3. Set the VBW  $\geq$  30 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be  $\leq 8$  dBm.

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# 9.4Test Result

EUT		Tablet	PC	М	odel		F102
Mode	Mode		802.11b 11Mbps		Input Voltage		DC3.7V
Temperature		24 deg	24 deg. C,		Humidity		56% RH
Channel	Cha	annel Frequency (MHz)	Final RF Power Level (dBm)		Maximum Limit (dBm)		Pass/ Fail
			11Mbp	s			
1		2412	-8.53	8			Pass
6	6 2437		-9.05		8		Pass
11		2462	-8.35		8		Pass

EUT		Tablet	PC	Μ	odel		F102
Mode		802.11b 1Mbps		Input Voltage		DC3.7V	
Temperature		24 deg. C,		Humidity			56% RH
Channel	Cha	annel Frequency	Final RF Po	wer	Maximur	n Limit	Pass/ Fail
Channel		(MHz)	Level in (dBm)		(dBm)		
			1Mbps	5			
1		2412	-8.37				Pass
6 2437		-7.48		8		Pass	
11 2462			-8.17		8		Pass

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EUT		Tablet	PC	М	odel		F102
Mode		802.11g 6Mbps		Input Voltage		DC3.7V	
Temperat	ure	24 deg. C,		Humidity			56% RH
Channel	Channel Frequency (MHz)		Final RF Power Level in (dBm)		Maximum Limit (dBm)		Pass/ Fail
			6Mbps				
1		2412	-13.04		8		Pass
6	2437		-13.20		8		Pass
11	11 2462		-13.30		8		Pass

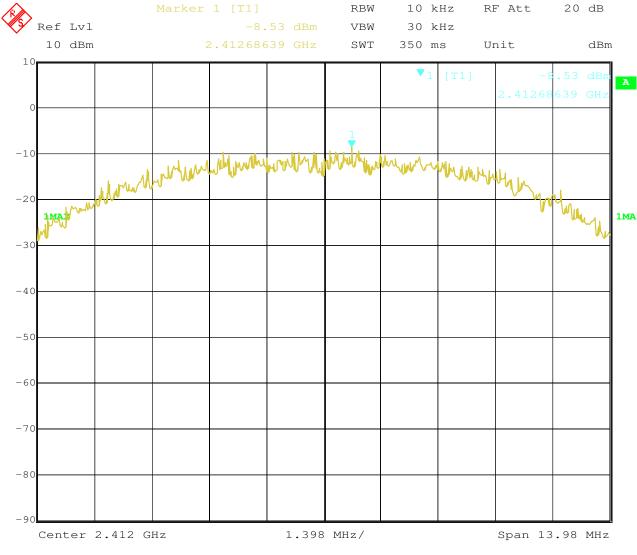
EUT		Tablet PC		Μ	odel		F102
Mode		802.11n HT20 6.5Mbps		Input Voltage		DC3.7V	
Temperat	Temperature		24 deg. C,		Humidity		56% RH
Channel	Ch	annel Frequency	Final RF Po	wer	Maximum Limit		Pass/ Fail
Channel		(MHz)	Level (dBm)		(dB	m)	
			HT20				
1		2412	-14.54		8		Pass
6	6 2437		-15.05		8		Pass
11		2462	-15.00		8		Pass

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# 9.5 Photo of Power Spectral Density Measurement

1.802.11b at 11Mbps of CH01



Date: 27.JUN.2016 15:11:42

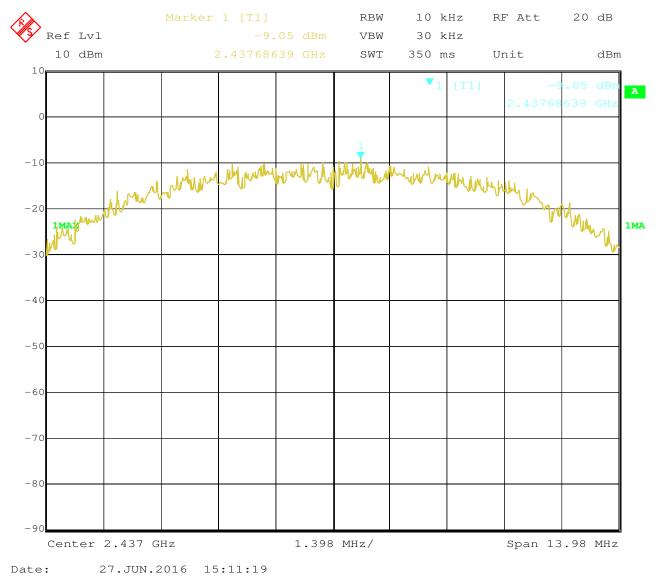
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#### 2. 802.11b at 11Mbps at CH06



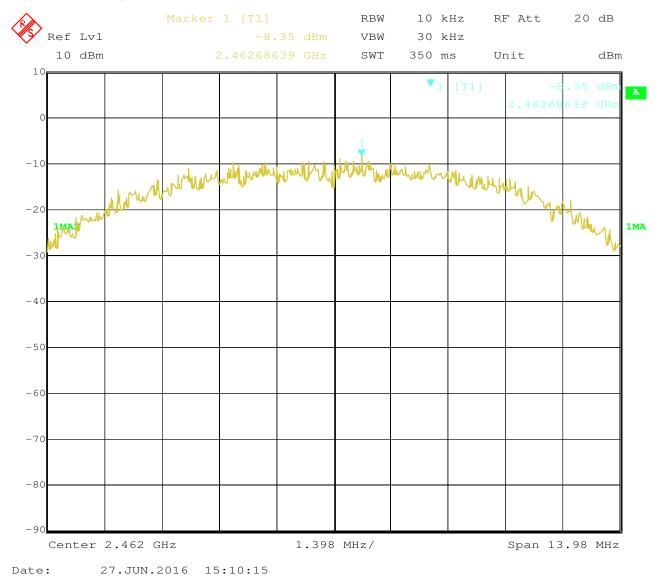
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## 3. 802.11b at 11Mbps of CH11



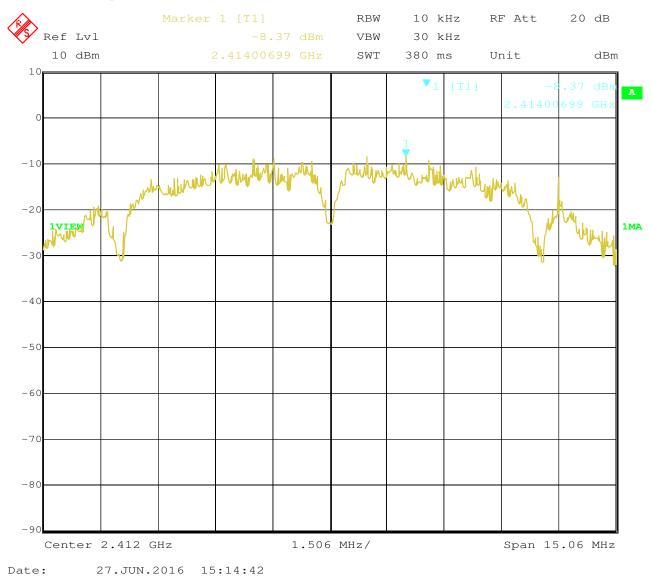
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4. 802.11b at 1Mbps of CH1



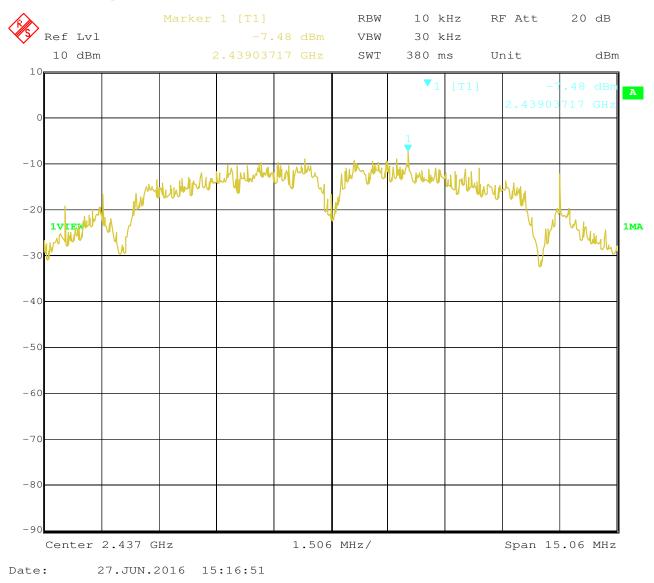
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5. 802.11b at 1Mbps of CH6



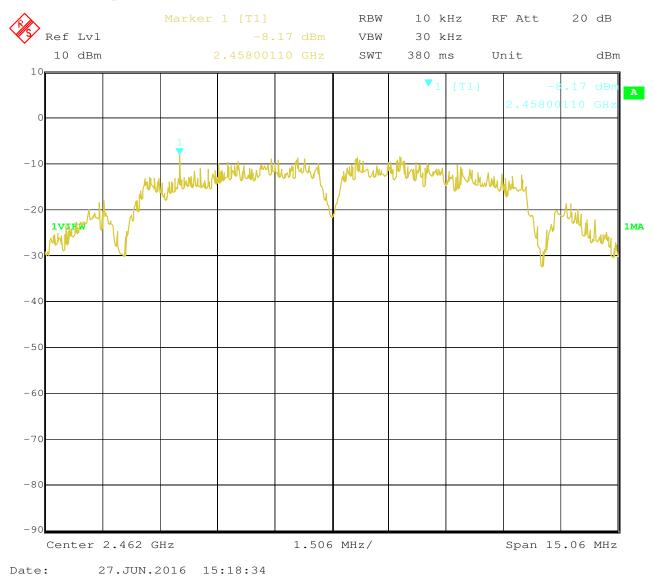
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6. 802.11b at 1Mbps of CH11



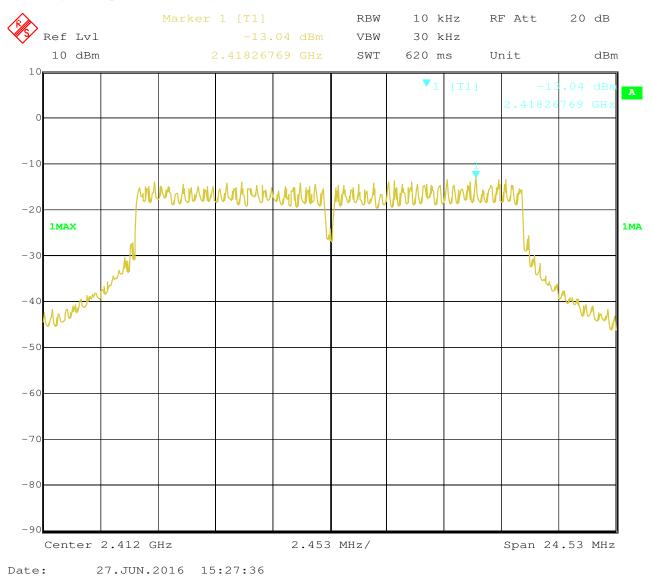
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7. 802.11g at 6Mbps of CH1



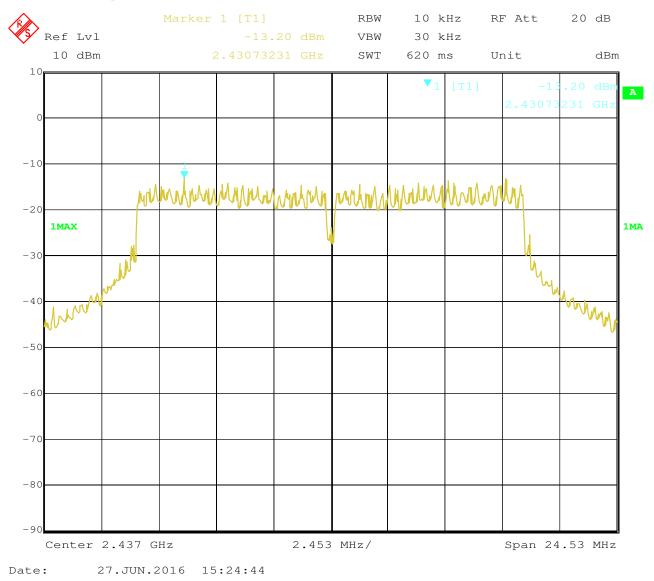
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8. 802.11g at 6Mbps of CH6



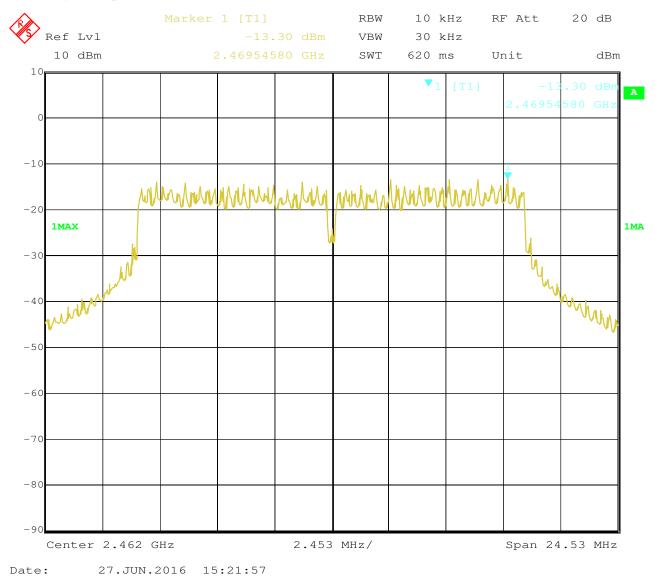
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9. 802.11g at 6Mbps of CH11



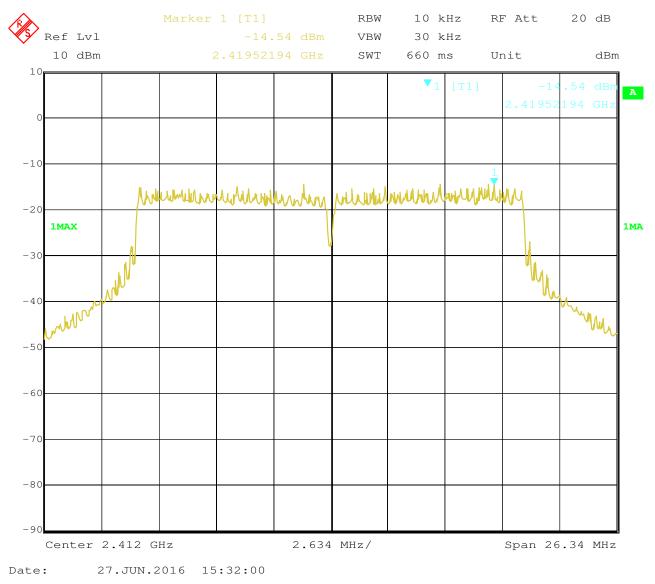
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### 10. 802.11n at HT20 of CH01



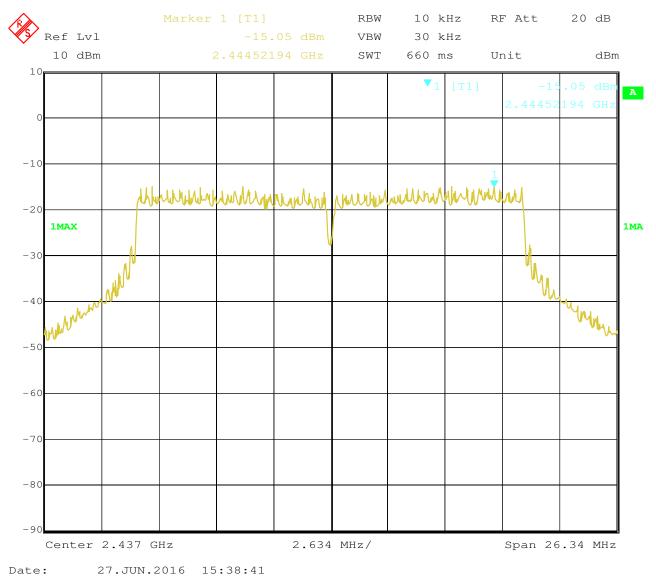
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### 11. 802.11n at HT20 of CH06



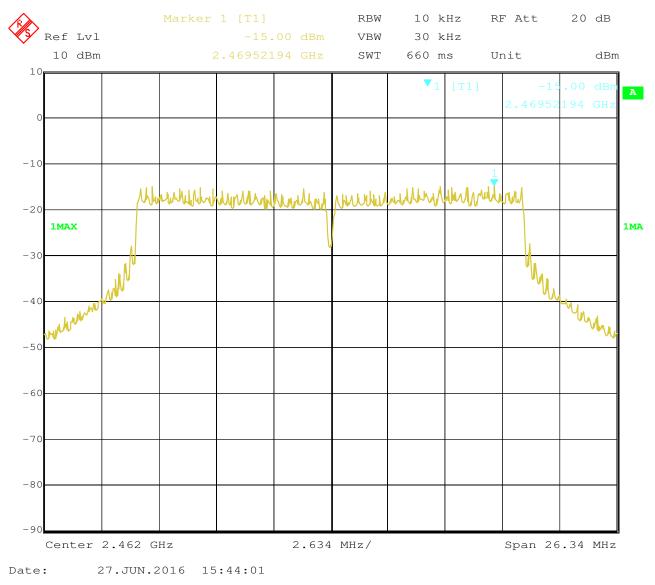
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### 12. 802.11n at HT20 of CH11

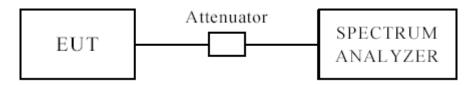


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**10 Out of Band Measurement 10.1 Test Setup for band edge** 



# The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

# 10.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

## **10.3 Test Procedure**

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test.( Peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector)

For bandage test, the spectrum set as follows: RBW=100, VBW=300 kHz. A conducted measurement used

# 10.4 Test Result

Please see next pages

Note: 1. this is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), after pre-test. It was found that the worse radiated emission was get at the lying position. the worse case was recorded

2. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

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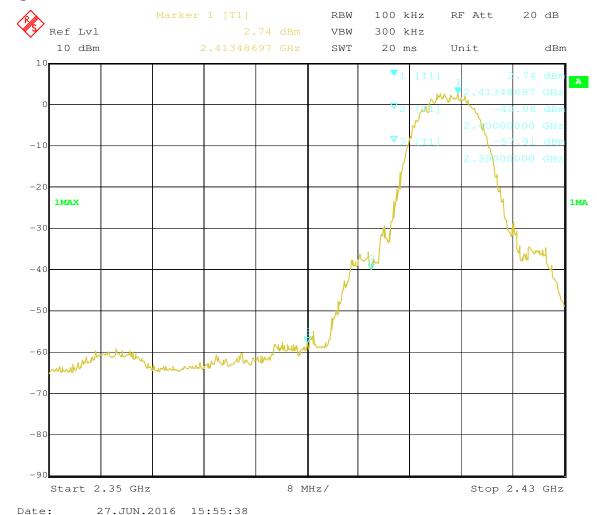
#### For 802.11b mode

CH01 at 11Mbps

#### 10.4 Band-edge Measurement

EUT	Tablet PC	Model	F102
Mode	Keeping Transmitting	Input Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	РК

#### **Test Figure:**



The report refers only to the sample tested and does not apply to the bulk.

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### CH11 at 11Mbps





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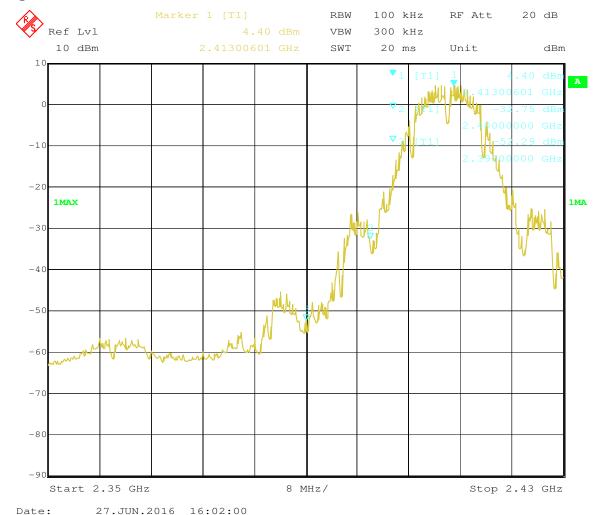
#### For 802.11b mode

CH01 at 1Mbps

#### 10.4 Band-edge Measurement

EUT	Tablet PC	Model	F102
Mode	Keeping Transmitting	Input Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	РК

#### **Test Figure:**

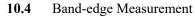


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### CH11 at 1Mbps



EUT	Tablet PC				М	lodel			F102	
Mode	Ke	eping Tra	nsmittin	g	Input	Voltage		E	OC3.7V	
Temperature		24 deg	g. C,		Hu	midity	56% RH			
Test Result:		Pas	s		De	tector			РК	
st Figure:										
		Marker		0.4	RBW	100 k		F Att	20 dB	
Ref L 10 d		2	4. .463026	84 dBm	VBW SWT	300 k 12.5 m		nit	dBn	n
10		1								1
0	ull	W MAL	ц.			• 1	[T1]	4 2.46302	.84 dBm 605 GHz	A
-10	M	V	M.			• 2	[T1]	-51 2.48350	.38 dBm	
-20	VV		VY							
-30	V			L.	. 1					1MA
N				hy h	My					
-40				Ĭ	M	2				
-50						Why	white	M		
-60									- Christon - Christon	
-70										
-80										
-90										

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#### For 802.11g mode

CH01 at 6Mbps

#### 10.4 Band-edge Measurement

EUT	Tabl	et PC	Ν	lodel		F102	
Mode	Keeping Transmitting			Voltage		DC3.7V	
Temperature	24 d	eg. C,	Hu	midity		56% RH	
Test Result:	Pa	ass	De	tector		PK	
Test Figure:							
(Rec)		1 [T1]	RBW	100 k		t 20 dB	
Ref Lv 10 dB		-4.74 dBm 2.41957916 GHz	VBW SWT	300 k 20 m		dBm	
10 ab	111	2.41957916 GHZ	SWI	20 m	s onic	аып	
				<b>1</b>	[T1]		A
0				<b>V</b> 0	2.41		
				· 2	[T1]	133.51 dBm	
-10				<b>⊽</b> 3	MUM	- <u>53.44</u> dBm	
					2.39	9000000 GHz	
-20							
1MAX						11	MA
-30						<u>M</u>	
-50				A CONTRACTOR		Y,	
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-40			J. W.			Nu.	
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-70							
- 8 0							
-90	2.35 GHz	8 MI			0+-	2 42 611-	
Date:	27.JUN.2016 1				JLC	op 2.43 GHz	

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### CH11 at 6Mbps

#### Band-edge Measurement 10.4

EUT	Tablet PC					odel			F102	
Mode	K	eeping Tra		g		Voltage			DC3.7V 6% RH	
Temperature		24 deg				nidity				
Test Result:		Pas	ss		Det	ector			PK	
est Figure:										
<u>ka</u>		Marker	1 [T1]		RBW	100 k	Hz	RF Att	20 dB	
Ref I				.14 dBm	VBW	300 k				
10 c	IBm	2	2.469539	908 GHz	SWT	12.5 m	S	Unit	dBm	1
						▼1		-!	.14 dBm	A
0								2.46953	3908 GHz	
Ŭ			1			<b>v</b> 2		-53	.63 dBm 0000 GHz	
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-70										
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-90	2.45 GH:				IHz/				2.5 GHz	l

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#### For 802.11n (HT20) mode

### CH01 at 6.5Mbps

#### 10.4 Band-edge Measurement

EUT	Tablet PC				Model			F102	
Mode	Keeping	Transmitti	ng	Inp	ut Voltage	e	]	DC3.7V	
Temperature	24	deg. C,		Н	lumidity		4	56% RH	
Test Result:	]	Pass		Ι	Detector		PK		
st Figure:									
	Marker			RBW	100 k		RF Att	20 dB	
Ref Lvl 10 dBm		-5. 2.419579	69 dBm	VBW SWT	300 k 20 m		Unit	dBm	
10 aBm	-	2.419579	10 GHZ	SWI	20 11	.5	UNIL	аы	
					▼1	[T1]	-	5.69 dBm 7916 GHz	A
0					▼2	[T1]	-3	2.81 dBm	
						1.4.4.4	2.4000	0000 GHz	
-10							Manune	2.72 dBm	L
						V	2.3900	0000 GHz	
-20							,		1MA
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-30					A REAL PROPERTY AND A REAL			Y.	
-40				/					
-50				- AMM				٦ ٦	
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-60 million	Menter to Market								
-70									
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-90Start 2	25 611-		8 M				Ct	2.43 GHz	
	.33 GH2 7.JUN.2016 16		o M				scop	2.43 GHZ	

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### CH11 at 6.5Mbps

#### 10.4 Band-edge Measurement

EUT	Tablet PC				М	lodel			F102	
Mode	K	Keeping T	ransmittin	g	Input	Input Voltage		DC3.7V		
Temperature		24 de	eg. C,		Hui	midity			56% RH	
Test Result:		Pa	iss		De	tector			РК	
st Figure:										
Ref Ly	2	Marker	1 [T1]	15 15	RBW	100 k		RF Att	20 dB	
10 di			-6. 2.469539	15 dBm 08 GHz	VBW SWT	300 k 12.5 m		Unit	dBrr	ı
10						▼1	6 1 1		1.5.15	1
						• 1	[T1]	2.4695	-6.15 dBm 3908 GHz	A
0						₹2	[T1]	-5		
			1					2.4835	0000 GHz	
-10	- halala	hal and the second second	MANNIN	h <u>y</u>						
		V								
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-40					N.					
					Why					
-50					"Vu	Uu4 <u></u> 2				
						with the second	hillyen	Mulhanuk		
-60									Muncherry	
-70										
-80										
-90	2.45 GH:			5 M					2.5 GHz	l

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m	Remark
(MHz)	(dBµV)	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	(dBµV/m)	
		(dB/m)						
2400	70.70	27.3	3.62	35.12	66.5	Н	74	PK
2400	49.90	27.3	3.62	35.12	45.7	Н	54	AV
2390	52.22	25.7	3.56	35.08	46.4	Н	74	PK
2390		25.7	3.56	35.08		Н	54	AV*
2400	69.40	27.3	3.62	35.12	65.2	V	74	РК
2400	49.30	27.3	3.62	35.12	45.1	V	54	AV
2390	51.12	25.7	3.56	35.08	45.3	V	74	РК
2390		25.7	3.56	35.08		V	54	AV*
2483.5	54.61	27.5	3.80	35.11	50.8	Н	74	РК
2483.5		27.5	3.80	35.11		Н	54	AV*
2483.5	53.51	27.5	3.80	35.11	49.7	V	74	РК
2483.5		27.5	3.80	35.11		V	54	AV*

**10.4** Restricted band Measurement for 802.11b 11Mbps

\* Note: The PK final measurement less than the AV limit. No necessary to record the AV emission level.

Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m	Remark
(MHz)	$(dB\mu V)$	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$	
		(dB/m)						
2400	71.20	27.3	3.62	35.12	67.0	Н	74	РК
2400	50.40	27.3	3.62	35.12	46.2	Н	54	AV
2390	58.02	25.7	3.56	35.08	52.2	Н	74	РК
2390	39.42	25.7	3.56	35.08	33.6	Н	54	AV
2400	70.30	27.3	3.62	35.12	66.1	V	74	РК
2400	49.50	27.3	3.62	35.12	45.3	V	54	AV
2390	57.42	25.7	3.56	35.08	51.6	V	74	РК
2390	39.02	25.7	3.56	35.08	33.2	V	54	AV
2483.5	55.51	27.5	3.80	35.11	51.7	Н	74	РК
2483.5	35.81	27.5	3.80	35.11	32.0	Н	54	AV
2483.5	54.71	27.5	3.80	35.11	50.9	V	74	РК
2483.5	35.01	27.5	3.80	35.11	31.2	V	54	AV

**10.4** Restricted band Measurement for 802.11b 1Mbps

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Frequency	Reading	Antenna	Cable	Pre-amp	Level@3m	Antenna	Limit@3m	Remark
(MHz)	(dBµV)	Factor	Loss (dB)	(dB)	$(dB\mu V/m)$	Polarity	$(dB\mu V/m)$	
		(dB/m)						
2400	73.60	27.3	3.62	35.12	69.4	Н	74	РК
2400	52.70	27.3	3.62	35.12	48.5	Н	54	AV
2390	56.62	25.7	3.56	35.08	50.8	Н	74	PK
2390	37.32	25.7	3.56	35.08	31.5	Н	54	AV
2400	73.00	27.3	3.62	35.12	68.8	V	74	PK
2400	51.80	27.3	3.62	35.12	47.6	V	54	AV
2390	56.12	25.7	3.56	35.08	50.3	V	74	РК
2390	37.02	25.7	3.56	35.08	31.2	V	54	AV
2483.5	54.51	27.5	3.80	35.11	50.7	Н	74	РК
2483.5	35.01	27.5	3.80	35.11	31.2	Н	54	AV
2483.5	53.91	27.5	3.80	35.11	50.1	V	74	РК
2483.5	34.41	27.5	3.80	35.11	30.6	V	54	AV

10.4 Restricted band Measurement for 802.11g 6Mbps

10.4 Restricted band Measurement for 802.1n 6.5Mbps

Frequency (MHz)	Reading (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pre-amp (dB)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)	Remark
2400	73.90	27.3	3.62	35.12	69.7	Н	74	PK
2400	54.30	27.3	3.62	35.12	50.1	Н	54	AV
2390	58.92	25.7	3.56	35.08	53.1	Н	74	PK
2390	40.12	25.7	3.56	35.08	34.3	Н	54	AV
2400	73.20	27.3	3.62	35.12	69.0	V	74	РК
2400	53.50	27.3	3.62	35.12	49.3	V	54	AV
2390	58.12	25.7	3.56	35.08	52.3	V	74	РК
2390	39.62	25.7	3.56	35.08	33.8	V	54	AV
2483.5	55.51	27.5	3.80	35.11	51.7	Н	74	РК
2483.5	36.61	27.5	3.80	35.11	32.8	Н	54	AV
2483.5	55.31	27.5	3.80	35.11	51.5	V	74	РК
2483.5	36.41	27.5	3.80	35.11	32.6	V	54	AV

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# 11.0 Antenna Requirement

# 11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

# 11.2 Antenna Connected construction

Integral antenna used. The maximum Gain of the antennas is 2.0dBi.

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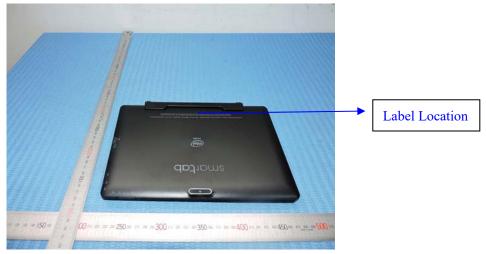
### 12.0 FCC ID Label

# FCC ID: RBD-F102

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### **Mark Location:**



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#### 13.0 Photo of testing

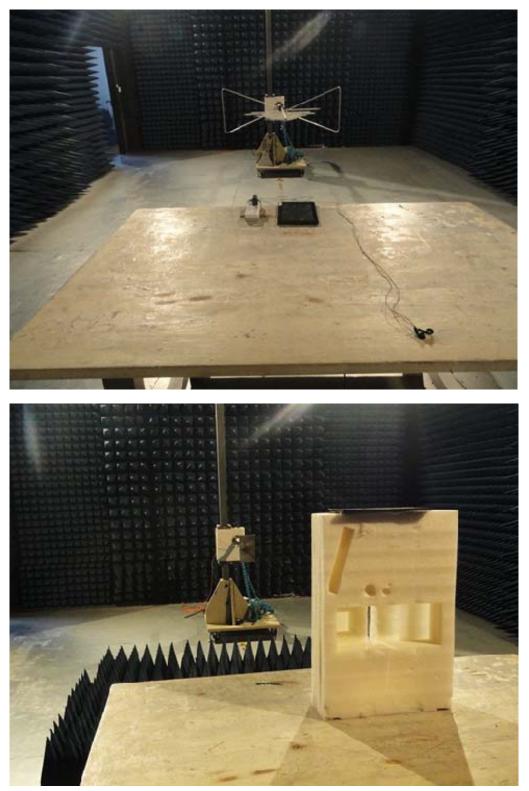
Conducted Emission Test Setup:



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Radiated Emission Test Setup:



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# **Photographs – EUT**

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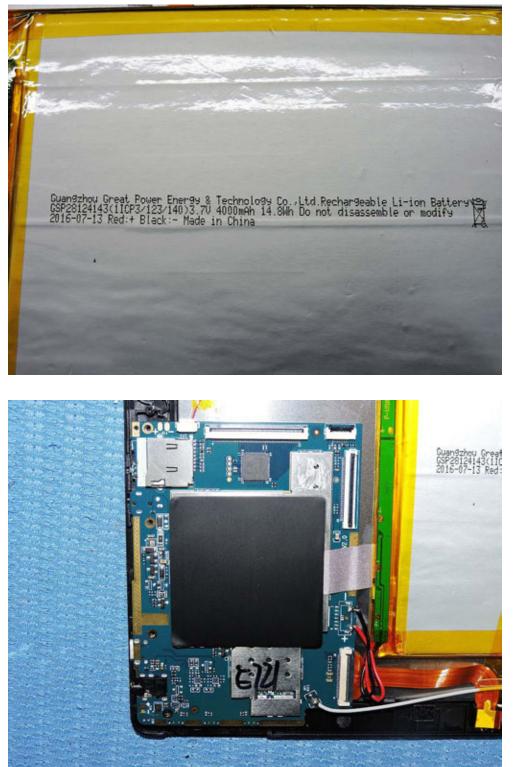
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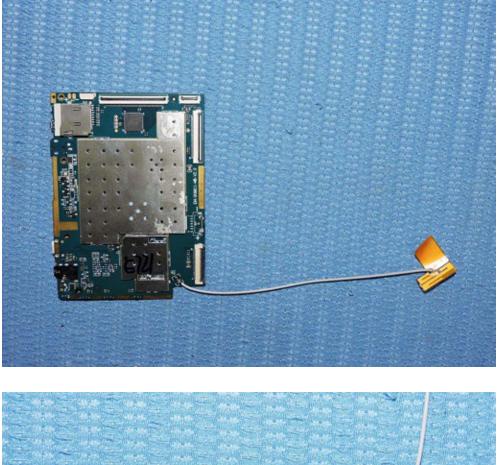
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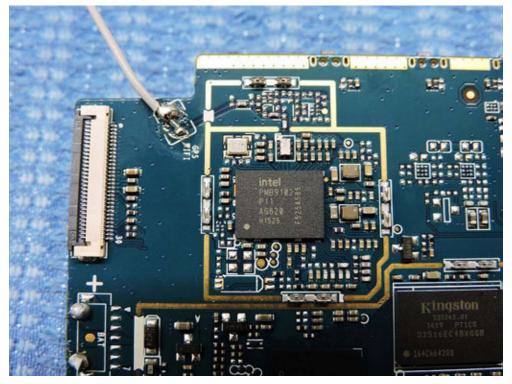


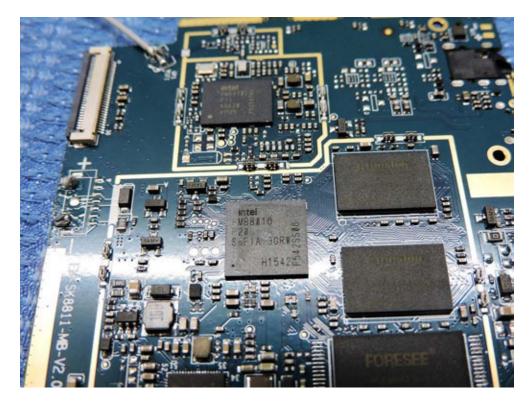
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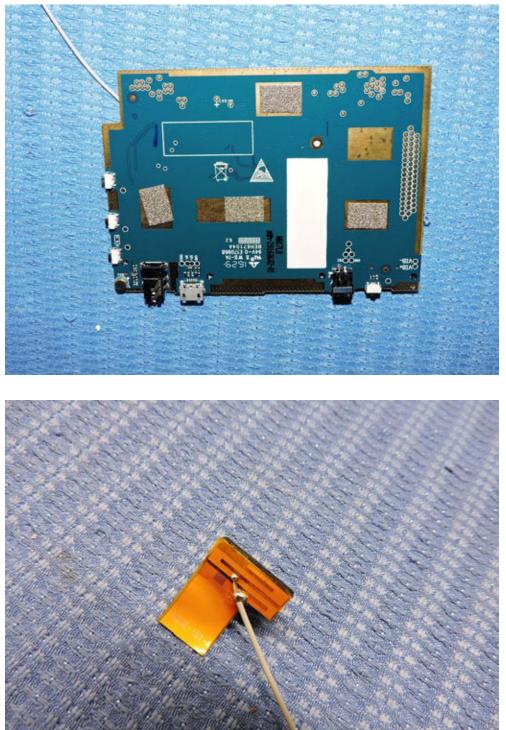




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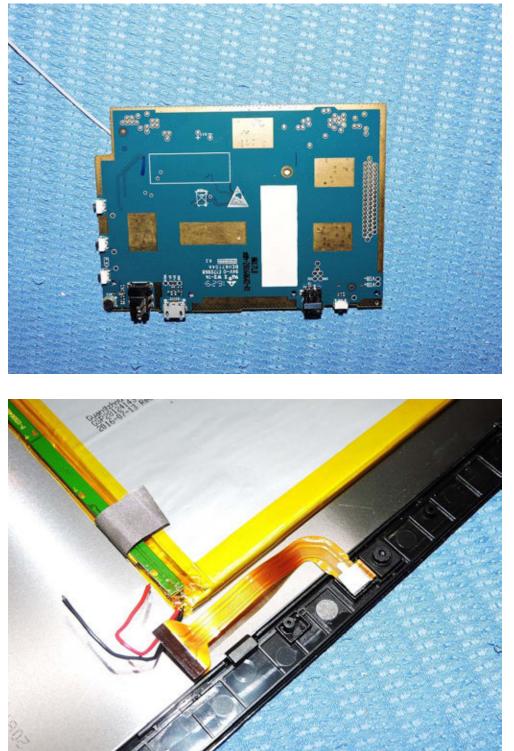
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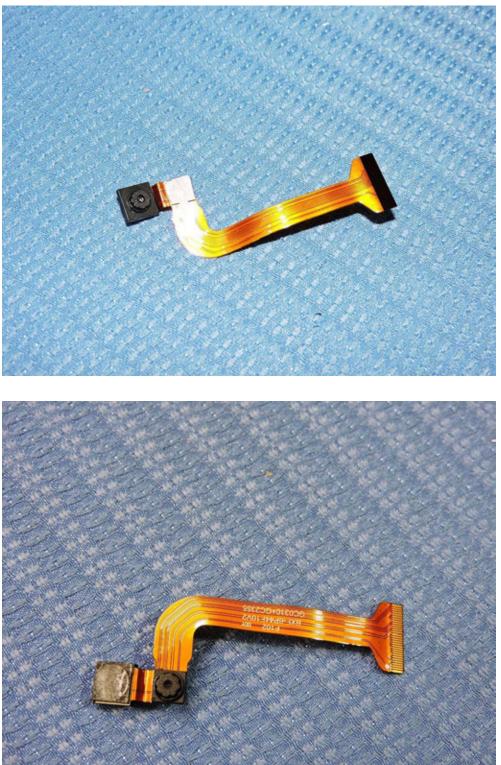
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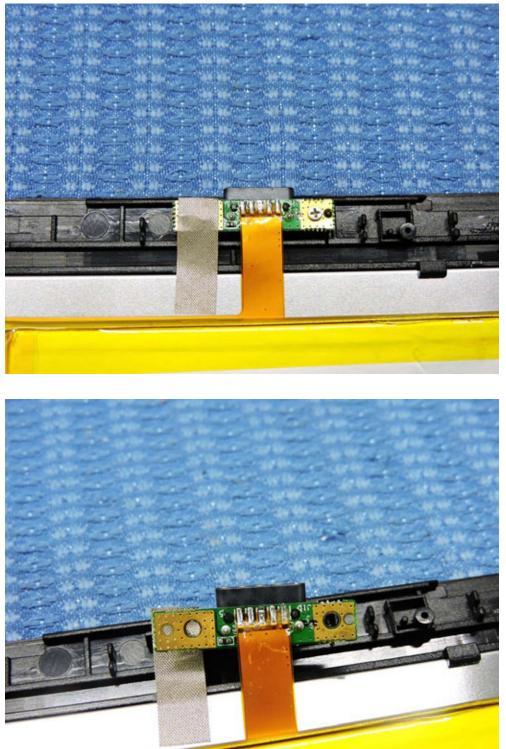
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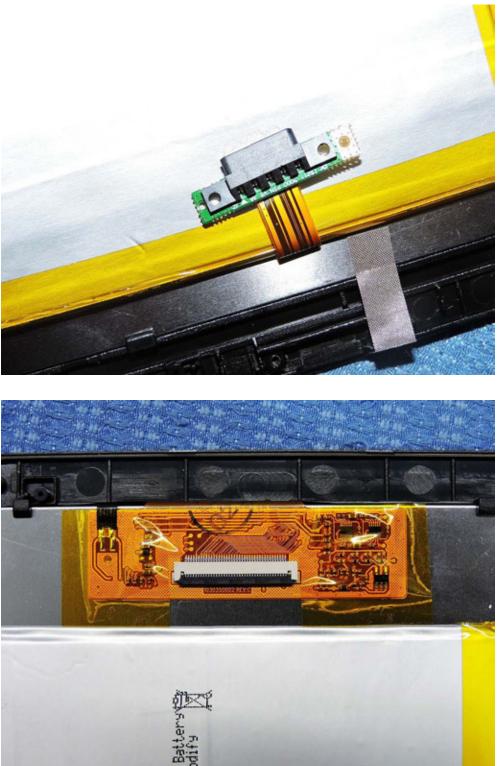


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Inside view-Configure b)





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Inside view- Configure b)



End of the report

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