### Shenzhen Huatongwei International Inspection Co., Ltd.

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# **TEST REPORT**

**Report Reference No.....: TRE1801004504** R/C.....: 93644

FCC ID.....: 2ALAVA81F

Applicant's name.....: Haier International Business Corporation Limited

Shan District, Qingdao, Shandong, China

Manufacturer...... Haier International Business Corporation Limited

Shan District, Qingdao, Shandong, China

Test item description .....: Tablet PC

Trade Mark ...... iBiRAPITÁ

Model/Type reference...... A81F

Listed Model(s) ..... -

Standard .....: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of receipt of test sample.......... Jan.05,2018

Date of testing...... Jan.06,2018-Jan.18,2018

Date of issue...... Jan.19,2018

Result.....: PASS

Compiled by

( position+printedname+signature)...: File administrators Candy Liu

Supervised by

(position+printedname+signature)....: Project Engineer : Edward Pan

Approved by

(position+printedname+signature)....: RF Manager Hans Hu

Testing Laboratory Name .....: Shenzhen Huatongwei International Inspection Co., Ltd.

Address....... 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road,

Tianliao, Gongming, Shenzhen, China

Candy Liu Bodward. Pan

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The test report merely correspond to the test sample.

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### 1. TEST STANDARDS AND REPORT VERSION

### 1.1. Test Standards

The tests were performed according to following standards:

<u>FCC Rules Part 15.247:</u> Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

ANSI C63.10:2013: American National Standard for Testing Unlicensed Wireless Devices

<u>KDB 558074 D01 DTS Meas Guidance v04:</u> Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating under §15.247

### 1.2. Report version

Version No.	Date of issue	Description
00	Jan.19,2018	Original

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# 2. TEST DESCRIPTION

Test Item	FCC Rule	Result	Test Engineer
Antenna requirement	15.203/15.247(c)	PASS	William Wang
Line Conducted Emissions (AC Main)	15.207	PASS	William Wang
Conducted Peak Output Power	15.247(b)(3)	PASS	Baozhu.hu
Power Spectral Density	15.247(e)	PASS	Baozhu.hu
6dB Bandwidth	15.247(a)(2)	PASS	Baozhu.hu
Restricted band	15.247(d)/15.205	PASS	Baozhu.hu
Spurious Emissions	15.247(d)/15.209	PASS	Baozhu.hu

Note: The measurement uncertainty is not included in the test result.

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# 3. **SUMMARY**

### 3.1. Client Information

Applicant:	Haier International Business Corporation Limited	
Address:  Room 1602,16th Floor,Tower A,No. 1 Ke Yuan Wei Yi Road, Lao Shan District,Qingdao,Shandong,China		
Manufacturer:	Haier International Business Corporation Limited	
Address:	Room 1602,16th Floor,Tower A,No. 1 Ke Yuan Wei Yi Road, Lao Shan District,Qingdao,Shandong,China	

## 3.2. Product Description

Name of EUT:	Tablet PC
Trade Mark:	İBİRAPİTÁ
Model No.:	A81F
Listed Model(s):	-
IMEI:	868758030000008
Power supply:	DC 3.7V
Adapter information:	Input: 100-240Va.c., 50/60Hz, 0.5A Output: 5Vd.c.,2.0A
Hardware version:	L808WF_V1_20171129
Software version:	Ibirapita.PadA81F.GM20180126.SV1.0
WIFI	
Supported type:	802.11b/802.11g/802.11n(HT20)/802.11n(HT40)
Modulation:	DSSS for 802.11b OFDM for 802.11g/802.11n(HT20)/802.11n(HT40)
Operation frequency:	2412MHz~2462MHz for 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz for 802.11n(HT40)
Channel number:	11 for 802.11b/802.11g/802.11n(HT20) 7 for 802.11n(HT40)
Channel separation:	5MHz
Antenna type:	PIFA Antenna
Antenna gain:	1.0dBi

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### 3.3. Operation state

### > Test frequency list

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channel which were tested. the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above gray bottom.

802.11b/g/n(HT20)		802.11n(HT40)		
Channel	Frequency (MHz)	Channel	Frequency (MHz)	
01	2412	01	-	
02	2417	02	-	
03	2422	03	2422	
04	2427	04	2427	
05	2432	05	2432	
06	2437	06	2437	
07	2442	07	2442	
08	2447	08	2447	
09	2452	09	2452	
10	2457	10	-	
11	2462	11	-	

### > Test mode

#### For RF test items

The engineering test program was provided and enabled to make EUT continuous transmit (duty cycle>98%).

For AC power line conducted emissions:

The EUT was set to connect with the WLAN AP under large package sizes transmission.

For Radiated suprious emissions test item:

The engineering test program was provided and enabled to make EUT continuous transmit(duty cycle>98%). The EUT in each of three orthogonal axis emissions had been tested ,but only the worst case (X axis) data Recorded in the report.

### 3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

supplied by the manufacturer

supplied by the lab

		Manufacturer:	/
0		Model No.:	/
	1	Manufacturer:	/
		Model No.:	/

### 3.5. Modifications

No modifications were implemented to meet testing criteria.

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### 4. TEST ENVIRONMENT

### 4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd. Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

### 4.2. Test Facility

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. 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.

### IC-Registration No.:5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No.: 5377B-1.

### **ACA**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

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#### 4.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

### 4.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors in calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd. quality system according to ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Here after the best measurement capability for Shenzhen Huatongwei International Inspection Co., Ltd. is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emissions 9kHz~40GHz	1.60 dB	(1)
Radiated spurious emissions 9kHz~40GHz	2.20 dB	(1)
Conducted Emissions 9kHz~30MHz	3.39 dB	(1)
Radiated Emissions 30~1000MHz	4.24 dB	(1)
Radiated Emissions 1~18GHz	5.16 dB	(1)
Radiated Emissions 18~40GHz	5.54 dB	(1)

<sup>(1)</sup> This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

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### 4.5. Equipments Used during the Test

Condu	Conducted Emissions						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)	
1	EMI Test Receiver	R&S	ESCI	101247	11/11/2017	11/10/2018	
2	Artificial Mains	SCHWARZBECK	NNLK 8121	573	11/11/2017	11/10/2018	
3	2-Line V- Network	R&S	ESH3-Z5	100049	11/11/2017	11/10/2018	
4	Pulse Limiter	R&S	ESH3-Z2	101488	11/11/2017	11/10/2018	
5	RF Connection Cable	HUBER+SUHNER	EF400	N/A	11/21/2017	11/20/2018	
6	Test Software	R&S	ES-K1	N/A	N/A	N/A	

Radiated Emissions						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	EMI Test Receiver	R&S	ESCI	101247	11/11/2017	11/10/2018
2	Loop Antenna	R&S	HFH2-Z2	100020	11/20/2017	11/19/2018
3	Ultra- Broadband Antenna	SCHWARZBECK	VULB9163	538	4/5/2017	4/4/2018
4	Preamplifier	SCHWARZBECK	BBV 9743	9743-0022	10/18/2017	10/17/2018
5	RF Connection Cable	HUBER+SUHNE R	RE-7-FL	N/A	11/21/2017	11/20/2018
6	EMI Test Software	R&S	ESK1	N/A	N/A	N/A
7	Spectrum Analyzer	R&S	FSP40	100597	11/11/2017	11/10/2018
8	Horn Antenna	SCHWARZBECK	9120D	1011	3/27/2017	3/26/2018
9	Horn Antenna	SCHWARZBECK	BBHA9170	25841	3/27/2017	3/26/2018
10	Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-248	10/18/2017	10/17/2018
11	High pass filter	Compliance Direction systems	BSU-6	34202	11/11/2017	11/10/2018
12	RF Connection Cable	HUBER+SUHNE R	RE-7-FH	N/A	11/21/2017	11/20/2018
13	EMI Test Software	Audix	E3	N/A	N/A	N/A
14	Turntable	MATURO	TT2.0	/	N/A	N/A
15	Antenna Mast	MATURO	TAM-4.0-P	/	N/A	N/A

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RF Con	RF Conducted Test						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)	
1	Spectrum Analyzer	R&S	FSV40	100048	11/11/2017	11/10/2018	
2	EXA Signal Analyzer	Agilent	N9020A	184247	9/22/2017	9/21/2018	
3	Power Meter	Anritsu	ML249A	/	9/22/2017	9/21/2018	
4	OSP	R&S	OSP120	101317	N/A	N/A	

The Cal.Interval was one year.

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### 5. TEST CONDITIONS AND RESULTS

### 5.1. Antenna requirement

#### **REQUIREMENT:**

### FCC CFR Title 47 Part 15 Subpart C 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. The use of a permanently attached antenna or of anantenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST RESULTS**

oxtimes Passed	☐ Not Applicable
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The directional gain of the antenna less than 6 dBi, please refer to the below antenna photo.



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### 5.2. Conducted Emissions (AC Main)

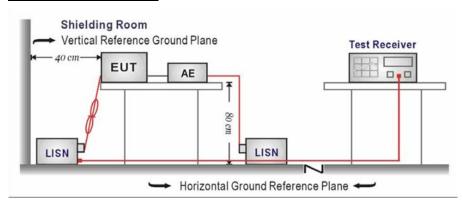
### LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207:

Frequency range (MHz)	Limit (dBuV)				
Frequency range (MHZ)	Quasi-peak	Average			
0.15-0.5	66 to 56*	56 to 46*			
0.5-5	56	46			
5-30	60	50			

<sup>\*</sup> Decreases with the logarithm of the frequency.

#### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
- 3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
- 4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
- 5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor,was individually connected through a LISN to the input power source.
- 6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
- 7. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
- 8. During the above scans, the emissions were maximized by cable manipulation.

### TEST MODE:

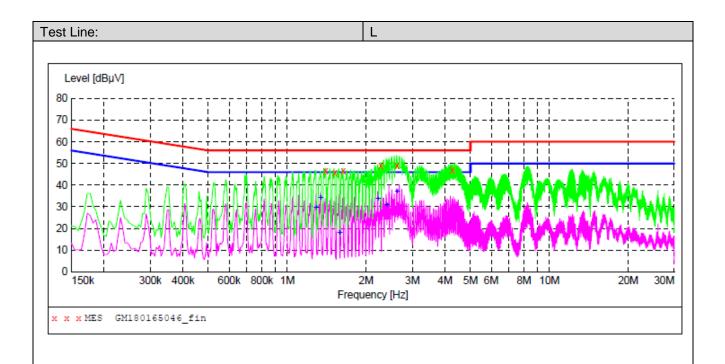
Please refer to the clause 3.3

#### **TEST RESULTS**

Note:

- 1) Transd=Cable lose+ Pulse Limiter Factor + Artificial Mains Factor
- 2) Margin= Limit -Level

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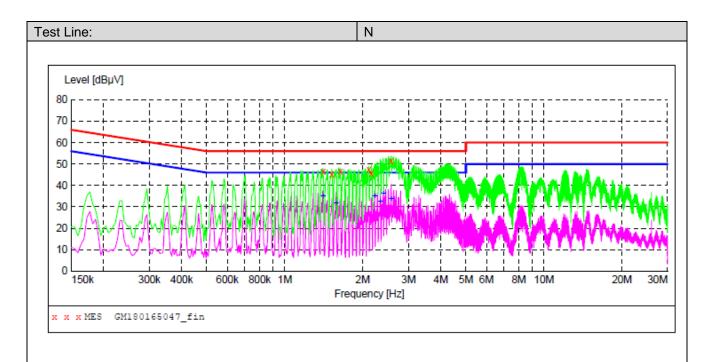
### MEASUREMENT RESULT: "GM180165046\_fin"

1	L/16/2018 2:2	9PM						
	Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
	1.401000	46.50	10.1	56	9.5	QP	L1	GND
	1.518000	45.90	10.1	56	10.1	QP	L1	GND
	1.635000	46.50	10.1	56	9.5	QP	L1	GND
	2.278500	49.00	10.1	56	7.0	QP	L1	GND
	2.620500	49.00	10.1	56	7.0	QP	L1	GND
	4.267500	46.80	10.1	56	9.2	QP	L1	GND

### MEASUREMENT RESULT: "GM180165046\_fin2"

1/16/2018	2:29PM						
Freque	-	vel Transd BµV dB		Margin dB	Detector	Line	PE
1.288	500 29	.50 10.1	46	16.5	AV	L1	GND
1.342	500 34	.20 10.1	46	11.8	AV	L1	GND
1.585	500 17	.90 10.1	46	28.1	AV	L1	GND
2.220	000 33	.80 10.1	46	12.2	AV	L1	GND
2.400	000 30	.90 10.1	46	15.1	AV	L1	GND
2.629	500 36	.90 10.1	46	9.1	AV	L1	GND

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### MEASUREMENT RESULT: "GM180165047\_fin"

1	/16/2018 2:3	32PM						
	Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
	1.405500	46.70	10.1	56	9.3	QP	N	GND
	1.518000	45.30	10.1	56	10.7	QP	N	GND
	1.639500	46.60	10.1	56	9.4	QP	N	GND
	2.112000	47.20	10.1	56	8.8	QP	N	GND
	2.161500	45.60	10.1	56	10.4	QP	N	GND
	2.571000	51.60	10.1	56	4.4	QP	N	GND

### MEASUREMENT RESULT: "GM180165047 fin2"

1/16/2018 2	2:32PM						
Frequency MHz		Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
1.405500	35.10	10.1	46	10.9	AV	N	GND
1.576500	31.50	10.1	46	14.5	AV	N	GND
2.224500	34.90	10.1	46	11.1	AV	N	GND
2.337000	32.40	10.1	46	13.6	AV	N	GND
2.404500	36.20	10.1	46	9.8	AV	N	GND
2.571000	33.70	10.1	46	12.3	AV	N	GND

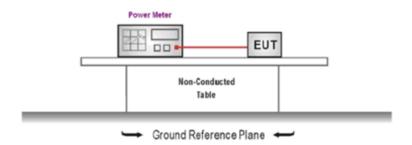
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### 5.3. Conducted Peak Output Power

### **LIMIT**

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3): 30dBm

### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- The EUT was tested according to ANSI C63.10: 2013 and KDB 558074 D01 for compliance to FCC 47 CFR 15.247 requirements.
- 2. The maximum peak conducted output power may be measured using a broadband peak RF power meter.
- 3. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector
- 4. Record the measurement data.

### **TEST MODE:**

Please refer to the clause 3.3

### **TEST RESULTS**

Туре	Channel	Output power (dBm)	Limit (dBm)	Result
	01	16.10		
802.11b	06	15.90	≤30.00	Pass
	11	16.03 15.06 15.44 ≤30.00		
	01	15.06		
802.11g	06	15.44	≤30.00	Pass
	11	15.25		
	01	14.04		
802.11n(HT20)	06	14.26	≤30.00	Pass
	11	14.46		
	03	13.10		
802.11n(HT40)	06	13.20	≤30.00	Pass
	09	13.50		

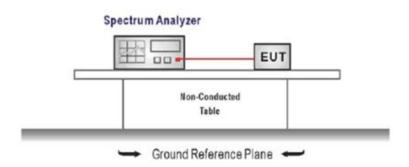
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### 5.4. Power Spectral Density

### **LIMIT**

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e):For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### **TEST CONFIGURATION**



#### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input,
- 2. Configure the spectrum analyzer as shown below:

Center frequency=DTS channel center frequency

Span =1.5 times the DTS bandwidth

RBW = 3 kHz ≤ RBW ≤ 100 kHz, VBW ≥ 3 × RBW

Sweep time = auto couple

Detector = peak

Trace mode = max hold

- 3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
- 4. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 5. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

### **TEST MODE:**

Please refer to the clause 3.3

### **TEST RESULTS**

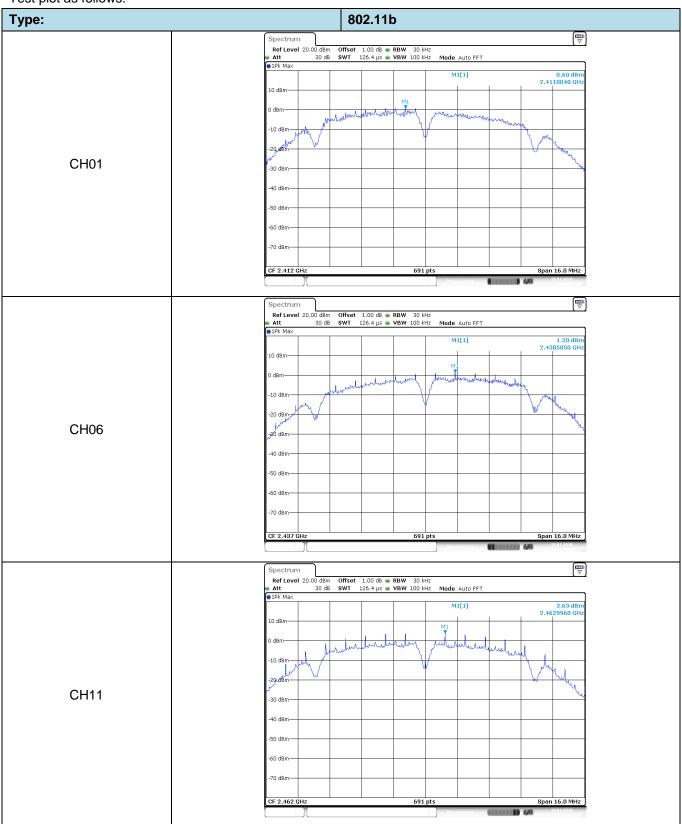
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Туре	Channel	Power Spectral Density (dBm/30KHz)	Power Spectral Density (dBm/3KHz)	Limit (dBm/3KHz)	Result	
	01	0.60	-9.40			
802.11b	06	1.20	-8.80	≤8.00	Pass	
	11	3.63	-6.37			
	01	-8.17	-18.17			
802.11g	06	-6.64	-16.64	≤8.00	Pass	
	11	-7.77	-17.77			
	01	-9.38	-19.38			
802.11n(HT20)	06	-8.63	-18.63	≤8.00	Pass	
	11	-8.78	-18.78			
	03	-11.98	-21.98			
802.11n(HT40)	06	-12.04	-22.04	≤8.00	Pass	
	09	-12.42	-22.42			

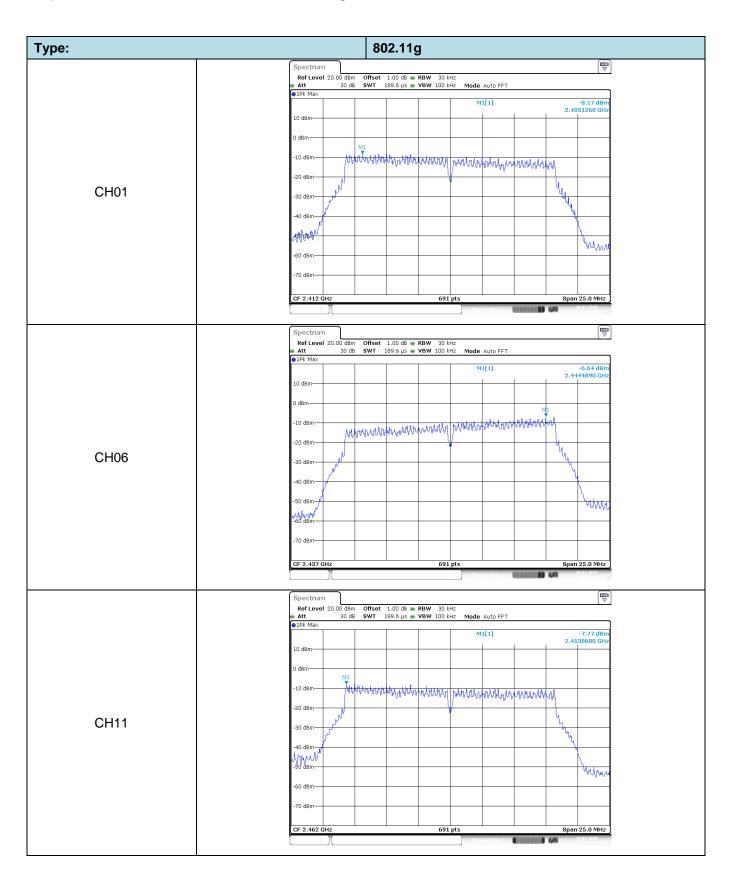
PSD(3KHz RBW)= PSD(30KHz RBW)-10\*log(30/3)= PSD(30KHz RBW)-10

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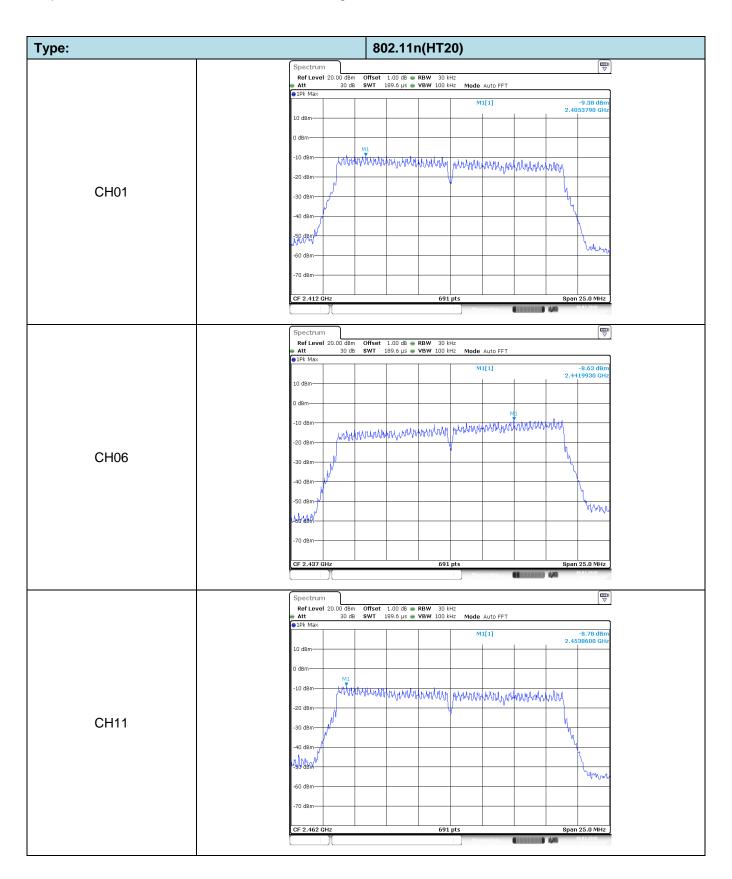
Test plot as follows:



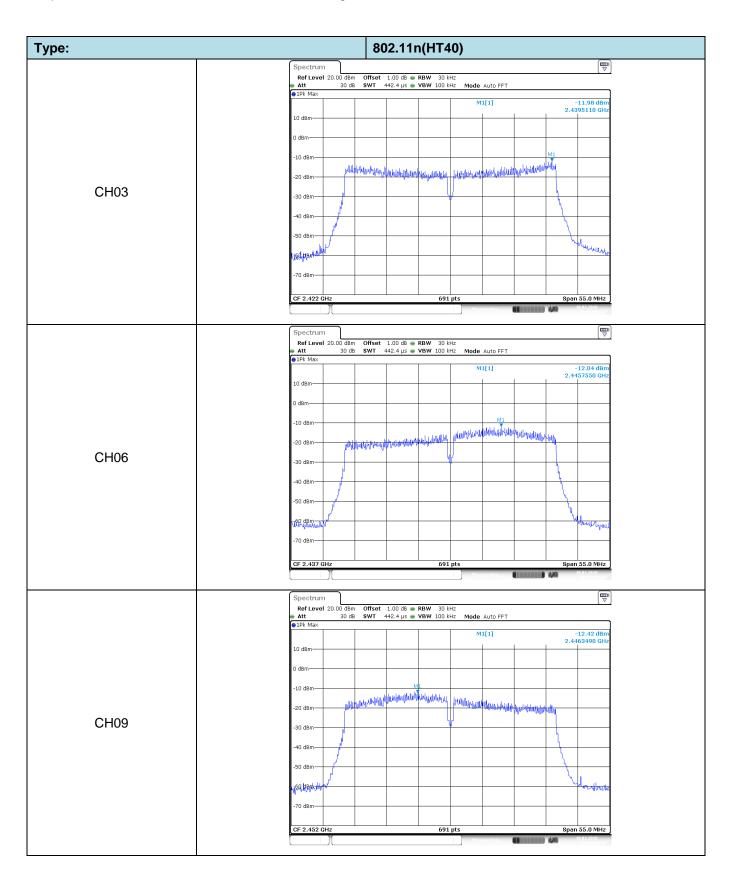
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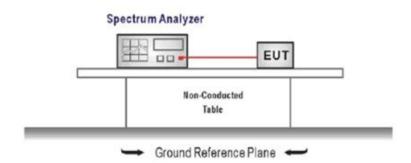
### 5.5. 6dB bandwidth

### **LIMIT**

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2):

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input.
- 2. Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).

Center Frequency = DTS channel center frequency

Span=2 x DTS bandwidth

RBW = 100 kHz, VBW ≥ 3 × RBW

Sweep time= auto couple

Detector = Peak

Trace mode = max hold

- 3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
- 4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission, and record the pertinent measurements.

### **TEST MODE:**

Please refer to the clause 3.3

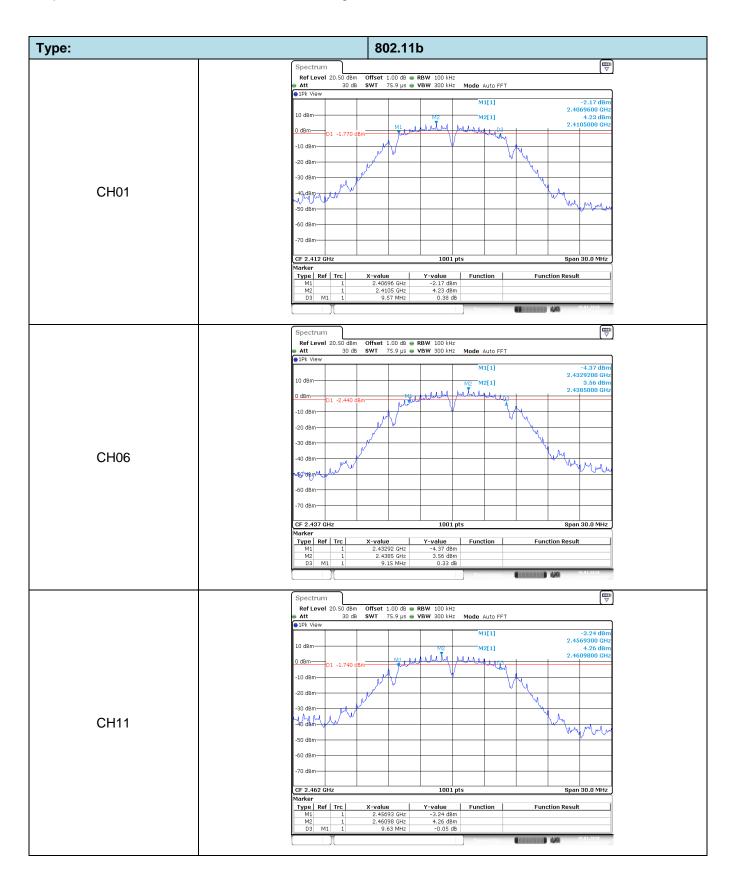
### **TEST RESULTS**

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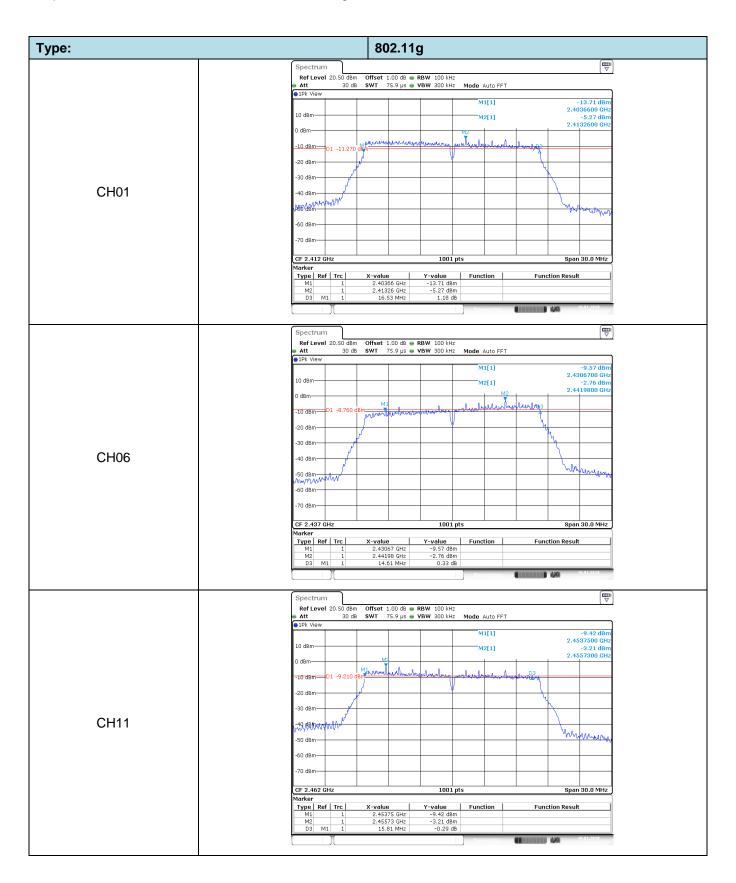
Туре	Channel	6dB Bandwidth (MHz)	Limit (kHz)	Result
	01	9.57		
802.11b	06	9.15	≥500	Pass
	11	9.63	9.15 ≥500  9.63  16.53  14.61 ≥500  15.81  15.18  15.15 ≥500	
	01	16.53		
802.11g	06	14.61	≥500	Pass
	11	15.81		
	01	15.18		
802.11n(HT20)	06	15.15	≥500	Pass
	11	16.47		
	03	36.18		
802.11n(HT40)	06	36.48	≥500	Pass
	09	35.22		

Test plot as follows:

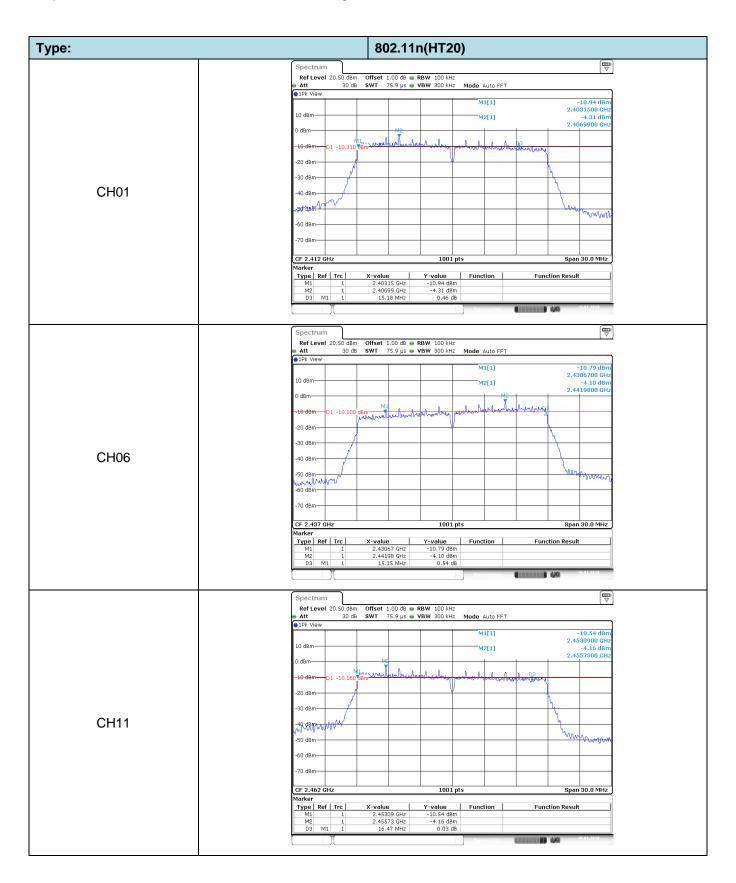
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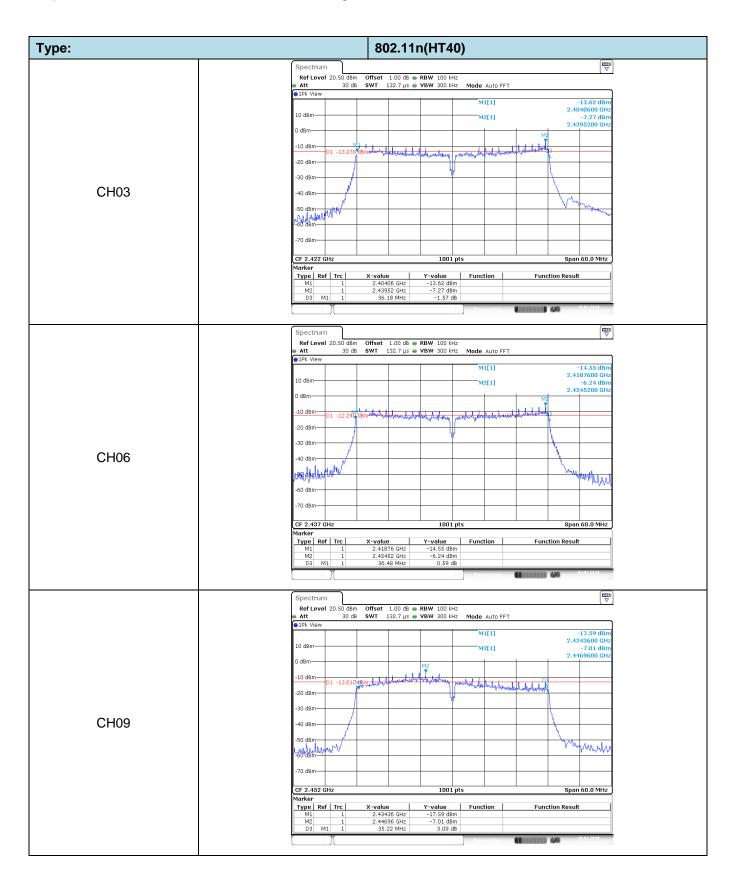
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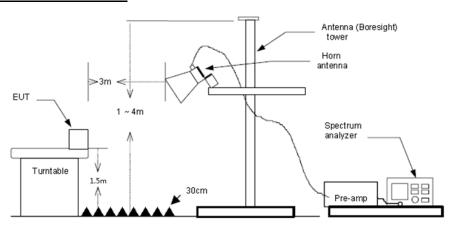
### 5.6. Restricted band

### **LIMIT**

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, Radiated Emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the Radiated Emissions limits specified in §15.209(a) (see §15.205(c)).

#### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- The EUT was setup and tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
- 2) The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3) The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
- 4) The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find themaximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
- 5) The receiver set as follow: RBW=1MHz, VBW=3MHz PEAK detector for Peak value. RBW=1MHz, VBW=3MHz RMS detector for Average value.

### **TEST MODE:**

Please refer to the clause 3.3

#### **TEST RESULTS**

### Note:

1) Final level= Read level + Antenna Factor+ Cable Loss- Preamp Factor

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802.11b	802.11b CH01									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value	
2310.00	25.73	28.05	6.62	0.00	60.40	74.00	-13.60	Vertical	Peak	
2390.01	26.43	27.65	6.75	0.00	60.83	74.00	-13.17	Vertical	Peak	
2310.00	25.81	28.05	6.62	0.00	60.48	74.00	-13.52	Horizontal	Peak	
2390.01	26.84	27.65	6.75	0.00	61.24	74.00	-12.76	Horizontal	Peak	
2310.00	13.39	28.05	6.62	0.00	48.06	54.00	-5.94	Vertical	Average	
2390.01	13.08	27.65	6.75	0.00	47.48	54.00	-6.52	Vertical	Average	
2310.00	13.42	28.05	6.62	0.00	48.09	54.00	-5.91	Horizontal	Average	
2390.01	13.11	27.65	6.75	0.00	47.51	54.00	-6.49	Horizontal	Average	

802.11b CH11									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2483.49	27.28	27.26	6.83	0.00	61.37	74.00	-12.63	Vertical	Peak
2500.00	26.30	27.20	6.84	0.00	60.34	74.00	-13.66	Vertical	Peak
2483.49	27.02	27.26	6.83	0.00	61.11	74.00	-12.89	Horizontal	Peak
2500.00	26.46	27.20	6.84	0.00	60.50	74.00	-13.50	Horizontal	Peak
2483.49	13.04	27.26	6.83	0.00	47.13	54.00	-6.87	Vertical	Average
2500.00	13.05	27.20	6.84	0.00	47.09	54.00	-6.91	Vertical	Average
2483.49	13.03	27.26	6.83	0.00	47.12	54.00	-6.88	Horizontal	Average
2500.00	13.02	27.20	6.84	0.00	47.06	54.00	-6.94	Horizontal	Average

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802.11g					CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2310.00	26.09	28.05	6.62	0.00	60.76	74.00	-13.24	Vertical	Peak
2390.01	25.91	27.65	6.75	0.00	60.31	74.00	-13.69	Vertical	Peak
2310.00	25.35	28.05	6.62	0.00	60.02	74.00	-13.98	Horizontal	Peak
2390.01	25.45	27.65	6.75	0.00	59.85	74.00	-14.15	Horizontal	Peak
2310.00	13.39	28.05	6.62	0.00	48.06	54.00	-5.94	Vertical	Average
2390.01	13.14	27.65	6.75	0.00	47.54	54.00	-6.46	Vertical	Average
2310.00	13.41	28.05	6.62	0.00	48.08	54.00	-5.92	Horizontal	Average
2390.01	13.07	27.65	6.75	0.00	47.47	54.00	-6.53	Horizontal	Average

802.11g CH11									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2483.49	26.35	27.26	6.83	0.00	60.44	74.00	-13.56	Vertical	Peak
2500.00	27.02	27.20	6.84	0.00	61.06	74.00	-12.94	Vertical	Peak
2483.49	25.93	27.26	6.83	0.00	60.02	74.00	-13.98	Horizontal	Peak
2500.00	26.14	27.20	6.84	0.00	60.18	74.00	-13.82	Horizontal	Peak
2483.49	13.09	27.26	6.83	0.00	47.18	54.00	-6.82	Vertical	Average
2500.00	13.03	27.20	6.84	0.00	47.07	54.00	-6.93	Vertical	Average
2483.49	13.06	27.26	6.83	0.00	47.15	54.00	-6.85	Horizontal	Average
2500.00	13.05	27.20	6.84	0.00	47.09	54.00	-6.91	Horizontal	Average

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802.11n(HT	802.11n(HT20)						CH01					
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value			
2310.00	27.06	28.05	6.62	0.00	61.73	74.00	-12.27	Vertical	Peak			
2390.01	27.13	27.65	6.75	0.00	61.53	74.00	-12.47	Vertical	Peak			
2310.00	27.06	28.05	6.62	0.00	61.73	74.00	-12.27	Horizontal	Peak			
2390.01	27.92	27.65	6.75	0.00	62.32	74.00	-11.68	Horizontal	Peak			
2310.00	13.39	28.05	6.62	0.00	48.06	54.00	-5.94	Vertical	Average			
2390.01	13.09	27.65	6.75	0.00	47.49	54.00	-6.51	Vertical	Average			
2310.00	13.39	28.05	6.62	0.00	48.06	54.00	-5.94	Horizontal	Average			
2390.01	13.06	27.65	6.75	0.00	47.46	54.00	-6.54	Horizontal	Average			

802.11n(HT	20)				CH11					
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value	
2483.49	25.54	27.26	6.83	0.00	59.63	74.00	-14.37	Vertical	Peak	
2500.00	27.91	27.20	6.84	0.00	61.95	74.00	-12.05	Vertical	Peak	
2483.49	25.97	27.26	6.83	0.00	60.06	74.00	-13.94	Horizontal	Peak	
2500.00	26.81	27.20	6.84	0.00	60.85	74.00	-13.15	Horizontal	Peak	
2483.49	13.07	27.26	6.83	0.00	47.16	54.00	-6.84	Vertical	Average	
2500.00	13.03	27.20	6.84	0.00	47.07	54.00	-6.93	Vertical	Average	
2483.49	13.10	27.26	6.83	0.00	47.19	54.00	-6.81	Horizontal	Average	
2500.00	13.05	27.20	6.84	0.00	47.09	54.00	-6.91	Horizontal	Average	

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802.11n(HT	40)				CH03				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2310.00	26.87	28.05	6.62	0.00	61.54	74.00	-12.46	Vertical	Peak
2389.99	25.48	27.65	6.75	0.00	59.88	74.00	-14.12	Vertical	Peak
2310.00	27.86	28.05	6.62	0.00	62.53	74.00	-11.47	Horizontal	Peak
2389.99	26.87	27.65	6.75	0.00	61.27	74.00	-12.73	Horizontal	Peak
2310.00	13.40	28.05	6.62	0.00	48.07	54.00	-5.93	Vertical	Average
2389.99	13.07	27.65	6.75	0.00	47.47	54.00	-6.53	Vertical	Average
2310.00	13.39	28.05	6.62	0.00	48.06	54.00	-5.94	Horizontal	Average
2389.99	13.07	27.65	6.75	0.00	47.47	54.00	-6.53	Horizontal	Average

802.11n(HT	40)			CH09					
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2483.50	26.19	27.26	6.83	0.00	60.28	74.00	-13.72	Vertical	Peak
2500.00	26.71	27.20	6.84	0.00	60.75	74.00	-13.25	Vertical	Peak
2483.50	26.88	27.26	6.83	0.00	60.97	74.00	-13.03	Horizontal	Peak
2500.00	26.13	27.20	6.84	0.00	60.17	74.00	-13.83	Horizontal	Peak
2483.50	13.22	27.26	6.83	0.00	47.31	54.00	-6.69	Vertical	Average
2500.00	13.12	27.20	6.84	0.00	47.16	54.00	-6.84	Vertical	Average
2483.50	13.15	27.26	6.83	0.00	47.24	54.00	-6.76	Horizontal	Average
2500.00	13.11	27.20	6.84	0.00	47.15	54.00	-6.85	Horizontal	Average

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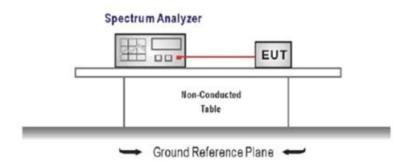
### 5.7. Band edge and Spurious Emissions (conducted)

### **LIMIT**

### FCC CFR Title 47 Part 15 Subpart C Section15.247 (d):

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

#### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- 1. Connect the antenna port(s) to the spectrum analyzer input.
- 2. Establish a reference level by using the following procedure

Center frequency=DTS channel center frequency

The span = 1.5 times the DTS bandwidth.

RBW = 100 kHz, VBW  $\geq$  3 x RBW

Detector = peak, Sweep time = auto couple, Trace mode = max hold

Allow trace to fully stabilize

Use the peak marker function to determine the maximum PSD level

Note: the channel found to contain the maximum PSD level can be used to establish the reference level.

3. Emission level measurement

Set the center frequency and span to encompass frequency range to be measured

RBW = 100 kHz, VBW ≥ 3 x RBW

Detector = peak, Sweep time = auto couple, Trace mode = max hold

Allow trace to fully stabilize

Use the peak marker function to determine the maximum amplitude level.

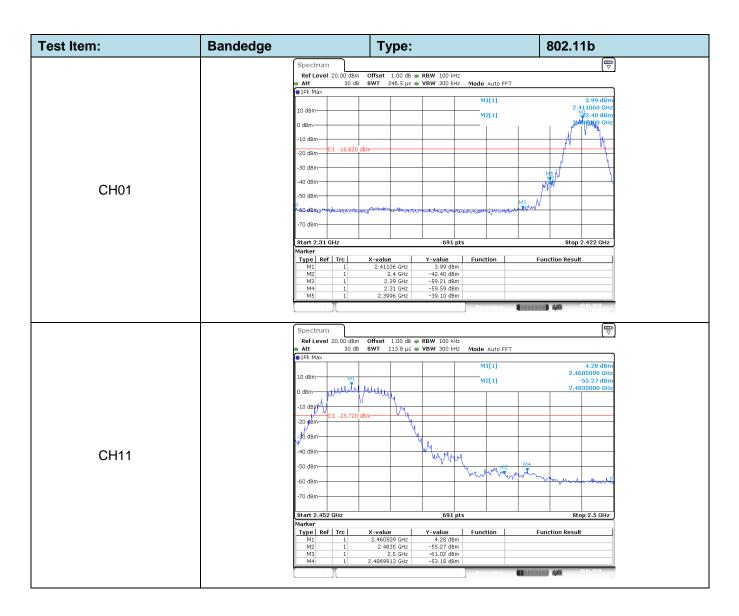
- 4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
- Ensure that the amplitude of all unwanted emission outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the minimum requirements specified (at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz). Report the three highest emission relative to the limit.

### **TEST MODE:**

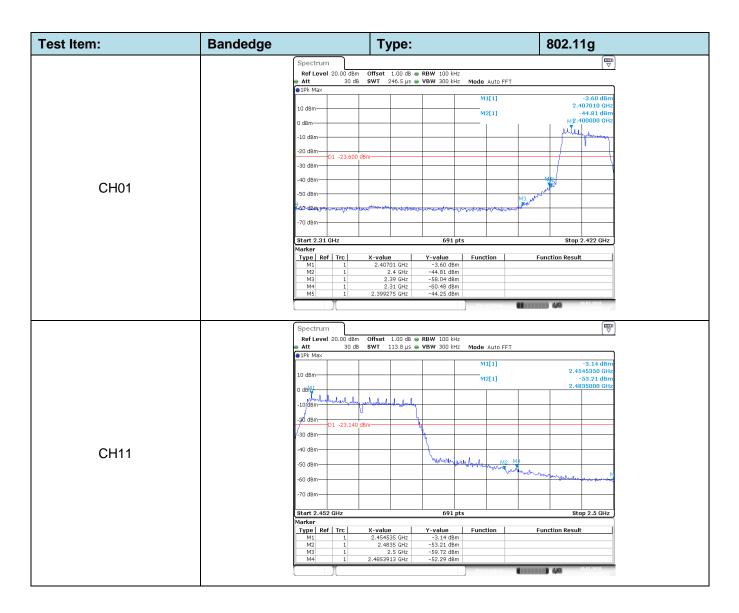
Please refer to the clause 3.3

### **TEST RESULTS**

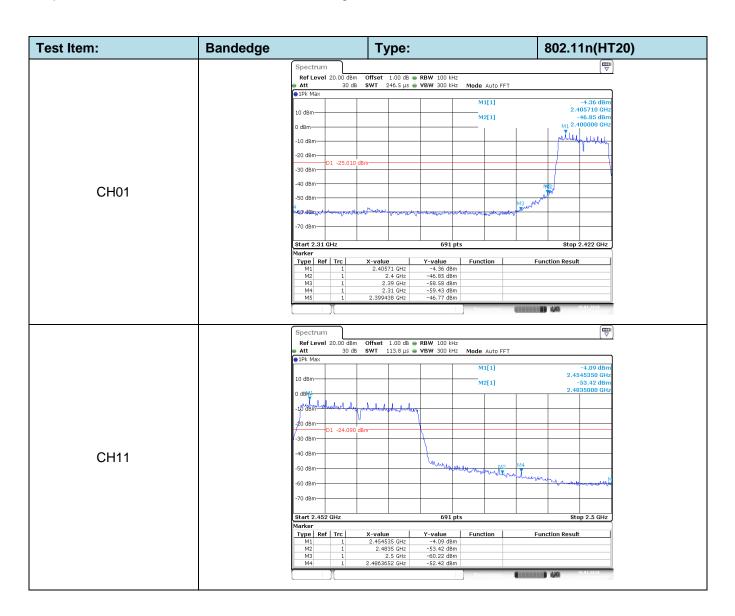
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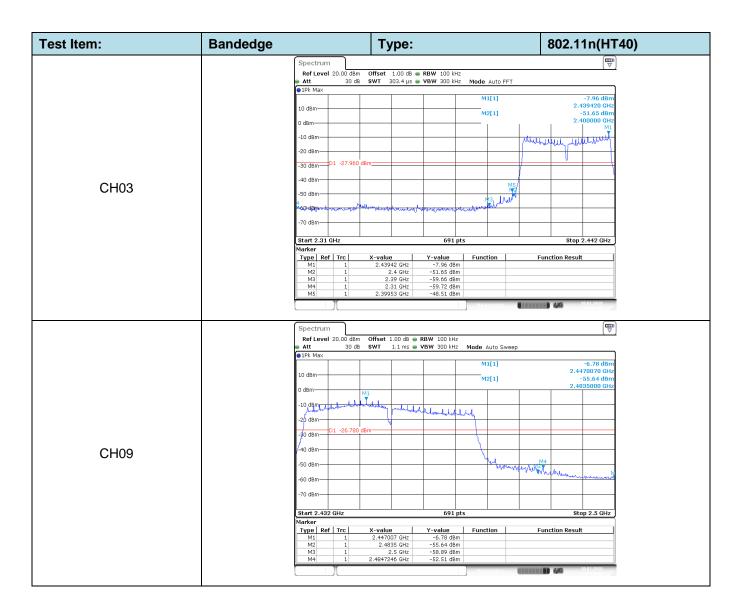
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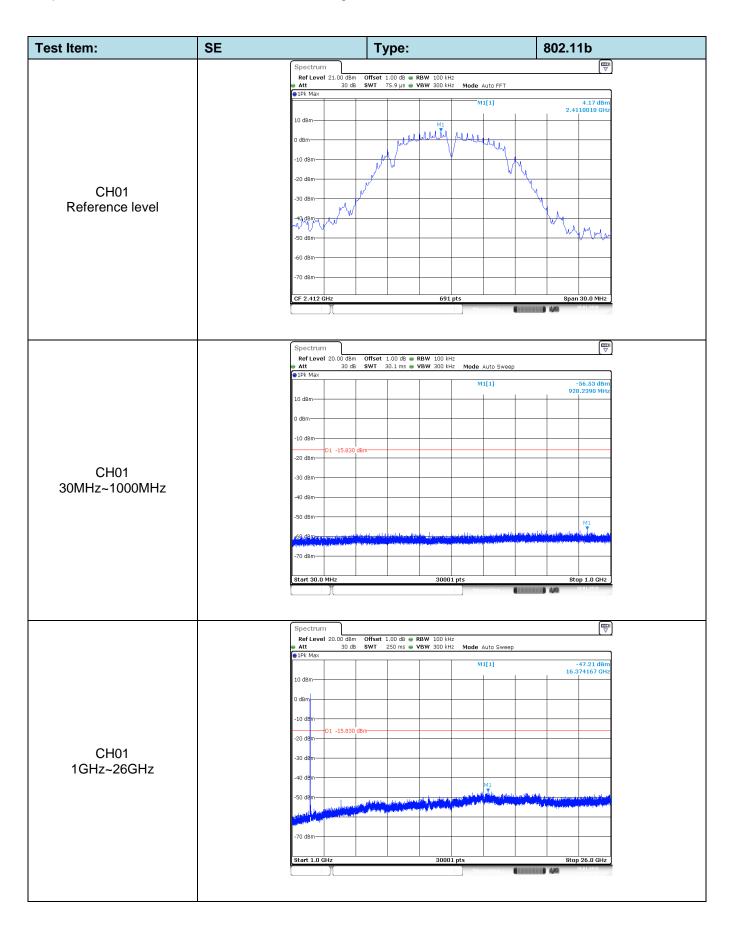
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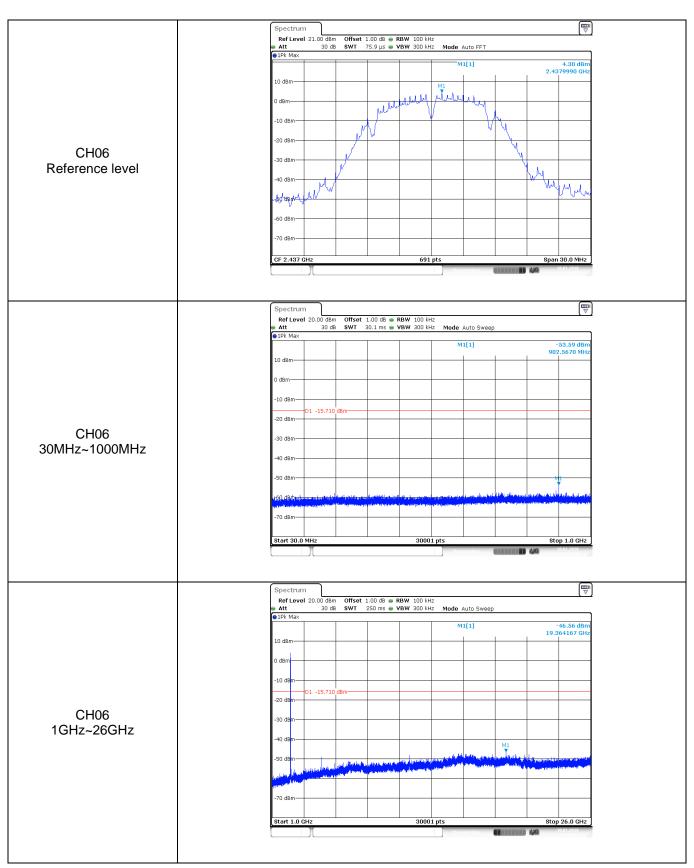
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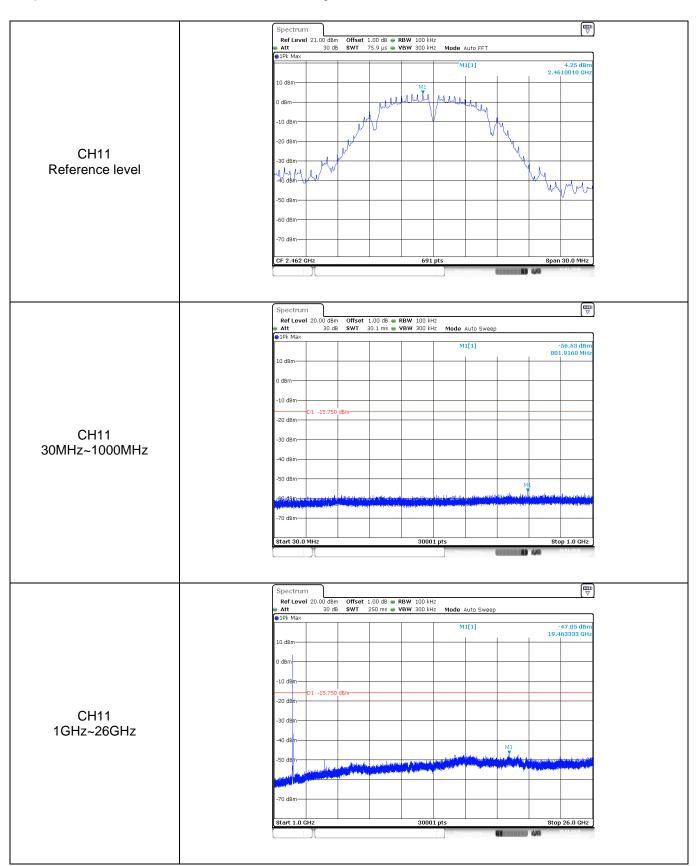
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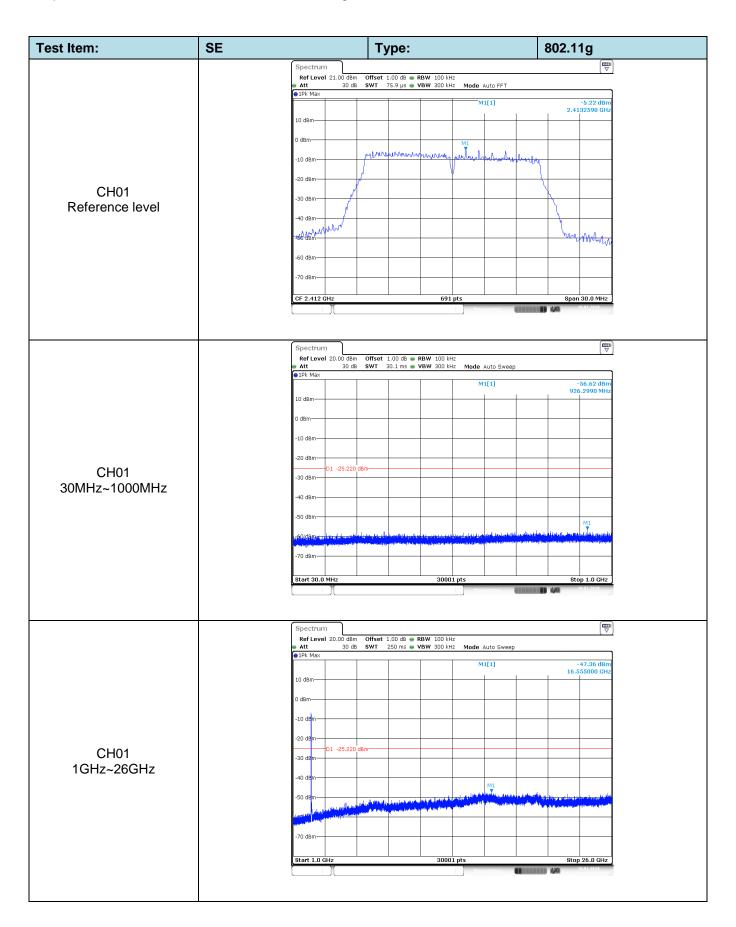
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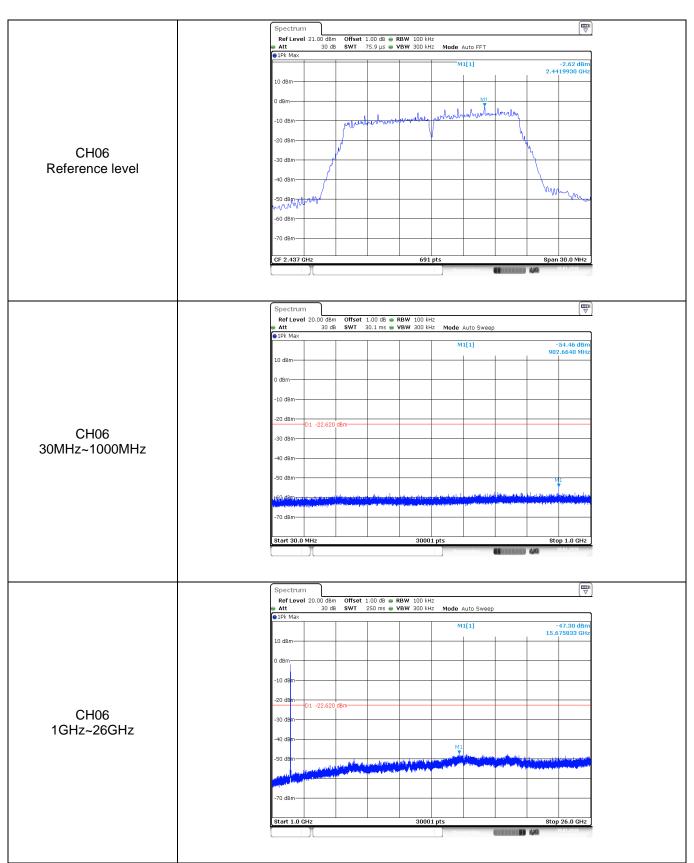
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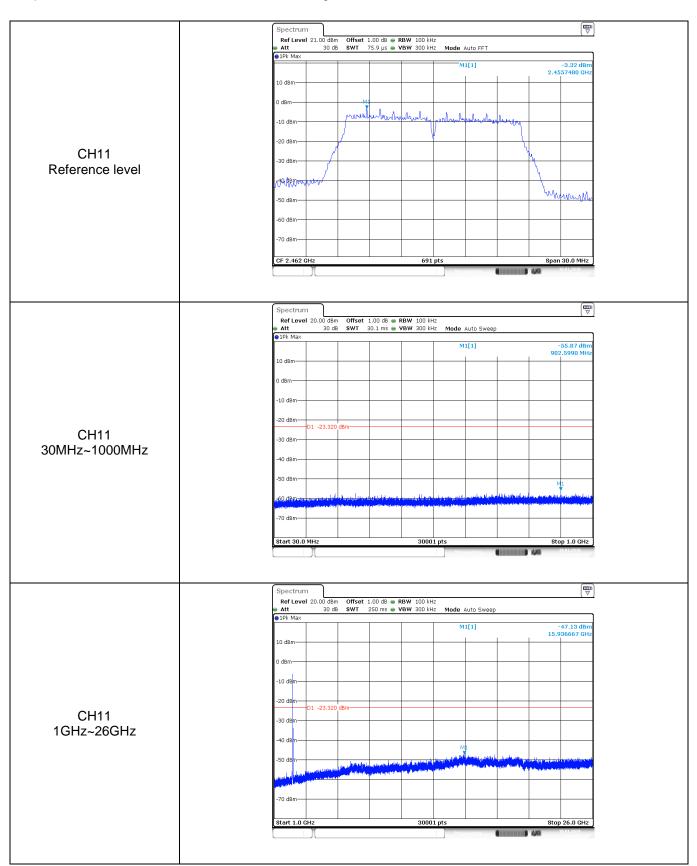
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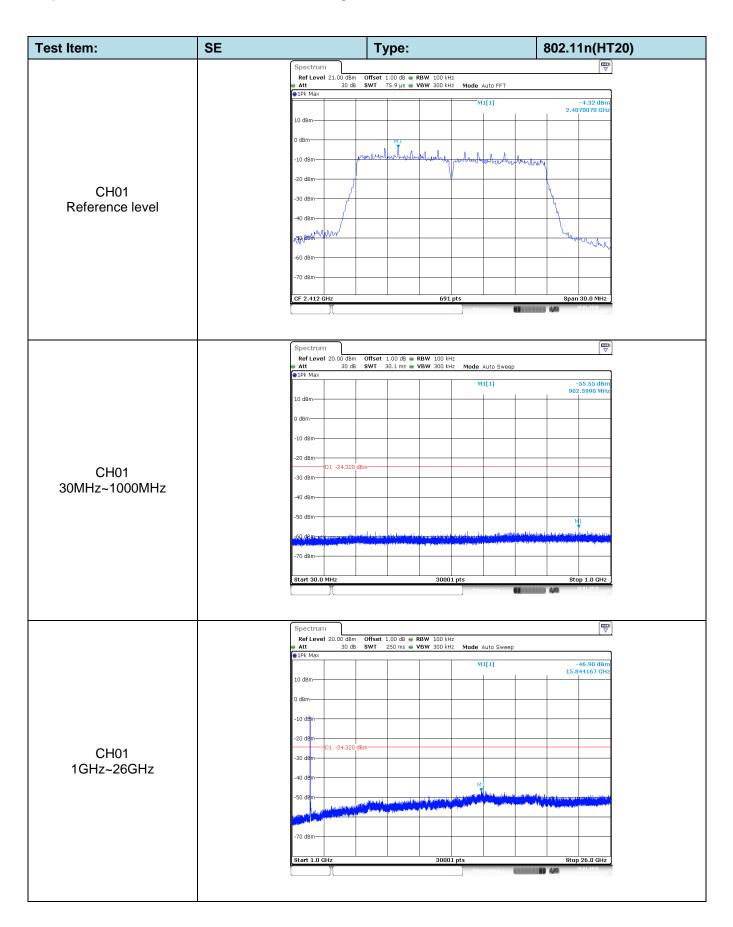
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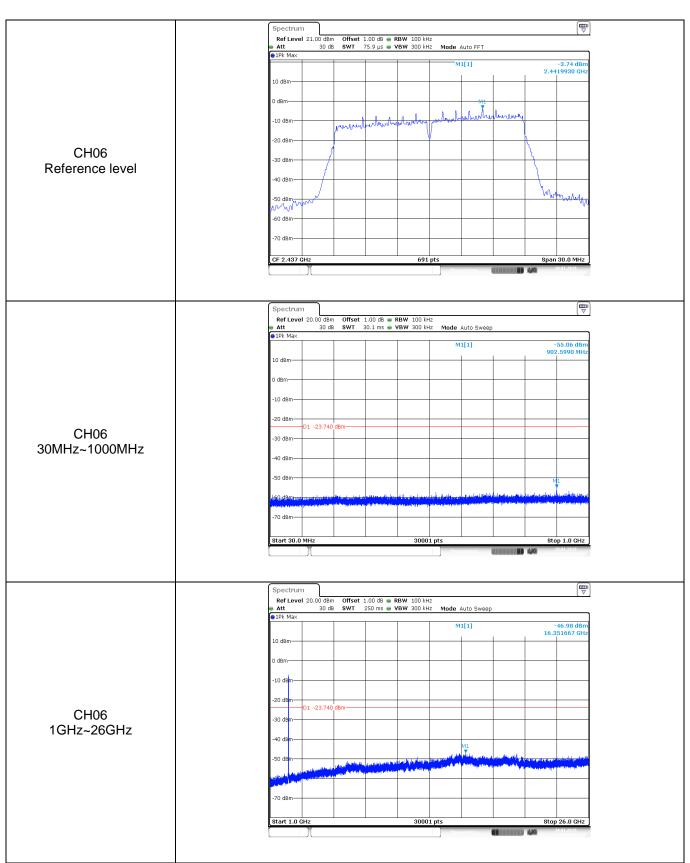
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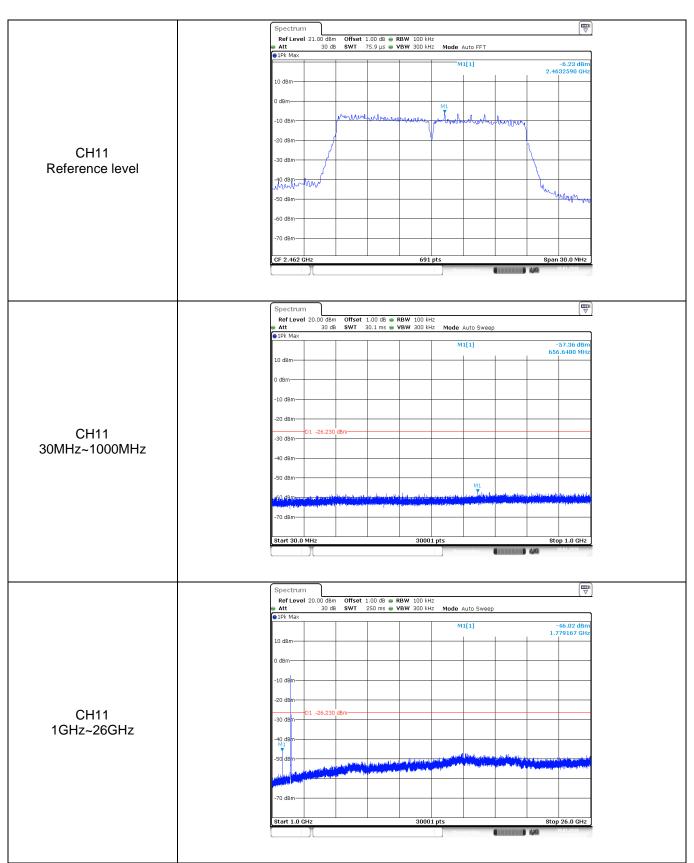
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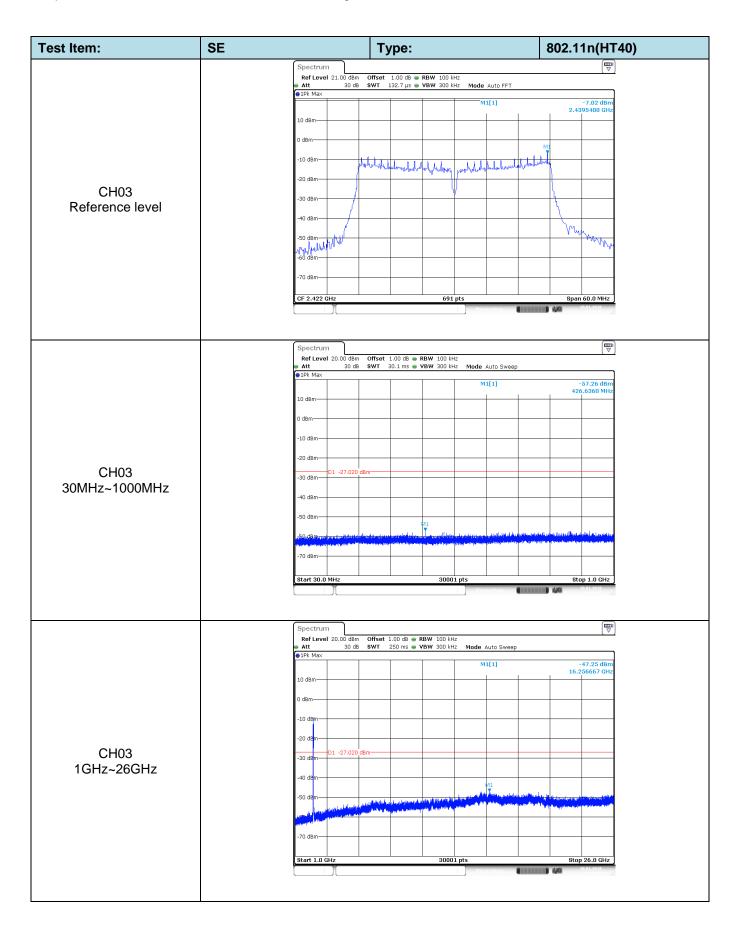
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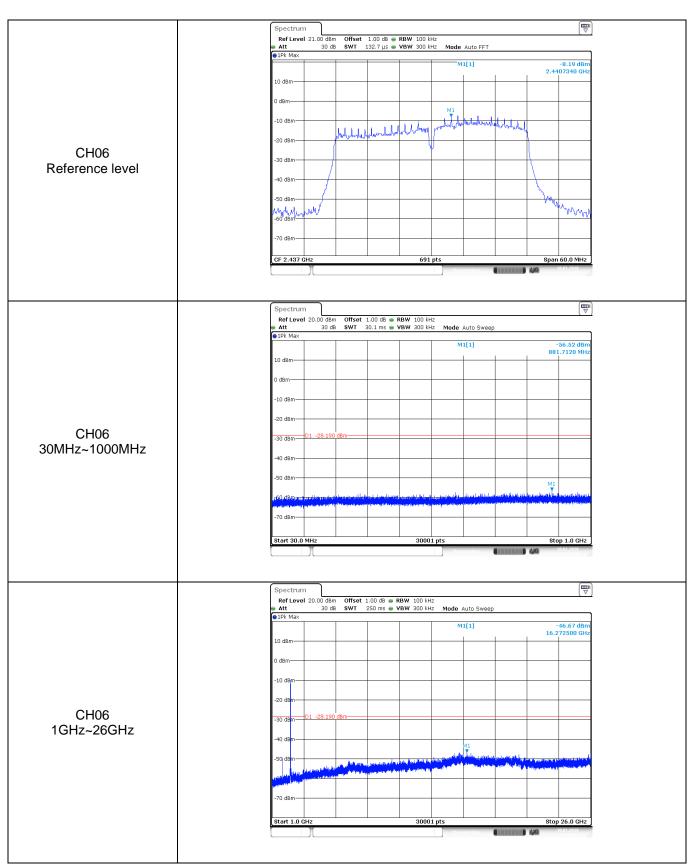
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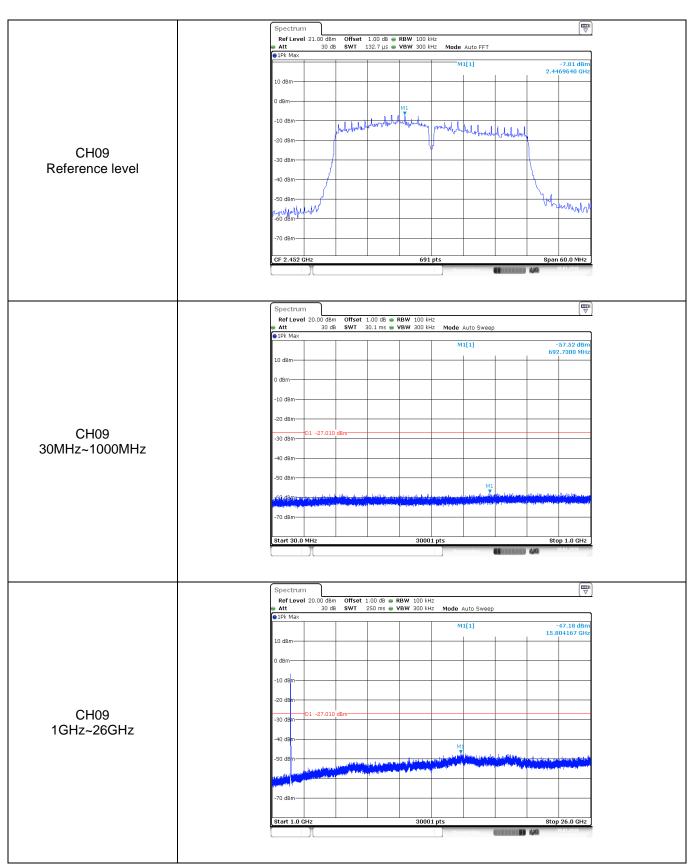
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## 5.8. Spurious Emissions (radiated)

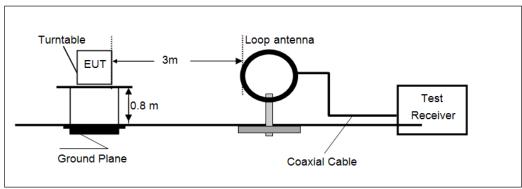
## **LIMIT**

FCC CFR Title 47 Part 15 Subpart C Section 15.209

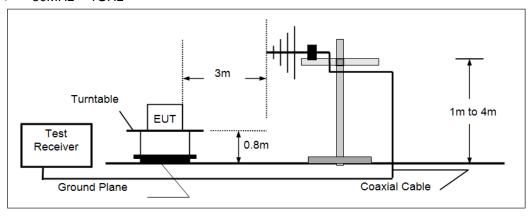
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
Above Toriz	74.00	Peak

## **TEST CONFIGURATION**

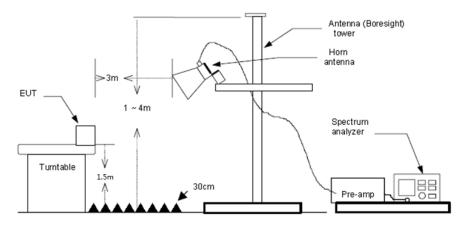
#### ▶ 9kHz ~30MHz



## ➤ 30MHz ~ 1GHz



## Above 1GHz



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### **TEST PROCEDURE**

- The EUT was setup and tested according to ANSI C63.10:2013 for compliance to FCC 47CFR 15.247 requirements.
- 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
- 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- 6. Use the following spectrum analyzer settings
  - (1) Span shall wide enough to fully capture the emission being measured;
  - (2) Below 1 GHz:

RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

(3) From 1 GHz to 10th harmonic:

RBW=1MHz, VBW=3MHz Peak detector for Peak value.

RBW=1MHz, VBW=3MHz RMS detector for Average value.

#### **TEST MODE:**

Please refer to the clause 3.3

## **TEST RESULTS**

□ Passed	☐ Not Applicable
_	

#### Note:

- 1) Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- The emission levels of other frequencies are very lower than the limit and not show in test report.

#### 9kHz ~ 30MHz

The EUT was pre-scanned the frequency band (9kHz~30MHz), found the radiated level lower than the limit, so don't show on the report.

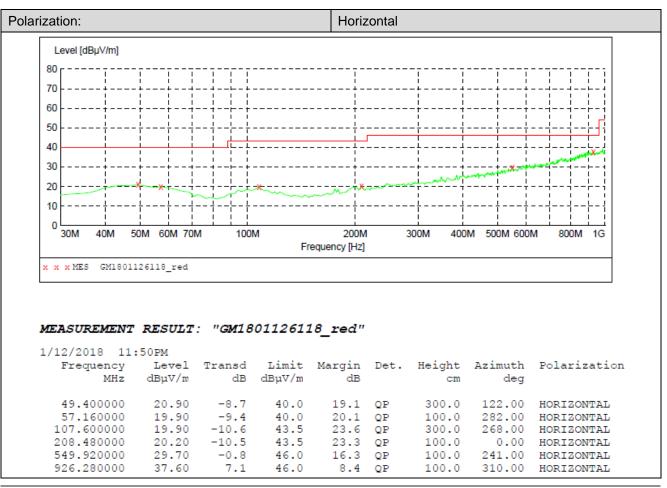
#### ➤ 30MHz ~1000MHz

Have pre-scan all modulation mode, found the 802.11b mode CH01 which it was worst case, so only the worst case's data on the test report.

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#### ≥ 30MHz ~ 1GHz

rization:				Verti	cal			
Level [dBµV/m]								
80								
70				¦				
'				į		i i		
60	. + +							
50								
40	+ + +	<del></del>				¦		
30				i		·i	i i	
				i I		Xhowan	man de la company	
20	1		*					
10								
0 30M 40M 5	OM 60M 70N	1 1001		200M		300M 400	M 500M 600	M 800M 1G
x x x MES GM18011	126117_red							
MEASUREMENT 1/12/2018 11: Frequency	:47PM			_	Det.	Height	Azimuth	Polarizatio
	:47PM			_	Det.	Height cm	Azimuth deg	Polarizatio
1/12/2018 11: Frequency MHz	:47PM Level dBµV/m	Transd dB	Limit dBµV/m	- Margin dB		cm	deg	
1/12/2018 11: Frequency MHz 51.340000	:47PM Level dBµV/m	Transd dB -8.8	Limit dBµV/m	Margin dB	QP	cm	deg 172.00	VERTICAL
1/12/2018 11: Frequency MHz 51.340000 57.160000	:47PM Level dBμV/m 21.40 22.00	Transd dB -8.8 -9.4	Limit dBµV/m 40.0 40.0	Margin dB 18.6	QP QP	100.0 100.0	deg 172.00 252.00	VERTICAL VERTICAL
1/12/2018 11: Frequency MHz 51.340000	:47PM Level dBµV/m	Transd dB -8.8	Limit dBµV/m	Margin dB	QP	cm	deg 172.00	VERTICAL
1/12/2018 11: Frequency MHz 51.340000 57.160000 105.660000	:47PM Level dBµV/m 21.40 22.00 19.20	Transd dB -8.8 -9.4 -10.5	Limit dBµV/m 40.0 40.0 43.5	Margin dB 18.6 18.0 24.3	QP QP QP	100.0 100.0 100.0	deg 172.00 252.00 149.00	VERTICAL VERTICAL VERTICAL



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## > 1 GHz ~ 25 GHz

802.11b					CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1741.81	35.53	25.29	5.85	37.02	29.65	74.00	-44.35	Vertical	Peak
3003.17	35.90	28.61	7.48	38.23	33.76	74.00	-40.24	Vertical	Peak
4821.76	42.85	31.56	9.55	36.90	47.06	74.00	-26.94	Vertical	Peak
7172.41	31.78	36.04	11.86	35.04	44.64	74.00	-29.36	Vertical	Peak
1786.72	34.54	25.37	5.93	37.11	28.73	74.00	-45.27	Horizontal	Peak
3844.28	32.86	29.64	8.56	38.20	32.86	74.00	-41.14	Horizontal	Peak
4821.76	40.48	31.56	9.55	36.90	44.69	74.00	-29.31	Horizontal	Peak
7527.83	31.84	36.13	12.49	34.92	45.54	74.00	-28.46	Horizontal	Peak

802.11b					CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1698.03	35.75	25.19	5.76	36.93	29.77	74.00	-44.23	Vertical	Peak
3184.25	35.91	28.80	7.70	38.20	34.21	74.00	-39.79	Vertical	Peak
4871.10	37.10	31.46	9.59	36.76	41.39	74.00	-32.61	Vertical	Peak
7063.69	32.98	35.49	11.85	34.88	45.44	74.00	-28.56	Vertical	Peak
1953.21	41.51	25.84	6.20	37.26	36.29	74.00	-37.71	Horizontal	Peak
3795.66	34.07	29.59	8.50	38.23	33.93	74.00	-40.07	Horizontal	Peak
5099.49	31.90	31.90	9.75	36.30	37.25	74.00	-36.75	Horizontal	Peak
6299.18	32.50	33.10	11.00	35.30	41.30	74.00	-32.70	Horizontal	Peak

802.11b					CH11				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1764.12	34.30	25.33	5.89	37.06	28.46	74.00	-45.54	Vertical	Peak
3552.58	34.63	29.16	8.20	38.34	33.65	74.00	-40.35	Vertical	Peak
4920.96	37.40	31.42	9.62	36.62	41.82	74.00	-32.18	Vertical	Peak
7154.17	31.42	35.93	11.86	35.01	44.20	74.00	-29.80	Vertical	Peak
1565.20	34.69	25.21	5.47	36.67	28.70	74.00	-45.30	Horizontal	Peak
3498.74	34.61	28.99	8.11	38.41	33.30	74.00	-40.70	Horizontal	Peak
4920.96	43.37	31.42	9.62	36.62	47.79	74.00	-26.21	Horizontal	Peak
7190.69	31.44	36.14	11.86	35.07	44.37	74.00	-29.63	Horizontal	Peak

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
- 3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

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802.11g					CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1313.08	35.05	26.16	4.85	36.51	29.55	74.00	-44.45	Vertical	Peak
3120.06	35.32	28.80	7.62	38.21	33.53	74.00	-40.47	Vertical	Peak
4821.76	40.08	31.56	9.55	36.90	44.29	74.00	-29.71	Vertical	Peak
8022.46	33.23	37.08	12.35	34.53	48.13	74.00	-25.87	Vertical	Peak
1943.29	38.24	25.74	6.18	37.25	32.91	74.00	-41.09	Horizontal	Peak
3570.71	35.05	29.21	8.22	38.31	34.17	74.00	-39.83	Horizontal	Peak
5112.49	32.64	31.85	9.76	36.29	37.96	74.00	-36.04	Horizontal	Peak
6851.19	31.55	34.36	11.66	34.94	42.63	74.00	-31.37	Horizontal	Peak

802.11g					CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1800.42	34.23	25.40	5.96	37.14	28.45	74.00	-45.55	Vertical	Peak
3184.25	35.84	28.80	7.70	38.20	34.14	74.00	-39.86	Vertical	Peak
4871.10	32.39	31.46	9.59	36.76	36.68	74.00	-37.32	Vertical	Peak
7301.36	31.21	36.30	11.97	34.95	44.53	74.00	-29.47	Vertical	Peak
1706.70	33.79	25.21	5.78	36.94	27.84	74.00	-46.16	Horizontal	Peak
3844.28	35.02	29.64	8.56	38.20	35.02	74.00	-38.98	Horizontal	Peak
4883.52	34.74	31.43	9.59	36.73	39.03	74.00	-34.97	Horizontal	Peak
7063.69	32.72	35.49	11.85	34.88	45.18	74.00	-28.82	Horizontal	Peak

802.11g					CH11				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1741.81	33.63	25.29	5.85	37.02	27.75	74.00	-46.25	Vertical	Peak
3120.06	34.68	28.80	7.62	38.21	32.89	74.00	-41.11	Vertical	Peak
4920.96	37.31	31.42	9.62	36.62	41.73	74.00	-32.27	Vertical	Peak
6235.36	32.46	32.97	11.01	35.29	41.15	74.00	-32.85	Vertical	Peak
2252.46	32.76	27.82	6.53	37.49	29.62	74.00	-44.38	Horizontal	Peak
3579.82	34.10	29.24	8.24	38.30	33.28	74.00	-40.72	Horizontal	Peak
4933.50	34.93	31.43	9.63	36.59	39.40	74.00	-34.60	Horizontal	Peak
7154.17	31.81	35.93	11.86	35.01	44.59	74.00	-29.41	Horizontal	Peak

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
- 3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

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802.11n(HT	20)				CH01				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1814.22	34.16	25.39	5.98	37.15	28.38	74.00	-45.62	Vertical	Peak
3690.85	34.98	29.30	8.37	38.25	34.40	74.00	-39.60	Vertical	Peak
4834.05	42.93	31.53	9.56	36.86	47.16	74.00	-26.84	Vertical	Peak
8002.06	33.12	37.10	12.30	34.53	47.99	74.00	-26.01	Vertical	Peak
1724.17	34.17	25.25	5.81	36.98	28.25	74.00	-45.75	Horizontal	Peak
3135.99	35.10	28.80	7.64	38.21	33.33	74.00	-40.67	Horizontal	Peak
4834.05	41.27	31.53	9.56	36.86	45.50	74.00	-28.50	Horizontal	Peak
6886.15	32.05	34.60	11.71	34.90	43.46	74.00	-30.54	Horizontal	Peak

802.11n(HT	20)				CH06				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1698.03	35.00	25.19	5.76	36.93	29.02	74.00	-44.98	Vertical	Peak
4076.07	34.48	29.85	8.84	37.94	35.23	74.00	-38.77	Vertical	Peak
4858.72	36.44	31.48	9.58	36.80	40.70	74.00	-33.30	Vertical	Peak
7063.69	31.84	35.49	11.85	34.88	44.30	74.00	-29.70	Vertical	Peak
1948.25	36.46	25.79	6.19	37.26	31.18	74.00	-42.82	Horizontal	Peak
3588.94	34.14	29.27	8.25	38.29	33.37	74.00	-40.63	Horizontal	Peak
4797.27	32.10	31.59	9.54	36.96	36.27	74.00	-37.73	Horizontal	Peak
6662.01	31.50	34.20	11.43	35.25	41.88	74.00	-32.12	Horizontal	Peak

802.11n(HT	20)				CH11				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1685.12	34.77	25.16	5.74	36.90	28.77	74.00	-45.23	Vertical	Peak
3184.25	34.51	28.80	7.70	38.20	32.81	74.00	-41.19	Vertical	Peak
4933.50	38.48	31.43	9.63	36.59	42.95	74.00	-31.05	Vertical	Peak
7489.60	32.07	36.12	12.36	34.89	45.66	74.00	-28.34	Vertical	Peak
2173.61	32.29	27.29	6.42	37.33	28.67	74.00	-45.33	Horizontal	Peak
3805.33	33.97	29.61	8.51	38.23	33.86	74.00	-40.14	Horizontal	Peak
4920.96	38.82	31.42	9.62	36.62	43.24	74.00	-30.76	Horizontal	Peak
7319.96	31.56	36.30	11.99	34.92	44.93	74.00	-29.07	Horizontal	Peak

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
- 3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

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802.11n(HT		CH03							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1676.56	34.12	25.13	5.72	36.88	28.09	74.00	-45.91	Vertical	Peak
3579.82	34.67	29.24	8.24	38.30	33.85	74.00	-40.15	Vertical	Peak
5086.52	33.63	31.85	9.74	36.31	38.91	74.00	-35.09	Vertical	Peak
7117.84	33.45	35.71	11.86	34.96	46.06	74.00	-27.94	Vertical	Peak
1617.86	34.64	24.95	5.60	36.76	28.43	74.00	-45.57	Horizontal	Peak
3598.09	33.86	29.29	8.27	38.27	33.15	74.00	-40.85	Horizontal	Peak
4846.37	33.82	31.51	9.57	36.83	38.07	74.00	-35.93	Horizontal	Peak
7451.57	32.89	36.20	12.24	34.86	46.47	74.00	-27.53	Horizontal	Peak

802.11n(HT		CH06							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1577.20	35.57	25.10	5.51	36.69	29.49	74.00	-44.51	Vertical	Peak
3010.83	35.72	28.62	7.49	38.23	33.60	74.00	-40.40	Vertical	Peak
3607.26	35.80	29.30	8.28	38.27	35.11	74.00	-38.89	Vertical	Peak
6347.47	32.60	33.20	11.00	35.30	41.50	74.00	-32.50	Vertical	Peak
1732.97	34.48	25.27	5.83	37.00	28.58	74.00	-45.42	Horizontal	Peak
3757.21	34.08	29.47	8.45	38.24	33.76	74.00	-40.24	Horizontal	Peak
5138.58	32.84	31.74	9.78	36.26	38.10	74.00	-35.90	Horizontal	Peak
8973.25	32.62	37.87	13.28	34.39	49.38	74.00	-24.62	Horizontal	Peak

802.11n(HT		CH09							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
1273.57	35.64	26.23	4.79	36.53	30.13	74.00	-43.87	Vertical	Peak
2263.96	32.94	27.89	6.55	37.52	29.86	74.00	-44.14	Vertical	Peak
3625.67	35.48	29.30	8.30	38.26	34.82	74.00	-39.18	Vertical	Peak
8022.46	33.50	37.08	12.35	34.53	48.40	74.00	-25.60	Vertical	Peak
1737.38	33.83	25.28	5.84	37.01	27.94	74.00	-46.06	Horizontal	Peak
3151.99	36.09	28.80	7.66	38.21	34.34	74.00	-39.66	Horizontal	Peak
5462.30	32.45	31.75	10.17	36.51	37.86	74.00	-36.14	Horizontal	Peak
7489.60	32.72	36.12	12.36	34.89	46.31	74.00	-27.69	Horizontal	Peak

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The peak level is lower than average limit(54 dBuV/m), this data is the too weak instrument of signal is unable to test.
- 3. The emission levels of other frequencies(test frequency band is 1GHz to 25GHz) are very lower than the limit and not show in test report.

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# 6. TEST SETUP PHOTOS

## **Conducted Emissions**

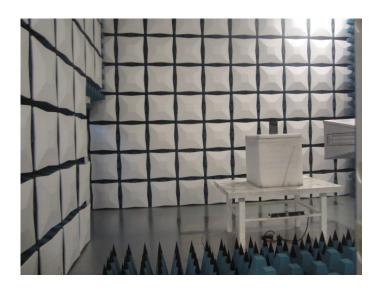


## **Radiated Emissions**





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# 7. EXTERANAL AND INTERNAL PHOTOS

Reference to the test report No.: TRE1801004501.

-----End of Report-----