



TE	EST REPOR	Т			
Report Reference No	TRE1809000905	R/C: 11967			
FCC ID:	ZSW-30-069				
Applicant's name	b mobile HK Limited				
Address	Flat 18; 14/F Block 1; Golder Street; Kwai Chung; New Te	n Industrial Building;16-26 Kwai Tak erritories; Hong Kong.			
Manufacturer	b mobile HK Limited				
Address:	Flat 18; 14/F Block 1; Golder Street; Kwai Chung; New Te	n Industrial Building;16-26 Kwai Tak erritories; Hong Kong.			
Test item description:	Mobile Phone				
Trade Mark:	Bmobile				
Model/Type reference:	AX951				
Listed Model(s)	-				
Standard :	: FCC CFR Title 47 Part 15 Subpart C Section 15.247				
Date of receipt of test sample	Sep 04,2018				
Date of testing	Sep 05,2018- Sep 12,2018				
Date of issue	Sep 13,2018				
Result	PASS				
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Supervised by position+printedname+signature):	Project Engineer Aaron Fang	Aaron.Fang			
Approved by position+printedname+signature):	RF Manager Hans Hu	Homsty			
Festing Laboratory Name :	Shenzhen Huatongwei Inte	ernational Inspection Co., Ltd.			
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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:

FCC Rules Part 15.247: 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 forTesting Unlicensed Wireless Devices

<u>KDB 558074 D01 DTS Meas Guidance v05:</u> Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating under §15.247

1.2. Report version

Revision No.	Date of issue	Description
N/A	2018-09-13	Original

2. TEST DESCRIPTION

Test Item	FCC Rule	Result	Test Engineer
Antenna requirement	15.203/15.247(c)	PASS	Xiaokang Tan
Line Conducted Emissions (AC Main)	15.207	PASS	Tony Duan
Conducted Peak Output Power	15.247(b)(3)	PASS	Xiaokang Tan
Power Spectral Density	15.247(e)	PASS	Xiaokang Tan
6dB Bandwidth	15.247(a)(2)	PASS	Xiaokang Tan
Restricted band	15.247(d)/15.205	PASS	Shower Dai
Spurious Emissions	15.247(d)/15.209	PASS	Shower Dai

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

Shenzhen Huatongwei International Inspection Co., Ltd.

3. <u>SUMMARY</u>

3.1. Client Information

Applicant:	b mobile HK Limited
Address:	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung; New Territories; Hong Kong.
Manufacturer:	b mobile HK Limited
Address:	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung; New Territories; Hong Kong.

3.2. Product Description

Name of EUT:	Mobile Phone
Trade Mark:	Bmobile
Model No.:	AX951
Listed Model(s):	-
IMEI:	Conducted: 359982079966802 Radiated: 359982079966537
Power supply:	DC 3.8V
Adapter information:	Input: 100-240Va.c., 50/60Hz, 0.2A Output: 5.0Vd.c., 1.0A
Hardware version: 7130DW_MMI_V11	
Software version:	Bmobile_AX951_OM_LTM_V002
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

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)	802.11r	n(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

0		Manufacturer:	
0	7	Model No.:	/
		Manufacturer:	/
0	7	Model No.:	/

3.5. Modifications

No modifications were implemented to meet testing criteria.

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.

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)

 This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.5. Equipments Used during the Test

Conduc	ted 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
Padiat	ed Emissions					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. (mm-dd-yy)	Next Cal. (mm-dd-yy)
1	Semi- Anechoic Chamber	Albatross projects	SAC-3m-01	C11121	10/16/2016	10/15/2019
2	EMI Test Receiver	R&S	ESCI	100900	11/11/2017	11/10/2018
3	Loop Antenna	R&S	HFH2-Z2	100020	11/20/2017	11/19/2020
4	Ultra- Broadband Antenna	SCHWARZBECK	VULB9163	538	4/5/2017	4/4/2020
5	Horn Antenna	SCHWARZBECK	9120D	1011	3/27/2017	3/26/2020
6	Broadband Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170 472	3/27/2017	3/26/2020
7	Pre-amplifier	SCHWARZBECK	BBV 9743	9743-0022	10/18/2017	10/17/2018
8	Broadband Pre-amplifier	SCHWARZBECK	BBV 9718	9718-248	10/18/2017	10/17/2018
9	Spectrum Analyzer	R&S	FSP40	100597	11/11/2017	11/10/2018
10	RF Connection Cable	HUBER+SUHNE R	RE-7-FL	N/A	11/21/2017	11/20/2018
11	RF Connection Cable	HUBER+SUHNE R	RE-7-FH	N/A	11/21/2017	11/20/2018
12	Test Software	Audix	E3	N/A	N/A	N/A
13	Test Software	R&S	ES-K1	N/A	N/A	N/A
14	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
15	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

Shenzhen Huatongwei International Inspection Co., Ltd.

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	N/A	9/22/2017	9/21/2018	
4	OSP	R&S	OSP120	101317	N/A	N/A	

5. TEST CONDITIONS AND RESULTS

5.1. Antenna requirement <u>REQUIREMENT:</u>

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

☑ Passed □ Not Applicable

The directional gain of the antenna less than 6 dBi, please refer to the below antenna photo.



5.2. Conducted Emissions (AC Main)

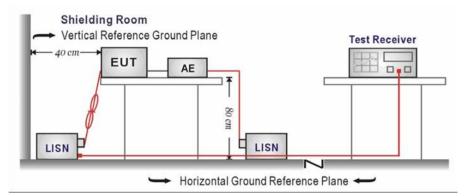
<u>LIMIT</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.207:

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

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

- 1. The EUT was setup according to ANSI C63.10:2013 requirements.
- 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.
- 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:

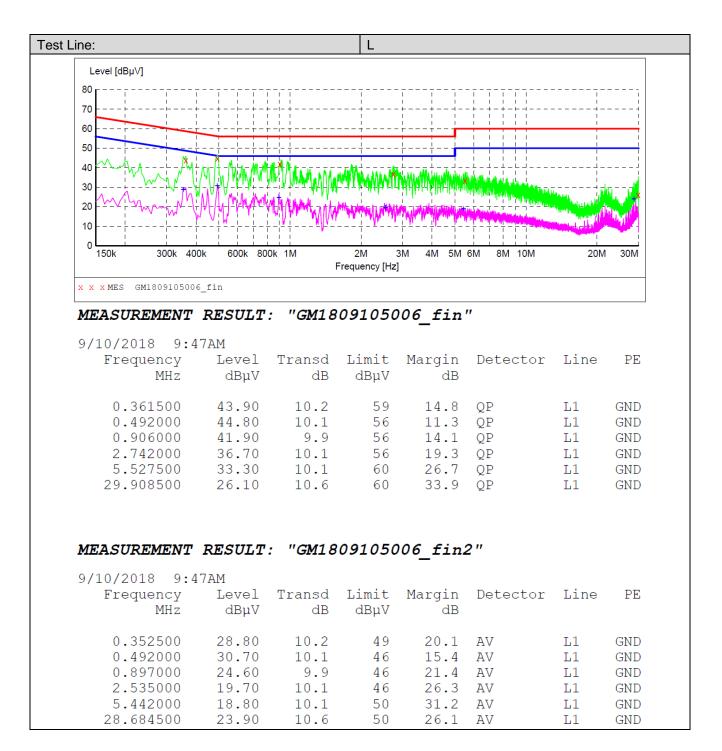
Please refer to the clause 3.3

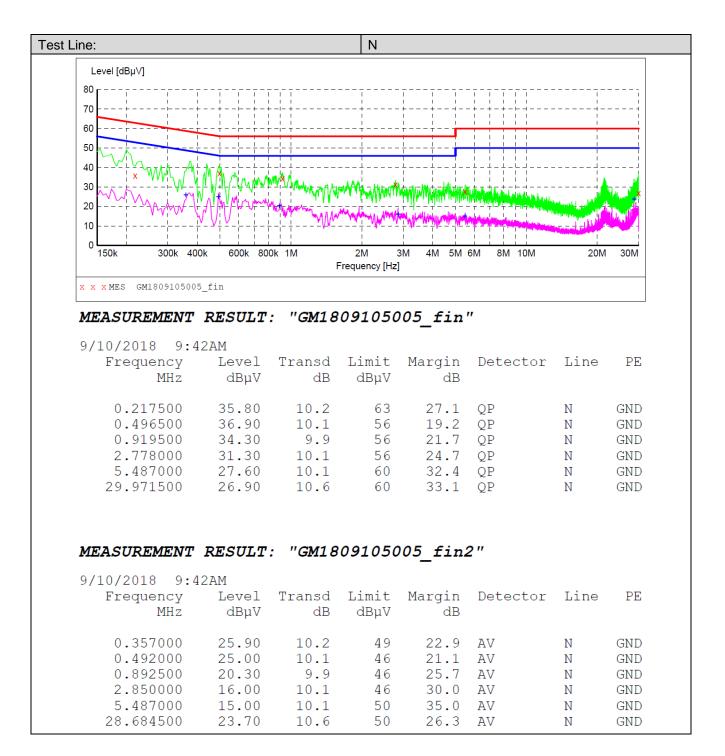
TEST RESULTS

☑ Passed □ Not Applicable

Note:

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

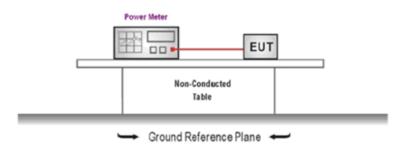




5.3. Conducted Peak Output Power LIMIT

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

TEST CONFIGURATION



TEST PROCEDURE

- 1. 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

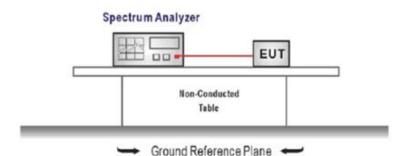
☑ Passed □ Not Applicable

Туре	Channel	Output power (dBm)	Limit (dBm)	Result
	01	16.63		
802.11b	06	16.38	≤30.00	Pass
	11	17.11		
	01	15.65		
802.11g	06	15.26	≤30.00	Pass
	11	15.01		
802.11n(HT20)	01	14.80		
	06	14.02	≤30.00	Pass
	11	14.19		
802.11n(HT40)	03	13.31		
	06	12.36	≤30.00	Pass
	09	12.28		

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,
- 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:

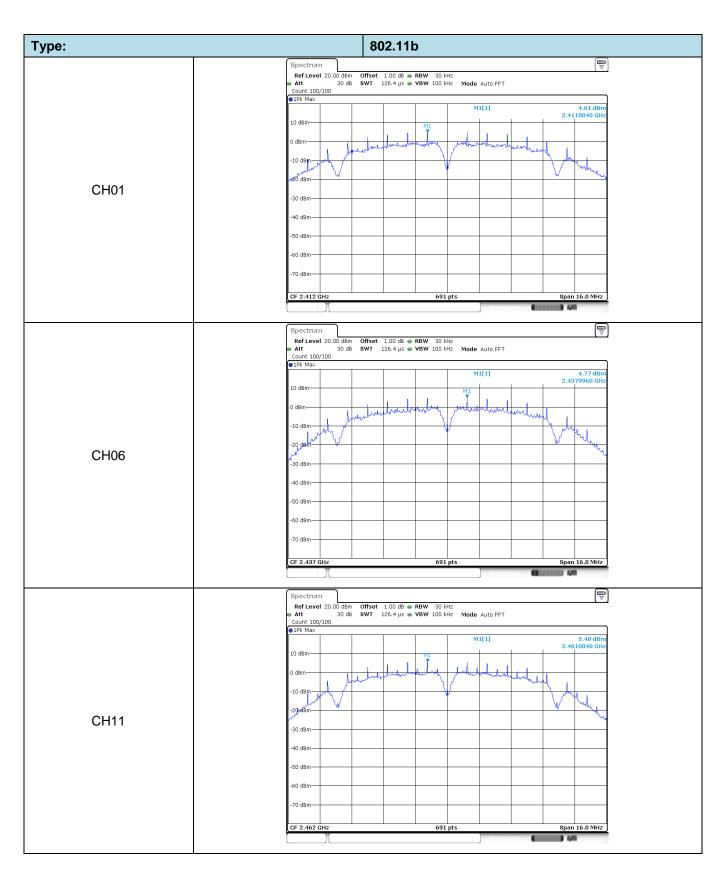
Please refer to the clause 3.3

TEST RESULTS

☑ Passed □ Not Applicable

Туре	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
	01	4.61		
802.11b	06	4.77	≤8.00	Pass
	11	5.48		
	01	-7.63		
802.11g	06	-8.13	≤8.00	Pass
	11	-9.34		
802.11n(HT20)	01	-8.90		
	06	-9.56	≤8.00	Pass
	11	-9.49		
	03	-12.95		
802.11n(HT40)	06	-14.38	≤8.00	Pass
	09	-14.86		

Test plot as follows:



Type: 802.11g Spectrum
 Ref Level
 20.00 dBm
 Offset
 1.00 dB
 ■ RBW
 30 kHz

 Att
 30 dB
 SWT
 189.6 µs
 ■ VBW
 100 kHz
 Mode
 Auto FFT
 Count 100/100 M1[1] -7.63 dB 2.4194890 GF 10 dBm· 0 dBmman and a supplication of the second second -10 dBm and a second state of the second s -20 dBn CH01 4 30 dBn Mahan r48-dam4 50 dBm -60 dBm 70 dBm· CF 2.412 G 691 pts Span Spectrum
 Ref Level
 20.00 dBm
 Offset
 1.00 dB
 RBW
 30 kHz

 Att
 30 dB
 SWT
 189.6 µs
 VBW
 100 kHz
 Mode Auto FFT

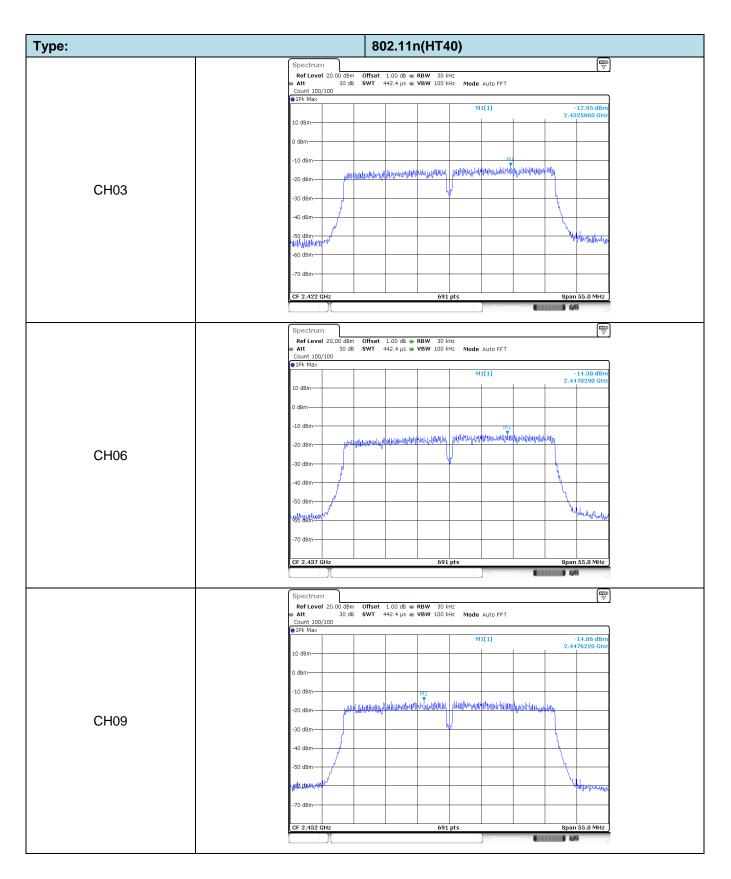
 Count 100/100
 FPK Max
 SWT
 189.6 µs
 VBW
 100 kHz
 Mode Auto FFT
 M1[1] -8.13 dB 2.4426080 GF 10 dBm-0 dBm manner and branch man have a series and the series of the -10 dBm--20 dBm CH06 h -30 dBm 40 dBn mp ANNA ANA -60 dBn 70 dBm Span 25.0 MHz CF 2.437 GH: 691 pts 40 Spectrum • Att Count 100/100 • 1Pk Max M1[1] -9.34 dBr 2.4632300 GH 10 dBm 0 dBm M1 -10 dBm Mannerana -20 dBm J. CH11 ٩, 30 dBn 40 dBn hur hstor distribu -60 dBm 70 dBn F 2.462 G 691 pt: 4.46

Type: 802.11n(HT20) Spectrum
 Ref Level
 20.00 dBm
 Offset
 1.00 dB
 ■ RBW
 30 kHz

 Att
 30 dB
 SWT
 189.6 µs
 ■ VBW
 100 kHz
 Mode
 Auto FFT
 Count 100/100 M1[1] -8.90 dB 2.4169930 GF 10 dBm· 0 dBm--10 dBm wand warde ward warder and the ward ward warder -20 dBn CH01 30 dBn -40 dBm-http -50 dBm--60 dBm 70 dBm-CF 2.412 G 691 pts Span Spectrum
 Ref Level
 20.00 dBm
 Offset
 1.00 dB
 RBW
 30 kHz

 Att
 30 dB
 SWT
 189.6 µs
 VBW
 100 kHz
 Mode Auto FFT

 Count 100/100
 FPK Max
 SWT
 189.6 µs
 VBW
 100 kHz
 Mode Auto FFT
 M1[1] -9.56 dB 2.4419930 GF 10 dBm-0 dBm -10 dBm--20 dBm CH06 h -30 dBm 40 dBn have .5.P. ABAY -60 dBn 70 dBm CF 2.437 GH 691 pts Span 25.0 MHz Spectrum • Att Count 100/100 • 1Pk Max M1[1] -9.49 dBr 2.4607340 GH 10 dBm-0 dBm-M1 martineran and and prover and and and and and and and -10 dBm -20 dBm h. CH11 30 dBn 40 dBn 150rd8m^{ll} hand the -60 dBm· 70 dBm F 2.462 G 691 pts 4.46



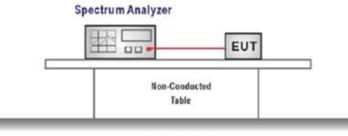
5.5. 6dB bandwidth

<u>LIMIT</u>

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



- Ground Reference Plane

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:

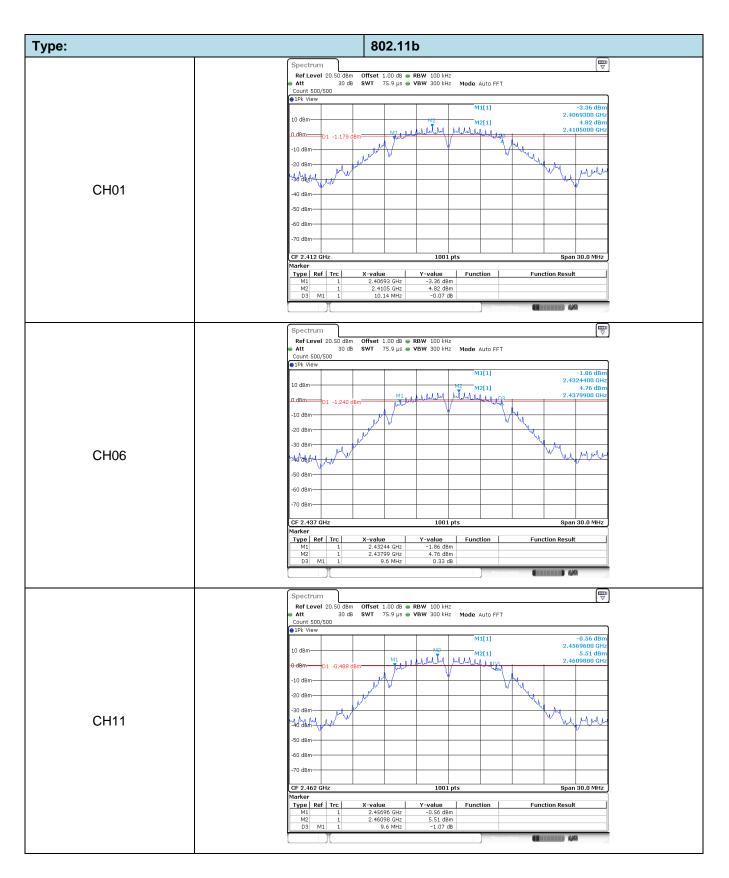
Please refer to the clause 3.3

TEST RESULTS

☑ Passed □ Not Applicable

Туре	Channel	6dB Bandwidth (MHz)	Limit (kHz)	Result
802.11b	01	10.14		
	06	9.60	≥500	Pass
	11	9.60		
802.11g	01	16.41		
	06	16.41	≥500	Pass
	11	16.44		
802.11n(HT20)	01	17.64		
	06	17.64	≥500	Pass
	11	17.64		
802.11n(HT40)	03	35.88		
	06	35.88	≥500	Pass
	09	35.46		

Test plot as follows:



pe:	802.11g
	Spectrum (₩
	RefLevel 20.50 dBm Offset 1.00 dB 🖷 RBW 100 kHz Att 30 dB SWT 75.9 µs 🖷 VBW 300 kHz Mode Auto FFT
	Count 500/500
	M1[1] -10.71 dBm 2.4037800 GHz 10 dBm
	0 dBm M2[1] -3.24 dBm M2 2.4169800 GHz
	-10 dBm D1 -9.244 dBm Marchard walnut walnut walnut walnut walnut walnut bard war ba
	-20 dBm
	-30 dBm
CH01	All demonstration
	-50 dBm
	-60 dBm
	-70 dBm-
	CF 2.412 GHz 1001 pts Span 30.0 MHz
	Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40378 GHz -10.71 dBm
	M1 1 2.4378 GHz -10.71 dBm M2 1 2.41698 GHz -3.24 dBm D3 M1 1 16.41 MHz 1.38 dB
	Spectrum 🕎
	Ref Level 20.50 dBm Offset 1.00 dB Ref Level 20.50 dBm Offset 1.00 dBm Offset
	Att 30 dB SWT 75.9 µs
	●1Pk View M1[1] -10.64 dBm
	10 dBm 2.4288100 GHz -3.76 dBm 3.76 dBm -3.76 dBm 2.448800 GHz
	-10 dBm D1 -9.760 dBm Acceluate and a second data and a second dat
	-20 dBm
CH06	-30 dBm
01100	-40 dbm
	-00 dbm
	-70 dBm
	CF 2.437 GHz 1001 pts Span 30.0 MHz
	Marker
	Type Ref Trc X-value Y-value Function Function Result M1 1 2.42881 GHz -10.64 dBm M2 1 2.44396 GHz -3.76 dBm
	D3 M1 1 16.41 MHz 0.24 dB
	Messada (Hessada)
	Spectrum 🕎
	RefLevel 20.50 dBm Offset 1.00 dB RBW 100 Hz Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
	Count 500/500 PIPk View
	10 dBm
	0 dBm M2
	-10.dem_01 -10.541 def streetlevelwallow drawlow and a streetlevelwallow base
	-20 dBm
	-30 d8m
CH11	-40 dBm
	-S0 dBm
	-60 dBm-
	-70 dBm-
	CF 2.462 GHz 1001 pts Span 30.0 MHz
	Marker Type Ref Trc X-value Y-value Function Function Result
	M1 1 2 45275 CU2 -10 02 dbm
	Mi 1 2.45375 GHz -10.82 dBm -10.82 dBm M2 1 2.45699 GHz -4.54 dBm -10.82 dBm D3 M1 1 16.44 MHz -1.12 dB -10.82 dBm

802.11n(HT20) Type: Spectrum
 Ref Level
 20.50 dBm
 Offset
 1.00 dB
 RBW
 100 kHz

 Att
 30 dB
 SWT
 75.9 μs
 VBW
 300 kHz
 Mode
 Auto FFT
 Count 500/500 -11.24 dB 10 dBm M2[1] -4.41 dB 2.4169800 GF 0 dBn X 10 d8 -20 dBn -30 dBr Manman CH01 49.**48**,17₩ -50 dBn -60 dBn -70 dBm CF 2.412 GHz Marker 1001 pts Span 30.0 MHz Type Ref Trc X-value 2.40318 GHz 2.41698 GHz 17.64 MHz Y-value -11.24 dBm -4.41 dBm 0.09 dB Function Function Result M2 D3 M1 ₽ Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 P1Pk View Offset 1.00 dB ● RBW 100 kHz SWT 75.9 µs ● VBW 300 kHz Mode Auto FFT -12.51 dBn 2.4281800 GH: -5.42 dBn 2.4419800 GH: M1[1] 10 dBm· M2[1] 0 dBm X -10 dBm D1 -11.41 -20 dBm -30 dBm CH06 40 dBm monde w oso de hau -60 dBm 70 dBm CF 2.437 GH: 1001 pt Span 30.0 MHz Type Ref Trc X-value 2.42818 GHz 2.44198 GHz 17.64 MHz
 Y-value
 Function

 -12.51 dBm
 -5.42 dBm

 0.49 dB
 -5.42 dBm
 Function Result M1 M2 D3 M1 ₽ Spectrum
 Ref Level
 20.50 dBm
 Offset
 1.00 dB
 RBW
 100 kHz

 Att
 30 dB
 SWT
 75.9 μs
 VBW
 300 kHz
 Mode
 Auto FFT
 Count 500/500 -11.75 dBr 2.4531500 GH M1[1] 10 dBm-M2[1] -4.94 dBr 2.4569900 GH 0 dBm Ĭ. ÷, ٨. 10 dBm 01 -10.94 -20 dBm--30 dBm-CH11 40 dBm mound -60 dBm· -70 dBm-CF 2.462 GHz 1001 pts Span 30.0 MHz Marker Type Ref Trc X-value 2.45315 GHz 2.45699 GHz 17.64 MHz Y-value -11.75 dBm -4.94 dBm 0.62 dB Function Function Result M2 D3 M1

Type: 802.11n(HT40) (₩ Spectrum
 Ref Level
 20.50 dBm
 Offset
 1.00 dB
 RBW
 100 kHz

 Att
 30 dB
 SWT
 132.7 μs
 VBW
 300 kHz
 Mode
 Auto FFT
 Count 500/500 -16.64 dB 10 dBm M2[1] -8.44 dB 2.4395200 GF 0 dBn -10 dBm D1 -14.443 Bmalada, Jakamalada Malada shy by the -20 dBm -30 dBn CH03 40 dBn 4PM min garafrafia .Mr Schelender -60 dBm -70 dBm CF 2.422 GHz Marker 1001 pts Span 60.0 MHz Type Ref Trc X-value 2.40436 GHz 2.43952 GHz 35.88 MHz Y-value -16.64 dBm -8.44 dBm 0.20 dB Function Function Result M2 D3 M1 ₽ Spectrum Ref Level 20.50 dBm Att 30 dB Count 500/500 Offset 1.00 dB ● RBW 100 kHz SWT 132.7 µs ● VBW 300 kHz Mode Auto FFT -17.82 dB M1[1] -17.82 us 2.4193600 GH -9.44 dBn 2.4419800 GH 10 dBm· M2[1] 0 dBm M2 -10 dBm . Autor July have here D1 -15.437 Brinder the low plus have been -20 dBm--30 dBm CH06 40 dBm -59. Manutan Marthallow March -60 dBm-70 dBm CF 2.437 GH: 1001 pt Span 60.0 MHz
 Y-value
 Function

 -17.82 dBm
 -9.44 dBm

 -0.15 dB
 -9.44 dBm
 Type Ref Trc X-value 2.41936 GHz 2.44198 GHz 35.88 MHz Function Result M1 M2 D3 M1 ₿ Spectrum
 Ref Level
 20.50 dBm
 Offset
 1.00 dB ●
 RBW
 100 kHz

 Att
 30 dB
 SWT
 132.7 µs
 ●
 VBW
 300 kHz
 Mode Auto FFT Count 500/500 -16.62 dBr 2.4343600 GH M1[1] 10 dBm-M2[1] -9.62 dBr 2.4494800 GH 0 dBm M2 BBmoleule de alternation de la de la des -10 dBm· pysolad ala for the design of the forther that the D1 -15.61 -20 dBm--30 dBm CH09 40 dBm -50 dBm Windowski -60 dBm· -70 dBm-CF 2.452 GHz 1001 pts Span 60.0 MHz Marker Type Ref Trc X-value 2.43436 GHz 2.44948 GHz 35.46 MHz Y-value -16.62 dBm -9.62 dBm 0.55 dB Function Function Result M2 D3 M1

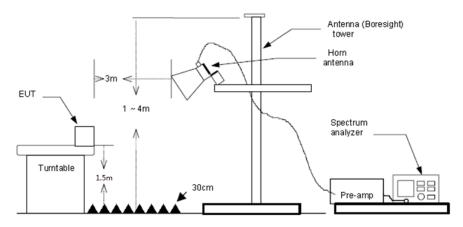
5.6. Restricted band

<u>LIMIT</u>

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

- 1) 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. This is 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.
- 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:

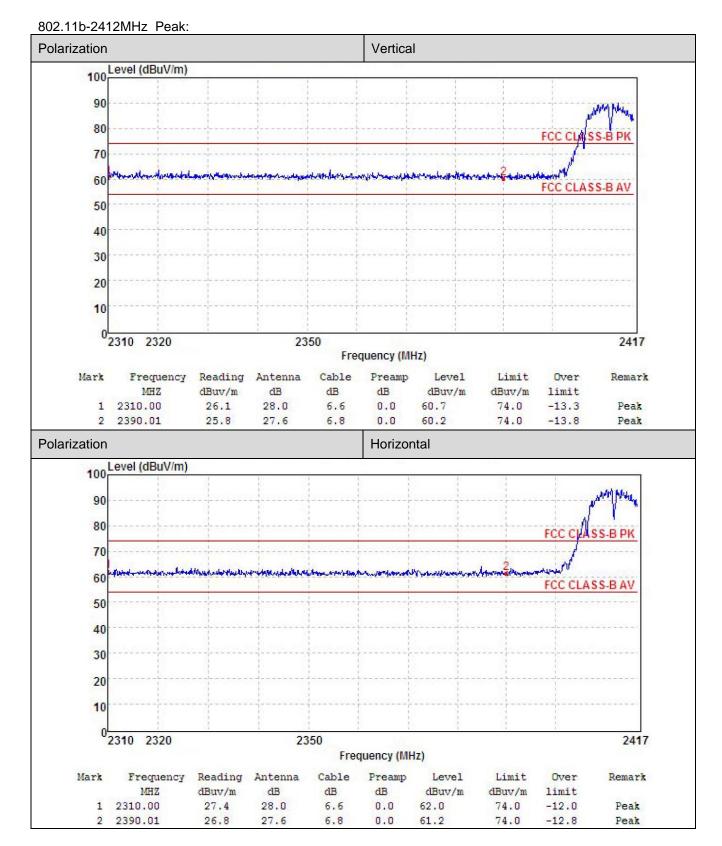
Please refer to the clause 3.3

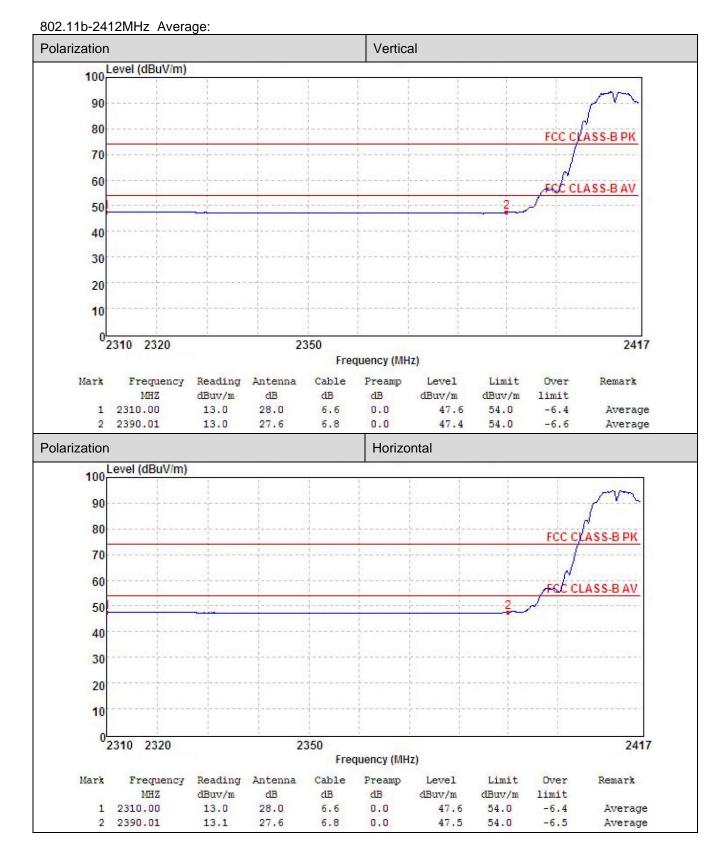
TEST RESULTS

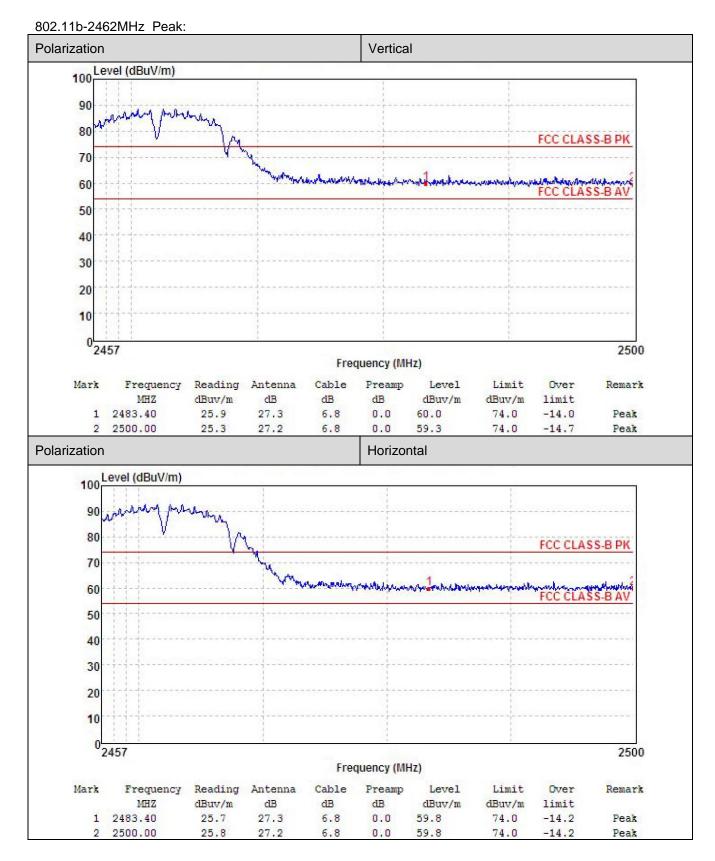
☑ Passed □ Not Applicable

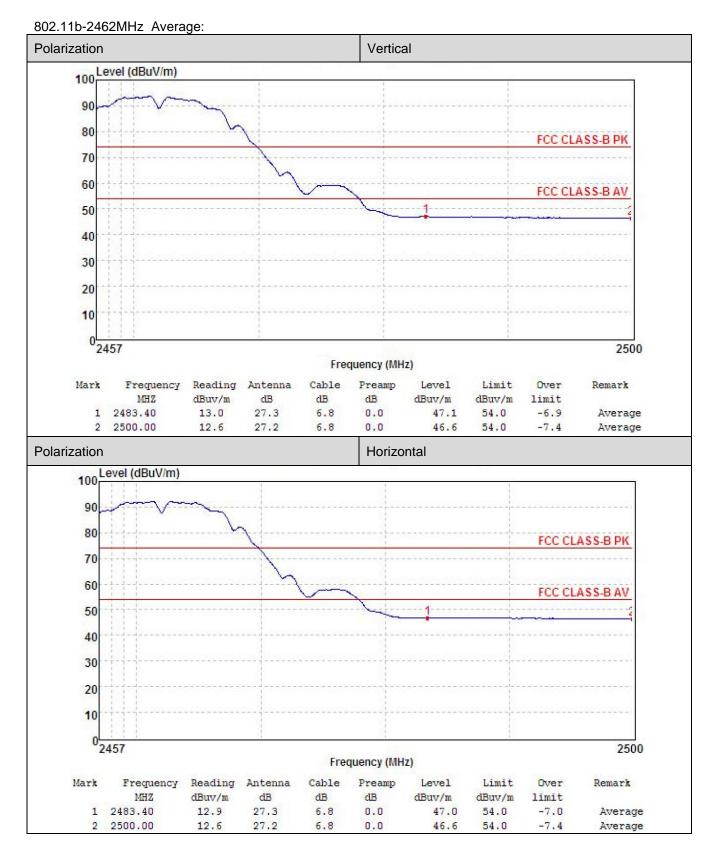
Note:

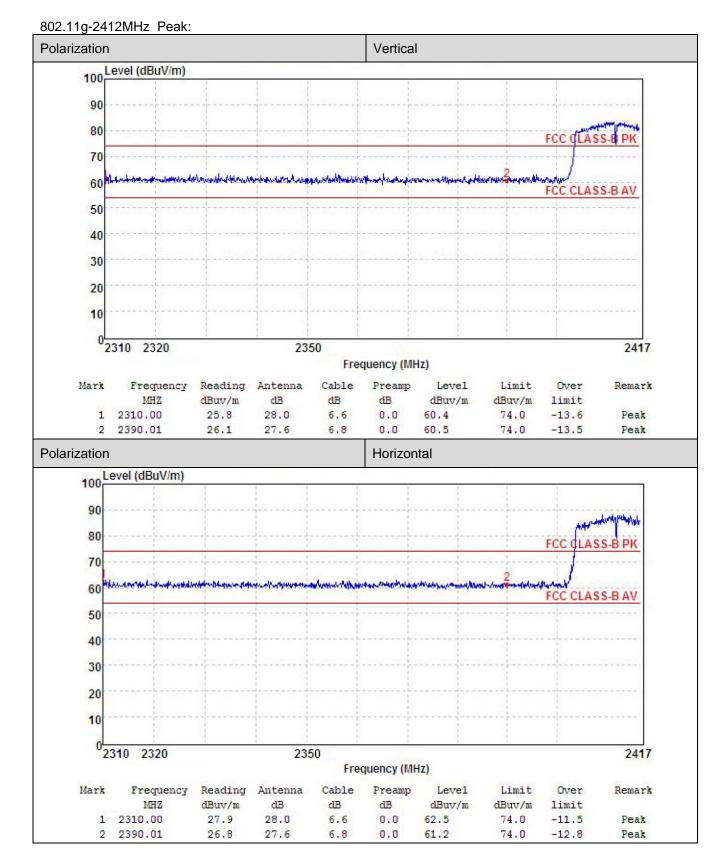
1) Final level= Read level + Antenna Factor+ Cable Loss- Preamp Factor

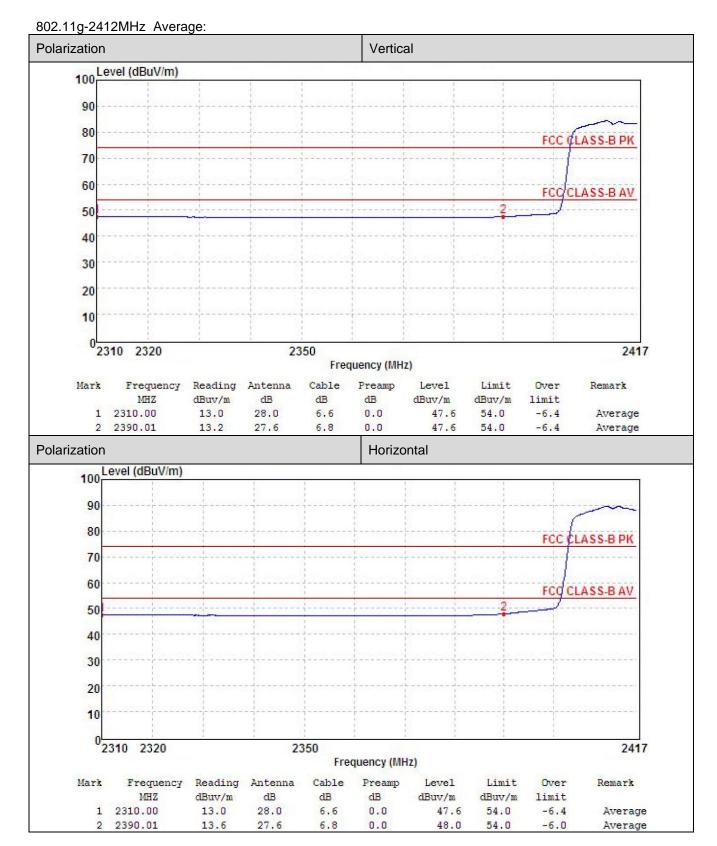


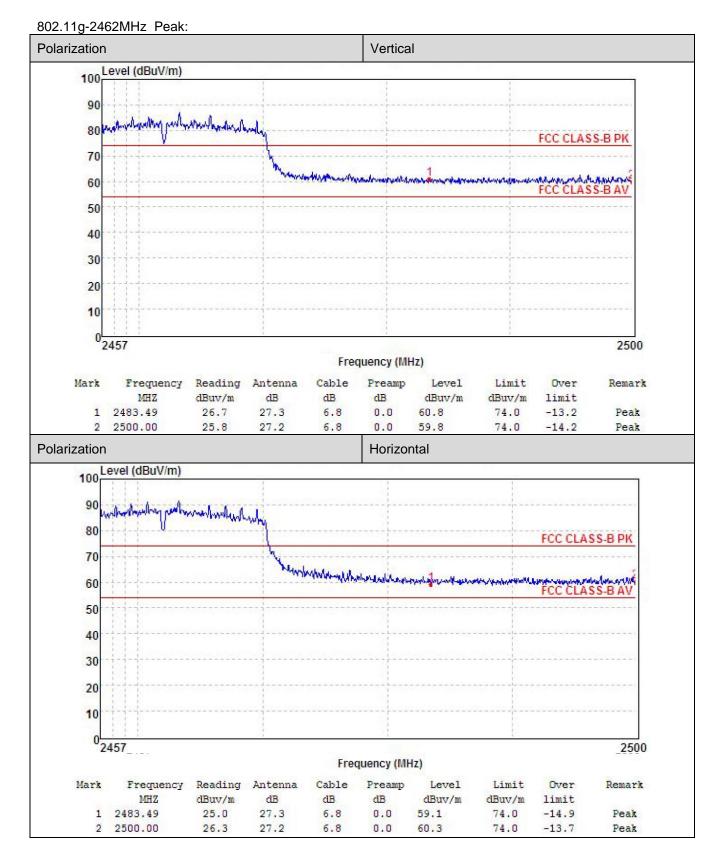


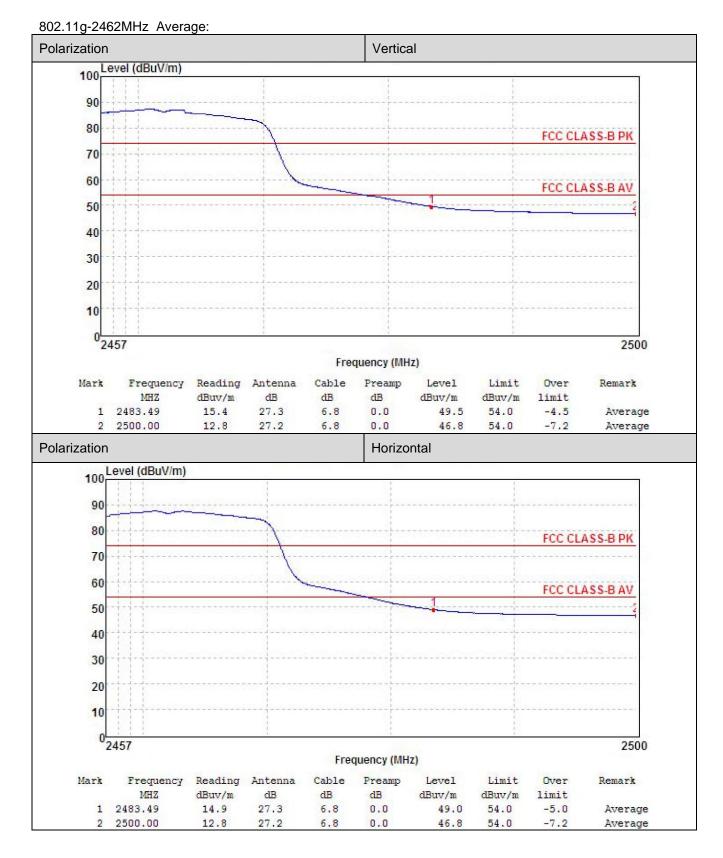


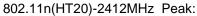


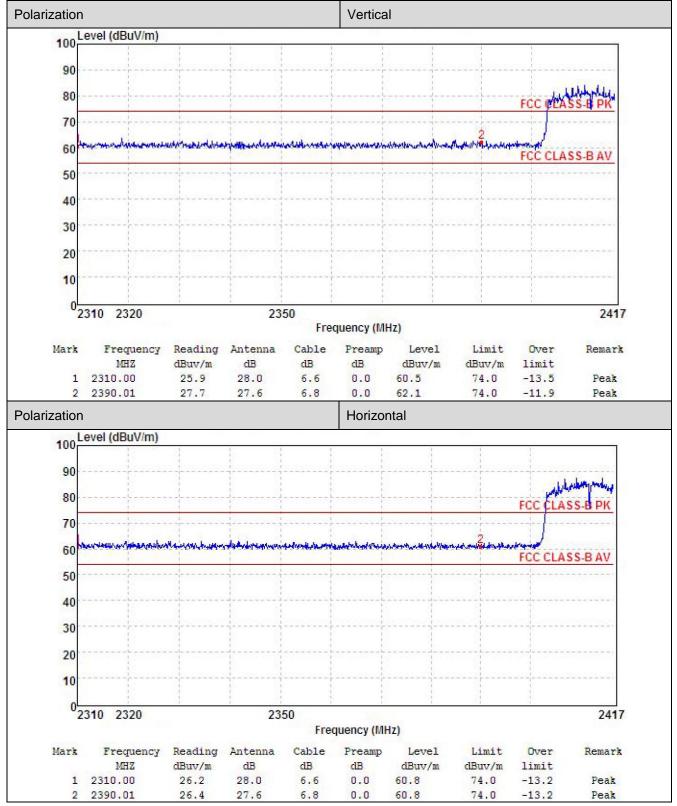


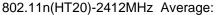


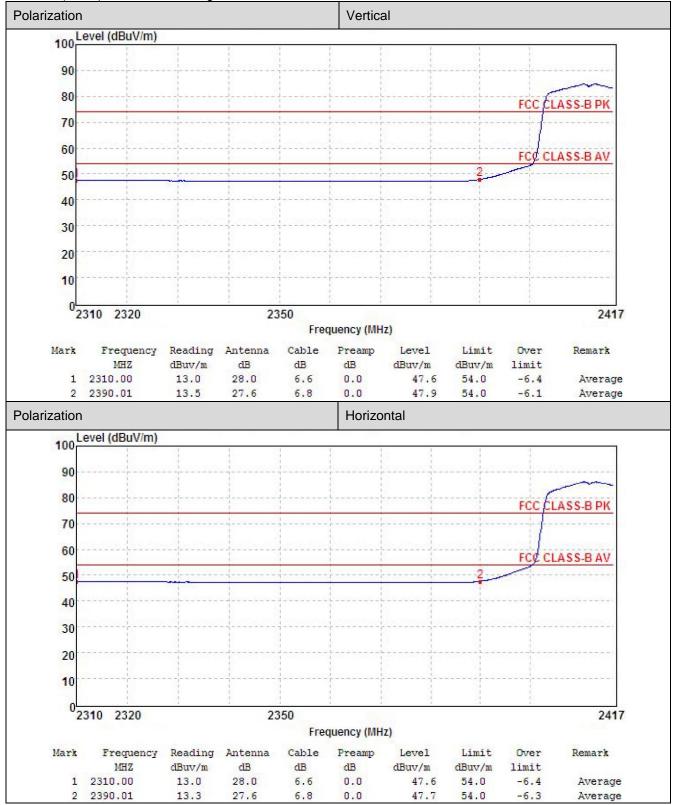


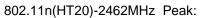


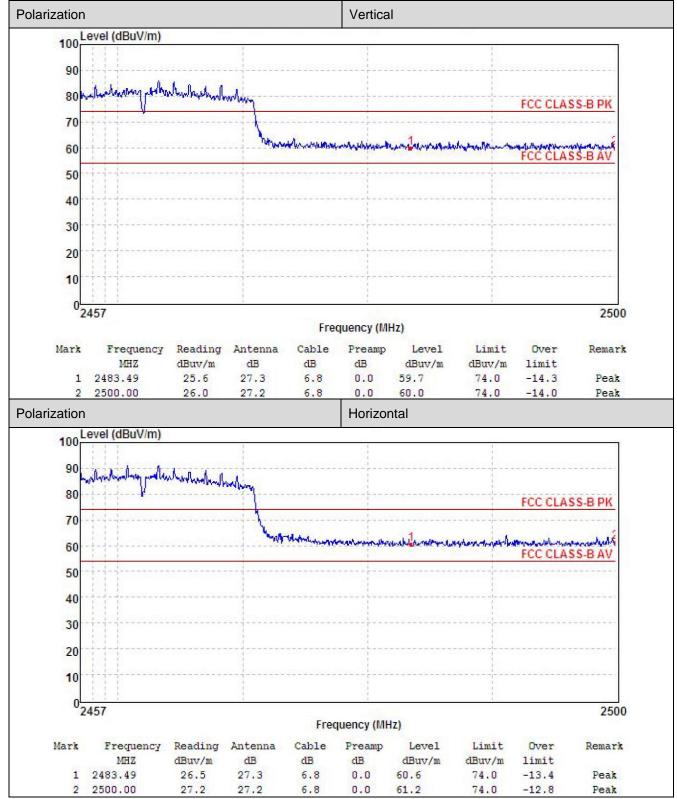


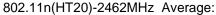


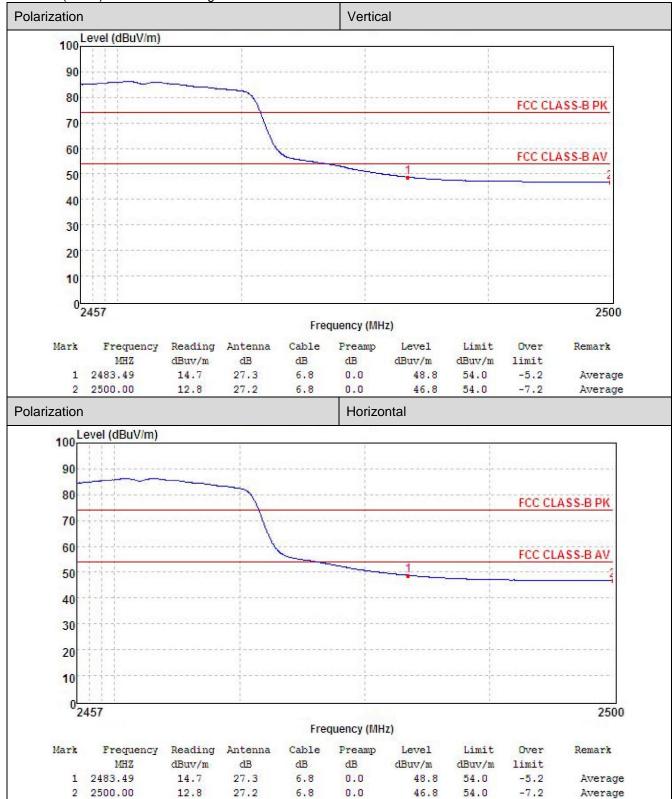


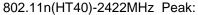


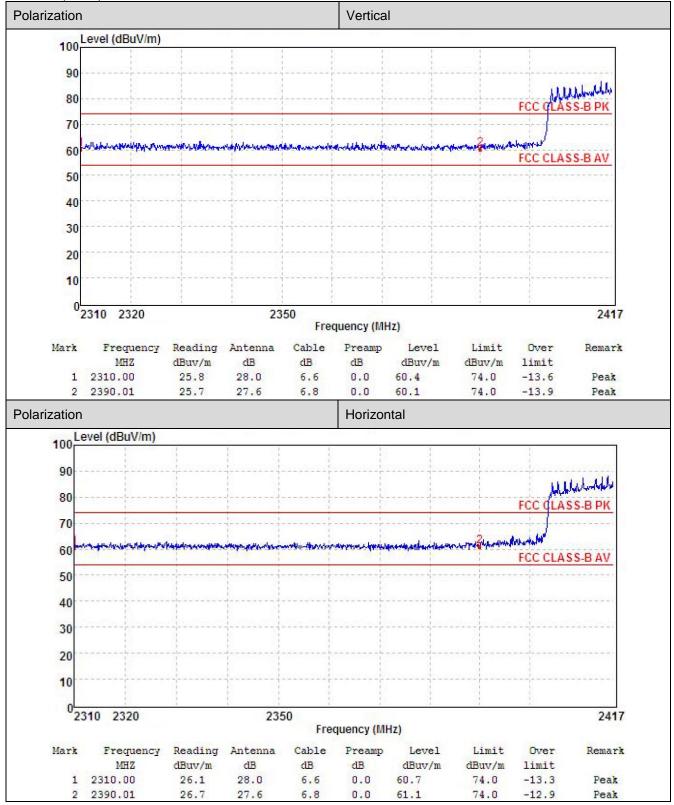


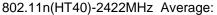


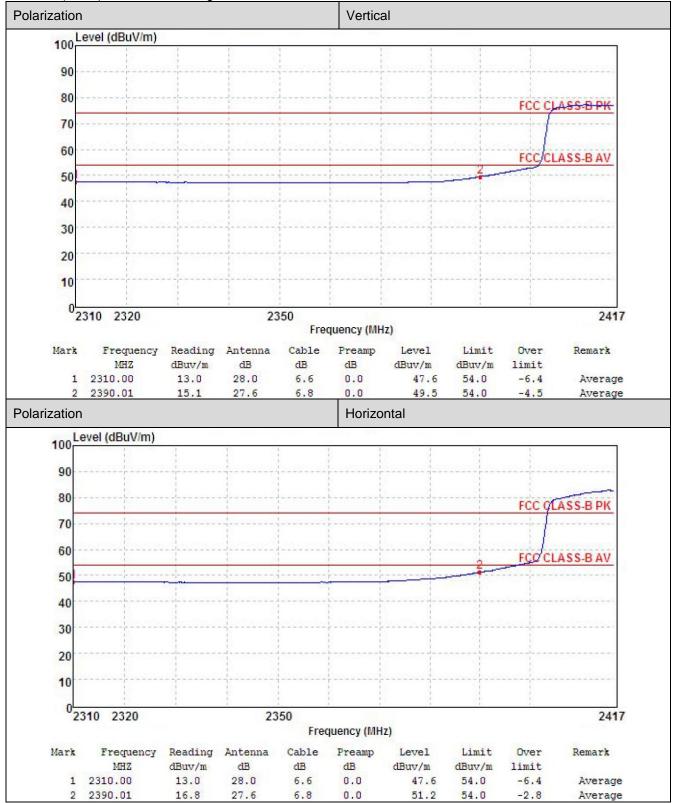


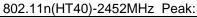


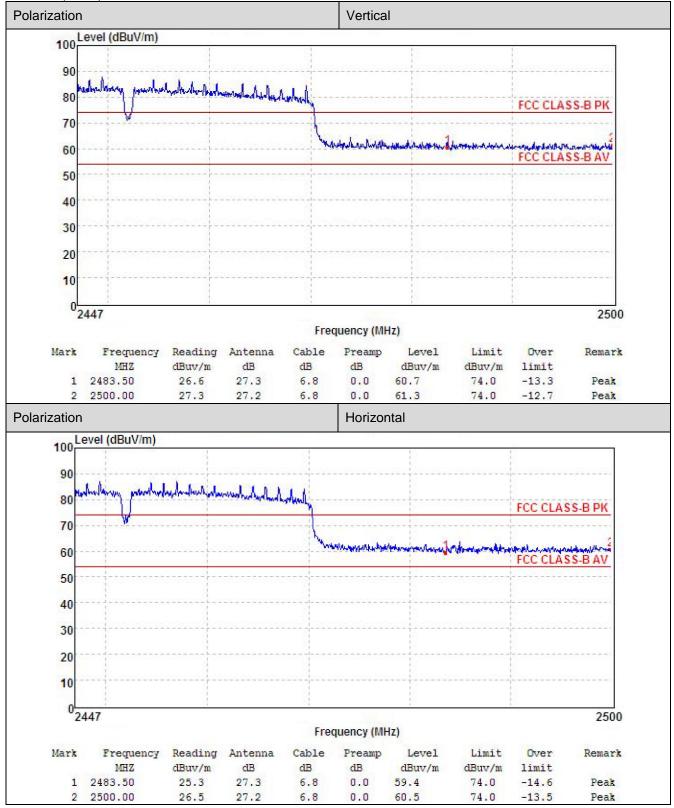


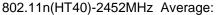


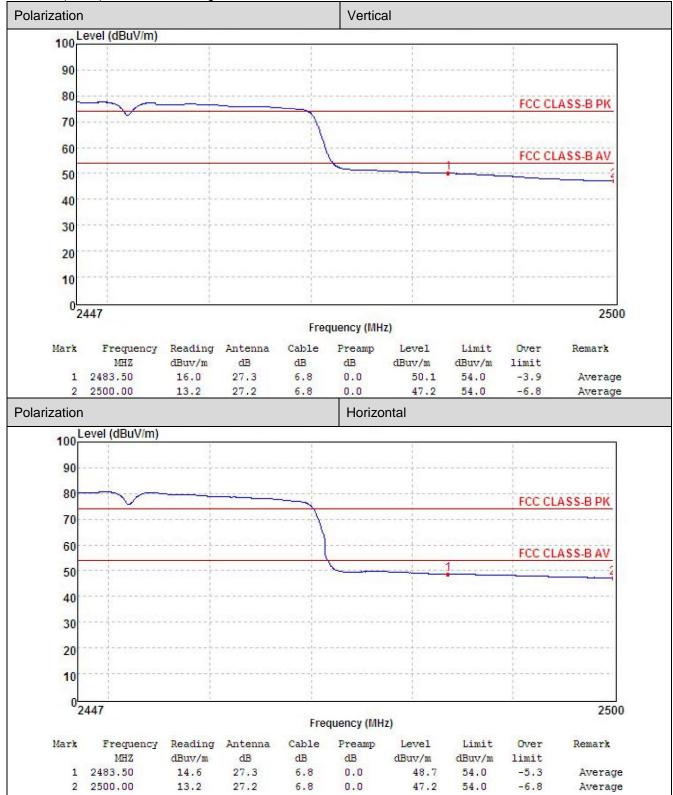










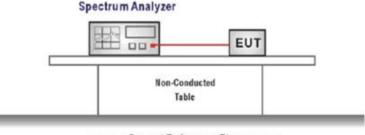


5.7. Band edge and Spurious Emissions (conducted)

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 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



Ground Reference Plane

TEST PROCEDURE

- 1. Connect the antenna port(s) to the spectrum analyzer input.
- 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 ≥ 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. Emission level measurement

Set the center frequency and span to encompass frequency range to be measured RBW = 100 kHz, VBW \ge 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:

3.

Please refer to the clause 3.3

TEST RESULTS

Passed [

Not Applicable

CH01	Test Item:	Bandedge	Туре:	802.11b
CH01		Ref Lev Att Count 30 10 dBm 0 dBm -10 dBm	el 20.00 dBm Offset 1,00 dB RBW 100 kHz 30 dB SWT 246.5 µs VBW 300 kHz Mode Auto FF 0/300 M1[1] M2[1]	T 4.60 dBm 2,110410 GHz 72,83 dBm 2,84 dBm 4,84 dBm 4,94
Type Ref Trc X-value Function Function Result M1 1 2.41041 (Hz 4.60 dbm	CH01	-40 dBm- -50 dBm- -60 dBm- -70 dBm- Start 2.3	and a second and the second and the second	
Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz • Att 30 dB SWT 113.8 µS • VBW 300 kHz • PFK Max		Type R M1 M2 M3 M4 M5	1 2.41041 GHz 4.60 dBm 1 2.4 GHz -32.83 dBm 1 2.39 GHz -50.46 dBm 1 2.31 GHz -59.09 dBm 1 2.397003 GHz -25.47 dBm	
The second se	CH11	Ref Lev Att Count 30 1Pk Max 10 dBm -10 dBm -30 dBm -30 dBm -40 dBm	el 20.00 dBm Offset 1.00 dB RBW 100 kHz 30 dB SWT 113.8 µs VBW 300 kHz Mode Auto FF 0/300	T 5.44 dBm 2.4605090 GHz - 58.16 dBm 2.4835000 GHz

Test Item:	Bandedge	Туре:		802.11g
			RBW 100 kHz VBW 300 kHz Mode Auto FFT	
CH01		Count 300/300 PIPK Max 10 dBm 0 dBm -10 dBm -20 dBm D1 -23.430 dBm -30 dBm -40 dBm	M1[1] M2[1] M2[1]	-3.43 dBm 2.417060 GHz -36.98 dBm 2.400000 GHz 1.1111 JULII M\$22
		ین مالس 50 dbm 	deutrus human hu human human	Stop 2.422 GHz
		Type Ref Trc X-value M1 1 2.41706 GHz 1 M3 1 2.40706 GHz 1 M3 1 2.30 GHz 1 M4 1 2.31 GHz 1 M5 1 2.397977 GHz 1	Y-value Function -3.43 dBm -3.49 dBm -36.90 dBm -49.25 dBm -57.86 dBm -36.60 dBm	Function Result
		Spectrum Ref Level 20.00 dBm Offset 1.00 dB ● Att 30 dB SWT 113.8 μs ● Count 300/300 JPK Max ● ●	RBW 100 kHz YBW 300 kHz Mode Auto FFT	
CH11		10 dBm	M1[1] M2[1]	-4.46 dBm 2.4569670 GHz -54.74 dBm 2.4835000 GHz
		-10.08m/w/w/w/w/w/w/w/w/w/w/w/w/w/w/w/w/w/w/w		
		-40 dBm	hours man war	M North Market
		-70 dBm	691 pts	Stop 2.5 GHz
		Type Ref Trc X-value M1 1 2.456967 GHz M2 1 2.46935 GHz M3 1 2.5 GHz M4 1 2.484487 GHz	Y-value Function -4.46 dBm - -54.74 dBm - -55.91 dBm - -54.67 dBm -	Function Result
			Steasurino	••••••

Test Item:	Bandedge	Туре:	802.11n(HT20)			
	Spectrum Ref Level 20. Att	00 dBm Offset 1.00 dB ● RBW 100 kHz 30 dB SWT 246.5 µs ● VBW 300 kHz Mode Au	0 FFT			
	Count 300/300 PIPk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm	M1[1 M2[1	-4.28 dBm 2.417060 GHz			
CH01	-40 dBm	691 pts	Stop 2.422 GHz			
	Marker Type Ref Tu M1					
	Spectrum Ref Level 20. Att Count 300/300 9 JPK Max	RefLevel 20.00 dBm Offset 1.00 dB RBW 100 kHz 1.2 Att 30 dB SWT 113.8 μs VBW 300 kHz Mode Auto FFT Count 300/500 SWT 113.8 μs VBW 300 kHz Mode Auto FFT				
	10 dBm	M1[1 M2[1	2.4569670 GHz			
	-20 dBm-01 -	24.900 dBm				
CH11	-40 d8m		Ma			
	Start 2.452 GH Marker Type Ref Ti M1	· · · · · · · · · · · · · · · · · · ·	Stop 2.5 GHz			
		1 2.4835826 GHz -54.55 dBm				

Test Item:	Bandedge	Ту	/pe:		802.11n(H	T40)
	👄 Att	el 20.00 dBm Offset 30 dB SWT 3	1.00 dB ● RBW 100 kHz 303.4 µs ● VBW 300 kHz		ET T	7
	Count 30 P 1Pk Max 10 dBm			M1[1] M2[1]	-8.38 dB) 2.439420 GF -48.14 dB) 2.400000 GF M	z n z
CH03	-20 dBm	D1 -28.380 dBm		M3 MS M2	unnan Samerany	
	4 -70 dBm- Start 2.3	1 GHz	691 p		Stop 2.442 GHz	
	Marker Type R M1 M2 M3 M4 M5	1 2.439 1 2 1 2.	42 GHz -8.38 dBm 1.4 GHz -48.14 dBm 39 GHz -51.24 dBm 31 GHz -58.70 dBm		Function Result	
	Ref Lev Att Count 30	Count 300/300				
	●1Pk Max 10 dBm	M1		M1[1] M2[1]	-9.25 dBi 2.4494670 GF -55.41 dBi 2.4835000 GF	z
CH09	-10 dgm- -20 dBm- -30 dBm-	M1 Automodulu orania (mag D1 -29.250 dBm	particles had a fair to a shad a fair			-
	/-40 dBm -50 dBm -60 dBm -70 dBm			highwarder -	m2 M4 MBM Mah Manush marked marked	
	Start 2.4 Markor Type M1 M2	ef Trc X-value	67 GHz -9.25 dBm 35 GHz -55.41 dBm	Function	Stop 2.5 GHz Function Result	
	M3 M4	1 2.48620	29 GHz -57.55 dBm 29 GHz -53.14 dBm		(IIIIII) 4/4	

Fest Item:	SE	Туре:	802.11b			
		Spectrum Ref Level 21.00 dBm Offset 1.00 dB m RBW 100 kHz Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT Count 100/100 Count 100/100 VBW 300 kHz Mode Auto FFT				
		Outri 10/10 O IPk Max M1(1)	4.80 dBm 2.4104800 GHz			
		10 dBm				
CH01		-10 dBm	Value .			
		-20 dam	why were			
Reference level		-40 dBm	¥			
		-50 dBm				
		-70 dBm-				
		CF 2.412 GHz 691 pts	Span 30.0 MHz			
		Spectrum				
		Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 30.1 ms VBW 300 kHz Mode Auto Sv Count 10/10 </td <td></td>				
		UPK MBX M1[1] 10 dBm	-56.90 dBm 745.1730 MHz			
		0 dBm				
		-10 dBm				
CH01 30MHz~1000MHz		-30 dBm				
		-40 dBm				
			MAT Refer to the Antonion and consistent of the Antonio Antonio Antonio Refer to the Antonio Antonio Antonio Antonio			
		-70 dBm	Stop 1.0 GHz			
)[seuring			
		Spectrum Ref Level 20.00 dBm Offset 1.00 dB • RBW 100 kHz				
CH01 1GHz~26GHz		Att 30 dB SWT 250 ms • VBW 300 kHz Mode Auto Sv Count 10/10 P1Pk Max M1[1]	-45.12 dBm			
		10 dBm	4.823333 GHz			
		0 dBm				
		D1 -15.200 d8m				
		-30 d8m				
		-70 dBm				
		Start 1.0 GHz 30001 pts	Stop 26.0 GHz			