



TEST REPORT

Report Reference No::	CHTEW19100073	Report verification:		
Project No:	SHT1909056701EW	100 - 100		
FCC ID:	2ASWW-STAR3G	z	THE ACL SCOT	
Applicant's name:	XINCHUANGXIN INTERNA	FIONAL CO. , LTD		
Address		ROOM 605 6/F, FA YUEN COMMERCIAL BUILDING, 75-77 FA YUEN STREET MONGKOK KL		
Manufacturer	Shenzhen Chiteng Technolo	gy Co.,LTD		
Address:	Second Floor,Area A, Buildir Guanguang Road, Tangjia C Guangming New District, Sh	ommunity, Gongming Stre		
Test item description:	Tablet			
Trade Mark	CORN			
Model/Type reference:	Star7 3G			
Listed Model(s)	Star7, Star8 3G, Star9 3G, S	tar9		
Standard:	FCC CFR Title 47 Part 15 Subpart C Section 15.247			
Date of receipt of test sample:	Sep 20, 2019			
Date of testing	Sep 21, 2019- Oct 14, 2019			
Date of issue:	Oct 15, 2019			
Result	PASS			
Compiled by (position+printedname+signature):	File administrators Silvia Li	Silvia	.Li	
Supervised by (position+printedname+signature):	Project Engineer Aaron Fang		ang	
Approved by (position+printedname+signature):	RF Manager Hans Hu	Homes	Ни	
Testing Laboratory Name: :	Shenzhen Huatongwei Inte	rnational Inspection Co.	., Ltd.	
Address:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China			
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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 forTesting Unlicensed Wireless Devices

<u>KDB 558074 D01 15.247 Meas Guidance v05r02:</u> Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating under Section 15.247 of The FCC Rules

1.2. Report version

Revision No.	Date of issue	Description
N/A	2019-10-15	Original

2. TEST DESCRIPTION

Test Item	FCC Rule	Result	Test Engineer	
Antenna requirement	15.203/15.247(c)	PASS	Kang Yang	
Line Conducted Emissions (AC Main)	15.207	PASS	Kang Yang	
Conducted Peak Output Power	15.247(b)(3)	PASS	Bruce Wong	
Power Spectral Density	15.247(e)	PASS	Bruce Wong	
6dB Bandwidth	15.247(a)(2)	PASS	Bruce Wong	
Restricted band	15.247(d)/15.205	PASS	Quanhai Deng	
Spurious Emissions	15.247(d)/15.209	PASS	Quanhai Deng	

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

3. <u>SUMMARY</u>

3.1. Client Information

Applicant:	XINCHUANGXIN INTERNATIONAL CO. , LTD		
Address:	ROOM 605 6/F, FA YUEN COMMERCIAL BUILDING, 75-77 FA YUEN STREET MONGKOK KL		
Manufacturer:	Shenzhen Chiteng Technology Co.,LTD		
Address:	Second Floor, Area A, Building 4, Huiye Technology Workshop, Guanguang Road, Tangjia Community, Gongming Street, Guangming New District, Shenzhen, Guangdong		

3.2. Product Description

Name of EUT:	Tablet	
Trade Mark:	CORN	
Model No.:	Star7 3G	
Listed Model(s):	Star7, Star8 3G, Star9 3G, Star9	
Power supply:	DC 3.7V	
Adapter information: Model:CS002 Input:100-240Va.c., 50/60Hz, 0.2A Output:5.0Vd.c., 1.5A		
Hardware version:	S863-7731E-D2(216-1)V2.0	
Software version:	Srar7_3G_20191009	
WIFI		
Supported type:	802.11b/802.11g/802.11n(HT20)	
Modulation: DSSS for 802.11b OFDM for 802.11g/802.11n(HT20)		
Operation frequency:	2412MHz~2462MHz	
Channel number:	11	
Channel separation:	5MHz	
Antenna type:	PIFA Antenna	
Antenna gain:	1.4dBi	

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)			
Channel Frequency (MHz)			
01	2412		
02 2417			
06	2437		
10	2457		
11	2462		

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

0	- supplied by the lab

o /	1	Manufacturer:	/
	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.:5377A

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.: 5377A.

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	0.51 dB	(1)
Conducted spurious emissions 9kHz~40GHz	0.51 dB	(1)
Conducted Disturbance 150kHz~30MHz	3.02 dB	(1)
Radiated Emissions below 1GHz	4.90 dB	(1)
Radiated Emissions above 1GHz	4.96 dB	(1)
Occupied Bandwidth	70 Hz	(1)

(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

•	Conducted Emission					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Shielded Room	Albatross projects	N/A	N/A	2018/09/28	2023/09/27
•	EMI Test Receiver	R&S	ESCI	101247	2018/10/27	2019/10/26
•	Artificial Mains	SCHWARZBECK	NNLK 8121	573	2018/10/27	2019/10/26
•	Pulse Limiter	R&S	ESH3-Z2	100499	2018/10/27	2019/10/26
•	RF Connection Cable	HUBER+SUHNER	EF400	N/A	2018/11/15	2019/11/14
•	Test Software	R&S	ES-K1	N/A	N/A	N/A
0	Single Balanced Telecom Pair ISN	FCC	FCC-TLISN-T2-02	20371	2018/10/28	2019/10/27
0	Two Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T4-02	20373	2018/10/28	2019/10/27
0	Four Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T8-02	20375	2018/10/28	2019/10/27
0	V-Network	R&S	ESH3-Z6	100211	2018/10/27	2019/10/26
0	V-Network	R&S	ESH3-Z6	100210	2018/10/27	2019/10/26
0	2-Line V-Network	R&S	ESH3-Z5	100049	2018/10/27	2019/10/26

•	Radiated Emission-6th test site					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Semi-Anechoic Chamber	Albatross projects	SAC-3m-02	N/A	2018/09/30	2021/09/29
•	EMI Test Receiver	R&S	ESCI	100900	2018/10/28	2019/10/27
•	Loop Antenna	R&S	HFH2-Z2	100020	2017/11/20	2020/11/19
•	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	546	2017/04/05	2020/04/04
•	Pre-Amplifer	SCHWARZBECK	BBV 9742	N/A	2018/11/15	2019/11/14
•	RF Connection Cable	HUBER+SUHNER	N/A	N/A	2019/8/21	2020/8/20
•	RF Connection Cable	HUBER+SUHNER	SUCOFLEX104	501184/4	2019/5/27	2020/5/26
•	Test Software	R&S	ES-K1	N/A	N/A	N/A
•	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
•	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

•	Radiated emission-7th test site					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
•	Semi-Anechoic Chamber	Albatross projects	SAC-3m-01	N/A	2018/09/30	2021/09/29
•	Spectrum Analyzer	R&S	FSP40	100597	2018/10/27	2019/10/26
•	Horn Antenna	SCHWARZBECK	9120D	1011	2017/03/27	2020/03/26
•	Pre-amplifier	BONN	BLWA0160-2M	1811887	2018/11/14	2019/11/13
•	Pre-amplifier	CD	PAP-0102	12004	2018/11/14	2019/11/13
•	Broadband Pre- amplifier	SCHWARZBECK	BBV 9718	9718-248	2019/04/26	2020/04/25
•	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	2018/11/15	2019/11/14
•	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	2018/11/15	2019/11/14
•	Test Software	Audix	E3	N/A	N/A	N/A

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•	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
•	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

•	RF Conducted Method						
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
•	Signal and spectrum Analyzer	R&S	FSV40	100048	2018/10/28	2019/10/27	
•	Spectrum Analyzer	Agilent	N9020A	MY50510187	2018/10/8	2020/10/7	
•	OSP	R&S	OSP120	101317	N/A	N/A	
0	Radio communication tester	R&S	CMW500	137688-Lv	2018/10/8	2020/10/7	
0	Test software	Tonscend	JS1120-1(LTE)	N/A	N/A	N/A	
0	Test software	Tonscend	JS1120-2(WIFI)	N/A	N/A	N/A	
0	Test software	Tonscend	JS1120-3(WCDMA)	N/A	N/A	N/A	
0	Test software	Tonscend	JS1120-4(GSM)	N/A	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)

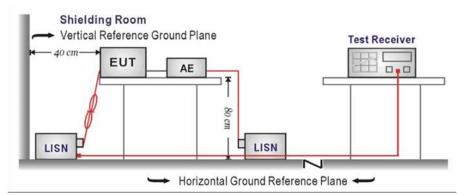
<u>LIMIT</u>

FCC CFR Title 47 Part 15 Subpart C Section 15.207:

	Limit (d	BuV)
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

* 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.
- 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:

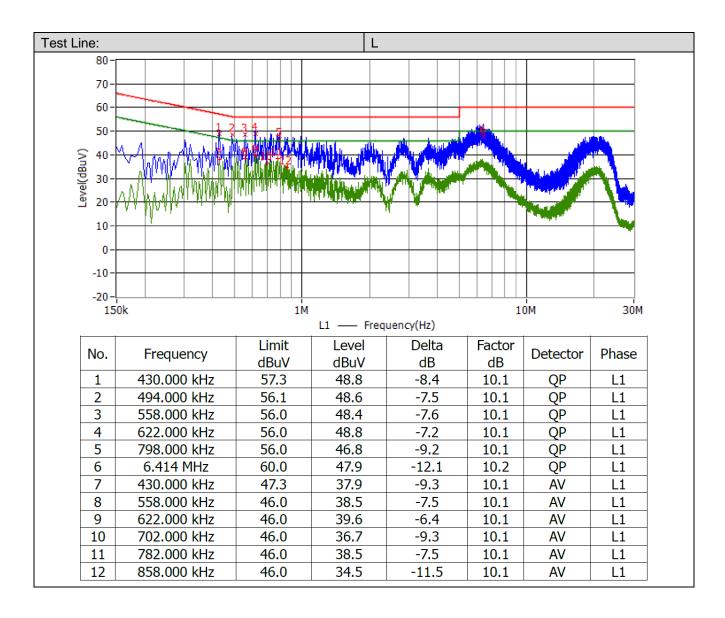
Please refer to the clause 3.3

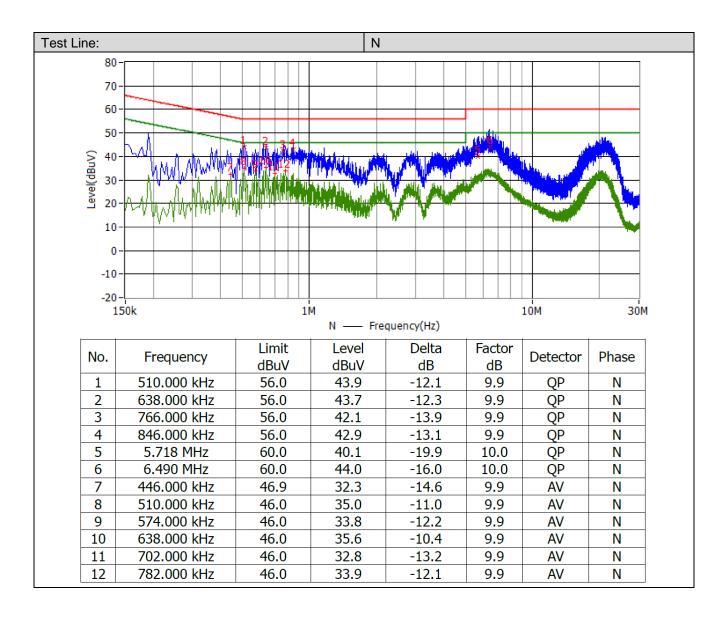
TEST RESULTS

☑ Passed □ Not Applicable

Note:

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

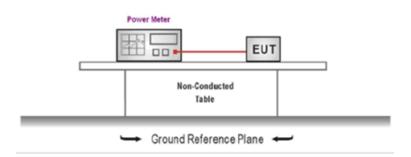




5.3. Conducted Peak Output Power LIMIT

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	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
	01	13.89	11.51		
802.11b	06	14.46	12.46	≤30.00	Pass
	11	15.64	13.47		
	01	17.36	13.53		
802.11g	06	17.90	14.07	≤30.00	Pass
	11	19.10	15.21		
	01	16.56	12.83		
802.11n(HT20)	06	17.00	13.36	≤30.00	Pass
	11	18.20	14.68		

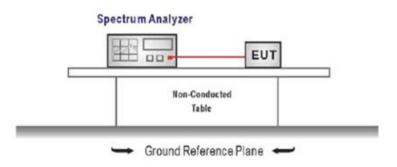
5.4. Power Spectral Density

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:

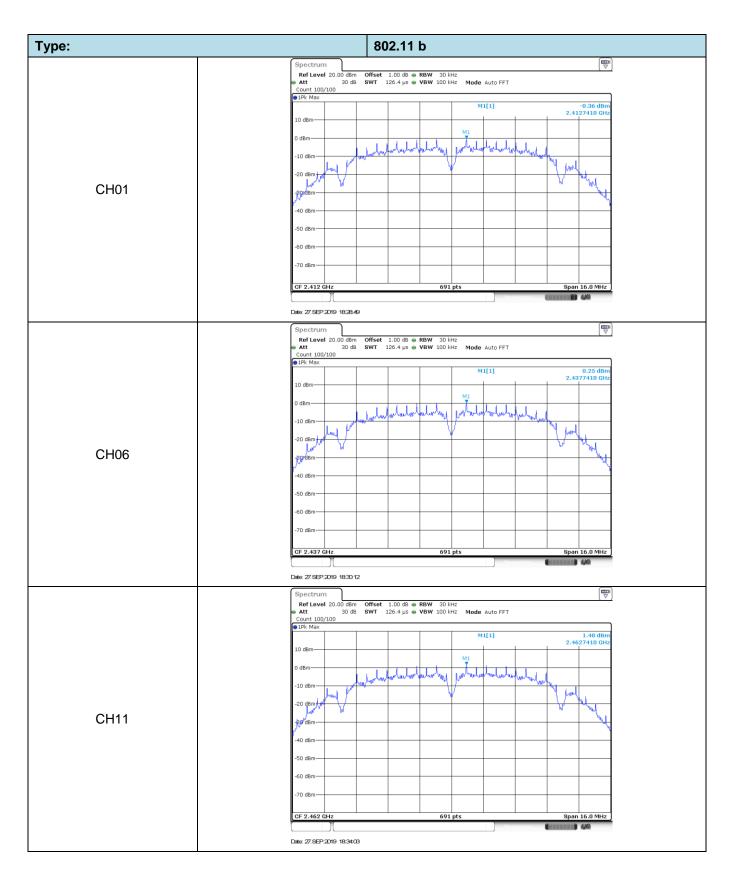
Please refer to the clause 3.3

TEST RESULTS

☑ Passed □ Not Applicable

Туре	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
	01	-0.36		
802.11b	06	0.25	≤8.00	Pass
	11	1.48		
	01	-7.16		
802.11g	06	-6.05	≤8.00	Pass
	11	-4.51		
	01	-8.32		
802.11n(HT20)	06	-7.63	≤8.00	Pass
	11	-6.16		

Test plot as follows:



Type: 802.11 g Spectrum Ref Level 20.00 dBm Att 30 dB Count 100/100 P1Pk Max Offset 1.00 dB ● RBW 30 kHz SWT 189.6 µs ● VBW 100 kHz Mode Auto FFT M1[1] -7.16 df 2.4194890 G LO dBm) dBr 10 dBm Managara and Managara white mand WWW -20 dBm CH01 -30 dBm -40 dBm hop 50 dBm 60 dBm 70 dBr CF 2.412 GH 691 pt 25.0 MHz Sn Date: 27.SEP.2019 18:36:12 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 -6.05 dB 2.4394960 GI M1[1] 10 dBm 0 dBmwww.www. proved down for any and proved -10 dBrr -20 dBrr N CH06 -30 dBm AP dBm they be -50 dBm 60 dBm 70 dBm CF 2.437 GH 691 pts Span 25.0 MHz IR AM Date: 27.SEP.2019 18.40.05 ectrur
 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] -4.51 dB 2.4644960 GF 10 dBm 0 dBm phonorphysical phone phone phone phone phone -10 dBm 20 dBr 4 1 CH11 30 dBr ابريد -40 dBpp -50 dBm -60 dBm 70 dBm 691 pts CF 2.4 **III** 480 Date: 27.SEP.2019 18:41:41

Туре:	802.11n(HT20)
	Spectrum
	RefLevel 20.00 dBm Offset 1.00 dB
	Count 100/100 P1Pk Max 0.00 d0m
	10 dBm
	0 dBm
	-10 dam WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW
	-20 dBm
CH01	-30 d8m
	78,980 MMM
	-50 dBm
	-60 d8m
	-70 dBm
	CF 2.412 GHz 691 pts Span 25.0 MHz
	Date: 27.5EP.2019 184332
	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
	●1Pk Max
	10 dBm
	0 dBm
	Ma Ma
	-10 dBm June Walthy how why have a preserve and the an
01100	-20 dBm
CH06	-30 dBm
	18,990 W
	-50 dBm
	-60 d8m
	-70 dBm
	CF 2.437 GHz 691 pts Span 25.0 MHz
	Date 27 SEP 2019 18:4511
	RefLevel 20.00 dBm Offset 1.00 dB RefW 30 kHz
	● Att 30 dB SWT 189.6 µs ● VBW 100 kHz Mode Auto FFT Count 100/100 ● IPk Max
	●1Pk Max M1[1] -6.16 dBm 2.4669930 GHz
	10 dBm
	0 dBm
	-10 dBm My math wath wath wath wath wath wath wath w
	-20 dBm
CH11	
	-30 dBm
	-40 dgg ^{ar}
	-50 dBm
	-60 d8m
	-70 dBm
	CF 2.462 CHz 691 pts Span 25.0 MHz
	Date 27.5EP 2019 1847.16

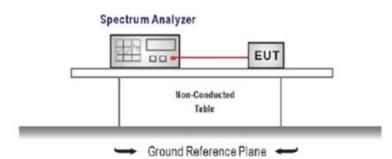
5.5. 6dB bandwidth

<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



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

- 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
	01	9.84		
802.11b	06	9.84	≥500	Pass
	11	9.63		
	01	16.44		
802.11g	06	16.41	≥500	Pass
	11	16.44		
	01	17.64		
802.11n(HT20)	06	17.64	≥500	Pass
	11	17.40		

Test plot as follows:

)e:	802.11 b
	Spectrum T
	RefLevel 20.50 dBm Offset 1.00 dB ● RBW 100 kHz ● Att 30 dB SWT 75.9 µs ● VBW 300 kHz Mode Auto FFT
	Court 500/500
	M1[1] -6.30 dBm
	10 dBm 2.4072000 GHz M2[1] 0.40 dBm 2.4135000 GHz 2.4135000 GHz
	0 dBm M1 / パル いいいいの / パレー パレン 2.4135000 GHz 01 -5.597 dBm のしいいいいの / パルパルレル いいいいの / パルパルレル いいいいの /
	-10 dBm
	-20 dBm
	-30 dBm
CH01	Mad all the second
	-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 2.4072 GHz 5.30 GHz 6.00 GHz M2 1 2.4135 GHz 0.40 dBm
	D3 M1 1 9.84 MHz 0.22 dB
	Date: 27.5EP-2019 1828.05
	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
	IPk View
	10 dBm M1[1] -5.64 dBm 2.4322000 GHz 10 dBm M2[1] 10 dBm
	0 dBm 2.4385000 GHz
	01 -4,930 dBm 01 -4,930 dBm 04 - 4,930 dBm 04 - 4,9
	-20 dBm
	-20 dBm
СНОС	manufacture the manufacture of t
CH06	
	-50 dBm
	-60 d8m
	-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 2.4322 GHz -5.64 dBm
	M1 1 2.4322 GHz -5.04 GBm M2 1 2.4385 GHz 1.07 GBm D3 M1 1 9.84 MHz 0.29 dB
	Date 27,SEP 2019 18:30:00
	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
	M1[1] -4.44 dBm
	10 dBm
	10 dBm 2.453 /100 GHz 0 dBm 0 dBm 01 - 3.587 dBm パワックローン 1.5587 dBm パ
	0 dBm 01 -3.587 dBm 01 -10 dBm 01 -3.587 dBm 01 -10 dBm 01 -3.587 dBm 01
	DI -3.587 UBII
	-10 dBm
CH11	-10 dBm20 dBm20 dBm
CH11	-10 dBm
CH11	
CH11	-10 dBm
CH11	-10 dBm
CH11	-10 dam
CH11	-10 dbm -20 dbm -20 dbm -30 dbm -30 dbm -50 dbm -50 dbm -70
CH11	-10 dbm -10 dbm <t< td=""></t<>
CH11	-10 dbm -10 dbm <t< td=""></t<>

Гуре:	802.11 g
	Spectrum Image: Control of the sector of the
	Count:500/500
	0 dBm 2.4169800 GHz
CH01	-30 d8m
	-60 dBm
	Type Ref Trc X-value Y-value Function Function Result M1 1 2.40378 GHz -9.80 dBm -9.81 dBm -9.81 dBm M2 1 2.41698 GHz -2.9.1 dBm -9.81 dBm -9.81 dBm D3 M1 1 16.44 MHz 0.47 dB -9.81 dBm -9.81 dBm
	Date: 27:587-2019 18:36:59 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
	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 ● 1Pk View ● ● M1[1] -8.24 dBm
	10 dBm 22.4288100 GHz 0 dBm 42[1] 2.19 dBm -2.19 dBm -10 dBm 01 -8.186 gBm ² /m ² /
CH06	-20 dBm
CHOO	-50 dBm
	-70 dBm Image: constraint of the second
	M1 1 2.42891 GHz -8.24 dBm M2 1 2.44199 GHz -2.19 dBm D3 M1 1 16.41 MHz -0.48 dB
	Date: 27 SEP 2019 1837:31 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 ● 1Pk View M1[1] -7.95 dBm
	10 dBm M2 2.4559900 GHz 0 dBm 0 dBm
0411	-20 dBm
CH11	-50 dBm
	-70 dBm -70 dBm CF 2.462 GHz 1001 pts Marker Type Ref Trc X-value Y-value Function Function Result
	M1 1 2.45378 GHz -7.95 dBm M2 1 2.45599 GHz -0.96 dBm D3 M1 1 16.44 MHz 0.82 dB

Туре:	802.11n(HT20)
	Spectrum (ΠΠ) 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 ● IPK View
	10 dBm M1[1] -9.99 dBm 10 dBm 2.4031600 GHz 0 dBm M2[1] -3.64 dBm -10 dBm 01 -9.639 gEmäyääal malasilon laaslaa, werkuulon merkuulon laaslaasilon GHz
CH01	-20 dbm
	-60 dBm
	Type Ref Trc X-value Y-value Function Function Function M1 1 2:40318 GHz -9.99 dBm
	Date: 27.5EP.2019 18.43.00 Spectrum Ref Level 20.50 dBm Offset 1.00 dB ■ RBW 100 kHz att 30 dB SWT 75.9 µs ■ YBW 300 kHz Mode Auto FFT
	Count 500/500
	-20 dBm
CH06	-50 dBm
	-70 dBm GF 2.437 GHz 1001 pts Span 30.0 MHz Marker
	Type Ref Trc X-value Y-value Function Function M1 1 2.42818 GHz -9.43 dBm Function Function Function M2 1 2.43073 GHz -9.35 dBm Function Function Function D3 M1 1 17.64 MHz -0.11 dB Function Function
	Date: 27.5EP.2019 18.4457 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
	0 dBm
CH11	-30 dBm
	-60 dBm
	Type Ref Trc X-value Y-value Function Function Result M1 1 2.45342 GHz -7.97 dBm -7.97 dBm -7.01 dB
	Date: 27.5EP-2019 18:47.04

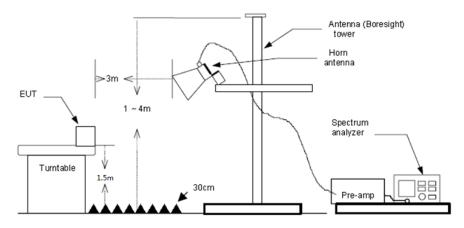
5.6. Restricted band

<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 + Factor

802.11b				CH01			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2310.000	15.36	35.78	51.14	74.00	22.86	Vertical	PK
2310.000	11.65	35.78	47.43	54.00	6.57	Vertical	AV
2390.009	16.56	35.50	52.06	74.00	21.94	Vertical	PK
2390.009	12.67	35.50	48.17	54.00	5.83	Vertical	AV
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2310.000	15.12	35.78	50.90	74.00	23.10	Horizontal	PK
2310.000	11.96	35.78	47.74	54.00	6.26	Horizontal	AV
2390.009	12.00	35.50	47.50	54.00	6.50	Horizontal	AV
2390.009	15.72	35.50	51.22	74.00	22.78	Horizontal	PK

802.11b				CH11			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2483.514	15.22	35.31	50.53	74.00	23.47	Horizontal	PK
2483.514	13.37	35.31	48.68	54.00	5.32	Horizontal	AV
2500.000	15.32	35.28	50.60	74.00	23.40	Horizontal	PK
2500.000	13.32	35.28	48.60	54.00	5.40	Horizontal	AV
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2483.514	13.09	35.31	48.40	54.00	5.60	Vertical	AV
2483.514	16.25	35.31	51.56	74.00	22.44	Vertical	PK
2500.000	15.19	35.28	50.47	74.00	23.53	Vertical	PK
2500.000	13.70	35.28	48.98	54.00	5.02	Vertical	AV

802.11g				CH01			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2310.000	12.59	35.78	48.37	74.00	25.63	Vertical	PK
2310.000	10.05	35.78	45.83	54.00	8.17	Vertical	AV
2390.036	12.99	35.50	48.49	74.00	25.51	Vertical	PK
2390.036	8.94	35.50	44.44	54.00	9.56	Vertical	AV
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2310.000	9.40	35.78	45.18	54.00	8.82	Horizontal	AV
2310.000	13.10	35.78	48.88	74.00	25.12	Horizontal	PK
2390.036	13.74	35.50	49.24	74.00	24.76	Horizontal	PK
2390.036	9.79	35.50	45.29	54.00	8.71	Horizontal	AV

802.11g				CH11			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2483.531	12.41	35.31	47.72	74.00	26.28	Vertical	PK
2483.531	9.35	35.31	44.66	54.00	9.34	Vertical	AV
2500.000	12.98	35.28	48.26	74.00	25.74	Vertical	PK
2500.000	10.15	35.28	45.43	54.00	8.57	Vertical	AV
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2483.531	12.71	35.31	48.02	74.00	25.98	Horizontal	PK
2483.531	9.85	35.31	45.16	54.00	8.84	Horizontal	AV
2500.000	12.29	35.28	47.57	74.00	26.43	Horizontal	PK
2500.000	9.31	35.28	44.59	54.00	9.41	Horizontal	AV

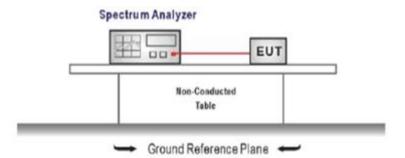
802.11n(HT2	20)			CH01			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2310.000	12.23	35.78	48.01	74.00	25.99	Horizontal	PK
2310.000	8.92	35.78	44.70	54.00	9.30	Horizontal	AV
2390.036	12.52	35.50	48.02	74.00	25.98	Horizontal	PK
2390.036	8.92	35.50	44.42	54.00	9.58	Horizontal	AV
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2310.000	13.14	35.78	48.92	74.00	25.08	Vertical	PK
2310.000	9.10	35.78	44.88	54.00	9.12	Vertical	AV
2390.036	9.51	35.50	45.01	54.00	8.99	Vertical	AV
2390.036	13.48	35.50	48.98	74.00	25.02	Vertical	PK
802.11n(HT	20)			CH11			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2483.531	12.60	35.31	47.91	74.00	26.09	Horizontal	PK
2483.531	10.13	35.31	45.44	54.00	8.56	Horizontal	AV
2500.000	13.21	35.28	48.49	74.00	25.51	Horizontal	PK
2500.000	10.32	35.28	45.60	54.00	8.40	Horizontal	AV
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
2483.531	9.89	35.31	45.20	54.00	8.80	Vertical	AV
2483.531	13.22	35.31	48.53	74.00	25.47	Vertical	PK
2500.000	12.31	35.28	47.59	74.00	26.41	Vertical	PK
2500.000	10.23	35.28	45.51	54.00	8.49	Vertical	AV

5.7. Band edge and Spurious Emissions (conducted)

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 ≥ 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

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.
 Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmit

- 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

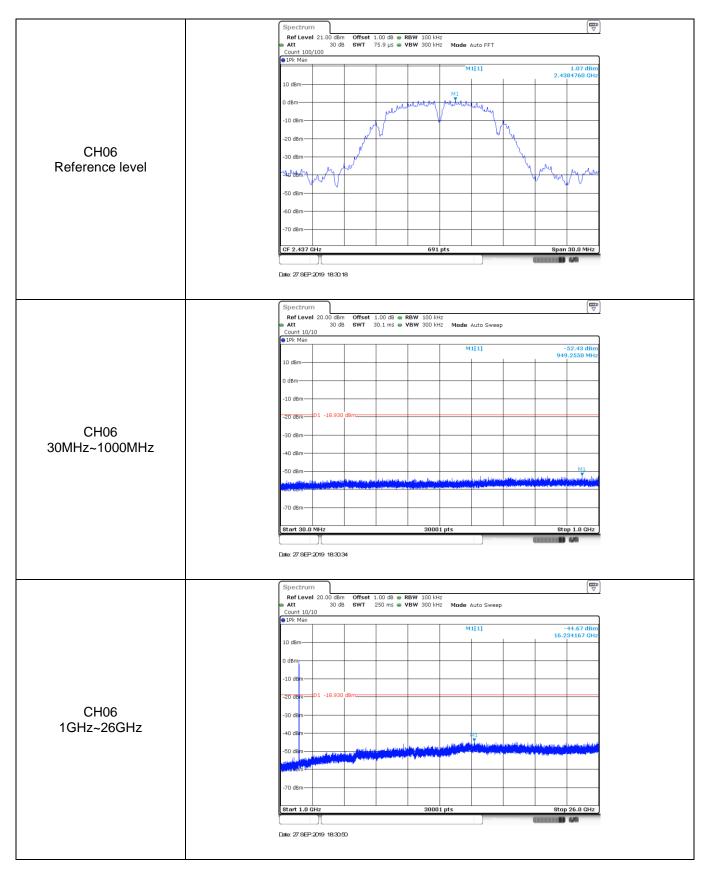
TEST RESULTS

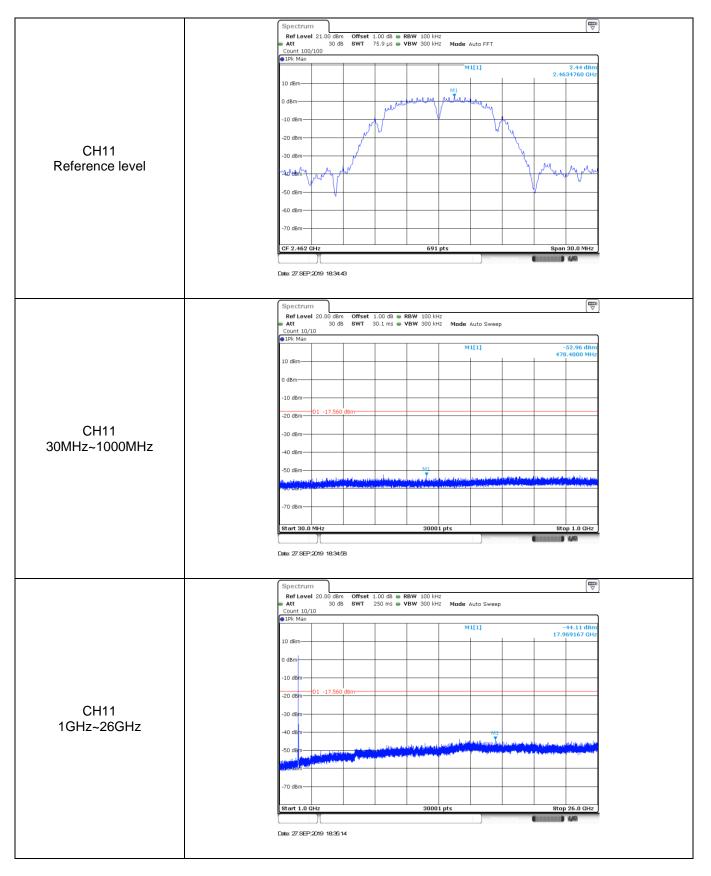
☑ Passed □ Not Applicable

Test Item:	Bandedge	Туре:	802.11 g
CH01	Spectru Ref Lev Att Count 30 IPk Max 10 dBm -0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm -40 dBm -50 dBm	el 20.00 dBm Offset 1.00 dB RBW 100 kHz 30 dB SWT 246.5 µs VBW 300 kHz Mode Auto FFT 0/300 M1[1] M2[1] M2[1] M2[1] 01 -22.410 dBm M2[1] M2[1] M2[1]	-2.41 dBm 2.414460 GHz -368 56 Bm 2.40000 GHz
CH11	Spectru Rof Lev • Att Count 30 • 1Pk Max 10 dBm- 0 dBm- -10 dBm- -20 dBm- -30 dBm- -30 dBm- -40 dBm- -50 dBm- -50 dBm- -70	el 20.00 dBm Offset 1.00 dB e RBW 100 kHz 30 dB SWT 113.8 µs e VBW 300 kHz Mode Auto FFT (/300 M1[1] 01 -20.270 dBm 01 -2	-0.27 dBm 2.4669700 GHz -43.57 dBm 2.4835000 GHz -43.57 dBm -4

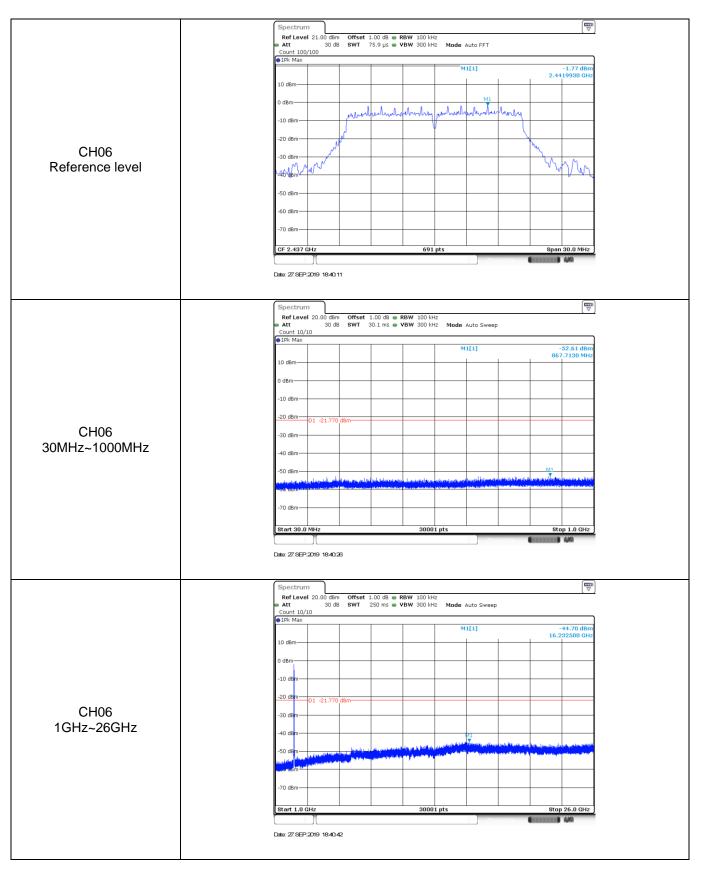
Test Item:	Bandedge	Type:		802.11 n(HT20)
	Spectrum Ref Level 2 • Att Count 300/30	30 dB SWT 246.5 µs 🖷 VBV	✔ 100 kHz ✔ 300 kHz Mode Auto FFT	(**)
	PIPk Max 10 dBm		M1[1] M2[1]	-3.21 dBm 2.414460 GHz -35,92 dBm 2.4004jb0 GHz
	0 dBm	23.210 dBm		- Aller and a start
CH01	-30 dBm -40 dBm -50 dBm		لىرد تى الم	
	4 1-50-88∰		meterseries and a second se	
	Start 2.31 G Marker Type Ref M1	Trc X-value Y	691 pts value Function -3.15 dBm	Stop 2.422 GHz Function Result
	M2 M3 M4 M5	1 2.39 GHz -4 1 2.31 GHz -5	35.92 dBm 17.03 dBm 59.58 dBm 37.26 dBm	
	Date: 27.8EP.20	19 18.43.46	Seasuring	
	Ref Level • Att Count 300/3 • IPK Max	30 dB SWT 113.8 µs 👄 VBV		
	10 dBm	M1	M1[1] M2[1]	-1.26 dBm 2.4694700 GHz -44.35 dBm 2.4835000 GHz
	-10 dBm -20 dBm -20 dBm	ut Auto physical and a second a secon		
CH11	-30 dBm		WWW Marked Warder Marked Ward	where and the second of
	-60 dBm			
	Start 2.452 Marker Type Ref	Trc X-value Y- 1 2.46947 GHz	691 pts value Function -1.26 dBm	Stop 2.5 GHz Function Result
	M2 M3 M4	1 2.5 GHz -5	44.35 dBm 55.32 dBm 43.45 dBm Measuring	(Interne 10 4/4
	Date: 27.SEP.2	019 18:47:27		

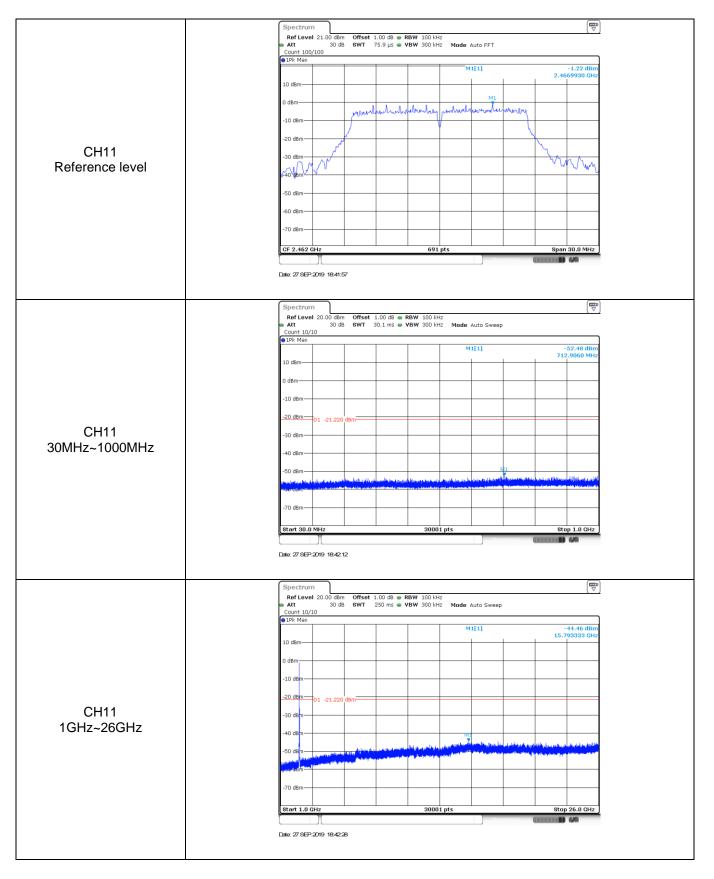
fest Item:	SE	Type:	8	802.1	1 b				
		Spectrum							
		RefLevel 21.00 dBm Att 30 dB	Offset 1.00 dB ● SWT 75.9 µs ●	RBW 100 kH VBW 300 kH	z z Mode A	uto FFT			
		Count 100/100							
					M1	[1]		2.41	0.35 dBm L29990 GHz
		10 dBm			M1				
		0 dBm	. A M	Lunning	Juli William	Myle			
		-10 dBm	- d los						
		-20 dBm		_		V "	Ly		
CH01		-30 dBm	J.				~		
Reference level		4000 My My M	and the second s				ų	My	Mon
		V ^Q V						y	
		-50 dBm							
		-60 dBm							
		-70 dBm							
		CF 2.412 GHz		691	pts				30.0 MHz
						Measu	eing		4,49
		Date: 27.SEP.2019 18:29:05							
		Con a structure							□
		Ref Level 20.00 dBm	Offset 1.00 dB = SWT 30.1 ms =	RBW 100 kH	z				[\
		Att 30 dB Count 10/10 Ptk Max	SWT 30.1 ms 🖷	VBW 300 kH	IZ Mode A	uto Sweep			
		The Max			M1	[1]			-52.48 dBm 5.2340 MHz
		10 dBm						921	
		0 dBm							
		-10 dBm							
			IBm-						
CH01		-30 dBm							
30MHz~1000MHz									
		-40 dBm							
		-50 dBm	المتحمد سراما سميه	La Alexandra di La	haldatata	والمراجعة والمراجع	مەلەررىيەلەردە	a la catala	a Janta Sa
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		-70 dBm							
		Start 30.0 MHz		3000	1 pts			Ste	op 1.0 GHz
						Measu	ring		4,49
		Date: 27.SEP.2019 18:29:21							
									(pm
		Spectrum Ref Level 20.00 dBm	Offset 1.00 dB 👄	RBW 100 kH	z				
		 Att 30 dB Count 10/10 1Pk Max 	SWT 250 ms 🖷	VBW 300 kH	z Mode A	uto Sweep			
		The max			M1	[1]		10 4	-44.37 dBm 310000 GHz
		10 dBm-						19.9	. 20000 GH2
		0 dBm							
		-10 dBm							
			Bm-						
CH01		-30 dBm							
1GHz~26GHz									
		-40 dBm-			a substantion	demisistration of the	ML.		فالرطب ملحاد
		-50 dEm	all dependent of the second second		des a fille de la companya de la com	and the second state of	-	telesept _e nsept	- International data
		in the second se							
		-70 dBm							
		Start 1.0 GHz		3000	1 pts			Stor	26.0 GHz
				3000	- 203	Measu		sto	
		Date: 27.SEP.2019 18:29:37							
	1								



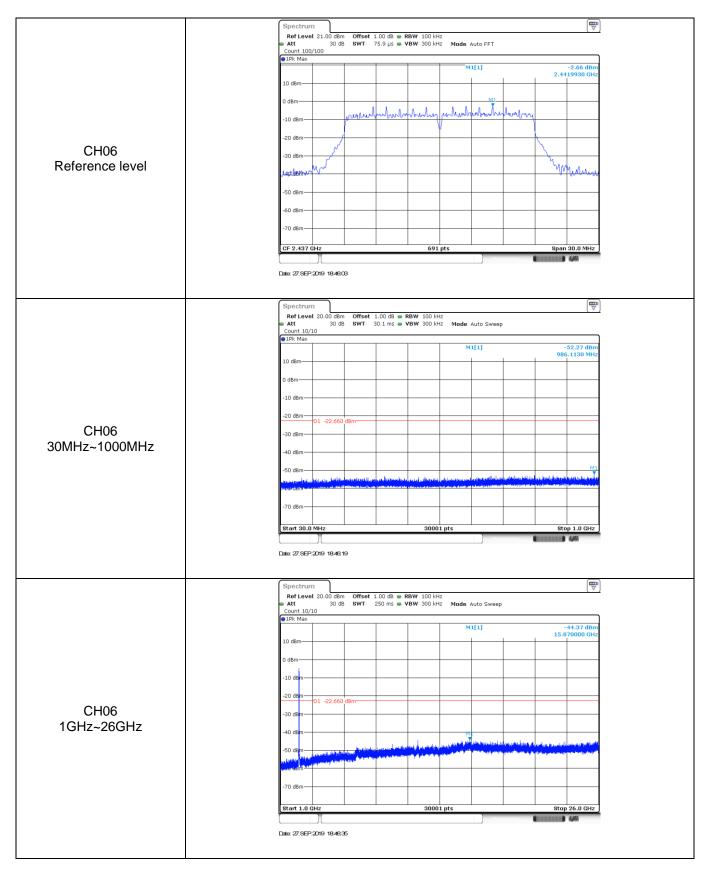


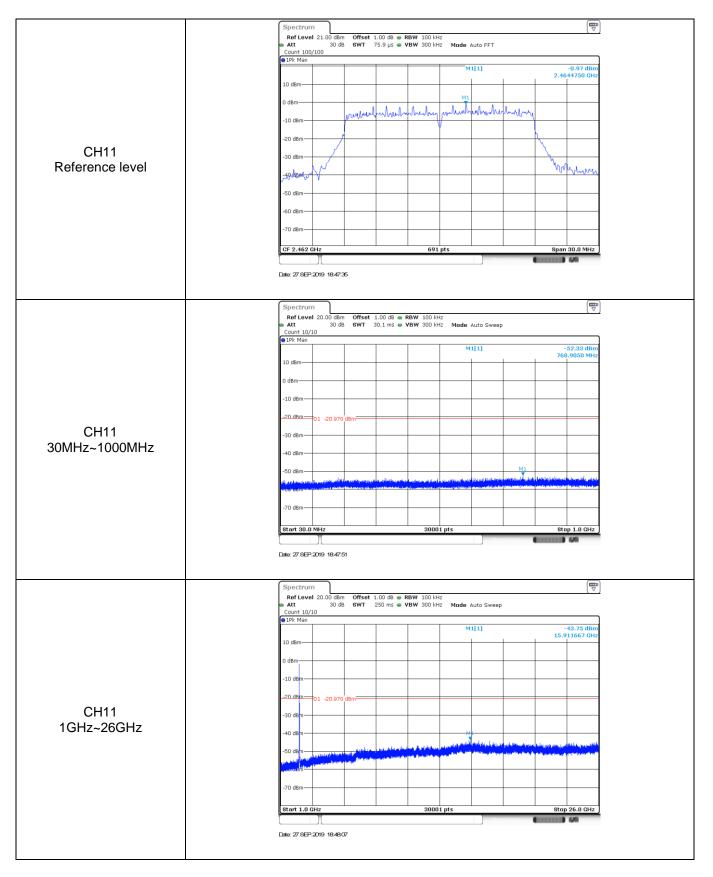
t Item:	SE		Туре:						802.11 g			
		Spectrum										
		Ref Level 21.00 dBm Att 30 dB	Offset 1.00 SWT 75.9				uto FFT					
		Count 100/100 Pk Max										
		10 day				M	(1)		2.41	-2.28 dBn 69930 GH:		
		10 dBm-					M1					
		0 dBm	mouland	hruburel	mber	mohenty	whenter	hunny				
		-10 dBm			- (Ì				
CH01		-20 dBm							~			
Reference level		-30 dBm							- M	mm		
		40'dBm							50	FP Wh		
		-50 dBm										
		-60 dBm										
		-70 dBm										
		CF 2.412 GHz			691	pts			Spar	30.0 MHz		
							Meas	suring		4,49		
		Date: 27.SEP.2019 18:36:37										
										(m		
		Spectrum Ref Level 20.00 dBm	Offset 1.00									
		Count 10/10	SWT 30.1	ms 👄 VB	W 300 kH	2 Mode /	uto Sweep					
		● 1Pk Max				MJ	[1]		66	-51.92 dBn 5.0240 MH;		
		10 dBm										
		0 dBm										
		-10 dBm										
		-20 dBm	Bm									
CH01		-30 dBm										
MHz~1000MHz		-40 dBm										
		-50 dBm					M1					
		الروار معر الألبيان المحمد ومن التركيم المراجع معرف المراجع ال		teory legist polyal en average any tao	adaalaada	and the second	l fa ata faltati a fa	nlar, fittleterns geboornensen	ang	tallfallprigtaards Readingsenergener		
		-70 dBm										
		Start 30.0 MHz			30001	l pts	Mea	suring	Ste	p 1.0 GHz		
		Date: 27.SEP.2019 18:36:53										
		Spectrum Ref Level 20.00 dBm	Offset 1.00	d0 - 001	N 100 kt					E		
		 Att 30 dB Count 10/10 	SWT 250	ms e VBI	W 300 kH	Z Mode A	uto Sweep					
		●1Pk Max				MJ	[1]			44.02 dBn		
		10 dBm							16.4	00000 GH		
		0 dBm										
		-10 dBm										
		-20 dBm										
CH01		-30 dBm	Bm									
1GHz~26GHz												
		-40 dBm		فاستحد والمتقادم	الد الاسل بيندر	No. of Contract of Contract	M1 Johlanse	u libraka a	Athene & damask	who are stilled		
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		-70 dBm										
		-/o dbii					I					
		Start 1.0 GHz			3000	L pts			Sto	26.0 GHz		





est Item:	SE		Туре:			8	802.11 n(HT20)	
		Att 30 dB	Offset 1.00 dB ● SWT 75.9 µs ●		Mode Auto FFT			
		Count 100/100 PIPk Max			M1[1]		-3.75 dBm	
		10 dBm			MILI	-	2.4057480 GHz	
		0 dBm	Ma					
		-10 dBm	experiment	mountry of	mlumbarbarb	many		
		-20 dBm		V				
CH01		-30 dBm					\mathbf{X}	
Reference level		Additeshinghow				_	mynama	
		-50 dBm						
		-60 dBm						
		-70 dBm				_		
		CF 2.412 GHz		691 p	ts		Span 30.0 MHz	
						easuring	499	
		Date: 27.SEP.2019 18:43:55						
		Spectrum Ref Level 20.00 dBm	Offset 1.00 dB 👄	PBW 100 Lat-				
		 Att 30 dB Count 10/10 	SWT 30.1 ms	VBW 300 kHz	Mode Auto Swe	ep		
		• 1Pk Max			M1[1]		-52.84 dBm	
		10 dBm				-	906.9960 MHz	
		0 dBm						
		-10 dBm						
		-20 dBmD1 -23.750 dB	3m					
		-30 dBm						
30MHz~1000MHz		-40 dBm-						
		-50 dBm		4	والمتعادية والمتعادية	Albassierstowness	A 1	
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		-70 dBm						
		Start 30.0 MHz		30001	pts		Stop 1.0 GHz	ļ
		Date: 27.SEP.2019 18:44:12			P1	easuring	4,20	
							Ē	1
		Spectrum Ref Level 20.00 dBm Att 30 dB	Offset 1.00 dB = SWT 250 ms =	RBW 100 kHz	Mode Auto Swo	en		1
		Count 10/10	200 ms 🖷			-r))
		10 dBm-			M1[1]		-44.33 dBm 20.342500 GHz	
		-10 dBm						
		-20 dBm						
CH01		-20 dBm D1 -23.750 dB	3m					
1GHz~26GHz		-40 dBm						
		-50 dBm	ha mana a la chaisteatri	م يو يارون الرول وروس	مؤمر مطالبة المتعاولين	When the Party of the	and the second	
				and the party of the party of the	Marine Constant of		and the second	
		-70 dBm						
	1	Start 1.0 GHz		30001	pts		Stop 26.0 GHz	1
					M	easuring	4/0	





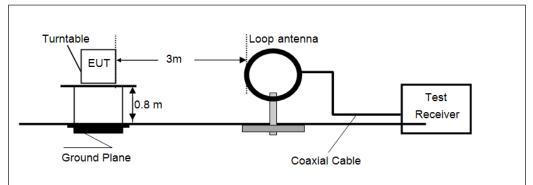
5.8. Spurious Emissions (radiated) LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

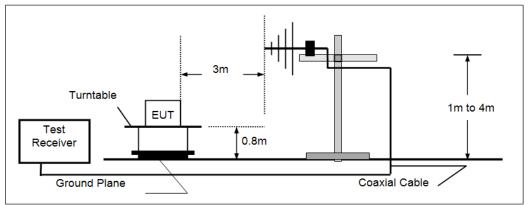
Frequency	Limit (dBuV/m @3m)	Value	
30MHz-88MHz	40.00	Quasi-peak	
88MHz-216MHz	43.50	Quasi-peak	
216MHz-960MHz	46.00	Quasi-peak	
960MHz-1GHz	54.00	Quasi-peak	
Above 1GHz	54.00	Average	
	74.00	Peak	

TEST CONFIGURATION

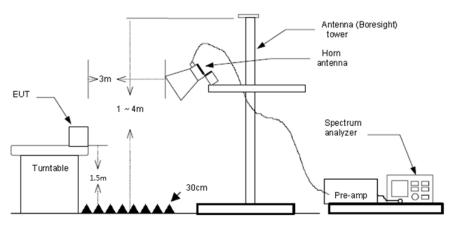
> 9kHz ~30MHz



> 30MHz ~ 1GHz



Above 1GHz



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 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 + Factor
- 2) The emission levels of other frequencies are very lower than the limit and not show in test report.

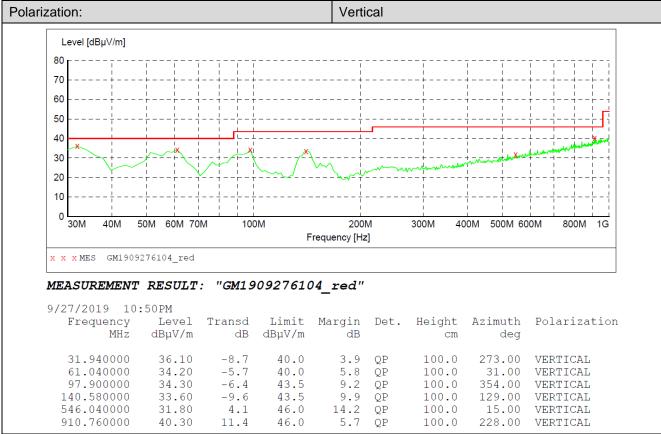
➢ 9kHz ~ 30MHz

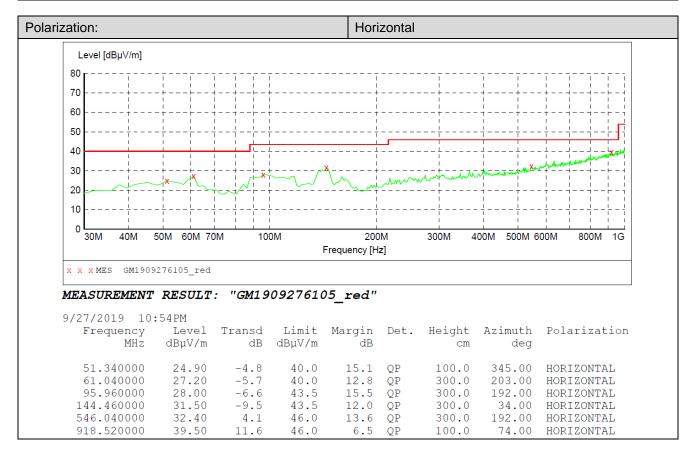
The EUT was pre-scanned the frequency band (9kHz~30MHz), found the radiated level lower than the limit, so don't show on the report.

➢ 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.

> 30MHz ~ 1GHz





➢ 1 GHz ~ 25 GHz

802.11b				CH01			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
1320.187	34.44	-5.57	28.87	74.00	45.13	Horizontal	PK
3184.031	34.90	0.76	35.66	74.00	38.34	Horizontal	PK
4823.156	43.22	7.08	50.30	74.00	23.70	Horizontal	PK
7236.312	36.54	15.01	<mark>51</mark> .55	74.00	22.45	Horizontal	PK
Freq.	Reading	Factor	Level	Limit	Margin	Delerity	Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1190.937	35.44	-5.93	29.51	74.00	44.49	Vertical	PK
3167.875	34.55	0.67	35.22	74.00	38.78	Vertical	PK
4823.156	39.54	7.08	46.62	74.00	27.38	Vertical	PK
7513.906	30.39	15.47	45.86	74.00	28.14	Vertical	PK
802.11b				CH06			
Freq.	Reading	Factor	Level	Limit	Margin	D H ¹¹	Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	
1277.593	33.75	-5.63	28.12	74.00	45.88	Vertical	PK
3182.562	34.05	0.75	34.80	74.00	39.20	Vertical	PK
4873.093	39.56	7.15	46.71	74.00	27.29	Vertical	PK
8005.937	30.55	16.20	46.75	74.00	27.25	Vertical	PK
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
1240.875	34.57	-5.72	28.85	74.00	45.15	Horizontal	PK
3159.062	34.40	0.63	35.03	74.00	38.97	Horizontal	PK
4873.093	42.27	7.15	49.42	74.00	24.58	Horizontal	PK
7311.218	35.86	15.09	50.95	74.00	23.05	Horizontal	PK

802.11b				CH11			
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
1196.812	36.22	-5.86	30.36	74.00	43.64	Horizontal	PK
3173.750	33.75	0.70	34.45	74.00	39.55	Horizontal	PK
4924.500	39.58	7.34	46.92	74.00	27.08	Horizontal	PK
7386.125	34.02	15.33	49.35	74.00	24.65	Horizontal	PK
Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
1634.500	36.05	-6.22	29.83	74.00	44.17	Vertical	PK
3147.312	34.74	0.57	35.31	74.00	38.69	Vertical	PK
4924.500	38.33	7.34	45.67	74.00	28.33	Vertical	PK
7386.125	30.01	15.33	45.34	74.00	28.66	Vertical	PK

Remark:

1. Final Level =Receiver Read level + 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.

802.11g				CH01			
Freq.	Reading	Factor	Level	Limit	Margin		
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1220.312	34.90	-5.78	29.12	74.00	44.88	Vertical	PK
2821.250	32.24	1.74	33.98	74.00	40.02	Vertical	PK
4824.625	39.20	7.08	46.28	74.00	27.72	Vertical	PK
6701.687	29.54	13.47	43.01	74.00	30.99	Vertical	PK
Freq.	Reading	Factor	Level	Limit	Margin		
	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
[MHz]							
1245.281	34.71	-5.71	29.00	74.00	45.00	Horizontal	PK
3551.218	34.63	1.25	35.88	74.00	38.12	Horizontal	PK
4823.156	43.80	7.08	50.88	74.00	23.12	Horizontal	PK
7236.312	36.94	15.01	51.95	74.00	22.05	Horizontal	PK
802.11g				CH06			
Freq.	Reading	Factor	Level	Limit	Margin		
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1143.937	35.49	-6.42	29.07	74.00	44.93	Horizontal	PK
3166.406	34.02	0.67	34.69	74.00	39.31	Horizontal	PK
4874.562	42.22	7.15	49.37	74.00	24.63	Horizontal	PK
7311.218	35.52	15.09	50.61	74.00	23.39	Horizontal	PK
Freq.	Reading	Factor	Level	Limit	Margin		Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	
1271.718	34.11	-5.64	28.47	74.00	45.53	Vertical	PK
3546.812	34.94	1.24	36.18	74.00	37.82	Vertical	PK
4873.093	37.99	7.15	45.14	74.00	28.86	Vertical	PK
7518.312	30.23	15.49	45.72	74.00	28.28	Vertical	PK
				CH11			
802.11g							
Freq.	Reading	Factor	Level	Limit	Margin	Polarity	Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]		
1334.875	33.96	-5.57	28.39	74.00	45.61	Vertical	PK
3159.062	34.64	0.63	35.27	74.00	38.73	Vertical	PK
4924.500	38.92	7.34	46.26	74.00	27.74	Vertical	PK
8067.625	30.14	16.29	46.43	74.00	27.57	Vertical	PK
Freq.	Reading	Factor	Level	Limit	Margin	D	
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1208.562	35.37	-5.81	29.56	74.00	44.44	Horizontal	PK
3162.000	34.38	0.64	35.02	74.00	38.98	Horizontal	PK
	40.00	7.34	48.16	74.00	25.84	Horizontal	PK
4924.500	40.82	1.34	40.10	74.00	20.04	rionzontai	

Remark:

- 1. Final Level =Receiver Read level + 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.

802.11n(HT	20)			CH01			
Freq.	Reading	Factor	Level	Limit	Margin		
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1243.812	34.30	-5.72	28.58	74.00	45.42	Horizontal	PK
3189.906	33.25	0.79	34.04	74.00	39. <mark>9</mark> 6	Horizontal	PK
4823.156	43.40	7.08	50.48	74.00	23.52	Horizontal	PK
7236.312	35.67	15.01	50.68	74.00	23.32	Horizontal	PK
Freq.	Reading	Factor	Level	Limit	Margin		
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1186.531	34.62	-5.97	28.65	74.00	45.35	Vertical	PK
3186.968	33.84	0.77	34.61	74.00	39.39	Vertical	PK
4823.156	37.99	7.08	45.07	74.00	28.93	Vertical	PK
6612.093	29.99	13.19	43.18	74.00	30.82	Vertical	PK
802.11n(HT	20)			CH06			
Freq.	Reading	Factor	Level	Limit	Margin		Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	
1259.968	35.30	-5.67	29.63	74.00	44.37	Vertical	PK
3141.437	34.06	0.54	34.60	74.00	39.40	Vertical	PK
4874.562	38.65	7.15	45.80	74.00	28.20	Vertical	PK
6634. <mark>1</mark> 25	30.07	13.26	43.33	74.00	30.67	Vertical	PK
Freq.	Reading	Factor	Level	Limit	Margin		
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Detector
1190.937	35.60	-5.93	29.67	74.00	44.33	Horizontal	PK
3189.906	34.26	0.79	35.05	74.00	38.95	Horizontal	PK
4873.093	42.29	7.15	49.44	74.00	24.56	Horizontal	PK
7311.218	35.27	15.09	50.36	74.00	23.64	Horizontal	PK
802.11n(HT2	20)			CH11			
Freq.	Reading	Factor	Level	Limit	Margin	Delerity	Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	Polarity	Delector
1130.718	35.60	-6.56	29.04	74.00	44.96	Horizontal	PK
3184.031	33.16	0.76	33.92	74.00	40.08	Horizontal	PK
4924.500	39.82	7.34	47.16	74.00	26.84	Horizontal	PK
7386.125	33.43	15.33	48.76	74.00	25.24	Horizontal	PK
Freq.	Reading	Factor	Level	Limit	Margin	Polarity	Detector
[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	rolanty	Delector
1235.000	35.20	-5.74	29.46	74.00	44.54	Vertical	PK
3517.437	35.19	1.12	36.31	74.00	37.69	Vertical	PK
4924.500	37.51	7.34	44.85	74.00	29.15	Vertical	PK
6832.406	30.28	13.49	43.77	74.00	30.23	Vertical	PK

Remark:

1. Final Level = Receiver Read level + 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.

6. TEST SETUP PHOTOS

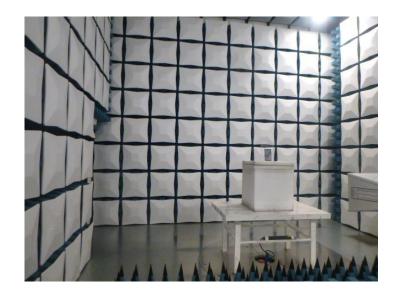
Conducted Emissions (AC Mains)



Radiated Emissions







7. EXTERANAL AND INTERNAL PHOTOS

Reference to the test report No. CHTEW19100069

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