# Shenzhen Huatongwei International Inspection Co., Ltd.

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# TEST REPORT

 Report Reference No......:
 CHTEW19090175
 Report Verification:

 Project No......
 SHT1906028004EW

FCC ID.....: 2AUG5-HD5PLUS

Applicant's name.....: Caresono Technology Co.,Ltd

Industry Base, Near Port Industry Zone, Dandong, Liaoning, China

Manufacturer...... Caresono Technology Co.,Ltd

Industry Base, Near Port Industry Zone, Dandong, Liaoning, China

Test item description .....: Bladder Scanner

Trade Mark ...... Caresono

Model/Type reference...... PadScan HD 5 Plus

Listed Model(s) ..... -

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

Date of testing...... Aug.13,2019 ~ Sep.26,2019

Date of issue...... Sep.29,2019

Result...... PASS

Compiled by

( position+printedname+signature)...: File administrators Yueming Li

Jueming

Supervised by

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

Edward pan

Approved by

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

.....

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

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 for Testing Unlicensed Wireless Devices

KDB 558074 D01 15.247 Meas Guidance v05: 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	2019-09-29	Original

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# 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	Bruce Wong
Spurious Emissions	15.247(d)/15.209	PASS	Yuan tao.liang

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

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# 3. **SUMMARY**

# 3.1. Client Information

Applicant:	Caresono Technology Co.,Ltd		
Address:  4th Floor,No.11Building,Initiating Zone,Instruments and Meters Base,Near Port Industry Zone,Dandong,Liaoning,China			
Manufacturer:	Caresono Technology Co.,Ltd		
Address:	4th Floor,No.11Building,Initiating Zone,Instruments and Meters Industry Base,Near Port Industry Zone,Dandong,Liaoning,China		

# 3.2. Product Description

Bladder Scanner	
Caresono	
PadScan HD 5 Plus	
-	
DC 11.1V	
Model: JD-05 Input: 100-240Va.c., 50/60Hz Output: 14V,3.5A	
Model: JD-06 Input: 100-240Va.c., 50/60Hz Output: 14V,3.5A	
802.11b/802.11g/802.11n(HT20)/802.11n(HT40)	
DSSS for 802.11b  OFDM for 802.11g/802.11n(HT20)/802.11n(HT40)	
2412MHz~2462MHz for 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz for 802.11n(HT40)	
2412MHz~2462MHz for 802.11b/802.11g/802.11n(HT20)	
2412MHz~2462MHz for 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz for 802.11n(HT40) 11 for 802.11b/802.11g/802.11n(HT20)	
2412MHz~2462MHz for 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz for 802.11n(HT40)  11 for 802.11b/802.11g/802.11n(HT20) 7 for 802.11n(HT40)	

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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.:	/
		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.: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.

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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	0.51 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)

<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

•	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	2018/09/28	2019/09/27
•	RF Connection Cable	HUBER+SUHNER	SUCOFLEX104	501184/4	2018/09/28	2019/09/27
•	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 M	lethod				
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	2018/09/29	2019/09/28
•	OSP	R&S	OSP120	101317	N/A	N/A
0	Radio communication tester	R&S	CMW500	137688-Lv	2018/09/29	2019/09/28
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

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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.

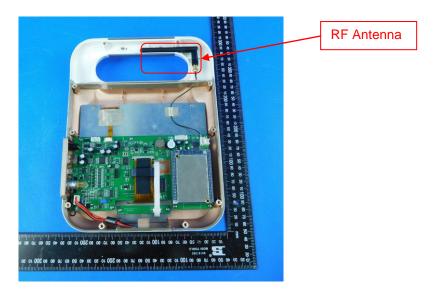
# FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(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
----------------	------------------

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)

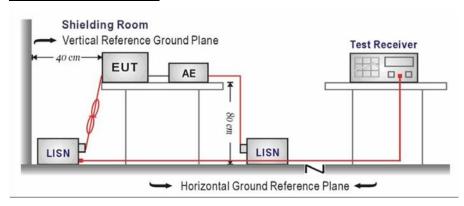
## LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207:

Fraguenov rango (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

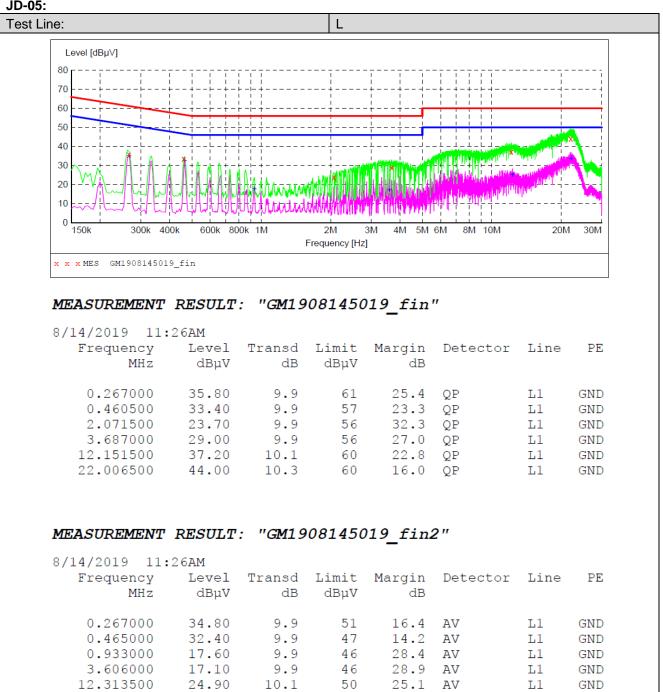
#### **TEST RESULTS**

Note:

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

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#### JD-05:



50

16.4 AV

10.3

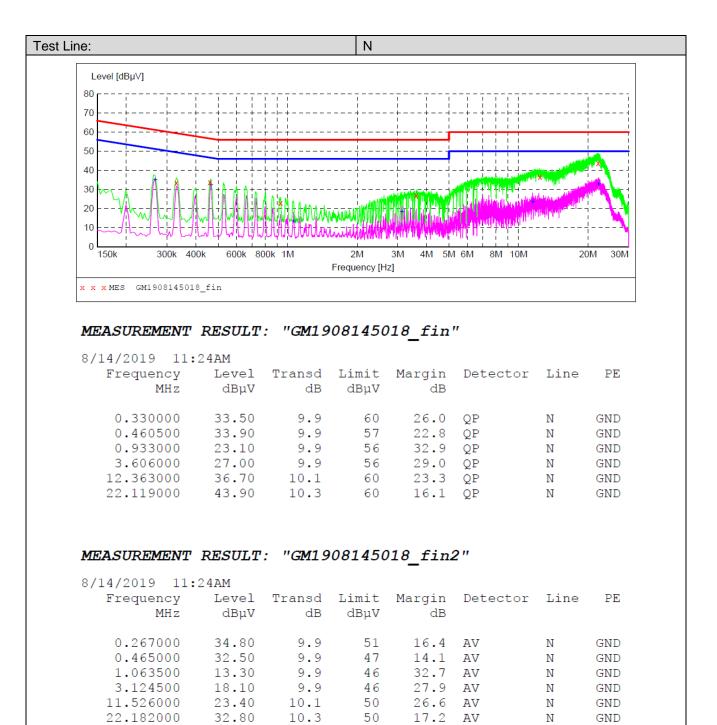
22.132500

33.60

L1

GND

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# JD-06:

e:			L				
Level [dBµ∀]							
80 [				,			
70							
60			i				i
50					1 1 1 1 1		
40 *					<u> </u>		
30			! !		104)	A Part of the last	
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10 1-1		MMMMM		White with the sales	ار از دار از		<del>-</del>
0 150k 300k	400k 600k	800k 1M	2M	3M 4M 5	5M 6M 8M 10N	Л	20M 30N
			Frequency	[Hz]			
x x x MES GM19110	65053_fin						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
MHz	dΒμV	dB	dΒμV	dB			
MHz 0.154500	dВµV 39.40	dB 10.1	dΒμV 66	dB 26.4	QP	L1	GND
MHz 0.154500 0.564000	dBμV 39.40 18.90	dB 10.1 10.1	dΒμV 66 56	dB 26.4 37.1	QP QP	L1 L1	GND GND
MHz 0.154500 0.564000 1.135500	dBμV 39.40 18.90 18.30	dB 10.1 10.1 10.1	dΒμV 66 56 56	dB 26.4 37.1 37.7	QP QP QP	L1 L1 L1	GND GND GND
MHz 0.154500 0.564000 1.135500 4.974000	dBμV 39.40 18.90 18.30 25.10	dB 10.1 10.1 10.1 10.1	dBμV 66 56 56 56	dB 26.4 37.1 37.7 30.9	QP QP QP QP	L1 L1 L1 L1	GND GND GND GND
MHz  0.154500  0.564000  1.135500  4.974000  12.430500	dBµV 39.40 18.90 18.30 25.10 37.70	dB 10.1 10.1 10.1 10.1 10.2	dBμV 66 56 56 56 60	dB 26.4 37.1 37.7 30.9 22.3	QP QP QP QP QP	L1 L1 L1 L1	GND GND GND GND GND
MHz 0.154500 0.564000 1.135500 4.974000	dBμV 39.40 18.90 18.30 25.10	dB 10.1 10.1 10.1 10.1	dBμV 66 56 56 56	dB 26.4 37.1 37.7 30.9	QP QP QP QP	L1 L1 L1 L1	GND GND GND GND
MHz 0.154500 0.564000 1.135500 4.974000 12.430500 13.128000	dBµV 39.40 18.90 18.30 25.10 37.70 39.90	dB  10.1 10.1 10.1 10.1 10.2 10.2	dBμV 66 56 56 56 60	dB 26.4 37.1 37.7 30.9 22.3 20.1	QP QP QP QP QP QP	L1 L1 L1 L1 L1	GND GND GND GND GND GND
MHz  0.154500  0.564000  1.135500  4.974000  12.430500	dBµV 39.40 18.90 18.30 25.10 37.70	dB 10.1 10.1 10.1 10.1 10.2	dBμV 66 56 56 56 60	dB 26.4 37.1 37.7 30.9 22.3 20.1	QP QP QP QP QP QP QP	L1 L1 L1 L1 L1	GND GND GND GND GND GND
MHz 0.154500 0.564000 1.135500 4.974000 12.430500 13.128000 Frequency	dBµV  39.40 18.90 18.30 25.10 37.70 39.90  Level	dB  10.1 10.1 10.1 10.1 10.2 10.2 Transd	dBμV 66 56 56 56 60 60 Limit	dB  26.4 37.1 37.7 30.9 22.3 20.1  Margin	QP QP QP QP QP QP QP	L1 L1 L1 L1 L1	GND GND GND GND GND GND
MHz 0.154500 0.564000 1.135500 4.974000 12.430500 13.128000 Frequency	dBµV  39.40 18.90 18.30 25.10 37.70 39.90  Level	dB  10.1 10.1 10.1 10.1 10.2 10.2 Transd	dBμV 66 56 56 56 60 60 Limit	dB  26.4 37.1 37.7 30.9 22.3 20.1  Margin	QP QP QP QP QP QP	L1 L1 L1 L1 L1	GND GND GND GND GND GND
MHz 0.154500 0.564000 1.135500 4.974000 12.430500 13.128000 Frequency MHz	dBμV 39.40 18.90 18.30 25.10 37.70 39.90 Level dBμV	dB  10.1 10.1 10.1 10.2 10.2 Transd dB	dBμV 66 56 56 56 60 60 Limit dBμV	dB  26.4 37.1 37.7 30.9 22.3 20.1  Margin dB	QP QP QP QP QP QP Detecto	L1 L1 L1 L1 L1 L1	GND GND GND GND GND GND
MHz  0.154500 0.564000 1.135500 4.974000 12.430500 13.128000 Frequency MHz  0.154500	dBμV 39.40 18.90 18.30 25.10 37.70 39.90 Level dBμV 27.80	dB  10.1 10.1 10.1 10.2 10.2 Transd dB  10.1	dBμV 66 56 56 60 60 Limit dBμV	dB  26.4 37.1 37.7 30.9 22.3 20.1  Margin dB	QP QP QP QP QP QP Detecto AV AV	L1 L1 L1 L1 L1 L1	GND GND GND GND GND GND
MHz  0.154500 0.564000 1.135500 4.974000 12.430500 13.128000 Frequency MHz  0.154500 0.564000	dBμV 39.40 18.90 18.30 25.10 37.70 39.90 Level dBμV 27.80 16.60	dB  10.1 10.1 10.1 10.2 10.2 Transd dB  10.1 10.1	dBμV 66 56 56 60 60 Limit dBμV	dB  26.4 37.1 37.7 30.9 22.3 20.1  Margin dB  28.0 29.4 31.2	QP QP QP QP QP QP Detecto AV AV AV	L1 L1 L1 L1 L1 L1 L1	GND GND GND GND GND Te PE GNI GNI GNI
MHz  0.154500 0.564000 1.135500 4.974000 12.430500 13.128000 Frequency MHz  0.154500 0.564000 1.027500	dBμV 39.40 18.90 18.30 25.10 37.70 39.90 Level dBμV 27.80 16.60 14.80	dB  10.1 10.1 10.1 10.2 10.2 Transd dB  10.1 10.1 10.1	dBμV 66 56 56 60 60 Limit dBμV 56 46	dB  26.4  37.1  37.7  30.9  22.3  20.1  Margin  dB  28.0  29.4  31.2  31.7	QP QP QP QP QP QP Detecto AV AV AV AV	L1 L1 L1 L1 L1 L1 L1 L1 L1	GND GND GND GND GND GND

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ne:			N				
Level [dBµV]							
80							
70			i	İ İ			i L
60							
50			<u> </u>		<b>.</b> i i i i i		i I
i i							
40		-			The state of the s	The state of the s	
30 ++						المارية المارية المارية المارية المارية المارية المارية المارية المارية المارية المارية المارية المارية المارية	
20					Tale No.	MT - 32-76	<del> </del>
10		<b>YAAAAAAAAA</b>		THE PERSON NAMED IN POST OF	**************************************		<u> </u>
0 L 300	0k 400k 600k	800k 1M	2M	3M 4M 5	5M 6M 8M 10M	20	: DM 30M
		3331	Frequency				
x x x MES GM1911	065052 fin						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dΒμV	dB	dΒμV	dB			
MHz 0.154500	dBμV 40.60	dB 10.1	dBµV 66	dB 25.2	QP	N	GND
	40.60			25.2	QP OP	N N	GND GND
0.154500		10.1	66	25.2 36.7	QP		
0.154500 0.820500	40.60 19.30	10.1 10.1	66 56	25.2	QP QP	N	GND
0.154500 0.820500 1.189500 4.506000	40.60 19.30 20.80 15.10	10.1 10.1 10.1 10.1	66 56 56	25.2 36.7 35.2 40.9	QP QP QP	N N	GND GND
0.154500 0.820500 1.189500	40.60 19.30 20.80	10.1 10.1 10.1	66 56 56 56	25.2 36.7 35.2	QP QP	N N N	GND GND GND
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000	40.60 19.30 20.80 15.10 36.00	10.1 10.1 10.1 10.1 10.2	66 56 56 56 56	25.2 36.7 35.2 40.9 24.0 19.7	QP QP QP QP QP	N N N N	GND GND GND GND GND
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000	40.60 19.30 20.80 15.10 36.00 40.30	10.1 10.1 10.1 10.1 10.2 10.2	66 56 56 56 60	25.2 36.7 35.2 40.9 24.0 19.7	QP QP QP QP	N N N N	GND GND GND GND GND
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000 Frequency	40.60 19.30 20.80 15.10 36.00 40.30 Level dBµV	10.1 10.1 10.1 10.1 10.2 10.2 Transd dB	66 56 56 56 60 60 Limit dBµV	25.2 36.7 35.2 40.9 24.0 19.7 Margin dB	QP QP QP QP QP Detector	N N N N N	GND GND GND GND GND
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000 Frequency MHz	40.60 19.30 20.80 15.10 36.00 40.30 Level dBμV	10.1 10.1 10.1 10.1 10.2 10.2 Transd dB	66 56 56 56 60 60 Limit dBµV	25.2 36.7 35.2 40.9 24.0 19.7 Margin dB	QP QP QP QP QP Detector	N N N N N Line	GND GND GND GND FE
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000 Frequency MHz 0.154500 0.721500	40.60 19.30 20.80 15.10 36.00 40.30 Level dBμV 29.80 18.10	10.1 10.1 10.1 10.1 10.2 10.2 Transd dB	66 56 56 56 60 60 Limit dBµV	25.2 36.7 35.2 40.9 24.0 19.7 Margin dB	QP QP QP QP QP Detector AV AV	N N N N Line	GND GND GND GND FE
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000 Frequency MHz 0.154500 0.721500 0.978000	40.60 19.30 20.80 15.10 36.00 40.30 Level dBμV 29.80 18.10 19.80	10.1 10.1 10.1 10.2 10.2 Transd dB 10.1 10.1	66 56 56 56 60 60 Limit dBµV 56 46	25.2 36.7 35.2 40.9 24.0 19.7 Margin dB 26.0 27.9 26.2	QP QP QP QP QP Detector AV AV	N N N N N Line	GND GND GND GND FE GND GND
0.154500 0.820500 1.189500 4.506000 10.086000 13.479000 Frequency MHz 0.154500 0.721500	40.60 19.30 20.80 15.10 36.00 40.30 Level dBμV 29.80 18.10	10.1 10.1 10.1 10.1 10.2 10.2 Transd dB	66 56 56 56 60 60 Limit dBµV	25.2 36.7 35.2 40.9 24.0 19.7 Margin dB 26.0 27.9	QP QP QP QP QP Detector AV AV	N N N N Line	GND GND GND GND FE

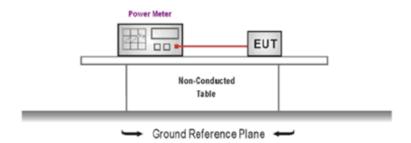
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# 5.3. Conducted Peak Output Power

# **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	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
	01	18.08	16.13		
802.11b	06	18.25	15.90	≤30.00	Pass
	11	18.82	16.31		
	01	17.93	14.28		
802.11g	06	18.10	14.48	≤30.00	Pass
	11	18.36	14.86		
	01	17.85	14.36		
802.11n(HT20)	06	18.01	14.53	≤30.00	Pass
	11	18.31	14.88		
	03	17.90	14.79		
802.11n(HT40)	06	18.06	14.76	≤30.00	Pass
	09	18.28	15.08		

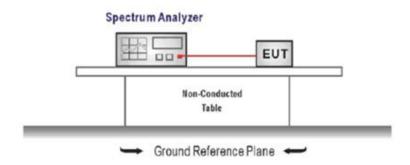
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# 5.4. Power Spectral Density

# **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

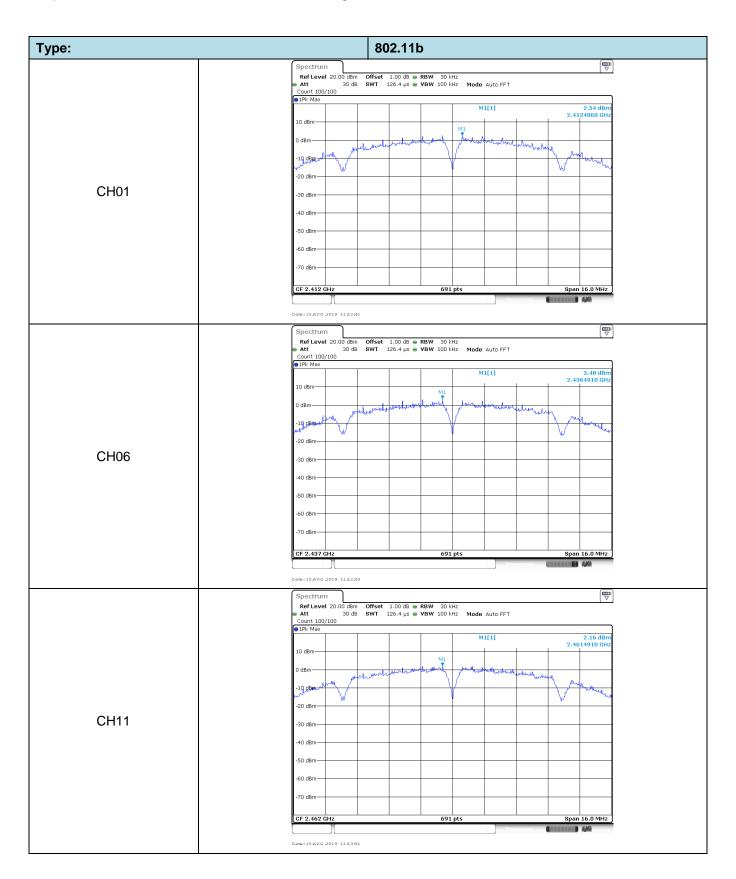
# **TEST RESULTS**

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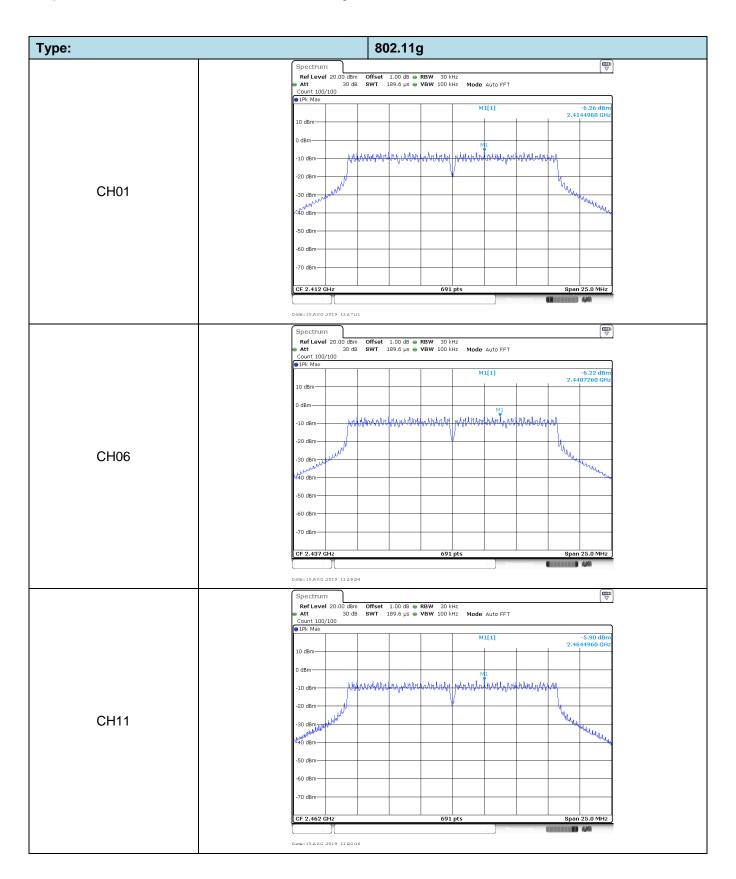
Туре	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
	01	2.54		
802.11b	06	3.48	≤8.00	Pass
	11	2.16		
	01	-6.26		
802.11g	06	-6.22	≤8.00	Pass
	11	-5.90		
	01	-6.33		
802.11n(HT20)	06	-6.02	≤8.00	Pass
	11	-5.41		
	03	-9.45		
802.11n(HT40)	06	-9.68	≤8.00	Pass
	09	-8.71		

Test plot as follows:

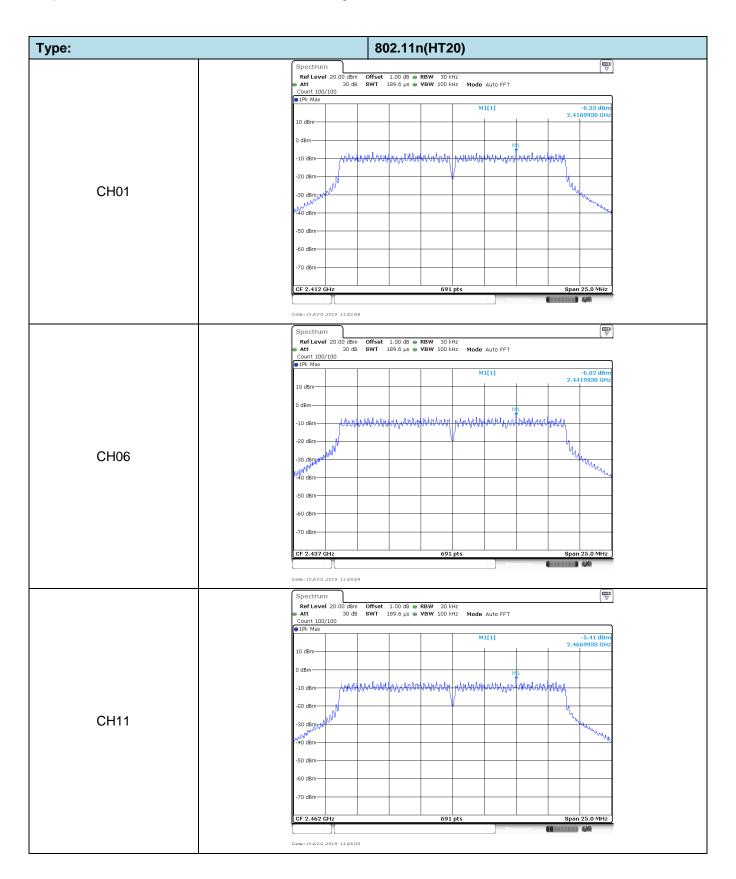
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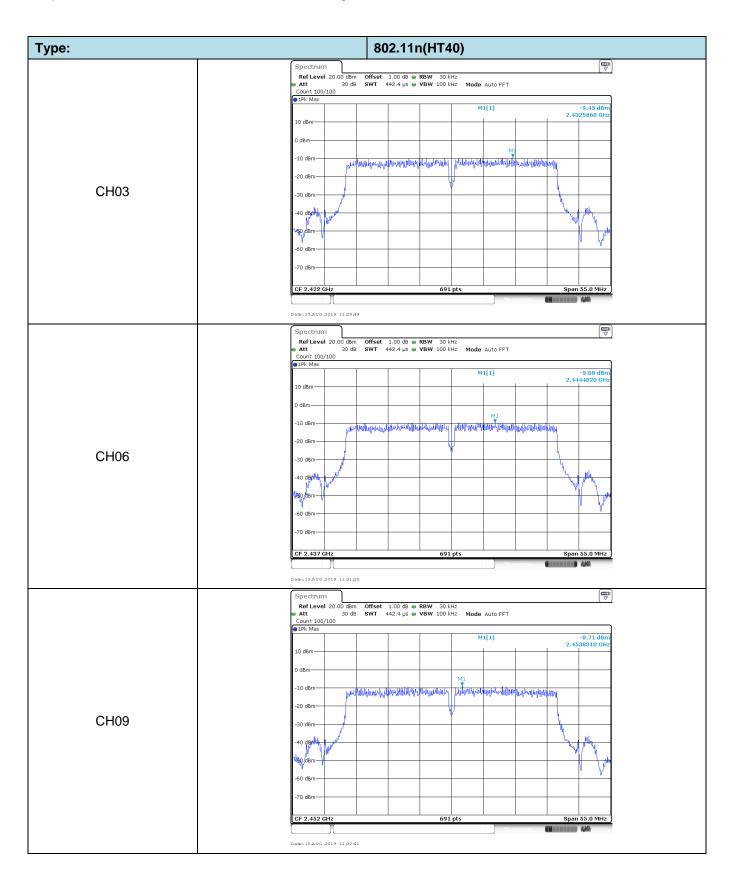
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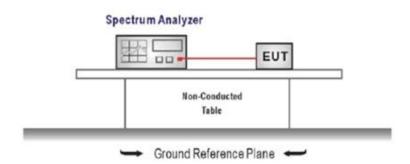
### 5.5. 6dB bandwidth

### **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

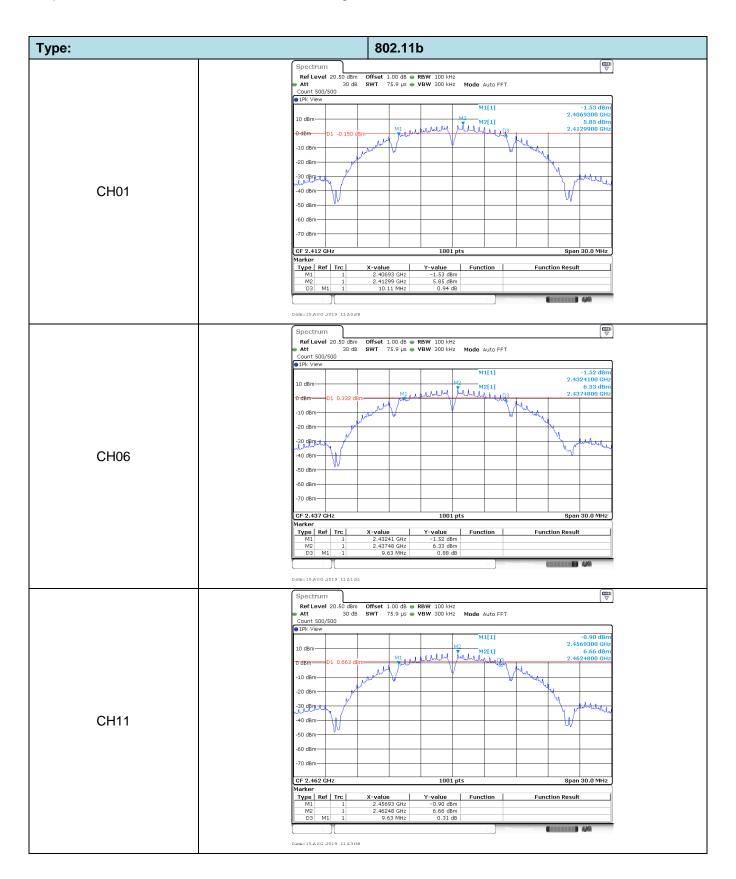
### **TEST RESULTS**

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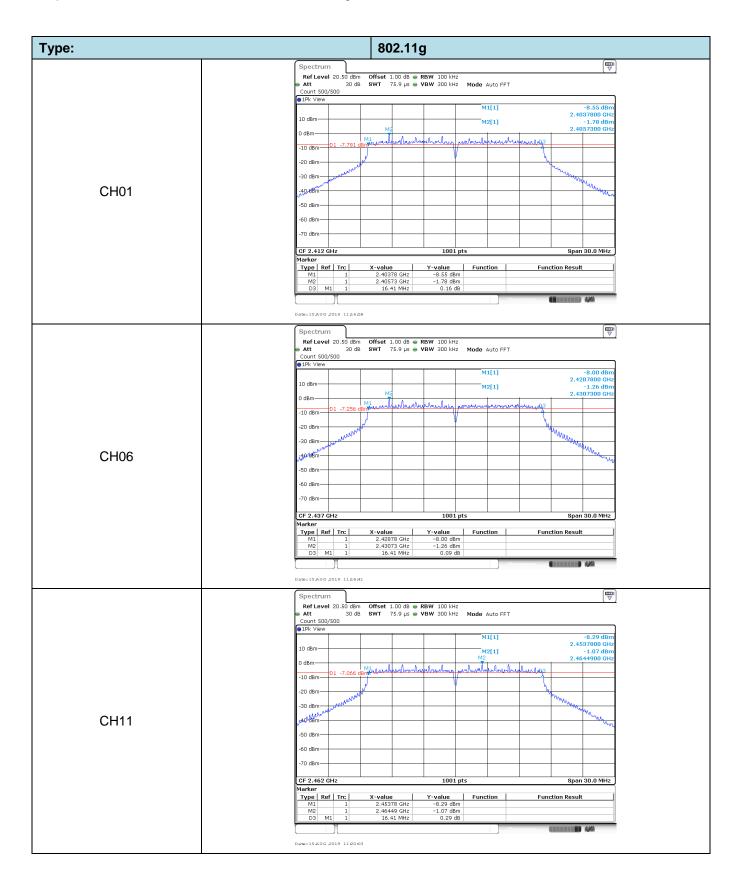
Туре	Channel	6dB Bandwidth (MHz)	Limit (kHz)	Result
	01	10.11		
802.11b	06	9.63	≥500	Pass
	11	9.63		
	01	16.41		
802.11g	06	16.41	≥500	0 Pass
	11	16.41		
	01	17.67		
802.11n(HT20)	06	17.88	≥500	Pass
	11	17.67		
	03	35.58		
802.11n(HT40)	06	35.28	≥500	Pass
	09	35.28		

Test plot as follows:

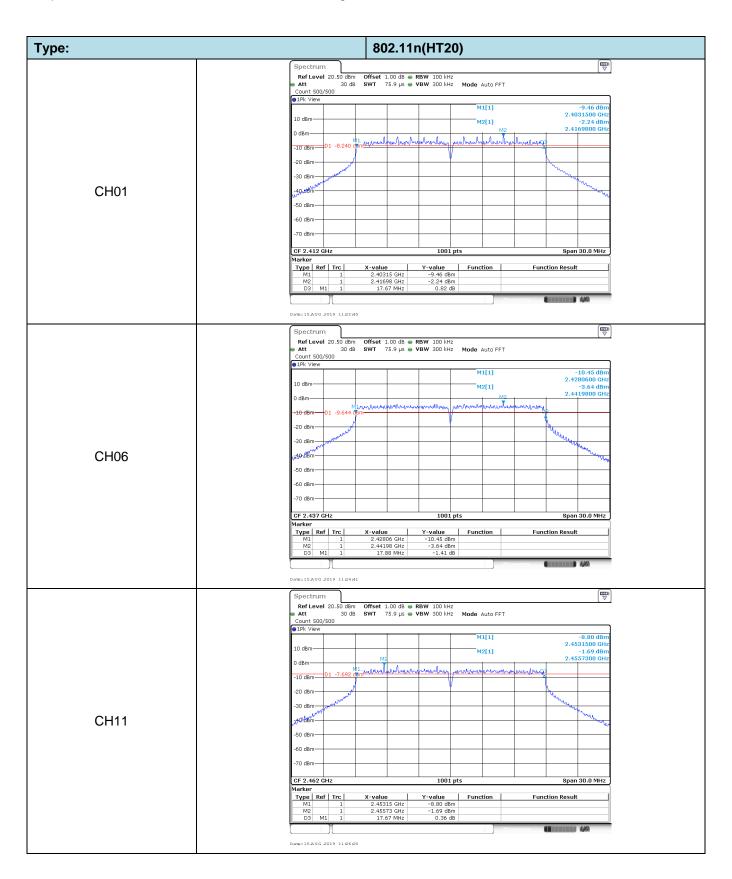
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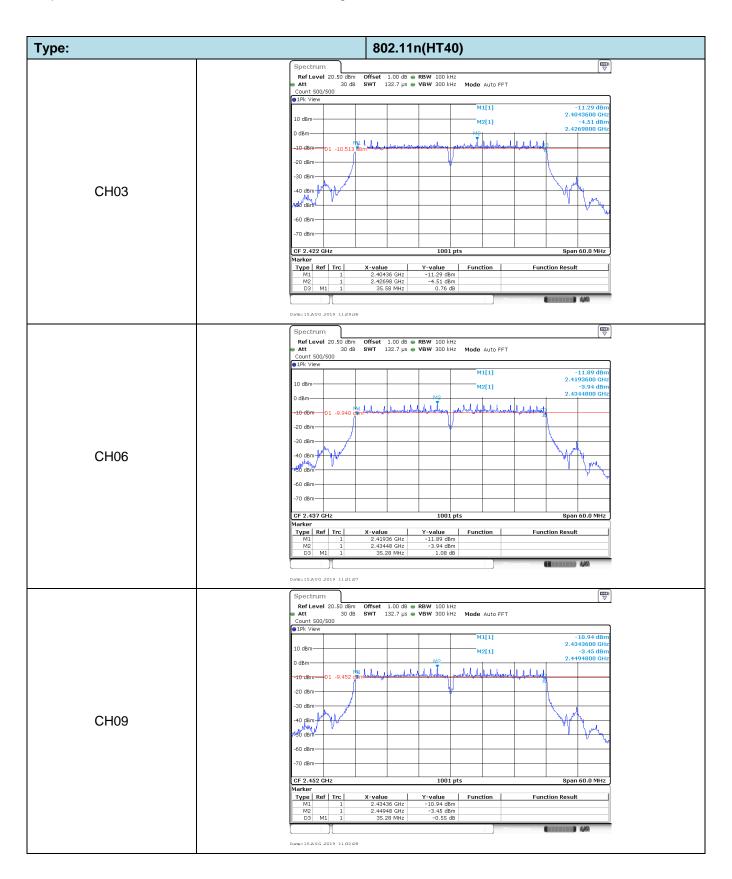
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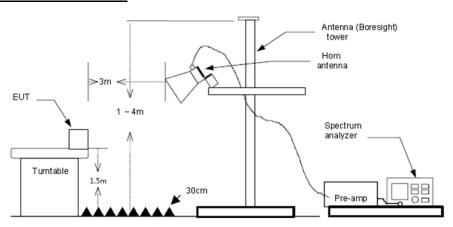
### 5.6. Restricted band

# <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**

- 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:

st channel: CH00				Polarity			Horizont	Horizontal		
Suspected Data List∘										
ب ۱۱۵	Freq.	Reading∉	Factor	Level⊬	Limit⊬	Margin	ψ Delevites	₽ 		
NO.₽	[MHz]∂	[dBµV/m]₽	[dB]₽	[dBµV/m]∂	[dBµV/m]₽	[dB]₽	Polarity₽	Detector₽		
1₽	2310.0004	21.70₽	35.78₽	57.48₽	74.00₽	16.52₽	Horizontal₽	PK₽		
2₽	2310.0004	14.66₽	35.78₽	50.44₽	54.00₽	3.56₽	Horizontal₽	AV₽		
3₽	2390.009	13.95₽	35.50₽	49.45₽	54.00₽	4.55₽	Horizontal₽	AV₽		
44□	2390.009₽	21.34₽	35.50₽	56.84₽	74.00₽	17.16₽	Horizontal₽	PK₽		

est channe	st channel: CH0		Polarity			Vertical	Vertical		
Suspected Data List⊳ -									e <sup>2</sup>
, NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]∂	Level⊬ [dBµV/m]₄	Limit⊬ [dBµV/m]√	Margin [dB]∉	e Polarity∂	 Detector	¢.
1₽	2310.000₽	21.57₽	35.78₽	57.35₽	74.00₽	16.65₽	Vertical₽	PK₽	₽
2₽	2310.0004	14.91₽	35.78₽	50.69₽	54.00₽	3.31₽	Vertical₽	AV₽	₽
3₽	2390.009	21.43₽	35.50₽	56.93₽	74.00₽	17.07₽	Vertical₽	PK₽	Ð
4₽	2390.009₽	14.43₽	35.50₽	49.93₽	54.00₽	4.07₽	Vertical₽	AV₽	ته

est chann	t channel: CH11		Pol	arity	Horizonta	Horizontal		
Suspected Data List								
NO.	Freq. [MHz]	Reading⊬ [dBµV/m]∂	Factor [dB]∉	Level- [dBµV/m]-	Limit⊬ [dBµV/m]⊬	Margin [dB]∉	⊌ Polarity⊍	Detector.
1₽	2483.504	20.80₽	35.31₽	56.11₽	74.00₽	17.89₽	Horizontal₽	PK₽
2₽	2483.504	15.11₽	35.31₽	50.42₽	54.00₽	3.58₽	Horizontal₽	AV₽
3₽	2500.000₽	14.12₽	35.28₽	49.40₽	54.00₽	4.60₽	Horizontal₽	AV₽
4.	2500.000₽	20.85₽	35.28₽	56.13₽	74.00₽	17.87₽	Horizontal₽	PK₽

channe	hannel:			Pol	Polarity							
Suspe	Suspected Data List∂											
, NO.₽	Freq. [MHz]∂	Reading⊬ [dBµV/m]⊬	Factor [dB]∂	Level√ [dBµV/m]√	Limit. [dBµV/m].	Margin [dB]∉	<i></i> Polarity	⊌ Detector⊌				
1₽	2483.504	21.74₽	35.31₽	57.05₽	74.00₽	16.95₽	Vertical₽	PK₽				
2€	2483.504₽	13.89₽	35.31₽	49.20₽	54.00₽	4.80₽	Vertical₽	AV₽				
3€	2500.000₽	22.65₽	35.28₽	57.93₽	74.00₽	16.07₽	Vertical₽	PK₽				
4↔	2500.000₽	14.43₽	35.28₽	49.71₽	54.00₽	4.29₽	Vertical₽	AV₽				

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802.11a:

t channe	channel:		CH00 Polarity				Horizontal		
Susp	ected Data I	List∂							ø
ب NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]∂	Level⊬ [dBµV/m]⊬	Limit⊬ [dBµV/m]√	Margin [dB]∉	Polarity⊍	ਦ Detectorਦ	4
1₽	2310.000₽	23.18₽	35.78₽	58.96₽	74.00₽	15.04₽	Horizontal₽	PK₽	₽
2↩	2310.000₽	14.79₽	35.78₽	50.57₽	54.00₽	3.43₽	Horizontal₽	AV₽	ته
3₽	2390.009₽	21.77₽	35.50₽	57.27₽	74.00₽	16.73₽	Horizontal₽	PK₽	₽
4₽	2390.009₽	14.68₽	35.50₽	50.18₽	54.00₽	3.82₽	Horizontal₽	AV₽	₽

t channe	l:	CH00		Pol	Polarity			Vertical			
Susp	Suspected Data List∍										
NO.	Freq. [MHz]∂	Reading⊬ [dBµV/m]∂	Factor [dB]∂	Level⊬ [dBµV/m]⊬	Limit⊬ [dBµV/m] <i></i> ⊬	Margin [dB]∉	Polarity.	⊌ Detector⊌			
1₽	2310.000₽	22.07₽	35.78₽	57.85₽	74.00₽	16.15₽	Vertical₽	PK₽			
243	2310.0004	15.01₽	35.78₽	50.79₽	54.00₽	3.21₽	Vertical₽	AV₽			
3₽	2390.0224	22.77₽	35.50₽	58.27₽	74.00₽	15.73₽	Vertical₽	PK₽			
4€	2390.022₽	16.76₽	35.50₽	52.26₽	54.00₽	1.74₽	Vertical₽	AV₽			

Test cl	channel:		CH11		Pol	arity	Horizon	Horizontal		
	Suspe	Suspected Data List								
	NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]∂	Factor [dB]∂	Level⊬ [dBµV/m]⊬	Limit⊬ [dBµV/m]⊬	Margin [dB]∂	Polarity⊲	Detector⊲	
	1₽	2483.504₽	22.06₽	35.31₽	57.37₽	74.00₽	16.63₽	Horizontal₽	PK₽	
	2₽	2483.504₽	15.87₽	35.31₽	51.18₽	54.00₽	2.82₽	Horizontal₽	AV₽	
	3₽	2500.000₽	20.35₽	35.28₽	55.63₽	74.00₽	18.37₽	Horizontal₽	PK₽	
	4₽	2500.000₽	14.69₽	35.28₽	49.97₽	54.00₽	4.03₽	Horizontal₽	AV₽	

st chann	el:	CH11		Pola	arity		Vertical		
Sus	pected Data	List∘							ب
NO	Freq.	Reading⊬ [dBµV/m]∂	Factor [dB]∂	Level√ [dBµV/m]√	Limit⊬ [dBµV/m]⊹	Margin [dB]∂	<i></i> Polarity	Detector⊲	47
1∉	2483.504₽	15.37₽	35.31₽	50.68₽	54.00₽	3.32₽	Vertical₽	AV₽	۰
2∻	2483.504₽	24.47₽	35.31₽	59.78₽	74.00₽	14.22₽	Vertical₽	PK₽	¢)
3∻	2500.000₽	20.65₽	35.28₽	55.93₽	74.00₽	18.07₽	Vertical₽	PK₽	Ç
4∻	2500.000₽	13.96₽	35.28₽	49.24₽	54.00₽	4.76₽	Vertical₽	AV₄□	47

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# 802.11n(H20):

st cha	nnel:	CH00	CH00 Polarity				Horizon	Horizontal		
Su	Suspected Data List									
N	Freq.	Reading√ [dBµV/m]√	Factor [dB]∂	Level  [dBµV/m]  [dBµV/m]	Limit. [dBµV/m].	Margin [dB]∂	Polarity∂	Detector.		
	2310.000	₽ 14.89₽	35.78₽	50.67₽	54.00₽	3.33₽	Horizontal₽	AV₽		
	2310.000	₽ 21.40₽	35.78₽	57.18₽	74.00₽	16.82₽	Horizontal₽	PK₽		
;	34 2390.022	₽ 20.09₽	35.50₽	55.59₽	74.00₽	18.41₽	Horizontal₽	PK₽		
4	2390.022	₽ 14.82₽	35.50₽	50.32₽	54.00₽	3.68₽	Horizontal₽	AV₽		

t channe	l:	CH00		Pol	Polarity			
Susp	ected Data I	List∂						
.√ NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]∉	Level√ [dBµV/m]√	Limit⊬ [dBµV/m]⊬	Margin [dB]∉	₽ Polarity	 Detector
1₽	2310.000₽	20.51₽	35.78₽	56.29₽	74.00₽	17.71₽	Vertical₽	PK₽
2₽	2310.000₽	15.27₽	35.78₽	51.05₽	54.00₽	2.95₽	Vertical₽	AV₄⋾
3€	2390.022₽	22.43₽	35.50₽	57.93₽	74.00₽	16.07₽	Vertical₽	PK₽
4₽	2390.022₽	15.55₽	35.50₽	51.05₽	54.00₽	2.95₽	Vertical₽	AV₽

st chann	el:	CH11		Pol	arity	Horizont	Horizontal				
Sus	uspected Data List∍										
NO.	Freq.	Reading√ [dBµV/m]√	Factor [dB]∂	Level√ [dBµV/m]√	Limit⊬ [dBµV/m]∉	Margin [dB]∂	Polarity∂	ਦ Detectorਦ			
1₽	2483.504₽	23.67₽	35.31₽	58.98₽	74.00₽	15.02₽	Horizontal₽	PK₽			
24□	2483.504	15.08₽	35.31₽	50.39₽	54.00₽	3.61₽	Horizontal₽	AV₽			
34□	2500.000₽	22.55₽	35.28₽	57.83₽	74.00₽	16.17₽	Horizontal₽	PK₽			
4↔	2500.000₽	14.77₽	35.28₽	50.05₽	54.00₽	3.95₽	Horizontal₽	AV₽			

st chan	nel:	CH11		Pol	arity		Vertical				
Su	Suspected Data List										
41	Freq.	Reading∉	Factor	Level⊬	Limit∉	Margin	٠	4			
NC	).₽ [MHz]₽	[dBµV/m]₽	[dB]	[dBµV/m]	[dBµV/m]∂	[dB]∂	Polarity₽	Detector₽			
1	2483.504	26.76₽	35.31₽	62.07₽	74.00₽	11.93₽	Vertical₽	PK₽			
2	2483.504	15.14₽	35.31₽	50.45₽	54.00₽	3.55₽	Vertical₽	AV₽			
3	2500.000₽	21.40₽	35.28₽	56.68₽	74.00₽	17.32₽	Vertical₽	PK₽			
4	2500.000₽	14.49₽	35.28₽	49.77₽	54.00₽	4.23₽	Vertical₽	AV₽			

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# 802.11n(H40):

st channe	channel:			Pola	arity		Horizonta	Horizontal			
Susp	Suspected Data List										
, NO.∻	Freq. [MHz]	Reading√ [dBµV/m]√	Factor [dB]∂	Level⊬ [dBµV/m]⊬	Limit⊬ [dBμV/m]∉	Margin [dB]∂	ਦ Polarityਦ	ਦ Detectorਦ	Ç		
1₽	2310.000₽	17.92₽	35.78₽	53.70₽	74.00₽	20.30₽	Horizontal₽	PK₽	ø		
2₽	2310.000₽	14.90₽	35.78₽	50.68₽	54.00₽	3.32₽	Horizontal₽	AV₽	ę,		
3₽	2390.013₽	15.69₽	35.50₽	51.19₽	54.00₽	2.81₽	Horizontal₽	AV₽	ø		
4.₽	2390.013₽	17.77₽	35.50₽	53.27₽	74.00₽	20.73₽	Horizontal₽	PK₽	٠		

Test c	hanne	l:	CH00	CH00 Polarity				Vertical	Vertical		
	Susp	Suspected Data List									
	4	Freq.	Reading∉	Factor	Level⊬	Limitℯ	Margin	ų	ψ		
	NO.₽	[MHz]∂	[dBµV/m]∂	[dB]₽	[dBµV/m]₽	[dBµV/m]∂	[dB]∂	Polarity₽	Detector₽		
	1₽	2310.000₽	13.78₽	35.78₽	49.56₽	54.00₽	4.44₽	Vertical₽	AV₽		
	2₽	2310.000₽	15.23₽	35.78₽	51.01₽	74.00₽	22.99₽	Vertical₽	PK₽		
	3₽	2390.013₽	17.51₽	35.50₽	53.01₽	74.00₽	20.99₽	Vertical₽	PK₽		
	4₽	2390.013₽	15.44₽	35.50₽	50.94₽	54.00₽	3.06₽	Vertical₽	AV₽		

est chann	t channel:			Pol	arity	Horizont	Horizontal		
Susp	ected Data	List∂							ę,
 NO.∻	Freq. [MHz]	Reading√ [dBµV/m]√	Factor [dB]∂	Level⊬ [dBµV/m]⊬	Limit⊬ [dBµV/m]₄	Margin [dB]∂	<sup>,,</sup> Polarity∂	Detector⊲	Ç
1€	2483.503₽	16.08₽	35.31₽	51.39₽	74.00₽	22.61₽	Horizontal₽	PK₽	ø
2₽	2483.5034	14.14₽	35.31₽	49.45₽	54.00₽	4.55₽	Horizontal₽	AV₽	ęJ
3₽	2500.0004	15.61₽	35.28₽	50.89₽	74.00₽	23.11₽	Horizontal₽	PK₽	ę,
4.0	2500.000₽	14.92₽	35.28₽	50.20₽	54.00₽	3.80₽	Horizontal₽	AV↔	ø

est c	hannel: CH11		CH11 Polarity					Vertical	
	Suspe	ected Data List∍							
	NO.	Freq. [MHz]∂	Reading√ [dBµV/m]∂	Factor [dB]∂	Level⊬ [dBµV/m]₄	Limit⊬ [dBµV/m]√	Margin [dB]₄	Polarity₽	Detector.
	1₽	2483.503₽	17.62₽	35.31₽	52.93₽	74.00₽	21.07₽	Vertical₽	PK₽
	24□	2483.5034	14.89₽	35.31₽	50.20₽	54.00₽	3.80₽	Vertical₽	AV₽
	3€	2500.000₽	15.06₽	35.28₽	50.34₽	54.00₽	3.66₽	Vertical₽	AV₽
	4₽	2500.000₽	16.23₽	35.28₽	51.51₽	74.00₽	22.49₽	Vertical₽	PK₽

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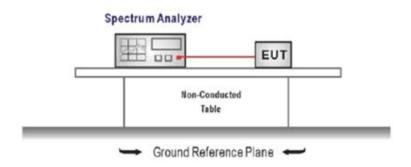
# 5.7. Band edge and Spurious Emissions (conducted)

# **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 ≥ 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.

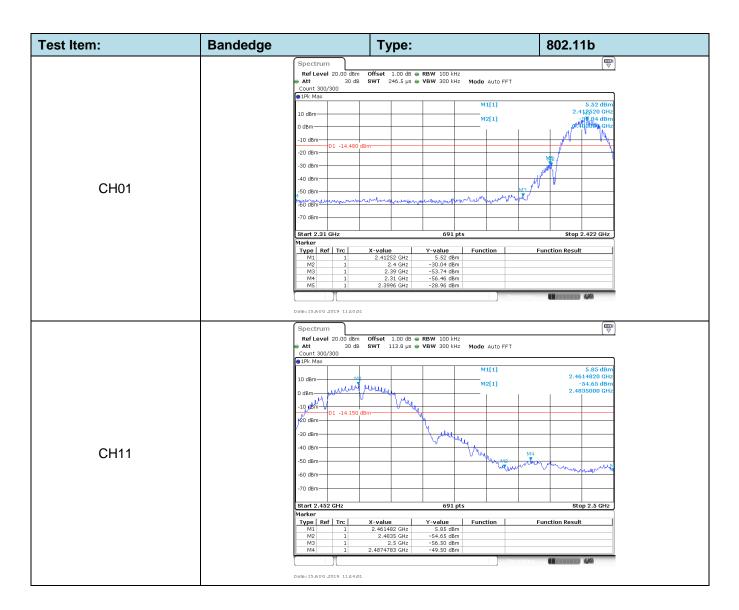
- 4. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
- 5. Ensure that the amplitude of all unwanted emission outside of the authorized frequency band excluding restricted frequency bands) are attenuated by at least the 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**

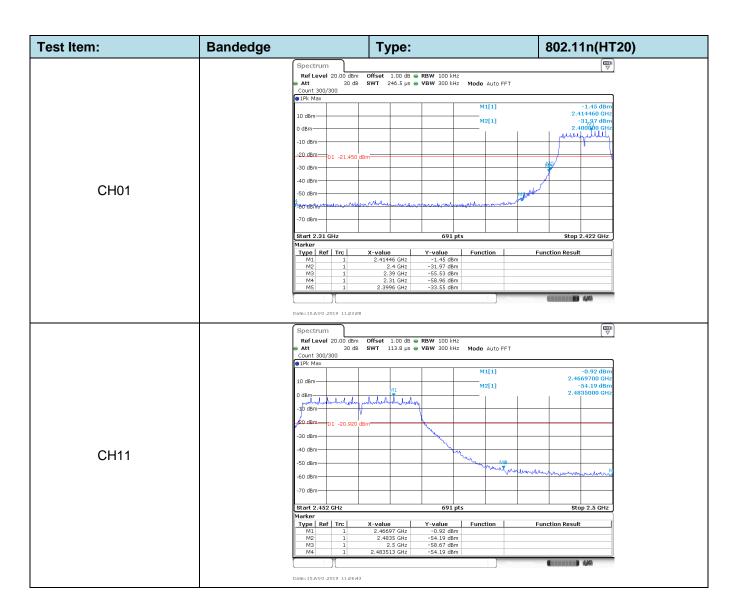
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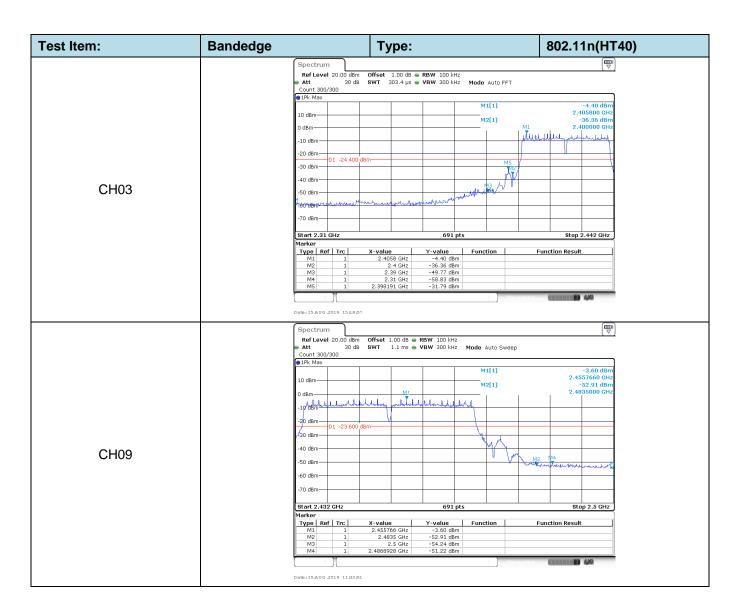
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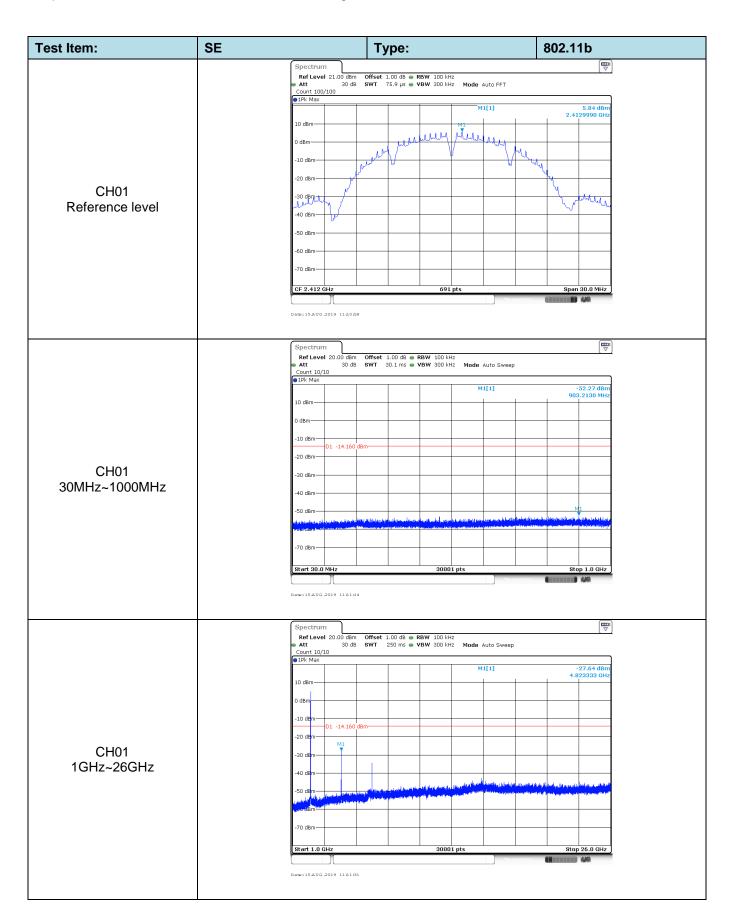
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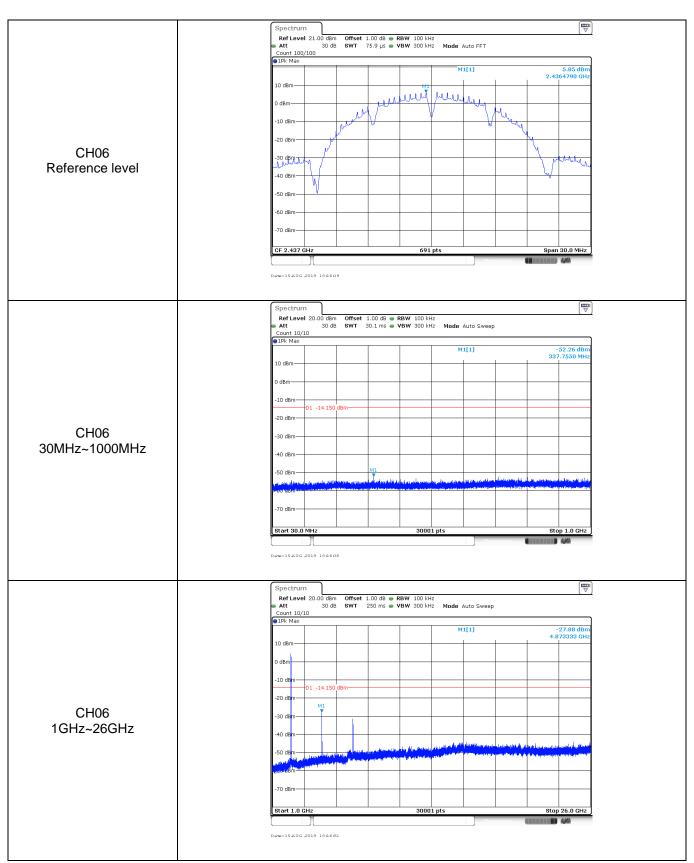
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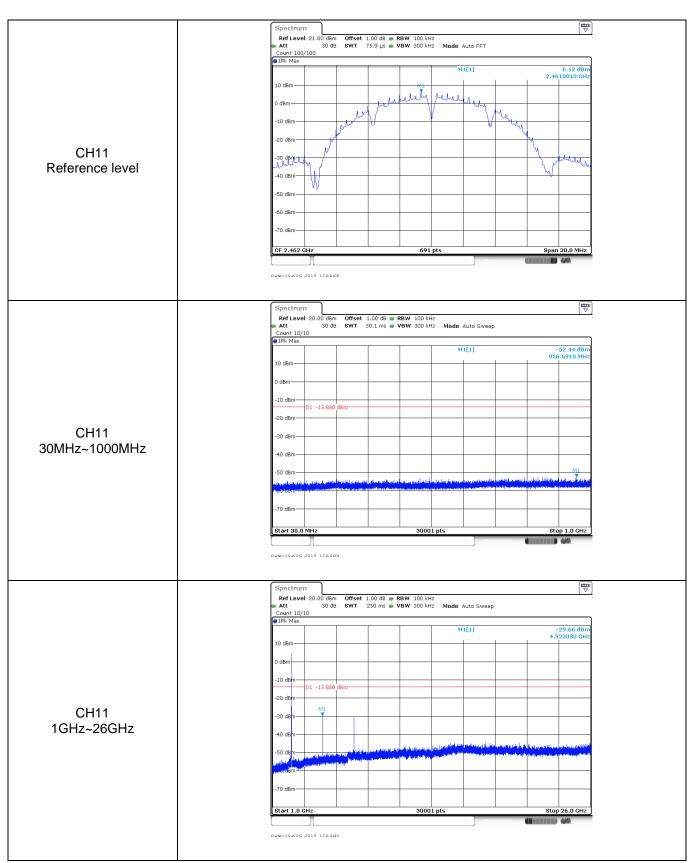
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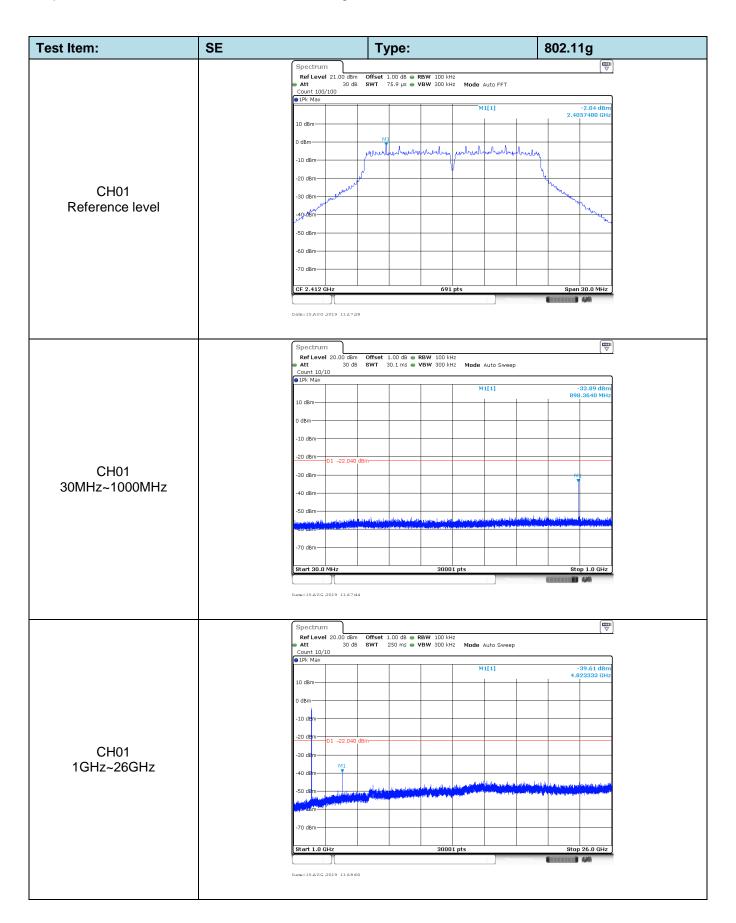
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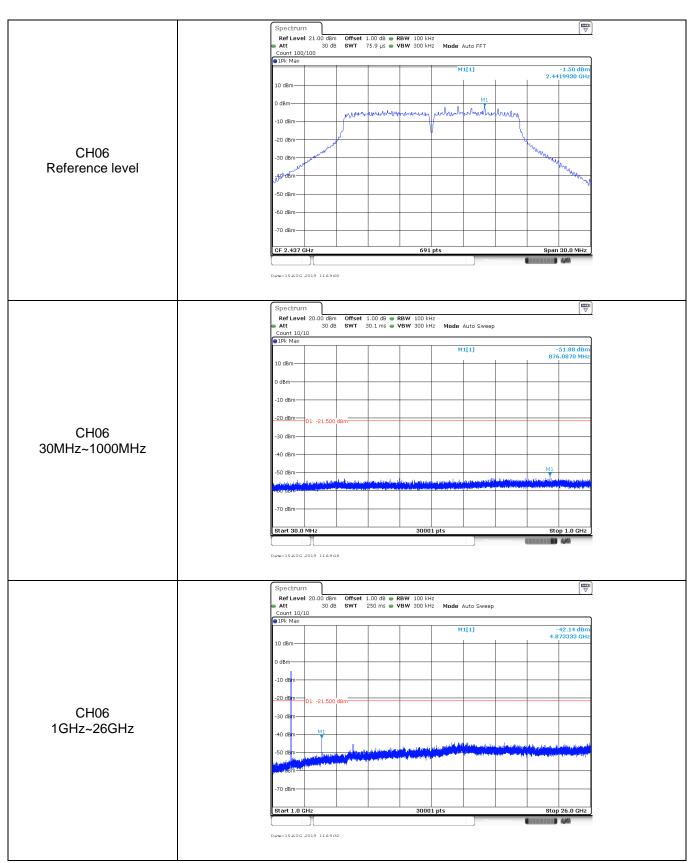
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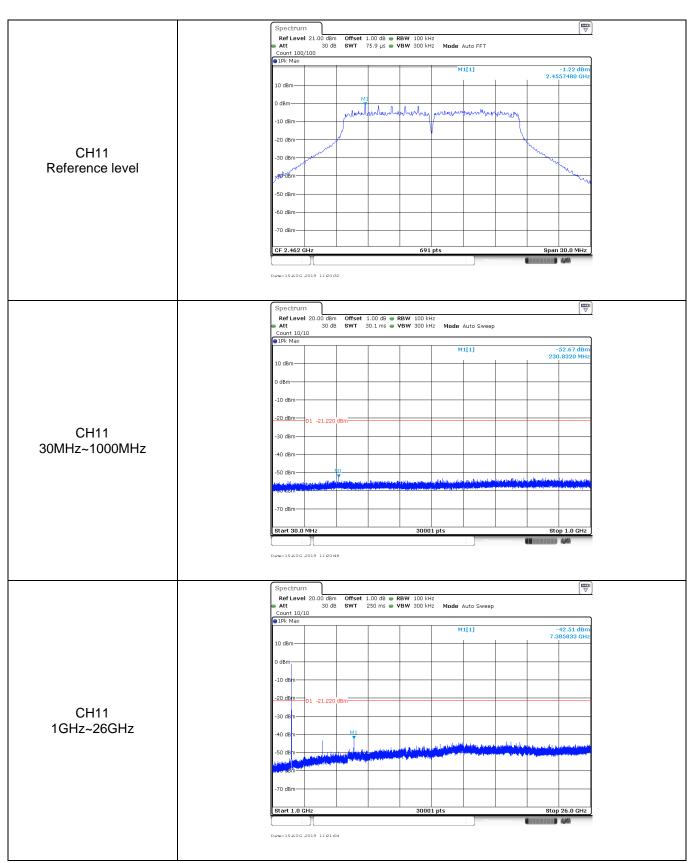
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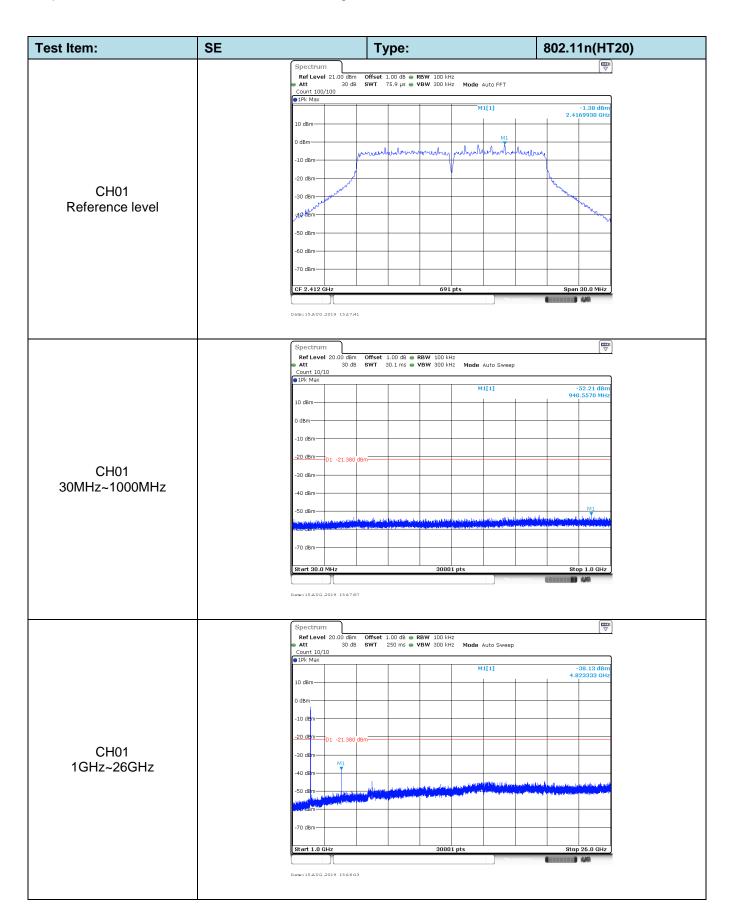
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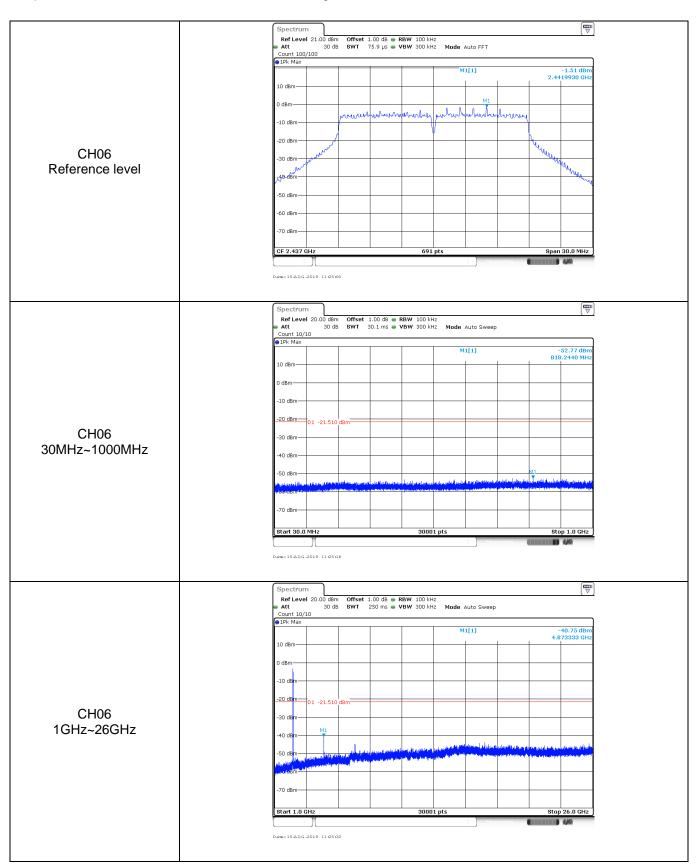
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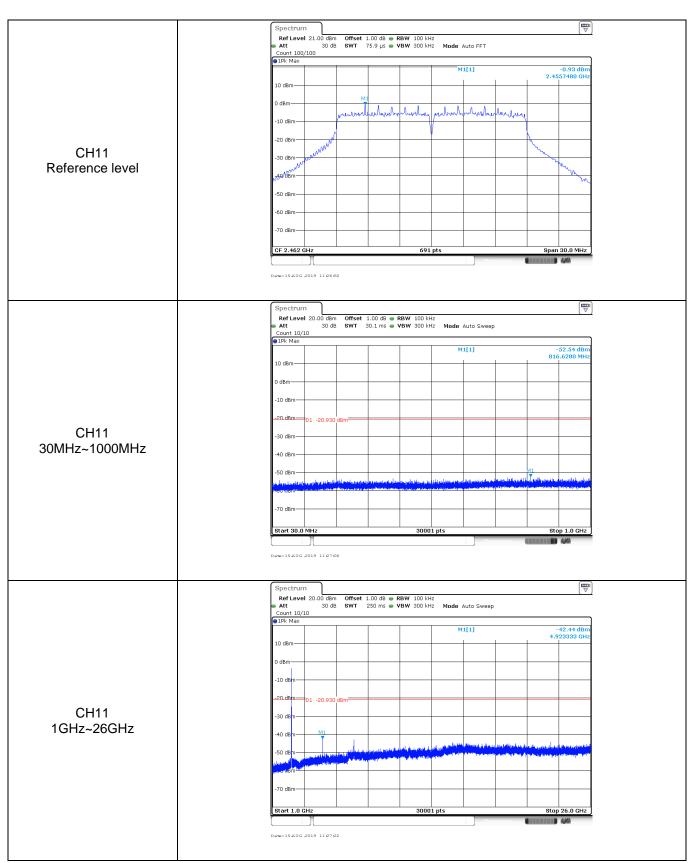
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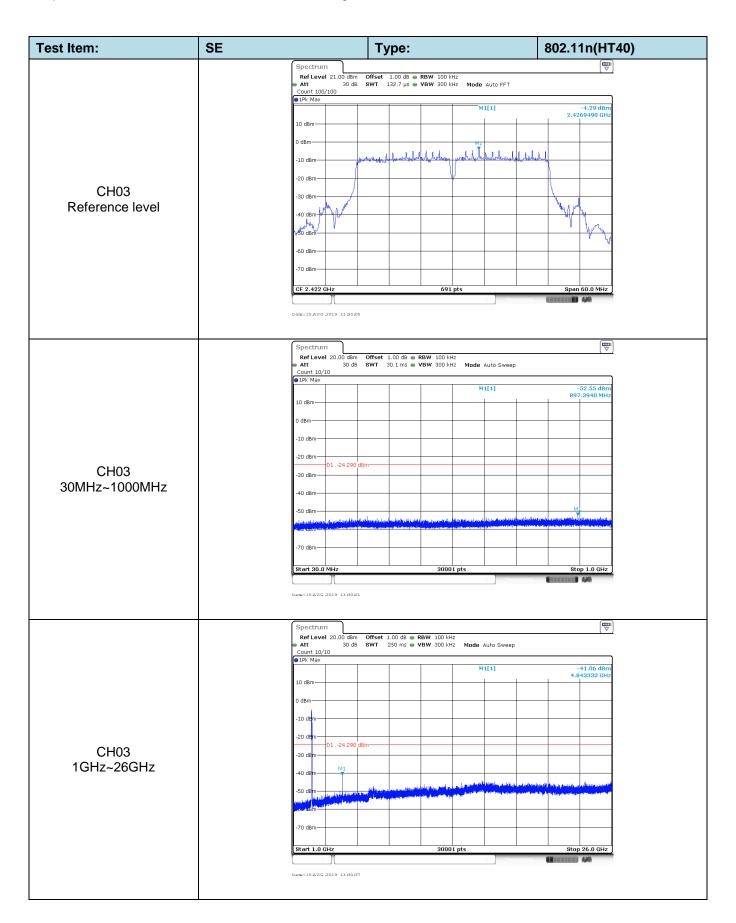
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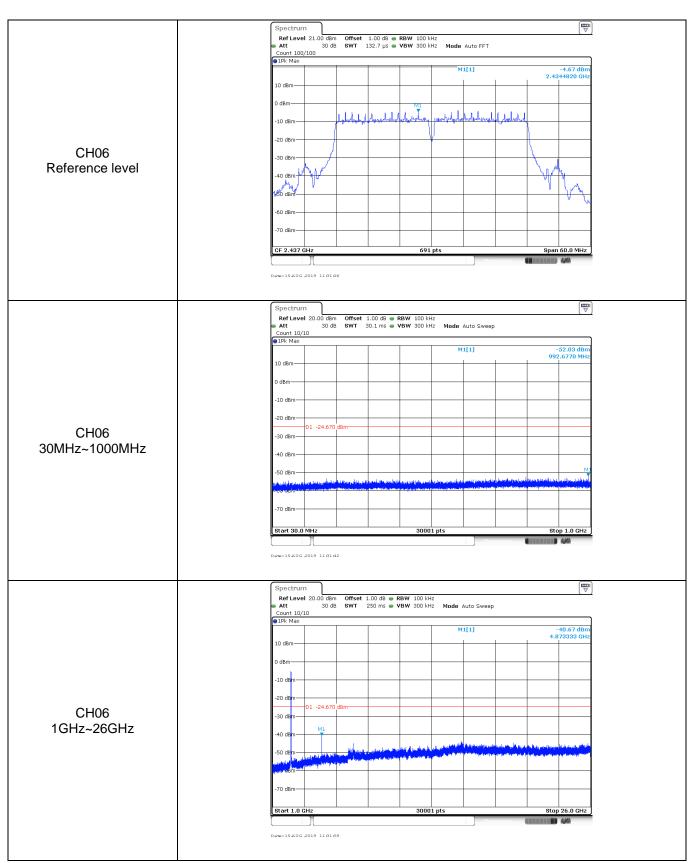
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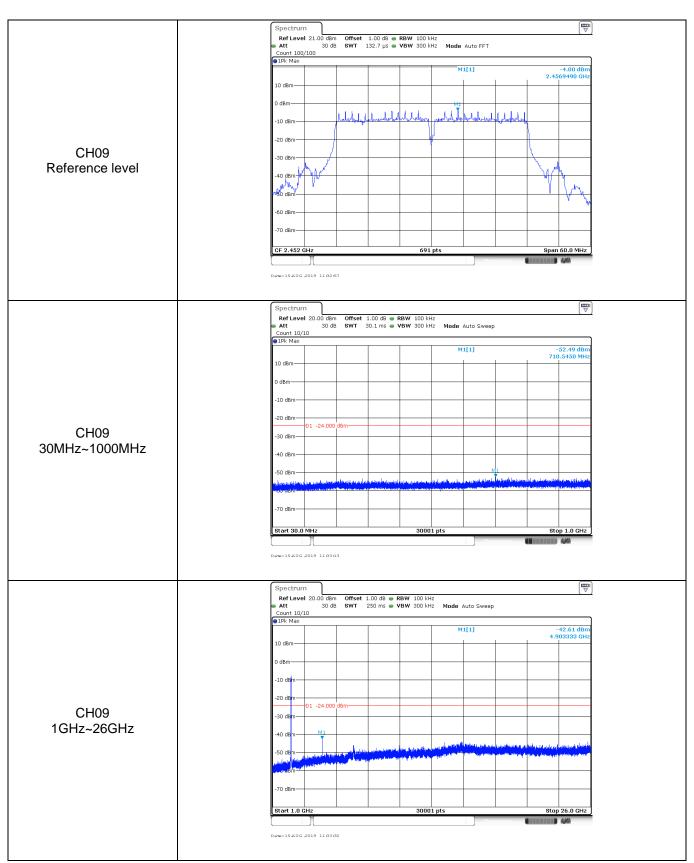
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# 5.8. Spurious Emissions (radiated)

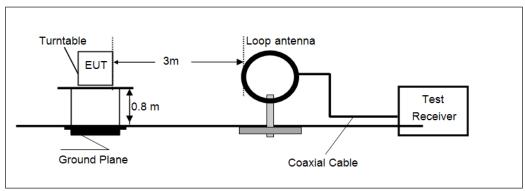
# **LIMIT**

FCC CFR Title 47 Part 15 Subpart C Section 15.209

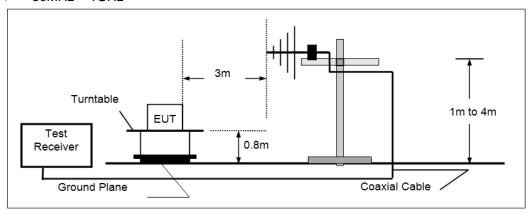
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
ABOVE TOTIZ	74.00	Peak

# **TEST CONFIGURATION**

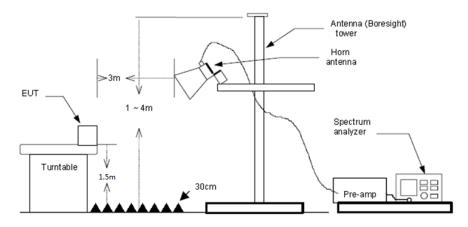
# ➤ 9kHz ~30MHz



# ➤ 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 10<sup>th</sup> 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
△ rasseu	

### 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.

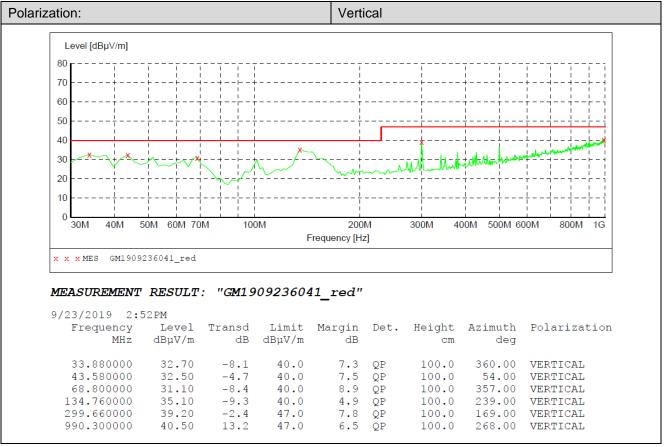
#### ➤ 30MHz ~1000MHz

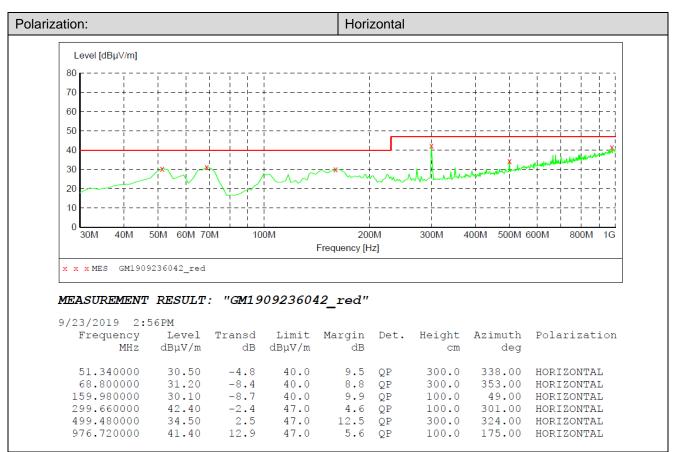
Have pre-scan all modulation mode, found the 802.11b mode CH01 which it was worst case, so only the worst case's data on the test report.

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### > 30MHz ~ 1GHz

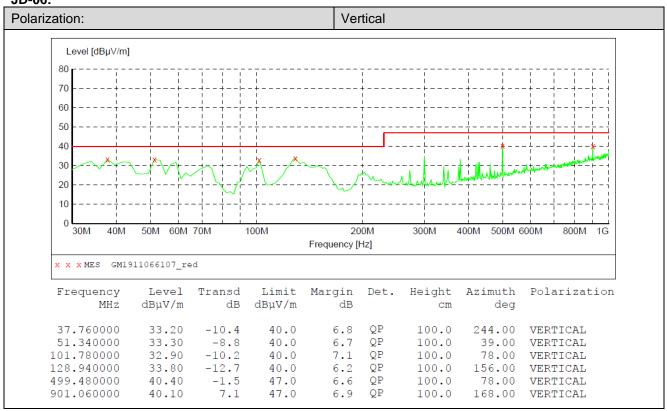
### JD-05:

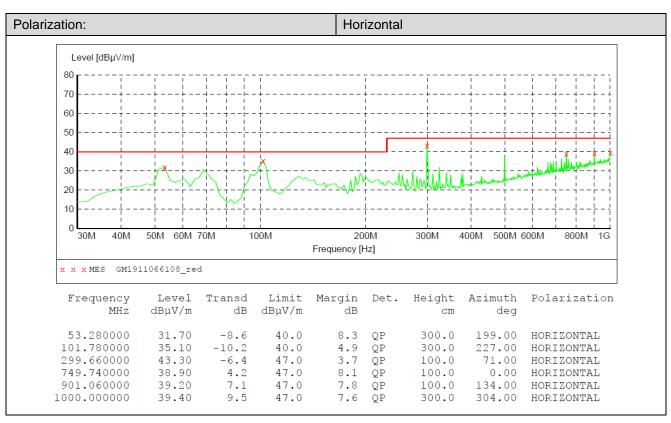




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### JD-06:





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# > 1 GHz ~ 25 GHz

# 802.11b

anne	el .			СН	01			
Susp	ected Data	List∂						
NO.₽	Freq. [MHz]	Reading√ [dBµV/m]√	Factor [dB]₽	Level⊬ [dBµV/m]₽	Limit⊬ [dBµV/m]∂	Margin [dB]∂	Polarity⊲	 Detector∉
1₽	3106.187₽	23.76₽	0.35₽	24.11₽	54.00₽	29.89₽	Horizontal₽	AV₽
2₽	3179.625₽	34.41₽	0.73₽	35.14₽	74.00₽	38.86₽	Horizontal₽	PK₽
3₽	3950.718₽	32.73₽	2.85₽	35.58₽	74.00₽	38.42₽	Horizontal₽	PK₽
4₽	3968.343₽	22.58₽	2.91₽	25.49₽	54.00₽	28.51₽	Horizontal₽	AV₽
5₽	4823.156₽	37.94₽	7.08₽	45.02₽	54.00₽	8.98₽	Horizontal₽	AV₽
6₽	4823.156₽	43.47₽	7.08₽	50.55₽	74.00₽	23.45₽	Horizontal₽	PK₽
7₽	7234.843₽	31.02₽	16.01₽	47.03₽	54.00₽	6.97₽	Horizontal₽	AV₽
8₽	7236.312₽	37.41₽	16.01₽	53.42₽	74.00₽	20.58₽	Horizontal₽	PK₽
Susp	ected Data I	lint.						
			Factor	l evelu	l imit	Margin	4	ę.
NO.₽	Freq.	Reading√ [dBµV/m]√	Factor [dB]₄	Level⊬ [dBµV/m]₽	Limit√ [dBµV/m]√	Margin [dB]∉	્ Polarity∘	ಳ Detectorಳ
	Freq.	Reading⊎					Polarity Vertical	Detector⊲ PK√
NO.₽	Freq. [MHz]	Reading√ [dBµV/m]√	[dB]	[dBµV/m]∂	[dBµV/m]₽	[dB] <i>₽</i>	,	
NO.₽	Freq. [MHz]= 3139.968=	Reading∉ [dBµV/m]₽ 33.88₽	[dB]₽ 0.53₽	[dBµV/m]₽ 34.41₽	[dBµV/m]₽ 74.00₽	[dB]₽ 39.59₽	Vertical₽	PK₽
NO.₽ 1₽ 2₽	Freq. [MHz]- 3139.968- 3156.125-	Reading □ [dBµV/m] □ 33.88 □ 23.97 □	[dB]∉ 0.53∉ 0.61∉	[dBµV/m]∘ 34.41∘ 24.58∘	[dBµV/m]₽ 74.00₽ 54.00₽	[dB]₽ 39.59₽ 29.42₽	Vertical₽ Vertical₽	PK₽ AV₽
NO.₽ 1₽ 2₽ 3₽	Freq. [MHz] ₽ 3139.968 ₽ 3156.125 ₽ 4019.750 ₽	Reading □ [dBµV/m] □ 33.88 □ 23.97 □ 22.45 □	[dB]= 0.53= 0.61= 3.07=	[dBµV/m]₽ 34.41₽ 24.58₽ 25.52₽	[dBμV/m]  74.00 e <sup>2</sup> 54.00 e <sup>2</sup> 54.00 e <sup>2</sup>	[dB]₽ 39.59₽ 29.42₽ 28.48₽	Vertical↔ Vertical↔ Vertical↔	PK₽ AV₽
NO.₽ 1₽ 2₽ 3₽ 4₽	Freq. [MHz] 3139.968 3156.125 4019.750 4260.625	Reading ↓ [dBµV/m] ↓ 33.88 ↓ 23.97 ↓ 22.45 ↓ 40.34 ↓	[dB] ○ 0.53 ← 0.61 ← 3.07 ← 3.79 ←	[dBµV/m]≠ 34.41≠ 24.58≠ 25.52≠ 44.13≠	[dBµV/m]↔ 74.00↔ 54.00↔ 54.00↔ 74.00↔	[dB]□ 39.59₽ 29.42₽ 28.48₽ 29.87₽	Vertical  Vertical  Vertical  Vertical	PK≠ AV≠ AV≠ PK≠
NO.₽ 1₽ 2₽ 3₽ 4₽ 5₽	Freq. [MHz] © 3139.968 © 3156.125 © 4019.750 © 4260.625 © 4823.156 ©	Reading   [dBµV/m]   33.88   23.97   22.45   40.34   39.24      39.24	[dB] → 0.53 ↔ 0.61 ↔ 3.07 ↔ 3.79 ↔ 7.08 ↔	[dBµV/m]≠ 34.41≠ 24.58≠ 25.52≠ 44.13≠ 46.32≠	[dBμV/m]  74.00  54.00  54.00  74.00  54.00  74.00  54.00  54.00  74.00  54.00  54.00  54.00  74.00  54.00	[dB]-3 39.59e 29.42e 28.48e 29.87e 7.68e	Vertical  Vertical  Vertical  Vertical  Vertical	PK₽ AV₽ AV₽ PK₽ AV₽

Test channel	CH06

Susp	ected Data	List⊬							Ð
NO.₽	Freq. [MHz]	Reading⊬ [dBµV/m]⊬	Factor [dB]∉	Level⊬ [dBµV/m]₽	Limit⊬ [dBµV/m]√	Margin [dB]∂	 Polarity.	Detector∉	4
1₽	3176.687₽	23.88₽	0.72₽	24.60₽	54.00₽	29.40₽	Horizontal₽	AV₽	₽
2₽	3219.281₽	34.63₽	0.61₽	35.24₽	74.00₽	38.76₽	Horizontal₽	PK₽	٦
3₽	4206.281₽	22.01₽	3.82₽	25.83₽	54.00₽	28.17₽	Horizontal₽	AV₽	₽
4₽	4320.843₽	31.94₽	4.01₽	35.95₽	74.00₽	38.05₽	Horizontal₽	PK₽	₽
5₽	4873.093₽	42.20₽	7.15₽	49.35₽	74.00₽	24.65₽	Horizontal₽	PK₽	47
6₽	4874.562₽	36.86₽	7.15₽	44.01₽	54.00₽	9.99₽	Horizontal₽	AV₽	ø
7₽	7309.750₽	31.95₽	16.08₽	48.03₽	54.00₽	5.97₽	Horizontal₽	AV₽	47
8₽	7312.687₽	37.36₽	16.09₽	53.45₽	74.00₽	20.55₽	Horizontal₽	PK₽	ø

Susp	ected Data	List⊬						
NO.₽	Freq. [MHz]	Reading√ [dBµV/m]√	Factor [dB]₽	Level⊬ [dBµV/m]⊮	Limit⊬ [dBµV/m]⊬	Margin [dB]∂	 Polarity.∂	⊌ Detector ₽
1₽	2796.281₽	31.52₽	2.03₽	33.55₽	74.00₽	40.45₽	Vertical₽	PK₽
2₽	2816.843₽	20.90₽	1.82₽	22.72₽	54.00₽	31.28₽	Vertical₽	AV₽
3₽	4263.562₽	23.75₽	3.79₽	27.54₽	54.00₽	26.46₽	Vertical₽	AV₽
4₽	4263.562₽	34.16₽	3.79₽	37.95₽	74.00₽	36.05₽	Vertical₽	PK₽
5₽	4873.093₽	39.95₽	7.15₽	47.10∂	74.00₽	26.90₽	Vertical₽	PK₽
6₽	4874.562₽	33.63₽	7.15₽	40.78₽	54.00₽	13.22₽	Vertical₽	AV₽
7₽	7309.750₽	33.89₽	16.08₽	49.97₽	54.00₽	4.03₽	Vertical₽	AV₽
8₽	7312.687₽	38.55₽	16.09₽	54.64₽	74.00₽	19.36₽	Vertical₽	PK₽

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Susp	ected Data I	List∂						
NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]∂	Level⊬ [dBµV/m]⊬	Limit⊬ [dBµV/m]⊬	Margin [dB]∂	e Polaritye	Detector.
1₽	2998.968₽	25.00₽	-0.11₽	24.89₽	54.00₽	29.11₽	Horizontal₽	AV₽
2₽	3151.718₽	34.56₽	0.59₽	35.15₽	74.00₽	38.85₽	Horizontal₽	PK₽
3₽	4034.437₽	32.04₽	3.10₽	35.14₽	74.00₽	38.86₽	Horizontal₽	PK₽
4₽	4157.812₽	21.82₽	3.58₽	25.40₽	54.00₽	28.60₽	Horizontal₽	AV₽
5₽	4924.500₽	40.97₽	7.34₽	48.31₽	74.00₽	25.69₽	Horizontal₽	PK₽
6↩	4924.500₽	37.34₽	7.34₽	44.68₽	54.00₽	9.32₽	Horizontal₽	AV₽
7₽	7387.593₽	35.80₽	16.33₽	52.13₽	74.00₽	21.87₽	Horizontal₽	PK₽
8₽	7387.593₽	29.16₽	16.33₽	45.49₽	54.00₽	8.51₽	Horizontal₽	AV₽
Susp NO.₽	ected Data Freq.	Reading⊬	Factor	Level⊬	Limit⊬	Margin	ب Polarity	با Detector
	[MHz]∂	[dBµV/m]∉	[dB]∉	[dBµV/m]∂	[dBµV/m]∂	[dB]∂	1	
1₽	2796.281₽	31.65₽	2.03₽	33.68₽	74.00₽	40.32₽	Vertical₽	PK₽
243	2994.562	24.92₽	-0.09₽	24.83₽	54.00₽	29.17₽	Vertical₽	AV₽
3₽	4251.812₽	33.61₽	3.79₽	37.40₽	74.00₽	36.60₽	Vertical₽	PK₽
4↩	4259.156₽	22.85₽	3.79₽	26.64₽	54.00₽	27.36₽	Vertical₽	AV₽
5₽	4924.500₽	40.78₽	7.34₽	48.12₽	74.00₽	25.88₽	Vertical₽	PK₽
6₽	4924.500₽	36.63₽	7.34₽	43.97₽	54.00₽	10.03₽	Vertical₽	AV₽
7₽	7387.593₽	37.43₽	16.33₽	53.76₽	74.00₽	20.24₽	Vertical₽	PK₽
		32.21₽	16.33₽	48.54₽	54.00₽	5.46₽	Vertical₽	_

### Remark:

- 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

#### **Test channel CH01** Suspected Data List Reading Freq. Factor Level⊬ Limit<sub>←</sub> Margin NO. Polarity@ Detector [dBµV/m] [MHz] [dB]∂ [dBµV/m] [dBµV/m] [dB] 1₽ 2841.812 21.85₽ 1.41₽ 23.26₽ 54.00₽ 30.74₽ Horizontal<sub>€</sub> AV₽ 3068.0004 34.17₽ 0.18₽ 34.35₽ 74.00₽ 39.65₽ Horizontal« PK₽ 2₽ Horizontal 3799.437 33.29₽ 1.99₽ 35.28₽ 74.00₽ 38.72₽ PK₽ 3.02₽ 54.00₽ 3999.1874 22.52₽ 25.54₽ 28.46₽ Horizontal<sub>4</sub> AV₽ 4821.687 39.69₽ 7.08₽ 46.77₽ 74.00₽ 27.23₽ Horizontal<sub>€</sub> PK₽ 6₽ 4824.625 31.04₽ 7.08₽ 54.00₽ 15.88₽ AV₽ 38.12₽ Horizontal<sub>e</sub> 7₽ 7237.7814 31.90₽ 16.01₽ 47.91₽ 54.00₽ 6.09₽ Horizontal<sub>€</sub> AV₽ 8₽ 7246.593 40.19₽ 16.02₽ 56.21₽ 74.00₽ 17.79₽ Horizontal<sub>€</sub> PK₽ Suspected Data List Freq. Reading Factor Level⊬ Limit⊬ Margin NO.4 **Polarity** Detector [dBµV/m] [MHz] [dB] [dBµV/m] [dBµV/m] [dB] 24.49₽ 24.41₽ 54.00₽ 1₽ 3009.250∉ -0.08₽ 29.59₽ Vertical₽ AV₽ 2 3043.0314 34.59₽ 0.07₽ 34.66₽ 74.00₽ 39.34₽ Vertical₽ PK₽ 3₽ 4034.437 22.60₽ 3.10₽ 25.70₽ 54.00₽ 28.30₽ Vertical₽ AV₽ 4₽ 4257.687 33.75₽ 3.79₽ 37.54₽ 74.00₽ 36.46₽ Vertical₽ PK₽ 5₽ 4824.625 33.19₽ 7.08₽ 40.27₽ 54.00₽ 13.73₽ Vertical₽ AV₽ 41.38₽ 7.08₽ 74.00₽ 25.54₽ PK₽ 6₽ 4824.625 48.46₽ Vertical₽ 7₽ 7231.906 43.68₽ 16.01₽ 59.69₽ 74.00₽ 14.31₽ Vertical₽ PK₽ 7233.375∉ 33.05₽ 16.01₽ 49.06₽ 54.00₽ 4.94₽ Vertical₽ 8₽ AV₽

anne	el .			CH	CH06					
Susp	ected Data	List⊬								
, NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]∉	Level⊬ [dBµV/m]₽	Limit⊬ [dBµV/m]⊬	Margin [dB]∉	Polarity⊲	Detector∈		
1₽	3059.187₽	34.66₽	0.14₽	34.80₽	74.00₽	39.20₽	Horizontal₽	PK₽		
2₽	3139.968₽	23.94₽	0.53₽	24.47₽	54.00₽	29.53₽	Horizontal₽	AV₽		
3₽	3868.468₽	32.56₽	2.46₽	35.02₽	74.00₽	38.98₽	Horizontal₽	PK₽		
4₽	4068.218₽	22.38₽	3.18₽	25.56₽	54.00₽	28.44₽	Horizontal₽	AV₽		
5₽	4874.562₽	30.56₽	7.15₽	37.71₽	54.00₽	16.29₽	Horizontal₽	AV₽		
6₽	4874.562₽	40.23₽	7.15₽	47.38₽	74.00₽	26.62₽	Horizontal₽	PK₽		
7₽	7305.343₽	40.54₽	16.07₽	56.61₽	74.00₽	17.39₽	Horizontal₽	PK₽		
8₽	7309.750₽	31.41₽	16.08₽	47.49₽	54.00₽	6.51₽	Horizontal₽	AV₽		
Suspe NO.∂	Freq. [MHz]₽	List⊮ Reading⊬ [dBµV/m]⊮	Factor [dB]∉	Level⊬ [dBµV/m]₽	Limit. [dBµV/m]⊲	Margin [dB]∂	્ Polarity∘	Detector		
1₽	3188.437₽	24.10₽	0.78₽	24.88₽	54.00₽	29.12₽	Vertical₽	AV₽		
	3197.250₽	35.67₽	0.83₽	36.50₽	74.00₽	37.50₽	Vertical₽	PK₽		
2₽			3.07₽	35.80₽	74.00₽	38.20₽	Vertical₽	PK₽		
2₽ 3₽	4022.687₽	32.73₽	3.07€				Mortinal :			
	4022.687₽ 4027.093₽	32.73₽ 22.35₽	3.08₽	25.43₽	54.00€	28.57₽	Vertical₽	AV₽		
3₽				25.43¢ 37.49¢	54.00₽ 54.00₽	28.57₽ 16.51₽	Vertical₽	AV4		
3 <i>₽</i> 4 <i>₽</i>	4027.093	22.35₽	3.08₽							
3₽ 4₽ 5₽	4027.093₽ 4873.093₽	22.35₽ 30.34₽	3.08₽ 7.15₽	37.49₽	54.00₽	16.51₽	Vertical₽	AV₽		

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Susp	ected Data	List⊬						
NO.₽	Freq. [MHz]	Reading√ [dBµV/m]∂	Factor [dB]∉	Level- [dBµV/m]-	Limit⊬ [dBµV/m]∂	Margin [dB]∉	₽ Polarity	Detector
1₽	3012.187₽	24.84₽	-0.07₽	24.77₽	54.00₽	29.23₽	Horizontal₽	AV₽
2₽	3125.281₽	34.05₽	0.45₽	34.50₽	74.00₽	39.50₽	Horizontal₽	PK₽
3₽	4000.6564	24.16₽	3.02₽	27.18₽	54.00₽	26.82₽	Horizontal₽	AV₽
4₽	4171.031₽	32.26₽	3.65₽	35.91₽	74.00₽	38.09₽	Horizontal₽	PK₽
5₽	4924.500₽	37.92₽	7.34₽	45.26₽	74.00₽	28.74₽	Horizontal₽	PK₽
6₽	4924.500₽	29.23₽	7.34₽	36.57₽	54.00₽	17.43₽	Horizontal₽	AV₽
7₽	7378.781₽	29.71₽	16.30₽	46.01₽	54.00₽	7.99₽	Horizontal₽	AV₽
8₽	7387.5934	39.50₽	16.33₽	55.83₽	74.00₽	18.17₽	Horizontal₽	PK₽
Susp NO.₽	ected Data I Freq. [MHz]∂	L <b>ist</b> ⊬ Reading⊬ [dBµV/m]⊬	Factor [dB]∂	Level↓ [dBµV/m]↓	Limit⊬ [dBµV/m]√	Margin [dB]∂	્ Polarity્	e Detectore
1₽	3001.906₽	24.91₽	-0.11₽	24.80₽	54.00₽	29.20₽	Vertical₽	AV₽
2₽	3069.468₽	34.02₽	0.19₽	34.21₽	74.00₽	39.79₽	Vertical₽	PK₽
3₽	3987.437₽	22.78₽	2.98₽	25.76₽	54.00₽	28.24₽	Vertical₽	AV₽
4₽	4031.500₽	32.20₽	3.09₽	35.29₽	74.00₽	38.71₽	Vertical₽	PK₽
5₽	4921.562₽	30.40₽	7.32₽	37.72₽	54.00₽	16.28₽	Vertical₽	AV₽
	4004 E00 -	39.87₽	7.34₽	47.21₽	74.00₽	26.79₽	Vertical₽	PK₽
6₽	4924.500₽	00.01						
6₽ 7₽	7389.062¢	41.74₽	16.34₽	58.08₽	74.00₽	15.92₽	Vertical₽	PK₽

# Remark:

- 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(HT20)

#### **Test channel CH01** Suspected Data List Reading Freq. Factor Level Limit<sub>\*</sub> Margin NO. Polarity@ Detector [dBµV/m] [MHz] [dB] [dBµV/m] [dBµV/m] [dB] 10 2991.625 35.03₽ -0.07₽ 34.96₽ 74.00₽ 39.04₽ Horizontal<sub>€</sub> PK₽ 2₽ 3054.781 24.59₽ 0.12₽ 24.71₽ 54.00₽ 29.29₽ Horizontal₽ AV₽ 3855.2504 3₽ 33.19₽ 2.37₽ 35.56₽ 74.00₽ 38.44₽ Horizontal@ PK₽ 4₽ 4000.656 22.91₽ 3.02₽ 25.93₽ 54.00₽ 28.07₽ Horizontal₽ AV₽ 5₽ 4824.625 40.39₽ 7.08₽ 47.47₽ 74.00₽ 26.53₽ Horizontal₽ PK₽ 6₽ 4824.625 32.14₽ 7.08₽ 39.22₽ 54.00₽ 14.78₽ Horizontal₽ AV₽ 7240.718 41.84₽ 16.01₽ 57.85₽ 74.00₽ 16.15₽ PK₽ 7₽ Horizontal -8₽ 7240.718 30.49₽ 16.01₽ 46.50₽ 54.00₽ 7.50₽ Horizontal<sub>4</sub> AV₽ Suspected Data List Reading Freq. Factor Level-Limit<sub>\*</sub> Margin NO. Polarity-Detector [MHz] [dBµV/m] [dB] [dBµV/m] [dBµV/m] [dB] 34.23₽ 74.00₽ PK₽ 3037.156 0.04₽ 34.27₽ 39.73₽ Vertical₽ 10 3048.906 24.56₽ 0.10₽ 24.66 54.00₽ 29.34₽ Vertical₽ AV₽ 3₽ 3993.3124 37.27₽ 3.00₽ 40.27₽ 74.00₽ 33.73₽ Vertical₽ PK₽ 24.70₽ 3.00₽ 27.70₽ 54.00₽ 26.30₽ Vertical₽ 4₽ 3993.3124 AV₽ 5₽ 4817.281∉ 42.80₽ 7.07₽ 49.87₽ 74.00₽ 24.13₽ Vertical₽ PK₽ 4823.156 34.23₽ 7.08₽ 41.31₽ 54.00₽ 12.69₽ Vertical₽ AV₽ 6₽ 16.01₽ 47.10₽ 7₽ 7237.781 31.09₽ 54.00₽ 6.90₽ Vertical₽ AV₽ 8₽ 7243.656 41.69₽ 16.02₽ 57.71₽ 74.00₽ 16.29₽ Vertical₽ PK₽

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Susp	ected Data I	_ist∂								
NO.₽	Freq. [MHz]	Reading√ [dBµV/m]√	Factor [dB]∂	Level√ [dBµV/m]√	Limit⊬ [dBµV/m]⊬	Margin [dB]∂	 Polarity⊲	Detector.		
1₽	2993.093₽	34.47₽	-0.08₽	34.39₽	74.00₽	39.61₽	Horizontal₽	PK₽		
2₽	3164.937₽	23.94₽	0.66₽	24.60₽	54.00₽	29.40₽	Horizontal₽	AV₽		
3₽	3649.625₽	33.68₽	1.52₽	35.20₽	74.00₽	38.80₽	Horizontal₽	PK₽		
4₽	4000.656₽	23.03₽	3.02₽	26.05₽	54.00₽	27.95₽	Horizontal₽	AV₽		
5₽	4865.750₽	38.35₽	7.14₽	45.49₽	74.00₽	28.51₽	Horizontal₽	PK₽		
6₽	4874.562₽	29.71₽	7.15₽	36.86₽	54.00₽	17.14₽	Horizontal₽	AV₽		
7₽	7299.468₽	41.34₽	16.05₽	57.39₽	74.00₽	16.61₽	Horizontal₽	PK₽		
8₽	7303.875₽	30.02₽	16.06₽	46.08₽	54.00₽	7.92₽	Horizontal₽	AV₽		
Susp NO.	Freq.	L <b>ist</b> ⊬ Reading⊬ [dBµV/m]⊬	Factor	Level.⊍	Limit√ [dBµV/m]∂	Margin [dB]√	 Polarity.∂	ب Detector ∈		
1∉	2998.968	35.27₽	-0.11₽	35.16€	74.00€	38.84	Vertical₽	PK₽		
2₽	3022.468	24.54	-0.02₽	24.52₽	54.00₽	29.48	Verticale  Verticale	AV₽		
3€	3893.437₽	32.76	2.63₽	35.39€	74.00₽	38.61₽	Vertical∉ Vertical∉	PK₽		
4₽	3994.781∉	22.57₽	3.00₽	25.57₽	54.00₽	28.43₽	Vertical <sup>2</sup>	AV₽		
5€	4873.093₽	30.78₽	7.15₽	37.93€	54.00₽	16.07₽	Vertical-	AV₽		
6₽	4880.437₽	40.40₽	7.15₽	47.55₽	74.00₽	26.45₽	Vertical-	PK₽		
7₽	7308.281₽	32.99₽	16.08₽	49.07₽	54.00₽	4.93₽	Vertical-  Vertical-	AV₽		

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Susp	ected Data	List⊬						
NO.₽	Freq. [MHz]	Reading∉ [dBµV/m]∉	Factor [dB]∂	Level⊬ [dBµV/m]₄	Limit⊬ [dBµV/m]₽	Margin [dB]∂	 Polarity∂	Detector∘
1₽	2985.750₽	24.48₽	-0.04₽	24.44₽	54.00₽	29.56₽	Horizontal₽	AV₽
2₽	2994.562₽	34.52₽	-0.09₽	34.43₽	74.00₽	39.57₽	Horizontal₽	PK₽
3₽	3985.968₽	32.28₽	2.97₽	35.25₽	74.00₽	38.75₽	Horizontal₽	PK₽
4₽	4000.6564	22.52₽	3.02₽	25.54₽	54.00₽	28.46₽	Horizontal₽	AV₽
5₽	4924.500₽	28.96₽	7.34₽	36.30₽	54.00₽	17.70₽	Horizontal₽	AV₽
6₽	4927.437₽	38.48₽	7.36₽	45.84₽	74.00₽	28.16₽	Horizontal₽	PK₽
7₽	7384.656₽	36.99₽	16.32₽	53.31₽	74.00₽	20.69₽	Horizontal₽	PK₽
8₽	7386.125₽	28.16₽	16.33₽	44.49₽	54.00₽	9.51₽	Horizontal₽	AV₽
	ected Data I	L <b>ist</b> ⊬ Reading⊬	Factor	Level⊬	Limit⊬	Margin	له	ų
NO.₽	[MHz]∂	[dBµV/m]₽	[dB]∂	[dBµV/m]∂	[dBµV/m]∂	[dB]∂	Polarity∂	Detector∂
1₽	3004.843₽	34.38₽	-0.10₽	34.28₽	74.00₽	39.72₽	Vertical₽	PK₽
2₽	3022.468₽	24.52₽	-0.02₽	24.50₽	54.00₽	29.50₽	Vertical₽	AV₽
3₽	3821.468₽	33.17₽	2.14₽	35.31₽	74.00₽	38.69₽	Vertical₽	PK₽
4₽	4000.656₽	22.55₽	3.02₽	25.57₽	54.00₽	28.43₽	Vertical₽	AV₽
5₽	4918.625₽	39.53₽	7.30₽	46.83₽	74.00₽	27.17₽	Vertical₽	PK₽
6₽	4923.031₽	30.32₽	7.33₽	37.65₽	54.00₽	16.35₽	Vertical₽	AV₽
7₽	7378.781₽	40.70₽	16.30₽	57.00₽	74.00₽	17.00₽	Vertical₽	PK₽
8₽	7381.718₽	30.98₽	16.31₽	47.29₽	54.00₽	6.71₽	Vertical₽	AV₽

### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- $2. \quad \text{The peak level is lower than average limit} (54 \ \text{dBuV/m}), \text{ this data is the too weak instrument of signal is unable to test.}$
- 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(HT40)

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Susp	ected Data I	List∂						
NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]₽	Level⊬ [dBµV/m]₽	Limit√ [dBµV/m]∞	Margin [dB]⊲	⊌ Polarity⊎	ب Detector
1₽	3000.437₽	27.43₽	-0.12₽	27.31₽	54.00₽	26.69₽	Horizontal₽	AV₽
2₽	3100.312₽	34.48₽	0.32₽	34.80₽	74.00₽	39.20₽	Horizontal₽	PK₽
3₽	3949.250₽	32.81₽	2.84₽	35.65₽	74.00₽	38.35₽	Horizontal₽	PK₽
4₽	4000.656₽	22.82₽	3.02₽	25.84₽	54.00₽	28.16₽	Horizontal₽	AV₽
5₽	4843.718₽	31.48₽	7.11₽	38.59₽	54.00₽	15.41₽	Horizontal₽	AV₽
6₽	4845.187₽	39.05₽	7.11∉	46.16₽	74.00₽	27.84₽	Horizontal₽	PK₽
7₽	7270.093₽	38.03₽	16.03₽	54.06₽	74.00₽	19.94₽	Horizontal₽	PK₽
8₽	7270.093₽	28.20₽	16.03₽	44.23₽	54.00₽	9.77₽	Horizontal₽	AV₽
Suspe NO.	ected Data I Freq. [MHz]∂	L <b>ist</b> ⊬ Reading⊬ [dBµV/m]⊮	Factor [dB]∉	Level⊬ [dBµV/m]√	Limit√ [dBµV/m]√	Margin [dB]∂	ب Polarity	ب Detector
1₽	3000.437₽	35.49₽	-0.12₽	35.37₽	74.00₽	38.63₽	Vertical₽	PK₽
2₽	3003.375₽	25.01₽	-0.11₽	24.90₽	54.00₽	29.10₽	Vertical₽	AV₽
3₽	3990.375₽	22.78₽	2.99₽	25.77₽	54.00₽	28.23₽	Vertical₽	AV∂
4₽	3990.375₽	34.51₽	2.99₽	37.50₽	74.00₽	36.50₽	Vertical₽	PK₽
5₽	4840.781₽	39.70₽	7.10₽	46.80₽	74.00₽	27.20₽	Vertical₽	PK₽
6₽	4840.781₽	29.97₽	7.10₽	37.07₽	54.00₽	16.93₽	Vertical₽	AV₽
7₽	7270.093₽	39.11₽	16.03₽	55.14₽	74.00₽	18.86₽	Vertical₽	PK₽
		30.04₽	16.04₽	1	54.00₽	7.92₽	Vertical₽	AV₽

annel					CH06			
Suspected Data List								
NO.₽	Freq. [MHz]∂	Reading√ [dBµV/m]√	Factor [dB]₽	Level⊬ [dBµV/m]₽	Limit√ [dBµV/m]∂	Margin [dB]∂	ਦ Polarity∂	Detector∈
1₽	3125.281₽	34.49₽	0.45₽	34.94₽	74.00₽	39.06₽	Horizontal₽	PK₽
2₽	3166.406₽	24.91₽	0.67₽	25.58₽	54.00₽	28.42₽	Horizontal₽	AV₽
3₽	3999.187₽	32.68₽	3.02₽	35.70₽	74.00₽	38.30₽	Horizontal₽	PK₽
4₽	4000.656₽	23.32₽	3.02₽	26.34₽	54.00₽	27.66₽	Horizontal₽	AV₽
5₽	4874.562₽	26.88₽	7.15₽	34.03₽	54.00₽	19.97₽	Horizontal₽	AV₽
6₽	4895.125₽	37.76₽	7.17₽	44.93₽	74.00₽	29.07₽	Horizontal₽	PK₽
7₽	7303.875₽	28.15₽	16.06₽	44.21∂	54.00₽	9.79₽	Horizontal₽	AV∂
8₽	7320.031₽	37.55₽	16.11₽	53.66₽	74.00₽	20.34₽	Horizontal₽	PK₽
Susp NO.	ected Data l Freq. [MHz]₽	List⊬ Reading⊬ [dBµV/m]⊬	Factor [dB]∂	Level⊬ [dBµV/m]⊮	Limit√ [dBµV/m]₽	Margin [dB]⊬	ب Polarity <i>⊷</i>	Detector∉
1₽	2988.687₽	25.95₽	-0.05₽	25.90₽	54.00₽	28.10₽	Vertical₽	AV₽
2₽	3041.562₽	35.04₽	0.06₽	35.10₽	74.00₽	38.90₽	Vertical₽	PK₽
3₽	3983.031₽	24.70₽	2.96₽	27.66₽	54.00₽	26.34₽	Vertical₽	AV₽
4₽	3983.031₽	37.78₽	2.96₽	40.74₽	74.00₽	33.26₽	Vertical₽	PK₽
5₽	4873.093₽	28.11₽	7.15₽	35.26₽	54.00₽	18.74₽	Vertical₽	AV₽
	4874.562₽	37.11₽	7.15₽	44.26₽	74.00₽	29.74₽	Vertical₽	PK₽
6₽			40.00	46.43₽	54.00₽	7.57₽	Vertical∉	AV₽
6₽ 7₽	7308.281₽	30.35₽	16.08₽	40.43₽	34.00€	7.57+	Vertical*	AV

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#### **Test channel CH11** Suspected Data List Reading Freq. Factor Level⊬ Limit<sub>\*</sub> Margin NO. Polarity<sub>4</sub> Detector [MHz] [dBµV/m] [dB] [dBµV/m] [dBµV/m] [dB] 3062.125 35.68₽ 0.15₽ 35.83₽ 74.00₽ 38.17₽ PK₽ 1₽ Horizontal<sub>€</sub> 4027.093 33.85₽ 3.08₽ 36.93₽ 74.00₽ 37.07₽ Horizontal₽ PK₽ 4877.5004 34.08₽ 7.15₽ 41.23₽ 74.00₽ 32.77₽ Horizontal₽ PK₽ 7353.812∉ 36.40₽ 16.22₽ 52.62₽ 74.00₽ 21.38₽ Horizontal₽ PK₽ Suspected Data List Reading Margin Freq. Factor Level **Limit**⊬ NO. Polarity<sub>4</sub> Detector [dBµV/m] [dB] [MHz] [dB]∉ [dBµV/m] [dBµV/m] 3010.718∉ 1₽ 34.40₽ -0.07₽ 34.33₽ 74.00₽ 39.67₽ Vertical₽ PK₽ 3032.750∉ 25.64₽ 0.02₽ 25.66₽ 54.00∉ 28.34₽ Vertical₽ AV₽ 4901.000 40.37₽ 7.19₽ 47.56₽ 74.00₽ 26.44₽ Vertical₽ PK₽ 4₽ 4903.937 31.20₽ 7.21₽ 38.41₽ 54.00₽ 15.59₽ Vertical₽ AV₽ 7343.5314 28.36₽ 16.19₽ 44.55₽ 54.00₽ 9.45₽ Vertical₽ 54 AV₽ 6₽ 7343.5314 38.86₽ 16.19₽ 55.05₽ 74.00₽ 18.95₽ Vertical₽ PK₽ 7₽ 8693.3124 21.83₽ 19.18₽ 41.01₽ 54.00₽ 12.99₽ Vertical₽ AV₽ 8₽ 9276.406∉ 31.77₽ 18.87₽ 50.64₽ 74.00₽ 23.36₽ Vertical₽ PK₽

#### Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 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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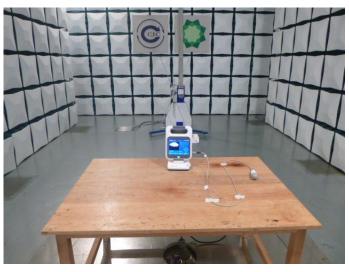
# 6. TEST SETUP PHOTOS

# **Conducted Emissions**



Radiated Emissions





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# 7. EXTERNAL AND INTERNAL PHOTOS

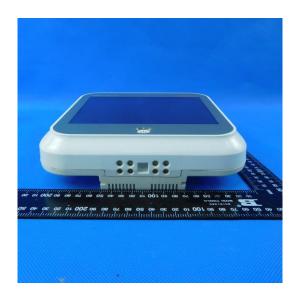
**External Photo** 

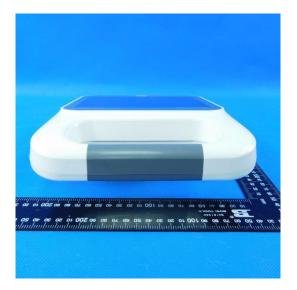


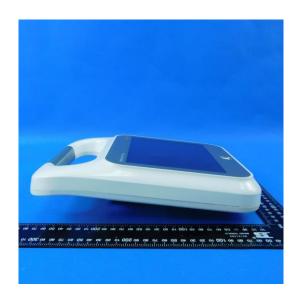




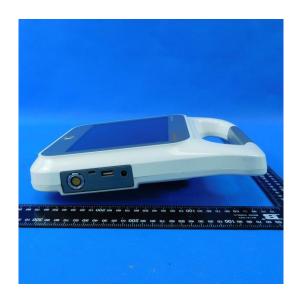
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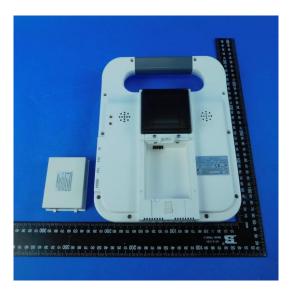






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Adapter 1(JD-05)



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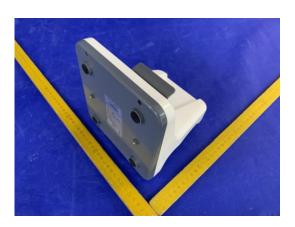


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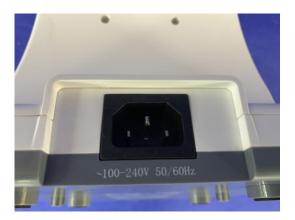


Adapter 2(JD-06)





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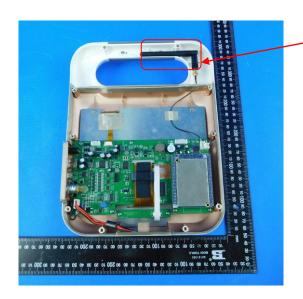




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# **Internal Photo**





RF Antenna



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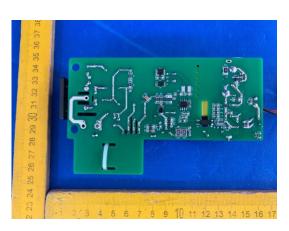
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Adapter 1(JD-05)



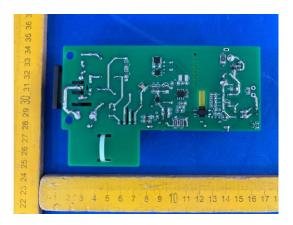




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Adapter 2(JD-06)







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