

TEST REPORT

Product : Digital Night Vision
Trade mark : Sytong
Model/Type reference : HT-66
Serial Number : N/A
Report Number : EED32N80026501
FCC ID : 2AYFSHT66202101
Date of Issue : Feb. 23, 2021
Test Standards : 47 CFR Part 15Subpart C
Test result : PASS

Prepared for:

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Feb. 23, 2021

Check No:8310180121

2 Version

Version No.	Date	Description
00	Feb. 23, 2021	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

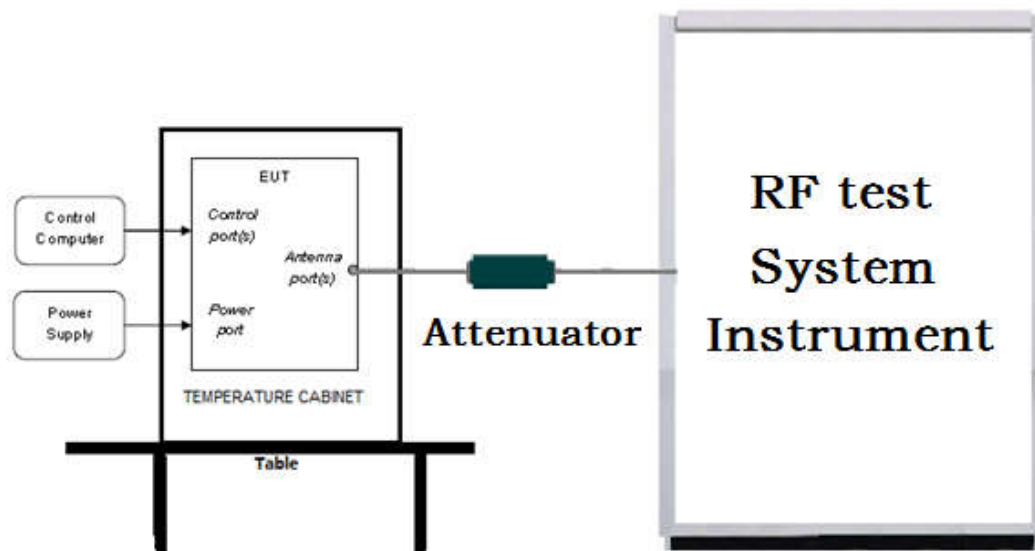
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5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

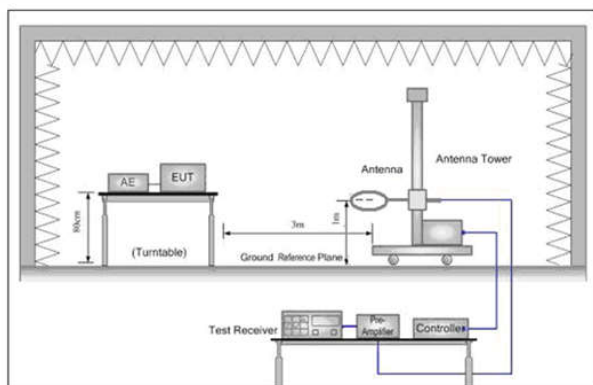


Figure 1. Below 30MHz

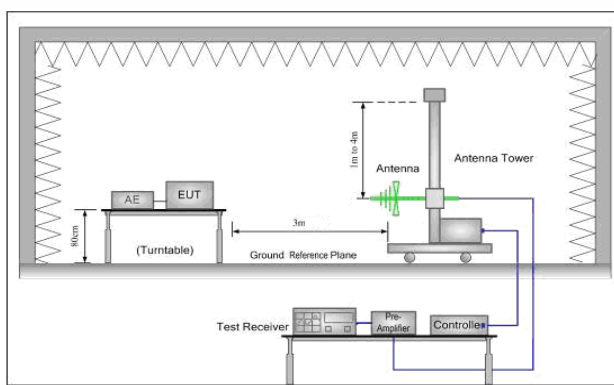


Figure 2. 30MHz to 1GHz

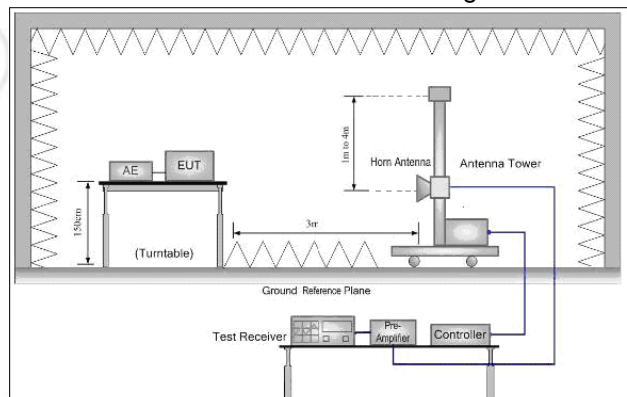
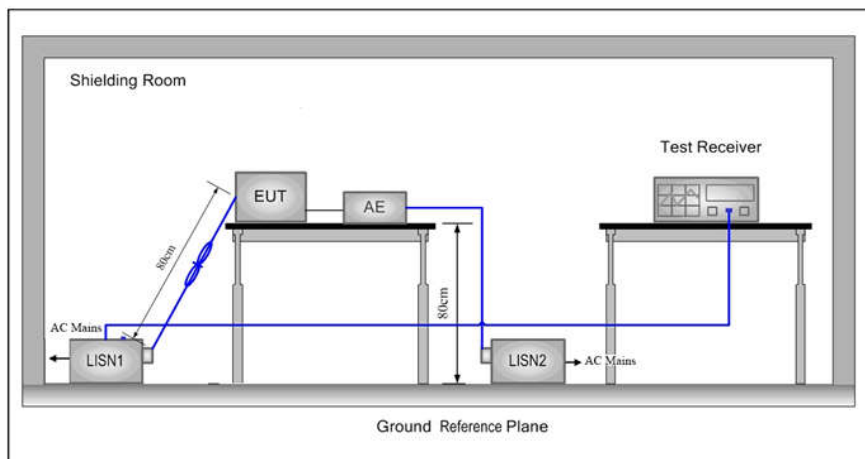


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	23.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11b/g/n(HT20)	2412MHz ~2462 MHz	Channel 1	Channel 6	Channel11
		2412MHz	2437MHz	2462MHz
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.			

Test mode:

Pre-scan under all rate at lowest channel 1

Through Pre-scan, 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20).

6 General Information

6.1 Client Information

Applicant:	Shenzhen Shi Yutong Technology Co. LTD
Address of Applicant:	Lianjian Science and Technology Industrial Park, Dalang Street, Longhua District, Shenzhen city , China
Manufacturer:	Shenzhen Shi Yutong Technology Co. LTD
Address of Manufacturer:	Lianjian Science and Technology Industrial Park, Dalang Street, Longhua District, Shenzhen city , China
Factory:	Shenzhen Shi Hui Tong Technology Co. LTD
Address of Factory:	4th floor, No.4 Workshop, Lianjian Science and Technology Industrial Park, Huarong Road, Tongsheng Community, Dalang Street, Longhua District, Shenzhen city, Guangdong Province, China

6.2 General Description of EUT

Product Name:	Digital Night Vision
Model No.(EUT):	HT-66
Trade mark:	Sytong
EUT Supports Radios application:	IEEE 802.11 b/g/n(HT20): 2412MHz to 2462MHz
Power Supply:	DC 5V
Sample Received Date:	Jan. 15, 2021
Sample tested Date:	Jan. 15, 2021 to Feb. 18, 2021

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz						
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels						
Channel Separation:	5MHz						
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM,QPSK,BPSK)						
Test Power Grade:	Reference Table						
Test Software of EUT:	SecureCRT						
Antenna Type and Gain:	Type:FPC Antenna Gain:3 dBi						
Power Supply:	Adapter:		Model:HNT-M520RZ Input:100-240V~50/60Hz0.3A Output:5.0V --- 2.0A				
Test voltage:	DC 5V						
Operation Frequency each of channel(802.11b/g/n HT20)							
Chann el	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

Associated equipment name		Manufacture	model	S/N serial number	Supplied by	Certification
AE	Notebook	DELL	DELL 3490	D245DX2	DELL	CE&FCC

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

7 Equipment List

RF test system					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	R&S	FSP40	100416	04-22-2020	04-21-2021
Signal Generator	Keysight	N5182B	MY53051549	02-17-2020	12-27-2021
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	06-29-2020	06-28-2021
High-pass filter	Sinoscite	FL3CX03WG18N M12-0398-002	---	---	---
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	---	---
DC Power	Keysight	E3642A	MY56376072	02-17-2020	12-27-2021
PC-1	Lenovo	R4960d	---	---	---
BT&WI-FI Automatic control	R&S	OSP120	101374	02-17-2020	12-27-2021
RF control unit	JS Tonscend	JS0806-2	158060006	02-17-2020	02-07-2022
BT&WI-FI Automatic test software	JS Tonscend	JS1120-3	---	---	---

Conducted disturbance Test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Receiver	R&S	ESCI	100435	04-28-2020	04-27-2021
Temperature/ Humidity Indicator	Defu	TH128	/	---	---
LISN	R&S	ENV216	100098	03-05-2020	03-04-2021
Barometer	changchun	DYM3	1188	---	---

3M Semi/full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05-24-2019	05-23-2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	05-16-2020	05-15-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-24-2021
Receiver	R&S	ESCI7	100938-003	10-16-2020	10-15-2021
Multi device Controller	maturo	NCD/070/107 11112	---	---	---
Temperature/ Humidity Indicator	Shanghai qixiang	HM10	1804298	06-29-2020	06-28-2021
Cable line	Fulai(7M)	SF106	5219/6A	---	---
Cable line	Fulai(6M)	SF106	5220/6A	---	---
Cable line	Fulai(3M)	SF106	5216/6A	---	---
Cable line	Fulai(3M)	SF106	5217/6A	---	---

3M full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	---	---
Receiver	Keysight	N9038A	MY57290136	03-05-2020	03-04-2021
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-05-2020	03-04-2021
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-05-2020	03-04-2021
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-24-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-24-2021
Horn Antenna	ETS-LINDGREN	3117	00057407	07-10-2018	07-09-2021
Preamplifier	EMCI	EMC184055SE	980597	05-20-2020	05-19-2021
Preamplifier	EMCI	EMC001330	980563	04-22-2020	04-21-2021
Preamplifier	JS Tonscend	980380	EMC051845 SE	01-17-2020	12-30-2021
Temperature/Humidity Indicator	biaozhi	GM1360	EE1186631	04-27-2020	04-26-2021
Fully Anechoic Chamber	TDK	FAC-3	---	01-17-2018	01-08-2024
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-09-2021
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

Test Results List:

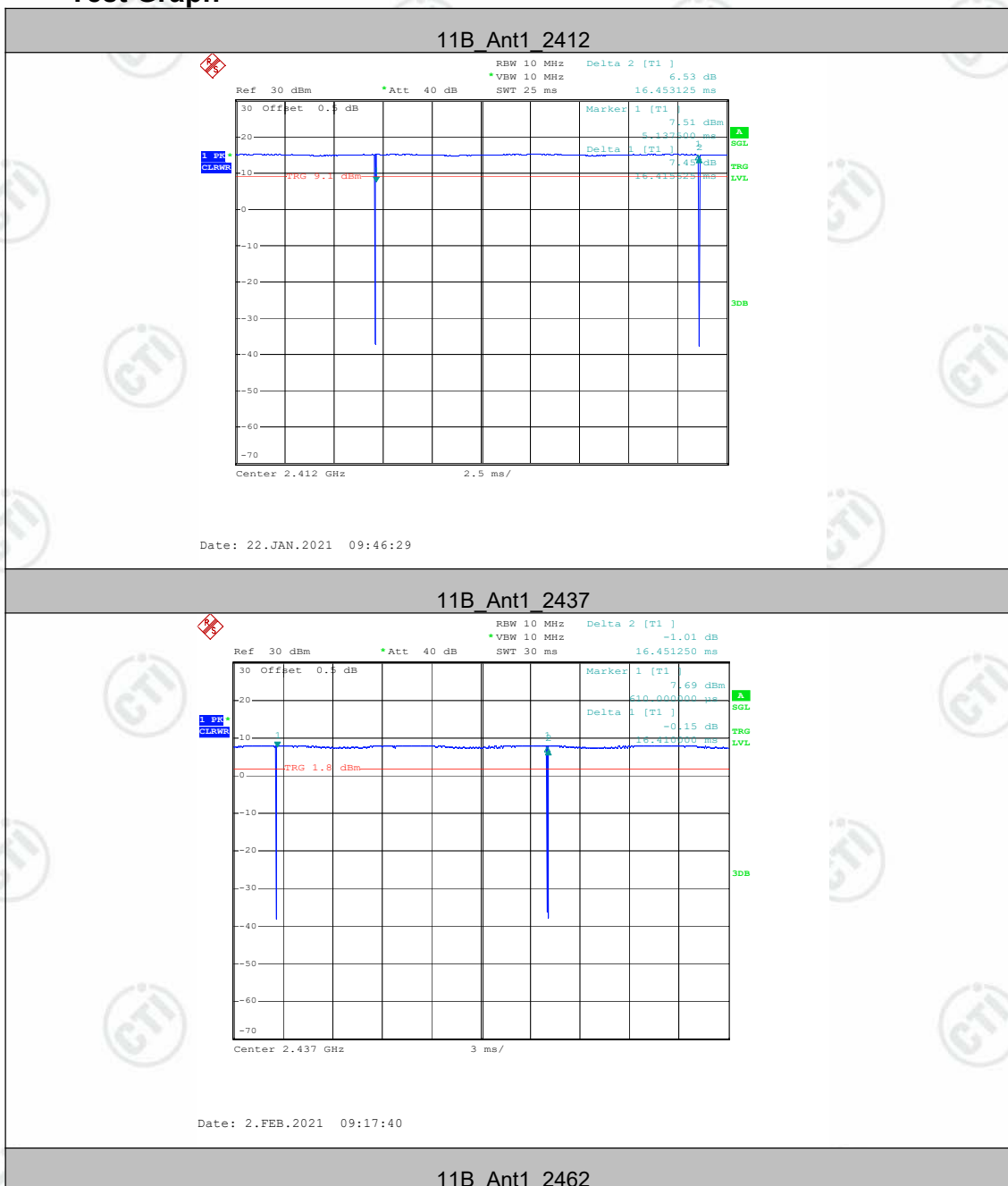
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10	Power Spectral Density	PASS	Appendix E)
Part15C Section 15.203/15.247 (c)	ANSI C63.10	Antenna Requirement	PASS	Appendix F)
Part15C Section 15.207	ANSI C63.10	AC Power Line Conducted Emission	PASS	Appendix G)
Part15C Section 15.205/15.209	ANSI C63.10	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix H)
Part15C Section 15.205/15.209	ANSI C63.10	Radiated Spurious Emissions	PASS	Appendix I)

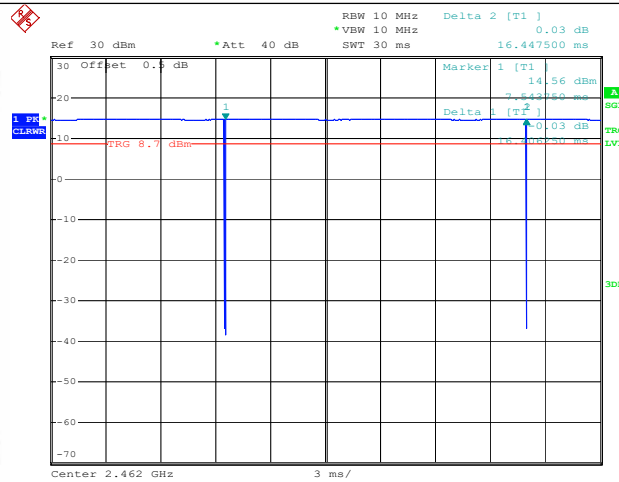
EUT DUTY CYCLE

Result Table

Test Mode	Antenna	Channel	Duty Cycle [%]	Limit	Verdict
11B	Ant1	2412	99.82	---	PASS
	Ant1	2437	99.76	---	PASS
	Ant1	2462	99.76	---	PASS
11G	Ant1	2412	98.56	---	PASS
	Ant1	2437	98.56	---	PASS
	Ant1	2462	98.56	---	PASS
11N20SISO	Ant1	2412	98.44	---	PASS
	Ant1	2437	98.44	---	PASS
	Ant1	2462	98.06	---	PASS

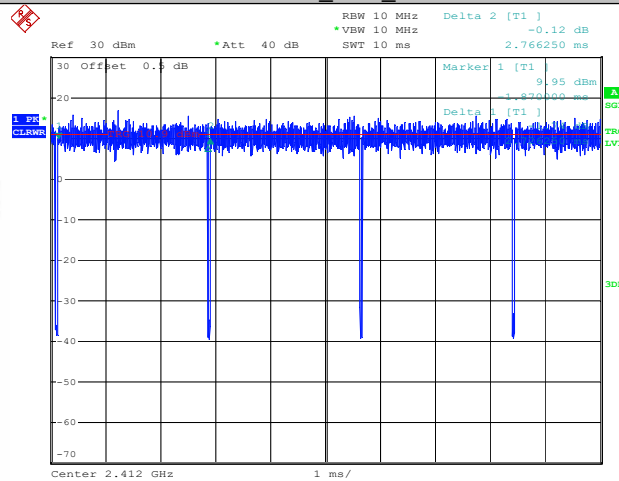
Test Graph





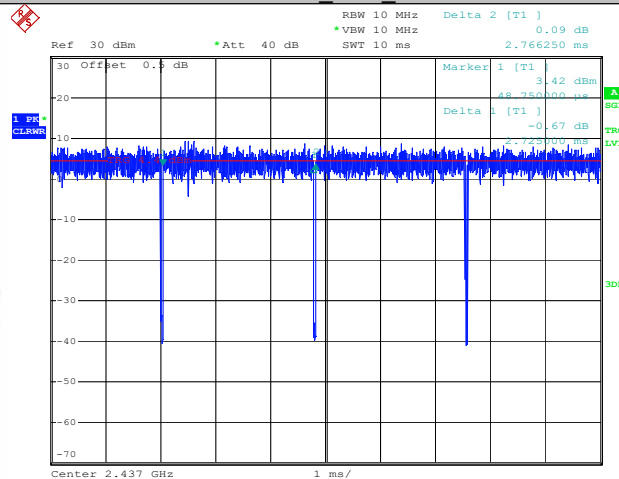
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11G_Ant1_2412

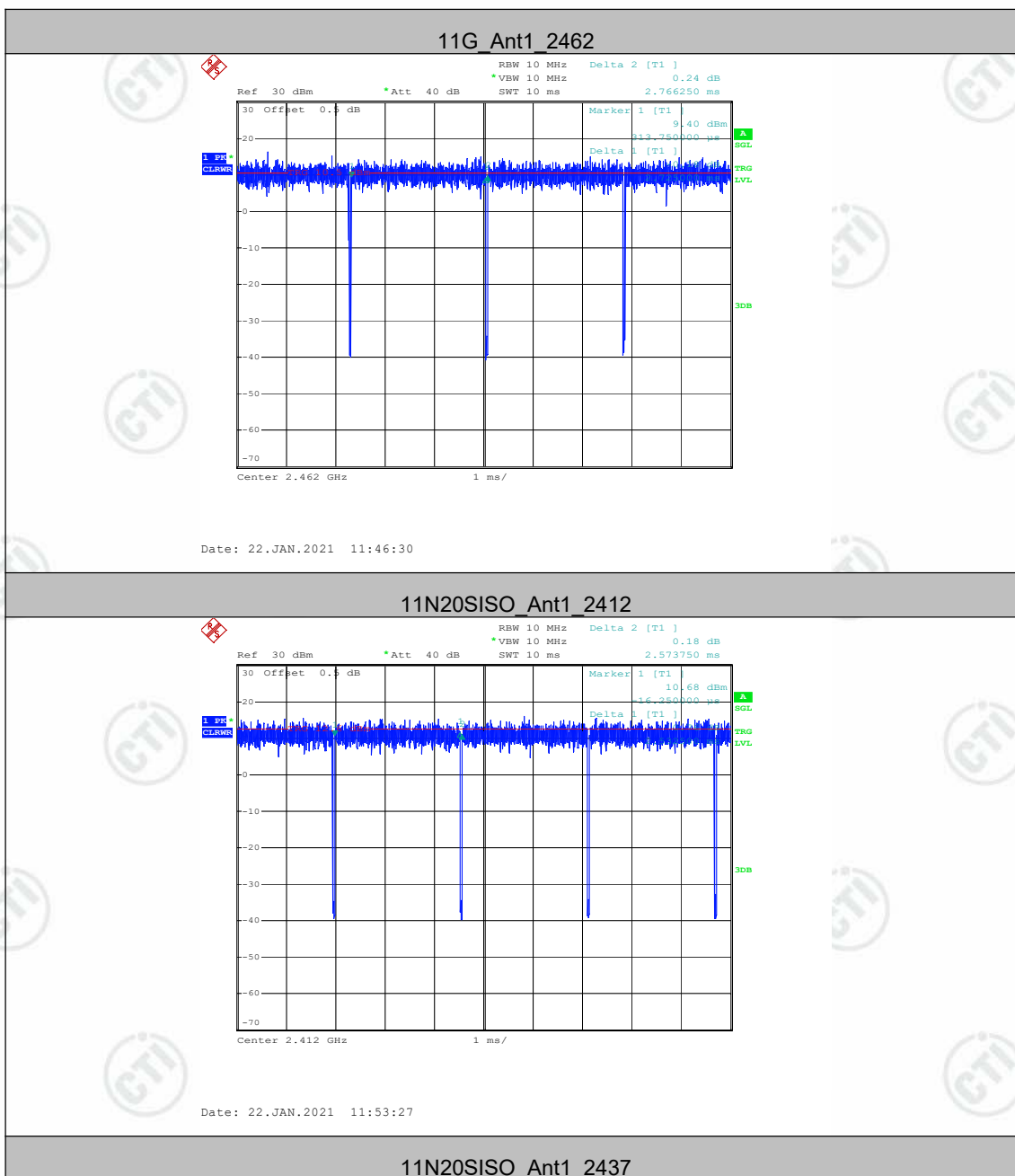


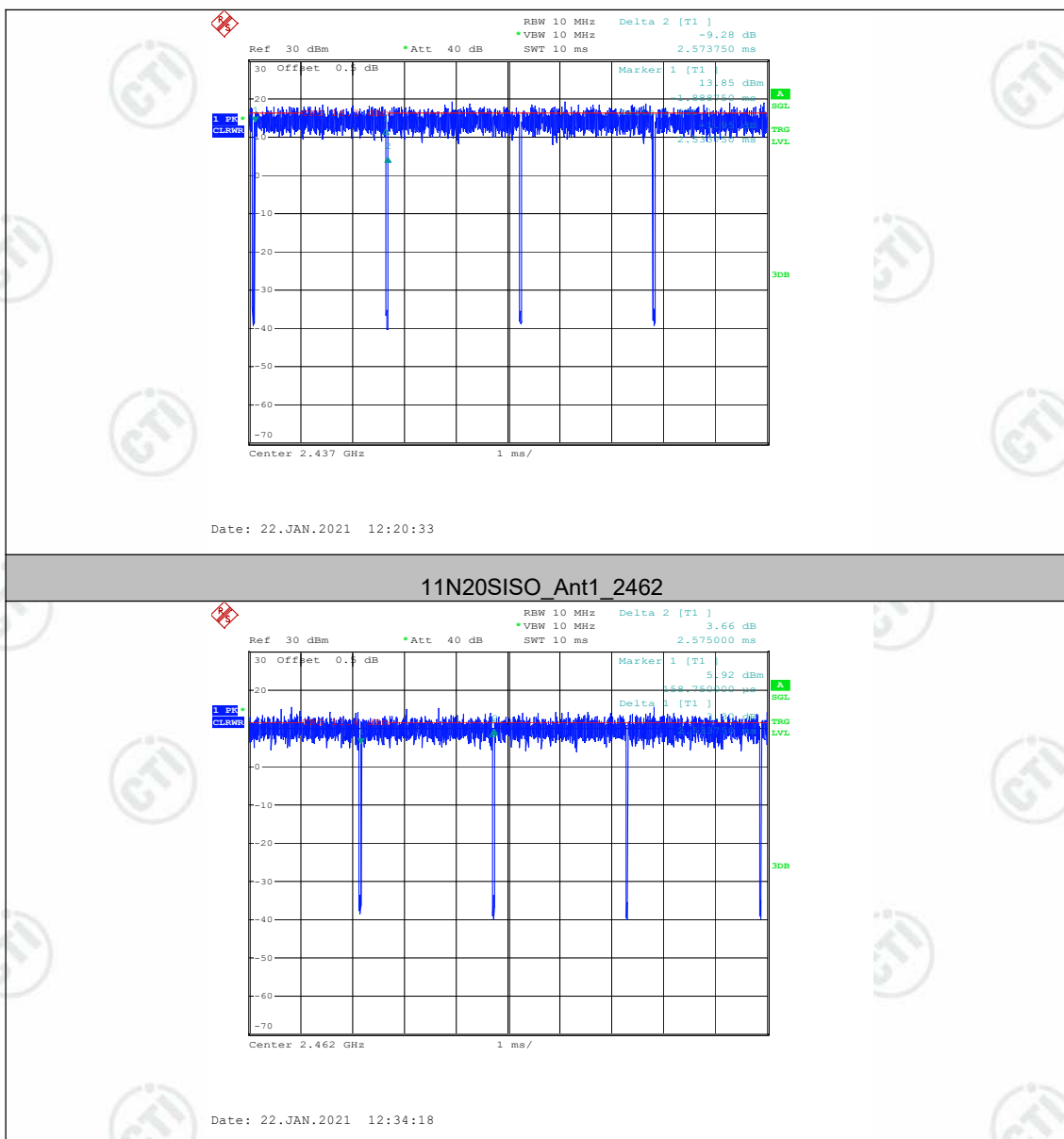
Date: 22.JAN.2021 10:44:29

11G_Ant1_2437



Date: 1.FEB.2021 13:37:00





Appendix A): Conducted Peak Output Power

Test Limit

According to §15.247(b)(3),

Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz: 1 Watt(30 dBm), base on the use of antennas with directional gain not exceed 6 dBi. If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] ☐ Point-to-point operation :
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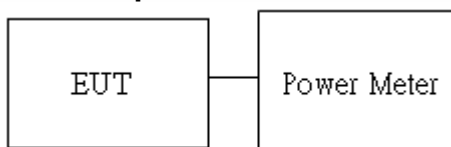
Average output power : For reporting purposes only.

Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

Test Setup



Test Result

Mode	Channel	Conducted Peak Output Power [dBm]	Verdict
11B	LCH	5.98	PASS
11B	MCH	6.30	PASS
11B	HCH	6.25	PASS
11G	LCH	6.11	PASS
11G	MCH	8.22	PASS
11G	HCH	8.63	PASS
11N20SISO	LCH	6.83	PASS
11N20SISO	MCH	7.37	PASS
11N20SISO	HCH	7.20	PASS

Appendix B): 6dB Occupied Bandwidth

Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
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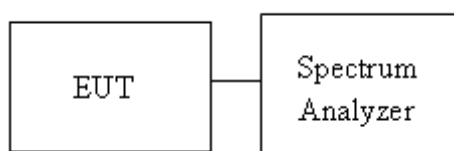
Occupied Bandwidth(99%) : For reporting purposes only.

Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW =100KHz , VBW = 300KHz and Detector = Peak, to measurement 6dB Bandwidth
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

Test Setup

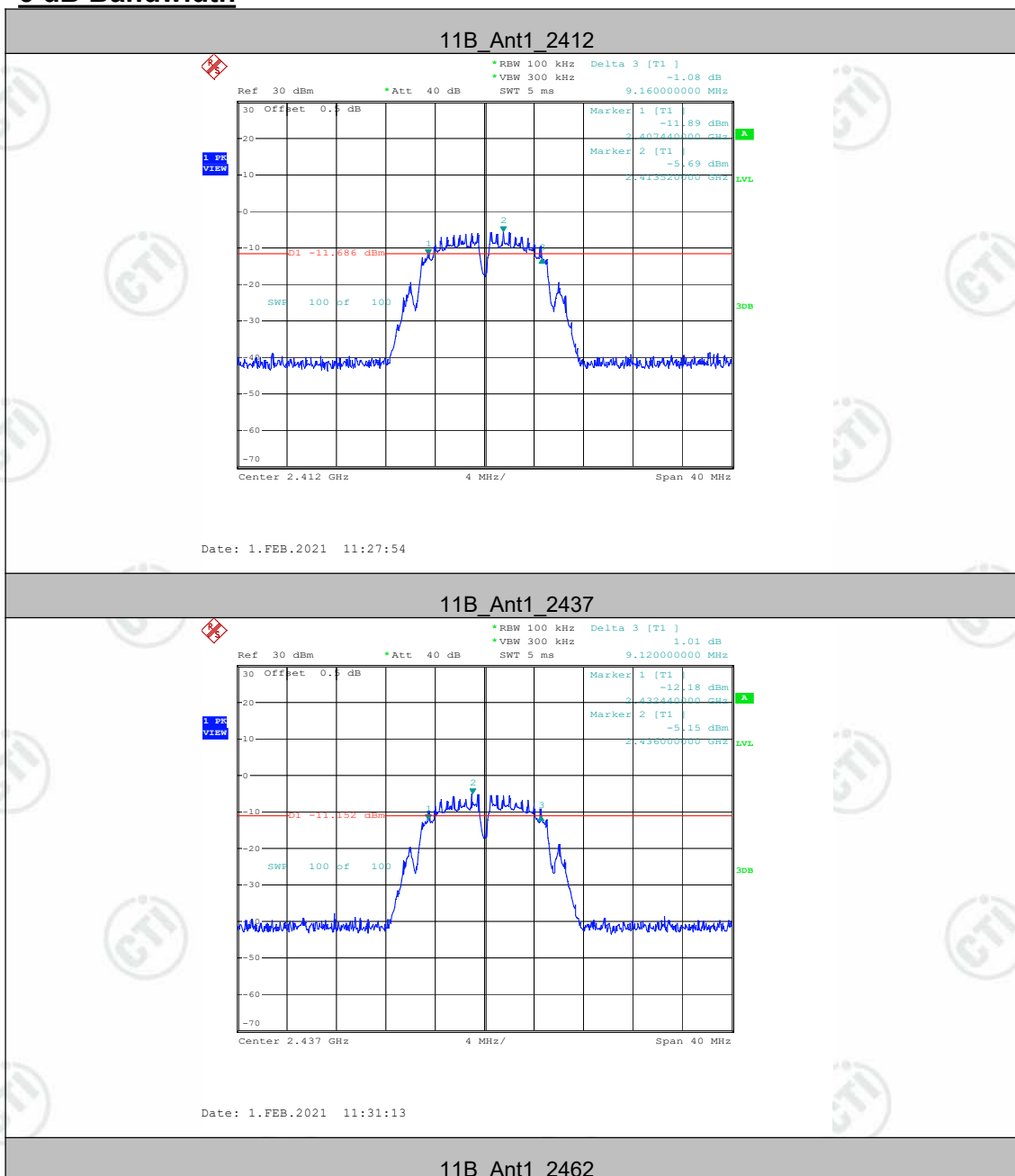


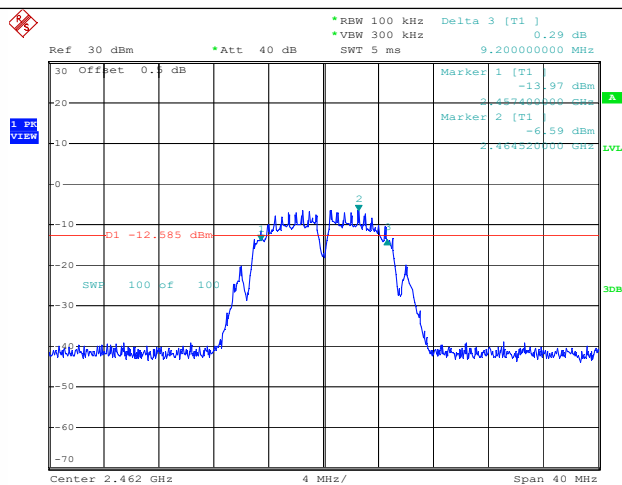
Test Result

Mode	Channel	6dB Bandwidth [MHz]	Verdict
11B	LCH	9.160	PASS
11B	MCH	9.120	PASS
11B	HCH	9.200	PASS
11G	LCH	16.440	PASS
11G	MCH	16.480	PASS
11G	HCH	16.480	PASS
11N20SISO	LCH	17.680	PASS
11N20SISO	MCH	17.680	PASS
11N20SISO	HCH	17.680	PASS

Test Graph

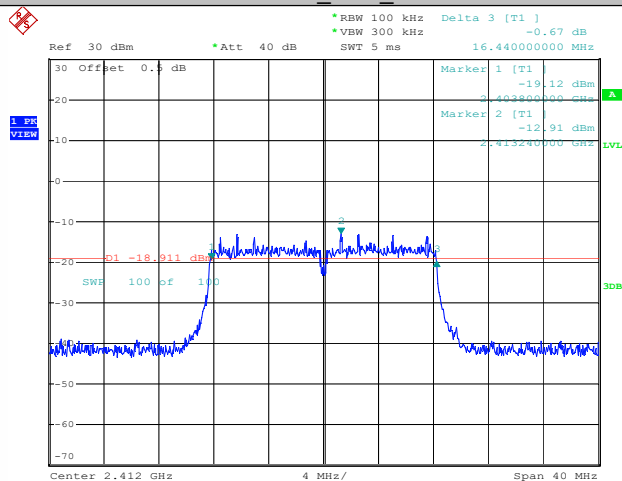
6 dB Bandwidth





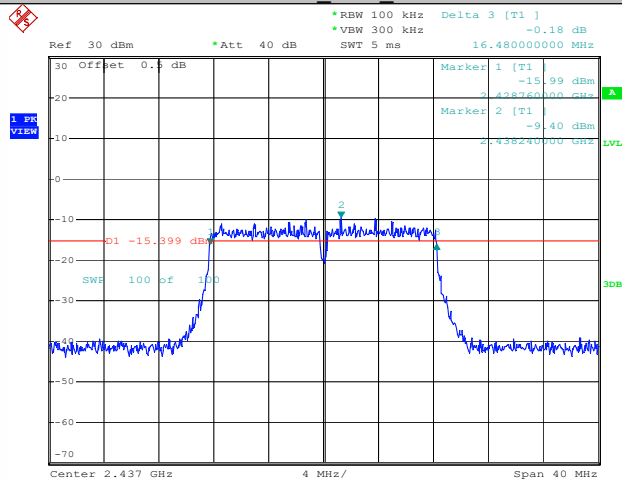
Date: 1.FEB.2021 11:33:21

11G_Ant1_2412

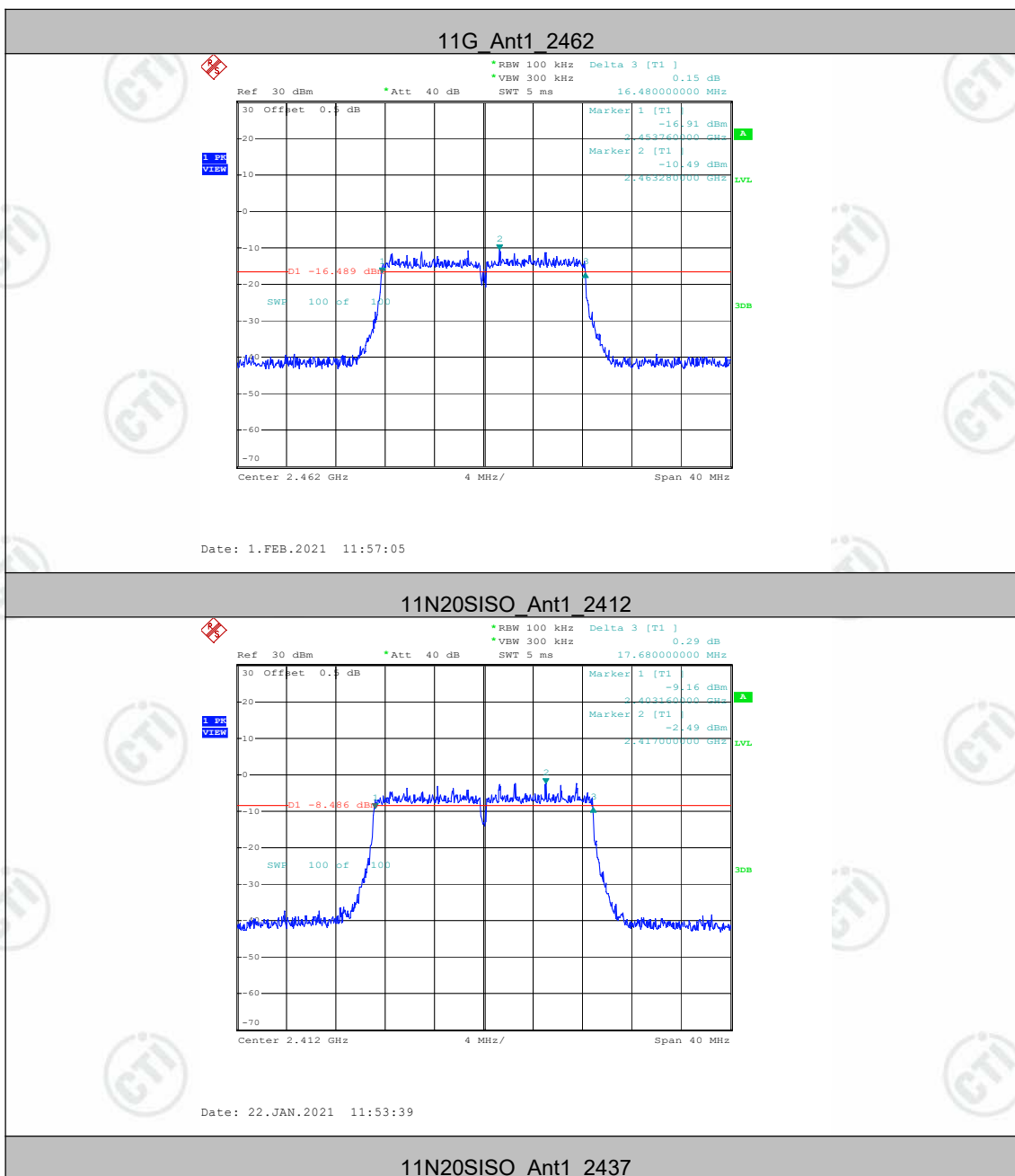


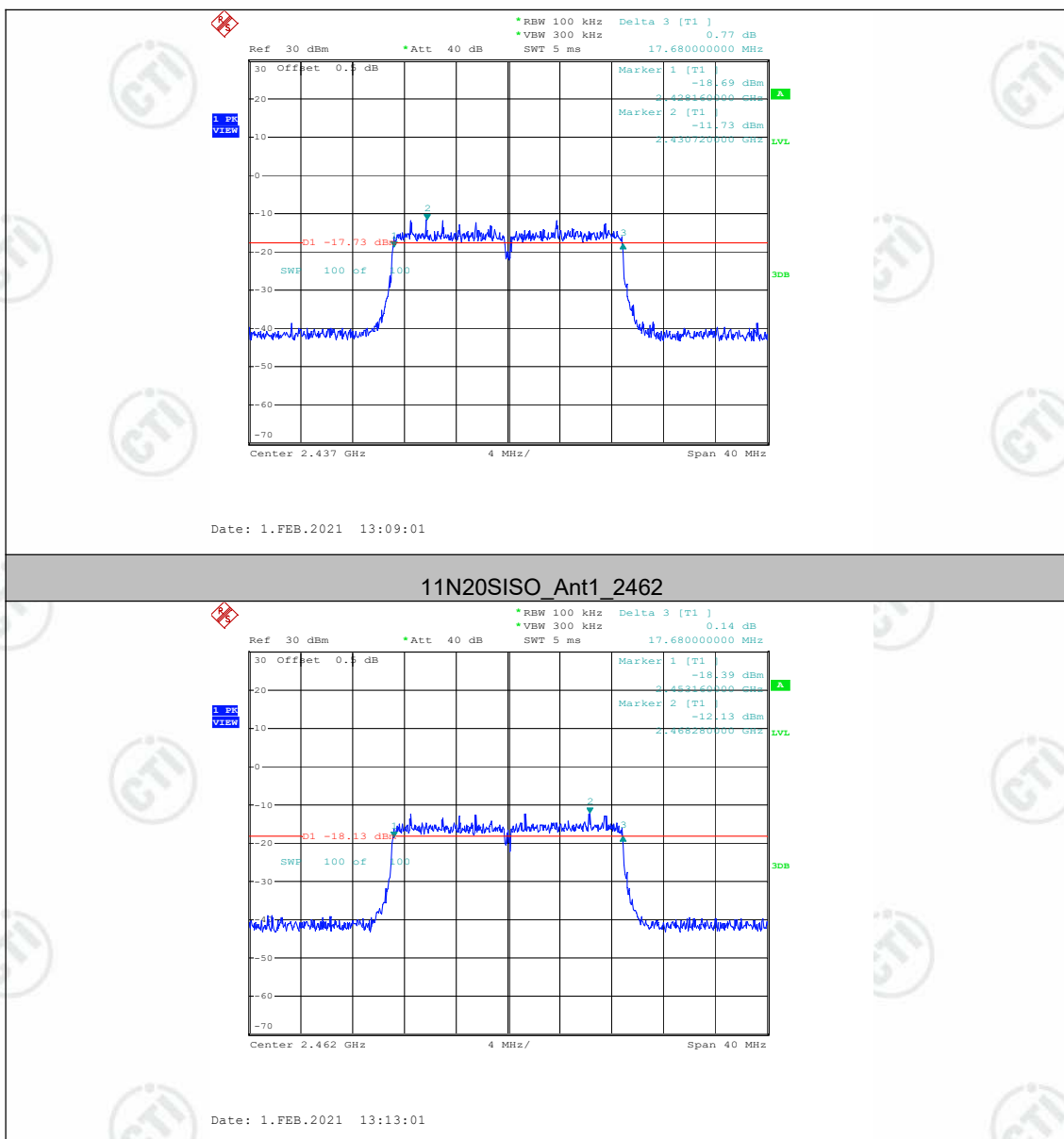
Date: 1.FEB.2021 11:40:11

11G_Ant1_2437



Date: 1.FEB.2021 13:37:11





Appendix C): Band-edge for RF Conducted Emissions

Test Limit

According to §15.247(d),

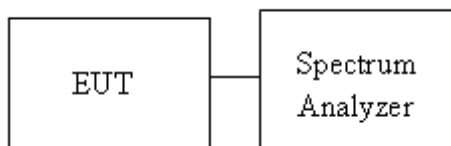
In any 100 kHz bandwidth outside the authorized frequency band,
Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Test Procedure

Test method Refer as KDB 558074 D01.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

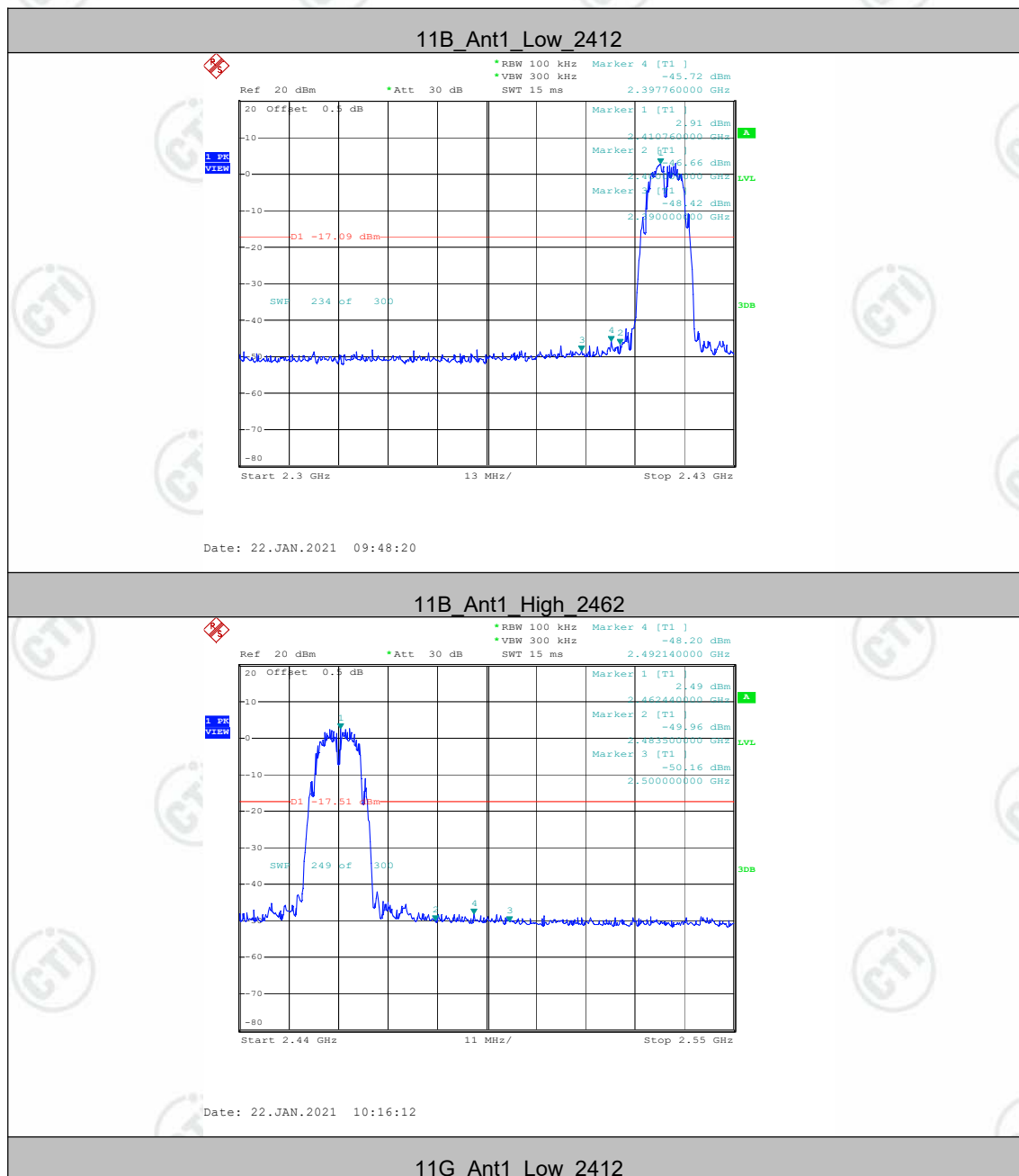
Test Setup

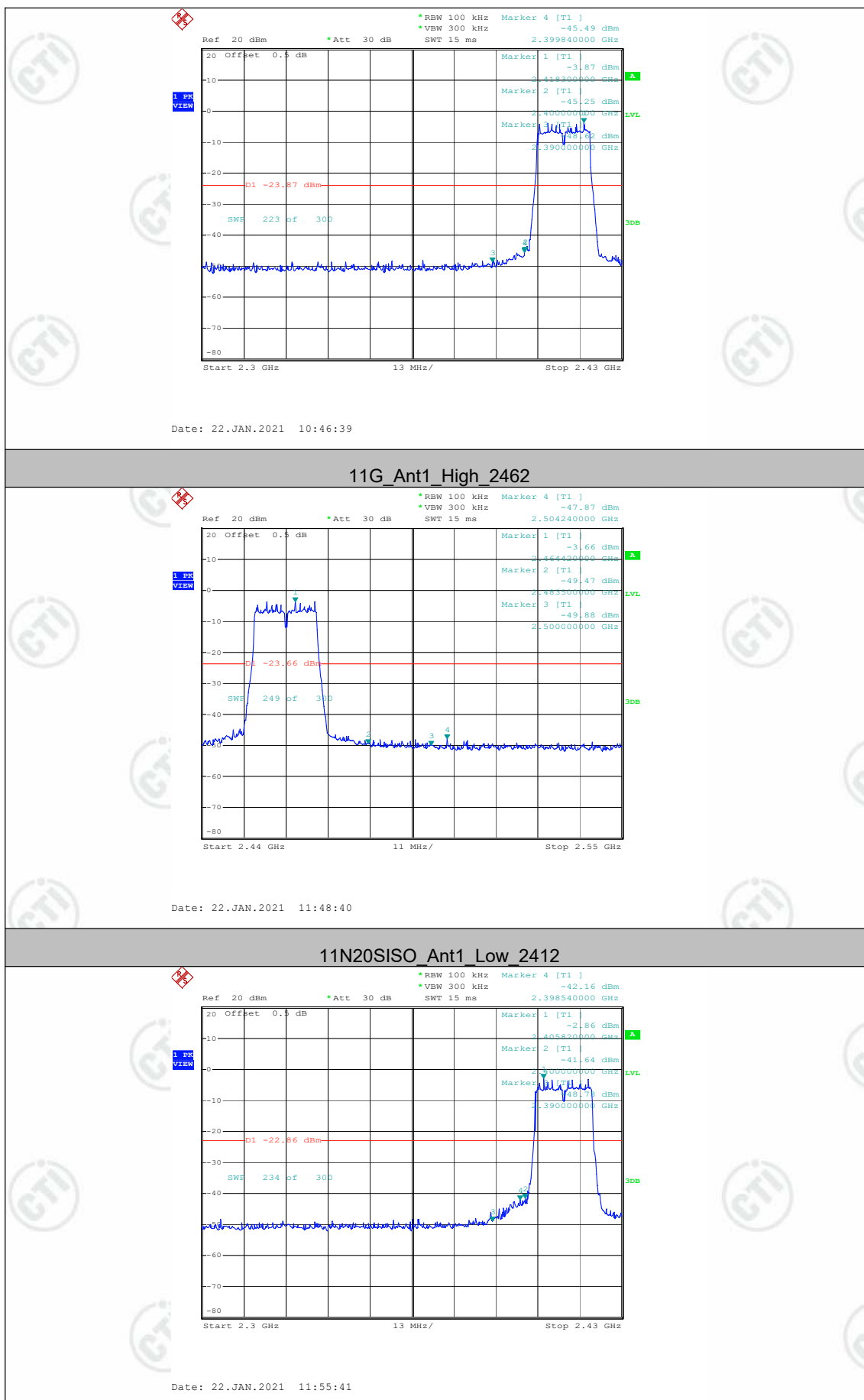


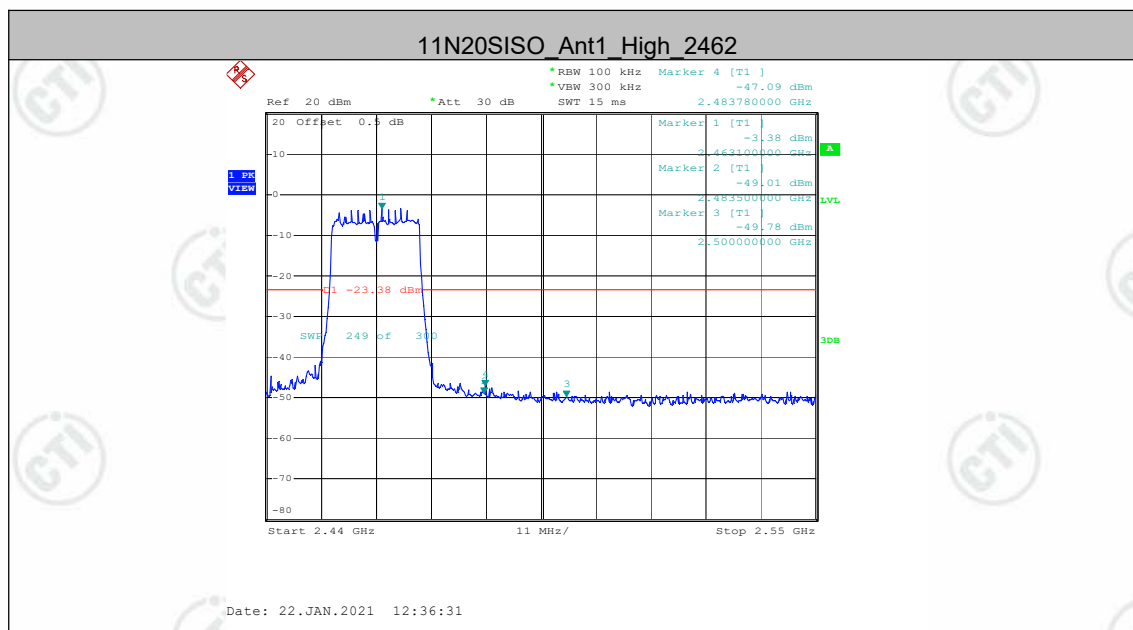
Result Table

Test Mode	Antenna	Ch Name	Channel	Re fLevel[dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	2.91	-45.72	<=-17.09	PASS
		High	2462	2.49	-48.2	<=-17.51	PASS
11G	Ant1	Low	2412	-3.87	-45.49	<=-23.87	PASS
		High	2462	-3.66	-47.87	<=-23.66	PASS
11N20SISO	Ant1	Low	2412	-2.86	-42.16	<=-22.86	PASS
		High	2462	-3.38	-47.09	<=-23.38	PASS

Test Graph







Appendix D): RF Conducted Spurious Emissions

Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

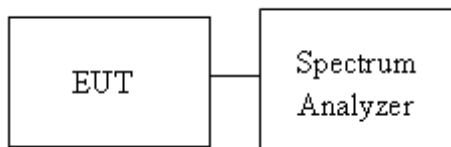
Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Test Procedure

Test method Refer as KDB 558074 D01.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

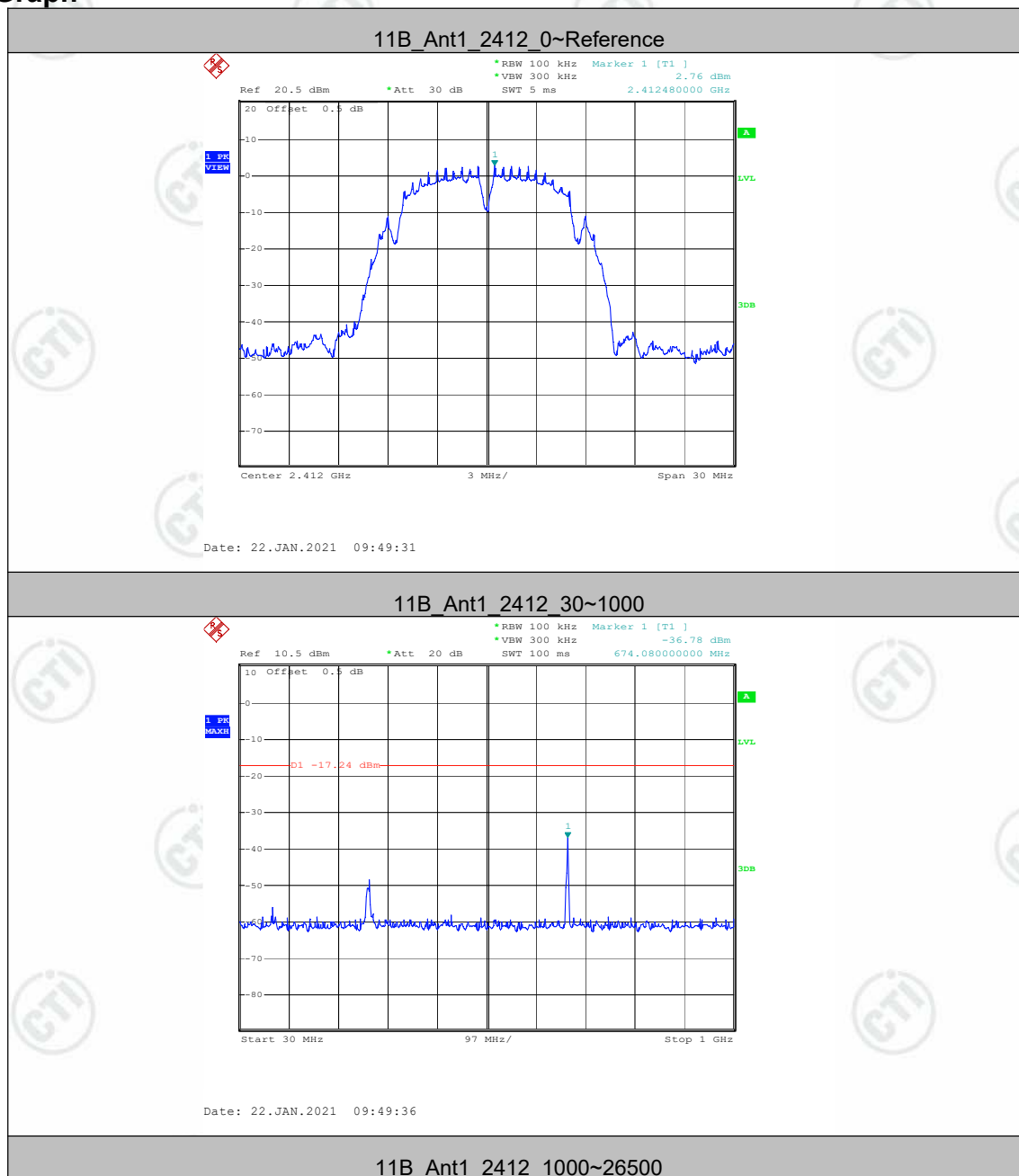
Test Setup

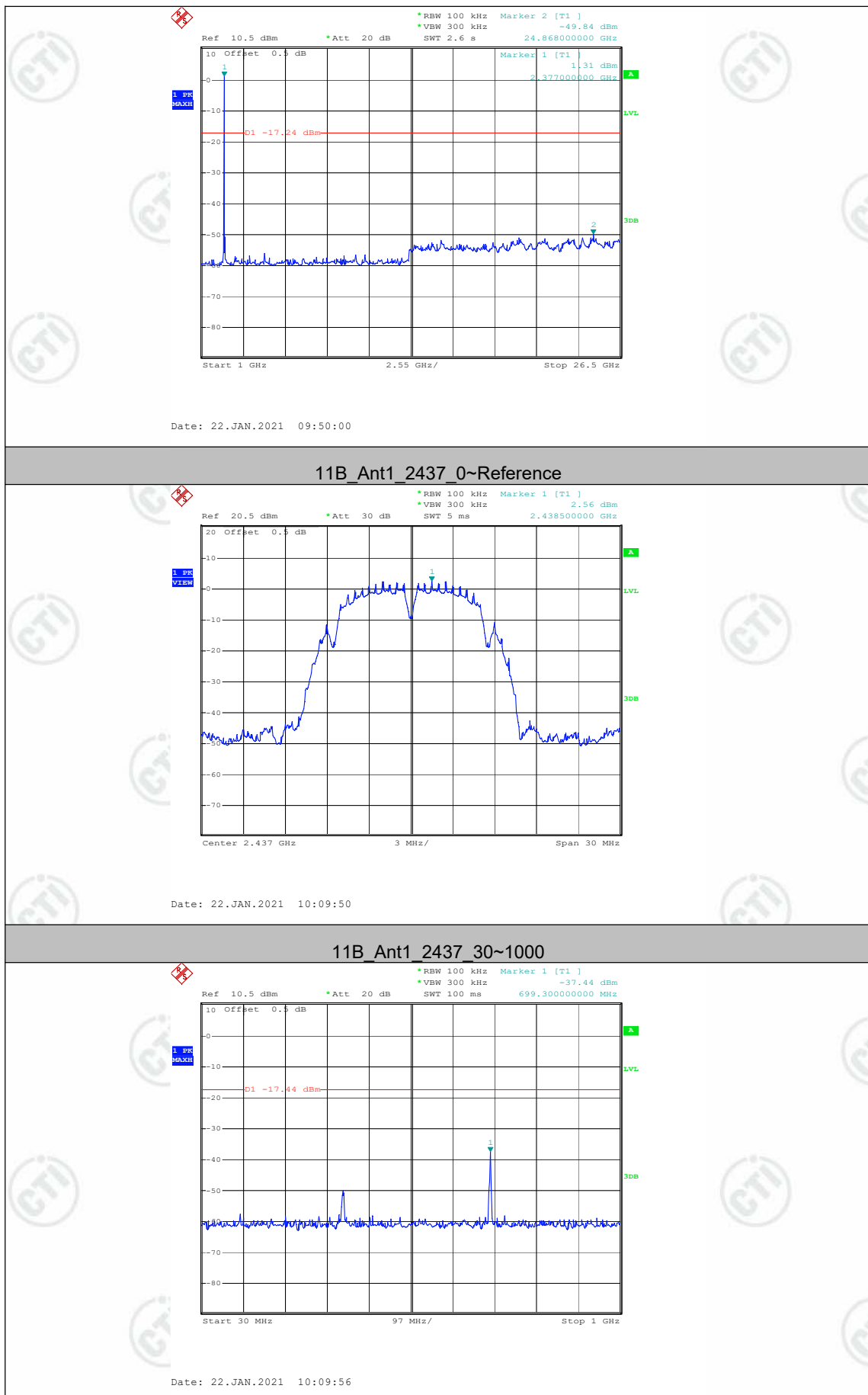


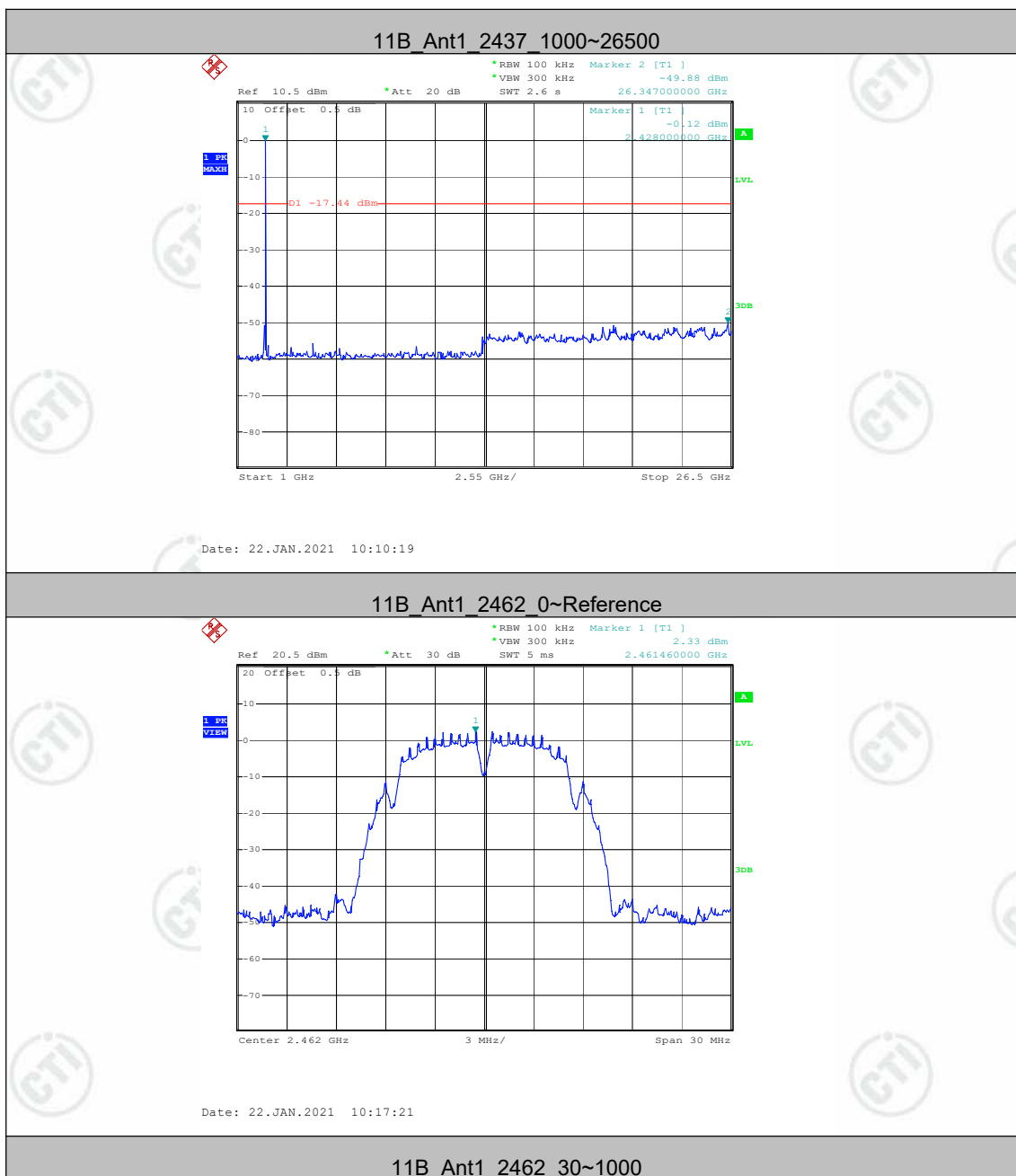
Result Table

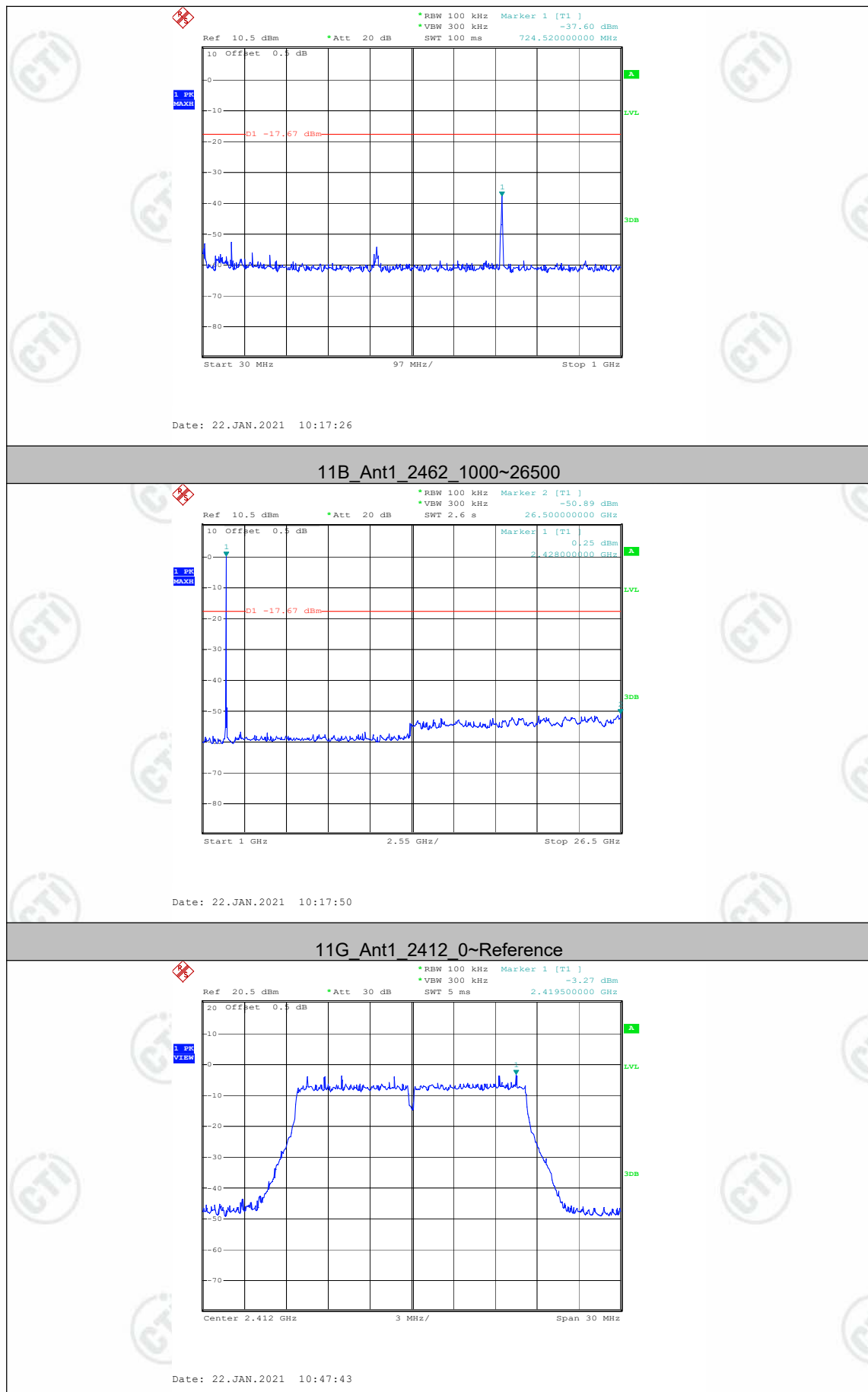
Test Mode	Antenna	Channel	Freq Range [Mhz]	Ref Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.76	2.76	---	PASS
			30~1000	2.76	-36.78	<=-17.24	PASS
			1000~26500	2.76	-49.84	<=-17.24	PASS
		2437	Reference	2.56	2.56	---	PASS
			30~1000	2.56	-37.44	<=-17.44	PASS
			1000~26500	2.56	-49.88	<=-17.44	PASS
		2462	Reference	2.33	2.33	---	PASS
			30~1000	2.33	-37.6	<=-17.67	PASS
			1000~26500	2.33	-50.89	<=-17.67	PASS
11G	Ant1	2412	Reference	-3.27	-3.27	---	PASS
			30~1000	-3.27	-50.85	<=-23.27	PASS
			1000~26500	-3.27	-50.55	<=-23.27	PASS
		2437	Reference	0.98	0.98	---	PASS
			30~1000	0.98	-42.39	<=-19.02	PASS
			1000~26500	0.98	-51.32	<=-19.02	PASS
		2462	Reference	-3.62	-3.62	---	PASS
			30~1000	-3.62	-51.99	<=-23.62	PASS
			1000~26500	-3.62	-50.95	<=-23.62	PASS
11N20SISO	Ant1	2412	Reference	-2.91	-2.91	---	PASS
			30~1000	-2.91	-51.11	<=-22.91	PASS
			1000~26500	-2.91	-50.91	<=-22.91	PASS
		2437	Reference	0.53	0.53	---	PASS
			30~1000	0.53	-43.29	<=-19.47	PASS
			1000~26500	0.53	-51.14	<=-19.47	PASS
		2462	Reference	-1.68	-1.68	---	PASS
			30~1000	-1.68	-48.7	<=-21.68	PASS
			1000~26500	-1.68	-50.53	<=-21.68	PASS

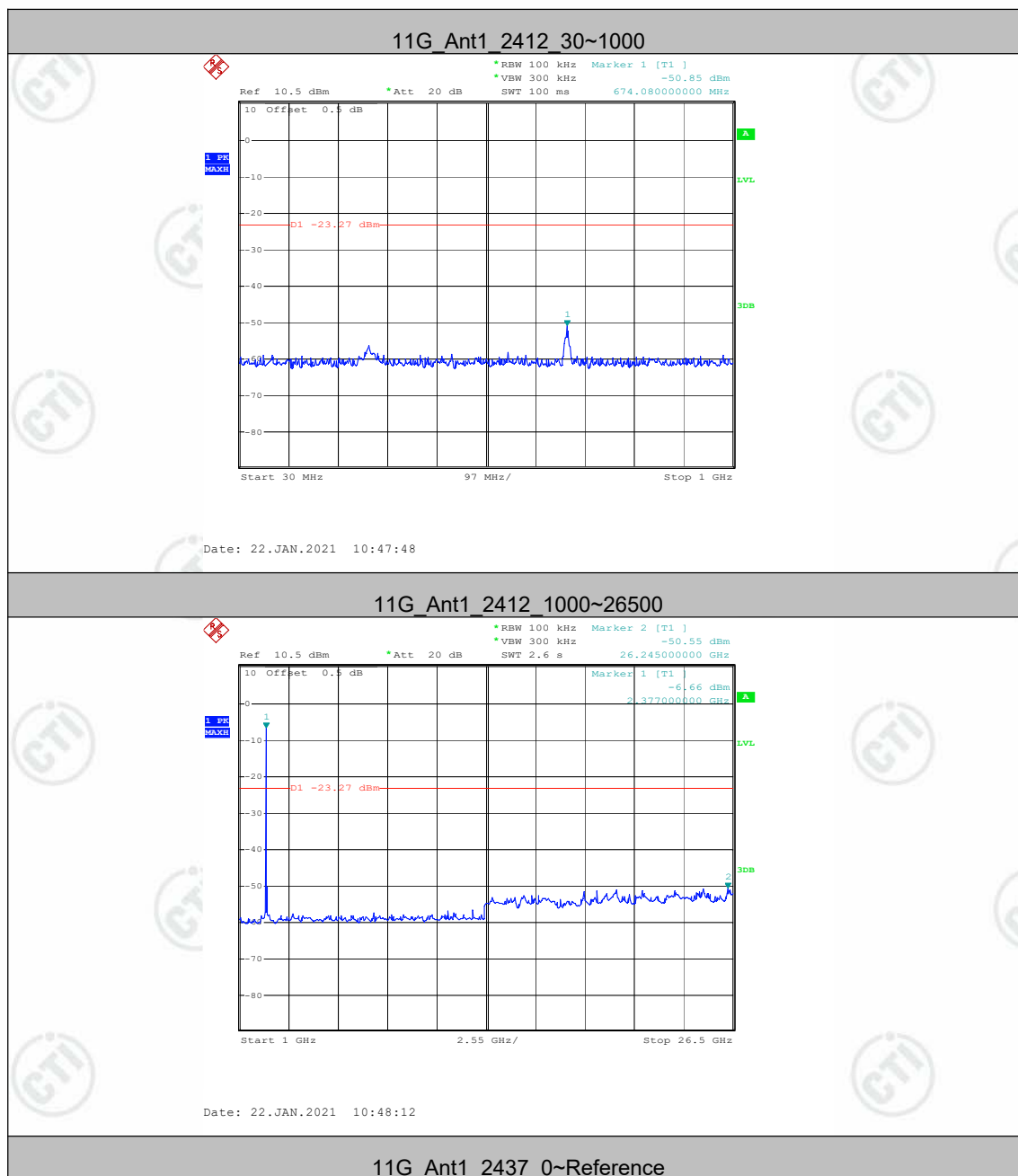
Test Graph



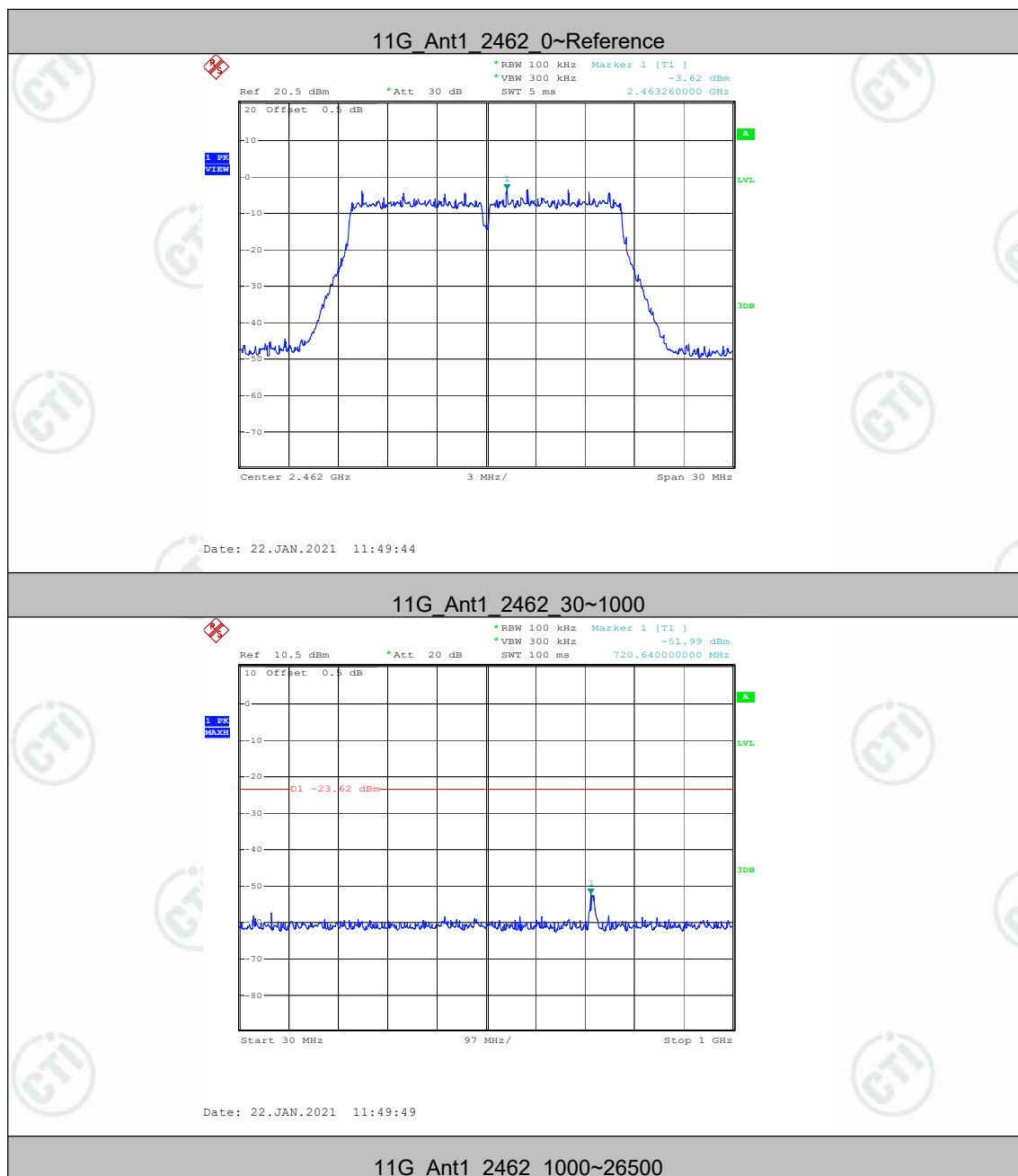


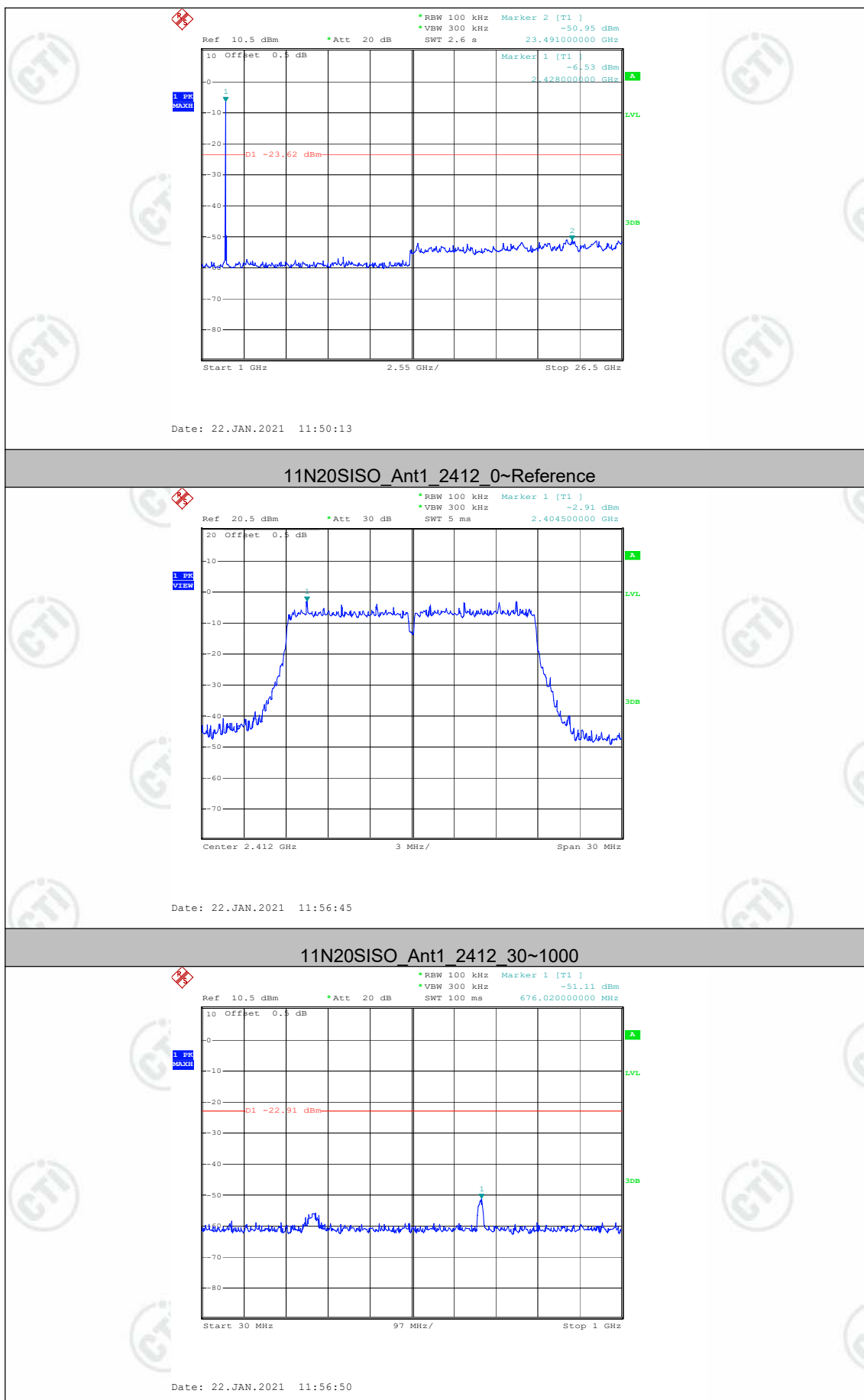


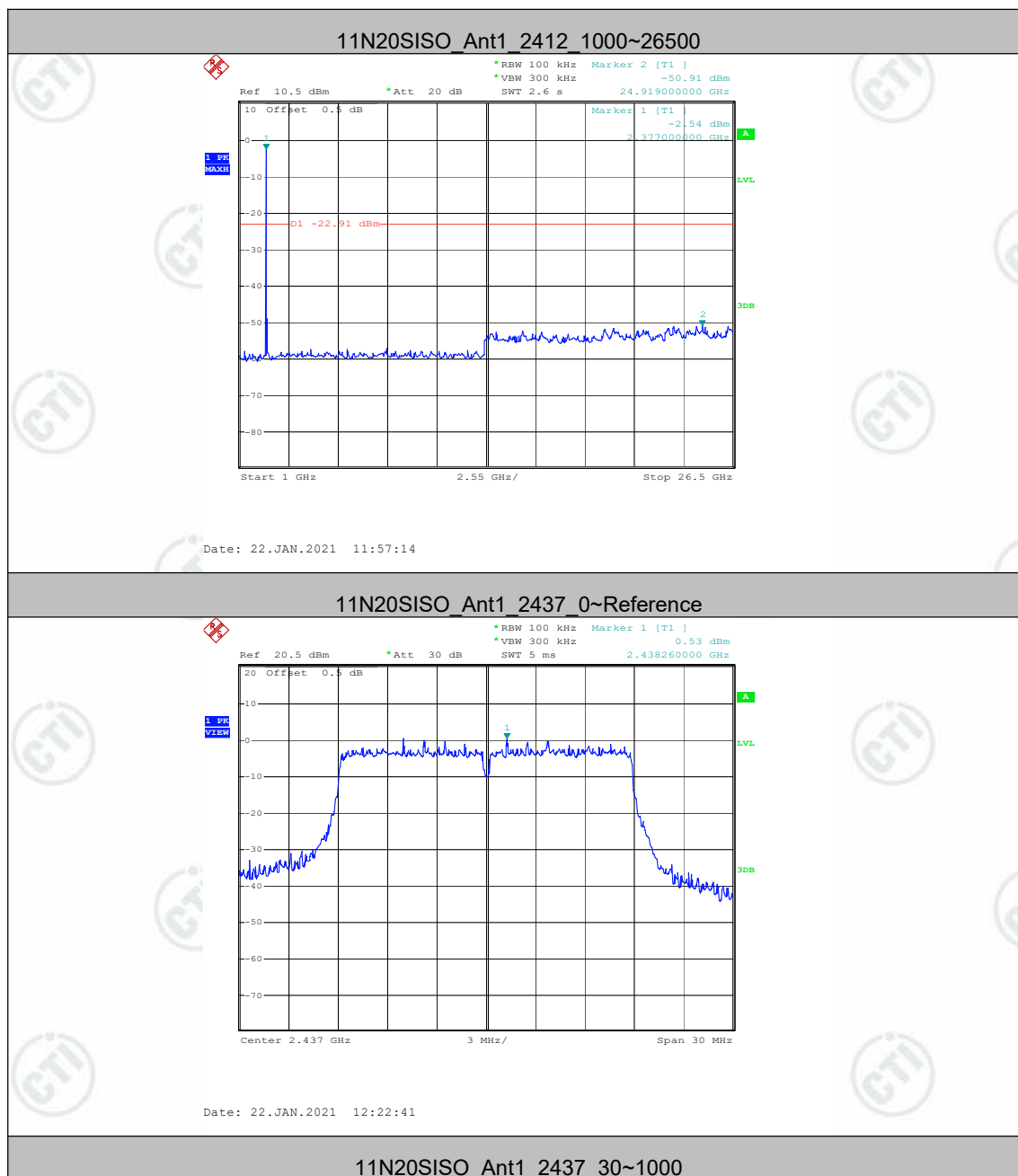


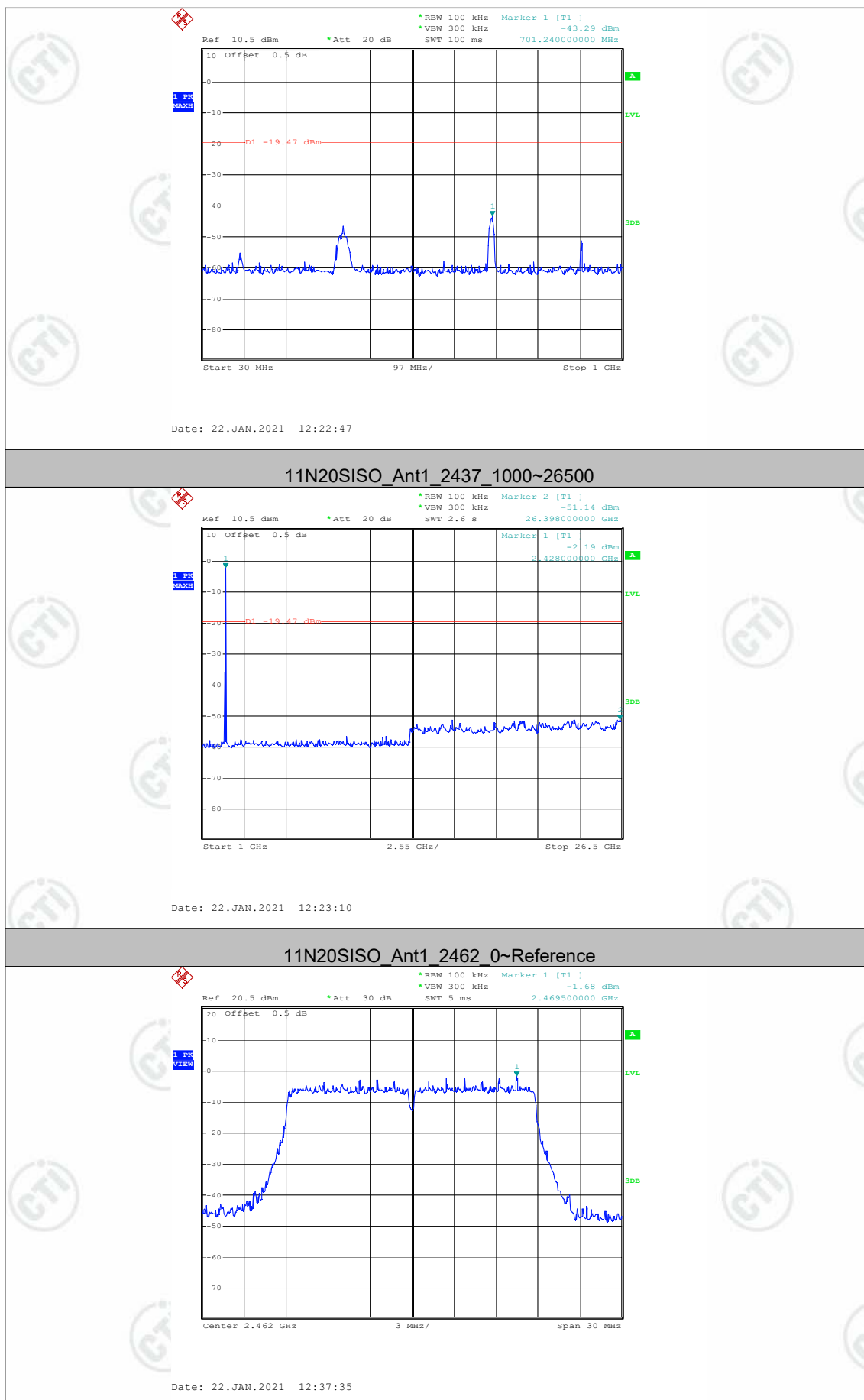














Appendix E): Power Spectral Density

Test Limit

According to §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.

Limit	☒ Antenna not exceed 6 dBi : 8dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 8 – (DG – 6)] ☐ Point-to-point operation :
-------	---

Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 30kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss was compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

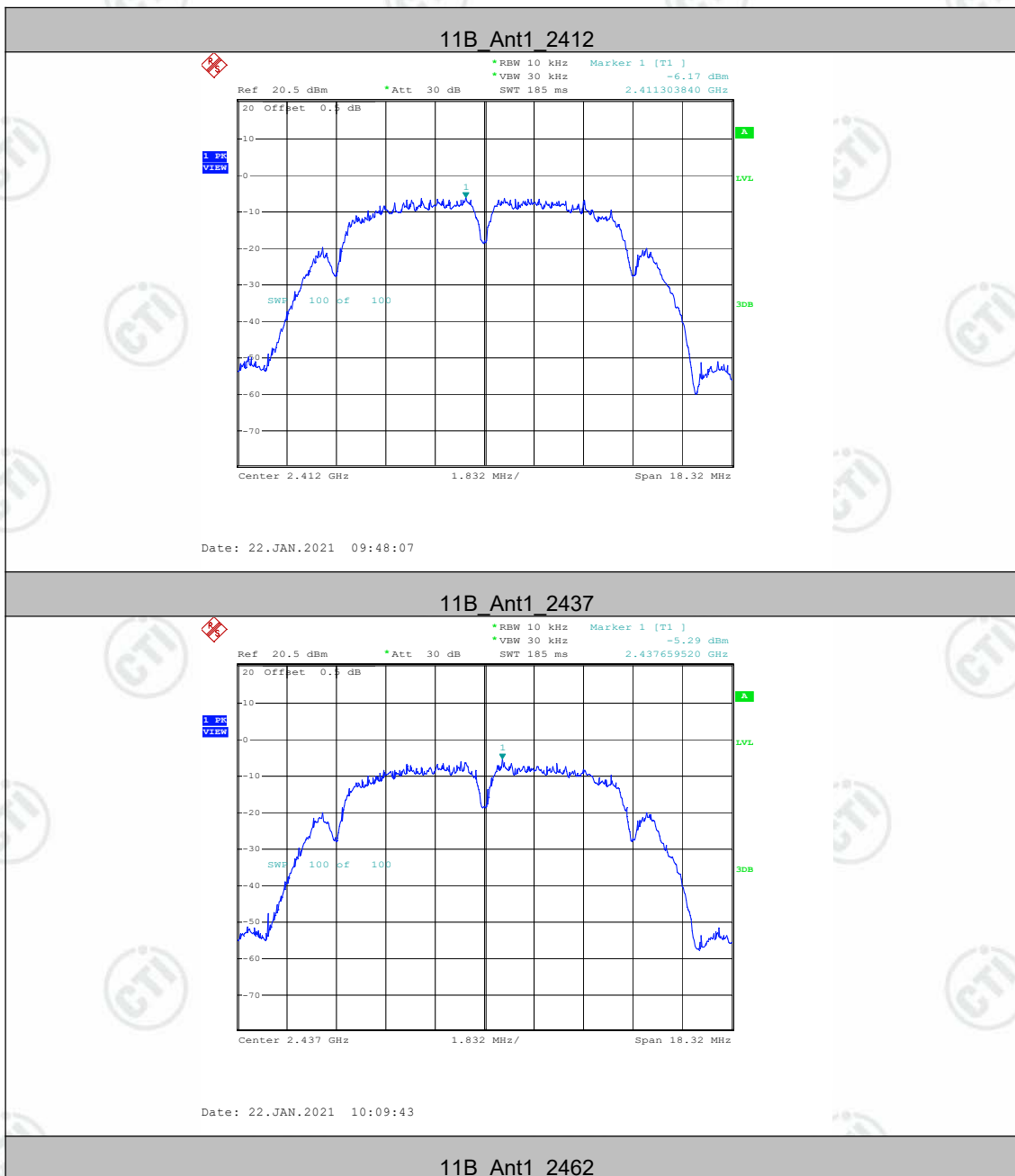
Test Setup

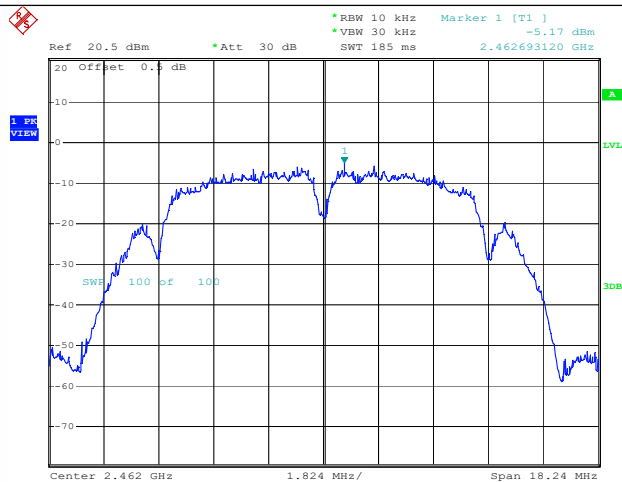


Result Table

Mode	Channel	Power Spectral Density [dBm]	Verdict
11B	LCH	-6.17	PASS
11B	MCH	-5.29	PASS
11B	HCH	-5.17	PASS
11G	LCH	-10.99	PASS
11G	MCH	-6.11	PASS
11G	HCH	-10.79	PASS
11N20SISO	LCH	-18.57	PASS
11N20SISO	MCH	-6.9	PASS
11N20SISO	HCH	-9.6	PASS

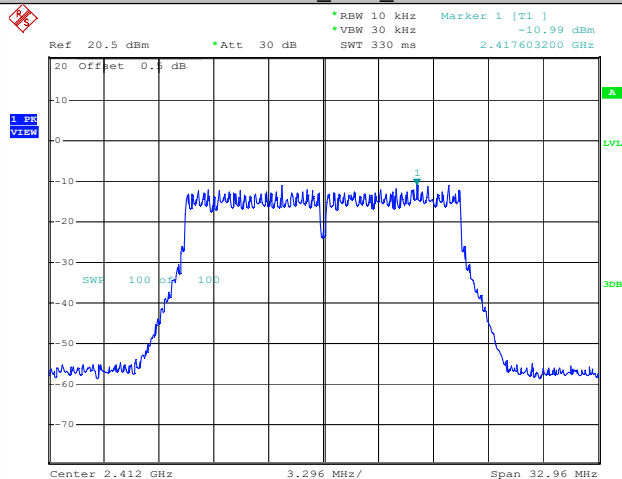
Test Graph





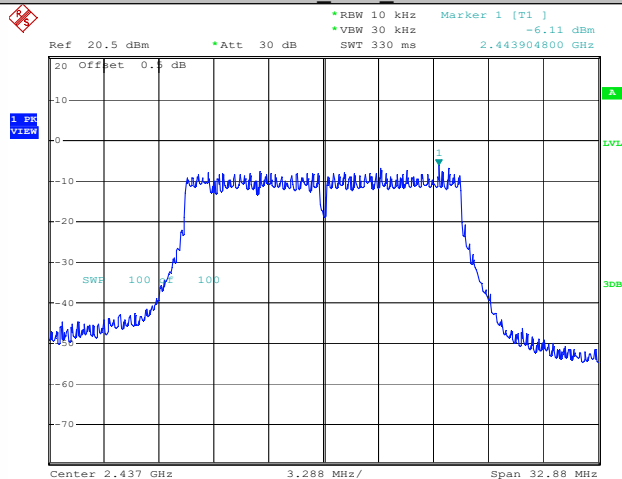
Date: 22.JAN.2021 10:15:59

11G_Ant1_2412

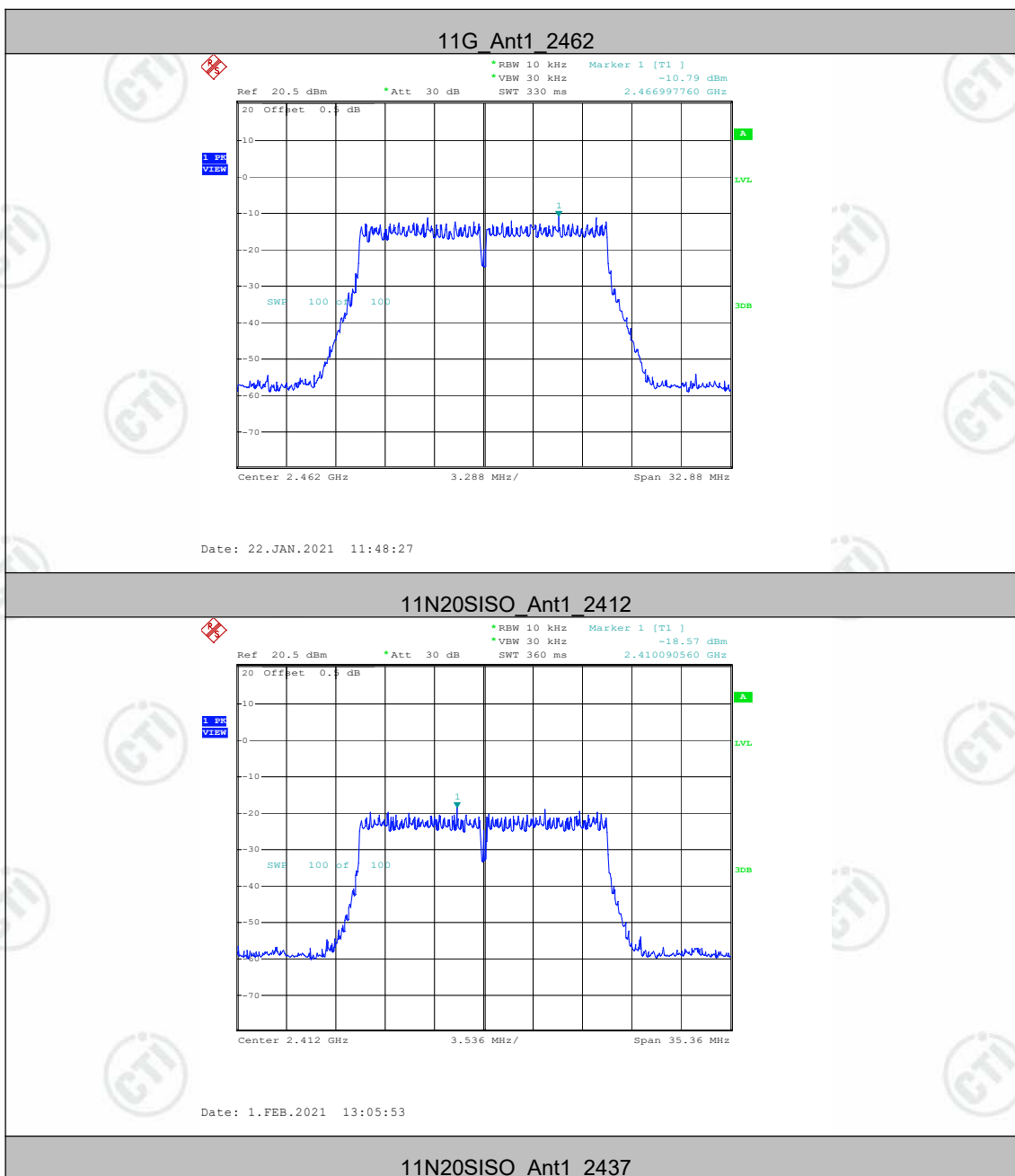


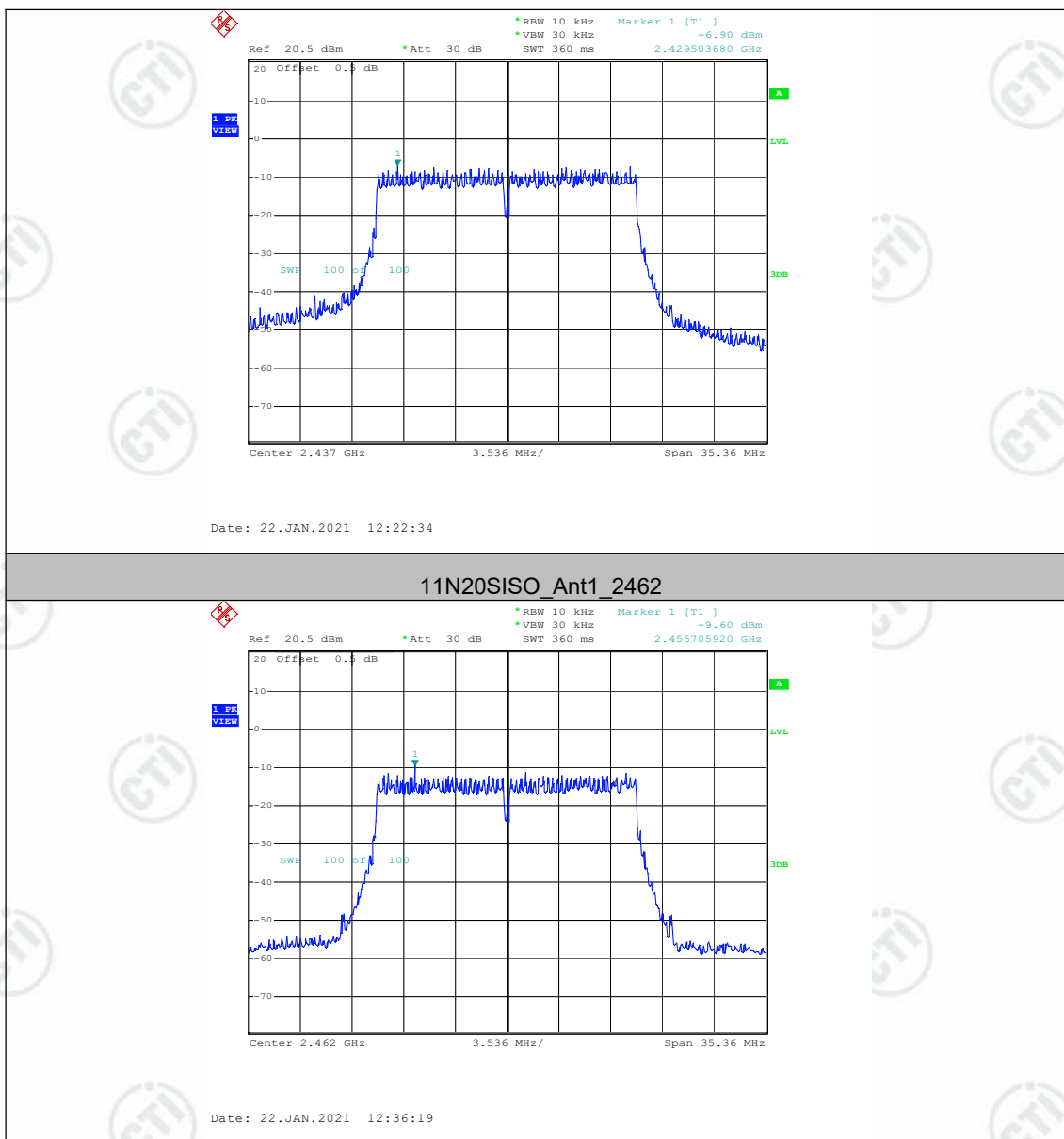
Date: 22.JAN.2021 10:46:26

11G_Ant1_2437



Date: 22.JAN.2021 11:43:25





Appendix F): Antenna Requirement

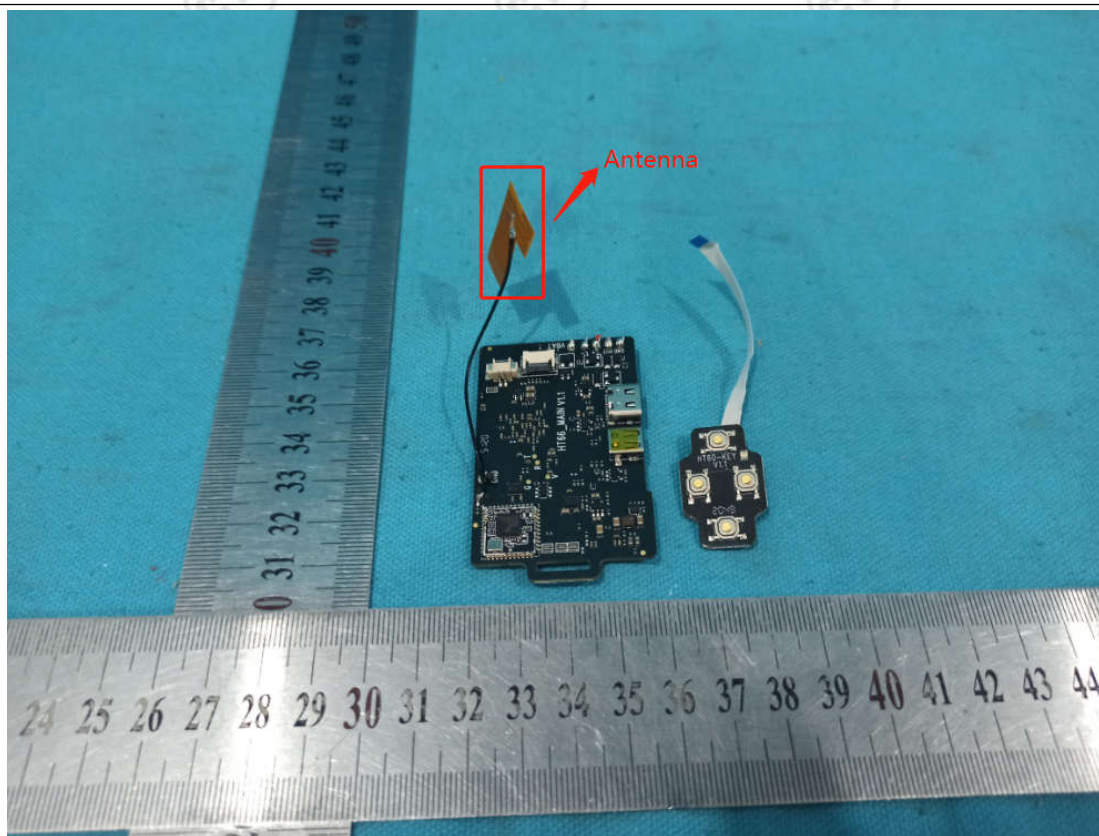
15.203 requirement:

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 an antenna 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:



The antenna is FPC Antenna . The best case gain of the antenna is 3 dBi.

Appendix G): AC Power Line Conducted Emission

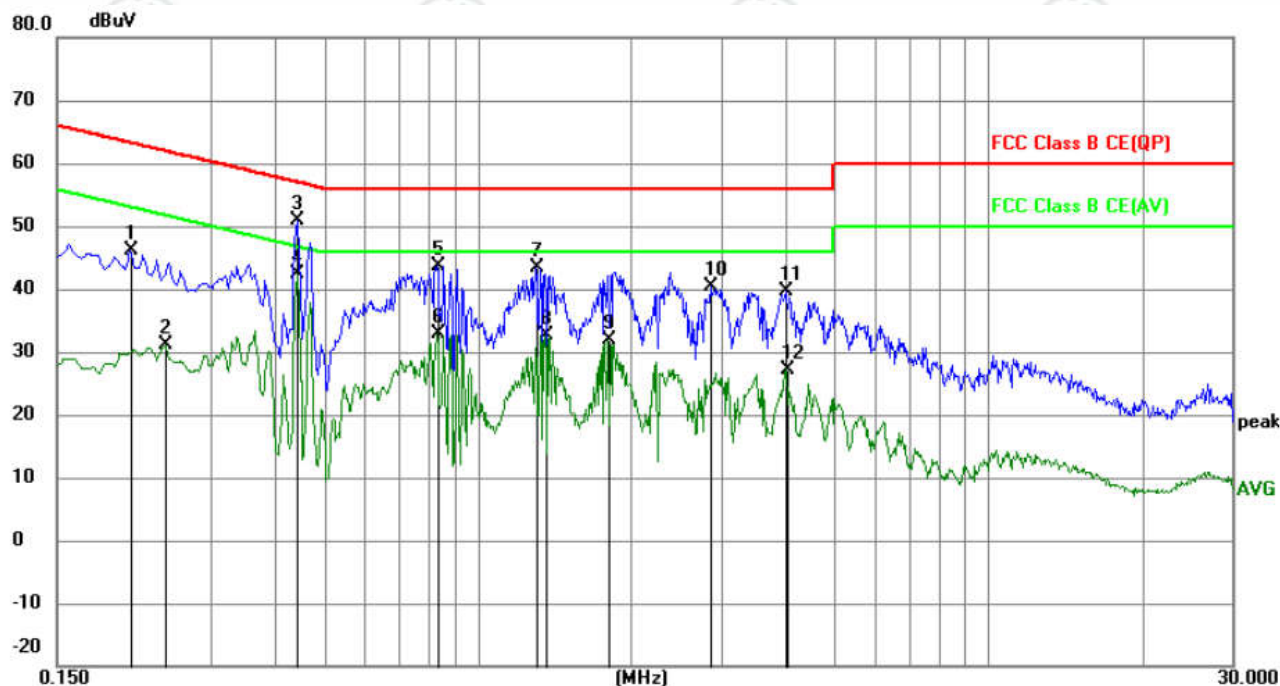
Test Procedure:	Test frequency range :150KHz-30MHz 1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.														
Limit:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table> * The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz. NOTE : The lower limit is applicable at the transition frequency	Frequency range (MHz)	Limit (dBμV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBμV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

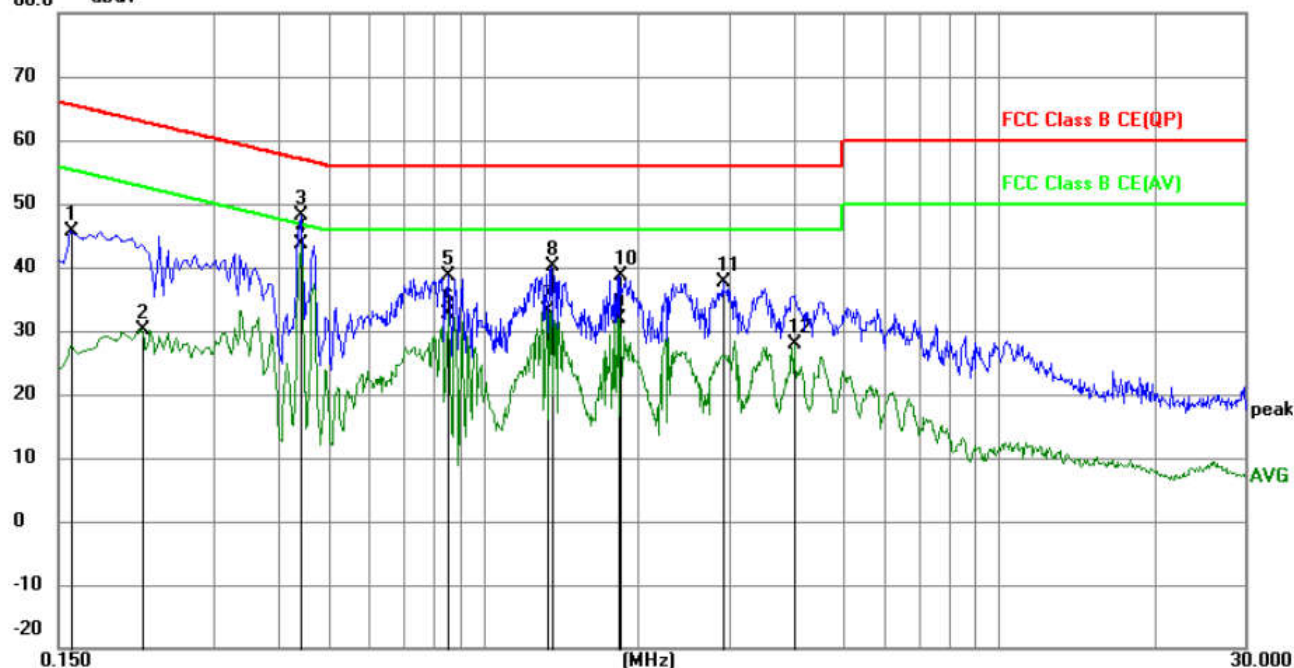
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2085	36.28	9.89	46.17	63.26	-17.09	QP	
2		0.2445	21.08	9.96	31.04	51.94	-20.90	AVG	
3		0.4425	41.03	9.96	50.99	57.01	-6.02	QP	
4	*	0.4425	32.33	9.96	42.29	47.01	-4.72	AVG	
5		0.8340	33.71	9.85	43.56	56.00	-12.44	QP	
6		0.8340	23.06	9.85	32.91	46.00	-13.09	AVG	
7		1.3020	33.46	9.82	43.28	56.00	-12.72	QP	
8		1.3560	22.90	9.82	32.72	46.00	-13.28	AVG	
9		1.8015	22.17	9.80	31.97	46.00	-14.03	AVG	
10		2.8635	30.63	9.79	40.42	56.00	-15.58	QP	
11		4.0245	29.81	9.78	39.59	56.00	-16.41	QP	
12		4.0425	17.47	9.78	27.25	46.00	-18.75	AVG	

Neutral line:
80.0 dBuV



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1590	35.82	9.87	45.69	65.52	-19.83	QP	
2		0.2175	20.30	9.90	30.20	52.91	-22.71	AVG	
3		0.4425	38.26	9.96	48.22	57.01	-8.79	QP	
4	*	0.4425	33.72	9.96	43.68	47.01	-3.33	AVG	
5		0.8565	28.87	9.85	38.72	56.00	-17.28	QP	
6		0.8565	22.69	9.85	32.54	56.00	-23.46	QP	
7		1.3245	23.33	9.82	33.15	46.00	-12.85	AVG	
8		1.3560	30.30	9.82	40.12	56.00	-15.88	QP	
9		1.8195	22.13	9.80	31.93	46.00	-14.07	AVG	
10		1.8465	28.93	9.80	38.73	56.00	-17.27	QP	
11		2.9265	27.86	9.79	37.65	56.00	-18.35	QP	
12		4.0065	18.22	9.78	28.00	46.00	-18.00	AVG	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

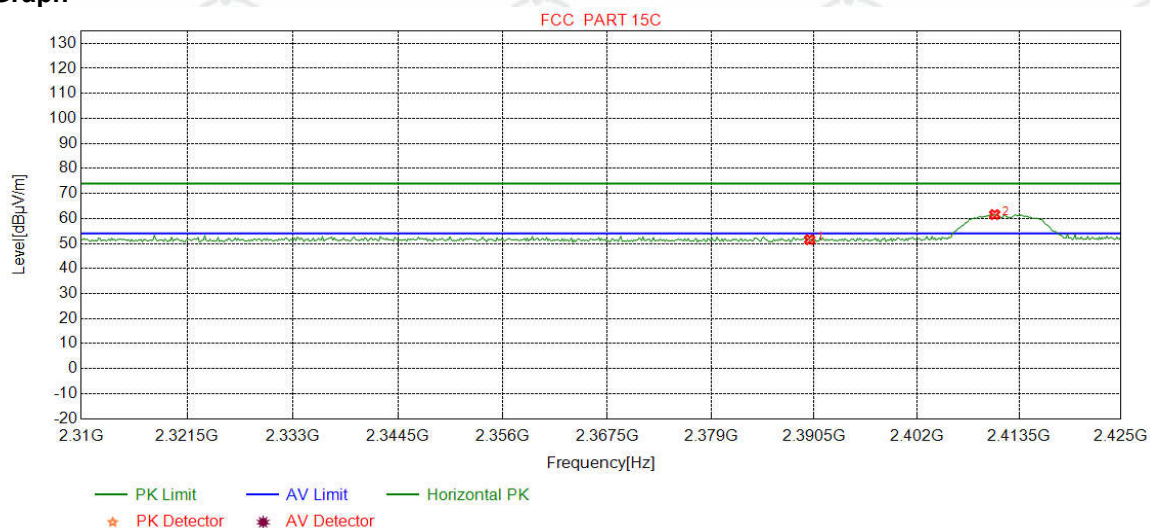
Appendix H): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Test Procedure:	Below 1GHz test procedure as below: Test method Refer as KDB 558074 D01 - The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. - The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. - The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. - For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading. - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. - Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel Above 1GHz test procedure as below: - Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter). - Test the EUT in the lowest channel , the Highest channel - The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. - Repeat above procedures until all frequencies measured was complete.				
Limit:	Frequency	Limit (dBμV/m @3m)	Remark		
	30MHz-88MHz	40.0	Quasi-peak Value		
	88MHz-216MHz	43.5	Quasi-peak Value		
	216MHz-960MHz	46.0	Quasi-peak Value		
	960MHz-1GHz	54.0	Quasi-peak Value		
	Above 1GHz	54.0	Average Value		
		74.0	Peak Value		

Test plot as follows:

Mode:	802.11 b Transmitting	Channel:	2412
Remark:	PK		

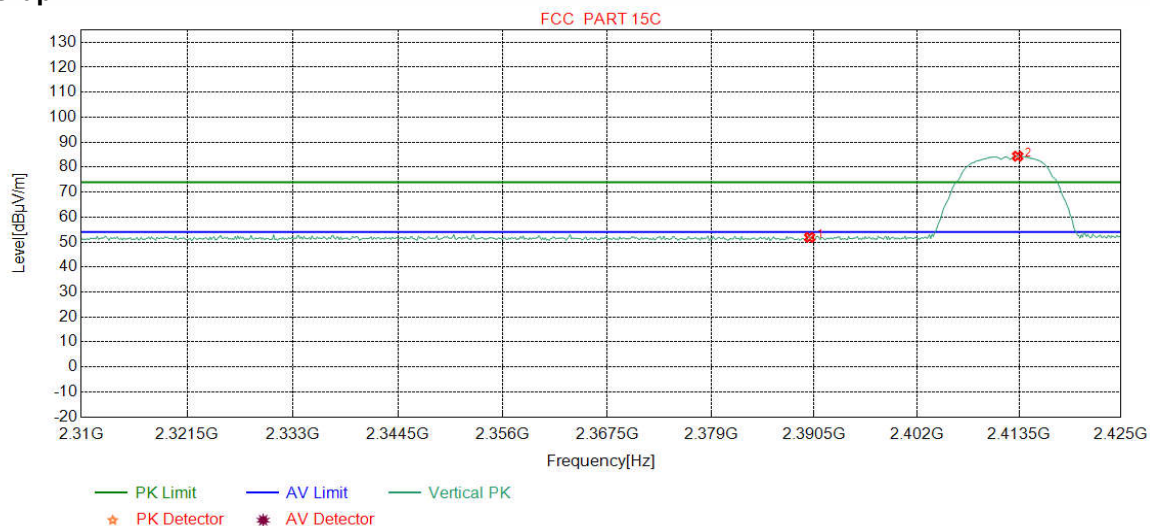
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	49.05	51.55	74.00	22.45	Pass	Horizontal
2	2410.7509	32.28	13.35	-43.12	59.06	61.57	74.00	12.43	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2412
Remark:	PK		

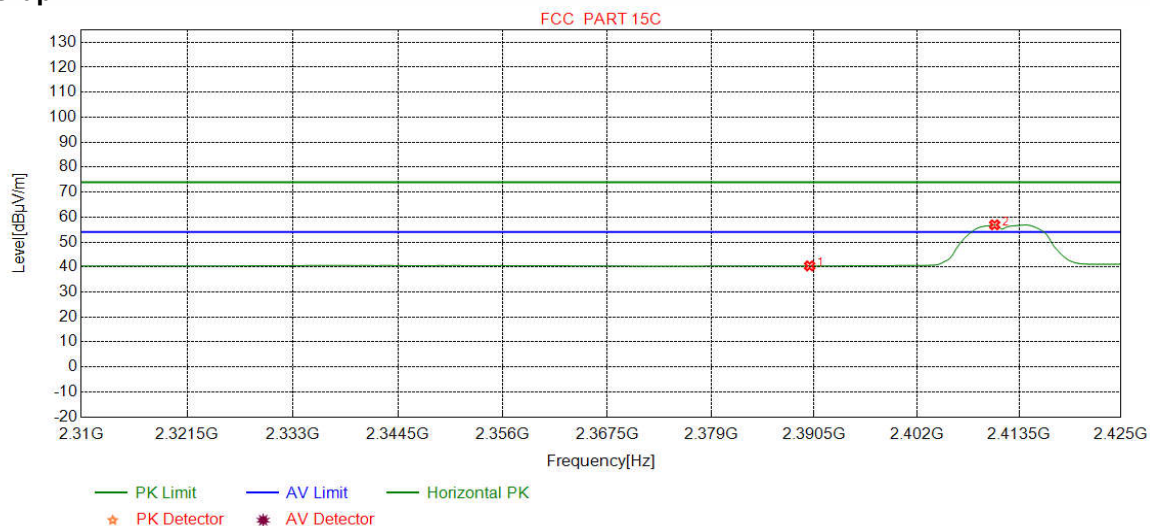
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	49.38	51.88	74.00	22.12	Pass	Vertical
2	2413.3417	32.28	13.36	-43.12	81.86	84.38	74.00	-10.38	Pass	Vertical

Mode:	802.11 b Transmitting	Channel:	2412
Remark:	AV		

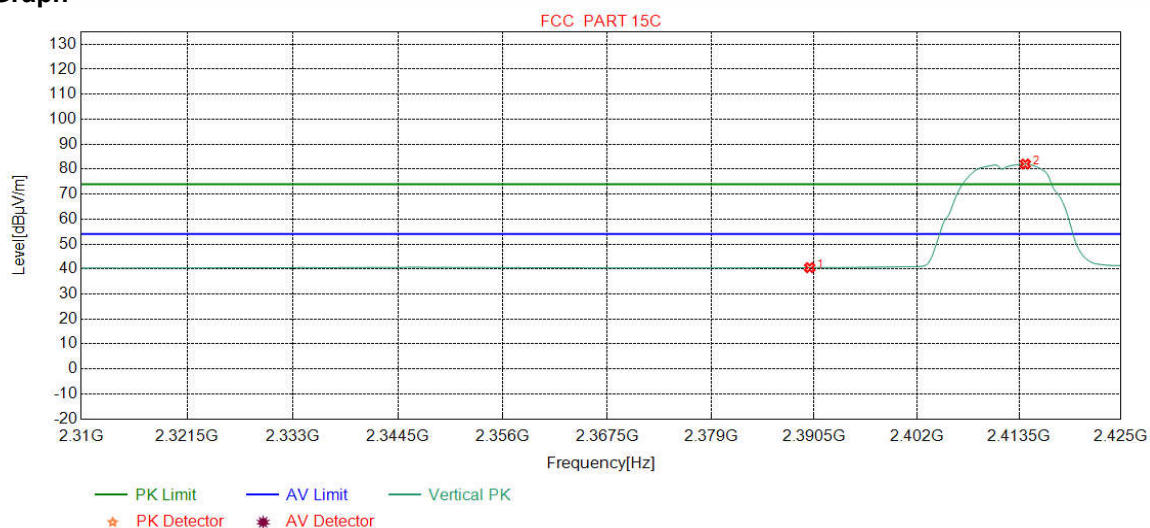
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	37.95	40.45	54.00	13.55	Pass	Horizontal
2	2410.7509	32.28	13.35	-43.12	54.40	56.91	54.00	-2.91	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2412
Remark:	AV		

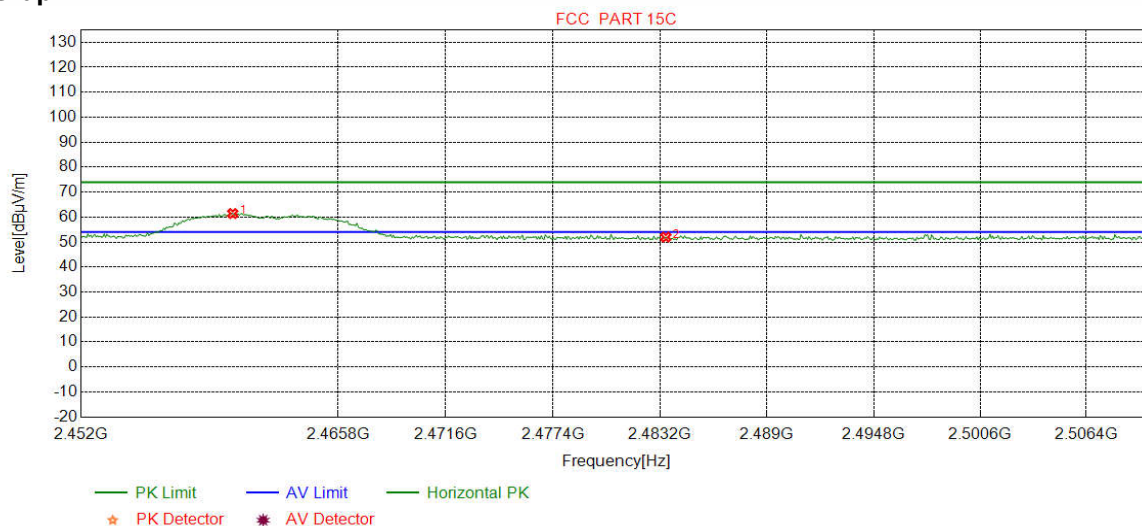
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	38.05	40.55	54.00	13.45	Pass	Vertical
2	2414.2053	32.28	13.37	-43.12	79.52	82.05	54.00	-28.05	Pass	Vertical

Mode:	802.11 b Transmitting	Channel:	2462
Remark:	PK		

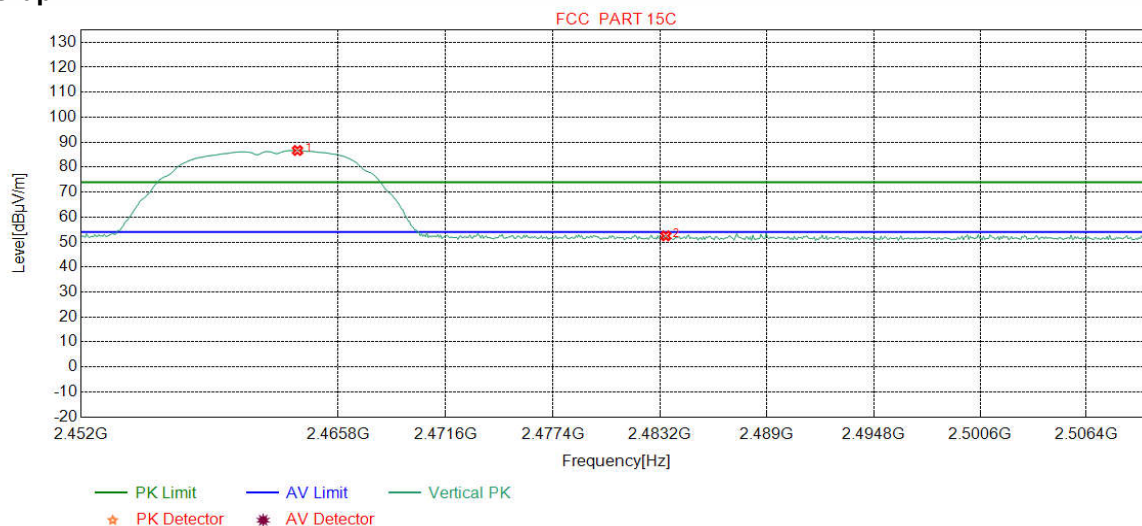
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2460.1302	32.34	13.48	-43.10	58.71	61.43	74.00	12.57	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	49.34	51.99	74.00	22.01	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2462
Remark:	PK		

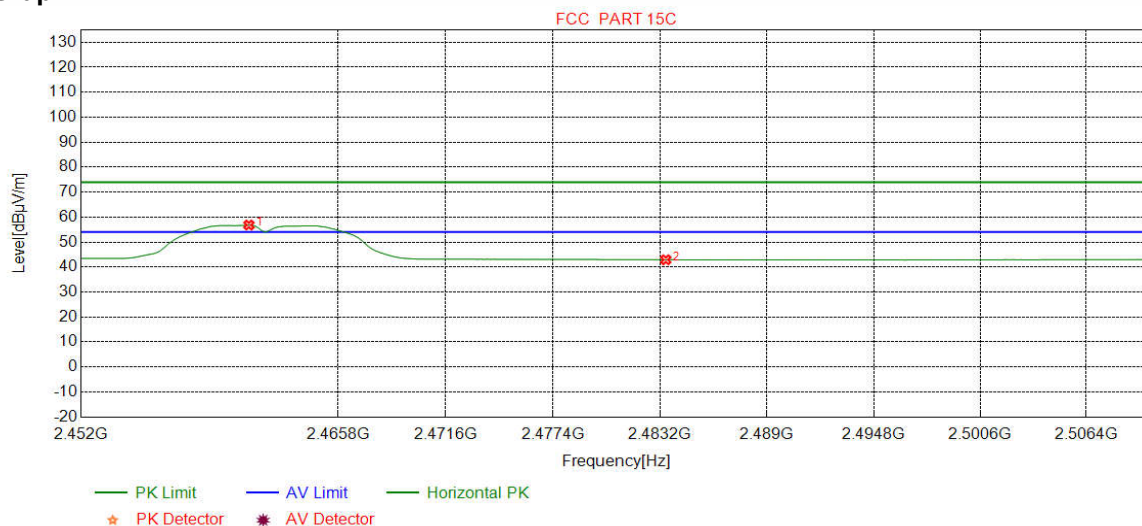
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2463.6145	32.35	13.47	-43.11	83.97	86.68	74.00	-12.68	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	49.83	52.48	74.00	21.52	Pass	Vertical

Mode:	802.11 b Transmitting	Channel:	2462
Remark:	AV		

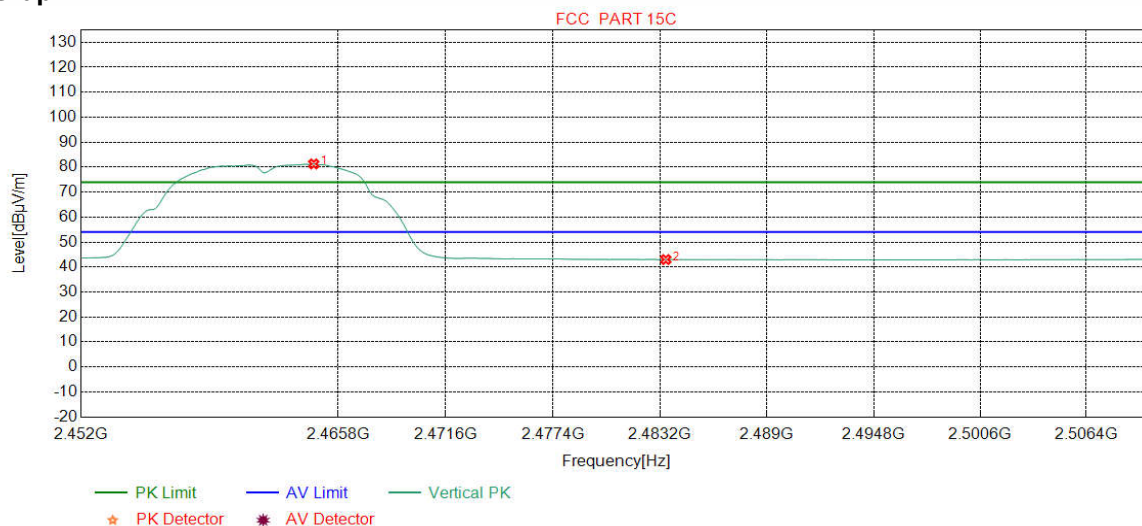
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2461.0013	32.35	13.48	-43.11	54.09	56.81	54.00	-2.81	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.25	42.90	54.00	11.10	Pass	Horizontal

Mode:	802.11 b Transmitting	Channel:	2462
Remark:	AV		

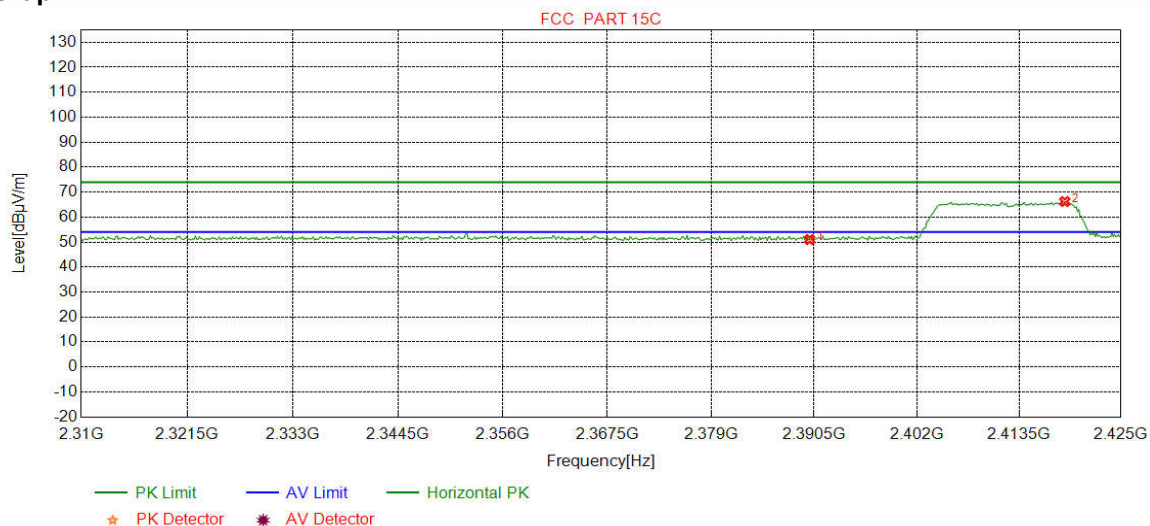
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2464.4856	32.35	13.46	-43.10	78.57	81.28	54.00	-27.28	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.34	42.99	54.00	11.01	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2412
Remark:	PK		

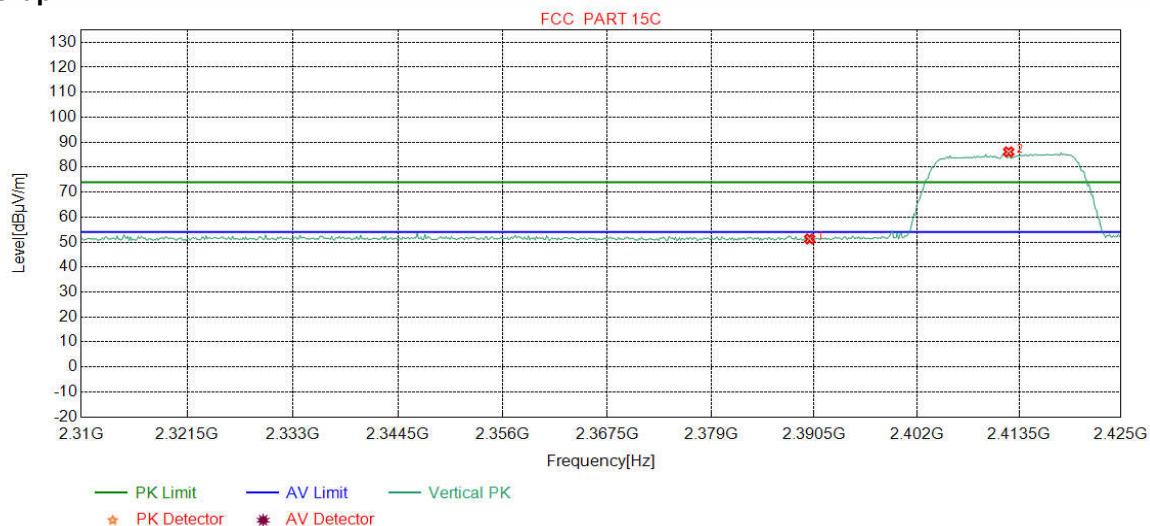
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	48.51	51.01	74.00	22.99	Pass	Horizontal
2	2418.6671	32.29	13.39	-43.12	63.68	66.24	74.00	7.76	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2412
Remark:	PK		

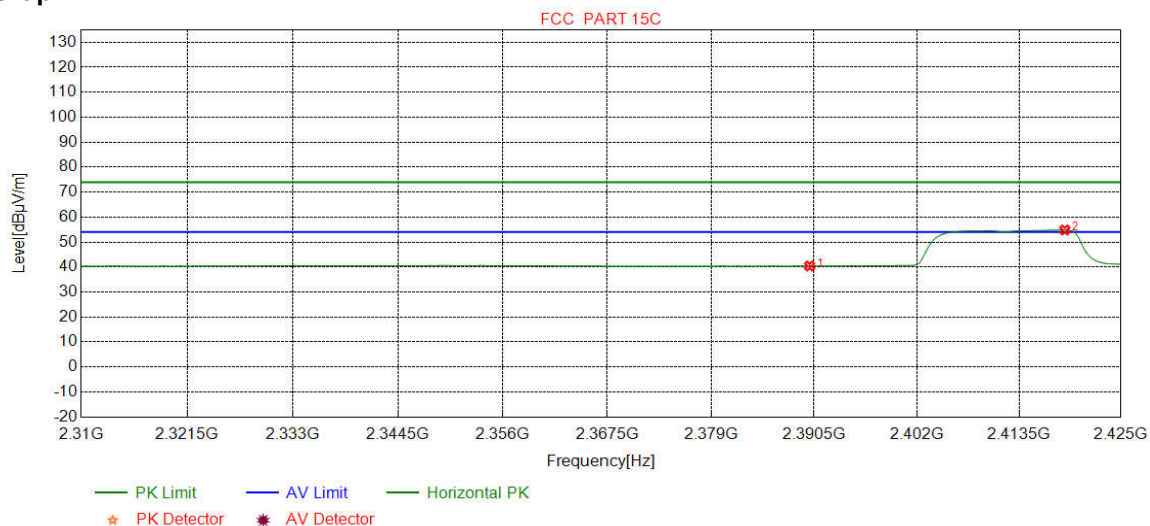
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	48.76	51.26	74.00	22.74	Pass	Vertical
2	2412.3342	32.28	13.36	-43.12	83.61	86.13	74.00	-12.13	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2412
Remark:	AV		

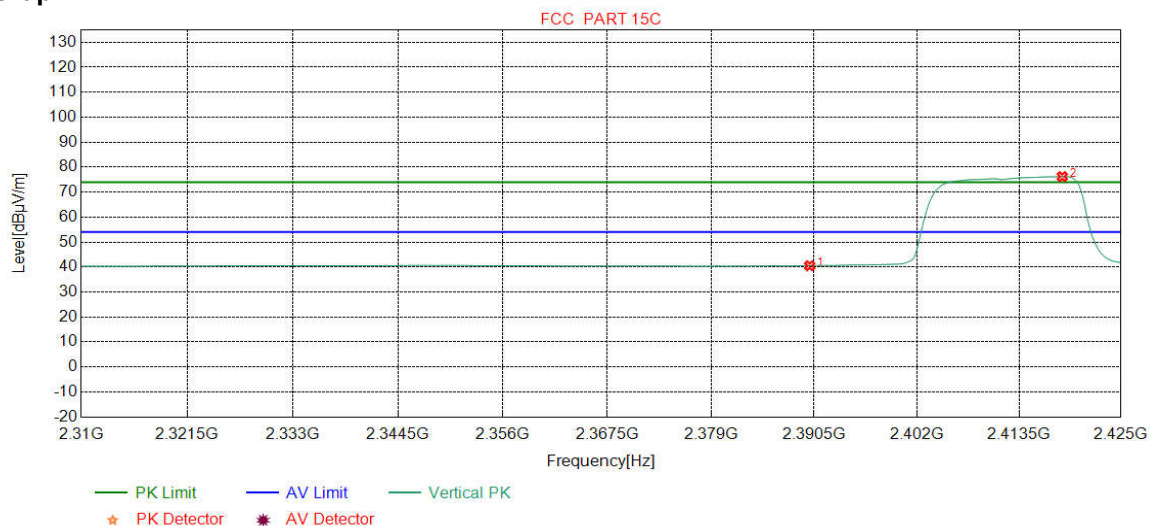
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	37.91	40.41	54.00	13.59	Pass	Horizontal
2	2418.6671	32.29	13.39	-43.12	52.27	54.83	54.00	-0.83	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2412
Remark:	AV		

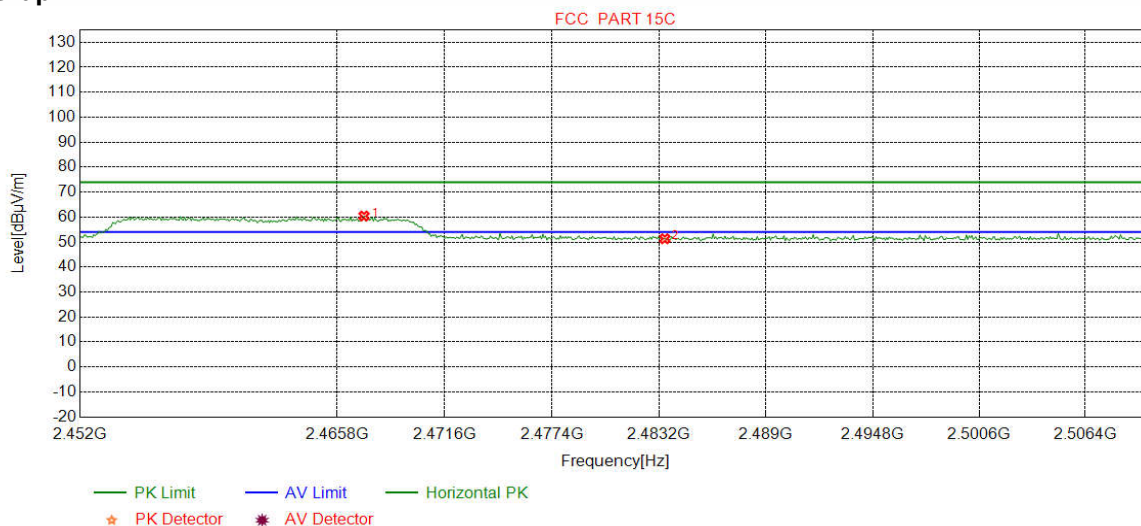
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	38.02	40.52	54.00	13.48	Pass	Vertical
2	2418.3792	32.29	13.38	-43.12	73.66	76.21	54.00	-22.21	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2462
Remark:	PK		

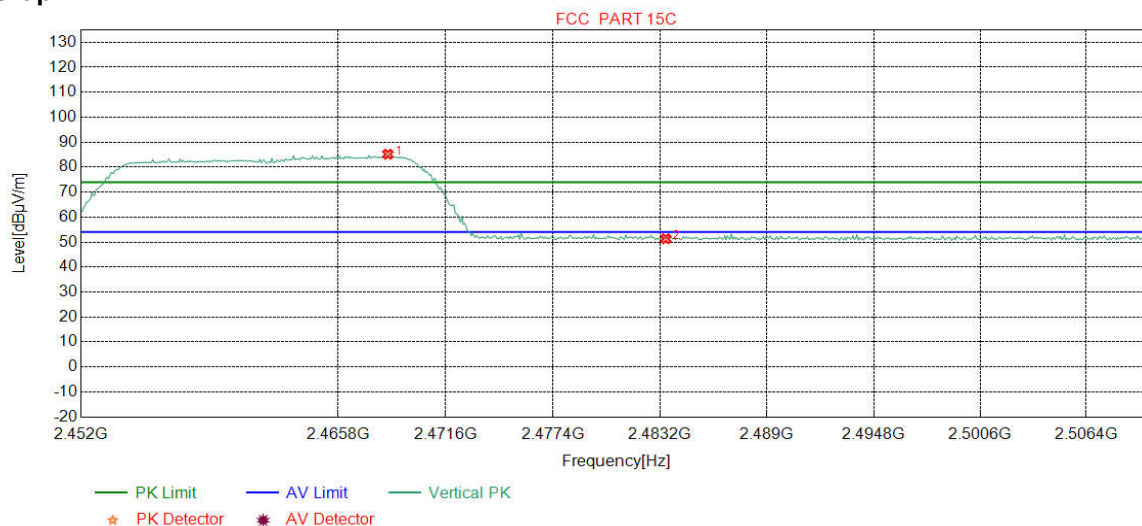
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2467.2441	32.35	13.45	-43.10	57.72	60.42	74.00	13.58	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	48.67	51.32	74.00	22.68	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2462
Remark:	PK		

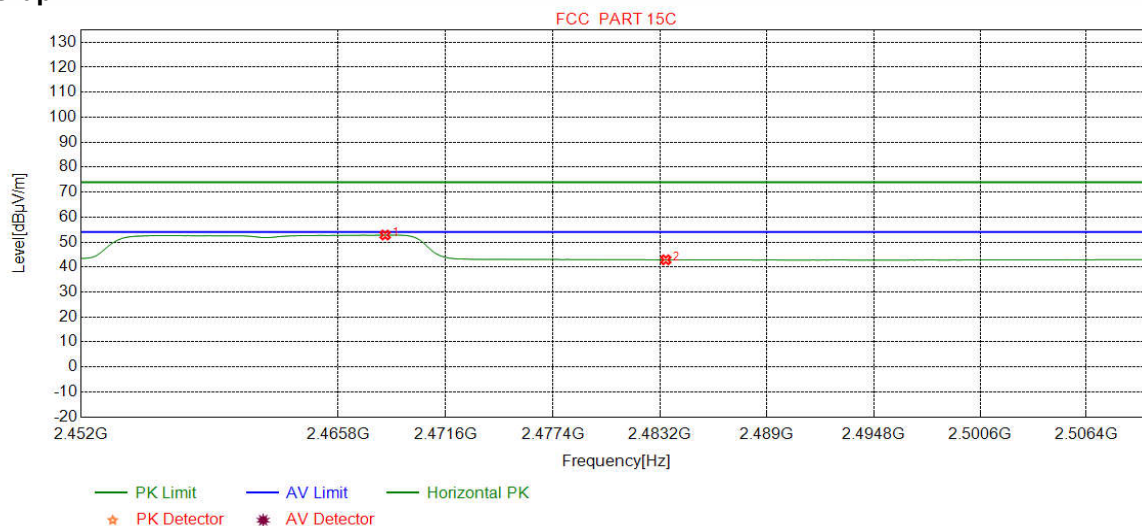
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2468.4781	32.36	13.45	-43.12	82.48	85.17	74.00	-11.17	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	48.67	51.32	74.00	22.68	Pass	Vertical

Mode:	802.11 g Transmitting	Channel:	2462
Remark:	AV		

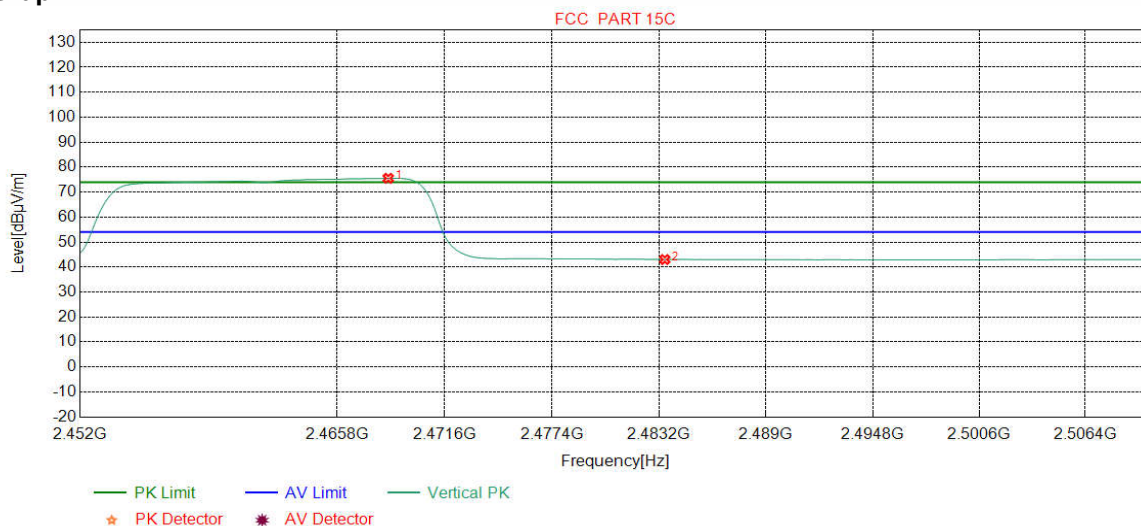
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2468.3329	32.36	13.45	-43.11	50.11	52.81	54.00	1.19	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.23	42.88	54.00	11.12	Pass	Horizontal

Mode:	802.11 g Transmitting	Channel:	2462
Remark:	AV		

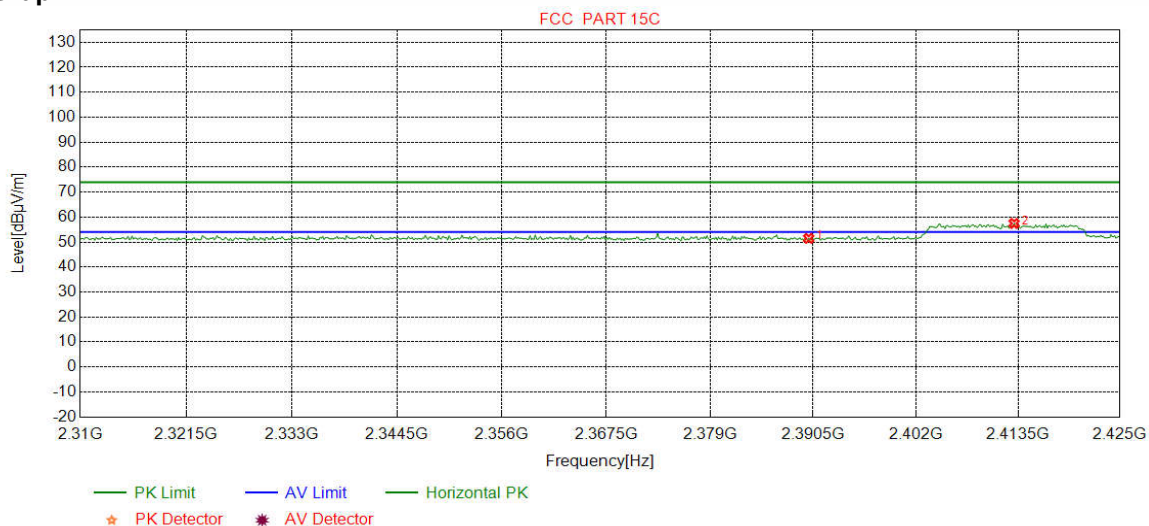
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2468.5507	32.36	13.44	-43.11	72.85	75.54	54.00	-21.54	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.35	43.00	54.00	11.00	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2412
Remark:	PK		

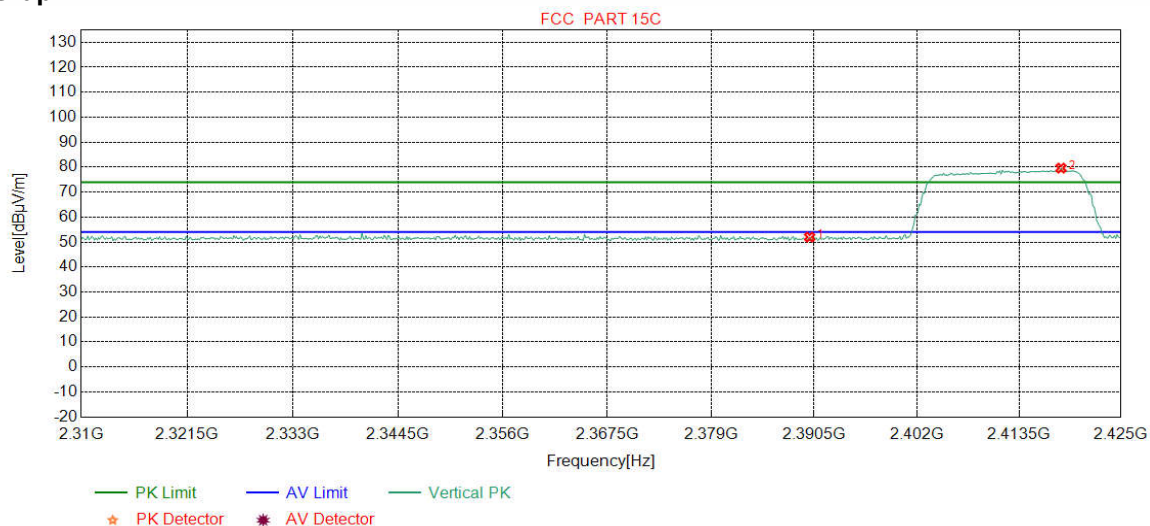
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	48.97	51.47	74.00	22.53	Pass	Horizontal
2	2413.0538	32.28	13.36	-43.12	54.94	57.46	74.00	16.54	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2412
Remark:	PK		

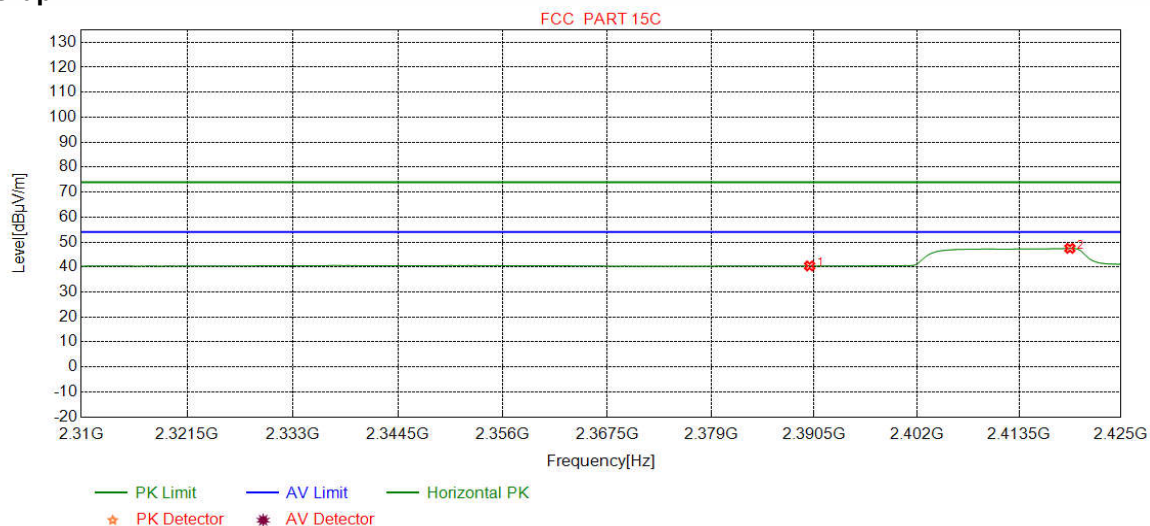
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	49.48	51.98	74.00	22.02	Pass	Vertical
2	2418.2353	32.29	13.38	-43.12	77.06	79.61	74.00	-5.61	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2412
Remark:	AV		

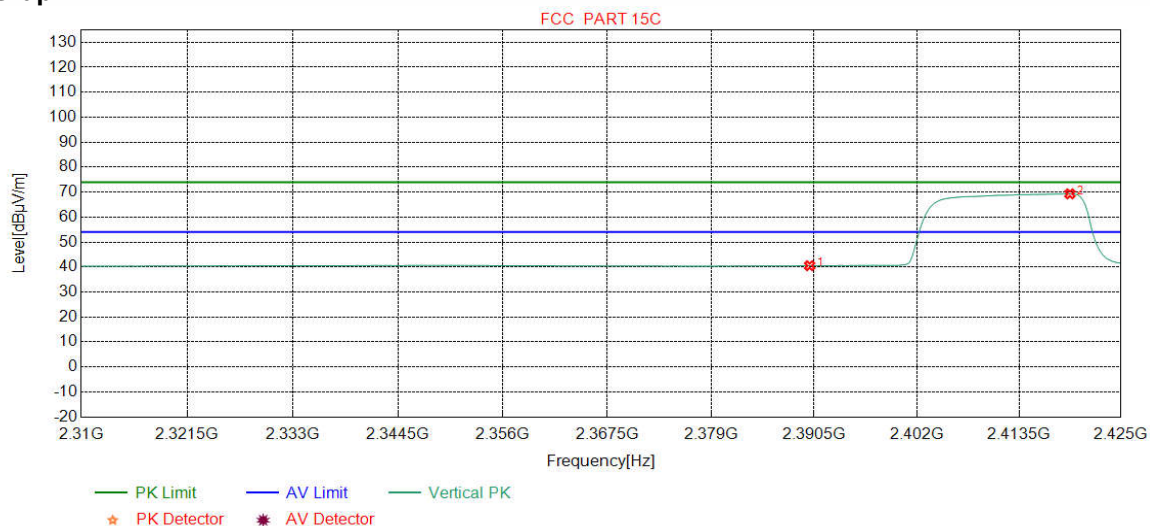
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	37.94	40.44	54.00	13.56	Pass	Horizontal
2	2419.2428	32.29	13.39	-43.12	44.92	47.48	54.00	6.52	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2412
Remark:	AV		

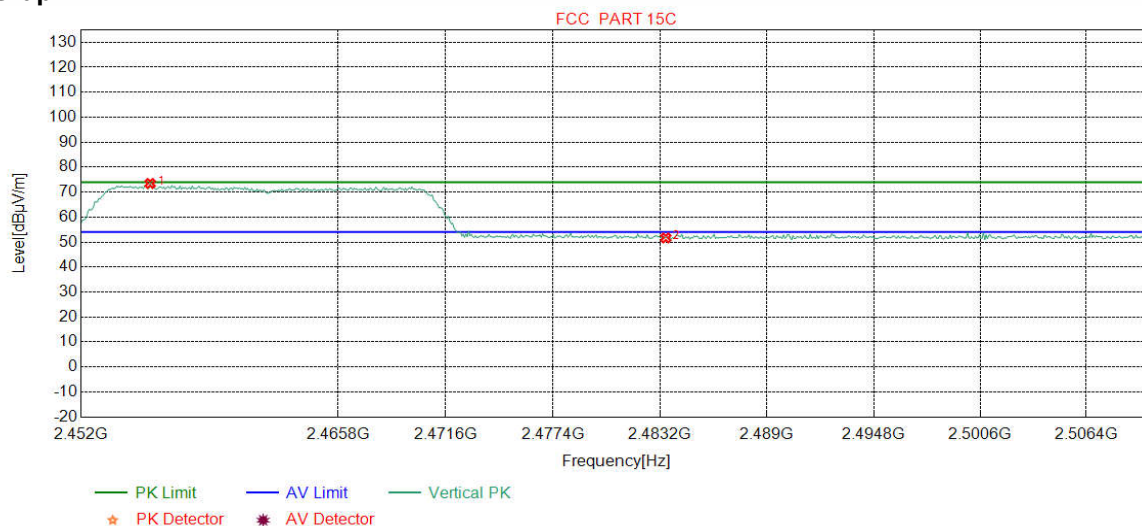
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2390.0000	32.25	13.37	-43.12	38.04	40.54	54.00	13.46	Pass	Vertical
2	2419.2428	32.29	13.39	-43.12	66.76	69.32	54.00	-15.32	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2462
Remark:	PK		

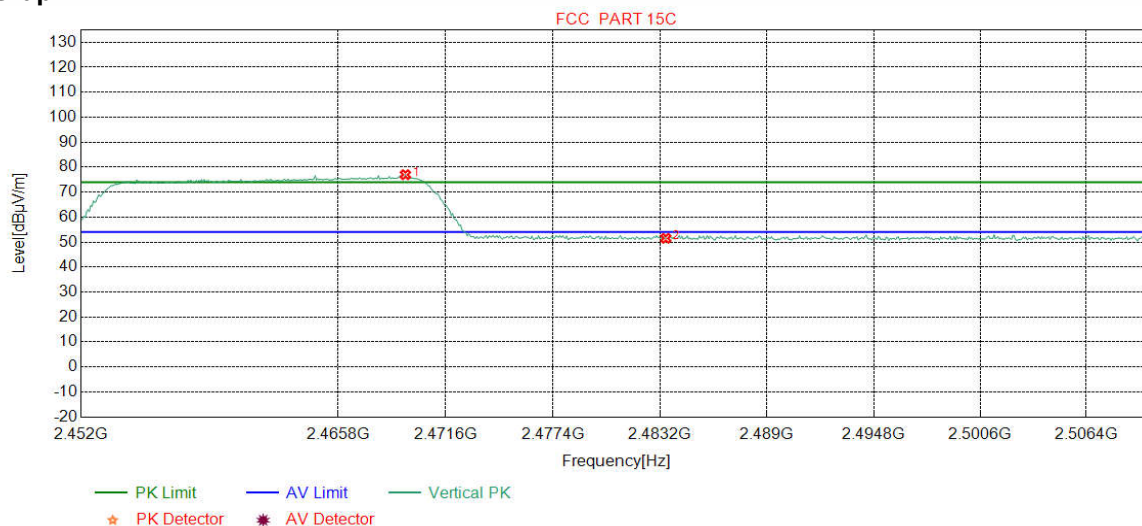
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2455.7021	32.34	13.50	-43.11	70.74	73.47	74.00	0.53	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	49.01	51.66	74.00	22.34	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2462
Remark:	PK		

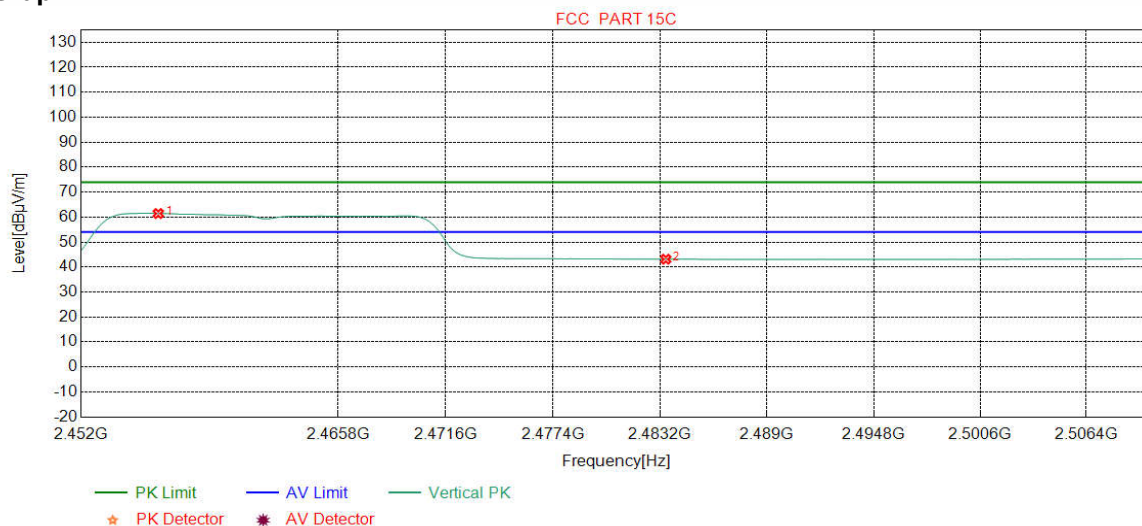
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2469.4218	32.36	13.44	-43.11	74.28	76.97	74.00	-2.97	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	48.86	51.51	74.00	22.49	Pass	Vertical

Mode:	802.11 n(HT20) Transmitting	Channel:	2462
Remark:	AV		

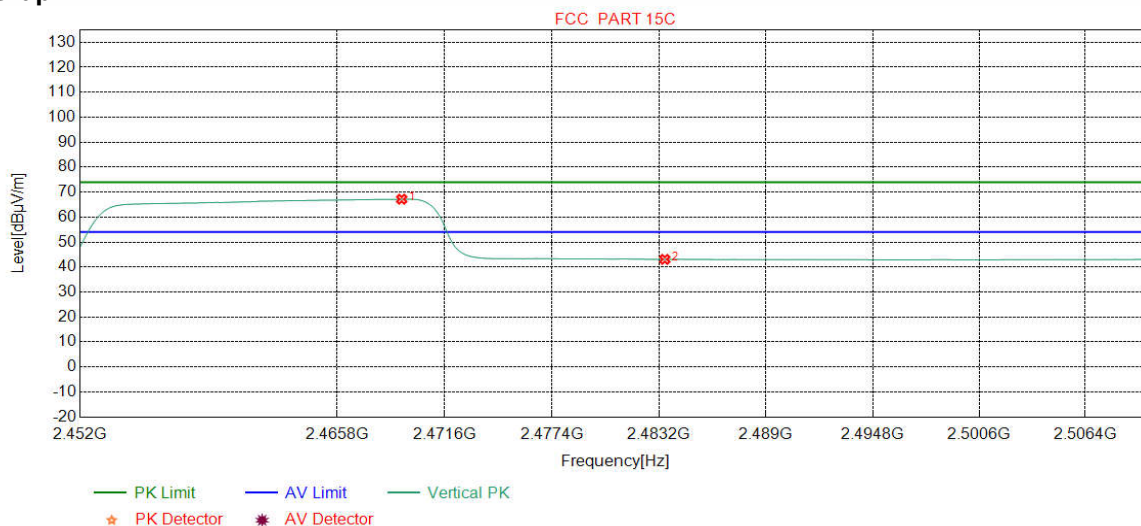
Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2456.1377	32.34	13.50	-43.11	58.69	61.42	54.00	-7.42	Pass	Horizontal
2	2483.5000	32.38	13.38	-43.11	40.49	43.14	54.00	10.86	Pass	Horizontal

Mode:	802.11 n(HT20) Transmitting	Channel:	2462
Remark:	AV		

Test Graph



NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity
1	2469.2766	32.36	13.44	-43.11	64.48	67.17	54.00	-13.17	Pass	Vertical
2	2483.5000	32.38	13.38	-43.11	40.43	43.08	54.00	10.92	Pass	Vertical

Note:

1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20), and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

Appendix I): Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).

h. Test the EUT in the lowest channel, the middle channel ,the Highest channel .

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.

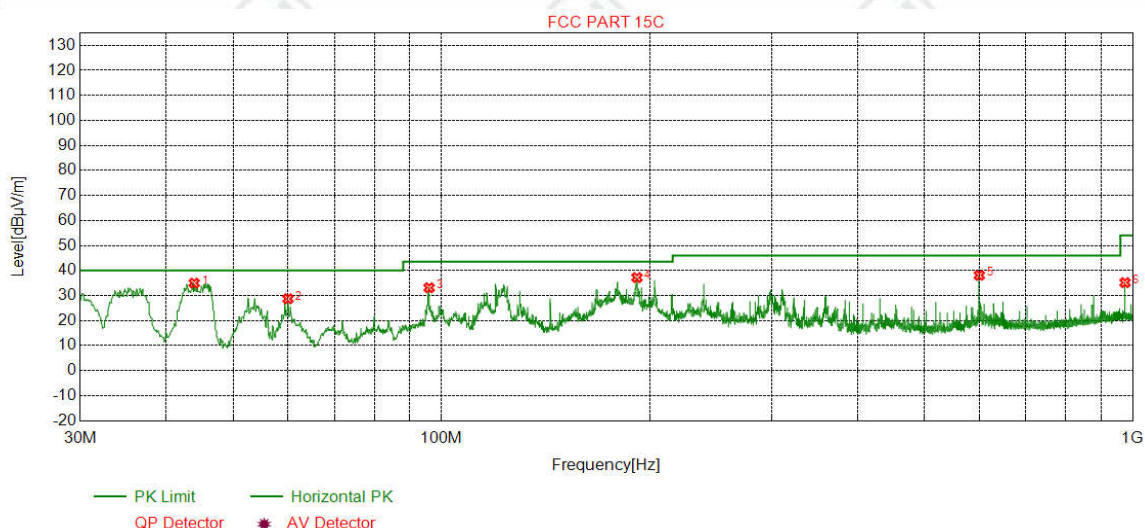
j. Repeat above procedures until all frequencies measured was complete.

Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3

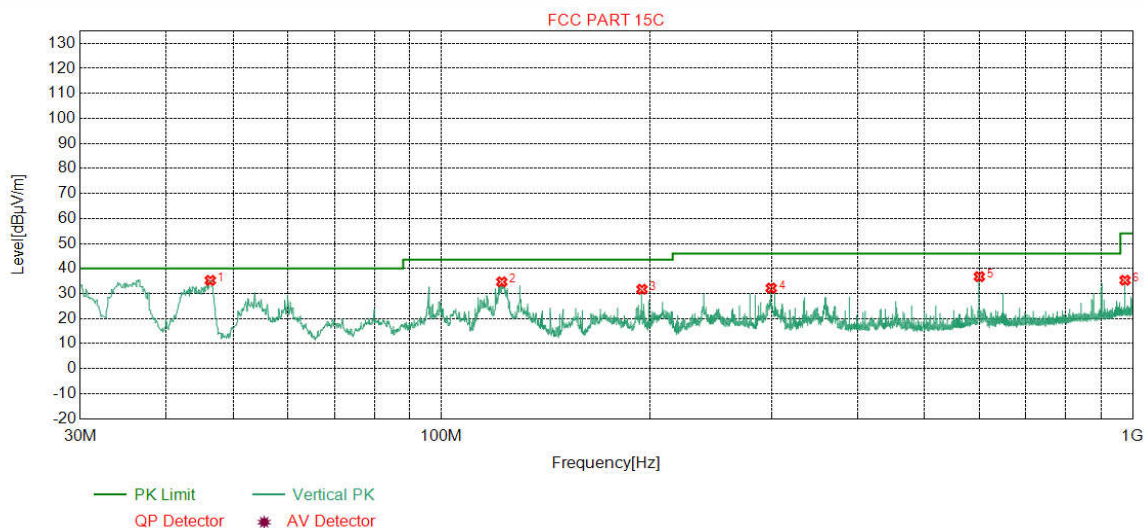
Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data: Radiated Emission below 1GHz

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 11 B Channel 2412MHz was selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Mode:			802.11 b Transmitting					Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	43.8724	13.00	0.74	-31.62	52.86	34.98	40.00	5.02	Pass	H	PK
2	59.9760	11.60	0.90	-31.80	48.01	28.71	40.00	11.29	Pass	H	PK
3	95.9666	10.35	1.13	-31.97	53.61	33.12	43.50	10.38	Pass	H	PK
4	191.8122	10.12	1.62	-31.95	57.38	37.17	43.50	6.33	Pass	H	PK
5	600.0290	19.00	2.96	-31.50	47.64	38.10	46.00	7.90	Pass	H	PK
6	974.9715	22.55	3.75	-30.95	39.82	35.17	54.00	18.83	Pass	H	PK



Mode:			802.11 b Transmitting					Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	46.2976	13.20	0.76	-31.81	53.10	35.25	40.00	4.75	Pass	V	PK
2	122.2562	8.86	1.31	-32.06	56.56	34.67	43.50	8.83	Pass	V	PK
3	195.0135	10.43	1.64	-31.94	51.58	31.71	43.50	11.79	Pass	V	PK
4	299.9780	13.20	2.06	-31.40	48.31	32.17	46.00	13.83	Pass	V	PK
5	600.0290	19.00	2.96	-31.50	46.30	36.76	46.00	9.24	Pass	V	PK
6	974.9715	22.55	3.75	-30.95	39.96	35.31	54.00	18.69	Pass	V	PK

Transmitter Emission above 1GHz

Mode:			802.11 b Transmitting					Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2001.5002	31.70	3.47	-43.19	49.92	41.90	74.00	32.10	Pass	H	PK
2	3301.0201	33.32	4.58	-43.10	48.82	43.62	74.00	30.38	Pass	H	PK
3	4986.1324	34.50	4.82	-42.80	51.25	47.77	74.00	26.23	Pass	H	PK
4	7477.2985	36.58	5.91	-42.11	48.89	49.27	74.00	24.73	Pass	H	PK
5	9740.4494	37.70	6.74	-42.10	49.01	51.35	74.00	22.65	Pass	H	PK
6	11866.591	39.19	7.41	-41.92	48.59	53.27	74.00	20.73	Pass	H	PK
7	1990.8991	31.64	3.46	-43.18	57.97	49.89	74.00	24.11	Pass	V	PK
8	2772.3772	32.84	4.19	-43.10	50.01	43.94	74.00	30.06	Pass	V	PK
9	5010.1340	34.51	4.83	-42.79	50.54	47.09	74.00	26.91	Pass	V	PK
10	6309.2206	35.86	5.46	-42.54	48.96	47.74	74.00	26.26	Pass	V	PK
11	8483.3656	36.59	6.46	-42.00	49.23	50.28	74.00	23.72	Pass	V	PK
12	10960.530	38.59	7.40	-42.00	48.53	52.52	74.00	21.48	Pass	V	PK

Mode:			802.11 b Transmitting					Channel:		2437	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2045.1045	31.76	3.55	-43.19	49.21	41.33	74.00	32.67	Pass	H	PK
2	3328.0219	33.33	4.55	-43.10	48.92	43.70	74.00	30.30	Pass	H	PK
3	5006.1337	34.51	4.83	-42.80	50.47	47.01	74.00	26.99	Pass	H	PK
4	7073.2716	36.17	5.72	-42.18	49.23	48.94	74.00	25.06	Pass	H	PK
5	9225.4150	37.65	6.52	-42.04	48.77	50.90	74.00	23.10	Pass	H	PK
6	11241.549	38.74	7.23	-41.99	48.97	52.95	74.00	21.05	Pass	H	PK
7	1991.2991	31.64	3.46	-43.17	55.84	47.77	74.00	26.23	Pass	V	PK
8	2440.3440	32.32	3.96	-43.11	57.38	50.55	74.00	23.45	Pass	V	PK
9	3916.0611	33.73	4.34	-43.01	50.09	45.15	74.00	28.85	Pass	V	PK
10	5024.1349	34.52	4.85	-42.79	51.88	48.46	74.00	25.54	Pass	V	PK
11	7564.3043	36.57	5.92	-42.11	48.85	49.23	74.00	24.77	Pass	V	PK
12	9657.4438	37.66	6.70	-42.10	50.15	52.41	74.00	21.59	Pass	V	PK

Mode:			802.11 b Transmitting					Channel:		2462	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2437.5438	32.31	3.96	-43.11	51.13	44.29	74.00	29.71	Pass	H	PK
2	3046.0031	33.22	4.84	-43.10	49.59	44.55	74.00	29.45	Pass	H	PK
3	5028.1352	34.53	4.85	-42.79	50.91	47.50	74.00	26.50	Pass	H	PK
4	7553.3036	36.58	5.87	-42.12	49.11	49.44	74.00	24.56	Pass	H	PK
5	9744.4496	37.70	6.76	-42.10	49.63	51.99	74.00	22.01	Pass	H	PK
6	11301.553	38.78	7.34	-42.00	48.85	52.97	74.00	21.03	Pass	H	PK
7	1994.4995	31.66	3.46	-43.18	55.84	47.78	74.00	26.22	Pass	H	AV
8	2463.9464	32.35	3.99	-43.11	53.96	47.19	74.00	26.81	Pass	V	PK
9	3525.0350	33.42	4.46	-43.09	50.61	45.40	74.00	28.60	Pass	V	PK
10	4994.1329	34.50	4.82	-42.80	50.61	47.13	74.00	26.87	Pass	V	PK
11	9232.4155	37.65	6.54	-42.04	49.26	51.41	74.00	22.59	Pass	V	PK
12	11248.549	38.75	7.24	-42.00	49.05	53.04	74.00	20.96	Pass	V	PK

Mode:			802.11 g Transmitting					Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1377.6378	28.28	2.86	-42.70	50.62	39.06	74.00	34.94	Pass	H	PK
2	2435.7436	32.31	3.96	-43.12	51.17	44.32	74.00	29.68	Pass	H	PK
3	5017.1345	34.52	4.84	-42.80	50.88	47.44	74.00	26.56	Pass	H	PK
4	7495.2997	36.60	5.95	-42.11	49.02	49.46	74.00	24.54	Pass	H	PK
5	8407.3605	36.56	6.34	-42.03	50.13	51.00	74.00	23.00	Pass	H	PK
6	11236.549	38.74	7.23	-42.00	49.10	53.07	74.00	20.93	Pass	H	PK
7	1381.2381	28.28	2.87	-42.70	50.45	38.90	74.00	35.10	Pass	V	PK
8	1996.0996	31.67	3.47	-43.19	56.77	48.72	74.00	25.28	Pass	V	PK
9	2404.9405	32.27	3.92	-43.12	51.62	44.69	74.00	29.31	Pass	V	PK
10	5035.1357	34.54	4.86	-42.79	50.75	47.36	74.00	26.64	Pass	V	PK
11	7660.3107	36.54	6.17	-42.13	48.68	49.26	74.00	24.74	Pass	V	PK
12	9650.4434	37.66	6.72	-42.10	49.37	51.65	74.00	22.35	Pass	V	PK

Mode:			802.11 g Transmitting					Channel:		2437	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2438.1438	32.31	3.96	-43.11	50.57	43.73	74.00	30.27	Pass	H	PK
2	5022.1348	34.52	4.85	-42.79	50.10	46.68	74.00	27.32	Pass	H	PK
3	6937.2625	36.07	5.83	-42.23	49.47	49.14	74.00	24.86	Pass	H	PK
4	8407.3605	36.56	6.34	-42.03	49.14	50.01	74.00	23.99	Pass	H	PK
5	10368.491	38.32	7.02	-42.03	49.53	52.84	74.00	21.16	Pass	H	PK
6	11183.545	38.71	7.21	-42.00	49.38	53.30	74.00	20.70	Pass	H	PK
7	1993.8994	31.66	3.46	-43.18	54.60	46.54	74.00	30.27	Pass	V	PK
8	2439.7440	32.32	3.96	-43.11	57.11	50.28	74.00	26.43	Pass	V	PK
9	5010.1340	34.51	4.83	-42.79	50.69	47.24	74.00	30.65	Pass	V	PK
10	7654.3103	36.54	6.16	-42.13	49.03	49.60	74.00	26.36	Pass	V	PK
11	9172.4115	37.67	6.45	-42.04	48.84	50.92	74.00	27.64	Pass	V	PK
12	10800.520	38.56	7.21	-42.00	49.04	52.81	74.00	25.26	Pass	V	PK

Mode:			802.11 g Transmitting					Channel:		2462	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2564.1564	32.50	4.09	-43.09	50.40	43.90	74.00	30.10	Pass	H	PK
2	3871.0581	33.70	4.35	-43.03	49.57	44.59	74.00	29.41	Pass	H	PK
3	5014.1343	34.51	4.84	-42.79	51.18	47.74	74.00	26.26	Pass	H	PK
4	7385.2924	36.49	5.85	-42.13	48.59	48.80	74.00	25.20	Pass	H	PK
5	9655.4437	37.66	6.71	-42.10	49.67	51.94	74.00	22.06	Pass	H	PK
6	11369.558	38.82	7.37	-42.00	49.16	53.35	74.00	20.65	Pass	H	PK
7	1993.2993	31.66	3.46	-43.18	55.94	47.88	74.00	26.12	Pass	V	PK
8	2438.1438	32.31	3.96	-43.11	51.07	44.23	74.00	29.77	Pass	V	PK
9	5000.1333	34.50	4.82	-42.80	50.61	47.13	74.00	26.87	Pass	V	PK
10	6442.2295	35.89	5.49	-42.52	49.37	48.23	74.00	25.77	Pass	V	PK
11	9764.4510	37.71	6.71	-42.10	49.50	51.82	74.00	22.18	Pass	V	PK
12	11328.555	38.80	7.33	-42.00	49.02	53.15	74.00	20.85	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2412	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2545.3545	32.47	4.08	-43.09	50.81	44.27	74.00	29.73	Pass	H	PK
2	3721.0481	33.58	4.29	-43.06	48.63	43.44	74.00	30.56	Pass	H	PK
3	4983.1322	34.50	4.82	-42.80	50.67	47.19	74.00	26.81	Pass	H	PK
4	7018.2679	36.12	5.69	-42.20	48.69	48.30	74.00	25.70	Pass	H	PK
5	9757.4505	37.70	6.74	-42.09	49.19	51.54	74.00	22.46	Pass	H	PK
6	11294.553	38.78	7.33	-42.00	49.62	53.73	74.00	20.27	Pass	H	PK
7	1992.4993	31.65	3.46	-43.18	54.44	46.37	74.00	27.63	Pass	V	PK
8	2567.5568	32.51	4.09	-43.10	50.70	44.20	74.00	29.80	Pass	V	PK
9	4482.0988	34.47	4.70	-42.80	48.45	44.82	74.00	29.18	Pass	V	PK
10	5004.1336	34.50	4.82	-42.79	50.26	46.79	74.00	27.21	Pass	V	PK
11	7367.2912	36.47	5.85	-42.13	49.52	49.71	74.00	24.29	Pass	V	PK
12	10812.520	38.56	7.18	-42.00	48.95	52.69	74.00	21.31	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2437	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2052.7053	31.77	3.56	-43.18	49.69	41.84	74.00	32.16	Pass	H	PK
2	3038.0025	33.22	4.85	-43.10	48.73	43.70	74.00	30.30	Pass	H	PK
3	3750.0500	33.60	4.35	-43.05	49.01	43.91	74.00	30.09	Pass	H	PK
4	5013.1342	34.51	4.84	-42.80	50.55	47.10	74.00	26.90	Pass	H	PK
5	7694.3130	36.52	6.25	-42.14	48.85	49.48	74.00	24.52	Pass	H	PK
6	9659.4440	37.66	6.70	-42.10	49.36	51.62	74.00	22.38	Pass	H	PK
7	1994.8995	31.67	3.46	-43.19	53.17	45.11	74.00	28.89	Pass	V	PK
8	2947.5948	33.12	4.40	-43.10	49.76	44.18	74.00	29.82	Pass	V	PK
9	5024.1349	34.52	4.85	-42.79	50.50	47.08	74.00	26.92	Pass	V	PK
10	6397.2265	35.88	5.32	-42.52	49.52	48.20	74.00	25.80	Pass	V	PK
11	9730.4487	37.69	6.71	-42.10	49.24	51.54	74.00	22.46	Pass	V	PK
12	11126.541	38.68	7.23	-42.00	49.56	53.47	74.00	20.53	Pass	V	PK

Mode:			802.11 n(HT20) Transmitting					Channel:		2462	
NO	Freq. [MHz]	Ant Factor [dB]	Cable loss [dB]	Pream gain [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1790.8791	30.32	3.30	-42.70	49.17	40.09	74.00	33.91	Pass	H	PK
2	2714.3714	32.74	4.13	-43.10	50.67	44.44	74.00	29.56	Pass	H	PK
3	4390.0927	34.35	4.54	-42.85	48.00	44.04	74.00	29.96	Pass	H	PK
4	7437.2958	36.54	5.85	-42.12	48.56	48.83	74.00	25.17	Pass	H	PK
5	9737.4492	37.69	6.73	-42.09	50.00	52.33	74.00	21.67	Pass	H	PK
6	11681.578	39.05	7.47	-41.97	48.63	53.18	74.00	20.82	Pass	H	PK
7	1992.2992	31.65	3.46	-43.18	55.48	47.41	74.00	26.59	Pass	V	PK
8	2808.7809	32.89	4.24	-43.10	50.22	44.25	74.00	29.75	Pass	V	PK
9	4052.0701	33.87	4.33	-42.98	48.76	43.98	74.00	30.02	Pass	V	PK
10	5005.1337	34.51	4.83	-42.81	50.67	47.20	74.00	26.80	Pass	V	PK
11	7357.2905	36.46	5.85	-42.13	49.78	49.96	74.00	24.04	Pass	V	PK
12	10210.480	38.09	6.85	-42.05	49.54	52.43	74.00	21.57	Pass	V	PK

Note:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.