SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park,
Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: ee.shenzhen@sgs.com

TEST REPORT

Application No.:	SZEM1703001952CR (SHEN1703001308IT)
Applicant:	Qingdao Haier Technology Co., Ltd.
Address of Applicant:	Building A01, Haier Information Park NO.1 Haier Road, Qingdao, P.R. China
Manufacturer:	Qingdao Haier Technology Co., Ltd.
Address of Manufacturer:	Building A01, Haier Information Park NO.1 Haier Road, Qingdao, P.R. China
Factory:	1. Rayson Technology (Shenzhen) Co., Ltd 2. Sichuan Changhong Componet Technology., Ltd
Address of Factory:	1. NO.1, Tongfu 1st Road, The 2nd Industrial Zone, Louncun, Gongming, Gguangming NewDistrict, Shenzhen, China 2. 35 East Mianxing Road High-Tech Park Mianxing City Sichuan Province
Equipment Under Test (EUT):	
EUT Name:	WIFI Modoule
Model No.:	MK-QTWIFI-08
FCC ID.:	2ALD3-MKQTWIFI08
Trade mark:	Haier
Standards:	47 CFR Part 15, Subpart C 15.247
Date of Receipt:	2017-03-16
Date of Test:	2017-03-31 to 2017-04-13
Date of Issue:	2017-04-24
Test Result :	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2017-04-24		Original

Authorized for issue by:				
Tested By				2017-04-13
		Bill Chen /Project Engineer		**Date**
Checked By				2017-04-24
		Eric Fu /Reviewer		**Date**

2 Test Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass

Radio Spectrum Matter Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Conducted Disturbance at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1.2	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.4	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass

3 Contents

4 General Information

4.1 Details of E.U.T.

Product Name:	WIFI Modoule
Model No.:	MK-QTWIFI-08
Trade Mark:	Haier
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 and HT40): OFDM (64QAM, 16QAM, QPSK, BPSK)
Operating Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
	IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Number:	IEEE 802.11b/g, IEEE 802.11n(HT20): 11 Channels
	IEEE 802.11n(HT40): 7 Channels
Channels Step:	5MHz step
Sample Type:	Fixed production
Antenna Type:	PCB antenna
Antenna Gain:	3dBi
Power supply:	DC input 5V
Test voltage	AC 120V 60Hz

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	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		

Operation Frequency each of channel(802.11n HT40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2422MHz	3	2432MHz	5	2442MHz	7	2452MHz
2	2427MHz	4	2437MHz	6	2447MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

For 802.11n (HT40):

Channel	Frequency
The Lowest channel	2422MHz
The Middle channel	2437MHz
The Highest channel	2452MHz

4.2 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
Air conditioning the motherboard	Customer to provide	N/A
Air conditioning remote control	Customer to provide	N/A
Laptop	Lenovo	T430u
Test board	Supply to SGS	FT232

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.25 x 10-8
2	Timeout	2s
3	Duty cycle	0.37%
4	Occupied Bandwidth	3%
5	RF conducted power	0.75dB
6	RF power density	2.84dB
7	Conducted Spurious emissions	0.75dB
8	RF Radiated power	4.5dB (below 1GHz)
		4.8dB (above 1GHz)
9	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-18GHz)
10	Temperature test	1℃
11	Humidity test	3%
12	Supply voltages	1.5%
13	Time	3%

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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. Registration No.: 556682.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Disturbance at AC Power Line(150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2016-05-13	2017-05-13
LISN	Rohde & Schwarz	ENV216	SEM007-01	2016-10-09	2017-10-09
LISN	ETS-LINDGREN	3816/2	SEM007-02	2016-04-25	2017-04-25
8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2016-09-28	2017-09-28
4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2016-09-28	2017-09-28
2 Line ISN	Fischer Custom	FCC-TLISN-T2-02	EMC0122	2016-09-28	2017-09-28

Conducted Peak Output Power					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2016-10-09	2017-10-09
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2016-10-09	2017-10-09
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2016-10-09	2017-10-09

Minimum 6dB Bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2016-10-09	2017-10-09
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2016-10-09	2017-10-09
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2016-10-09	2017-10-09

Power Spectrum Density					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2016-10-09	2017-10-09
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2016-10-09	2017-10-09
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2016-10-09	2017-10-09

Conducted Spurious Emissions					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2016-10-09	2017-10-09
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2016-10-09	2017-10-09
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2016-10-09	2017-10-09

Conducted Band Edges Measurement					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2016-10-09	2017-10-09
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2016-10-09	2017-10-09
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2016-10-09	2017-10-09

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2016-10-12	2017-10-12
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2016-10-12	2017-10-12
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2016-05-18	2017-05-18

RE in Chamber					
Test Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2016-05-13	2017-05-13
EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2016-10-09	2017-10-09
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2014-11-01	2017-11-01
Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-11	2015-10-17	2018-10-17
Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEM003-12	2014-11-24	2017-11-24
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2016-04-25	2017-04-25
Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A
DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2016-10-09	2017-10-09
Loop Antenna	Beijing Daze	ZN30401	SEM003-09	2015-05-13	2018-05-13

RE in Chamber					
Test Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2016-05-13	2017-05-13
EXA Spectrum Analyzer	Agilent Technologies Inc	N9010A	SEM004-09	2016-07-19	2017-07-19
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-02	2014-11-15	2017-11-15
Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2016-10-09	2017-10-09
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-14
Horn Antenna (18-26GHz)	ETS-Lindgren	3160	SEM003-12	2014-11-24	2017-11-24
Horn Antenna(26GHz-40GHz)	A.H.Systems, inc.	SAS-573	SEM003-13	2015-02-12	2018-02-12
Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2016-10-09	2017-10-09
Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247

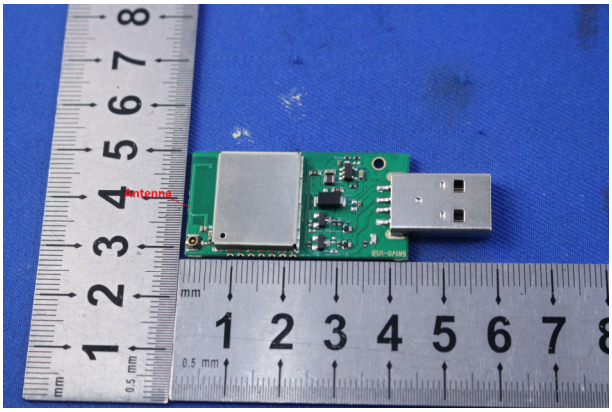
6.1.2 Conclusion

Standard Requirment:

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 integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3dBi.

7 Radio Spectrum Matter Test Results

7.1 Conducted Disturbance at AC Power Line(150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207
Test Method: ANSI C63.10 (2013) Section 6.2
Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency.		

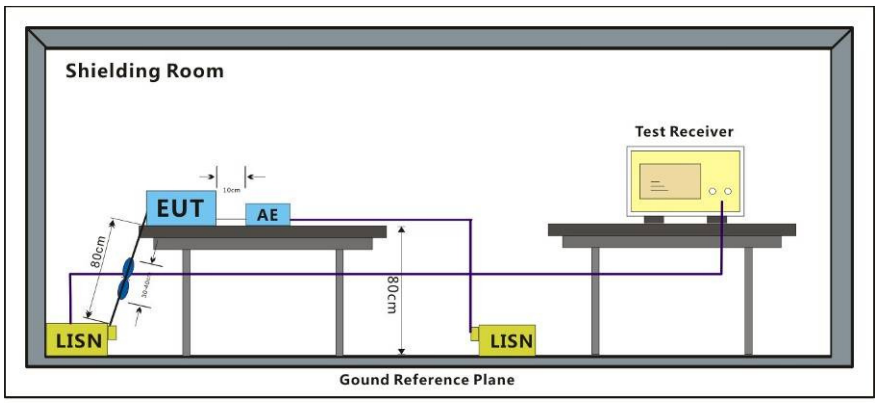
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 55 % RH Atmospheric Pressure: 1020 mbar

Test mode: a:TX_Keep the EUT transmitted the continuous modulation test signal at the specific channel(s).

7.1.2 Test Setup Diagram



7.1.3 Measurement Data

1) The mains terminal disturbance voltage test was conducted in a shielded room.

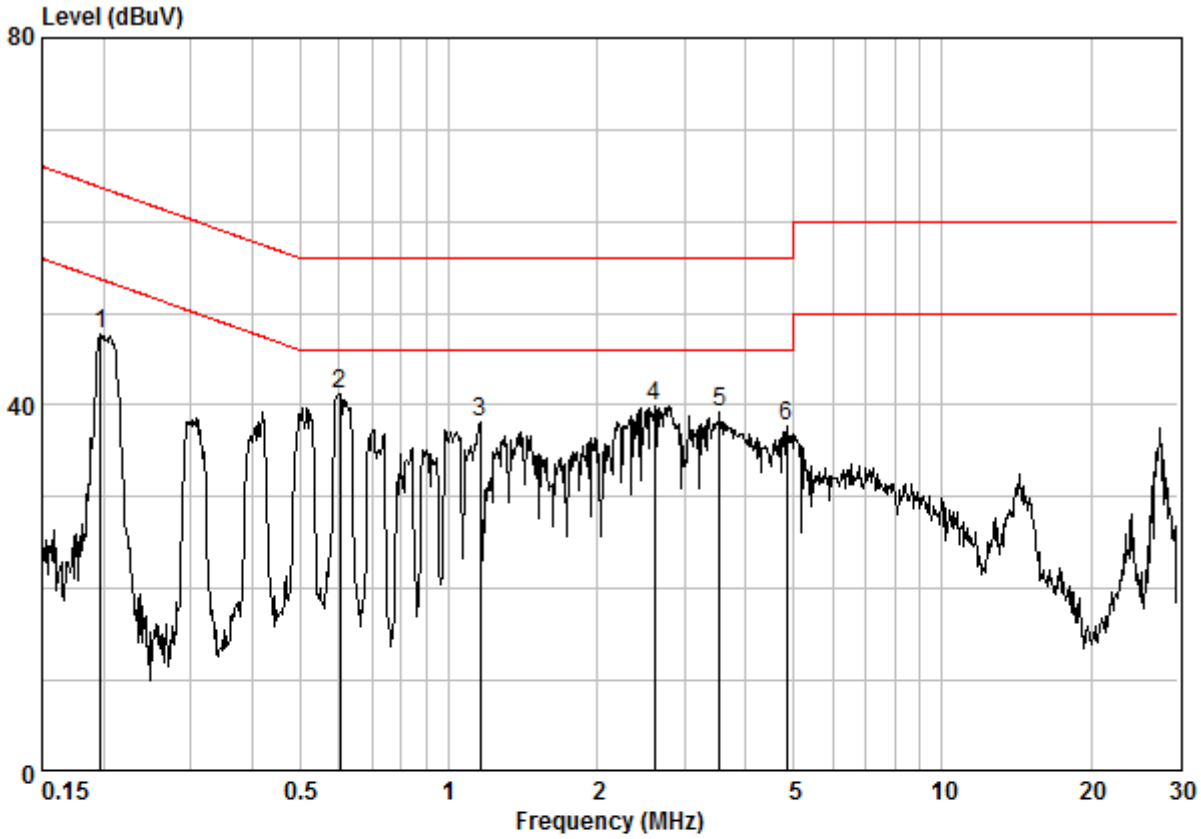
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as 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.

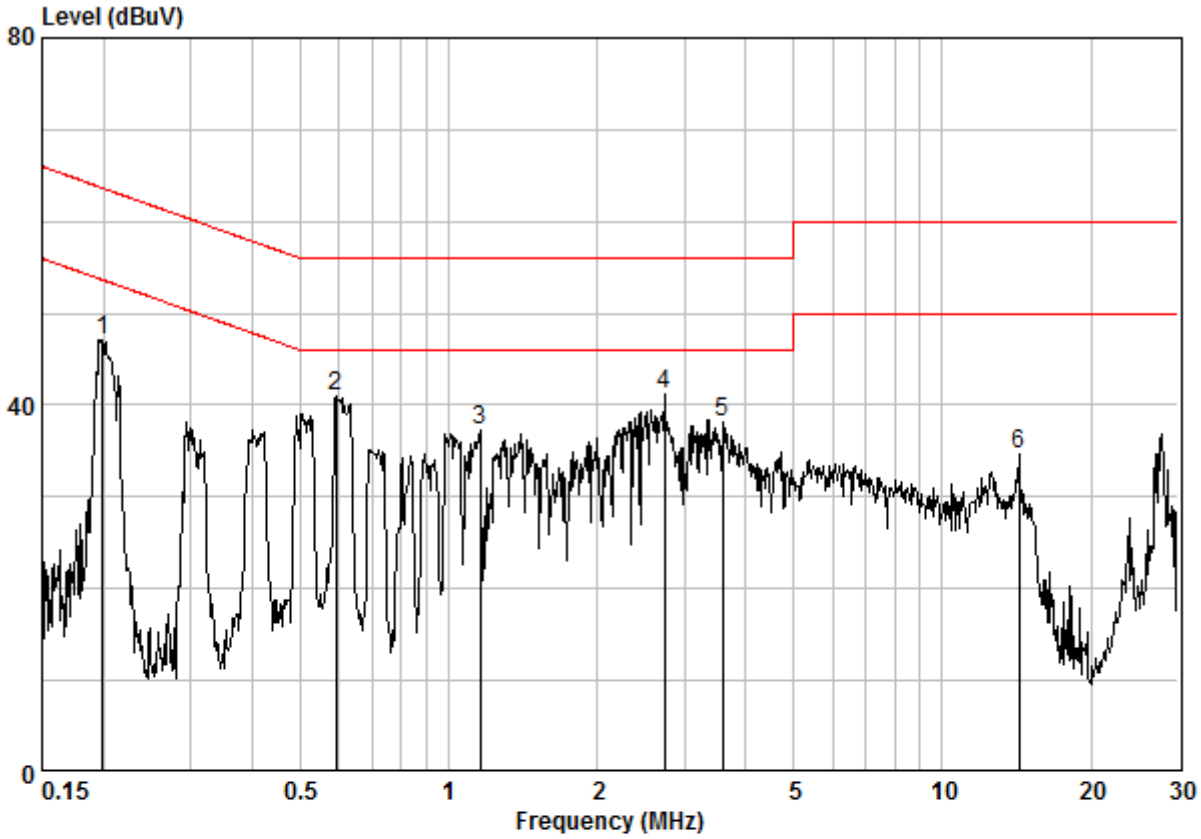
Mode:a; Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 01952CR
Test Mode : a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.19758	0.02	9.64	38.16	47.82	53.71	-5.89	Peak
2	0.60112	0.02	9.65	31.48	41.15	46.00	-4.85	Peak
3	1.160	0.03	9.66	28.42	38.11	46.00	-7.89	Peak
4	2.608	0.03	9.68	30.19	39.90	46.00	-6.10	Peak
5	3.547	0.02	9.70	29.58	39.30	46.00	-6.70	Peak
6	4.848	0.02	9.74	27.95	37.70	46.00	-8.30	Peak

Mode:a; Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 01952CR
Test Mode : a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.19863	0.02	9.63	37.48	47.13	53.67	-6.54	Peak
2	0.59164	0.02	9.63	31.25	40.90	46.00	-5.10	Peak
3	1.160	0.03	9.64	27.59	37.26	46.00	-8.74	Peak
4 @	2.736	0.03	9.67	31.48	41.17	46.00	-4.83	Peak
5	3.584	0.02	9.68	28.33	38.04	46.00	-7.96	Peak
6	14.288	0.16	9.95	24.45	34.56	50.00	-15.44	Peak

7.2 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)
Test Method: ANSI C63.10 (2013) Section 11.9.1.2
Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥50 hopping channels
	0.25 for 25≤ hopping channels <50
	1 for digital modulation
2400-2483.5	1 for ≥75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.2.1 E.U.T. Operation

Operating Environment:

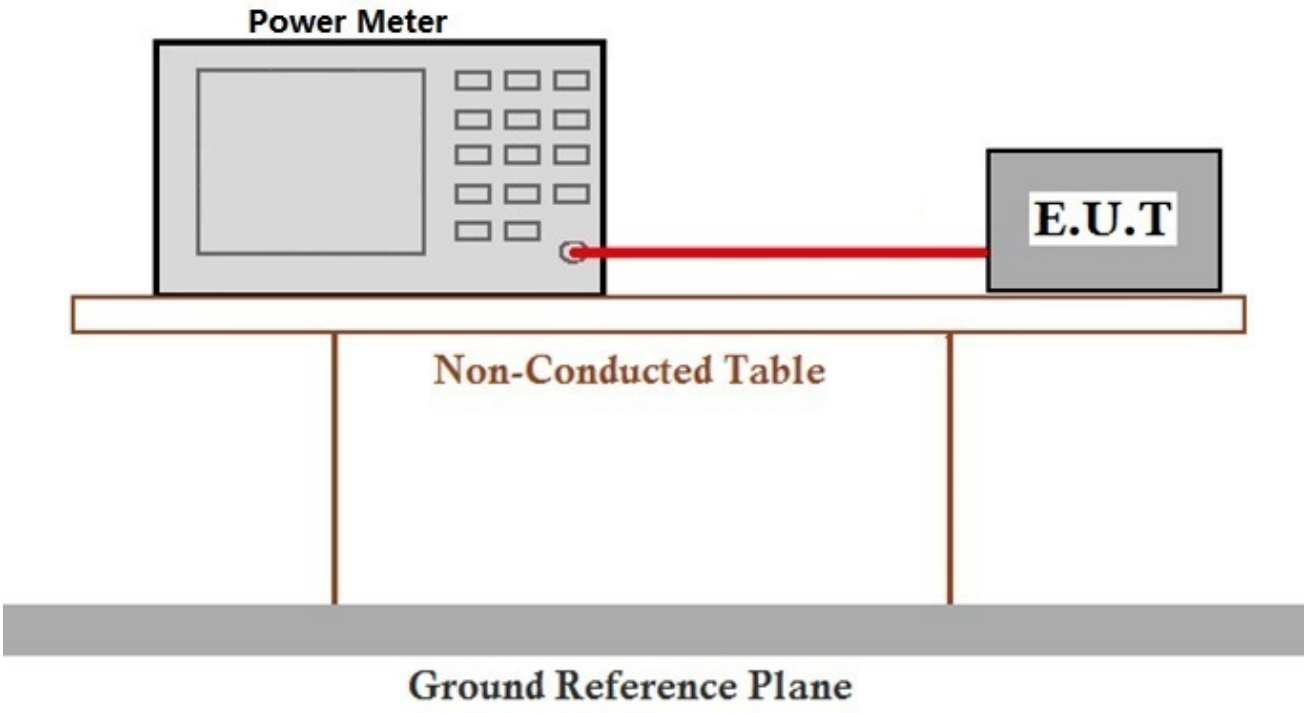
Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

Test Mode: Transmitting with all kind of modulations, data rates

Final Test Mode: Through Pre-scan, find the 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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

7.2.2 Test Setup Diagram



7.2.3 Measurement Data

The detailed test data see: Appendix 15.247

7.3 Minimum 6dB Bandwidth

Test Requirement	47 CFR Part 15, Subpart C 15.247a(2)
Test Method:	ANSI C63.10 (2013) Section 11.8.1
Limit:	⩾500 kHz

7.3.1 E.U.T. Operation

Operating Environment:

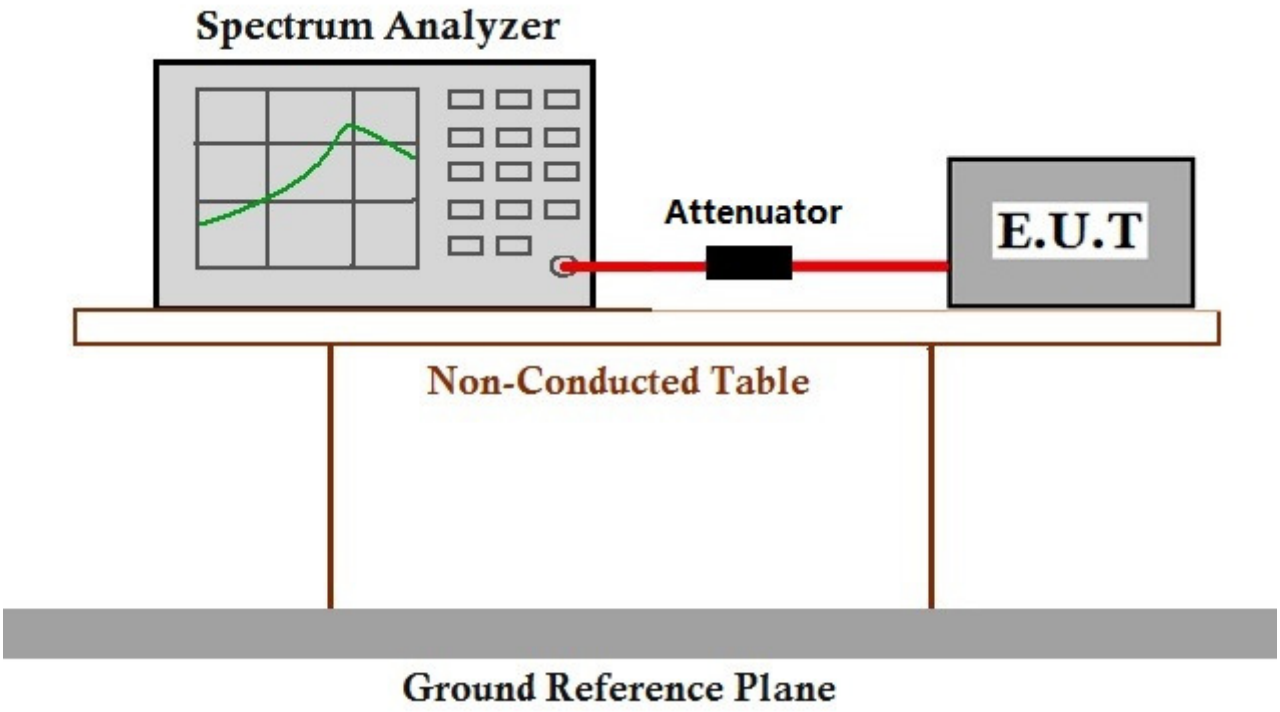
Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

Test Mode: Transmitting with all kind of modulations, data rates

Final Test Mode: Through Pre-scan, find the 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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

7.3.2 Test Setup Diagram



7.3.3 Measurement Data

The detailed test data see: Appendix 15.247

7.4 Power Spectrum Density

Test Requirement	47 CFR Part 15, Subpart C 15.247(e)
Test Method:	ANSI C63.10 (2013) Section 11.10.2
Limit:	≤8dBm in any 3 kHz band during any time interval of continuous transmission

7.4.1 E.U.T. Operation

Operating Environment:

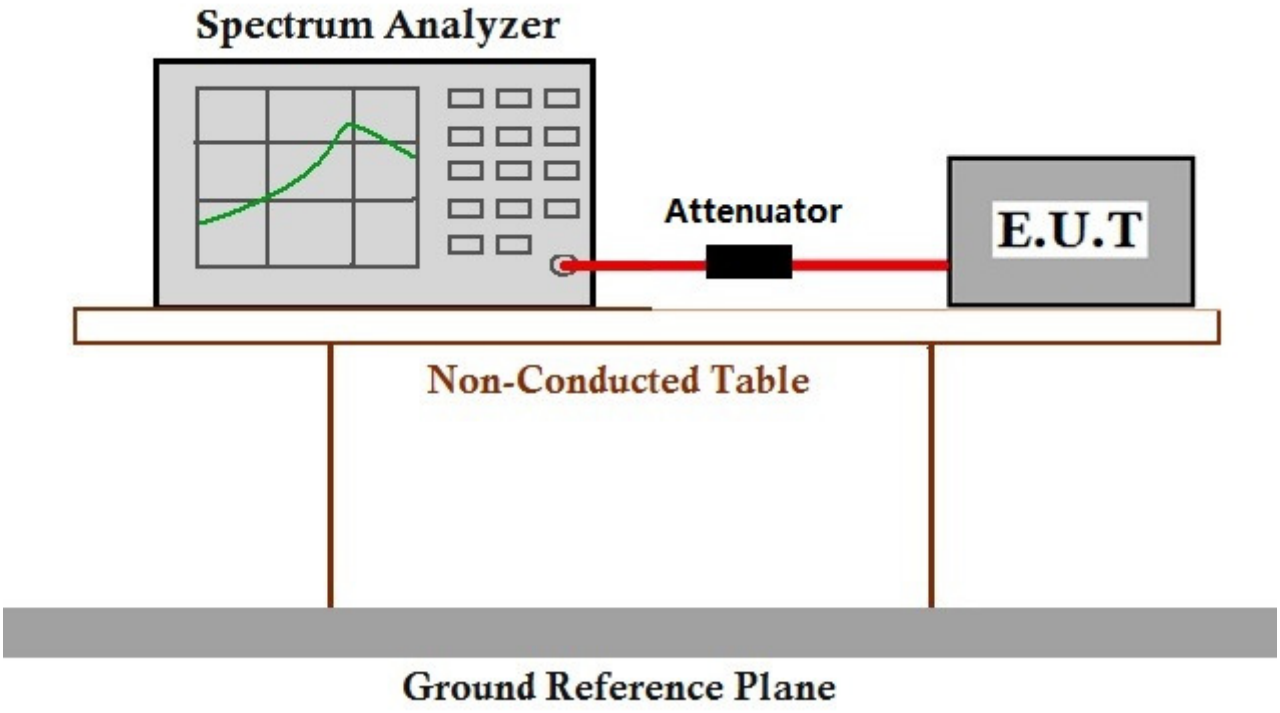
Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

Test Mode: Transmitting with all kind of modulations, data rates

Final Test Mode: Through Pre-scan, find the 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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

7.4.2 Test Setup Diagram



7.4.3 Measurement Data

The detailed test data see: Appendix 15.247

7.5 Conducted Spurious Emissions

Test Requirement	47 CFR Part 15, Subpart C 15.247(d)
Test Method:	ANSI C63.10 (2013) Section 11.11
Limit:	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.

7.5.1 E.U.T. Operation

Operating Environment:

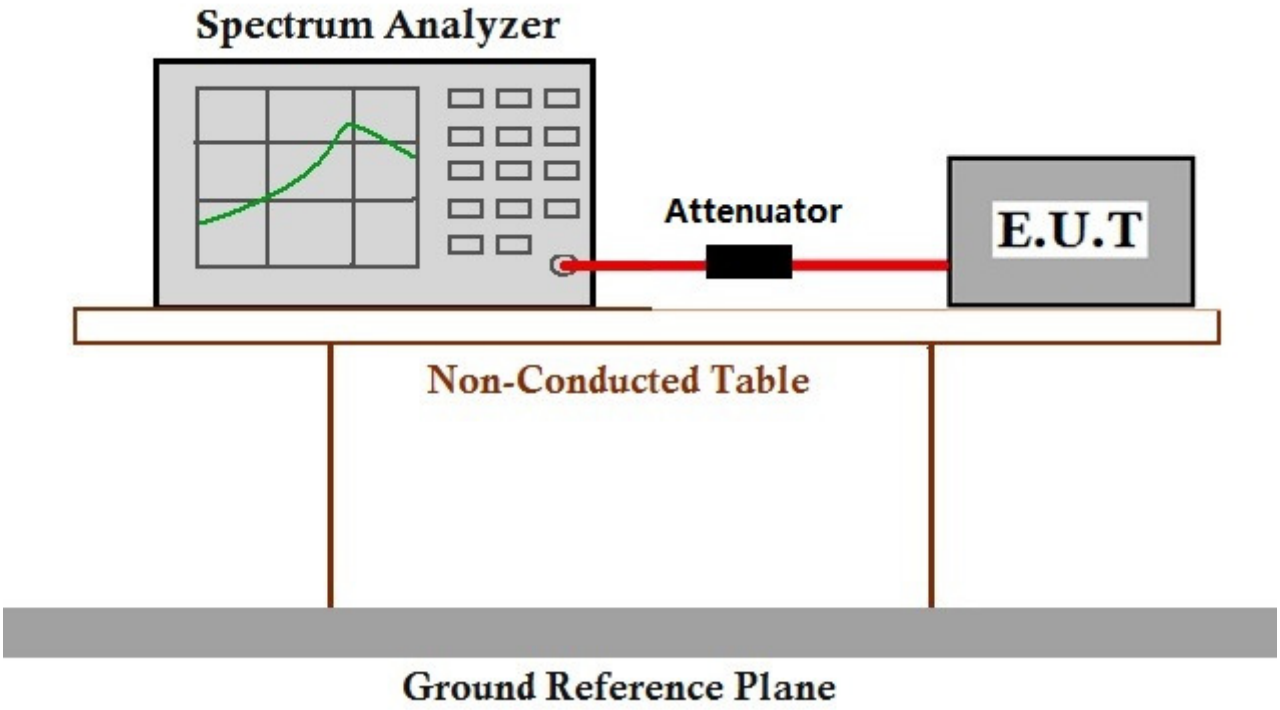
Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

Test Mode: Transmitting with all kind of modulations, data rates

Final Test Mode: Through Pre-scan, find the 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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

7.5.2 Test Setup Diagram



7.5.3 Measurement Data

The detailed test data see: Appendix 15.247

7.6 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)
Test Method: ANSI C63.10 (2013) Section 6.10.4
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

7.6.1 E.U.T. Operation

Operating Environment:

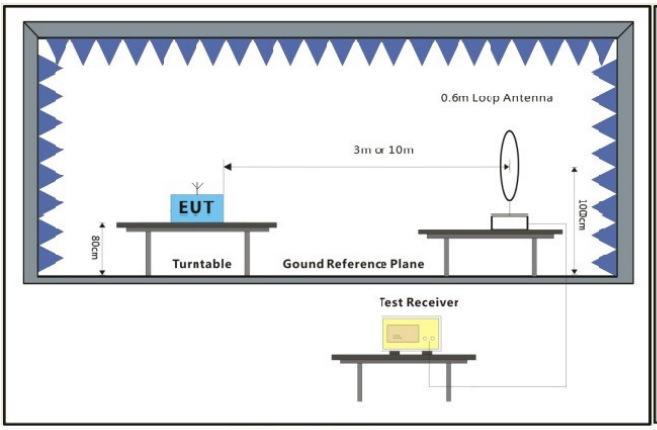
Temperature: 25.0 °C Humidity: 55 % RH Atmospheric Pressure: 1015 mbar

Test Mode: Transmitting with all kind of modulations, data rates

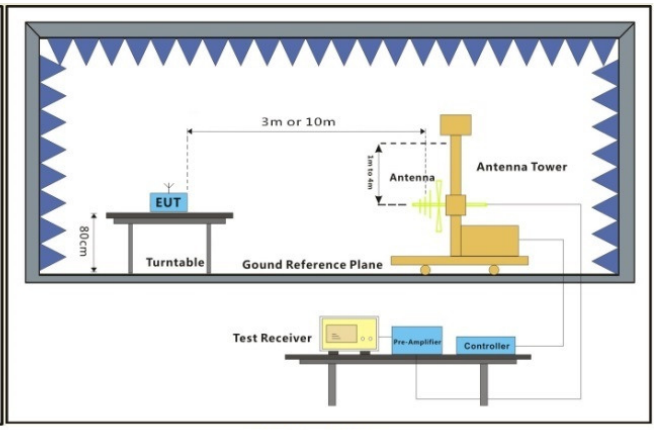
Final Test Mode: Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b;

6Mbps of rate is the worst case of 802.11g ; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

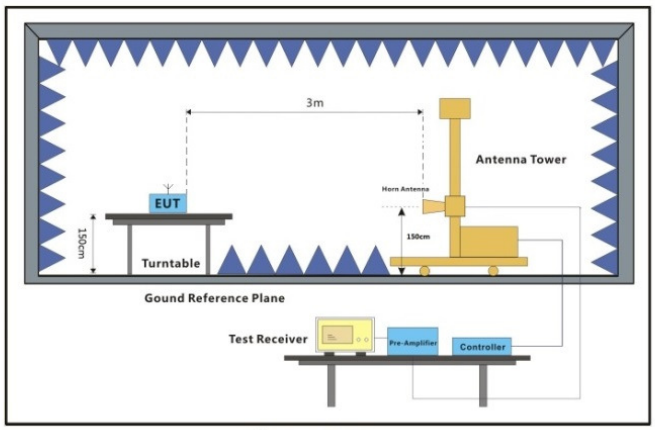
7.6.2 Test Setup Diagram



Below 30MHz



30MHz-1GHz



Above 1GHz

7.6.3 Measurement Data

a. For below 1GHz, 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.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

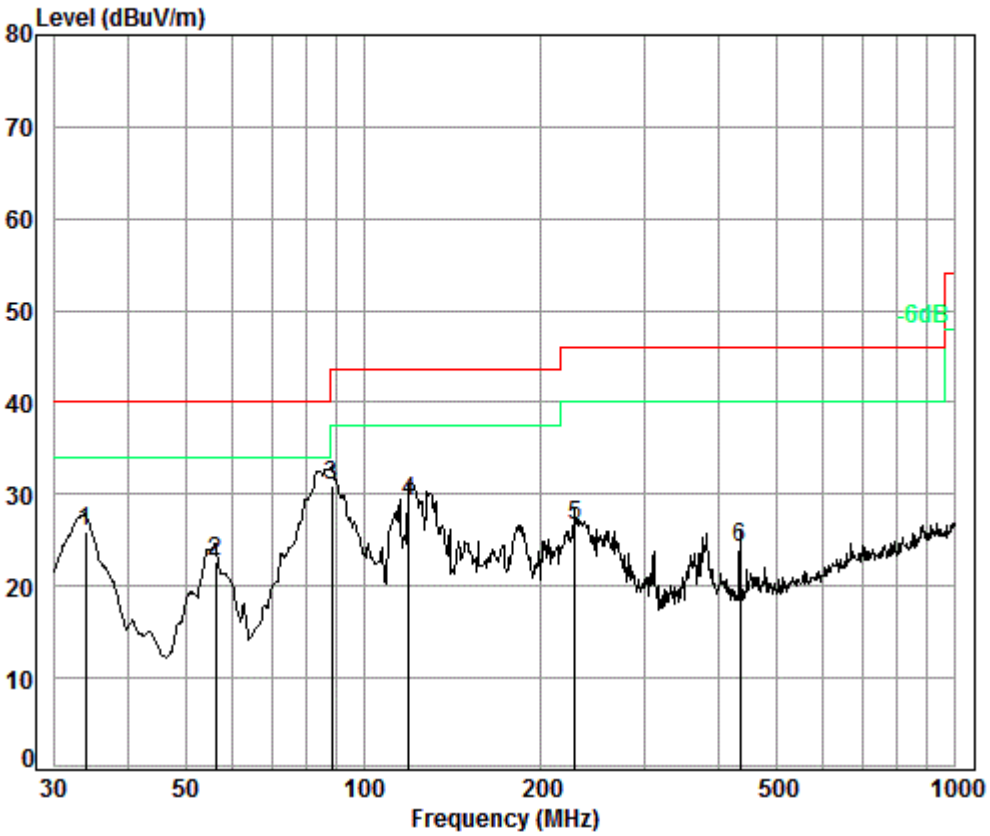
g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified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

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 the worst case.

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

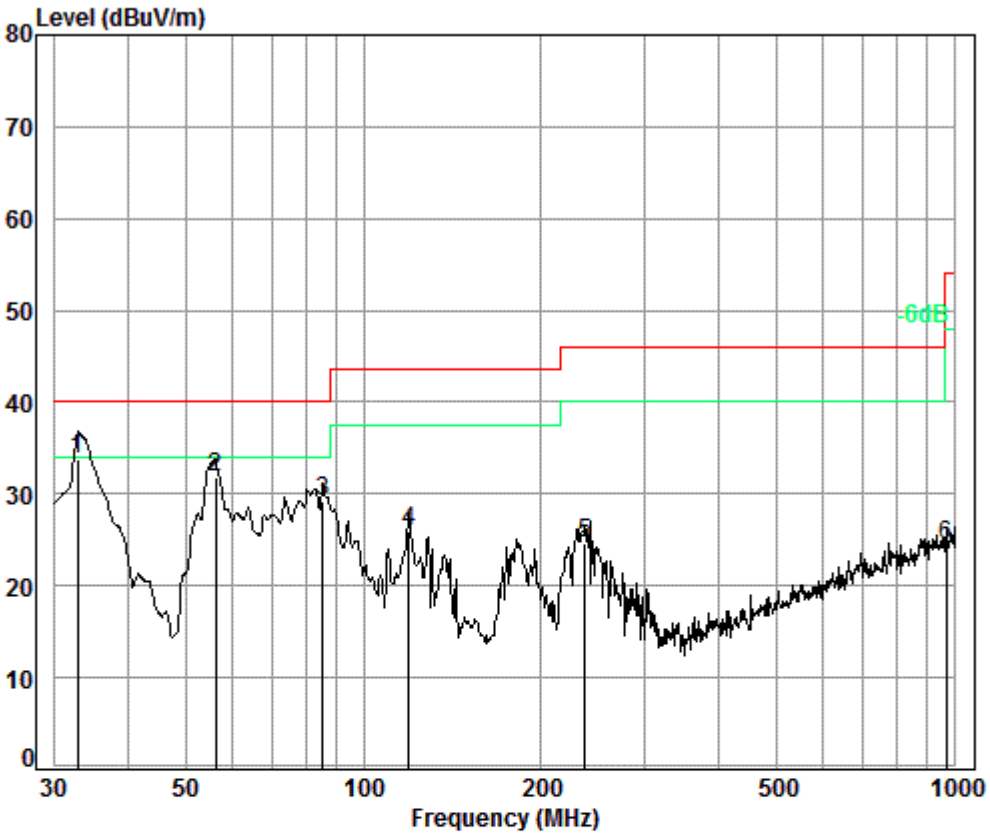
Mode:a;



Condition: 3m HORIZONTAL
Job No. : 01592CR
Test mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	33.92	0.60	16.51	27.34	36.10	25.87	40.00	-14.13
2	56.20	0.80	7.77	27.27	41.44	22.74	40.00	-17.26
3 pp	88.34	1.10	8.53	27.22	48.63	31.04	43.50	-12.46
4	119.44	1.25	7.94	27.07	47.16	29.28	43.50	-14.22
5	227.69	1.56	11.59	26.61	40.01	26.55	46.00	-19.45
6	434.07	2.35	16.58	27.35	32.61	24.19	46.00	-21.81

Mode:a;



Condition: 3m VERTICAL
Job No. : 01952CR
Test mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	32.86	0.60	17.10	27.35	43.41	33.76	40.00	-6.24
2	56.20	0.80	7.77	27.27	50.58	31.88	40.00	-8.12
3	85.30	1.10	8.23	27.22	47.03	29.14	40.00	-10.86
4	119.44	1.25	7.94	27.07	43.75	25.87	43.50	-17.63
5	236.64	1.61	11.87	26.58	37.80	24.70	46.00	-21.30
6	965.54	3.67	23.30	26.47	23.87	24.37	54.00	-29.63

Above 1G:

Mode:a; Polarization:Horizontal; Modulation Type:802.11b; bandwidth:20MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3847.726	33.19	6.58	37.98	44.08	46.36	74	-27.64
4824.000	34.19	7.76	38.41	44.78	48.71	74	-25.29
6148.967	34.82	8.84	38.15	44.43	50.23	74	-23.77
7236.000	36.40	9.67	37.09	43.10	52.33	74	-21.67
9648.000	37.53	11.10	35.08	39.76	53.76	74	-20.24
12676.420	38.86	13.22	37.22	37.41	52.82	74	-21.18

Mode:a; Polarization:Vertical; Modulation Type:802.11b; bandwidth:20MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3842.163	33.18	6.58	37.98	45.46	47.73	74	-26.27
4824.000	34.19	7.76	38.41	45.91	49.84	74	-24.16
6060.637	34.75	8.79	38.24	45.00	50.61	74	-23.39
7236.000	36.40	9.67	37.09	43.63	52.86	74	-21.14
9648.000	37.53	11.10	35.08	39.37	53.37	74	-20.63
12548.680	38.89	13.16	36.92	37.18	52.90	74	-21.10

Mode:a; Polarization:Horizontal; Modulation Type:802.11b; bandwidth:20MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3853.298	33.21	6.59	37.99	44.73	47.02	74	-26.98
4874.000	34.28	7.83	38.44	45.13	49.21	74	-24.79
6008.249	34.71	8.76	38.29	44.75	50.25	74	-23.75
7311.000	36.37	9.72	37.02	43.63	52.94	74	-21.06
9748.000	37.55	11.20	35.03	39.17	53.35	74	-20.65
12440.210	38.86	13.05	36.66	37.62	53.50	74	-20.50

Mode:a; Polarization:Vertical; Modulation Type:802.11b; bandwidth:20MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3847.726	33.19	6.58	37.98	44.79	47.07	74	-26.93
4874.000	34.28	7.83	38.44	44.63	48.71	74	-25.29
5803.188	34.59	8.56	38.34	45.20	50.40	74	-23.60
7311.000	36.37	9.72	37.02	43.35	52.66	74	-21.34
9748.000	37.55	11.20	35.03	39.60	53.78	74	-20.22
12458.220	38.88	13.08	36.70	37.03	52.91	74	-21.09

Mode:a; Polarization:Horizontal; Modulation Type:802.11b; bandwidth:20MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3759.672	32.95	6.51	37.98	44.43	46.41	74	-27.59
4924.000	34.37	7.90	38.46	44.15	48.38	74	-25.62
6274.796	34.92	8.92	38.03	43.98	50.10	74	-23.90
7386.000	36.34	9.77	36.95	43.09	52.47	74	-21.53
9848.000	37.57	11.29	34.98	39.37	53.71	74	-20.29
12512.420	38.90	13.15	36.83	37.22	53.05	74	-20.95

Mode:a; Polarization:Vertical; Modulation Type:802.11b; bandwidth:20MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3886.896	33.30	6.61	37.99	45.06	47.45	74	-26.55
4924.000	34.37	7.90	38.46	44.20	48.43	74	-25.57
6069.413	34.76	8.79	38.23	44.89	50.51	74	-23.49
7386.000	36.34	9.77	36.95	44.12	53.50	74	-20.50
9848.000	37.57	11.29	34.98	38.98	53.32	74	-20.68
12422.220	38.85	13.03	36.61	37.19	53.09	74	-20.91

Mode:a; Polarization:Horizontal; Modulation Type:802.11g; bandwidth:20MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3652.432	32.65	6.43	37.97	44.55	46.18	74	-27.82
4824.000	34.19	7.76	38.41	45.32	49.25	74	-24.75
5870.752	34.62	8.62	38.33	45.07	50.34	74	-23.66
7236.000	36.40	9.67	37.09	43.83	53.06	74	-20.94
9648.000	37.53	11.10	35.08	39.81	53.81	74	-20.19
12676.420	38.86	13.22	37.22	37.96	53.37	74	-20.63

Mode:a; Polarization:Vertical; Modulation Type:802.11g; bandwidth:20MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3903.804	33.34	6.63	37.99	44.22	46.67	74	-27.33
4824.000	34.19	7.76	38.41	45.02	48.95	74	-25.05
6320.356	34.96	8.95	37.98	44.30	50.54	74	-23.46
7236.000	36.40	9.67	37.09	44.13	53.36	74	-20.64
9648.000	37.53	11.10	35.08	39.03	53.03	74	-20.97
12332.670	38.80	12.90	36.40	36.97	52.93	74	-21.07

Mode:a; Polarization:Horizontal; Modulation Type:802.11g; bandwidth:20MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3842.163	33.18	7.76	37.98	45.01	47.97	74	-26.03
4874.000	34.28	8.97	38.44	45.64	50.45	74	-23.55
6016.949	34.71	10.54	38.28	45.30	52.27	74	-21.73
7311.000	36.37	10.72	37.02	43.58	53.65	74	-20.35
9748.000	37.55	12.58	35.03	37.63	52.73	74	-21.27
12676.420	38.86	14.65	37.22	36.80	53.09	74	-20.91

Mode:a; Polarization:Vertical; Modulation Type:802.11g; bandwidth:20MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3786.970	33.03	7.74	37.98	45.48	48.27	74	-25.73
4874.000	34.28	8.97	38.44	45.73	50.54	74	-23.46
6131.199	34.81	10.39	38.17	45.43	52.46	74	-21.54
7311.000	36.37	10.72	37.02	43.25	53.32	74	-20.68
9748.000	37.55	12.58	35.03	38.42	53.52	74	-20.48
12422.220	38.85	14.21	36.61	36.63	53.08	74	-20.92

Mode:a; Polarization:Horizontal; Modulation Type:802.11g; bandwidth:20MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3909.457	33.36	6.63	37.99	44.21	46.68	74	-27.32
4924.000	34.37	7.90	38.46	43.79	48.02	74	-25.98
6016.949	34.71	8.76	38.28	44.57	50.08	74	-23.92
7386.000	36.34	9.77	36.95	43.64	53.02	74	-20.98
9848.000	37.57	11.29	34.98	38.77	53.11	74	-20.89
12458.220	38.88	13.08	36.70	37.80	53.68	74	-20.32

Mode:a; Polarization:Vertical; Modulation Type:802.11g; bandwidth:20MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3853.298	33.21	6.59	37.99	45.16	47.45	74	-26.55
4924.000	34.37	7.90	38.46	44.67	48.90	74	-25.10
6034.386	34.73	8.77	38.27	44.52	50.06	74	-23.94
7386.000	36.34	9.77	36.95	43.75	53.13	74	-20.87
9848.000	37.57	11.29	34.98	39.40	53.74	74	-20.26
12639.790	38.87	13.20	37.14	37.10	52.60	74	-21.40

Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:20MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3847.726	33.19	7.76	37.98	44.94	47.91	74	-26.09
4824.000	34.19	8.90	38.41	44.97	49.65	74	-24.35
6311.218	34.95	10.16	37.99	45.66	52.78	74	-21.22
7236.000	36.40	10.69	37.09	43.80	53.80	74	-20.20
9648.000	37.53	12.52	35.08	38.28	53.25	74	-20.75
12314.840	38.79	14.30	36.36	36.00	52.73	74	-21.27

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:20MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3842.163	33.18	7.76	37.98	44.93	47.89	74	-26.11
4824.000	34.19	8.90	38.41	45.63	50.31	74	-23.69
6122.333	34.80	10.40	38.18	45.35	52.37	74	-21.63
7236.000	36.40	10.69	37.09	43.06	53.06	74	-20.94
9648.000	37.53	12.52	35.08	38.56	53.53	74	-20.47
12713.160	38.86	14.75	37.31	37.00	53.30	74	-20.70

Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:20MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3847.726	33.19	7.76	37.98	45.17	48.14	74	-25.86
4874.000	34.28	8.97	38.44	45.79	50.60	74	-23.40
5999.562	34.70	10.56	38.30	45.59	52.55	74	-21.45
7311.000	36.37	10.72	37.02	42.88	52.95	74	-21.05
9748.000	37.55	12.58	35.03	38.17	53.27	74	-20.73
12386.320	38.83	14.24	36.53	36.91	53.45	74	-20.55

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:20MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3983.689	33.56	7.80	38.00	45.89	49.25	74	-24.75
4874.000	34.28	8.97	38.44	44.88	49.69	74	-24.31
6265.724	34.92	10.22	38.03	44.34	51.45	74	-22.55
7311.000	36.37	10.72	37.02	42.94	53.01	74	-20.99
9748.000	37.55	12.58	35.03	38.52	53.62	74	-20.38
12440.210	38.86	14.20	36.66	36.89	53.29	74	-20.71

Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:20MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3847.726	33.19	7.76	37.98	45.02	47.99	74	-26.01
4924.000	34.37	9.04	38.46	45.08	50.03	74	-23.97
6008.249	34.71	10.55	38.29	45.47	52.44	74	-21.56
7386.000	36.34	10.75	36.95	43.21	53.35	74	-20.65
9848.000	37.57	12.63	34.98	37.99	53.21	74	-20.79
12731.570	38.85	14.81	37.36	36.96	53.26	74	-20.74

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:20MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3647.151	32.63	7.69	37.96	45.16	47.52	74	-26.48
4924.000	34.37	9.04	38.46	45.96	50.91	74	-23.09
6131.199	34.81	10.39	38.17	45.44	52.47	74	-21.53
7386.000	36.34	10.75	36.95	43.45	53.59	74	-20.41
9848.000	37.57	12.63	34.98	38.11	53.33	74	-20.67
12621.510	38.88	14.50	37.09	36.52	52.81	74	-21.19

Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:40MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3858.877	33.22	7.76	37.99	44.80	47.79	74	-26.21
4844.000	34.23	8.92	38.42	46.86	51.59	74	-22.41
5999.562	34.70	10.56	38.30	45.66	52.62	74	-21.38
7266.000	36.39	10.70	37.06	43.20	53.23	74	-20.77
9688.000	37.54	12.54	35.06	38.32	53.34	74	-20.66
12368.410	38.82	14.26	36.48	36.77	53.37	74	-20.63

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:40MHz; Channel:Low

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3858.877	33.22	7.76	37.99	45.18	48.17	74	-25.83
4844.000	34.23	8.92	38.42	46.26	50.99	74	-23.01
5999.562	34.70	10.56	38.30	44.71	51.67	74	-22.33
7266.000	36.39	10.70	37.06	43.23	53.26	74	-20.74
9688.000	37.54	12.54	35.06	38.64	53.66	74	-20.34
12350.530	38.81	14.27	36.44	36.00	52.64	74	-21.36

Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:40MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3842.163	33.18	7.76	37.98	45.00	47.96	74	-26.04
4874.000	34.28	8.97	38.44	45.11	49.92	74	-24.08
6122.333	34.80	10.40	38.18	45.40	52.42	74	-21.58
7311.000	36.37	10.72	37.02	43.06	53.13	74	-20.87
9748.000	37.55	12.58	35.03	38.41	53.51	74	-20.49
12731.570	38.85	14.81	37.36	36.73	53.03	74	-20.97

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:40MHz; Channel:middle

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3870.060	33.25	7.77	37.99	44.75	47.78	74	-26.22
4874.000	34.28	8.97	38.44	44.90	49.71	74	-24.29
6008.249	34.71	10.55	38.29	46.02	52.99	74	-21.01
7311.000	36.37	10.72	37.02	43.57	53.64	74	-20.36
9748.000	37.55	12.58	35.03	38.71	53.81	74	-20.19
12243.770	38.75	14.36	36.19	36.02	52.94	74	-21.06

Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:40MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3647.151	32.63	7.69	37.96	45.83	48.19	74	-25.81
4904.000	34.33	9.01	38.45	45.93	50.82	74	-23.18
5836.872	34.60	10.10	38.33	45.35	51.72	74	-22.28
7356.000	36.34	10.75	36.95	43.69	53.83	74	-20.17
9808.000	37.56	12.61	35.00	38.03	53.20	74	-20.80
12226.070	38.74	14.37	36.14	36.33	53.30	74	-20.70

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:40MHz; Channel:High

Freq (MHz)	Antenna_ Factor (dB/m)	Cable_ Loss (dB)	Preamp_ Gain (dB)	Read_ Level (dBuV)	Level (dBuV/m)	Limit_ Line (dBuV/m)	Over_ Limit (dB)
3759.672	32.95	7.73	37.98	44.94	47.64	74	-26.36
4904.000	34.33	9.01	38.45	45.91	50.80	74	-23.20
6016.949	34.71	10.54	38.28	45.36	52.33	74	-21.67
7356.000	36.34	10.75	36.95	42.79	52.93	74	-21.07
9808.000	37.56	12.61	35.00	38.40	53.57	74	-20.43
12350.530	38.81	14.27	36.44	35.96	52.60	74	-21.40

Remark:

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 + Antenna Factor + Cable Factor – Preamplifier 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 .
3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the above measurement data were shown in the report.

7.7 Radiated Emissions which fall in the restricted bands

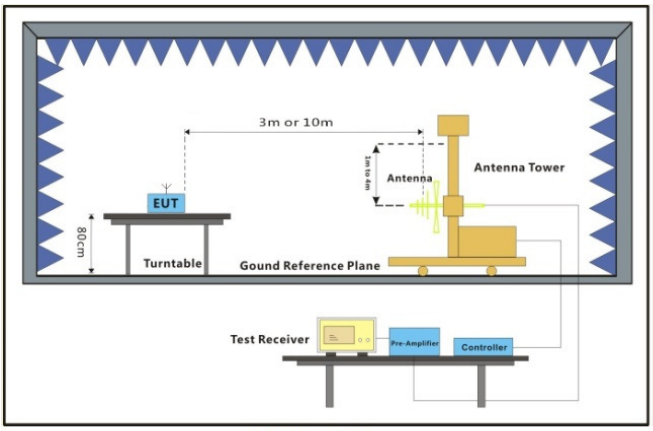
Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)
Test Method: ANSI C63.10 (2013) Section 6.10.5
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

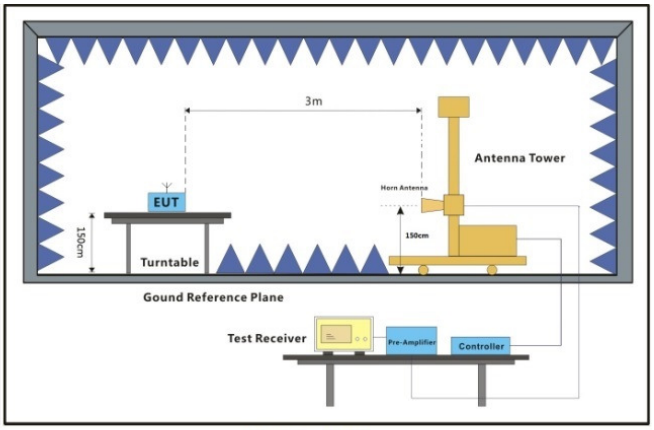
7.7.1 E.U.T. Operation

Operating Environment:
Temperature: 23.0 °C Humidity: 53 % RH Atmospheric Pressure: 1020 mbar
Test Mode: Transmitting with all kind of modulations, data rates
Final Test Mode: Through Pre-scan, find the 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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

7.7.2 Test Setup Diagram



30MHz-1GHz



Above 1GHz

7.7.3 Measurement Data

a. For below 1GHz, 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.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. 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.

e. 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 table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

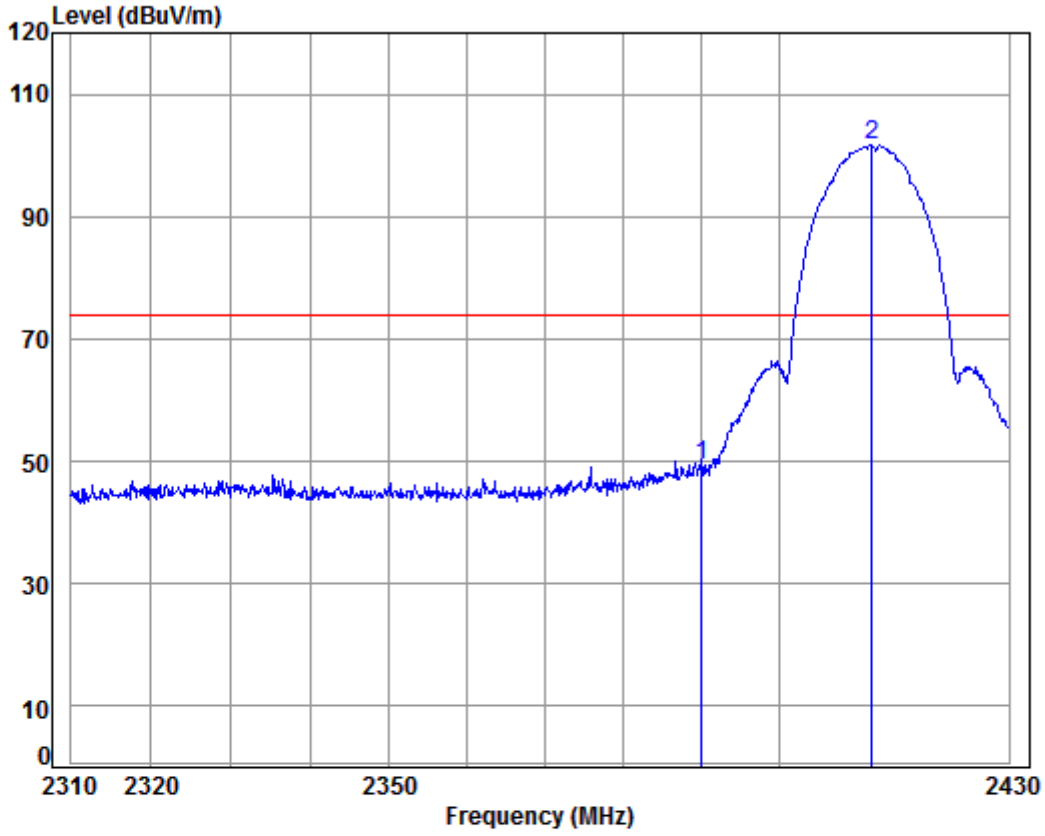
g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified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

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 the worst case.

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

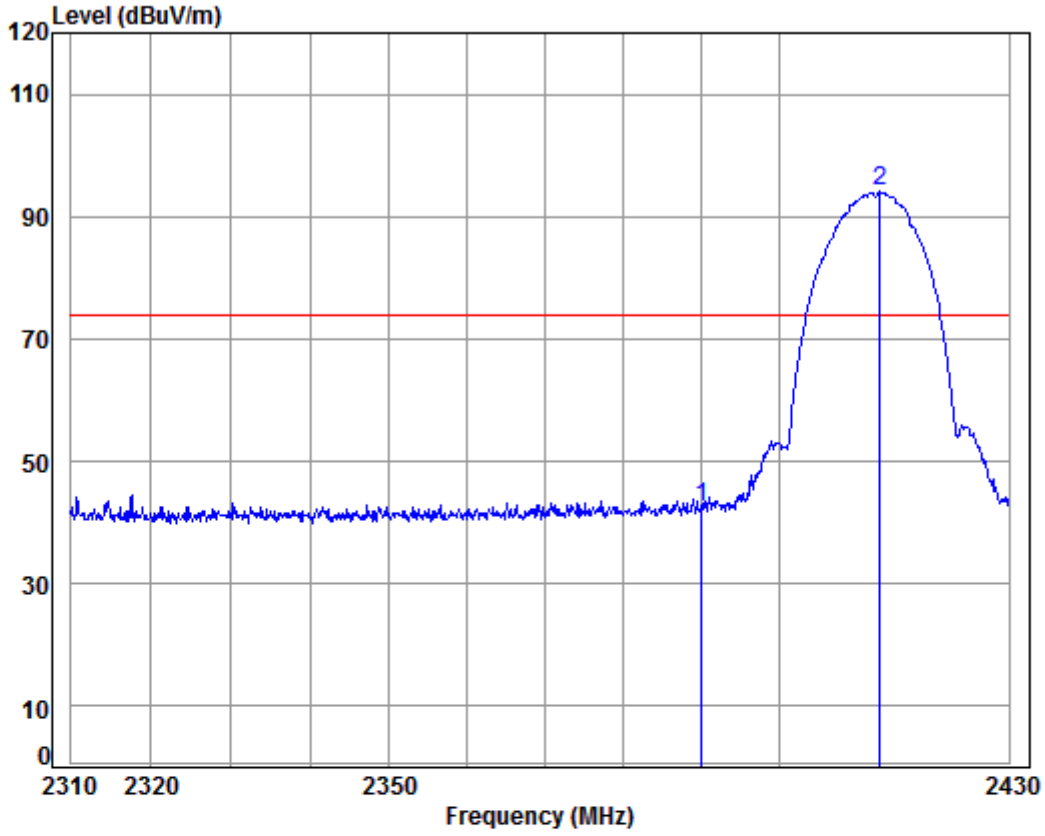
Mode:a; Polarization:Horizontal; Modulation Type:802.11b; bandwidth:20MHz; Channel:Low



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2412 Band edge
: B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	52.90	49.36	74.00	-24.64	
2 pp	2412.099	5.35	29.14	37.96	105.15	101.68	74.00	27.68	

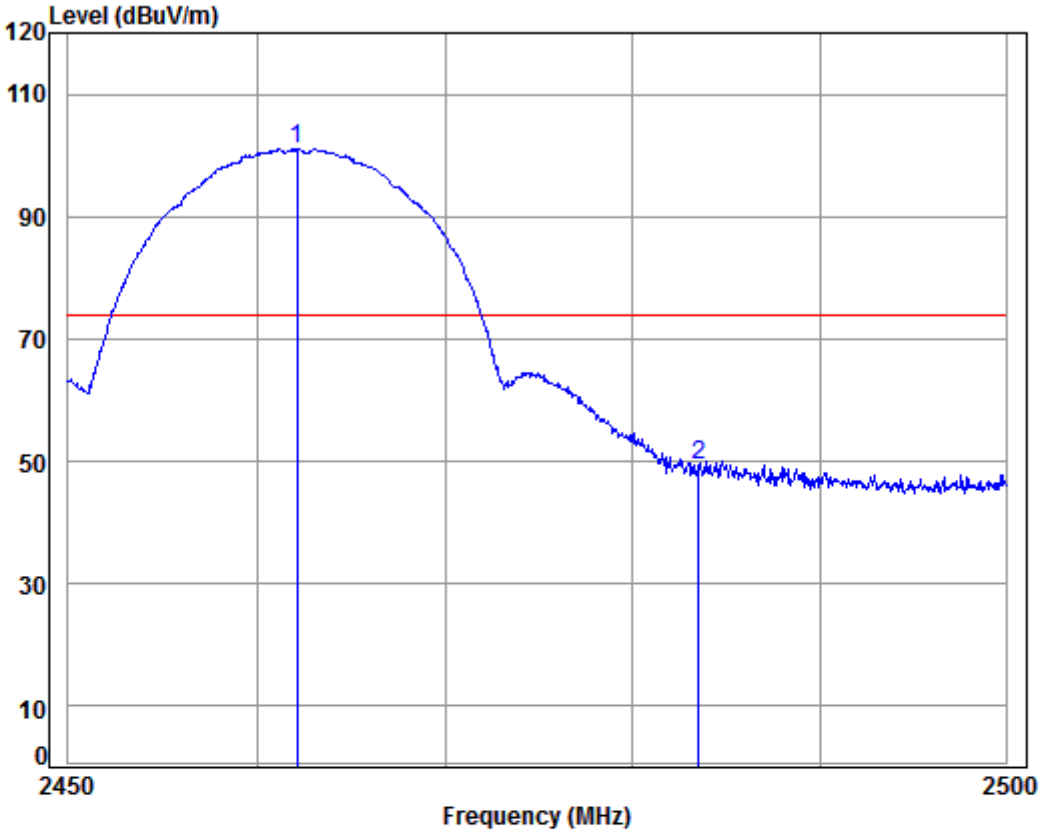
Mode:a; Polarization:Vertical; Modulation Type:802.11b; bandwidth:20MHz; Channel:Low



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2412 Band edge
: B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	46.06	42.52	74.00	-31.48	
2 pp	2413.076	5.35	29.15	37.96	97.55	94.09	74.00	20.09	

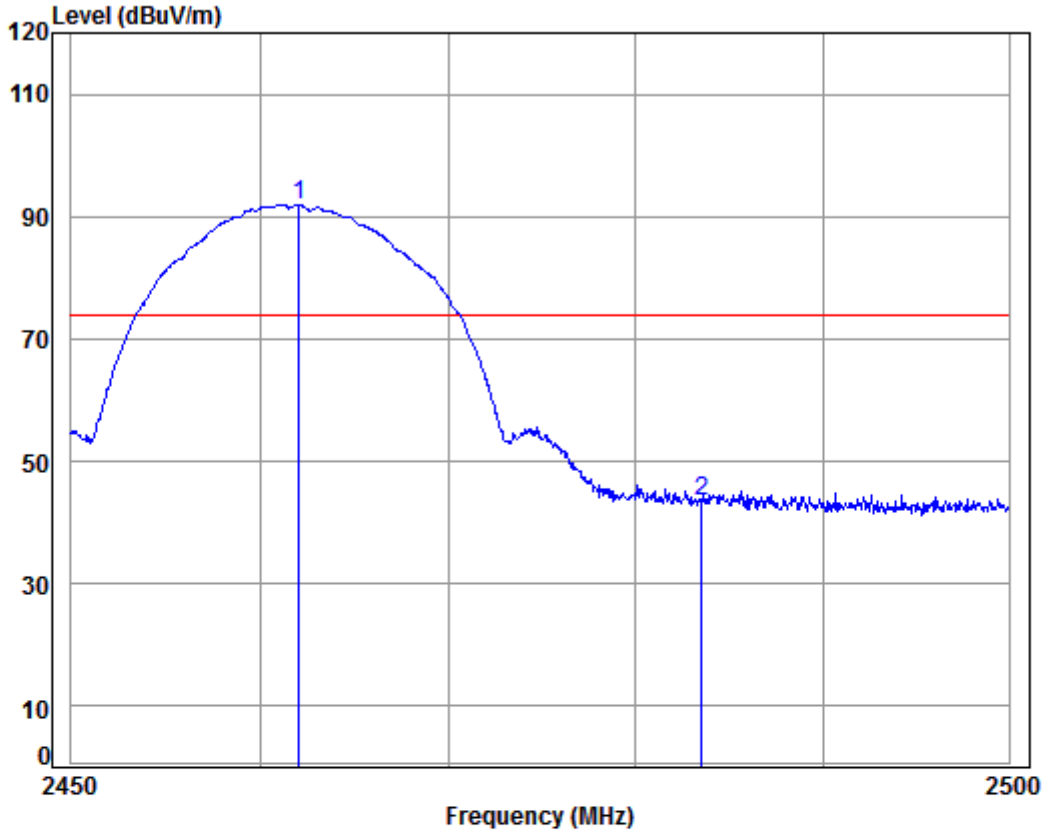
Mode:a; Polarization:Horizontal; Modulation Type:802.11b; bandwidth:20MHz; Channel:High



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2462 Band edge
: B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.107	5.39	29.29	37.95	104.36	101.09	74.00	27.09	
2	2483.500	5.41	29.35	37.95	52.54	49.35	74.00	-24.65	

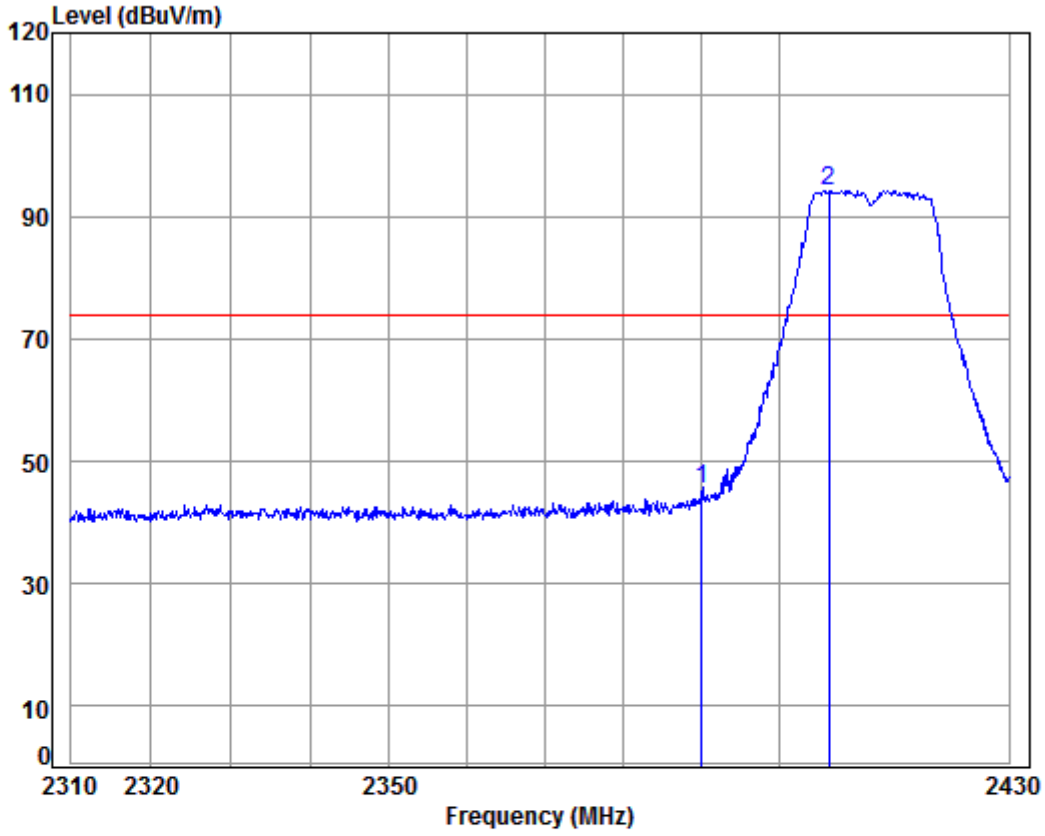
Mode:a; Polarization:Vertical; Modulation Type:802.11b; bandwidth:20MHz; Channel:High



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2462 Band edge
: B

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2462.057	5.39	29.29	37.95	95.19	91.92	74.00	17.92	
2	2483.500	5.41	29.35	37.95	46.67	43.48	74.00	-30.52	

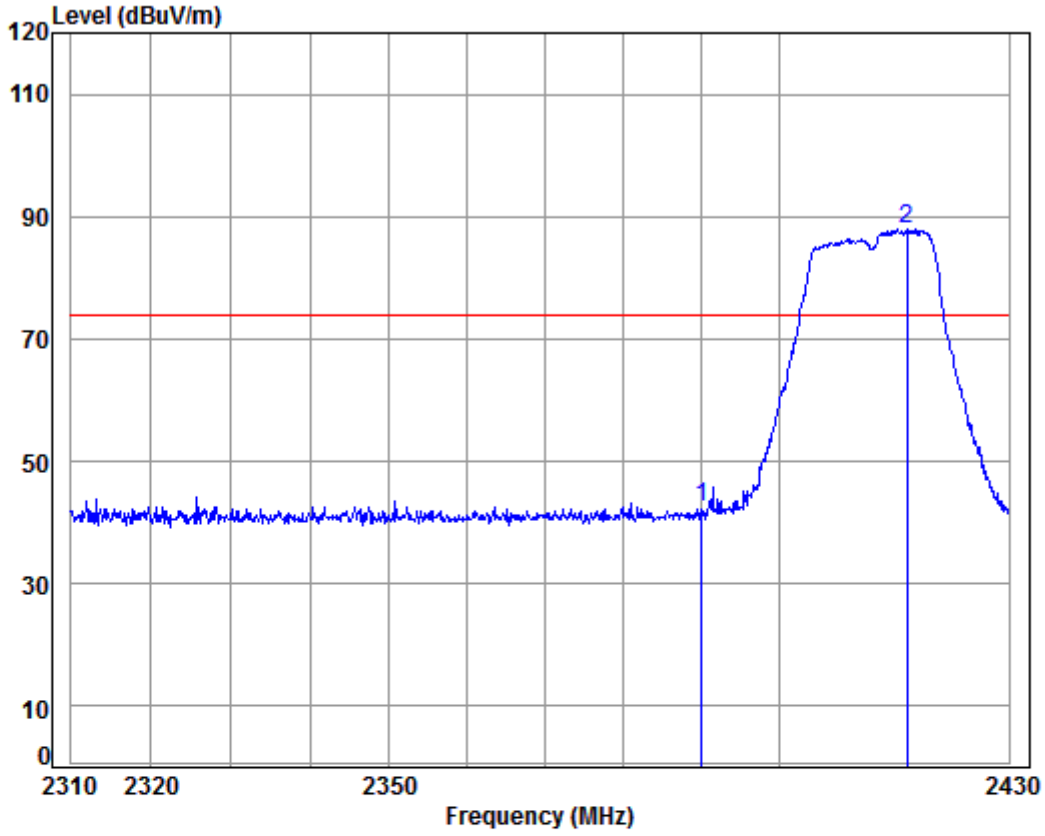
Mode:a; Polarization:Horizontal; Modulation Type:802.11g; bandwidth:20MHz; Channel:Low



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2412 Band edge
: G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	48.99	45.45	74.00	-28.55	
2 pp	2406.486	5.35	29.13	37.96	97.74	94.26	74.00	20.26	

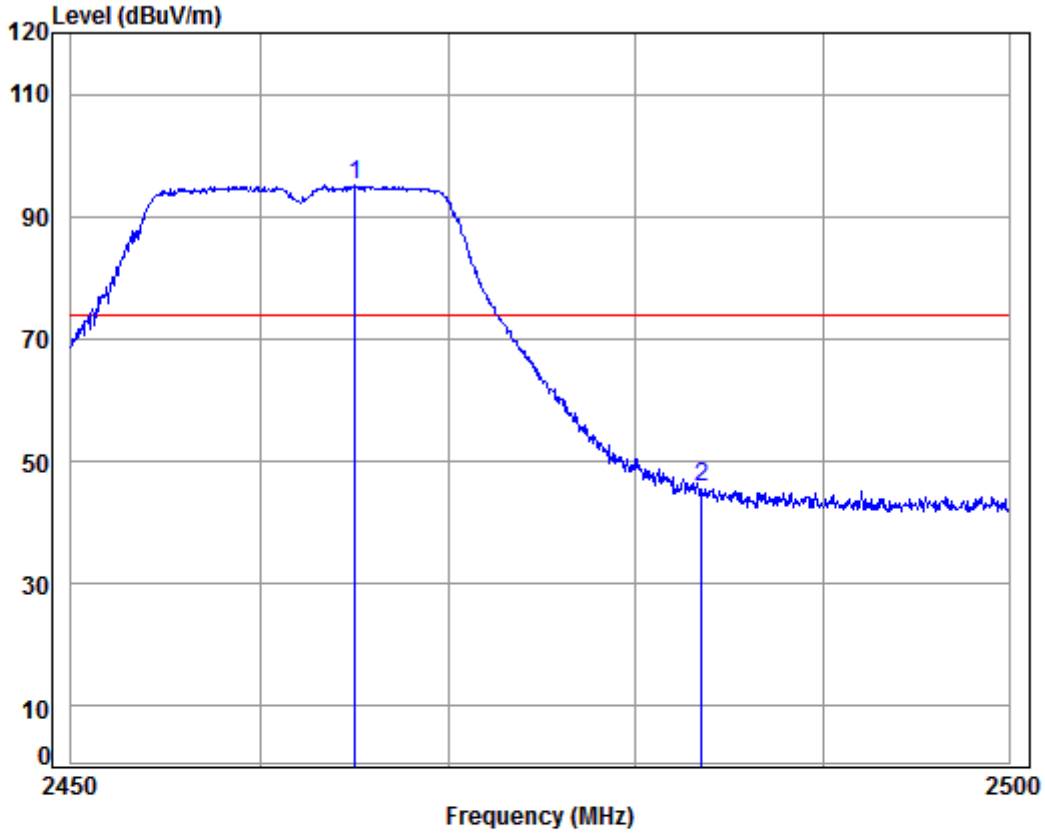
Mode:a; Polarization:Vertical; Modulation Type:802.11g; bandwidth:20MHz; Channel:Low



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2412 Band edge
: G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	45.91	42.37	74.00	-31.63	
2 pp	2416.623	5.36	29.16	37.96	91.34	87.90	74.00	13.90	

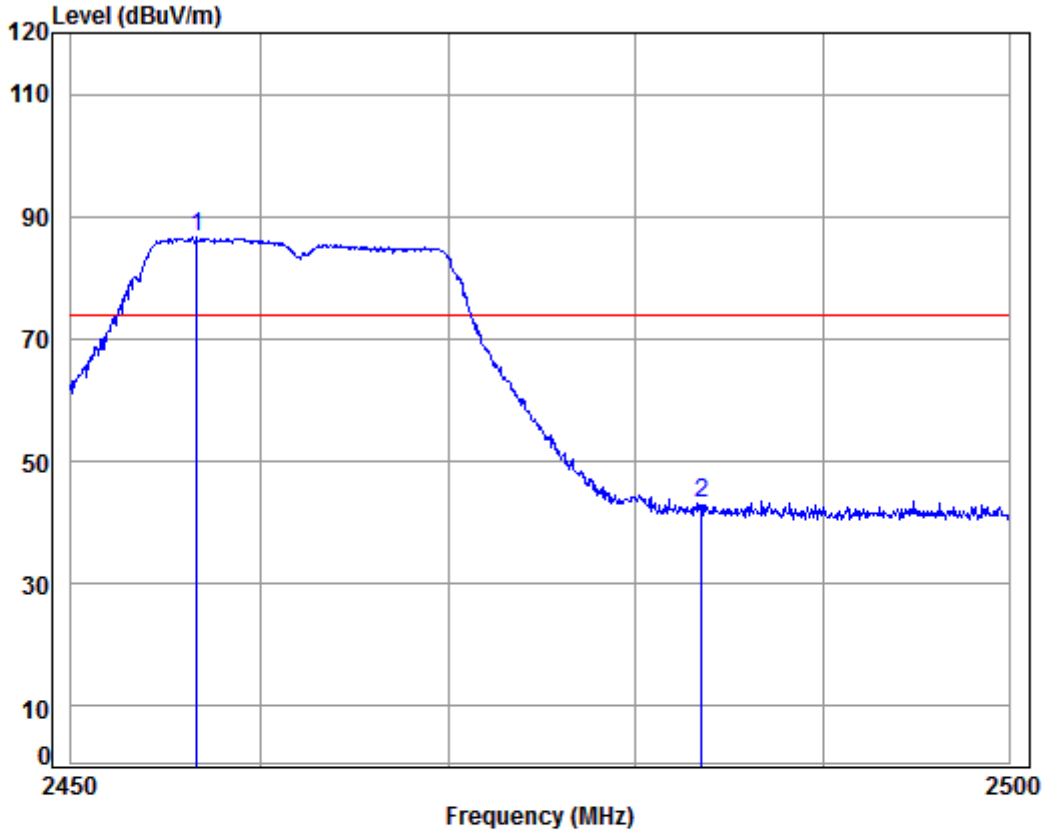
Mode:a; Polarization:Horizontal; Modulation Type:802.11g; bandwidth:20MHz; Channel:High



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2462 Band edge
: G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2465.043	5.39	29.30	37.95	98.29	95.03	74.00	21.03	
2	2483.500	5.41	29.35	37.95	49.09	45.90	74.00	-28.10	

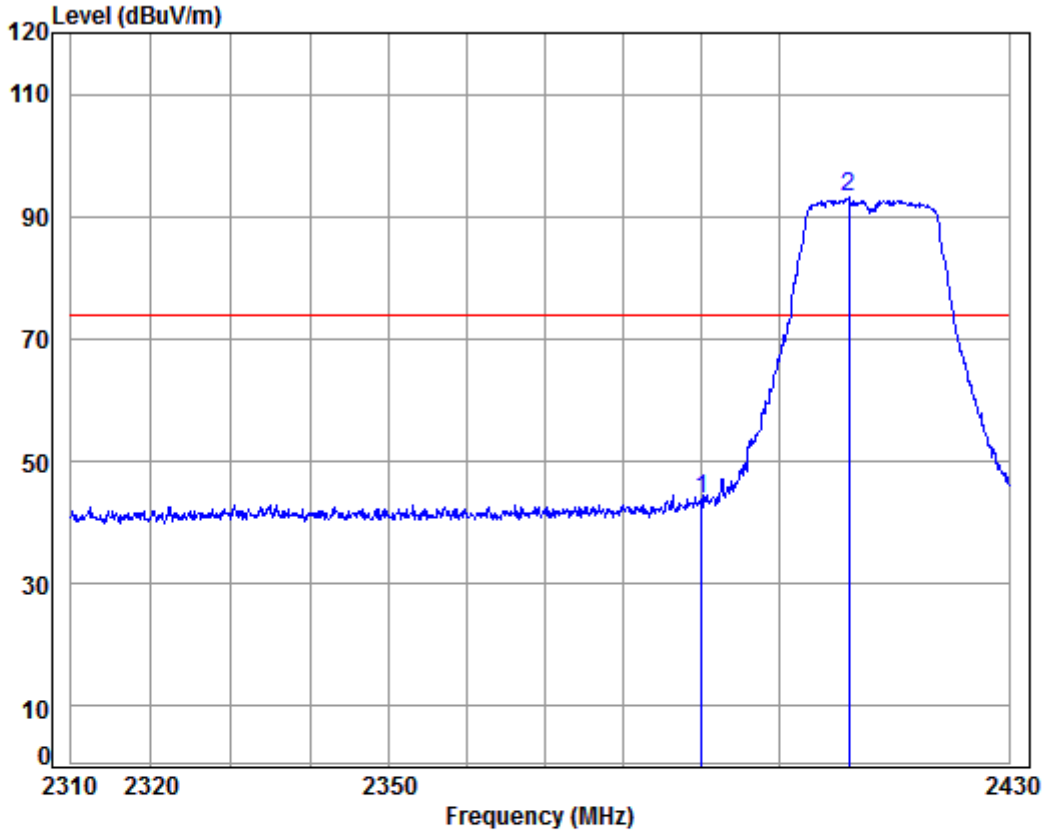
Mode:a; Polarization:Vertical; Modulation Type:802.11g; bandwidth:20MHz; Channel:High



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2462 Band edge
: G

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2456.642	5.39	29.27	37.95	89.93	86.64	74.00	12.64	
2	2483.500	5.41	29.35	37.95	46.30	43.11	74.00	-30.89	

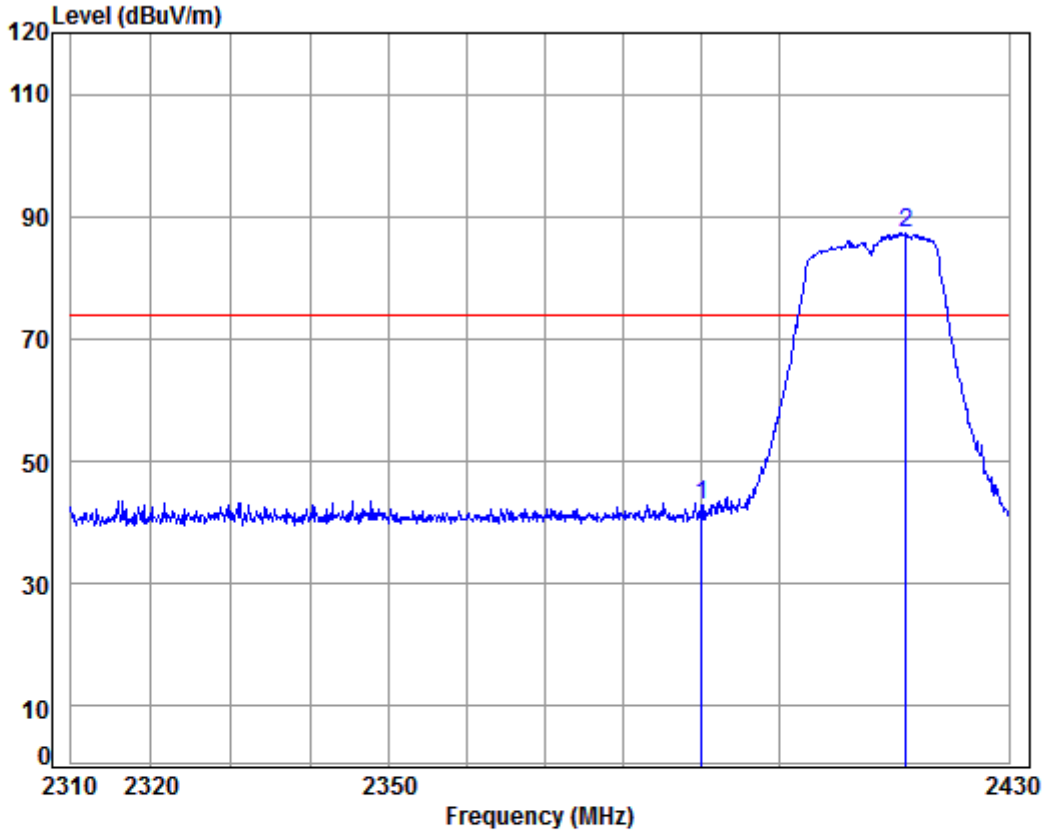
Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:20MHz; Channel:Low



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2412 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	47.33	43.79	74.00	-30.21	
2 pp	2409.047	5.35	29.13	37.96	96.62	93.14	74.00	19.14	

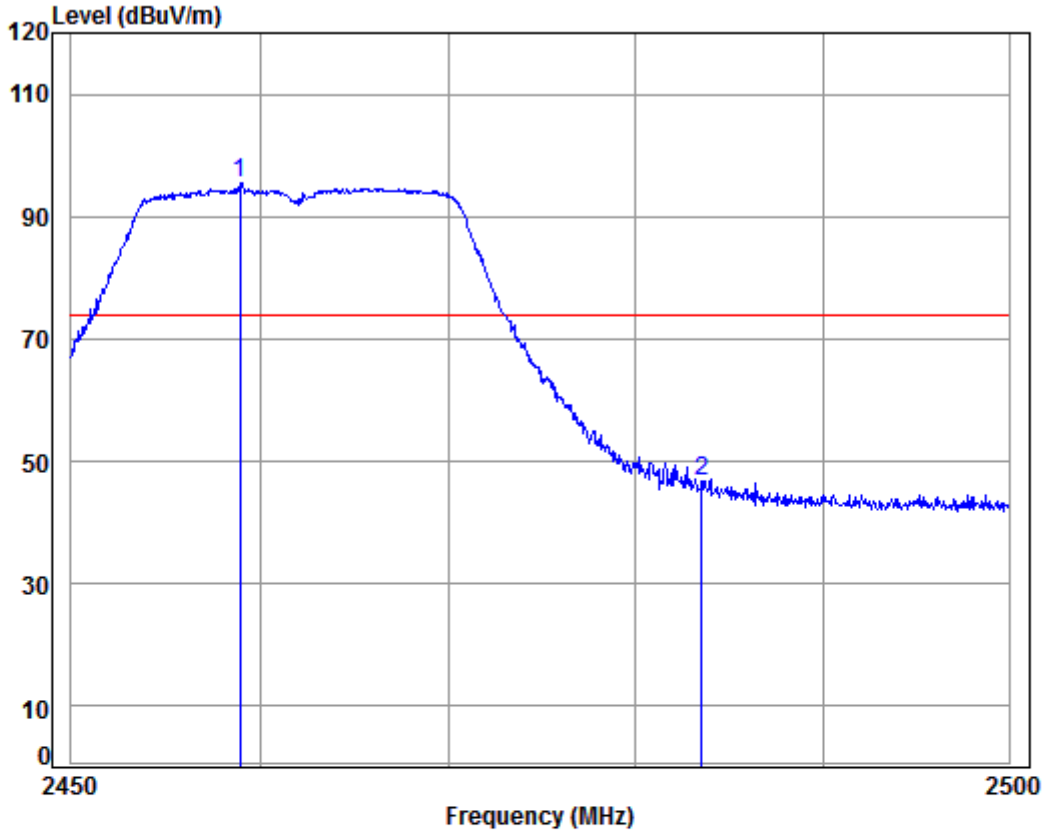
Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:20MHz; Channel:Low



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2412 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	46.37	42.83	74.00	-31.17	
2 pp	2416.500	5.36	29.16	37.96	90.70	87.26	74.00	13.26	

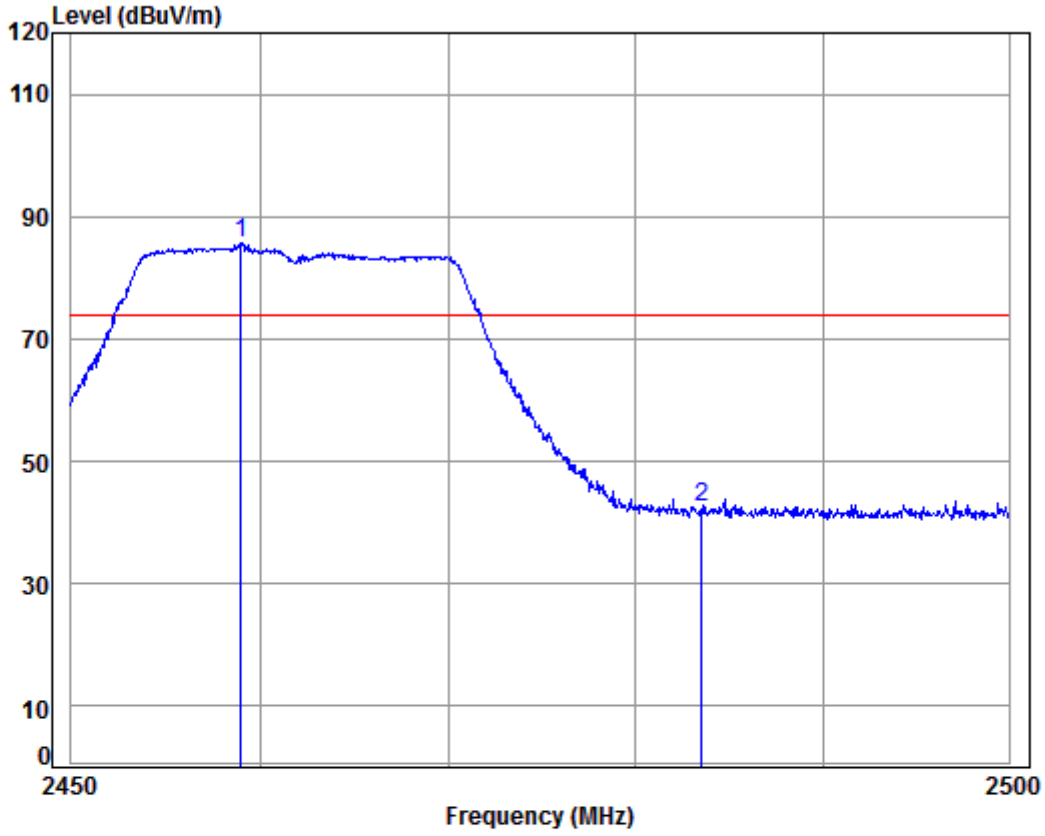
Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:20MHz; Channel:High



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2462 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2458.926	5.39	29.28	37.95	98.67	95.39	74.00	21.39	
2	2483.500	5.41	29.35	37.95	50.01	46.82	74.00	-27.18	

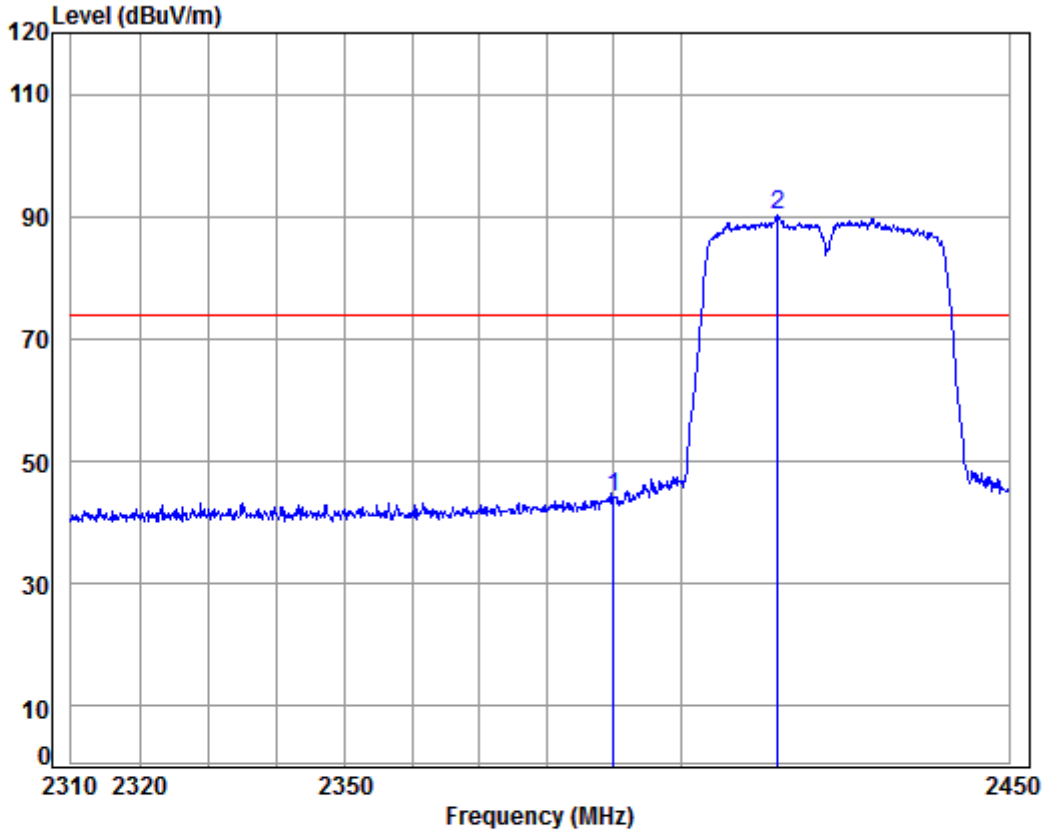
Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:20MHz; Channel:High



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2462 Band edge
: N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2458.975	5.39	29.28	37.95	89.09	85.81	74.00	11.81	
2	2483.500	5.41	29.35	37.95	45.56	42.37	74.00	-31.63	

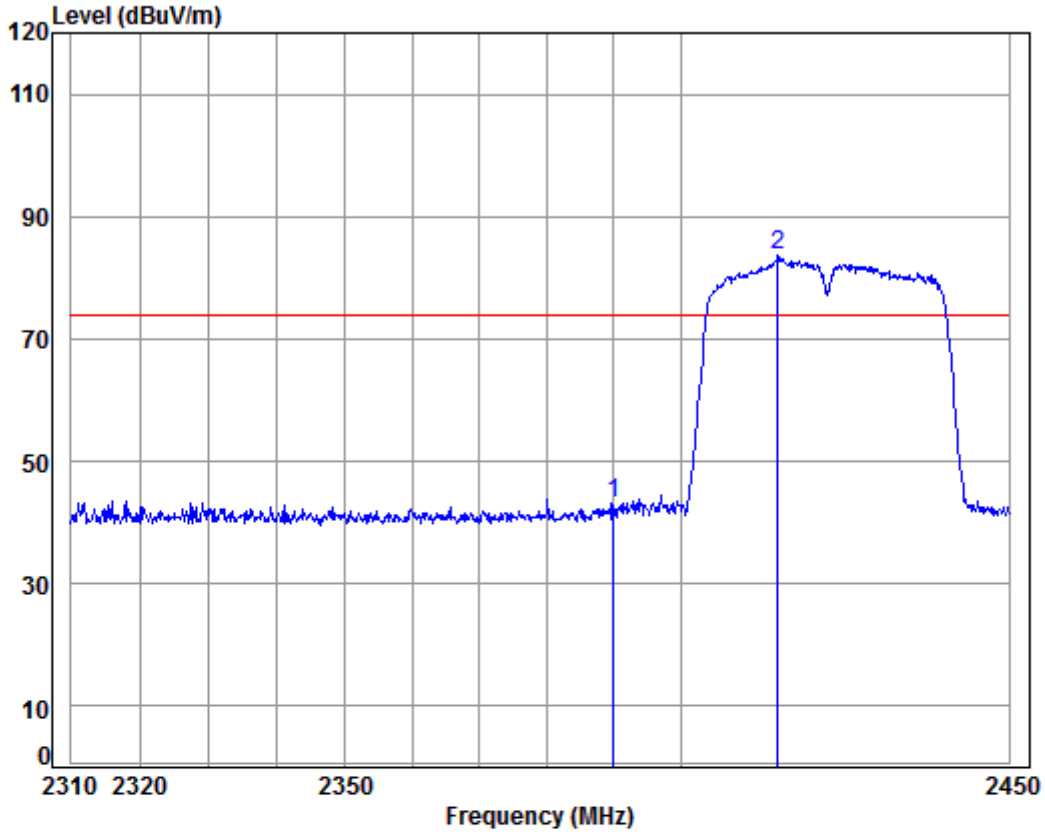
Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:40MHz; Channel:Low



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2422 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	47.77	44.23	74.00	-29.77	
2	pp 2414.792	5.36	29.15	37.96	93.70	90.25	74.00	16.25	

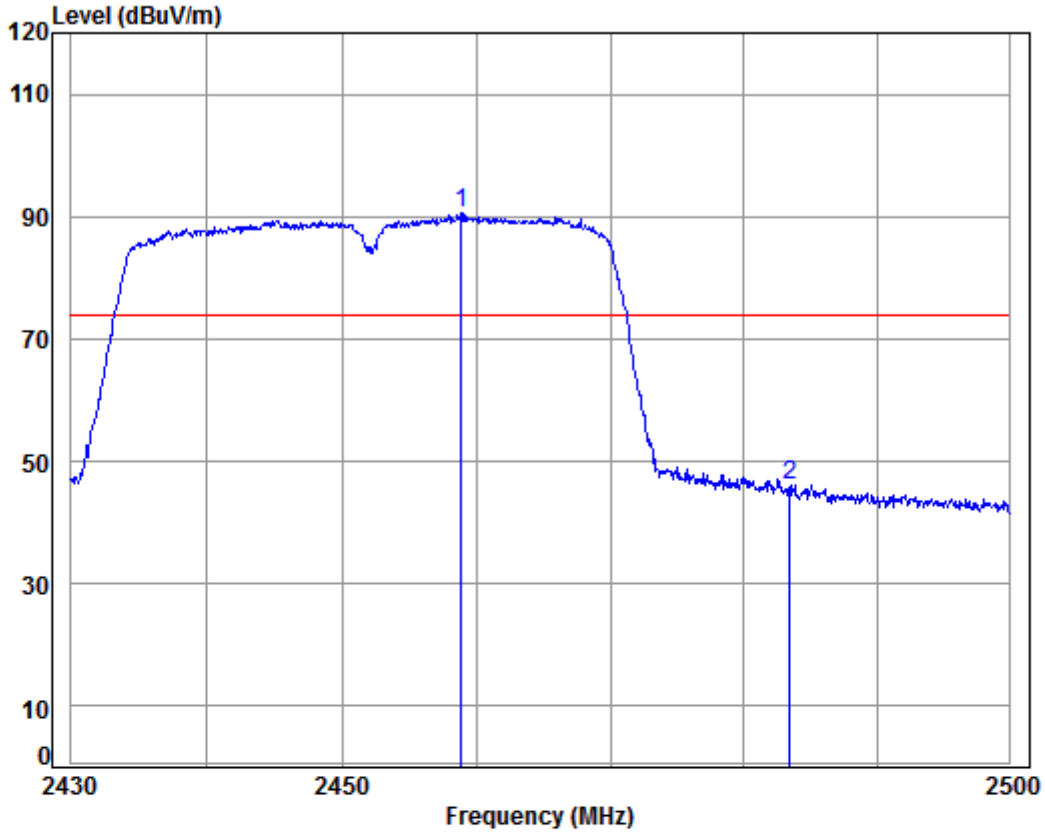
Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:40MHz; Channel:Low



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2422 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	5.34	29.08	37.96	46.54	43.00	74.00	-31.00	
2	pp 2414.792	5.36	29.15	37.96	87.00	83.55	74.00	9.55	

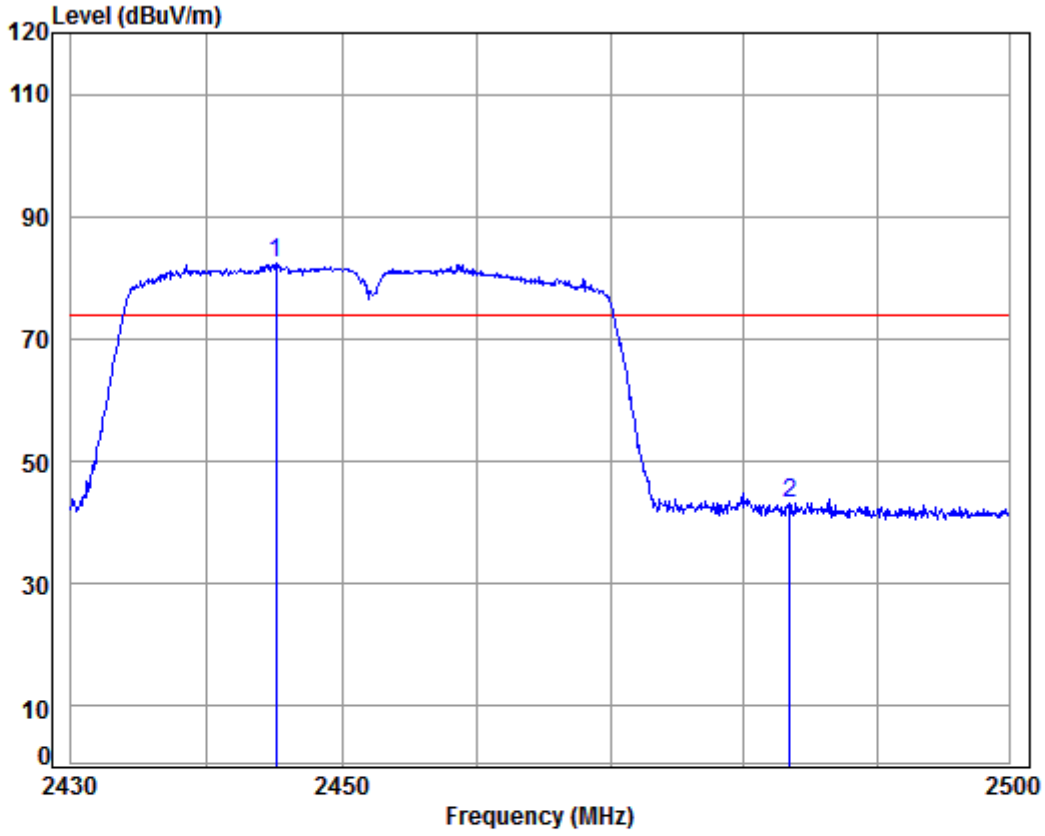
Mode:a; Polarization:Horizontal; Modulation Type:802.11n; bandwidth:40MHz; Channel:High



Condition: 3m Horizontal
Job No: : 01952CR
Mode: : 2452 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2458.879	5.39	29.28	37.95	93.74	90.46	74.00	16.46	
2	2483.500	5.41	29.35	37.95	49.26	46.07	74.00	-27.93	

Mode:a; Polarization:Vertical; Modulation Type:802.11n; bandwidth:40MHz; Channel:High



Condition: 3m Vertical
Job No: : 01952CR
Mode: : 2452 Band edge
: N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2445.160	5.38	29.24	37.96	85.82	82.48	74.00	8.48	
2	2483.500	5.41	29.35	37.95	46.27	43.08	74.00	-30.92	

7.8 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.13.3.2

7.8.1 E.U.T. Operation

Operating Environment:

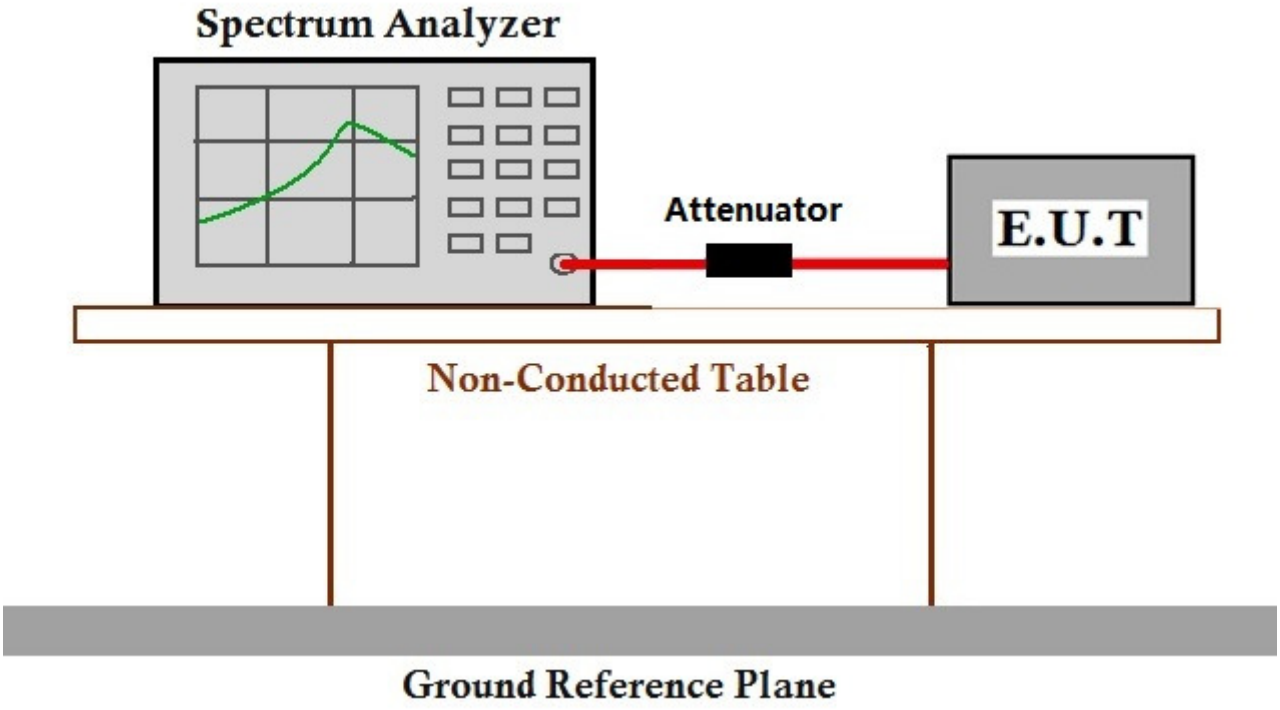
Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1015 mbar

Test Mode: Transmitting with all kind of modulations, data rates

Final Test Mode: Through Pre-scan, find the 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) ; 13.5Mbps of rate is the worst case of 802.11n(HT40)

7.8.2 Test Setup Diagram



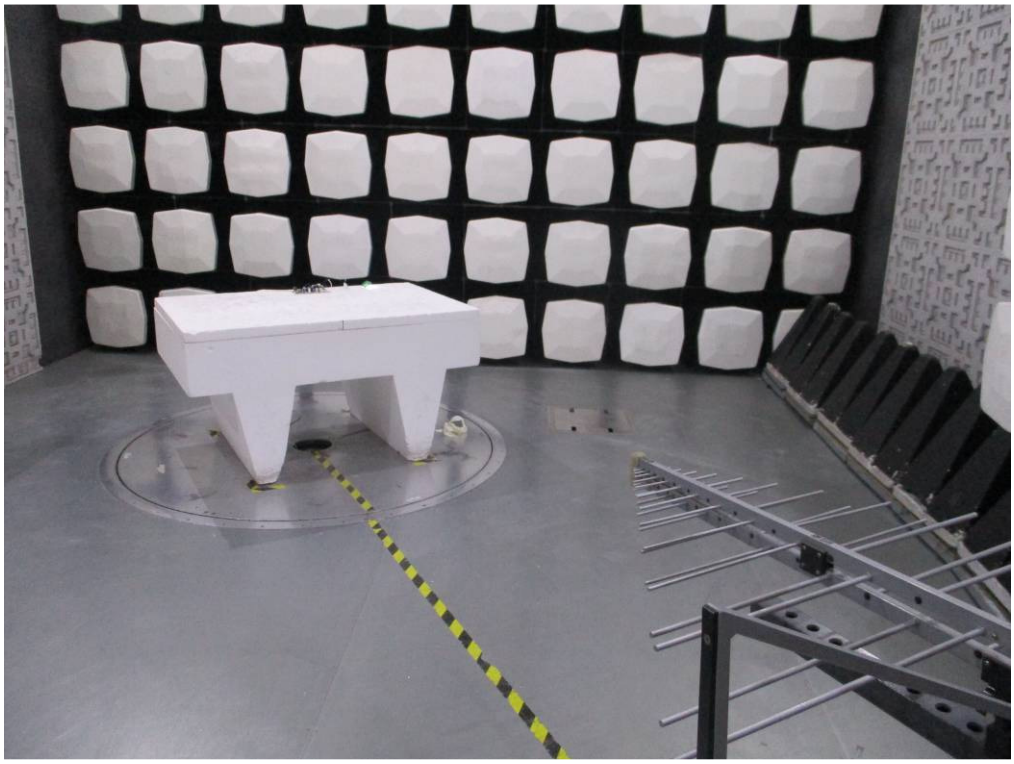
7.8.3 Measurement Data

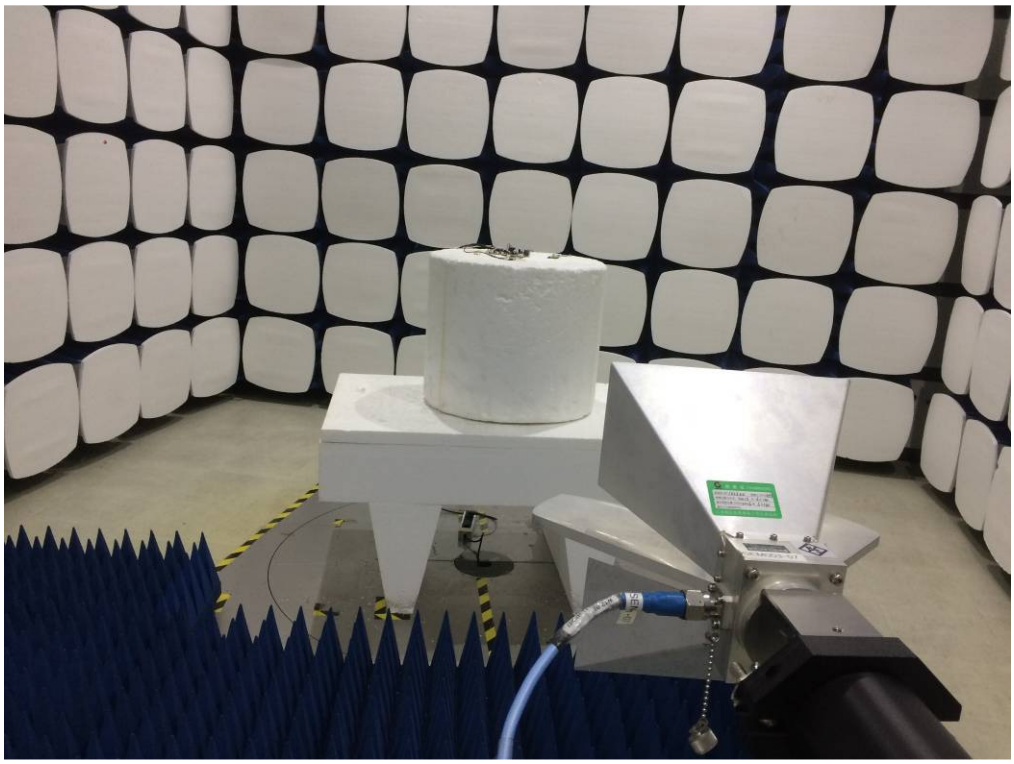
The detailed test data see: Appendix 15.247

8 Photographs

8.1 Conducted Disturbance at AC Power Line(150kHz-30MHz) Test Setup

8.2 Radiated Spurious Emissions Test Setup





8.3 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM1703001952CR

9 Appendix

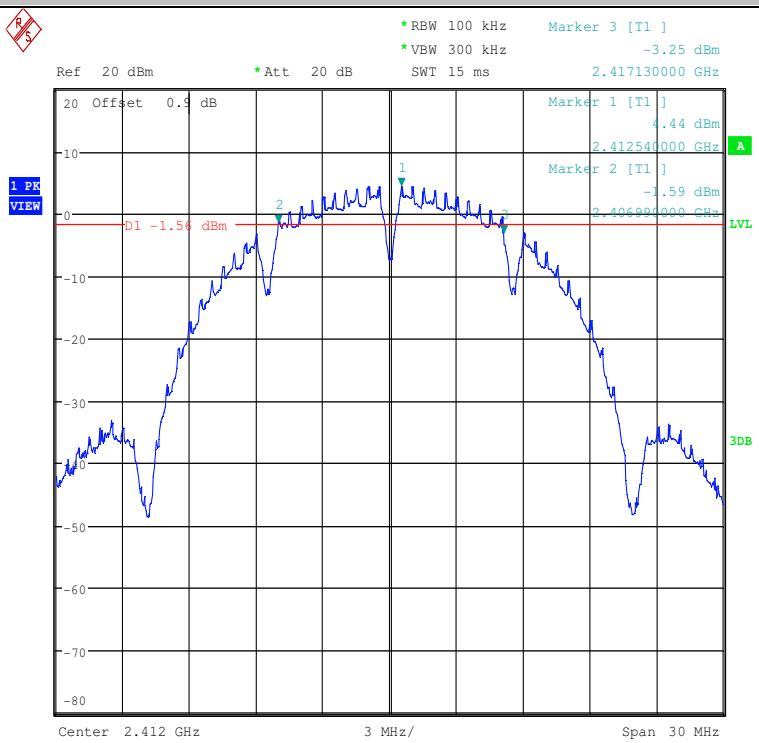
9.1 Appendix 15.247

1.6dB Bandwidth

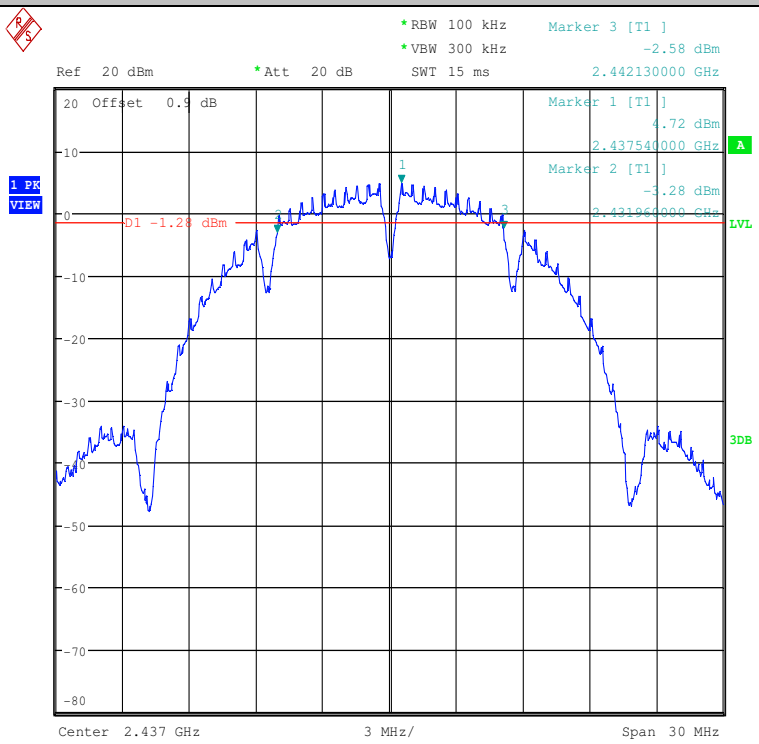
Test Mode	Test Channel	EBW[MHz]	Limit	Verdict
11B	2412	10.140	>=0.5	PASS
11B	2437	10.170	>=0.5	PASS
11B	2462	10.170	>=0.5	PASS
11G	2412	16.620	>=0.5	PASS
11G	2437	16.620	>=0.5	PASS
11G	2462	16.575	>=0.5	PASS
11N20SISO	2412	17.670	>=0.5	PASS
11N20SISO	2437	17.820	>=0.5	PASS
11N20SISO	2462	17.700	>=0.5	PASS
11N40SISO	2422	36.480	>=0.5	PASS
11N40SISO	2437	36.480	>=0.5	PASS
11N40SISO	2452	36.480	>=0.5	PASS

TEST PLOT

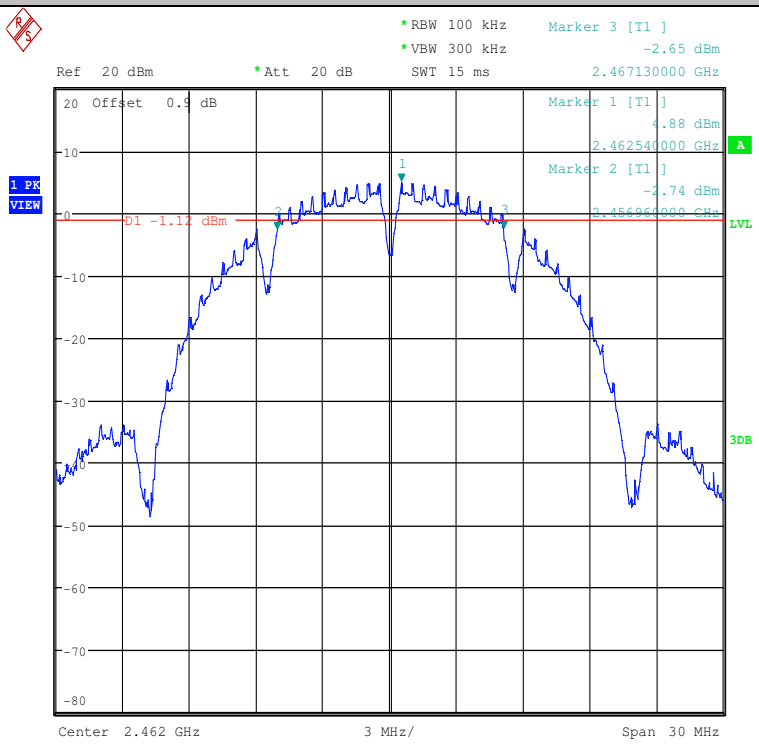
6dB Bandwidth_11B_2412



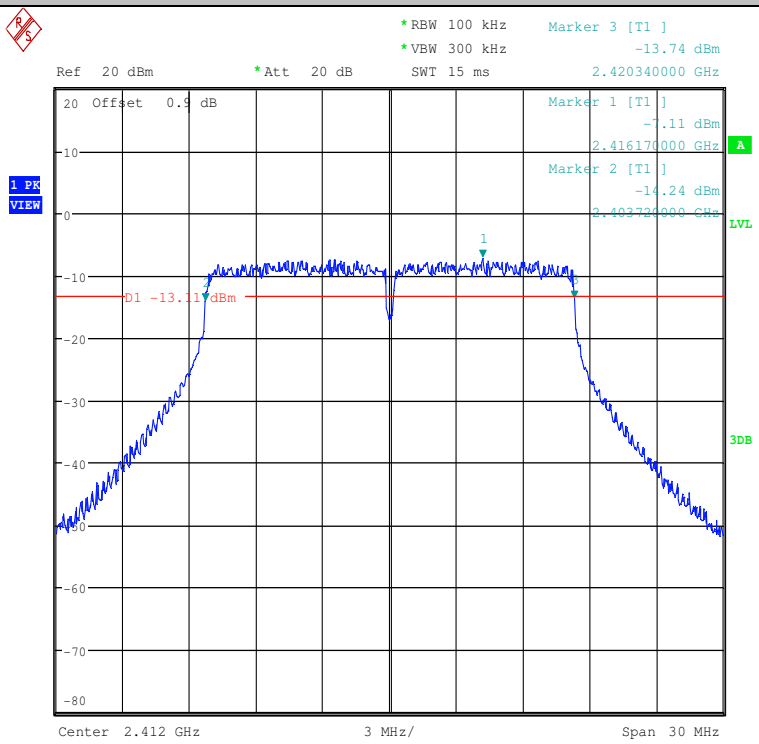
6dB Bandwidth_11B_2437



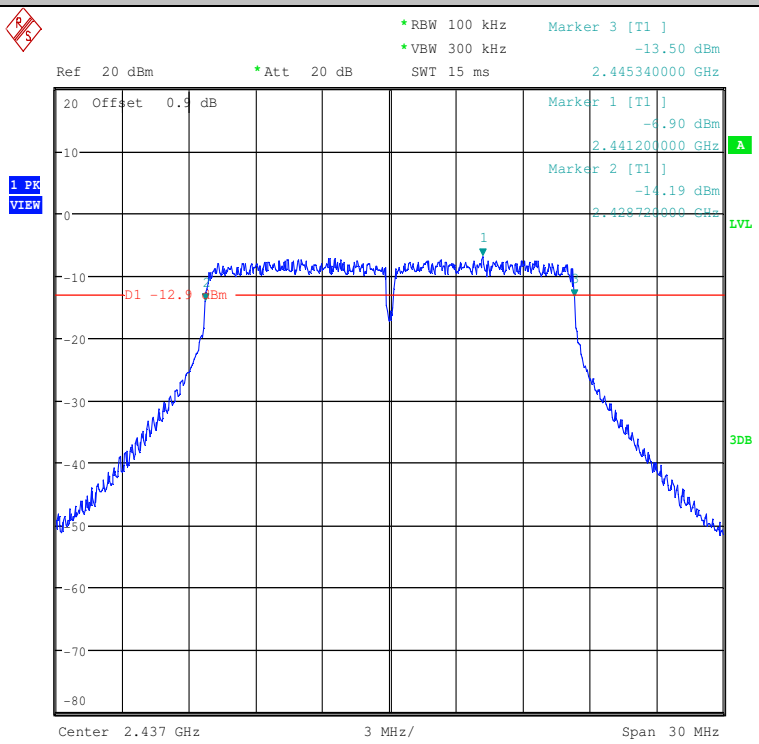
6dB Bandwidth_11B_2462



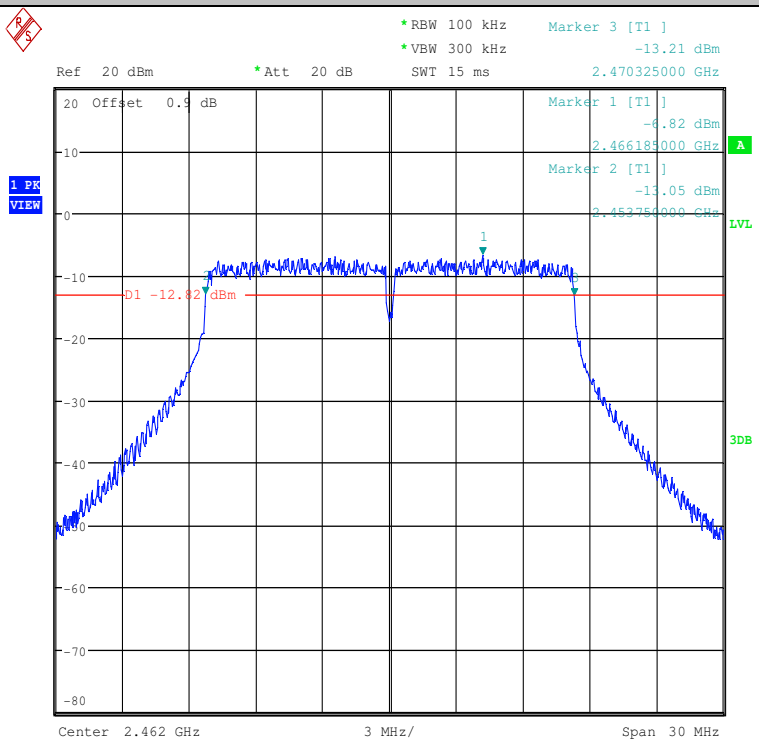
6dB Bandwidth_11G_2412



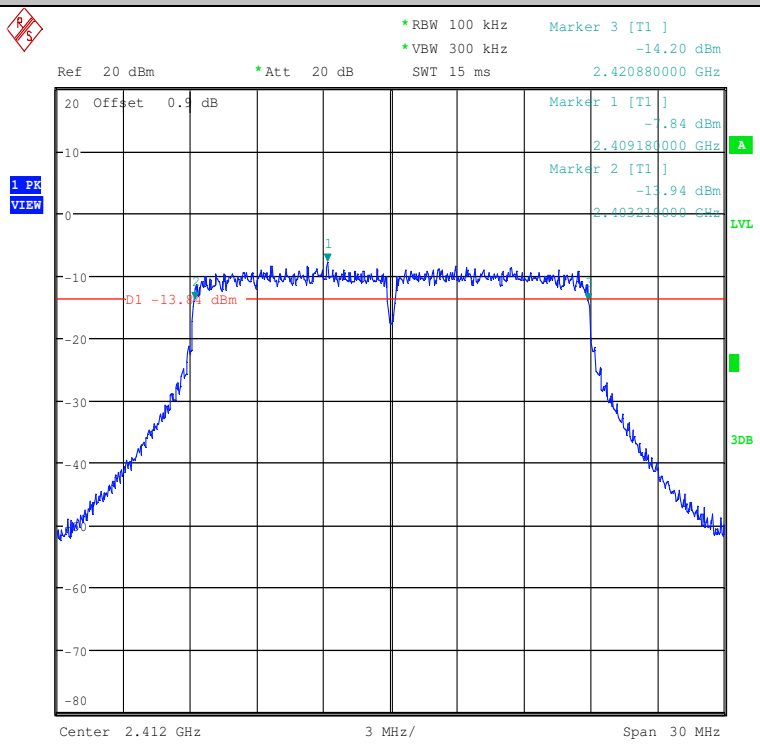
6dB Bandwidth_11G_2437



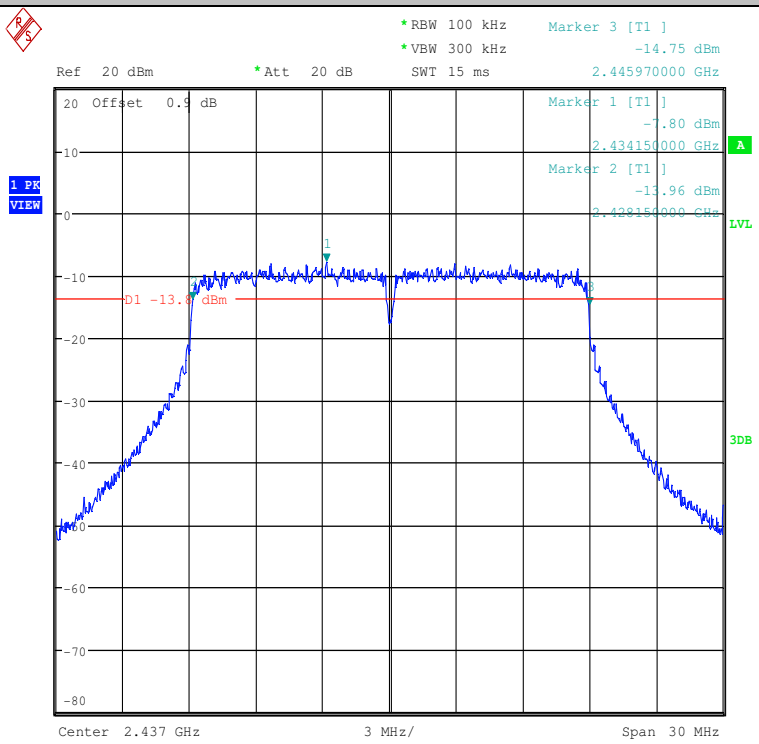
6dB Bandwidth_11G_2462



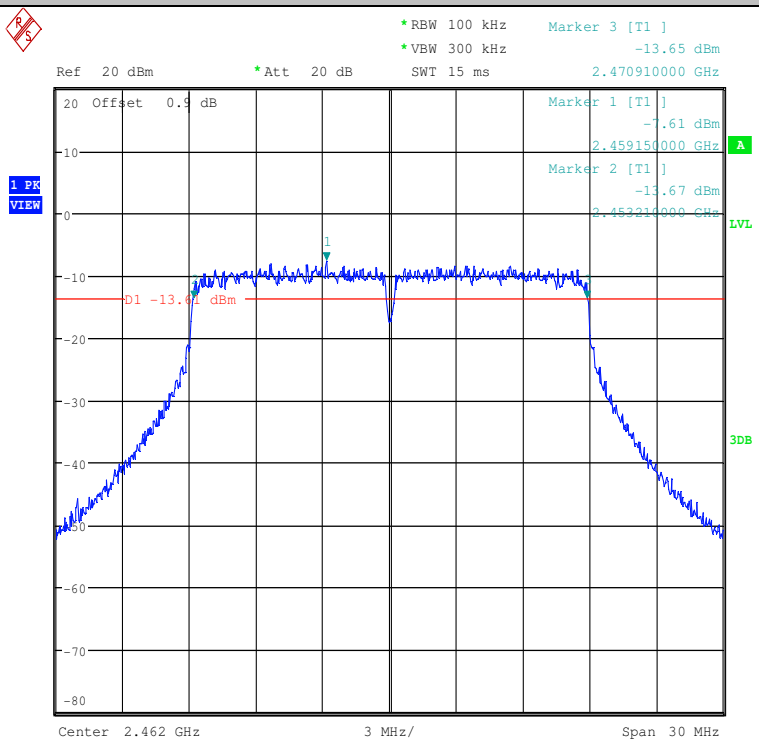
6dB Bandwidth_11N20SISO_2412



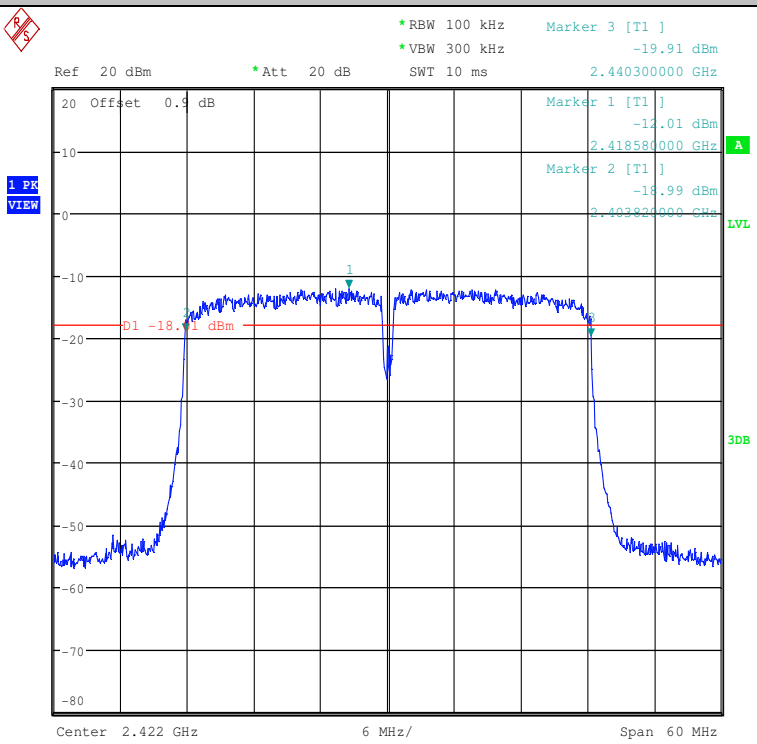
6dB Bandwidth_11N20SISO_2437



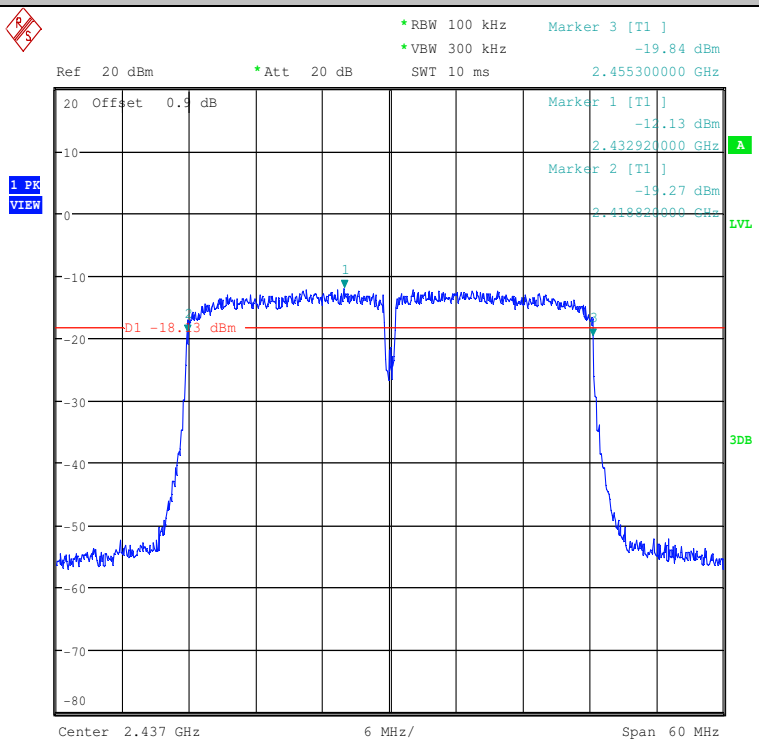
6dB Bandwidth_11N20SISO_2462



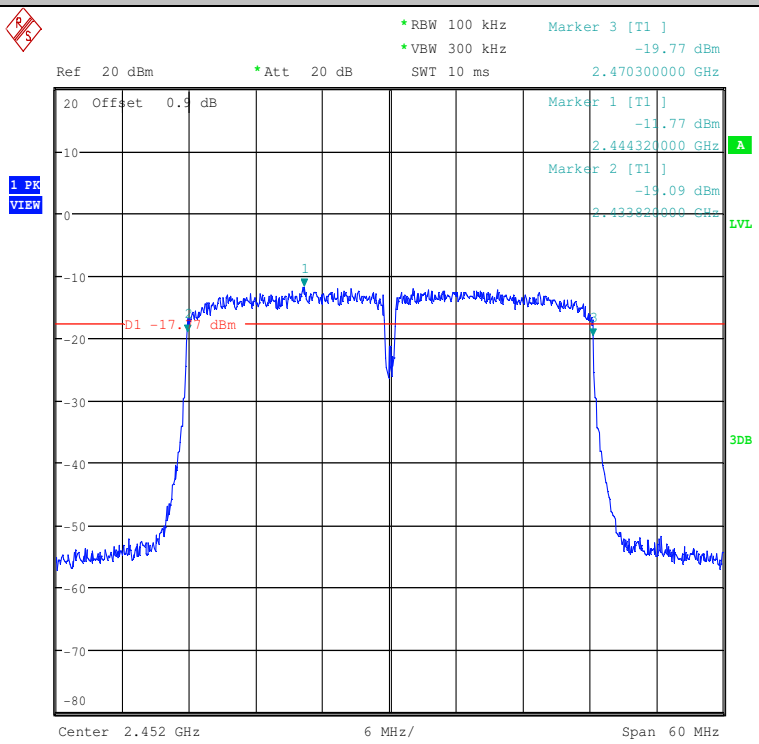
6dB Bandwidth_11N40SISO_2422



6dB Bandwidth_11N40SISO_2437



6dB Bandwidth_11N40SISO_2452



2.Maximum peak conducted output power

Pre-scan under all rate

Mode	802.11b							
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps				
Power (dBm)	18.72	18.69	18.66	18.63				
Mode	802.11g							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
Power (dBm)	15.7	15.68	15.66	15.63	15.61	15.59	15.56	15.54
Mode	802.11n(HT20)							
Data Rate	6.5Mbps	13Mbps	19.5Mbps	26Mbps	39Mbps	52Mbps	58.5Mbps	65Mbps
Power (dBm)	14.85	14.82	14.79	14.77	14.75	14.73	14.71	14.69
Mode	802.11n(HT40)							
Data Rate	13.5Mbps	27Mbps	40.5Mbps	54Mbps	81Mbps	108Mbps	121.5Mbps	135Mbps
Power (dBm)	13.68	13.65	13.62	13.59	13.57	13.55	13.53	13.51

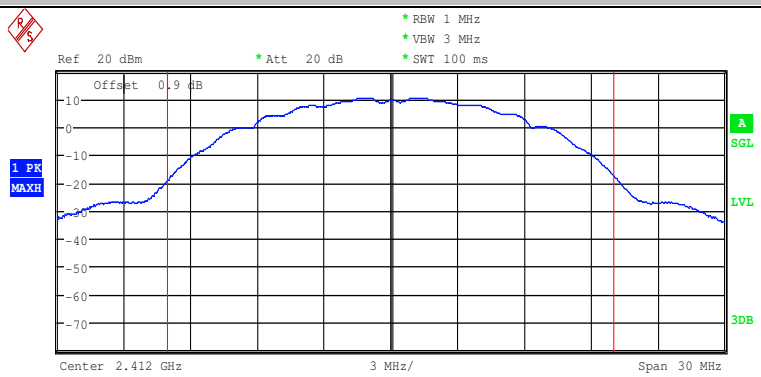
Through Pre-scan, 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40).

Test Mode	Test Channel	Power[dBm]	Limit[dBm]	Verdict
11B	2412	18.22	<30	PASS
11B	2437	18.54	<30	PASS
11B	2462	18.72	<30	PASS
11G	2412	15.33	<30	PASS

11G	2437	15.56	<30	PASS
11G	2462	15.7	<30	PASS
11N20SISO	2412	14.52	<30	PASS
11N20SISO	2437	14.73	<30	PASS
11N20SISO	2462	14.85	<30	PASS
11N40SISO	2422	13.64	<30	PASS
11N40SISO	2437	13.57	<30	PASS
11N40SISO	2452	13.68	<30	PASS

TEST PLOT

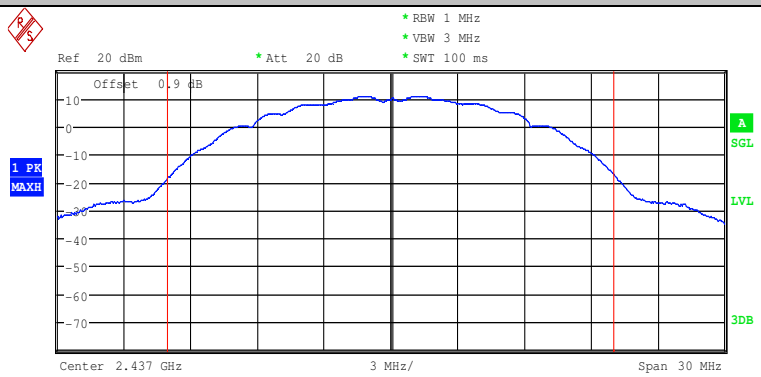
Maximum peak conducted output power_11B_2412



Tx Channel

Bandwidth	20 MHz	Power	18.22 dBm

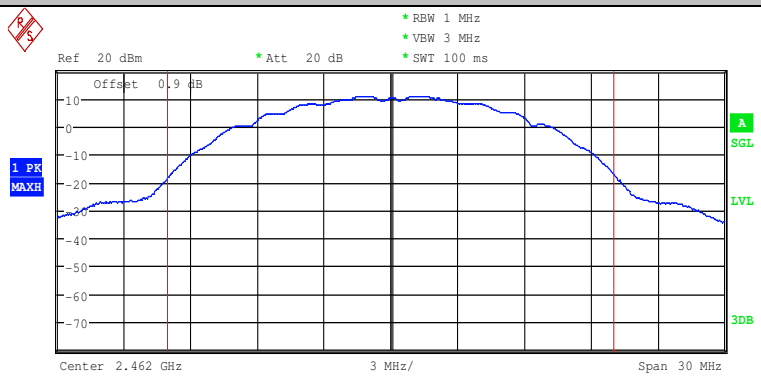
Maximum peak conducted output power_11B_2437



Tx Channel

Bandwidth	20 MHz	Power	18.54 dBm

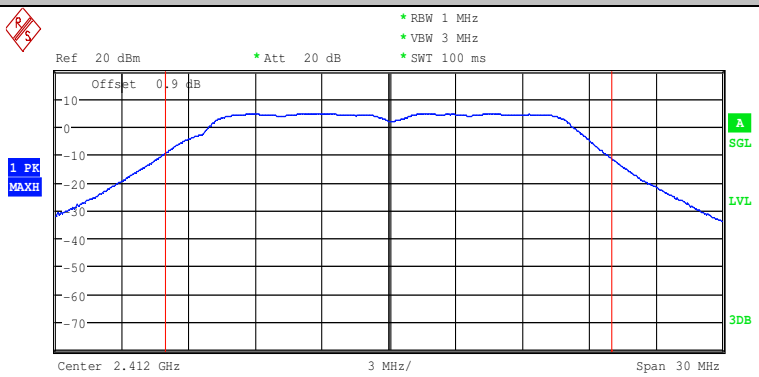
Maximum peak conducted output power_11B_2462



Tx Channel

Bandwidth	20 MHz	Power	18.72 dBm

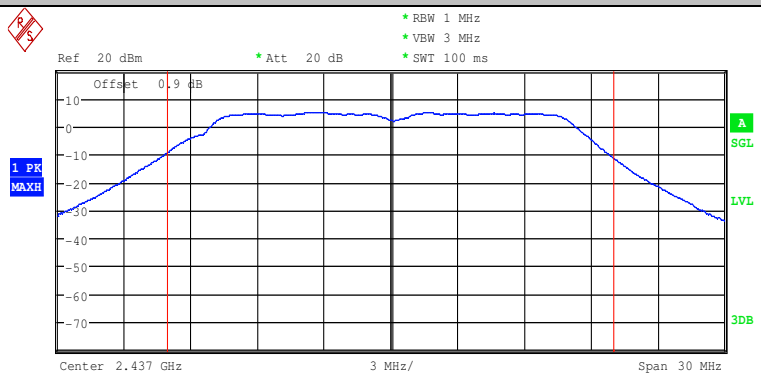
Maximum peak conducted output power_11G_2412



Tx Channel

Bandwidth	20 MHz	Power	15.33 dBm

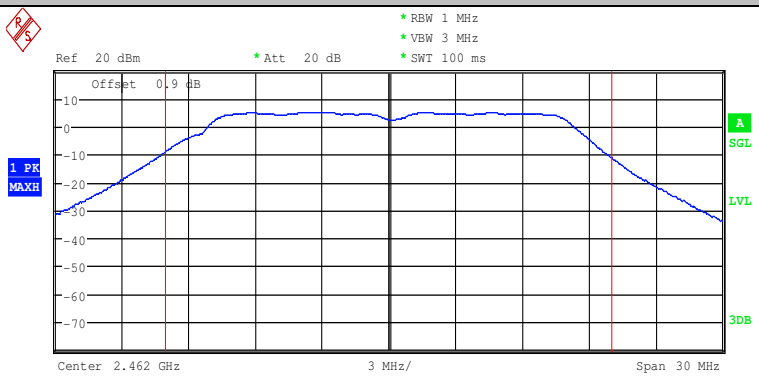
Maximum peak conducted output power_11G_2437



Tx Channel

Bandwidth	20 MHz	Power	15.56 dBm

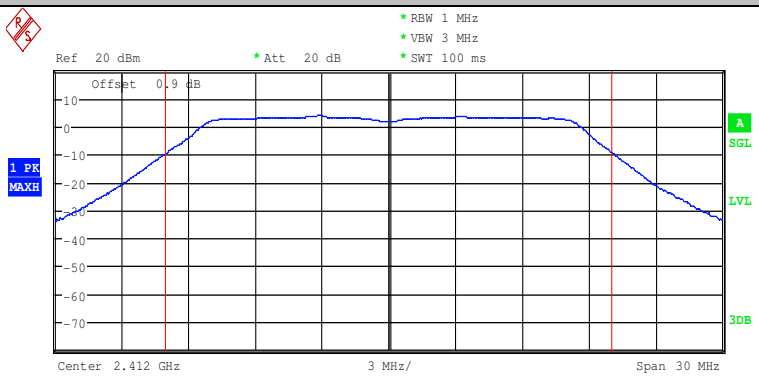
Maximum peak conducted output power_11G_2462



Tx Channel

Bandwidth	20 MHz	Power	15.70 dBm

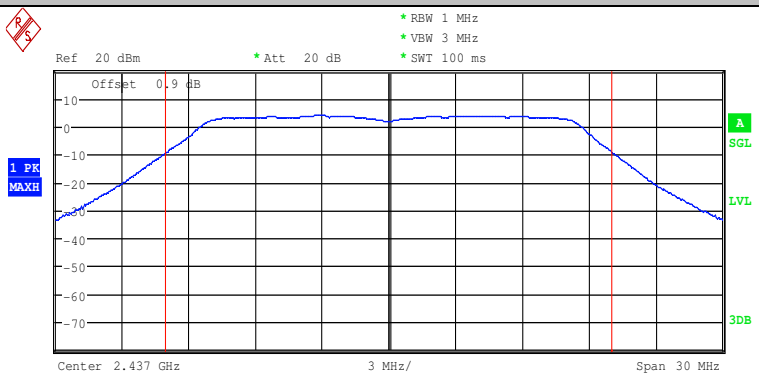
Maximum peak conducted output power_11N20SISO_2412



Tx Channel

Bandwidth	20 MHz	Power	14.52 dBm

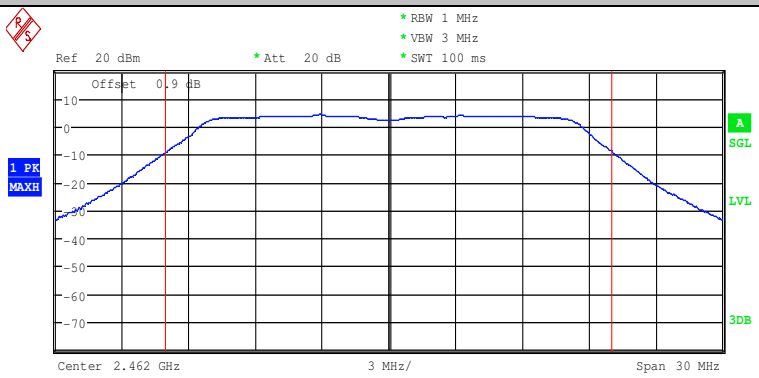
Maximum peak conducted output power_11N20SISO_2437



Tx Channel

Bandwidth	20 MHz	Power	14.73 dBm

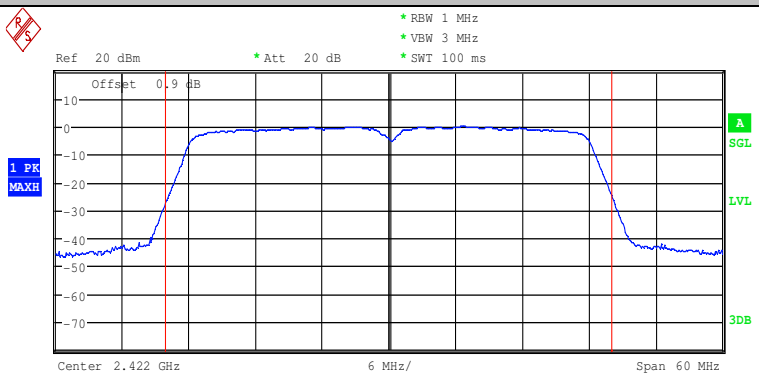
Maximum peak conducted output power_11N20SISO_2462



Tx Channel

Bandwidth	20 MHz	Power	14.85 dBm

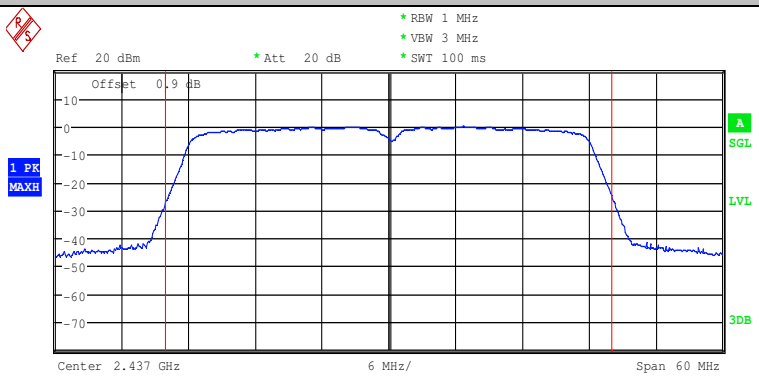
Maximum peak conducted output power_11N40SISO_2422



Tx Channel

Bandwidth	40 MHz	Power	13.64 dBm

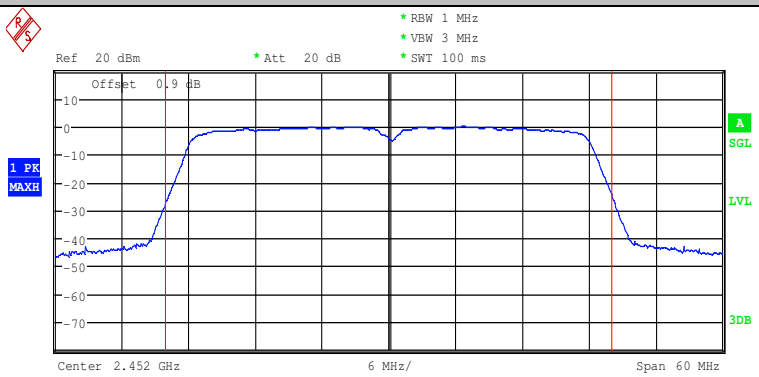
Maximum peak conducted output power_11N40SISO_2437



Tx Channel

Bandwidth	40 MHz	Power	13.57 dBm

Maximum peak conducted output power_11N40SISO_2452



Tx Channel

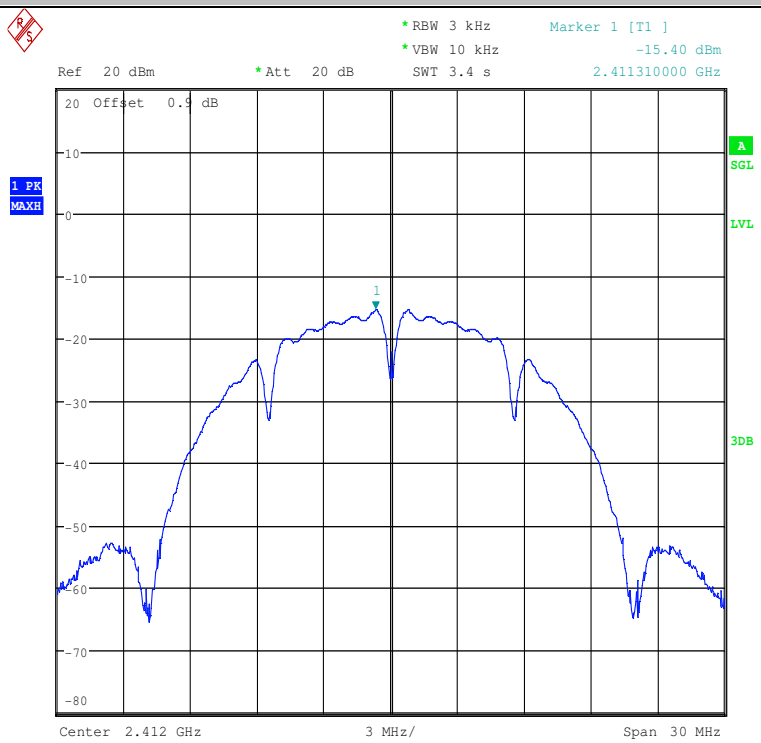
Bandwidth	40 MHz	Power	13.68 dBm

3.Maximum Peak power spectral density

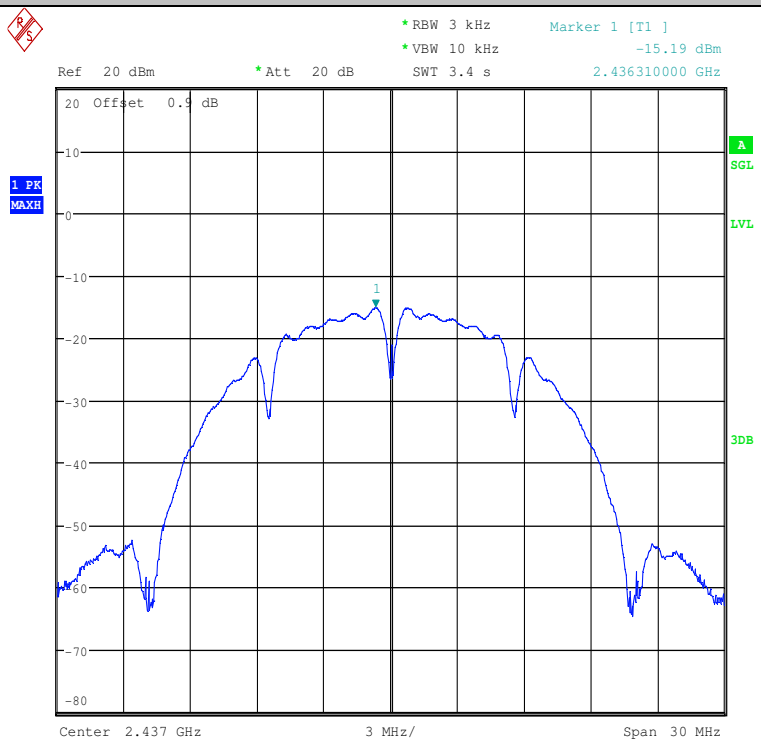
Test Mode	Test Channel	PSD[dBm/MHz]	Limit[dBm/MHz]	Verdict
11B	2412	-15.4	<8.00	PASS
11B	2437	-15.19	<8.00	PASS
11B	2462	-14.95	<8.00	PASS
11G	2412	-21.74	<8.00	PASS
11G	2437	-21.41	<8.00	PASS
11G	2462	-21.32	<8.00	PASS
11N20SISO	2412	-22.35	<8.00	PASS
11N20SISO	2437	-22.05	<8.00	PASS
11N20SISO	2462	-21.93	<8.00	PASS
11N40SISO	2422	-24.16	<8.00	PASS
11N40SISO	2437	-22.89	<8.00	PASS
11N40SISO	2452	-24.18	<8.00	PASS

TEST PLOT

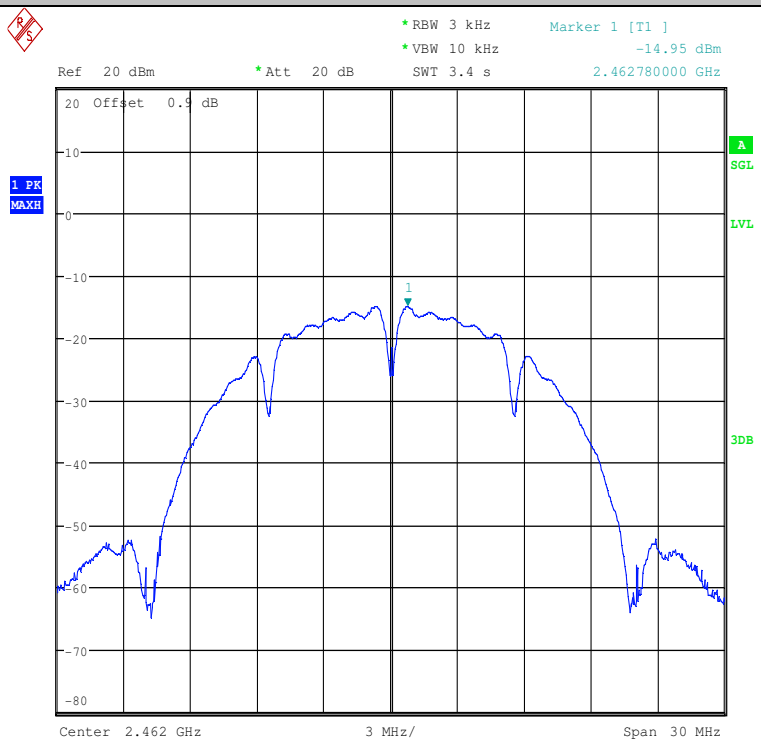
Maximum Peak power spectral density_11B_2412



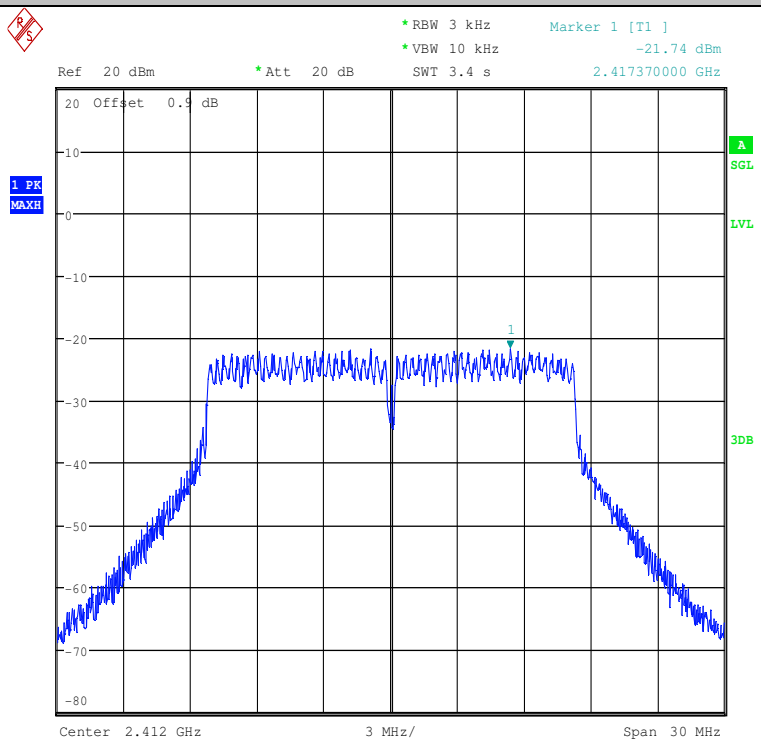
Maximum Peak power spectral density_11B_2437



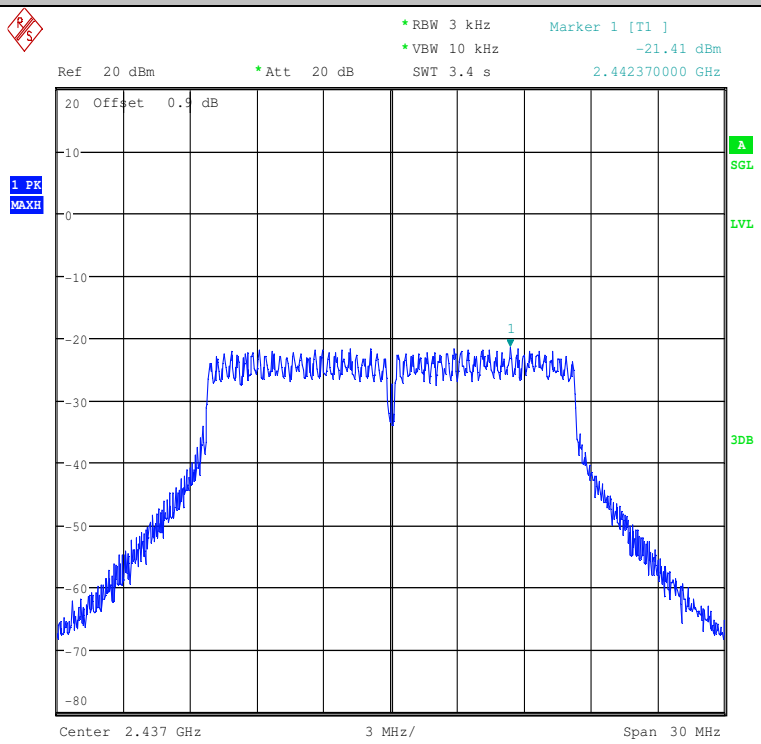
Maximum Peak power spectral density_11B_2462



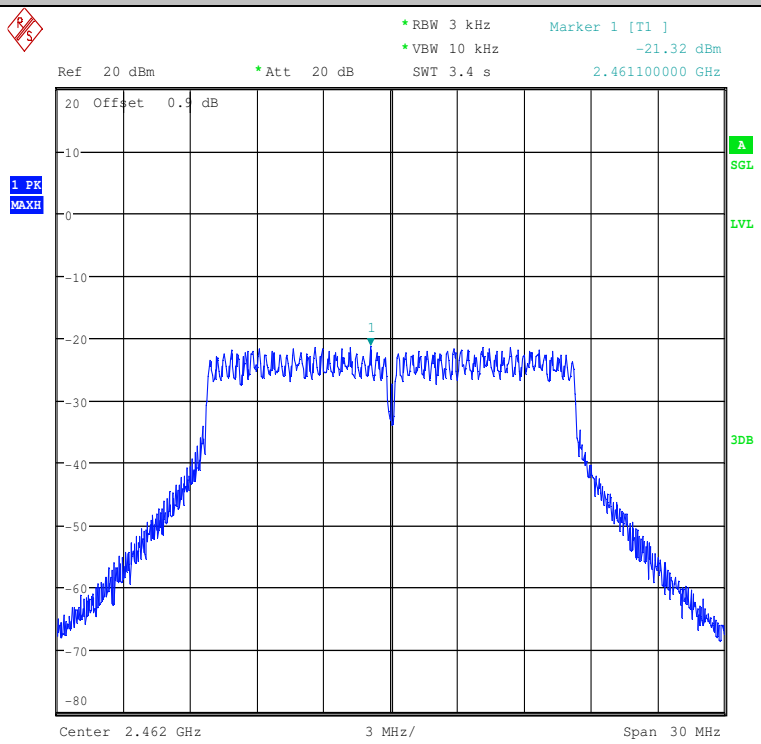
Maximum Peak power spectral density_11G_2412



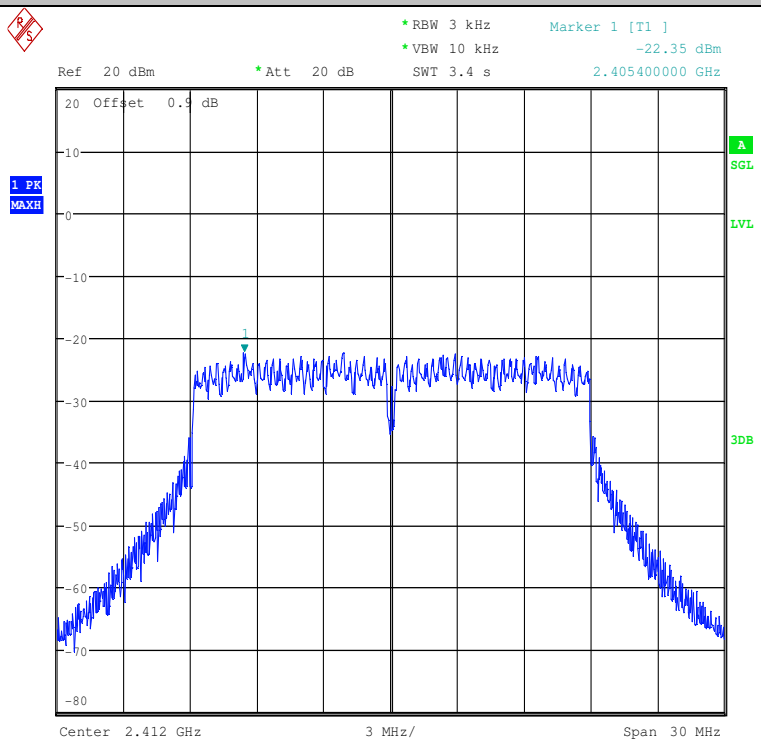
Maximum Peak power spectral density_11G_2437



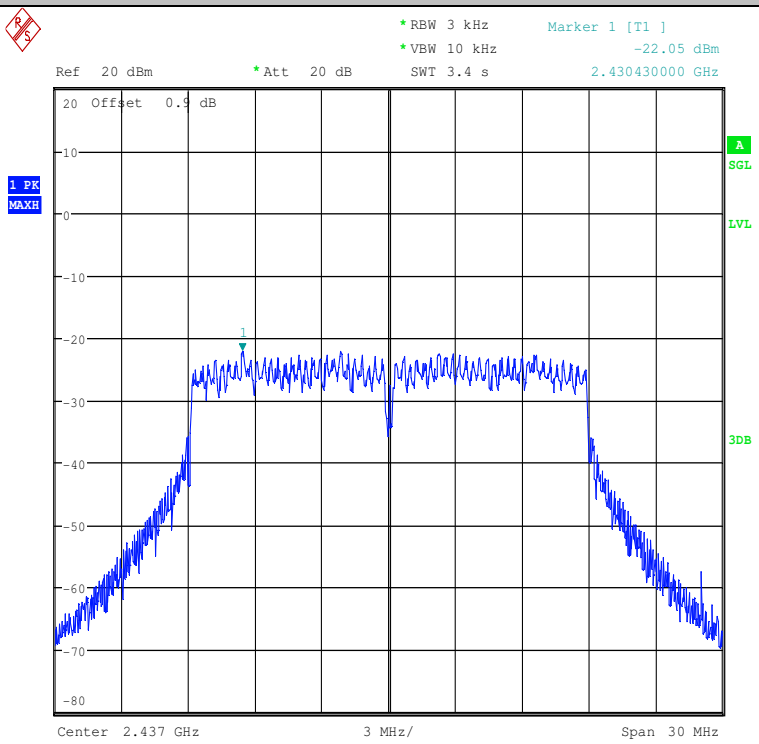
Maximum Peak power spectral density_11G_2462



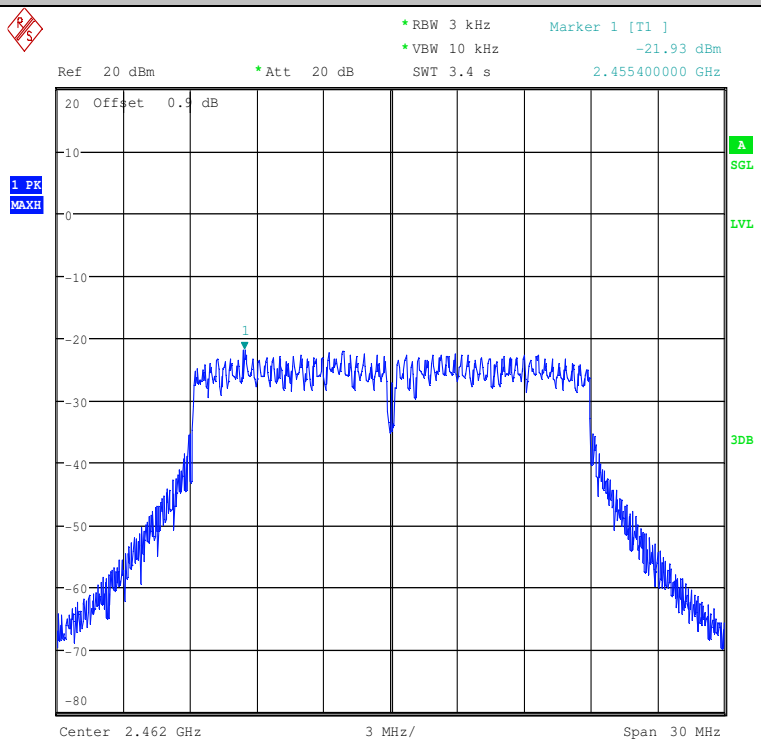
Maximum Peak power spectral density_11N20SISO_2412



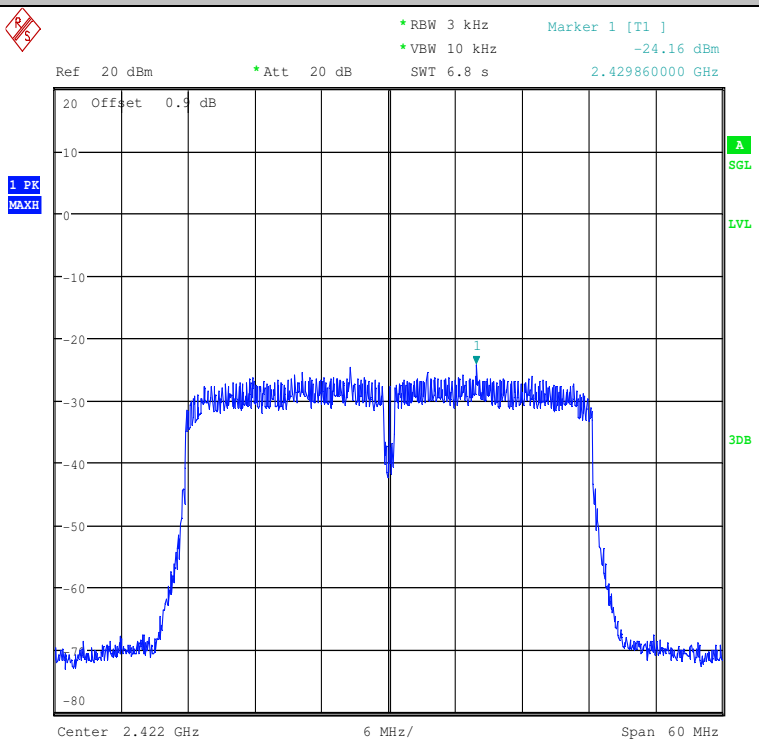
Maximum Peak power spectral density_11N20SISO_2437



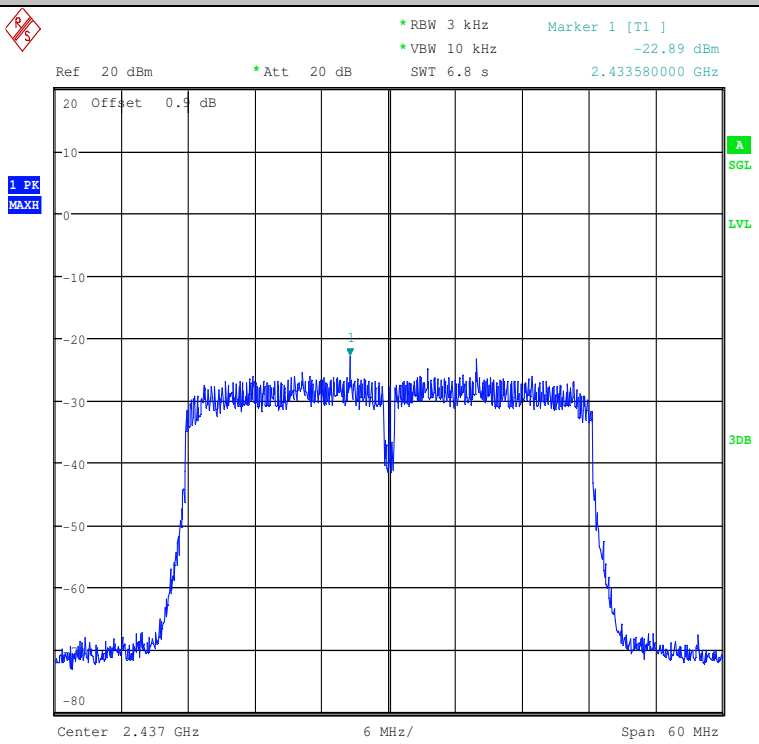
Maximum Peak power spectral density_11N20SISO_2462



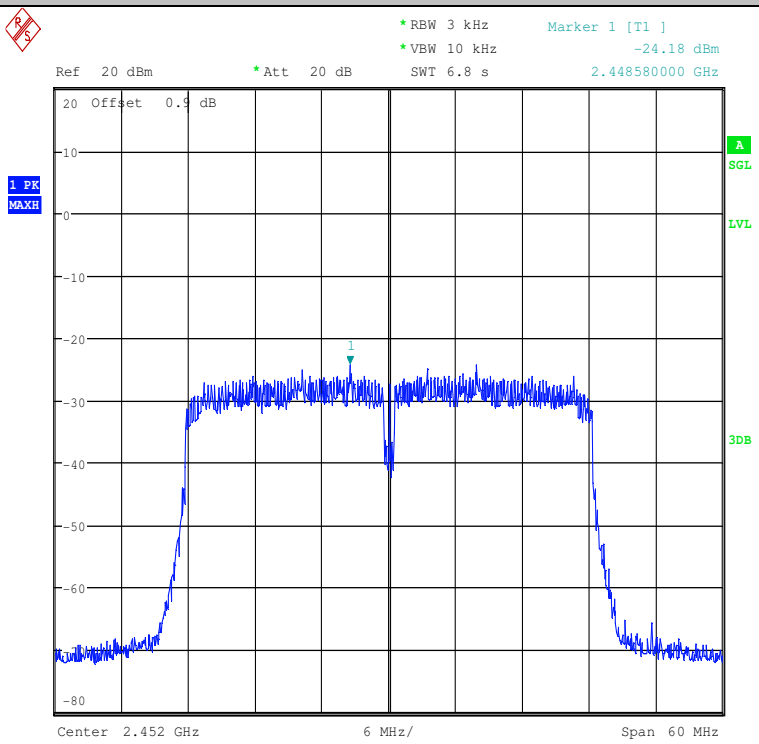
Maximum Peak power spectral density_11N40SISO_2422



Maximum Peak power spectral density_11N40SISO_2437



Maximum Peak power spectral density_11N40SISO_2452

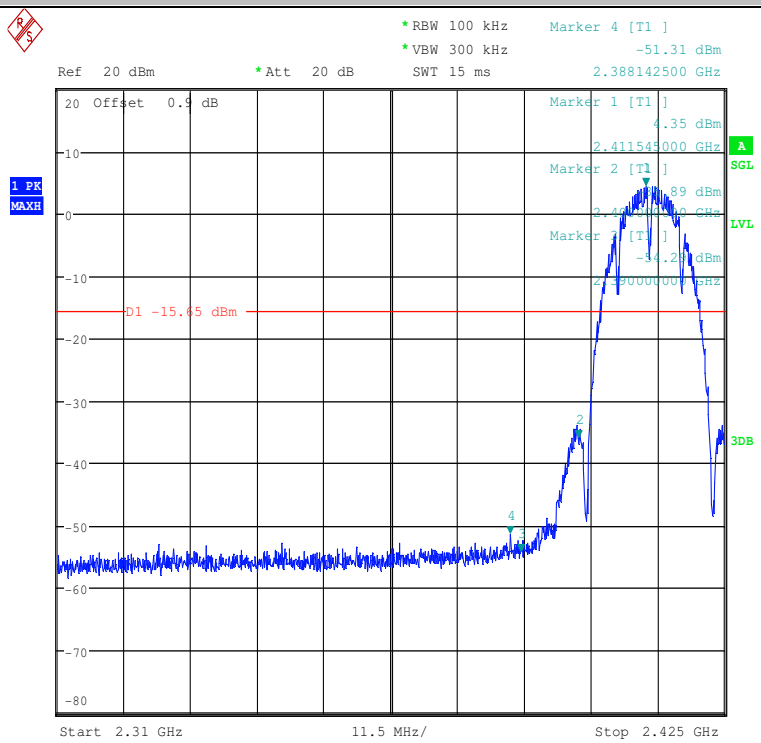


4.Band-edge for RF Conducted Emissions

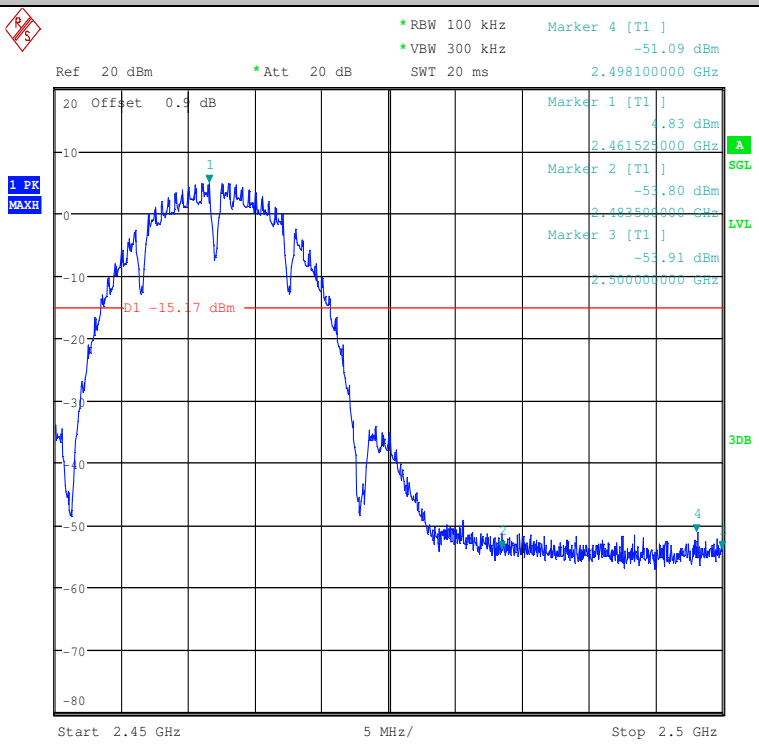
Test Mode	Test Channel	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
11B	2412	4.350	-51.310	<-15.65	PASS
11B	2462	4.830	-51.090	<-15.17	PASS
11G	2412	-7.340	-54.869	<-27.34	PASS
11G	2462	-7.040	-54.668	<-27.04	PASS
11N20SISO	2412	-8.080	-54.983	<-28.08	PASS
11N20SISO	2462	-7.600	-54.354	<-27.6	PASS
11N40SISO	2422	-12.190	-55.224	<-32.19	PASS
11N40SISO	2452	-12.040	-53.127	<-32.04	PASS

TEST PLOT

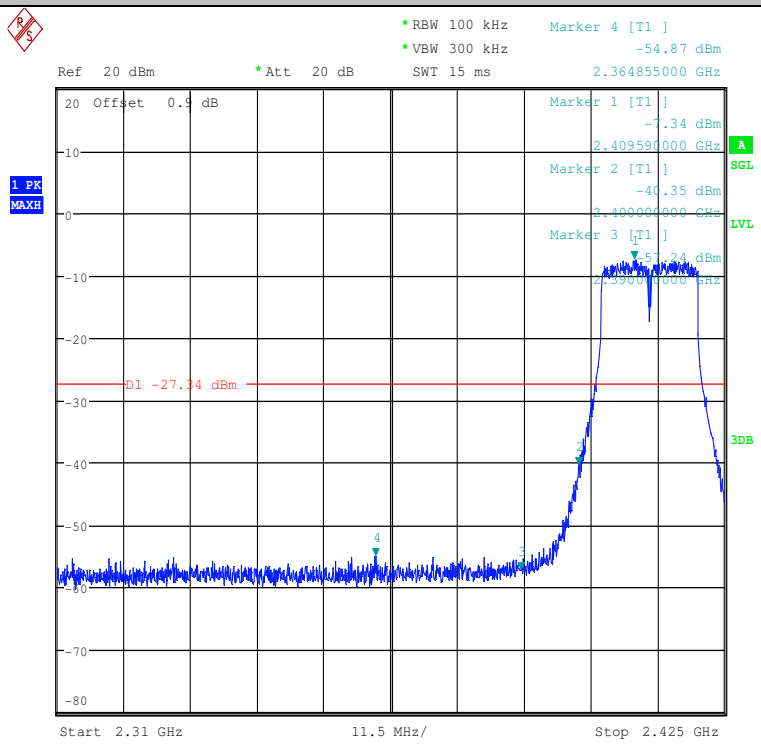
Band-edge for RF Conducted Emissions_11B_2412_Hopping Off



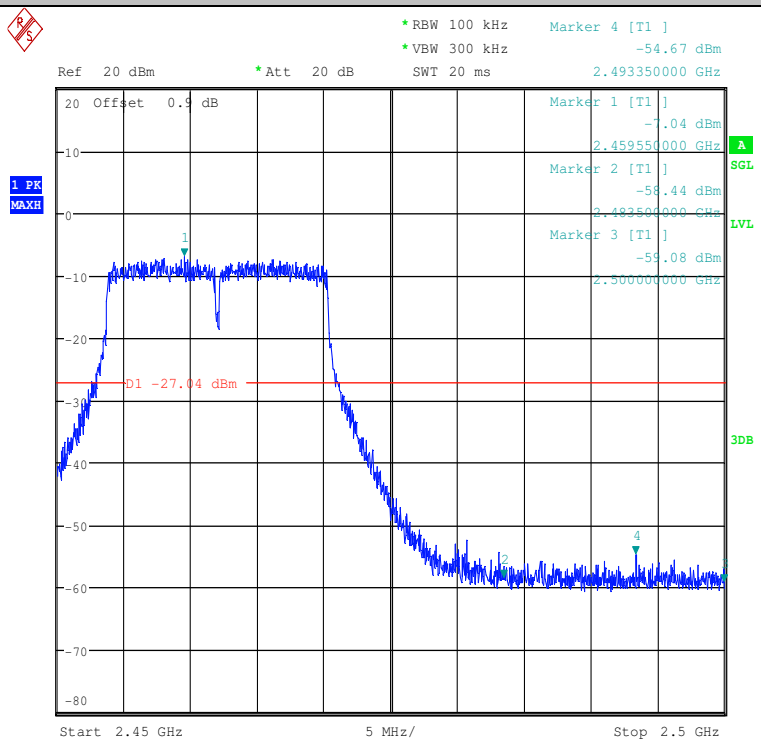
Band-edge for RF Conducted Emissions_11B_2462_Hopping Off



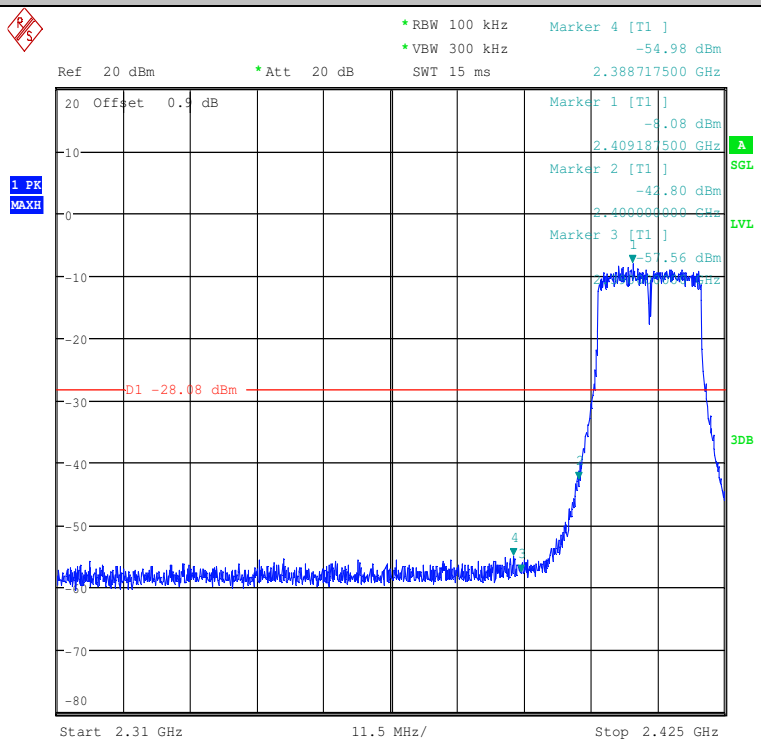
Band-edge for RF Conducted Emissions_11G_2412_Hopping Off



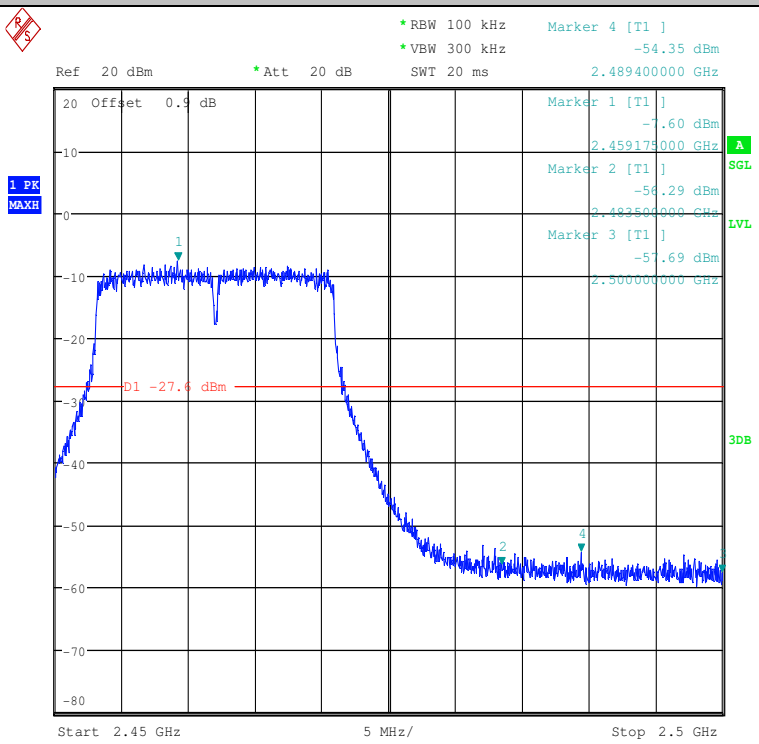
Band-edge for RF Conducted Emissions_11G_2462_Hopping Off



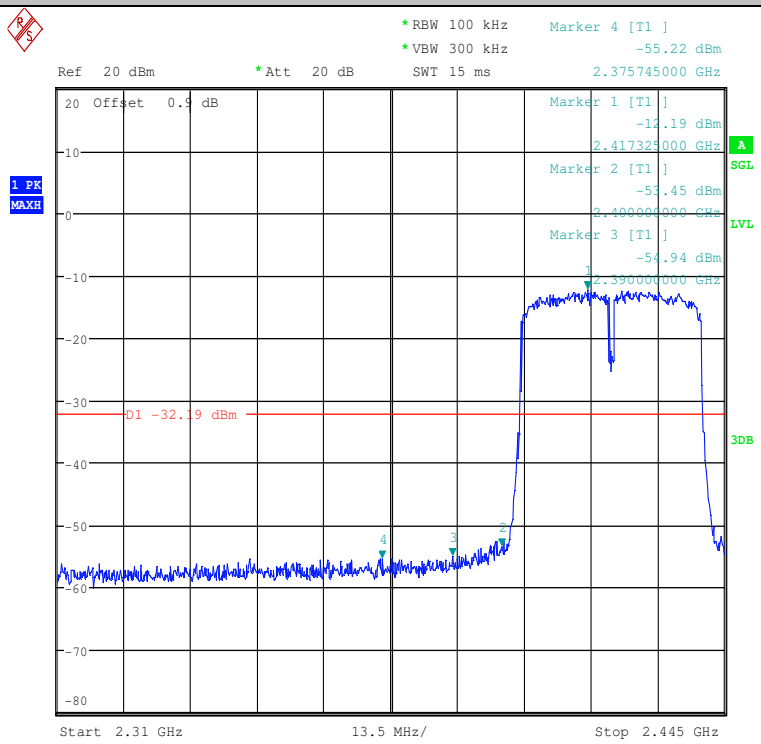
Band-edge for RF Conducted Emissions_11N20SISO_2412_Hopping Off



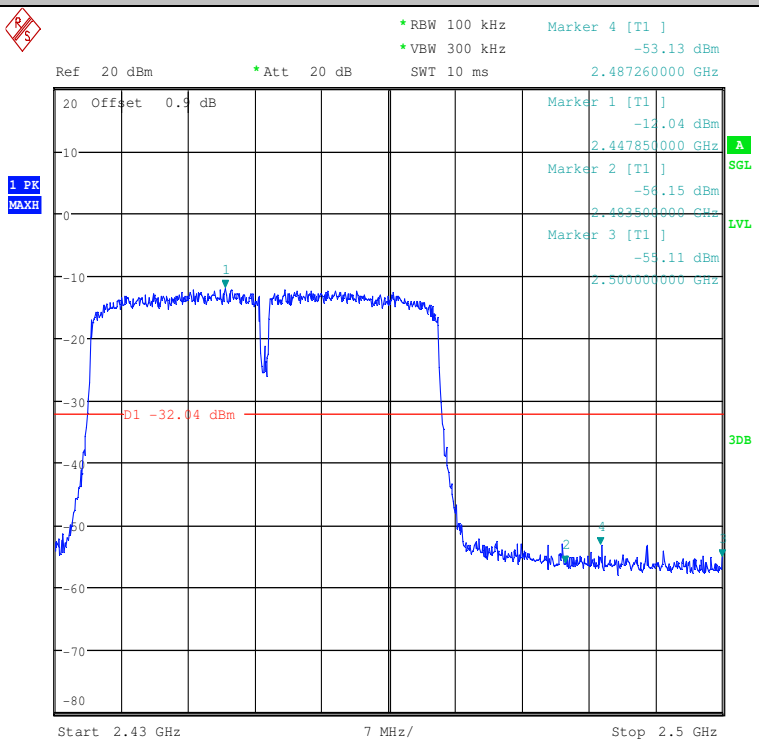
Band-edge for RF Conducted Emissions_11N20SISO_2462_Hopping Off



Band-edge for RF Conducted Emissions_11N40SISO_2422_Hopping Off



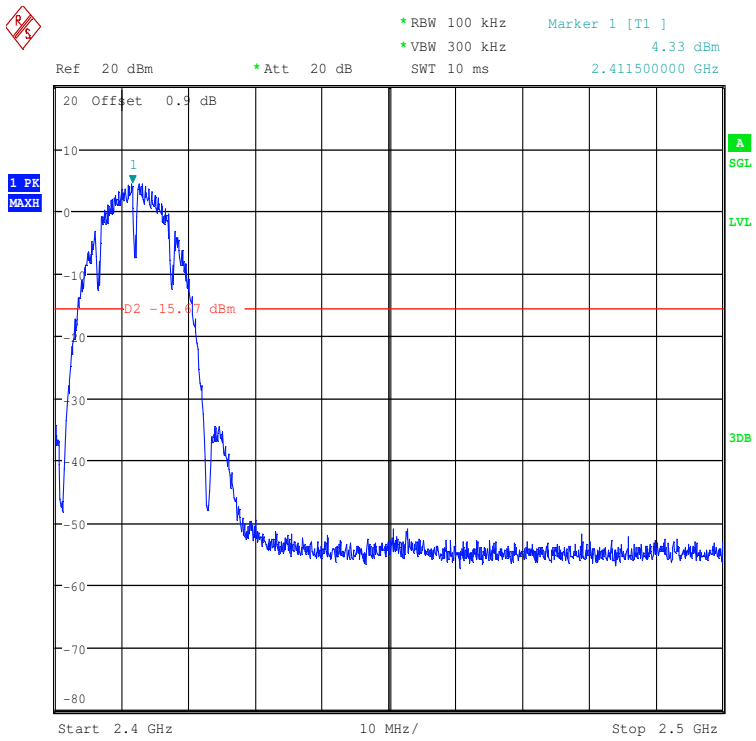
Band-edge for RF Conducted Emissions_11N40SISO_2452_Hopping Off



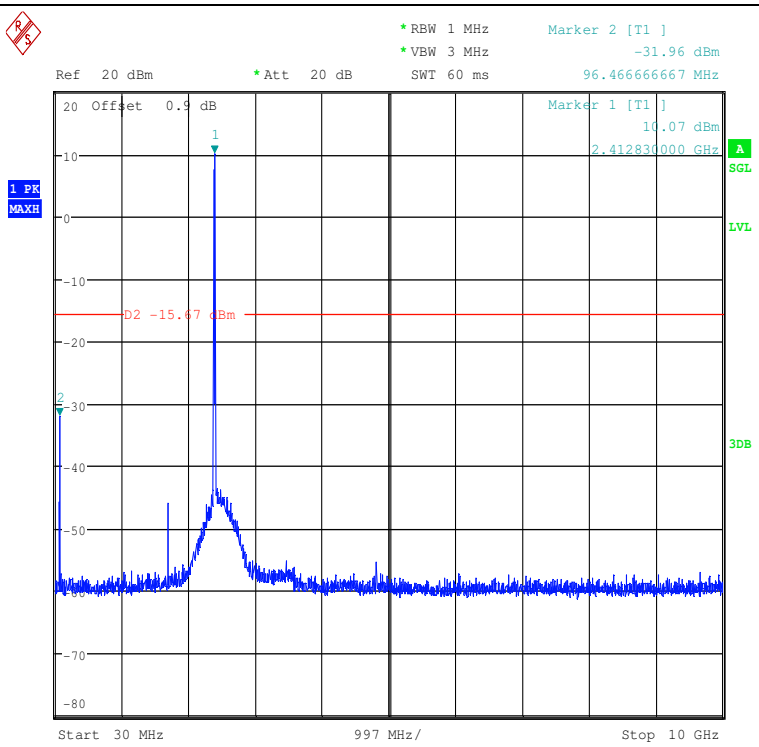
5.RF Conducted Spurious Emissions

Test Mode	Test Channel	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
11B	2412	30	10000	1000	3000	4.33	-31.960	<-15.67	PASS
11B	2412	10000	25000	1000	3000	4.33	-55.140	<-15.67	PASS
11B	2437	30	10000	1000	3000	4.53	-31.910	<-15.47	PASS
11B	2437	10000	25000	1000	3000	4.53	-55.820	<-15.47	PASS
11B	2462	30	10000	1000	3000	4.64	-31.480	<-15.36	PASS
11B	2462	10000	25000	1000	3000	4.64	-54.740	<-15.36	PASS
11G	2412	30	10000	1000	3000	-7.26	-34.010	<-27.26	PASS
11G	2412	10000	25000	1000	3000	-7.26	-54.600	<-27.26	PASS
11G	2437	30	10000	1000	3000	-6.97	-46.720	<-26.97	PASS
11G	2437	10000	25000	1000	3000	-6.97	-55.050	<-26.97	PASS
11G	2462	30	10000	1000	3000	-6.2	-45.720	<-26.2	PASS
11G	2462	10000	25000	1000	3000	-6.2	-54.940	<-26.2	PASS
11N20SISO	2412	30	10000	1000	3000	-8.39	-43.310	<-28.39	PASS
11N20SISO	2412	10000	25000	1000	3000	-8.39	-54.930	<-28.39	PASS

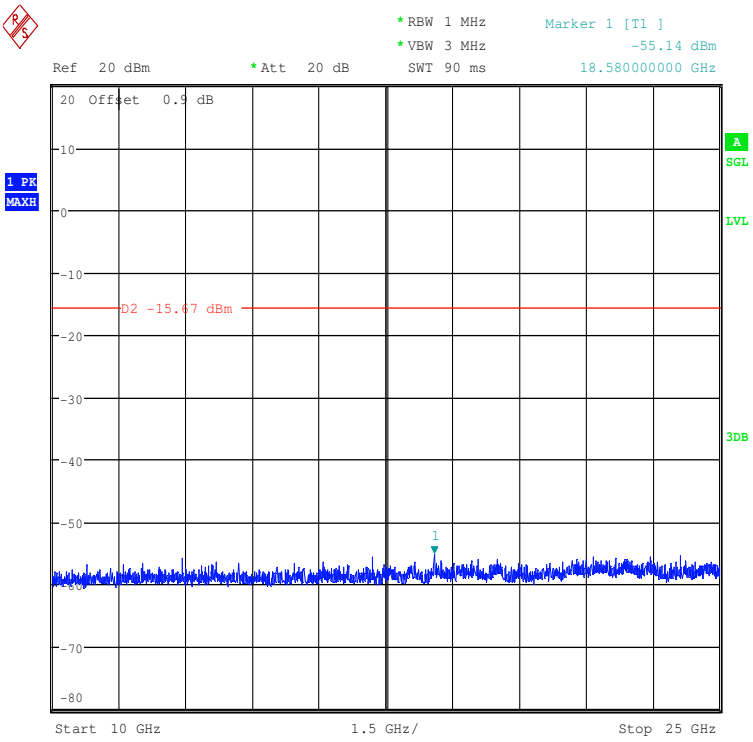
11N20SISO	2437	30	10000	1000	3000	-8.15	-40.990	<-28.15	PASS
11N20SISO	2437	10000	25000	1000	3000	-8.15	-55.080	<-28.15	PASS
11N20SISO	2462	30	10000	1000	3000	-7.54	-42.890	<-27.54	PASS
11N20SISO	2462	10000	25000	1000	3000	-7.54	-54.900	<-27.54	PASS
11N40SISO	2422	30	10000	1000	3000	-12.42	-43.490	<-32.42	PASS
11N40SISO	2422	10000	25000	1000	3000	-12.42	-55.010	<-32.42	PASS
11N40SISO	2437	30	10000	1000	3000	-12.16	-45.590	<-32.16	PASS
11N40SISO	2437	10000	25000	1000	3000	-12.16	-55.180	<-32.16	PASS
11N40SISO	2452	30	10000	1000	3000	-11.98	-43.120	<-31.98	PASS
11N40SISO	2452	10000	25000	1000	3000	-11.98	-54.630	<-31.98	PASS

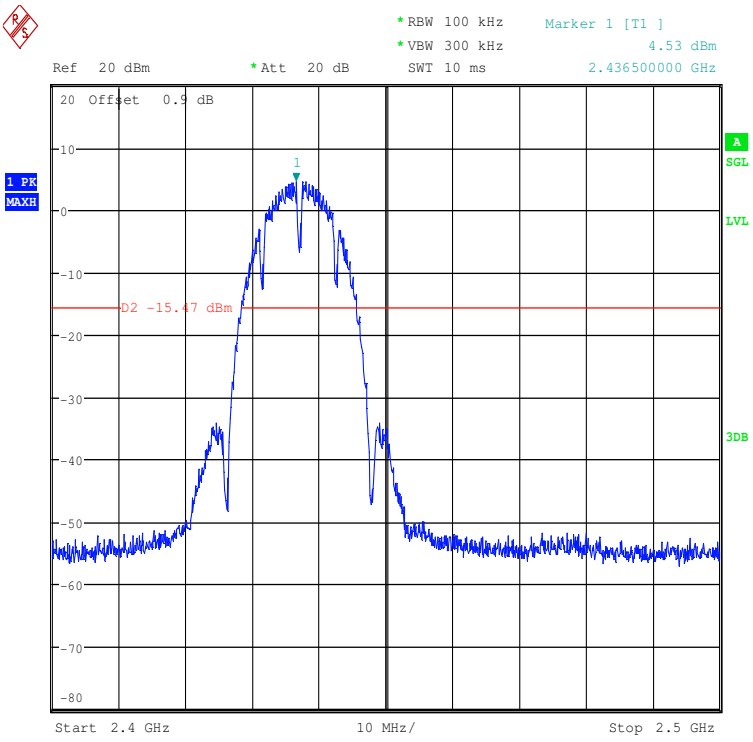
TEST PLOT	
RF Conducted Spurious Emissions_11B_2412	
Pref	

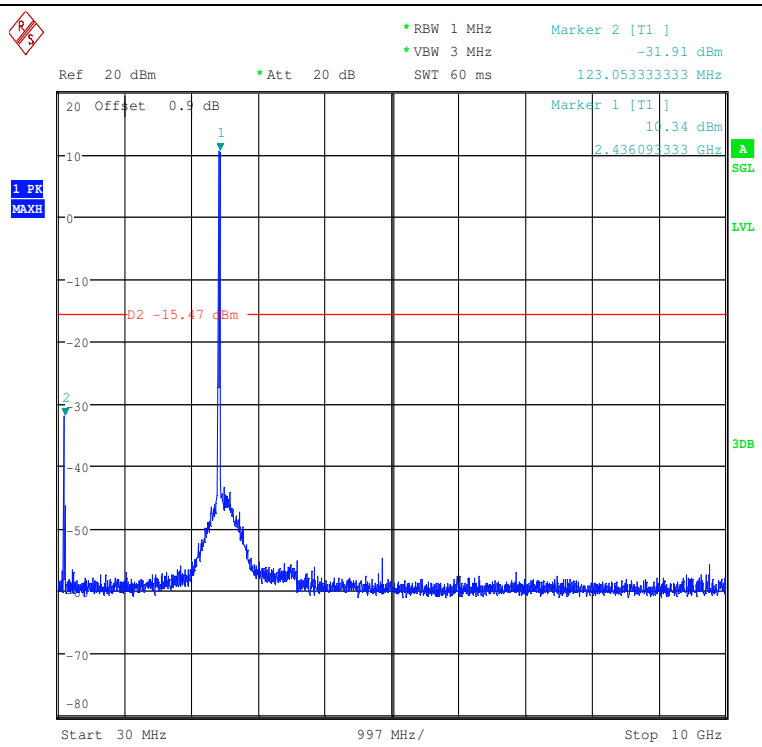
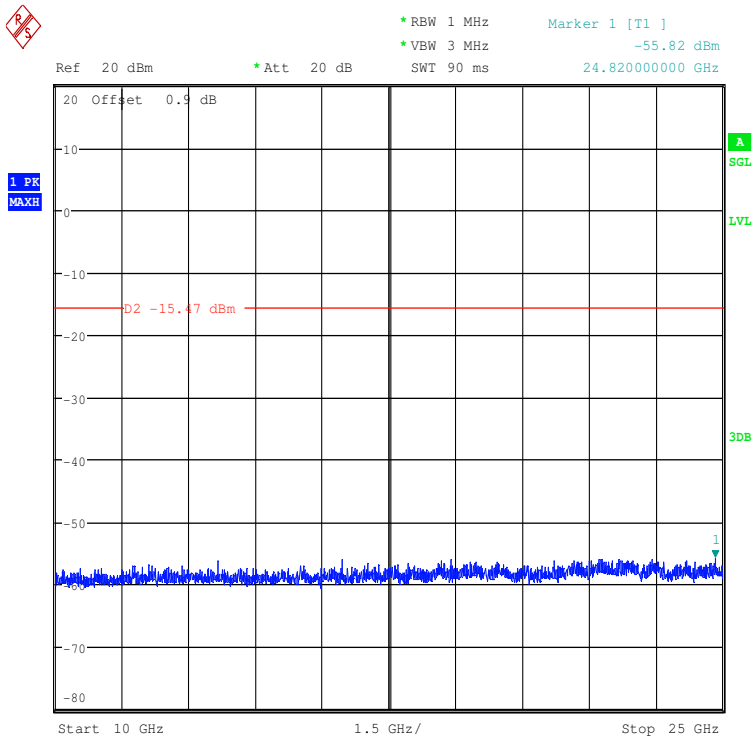
CSE_1

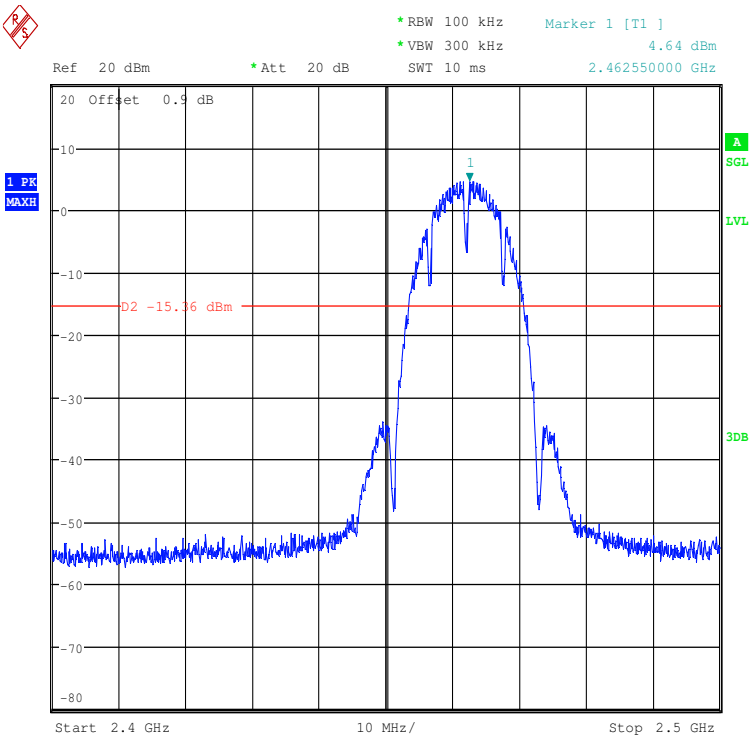


CSE_2

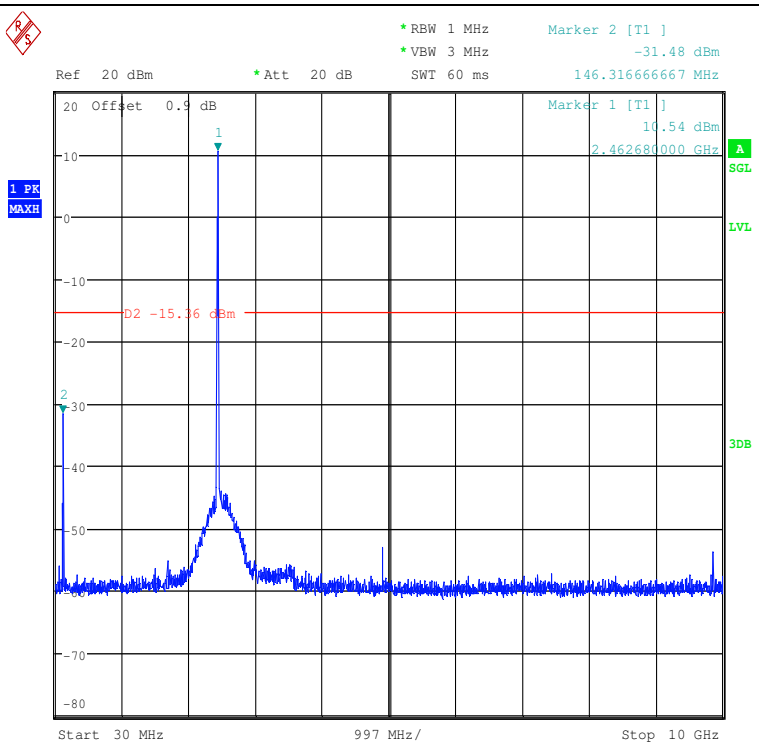


RF Conducted Spurious Emissions_11B_2437	
Pref	

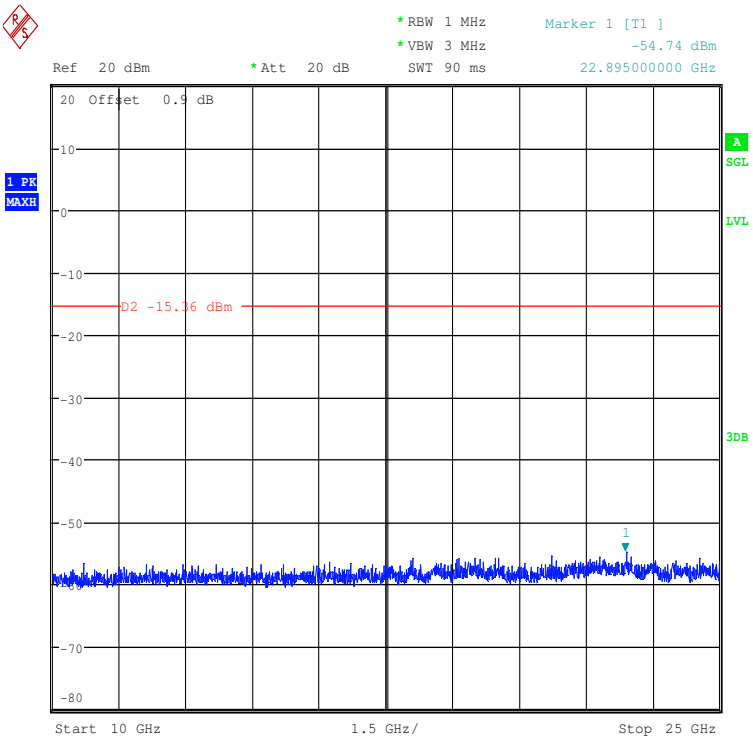
CSE_1	
CSE_2	

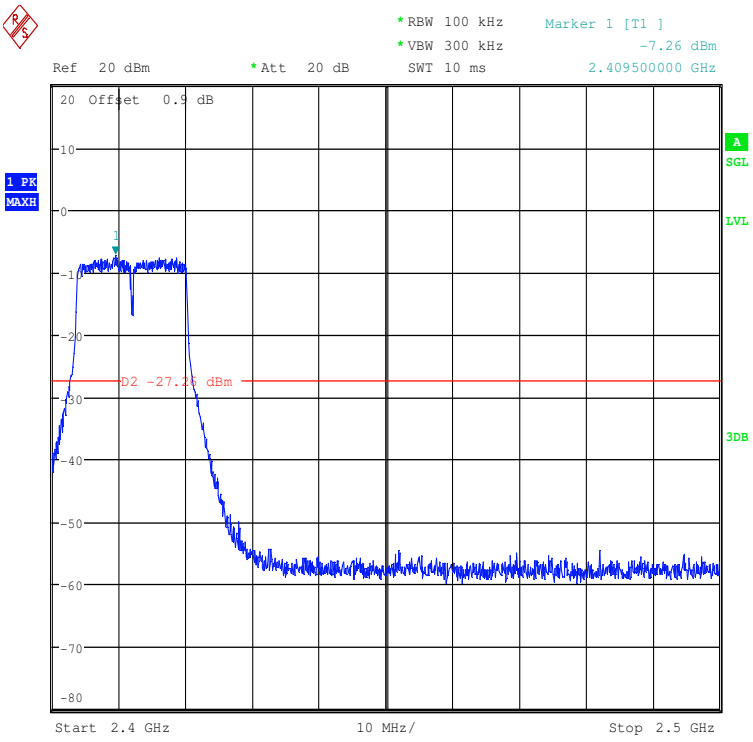
RF Conducted Spurious Emissions_11B_2462	
Pref	

CSE_1

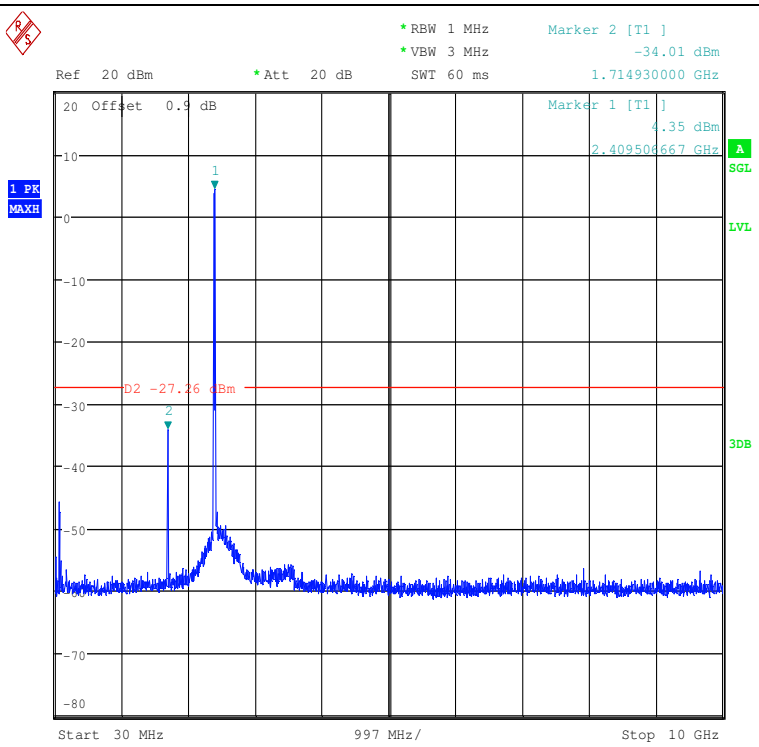


CSE_2

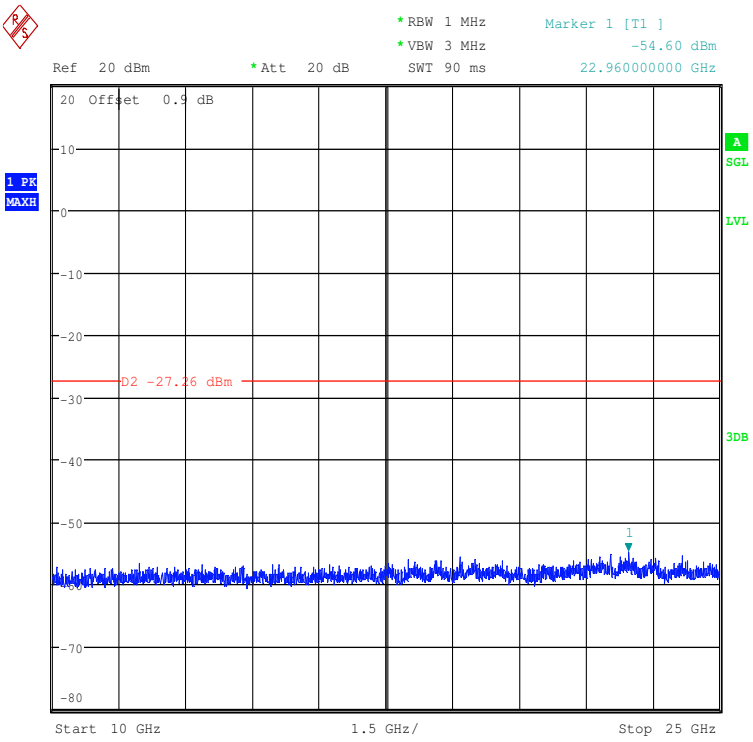


RF Conducted Spurious Emissions_11G_2412	
Pref	

CSE_1



CSE_2



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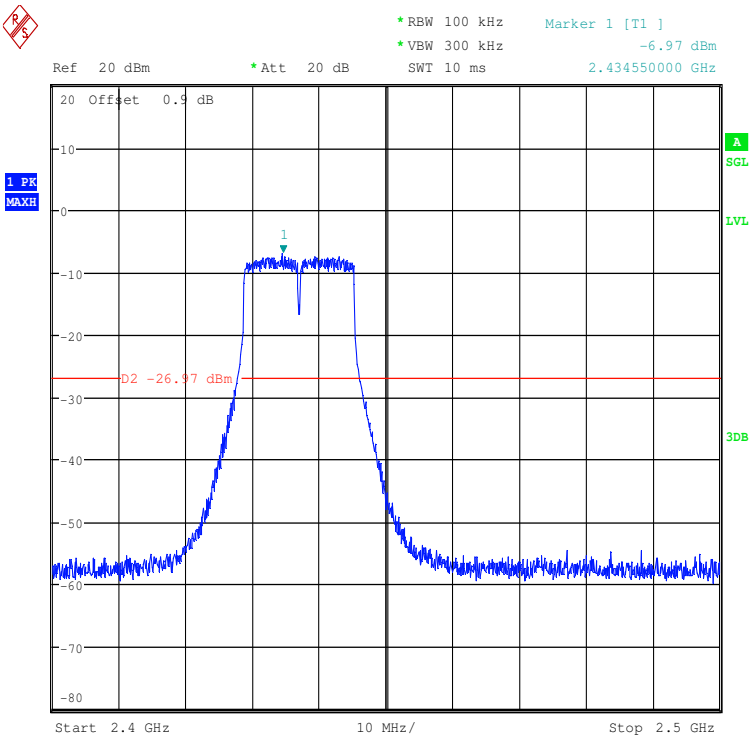
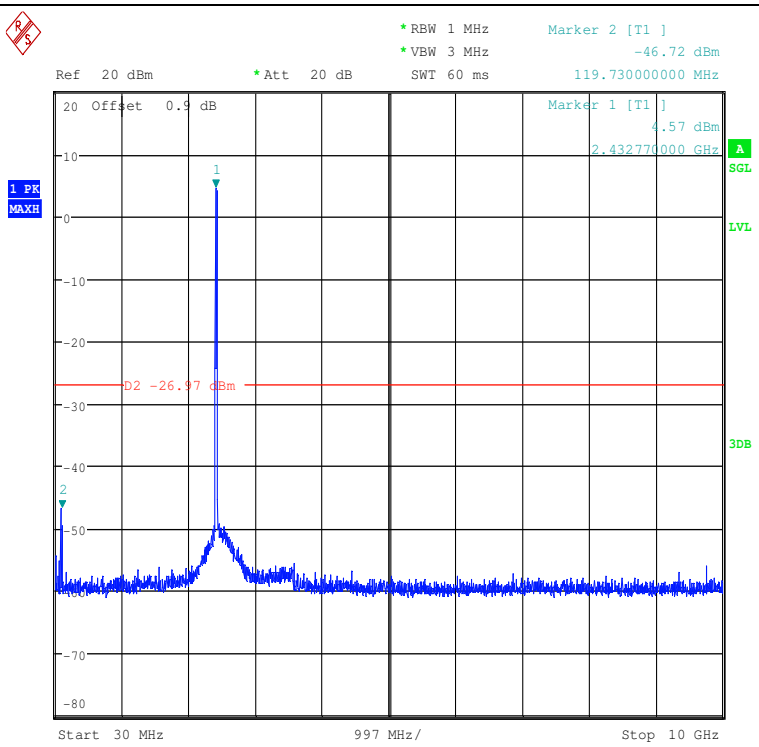
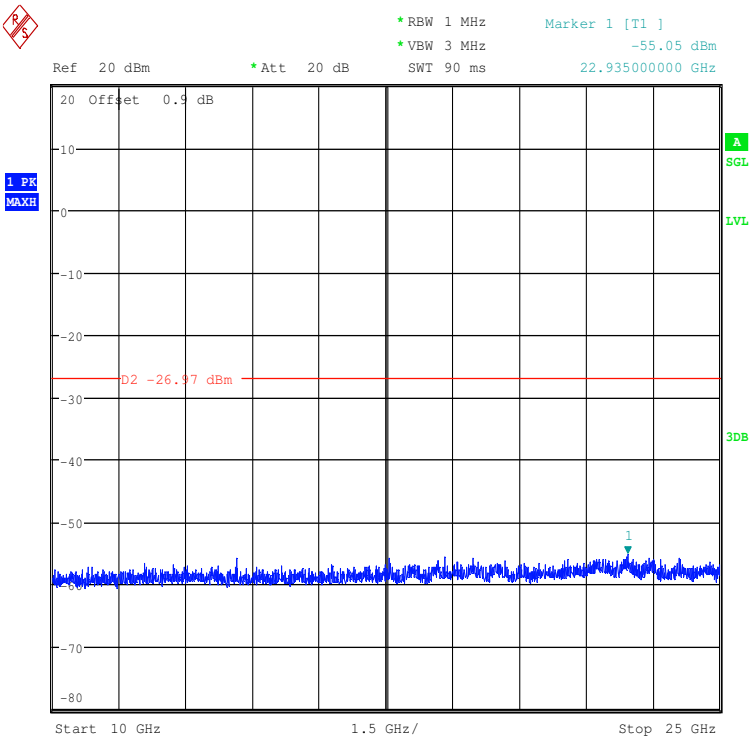
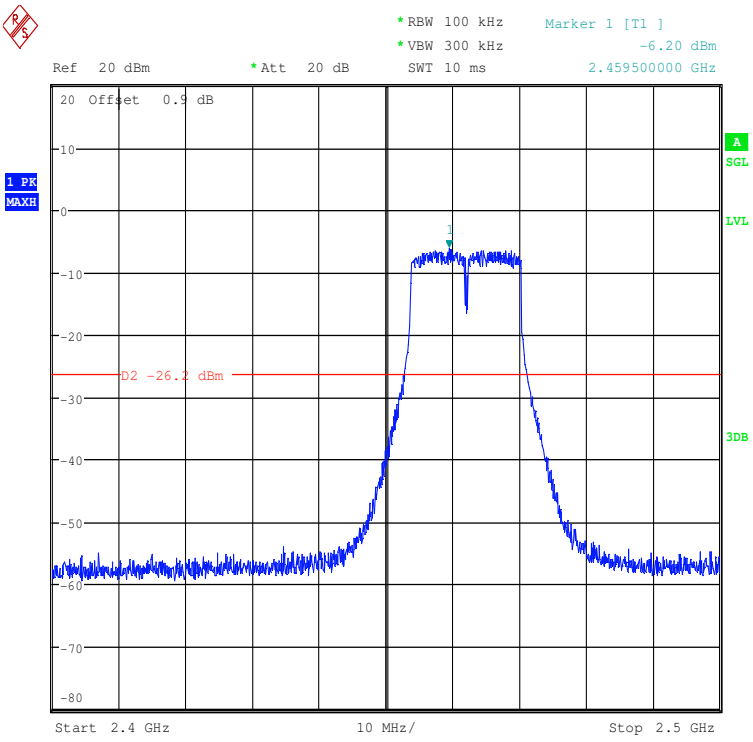
Pref	

CSE_1

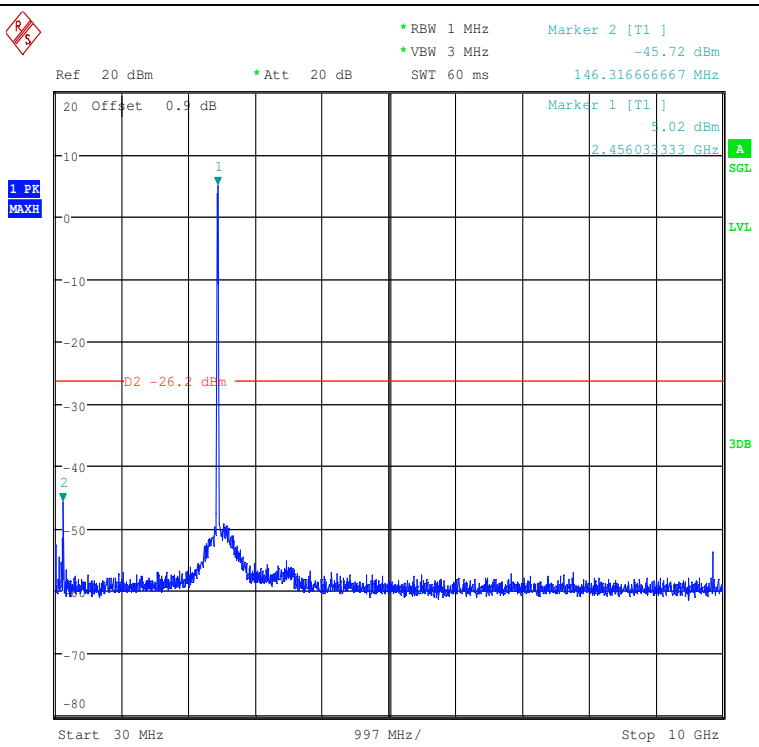


CSE_2

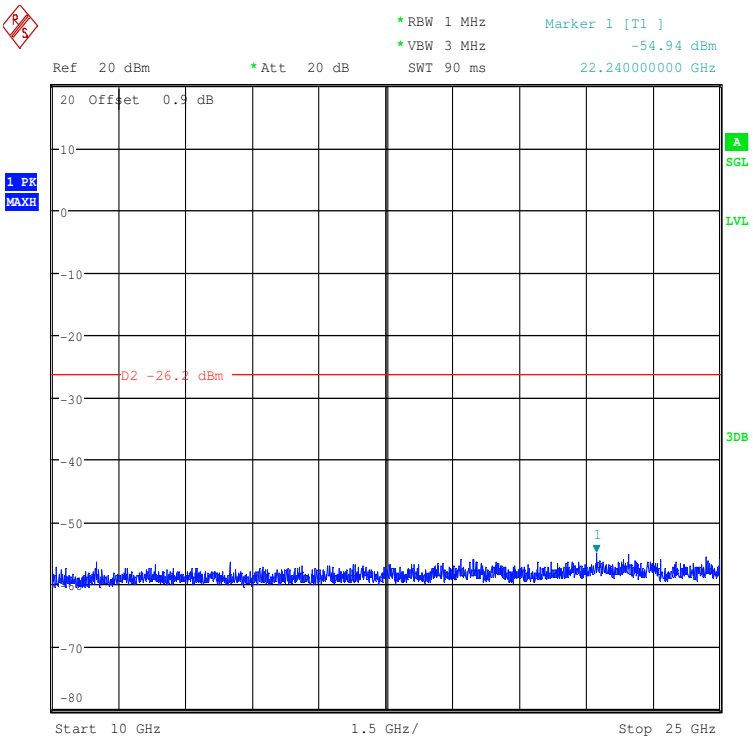


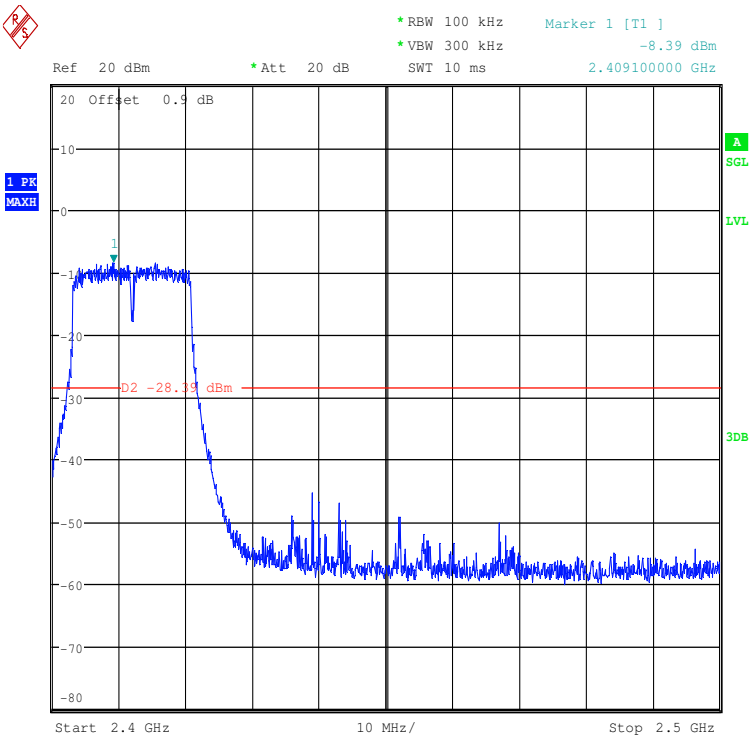
RF Conducted Spurious Emissions_11G_2462	
Pref	

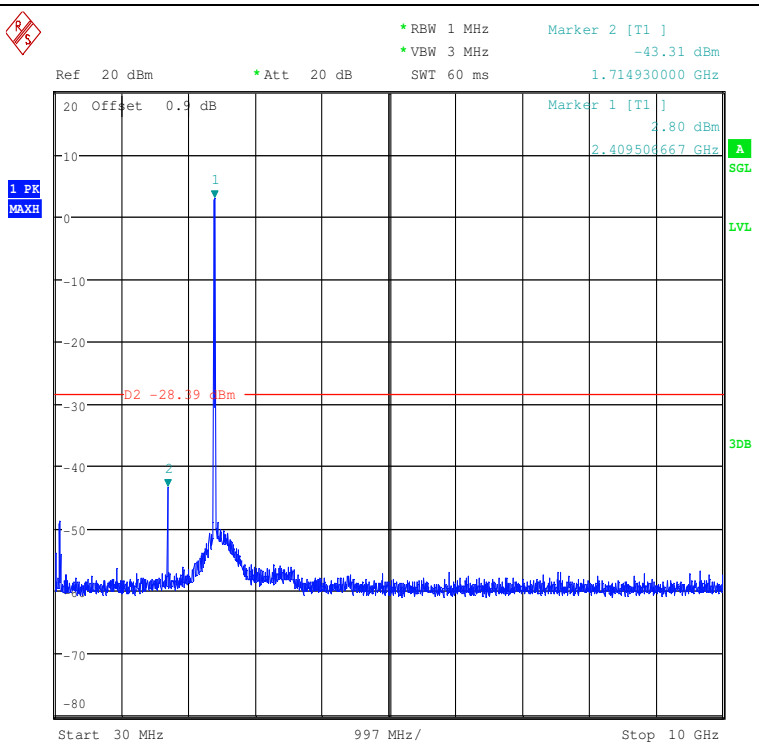
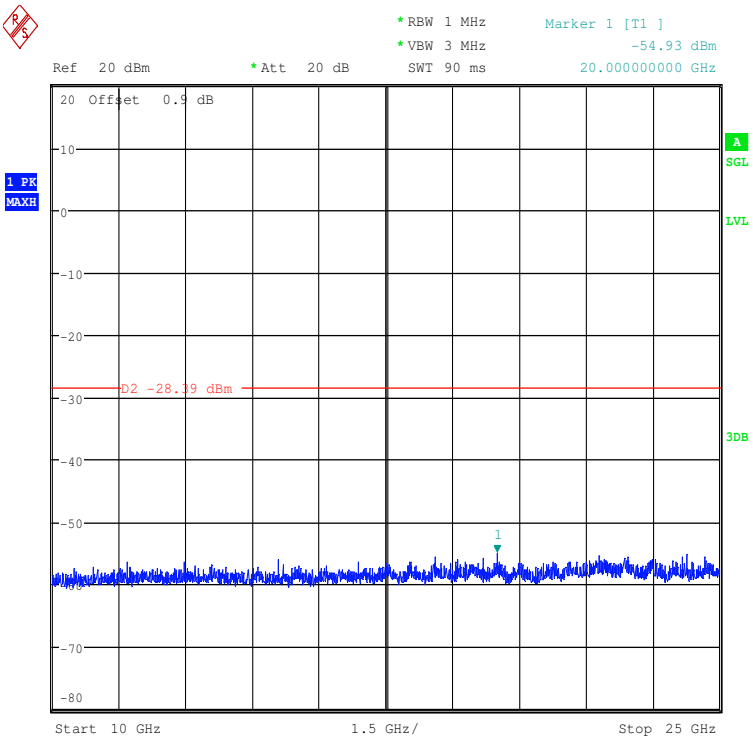
CSE_1

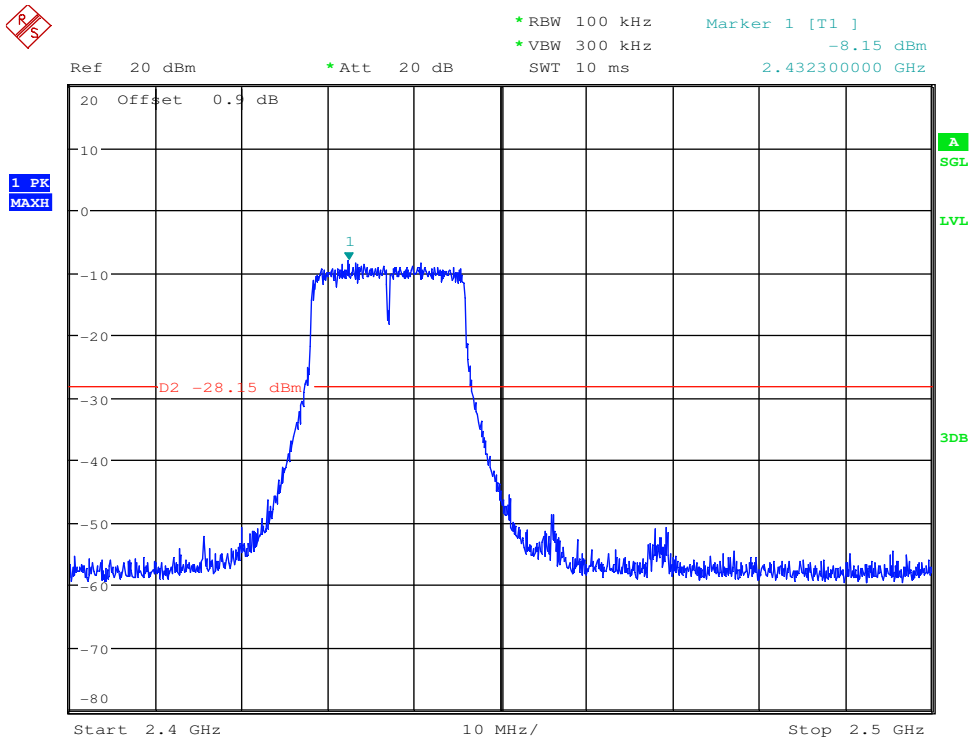


CSE_2

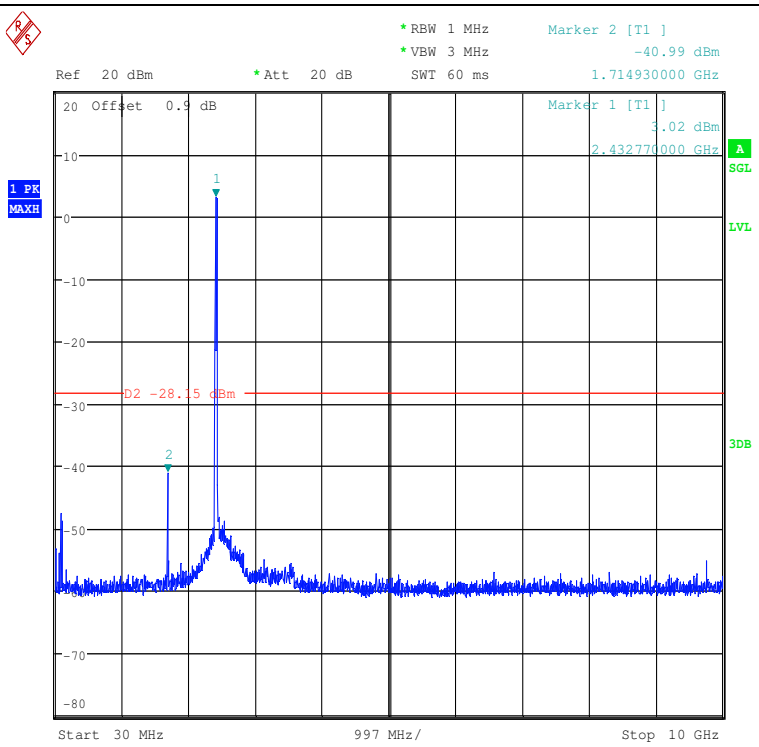


RF Conducted Spurious Emissions_11N20SISO_2412	
Pref	

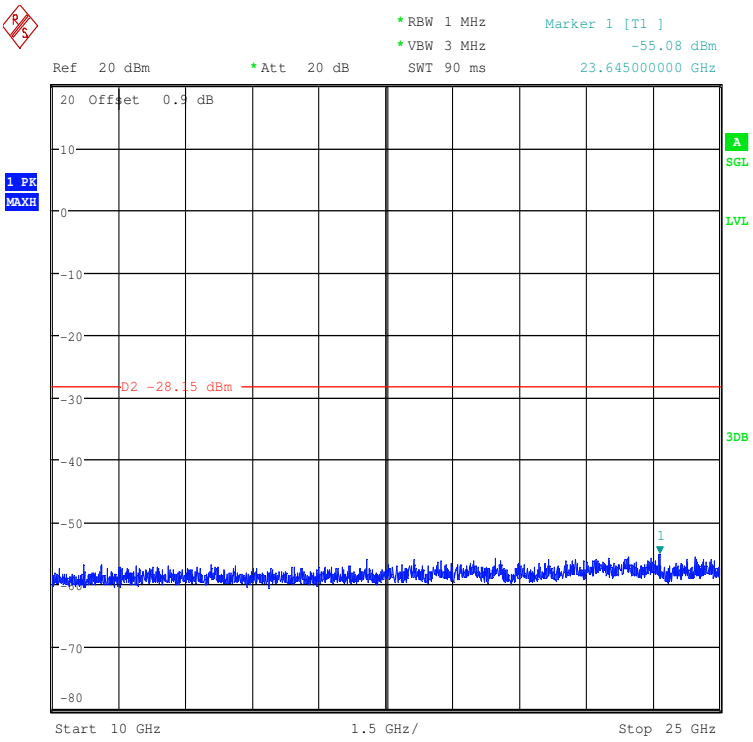
CSE_1	
CSE_2	

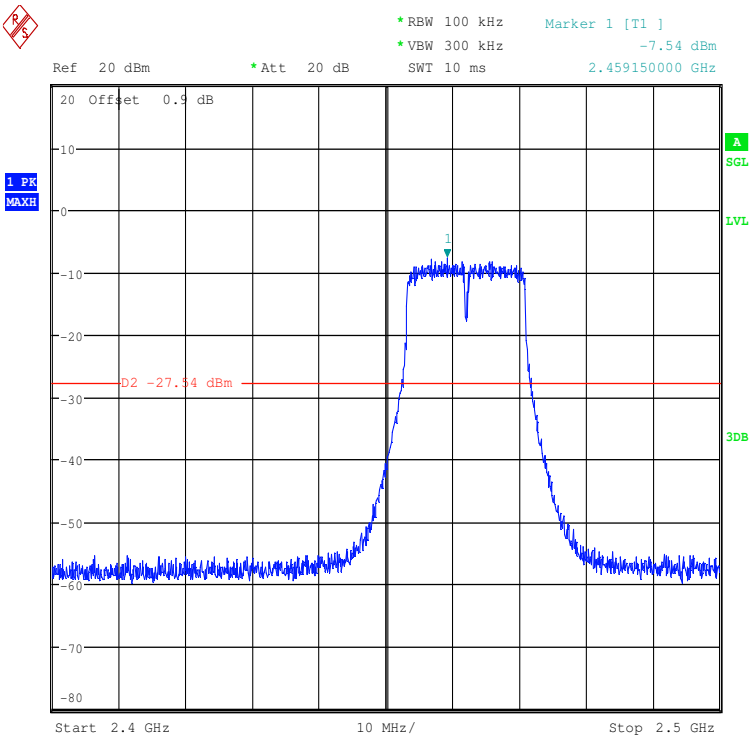
RF Conducted Spurious Emissions_11N20SISO_2437	
Pref	

CSE_1

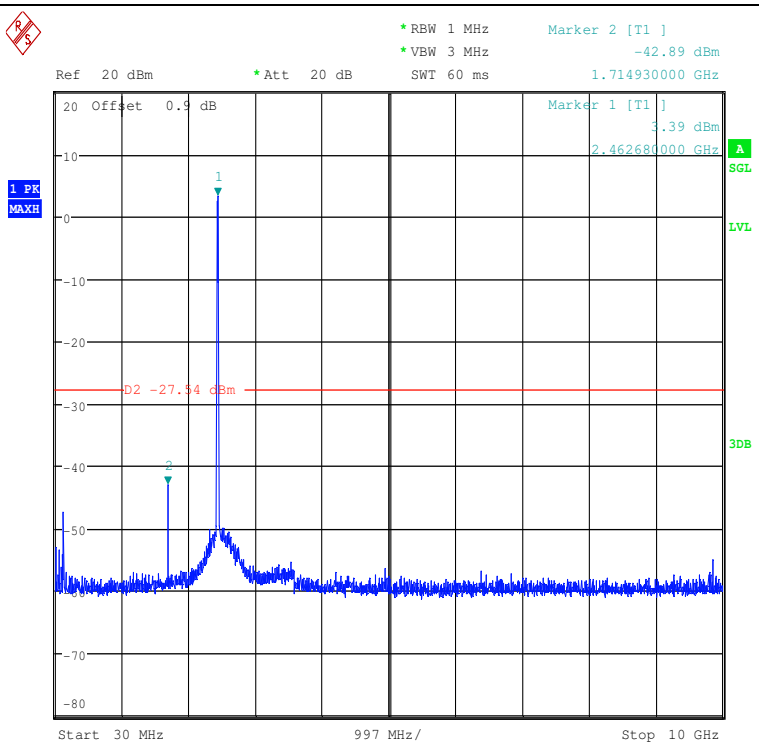


CSE_2

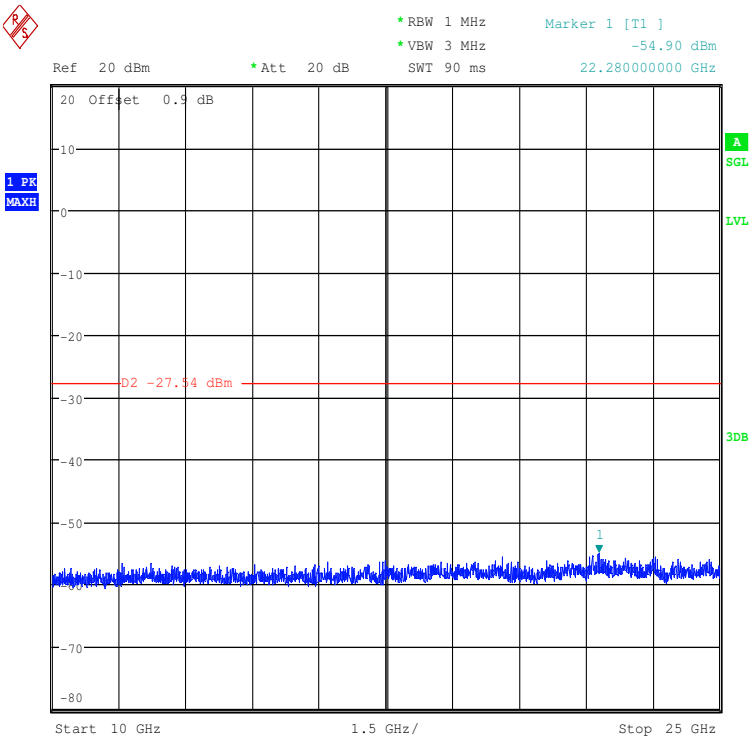


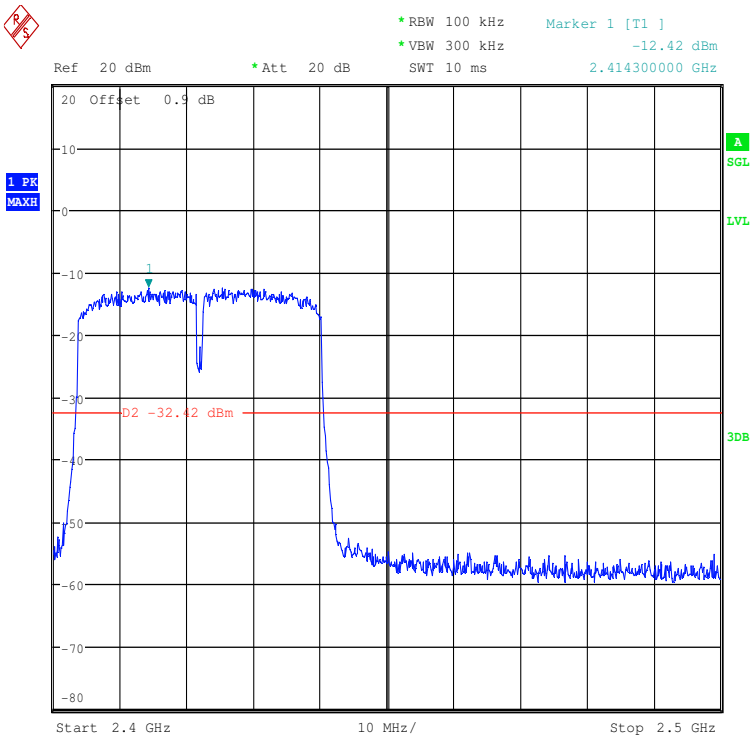
RF Conducted Spurious Emissions_11N20SISO_2462	
Pref	

CSE_1

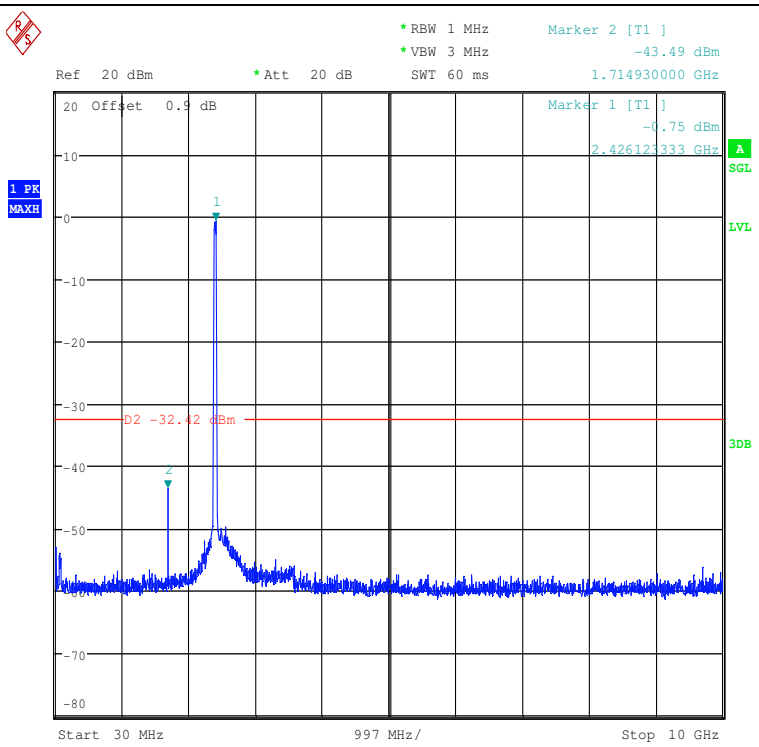


CSE_2

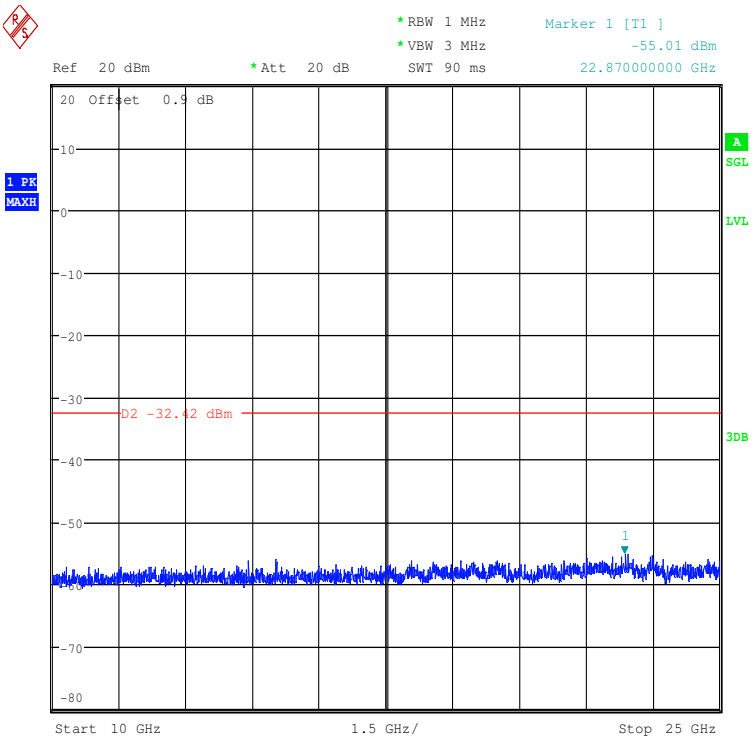


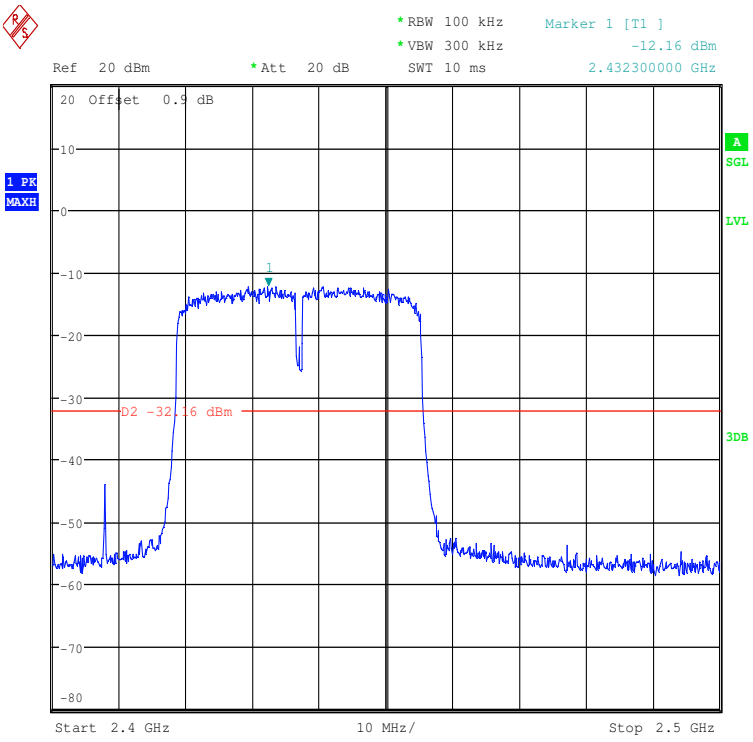
RF Conducted Spurious Emissions_11N40SISO_2422	
Pref	

CSE_1

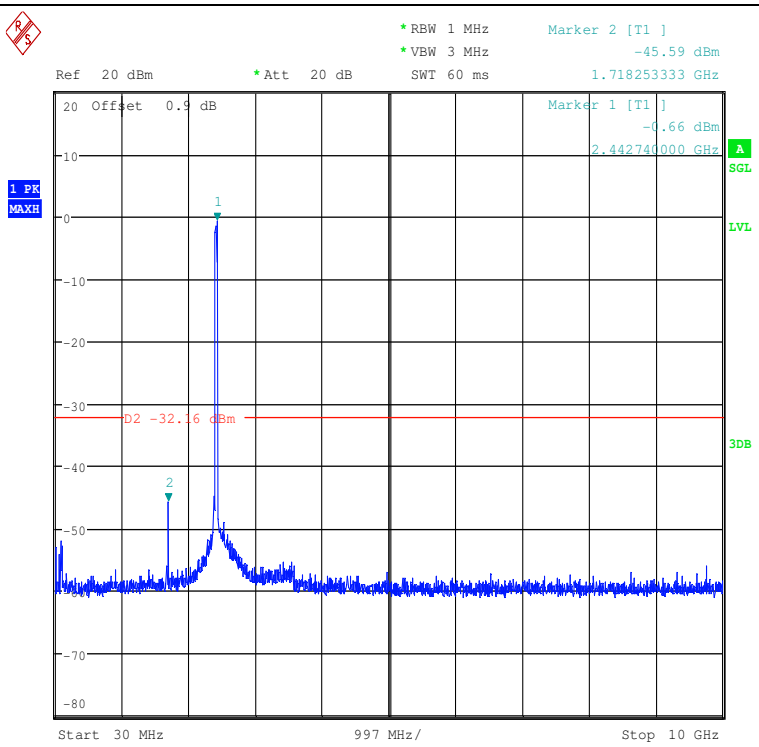


CSE_2

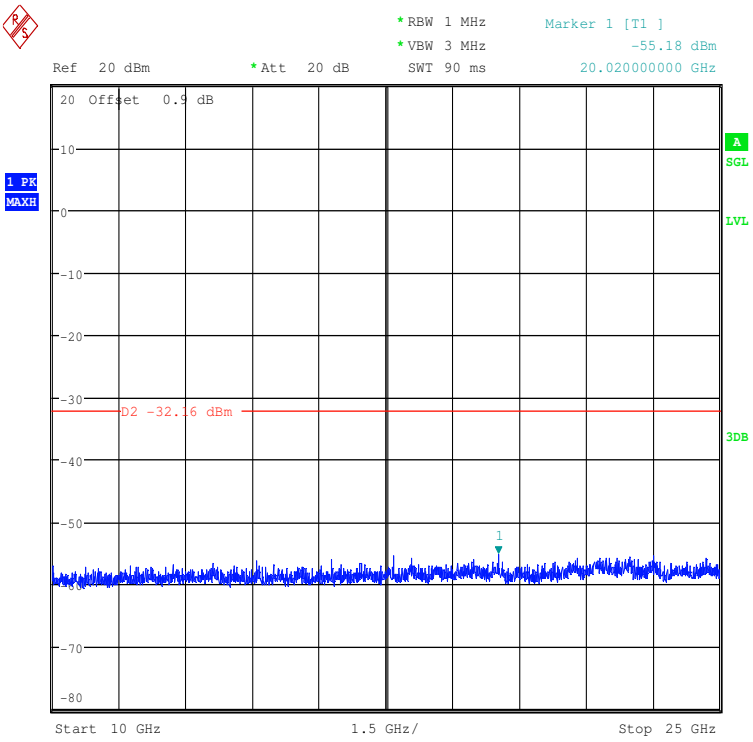


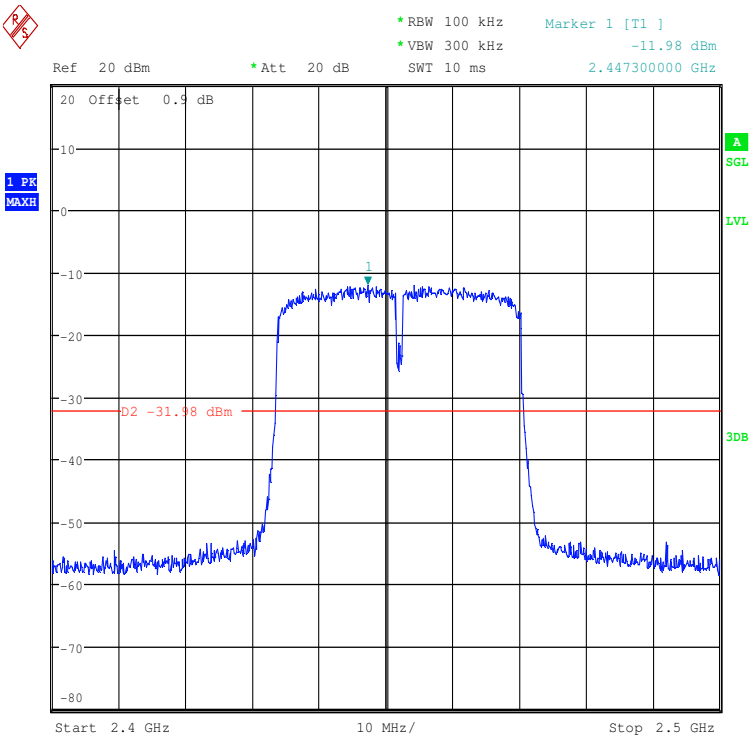
RF Conducted Spurious Emissions_11N40SISO_2437	
Pref	

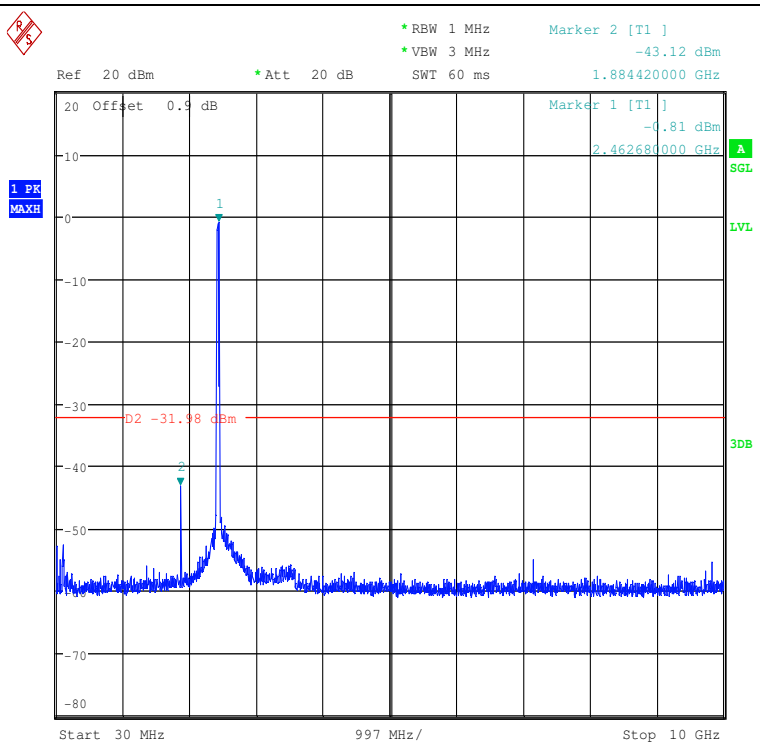
CSE_1



CSE_2



RF Conducted Spurious Emissions_11N40SISO_2452	
Pref	

CSE_1	
CSE_2