SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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FCC Part 15C TEST REPORT

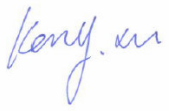
Application No.:	SHEM1303000453RF
Applicant:	Lenbrook Industries Limited
FCC ID:	SVC-USBDAC2RX
IC:	152A-USBDAC2RX
Equipment Under Test (EUT): **NOTE:** The following sample(s) submitted was/were identified on behalf of the client as	
EUT Name:	Wireless USB DAC2
Brand Name:	NAD
Model No:	DAC 2 USB Wireless DAC Receiver
Fundamental Frequency :	2.4GHz Band: 2412MHz to 2464MHz 5.2GHz Band: 5180MHz to 5240MHz 5.8GHz Band: 5736MHz to 5814MHz
Test Frequency:	2.4GHz Band: 2412MHz to 2464MHz 5.8GHz Band: 5736MHz to 5814MHz
Standards:	FCC PART 15 SUBPART C, Section 15.247:2012 RSS-210 Issue 8 (December 2010) RSS-Gen Issue 3 (December 2010)
Date of Receipt:	March 26, 2013
Date of Test:	April 07, 2013 to April 10, 2013
Date of Issue:	May 21, 2013
Test Result :	**PASS ***

* In the configuration tested, the EUT (Equipment under test) complied with the standards specified above.

Tony Wu
E&E Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00	/	May 21, 2013	/	Original

Authorized for issue by:				
Engineer		Zenger Zhang **Print Name**		
Clerk		Susie Liu **Print Name**		
Reviewer		Keny Xu **Print Name**		

3 Test Summary

TEST ITEM	FCC REFERANCE	IC REFERANCE	Test Procedure	RESULT
Power line conducted emission	15.207	RSS-Gen Issue 8 Clause 7.2.4	ANSI C63.4,2009 Clause 7.3	Pass
Radiated emission	15.205 & 15.209	RSS-Gen Issue 8 Clause 7.2.5	ANSI C63.4,2009 Clause 8.3	Pass
Minimum 6dB Bandwidth	15.247(a)(2)	RSS-210 Issue 8 Annex 8	KDB 558074 D01 Clause 8	Pass
Maximum peak output power	15.247(b)	RSS-210 Issue 8 Annex 8	KDB 558074 D01 Clause 9.1	Pass
Power spectrum density	15.247(e)	RSS-210 Issue 8 Annex 8	KDB 558074 D01 Clause 10.2	Pass
RF Conducted Spurious Emissions	15.247(d)	RSS-210 Issue 8 Annex 8	KDB 558074 D01 Clause 11 & Caluse 12	Pass
Radiated Emission BandEdge	15.247(d)	RSS-210 Issue 8 Annex 8	KDB 558074 D01 Caluse 12	Pass
Emission outside the Frequency band	15.247(d)	RSS-210 Issue 8 Annex 8	KDB 558074 D01 Clause 11 & Caluse 12	Pass
Occupied bandwidth	---	RSS-Gen Issue 3 Clause 4.6.1	RSS-Gen Issue 3 Clause 4.6.1	Tested

4 Contents

5 General Information

5.1 Client Information

Applicant :	Lenbrook Industries Limited
Applicant Address:	633 Granite Court, Pickering Ontario, Toronto L1W 3K1, Canada
Manufacturer:	Lenbrook Industries Limited
Manufacturer Address:	633 Granite Court, Pickering Ontario, Toronto L1W 3K1, Canada
Factory:	Hansong (Nanjing) Technology Ltd.

5.2 Details of E.U.T.

EUT Name:	Wireless USB DAC2		
Brand Name:	NAD		
Model No:	DAC 2 USB Wireless DAC Receiver		
Power Supply:	DC 5V		
Frequency Band Channels :	2.4GHz Band Channel Description:		
	Channel of Tranmitter	Frequency(MHz)	
	Low	2412	
	Mid	2438	
	High	2464	
	5.8GHz Band Channel Description:		
	Channel of Tranmitter	Frequency(MHz)	
	Low	5736	
	Mid	5762	
	High	5814	
Modulation Type:	QPSK		
Antenna Type:	Integral antenna(Antenna Gain 2.0dBi)		
Adapter:	Rated Input:	AC 100V-240V 50-60Hz 0.5A	
	Rated Output:	DC 5.0V 2.0A	

5.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.	Supplied By
Voice box	Guangdong Shantou Zhongwang Electronics Co., Ltd.	CT-338	**N/A**	**SGS**

5.4 Details of Test Mode

Test Mode	Description of Test Mode
Transmitting mode	Keep the EUT on continue transmitting mode.
Remark:N/A	

5.5 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.
No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

5.6 Test Facility

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

- **CNAS (No. CNAS L0599)**

  CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 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. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

  SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

- **VCCI (Member No.: 3061)**

  The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

6 Test Instruments

Conducted Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2014-02-22
2	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2014-02-22
3	Line impedance stabilization network	ETS	3816/2	00034161	2014-02-22

☒ **RF Test**

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2014-02-22
2	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-679	2014-03-06
3	Horn Antenna	Rohde & Schwarz	HF906	100284	2014-06-01
4	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2014-03-06
5	Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170373	2014-03-06
6	Ultra broadband antenna	Rohde & Schwarz	HL562	100227	2013-10-08
7	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY－2009P	--	2013-10-08
8	CLAMP METER	FLUKE	316	86080010	2014-06-01

9	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2013-10-08
11	High-low temperature cabinet	Shanghai YuanZhen	GW2050	--	2014-06-01
12	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT1800.0/ 2000.0-0.2/40-5SSK	11	2014-06-01
13	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/880.0-0.2/40-5SSK	9	2014-06-01
14	High pass Filter	FSCW	HP 12/2800-5AA2	19A45-02	2014-06-01
15	Low nosie amplifier	TESEQ	LNA6900	70133	2014-02-22
16	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2014-02-22
17	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2014-02-22

7 Test Procedure & Measurement Data

7.1 E.U.T. Operation

Input voltage: AC 120V

Operating Environment:

Temperature: 25.0 °C

Humidity: 45 % RH

Atmospheric Pressure: 1013 mbar

EUT Operation: The EUT has been tested under operating condition.

Test program was used to control the EUT for staying in continuous transmitting mode is programmed.

7.2 Conducted Emission Test

Test Requirement: FCC Part15 15.207

RSS-Gen Issue 8 Clause 7.2.4

Standard Applicable According to section 15.207,frequency 150KHz to 30MHz shall not not exceed the limit table as blew.

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

*

EUT Setup 1.The conducted emission tests were performed in the test site,using the setup in accordance with the ANSI C63.4-2009.

2.EUT is charged with PC.The AC Power adaptor of PC was plug-in LISN.The rear of the EUT and periphearals were placed flushed with the rear of the tabletop.

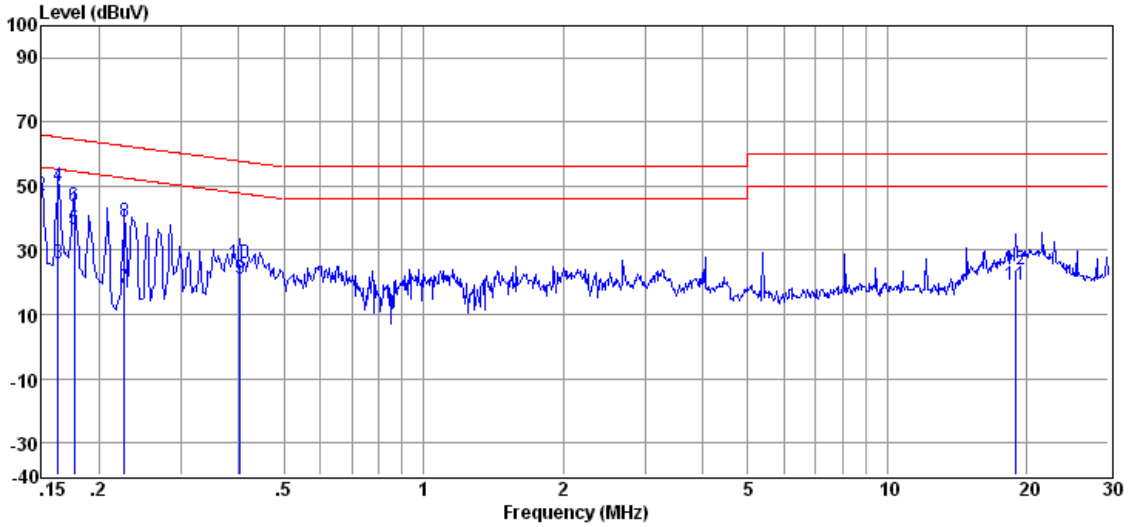
3.The LISN was connected with 120V AC/60Hz power source.

Measurement Procedure: Pre-scan was performed with peak detected on all ports, Quasi-peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Quasi-peak and Average test results.

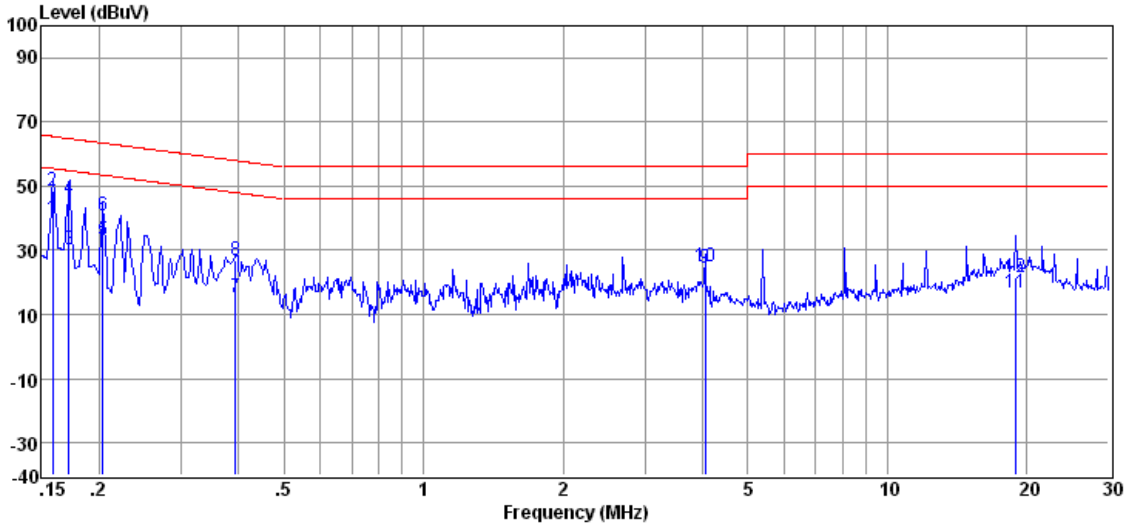
Level = Read Level + LISN/ISN Factor + Cable Loss.

Test Mode: Transmitting mode **Test Port:** AC Live Line



Freq (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
0.150	26.91	0.20	0.10	27.21	56.00	-28.79	Average	Live
0.150	46.76	0.20	0.10	47.06	66.00	-18.94	QP	Live
0.163	25.47	0.17	0.10	25.74	55.30	-29.56	Average	Live
0.163	49.75	0.17	0.10	50.02	65.30	-15.28	QP	Live
0.177	36.46	0.15	0.10	36.71	54.64	-17.93	Average	Live
0.177	43.51	0.15	0.10	43.76	64.64	-20.88	QP	Live
0.227	18.20	0.11	0.10	18.41	52.57	-34.16	Average	Live
0.227	38.83	0.11	0.10	39.04	62.57	-23.53	QP	Live
0.402	20.82	0.17	0.10	21.09	47.81	-26.72	Average	Live
0.402	25.76	0.17	0.10	26.03	57.81	-31.78	QP	Live
18.920	18.62	0.60	0.18	19.40	50.00	-30.60	Average	Live
18.920	23.24	0.60	0.18	24.02	60.00	-35.98	QP	Live

Test Mode: Transmitting mode **Test Port:** AC Neutral Line



Freq (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
0.159	39.82	0.18	0.10	40.10	55.52	-15.42	Average	Neutral
0.159	48.31	0.18	0.10	48.59	65.52	-16.93	QP	Neutral
0.172	29.99	0.15	0.10	30.24	54.86	-24.62	Average	Neutral
0.172	46.06	0.15	0.10	46.31	64.86	-18.55	QP	Neutral
0.204	33.01	0.10	0.10	33.21	53.45	-20.24	Average	Neutral
0.204	40.84	0.10	0.10	41.04	63.45	-22.41	QP	Neutral
0.393	15.01	0.10	0.10	15.21	47.99	-32.78	Average	Neutral
0.393	26.50	0.10	0.10	26.70	57.99	-31.29	QP	Neutral
4.049	23.84	0.22	0.17	24.23	46.00	-21.77	Average	Neutral
4.049	24.60	0.22	0.17	24.99	56.00	-31.01	QP	Neutral
18.920	15.92	0.58	0.18	16.68	50.00	-33.32	Average	Neutral
18.920	20.95	0.58	0.18	21.71	60.00	-38.29	QP	Neutral

7.3 Radiated Spurious Emission Test

Test Requirement: FCC Part15 247(d) and FCC Part 15.209

RSS-Gen Issue 8 Clause 7.2.5

Standard Applicable: According to section 15.247(c),all other emissions outside these bands shall not exceed the general radiated emission limits specified in section15.209(a).And according to section 15.33(a)(1),for an intentional radiator operates below 10GHz,the frequency range of measurements:to the tenth harmonic of the highest fundamental frequency or to 40GHz,which is lower.

Measurement Procedure:

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Pre-test with the Horizontal, Vertical and other status towards to the test antenna. To find the worst status.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.

Test instrumentation resolution bandwidth 120 kHz and Quasi-Peak detector applies (30 MHz - 1000 MHz). 1MHz resolution bandwidth and Peak detector apply (1000 MHz – 40GHz)

Above 1GHz

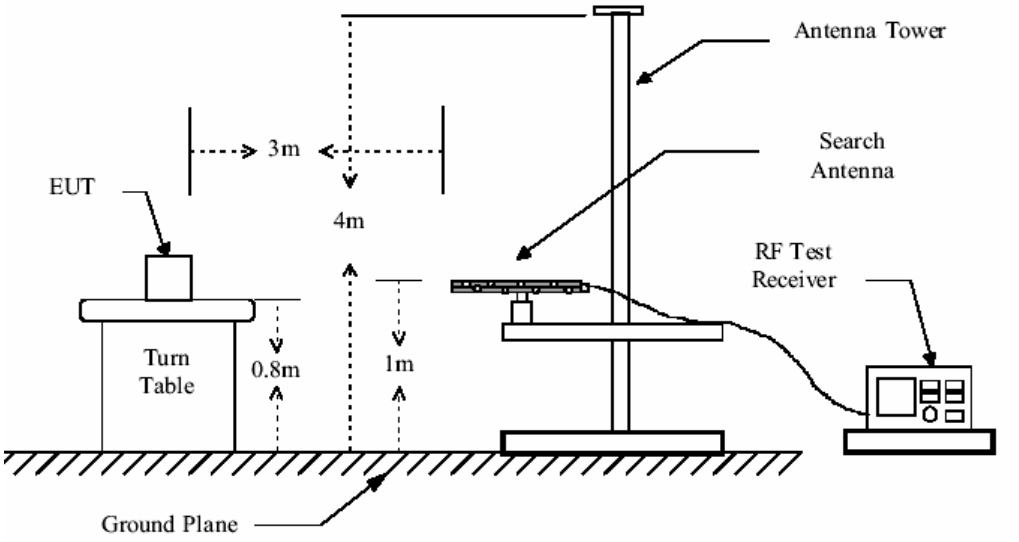
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO.

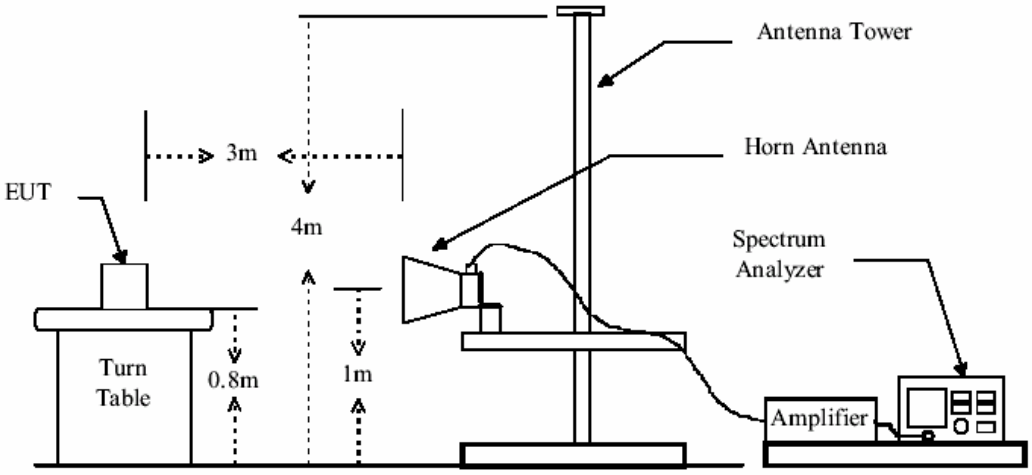
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. Repeat above procedures until all frequency measured were complete.

Radiated Test Set-up:

Radiated Emission Test Set-up,Frequency Below 1000MHz



Radiated Emission Test Set-up Frequency Over 1GHz



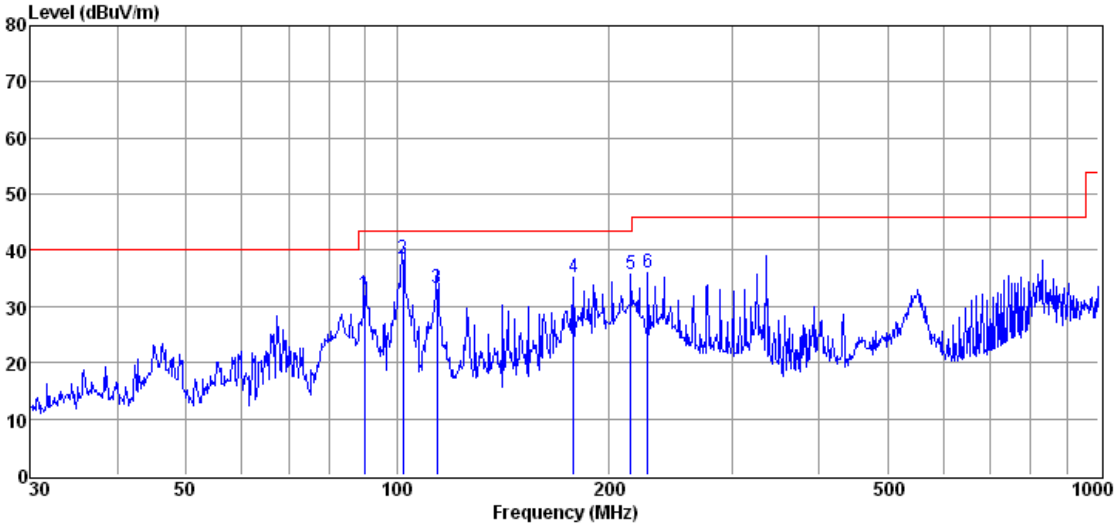
Low nosie amplifier was used below 1GHz,High pass Filter was used above 1GHz.

Tests results:

From the pre-test the worst status is the EUT Horizontal towards to the antenna. Below is the worst test results.

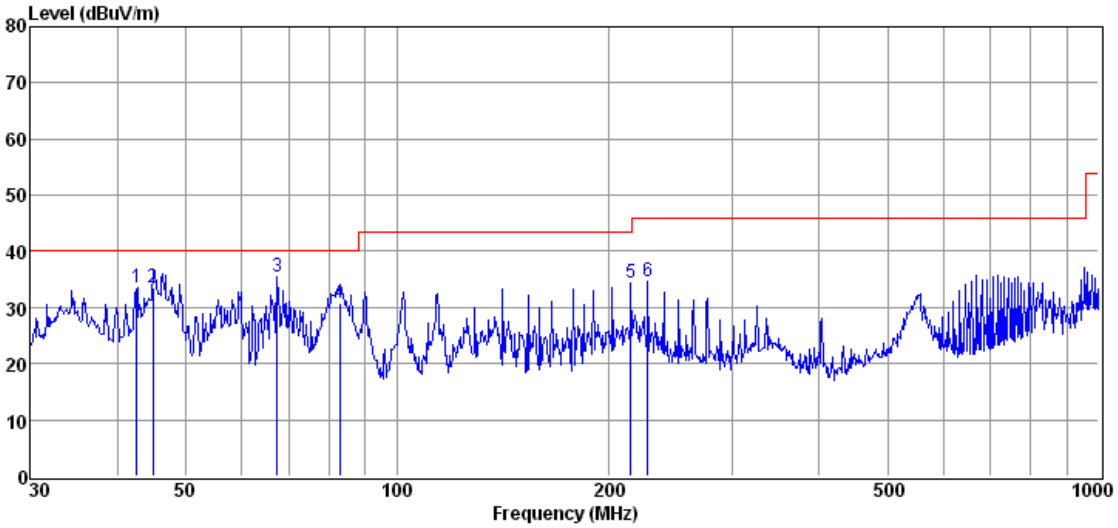
30MHz~1GHz Spurious Emissions

Quasi-Peak Measurement Antenna:Horizontal



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBuV/m)	(dB)
1	89.92	47.49	8.50	24.70	0.95	32.24	43.50	-11.26
2	101.99	52.81	9.38	24.70	1.05	38.54	43.50	-4.96
3	114.06	46.42	10.55	24.70	1.11	33.38	43.50	-10.12
4	178.43	47.13	11.29	24.60	1.40	35.22	43.50	-8.28
5	215.50	49.65	9.14	24.60	1.58	35.77	43.50	-7.73
6	227.90	49.72	9.26	24.60	1.63	36.01	46.00	-9.99

Quasi-Peak Measurement Antenna:Vertical



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBuV/m)	(dB)
1	42.58	44.38	13.20	24.70	0.58	33.46	40.00	-6.54
2	44.85	44.66	13.11	24.70	0.60	33.67	40.00	-6.33
3	67.50	48.32	11.15	24.70	0.78	35.55	40.00	-4.45
4	82.81	45.91	8.72	24.70	0.89	30.82	40.00	-9.18
5	215.45	48.36	9.15	24.60	1.58	34.49	43.50	-9.01
6	227.73	48.45	9.25	24.60	1.63	34.73	46.00	-11.27

Above 1GHz Spurious Emissions

EUT mode: Antenna A

Test Antenna: Horizontal **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4824	42.49	-1.71	40.78	54	-13.22	peak
2	7236	39.26	6.24	45.50	54	-8.50	peak
3	9648	36.55	11.56	48.11	54	-5.89	peak
4	12060	38.99	8.88	47.87	54	-6.13	peak

Test Antenna: Vertical **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4824	43.79	-1.71	42.08	54	-11.92	peak
2	7236	41.05	6.24	47.29	54	-6.71	peak
3	9648	37.99	11.56	49.55	54	-4.45	peak
4	12060	39.34	8.88	48.22	54	-5.78	peak

EUT mode: Antenna B

Test Antenna: Horizontal **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4824	43.49	-1.71	41.78	54	-12.22	peak
2	7236	41.62	6.24	47.86	54	-6.14	peak
3	9648	38.84	11.56	50.40	54	-3.60	peak
4	12060	40.16	8.88	49.04	54	-4.96	peak

Test Antenna: Vertical **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4824	44.01	-1.71	42.30	54	-11.70	peak
2	7236	41.64	6.24	47.88	54	-6.12	peak
3	9648	37.84	11.56	49.40	54	-4.60	peak
4	12060	39.92	8.88	48.80	54	-5.20	peak

2438MHz Peak and Average Spurious Emissions Measurement

EUT mode: Antenna A

Test Antenna: Horizontal **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4876	41.05	0.52	41.57	54	-12.43	peak
2	7314	40.61	6.93	47.54	54	-6.46	peak
3	9752	37.96	11.31	49.27	54	-4.73	peak
4	12190	40.44	9	49.44	54	-4.56	peak

Test Antenna: Vertical **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4876	39.95	0.52	40.47	54	-13.53	peak
2	7314	39.40	6.93	46.33	54	-7.67	peak
3	9752	37.25	11.31	48.56	54	-5.44	peak
4	12190	39.86	9.00	48.86	54	-5.14	peak

EUT mode: Antenna B

Test Antenna: Horizontal **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4876	40.4	0.52	40.92	54	-13.08	peak
2	7314	40.23	6.93	47.16	54	-6.84	peak
3	9752	37.8	11.31	49.11	54	-4.89	peak
4	12190	39.11	9.00	48.11	54	-5.89	peak

Test Antenna: Vertical **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4876	41.38	0.52	41.9	54	-12.1	peak
2	7314	40.12	6.93	47.05	54	-6.95	peak
3	9752	37.9	11.31	49.21	54	-4.79	peak
4	12190	40.15	9.00	49.15	54	-4.85	peak

2464MHz Peak and Average Spurious Emissions Measurement

EUT mode: Antenna A

Test Antenna: Horizontal **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4928	40.41	0.59	41	54	-13	peak
2	7392	38.52	7.73	46.25	54	-7.75	peak
3	9856	37.55	11.41	48.96	54	-5.04	peak
4	12320	39.91	8.81	48.72	54	-5.28	peak

Test Antenna: Vertical **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4928	39.73	0.59	40.32	54	-13.68	peak
2	7392	39.56	7.73	47.29	54	-6.71	peak
3	9856	37.62	11.41	49.03	54	-4.97	peak
4	12320	41.14	8.81	49.95	54	-4.05	peak

EUT mode: Antenna B

Test Antenna: Horizontal **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4928	40.42	0.59	41.01	54	-12.99	peak
2	7392	39.46	7.73	47.19	54	-6.81	peak
3	9856	37.9	11.41	49.31	54	-4.69	peak
4	12320	39.08	8.81	47.89	54	-6.11	peak

Test Antenna: Vertical **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	High
1	4928	41.22	0.59	41.81	54	-12.19	peak
2	7392	39.6	7.73	47.33	54	-6.67	peak
3	9856	37.61	11.41	49.02	54	-4.98	peak
4	12320	40.81	8.81	49.62	54	-4.38	peak

5736MHz Peak and Average Spurious Emissions Measurement

EUT mode: Antenna A

Test Antenna: Horizontal **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11523	45.33	9.16	54.49	74	-19.51	peak
2	17286	45.43	9.89	55.32	74	-18.68	peak
3	23048	45.95	10.28	56.23	74	-17.77	peak
4	28810	44.74	14.6	59.34	74	-14.66	peak
5	11523	40.07	9.16	49.23	54	-4.77	AVG
6	17286	40.29	9.89	50.18	54	-3.82	AVG
7	23048	39.45	10.28	49.73	54	-4.27	AVG
8	28810	36.32	14.60	50.92	54	-3.08	AVG

Test Antenna: Vertical **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11523	53.39	9.16	62.55	74	-11.45	peak
2	17286	45.73	9.89	55.62	74	-18.38	peak
3	23048	45.52	10.28	55.80	74	-18.20	peak
4	28810	45.14	14.6	59.74	74	-14.26	peak
5	11523	41.48	9.16	50.64	54	-3.36	AVG
6	17286	39.86	9.89	49.75	54	-4.25	AVG
7	23048	40.1	10.28	50.38	54	-3.62	AVG
8	28810	36.21	14.6	50.81	54	-3.19	AVG

EUT mode: Antenna B

Test Antenna: Horizontal **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11523	58.5	9.16	67.66	74	-6.34	peak
2	17286	45.67	9.89	55.56	74	-18.44	peak
3	23048	45.25	10.28	55.53	74	-18.47	peak
4	28810	45.42	14.6	60.02	74	-13.98	peak
5	11523	42.18	9.16	51.34	54	-2.66	AVG
6	17286	40.57	9.89	50.46	54	-3.54	AVG
7	23048	40.55	10.28	50.83	54	-3.17	AVG
8	28810	34.77	14.6	49.37	54	-4.63	AVG

Test Antenna: Vertical **Test Channel: Low**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11523	52.53	9.16	61.69	74	-12.31	peak
2	17286	43.96	9.89	53.85	74	-20.15	peak
3	23048	44.89	10.28	55.17	74	-18.83	peak
4	28810	45.71	14.6	60.31	74	-13.69	peak
5	11523	42.59	9.16	51.75	54	-2.25	AVG
6	17286	40.38	9.89	50.27	54	-3.73	AVG
7	23048	39.91	10.28	50.19	54	-3.81	AVG
8	28810	36.86	14.6	51.46	54	-2.54	AVG

5762MHz Peak and Average Spurious Emissions Measurement

EUT mode: Antenna A

Test Antenna: Horizontal **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11472	52	9.22	61.22	74	-12.78	peak
2	17208	45.63	9.84	55.47	74	-18.53	peak
3	22944	45.93	10.24	56.17	74	-17.83	peak
4	28680	47.1	14.56	61.66	74	-12.34	peak
5	11472	42.15	9.22	51.37	54	-2.63	AVG
6	17208	40.83	9.84	50.67	54	-3.33	AVG
7	22944	41.18	10.24	51.42	54	-2.58	AVG
8	28680	37.11	14.56	51.67	54	-2.33	AVG

Test Antenna: Vertical **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11472	52.46	9.22	61.68	74	-12.32	peak
2	17208	44.64	9.84	54.48	74	-19.52	peak
3	22944	44.58	10.24	54.82	74	-19.18	peak
4	28680	43.96	14.56	58.52	74	-15.48	peak
5	11472	42.6	9.22	51.82	54	-2.18	AVG
6	17208	40.47	9.84	50.31	54	-3.69	AVG
7	22944	39.4	10.24	49.64	54	-4.36	AVG
8	28680	35.72	14.56	50.28	54	-3.72	AVG

EUT mode: Antenna B

Test Antenna: Horizontal **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11472	45.82	9.22	55.04	74	-18.96	peak
2	17208	45.83	9.84	55.67	74	-18.33	peak
3	22944	45.58	10.24	55.82	74	-18.18	peak
4	28680	45.28	14.56	59.84	74	-14.16	peak
5	11472	41.53	9.22	50.75	54	-3.25	AVG
6	17208	40.18	9.84	50.02	54	-3.98	AVG
7	22944	41.13	10.24	51.37	54	-2.63	AVG
8	28680	35.3	14.56	49.86	54	-4.14	AVG

Test Antenna: Vertical **Test Channel: Middle**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11472	47.34	9.22	56.56	74	-17.44	peak
2	17208	45.24	9.84	55.08	74	-18.92	peak
3	22944	46.48	10.24	56.72	74	-17.28	peak
4	28680	45.78	14.56	60.34	74	-13.66	peak
5	11472	39.03	9.22	48.25	54	-5.75	AVG
6	17208	41.4	9.84	51.24	54	-2.76	AVG
7	22944	42.24	10.24	52.48	54	-1.52	AVG
8	28680	36.78	14.56	51.34	54	-2.66	AVG

5814MHz Peak and Average Spurious Emissions Measurement

EUT mode: Antenna A

Test Antenna: Horizontal **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11628	46.89	9.16	56.05	74	-17.95	peak
2	17442	46.19	9.51	55.70	74	-18.3	peak
3	23256	45.59	10.32	55.91	74	-18.09	peak
4	29070	44.75	14.67	59.42	74	-14.58	peak
5	11628	40.21	9.16	49.37	54	-4.63	AVG
6	17442	40.8	9.51	50.31	54	-3.69	AVG
7	23256	40.14	10.32	50.46	54	-3.54	AVG
8	29070	35.72	14.67	50.39	54	-3.61	AVG

Test Antenna: Vertical **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11628	47.51	9.16	56.67	74	-17.33	peak
2	17442	45.91	9.51	55.42	74	-18.58	peak
3	23256	45.39	10.32	55.71	74	-18.29	peak
4	29070	44.71	14.67	59.38	74	-14.62	peak
5	11628	41.07	9.16	50.23	54	-3.77	AVG
6	17442	40.16	9.51	49.67	54	-4.33	AVG
7	23256	39.95	10.32	50.27	54	-3.73	AVG
8	29070	36.27	14.67	50.94	54	-3.06	AVG

EUT mode: Antenna B

Test Antenna: Horizontal **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11628	59.86	9.16	69.02	74	-4.98	peak
2	17442	46.46	9.51	55.97	74	-18.03	peak
3	23256	45.9	10.32	56.22	74	-17.78	peak
4	29070	47.39	14.67	62.06	74	-11.94	peak
5	11628	43.26	9.16	52.42	54	-1.58	AVG
6	17442	41.57	9.51	51.08	54	-2.92	AVG
7	23256	40.1	10.32	50.42	54	-3.58	AVG
8	29070	36.7	14.67	51.37	54	-2.63	AVG

Test Antenna: Vertical **Test Channel: High**

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	11628	46.69	9.16	55.85	74	-18.15	peak
2	17442	45.73	9.51	55.24	74	-18.76	peak
3	23256	45.24	10.32	55.56	74	-18.44	peak
4	29070	43.92	14.67	58.59	74	-15.41	peak
5	11628	40.96	9.16	50.12	54	-3.88	AVG
6	17442	41.35	9.51	50.86	54	-3.14	AVG
7	23256	39.5	10.32	49.82	54	-4.18	AVG
8	29070	35.99	14.67	50.66	54	-3.34	AVG

Remark: No other radiation has been found

Test Level =Receiver Reading + Antenna Factor + Cable Loss –Preamplifier Factor.

Remark: No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.

7.4 6dB Bandwidth

Test Requirement: FCC Part15 247(a)(2)

Standard Applicable: According to section 15.247(a)(2),Systems using digital modulationg techniques may operate in the 902-928MHz,2400-2483.5MHz,and 5725-5850MHz bands.The minimum 6dB bandwidth shall be at least 500KHz.

Measurement Procedure:
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz, VBW =3* RBW, Span=30/ 50MHz, Sweep=auto
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured were complete.

Measurement Result:

For 2412-2464MHz Band Antenna A:

CH	Frequency (MHz)	Bandwidth (MHz)	Limit Bandwidth (KHz)	Result
LOW	2412	11.07	500	PASS
MID	2438	10.11	500	PASS
HIGH	2464	10.08	500	PASS

For 2412-2464MHz Band Antenna B:

CH	Frequency (MHz)	Bandwidth (MHz)	Limit Bandwidth (KHz)	Result
LOW	2412	11.10	500	PASS
MID	2438	10.11	500	PASS
HIGH	2464	10.11	500	PASS

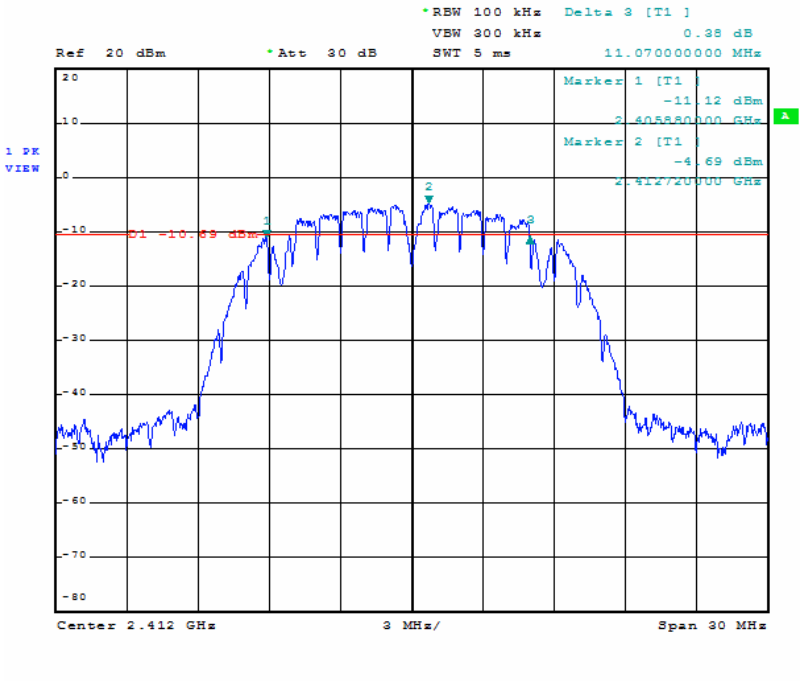
For 5736-5814MHz Band Antenna A:

CH	Frequency (MHz)	Bandwidth (MHz)	Limit Bandwidth (KHz)	Result
LOW	5736	11.31	500	PASS
MID	5762	11.43	500	PASS
HIGH	5814	11.37	500	PASS

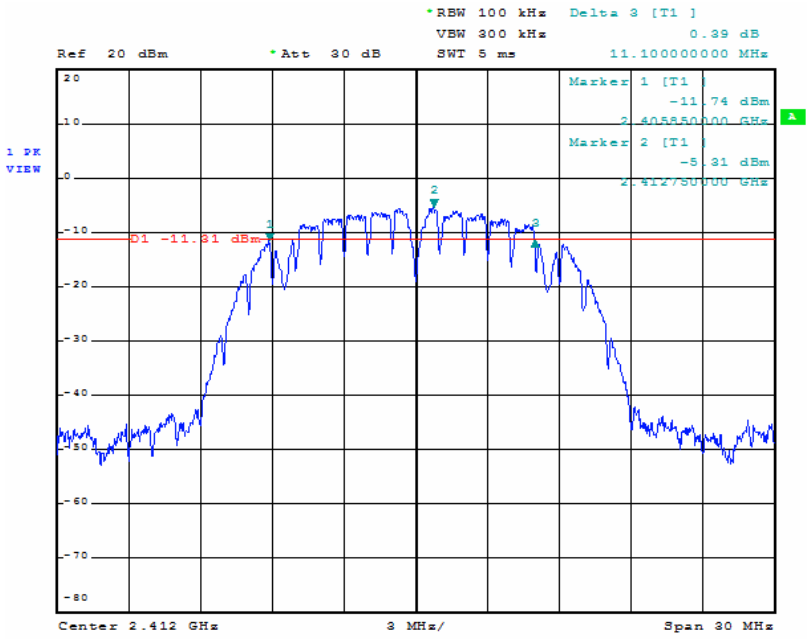
For 5736-5814MHz Band Antenna B:

CH	Frequency (MHz)	Bandwidth (MHz)	Limit Bandwidth (KHz)	Result
LOW	5736	11.34	500	PASS
MID	5762	11.34	500	PASS
HIGH	5814	11.43	500	PASS

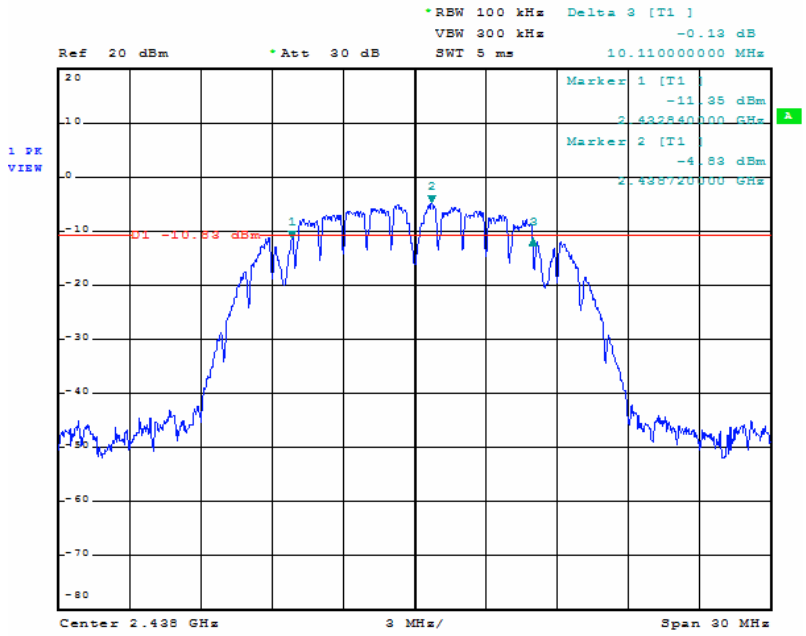
6dB Band Width: Antenna A CH 2412MHz



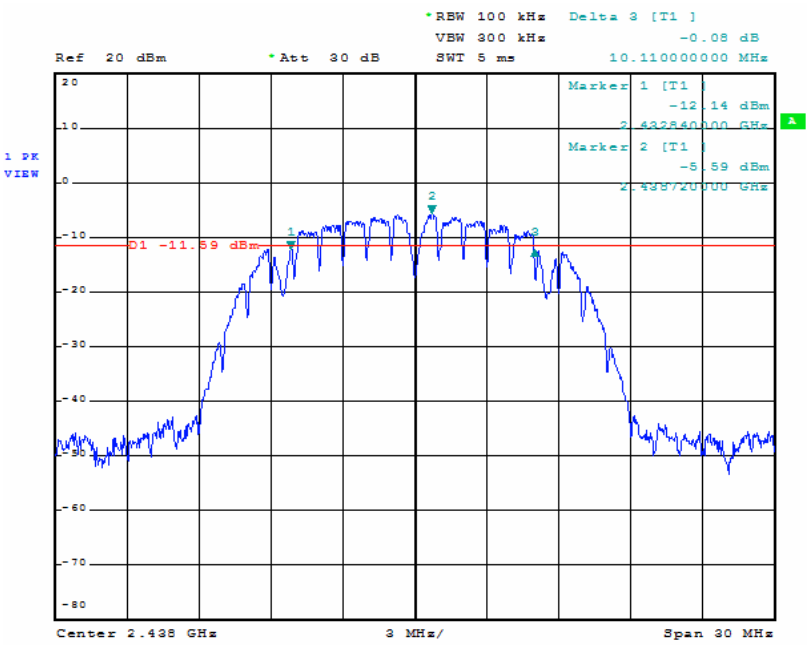
6dB Band Width: Antenna B CH 2412MHz



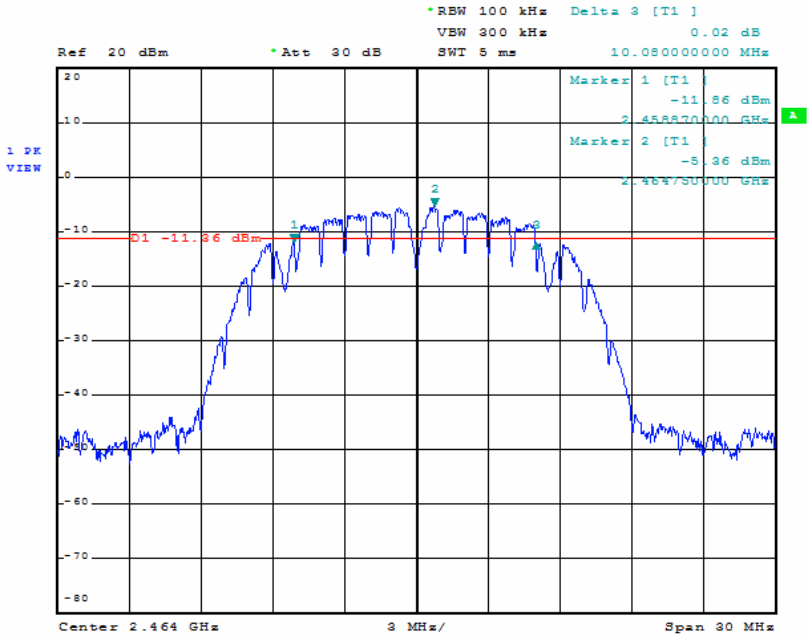
6dB Band Width Antenna A CH 2438MHz:



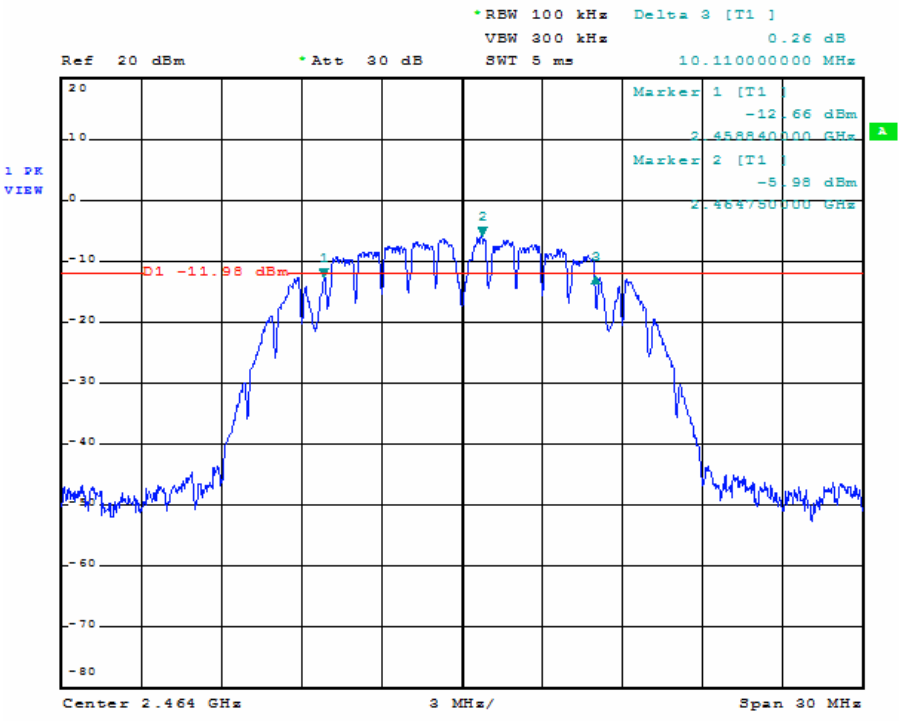
6dB Band Width Antenna B CH 2438MHz:



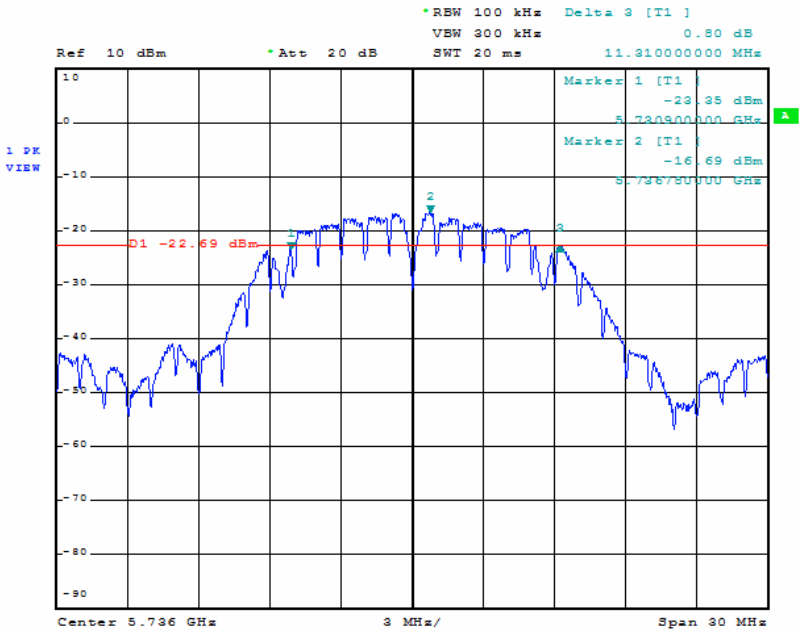
6dB Band Width Antenna A CH 2464MHz:



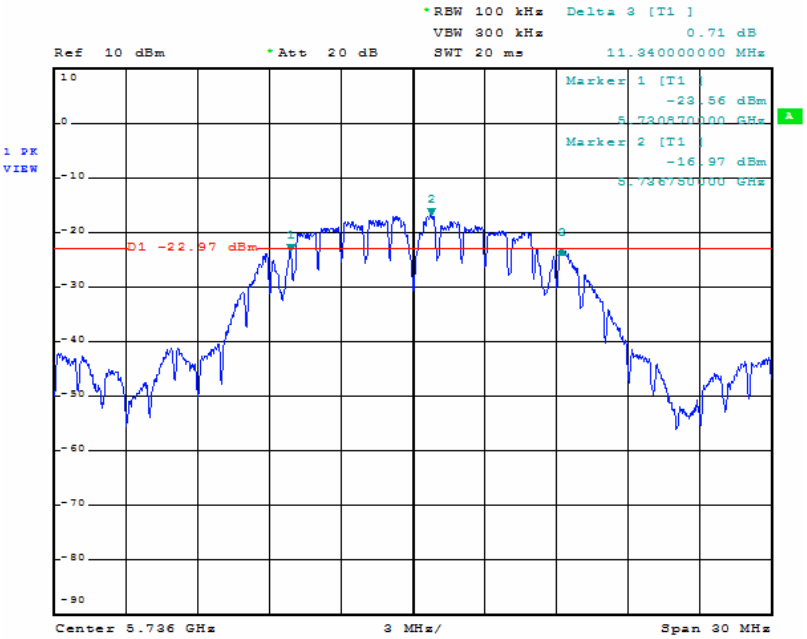
6dB Band Width Antenna B CH 2464MHz:



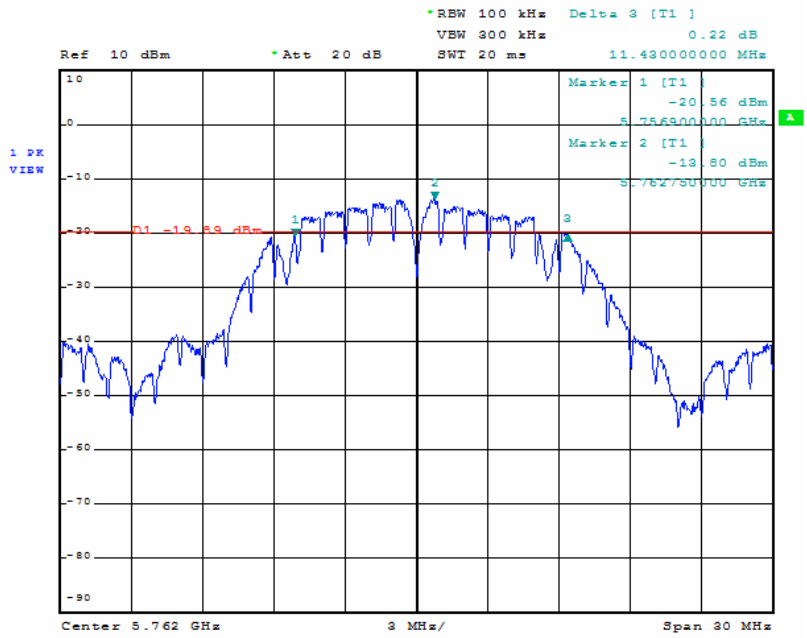
6dB Band Width Antenna A CH 5736MHz:



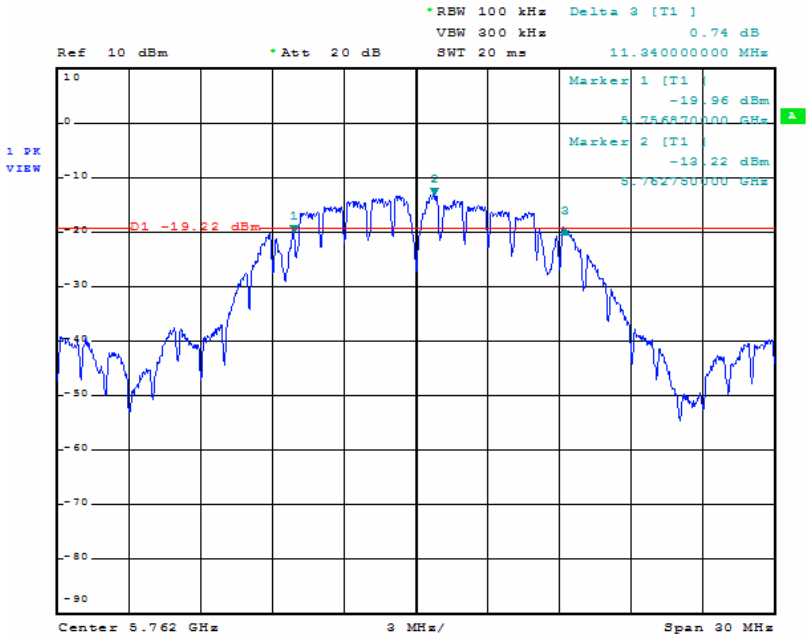
6dB Band Width Antenna B CH 5736MHz:



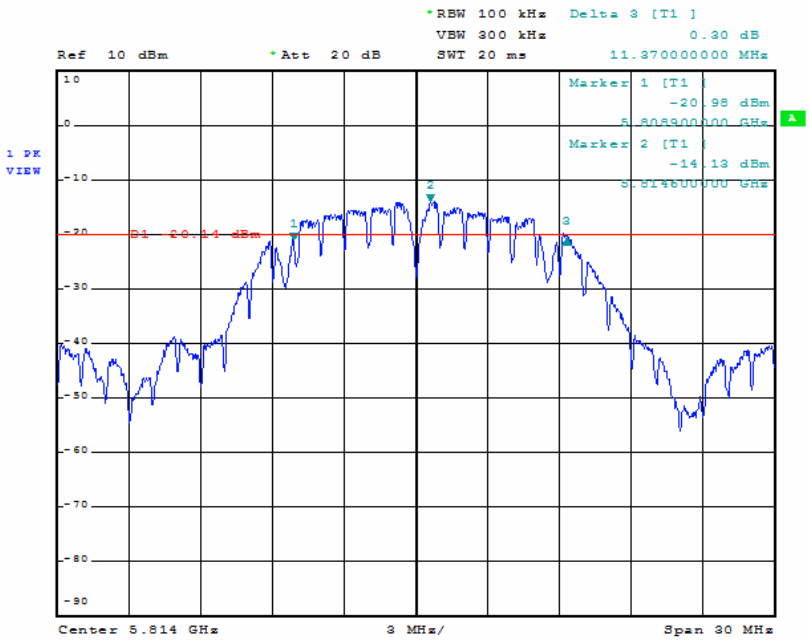
6dB Band Width Antenna A CH 5762MHz:



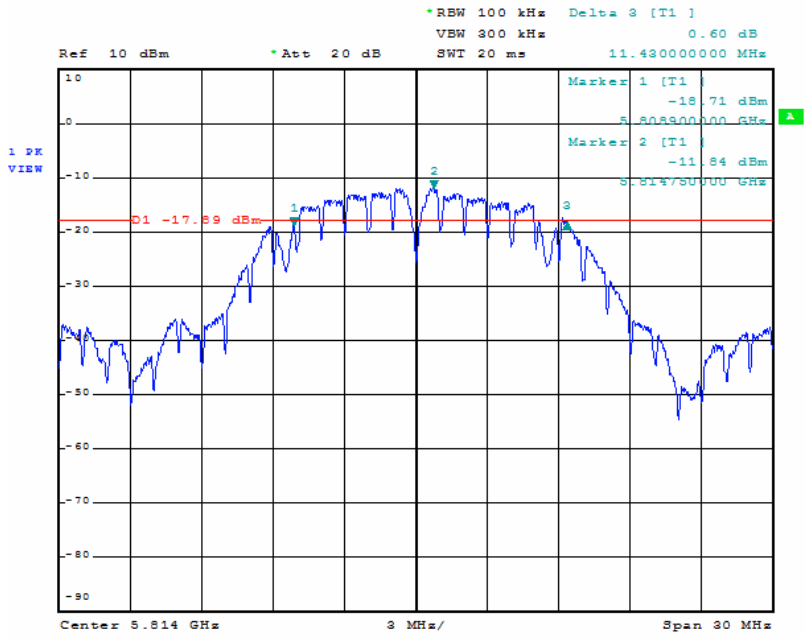
6dB Band Width Antenna B CH 5762MHz:



6dB Band Width Antenna A CH 5814MHz:



6dB Band Width Antenna B CH 5814MHz:



7.5 Peak Output Power Measurement

Test Requirement: FCC Part 15 15.247(a)(2),(b)
RSS-210 Issue 8 Annex 8

Standard Applicable: According to section 15.247(a)(2),(b)
(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Measuremet Produre

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF calbe from the antenna port to the spectrum.
3. Set the occur band to the entire emission bandwitdth of the signal.
4. Record the max.channel power reading

   Repeat above procedures until all the frequency measured were complete.

Measurement Result:

For Antenna A 2.4GHz Band:

CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Peak Power Limit (dBm)	Result
Low	2412	14.16	1.5	15.66	30	PASS
Middle	2438	13.93	1.5	15.43	30	PASS
High	2464	13.46	1.5	14.99	30	PASS

For Antenna B 2.4GHz Band:

CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Peak Power Limit (dBm)	Result
Low	2412	13.54	1.5	15.04	30	PASS
Middle	2438	13.15	1.5	14.65	30	PASS
High	2464	12.80	1.5	14.30	30	PASS

For Antenna A 5.8GHz Band:

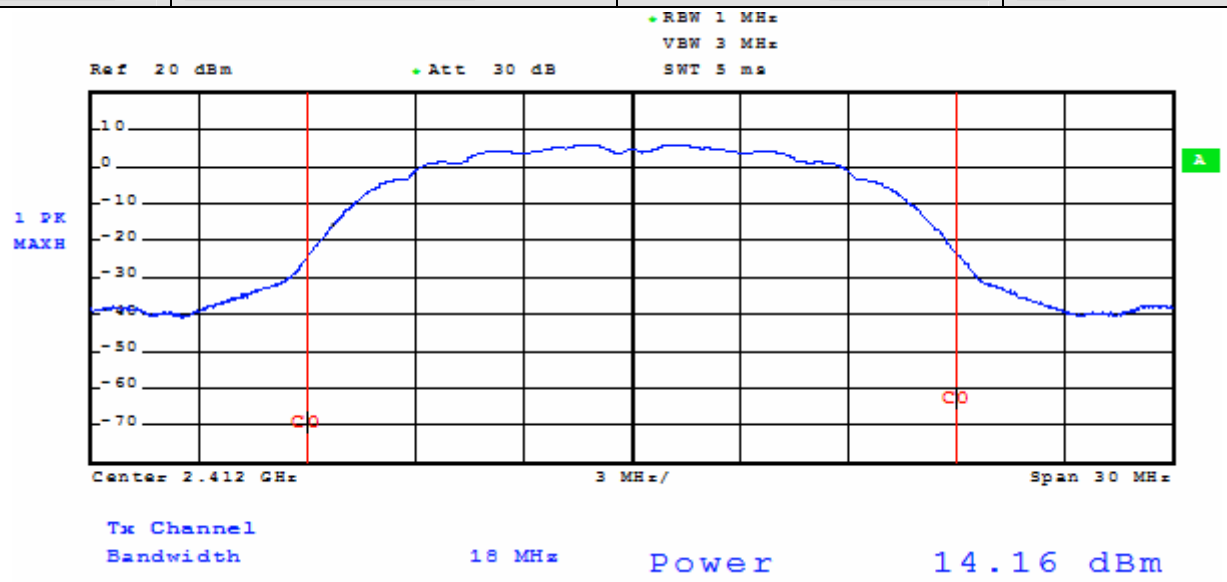
CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Peak Power Limit (dBm)	Result
Low	5736	6.85	1.9	8.75	30	PASS
Middle	5762	6.91	1.9	8.81	30	PASS
High	5814	7.69	1.9	9.59	30	PASS

For Antenna B 5.8GHz Band:

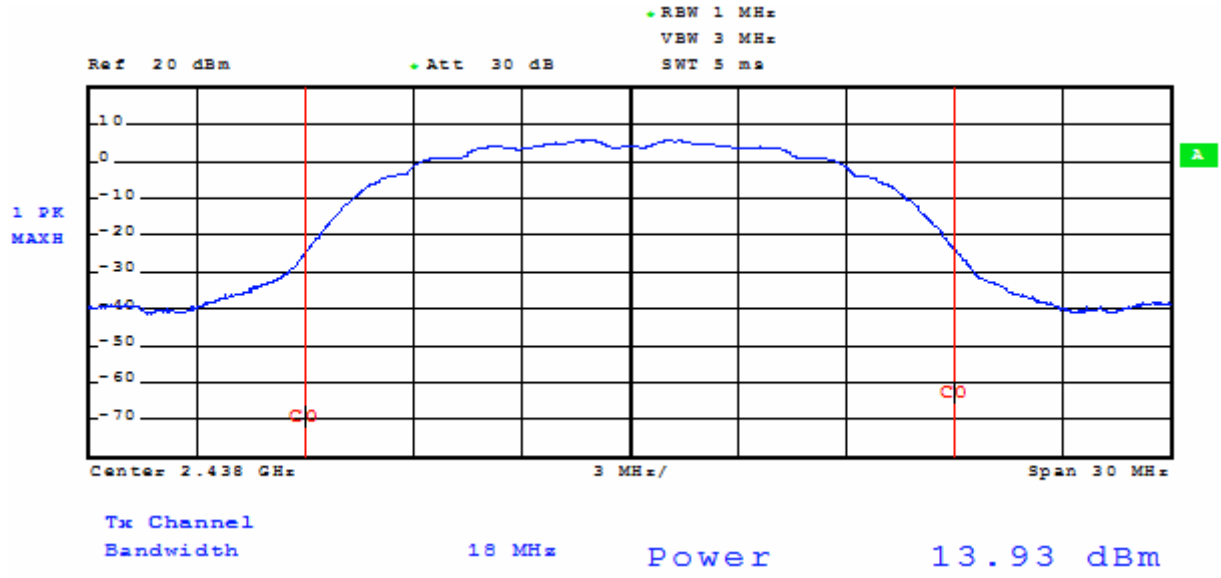
CH	Frequency (MHz)	Reading Peak Power (dBm)	Cable Loss (dB)	Output Peak Power (dBm)	Peak Power Limit (dBm)	Result
Low	5736	6.24	1.9	8.14	30	PASS
Middle	5762	7.06	1.9	8.96	30	PASS
High	5814	7.08	1.9	8.98	30	PASS

Test result plot as follows:

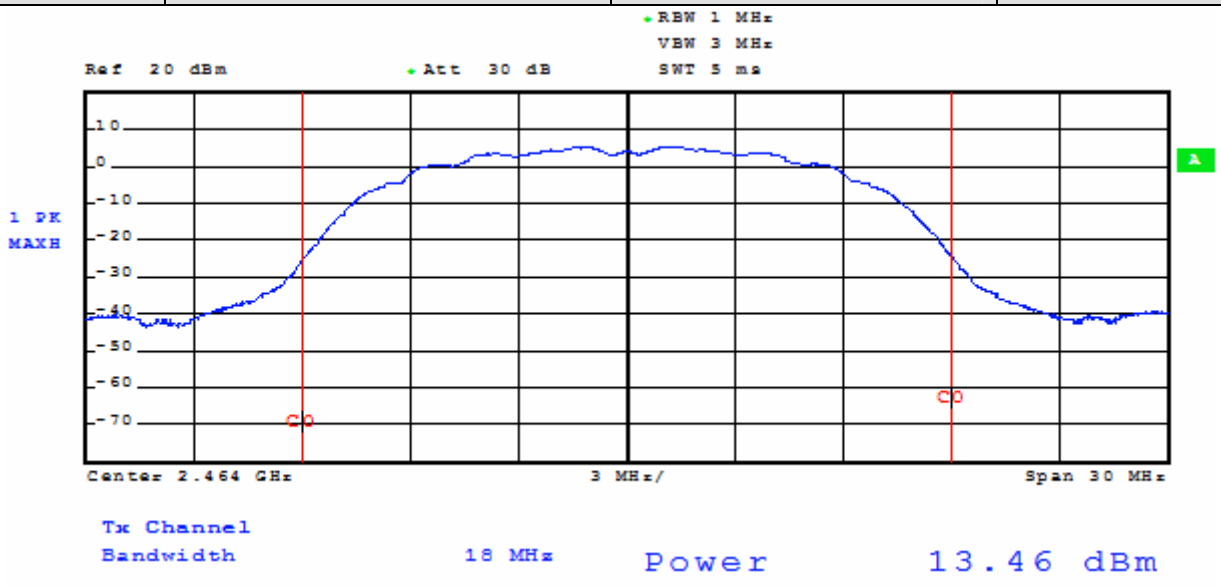
Test mode:	2.4GHz Band Antenna A	Test channel:	Low



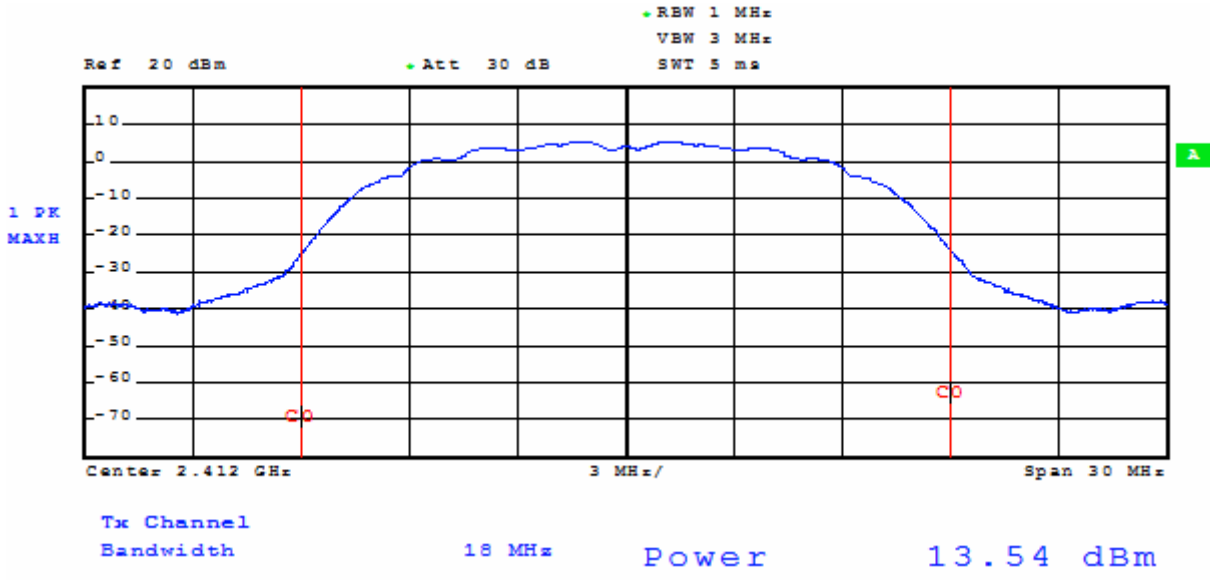
Test mode:	2.4GHz Band Antenna A	Test channel:	Middle



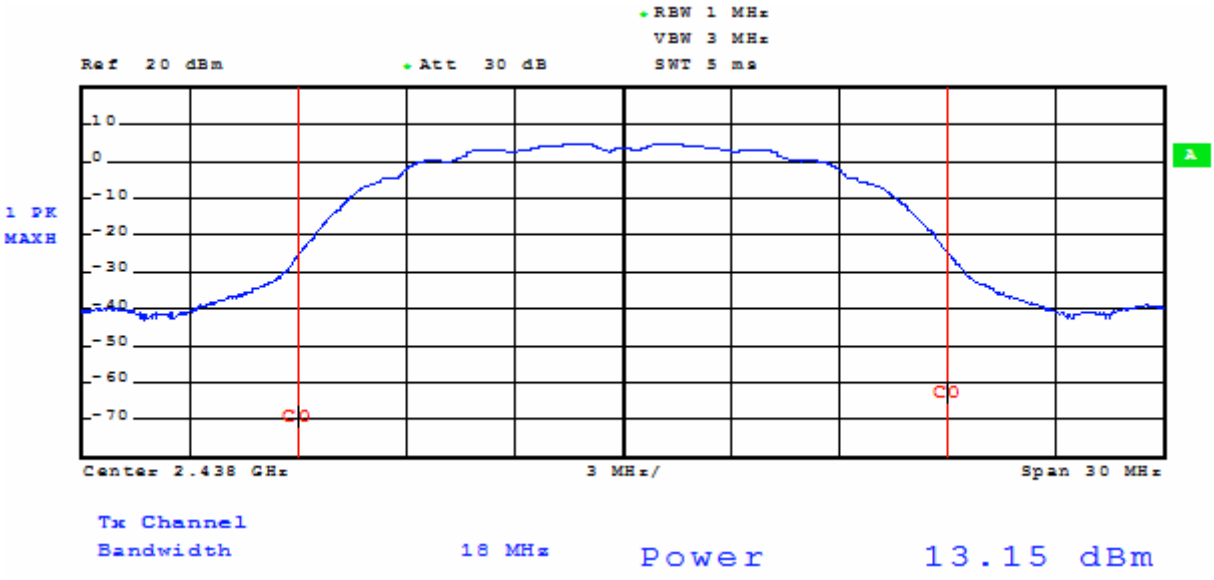
Test mode:	2.4GHz Band Antenna A	Test channel:	High



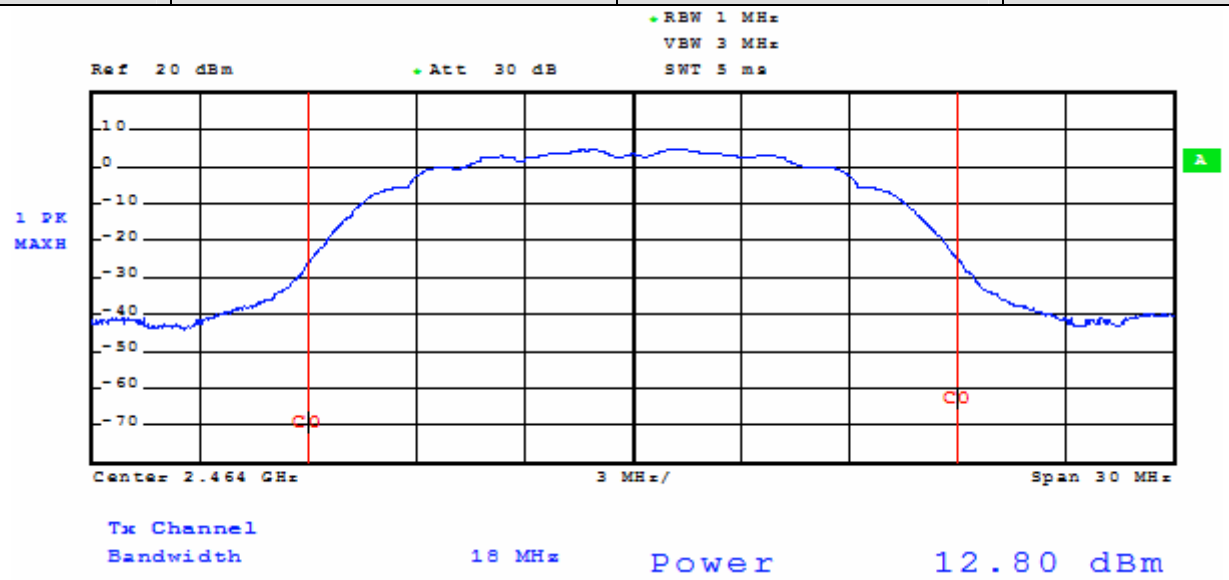
Test mode:	2.4GHz Band Antenna B	Test channel:	Lowest



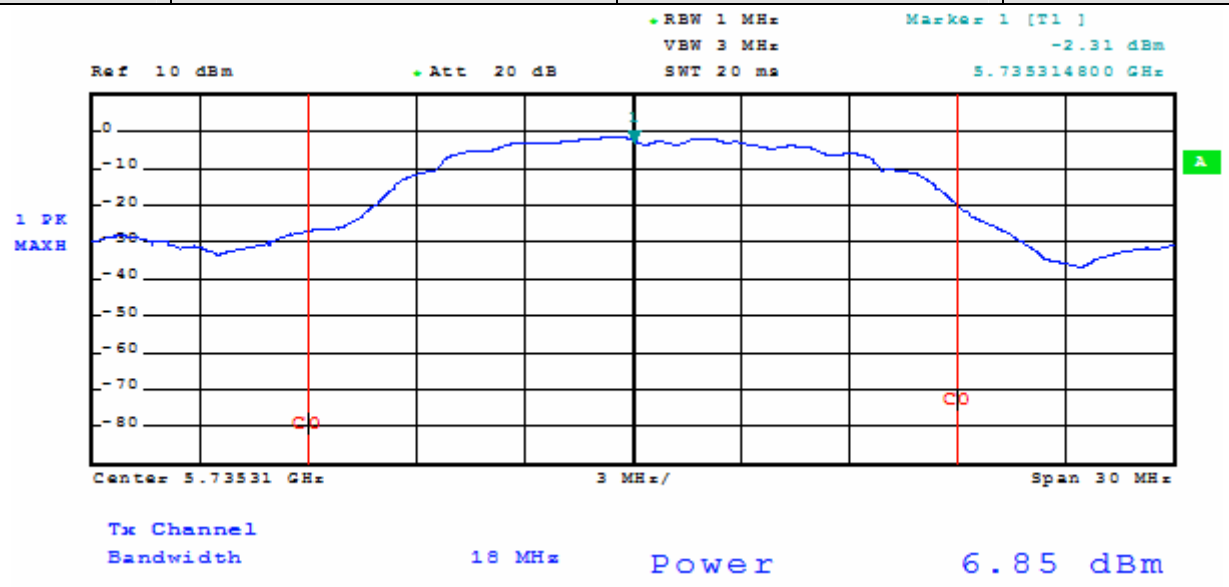
Test mode:	2.4GHz Band Antenna B	Test channel:	Middle



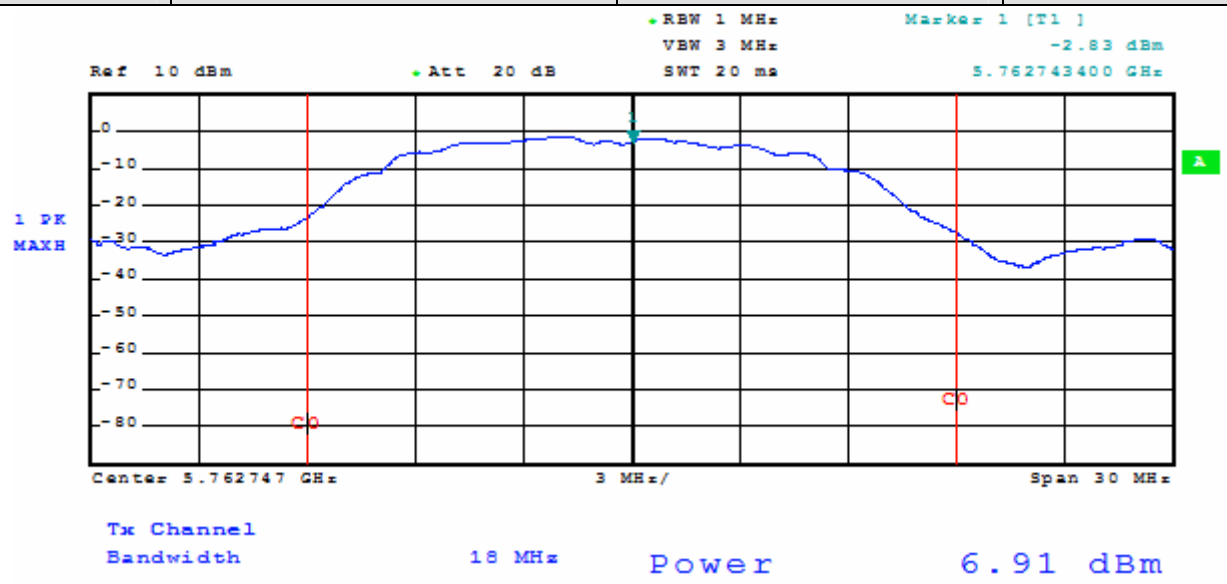
Test mode:	2.4GHz Band Antenna B	Test channel:	High



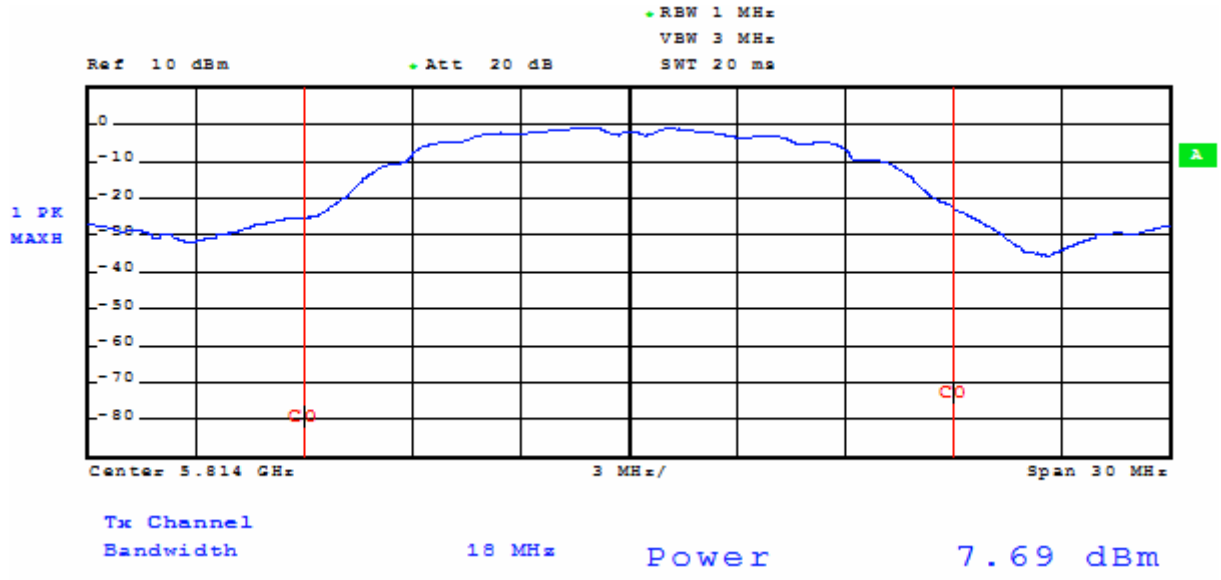
Test mode:	5.8GHz Band Antenna A	Test channel:	Lowest



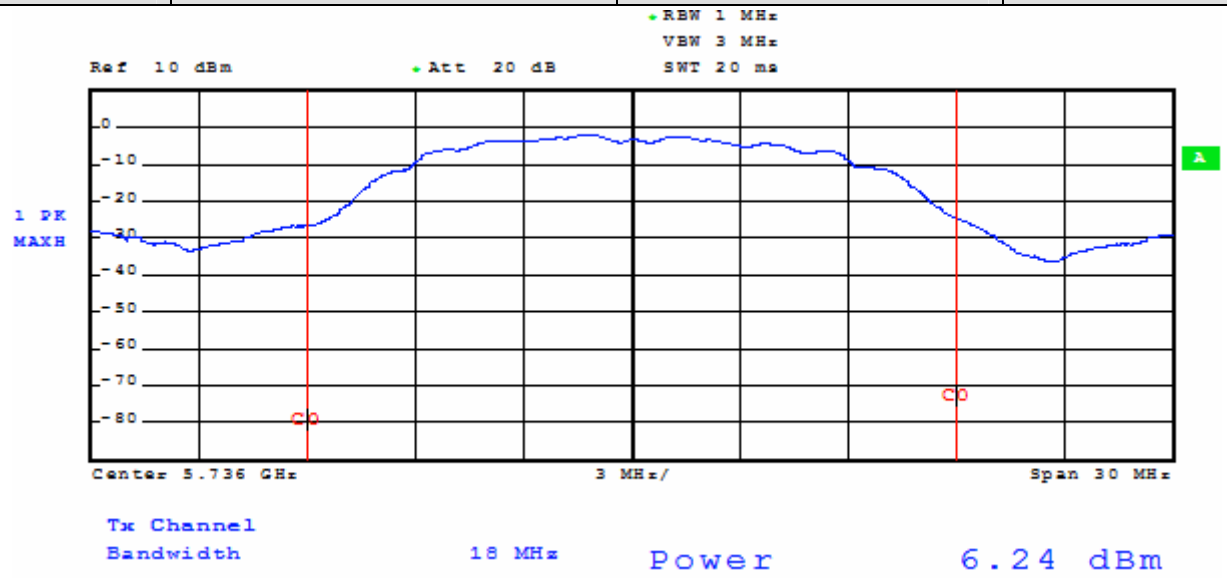
Test mode:	5.8GHz Band Antenna A	Test channel:	Middle



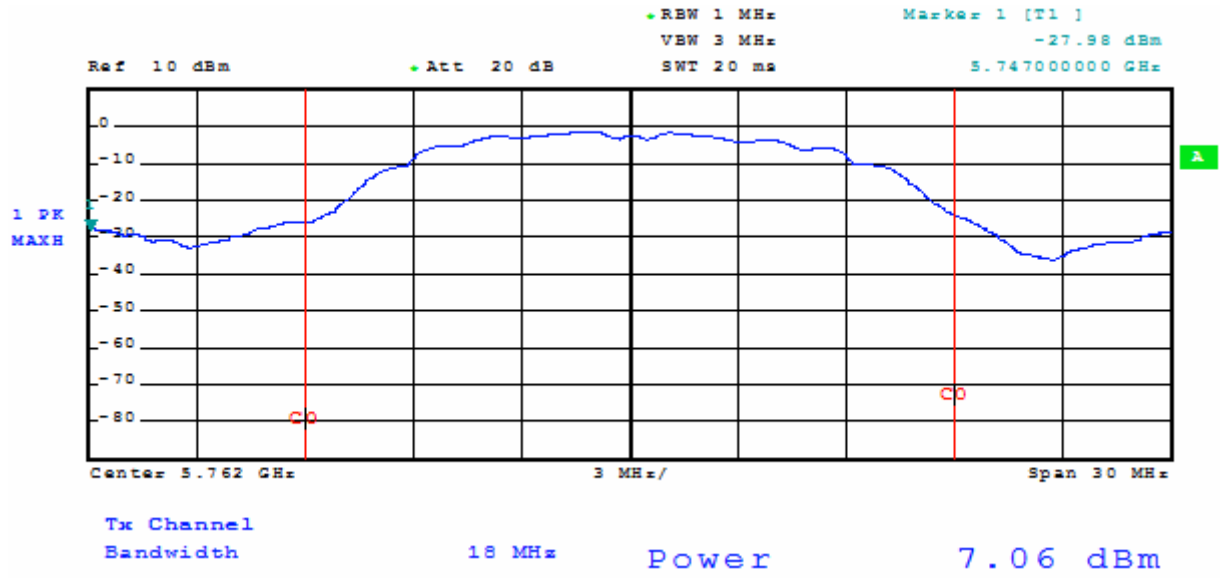
Test mode:	5.8GHz Band Antenna A	Test channel:	High



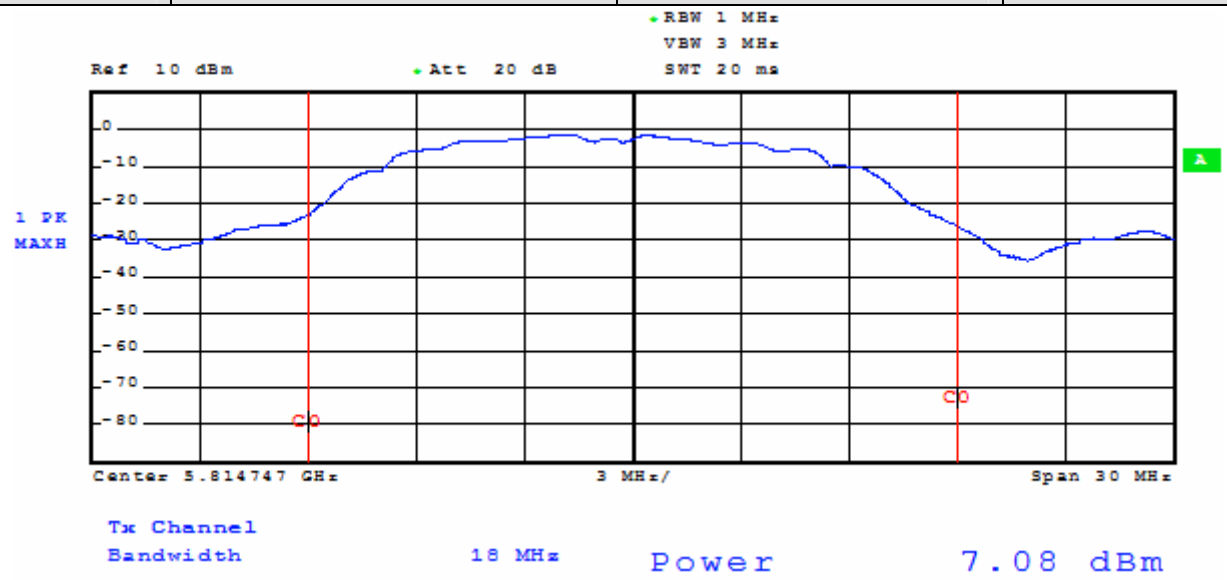
Test mode:	5.8GHz Band Antenna B	Test channel:	Lowest



Test mode:	5.8GHz Band Antenna B	Test channel:	Middle



Test mode:	5.8GHz Band Antenna B	Test channel:	High



7.6 Peak Power Spectral Density

Test Requirement: FCC Part15 247(e)
RSS-210 Issue 8 Annex 8

Standard Applicable: According to section 15.247(e),For digitally modulated systems,the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dB in any 3KHz band during any time in terval of continuous transmission.This power spectral density shall be determined in accordance with the provisions of paragraph(b) of this section.The same method of determining the conducted output power shall be used to determine the powr spectral density.

Measurement Procedure: The EUT was tested according to DTS test procedure of KDB 558074 D01 for compliance to FCC 47CFR 15.247 requiremnts.
Set RBW=100KHz,Set VBW=300KHz,Span=15MHz,Sweep time=Auto,Set detector=Peak detector.

Test Result: Pass

Measurement Result:

For Antenna A 2.4GHz Band

CH	Frequency (MHz)	Reading (dBm)	Cable Loss (dB)	RF Power Density (dBm)	Limit (dBm)	Result
LOW	2412	-2.52	1.5	-1.02	8	PASS
MID	2438	-3.04	1.5	-1.54	8	PASS
HIGH	2464	-3.18	1.5	-1.68	8	PASS

For Antenna B 2.4GHz Band

CH	Frequency (MHz)	Reading (dBm)	Cable Loss (dB)	RF Power Density (dBm)	Limit (dBm)	Result
LOW	2412	-2.42	1.5	-0.92	8	PASS
MID	2438	-2.90	1.5	-1.40	8	PASS
HIGH	2464	-2.87	1.5	-1.37	8	PASS

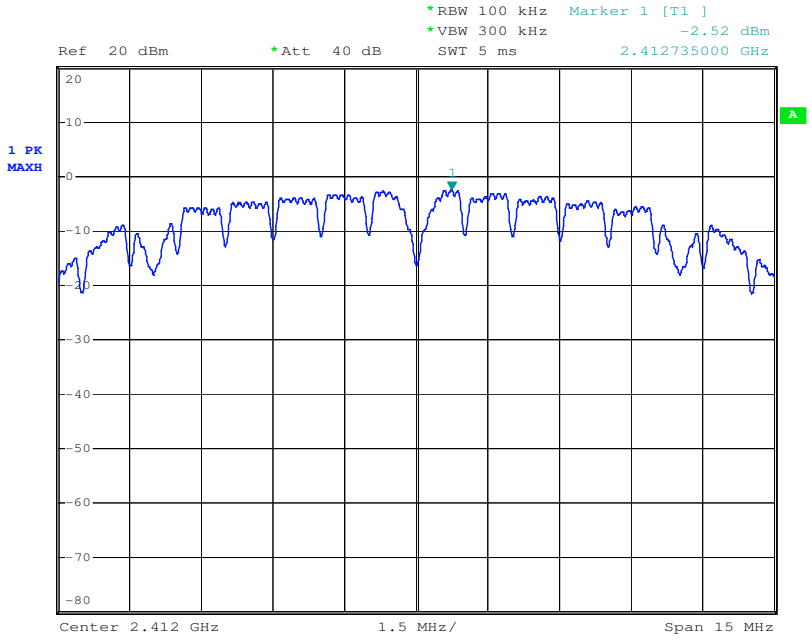
For Antenna A 5.8GHz Band

CH	Frequency (MHz)	Reading (dBm)	Cable Loss (dB)	RF Power Density (dBm)	Limit (dBm)	Result
LOW	5736	-9.47	1.9	-7.57	8	PASS
MID	5762	-9.66	1.9	-7.76	8	PASS
HIGH	5814	-8.71	1.9	-6.81	8	PASS

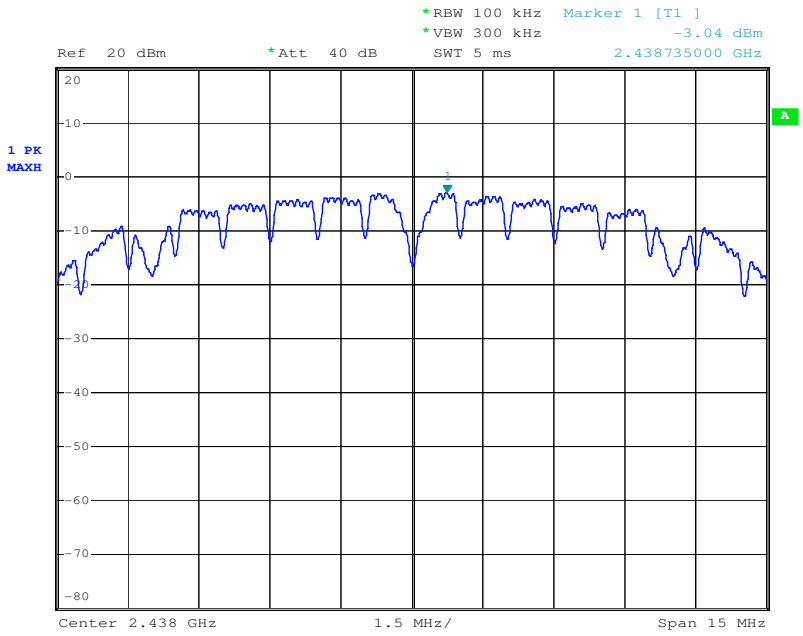
For Antenna B 5.8GHz Band

CH	Frequency (MHz)	Reading (dBm)	Cable Loss (dB)	RF Power Density (dBm)	Limit (dBm)	Result
LOW	5736	-9.55	1.9	-7.65	8	PASS
MID	5762	-9.98	1.9	-8.08	8	PASS
HIGH	5814	-7.78	1.9	-5.88	8	PASS

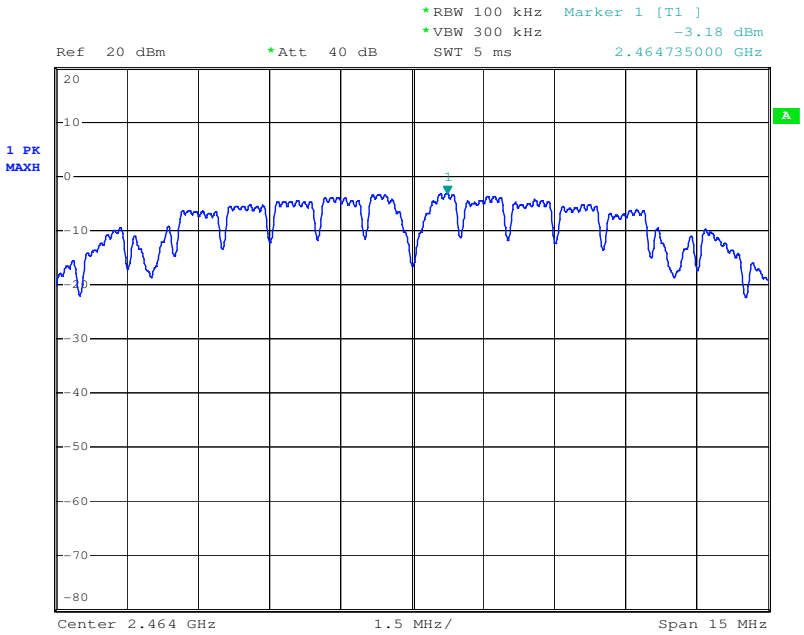
Test mode:	2.4GHz Band Antenna A	Test channel:	Low



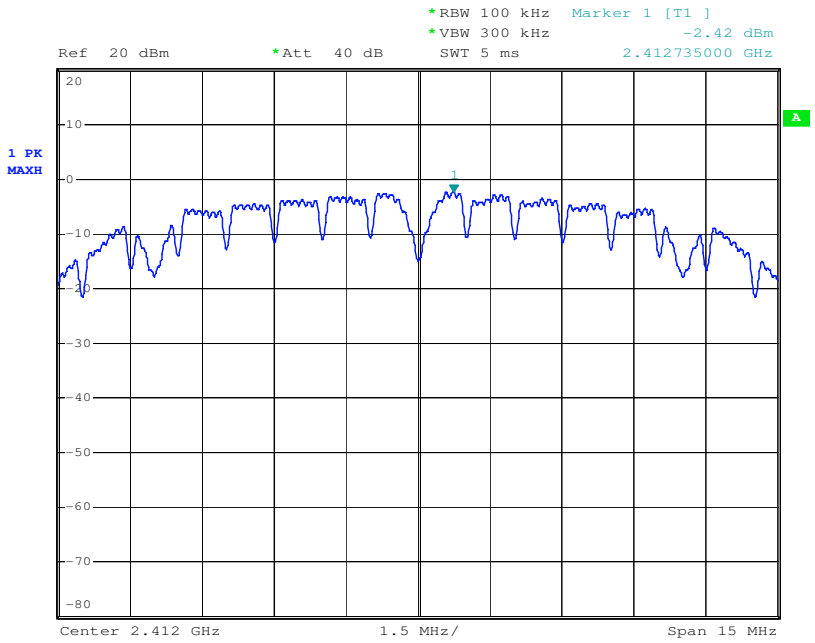
Test mode:	2.4GHz Band Antenna A	Test channel:	Middle



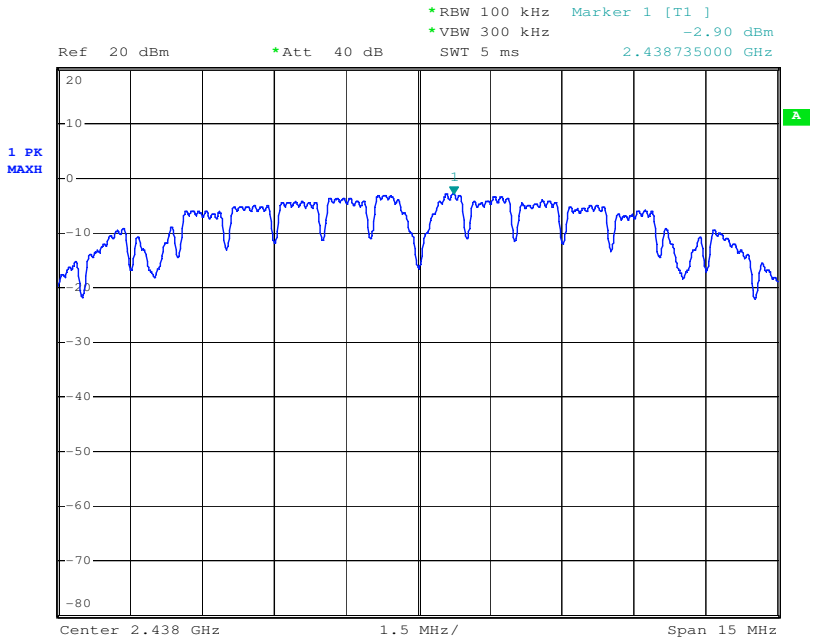
Test mode:	2.4GHz Band Antenna A	Test channel:	High



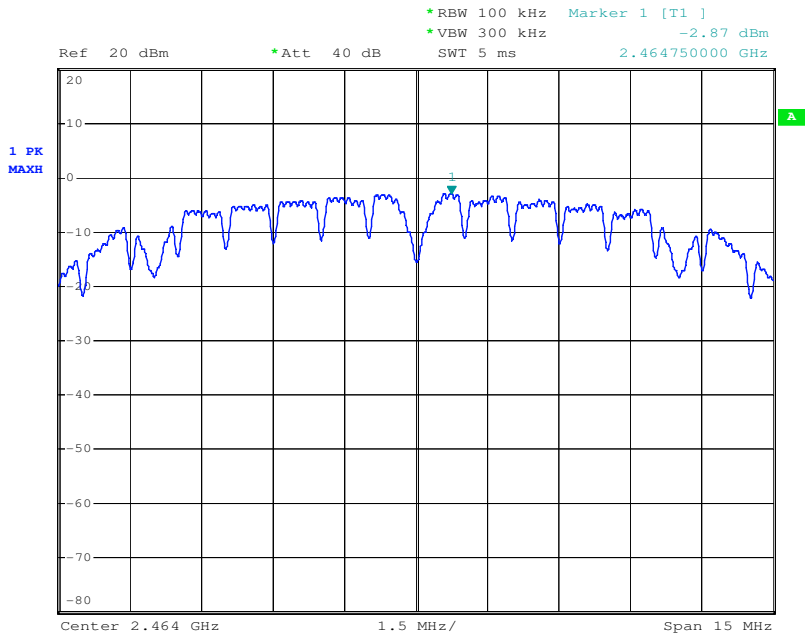
Test mode:	2.4GHz Band Antenna B	Test channel:	Low



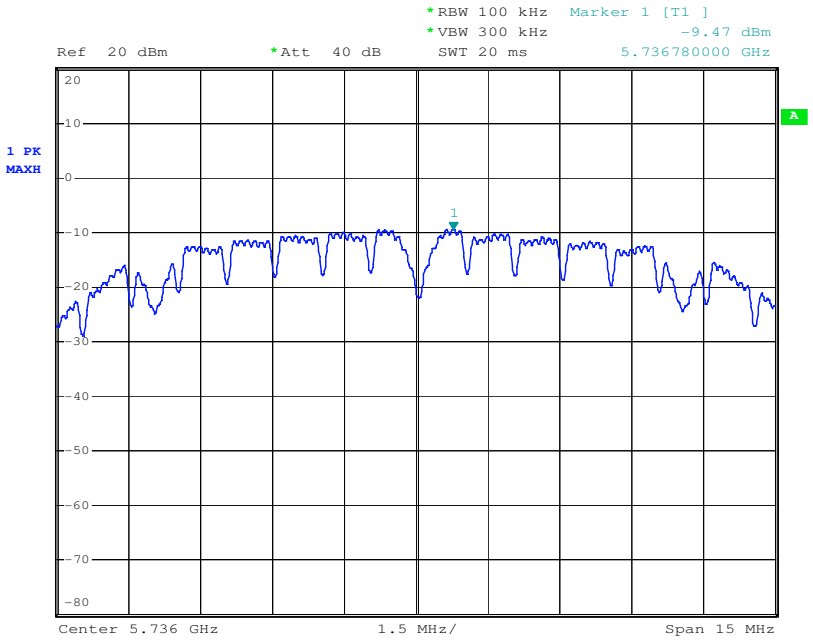
Test mode:	2.4GHz Band Antenna B	Test channel:	Middle



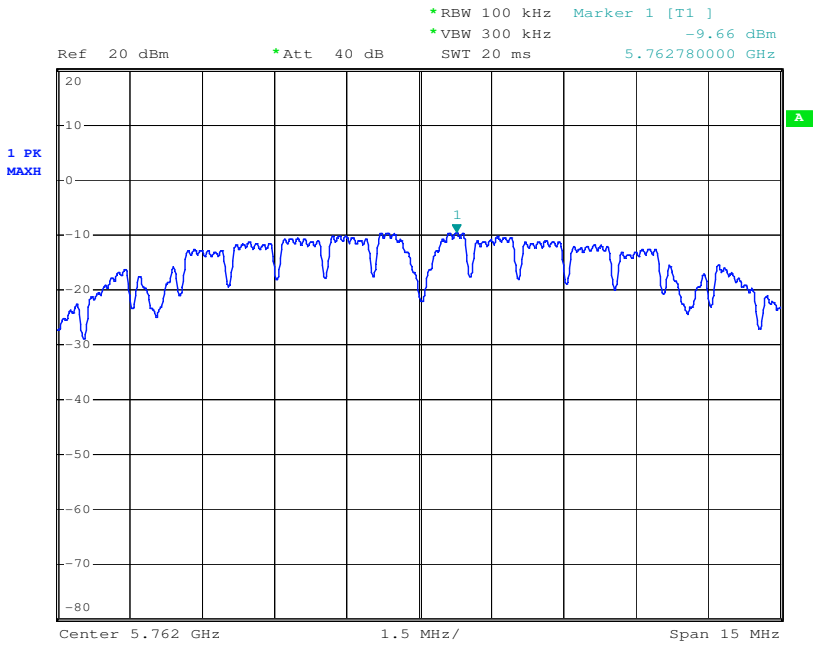
Test mode:	2.4GHz Band Antenna B	Test channel:	High



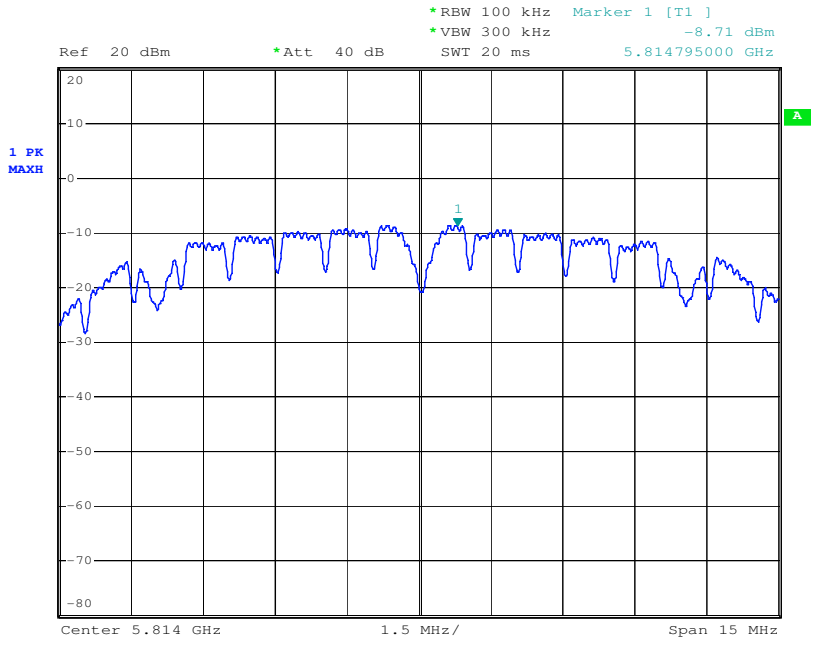
Test mode:	5.8GHz Band Antenna A	Test channel:	Low



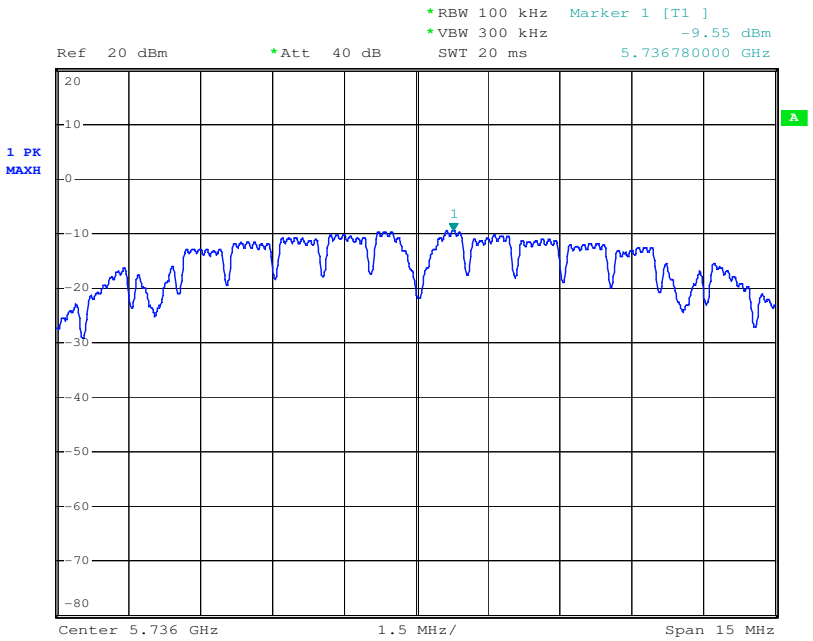
Test mode:	5.8GHz Band Antenna A	Test channel:	Middle



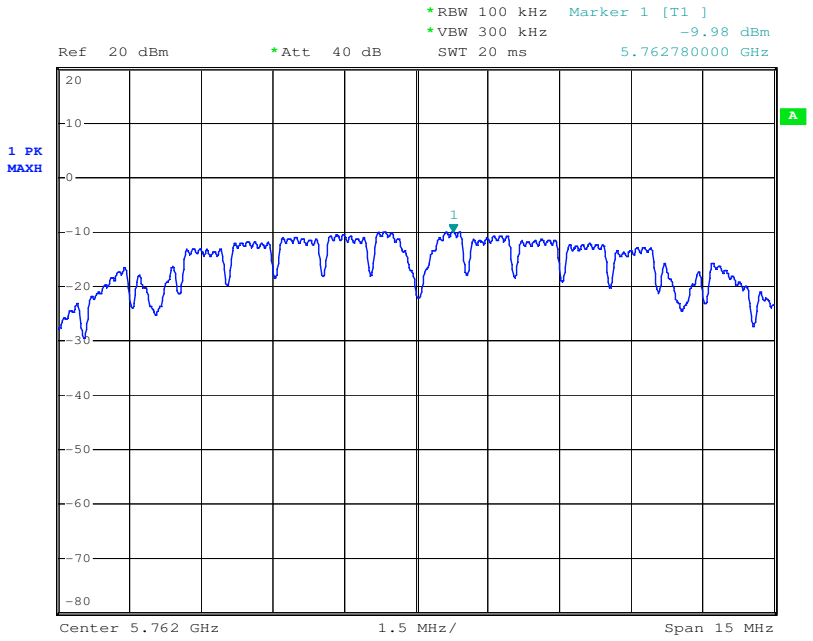
Test mode:	5.8GHz Band Antenna A	Test channel:	High



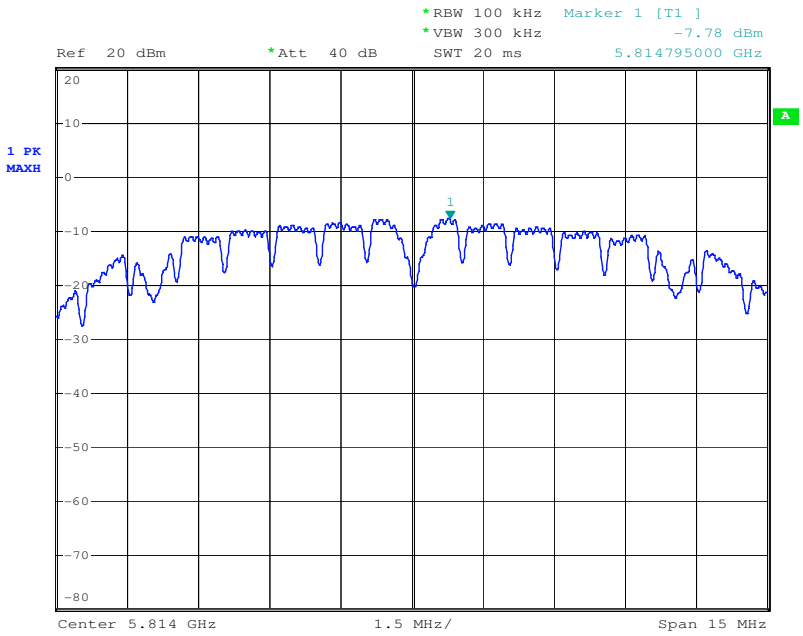
Test mode:	5.8GHz Band Antenna B	Test channel:	Low



Test mode:	5.8GHz Band Antenna B	Test channel:	Middle



Test mode:	5.8GHz Band Antenna B	Test channel:	High



7.7 Radiated Emission Band Edge

Test Requirement: FCC Part15 247(c)
RSS-210 Issue 8 Annex 8

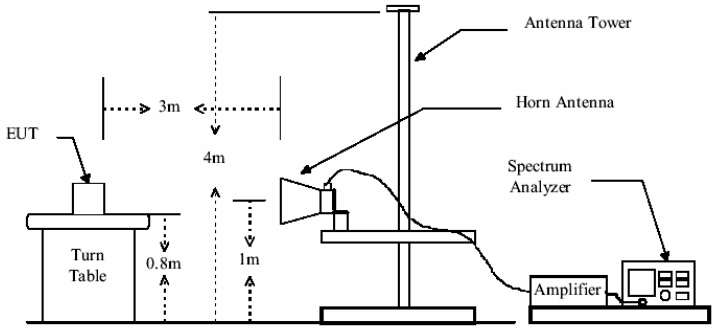
Standard Applicable: According to section 15.247(c),in any 100KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating,the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power,In addition,radiated emissions which fall in the restricted bands,as defined in section 15.205(a),must also comply with the radiated emission limits specified in 15.209(a).

Measurement Distance: 3m (Semi-Anechoic Chamber)

Limit: 40.0 dBμV/m between 30MHz & 88MHz;
43.5 dBμV/m between 88MHz & 216MHz;
46.0 dBμV/m between 216MHz & 960MHz;
AV 54.0 dBμV/m PK 74.0dBμV/m above 960MHz.

Measurement Procedure: The EUT was setup according to KDB558074 D01 and tested according to DTS test procedure of KDB558074 D01 for compliance to FCC 47 CFR 15.247 requirements.The EUT is placed on a turn table which is 0.8 m above ground.The turn table is rotated 360 degrees to determine to the position of the maximum emission level.The EUT was positioned such that the distance from antenna to the EUT was 3 menters.The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level
This is repeated for both horizontal and vertical polarization of the antenna.In order to find the maximum emission,all of the interface cables were manipulated according to KDB558074 D01 on radiated measurement.
Spectrum analyzer parameters setting as shown below:
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

Radiated Emission Test Set-up Frequency Over 1GHz



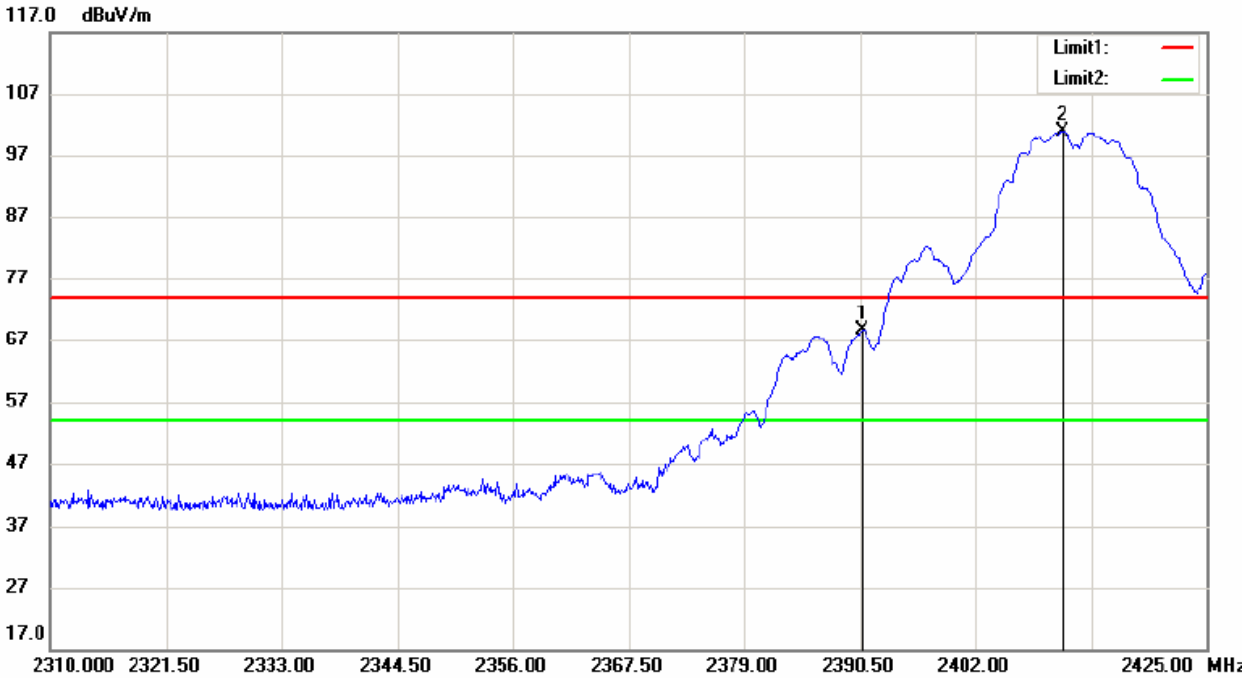
The field strength is calculated by adding the Antenna Factor,Preamplifier Factor&Cable Factor. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

Radiated Bandedge Measurement Result:

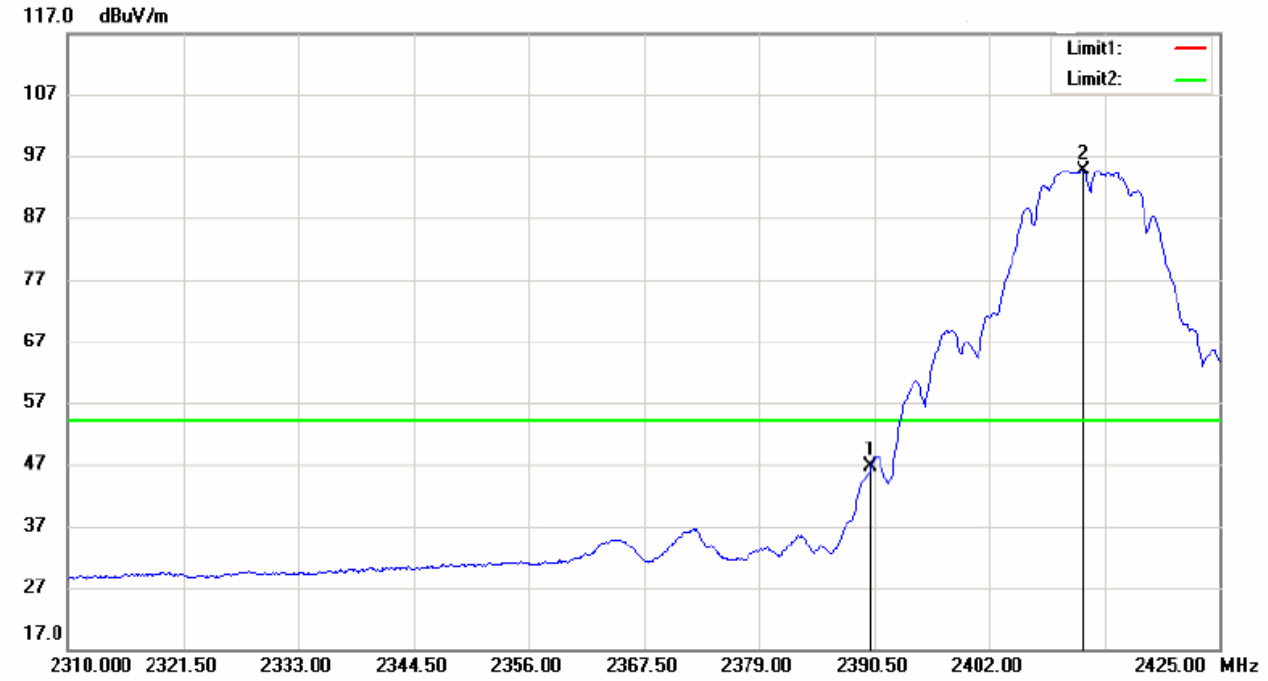
Test mode:	2.4GHz Band Antenna A	Test channel:	Low

Horizontal, Peak Detector:



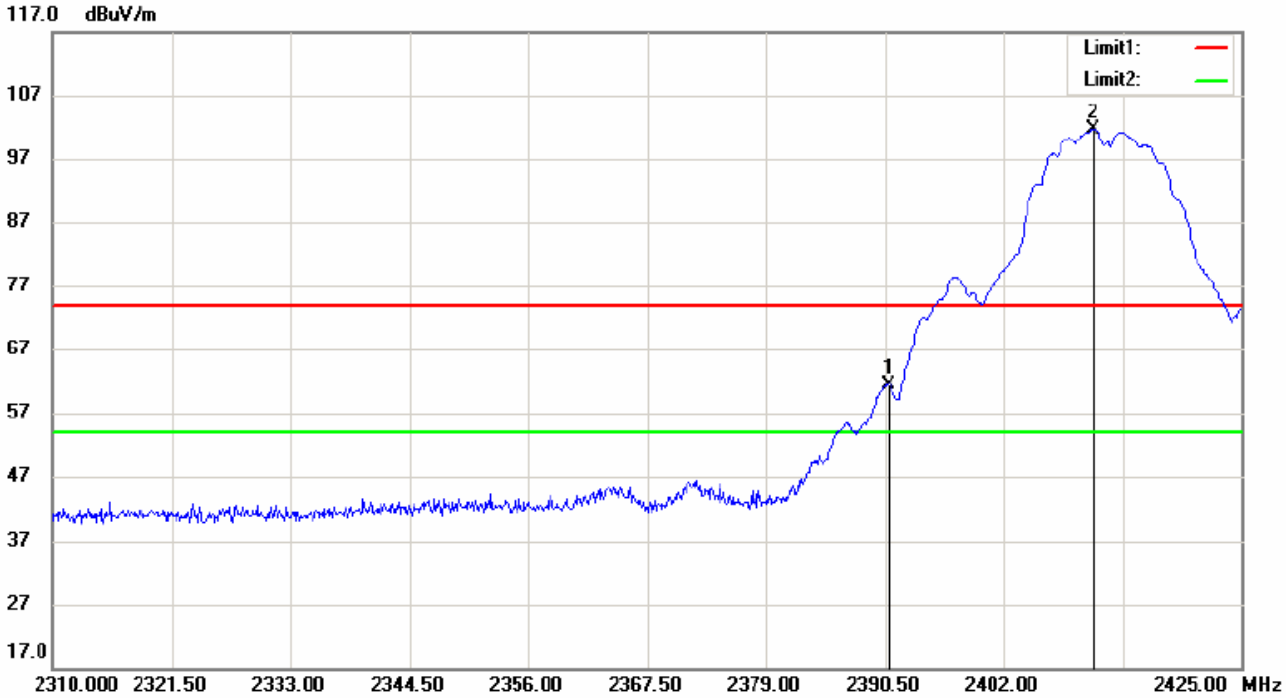
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.730	75.15	peak	-6.55	68.60	74.00	-5.40
2	2410.625	107.49	peak	-6.52	100.97	74.00	26.97

Horizontal, Average Detector:



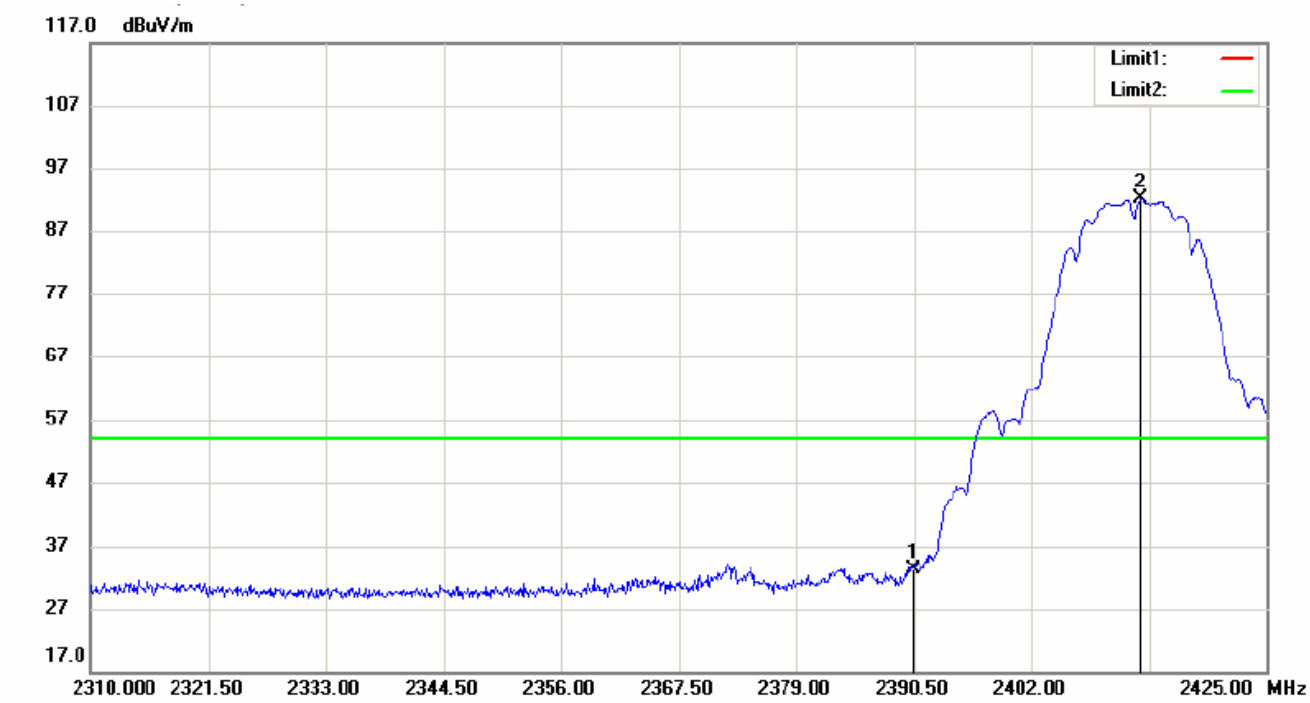
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.155	53.10	peak	-6.55	46.55	54.00	-7.45
2	2411.430	101.15	peak	-6.51	94.64	54.00	40.64

Vertical , Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.845	68.05	peak	-6.55	61.50	74.00	-12.50
2	2410.625	108.22	peak	-6.52	101.70	74.00	27.70

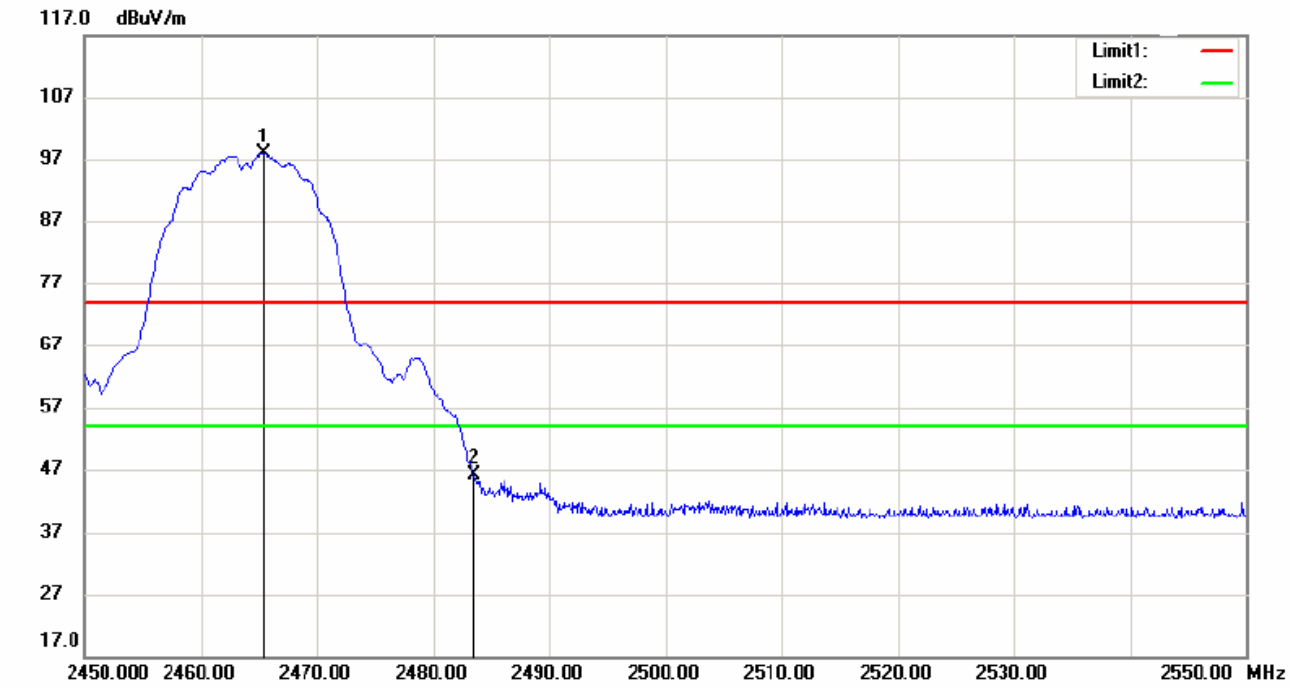
Vertical , Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.385	40.05	peak	-6.55	33.50	54.00	-20.50
2	2412.695	98.55	peak	-6.52	92.03	54.00	38.03

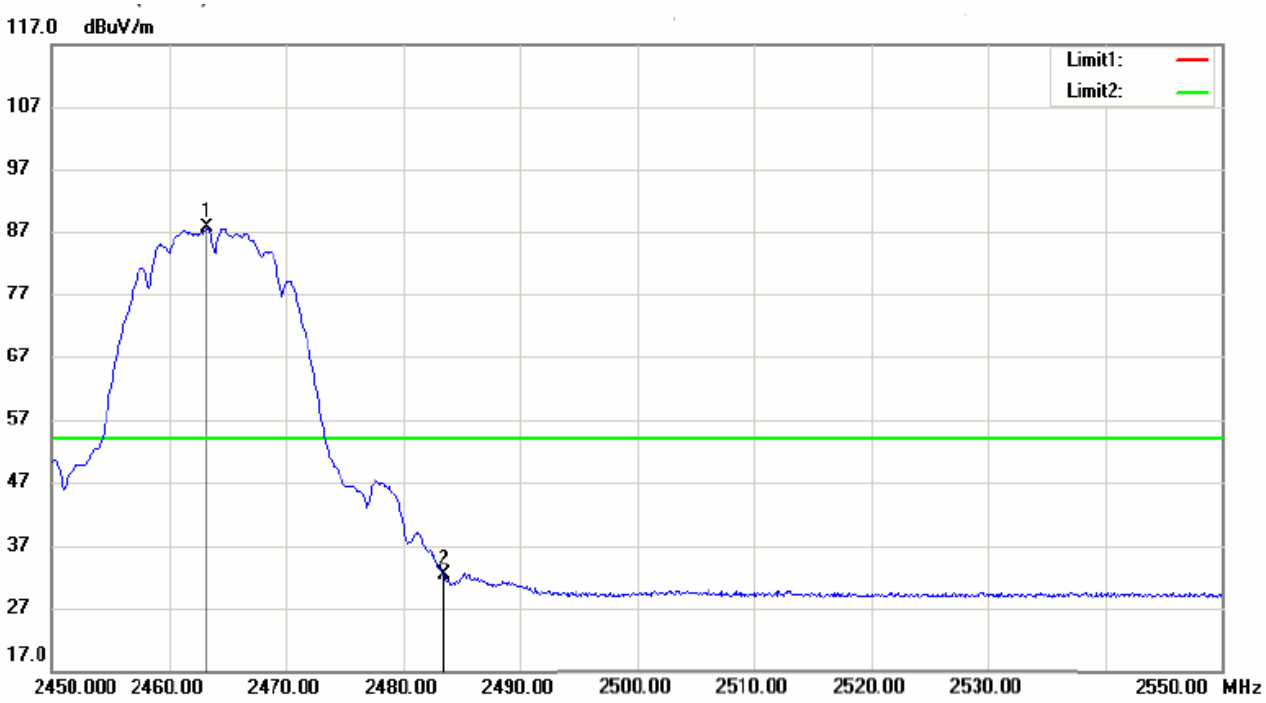
Test mode:	2.4GHz Band Antenna A	Test channel:	Hight

Horizontal, Peak Detector:



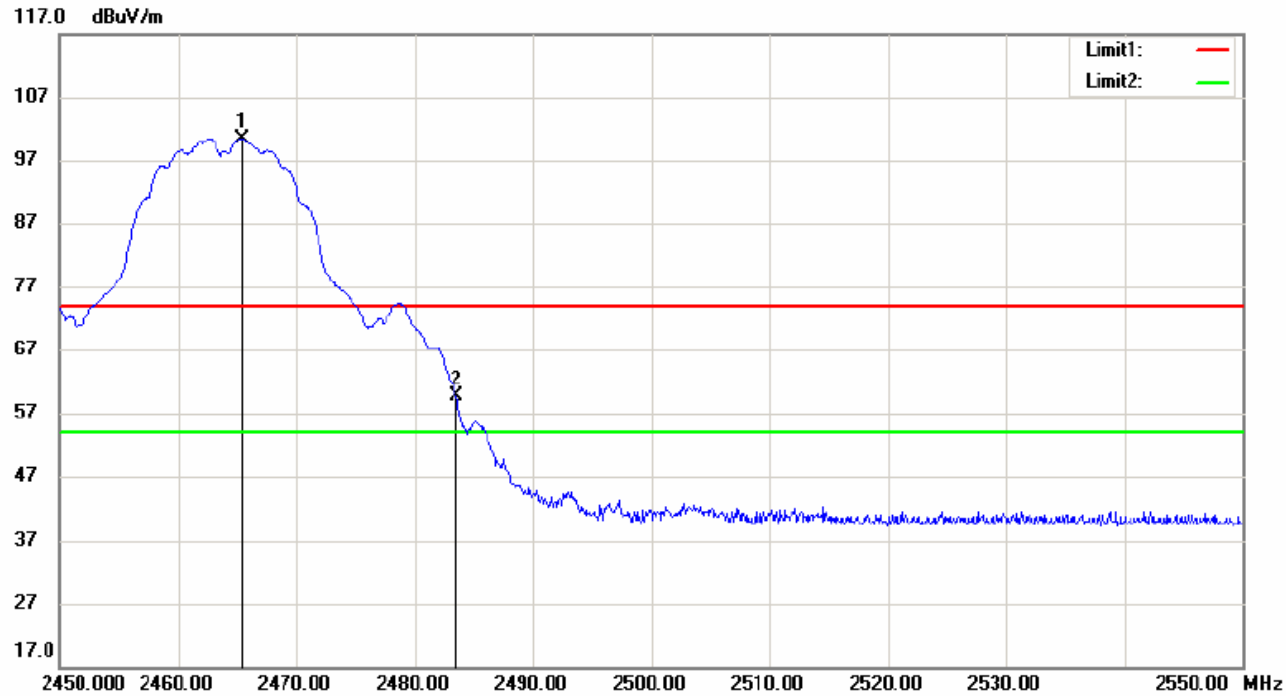
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2465.400	104.35	peak	-6.45	97.90	74.00	23.90
2	2483.500	52.51	peak	-6.41	46.10	74.00	-27.90

Horizontal, Average Detector:



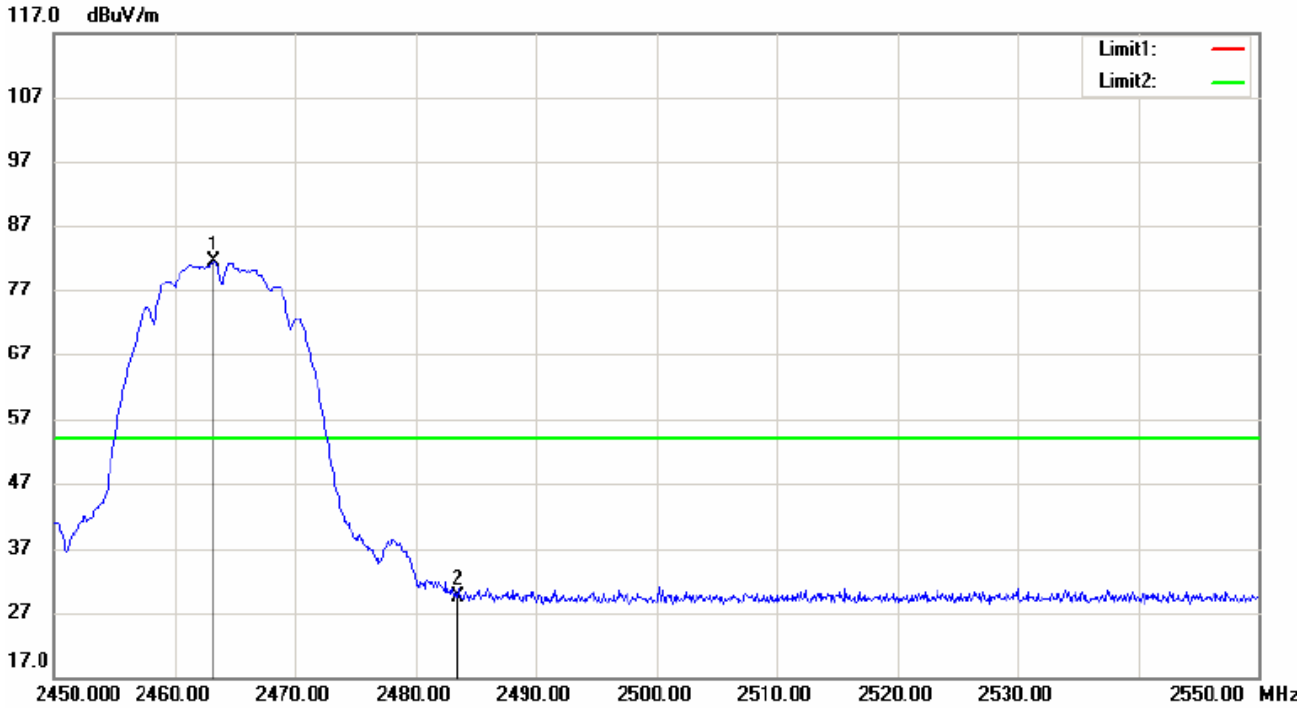
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2463.300	94.05	peak	-6.45	87.60	54.00	33.60
2	2483.500	38.67	peak	-6.41	32.26	54.00	-21.74

Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2465.400	106.85	peak	-6.45	100.40	74.00	26.40
2	2483.500	65.97	peak	-6.41	59.56	74.00	-14.44

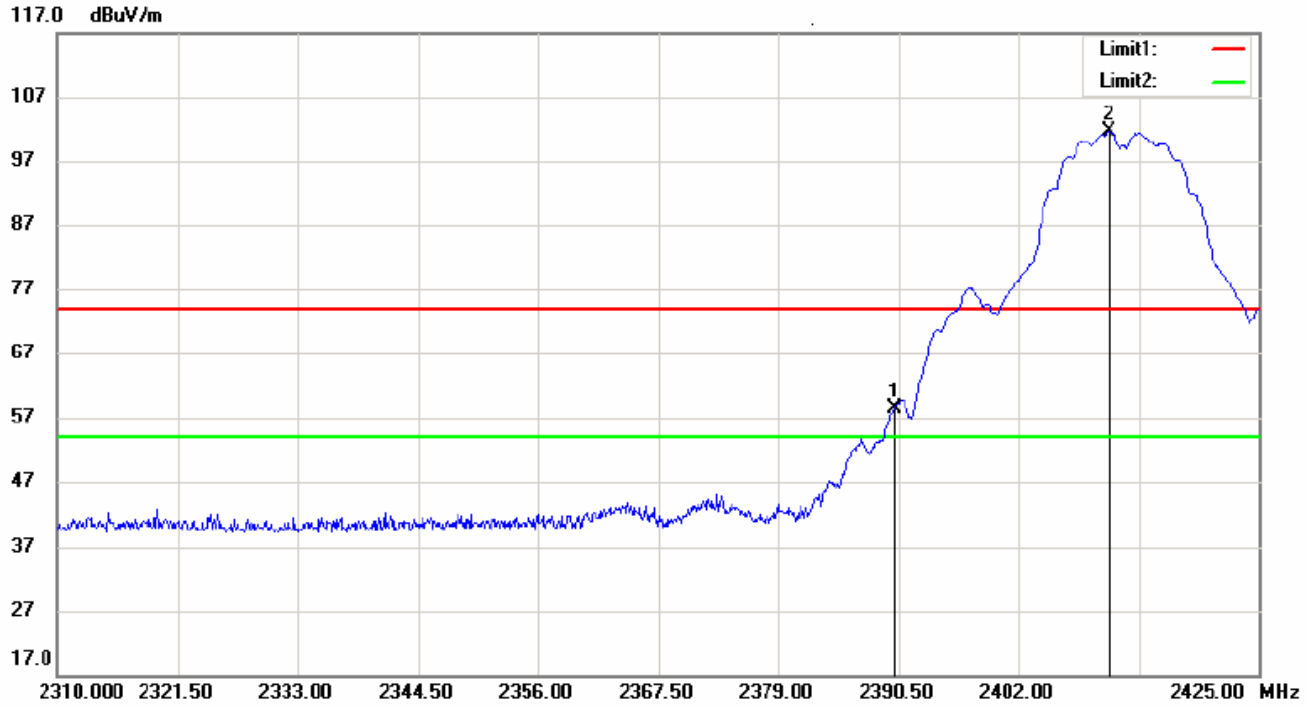
Vertical, Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2463.300	87.82	peak	-6.45	81.37	54.00	27.37
2	2483.500	35.97	peak	-6.41	29.56	54.00	-24.44

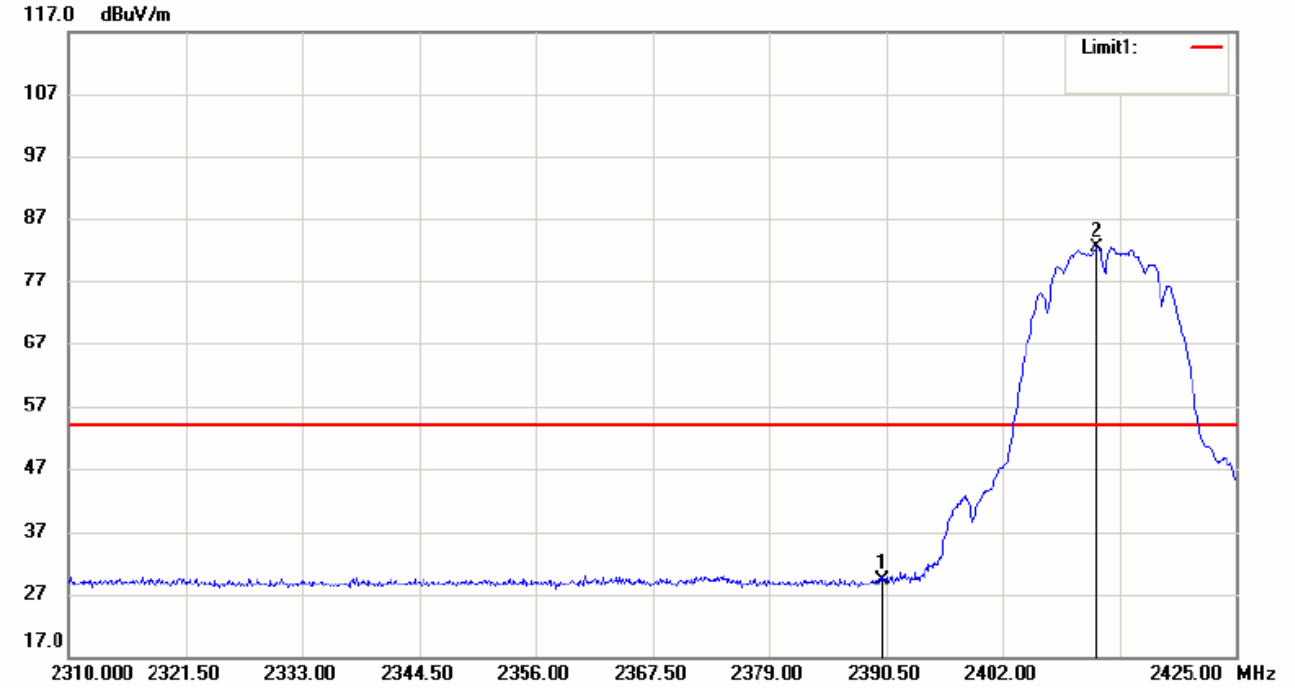
Test mode:	2.4GHz Band Antenna B	Test channel:	Lowest

Horizontal, Peak Detector:



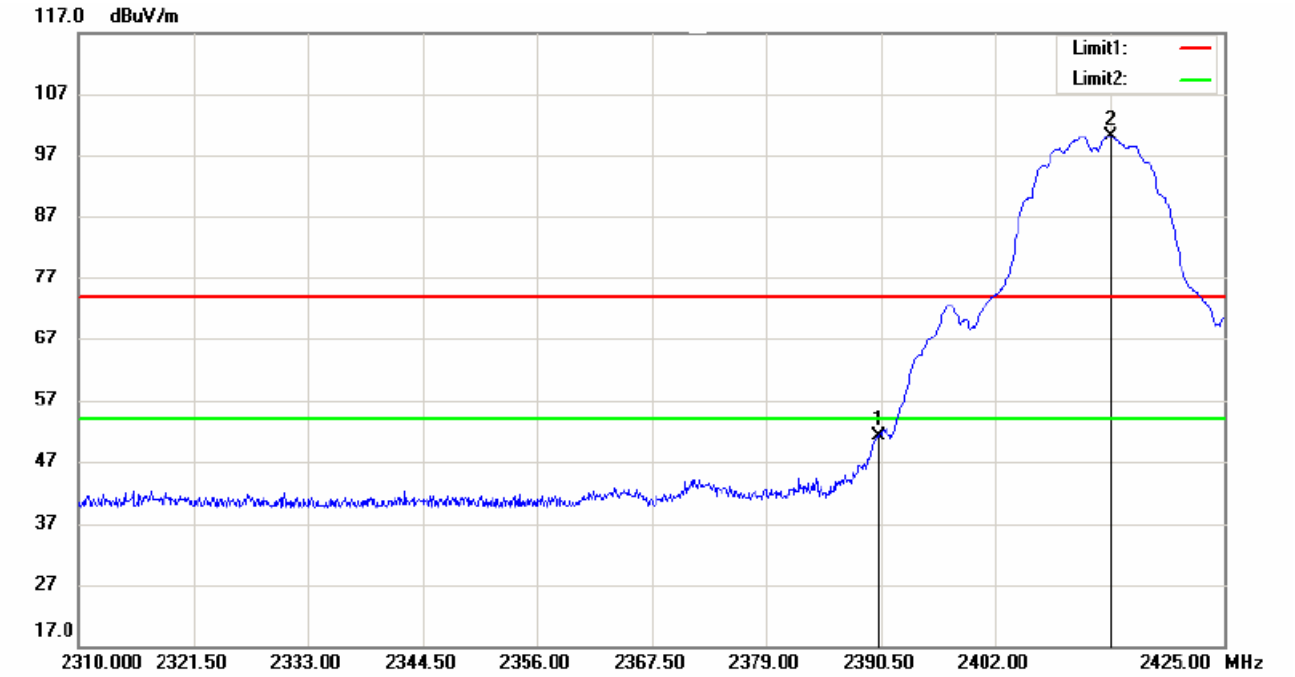
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.155	64.96	peak	-6.55	58.41	74.00	-15.59
2	2410.625	108.09	peak	-6.52	101.57	74.00	27.57

Horizontal, Average Detector:



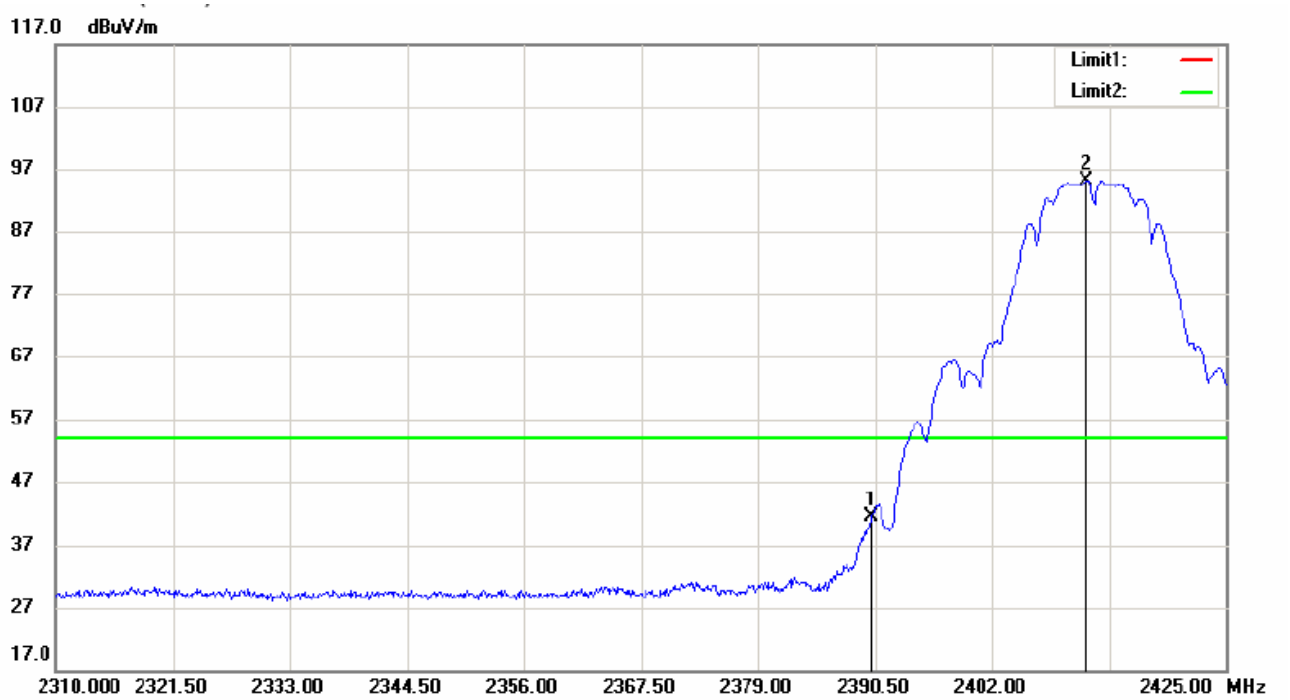
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.155	35.87	peak	-6.55	29.32	54.00	-24.68
2	2411.315	88.78	peak	-6.51	82.27	54.00	28.27

Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.270	57.66	peak	-6.55	51.11	74.00	-22.89
2	2413.500	106.67	peak	-6.52	100.15	74.00	26.15

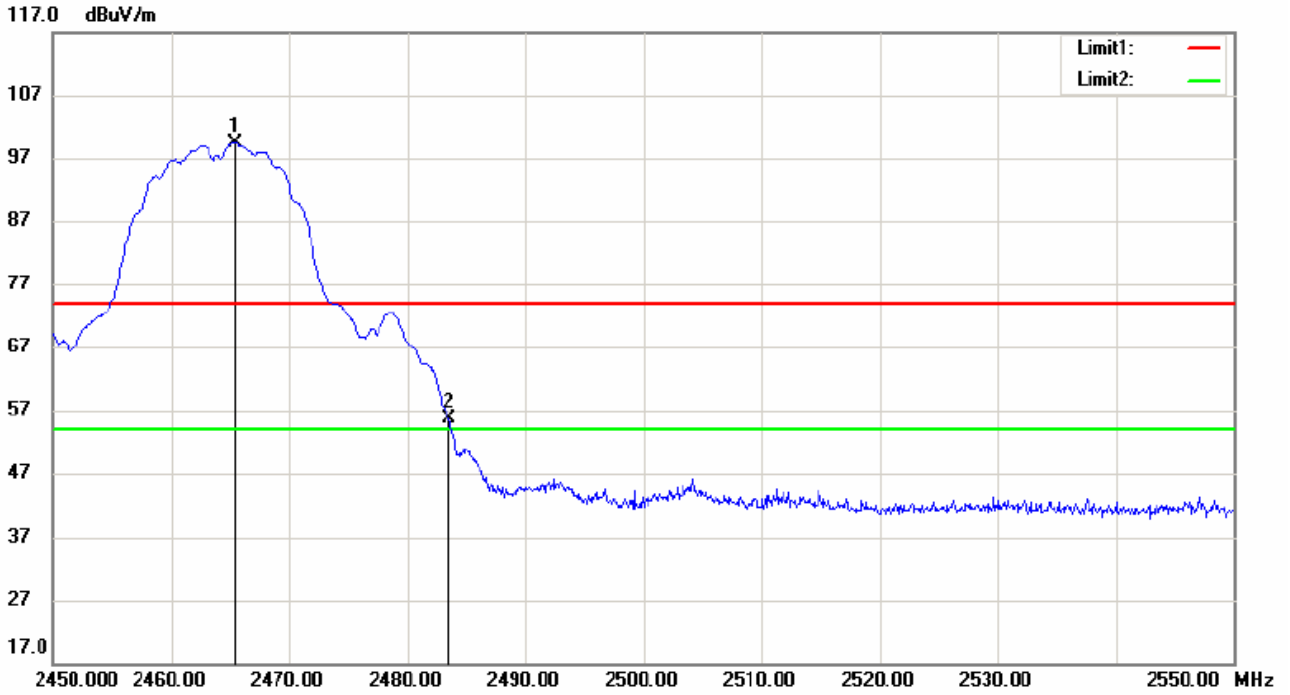
Vertical, Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2390.155	47.91	peak	-6.55	41.36	54.00	-12.64
2	2411.315	101.69	peak	-6.51	95.18	54.00	41.18

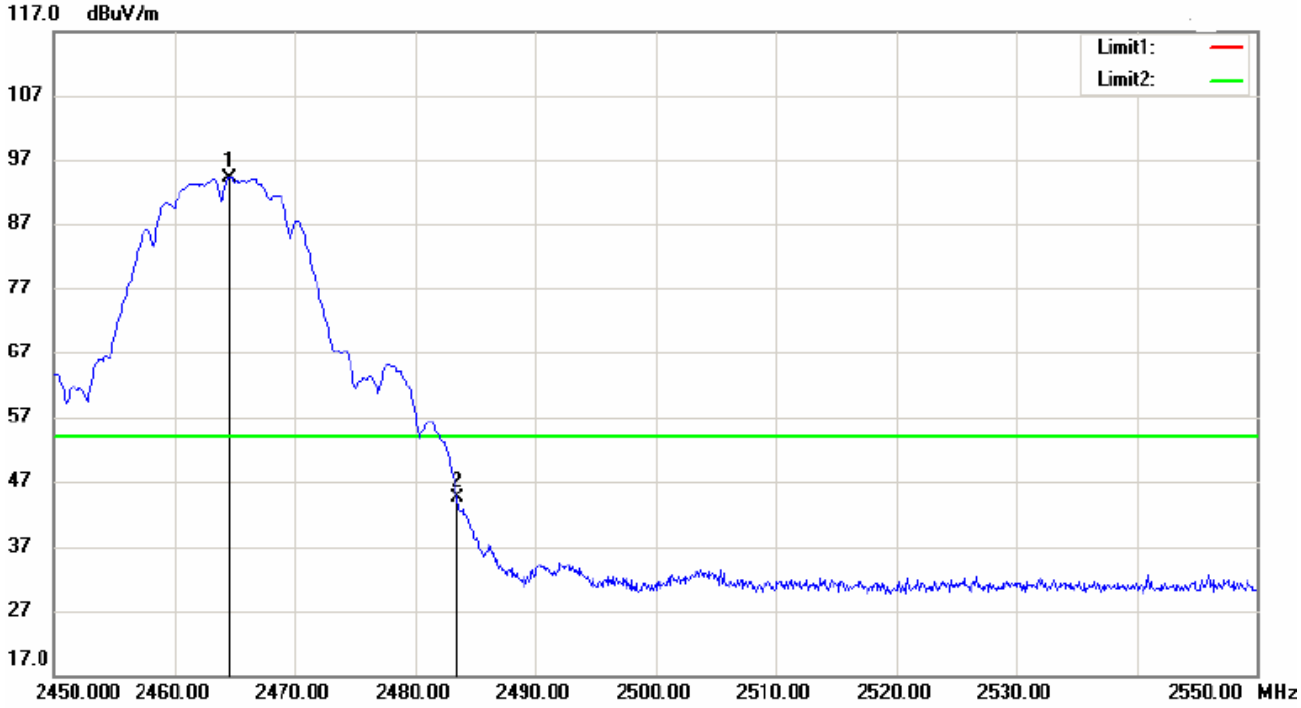
Test mode:	2.4GHz Band Antenna B	Test channel:	Highest

Horizontal, Peak Detector:



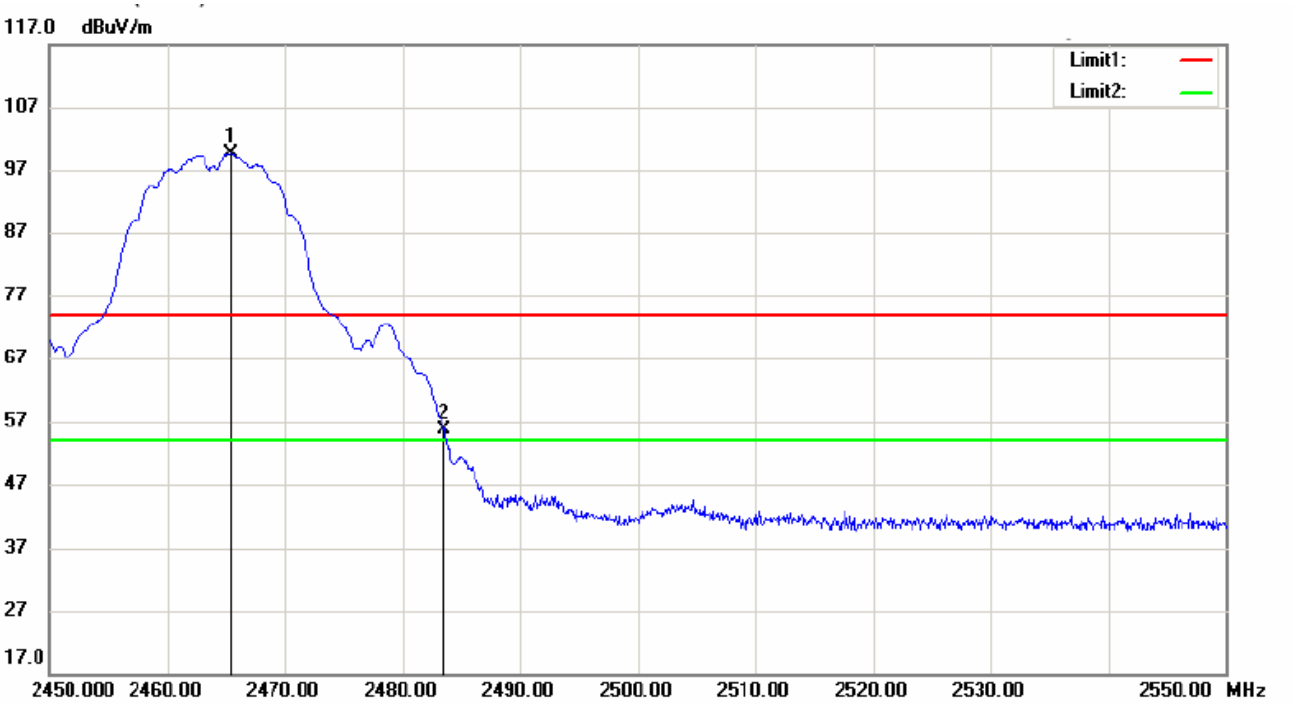
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2465.400	105.89	peak	-6.45	99.44	74.00	25.44
2	2483.500	62.03	peak	-6.41	55.62	74.00	-18.38

Horizontal, Average Detector:



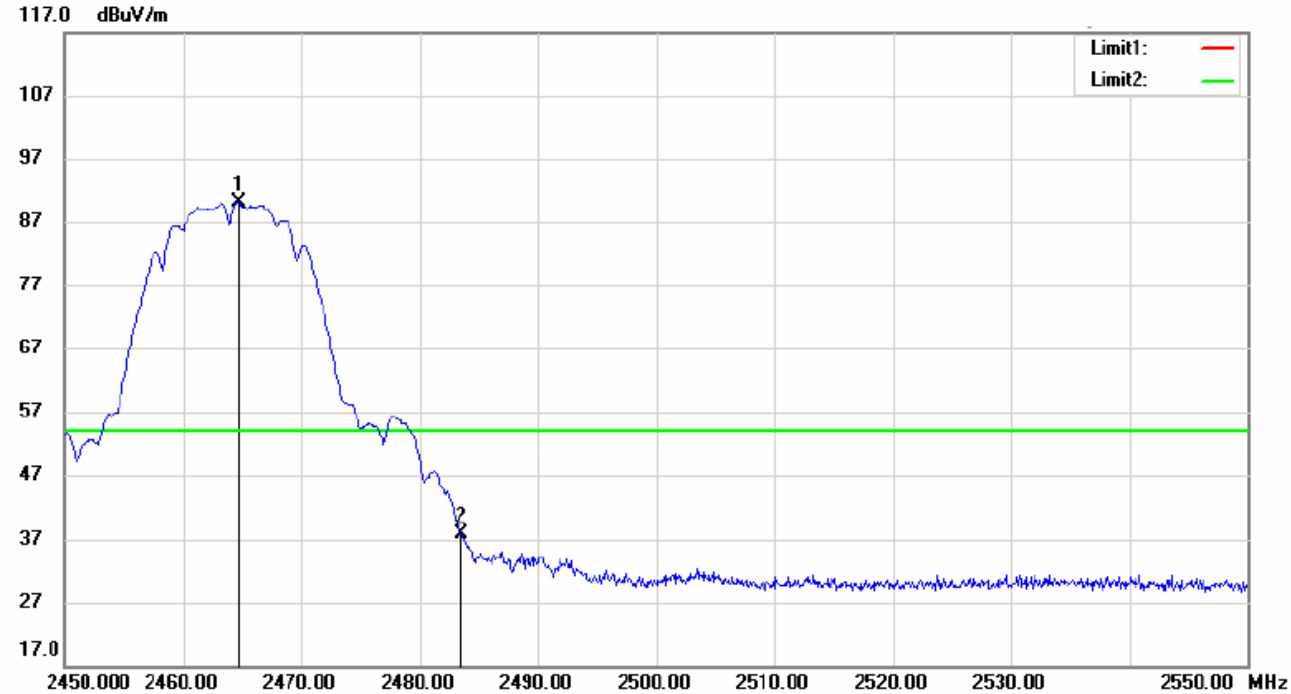
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2464.600	100.55	AVG	-6.45	94.10	54.00	40.10
2	2483.500	50.87	AVG	-6.41	44.46	54.00	-9.54

Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2465.400	105.99	peak	-6.45	99.54	74.00	25.54
2	2483.500	62.11	peak	-6.41	55.70	74.00	-18.30

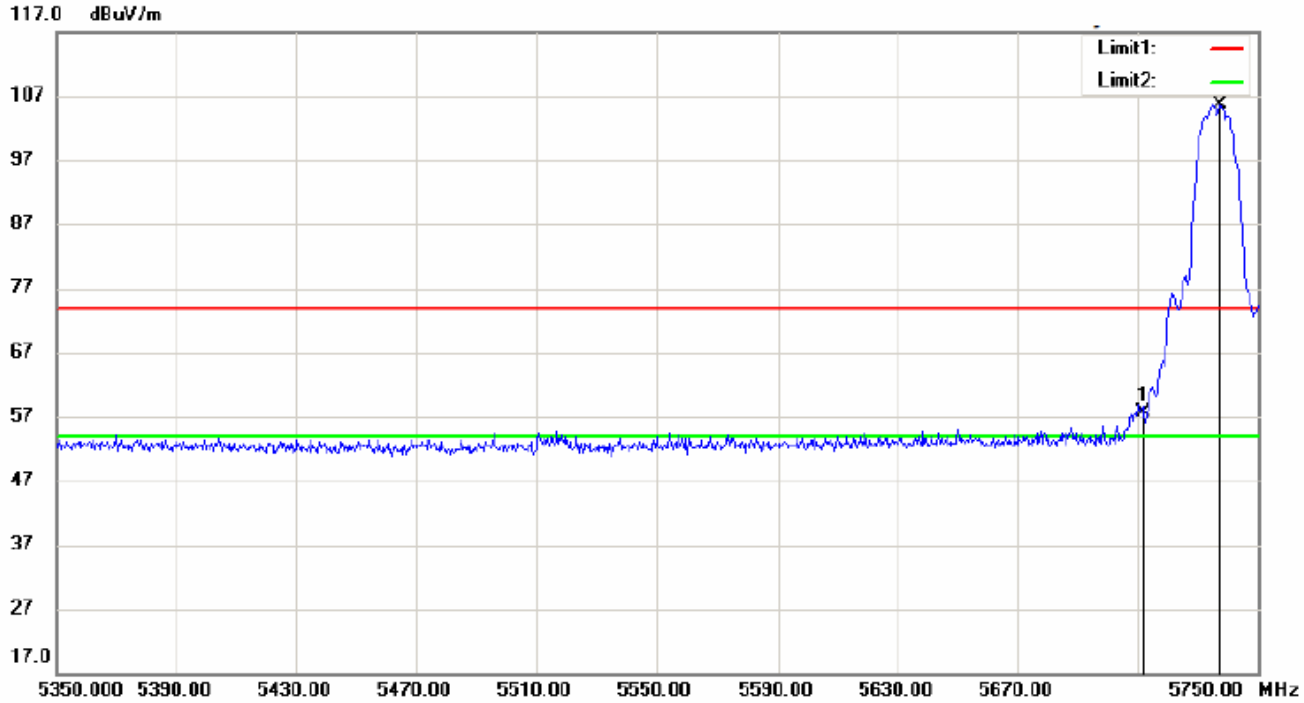
Vertical, Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2464.700	96.57	peak	-6.45	90.12	54.00	36.12
2	2483.500	44.26	peak	-6.41	37.85	54.00	-16.15

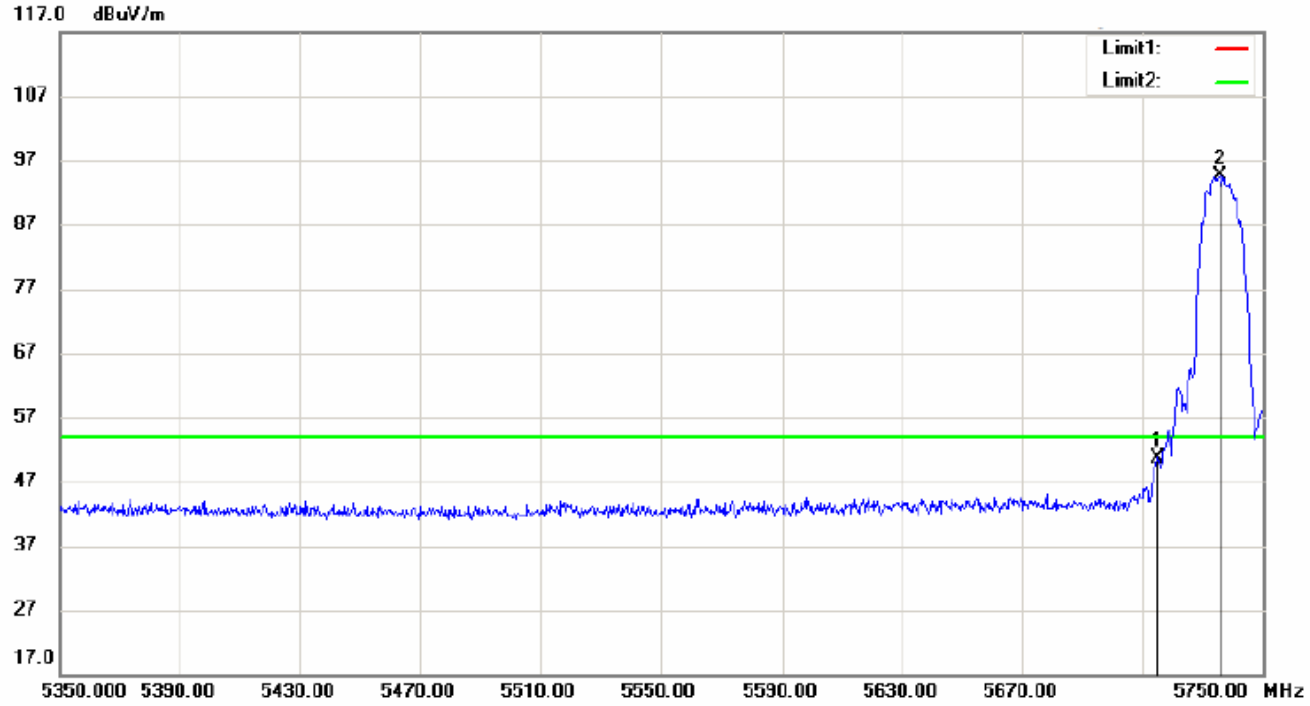
Test mode:	5.8GHz Band Antenna A	Test channel:	Low

Horizontal, Peak Detector:



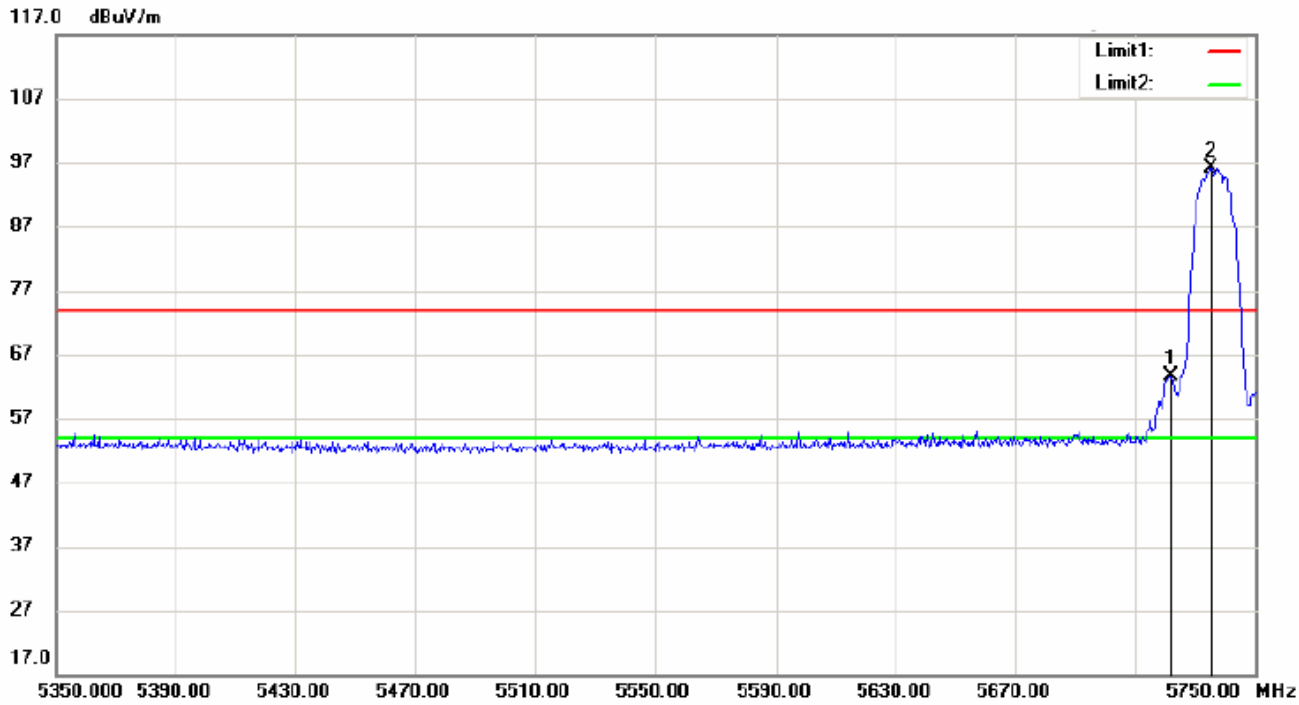
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5712.000	56.01	peak	1.50	57.51	74.00	-16.49
2	5737.600	104.06	peak	1.57	105.63	74.00	31.63

Horizontal, Average Detector:



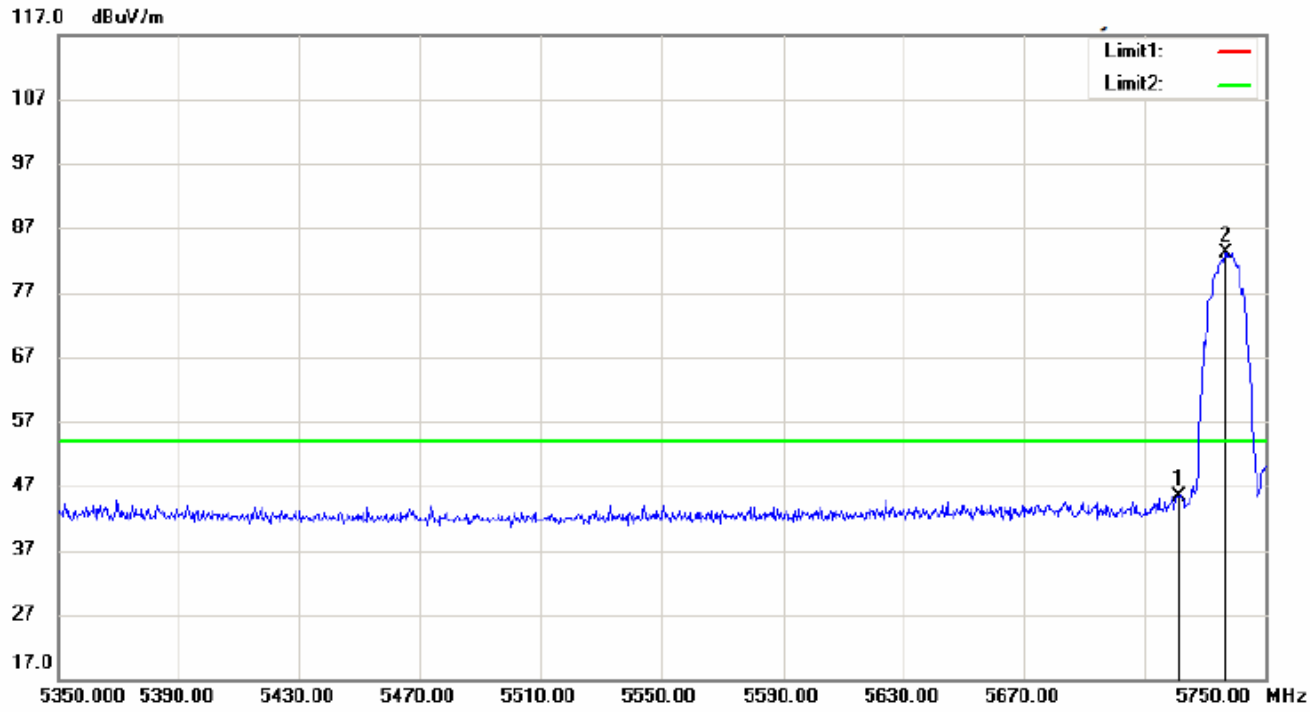
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5715.200	49.10	peak	1.52	50.62	54.00	-3.38
2	5735.600	92.95	peak	1.56	94.51	54.00	40.51

Vertical , Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5722.000	62.14	peak	1.53	63.67	74.00	-10.33
2	5735.200	94.60	peak	1.56	96.16	74.00	22.16

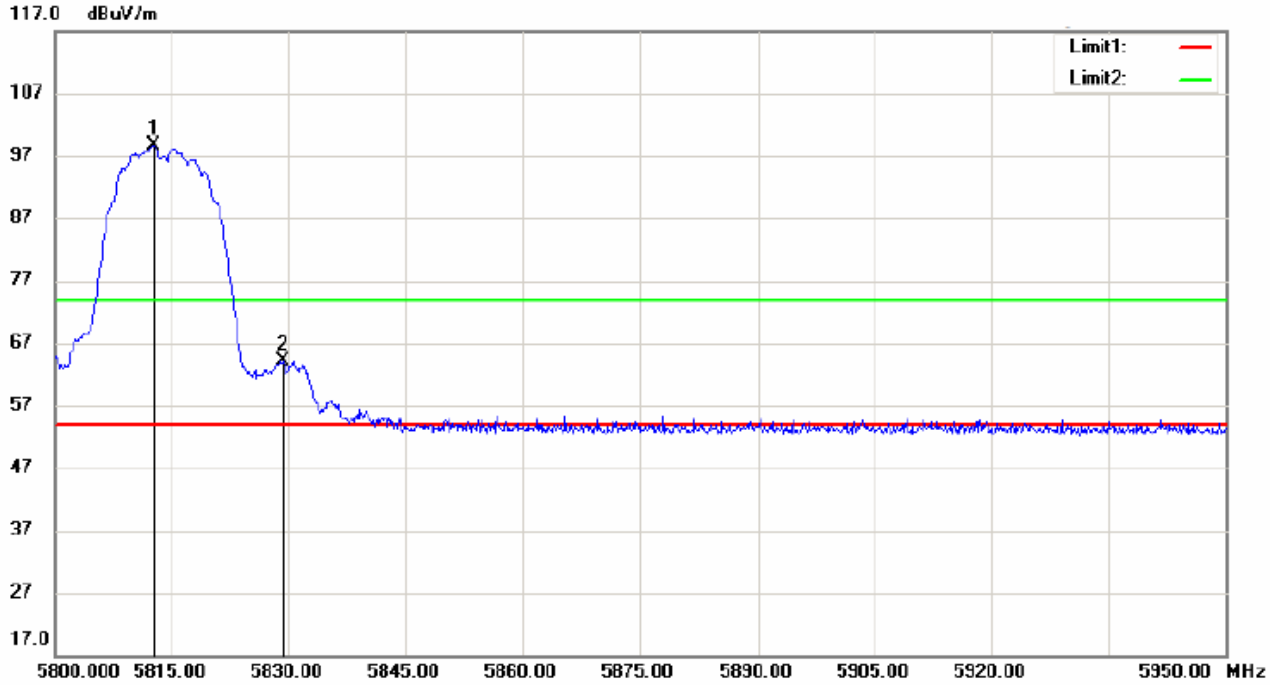
Vertical , Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5721.600	43.83	peak	1.53	45.36	54.00	-8.64
2	5736.800	81.55	peak	1.56	83.11	54.00	29.11

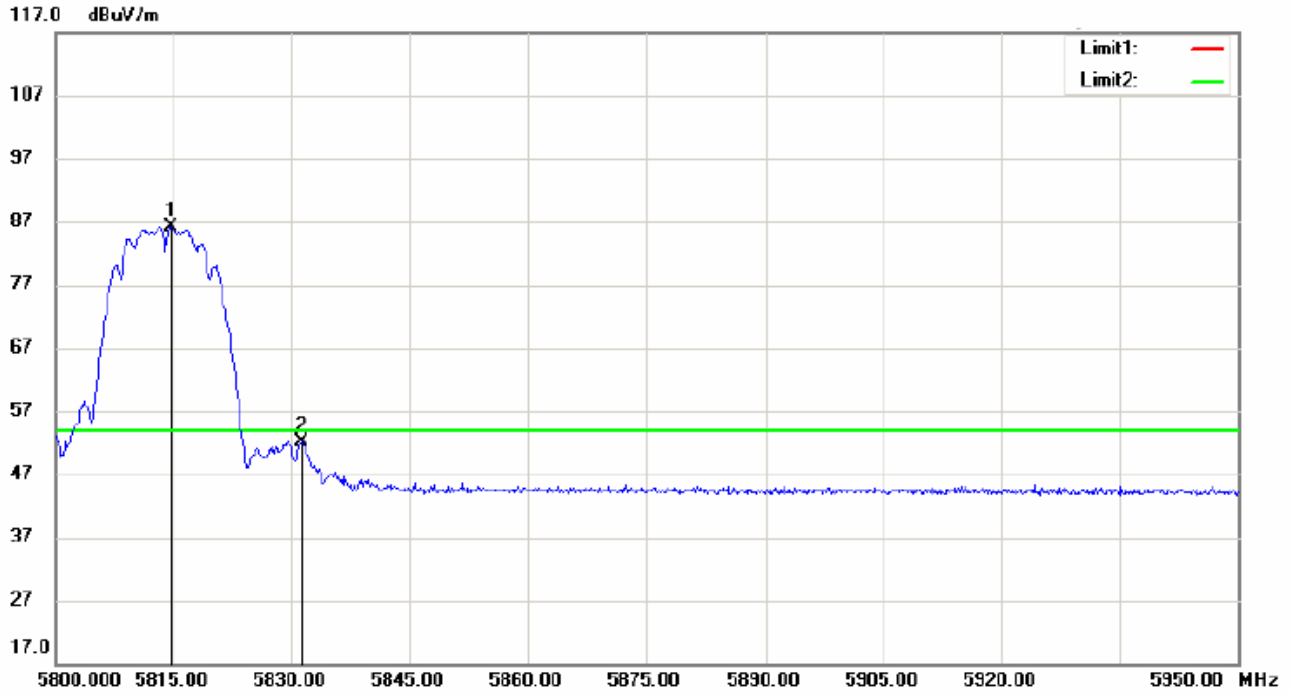
Test mode:	5.8GHz Band Antenna A	Test channel:	Hight

Horizontal, Peak Detector:



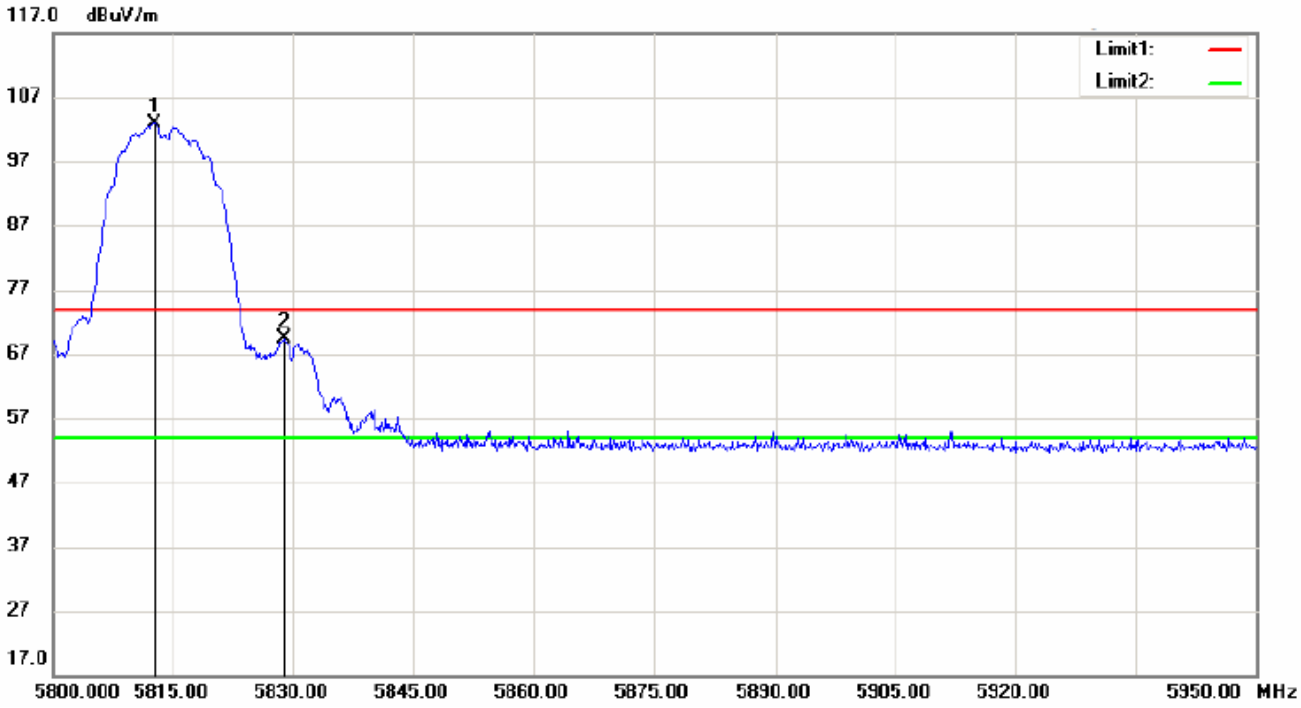
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5812.600	96.86	peak	1.73	98.59	74.00	24.59
2	5829.250	62.37	peak	1.76	64.13	74.00	-10.13

Horizontal, Average Detector:



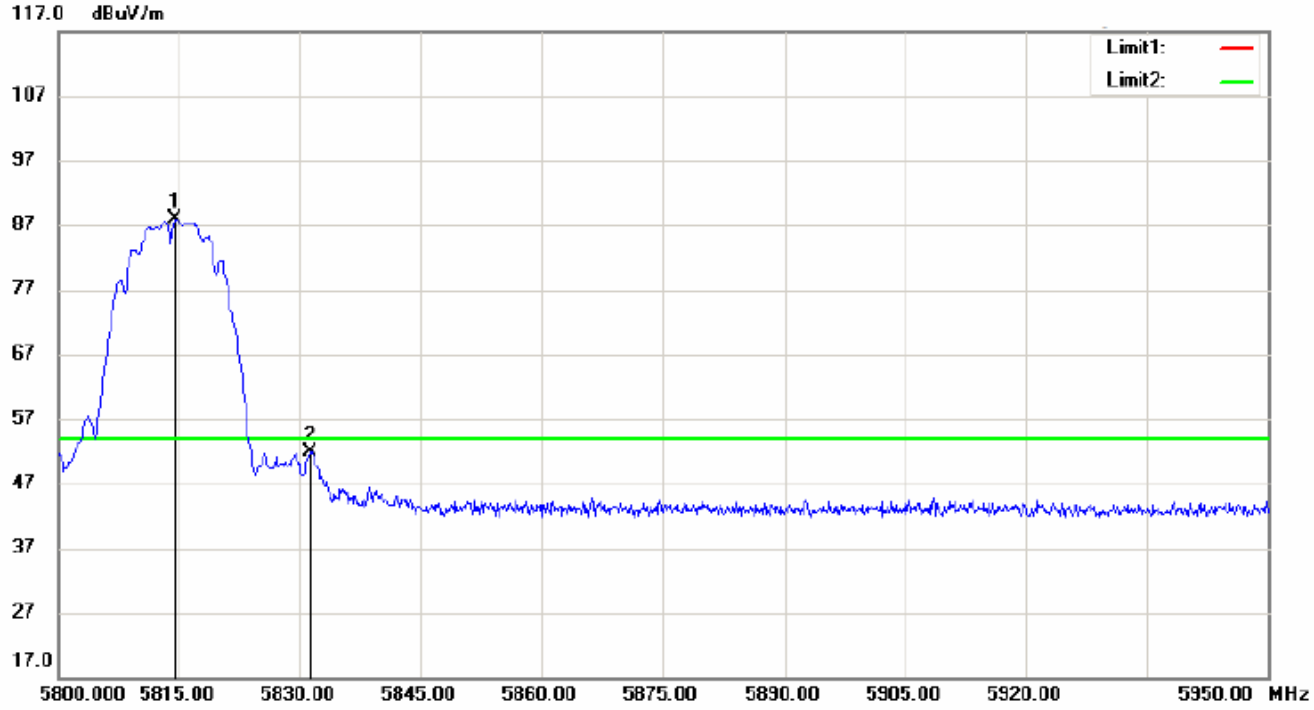
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5814.700	84.47	peak	1.73	86.20	54.00	32.20
2	5831.350	50.44	peak	1.76	52.20	54.00	-1.80

Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5812.600	101.11	peak	1.73	102.84	74.00	28.84
2	5828.800	67.55	peak	1.76	69.31	74.00	-4.69

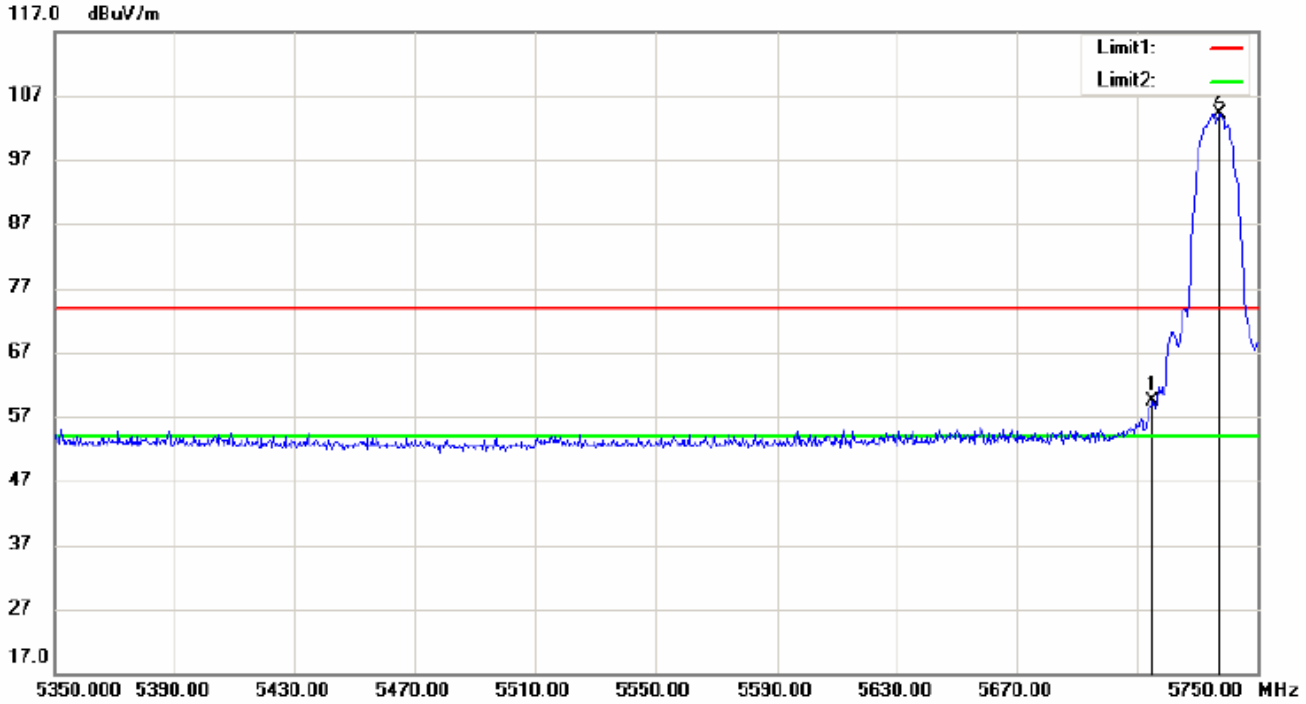
Vertical, Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5814.550	86.22	peak	1.73	87.95	54.00	33.95
2	5831.350	50.03	peak	1.76	51.79	54.00	-2.21

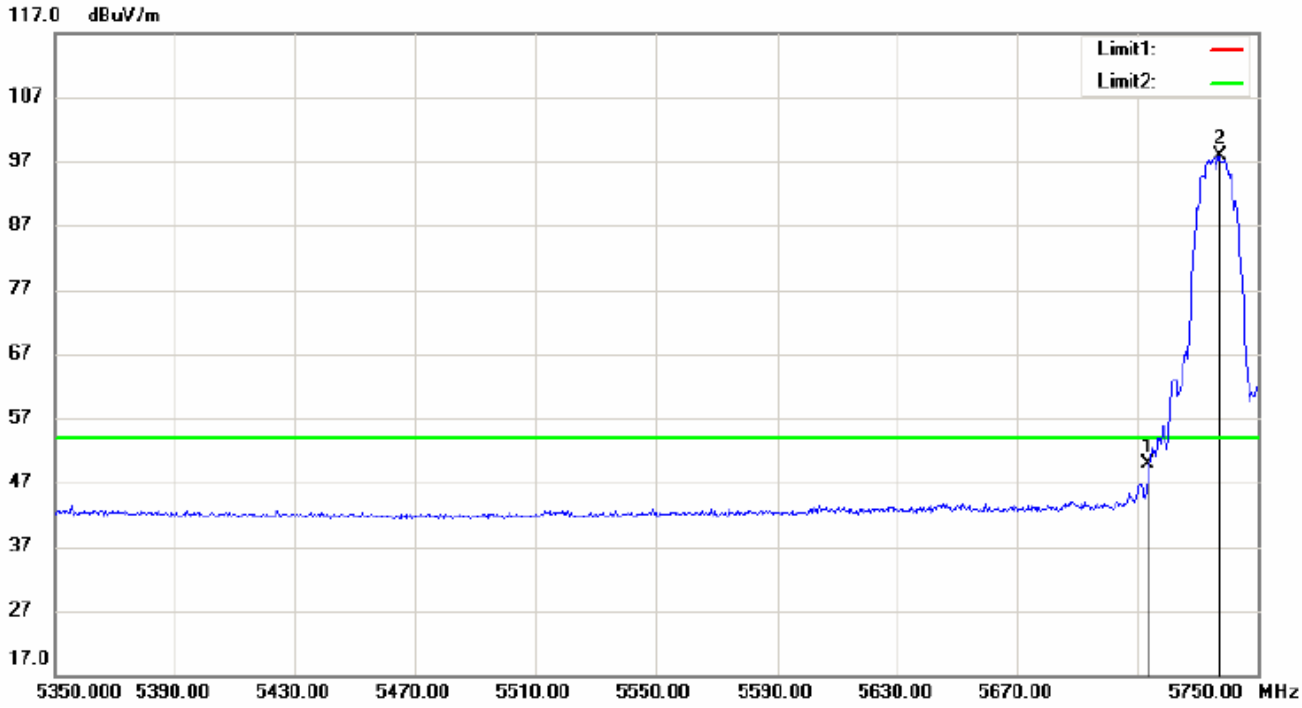
Test mode:	5.8GHz Band Antenna B	Test channel:	Low

Horizontal, Peak Detector



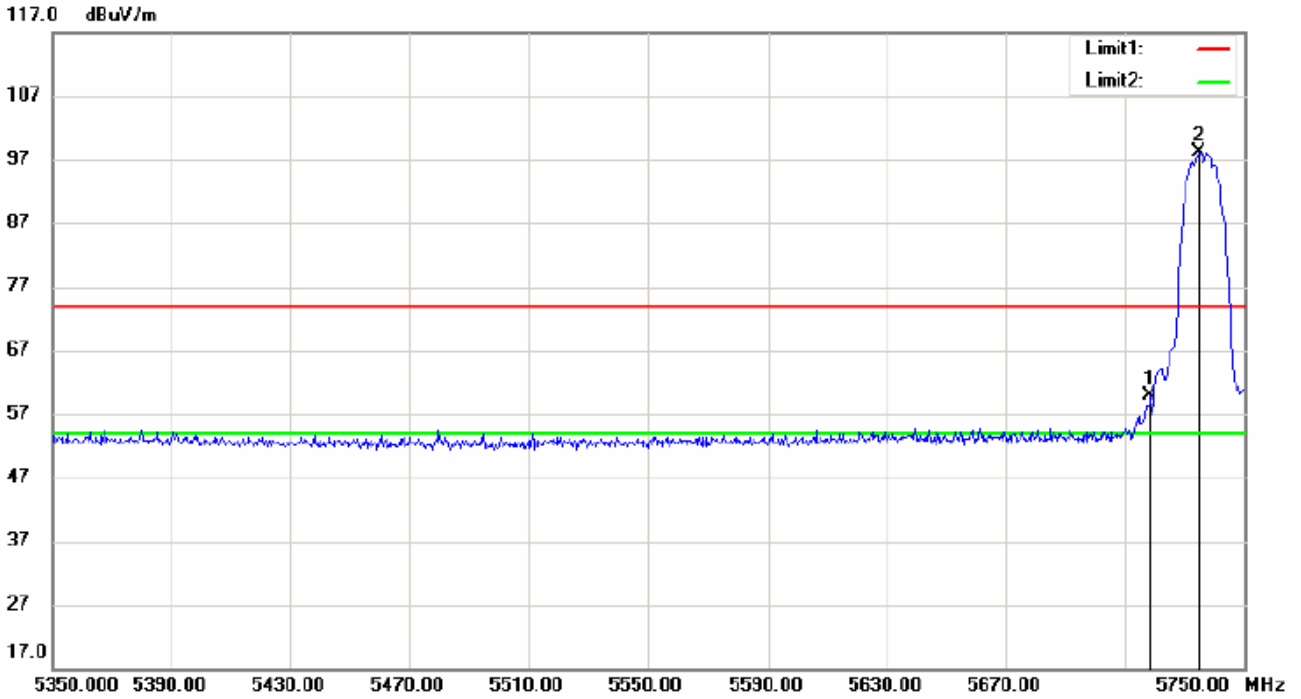
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5715.200	57.77	peak	1.52	59.29	74.00	-14.71
2	5737.600	102.54	peak	1.57	104.11	74.00	30.11

Horizontal, Average Detector:



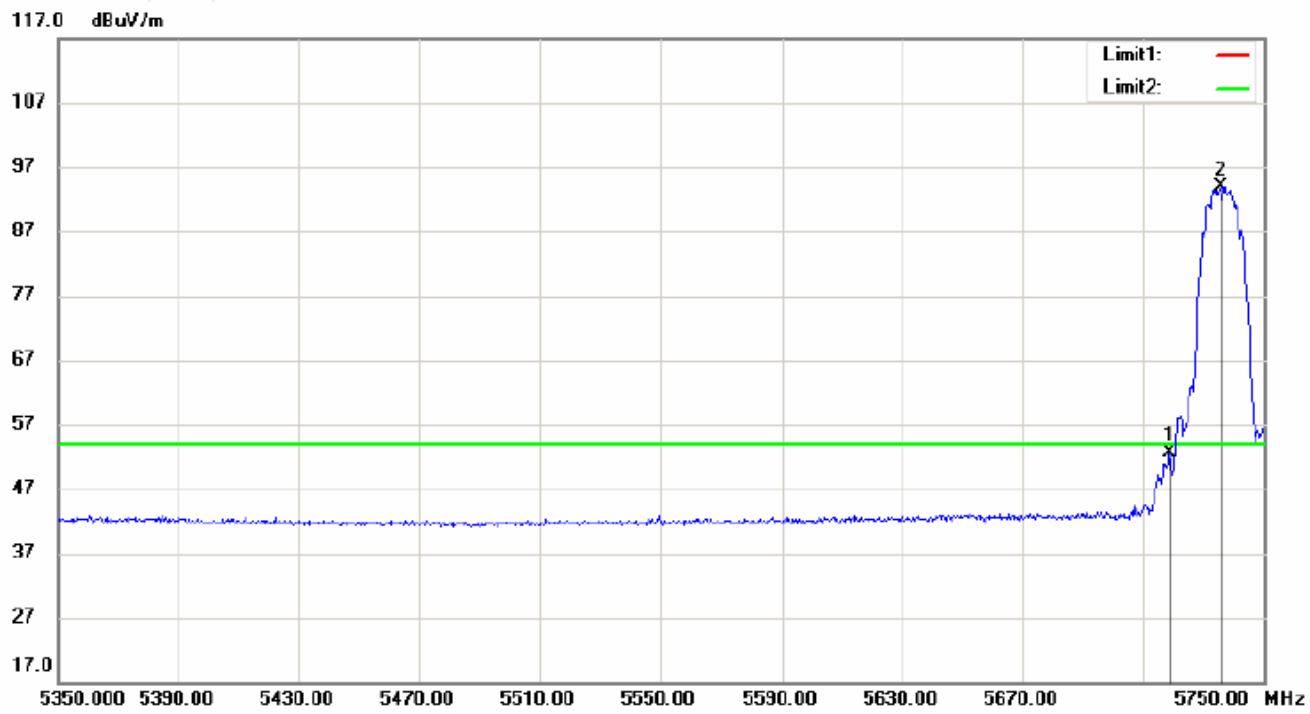
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5713.600	48.28	peak	1.51	49.79	54.00	-4.21
2	5737.200	96.24	peak	1.56	97.80	54.00	43.80

Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5718.400	58.31	peak	1.53	59.84	74.00	-14.16
2	5734.800	96.60	peak	1.55	98.15	74.00	24.15

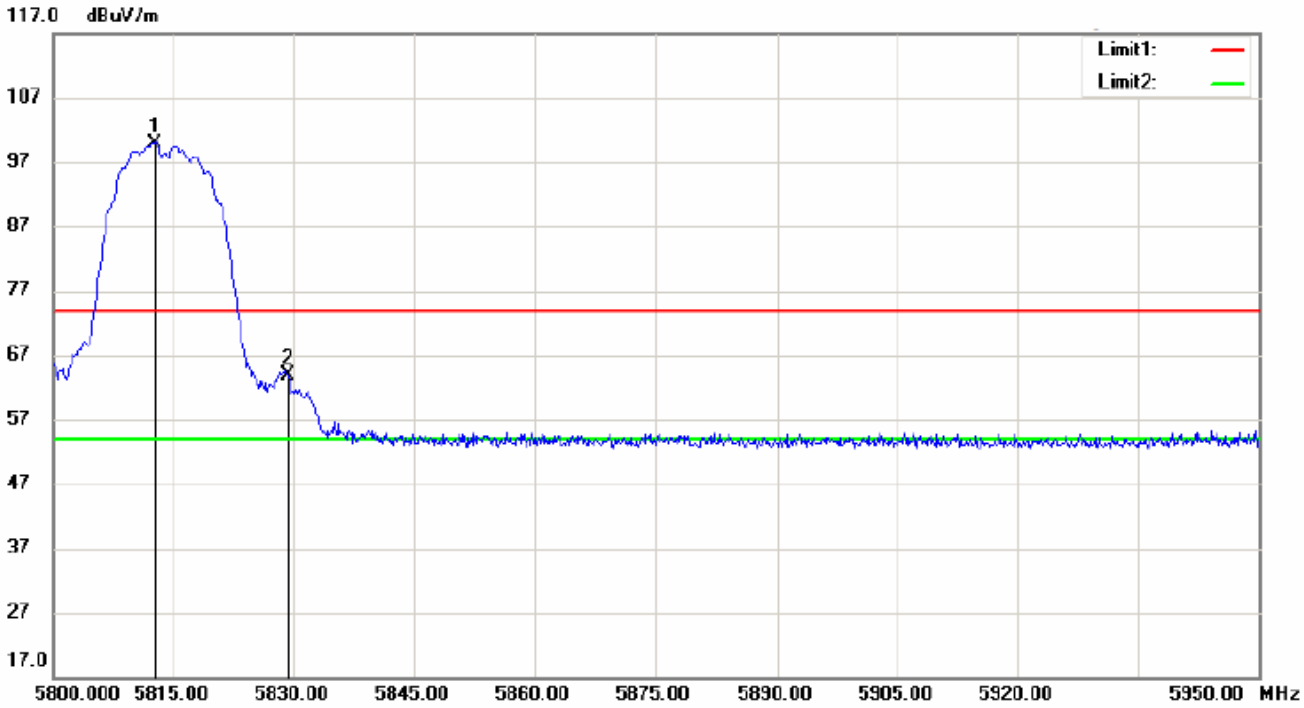
Vertical, Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5718.800	51.11	peak	1.53	52.64	54.00	-1.36
2	5735.600	92.33	peak	1.56	93.89	54.00	39.89

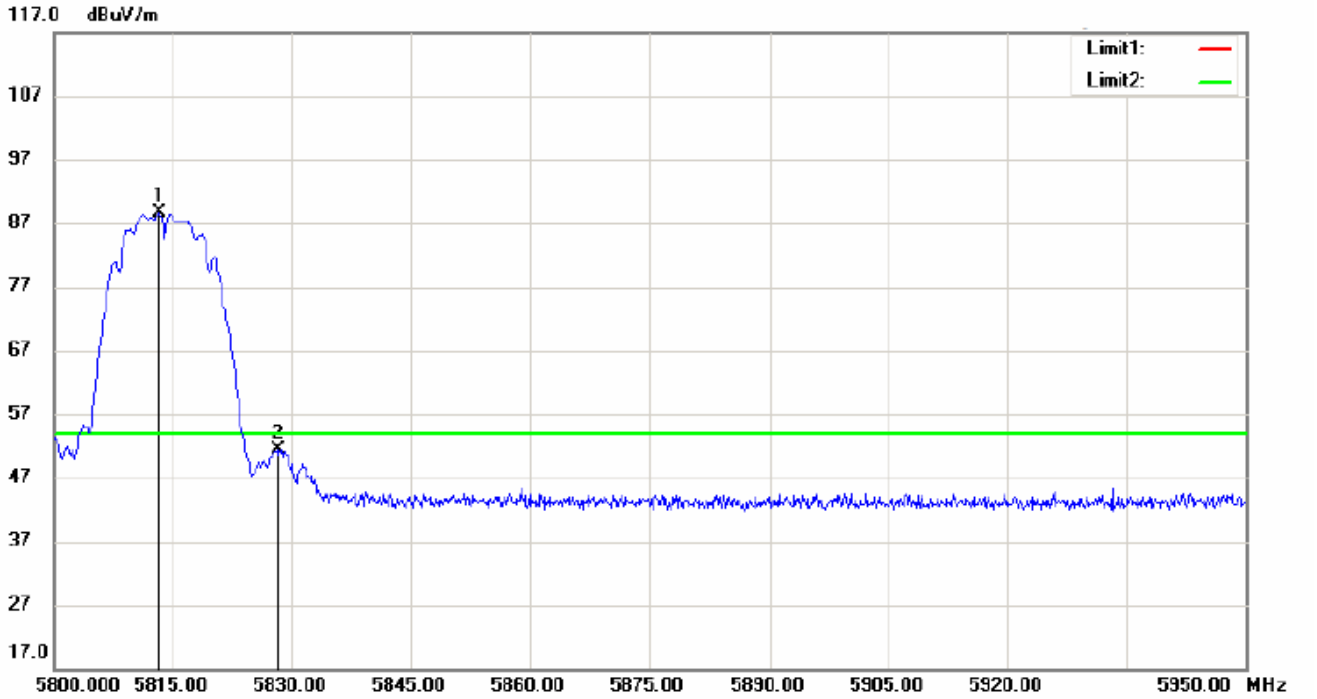
Test mode:	5.8GHz Band Antenna B	Test channel:	High

Horizontal, Peak Detector:



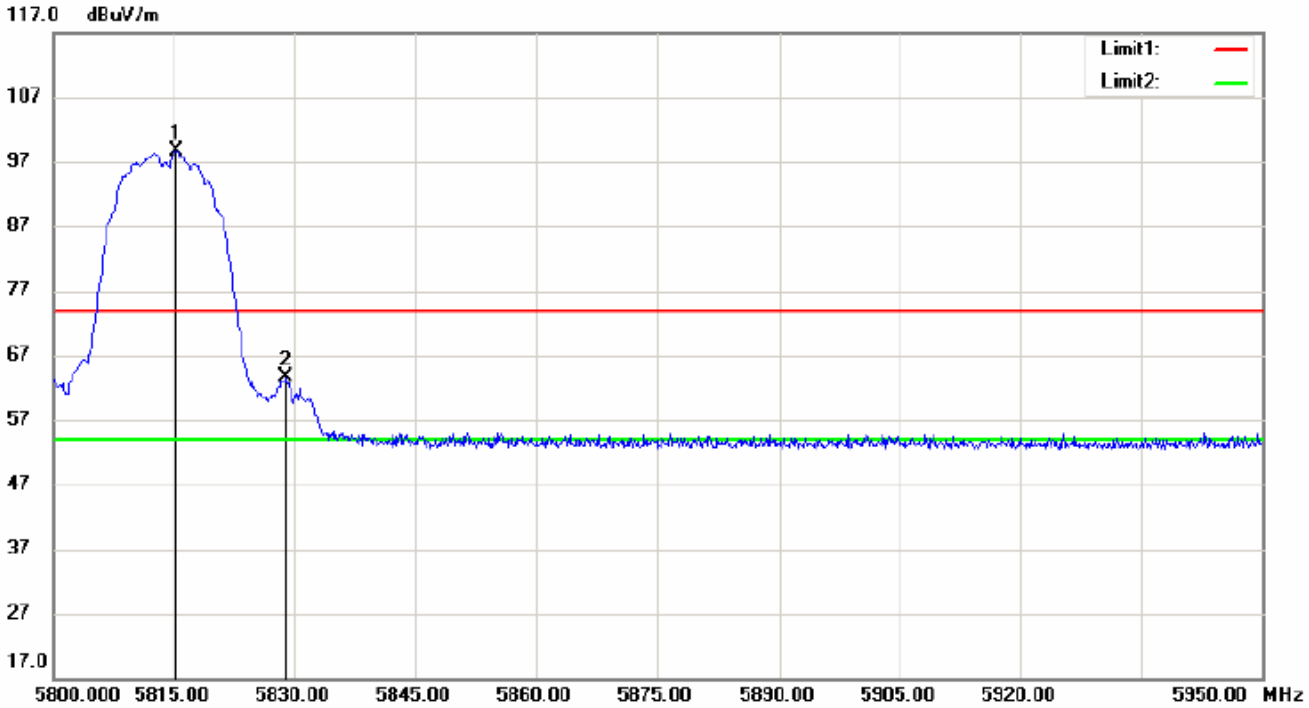
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5812.600	98.27	peak	1.73	100.00	74.00	26.00
2	5829.250	62.11	peak	1.76	63.87	74.00	-10.13

Horizontal, Average Detector:



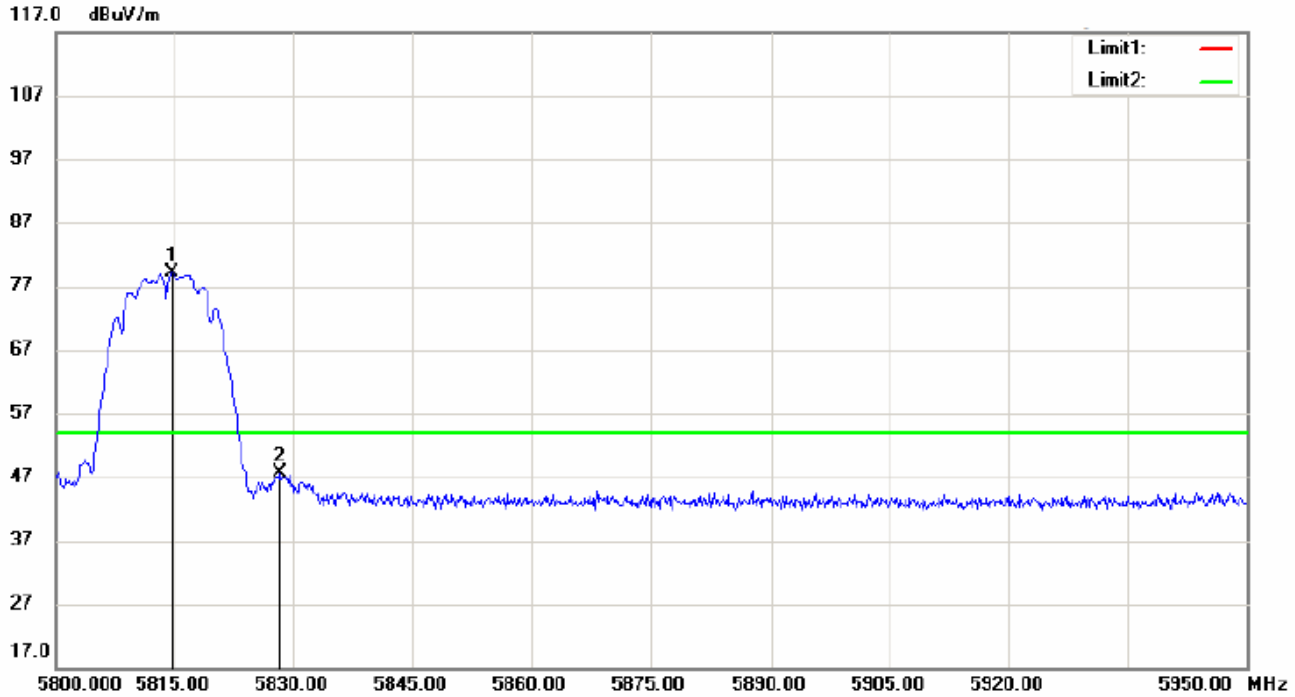
Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5813.200	86.87	peak	1.73	88.60	54.00	34.60
2	5828.200	49.66	peak	1.76	51.42	54.00	-2.58

Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5815.300	96.82	peak	1.74	98.56	74.00	24.56
2	5828.950	61.91	peak	1.76	63.67	74.00	-10.33

Vertical, Average Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	5814.700	77.33	peak	1.73	79.06	54.00	25.06
2	5828.350	45.82	peak	1.76	47.58	54.00	-6.42

Remark: No any other emission which fall in restricted bands can be detected and be reported.

Test Level = Receiver Reading + Antenna Factor + Cable Loss- Preamplifier Factor

All frequencies within the “Restricted bands” have been evaluated to compliance. Section 15.205 Restricted bands of operation.

7.8 Conducted Spurious Emission Test

Test Requirement: FCC Part15 247(c)
RSS-210 Issue 8 Annex 8

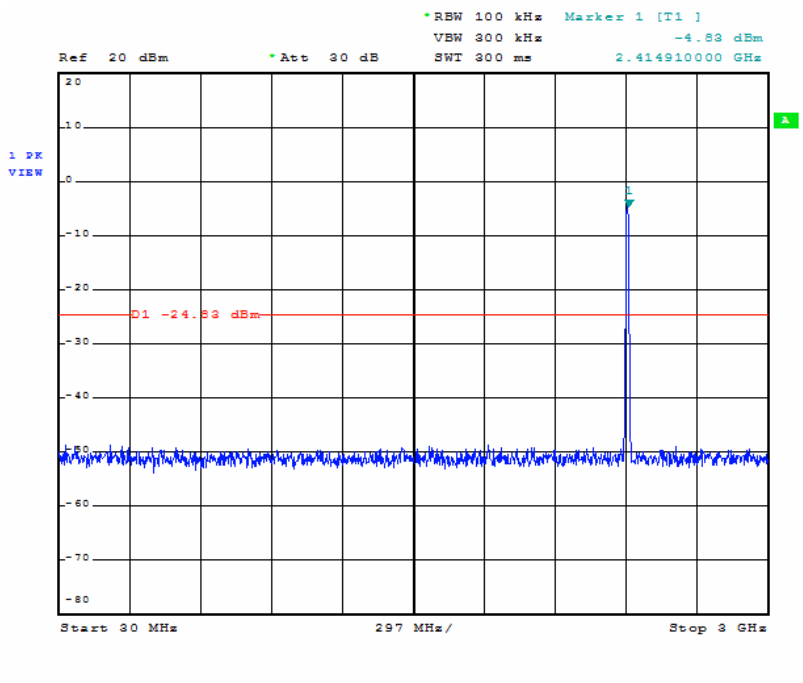
Standard Applicable: According to section 15.247(c),in any 100KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating,the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power,In addition,radiated emissions which fall in the restricted bands,as defined in section 15.205(a),must also comply with the radiated emission limits specified in 15.209(a).

Measurement Procedure:
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set center frequency of spectrum analyzer = operating frequency.
4. Set the spectrum analyzer as RBW=100KHz VBW=300KHz, Sweep = auto
6. Repeat above procedures until all frequency measured were complete.

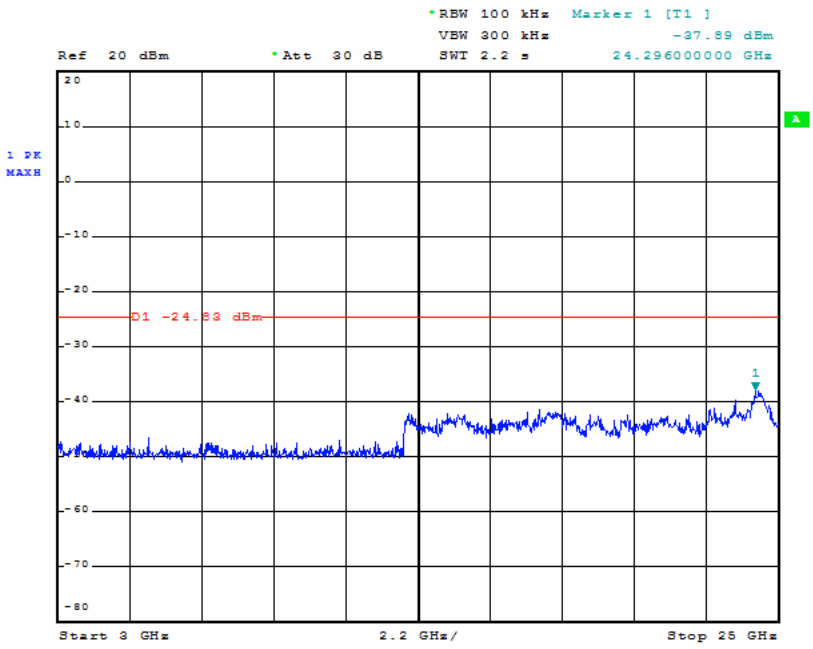
Measurement Result:

Test mode:	2.4GHz Band Antenna A	Test channel:	Low

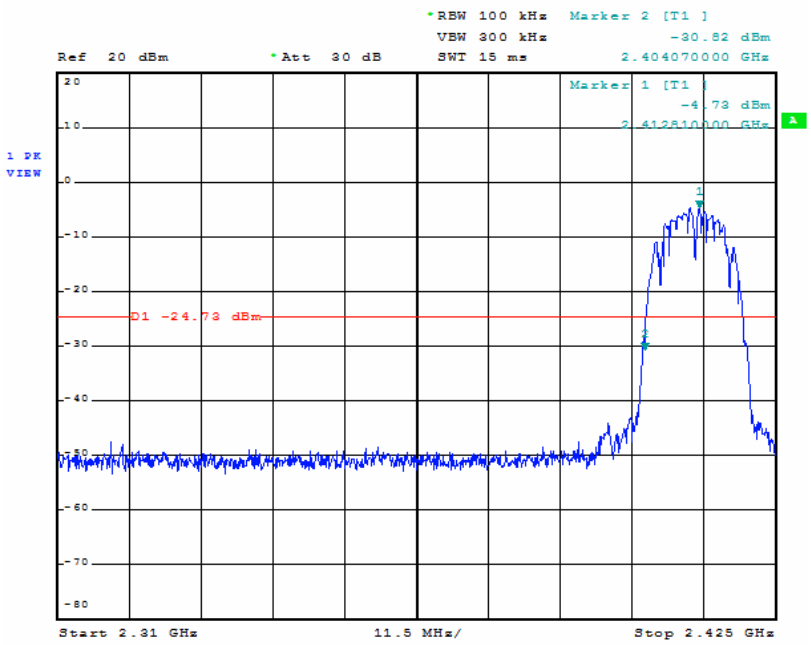
30MHz-3GHz



3GHz-25GHz

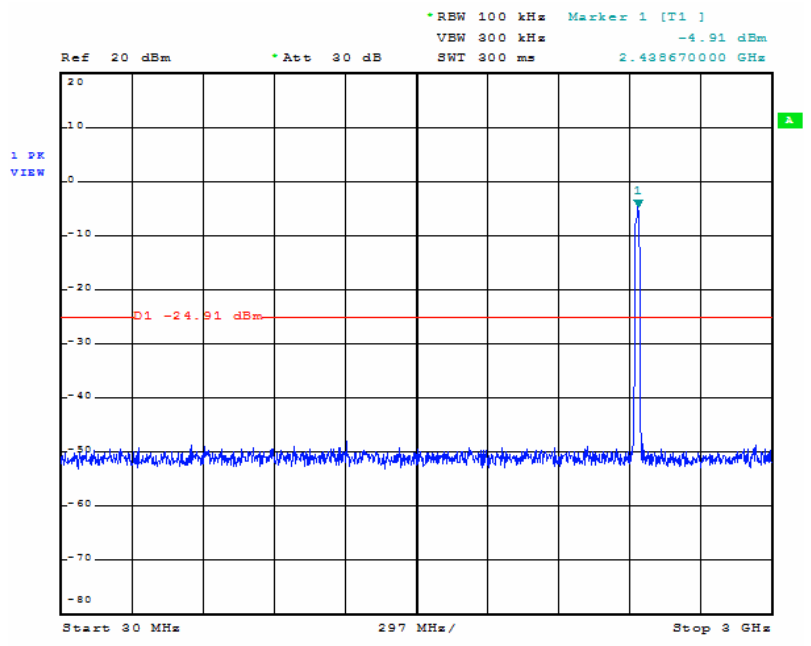


Band Edge

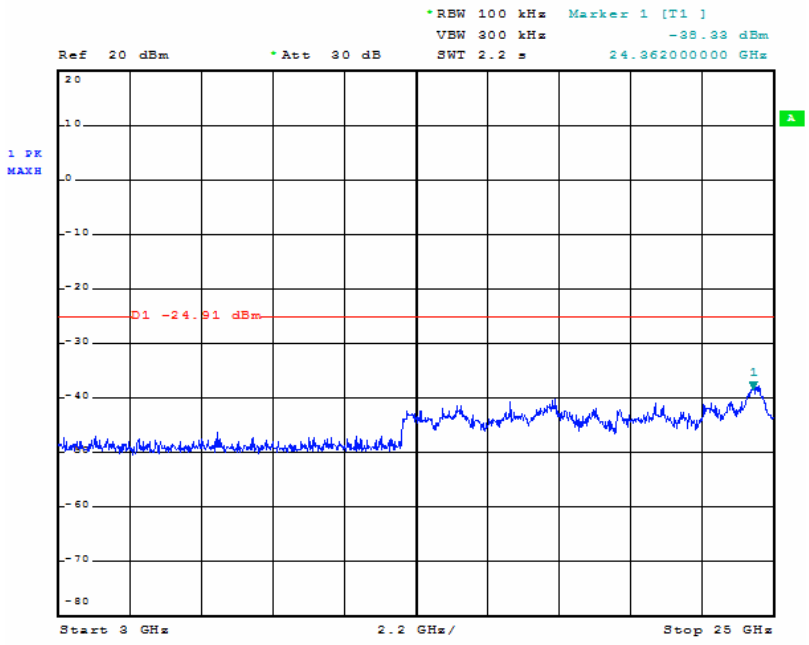


Test mode:	2.4GHz Band Antenna A	Test channel:	Middle

30MHz-3GHz

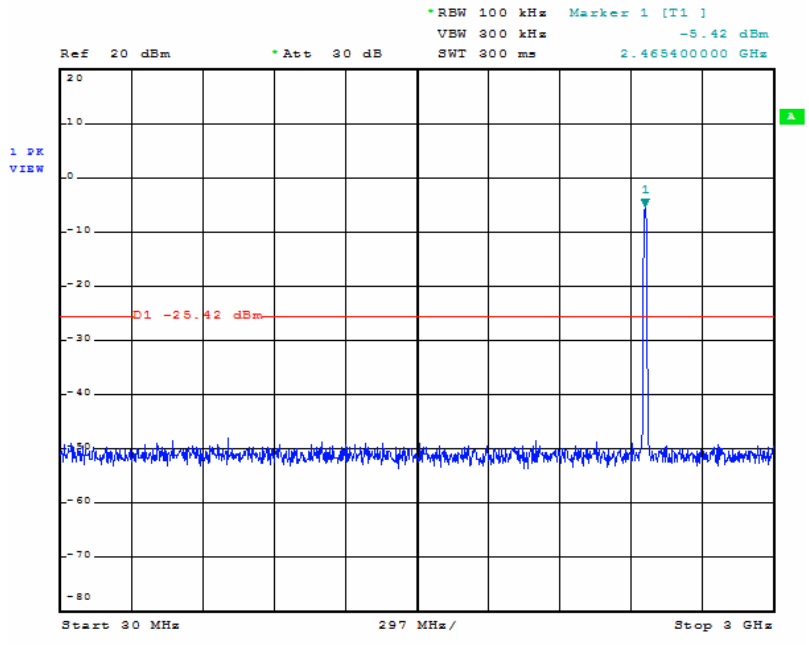


3GHz-25GHz

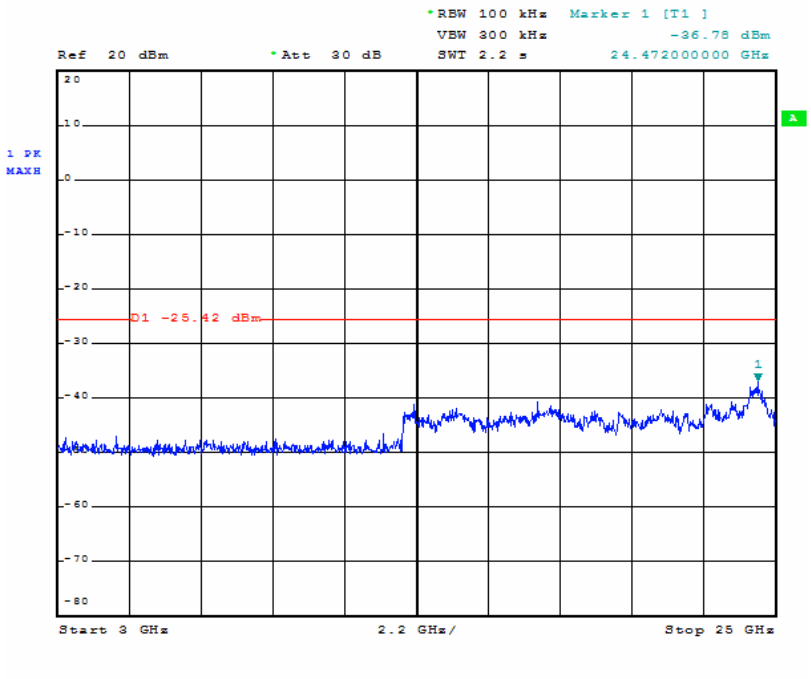


Test mode:	2.4GHz Band Antenna A	Test channel:	High

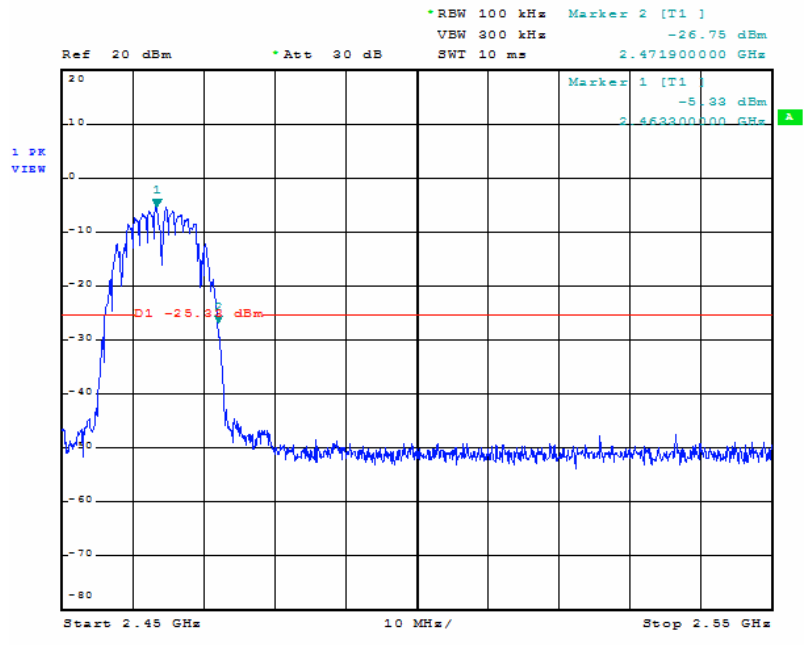
30MHz-3GHz



3GHz-25GHz

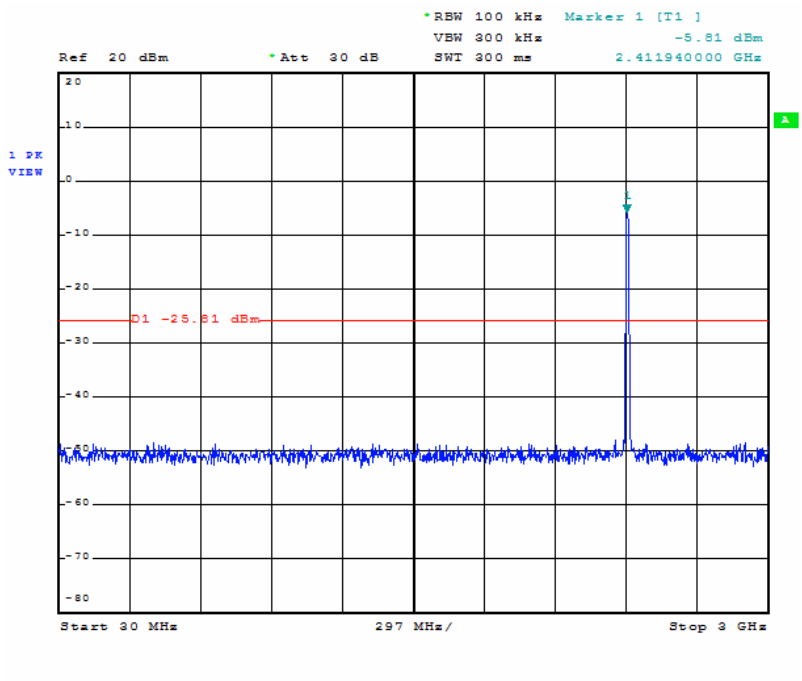


Band Edge

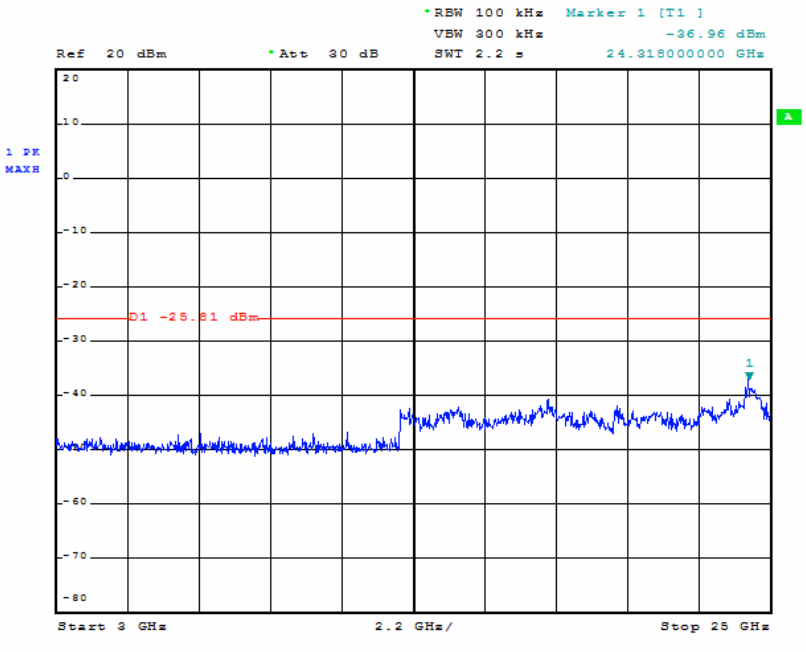


Test mode:	2.4GHz Band Antenna B	Test channel:	Low

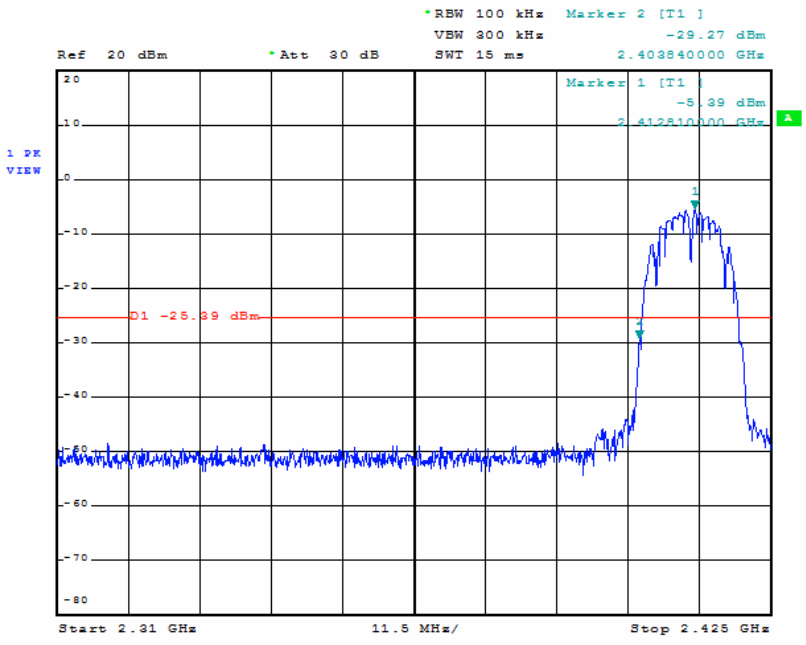
30MHz-3GHz



3GHz-25GHz

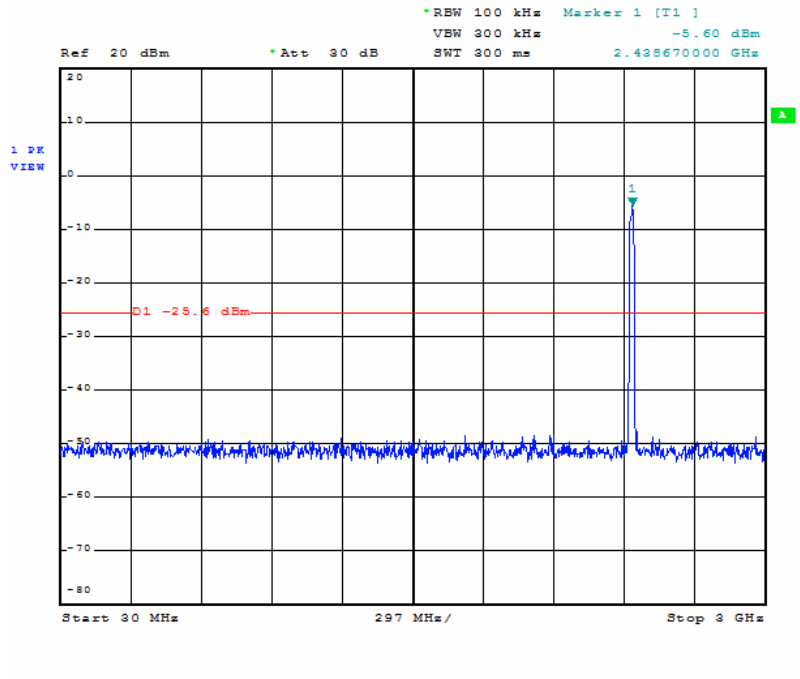


Band Edge

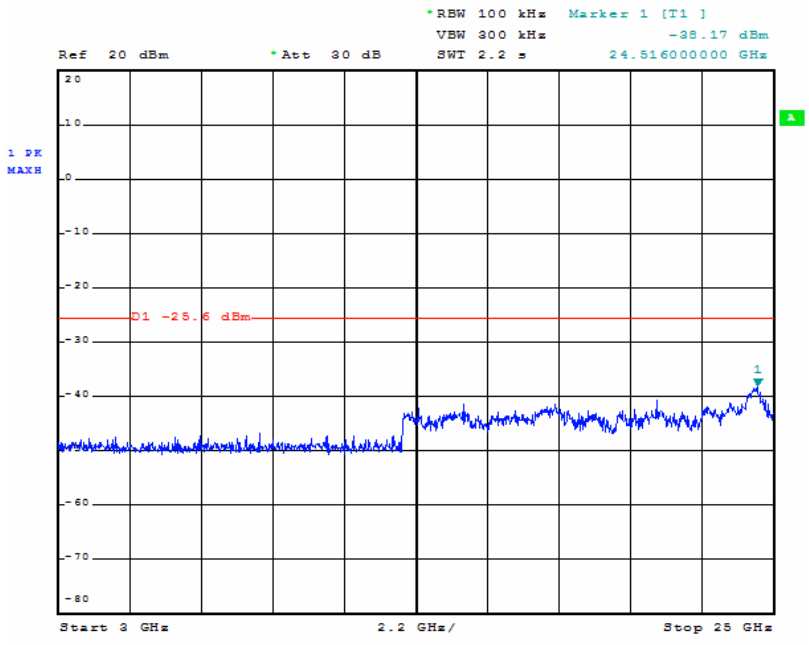


Test mode:	2.4GHz Band Antenna B	Test channel:	Middle

30MHz-3GHz

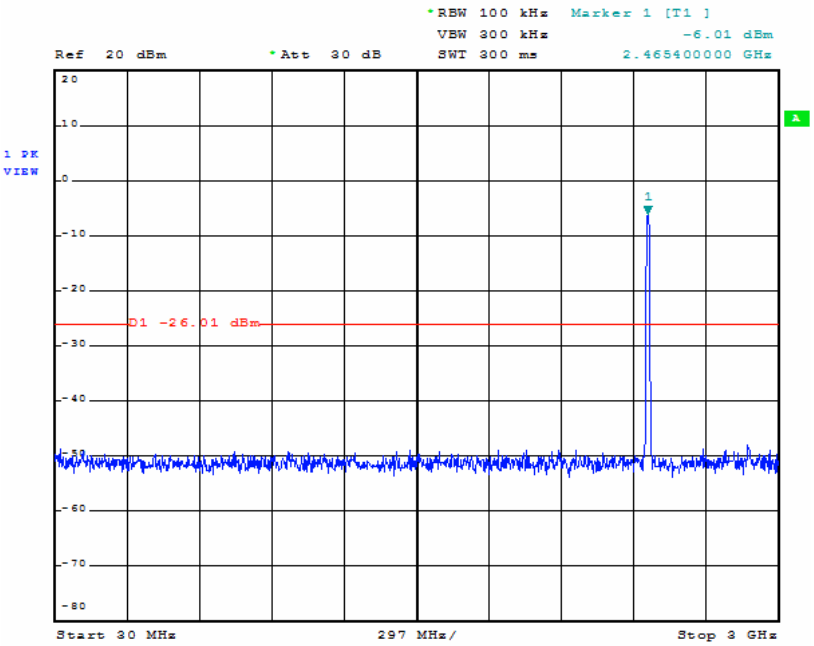


3GHz-25GHz

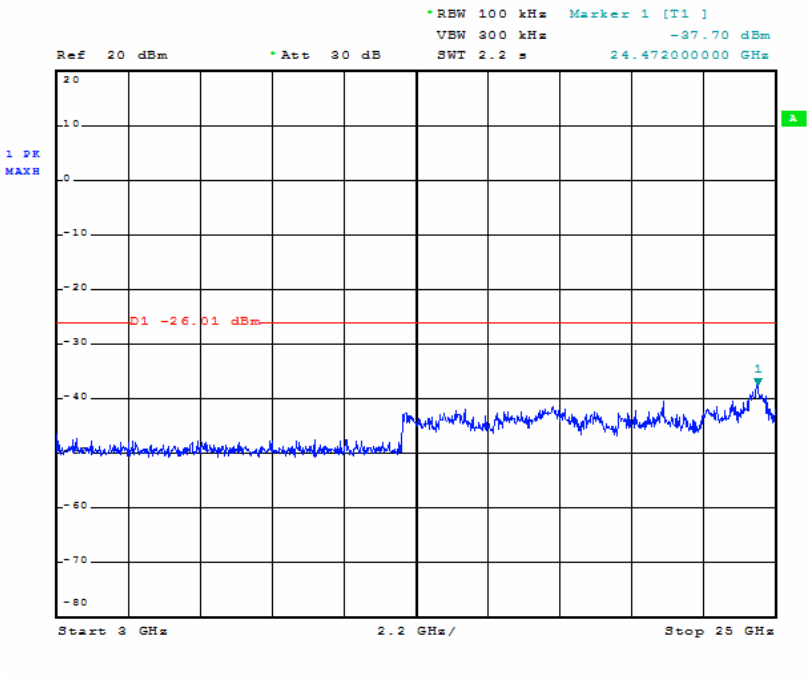


Test mode:	2.4GHz Band Antenna B	Test channel:	High

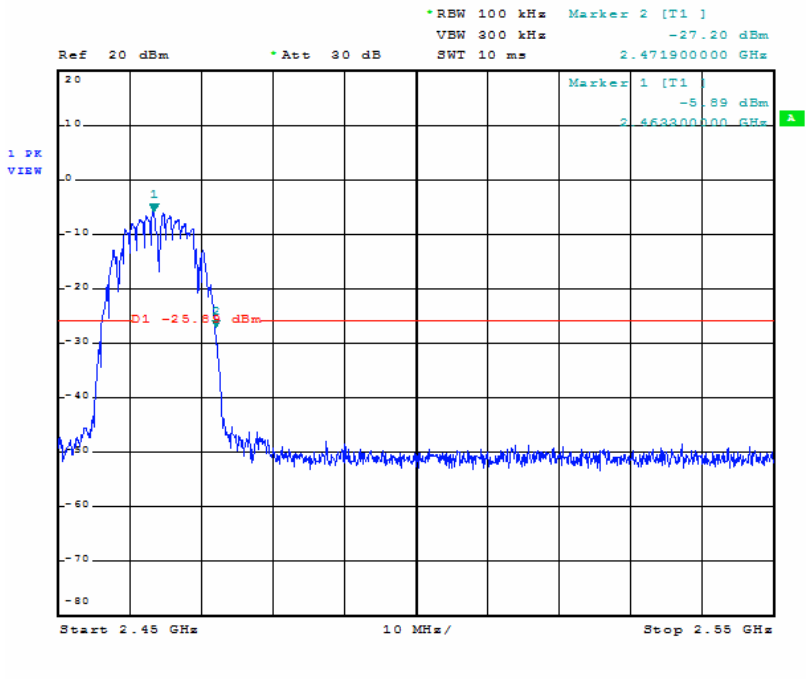
30MHz-3GHz



3GHz-25GHz

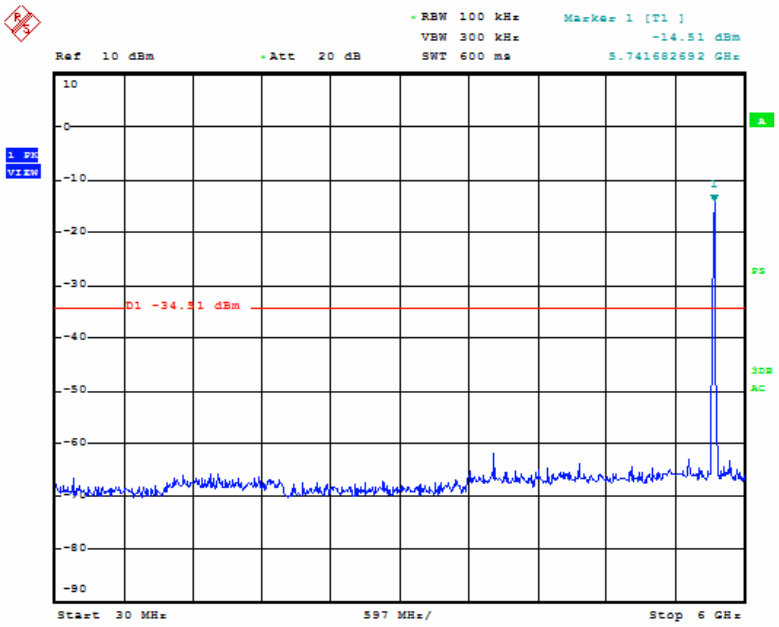


Band Edge

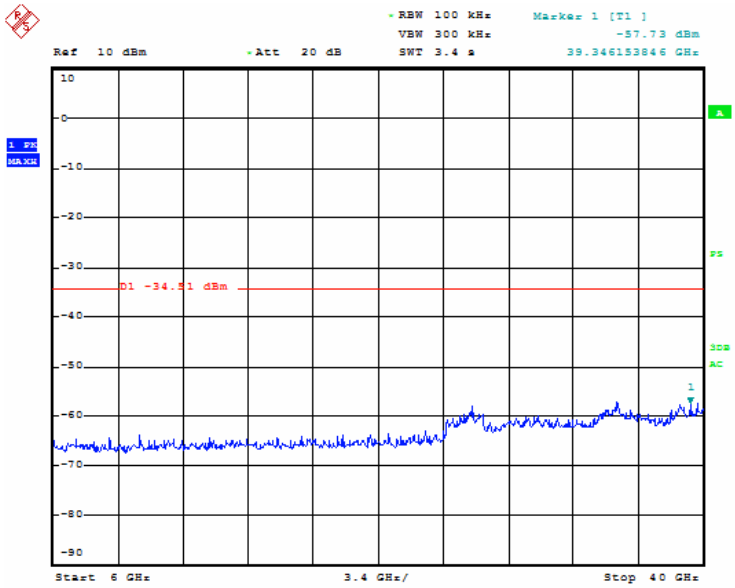


Test mode:	5.8GHz Band Antenna A	Test channel:	Low

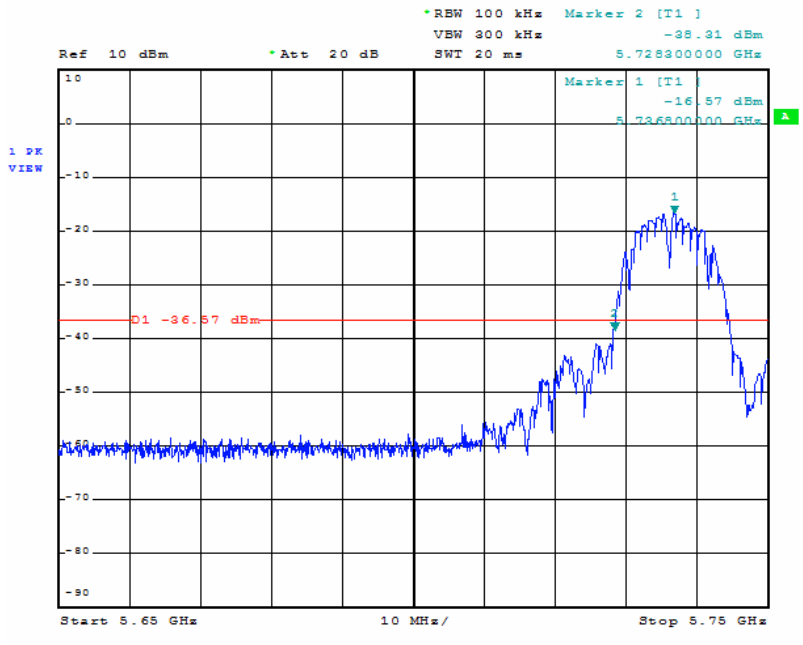
30MHz-6GHz



6GHz-40GHz

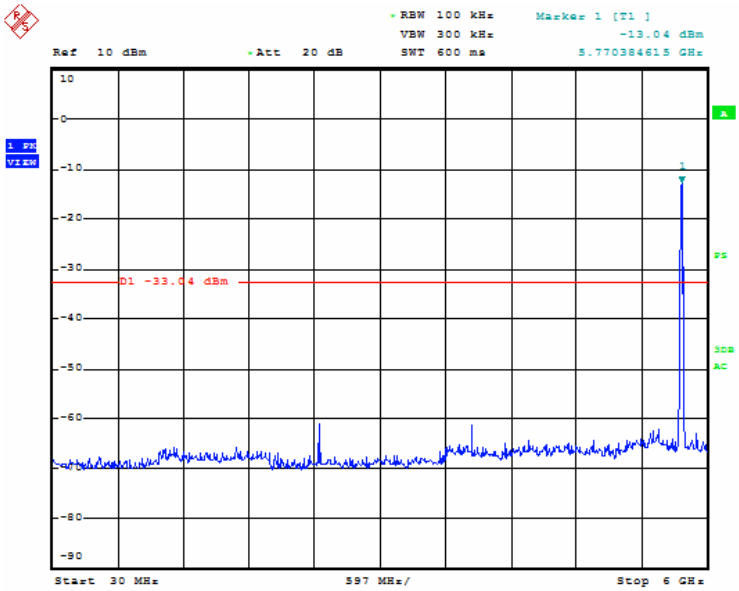


Band Edge

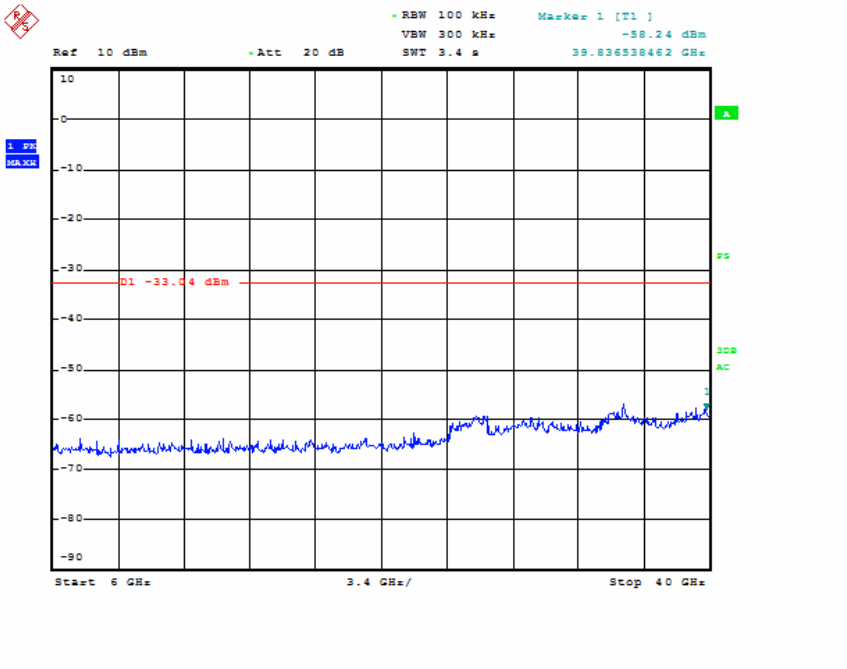


Test mode:	5.8GHz Band Antenna A	Test channel:	Middle

30MHz-6GHz

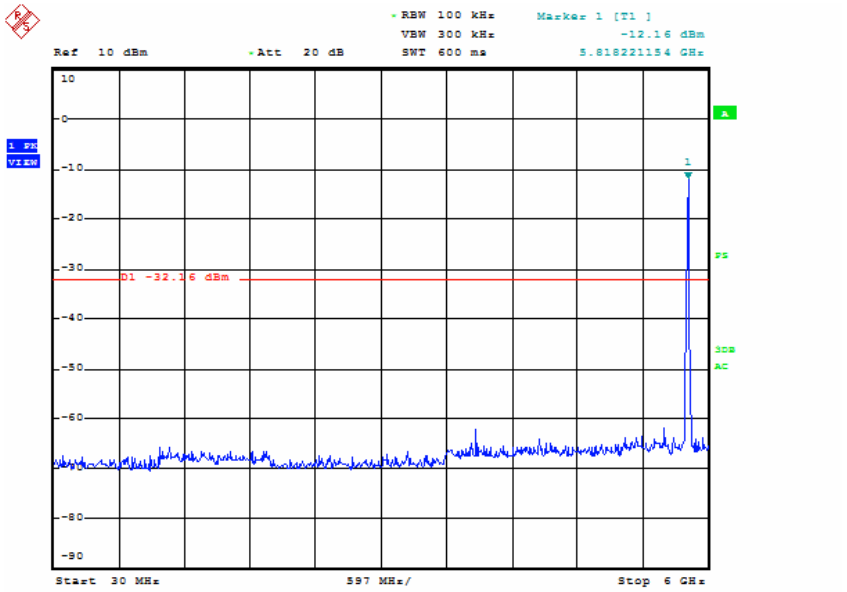


6GHz-40GHz

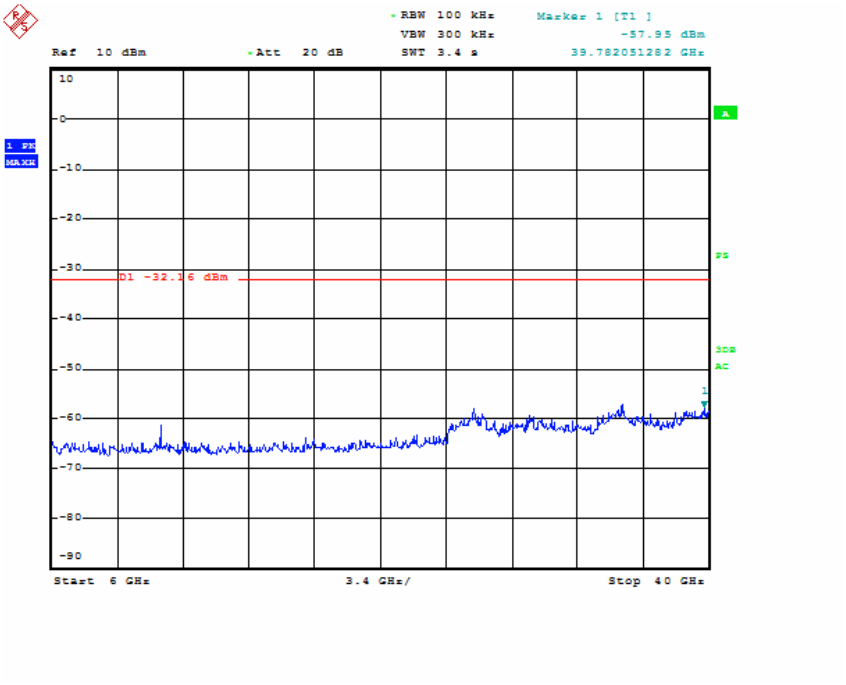


Test mode:	5.8GHz Band Antenna A	Test channel:	High

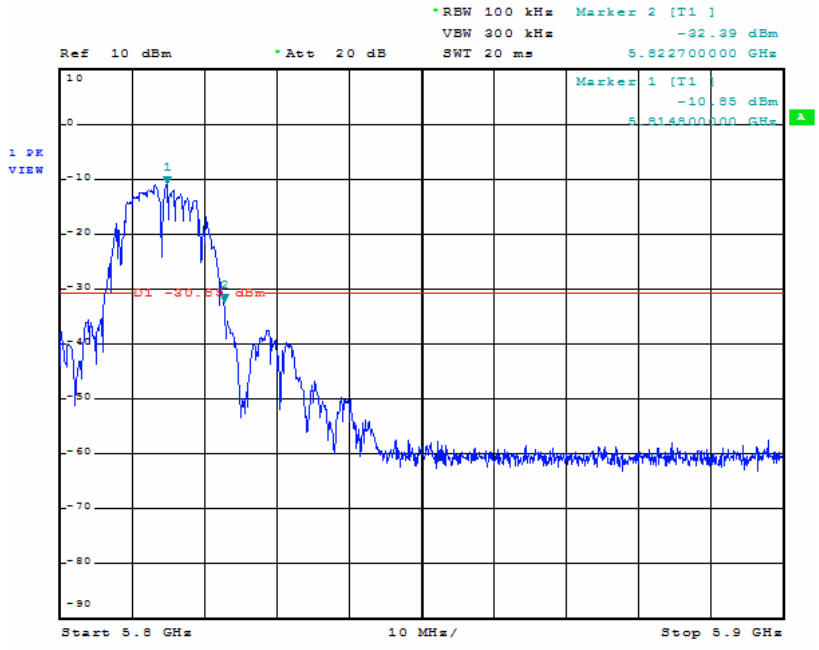
30MHz-6GHz



6GHz-40GHz

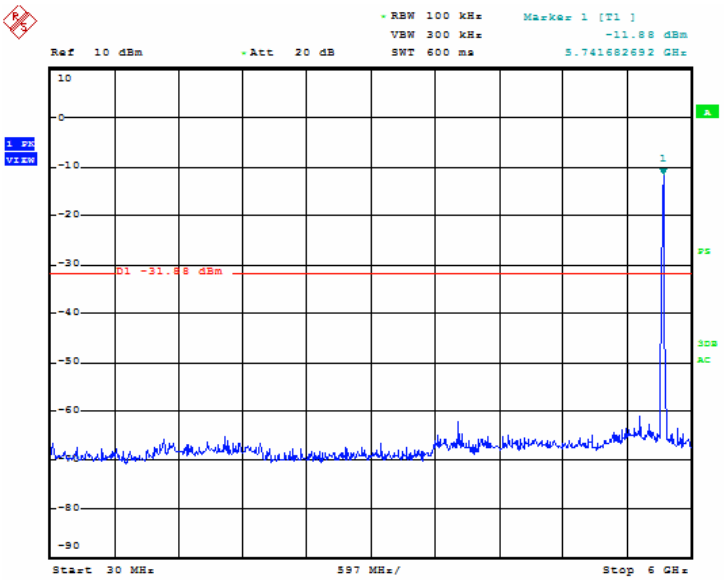


Band Edge

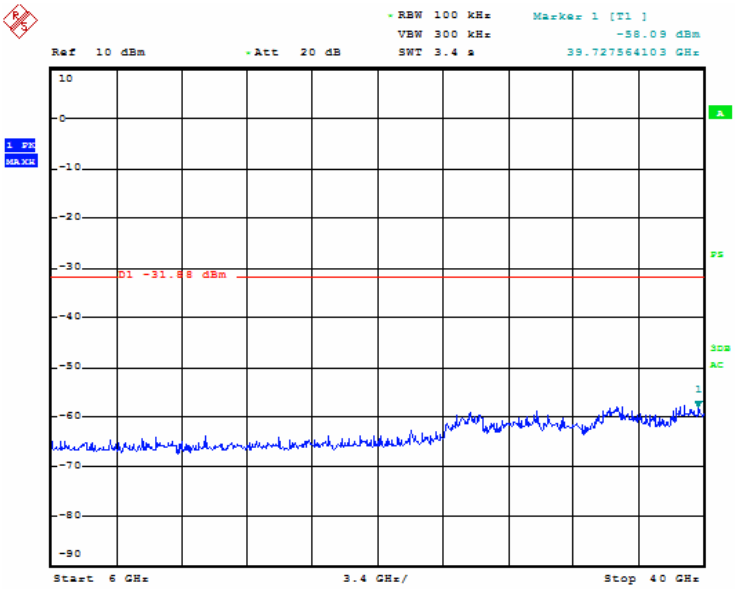


Test mode:	5.8GHz Band Antenna B	Test channel:	Low

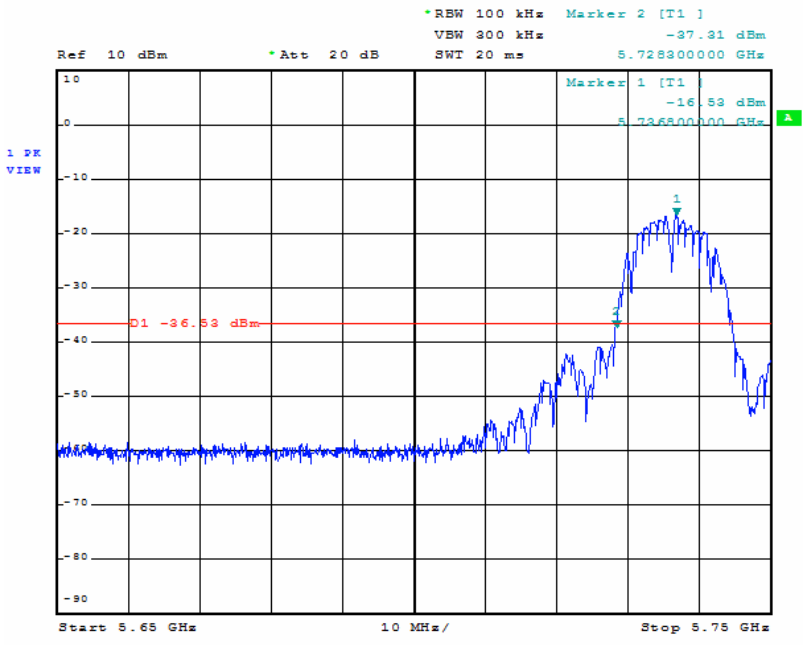
30MHz-6GHz



6GHz-40GHz

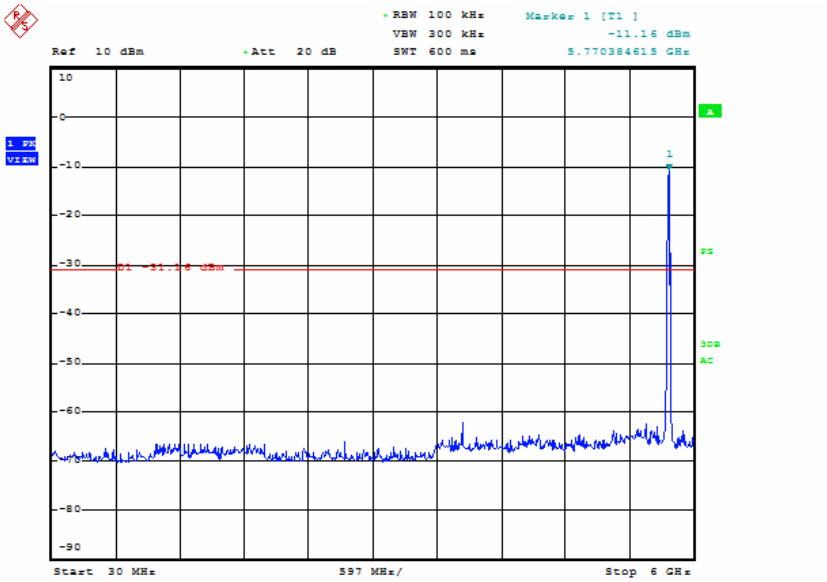


Band Edge

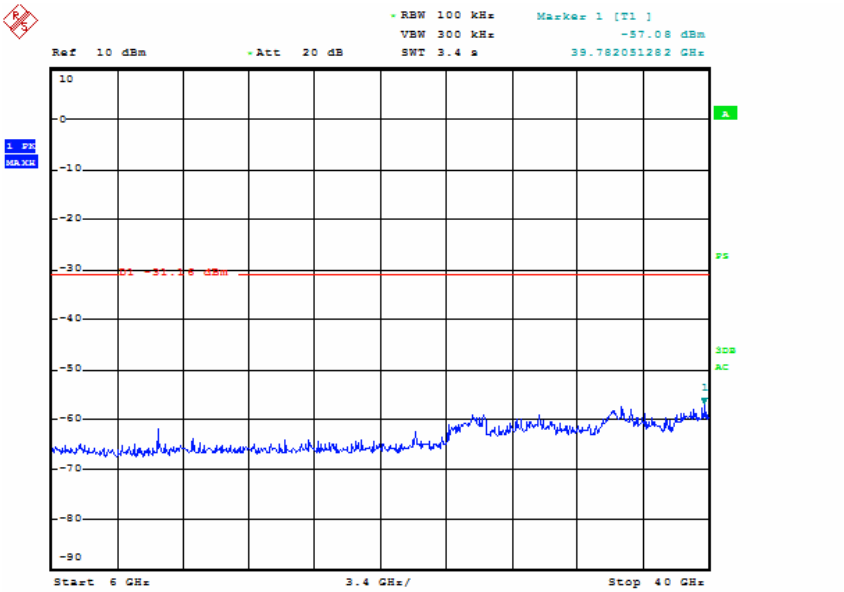


Test mode:	5.8GHz Band Antenna B	Test channel:	Middle

30MHz-6GHz

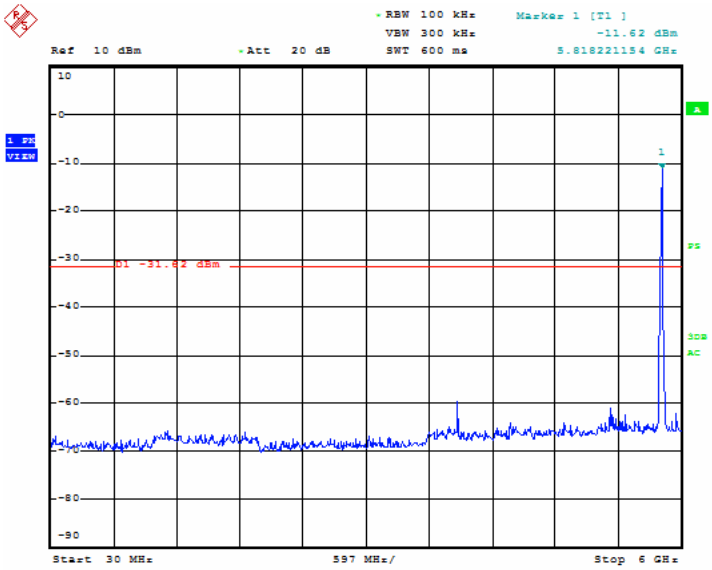


6GHz-40GHz

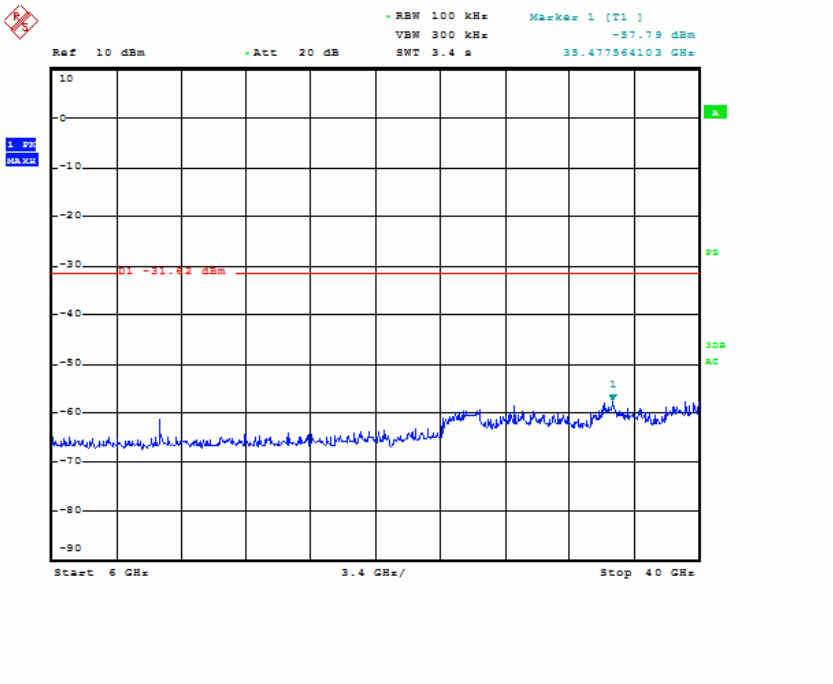


Test mode:	5.8GHz Band Antenna B	Test channel:	High

30MHz-6GHz



6GHz-40GHz



Band Edge

7.9 Occupied Bandwidth Test

Test Requirement: RSS-Gen Issue 3 Clause 4.6.1

Standard Applicable According to the section RSS-Gen Issue 3 Clause 4.6.1

EUT Setup The occupied bandwidth per RSS-Gen Issue 3 Clause 4.6.1 was measured using the Spectrum Analyzer with the resolutions set at 100kHz,the video bandwidth set at 300kHz.

Measurement Result:

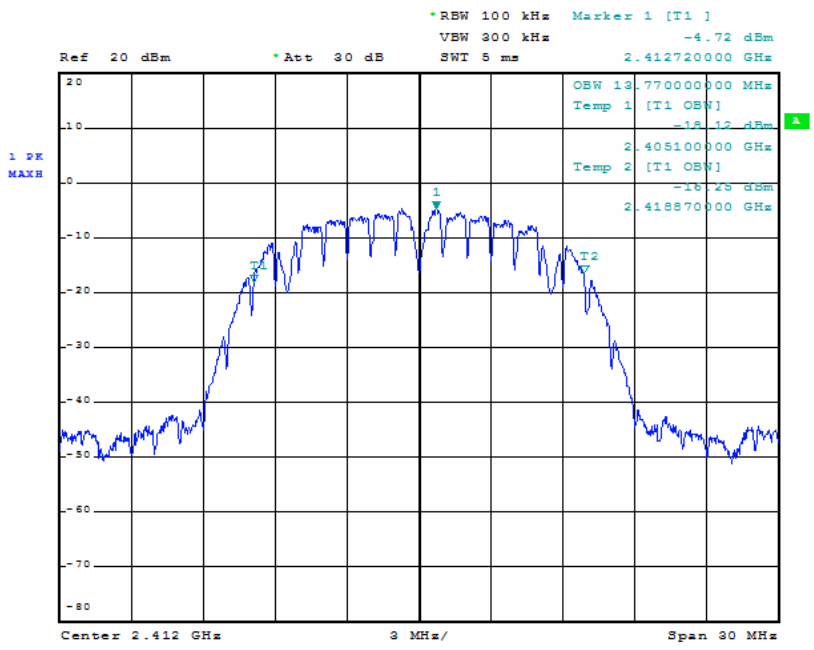
For 2412-2464MHz Band

Test Antenna	Channel	Frequency (MHz)	Bandwidth (MHz)
Antenna A	Low	2412	13.77
	Middle	2438	13.74
	High	2464	13.74
Antenna B	Low	2412	13.77
	Middle	2438	13.77
	High	2464	13.74

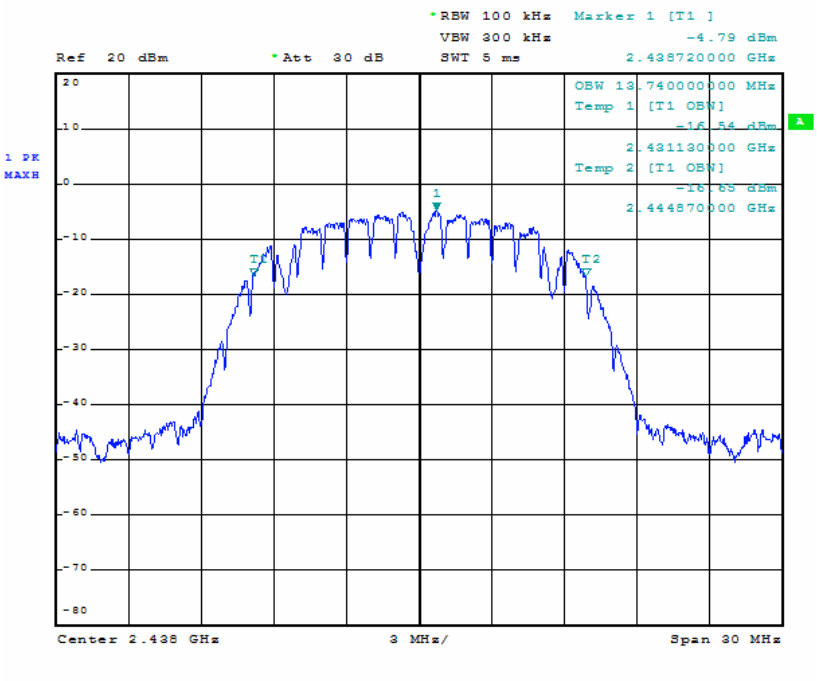
For 5736-5814MHz Band

Test Antenna	Channel	Frequency (MHz)	Bandwidth (MHz)
Antenna A	Low	5736	14.37
	Middle	5762	14.28
	High	2814	14.40
Antenna B	Low	5736	14.70
	Middle	5762	14.34
	High	2814	14.31

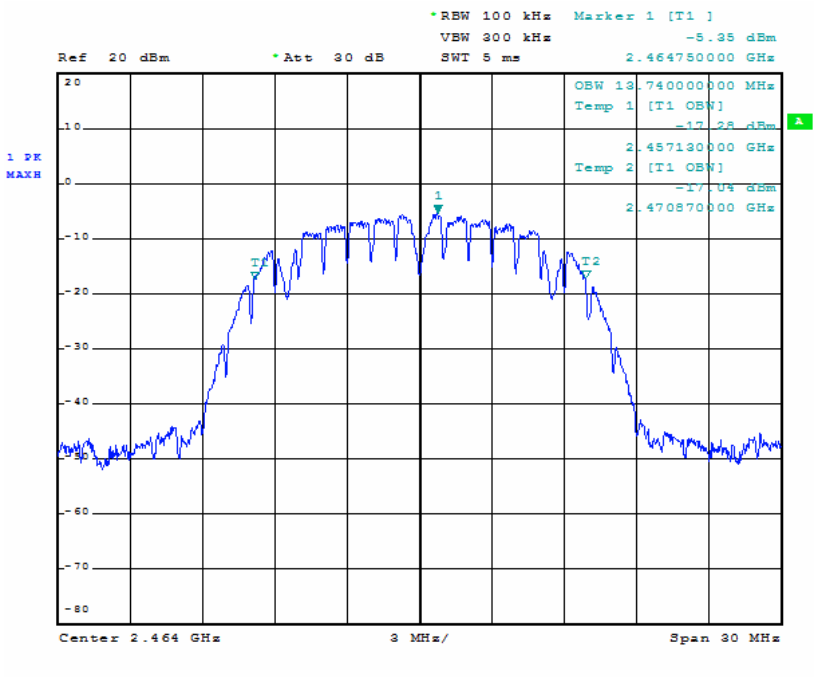
Test mode:	2.4GHz Band Antenna A	Test channel:	Low



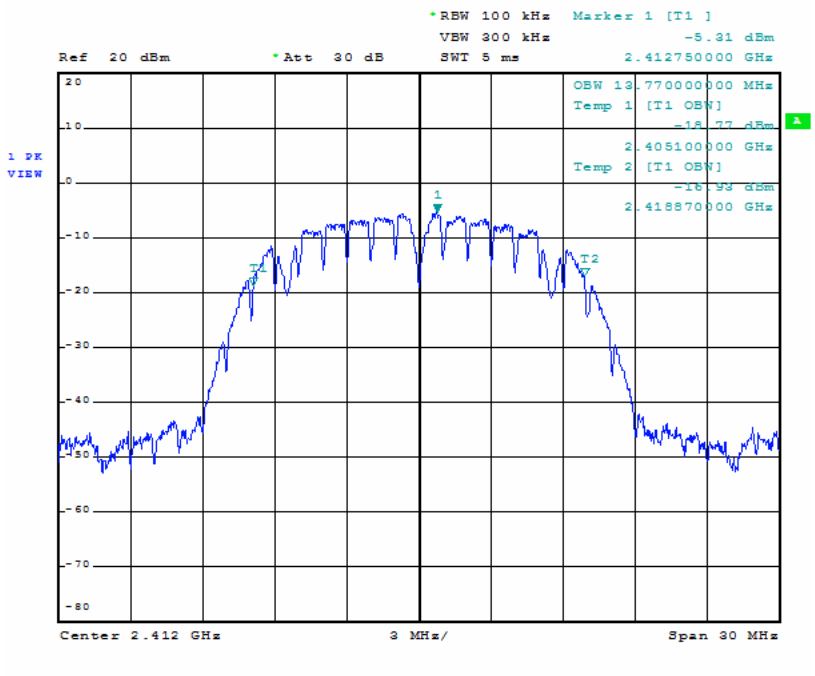
Test mode:	2.4GHz Band Antenna A	Test channel:	Middle



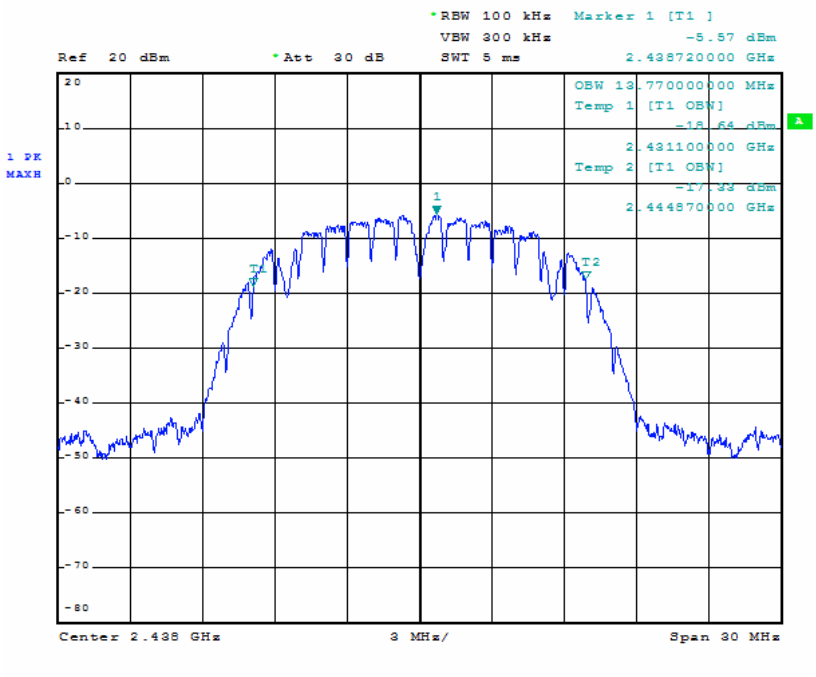
Test mode:	2.4GHz Band Antenna A	Test channel:	High



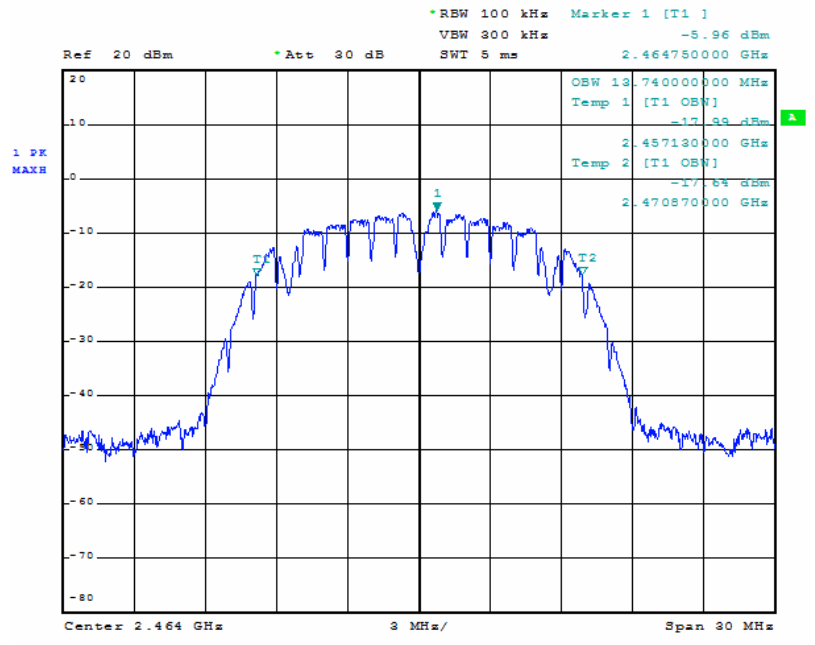
Test mode:	2.4GHz Band Antenna B	Test channel:	Low



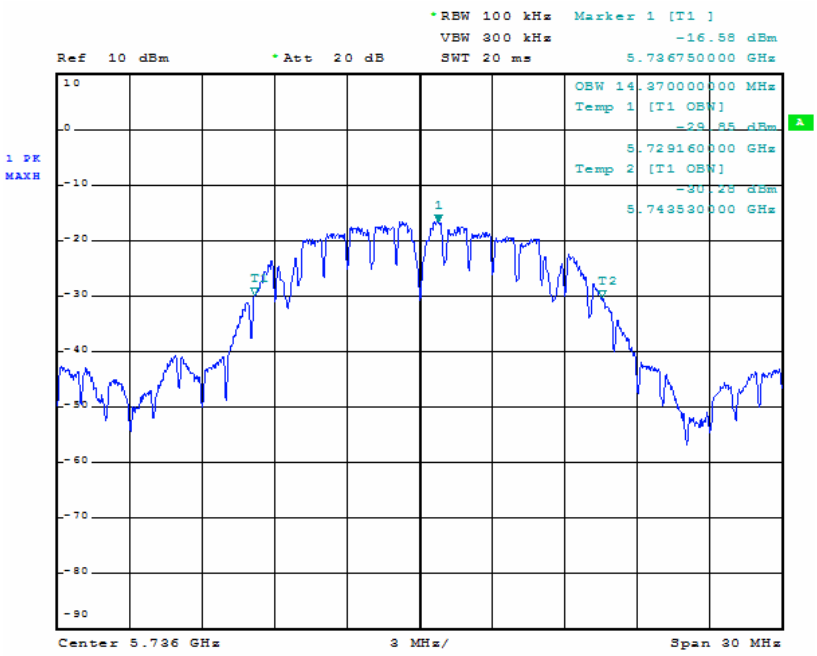
Test mode:	2.4GHz Band Antenna B	Test channel:	Middle



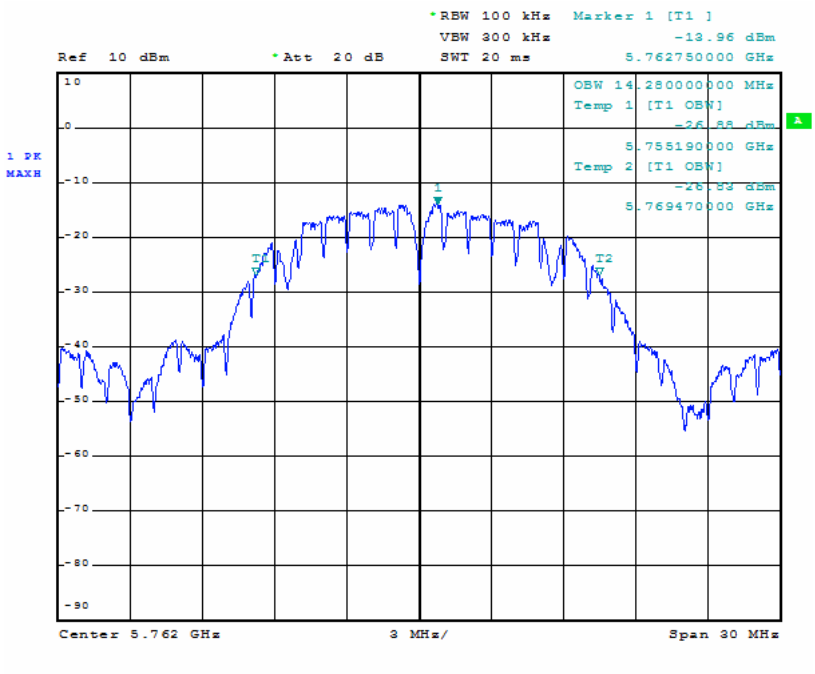
Test mode:	2.4GHz Band Antenna B	Test channel:	High



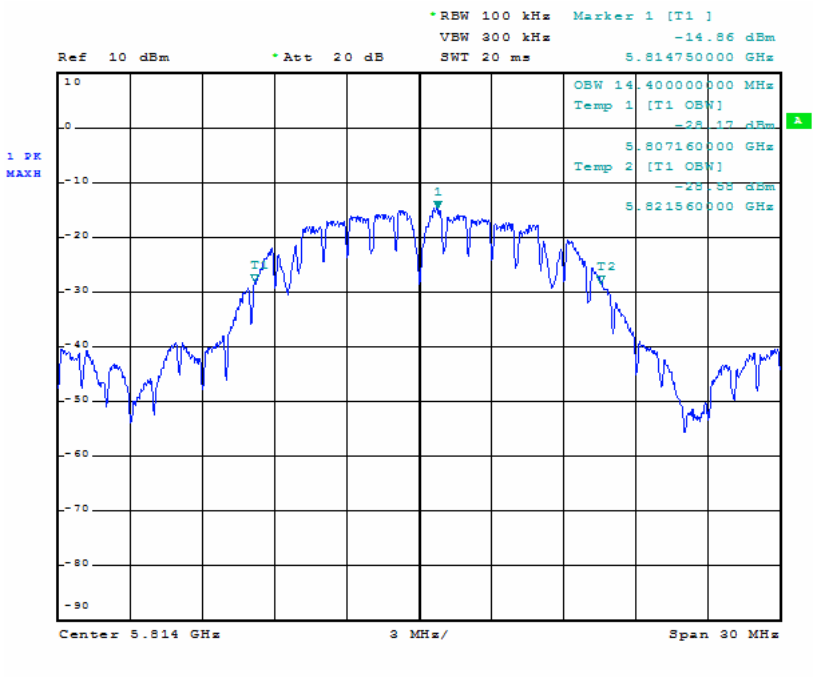
Test mode:	5.8GHz Band Antenna A	Test channel:	Low



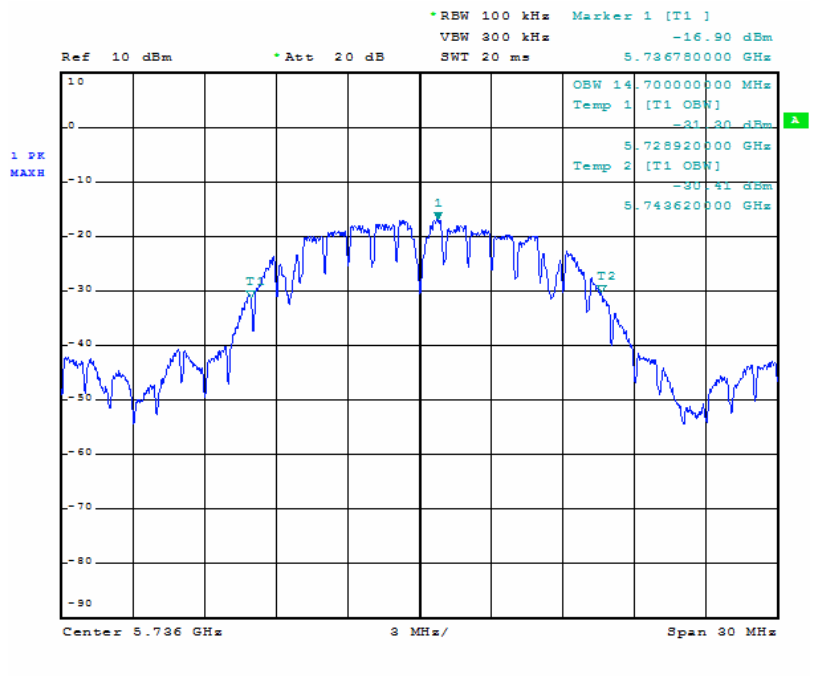
Test mode:	5.8GHz Band Antenna A	Test channel:	Middle



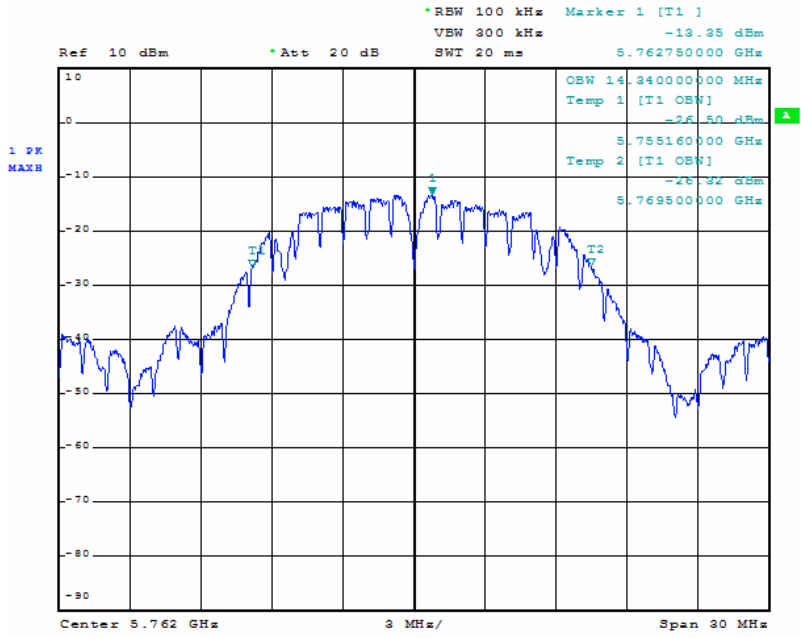
Test mode:	5.8GHz Band Antenna A	Test channel:	High



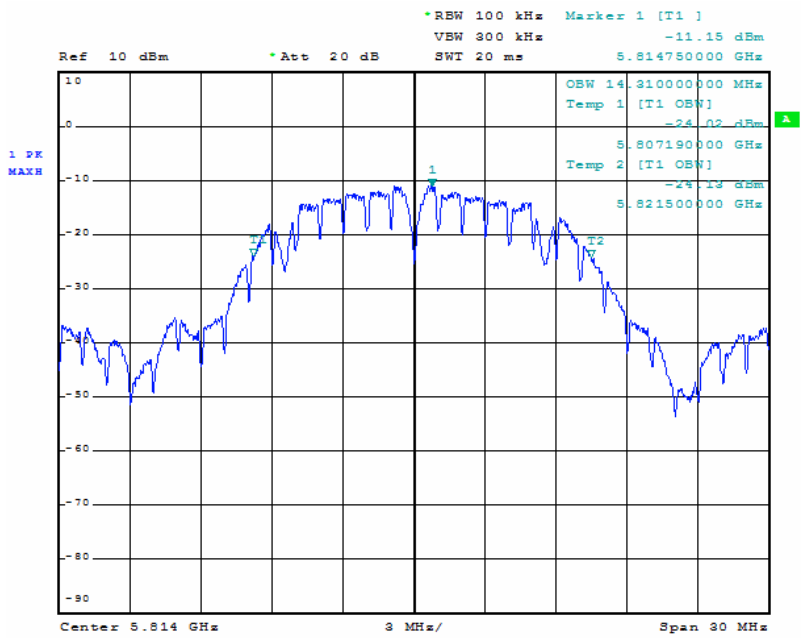
Test mode:	5.8GHz Band Antenna B	Test channel:	Low



Test mode:	5.8GHz Band Antenna B	Test channel:	Middle



Test mode:	5.8GHz Band Antenna B	Test channel:	High



8 Test Setup Photographs

Refer to the <DAC2-RX _Test Setup photos>.

9 EUT Constructional Details

Refer to the < DAC2-RX _External Photos > & < DAC2-RX _Internal Photos >.

End of Report