

FCC Radio Test Report

FCC ID: 2AEUPBHASC041

This report concerns (check one): ☒ Original Grant ☐ Class I Change ☐ Class II Change

Project No. : 1705154
Equipment : Ring
Test Model : Spotlight Cam Battery
Series Model : N/A
Applicant : Bot Home Automation, Inc.
Address : 1523 26th St, Santa Monica, CA 90404, USA

Date of Receipt : Jun. 02, 2017
Date of Test : Jun. 02, 2017 ~ Jun. 29, 2017
Issued Date : Jul. 04, 2017
Tested by : BTL Inc.

Testing Engineer : Rush Kao
(Rush Kao)
Technical Manager : James Chiu
(James Chiu)
Authorized Signatory : Andy Chiu
(Andy Chiu)

B T L I N C .

B1, No.37, Lane 365, Yang Guang St.,
Nei-Hu District, Taipei City 114, Taiwan.
TEL:+886-2-2657-3299 FAX: +886-2-2657-3331

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

BTL's report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL's** authorized written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents	Page
1 . CERTIFICATION	6
2 . SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
3 . GENERAL INFORMATION	9
3.1 GENERAL DESCRIPTION OF EUT	9
3.2 DESCRIPTION OF TEST MODES	10
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	12
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	13
3.5 DESCRIPTION OF SUPPORT UNITS	13
4 . EMC EMISSION TEST	14
4.1 CONDUCTED EMISSION MEASUREMENT	14
4.1.1 POWER LINE CONDUCTED EMISSION LIMITS	14
4.1.2 TEST PROCEDURE	14
4.1.3 DEVIATION FROM TEST STANDARD	14
4.1.4 TEST SETUP	15
4.1.5 EUT OPERATING CONDITIONS	15
4.1.6 EUT TEST CONDITIONS	15
4.1.7 TEST RESULTS	15
4.2 RADIATED EMISSION MEASUREMENT	16
4.2.1 RADIATED EMISSION LIMITS	16
4.2.2 TEST PROCEDURE	17
4.2.3 DEVIATION FROM TEST STANDARD	17
4.2.4 TEST SETUP	18
4.2.5 EUT OPERATING CONDITIONS	19
4.2.6 EUT TEST CONDITIONS	19
4.2.7 TEST RESULTS (9KHZ TO 30MHZ)	19
4.2.7 TEST RESULTS (30MHZ TO 1000 MHZ)	19
4.2.7 TEST RESULTS (ABOVE 1000 MHZ)	19
5 . BANDWIDTH TEST	20
5.1 APPLIED PROCEDURES	20
5.1.1 TEST PROCEDURE	20
5.1.2 DEVIATION FROM STANDARD	20
5.1.3 TEST SETUP	20
5.1.4 EUT OPERATION CONDITIONS	20
5.1.5 EUT TEST CONDITIONS	20
5.1.6 TEST RESULTS	20
6 . MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST	21


Table of Contents	Page
6.1 APPLIED PROCEDURES / LIMIT	21
6.1.1 TEST PROCEDURE	21
6.1.2 DEVIATION FROM STANDARD	21
6.1.3 TEST SETUP	21
6.1.4 EUT OPERATION CONDITIONS	21
6.1.5 EUT TEST CONDITIONS	21
6.1.6 TEST RESULTS	21
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	22
7.1 APPLIED PROCEDURES / LIMIT	22
7.1.1 TEST PROCEDURE	22
7.1.2 DEVIATION FROM STANDARD	22
7.1.3 TEST SETUP	22
7.1.4 EUT OPERATION CONDITIONS	22
7.1.5 EUT TEST CONDITIONS	22
7.1.6 TEST RESULTS	22
8 . POWER SPECTRAL DENSITY TEST	23
8.1 APPLIED PROCEDURES / LIMIT	23
8.1.1 TEST PROCEDURE	23
8.1.2 DEVIATION FROM STANDARD	23
8.1.3 TEST SETUP	23
8.1.4 EUT OPERATION CONDITIONS	23
8.1.5 EUT TEST CONDITIONS	23
8.1.6 TEST RESULTS	23
9 . MEASUREMENT INSTRUMENTS LIST	24
10 . EUT TEST PHOTO	26
ATTACHMENT A - CONDUCTED EMISSION	29
ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)	30
ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)	35
ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)	38
ATTACHMENT E - BANDWIDTH	75
ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER	82
ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION	84
ATTACHMENT H - POWER SPECTRAL DENSITY	103

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-1-1705154	Original Issue.	Jul. 04, 2017

1. CERTIFICATION

Equipment : Ring

Brand Name : 

Test Model : Spotlight Cam Battery

Series Model : N/A

Applicant : Bot Home Automation, Inc.

Manufacturer : Goldtek Technology CO.,LTD.

Address : 16F., No166, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)

Factory : Goldtek Technology CO.,LTD.

Address : 16F., No166, Jian 1st Rd., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)

Date of Test : Jun. 02, 2017 ~ Jun. 29, 2017

Test Sample : Engineering Sample

Standard(s) : FCC Part15, Subpart C:(15.247) / ANSI C63.10-2013

The above equipment has been tested and found in compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1705154) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C			
Standard(s) Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	NOTE(1)
15.247(d)	Antenna conducted Spurious Emission	PASS	-----
15.247(a)(2)	6dB Bandwidth	PASS	-----
15.247(b)(3)	Peak Output Power	PASS	-----
15.247(e)	Power Spectral Density	PASS	-----
15.203	Antenna Requirement	PASS	-----
15.247(d)/ 15.205/ 15.209	Transmitter Radiated Emissions	PASS	-----

NOTE:

(1) "N/A" denotes test is not applicable in this test report.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Radiated emission Test (Below 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

Radiated emission Test (Above 1 GHz):

CB15: (FCC RN:674415; FCC DN:TW0659)

No. 68-1, Ln. 169, Sec.2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

A. Radiated emission test:

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15 (3m)	CISPR	9kHz ~ 150kHz	2.96
		150kHz ~ 30MHz	2.74

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 (3m)	CISPR	30MHz ~ 200MHz	V	4.76
		30MHz ~ 200MHz	H	4.28
		200MHz ~ 1,000MHz	V	5.08
		200MHz ~ 1,000MHz	H	4.50

Test Site	Method	Measurement Frequency Range	Ant.	U,(dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.48
		1GHz ~ 6GHz	H	4.50
		6GHz ~ 18GHz	V	4.30
		6GHz ~ 18GHz	H	4.14

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15 (1m)	CISPR	18 ~ 26.5 GHz	4.72
		26.5 ~ 40 GHz	5.20

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Ring	
Brand Name		
Test Model	Spotlight Cam Battery	
Series Model	N/A	
Model Difference	The EUT includes two colors: Black and White.	
Power Source	Battery supplied. (Battery is charged independently by USB power supply)	
Power Rating	Battery charge input: DC 5V Battery output: (1) FUJI/V4: DC 3.65V 6040mAh 22.046Wh (2) Totex/U80532: DC 3.64V 6100mAh 22.2Wh	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS 802.11g:OFDM 802.11n:OFDM
	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n up to 65 Mbps
	Output Power (Max.)	802.11b: 15.13dBm 802.11g: 18.21dBm 802.11n(20MHz): 18.21dBm

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Channel List:

CH01 – CH11 for 802.11b, 802.11g, 802.11n(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna

Ant.	Manufacture	Model Name	Antenna Type	Connector	Gain (dBi)
1		CAM V4	PIFA	N/A	2.20

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
-	-

For Radiated Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

For Band Edge Test	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

6dB Spectrum Bandwidth	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

Maximum Conducted Output Power	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

Power Spectral Density	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11

Note:

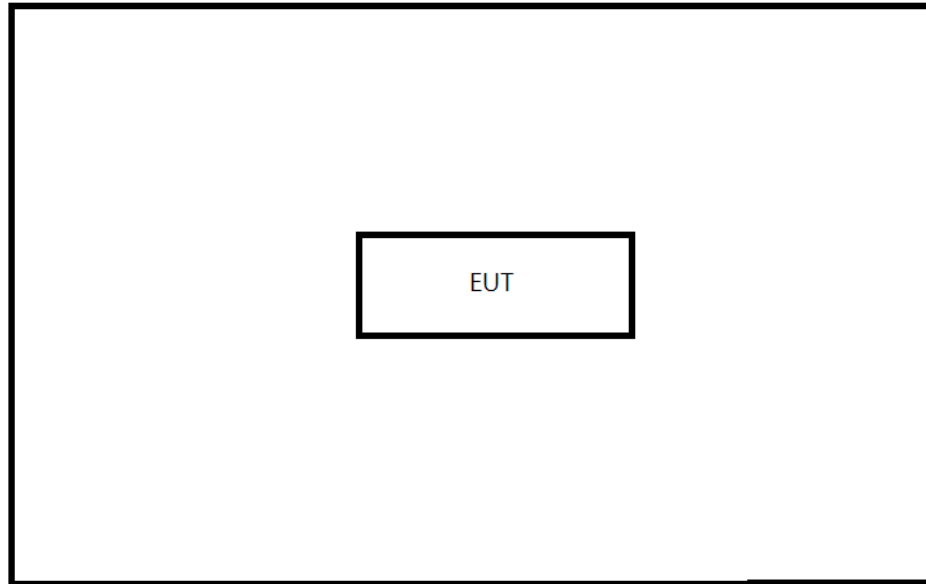
- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
802.11g mode: OFDM (6Mbps)
802.11n HT20 mode : BPSK (6.5Mbps)
For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.
- (4) The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.
- (5) Worst case of battery is used for final test.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software version	CC3100_CC3200_RadioTool v1.2		
Frequency (MHz)	2412	2437	2462
802.11b	4	3	1
802.11g	0	2	0
802.11n (20MHz)	0	1	0

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
-	-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION LIMITS (Frequency Range 150KHz-30MHz)

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 -0.50	66 to 56*	56 to 46*
0.50 -5.0	56	46
5.0 -30.0	60	50

Note:

- (1) The limit of " * " decreases with the logarithm of the frequency
- (2) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
 Margin Level = Measurement Value - Limit Value

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

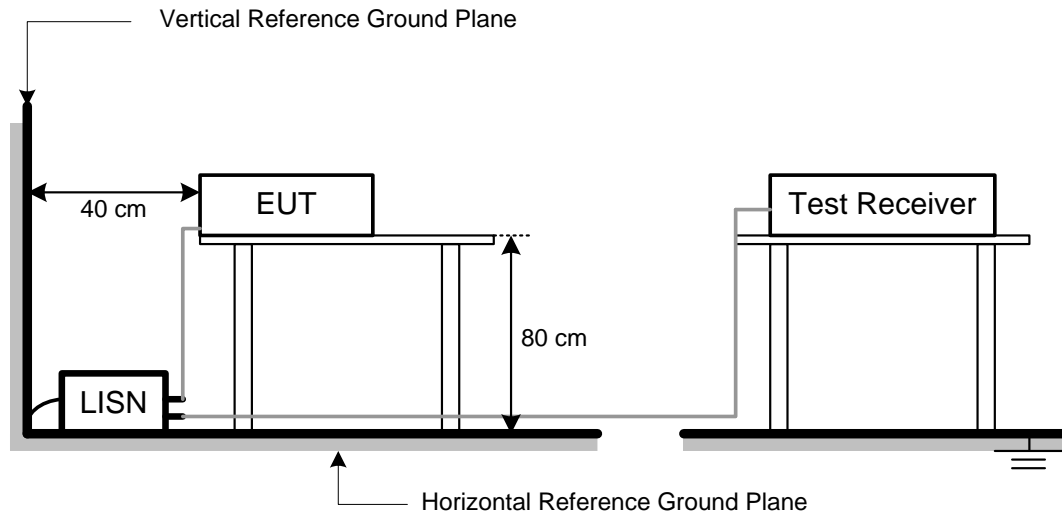
4.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 m from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

The EUT was placed on the test table and programmed in normal function.

4.1.6 EUT TEST CONDITIONS

Temperature: N/A Relative Humidity: N/A Test Voltage: N/A

4.1.7 TEST RESULTS

Please refer to the Attachment A.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9KHz-1000MHz)

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
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
 Margin Level = Measurement Value - Limit Value

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2.2 TEST PROCEDURE

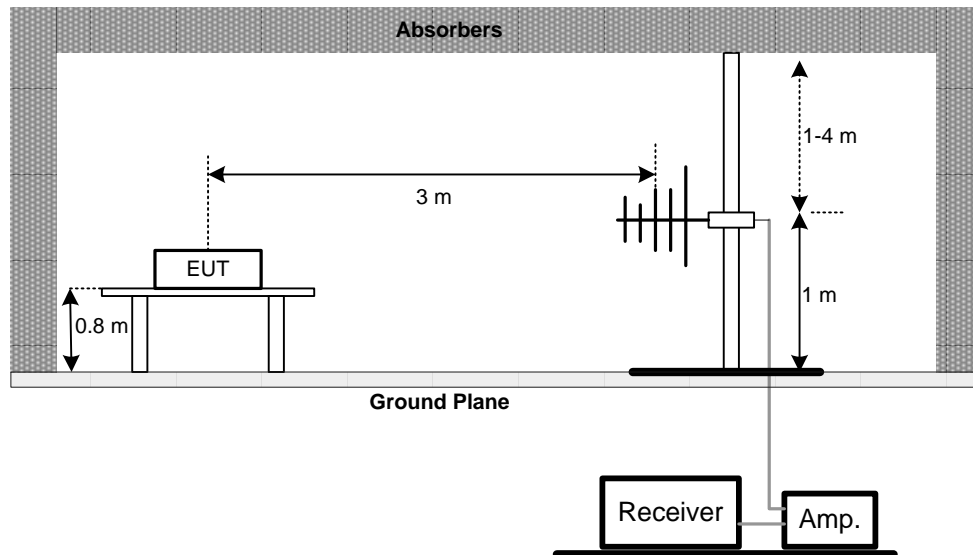
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 m above the ground at a 3 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 m above the ground at a 3 m semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.3 DEVIATION FROM TEST STANDARD

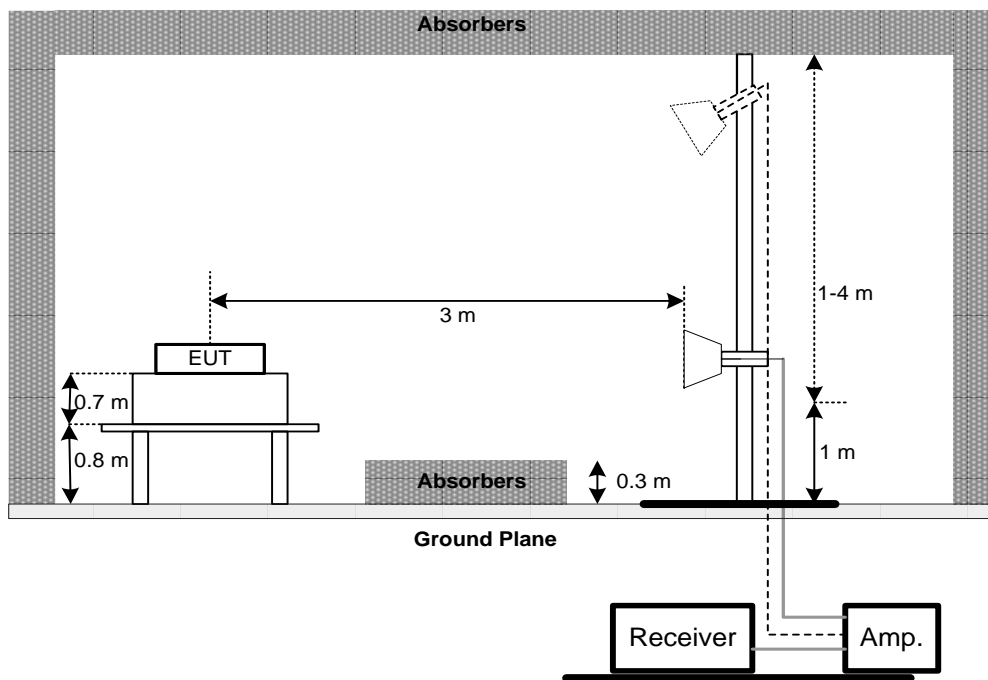
No deviation

4.2.4 TEST SETUP

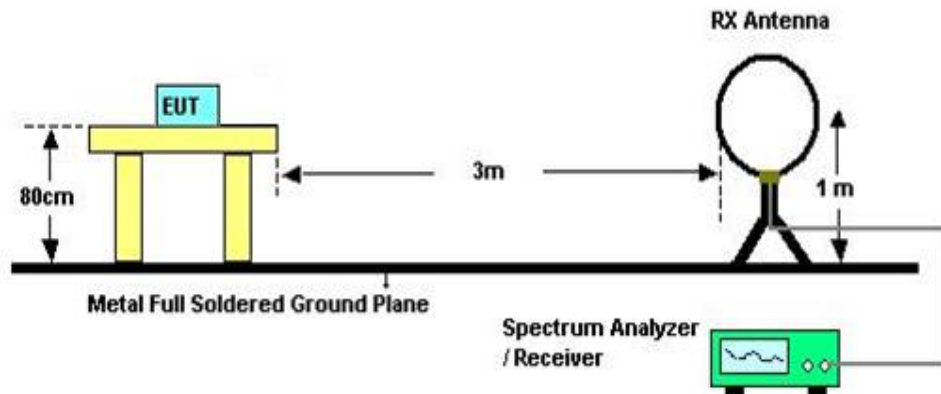
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For Radiated Emissions Below 30MHz



4.2.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.2.6 EUT TEST CONDITIONS

Temperature: 25°C / 23°C Relative Humidity: 45% / 70% Test Voltage: DC 5V

4.2.7 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Attachment B

Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.2.7 TEST RESULTS (30MHZ TO 1000 MHZ)

Please refer to the Attachment C.

4.2.7 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Attachment D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	2400-2483.5	PASS

5.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 5V

5.1.6 TEST RESULTS

Please refer to the Attachment E.

6. MAXIMUM PEAK CONDUCTED OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 Watt or 30dBm	2400-2483.5	PASS

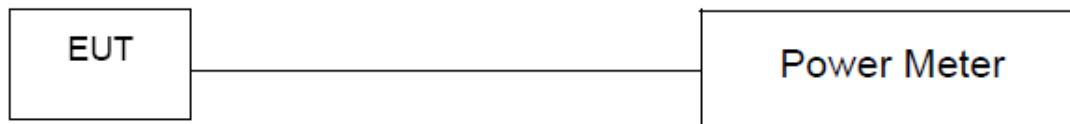
6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance and FCC KDB 662911 D01 Multiple Transmitter Output.

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 5V

6.1.6 TEST RESULTS

Please refer to the Attachment F.

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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, provided that the transmitter demonstrates compliance with the peak conducted power limits.

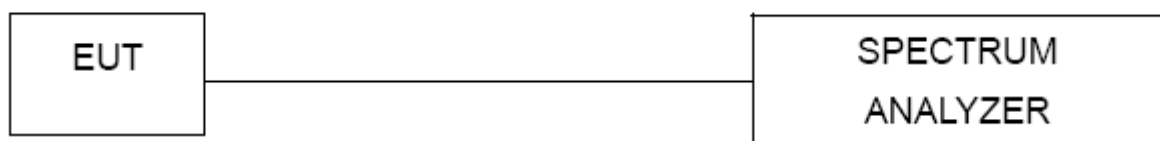
7.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.
- Offset=antenna gain+cable loss

7.1.2 DEVIATION FROM STANDARD

No deviation.

7.1.3 TEST SETUP



7.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 5V

7.1.6 TEST RESULTS

Please refer to the Attachment G.

8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

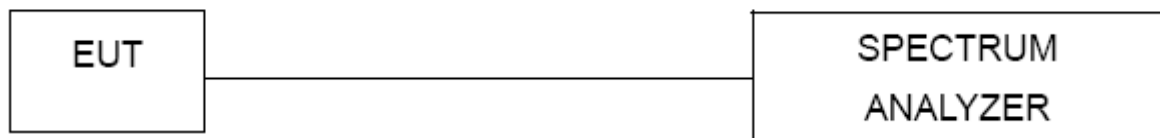
8.1.1 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW=3KHz, VBW=10KHz, Sweep time = Auto.

8.1.2 DEVIATION FROM STANDARD

No deviation.

8.1.3 TEST SETUP



8.1.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.1.5 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 55% Test Voltage: DC 5V

8.1.6 TEST RESULTS

Please refer to the Attachment H.

9. MEASUREMENT INSTRUMENTS LIST

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMCI	012645B	980267	Feb. 28, 2018
2	Preamplifier	EMCI	EMC02325	980217	Dec. 29, 2017
3	Preamplifier	EMCI	EMC2654045	980030	Feb.14,2018
4	Test Cable	EMCI	EMC104-SM-S M-8000	8m	Jan. 04, 2018
5	Test Cable	EMCI	EMC104-SM-S M-800	150207	Jan. 04, 2018
6	Test Cable	EMCI	EEMC104-SM-S M-3000	151205	Jan. 04, 2018
7	MXE EMI Receiver	Agilent	N9038A	MY5542012 7	Jan. 09, 2018
8	Signal Analyzer	Agilent	N9010A	MY5222099 0	Feb. 22, 2018
9	Loop Ant	EMCO	6502	42960	Nov. 24, 2017
10	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	Feb. 28, 2018
11	Horn Ant	Schwarzbeck	BBHA 9170	187	May 11, 2018
12	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	Jan. 16, 2018
13	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	Jan. 16, 2018

6dB Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 25, 2018

Peak Output Power Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 25, 2018
2	Power Meter	Anritsu	ML2495A	1128008	Aug. 17, 2017
3	Power Sensor	Anritsu	MA2411B	1126001	Aug. 17, 2017

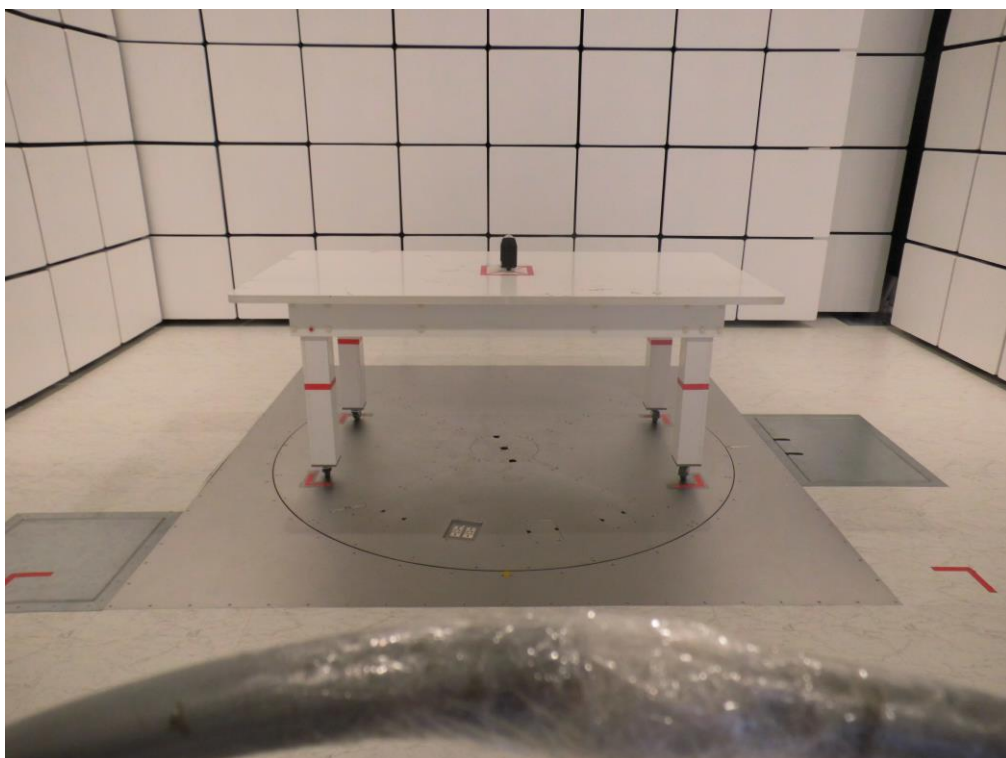
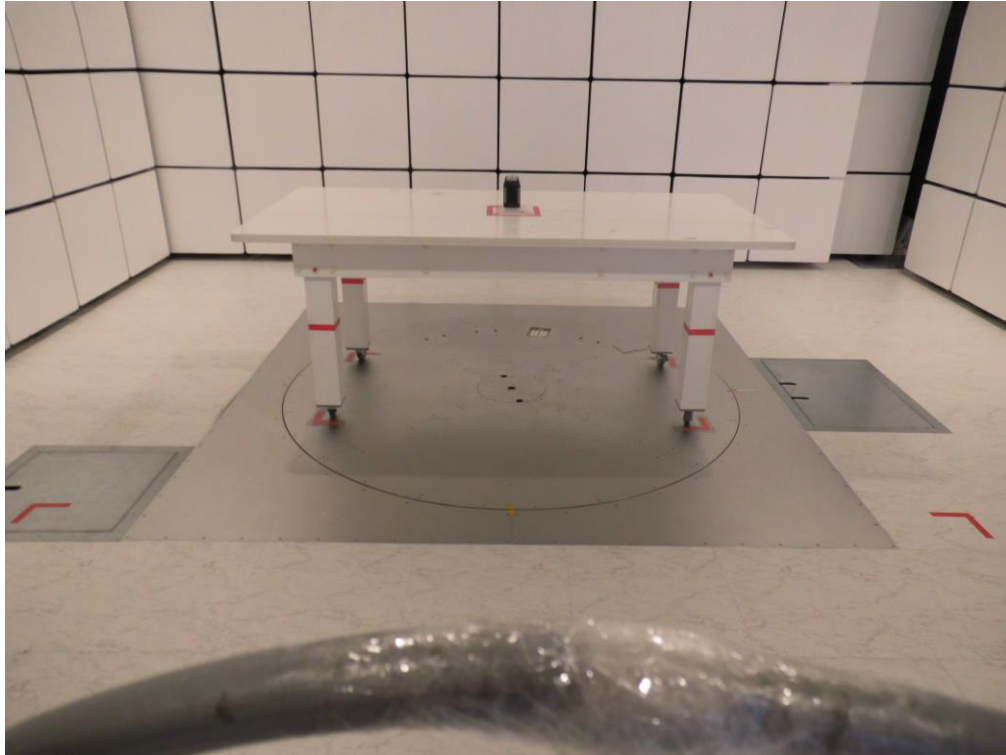
Antenna Conducted Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 25, 2018

Power Spectral Density Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	R&S/FSP30	100854	May 25, 2018

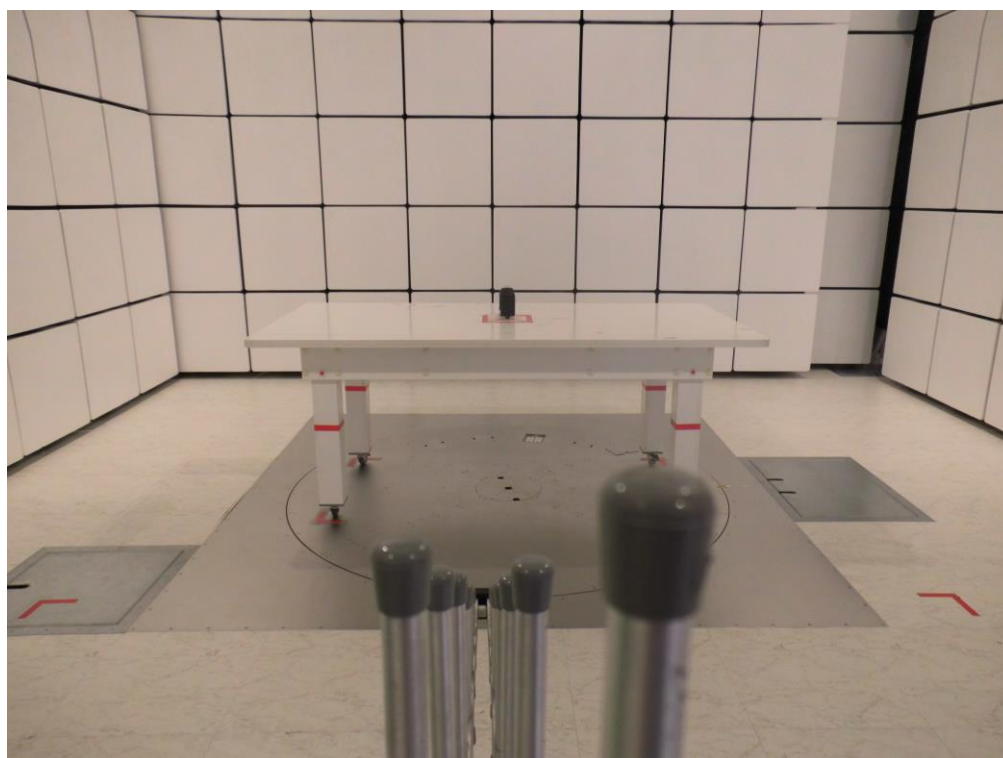
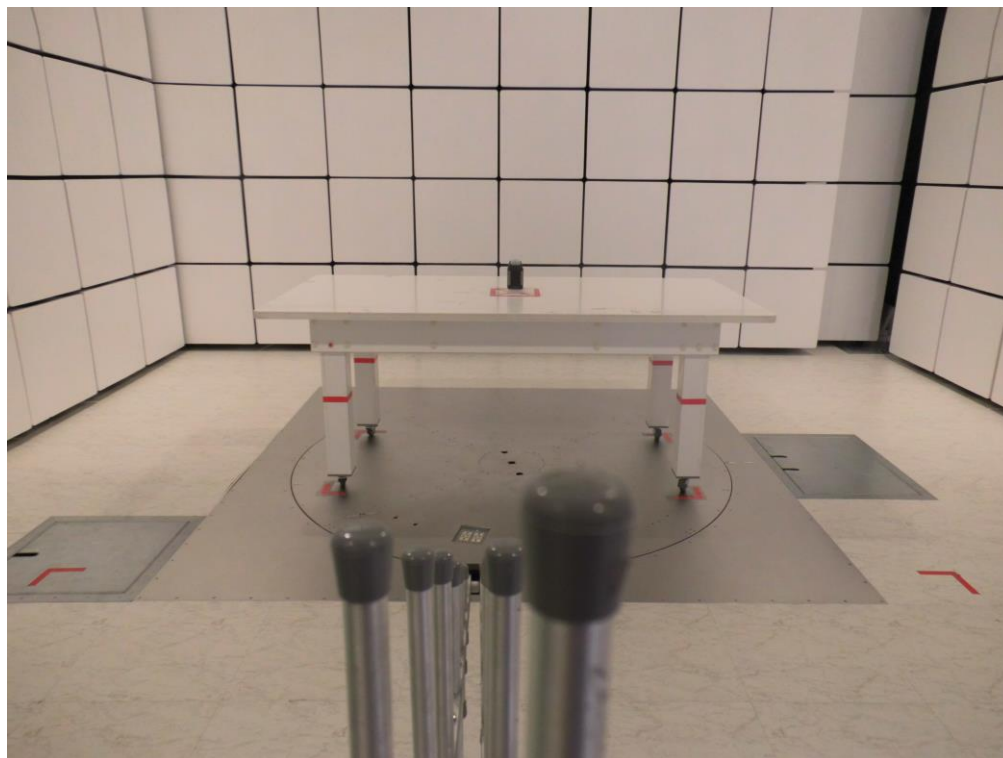
Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

10. EUT TEST PHOTO

Radiated Measurement Photos 9KHz to 30MHz



Radiated Measurement Photos 30MHz to 1000MHz



**Radiated Measurement Photos
Above 1000MHz**



ATTACHMENT A - CONDUCTED EMISSION

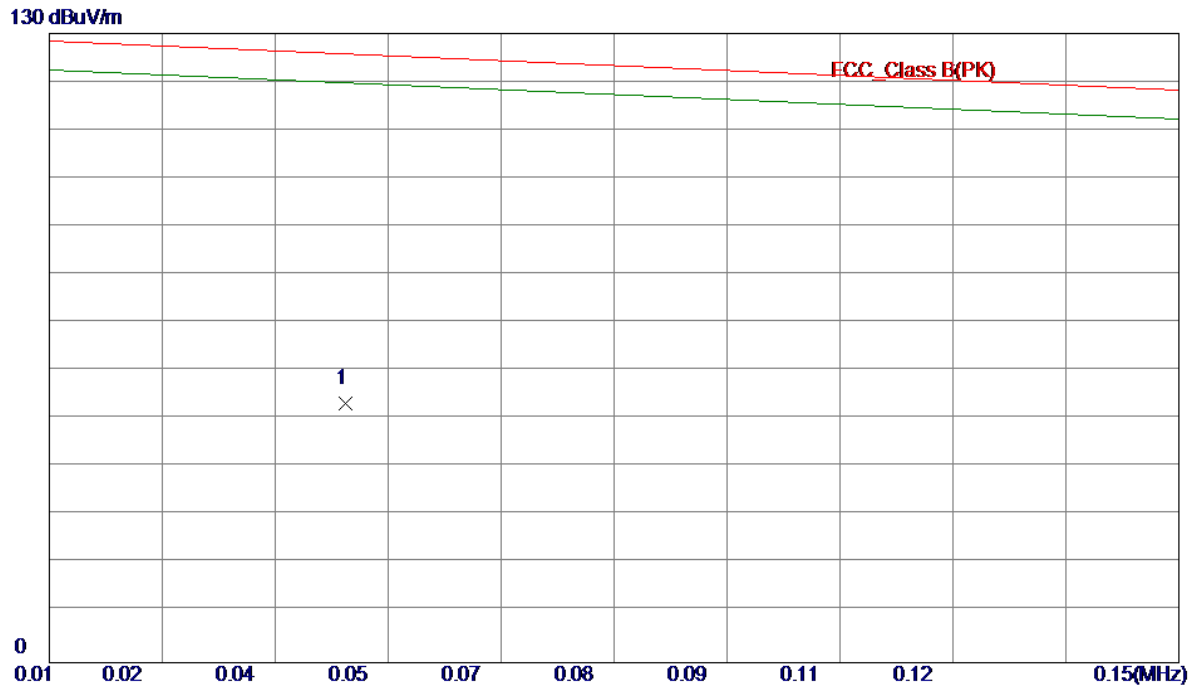
Test Mode: N/A

Note: "N/A" denotes test is not applicable to this device.

ATTACHMENT B - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode: TX B MODE CHANNEL 01

Ant 0°



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	0.0460	40.04	13.40	53.44	125.84	-72.40	Peak	

Test Mode: TX B MODE CHANNEL 01

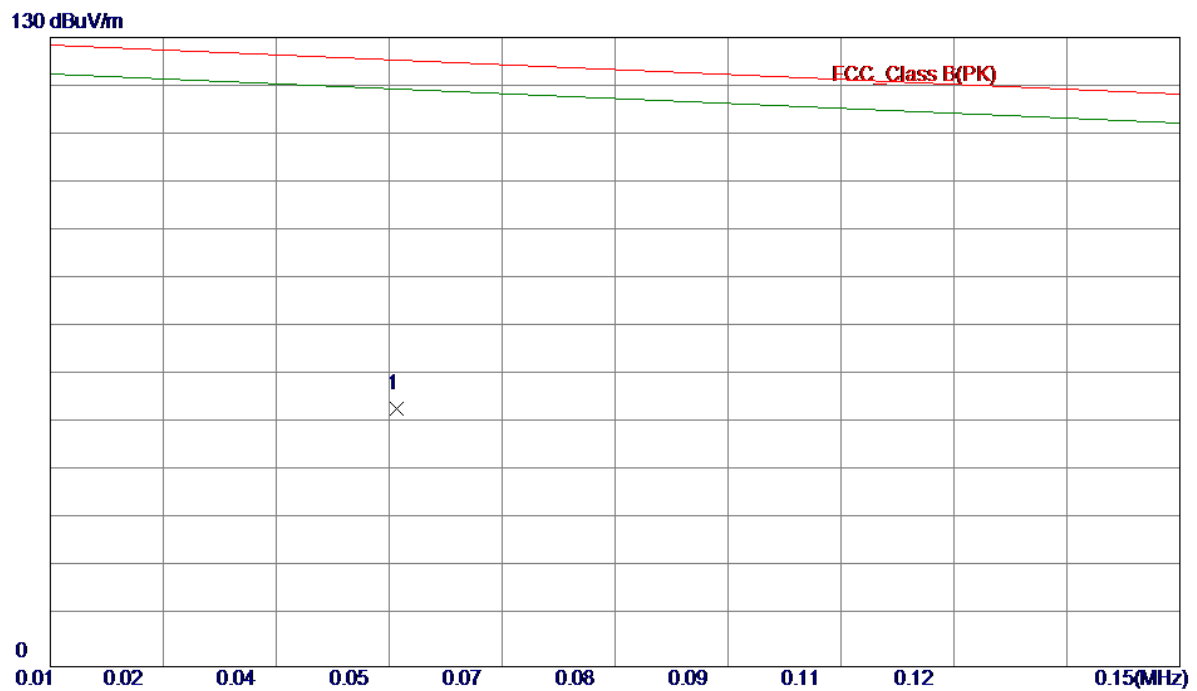
Ant 0°



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.3291	40.93	11.80	52.73	105.41	-52.68	Peak	
2 *	0.5080	36.55	11.80	48.35	73.64	-25.29	Peak	
3	1.0750	30.36	11.97	42.33	68.58	-26.25	Peak	
4	1.7020	25.41	11.68	37.09	63.00	-25.91	Peak	
5	2.3887	22.56	11.38	33.94	69.54	-35.60	Peak	
6	3.5825	18.91	11.19	30.10	69.54	-39.44	Peak	

Test Mode: TX B MODE CHANNEL 01

Ant 90°



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	0.0522	40.30	12.96	53.26	125.39	-72.13	Peak	

Test Mode: TX B MODE CHANNEL 01

Ant 90°

130 dBuV/m

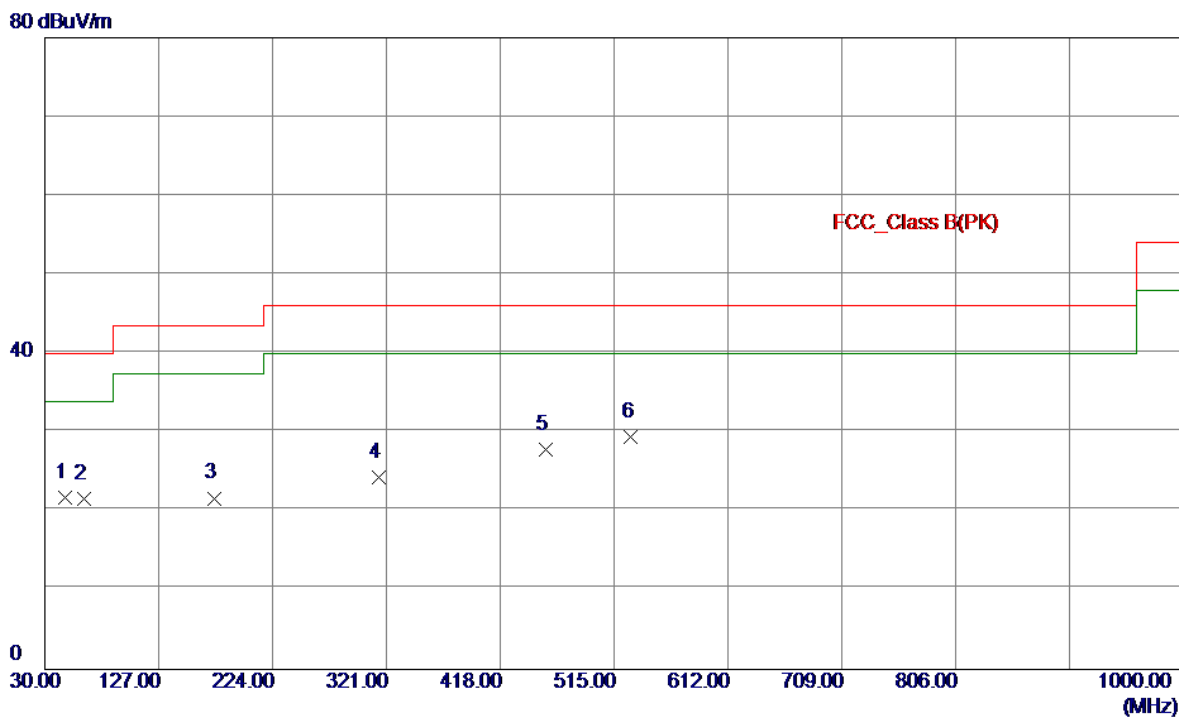


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	0.5675	35.78	11.83	47.61	73.11	-25.50	Peak	
2	1.2240	28.18	11.90	40.08	67.26	-27.18	Peak	
3	2.2395	24.62	11.44	36.06	69.54	-33.48	Peak	
4	2.8664	21.25	11.16	32.41	69.54	-37.13	Peak	
5	4.0602	17.63	11.26	28.89	69.54	-40.65	Peak	
6	6.3887	15.28	11.37	26.65	69.54	-42.89	Peak	

ATTACHMENT C - RADIATED EMISSION (30MHZ TO 1000MHZ)

Test Mode: TX B MODE 2462MHz

Vertical

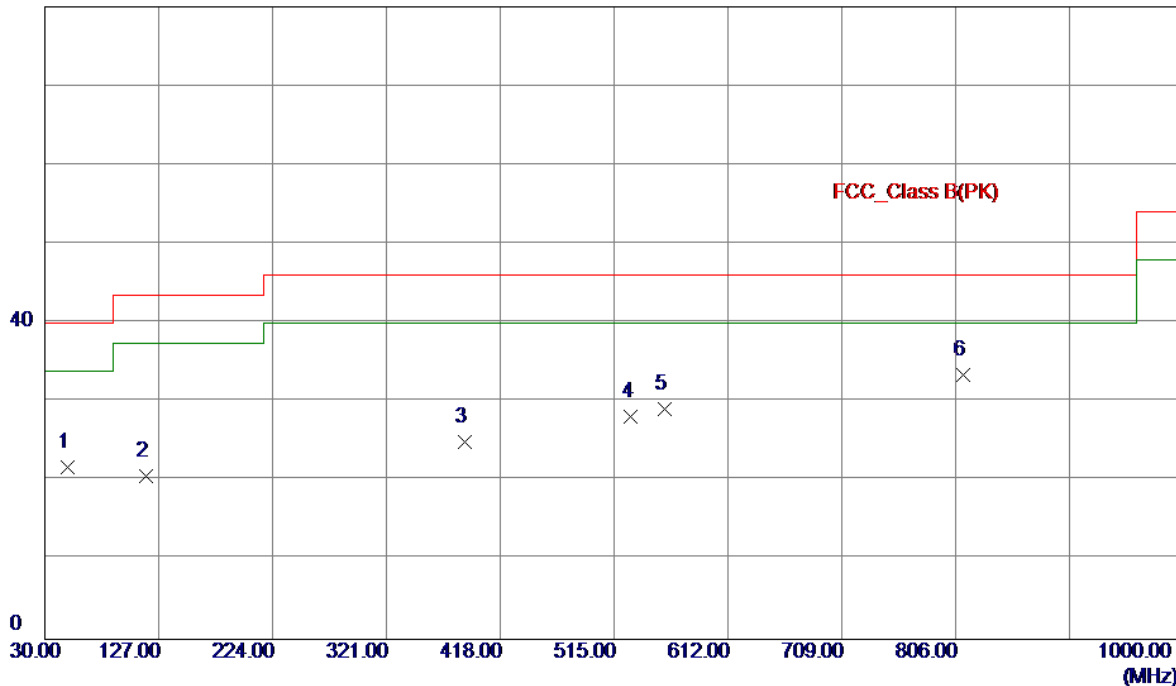


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	47.4600	30.27	-8.45	21.82	40.00	-18.18	Peak	
2	62.9800	30.64	-9.06	21.58	40.00	-18.42	Peak	
3	174.5300	30.74	-9.06	21.68	43.50	-21.82	Peak	
4	314.2100	31.47	-7.13	24.34	46.00	-21.66	Peak	
5	456.8000	31.28	-3.45	27.83	46.00	-18.17	Peak	
6 *	529.5500	31.54	-2.14	29.40	46.00	-16.60	Peak	

Test Mode: TX B MODE 2462MHz

Horizontal

80 dBuV/m

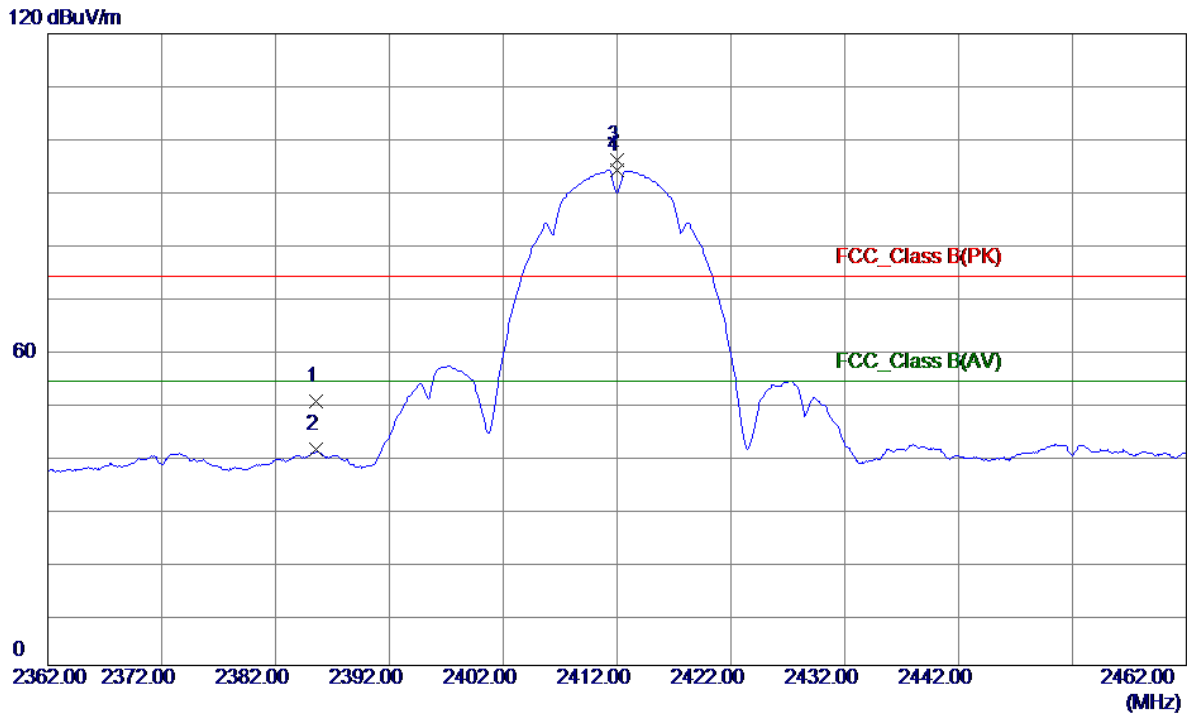


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB		
1	49.4000	30.06	-8.33	21.73	40.00	-18.27	Peak	
2	116.3300	31.02	-10.39	20.63	43.50	-22.87	Peak	
3	387.9300	30.16	-5.25	24.91	46.00	-21.09	Peak	
4	529.5500	30.36	-2.14	28.22	46.00	-17.78	Peak	
5	557.6800	30.65	-1.52	29.13	46.00	-16.87	Peak	
6 *	812.7900	30.74	2.77	33.51	46.00	-12.49	Peak	

ATTACHMENT D - RADIATED EMISSION (ABOVE 1000MHZ)

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Vertical

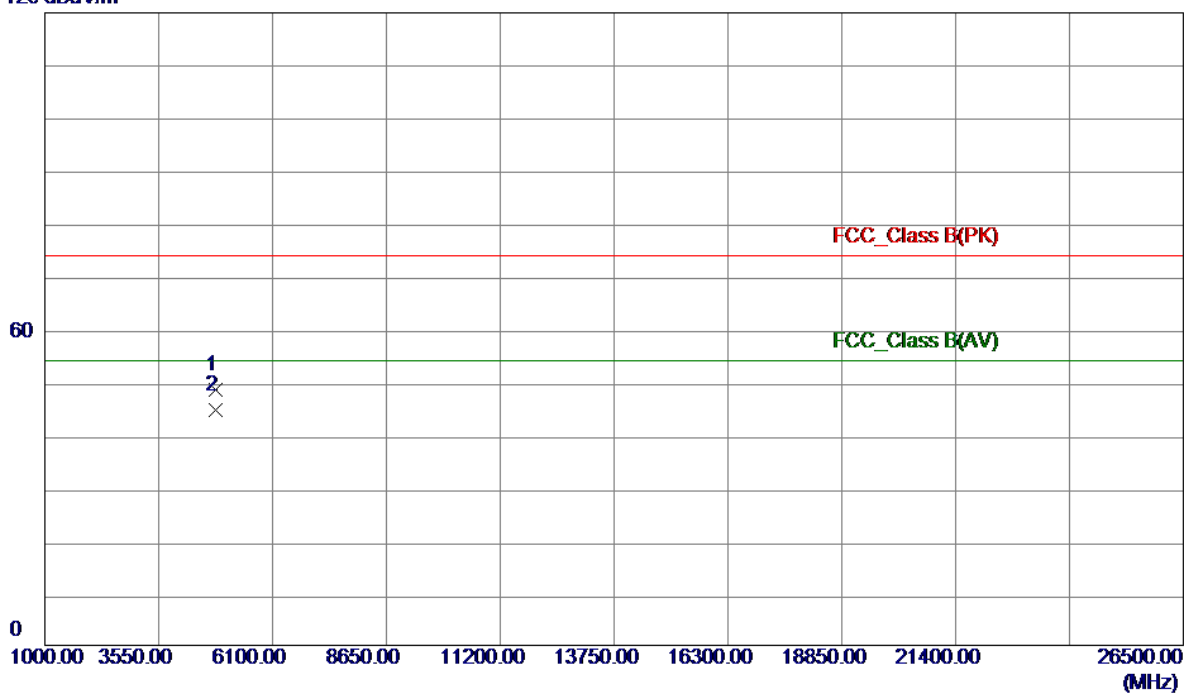


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2385.5480	19.07	31.05	50.12	74.00	-23.88	Peak	
2	2385.5480	9.91	31.05	40.96	54.00	-13.04	AVG	
3	2412.0000	64.88	31.15	96.03	74.00	22.03	Peak	No Limit
4 *	2412.0000	62.89	31.15	94.04	54.00	40.04	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Vertical

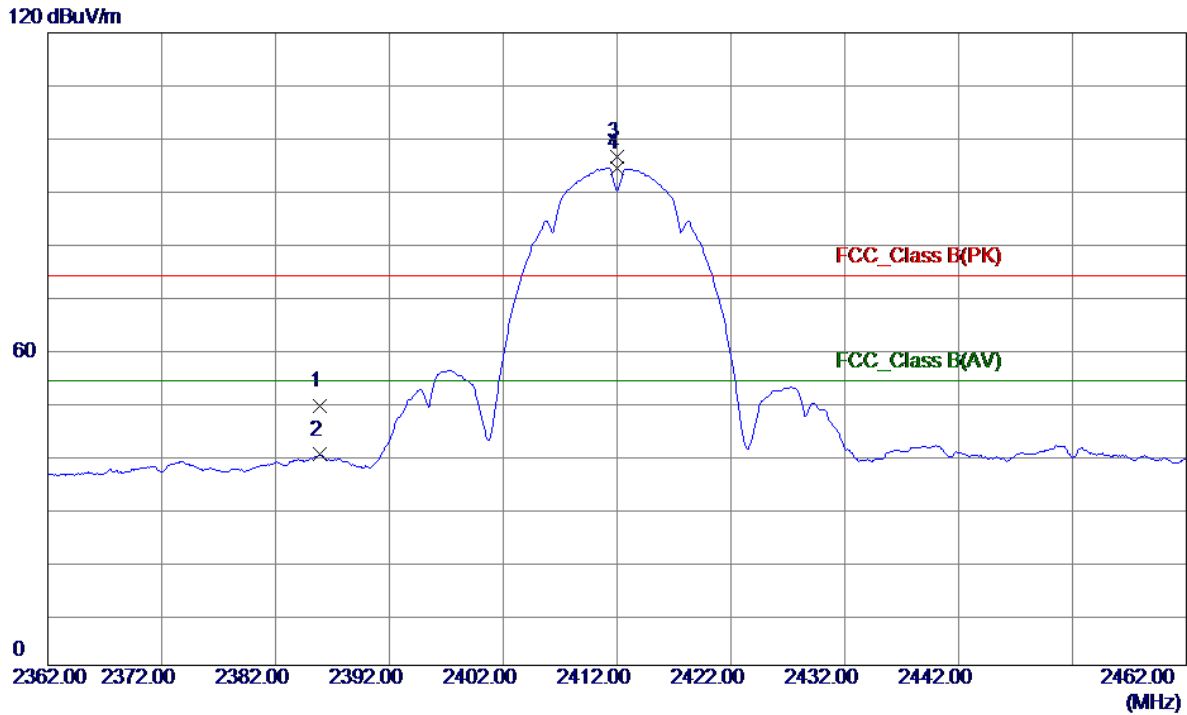
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	59.85	-11.37	48.48	74.00	-25.52	Peak	
2 *	4824.0000	55.94	-11.37	44.57	54.00	-9.43	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Horizontal

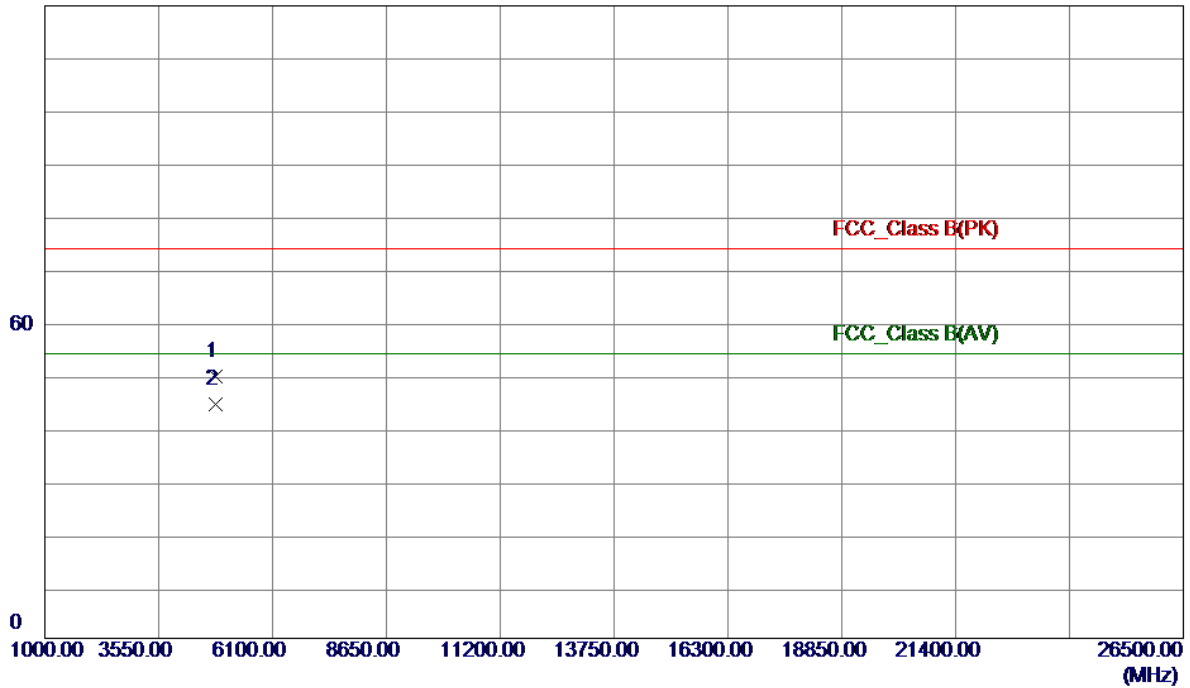


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2385.8839	18.22	31.05	49.27	74.00	-24.73	Peak	
2	2385.8839	8.91	31.05	39.96	54.00	-14.04	AVG	
3	2412.0000	65.24	31.15	96.39	74.00	22.39	Peak	No Limit
4 *	2412.0000	63.21	31.15	94.36	54.00	40.36	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX B MODE 2412MHz

Horizontal

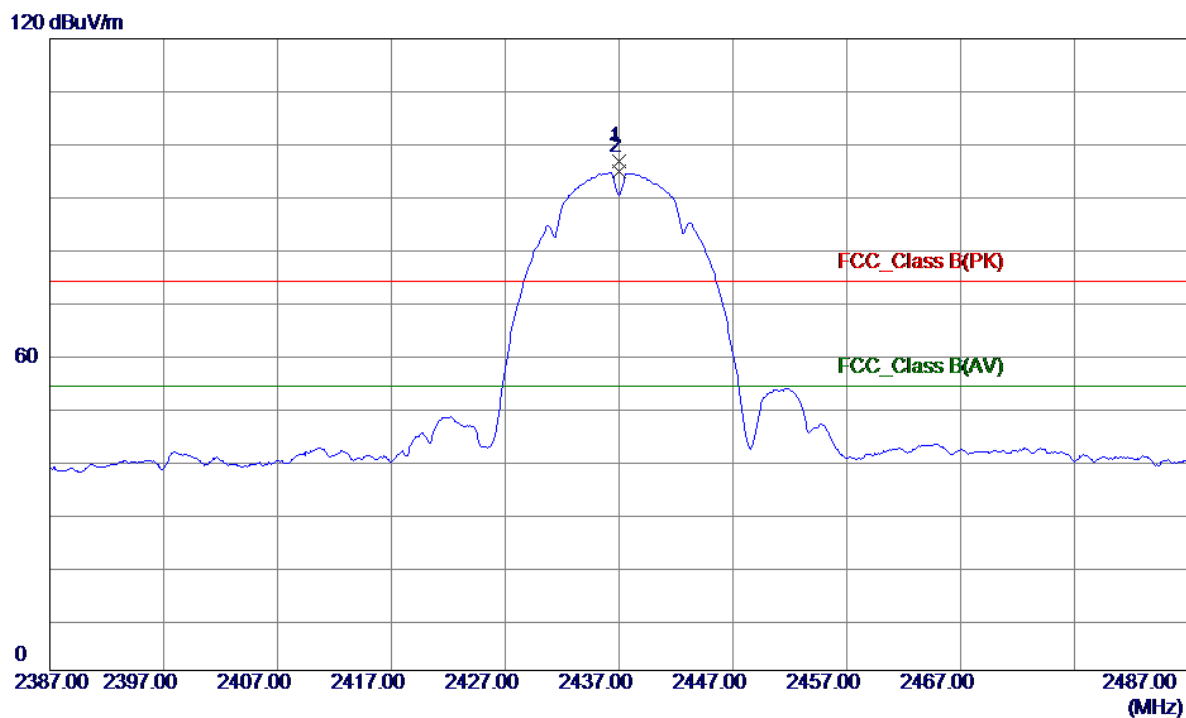
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	60.95	-11.37	49.58	74.00	-24.42	Peak	
2 *	4824.0000	55.66	-11.37	44.29	54.00	-9.71	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Vertical

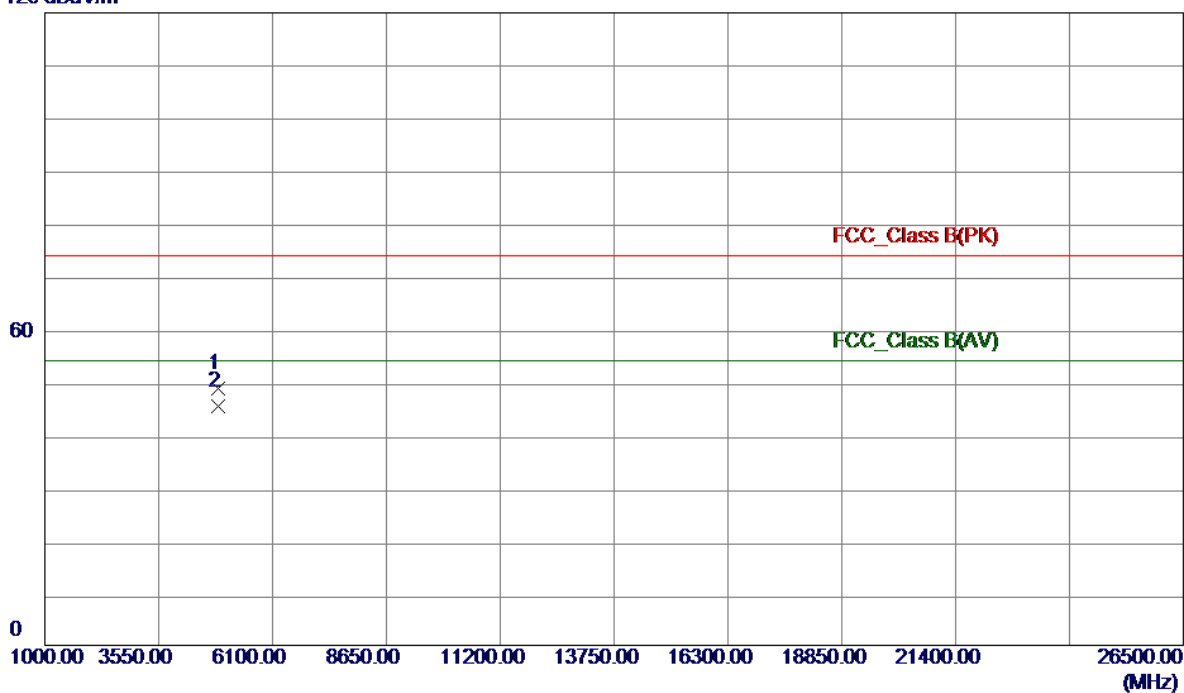


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2437.0000	65.60	31.24	96.84	74.00	22.84	Peak	No Limit
2 *	2437.0000	63.61	31.24	94.85	54.00	40.85	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Vertical

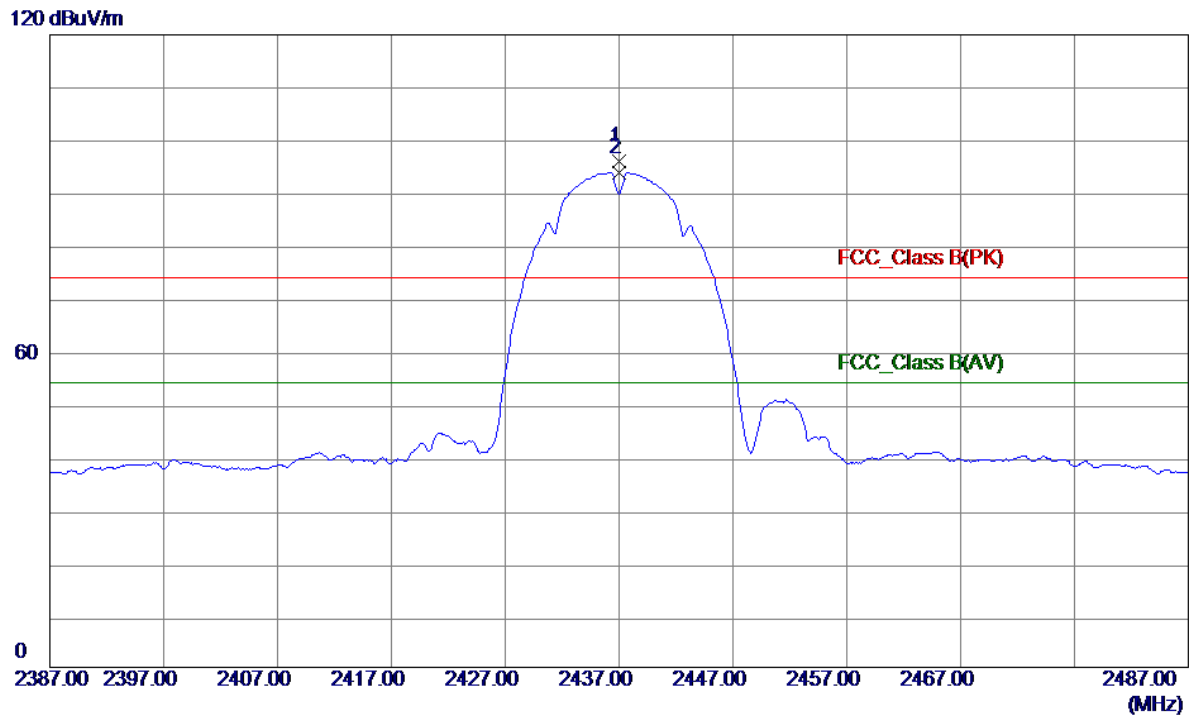
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	60.09	-11.29	48.80	74.00	-25.20	Peak	
2 *	4874.0000	56.68	-11.29	45.39	54.00	-8.61	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Horizontal

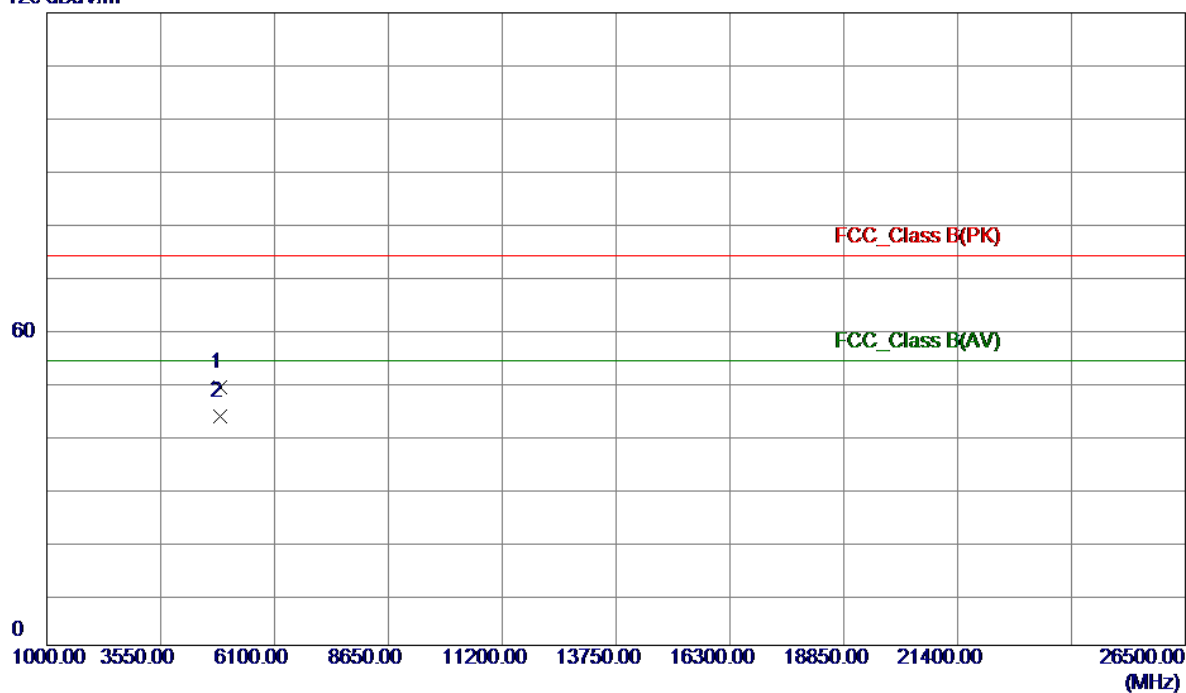


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2437.0000	64.76	31.24	96.00	74.00	22.00	Peak	No Limit
2 *	2437.0000	62.57	31.24	93.81	54.00	39.81	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX B MODE 2437MHz

Horizontal

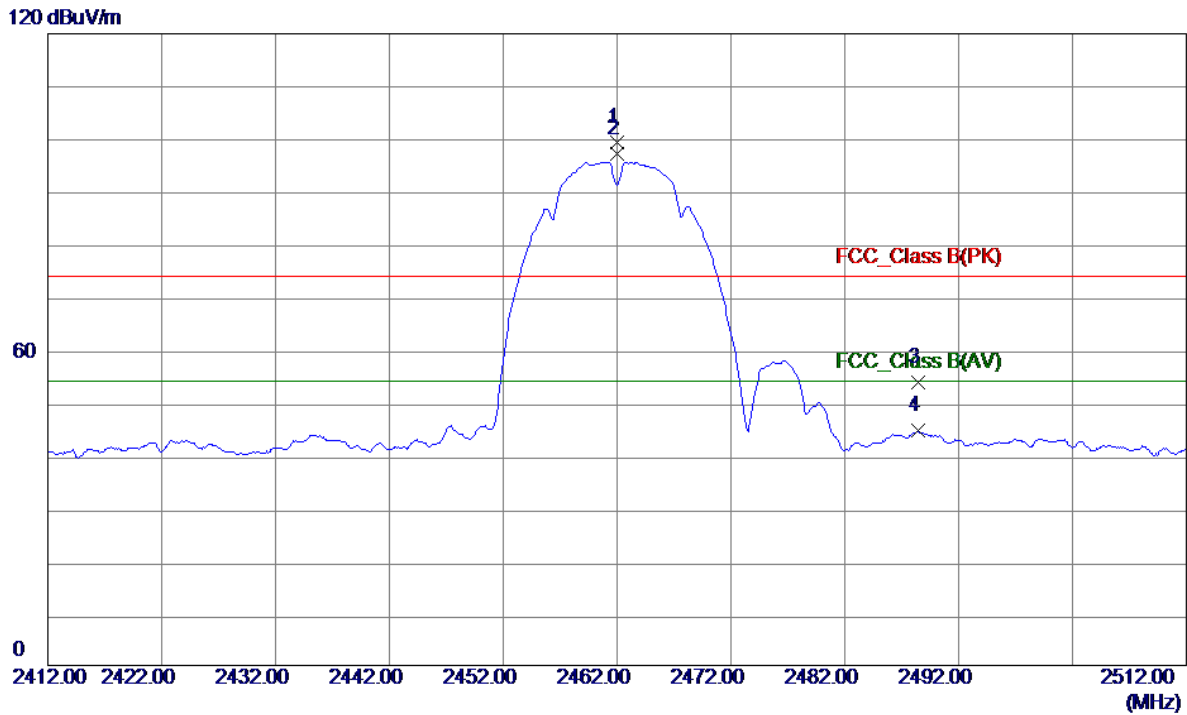
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	60.21	-11.29	48.92	74.00	-25.08	Peak	
2 *	4874.0000	54.74	-11.29	43.45	54.00	-10.55	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Vertical

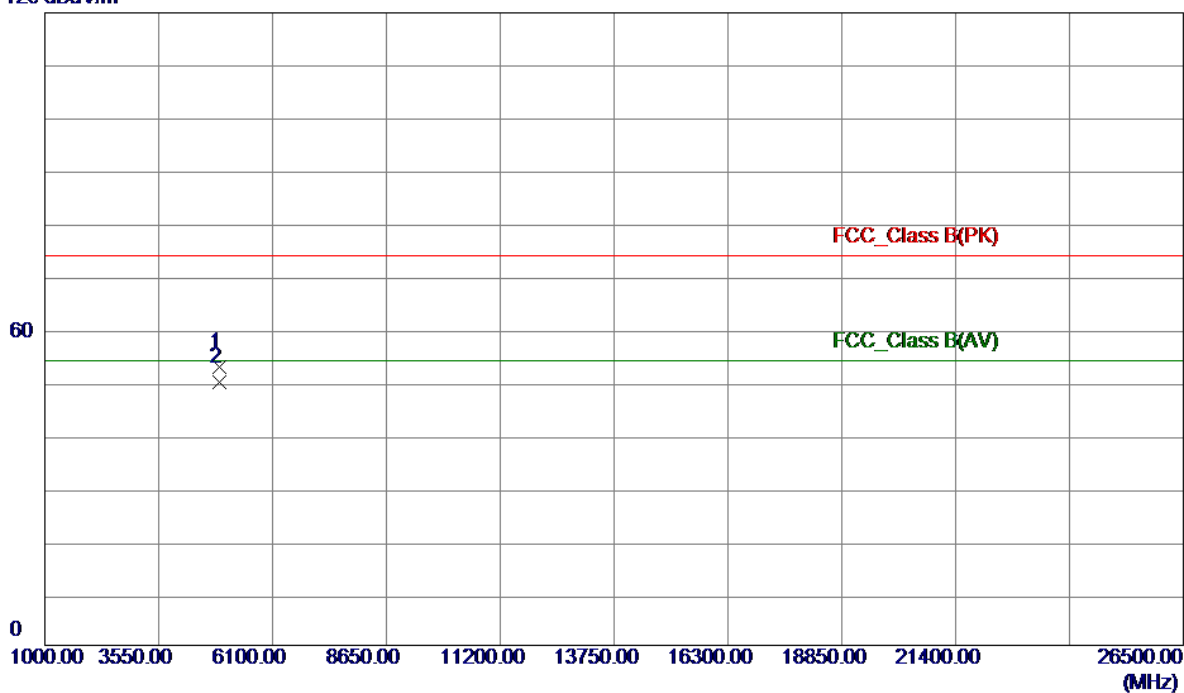


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.0000	67.99	31.33	99.32	74.00	25.32	Peak	No Limit
2 *	2462.0000	65.89	31.33	97.22	54.00	43.22	AVG	No Limit
3	2488.4170	22.33	31.43	53.76	74.00	-20.24	Peak	
4	2488.4170	13.29	31.43	44.72	54.00	-9.28	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Vertical

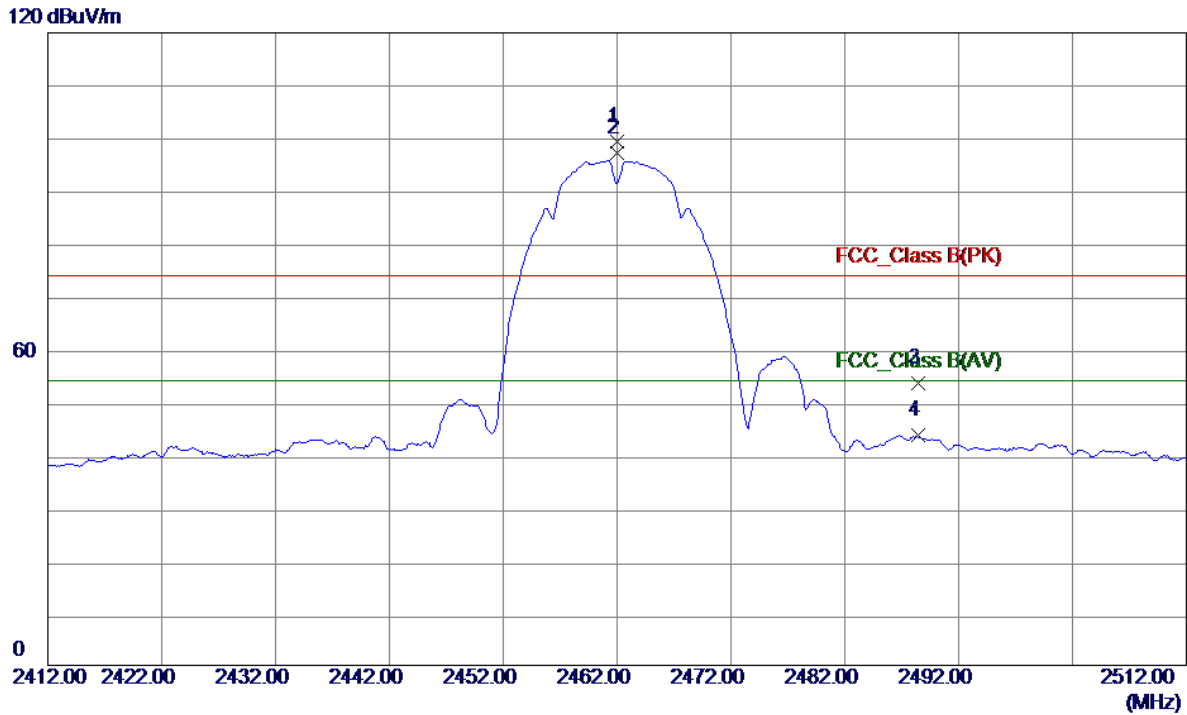
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	64.13	-11.22	52.91	74.00	-21.09	Peak	
2 *	4924.0000	61.17	-11.22	49.95	54.00	-4.05	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Horizontal

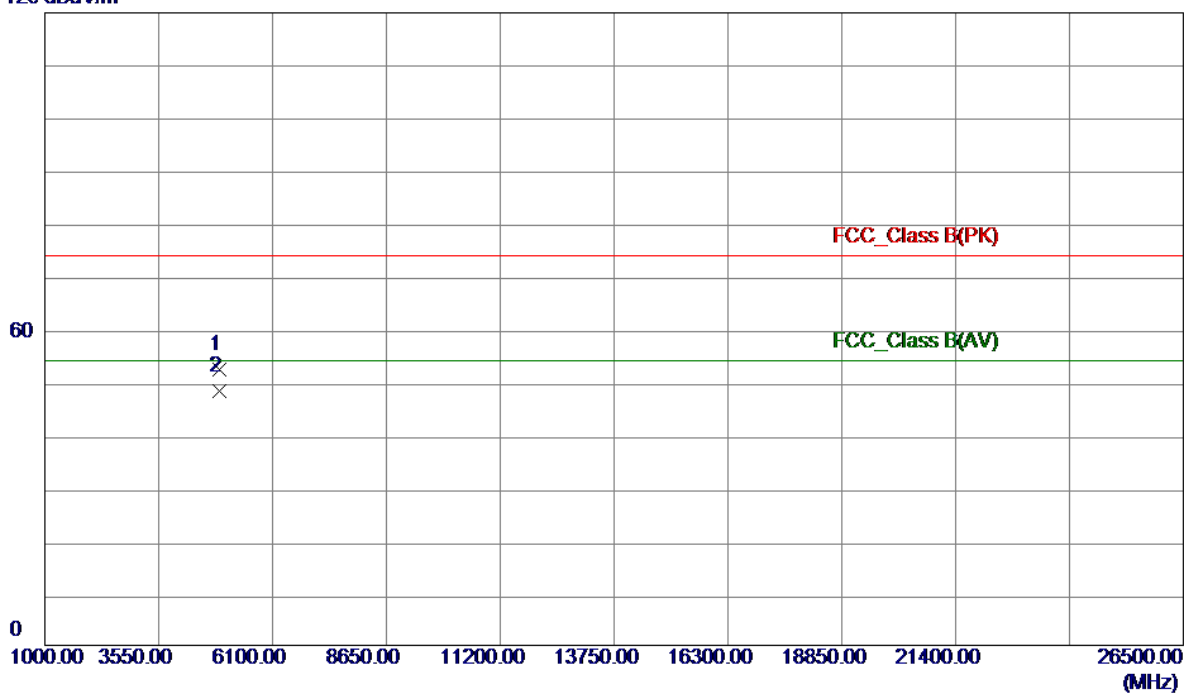


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.0000	67.98	31.33	99.31	74.00	25.31	Peak	No Limit
2 *	2462.0000	65.97	31.33	97.30	54.00	43.30	AVG	No Limit
3	2488.4340	22.00	31.43	53.43	74.00	-20.57	Peak	
4	2488.4340	12.34	31.43	43.77	54.00	-10.23	AVG	

Orthogonal Axis :	X
Test Mode :	TX B MODE 2462MHz

Horizontal

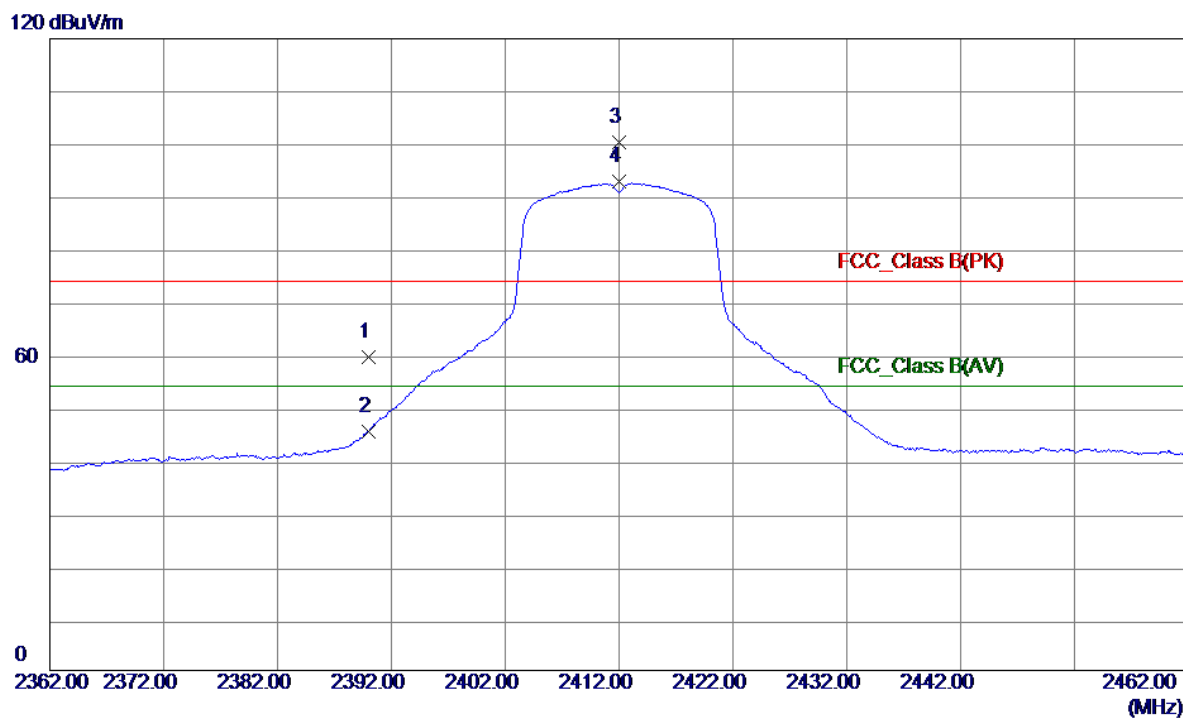
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	63.59	-11.22	52.37	74.00	-21.63	Peak	
2 *	4924.0000	59.53	-11.22	48.31	54.00	-5.69	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Vertical

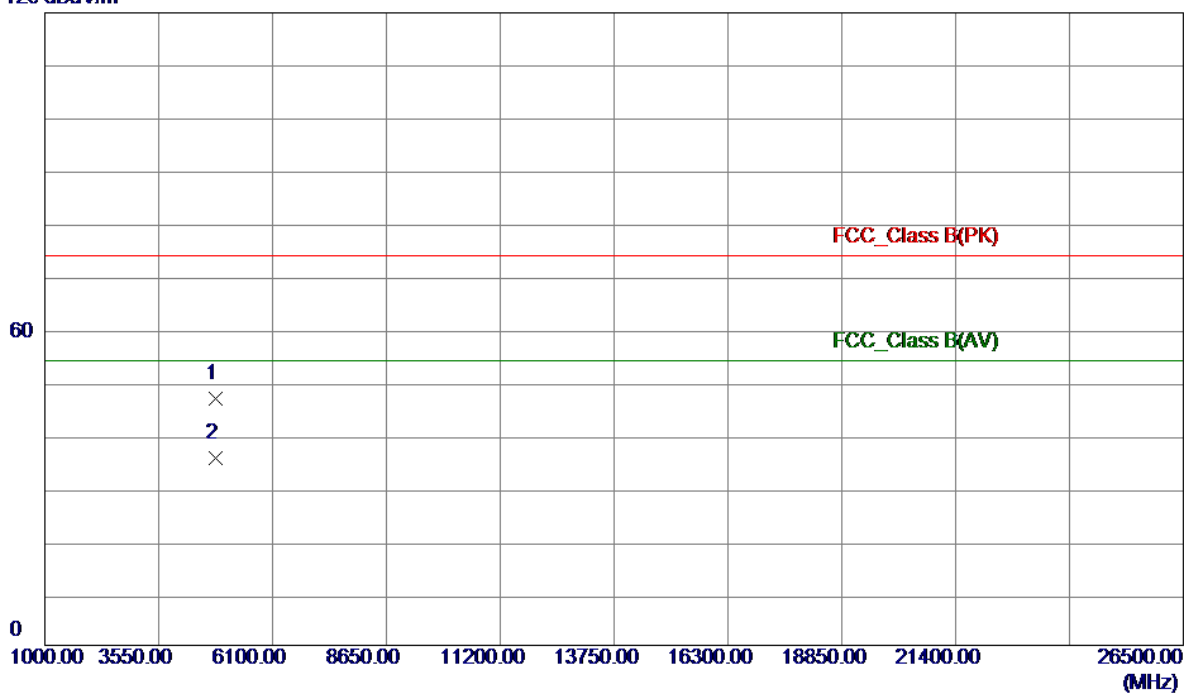


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	28.51	31.07	59.58	74.00	-14.42	Peak	
2	2390.0000	14.40	31.07	45.47	54.00	-8.53	AVG	
3	2412.0000	69.13	31.15	100.28	74.00	26.28	Peak	No Limit
4 *	2412.0000	61.77	31.15	92.92	54.00	38.92	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Vertical

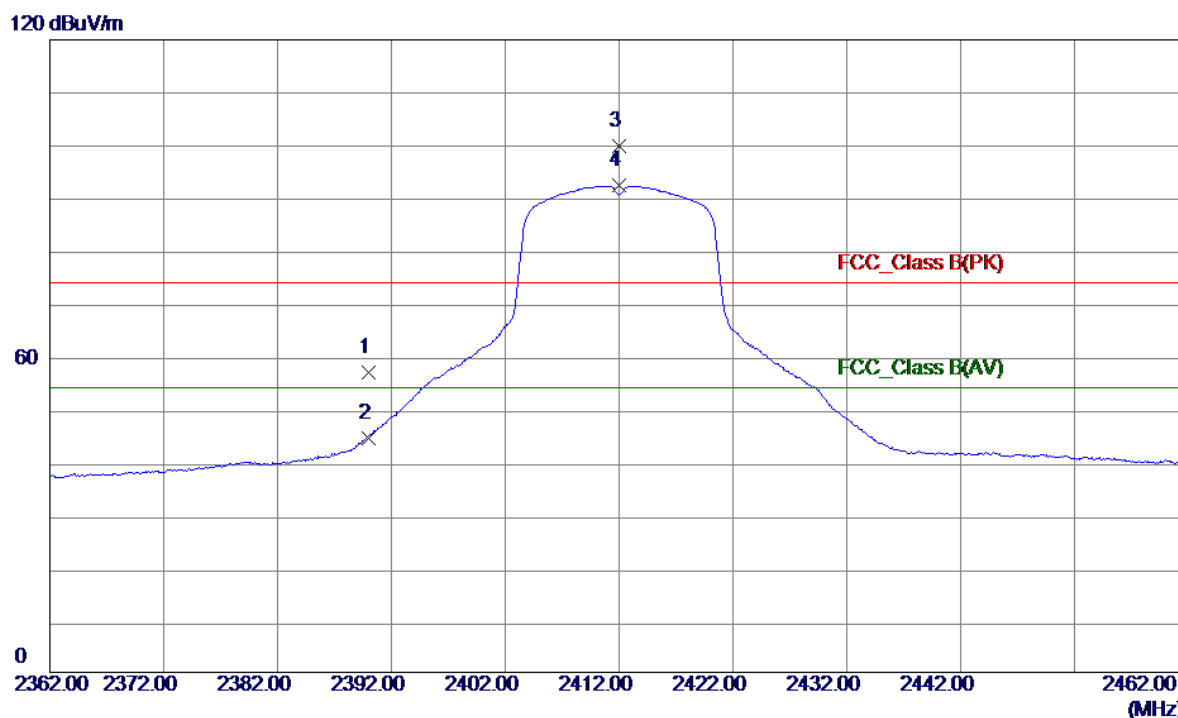
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	58.27	-11.37	46.90	74.00	-27.10	Peak	
2 *	4824.0000	46.84	-11.37	35.47	54.00	-18.53	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Horizontal

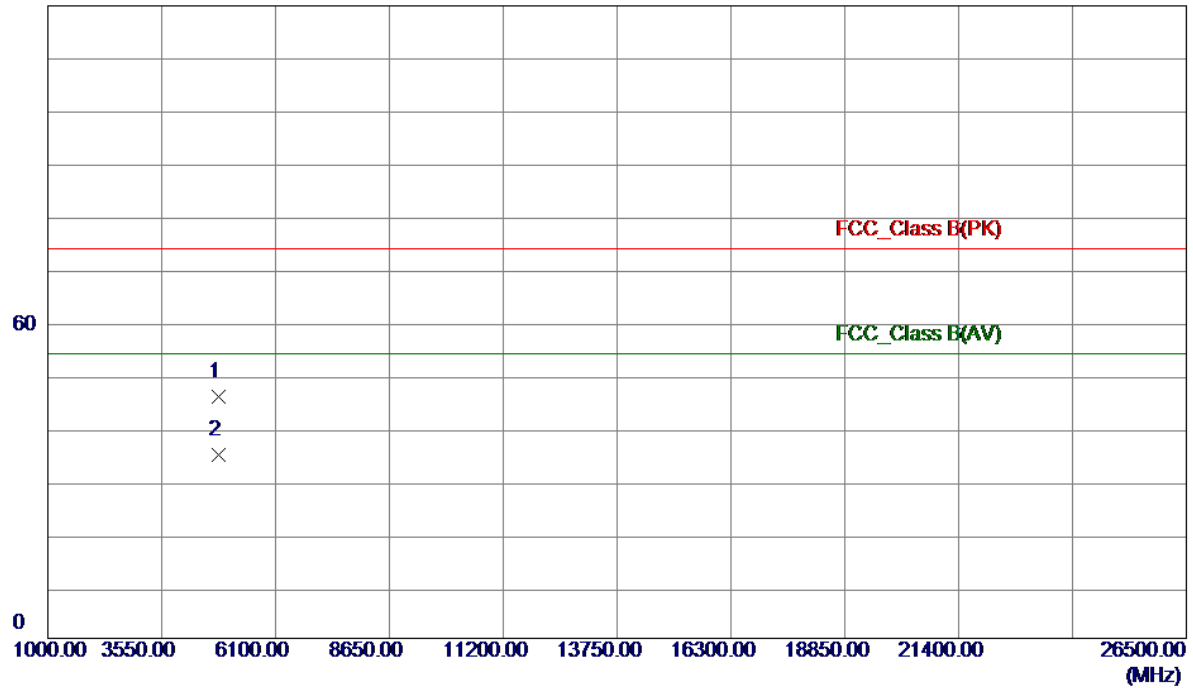


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	25.86	31.07	56.93	74.00	-17.07	Peak	
2	2390.0000	13.30	31.07	44.37	54.00	-9.63	AVG	
3	2412.0000	68.80	31.15	99.95	74.00	25.95	Peak	No Limit
4 *	2412.0000	61.28	31.15	92.43	54.00	38.43	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX G MODE 2412MHz

Horizontal

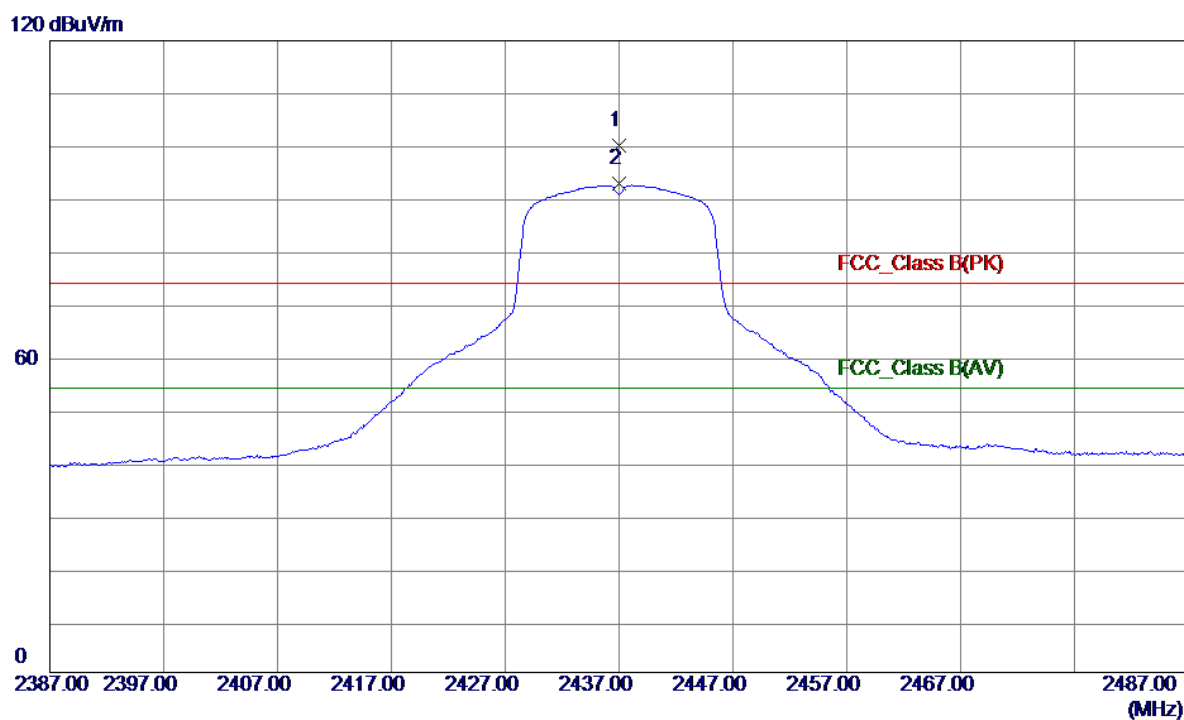
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	57.15	-11.37	45.78	74.00	-28.22	Peak	
2 *	4824.0000	46.09	-11.37	34.72	54.00	-19.28	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Vertical

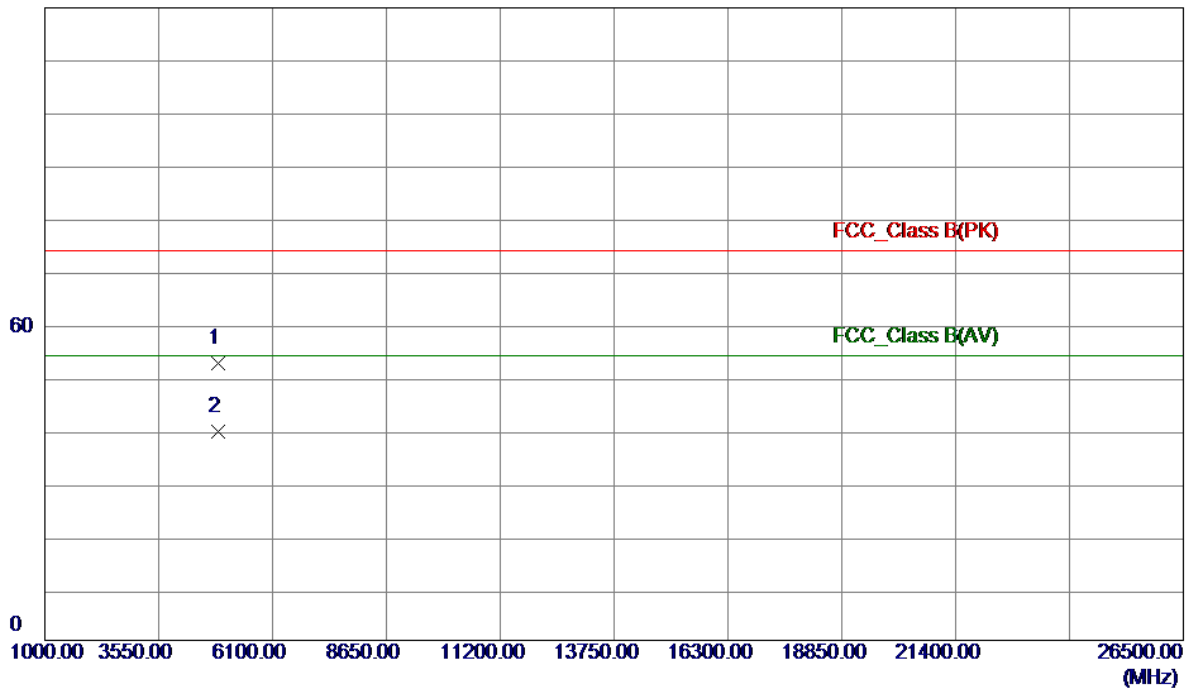


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2437.0000	68.81	31.24	100.05	74.00	26.05	Peak	No Limit
2 *	2437.0000	61.60	31.24	92.84	54.00	38.84	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Vertical

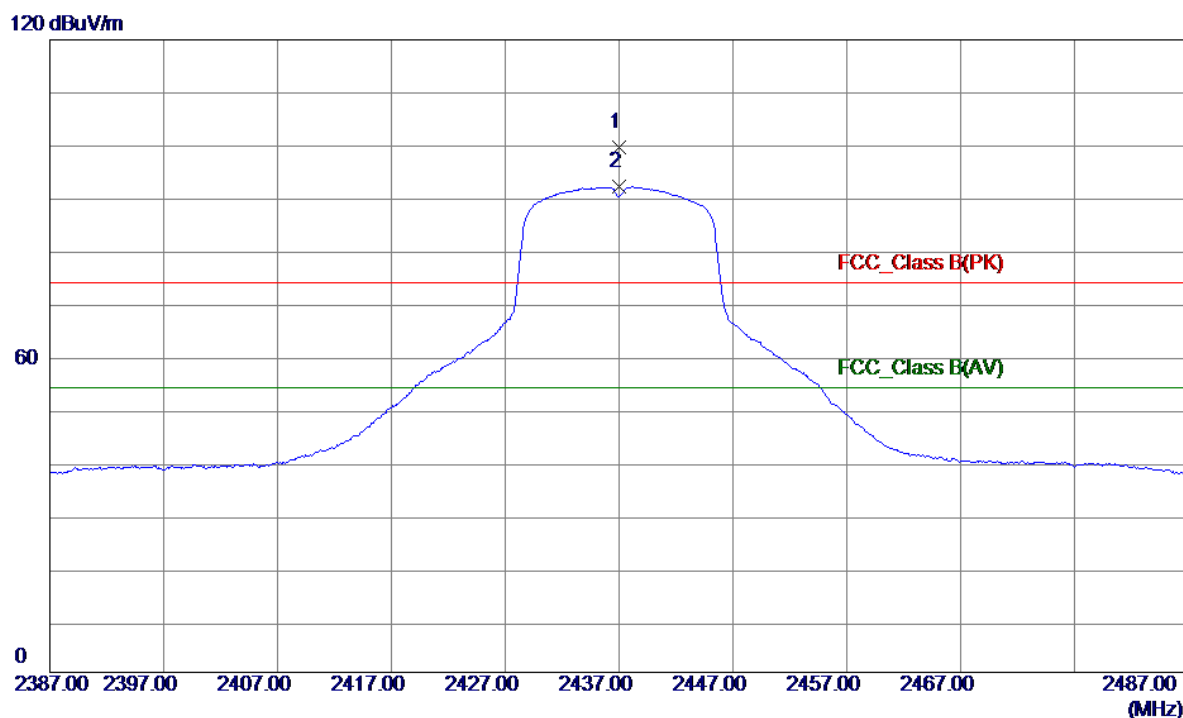
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	63.74	-11.29	52.45	74.00	-21.55	Peak	
2 *	4874.0000	50.89	-11.29	39.60	54.00	-14.40	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Horizontal

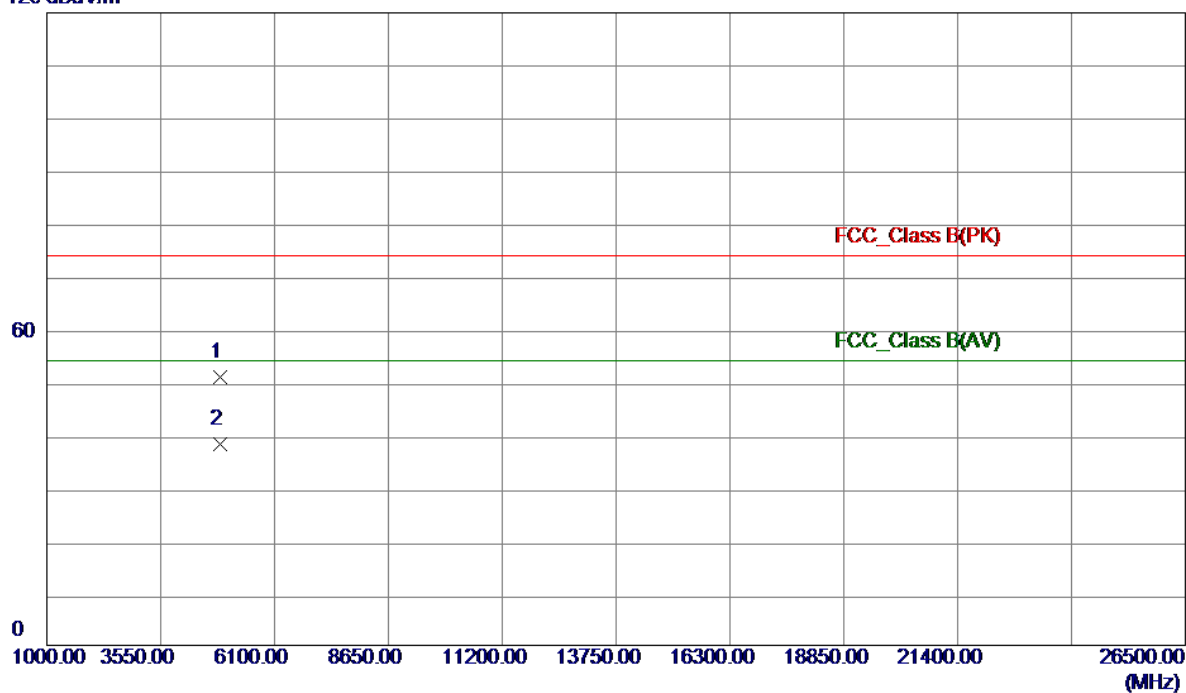


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2437.0000	68.34	31.24	99.58	74.00	25.58	Peak	No Limit
2 *	2437.0000	60.84	31.24	92.08	54.00	38.08	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX G MODE 2437MHz

Horizontal

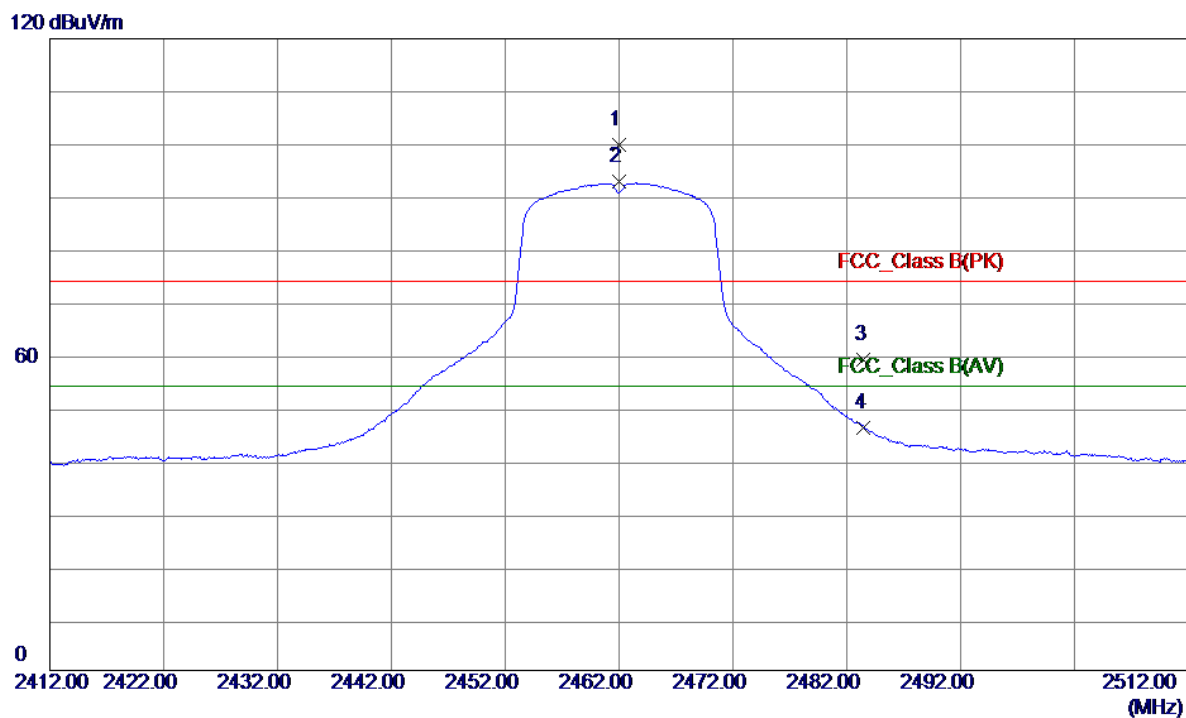
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	62.16	-11.29	50.87	74.00	-23.13	Peak	
2 *	4874.0000	49.52	-11.29	38.23	54.00	-15.77	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Vertical

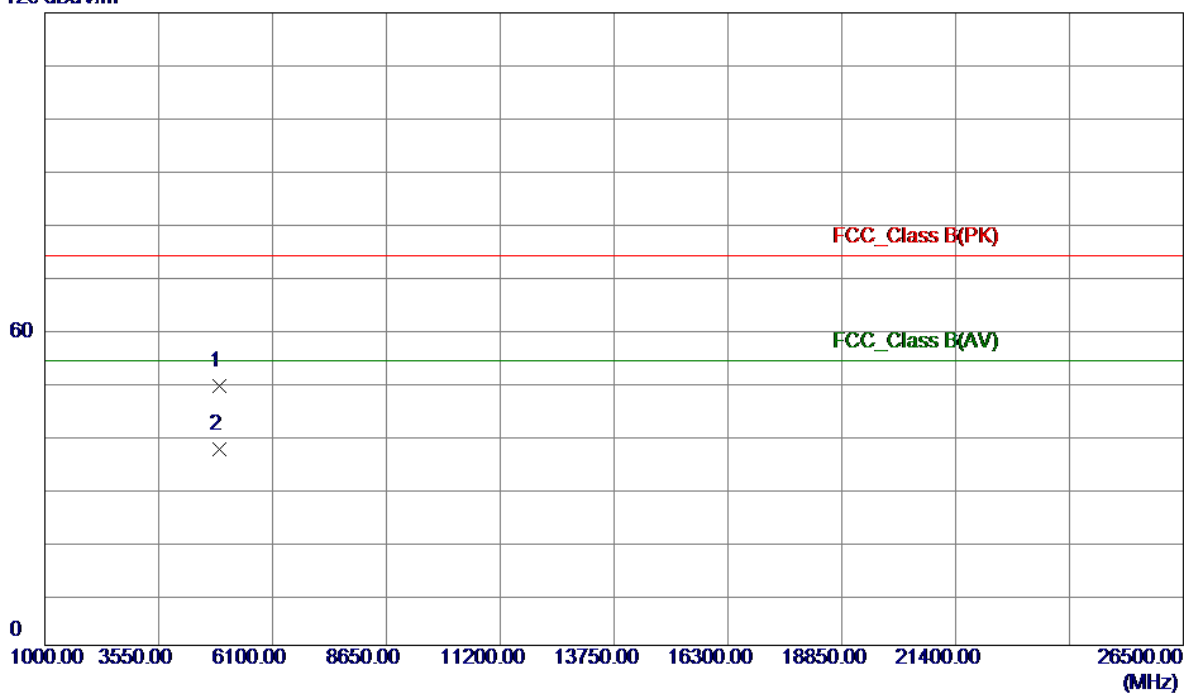


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.0000	68.62	31.33	99.95	74.00	25.95	Peak	No Limit
2 *	2462.0000	61.60	31.33	92.93	54.00	38.93	AVG	No Limit
3	2483.5000	27.58	31.41	58.99	74.00	-15.01	Peak	
4	2483.5000	14.73	31.41	46.14	54.00	-7.86	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Vertical

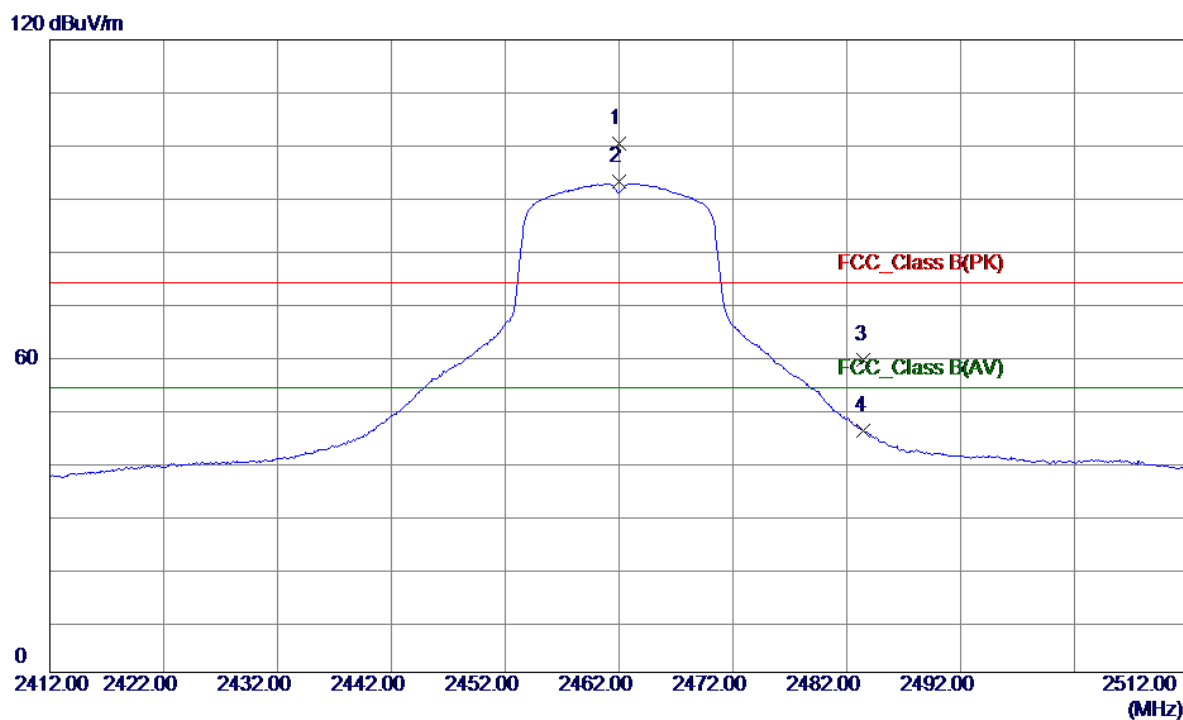
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	60.53	-11.22	49.31	74.00	-24.69	Peak	
2 *	4924.0000	48.47	-11.22	37.25	54.00	-16.75	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Horizontal

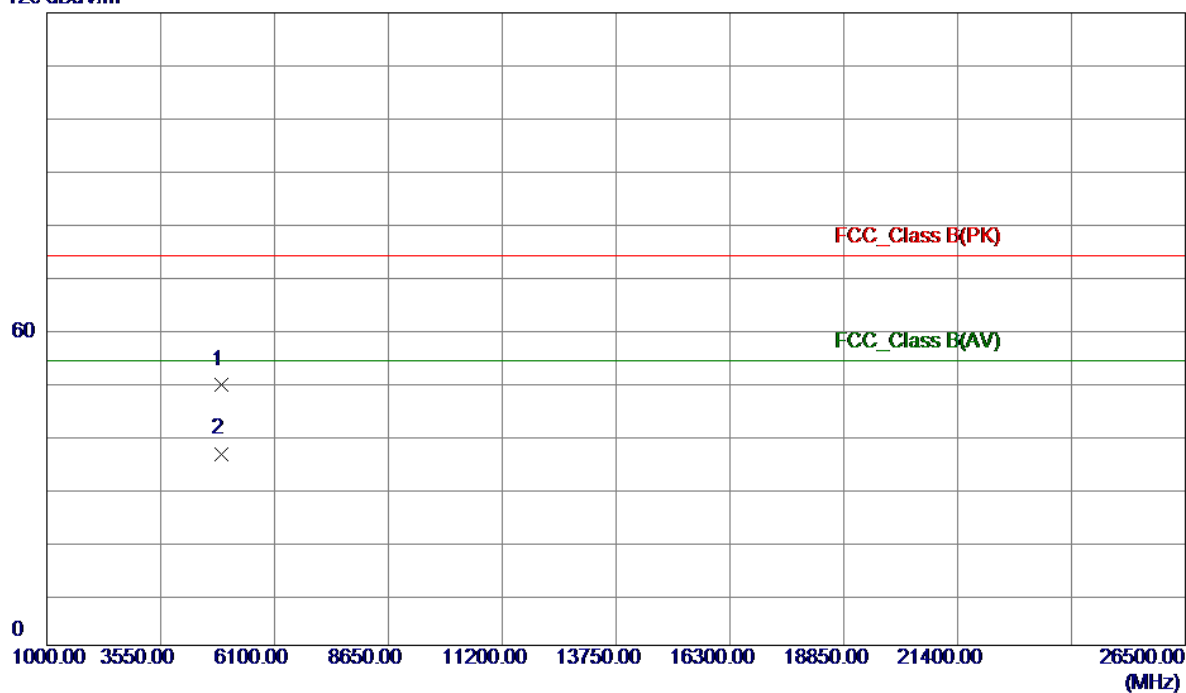


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.0000	69.09	31.33	100.42	74.00	26.42	Peak	No Limit
2 *	2462.0000	61.76	31.33	93.09	54.00	39.09	AVG	No Limit
3	2483.5000	27.82	31.41	59.23	74.00	-14.77	Peak	
4	2483.5000	14.48	31.41	45.89	54.00	-8.11	AVG	

Orthogonal Axis :	X
Test Mode :	TX G MODE 2462MHz

Horizontal

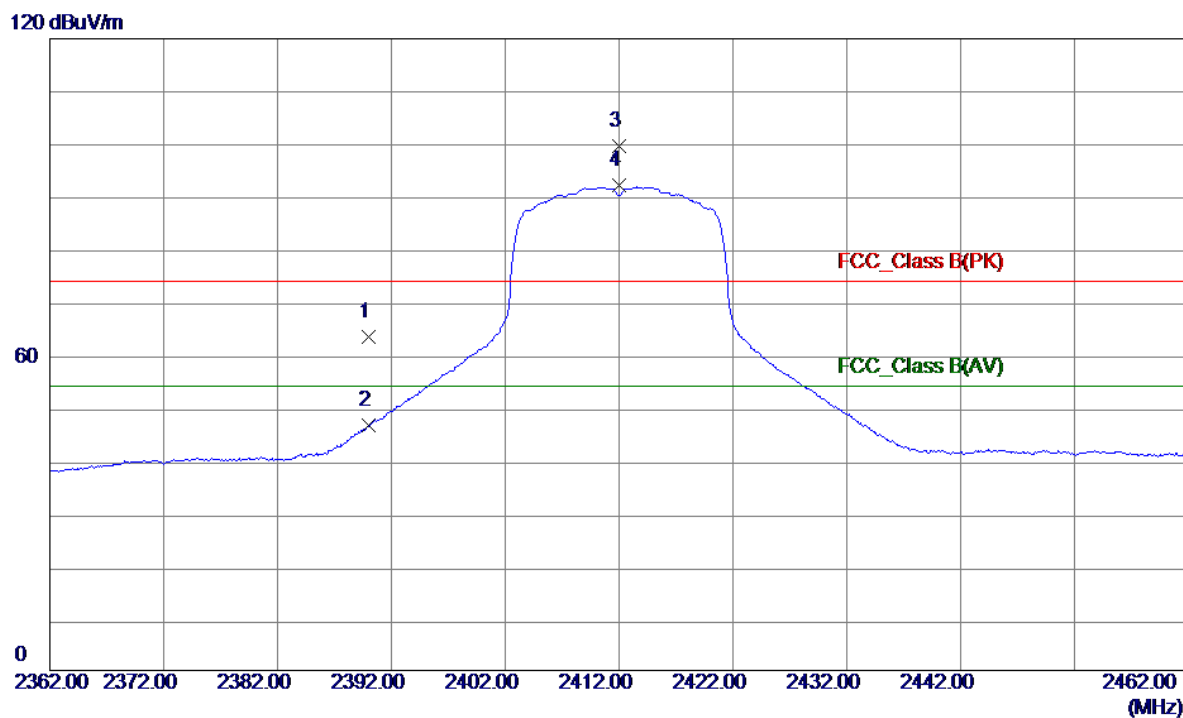
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	60.63	-11.22	49.41	74.00	-24.59	Peak	
2 *	4924.0000	47.58	-11.22	36.36	54.00	-17.64	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2412MHz

Vertical

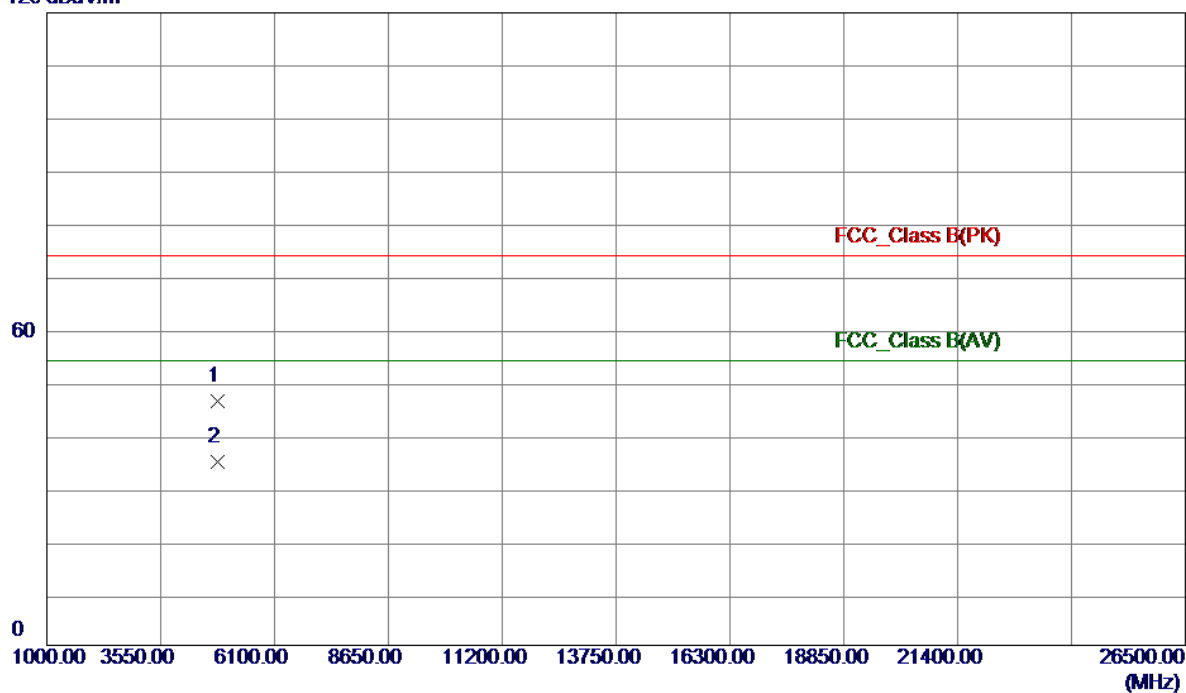


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	32.24	31.07	63.31	74.00	-10.69	Peak	
2	2390.0000	15.50	31.07	46.57	54.00	-7.43	AVG	
3	2412.0000	68.49	31.15	99.64	74.00	25.64	Peak	No Limit
4 *	2412.0000	60.94	31.15	92.09	54.00	38.09	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2412MHz

Vertical

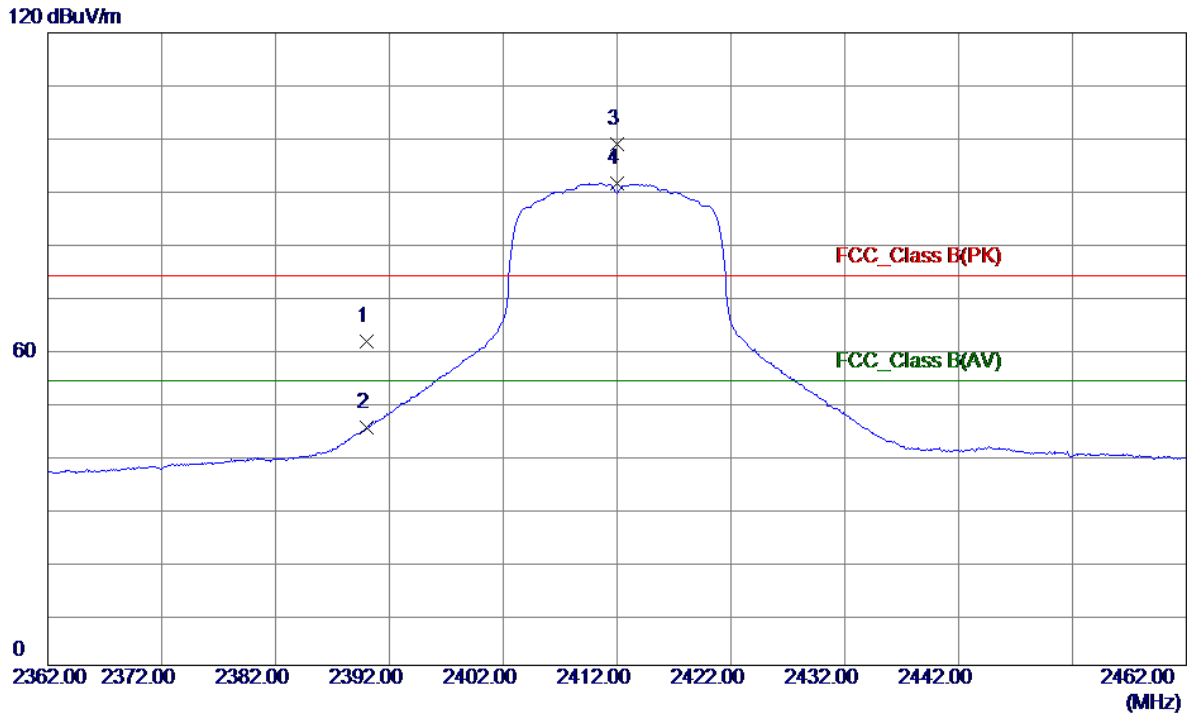
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	57.74	-11.37	46.37	74.00	-27.63	Peak	
2 *	4824.0000	46.11	-11.37	34.74	54.00	-19.26	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2412MHz

Horizontal

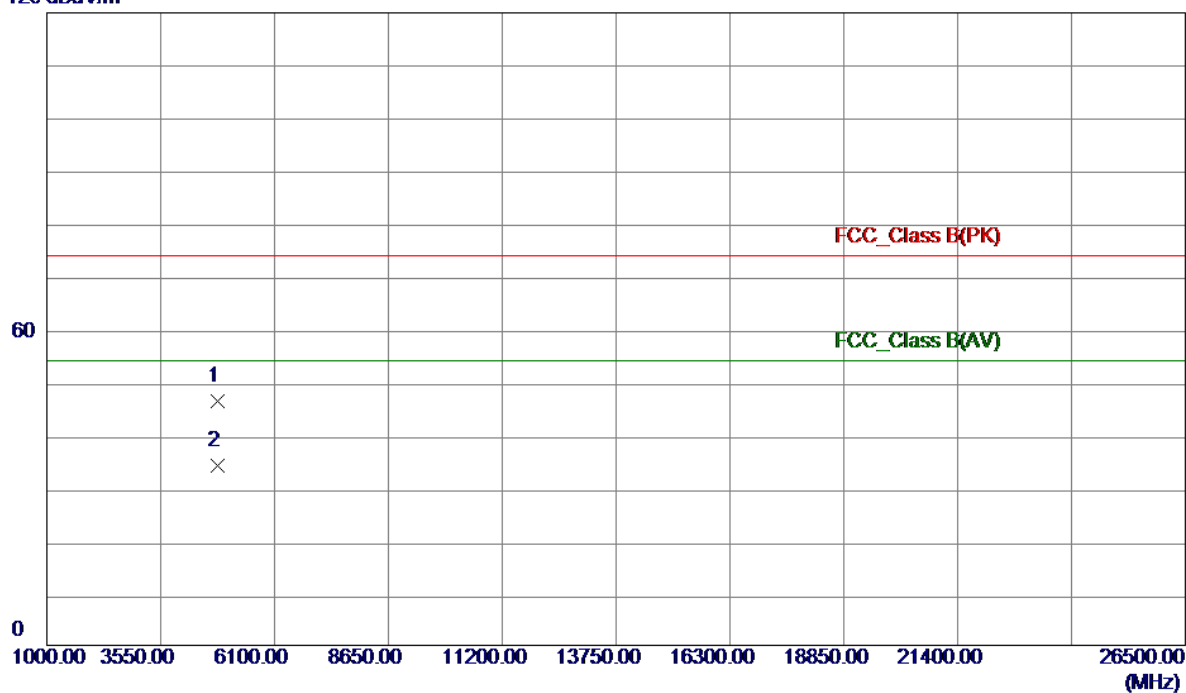


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	30.30	31.07	61.37	74.00	-12.63	Peak	
2	2390.0000	14.05	31.07	45.12	54.00	-8.88	AVG	
3	2412.0000	67.72	31.15	98.87	74.00	24.87	Peak	No Limit
4 *	2412.0000	60.29	31.15	91.44	54.00	37.44	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2412MHz

Horizontal

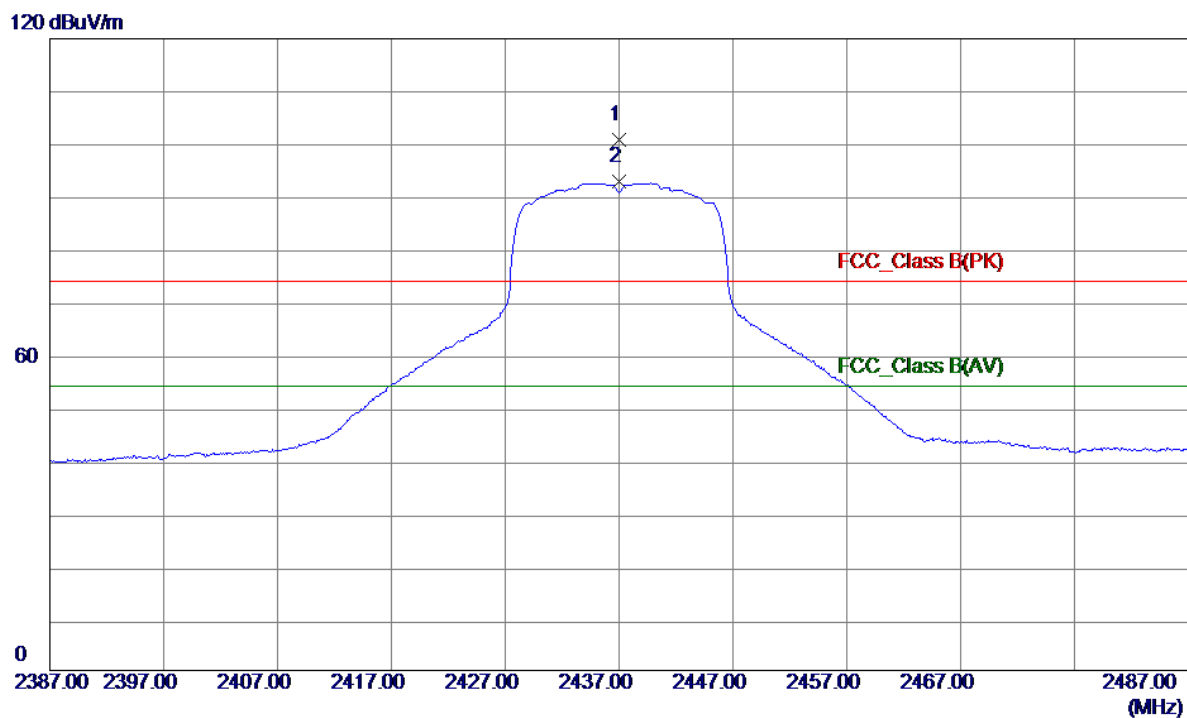
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4824.0000	57.80	-11.37	46.43	74.00	-27.57	Peak	
2 *	4824.0000	45.45	-11.37	34.08	54.00	-19.92	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

Vertical

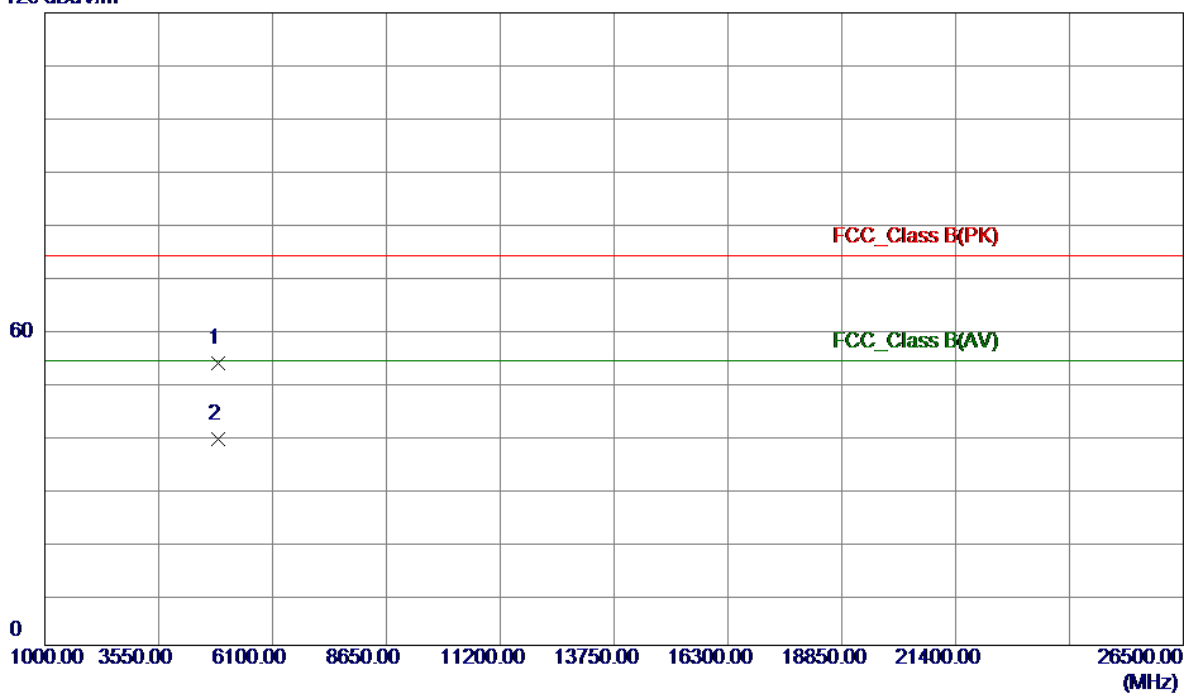


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2437.0000	69.49	31.24	100.73	74.00	26.73	Peak	No Limit
2 *	2437.0000	61.75	31.24	92.99	54.00	38.99	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

Vertical

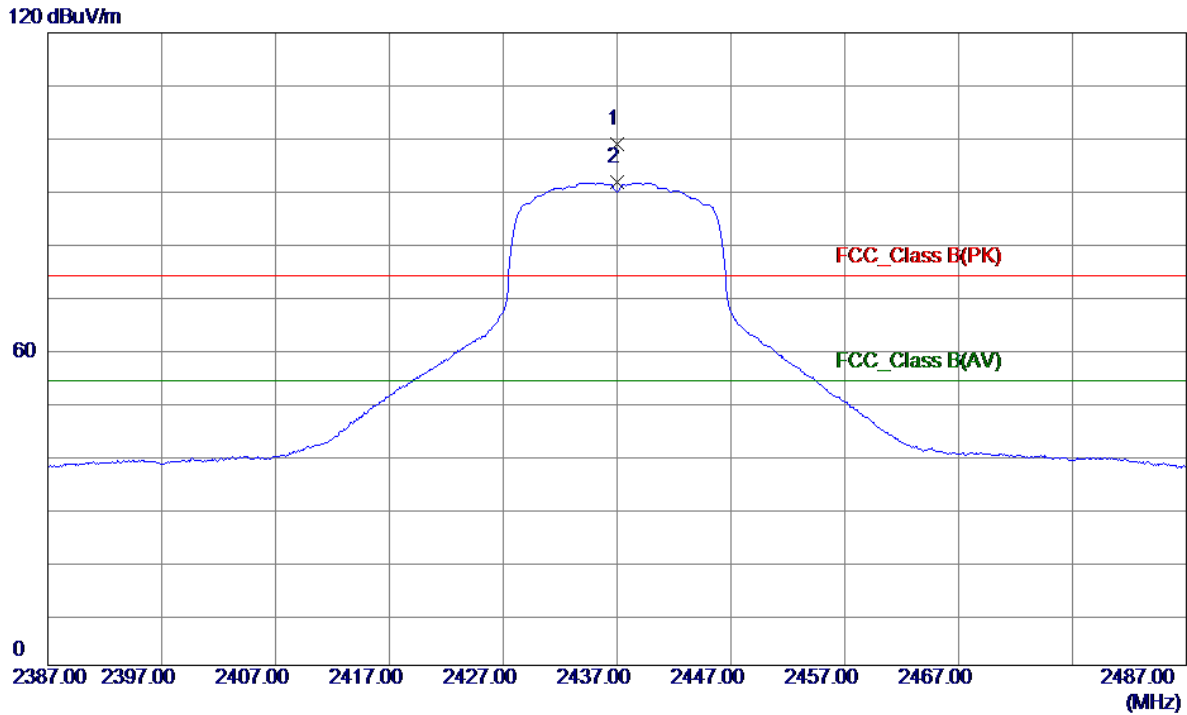
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	64.71	-11.29	53.42	74.00	-20.58	Peak	
2 *	4874.0000	50.43	-11.29	39.14	54.00	-14.86	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

Horizontal

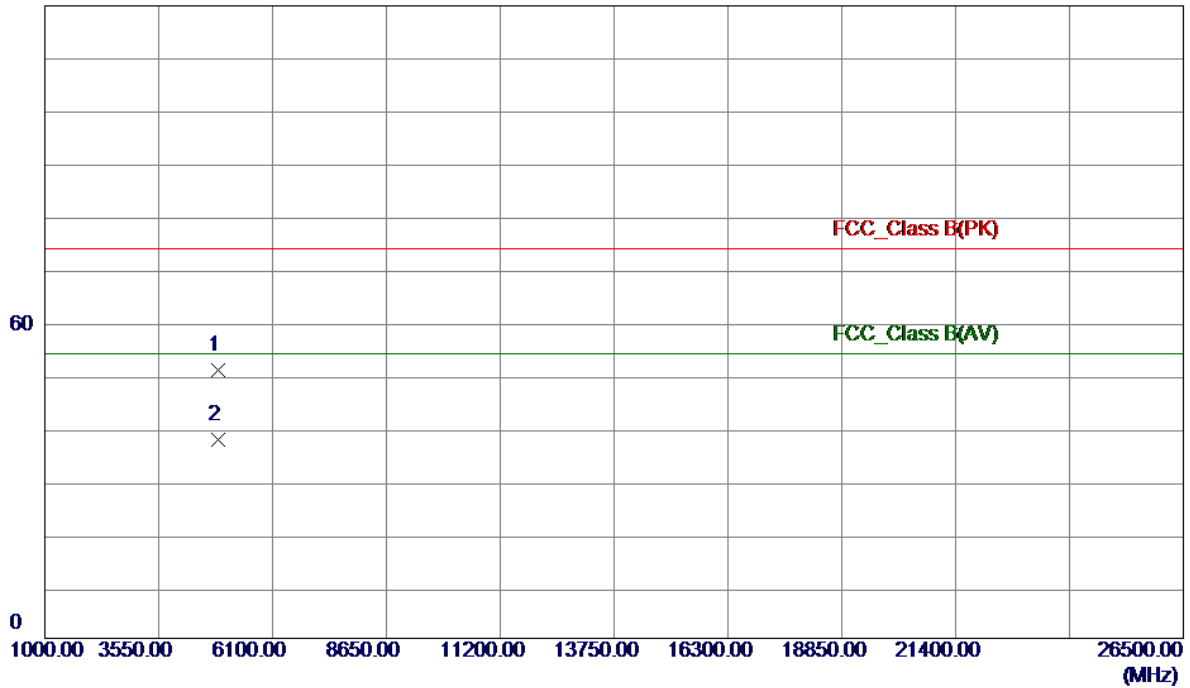


No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2437.0000	67.68	31.24	98.92	74.00	24.92	Peak	No Limit
2 *	2437.0000	60.38	31.24	91.62	54.00	37.62	AVG	No Limit

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2437MHz

Horizontal

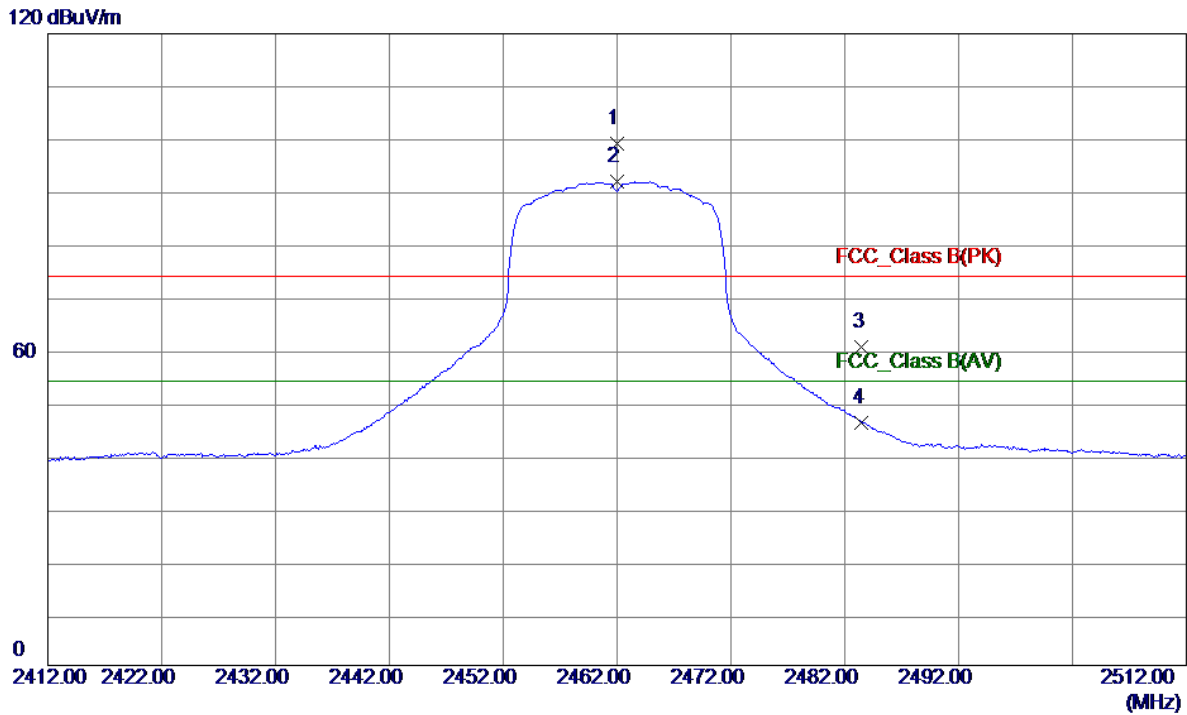
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4874.0000	62.12	-11.29	50.83	74.00	-23.17	Peak	
2 *	4874.0000	49.01	-11.29	37.72	54.00	-16.28	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

Vertical

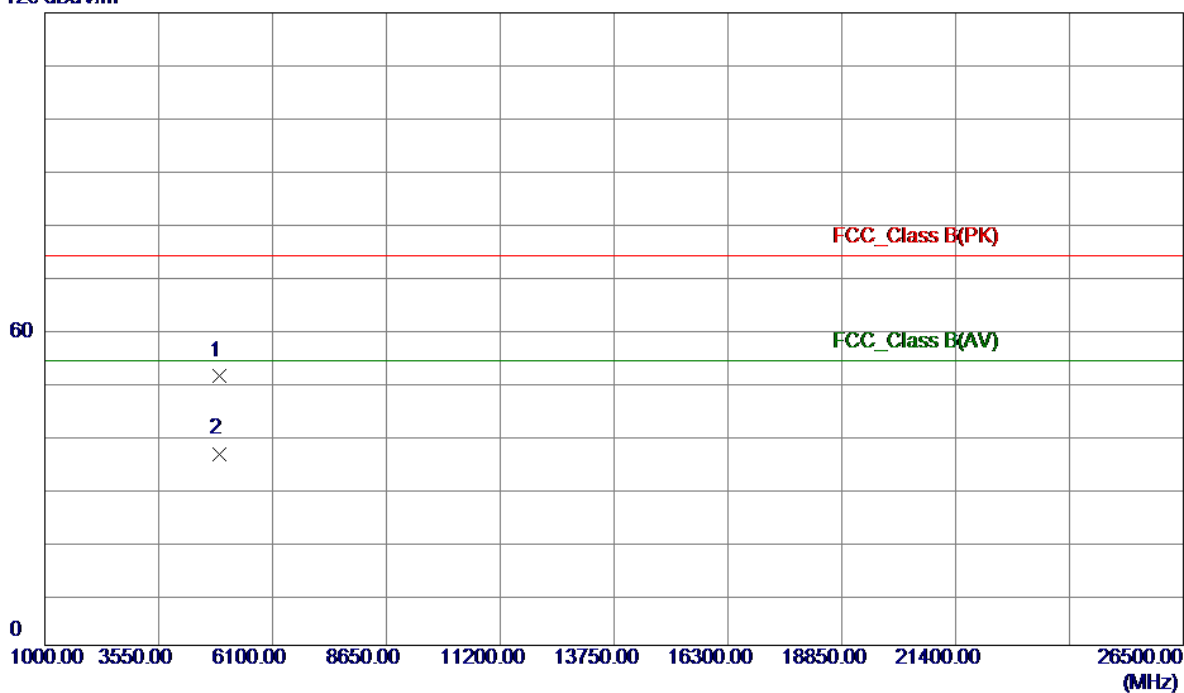


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.0000	67.90	31.33	99.23	74.00	25.23	Peak	No Limit
2 *	2462.0000	60.67	31.33	92.00	54.00	38.00	AVG	No Limit
3	2483.5000	29.11	31.41	60.52	74.00	-13.48	Peak	
4	2483.5000	14.71	31.41	46.12	54.00	-7.88	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

Vertical

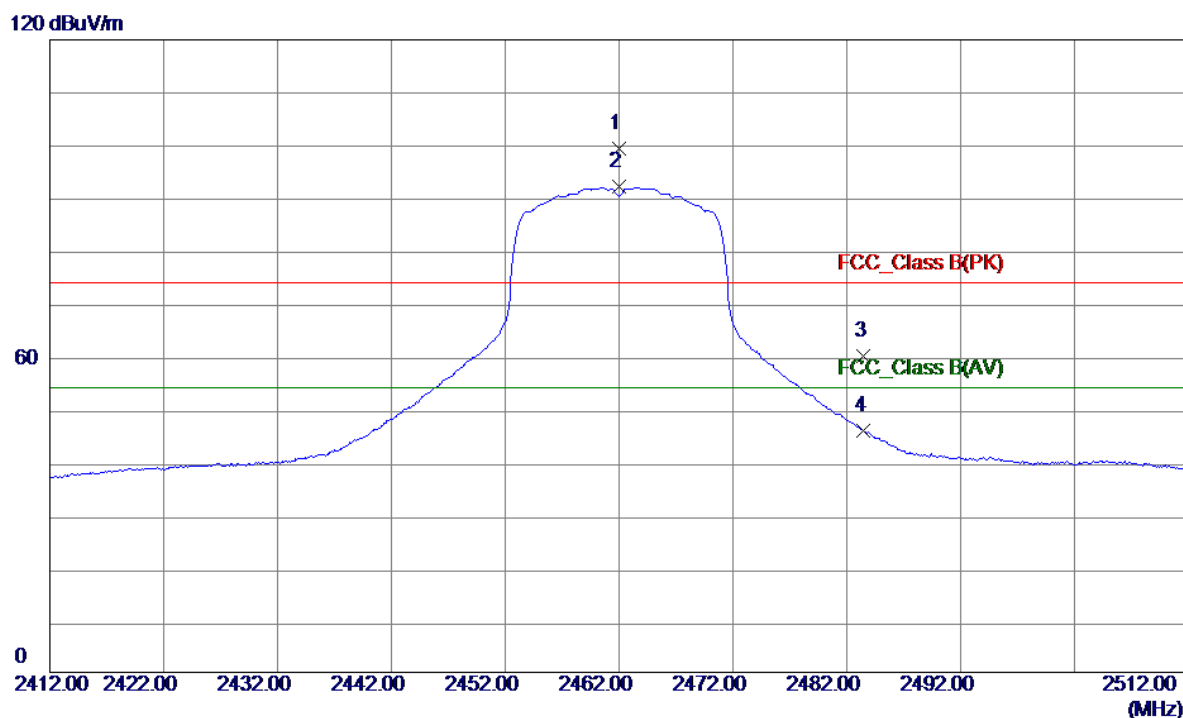
120 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	62.30	-11.22	51.08	74.00	-22.92	Peak	
2 *	4924.0000	47.58	-11.22	36.36	54.00	-17.64	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

Horizontal

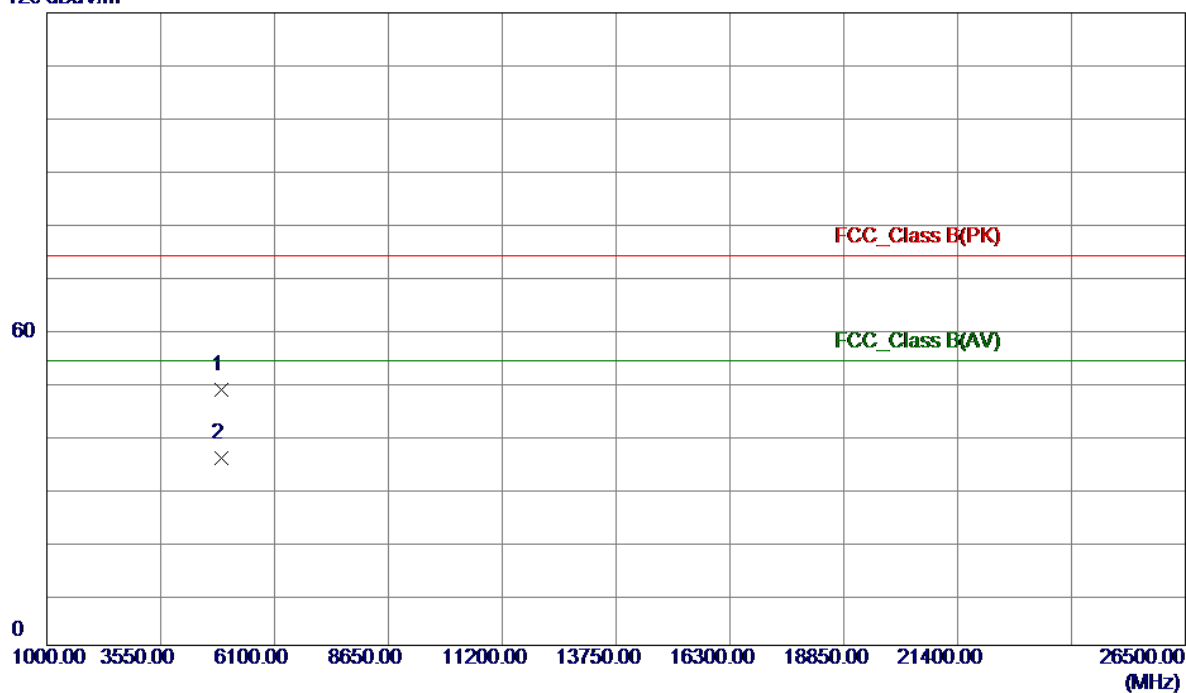


No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2462.0000	68.05	31.33	99.38	74.00	25.38	Peak	No Limit
2 *	2462.0000	60.83	31.33	92.16	54.00	38.16	AVG	No Limit
3	2483.5000	28.51	31.41	59.92	74.00	-14.08	Peak	
4	2483.5000	14.51	31.41	45.92	54.00	-8.08	AVG	

Orthogonal Axis :	X
Test Mode :	TX N-20M MODE 2462MHz

Horizontal

120 dBuV/m



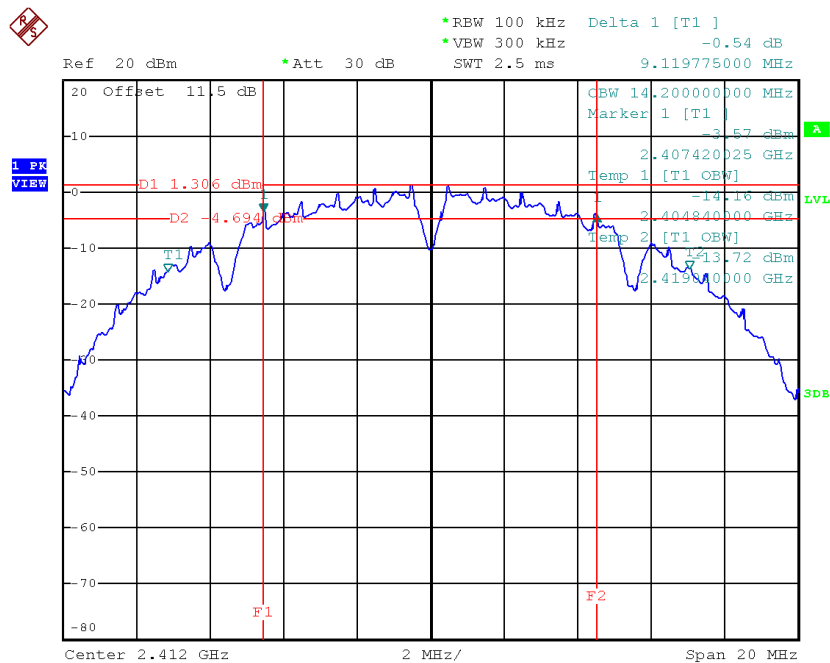
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0000	59.70	-11.22	48.48	74.00	-25.52	Peak	
2 *	4924.0000	46.65	-11.22	35.43	54.00	-18.57	AVG	

ATTACHMENT E - BANDWIDTH

Test Mode : TX B Mode_CH01/06/11

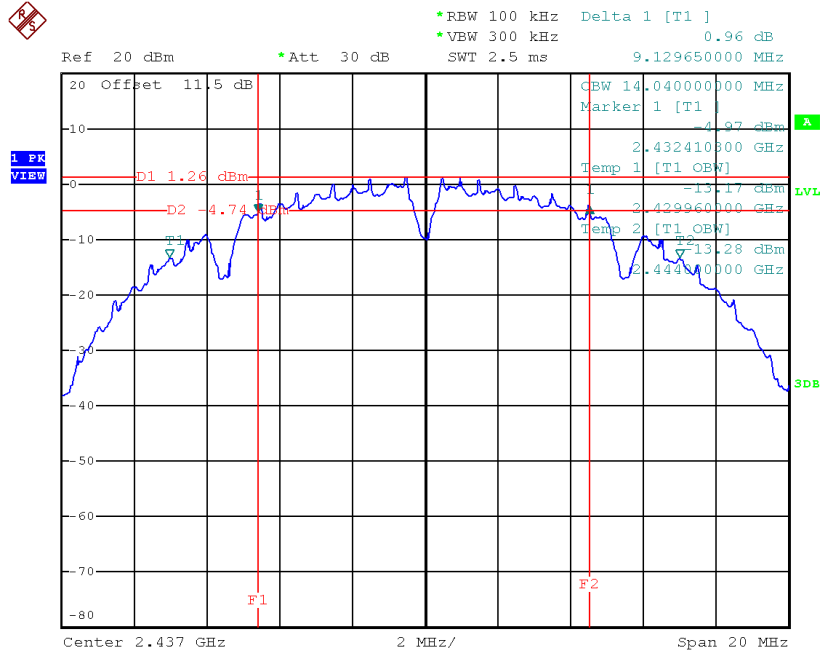
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	9.12	14.2	500	Complies
2437	9.13	14.04	500	Complies
2462	9.16	14.12	500	Complies

TX CH01



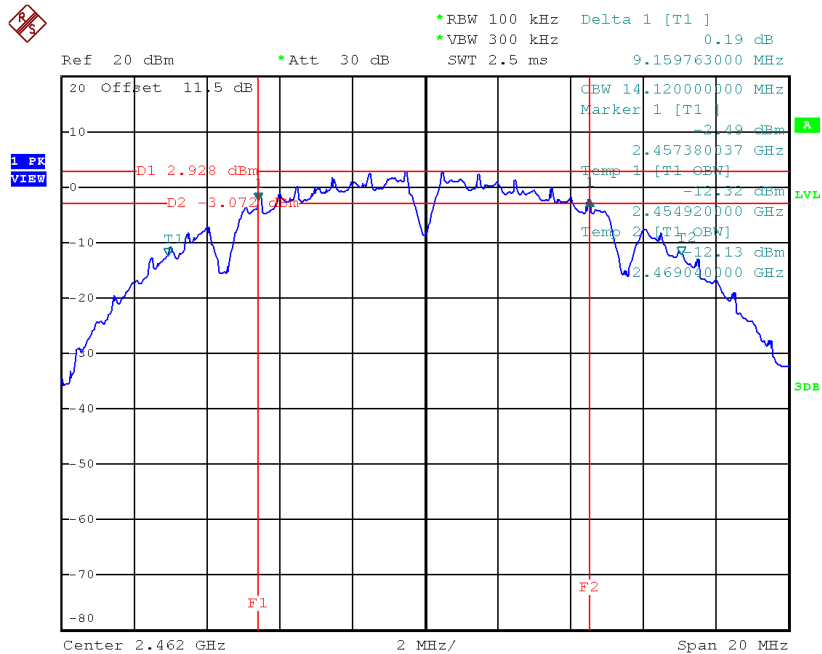
Date: 27.JUN.2017 11:14:57

TX CH06



Date: 27.JUN.2017 11:16:37

TX CH11

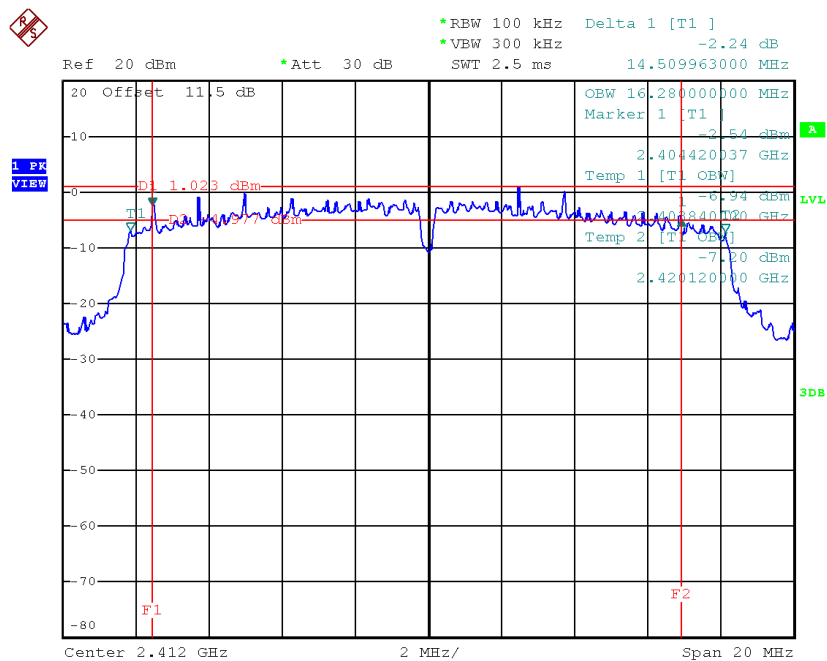


Date: 27.JUN.2017 11:18:31

Test Mode: TX G Mode_CH01/06/11

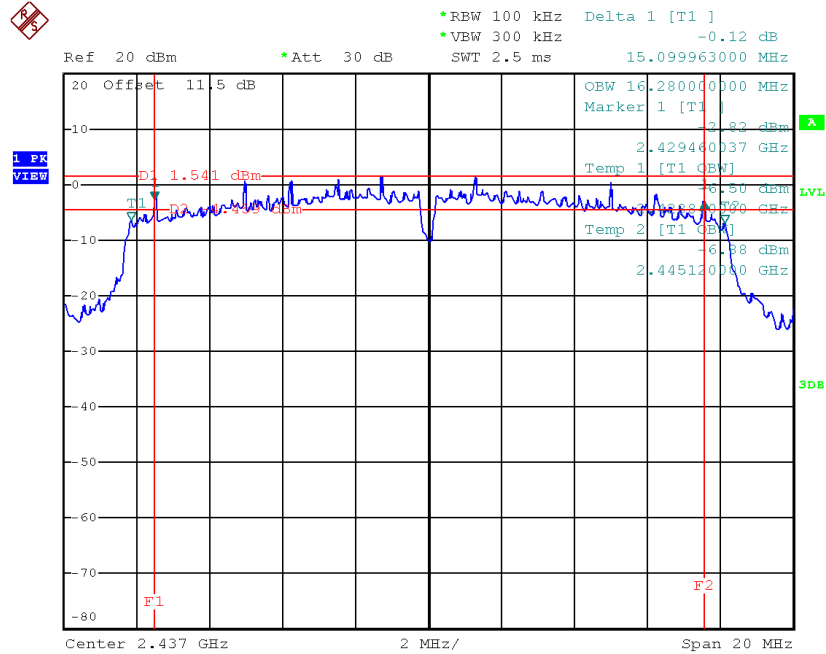
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	14.51	16.28	500	Complies
2437	15.1	16.28	500	Complies
2462	14.47	16.32	500	Complies

TX CH01



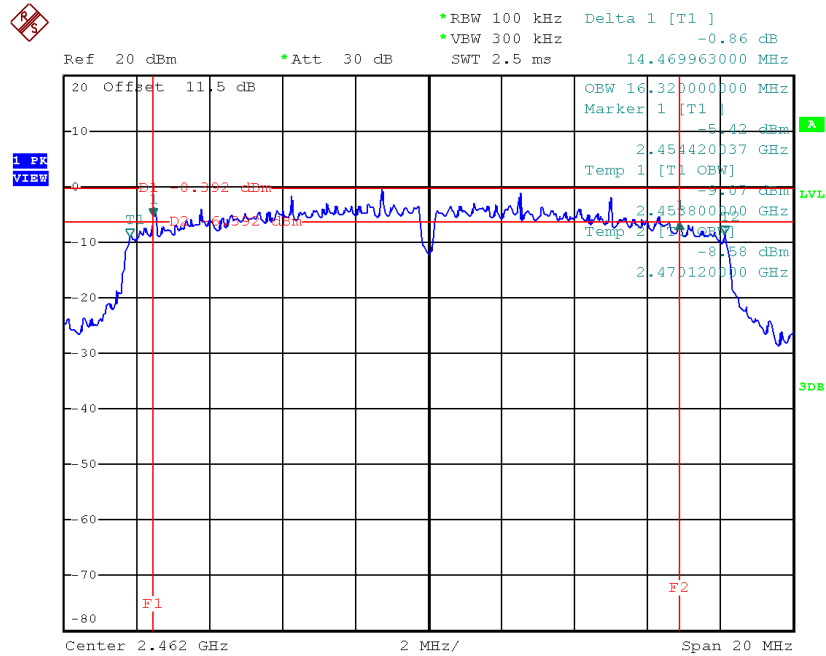
Date: 27.JUN.2017 11:19:53

TX CH06



Date: 27.JUN.2017 11:21:25

TX CH11

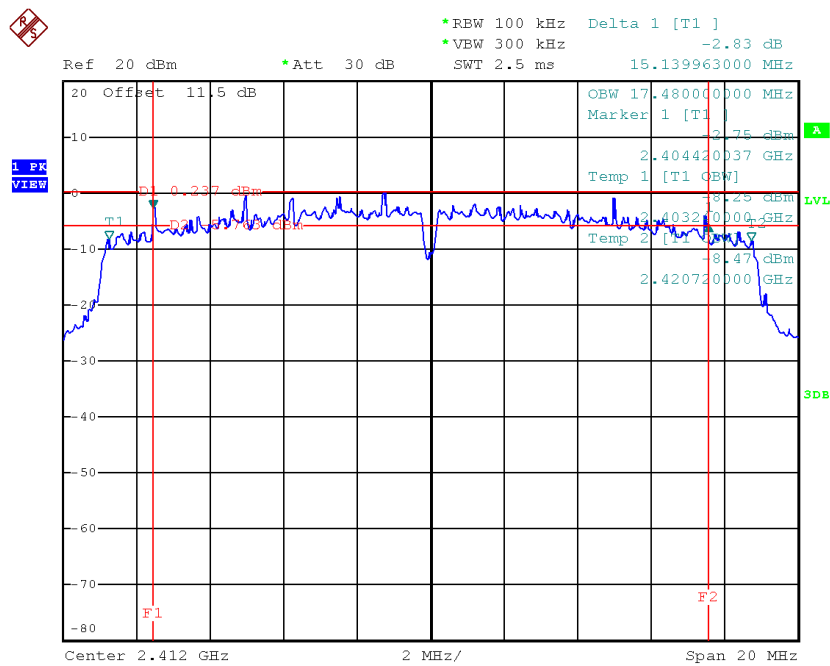


Date: 27.JUN.2017 11:22:37

Test Mode : TX N-20MHz Mode_CH01/06/11

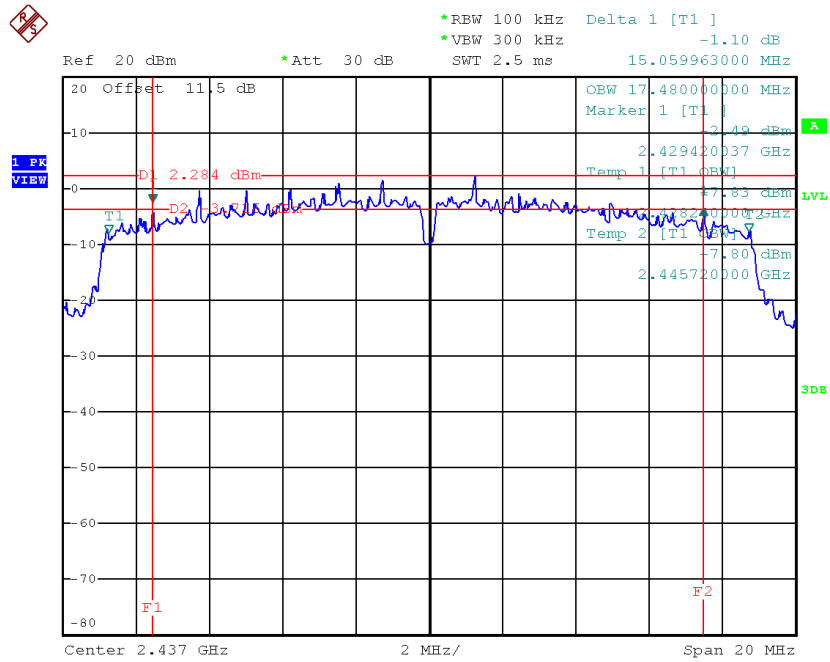
Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied BW (MHz)	Min. Limit (kHz)	Test Result
2412	15.14	17.48	500	Complies
2437	15.06	17.48	500	Complies
2462	15.14	17.48	500	Complies

TX CH01



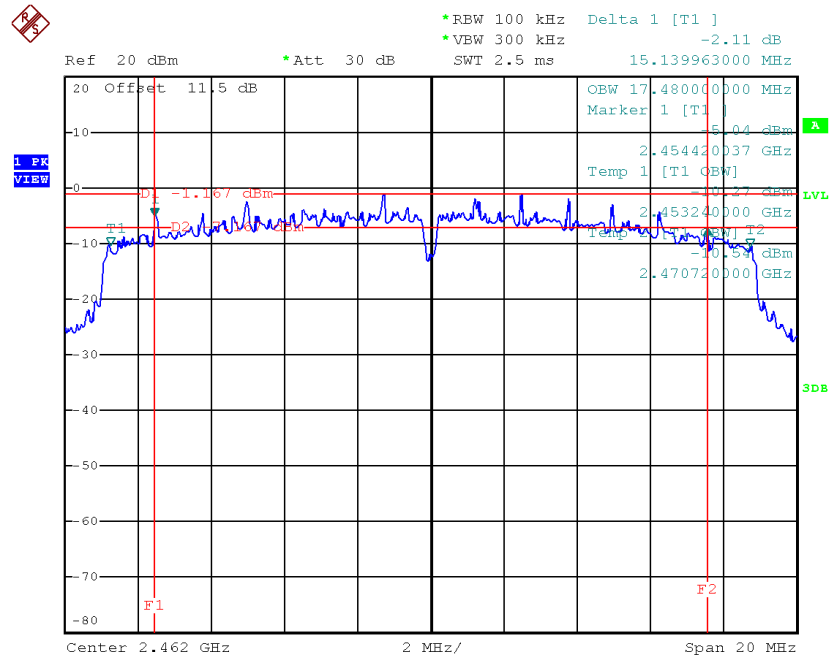
Date: 27.JUN.2017 11:24:00

TX CH06



Date: 27.JUN.2017 11:25:34

TX CH11



Date: 27.JUN.2017 11:26:42

ATTACHMENT F – MAXIMUM PEAK CONDUCTED OUTPUT POWER

Test Mode :TX B Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	14.26	0.03	30.00	1.00	Complies
2437	14.43	0.03	30.00	1.00	Complies
2462	15.13	0.03	30.00	1.00	Complies

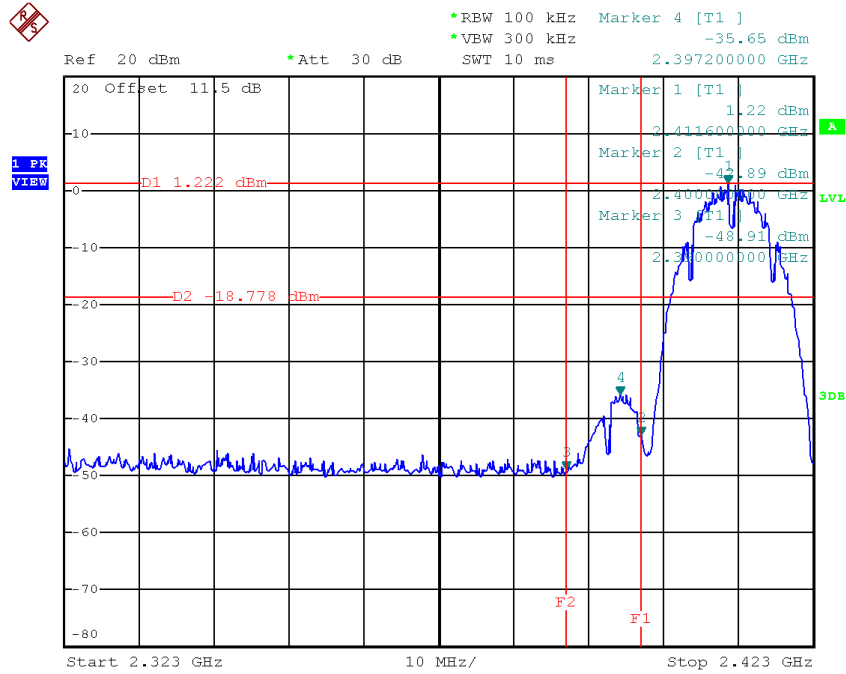
Test Mode :TX G Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.13	0.07	30.00	1.00	Complies
2437	18.21	0.07	30.00	1.00	Complies
2462	17.90	0.06	30.00	1.00	Complies

Test Mode :TX N20 Mode_CH01/06/11					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
2412	18.16	0.07	30.00	1.00	Complies
2437	18.21	0.07	30.00	1.00	Complies
2462	17.71	0.06	30.00	1.00	Complies

ATTACHMENT G - ANTENNA CONDUCTED SPURIOUS EMISSION

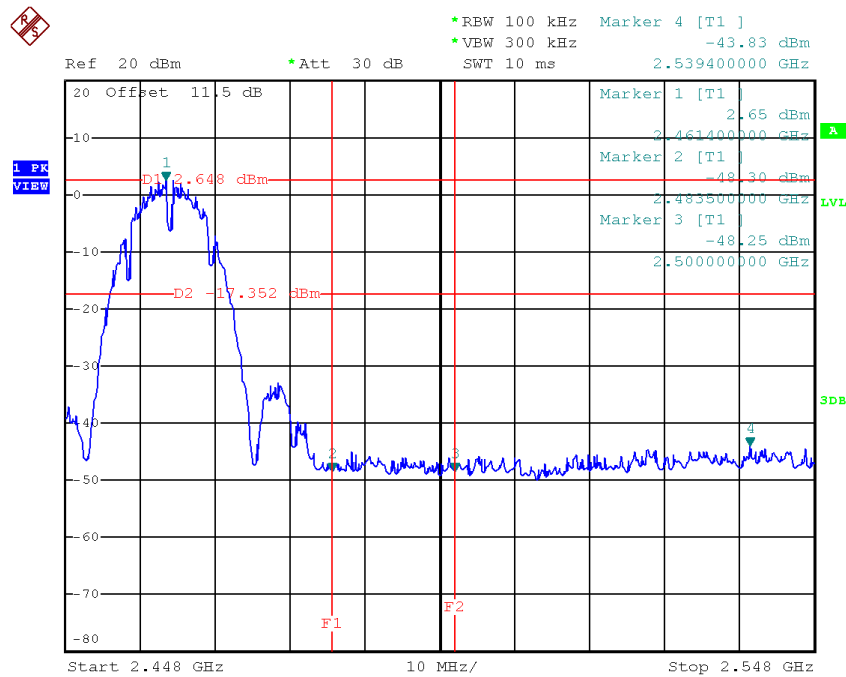
Test Mode : TX B Mode

TX B mode CH01



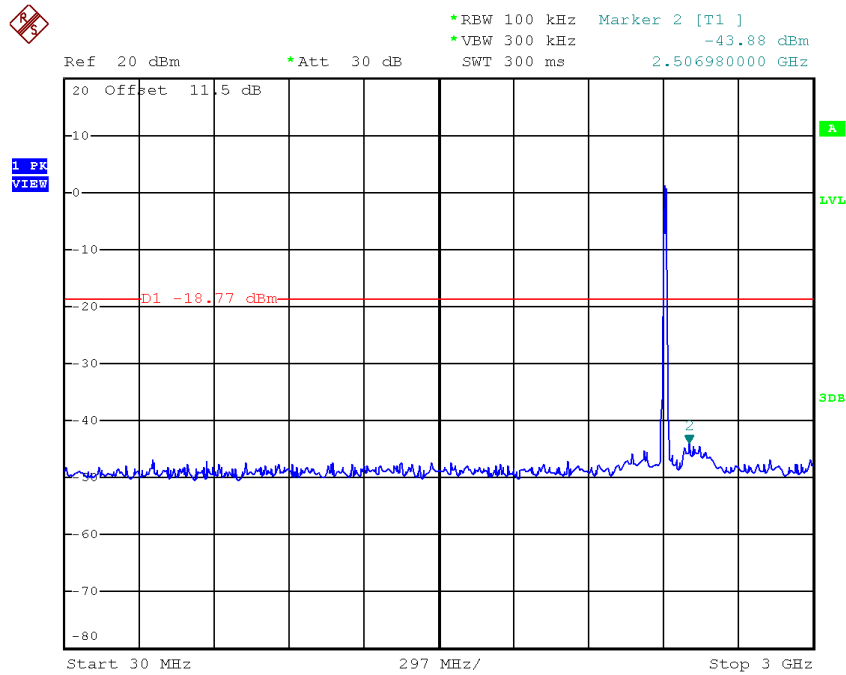
Date: 27.JUN.2017 11:15:31

TX B mode CH11

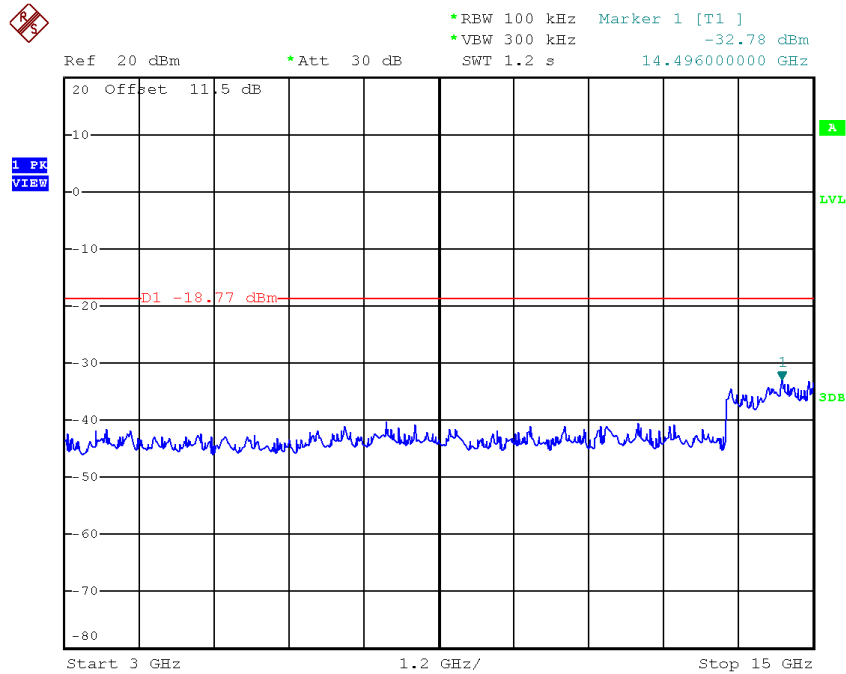


Date: 27.JUN.2017 11:19:05

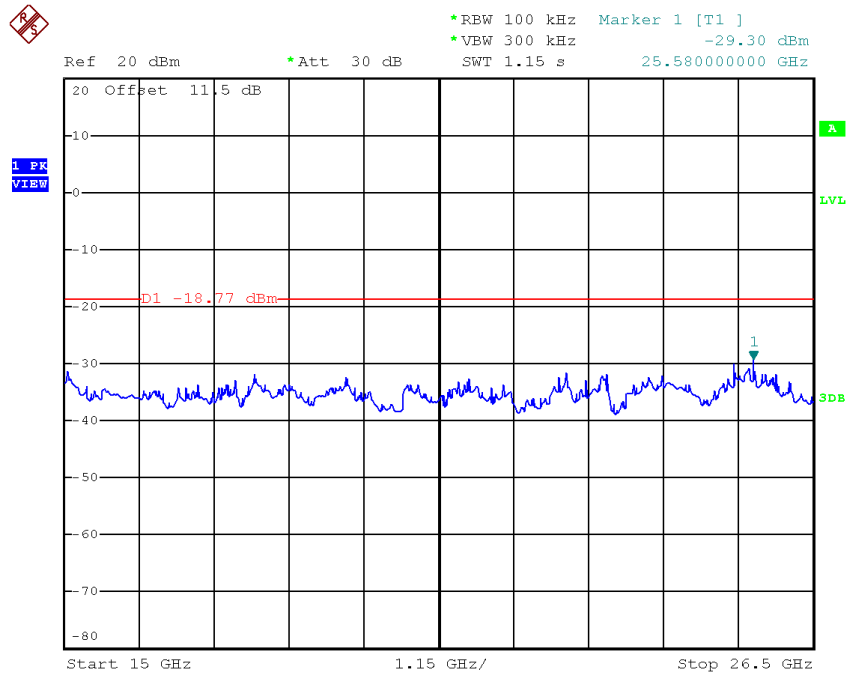
TX B mode CH01 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:15:10

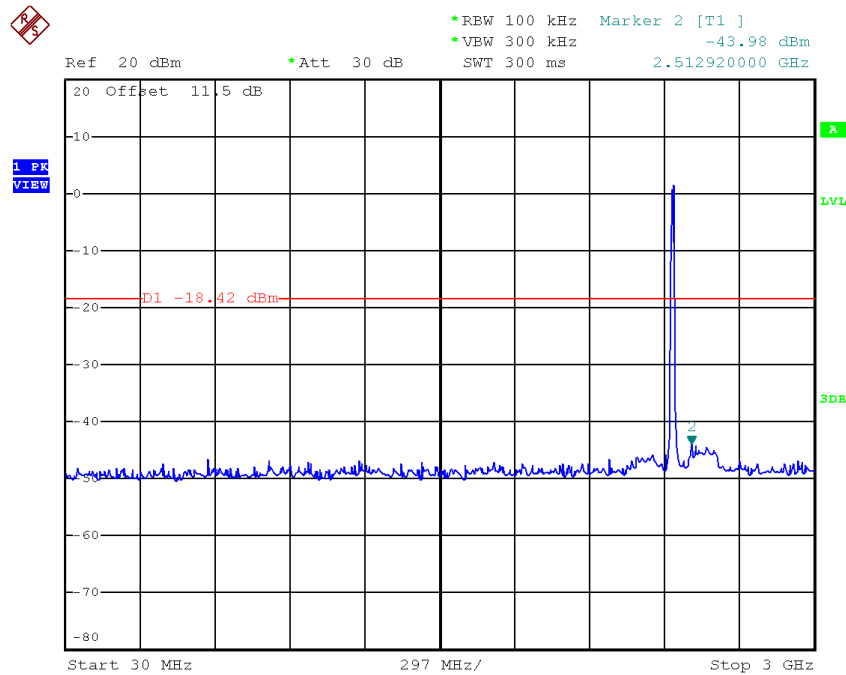


Date: 27.JUN.2017 11:15:17

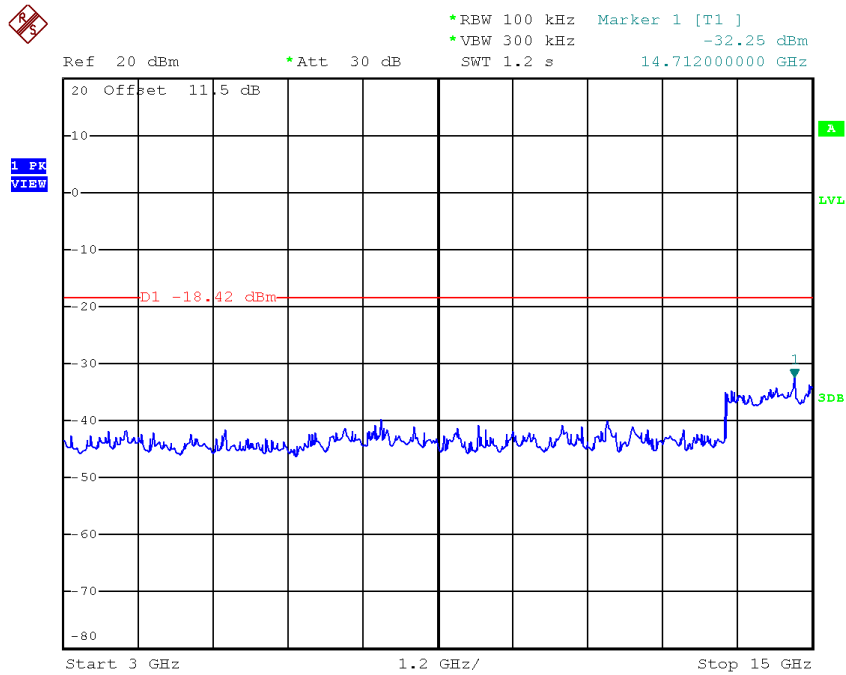


Date: 27.JUN.2017 11:15:24

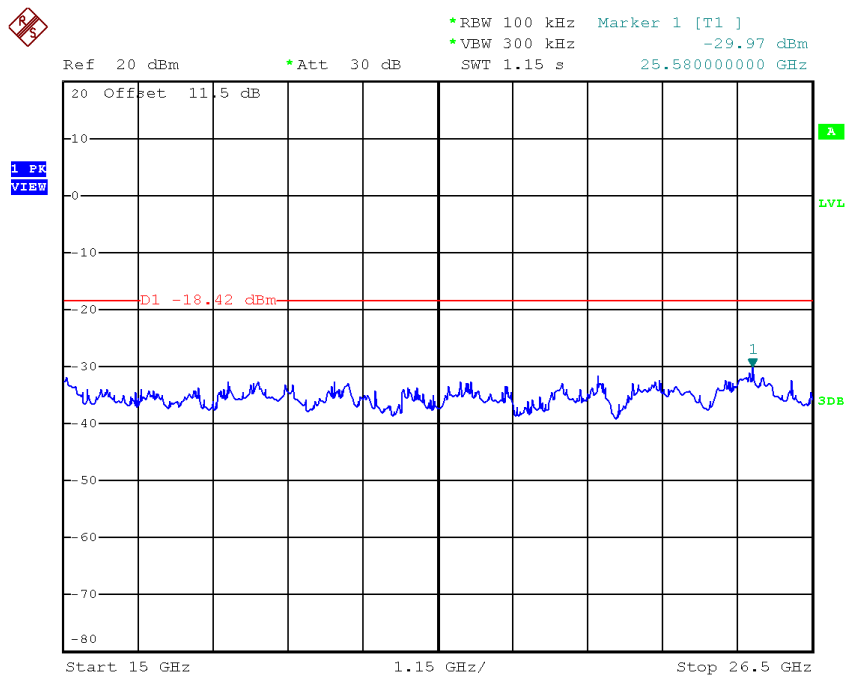
TX B mode CH06 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:16:50

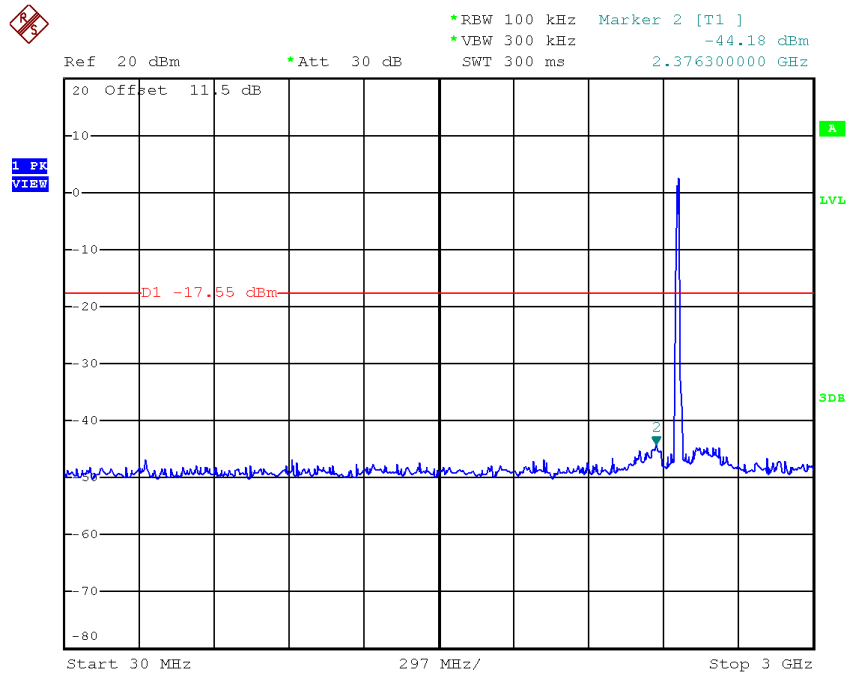


Date: 27.JUN.2017 11:16:57

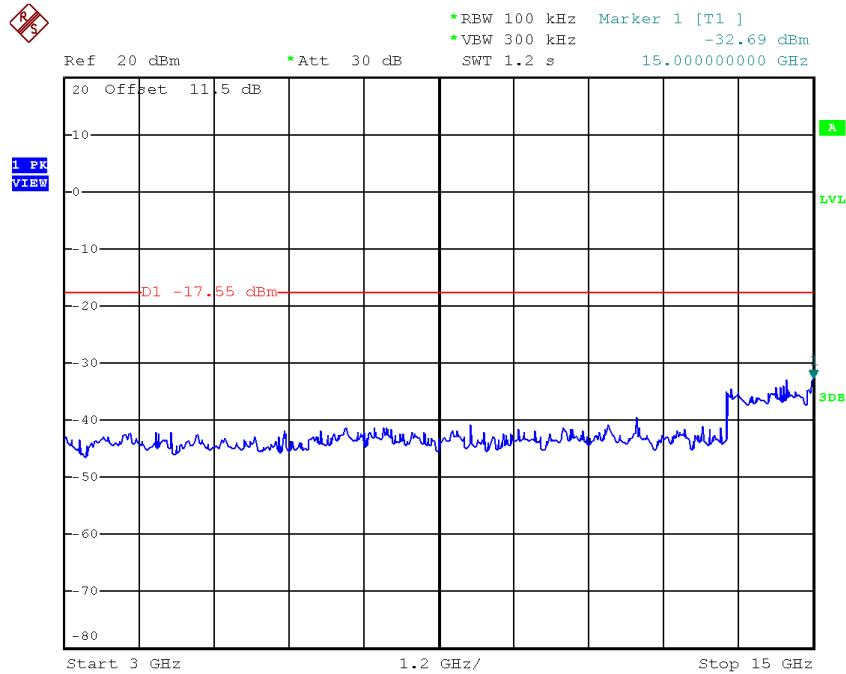


Date: 27.JUN.2017 11:17:03

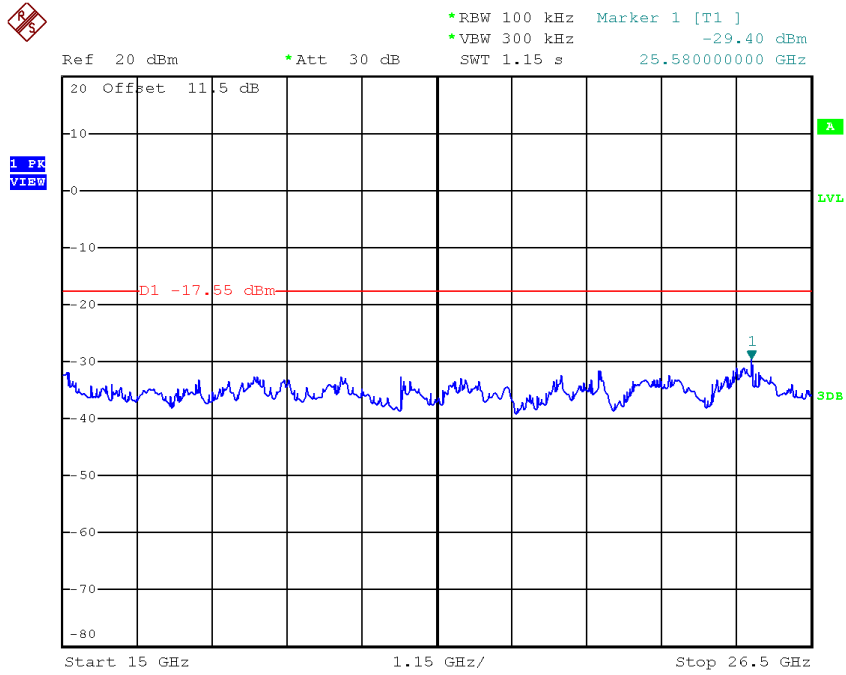
TX B mode CH11 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:18:45



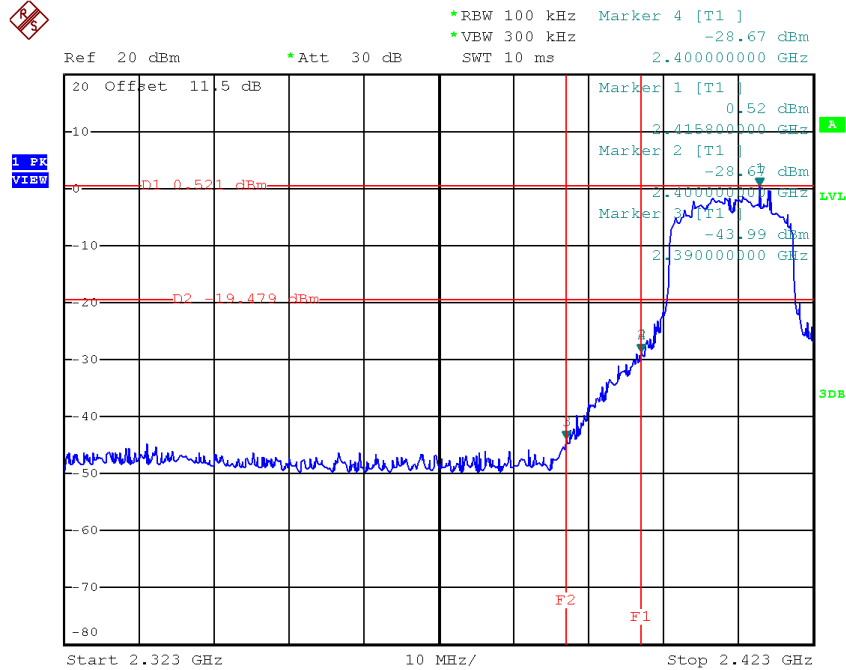
Date: 27.JUN.2017 11:18:51



Date: 27.JUN.2017 11:18:58

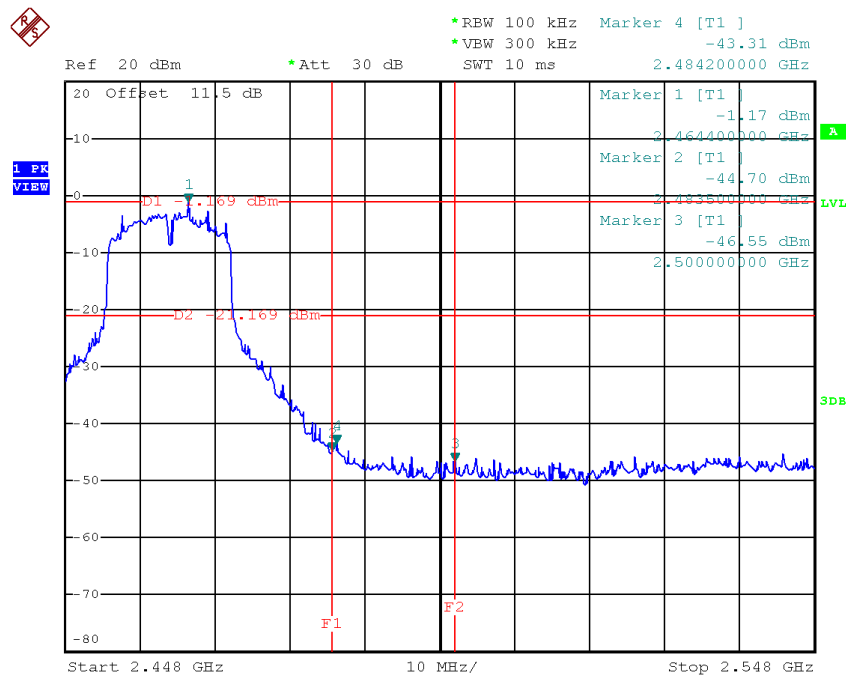
Test Mode : TX G Mode

TX G mode CH01



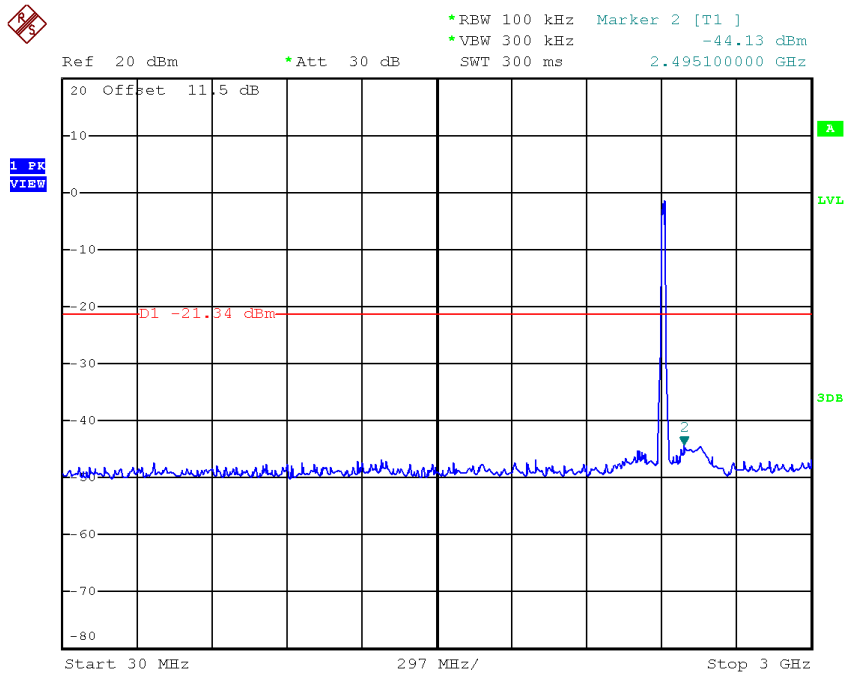
Date: 27.JUN.2017 11:20:43

TX G mode CH11

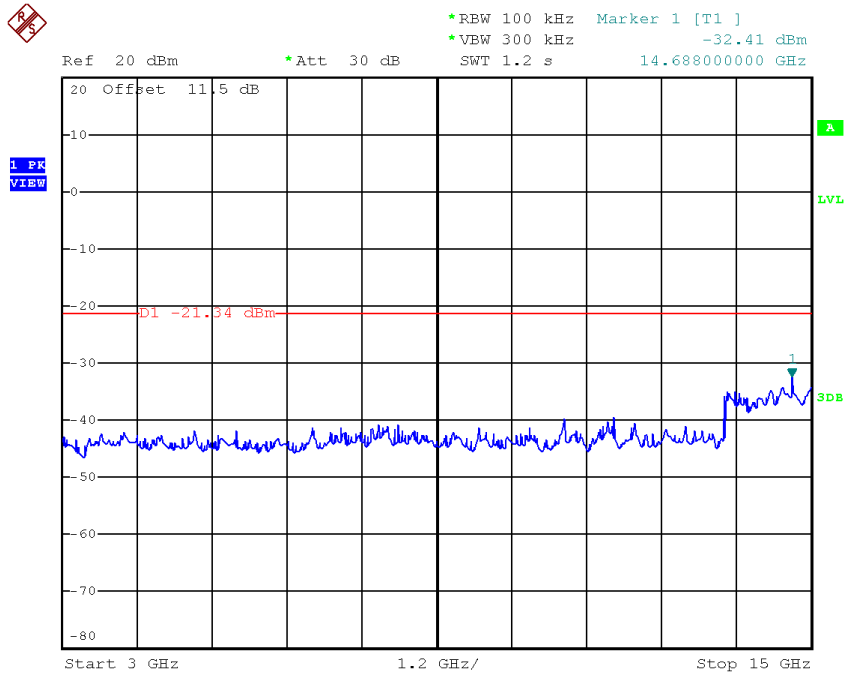


Date: 27.JUN.2017 11:23:11

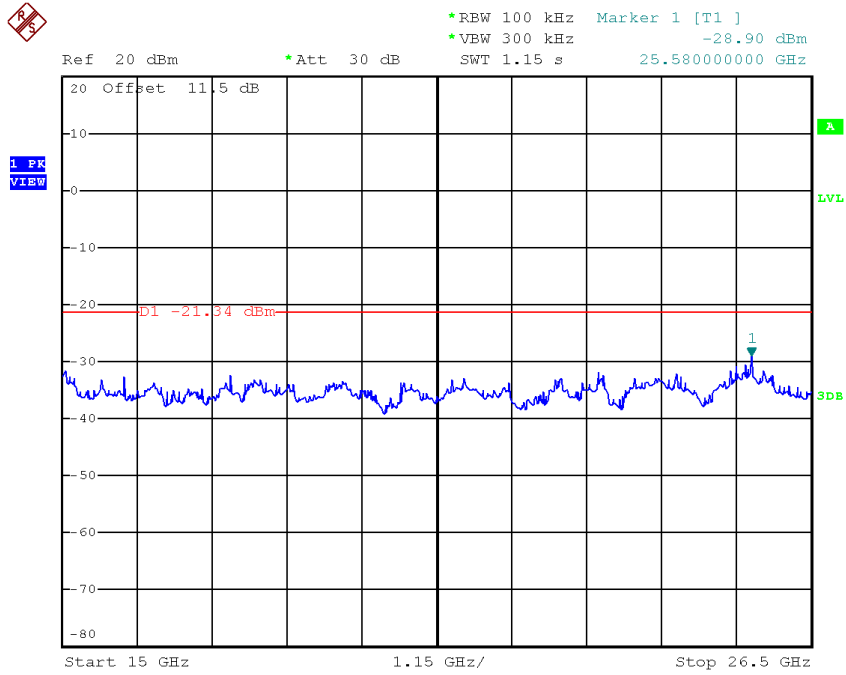
TX G mode CH01 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:20:06

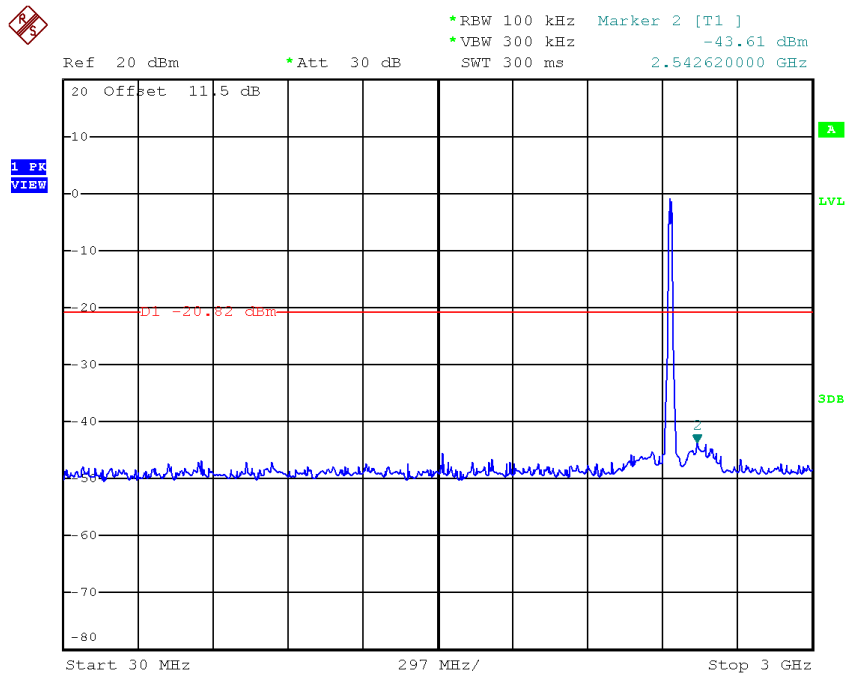


Date: 27.JUN.2017 11:20:13

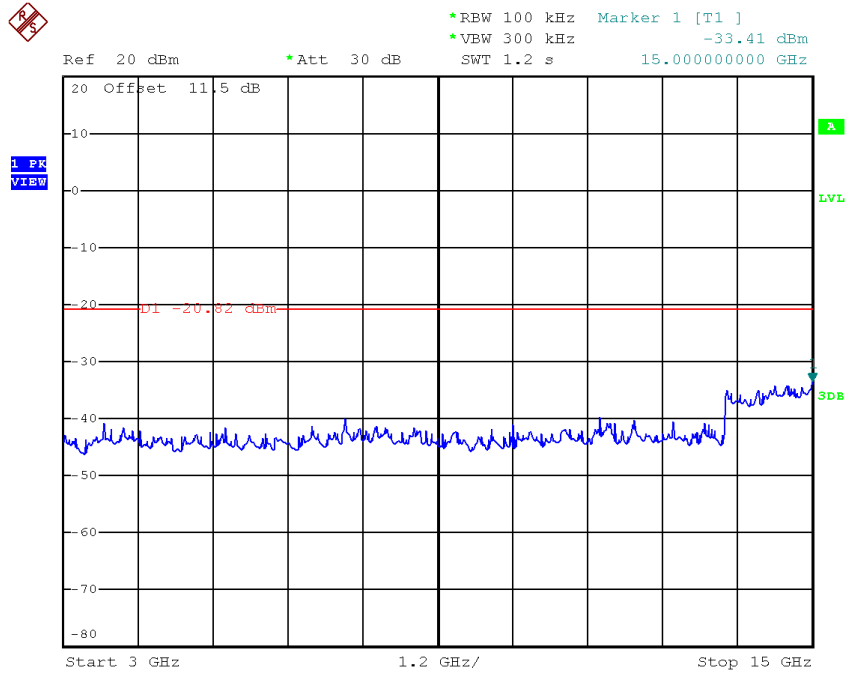


Date: 27.JUN.2017 11:20:20

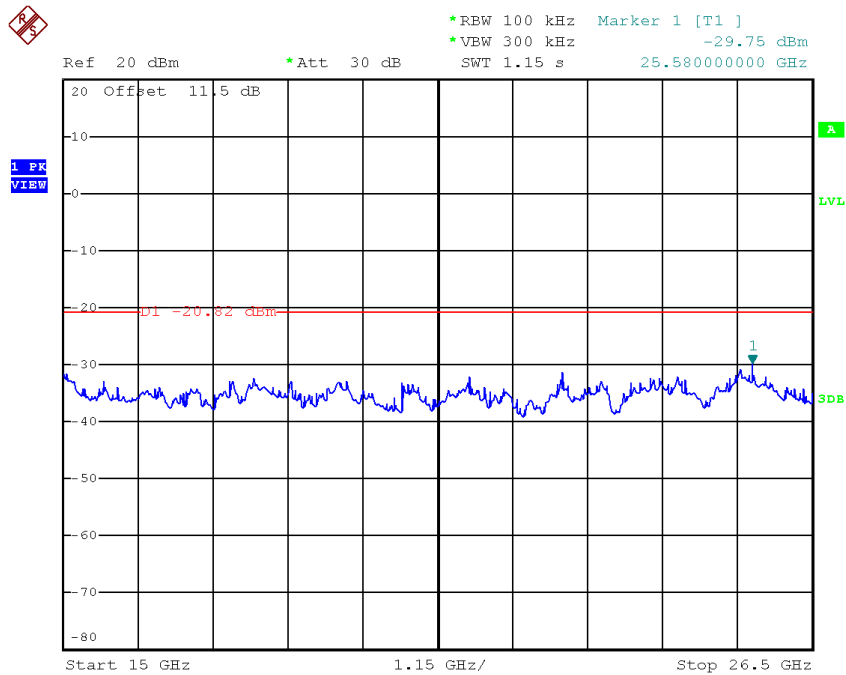
TX G mode CH06 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:21:38

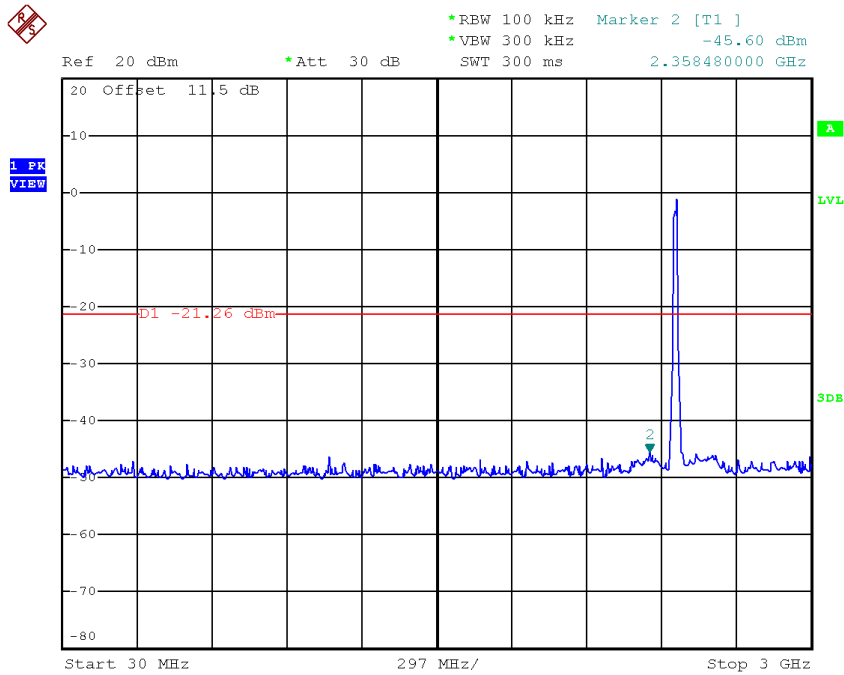


Date: 27.JUN.2017 11:21:45

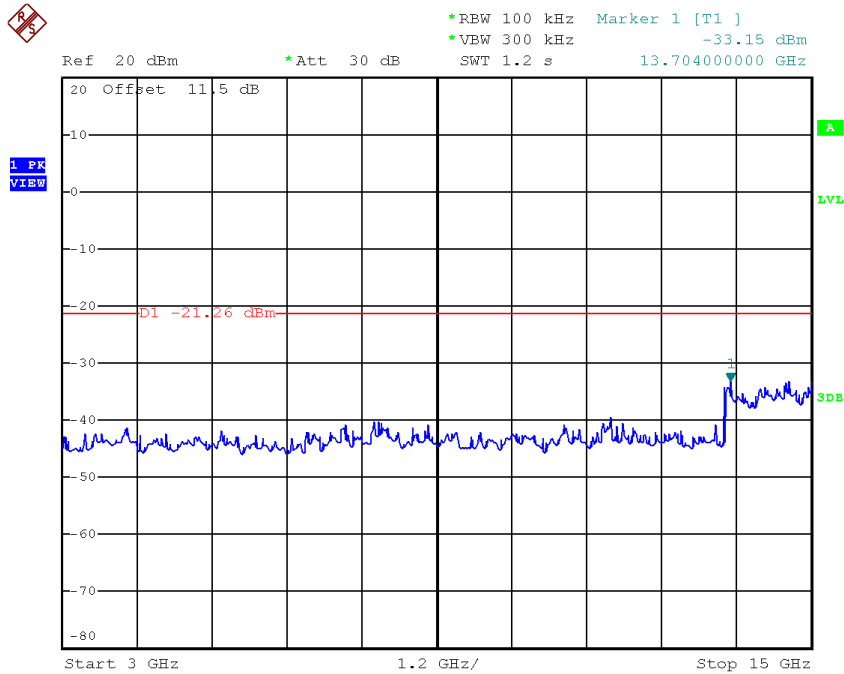


Date: 27.JUN.2017 11:21:52

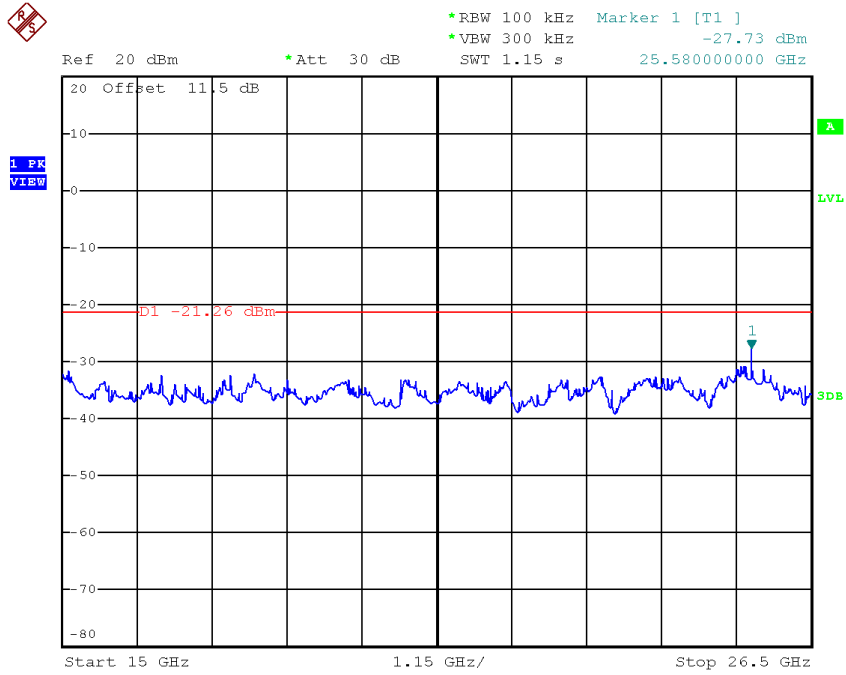
TX G mode CH11 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:22:50



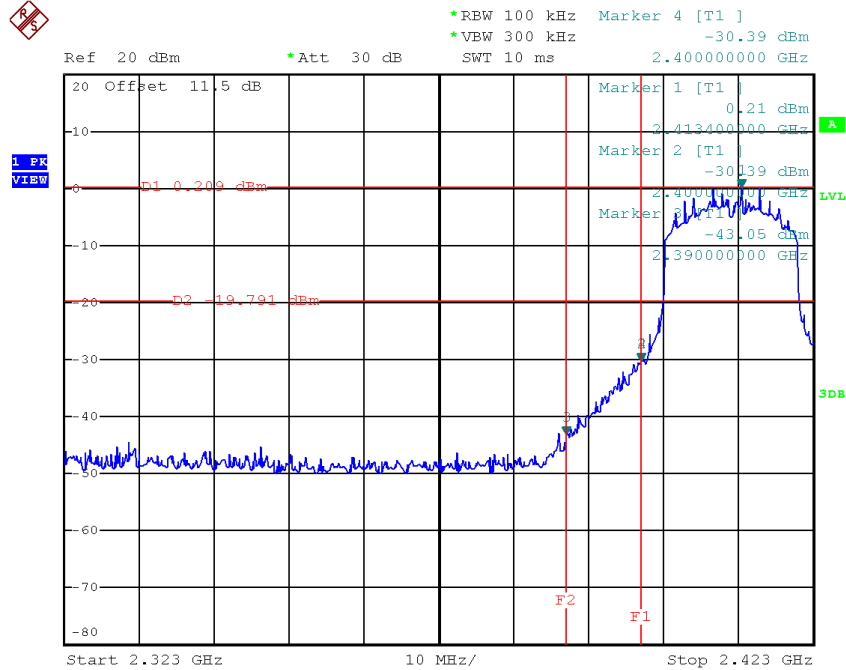
Date: 27.JUN.2017 11:22:57



Date: 27.JUN.2017 11:23:04

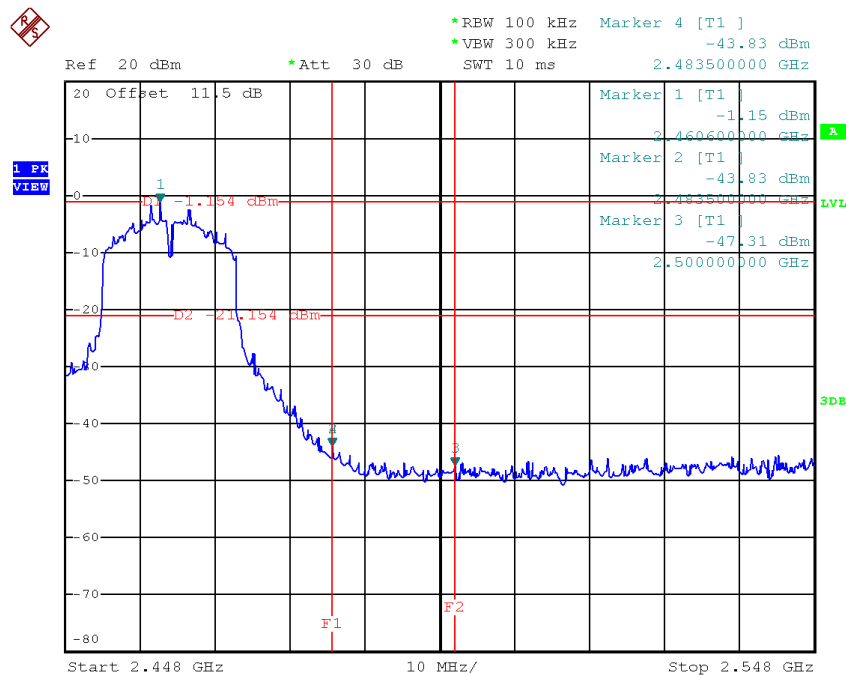
Test Mode : TX N-20M Mode

TX HT20 mode CH01



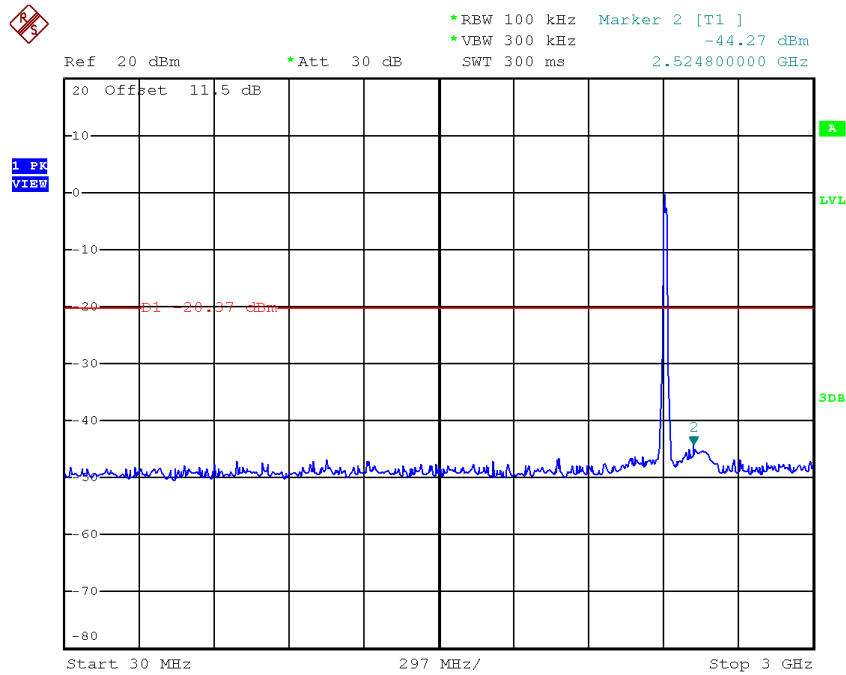
Date: 27.JUN.2017 11:24:50

TX HT20 mode CH11

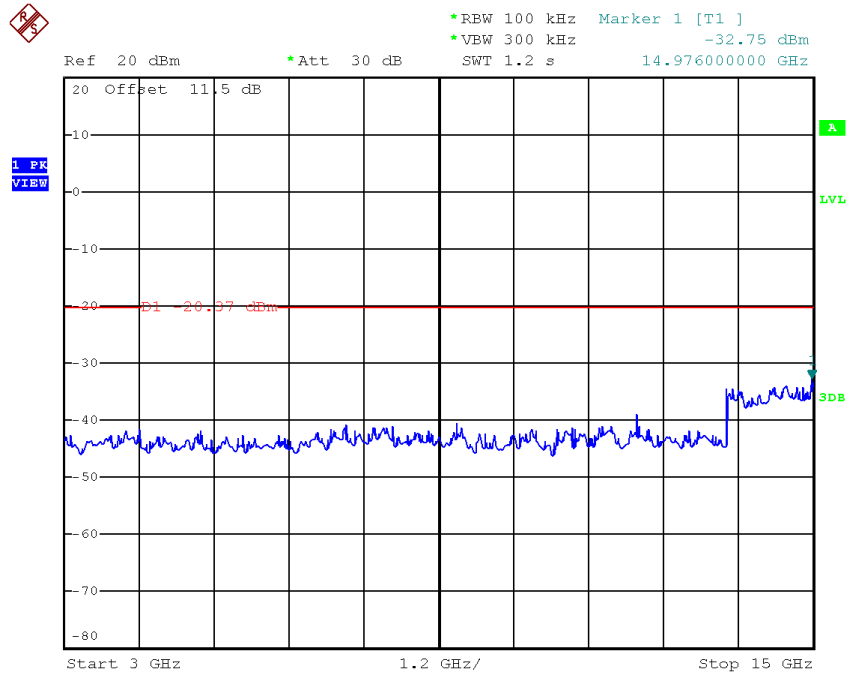


Date: 27.JUN.2017 11:27:32

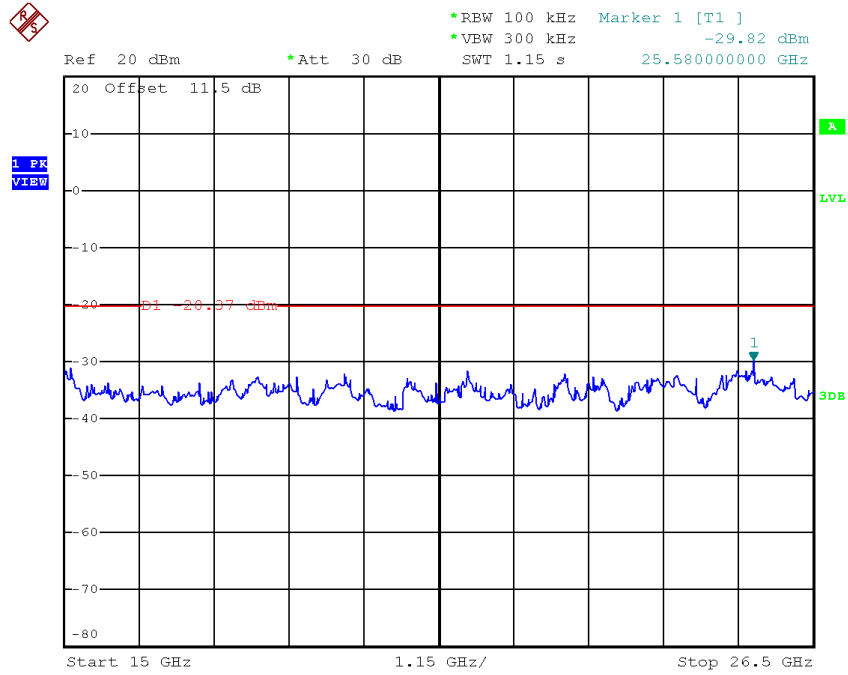
TX HT20 mode CH01 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:24:12

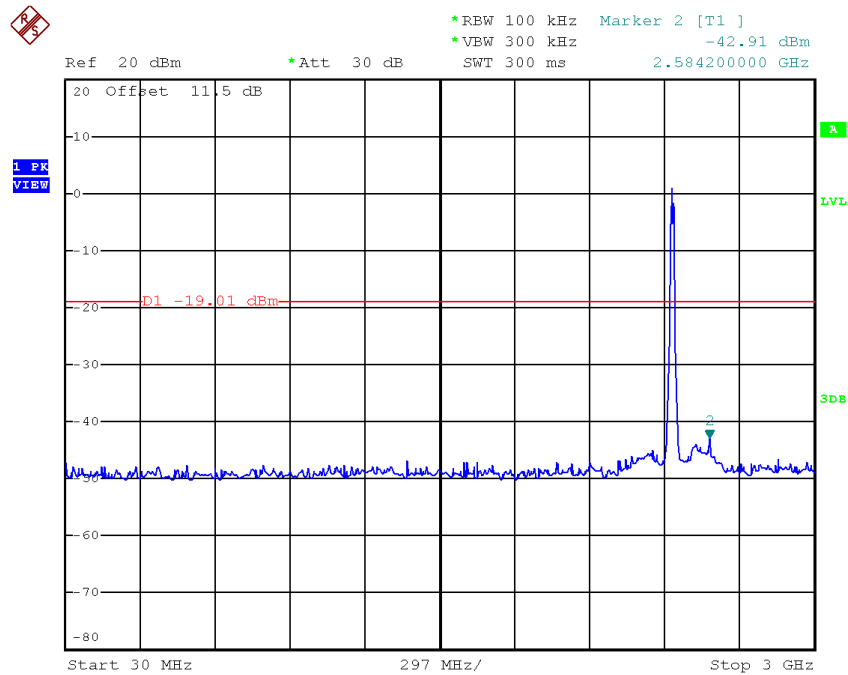


Date: 27.JUN.2017 11:24:19

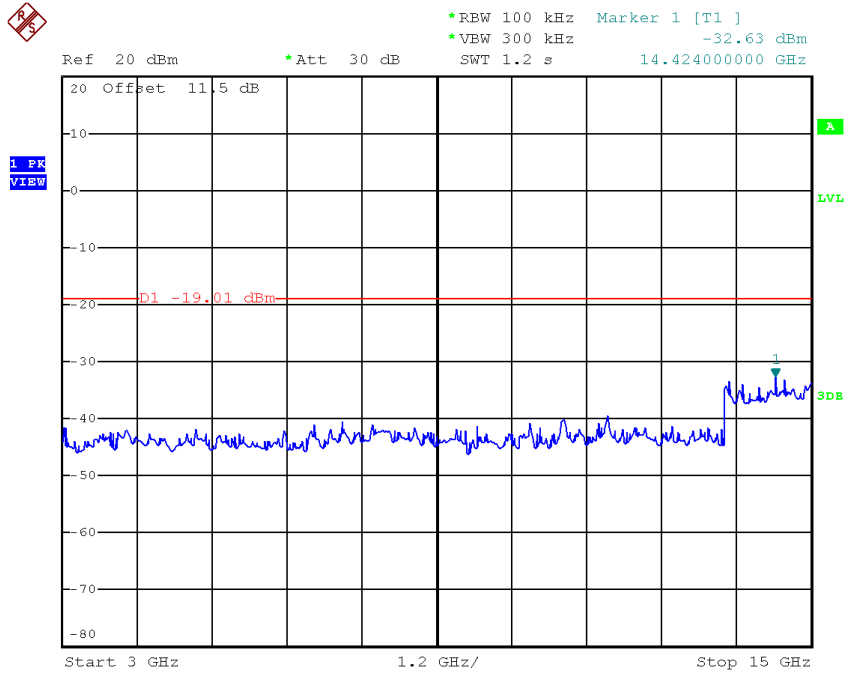


Date: 27.JUN.2017 11:24:26

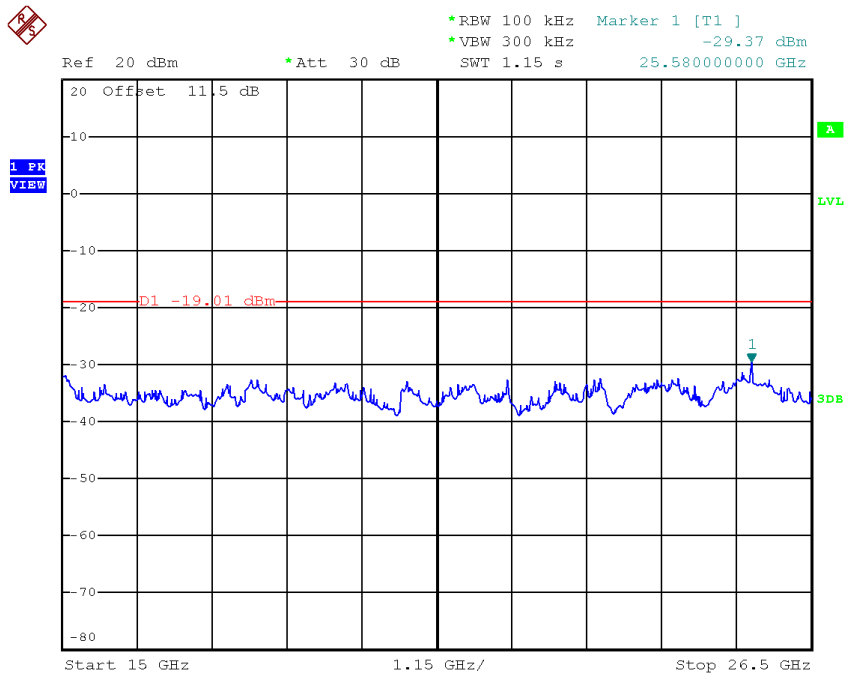
TX HT20 mode CH06 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:25:47

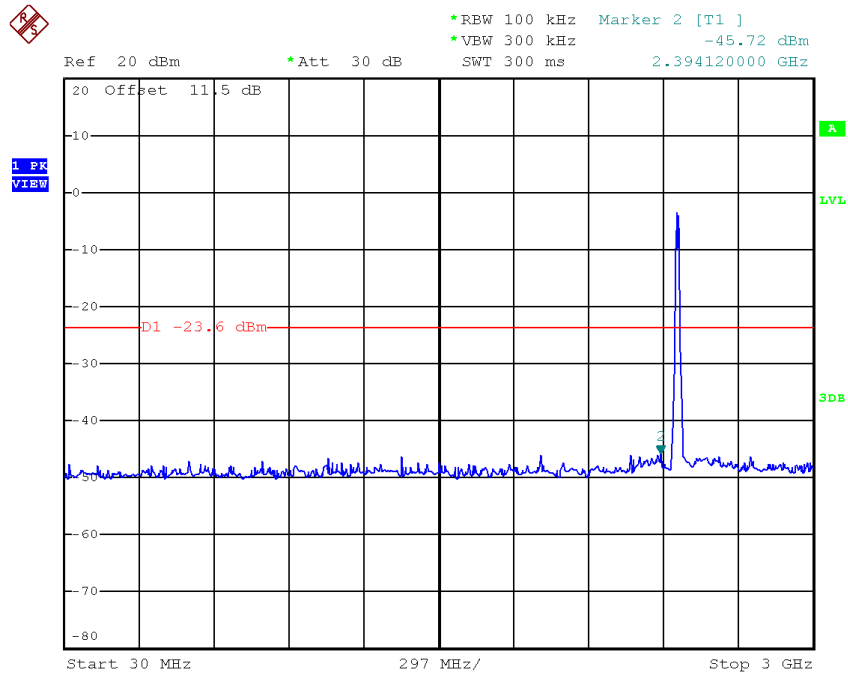


Date: 27.JUN.2017 11:25:54

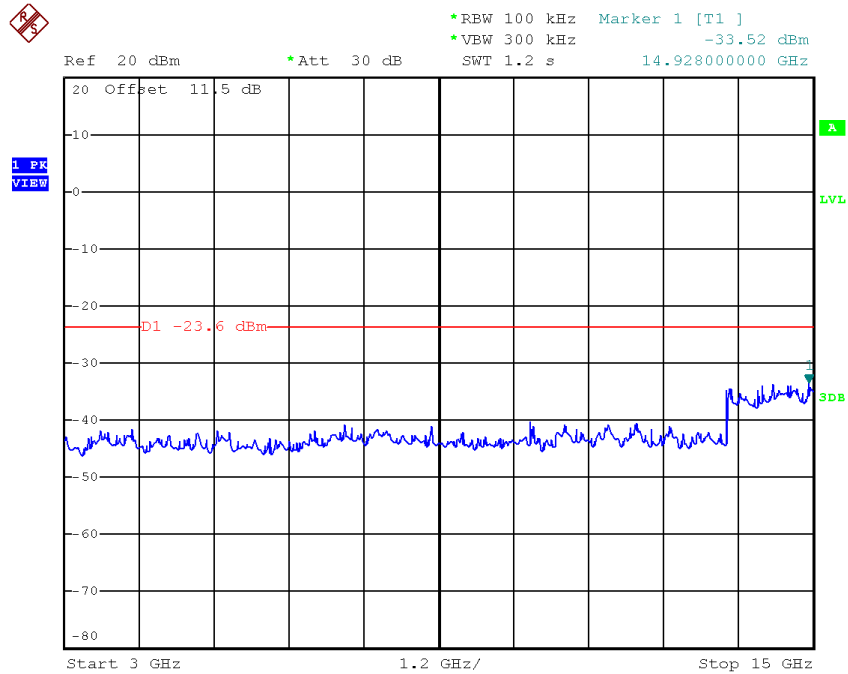


Date: 27.JUN.2017 11:26:00

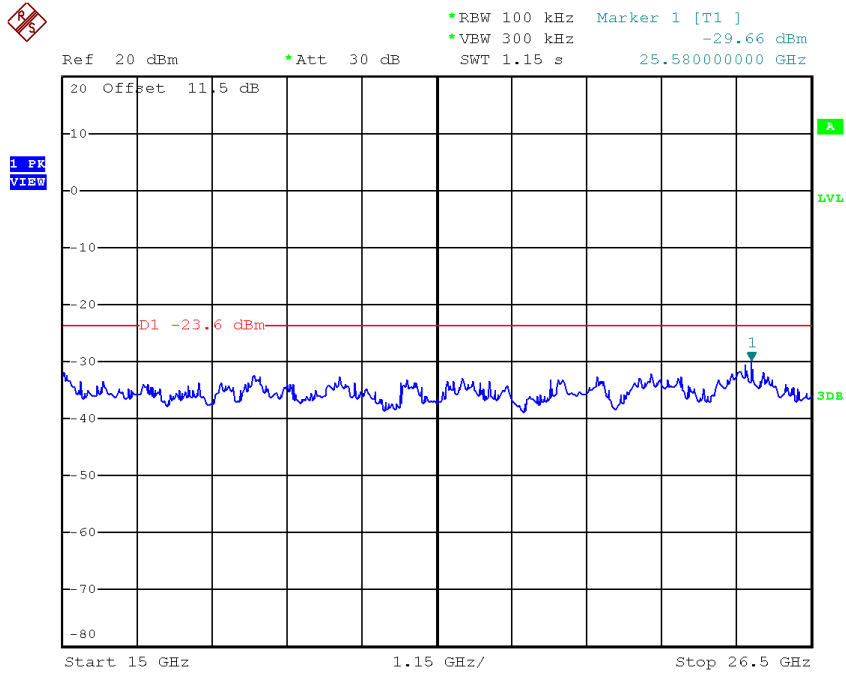
TX HT20 mode CH11 (10 Harmonic of the frequency)



Date: 27.JUN.2017 11:26:55



Date: 27.JUN.2017 11:27:02



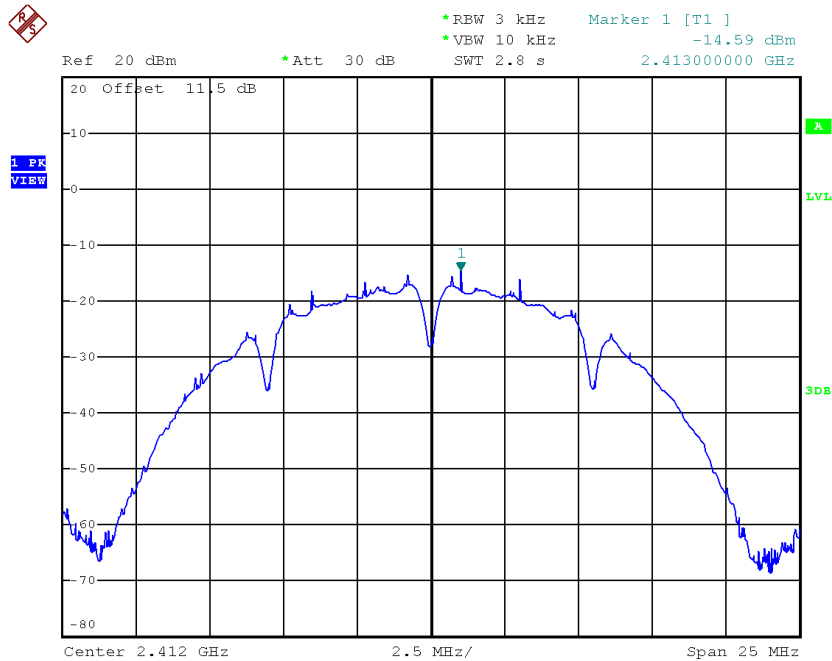
Date: 27.JUN.2017 11:27:08

ATTACHMENT H - POWER SPECTRAL DENSITY

Test Mode :TX B Mode_CH01/06/11

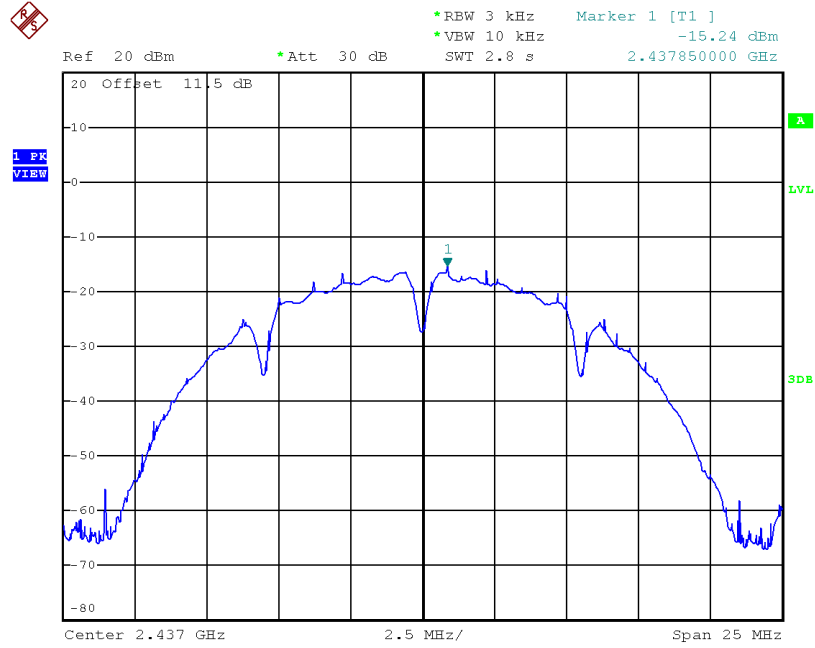
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-14.59	0.0348	8.00	Complies
2437	-15.24	0.0299	8.00	Complies
2462	-13.60	0.0437	8.00	Complies

TX CH01



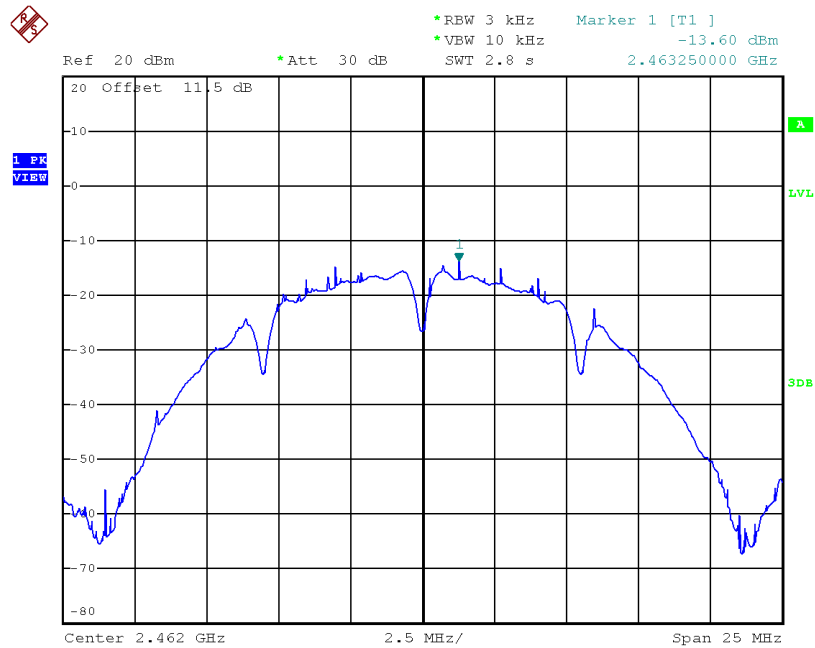
Date: 27.JUN.2017 11:15:39

TX CH06



Date: 27.JUN.2017 11:17:12

TX CH11

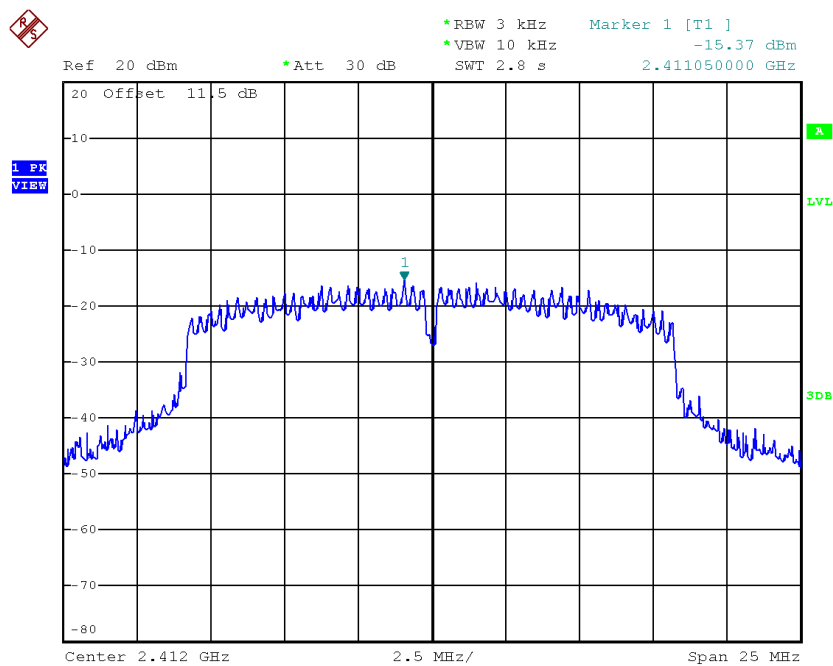


Date: 27.JUN.2017 11:19:13

Test Mode :TX G Mode_CH01/06/11

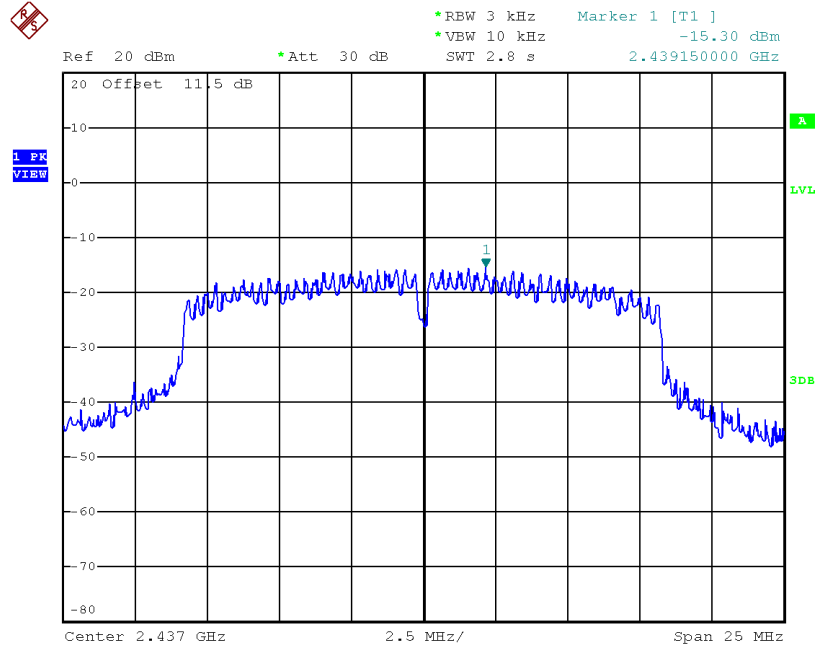
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-15.37	0.0290	8.00	Complies
2437	-15.30	0.0295	8.00	Complies
2462	-16.83	0.0207	8.00	Complies

TX CH01



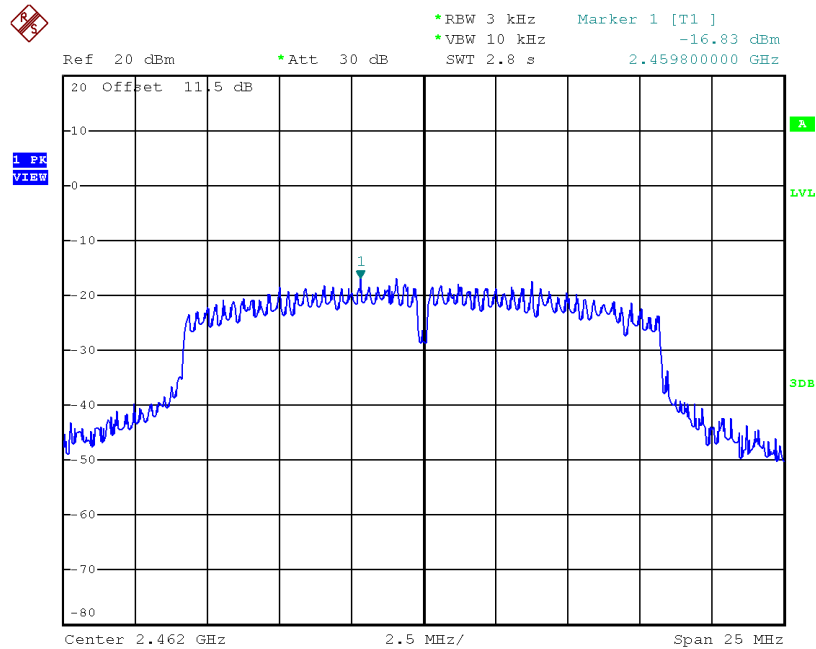
Date: 27.JUN.2017 11:20:52

TX CH06



Date: 27.JUN.2017 11:22:00

TX CH11

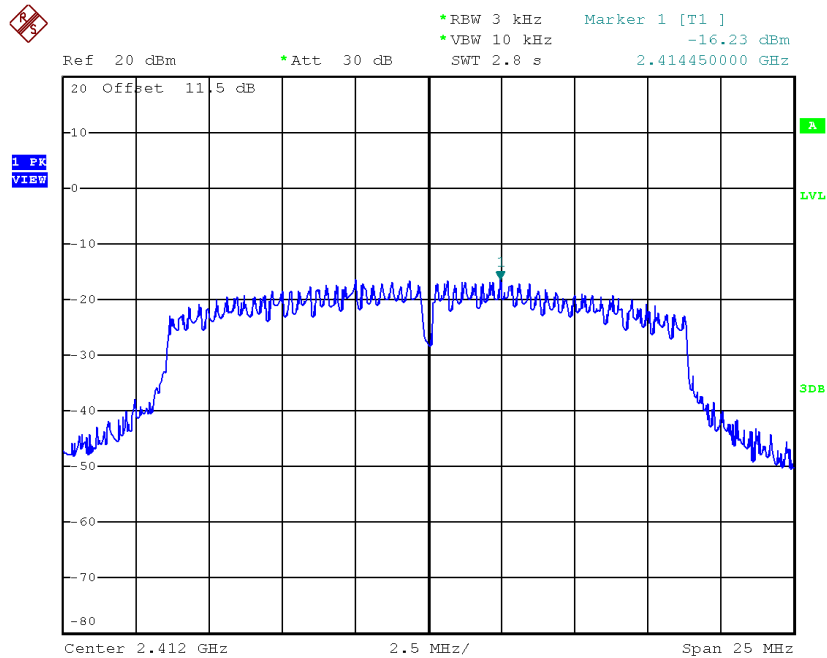


Date: 27.JUN.2017 11:23:19

Test Mode : TX N-20M Mode_CH01/06/11

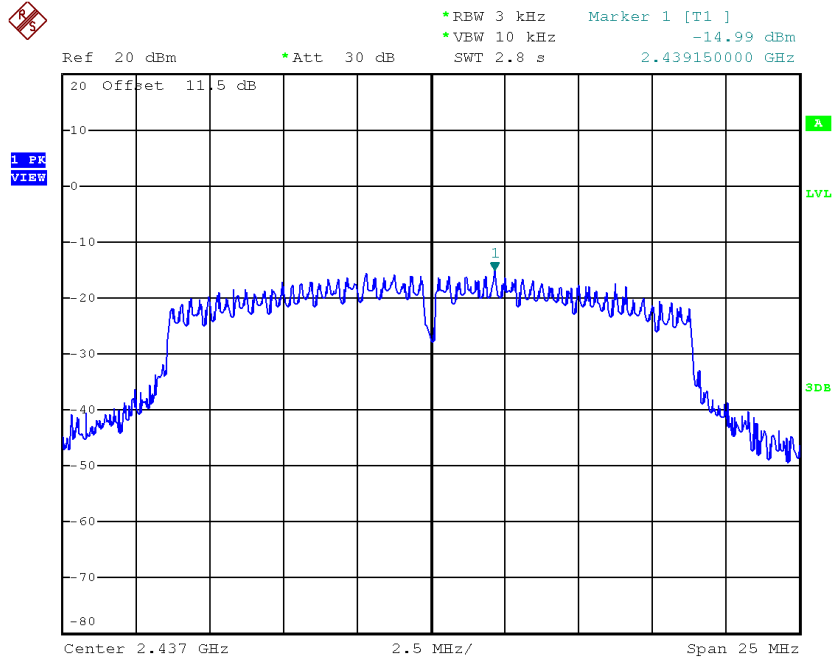
Frequency (MHz)	Power Density (dBm/3kHz)	Power Density (mW/3kHz)	Max. Limit (dBm/3kHz)	Result
2412	-16.23	0.0238	8.00	Complies
2437	-14.99	0.0317	8.00	Complies
2462	-17.67	0.0171	8.00	Complies

TX CH01



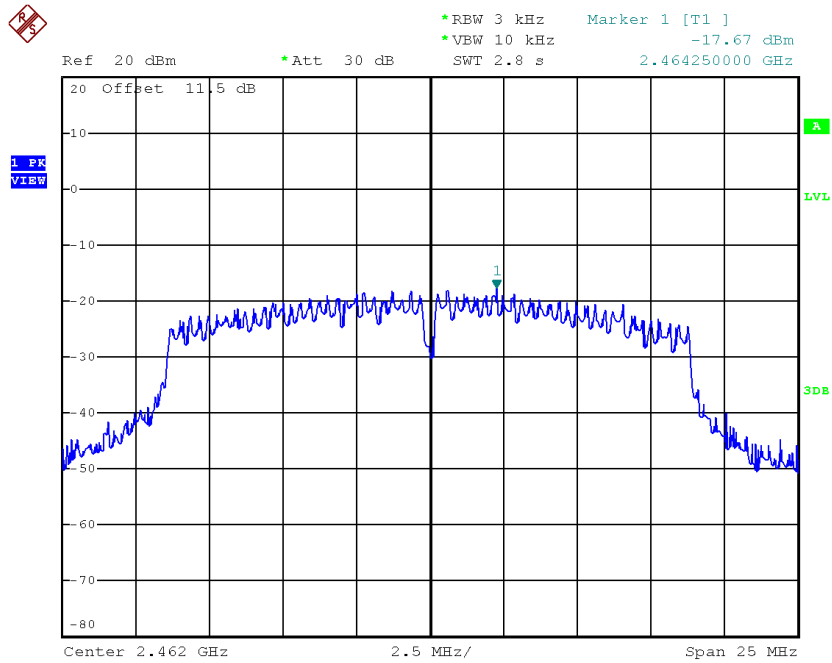
Date: 27.JUN.2017 11:24:58

TX CH06



Date: 27.JUN.2017 11:26:09

TX CH11



Date: 27.JUN.2017 11:27:40