

FCC Radio Test Report

FCC ID: V7TAP5V2

This report concerns: Original Grant

Project No. : 1905C047
Equipment : 300Mbps Wireless N Access Point
Test Model : AP5
Series Model : N/A
Applicant : SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan
Road, Nanshan District, Shenzhen, China. 518052

Date of Receipt : May 16, 2019
Date of Test : May 17, 2019~Jun. 12, 2019
Issued Date : Jun. 20, 2019
Tested by : BTL Inc.

Testing Engineer

:

Vincent Tan

(Vincent Tan)

Technical Manager

:

Steven Lu

(Steven Lu)

Authorized Signatory

:

Ethan Ma

(Ethan Ma)

B T L I N C .

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan,
Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000



Certificate #5123.02

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

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

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

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.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

Table of Contents

Page

REPORT ISSUED HISTORY	6
1 . GENERAL SUMMARY	7
2 . SUMMARY OF TEST RESULTS	8
2.1 TEST FACILITY	9
2.2 MEASUREMENT UNCERTAINTY	9
3 . GENERAL INFORMATION	10
3.1 GENERAL DESCRIPTION OF EUT	10
3.2 DESCRIPTION OF TEST MODES	12
3.3 PARAMETERS OF TEST SOFTWARE	14
3.4 DUTY CYCLE	15
3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	16
3.6 SUPPORT UNITS	16
4 . AC POWER LINE CONDUCTED EMISSIONS TEST	17
4.1 LIMIT	17
4.2 TEST PROCEDURE	17
4.3 DEVIATION FROM TEST STANDARD	17
4.4 TEST SETUP	18
4.5 EUT OPERATION CONDITIONS	18
4.6 EUT TEST CONDITIONS	18
4.7 TEST RESULTS	18
5 . RADIATED EMISSIONS TEST	19
5.1 LIMIT	19
5.2 TEST PROCEDURE	20
5.3 DEVIATION FROM TEST STANDARD	20
5.4 TEST SETUP	21
5.5 EUT OPERATION CONDITIONS	22
5.6 EUT TEST CONDITIONS	22
5.7 TEST RESULTS - 9 KHZ TO 30 MHZ	22
5.8 TEST RESULTS - 30 MHZ TO 1000 MHZ	22
5.9 TEST RESULTS - ABOVE 1000 MHZ	22
6 . BANDWIDTH TEST	23
6.1 LIMIT	23
6.2 TEST PROCEDURE	23

Table of Contents	Page
6.3 DEVIATION FROM STANDARD	23
6.4 TEST SETUP	23
6.5 EUT OPERATION CONDITIONS	23
6.6 EUT TEST CONDITIONS	23
6.7 TEST RESULTS	23
7 . MAXIMUM OUTPUT POWER TEST	24
7.1 LIMIT	24
7.2 TEST PROCEDURE	24
7.3 DEVIATION FROM STANDARD	24
7.4 TEST SETUP	24
7.5 EUT OPERATION CONDITIONS	24
7.6 EUT TEST CONDITIONS	24
7.7 TEST RESULTS	24
8 . CONDUCTED SPURIOUS EMISSIONS	25
8.1 LIMIT	25
8.2 TEST PROCEDURE	25
8.3 DEVIATION FROM STANDARD	25
8.4 TEST SETUP	25
8.5 EUT OPERATION CONDITIONS	25
8.6 EUT TEST CONDITIONS	25
8.7 TEST RESULTS	25
9 . POWER SPECTRAL DENSITY TEST	26
9.1 LIMIT	26
9.2 TEST PROCEDURE	26
9.3 DEVIATION FROM STANDARD	26
9.4 TEST SETUP	26
9.5 EUT OPERATION CONDITIONS	26
9.6 EUT TEST CONDITIONS	26
9.7 TEST RESULTS	26
10 . MEASUREMENT INSTRUMENTS LIST	27
11 . EUT TEST PHOTO	29
APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS	33
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ	36

Table of Contents**Page**

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ	41
APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ	44
APPENDIX E - BANDWIDTH	93
APPENDIX F - MAXIMUM OUTPUT POWER	100
APPENDIX G - CONDUCTED SPURIOUS EMISSIONS	106
APPENDIX H - POWER SPECTRAL DENSITY	117

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Jun. 20, 2019

1. GENERAL SUMMARY

Equipment : 300Mbps Wireless N Access Point
Brand Name : Tenda
Test Model : AP5
Series Model : N/A
Applicant : SHENZHEN TENDA TECHNOLOGY CO.,LTD
Manufacturer : SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District,
Shenzhen, China. 518052
Date of Test : May 17, 2019~Jun. 12, 2019
Test Sample : Engineering Sample No.: DG19051712
Standard(s) : FCC Part15, Subpart C (15.247)
ANSI C63.10-2013
FCC KDB 558074 D01 DTS Meas Guidance v05r02
FCC KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested and found 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-1-1905C047) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

Test results included in this report are only for the WLAN 2.4 GHz part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15, Subpart C (15.247)				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS	-----
15.247(a)(2)	Bandwidth	APPENDIX E	PASS	-----
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS	-----
15.247(d)	Conducted Spurious Emissions	APPENDIX G	PASS	-----
15.247(e)	Power Spectral Density	APPENDIX H	PASS	-----
15.203	Antenna Requirement	-----	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 is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150 kHz ~ 30 MHz	2.32

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9 KHz~30 MHz	V	3.79
		9 KHz~30 MHz	H	3.57
		30 MHz~200 MHz	V	3.82
		30 MHz~200 MHz	H	3.78
		200 MHz~1,000 MHz	V	4.10
		200 MHz~1,000 MHz	H	4.06
		1 GHz~18 GHz	V	3.12
		1 GHz~18 GHz	H	3.68
		18 GHz~40 GHz	V	4.15
		18 GHz~40 GHz	H	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	300Mbps Wireless N Access Point
Brand Name	Tenda
Test Model	AP5
Series Model	N/A
Model Difference(s)	N/A
Power Source	1# DC voltage supplied from AC/DC adapter. Model:BN036-A12012U 2# DC voltage supplied from PoE adapter.
Power Rating	I/P: 100-240V~ 50/60Hz 0.4A O/P: 12V -- 1.0A
Operation Frequency	2412 MHz ~ 2462 MHz
Modulation Type	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM
Bit Rate of Transmitter	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps
Maximum Output Power Non-Beamforming	IEEE 802.11b: 11.33 dBm (0.0136 W) IEEE 802.11g: 22.67 dBm (0.1849 W) IEEE 802.11n (HT20): 24.91 dBm (0.3097 W) IEEE 802.11n (HT40): 22.57 dBm (0.1807 W)
Maximum Output Power Beamforming	IEEE 802.11n (HT20): 24.84 dBm (0.3048 W) IEEE 802.11n (HT40): 22.52 dBm (0.1786 W)

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(20 MHz) CH03 - CH09 for 802.11n(40 MHz)							
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. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	Dipole	N/A	5	TX/RX
2	N/A	N/A	Dipole	N/A	5	TX/RX
3	N/A	N/A	Dipole	N/A	5	RX

Note:

(1) For Non-Beamforming Function:

Antenna Gain=5 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = $G_{ANT} + 10\log(N)$ dBi, that is Directional gain = $5 + 10\log(2)$ dBi = 8.01. So, the output power limit is $30 - 8.01 + 6 = 27.99$, the power spectral density limit is $8 - 8.01 + 6 = 5.99$.

(2) For Beamforming Function:

Beamforming Gain=3 dBi, Directional gain=3+5=8 dBi. So, the output power limit is $30 - 8 + 6 = 28$, the power spectral density limit is $8 - 8 + 6 = 6$.

4. Table for Antenna Configuration:

Operating Mode TX Mode	1TX	2TX
802.11b	V (Ant. 2)	-
802.11g	V (Ant. 2)	-
802.11n(20 MHz)	-	V (Ant. 1 + Ant. 2)
802.11n(40 MHz)	-	V (Ant. 1 + Ant. 2)

3.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

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-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09
Mode 5	TX N-20 Mode Channel 06

Following mode(s) as (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode:	Description
Mode 5	TX N-20 Mode Channel 06

Radiated emissions test – Below 1GHz	
Final Test Mode:	Description
Mode 5	TX N-20 Mode Channel 06

Radiated emissions test – Above 1GHz	
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-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

Conducted 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-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

NOTE:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: CCK (1 Mbps)
802.11g mode: OFDM (6 Mbps)
802.11n HT20 mode : BPSK (6.5*2 Mbps)
802.11n HT40 mode : BPSK (13.5*2 Mbps)
For radiated emission tests, the highest output powers were set for final test.
- (3) For radiated emission below 1 GHz test, the IEEE 802.11n20 is found to be the worst case and recorded.
- (4) For radiated emission above 1 GHz test, 1GHz~26.5GHz have been pre-tested and in this report only recorded the worst case. The remaining spurious points are all below the limit value of 20dB.

3.3 PARAMETERS OF TEST SOFTWARE

Non-Beamforming

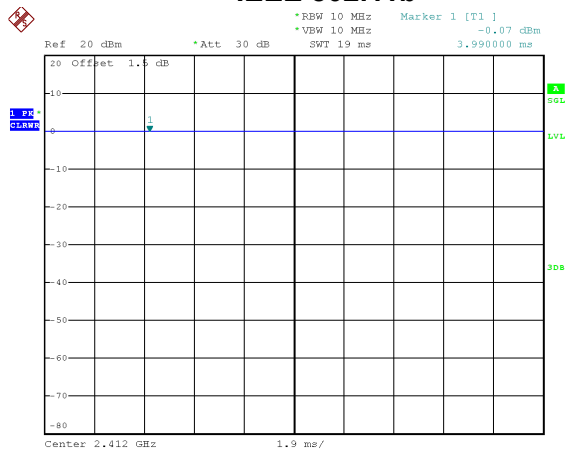
Test Software	cart		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	5.5	6.5	7.5
IEEE 802.11g	11	13.5	13
IEEE 802.11n (HT20)	11	12.5	13
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	9.5	12.5	11

With Beamforming

Test Software	cart		
Frequency (MHz)	2412	2437	2462
IEEE 802.11n (HT20)	11	12.5	13
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	9.5	12.5	11

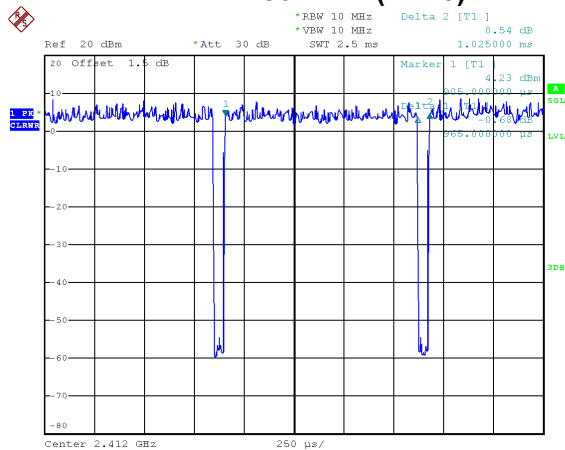
3.4 DUTY CYCLE

IEEE 802.11b



Date: 30.MAY.2019 18:02:46

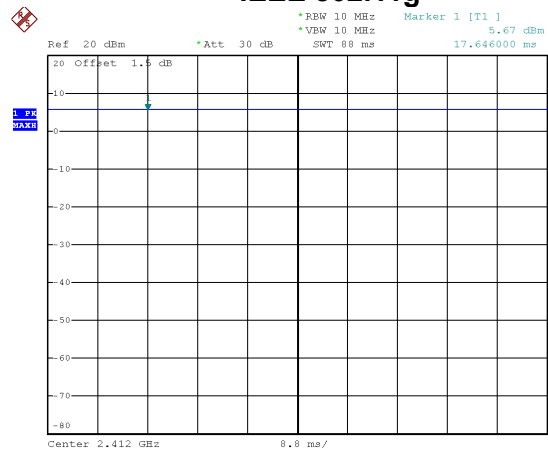
Duty cycle = 19 ms / 19 ms = 100%
Duty Factor = $10 \log(1/\text{Duty cycle}) = 0.00$
IEEE 802.11n (HT20)



Date: 30.MAY.2019 18:03:38

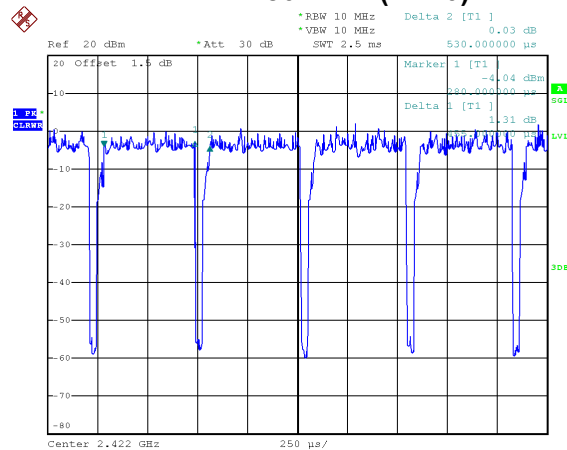
Duty cycle = 0.965 ms / 1.025 ms = 94.1%
Duty Factor = $10 \log(1/\text{Duty cycle}) = 0.26$

IEEE 802.11g



Date: 30.MAY.2019 18:01:40

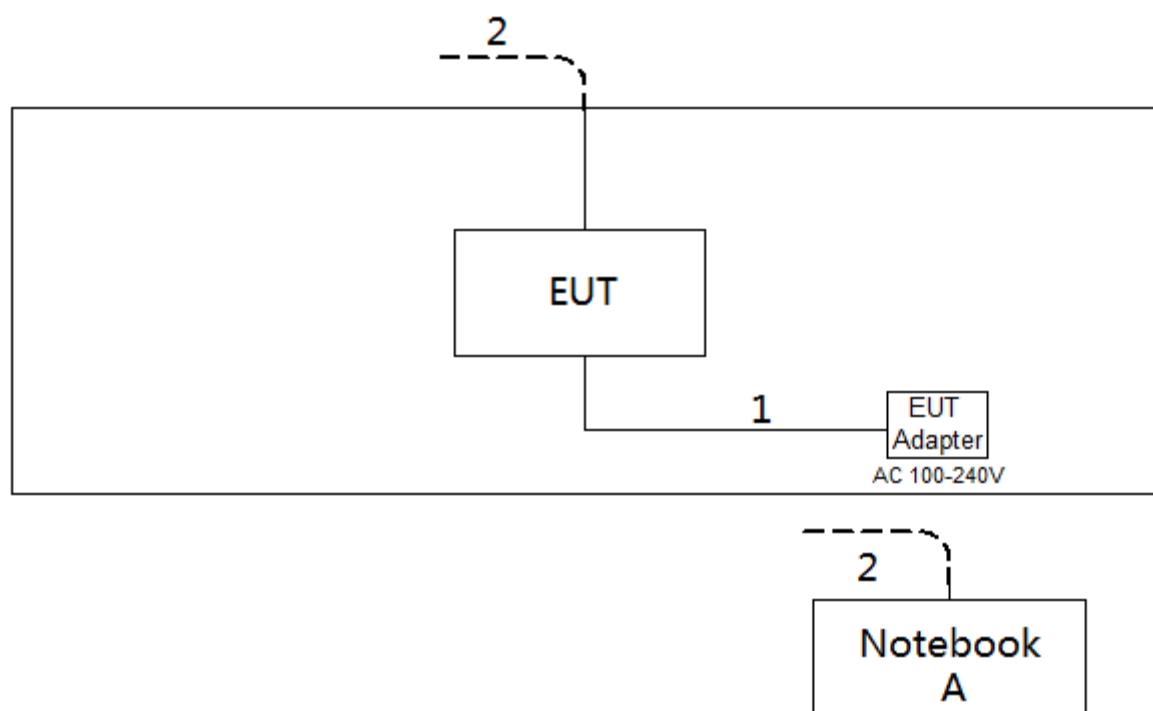
Duty cycle = 88 ms / 88 ms = 100%
Duty Factor = $10 \log(1/\text{Duty cycle}) = 0.00$
IEEE 802.11n (HT40)



Date: 30.MAY.2019 18:04:01

Duty cycle = 0.455 ms / 0.530 ms = 85.8%
Duty Factor = $10 \log(1/\text{Duty cycle}) = 0.67$

3.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.6 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
A	Notebook	Dell	Inspiron 15-7559	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m
2	RJ45 Cable	NO	NO	10m

4. AC POWER LINE CONDUCTED EMISSIONS TEST

4.1 LIMIT

Frequency of Emission (MHz)	Limit (dB μ V)	
	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 tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

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

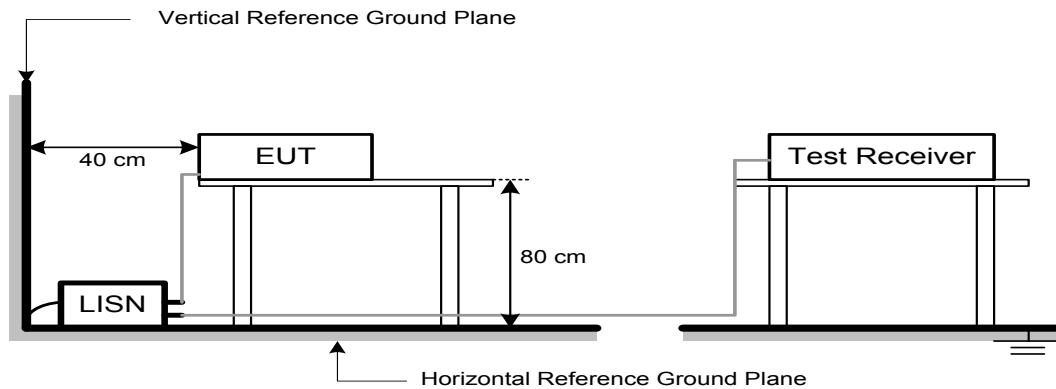
4.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment 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.

4.3 DEVIATION FROM TEST STANDARD

No deviation

4.4 TEST SETUP



4.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

4.6 EUT TEST CONDITIONS

Temperature: 25°C Relative Humidity: 53% Test Voltage: AC 120V/60Hz

4.7 TEST RESULTS

Please refer to the APPENDIX A.

5. RADIATED EMISSIONS TEST

5.1 LIMIT

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 (9 kHz-1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

NOTE:

- (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).

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

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

5.2 TEST PROCEDURE

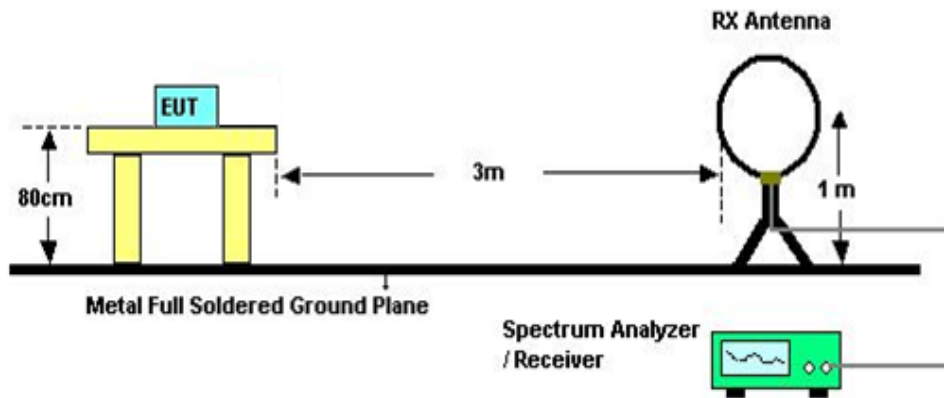
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
- 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 1 GHz.
- 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 1 GHz)
- 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 1 GHz)
- For the actual test configuration, please refer to the related Item -EUT Test Photos.

5.3 DEVIATION FROM TEST STANDARD

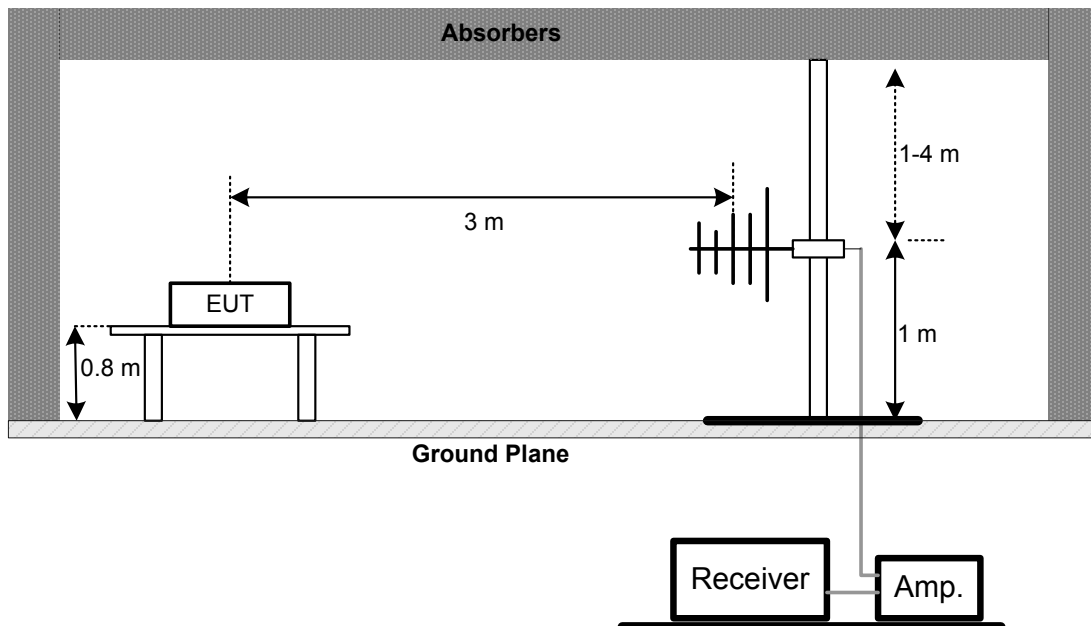
No deviation

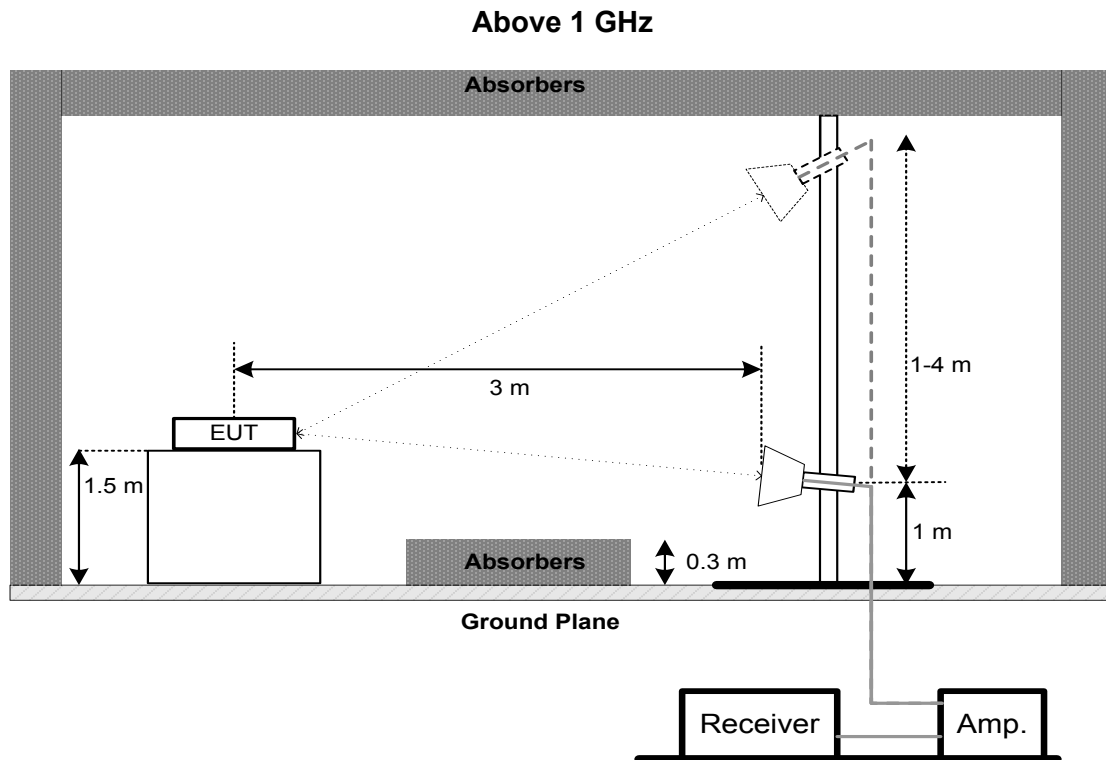
5.4 TEST SETUP

9 kHz-30 MHz



30 MHz to 1 GHz





5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 68% Test Voltage: AC 120V/60Hz

5.7 TEST RESULTS - 9 KHZ TO 30 MHZ

Please refer to the APPENDIX B

Remark:

- (1) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.8 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

5.9 TEST RESULTS - ABOVE 1000 MHZ

Please refer to the APPENDIX D.

Remark:

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

6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(a)(2)	6 dB Bandwidth	Minimum 500 kHz
	99% Emission Bandwidth	-

6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- For 6dB Bandwidth Spectrum setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.
For 99% OBW Spectrum Setting: For B,G,N20,vht20 mode: RBW= 300KHz, VBW=1MHz,For N40,vht40 mode: RBW= 1MHz, VBW=3MHz, Sweep time = 2.5 ms.
- The bandwidth was performed in accordance with method 11.8.1 of ANSI C63.10-2013.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

6.7 TEST RESULTS

Please refer to the APPENDIX E.

7. MAXIMUM OUTPUT POWER TEST

7.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(b)(3)	Maximum Output Power	1 Watt or 30dBm

7.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.1.3 (for peak power) or 11.9.2.3 (for AVG power) of ANSI C63.10-2013.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

7.7 TEST RESULTS

Please refer to the APPENDIX F.

8. CONDUCTED SPURIOUS EMISSIONS

8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. 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 Section 15.209(a) (see Section 15.205(c)).

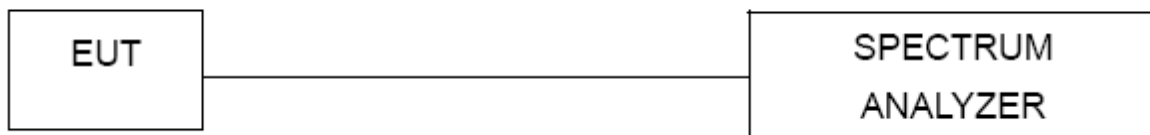
8.2 TEST PROCEDURE

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

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

8.7 TEST RESULTS

Please refer to the APPENDIX G.

9. POWER SPECTRAL DENSITY TEST

9.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

9.2 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=3 kHz, VBW=10 kHz, Sweep time = Auto.
- The Power Spectral Density was performed in accordance with method 11.10.2 of ANSI C63.10-2013.

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 EUT TEST CONDITIONS

Temperature: 24°C Relative Humidity: 70.8% Test Voltage: AC 120V/60Hz

9.7 TEST RESULTS

Please refer to the APPENDIX H.

10. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100382	Mar. 10, 2020
2	LISN	EMCO	3816/2	52765	Mar. 10, 2020
3	50ohm Terminator	SHX	TF5-3	15041305	Mar. 10, 2020
4	Artificial-Mains Network	SCHWARZBEC K	NSLK 8127	8127685	Mar. 10, 2020
5	TRANSIENT LIMITER	EM	EM-7600	772	Mar. 10, 2020
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
7	Cable	N/A	RG223	12m	Mar. 12, 2020

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EM	EM-6876-1	230	Jan. 15, 2020
2	Cable	N/A	RG 213/U	C-102	May 31, 2020
3	EMI Test Receiver	R&S	ESCI	100895	Mar. 10, 2020
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2020
2	Amplifier	HP	8447D	2944A09673	Aug. 11, 2019
3	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
4	Cable	emci	LMR-400(30MHz-1GHz)(8m+5m)	N/A	May 24, 2020
5	Controller	CT	SC100	N/A	N/A
6	Controller	MF	MF-7802	MF780208416	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - Above 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 09, 2020
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2019
3	Amplifier	Agilent	8449B	3008A02333	Mar. 10, 2020
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 10, 2020
5	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	mitron	B10-01-01-12M	18072744	Jul. 30, 2019
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series power meter	Agilent	N1911A	MY45100473	Aug. 11, 2019
2	wideband power sensor	Agilent	N1921A	MY51100041	Aug. 11, 2019

Antenna Conducted Spurious Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

11. EUT TEST PHOTO

AC Power Line Conducted Emissions Test Photos



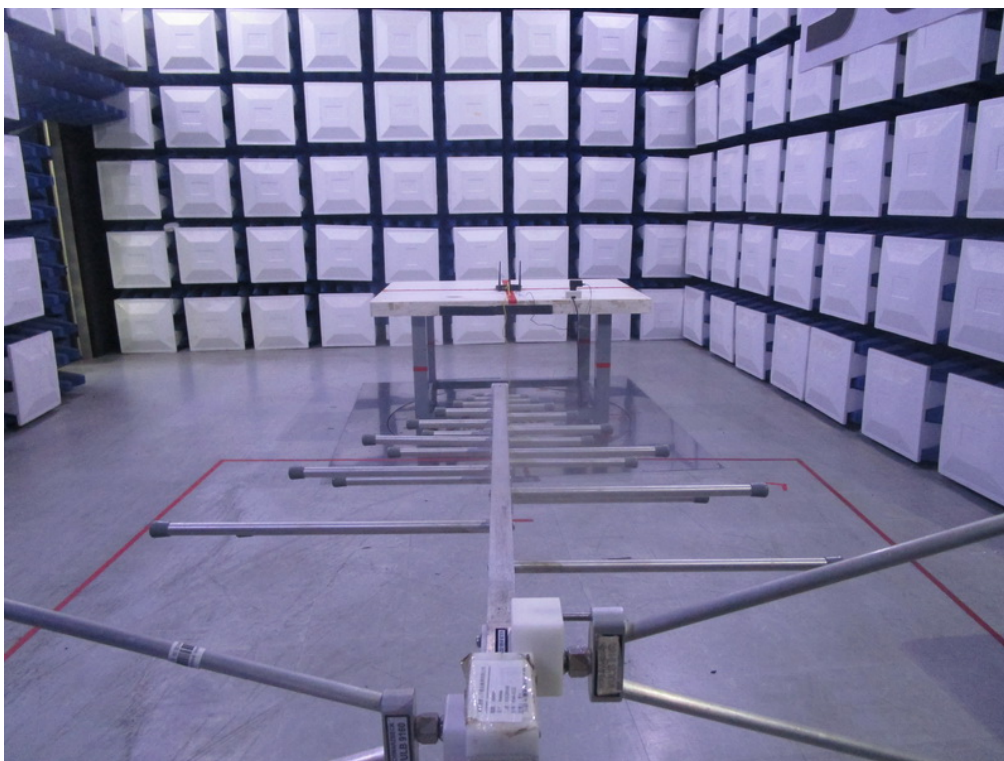
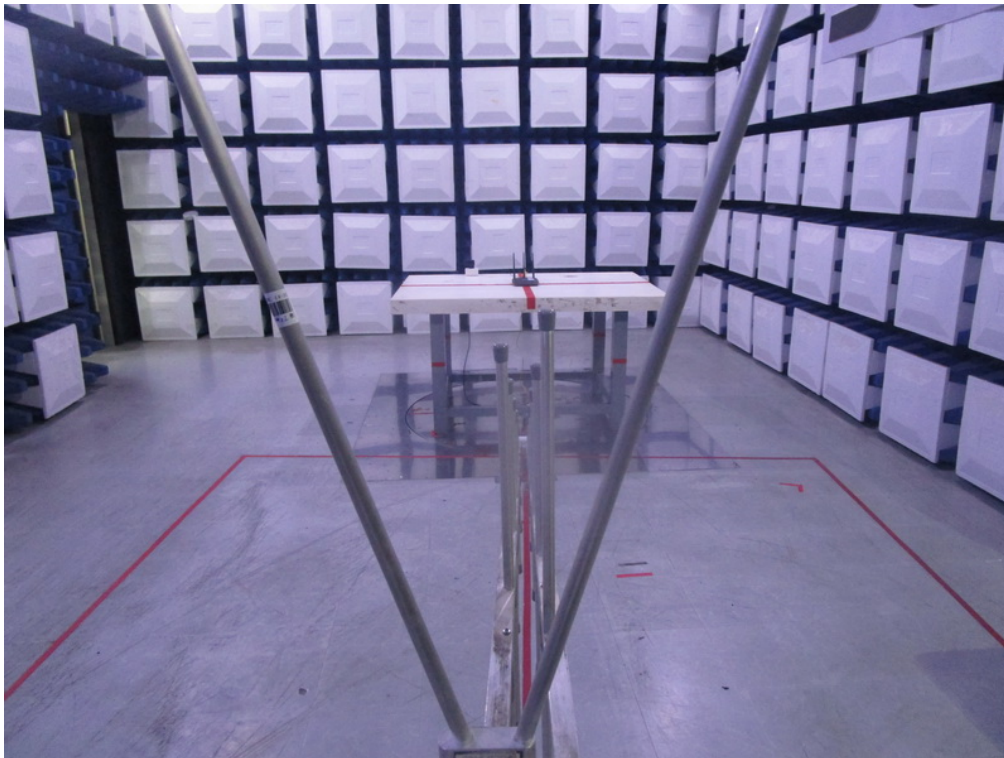
Radiated Emissions Test Photos

9 kHz to 30 MHz



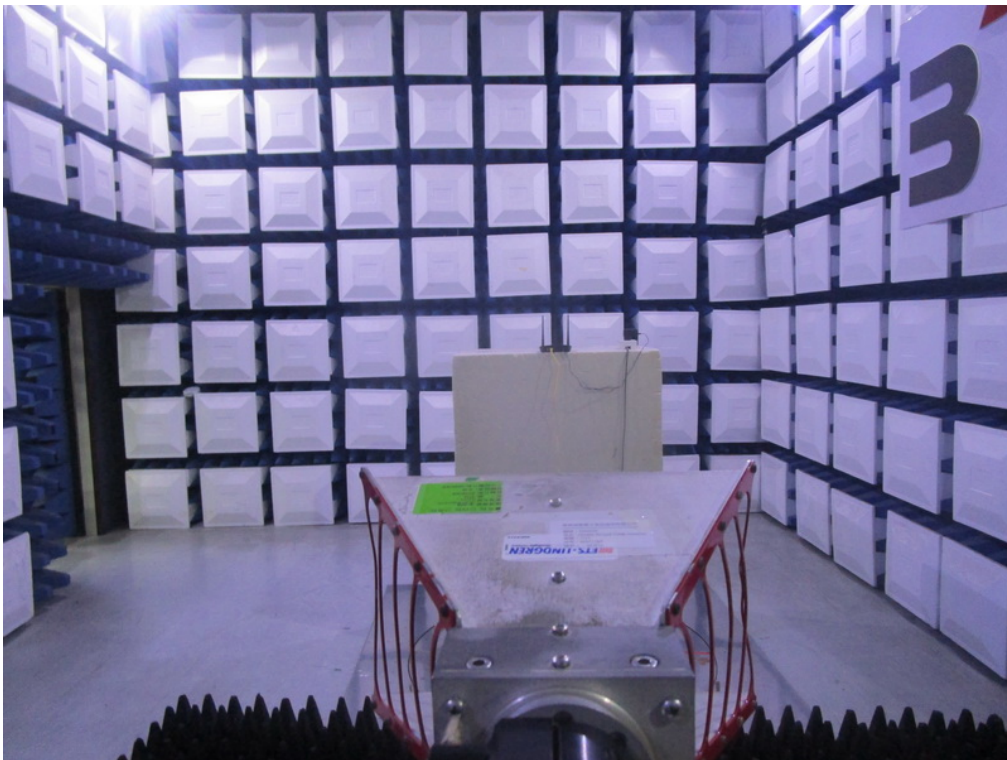
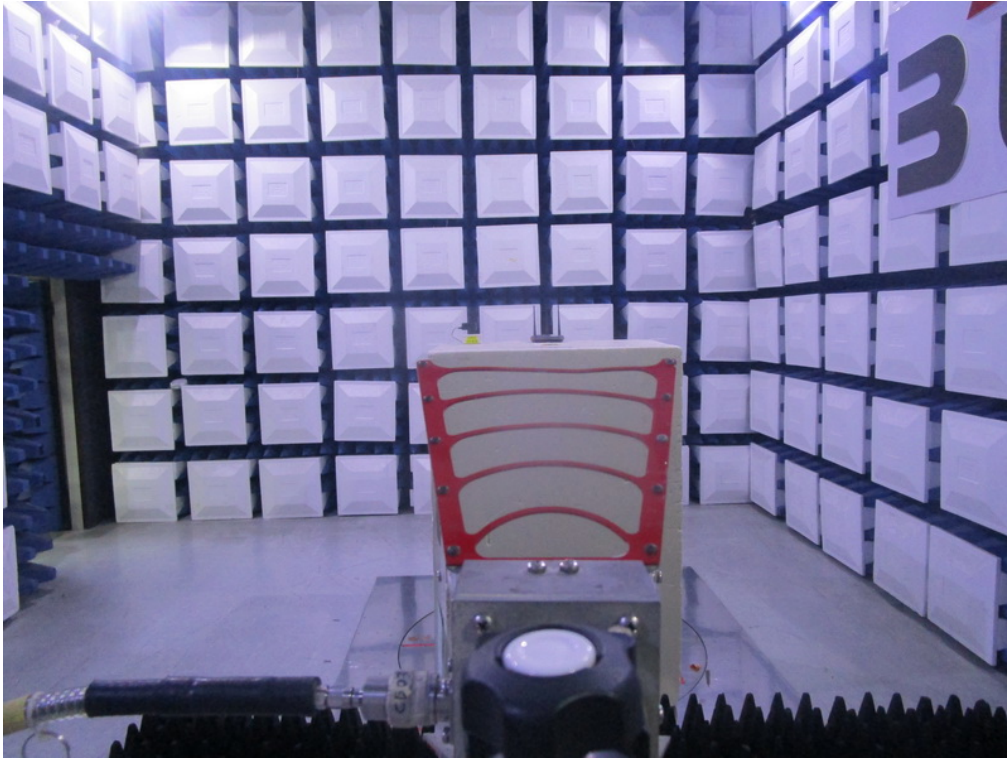
Radiated Emissions Test Photos

30 MHz to 1 GHz



Radiated Emissions Test Photos

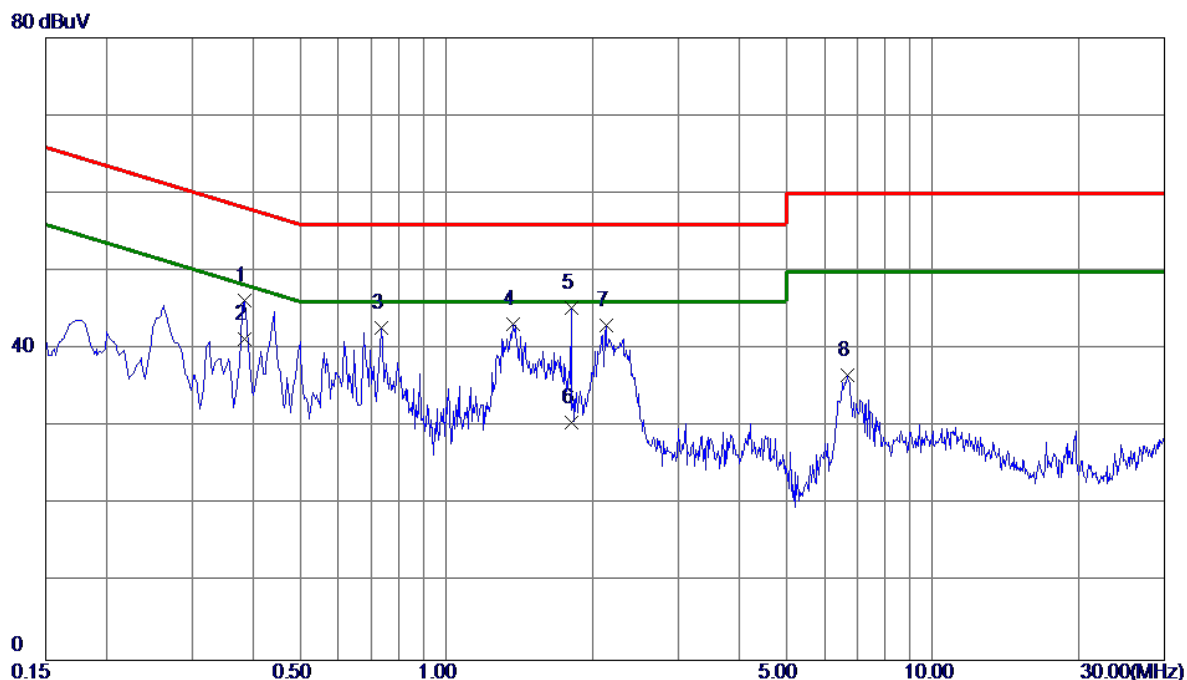
Above 1 GHz



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode: TX N-20 MODE CHANNEL 06

Line



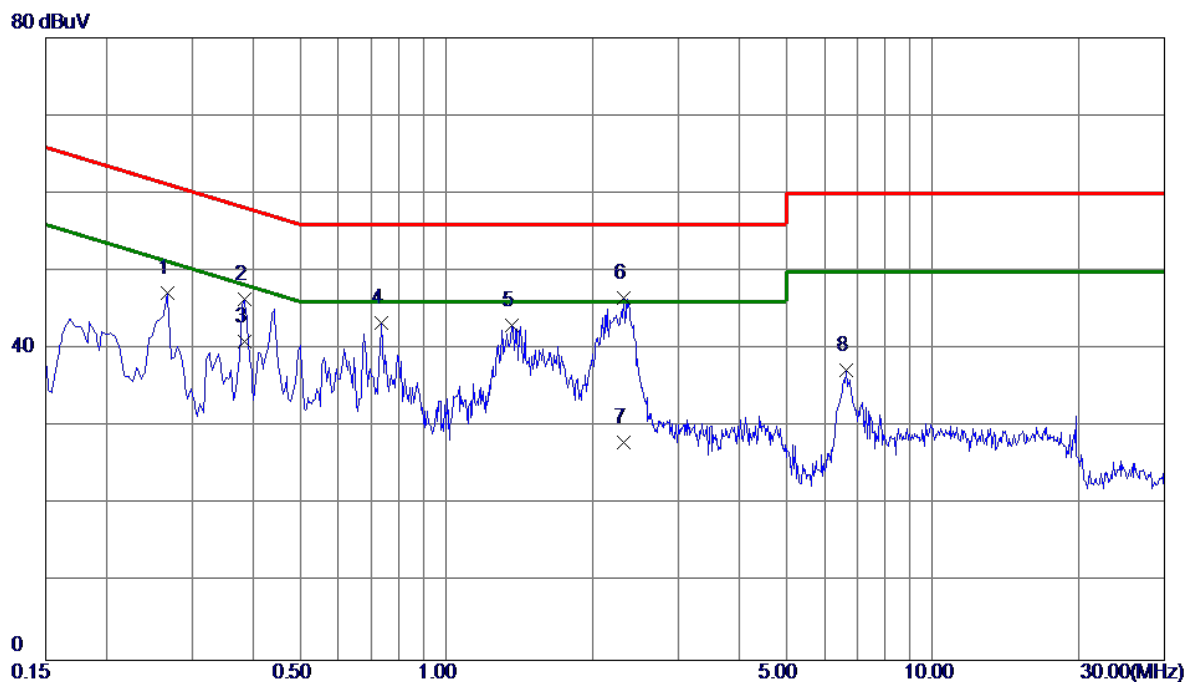
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.3840	35.76	10.49	46.25	58.19	-11.94	Peak	
2 *	0.3840	30.79	10.49	41.28	48.19	-6.91	AVG	
3	0.7350	32.16	10.52	42.68	56.00	-13.32	Peak	
4	1.3695	32.54	10.59	43.13	56.00	-12.87	Peak	
5	1.8060	34.63	10.62	45.25	56.00	-10.75	Peak	
6	1.8060	19.91	10.62	30.53	46.00	-15.47	AVG	
7	2.1300	32.44	10.65	43.09	56.00	-12.91	Peak	
8	6.6885	25.79	10.84	36.63	60.00	-23.37	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX N-20 MODE CHANNEL 06

Neutral



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	0.2670	36.74	10.46	47.20	61.21	-14.01	Peak	
2	0.3840	35.87	10.46	46.33	58.19	-11.86	Peak	
3 *	0.3840	30.50	10.46	40.96	48.19	-7.23	AVG	
4	0.7350	32.81	10.50	43.31	56.00	-12.69	Peak	
5	1.3650	32.53	10.54	43.07	56.00	-12.93	Peak	
6	2.3145	36.01	10.62	46.63	56.00	-9.37	Peak	
7	2.3145	17.40	10.62	28.02	46.00	-17.98	AVG	
8	6.6480	26.52	10.79	37.31	60.00	-22.69	Peak	

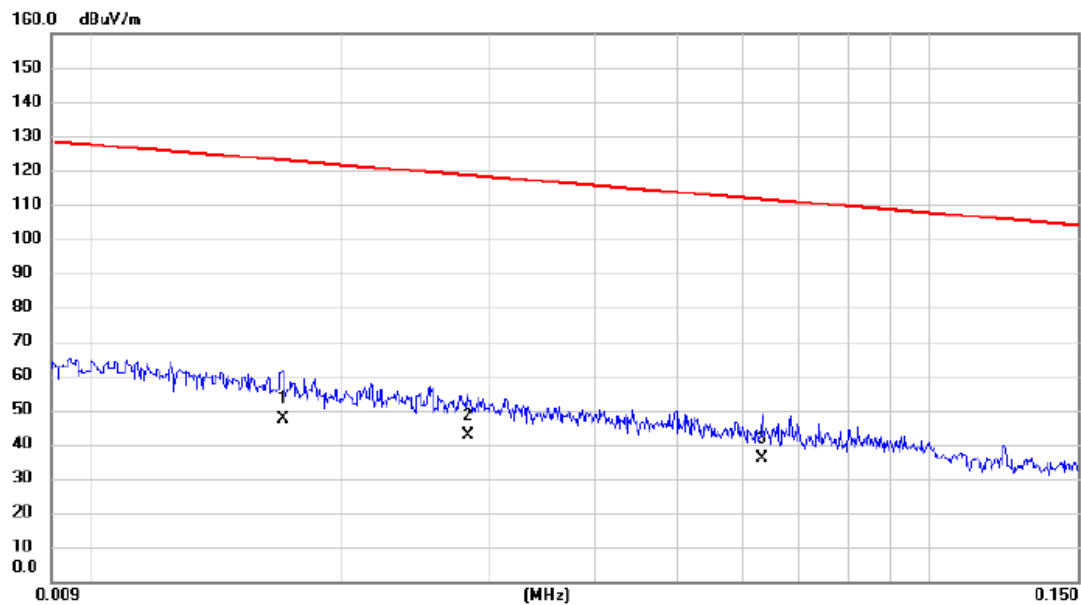
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Test Mode: TX N-20 MODE CHANNEL 06

Ant 0°



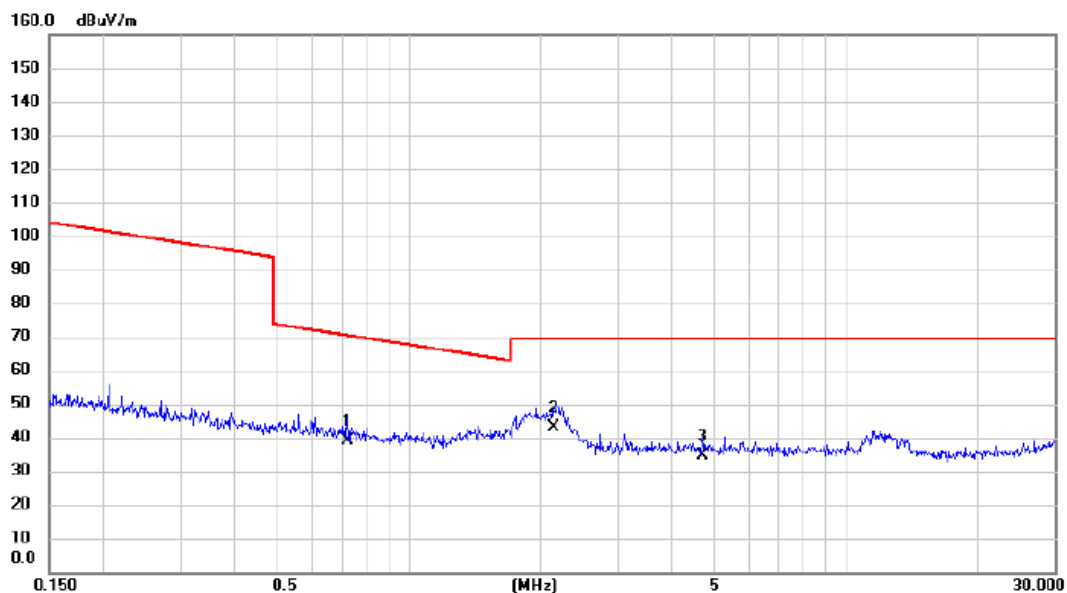
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.017	32.63	14.72	47.35	123.00	-75.65	AVG	
2		0.028	28.70	13.85	42.55	118.60	-76.05	AVG	
3		0.063	22.10	13.72	35.82	111.59	-75.77	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX N-20 MODE CHANNEL 06

Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.724	26.40	12.63	39.03	70.41	-31.38	QP	
2	*	2.144	31.10	11.73	42.83	69.54	-26.71	QP	
3		4.696	23.90	10.89	34.79	69.54	-34.75	QP	

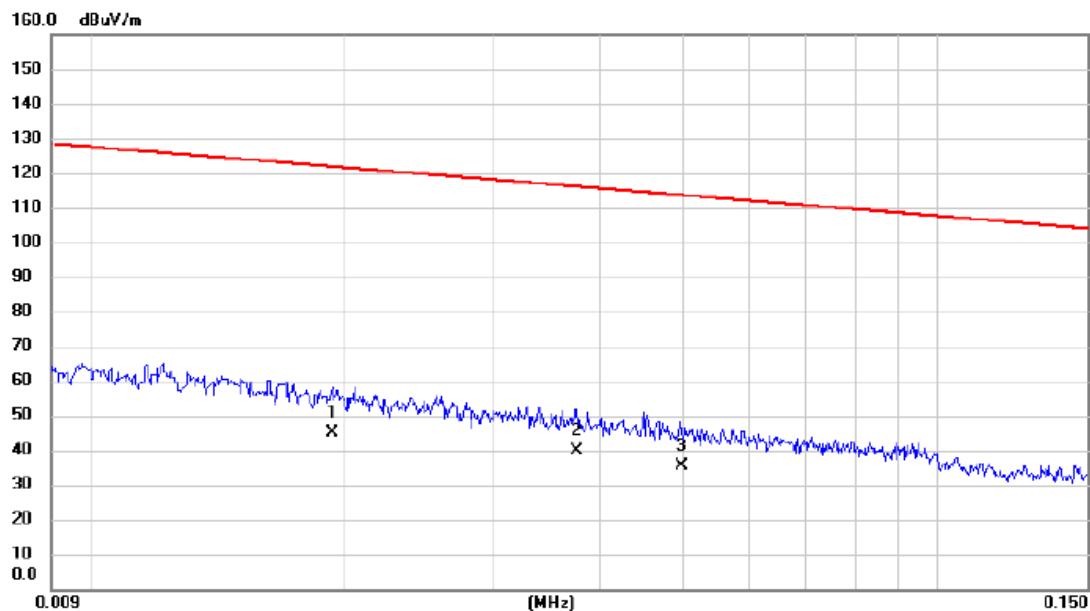
REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX N-20 MODE CHANNEL 06

Ant 90°



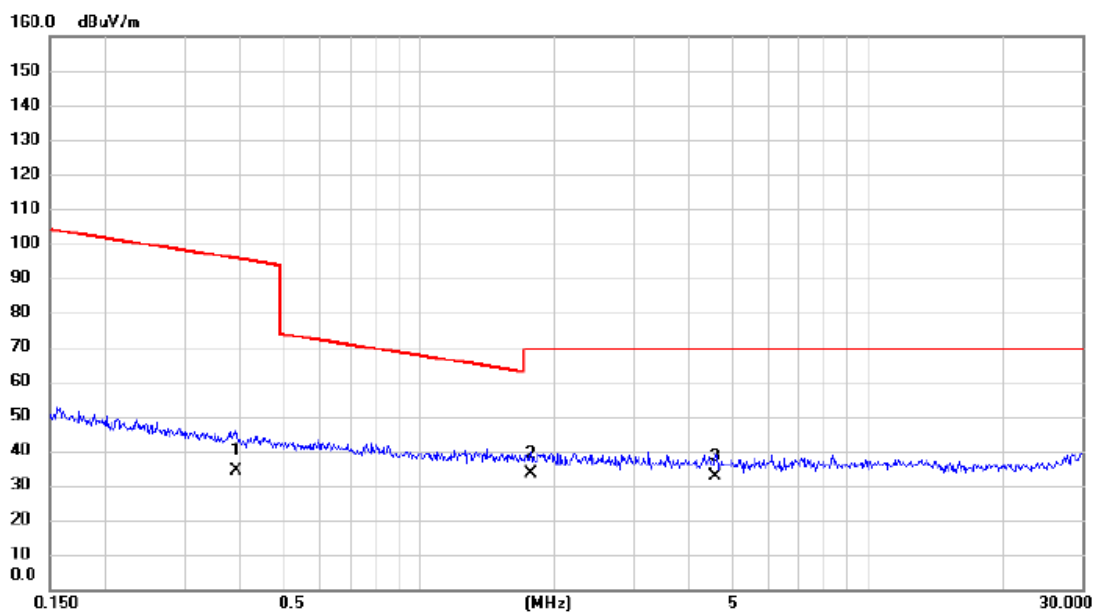
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.019	30.80	14.03	44.83	121.89	-77.06	AVG	
2	*	0.037	26.10	13.89	39.99	116.12	-76.13	AVG	
3		0.050	21.30	13.93	35.23	113.66	-78.43	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX N-20 MODE CHANNEL 06

Ant 90°



REMARKS:

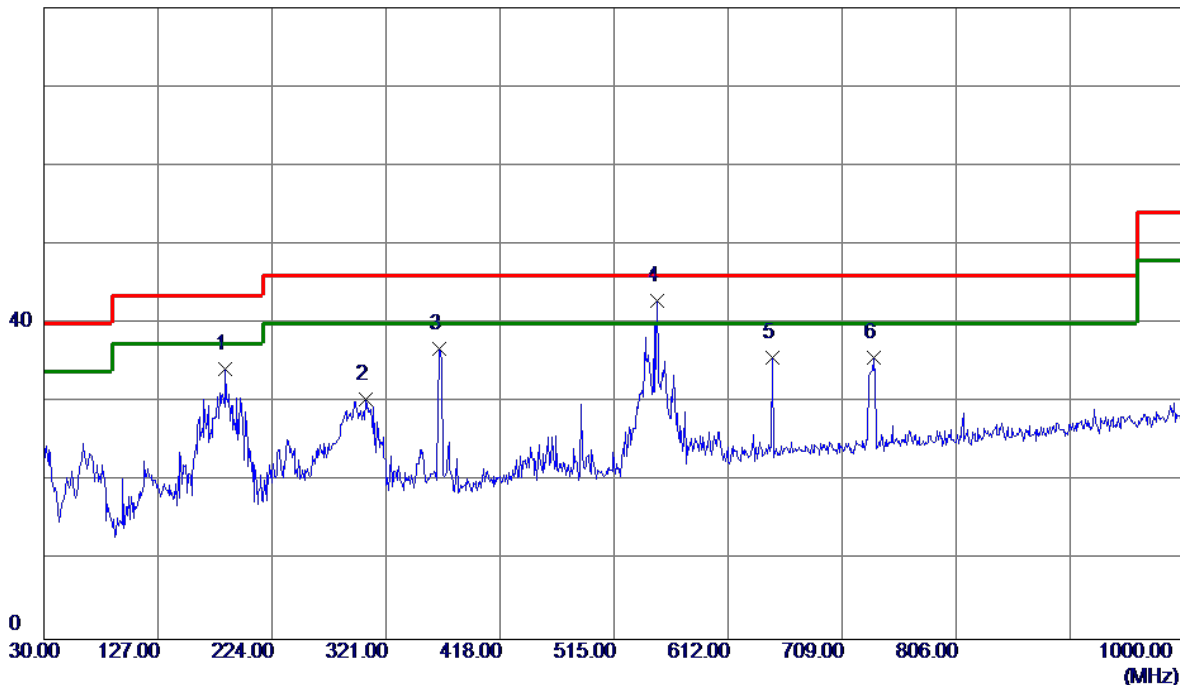
- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode: TX N-20 MODE CHANNEL 06

Vertical

80 dBuV/m



REMARKS:

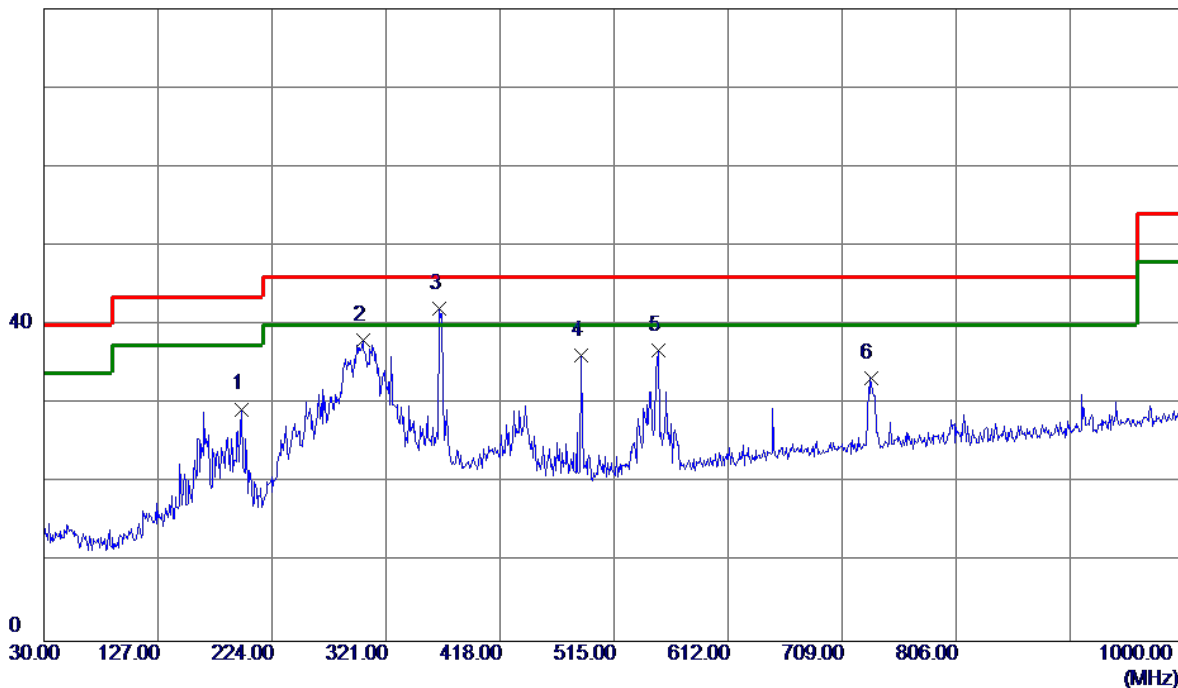
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode: TX N-20 MODE CHANNEL 06

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	198.2950	44.48	-15.12	29.36	43.50	-14.14	Peak	
2	301.1150	49.60	-11.53	38.07	46.00	-7.93	Peak	
3 *	366.1050	52.45	-10.35	42.10	46.00	-3.90	Peak	
4	487.3550	44.02	-7.85	36.17	46.00	-9.83	Peak	
5	552.3449	43.97	-7.21	36.76	46.00	-9.24	Peak	
6	733.2500	37.12	-3.79	33.33	46.00	-12.67	Peak	

REMARKS:

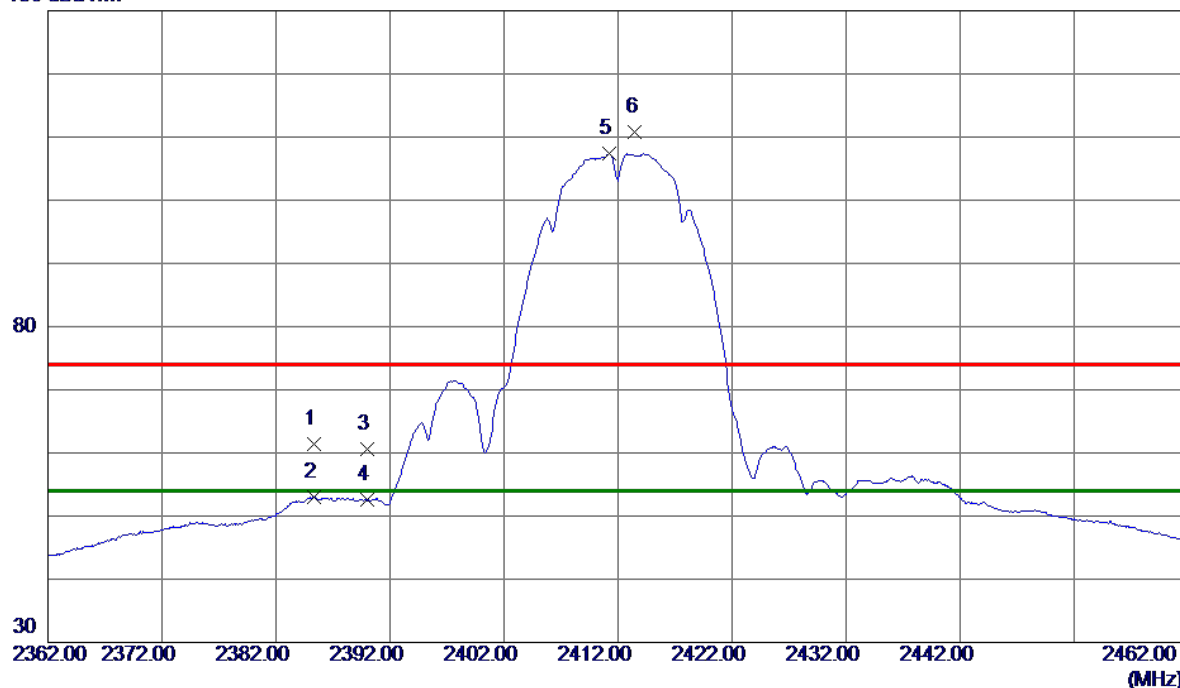
- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

Vertical

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	2385.3500	53.42	7.90	61.32	74.00	-12.68	Peak	
2	2385.3500	45.19	7.90	53.09	54.00	-0.91	AVG	
3	2390.0000	52.63	7.92	60.55	74.00	-13.45	Peak	
4	2390.0000	44.74	7.92	52.66	54.00	-1.34	AVG	
5 *	2411.2500	99.31	8.00	107.31	54.00	53.31	AVG	No Limit
6	2413.5000	102.87	8.01	110.88	74.00	36.88	Peak	No Limit

REMARKS:

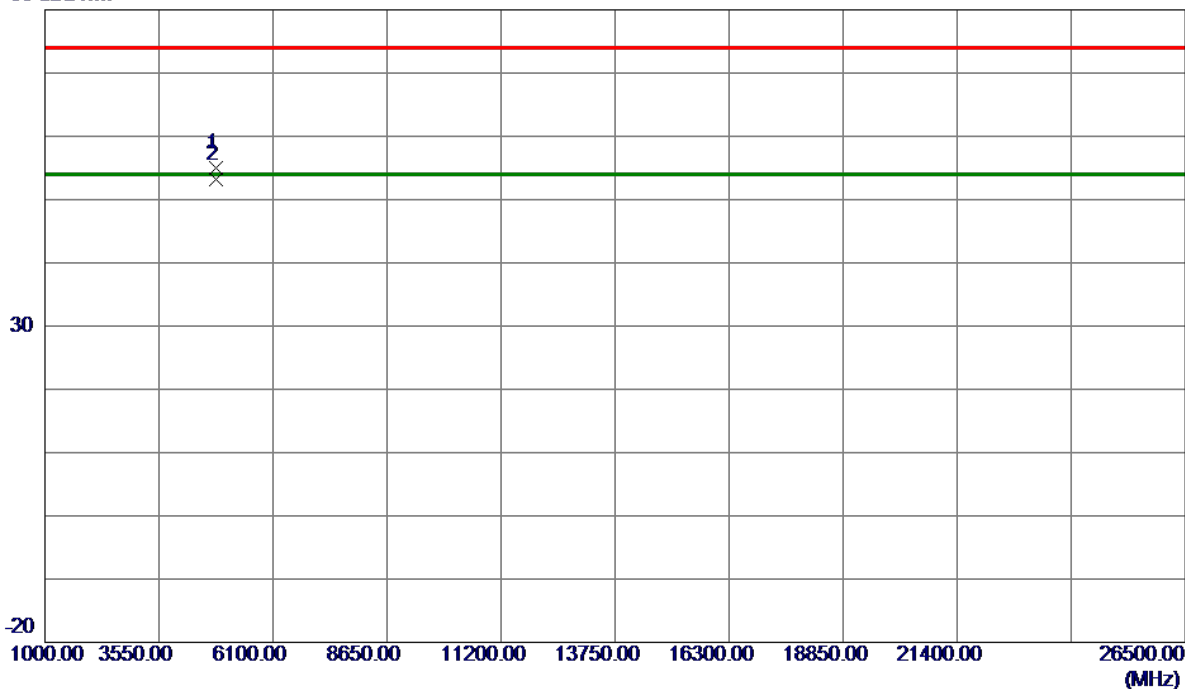
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

Vertical

80 dBuV/m



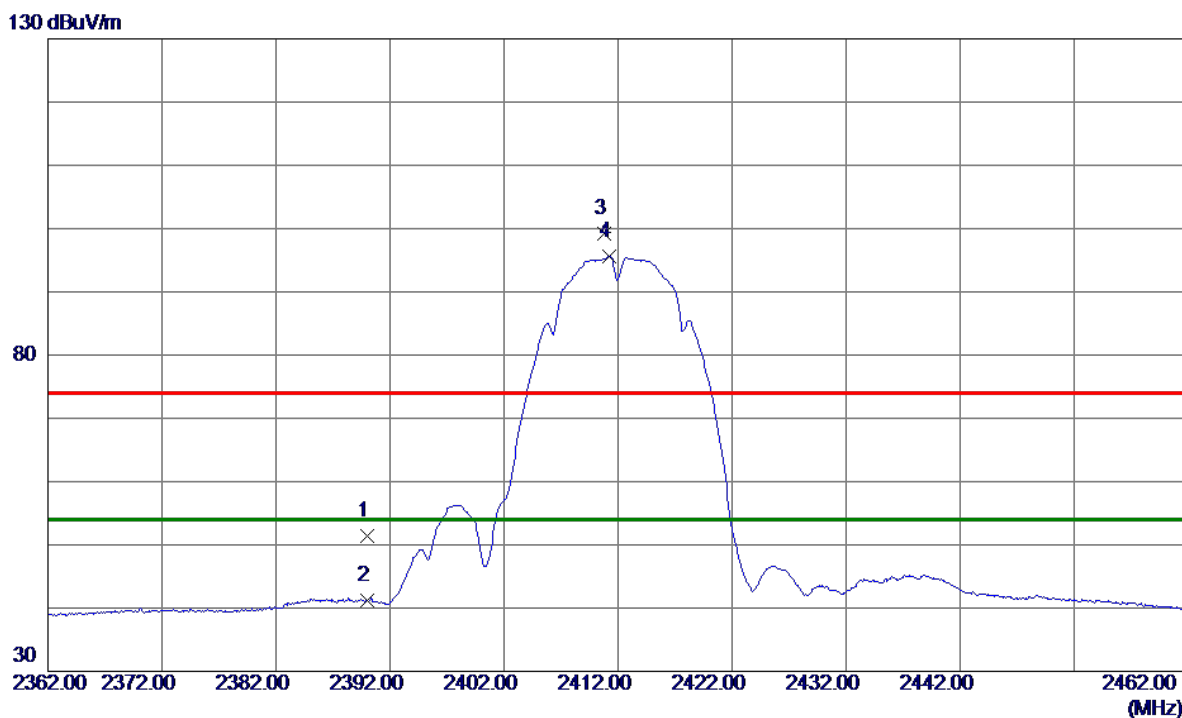
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4823.9270	50.78	4.16	54.94	74.00	-19.06	Peak	
2 *	4824.0000	49.03	4.16	53.19	54.00	-0.81	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

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	43.44	7.92	51.36	74.00	-22.64	Peak	
2	2390.0000	33.27	7.92	41.19	54.00	-12.81	AVG	
3	2410.7500	91.21	8.00	99.21	74.00	25.21	Peak	No Limit
4 *	2411.2000	87.62	8.00	95.62	54.00	41.62	AVG	No Limit

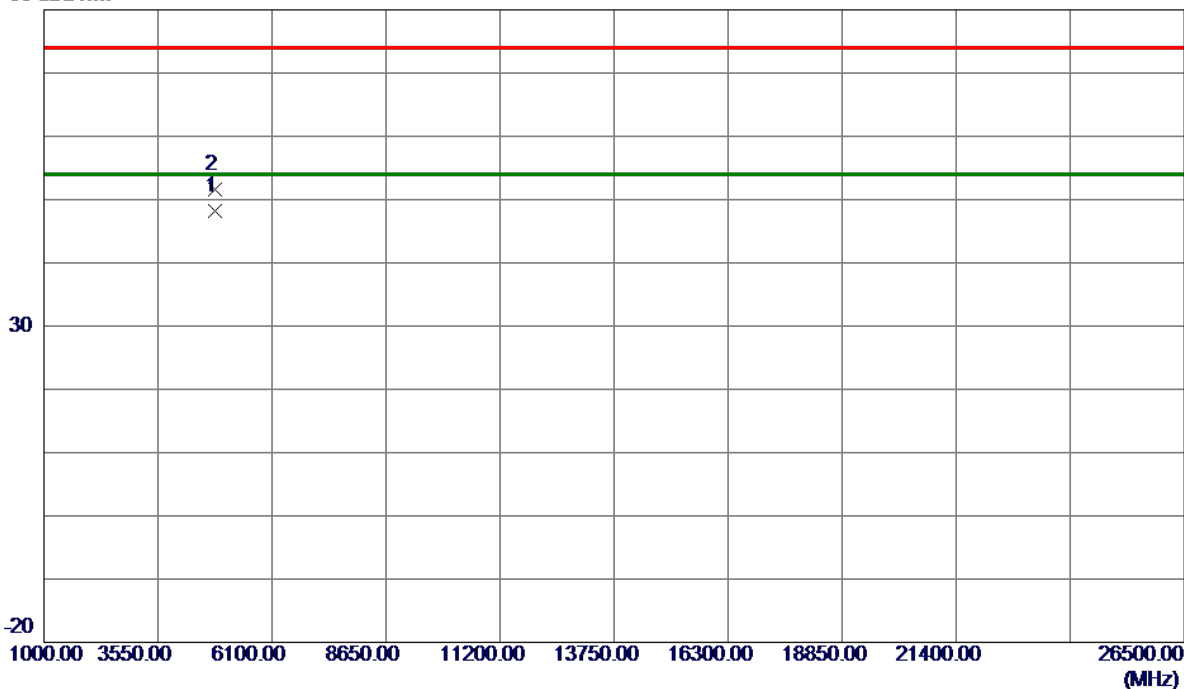
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2412 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.0099	44.06	4.16	48.22	54.00	-5.78	AVG	
2	4824.0230	47.40	4.16	51.56	74.00	-22.44	Peak	

REMARKS:

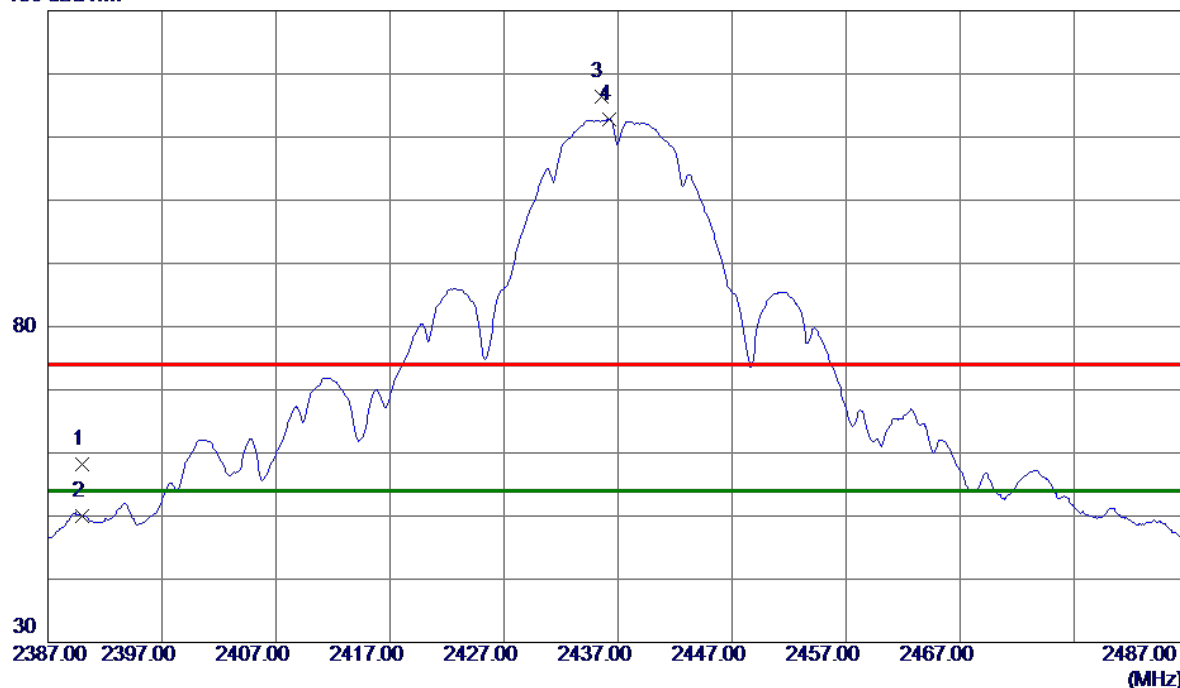
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Vertical

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	2390.0000	50.22	7.92	58.14	74.00	-15.86	Peak	
2	2390.0000	42.12	7.92	50.04	54.00	-3.96	AVG	
3	2435.5000	108.40	8.09	116.49	74.00	42.49	Peak	No Limit
4 *	2436.2000	104.72	8.09	112.81	54.00	58.81	AVG	No Limit

REMARKS:

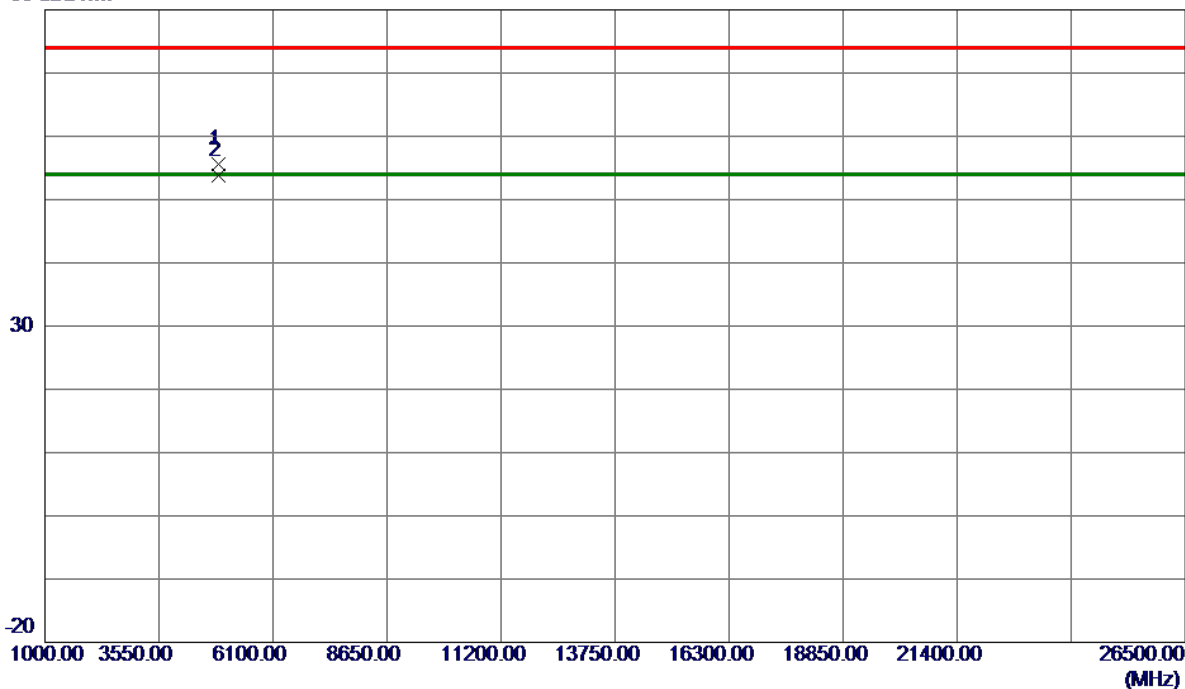
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Vertical

80 dBuV/m



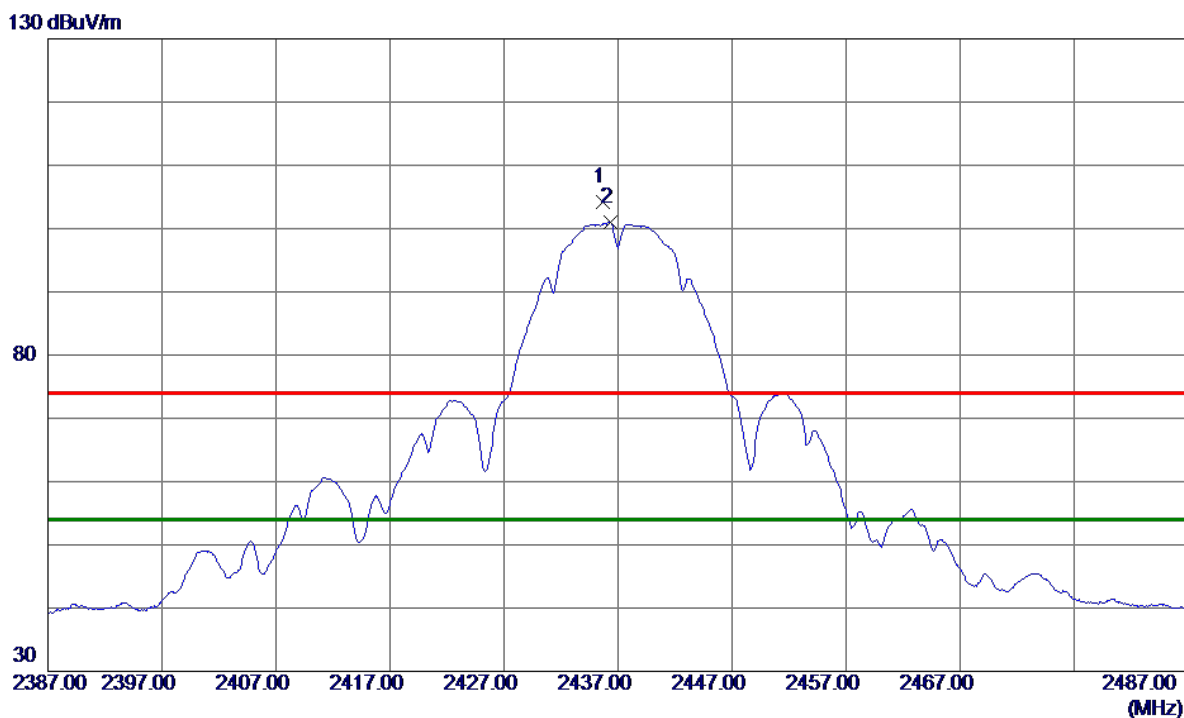
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.9930	51.28	4.32	55.60	74.00	-18.40	Peak	
2 *	4874.0250	49.43	4.32	53.75	54.00	-0.25	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2435.7000	96.15	8.09	104.24	74.00	30.24	Peak	No Limit
2 *	2436.3000	92.87	8.09	100.96	54.00	46.96	AVG	No Limit

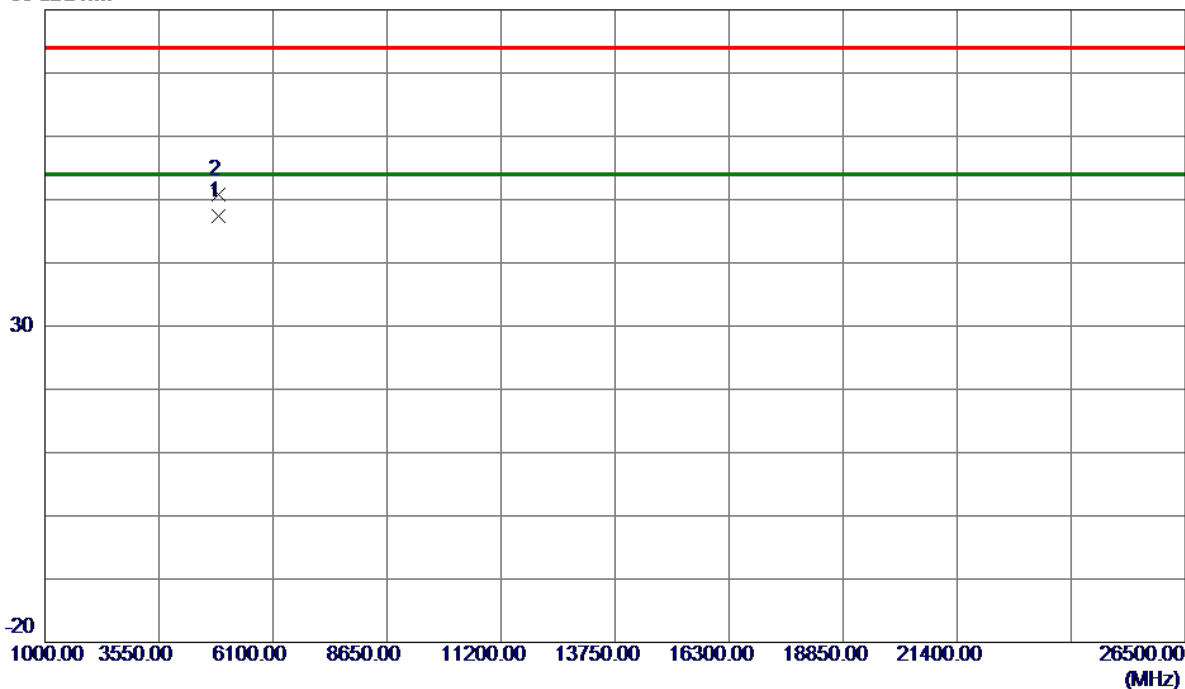
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2437 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4873.9750	43.11	4.32	47.43	54.00	-6.57	AVG	
2	4874.1800	46.43	4.32	50.75	74.00	-23.25	Peak	

REMARKS:

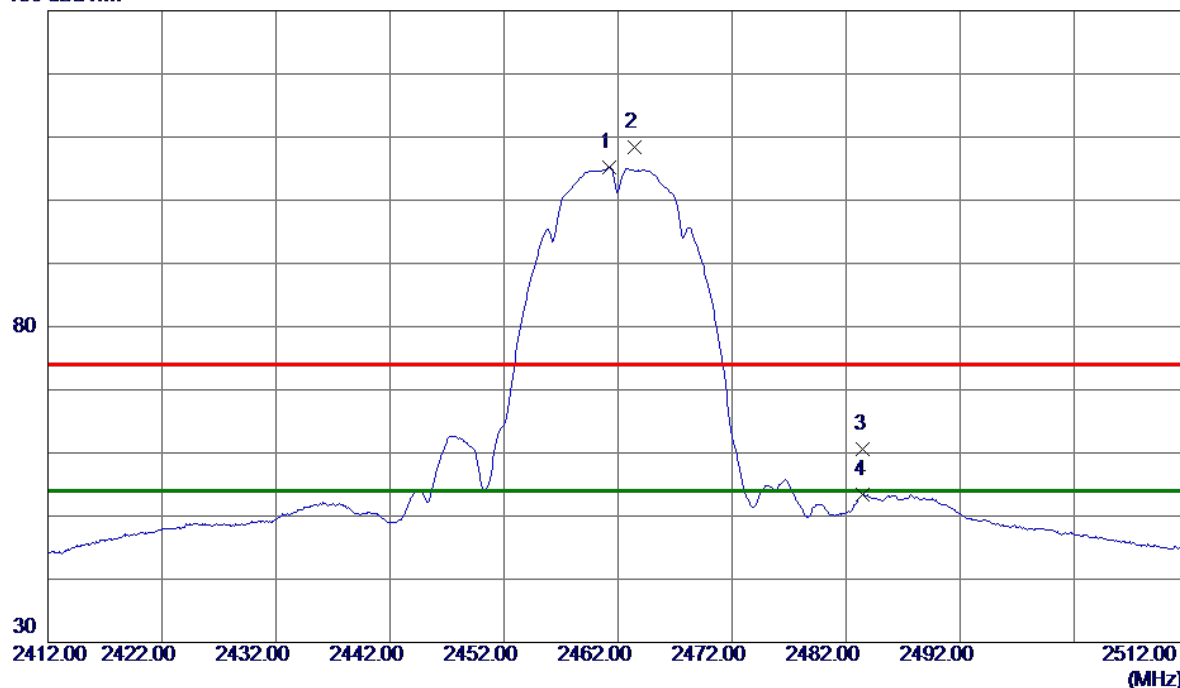
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Vertical

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 *	2461.2500	97.03	8.19	105.22	54.00	51.22	AVG	No Limit
2	2463.4000	100.30	8.19	108.49	74.00	34.49	Peak	No Limit
3	2483.5000	52.33	8.27	60.60	74.00	-13.40	Peak	
4	2483.5000	45.04	8.27	53.31	54.00	-0.69	AVG	

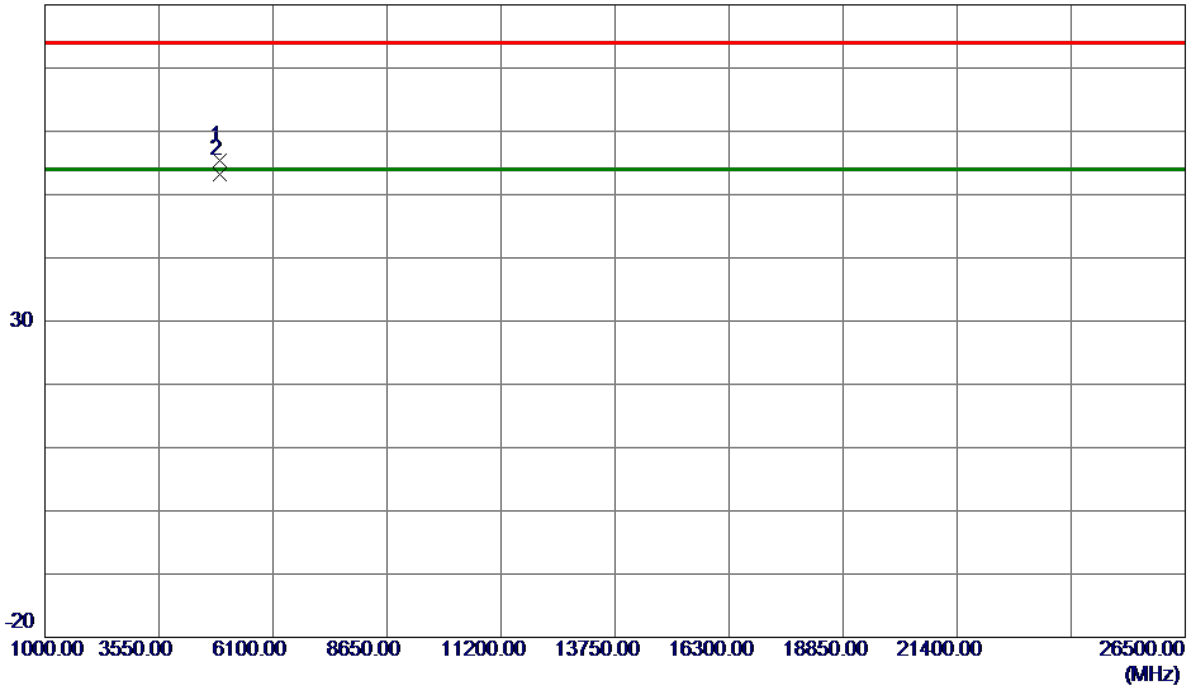
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Vertical

80 dBuV/m



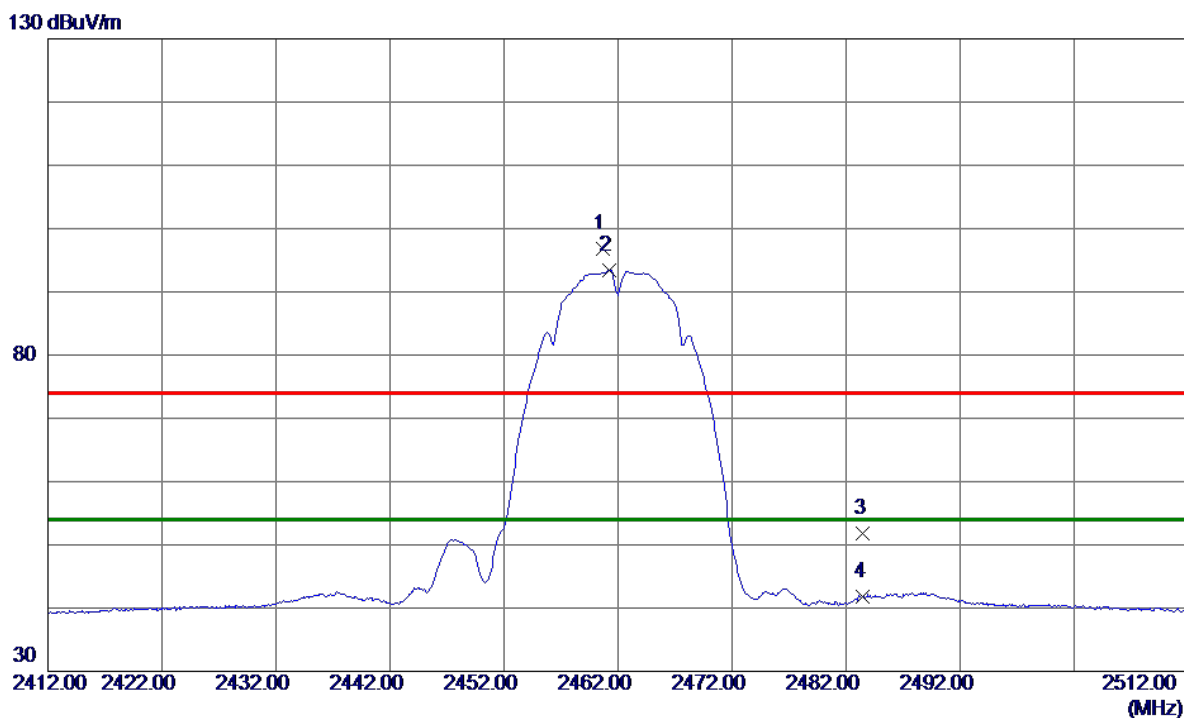
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.0019	50.95	4.47	55.42	74.00	-18.58	Peak	
2 *	4924.0150	48.78	4.47	53.25	54.00	-0.75	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2460.7000	88.53	8.18	96.71	74.00	22.71	Peak	No Limit
2 *	2461.2500	85.30	8.19	93.49	54.00	39.49	AVG	No Limit
3	2483.5000	43.57	8.27	51.84	74.00	-22.16	Peak	
4	2483.5000	33.50	8.27	41.77	54.00	-12.23	AVG	

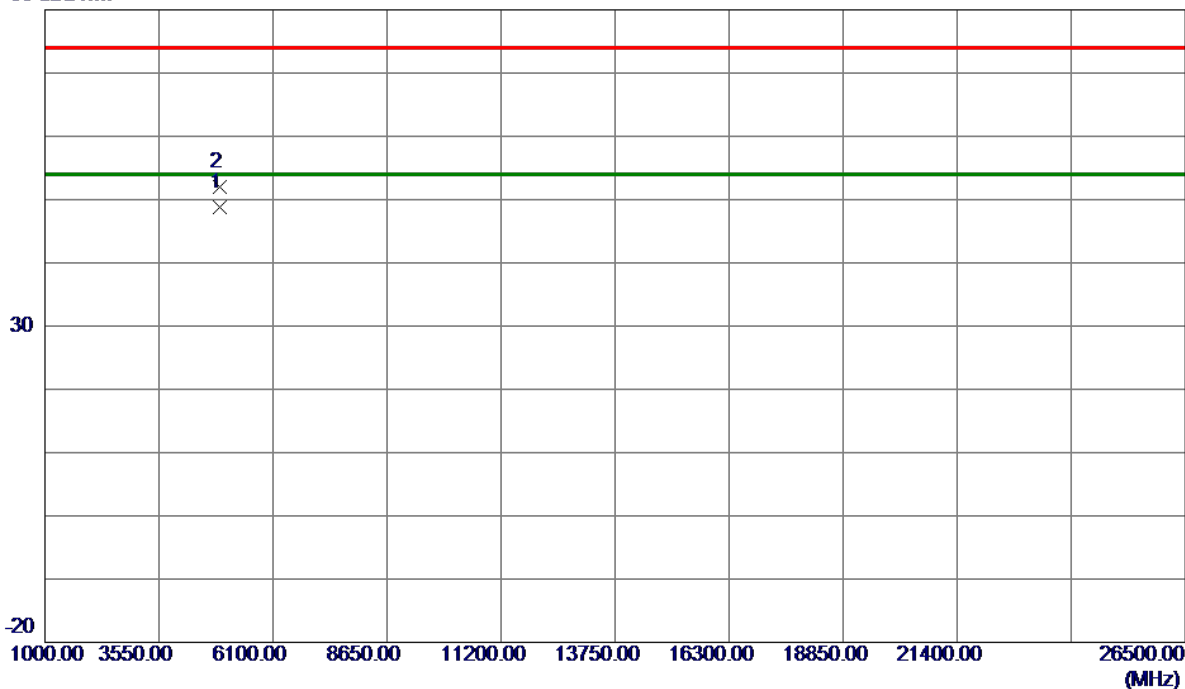
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX B Mode 2462 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4924.0200	44.39	4.47	48.86	54.00	-5.14	AVG	
2	4924.0650	47.62	4.47	52.09	74.00	-21.91	Peak	

REMARKS:

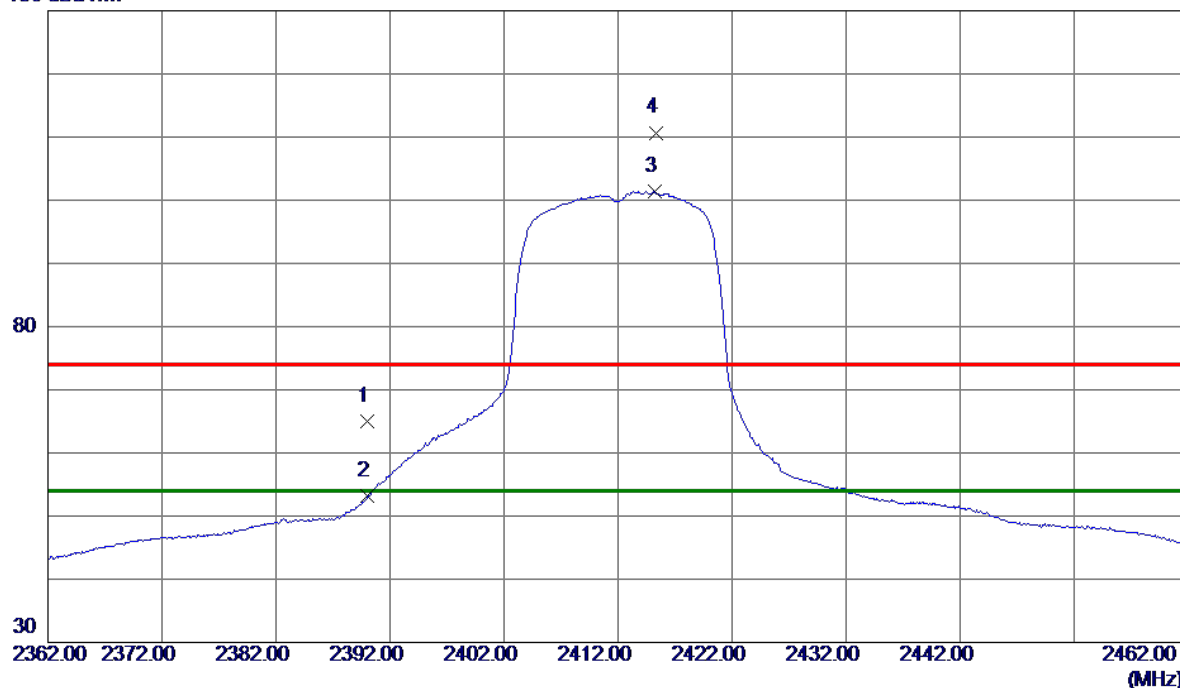
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Vertical

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	2390.0000	57.15	7.92	65.07	74.00	-8.93	Peak	
2	2390.0000	45.19	7.92	53.11	54.00	-0.89	AVG	
3 *	2415.2000	93.39	8.01	101.40	54.00	47.40	AVG	No Limit
4	2415.3500	102.68	8.02	110.70	74.00	36.70	Peak	No Limit

REMARKS:

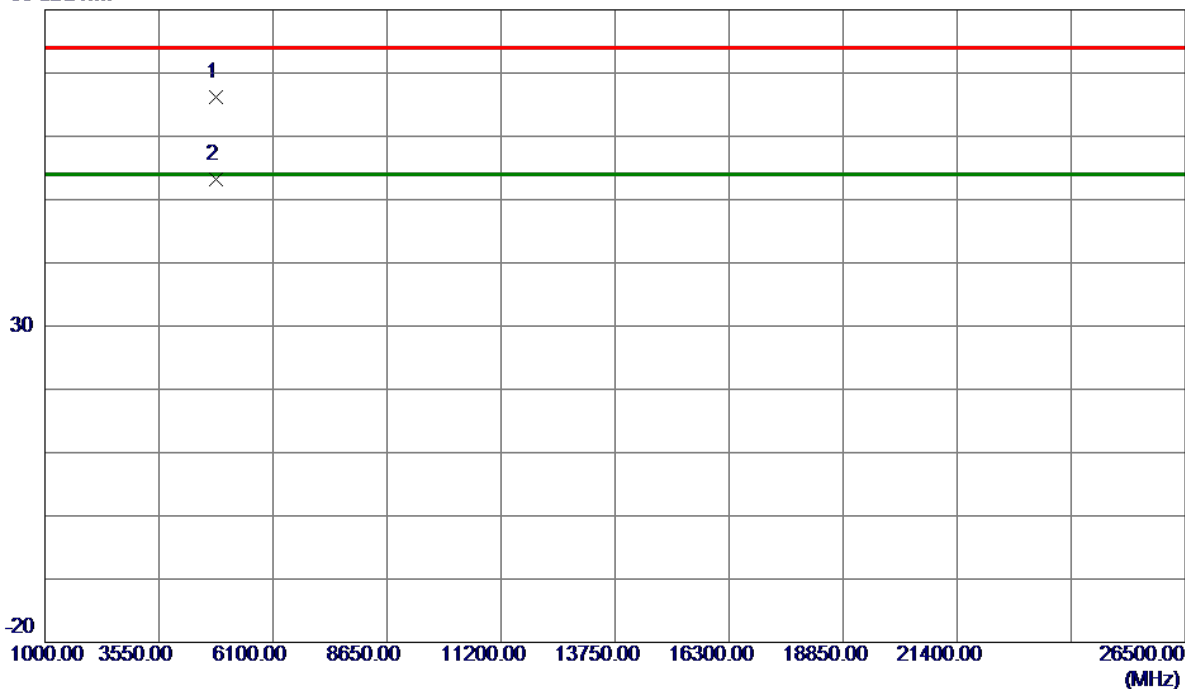
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Vertical

80 dBuV/m



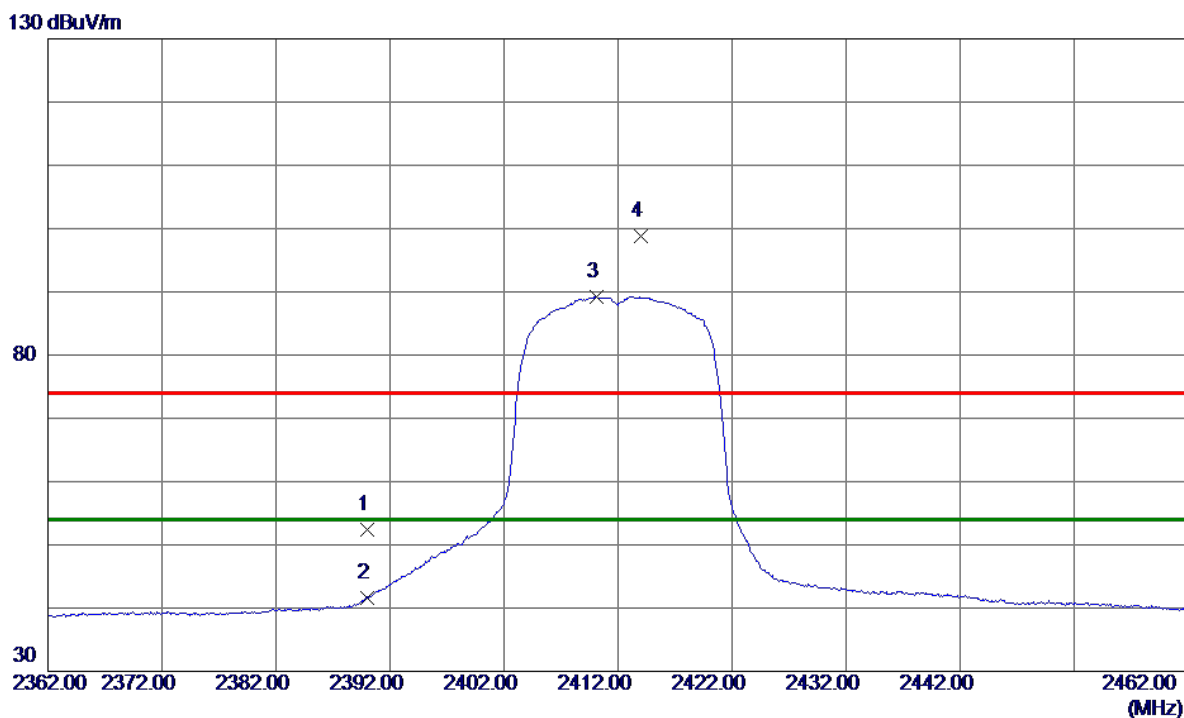
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4822.6200	62.06	4.16	66.22	74.00	-7.78	Peak	
2 *	4823.7220	48.99	4.16	53.15	54.00	-0.85	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

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	44.53	7.92	52.45	74.00	-21.55	Peak	
2	2390.0000	33.76	7.92	41.68	54.00	-12.32	AVG	
3 *	2410.1000	81.27	8.00	89.27	54.00	35.27	AVG	No Limit
4	2413.9500	90.87	8.01	98.88	74.00	24.88	Peak	No Limit

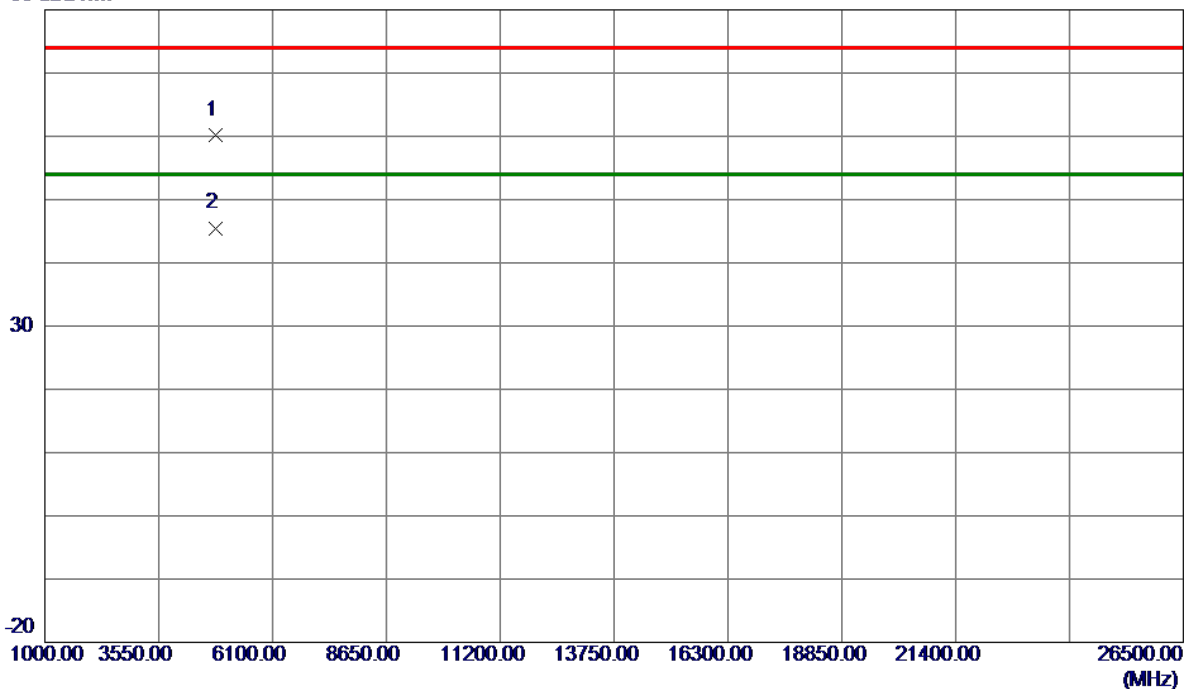
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2412 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4822.6549	56.05	4.16	60.21	74.00	-13.79	Peak	
2 *	4823.9430	41.34	4.16	45.50	54.00	-8.50	AVG	

REMARKS:

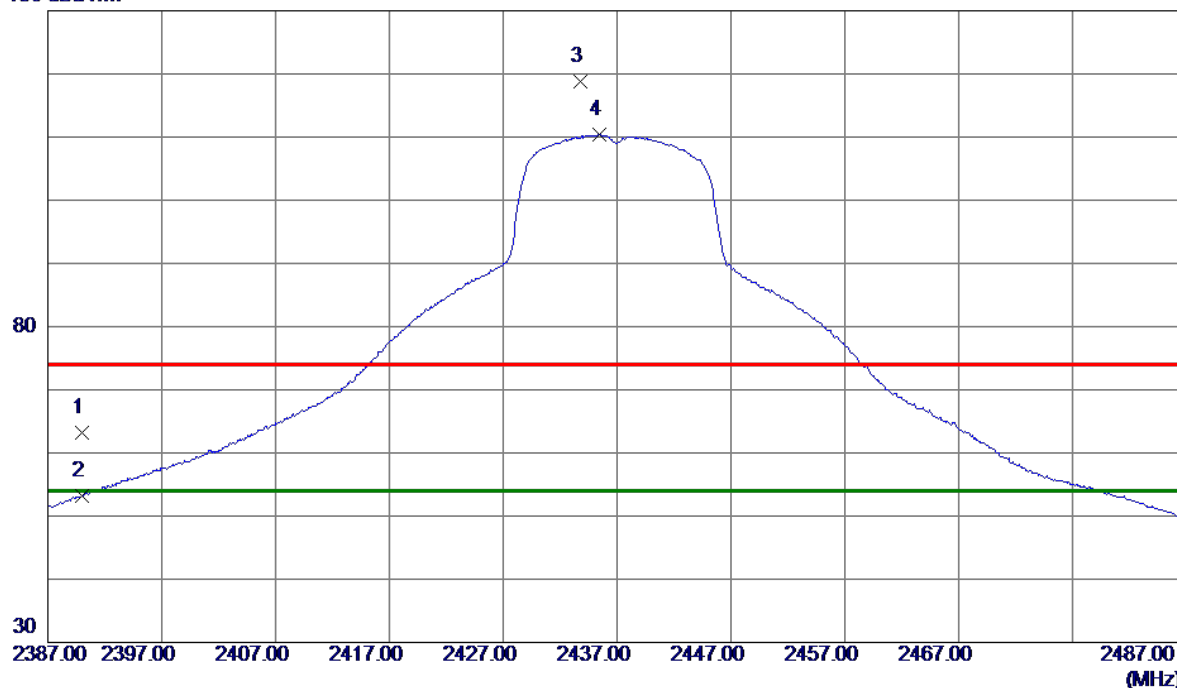
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Vertical

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	2390.0000	55.22	7.92	63.14	74.00	-10.86	Peak	
2	2390.0000	45.32	7.92	53.24	54.00	-0.76	AVG	
3	2433.8000	110.78	8.08	118.86	74.00	44.86	Peak	No Limit
4 *	2435.4500	102.25	8.09	110.34	54.00	56.34	AVG	No Limit

REMARKS:

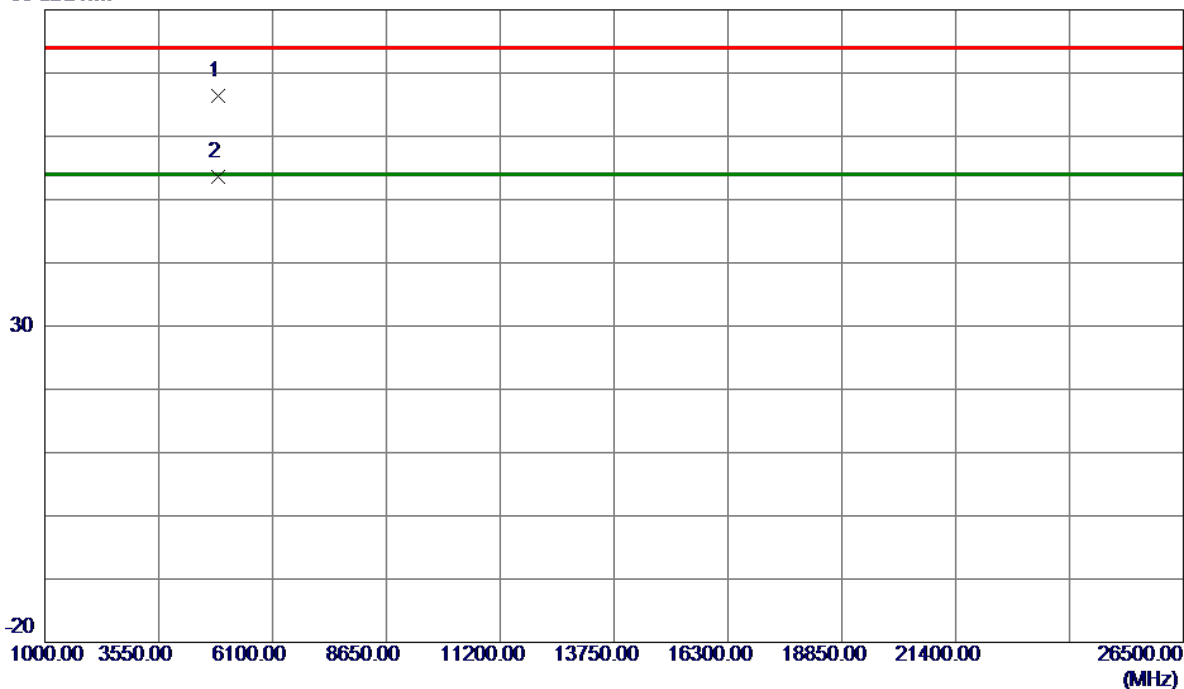
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Vertical

80 dBuV/m



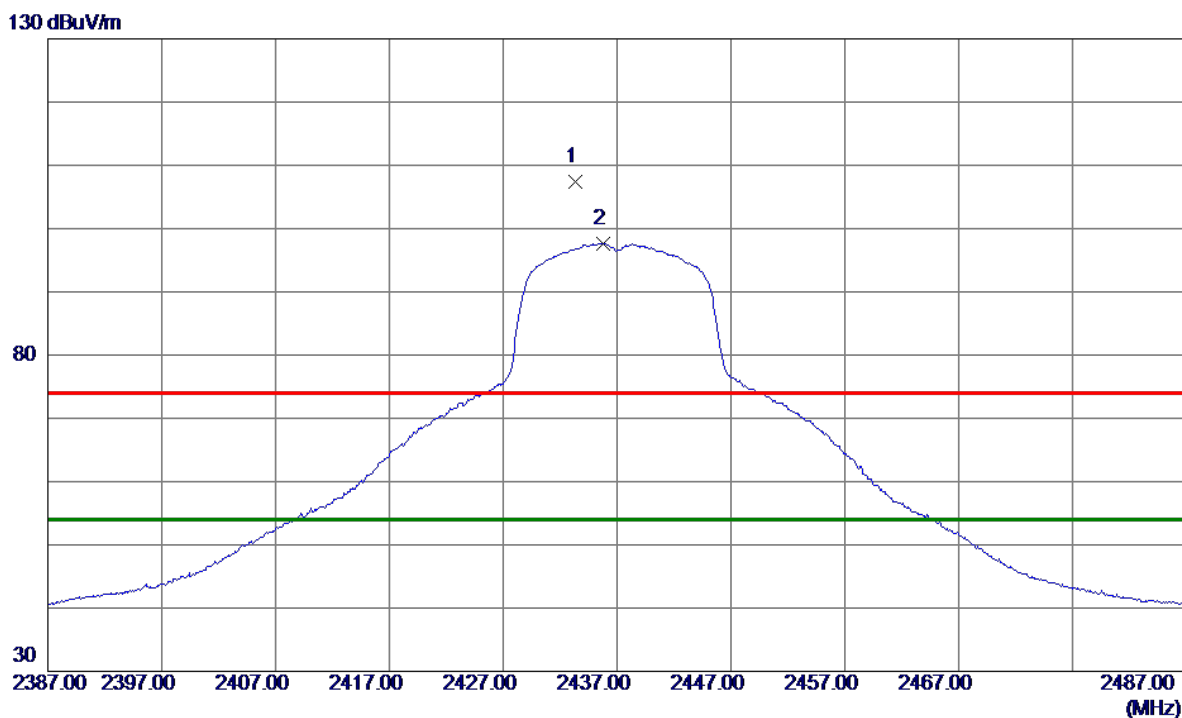
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4873.5150	61.99	4.32	66.31	74.00	-7.69	Peak	
2 *	4873.8370	49.37	4.32	53.69	54.00	-0.31	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2433.3000	99.31	8.08	107.39	74.00	33.39	Peak	No Limit
2 *	2435.8000	89.58	8.09	97.67	54.00	43.67	AVG	No Limit

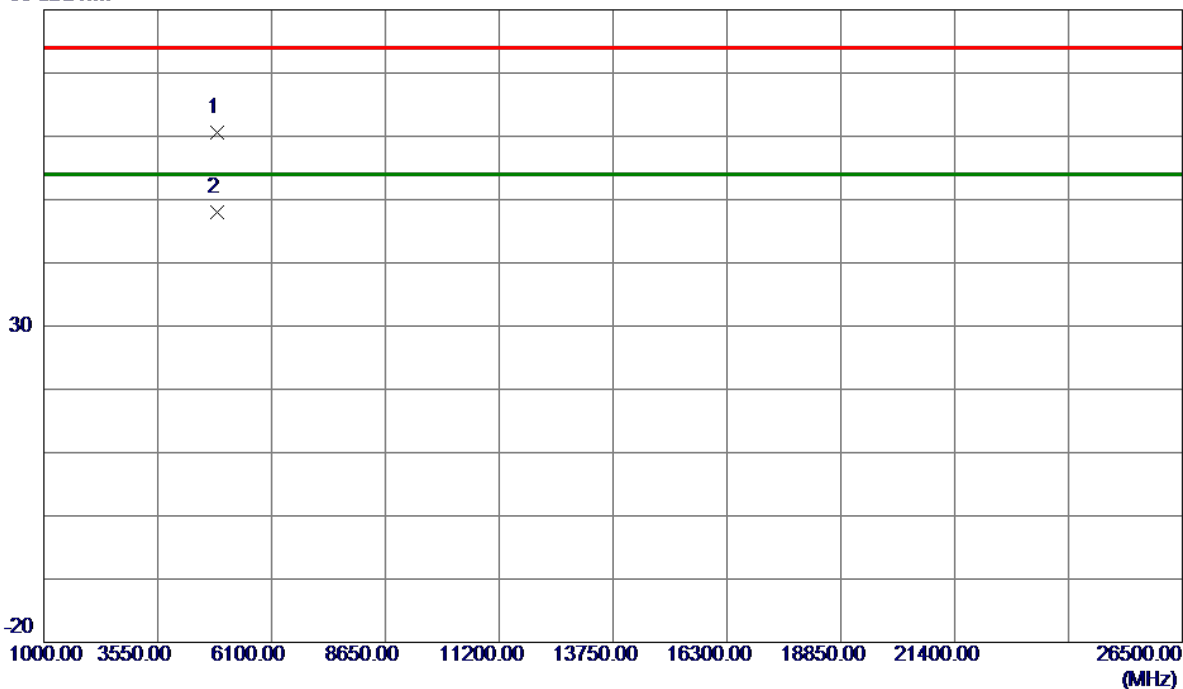
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2437 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4872.0570	56.36	4.31	60.67	74.00	-13.33	Peak	
2 *	4872.0800	43.60	4.31	47.91	54.00	-6.09	AVG	

REMARKS:

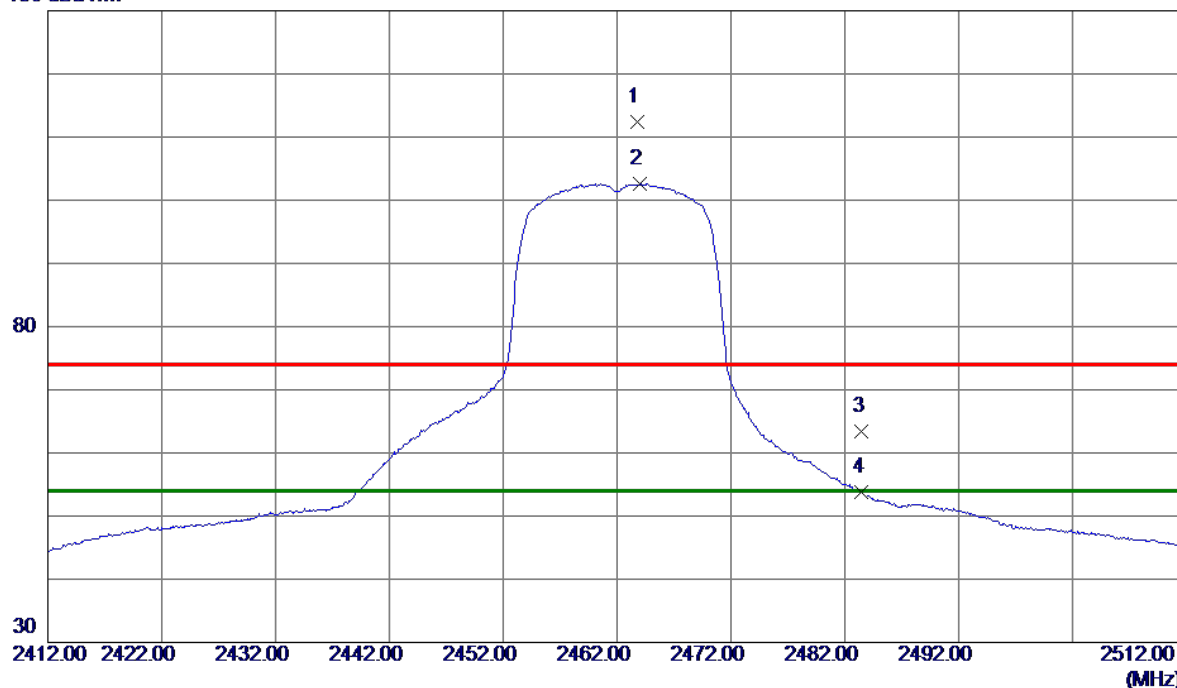
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Vertical

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	2463.7500	104.23	8.20	112.43	74.00	38.43	Peak	No Limit
2 *	2464.0500	94.45	8.20	102.65	54.00	48.65	AVG	No Limit
3	2483.5000	55.12	8.27	63.39	74.00	-10.61	Peak	
4	2483.5000	45.50	8.27	53.77	54.00	-0.23	AVG	

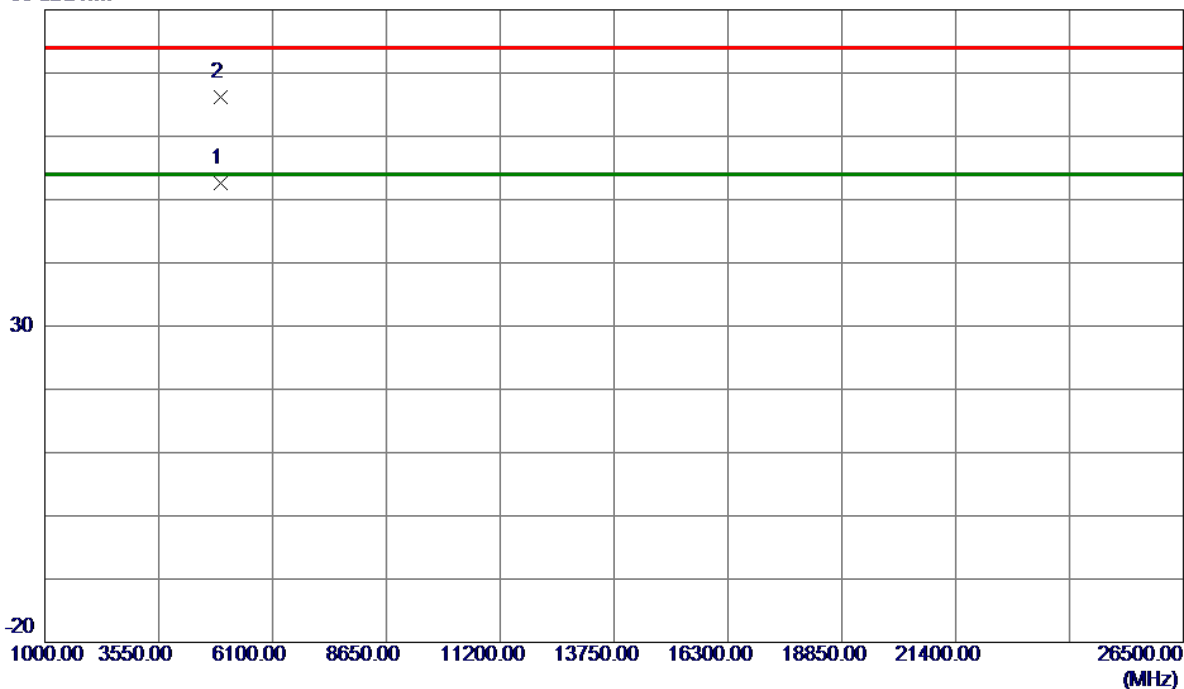
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Vertical

80 dBuV/m



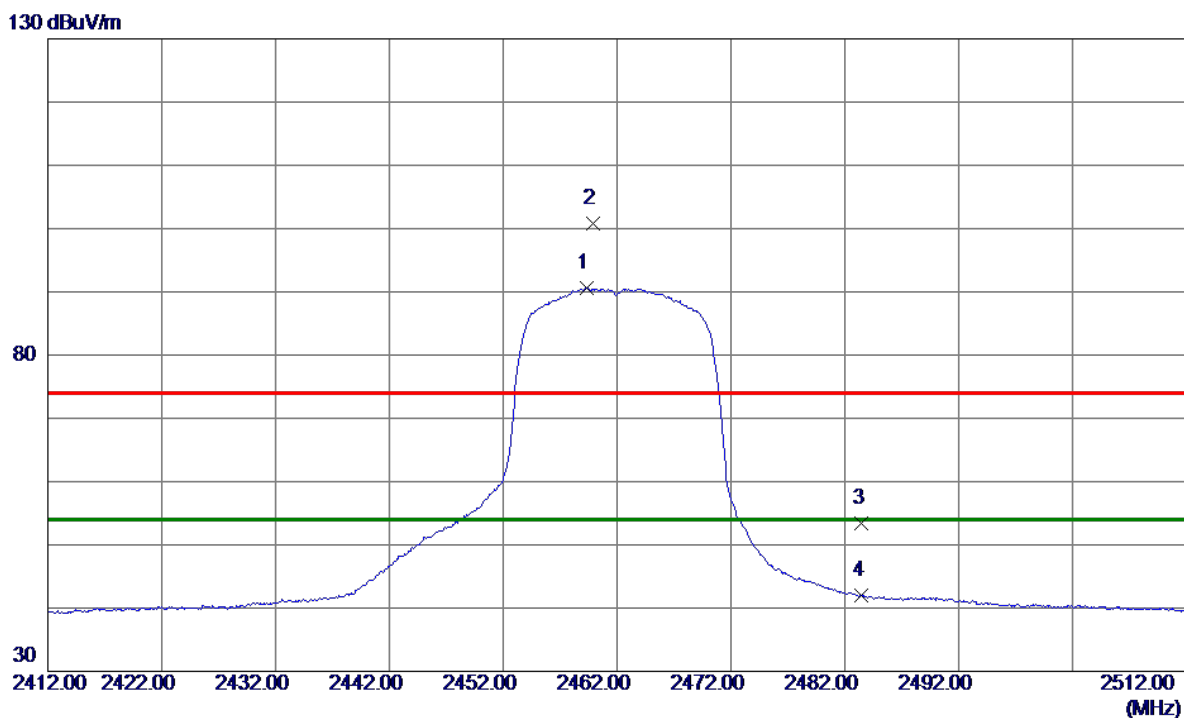
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4924.2030	48.22	4.47	52.69	54.00	-1.31	AVG	
2	4924.2170	61.67	4.47	66.14	74.00	-7.86	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2459.3000	82.41	8.18	90.59	54.00	36.59	AVG	No Limit
2	2459.8500	92.55	8.18	100.73	74.00	26.73	Peak	No Limit
3	2483.5000	45.20	8.27	53.47	74.00	-20.53	Peak	
4	2483.5000	33.71	8.27	41.98	54.00	-12.02	AVG	

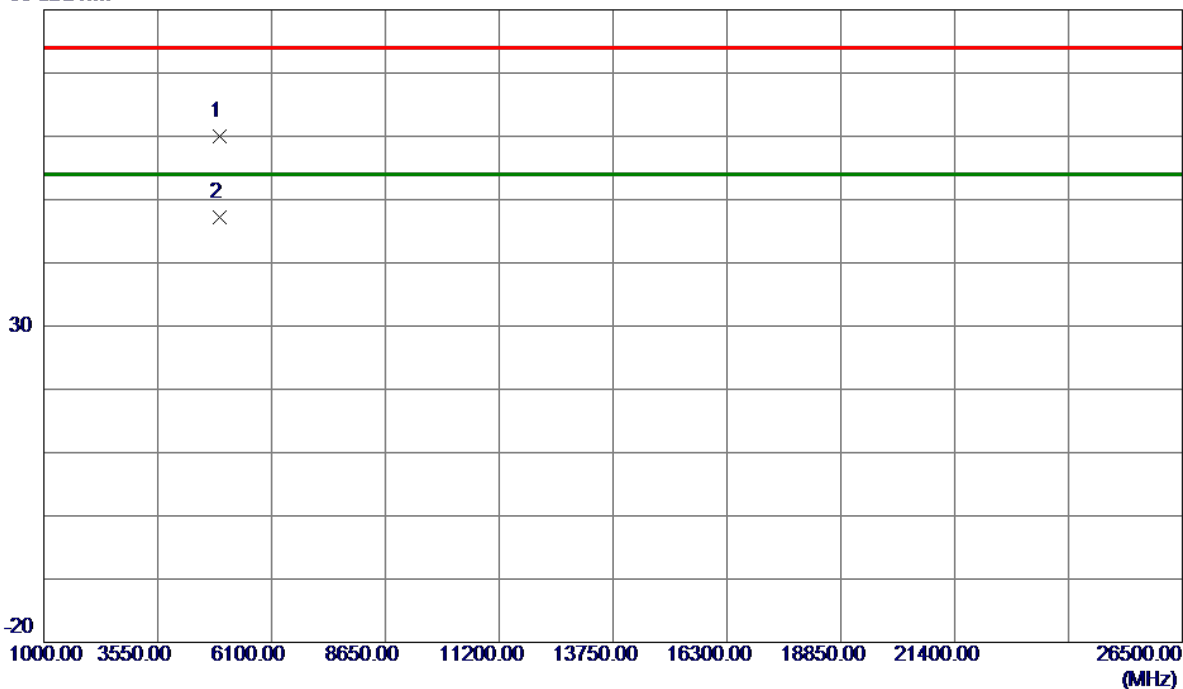
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX G Mode 2462 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4924.7030	55.48	4.47	59.95	74.00	-14.05	Peak	
2 *	4925.6450	42.76	4.48	47.24	54.00	-6.76	AVG	

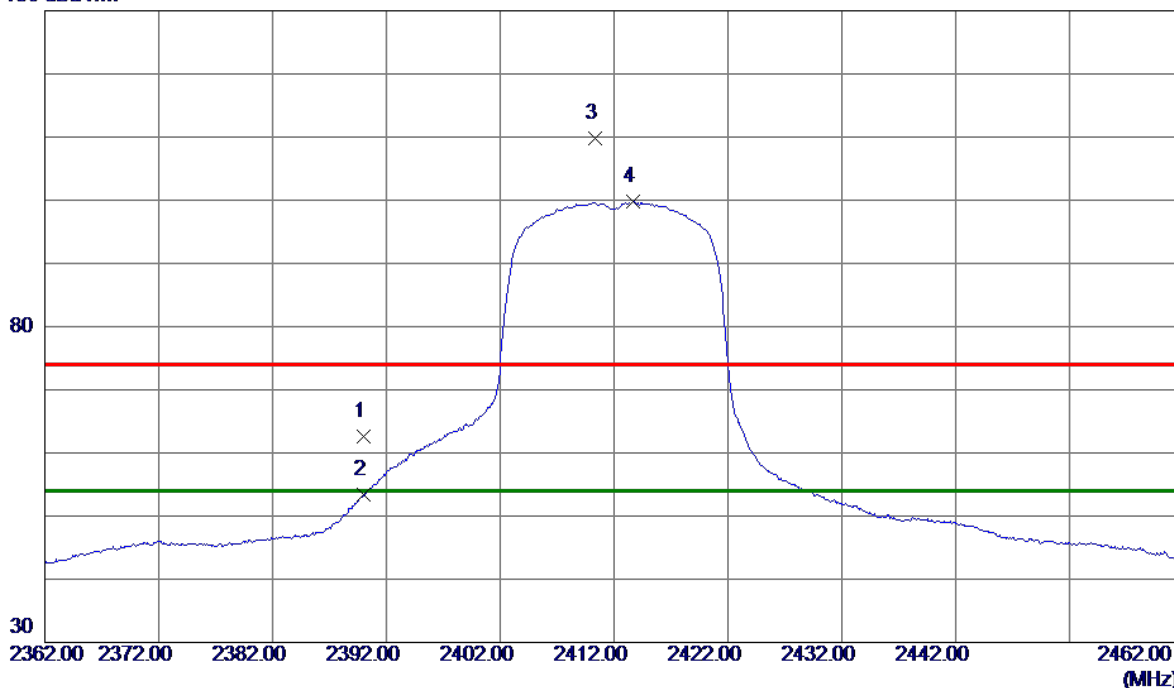
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Vertical

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	2390.0000	54.66	7.92	62.58	74.00	-11.42	Peak	
2	2390.0000	45.47	7.92	53.39	54.00	-0.61	AVG	
3	2410.3000	101.72	8.00	109.72	74.00	35.72	Peak	No Limit
4 *	2413.7000	91.77	8.01	99.78	54.00	45.78	AVG	No Limit

REMARKS:

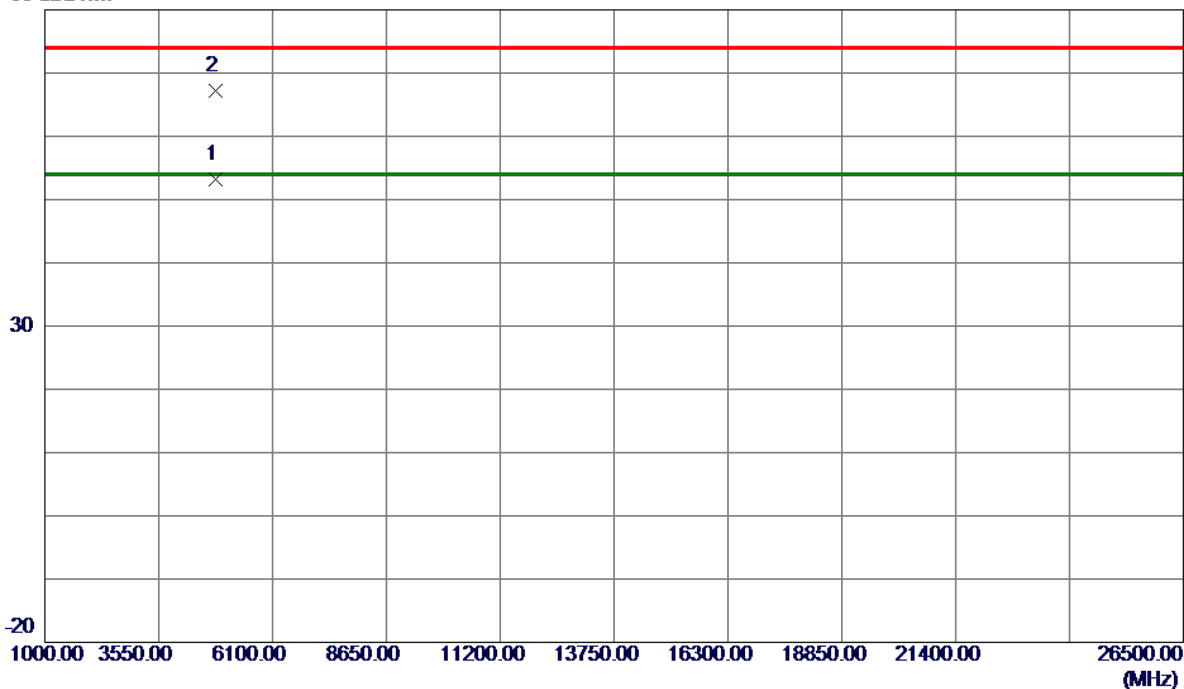
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

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

Vertical

80 dBuV/m



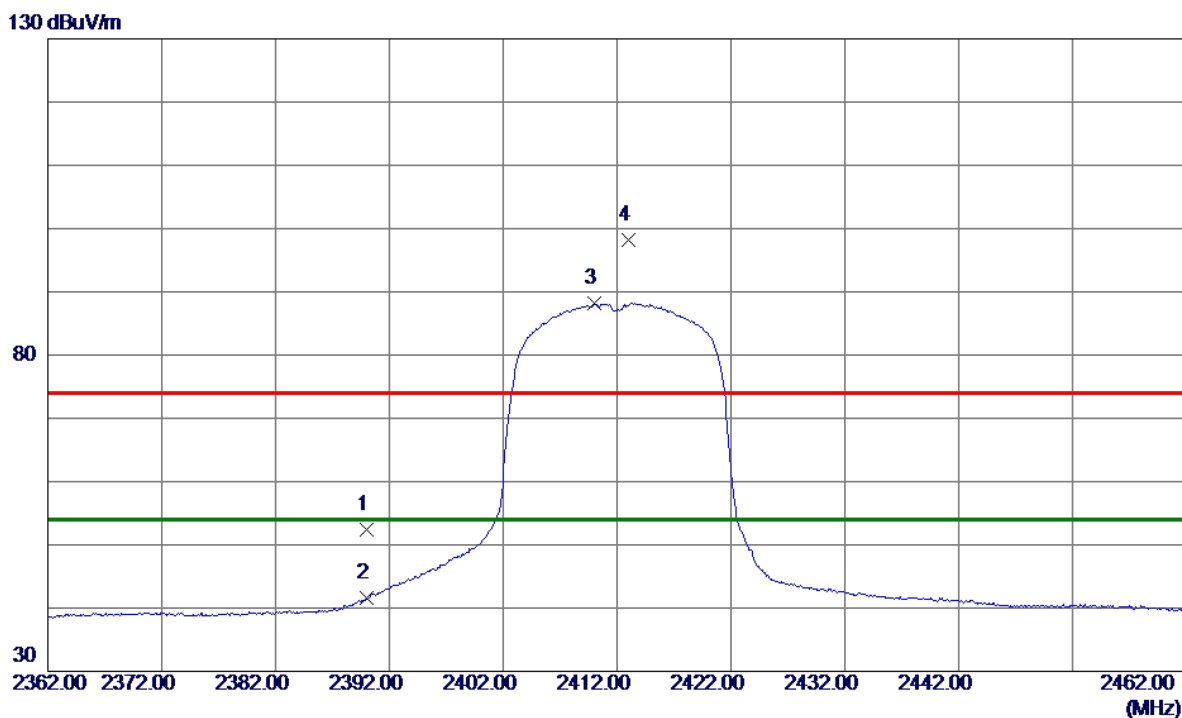
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4824.0379	49.02	4.16	53.18	54.00	-0.82	AVG	
2	4824.6700	63.06	4.16	67.22	74.00	-6.78	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

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	44.39	7.92	52.31	74.00	-21.69	Peak	
2	2390.0000	33.73	7.92	41.65	54.00	-12.35	AVG	
3 *	2409.9500	80.21	7.99	88.20	54.00	34.20	AVG	No Limit
4	2413.0500	90.25	8.01	98.26	74.00	24.26	Peak	No Limit

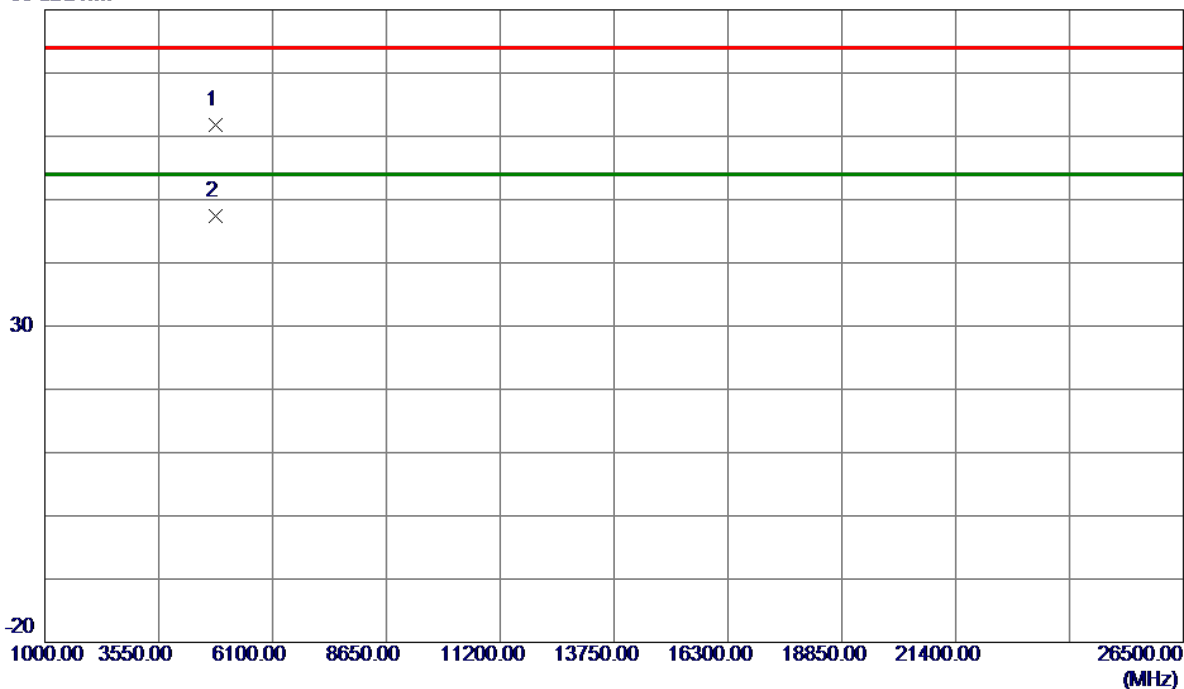
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4822.8700	57.68	4.16	61.84	74.00	-12.16	Peak	
2 *	4824.1349	43.32	4.16	47.48	54.00	-6.52	AVG	

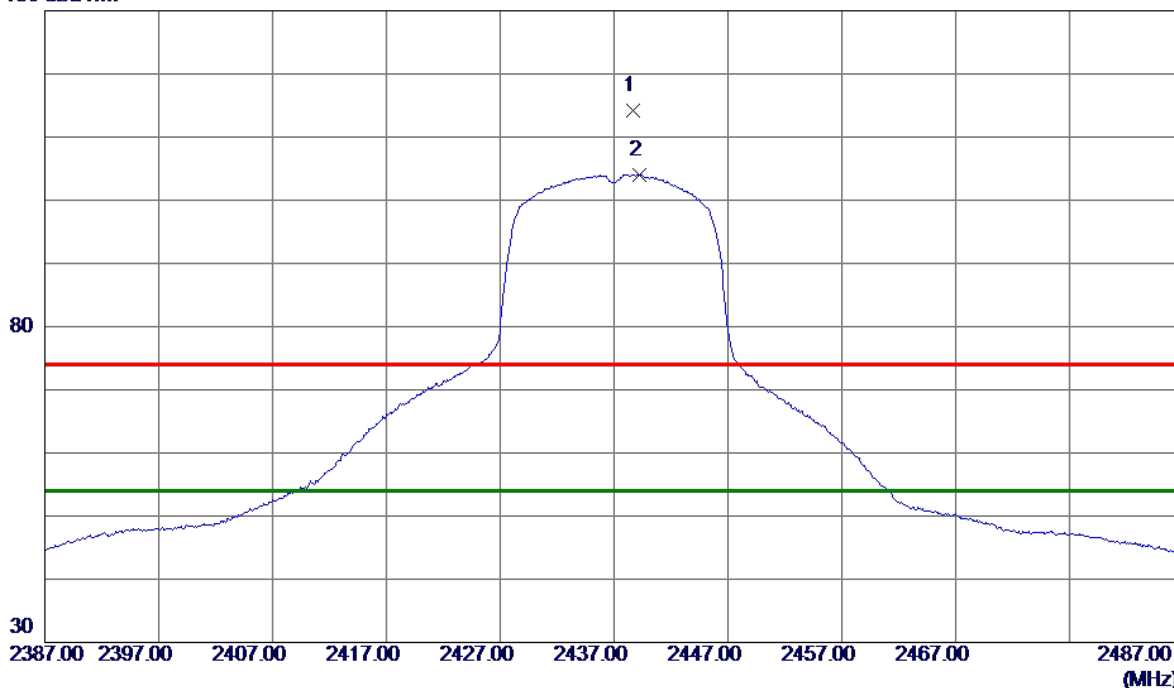
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Vertical

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	2438.6500	106.01	8.10	114.11	74.00	40.11	Peak	No Limit
2 *	2439.2000	95.98	8.10	104.08	54.00	50.08	AVG	No Limit

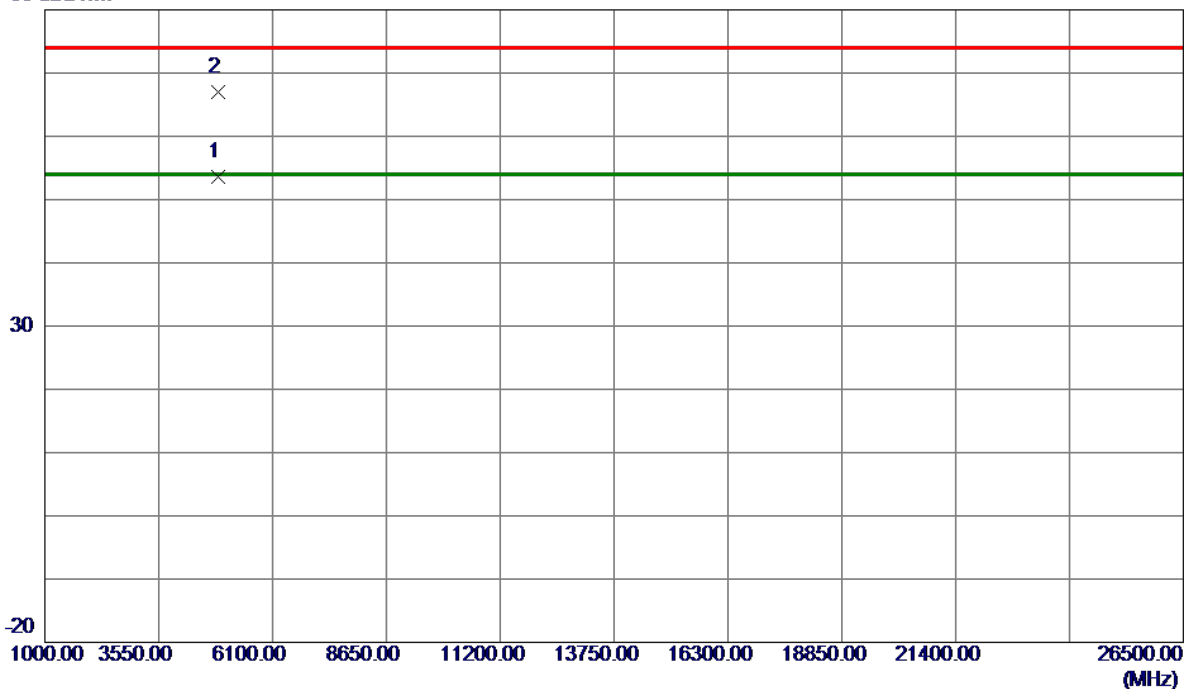
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Vertical

80 dBuV/m



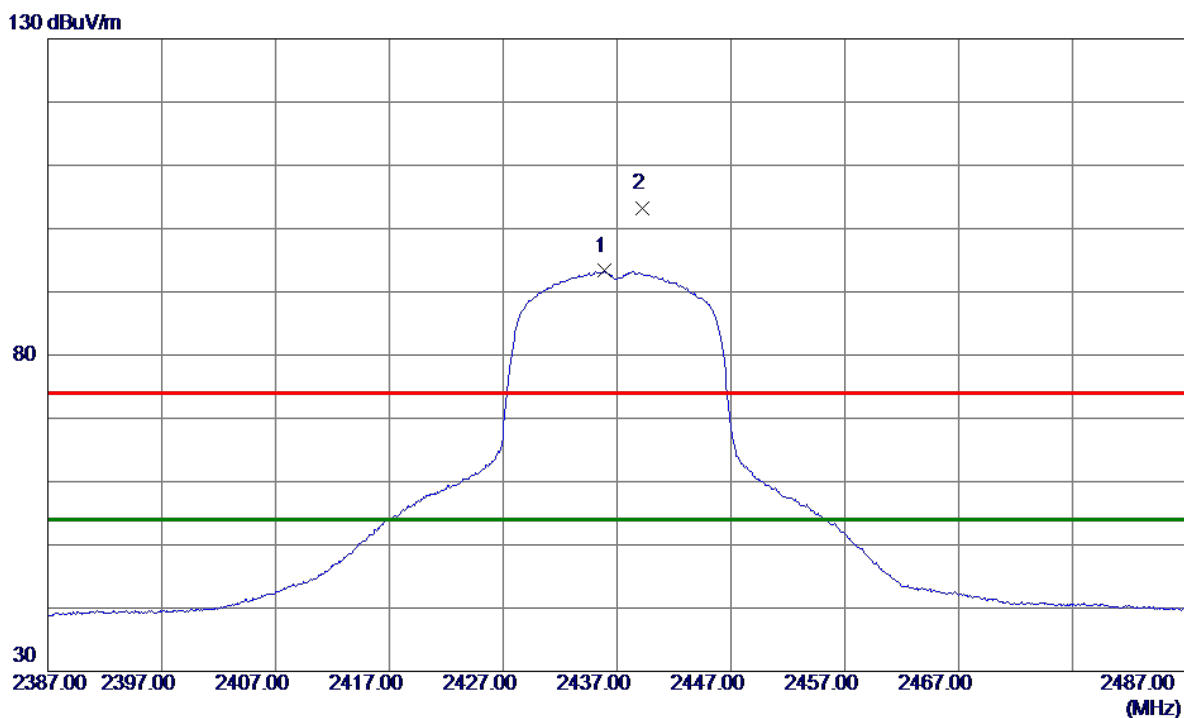
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4871.6050	49.21	4.31	53.52	54.00	-0.48	AVG	
2	4874.9030	62.73	4.32	67.05	74.00	-6.95	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2435.9000	85.21	8.09	93.30	54.00	39.30	AVG	No Limit
2	2439.2500	95.17	8.10	103.27	74.00	29.27	Peak	No Limit

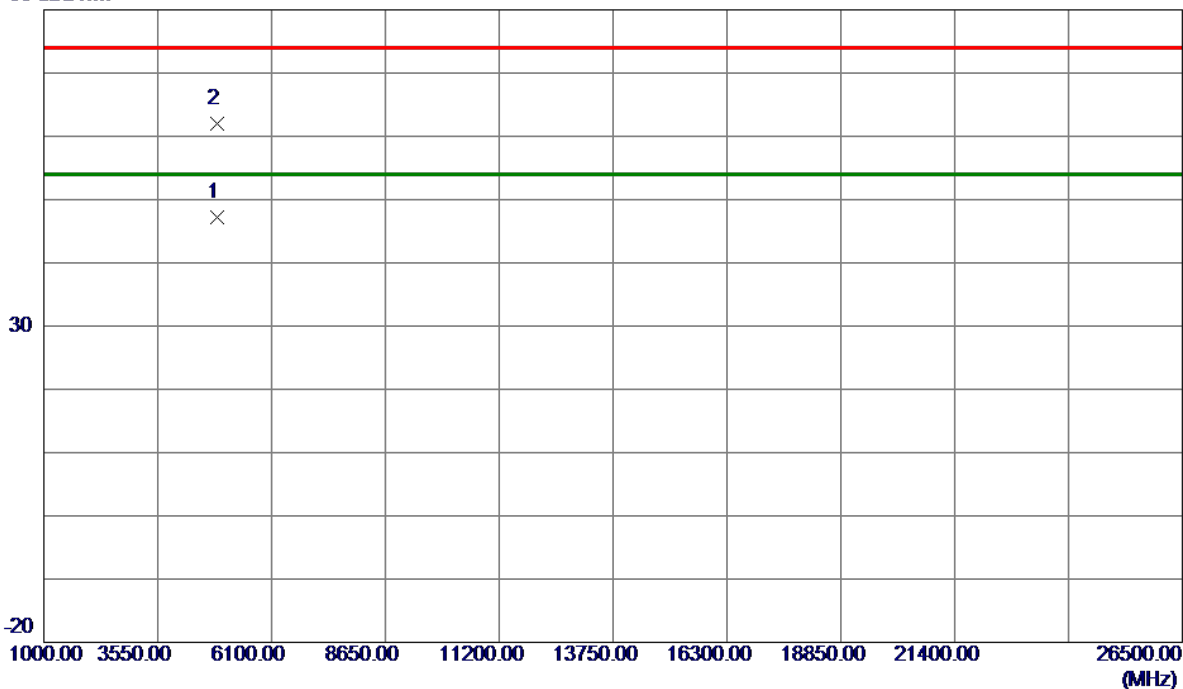
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4871.5000	42.95	4.31	47.26	54.00	-6.74	AVG	
2	4872.4500	57.68	4.31	61.99	74.00	-12.01	Peak	

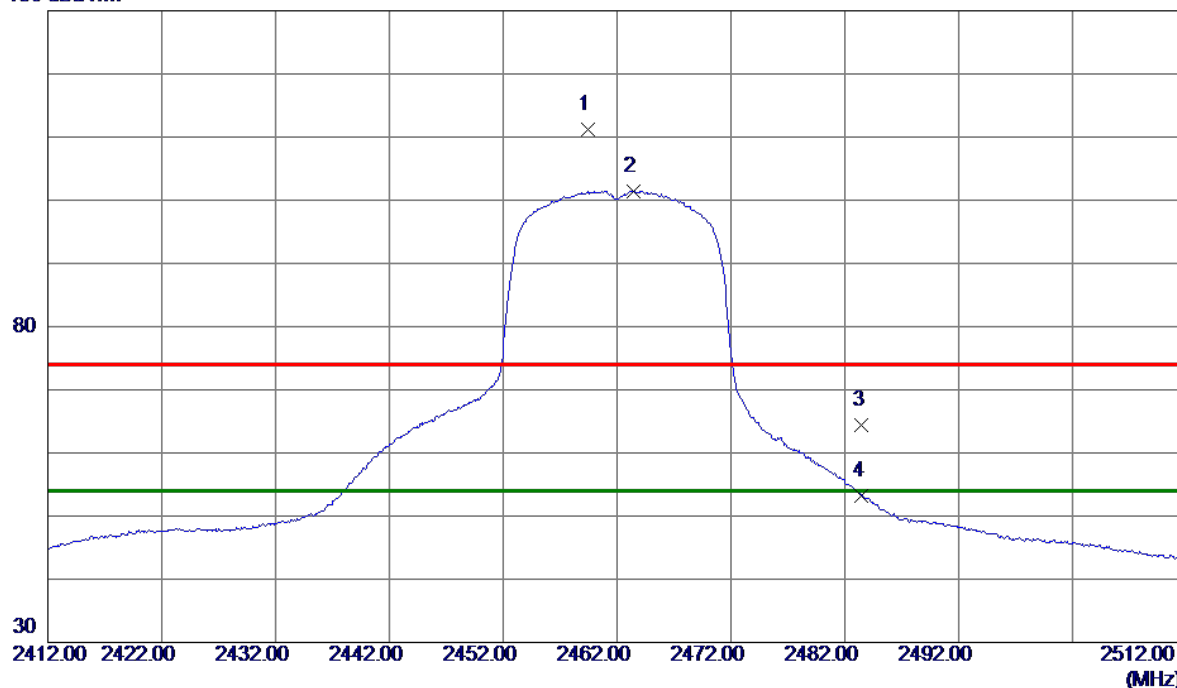
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

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

Vertical

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	2459.4000	102.99	8.18	111.17	74.00	37.17	Peak	No Limit
2 *	2463.4000	93.29	8.19	101.48	54.00	47.48	AVG	No Limit
3	2483.5000	56.20	8.27	64.47	74.00	-9.53	Peak	
4	2483.5000	44.88	8.27	53.15	54.00	-0.85	AVG	

REMARKS:

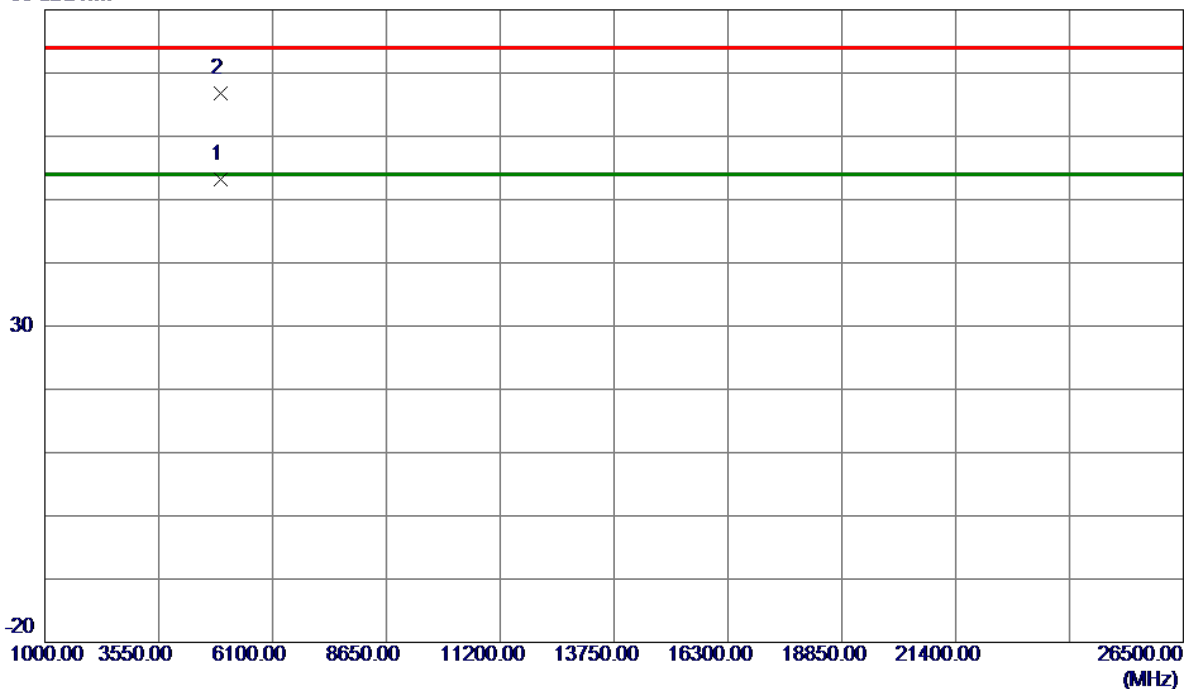
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

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

Vertical

80 dBuV/m



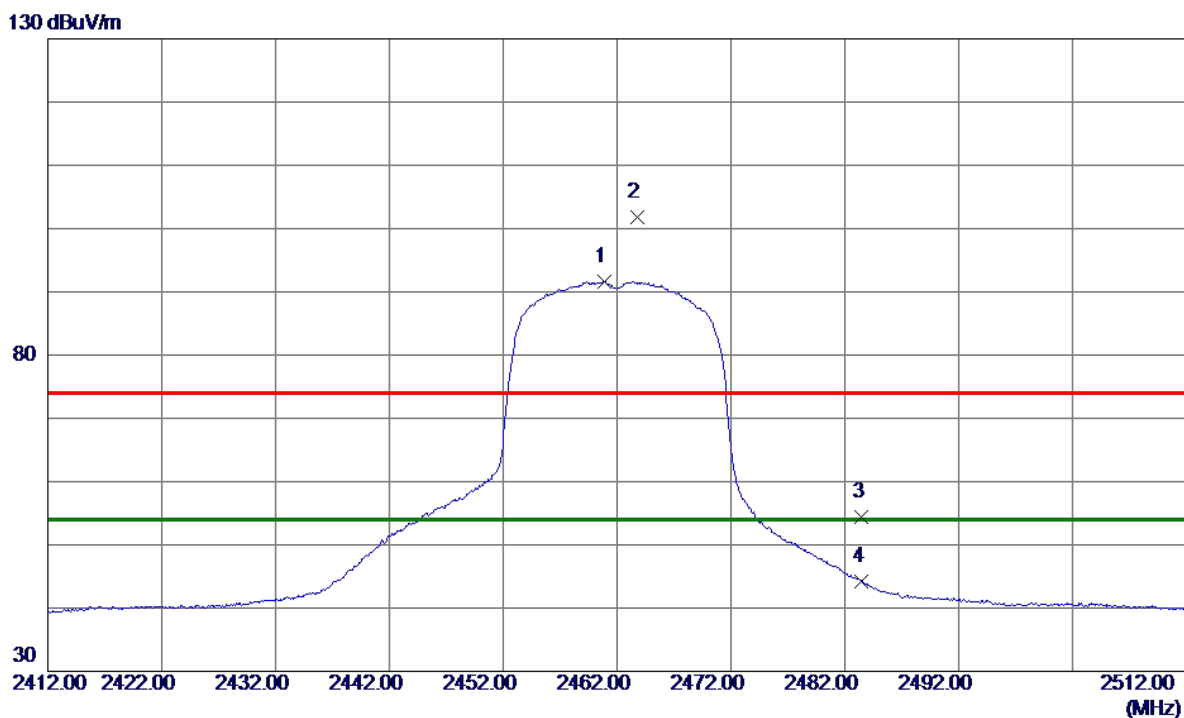
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4924.3300	48.68	4.47	53.15	54.00	-0.85	AVG	
2	4924.9400	62.35	4.48	66.83	74.00	-7.17	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

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

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2460.8500	83.50	8.18	91.68	54.00	37.68	AVG	No Limit
2	2463.8000	93.59	8.20	101.79	74.00	27.79	Peak	No Limit
3	2483.5000	46.06	8.27	54.33	74.00	-19.67	Peak	
4	2483.5000	35.96	8.27	44.23	54.00	-9.77	AVG	

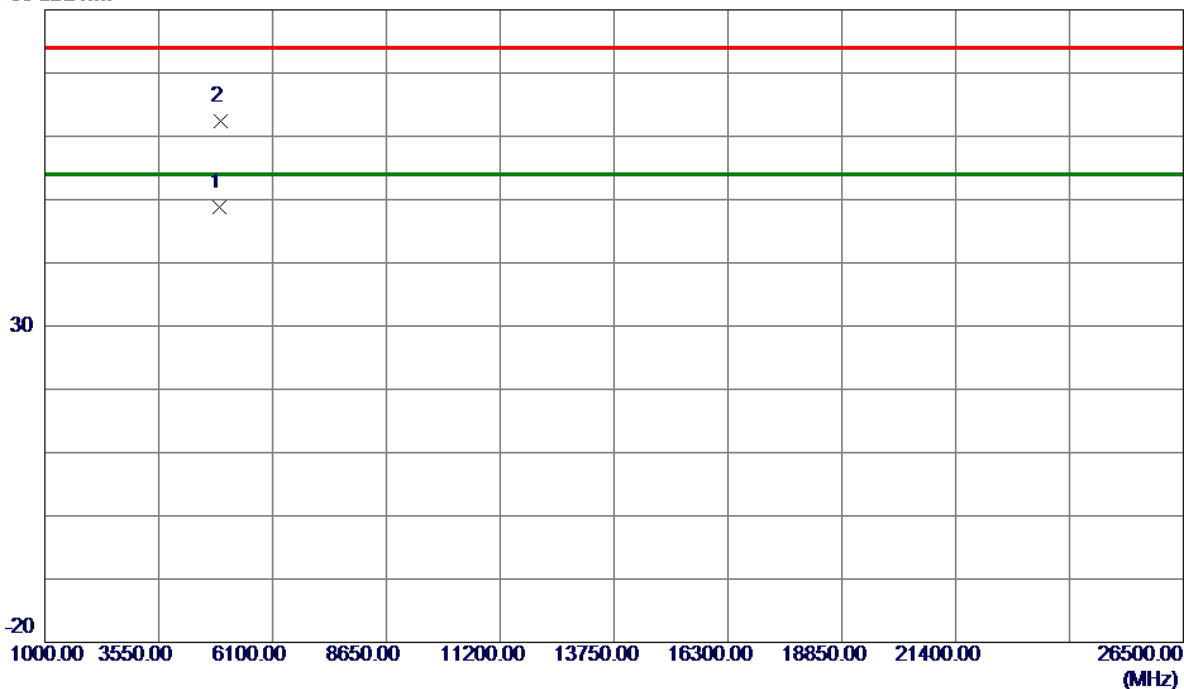
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

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

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4922.2430	44.35	4.47	48.82	54.00	-5.18	AVG	
2	4924.8330	57.96	4.48	62.44	74.00	-11.56	Peak	

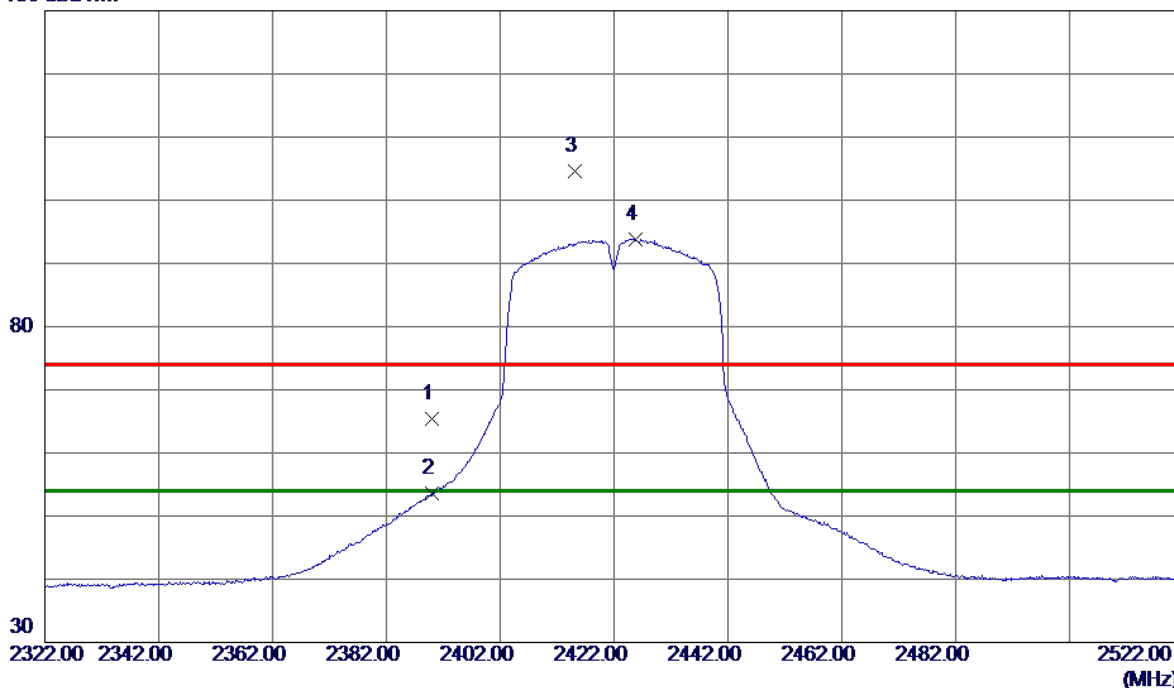
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz

Vertical

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	2390.0000	57.49	7.92	65.41	74.00	-8.59	Peak	
2	2390.0000	45.72	7.92	53.64	54.00	-0.36	AVG	
3	2415.2000	96.63	8.01	104.64	74.00	30.64	Peak	No Limit
4 *	2425.8000	85.84	8.05	93.89	54.00	39.89	AVG	No Limit

REMARKS:

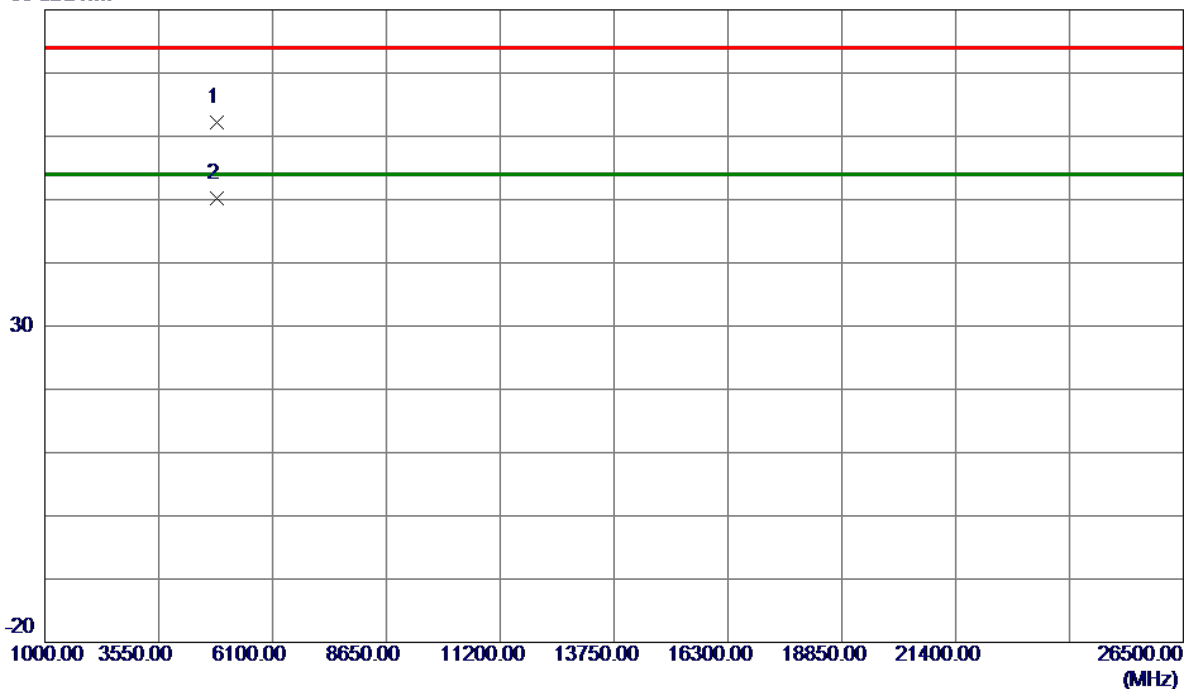
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz

Vertical

80 dBuV/m



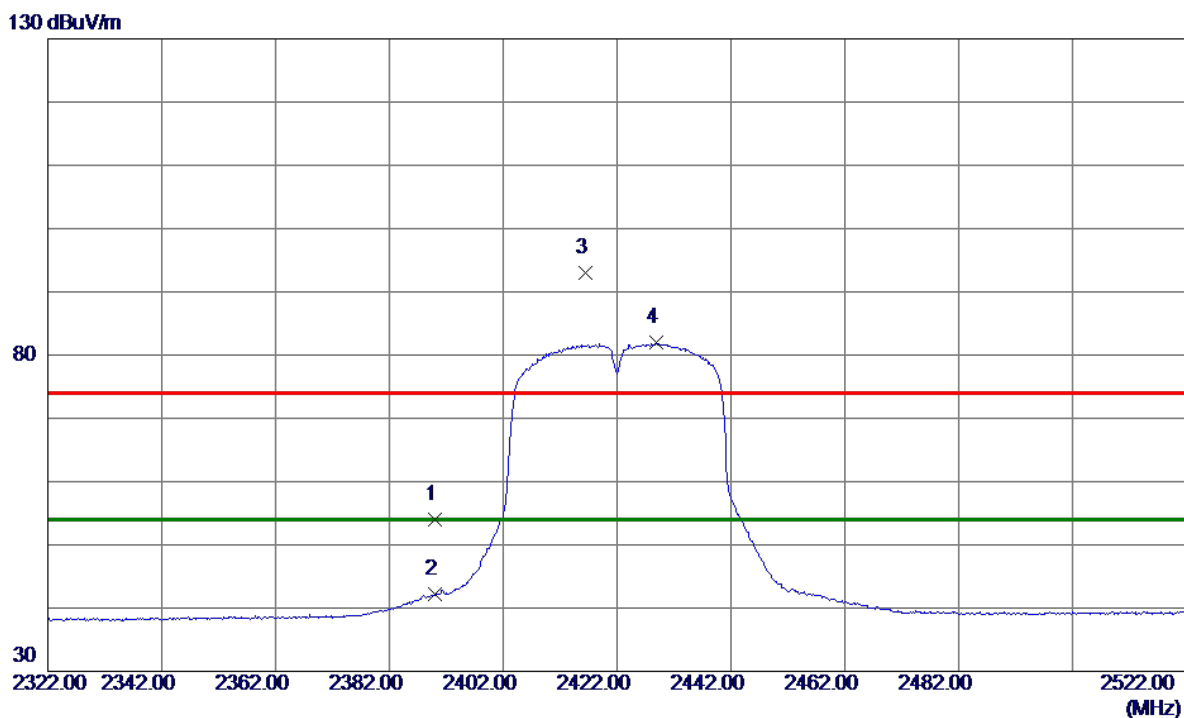
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4841.5099	57.97	4.22	62.19	74.00	-11.81	Peak	
2 *	4842.4220	45.97	4.22	50.19	54.00	-3.81	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz

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	46.09	7.92	54.01	74.00	-19.99	Peak	
2	2390.0000	34.19	7.92	42.11	54.00	-11.89	AVG	
3	2416.5000	84.94	8.02	92.96	74.00	18.96	Peak	No Limit
4 *	2428.9000	73.85	8.07	81.92	54.00	27.92	AVG	No Limit

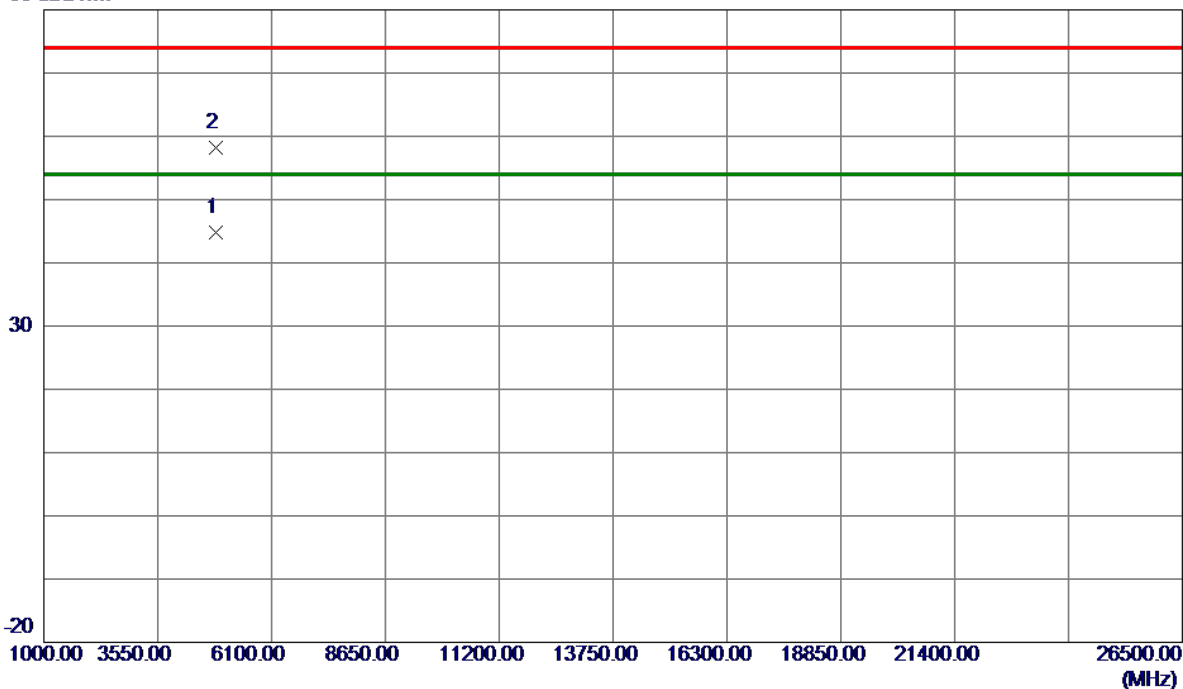
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2422MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4841.8920	40.67	4.22	44.89	54.00	-9.11	AVG	
2	4843.1880	53.97	4.22	58.19	74.00	-15.81	Peak	

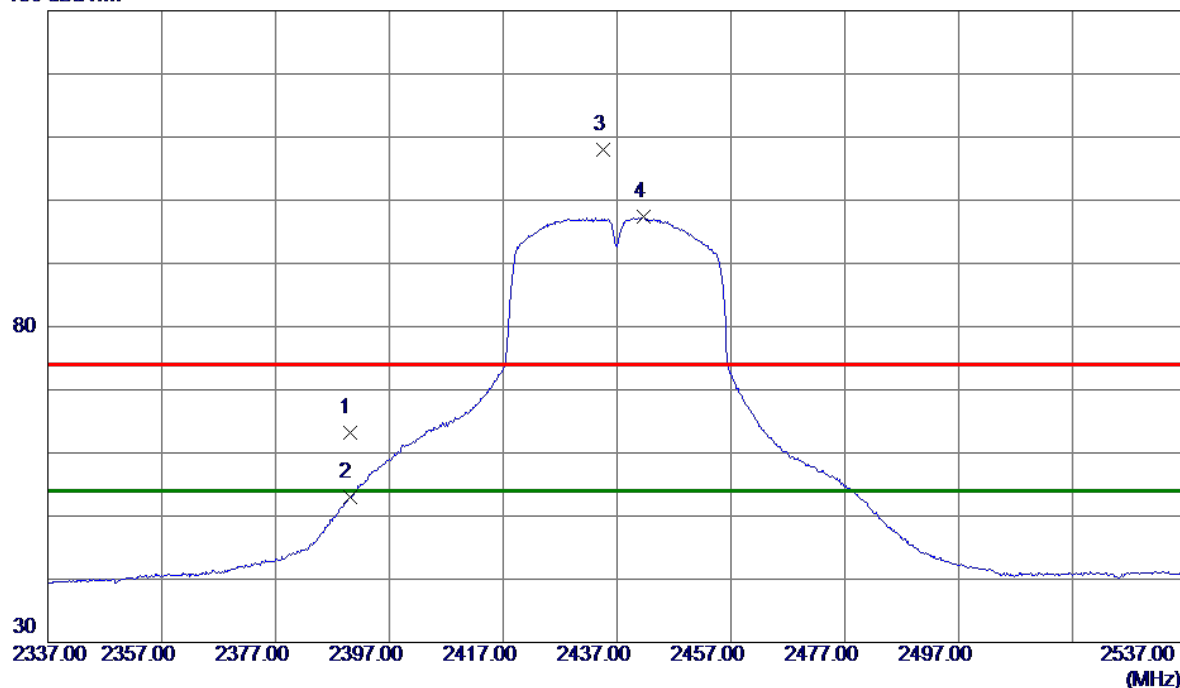
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz

Vertical

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	2390.0000	55.27	7.92	63.19	74.00	-10.81	Peak	
2	2390.0000	45.09	7.92	53.01	54.00	-0.99	AVG	
3	2434.5000	99.92	8.09	108.01	74.00	34.01	Peak	No Limit
4 *	2441.7000	89.20	8.11	97.31	54.00	43.31	AVG	No Limit

REMARKS:

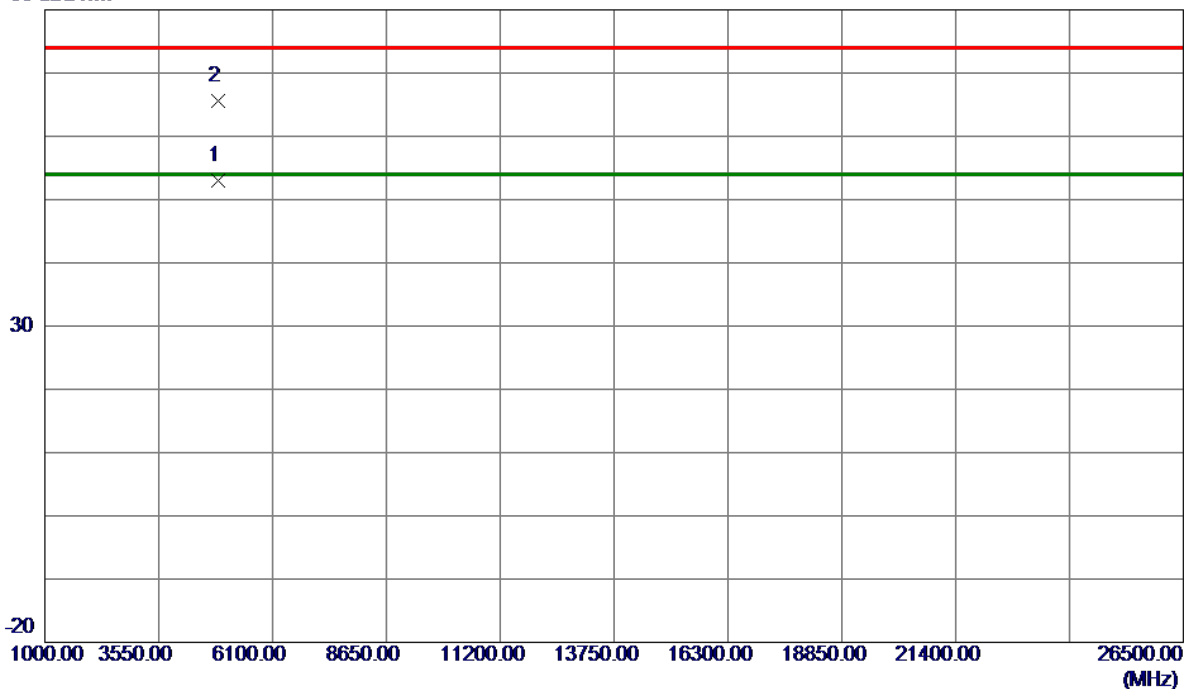
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz

Vertical

80 dBuV/m



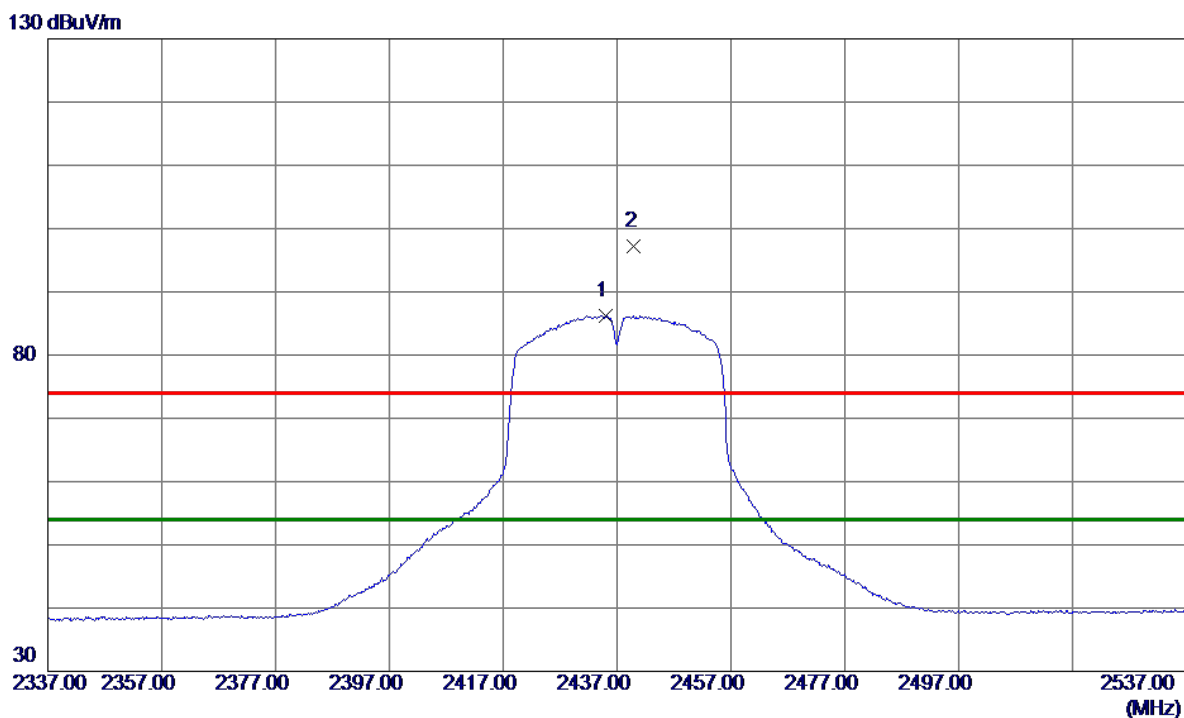
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4871.5019	48.69	4.31	53.00	54.00	-1.00	AVG	
2	4873.9270	61.24	4.32	65.56	74.00	-8.44	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2434.9000	78.18	8.09	86.27	54.00	32.27	AVG	No Limit
2	2440.0000	89.03	8.11	97.14	74.00	23.14	Peak	No Limit

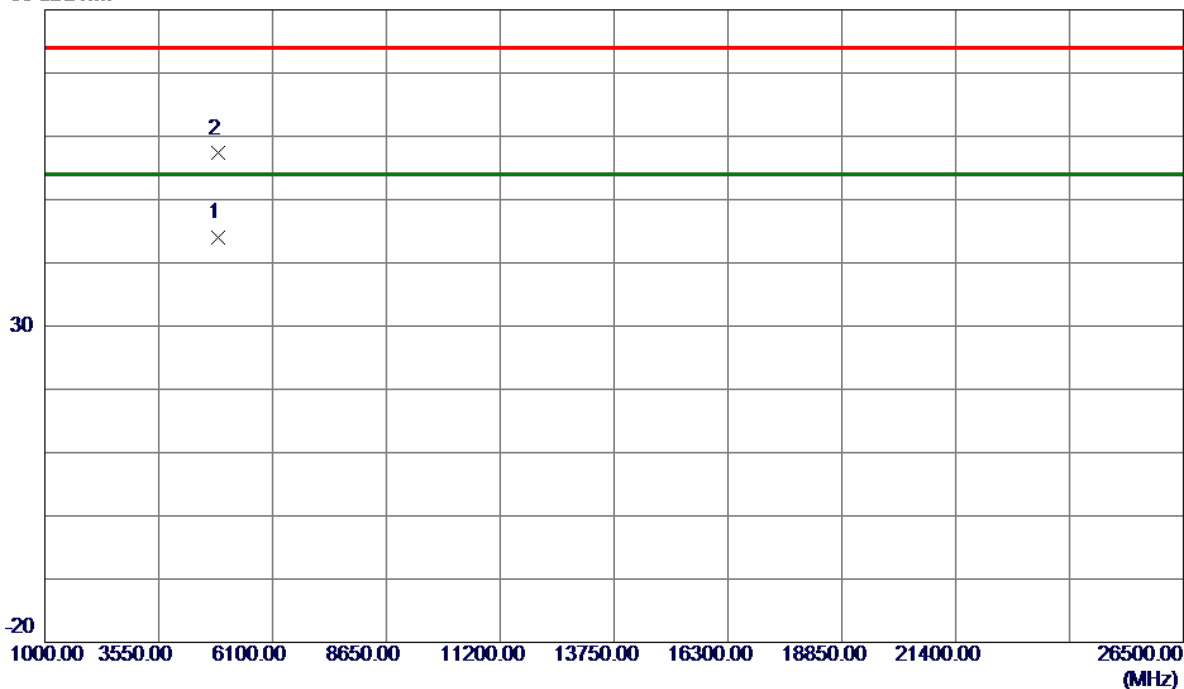
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2437 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	4871.9320	39.66	4.31	43.97	54.00	-10.03	AVG	
2	4872.9620	52.99	4.31	57.30	74.00	-16.70	Peak	

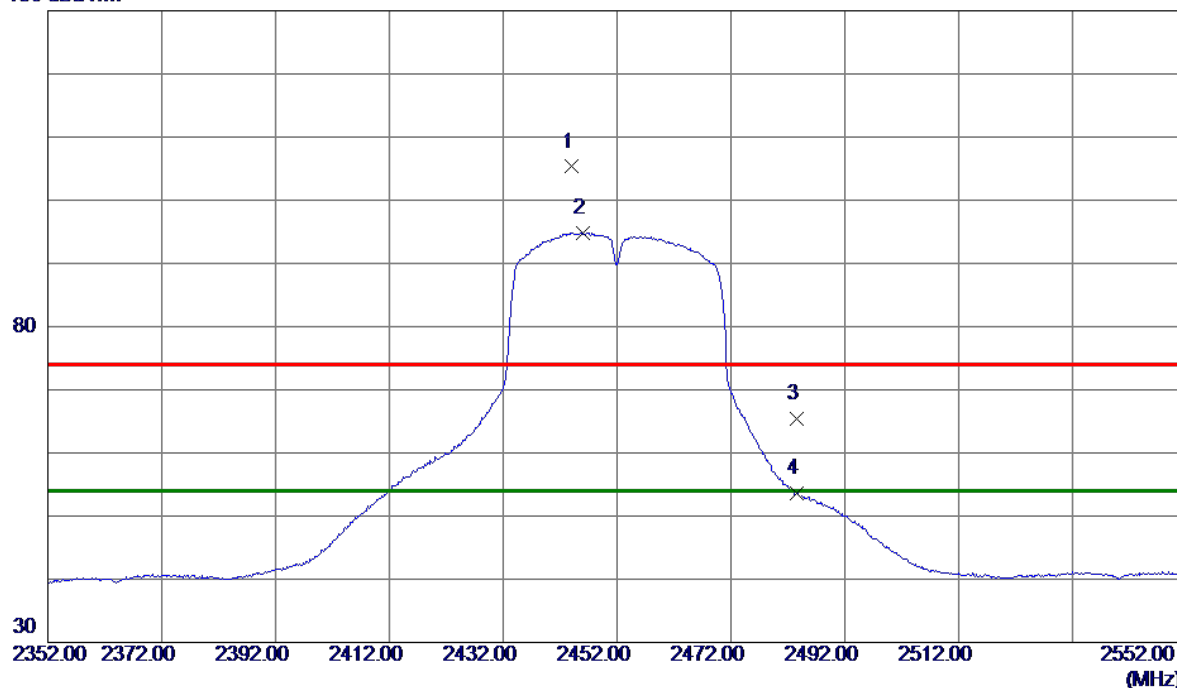
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz

Vertical

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	2444.1000	97.18	8.12	105.30	74.00	31.30	Peak	No Limit
2 *	2445.9000	86.76	8.13	94.89	54.00	40.89	AVG	No Limit
3	2483.5000	57.20	8.27	65.47	74.00	-8.53	Peak	
4	2483.5000	45.26	8.27	53.53	54.00	-0.47	AVG	

REMARKS:

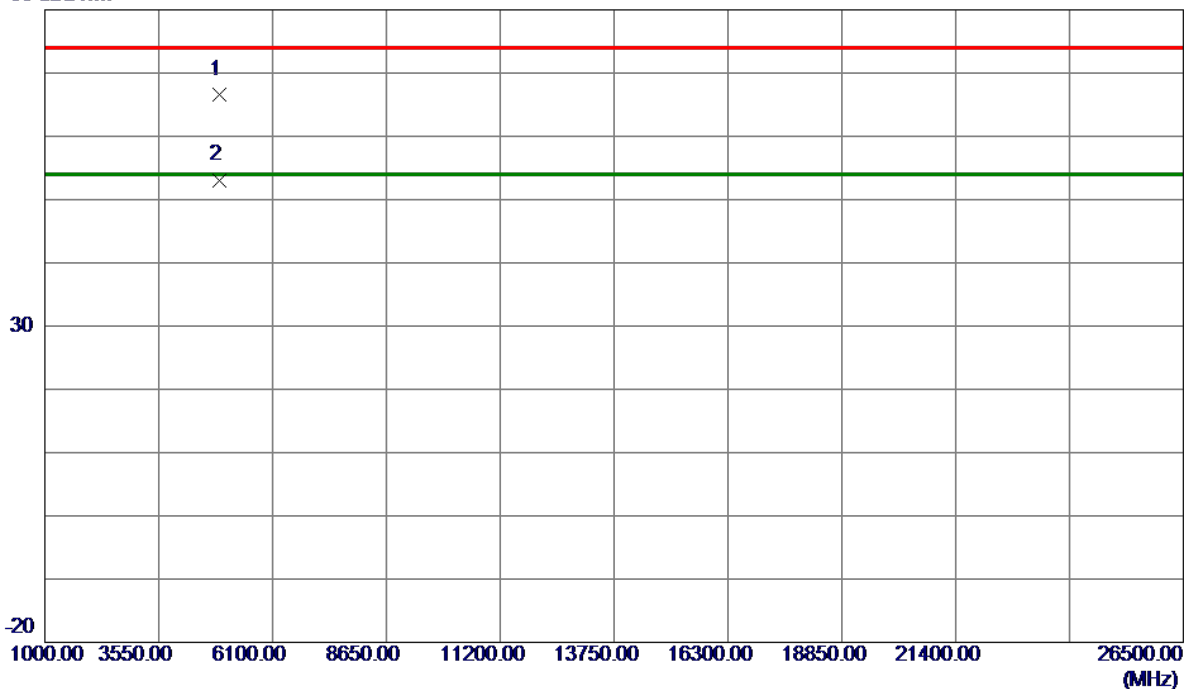
(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz

Vertical

80 dBuV/m



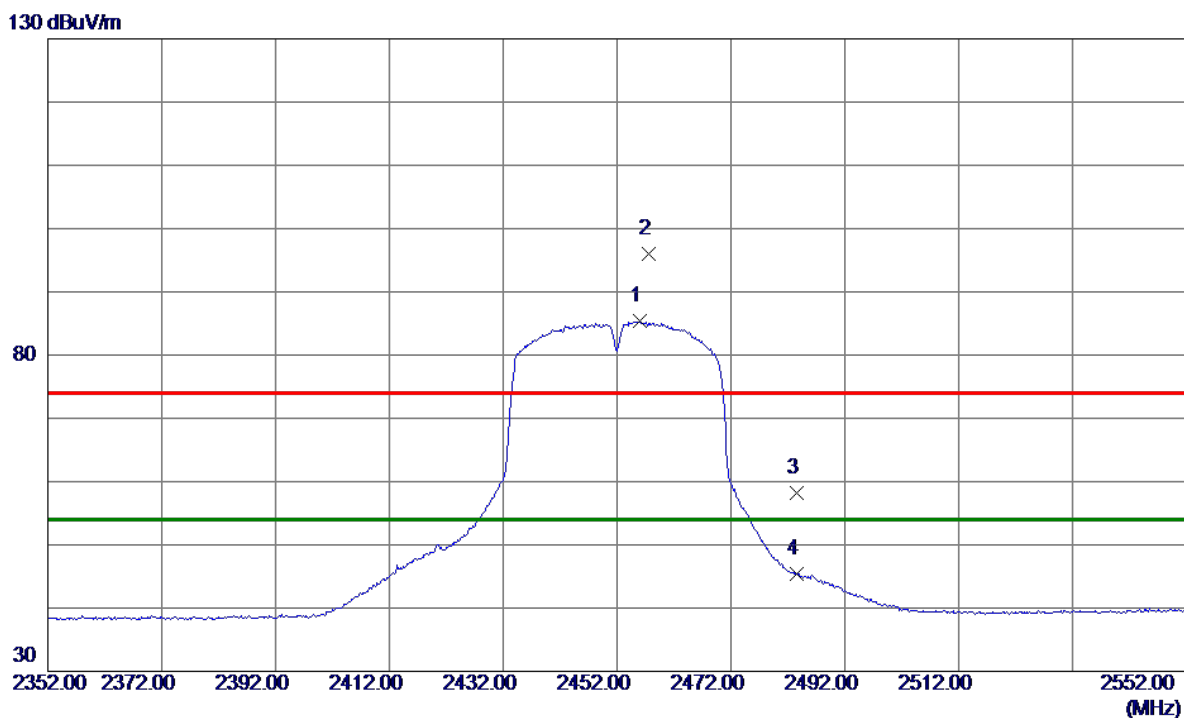
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4901.5600	62.25	4.40	66.65	74.00	-7.35	Peak	
2 *	4905.2550	48.69	4.41	53.10	54.00	-0.90	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz

Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2456.1000	77.18	8.17	85.35	54.00	31.35	AVG	No Limit
2	2457.6000	87.91	8.17	96.08	74.00	22.08	Peak	No Limit
3	2483.5000	49.99	8.27	58.26	74.00	-15.74	Peak	
4	2483.5000	37.17	8.27	45.44	54.00	-8.56	AVG	

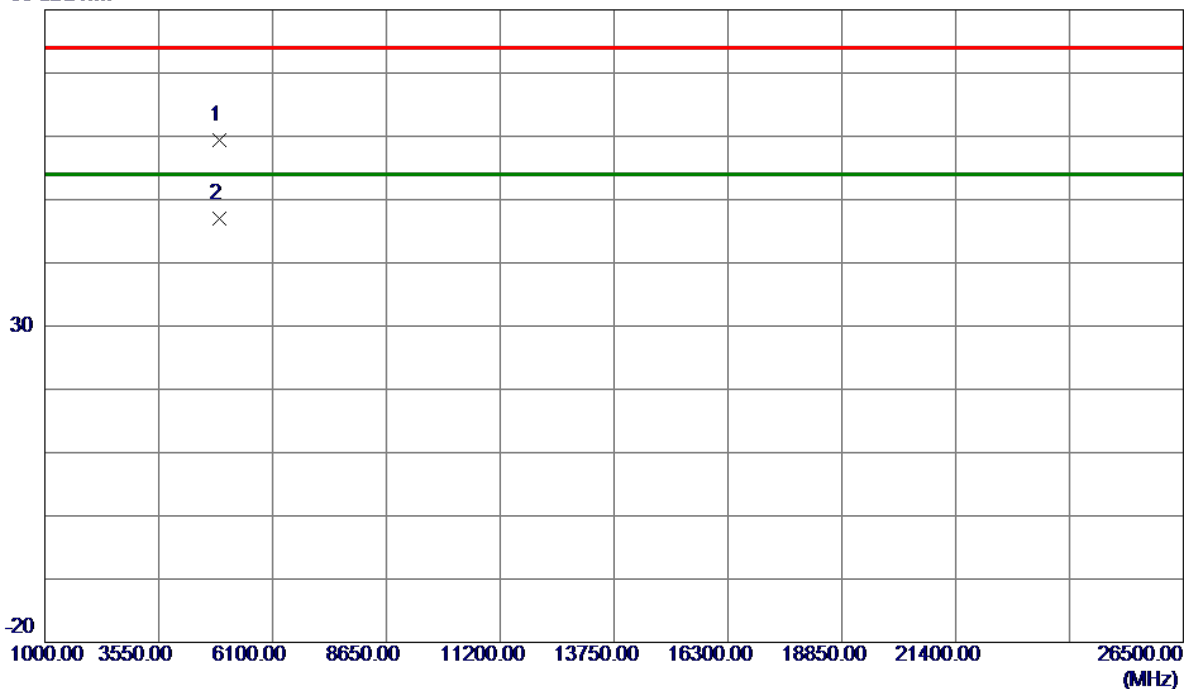
REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Orthogonal Axis	X
Test Mode:	TX N-40M Mode 2452 MHz

Horizontal

80 dBuV/m



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	4902.1450	54.98	4.40	59.38	74.00	-14.62	Peak	
2 *	4902.4250	42.55	4.41	46.96	54.00	-7.04	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

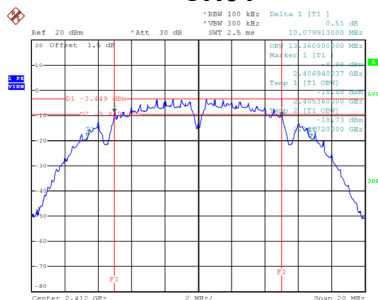
APPENDIX E - BANDWIDTH

Non-Beamforming

Test Mode	TX B Mode
-----------	-----------

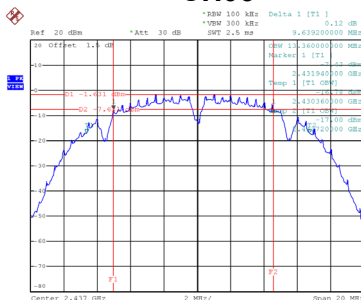
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	10.08	500	Complies
06	2437	9.64	500	Complies
11	2462	10.03	500	Complies

CH01



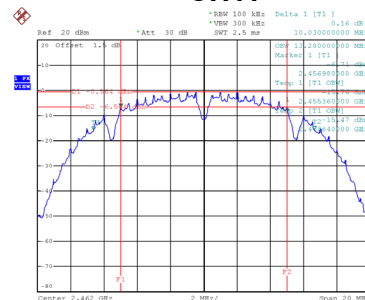
Date: 30.MAY.2019 16:09:37

CH06



Date: 30.MAY.2019 16:27:17

CH11

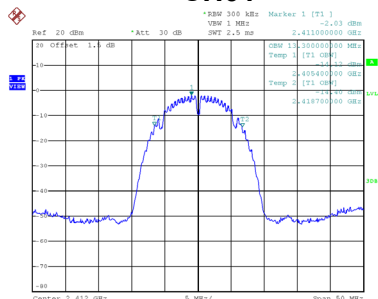


Date: 30.MAY.2019 16:29:09

Test Mode	TX B Mode
-----------	-----------

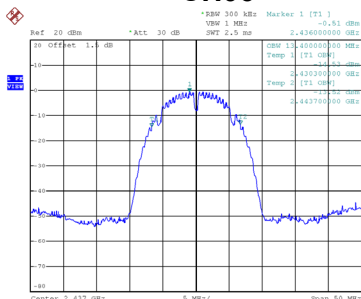
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	13.30	Complies
06	2437	13.40	Complies
11	2462	13.40	Complies

CH01



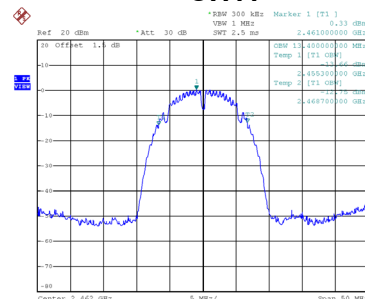
Date: 12.JUN.2019 12:02:05

CH06



Date: 12.JUN.2019 14:51:33

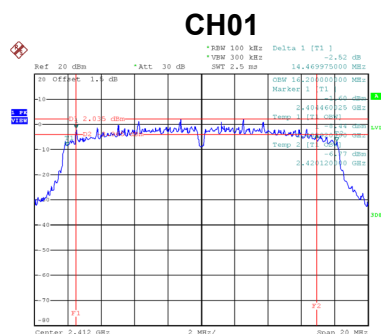
CH11



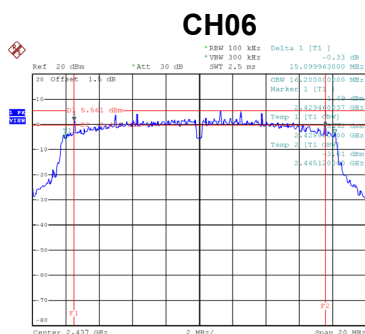
Date: 12.JUN.2019 14:52:44

Test Mode	TX G Mode
-----------	-----------

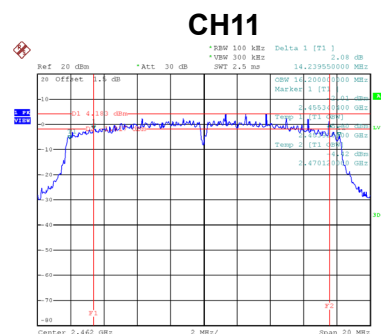
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	14.47	500	Complies
06	2437	15.10	500	Complies
11	2462	14.24	500	Complies



Date: 30.MAY.2019 16:34:56



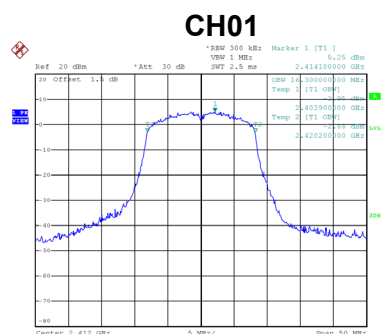
Date: 30.MAY.2019 16:36:37



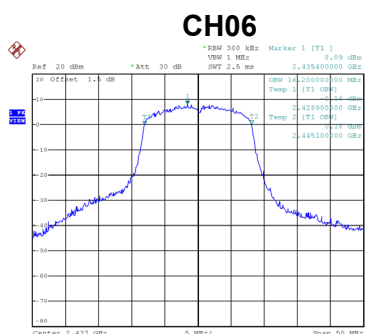
Date: 30-MAY-2019 16:38:12

Test Mode	TX G Mode
-----------	-----------

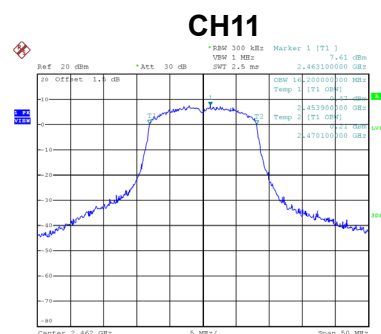
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	16.30	Complies
06	2437	16.20	Complies
11	2462	16.20	Complies



Date: 12.JUN.2019 14:55:35



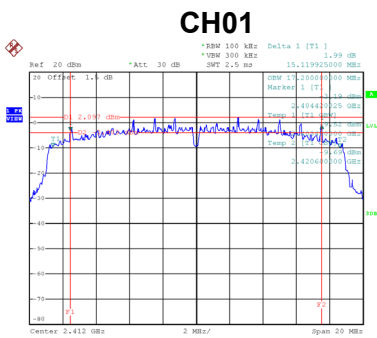
Date: 12.JUN.2019 14:56:18



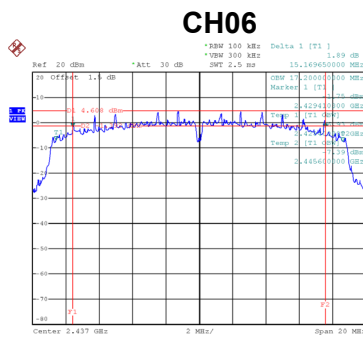
Date: 12.JUN.2019 14:56:56

Test Mode	TX N-20M Mode
-----------	---------------

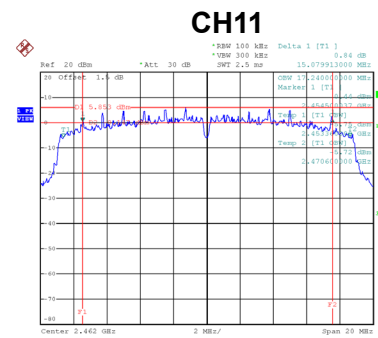
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	15.12	500	Complies
06	2437	15.17	500	Complies
11	2462	15.08	500	Complies



Date: 30.MAY.2019 16:52:09



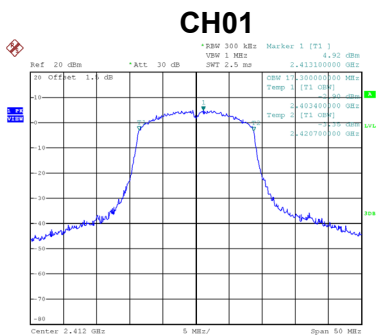
Date: 30.MAY.2019 16:53:28



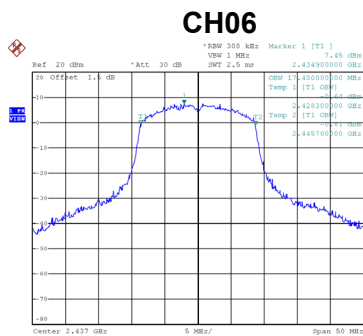
Date: 30.MAY.2019 16:54:50

Test Mode	TX N-20M Mode
-----------	---------------

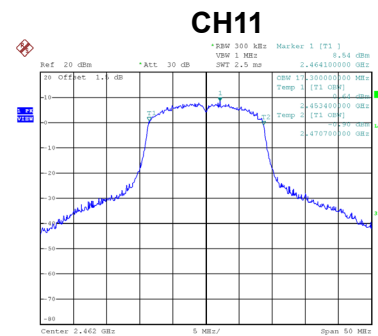
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	17.30	Complies
06	2437	17.40	Complies
11	2462	17.30	Complies



Date: 12.JUN.2019 15:01:47



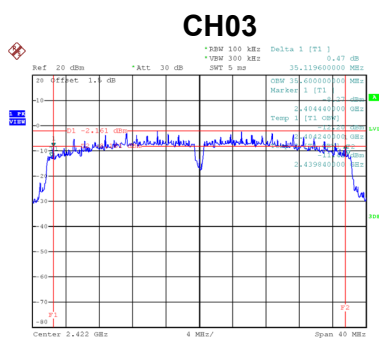
Date: 12.JUN.2019 15:03:33



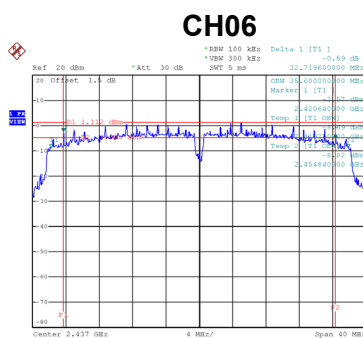
Date: 12.JUN.2019 15:05:10

Test Mode TX N-40M Mode

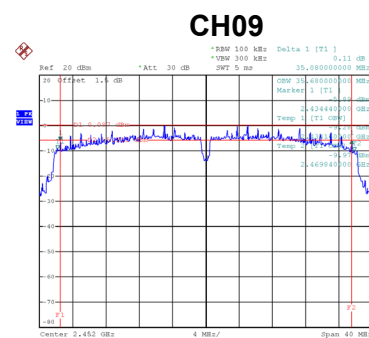
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	35.12	500	Complies
06	2437	32.72	500	Complies
09	2452	35.08	500	Complies



Date: 30.MAY.2019 16:55:54



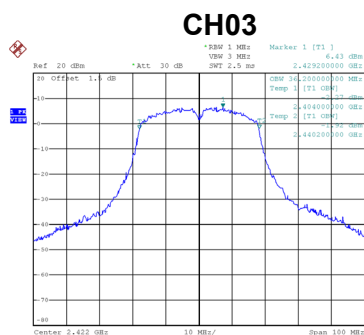
Date: 30.MAY.2019 16:57:20



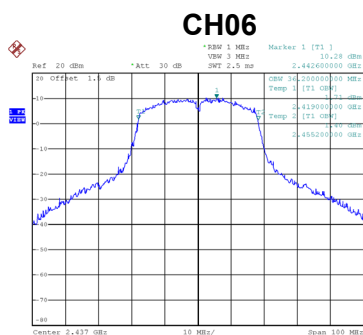
Date: 30.MAY.2019 16:59:01

Test Mode TX N-40M Mode

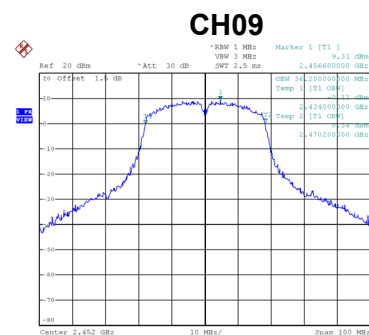
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
03	2422	36.20	Complies
06	2437	36.20	Complies
09	2452	36.20	Complies



Date: 12.JUN.2019 15:15:20



Date: 12.JUN.2019 15:16:53

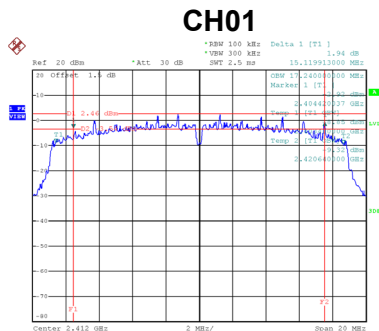


Date: 12.JUN.2019 15:18:25

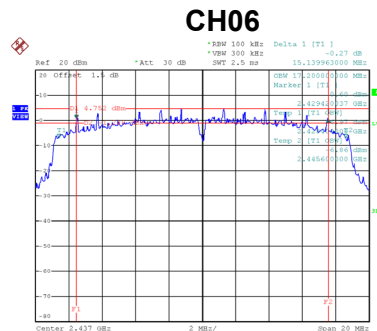
With Beamforming

Test Mode	TX N-20M Mode
-----------	---------------

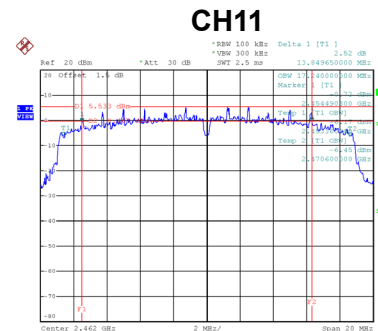
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	15.12	500	Complies
06	2437	15.14	500	Complies
11	2462	13.85	500	Complies



Date: 30.MAY.2019 17:39:25



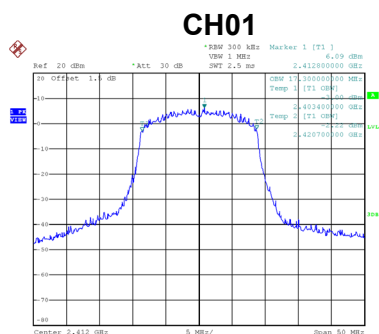
Date: 30.MAY.2019 17:40:58



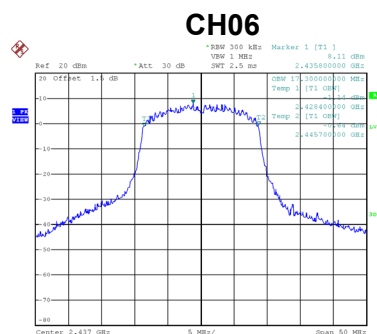
Date: 30.MAY.2019 17:42:28

Test Mode	TX N-20M Mode
-----------	---------------

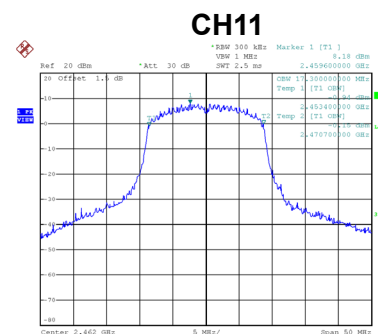
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	17.30	Complies
06	2437	17.30	Complies
11	2462	17.30	Complies



Date: 12.JUN.2019 15:02:25



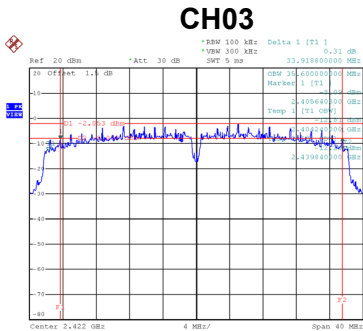
Date: 12.JUN.2019 15:04:06



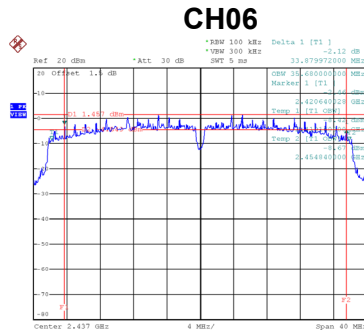
Date: 12.JUN.2019 15:05:43

Test Mode	TX N-40M Mode
-----------	---------------

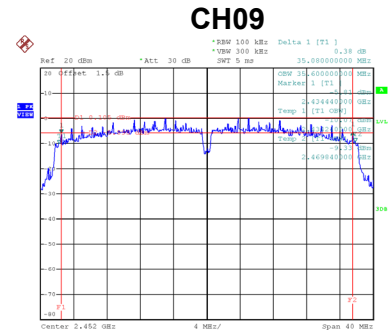
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	33.92	500	Complies
06	2437	33.88	500	Complies
09	2452	35.08	500	Complies



Date: 30.MAY.2019 17:43:34



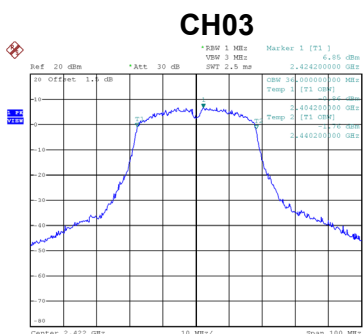
Date: 30.MAY.2019 17:45:20



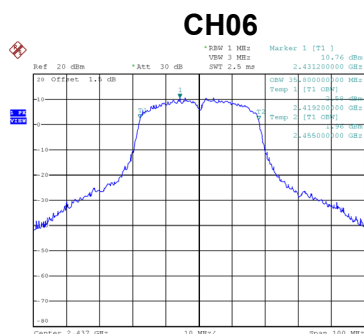
Date: 30.MAY.2019 17:46:58

Test Mode	TX N-40M Mode
-----------	---------------

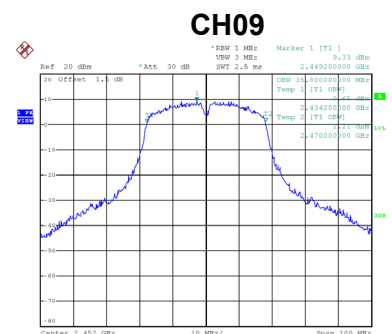
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
03	2422	36.00	Complies
06	2437	35.60	Complies
09	2452	35.80	Complies



Date: 12.JUN.2019 15:15:49



Date: 12.JUN.2019 15:17:22



Date: 12.JUN.2019 15:18:54

APPENDIX F - MAXIMUM OUTPUT POWER

Non-Beamforming

Test Mode	TX B Mode
-----------	-----------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	8.83	0.0076	30.00	1.0000	Complies
06	2437	10.49	0.0112	30.00	1.0000	Complies
11	2462	11.33	0.0136	30.00	1.0000	Complies

Test Mode	TX G Mode
-----------	-----------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.73	0.0940	30.00	1.0000	Complies
06	2437	22.67	0.1849	30.00	1.0000	Complies
11	2462	22.39	0.1734	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 1
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.58	0.0908	27.99	0.6295	Complies
06	2437	21.82	0.1521	27.99	0.6295	Complies
11	2462	20.08	0.1019	27.99	0.6295	Complies

Test Mode	TX N-20M Mode_Ant. 2
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.08	0.1019	27.99	0.6295	Complies
06	2437	21.97	0.1574	27.99	0.6295	Complies
11	2462	21.75	0.1496	27.99	0.6295	Complies

Test Mode	TX N-20M Mode_Total
-----------	---------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.85	0.1926	27.99	0.6295	Complies
06	2437	24.91	0.3097	27.99	0.6295	Complies
11	2462	24.01	0.2515	27.99	0.6295	Complies

Test Mode	TX N-40M Mode_Ant. 1
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	15.99	0.0397	27.99	0.6295	Complies
06	2437	19.48	0.0887	27.99	0.6295	Complies
09	2452	18.12	0.0649	27.99	0.6295	Complies

Test Mode	TX N-40M Mode_Ant. 2
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	16.69	0.0467	27.99	0.6295	Complies
06	2437	19.63	0.0918	27.99	0.6295	Complies
09	2452	17.71	0.0590	27.99	0.6295	Complies

Test Mode	TX N-40M Mode_Total
-----------	---------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	19.36	0.0864	27.99	0.6295	Complies
06	2437	22.57	0.1807	27.99	0.6295	Complies
09	2452	20.93	0.1239	27.99	0.6295	Complies

With Beamforming

Test Mode	TX N-20M Mode_Ant. 1
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	19.46	0.0883	28.00	0.6310	Complies
06	2437	21.74	0.1493	28.00	0.6310	Complies
11	2462	20.03	0.1007	28.00	0.6310	Complies

Test Mode	TX N-20M Mode_Ant. 2
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.05	0.1012	28.00	0.6310	Complies
06	2437	21.91	0.1552	28.00	0.6310	Complies
11	2462	21.68	0.1472	28.00	0.6310	Complies

Test Mode	TX N-20M Mode_Total
-----------	---------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	22.78	0.1895	28.00	0.6310	Complies
06	2437	24.84	0.3048	28.00	0.6310	Complies
11	2462	23.94	0.2479	28.00	0.6310	Complies

Test Mode	TX N-40M Mode_Ant. 1
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	15.92	0.0391	28.00	0.6310	Complies
06	2437	19.43	0.0877	28.00	0.6310	Complies
09	2452	18.08	0.0643	28.00	0.6310	Complies

Test Mode	TX N-40M Mode_Ant. 2
-----------	----------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	16.64	0.0461	28.00	0.6310	Complies
06	2437	19.58	0.0908	28.00	0.6310	Complies
09	2452	17.62	0.0578	28.00	0.6310	Complies

Test Mode	TX N-40M Mode_Total
-----------	---------------------

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	19.31	0.0852	28.00	0.6310	Complies
06	2437	22.52	0.1786	28.00	0.6310	Complies
09	2452	20.87	0.1221	28.00	0.6310	Complies

APPENDIX G - CONDUCTED SPURIOUS EMISSIONS