

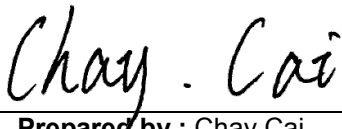
# FCC Radio Test Report

## FCC ID: 2ABZM-IUAPACLR

This report concerns: Original Grant

**Project No.** : 2005C193  
**Equipment** : 802.11ac Dual-Band Long Range Access Point  
**Brand Name** : IP-COM  
**Test Model** : iUAP-AC-LR  
**Series Model** : N/A  
**Applicant** : SHENZHEN IP-COM NETWORKS CO.,LTD.  
**Address** : Room 101, Unit A, First Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Manufacturer** : SHENZHEN IP-COM NETWORKS CO.,LTD.  
**Address** : Room 101, Unit A, First Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Date of Receipt** : May 29, 2020  
**Date of Test** : Jun. 02, 2020 ~ Jul. 14, 2020  
**Issued Date** : Jul. 17, 2020  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: DG20200529165 for conducted, DG20200529166 for radiated.  
**Standard(s)** : FCC Part15, Subpart C (15.247)  
ANSI C63.10-2013  
FCC KDB 558074 D01 15.247 Meas Guidance v05r02

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



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**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).

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**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.

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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.

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**REPORT ISSUED HISTORY**

Report Version	Description	Issued Date
R00	Original Issue.	Jul. 17, 2020

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical 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(2)

Note:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

## 1.1 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

## 1.2 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	150kHz ~ 30MHz	2.60

### B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB03	CISPR	9kHz ~ 30MHz	V	3.79
		9kHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.88
		30MHz ~ 200MHz	H	4.14
		200MHz ~ 1,000MHz	V	4.62
		200MHz ~ 1,000MHz	H	4.80
		1GHz ~ 6GHz	-	4.58
		6GHz ~ 18GHz	-	5.18
		18GHz ~ 26.5GHz	-	3.62
		26.5GHz ~ 40GHz	-	4.00

### C. Other Measurement:

Parameter	Uncertainty
Bandwidth	±3.8 %
Maximum Output Power	±0.95 dB
Conducted Spurious Emission	±2.71 dB
Power Spectral Density	±0.86 dB
Temperature	±0.08 °C
Time	±0.58 %
Supply voltages	±0.3 %

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



### 1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	25°C	55%	AC 120V/60Hz AC 240V/50Hz	Kwok Guo
Radiated Emissions-9K-30MHz	25°C	60%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-30 MHz to 1GHz	22°C	54%	AC 120V/60Hz	Kwok Guo
Radiated Emissions-Above 1000 MHz	22°C	54%	AC 120V/60Hz	Kwok Guo
Bandwidth	25°C	62%	DC 24V	Hayden Chen
Maximum output power	25°C	62%	DC 24V	Laughing Zhang
Conducted Spurious Emissions	25°C	62%	DC 24V	Hayden Chen
Power Spectral Density	25°C	62%	DC 24V	Hayden Chen

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	802.11ac Dual-Band Long Range Access Point
Brand Name	IP-COM
Test Model	iUAP-AC-LR
Series Model	N/A
Model Difference(s)	N/A
Power Source	Supplied from PoE adapter. Model: BN060-P12024
Power Rating	I/P: 100-240V~ 50/60Hz 0.3A O/P: 24V $\overline{=}$ 0.5A
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 450 Mbps
Maximum Peak Output Power_Non Beamforming	IEEE 802.11b: 26.41 dBm (0.4375 W) IEEE 802.11g: 29.93 dBm (0.9840 W) IEEE 802.11n (HT20): 26.36 dBm (0.4325 W) IEEE 802.11n (HT40): 26.08 dBm (0.4055 W)
Maximum Peak Output Power_Beamforming	IEEE 802.11n (HT20): 25.94 dBm (0.3926 W) IEEE 802.11n (HT40): 25.61 dBm (0.3639 W)
Maximum Average Output Power_Non Beamforming	IEEE 802.11b: 23.53 dBm (0.2254 W) IEEE 802.11g: 20.64 dBm (0.1159 W) IEEE 802.11n (HT20): 17.08 dBm (0.0511 W) IEEE 802.11n (HT40): 18.06 dBm (0.0640 W)
Maximum Average Output Power_Beamforming	IEEE 802.11n (HT20): 16.63 dBm (0.0460 W) IEEE 802.11n (HT40): 17.57 dBm (0.0571 W)

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

#### 2. Channel List:

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n (HT20) CH03 - CH09 for IEEE 802.11n (HT40)							
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)
1	N/A	N/A	PIFA	N/A	5
2	N/A	N/A	PIFA	N/A	4.8
3	N/A	N/A	PIFA	N/A	4.3

Note:

- 1) This EUT supports CDD, and antenna gains are not equal, so the Directional gain  $=10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N]$  dBi, that is Directional gain  $=10\log[(10^{5/20} + 10^{4.8/20} + 10^{4.3/20})^2 / 3]$  dBi = 9.48. So the output power limit is  $30 - (9.48 - 6) = 26.52$ , the power spectral density limit is  $8 - (9.48 - 6) = 4.52$ .
- 2) Beamforming Gain: 4.5dB. So the Directional gain = 4.5 + 5 = 9.50dB. So the output power limit is  $30 - (9.50 - 6) = 26.50$ .

**4. Table for Antenna Configuration:**

For Non Beamforming:

Operating Mode / TX Mode	1TX	3TX
IEEE 802.11b	V (Ant. 1)	-
IEEE 802.11g	V (Ant. 1)	-
IEEE 802.11n(HT20)	-	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11n(HT40)	-	V (Ant. 1+Ant. 2+Ant. 3)

For Beamforming:

Operating Mode / TX Mode	3TX
IEEE 802.11n(HT20)	V (Ant. 1+Ant. 2+Ant. 3)
IEEE 802.11n(HT40)	V (Ant. 1+Ant. 2+Ant. 3)

## 2.2 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 G Mode Channel 06

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

<b>AC power line conducted emissions test</b>	
Final Test Mode	Description
Mode 5	TX G Mode Channel 06

<b>Radiated emissions test - Below 1GHz</b>	
Final Test Mode	Description
Mode 5	TX G Mode Channel 06

<b>Radiated emissions test- Above 1GHz_Non Beamforming</b>	
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

Output Power test_Non Beamforming	
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

Output Power test_Beamforming	
Final Test Mode	Description
Mode 3	TX N-20 MHz Mode Channel 01/06/11
Mode 4	TX N-40 MHz Mode Channel 03/06/09

Other Conducted test_Non Beamforming	
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) All the bit rate of transmitter have been tested and found the lowest rate is found to be the worst case and recorded.
- (3) For radiated emission below 1 GHz test, the IEEE 802.11g Channel 06 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.
- (5) The measurements for RF Output Power were tested, the Non Beamforming and Beamforming are recorded in the report. The worst case was Non Beamforming and only worst case were documented for other test items.
- (6) For radiated emissions, the TX WLAN 2.4G B Mode 2412MHz + WLAN 5G A Mode 5745MHz was found the worst case of simultaneous transmission and recorded.

### 2.3 PARAMETERS OF TEST SOFTWARE

#### Non Beamforming

Test Software	cart		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	21.5	22	22
IEEE 802.11g	19	20	20
IEEE 802.11n (HT20)	11	11	14.5
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	13	13	14.5

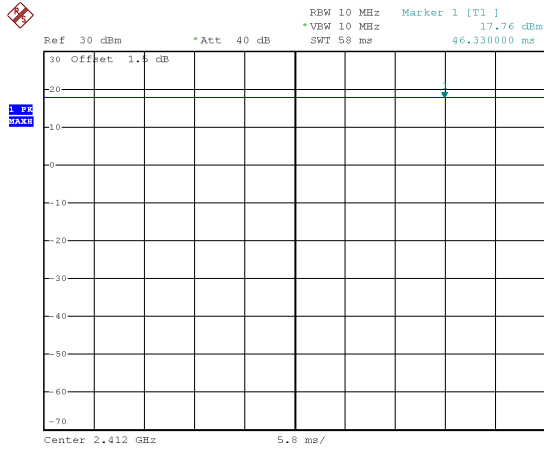
#### Beamforming

Test Software	cart		
Frequency (MHz)	2412	2437	2462
IEEE 802.11n (HT20)	10.5	10.5	14
Frequency (MHz)	2422	2437	2452
IEEE 802.11n (HT40)	12.5	12.5	14

## 2.4 DUTY CYCLE

If duty cycle is  $\geq 98\%$ , duty factor is not required.  
 If duty cycle is  $< 98\%$ , duty factor shall be considered.  
 The output power = measured power + duty factor.

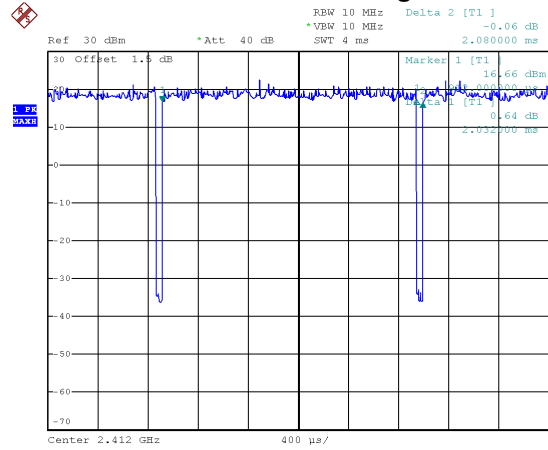
**IEEE 802.11b**



Date: 13.JUN.2020 10:41:23

Duty cycle = 58.000 ms / 58.000 ms = 100%  
 Duty Factor =  $10 \log(1/\text{Duty cycle}) = 0.00$

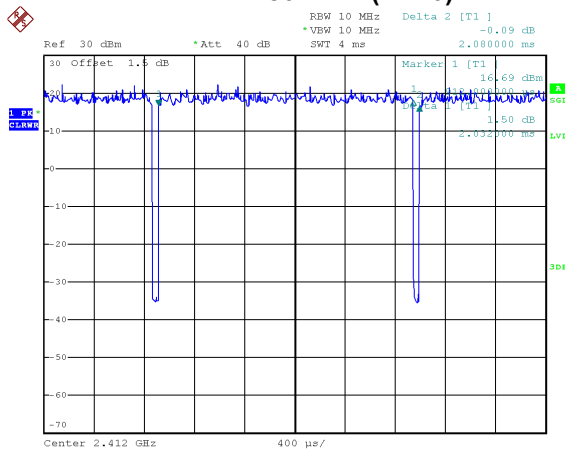
**IEEE 802.11g**



Date: 13.JUN.2020 10:43:39

Duty cycle = 2.032 ms / 2.080 ms = 97.69%  
 Duty Factor =  $10 \log(1/\text{Duty cycle}) = 0.10$

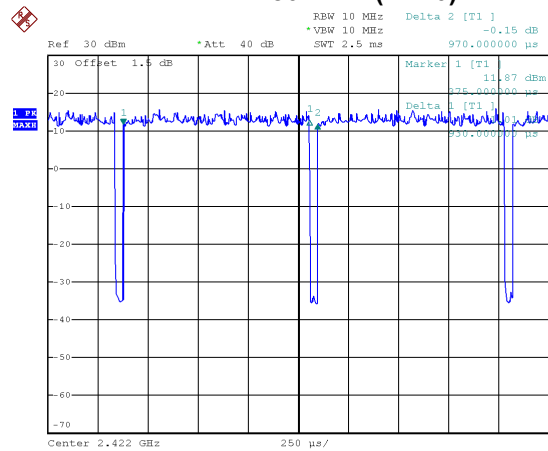
**IEEE 802.11n (HT20)**



Date: 13.JUN.2020 10:44:54

Duty cycle = 2.032 ms / 2.080 ms = 97.69%  
 Duty Factor =  $10 \log(1/\text{Duty cycle}) = 0.10$

**IEEE 802.11n (HT40)**



Date: 13.JUN.2020 10:50:15

Duty cycle = 0.930 ms / 0.970 ms = 95.88%  
 Duty Factor =  $10 \log(1/\text{Duty cycle}) = 0.18$

**NOTE:**

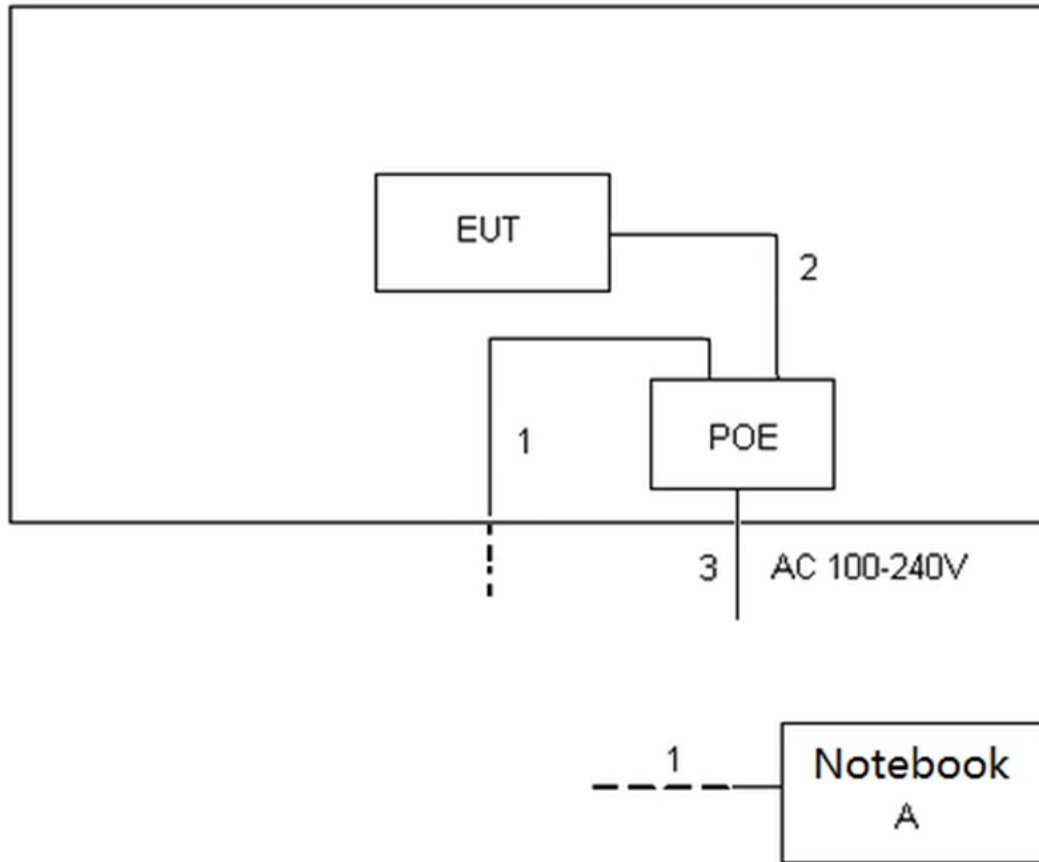
For IEEE 802.11g and IEEE 802.11n (HT20):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz (Duty cycle  $< 98\%$ ).

For IEEE 802.11n (HT40):

For radiated emissions frequency above 1 GHz, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 2 kHz (Duty cycle  $< 98\%$ ).

## 2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



## 2.6 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	RJ45 Cable	NO	NO	10m
2	RJ45 Cable	NO	NO	1m
3	AC Cable	NO	NO	1m



### 3. AC POWER LINE CONDUCTED EMISSIONS TEST

#### 3.1 LIMIT

Frequency of Emission (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 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

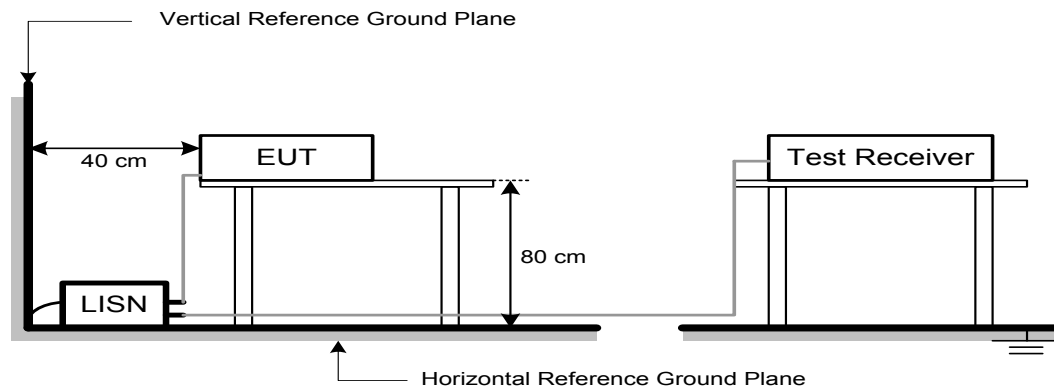
#### 3.2 TEST PROCEDURE

- 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.

#### 3.3 DEVIATION FROM TEST STANDARD

No deviation

### 3.4 TEST SETUP



### 3.5 EUT OPERATION CONDITIONS

EUT was programmed to be in continuously transmitting mode.

### 3.6 TEST RESULTS

Please refer to the APPENDIX A.

## 4. RADIATED EMISSIONS TEST

### 4.1 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)

For WLAN 2.4G:

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

For WLAN 5G:

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dB $\mu$ V/m)
5725-5850	-27 NOTE (4)	68.3
	10 NOTE (4)	105.3
	15.6 NOTE (4)	110.9
	27 NOTE (4)	122.3

NOTE:

- (1) The limit for radiated test was performed according to FCC PART 15C & FCC PART 15E.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) According to 15.407(b)(4)(i), all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

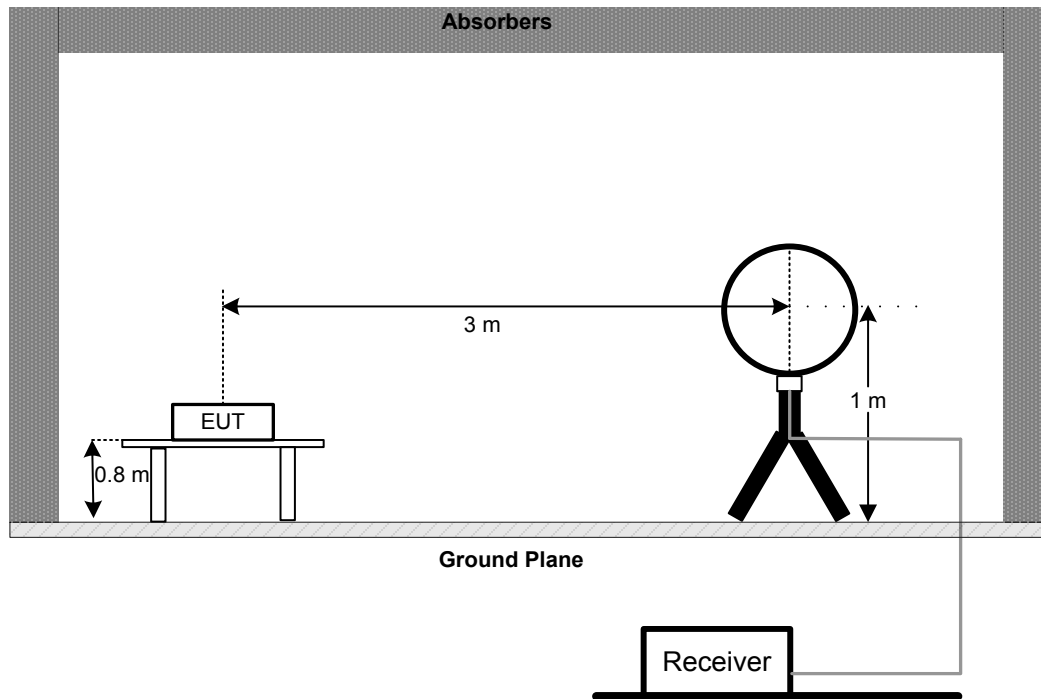
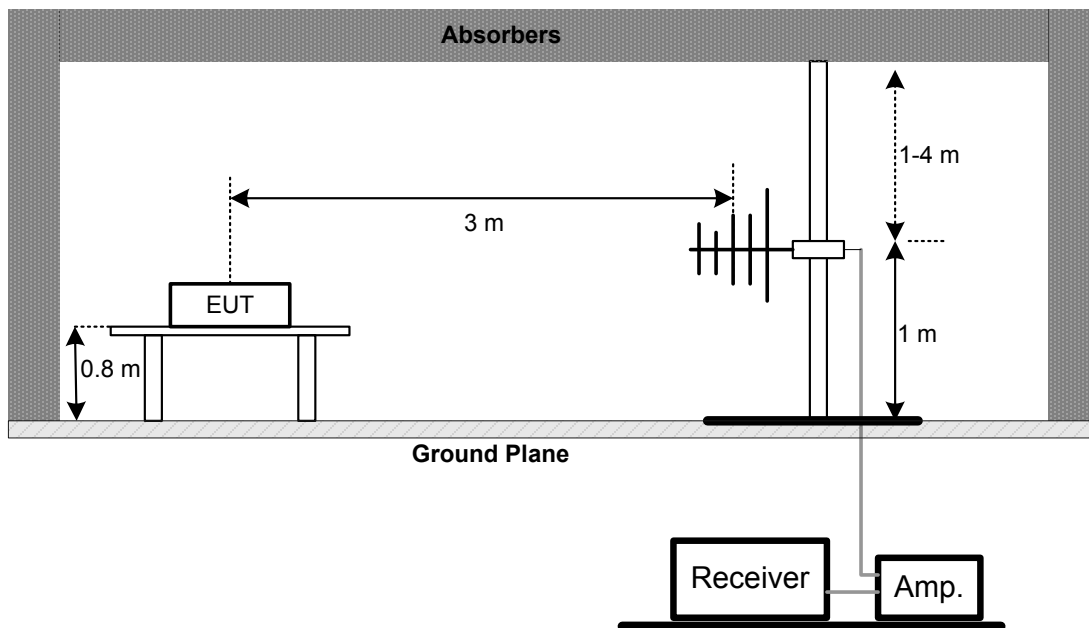
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000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

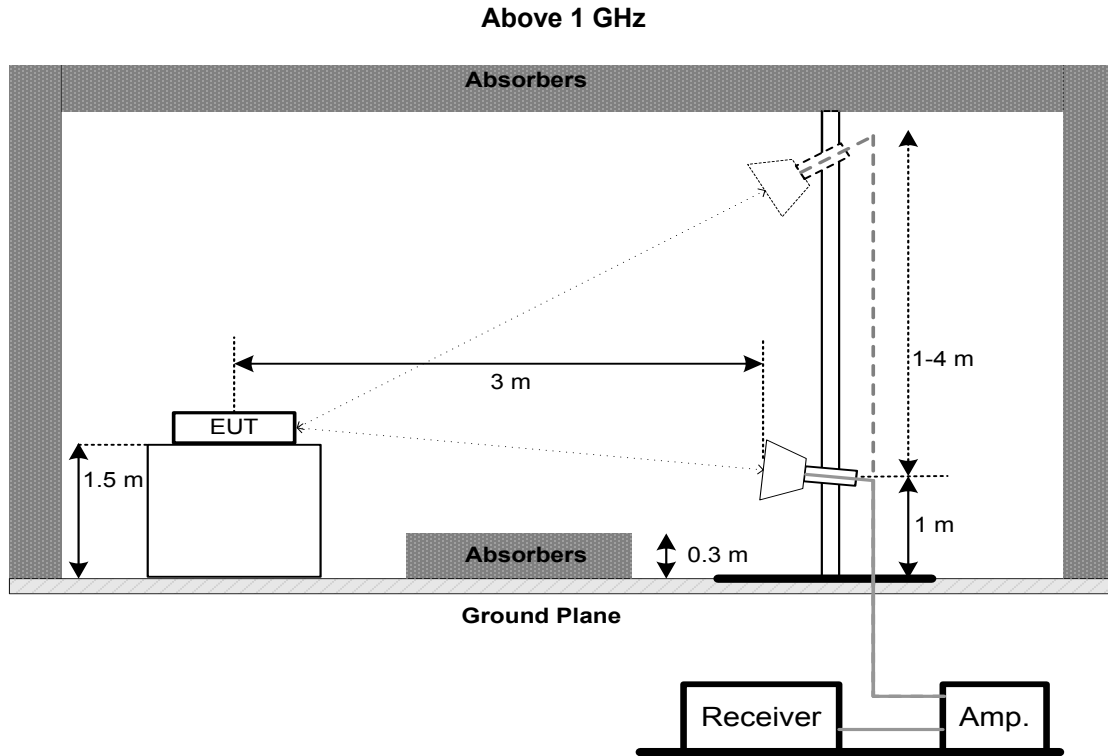
#### 4.2 TEST PROCEDURE

- a. 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)
- b. 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)
- c. 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.
- d. 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).
- e. 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.
- f. 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.
- g. 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)
- h. 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)
- i. 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****9 kHz-30 MHz****30 MHz to 1 GHz**



#### 4.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

#### 4.6 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.

#### 4.7 TEST RESULTS - 30 MHZ TO 1000 MHZ

Please refer to the APPENDIX C.

#### 4.8 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.

## 5. BANDWIDTH TEST

### 5.1 LIMIT

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

### 5.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting:
  - For 6 dB Bandwidth: RBW= 100 kHz, VBW=300 kHz, Sweep time = auto.
  - For 99% Emission Bandwidth B/G/N-20 Mode: RBW= 300 KHz, VBW=1 MHz, Sweep time = 2.5 ms.
  - For 99% Emission Bandwidth N-40 Mode: RBW= 1 MHz, VBW=3 MHz, Sweep time = 2.5 ms.
- c. The bandwidth was performed in accordance with method 11.8.1 of ANSI C63.10-2013.

### 5.3 DEVIATION FROM STANDARD

No deviation.

### 5.4 TEST SETUP



### 5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 5.6 TEST RESULTS

Please refer to the APPENDIX E.

## 6. MAXIMUM OUTPUT POWER TEST

### 6.1 LIMIT

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

### 6.2 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 and 11.9.2.3.1 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 TEST RESULTS

Please refer to the APPENDIX F.



## 7. CONDUCTED SPURIOUS EMISSIONS

### 7.1 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.

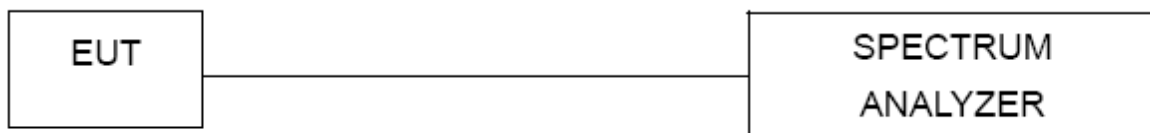
### 7.2 TEST PROCEDURE

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

### 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 TEST RESULTS

Please refer to the APPENDIX G.

## 8. POWER SPECTRAL DENSITY TEST

### 8.1 LIMIT

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

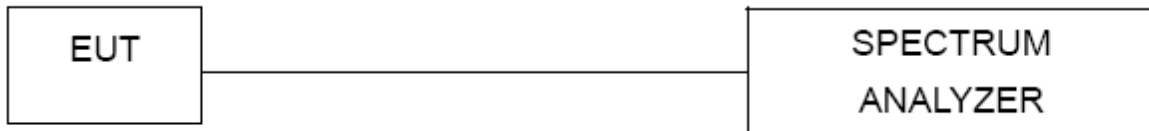
### 8.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW=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.

### 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 TEST RESULTS

Please refer to the APPENDIX H.

## 9. 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	Feb. 28, 2021
2	LISN	EMCO	3816/2	52765	Mar. 01, 2021
3	TWO-LINE V-NETWORK	R&S	ENV216	101447	Feb. 28, 2021
4	50Ω Terminator	SHX	TF5-3	15041305	Mar. 01, 2021
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	Cable	N/A	RG223	12m	Mar. 10, 2021

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	EM	EM-6876-1	230	Apr. 16, 2021
2	Cable	N/A	RG 213/U	N/A	May 29, 2021
3	EMI Test Receiver	R&S	ESCI	100895	Feb. 28, 2021
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, 2021
2*	Amplifier	HP	8447D	2944A09673	Aug. 11, 2021
3	Receiver	Agilent	N9038A	MY52130039	Aug. 03, 2020
4	Cable	emci	LMR-400(30MHz-1 GHz)(8m+5m)	N/A	May 22, 2021
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	May 12, 2021
2	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jul. 07, 2021
3	Amplifier	Agilent	8449B	3008A02333	Mar. 01, 2021
4	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 07, 2021
5	Receiver	Agilent	N9038A	MY52130039	Aug. 03, 2020
6	Controller	CT	SC100	N/A	N/A
7	Controller	MF	MF-7802	MF780208416	N/A
8	Cable	N/A	EMC104-SM-SM-6000	N/A	May 09, 2021
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Bandwidth & Antenna Conducted Spurious Emissions & Power Spectral Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP40	100185	Aug. 03, 2020

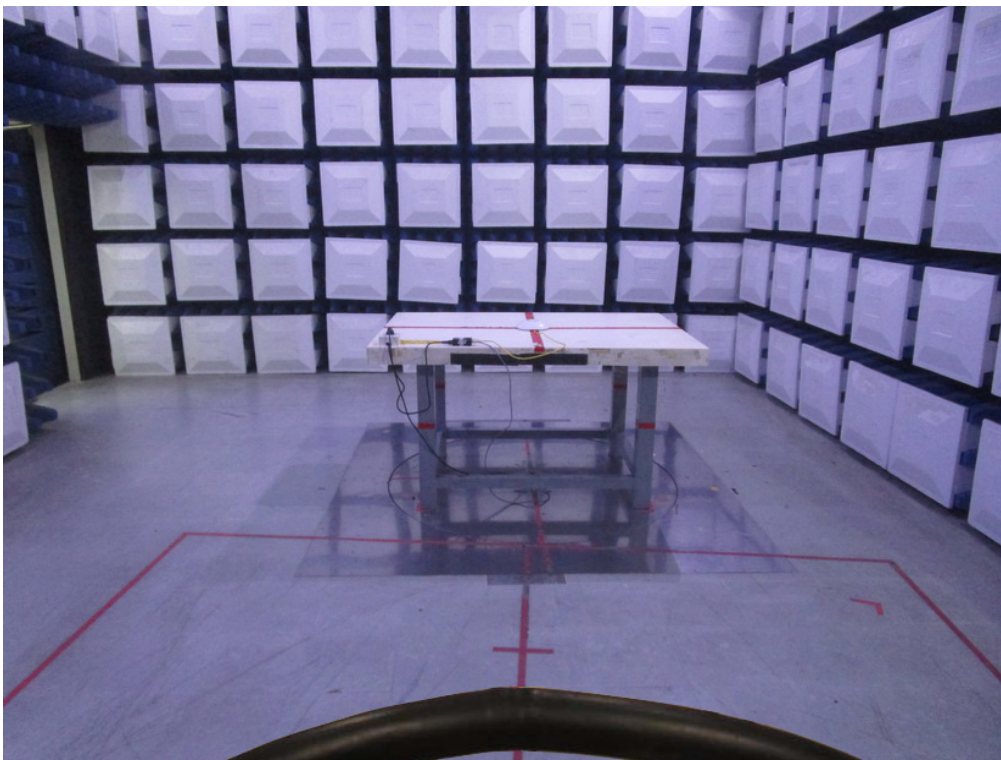
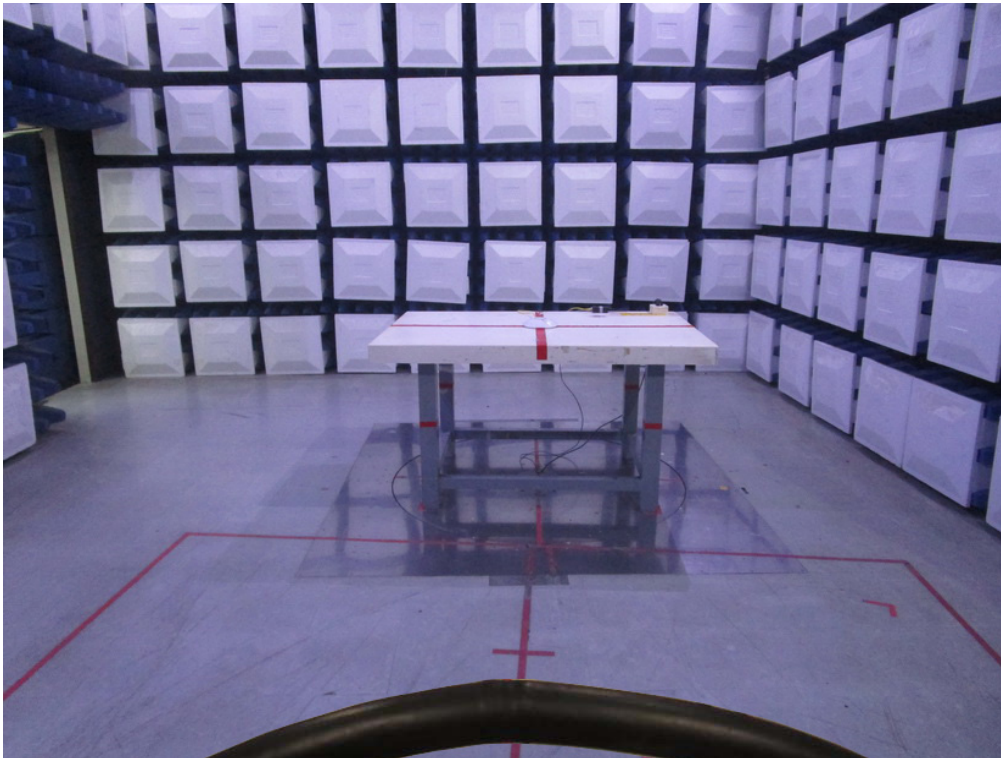
Maximum Output Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Peak Power Analyzer	Keysight	8990B	MY51000506	Aug. 03, 2020
2	Wideband power sensor	Keysight	N1923A	MY58310004	Aug. 03, 2020

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

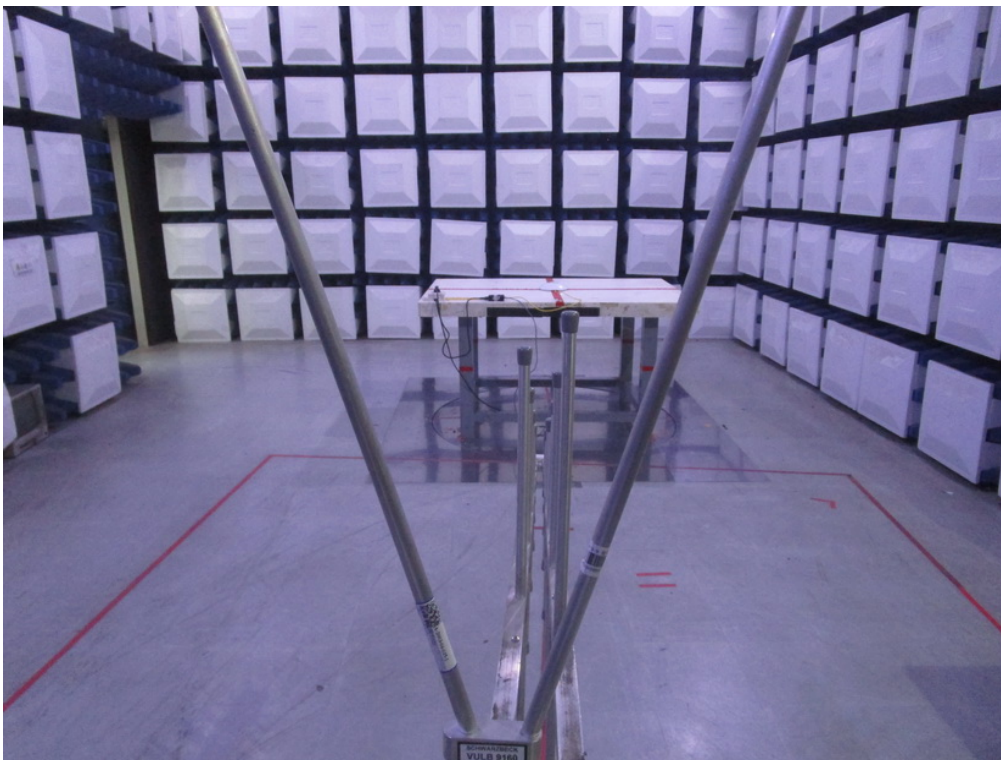
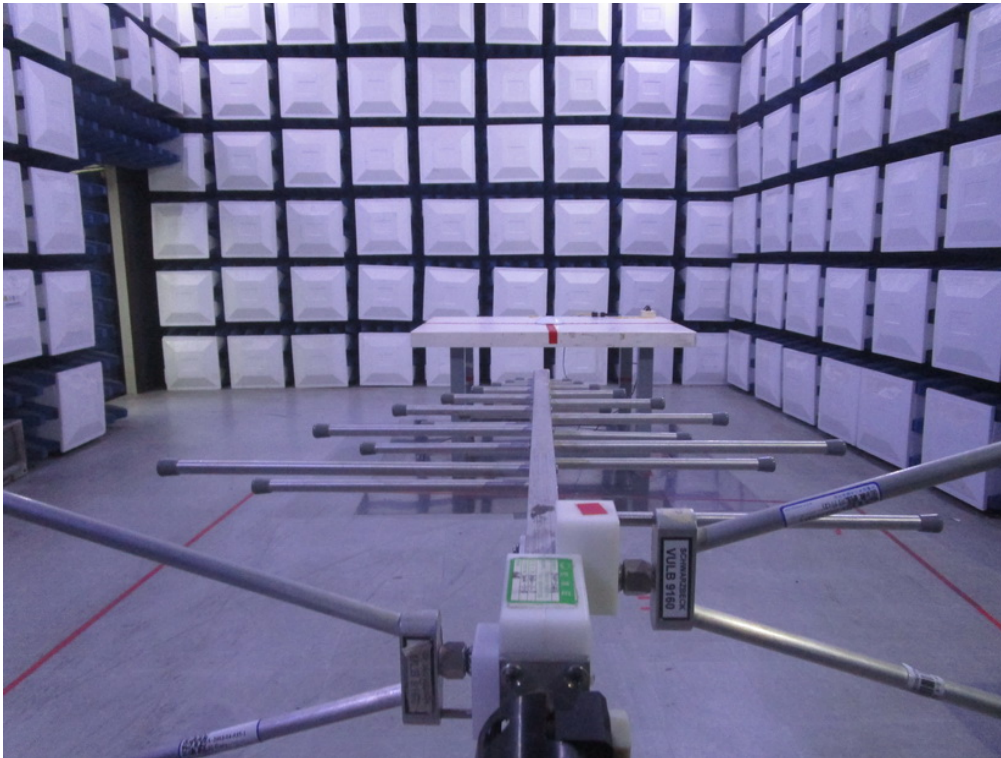
"\*" calibration period of equipment list is three year.

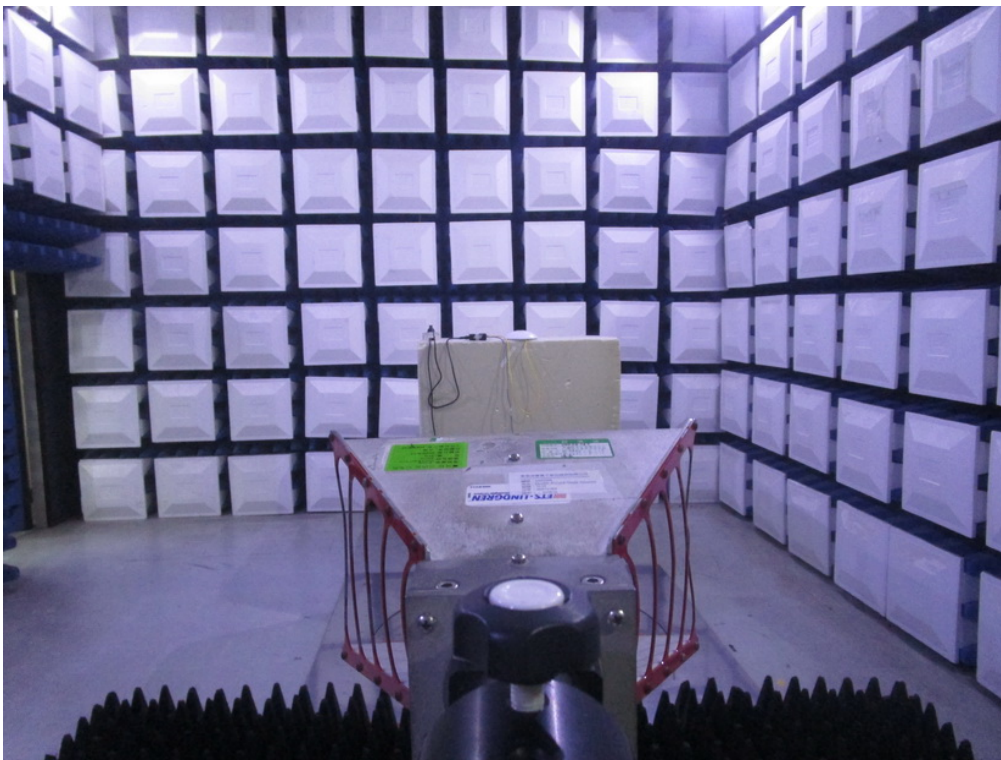
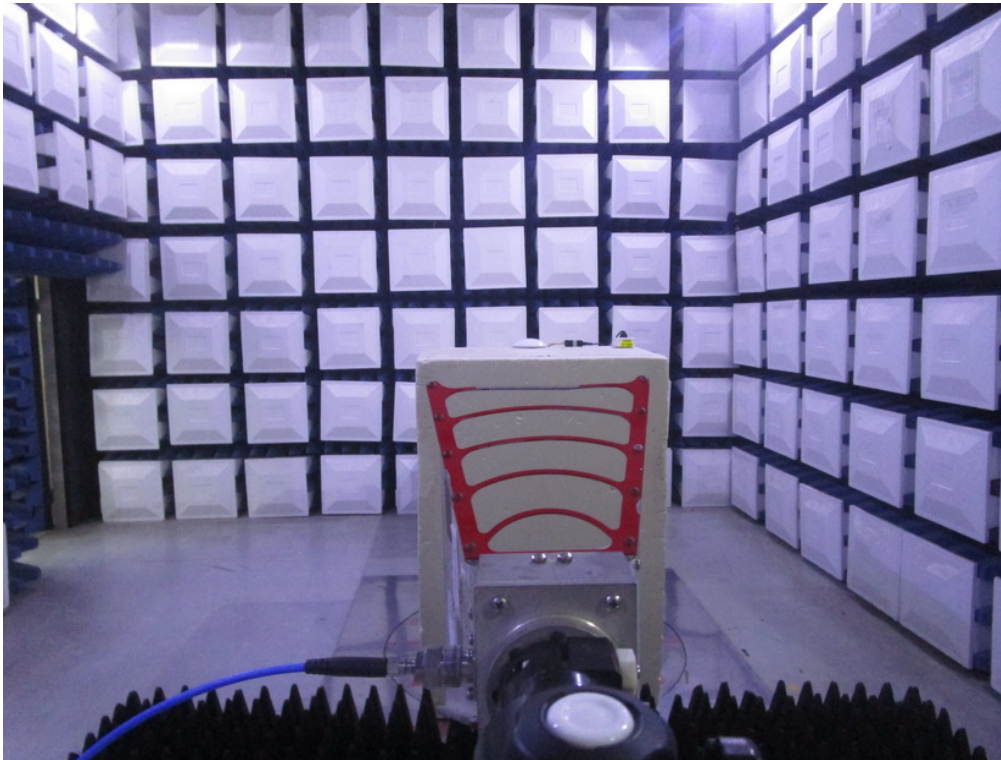
Except \* item, all calibration period of equipment list is one year.

**10. EUT TEST PHOTO****AC Power Line Conducted Emissions Test Photos**

**Radiated Emissions Test Photos****9 kHz to 30 MHz**



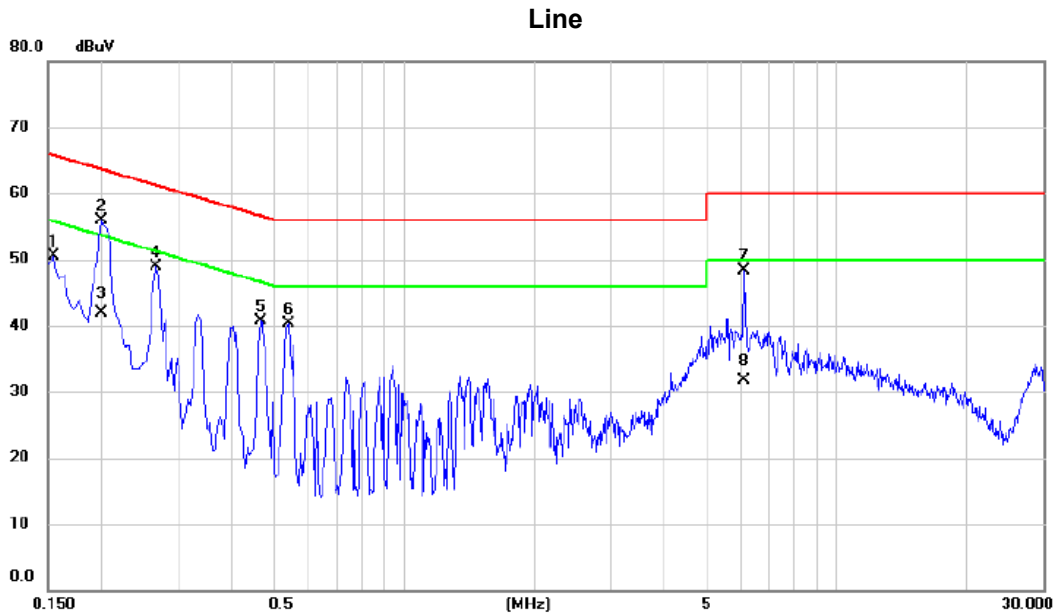
**Radiated Emissions Test Photos****30 MHz to 1 GHz**

**Radiated Emissions Test Photos****Above 1 GHz**



## **APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS**

Test Voltage:	AC 120V/60Hz
Test Mode:	TX G Mode Channel 06



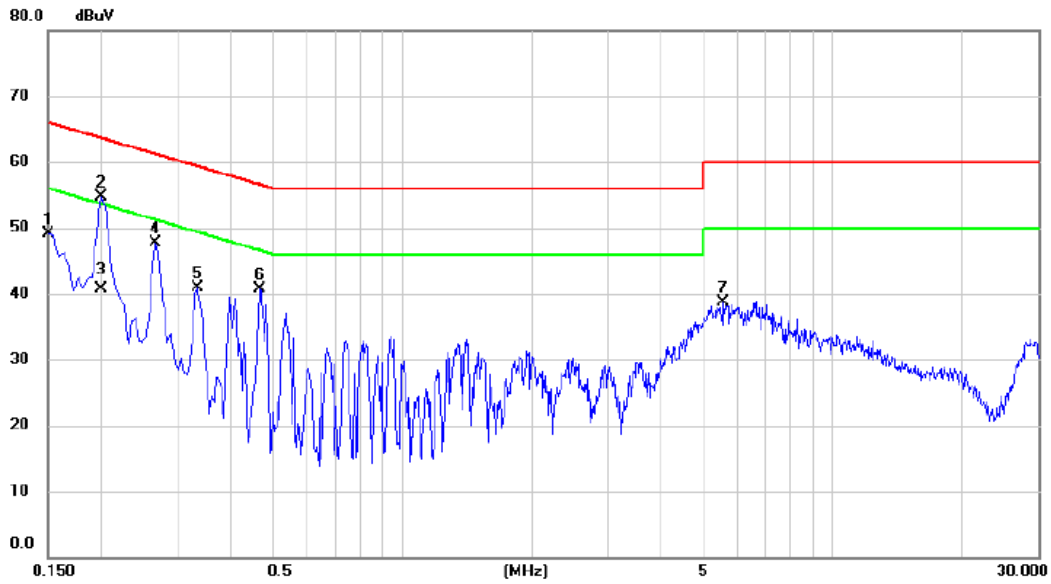
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1545	40.73	9.70	50.43	65.75	-15.32	peak	
2	*	0.1995	45.91	9.91	55.82	63.63	-7.81	peak	
3		0.1995	31.90	9.91	41.81	53.63	-11.82	AVG	
4		0.2670	38.96	9.88	48.84	61.21	-12.37	peak	
5		0.4650	30.70	9.94	40.64	56.60	-15.96	peak	
6		0.5415	30.26	9.95	40.21	56.00	-15.79	peak	
7		6.1125	37.95	10.40	48.35	60.00	-11.65	peak	
8		6.1125	21.30	10.40	31.70	50.00	-18.30	AVG	

**REMARKS:**

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

Test Voltage:	AC 120V/60Hz
Test Mode:	TX G Mode Channel 06

### Neutral

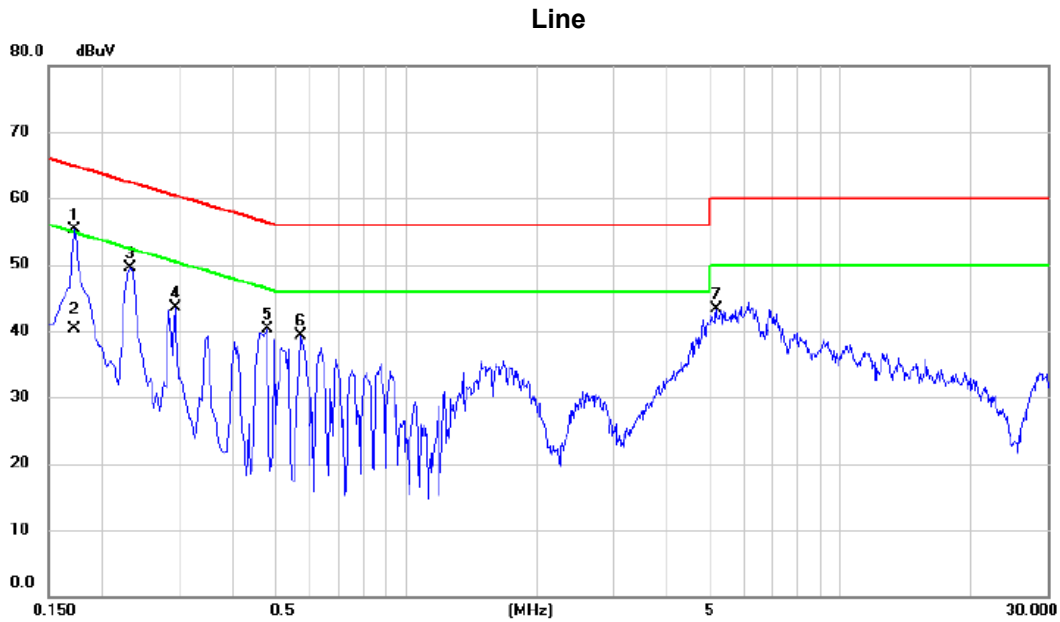


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	39.38	9.74	49.12	66.00	-16.88	peak	
2	*	0.1995	44.67	10.01	54.68	63.63	-8.95	peak	
3		0.1995	30.70	10.01	40.71	53.63	-12.92	AVG	
4		0.2670	37.73	9.99	47.72	61.21	-13.49	peak	
5		0.3345	30.86	10.04	40.90	59.34	-18.44	peak	
6		0.4650	30.59	10.13	40.72	56.60	-15.88	peak	
7		5.5770	27.90	10.71	38.61	60.00	-21.39	peak	

**REMARKS:**

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

Test Voltage:	AC 240V/50Hz
Test Mode:	TX G Mode Channel 06



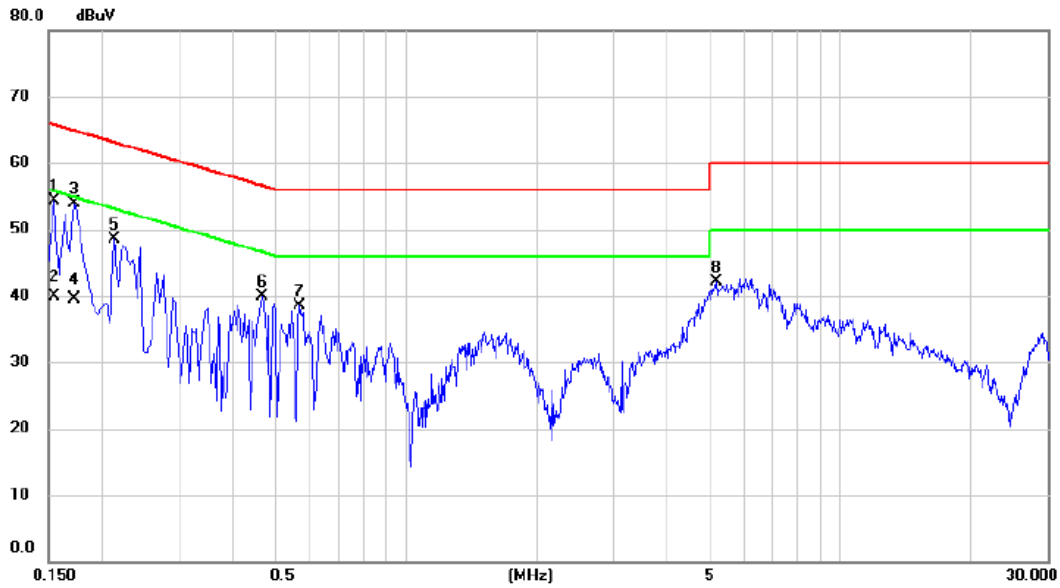
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1725	45.38	9.83	55.21	64.84	-9.63	peak	
2		0.1725	30.40	9.83	40.23	54.84	-14.61	AVG	
3		0.2310	39.61	9.89	49.50	62.41	-12.91	peak	
4		0.2940	33.66	9.89	43.55	60.41	-16.86	peak	
5		0.4785	30.33	9.95	40.28	56.37	-16.09	peak	
6		0.5730	29.29	9.96	39.25	56.00	-16.75	peak	
7		5.1765	33.02	10.35	43.37	60.00	-16.63	peak	

**REMARKS:**

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

Test Voltage:	AC 240V/50Hz
Test Mode:	TX G Mode Channel 06

### Neutral



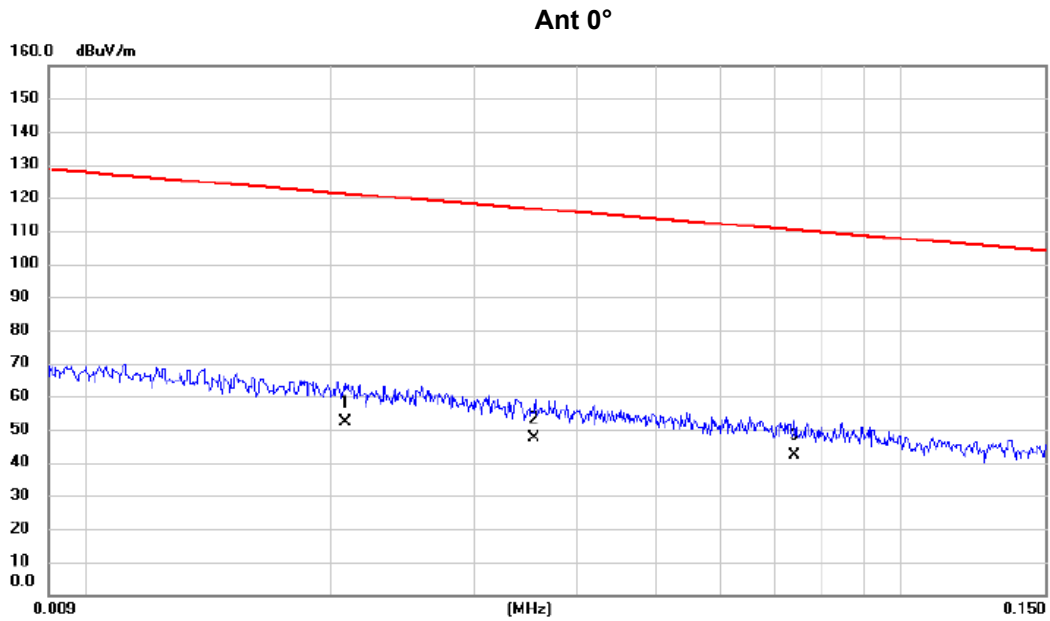
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1545	44.46	9.77	54.23	65.75	-11.52	peak	
2		0.1545	30.10	9.77	39.87	55.75	-15.88	AVG	
3	*	0.1725	44.05	9.91	53.96	64.84	-10.88	peak	
4		0.1725	29.60	9.91	39.51	54.84	-15.33	AVG	
5		0.2130	38.53	10.00	48.53	63.09	-14.56	peak	
6		0.4650	29.85	10.13	39.98	56.60	-16.62	peak	
7		0.5685	28.34	10.18	38.52	56.00	-17.48	peak	
8		5.1900	31.47	10.69	42.16	60.00	-17.84	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 G Mode Channel 06

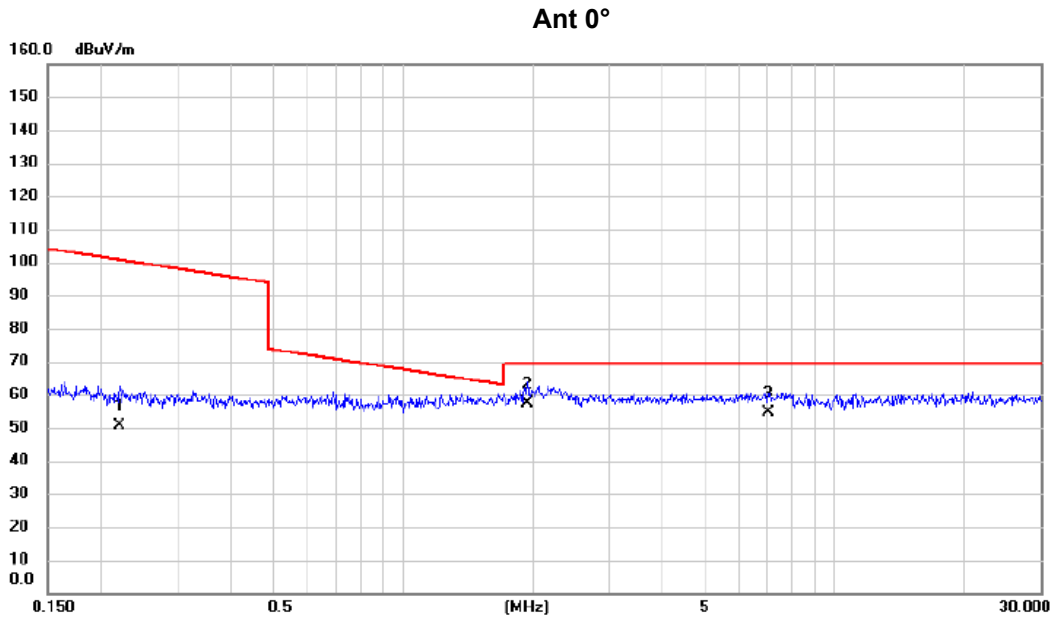


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0208	31.05	21.11	52.16	121.24	-69.08	AVG	
2		0.0355	26.51	21.03	47.54	116.60	-69.06	AVG	
3	*	0.0740	21.18	21.03	42.21	110.22	-68.01	AVG	

**REMARKS:**

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

Test Mode: TX G Mode Channel 06



No.	Mk.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2208	29.83	20.86	50.69	100.73	-50.04	AVG	
2	*	1.9386	35.51	21.80	57.31	69.54	-12.23	QP	
3		7.0250	32.57	21.99	54.56	69.54	-14.98	QP	

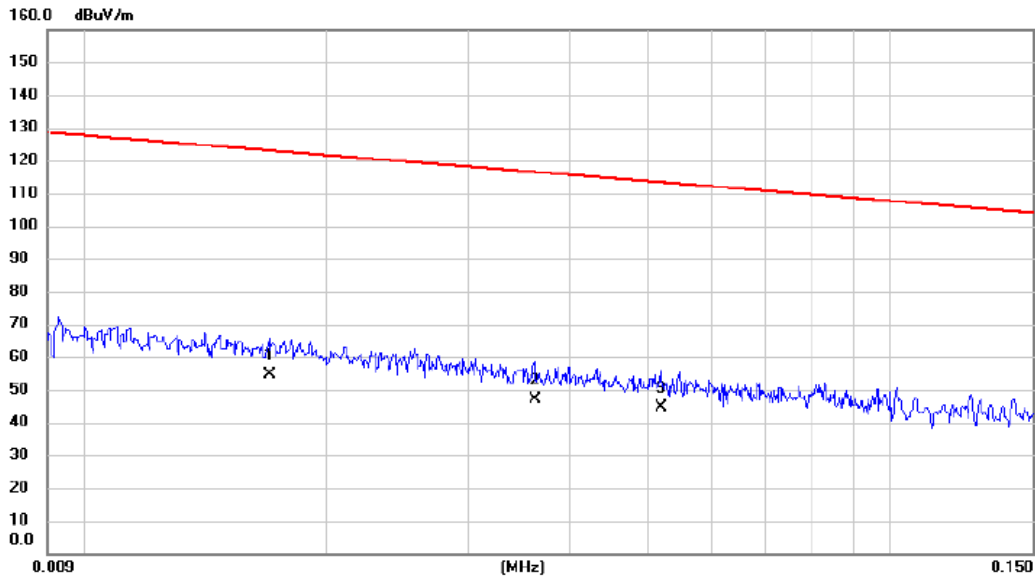
**REMARKS:**

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



Test Mode: TX G Mode Channel 06

**Ant 90°**

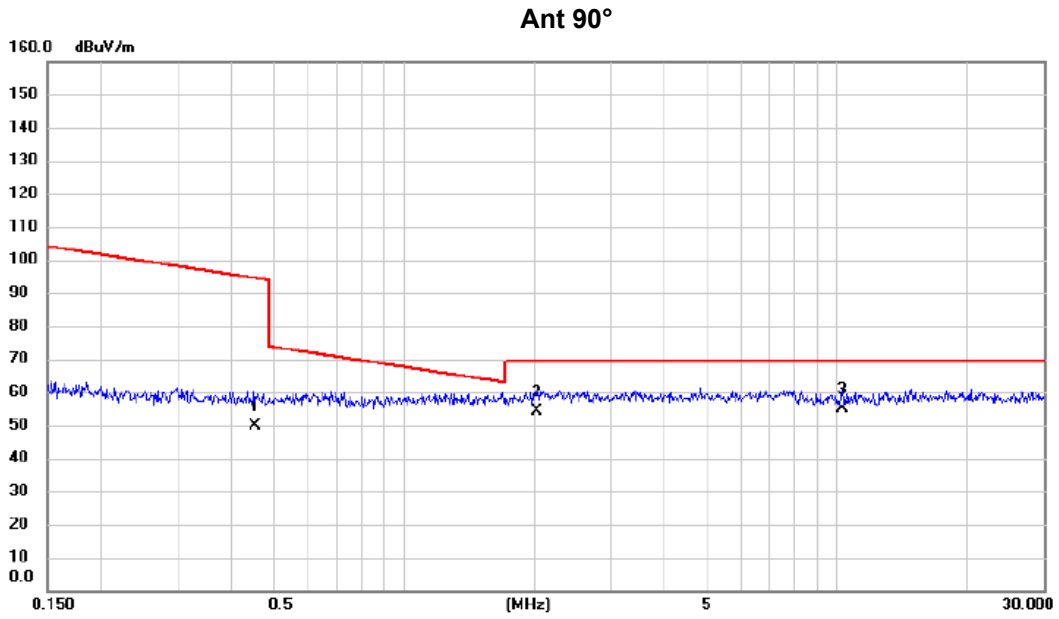


No.	Mk.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0170	33.47	21.27	54.74	123.00	-68.26	AVG	
2		0.0362	26.18	21.02	47.20	116.43	-69.23	AVG	
3		0.0520	23.81	20.94	44.75	113.28	-68.53	AVG	

**REMARKS:**

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

Test Mode: TX G Mode Channel 06



No. Mk.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.4516	28.92	20.78	49.70	94.51	-44.81	AVG	
2	2.0225	32.28	21.82	54.10	69.54	-15.44	QP	
3 *	10.2876	32.49	22.36	54.85	69.54	-14.69	QP	

**REMARKS:**

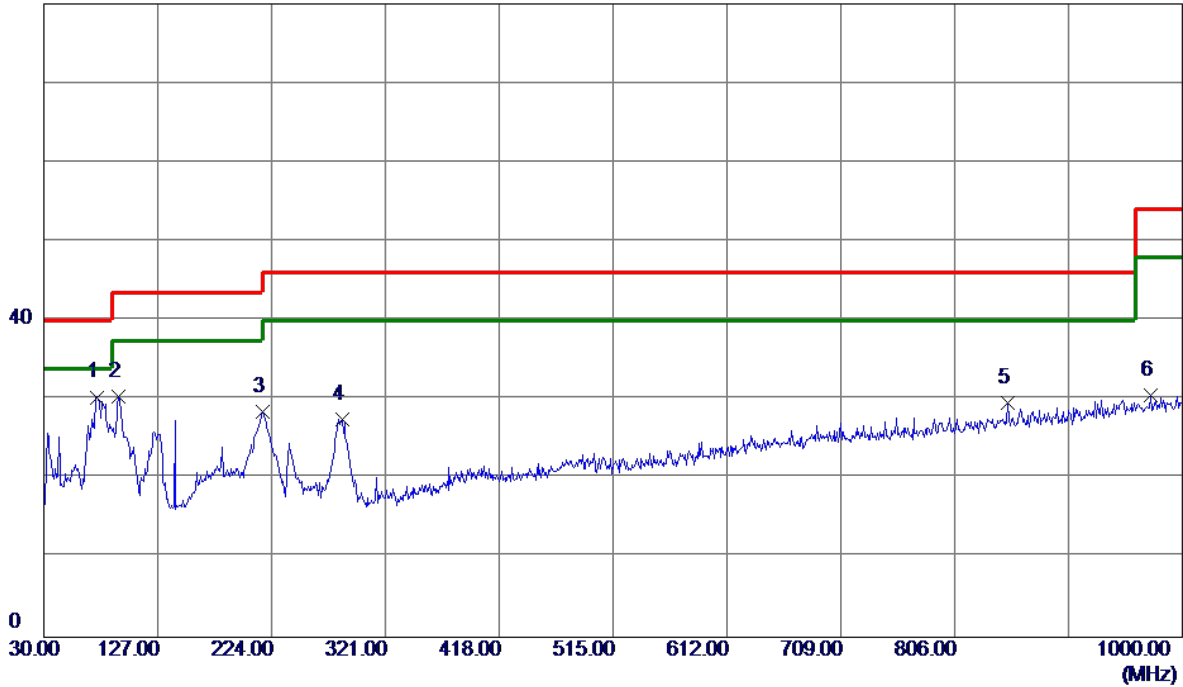
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

## **APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ**

Test Mode: TX G Mode Channel 06

### Vertical

80 dBuV/m



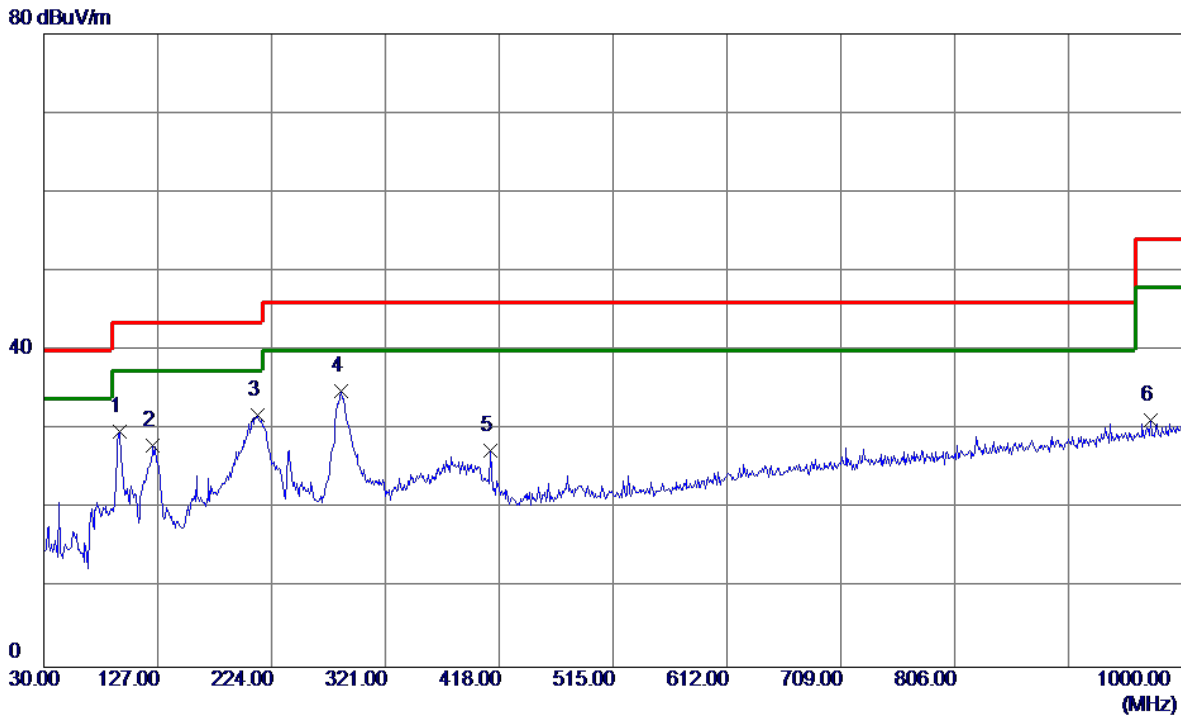
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	75.5899	47.27	-16.95	30.32	40.00	-9.68	Peak	
2	94.0199	45.79	-15.36	30.43	43.50	-13.07	Peak	
3	216.2400	43.12	-14.61	28.51	46.00	-17.49	Peak	
4	284.1400	39.42	-11.88	27.54	46.00	-18.46	Peak	
5	851.5900	31.28	-1.72	29.56	46.00	-16.44	Peak	
6	972.8400	29.93	0.58	30.51	54.00	-23.49	Peak	

**REMARKS:**

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

Test Mode: TX G Mode Channel 06

### Horizontal



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	94.9900	44.99	-15.27	29.72	43.50	-13.78	Peak	
2	123.1200	40.71	-12.74	27.97	43.50	-15.53	Peak	
3	212.3600	46.76	-14.99	31.77	43.50	-11.73	Peak	
4 *	283.1700	46.79	-11.95	34.84	46.00	-11.16	Peak	
5	410.2400	36.07	-8.73	27.34	46.00	-18.66	Peak	
6	972.8400	30.58	0.58	31.16	54.00	-22.84	Peak	

**REMARKS:**

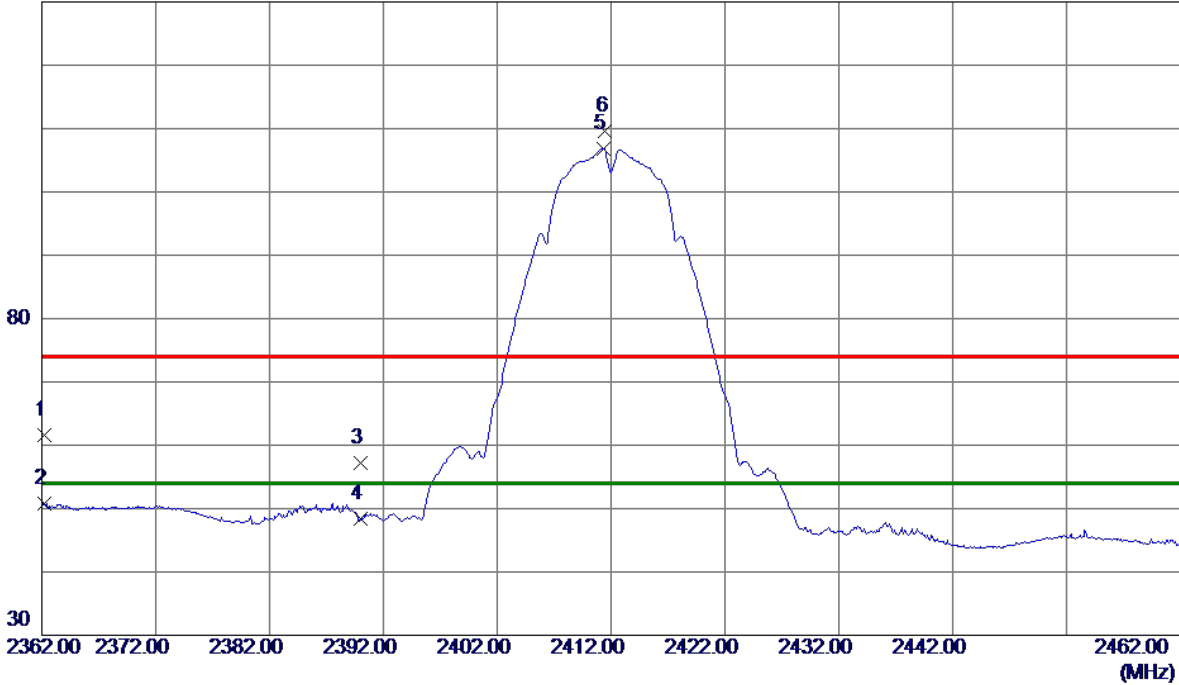
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

**APPENDIX D - RADIATED EMISSION- ABOVE 1000 MHZ**

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	2362.2000	53.29	8.26	61.55	74.00	-12.45	Peak	
2	2362.2000	42.63	8.26	50.89	54.00	-3.11	AVG	
3	2390.0000	48.87	8.29	57.16	74.00	-16.84	Peak	
4	2390.0000	40.04	8.29	48.33	54.00	-5.67	AVG	
5 *	2411.3000	98.52	8.31	106.83	54.00	52.83	AVG	No Limit
6	2411.5000	101.25	8.31	109.56	74.00	35.56	Peak	No Limit

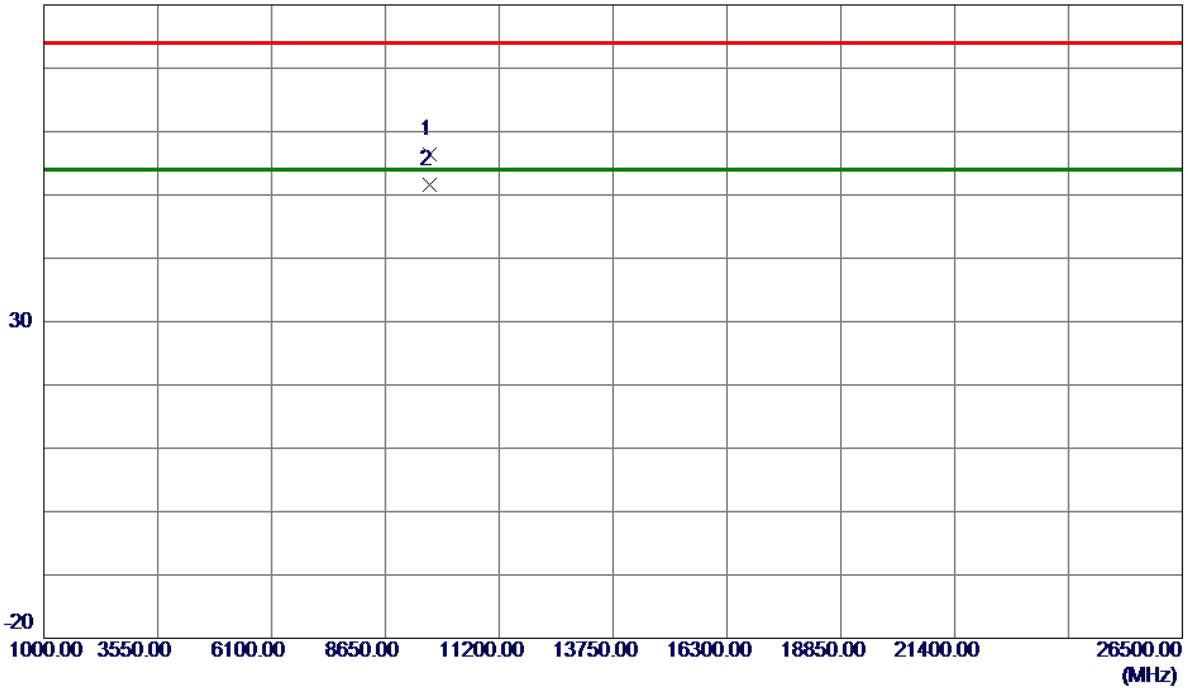
**REMARKS:**

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

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	9647.9250	43.46	12.88	56.34	74.00	-17.66	Peak	
2 *	9648.1200	38.71	12.88	51.59	54.00	-2.41	AVG	

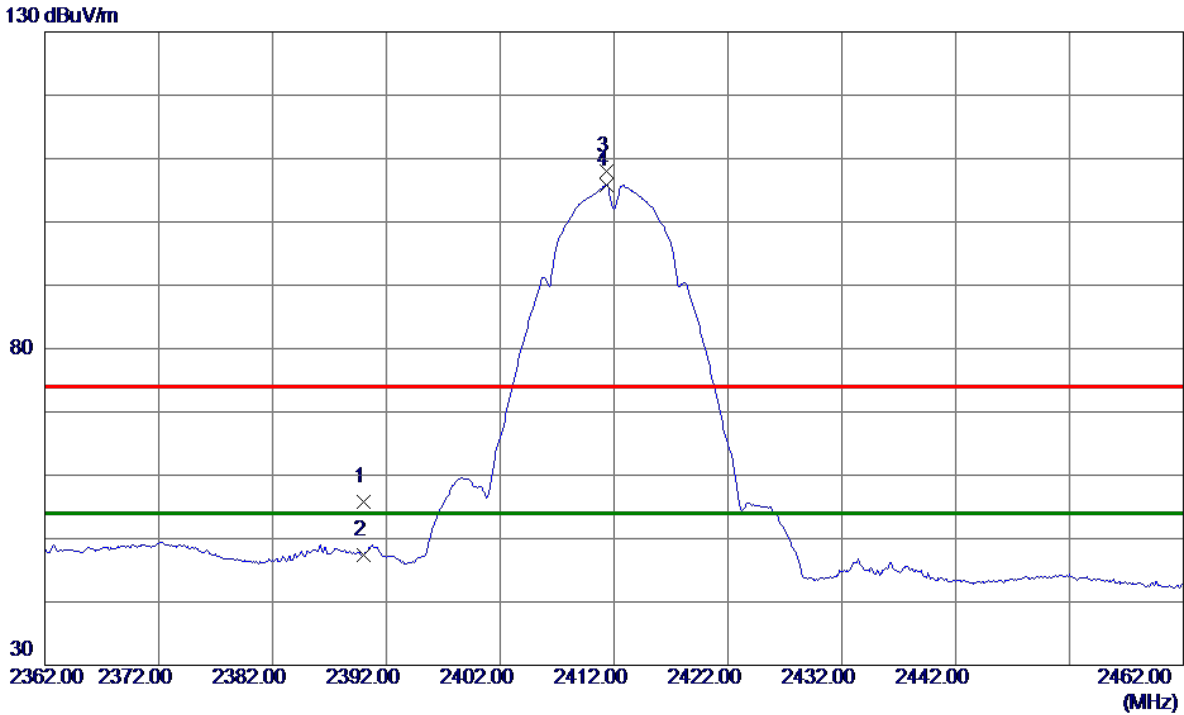
**REMARKS:**

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



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	47.54	8.29	55.83	74.00	-18.17	Peak	
2	2390.0000	39.20	8.29	47.49	54.00	-6.51	AVG	
3	2411.3000	99.70	8.31	108.01	74.00	34.01	Peak	No Limit
4 *	2411.3000	97.48	8.31	105.79	54.00	51.79	AVG	No Limit

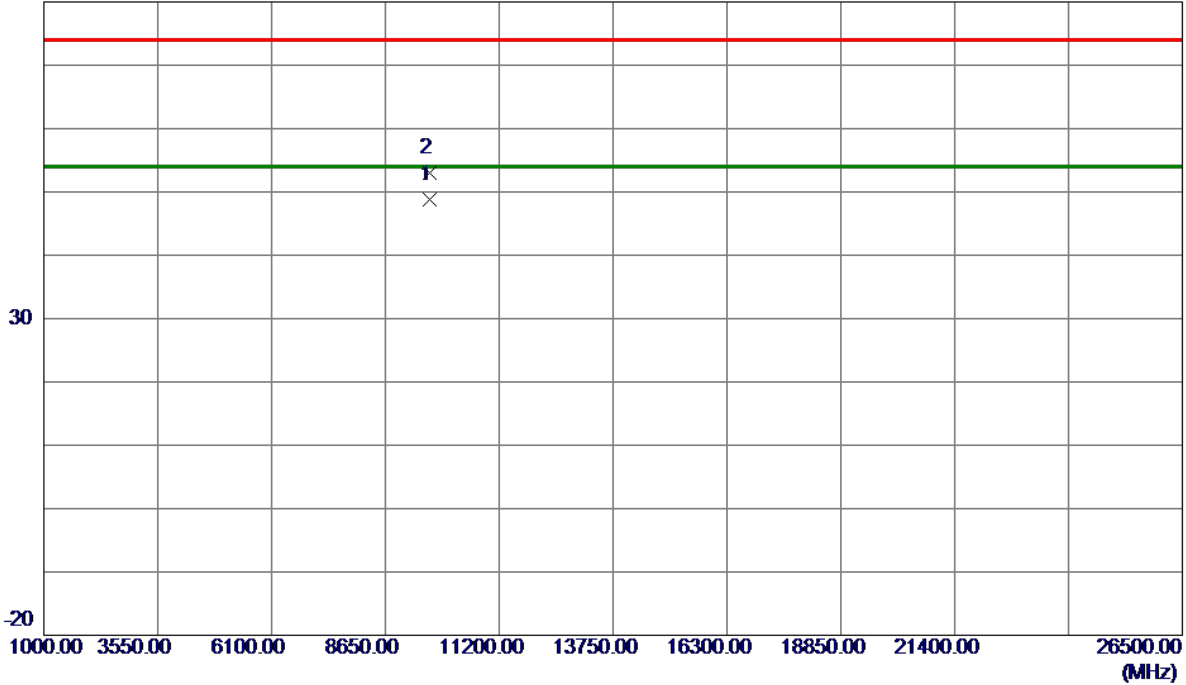
**REMARKS:**

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

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 *	9647.4300	35.87	12.88	48.75	54.00	-5.25	AVG	
2	9649.8150	40.21	12.88	53.09	74.00	-20.91	Peak	

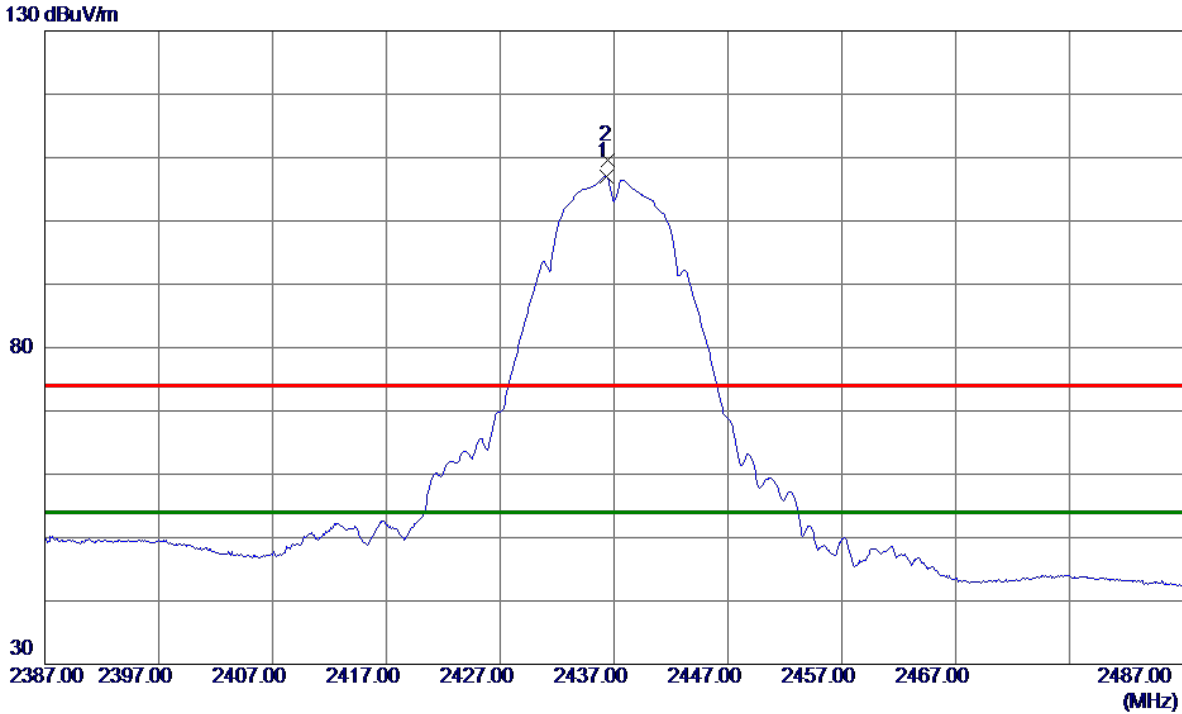
**REMARKS:**

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

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

Test Mode: TX B Mode 2437 MHz

**Vertical**



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2436.3000	98.62	8.34	106.96	54.00	52.96	AVG	No Limit
2	2436.5000	101.25	8.34	109.59	74.00	35.59	Peak	No Limit

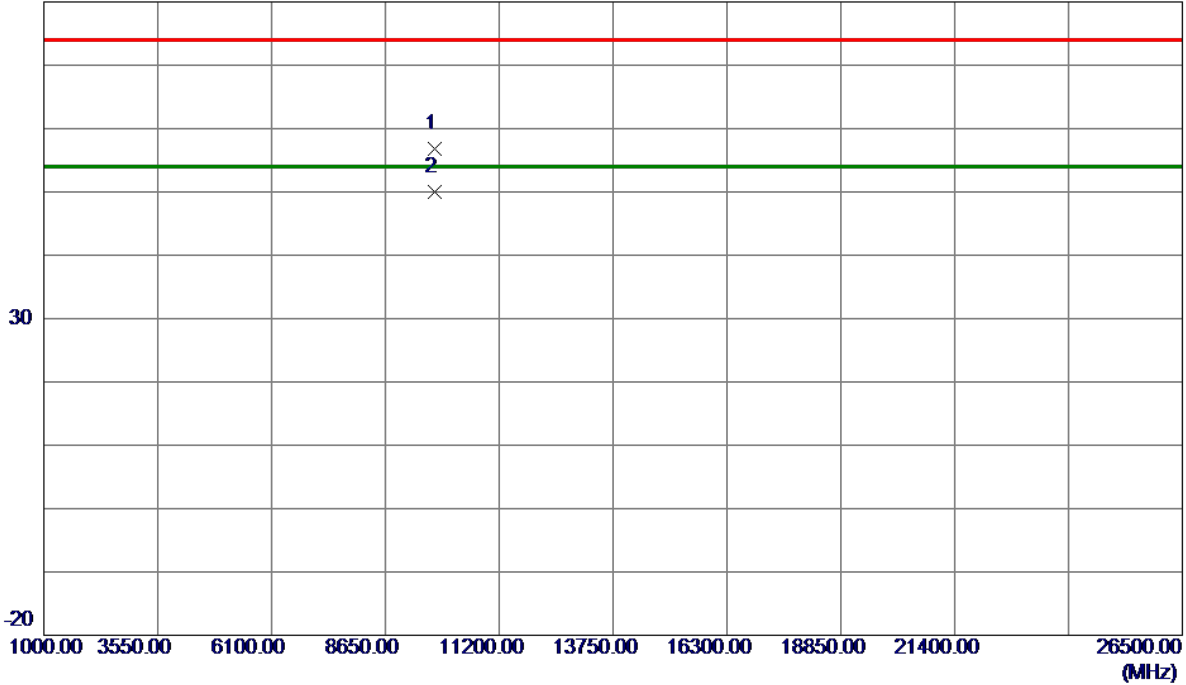
**REMARKS:**

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

Test Mode: TX B Mode 2437 MHz

### Vertical

80 dBuV/m



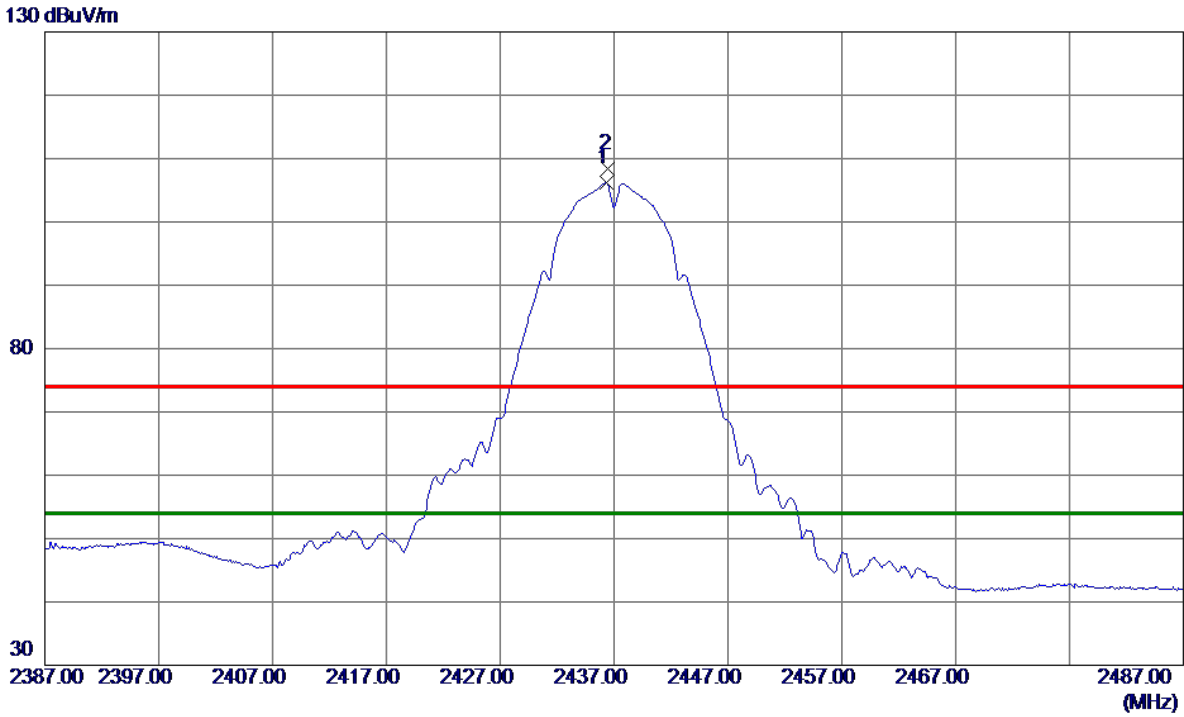
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	9747.9349	43.89	12.97	56.86	74.00	-17.14	Peak	
2 *	9748.0750	37.06	12.97	50.03	54.00	-3.97	AVG	

**REMARKS:**

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

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 *	2436.3000	97.88	8.34	106.22	54.00	52.22	AVG	No Limit
2	2436.5000	100.14	8.34	108.48	74.00	34.48	Peak	No Limit

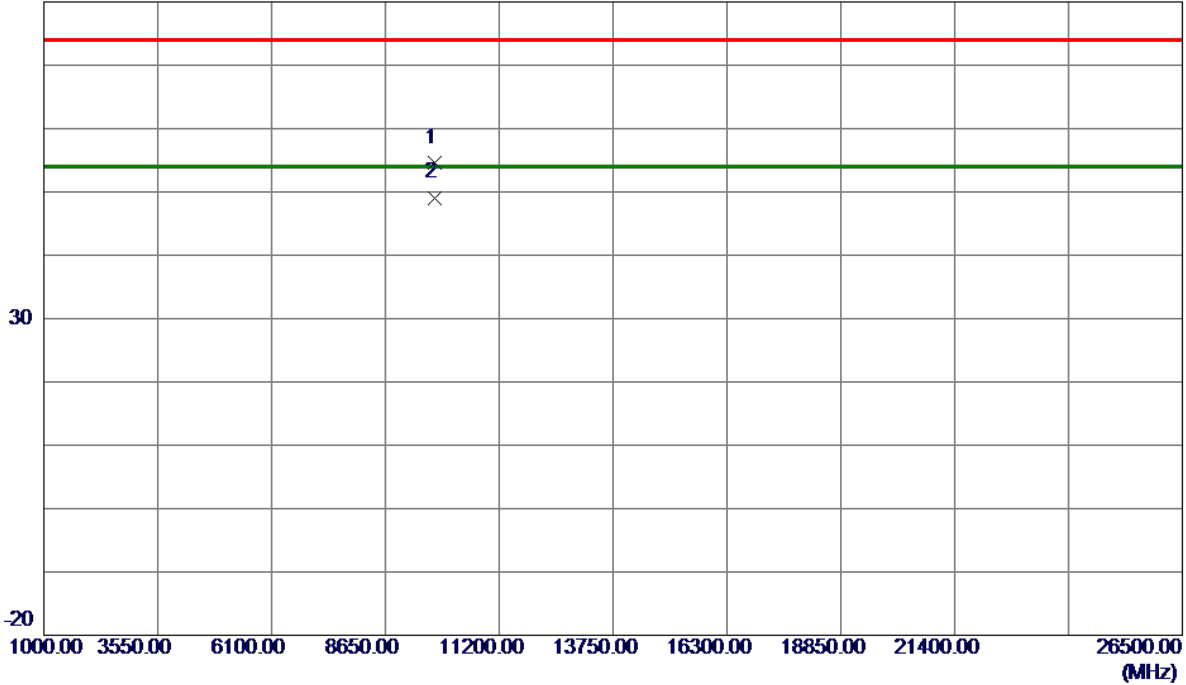
**REMARKS:**

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

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	9747.9950	41.57	12.97	54.54	74.00	-19.46	Peak	
2 *	9748.0850	36.13	12.97	49.10	54.00	-4.90	AVG	

**REMARKS:**

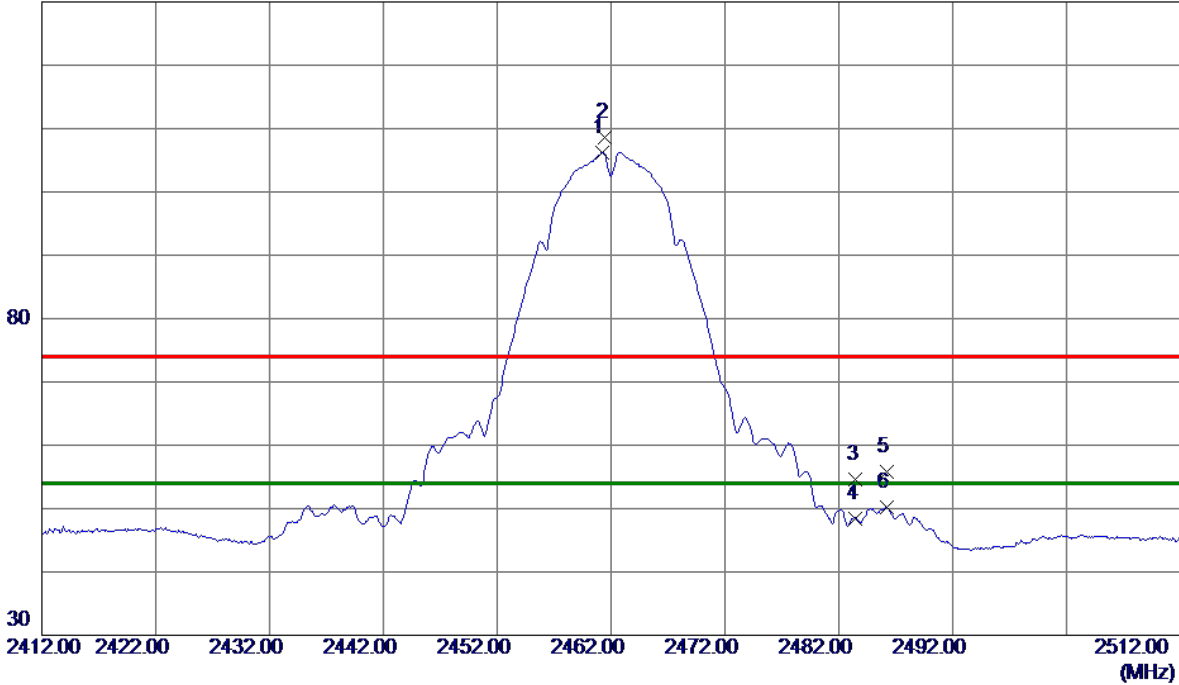
(1) Measurement Value = Reading Level + Correct Factor.

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

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 *	2461.2000	97.83	8.36	106.19	54.00	52.19	AVG	No Limit
2	2461.5000	100.23	8.36	108.59	74.00	34.59	Peak	No Limit
3	2483.5000	46.17	8.39	54.56	74.00	-19.44	Peak	
4	2483.5000	40.07	8.39	48.46	54.00	-5.54	AVG	
5	2486.2000	47.46	8.39	55.85	74.00	-18.15	Peak	
6	2486.2000	41.75	8.39	50.14	54.00	-3.86	AVG	

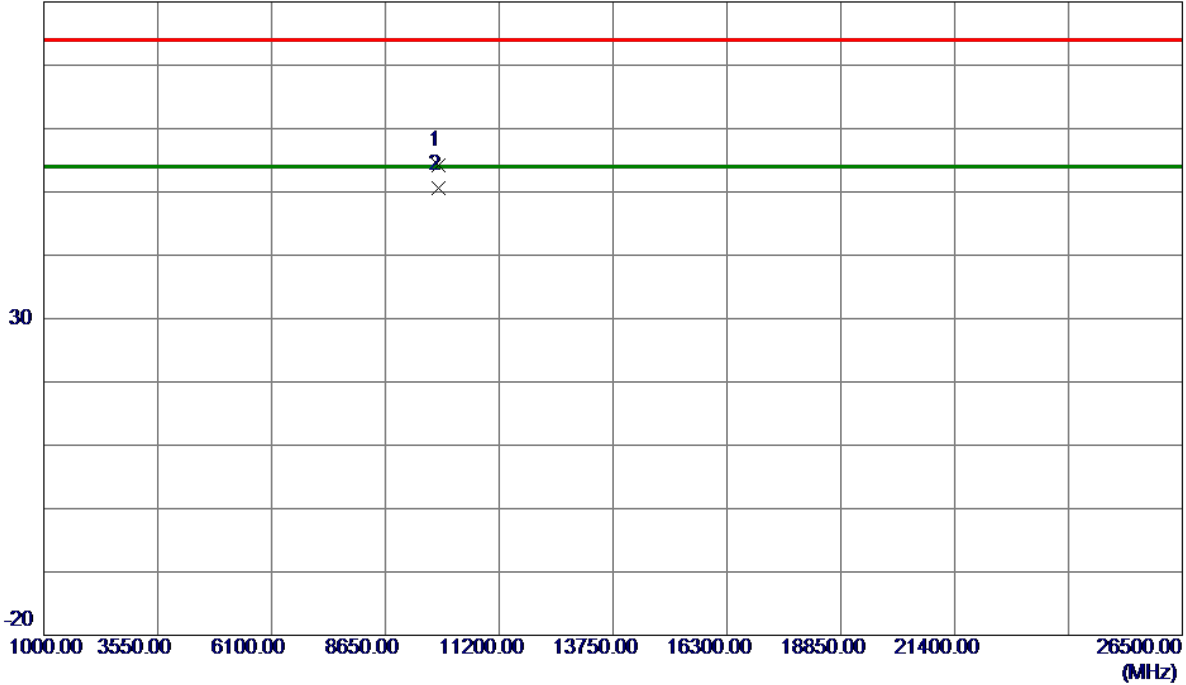
**REMARKS:**

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

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	9850.4180	41.09	13.05	54.14	74.00	-19.86	Peak	
2 *	9850.4700	37.45	13.05	50.50	54.00	-3.50	AVG	

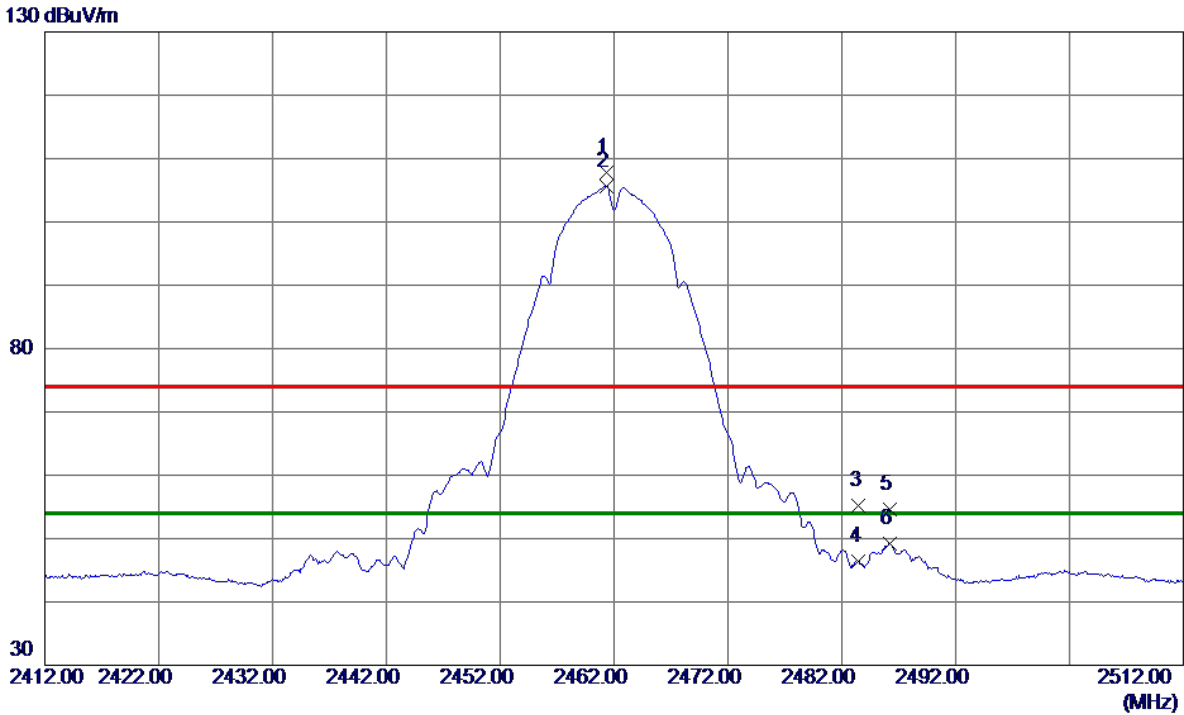
**REMARKS:**

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



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	2461.3000	99.46	8.36	107.82	74.00	33.82	Peak	No Limit
2 *	2461.3000	97.26	8.36	105.62	54.00	51.62	AVG	No Limit
3	2483.5000	46.76	8.39	55.15	74.00	-18.85	Peak	
4	2483.5000	38.06	8.39	46.45	54.00	-7.55	AVG	
5	2486.2000	46.27	8.39	54.66	74.00	-19.34	Peak	
6	2486.2000	40.74	8.39	49.13	54.00	-4.87	AVG	

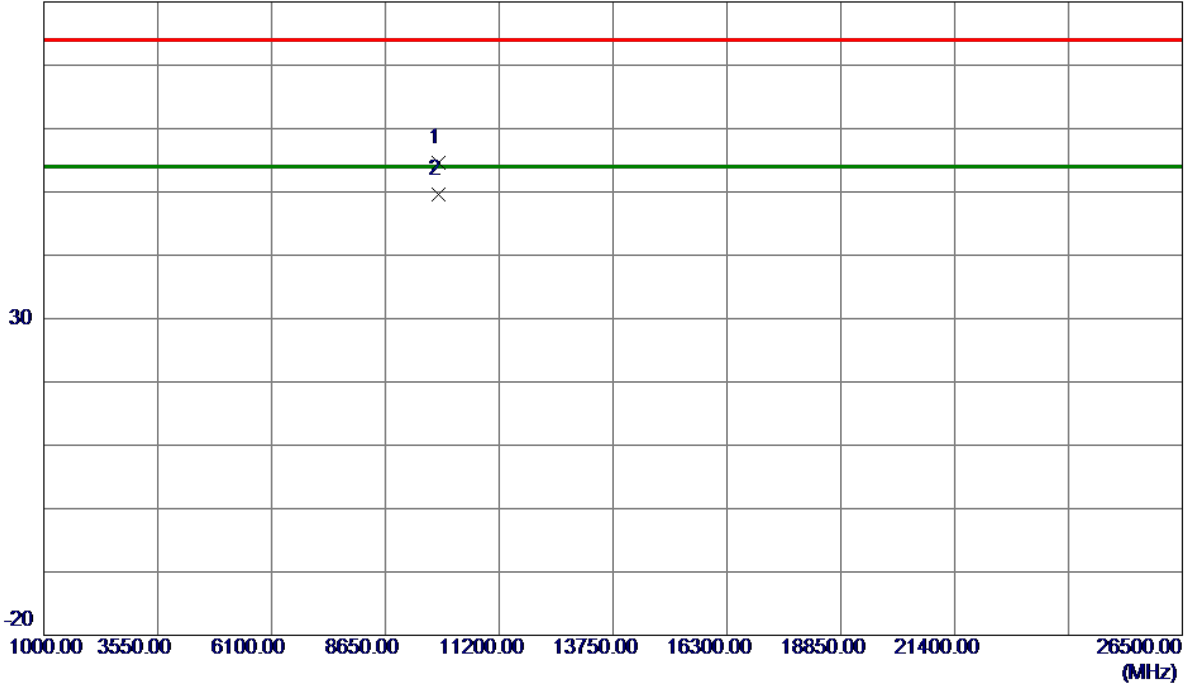
**REMARKS:**

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

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	9850.2050	41.58	13.05	54.63	74.00	-19.37	Peak	
2 *	9850.3550	36.48	13.05	49.53	54.00	-4.47	AVG	

**REMARKS:**

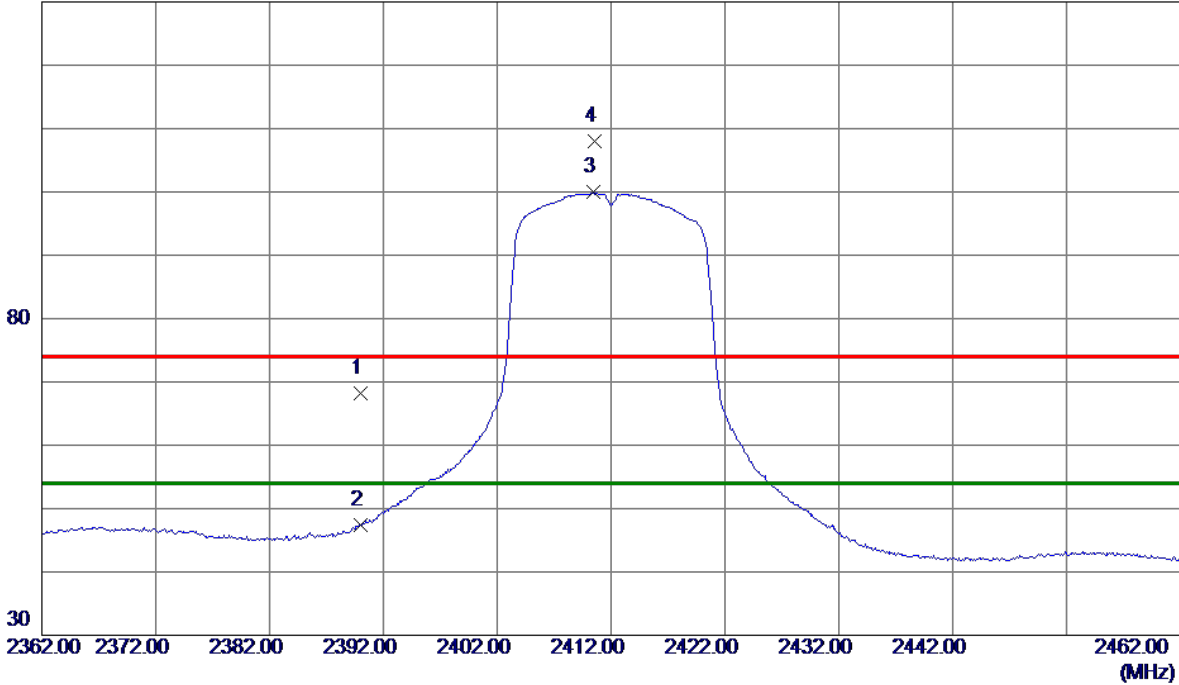
(1) Measurement Value = Reading Level + Correct Factor.

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

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	59.96	8.29	68.25	74.00	-5.75	Peak	
2	2390.0000	39.18	8.29	47.47	54.00	-6.53	AVG	
3 *	2410.4000	91.60	8.31	99.91	54.00	45.91	AVG	No Limit
4	2410.6000	99.77	8.31	108.08	74.00	34.08	Peak	No Limit

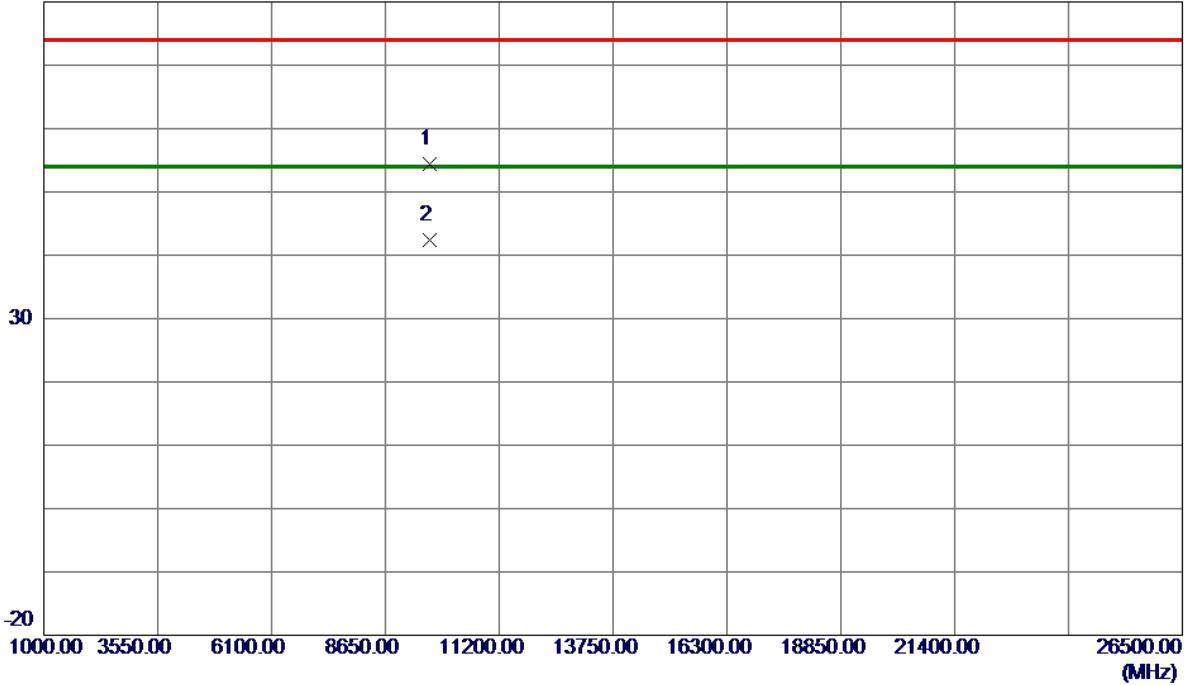
**REMARKS:**

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

Test Mode: TX G Mode 2412 MHz

### Vertical

80 dBuV/m



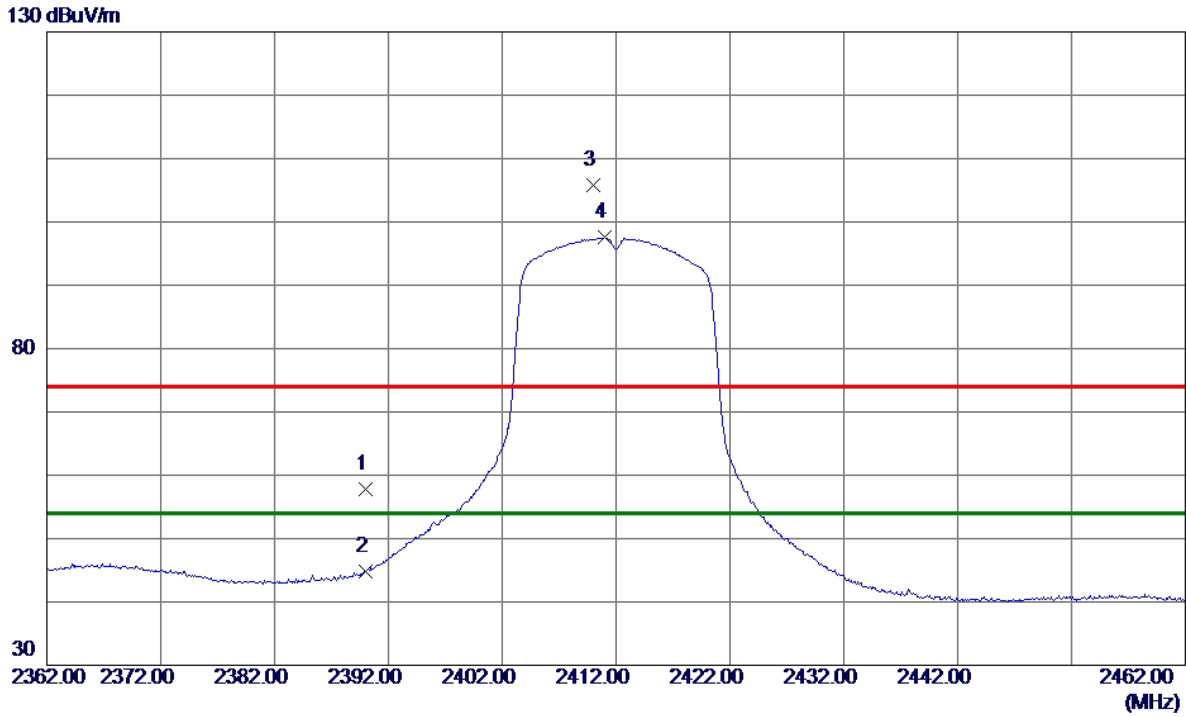
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	9647.2100	41.58	12.88	54.46	74.00	-19.54	Peak	
2 *	9648.3000	29.47	12.88	42.35	54.00	-11.65	AVG	

**REMARKS:**

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

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	49.55	8.29	57.84	74.00	-16.16	Peak	
2	2390.0000	36.56	8.29	44.85	54.00	-9.15	AVG	
3	2410.0000	97.42	8.31	105.73	74.00	31.73	Peak	No Limit
4 *	2411.0000	89.21	8.31	97.52	54.00	43.52	AVG	No Limit

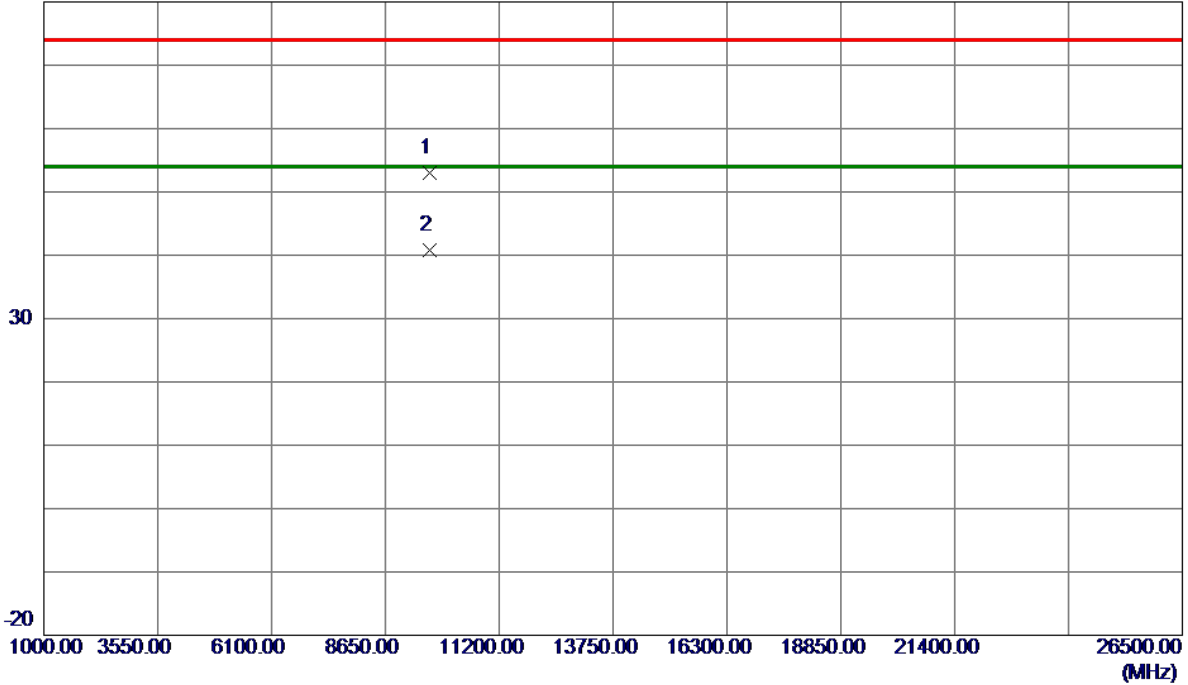
**REMARKS:**

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

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	9646.3650	40.17	12.88	53.05	74.00	-20.95	Peak	
2 *	9649.7150	27.84	12.88	40.72	54.00	-13.28	AVG	

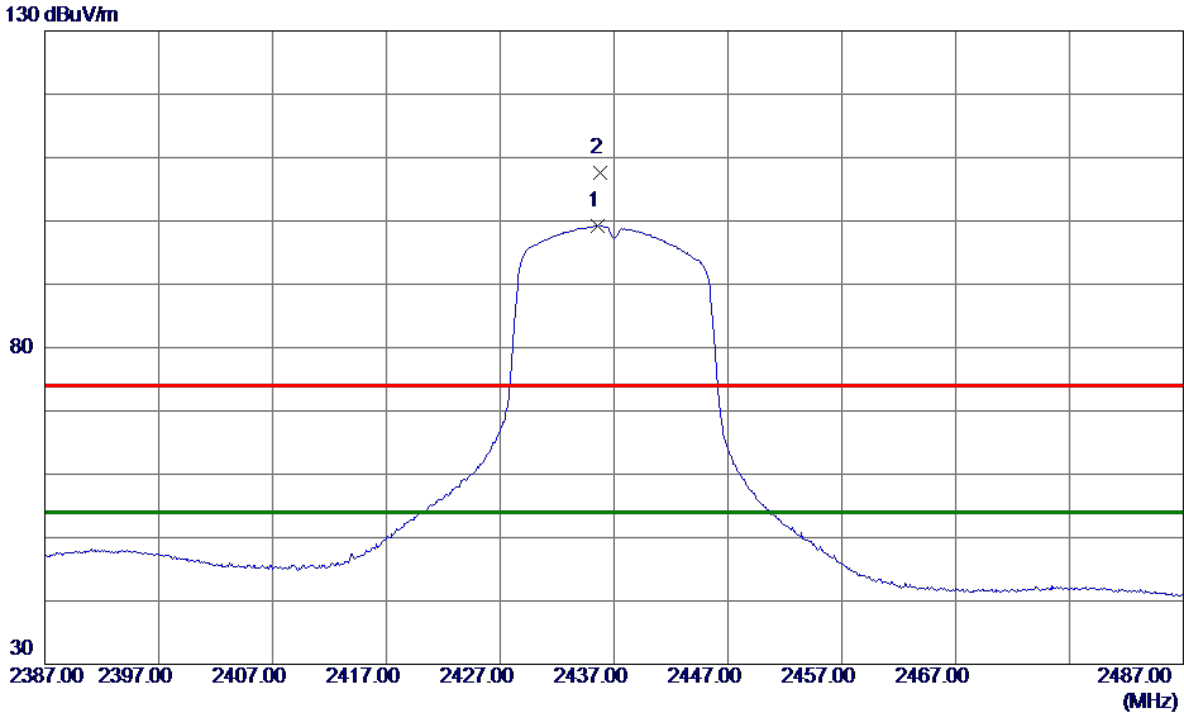
**REMARKS:**

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

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

Test Mode: TX G Mode 2437 MHz

**Vertical**



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	2435.6000	90.90	8.34	99.24	54.00	45.24	AVG	No Limit
2	2435.8000	99.27	8.34	107.61	74.00	33.61	Peak	No Limit

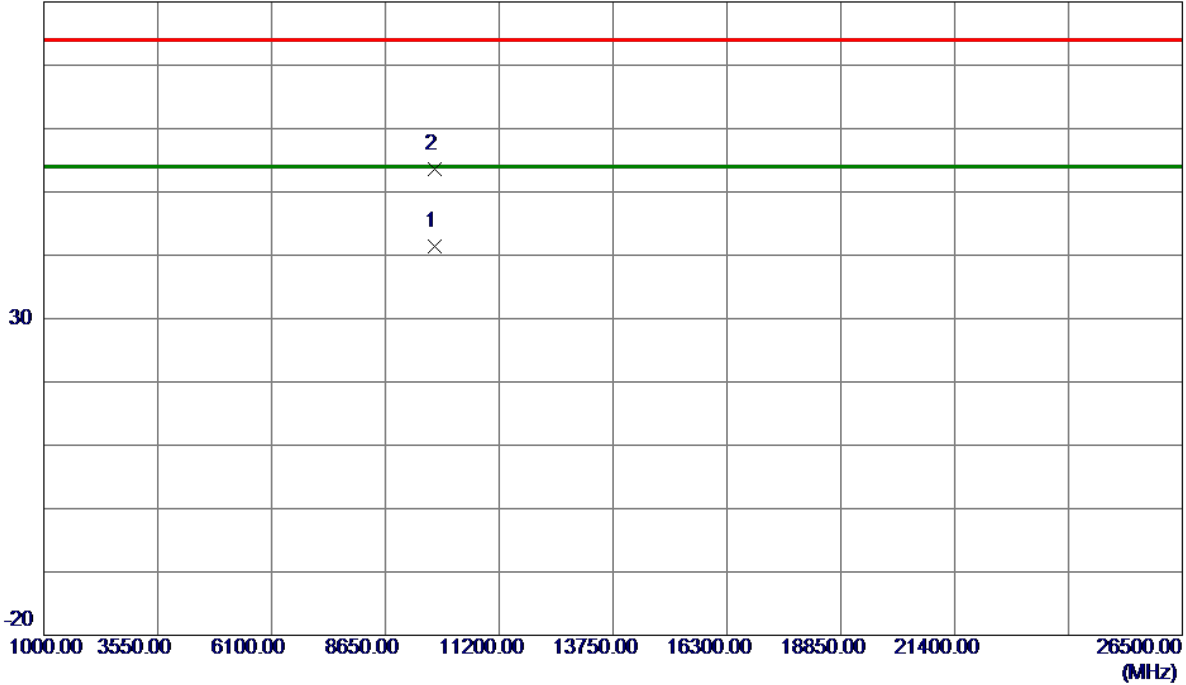
**REMARKS:**

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

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 *	9746.3750	28.47	12.96	41.43	54.00	-12.57	AVG	
2	9748.2500	40.57	12.97	53.54	74.00	-20.46	Peak	

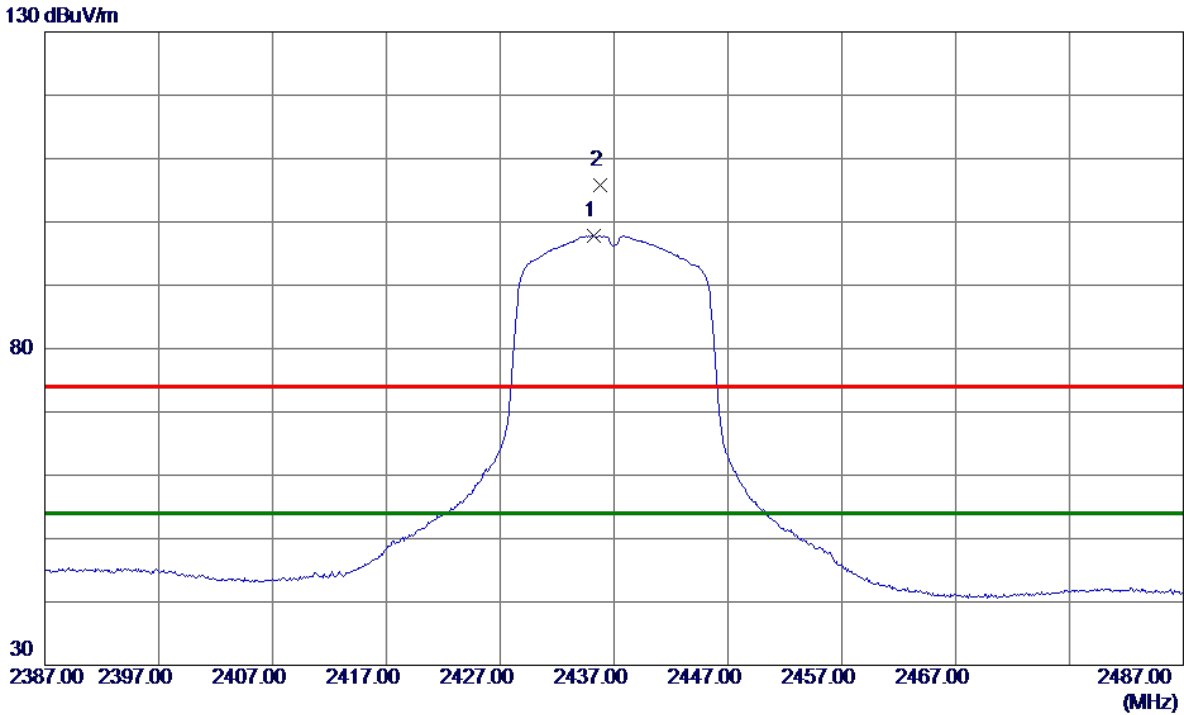
**REMARKS:**

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



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 *	2435.2000	89.52	8.34	97.86	54.00	43.86	AVG	No Limit
2	2435.8000	97.40	8.34	105.74	74.00	31.74	Peak	No Limit

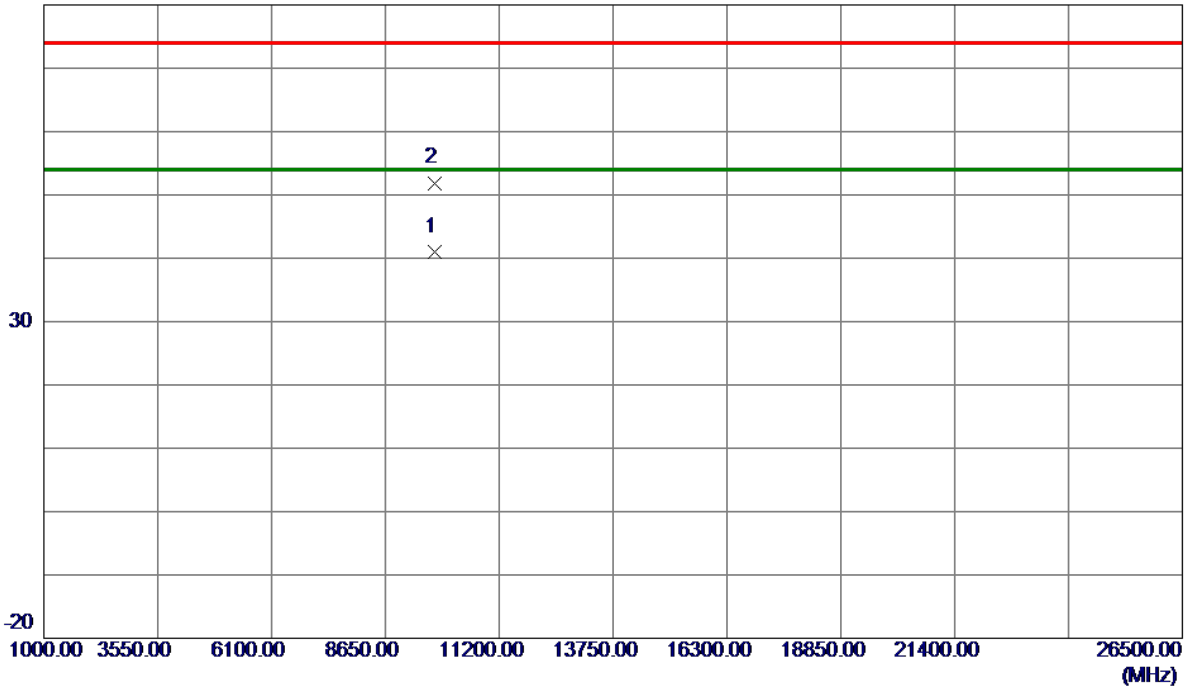
**REMARKS:**

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

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 *	9746.5250	27.97	12.96	40.93	54.00	-13.07	AVG	
2	9747.1200	38.93	12.97	51.90	74.00	-22.10	Peak	

**REMARKS:**

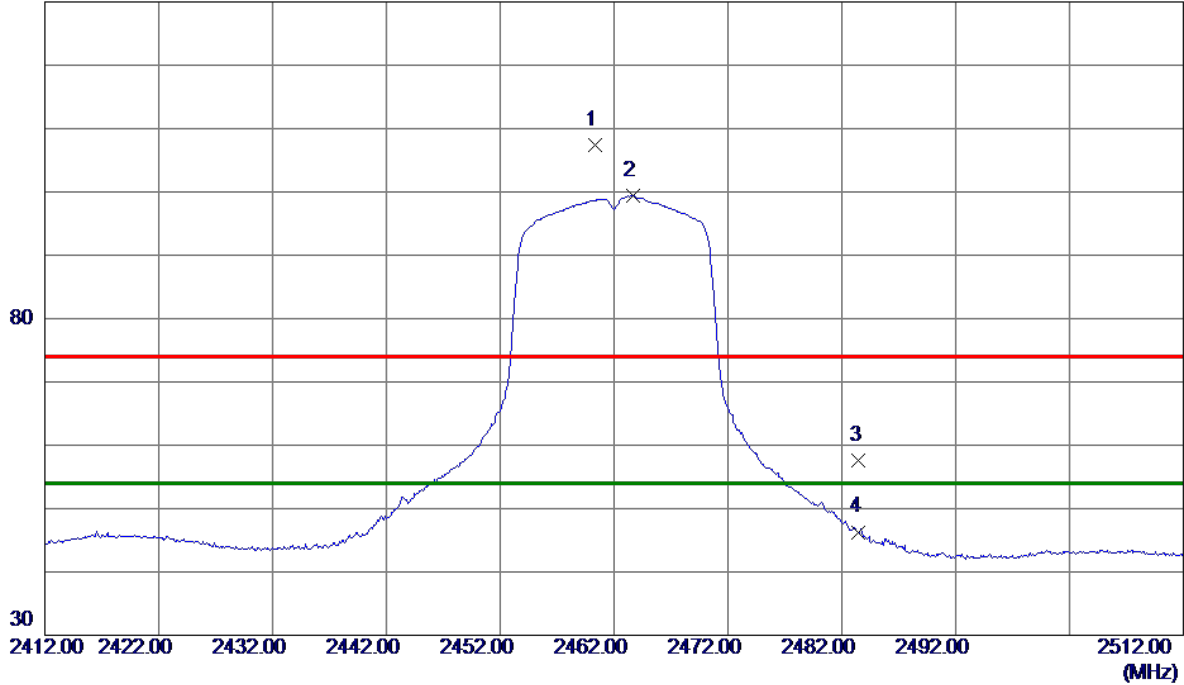
(1) Measurement Value = Reading Level + Correct Factor.

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

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	2460.3000	99.07	8.36	107.43	74.00	33.43	Peak	No Limit
2 *	2463.7000	91.00	8.37	99.37	54.00	45.37	AVG	No Limit
3	2483.5000	49.15	8.39	57.54	74.00	-16.46	Peak	
4	2483.5000	37.91	8.39	46.30	54.00	-7.70	AVG	

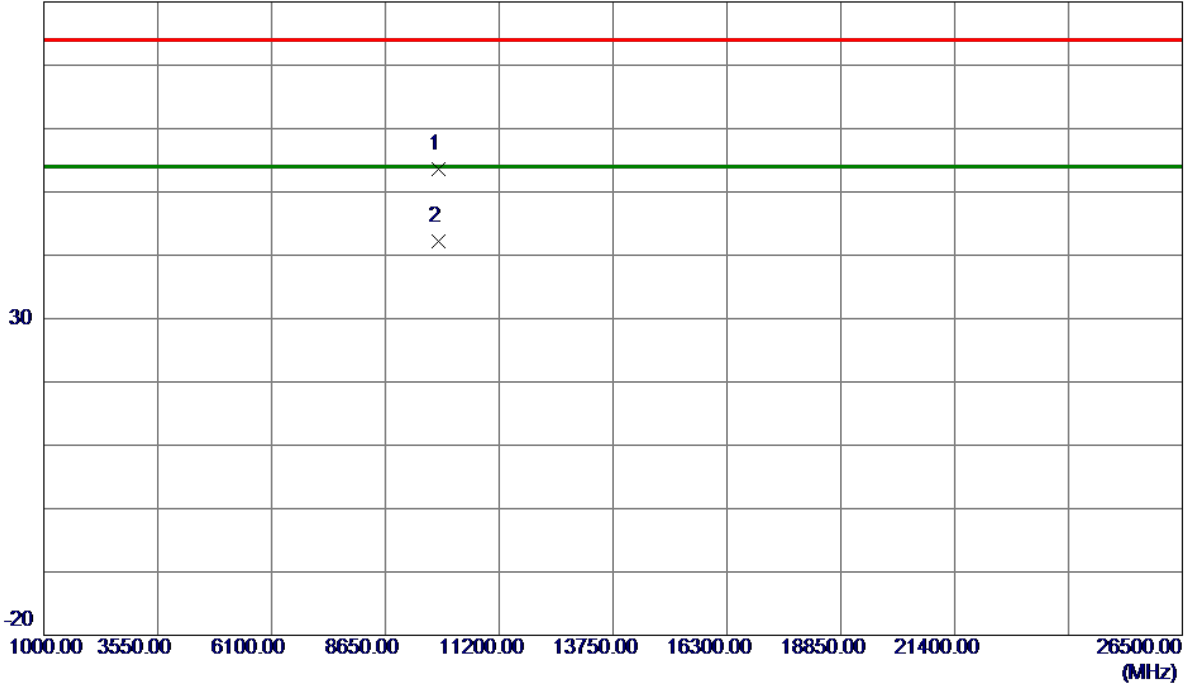
**REMARKS:**

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

Test Mode: TX G Mode 2462 MHz

### Vertical

80 dBuV/m



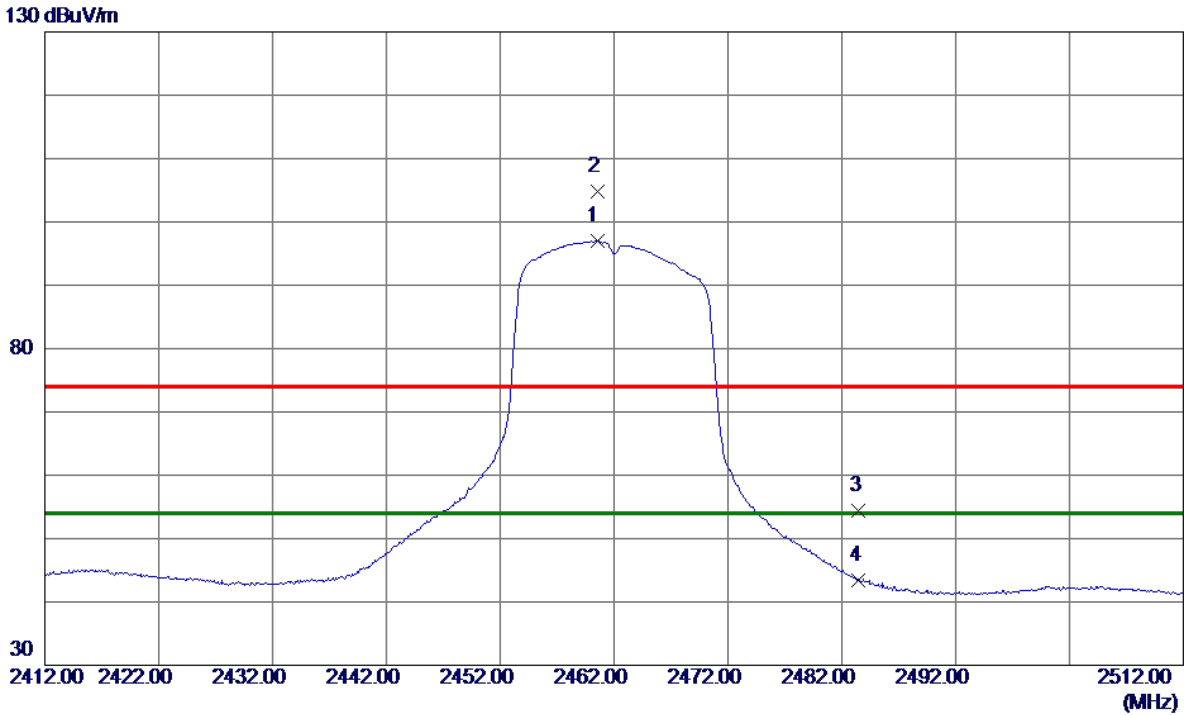
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	9849.2650	40.52	13.05	53.57	74.00	-20.43	Peak	
2 *	9850.4800	29.13	13.05	42.18	54.00	-11.82	AVG	

**REMARKS:**

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

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 *	2460.5000	88.69	8.36	97.05	54.00	43.05	AVG	No Limit
2	2460.6000	96.43	8.36	104.79	74.00	30.79	Peak	No Limit
3	2483.5000	46.00	8.39	54.39	74.00	-19.61	Peak	
4	2483.5000	35.05	8.39	43.44	54.00	-10.56	AVG	

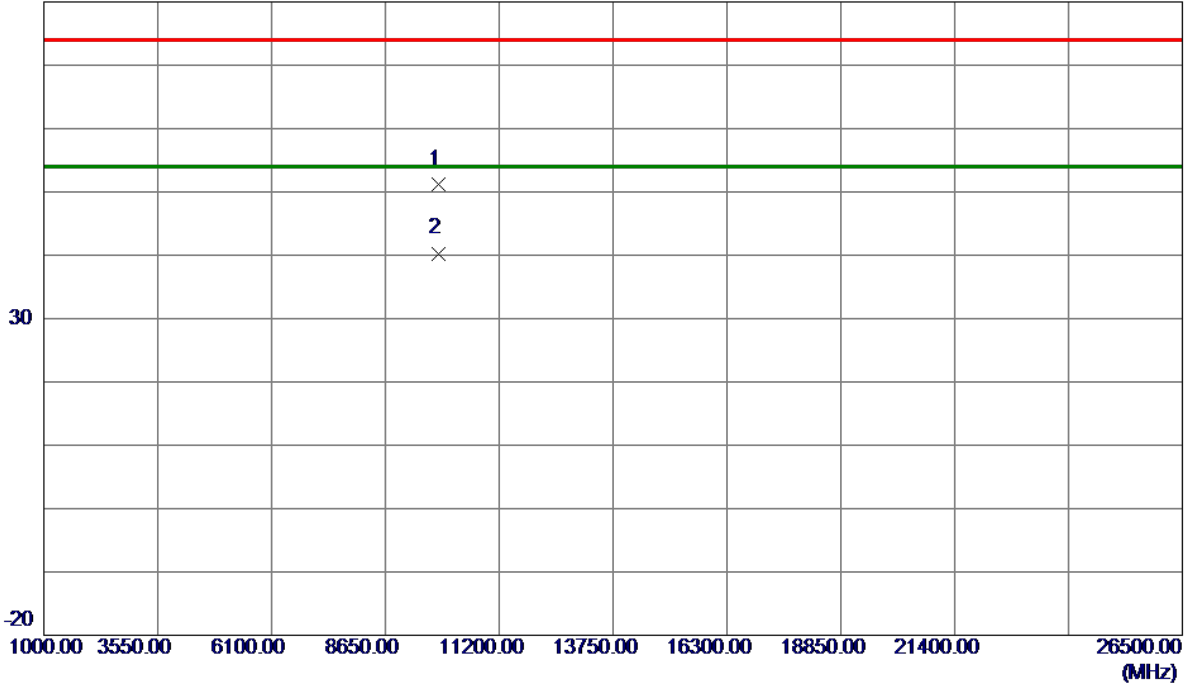
**REMARKS:**

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

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	9849.5199	38.21	13.05	51.26	74.00	-22.74	Peak	
2 *	9850.0450	27.25	13.05	40.30	54.00	-13.70	AVG	

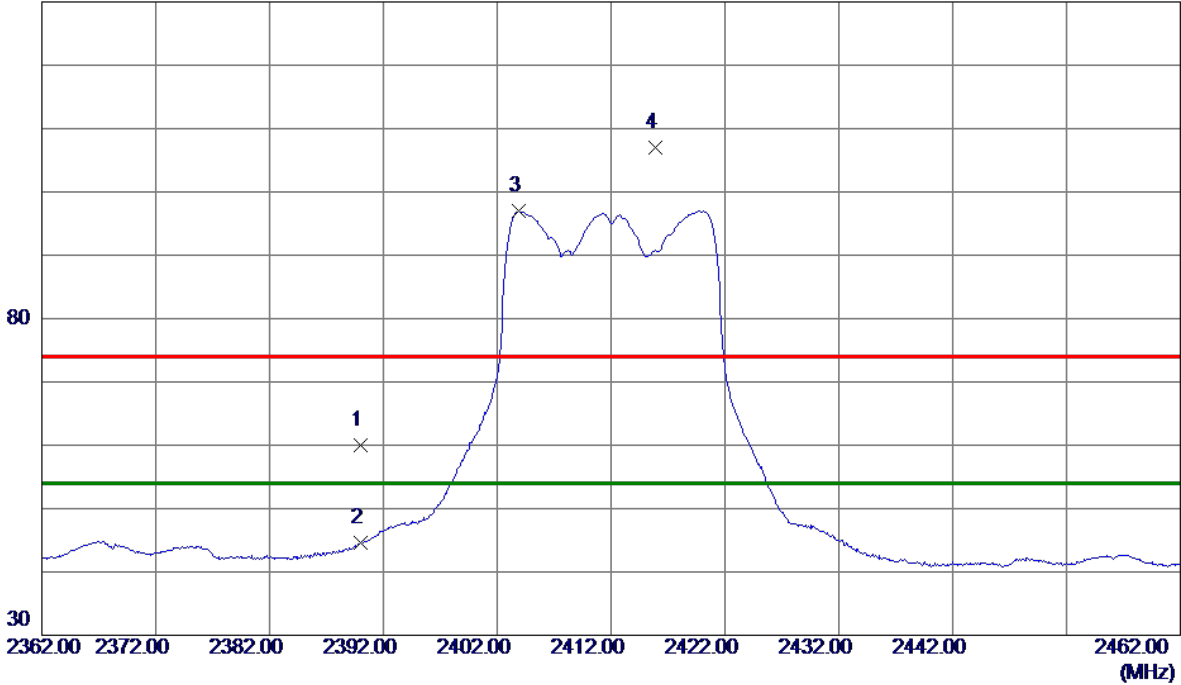
**REMARKS:**

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

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	51.76	8.29	60.05	74.00	-13.95	Peak	
2	2390.0000	36.39	8.29	44.68	54.00	-9.32	AVG	
3 *	2403.9000	88.63	8.30	96.93	54.00	42.93	AVG	No Limit
4	2415.9000	98.69	8.32	107.01	74.00	33.01	Peak	No Limit

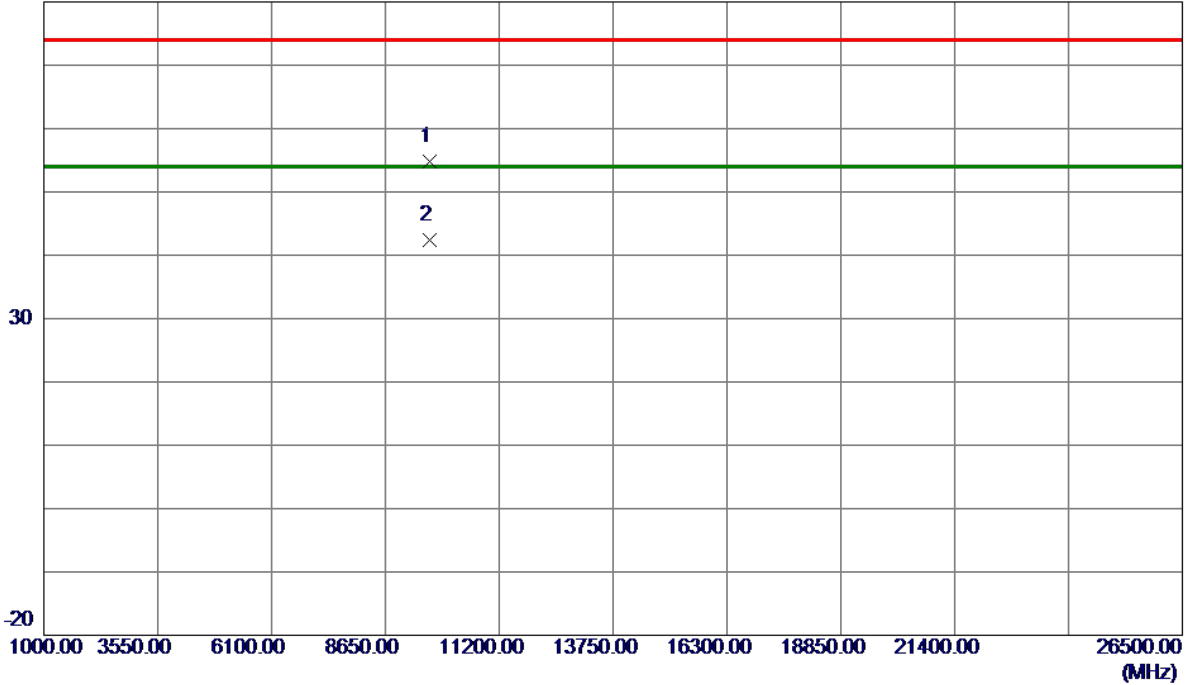
**REMARKS:**

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

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	9649.5150	41.85	12.88	54.73	74.00	-19.27	Peak	
2 *	9650.4500	29.48	12.88	42.36	54.00	-11.64	AVG	

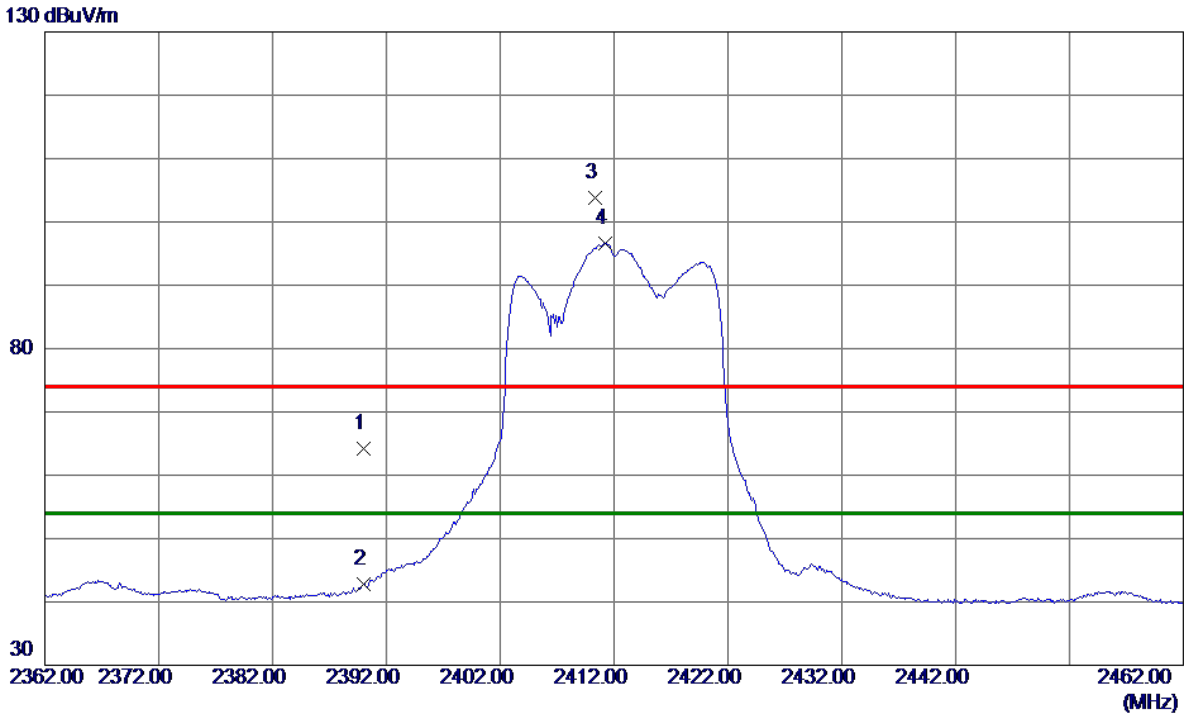
**REMARKS:**

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



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	55.91	8.29	64.20	74.00	-9.80	Peak	
2	2390.0000	34.50	8.29	42.79	54.00	-11.21	AVG	
3	2410.3000	95.54	8.31	103.85	74.00	29.85	Peak	No Limit
4 *	2411.2000	88.33	8.31	96.64	54.00	42.64	AVG	No Limit

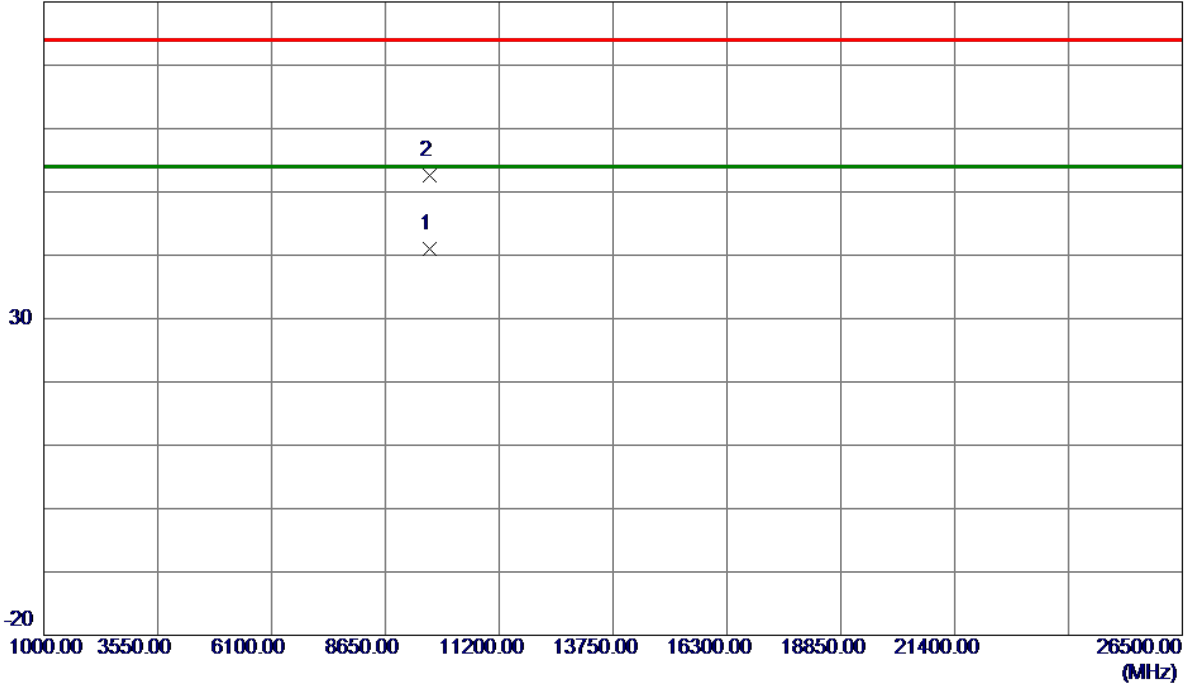
**REMARKS:**

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

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 *	9647.9800	28.21	12.88	41.09	54.00	-12.91	AVG	
2	9648.3949	39.66	12.88	52.54	74.00	-21.46	Peak	

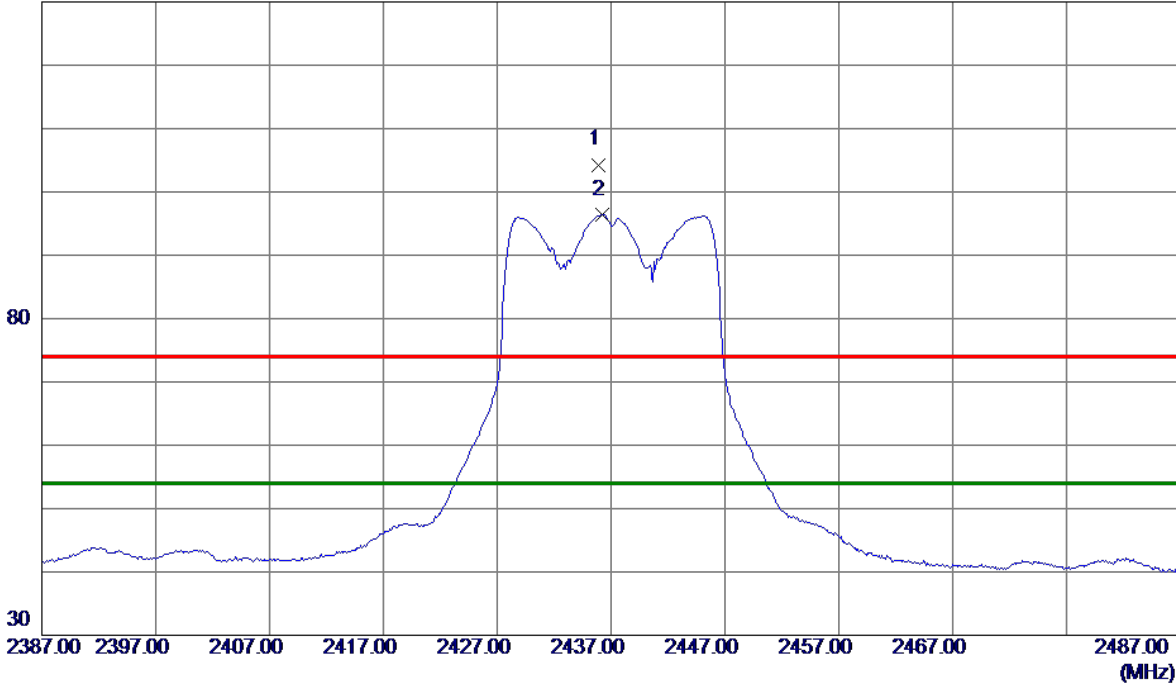
**REMARKS:**

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

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	2435.9000	95.96	8.34	104.30	74.00	30.30	Peak	No Limit
2 *	2436.2000	88.12	8.34	96.46	54.00	42.46	AVG	No Limit

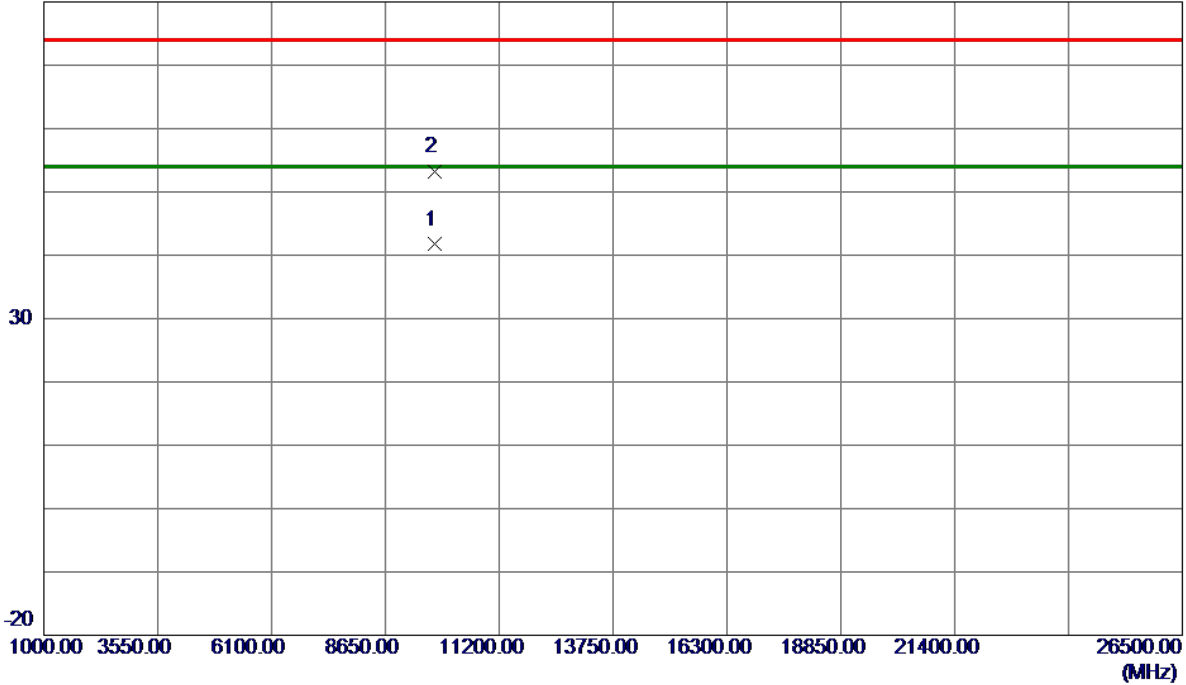
**REMARKS:**

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

Test Mode: TX N-20M Mode 2437 MHz

### Vertical

80 dBuV/m



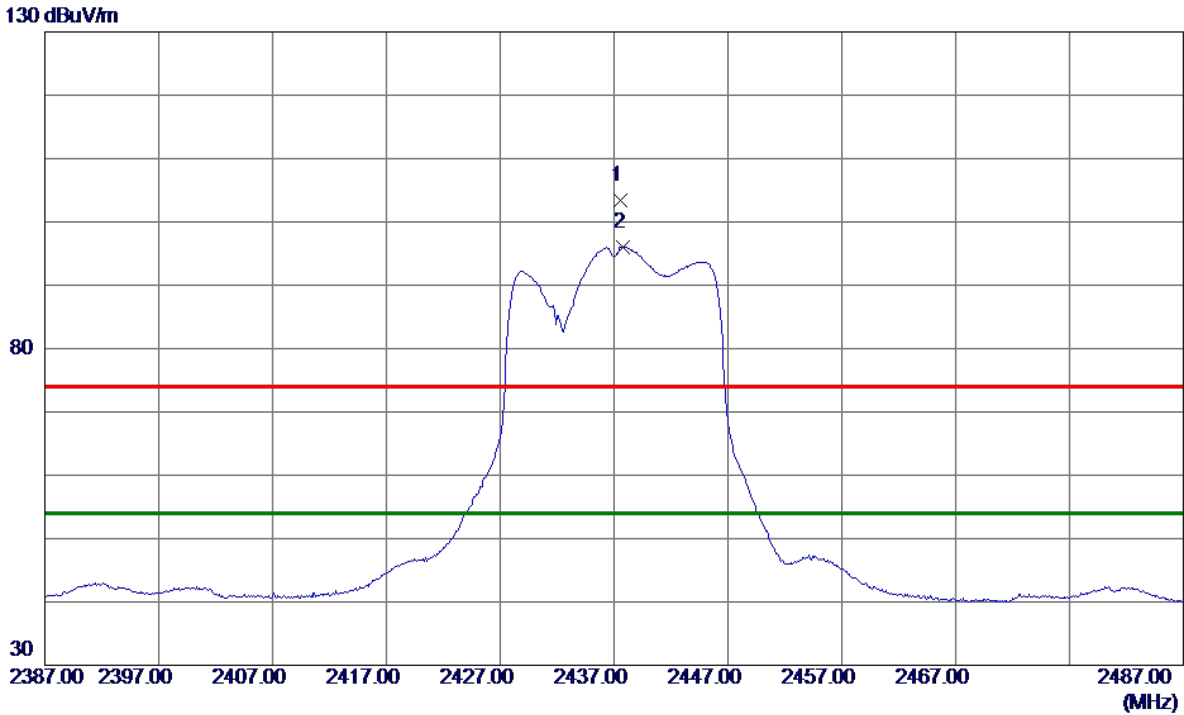
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	9745.5650	28.74	12.96	41.70	54.00	-12.30	AVG	
2	9747.8550	40.24	12.97	53.21	74.00	-20.79	Peak	

**REMARKS:**

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

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	2437.6000	95.06	8.34	103.40	74.00	29.40	Peak	No Limit
2 *	2437.8000	87.72	8.34	96.06	54.00	42.06	AVG	No Limit

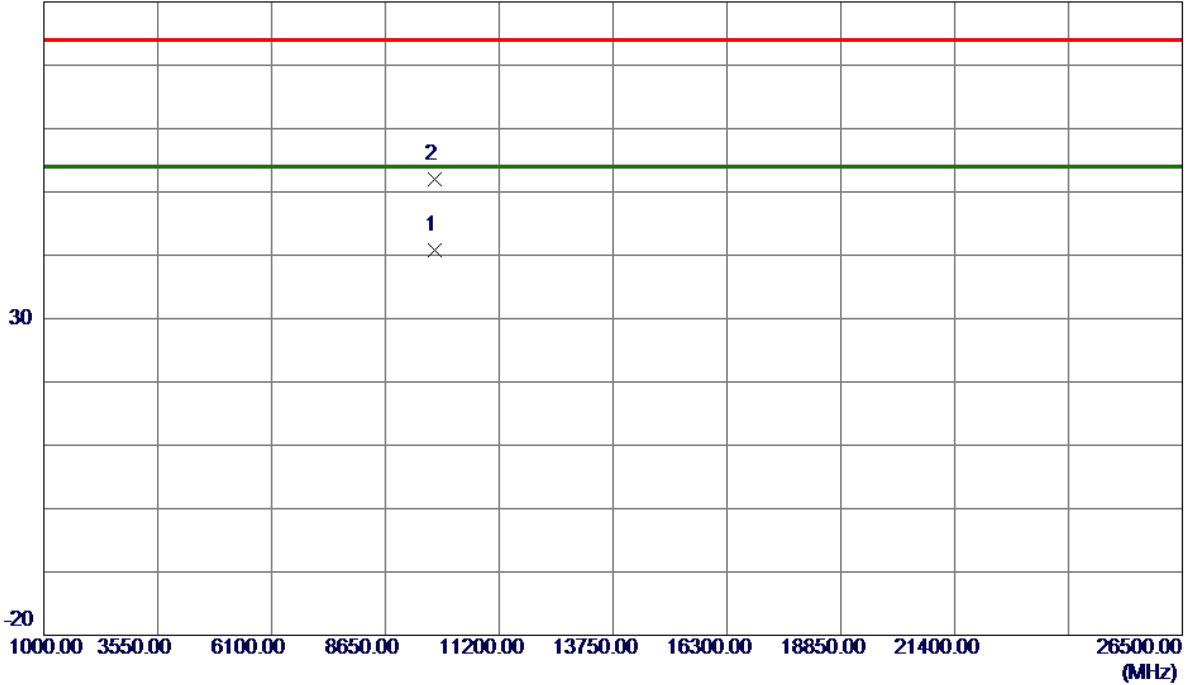
**REMARKS:**

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

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 *	9748.2850	27.89	12.97	40.86	54.00	-13.14	AVG	
2	9749.6400	38.97	12.97	51.94	74.00	-22.06	Peak	

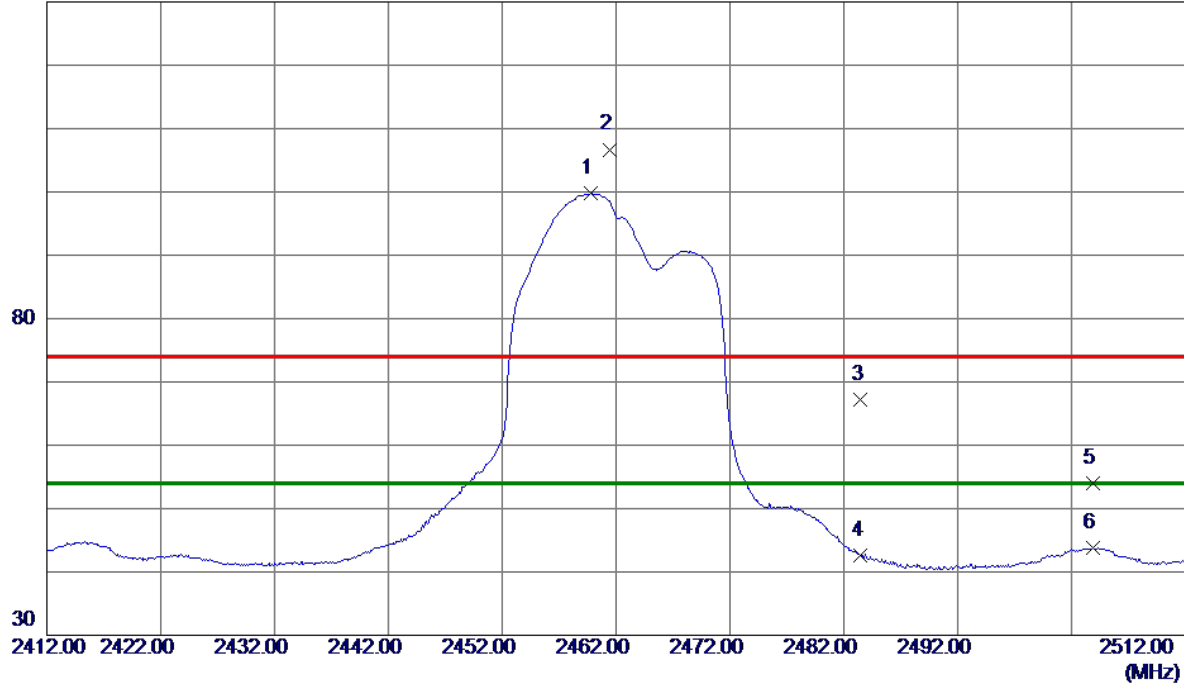
**REMARKS:**

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

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 *	2459.8000	91.38	8.36	99.74	54.00	45.74	AVG	No Limit
2	2461.4000	98.34	8.36	106.70	74.00	32.70	Peak	No Limit
3	2483.5000	58.79	8.39	67.18	74.00	-6.82	Peak	
4	2483.5000	34.20	8.39	42.59	54.00	-11.41	AVG	
5	2503.9000	45.57	8.42	53.99	74.00	-20.01	Peak	
6	2503.9000	35.35	8.42	43.77	54.00	-10.23	AVG	

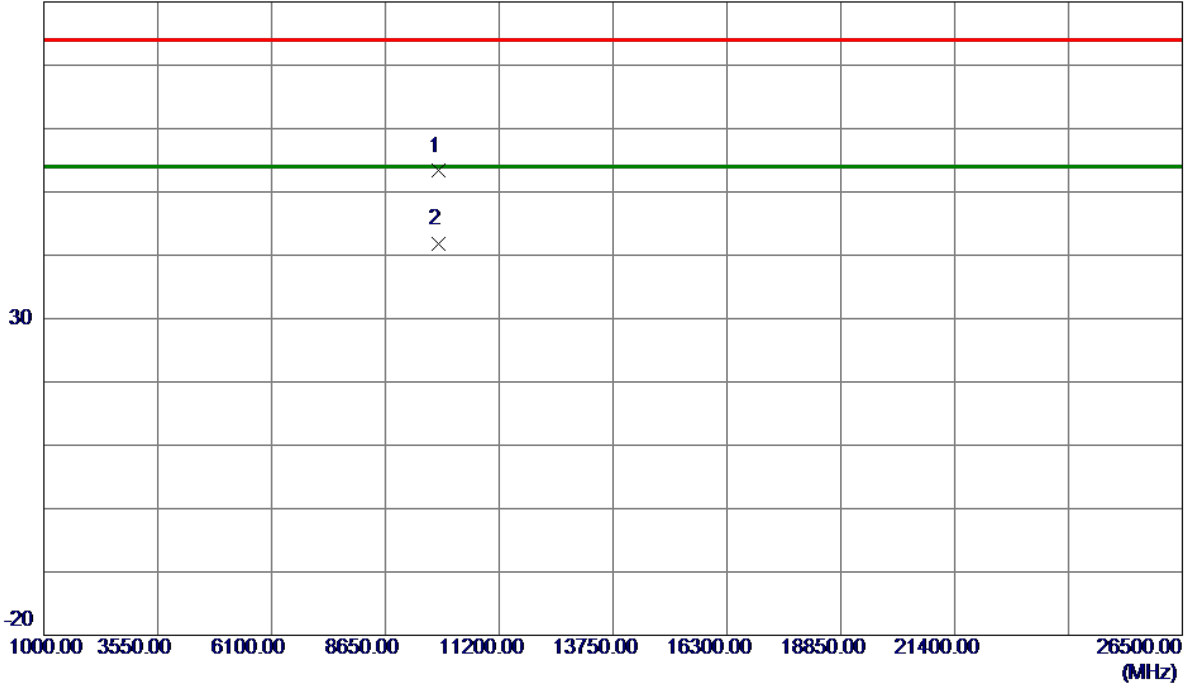
**REMARKS:**

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

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	9845.5400	40.25	13.05	53.30	74.00	-20.70	Peak	
2 *	9848.2100	28.74	13.05	41.79	54.00	-12.21	AVG	

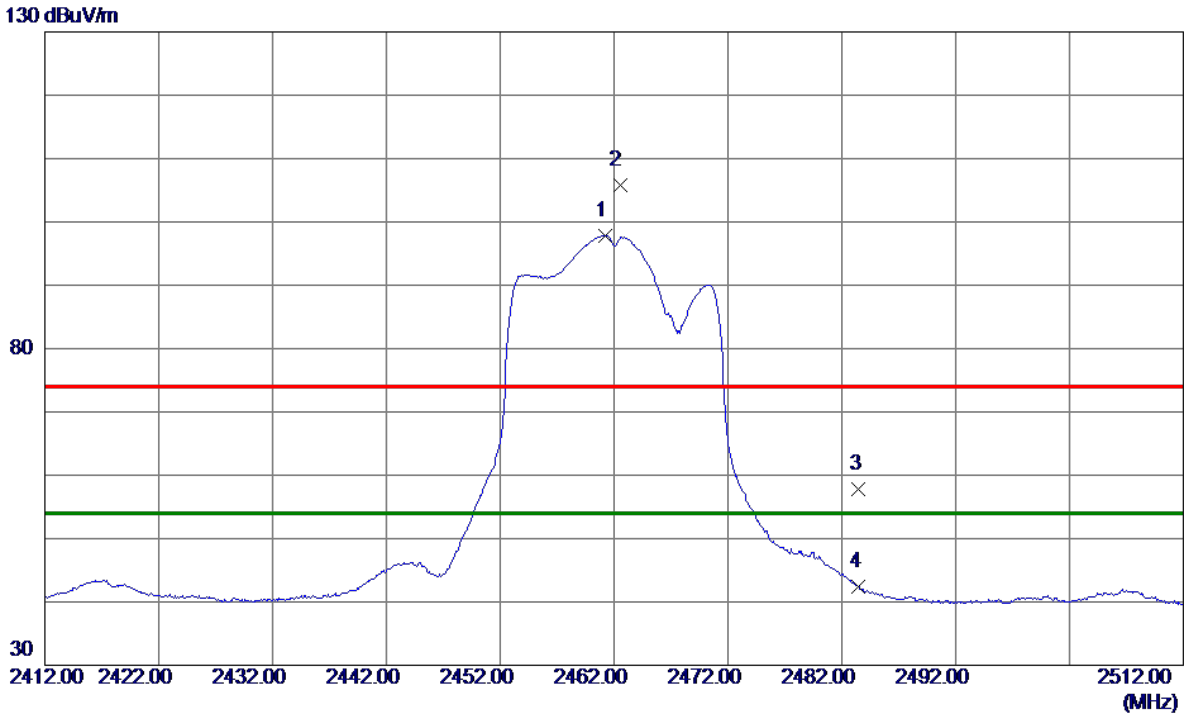
**REMARKS:**

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



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 *	2461.2000	89.49	8.36	97.85	54.00	43.85	AVG	No Limit
2	2462.5000	97.39	8.36	105.75	74.00	31.75	Peak	No Limit
3	2483.5000	49.50	8.39	57.89	74.00	-16.11	Peak	
4	2483.5000	33.93	8.39	42.32	54.00	-11.68	AVG	

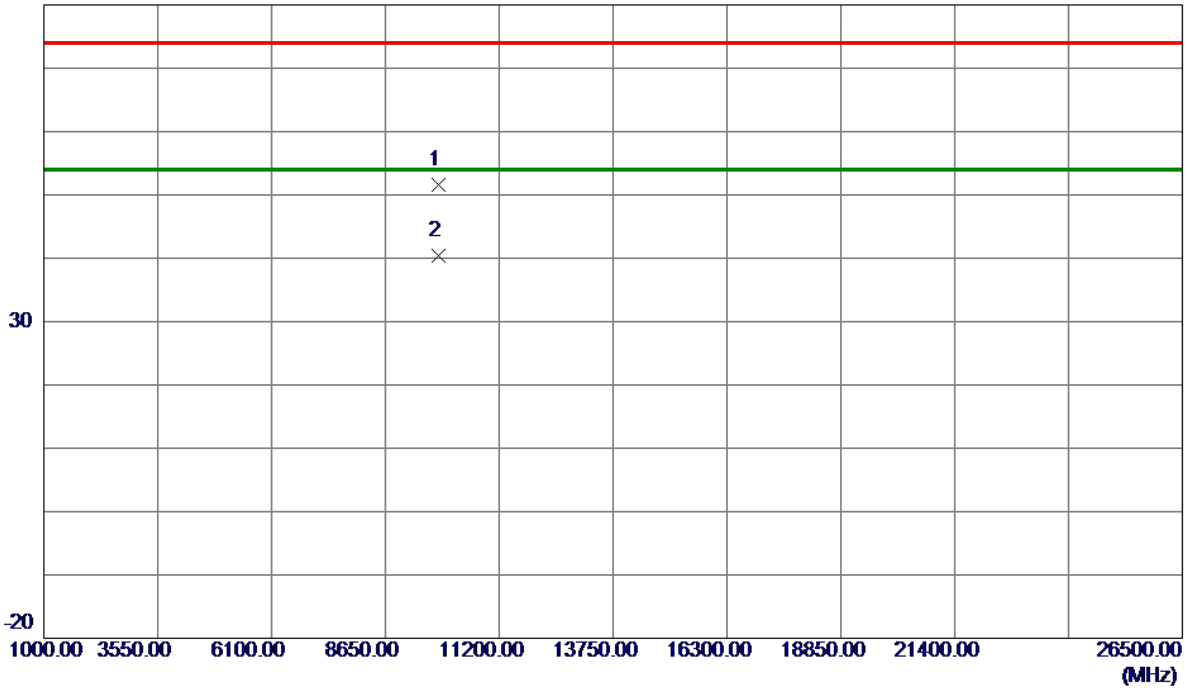
**REMARKS:**

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

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	9848.3150	38.48	13.05	51.53	74.00	-22.47	Peak	
2 *	9850.1200	27.29	13.05	40.34	54.00	-13.66	AVG	

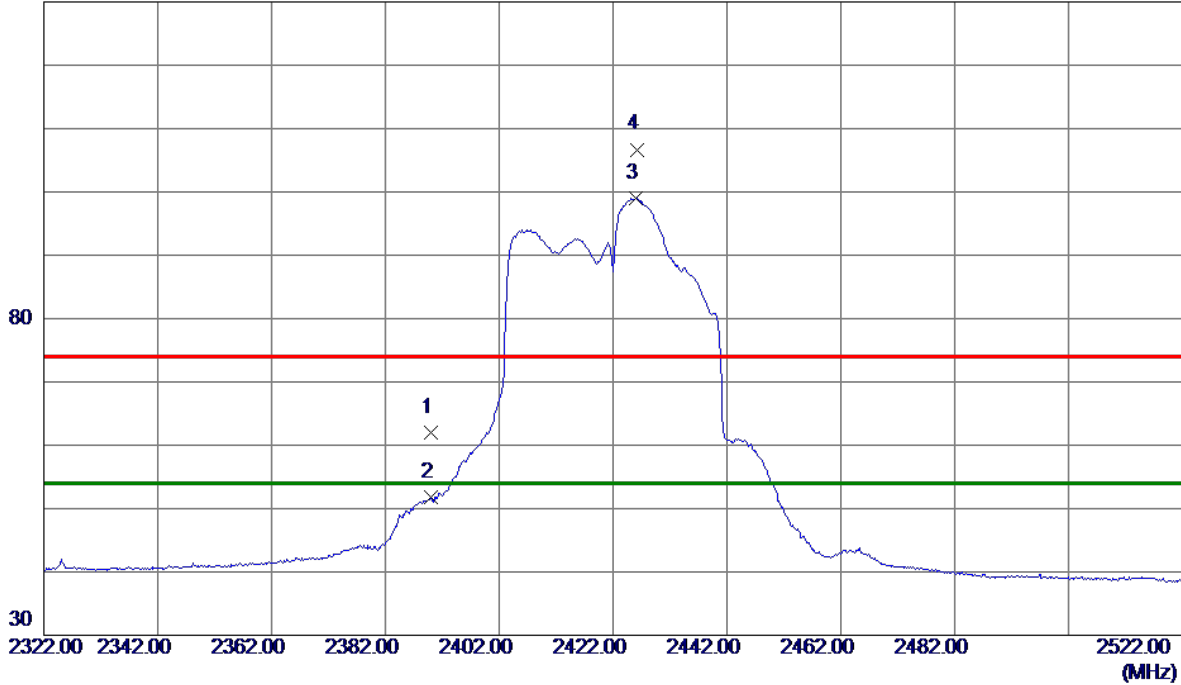
**REMARKS:**

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

Test Mode: TX N-40M Mode 2422 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	53.68	8.29	61.97	74.00	-12.03	Peak	
2	2390.0000	43.42	8.29	51.71	54.00	-2.29	AVG	
3 *	2426.0000	90.75	8.33	99.08	54.00	45.08	AVG	No Limit
4	2426.2000	98.37	8.33	106.70	74.00	32.70	Peak	No Limit

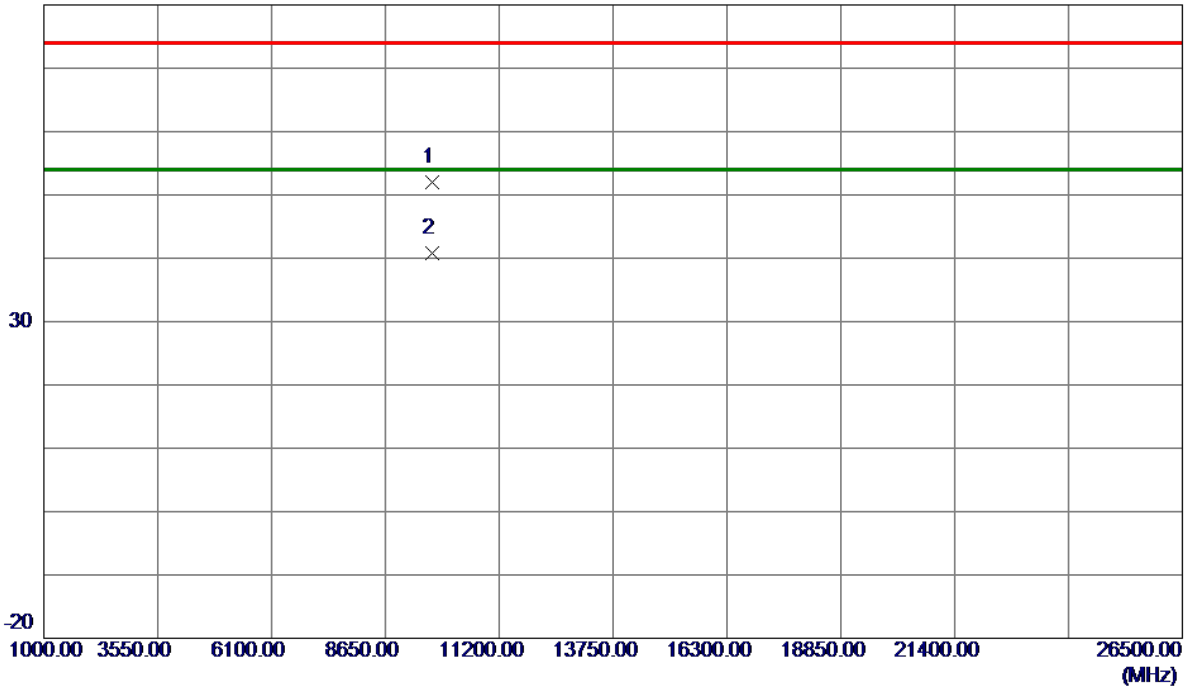
**REMARKS:**

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

Test Mode: TX N-40M Mode 2422 MHz

### Vertical

80 dBuV/m



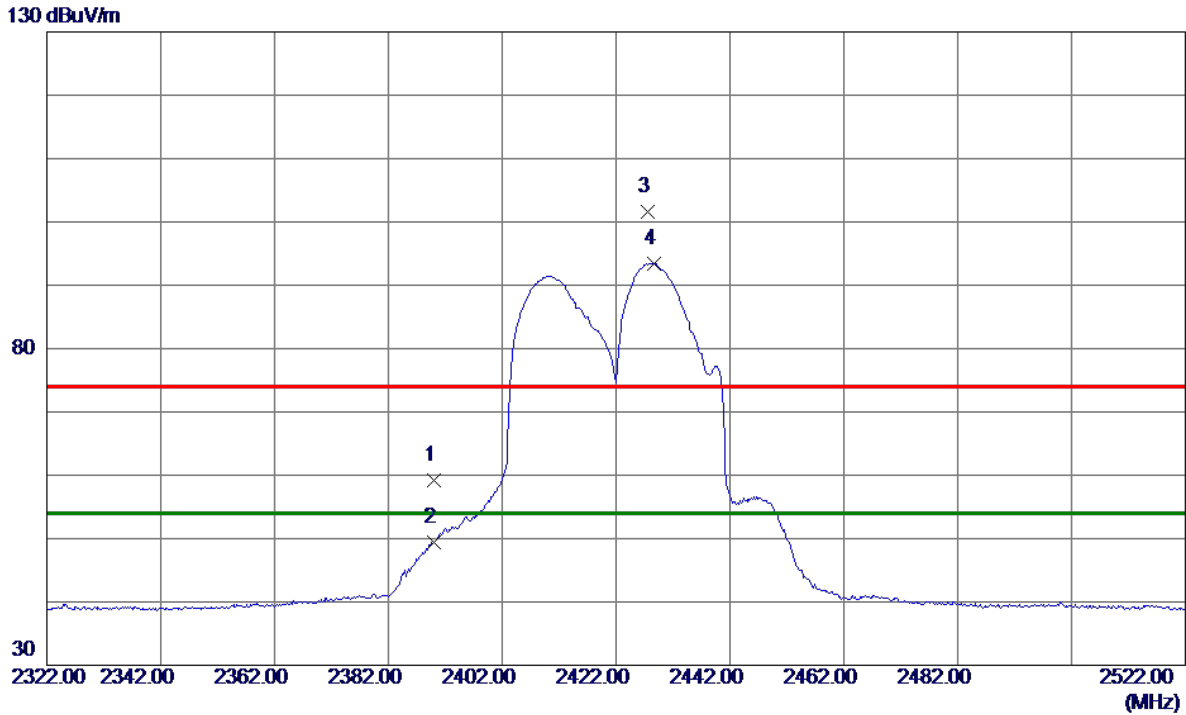
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	9685.8099	39.08	12.91	51.99	74.00	-22.01	Peak	
2 *	9689.7650	27.97	12.92	40.89	54.00	-13.11	AVG	

**REMARKS:**

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

Test Mode: TX N-40M Mode 2422 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	50.89	8.29	59.18	74.00	-14.82	Peak	
2	2390.0000	41.16	8.29	49.45	54.00	-4.55	AVG	
3	2427.6000	93.34	8.33	101.67	74.00	27.67	Peak	No Limit
4 *	2428.6000	85.14	8.33	93.47	54.00	39.47	AVG	No Limit

**REMARKS:**

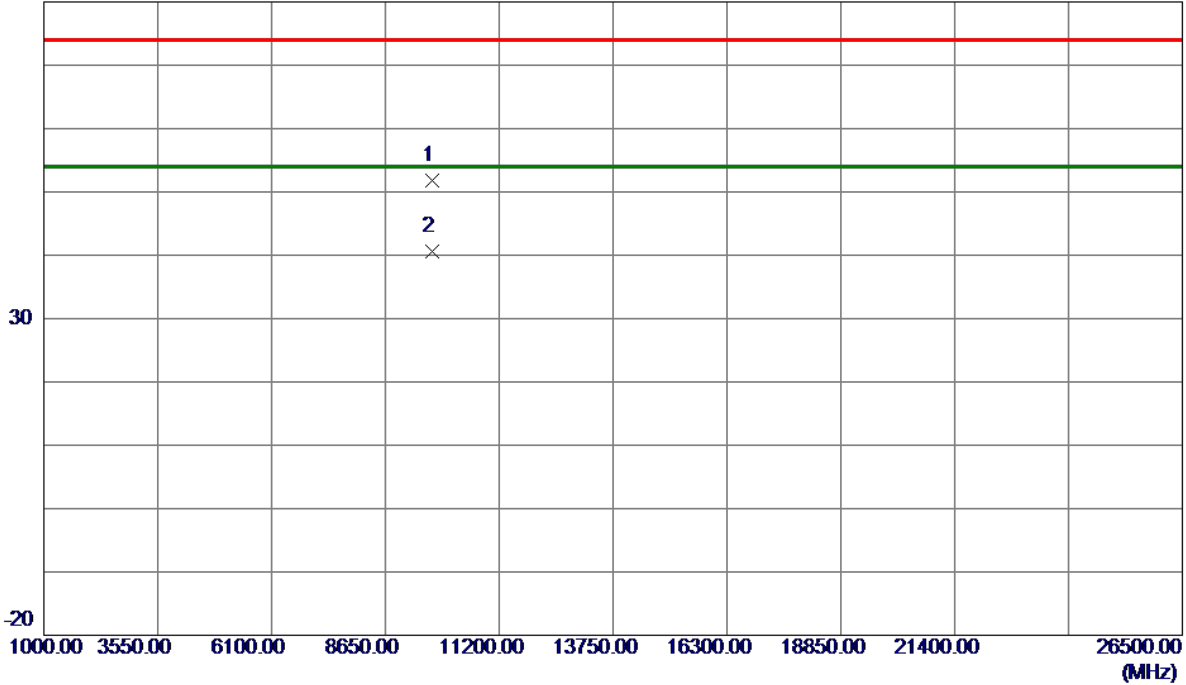
(1) Measurement Value = Reading Level + Correct Factor.

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

Test Mode: TX N-40M Mode 2422 MHz

### Horizontal

80 dBuV/m



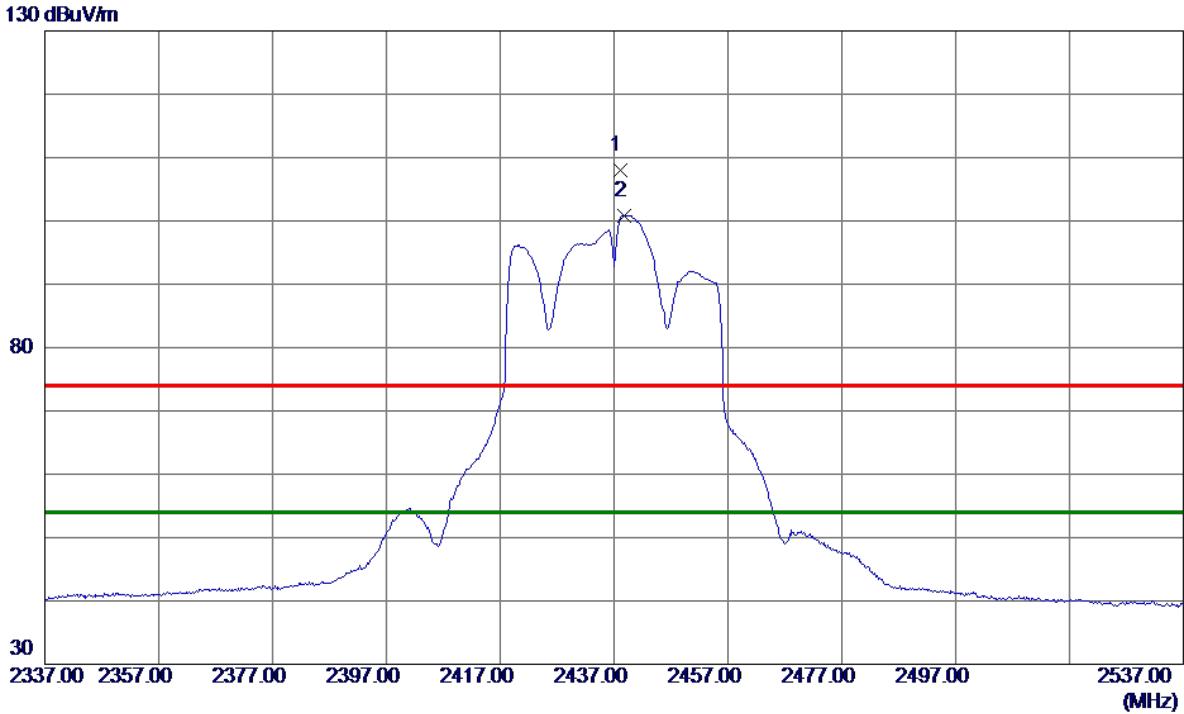
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	9685.6500	38.89	12.91	51.80	74.00	-22.20	Peak	
2 *	9688.1550	27.78	12.91	40.69	54.00	-13.31	AVG	

**REMARKS:**

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

Test Mode: TX N-40M Mode 2437 MHz

**Vertical**



No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2438.0000	99.56	8.34	107.90	74.00	33.90	Peak	No Limit
2 *	2438.8000	92.55	8.34	100.89	54.00	46.89	AVG	No Limit

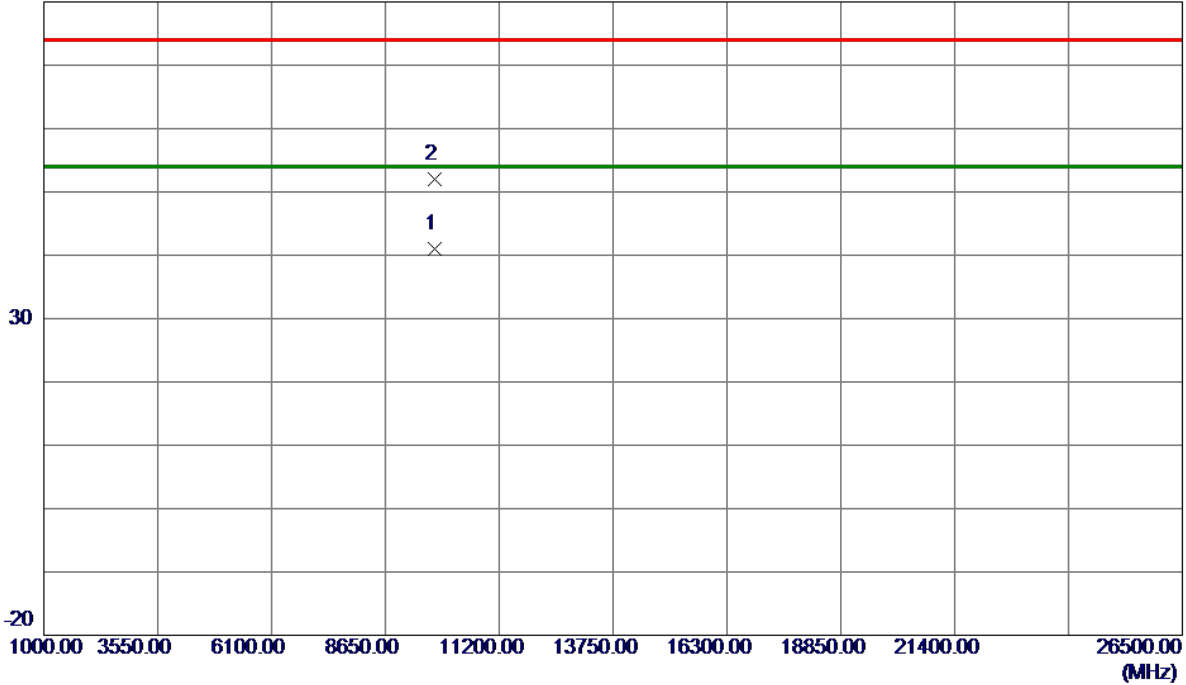
**REMARKS:**

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

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 *	9746.3600	27.99	12.96	40.95	54.00	-13.05	AVG	
2	9746.9600	39.07	12.96	52.03	74.00	-21.97	Peak	

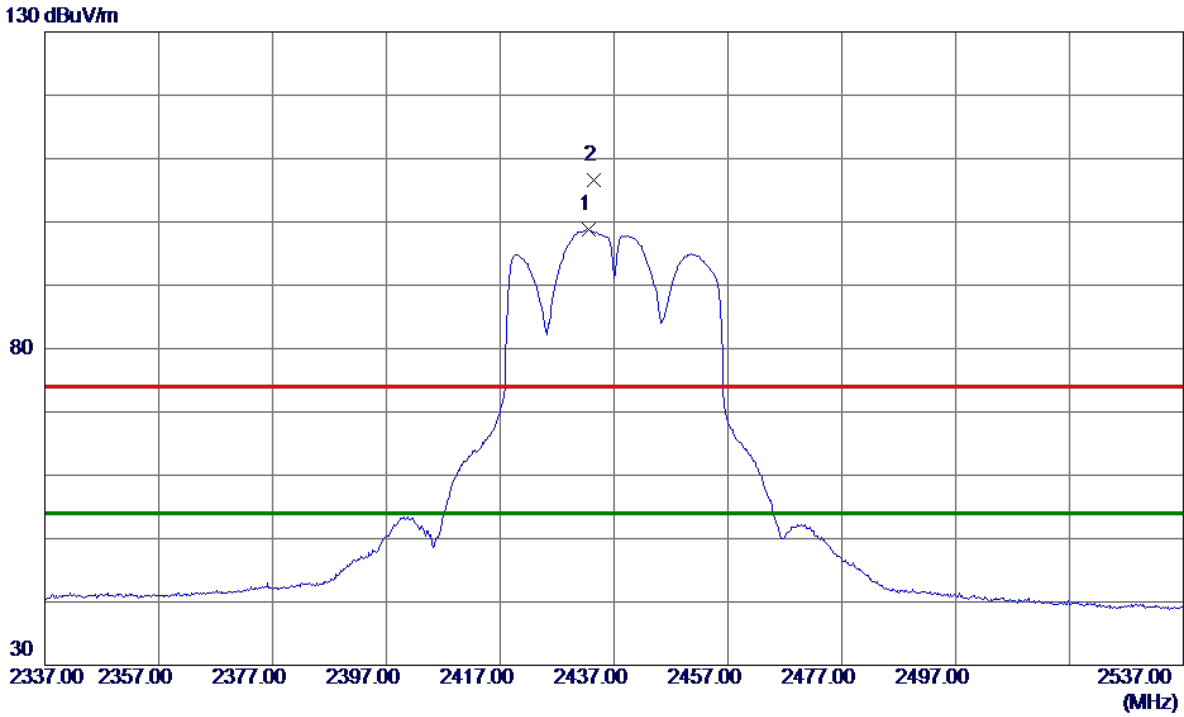
**REMARKS:**

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



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 *	2432.6000	90.38	8.33	98.71	54.00	44.71	AVG	No Limit
2	2433.4000	98.35	8.33	106.68	74.00	32.68	Peak	No Limit

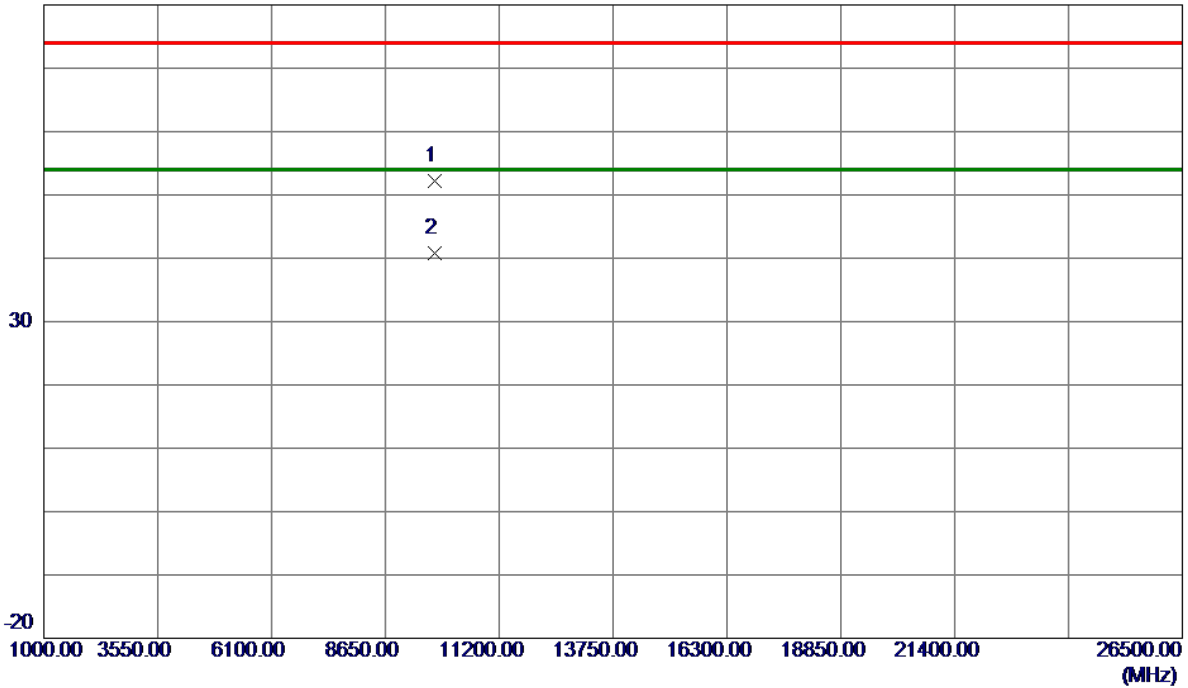
**REMARKS:**

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

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	9747.3650	39.14	12.97	52.11	74.00	-21.89	Peak	
2 *	9747.5550	27.75	12.97	40.72	54.00	-13.28	AVG	

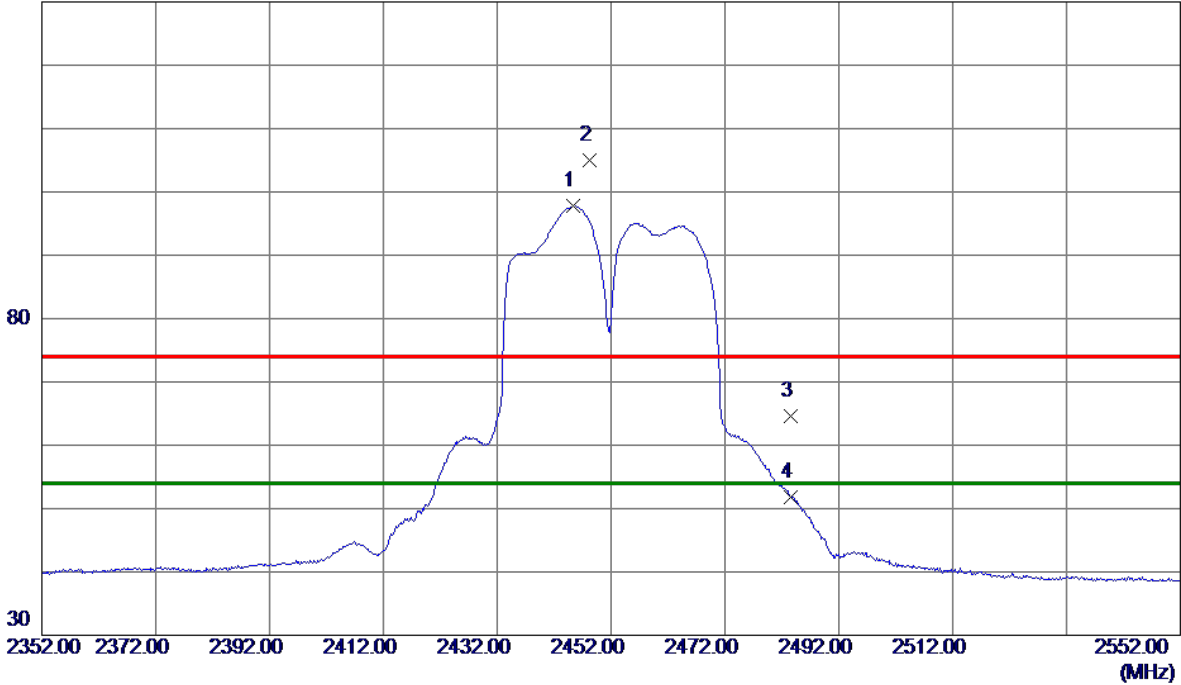
**REMARKS:**

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

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 *	2445.4000	89.36	8.35	97.71	54.00	43.71	AVG	No Limit
2	2448.2000	96.75	8.35	105.10	74.00	31.10	Peak	No Limit
3	2483.5000	56.24	8.39	64.63	74.00	-9.37	Peak	
4	2483.5000	43.41	8.39	51.80	54.00	-2.20	AVG	

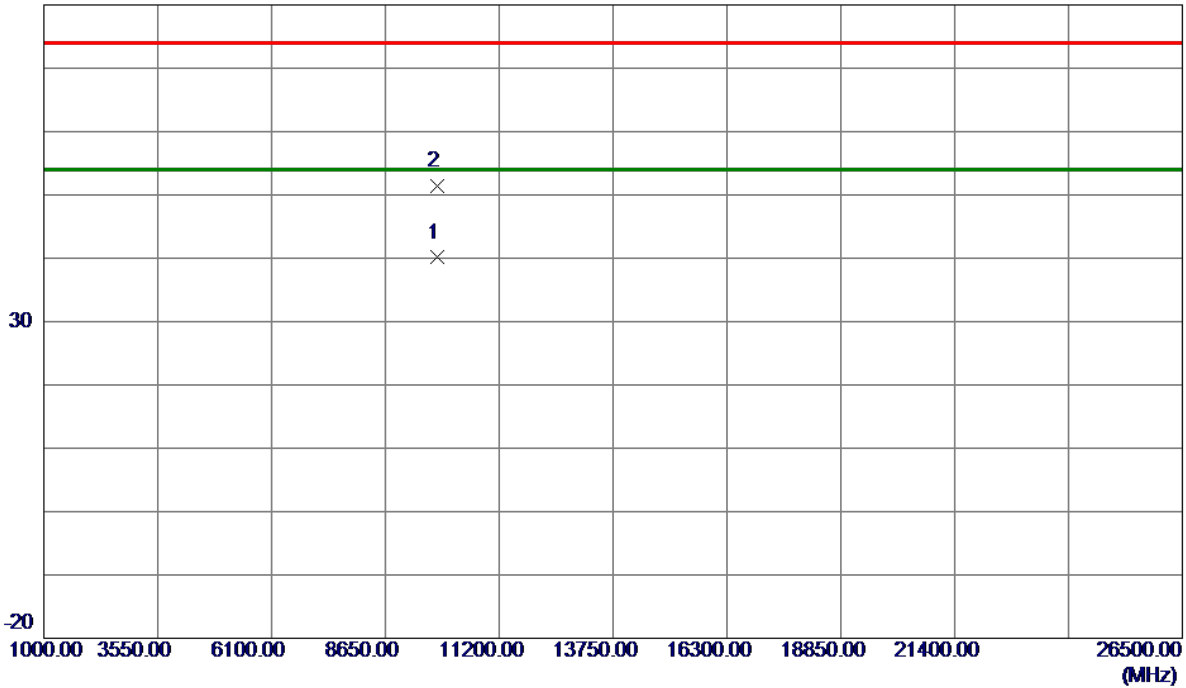
**REMARKS:**

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

Test Mode: TX N-40M Mode 2452 MHz

### Vertical

80 dBuV/m



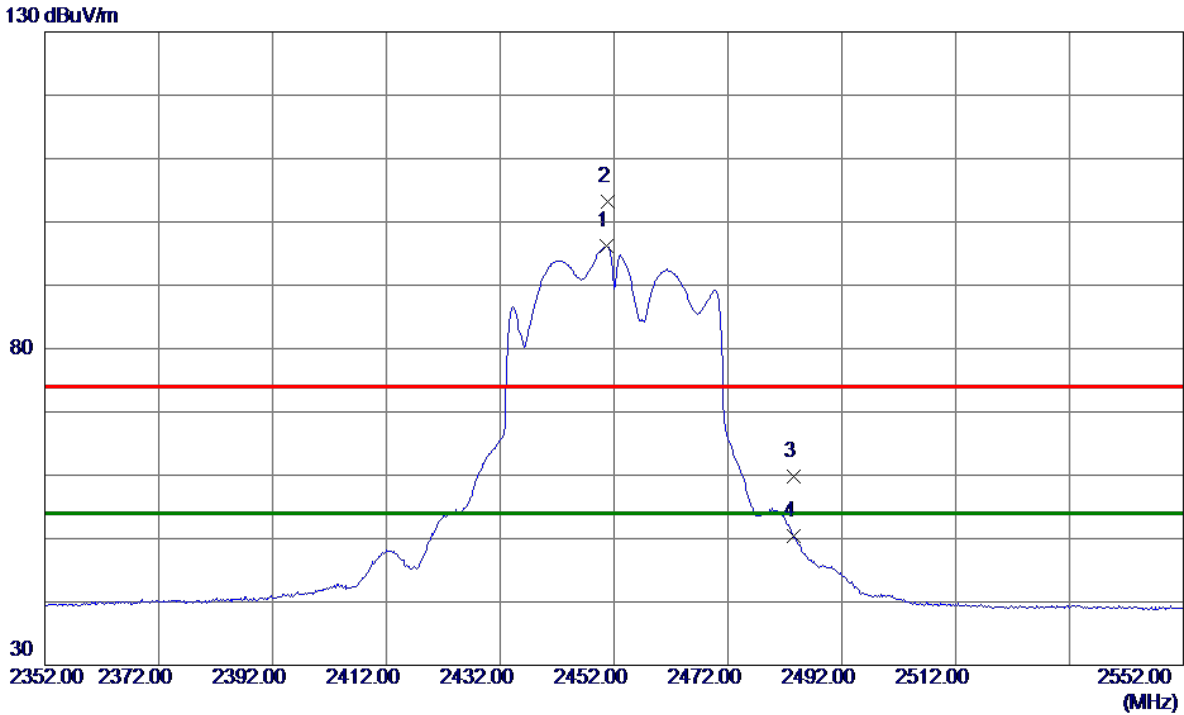
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1 *	9807.5250	27.08	13.02	40.10	54.00	-13.90	AVG	
2	9809.1449	38.39	13.02	51.41	74.00	-22.59	Peak	

**REMARKS:**

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

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 *	2450.6000	87.81	8.35	96.16	54.00	42.16	AVG	No Limit
2	2450.8000	94.78	8.35	103.13	74.00	29.13	Peak	No Limit
3	2483.5000	51.38	8.39	59.77	74.00	-14.23	Peak	
4	2483.5000	42.08	8.39	50.47	54.00	-3.53	AVG	

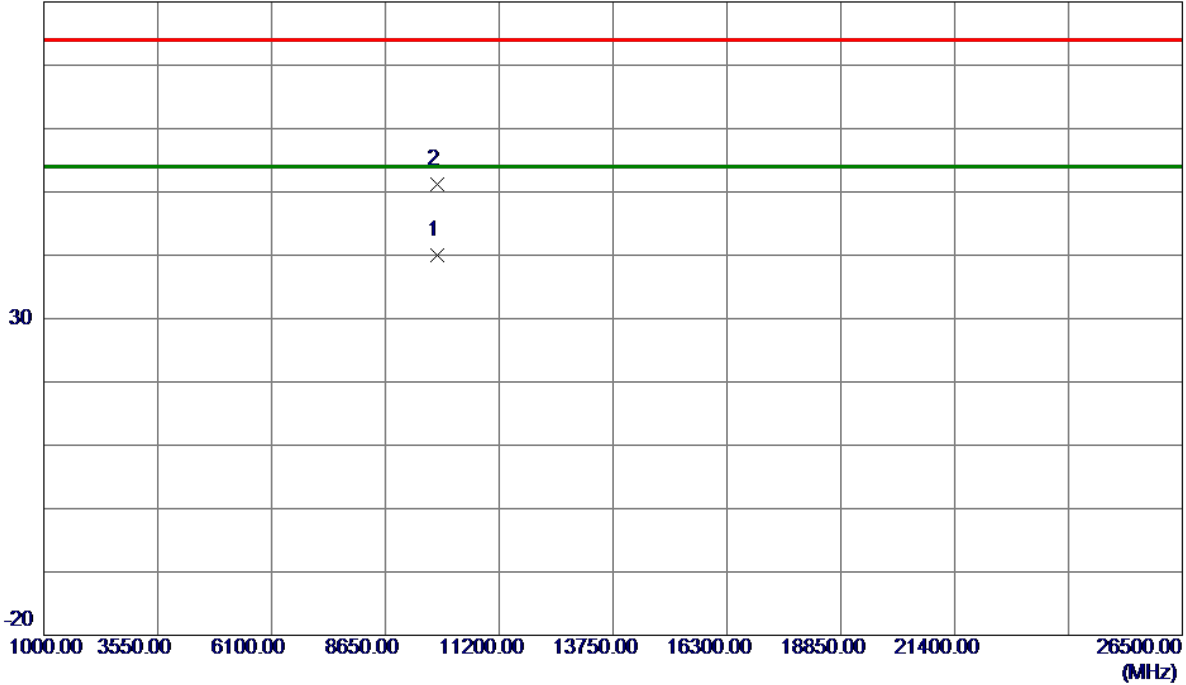
**REMARKS:**

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

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 *	9806.2950	27.06	13.02	40.08	54.00	-13.92	AVG	
2	9808.1000	38.12	13.02	51.14	74.00	-22.86	Peak	

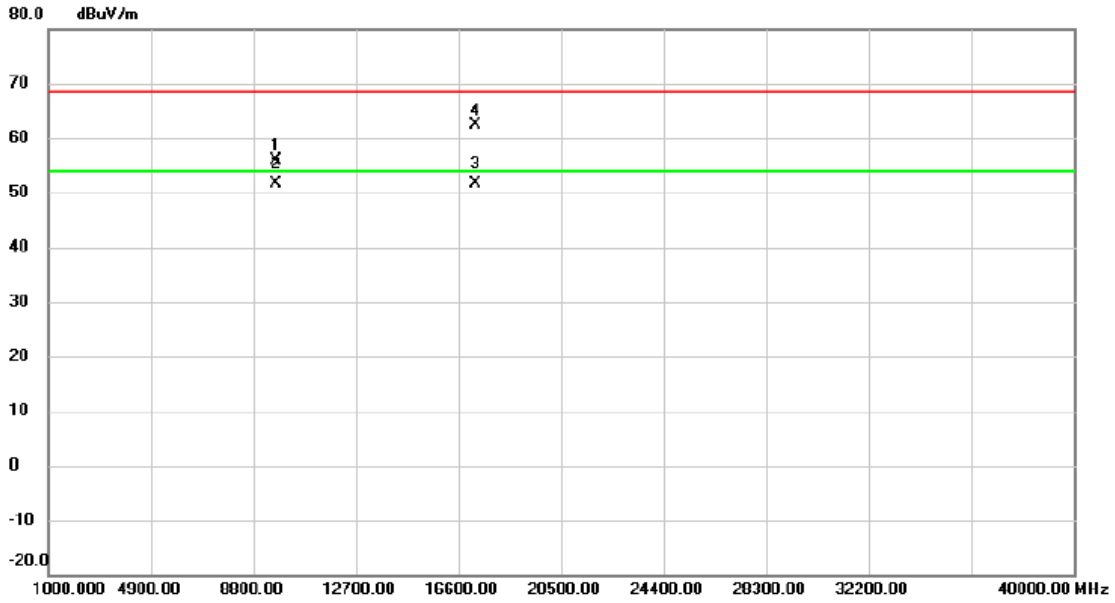
**REMARKS:**

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

The worst case of simultaneous transmission:

Test Mode: TX WLAN 2.4G B Mode 2412MHz + WLAN 5G A Mode 5745MHz

### Vertical



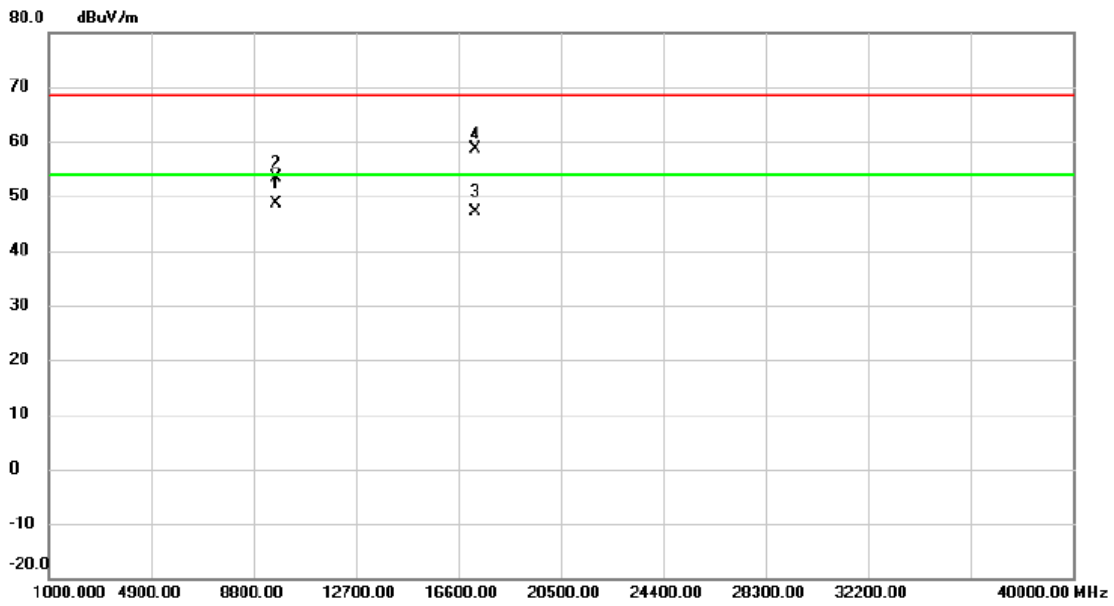
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		9647.931	43.11	12.88	55.99	68.30	-12.31	peak	
2		9648.093	38.66	12.88	51.54	54.00	-2.46	AVG	
3	*	17229.390	30.54	21.09	51.63	54.00	-2.37	AVG	
4		17230.330	41.40	21.09	62.49	68.30	-5.81	peak	

**REMARKS:**

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

Test Mode: TX WLAN 2.4G B Mode 2412MHz + WLAN 5G A Mode 5745MHz

### Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	9647.430	35.77	12.88	48.65	54.00	-5.35	AVG	
2		9648.057	40.54	12.88	53.42	68.30	-14.88	peak	
3		17236.190	25.92	21.11	47.03	54.00	-6.97	AVG	
4		17236.850	37.58	21.11	58.69	68.30	-9.61	peak	

**REMARKS:**

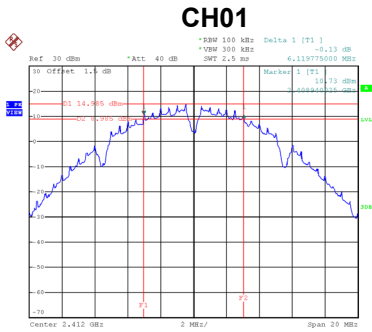
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



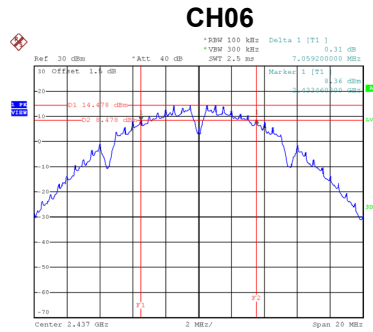
## APPENDIX E - BANDWIDTH

Test Mode	TX B Mode
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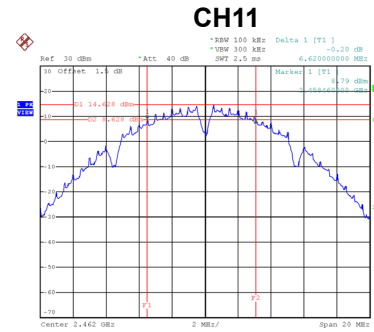
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	6.12	500	Complies
06	2437	7.06	500	Complies
11	2462	6.62	500	Complies



Date: 3.JUL.2020 09:38:19

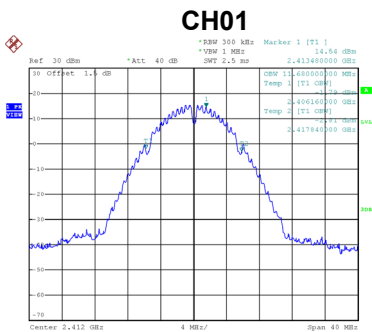


Date: 3.JUL.2020 09:39:51

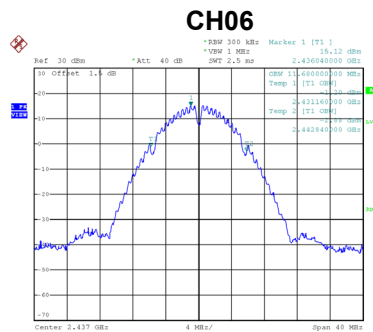


Date: 3.JUL.2020 09:41:24

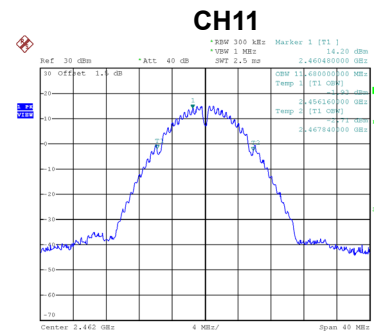
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	11.68	Complies
06	2437	11.68	Complies
11	2462	11.68	Complies



Date: 3.JUL.2020 09:38:26



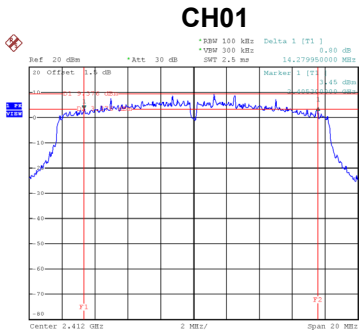
Date: 3.JUL.2020 09:39:58



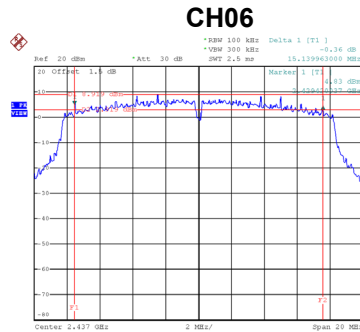
Date: 3.JUL.2020 09:41:30

Test Mode	TX G Mode
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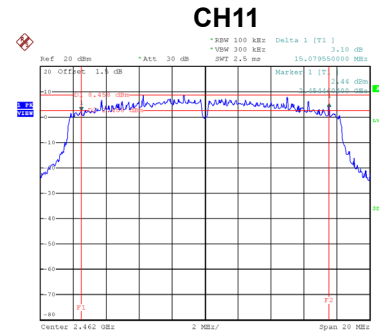
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	14.28	500	Complies
06	2437	15.14	500	Complies
11	2462	15.08	500	Complies



Date: 3.JUL.2020 09:43:12

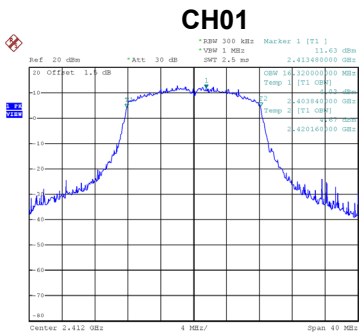


Date: 3.JUL.2020 09:44:35

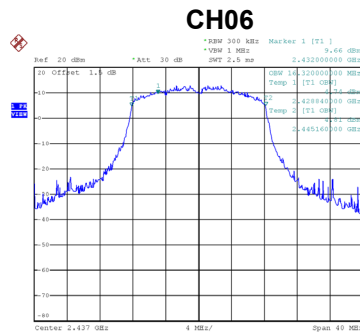


Date: 3.JUL.2020 09:45:51

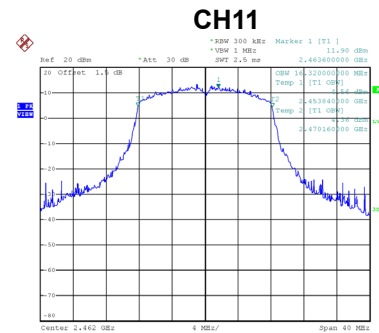
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	16.32	Complies
06	2437	16.32	Complies
11	2462	16.32	Complies



Date: 3.JUL.2020 09:43:19



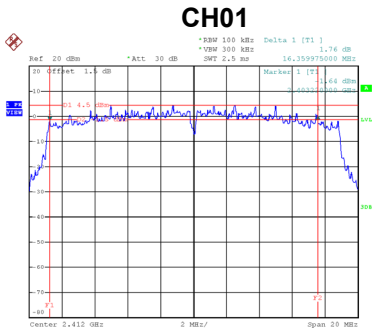
Date: 3.JUL.2020 09:44:41



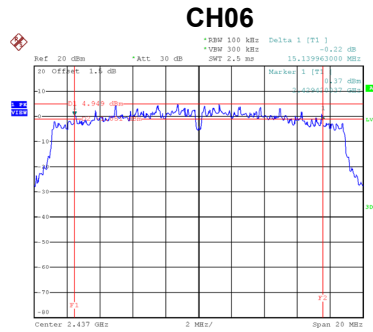
Date: 3.JUL.2020 09:45:58

Test Mode	TX N-20M Mode
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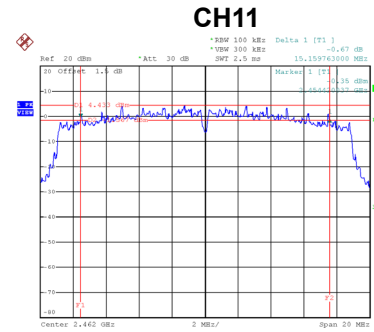
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
01	2412	16.36	500	Complies
06	2437	15.14	500	Complies
11	2462	15.16	500	Complies



Date: 3.JUL.2020 09:55:57

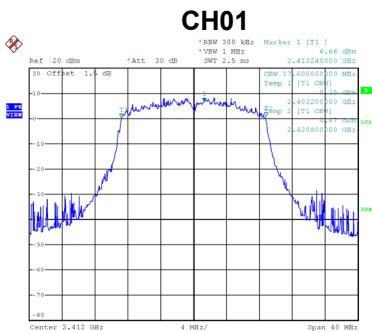


Date: 3.JUL.2020 09:57:21

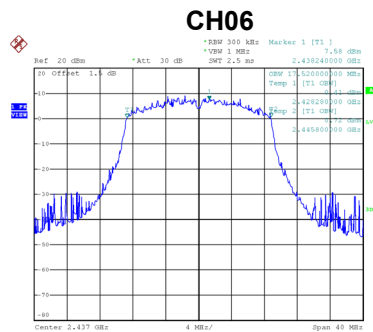


Date: 3.JUL.2020 09:58:48

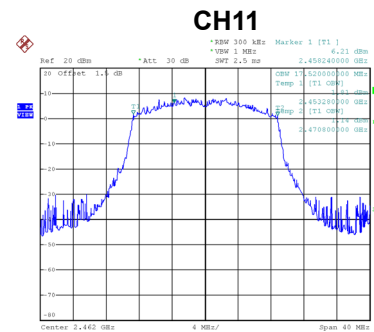
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
01	2412	17.60	Complies
06	2437	17.52	Complies
11	2462	17.52	Complies



Date: 3.JUL.2020 09:56:03



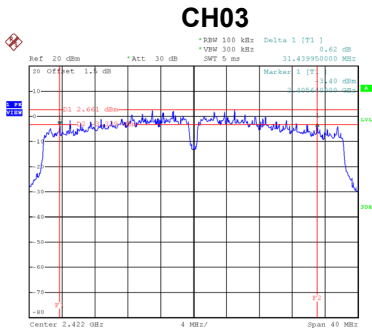
Date: 3.JUL.2020 09:57:27



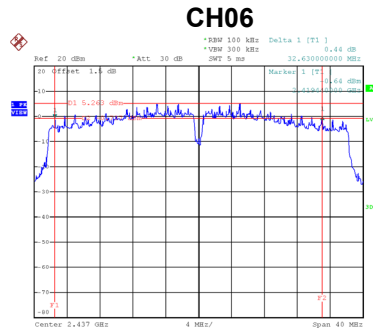
Date: 3.JUL.2020 09:58:55

Test Mode	TX N-40M Mode
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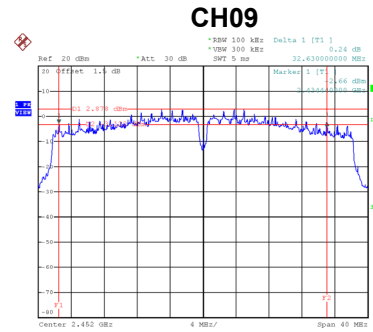
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	6 dB Bandwidth Min. Limit (kHz)	Result
03	2422	31.44	500	Complies
06	2437	32.63	500	Complies
09	2452	32.63	500	Complies



Date: 3.JUL.2020 10:02:23

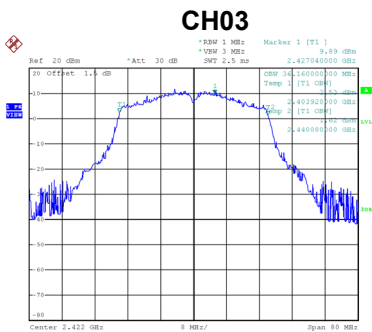


Date: 3.JUL.2020 10:06:04

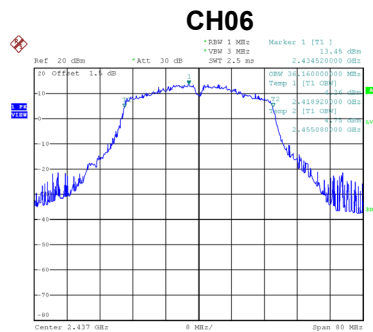


Date: 3.JUL.2020 10:07:27

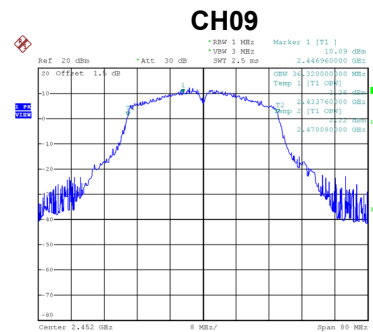
Channel	Frequency (MHz)	99 % Emission Bandwidth (MHz)	Result
03	2422	36.16	Complies
06	2437	36.16	Complies
09	2452	36.32	Complies



Date: 3.JUL.2020 10:02:30



Date: 3.JUL.2020 10:06:10



Date: 3.JUL.2020 10:07:33

## **APPENDIX F - MAXIMUM OUTPUT POWER**

### Non Beamforming

<b>Test Mode</b>	<b>TX B Mode</b>
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	26.28	30.00	1.0000	Complies
06	2437	26.41	30.00	1.0000	Complies
11	2462	26.09	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	23.53	30.00	1.0000	Complies
06	2437	23.38	30.00	1.0000	Complies
11	2462	23.22	30.00	1.0000	Complies

<b>Test Mode</b>	<b>TX G Mode</b>
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	29.84	30.00	1.0000	Complies
06	2437	29.93	30.00	1.0000	Complies
11	2462	29.51	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.64	30.00	1.0000	Complies
06	2437	20.53	30.00	1.0000	Complies
11	2462	20.48	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 1
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.77	30.00	1.0000	Complies
06	2437	21.22	30.00	1.0000	Complies
11	2462	20.52	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	12.48	30.00	1.0000	Complies
06	2437	12.04	30.00	1.0000	Complies
11	2462	11.75	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 2
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.64	30.00	1.0000	Complies
06	2437	21.72	30.00	1.0000	Complies
11	2462	21.29	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	12.19	30.00	1.0000	Complies
06	2437	12.33	30.00	1.0000	Complies
11	2462	11.96	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 3
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.35	30.00	1.0000	Complies
06	2437	20.84	30.00	1.0000	Complies
11	2462	21.38	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	12.24	30.00	1.0000	Complies
06	2437	11.67	30.00	1.0000	Complies
11	2462	12.14	30.00	1.0000	Complies



Test Mode	TX N-20M Mode_Total
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	26.36	26.52	0.4487	Complies
06	2437	26.05	26.52	0.4487	Complies
11	2462	25.85	26.52	0.4487	Complies

Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	17.08	26.52	0.4487	Complies
06	2437	16.79	26.52	0.4487	Complies
11	2462	16.73	26.52	0.4487	Complies

Test Mode	TX N-40M Mode_Ant. 1
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.28	30.00	1.0000	Complies
06	2437	20.85	30.00	1.0000	Complies
09	2452	21.34	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	13.37	30.00	1.0000	Complies
06	2437	12.79	30.00	1.0000	Complies
09	2452	13.13	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Ant. 2
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.49	30.00	1.0000	Complies
06	2437	21.79	30.00	1.0000	Complies
09	2452	21.13	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	13.26	30.00	1.0000	Complies
06	2437	13.97	30.00	1.0000	Complies
09	2452	13.14	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Ant. 3
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.16	30.00	1.0000	Complies
06	2437	21.12	30.00	1.0000	Complies
09	2452	21.14	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	13.04	30.00	1.0000	Complies
06	2437	12.99	30.00	1.0000	Complies
09	2452	12.99	30.00	1.0000	Complies

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

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	26.08	26.52	0.4487	Complies
06	2437	26.04	26.52	0.4487	Complies
09	2452	25.98	26.52	0.4487	Complies

Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	18.00	26.52	0.4487	Complies
06	2437	18.06	26.52	0.4487	Complies
09	2452	17.86	26.52	0.4487	Complies

### Beamforming

Test Mode	TX N-20M Mode_Ant. 1
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.34	30.00	1.0000	Complies
06	2437	20.86	30.00	1.0000	Complies
11	2462	20.01	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	12.01	30.00	1.0000	Complies
06	2437	11.63	30.00	1.0000	Complies
11	2462	11.25	30.00	1.0000	Complies

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

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	21.33	30.00	1.0000	Complies
06	2437	21.24	30.00	1.0000	Complies
11	2462	20.79	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	11.82	30.00	1.0000	Complies
06	2437	11.90	30.00	1.0000	Complies
11	2462	11.40	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Ant. 3
-----------	----------------------

Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	20.81	30.00	1.0000	Complies
06	2437	20.44	30.00	1.0000	Complies
11	2462	21.01	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	11.75	30.00	1.0000	Complies
06	2437	11.21	30.00	1.0000	Complies
11	2462	11.75	30.00	1.0000	Complies

Test Mode	TX N-20M Mode_Total
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	25.94	26.50	0.4467	Complies
06	2437	25.63	26.50	0.4467	Complies
11	2462	25.40	26.50	0.4467	Complies

Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
01	2412	16.63	26.50	0.4467	Complies
06	2437	16.36	26.50	0.4467	Complies
11	2462	16.24	26.50	0.4467	Complies

Test Mode	TX N-40M Mode_Ant. 1
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	20.73	30.00	1.0000	Complies
06	2437	20.43	30.00	1.0000	Complies
09	2452	21.01	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	12.88	30.00	1.0000	Complies
06	2437	12.31	30.00	1.0000	Complies
09	2452	12.78	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Ant. 2
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	21.04	30.00	1.0000	Complies
06	2437	21.35	30.00	1.0000	Complies
09	2452	20.56	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	12.82	30.00	1.0000	Complies
06	2437	13.51	30.00	1.0000	Complies
09	2452	12.61	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Ant. 3
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	20.73	30.00	1.0000	Complies
06	2437	20.60	30.00	1.0000	Complies
09	2452	20.63	30.00	1.0000	Complies

Channel	Frequency (MHz)	Average Output Power + Duty Factor (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	12.63	30.00	1.0000	Complies
06	2437	12.48	30.00	1.0000	Complies
09	2452	12.43	30.00	1.0000	Complies

Test Mode	TX N-40M Mode_Total
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Channel	Frequency (MHz)	Peak Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	25.61	26.50	0.4467	Complies
06	2437	25.58	26.50	0.4467	Complies
09	2452	25.51	26.50	0.4467	Complies

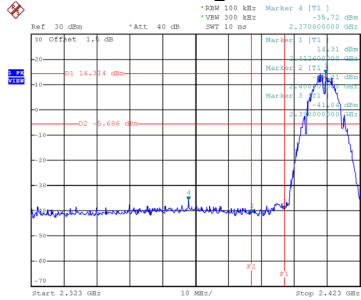
Channel	Frequency (MHz)	Average Output Power (dBm)	Max. Limit (dBm)	Max. Limit (W)	Result
03	2422	17.55	26.50	0.4467	Complies
06	2437	17.57	26.50	0.4467	Complies
09	2452	17.38	26.50	0.4467	Complies

## **APPENDIX G - CONDUCTED SPURIOUS EMISSIONS**



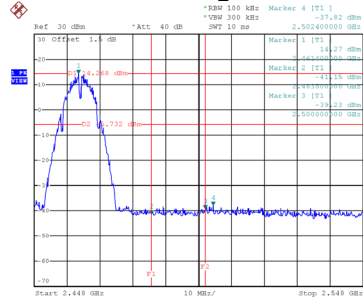
Test Mode TX B Mode

### Bandedge-CH01



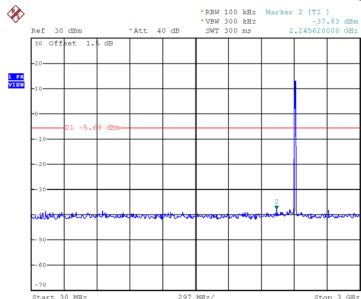
Date: 3.JUL.2020 09:38:33

### Bandedge-CH11

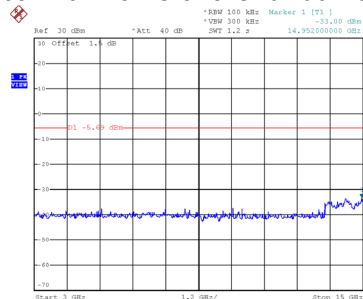


Date: 3.JUL.2020 09:41:37

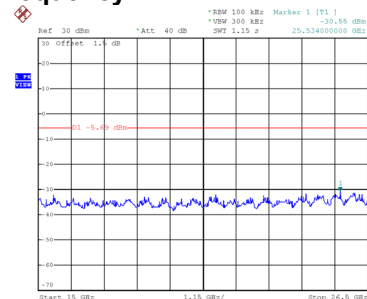
### CH01 – 10th Harmonic of the fundamental frequency



Date: 3.JUL.2020 09:38:46

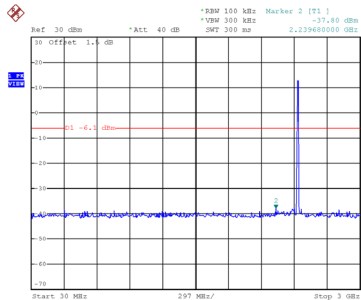


Date: 3.JUL.2020 09:38:53

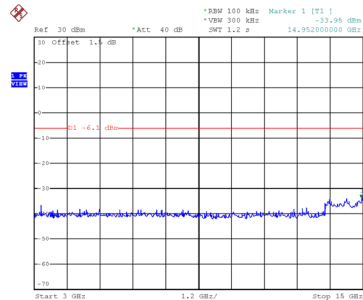


Date: 3.JUL.2020 09:39:00

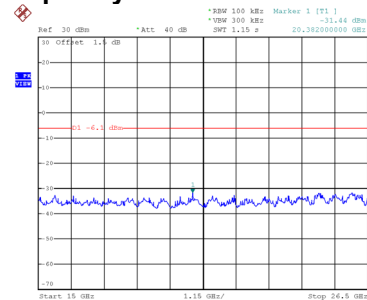
### CH06 – 10th Harmonic of the fundamental frequency



Date: 3.JUL.2020 09:40:18

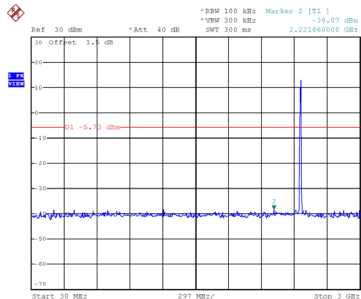


Date: 3.JUL.2020 09:40:25

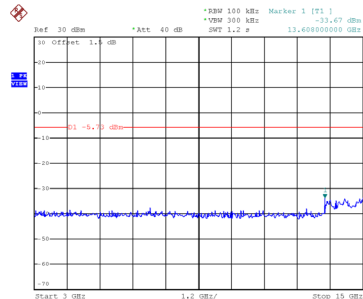


Date: 3.JUL.2020 09:40:31

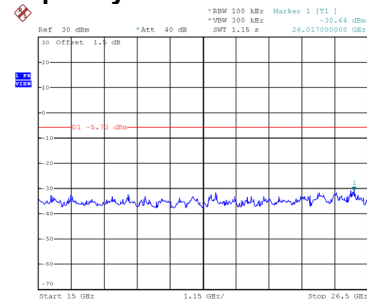
### CH11 – 10th Harmonic of the fundamental frequency



Date: 3.JUL.2020 09:41:50



Date: 3.JUL.2020 09:41:57



Date: 3.JUL.2020 09:42:04