# FCC Radio Test Report

## FCC ID: 2AUA9-RQZY001

**This report concerns: Original Grant**

| | | |
|---|---|---|
| **Project No.** | : | 1910C010 |
| **Equipment** | : | AC1200 DUAL-BAND SMART WIFI ROUTER |
| **Brand Name** | : | rock space, ROCK |
| **Test Model** | : | RSD0611 |
| **Series Model** | : | N/A |
| **Applicant** | : | Shenzhen Renqing Excellent Technology Co., Ltd. |
| **Address** | : | 104, No.15, Longfu Industrial Zone, Huarong Road, Tongsheng Community, Dalang Street, Longhua District, Shenzhen, China |
| **Manufacturer** | : | Shenzhen Renqing Excellent Technology Co., Ltd. |
| **Address** | : | 104, No.15, Longfu Industrial Zone, Huarong Road, Tongsheng Community, Dalang Street, Longhua District, Shenzhen, China |
| **Factory** | : | Shenzhen Renqing Excellent Technology Co., Ltd. |
| **Address** | : | 104, No.15, Longfu Industrial Zone, Huarong Road, Tongsheng Community, Dalang Street, Longhua District, Shenzhen, China |
| **Date of Receipt** | : | Oct. 10, 2019 |
| **Date of Test** | : | Oct. 11, 2019 ~ Oct. 25, 2019 |
| **Issued Date** | : | Nov. 11, 2019 |
| **Report Version** | : | R01 |
| **Test Sample** | : | Engineering Sample No.: DG201910091168 |
| **Standard(s)** | : | FCC Part15, Subpart C (15.247)<br>ANSI C63.10-2013<br>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.

Kai Xu

**Prepared by :** Kai Xu

Ethan Ma

**Approved by :** Ethan Ma

Certificate #5123.02

Add: No.3, Jinshagang 1st Road, Shixia, Dalang Town,Dongguan, Guangdong, China.
Tel: +86-769-8318-3000
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## Declaration

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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. | Nov. 01, 2019 |
| R01 | Changed the product name. | Nov. 11, 2019 |

# 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)<br>15.205(a)<br>15.209(a) | Radiated Emissions | APPENDIX B<br>APPENDIX C<br>APPENDIX D | PASS | ------ |
| 15.247(a)(2) | Bandwidth | APPENDIX E | PASS | ------ |
| 15.247(b)(3) | Maximum Output Power | APPENDIX F | PASS | ------ |
| 15.247(d) | Conducted Spurious Emissions | APPENDIX G | PASS | ------ |
| 15.247(e) | Power Spectral Density | APPENDIX H | PASS | ------ |
| 15.203 | Antenna Requirement | ------ | PASS | ------ |

Note:

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

(2) 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 | 150 kHz ~ 30 MHz | 2.32 |

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 | - | 3.80 |
| | | 26.5GHz ~ 40GHz | - | 4.30 |

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 | 53% | AC 120V/60Hz | Laughing Zhang |
| Radiated Emissions-9K-30MHz | 25°C | 60% | AC 120V/60Hz | Laughing Zhang |
| Radiated Emissions-30 MHz to 1GHz | 24°C | 68% | AC 120V/60Hz | Berton Luo |
| Radiated Emissions-Above 1000 MHz | 24°C | 68% | AC 120V/60Hz | Berton Luo |
| Bandwidth | 25°C | 58% | AC 120V/60Hz | Jonas Chen |
| Maximum output power | 25°C | 58% | AC 120V/60Hz | Jonas Chen |
| Conducted Spurious Emissions | 25°C | 58% | AC 120V/60Hz | Jonas Chen |
| Power Spectral Density | 25°C | 58% | AC 120V/60Hz | Jonas Chen |

# 2. GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF EUT

| | |
|---|---|
| Equipment | AC1200 DUAL-BAND SMART WIFI ROUTER |
| Brand Name | rock space, ROCK |
| Test Model | RSD0611 |
| Series Model | N/A |
| Model Difference(s) | N/A |
| Power Source | DC Voltage supplied from AC/DC adapter.<br>Model:GQ12-120100-CC |
| Power Rating | I/P: 100-240V~ 50/60Hz 0.4A Max<br>O/P: 12V ⎓ 1.0A |
| Operation Frequency | 2412 MHz ~ 2462 MHz |
| Modulation Type | IEEE 802.11b: DSSS<br>IEEE 802.11g: OFDM<br>IEEE 802.11n: OFDM |
| Bit Rate of Transmitter | IEEE 802.11b: 11/5.5/2/1 Mbps<br>IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps<br>IEEE 802.11n: up to 300 Mbps |
| Maximum Output Power Non Beamforming | IEEE 802.11b: 18.07 dBm (0.0641 W)<br>IEEE 802.11g: 16.28 dBm (0.0425 W)<br>IEEE 802.11n (HT20): 18.41 dBm (0.0693 W)<br>IEEE 802.11n (HT40): 18.96 dBm (0.0787 W) |
| Maximum Output Power Beamforming | IEEE 802.11n (HT20): 18.06 dBm (0.0640 W)<br>IEEE 802.11n (HT40): 18.45 dBm (0.0700 W) |

Note:

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

2. Channel List:

| CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n (HT20)<br>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. | Manufacturer | Model Name | Antenna Type | Connector | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | DONGGUAN SLEing INTEL-TECH.CO.,LTD | N/A | Dipole | N/A | 3.50 |
| 2 | DONGGUAN SLEing INTEL-TECH.CO.,LTD | N/A | Dipole | N/A | 3.50 |

Note:

(1) For Non Beamforming function, this EUT supports CDD, and all antennas have the same gain,Directional gain=$G_{ANT}$+Array Gain, where Array Gain is as follows:
For output power measurements, Array Gain=0 (NANT ≤ 4), so, Directional gain=3.50
For power spectral density measurements, Array Gain=10log($N_{ANT}$/$N_{SS}$) dB
that is Directional gain=3.50+10log(2/1)=6.51.
So, the power density limit is 8-6.51+6=7.49

(2) For Beamforming function, Beamforming gain: 3.0dB, so Directional gain=3.0+3.50=6.50. Then, the output Power limit is 30-6.50+6=29.50

4. The worst case for 1TX/2TX as follow:

For Non Beamforming:

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

For Beamforming:

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

## 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 N-40 MHz Mode Channel 09 |

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

| **AC power line conducted emissions test** | |
|---|---|
| Final Test Mode: | Description |
| Mode 5 | TX N-40 MHz Mode Channel 09 |

| **Radiated emissions test - Below 1GHz** | |
|---|---|
| Final Test Mode: | Description |
| Mode 5 | TX N-40 MHz Mode Channel 09 |

| **Radiated emissions test- Above 1GHz** | |
|---|---|
| Final Test Mode: | Description |
| Mode 1 | TX B Mode Channel 01/06/11 |
| Mode 2 | TX G Mode Channel 01/06/11 |
| Mode 3 | TX N-20 MHz Mode Channel 01/06/11 |
| Mode 4 | TX N-40 MHz Mode Channel 03/06/09 |

| **Output Power test for 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 for 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 |

| Others Conducted test for 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) 802.11b mode: CCK (1 Mbps)
802.11g mode: OFDM (6 Mbps)
802.11n HT20 mode : BPSK (6.5 Mbps)
802.11n HT40 mode : BPSK (13.5 Mbps)
For radiated emission tests, the highest output powers were set for final test.

(3) For radiated emission below 1 GHz test, the IEEE 802.11n40 Channel 09 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 Power were tested, the non Beamforming and beamforming are recorded in the report. The worst cases were Non Beamforming, and only the worst cases were documented for other test items.

## 2.3 PARAMETERS OF TEST SOFTWARE

**Non Beamforming**

| Test Software | MP_TEST.EXE | | |
|---|---|---|---|
| Frequency (MHz) | 2412 | 2437 | 2462 |
| IEEE 802.11b | 37 | 40 | 43 |
| IEEE 802.11g | 39 | 40 | 41 |
| IEEE 802.11n (HT20) | 39 | 40 | 41 |
| Frequency (MHz) | 2422 | 2437 | 2452 |
| IEEE 802.11n (HT40) | 39 | 41 | 42 |

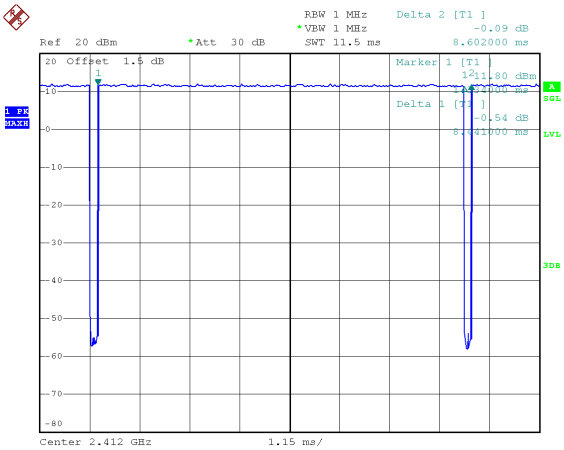
**Beamforming**

| Test Software | MP_TEST.EXE | | |
|---|---|---|---|
| Frequency (MHz) | 2412 | 2437 | 2462 |
| IEEE 802.11n (HT20) | 38 | 39 | 40 |
| Frequency (MHz) | 2422 | 2437 | 2452 |
| IEEE 802.11n (HT40) | 39 | 40 | 41 |

## 2.4 DUTY CYCLE

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

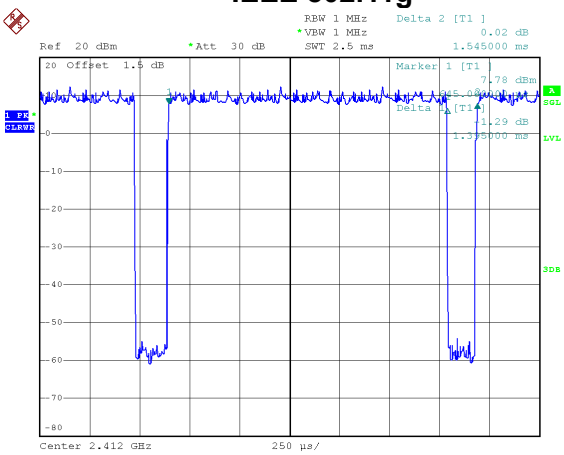
### IEEE 802.11b




Date: 16.OCT.2019 21:39:05

Duty cycle = 8.441 ms / 8.602 ms = 98.13%
Duty Factor = 10 log(1/Duty cycle) = 0.00

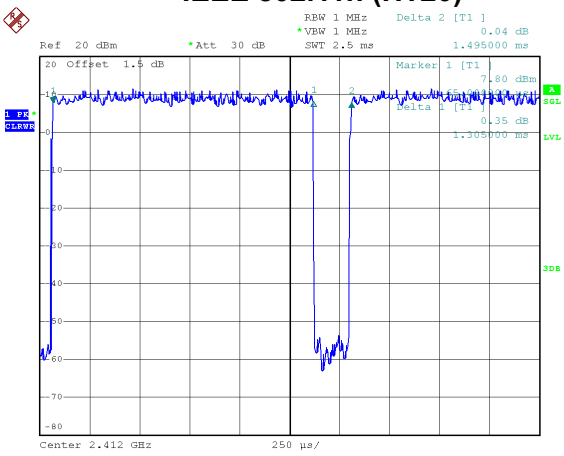
### IEEE 802.11g




Date: 16.OCT.2019 21:39:54

Duty cycle = 1.395 ms / 1.545 ms = 90.29%
Duty Factor = 10 log(1/Duty cycle) = 0.44

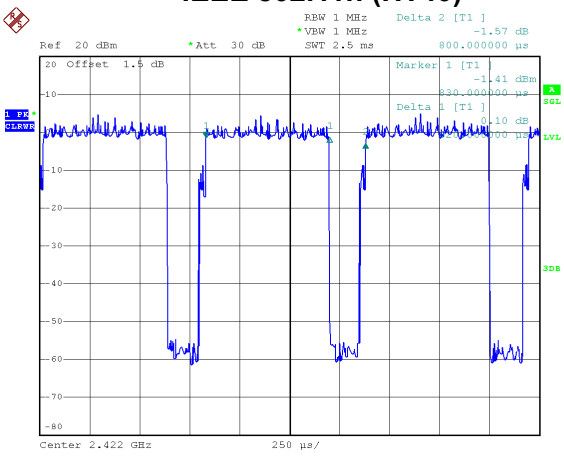
### IEEE 802.11n (HT20)




Date: 16.OCT.2019 21:42:32

Duty cycle = 1.305 ms / 1.495 ms = 87.29%
Duty Factor = 10 log(1/Duty cycle) = 0.59

### IEEE 802.11n (HT40)



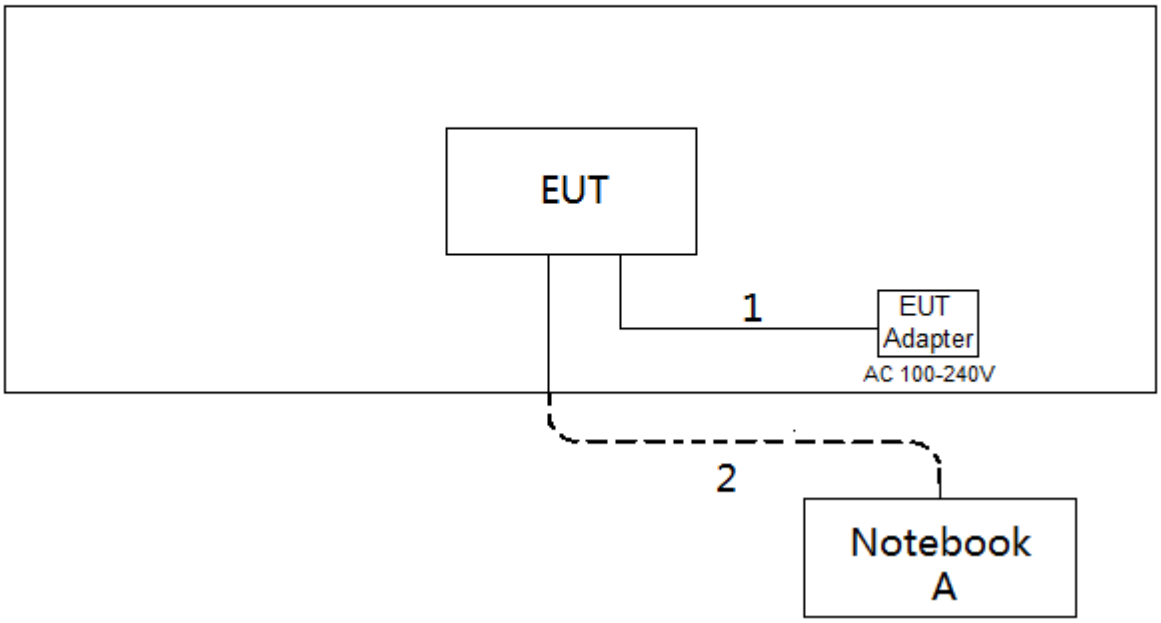

Date: 16.OCT.2019 21:48:06

Duty cycle = 0.620 ms / 0.800 ms = 77.50%
Duty Factor = 10 log(1/Duty cycle) = 1.11

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 | DC Cable | NO | NO | 1.2m |
| 2 | RJ45 Cable | NO | NO | 10m |

# 3. AC POWER LINE CONDUCTED EMISSIONS TEST

## 3.1 LIMIT

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

NOTE:
(1) The 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 |

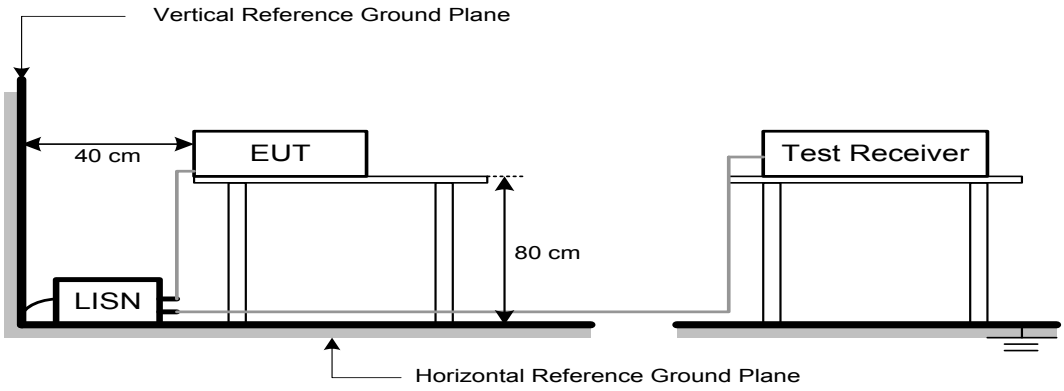
## 3.2 TEST PROCEDURE

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)

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

NOTE:
(1) The limit for radiated test was performed according to FCC PART 15C.
(2) The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).

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

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

## 4.2 TEST PROCEDURE

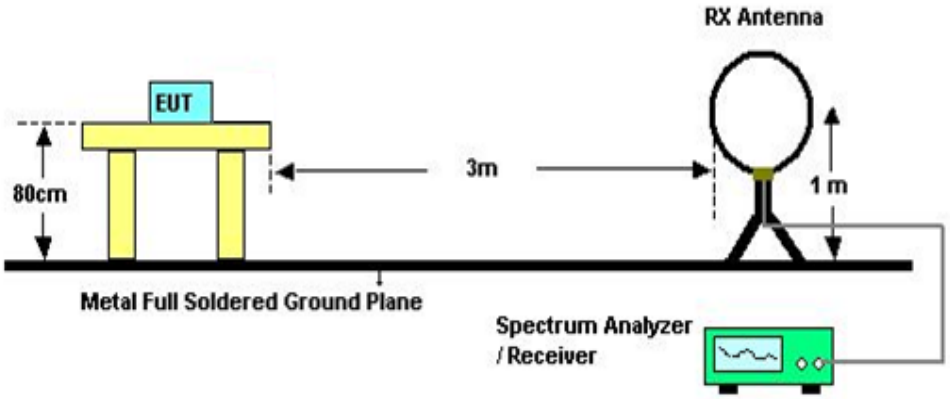
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
b. The measuring distance 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

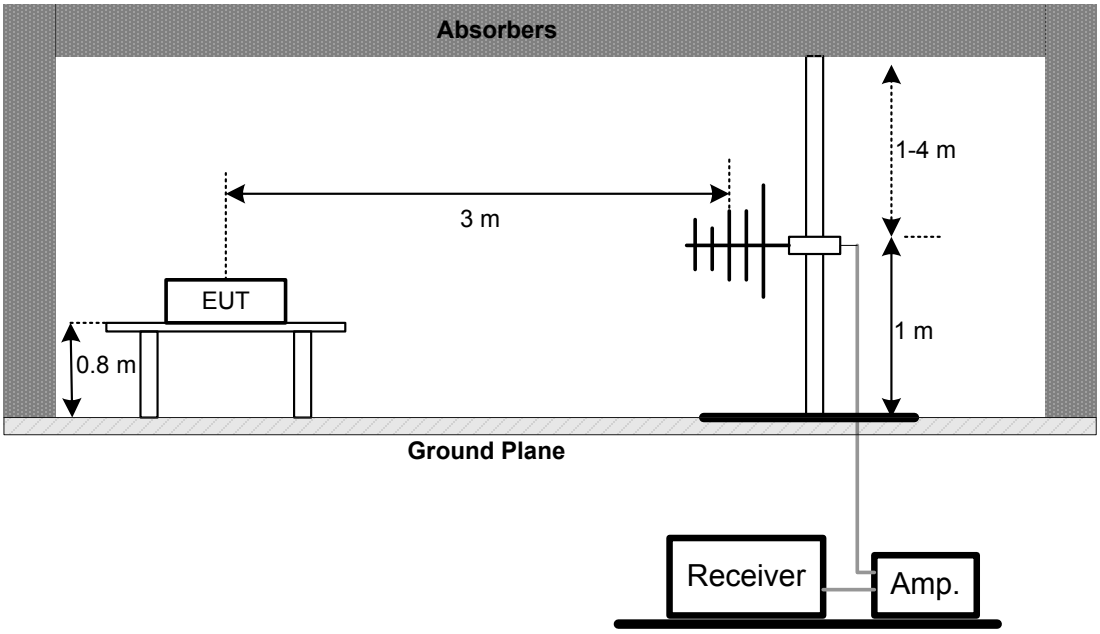
No deviation

## 4.4 TEST SETUP

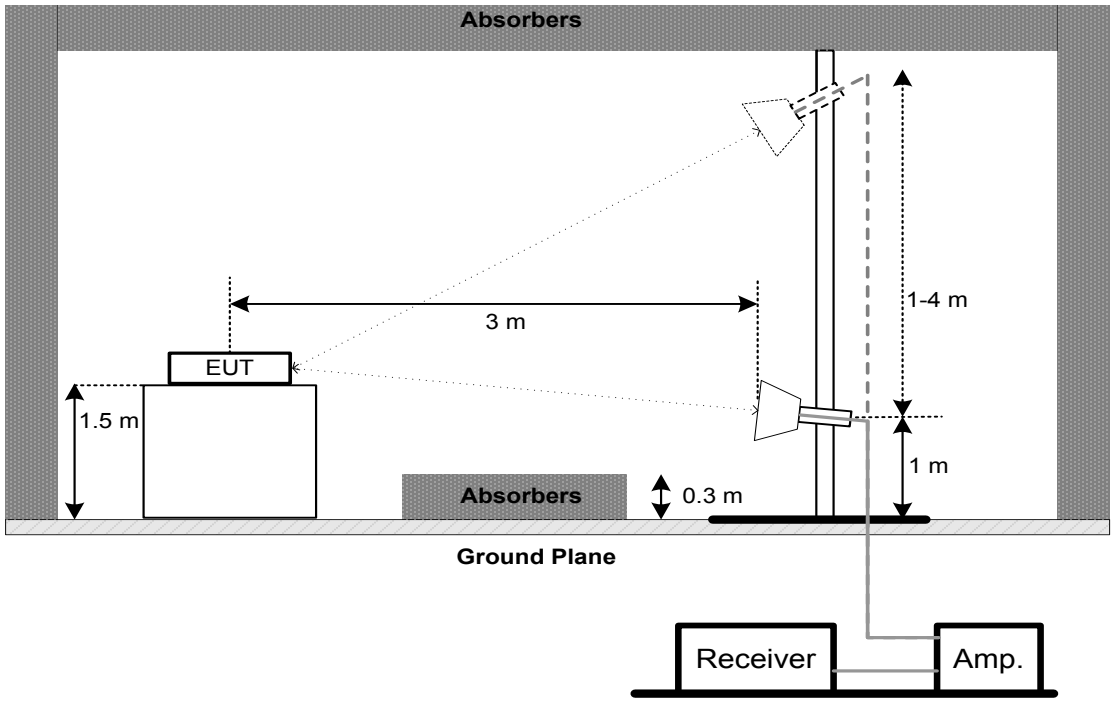
**9 kHz-30 MHz**




**30 MHz to 1 GHz**



**Above 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 (specific distance / 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 | - |

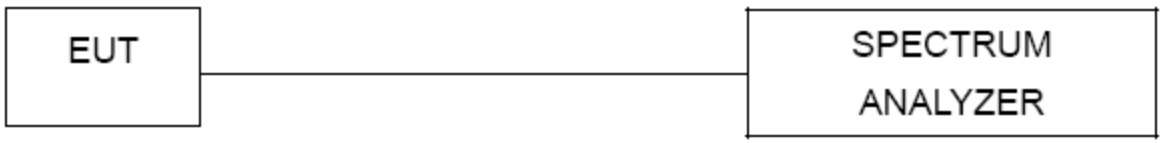
## 5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. For 6dB Bandwidth Spectrum setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms. For 99% OBW Spectrum Setting: For B,G,N20 mode: RBW= 300KHz, VBW=1MHz, For N40 mode: RBW= 1MHz, VBW=3MHz, 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 |

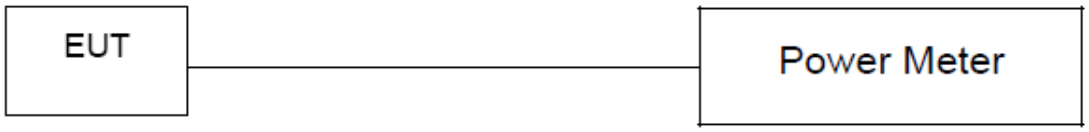
## 6.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
b. The maximum conducted output power was performed in accordance with method 11.9.1.3 of ANSI C63.10-2013 and FCC KDB 662911 D01 v02r01 Multiple Transmitter Output.

## 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<br>(in any 3 kHz) |

## 8.2 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=3 kHz, VBW=10 kHz, Sweep time = Auto.
c. 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 | Mar. 10, 2020 |
| 2 | LISN | EMCO | 3816/2 | 52765 | Mar. 10, 2020 |
| 3 | 50ohm Terminator | SHX | TF5-3 | 15041305 | Mar. 10, 2020 |
| 4 | TWO-LINE V-NETWORK | R&S | ENV216 | 101447 | May 19, 2020 |
| 5 | Measurement Software | Farad | EZ-EMC Ver.NB-03A1-01 | N/A | N/A |
| 6 | Cable | N/A | RG223 | 12m | Mar. 12, 2020 |

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

| Radiated Emissions - 30 MHz to 1 GHz | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Antenna | Schwarzbeck | VULB9160 | 9160-3232 | Mar. 09, 2020 |
| 2* | Amplifier | HP | 8447D | 2944A09673 | Aug. 11, 2021 |
| 3 | Receiver | Agilent | N9038A | MY52130039 | Aug. 03, 2020 |
| 4 | Cable | emci | LMR-400(30MHz-1GHz)(8m+5m) | N/A | May 24, 2020 |
| 5 | Controller | CT | SC100 | N/A | N/A |
| 6 | Controller | MF | MF-7802 | MF780208416 | N/A |
| 7 | Measurement Software | Farad | EZ-EMC Ver.NB-03A1-01 | N/A | N/A |

| Radiated Emissions - Above 1 GHz | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Double Ridged Guide Antenna | ETS | 3115 | 75789 | Mar. 09, 2020 |
| 2 | Broad-Band Horn Antenna | Schwarzbeck | BBHA 9170 | 9170319 | Jun. 23, 2020 |
| 3 | Amplifier | Agilent | 8449B | 3008A02333 | Mar. 10, 2020 |
| 4 | Microwave Preamplifier With Adaptor | EMC INSTRUMENT | EMC2654045 | 980039 & HA01 | Mar. 10, 2020 |
| 5 | Receiver | Agilent | N9038A | MY52130039 | Aug. 03, 2020 |
| 6 | Controller | CT | SC100 | N/A | N/A |
| 7 | Controller | MF | MF-7802 | MF780208416 | N/A |
| 8 | Cable | mitron | B10-01-01-12M | 18072744 | Jun. 29, 2020 |
| 9 | Measurement Software | Farad | EZ-EMC Ver.NB-03A1-01 | N/A | N/A |

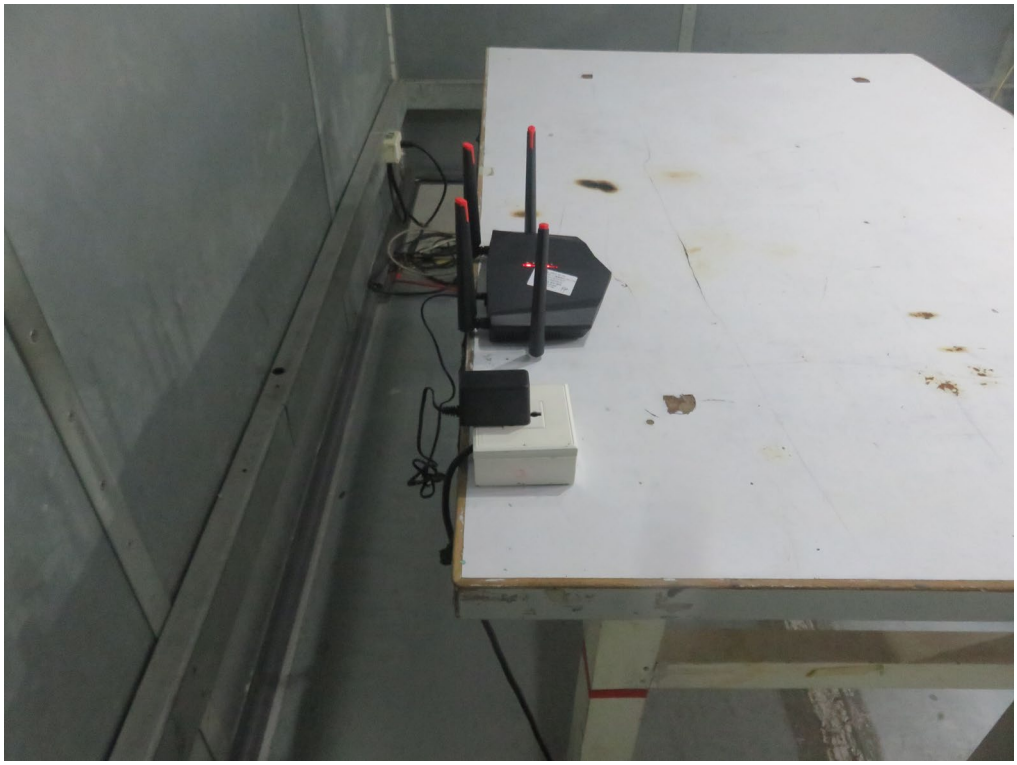
| Bandwidth & Antenna Conducted Spurious Emissions & Power Spectral Density | | | | | |
|---|---|---|---|---|---|
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
| 1 | Spectrum Analyzer | R&S | FSP40 | 100185 | Aug. 03, 2020 |

| 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.

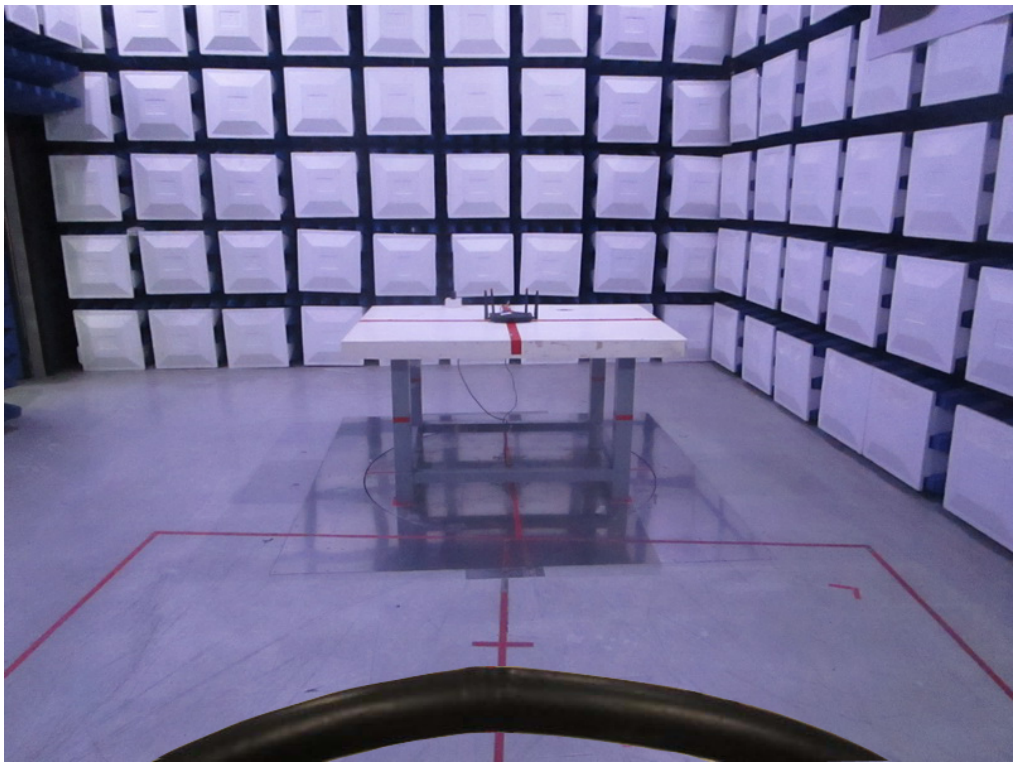
## 10. EUT TEST PHOTO

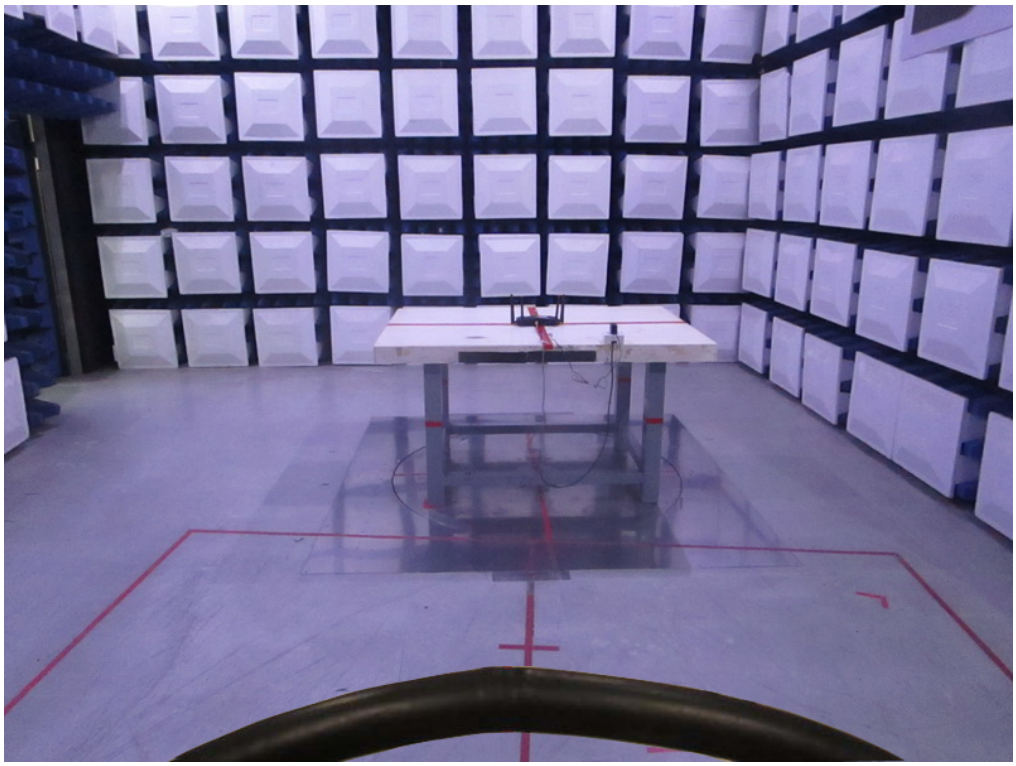
**AC Power Line Conducted Emissions Test Photos**



## Radiated Emissions Test Photos

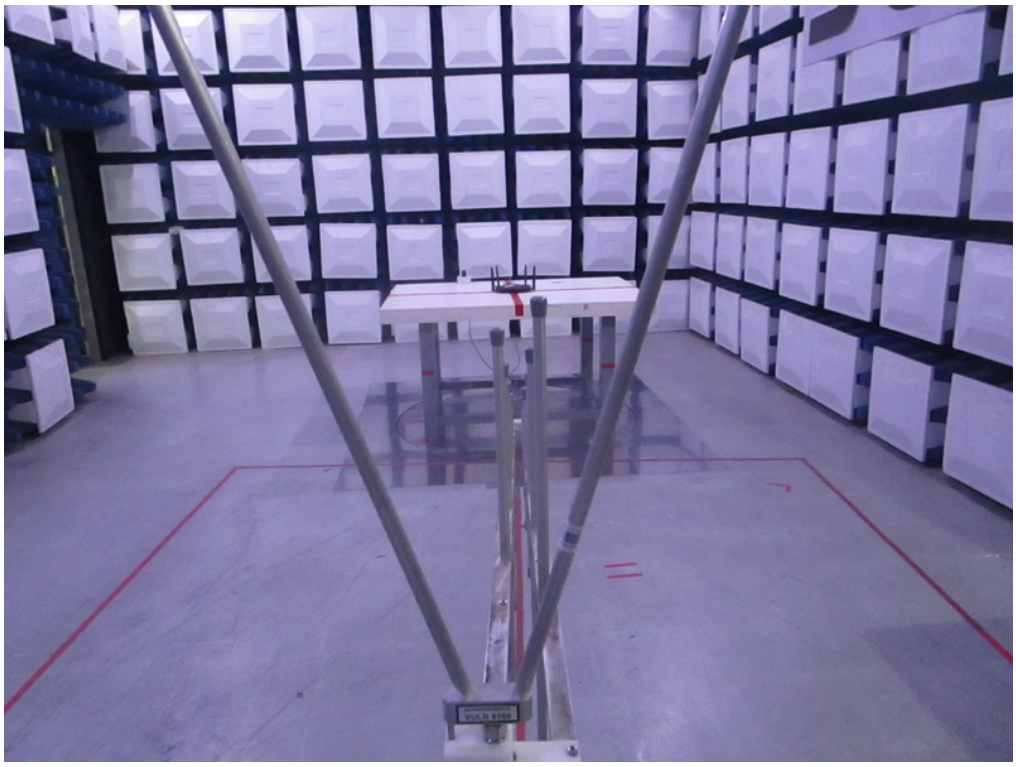
### 9 kHz to 30 MHz

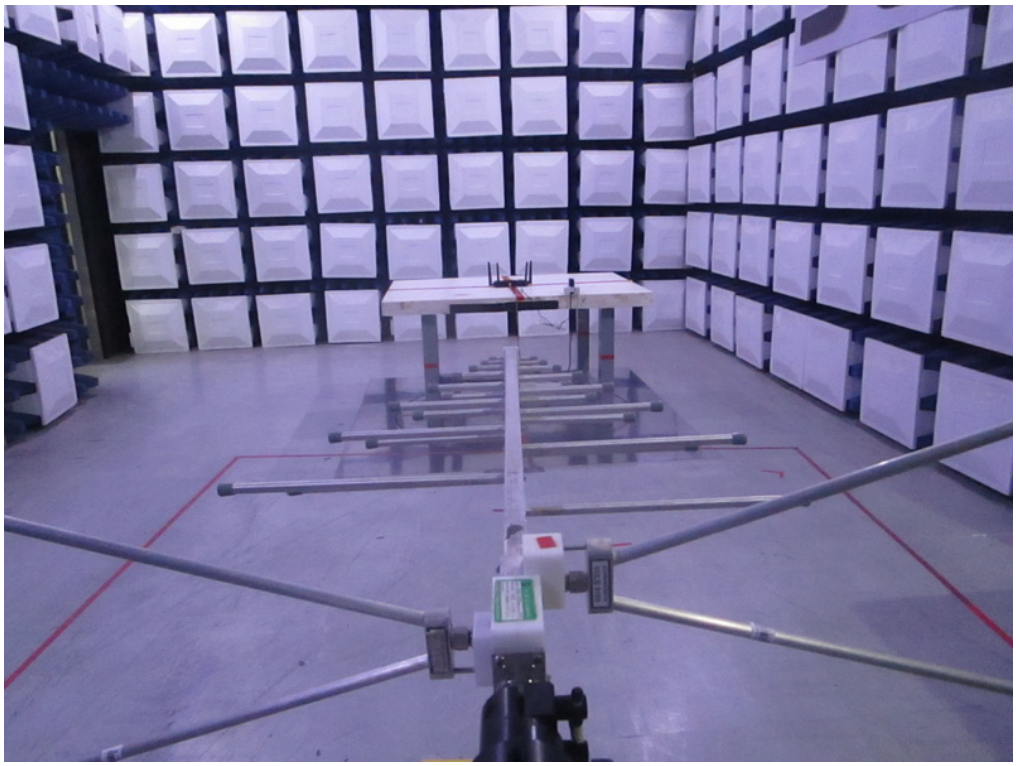




**Radiated Emissions Test Photos**

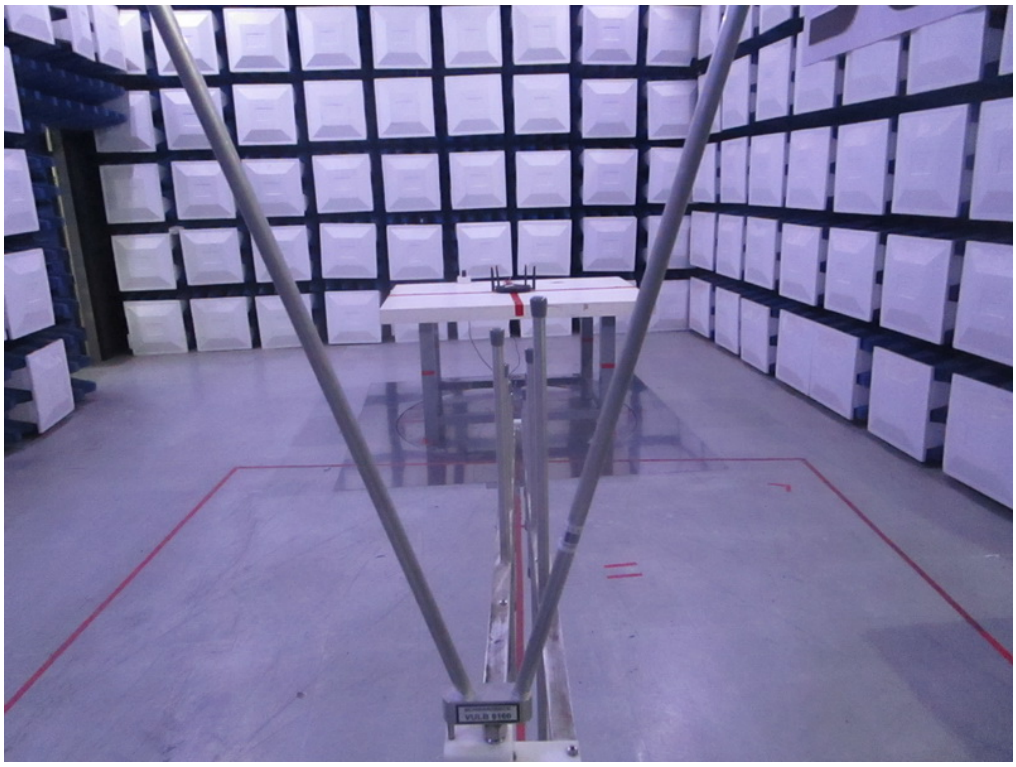
**30 MHz to 1 GHz**

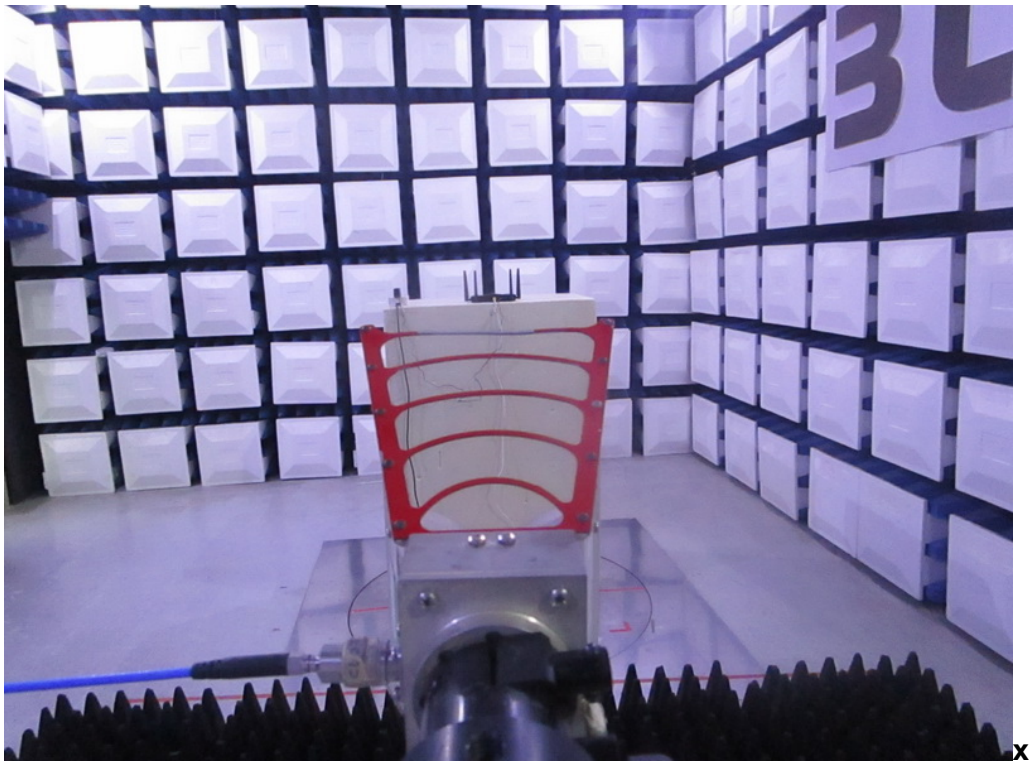




**Radiated Emissions Test Photos**

**Above 1 GHz**



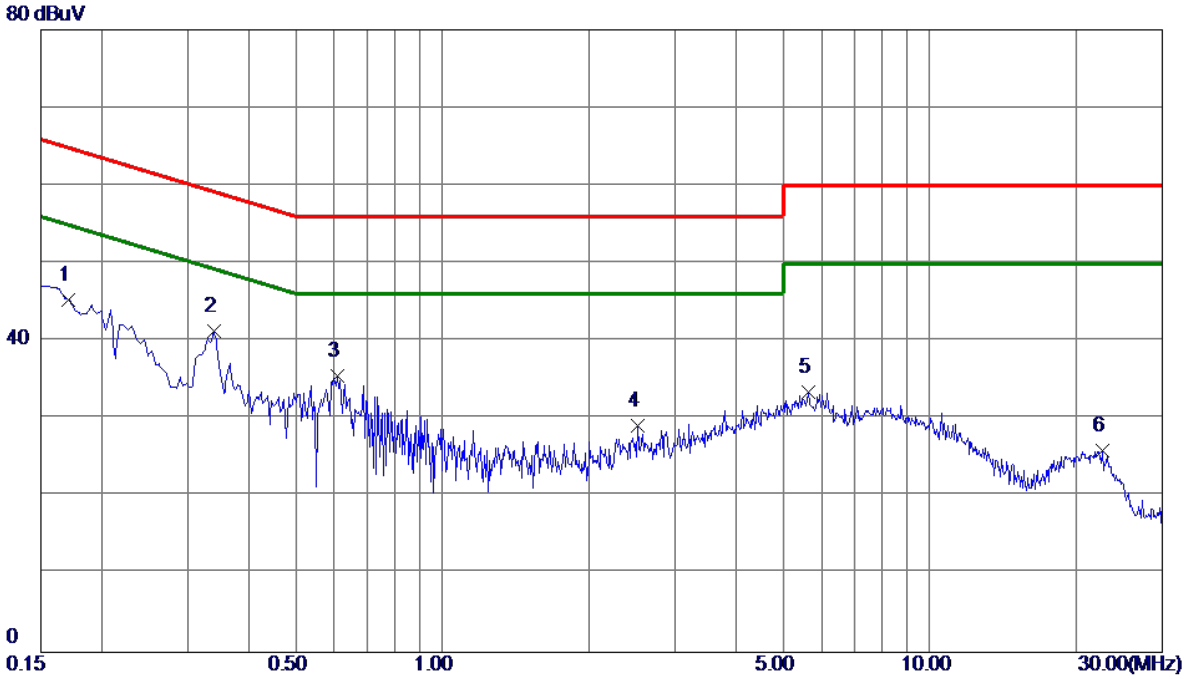


x

# APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

| Test Mode: | TX N40 Mode Channel 09 |
|---|---|

## Line

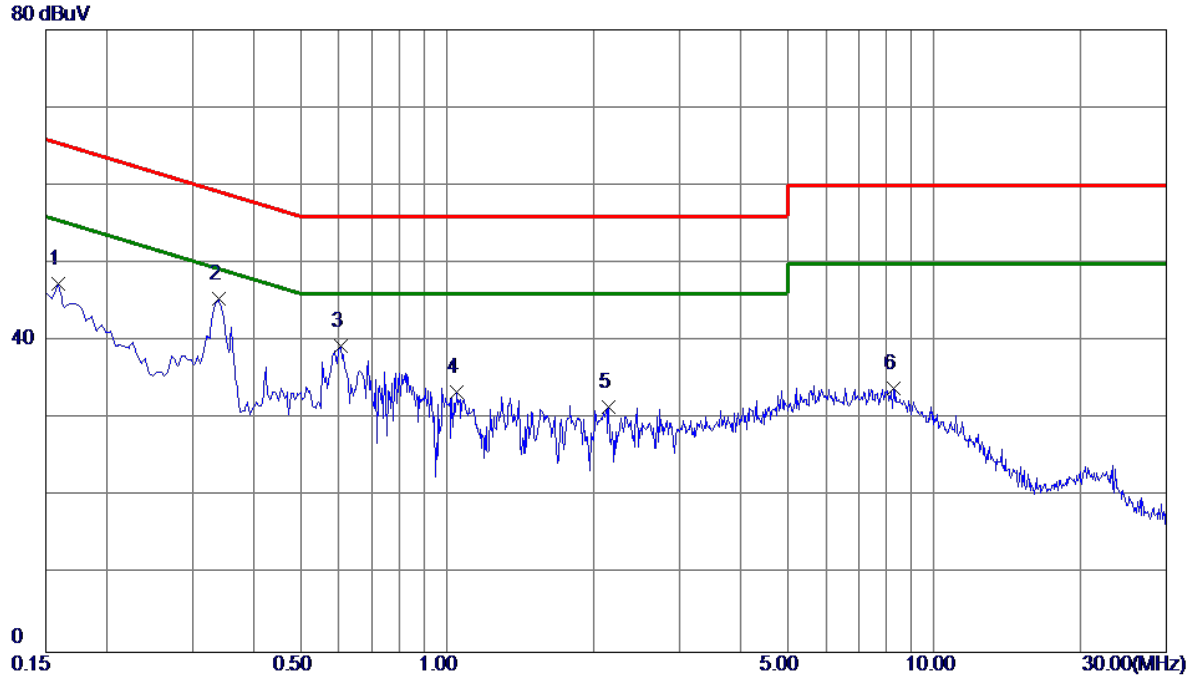



| No. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | 0.1703 | 35.47 | 9.82 | 45.29 | 64.95 | -19.66 | Peak | |
| 2 * | 0.3390 | 31.38 | 9.85 | 41.23 | 59.23 | -18.00 | Peak | |
| 3 | 0.6090 | 25.66 | 9.89 | 35.55 | 56.00 | -20.45 | Peak | |
| 4 | 2.5125 | 19.05 | 10.03 | 29.08 | 56.00 | -26.92 | Peak | |
| 5 | 5.6310 | 23.18 | 10.23 | 33.41 | 60.00 | -26.59 | Peak | |
| 6 | 22.6275 | 14.72 | 11.16 | 25.88 | 60.00 | -34.12 | Peak | |

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

| Test Mode: | TX N40 Mode Channel 09 |
|---|---|

**Neutral**



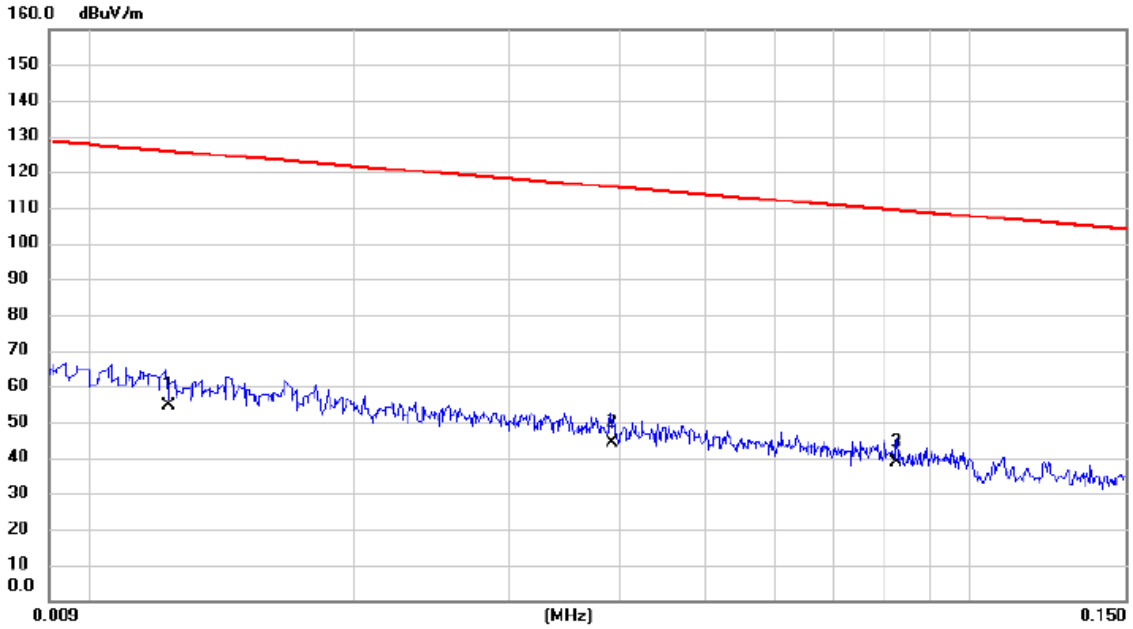

| No. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dBuV | dBuV | dB | Detector | Comment |
| 1 | 0.1590 | 37.38 | 9.91 | 47.29 | 65.52 | -18.23 | Peak | |
| 2 * | 0.3390 | 35.43 | 9.98 | 45.41 | 59.23 | -13.82 | Peak | |
| 3 | 0.6045 | 29.34 | 10.04 | 39.38 | 56.00 | -16.62 | Peak | |
| 4 | 1.0455 | 23.30 | 10.12 | 33.42 | 56.00 | -22.58 | Peak | |
| 5 | 2.1525 | 21.39 | 10.20 | 31.59 | 56.00 | -24.41 | Peak | |
| 6 | 8.2410 | 23.30 | 10.65 | 33.95 | 60.00 | -26.05 | 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 N40 Mode Channel 09 |
|---|---|

**Ant 0°**

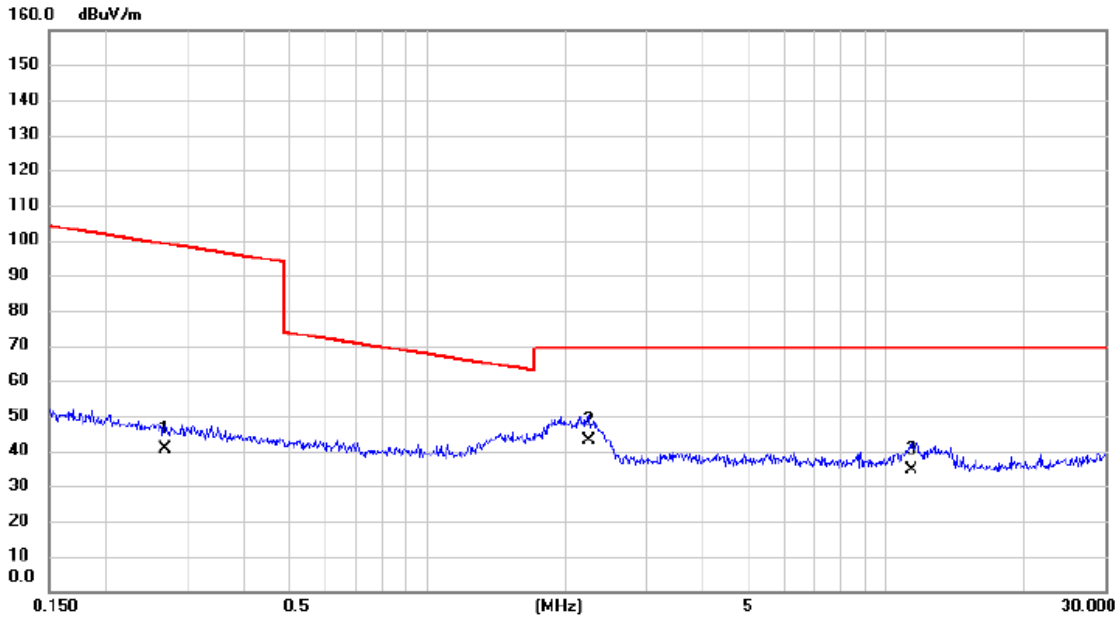



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.0123 | 38.65 | 16.13 | 54.78 | 125.81 | -71.03 | AVG | |
| 2 | | 0.0392 | 30.48 | 13.89 | 44.37 | 115.74 | -71.37 | AVG | |
| 3 | * | 0.0826 | 24.96 | 13.54 | 38.50 | 109.27 | -70.77 | AVG | |

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

| Test Mode: | TX N40 Mode Channel 09 |
|---|---|

**Ant 0°**

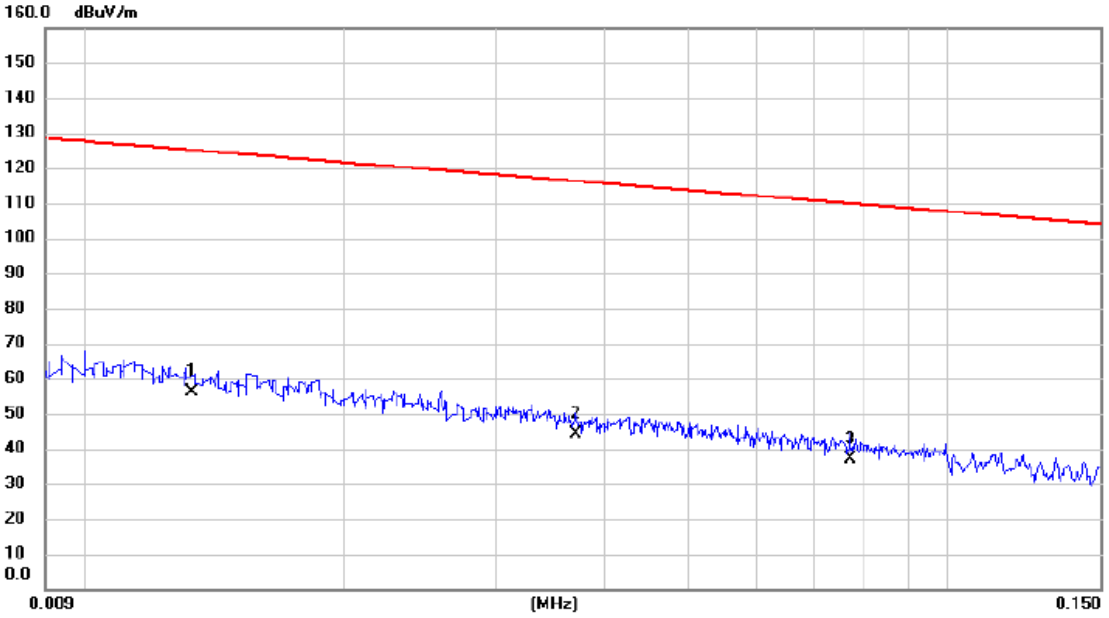



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.2686 | 26.85 | 13.62 | 40.47 | 99.02 | -58.55 | AVG | |
| 2 | * | 2.2486 | 31.45 | 11.67 | 43.12 | 69.54 | -26.42 | QP | |
| 3 | | 11.3771 | 22.96 | 11.61 | 34.57 | 69.54 | -34.97 | QP | |

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

| Test Mode: | TX N40 Mode Channel 09 |
|---|---|

**Ant 90°**

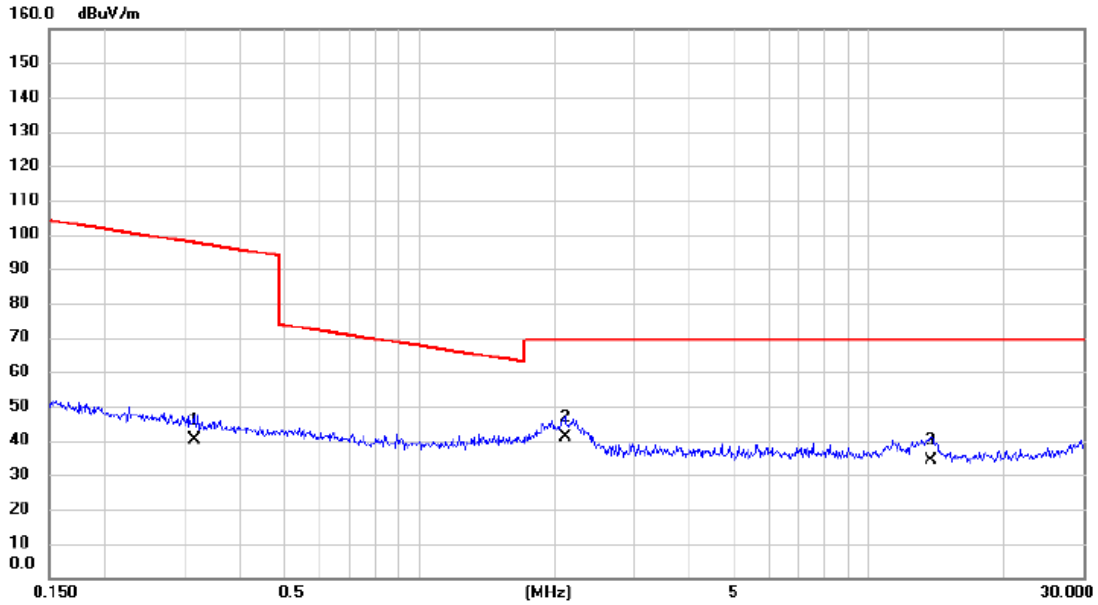



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | * | 0.0133 | 40.36 | 15.83 | 56.19 | 125.13 | -68.94 | AVG | |
| 2 | | 0.0371 | 30.48 | 13.89 | 44.37 | 116.22 | -71.85 | AVG | |
| 3 | | 0.0770 | 23.65 | 13.53 | 37.18 | 109.88 | -72.70 | AVG | |

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

| Test Mode: | TX N40 Mode Channel 09 |
|---|---|

**Ant 90°**



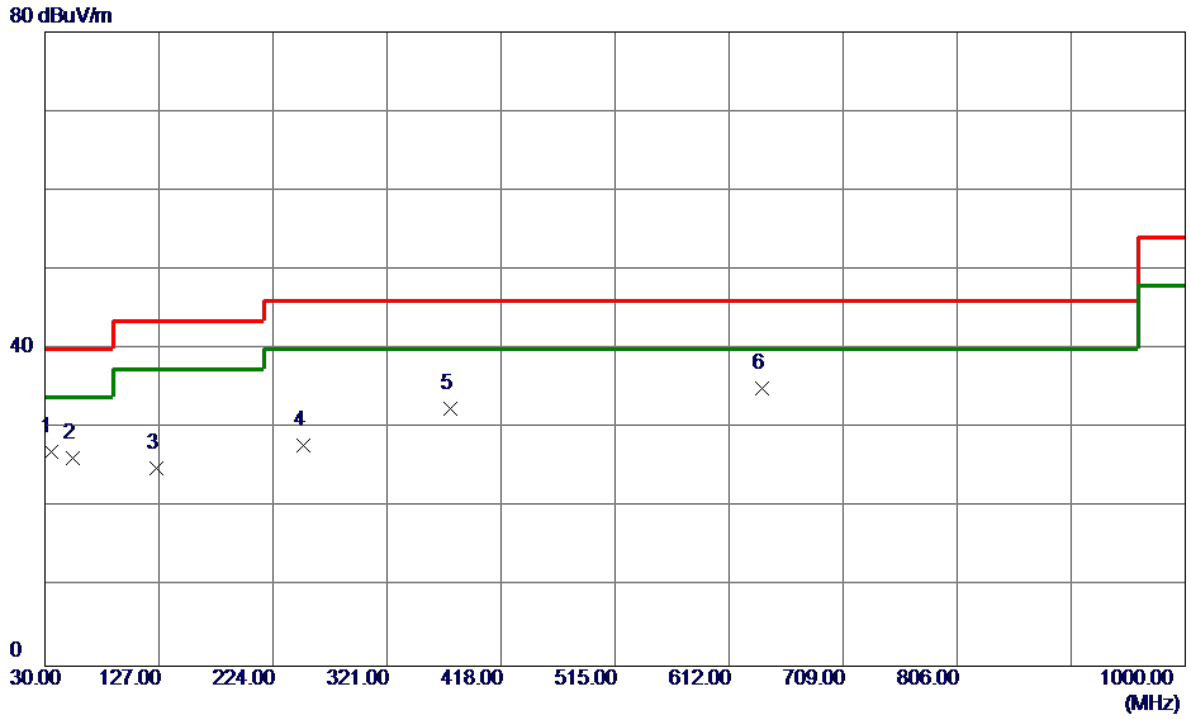

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | | 0.3150 | 26.85 | 13.50 | 40.35 | 97.64 | -57.29 | AVG | |
| 2 | * | 2.1101 | 29.35 | 11.75 | 41.10 | 69.54 | -28.44 | QP | |
| 3 | | 13.7680 | 22.47 | 11.58 | 34.05 | 69.54 | -35.49 | 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 N40 Mode Channel 09 |
|---|---|

**Vertical**

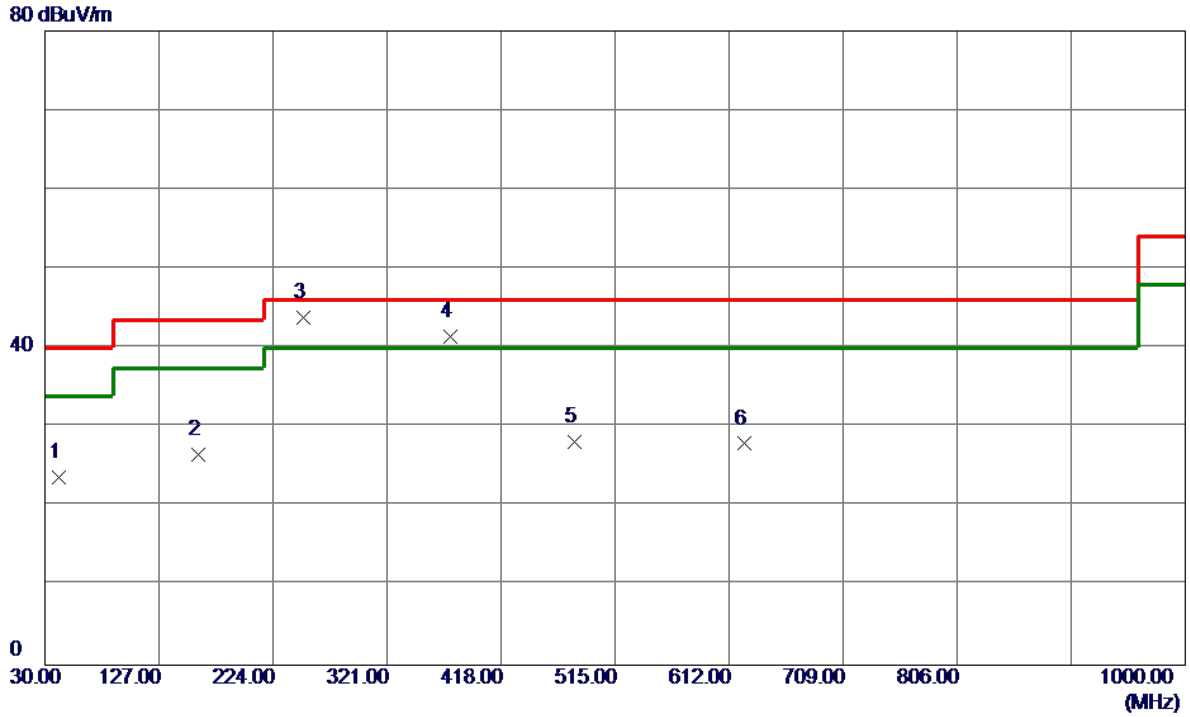



| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 34.8500 | 42.03 | -14.94 | 27.09 | 40.00 | -12.91 | Peak | |
| 2 | 53.7650 | 40.16 | -13.93 | 26.23 | 40.00 | -13.77 | Peak | |
| 3 | 125.0600 | 38.09 | -13.11 | 24.98 | 43.50 | -18.52 | Peak | |
| 4 | 250.1900 | 41.56 | -13.77 | 27.79 | 46.00 | -18.21 | Peak | |
| 5 | 374.8350 | 42.68 | -10.14 | 32.54 | 46.00 | -13.46 | Peak | |
| 6 * | 640.1300 | 39.90 | -4.93 | 34.97 | 46.00 | -11.03 | Peak | |

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

| Test Mode: | TX N40 Mode Channel 09 |
|---|---|

**Horizontal**



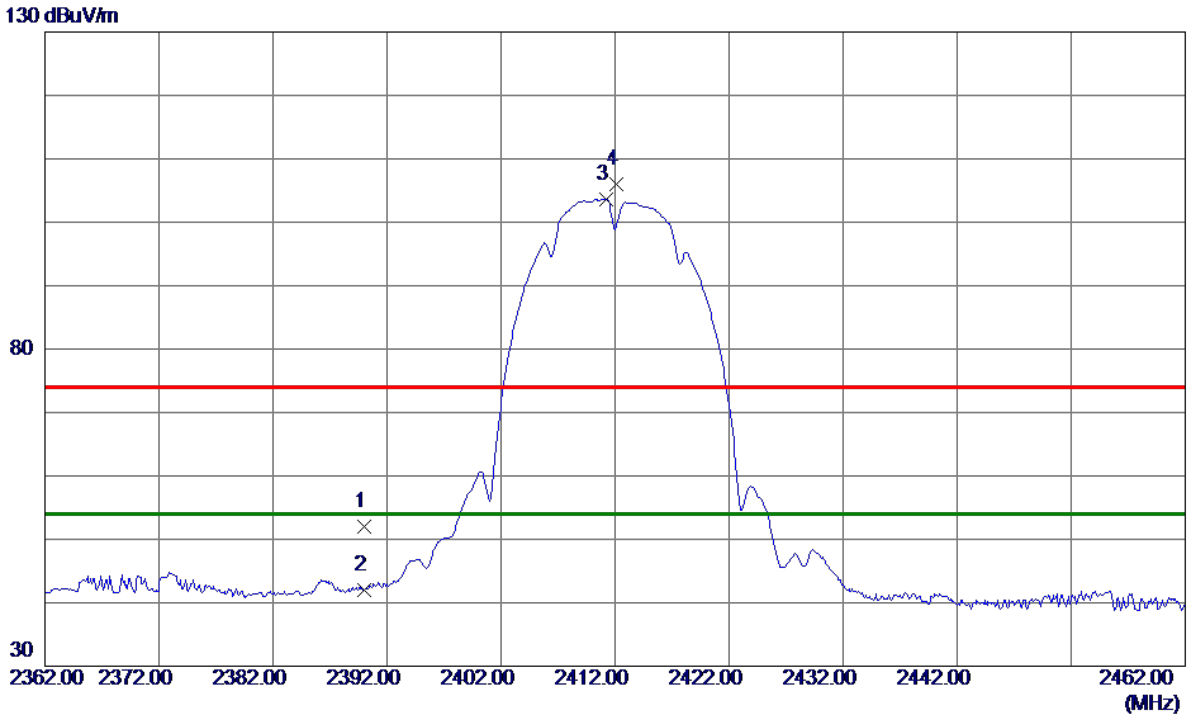

| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 42.1250 | 38.22 | -14.47 | 23.75 | 40.00 | -16.25 | Peak | |
| 2 | 159.9800 | 37.59 | -11.07 | 26.52 | 43.50 | -16.98 | Peak | |
| 3 * | 250.1900 | 57.60 | -13.77 | 43.83 | 46.00 | -2.17 | Peak | |
| 4 | 374.8350 | 51.53 | -10.14 | 41.39 | 46.00 | -4.61 | Peak | |
| 5 | 480.0800 | 36.00 | -7.91 | 28.09 | 46.00 | -17.91 | Peak | |
| 6 | 625.0949 | 33.18 | -5.26 | 27.92 | 46.00 | -18.08 | 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**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 45.46 | 6.53 | 51.99 | 74.00 | -22.01 | Peak | |
| 2 | 2390.0000 | 35.55 | 6.53 | 42.08 | 54.00 | -11.92 | AVG | |
| 3 * | 2411.2500 | 97.13 | 6.51 | 103.64 | 54.00 | 49.64 | AVG | No Limit |
| 4 | 2412.1000 | 99.59 | 6.51 | 106.10 | 74.00 | 32.10 | 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 |
|---|---|

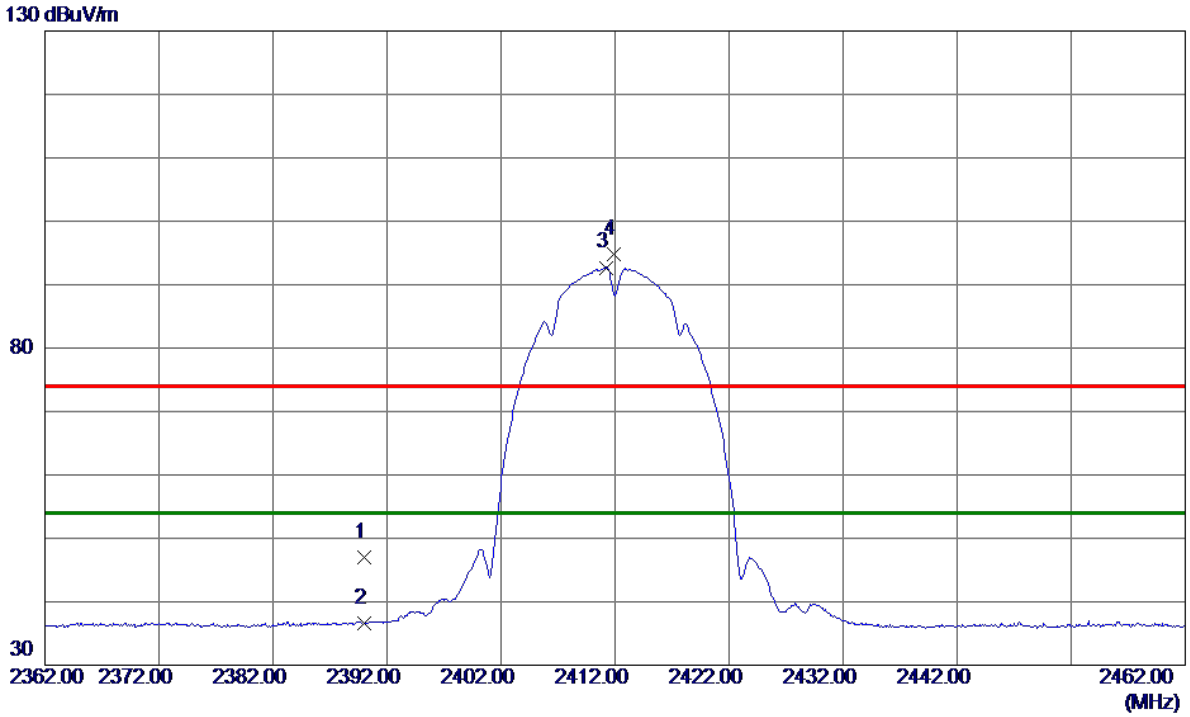
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4824.0200 | 50.88 | 3.43 | 54.31 | 74.00 | -19.69 | Peak | |
| 2 * | 4824.0500 | 49.76 | 3.43 | 53.19 | 54.00 | -0.81 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 40.51 | 6.53 | 47.04 | 74.00 | -26.96 | Peak | |
| 2 | 2390.0000 | 30.03 | 6.53 | 36.56 | 54.00 | -17.44 | AVG | |
| 3 * | 2411.2500 | 86.19 | 6.51 | 92.70 | 54.00 | 38.70 | AVG | No Limit |
| 4 | 2411.9000 | 88.22 | 6.51 | 94.73 | 74.00 | 20.73 | 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 |
|---|---|

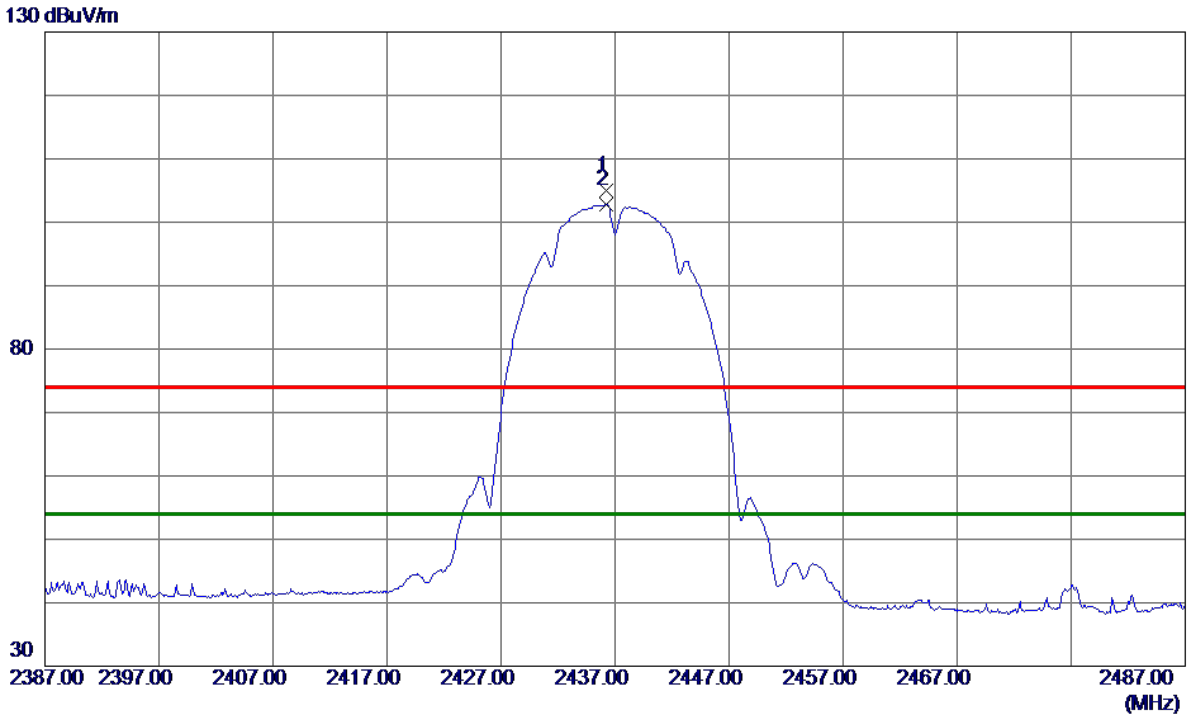
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4824.0050 | 43.78 | 3.43 | 47.21 | 54.00 | -6.79 | AVG | |
| 2 | 4824.0400 | 45.75 | 3.43 | 49.18 | 74.00 | -24.82 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2436.2000 | 98.55 | 6.48 | 105.03 | 74.00 | 31.03 | Peak | No Limit |
| 2 * | 2436.2500 | 96.32 | 6.48 | 102.80 | 54.00 | 48.80 | AVG | No Limit |

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

| Test Mode: | TX B Mode 2437 MHz |
|---|---|

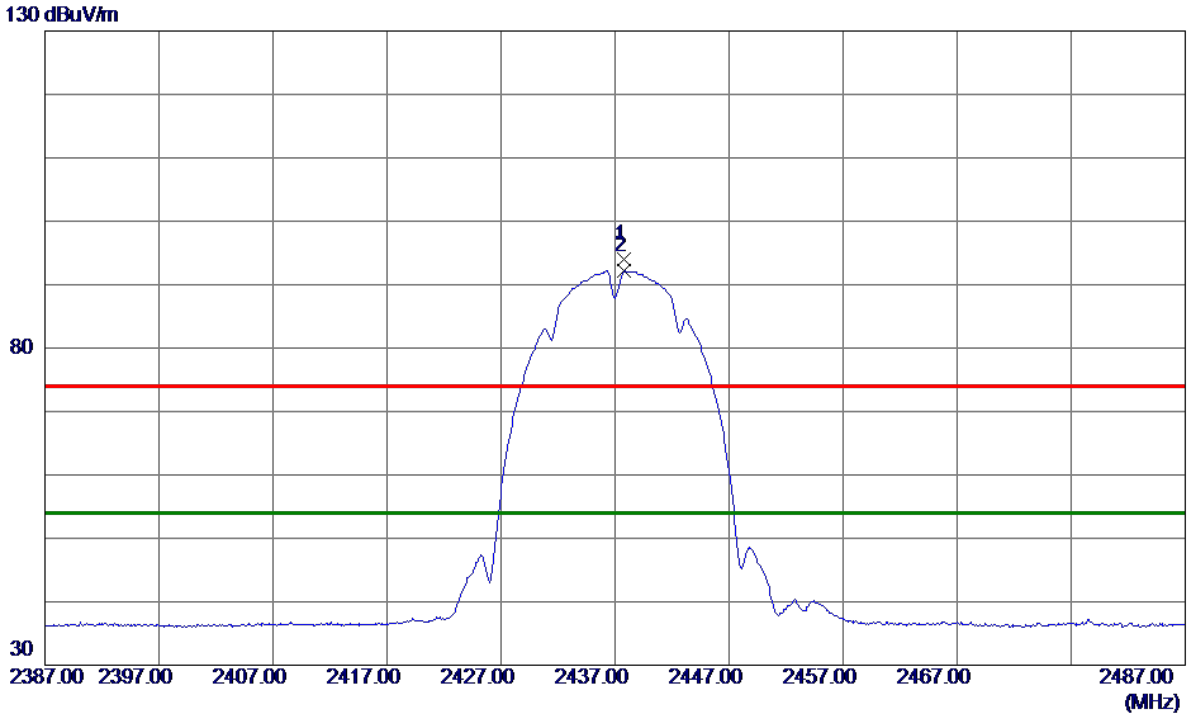
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4874.0200 | 49.68 | 3.58 | 53.26 | 54.00 | -0.74 | AVG | |
| 2 | 4874.0650 | 50.87 | 3.58 | 54.45 | 74.00 | -19.55 | Peak | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2437.8000 | 87.42 | 6.48 | 93.90 | 74.00 | 19.90 | Peak | No Limit |
| 2 * | 2437.8000 | 85.70 | 6.48 | 92.18 | 54.00 | 38.18 | AVG | No Limit |

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

| Test Mode: | TX B Mode 2437 MHz |
|---|---|

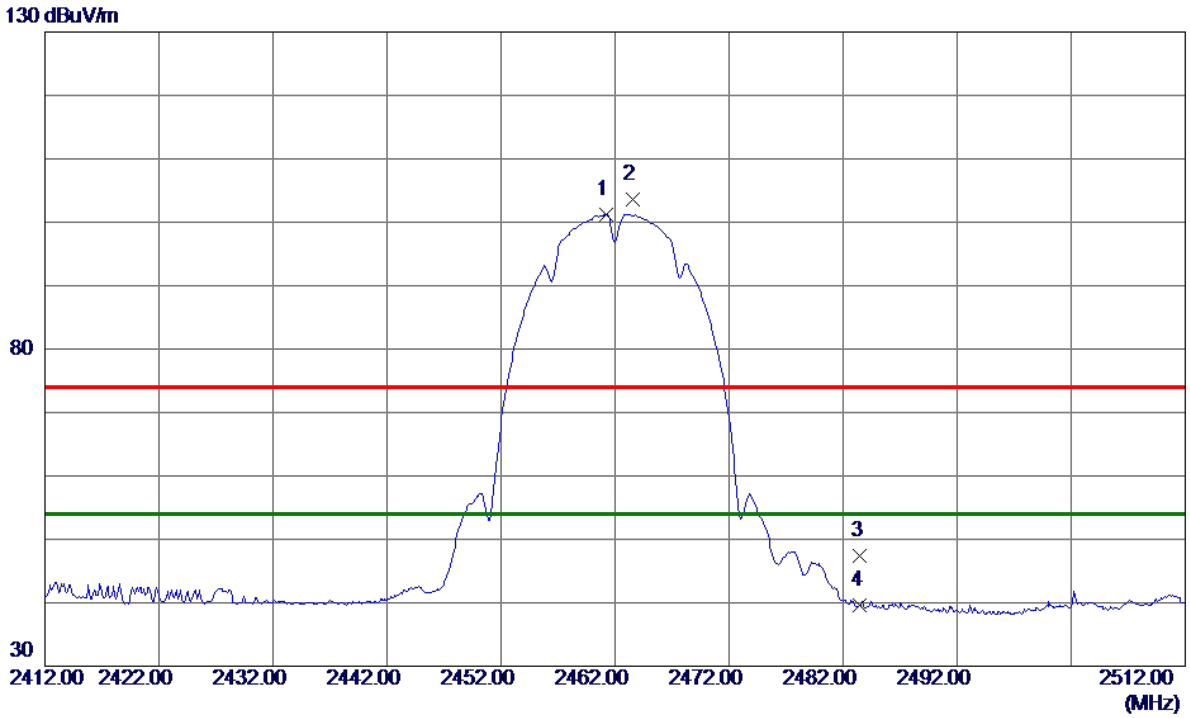
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4874.0250 | 45.77 | 3.58 | 49.35 | 54.00 | -4.65 | AVG | |
| 2 | 4874.1150 | 47.87 | 3.58 | 51.45 | 74.00 | -22.55 | Peak | |

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

| Test Mode: | TX B Mode 2462 MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2461.2500 | 94.83 | 6.45 | 101.28 | 54.00 | 47.28 | AVG | No Limit |
| 2 | 2463.5500 | 97.12 | 6.45 | 103.57 | 74.00 | 29.57 | Peak | No Limit |
| 3 | 2483.5000 | 40.90 | 6.42 | 47.32 | 74.00 | -26.68 | Peak | |
| 4 | 2483.5000 | 33.09 | 6.42 | 39.51 | 54.00 | -14.49 | AVG | |

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

| Test Mode: | TX B Mode 2462 MHz |
|---|---|

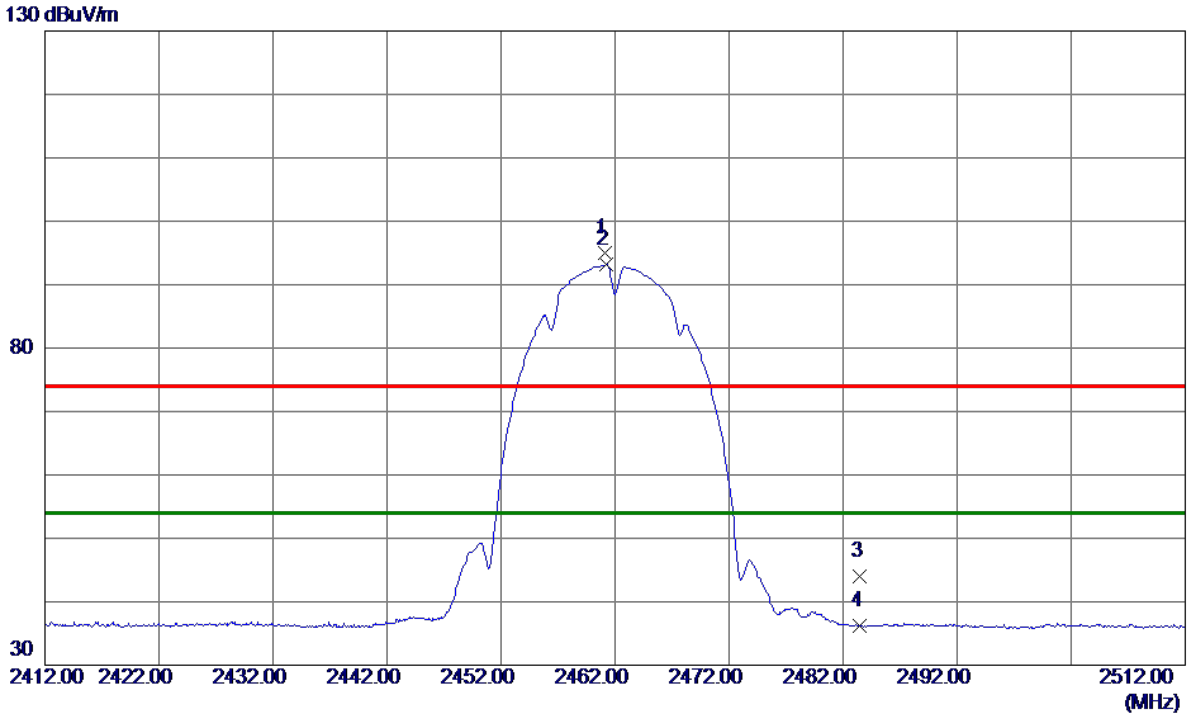
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4924.0250 | 49.38 | 3.73 | 53.11 | 54.00 | -0.89 | AVG | |
| 2 | 4924.0900 | 50.57 | 3.73 | 54.30 | 74.00 | -19.70 | Peak | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2461.1000 | 88.53 | 6.45 | 94.98 | 74.00 | 20.98 | Peak | No Limit |
| 2 * | 2461.2500 | 86.73 | 6.45 | 93.18 | 54.00 | 39.18 | AVG | No Limit |
| 3 | 2483.5000 | 37.61 | 6.42 | 44.03 | 74.00 | -29.97 | Peak | |
| 4 | 2483.5000 | 29.82 | 6.42 | 36.24 | 54.00 | -17.76 | AVG | |

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

| Test Mode: | TX B Mode 2462 MHz |
|---|---|

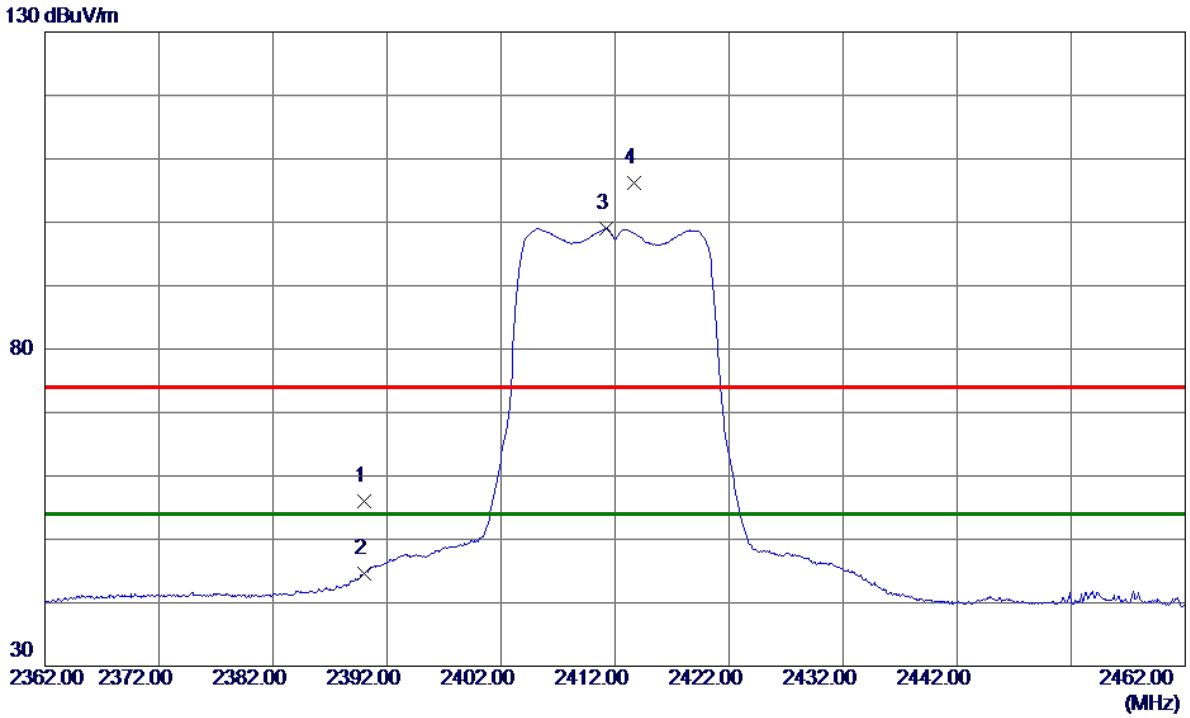
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4924.0550 | 45.39 | 3.73 | 49.12 | 54.00 | -4.88 | AVG | |
| 2 | 4924.0600 | 47.22 | 3.73 | 50.95 | 74.00 | -23.05 | Peak | |

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

| Test Mode: | TX G Mode 2412 MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 49.49 | 6.53 | 56.02 | 74.00 | -17.98 | Peak | |
| 2 | 2390.0000 | 38.11 | 6.53 | 44.64 | 54.00 | -9.36 | AVG | |
| 3 * | 2411.2000 | 92.47 | 6.51 | 98.98 | 54.00 | 44.98 | AVG | No Limit |
| 4 | 2413.6500 | 99.79 | 6.50 | 106.29 | 74.00 | 32.29 | 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 |
|---|---|

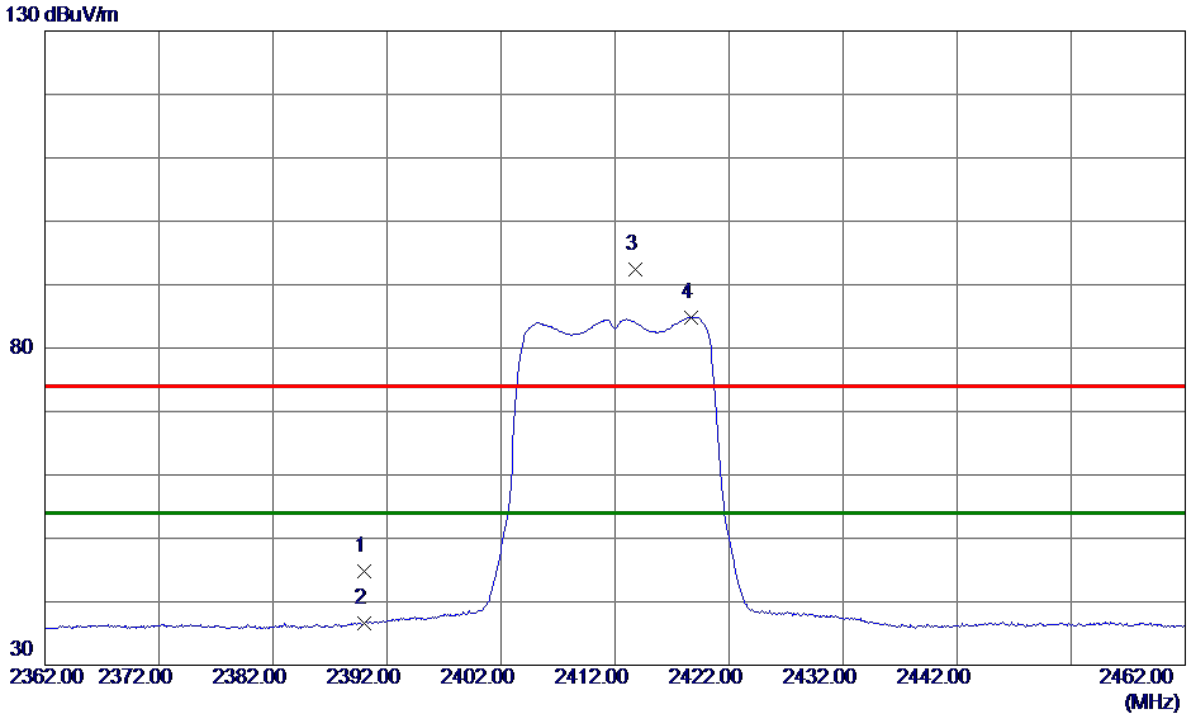
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4821.1950 | 48.38 | 3.42 | 51.80 | 74.00 | -22.20 | Peak | |
| 2 * | 4823.9600 | 38.78 | 3.43 | 42.21 | 54.00 | -11.79 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 38.31 | 6.53 | 44.84 | 74.00 | -29.16 | Peak | |
| 2 | 2390.0000 | 30.04 | 6.53 | 36.57 | 54.00 | -17.43 | AVG | |
| 3 | 2413.7500 | 85.81 | 6.50 | 92.31 | 74.00 | 18.31 | Peak | No Limit |
| 4 * | 2418.6500 | 78.36 | 6.50 | 84.86 | 54.00 | 30.86 | 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 |
|---|---|

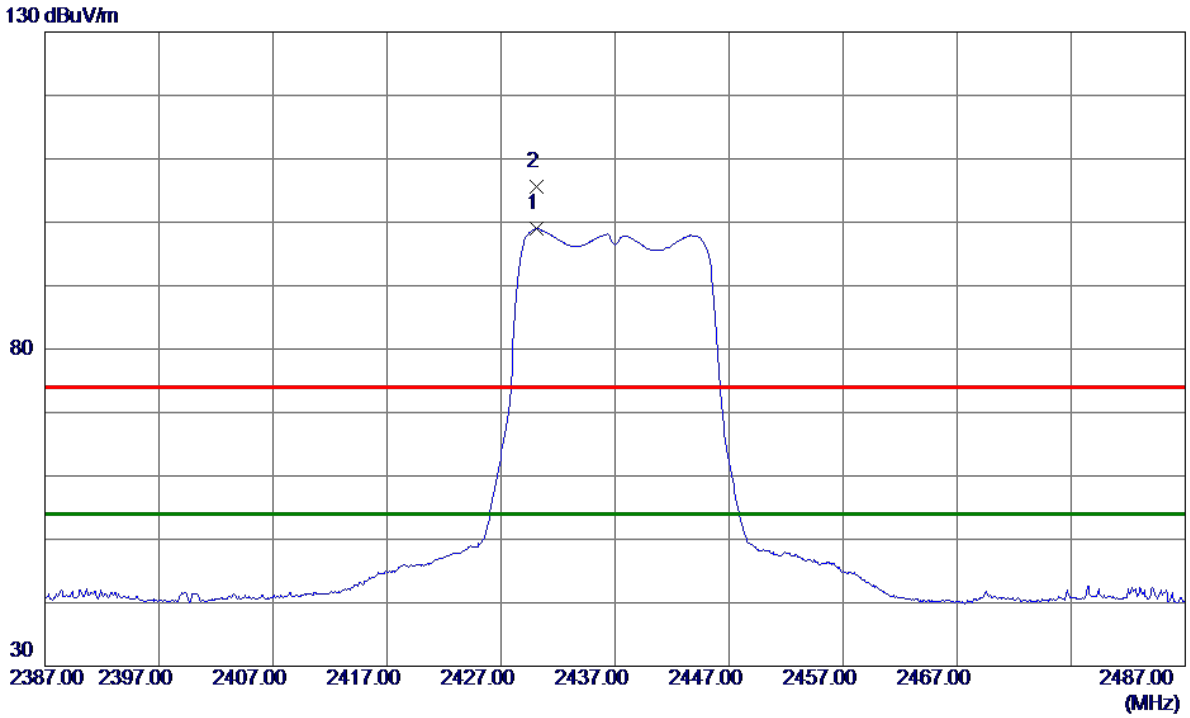
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4824.1100 | 33.21 | 3.43 | 36.64 | 54.00 | -17.36 | AVG | |
| 2 | 4825.0050 | 44.31 | 3.43 | 47.74 | 74.00 | -26.26 | Peak | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2430.1000 | 92.49 | 6.49 | 98.98 | 54.00 | 44.98 | AVG | No Limit |
| 2 | 2430.1500 | 99.15 | 6.49 | 105.64 | 74.00 | 31.64 | 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 |
|---|---|

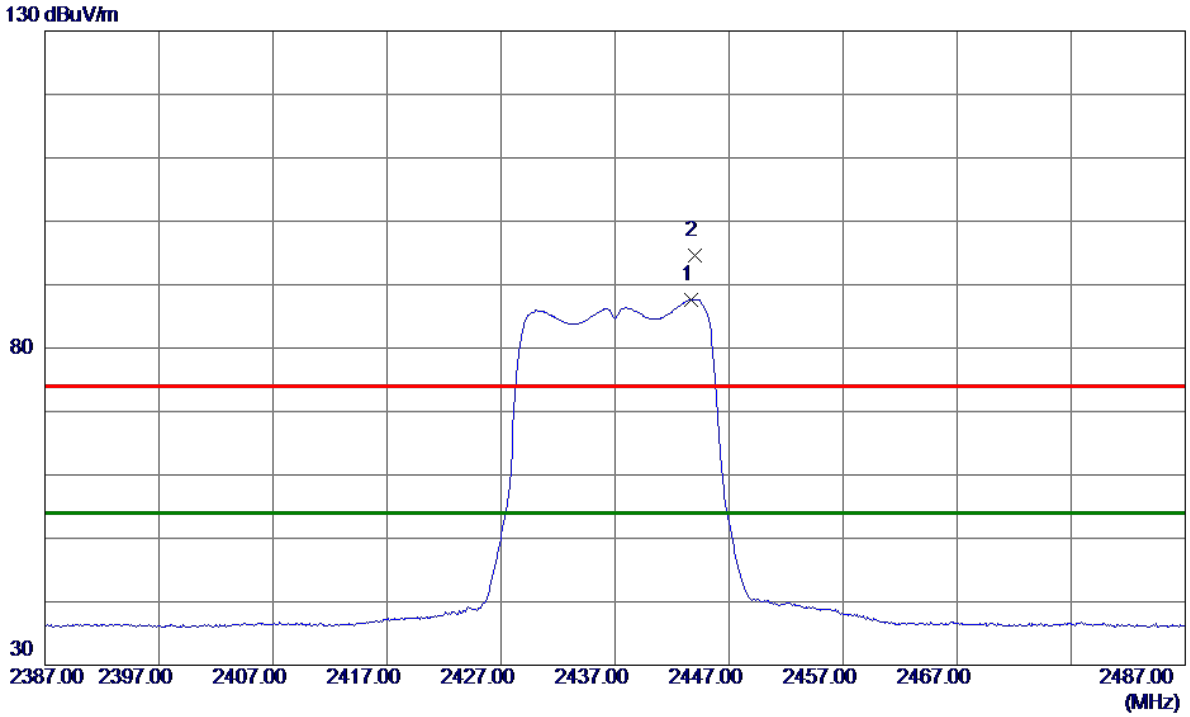
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4873.7850 | 38.57 | 3.58 | 42.15 | 54.00 | -11.85 | AVG | |
| 2 | 4875.2550 | 47.91 | 3.58 | 51.49 | 74.00 | -22.51 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2443.6500 | 81.14 | 6.47 | 87.61 | 54.00 | 33.61 | AVG | No Limit |
| 2 | 2444.0000 | 88.11 | 6.47 | 94.58 | 74.00 | 20.58 | 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 |
|---|---|

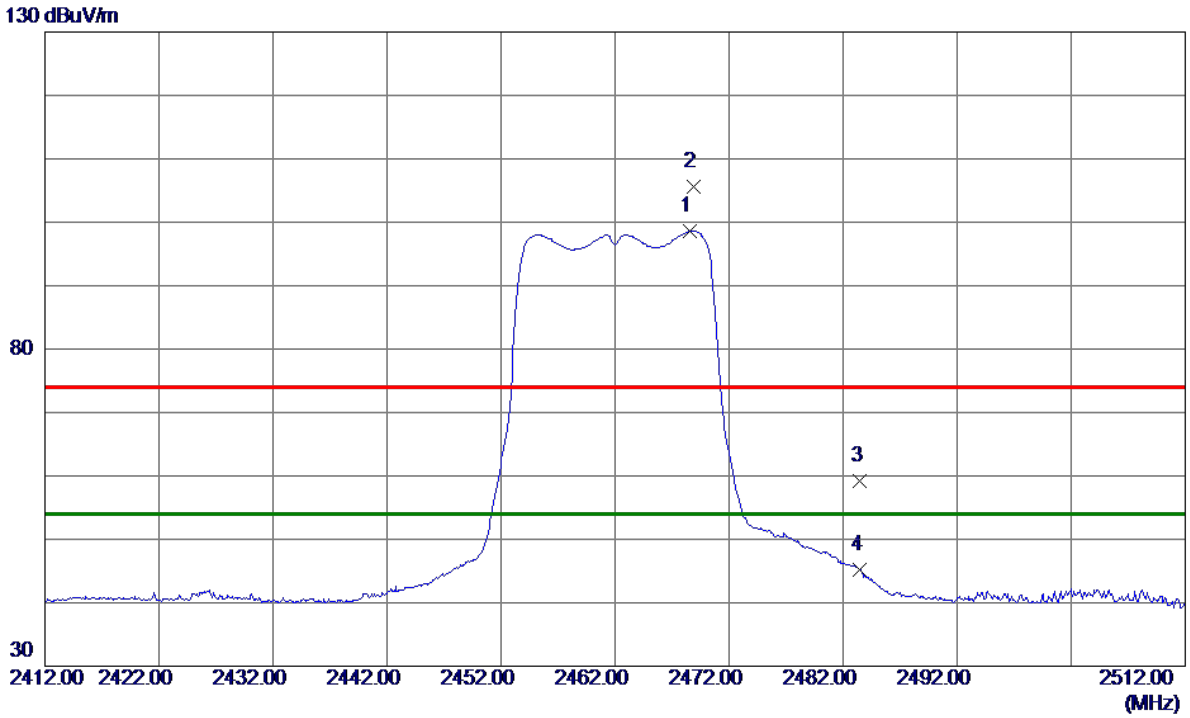
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4874.0000 | 33.55 | 3.58 | 37.13 | 54.00 | -16.87 | AVG | |
| 2 | 4874.9750 | 44.40 | 3.58 | 47.98 | 74.00 | -26.02 | Peak | |

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

| Test Mode: | TX G Mode 2462 MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2468.5500 | 92.16 | 6.44 | 98.60 | 54.00 | 44.60 | AVG | No Limit |
| 2 | 2468.8500 | 99.14 | 6.44 | 105.58 | 74.00 | 31.58 | Peak | No Limit |
| 3 | 2483.5000 | 52.75 | 6.42 | 59.17 | 74.00 | -14.83 | Peak | |
| 4 | 2483.5000 | 38.70 | 6.42 | 45.12 | 54.00 | -8.88 | AVG | |

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

| Test Mode: | TX G Mode 2462 MHz |
|---|---|

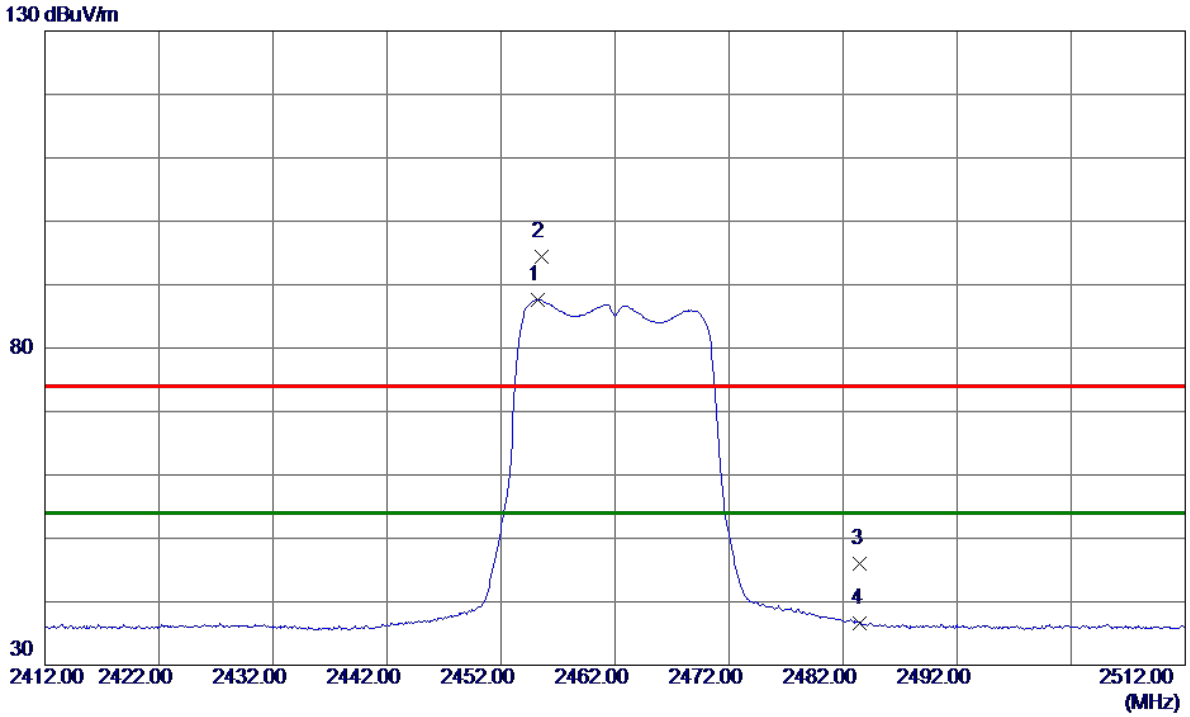
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4923.9900 | 38.22 | 3.73 | 41.95 | 54.00 | -12.05 | AVG | |
| 2 | 4925.4550 | 47.57 | 3.74 | 51.31 | 74.00 | -22.69 | Peak | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2455.2000 | 81.21 | 6.46 | 87.67 | 54.00 | 33.67 | AVG | No Limit |
| 2 | 2455.6000 | 88.03 | 6.46 | 94.49 | 74.00 | 20.49 | Peak | No Limit |
| 3 | 2483.5000 | 39.50 | 6.42 | 45.92 | 74.00 | -28.08 | Peak | |
| 4 | 2483.5000 | 30.17 | 6.42 | 36.59 | 54.00 | -17.41 | AVG | |

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

| Test Mode: | TX G Mode 2462 MHz |
|---|---|

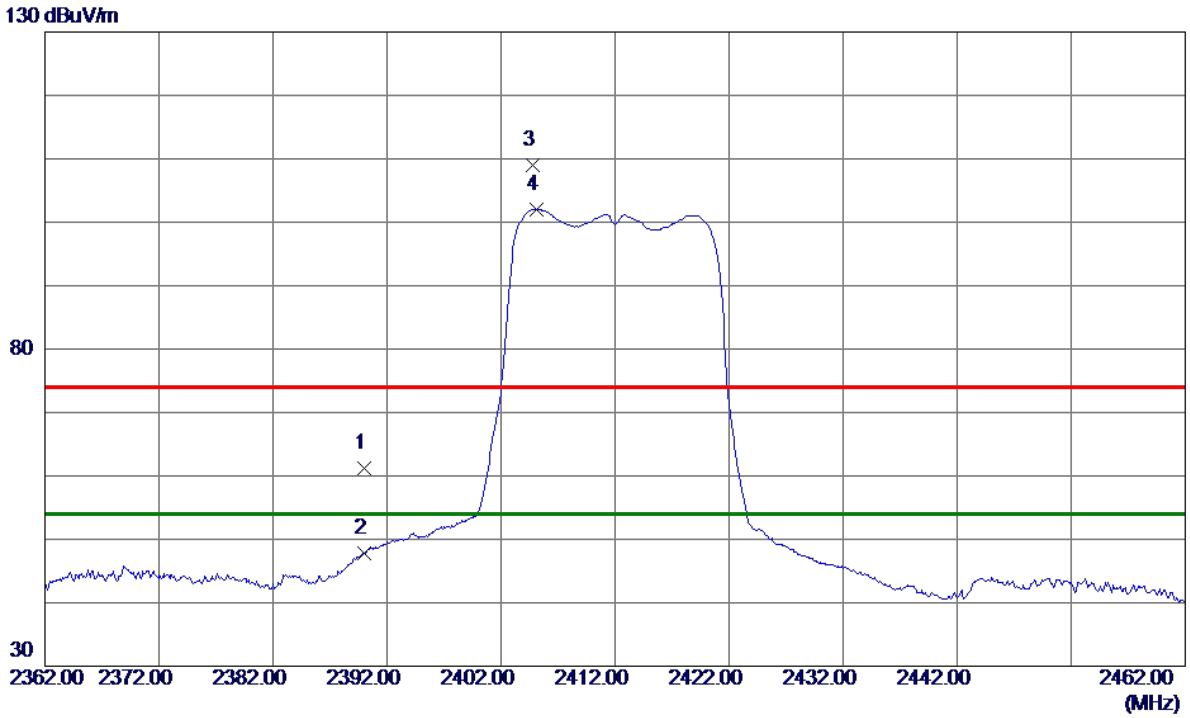
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4924.1450 | 34.04 | 3.73 | 37.77 | 54.00 | -16.23 | AVG | |
| 2 | 4925.2200 | 44.29 | 3.73 | 48.02 | 74.00 | -25.98 | Peak | |

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

| Test Mode: | TX N-20M Mode 2412 MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 54.64 | 6.53 | 61.17 | 74.00 | -12.83 | Peak | |
| 2 | 2390.0000 | 41.24 | 6.53 | 47.77 | 54.00 | -6.23 | AVG | |
| 3 | 2404.7500 | 102.48 | 6.51 | 108.99 | 74.00 | 34.99 | Peak | No Limit |
| 4 * | 2405.1500 | 95.56 | 6.51 | 102.07 | 54.00 | 48.07 | 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 |
|---|---|

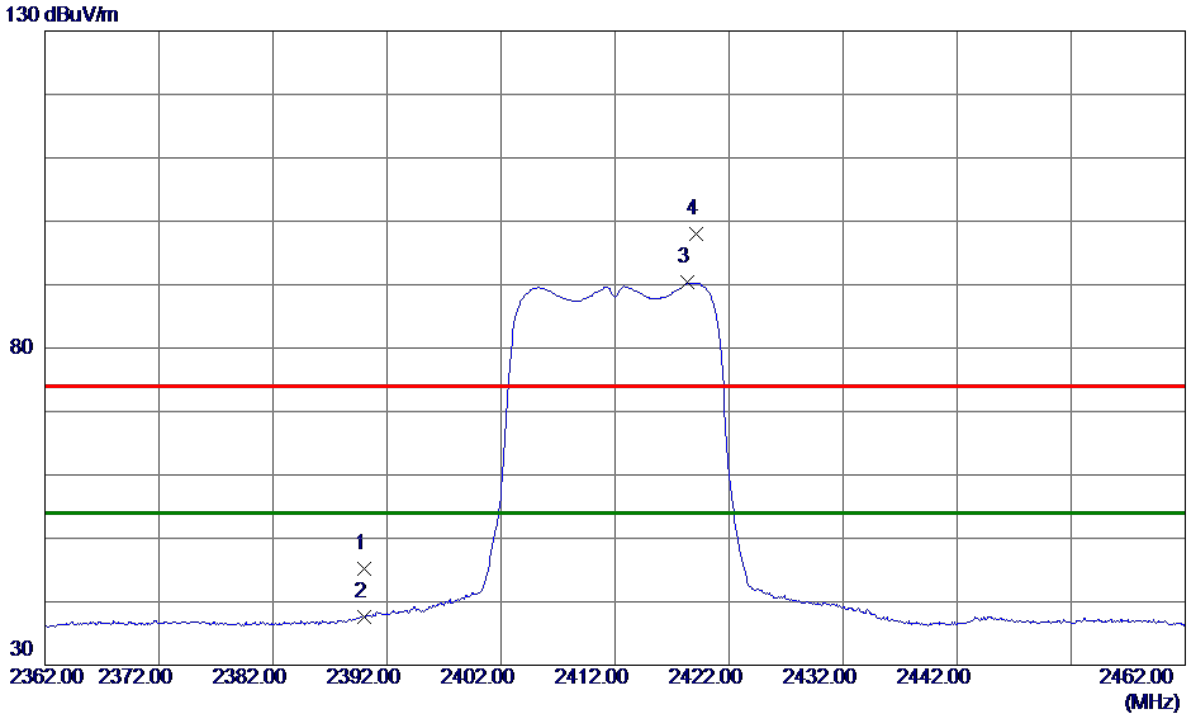
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4823.4000 | 48.93 | 3.43 | 52.36 | 74.00 | -21.64 | Peak | |
| 2 * | 4824.8350 | 39.05 | 3.43 | 42.48 | 54.00 | -11.52 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 38.58 | 6.53 | 45.11 | 74.00 | -28.89 | Peak | |
| 2 | 2390.0000 | 31.04 | 6.53 | 37.57 | 54.00 | -16.43 | AVG | |
| 3 * | 2418.3500 | 83.81 | 6.50 | 90.31 | 54.00 | 36.31 | AVG | No Limit |
| 4 | 2419.1500 | 91.50 | 6.50 | 98.00 | 74.00 | 24.00 | 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 |
|---|---|

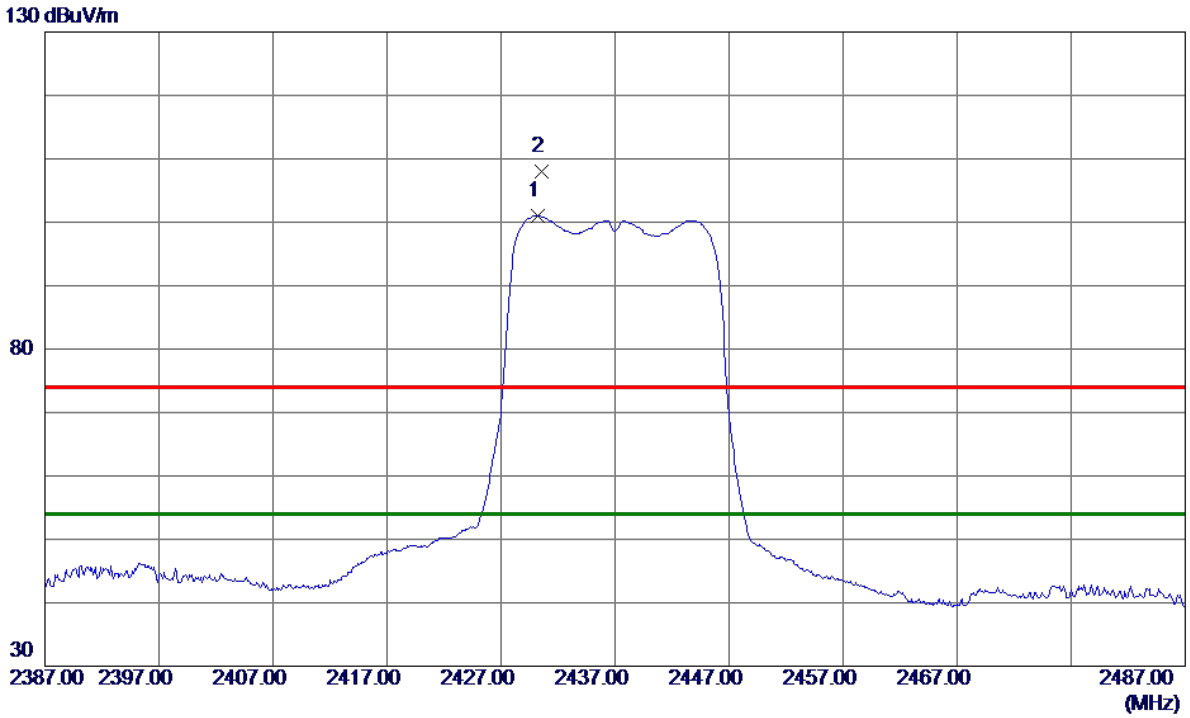
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4822.2500 | 46.78 | 3.42 | 50.20 | 74.00 | -23.80 | Peak | |
| 2 * | 4822.9200 | 36.66 | 3.43 | 40.09 | 54.00 | -13.91 | AVG | |

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

| Test Mode: | TX N-20M Mode 2437 MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2430.2500 | 94.50 | 6.49 | 100.99 | 54.00 | 46.99 | AVG | No Limit |
| 2 | 2430.6000 | 101.52 | 6.48 | 108.00 | 74.00 | 34.00 | Peak | 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 |
|---|---|

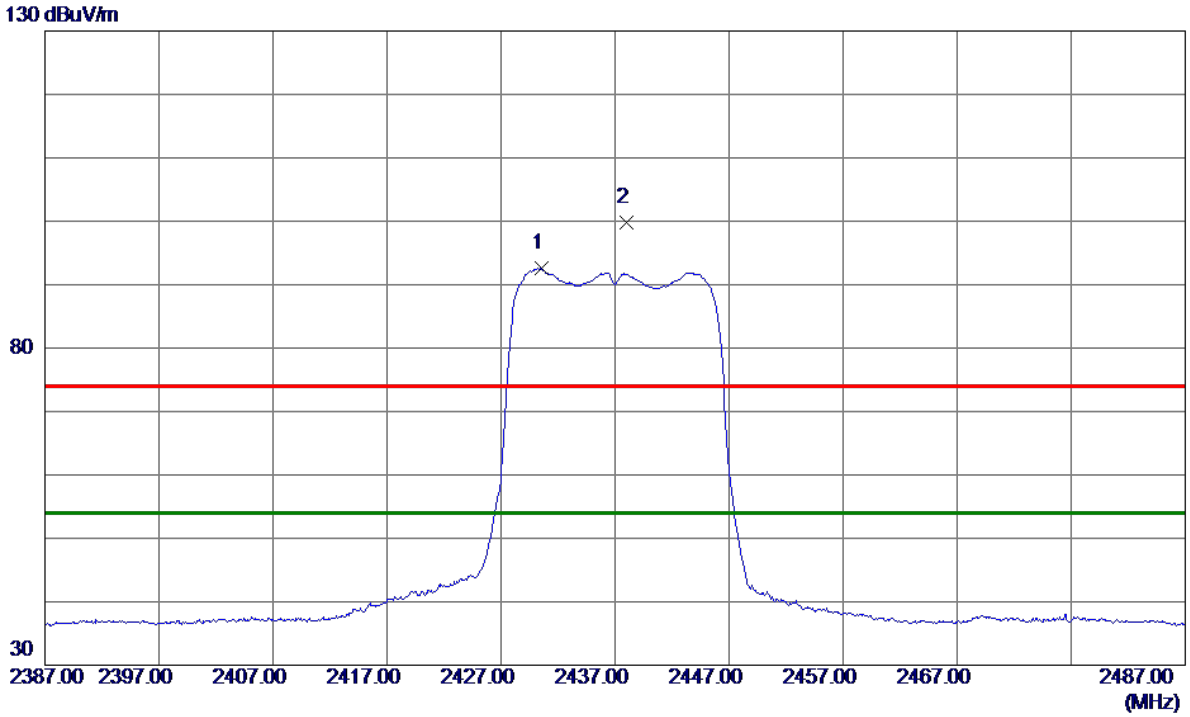
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4875.0500 | 38.70 | 3.58 | 42.28 | 54.00 | -11.72 | AVG | |
| 2 | 4877.5750 | 48.67 | 3.59 | 52.26 | 74.00 | -21.74 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2430.5500 | 86.05 | 6.48 | 92.53 | 54.00 | 38.53 | AVG | No Limit |
| 2 | 2438.0500 | 93.38 | 6.48 | 99.86 | 74.00 | 25.86 | Peak | 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 |
|---|---|

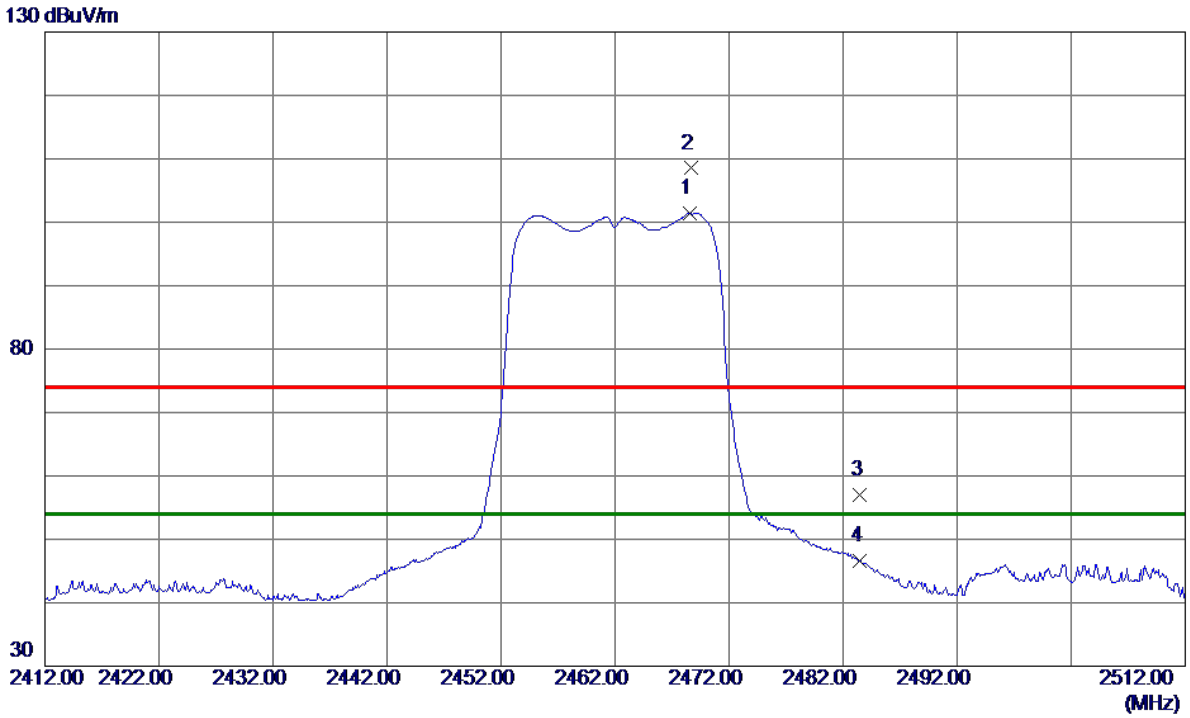
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4873.1549 | 35.36 | 3.58 | 38.94 | 54.00 | -15.06 | AVG | |
| 2 | 4873.1800 | 44.78 | 3.58 | 48.36 | 74.00 | -25.64 | 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**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2468.6000 | 94.94 | 6.44 | 101.38 | 54.00 | 47.38 | AVG | No Limit |
| 2 | 2468.6500 | 102.06 | 6.44 | 108.50 | 74.00 | 34.50 | Peak | No Limit |
| 3 | 2483.5000 | 50.56 | 6.42 | 56.98 | 74.00 | -17.02 | Peak | |
| 4 | 2483.5000 | 40.16 | 6.42 | 46.58 | 54.00 | -7.42 | AVG | |

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

| Test Mode: | TX N-20M Mode 2462 MHz |
|---|---|

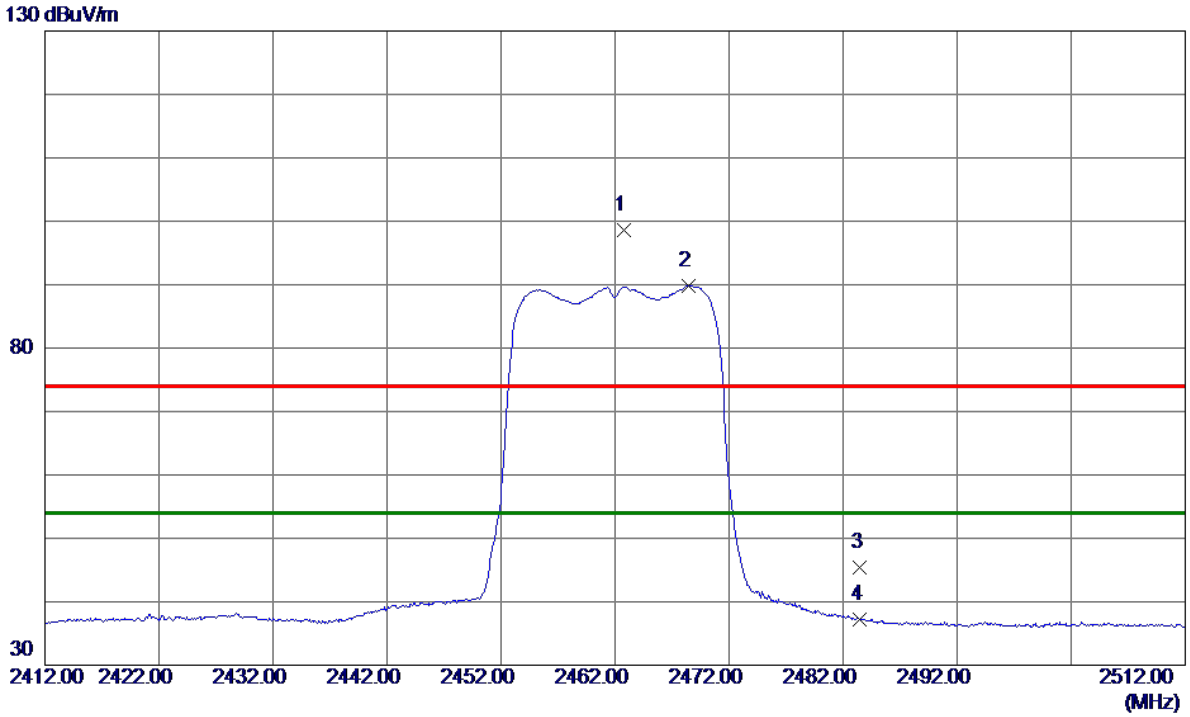
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4922.8800 | 37.99 | 3.73 | 41.72 | 54.00 | -12.28 | AVG | |
| 2 | 4923.2300 | 48.50 | 3.73 | 52.23 | 74.00 | -21.77 | Peak | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2462.8000 | 92.11 | 6.45 | 98.56 | 74.00 | 24.56 | Peak | No Limit |
| 2 * | 2468.4000 | 83.42 | 6.44 | 89.86 | 54.00 | 35.86 | AVG | No Limit |
| 3 | 2483.5000 | 39.02 | 6.42 | 45.44 | 74.00 | -28.56 | Peak | |
| 4 | 2483.5000 | 30.79 | 6.42 | 37.21 | 54.00 | -16.79 | AVG | |

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

| Test Mode: | TX N-20M Mode 2462 MHz |
|---|---|

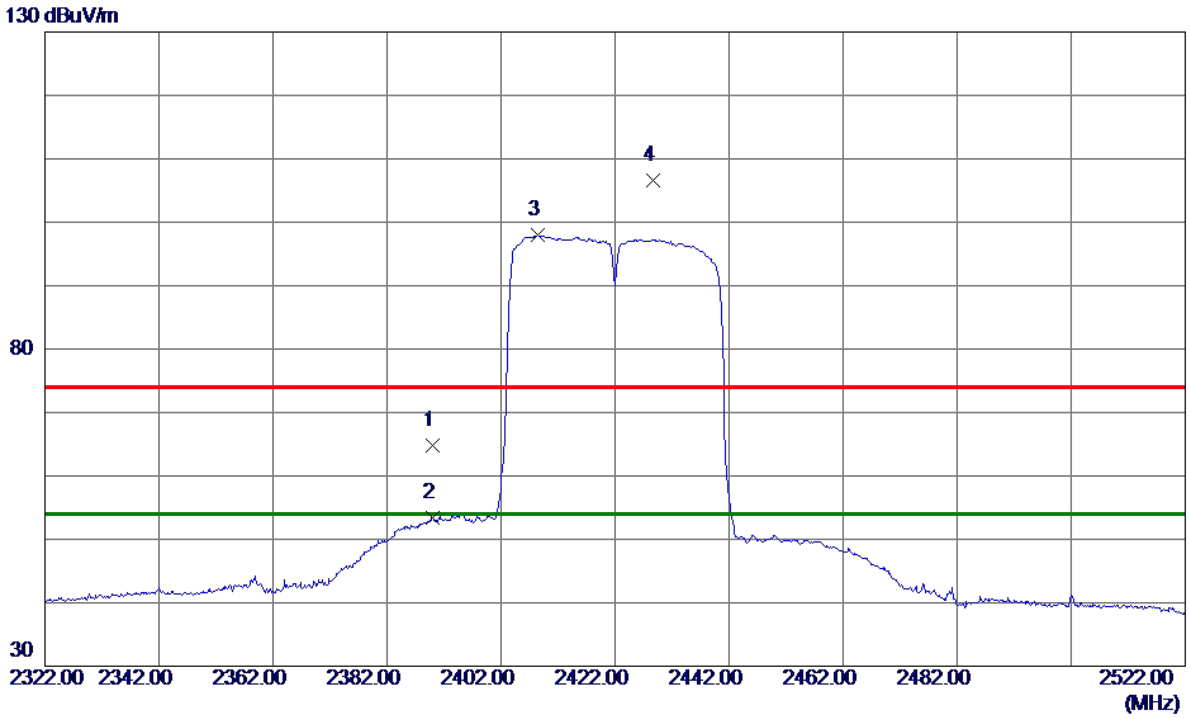
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4923.3000 | 36.51 | 3.73 | 40.24 | 54.00 | -13.76 | AVG | |
| 2 | 4924.3650 | 46.53 | 3.73 | 50.26 | 74.00 | -23.74 | Peak | |

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

| Test Mode: | TX N-40M Mode 2422MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 58.33 | 6.53 | 64.86 | 74.00 | -9.14 | Peak | |
| 2 | 2390.0000 | 46.79 | 6.53 | 53.32 | 54.00 | -0.68 | AVG | |
| 3 * | 2408.4000 | 91.42 | 6.51 | 97.93 | 54.00 | 43.93 | AVG | No Limit |
| 4 | 2428.7000 | 100.10 | 6.49 | 106.59 | 74.00 | 32.59 | Peak | No Limit |

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

| Test Mode: | TX N-40M Mode 2422MHz |
|---|---|

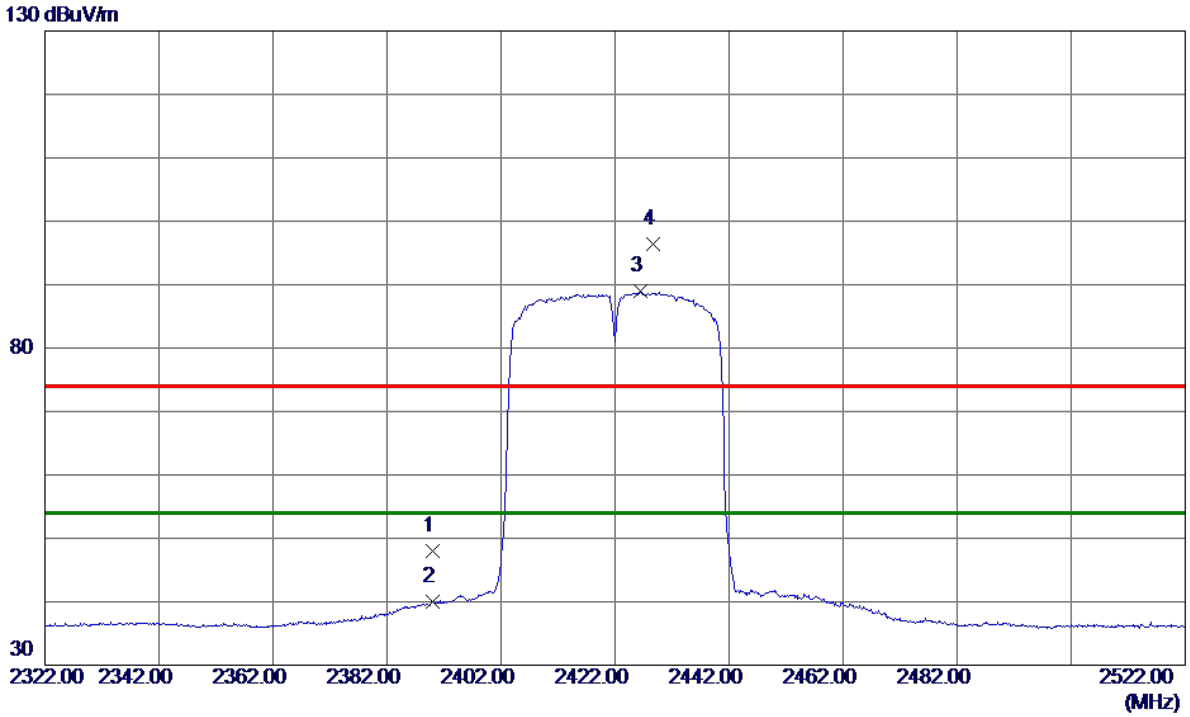
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4840.6400 | 47.18 | 3.48 | 50.66 | 74.00 | -23.34 | Peak | |
| 2 * | 4843.3400 | 36.79 | 3.49 | 40.28 | 54.00 | -13.72 | AVG | |

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

| Test Mode: | TX N-40M Mode 2422MHz |
|---|---|

**Horizontal**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2390.0000 | 41.51 | 6.53 | 48.04 | 74.00 | -25.96 | Peak | |
| 2 | 2390.0000 | 33.39 | 6.53 | 39.92 | 54.00 | -14.08 | AVG | |
| 3 * | 2426.5000 | 82.43 | 6.49 | 88.92 | 54.00 | 34.92 | AVG | No Limit |
| 4 | 2428.7000 | 89.89 | 6.49 | 96.38 | 74.00 | 22.38 | Peak | No Limit |

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

| Test Mode: | TX N-40M Mode 2422MHz |
|---|---|

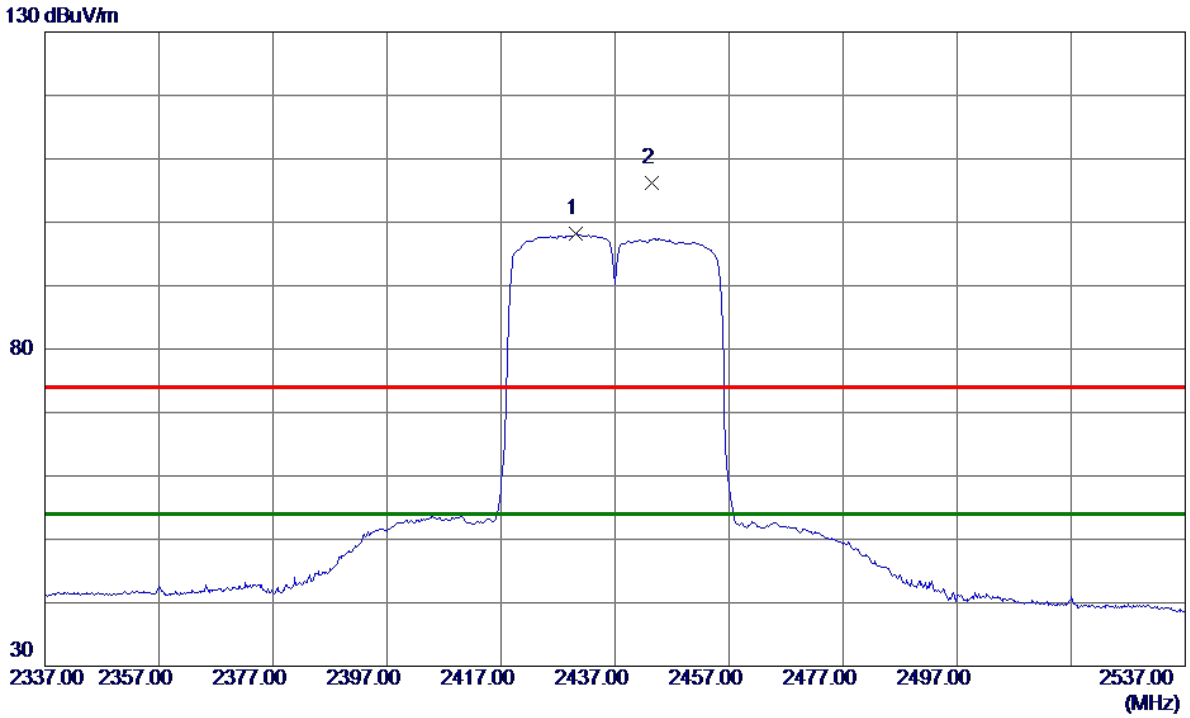
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4843.2700 | 32.92 | 3.49 | 36.41 | 54.00 | -17.59 | AVG | |
| 2 | 4843.3300 | 42.94 | 3.49 | 46.43 | 74.00 | -27.57 | Peak | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2430.2000 | 91.70 | 6.49 | 98.19 | 54.00 | 44.19 | AVG | No Limit |
| 2 | 2443.5000 | 99.71 | 6.47 | 106.18 | 74.00 | 32.18 | 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 |
|---|---|

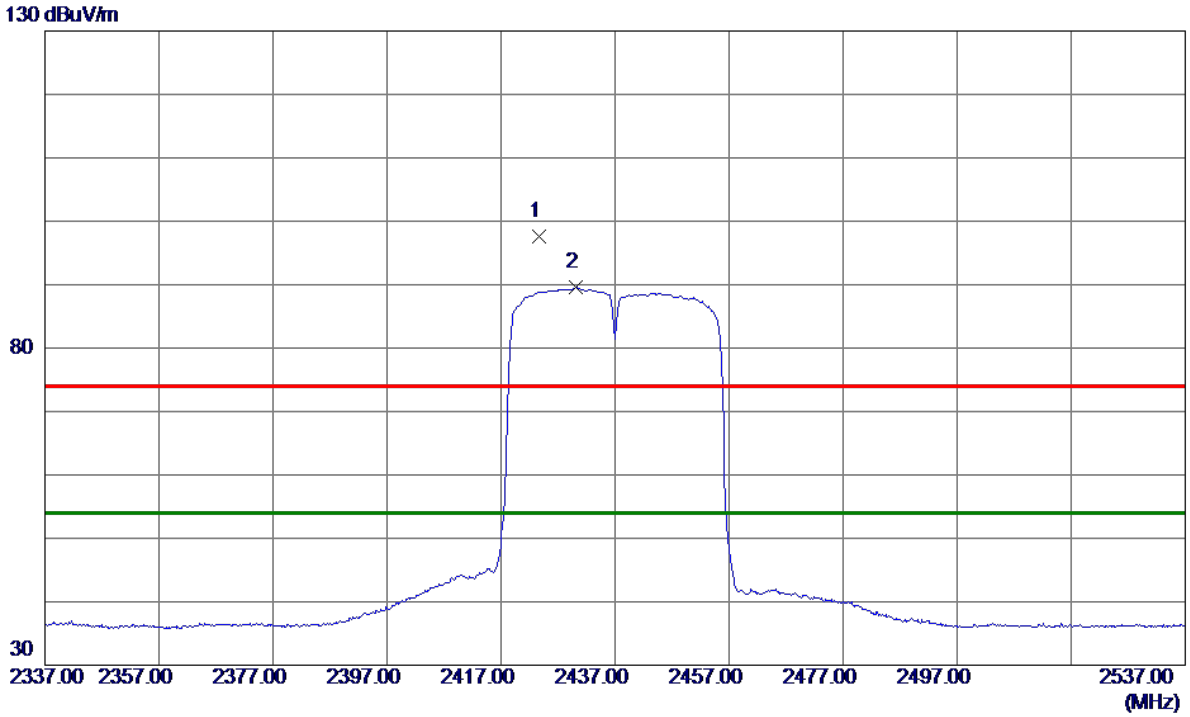
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 4873.1300 | 46.58 | 3.58 | 50.16 | 74.00 | -23.84 | Peak | |
| 2 * | 4873.2700 | 36.09 | 3.58 | 39.67 | 54.00 | -14.33 | AVG | |

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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 | 2423.6000 | 91.12 | 6.49 | 97.61 | 74.00 | 23.61 | Peak | No Limit |
| 2 * | 2430.1000 | 83.09 | 6.49 | 89.58 | 54.00 | 35.58 | 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 |
|---|---|

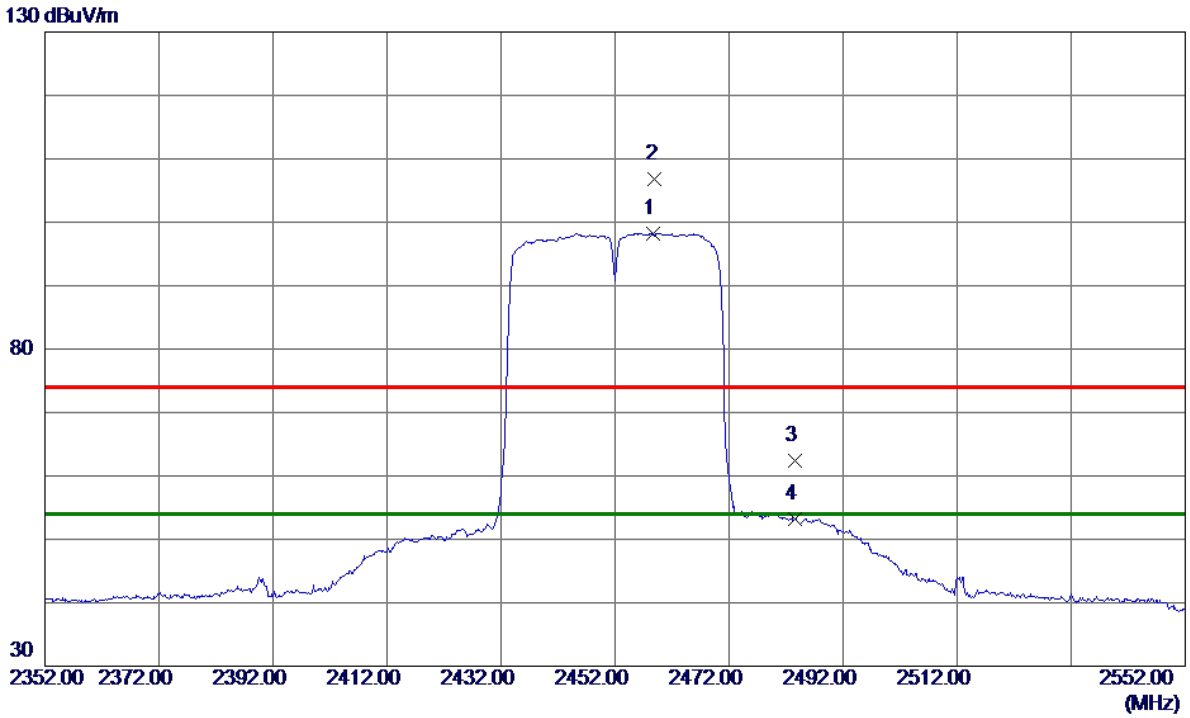
**Horizontal**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4873.1700 | 33.74 | 3.58 | 37.32 | 54.00 | -16.68 | AVG | |
| 2 | 4876.7599 | 44.08 | 3.59 | 47.67 | 74.00 | -26.33 | Peak | |

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

| Test Mode: | TX N-40M Mode 2452 MHz |
|---|---|

**Vertical**




| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2458.7000 | 91.81 | 6.45 | 98.26 | 54.00 | 44.26 | AVG | No Limit |
| 2 | 2459.0000 | 100.36 | 6.45 | 106.81 | 74.00 | 32.81 | Peak | No Limit |
| 3 | 2483.5000 | 55.99 | 6.42 | 62.41 | 74.00 | -11.59 | Peak | |
| 4 | 2483.5000 | 46.84 | 6.42 | 53.26 | 54.00 | -0.74 | AVG | |

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

| Test Mode: | TX N-40M Mode 2452 MHz |
|---|---|

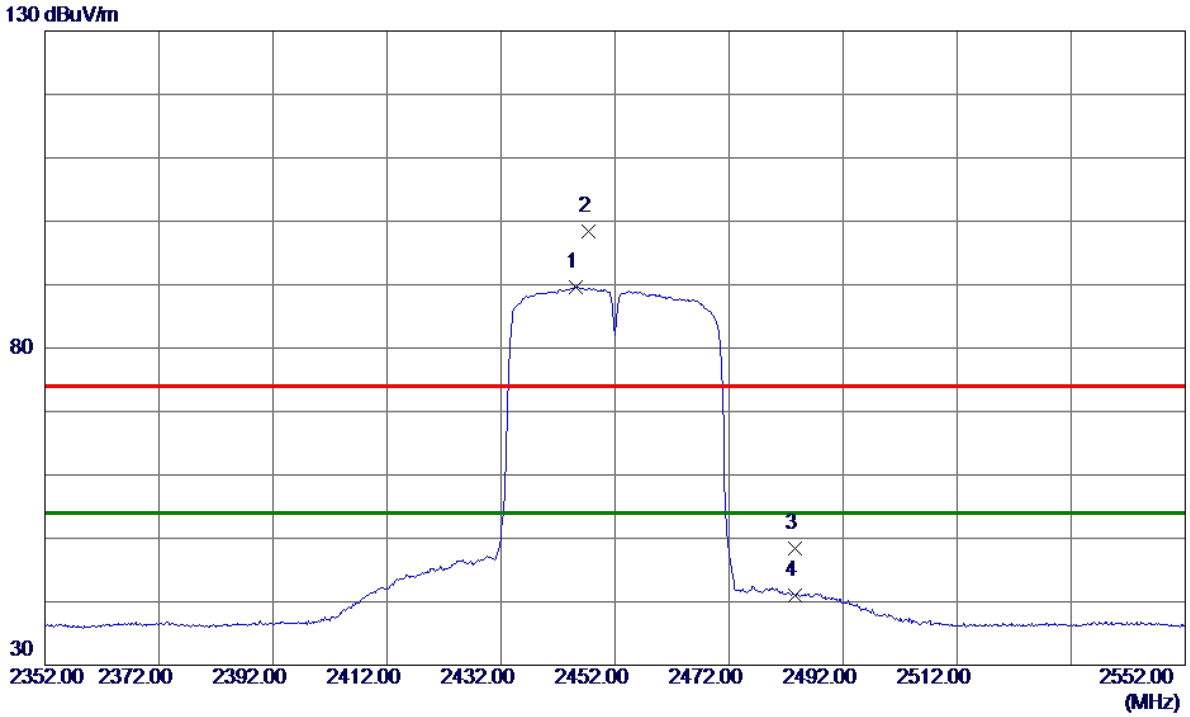
**Vertical**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4903.2450 | 35.90 | 3.67 | 39.57 | 54.00 | -14.43 | AVG | |
| 2 | 4904.4650 | 46.39 | 3.67 | 50.06 | 74.00 | -23.94 | 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. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 2445.2000 | 83.20 | 6.47 | 89.67 | 54.00 | 35.67 | AVG | No Limit |
| 2 | 2447.3000 | 91.96 | 6.47 | 98.43 | 74.00 | 24.43 | Peak | No Limit |
| 3 | 2483.5000 | 41.99 | 6.42 | 48.41 | 74.00 | -25.59 | Peak | |
| 4 | 2483.5000 | 34.66 | 6.42 | 41.08 | 54.00 | -12.92 | 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**


| No. | Freq. | Reading Level | Correct Factor | Measure ment | Limit | Margin | | |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dB | dBuV/m | dBuV/m | dB | Detector | Comment |
| 1 * | 4903.0800 | 33.76 | 3.67 | 37.43 | 54.00 | -16.57 | AVG | |
| 2 | 4906.7400 | 45.00 | 3.68 | 48.68 | 74.00 | -25.32 | Peak | |

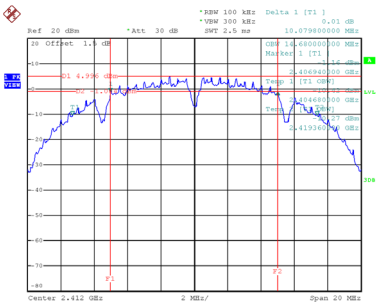
REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

# APPENDIX E - BANDWIDTH

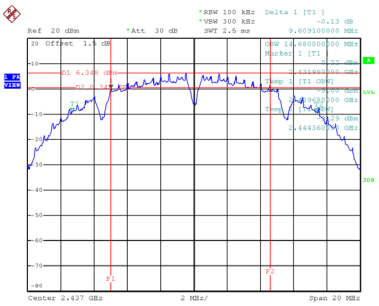
| Test Mode | TX B Mode |
|---|---|

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | 6 dB Bandwidth Min. Limit (kHz) | Result |
|---|---|---|---|---|
| 01 | 2412 | 10.08 | 500 | Complies |
| 06 | 2437 | 9.61 | 500 | Complies |
| 11 | 2462 | 9.64 | 500 | Complies |

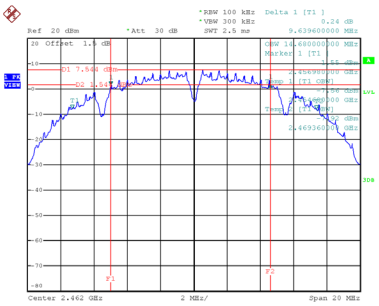
**CH01**



**CH06**

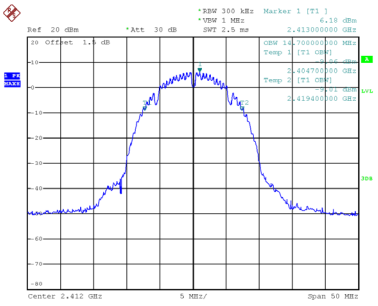


**CH11**

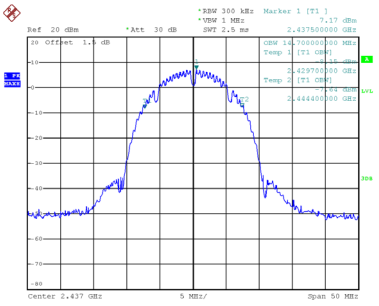


| Channel | Frequency (MHz) | 99 % Emission Bandwidth (MHz) | Result |
|---|---|---|---|
| 01 | 2412 | 14.70 | Complies |
| 06 | 2437 | 14.70 | Complies |
| 11 | 2462 | 14.70 | Complies |

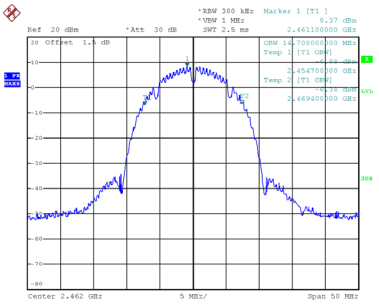
**CH01**



**CH06**



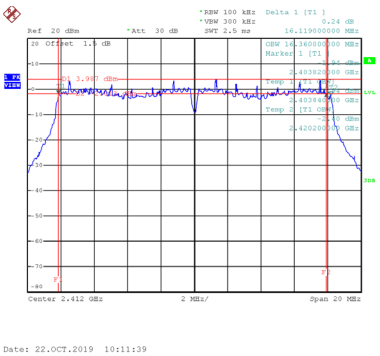
**CH11**



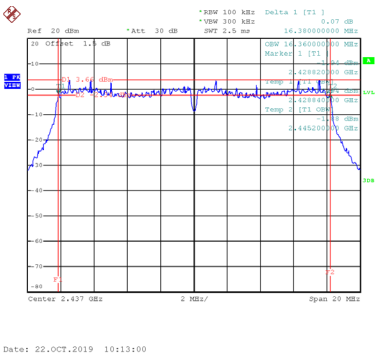
| Test Mode | TX G Mode |
|---|---|

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | 6 dB Bandwidth Min. Limit (kHz) | Result |
|---|---|---|---|---|
| 01 | 2412 | 16.12 | 500 | Complies |
| 06 | 2437 | 16.38 | 500 | Complies |
| 11 | 2462 | 16.38 | 500 | Complies |

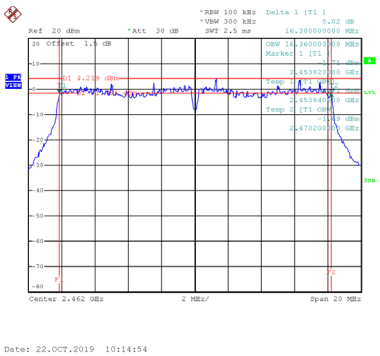
**CH01**



**CH06**

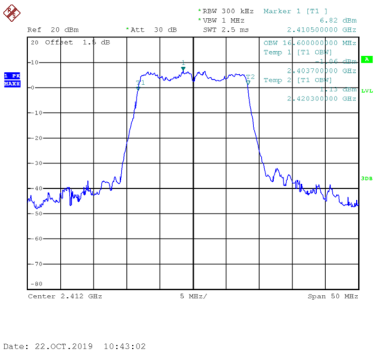


**CH11**

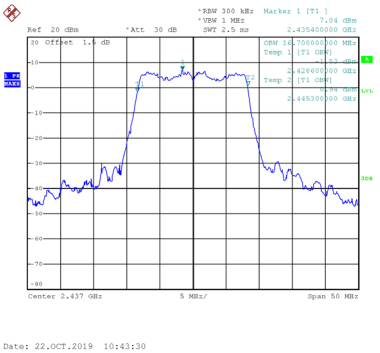


| Channel | Frequency (MHz) | 99 % Emission Bandwidth (MHz) | Result |
|---|---|---|---|
| 01 | 2412 | 16.60 | Complies |
| 06 | 2437 | 16.70 | Complies |
| 11 | 2462 | 16.70 | Complies |

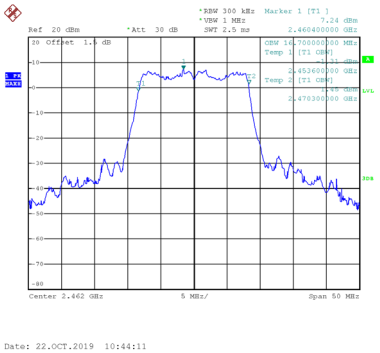
**CH01**



**CH06**



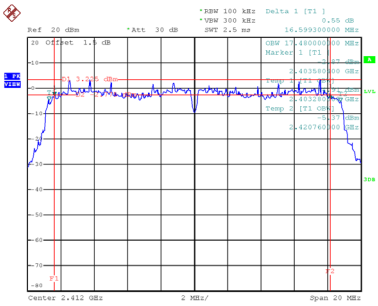
**CH11**



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

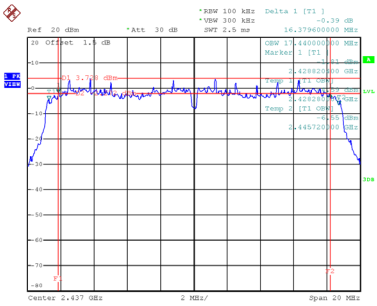
| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | 6 dB Bandwidth Min. Limit (kHz) | Result |
|---|---|---|---|---|
| 01 | 2412 | 16.60 | 500 | Complies |
| 06 | 2437 | 16.38 | 500 | Complies |
| 11 | 2462 | 16.40 | 500 | Complies |

**CH01**



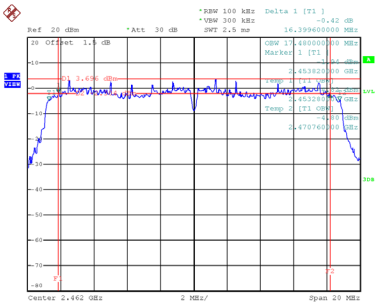
Date: 22.OCT.2019 10:17:06

**CH06**



Date: 22.OCT.2019 10:18:38

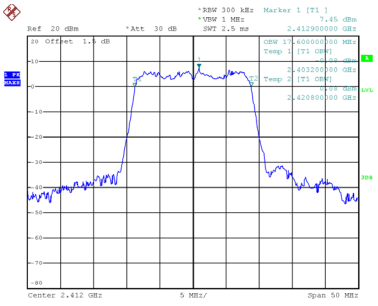
**CH11**



Date: 22.OCT.2019 10:20:41

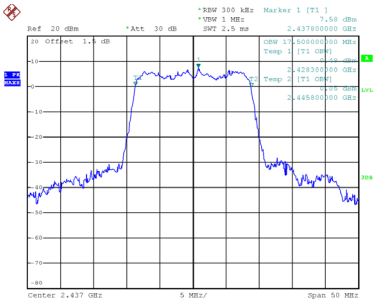
| Channel | Frequency (MHz) | 99 % Emission Bandwidth (MHz) | Result |
|---|---|---|---|
| 01 | 2412 | 17.60 | Complies |
| 06 | 2437 | 17.50 | Complies |
| 11 | 2462 | 17.60 | Complies |

**CH01**



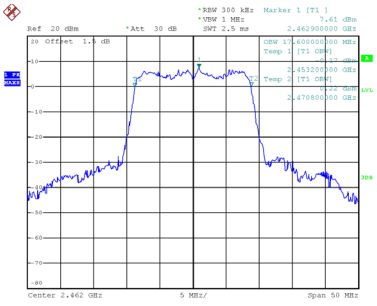
Date: 22.OCT.2019 10:44:59

**CH06**



Date: 22.OCT.2019 10:45:29

**CH11**

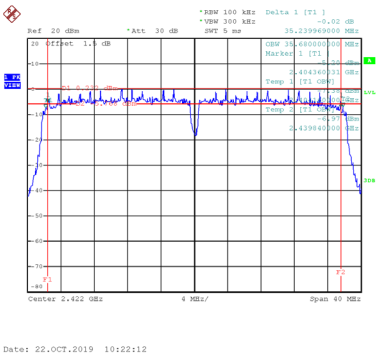


Date: 22.OCT.2019 10:45:54

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

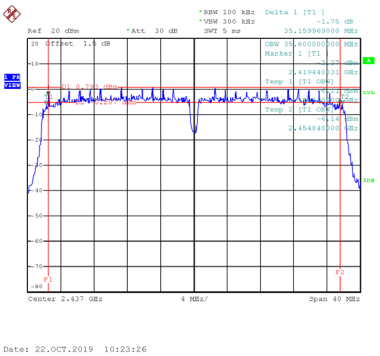
| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | 6 dB Bandwidth Min. Limit (kHz) | Result |
|---|---|---|---|---|
| 03 | 2422 | 35.24 | 500 | Complies |
| 06 | 2437 | 35.16 | 500 | Complies |
| 09 | 2452 | 35.08 | 500 | Complies |

**CH03**



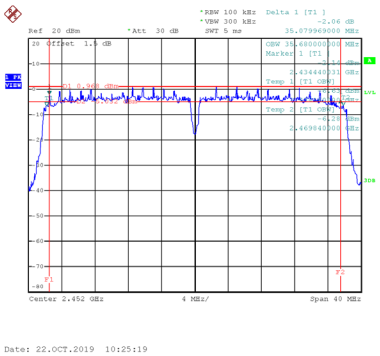
Date: 22.OCT.2019 10:22:12

**CH06**



Date: 22.OCT.2019 10:23:26

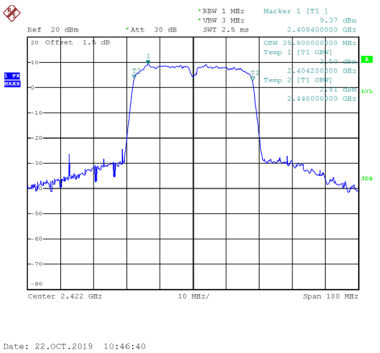
**CH09**



Date: 22.OCT.2019 10:25:19

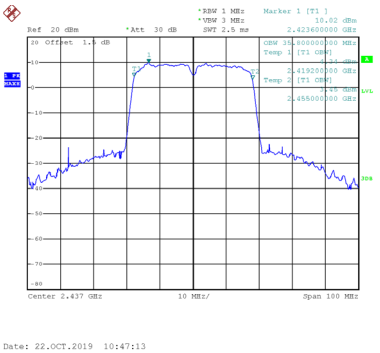
| Channel | Frequency (MHz) | 99 % Emission Bandwidth (MHz) | Result |
|---|---|---|---|
| 03 | 2422 | 35.80 | Complies |
| 06 | 2437 | 35.80 | Complies |
| 09 | 2452 | 35.80 | Complies |

**CH03**



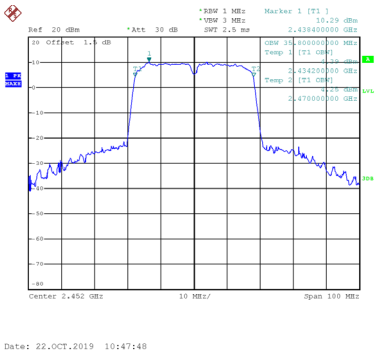
Date: 22.OCT.2019 10:46:40

**CH06**



Date: 22.OCT.2019 10:47:13

**CH09**



Date: 22.OCT.2019 10:47:48

# APPENDIX F - MAXIMUM OUTPUT POWER

**Non Beamforming**

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 16.21 | 0.0418 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 17.33 | 0.0541 | 30.00 | 1.0000 | Complies |
| 11 | 2462 | 18.07 | 0.0641 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 16.19 | 0.0416 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 16.28 | 0.0425 | 30.00 | 1.0000 | Complies |
| 11 | 2462 | 16.23 | 0.0420 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 15.54 | 0.0358 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 15.50 | 0.0355 | 30.00 | 1.0000 | Complies |
| 11 | 2462 | 15.54 | 0.0358 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 15.21 | 0.0332 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 15.14 | 0.0327 | 30.00 | 1.0000 | Complies |
| 11 | 2462 | 15.25 | 0.0335 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 18.39 | 0.0690 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 18.33 | 0.0681 | 30.00 | 1.0000 | Complies |
| 11 | 2462 | 18.41 | 0.0693 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 03 | 2422 | 15.44 | 0.0350 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 15.94 | 0.0392 | 30.00 | 1.0000 | Complies |
| 09 | 2452 | 16.08 | 0.0405 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 03 | 2422 | 15.17 | 0.0329 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 15.64 | 0.0366 | 30.00 | 1.0000 | Complies |
| 09 | 2452 | 15.83 | 0.0383 | 30.00 | 1.0000 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 03 | 2422 | 18.31 | 0.0678 | 30.00 | 1.0000 | Complies |
| 06 | 2437 | 18.80 | 0.0759 | 30.00 | 1.0000 | Complies |
| 09 | 2452 | 18.96 | 0.0788 | 30.00 | 1.0000 | Complies |

## Beamforming

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 15.01 | 0.0317 | 29.50 | 0.8913 | Complies |
| 06 | 2437 | 14.93 | 0.0311 | 29.50 | 0.8913 | Complies |
| 11 | 2462 | 15.14 | 0.0327 | 29.50 | 0.8913 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 14.93 | 0.0311 | 29.50 | 0.8913 | Complies |
| 06 | 2437 | 14.67 | 0.0293 | 29.50 | 0.8913 | Complies |
| 11 | 2462 | 14.96 | 0.0313 | 29.50 | 0.8913 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 01 | 2412 | 17.98 | 0.0628 | 29.50 | 0.8913 | Complies |
| 06 | 2437 | 17.81 | 0.0604 | 29.50 | 0.8913 | Complies |
| 11 | 2462 | 18.06 | 0.0640 | 29.50 | 0.8913 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 03 | 2422 | 15.67 | 0.0369 | 29.50 | 0.8913 | Complies |
| 06 | 2437 | 15.43 | 0.0349 | 29.50 | 0.8913 | Complies |
| 09 | 2452 | 15.40 | 0.0346 | 29.50 | 0.8913 | Complies |

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

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 03 | 2422 | 15.03 | 0.0318 | 29.50 | 0.8913 | Complies |
| 06 | 2437 | 15.22 | 0.0332 | 29.50 | 0.8913 | Complies |
| 09 | 2452 | 15.49 | 0.0354 | 29.50 | 0.8913 | Complies |

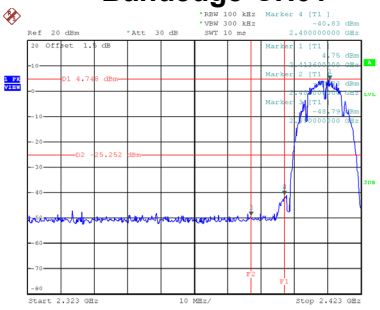
| Test Mode | TX N-40M Mode_Total |
|---|---|

| Channel | Frequency (MHz) | Output Power (dBm) | Output Power (W) | Max. Limit (dBm) | Max. Limit (W) | Result |
|---|---|---|---|---|---|---|
| 03 | 2422 | 18.37 | 0.0687 | 29.50 | 0.8913 | Complies |
| 06 | 2437 | 18.33 | 0.0681 | 29.50 | 0.8913 | Complies |
| 09 | 2452 | 18.45 | 0.0700 | 29.50 | 0.8913 | Complies |

# APPENDIX G - CONDUCTED SPURIOUS EMISSIONS

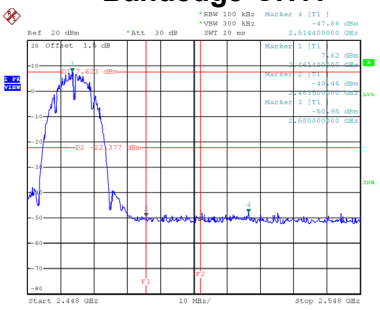
| Test Mode | TX B Mode |
|---|---|

## Bandedge-CH01



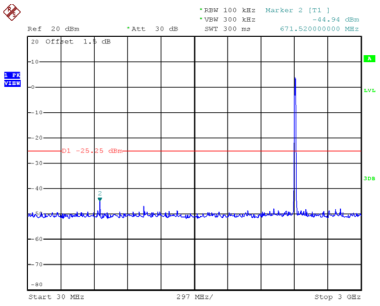
Date: 22.OCT.2019 10:04:17

## Bandedge-CH11

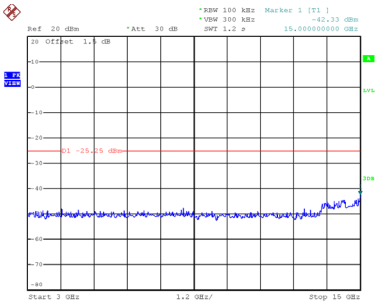


Date: 22.OCT.2019 10:09:16

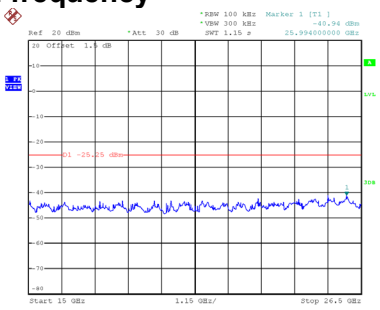
## CH01 – 10th Harmonic of the fundamental frequency



Date: 22.OCT.2019 10:04:30

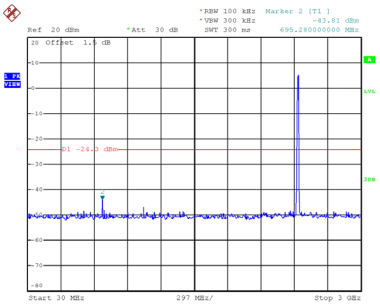


Date: 22.OCT.2019 10:04:37

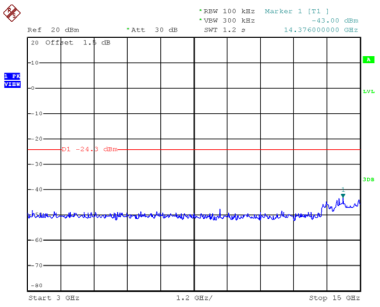


Date: 22.OCT.2019 10:04:44

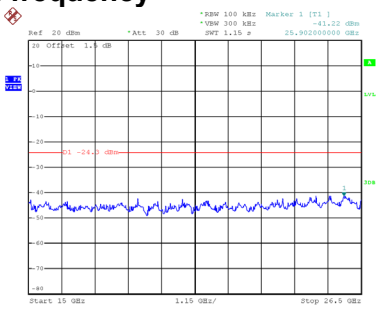
## CH06 – 10th Harmonic of the fundamental frequency



Date: 22.OCT.2019 10:06:41

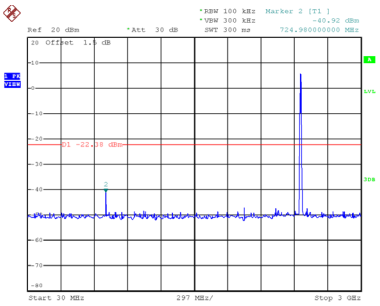


Date: 22.OCT.2019 10:06:48

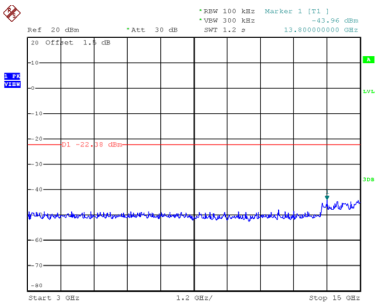


Date: 22.OCT.2019 10:06:55

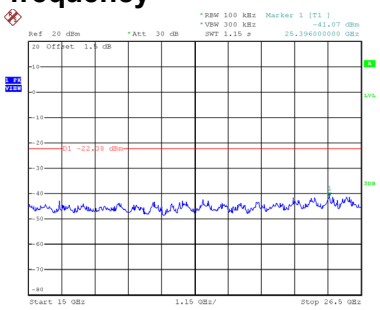
## CH11 – 10th Harmonic of the fundamental frequency



Date: 22.OCT.2019 10:09:29



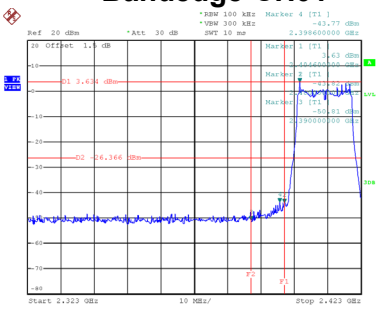
Date: 22.OCT.2019 10:09:36



Date: 22.OCT.2019 10:09:43

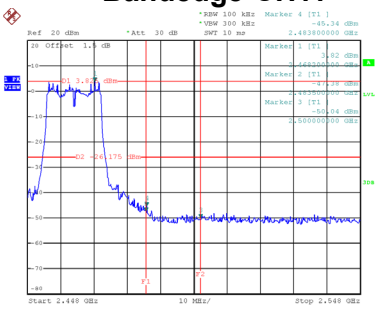
| Test Mode | TX G Mode |
|---|---|

## Bandedge-CH01



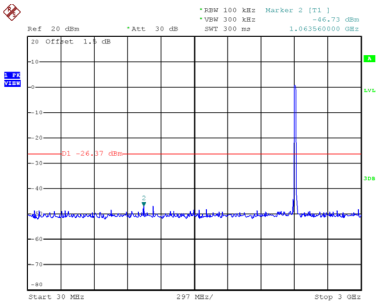
Date: 22.OCT.2019 10:11:46

## Bandedge-CH11

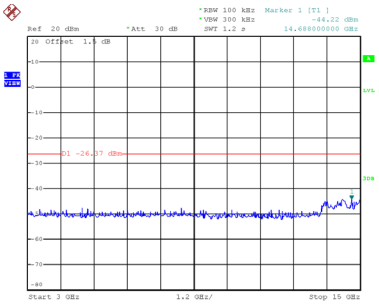


Date: 22.OCT.2019 10:15:01

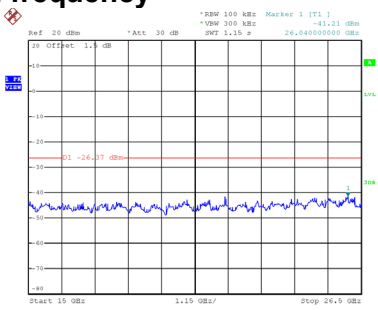
## CH01 – 10th Harmonic of the fundamental frequency



Date: 22.OCT.2019 10:11:59

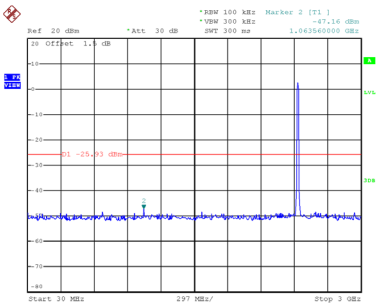


Date: 22.OCT.2019 10:12:06

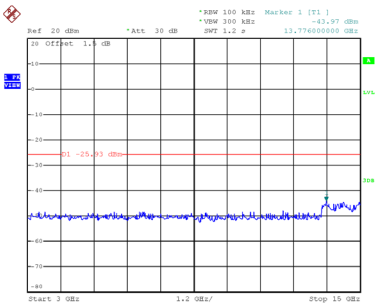


Date: 22.OCT.2019 10:12:13

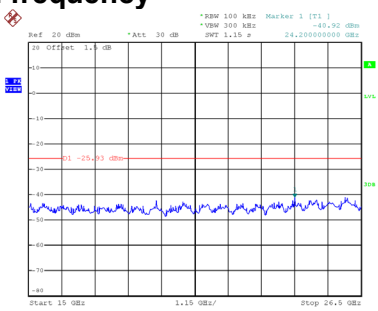
## CH06 – 10th Harmonic of the fundamental frequency



Date: 22.OCT.2019 10:13:20

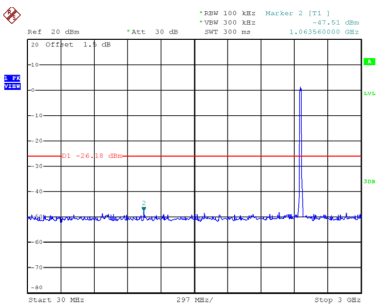


Date: 22.OCT.2019 10:13:27

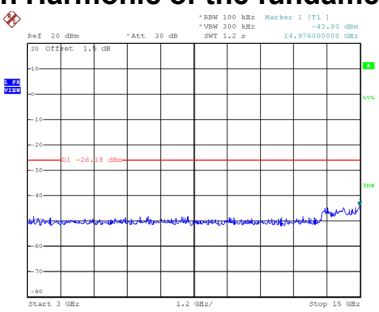


Date: 22.OCT.2019 10:13:34

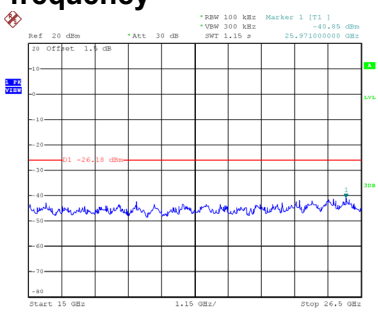
## CH11 – 10th Harmonic of the fundamental frequency



Date: 22.OCT.2019 10:15:14



Date: 22.OCT.2019 10:15:21



Date: 22.OCT.2019 10:15:28