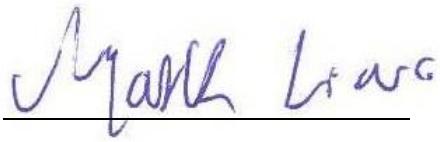
# FCC RADIO TEST REPORT

| | | |
|---|---|---|
| Applicant | : | LITE-ON TECHNOLOGY CORP. |
| Address | : | Bldg. C, 90, Chien 1 Road, Chung Ho,<br>New Taipei City 23585, Taiwan, R.O.C. |
| Equipment | : | 802.11b/g/n 2T2R Wireless LAN USB Module |
| Model No. | : | WN3604R |
| Trade Name | : | LITEON |
| FCC ID. | : | PPQ-WN3604R |

**I HEREBY CERTIFY THAT :**

**The sample was received on Oct. 15, 2020 and the testing was completed on Nov. 21, 2020 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.**

Approved by:



Laboratory Accreditation:

Cerpass Technology Corporation Test Laboratory

## Contents

# History of this test report

| Report No. | Issue Date | Description |
|---|---|---|
| TEFI2010087 | Nov. 26, 2020 | Original |
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# 1. Summary of Test Procedure and Test Results

## 1.1 Applicable Standards

**ANSI C63.10:2013**

**FCC Rules and Regulations Part 15 Subpart C §15.247**

| FCC Rule | . Description of Test | Result |
|---|---|---|
| 15.203 | . Antenna Requirement | PASS |
| 15.207 | . AC Power Line Conducted Emission | PASS |
| 15.209<br>15.205 | . Radiated Spurious Emission | PASS |
| 15.247(d) | . Conducted Spurious Emission | PASS |
| 15.247(a)(2) | . 6dB Bandwidth | PASS |
| 15.247(b) | . Maximum Peak and Average Output Power | PASS |
| 15.247(e) | . Power Spectral Density | PASS |
| 2.1091 | . Radio Frequency Exposure | PASS |

*The lab has reduced the uncertainty risk factor from test equipment, environment and staff technicians which according to the standard on contract. Therefore, the test result will only be determined by standard requirement.

*This EUT has been also tested and compiled with the requirement of FCC Part 15, Subpart B, recorded in a separate test report(TEFD2010087).

# 2. Test Configuration of Equipment under Test

## 2.1 Feature of Equipment

| | |
|---|---|
| Frequency Range | 802.11b/g/n: 2412-2462MHz |
| Modulation Type | 802.11b: CCK, DQPSK, DBPSK<br>802.11g/n: BPSK, QPSK, 16QAM, 64QAM, |
| Modulation Technology | DSSS, OFDM |
| Data Rate | 802.11b: 1, 2, 5.5, 11Mbps<br>802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps<br>802.11n: MCS0 – MCS15, HT20/40 |
| Antenna Type | PCB / PIFA Antenna |
| Antenna Gain | PCB: ANT A / B: 3.23dBi<br>PIFA: ANT A / B: 2.87dBi |
| Firmware Number | MT7603_mp1_v1.17 |
| Serial Number | 3604203400097 |

Note:

1. For more details, please refer to the User's manual of the EUT.

## 2.2 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT20 (2412MHz~2462MHz)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---|---|---|---|
| ***01** | **2412** | 07 | 2442 |
| 02 | 2417 | 08 | 2447 |
| 03 | 2422 | 09 | 2452 |
| 04 | 2427 | 10 | 2457 |
| 05 | 2432 | ***11** | **2462** |
| ***06** | **2437** | --- | --- |

802.11n HT40 (2422MHz~2452MHz)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---|---|---|---|
| --- | --- | 07 | 2442 |
| --- | --- | 08 | 2447 |
| ***03** | **2422** | ***09** | **2452** |
| 04 | 2427 | --- | --- |
| 05 | 2432 | --- | --- |
| ***06** | **2437** | --- | --- |

Note: Channels remarked * are selected to perform test.

## 2.3 Test Mode and Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.10.
b. The complete test system included Remote workstation and EUT for RF test. The Remote workstation included Notebook.
c. An executive program, ” MT7603 QA ver.0.0.0.68” under Windows OS system was executed to transmit and receive data via WLAN.
d. The following test modes were performed for the test:

| Conducted Emissions from the AC mains power ports | |
|---|---|
| Test Mode | Operating Description |
| 1 | 802.11b (11Mbps) , For PCB antenna |
| 2 | 802.11g (6Mbps) , For PCB antenna |
| 3 | 802.11n HT20 (6.5Mbps) , For PCB antenna |
| 4 | 802.11n HT40 (13.5Mbps) , For PCB antenna |
| 5 | 802.11b (11Mbps) , For PIFA antenna |
| 6 | 802.11g (6Mbps) , For PIFA antenna |
| 7 | 802.11n HT20 (6.5Mbps) , For PIFA antenna |
| 8 | 802.11n HT40 (13.5Mbps) , For PIFA antenna |
| caused “Test Mode 3, 7” generated the worst case, it was reported as the final data. | |
| Radiation Emissions (30MHz ~ 1GHz) | |
| Test Mode | Operating Description |
| 1 | 802.11b (11Mbps) , For PCB antenna |
| 2 | 802.11g (6Mbps) , For PCB antenna |
| 3 | 802.11n HT20 (6.5Mbps) , For PCB antenna |
| 4 | 802.11n HT40 (13.5Mbps) , For PCB antenna |
| 5 | 802.11b (11Mbps) , For PIFA antenna |
| 6 | 802.11g (6Mbps) , For PIFA antenna |
| 7 | 802.11n HT20 (6.5Mbps) , For PIFA antenna |
| 8 | 802.11n HT40 (13.5Mbps) , For PIFA antenna |
| caused “Test Mode 3, 7” generated the worst case, it was reported as the final data. | |
| Radiation Emissions (1GHz ~ 25GHz) | |
| Test Mode | Operating Description |
| 1 | 802.11b (11Mbps) , For PCB antenna |
| 2 | 802.11g (6Mbps) , For PCB antenna |
| 3 | 802.11n HT20 (6.5Mbps) , For PCB antenna |
| 4 | 802.11n HT40 (13.5Mbps) , For PCB antenna |
| 5 | 802.11b (11Mbps) , For PIFA antenna |
| 6 | 802.11g (6Mbps) , For PIFA antenna |
| 7 | 802.11n HT20 (6.5Mbps) , For PIFA antenna |
| 8 | 802.11n HT40 (13.5Mbps) , For PIFA antenna |
| caused “Test Mode 1~8” generated the worst case, they were reported as the final data. | |

The EUT incorporates a MIMO function

| Modulation Type | TX CONFIGURATION |
|---|---|
| 802.11b | 2TX |
| 802.11g | 2TX |
| 802.11n HT20 | 2TX |
| 802.11n HT40 | 2TX |

## 2.4 Description of Test System

| RF Conducted | | | | |
|---|---|---|---|---|
| Equipment | Brand | Model | Length/Type | Power cord/Length/Type |
| Notebook | ASUS | P2430U | N/A | Adapter / 1.8m / NS |
| USB Cable | BENEVO | BUSB3100AMF | 1.0m / NS | N/A |
| Radiated Emissions | | | | |
| Equipment | Brand | Model | Length/Type | Power cord/Length/Type |
| Notebook | ASUS | P2430U | N/A | Adapter / 1.8m / NS |
| USB Cable | BENEVO | BUSB3100AMF | 1.0m / NS | N/A |
| AC Power Line Conducted Emission | | | | |
| Equipment | Brand | Model | Length/Type | Power cord/Length/Type |
| Notebook | ASUS | P2430U | N/A | Adapter / 1.8m / NS |
| USB Cable | BENEVO | BUSB3100AMF | 1.0m / NS | N/A |

## 2.5 General Information of Test

| | | |
|---|---|---|
| Test Site | **Cerpass Technology Corporation Test Laboratory**<br>Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.)<br>Tel:+886-3-3226-888<br>Fax:+886-3-3226-881 | |
| | FCC | TW1079, TW1439 |
| | IC | 4934E-1, 4934E-2 |
| | VCCI | T-2205 for Telecommunication test<br>C-4663 for Conducted emission test<br>R-4218 for Radiated emission test<br>G-10812, G-10813 for radiated disturbance above 1GHz |
| Frequency Range Investigated: | Conducted: from 150kHz to 30 MHz<br>Radiation: from 30 MHz to 25,000MHz | |
| Test Distance: | The test distance of radiated emission from antenna to EUT is 3 M. | |

| Test Item | Test Site | Test Period | Environmental Conditions | Tested By |
|---|---|---|---|---|
| RF Conducted | RFCON01-NK | 2020/11/19 | 26℃ / 45% | Nick Guan |
| Radiated Emissions | 3M02-NK | 2020/11/09~2020/11/12 | 22~27℃ / 39~45% | Leon Huang |
| AC Power Line Conducted Emission | CON01-NK | 2020/11/21 | 25℃ / 48% | Leon Huang |

## 2.6 Measurement Uncertainty

| Measurement Item | Uncertainty |
|---|---|
| AC Power Line Conduction(150K~30MHz) | ±3.42dB |
| Radiated Spurious Emission(9KHz~30MHz) | ±3.404dB |
| Radiated Spurious Emission(30MHz~1GHz) | ±5.686dB |
| Radiated Spurious Emission(1GHz~25GHz) | ±6.597dB |
| Conducted Spurious Emission | ±2.022dB |
| 6dB Bandwidth | ±4.482% |
| 20dB Bandwidth | ±4.40% |
| Occupied Bandwidth | ±4.40% |
| Peak Output Power(Conducted Power Meter) | ±1.02dB |
| Dwell Time | ±3.49% |
| Power Spectral Density | ±1.963dB |
| Duty Cycle | ±3.47% |

## 3. Test Equipment and Ancillaries Used for Tests

| Test Item | Radiated Emissions | | | | |
|---|---|---|---|---|---|
| Test Site | Semi Anechoic Room(3M02-NK) | | | | |
| **Instrument** | **Manufacturer** | **Model No** | **Serial No** | **Calibration Date** | **Valid Date** |
| Bilog Antenna | Schwarzbeck | VULB9168 | 369 | 2020/04/10 | 2021/04/09 |
| Active Loop Antenna | EMCO | 6507 | 40855 | 2020/05/21 | 2021/05/20 |
| Horn Antenna | EMCO | 3115 | 31601 | 2020/10/16 | 2021/10/15 |
| Horn Antenna | EMCO | 3116 | 31970 | 2020/03/26 | 2021/03/25 |
| EMI Receiver | ROHDE & SCHWARZ | ESCI | 101423 | 2020/06/23 | 2021/06/22 |
| Spectrum Analyzer | ROHDE & SCHWARZ | FSV 40-N | 102151 | 2020/08/03 | 2021/08/02 |
| Preamplifier | EM Electronics corp. | EM330 | 60660 | 2020/03/16 | 2021/03/15 |
| Preamplifier | Agilent | 8449B | 3008A01954 | 2020/03/16 | 2021/03/15 |
| Preamplifier | EMC INSTRUMENTS | EMC184045 | 980065 | 2020/11/06 | 2021/11/05 |
| Bluetooth Tester | ROHDE & SCHWARZ | CBT | 101133 | 2020/04/07 | 2021/04/06 |
| Cable-3in1(30M-1G) | HARBOUR INDUSTRIES | LL142 | CCE1315 | 2020/04/09 | 2021/04/08 |
| Cable-0.5m(1G-18G) | HUBER SUHNER | SUCOFLEX 100 | 805443/4 | 2020/05/27 | 2021/05/26 |
| Cable-3m(1G-18G) | HUBER SUHNER | SUCOFLEX 100 | 805796/4 | 2020/05/27 | 2021/05/26 |
| Cable-8m(1G-18G) | HUBER SUHNER | SUCOFLEX 100 | 805795/4 | 2020/05/27 | 2021/05/26 |
| Cable-0.5m(30M-40G) | HUBER SUHNER | SUCOFLEX 102 | 28420/2 | 2020/04/01 | 2021/03/31 |
| Cable-3m(30M-40G) | HUBER SUHNER | SUCOFLEX 102 | MY2608/2 | 2020/04/01 | 2021/03/31 |
| Cable-0.5m(1G-40G) | Rapidtek | 40GHZ 50CM | 38MS-38MS50 314 | 2020/04/09 | 2021/04/08 |
| Cable-6m(9k~300M) | NA | EMC5D-BM-BM-6 | 130606 | 2020/03/11 | 2021/03/10 |
| E3 | AUDIX | v8.2014-8-6 | RK-000529 | NA | NA |

| **Test Item** | RF Conducted | | | | |
|---|---|---|---|---|---|
| **Test Site** | RFCON01-NK | | | | |
| **Instrument** | **Manufacturer** | **Model No** | **Serial No** | **Calibration Date** | **Valid Date** |
| Spectrum Analyzer | ROHDE & SCHWARZ | FSV 40-N | 101329 | 2020/07/07 | 2021/07/06 |
| Bluetooth Tester | ROHDE & SCHWARZ | CBT | 101133 | 2020/04/07 | 2021/04/06 |
| CAX Signal Analyzer | KEYSIGHT | N9000B | MY57100339 | 2019/11/25 | 2020/11/24 |
| Attenuator | KEYSIGHT | 8491B | MY39250703 | 2020/04/17 | 2021/04/16 |
| TEMP & HUMI CHAMBER | T-MACHINE | TMJ-9712 | T-12-040111 | 2020/08/25 | 2021/08/24 |
| Power Meter | Anritsu | ML2495A | 1224005 | 2020/04/17 | 2021/04/16 |
| Power Sensor | Anritsu | MA2411B | 1207295 | 2020/04/17 | 2021/04/16 |

| Test Item | AC Power Line Conducted Emission | | | | |
|---|---|---|---|---|---|
| **Test Site** | CON01-NK | | | | |
| **Instrument** | **Manufacturer** | **Model No** | **Serial No** | **Calibration Date** | **Valid Date** |
| EMI Receiver | ROHDE & SCHWARZ | ESCI | 100443 | 2020/05/25 | 2021/05/24 |
| Line Impedance Stabilization Network | Schwarzbeck | NSLK 8127 | 8127-568 | 2020/03/12 | 2021/03/11 |
| Pulse Limiter | ROHDE & SCHWARZ | ESH3-Z2 | 101934 | 2020/03/11 | 2021/03/10 |
| Cable-6m(9k~300M) | NA | CFD300-NL | NA | 2020/03/11 | 2021/03/10 |
| E3 | AUDIX | v8.2014-8-6 | RK-000531 | NA | NA |

# 4. Antenna Requirements

## 4.1 Antenna Construction and Directional Gain

| | |
|---|---|
| Antenna Type | PCB / PIFA Antenna |
| Antenna Gain | PCB: ANT A / B: 3.23dBi<br>PIFA: ANT A / B: 2.87dBi |

For PCB ANT:
2412-2462MHz
For Power directional gain= $G_{ant}$= 3.23 dBi
For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2$ /NANT]
= 6.24 (dBi)

For PIFA ANT:
2412-2462MHz
For Power directional gain= $G_{ant}$= 2.87 dBi
For PSD directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2$ /NANT]
= 5.88 (dBi)

# 5. Test of AC Power Line Conducted Emission

## 5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz, according to the methods defined in ANSI C63.4-2014. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

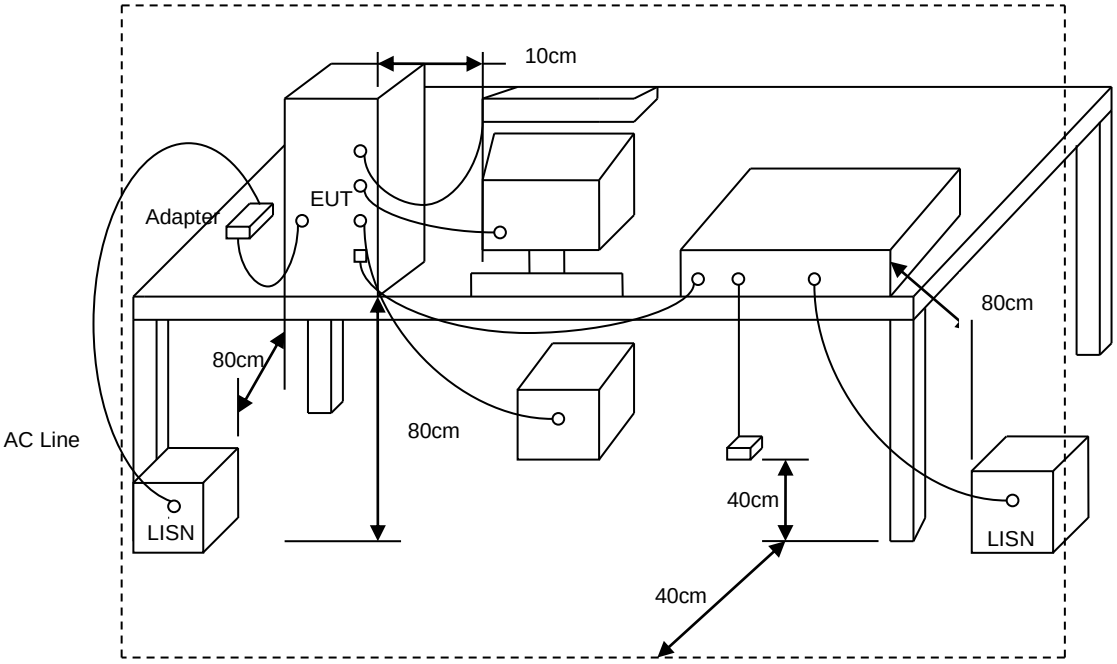
| Frequency (MHz) | Quasi Peak (dB μ V) | Average (dB μ V) |
|---|---|---|
| 0.15 – 0.5 | 66-56* | 56-46* |
| 0.5 – 5.0 | 56 | 46 |
| 5.0 – 30.0 | 60 | 50 |

*Decreases with the logarithm of the frequency.

## 5.2 Test Procedures

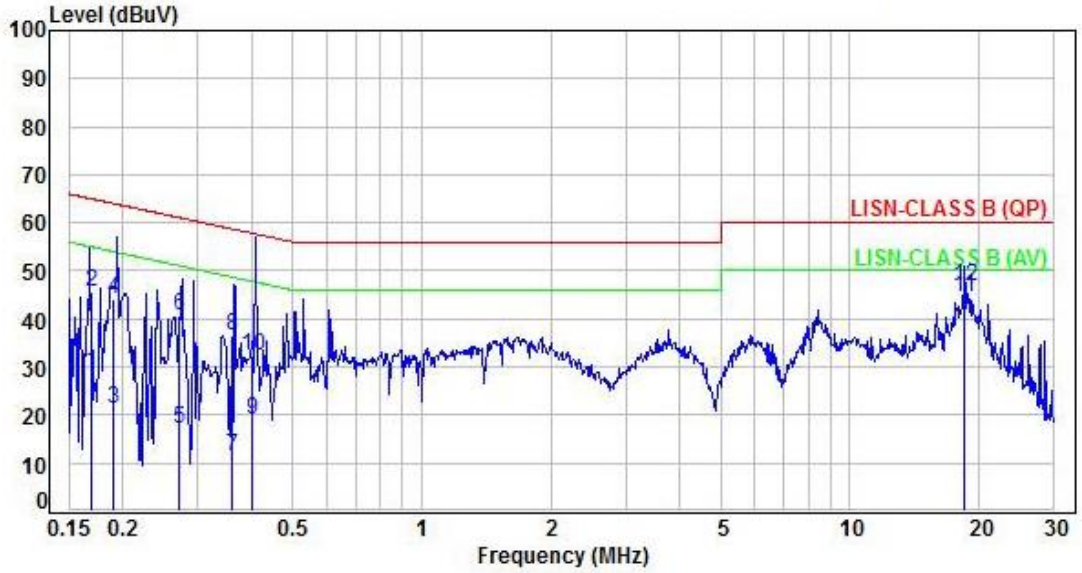
a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
c. All the support units are connecting to the other LISN.
d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
f. Both sides of AC line were checked for maximum conducted interference.
g. The frequency range from 150 kHz to 30 MHz was searched.
h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

## 5.3 Typical Test Setup



## 5.4 Test Result and Data

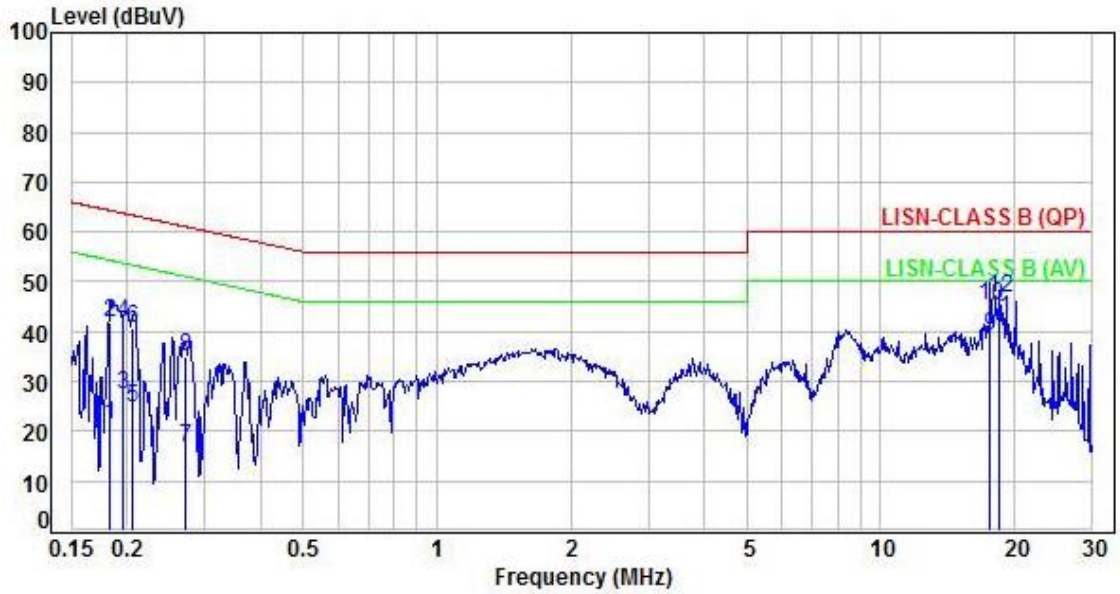
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | LINE |
| Test Mode | : | Mode 3 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.17 | 10.05 | 18.95 | 29.00 | 55.03 | -26.03 | Average | P |
| 2 | 0.17 | 10.05 | 35.71 | 45.76 | 65.03 | -19.27 | QP | P |
| 3 | 0.19 | 10.05 | 11.26 | 21.31 | 53.99 | -32.68 | Average | P |
| 4 | 0.19 | 10.05 | 34.07 | 44.12 | 63.99 | -19.87 | QP | P |
| 5 | 0.27 | 10.05 | 7.05 | 17.10 | 51.06 | -33.96 | Average | P |
| 6 | 0.27 | 10.05 | 30.60 | 40.65 | 61.06 | -20.41 | QP | P |
| 7 | 0.36 | 10.05 | 1.22 | 11.27 | 48.69 | -37.42 | Average | P |
| 8 | 0.36 | 10.05 | 26.60 | 36.65 | 58.69 | -22.04 | QP | P |
| 9 | 0.40 | 10.05 | 8.99 | 19.04 | 47.80 | -28.76 | Average | P |
| 10 | 0.40 | 10.05 | 22.38 | 32.43 | 57.80 | -25.37 | QP | P |
| 11 | 18.48 | 10.91 | 33.41 | 44.32 | 50.00 | -5.68 | Average | P |
| 12 | 18.48 | 10.91 | 35.90 | 46.81 | 60.00 | -13.19 | QP | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

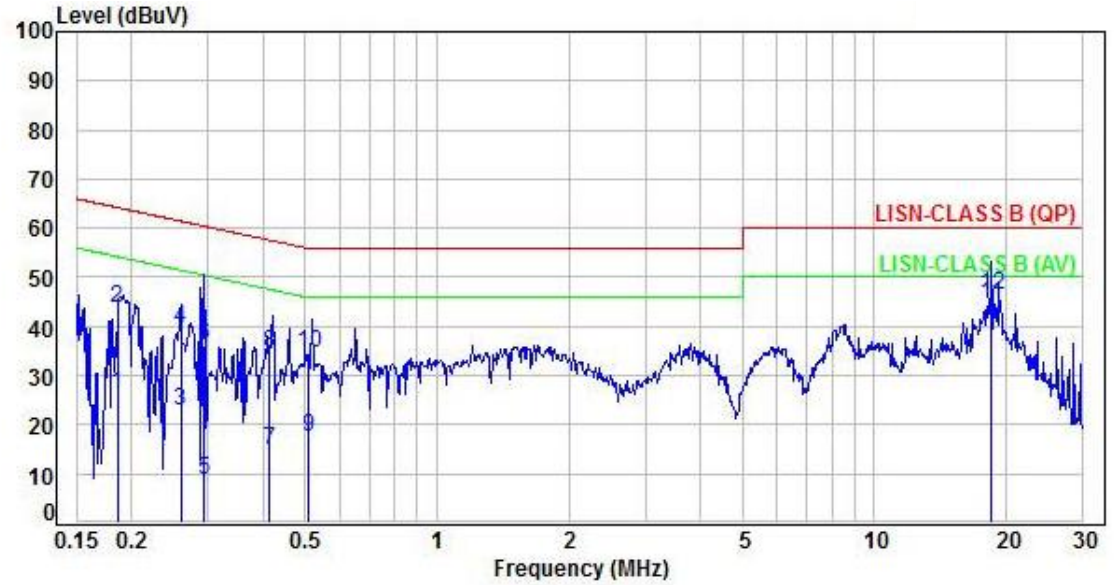
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | NEUTRAL |
| Test Mode | : | Mode 3 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.18 | 10.02 | 11.40 | 21.42 | 54.37 | -32.95 | Average | P |
| 2 | 0.18 | 10.02 | 31.64 | 41.66 | 64.37 | -22.71 | QP | P |
| 3 | 0.20 | 10.02 | 17.53 | 27.55 | 53.80 | -26.25 | Average | P |
| 4 | 0.20 | 10.02 | 31.67 | 41.69 | 63.80 | -22.11 | QP | P |
| 5 | 0.21 | 10.02 | 14.56 | 24.58 | 53.39 | -28.81 | Average | P |
| 6 | 0.21 | 10.02 | 30.57 | 40.59 | 63.39 | -22.80 | QP | P |
| 7 | 0.27 | 10.02 | 6.85 | 16.87 | 51.10 | -34.23 | Average | P |
| 8 | 0.27 | 10.02 | 24.79 | 34.81 | 61.10 | -26.29 | QP | P |
| 9 | 17.63 | 10.86 | 28.46 | 39.32 | 50.00 | -10.68 | Average | P |
| 10 | 17.63 | 10.86 | 34.52 | 45.38 | 60.00 | -14.62 | QP | P |
| 11 | 18.47 | 10.91 | 31.52 | 42.43 | 50.00 | -7.57 | Average | P |
| 12 | 18.47 | 10.91 | 35.95 | 46.86 | 60.00 | -13.14 | QP | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

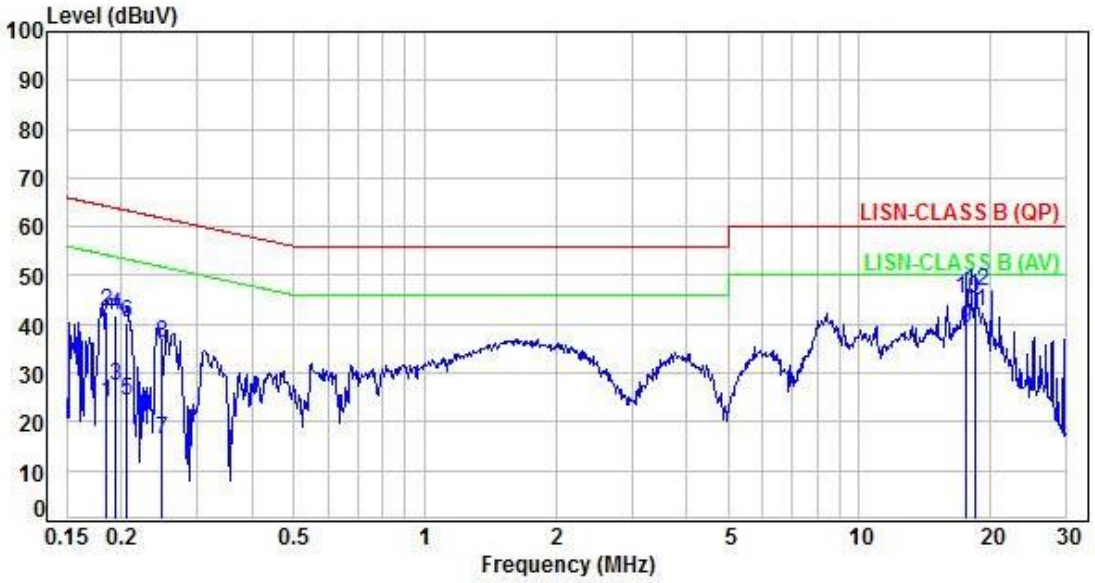
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | LINE |
| Test Mode | : | Mode 7 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.19 | 10.05 | 16.20 | 26.25 | 54.23 | -27.98 | Average | P |
| 2 | 0.19 | 10.05 | 33.79 | 43.84 | 64.23 | -20.39 | QP | P |
| 3 | 0.26 | 10.05 | 12.95 | 23.00 | 51.45 | -28.45 | Average | P |
| 4 | 0.26 | 10.05 | 29.51 | 39.56 | 61.45 | -21.89 | QP | P |
| 5 | 0.29 | 10.05 | -1.32 | 8.73 | 50.45 | -41.72 | Average | P |
| 6 | 0.29 | 10.05 | 25.89 | 35.94 | 60.45 | -24.51 | QP | P |
| 7 | 0.42 | 10.05 | 4.79 | 14.84 | 47.55 | -32.71 | Average | P |
| 8 | 0.42 | 10.05 | 24.54 | 34.59 | 57.55 | -22.96 | QP | P |
| 9 | 0.51 | 10.06 | 7.33 | 17.39 | 46.00 | -28.61 | Average | P |
| 10 | 0.51 | 10.06 | 24.65 | 34.71 | 56.00 | -21.29 | QP | P |
| 11 | 18.48 | 10.91 | 33.69 | 44.60 | 50.00 | -5.40 | Average | P |
| 12 | 18.48 | 10.91 | 35.33 | 46.24 | 60.00 | -13.76 | QP | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | NEUTRAL |
| Test Mode | : | Mode 7 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector | P/F |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.18 | 10.02 | 14.09 | 24.11 | 54.29 | -30.18 | Average | P |
| 2 | 0.18 | 10.02 | 32.46 | 42.48 | 64.29 | -21.81 | QP | P |
| 3 | 0.19 | 10.02 | 17.52 | 27.54 | 53.88 | -26.34 | Average | P |
| 4 | 0.19 | 10.02 | 31.78 | 41.80 | 63.88 | -22.08 | QP | P |
| 5 | 0.21 | 10.02 | 14.35 | 24.37 | 53.37 | -29.00 | Average | P |
| 6 | 0.21 | 10.02 | 30.29 | 40.31 | 63.37 | -23.06 | QP | P |
| 7 | 0.25 | 10.02 | 6.28 | 16.30 | 51.84 | -35.54 | Average | P |
| 8 | 0.25 | 10.02 | 26.11 | 36.13 | 61.84 | -25.71 | QP | P |
| 9 | 17.63 | 10.86 | 28.49 | 39.35 | 50.00 | -10.65 | Average | P |
| 10 | 17.63 | 10.86 | 34.25 | 45.11 | 60.00 | -14.89 | QP | P |
| 11 | 18.47 | 10.91 | 31.74 | 42.65 | 50.00 | -7.35 | Average | P |
| 12 | 18.47 | 10.91 | 35.88 | 46.79 | 60.00 | -13.21 | QP | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=(LISN or ISN or Current Probe)Factor + Cable Loss

# 6. Test of Radiated Spurious Emission

## 6.1 Test Limit

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

| Frequency (MHz) | Field Strength (microvolt/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 |

## 6.2 Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter above ground.

b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

c. The table was rotated 360 degrees to determine the position of the highest radiation.

d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.

e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.

f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

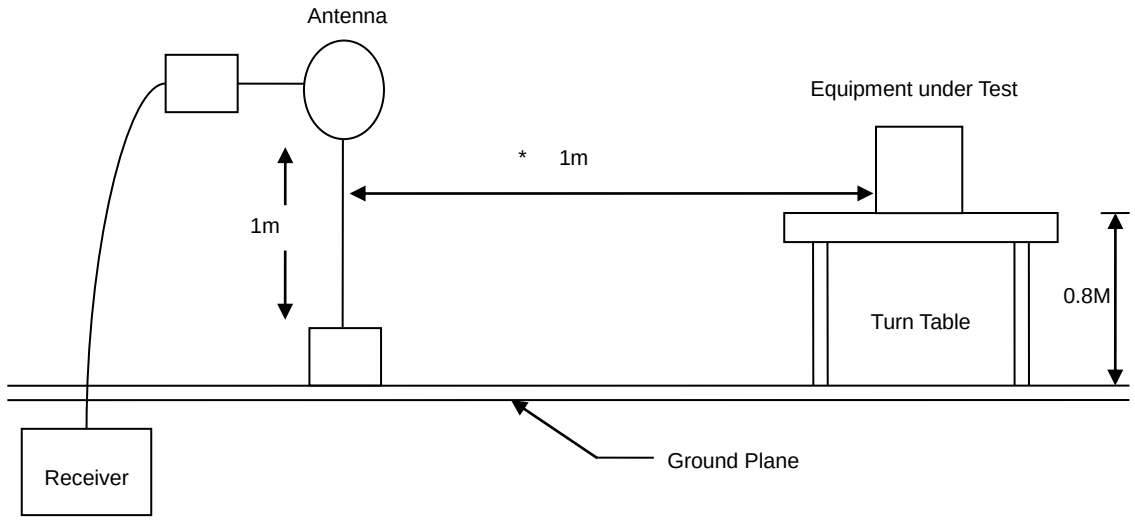
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

i. “Cone of radiation” has been considered to be 3dB bandwidth of the measurement antenna.

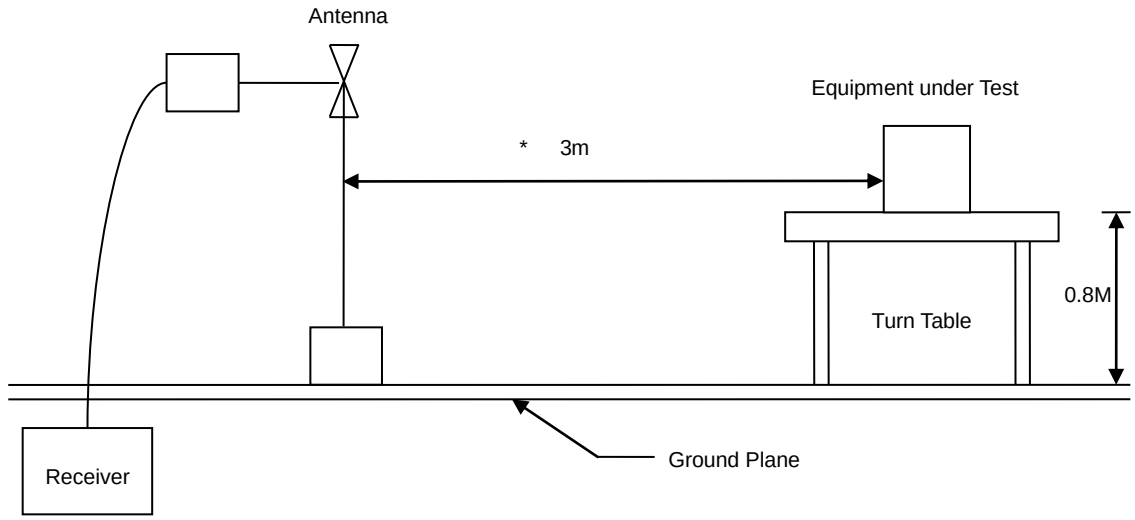
Note: The supporting fixture shall permit orientation of the EUT in each of three orthogonal axis positions such that emissions from the EUT are maximized.
(Y-AXIS is the worst.)

## 6.3 Typical Test Setup

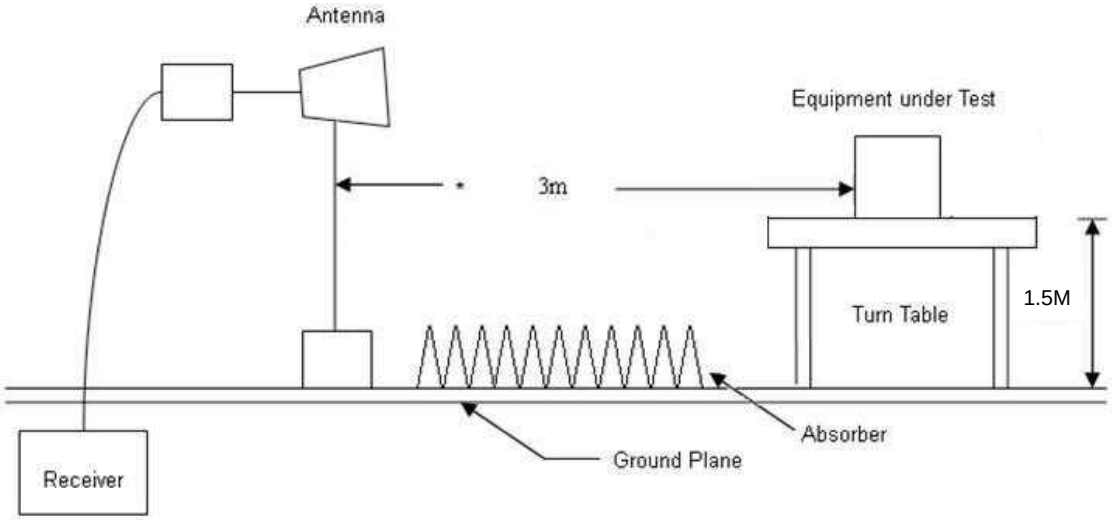
Below 30MHz test setup




30MHz- 1GHz Test Setup




Above 1GHz Test Setup

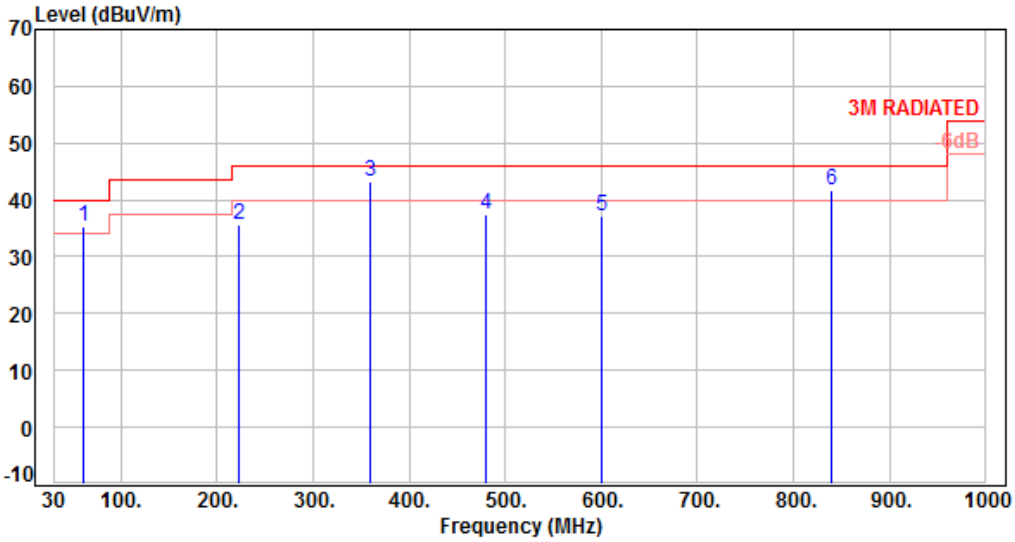


## 6.4 Test Result and Data (9KHz ~ 30MHz)

The 9kHz - 30MHz spurious emission is under limit 20dB more.

## 6.5 Test Result and Data (30MHz ~ 1GHz)

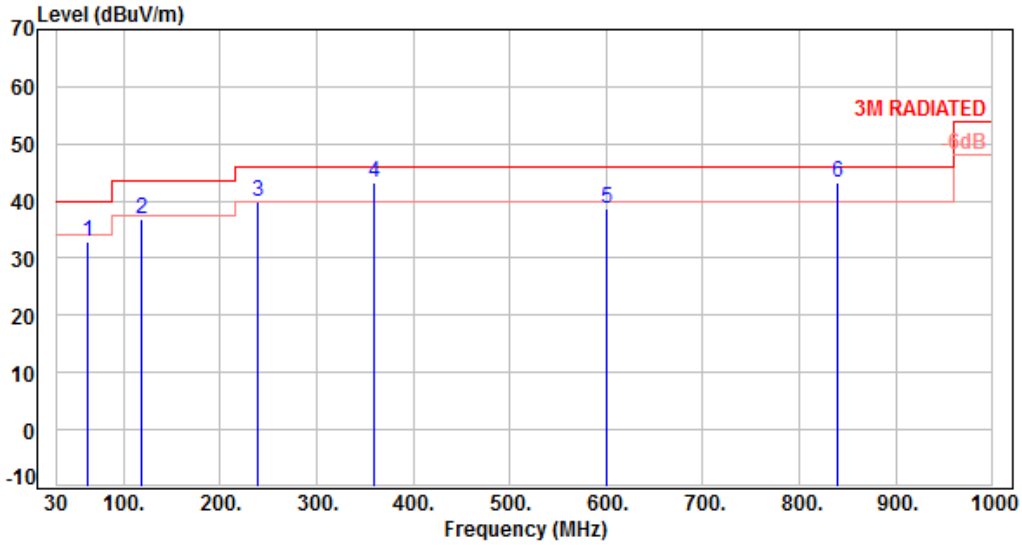
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 3 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 61.04 | -10.29 | 45.54 | 35.25 | 40.00 | -4.75 | Peak | 100 | 0 | P |
| 2 | 223.03 | -11.93 | 47.48 | 35.55 | 46.00 | -10.45 | Peak | 100 | 0 | P |
| 3 | 359.80 | -6.92 | 50.09 | 43.17 | 46.00 | -2.83 | QP | 120 | 320 | P |
| 4 | 480.08 | -4.10 | 41.55 | 37.45 | 46.00 | -8.55 | Peak | 100 | 0 | P |
| 5 | 600.36 | -1.21 | 38.39 | 37.18 | 46.00 | -8.82 | Peak | 100 | 0 | P |
| 6 | 839.95 | 2.31 | 39.30 | 41.61 | 46.00 | -4.39 | QP | 180 | 310 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

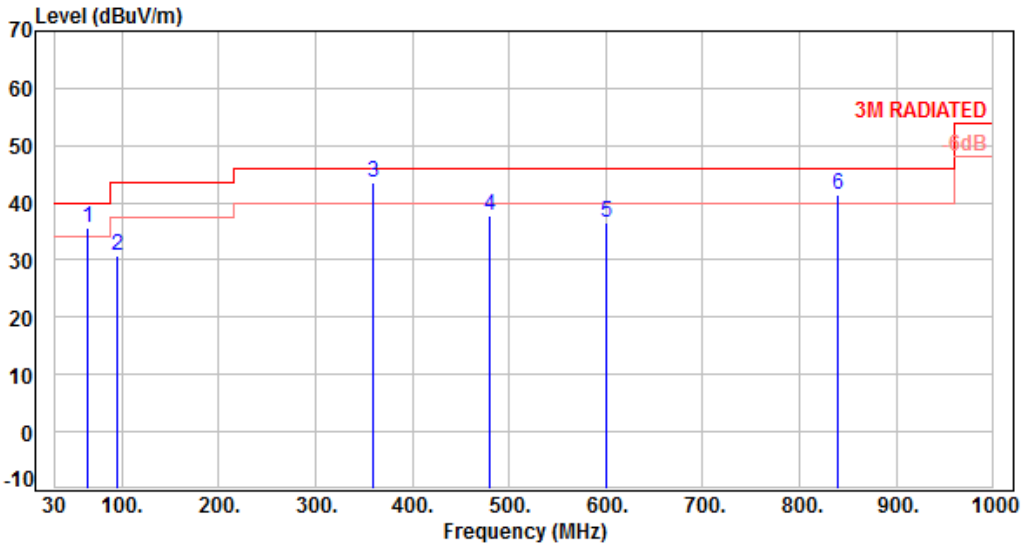
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 3 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 62.01 | -10.48 | 43.50 | 33.02 | 40.00 | -6.98 | QP | 210 | 110 | P |
| 2 | 119.24 | -11.70 | 48.43 | 36.73 | 43.50 | -6.77 | Peak | 400 | 0 | P |
| 3 | 239.52 | -10.66 | 50.53 | 39.87 | 46.00 | -6.13 | Peak | 400 | 0 | P |
| 4 | 359.80 | -6.92 | 50.15 | 43.23 | 46.00 | -2.77 | QP | 100 | 235 | P |
| 5 | 600.36 | -1.21 | 40.03 | 38.82 | 46.00 | -7.18 | Peak | 400 | 0 | P |
| 6 | 839.95 | 2.31 | 40.79 | 43.10 | 46.00 | -2.90 | QP | 100 | 258 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

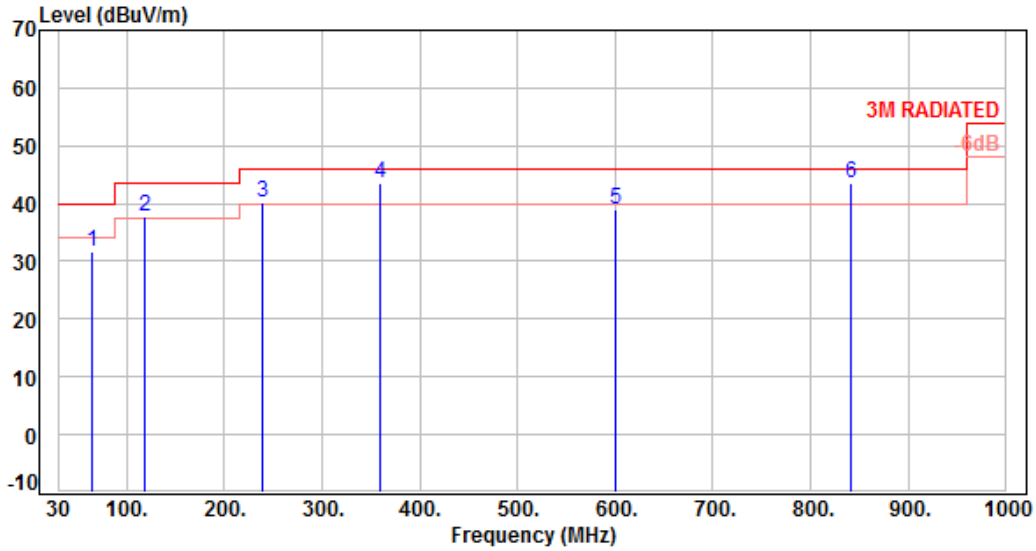
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 7 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 63.95 | -10.66 | 46.43 | 35.77 | 40.00 | -4.23 | Peak | 100 | 0 | P |
| 2 | 95.96 | -15.17 | 45.95 | 30.78 | 43.50 | -12.72 | Peak | 100 | 0 | P |
| 3 | 359.80 | -6.92 | 50.59 | 43.67 | 46.00 | -2.33 | QP | 125 | 320 | P |
| 4 | 480.08 | -4.10 | 41.70 | 37.60 | 46.00 | -8.40 | Peak | 100 | 0 | P |
| 5 | 600.36 | -1.21 | 37.77 | 36.56 | 46.00 | -9.44 | Peak | 100 | 0 | P |
| 6 | 839.95 | 2.31 | 39.00 | 41.31 | 46.00 | -4.69 | QP | 185 | 310 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60Hz | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 7 | | : | |

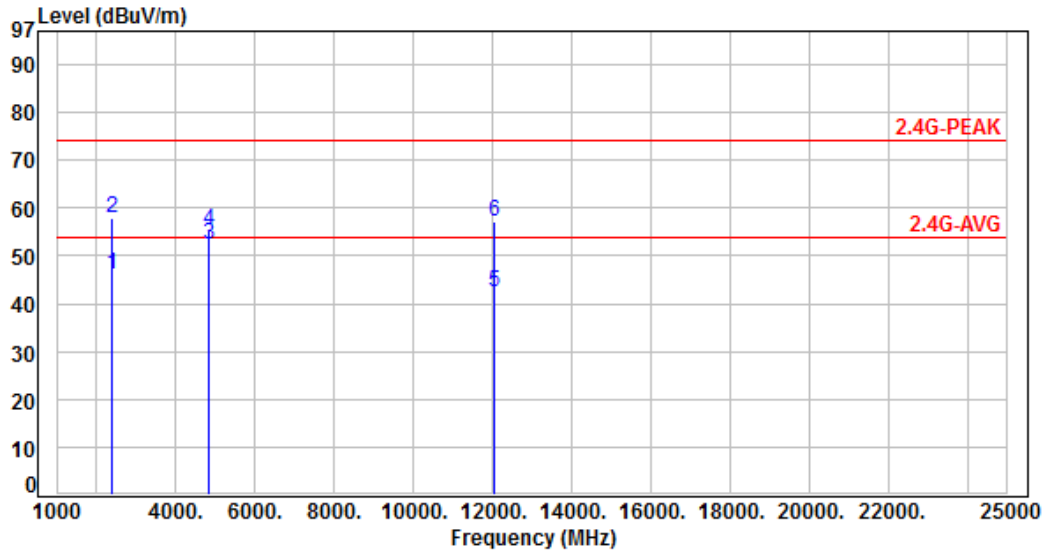



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 63.95 | -10.66 | 42.39 | 31.73 | 40.00 | -8.27 | QP | 220 | 105 | P |
| 2 | 119.24 | -11.70 | 49.56 | 37.86 | 43.50 | -5.64 | Peak | 400 | 0 | P |
| 3 | 239.52 | -10.66 | 50.73 | 40.07 | 46.00 | -5.93 | Peak | 400 | 0 | P |
| 4 | 359.80 | -6.92 | 50.39 | 43.47 | 46.00 | -2.53 | QP | 100 | 235 | P |
| 5 | 600.36 | -1.21 | 40.16 | 38.95 | 46.00 | -7.05 | Peak | 400 | 0 | P |
| 6 | 840.92 | 2.33 | 41.30 | 43.63 | 46.00 | -2.37 | QP | 100 | 260 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

## 6.6 Test Result and Data (1GHz ~ 25GHz)

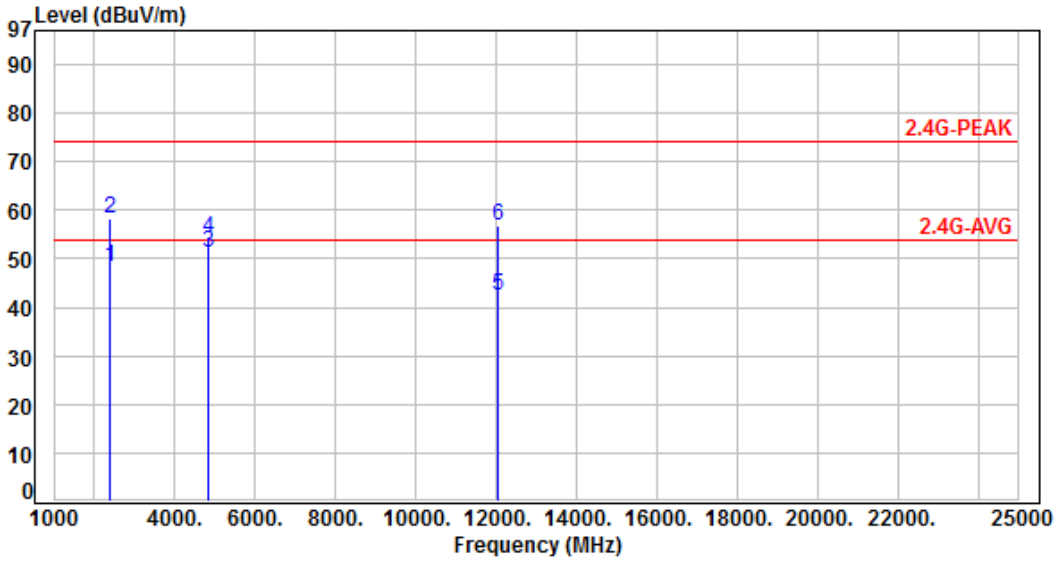
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 1, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 48.99 | 46.10 | 54.00 | -7.90 | Average | 100 | 160 | P |
| 2 | 2390.00 | -2.89 | 60.72 | 57.83 | 74.00 | -16.17 | Peak | 100 | 160 | P |
| 3 | 4824.00 | 4.73 | 47.82 | 52.55 | 54.00 | -1.45 | Average | 227 | 283 | P |
| 4 | 4824.00 | 4.73 | 50.65 | 55.38 | 74.00 | -18.62 | Peak | 227 | 283 | P |
| 5 | 12060.00 | 14.70 | 27.71 | 42.41 | 54.00 | -11.59 | Average | 100 | 54 | P |
| 6 | 12060.00 | 14.70 | 42.31 | 57.01 | 74.00 | -16.99 | Peak | 100 | 54 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

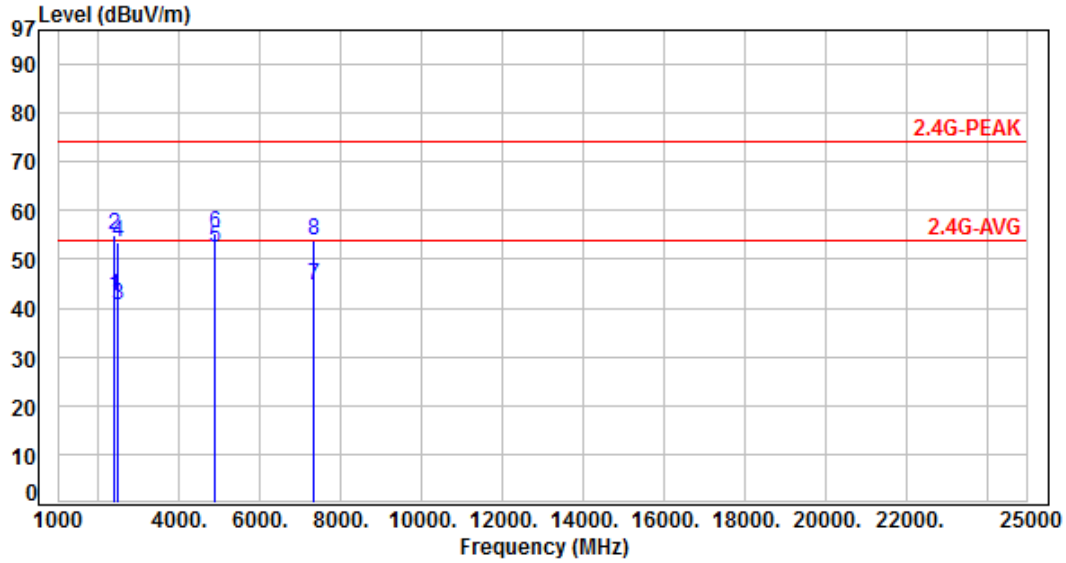
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 1, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 51.17 | 48.28 | 54.00 | -5.72 | Average | 100 | 240 | P |
| 2 | 2390.00 | -2.89 | 60.98 | 58.09 | 74.00 | -15.91 | Peak | 100 | 240 | P |
| 3 | 4824.00 | 4.73 | 46.53 | 51.26 | 54.00 | -2.74 | Average | 275 | 269 | P |
| 4 | 4824.00 | 4.73 | 49.33 | 54.06 | 74.00 | -19.94 | Peak | 275 | 269 | P |
| 5 | 12060.00 | 14.70 | 27.67 | 42.37 | 54.00 | -11.63 | Average | 100 | 184 | P |
| 6 | 12060.00 | 14.70 | 42.26 | 56.96 | 74.00 | -17.04 | Peak | 100 | 184 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

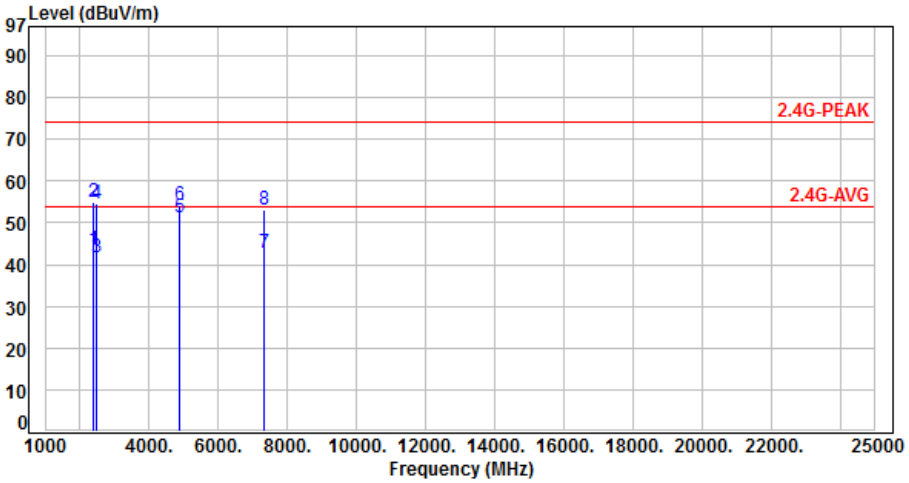
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 1, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 45.15 | 42.26 | 54.00 | -11.74 | Average | 145 | 133 | P |
| 2 | 2390.00 | -2.89 | 57.81 | 54.92 | 74.00 | -19.08 | Peak | 145 | 133 | P |
| 3 | 2483.50 | -2.66 | 43.36 | 40.70 | 54.00 | -13.30 | Average | 100 | 255 | P |
| 4 | 2483.50 | -2.66 | 56.17 | 53.51 | 74.00 | -20.49 | Peak | 100 | 255 | P |
| 5 | 4874.00 | 4.89 | 47.56 | 52.45 | 54.00 | -1.55 | Average | 220 | 285 | P |
| 6 | 4874.00 | 4.89 | 50.49 | 55.38 | 74.00 | -18.62 | Peak | 220 | 285 | P |
| 7 | 7311.00 | 9.81 | 34.76 | 44.57 | 54.00 | -9.43 | Average | 100 | 320 | P |
| 8 | 7311.00 | 9.81 | 44.21 | 54.02 | 74.00 | -19.98 | Peak | 100 | 320 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

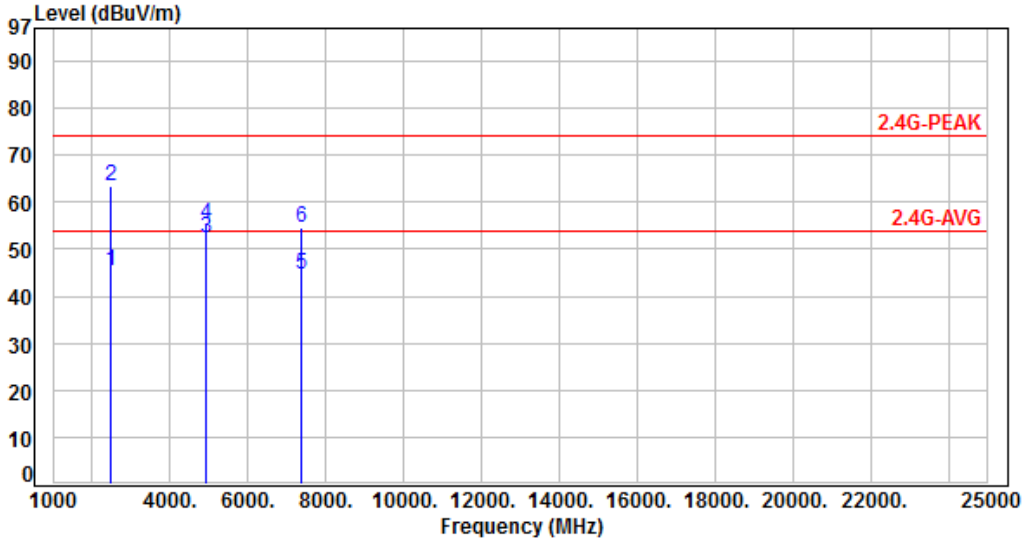
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 1, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 46.47 | 43.58 | 54.00 | -10.42 | Average | 100 | 260 | P |
| 2 | 2390.00 | -2.89 | 57.99 | 55.10 | 74.00 | -18.90 | Peak | 100 | 260 | P |
| 3 | 2483.50 | -2.66 | 44.49 | 41.83 | 54.00 | -12.17 | Average | 100 | 150 | P |
| 4 | 2483.50 | -2.66 | 57.09 | 54.43 | 74.00 | -19.57 | Peak | 100 | 150 | P |
| 5 | 4874.00 | 4.89 | 46.33 | 51.22 | 54.00 | -2.78 | Average | 280 | 263 | P |
| 6 | 4874.00 | 4.89 | 49.45 | 54.34 | 74.00 | -19.66 | Peak | 280 | 263 | P |
| 7 | 7311.00 | 9.81 | 32.87 | 42.68 | 54.00 | -11.32 | Average | 270 | 140 | P |
| 8 | 7311.00 | 9.81 | 43.34 | 53.15 | 74.00 | -20.85 | Peak | 270 | 140 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

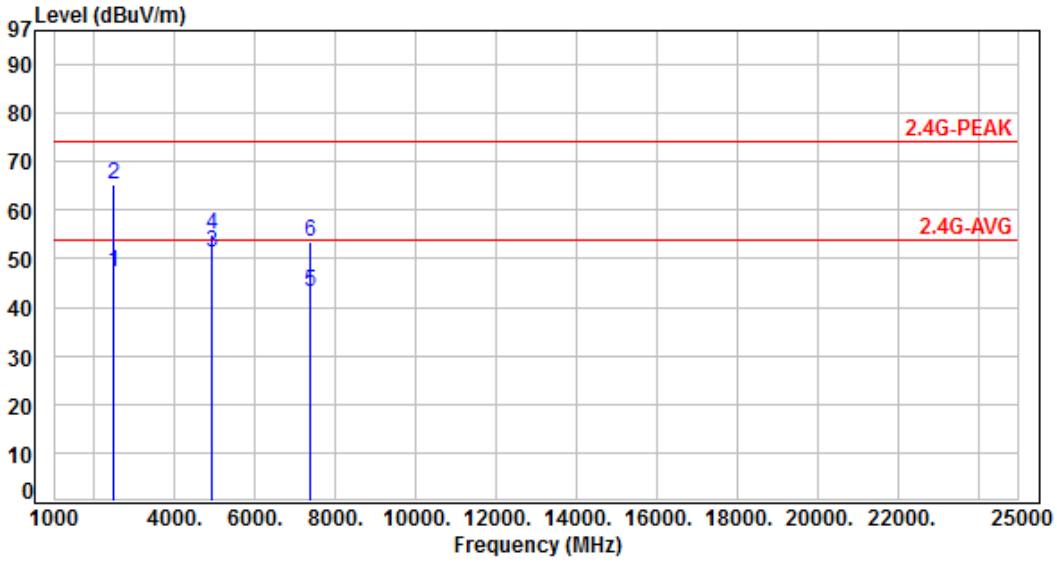
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 1, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 48.15 | 45.49 | 54.00 | -8.51 | Average | 160 | 175 | P |
| 2 | 2483.50 | -2.66 | 65.96 | 63.30 | 74.00 | -10.70 | Peak | 160 | 175 | P |
| 3 | 4924.00 | 5.10 | 47.31 | 52.41 | 54.00 | -1.59 | Average | 211 | 285 | P |
| 4 | 4924.00 | 5.10 | 50.13 | 55.23 | 74.00 | -18.77 | Peak | 211 | 285 | P |
| 5 | 7386.00 | 9.94 | 34.60 | 44.54 | 54.00 | -9.46 | Average | 100 | 323 | P |
| 6 | 7386.00 | 9.94 | 44.72 | 54.66 | 74.00 | -19.34 | Peak | 100 | 323 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

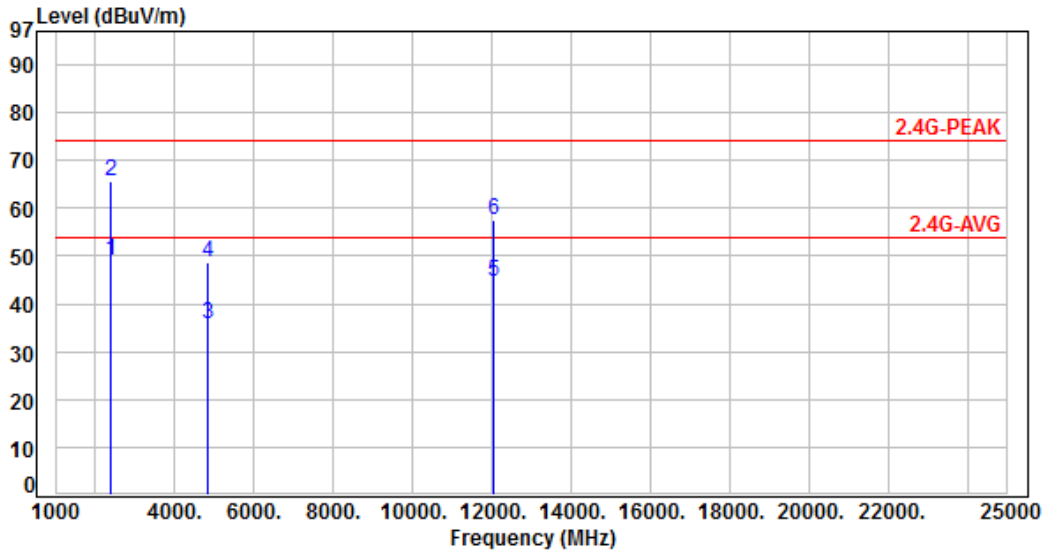
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 1, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 50.01 | 47.35 | 54.00 | -6.65 | Average | 280 | 235 | P |
| 2 | 2483.50 | -2.66 | 67.97 | 65.31 | 74.00 | -8.69 | Peak | 280 | 235 | P |
| 3 | 4924.00 | 5.10 | 46.28 | 51.38 | 54.00 | -2.62 | Average | 275 | 263 | P |
| 4 | 4924.00 | 5.10 | 50.01 | 55.11 | 74.00 | -18.89 | Peak | 275 | 263 | P |
| 5 | 7386.00 | 9.94 | 33.15 | 43.09 | 54.00 | -10.91 | Average | 265 | 140 | P |
| 6 | 7386.00 | 9.94 | 43.49 | 53.43 | 74.00 | -20.57 | Peak | 265 | 140 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

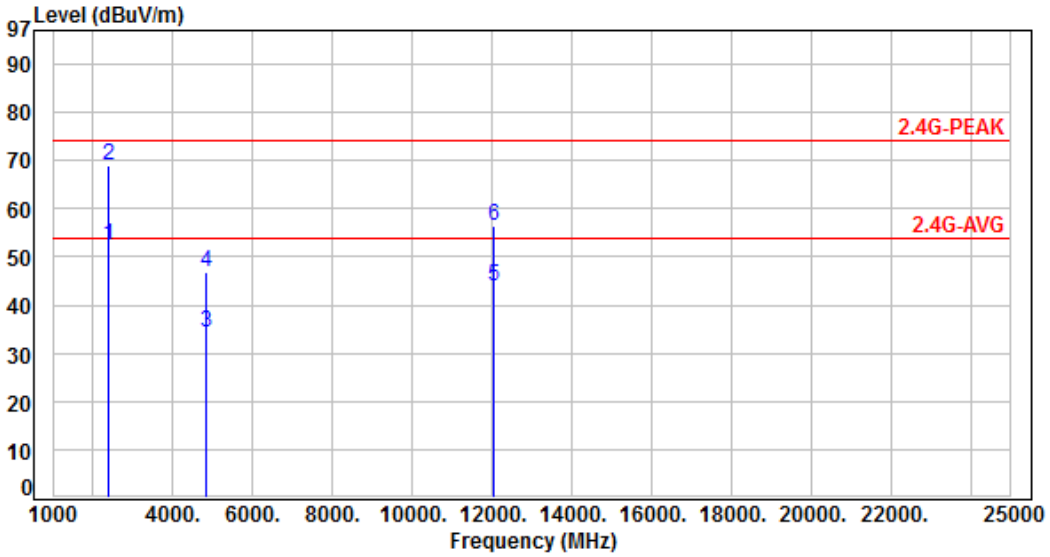
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 2, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 51.85 | 48.96 | 54.00 | -5.04 | Average | 400 | 280 | P |
| 2 | 2390.00 | -2.89 | 68.54 | 65.65 | 74.00 | -8.35 | Peak | 400 | 280 | P |
| 3 | 4824.00 | 4.73 | 31.11 | 35.84 | 54.00 | -18.16 | Average | 180 | 100 | P |
| 4 | 4824.00 | 4.73 | 43.77 | 48.50 | 74.00 | -25.50 | Peak | 180 | 100 | P |
| 5 | 12060.00 | 14.70 | 29.87 | 44.57 | 54.00 | -9.43 | Average | 150 | 10 | P |
| 6 | 12060.00 | 14.70 | 42.98 | 57.68 | 74.00 | -16.32 | Peak | 150 | 10 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

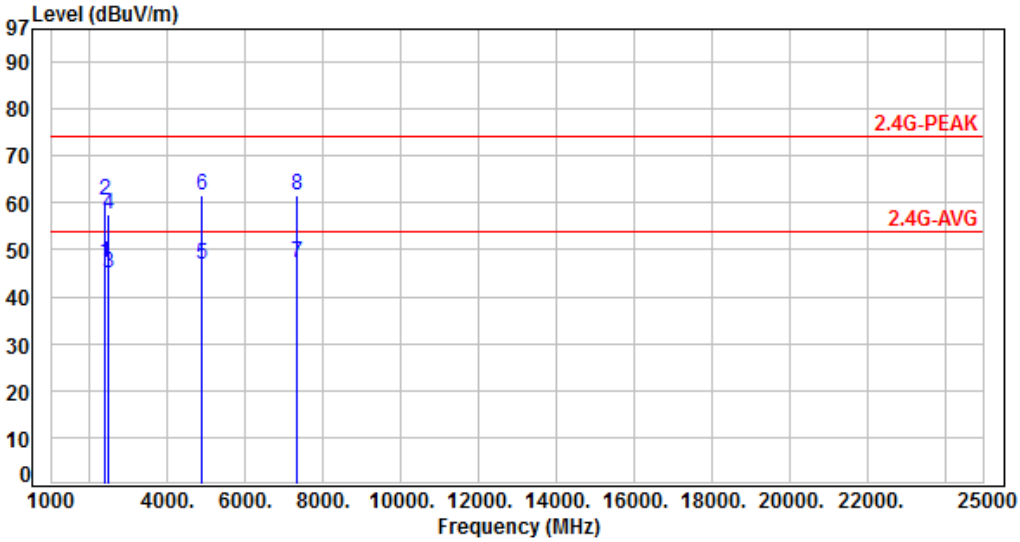
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 2, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 55.41 | 52.52 | 54.00 | -1.48 | Average | 202 | 230 | P |
| 2 | 2390.00 | -2.89 | 71.86 | 68.97 | 74.00 | -5.03 | Peak | 202 | 230 | P |
| 3 | 4824.00 | 4.73 | 29.73 | 34.46 | 54.00 | -19.54 | Average | 300 | 115 | P |
| 4 | 4824.00 | 4.73 | 42.20 | 46.93 | 74.00 | -27.07 | Peak | 300 | 115 | P |
| 5 | 12060.00 | 14.70 | 29.03 | 43.73 | 54.00 | -10.27 | Average | 100 | 245 | P |
| 6 | 12060.00 | 14.70 | 41.68 | 56.38 | 74.00 | -17.62 | Peak | 100 | 245 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

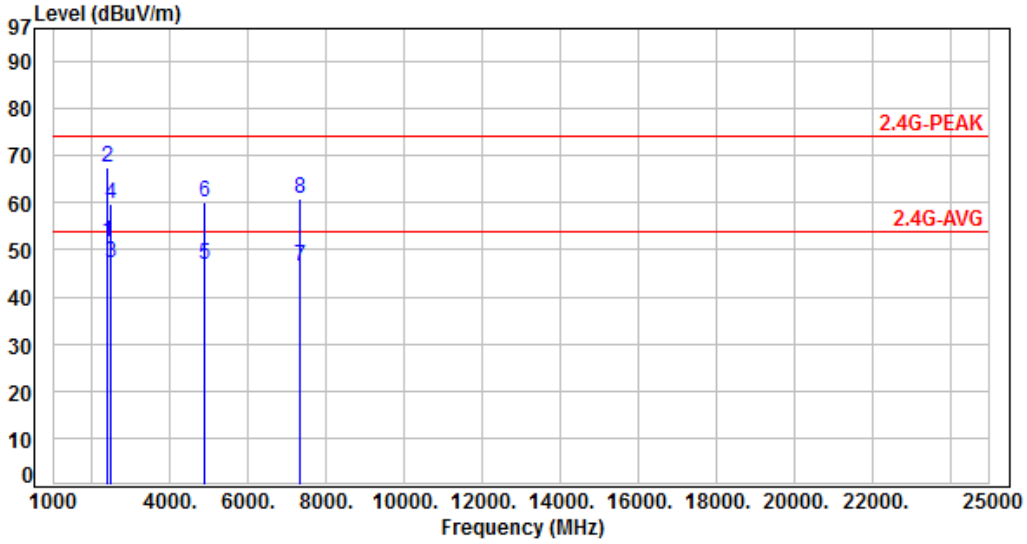
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 2, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 50.23 | 47.34 | 54.00 | -6.66 | Average | 100 | 240 | P |
| 2 | 2390.00 | -2.89 | 63.21 | 60.32 | 74.00 | -13.68 | Peak | 100 | 240 | P |
| 3 | 2483.50 | -2.66 | 47.63 | 44.97 | 54.00 | -9.03 | Average | 215 | 350 | P |
| 4 | 2483.50 | -2.66 | 60.04 | 57.38 | 74.00 | -16.62 | Peak | 215 | 350 | P |
| 5 | 4874.00 | 4.89 | 42.13 | 47.02 | 54.00 | -6.98 | Average | 100 | 270 | P |
| 6 | 4874.00 | 4.89 | 56.68 | 61.57 | 74.00 | -12.43 | Peak | 100 | 270 | P |
| 7 | 7311.00 | 9.81 | 37.55 | 47.36 | 54.00 | -6.64 | Average | 200 | 12 | P |
| 8 | 7311.00 | 9.81 | 51.75 | 61.56 | 74.00 | -12.44 | Peak | 200 | 12 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

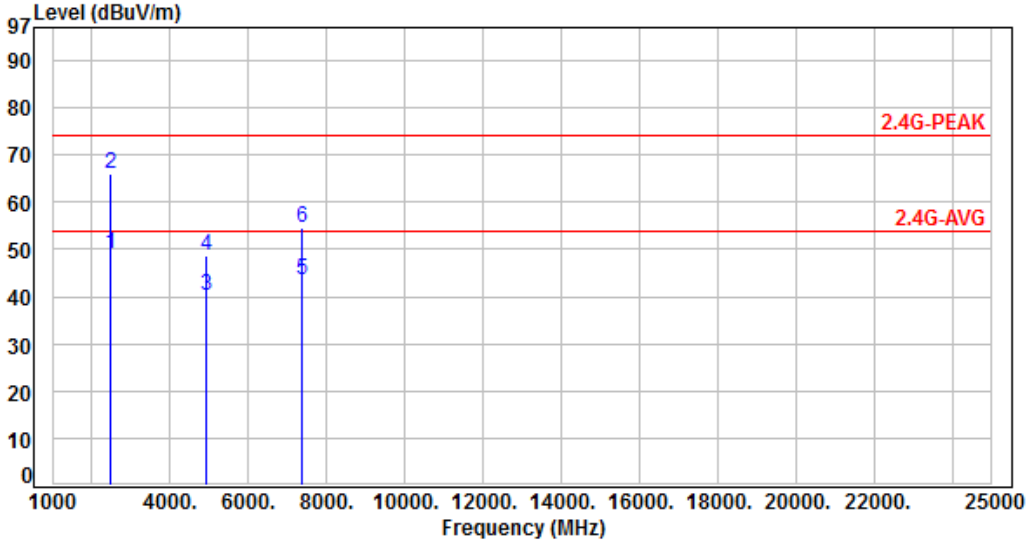
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 2, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 54.56 | 51.67 | 54.00 | -2.33 | Average | 202 | 230 | P |
| 2 | 2390.00 | -2.89 | 70.27 | 67.38 | 74.00 | -6.62 | Peak | 202 | 230 | P |
| 3 | 2483.50 | -2.66 | 50.02 | 47.36 | 54.00 | -6.64 | Average | 100 | 300 | P |
| 4 | 2483.50 | -2.66 | 62.34 | 59.68 | 74.00 | -14.32 | Peak | 100 | 300 | P |
| 5 | 4874.00 | 4.89 | 42.09 | 46.98 | 54.00 | -7.02 | Average | 180 | 225 | P |
| 6 | 4874.00 | 4.89 | 55.22 | 60.11 | 74.00 | -13.89 | Peak | 180 | 225 | P |
| 7 | 7311.00 | 9.81 | 36.83 | 46.64 | 54.00 | -7.36 | Average | 360 | 30 | P |
| 8 | 7311.00 | 9.81 | 51.01 | 60.82 | 74.00 | -13.18 | Peak | 360 | 30 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

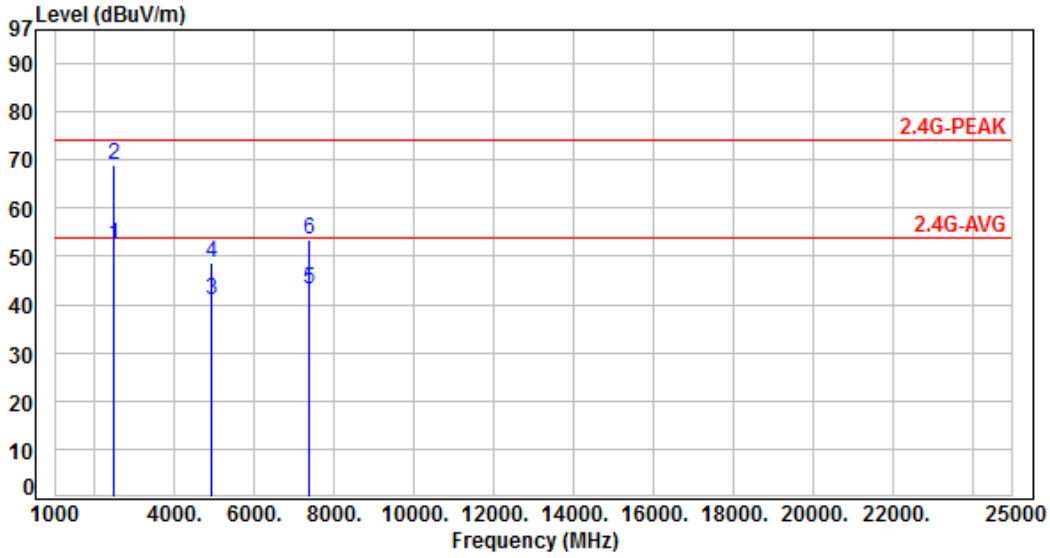
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 2, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 51.66 | 49.00 | 54.00 | -5.00 | Average | 215 | 350 | P |
| 2 | 2483.50 | -2.66 | 68.59 | 65.93 | 74.00 | -8.07 | Peak | 215 | 350 | P |
| 3 | 4924.00 | 5.10 | 35.11 | 40.21 | 54.00 | -13.79 | Average | 150 | 290 | P |
| 4 | 4924.00 | 5.10 | 43.46 | 48.56 | 74.00 | -25.44 | Peak | 150 | 290 | P |
| 5 | 7386.00 | 9.94 | 33.63 | 43.57 | 54.00 | -10.43 | Average | 240 | 220 | P |
| 6 | 7386.00 | 9.94 | 44.57 | 54.51 | 74.00 | -19.49 | Peak | 240 | 220 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

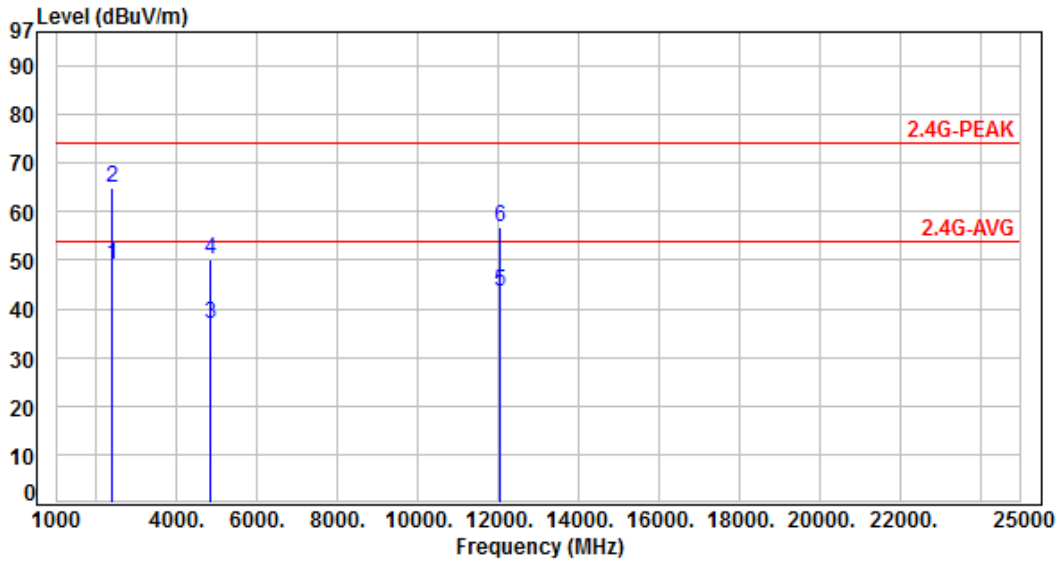
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 2, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 55.13 | 52.47 | 54.00 | -1.53 | Average | 100 | 300 | P |
| 2 | 2483.50 | -2.66 | 71.73 | 69.07 | 74.00 | -4.93 | Peak | 100 | 300 | P |
| 3 | 4924.00 | 5.10 | 35.78 | 40.88 | 54.00 | -13.12 | Average | 100 | 255 | P |
| 4 | 4924.00 | 5.10 | 43.65 | 48.75 | 74.00 | -25.25 | Peak | 100 | 255 | P |
| 5 | 7386.00 | 9.94 | 33.15 | 43.09 | 54.00 | -10.91 | Average | 190 | 211 | P |
| 6 | 7386.00 | 9.94 | 43.46 | 53.40 | 74.00 | -20.60 | Peak | 190 | 211 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

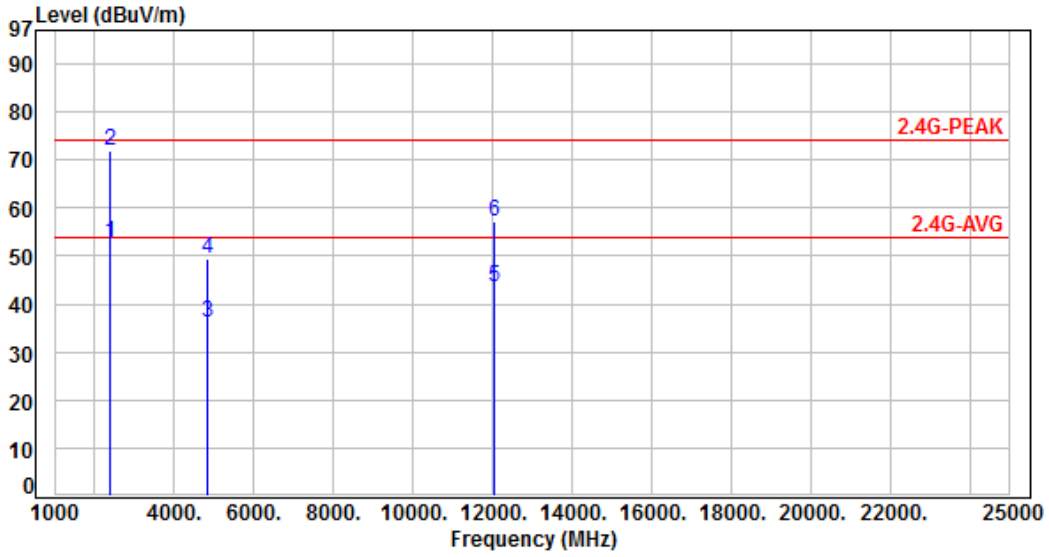
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 3, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 51.94 | 49.05 | 54.00 | -4.95 | Average | 400 | 280 | P |
| 2 | 2390.00 | -2.89 | 67.78 | 64.89 | 74.00 | -9.11 | Peak | 400 | 280 | P |
| 3 | 4824.00 | 4.73 | 32.28 | 37.01 | 54.00 | -16.99 | Average | 100 | 255 | P |
| 4 | 4824.00 | 4.73 | 45.41 | 50.14 | 74.00 | -23.86 | Peak | 100 | 255 | P |
| 5 | 12060.00 | 14.70 | 28.92 | 43.62 | 54.00 | -10.38 | Average | 100 | 144 | P |
| 6 | 12060.00 | 14.70 | 42.20 | 56.90 | 74.00 | -17.10 | Peak | 100 | 144 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

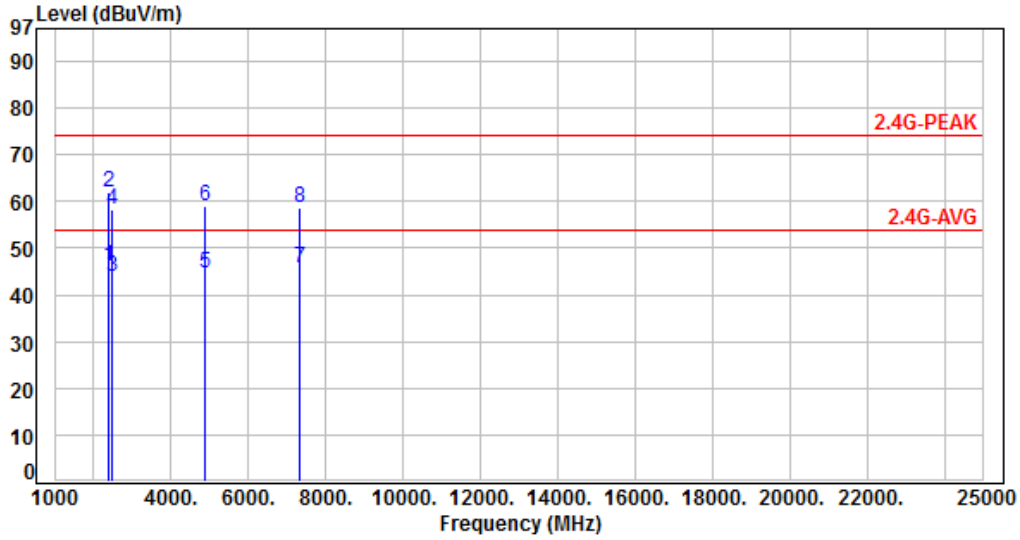
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 3, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 55.50 | 52.61 | 54.00 | -1.39 | Average | 200 | 230 | P |
| 2 | 2390.00 | -2.89 | 74.74 | 71.85 | 74.00 | -2.15 | Peak | 200 | 230 | P |
| 3 | 4824.00 | 4.73 | 31.50 | 36.23 | 54.00 | -17.77 | Average | 145 | 230 | P |
| 4 | 4824.00 | 4.73 | 44.59 | 49.32 | 74.00 | -24.68 | Peak | 145 | 230 | P |
| 5 | 12060.00 | 14.70 | 28.88 | 43.58 | 54.00 | -10.42 | Average | 100 | 300 | P |
| 6 | 12060.00 | 14.70 | 42.45 | 57.15 | 74.00 | -16.85 | Peak | 100 | 300 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

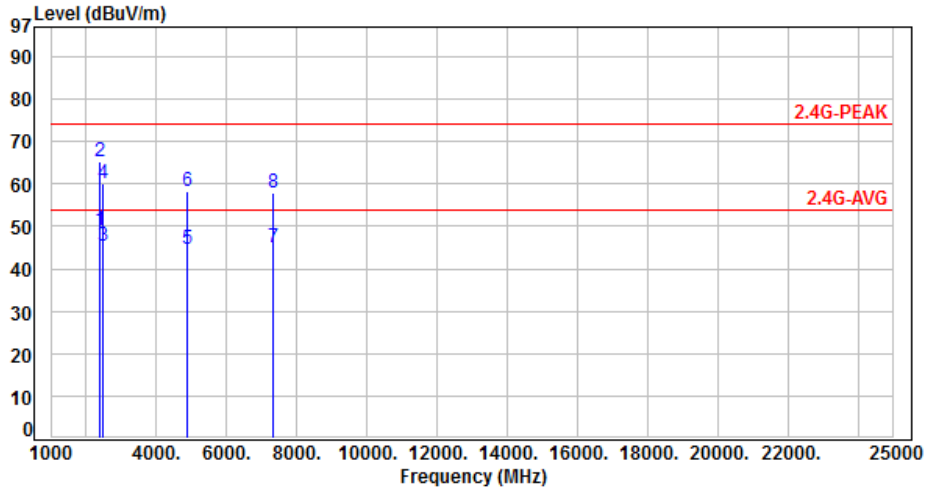
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 3, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 48.87 | 45.98 | 54.00 | -8.02 | Average | 100 | 240 | P |
| 2 | 2390.00 | -2.89 | 64.77 | 61.88 | 74.00 | -12.12 | Peak | 100 | 240 | P |
| 3 | 2483.50 | -2.66 | 46.68 | 44.02 | 54.00 | -9.98 | Average | 120 | 170 | P |
| 4 | 2483.50 | -2.66 | 60.95 | 58.29 | 74.00 | -15.71 | Peak | 120 | 170 | P |
| 5 | 4874.00 | 4.89 | 39.79 | 44.68 | 54.00 | -9.32 | Average | 100 | 263 | P |
| 6 | 4874.00 | 4.89 | 54.05 | 58.94 | 74.00 | -15.06 | Peak | 100 | 263 | P |
| 7 | 7311.00 | 9.81 | 35.79 | 45.60 | 54.00 | -8.40 | Average | 140 | 360 | P |
| 8 | 7311.00 | 9.81 | 48.94 | 58.75 | 74.00 | -15.25 | Peak | 140 | 360 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

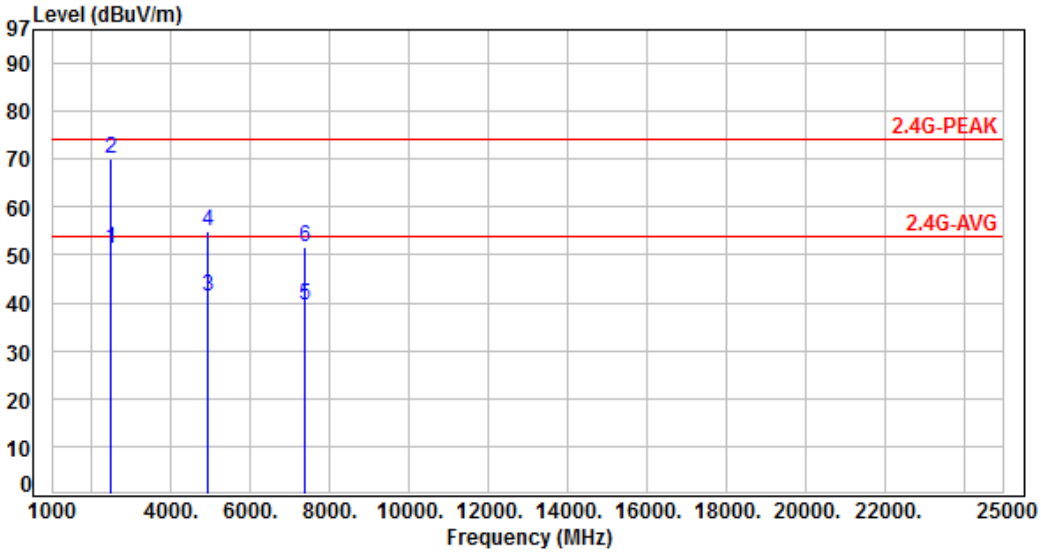
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 3, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 52.12 | 49.23 | 54.00 | -4.77 | Average | 210 | 235 | P |
| 2 | 2390.00 | -2.89 | 68.32 | 65.43 | 74.00 | -8.57 | Peak | 210 | 235 | P |
| 3 | 2483.50 | -2.66 | 48.17 | 45.51 | 54.00 | -8.49 | Average | 100 | 305 | P |
| 4 | 2483.50 | -2.66 | 62.82 | 60.16 | 74.00 | -13.84 | Peak | 100 | 305 | P |
| 5 | 4874.00 | 4.89 | 39.69 | 44.58 | 54.00 | -9.42 | Average | 200 | 260 | P |
| 6 | 4874.00 | 4.89 | 53.51 | 58.40 | 74.00 | -15.60 | Peak | 200 | 260 | P |
| 7 | 7311.00 | 9.81 | 35.01 | 44.82 | 54.00 | -9.18 | Average | 120 | 15 | P |
| 8 | 7311.00 | 9.81 | 48.27 | 58.08 | 74.00 | -15.92 | Peak | 120 | 15 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

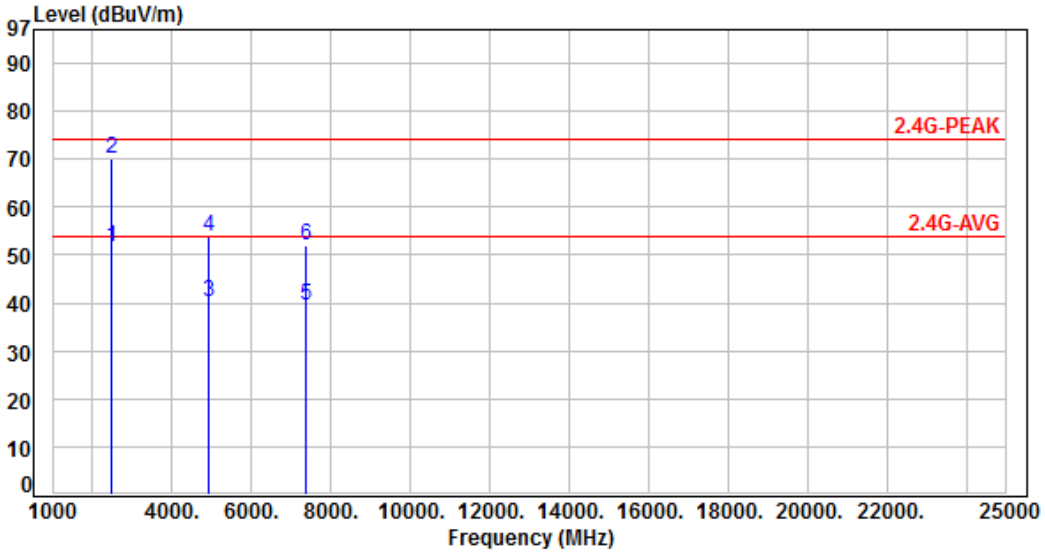
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 3, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 53.76 | 51.10 | 54.00 | -2.90 | Average | 400 | 270 | P |
| 2 | 2483.50 | -2.66 | 72.56 | 69.90 | 74.00 | -4.10 | Peak | 400 | 270 | P |
| 3 | 4924.00 | 5.10 | 36.24 | 41.34 | 54.00 | -12.66 | Average | 100 | 270 | P |
| 4 | 4924.00 | 5.10 | 49.77 | 54.87 | 74.00 | -19.13 | Peak | 100 | 270 | P |
| 5 | 7386.00 | 9.94 | 29.44 | 39.38 | 54.00 | -14.62 | Average | 100 | 116 | P |
| 6 | 7386.00 | 9.94 | 41.76 | 51.70 | 74.00 | -22.30 | Peak | 100 | 116 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

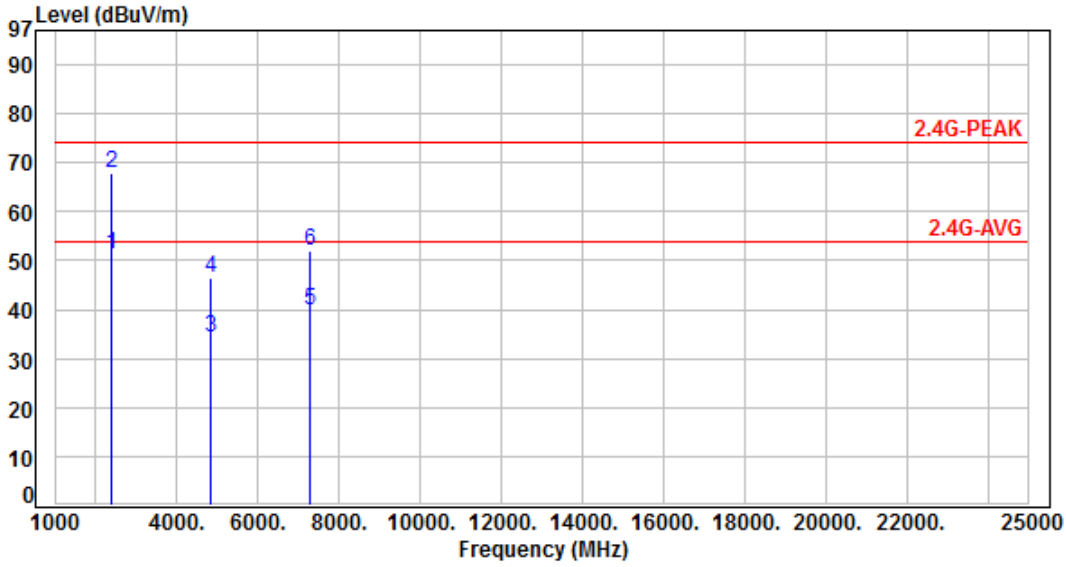
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 3, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 54.26 | 51.60 | 54.00 | -2.40 | Average | 100 | 300 | P |
| 2 | 2483.50 | -2.66 | 72.63 | 69.97 | 74.00 | -4.03 | Peak | 100 | 300 | P |
| 3 | 4924.00 | 5.10 | 35.11 | 40.21 | 54.00 | -13.79 | Average | 250 | 225 | P |
| 4 | 4924.00 | 5.10 | 48.70 | 53.80 | 74.00 | -20.20 | Peak | 250 | 225 | P |
| 5 | 7386.00 | 9.94 | 29.37 | 39.31 | 54.00 | -14.69 | Average | 100 | 50 | P |
| 6 | 7386.00 | 9.94 | 42.07 | 52.01 | 74.00 | -21.99 | Peak | 100 | 50 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

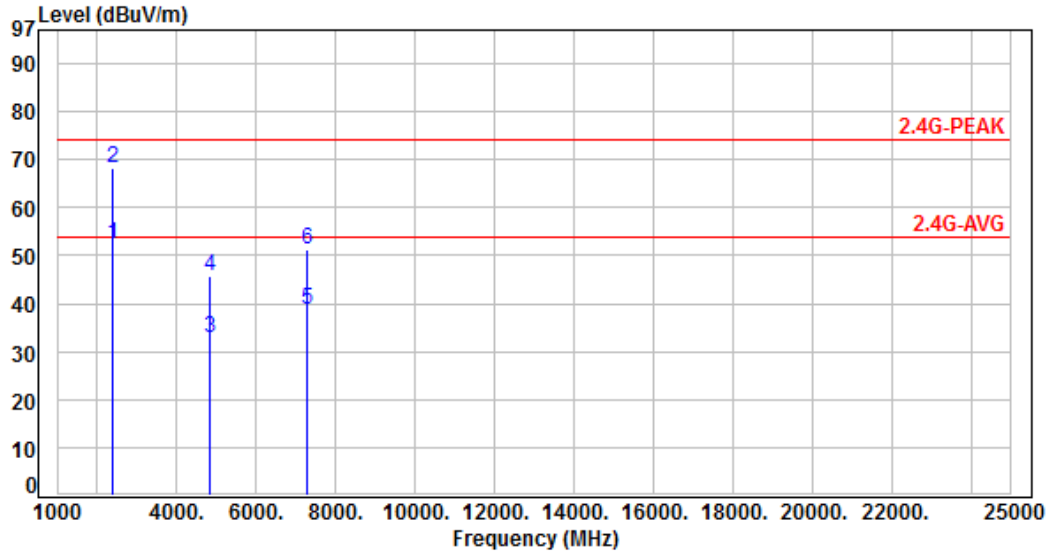
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 4, CH03 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 54.31 | 51.42 | 54.00 | -2.58 | Average | 100 | 95 | P |
| 2 | 2390.00 | -2.89 | 70.66 | 67.77 | 74.00 | -6.23 | Peak | 100 | 95 | P |
| 3 | 4844.00 | 4.80 | 29.55 | 34.35 | 54.00 | -19.65 | Average | 100 | 195 | P |
| 4 | 4844.00 | 4.80 | 41.59 | 46.39 | 74.00 | -27.61 | Peak | 100 | 195 | P |
| 5 | 7266.00 | 9.63 | 30.10 | 39.73 | 54.00 | -14.27 | Average | 100 | 215 | P |
| 6 | 7266.00 | 9.63 | 42.27 | 51.90 | 74.00 | -22.10 | Peak | 100 | 215 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

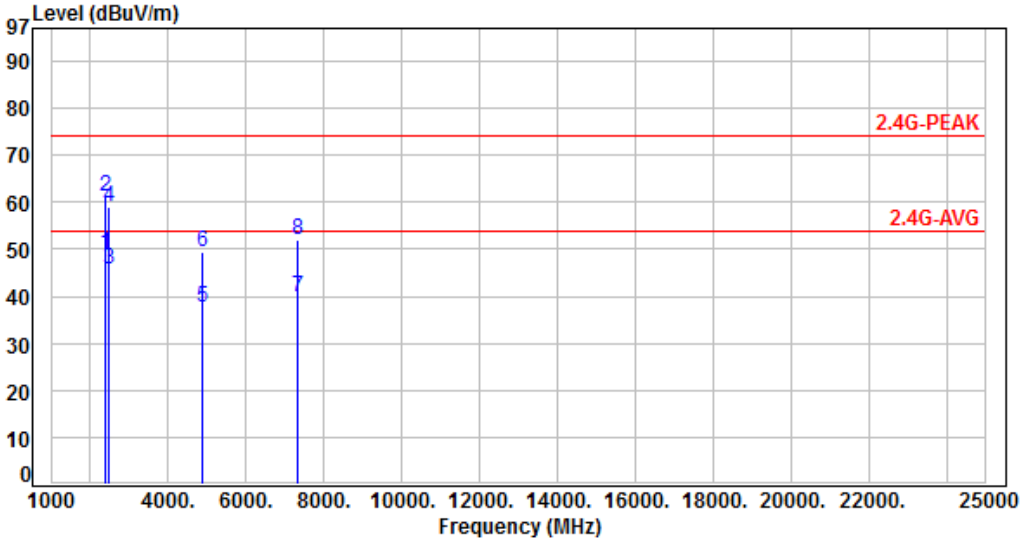
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 4, CH03 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 55.34 | 52.45 | 54.00 | -1.55 | Average | 100 | 230 | P |
| 2 | 2390.00 | -2.89 | 71.16 | 68.27 | 74.00 | -5.73 | Peak | 100 | 230 | P |
| 3 | 4844.00 | 4.80 | 27.99 | 32.79 | 54.00 | -21.21 | Average | 100 | 150 | P |
| 4 | 4844.00 | 4.80 | 41.09 | 45.89 | 74.00 | -28.11 | Peak | 100 | 150 | P |
| 5 | 7266.00 | 9.63 | 29.04 | 38.67 | 54.00 | -15.33 | Average | 100 | 10 | P |
| 6 | 7266.00 | 9.63 | 41.45 | 51.08 | 74.00 | -22.92 | Peak | 100 | 10 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

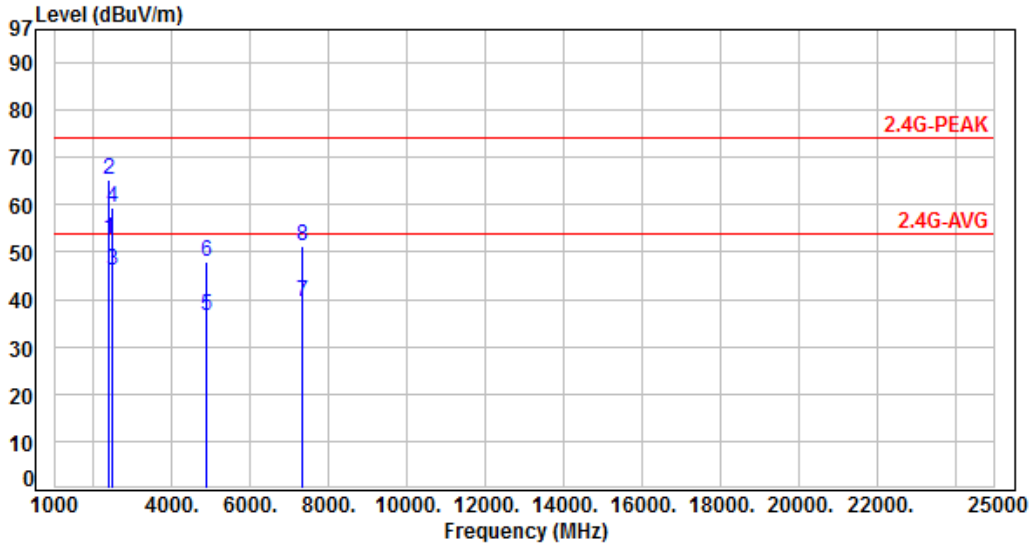
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 4, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 52.06 | 49.17 | 54.00 | -4.83 | Average | 100 | 300 | P |
| 2 | 2390.00 | -2.89 | 64.28 | 61.39 | 74.00 | -12.61 | Peak | 100 | 300 | P |
| 3 | 2483.50 | -2.66 | 48.35 | 45.69 | 54.00 | -8.31 | Average | 120 | 170 | P |
| 4 | 2483.50 | -2.66 | 61.62 | 58.96 | 74.00 | -15.04 | Peak | 120 | 170 | P |
| 5 | 4874.00 | 4.89 | 32.89 | 37.78 | 54.00 | -16.22 | Average | 100 | 175 | P |
| 6 | 4874.00 | 4.89 | 44.53 | 49.42 | 74.00 | -24.58 | Peak | 100 | 175 | P |
| 7 | 7311.00 | 9.81 | 29.93 | 39.74 | 54.00 | -14.26 | Average | 100 | 60 | P |
| 8 | 7311.00 | 9.81 | 42.01 | 51.82 | 74.00 | -22.18 | Peak | 100 | 60 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

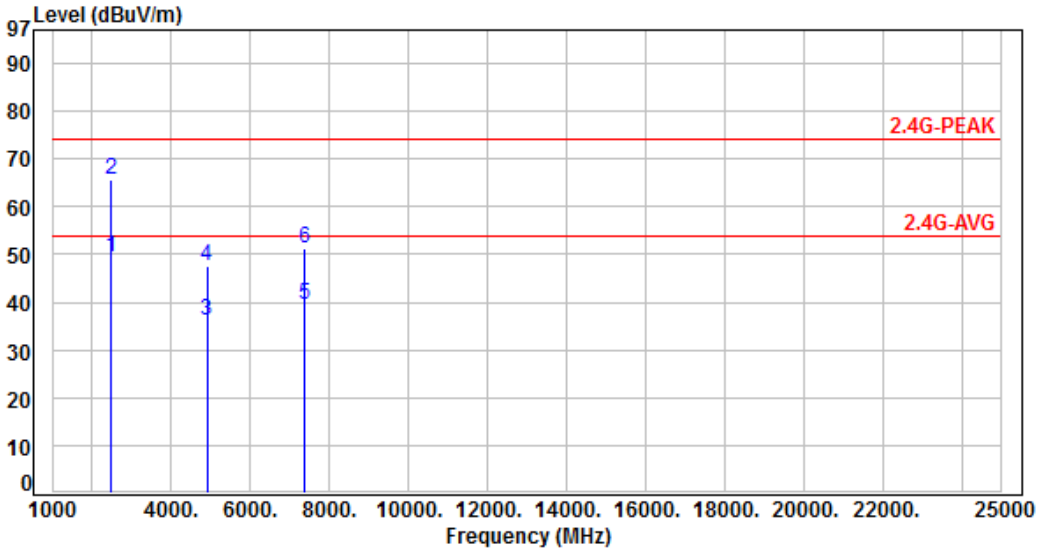
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 4, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 55.51 | 52.62 | 54.00 | -1.38 | Average | 220 | 235 | P |
| 2 | 2390.00 | -2.89 | 68.14 | 65.25 | 74.00 | -8.75 | Peak | 220 | 235 | P |
| 3 | 2483.50 | -2.66 | 48.91 | 46.25 | 54.00 | -7.75 | Average | 100 | 300 | P |
| 4 | 2483.50 | -2.66 | 62.18 | 59.52 | 74.00 | -14.48 | Peak | 100 | 300 | P |
| 5 | 4874.00 | 4.89 | 31.81 | 36.70 | 54.00 | -17.30 | Average | 200 | 205 | P |
| 6 | 4874.00 | 4.89 | 43.24 | 48.13 | 74.00 | -25.87 | Peak | 200 | 205 | P |
| 7 | 7311.00 | 9.81 | 29.75 | 39.56 | 54.00 | -14.44 | Average | 150 | 169 | P |
| 8 | 7311.00 | 9.81 | 41.49 | 51.30 | 74.00 | -22.70 | Peak | 150 | 169 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

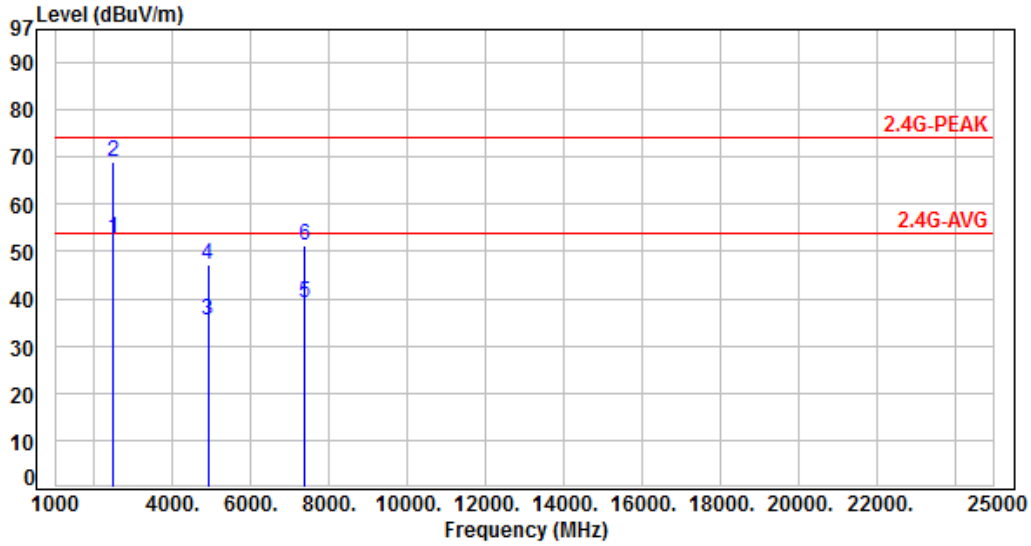
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 4, CH09 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 52.15 | 49.49 | 54.00 | -4.51 | Average | 115 | 170 | P |
| 2 | 2483.50 | -2.66 | 68.34 | 65.68 | 74.00 | -8.32 | Peak | 115 | 170 | P |
| 3 | 4904.00 | 4.99 | 31.11 | 36.10 | 54.00 | -17.90 | Average | 100 | 100 | P |
| 4 | 4904.00 | 4.99 | 42.56 | 47.55 | 74.00 | -26.45 | Peak | 100 | 100 | P |
| 5 | 7356.00 | 9.91 | 29.41 | 39.32 | 54.00 | -14.68 | Average | 100 | 190 | P |
| 6 | 7356.00 | 9.91 | 41.51 | 51.42 | 74.00 | -22.58 | Peak | 100 | 190 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

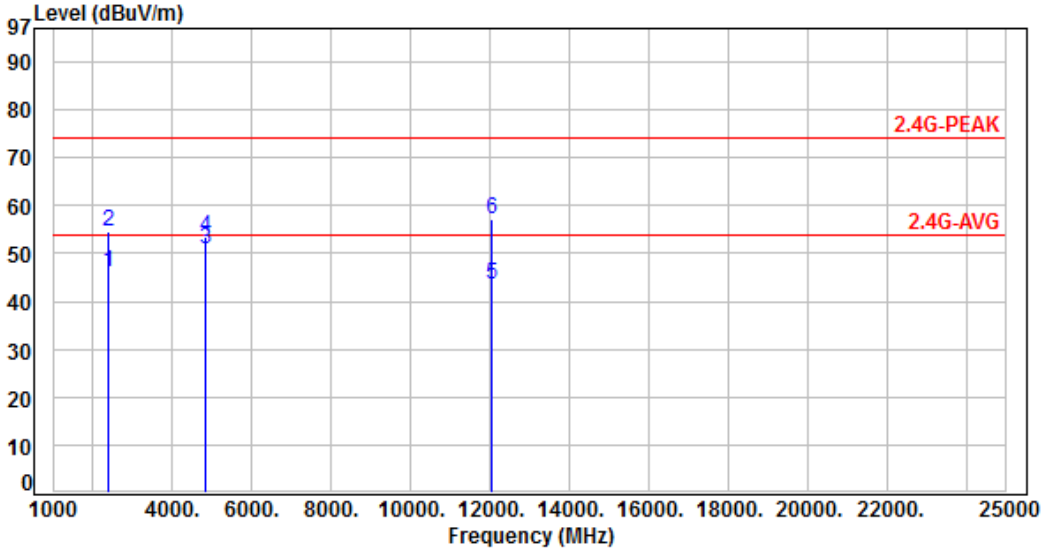
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 4, CH09 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 55.25 | 52.59 | 54.00 | -1.41 | Average | 285 | 235 | P |
| 2 | 2483.50 | -2.66 | 71.66 | 69.00 | 74.00 | -5.00 | Peak | 285 | 235 | P |
| 3 | 4904.00 | 4.99 | 30.25 | 35.24 | 54.00 | -18.76 | Average | 100 | 240 | P |
| 4 | 4904.00 | 4.99 | 42.13 | 47.12 | 74.00 | -26.88 | Peak | 100 | 240 | P |
| 5 | 7356.00 | 9.91 | 29.19 | 39.10 | 54.00 | -14.90 | Average | 100 | 255 | P |
| 6 | 7356.00 | 9.91 | 41.37 | 51.28 | 74.00 | -22.72 | Peak | 100 | 255 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

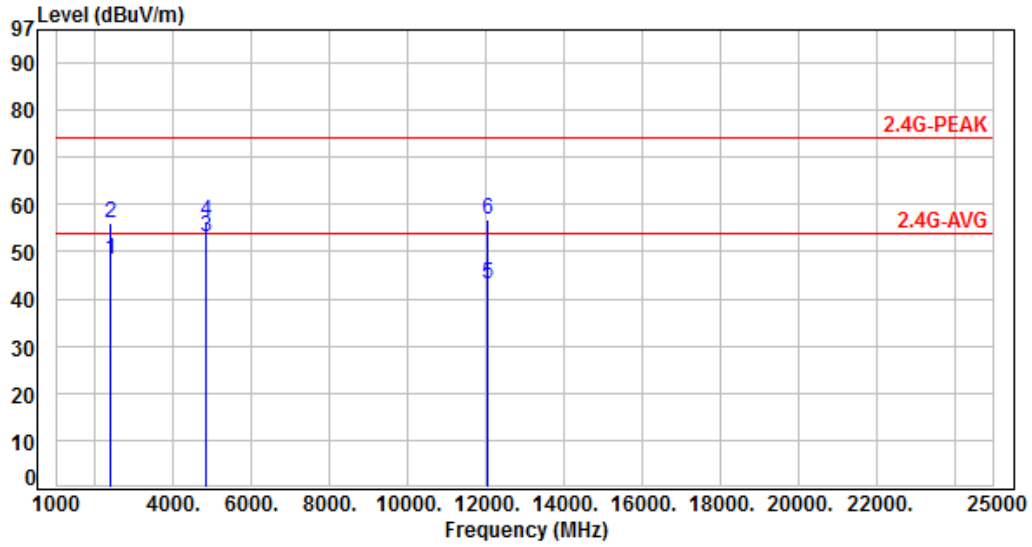
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 5, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 48.97 | 46.08 | 54.00 | -7.92 | Average | 330 | 160 | P |
| 2 | 2390.00 | -2.89 | 57.29 | 54.40 | 74.00 | -19.60 | Peak | 330 | 160 | P |
| 3 | 4824.00 | 4.73 | 46.12 | 50.85 | 54.00 | -3.15 | Average | 370 | 255 | P |
| 4 | 4824.00 | 4.73 | 48.66 | 53.39 | 74.00 | -20.61 | Peak | 370 | 255 | P |
| 5 | 12060.00 | 14.70 | 28.74 | 43.44 | 54.00 | -10.56 | Average | 100 | 153 | P |
| 6 | 12060.00 | 14.70 | 42.59 | 57.29 | 74.00 | -16.71 | Peak | 100 | 153 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

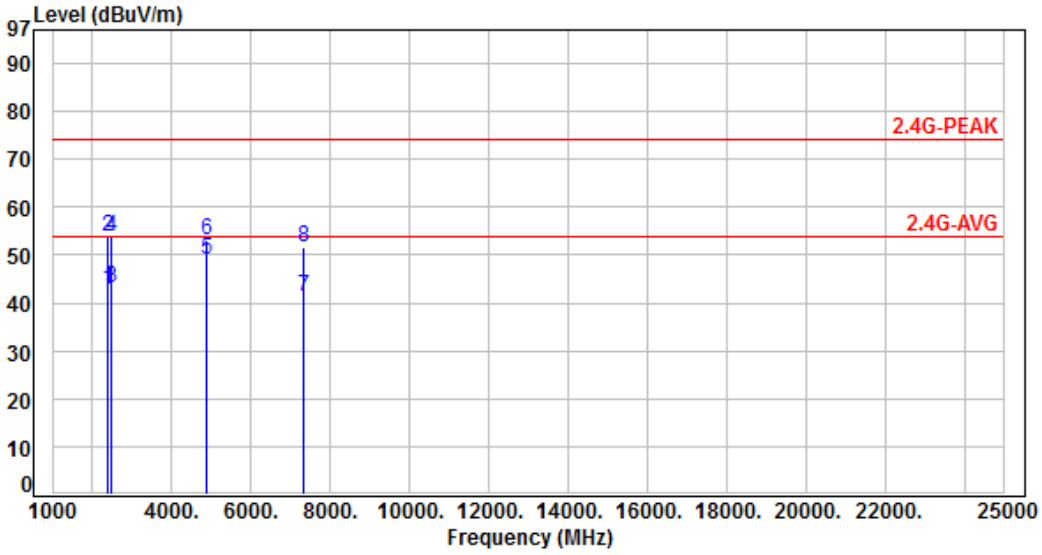
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 5, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 51.36 | 48.47 | 54.00 | -5.53 | Average | 100 | 235 | P |
| 2 | 2390.00 | -2.89 | 58.88 | 55.99 | 74.00 | -18.01 | Peak | 100 | 235 | P |
| 3 | 4824.00 | 4.73 | 48.20 | 52.93 | 54.00 | -1.07 | Average | 385 | 63 | P |
| 4 | 4824.00 | 4.73 | 51.55 | 56.28 | 74.00 | -17.72 | Peak | 385 | 63 | P |
| 5 | 12060.00 | 14.70 | 28.42 | 43.12 | 54.00 | -10.88 | Average | 100 | 55 | P |
| 6 | 12060.00 | 14.70 | 42.24 | 56.94 | 74.00 | -17.06 | Peak | 100 | 55 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

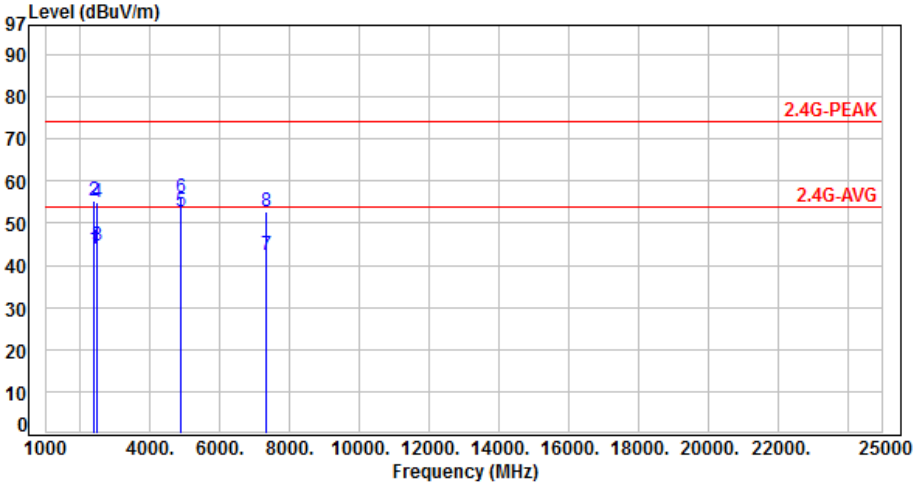
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 5, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 45.65 | 42.76 | 54.00 | -11.24 | Average | 100 | 237 | P |
| 2 | 2390.00 | -2.89 | 56.90 | 54.01 | 74.00 | -19.99 | Peak | 100 | 237 | P |
| 3 | 2483.50 | -2.66 | 45.94 | 43.28 | 54.00 | -10.72 | Average | 270 | 160 | P |
| 4 | 2483.50 | -2.66 | 56.46 | 53.80 | 74.00 | -20.20 | Peak | 270 | 160 | P |
| 5 | 4874.00 | 4.89 | 44.19 | 49.08 | 54.00 | -4.92 | Average | 120 | 292 | P |
| 6 | 4874.00 | 4.89 | 48.13 | 53.02 | 74.00 | -20.98 | Peak | 120 | 292 | P |
| 7 | 7311.00 | 9.81 | 31.56 | 41.37 | 54.00 | -12.63 | Average | 110 | 235 | P |
| 8 | 7311.00 | 9.81 | 41.82 | 51.63 | 74.00 | -22.37 | Peak | 110 | 235 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

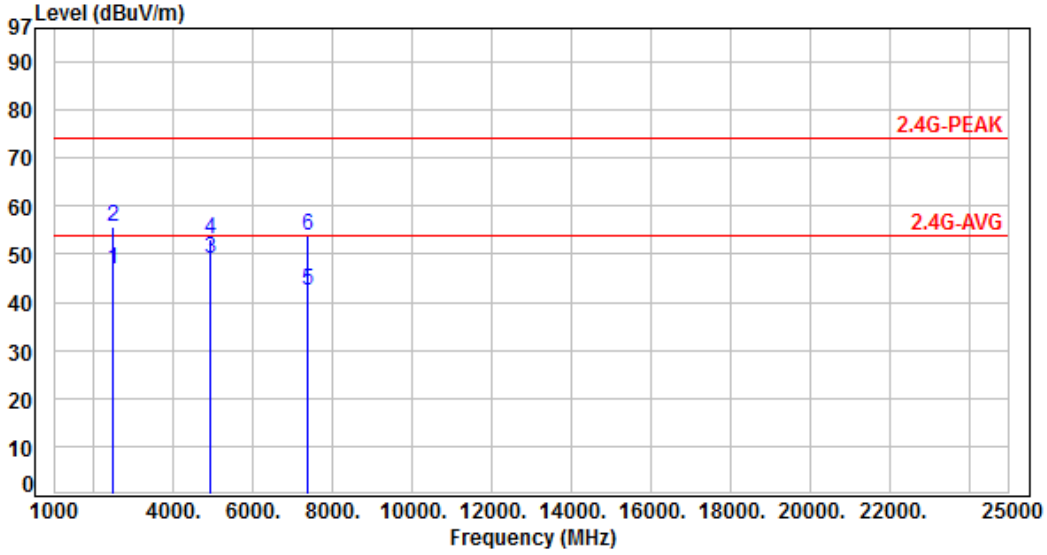
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 5, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 46.93 | 44.04 | 54.00 | -9.96 | Average | 100 | 250 | P |
| 2 | 2390.00 | -2.89 | 58.04 | 55.15 | 74.00 | -18.85 | Peak | 100 | 250 | P |
| 3 | 2483.50 | -2.66 | 47.36 | 44.70 | 54.00 | -9.30 | Average | 285 | 240 | P |
| 4 | 2483.50 | -2.66 | 57.61 | 54.95 | 74.00 | -19.05 | Peak | 285 | 240 | P |
| 5 | 4874.00 | 4.89 | 47.85 | 52.74 | 54.00 | -1.26 | Average | 338 | 245 | P |
| 6 | 4874.00 | 4.89 | 51.01 | 55.90 | 74.00 | -18.10 | Peak | 338 | 245 | P |
| 7 | 7311.00 | 9.81 | 32.44 | 42.25 | 54.00 | -11.75 | Average | 100 | 170 | P |
| 8 | 7311.00 | 9.81 | 42.77 | 52.58 | 74.00 | -21.42 | Peak | 100 | 170 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

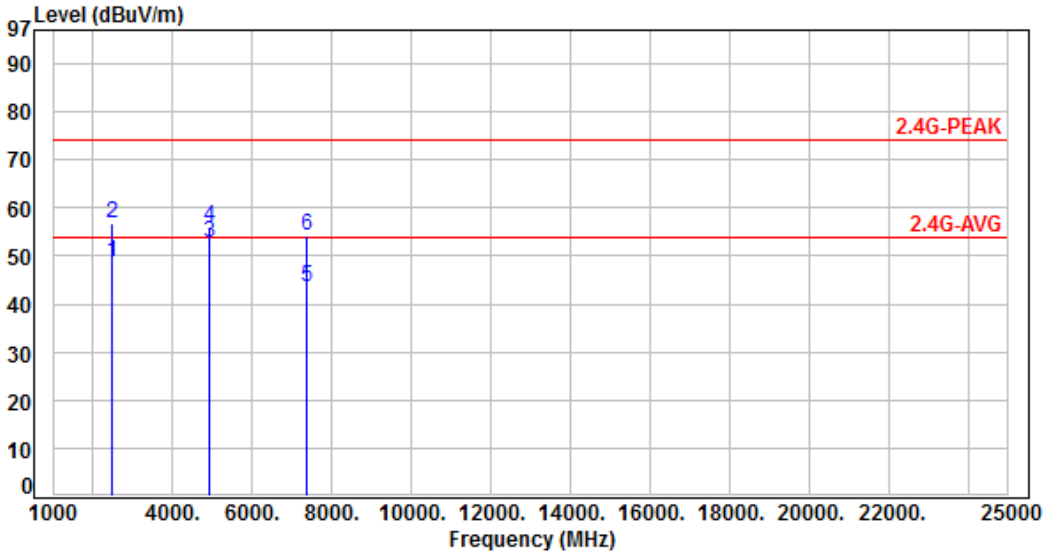
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 5, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 49.49 | 46.83 | 54.00 | -7.17 | Average | 270 | 185 | P |
| 2 | 2483.50 | -2.66 | 58.45 | 55.79 | 74.00 | -18.21 | Peak | 270 | 185 | P |
| 3 | 4924.00 | 5.10 | 43.82 | 48.92 | 54.00 | -5.08 | Average | 100 | 35 | P |
| 4 | 4924.00 | 5.10 | 48.08 | 53.18 | 74.00 | -20.82 | Peak | 100 | 35 | P |
| 5 | 7386.00 | 9.94 | 32.54 | 42.48 | 54.00 | -11.52 | Average | 200 | 145 | P |
| 6 | 7386.00 | 9.94 | 43.75 | 53.69 | 74.00 | -20.31 | Peak | 200 | 145 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

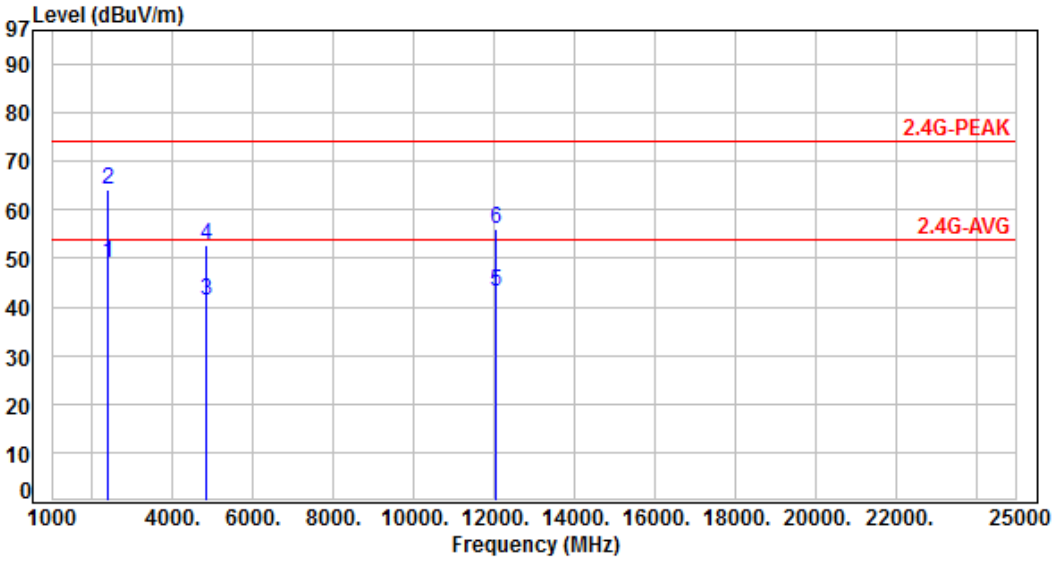
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 5, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 51.40 | 48.74 | 54.00 | -5.26 | Average | 190 | 235 | P |
| 2 | 2483.50 | -2.66 | 59.48 | 56.82 | 74.00 | -17.18 | Peak | 190 | 235 | P |
| 3 | 4924.00 | 5.10 | 47.52 | 52.62 | 54.00 | -1.38 | Average | 100 | 225 | P |
| 4 | 4924.00 | 5.10 | 50.94 | 56.04 | 74.00 | -17.96 | Peak | 100 | 225 | P |
| 5 | 7386.00 | 9.94 | 33.63 | 43.57 | 54.00 | -10.43 | Average | 100 | 315 | P |
| 6 | 7386.00 | 9.94 | 44.14 | 54.08 | 74.00 | -19.92 | Peak | 100 | 315 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

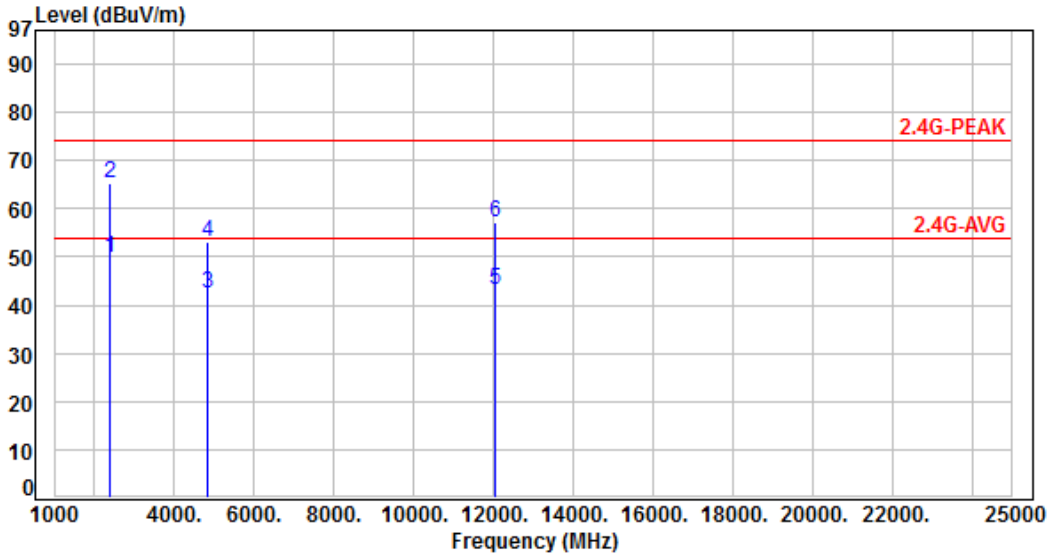
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 6, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 51.96 | 49.07 | 54.00 | -4.93 | Average | 120 | 135 | P |
| 2 | 2390.00 | -2.89 | 67.23 | 64.34 | 74.00 | -9.66 | Peak | 120 | 135 | P |
| 3 | 4824.00 | 4.73 | 36.66 | 41.39 | 54.00 | -12.61 | Average | 250 | 310 | P |
| 4 | 4824.00 | 4.73 | 48.13 | 52.86 | 74.00 | -21.14 | Peak | 250 | 310 | P |
| 5 | 12060.00 | 14.70 | 28.57 | 43.27 | 54.00 | -10.73 | Average | 100 | 45 | P |
| 6 | 12060.00 | 14.70 | 41.19 | 55.89 | 74.00 | -18.11 | Peak | 100 | 45 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

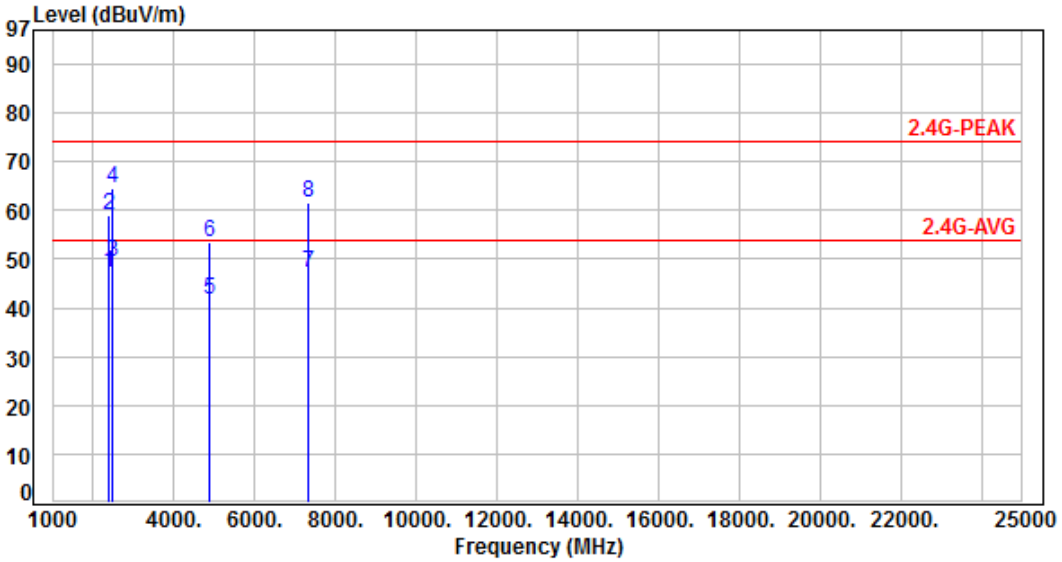
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 6, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 52.59 | 49.70 | 54.00 | -4.30 | Average | 100 | 120 | P |
| 2 | 2390.00 | -2.89 | 68.12 | 65.23 | 74.00 | -8.77 | Peak | 100 | 120 | P |
| 3 | 4824.00 | 4.73 | 37.67 | 42.40 | 54.00 | -11.60 | Average | 290 | 125 | P |
| 4 | 4824.00 | 4.73 | 48.48 | 53.21 | 74.00 | -20.79 | Peak | 290 | 125 | P |
| 5 | 12060.00 | 14.70 | 28.47 | 43.17 | 54.00 | -10.83 | Average | 100 | 240 | P |
| 6 | 12060.00 | 14.70 | 42.41 | 57.11 | 74.00 | -16.89 | Peak | 100 | 240 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

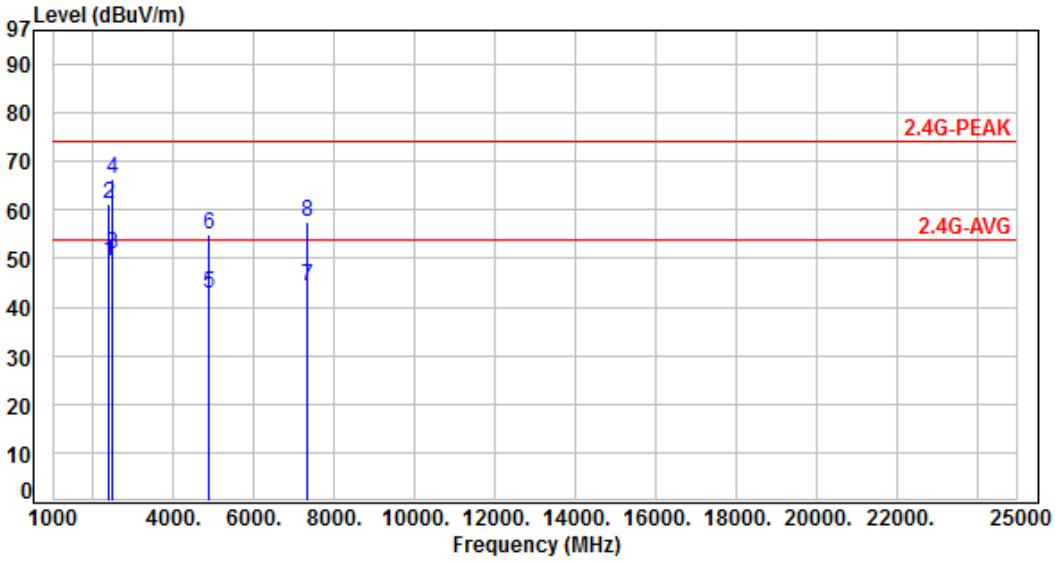
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 6, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 50.12 | 47.23 | 54.00 | -6.77 | Average | 120 | 135 | P |
| 2 | 2390.00 | -2.89 | 61.86 | 58.97 | 74.00 | -15.03 | Peak | 120 | 135 | P |
| 3 | 2483.50 | -2.66 | 52.01 | 49.35 | 54.00 | -4.65 | Average | 100 | 170 | P |
| 4 | 2483.50 | -2.66 | 67.21 | 64.55 | 74.00 | -9.45 | Peak | 100 | 170 | P |
| 5 | 4874.00 | 4.89 | 36.80 | 41.69 | 54.00 | -12.31 | Average | 263 | 77 | P |
| 6 | 4874.00 | 4.89 | 48.76 | 53.65 | 74.00 | -20.35 | Peak | 263 | 77 | P |
| 7 | 7311.00 | 9.81 | 37.22 | 47.03 | 54.00 | -6.97 | Average | 280 | 95 | P |
| 8 | 7311.00 | 9.81 | 51.72 | 61.53 | 74.00 | -12.47 | Peak | 280 | 95 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

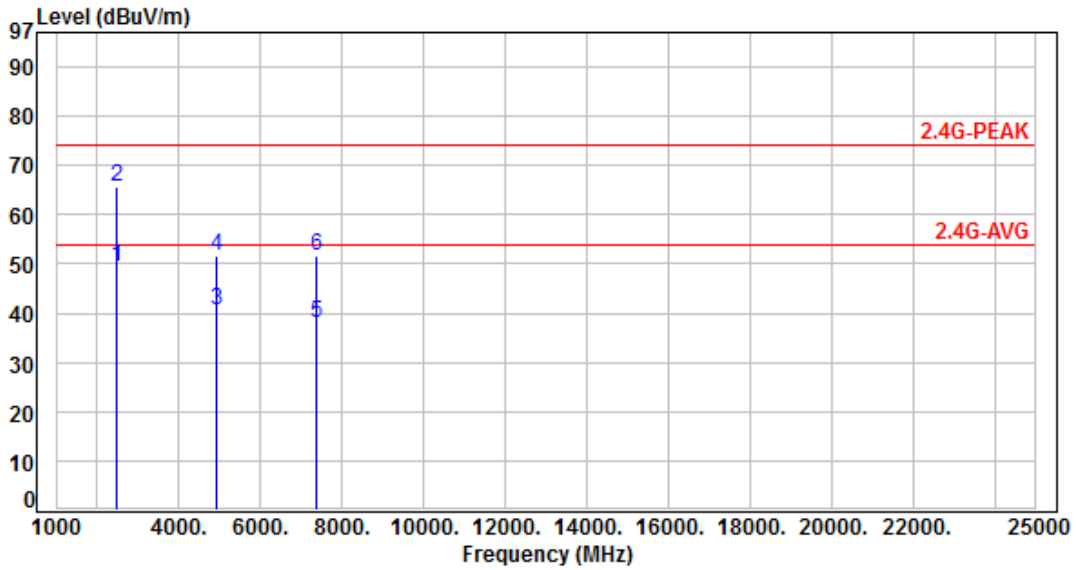
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 6, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 52.27 | 49.38 | 54.00 | -4.62 | Average | 205 | 240 | P |
| 2 | 2390.00 | -2.89 | 64.22 | 61.33 | 74.00 | -12.67 | Peak | 205 | 240 | P |
| 3 | 2483.50 | -2.66 | 53.47 | 50.81 | 54.00 | -3.19 | Average | 200 | 240 | P |
| 4 | 2483.50 | -2.66 | 68.90 | 66.24 | 74.00 | -7.76 | Peak | 200 | 240 | P |
| 5 | 4874.00 | 4.89 | 37.79 | 42.68 | 54.00 | -11.32 | Average | 100 | 210 | P |
| 6 | 4874.00 | 4.89 | 49.95 | 54.84 | 74.00 | -19.16 | Peak | 100 | 210 | P |
| 7 | 7311.00 | 9.81 | 34.55 | 44.36 | 54.00 | -9.64 | Average | 100 | 220 | P |
| 8 | 7311.00 | 9.81 | 47.89 | 57.70 | 74.00 | -16.30 | Peak | 100 | 220 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

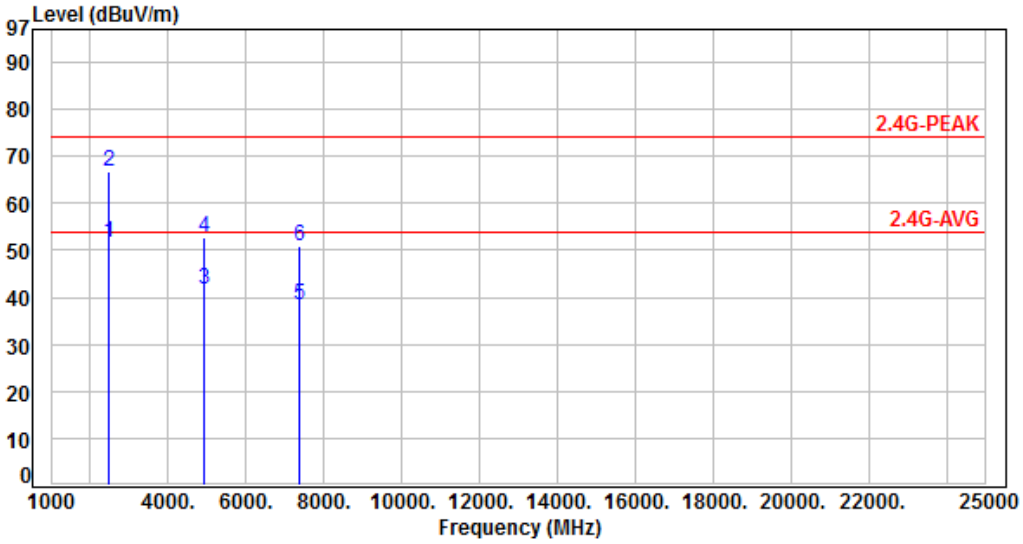
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 6, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 52.15 | 49.49 | 54.00 | -4.51 | Average | 300 | 165 | P |
| 2 | 2483.50 | -2.66 | 68.43 | 65.77 | 74.00 | -8.23 | Peak | 300 | 165 | P |
| 3 | 4924.00 | 5.10 | 35.53 | 40.63 | 54.00 | -13.37 | Average | 180 | 250 | P |
| 4 | 4924.00 | 5.10 | 46.52 | 51.62 | 74.00 | -22.38 | Peak | 180 | 250 | P |
| 5 | 7386.00 | 9.94 | 28.22 | 38.16 | 54.00 | -15.84 | Average | 100 | 153 | P |
| 6 | 7386.00 | 9.94 | 41.61 | 51.55 | 74.00 | -22.45 | Peak | 100 | 153 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

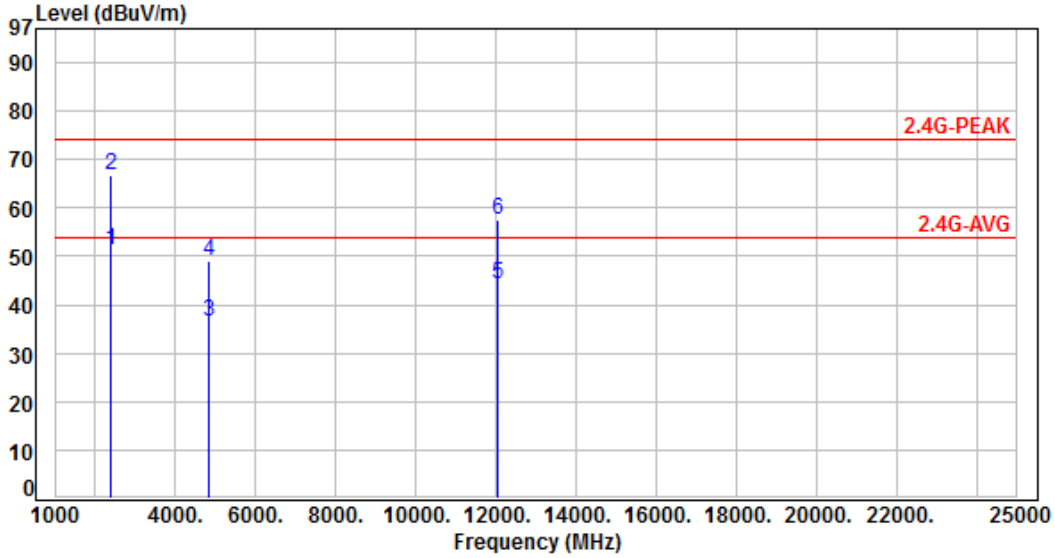
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 6, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 54.23 | 51.57 | 54.00 | -2.43 | Average | 100 | 240 | P |
| 2 | 2483.50 | -2.66 | 69.27 | 66.61 | 74.00 | -7.39 | Peak | 100 | 240 | P |
| 3 | 4924.00 | 5.10 | 36.51 | 41.61 | 54.00 | -12.39 | Average | 200 | 235 | P |
| 4 | 4924.00 | 5.10 | 47.66 | 52.76 | 74.00 | -21.24 | Peak | 200 | 235 | P |
| 5 | 7386.00 | 9.94 | 28.52 | 38.46 | 54.00 | -15.54 | Average | 100 | 75 | P |
| 6 | 7386.00 | 9.94 | 40.83 | 50.77 | 74.00 | -23.23 | Peak | 100 | 75 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

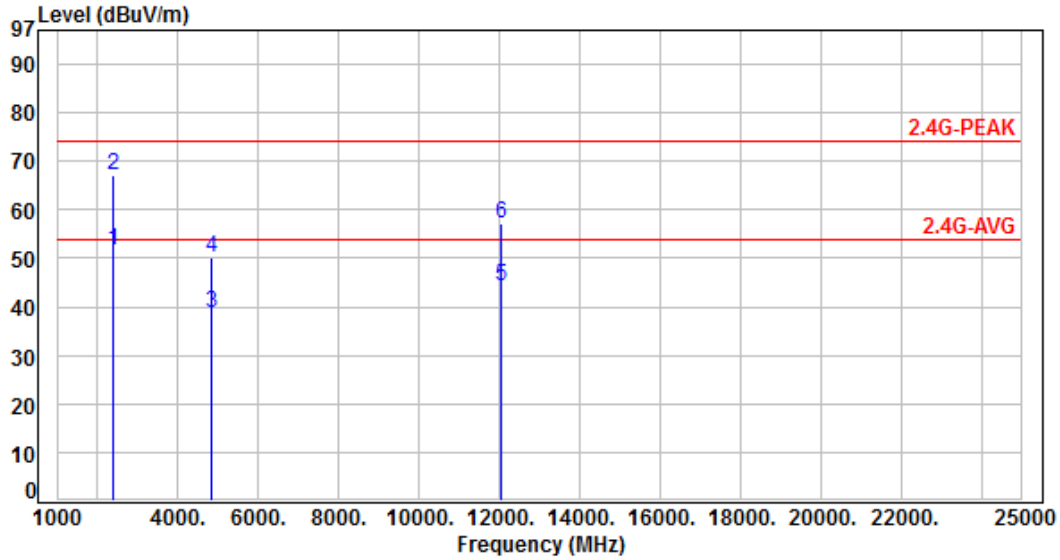
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 7, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 54.01 | 51.12 | 54.00 | -2.88 | Average | 290 | 175 | P |
| 2 | 2390.00 | -2.89 | 69.57 | 66.68 | 74.00 | -7.32 | Peak | 290 | 175 | P |
| 3 | 4824.00 | 4.73 | 31.74 | 36.47 | 54.00 | -17.53 | Average | 115 | 155 | P |
| 4 | 4824.00 | 4.73 | 44.19 | 48.92 | 74.00 | -25.08 | Peak | 115 | 155 | P |
| 5 | 12060.00 | 14.70 | 29.46 | 44.16 | 54.00 | -9.84 | Average | 100 | 70 | P |
| 6 | 12060.00 | 14.70 | 42.80 | 57.50 | 74.00 | -16.50 | Peak | 100 | 70 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

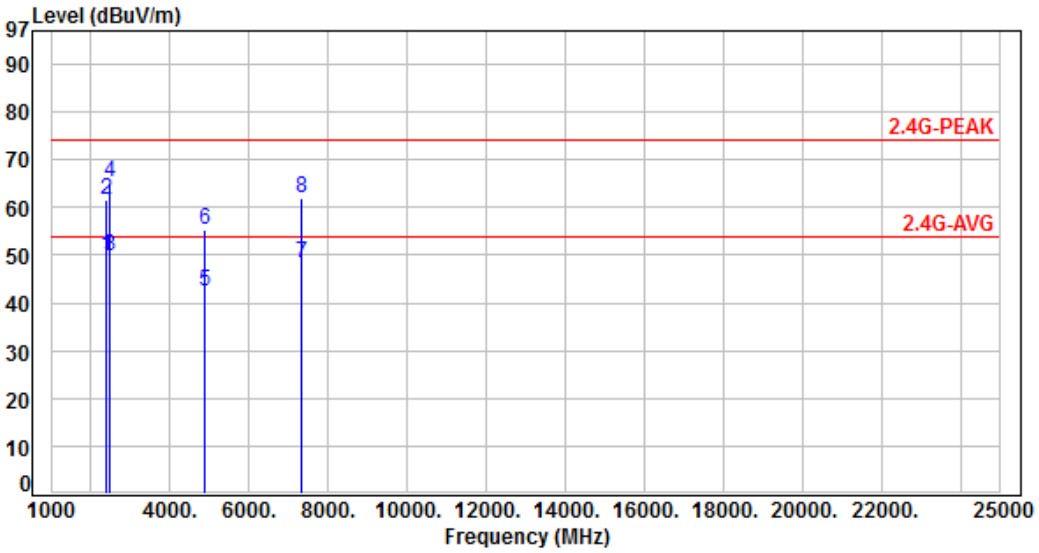
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 7, CH01 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 54.60 | 51.71 | 54.00 | -2.29 | Average | 110 | 240 | P |
| 2 | 2390.00 | -2.89 | 69.92 | 67.03 | 74.00 | -6.97 | Peak | 110 | 240 | P |
| 3 | 4824.00 | 4.73 | 33.83 | 38.56 | 54.00 | -15.44 | Average | 100 | 270 | P |
| 4 | 4824.00 | 4.73 | 45.43 | 50.16 | 74.00 | -23.84 | Peak | 100 | 270 | P |
| 5 | 12060.00 | 14.70 | 29.42 | 44.12 | 54.00 | -9.88 | Average | 100 | 350 | P |
| 6 | 12060.00 | 14.70 | 42.40 | 57.10 | 74.00 | -16.90 | Peak | 100 | 350 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

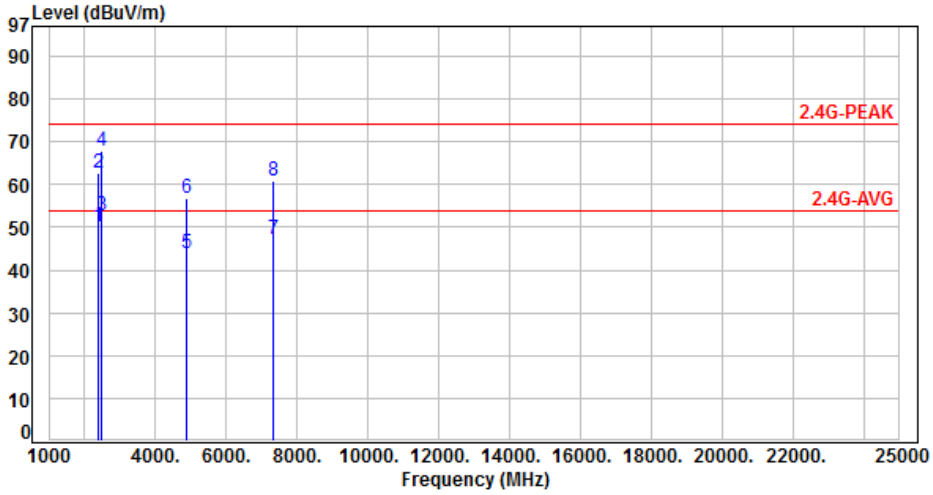
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 7, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 52.78 | 49.89 | 54.00 | -4.11 | Average | 290 | 175 | P |
| 2 | 2390.00 | -2.89 | 64.42 | 61.53 | 74.00 | -12.47 | Peak | 290 | 175 | P |
| 3 | 2483.50 | -2.66 | 52.55 | 49.89 | 54.00 | -4.11 | Average | 130 | 165 | P |
| 4 | 2483.50 | -2.66 | 67.98 | 65.32 | 74.00 | -8.68 | Peak | 130 | 165 | P |
| 5 | 4874.00 | 4.89 | 37.59 | 42.48 | 54.00 | -11.52 | Average | 313 | 40 | P |
| 6 | 4874.00 | 4.89 | 50.47 | 55.36 | 74.00 | -18.64 | Peak | 313 | 40 | P |
| 7 | 7311.00 | 9.81 | 38.67 | 48.48 | 54.00 | -5.52 | Average | 275 | 90 | P |
| 8 | 7311.00 | 9.81 | 52.17 | 61.98 | 74.00 | -12.02 | Peak | 275 | 90 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

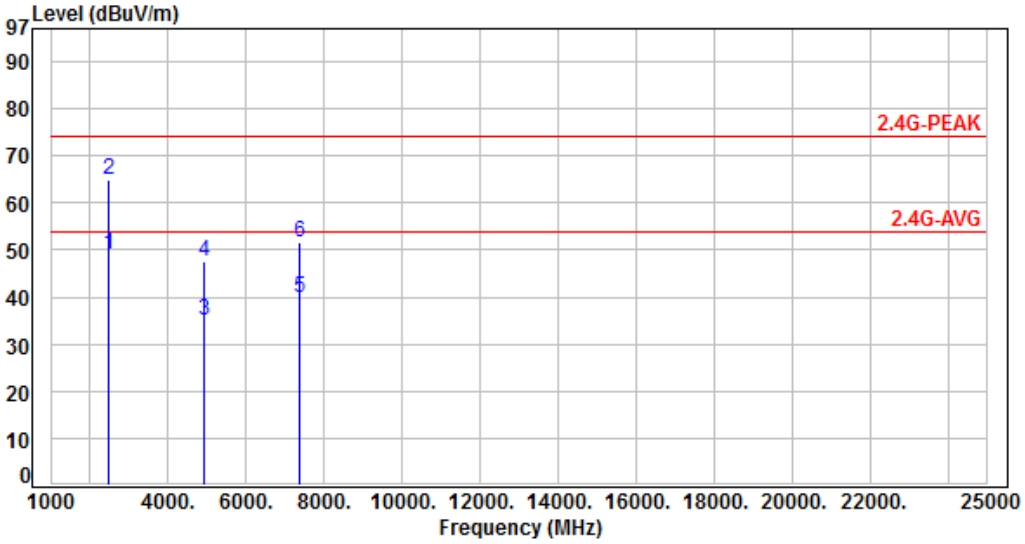
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 7, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 53.08 | 50.19 | 54.00 | -3.81 | Average | 210 | 240 | P |
| 2 | 2390.00 | -2.89 | 65.68 | 62.79 | 74.00 | -11.21 | Peak | 210 | 240 | P |
| 3 | 2483.50 | -2.66 | 55.44 | 52.78 | 54.00 | -1.22 | Average | 195 | 240 | P |
| 4 | 2483.50 | -2.66 | 70.44 | 67.78 | 74.00 | -6.22 | Peak | 195 | 240 | P |
| 5 | 4874.00 | 4.89 | 38.93 | 43.82 | 54.00 | -10.18 | Average | 170 | 215 | P |
| 6 | 4874.00 | 4.89 | 51.82 | 56.71 | 74.00 | -17.29 | Peak | 170 | 215 | P |
| 7 | 7311.00 | 9.81 | 37.30 | 47.11 | 54.00 | -6.89 | Average | 230 | 125 | P |
| 8 | 7311.00 | 9.81 | 50.98 | 60.79 | 74.00 | -13.21 | Peak | 230 | 125 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

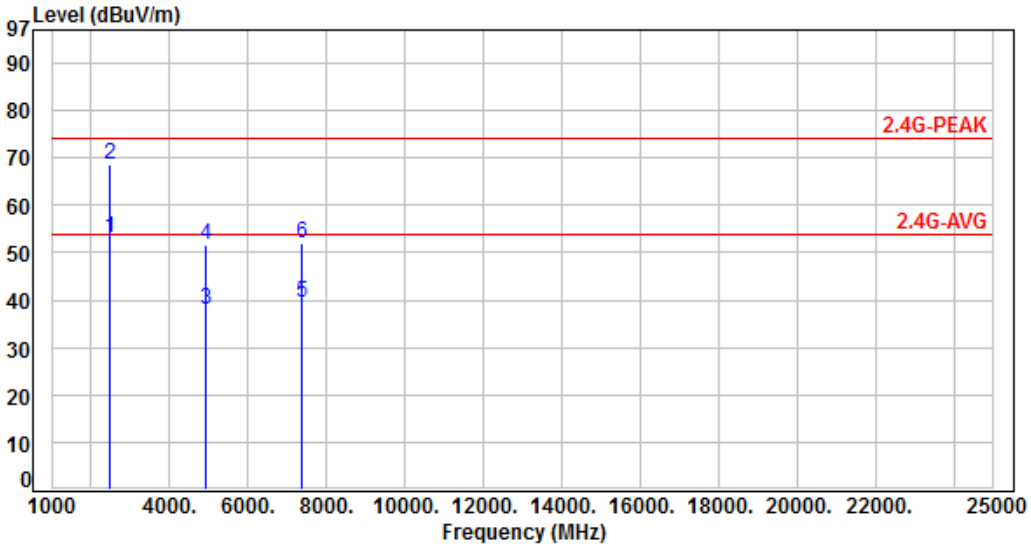
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 7, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 51.65 | 48.99 | 54.00 | -5.01 | Average | 135 | 170 | P |
| 2 | 2483.50 | -2.66 | 67.41 | 64.75 | 74.00 | -9.25 | Peak | 135 | 170 | P |
| 3 | 4924.00 | 5.10 | 29.99 | 35.09 | 54.00 | -18.91 | Average | 100 | 290 | P |
| 4 | 4924.00 | 5.10 | 42.52 | 47.62 | 74.00 | -26.38 | Peak | 100 | 290 | P |
| 5 | 7386.00 | 9.94 | 29.97 | 39.91 | 54.00 | -14.09 | Average | 100 | 0 | P |
| 6 | 7386.00 | 9.94 | 41.75 | 51.69 | 74.00 | -22.31 | Peak | 100 | 0 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

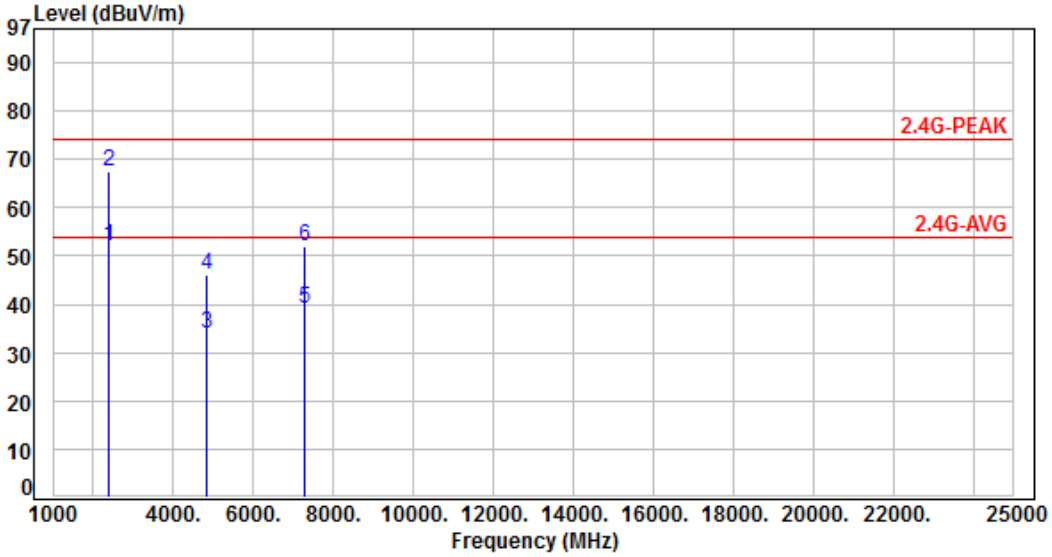
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 7, CH11 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 55.63 | 52.97 | 54.00 | -1.03 | Average | 190 | 240 | P |
| 2 | 2483.50 | -2.66 | 71.40 | 68.74 | 74.00 | -5.26 | Peak | 190 | 240 | P |
| 3 | 4924.00 | 5.10 | 32.80 | 37.90 | 54.00 | -16.10 | Average | 100 | 210 | P |
| 4 | 4924.00 | 5.10 | 46.66 | 51.76 | 74.00 | -22.24 | Peak | 100 | 210 | P |
| 5 | 7386.00 | 9.94 | 29.51 | 39.45 | 54.00 | -14.55 | Average | 100 | 253 | P |
| 6 | 7386.00 | 9.94 | 42.08 | 52.02 | 74.00 | -21.98 | Peak | 100 | 253 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

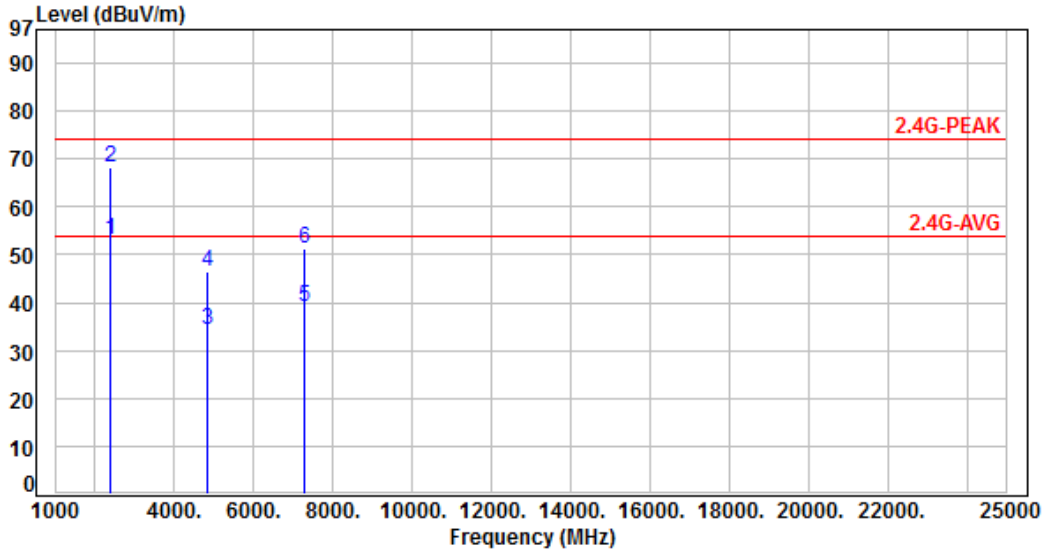
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 8, CH03 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 54.92 | 52.03 | 54.00 | -1.97 | Average | 290 | 175 | P |
| 2 | 2390.00 | -2.89 | 70.23 | 67.34 | 74.00 | -6.66 | Peak | 290 | 175 | P |
| 3 | 4844.00 | 4.80 | 29.16 | 33.96 | 54.00 | -20.04 | Average | 160 | 130 | P |
| 4 | 4844.00 | 4.80 | 41.23 | 46.03 | 74.00 | -27.97 | Peak | 160 | 130 | P |
| 5 | 7266.00 | 9.63 | 29.53 | 39.16 | 54.00 | -14.84 | Average | 120 | 190 | P |
| 6 | 7266.00 | 9.63 | 42.40 | 52.03 | 74.00 | -21.97 | Peak | 120 | 190 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

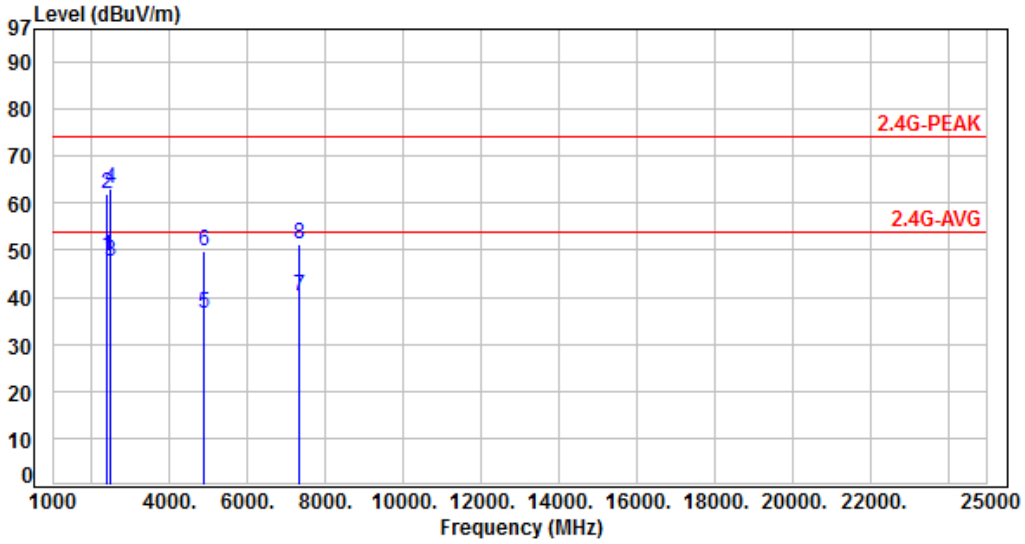
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 8, CH03 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 55.84 | 52.95 | 54.00 | -1.05 | Average | 225 | 245 | P |
| 2 | 2390.00 | -2.89 | 71.15 | 68.26 | 74.00 | -5.74 | Peak | 225 | 245 | P |
| 3 | 4844.00 | 4.80 | 29.59 | 34.39 | 54.00 | -19.61 | Average | 125 | 240 | P |
| 4 | 4844.00 | 4.80 | 41.59 | 46.39 | 74.00 | -27.61 | Peak | 125 | 240 | P |
| 5 | 7266.00 | 9.63 | 29.49 | 39.12 | 54.00 | -14.88 | Average | 150 | 310 | P |
| 6 | 7266.00 | 9.63 | 41.68 | 51.31 | 74.00 | -22.69 | Peak | 150 | 310 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

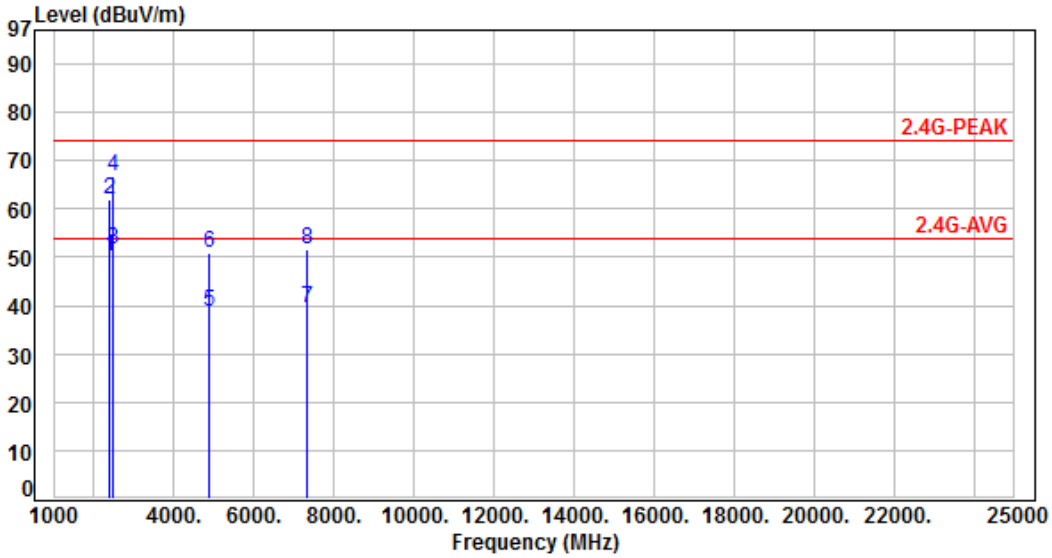
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 8, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 51.63 | 48.74 | 54.00 | -5.26 | Average | 290 | 175 | P |
| 2 | 2390.00 | -2.89 | 64.82 | 61.93 | 74.00 | -12.07 | Peak | 290 | 175 | P |
| 3 | 2483.50 | -2.66 | 50.42 | 47.76 | 54.00 | -6.24 | Average | 400 | 130 | P |
| 4 | 2483.50 | -2.66 | 65.89 | 63.23 | 74.00 | -10.77 | Peak | 400 | 130 | P |
| 5 | 4874.00 | 4.89 | 31.62 | 36.51 | 54.00 | -17.49 | Average | 310 | 50 | P |
| 6 | 4874.00 | 4.89 | 44.93 | 49.82 | 74.00 | -24.18 | Peak | 310 | 50 | P |
| 7 | 7311.00 | 9.81 | 30.25 | 40.06 | 54.00 | -13.94 | Average | 200 | 135 | P |
| 8 | 7311.00 | 9.81 | 41.30 | 51.11 | 74.00 | -22.89 | Peak | 200 | 135 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

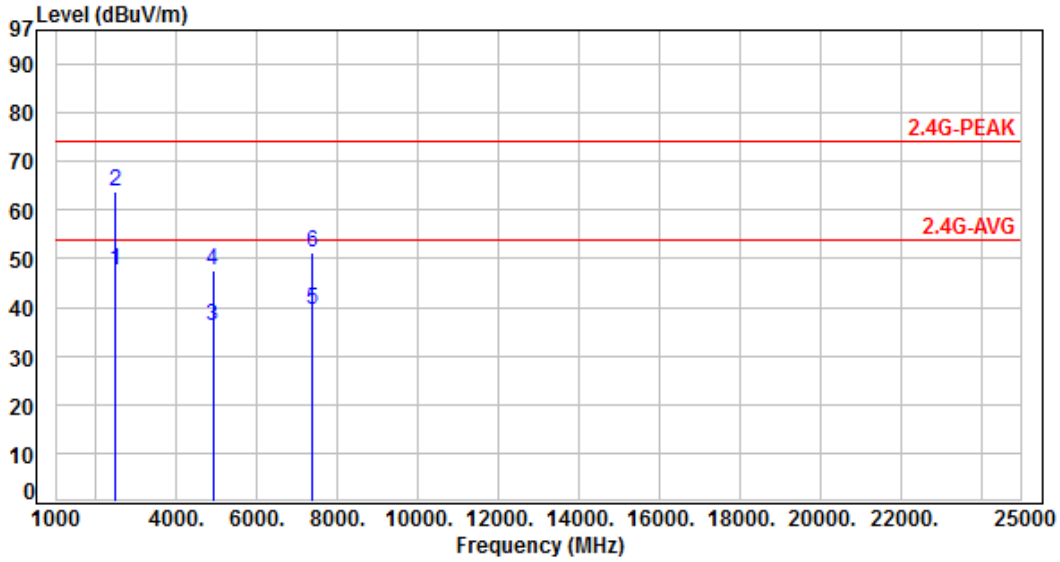
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 8, CH06 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.00 | -2.89 | 53.12 | 50.23 | 54.00 | -3.77 | Average | 225 | 250 | P |
| 2 | 2390.00 | -2.89 | 65.01 | 62.12 | 74.00 | -11.88 | Peak | 225 | 250 | P |
| 3 | 2483.50 | -2.66 | 54.21 | 51.55 | 54.00 | -2.45 | Average | 210 | 245 | P |
| 4 | 2483.50 | -2.66 | 69.29 | 66.63 | 74.00 | -7.37 | Peak | 210 | 245 | P |
| 5 | 4874.00 | 4.89 | 33.90 | 38.79 | 54.00 | -15.21 | Average | 190 | 220 | P |
| 6 | 4874.00 | 4.89 | 45.86 | 50.75 | 74.00 | -23.25 | Peak | 190 | 220 | P |
| 7 | 7311.00 | 9.81 | 29.80 | 39.61 | 54.00 | -14.39 | Average | 100 | 250 | P |
| 8 | 7311.00 | 9.81 | 41.97 | 51.78 | 74.00 | -22.22 | Peak | 100 | 250 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

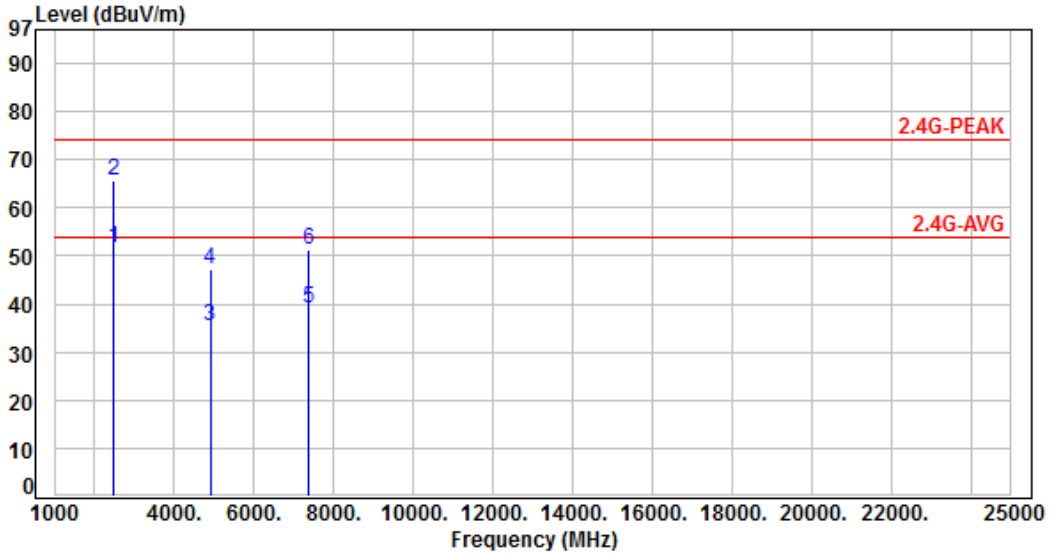
| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | VERTICAL |
| Test Mode | : | Mode 8, CH09 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 50.15 | 47.49 | 54.00 | -6.51 | Average | 295 | 180 | P |
| 2 | 2483.50 | -2.66 | 66.62 | 63.96 | 74.00 | -10.04 | Peak | 295 | 180 | P |
| 3 | 4904.00 | 4.99 | 31.11 | 36.10 | 54.00 | -17.90 | Average | 100 | 100 | P |
| 4 | 4904.00 | 4.99 | 42.56 | 47.55 | 74.00 | -26.45 | Peak | 100 | 100 | P |
| 5 | 7356.00 | 9.91 | 29.41 | 39.32 | 54.00 | -14.68 | Average | 100 | 190 | P |
| 6 | 7356.00 | 9.91 | 41.51 | 51.42 | 74.00 | -22.58 | Peak | 100 | 190 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

| | | | | | |
|---|---|---|---|---|---|
| Power | : | AC 120V / 60HZ | Pol/Phase | : | HORIZONTAL |
| Test Mode | : | Mode 8, CH09 | | : | |




| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Azimuth (deg) | P/F |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.50 | -2.66 | 54.38 | 51.72 | 54.00 | -2.28 | Average | 210 | 245 | P |
| 2 | 2483.50 | -2.66 | 68.33 | 65.67 | 74.00 | -8.33 | Peak | 210 | 245 | P |
| 3 | 4904.00 | 4.99 | 30.25 | 35.24 | 54.00 | -18.76 | Average | 100 | 240 | P |
| 4 | 4904.00 | 4.99 | 42.13 | 47.12 | 74.00 | -26.88 | Peak | 100 | 240 | P |
| 5 | 7356.00 | 9.91 | 29.19 | 39.10 | 54.00 | -14.90 | Average | 100 | 255 | P |
| 6 | 7356.00 | 9.91 | 41.37 | 51.28 | 74.00 | -22.72 | Peak | 100 | 255 | P |

Note: Level=Reading+Factor
Margin=Level-Limit
Factor=Antenna Factor + cable loss - Amplifier Factor

## 6.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.09000 – 0.11000 | 16.42000 – 16.42300 | 399.9 – 410.0 | 4.500 – 5.250 |
| 0.49500 – 0.505** | 16.69475 – 16.69525 | 608.0 – 614.0 | 5.350 – 5.460 |
| 2.17350 – 2.19050 | 16.80425 – 16.80475 | 960.0 – 1240.0 | 7.250 – 7.750 |
| 4.12500 – 4.12800 | 25.50000 – 25.67000 | 1300.0 – 1427.0 | 8.025 – 8.500 |
| 4.17725 – 4.17775 | 37.50000 – 38.25000 | 1435.0 – 1626.5 | 9.000 – 9.200 |
| 4.20725 – 4.20775 | 73.00000 – 74.60000 | 1645.5 – 1646.5 | 9.300 – 9.500 |
| 6.21500 – 6.21800 | 74.80000 – 75.20000 | 1660.0 – 1710.0 | 10.600 – 12.700 |
| 6.26775 – 6.26825 | 108.00000 – 121.94000 | 1718.8 – 1722.2 | 13.250 – 13.400 |
| 6.31175 – 6.31225 | 123.00000 – 138.00000 | 2200.0 – 2300.0 | 14.470 – 14.500 |
| 8.29100 – 8.29400 | 149.90000 – 150.05000 | 2310.0 – 2390.0 | 15.350 – 16.200 |
| 8.36200 – 8.36600 | 156.52475 – 156.52525 | 2483.5 – 2500.0 | 17.700 – 21.400 |
| 8.37625 – 8.38675 | 156.70000 – 156.90000 | 2655.0 – 2900.0 | 22.010 – 23.120 |
| 8.41425 – 8.41475 | 162.01250 – 167.17000 | 3260.0 – 3267.0 | 23.600 – 24.000 |
| 12.29000 – 12.29300 | 167.72000 – 173.20000 | 3332.0 – 3339.0 | 31.200 – 31.800 |
| 12.51975 – 12.52025 | 240.00000 – 285.00000 | 3345.8 – 3358.0 | 36.430 – 36.500 |
| 12.57675 – 12.57725 | 322.00000 – 335.40000 | 3600.0 – 4400.0 | Above 38.6 |
| 13.36000 – 13.41000 | | | |

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

# 7. Test of Conducted Spurious Emission

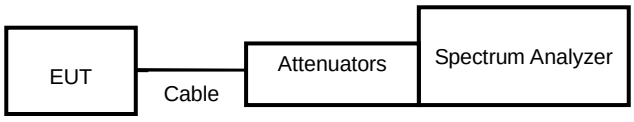
## 7.1 Test Limit

Below –20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

## 7.2 Test Procedure

a. The transmitter output was connected to the spectrum analyzer via a low loss cable.
b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20dB relative to the maximum measured in-band peak PSD level.
d. The band edges was measured and recorded.

## 7.3 Test Setup Layout



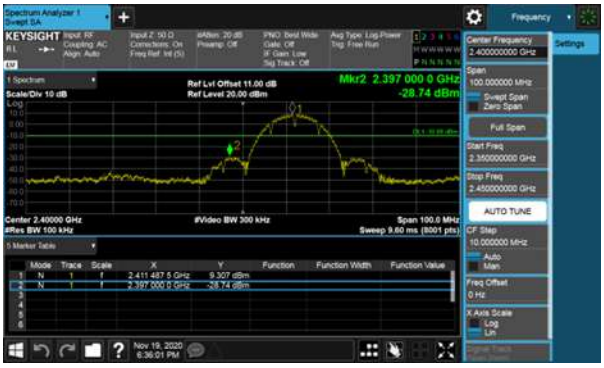

## 7.4 Test Result and Data

Note: Test plots refers to the following pages.

ANT A:

Modulation Type: 802.11b, CH 01


Modulation Type: 802.11b, CH 06

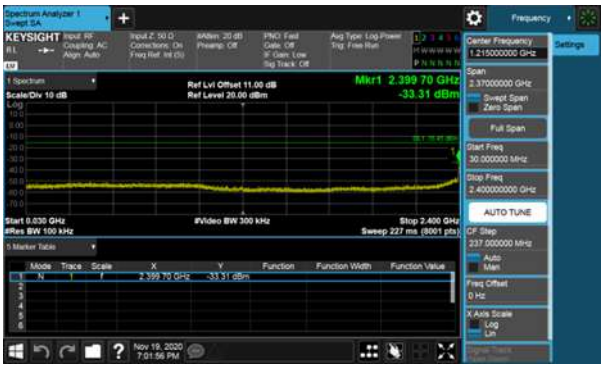



ANT A:
Modulation Type: 802.11b, CH 11

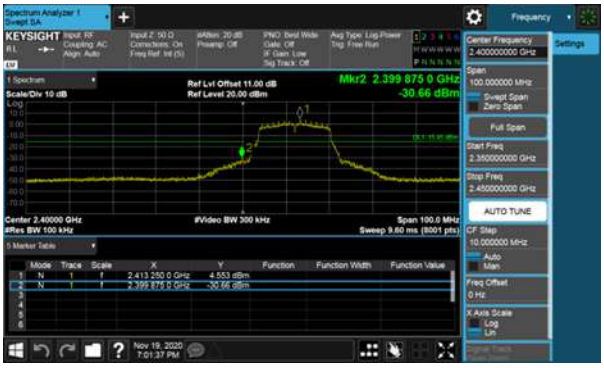


ANT A:

Modulation Type: 802.11g, CH 01




Modulation Type: 802.11g, CH 06

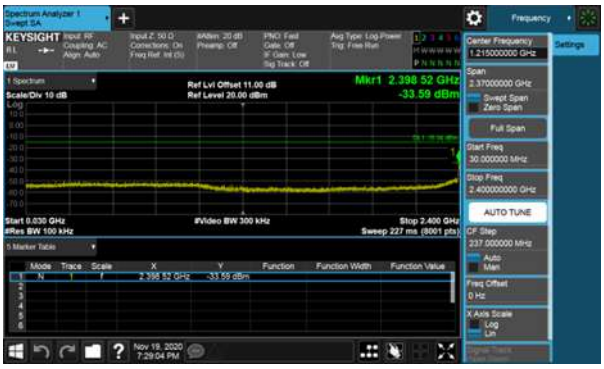



ANT A:
Modulation Type: 802.11g, CH 11

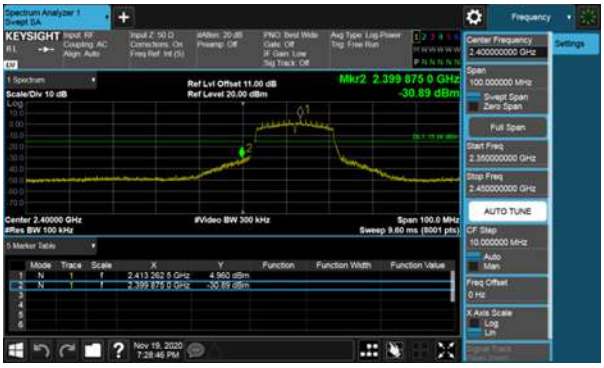


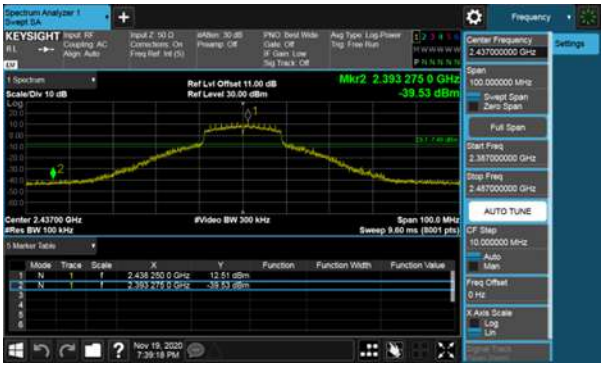
ANT A:

Modulation Type: 802.11n HT20, CH01




Modulation Type: 802.11n HT20, CH06



ANT A:

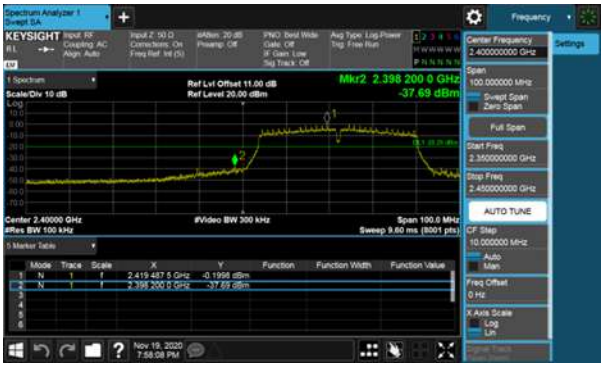
Modulation Type: 802.11n HT20, CH11



ANT A:

Modulation Type: 802.11n HT40, CH03


Modulation Type: 802.11n HT40, CH06




ANT A:

Modulation Type: 802.11n HT40, CH09



ANT B:

Modulation Type: 802.11b, CH 01


Modulation Type: 802.11b, CH 06



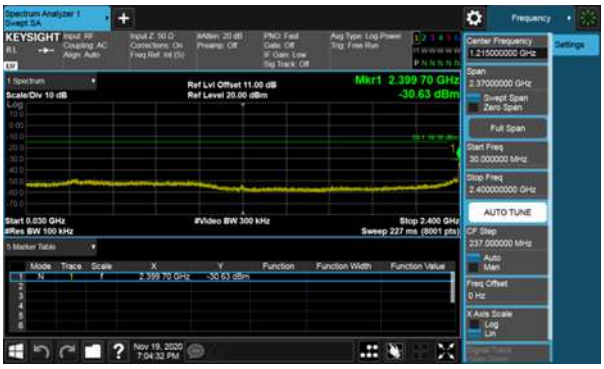


ANT B:
Modulation Type: 802.11b, CH 11



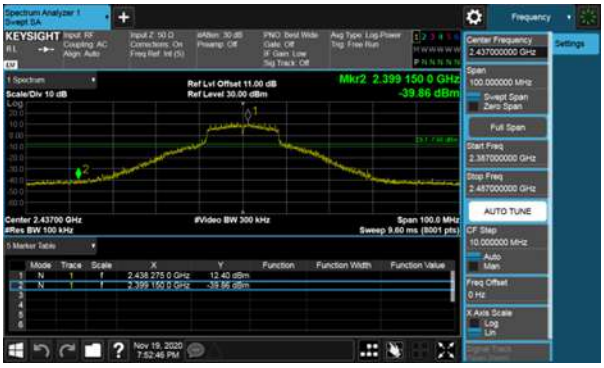
ANT B:

Modulation Type: 802.11g, CH 01




Modulation Type: 802.11g, CH 06





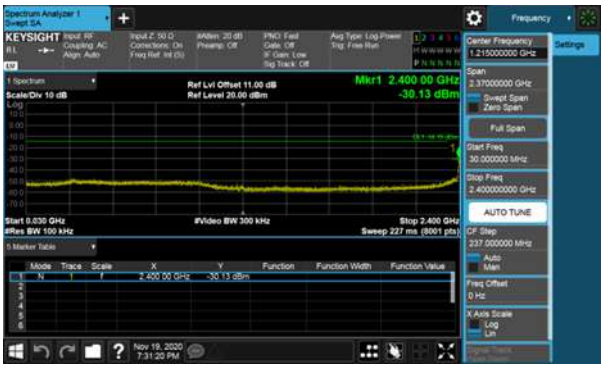


ANT B:
Modulation Type: 802.11g, CH 11

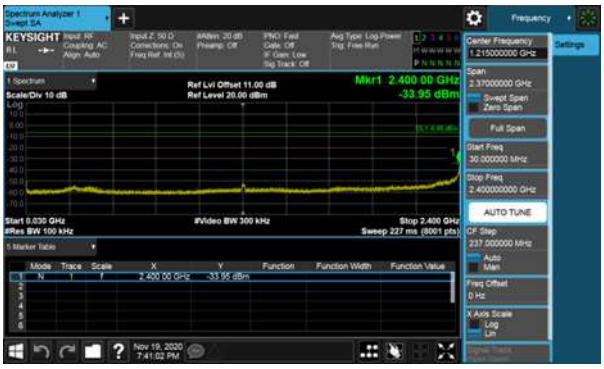


ANT B:

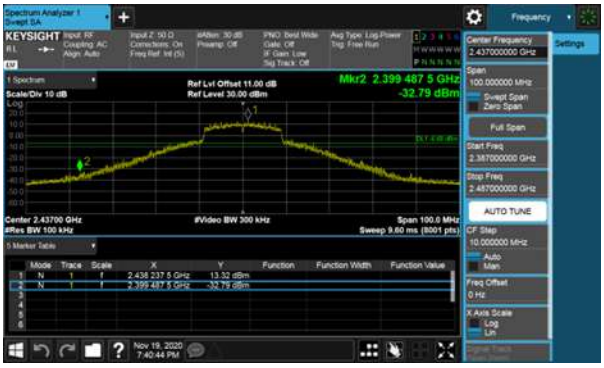
Modulation Type: 802.11n HT20, CH01




Modulation Type: 802.11n HT20, CH06



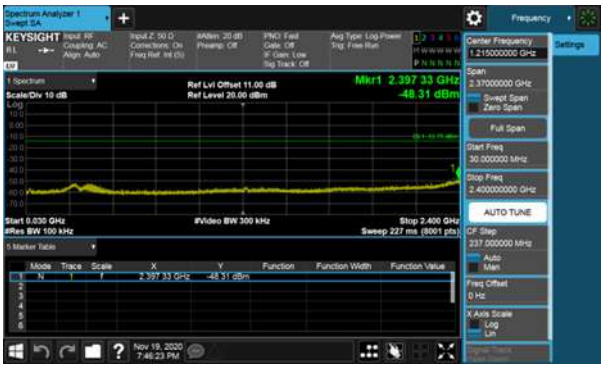






ANT B:

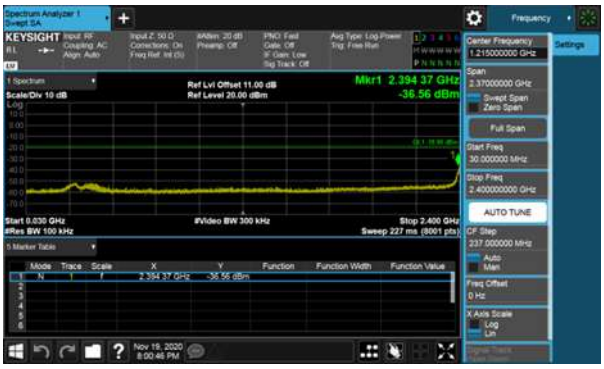
Modulation Type: 802.11n HT20, CH11



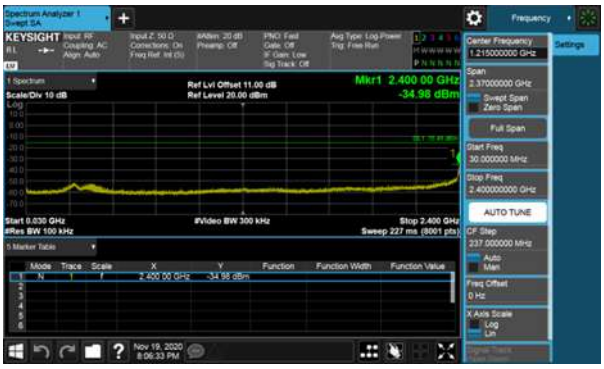


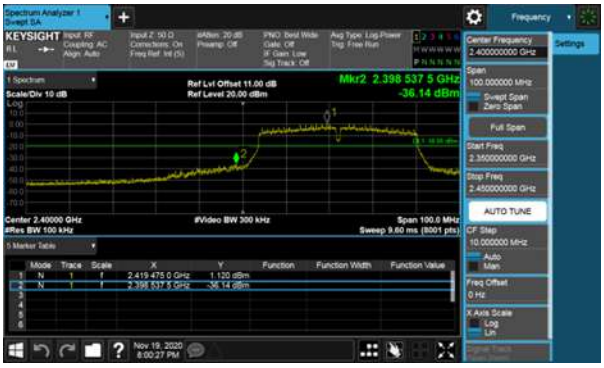
ANT B:

Modulation Type: 802.11n HT40, CH03




Modulation Type: 802.11n HT40, CH06

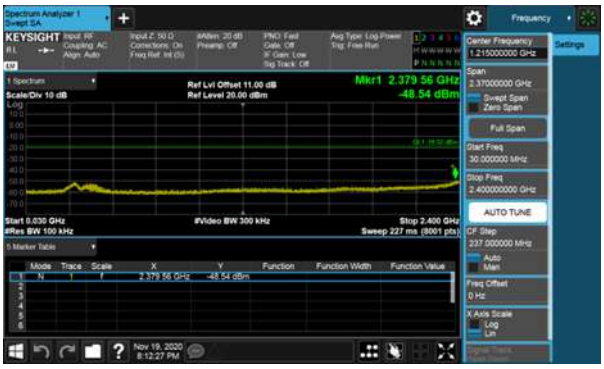





ANT B:

Modulation Type: 802.11n HT40, CH09





# 8. On Time, Duty Cycle and Measurement methods

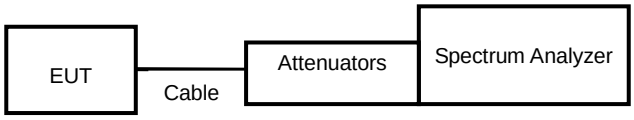
## 8.1 Test Limit

None; for reporting purposes only.

## 8.2 Test Procedure

Zero-Span Spectrum Analyzer Method.

## 8.3 Test Setup Layout




## 8.4 Test Result and Data

| Modulation Type | On Time (ms) | Period Time (ms) | Duty Cycle (%) |
|---|---|---|---|
| 11b,1M | 8.43 | 8.58 | 98.25% |
| 11g,6M | 1.39 | 1.55 | 89.70% |
| 11n HT20 | 1.31 | 1.47 | 89.09% |
| 11n HT40 | 0.65 | 0.81 | 79.92% |

Modulation Type: 802.11b(1Mbps)

Modulation Type: 802.11n HT40(13.5Mbps)

Modulation Type: 802.11g(6Mbps)

Modulation Type: 802.11n HT20(6.5Mbps)

# 9. 6dB Bandwidth Measurement Data

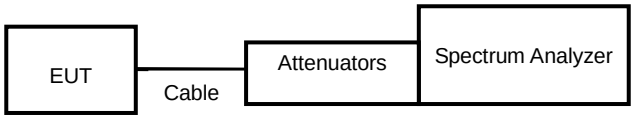
## 9.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

## 9.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
d. The 6dB Bandwidth was measured and recorded.

## 9.3 Test Setup Layout



## 9.4 Test Result and Data

| Modulation Type | Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Limit (MHz) |
|---|---|---|---|---|---|
| | | | ANT A | ANT B | |
| 11b | 1 | 2412 | 10.05 | 10.05 | 0.5 |
| | 6 | 2437 | 10.02 | 10.05 | 0.5 |
| | 11 | 2462 | 10.05 | 10.05 | 0.5 |
| 11g | 1 | 2412 | 15.09 | 15.09 | 0.5 |
| | 6 | 2437 | 15.09 | 15.12 | 0.5 |
| | 11 | 2462 | 15.09 | 15.09 | 0.5 |
| 11n HT20 | 1 | 2412 | 15.09 | 15.09 | 0.5 |
| | 6 | 2437 | 15.09 | 15.69 | 0.5 |
| | 11 | 2462 | 15.09 | 15.09 | 0.5 |
| 11n HT40 | 3 | 2422 | 35.10 | 35.10 | 0.5 |
| | 6 | 2437 | 35.10 | 35.04 | 0.5 |
| | 9 | 2452 | 35.10 | 35.10 | 0.5 |

6dB Bandwidth, ANT A:

Modulation Type: 802.11b

CH01

Modulation Type: 802.11g

CH01

CH06

CH06

CH11

CH11

6dB Bandwidth, ANT A:

Modulation Type: 802.11n HT20

CH01

Modulation Type: 802.11n HT40

CH03

CH06

CH06

CH11

CH09

6dB Bandwidth, ANT B:

Modulation Type: 802.11b

CH01

Modulation Type: 802.11g

CH01

CH06

CH06

CH11

CH11

6dB Bandwidth, ANT B:

Modulation Type: 802.11n HT20

CH01

Modulation Type: 802.11n HT40

CH03

CH06

CH06

CH11

CH09

# 10. Maximum Peak and Average Output Power

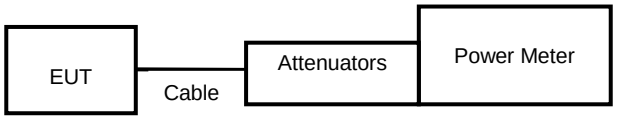
## 10.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.
If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

## 10.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

## 10.3 Test Setup Layout



### 10.4 Test Result and Data

| Setting | Modulation Mode | Channel | Frequency (MHz) | Conducted(peak) output power (dBm) | | Total PK power (dBm) | Total PK power (mW) | Power Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | | ANT A | ANT B | | | |
| 24 | 11b | 1 | 2412 | 22.01 | 21.91 | 24.97 | 314.093 | 30.00 |
| 24 | | 6 | 2437 | 22.12 | 21.95 | 25.05 | 319.605 | 30.00 |
| 24 | | 11 | 2462 | 21.97 | 21.90 | 24.95 | 312.280 | 30.00 |
| 1D | 11g | 1 | 2412 | 22.83 | 23.03 | 25.94 | 392.776 | 30.00 |
| 2C | | 6 | 2437 | 25.69 | 26.35 | 29.04 | 802.200 | 30.00 |
| 21 | | 11 | 2462 | 23.94 | 24.35 | 27.16 | 520.012 | 30.00 |
| 20 | 11n HT20 | 1 | 2412 | 22.95 | 23.31 | 26.14 | 411.531 | 30.00 |
| 2F | | 6 | 2437 | 25.84 | 26.46 | **29.17** | 826.296 | 30.00 |
| 21 | | 11 | 2462 | 23.22 | 23.65 | 26.45 | 441.633 | 30.00 |
| 1B | 11n HT40 | 3 | 2422 | 21.10 | 21.08 | 24.10 | 257.058 | 30.00 |
| 22 | | 6 | 2437 | 23.65 | 24.00 | 26.84 | 482.928 | 30.00 |
| 1B | | 9 | 2452 | 21.07 | 21.16 | 24.13 | 258.555 | 30.00 |
| Setting | Modulation Mode | Channel | Frequency (MHz) | Conducted(average) output power (dBm) | | Total AV power (dBm) | Total AV power (mW) | Power Limit (dBm) |
| | | | | ANT A | ANT B | | | |
| 24 | 11b | 1 | 2412 | 20.30 | 20.12 | 23.22 | 209.954 | NA |
| 24 | | 6 | 2437 | 20.35 | 20.14 | 23.26 | 211.669 | NA |
| 24 | | 11 | 2462 | 20.20 | 20.06 | 23.14 | 206.104 | NA |
| 1D | 11g | 1 | 2412 | 15.15 | 14.90 | 18.04 | 63.637 | NA |
| 2C | | 6 | 2437 | 22.56 | 22.24 | 25.41 | 347.796 | NA |
| 21 | | 11 | 2462 | 17.33 | 16.94 | 20.15 | 103.507 | NA |
| 20 | 11n HT20 | 1 | 2412 | 15.59 | 15.35 | 18.48 | 70.501 | NA |
| 2F | | 6 | 2437 | 22.55 | 22.56 | 25.57 | 360.189 | NA |
| 21 | | 11 | 2462 | 16.13 | 15.75 | 18.95 | 78.604 | NA |
| 1B | 11n HT40 | 3 | 2422 | 13.16 | 12.80 | 15.99 | 39.756 | NA |
| 22 | | 6 | 2437 | 16.94 | 16.65 | 19.81 | 95.669 | NA |
| 1B | | 9 | 2452 | 13.09 | 12.90 | 16.01 | 39.869 | NA |

Note: Average power is for reference only.

# 11. Power Spectral Density

## 11.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

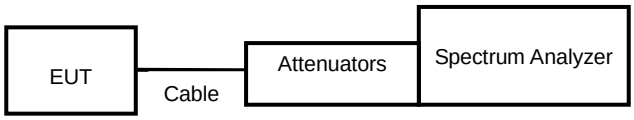
## 11.2 Test Procedures

a. The transmitter output was connected to spectrum analyzer.

b. The spectrum analyzer's resolution bandwidth were set at 3kHz RBW and 10KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.

c. The power spectral density was measured and recorded.

## 11.3 Test Setup Layout



## 11.4 Test Result and Data

| Modulation Type | Channel | Frequency (MHz) | Maximum Power Density of 3KHz Bandwidth(dBm) | | Sum chain (dBm) | Duty Cycle CF(dB) | Total PSD (dBm) | Limit (dBm) |
|---|---|---|---|---|---|---|---|---|
| | | | ANT A | ANT B | | | | |
| 11b | 1 | 2412 | -5.56 | -5.58 | -2.56 | 0.00 | -2.56 | 7.76 |
| | 6 | 2437 | -7.10 | -6.06 | -3.54 | 0.00 | -3.54 | 7.76 |
| | 11 | 2462 | -7.08 | -5.31 | -3.10 | 0.00 | -3.10 | 7.76 |
| 11g | 1 | 2412 | -11.97 | -9.92 | -7.81 | 0.00 | -7.81 | 7.76 |
| | 6 | 2437 | -4.01 | -4.64 | -1.30 | 0.00 | -1.30 | 7.76 |
| | 11 | 2462 | -10.39 | -7.40 | -5.63 | 0.00 | -5.63 | 7.76 |
| 11n HT20 | 1 | 2412 | -11.07 | -10.15 | -7.58 | 0.00 | -7.58 | 7.76 |
| | 6 | 2437 | -4.09 | -2.04 | 0.07 | 0.00 | 0.07 | 7.76 |
| | 11 | 2462 | -11.42 | -10.57 | -7.96 | 0.00 | -7.96 | 7.76 |
| 11n HT40 | 3 | 2422 | -17.03 | -16.16 | -13.56 | 0.00 | -13.56 | 7.76 |
| | 6 | 2437 | -12.95 | -12.39 | -9.65 | 0.00 | -9.65 | 7.76 |
| | 9 | 2452 | -16.67 | -16.07 | -13.35 | 0.00 | -13.35 | 7.76 |

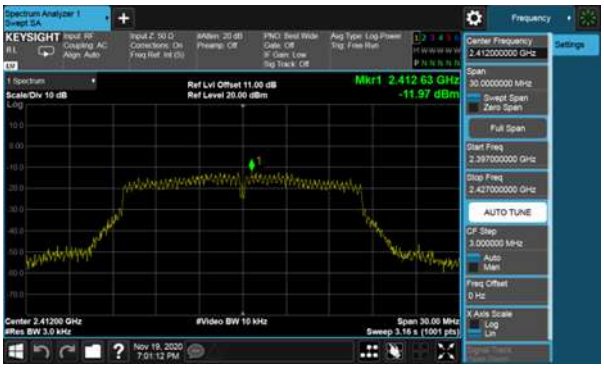
ANT A:

Modulation Type: 802.11b

CH01

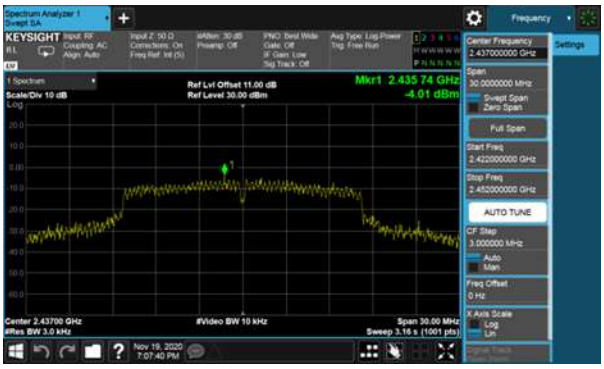

Modulation Type: 802.11g

CH01



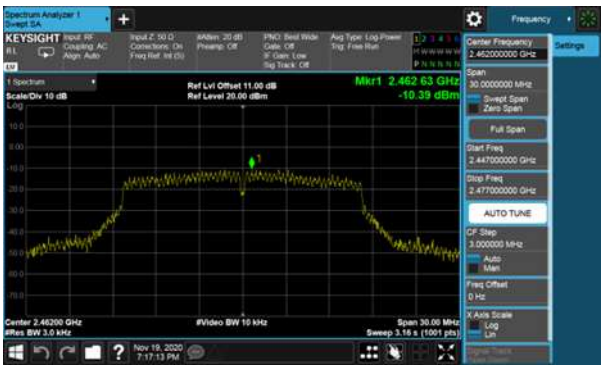

CH06


CH06




CH11

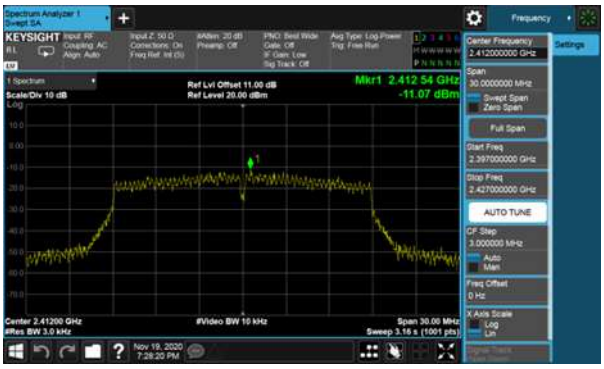

CH11



ANT A:

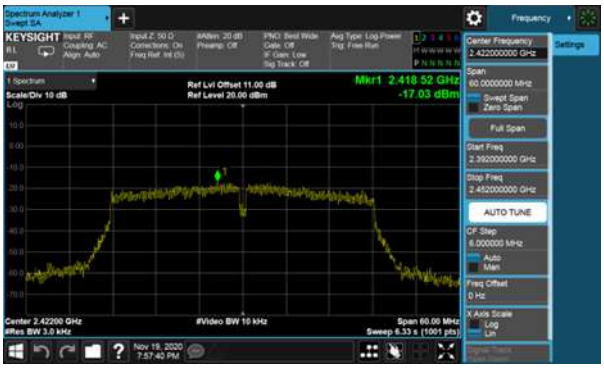
Modulation Type: 802.11n HT20

CH01

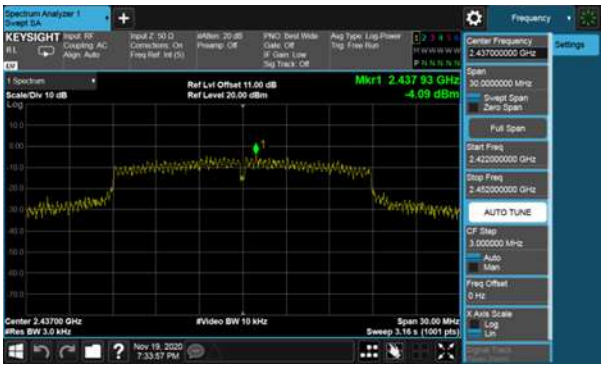


Modulation Type: 802.11n HT40

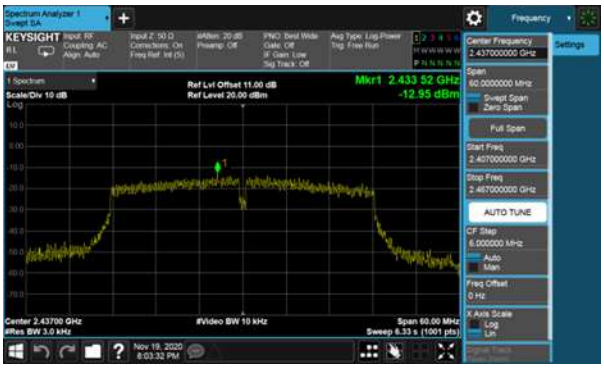
CH03



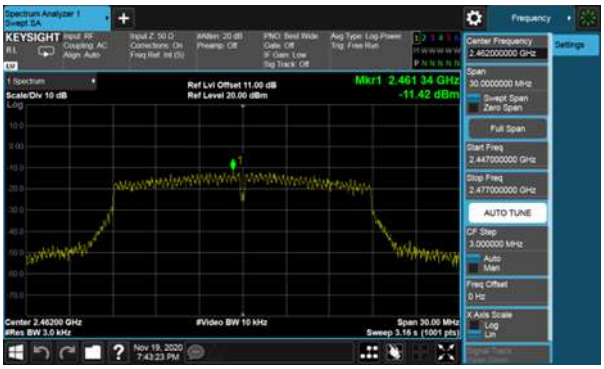
CH06



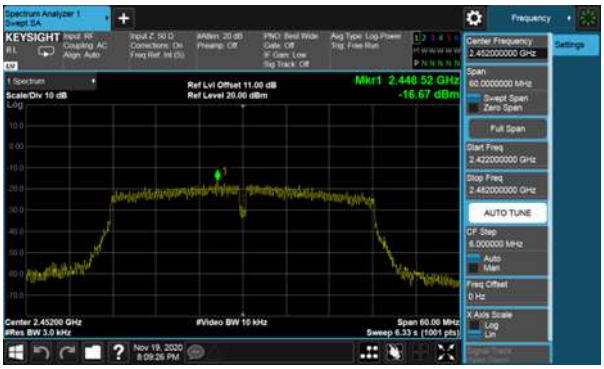
CH06



CH11



CH09



ANT B:

Modulation Type: 802.11b

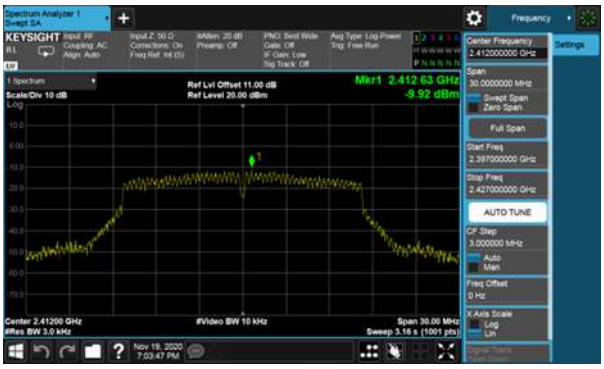
CH01


CH06

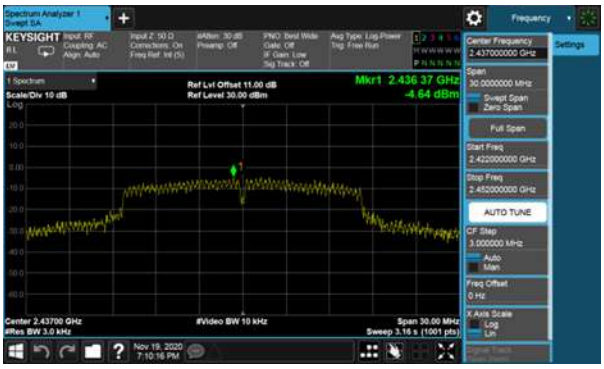

CH11


Modulation Type: 802.11g

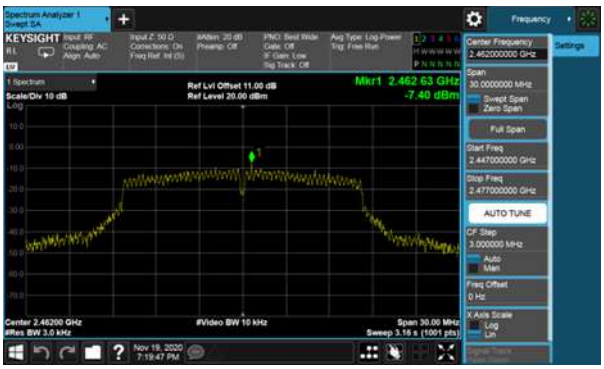
CH01




CH06



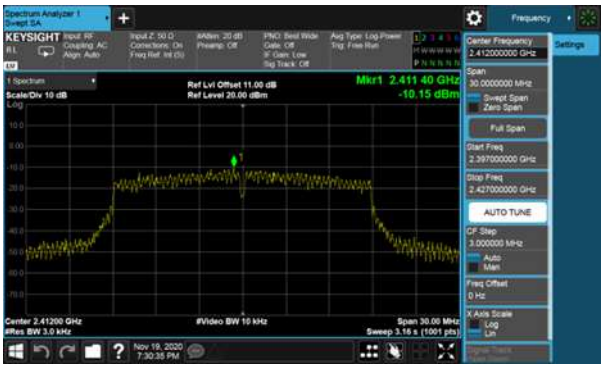

CH11



ANT B:

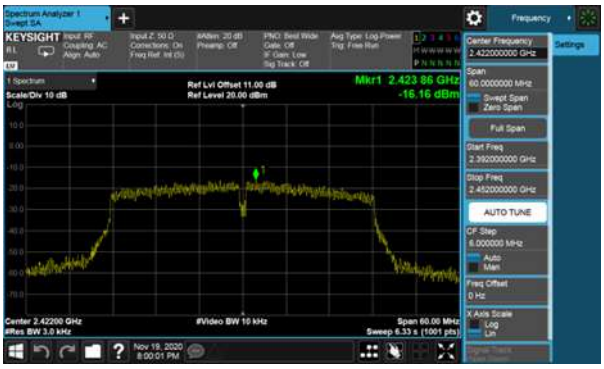
Modulation Type: 802.11n HT20

CH01

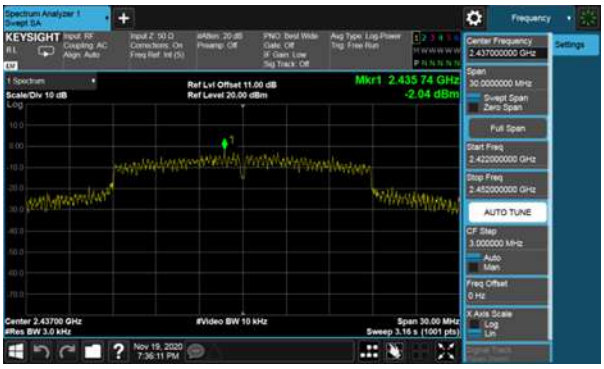



Modulation Type: 802.11n HT40

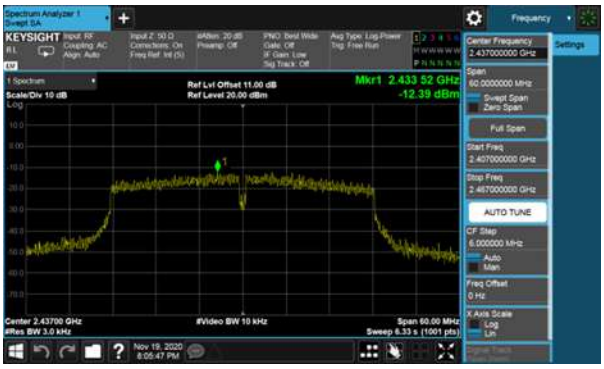
CH03



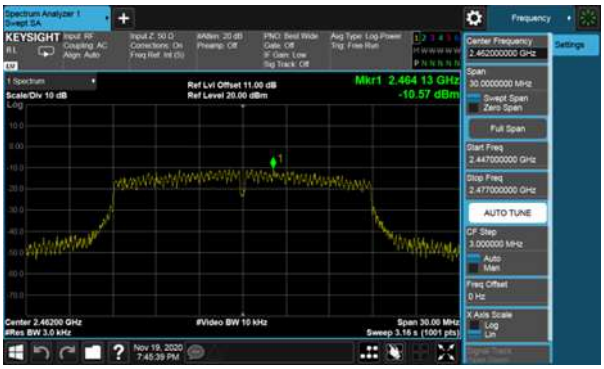

CH06




CH06




CH11




CH09