



FCC 47CFR part 15C

Test Report

For
Jongo T6
Jongo T640

Reference Standard: FCC 47CFR part 15C

Manufacturer: PURE

For type of equipment and serial number, refer to section 3

Report Number: **05-6938-7-13 Issue 02**

Supersedes report 05-6938-7-13 issue 01

Report Produced by: -

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Certificate of Test 6938-7

The unit noted below has been tested by **R.N. Electronics Limited** and, where appropriate, conforms to the relevant subpart of FCC 47CFR Part 15. This is a certificate of test only and should not be confused with an equipment authorisation. Other standards may also apply.

| | |
|---|--|
| Equipment: | Jongo T6 |
| Model Number: | Jongo T640 |
| Proposed FCC ID: | X280067 |
| Unique Serial Number(s): | ES2-1 (radiated tests), ES3-2 (conducted tests) |
| Manufacturer: | PURE Imagination Technologies Home Park Industrial Estate Kings Langley Hertfordshire WD4 8LZ |
| Full measurement results are detailed in Report Number: | 05-6938-7-13 Issue 02 |
| Test Standards: | FCC 47CFR Part 15.247 effective date October 1st 2012 , Class DTS Intentional Radiator |

NOTE:

Certain tests were not performed based upon manufacturer's declarations. For details refer to section 3 of this report.

DEVIATIONS:

Deviations from the standards have been applied. For details refer to section 4.2 of this report.

This certificate relates only to the unit tested as identified by a unique serial number and in the condition at the time it was tested. It does not relate to any other similar equipment and performance of the product before or after the test cannot be guaranteed. Whilst every effort is made to assure quality of testing, type tests are not exhaustive and although no non-conformances may be found, this doesn't exclude the possibility of unit not meeting the intentions of the standard or the requirements of the Directive, particularly under different conditions to those during testing. Any compliance statements are made reliant on (a) the application of the product and use of the assigned band being acceptable to one or more national authorities within the EU and (b) the modes of operation as instructed to us by the Customer based on their specific knowledge of the application and functionality of the EUT. Statements of compliance, where measurements were made, do not include the measurement uncertainty. The measurement uncertainty, where stated, is the expanded uncertainty based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

| | |
|-----------------------------------|----------------------------|
| Date of Test: | 28th May to 31st May, 2013 |
| Test Engineer: | [Signature Box] |
| Approved By: Managing Director | [Signature Box] |
| Customer representative | [Signature Box] |

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2 Equipment Under Test (EUT)

2.1 Equipment Specification

| | |
|--|--|
| Applicant | PURE Imagination Technologies Home Park Industrial Estate Kings Langley Hertfordshire WD4 8LZ |
| Manufacturer of EUT | PURE |
| Brand name of EUT | Jongo T6 |
| Model Number of EUT | Jongo T640 |
| Serial Number of EUT | ES2-1 (radiated tests), ES3-2 (conducted tests) |
| Date when equipment was received by RN Electronics | 22nd May, 2013 |
| Date of test: | 28th May to 31st May, 2013 |
| Visual description of EUT: | A plastic enclosure with two speakers on the front hidden by a removable speaker grille. The unit has a standby, mute and Volume up and down buttons on one side. On the rear are an auxiliary input port, a USB port and a mains input port. Also located on the rear are a Wi-Fi sync button and a main On/Off switch. The Wi-Fi Antenna is located internally to the enclosure. |
| Main function of the EUT: | Wireless music streaming via Wi-Fi or Bluetooth. N.b. Bluetooth not under test. |
| Height | 205 mm |
| Width | 360 mm |
| Depth | 195 mm |
| Weight | 6kg |
| Voltage | 100-240V AC |
| Current required from above voltage source | 2A |

2.2 EUT Configurations for testing

| General parameters | |
|--|-------------------------------|
| EUT normal use position / classification | Desktop / mobile. |
| Choice of model(s) for type tests | Single variant |
| Antenna details | Wi-Fi inverted F PCB antenna |
| Antenna port | Integral antenna |
| Data port (yes/no)? | Yes |
| Highest signal generated in EUT | 2462MHz (Wi-Fi TX channel 11) |
| Lowest signal generated in EUT | 12MHz (USB clock) |

| TX parameters | |
|------------------------------------|---|
| Alignment range – transmitter | 2.412 - 2.462 GHz |
| EUT declared modulation parameters | DSSS: DBPSK; DQPSK; CCK (802.11b) OFDM: BPSK; QPSK; 16QAM; 64QAM (802.11g) |
| EUT declared power level | +16dBm |
| EUT declared signal bandwidths | 20MHz |
| EUT declared channel spacing's | 5MHz |
| Declared frequency stability | +/-20ppm |
| RX parameters | |
| Alignment range – receiver | 2.412 - 2.462 GHz |
| EUT declared RX signal bandwidth | 20MHz |

2.3 Functional Description

Pure "Jongo T6, T640" is part of the range of Wi-Fi connected audio products. It is a wireless loudspeaker to stream audio media via use of a Wi-Fi network or via Bluetooth. The media can be steamed from a smart phone, tablet or a pc. Use of the Pure connect App on iOS/Android device is the suggested way to use the equipment. The unit can also stream audio using an integral pre-approved Bluetooth device (not under test in this report)

2.4 EUT Modes

| Mode Reference | Description | Used for testing |
|-----------------|--|------------------|
| TX Low Channel | EUT constantly transmitting with modulation at 2412MHz | Yes |
| TX Mid Channel | EUT constantly transmitting with modulation at 2437MHz | Yes |
| TX High Channel | EUT constantly transmitting with modulation at 2462MHz | Yes |
| TX normal | Wi-Fi or Bluetooth packet transmission of audio data | No |

All Transmit modes were 100% duty cycle, modulated (except where stated otherwise), and left on the default max power setting.

The Transmit modes referred to above were checked in combination with the following table of modulation/ data rate schemes to fulfil the test requirements:-

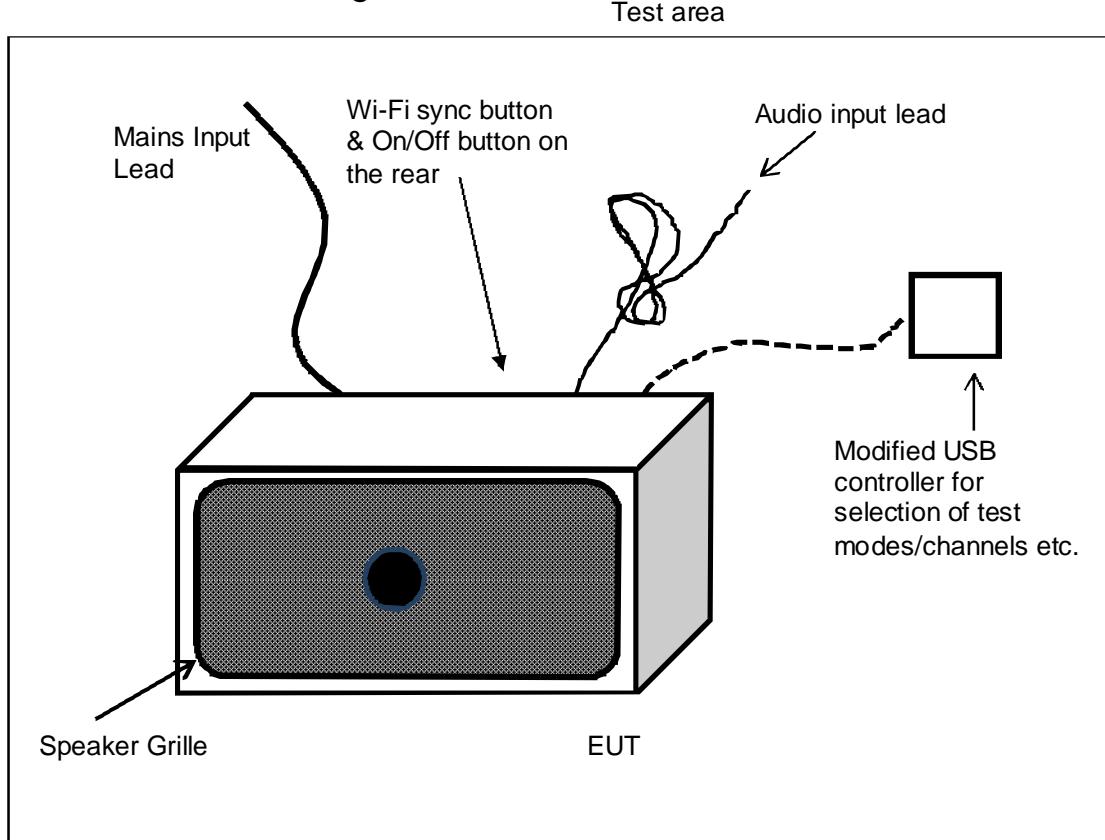
| Mode | Rate |
|---------|----------|
| 802.11B | 1 Mbps |
| 802.11B | 2 Mbps |
| 802.11B | 5.5 Mbps |
| 802.11B | 11 Mbps |
| 802.11G | 6 Mbps |
| 802.11G | 9 Mbps |
| 802.11G | 12 Mbps |
| 802.11G | 18 Mbps |
| 802.11G | 24 Mbps |
| 802.11G | 36 Mbps |
| 802.11G | 48 Mbps |
| 802.11G | 54 Mbps |

Description of ancillary equipment connected to the equipment under test, for the purpose of tests, can be found in Section 10.

Any modifications made to the EUT, whilst under test, can be found in Section 11.

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2.5 Emissions Configuration



The unit was powered from 110V AC @ 60Hz using the figure of 8 mains lead provided with the unit. For conducted RF tests a second unit was provided with the internal antenna unsoldered and an SMA connector fitted in its place.

The units were configured with engineering menus in software which were accessed via a specially modified USB device. This device allowed permanent transmit and receive modes of the EUT on the top, middle and bottom channels as stated within section 2.4 of this report.

The transmit mode was 100% continuous with modulation and the power settings for each channel were left at the default settings (level 20) in the software.

For radiated and conducted emissions tests the unit was populated with typical peripherals. The USB port was populated with the specially modified USB device for control of the test modes. An iPhone was connected to the auxiliary audio input lead as a termination only this had no effect on the units radiated or conducted emissions profile, therefore, for radiated emissions the iPhone was removed and an unterminated lead was left attached to the unit. 2 identical units were provided for test, these were: - S/n ES2-1 for all Radiated RF TX tests (and Conducted AC emissions) and S/n ES3-2 for all Conducted RF TX tests.

A pre-approved Bluetooth USB dongle was permanently fitted inside the EUT enclosure and was powered/in operation during the course of the testing. The Bluetooth dongle was labelled FCC ID: **X2806M**.

3 Summary of test results

The **Jongo T6** was tested to the following standards: -

**FCC 47CFR Part 15.247 (effective date October 1st, 2012);
Class DTS Intentional Radiator**

Any compliance statements are made reliant on the modes of operation as instructed to us by the Manufacturer based on their specific knowledge of the application and functionality of the equipment tested. Whilst every effort is made to assure quality of testing, type tests are not exhaustive and although no non-conformances may be found, this doesn't exclude the possibility of equipment not meeting the intentions of the standard, particularly under different conditions to those during testing.

| Title | Reference | Results |
|--|---|--|
| 1. AC power line conducted emissions | FCC Part 15C §15.207 | PASSED |
| 2. Radiated emissions | FCC Part 15C §15.205, §15.209 and §15.247(d) | PASSED |
| 3. Occupied bandwidth | FCC Part 15C §15.215(c), §15.247(a)(2) | PASSED |
| 4. Maximum peak conducted output power | FCC Part 15C §15.247(b) | PASSED |
| 5. Frequency tolerance | FCC Part 15C §15.215(c) | NOT APPLICABLE ¹ |
| 6. Duty cycle | FCC Part 15C §15.35(c) | NOT APPLICABLE ² |
| 7. Power spectral density | FCC Part 15C §15.247(e) | PASSED |
| 8. Band edge compliance | FCC Part 15C §15.205, §15.209 and §15.247 | PASSED |
| 9. FHSS parameters | FCC Part 15C §15.247(a)(1) Dwell time and Number of hopping channels Frequency separation | NOT APPLICABLE ³ NOT APPLICABLE ³ |

¹No limits apply, however the requirement to contain the designated bandwidth of the emission within the specified frequency band includes the frequency stability of the transmitter over expected variations in temperature and supply voltage.

² No limits apply.

³ EUT does not employ FHSS technology.

4 Specifications

4.1 Relevant Standards

The tests were performed by RN Electronics Engineer Daniel Sims who set up the tests, the test equipment, and operated it in accordance with the **R.N. Electronics Ltd** procedures manual and the basic standards listed below.

R.N. Electronics Ltd sites M and OATS are listed with the FCC. Registration Number 293246

| Reference | Standard Number | Year | Description |
|-----------|-----------------|------|--|
| 4.1.1 | FCC 47CFR15 | 2012 | Electromagnetic compatibility and radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements |
| 4.1.2 | ANSI C63.10 | 2009 | American National Standard for Testing Unlicensed Wireless Devices |
| 4.1.3 | ANSI C63.4 | 2003 | American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz |
| 4.1.4 | KDB558074 | 2013 | Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 |

4.2 Deviations

ANSI C63.10-2009 deviations:

The reference standard ANSI C63.4-2003 was used, not the latest ANSI C63.4-2009

FCC Part 15 deviations:

None.

4.3 Tests at Extremes of Temperature & Voltage

Not Required.

N.b. for certain tests referenced to antenna port:

- A Temporary SMA Connector was soldered to the end of the Antenna RF lead (with the antenna removed) and was used for testing.
- A test fixture was used for testing.
- A temporary RF port was created for testing.
- The equipment internal Antenna was used for testing.

4.4 Measurement Uncertainties

| Parameter | Uncertainty | |
|-----------------------------------|-----------------------------------|--------|
| Transmitter Tests | | |
| Conducted RF power | <± 1.0 dB | |
| Occupied bandwidth | ± 1.9 % | |
| Radiated RF power | ± 3.5 dB | |
| Radiated spurious emissions | 30MHz - 1000MHz | ±5.1dB |
| | 1000MHz - 2000MHz | ±4.5dB |
| | 1 – 18 GHz | ±3.5dB |
| | 18 – 26.5 GHz | ±3.9dB |
| AC power line conducted emissions | (For LISN) 150kHz to 30MHz ±3.6dB | |

5 Tests, Methods and Results

5.1 AC power line conducted emissions

5.1.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.207)
Test Method: ANSI C63.10, Reference (6.2.)

5.1.2 Configuration of EUT

The EUT was placed on a wooden table 0.8m above the ground plane and connected to a LISN via a 1m mains cable.

Details of the Peripheral and Ancillary Equipment connected for this test is listed in section 11.

The EUT was operated in mode TX Low Channel, TX Mid Channel, and TX High Channel.

5.1.3 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted in the 'Test Equipment' Section. Measurements were made on the live and neutral conductors using both average and quasi-peak detection.

At least 6 signals within 20dB and/or all signals within 10dB of the limit were investigated.

Tests were performed in Test Site F.

5.1.4 Test Equipment used

E150, E035, E410, E411, E412, E465

See Section 10 for more details.

5.1.5 Test results

Ambient conditions.

Temperature: 20 °C

Relative humidity: 49 %

Analyser plots showing Peak values can be found in Section 6.1 of this report.

No discernible difference was noted in emissions between channels (exploratory measurements); therefore the final measurements are presented for **TX mid channel** mode only.

Table of signals measured.

Quasi-Peak and Average Live (TX MID Channel)

| Signal No. | Freq (MHz) | Peak Amp (dBuV) | QP Amp (dBuV) | QP - Lim1 (dB) | AV Amp (dBuV) | AV - Lim1 (dB) |
|------------|------------|-----------------|---------------|----------------|---------------|----------------|
| 1 | 0.165 | 41.7 | 35.8 | -29.4 | 29.7 | -25.5 |
| 2 | 0.183 | 54.3 | 53.7 | -10.6 | 51.7 | -2.6 |
| 3 | 0.671 | 31.0 | 30.4 | -25.6 | 29.8 | -16.2 |
| 4 | 0.793 | 31.3 | 30.5 | -25.5 | 29.9 | -16.1 |
| 5 | 0.914 | 31.6 | 30.6 | -25.4 | 29.7 | -16.3 |
| 6 | 1.036 | 31.3 | 30.6 | -25.4 | 29.7 | -16.3 |

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| | | | | | | |
|---|--------|------|------|-------|------|-------|
| 7 | 1.402 | 31.0 | 30.4 | -25.6 | 29.7 | -16.3 |
| 8 | 19.969 | 28.3 | 27.1 | -32.9 | 25.7 | -24.3 |

Table of signals measured.

Quasi-Peak and Average Neutral (TX MID Channel)

| Signal No. | Freq (MHz) | Peak Amp (dBuV) | QP Amp (dBuV) | QP - Lim1 (dB) | AV Amp (dBuV) | AV - Lim1 (dB) |
|------------|------------|-----------------|---------------|----------------|---------------|----------------|
| 1 | 0.183 | 49.9 | 47.9 | -16.4 | 44.8 | -9.5 |
| 2 | 0.305 | 31.9 | 30.9 | -29.2 | 29.3 | -20.8 |
| 3 | 0.549 | 30.4 | 29.0 | -27.0 | 27.8 | -18.2 |
| 4 | 0.671 | 29.9 | 28.9 | -27.1 | 27.7 | -18.3 |
| 5 | 0.793 | 29.5 | 28.5 | -27.5 | 27.5 | -18.5 |
| 6 | 0.915 | 29.4 | 28.4 | -27.6 | 27.2 | -18.8 |
| 7 | 3.561 | 30.0 | 27.3 | -28.7 | 22.9 | -23.1 |

These results show that the **EUT** has **PASSED** this test.

5.2 Radiated emissions

5.2.1 Test Methods

Test Requirements: FCC Part 15C, Reference (15.209)
Test Method: ANSI C63.4, Reference (8.)

5.2.2 Configuration of EUT

The EUT was placed on a 0.8 metres high turntable. The front edge of the EUT was initially positioned facing the antenna. The EUT was measured at a distance of 3 metres. The EUT was rotated in all three orthogonal planes.

The EUT was operated in **TX low channel**, **TX mid channel** and **TX high channel** modes.

5.2.3 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below.

Below 30MHz, measurements were made in a semi-anechoic chamber (pre-scan) with any final measurements required performed on an OATS without a ground plane. The antenna was placed 1m above the ground. The equipment and the antenna were rotated 360° to record the worst case emissions.

30MHz - 1GHz, measurements were made on a site listed with the FCC. The equipment was rotated 360° and the antenna scanned 1 – 4 metres in both horizontal and vertical polarisations to record the worst case emissions.

Above 1GHz, measurements were made in a semi-anechoic chamber with appropriate absorbing material for use in this range. Horn antennas were used at heights where the whole of the EUT was contained within the main beam. The EUT was rotated through 360° to record the worst case emissions.

At least 6 signals within 20dB and all signals within 10dB of the limit were investigated.

Radiated emissions tests were performed using Test Site M.

5.2.4 Test Equipment used

E268, E410, E411, E412, E429, TMS81, TMS78, TMS79, TMS81, TMS82, TMS933, N240.

See Section 10 for more details

5.2.5 Test results

Ambient conditions.

Temperature: 19-20 °C Relative humidity: 36-39 %

Analyser plots showing Peak values can be found in Section 6.2 of this report.

Note: EUT tested in a continuous transmit mode for ease of test

No discernible difference was noted in emissions between channel settings in the test ranges 150k-30MHz and 30-1000MHz (exploratory measurements); therefore final measurements are presented for **TX mid channel** mode only for these test ranges.

The 1Mbps data rate was found to yield the highest emission amplitudes and has been used for final measurements.

5.2.5.1 Below 30MHz.

Plot references for Low Frequency Radiated emissions measurements (150kHz to 30MHz)

| Channel | Parallel Plots | Perpendicular Plots |
|-------------|---|--|
| Mid channel | 6938-7 150k - 30 MHz Parallel Loop Mid Channel TX | 6938-7 150k - 30 MHz Perpendicular Loop Mid Channel TX |

5.2.5.2 30MHz - 1GHz.

Plot references for Radiated emissions measurements (30-1000MHz)

| Frequency Range | Antenna Polarisation | Plot reference |
|-----------------|----------------------|------------------------|
| 30 – 300 MHz | Horizontal | 6938-7 Rad 1 VHF Horiz |
| 30 – 300 MHz | Vertical | 6938-7 Rad 1 VHF Vert |
| 300 – 1000 MHz | Horizontal | 6938-7 Rad 1 UHF Horiz |
| 300 – 1000 MHz | Vertical | 6938-7 Rad 1 UHF Vert |

Table of signals measured 30-1000MHz (TX Mid Chan)

Horizontal

| Signal No. | Freq (MHz) | Peak Amp (dBuV) | QP Amp (dBuV) | QP - Lim1 (dB) |
|------------|------------|-----------------|---------------|----------------|
| 1 | 77.891 | 28.1 | 26.3 | -13.7 |
| 2 | 108.009 | 31.0 | 27.4 | -16.1 |
| 3 | 239.882 | 24.2 | 19.7 | -26.3 |
| 4 | 244.083 | 24.8 | 21.1 | -24.9 |
| 5 | 380.562 | 38.2 | 22.5 | -23.5 |
| 6 | 387.269 | 38.9 | 30.0 | -16.0 |
| 7 | 389.991 | 37.5 | 27.9 | -18.1 |
| 8 | 392.640 | 35.7 | 26.7 | -19.3 |
| 9 | 399.356 | 39.6 | 32.8 | -13.2 |

Vertical

| Signal No. | Freq (MHz) | Peak Amp (dBuV) | QP Amp (dBuV) | QP - Lim1 (dB) |
|------------|------------|-----------------|---------------|----------------|
| 1 | 61.201 | 25.8 | 23.3 | -16.7 |
| 2 | 76.947 | 28.6 | 26.7 | -13.3 |
| 3 | 399.376 | 38.0 | 31.5 | -14.5 |
| 4 | 402.074 | 38.6 | 31.0 | -15.0 |
| 5 | 406.101 | 36.8 | 28.5 | -17.5 |
| 6 | 408.779 | 39.7 | 29.9 | -16.1 |
| 7 | 417.809 | 30.2 | 26.2 | -19.8 |

5.2.5.3 Above 1GHz.

Radio Parameters 1

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Bottom channel | 2412 MHz |

Results relating to Radio Parameters 1

| Spurious Frequency (MHz) | Measured Peak Level (dB μ V/m) | Difference to Peak Limit (dB) | Measured Average Level (dB μ V/m) | Difference to Average Limit (dB) | Antenna Polarisation | EUT Polarisation |
|--------------------------|------------------------------------|-------------------------------|---------------------------------------|----------------------------------|----------------------|------------------|
| 6432 | 46.7 | -27.3 | 41.5 | -12.5 | Vertical | normal use |
| 6432 | 48.6 | -25.4 | 44.5 | -9.5 | Horizontal | normal use |
| 12864 | 45 | -29 | 39.1 | -14.9 | Horizontal | normal use |
| 4824 | 50.2 | -23.8 | 42.7 | -11.3 | Vertical | normal use |
| 4824 | 51.2 | -22.8 | 44.5 | -9.5 | Horizontal | normal use |

Radio Parameters 2

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Middle channel | 2437 MHz |

Results relating to Radio Parameters 2

| Spurious Frequency (MHz) | Measured Peak Level (dB μ V/m) | Difference to Peak Limit (dB) | Measured Average Level (dB μ V/m) | Difference to Average Limit (dB) | Antenna Polarisation | EUT Polarisation |
|--------------------------|------------------------------------|-------------------------------|---------------------------------------|----------------------------------|----------------------|------------------|
| 6498 | 48.9 | -25.1 | 44.7 | -9.3 | Vertical | normal use |
| 6498 | 50.2 | -23.8 | 47 | -7 | Horizontal | normal use |
| 4874 | 48.7 | -25.3 | 40.1 | -13.9 | Vertical | normal use |
| 4874 | 53.8 | -20.2 | 49.8 | -4.2 | Horizontal | normal use |

Radio Parameters 3

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 3

| Spurious Frequency (MHz) | Measured Peak Level (dB μ V/m) | Difference to Peak Limit (dB) | Measured Average Level (dB μ V/m) | Difference to Average Limit (dB) | Antenna Polarisation | EUT Polarisation |
|--------------------------|------------------------------------|-------------------------------|---------------------------------------|----------------------------------|----------------------|------------------|
| 6565 | 48.4 | -25.6 | 44 | -10 | Vertical | normal use |
| 6565 | 50.3 | -23.7 | 47.3 | -6.7 | Horizontal | normal use |

File name PURE.6938-7 ISSUE 02

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| | | | | | | |
|-------|------|-------|------|-------|------------|------------|
| 13130 | 43.2 | -30.8 | 35.9 | -18.1 | Horizontal | normal use |
| 4924 | 50.5 | -23.5 | 43.7 | -10.3 | Vertical | normal use |
| 4924 | 52.7 | -21.3 | 47.7 | -6.3 | Horizontal | normal use |

Plot Table

| Frequency Range | Antenna Polarisation | Plot reference |
|-----------------|----------------------|--|
| 1-2GHz | Horizontal | 6938-7 1 - 2GHz Vertical Mid Channel TX |
| 1-2GHz | Vertical | 6938-7 1 - 2GHz Horizontal Mid Channel TX |
| 2-2.7GHz | Horizontal | 6938-7 2.0 - 2.7 GHz Vertical Mid Channel TX |
| 2-2.7GHz | Vertical | 6938-7 2.0 - 2.7 GHz Horizontal Mid Channel TX |
| 2.7GHz-5GHz | Horizontal | 6938-7 2.7 - 5 GHz Vertical Mid Channel TX |
| 2.7GHz-5GHz | Vertical | 6938-7 2.7 - 5 GHz Horizontal Mid Channel TX |
| 5-6GHz | Horizontal | 6938-7 5 - 6 GHz Vertical Mid Channel TX |
| 5-6GHz | Vertical | 6938-7 5 - 6 GHz Horizontal Mid Channel TX |
| 6-7.8GHz | Horizontal | 6938-7 6 - 7.8 GHz Vertical Mid Channel TX |
| 6-7.8GHz | Vertical | 6938-7 6 - 7.8 GHz Horizontal Mid Channel TX |
| 7.8-10GHz | Horizontal | 6938-7 7.8 - 10 GHz Vertical Mid Channel TX |
| 7.8-10GHz | Vertical | 6938-7 7.8 - 10 GHz Horizontal Mid Channel TX |
| 10-12.5GHz | Horizontal | 6938-7 10 - 12.5 GHz Vertical Mid Channel TX |
| 10-12.5GHz | Vertical | 6938-7 10 - 12.5 GHz Horizontal Mid Channel TX |
| 12.5-15GHz | Horizontal | 6938-7 12.5 - 15 GHz Vertical Mid Channel TX |
| 12.5-15GHz | Vertical | 6938-7 12.5 - 15 GHz Horizontal Mid Channel TX |
| 15-18GHz | Horizontal | 6938-7 15 - 18 GHz Vertical Mid Channel TX |
| 15-18GHz | Vertical | 6938-7 15 - 18 GHz Horizontal Mid Channel TX |
| 18-20GHz | Horizontal | 6938-7 18 - 20 GHz Vertical Mid Channel TX |
| 18-20GHz | Vertical | 6938-7 18 - 20 GHz Horizontal Mid Channel TX |
| 20-22.5GHz | Horizontal | 6938-7 20 - 22.5 GHz Vertical Mid Channel TX |
| 20-22.5GHz | Vertical | 6938-7 20 - 22.5 GHz Horizontal Mid Channel TX |
| 22.5-25GHz | Horizontal | 6938-7 22.5 - 25 GHz Vertical Mid Channel TX |
| 22.5-25GHz | Vertical | 6938-7 22.5 - 25 GHz Horizontal Mid Channel TX |

Note: Whilst Low, Mid and High channels were tested, plots are for illustrative purposes only and only **Mid channel** plots are shown in this report.

LIMITS:

15.209 limits are applicable in the restricted bands of 15.205 with the relevant detector.
15.247(d) other emissions, outside the intentional band, must be attenuated by at least 20dB from the level of the fundamental / meet the general limits of 15.209.

N.b. the general limits of 15.209 are as drawn on the respective plots.

These show that the **EUT** has **PASSED** this test.

5.3 Occupied bandwidth

5.3.1 Test Methods

Test Requirements: FCC Part 15C, Reference (15.215)
Test Method: ANSI C63.10, Reference (6.9)

5.3.2 Configuration of EUT

The EUT was tested on a bench. Measurements were made at the internal RF port.
The EUT was operated in **TX low channel** and **TX mid channel** and **TX high channel** modes.

5.3.3 Test Procedure

Tests were performed using Test Site A.
Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. A 100kHz RBW, 3x VBW, auto sweep time and max hold settings were used for the 6dB bandwidth.

5.3.4 Test Equipment used

E252, E533, E534, E535, E256

See Section 10 for more details.

5.3.5 Test results

Ambient conditions.

Temperature: 20 °C

Relative humidity: 38 %

Pressure: 100.5 mbar

Analyser plots for the 6dB bandwidth can be found in Section 6.3 of this report.

Radio Parameter 1

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 1

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 10.067 | 10.067 | 10.067 |
| Plot reference | J6938-7, Plot 0001 | J6938-7, Plot 0013 | J6938-7, Plot 0025 |

Radio Parameter 2

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 2 MBPS |

| | |
|--------------------|----------|
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 2

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 10.08 | 10.067 | 10.09 |
| Plot reference | J6938-7, Plot 0002 | J6938-7, Plot 0014 | J6938-7, Plot 0026 |

Radio Parameter 3

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 5.5 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 3

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 10.067 | 10.067 | 10.067 |
| Plot reference | J6938-7, Plot 0003 | J6938-7, Plot 0015 | J6938-7, Plot 0027 |

Radio Parameter 4

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 11 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 4

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 10.08 | 10.055 | 10.055 |
| Plot reference | J6938-7, Plot 0004 | J6938-7, Plot 0016 | J6938-7, Plot 0028 |

Radio Parameter 5

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 6 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 5

| | Low | Mid | High |
|--|------------|------------|-------------|
| | | | |

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| | | | |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.3 | 15.18 | 15.17 |
| Plot reference | J6938-7, Plot 0005 | J6938-7, Plot 0017 | J6938-7, Plot 0029 |

Radio Parameter 6

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 9 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 6

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.17 | 15.17 | 15.17 |
| Plot reference | J6938-7, Plot 0006 | J6938-7, Plot 0018 | J6938-7, Plot 0030 |

Radio Parameter 7

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 12 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 7

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.17 | 15.17 | 15.17 |
| Plot reference | J6938-7, Plot 0007 | J6938-7, Plot 0019 | J6938-7, Plot 0031 |

Radio Parameter 8

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 18 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 8

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.43 | 15.43 | 15.16 |
| Plot reference | J6938-7, Plot 0008 | J6938-7, Plot 0020 | J6938-7, Plot 0032 |

Radio Parameter 9

| | |
|--------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |

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| | |
|------------------------|----------|
| Channel spacing | 5 MHz |
| Mod scheme | 24 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 9

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.17 | 15.17 | 15.17 |
| Plot reference | J6938-7, Plot 0009 | J6938-7, Plot 0021 | J6938-7, Plot 0033 |

Radio Parameter 10

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 36 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 10

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.85 | 15.85 | 15.82 |
| Plot reference | J6938-7, Plot 0010 | J6938-7, Plot 0022 | J6938-7, Plot 0034 |

Radio Parameter 11

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 48 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 11

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.35 | 15.35 | 15.33 |
| Plot reference | J6938-7, Plot 0011 | J6938-7, Plot 0023 | J6938-7, Plot 0035 |

Radio Parameter 12

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 54 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 12

| | Low | Mid | High |
|-----------------------|--------------------|--------------------|--------------------|
| 6dB BW (MHz) | 15.17 | 15.17 | 15.16 |
| Plot reference | J6938-7, Plot 0012 | J6938-7, Plot 0024 | J6938-7, Plot 0036 |

LIMITS:

15.247(a)(2) The minimum 6dB bandwidth shall be at least 500kHz.

These results show that the EUT has **PASSED** this test.

5.4 Maximum Peak conducted output power

5.4.1 Test Methods

Test Requirements
Test Method:

FCC Part 15C, Reference (15.247)
ANSI C63.10, Reference (6.10.2.1 b))

5.4.2 Configuration of EUT

The EUT was measured on a bench using a spectrum analyser connected to the internal RF port.

The EUT was operated in TX Low Channel, TX Mid Channel and TX High Channel mode for this test.

The EUT was set to each mode and test signal in turn (see section 2.4) and highest power levels recorded.

5.4.3 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below.

Peak stated reading is maximum power observed using a spectrum analyser channel power function over the 6dB bandwidth + 1MHz using a 1MHz RBW, per ANSI C63.10.

Measurements were made on a test bench in site A.

5.4.4 Test Equipment used

E003, E266, E252,

See Section 10 for more details

5.4.5 Test results

Ambient conditions.

Temperature: 21 °C

Relative humidity: 40 %

Pressure: 99.5 mbar

Radio Parameter1

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 1

| Test conditions | Carrier Power (mW) | | |
|---------------------------------------|--------------------|------|------|
| | Low | Mid | High |
| Temp Ambient | 20.9 | 23.4 | 22.4 |
| Maximum TX Power observed (mW) | | 23.4 | |

Radio Parameter2

File name PURE.6938-7 ISSUE 02

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| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 2 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 2

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|--------------------|------|------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 20.9 | 24.0 | 22.4 |
| Maximum TX Power observed (mW) | | 24.0 | | |

Radio Parameter3

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 5.5 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 3

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|--------------------|------|------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 22.4 | 25.1 | 24.0 |
| Maximum TX Power observed (mW) | | 25.1 | | |

Radio Parameter4

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 11 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 4

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|--------------------|------|------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 24.0 | 26.9 | 25.7 |
| Maximum TX Power observed (mW) | | 26.9 | | |

Radio Parameter5

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |

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| | |
|--------------------|----------|
| Mod scheme | 6 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 5

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|---------------------------|------------|-------------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 22.9 | 24.0 | 22.9 |
| Maximum TX Power observed (mW) | | 24.0 | | |

Radio Parameter6

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 9 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 6

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|---------------------------|------------|-------------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 23.4 | 24.5 | 23.4 |
| Maximum TX Power observed (mW) | | 24.5 | | |

Radio Parameter7

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 12 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 7

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|---------------------------|------------|-------------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 20.9 | 21.9 | 20.9 |
| Maximum TX Power observed (mW) | | 21.9 | | |

Radio Parameter8

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 18 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |

File name PURE.6938-7 ISSUE 02

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| | |
|--------------------|----------|
| Top channel | 2462 MHz |
|--------------------|----------|

Results relating to Radio Parameters 8

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|---------------------------|------------|-------------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 20.4 | 21.4 | 20.4 |
| Maximum TX Power observed (mW) | | 21.4 | | |

Radio Parameter9

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 24 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 9

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|---------------------------|------------|-------------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 22.4 | 22.9 | 22.9 |
| Maximum TX Power observed (mW) | | 22.9 | | |

Radio Parameter10

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 36 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 10

| Test conditions | | Carrier Power (mW) | | |
|---------------------------------------|----------------------|---------------------------|------------|-------------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 24.0 | 24.0 | 24.0 |
| Maximum TX Power observed (mW) | | 24.0 | | |

Radio Parameter11

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 48 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 11

File name PURE.6938-7 ISSUE 02

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| Test conditions | | Carrier Power (mW) | | |
|--------------------------------|---------------|--------------------|------|------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 15.1 | 15.5 | 20.9 |
| Maximum TX Power observed (mW) | | 20.9 | | |

Radio Parameter12

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 54 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 12

| Test conditions | | Carrier Power (mW) | | |
|--------------------------------|---------------|--------------------|------|------|
| | | Low | Mid | High |
| Temp Ambient | Volts Nominal | 15.1 | 15.5 | 20.9 |
| Maximum TX Power observed (mW) | | 20.9 | | |

LIMITS:

15.247(b)(3)

For systems using digital modulation in the 902-928, 2400-2483.5 or 5725-5850 MHz bands 1 Watt.

These results show that the EUT has **PASSED** this test.

5.5 Frequency tolerance

NOT APPLICABLE: No limits apply, however the requirement to contain the designated bandwidth of the emission within the specified frequency band includes the frequency stability of the transmitter over expected variations in temperature and supply voltage

5.6 Duty cycle

NOT APPLICABLE: There is no limit defined in the standard. It was, however, confirmed by observation that the continuous test mode provided was 100% duty.

5.7 Maximum Power Spectral Density

5.7.1 Test Methods

Test Requirements:
Test Method:

FCC Part 15C, Reference (15.247)
KDB558074, PSD Option 1

5.7.2 Configuration of EUT

The EUT was configured as for the peak conducted power test. The EUT was operated in TX Low Channel, TX Mid Channel and TX High Channel mode for this test.

5.7.3 Test Procedure

Tests were performed using Test Site A.

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. The emission from the EUT was maximised before taking any plots. PEP was recorded in the required span and bandwidth. Measurements/plots were taken with the span set to 1.5 times the measured DTS bandwidth for each modulation scheme setting.

5.7.4 Test Equipment used

E533, E534, E535, E252, E256

See Section 10 for more details.

5.7.5 Test results

Ambient conditions.

Temperature: 21°C

Relative humidity: 40%

Pressure: 99.5mbar

Radio Parameter 1

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 1

| | Low | Mid | High |
|-----------------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -9.570 | -10.350 | -11.230 |
| Plot reference | J6938-7 plot 0037 | J6938-7 plot 0049 | J6938-7 plot 0061 |

Radio Parameter 2

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 2 MBPS |

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| | |
|--------------------|----------|
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 2

| | Low | Mid | High |
|-----------------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -7.460 | -10.020 | -8.990 |
| Plot reference | J6938-7 plot 0038 | J6938-7 plot 0050 | J6938-7 plot 0062 |

Radio Parameter 3

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 5.5 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 3

| | Low | Mid | High |
|-----------------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -9.330 | -9.540 | -10.710 |
| Plot reference | J6938-7 plot 0039 | J6938-7 plot 0051 | J6938-7 plot 0063 |

Radio Parameter 4

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 11 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 4

| | Low | Mid | High |
|-----------------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -8.630 | -8.830 | -10.100 |
| Plot reference | J6938-7 plot 0040 | J6938-7 plot 0052 | J6938-7 plot 0064 |

Radio Parameter 5

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 6 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

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Results relating to Radio Parameters 5

| | Low | Mid | High |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -7.190 | -8.010 | -9.100 |
| Plot reference | J6938-7 plot 0041 | J6938-7 plot 0053 | J6938-7 plot 0065 |

Radio Parameter 6

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 9 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 6

| | Low | Mid | High |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -6.630 | -7.370 | -8.550 |
| Plot reference | J6938-7 plot 0042 | J6938-7 plot 0054 | J6938-7 plot 0066 |

Radio Parameter 7

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 12 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 7

| | Low | Mid | High |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -6.260 | -6.960 | -8.070 |
| Plot reference | J6938-7 plot 0043 | J6938-7 plot 0055 | J6938-7 plot 0067 |

Radio Parameter 8

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 18 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 8

| | Low | Mid | High |
|--|-----|-----|------|
| | | | |

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| | | | |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -7.010 | -7.730 | -8.950 |
| Plot reference | J6938-7 plot 0044 | J6938-7 plot 0056 | J6938-7 plot 0068 |

Radio Parameter 9

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 24 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 9

| | Low | Mid | High |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -7.040 | -7.810 | -8.960 |
| Plot reference | J6938-7 plot 0045 | J6938-7 plot 0057 | J6938-7 plot 0069 |

Radio Parameter 10

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 36 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 10

| | Low | Mid | High |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -4.860 | -5.620 | -6.680 |
| Plot reference | J6938-7 plot 0046 | J6938-7 plot 0058 | J6938-7 plot 0070 |

Radio Parameter 11

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 48 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 11

| | Low | Mid | High |
|----------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -5.930 | -6.610 | -6.360 |
| Plot reference | J6938-7 plot 0047 | J6938-7 plot 0059 | J6938-7 plot 0071 |

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Radio Parameter 12

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 54 MBPS |
| Low channel | 2412 MHz |
| Mid channel | 2437 MHz |
| Top channel | 2462 MHz |

Results relating to Radio Parameters 12

| | Low | Mid | High |
|-----------------------|-------------------|-------------------|-------------------|
| Duty Cycle (%) | 100 | 100 | 100 |
| dBm per 3kHz | -7.130 | -7.800 | -7.360 |
| Plot reference | J6938-7 plot 0048 | J6938-7 plot 0060 | J6938-7 plot 0072 |

LIMITS:

15.247(e) +8dBm/3kHz.

Any Analyser plots can be found in Section 6.5 of this report.

These results show that the EUT has **PASSED** this test.

5.8 Band Edge Compliance

5.8.1 Test Methods

Test Requirements: FCC Part 15C, Reference (15.215 and 15.247)
Test Method: ANSI C63.10-2009, Reference clause 6.9.3

5.8.2 Configuration of EUT

The EUT was placed on a 0.8 metres high turntable. The front edge of the EUT was initially positioned facing the antenna. The EUT was measured at a distance of 3 metres.

The EUT was operated in TX Low Channel and TX High Channel modes.

5.8.3 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. The emission from the EUT was maximised before taking the plots.

Tests were performed using Test Site M.

5.8.4 Test Equipment used

E268, E410, E411, E412, TMS82, E252

See Section 10 for more details.

5.8.5 Test results

Ambient conditions.

Temperature: 19-23 °C Relative humidity: 34-38 % Pressure: 101 mbar

Analyser plots for the Band Edge Compliance can be found in Section 6.4 of this report. These show the 20dBc requirement of 15.247(d) are met at the band edges of 2400 and 2483.5 MHz. Restricted band edge plots are also shown in section 6.4.

The following tables list the field strengths observed in the adjacent restricted bands, which are required to meet the tighter 15.209 limits:

Radio Parameter 1

| | |
|------------------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 1 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 1

| | Low | High |
|---------------------------------------|---|--|
| Peak Level (dB_PV/m) | 62.5 | 60.9 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 1MBPS | J6938-7, Band edge PK (1MRBW) High chan 1MBPS |

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| | | |
|------------------------------|--|---|
| Average Level (dB μ V/m) | 53.9 | 49.6 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 1MBPS | J6938-7, Band edge AVG (1MRBW) High chan 1MBPS |

Band Edge Results relating to Radio Parameters 1

| | Low | High |
|----------------|---|--|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 1MBPS | J6938-7, Band edge PK (100kRBW) High chan 1MBPS |

Radio Parameter 2

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 2 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 2

| | Low | High |
|------------------------------|--|---|
| Peak Level (dB μ V/m) | 63.1 | 61.1 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 2MBPS | J6938-7, Band edge PK (1MRBW) High chan 2MBPS |
| Average Level (dB μ V/m) | 53.1 | 50 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 2MBPS | J6938-7, Band edge AVG (1MRBW) High chan 2MBPS |

Band Edge Results relating to Radio Parameters 2

| | Low | High |
|----------------|---|--|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 2MBPS | J6938-7, Band edge PK (100kRBW) High chan 2MBPS |

Radio Parameter 3

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 5.5 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 3

| | Low | High |
|---------------------------|---|---|
| Peak Level (dB μ V/m) | 62 | 60.3 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 5.5MBPS | J6938-7, Band edge PK (1MRBW) High chan 5.5MBPS |

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| | | |
|------------------------------|--|---|
| Average Level (dB μ V/m) | 52 | 49.4 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 5.5MBPS | J6938-7, Band edge AVG (1MRBW) High chan 5.5MBPS |

Band Edge Results relating to Radio Parameters 3

| | Low | High |
|----------------|---|--|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 5.5MBPS | J6938-7, Band edge PK (100kRBW) High chan 5.5MBPS |

Radio Parameter 4

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 11 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 4

| | Low | High |
|------------------------------|---|--|
| Peak Level (dB μ V/m) | 62.2 | 61.8 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 11MBPS | J6938-7, Band edge PK (1MRBW) High chan 11MBPS |
| Average Level (dB μ V/m) | 51.9 | 49.4 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 11MBPS | J6938-7, Band edge AVG (1MRBW) High chan 11MBPS |

Band Edge Results relating to Radio Parameters 4

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 11MBPS | J6938-7, Band edge PK (100kRBW) High chan 11MBPS |

Radio Parameter 5

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 6 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 5

| | Low | High |
|---------------------------|---|---|
| Peak Level (dB μ V/m) | 63.2 | 61.4 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 6MBPS | J6938-7, Band edge PK (1MRBW) High chan 6MBPS |

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| | | |
|------------------------------|--|---|
| Average Level (dB μ V/m) | 49.1 | 49.5 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 6MBPS | J6938-7, Band edge AVG (1MRBW) High chan 6MBPS |

Band Edge Results relating to Radio Parameters 5

| | Low | High |
|----------------|---|--|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 6MBPS | J6938-7, Band edge PK (100kRBW) High chan 6MBPS |

Radio Parameter 6

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 9 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 6

| | Low | High |
|------------------------------|--|---|
| Peak Level (dB μ V/m) | 61.6 | 61 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 9MBPS | J6938-7, Band edge PK (1MRBW) High chan 9MBPS |
| Average Level (dB μ V/m) | 49.4 | 49.7 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 9MBPS | J6938-7, Band edge AVG (1MRBW) High chan 9MBPS |

Band Edge Results relating to Radio Parameters 6

| | Low | High |
|----------------|---|--|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 9MBPS | J6938-7, Band edge PK (100kRBW) High chan 9MBPS |

Radio Parameter 7

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 12 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 7

| | Low | High |
|---------------------------|--|--|
| Peak Level (dB μ V/m) | 62.2 | 61.6 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 12MBPS | J6938-7, Band edge PK (1MRBW) High chan 12MBPS |

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| | | |
|------------------------------|---|--|
| Average Level (dB μ V/m) | 49.7 | 49.5 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 12MBPS | J6938-7, Band edge AVG (1MRBW) High chan 12MBPS |

Band Edge Results relating to Radio Parameters 7

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 12MBPS | J6938-7, Band edge PK (100kRBW) High chan 12MBPS |

Radio Parameter 8

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 18 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 8

| | Low | High |
|------------------------------|---|--|
| Peak Level (dB μ V/m) | 61.2 | 61.1 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 18MBPS | J6938-7, Band edge PK (1MRBW) High chan 18MBPS |
| Average Level (dB μ V/m) | 49.3 | 49.5 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 18MBPS | J6938-7, Band edge AVG (1MRBW) High chan 18MBPS |

Band Edge Results relating to Radio Parameters 8

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 18MBPS | J6938-7, Band edge PK (100kRBW) High chan 18MBPS |

Radio Parameter 9

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 24 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 9

| | Low | High |
|---------------------------|--|--|
| Peak Level (dB μ V/m) | 62.5 | 62.5 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 24MBPS | J6938-7, Band edge PK (1MRBW) High chan 24MBPS |

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| | | |
|------------------------------|---|--|
| Average Level (dB μ V/m) | 49.2 | 49.5 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 24MBPS | J6938-7, Band edge AVG (1MRBW) High chan 24MBPS |

Band Edge Results relating to Radio Parameters 9

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 24MBPS | J6938-7, Band edge PK (100kRBW) High chan 24MBPS |

Radio Parameter 10

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 36 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 10

| | Low | High |
|------------------------------|---|--|
| Peak Level (dB μ V/m) | 61.3 | 60.9 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 36MBPS | J6938-7, Band edge PK (1MRBW) High chan 36MBPS |
| Average Level (dB μ V/m) | 48.9 | 49.5 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 36MBPS | J6938-7, Band edge AVG (1MRBW) High chan 36MBPS |

Band Edge Results relating to Radio Parameters 10

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 36MBPS | J6938-7, Band edge PK (100kRBW) High chan 36MBPS |

Radio Parameter 11

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 48 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 11

| | Low | High |
|---------------------------|--|--|
| Peak Level (dB μ V/m) | 59.7 | 61.4 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 48MBPS | J6938-7, Band edge PK (1MRBW) High chan 48MBPS |

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| | | |
|------------------------------|---|--|
| Average Level (dB μ V/m) | 48.2 | 49.3 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 48MBPS | J6938-7, Band edge AVG (1MRBW) High chan 48MBPS |

Band Edge Results relating to Radio Parameters 11

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 48MBPS | J6938-7, Band edge PK (100kRBW) High chan 48MBPS |

Radio Parameter 12

| | |
|-----------------|-----------------|
| Band | 2400-2483.5 MHz |
| Power level | 16 dBm |
| Channel spacing | 5 MHz |
| Mod scheme | 54 MBPS |
| Low channel | 2412 MHz |
| Top channel | 2462 MHz |

Restricted Band Edge Results relating to Radio Parameters 12

| | Low | High |
|------------------------------|---|--|
| Peak Level (dB μ V/m) | 61.2 | 62.1 |
| Peak Plot reference | J6938-7, Band edge PK (1MRBW) Low chan 54MBPS | J6938-7, Band edge PK (1MRBW) High chan 54MBPS |
| Average Level (dB μ V/m) | 48.4 | 49.2 |
| Average Plot reference | J6938-7, Band edge AVG (1MRBW) Low chan 54MBPS | J6938-7, Band edge AVG (1MRBW) High chan 54MBPS |

Band Edge Results relating to Radio Parameters 12

| | Low | High |
|----------------|--|---|
| Plot reference | J6938-7, Band edge PK (100kRBW) Low chan 54MBPS | J6938-7, Band edge PK (100kRBW) High chan 54MBPS |

The band edge readings were performed with a peak detector (max held plot) and with the EUT set in a constant 100% transmit state.

Limits:
AV = 54dB μ V/m at band edges
PK = 74dB μ V/m at band edges

The restricted band edges closest to the EUT frequency of 2400-2483.5MHz are 2390 & 2483.5MHz

Further wider span plots have been taken to show the fact that there are no spurious emissions above the restricted limits of 15.209.

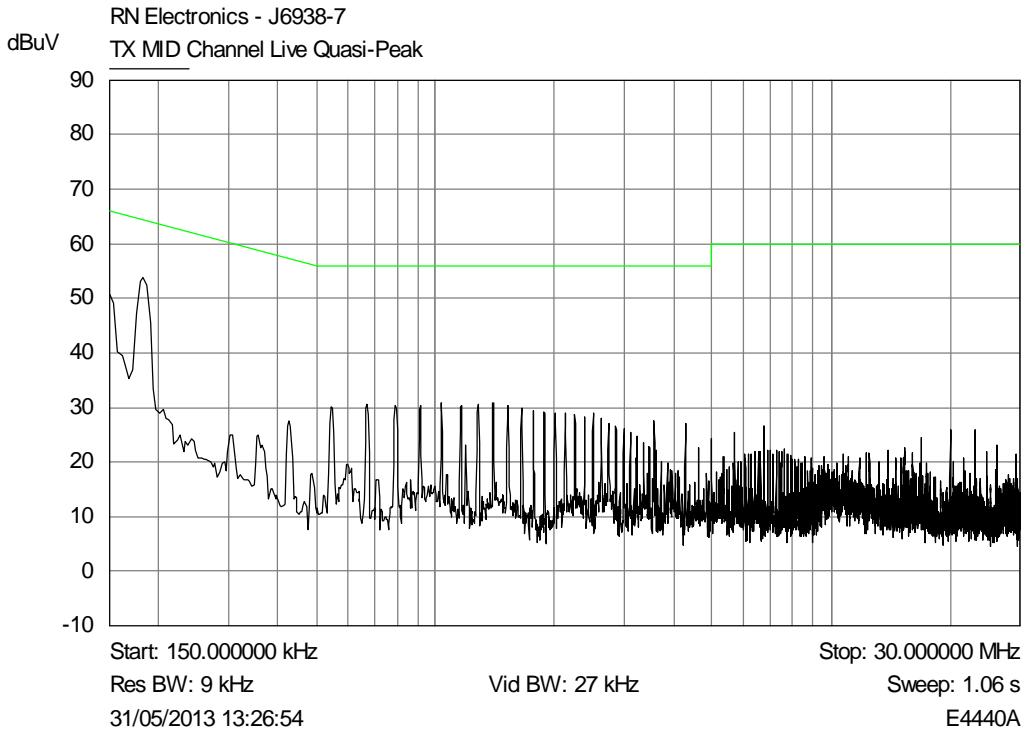
These results show that the **EUT** has **PASSED** this test.

5.9 FHSS Parameters

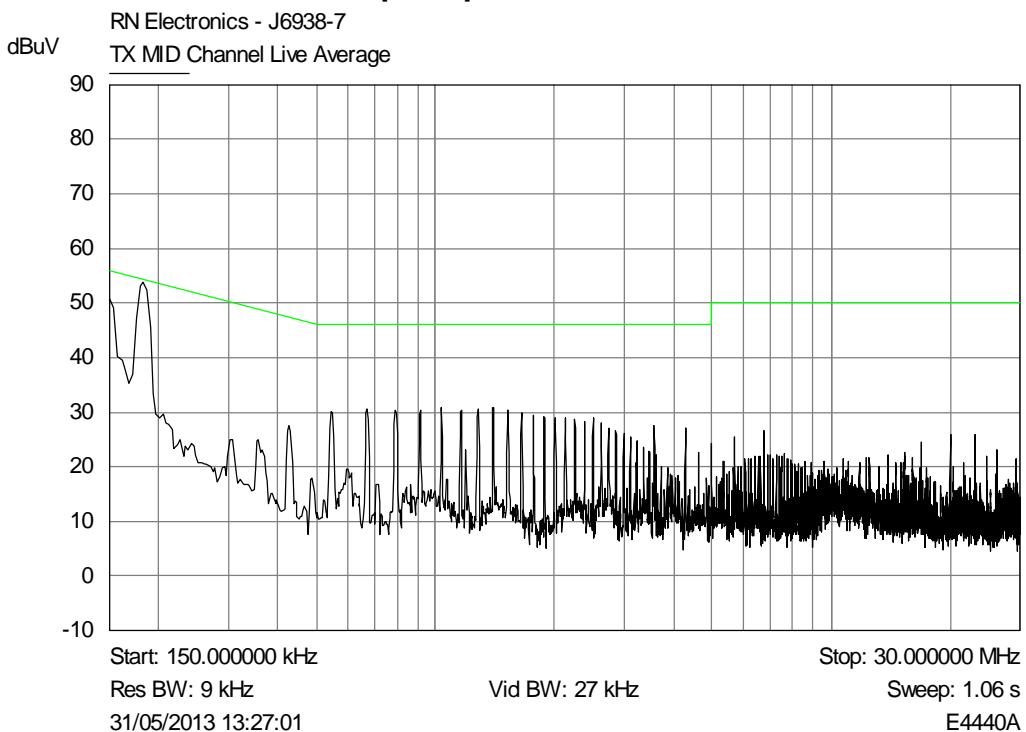
Not Applicable. EUT does not employ FHSS technology.

6 Plots and Results

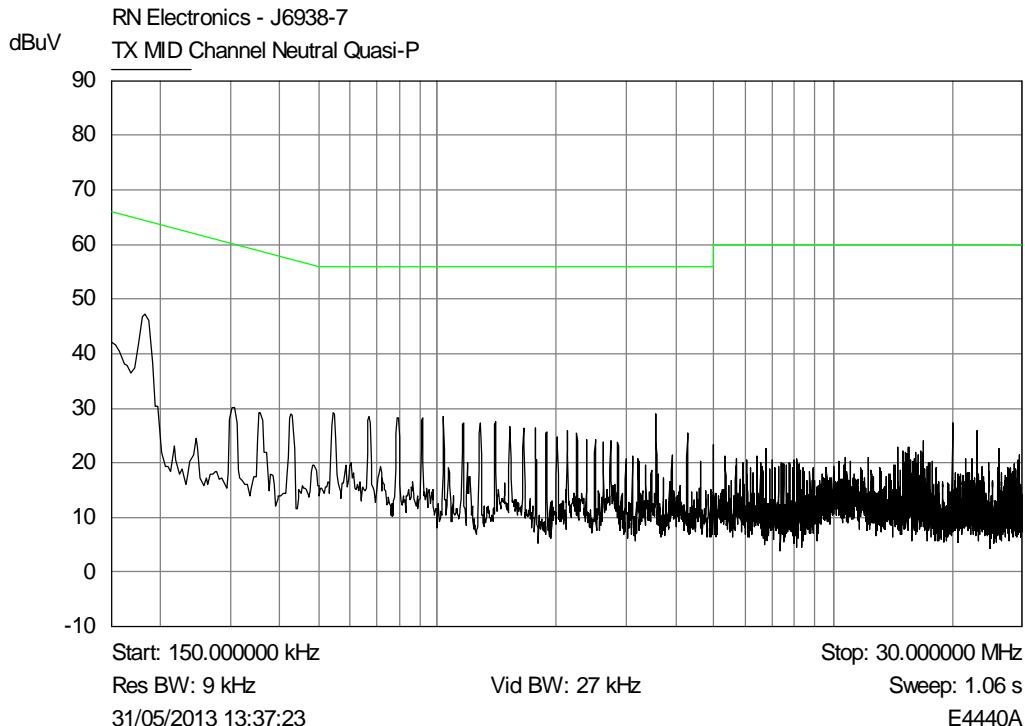
6.1 AC power line conducted emissions plots



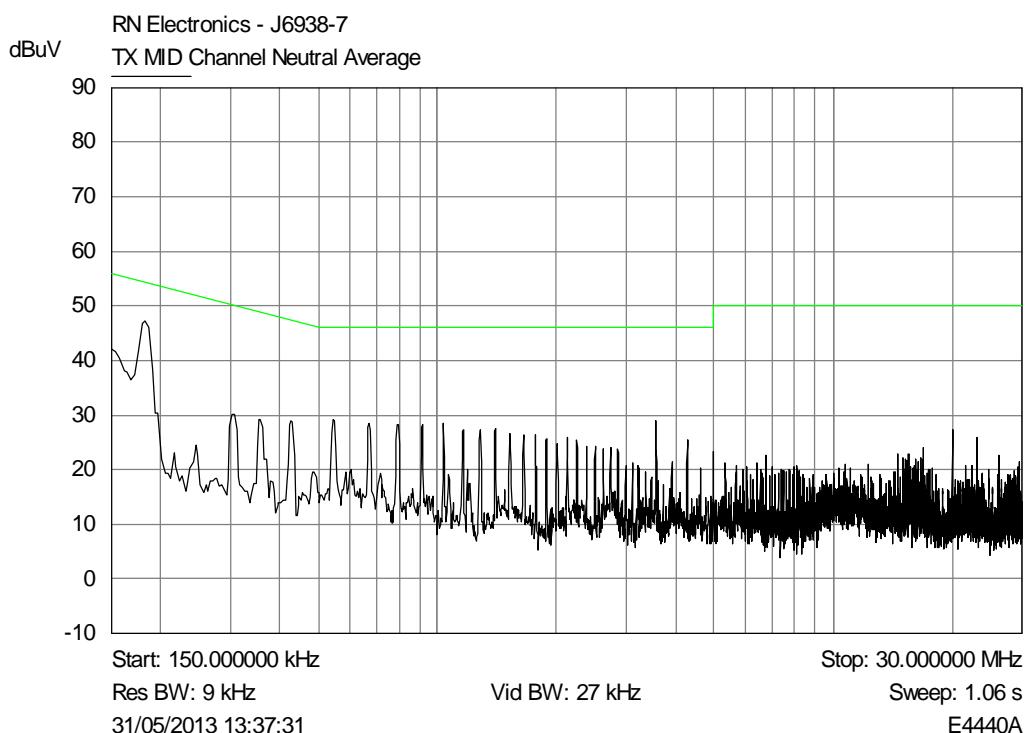
Plot of peak emissions 150kHz - 30MHz on the live terminal against the quasi-peak limit line.



Plot of peak emissions 150kHz - 30MHz on the live terminal against the average limit line.



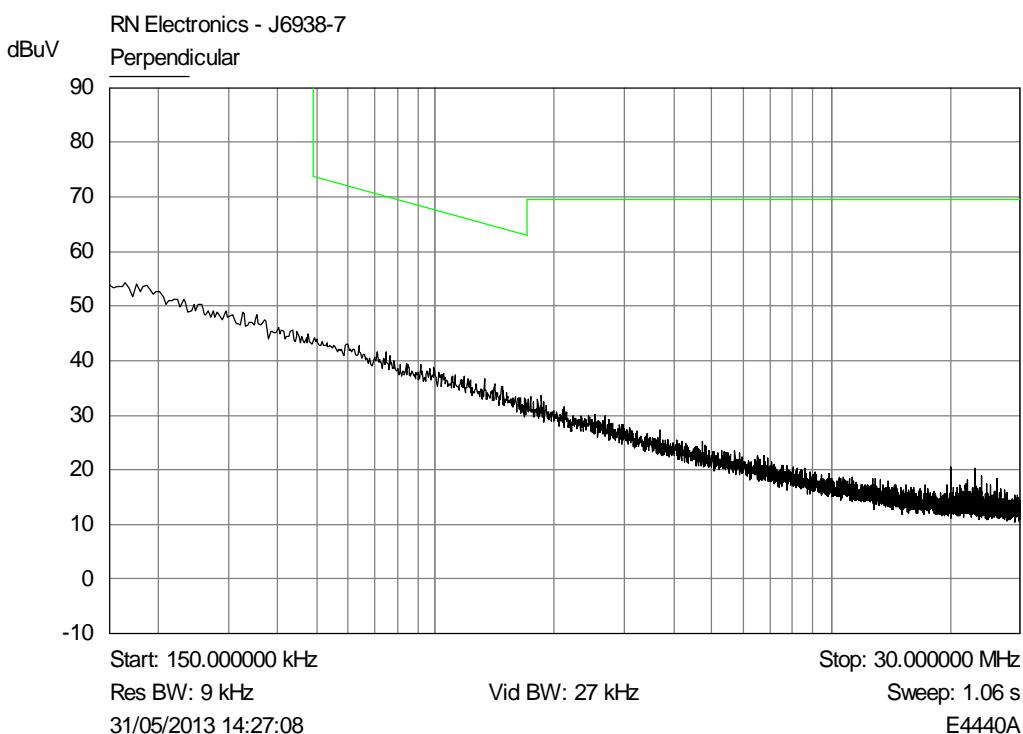
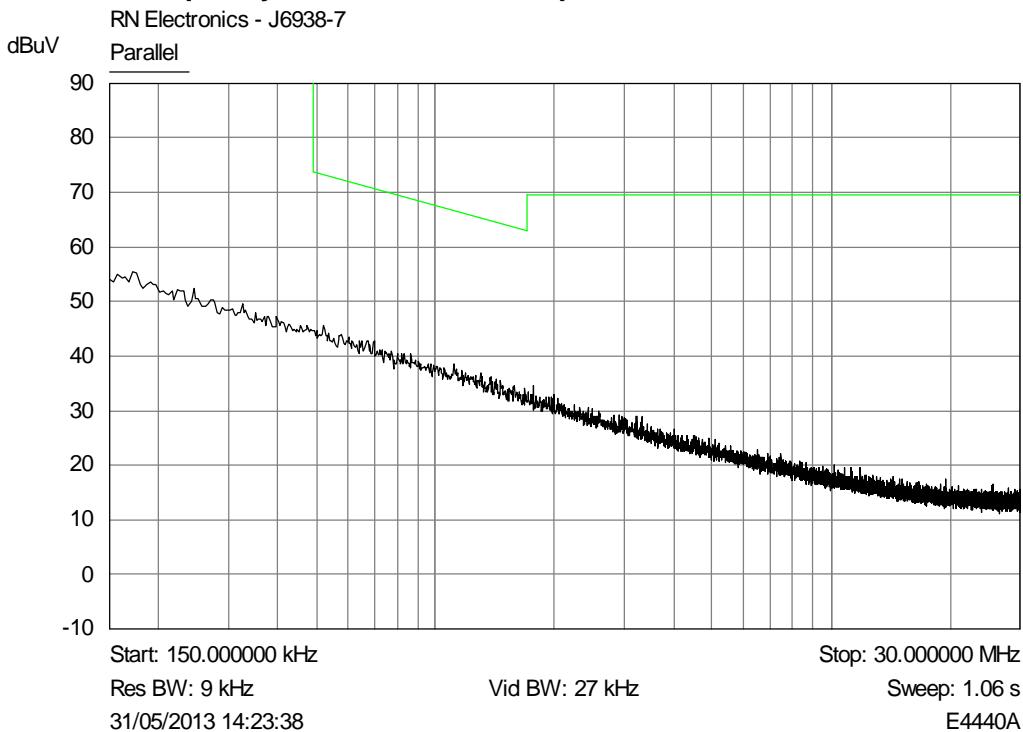
Plot of peak emissions 150kHz - 30MHz on the neutral terminal against the quasi-peak limit line.



Plot of peak emissions 150kHz - 30MHz on the neutral terminal against the average limit line.

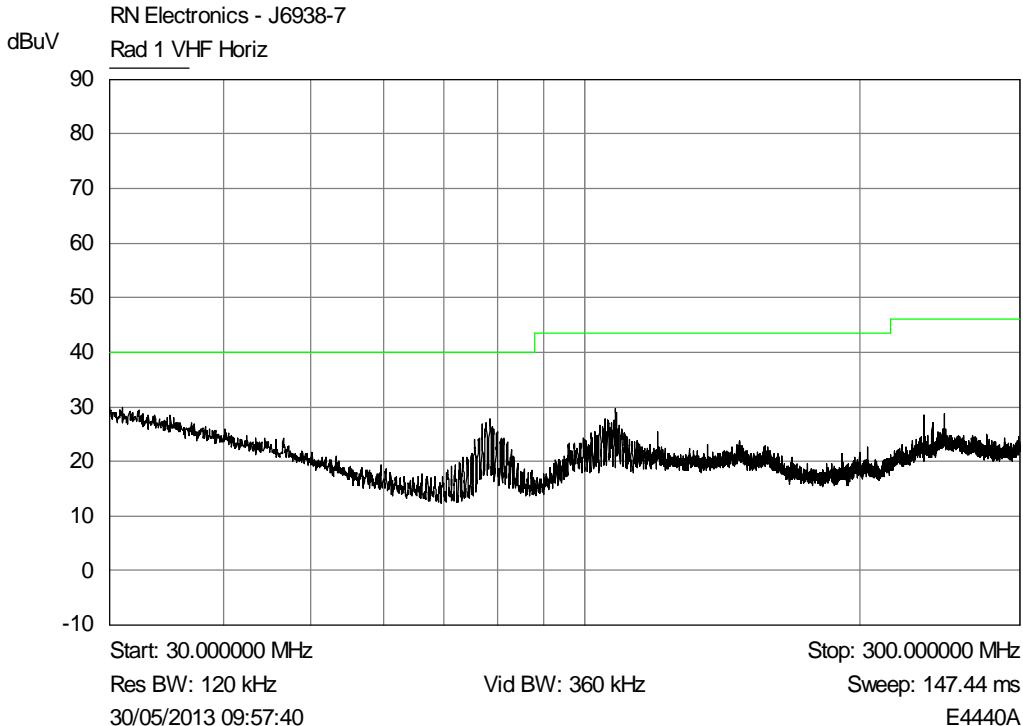
6.2 Radiated emissions plots

6.2.1 Low frequency radiated emissions plots

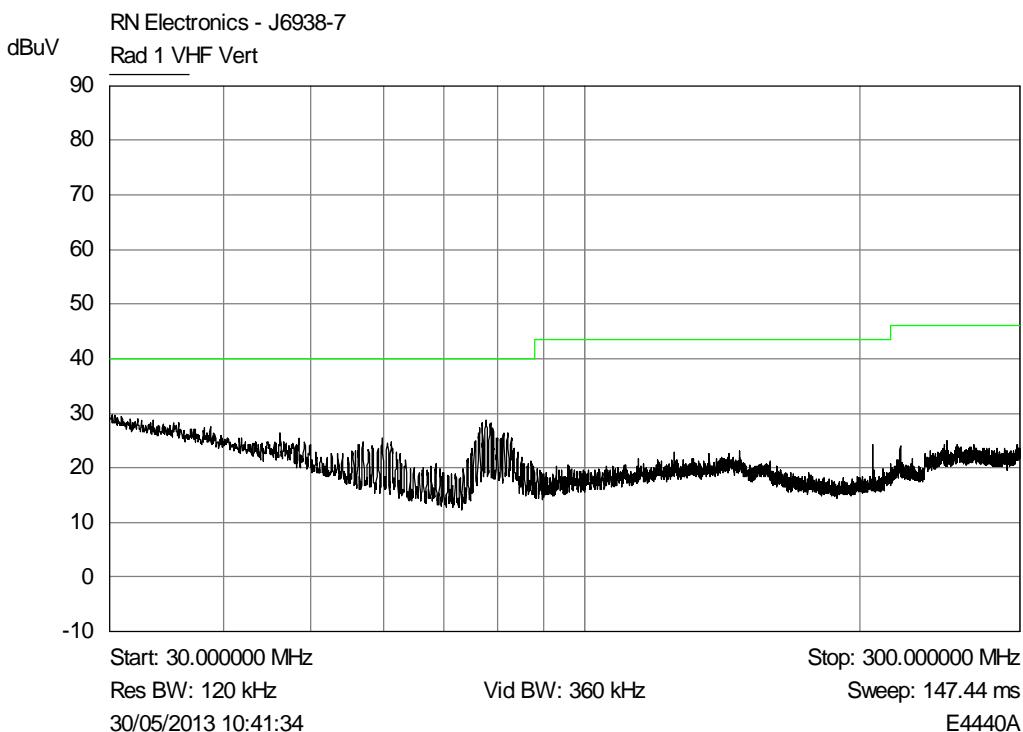


Mid channel - Perpendicular Plot

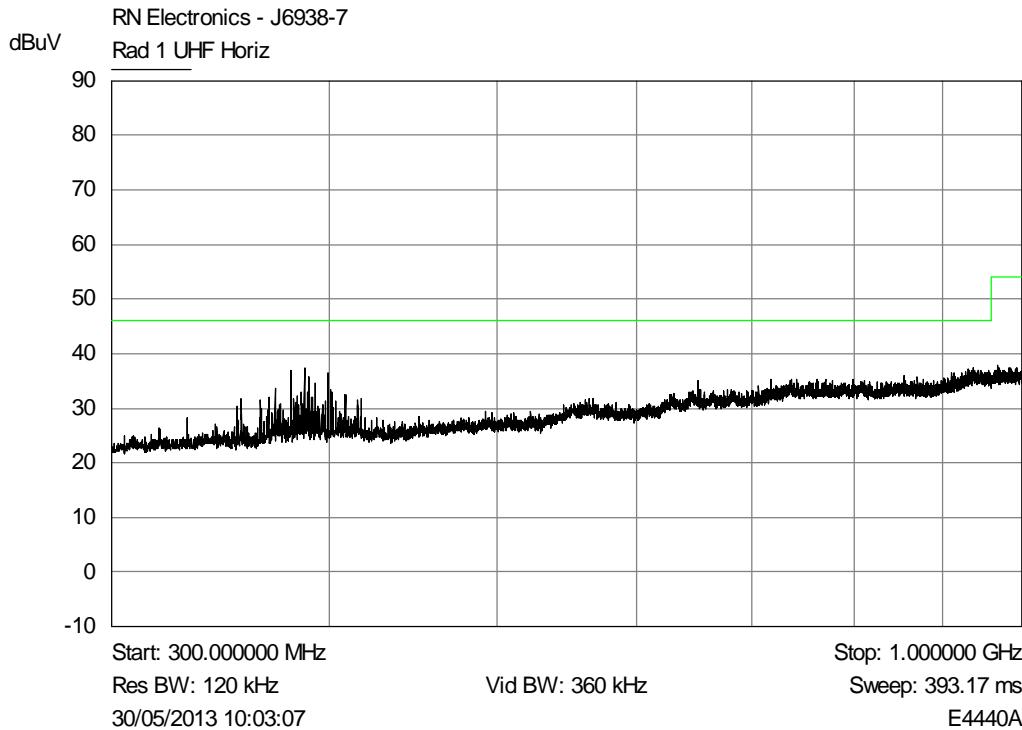
6.2.2 Radiated emissions - 30MHz - 1GHz



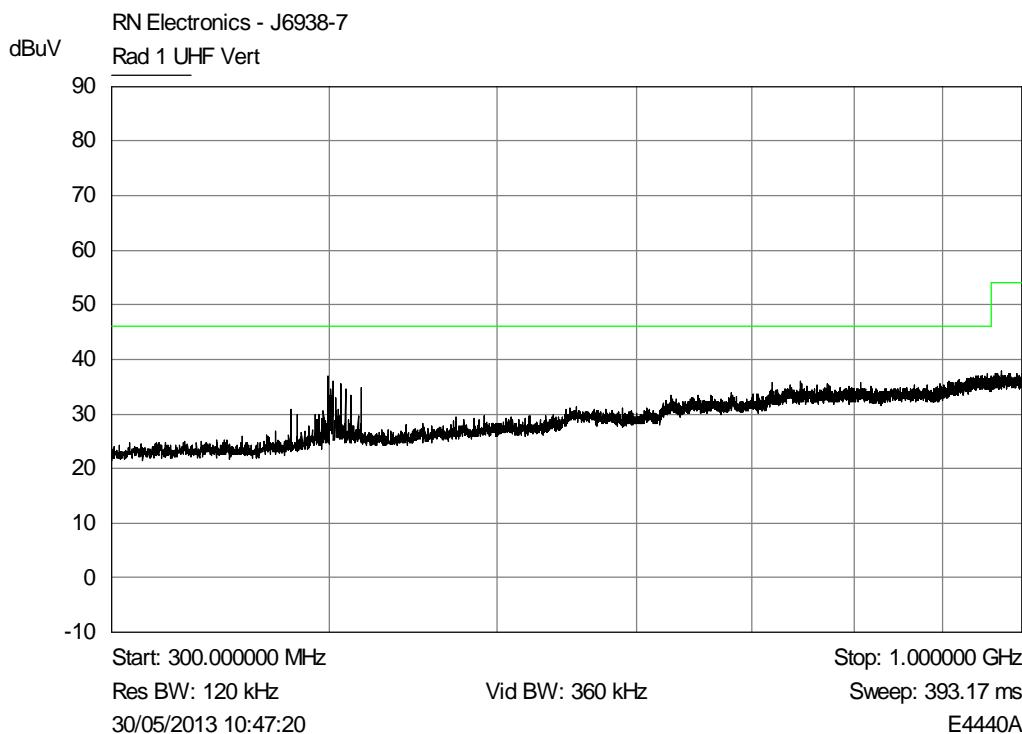
TX Mid Chan: Plot of peak horizontal emissions 30MHz - 300MHz against the quasi-peak limit line.



TX Mid Chan: Plot of peak vertical emissions 30MHz - 300MHz against the quasi-peak limit line.

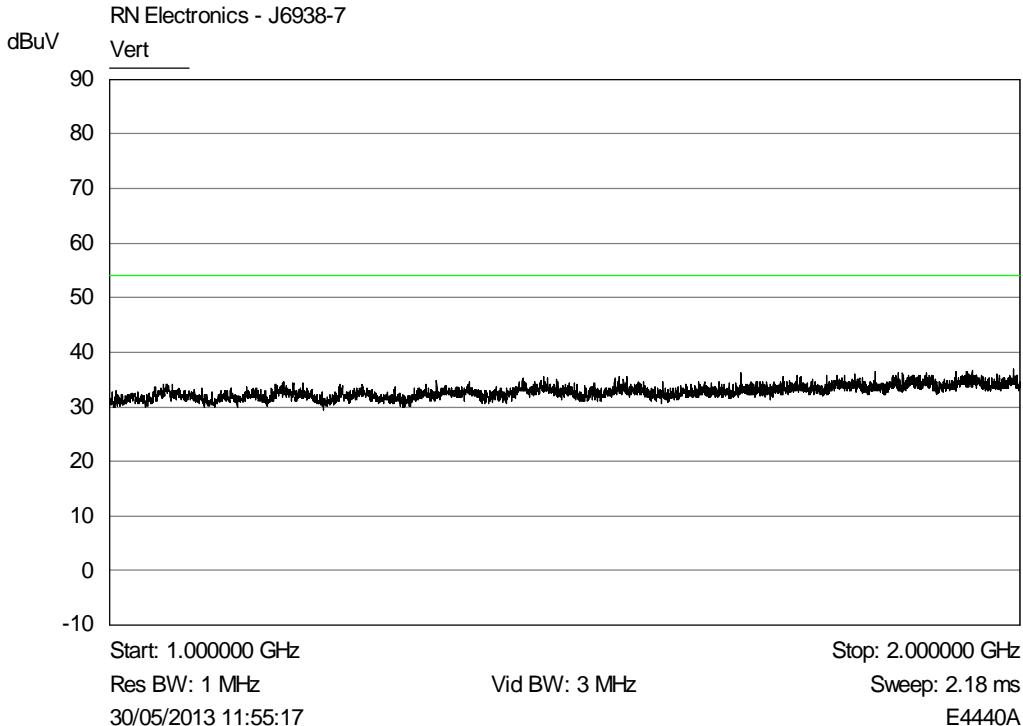


TX Mid Chan: Plot of peak horizontal emissions 300MHz - 1GHz against the quasi-peak limit line.

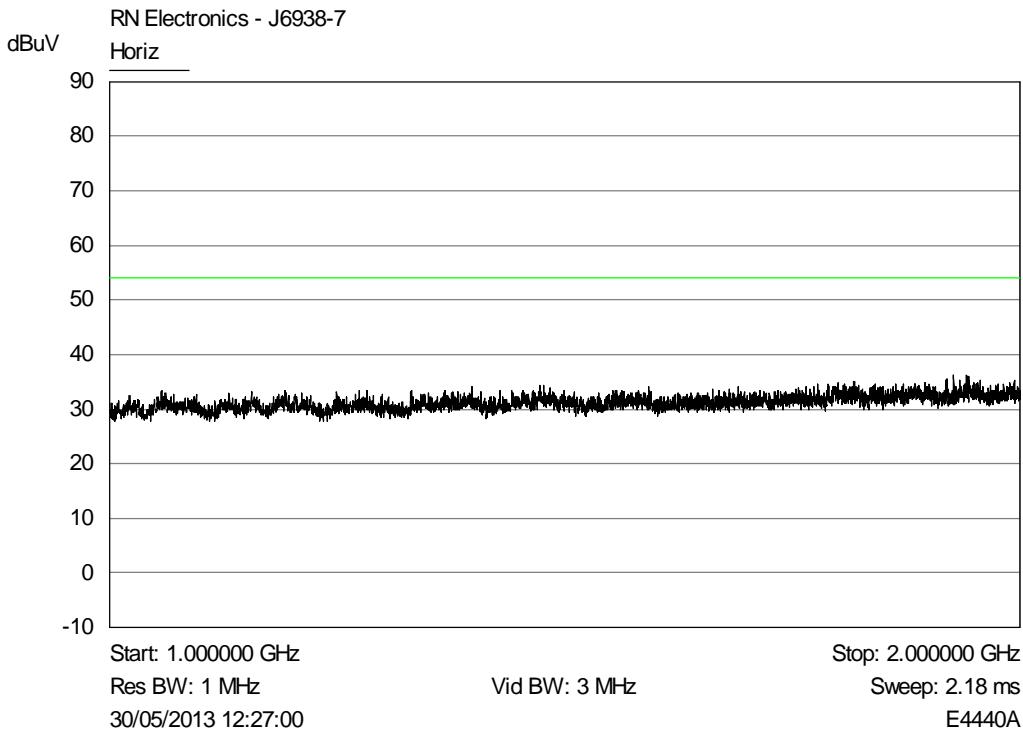


TX Mid Chan: Plot of peak vertical emissions 300MHz - 1GHz against the quasi-peak limit line.

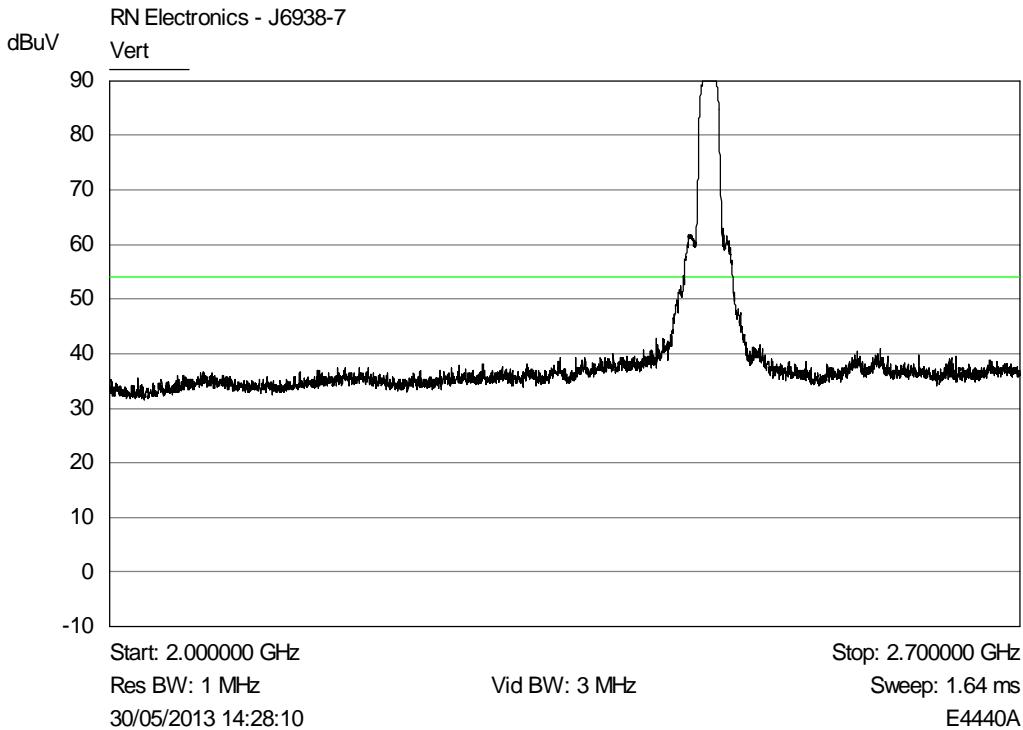
6.2.3 Radiated emissions Plots above 1GHz



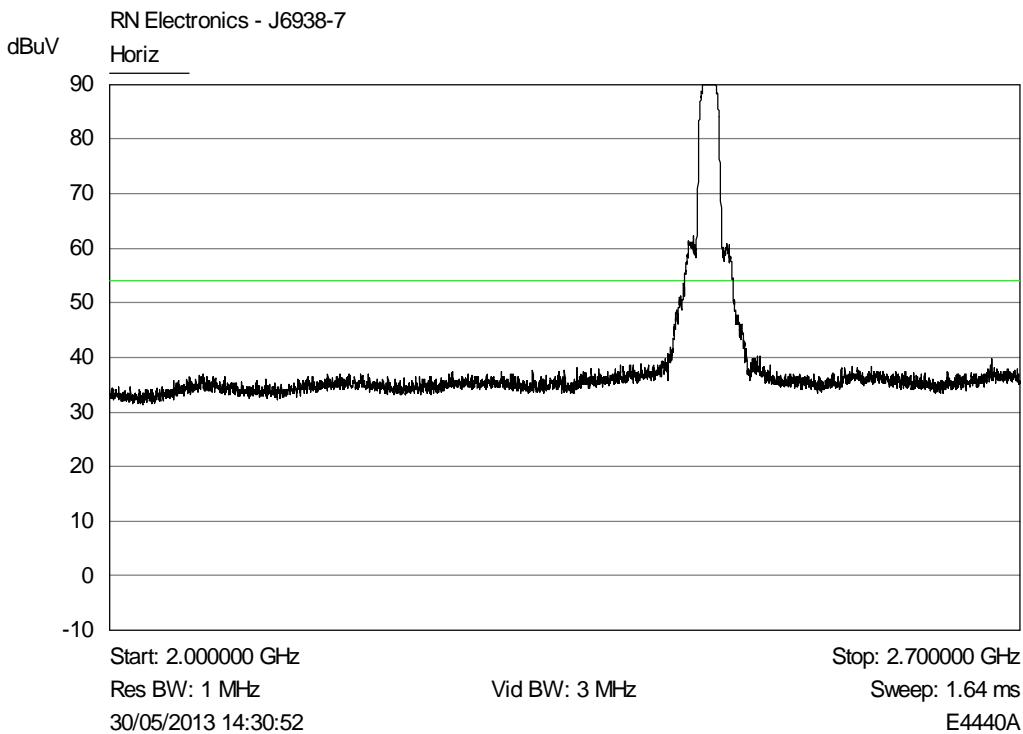
Middle channel (2437 MHz) - 1-2 GHz - Vertical



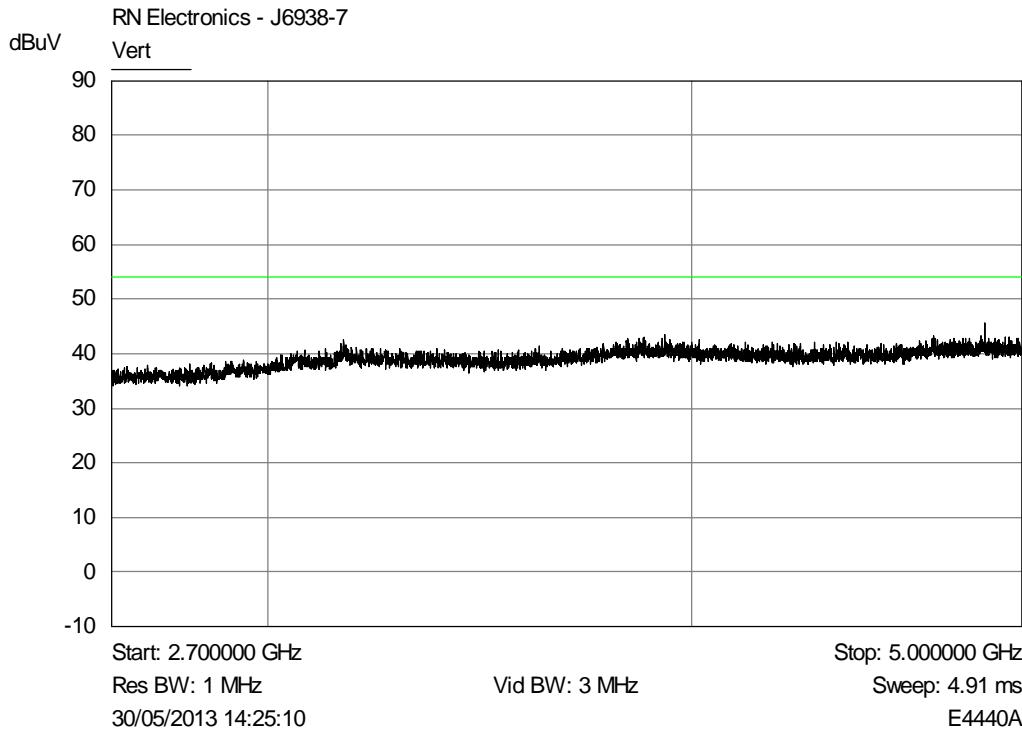
Middle channel (2437 MHz) - 1-2 GHz - Horizontal



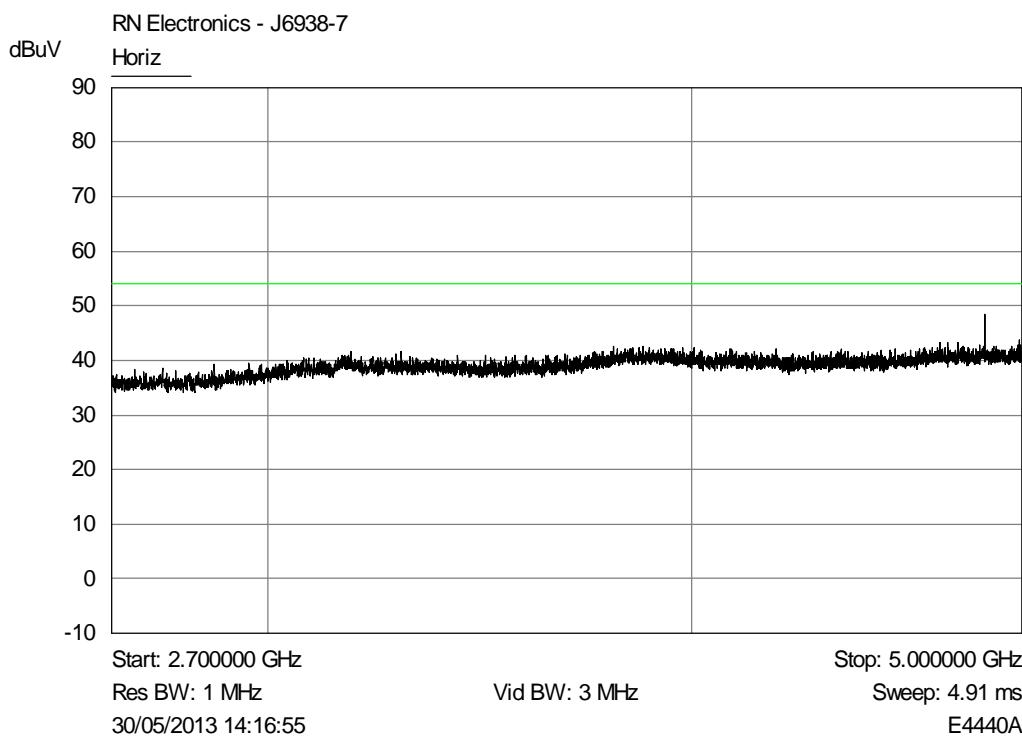
Middle channel (2437 MHz) - 2-2.7 GHz - Vertical



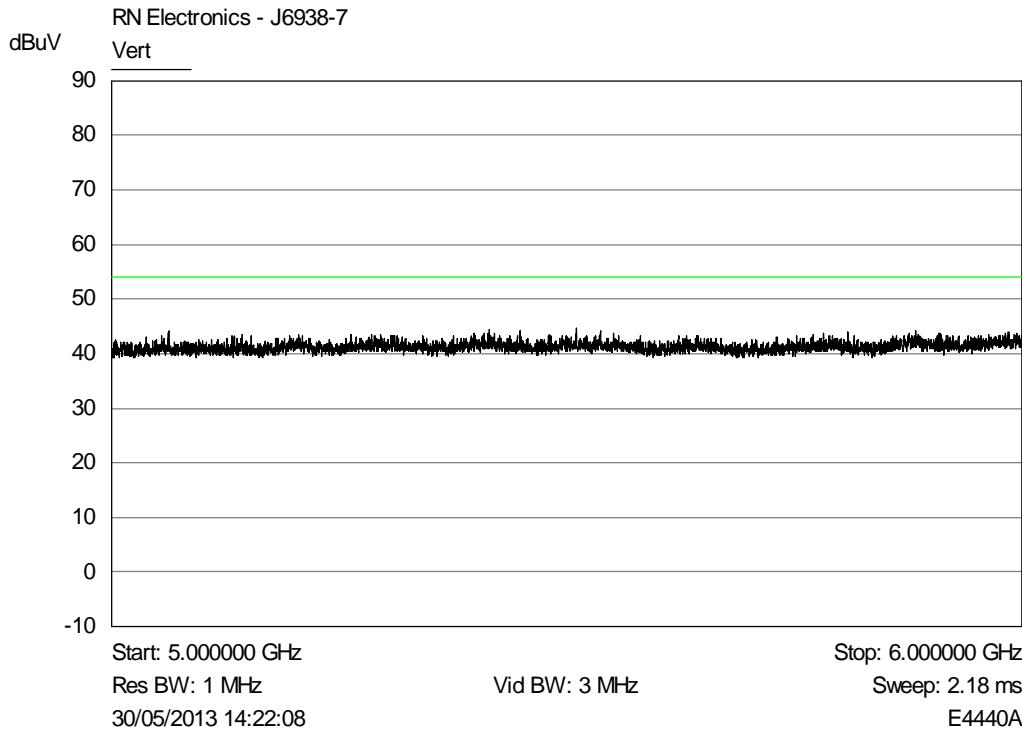
Middle channel (2437 MHz) - 2-2.7 GHz - Horizontal



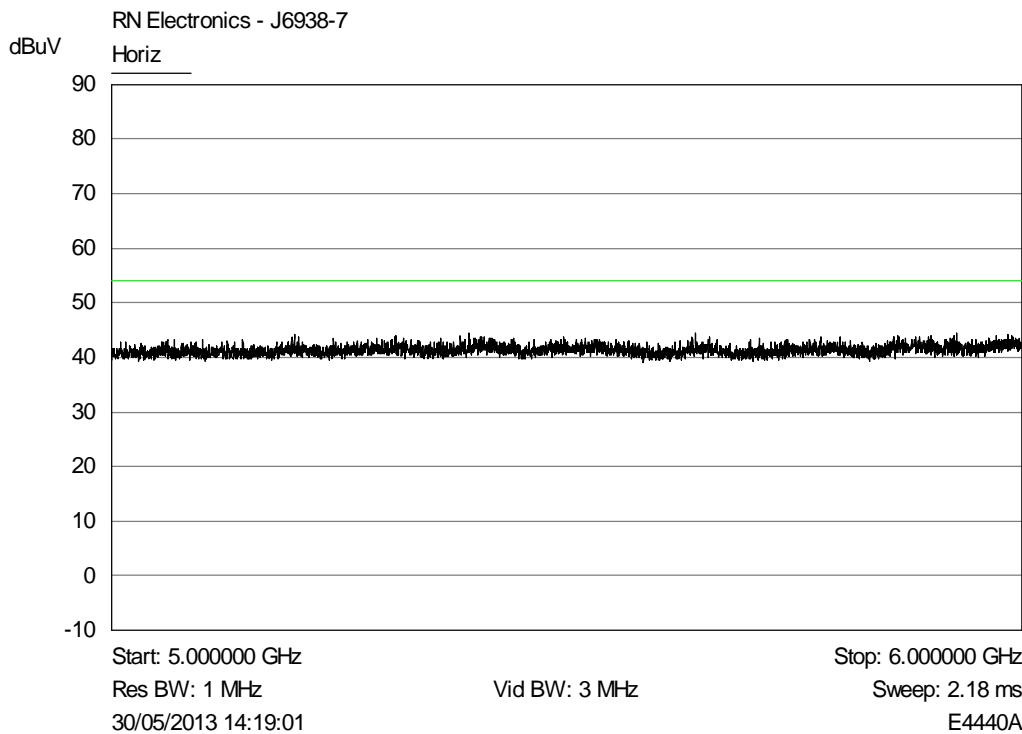
Middle channel (2437 MHz) - 2.7-5 GHz - Vertical



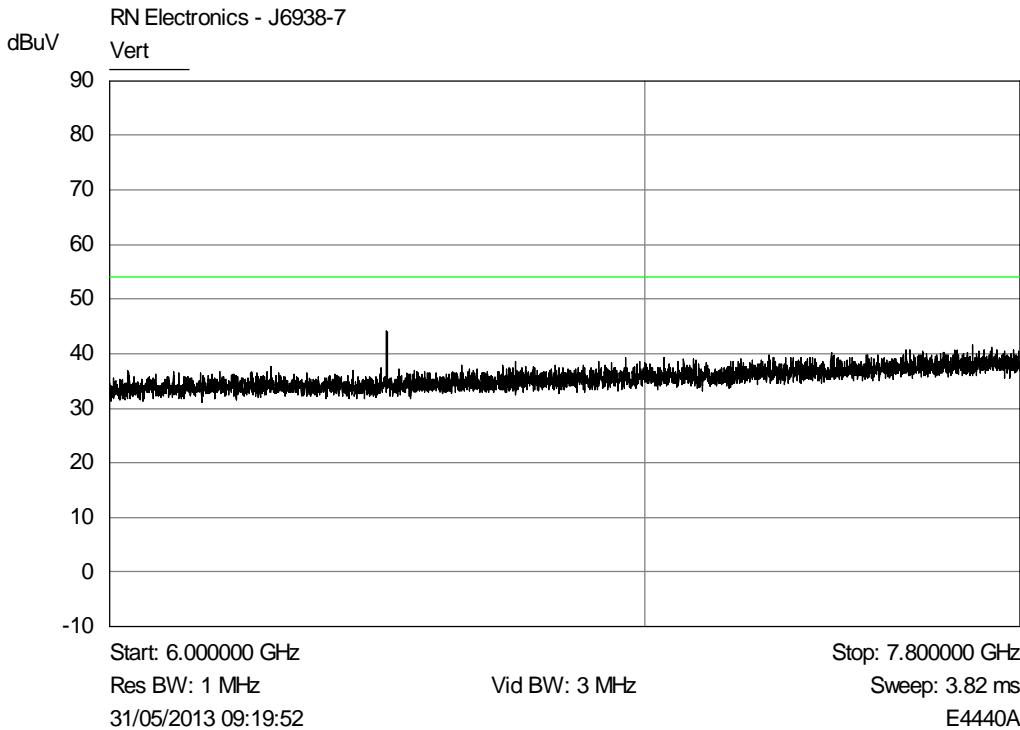
Middle channel (2437 MHz) - 2.7-5 GHz - Horizontal



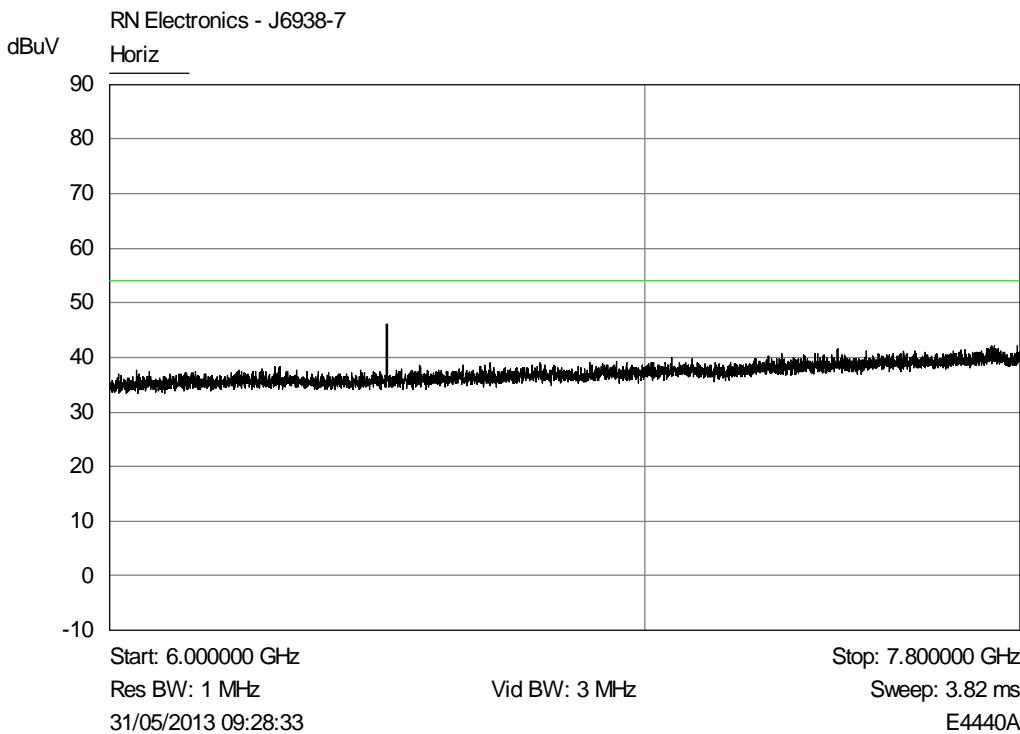
Middle channel (2437 MHz) - 5-6 GHz - Vertical



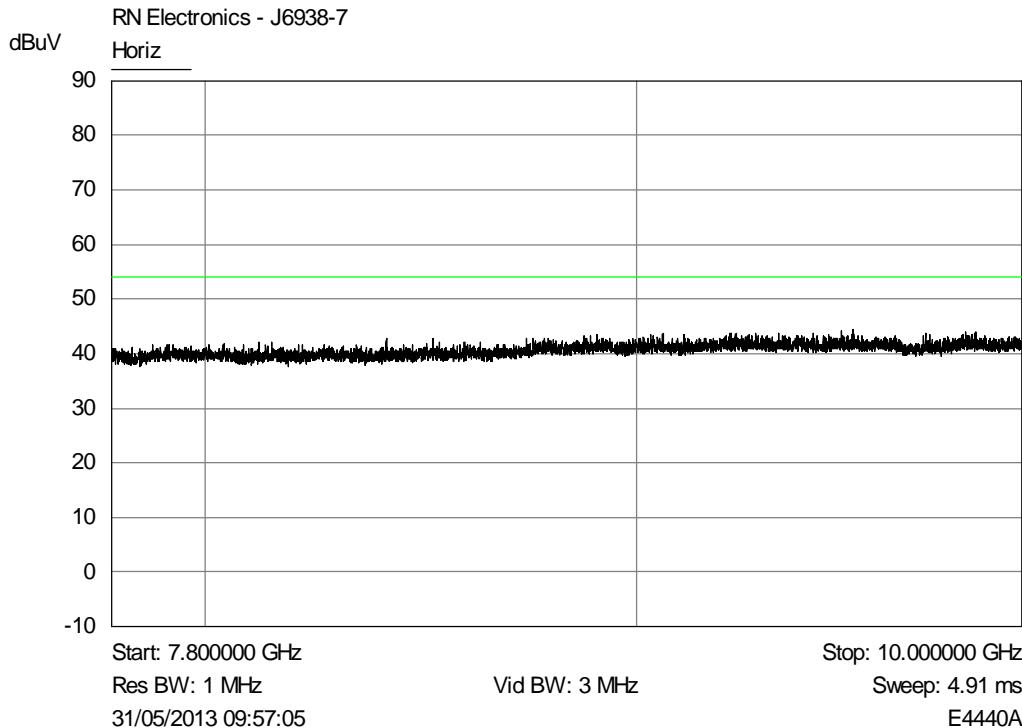
Middle channel (2437 MHz) - 5-6 GHz - Horizontal



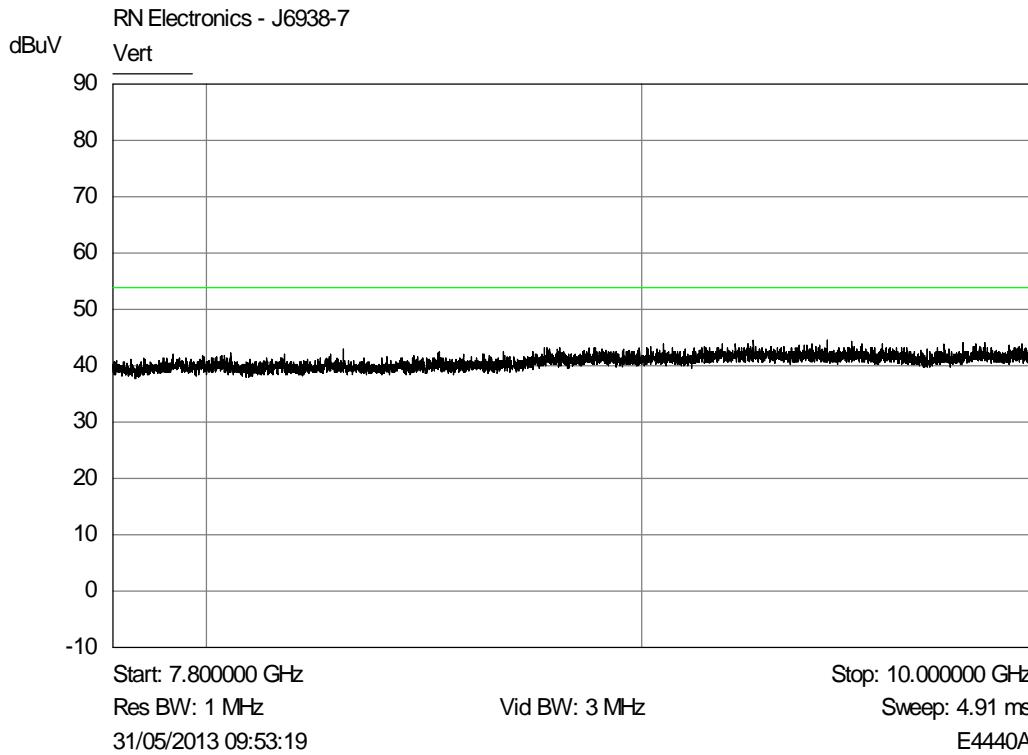
Middle channel (2437 MHz) - 6-7.8 GHz - Vertical



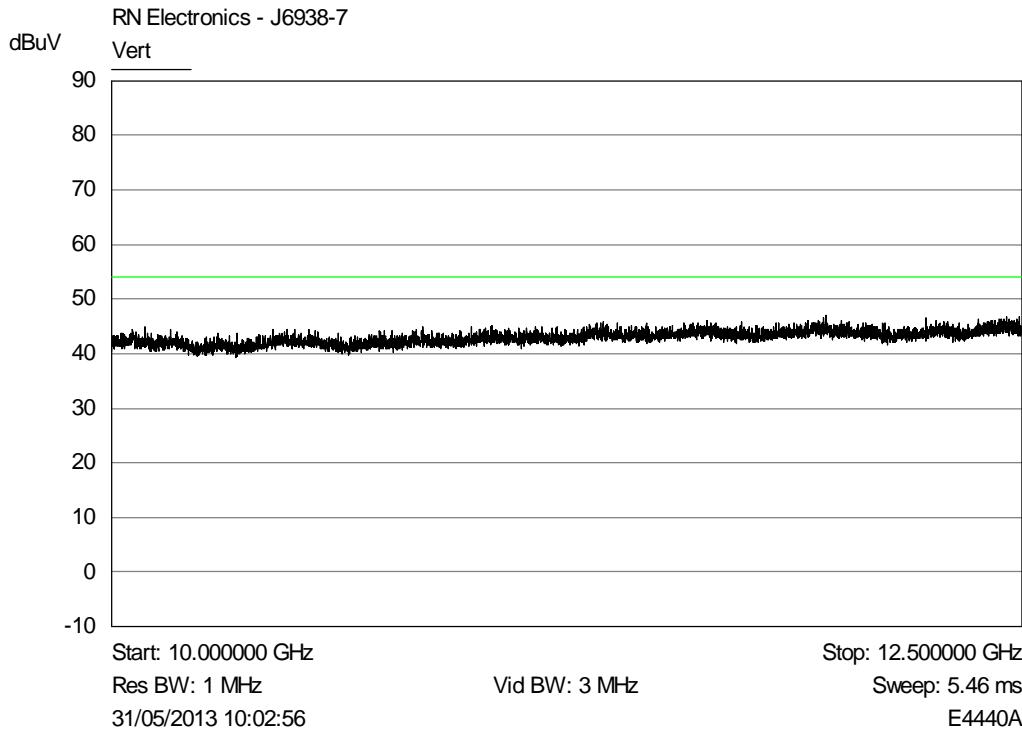
Middle channel (2437 MHz) - 6-7.8 GHz - Horizontal



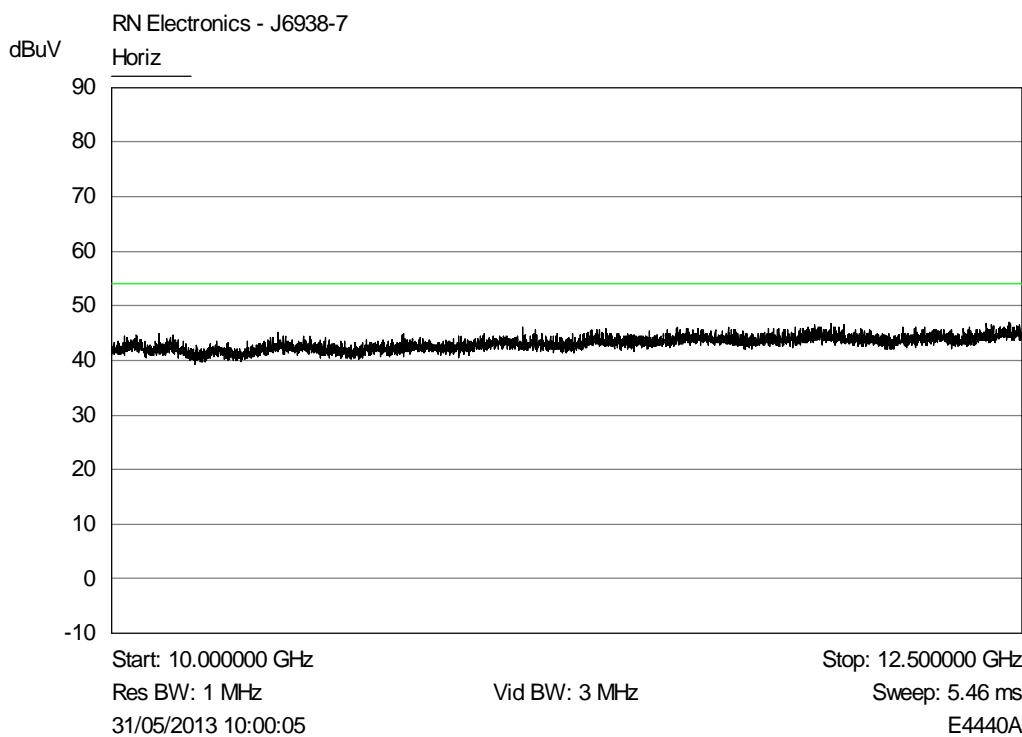
Middle channel (2437 MHz) - 7.8-10GHz – Horizontal



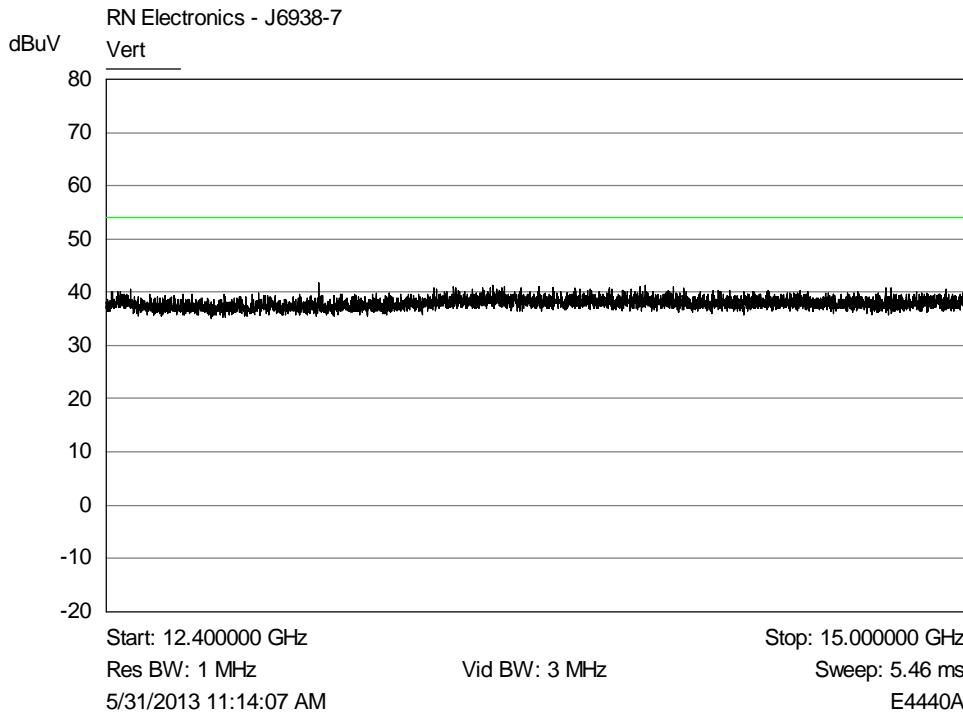
Middle channel (2437 MHz) - 7.8-10GHz - Vertical



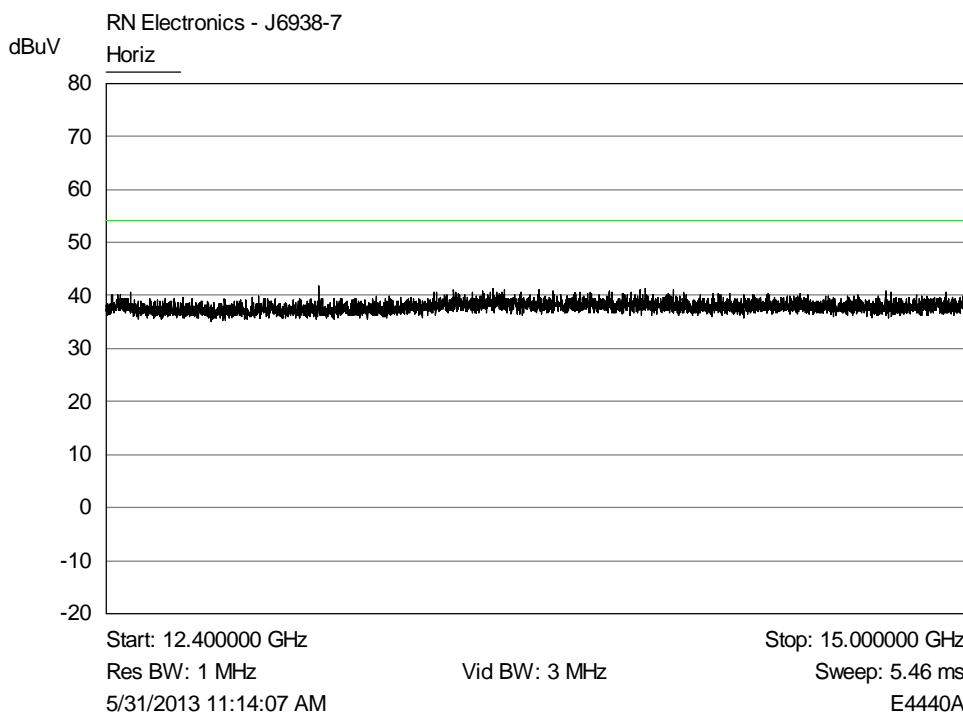
Middle channel (2437 MHz) - 10-12.5GHz - Vertical



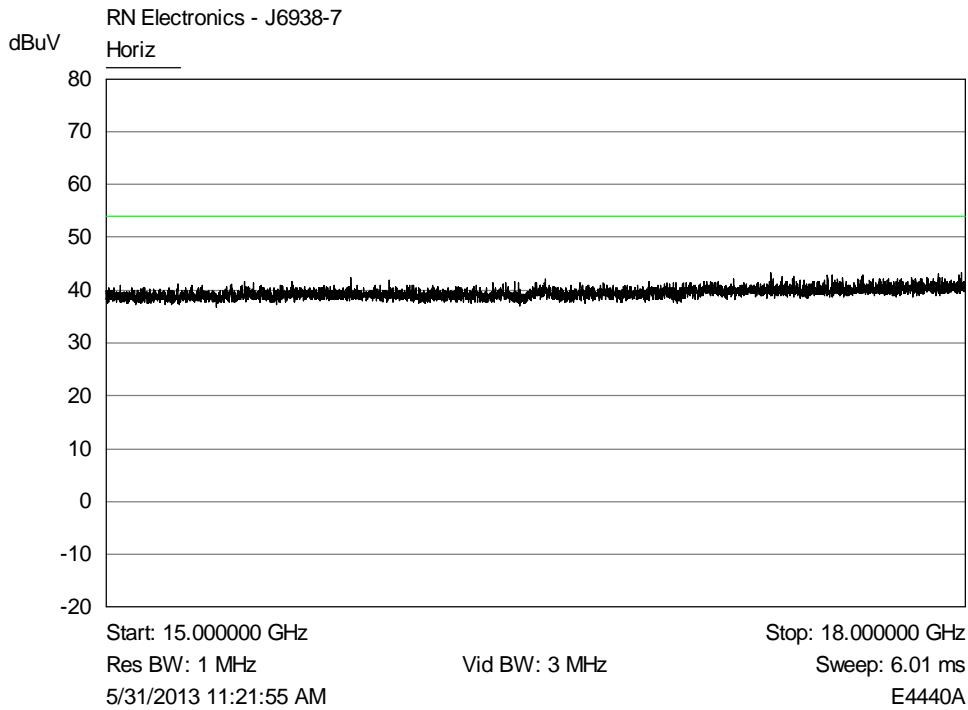
Middle channel (2437 MHz) - 10-12.5GHz - Horizontal



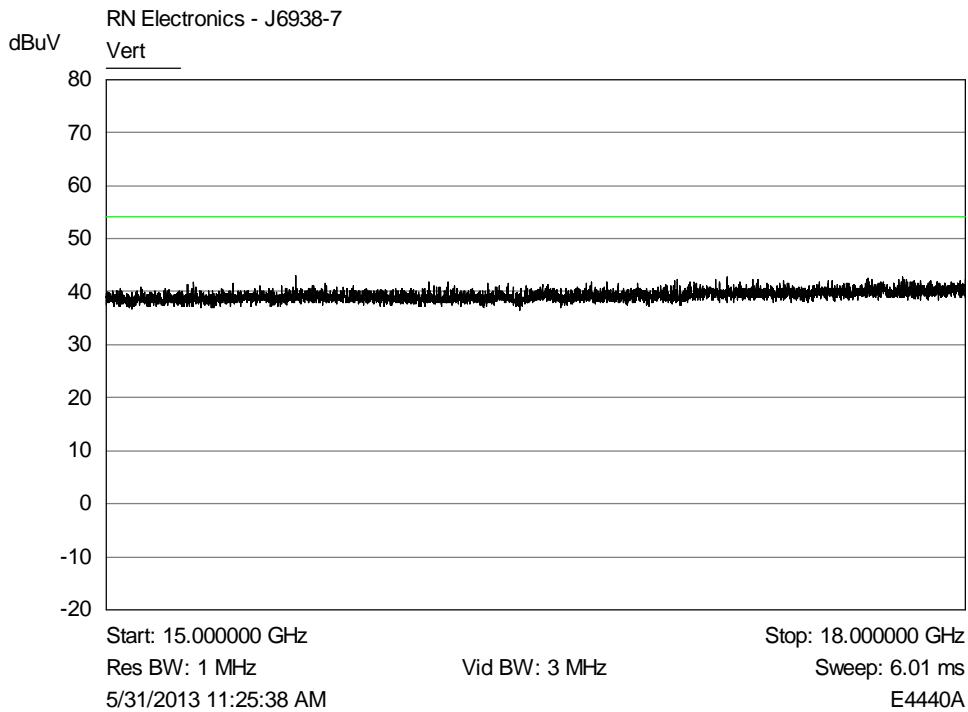
Middle channel (2437 MHz) – 12.5-15GHz - Vertical



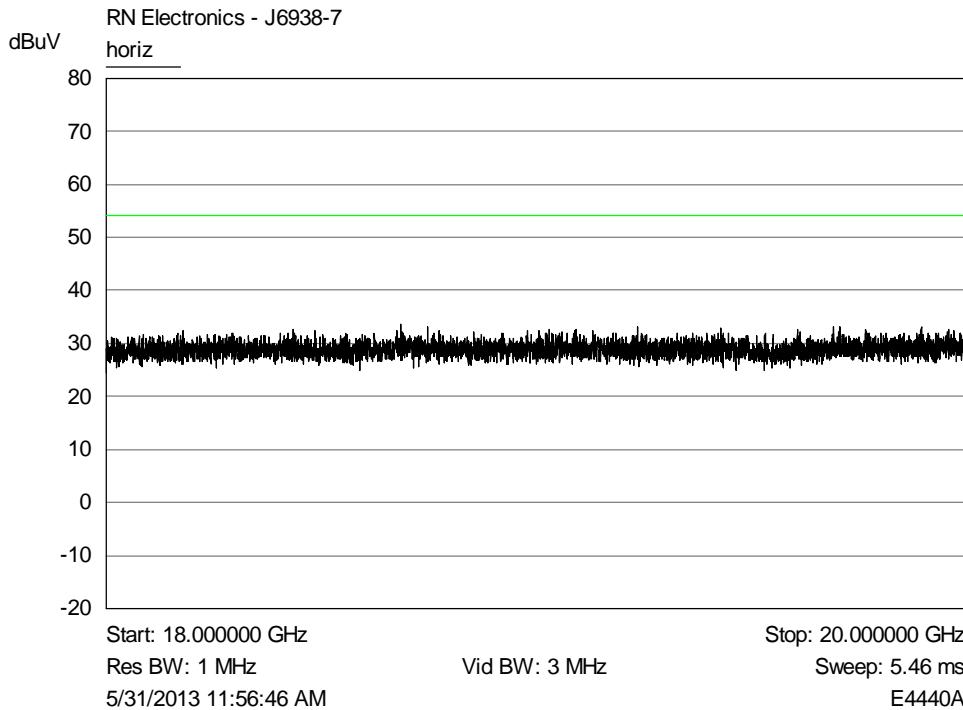
Middle channel (2437 MHz) - 12.5-15GHz – Horizontal



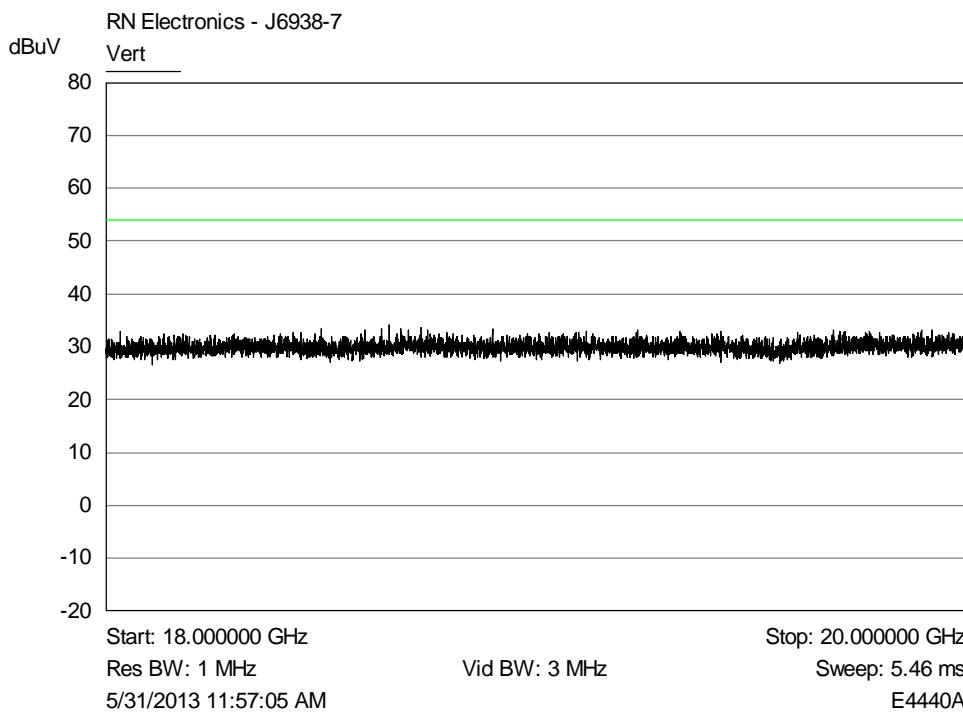
Middle channel (2437 MHz) - 15-18GHz - Horizontal



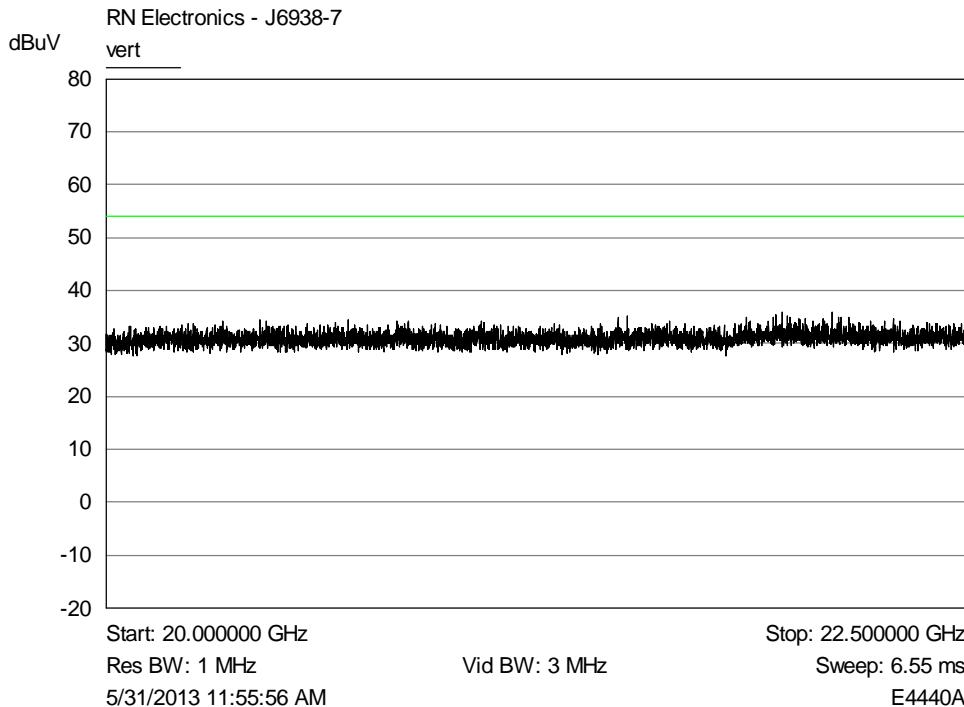
Middle channel (2437 MHz) - 15-18GHz – Vertical



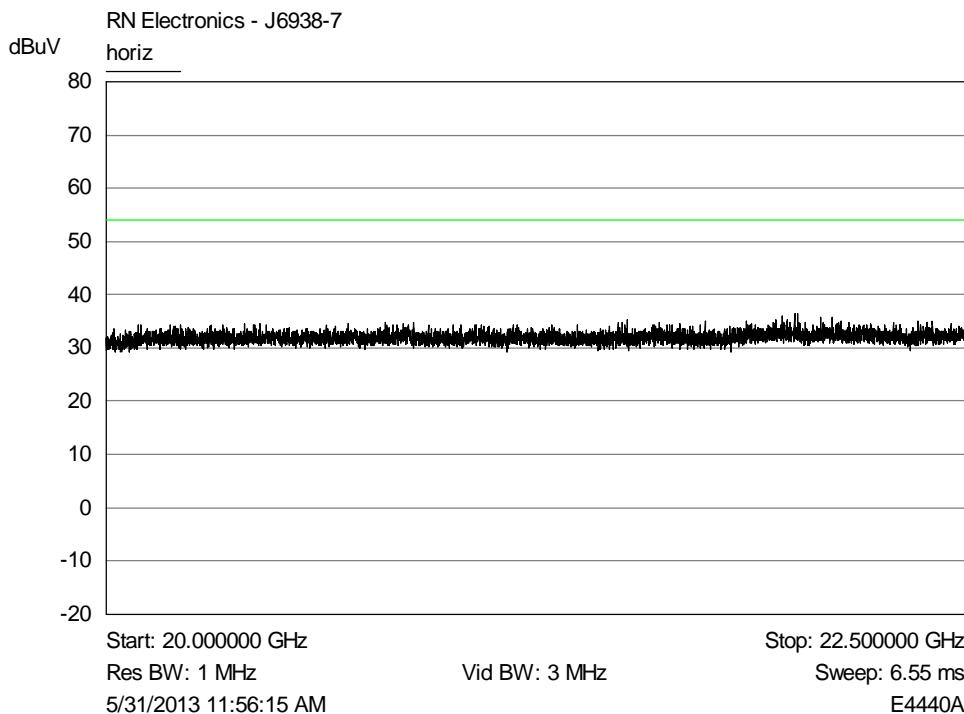
Middle channel (2437 MHz) - 18-20GHz - Horizontal



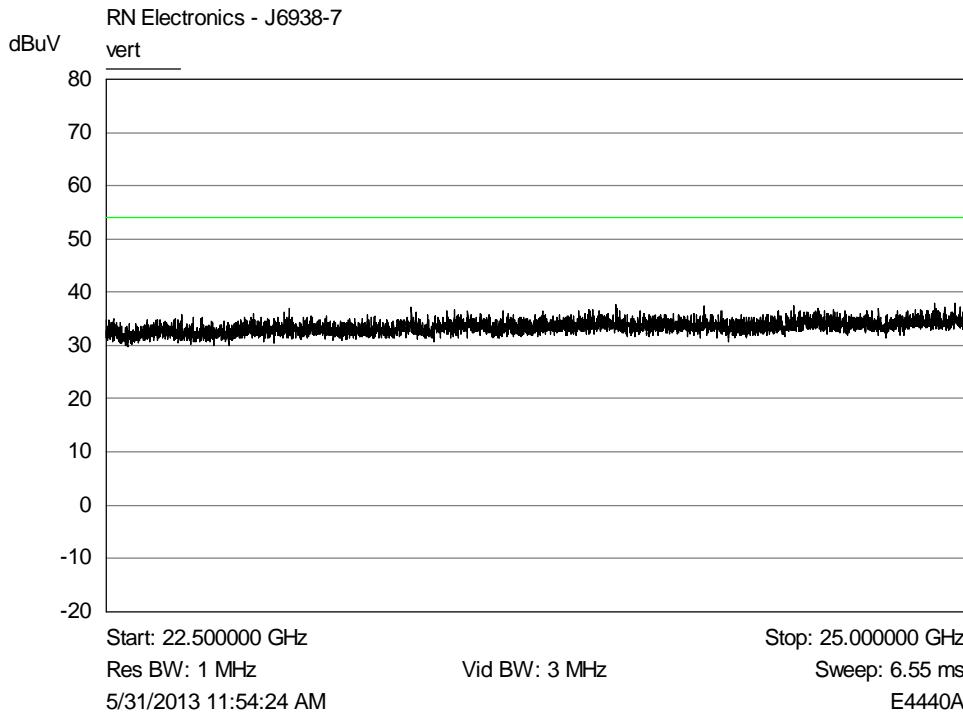
Middle channel (2437 MHz) - 18-20GHz – Vertical



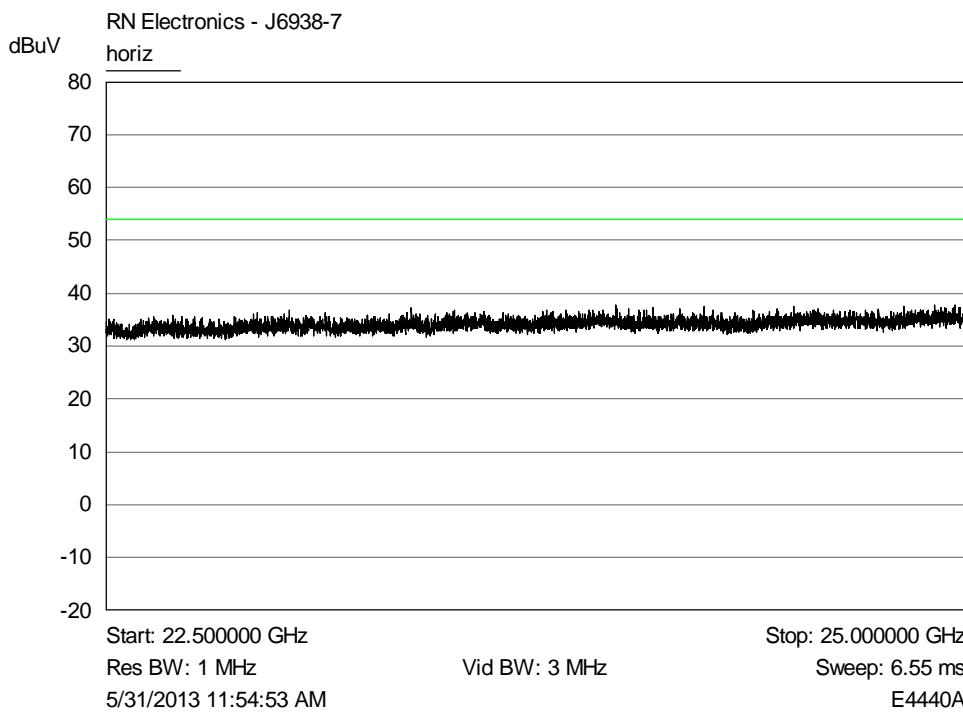
Middle channel (2437 MHz) - 20-22.5GHz - Vertical



Middle channel (2437 MHz) - 20-22.5GHz - Horizontal



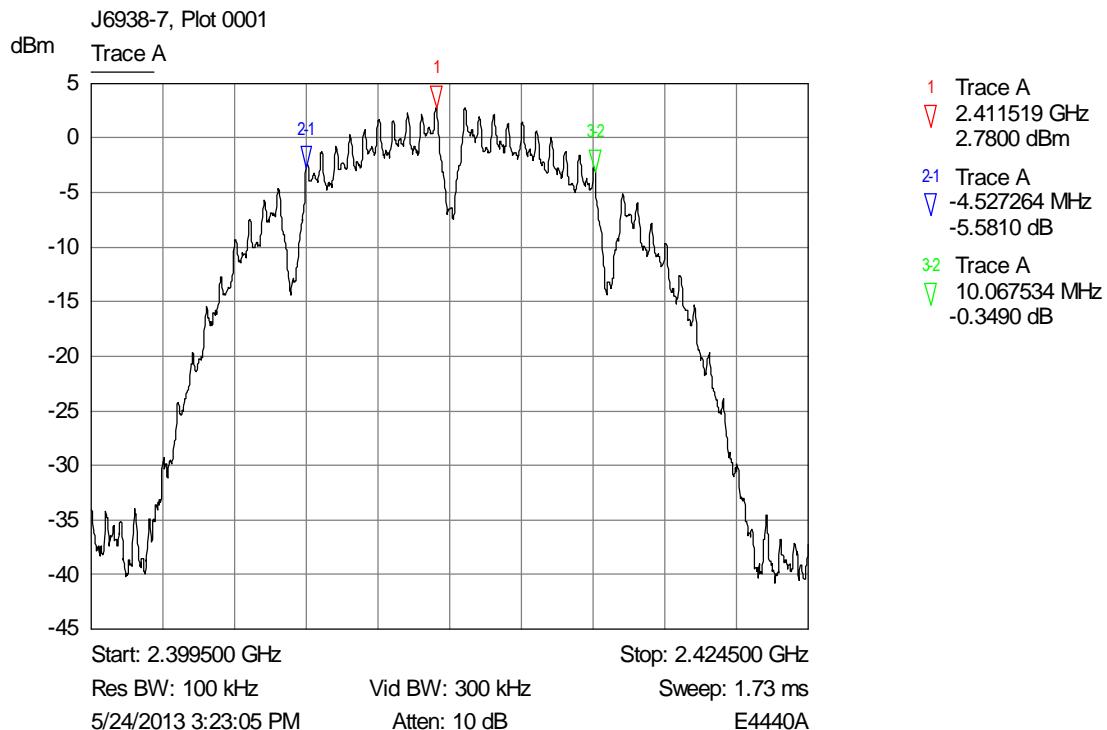
Middle channel (2437 MHz) – 22.5-25GHz - Vertical



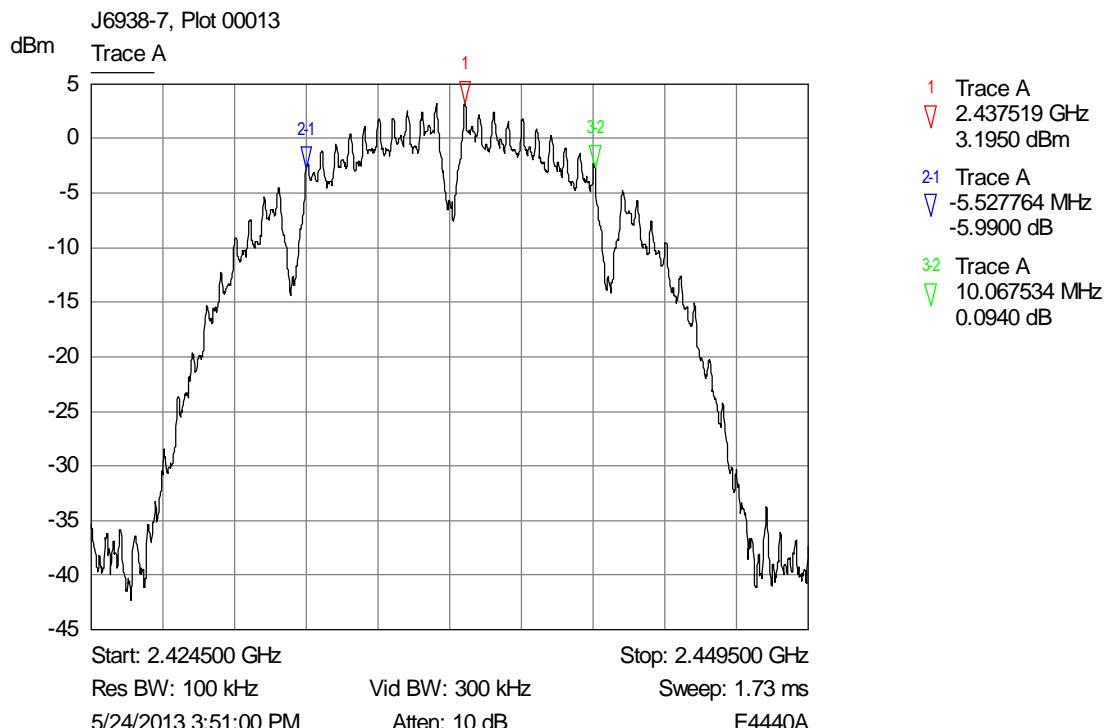
Middle channel (2437 MHz) - 22.5-25GHz - Horizontal

6.3 6dB bandwidth / occupied bandwidth plots

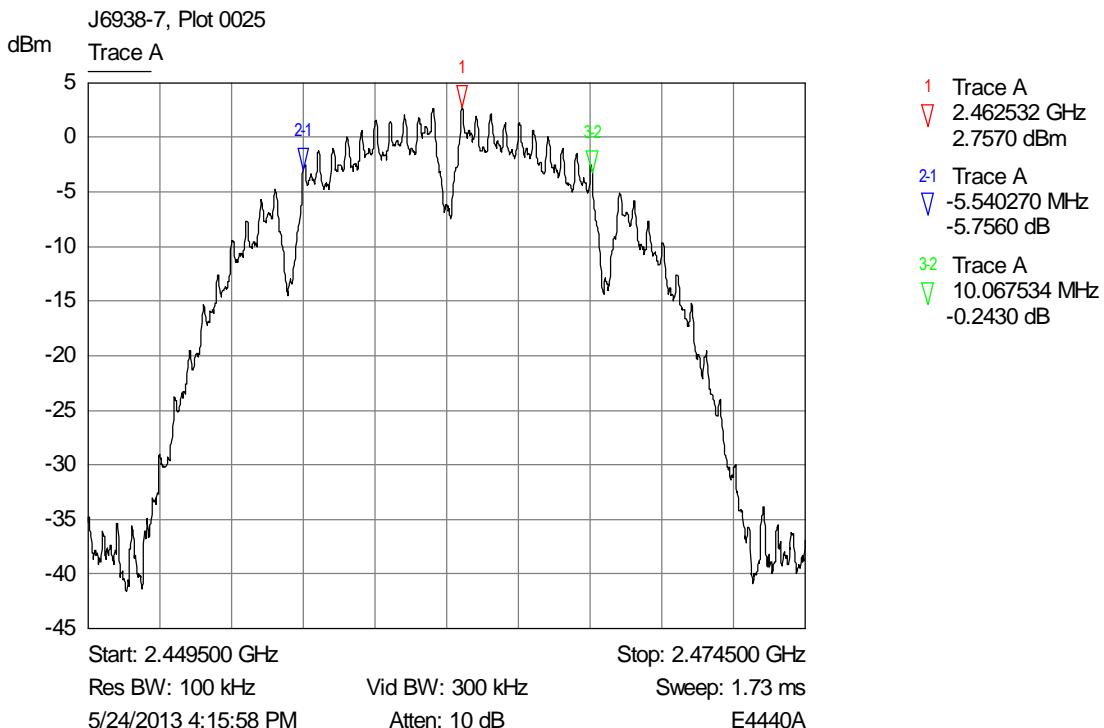
6.3.1 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 1 MBPS



Low channel

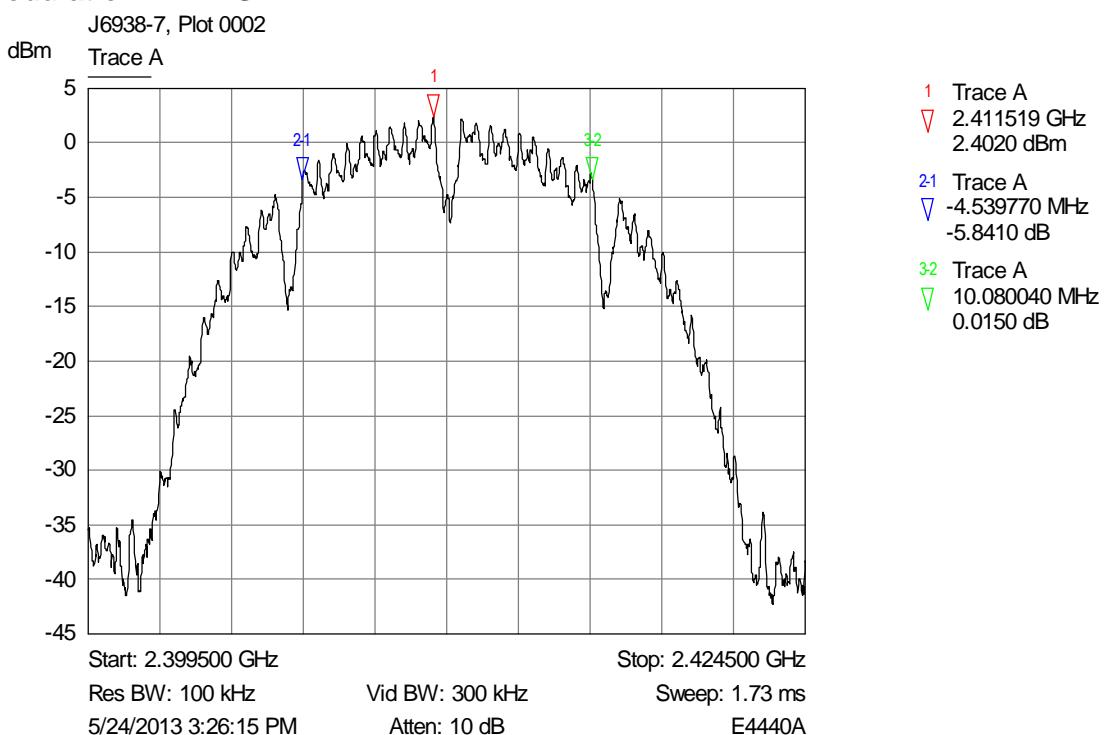


Mid channel

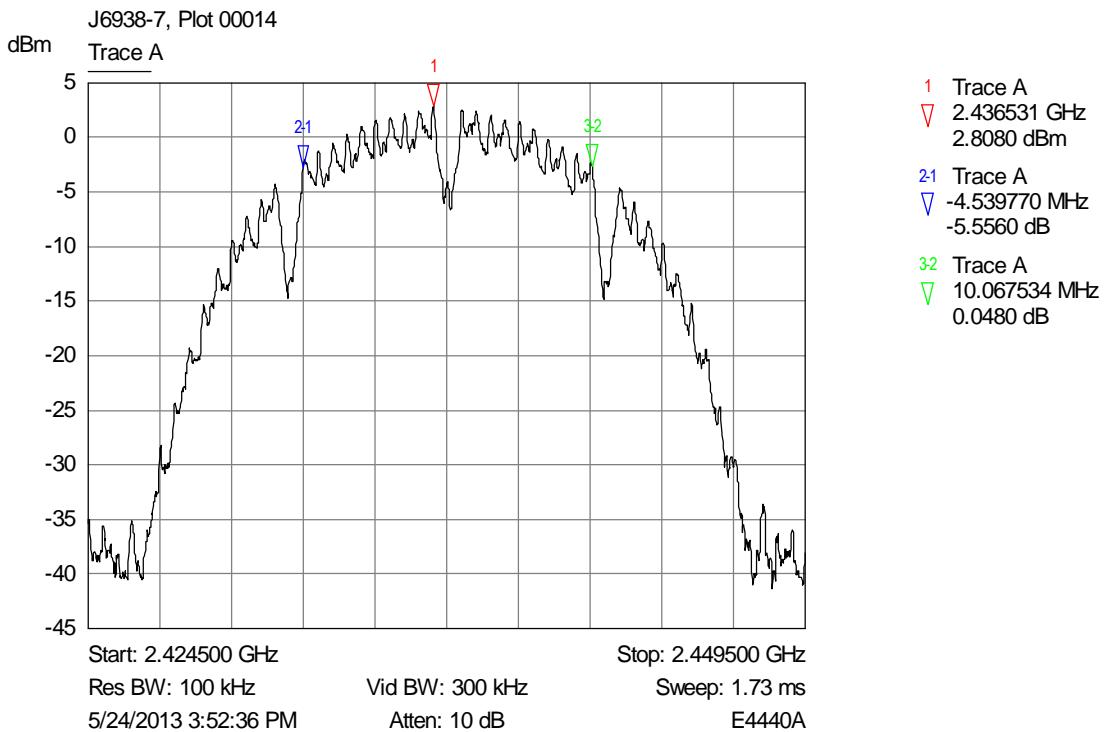


High channel

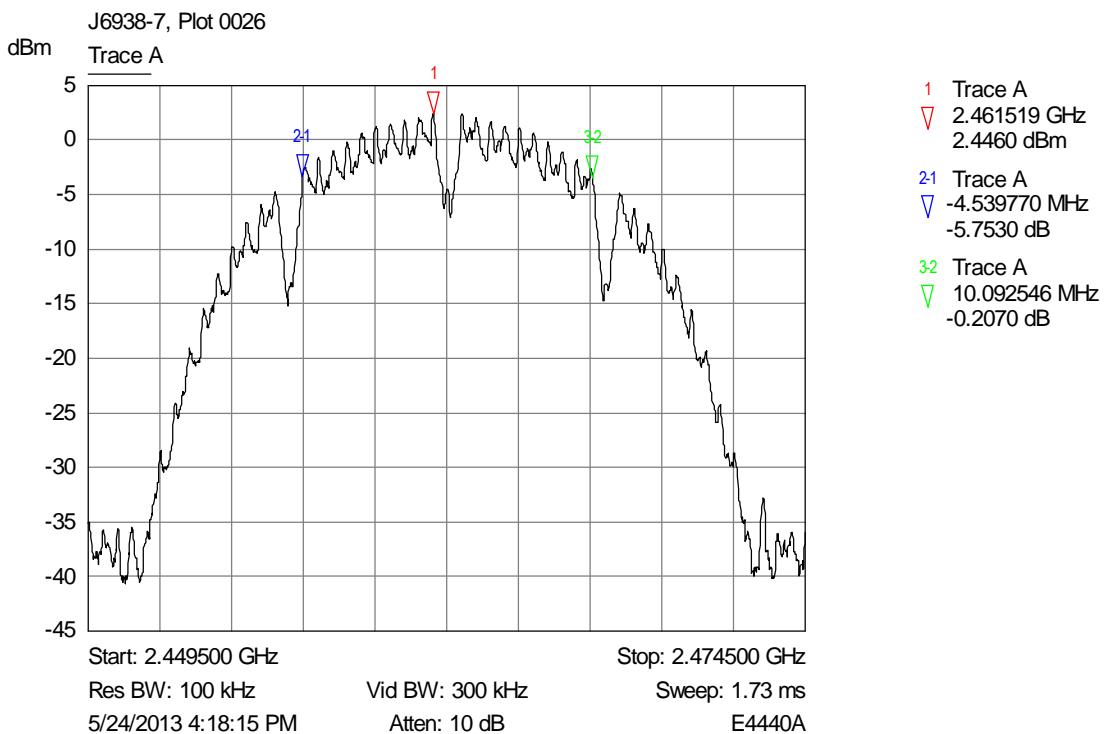
6.3.2 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 2 MBPS



Low channel

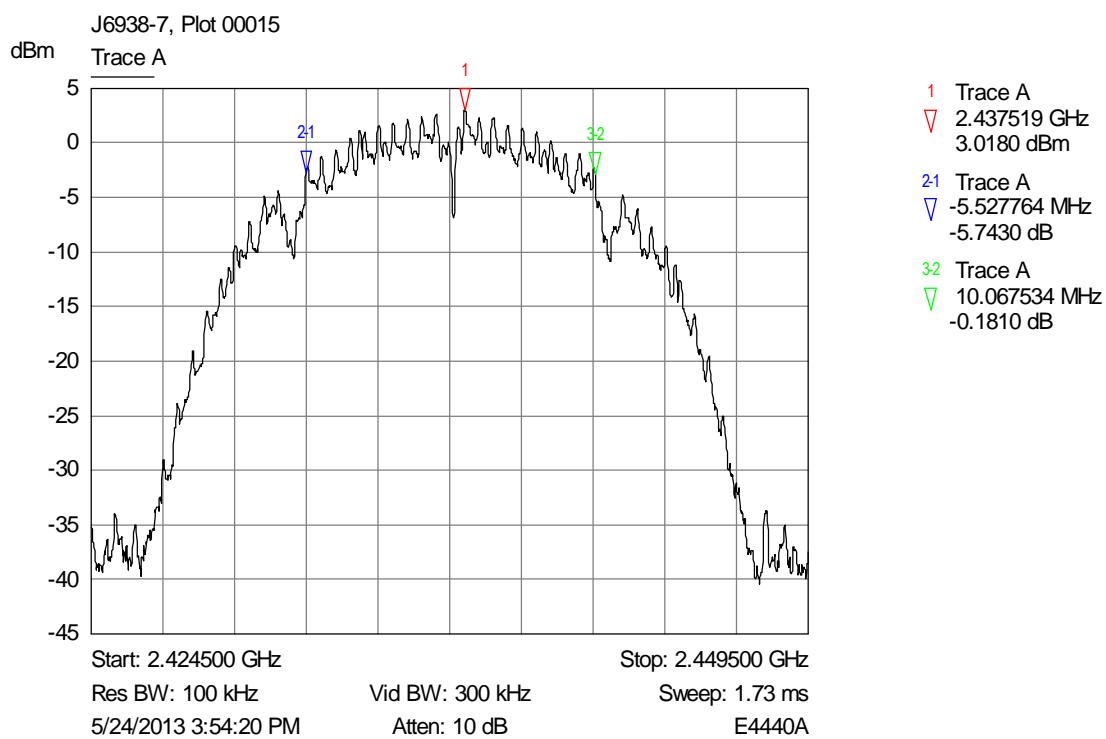
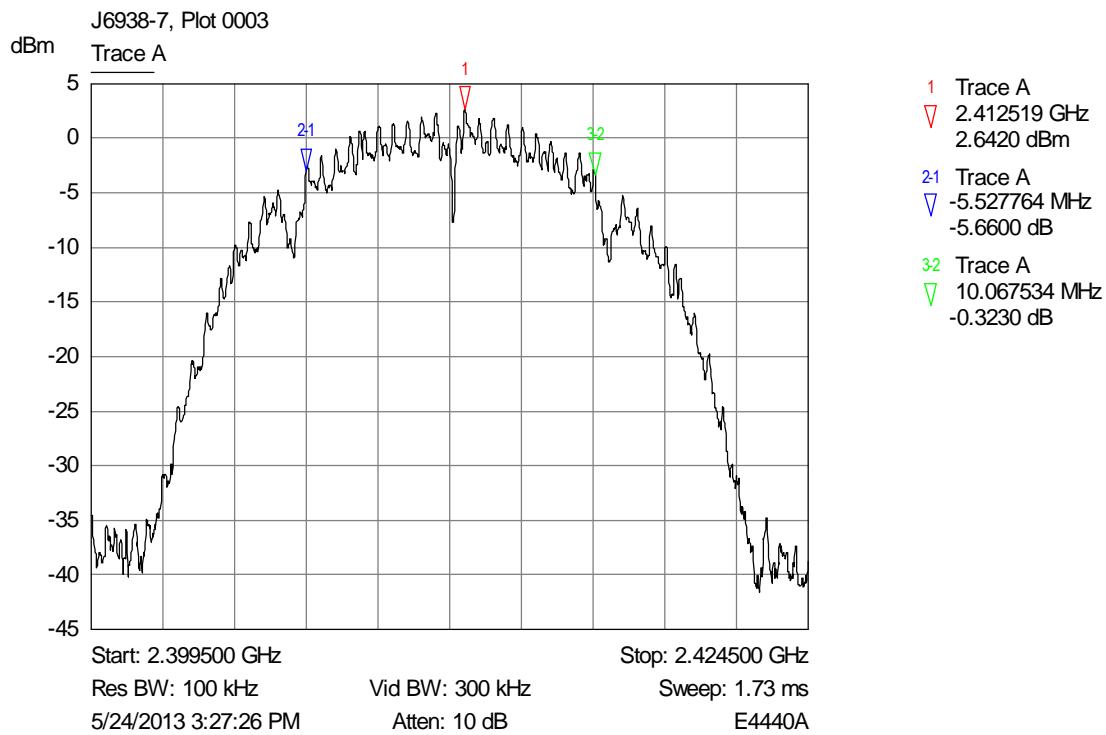


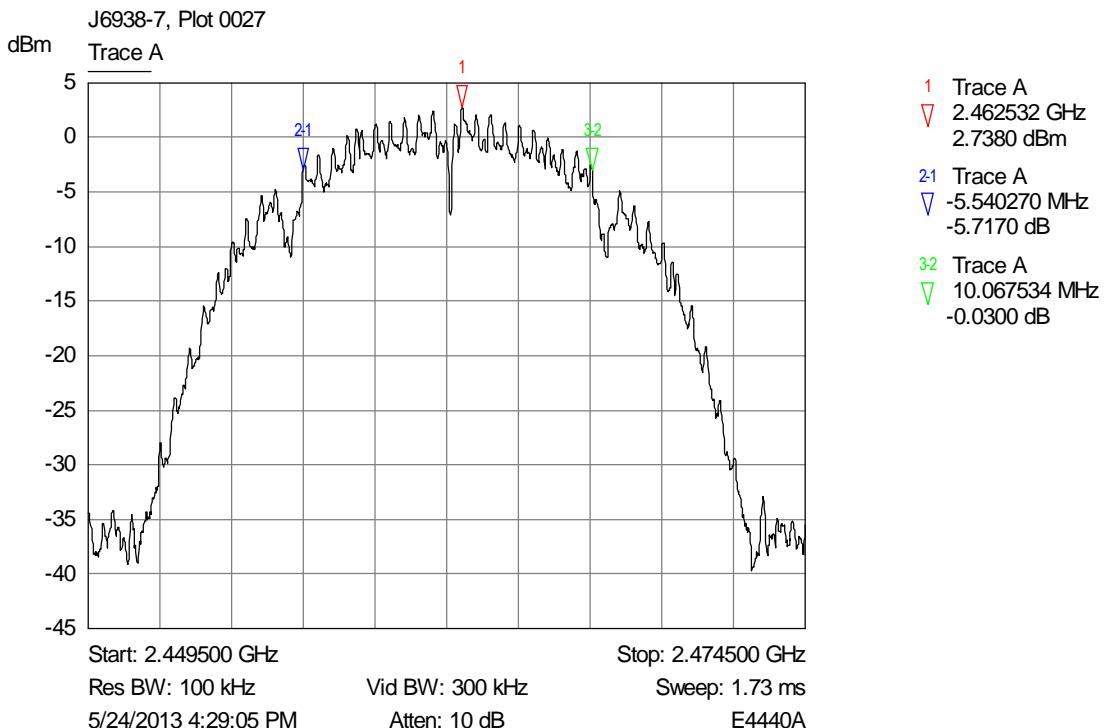
Mid channel



High channel

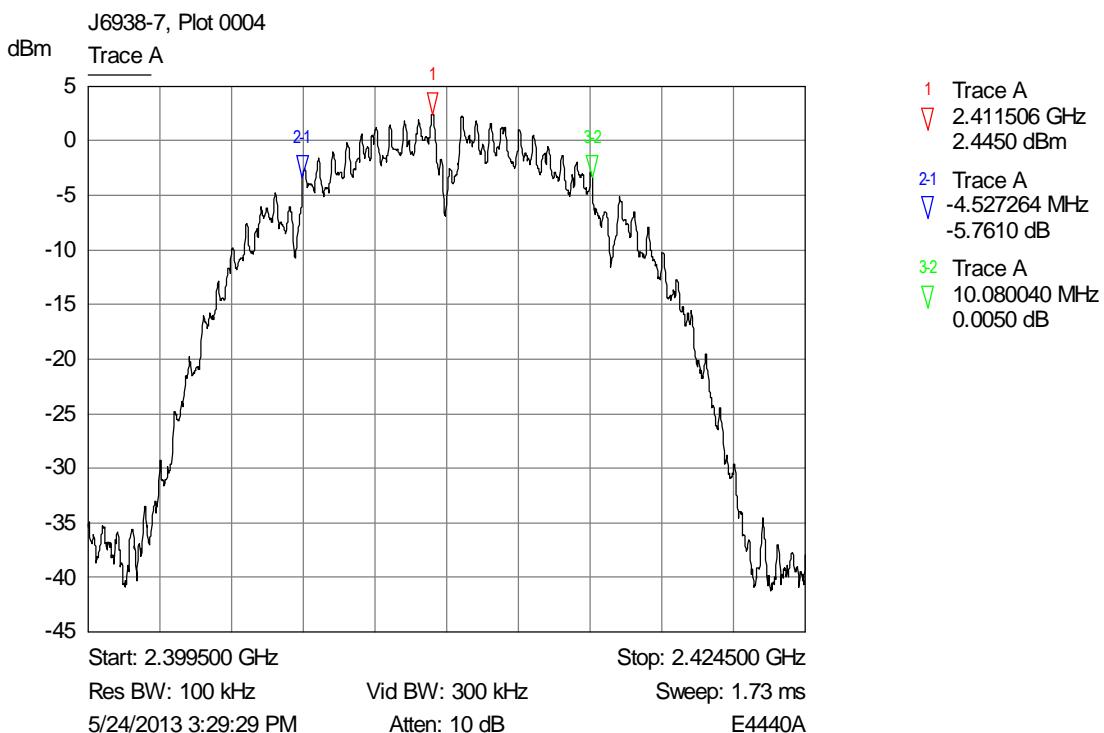
6.3.3 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 5.5 MBPS



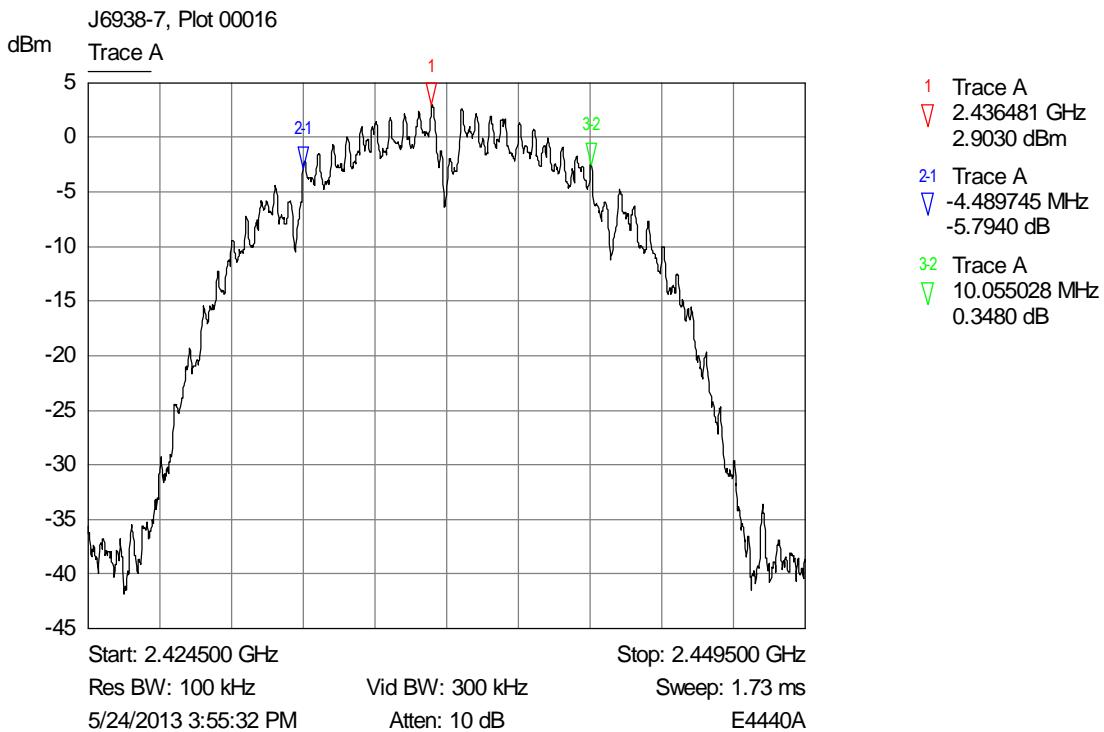


High channel

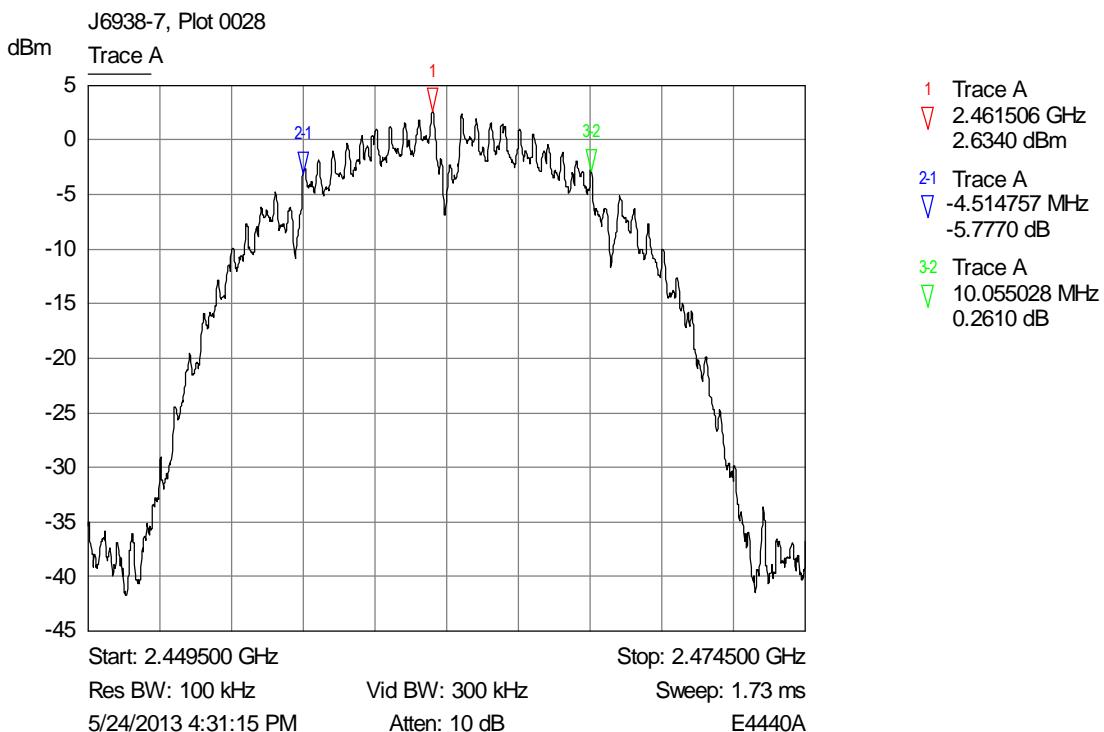
6.3.4 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 11 MBPS



Low channel

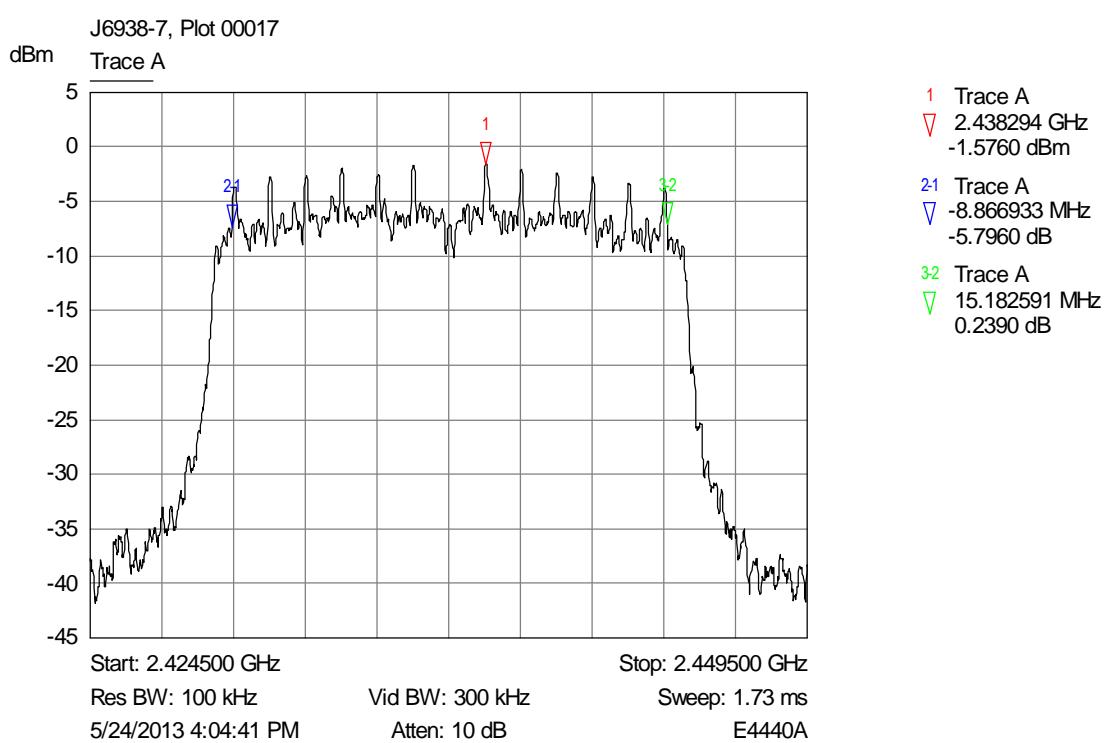
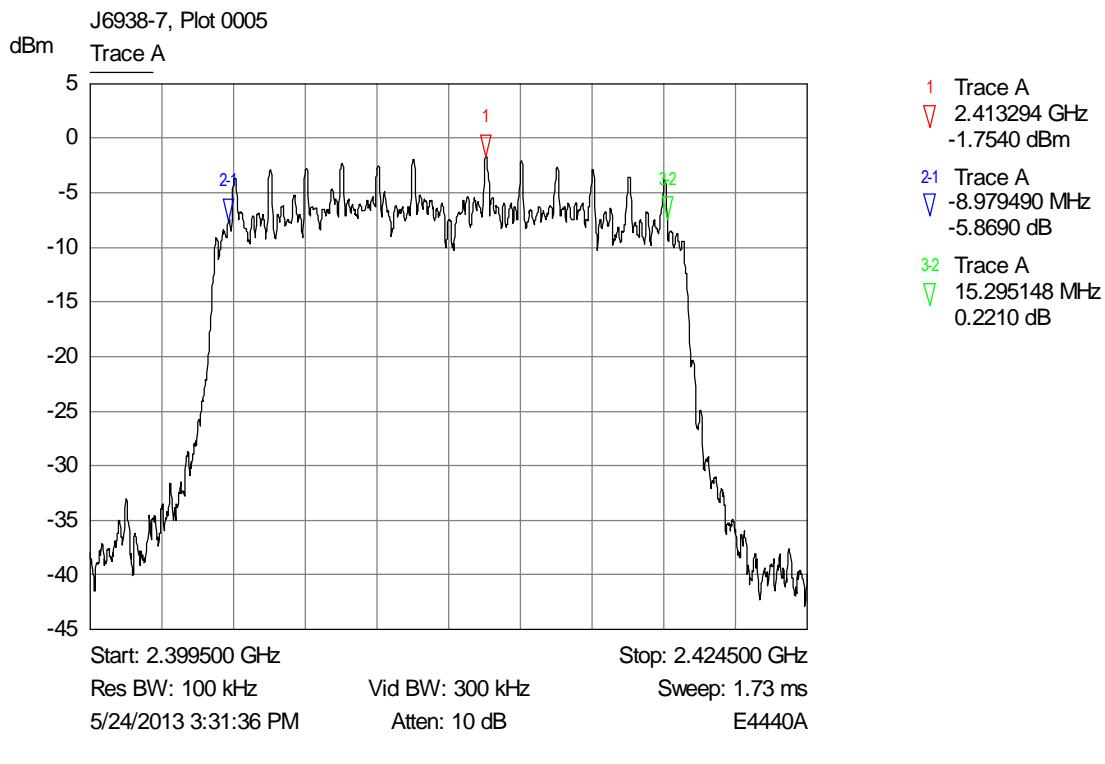


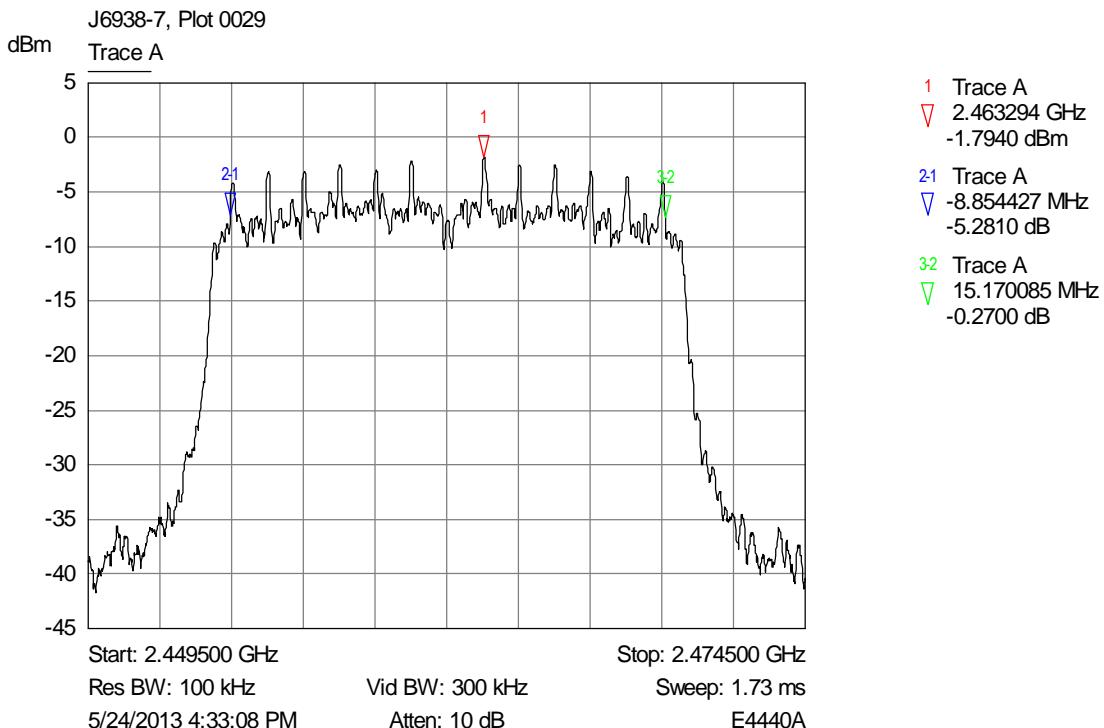
Mid channel



High channel

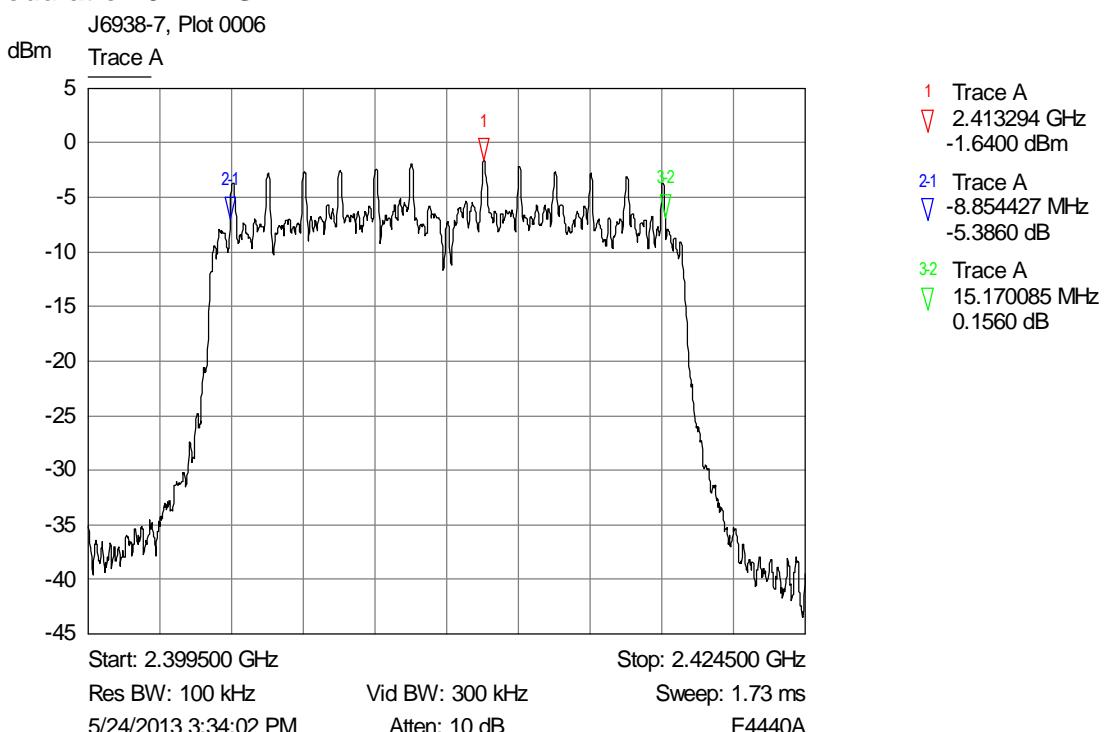
6.3.5 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 6 MBPS



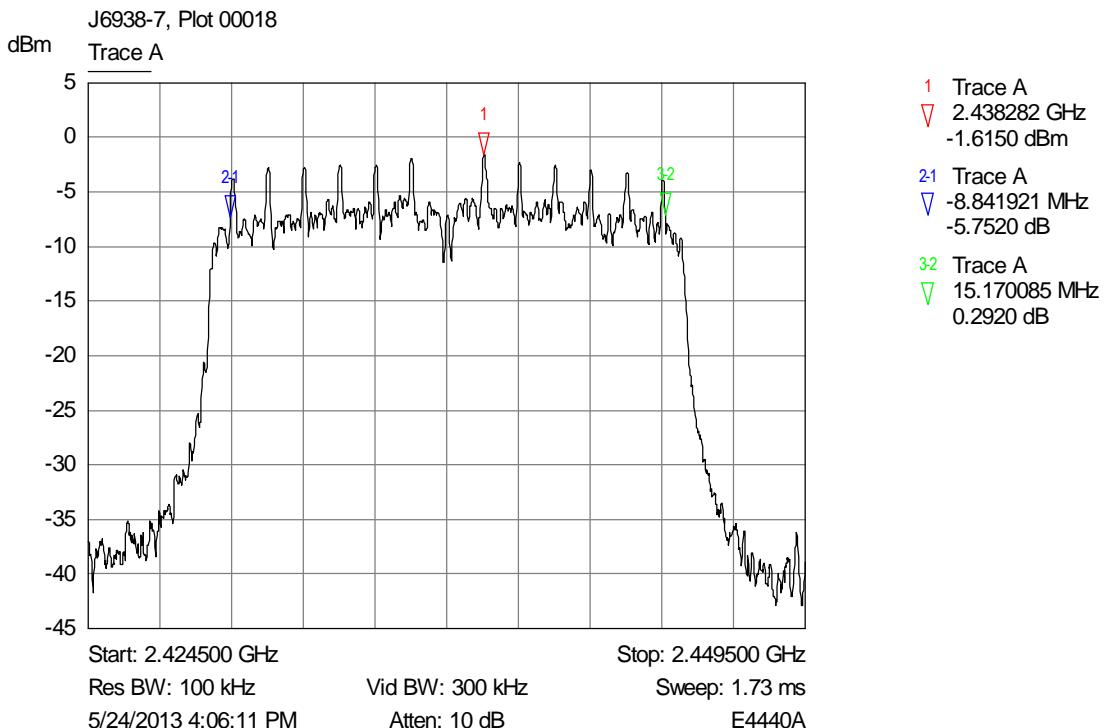


High channel

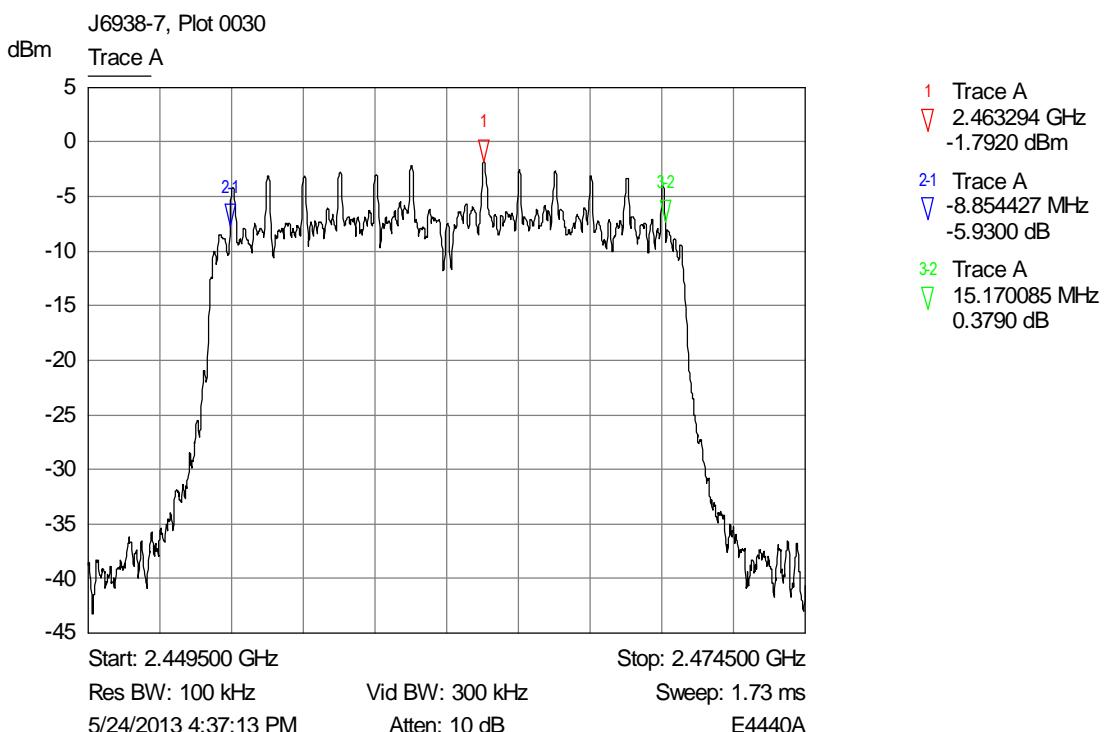
6.3.6 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 9 MBPS



Low channel

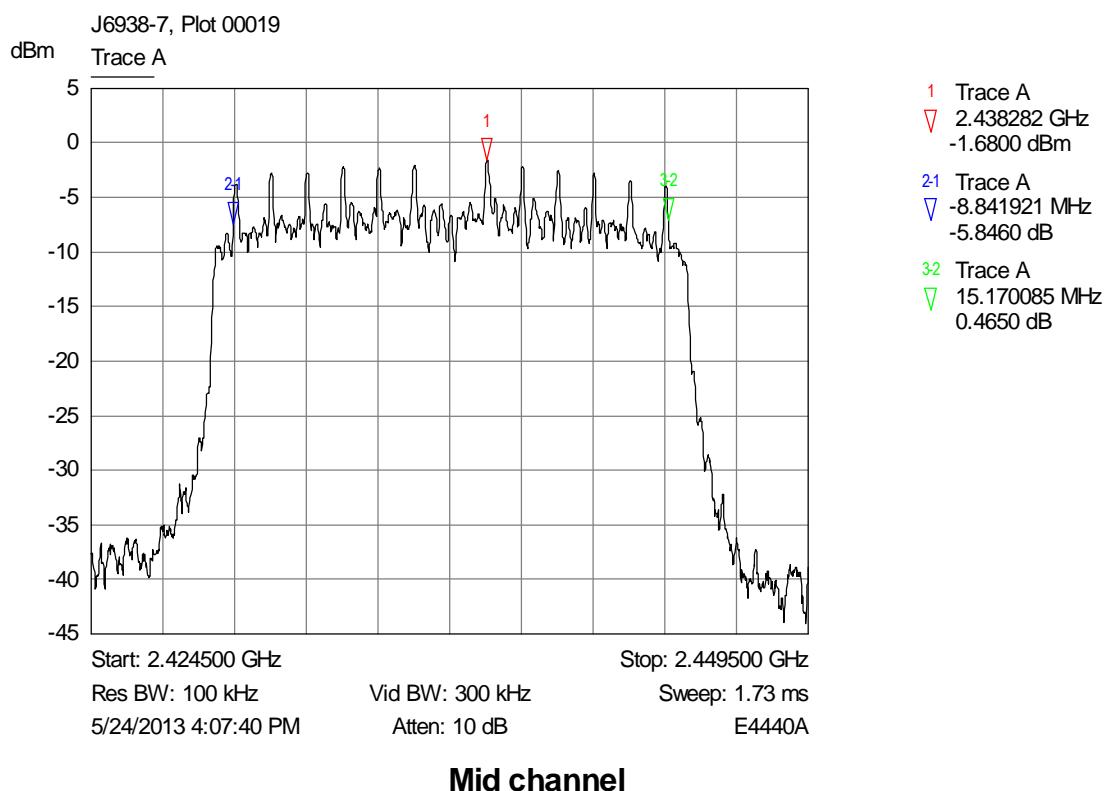
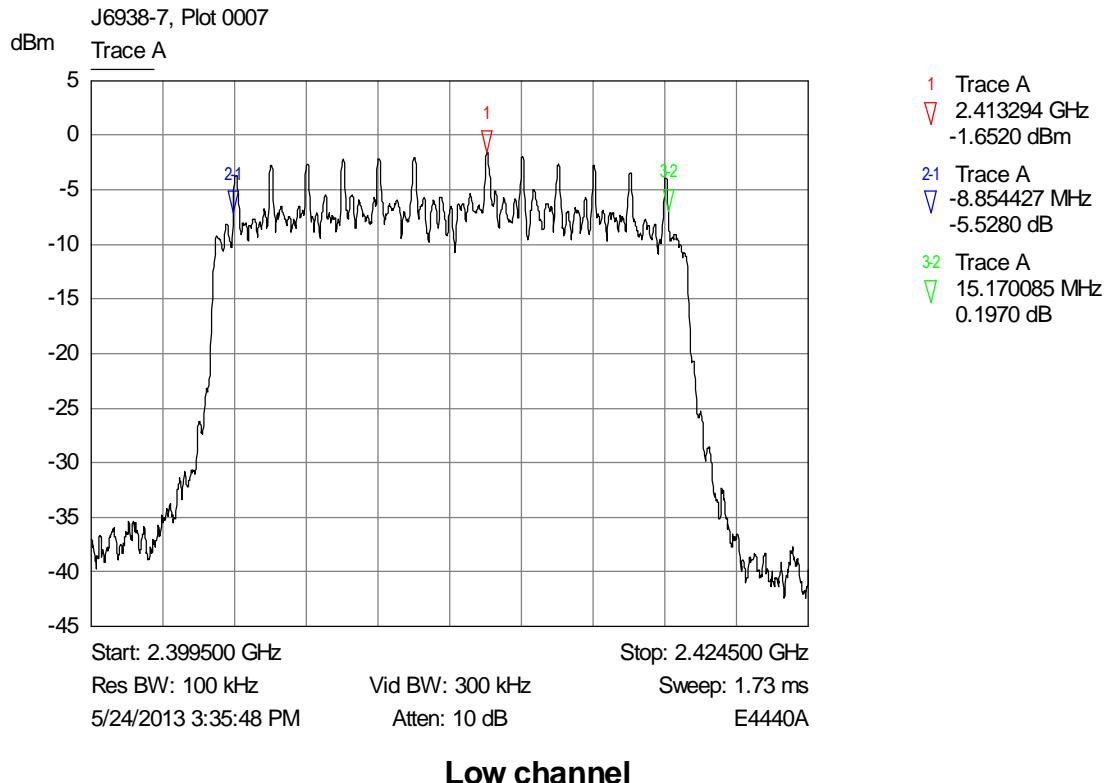


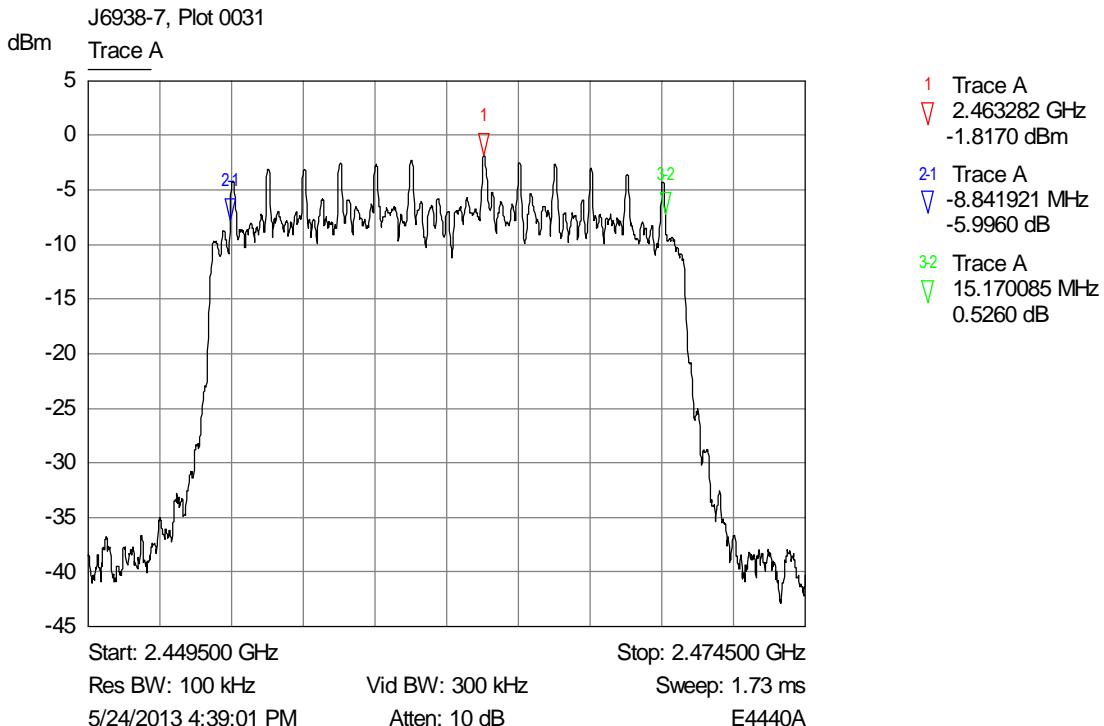
Mid channel



High channel

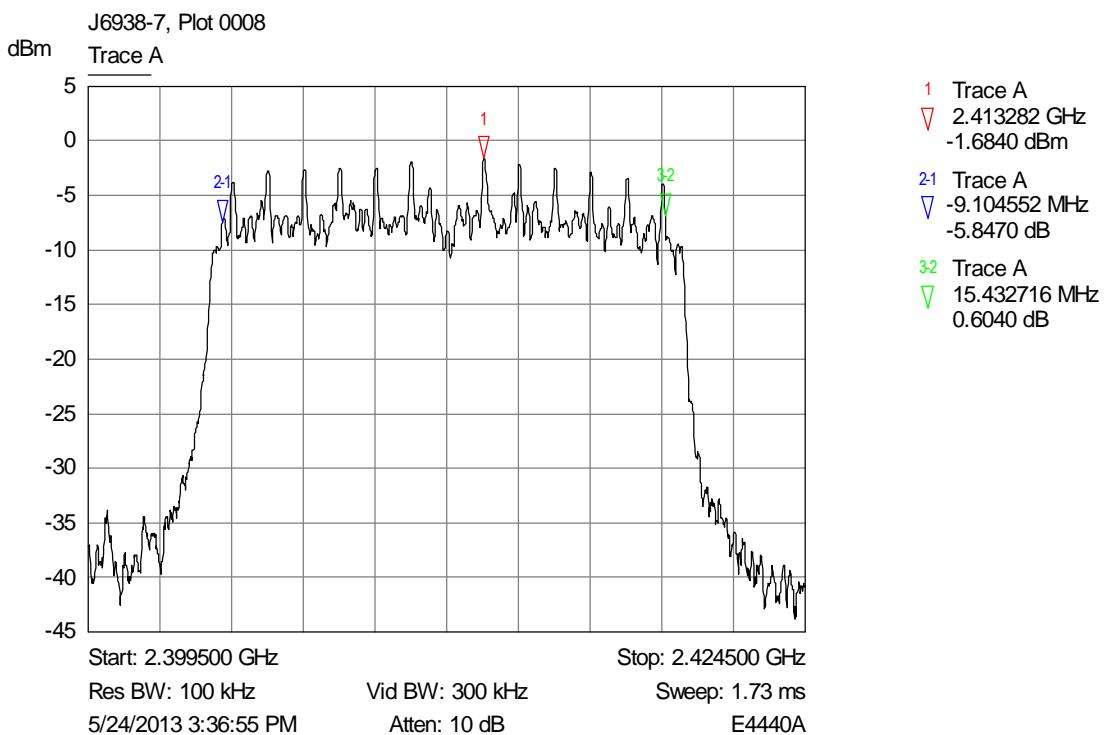
6.3.7 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 12 MBPS



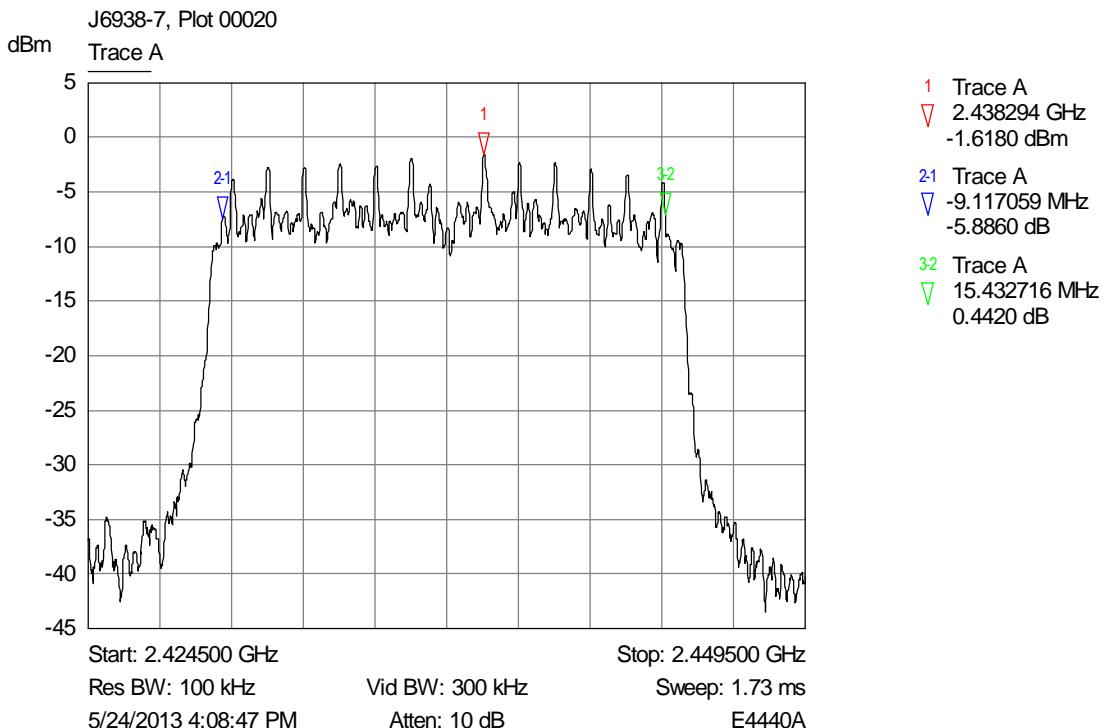


High channel

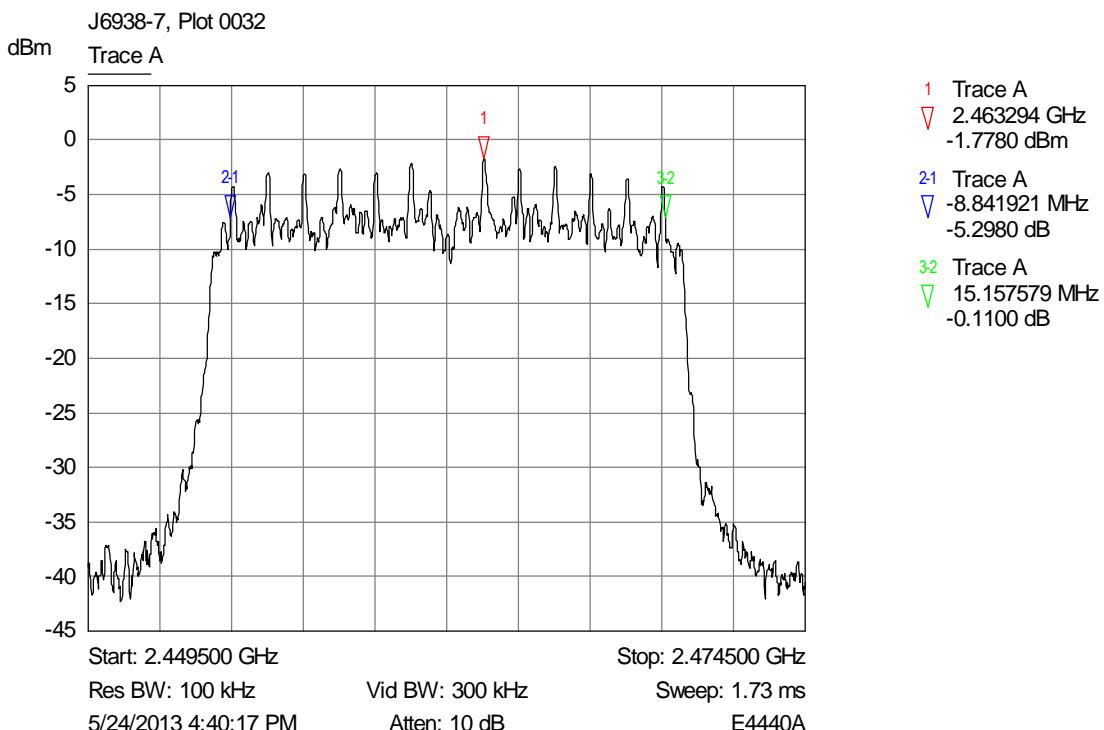
6.3.8 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 18 MBPS



Low channel

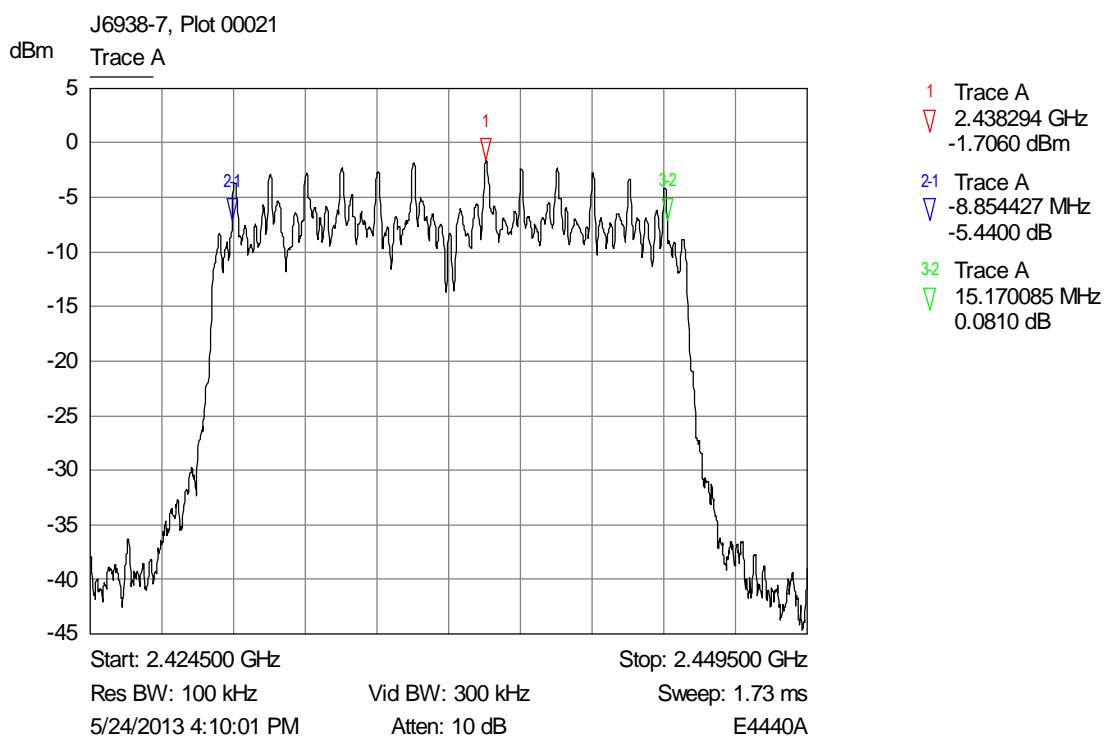
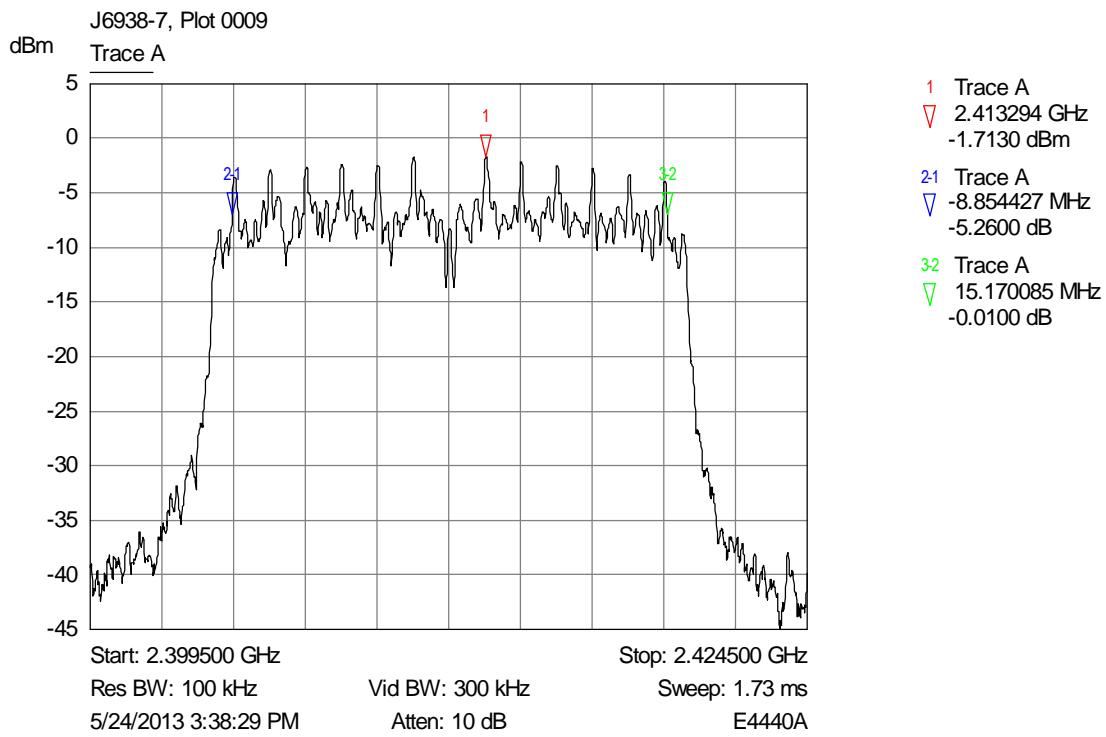


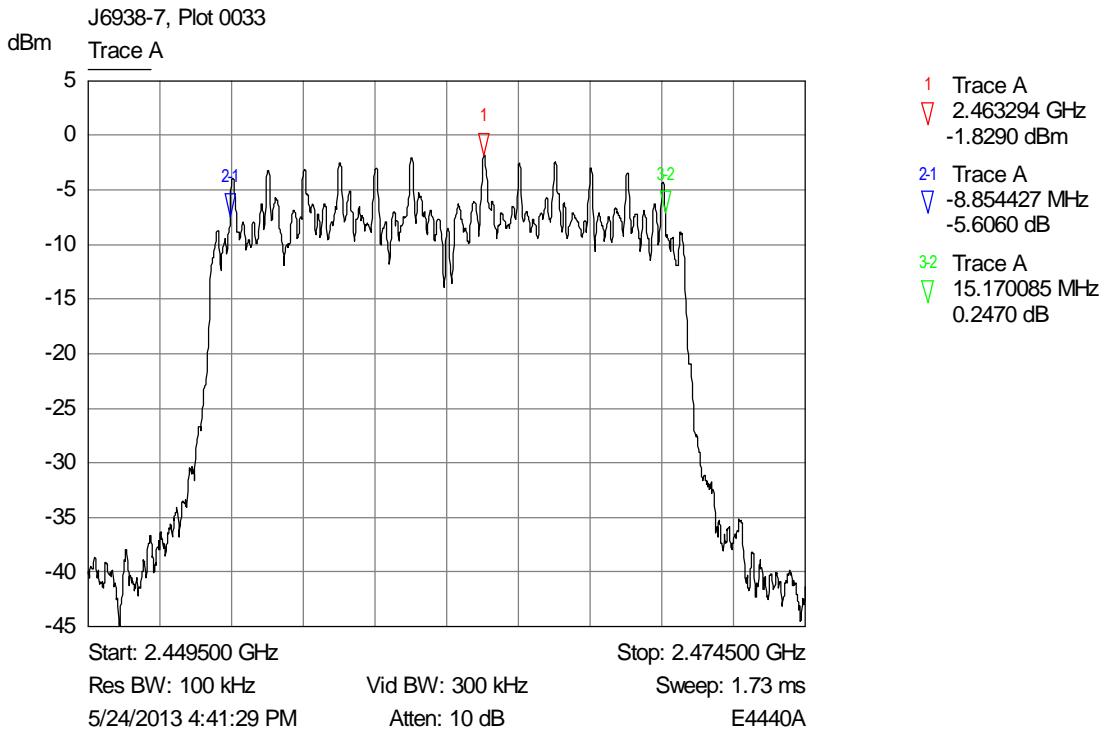
Mid channel



High channel

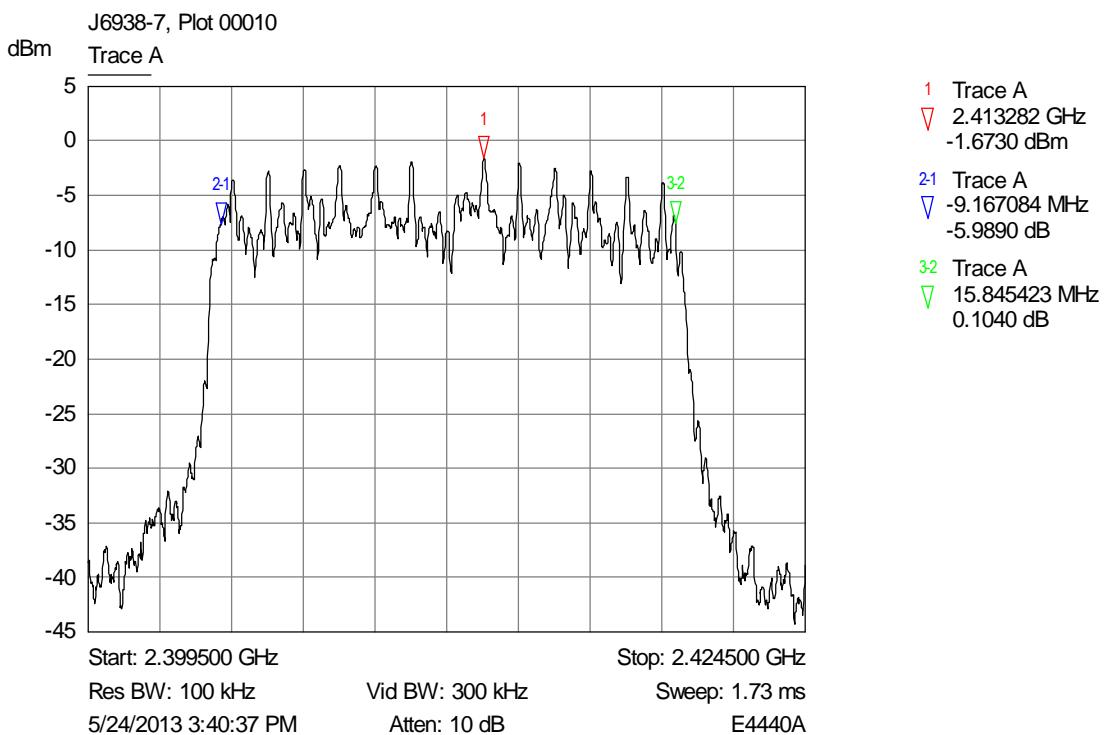
6.3.9 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 24 MBPS



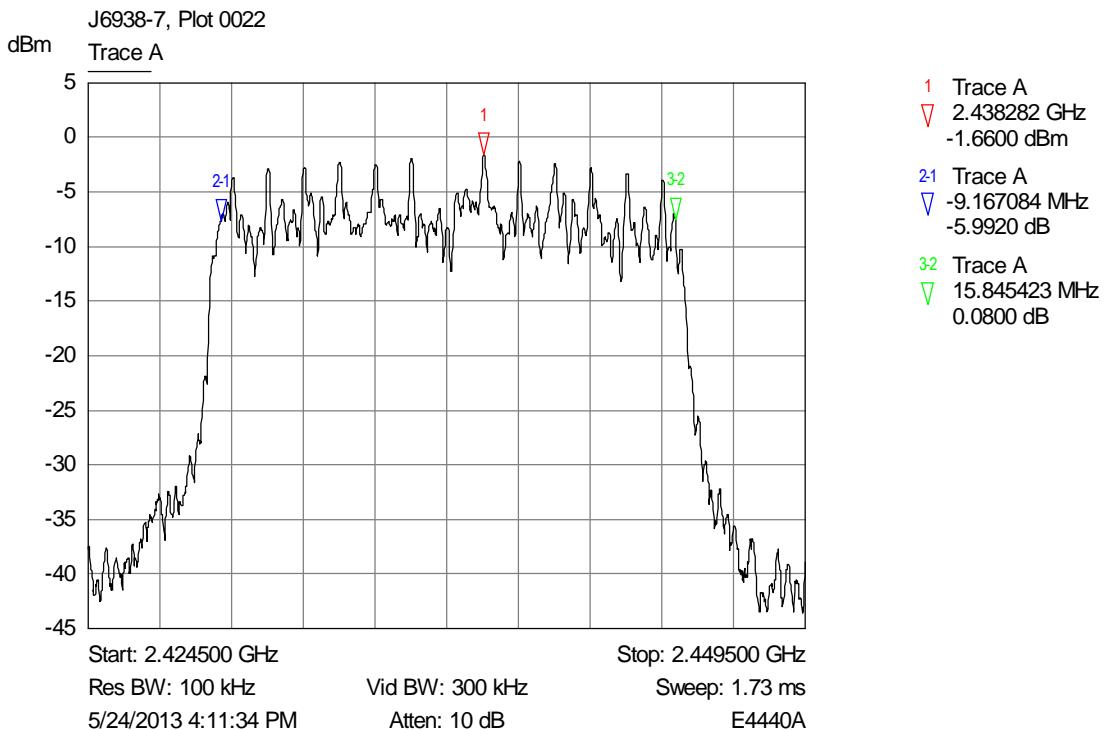


High channel

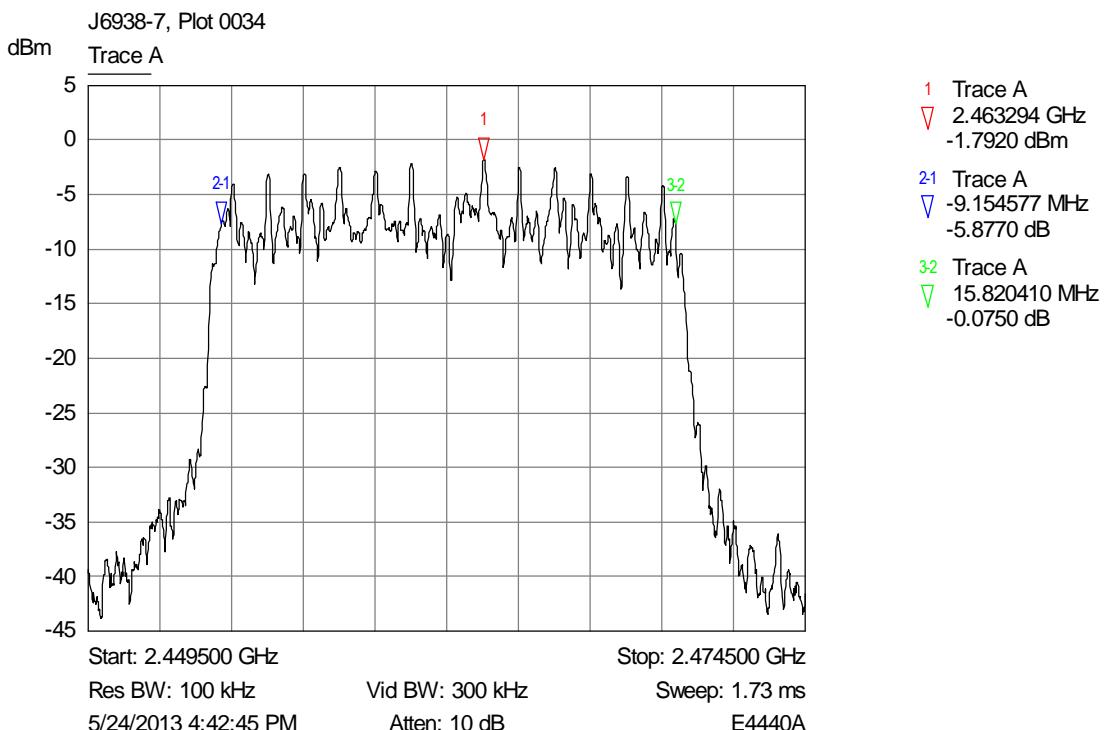
6.3.10 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 36 MBPS



Low channel

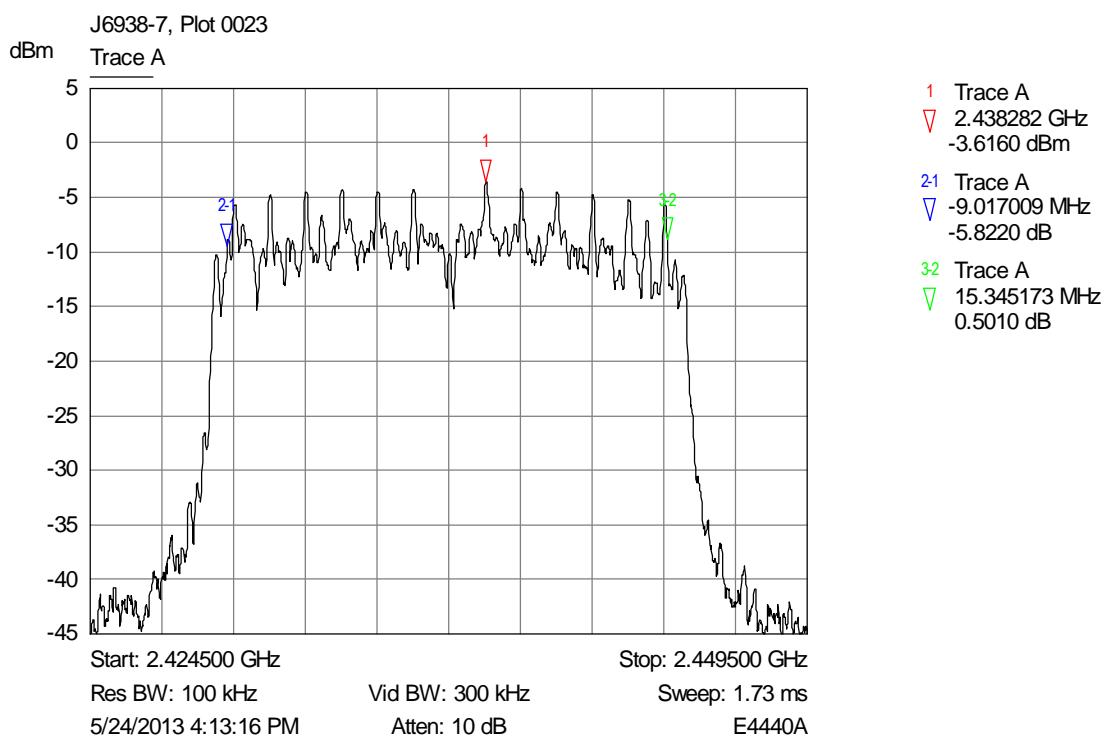
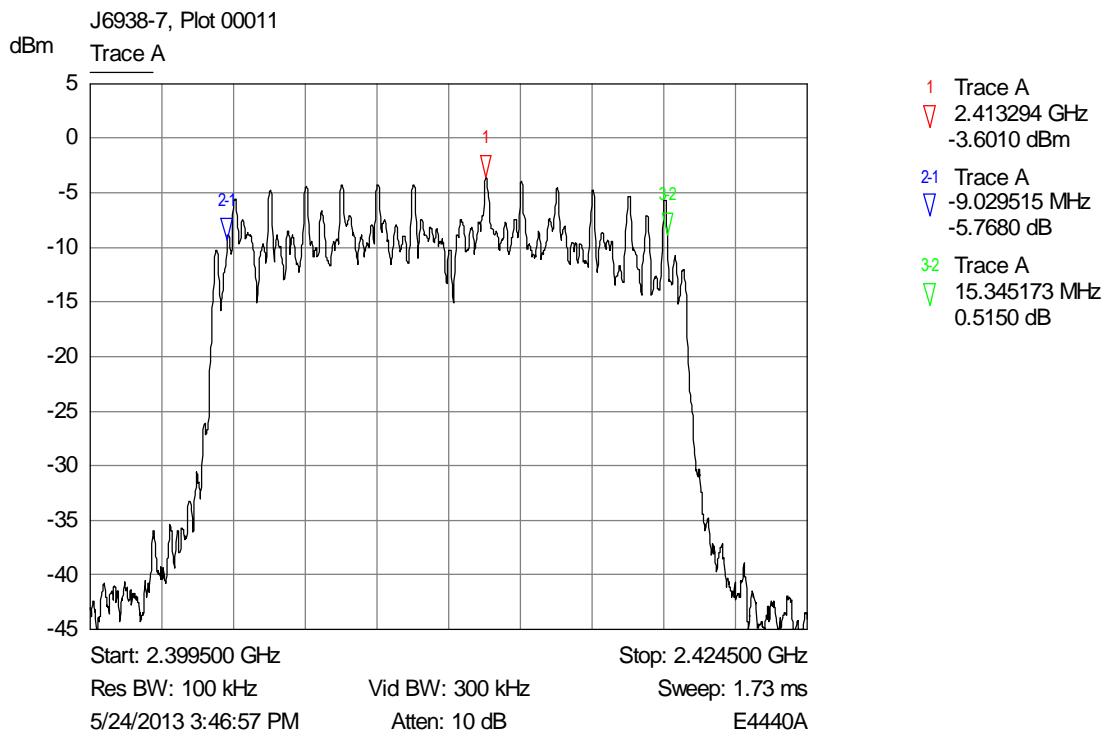


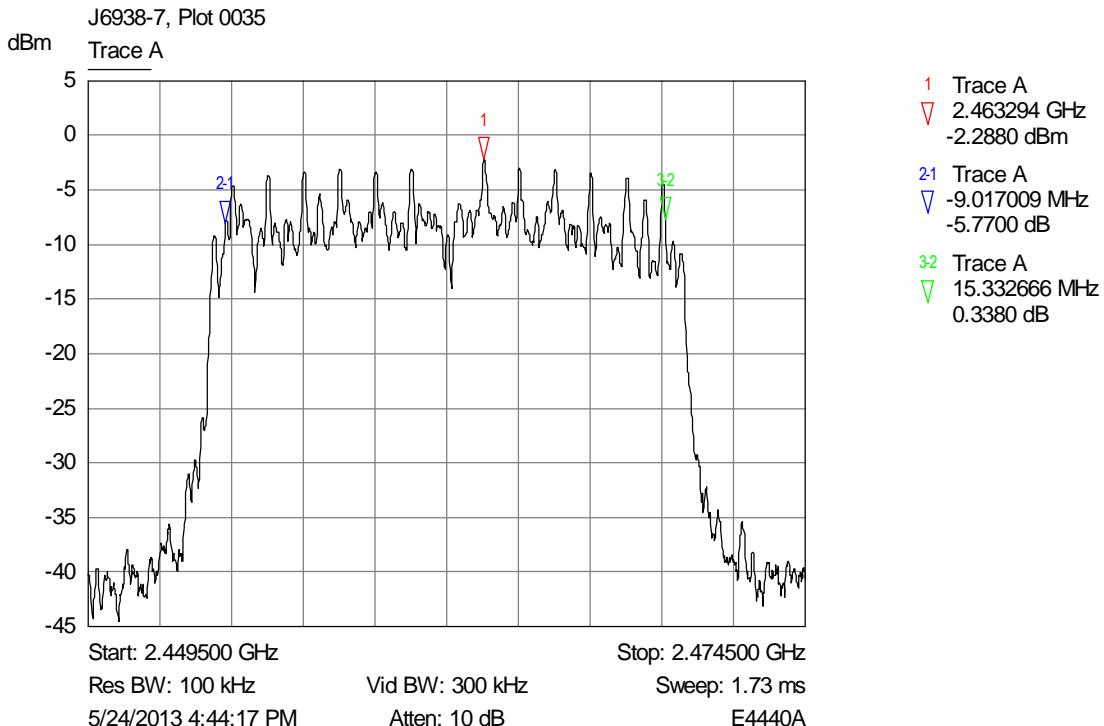
Mid channel



High channel

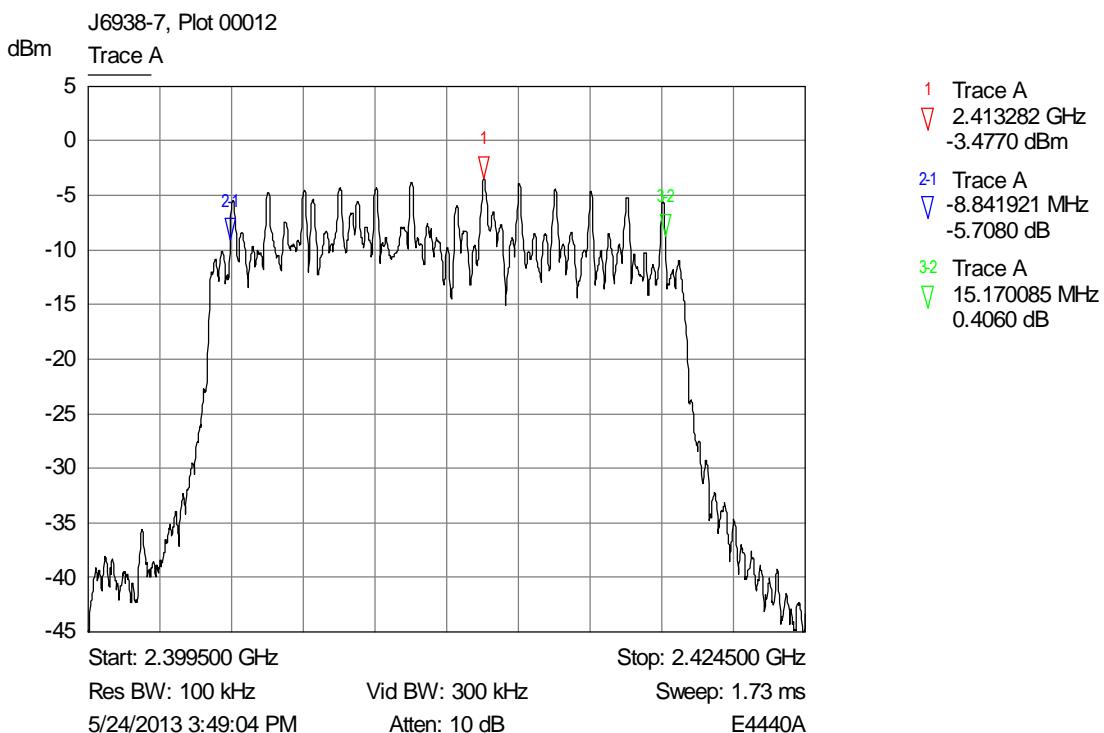
6.3.11 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 48 MBPS



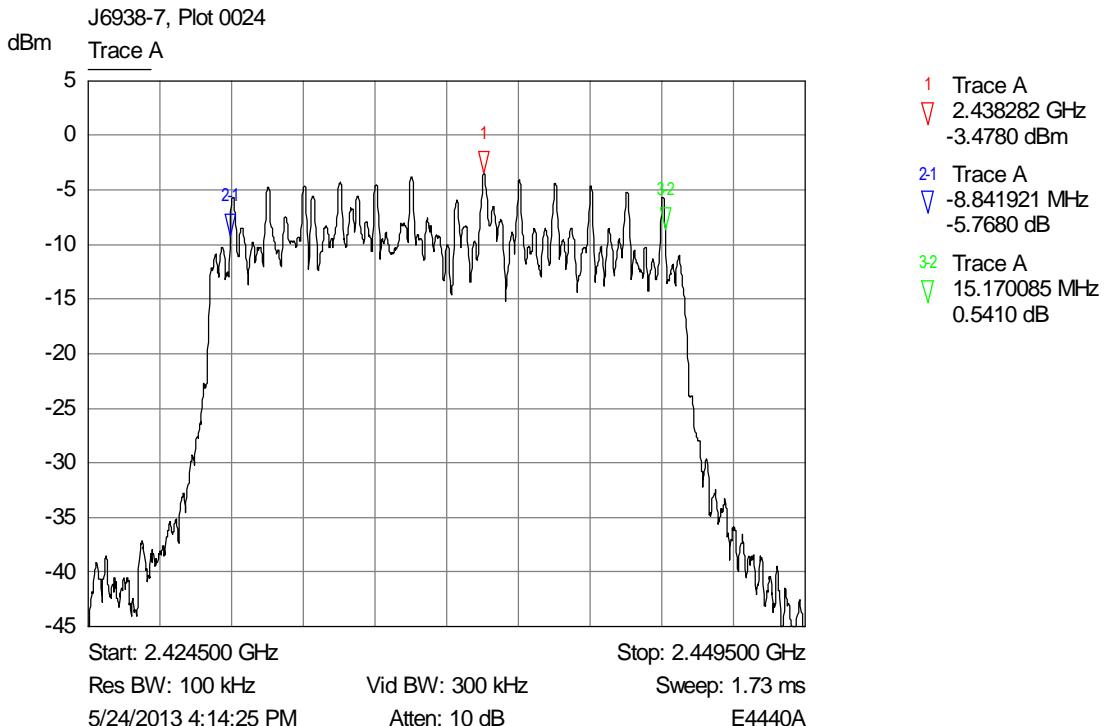


High channel

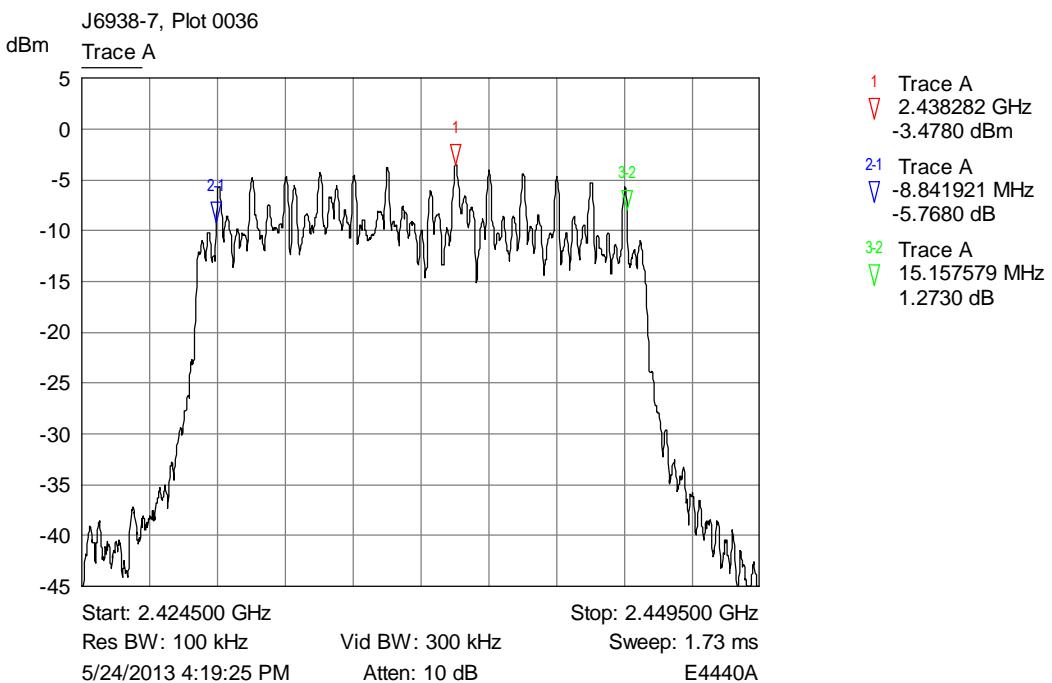
6.3.12 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 54 MBPS



Low channel



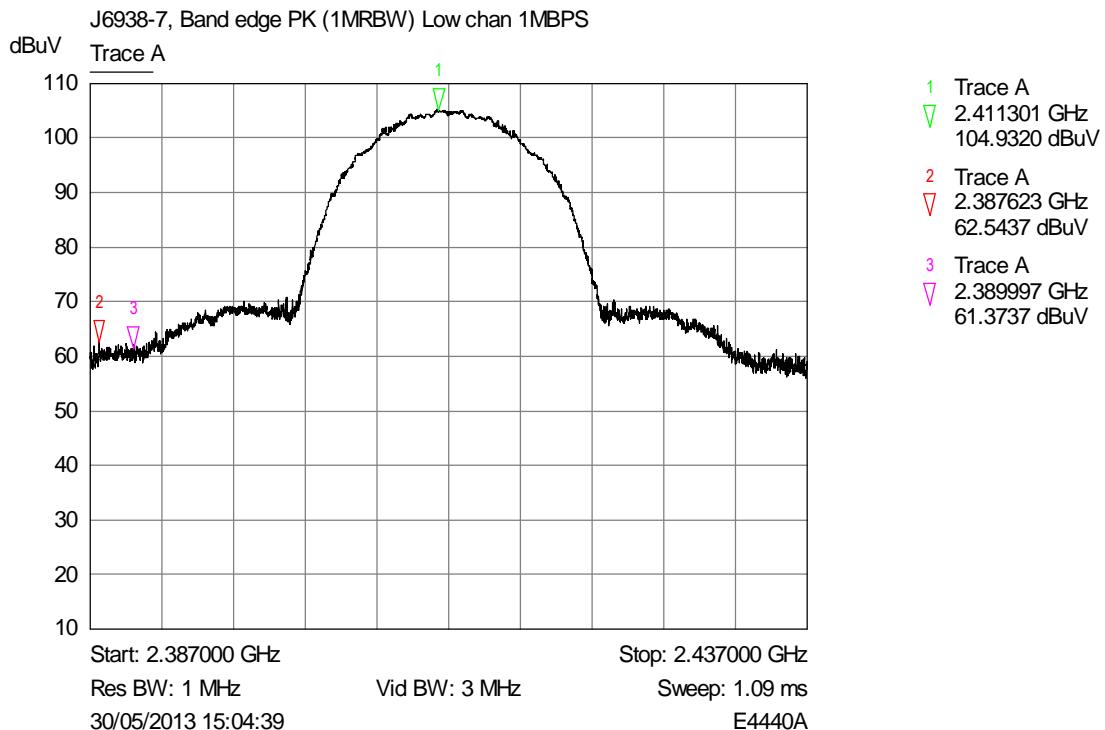
Mid channel



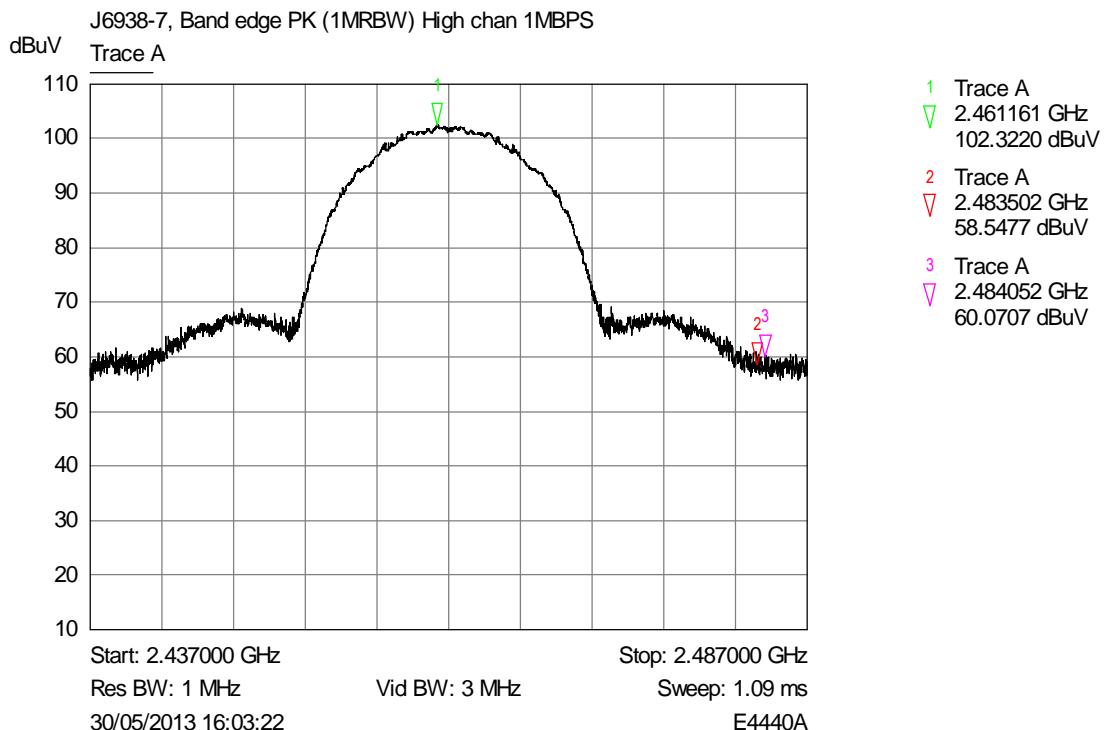
High channel

6.4 Band edge compliance plots

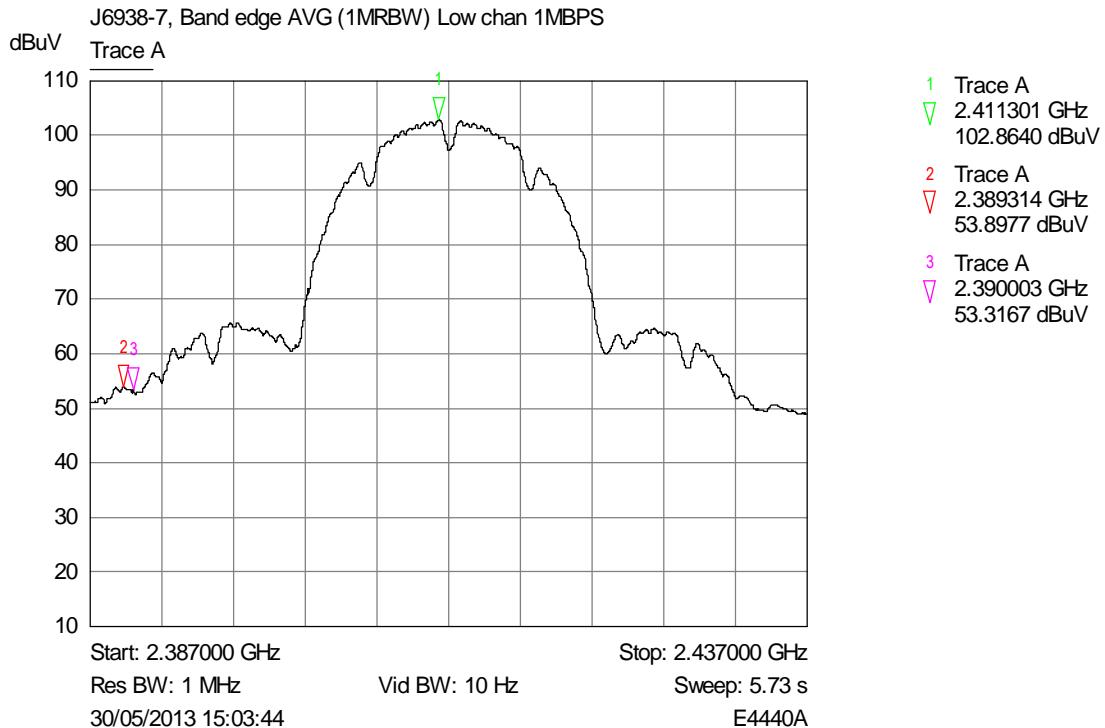
6.4.1 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 1 MBPS



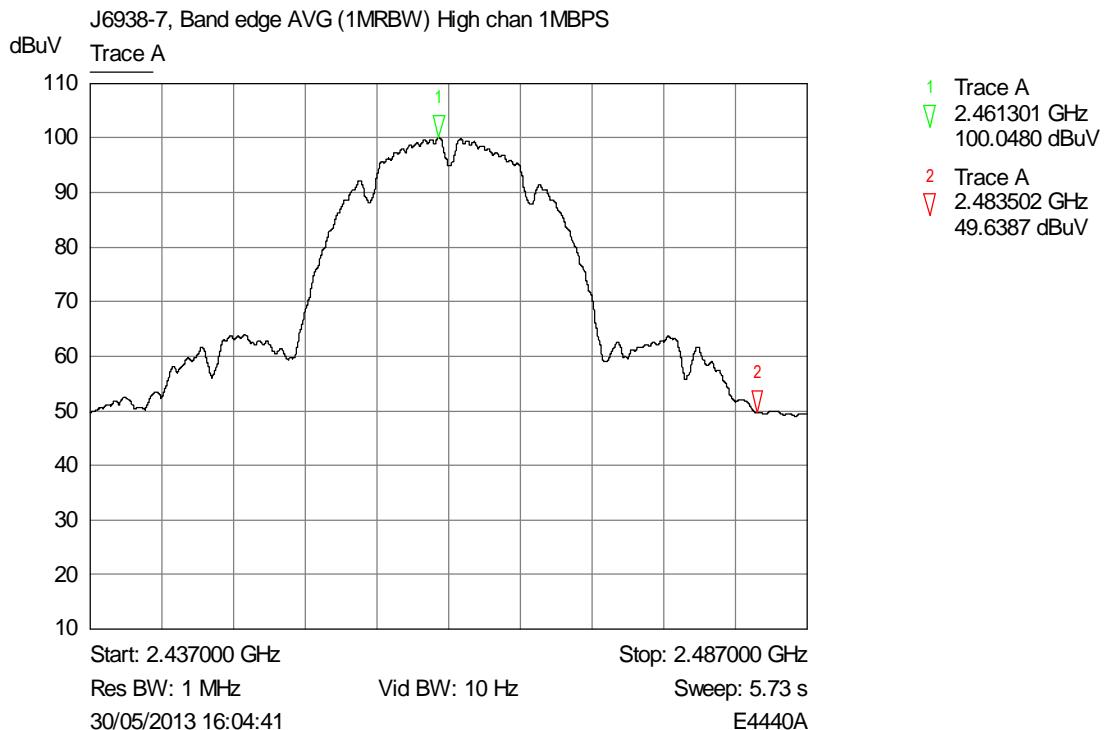
Restricted Band: Low channel Peak Plot



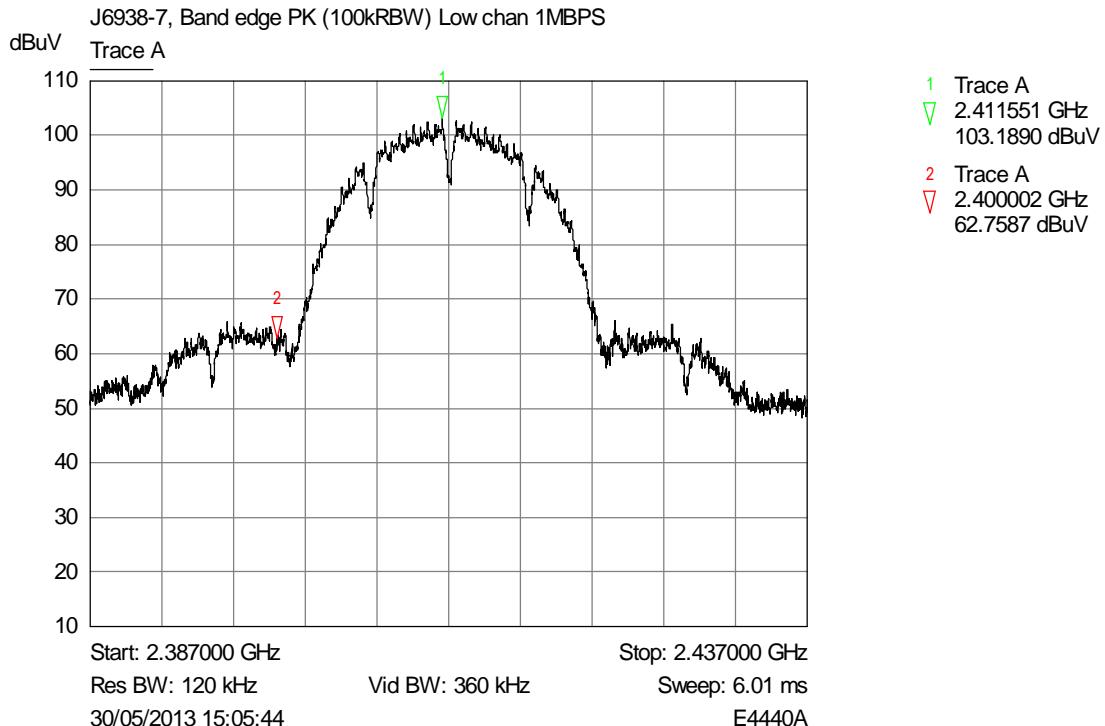
Restricted Band: High channel Peak Plot



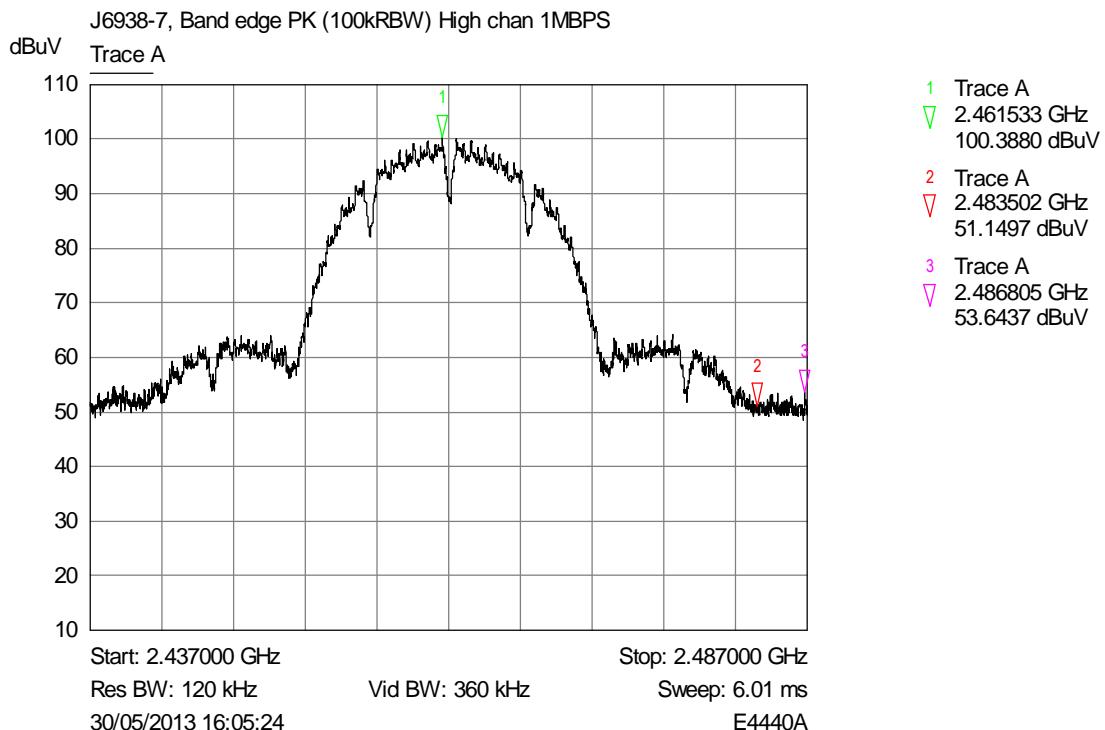
Restricted Band: Low channel Average Plot



Restricted Band: High channel Average Plot

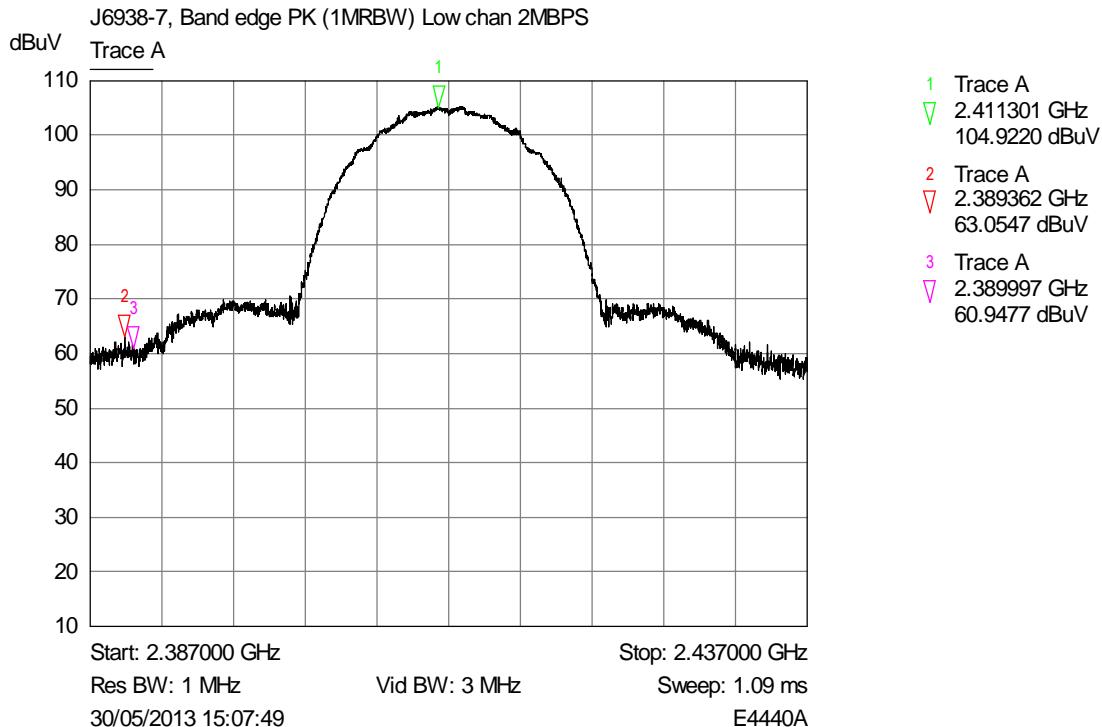


Band Edge: Low channel

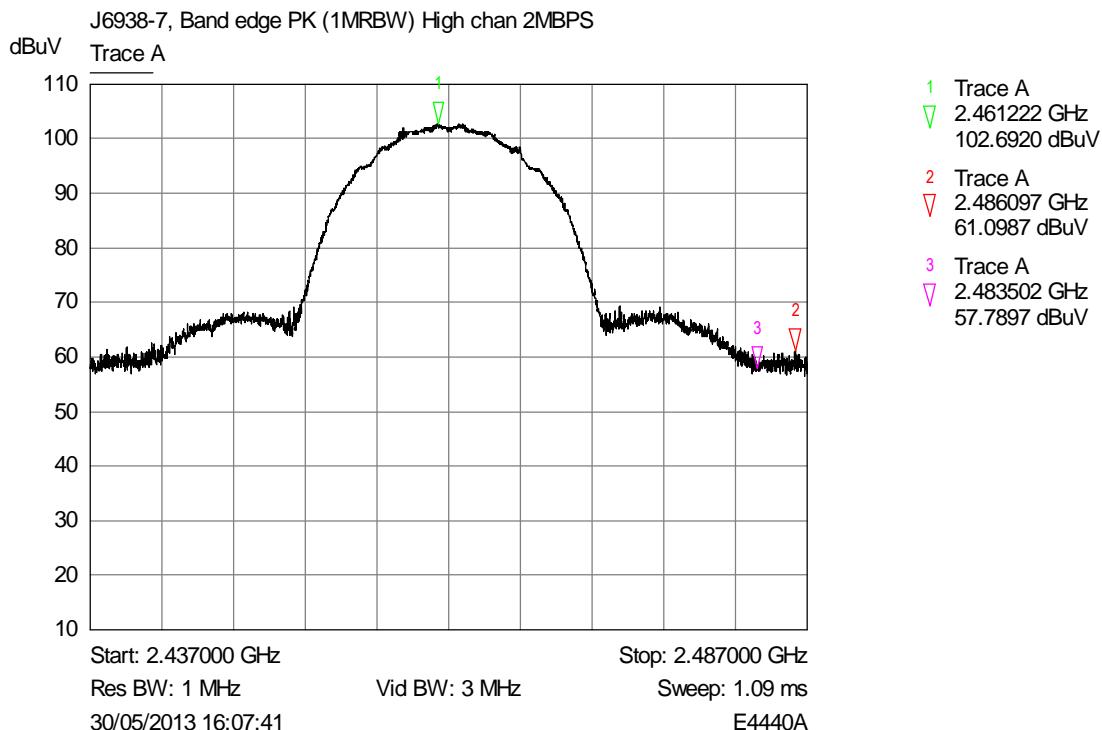


Band Edge: High channel

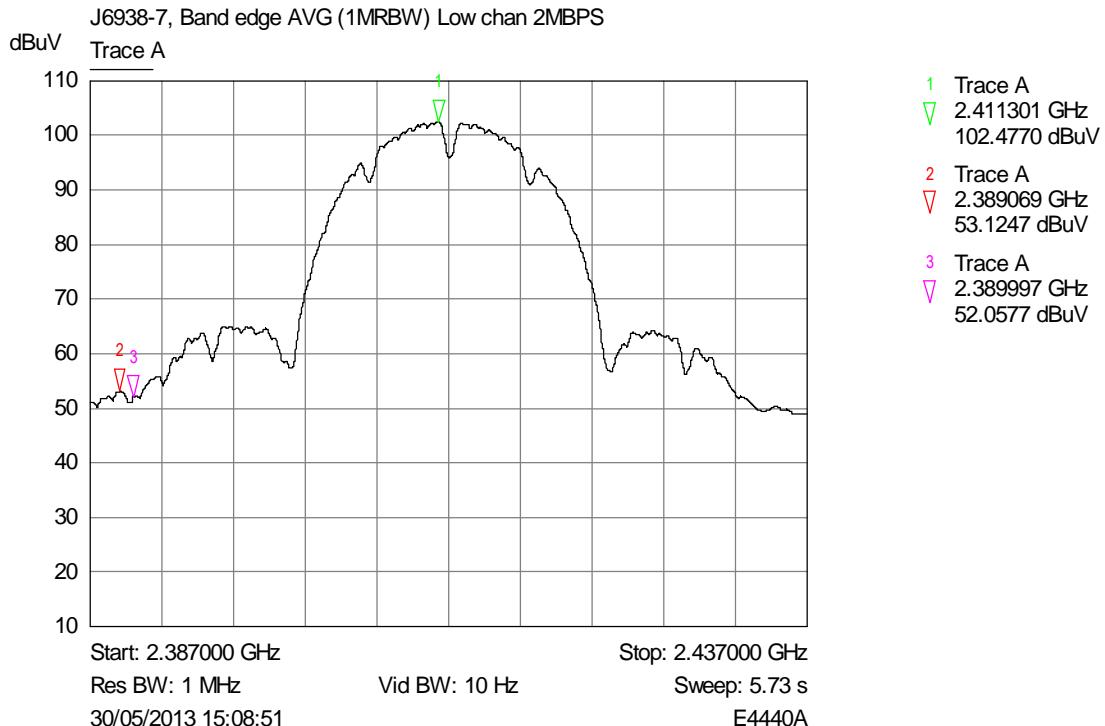
6.4.2 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 2 MBPS



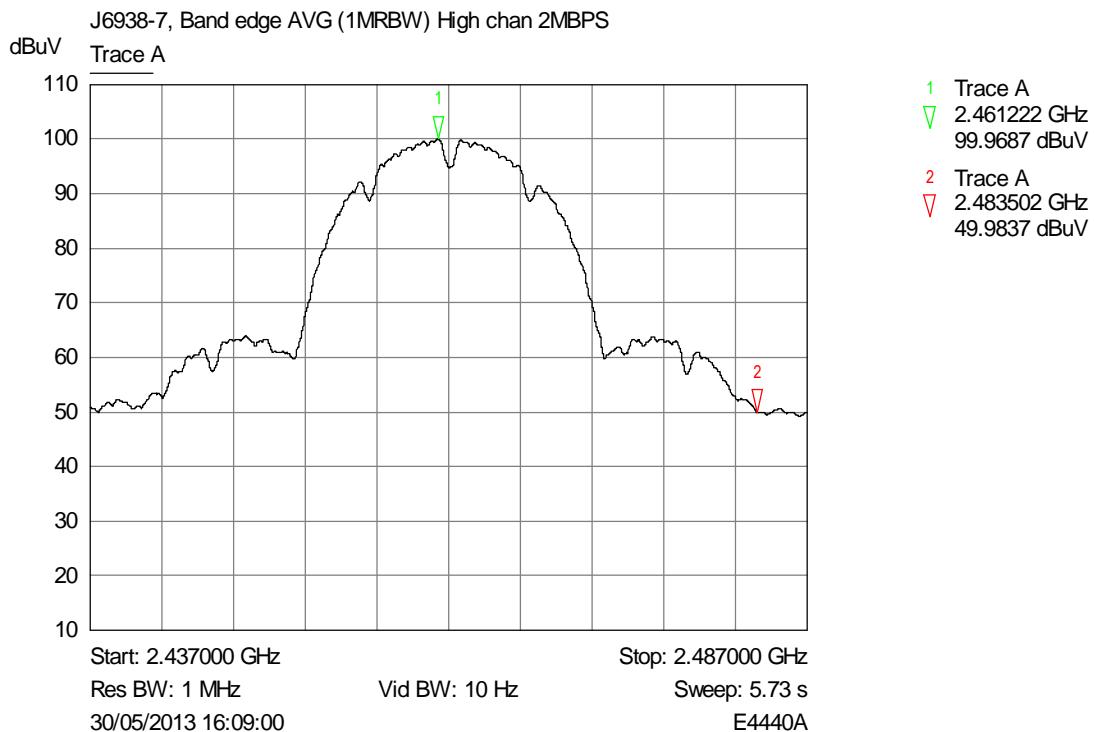
Restricted Band: Low channel Peak plot



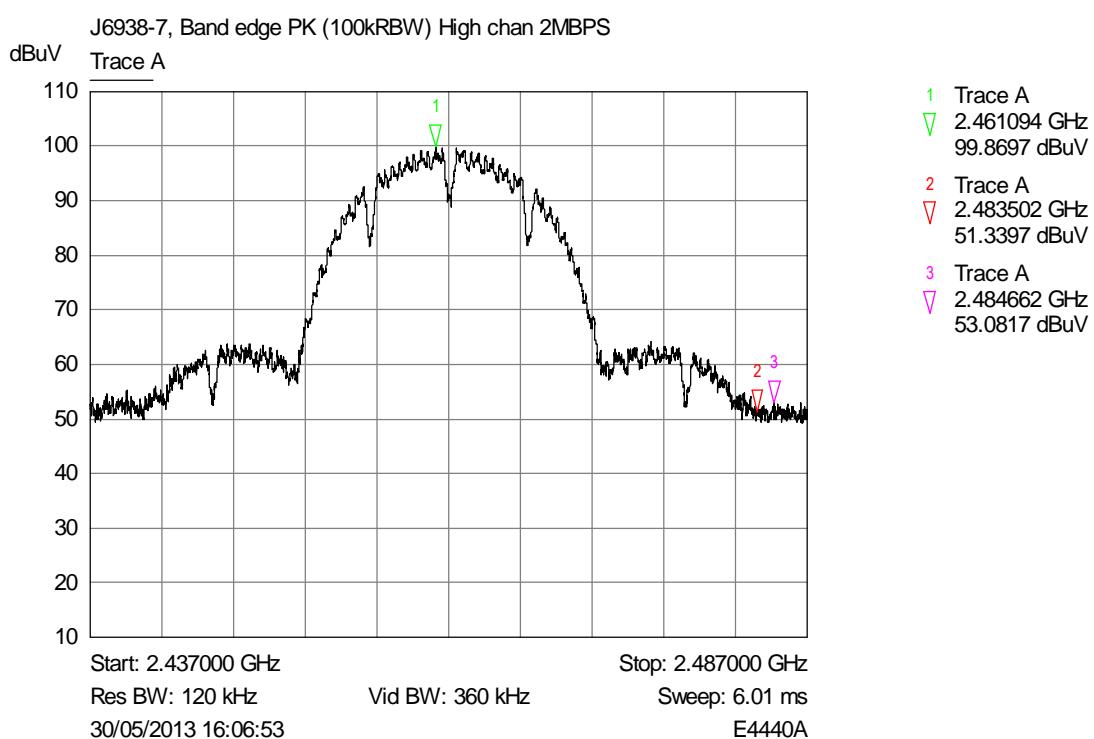
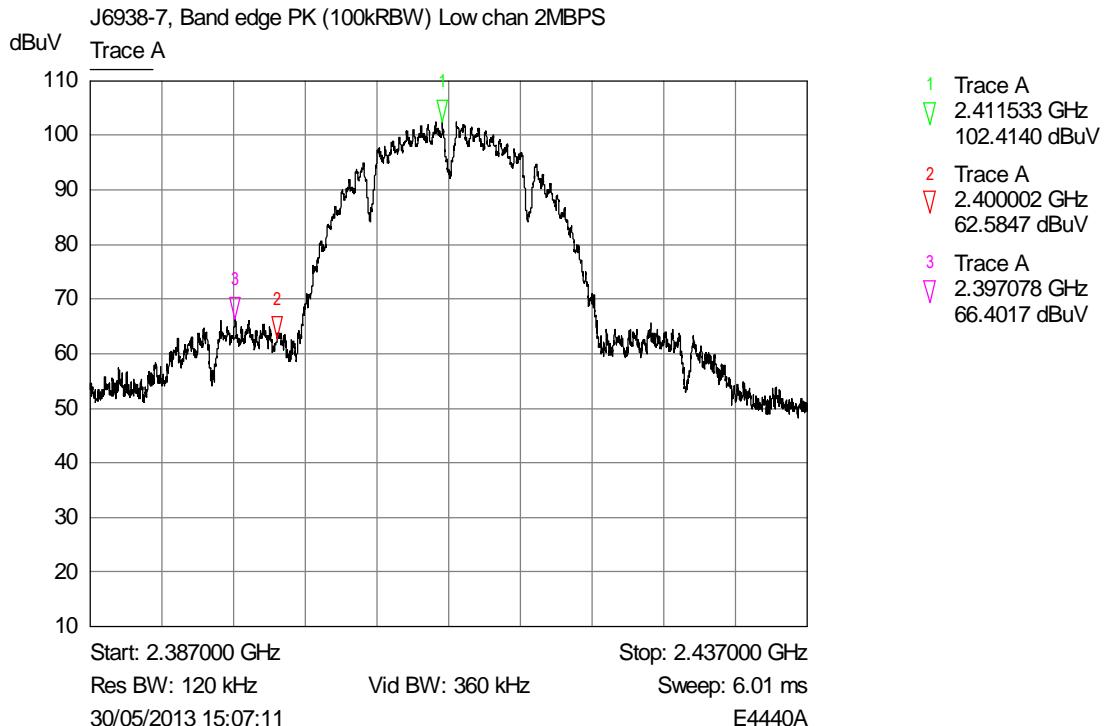
Restricted Band: High channel Peak plot



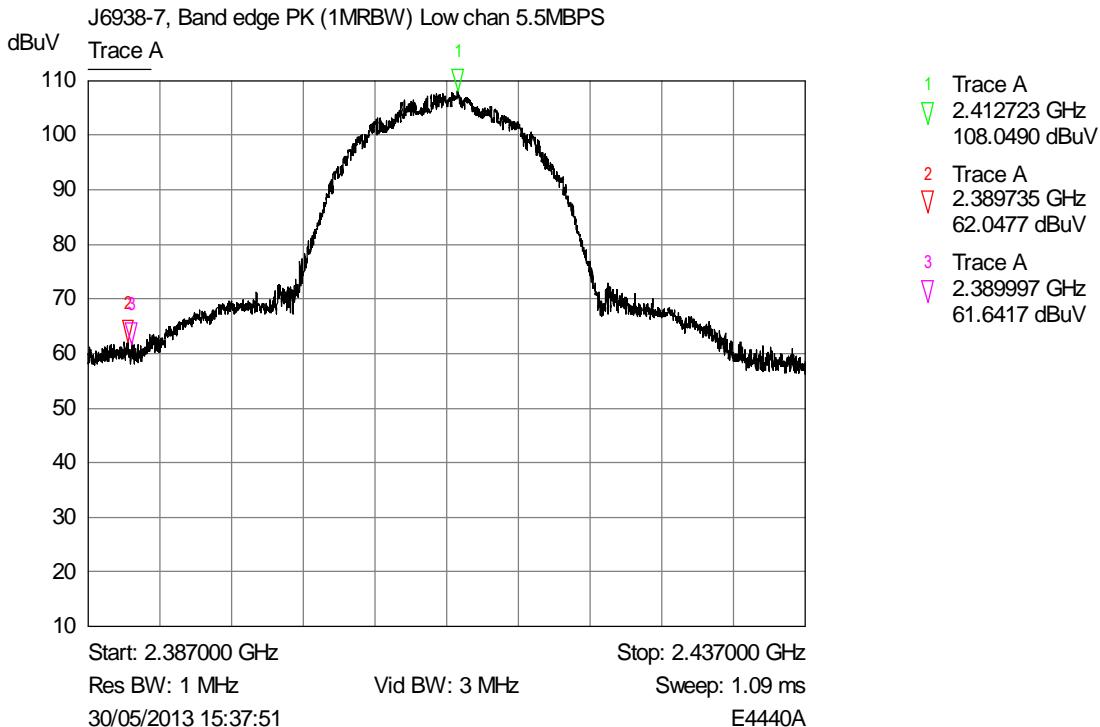
Restricted Band: Low channel Average plot



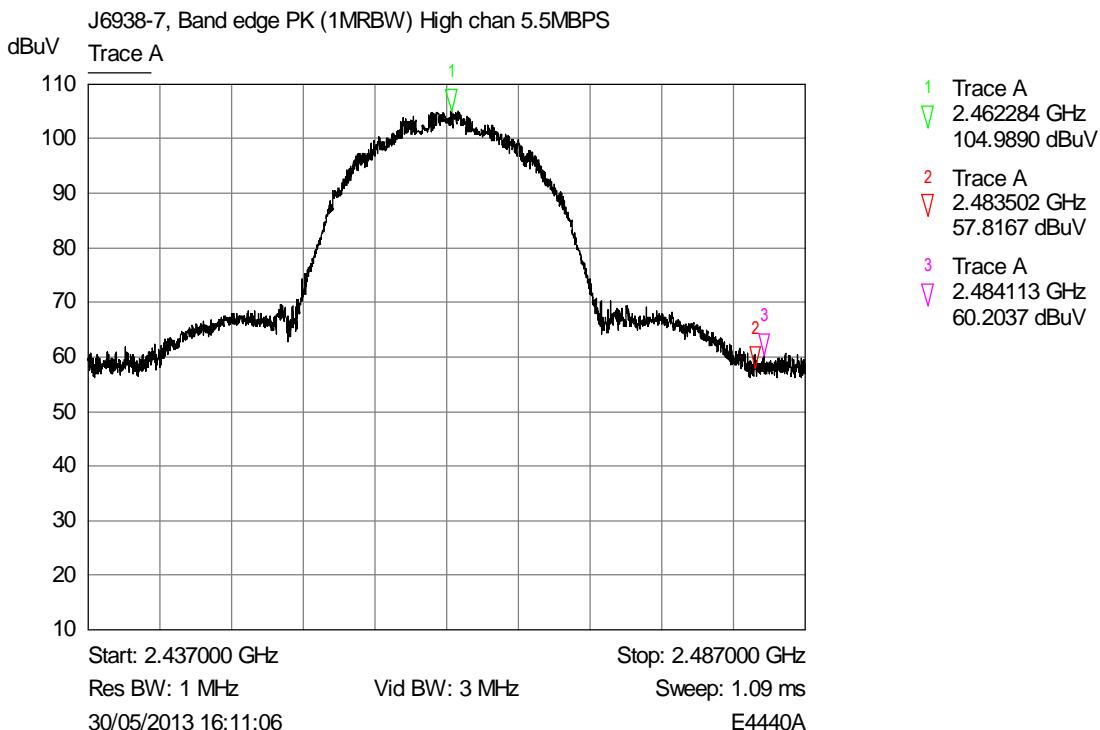
Restricted Band: High channel Average plot



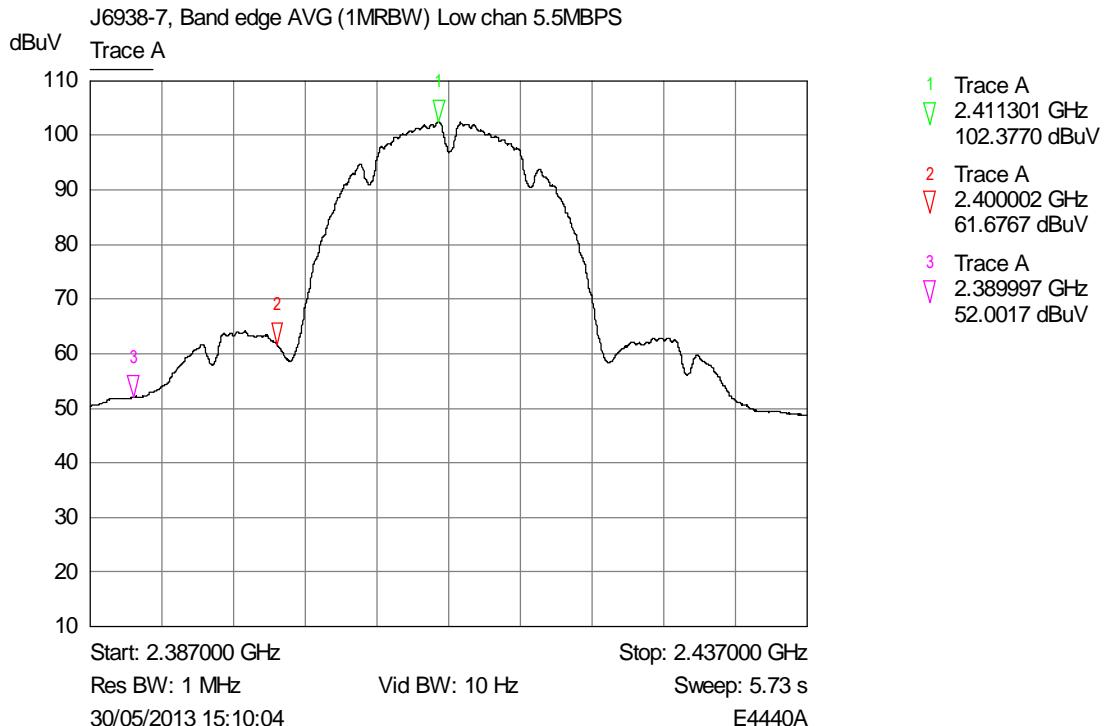
6.4.3 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 5.5 MBPS



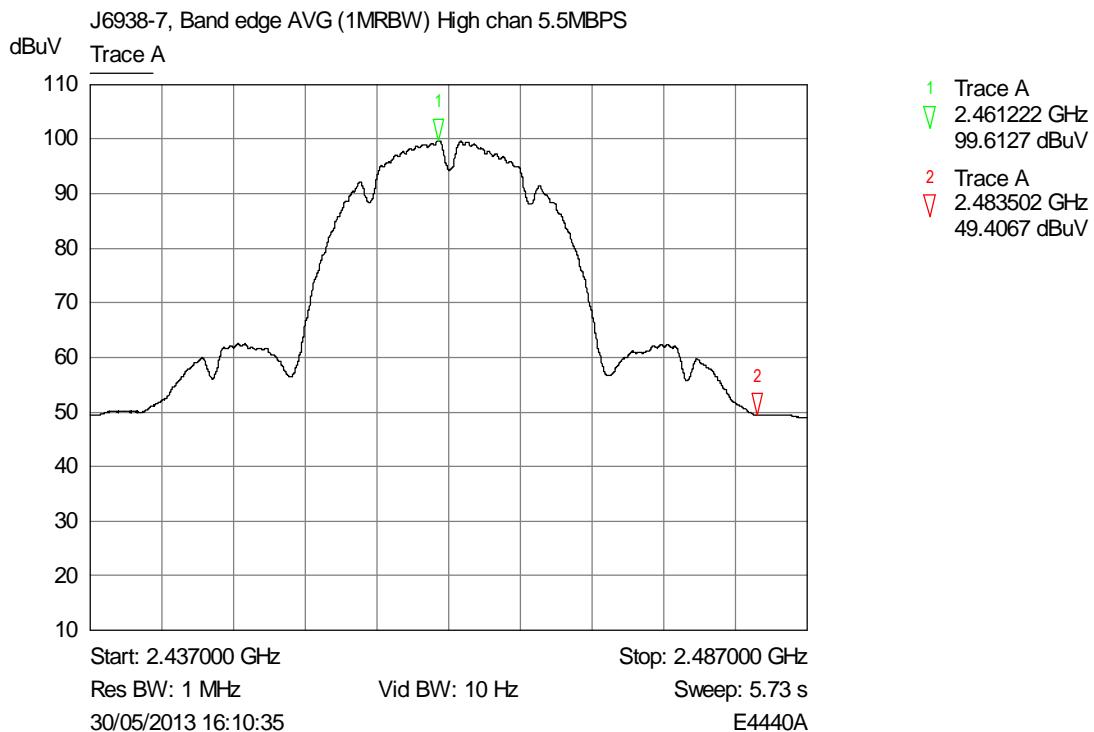
Restricted Band: Low channel Peak plot



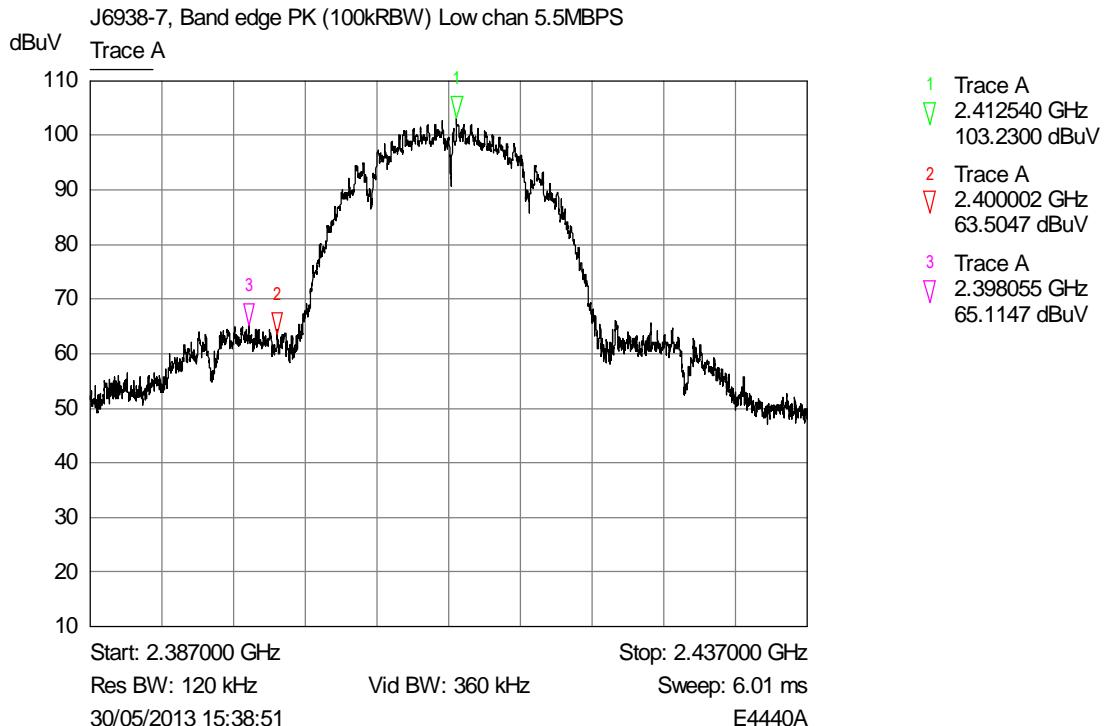
Restricted Band: High channel Peak plot



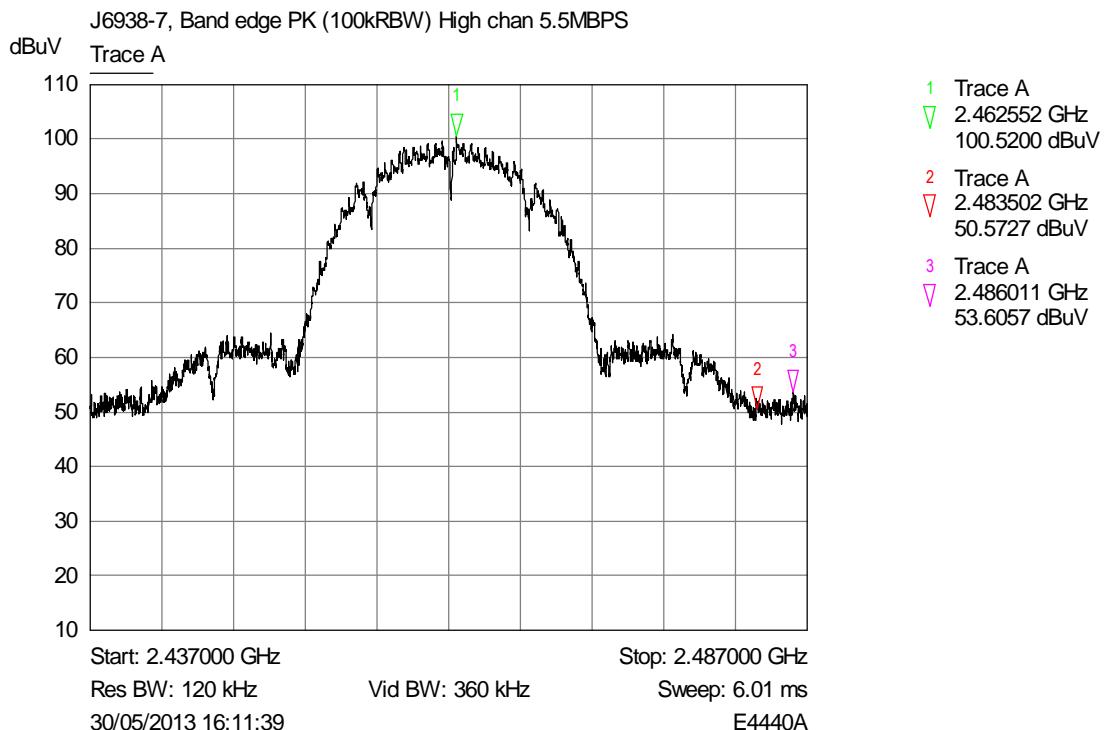
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

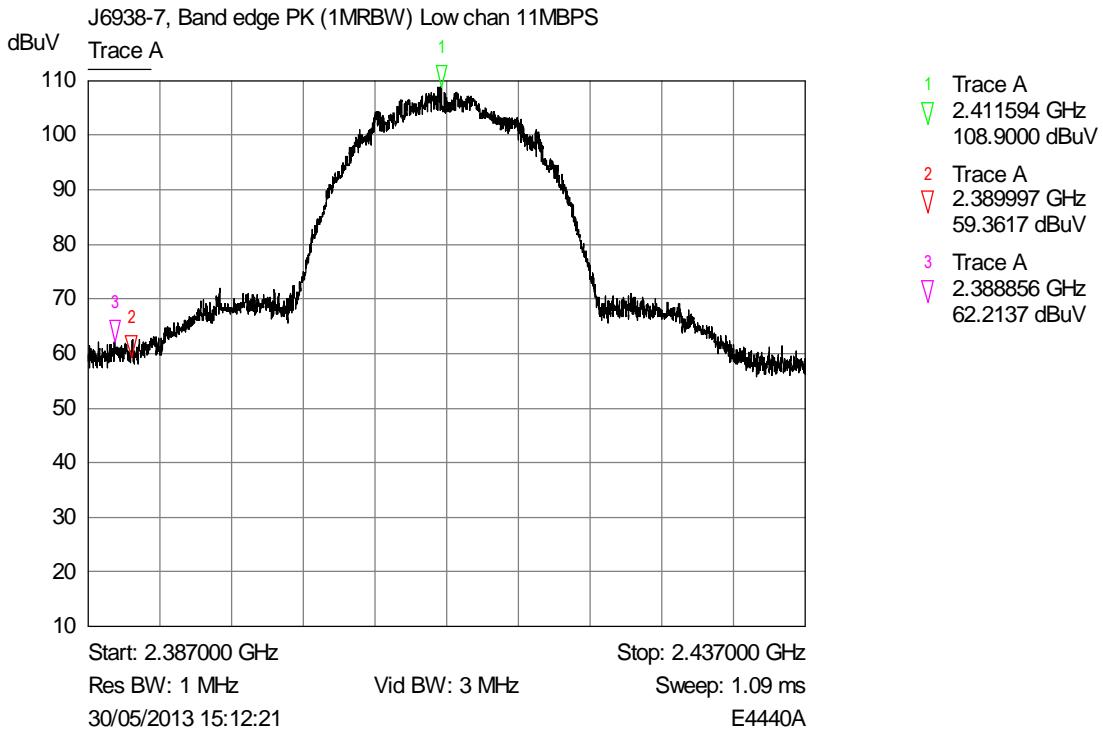


Band Edge: Low channel

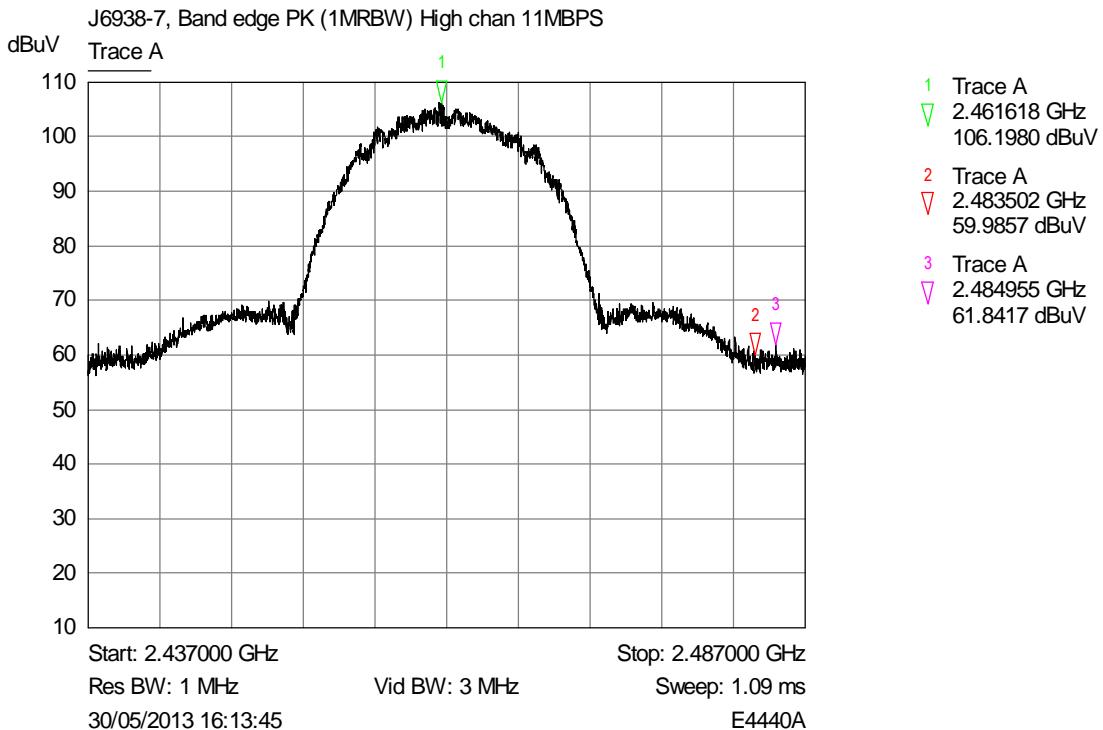


Band Edge: High channel

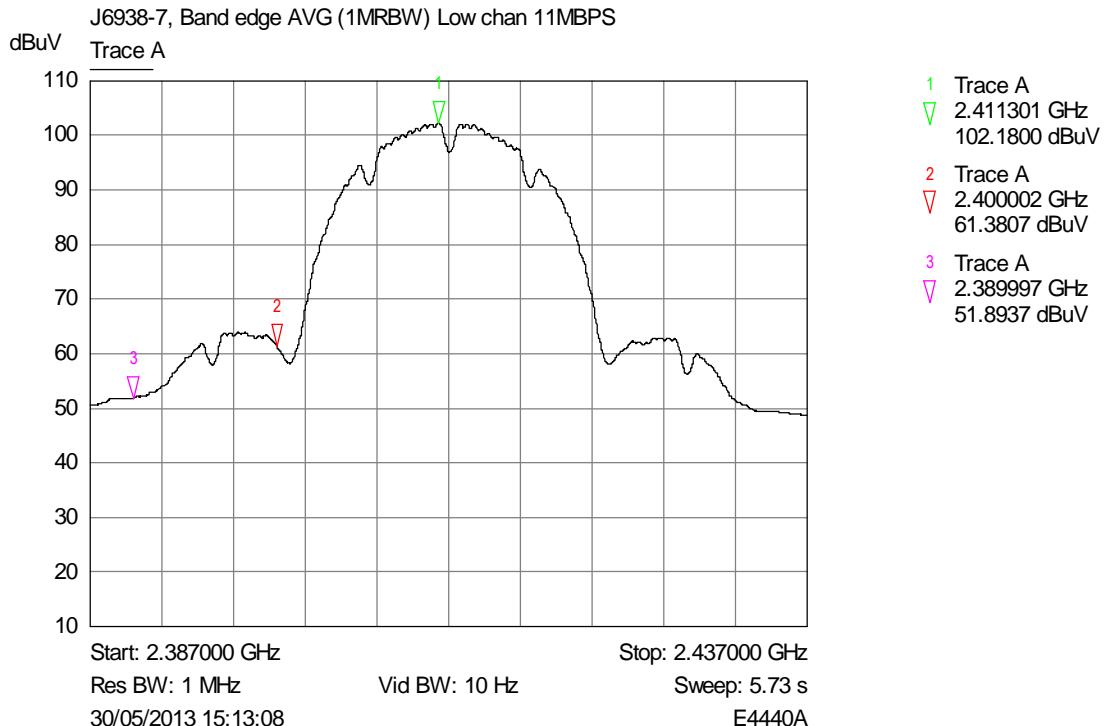
6.4.4 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 11 MBPS



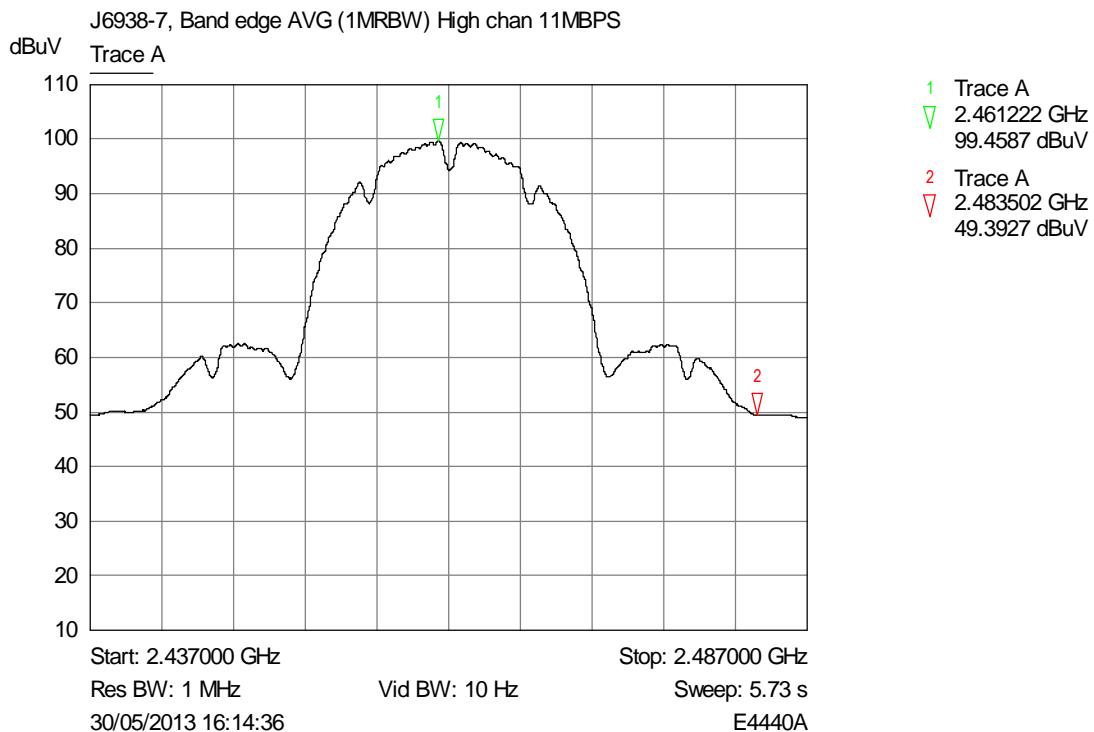
Restricted Band: Low channel Peak plot



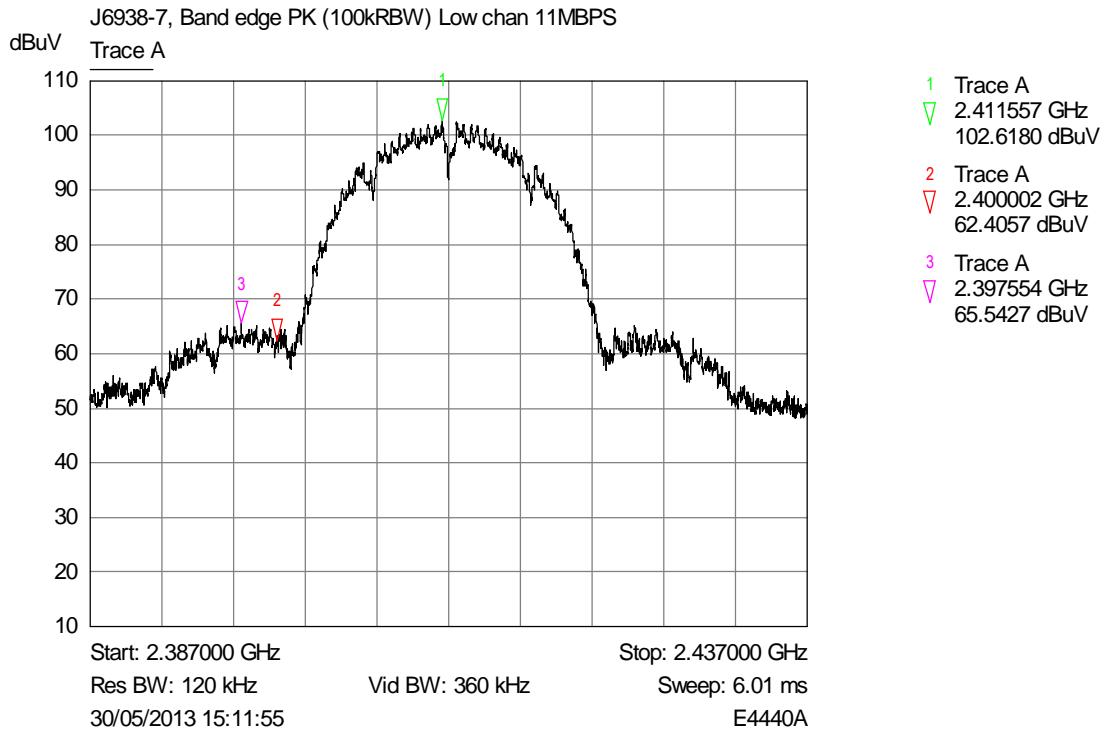
Restricted Band: High channel Peak plot



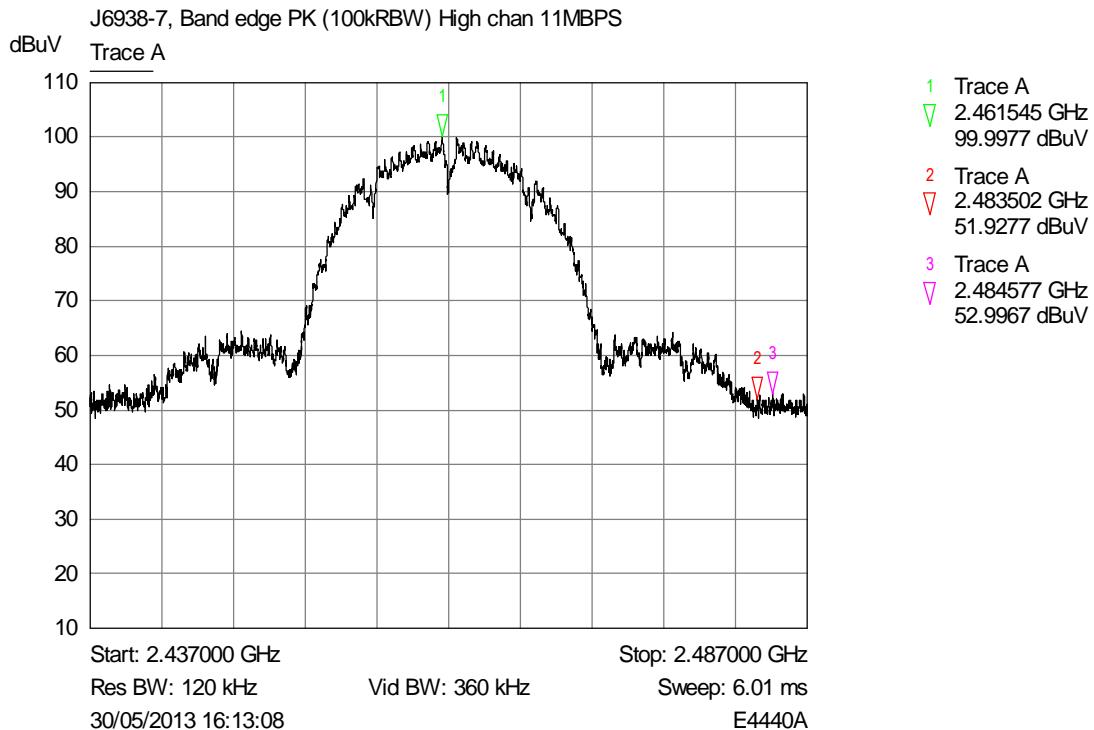
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

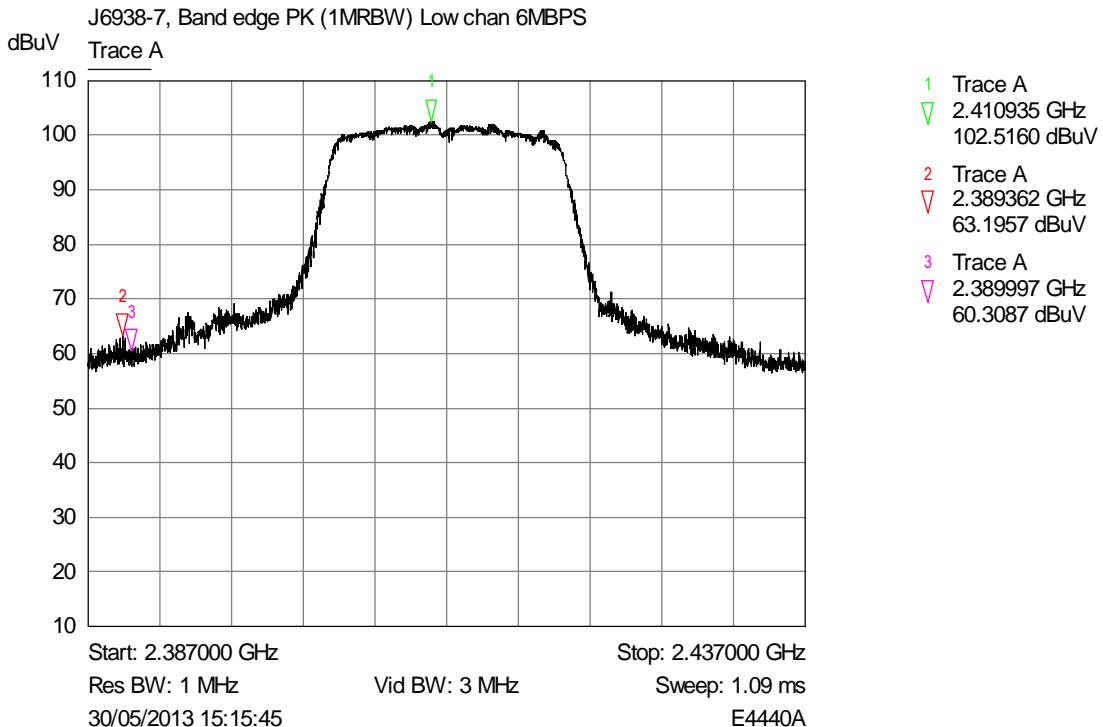


Band Edge: Low channel

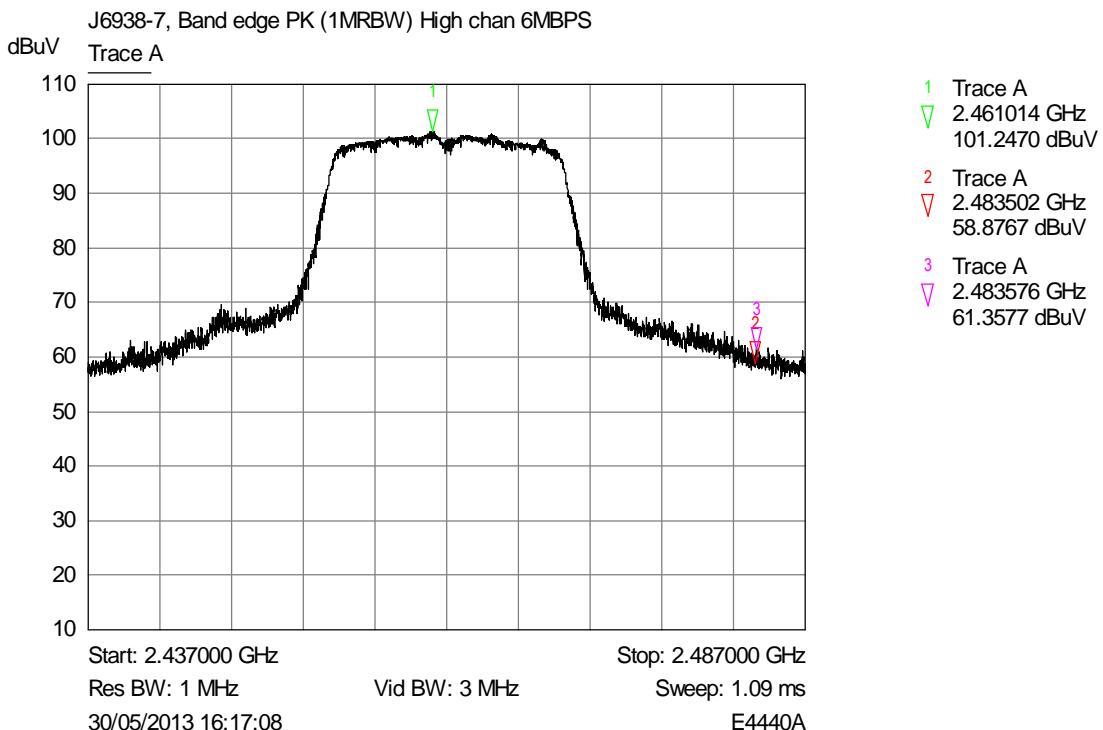


Band Edge: High channel

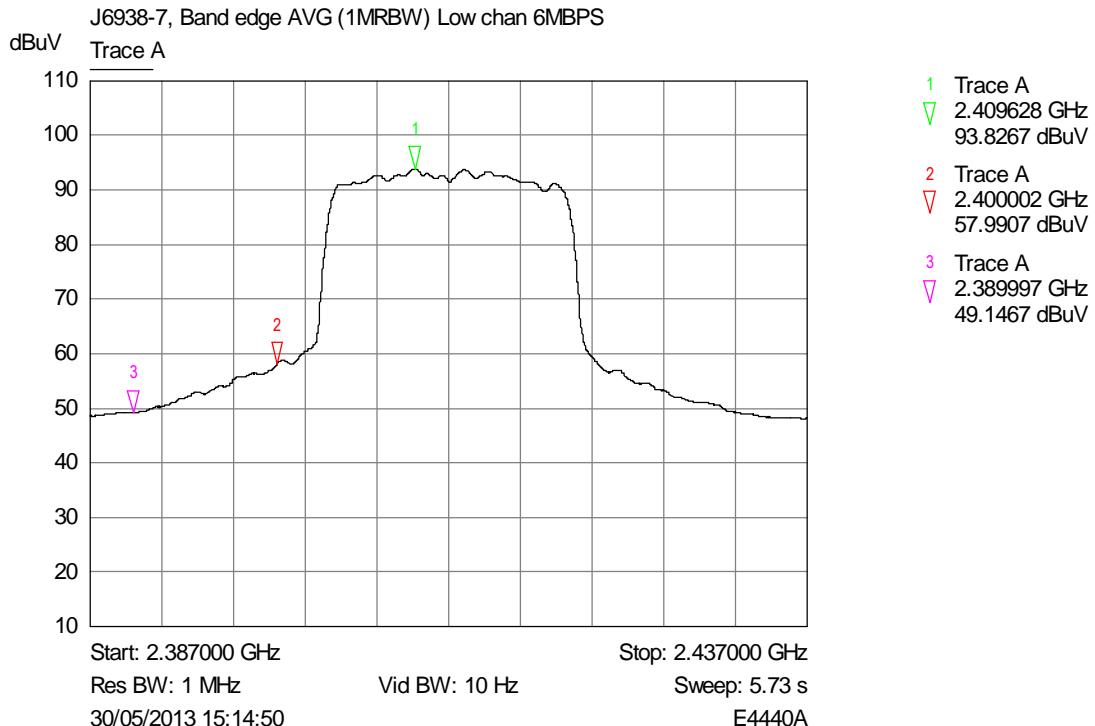
6.4.5 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 6 MBPS



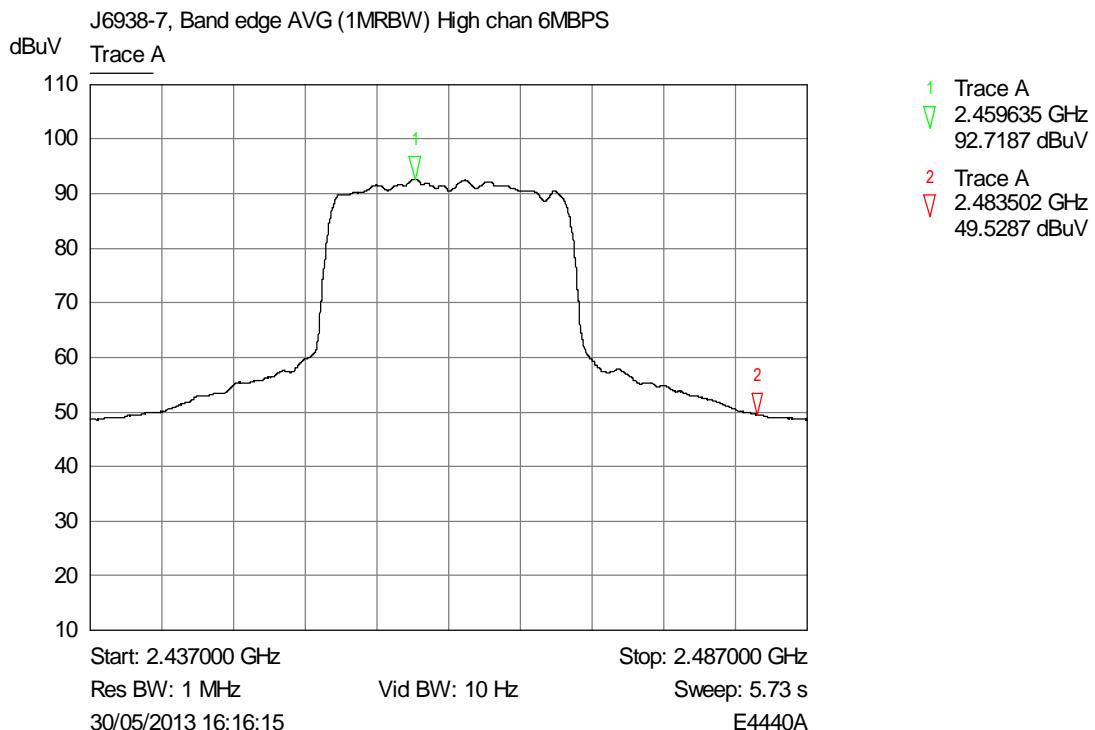
Restricted Band: Low channel Peak plot



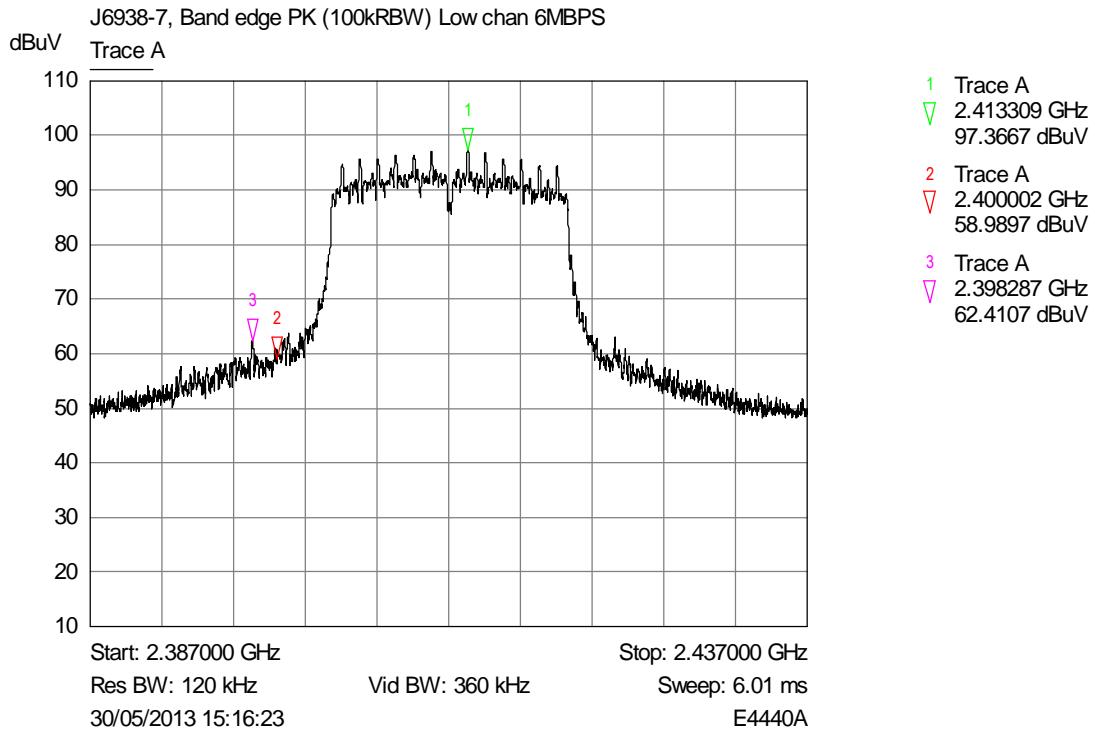
Restricted Band: High channel Peak plot



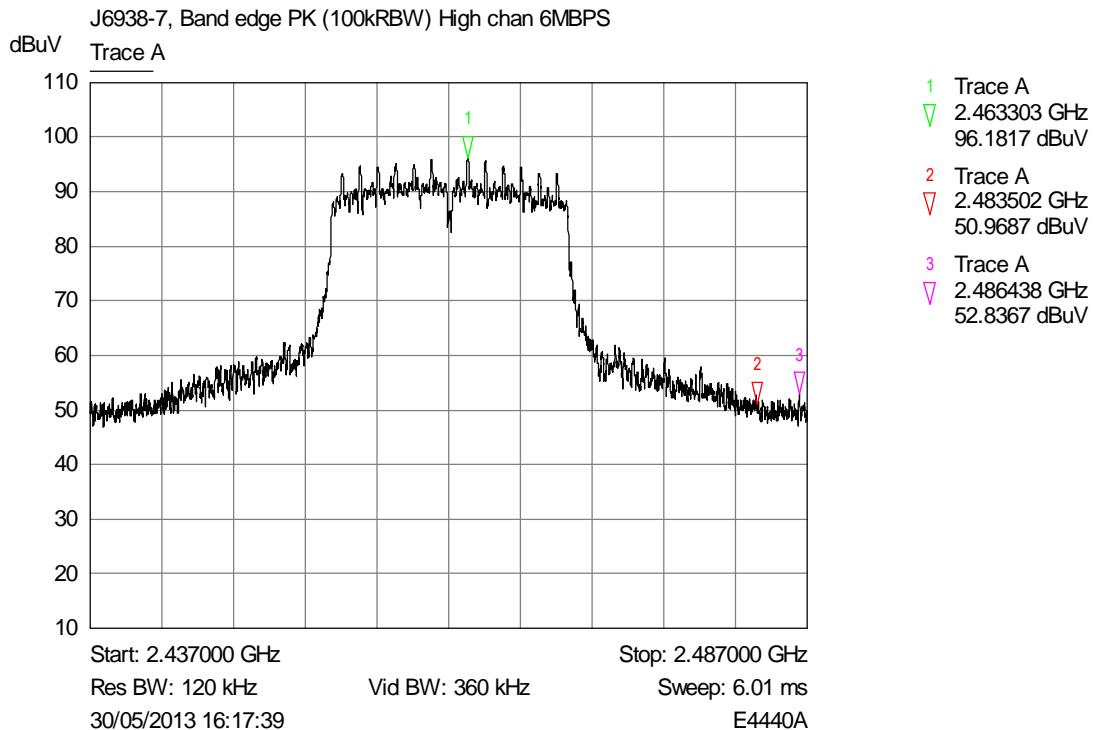
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

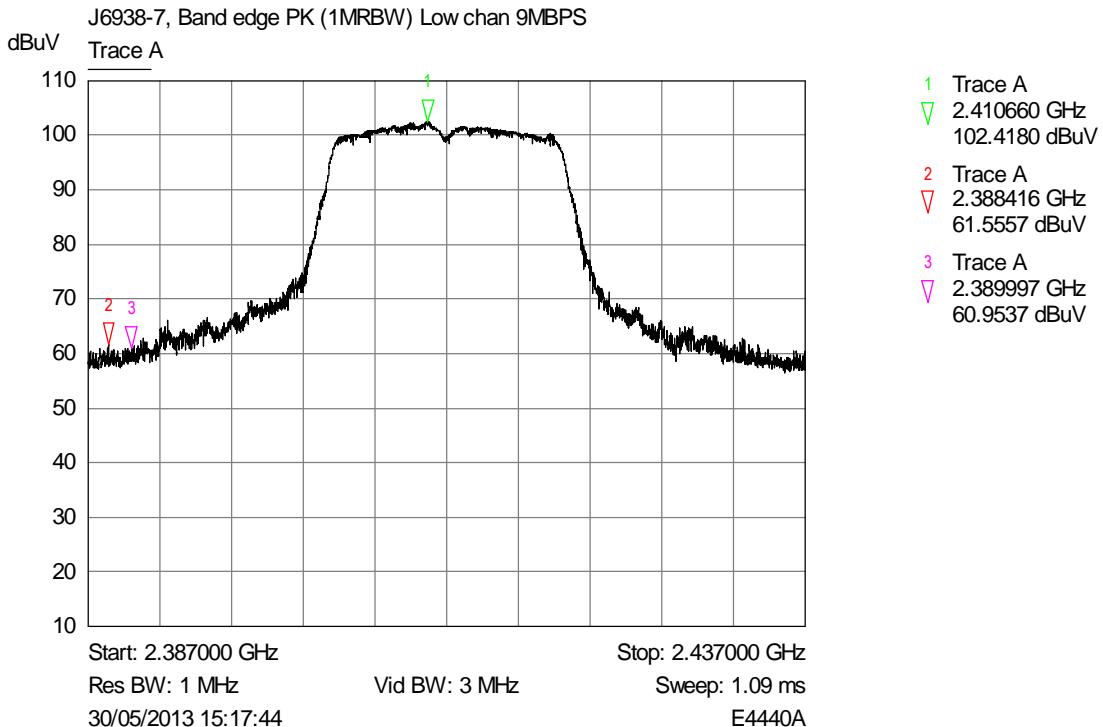


Band Edge: Low channel

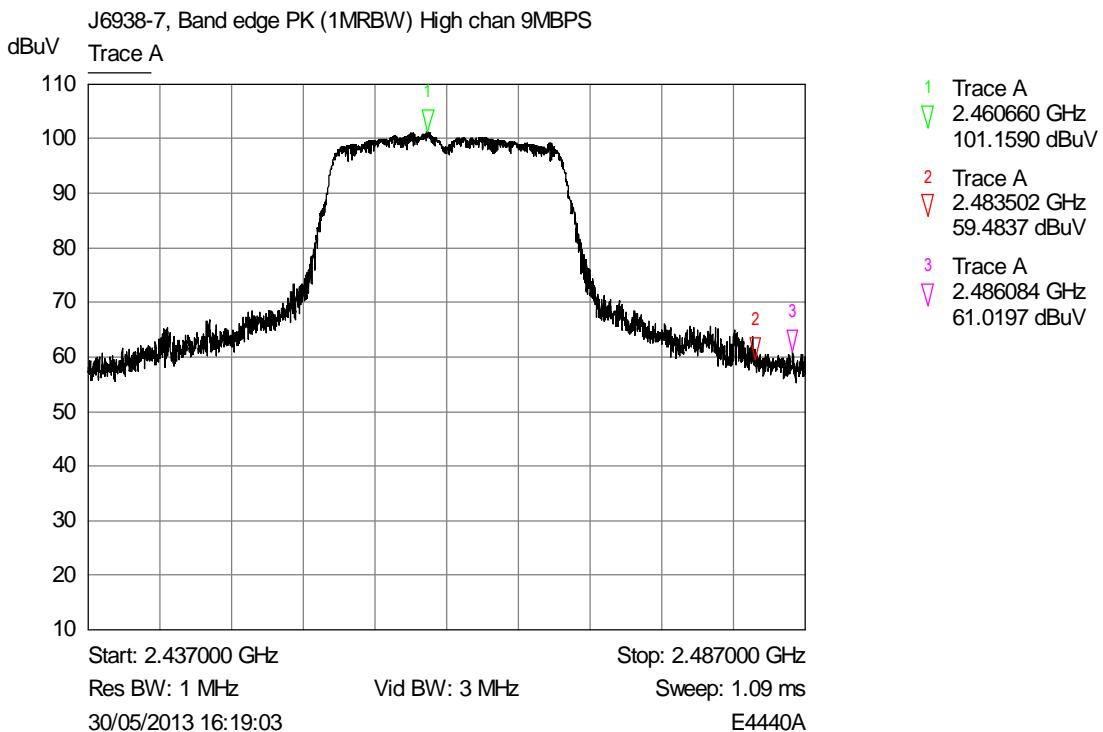


Band Edge: High channel

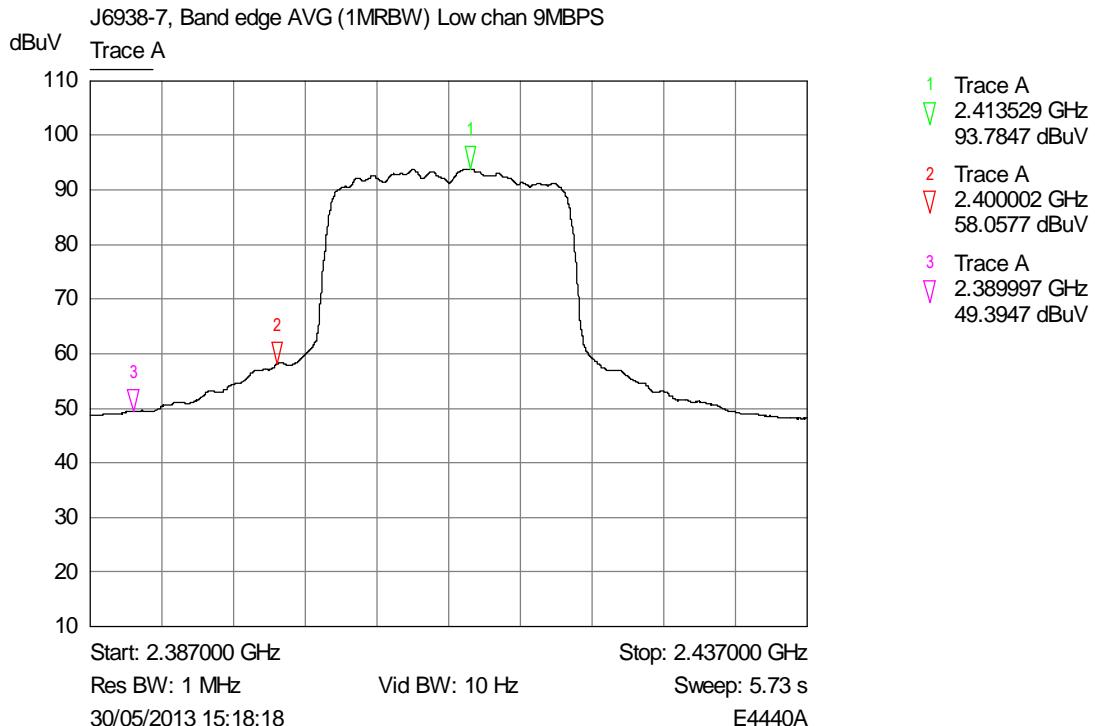
6.4.6 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 9 MBPS



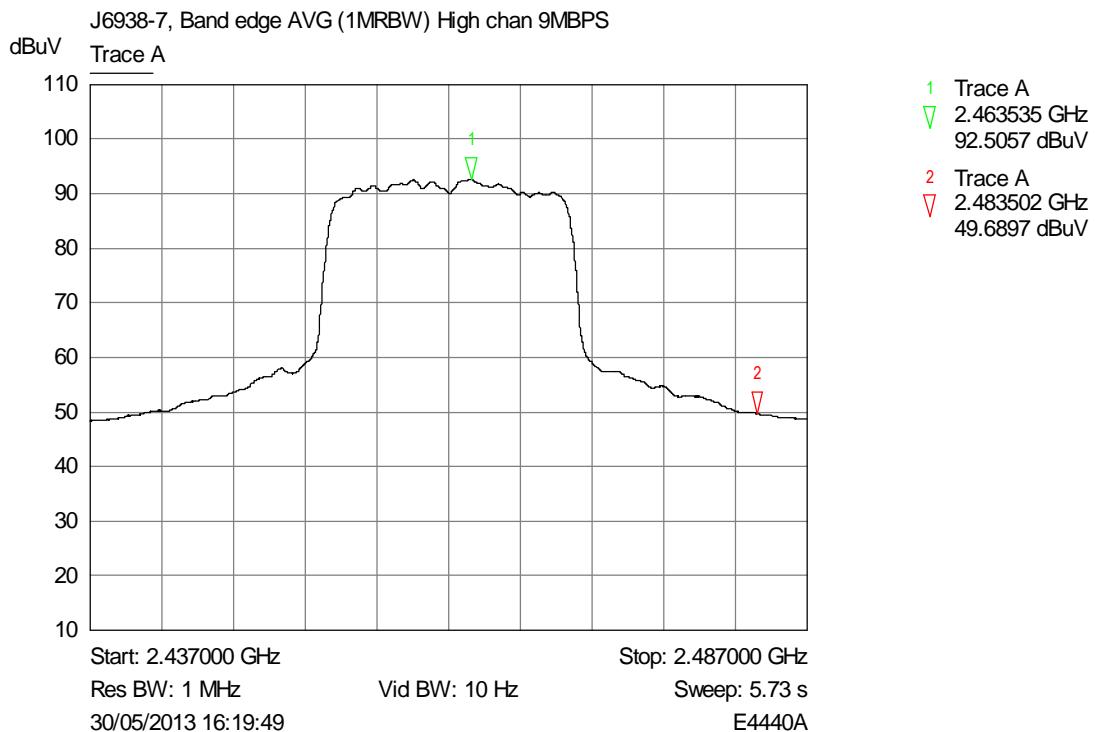
Restricted Band: Low channel Peak plot



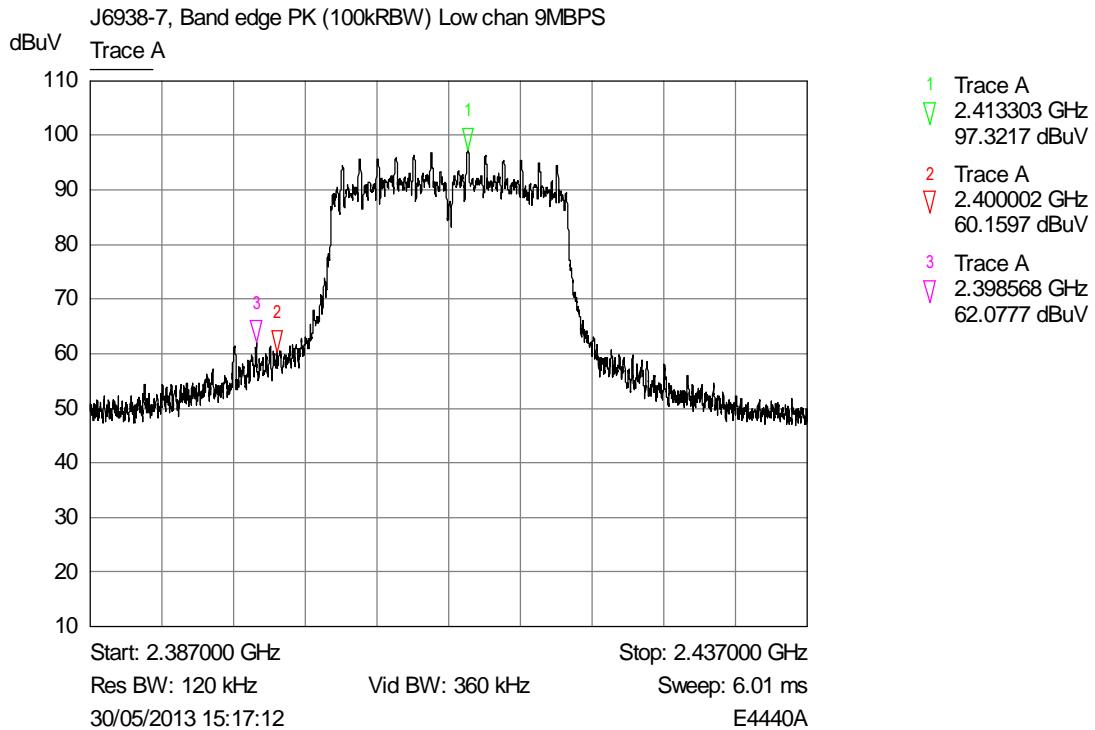
Restricted Band: High channel Peak plot



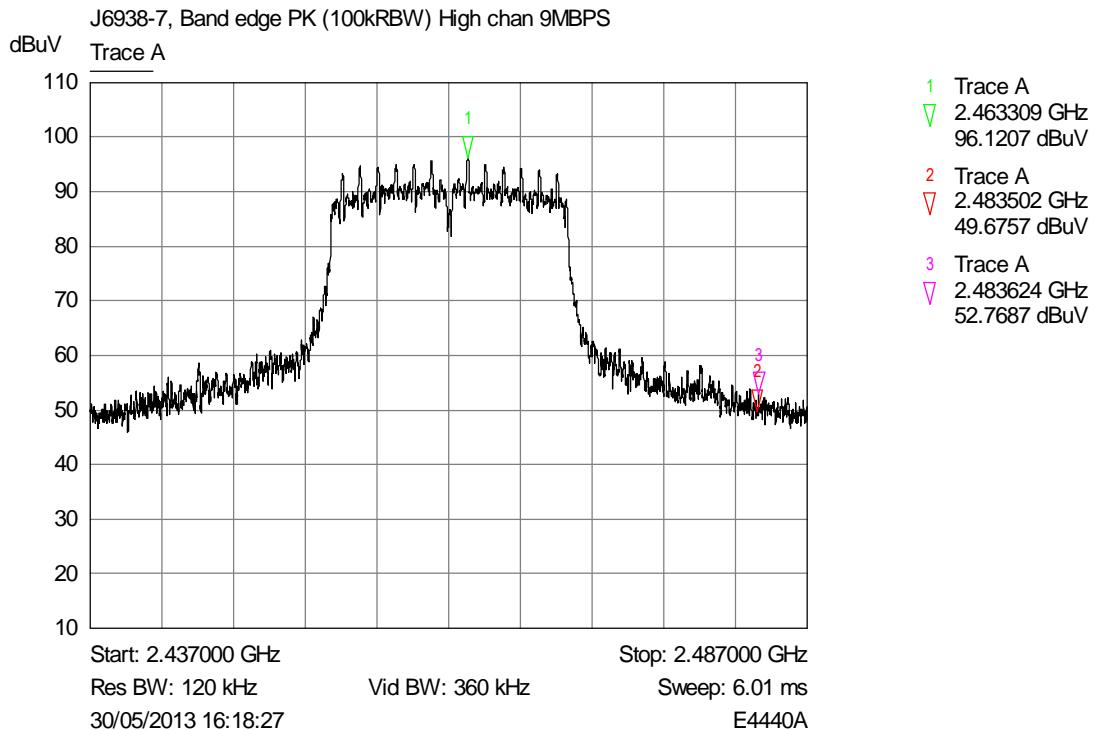
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

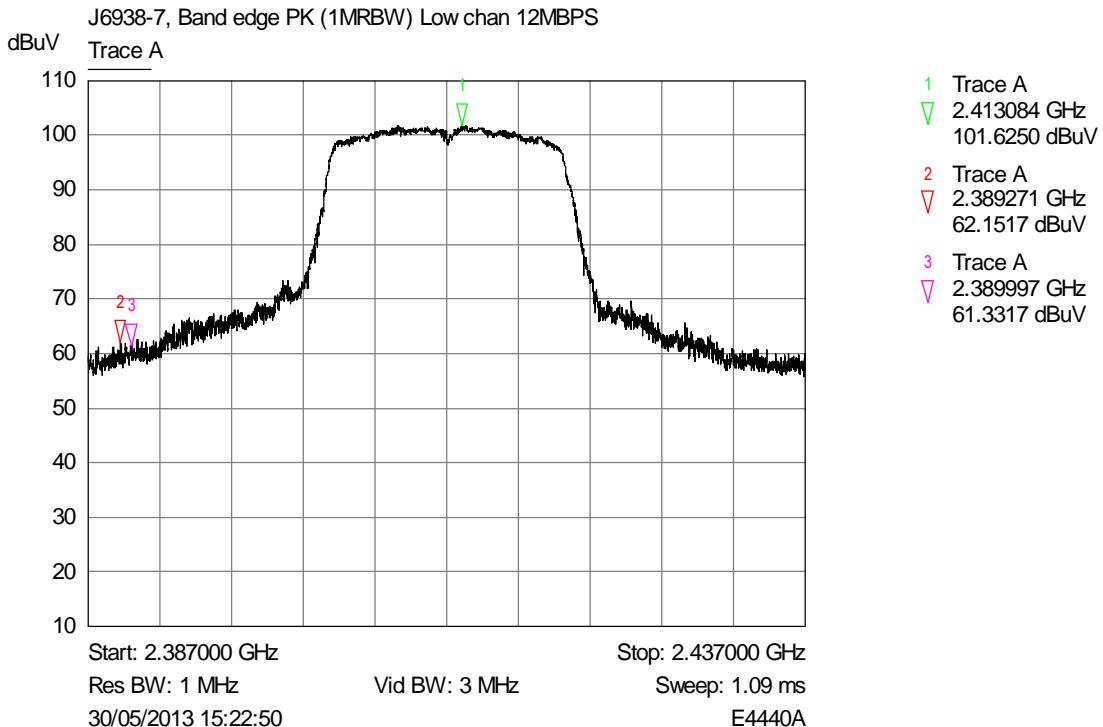


Band Edge: Low channel

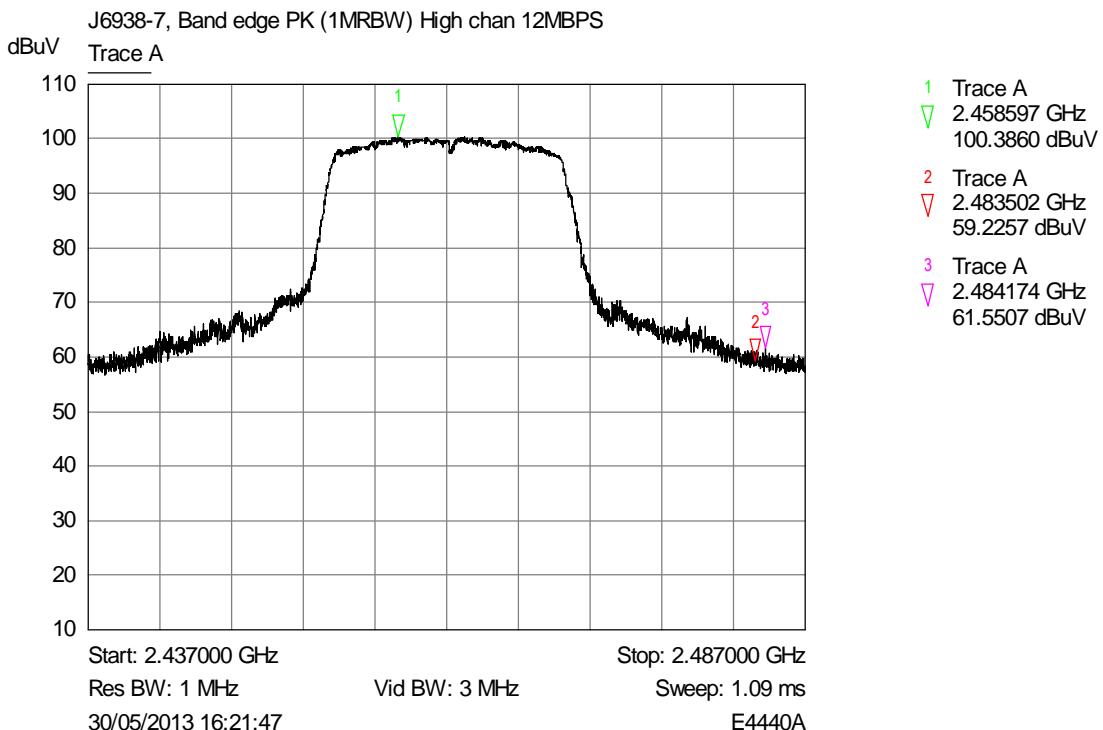


Band Edge: High channel

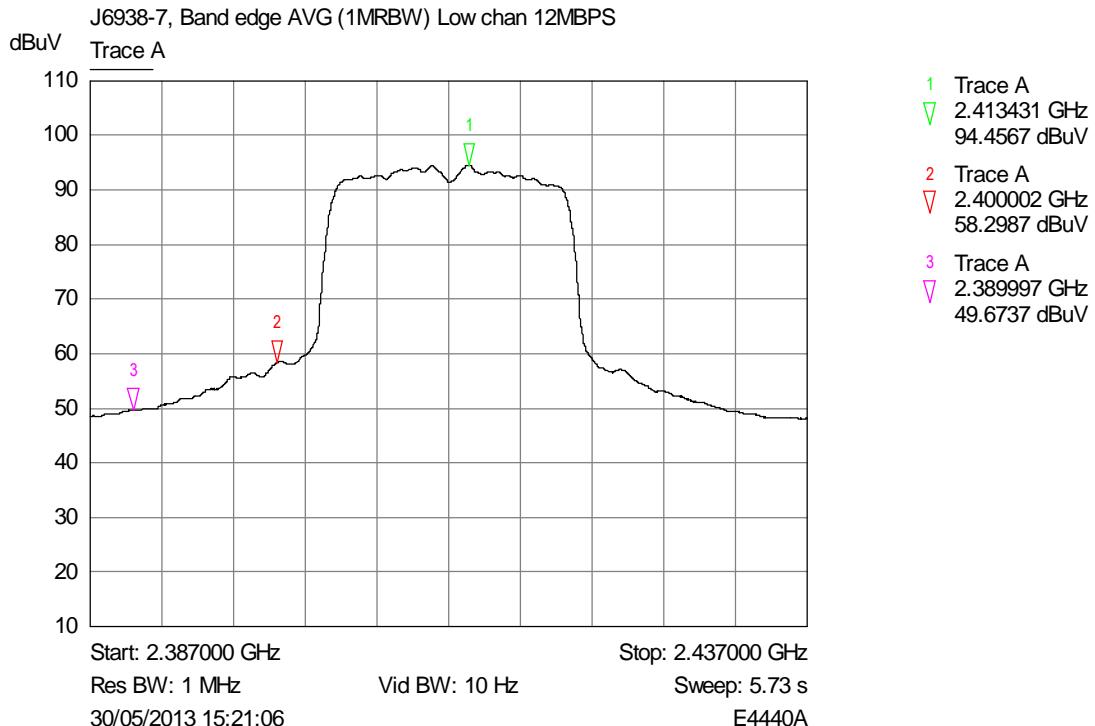
6.4.7 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 12 MBPS



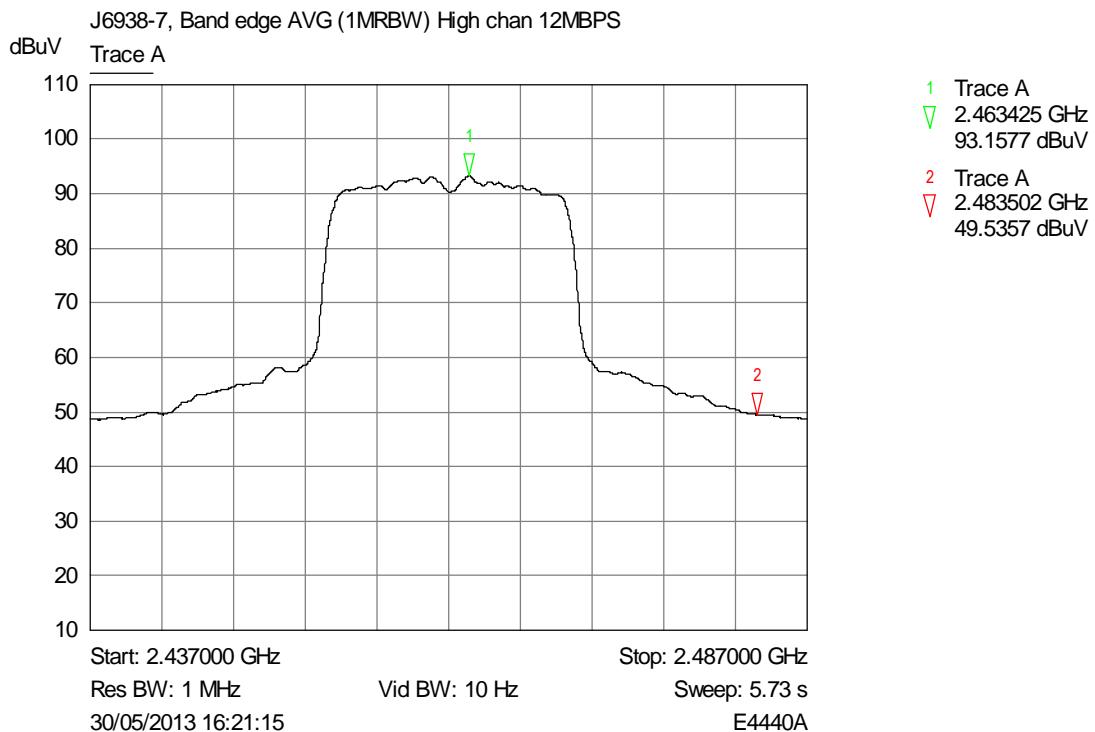
Restricted Band: Low channel Peak plot



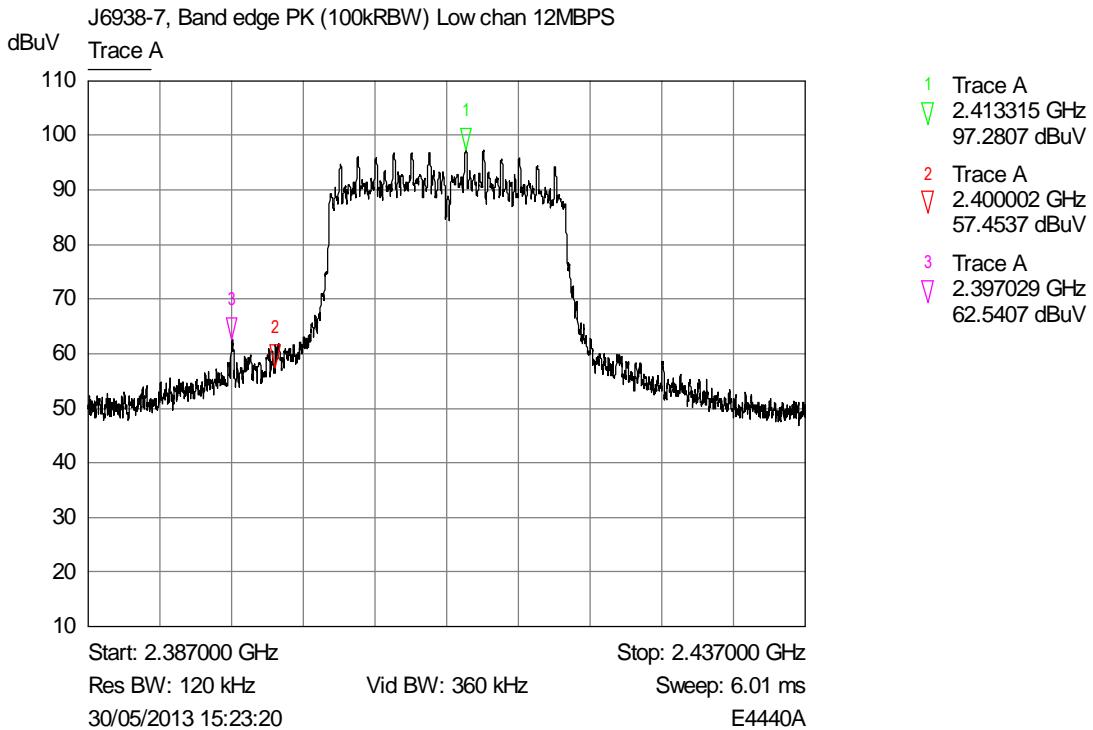
Restricted Band: High channel Peak plot



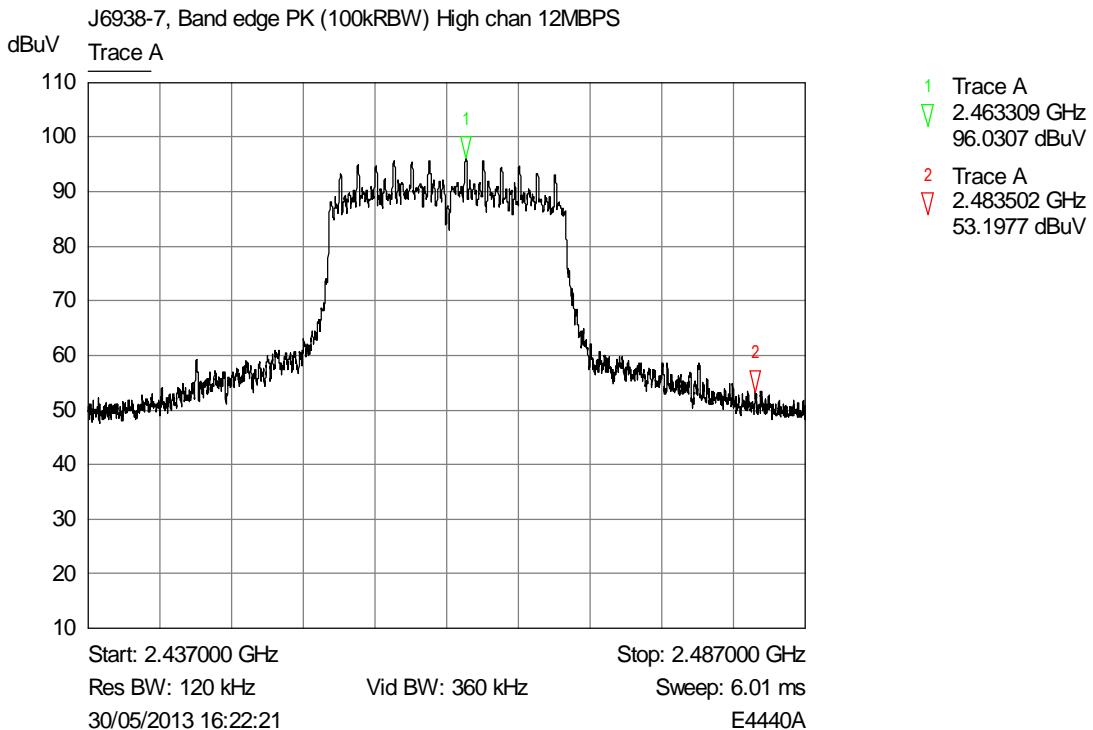
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

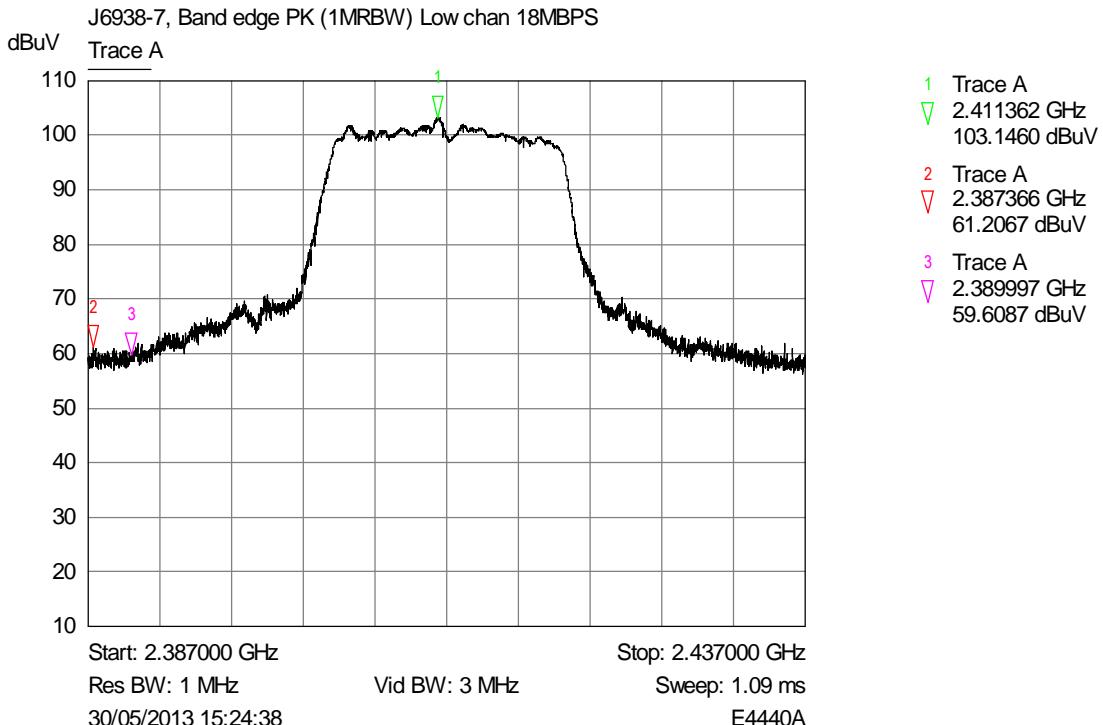


Band Edge: Low channel

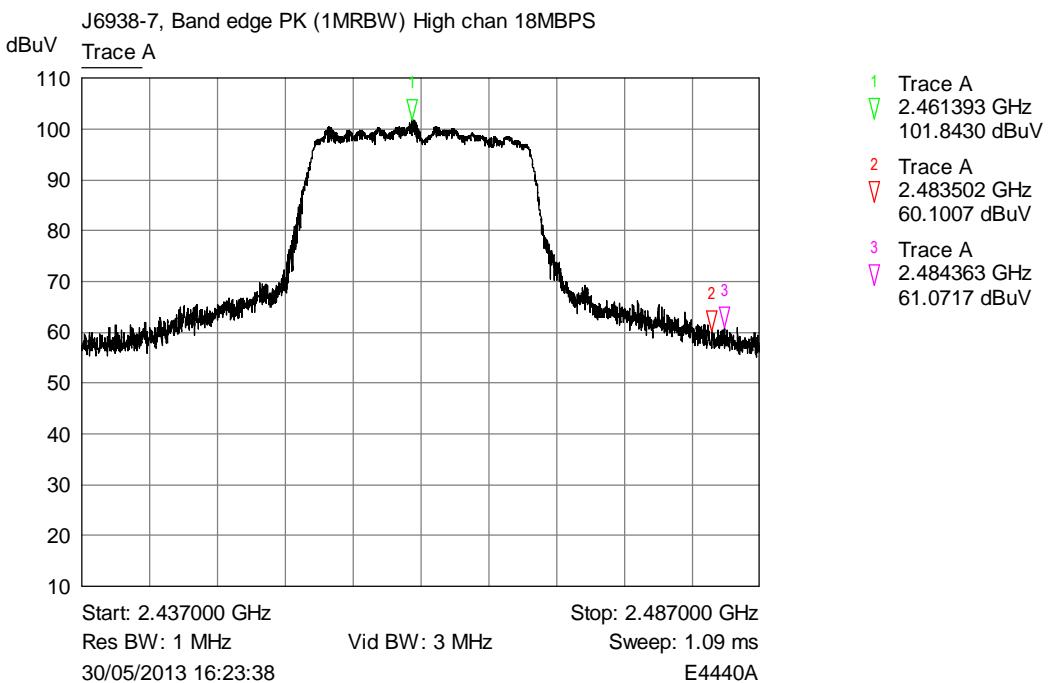


Band Edge: High channel

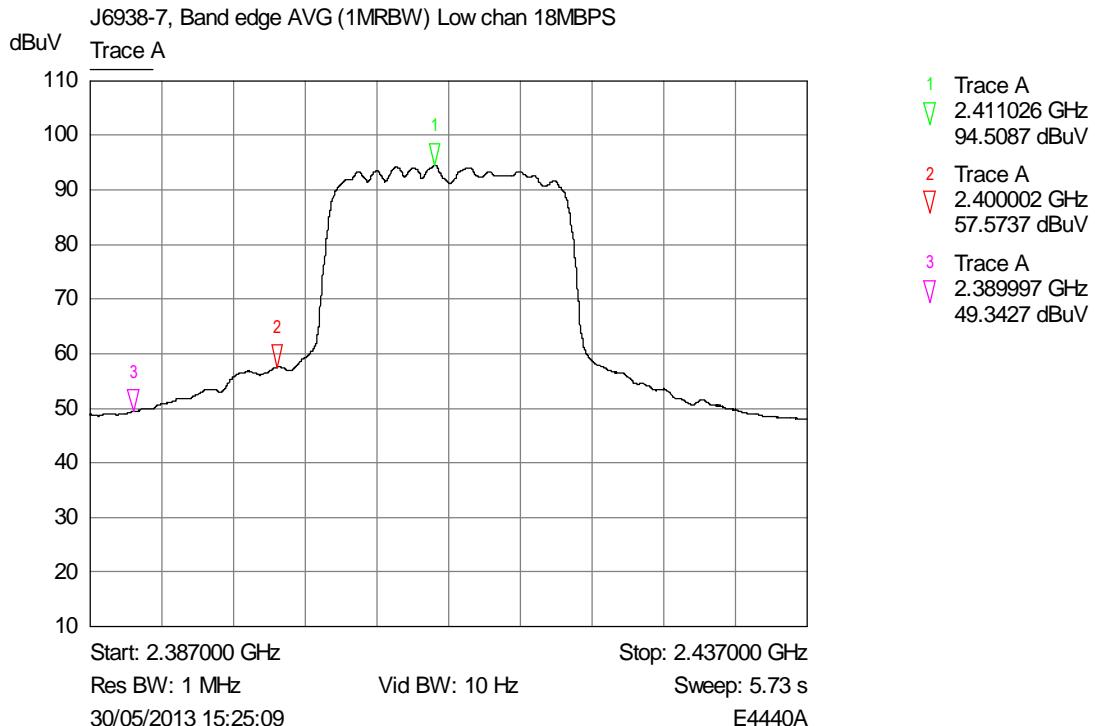
6.4.8 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 18 MBPS



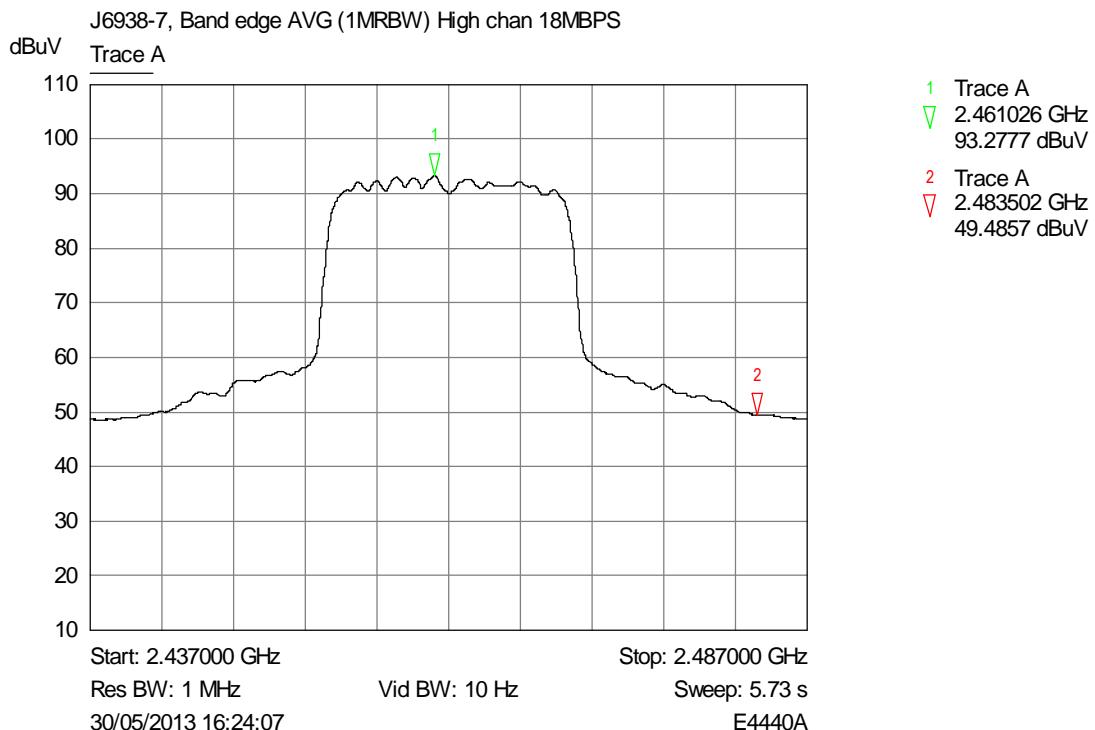
Restricted Band: Low channel Peak plot



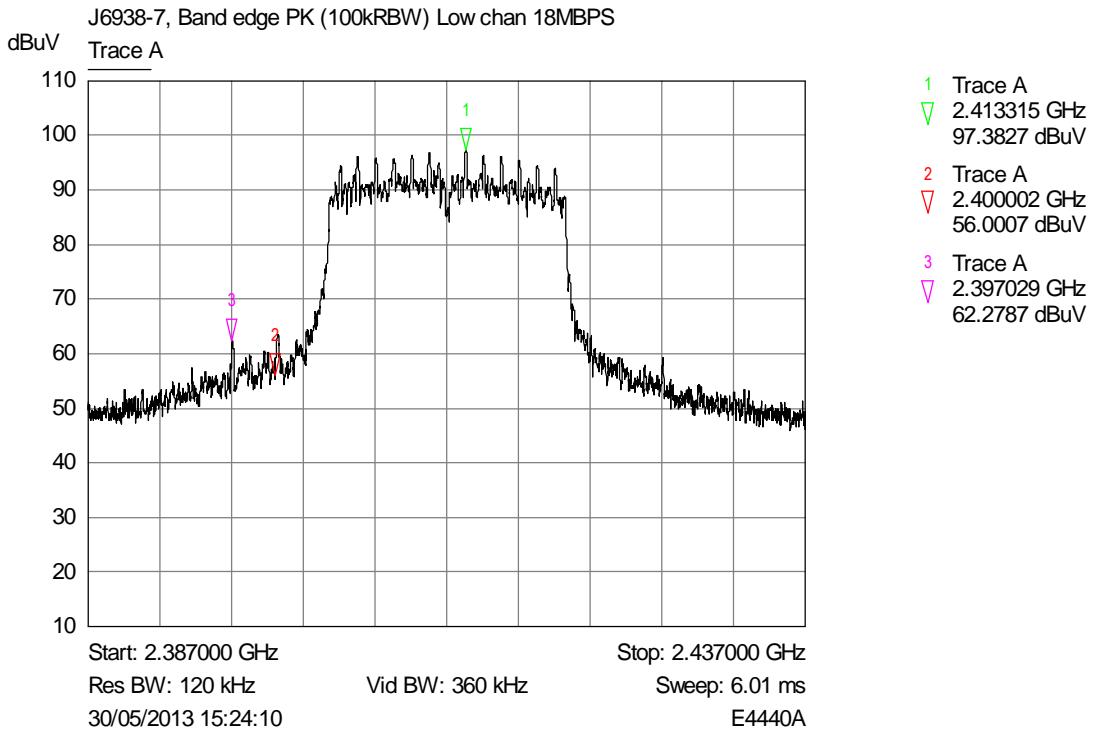
Restricted Band: High channel Peak plot



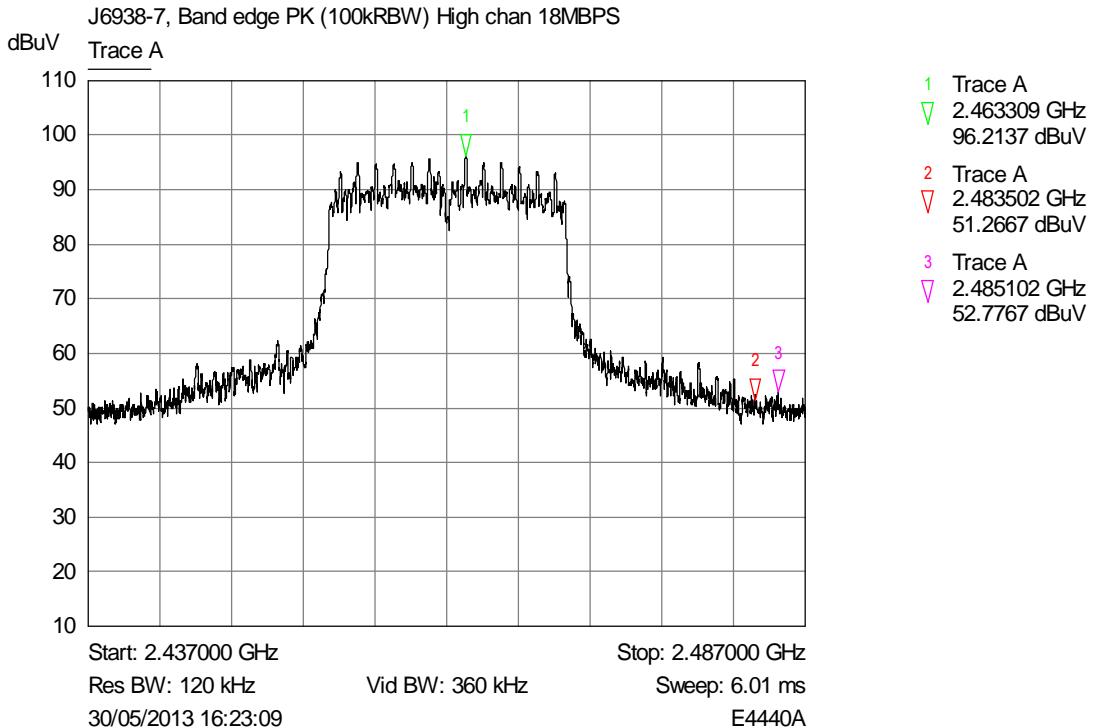
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

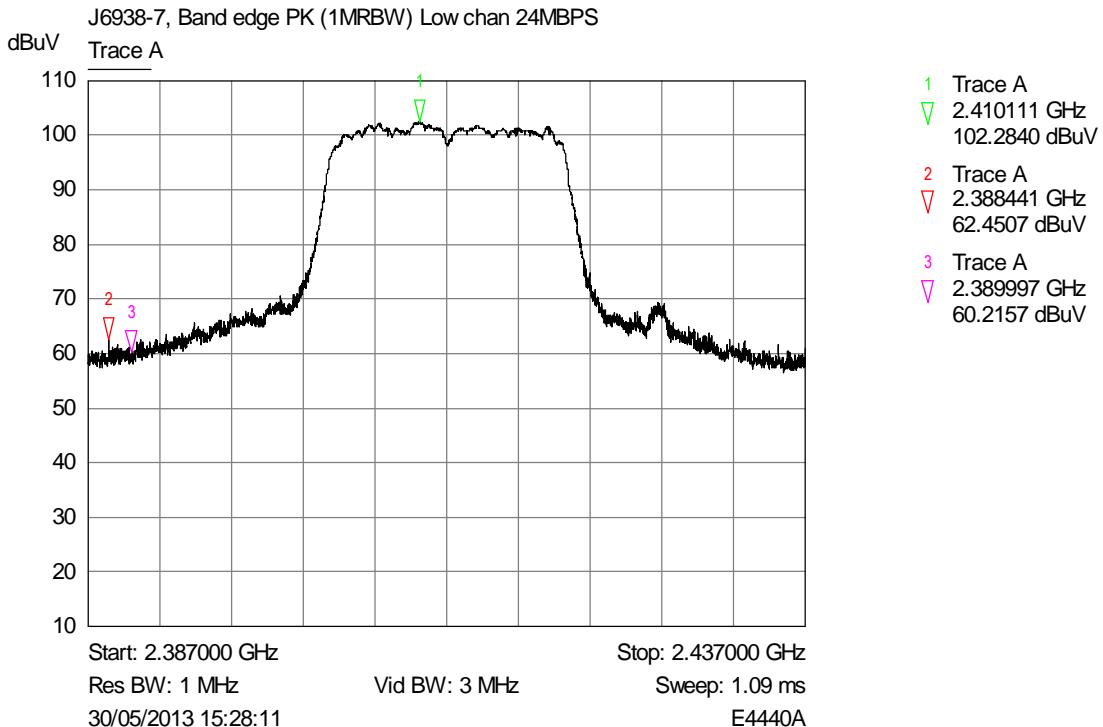


Band Edge: Low channel

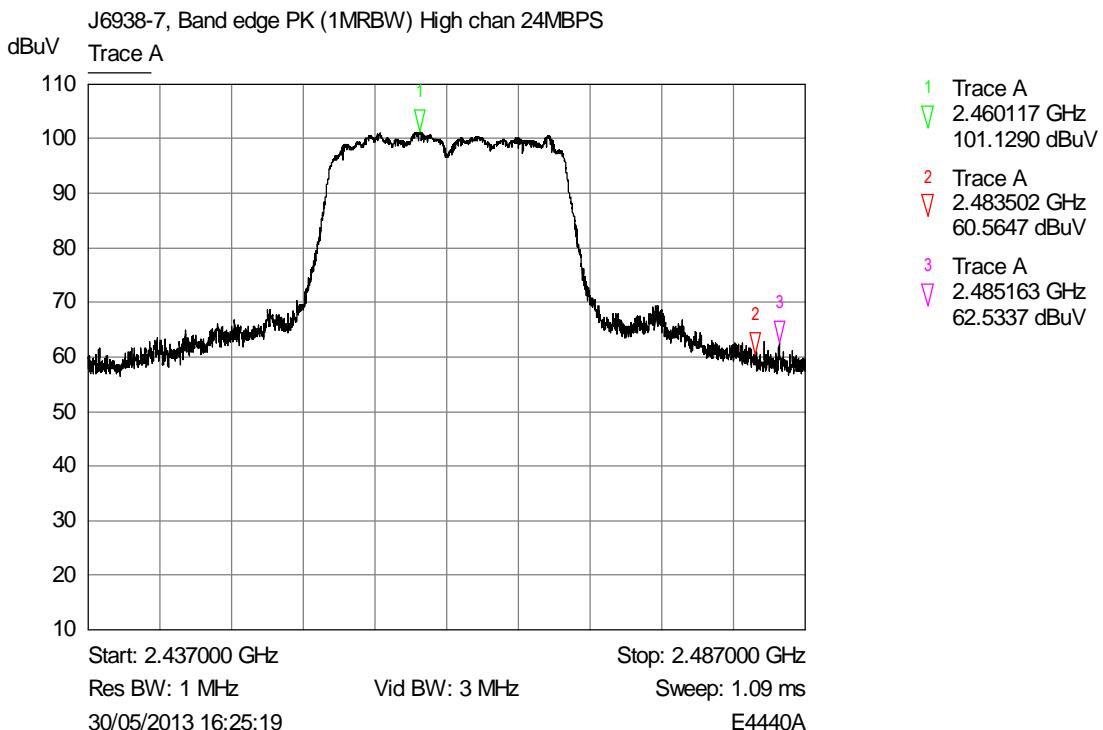


Band Edge: High channel

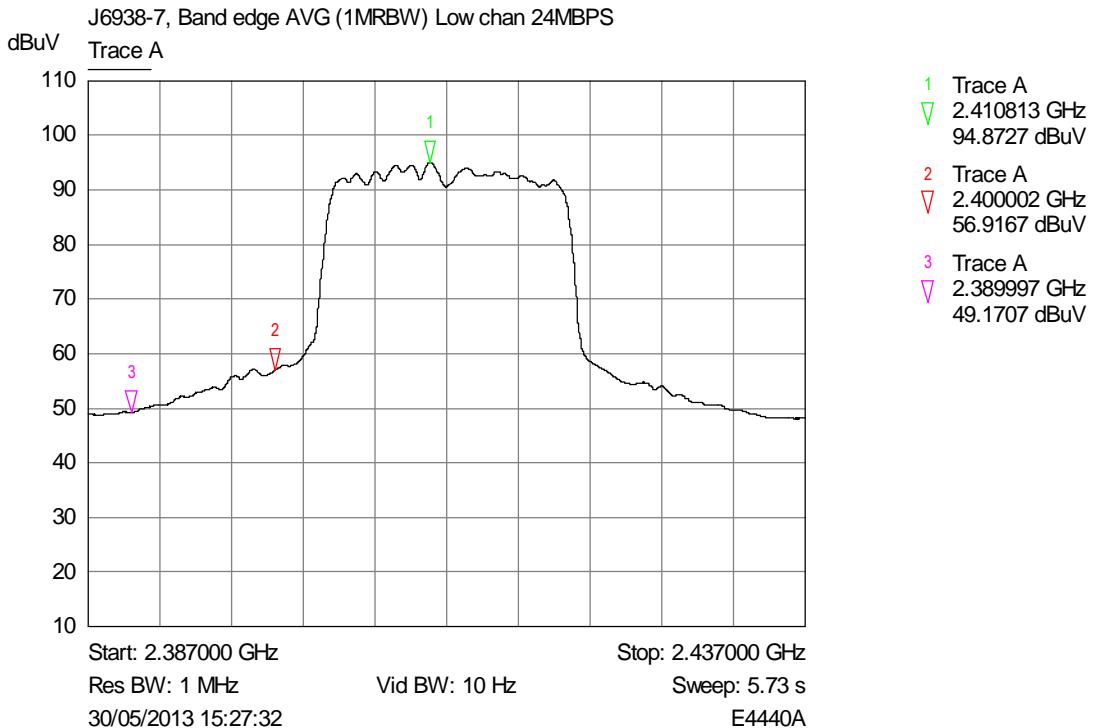
6.4.9 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 24 MBPS



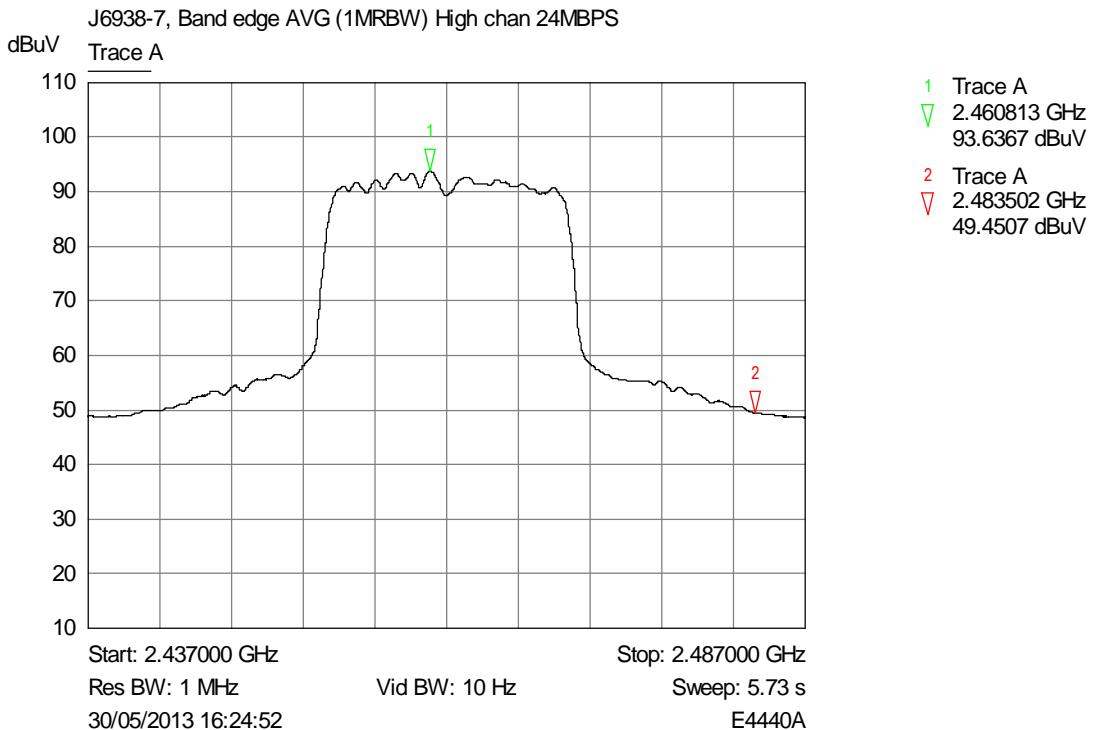
Restricted Band: Low channel Peak plot



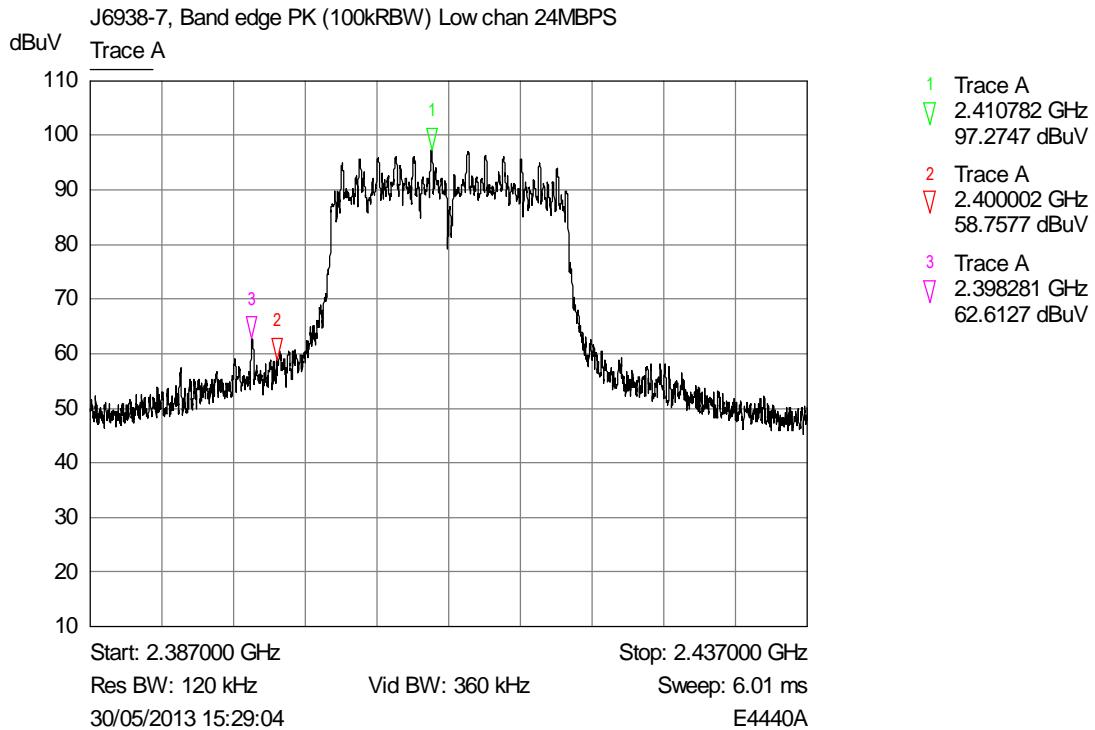
Restricted Band: High channel Peak plot



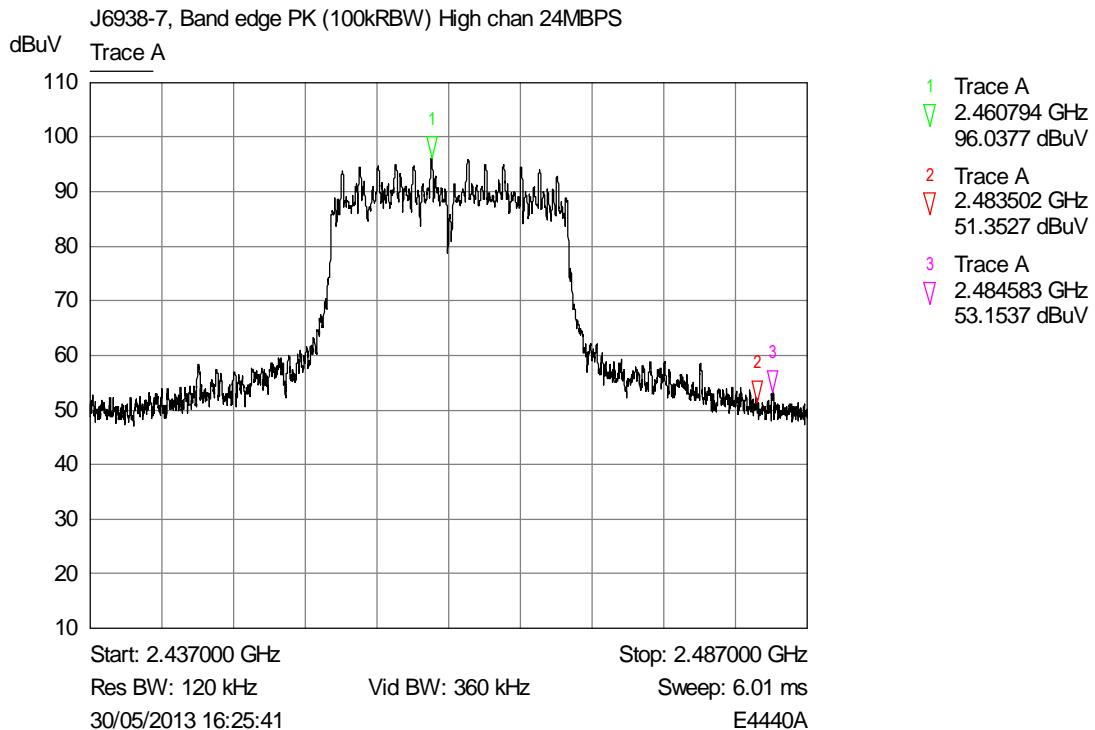
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

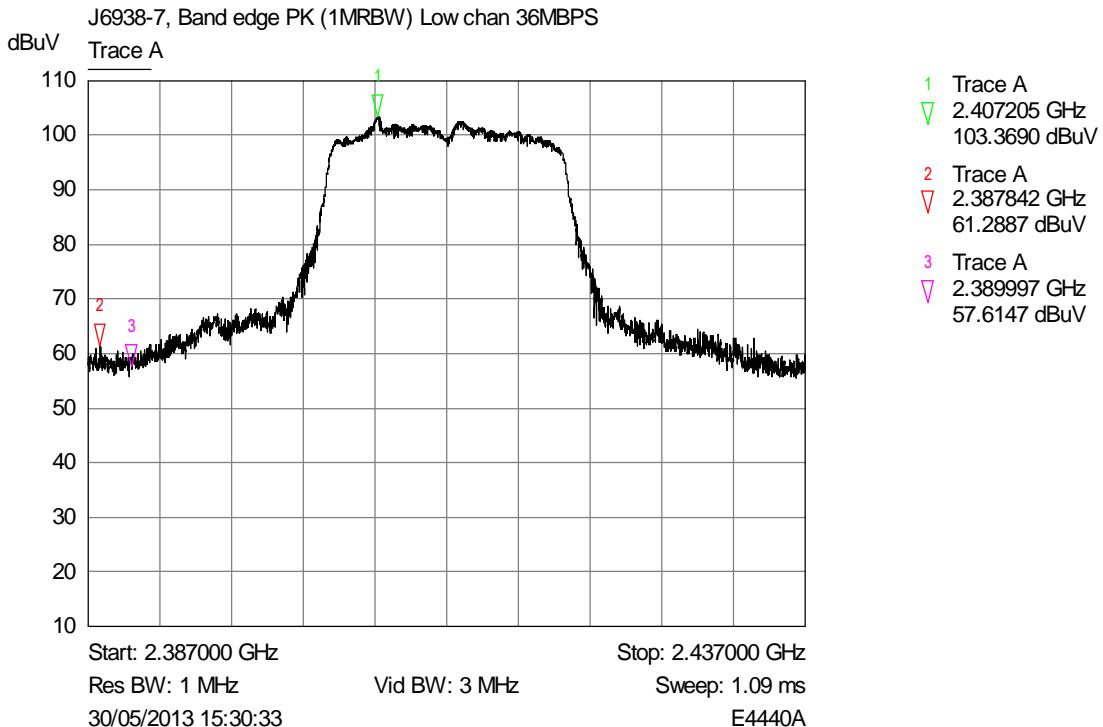


Band Edge: Low channel

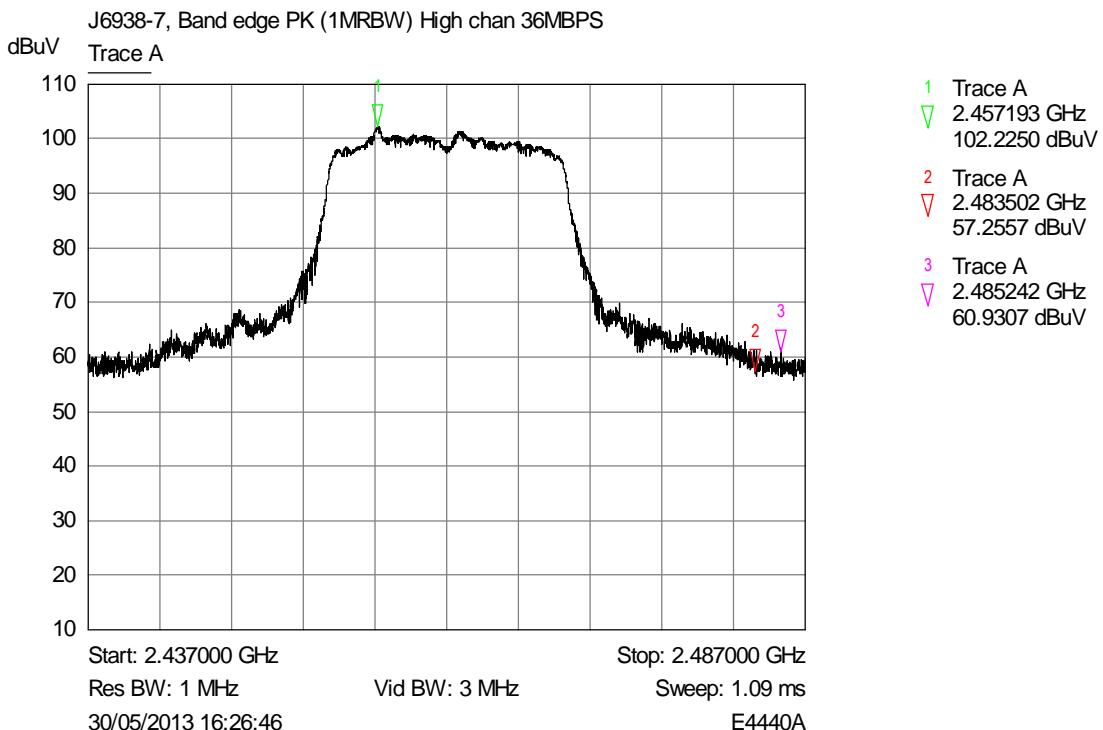


Band Edge: High channel

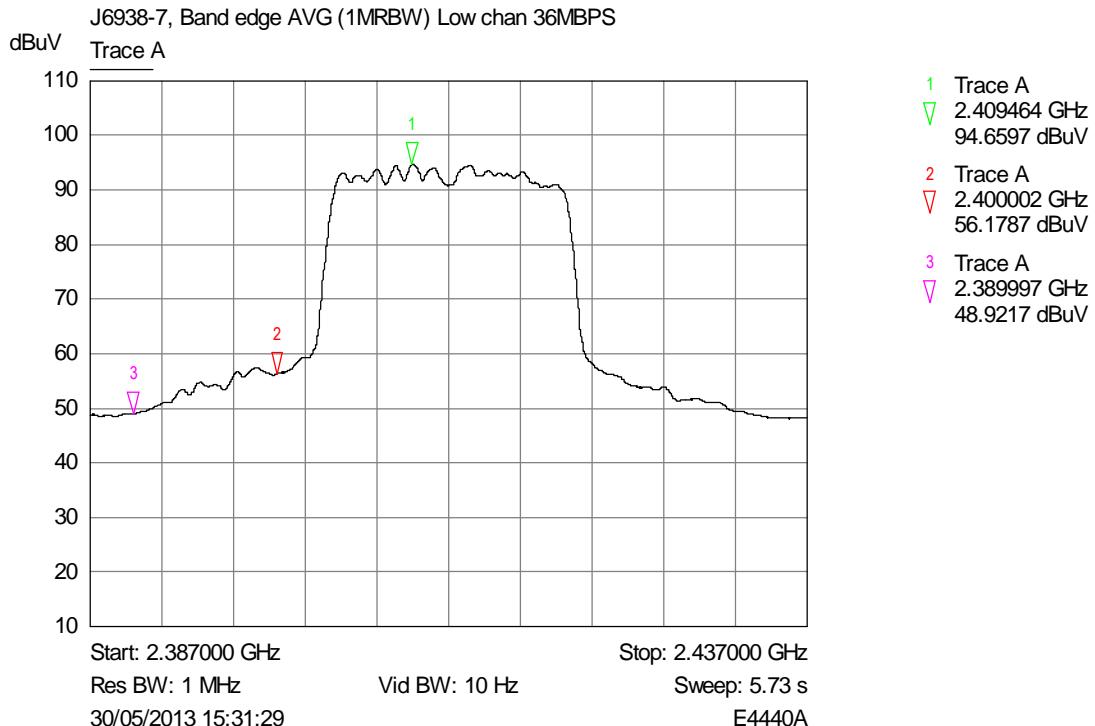
6.4.10 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 36 MBPS



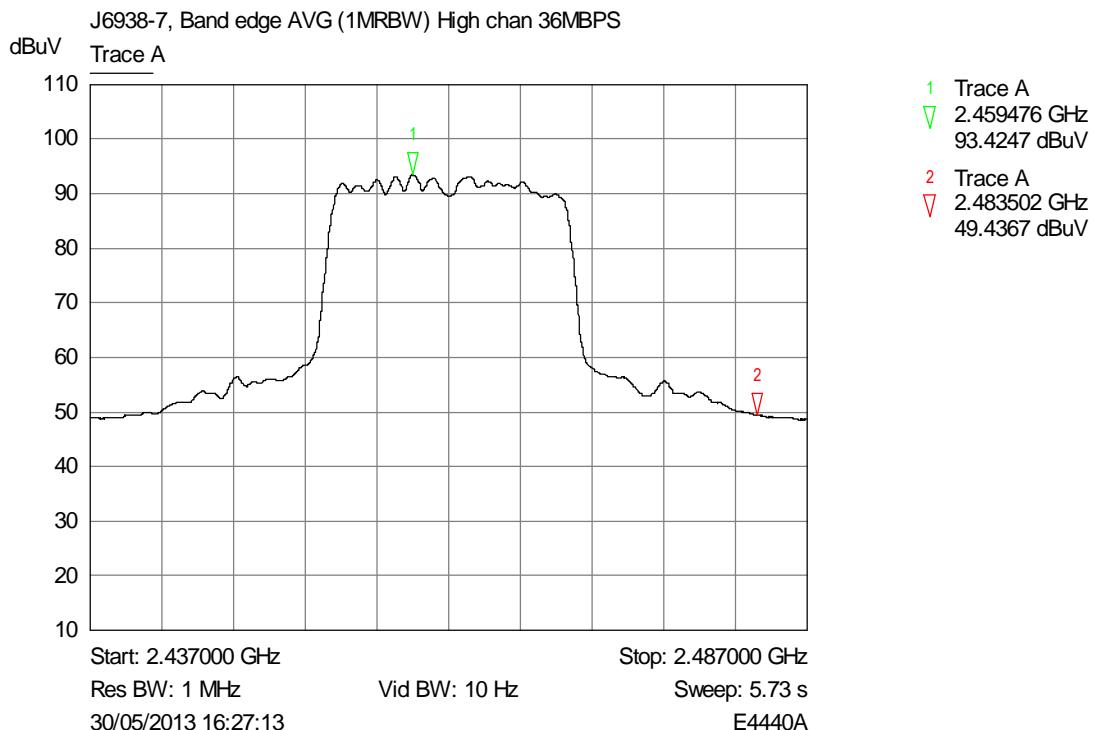
Restricted Band: Low channel Peak plot



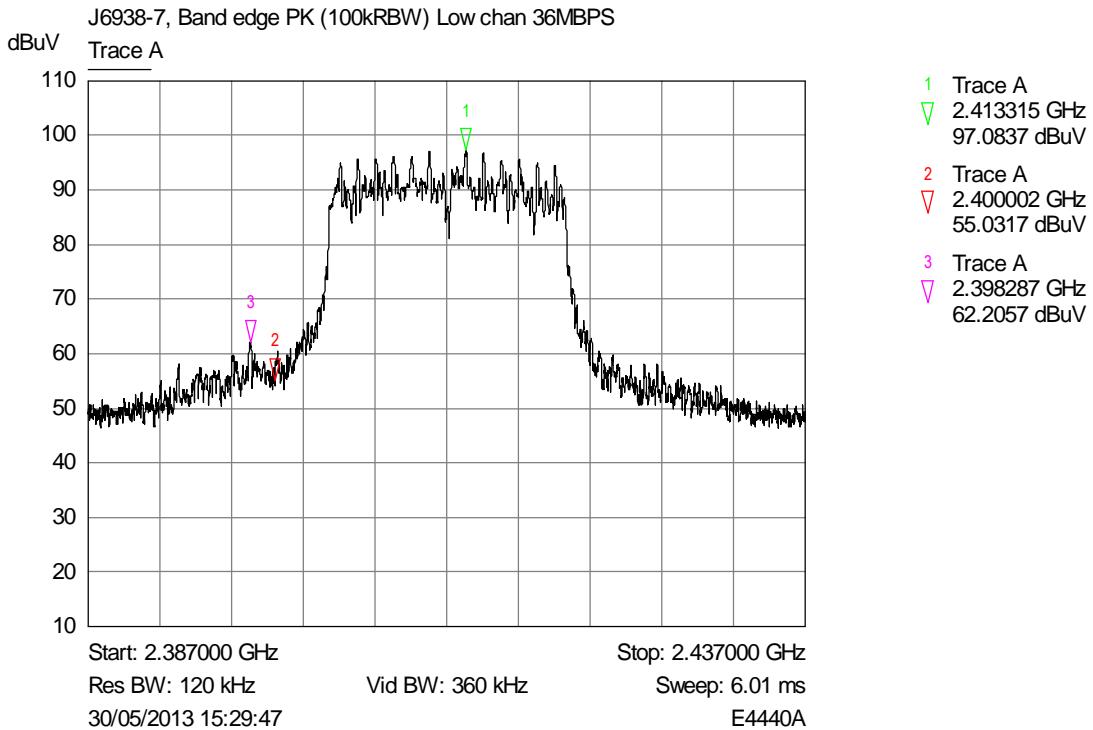
Restricted Band: High channel Peak plot



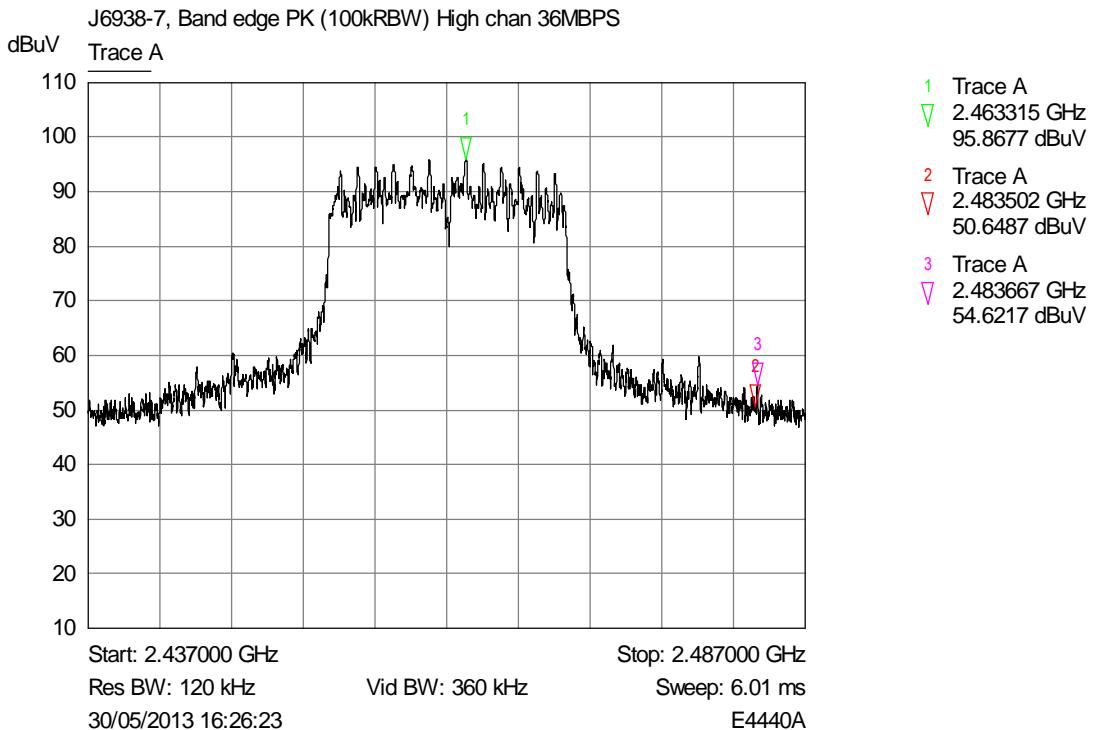
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

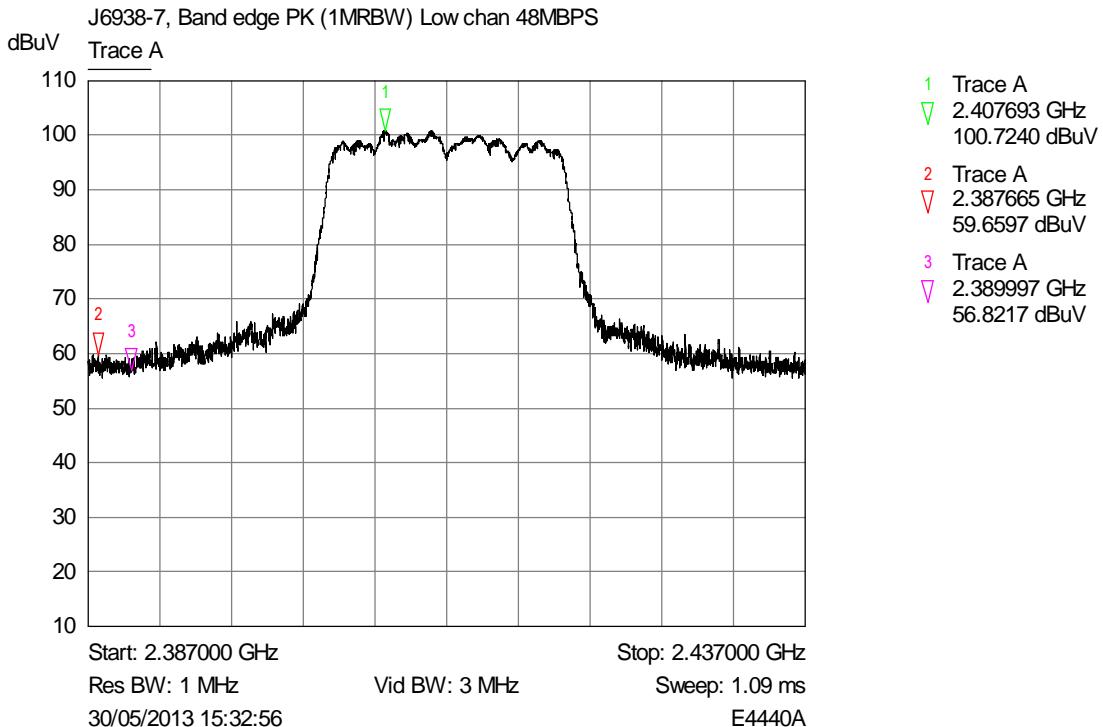


Band Edge: Low channel

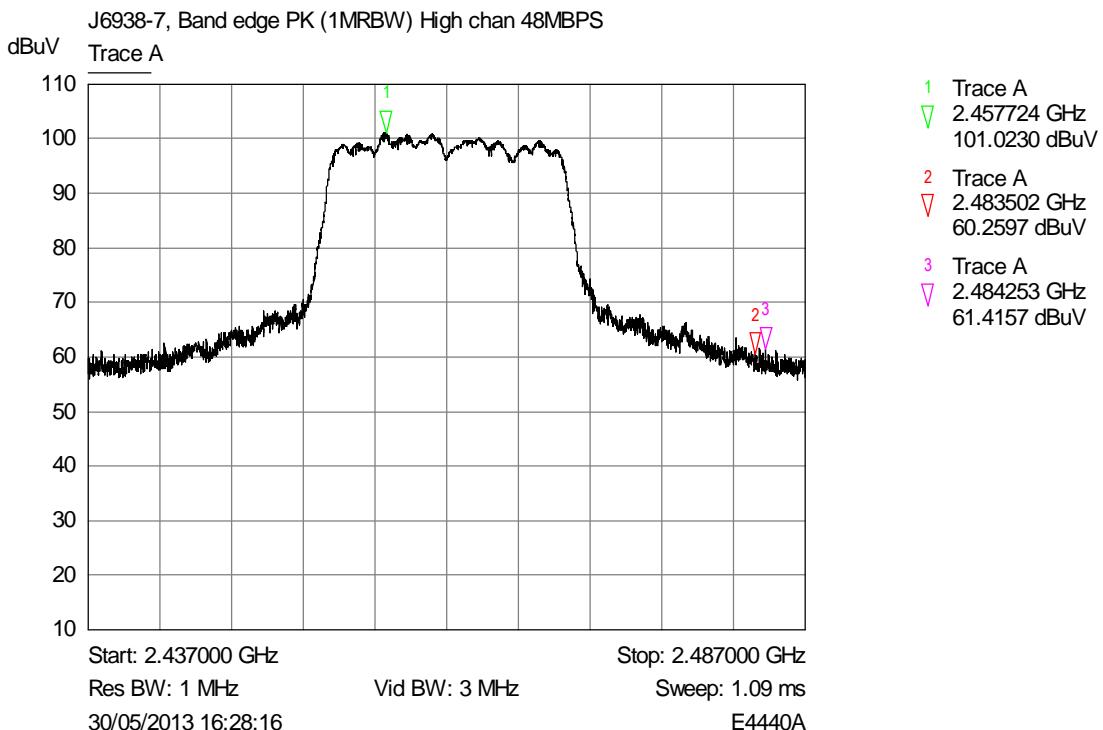


Band Edge: High channel

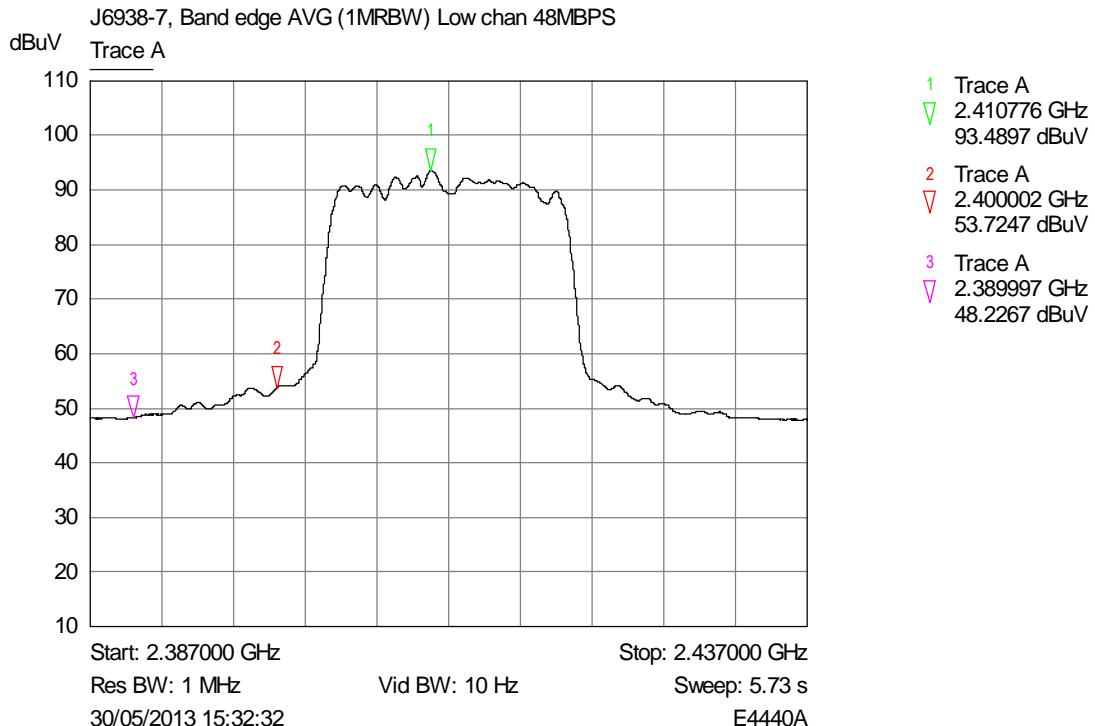
6.4.11 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 48 MBPS



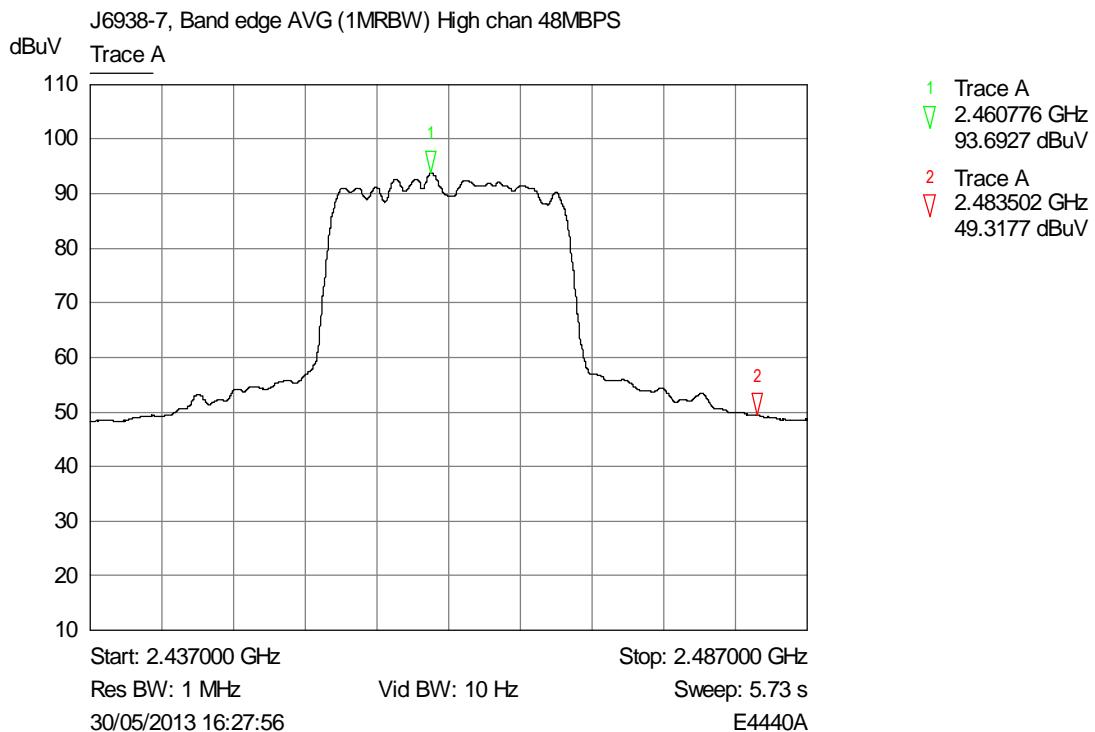
Restricted Band: Low channel Peak plot



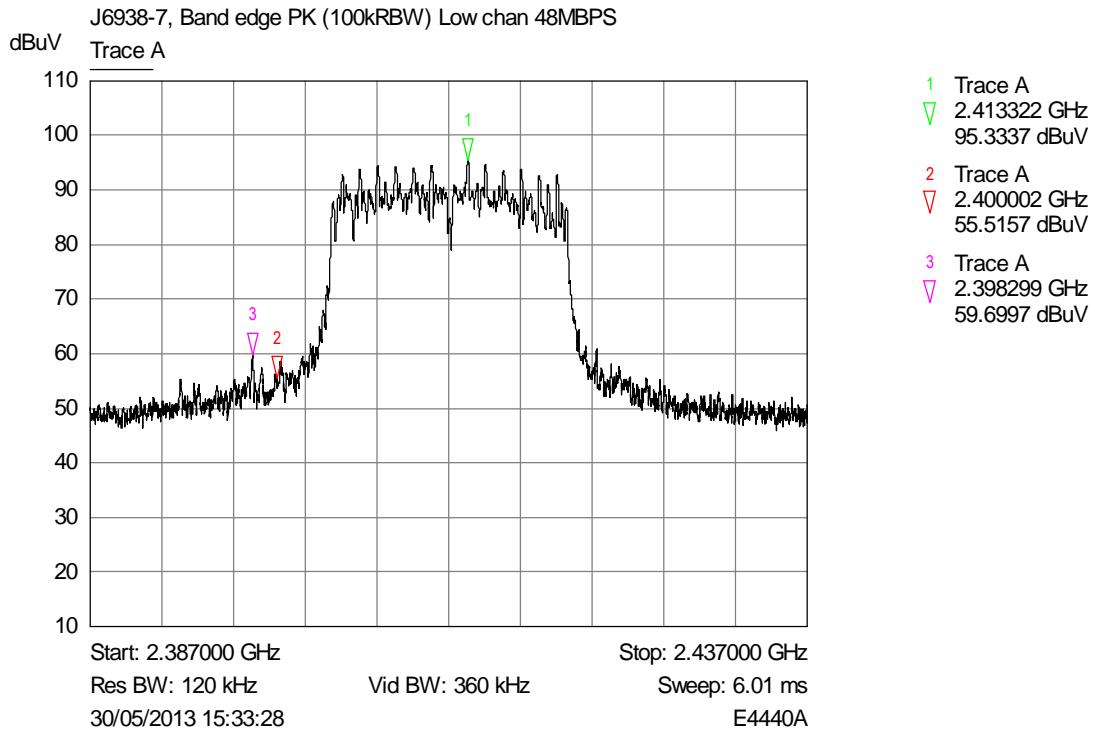
Restricted Band: High channel Peak plot



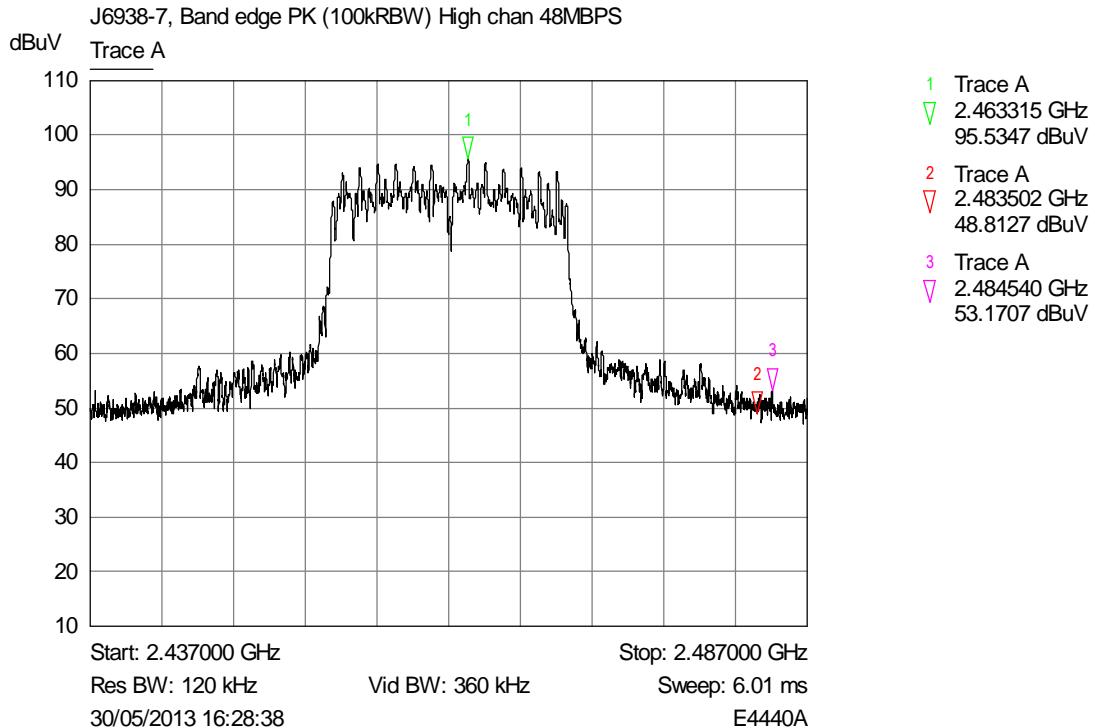
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot

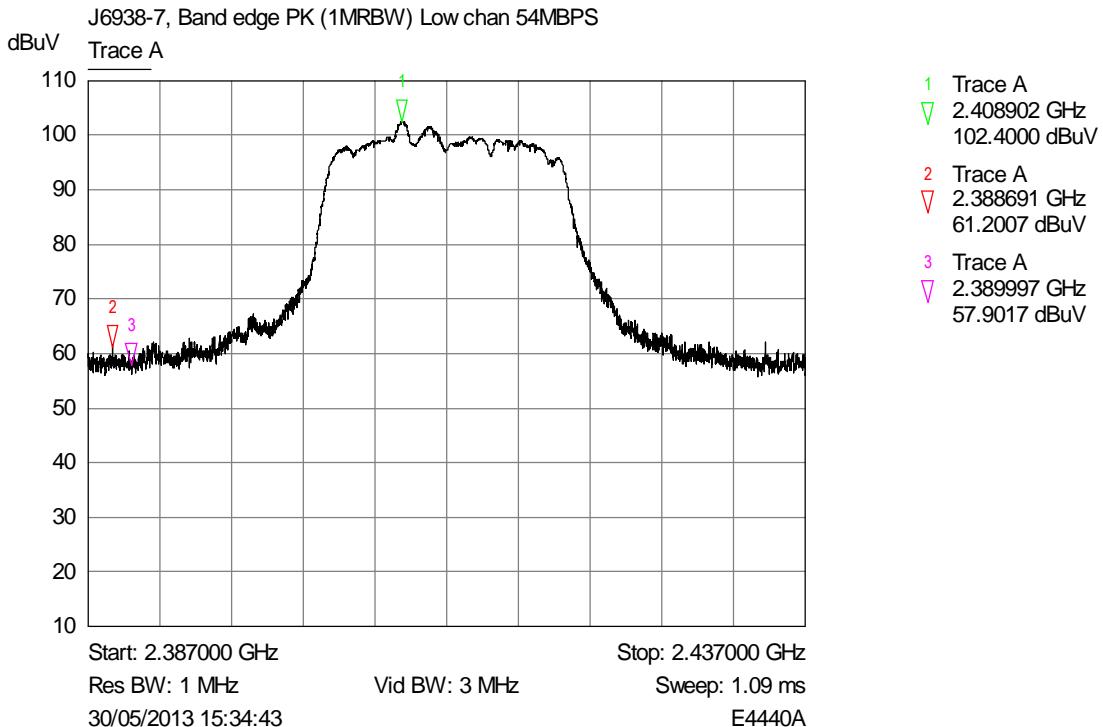


Band Edge: Low channel

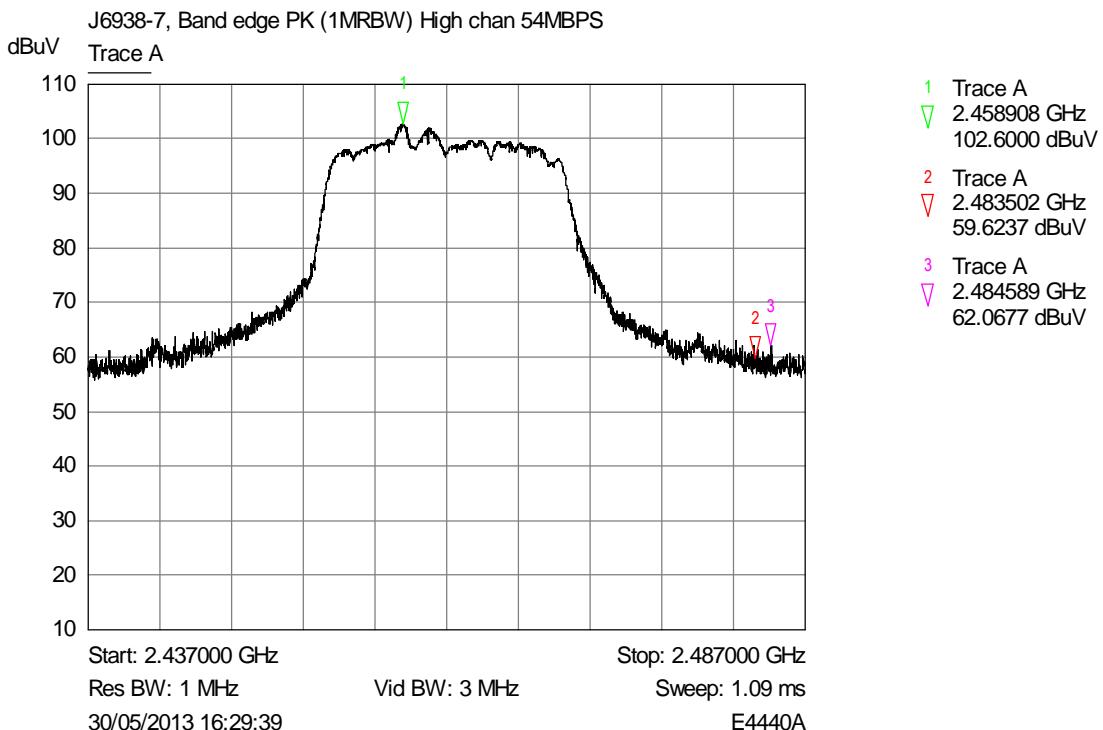


Band Edge: High channel

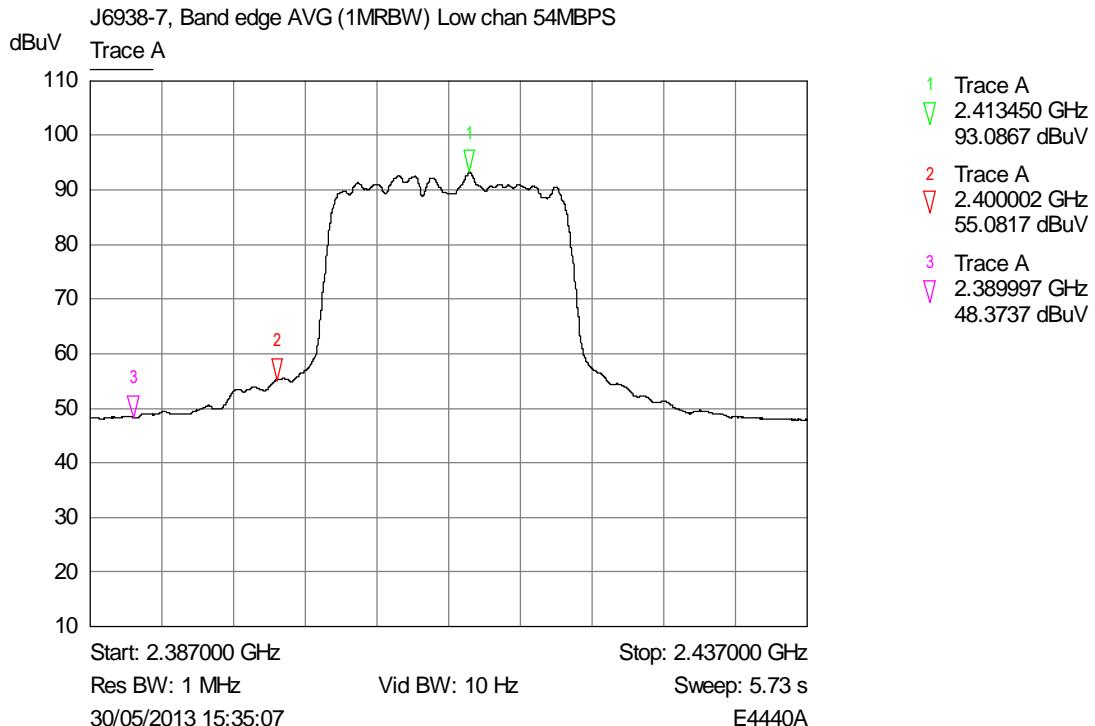
6.4.12 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 54 MBPS



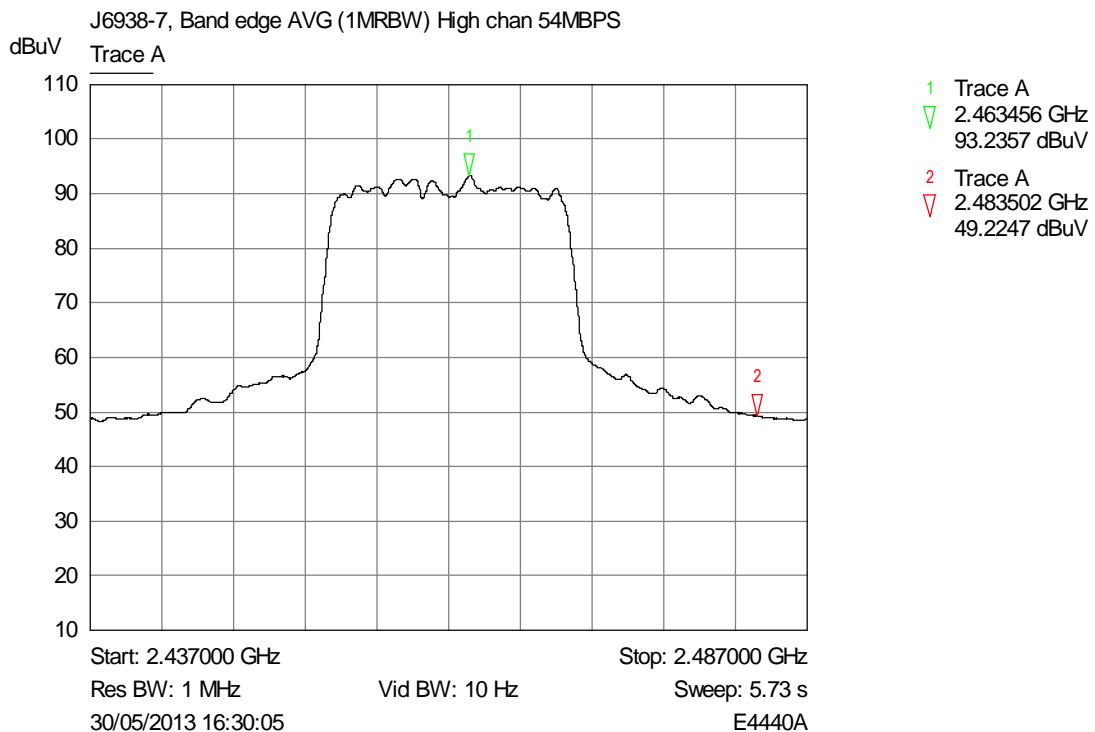
Restricted Band: Low channel Peak plot



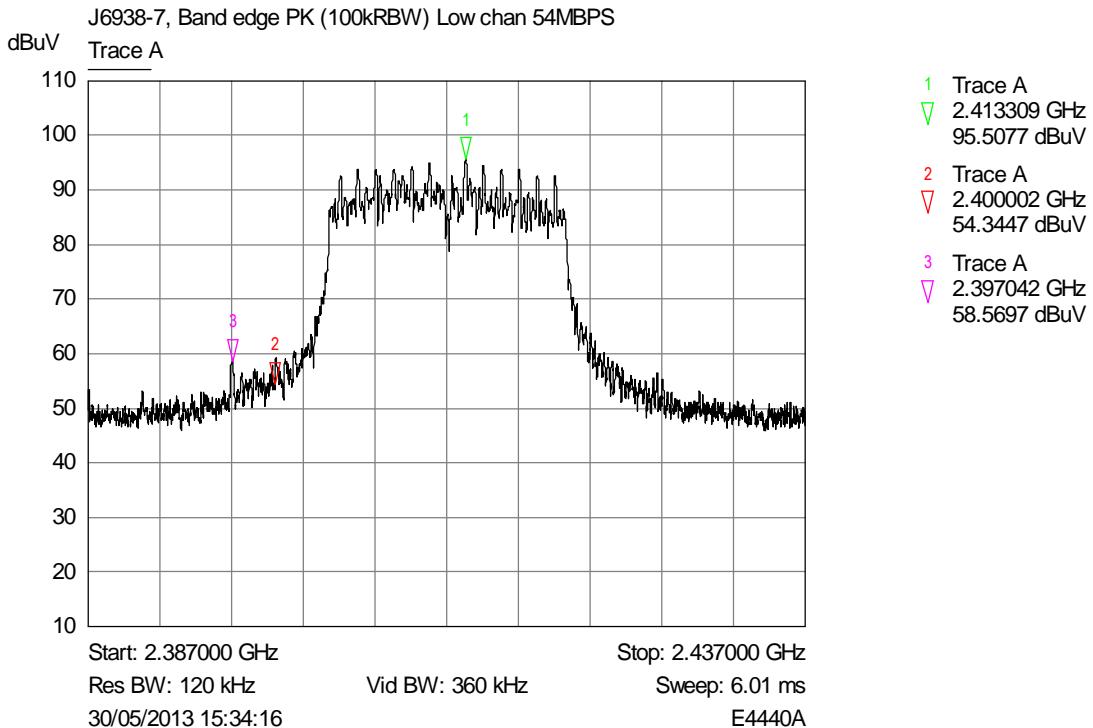
Restricted Band: High channel Peak plot



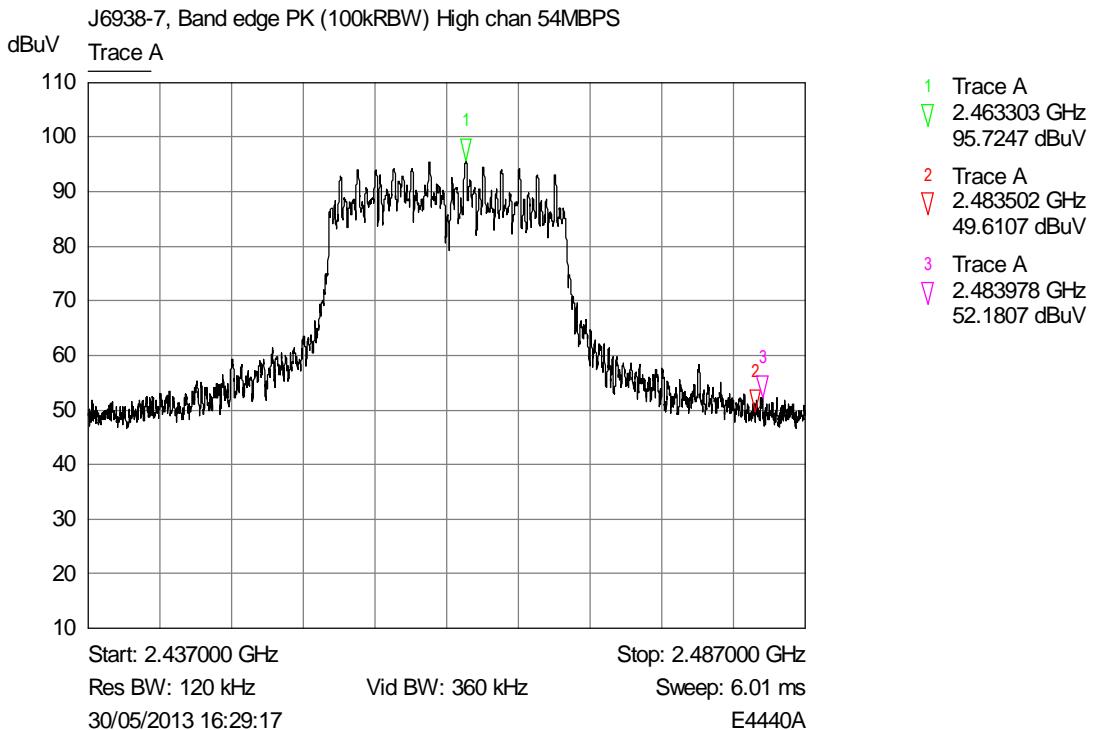
Restricted Band: Low channel Average plot



Restricted Band: High channel Average plot



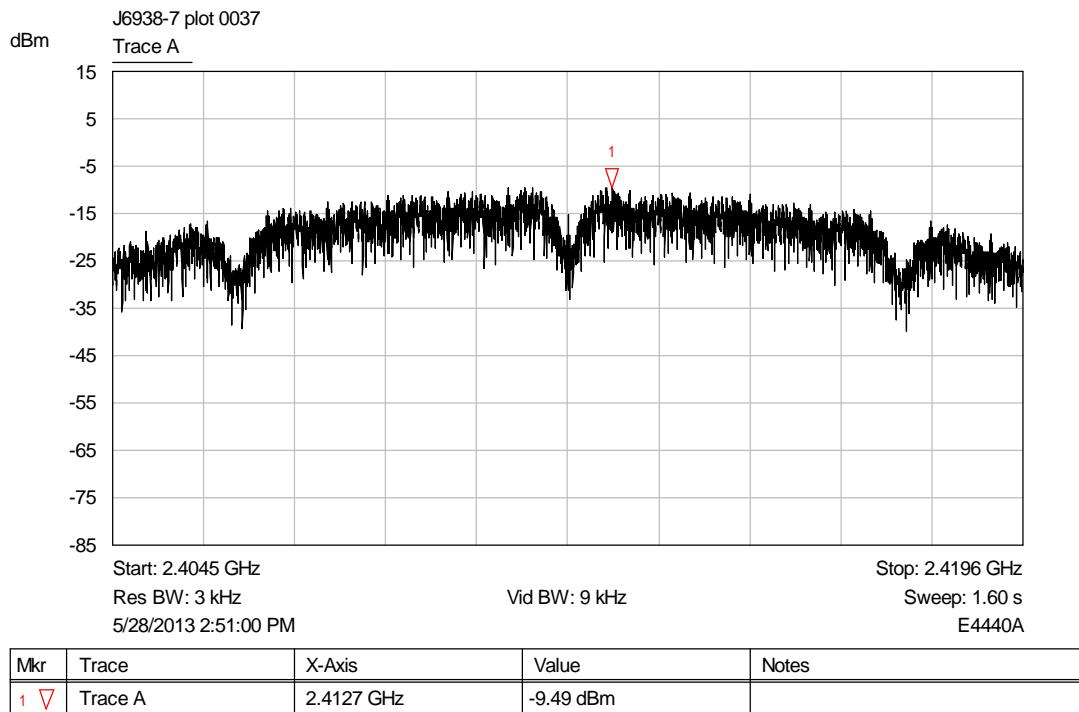
Band Edge: Low channel



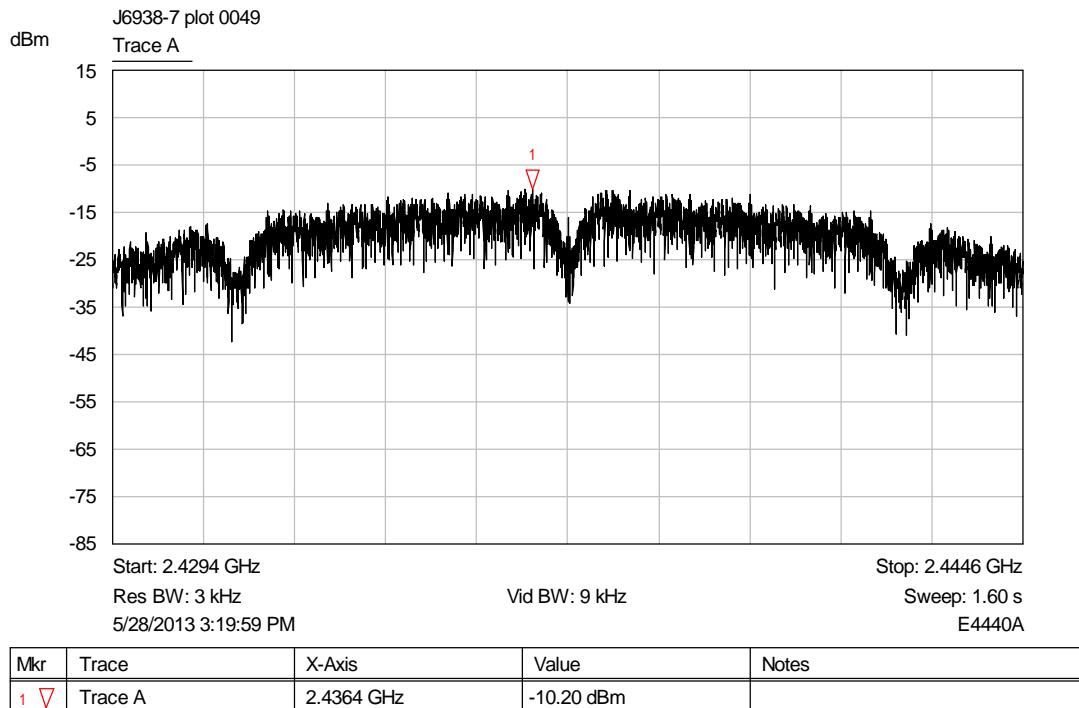
Band Edge: High channel

6.5 Power spectral density plots

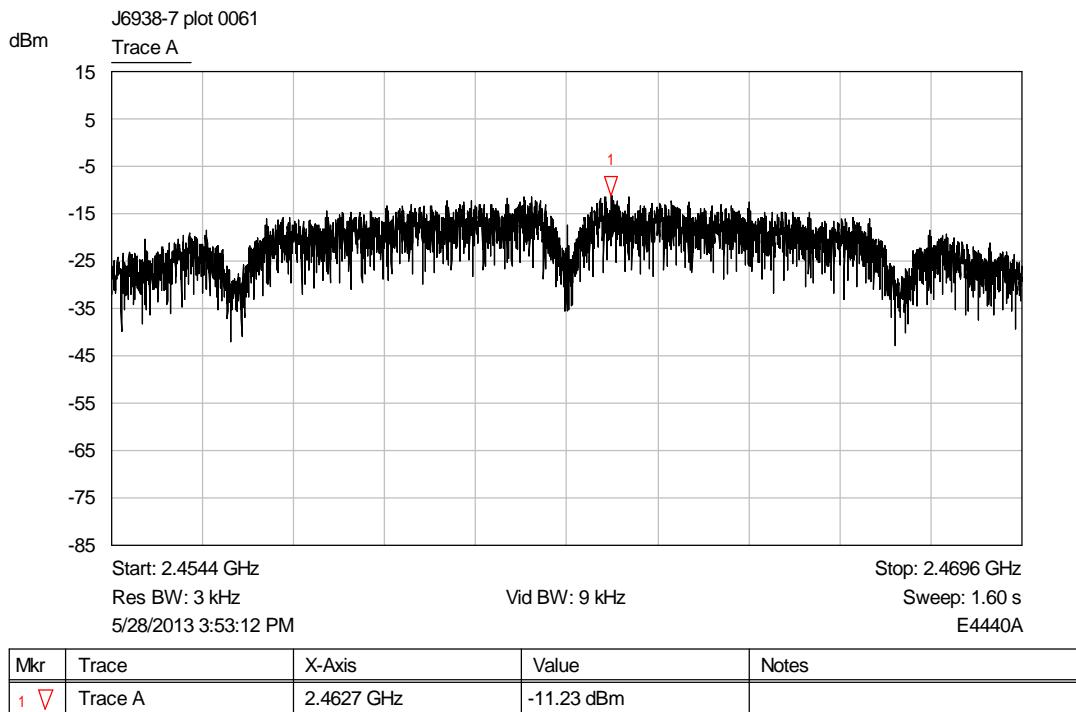
6.5.1 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 1 MBPS



Low channel

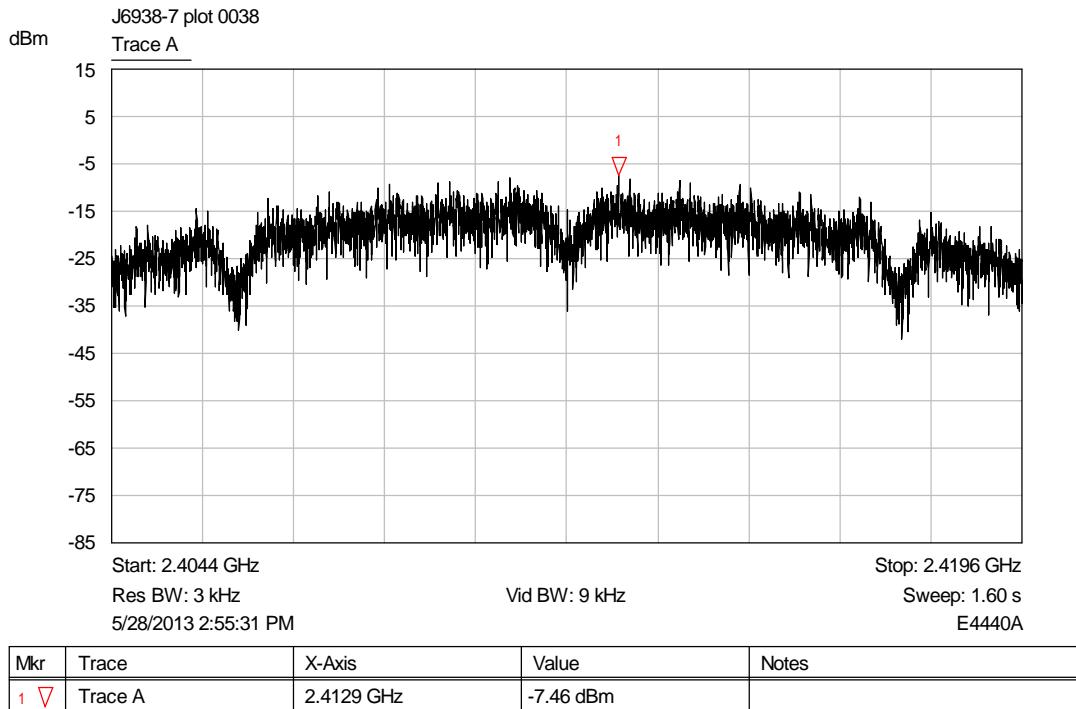


Mid channel

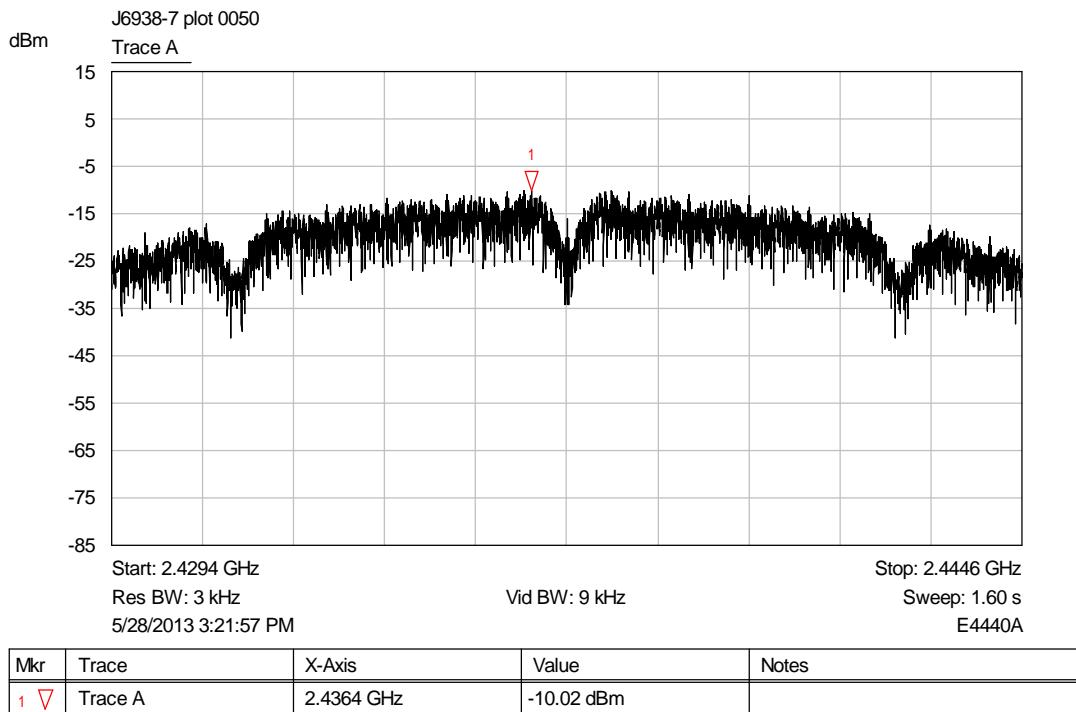


High channel

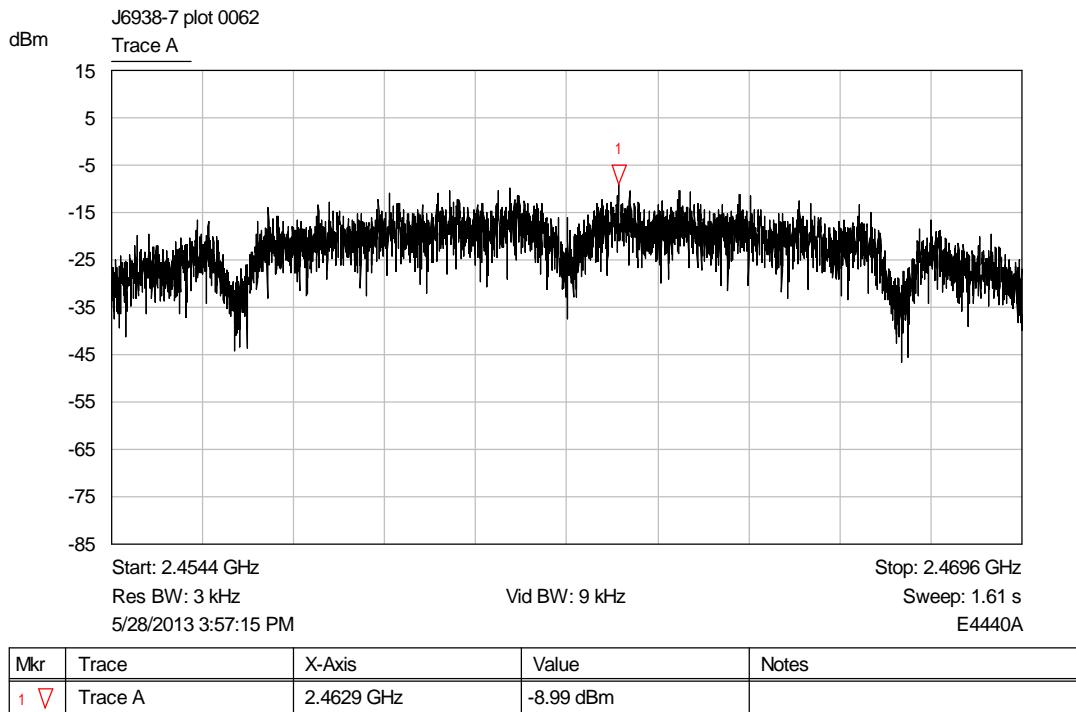
6.5.2 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 2 MBPS



Low channel

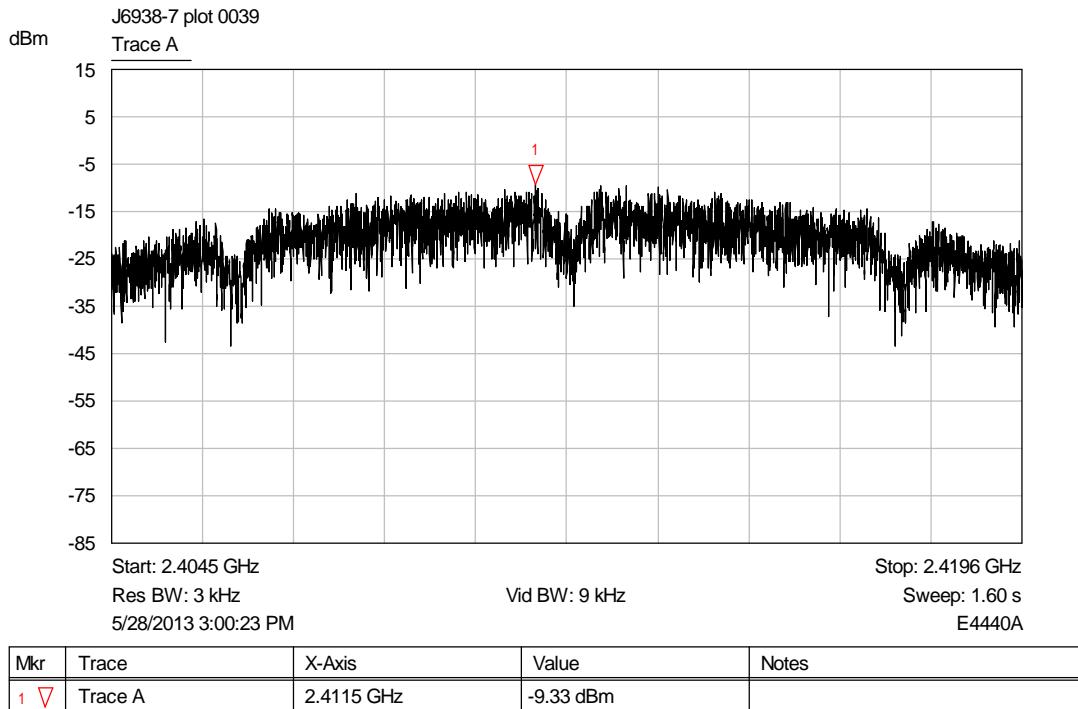


Mid channel

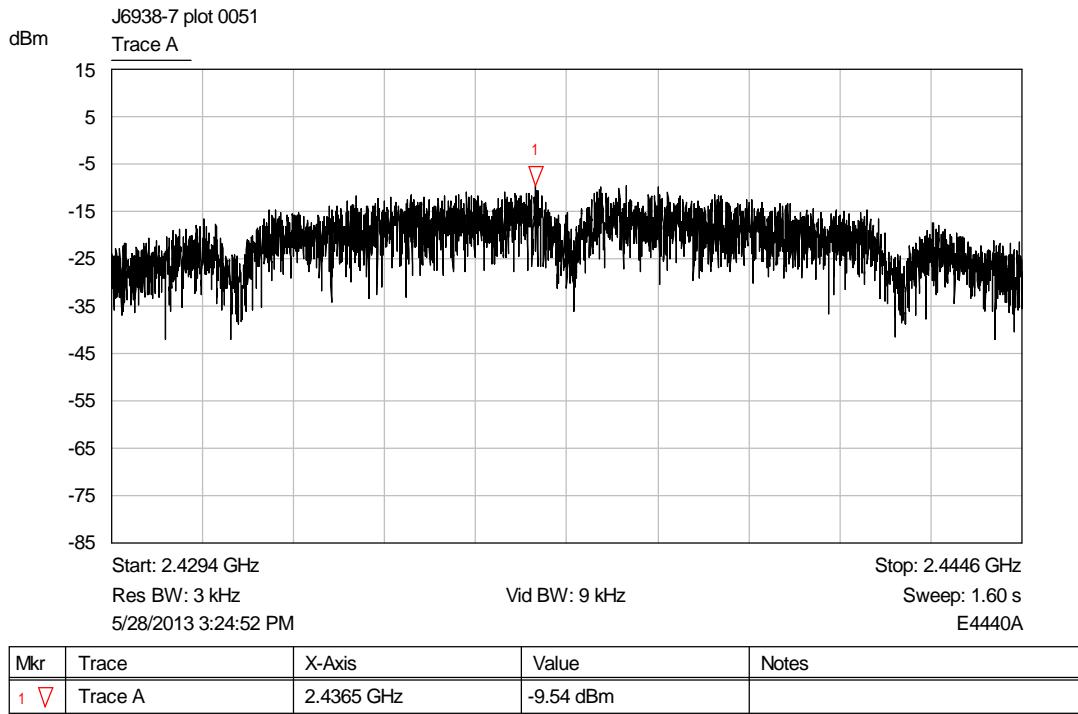


High channel

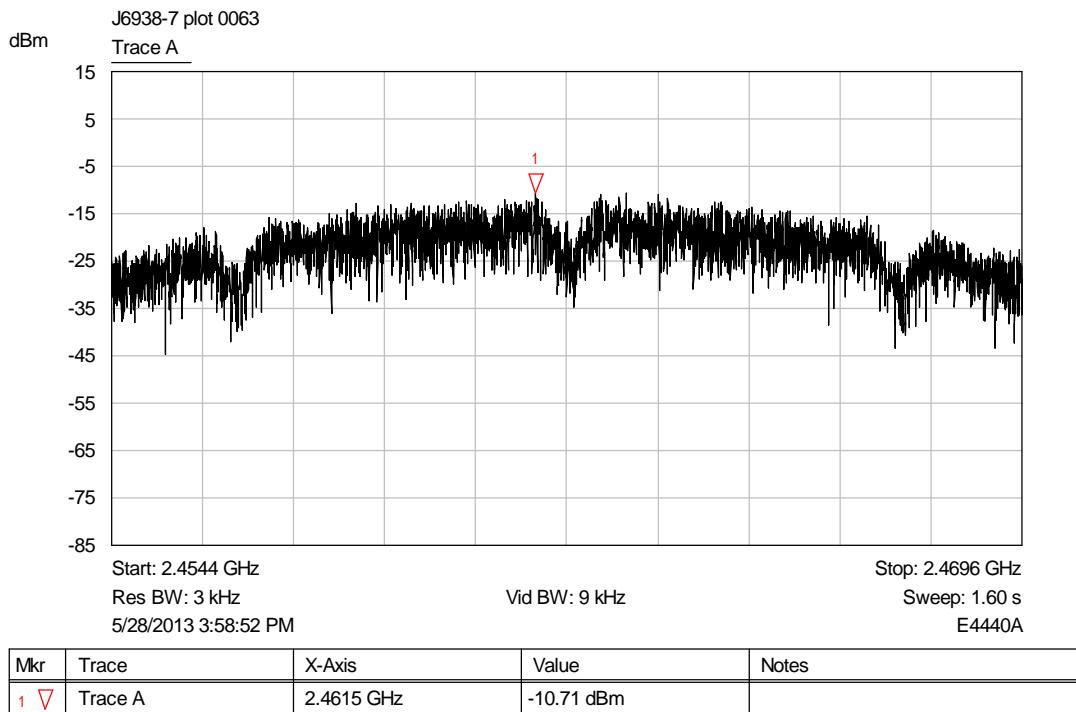
6.5.3 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 5.5 MBPS



Low channel

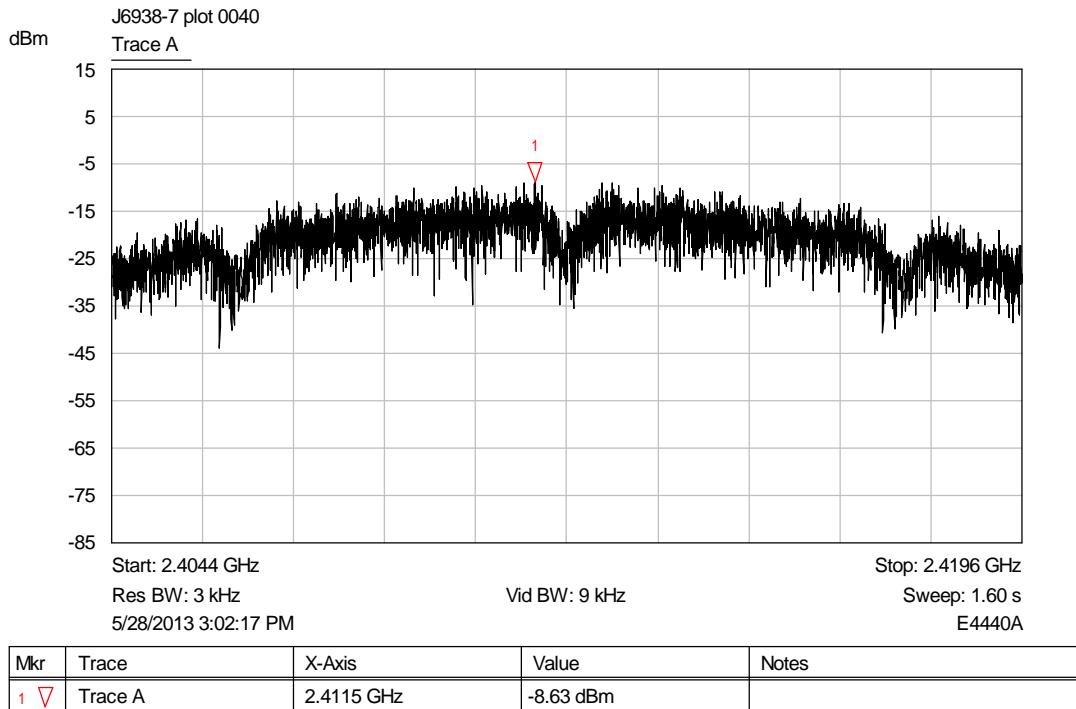


Mid channel

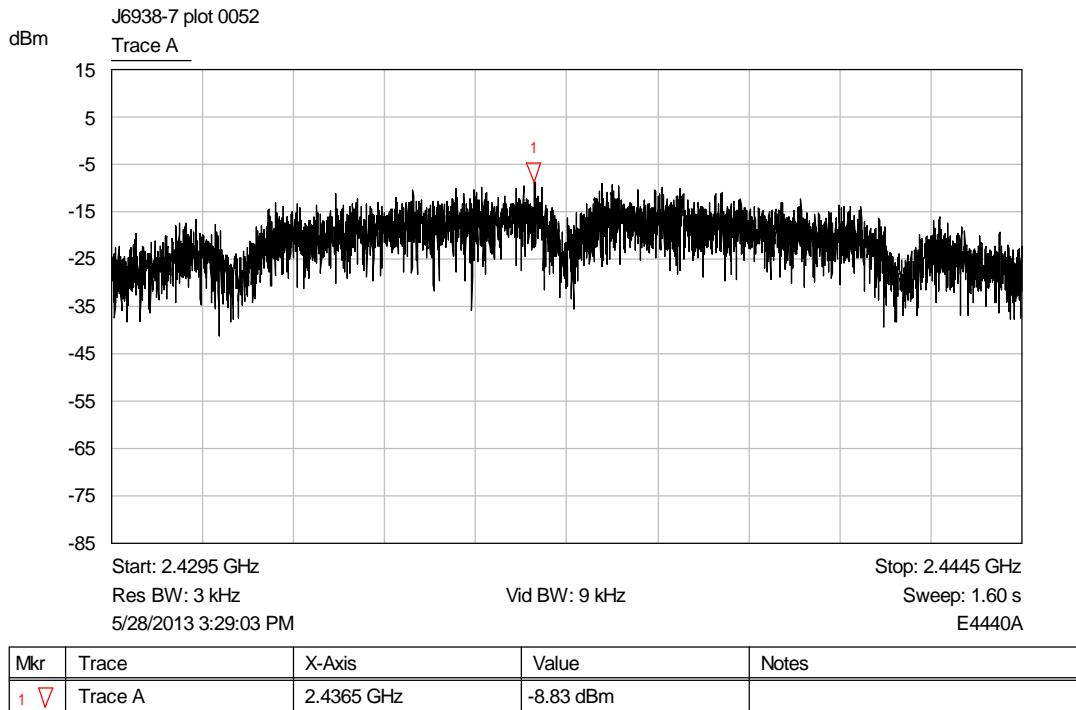


High channel

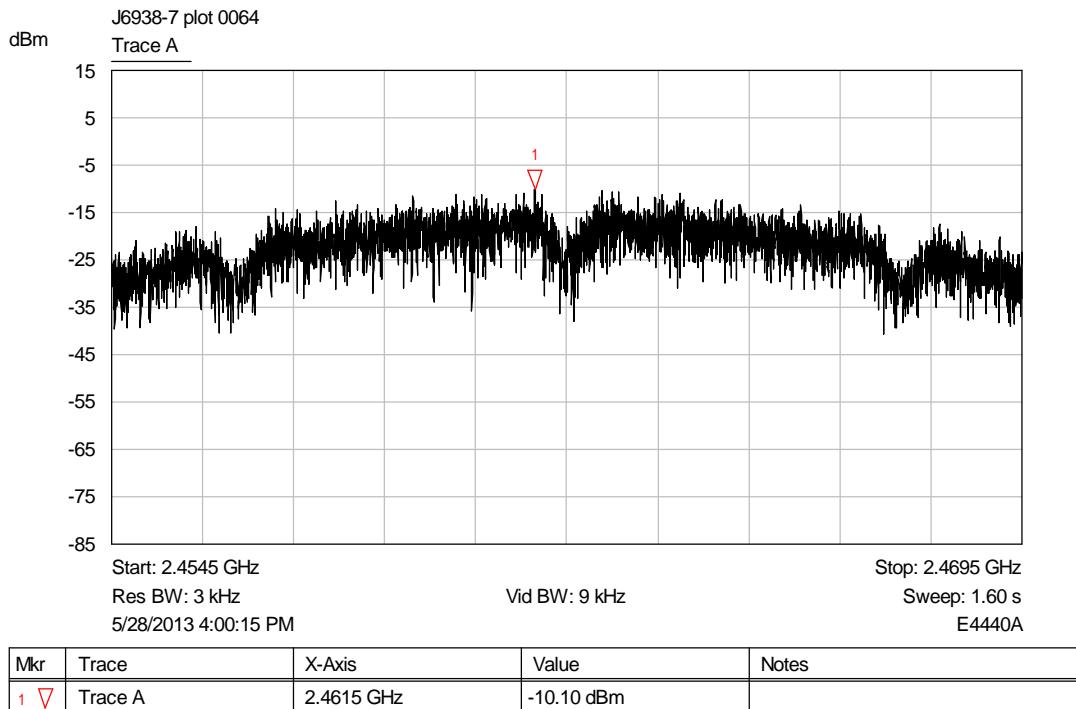
6.5.4 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 11 MBPS



Low channel

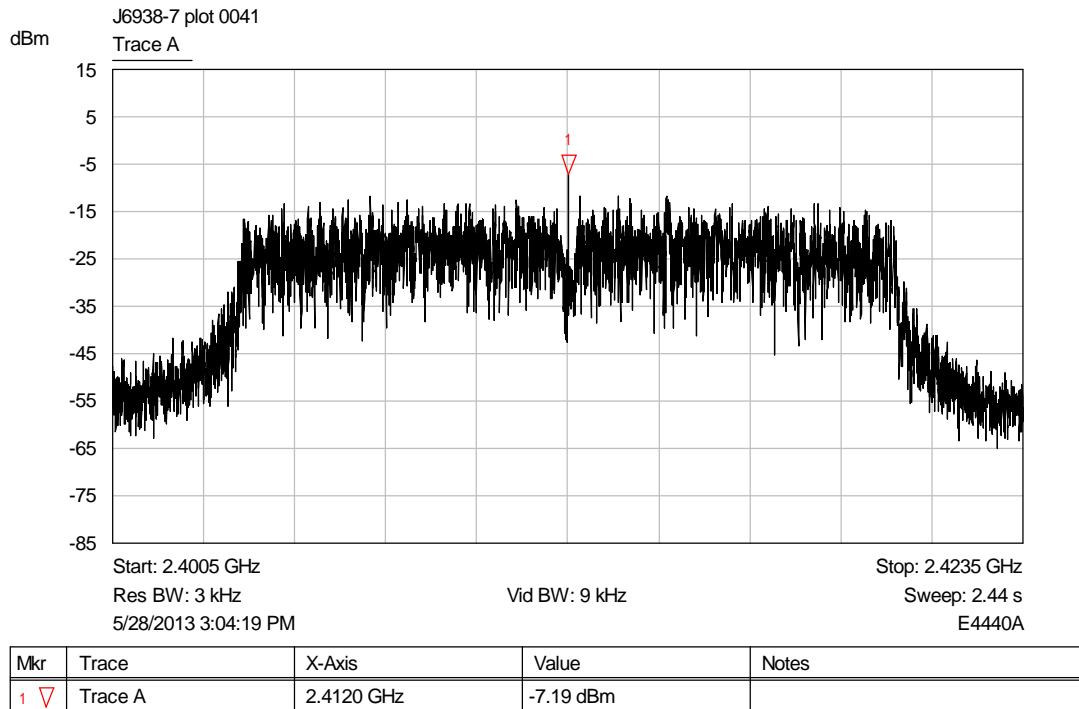


Mid channel

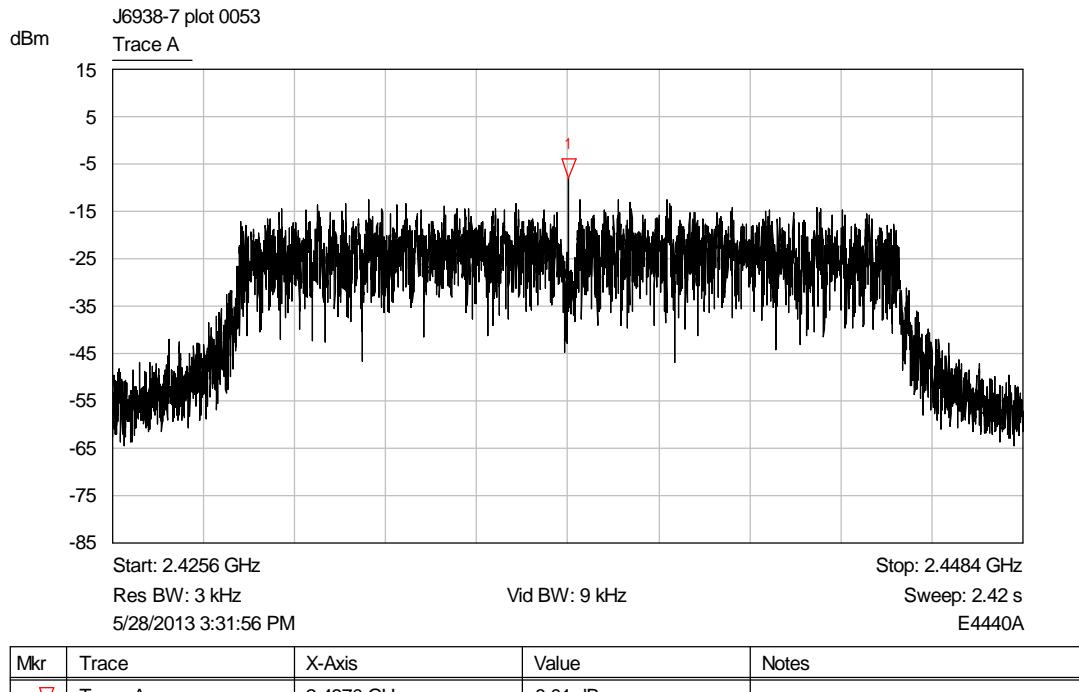


High channel

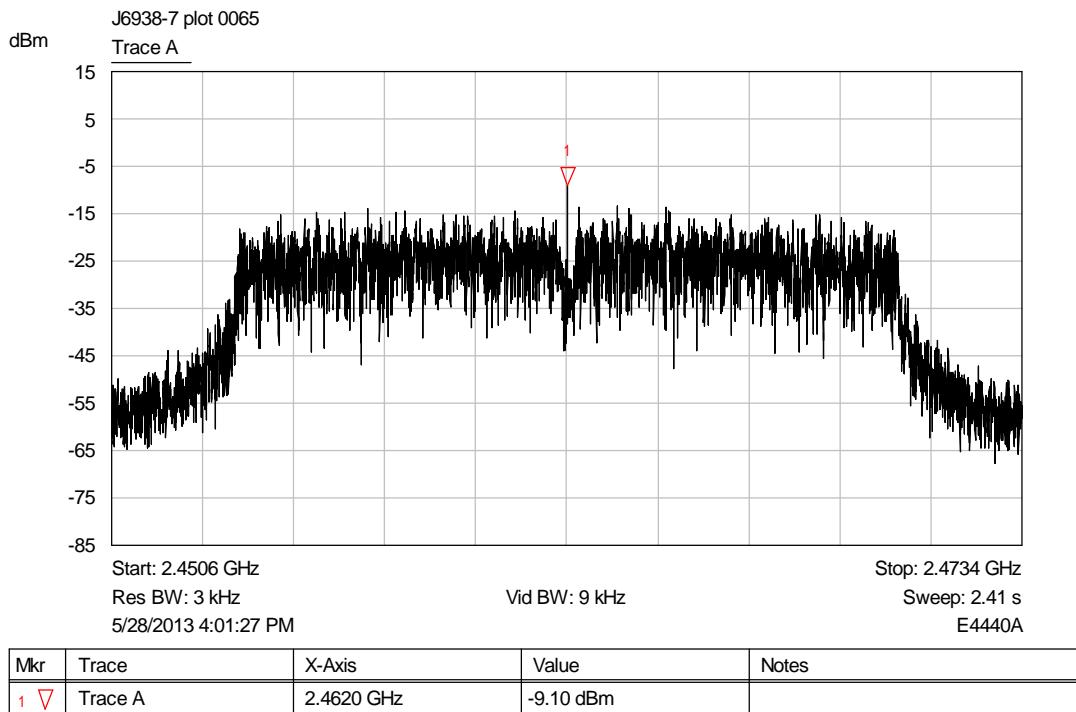
6.5.5 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 6 MBPS



Low channel

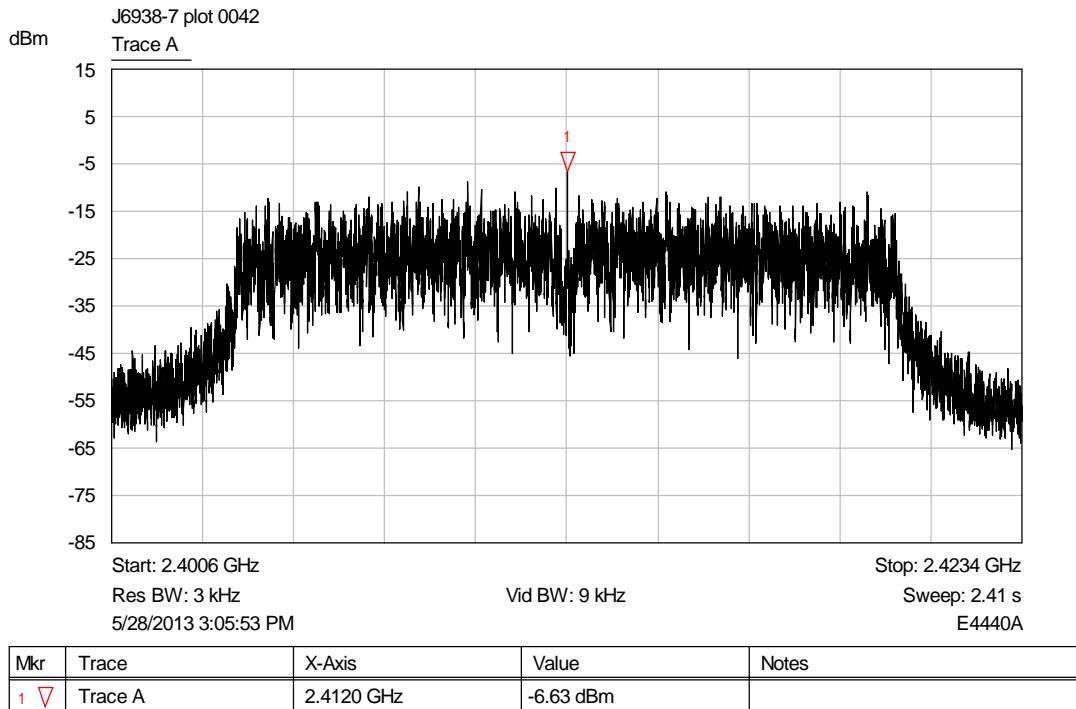


Mid channel



High channel

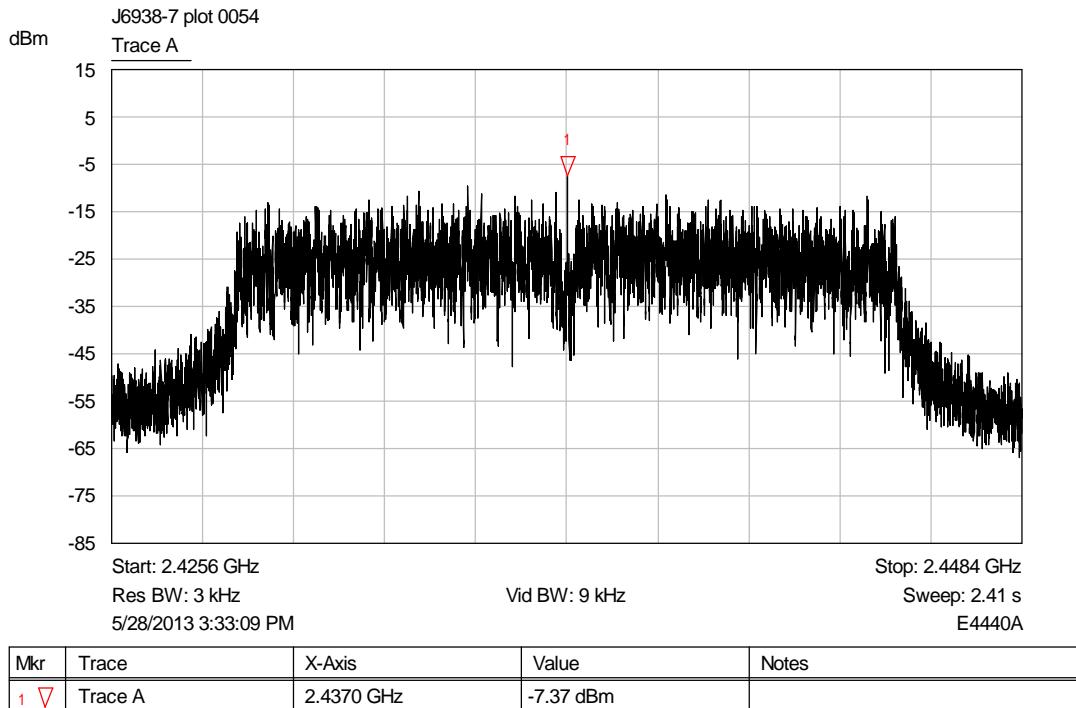
6.5.6 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 9 MBPS



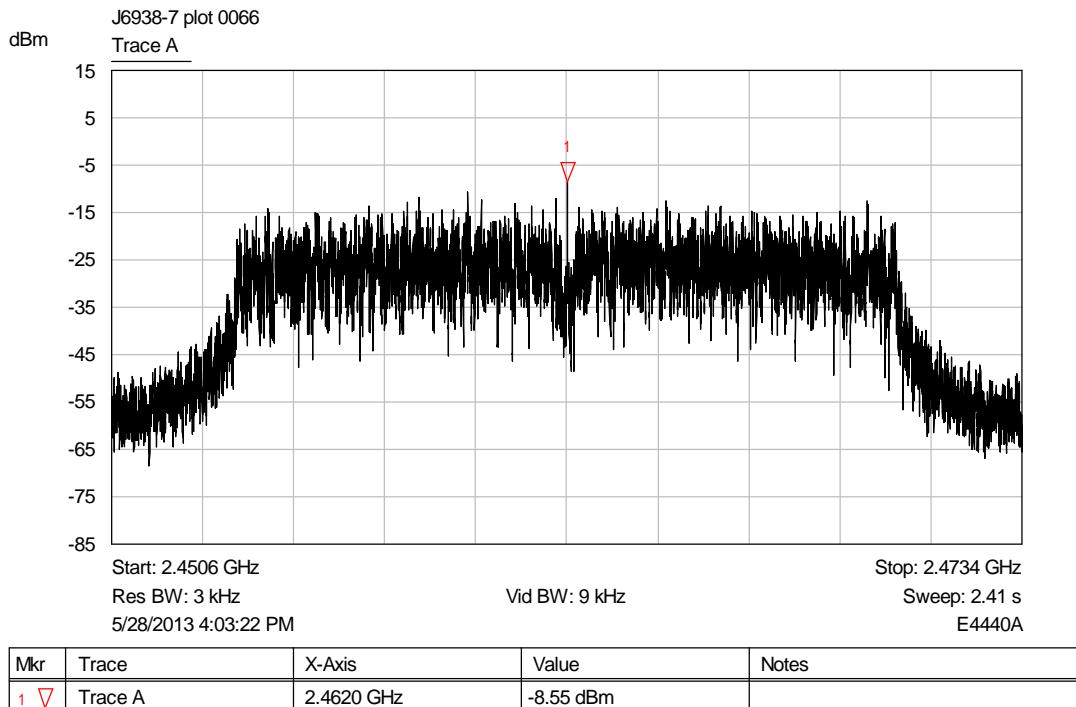
Low channel

File name PURE.6938-7 ISSUE 02

The contents of this report, apart from the referenced ANSI C63.4-2003, are beyond the scope of UKAS Testing Laboratory No. 2360 accreditation.

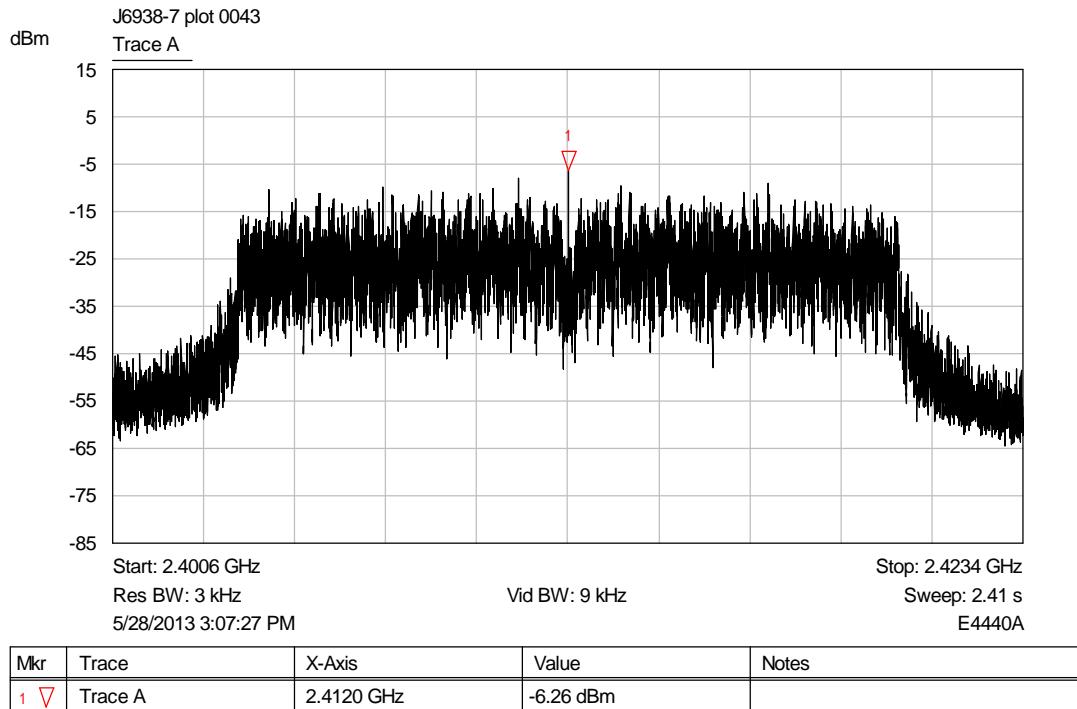


Mid channel

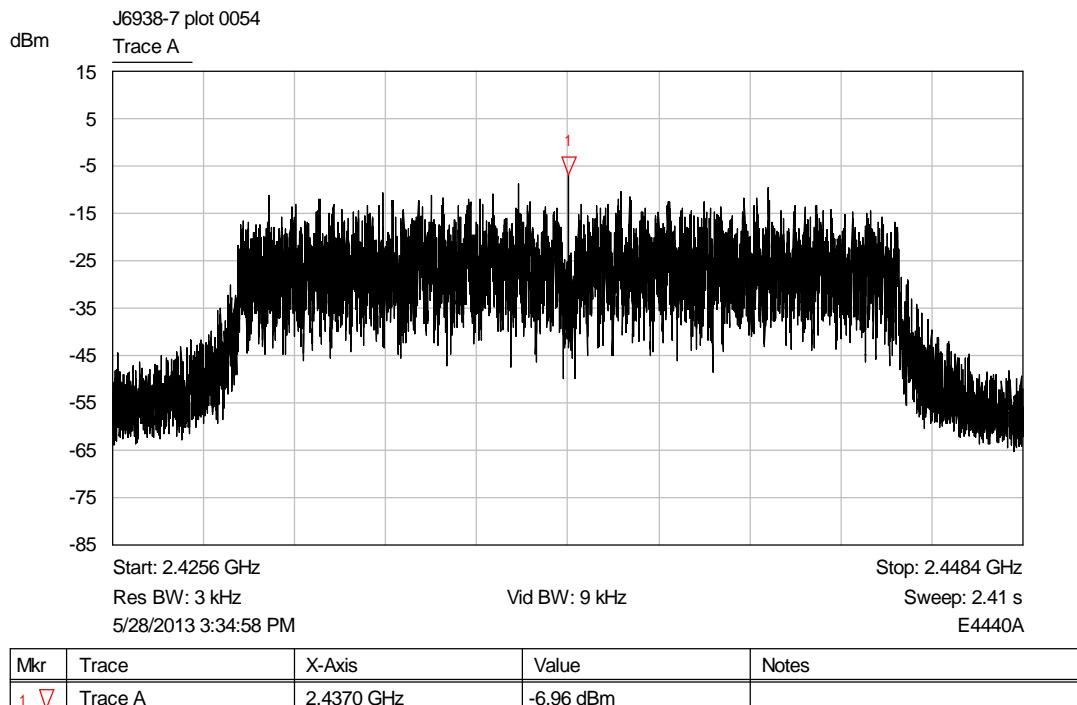


High channel

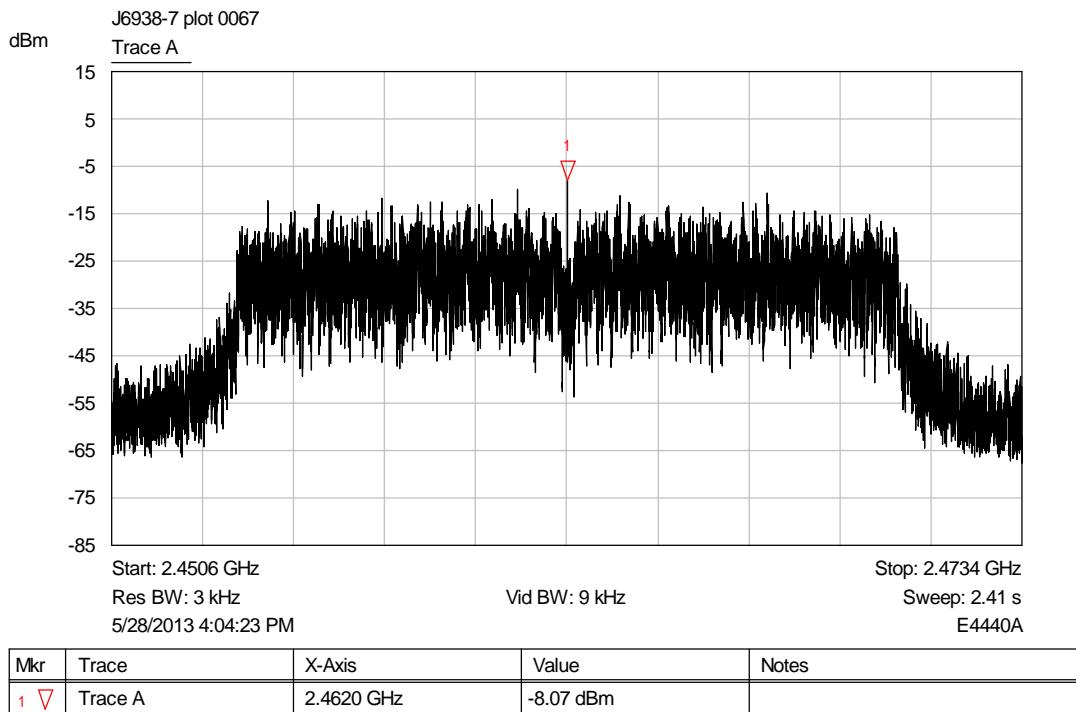
6.5.7 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 12 MBPS



Low channel

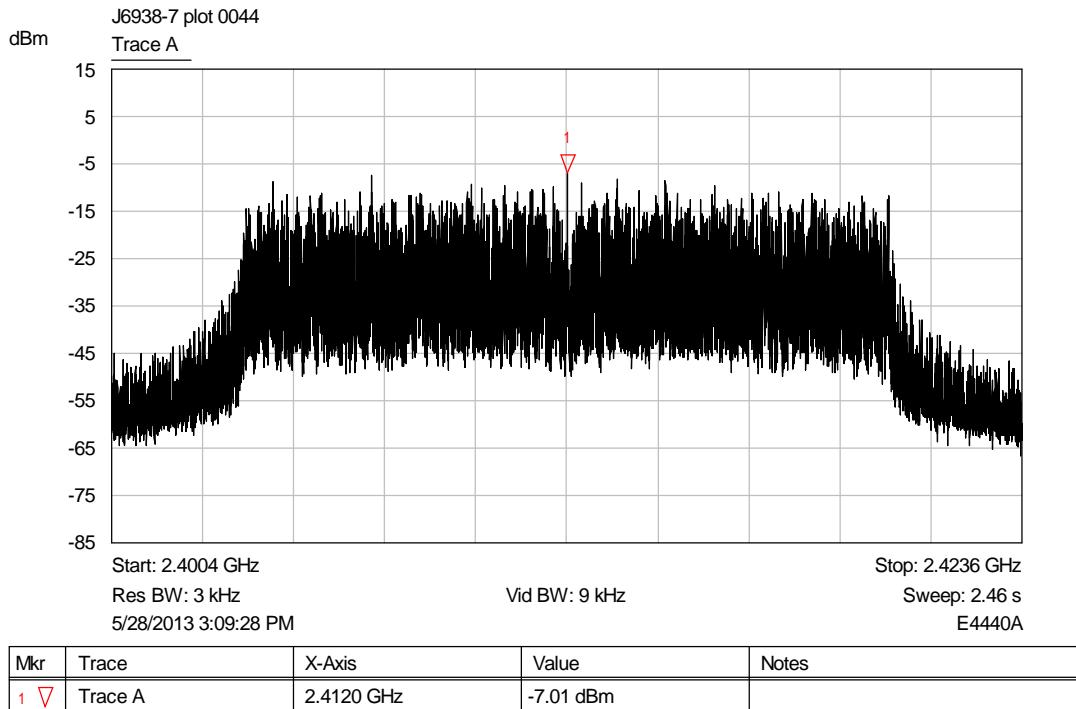


Mid channel



High channel

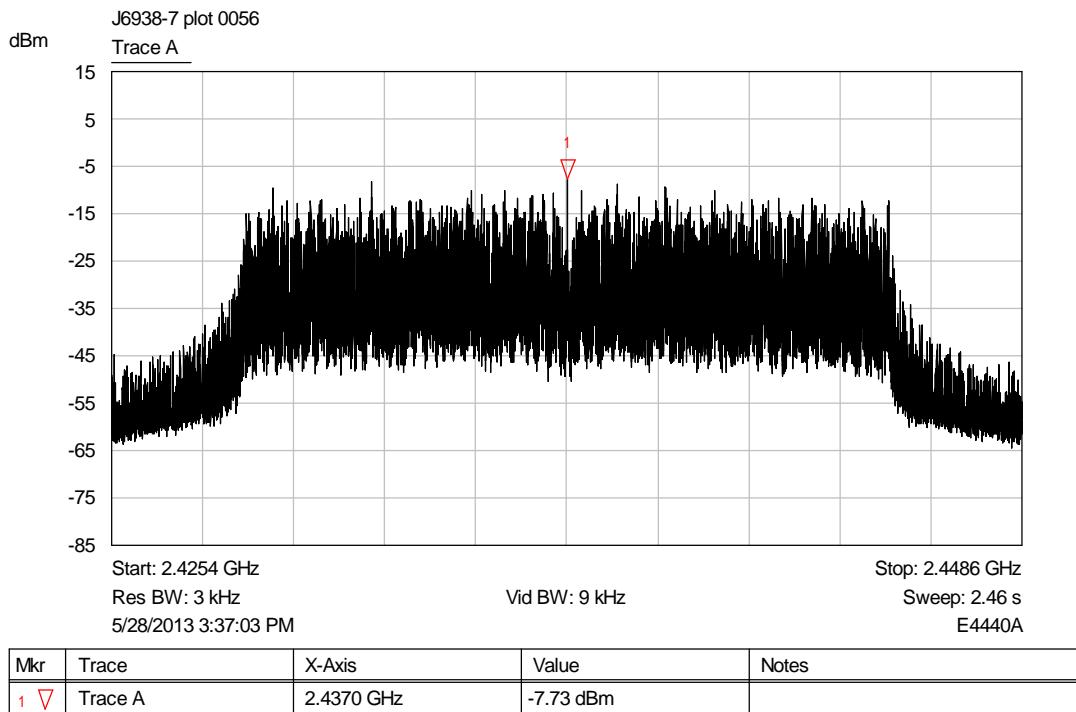
6.5.8 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 18 MBPS



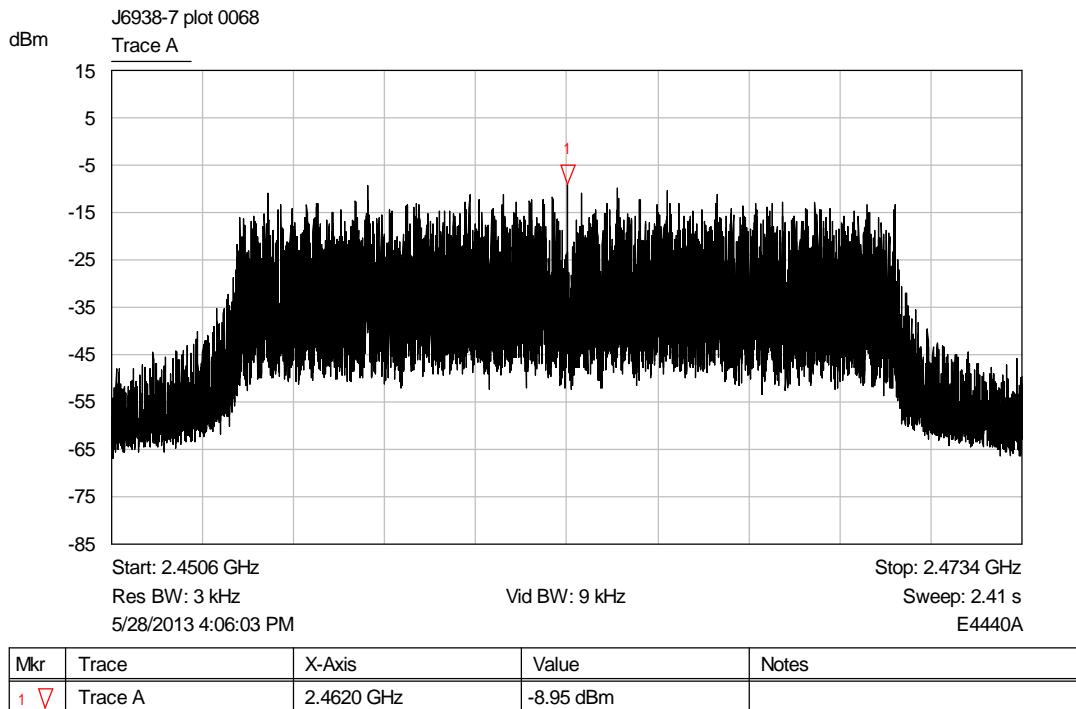
Low channel

File name PURE.6938-7 ISSUE 02

The contents of this report, apart from the referenced ANSI C63.4-2003, are beyond the scope of UKAS Testing Laboratory No. 2360 accreditation.

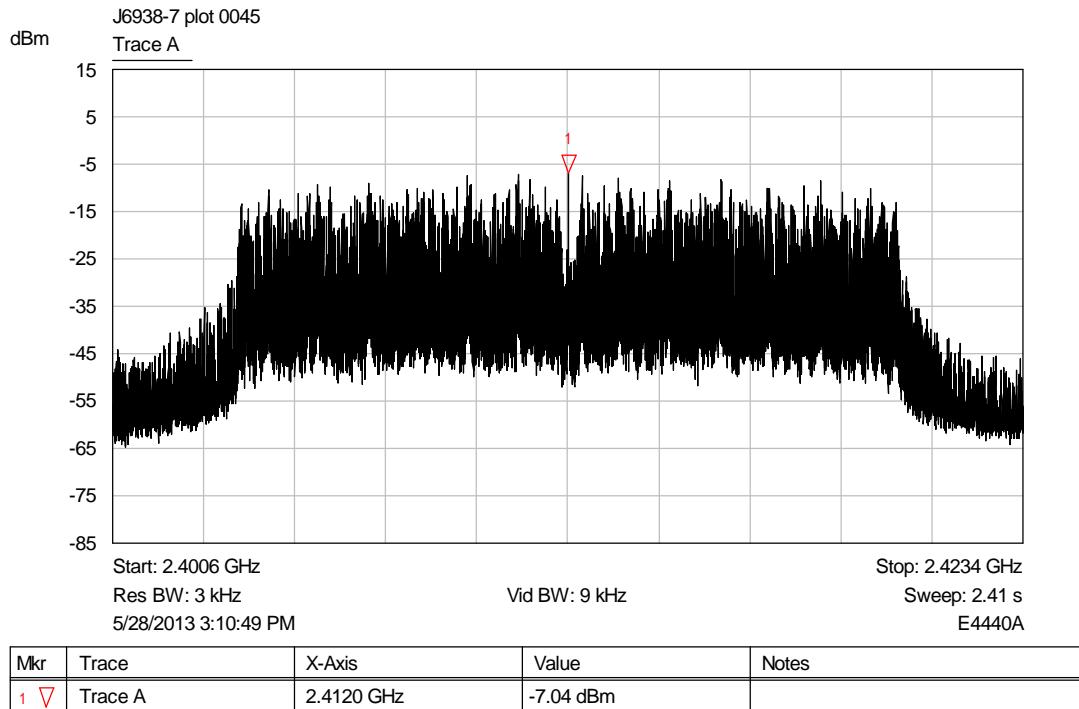


Mid channel

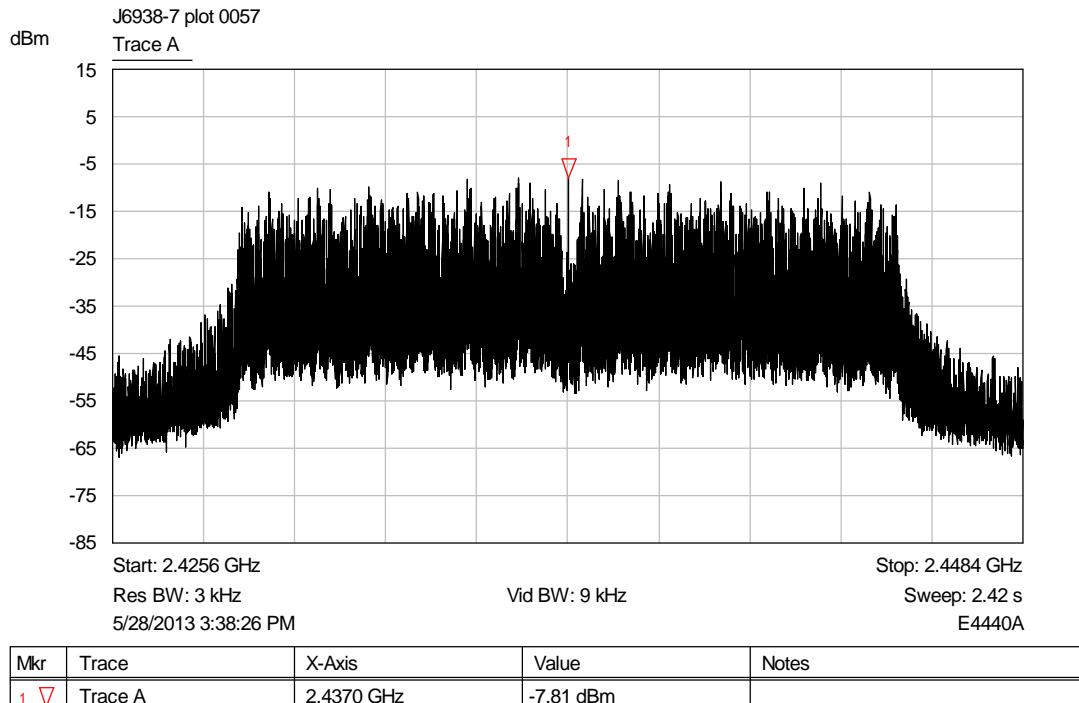


High channel

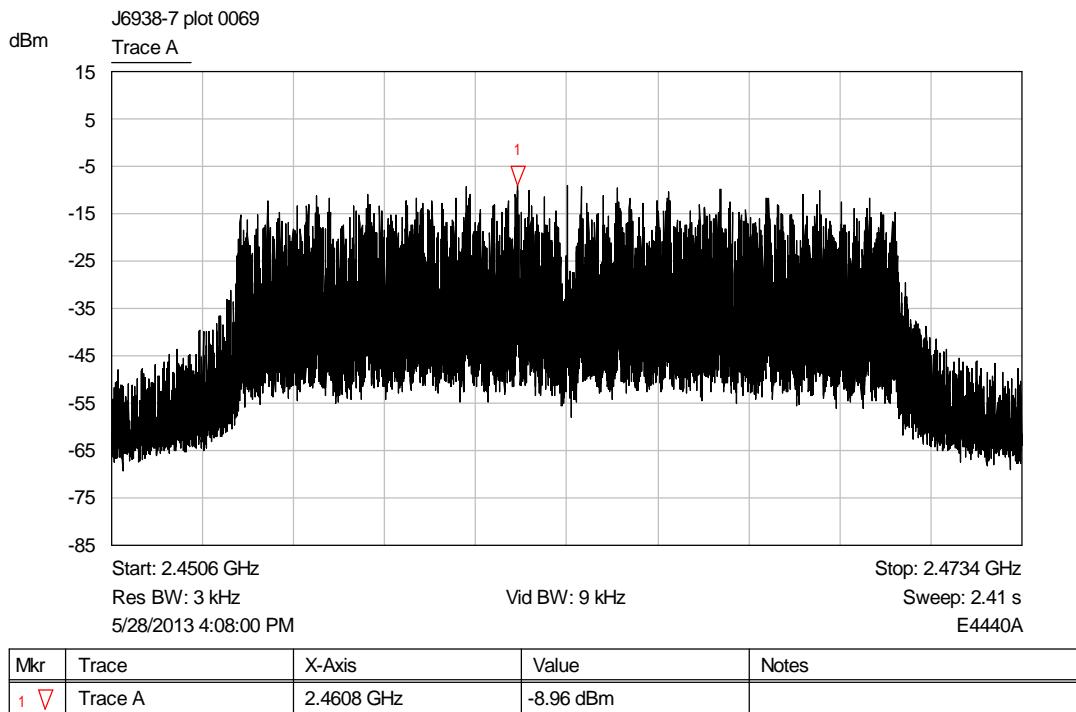
6.5.9 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 24 MBPS



Low channel

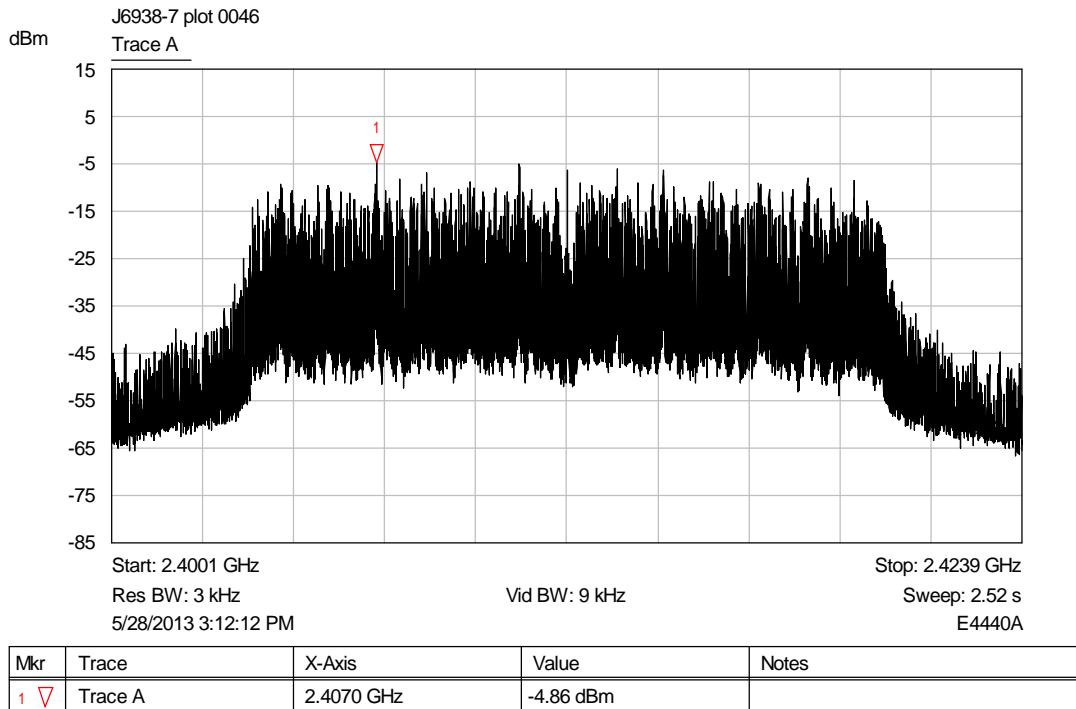


Mid channel

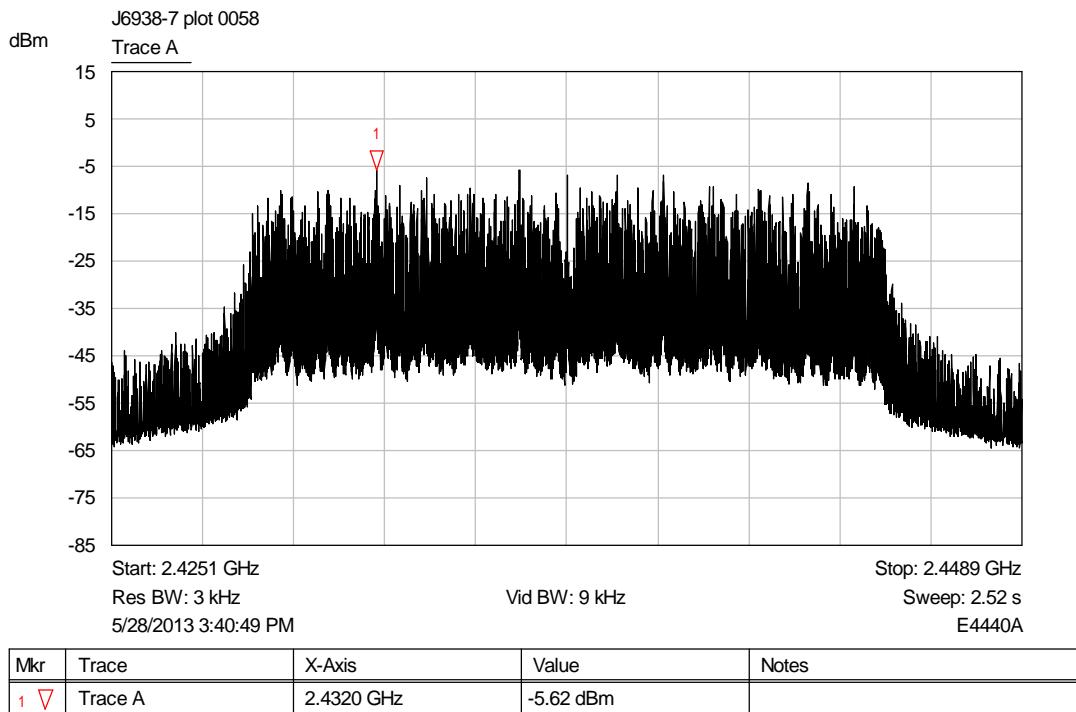


High channel

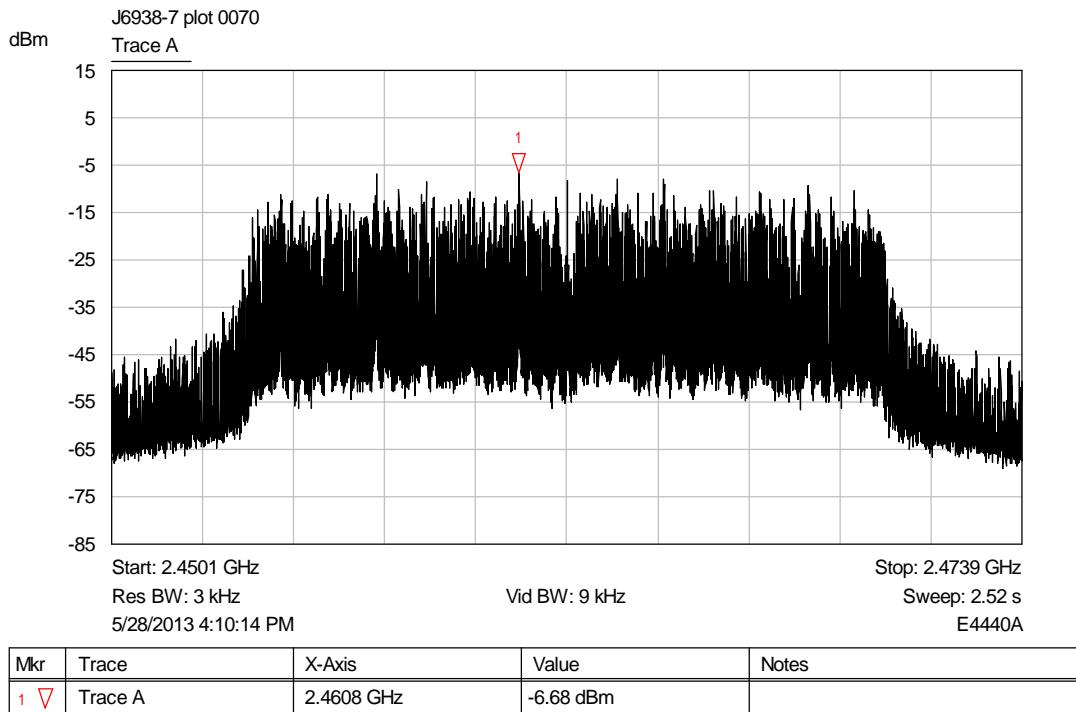
6.5.10 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 36 MBPS



Low channel

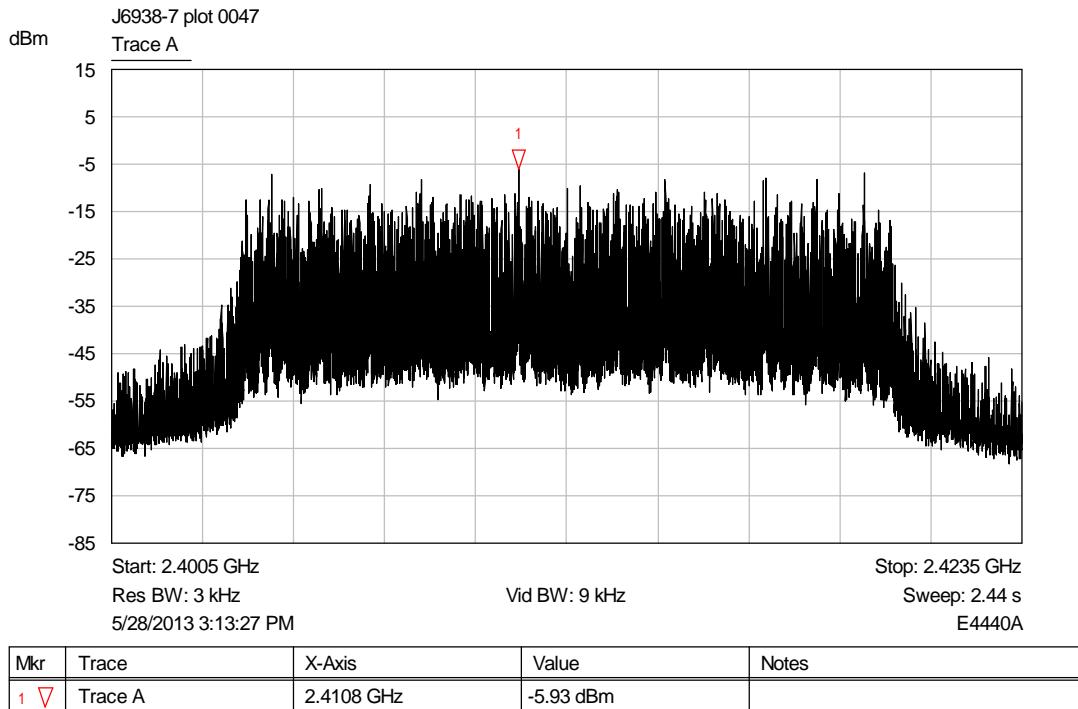


Mid channel

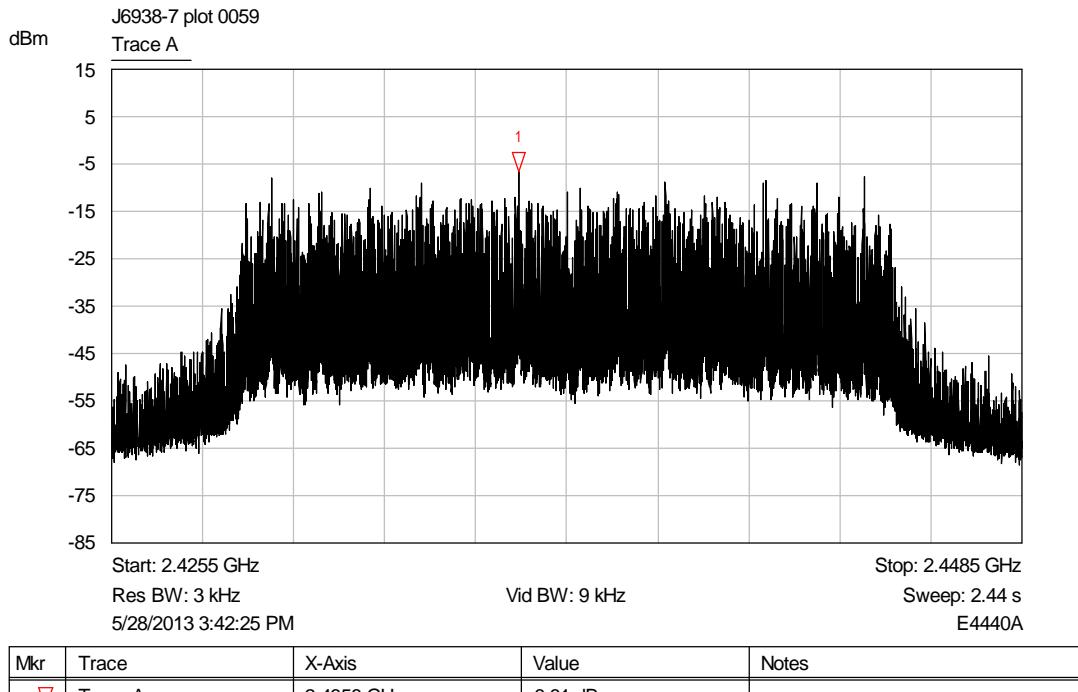


High channel

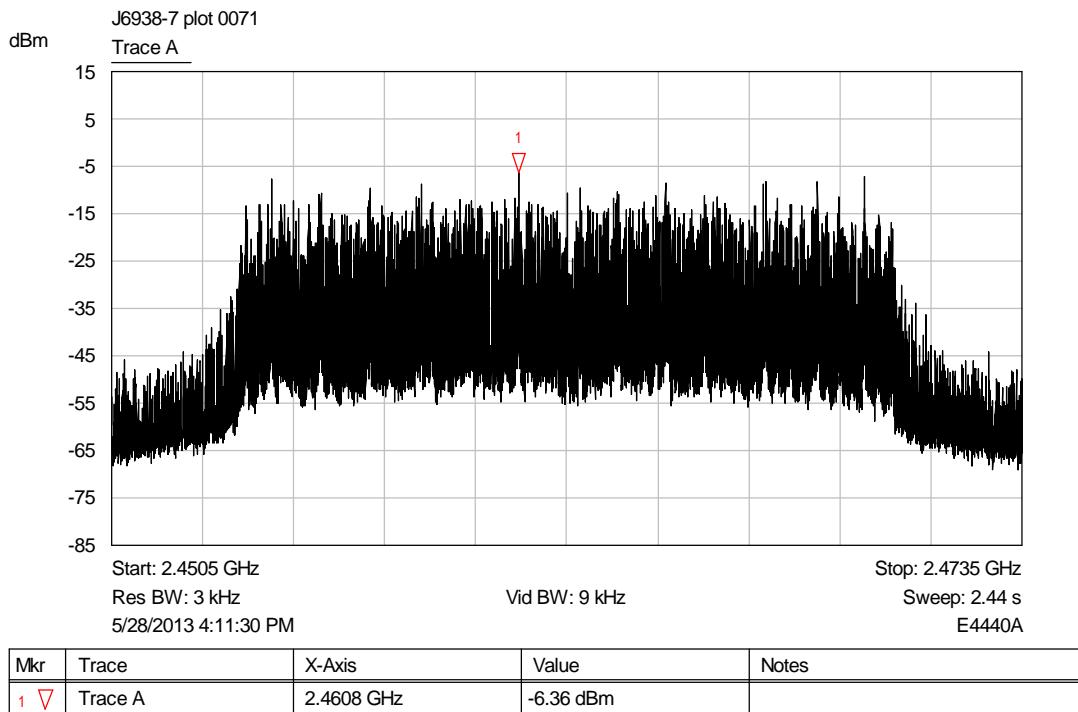
6.5.11 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 48 MBPS



Low channel

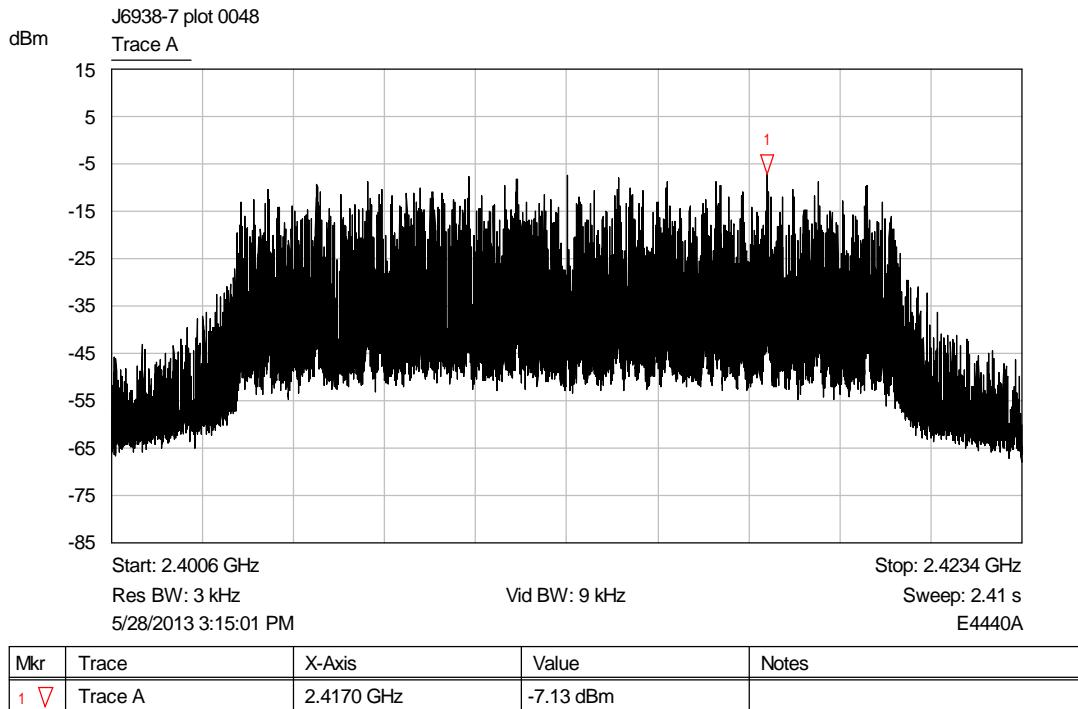


Mid channel

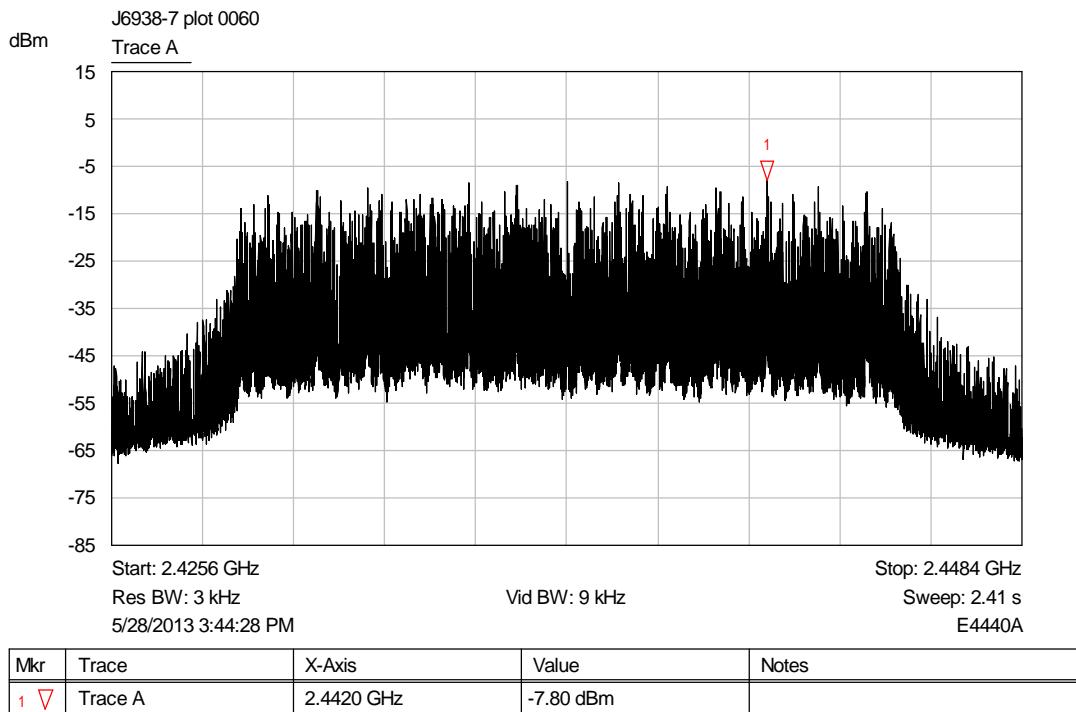


High channel

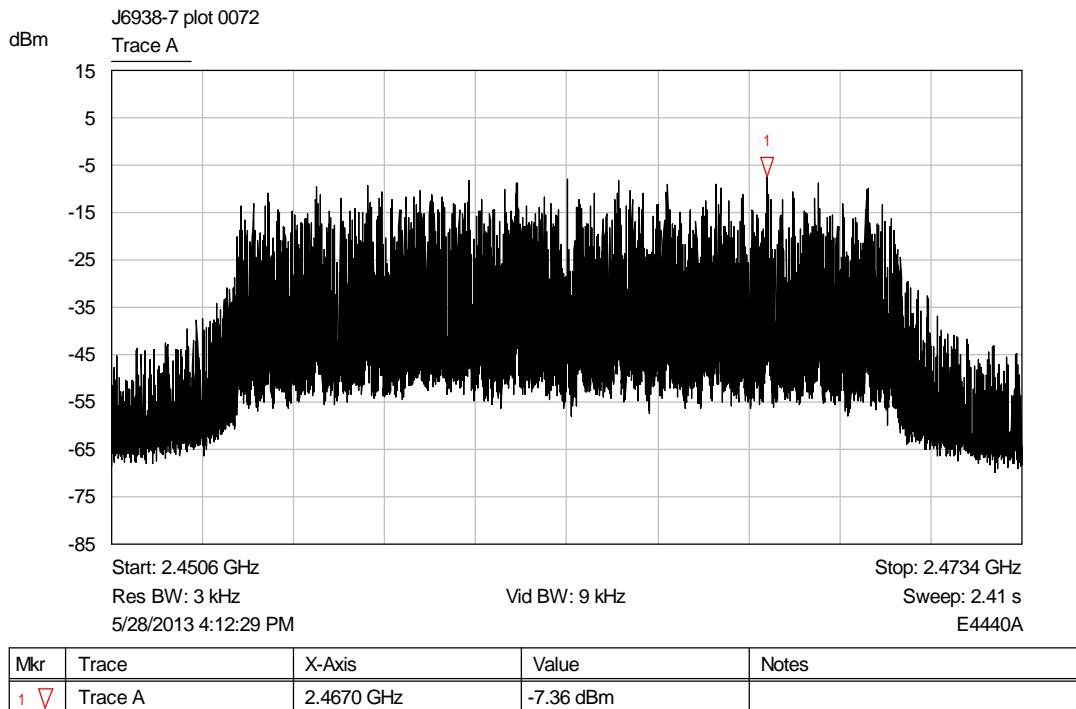
6.5.12 Plots for Band 2400-2483.5 MHz, Power 16 dBm, Spacing 5 MHz, and Modulation 54 MBPS



Low channel



Mid channel



High channel

7 Explanatory Notes

7.1 Explanation of Table of Signals Measured

Measurements are made as required by the standard. These measurements are made and recorded using detectors, either peak, quasi peak or average dependant on the test. A table of results has been given following the relevant plots. This table looks similar to the one illustrated below dependant on the measurements required by the test: -

| Signal No. | Freq (MHz) | Peak Amp (dB μ V) | Pk - Lim 1 (dB) | QP Amp (dB μ V) | QP - Lim1 (dB) | Av Amp (dB μ V) | Av - Lim1 (dB) |
|------------|------------|-----------------------|-----------------|---------------------|----------------|---------------------|----------------|
| 1 | 12345 | 54.9 | -10.5 | 48.0 | -12.6 | 37.6 | -14.4 |

Column One - Labelled Signal No. is an incremental number that the receiver has given to each signal that has been measured.

Column Two - Labelled Freq (MHz) is the approximate frequency of the signal received.

Column Three - Labelled Peak Amp (dB μ V) is the level of received signal that was measured in dB above 1 μ V using the peak detector.

Column Four - Labelled Pk - Lim1 (dB) is the difference in level from the peak signal given to the active limit line. If this column appears in the table the peak detector measurement is required by the standard for this test. The results entered in this column indicate the signal level relative to the compliance limit required. Negative numbers indicate that the product is compliant.

Column Five - Labelled QP Amp (dB μ V) is the level of received signal that was measured in dB above 1 μ V using the quasi-peak detector.

Column Six - Labelled QP - Lim1 (dB) is the difference in level from the quasi-peak signal given to the active limit line. If this column appears in the table the quasi-peak detector measurement is required by the standard for this test. The results entered in this column indicate the signal level relative to the compliance limit required. Negative numbers indicate that the product is compliant.

Column Seven - Labelled Av Amp (dB μ V) is the level of received signal that was measured in dB above 1 μ V using the average detector.

Column Eight - Labelled Av - Lim1 (dB) is the difference in level from the average signal given to the active limit line. If this column appears in the table the average detector measurement is required by the standard for this test. The results entered in this column indicate the signal level relative to the compliance limit required. Negative numbers indicate that the product is compliant.

Only signals highlighted in red are deemed to exceed the limit of the detector required.

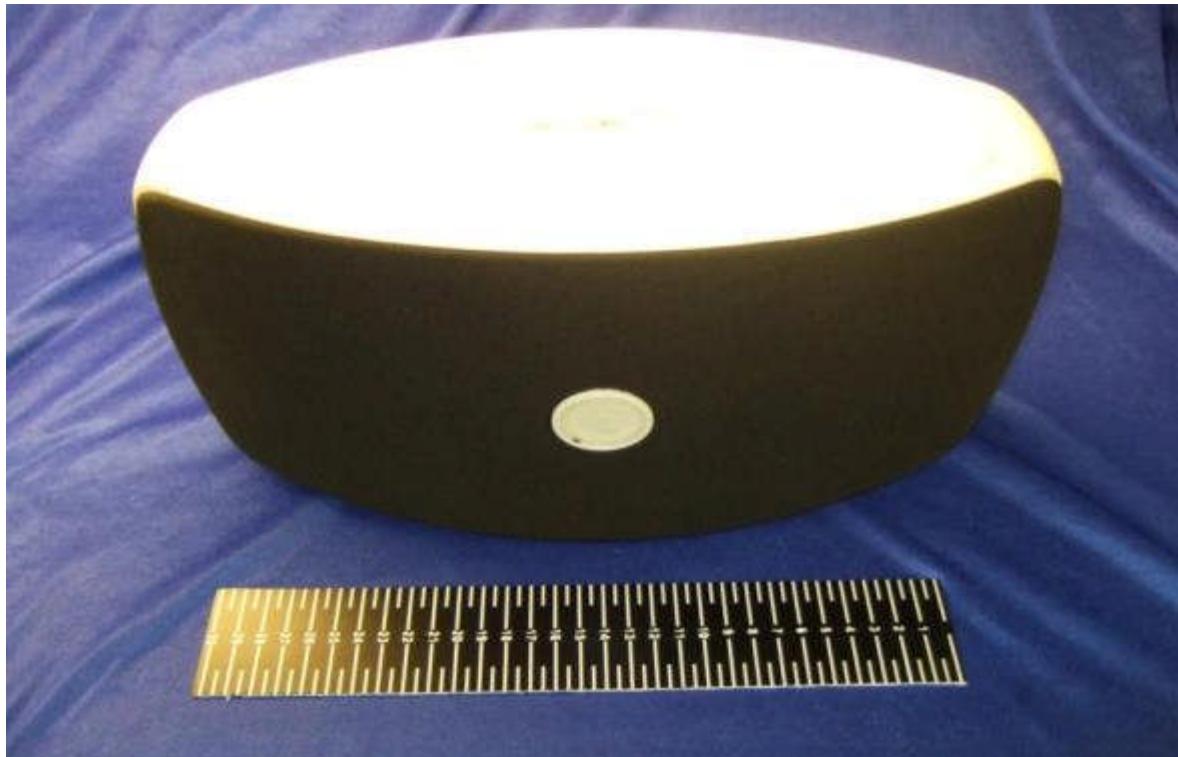
7.2 Explanation of limit line calculations for radiated measurements

The limits given in the test standard are normally expressed as absolute values (e.g. in $\mu\text{V}/\text{m}$ at a specified distance), whereas the measured values are expressed as peak, quasi peak or average values in $\text{dB}\mu\text{V}/\text{m}$ referenced to the measuring instrument inputs. RN Electronics calibrate the test set-up to account for any path losses, antenna gains, etc. so that the value read at the receiver relates directly to the absolute value required, except that it is expressed in dB relative to one microVolt and may need to take account of any alternative measuring distance used. Examples:

- (a) limit of 500 $\mu\text{V}/\text{m}$ equates to $20.\log(500) = 54 \text{ dB } \mu\text{V}/\text{m}$.
- (b) limit of 300 $\mu\text{V}/\text{m}$ at 10m equates to $20.\log(300 \cdot 10/3) = 60 \text{ dB } \mu\text{V}/\text{m}$ at 3m
- (c) limit of 30 $\mu\text{V}/\text{m}$ at 30m, but below 30MHz, equates to $20.\log(30) + 40.\log(30/3) = 69.5 \text{ dB}\mu\text{V}/\text{m}$ at 3m, as extrapolation factor below 30MHz is 40dB/decade per 15.31(f)(2).

8 Photographs

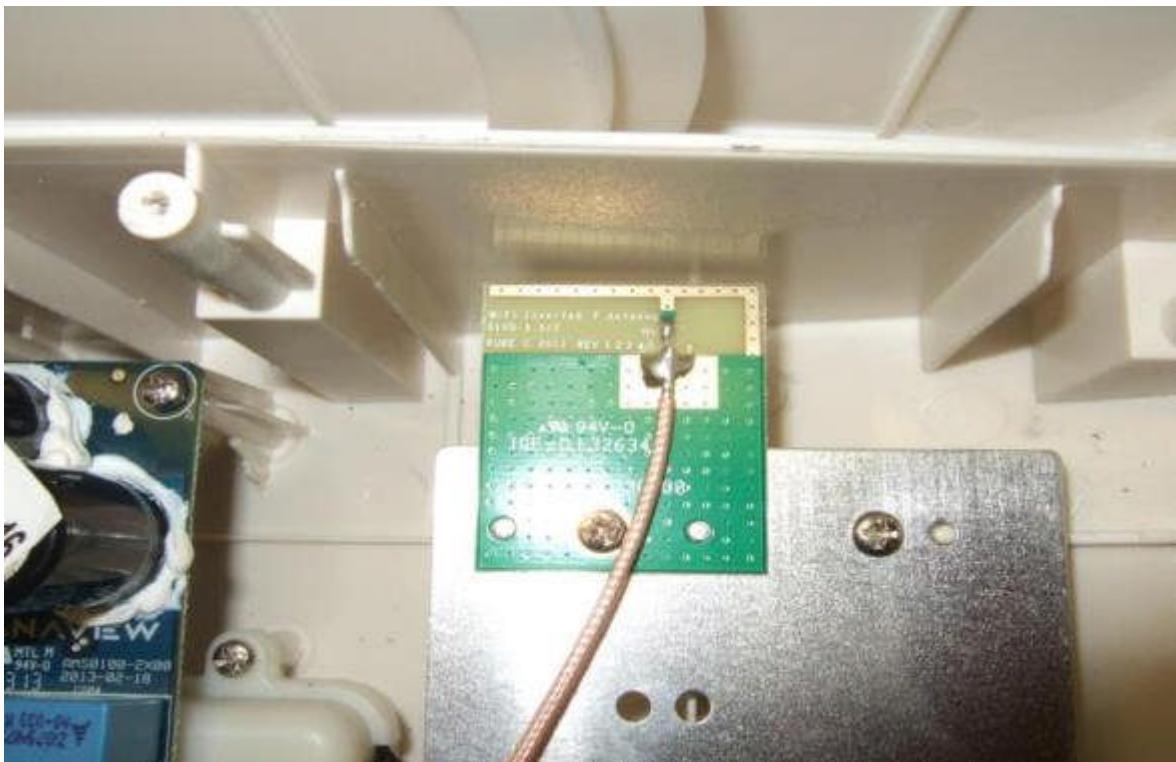
8.1 EUT Front View



8.2 EUT Reverse Angle



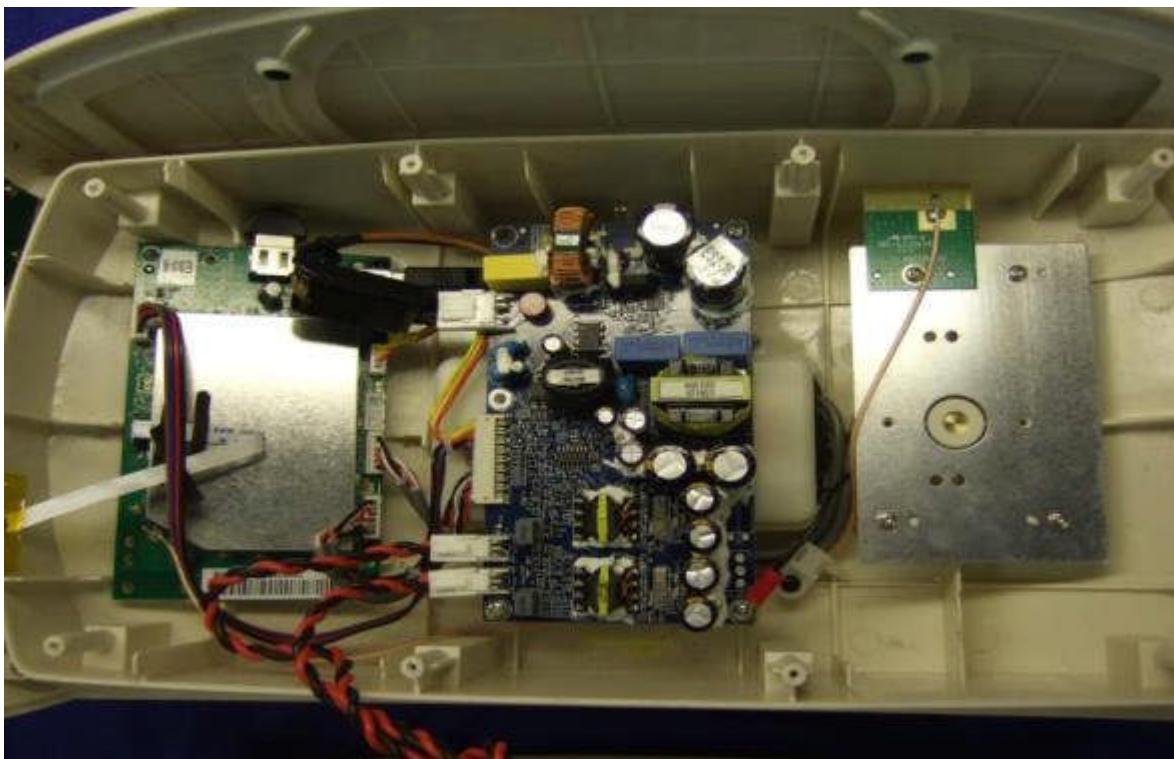
8.3 EUT Antenna Connector Port

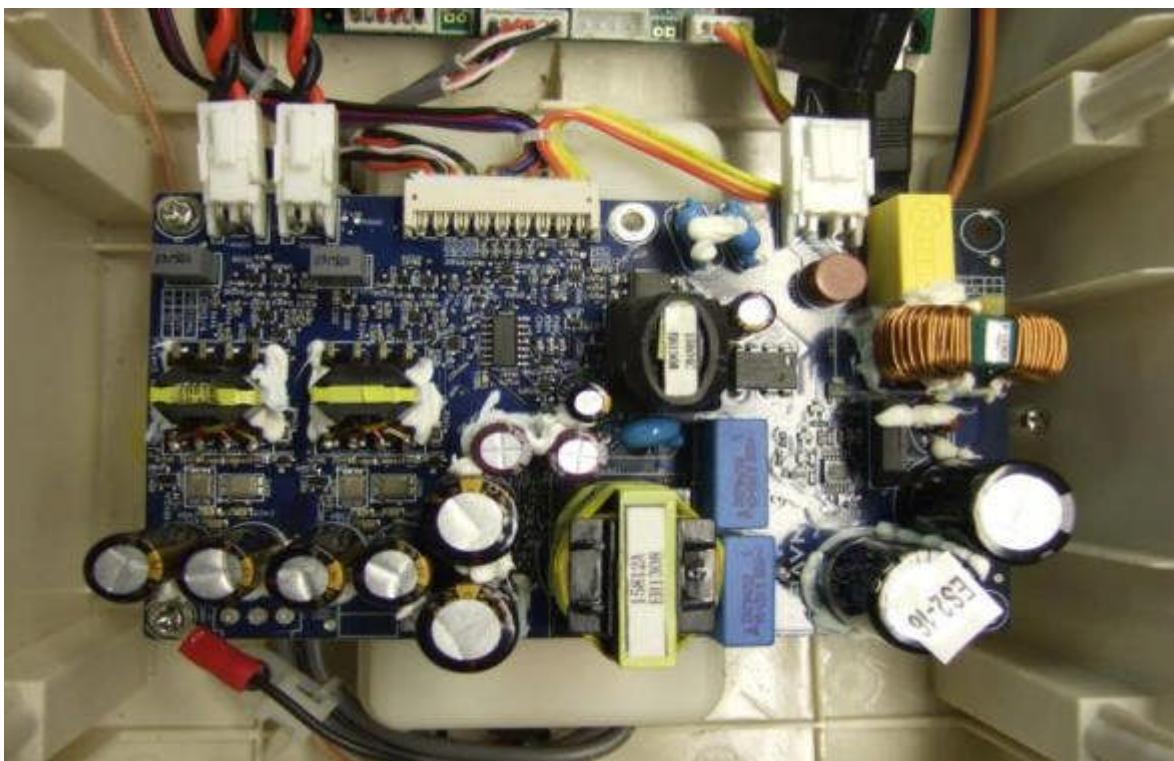


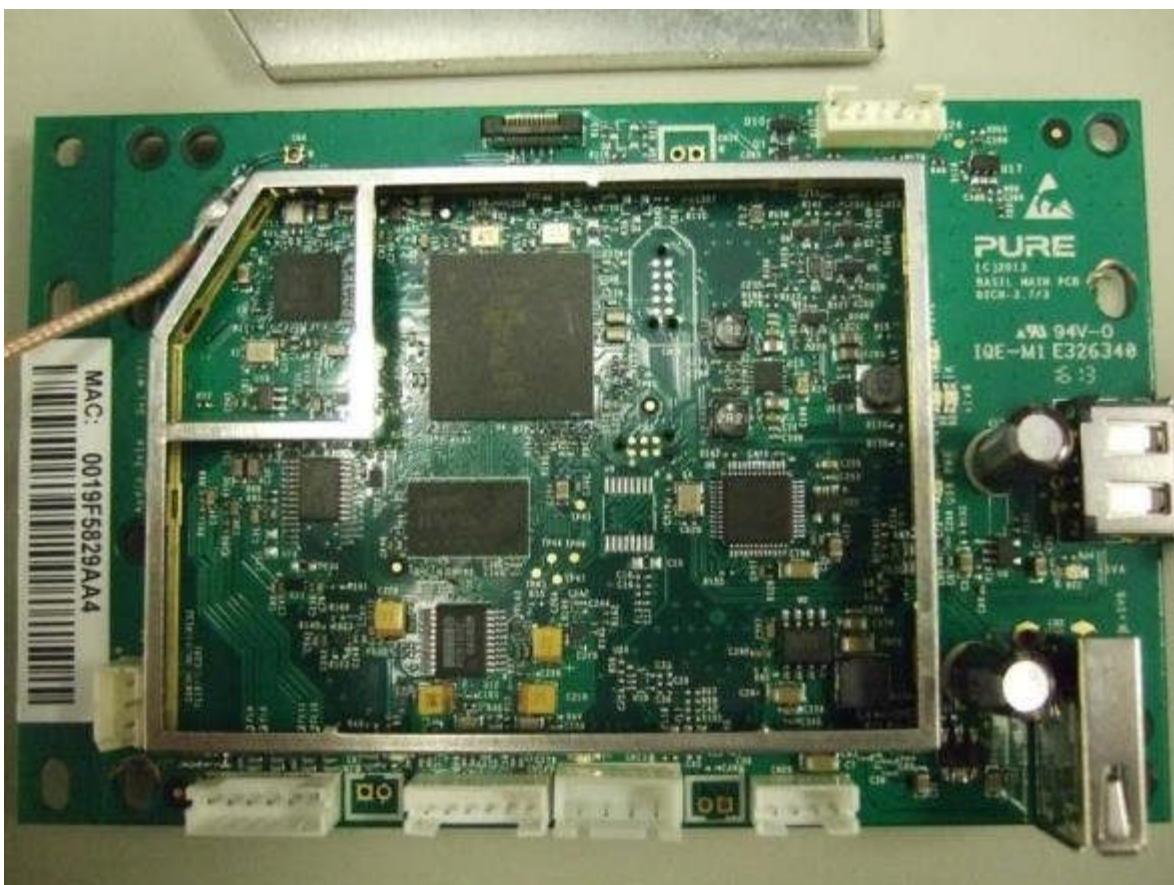
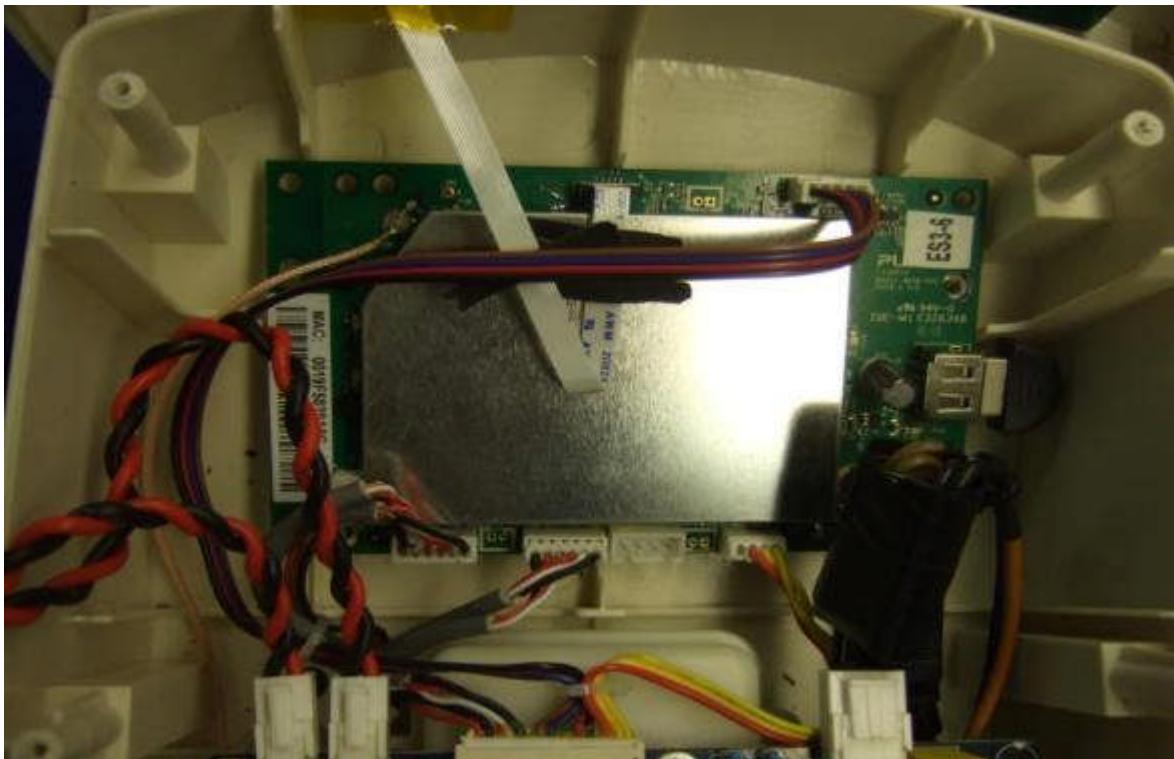
8.4 EUT Display / Controls



8.5 EUT Internal Construction





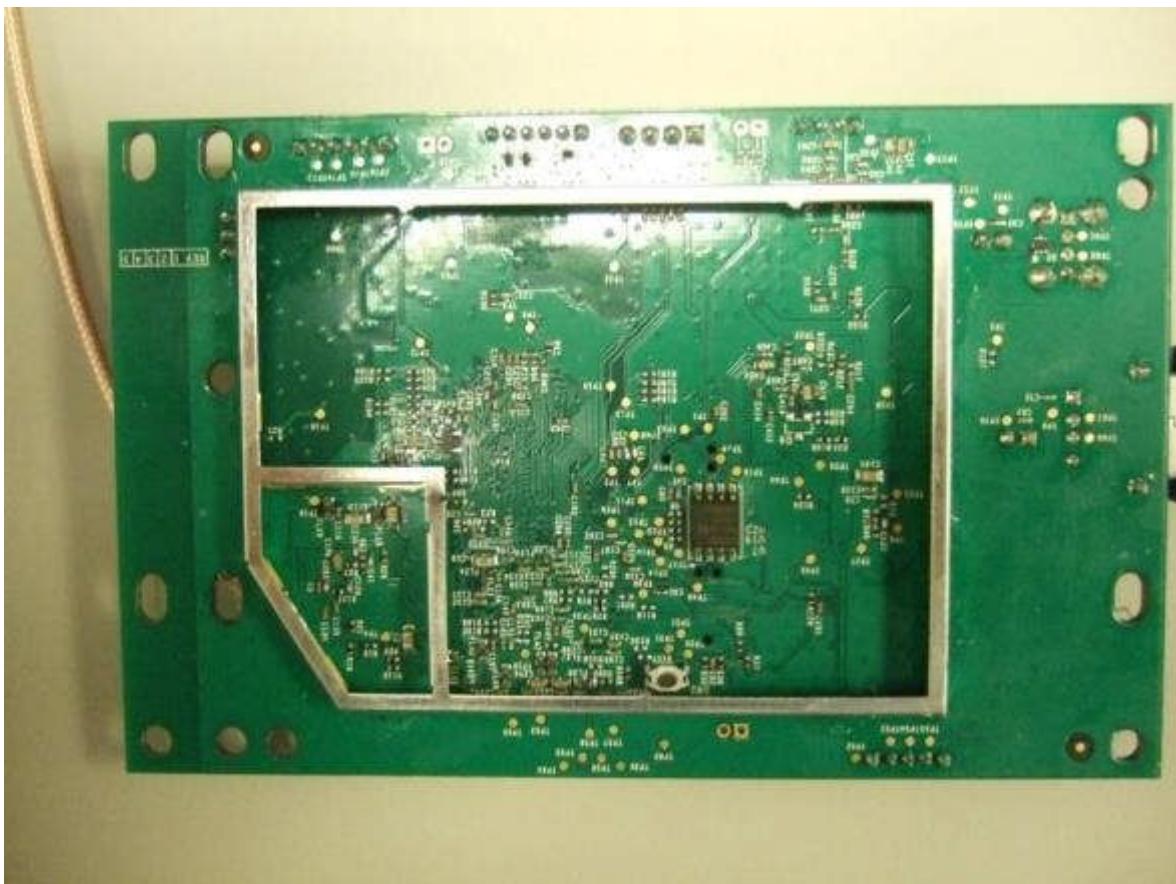


File name PURE.6938-7 ISSUE 02

The contents of this report, apart from the referenced ANSI C63.4-2003, are beyond the scope of UKAS Testing Laboratory No. 2360 accreditation.

QMF21J – 3; 47CFR15.247, RNE ISSUE 01 SEP 2012

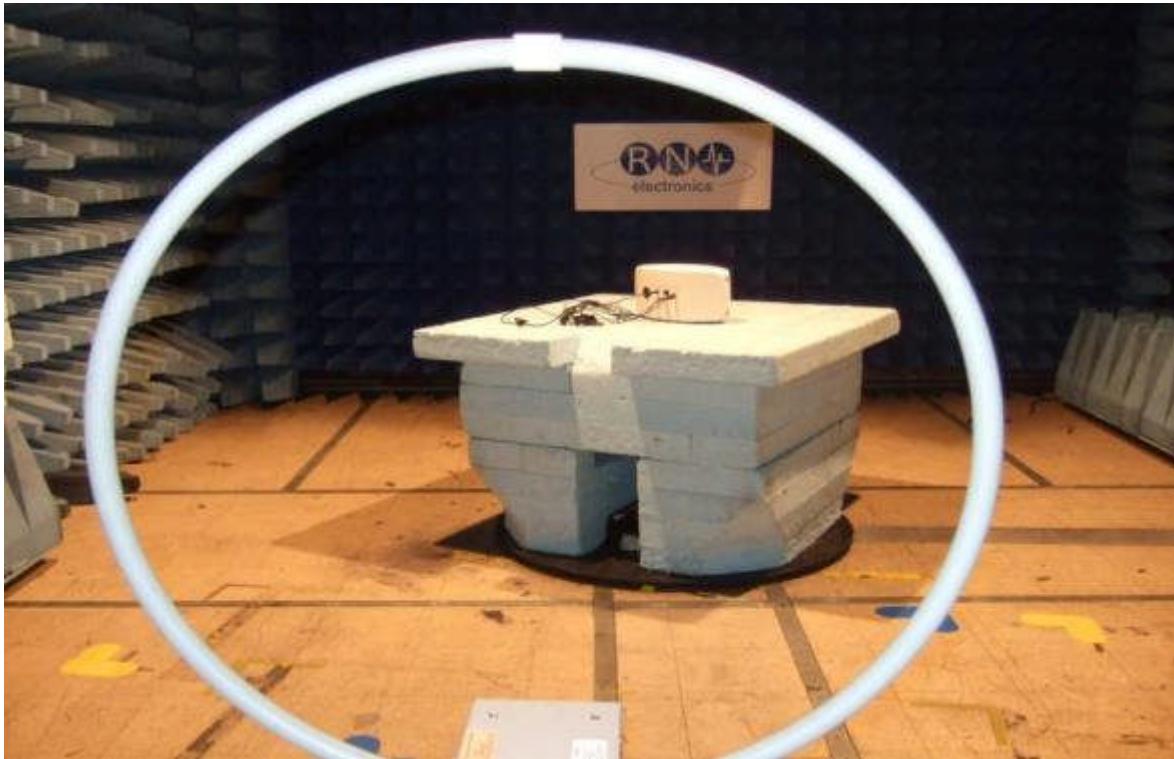
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8.6 EUT Chassis



8.7 Test set-up, spurious emissions





Photographs of the EUT as viewed from in front of the antennae, site M.

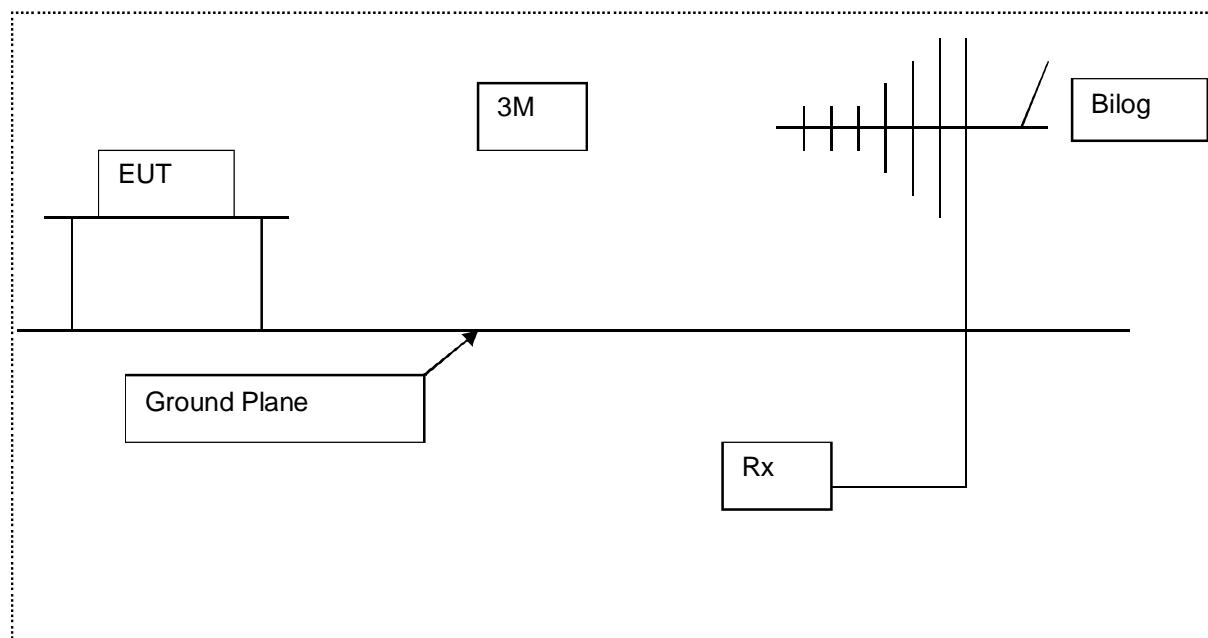


Diagram of the radiated emissions test setup.



Photograph of the EUT as viewed from screened room (AC power line conducted emissions)

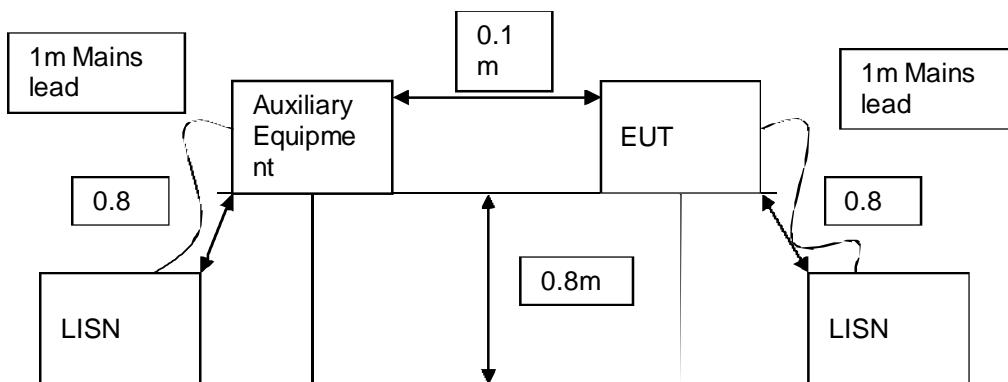


Diagram of the AC power line conducted emissions test setup.

9 Signal Leads

| Port Name | Cable Type | Connected |
|-----------------|----------------|-----------|
| Power Input | Figure 8 Mains | Yes |
| Auxiliary Input | 3.5mm audio | Yes |
| USB | standard USB | Yes |

10 Test Equipment Calibration list

The following table lists the test equipment used, last calibration date and calibration interval. All test equipment used has been maintained within the calibration requirements of **R.N. Electronics Ltd.** test facility quality system. Calibration intervals are regularly reviewed dependent on equipment manufacturer's recommendations and actual usage of the equipment.

| RN No. | Model | Description | Manufacturer | Calibration date | Cal period |
|--------|-------------|---|-----------------------|------------------|------------|
| E003 | HP8593E | Spectrum Analyser | Hewlett Packard | 21/11/2012 | 24 months |
| E035 | HP11947A | Transient Limiter + 10dB Atten. | Hewlett Packard | 11/02/2013 | 6 months |
| E150 | MN2050 | LISN 13A | Chase | 02/10/2012 | 12 months |
| E252 | 6810.19.A | 10 dB Attenuator | Suhner | 09/05/2013 | 12 months |
| E256 | 44 | 10 dB Attenuator | Weinschel Engineering | 1/11/2012 | 12 months |
| E266 | 2032 | 5.4GHz Signal Generator | Marconi Instruments | *28/06/2012 | 24 months |
| E268 | BHA 9118 | 1-18 GHz Horn Antenna | Schaffner | 14/04/2013 | 24 months |
| E410 | N5181A | 3 GHz MXG Signal Generator | Agilent Technologies | 26/10/2011 | 36 months |
| E411 | N9039A | 9 kHz - 1 GHz RF Filter Section | Agilent Technologies | 18/10/2012 | 12 months |
| E412 | E4440A | 3 Hz - 26.5 GHz PSA | Agilent Technologies | 18/10/2012 | 12 months |
| E429 | - | 5 Switch Filter Box 0.91 GHz - 16.3 GHz | RN Electronics | 20/11/2012 | 12 months |
| E465 | PCR2000LA | AC Power Supply | KIKUSUI | 09/05/2013 | 12 months |
| E533 | N5182A | 6 GHz MXG Signal Generator | Agilent Technologies | 26/02/2013 | 36 months |
| E534 | E4440A | 3 Hz - 26.5 GHz PSA | Agilent Technologies | 22/02/2013 | 36 months |
| E535 | N9039A | 9 kHz - 1 GHz RF Filter Section | Agilent Technologies | 22/02/2013 | 36 months |
| N240 | CRT700/3/2C | 100v Transformer | Unknown | N/A | N/A |
| TMS78 | 3160-08 | Std Gain Horn Antenna 12.4-18 GHz | ETS Systems | *07/06/2013 | 24 months |
| TMS79 | 3160-09 | Std Gain Horn Antenna 18-26.5 GHz | ETS Systems | *07/06/2013 | 24 months |
| TMS81 | 6502 | Active Loop Antenna | EMCO | 24/10/2012 | 24 months |
| TMS82 | 8449B | Pre Amplifier 1 - 26 GHz | Agilent | 19/11/2012 | 12 months |
| TMS933 | CBL6141A | Bilog Antenna 30MHz - 2GHz | York EMC | 09/09/2010 | 36 months |

Note: *Calibrated since test and 24 months prior, as appropriate

11 Auxiliary equipment

11.1 Customer supplied Equipment

Auxiliary equipment used for the purpose of test supplied by the above has been listed below

| Item No. | Model No. | Description | Manufacturer | Serial No. |
|----------|---------------|-------------------------|--------------|------------|
| 1 | Highway 300Di | Modified USB controller | Pure | - |

11.2 Supplied by RN Electronics Limited

Auxiliary equipment used for the purpose of test supplied by the above has been listed below

No RN Electronics supplied equipment was used.

12 Modifications

In order for the EUT to produce the results shown within this report the following modifications, if any, were implemented.

12.1 Modifications before test

There were no modifications made by R.N. Electronics Ltd before testing commenced.

12.2 Modifications during test

There were no modifications made by R.N. Electronics Ltd during testing.

13 Compliance information

Products subject to the Declaration of Conformity procedure are required to be supplied with a compliance information statement. A copy of this statement may be included here:

CERTIFIED equipment – DoC not required

N.b. the EUT USB port does not connect to a PC, hence it is not a PC peripheral either.

14 Description of Test Sites

| | |
|-----------|--|
| Site A | Radio / Calibration Laboratory and anechoic chamber |
| Site B | Semi-anechoic chamber |
| Site B1 | Control Room for Site B |
| Site C | Transient Laboratory |
| Site D | Screened Room (Conducted Immunity) |
| Site E | Screened Room (Control Room for Site D) |
| Site F | Screened Room (AC power line conducted Emissions) VCCI Registration No. C-2823 |
| Site G | Screened Room (Control Room for Site H) |
| Site H | 3m Semi-anechoic chamber (indoor OATS) |
| Site J | Screened Room |
| Site K | Screened Room (Control Room for Site M) |
| Site M | 3m Semi-anechoic chamber (indoor OATS) FCC Registration No. 293246 |
| Site Q | Fully-anechoic chamber |
| Site OATS | 3m and 10m Open Area Test Site FCC Registration No. 293246 IC Registration No. 5612A-1 VCCI Registration No. R-2580 |
| Site R | Screened Room (Conducted Immunity) |
| Site S | Safety Laboratory |
| Site T | Transient Laboratory |

15 Abbreviations and Units

| | | | |
|------|---------------------------------------|------|--|
| % | Percent | Hz | Hertz |
| µV | microVolts | IF | Intermediate Frequency |
| µW | microWatts | kHz | kiloHertz |
| AC | Alternating Current | LO | Local Oscillator |
| ALSE | Absorber Lined Screened Enclosure | mA | milliAmps |
| AM | Amplitude Modulation | max | maximum |
| Amb | Ambient | mbar | milliBars |
| ANSI | American National Standards Institute | MHz | MegaHertz |
| °C | Degrees Celsius | min | minimum |
| CFR | Code of Federal Regulations | mm | milliMetres |
| CS | Channel Spacing | ms | milliSeconds |
| CW | Continuous Wave | mW | milliWatts |
| dB | deciBels | NA | Not Applicable |
| dBµV | deciBels relative to 1µV | nom | Nominal |
| dbc | deciBels relative to Carrier | OATS | Open Area Test Site |
| dBm | deciBels relative to 1mW | OFDM | Orthogonal Frequency Division Multiplexing |
| DC | Direct Current | ppm | Parts per million |
| EIRP | Equivalent Isotropic Radiated Power | QAM | Quadrature Amplitude Modulation |
| ERP | Effective Radiated Power | QPSK | Quadrature Phase Shift Keying |
| EUT | Equipment Under Test | Ref | Reference |
| FCC | Federal Communications Commission | RF | Radio Frequency |
| FM | Frequency Modulation | RTP | Room Temperature and Pressure |
| FSK | Frequency Shift Keying | s | Seconds |
| g | Grams | Tx | Transmitter |
| GHz | GigaHertz | V | Volts |