FCC 47CFR part 15C
Test Report
For
Cougar module type A
VL-62444

Reference Standard: FCC 47CFR part 15C
Manufacturer: Imagination Technologies
For type of equipment and serial number, refer to section 2
Report Number: 08-6899-8-13 Issue 02
Supersedes report number: 08-6899-8-13 Issue 01

Report Produced by: -

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Certificate of Test 6899-8

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:	Cougar module type A
Model Number:	VL-62444
Proposed FCC ID:	X280072
Unique Serial Number:	ES4B-3
Manufacturer:	Imagination Technologies Ltd. Home Park Industrial Estate Kings Langley Hertfordshire WD4 8LZ
Full measurement results are detailed in Report Number:	08-6899-8-13 Issue 02
Test Standards:	FCC 47CFR Part 15.247 effective date **October 1st 2012,** Class DTS Intentional Radiator

NOTE:
The above list is incomplete as only partial tests conducted at request of the manufacturer. Certain other tests were not performed based upon manufacturer's declarations. For details refer to section 3 of this report.
This test report covers the Wi-Fi mode of operation only. Please see RN Electronics report number: 08-6899-5-13 Issue 01, for results pertaining to the Bluetooth mode of operation.

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 the FCC 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: 25th June to 16th August, 2013

Test Engineer: Digitally signed by: Daniel Sims DN: CN = Daniel Sims C = GB O = RN Electronics Date: 2014.01.30 09:24:05 Z

Approved By:
Technical Director

Customer Representative:

1 Contents

2 Equipment Under Test (EUT)

2.1 Equipment Specification

Applicant	Imagination Technologies Ltd. Home Park Industrial Estate Kings Langley Hertfordshire WD4 8LZ	
Manufacturer of EUT	Imagination Technologies	
Brand name of EUT	Cougar module type A	
Model Number of EUT	VL-62444	
Serial Number of EUT	ES4B-3	
Date when equipment was received by RN Electronics	24th June, 2013	
Date of test:	25th June to 16th August, 2013	
Visual description of EUT:	PCB module with an RF can covering almost one entire side of the PCB. There is 1 conducted RF port and 1 PCB antenna at either end of the board (2 in total); one of these is for Bluetooth operation and one is for Wi-Fi operation. On the underside of the module there is a 2 by 22 pin connector.	
Main function of the EUT:	RF and audio module for wireless audio system.	
Height	107 mm	
Width	51 mm	
Depth	10 mm	
Weight	0.05 kg	
Voltage	8.5-23V DC for module (18V nominal)	
Current required from above voltage source	Not specified	
EUT supplied PSU:	Manufacturer	Imagination Technologies
	Model number	CPS065A180361
	Serial number	None specified
	Input voltage	100-240V AC
	Input current	1.6A
	Output	18V DC @ 3.61A

2.2 EUT Configurations for testing

General parameters	
EUT Normal use position	EUT is a module and will be fitted inside desktop equipment
Choice of model(s) for type tests	Single variant supplied
Antenna details	Inverted 'F' PCB antenna
Antenna port	Internal port available
Baseband Data port (yes/no)?	No
Highest Signal generated in EUT	2480 MHz (Bluetooth channel 79)
Lowest Signal generated in EUT	12 MHz (USB clock)
TX Parameters	
Alignment range – transmitter	2412 - 2462 MHz
EUT Declared Modulation Parameters	DSSS: DBPSK; DQPSK; CCK (802.11b) OFDM: BPSK; QPSK; 16QAM; 64QAM (802.11g)

EUT Declared Power level	+18.5dBm
EUT Declared Signal Bandwidths	20MHz
EUT Declared Channel Spacing's	5MHz
Declared frequency stability	<+/-20ppm
RX Parameters	
Alignment range – receiver	2412 - 2462 MHz
EUT Declared RX Signal Bandwidth	20MHz

2.3 Functional Description

Wireless RF and audio module to be placed inside an audio product to enable streaming of audio media via use of a Wi-Fi network or via Bluetooth. The media can be streamed from a smart phone, tablet or PC. Use of the Pure connect App on iOS or Android is the suggested way to use the equipment.

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
Normal	EUT streaming audio via Wi-Fi	No
Bluetooth Mode	EUT streaming Audio via Bluetooth	*No

* Please see RN Electronics report number: **08-6899-5-13 Issue 01** for results pertaining to the Bluetooth mode of operation.

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:-

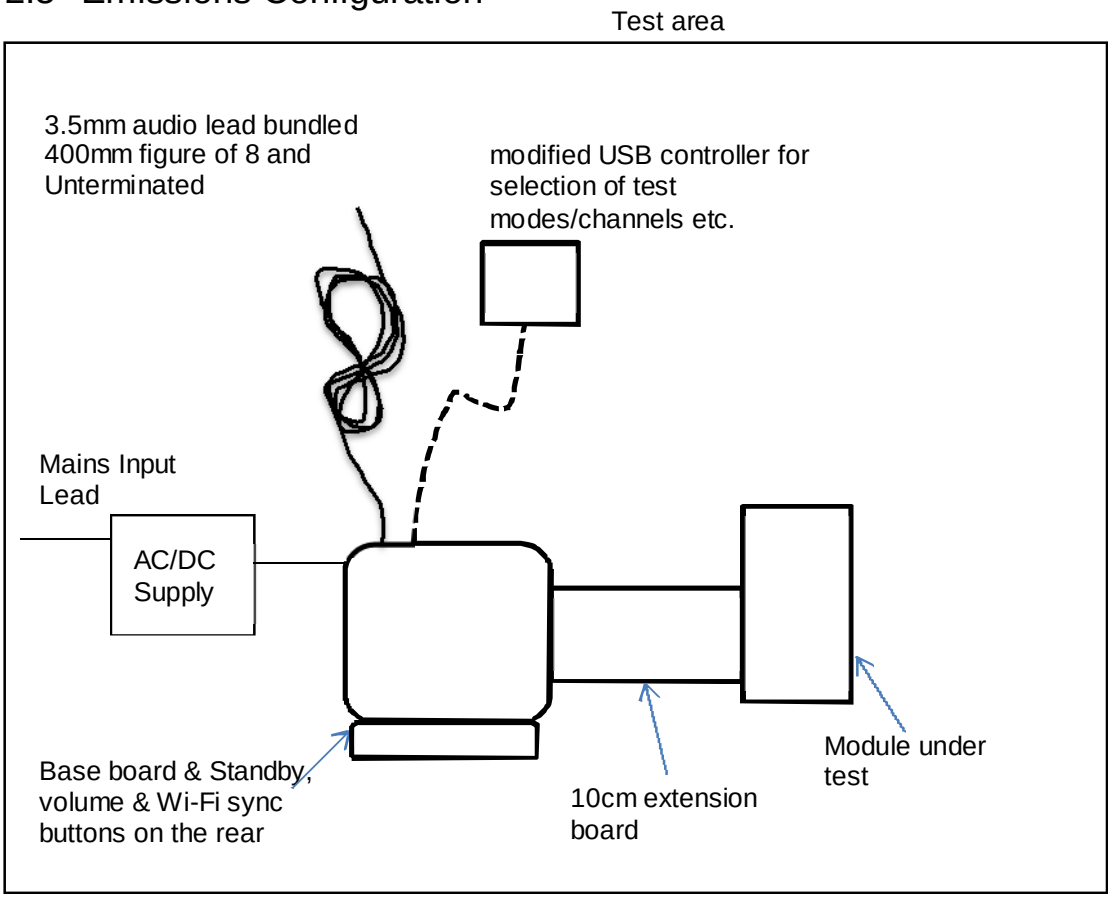
Mode	Rate
802.11B	1 Mbps
802.11B	2 Mbps
802.11B	5.5 Mbps
802.11B	11 Mbps
802.11G	6 Mbps
802.11G	9 Mbps
802.11G	12 Mbps
802.11G	18 Mbps
802.11G	24 Mbps
802.11G	36 Mbps
802.11G	48 Mbps
802.11G	54 Mbps

Description of ancillary equipment connected to the equipment under test, for the purpose of tests, can be found in Section 11.

Any modifications made to the EUT, whilst under test, can be found in Section 12.

This report was printed on: 30 January 2014

2.5 Emissions Configuration



The unit was powered from the dedicated AC/DC adapter provided with the unit. For conducted RF tests the same unit was used and tested via its provided RF port and a short UFL to SMA lead. Note: Conducted port only used to facilitate easier testing methods; unit is tested as an integral antenna unit.

The unit was configured with an engineering menu in software this allowed selection of the relevant channels and mod schemes for test. Top, middle and bottom channels were set as stated within section 2.4 of this report. The transmit modes were 100% continuous with modulation (except where stated) and the power settings for each channel were left at the default maximum setting. The module was fitted to the end of a special 10cm extender PCB which in turn was connected to a controller PCB which provided a means of controlling the module and setting the various modes for test.

For radiated and conducted emissions tests the unit was populated with typical peripherals. The audio input port had a 3.5mm audio lead inserted which was connected to the audio out of an iPhone (3.5mm socket). The Audio lead showed no difference in emissions whether it was terminated into the iPhone or not and as such the lead was left unterminated and bundled for final tests. The USB port was populated with the Special USB device for control of the test modes required for tests.
The AC/DC adapter was also placed on to the test table along with the main enclosure of the EUT.

3 Summary of test results

The **Cougar module type A, VL-62444** 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. Antenna power conducted emissions for receivers	FCC Part 15.111	NOT APPLICABLE[1]
4. Occupied bandwidth	FCC Part 15C §15.215(c), §15.247(a)(2)	PASSED
5. Maximum peak conducted output power	FCC Part 15C §15.247(b) Peak Average	PASSED NOT APPLICABLE[2]
6. Duty cycle	FCC Part 15C §15.35(c)	NOT APPLICABLE[3]
7. Power Spectral Density (PSD)	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[4] NOT APPLICABLE[4]
10. Frequency stability	ANSI C63.10 §6.8.	NOT APPLICABLE[5]

[1] EUT has no receive function in the range 30 – 960 MHz.
[2] Alternative method not required as peak power measured.
[3] No limits apply, however duty cycle measurement performed to verify correction factors for average emissions.
[4] EUT Wi-Fi radio is not FHSS technology.
[5] 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

NOTE: This report covers the Wi-Fi technology test requirements only. For Bluetooth test requirements please refer to RN Electronics report: 08-6899-5-13 Issue 01.

4 Specifications

4.1 Relevant Standards

The tests were performed by an RN Electronics Engineer 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	47CFR15
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	RESERVED	-	-
4.1.5	KDB-558074	2013	Federal Communications Commission Office of Engineering and Technology Division 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.

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 and AC/DC adapter were 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 TX Low Channel and TX Mid Channel and TX High Channel modes.

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: 48 %

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

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

Table of signals measured.

Quasi-Peak and Average Live (AC_DC Adapter Input (Wi-Fi))

Signal No.	Freq (MHz)	Peak Amp (dBµV)	QP Amp (dBµV)	QP - Lim1 (dB)	AV Amp (dBµV)	AV - Lim1 (dB)
1	0.156	48.3	45.2	-20.5	30.9	-24.8
2	0.253	37.2	34.0	-27.7	22.1	-29.6
3	0.273	36.3	32.8	-28.2	22.9	-28.1
4	0.311	32.6	29.3	-30.6	25.3	-24.6
5	0.428	35.0	34.2	-23.1	32.9	-14.4
6	0.428	35.2	34.2	-23.1	32.9	-14.4
7	2.357	28.8	26.6	-29.4	21.4	-24.6
8	2.376	28.8	26.0	-30.0	19.8	-26.2
9	2.607	28.1	25.6	-30.4	17.8	-28.2
10	2.705	31.0	29.1	-26.9	19.8	-26.2
11	2.726	31.4	29.9	-26.1	21.1	-24.9
12	2.766	30.4	28.6	-27.4	20.4	-25.6

Table of signals measured.

Quasi-Peak and Average Neutral (AC_DC Adapter Input (Wi-Fi))

Signal No.	Freq (MHz)	Peak Amp (dBµV)	QP Amp (dBµV)	QP - Lim1 (dB)	AV Amp (dBµV)	AV - Lim1 (dB)
1	0.156	47.7	45.5	-20.2	29.4	-26.3
2	0.175	45.5	42.6	-22.1	27.5	-27.2
3	0.194	43.2	40.0	-23.9	26.1	-27.8
4	0.214	40.5	37.9	-25.1	25.5	-27.5
5	0.253	36.8	34.9	-26.8	24.6	-27.1
6	0.409	33.7	32.1	-25.6	28.0	-19.7
7	1.111	28.4	27.2	-28.8	26.1	-19.9
8	1.130	29.5	28.6	-27.4	27.6	-18.4
9	1.149	29.5	28.8	-27.2	27.8	-18.2
10	1.188	28.5	27.4	-28.6	26.4	-19.6
11	1.208	28.6	27.8	-28.2	26.8	-19.2
12	1.344	28.6	27.7	-28.3	26.5	-19.5

Plot reference tables

Frequency range	Plot reference
150kHz to 30MHz	6899-8 Cond 2 AC Live 150k-30M Average
150kHz to 30MHz	6899-8 Cond 2 AC Live 150k-30M Quasi-Peak
150kHz to 30MHz	6899-8 Cond 2 AC Neutral 150k-30M Average
150kHz to 30MHz	6899-8 Cond 2 AC Neutral 150k-30M Quasi-Peak

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 C63.10, Reference (6.4 – 6.6.)

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). 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.

Tests were performed using Test Site M**.**

5.2.4 Test Equipment used

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

See Section 10 for more details

5.2.5 Test results

Ambient conditions
Temperature: 18-22 °C Relative humidity: 44-56 %

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
Middle Channel	6899-5 Parallel 150k-30MHz Wi-Fi TX Mid channel	6899-5 Perpendicular 150k-30MHz Wi-Fi TX Mid channel

5.2.5.2 30MHz - 1GHz.

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

Frequency Range	Antenna Polarisation	Plot reference
30 – 300 MHz	Horizontal	6899-8 Rad 1 VHF Horiz
30 – 300 MHz	Vertical	6899-8 Rad 1 VHF Vert
300 – 1000 MHz	Horizontal	6899-8 Rad 1 UHF Horiz
300 – 1000 MHz	Vertical	6899-8 Rad 1 UHF Vert

Table of signals measured (WI-FI TX Mid Channel)

Horizontal

Signal No.	Freq (MHz)	Peak Amp (dBµV)	QP Amp (dBµV)	QP - Lim1 (dB)
1	49.153	30.6	28.3	-11.7
2	112.647	31.0	26.5	-17.0
3	119.998	34.4	32.2	-11.3
4	132.014	33.1	27.2	-16.3
5	239.996	31.1	28.5	-17.5
6	288.013	30.4	24.8	-21.2
7	359.994	38.4	36.0	-10.0
8	399.350	34.7	27.9	-18.1

Vertical

Signal No.	Freq (MHz)	Peak Amp (dBµV)	QP Amp (dBµV)	QP - Lim1 (dB)
1	49.153	32.1	27.7	-12.3
2	99.862	26.0	20.4	-23.1
3	112.414	32.5	27.9	-15.6
4	112.414	27.3	21.7	-21.8
5	142.128	30.6	24.9	-18.6
6	147.459	34.4	33.2	-10.3
7	690.333	33.1	26.4	-19.6

5.2.5.3 Above 1GHz.

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.

Radio Parameters 1

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	Difference to Peak Limit (dB)	Measured Average Level (dBµV/m)	Difference to Average Limit (dB)	Antenna Polarisation	EUT Polarisation
6432	49	-25	46.4	-7.6	Vertical	Upright Vertical
6432	47.5	-26.5	44	-10	Horizontal	Upright Vertical
12864	49.3	-24.7	46.4	-7.6	Vertical	Upright Vertical
12864	49.2	-24.8	46.3	-7.7	Horizontal	Upright Vertical
4824	52.2	-21.8	46.4	-7.6	Vertical	Upright Vertical
4824	56.5	-17.5	53.7	-0.3	Horizontal	Sideways Vertical

Radio Parameters 2

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	Difference to Peak Limit (dB)	Measured Average Level (dBµV/m)	Difference to Average Limit (dB)	Antenna Polarisation	EUT Polarisation
6498.6	48	-26	45.1	-8.9	Vertical	Upright Vertical
6498.6	48	-26	45	-9	Horizontal	Upright Vertical
12997	50.1	-23.9	47.5	-6.5	Vertical	Upright Vertical
12997	51.3	-22.7	49.1	-4.9	Horizontal	Upright Vertical
4874	56.3	-17.7	53.6	-0.4	Vertical	Upright Vertical
4874	52.2	-21.8	47.4	-6.6	Horizontal	Sideways Vertical

Radio Parameters 3

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	Difference to Peak Limit (dB)	Measured Average Level (dBµV/m)	Difference to Average Limit (dB)	Antenna Polarisation	EUT Polarisation
6565.3	46.9	-27.1	43.7	-10.3	Vertical	Upright Vertical
6565.3	47.9	-26.1	44.7	-9.3	Horizontal	Upright Vertical
13130	50.5	-23.5	48.3	-5.7	Vertical	Upright Vertical
13130	50.2	-23.8	47.9	-6.1	Horizontal	Upright Vertical
4924	54	-20	50.3	-3.7	Vertical	Upright Vertical
4924	56.5	-17.5	53.8	-0.2	Horizontal	Sideways Vertical

Plot reference table

Frequency Range	Antenna Polarisation	Plot reference
1-2GHz	Vertical	6899-5 1-2GHz Vert Mid Chan TX
1-2GHz	Horizontal	6899-5 1-2GHz Horiz Mid Chan TX
2-2.7GHz	Vertical	6899-5 2-2.7GHz Vert Mid Chan TX
2-2.7GHz	Horizontal	6899-5 2-2.7GHz Horiz Mid Chan TX
2.7-5GHz	Vertical	6899-5 2.7-5GHz Vert Mid Chan TX
2.7-5GHz	Horizontal	6899-5 2.7-5GHz Horiz Mid Chan TX
5-6GHz	Vertical	6899-5 5-6GHz Vert Mid Chan TX
5-6GHz	Horizontal	6899-5 5-6GHz Horiz Mid Chan TX
6-7.8GHz	Vertical	6899-5 6-7.8GHz Vert Mid Chan TX
6-7.8GHz	Horizontal	6899-5 6-7.8GHz Horiz Mid Chan TX
7.8-10GHz	Vertical	6899-5 7.8-10GHz Vert Mid Chan TX
7.8-10GHz	Horizontal	6899-5 7.8-10GHz Horiz Mid Chan TX
10-12.5GHz	Vertical	6899-5 10-12.5GHz Vert Mid Chan TX
10-12.5GHz	Horizontal	6899-5 10-12.5GHz Horiz Mid Chan TX
12-15GHz	Vertical	6899-5 12-15GHz Vert Mid Chan TX
12-15GHz	Horizontal	6899-5 12-15GHz Horiz Mid Chan TX
15-18GHz	Vertical	6899-5 15-18GHz Vert Mid Chan TX
15-18GHz	Horizontal	6899-5 15-18GHz Horiz Mid Chan TX
18-21.5GHz	Vertical	6899-5 18-21.5GHz Vert Mid Chan TX
18-21.5GHz	Horizontal	6899-5 18-21.5GHz Horiz Mid Chan TX
21.5-25GHz	Vertical	6899-5 21.5-25GHz Vert Mid Chan TX
21.5-25GHz	Horizontal	6899-5 21.5-25GHz Horiz Mid Chan TX

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 Antenna power conducted emissions

NOT APPLICABLE: EUT has no receive function in the range 30 – 960 MHz.

5.4 Occupied bandwidth

5.4.1 Test Methods

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

5.4.2 Configuration of EUT

The EUT was tested on a bench. The EUT was tested whilst connected to the AC power for maximised emissions. The EUT was operated in TX Low Channel and TX Mid Channel and TX High Channel modes.

5.4.3 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.

5.4.4 Test Equipment used

E533, E534, E535, E367

See Section 10 for more details.

5.4.5 Test results

Ambient conditions.
Temperature: 22 °C Relative humidity: 56 % Pressure: 101.3 kPa

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	18.5 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)	10.08	10.08	10.04
Plot reference	J6899-5 Wi-Fi 6dB BW plot 01	J6899-5 Wi-Fi 6dB BW plot 13	J6899-5 Wi-Fi 6dB BW plot 25

Radio Parameter 2

Band	2400-2483.5 MHz
Power level	18.5 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)	10.8	10.13	10.04
Plot reference	J6899-5 Wi-Fi 6dB BW plot 02	J6899-5 Wi-Fi 6dB BW plot 14	J6899-5 Wi-Fi 6dB BW plot 26

Radio Parameter 3

Band	2400-2483.5 MHz
Power level	18.5 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)	10.04	10.04	10.04
Plot reference	J6899-5 Wi-Fi 6dB BW plot 03	J6899-5 Wi-Fi 6dB BW plot 15	J6899-5 Wi-Fi 6dB BW plot 27

Radio Parameter 4

Band	2400-2483.5 MHz
Power level	18.5 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	10.08	10.08
Plot reference	J6899-5 Wi-Fi 6dB BW plot 04	J6899-5 Wi-Fi 6dB BW plot 16	J6899-5 Wi-Fi 6dB BW plot 28

Radio Parameter 5

Band	2400-2483.5 MHz
Power level	18.5 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
6dB BW (MHz)	15.17	15.17	15.17
Plot reference	J6899-5 Wi-Fi 6dB BW plot 05	J6899-5 Wi-Fi 6dB BW plot 17	J6899-5 Wi-Fi 6dB BW plot 29

Radio Parameter 6

Band	2400-2483.5 MHz
Power level	18.5 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	J6899-5 Wi-Fi 6dB BW plot 06	J6899-5 Wi-Fi 6dB BW plot 18	J6899-5 Wi-Fi 6dB BW plot 30

Radio Parameter 7

Band	2400-2483.5 MHz
Power level	18.5 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	J6899-5 Wi-Fi 6dB BW plot 07	J6899-5 Wi-Fi 6dB BW plot 19	J6899-5 Wi-Fi 6dB BW plot 31

Radio Parameter 8

Band	2400-2483.5 MHz
Power level	18.5 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)	15.4	15.42	15.42
Plot reference	J6899-5 Wi-Fi 6dB BW plot 08	J6899-5 Wi-Fi 6dB BW plot 20	J6899-5 Wi-Fi 6dB BW plot 32

Radio Parameter 9

Band	2400-2483.5 MHz
Power level	18.5 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
6dB BW (MHz)	15.17	15.17	15.17
Plot reference	J6899-5 Wi-Fi 6dB BW plot 09	J6899-5 Wi-Fi 6dB BW plot 21	J6899-5 Wi-Fi 6dB BW plot 33

Radio Parameter 10

Band	2400-2483.5 MHz
Power level	18.5 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)	15.75	15.75	15.75
Plot reference	J6899-5 Wi-Fi 6dB BW plot 10	J6899-5 Wi-Fi 6dB BW plot 22	J6899-5 Wi-Fi 6dB BW plot 34

Radio Parameter 11

Band	2400-2483.5 MHz
Power level	18.5 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)	15.33	15.33	15.33
Plot reference	J6899-5 Wi-Fi 6dB BW plot 11	J6899-5 Wi-Fi 6dB BW plot 23	J6899-5 Wi-Fi 6dB BW plot 35

Radio Parameter 12

Band	2400-2483.5 MHz
Power level	18.5 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	15.17
Plot reference	J6899-5 Wi-Fi 6dB BW plot 12	J6899-5 Wi-Fi 6dB BW plot 24	J6899-5 Wi-Fi 6dB BW plot 36

LIMITS:

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

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

5.5 Maximum peak conducted output power

5.5.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.247)
Test Method: ANSI C63.10, Reference (6.10.2.1 b))

5.5.2 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 modes for this test.

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

5.5.3 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.

5.5.4 Test Equipment used

E342, E367

See Section 10 for more details

5.5.5 Test results

Ambient conditions.
Temperature: 22 °C Relative humidity: 54 % Pressure: 101.5 kPa

Radio Parameter 1

Band	2400-2483.5 MHz
Power level	18.5 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	**Volts Nominal**	52.48	51.29	57.54
Maximum TX Power observed (mW)		57.54		

Radio Parameter 2

Band	2400-2483.5 MHz
Power level	18.5 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**	54.95	51.29	58.88
Maximum TX Power observed (mW)		58.88		

Radio Parameter 3

Band	2400-2483.5 MHz
Power level	18.5 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**	63.10	58.88	66.07
Maximum TX Power observed (mW)		66.0693448		

Radio Parameter 4

Band	2400-2483.5 MHz
Power level	18.5 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**	69.18	64.57	72.44
Maximum TX Power observed (mW)		72.44		

Radio Parameter 5

Band	2400-2483.5 MHz
Power level	18.5 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

Test conditions		Carrier Power (mW)		
		Low	Mid	High
Temp Ambient	Volts Nominal	57.54	60.26	58.88
Maximum TX Power observed (mW)		60.26		

Radio Parameter 6

Band	2400-2483.5 MHz
Power level	18.5 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	61.66	64.57	63.10
Maximum TX Power observed (mW)		64.57		

Radio Parameter 7

Band	2400-2483.5 MHz
Power level	18.5 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	52.48	54.95	54.95
Maximum TX Power observed (mW)		54.95		

Radio Parameter 8

Band	2400-2483.5 MHz
Power level	18.5 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

Test conditions		Carrier Power (mW)		
		Low	Mid	High
Temp Ambient	Volts Nominal	51.29	53.70	53.70
Maximum TX Power observed (mW)		53.70		

Radio Parameter 9

Band	2400-2483.5 MHz
Power level	18.5 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**	53.70	56.23	56.23
Maximum TX Power observed (mW)		56.23		

Radio Parameter 10

Band	2400-2483.5 MHz
Power level	18.5 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**	56.23	58.88	57.54
Maximum TX Power observed (mW)		58.88		

Radio Parameter 11

Band	2400-2483.5 MHz
Power level	18.5 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

Test conditions		**Carrier Power (mW)**		
		Low	**Mid**	**High**
Temp Ambient	**Volts Nominal**	36.31	40.74	36.31
Maximum TX Power observed (mW)		40.74		

Radio Parameter 12

Band	2400-2483.5 MHz
Power level	18.5 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**	36.31	40.74	36.31
Maximum TX Power observed (mW)		40.74		

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.

5.6 Maximum average conducted output power

NOT APPLICABLE: PK power test performed instead.

5.7 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.

5.8 Maximum Power Spectral Density

5.8.1 Test Methods

Test Requirements**:** FCC Part 15C, Reference (15.247)
Test Method: KDB558074, PSD Option 1

5.8.2 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 modes for this test.

5.8.3 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. Plots were taken with the span set to 1.5 times the measured DTS bandwidth for each modulation scheme setting.

5.8.4 Test Equipment used

E367, E533, E534, E535

See Section 10 for more details.

5.8.5 Test results

Ambient conditions.
Temperature: 26°C Relative humidity: 50% Pressure: 101kPa

Radio Parameter 1

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-12.190	-12.770	-12.290
Plot reference	J6899-5 PSD plot 01	J6899-5 PSD plot 13	J6899-5 PSD plot 25

Radio Parameter 2

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-10.230	-10.330	-10.110
Plot reference	J6899-5 PSD plot 02	J6899-5 PSD plot 14	J6899-5 PSD plot 26

Radio Parameter 3

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-11.600	-11.930	-11.430
Plot reference	J6899-5 PSD plot 03	J6899-5 PSD plot 15	J6899-5 PSD plot 27

Radio Parameter 4

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-10.990	-11.570	-11.020
Plot reference	J6899-5 PSD plot 04	J6899-5 PSD plot 16	J6899-5 PSD plot 28

Radio Parameter 5

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-14.950	-14.710	-14.910
Plot reference	J6899-5 PSD plot 05	J6899-5 PSD plot 17	J6899-5 PSD plot 29

Radio Parameter 6

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-12.080	-11.870	-12.040
Plot reference	J6899-5 PSD plot 06	J6899-5 PSD plot 18	J6899-5 PSD plot 30

Radio Parameter 7

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-11.360	-11.250	-11.350
Plot reference	J6899-5 PSD plot 07	J6899-5 PSD plot 19	J6899-5 PSD plot 31

Radio Parameter 8

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-10.550	-10.340	-10.550
Plot reference	J6899-5 PSD plot 08	J6899-5 PSD plot 20	J6899-5 PSD plot 32

Radio Parameter 9

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-10.500	-10.300	-10.380
Plot reference	J6899-5 PSD plot 09	J6899-5 PSD plot 21	J6899-5 PSD plot 33

Radio Parameter 10

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-8.150	-7.960	-8.050
Plot reference	J6899-5 PSD plot 10	J6899-5 PSD plot 22	J6899-5 PSD plot 34

Radio Parameter 11

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-9.280	-8.720	-9.240
Plot reference	J6899-5 PSD plot 11	J6899-5 PSD plot 23	J6899-5 PSD plot 35

Radio Parameter 12

Band	2400-2483.5 MHz
Power level	18.5 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
Antenna Gain (dB)	-1.1	-1.3	-1.6
Duty Cycle (%)	100	100	100
dBm per 3kHz	-10.330	-9.820	-10.290
Plot reference	J6899-5 PSD plot 12	J6899-5 PSD plot 24	J6899-5 PSD plot 36

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.

5.9 Band Edge Compliance

5.9.1 Test Methods

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

5.9.2 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.

5.9.3 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**.

5.9.4 Test Equipment used

E268, E533, E534, E535, TMS82, E252

See Section 10 for more details.

5.9.5 Test results

Ambient conditions.
Temperature: 18-20 °C Relative humidity: 45-57 % Pressure: 101 kPa

Highest emissions were with the EUT in a horizontally flat position with the measuring Antenna polarisation in a horizontal plane.

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	18.5 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 (dBµV/m)	57	54.4
Peak Plot reference	J6899-5 Band edge plot 001	J6899-5 Band edge plot 037
Average Level (dBµV/m)	51.9	49.8
Average Plot reference	J6899-5 Band edge plot 002	J6899-5 Band edge plot 038

Band Edge Results relating to Radio Parameters 1

	Low	High
Plot reference	J6899-5 Band edge plot 003	J6899-5 Band edge plot 039

Radio Parameter 2

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	56.3	53.3
Peak Plot reference	J6899-5 Band edge plot 004	J6899-5 Band edge plot 040
Average Level (dBµV/m)	52.3	49.7
Average Plot reference	J6899-5 Band edge plot 005	J6899-5 Band edge plot 041

Band Edge Results relating to Radio Parameters 2

	Low	High
Plot reference	J6899-5 Band edge plot 006	J6899-5 Band edge plot 042

Radio Parameter 3

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	58.7	56.3
Peak Plot reference	J6899-5 Band edge plot 007	J6899-5 Band edge plot 043
Average Level (dBµV/m)	48.1	46.6
Average Plot reference	J6899-5 Band edge plot 008	J6899-5 Band edge plot 044

Band Edge Results relating to Radio Parameters 3

	Low	High
Plot reference	J6899-5 Band edge plot 009	J6899-5 Band edge plot 045

Radio Parameter 4

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	57.2	54.9
Peak Plot reference	J6899-5 Band edge plot 010	J6899-5 Band edge plot 046
Average Level (dBµV/m)	48.2	46.6
Average Plot reference	J6899-5 Band edge plot 011	J6899-5 Band edge plot 047

Band Edge Results relating to Radio Parameters 4

	Low	High
Plot reference	J6899-5 Band edge plot 012	J6899-5 Band edge plot 048

Radio Parameter 5

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	59	56.7
Peak Plot reference	J6899-5 Band edge plot 013	J6899-5 Band edge plot 049
Average Level (dBµV/m)	43	42.4
Average Plot reference	J6899-5 Band edge plot 014	J6899-5 Band edge plot 050

Band Edge Results relating to Radio Parameters 5

	Low	High
Plot reference	J6899-5 Band edge plot 015	J6899-5 Band edge plot 051

Radio Parameter 6

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	57	58.4
Peak Plot reference	J6899-5 Band edge plot 016	J6899-5 Band edge plot 052
Average Level (dBµV/m)	43.7	42.7
Average Plot reference	J6899-5 Band edge plot 017	J6899-5 Band edge plot 053

Band Edge Results relating to Radio Parameters 6

	Low	High
Plot reference	J6899-5 Band edge plot 018	J6899-5 Band edge plot 054

Radio Parameter 7

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	59.3	55.6
Peak Plot reference	J6899-5 Band edge plot 019	J6899-5 Band edge plot 055
Average Level (dBµV/m)	43.9	42.5
Average Plot reference	J6899-5 Band edge plot 020	J6899-5 Band edge plot 056

Band Edge Results relating to Radio Parameters 7

	Low	High
Plot reference	J6899-5 Band edge plot 021	J6899-5 Band edge plot 057

Radio Parameter 8

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	56	54
Peak Plot reference	J6899-5 Band edge plot 022	J6899-5 Band edge plot 058
Average Level (dBµV/m)	43.8	42.9
Average Plot reference	J6899-5 Band edge plot 023	J6899-5 Band edge plot 059

Band Edge Results relating to Radio Parameters 8

	Low	High
Plot reference	J6899-5 Band edge plot 024	J6899-5 Band edge plot 060

Radio Parameter 9

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	52.6	53.4
Peak Plot reference	J6899-5 Band edge plot 025	J6899-5 Band edge plot 061
Average Level (dBµV/m)	43.7	42.1
Average Plot reference	J6899-5 Band edge plot 026	J6899-5 Band edge plot 062

Band Edge Results relating to Radio Parameters 9

	Low	High
Plot reference	J6899-5 Band edge plot 027	J6899-5 Band edge plot 063

Radio Parameter 10

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	54.3	54.3
Peak Plot reference	J6899-5 Band edge plot 028	J6899-5 Band edge plot 064
Average Level (dBµV/m)	42.7	42.5
Average Plot reference	J6899-5 Band edge plot 029	J6899-5 Band edge plot 065

Band Edge Results relating to Radio Parameters 10

	Low	High
Plot reference	J6899-5 Band edge plot 030	J6899-5 Band edge plot 066

Radio Parameter 11

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	49.3	52.7
Peak Plot reference	J6899-5 Band edge plot 031	J6899-5 Band edge plot 067
Average Level (dBµV/m)	40.4	40.2
Average Plot reference	J6899-5 Band edge plot 032	J6899-5 Band edge plot 068

Band Edge Results relating to Radio Parameters 11

	Low	High
Plot reference	J6899-5 Band edge plot 033	J6899-5 Band edge plot 069

Radio Parameter 12

Band	2400-2483.5 MHz
Power level	18.5 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 (dBµV/m)	51.6	52.2
Peak Plot reference	J6899-5 Band edge plot 034	J6899-5 Band edge plot 070
Average Level (dBµV/m)	40.5	40.7
Average Plot reference	J6899-5 Band edge plot 035	J6899-5 Band edge plot 071

Band Edge Results relating to Radio Parameters 12

	Low	High
Plot reference	J6899-5 Band edge plot 036	J6899-5 Band edge plot 072

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 = 54dBuV/m at band edges
PK = 74dBuV/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.

5.10 FHSS Parameters

5.10.1 Carrier frequency separation

NOT APPLICABLE: Wi-Fi part is not FHSS technology.

5.10.2 Number of hopping frequencies and Chanel Occupancy (Dwell time)

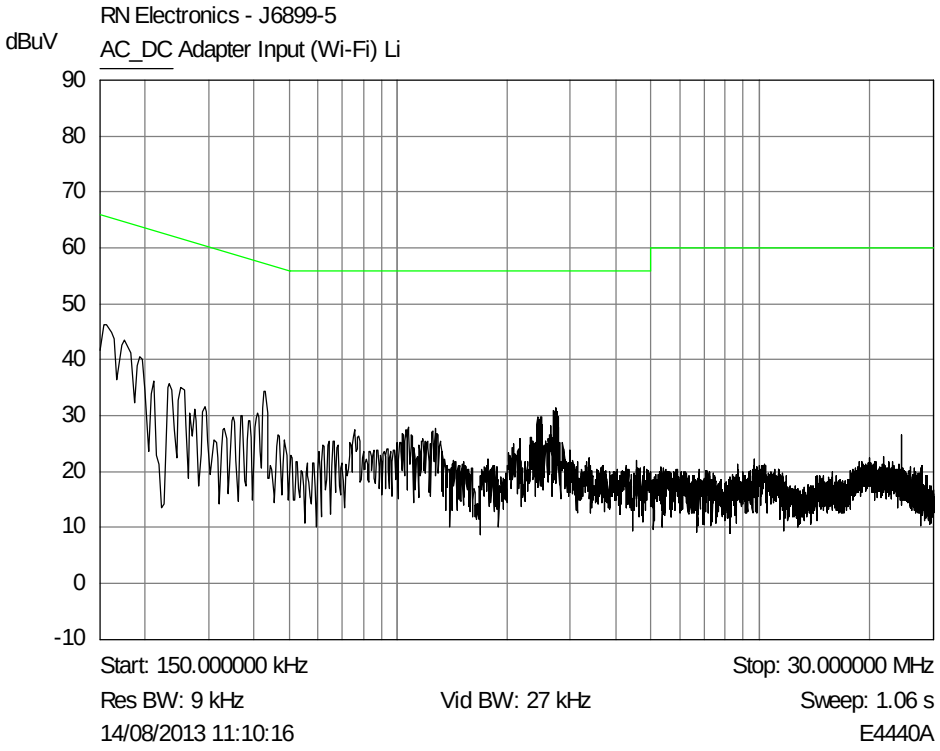
NOT APPLICABLE: Wi-Fi part is not FHSS technology

5.11 Frequency stability

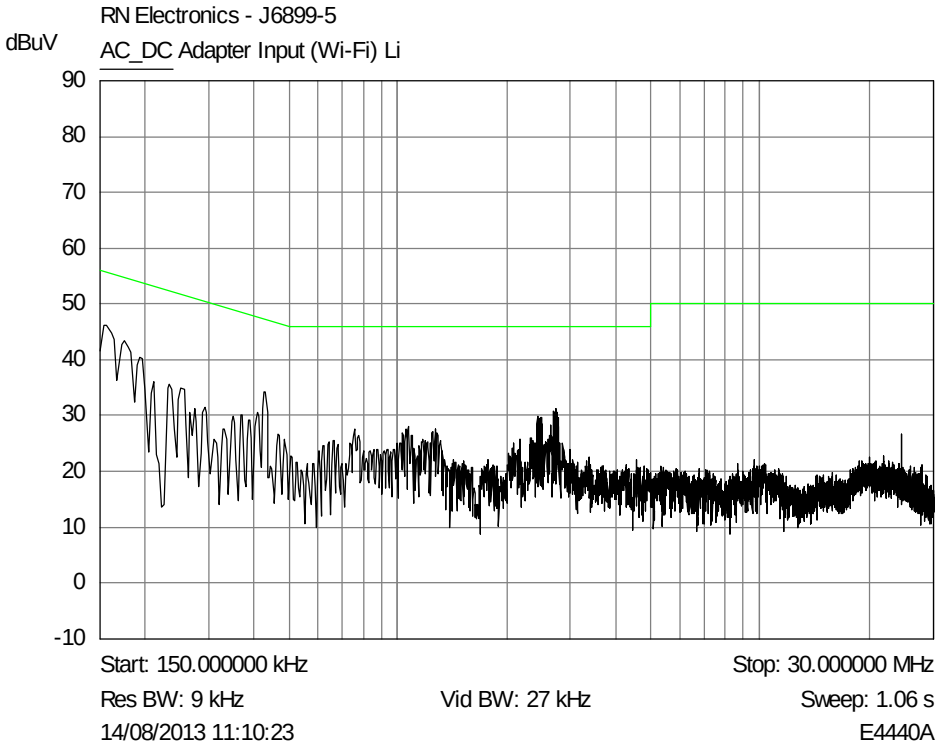
NOT APPLICABLE: No limits apply, however the requirement to contain the designated bandwidth of the emission within the specified frequency band includes the frequency stability of the transmitter over expected variations in temperature and supply voltage.

6 Plots and Results

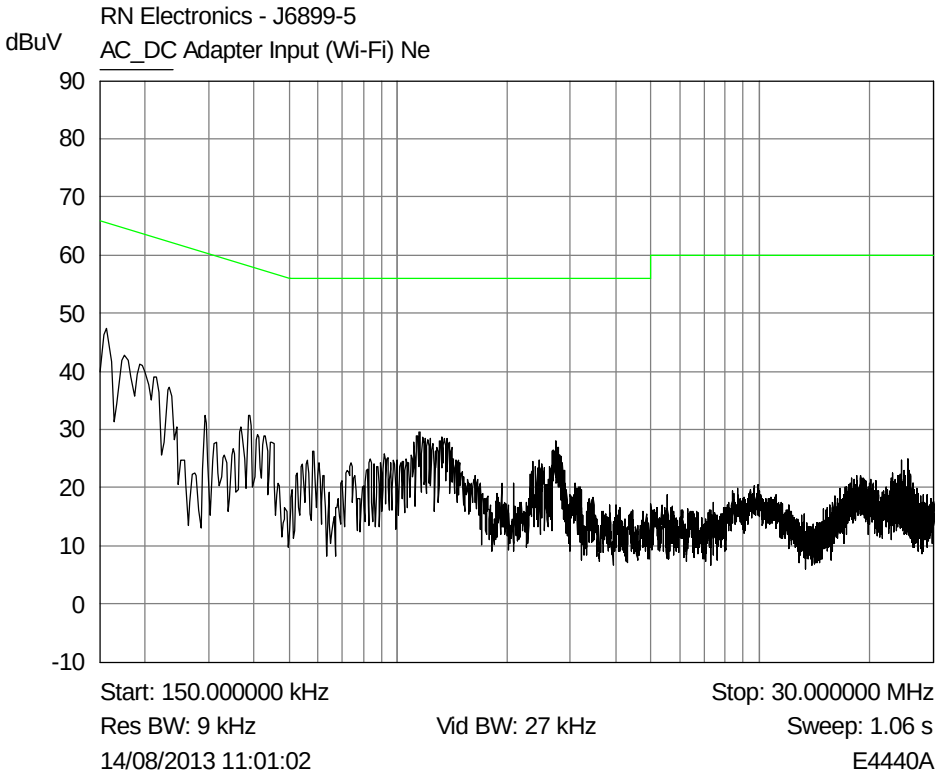
6.1 AC power line conducted emissions plots



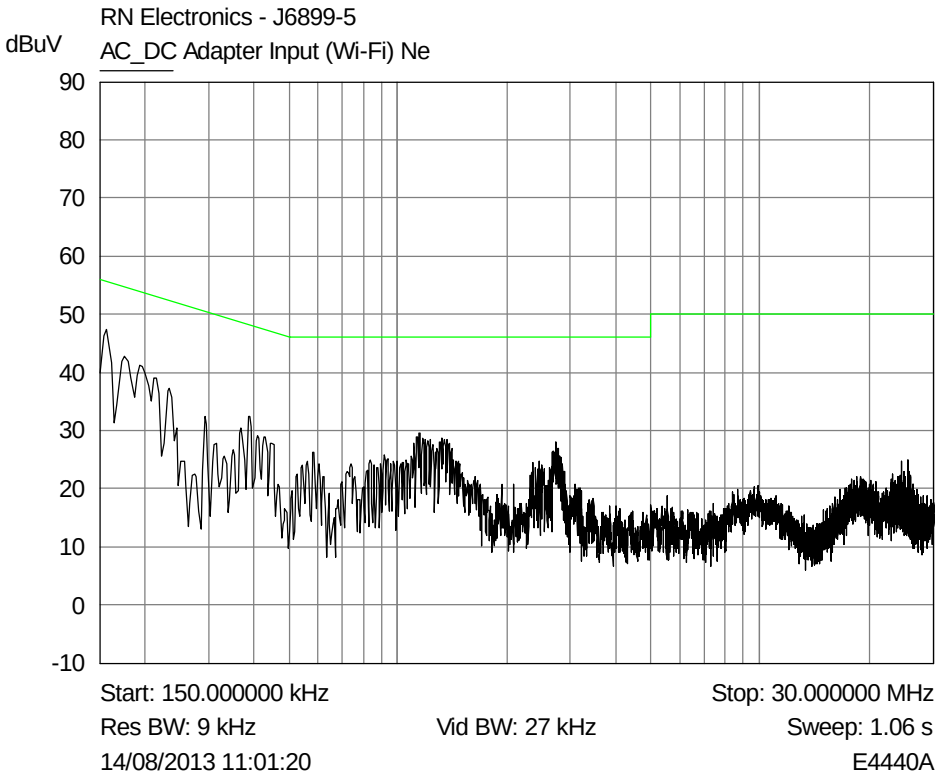
Plot of peak emissions 150kHz - 30MHz on the AC_DC Adapter Input (Wi-Fi) live terminal against the quasi-peak limit line.



Plot of peak emissions 150kHz - 30MHz on the AC_DC Adapter Input (Wi-Fi) live terminal against the average limit line.



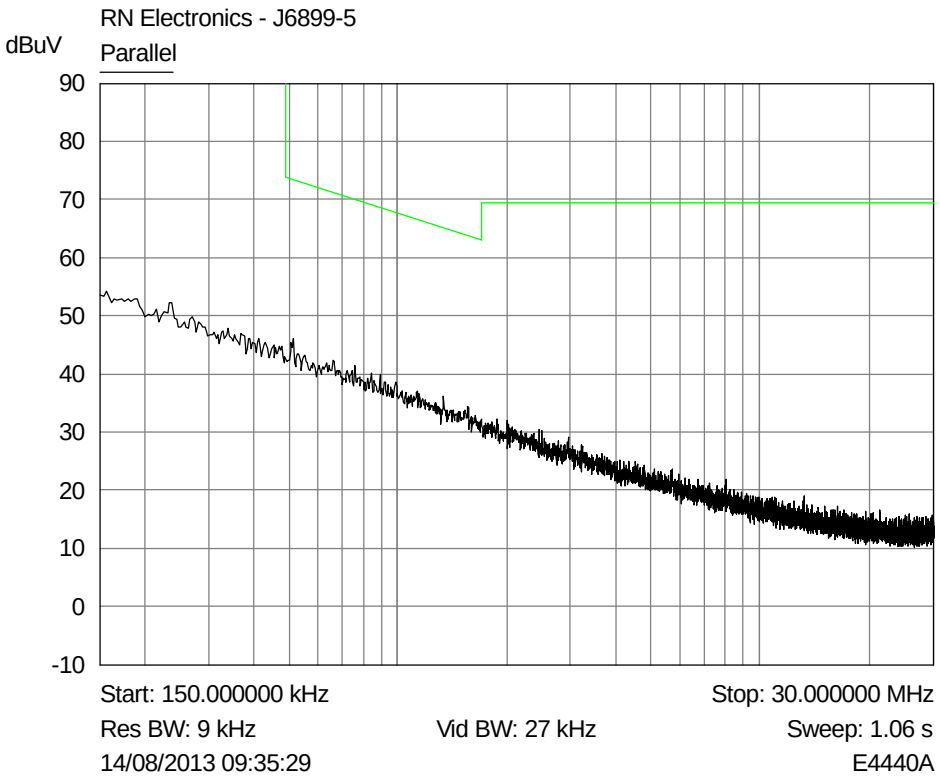
Plot of peak emissions 150kHz - 30MHz on the AC_DC Adapter Input (Wi-Fi) neutral terminal against the quasi-peak limit line.



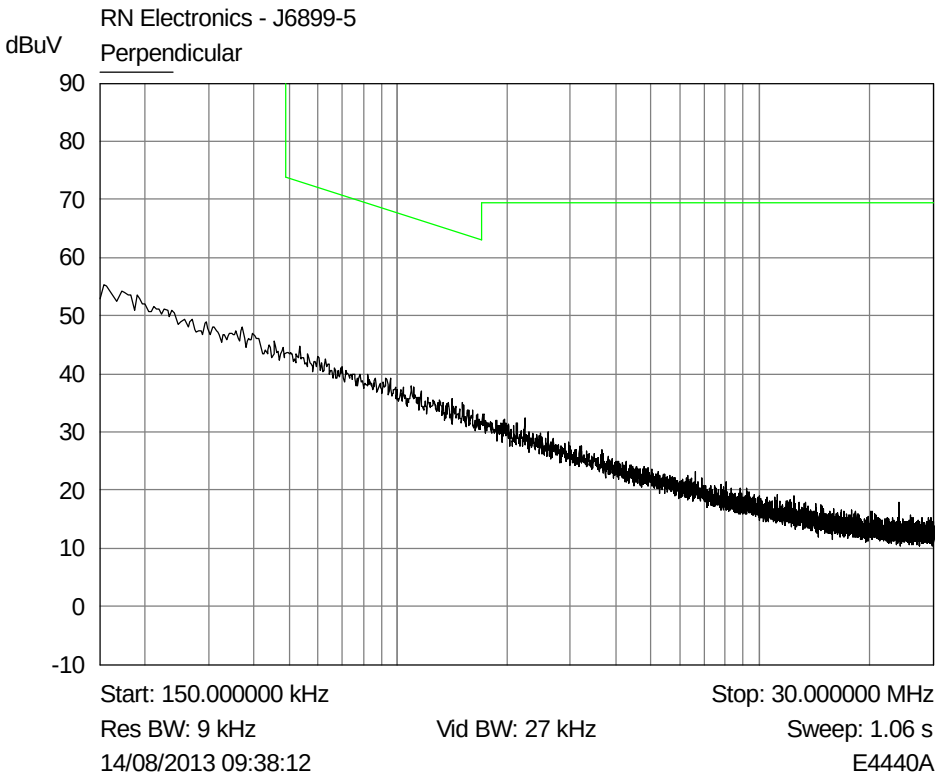
Plot of peak emissions 150kHz - 30MHz on the AC_DC Adapter Input (Wi-Fi) neutral terminal against the average limit line.

6.2 Radiated emissions plots

6.2.1 Low frequency radiated emissions plots

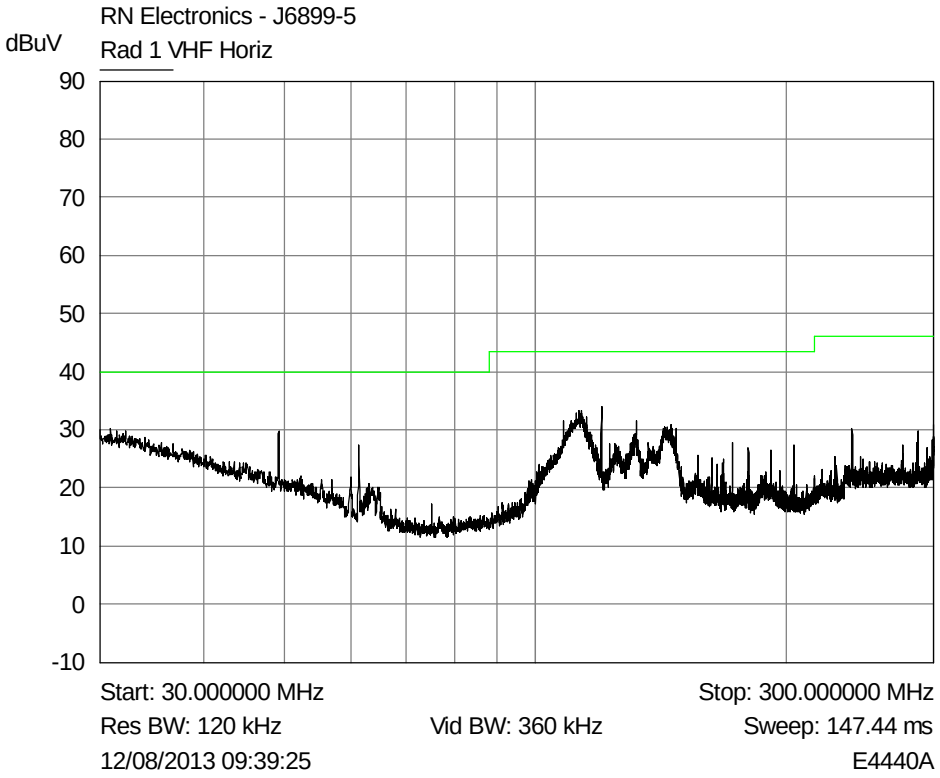


Middle Channel - Parallel Plot

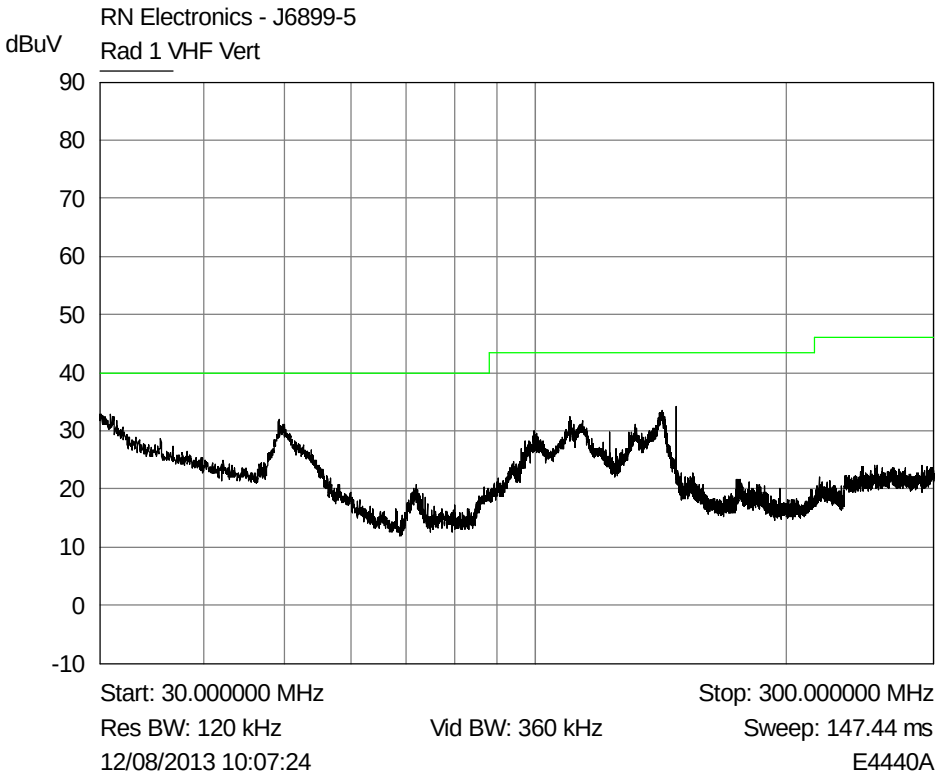


Middle Channel - Perpendicular Plot

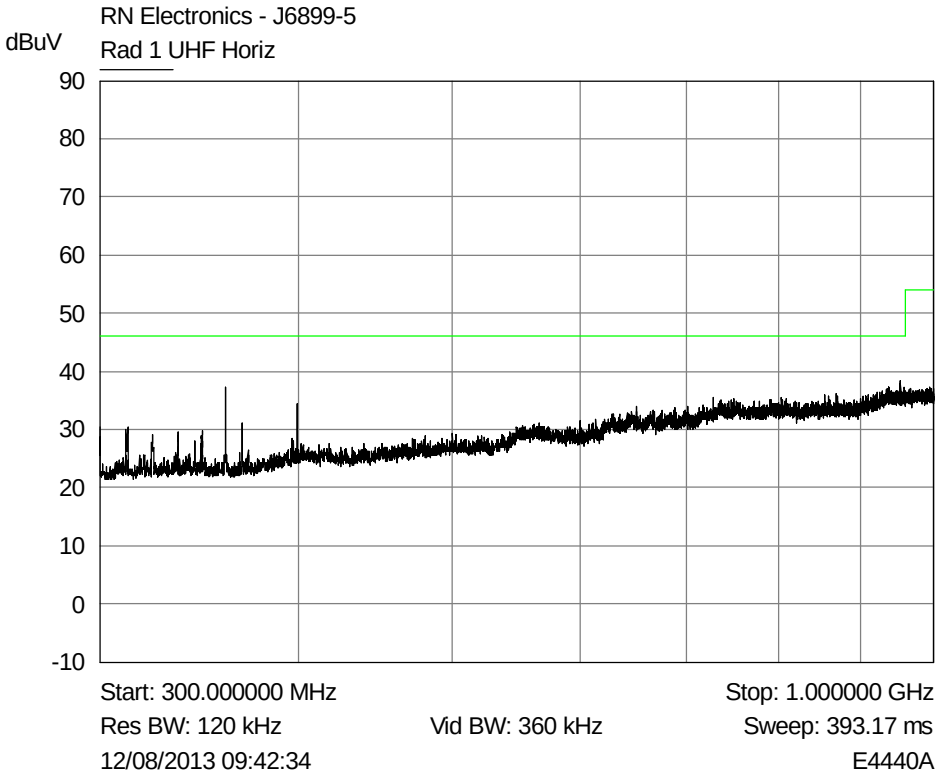
6.2.2 Radiated emissions - 30MHz - 1GHz



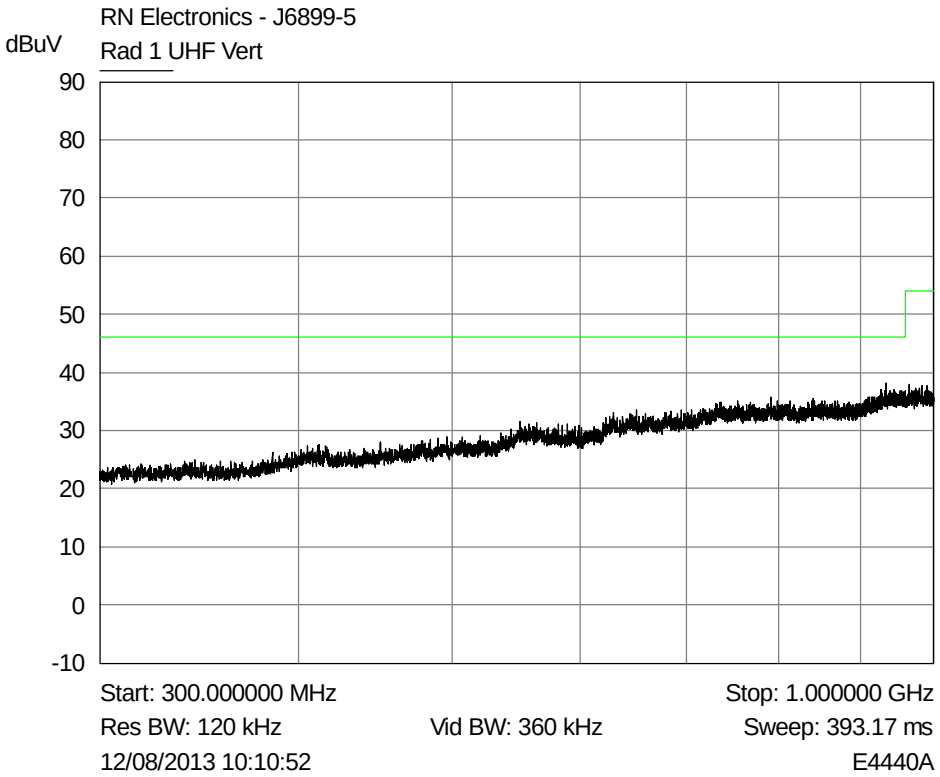
WI-FI TX Mid Channel: Plot of peak horizontal emissions 30MHz - 300MHz against the quasi-peak limit line.



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

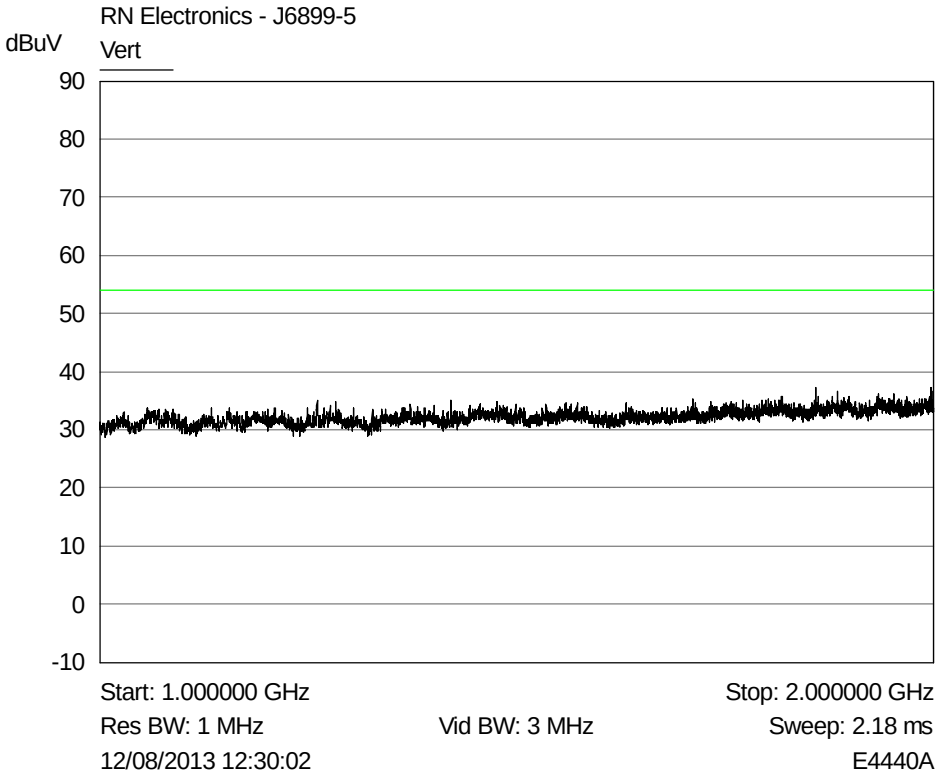


WI-FI TX Mid Channel: Plot of peak horizontal emissions 300MHz - 1GHz against the quasi-peak limit line.

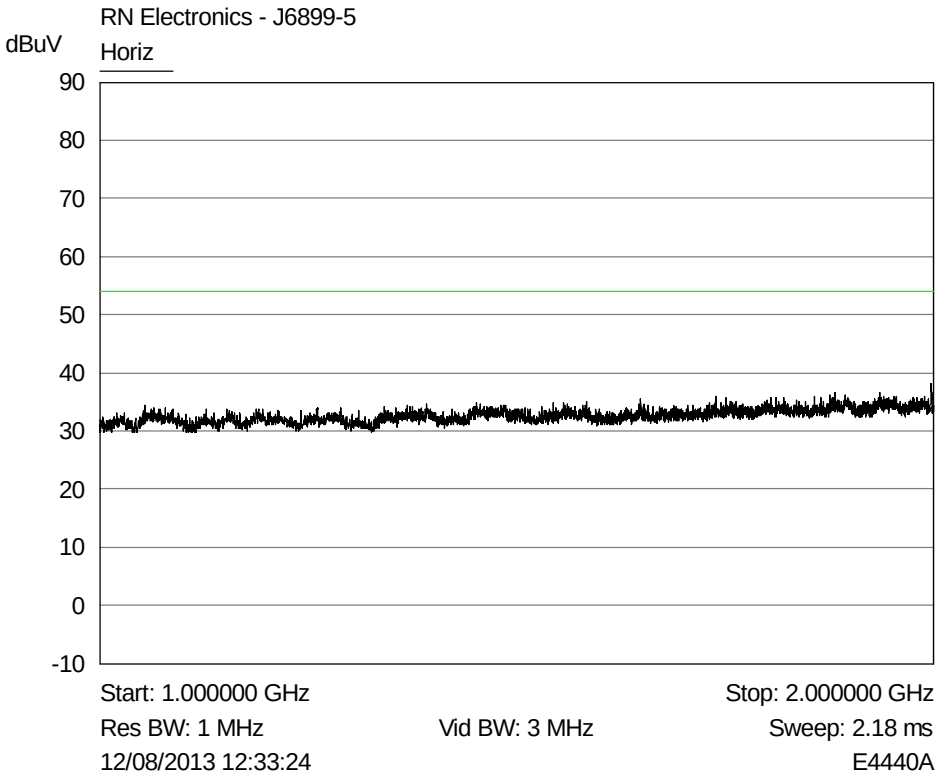


WI-FI TX Mid Channel: Plot of peak vertical emissions 300MHz - 1GHz against the quasi-peak limit line.

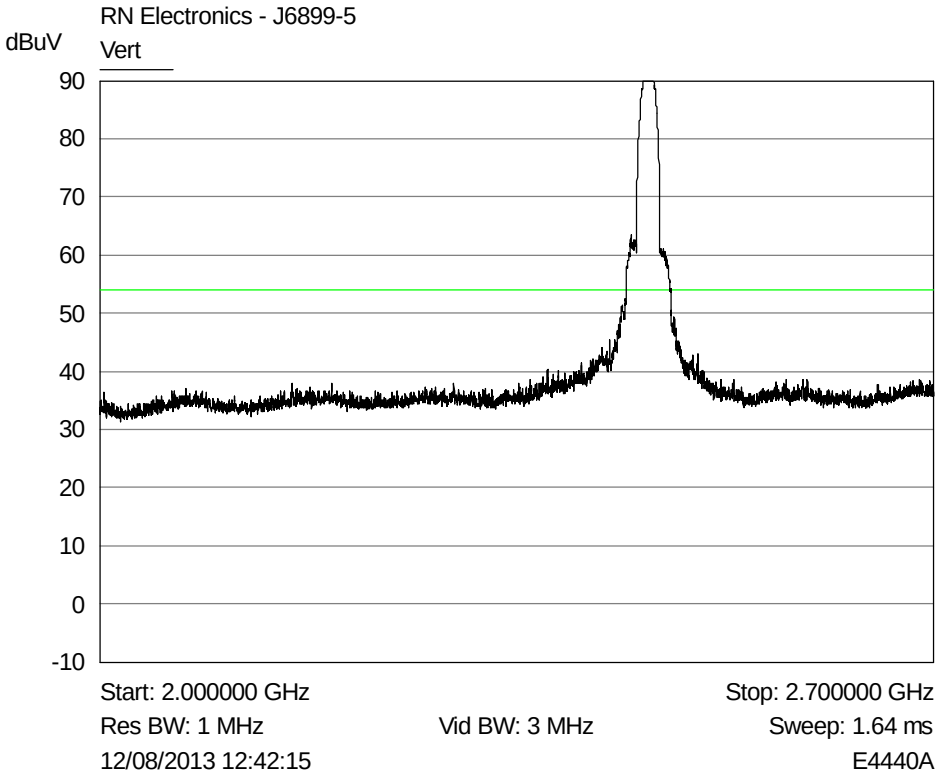
6.2.3 Radiated emissions Plots above 1GHz



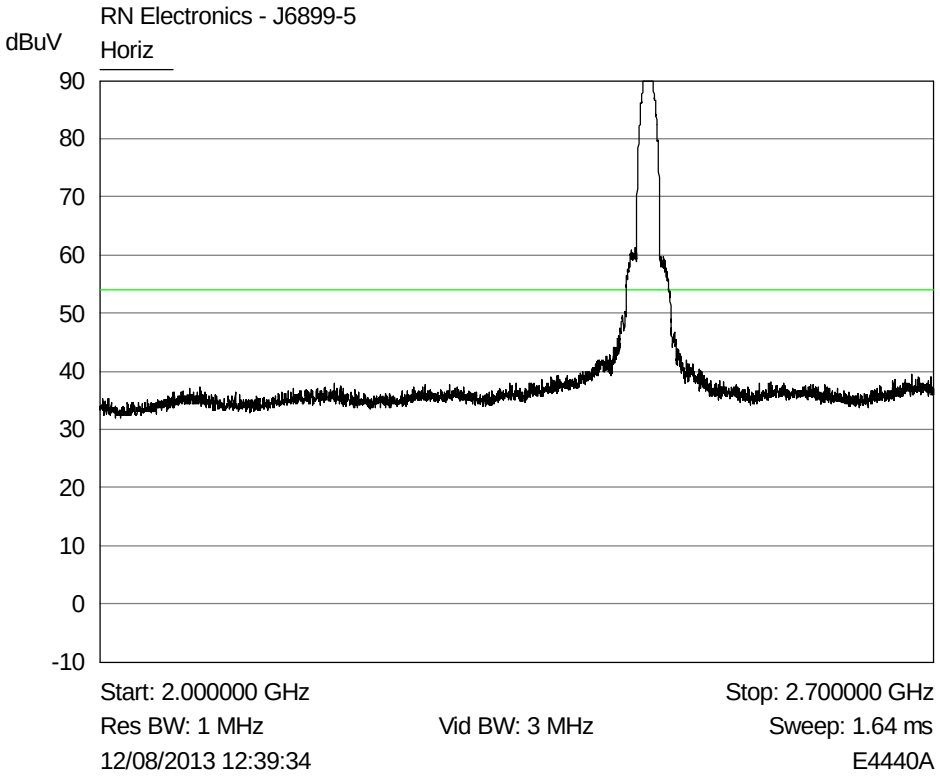
Middle channel (2437 MHz) - 1-2GHz - Vertical



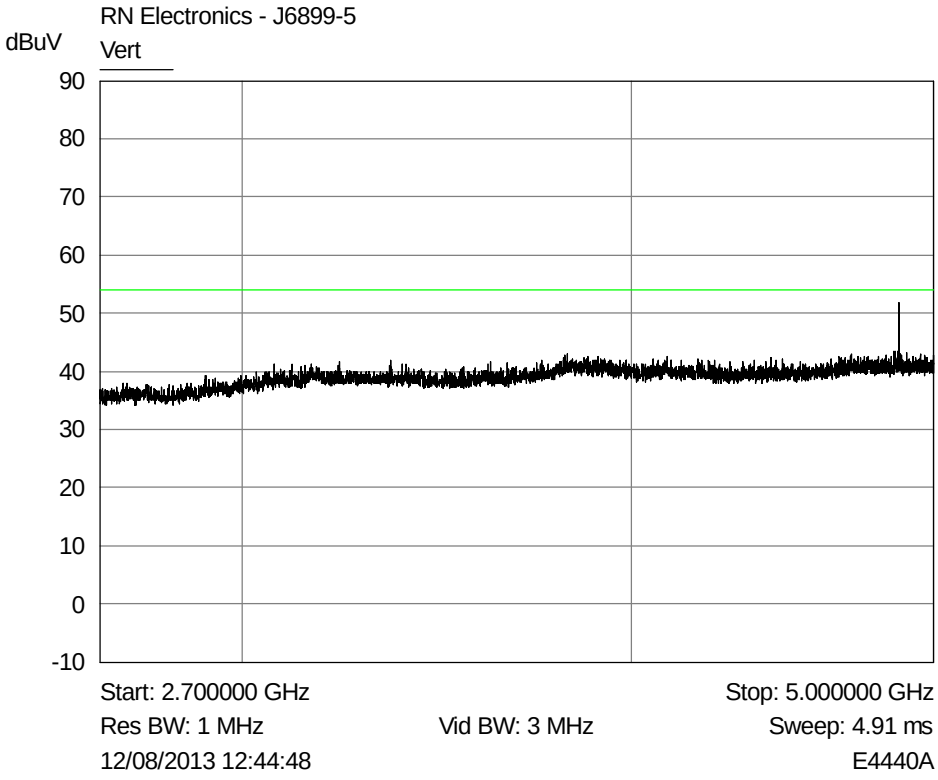
Middle channel (2437 MHz) - 1-2GHz - Horizontal



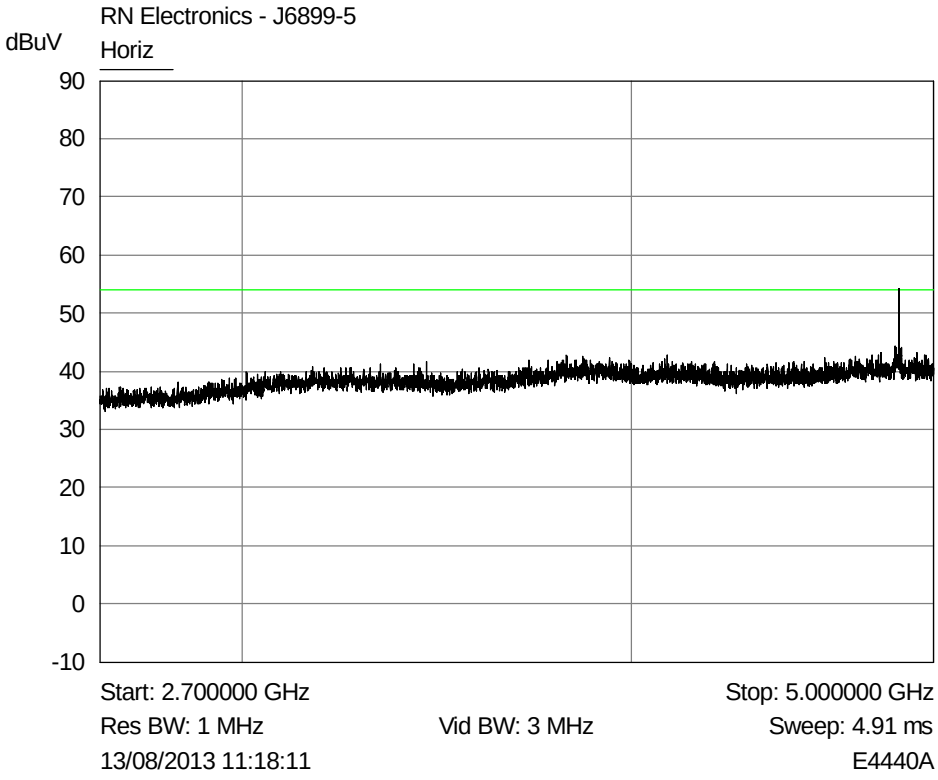
Middle channel (2437 MHz) - 2-2.7GHz - Vertical



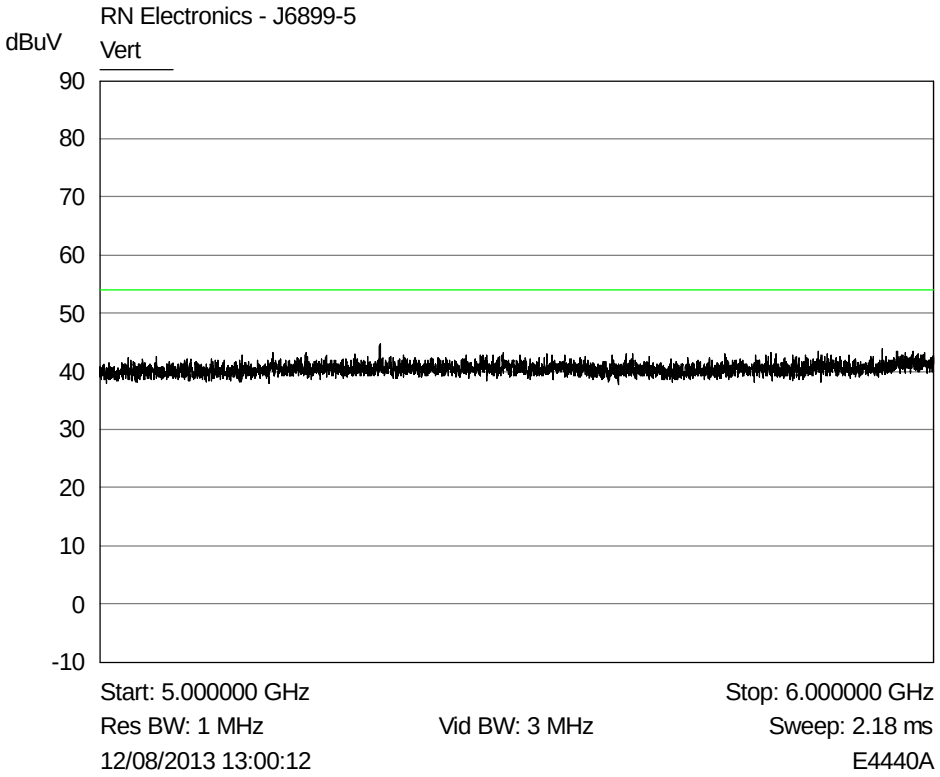
Middle channel (2437 MHz) - 2-2.7GHz - Horizontal



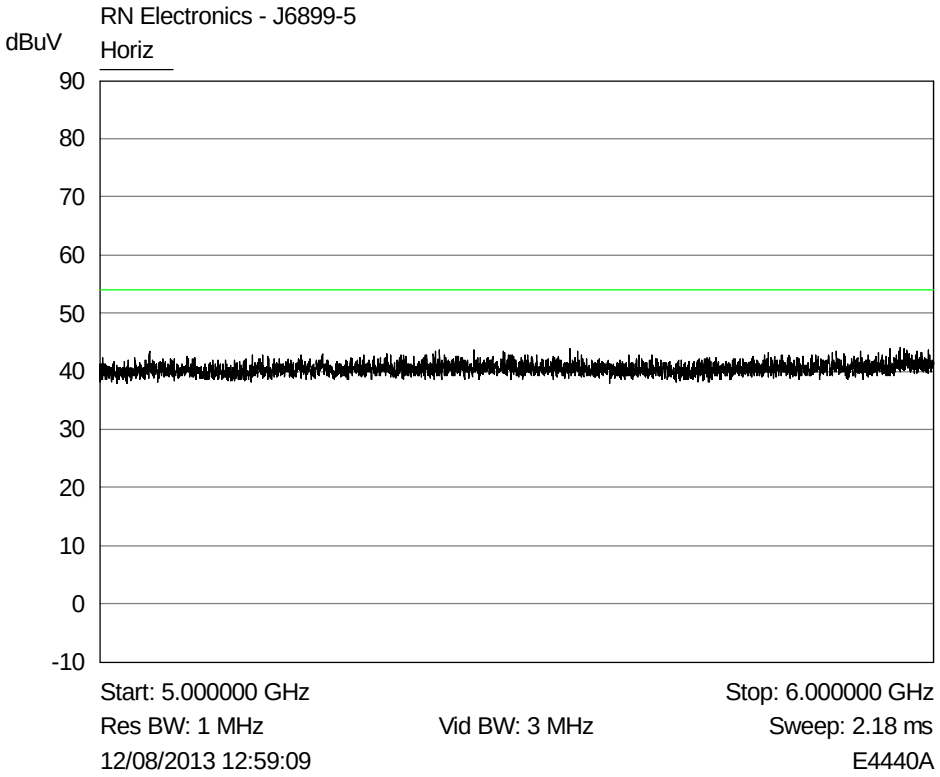
Middle channel (2437 MHz) - 2.7-5GHz - Vertical



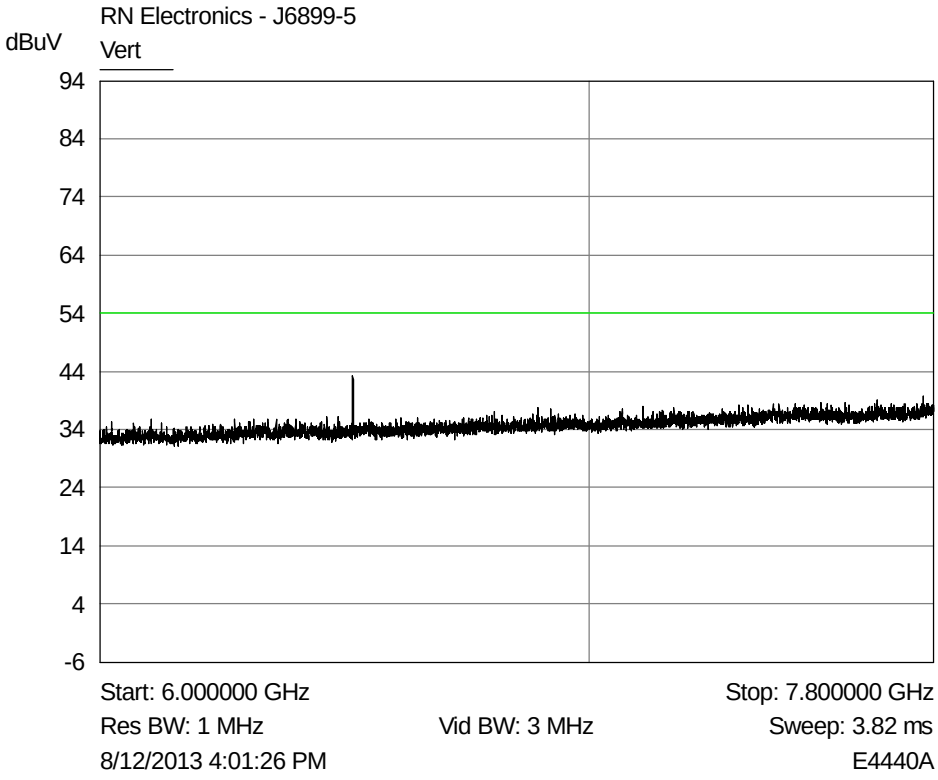
Middle channel (2437 MHz) - 2.7-5GHz - Horizontal



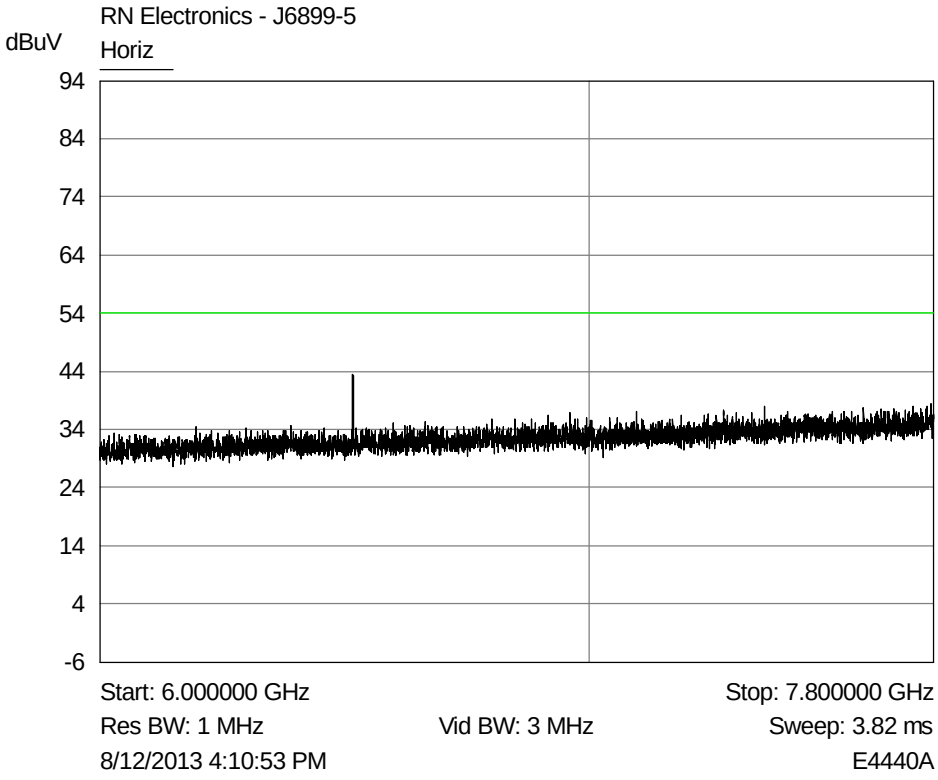
Middle channel (2437 MHz) - 5-6GHz - Vertical



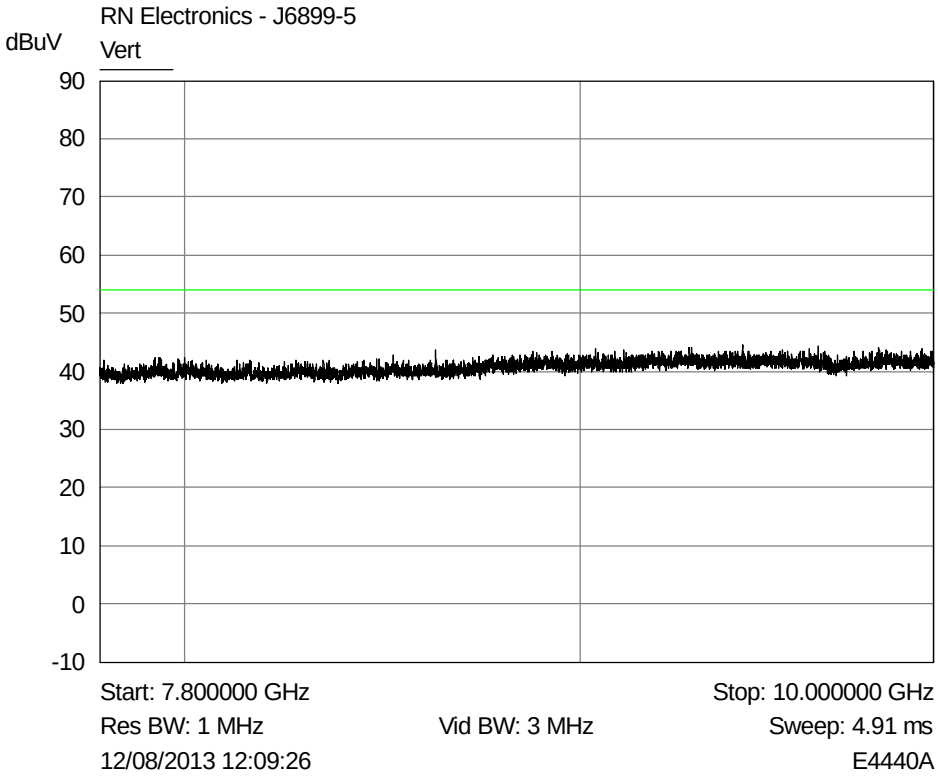
Middle channel (2437 MHz) - 5-6GHz - Horizontal



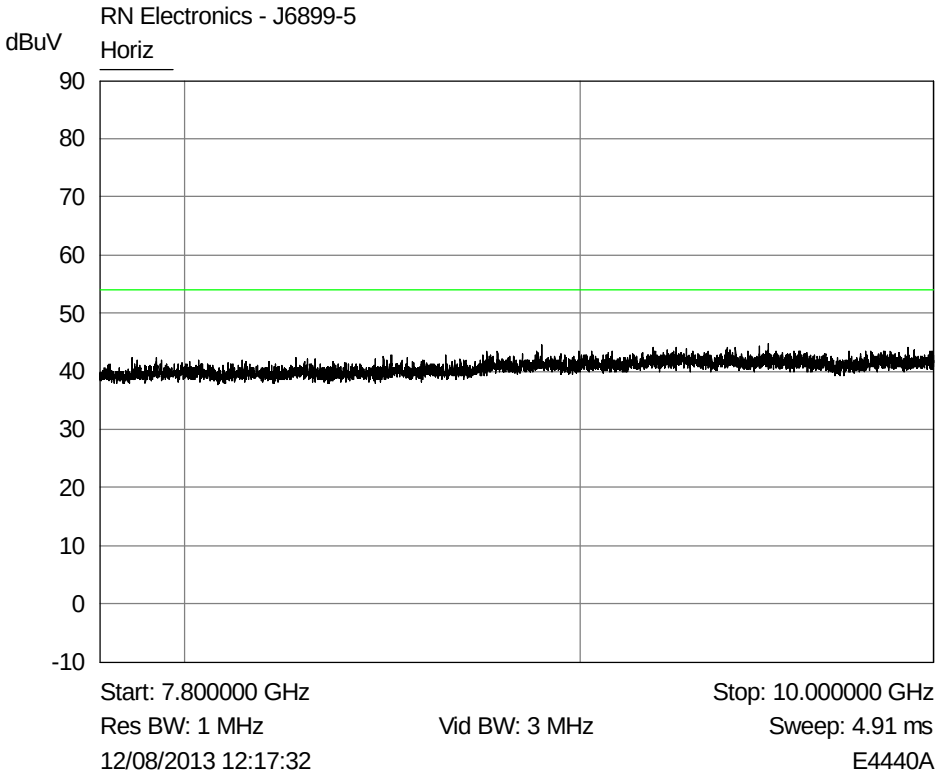
Middle channel (2437 MHz) - 6-7.8GHz - Vertical



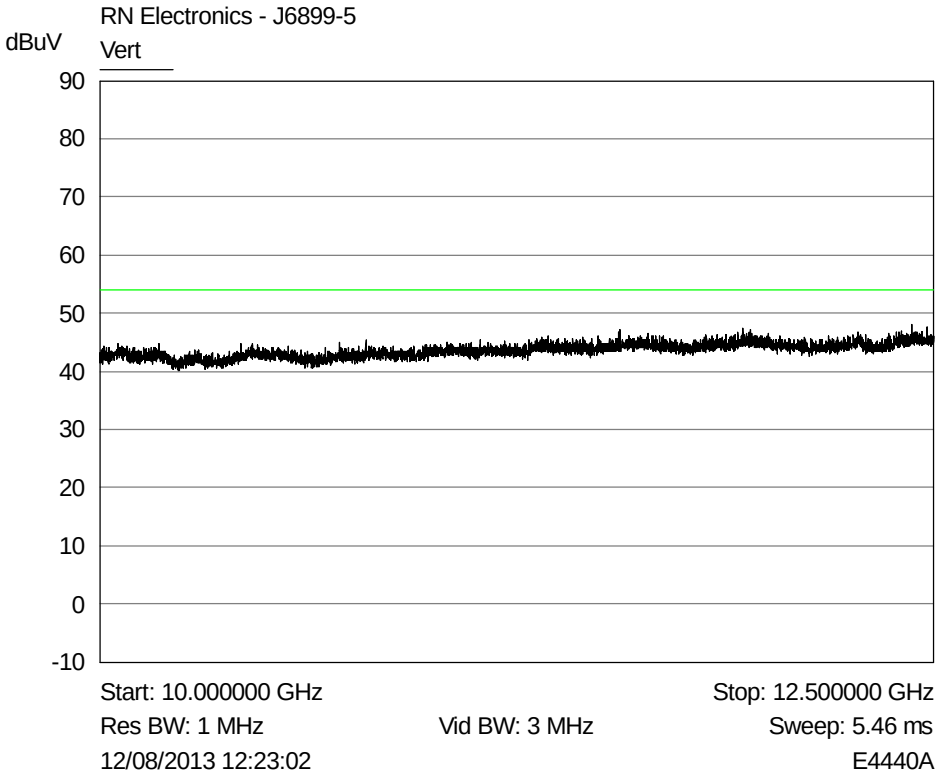
Middle channel (2437 MHz) - 6-7.8GHz - Horizontal



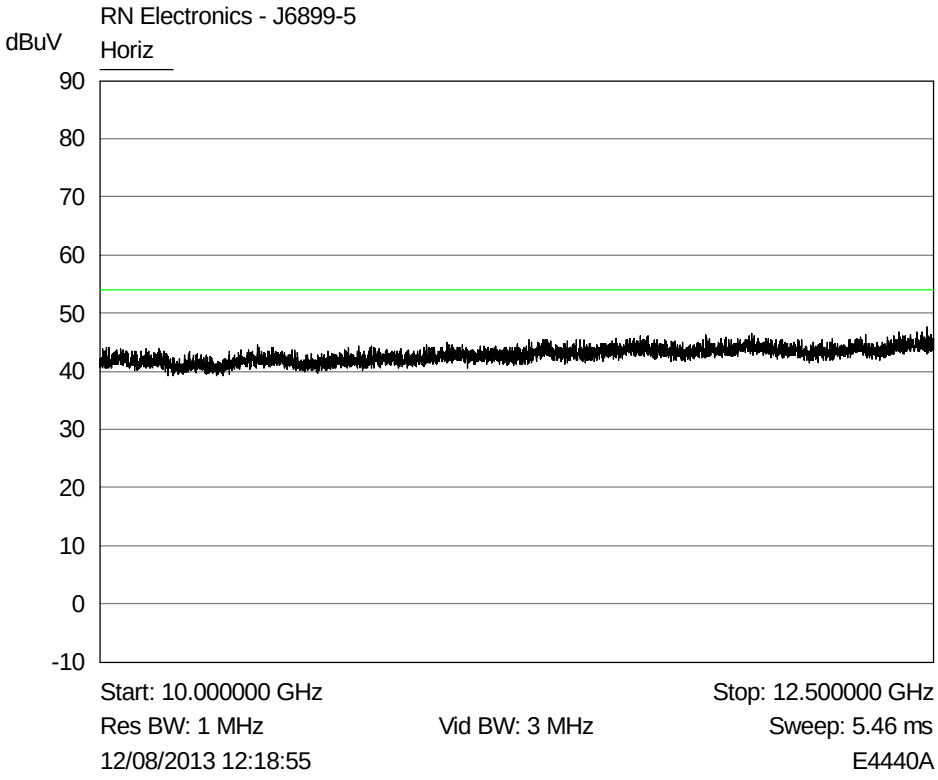
Middle channel (2437 MHz) - 7.8-10GHz - Vertical



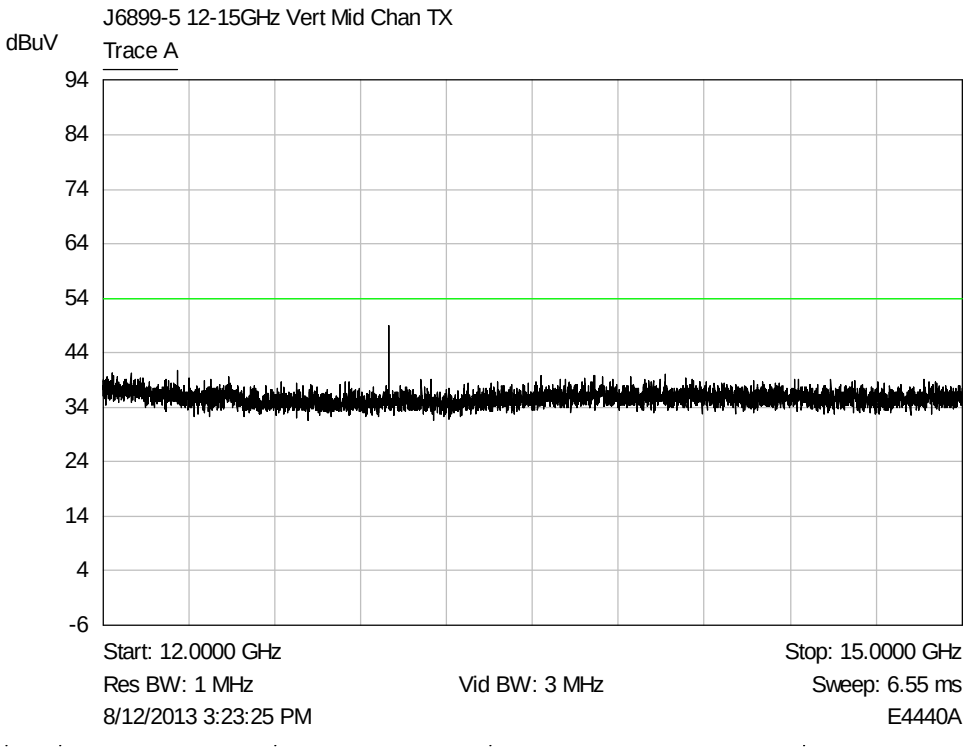
Middle channel (2437 MHz) - 7.8-10GHz - Horizontal



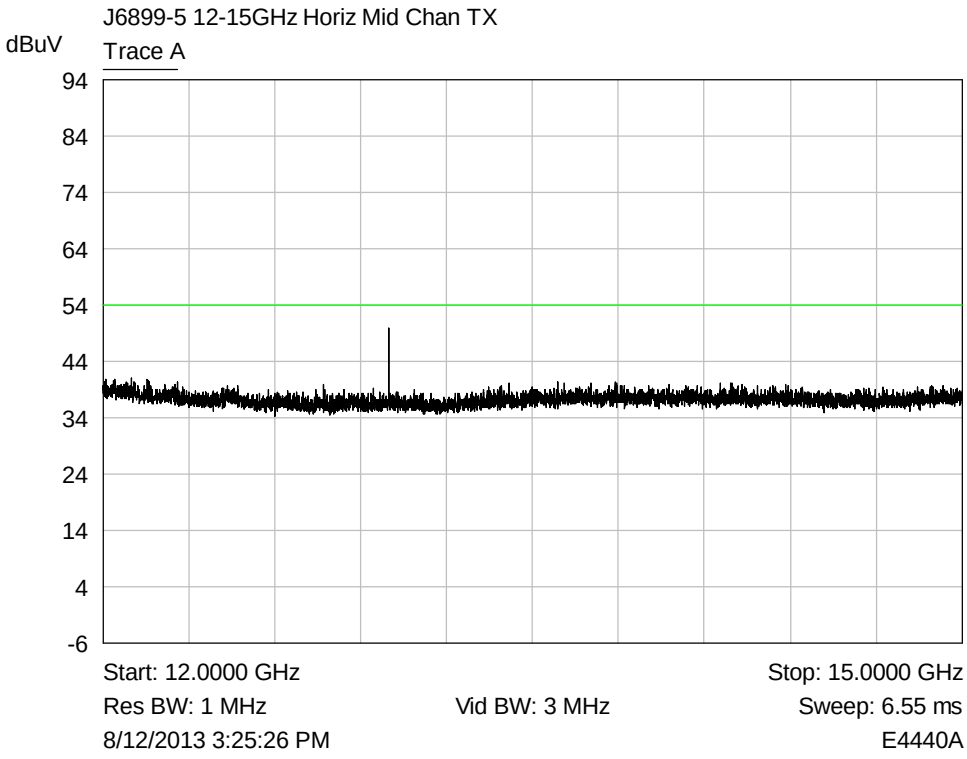
Middle channel (2437 MHz) - 10-12.5GHz - Vertical



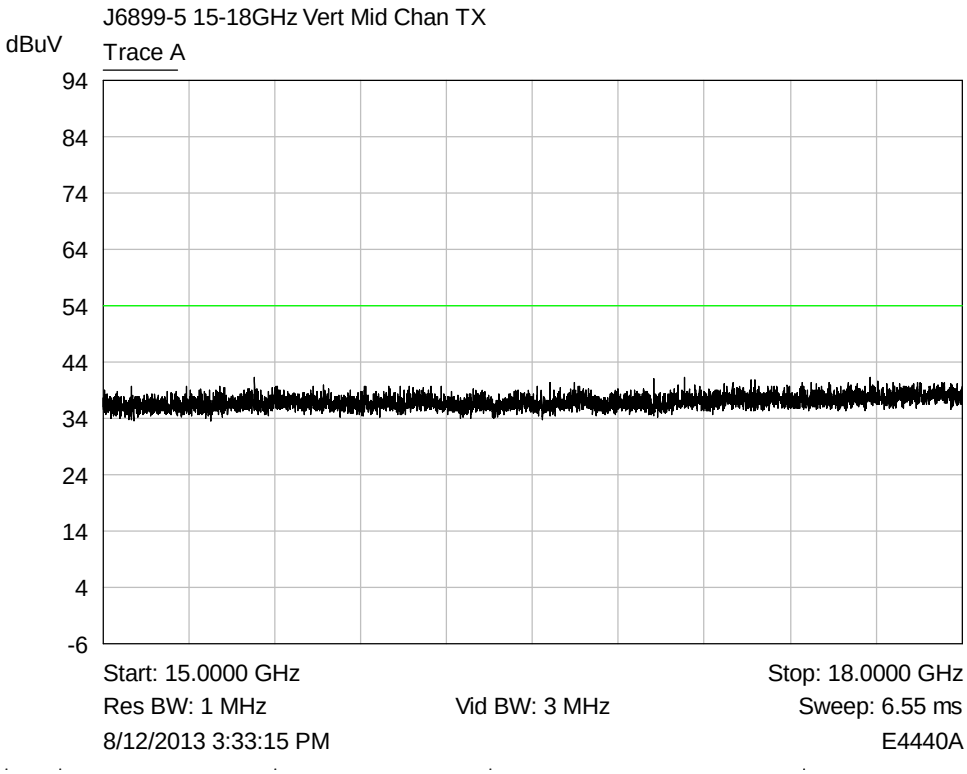
Middle channel (2437 MHz) - 10-12.5GHz - Horizontal



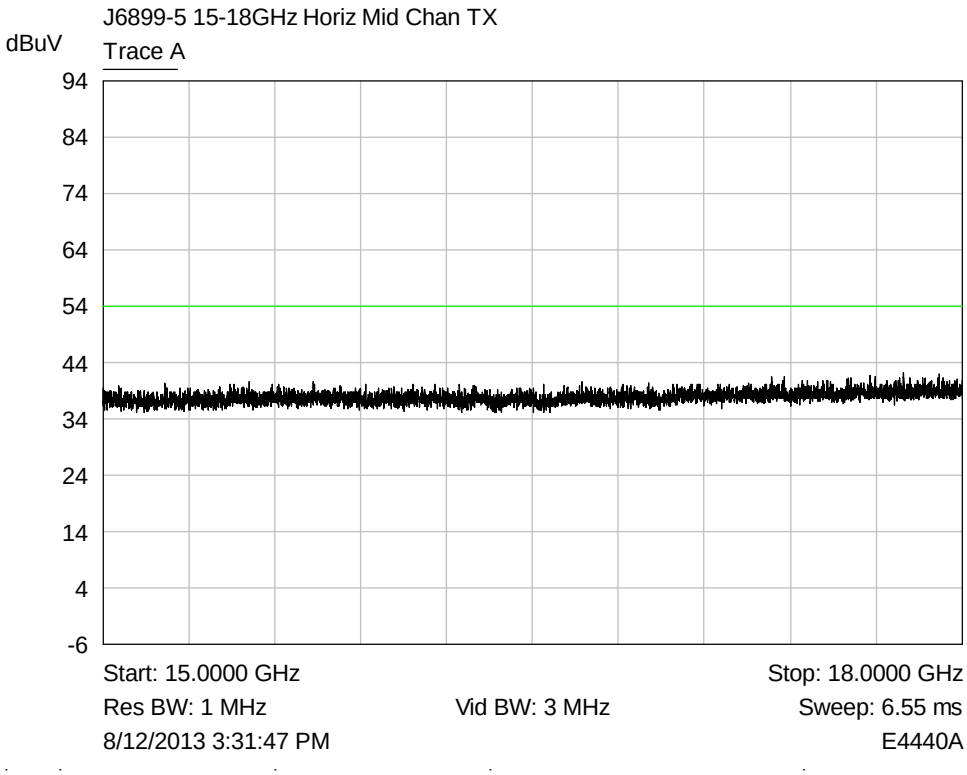
Middle channel (2437 MHz) - 12-15GHz - Vertical



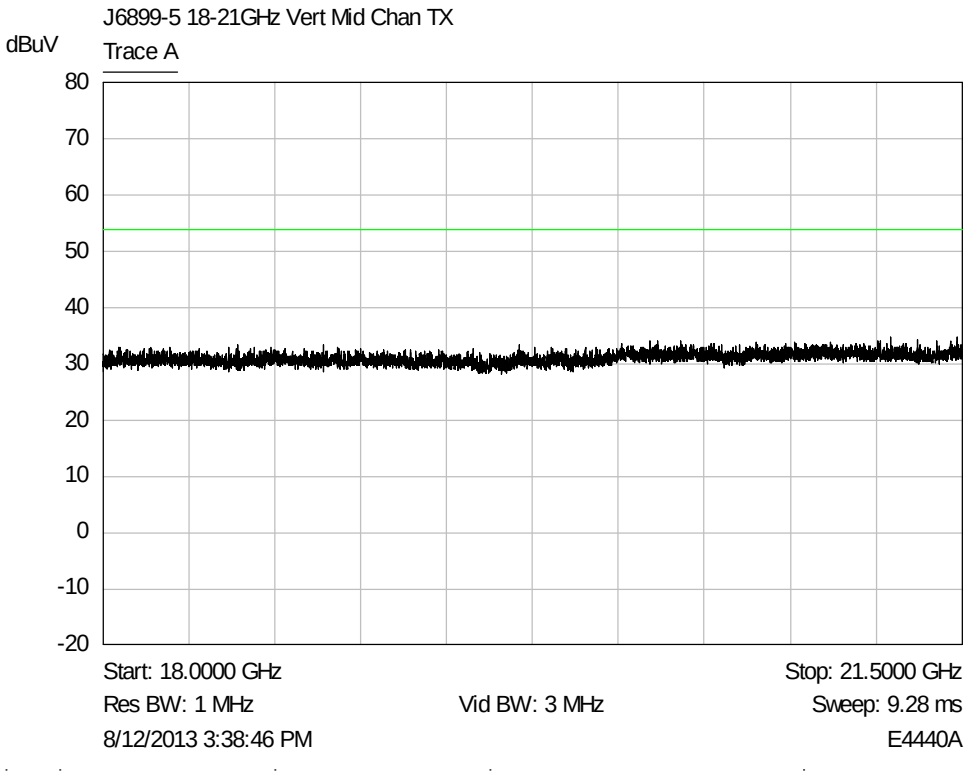
Middle channel (2437 MHz) - 12-15GHz – Horizontal



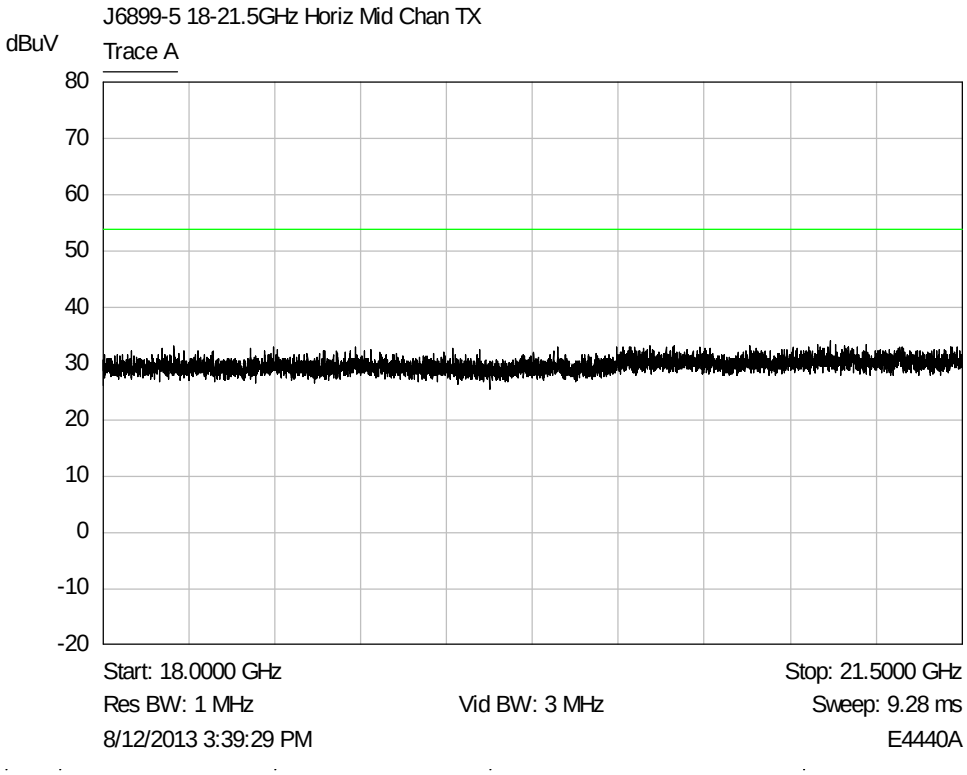
Middle channel (2437 MHz) – 15-18GHz - Vertical



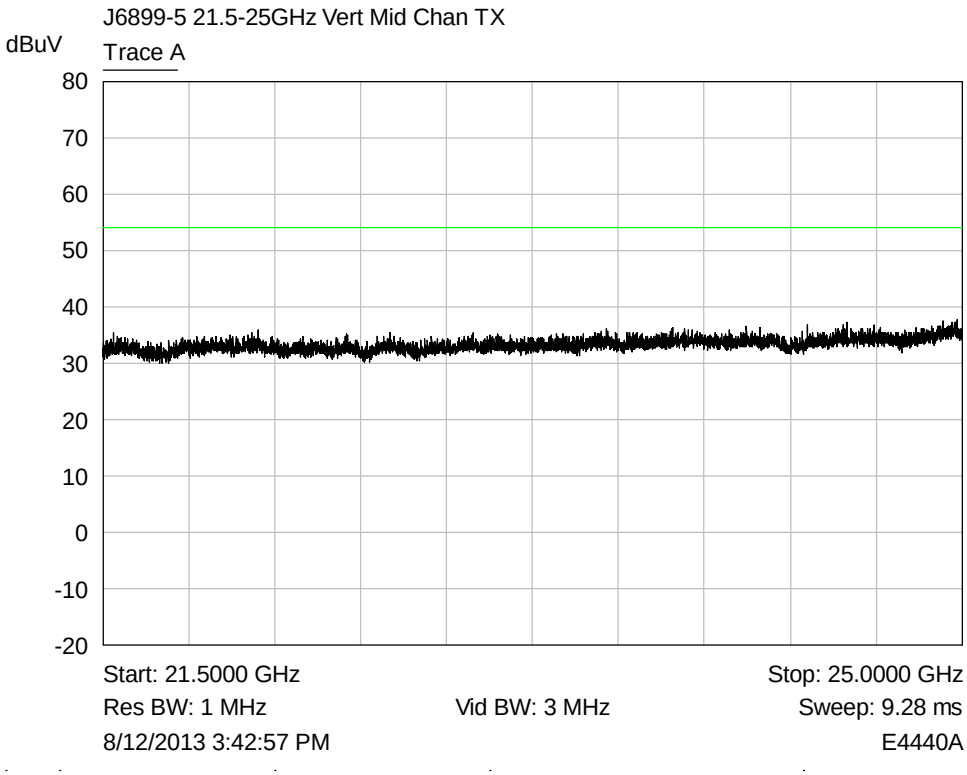
Middle channel (2437 MHz) – 15-18GHz - Horizontal



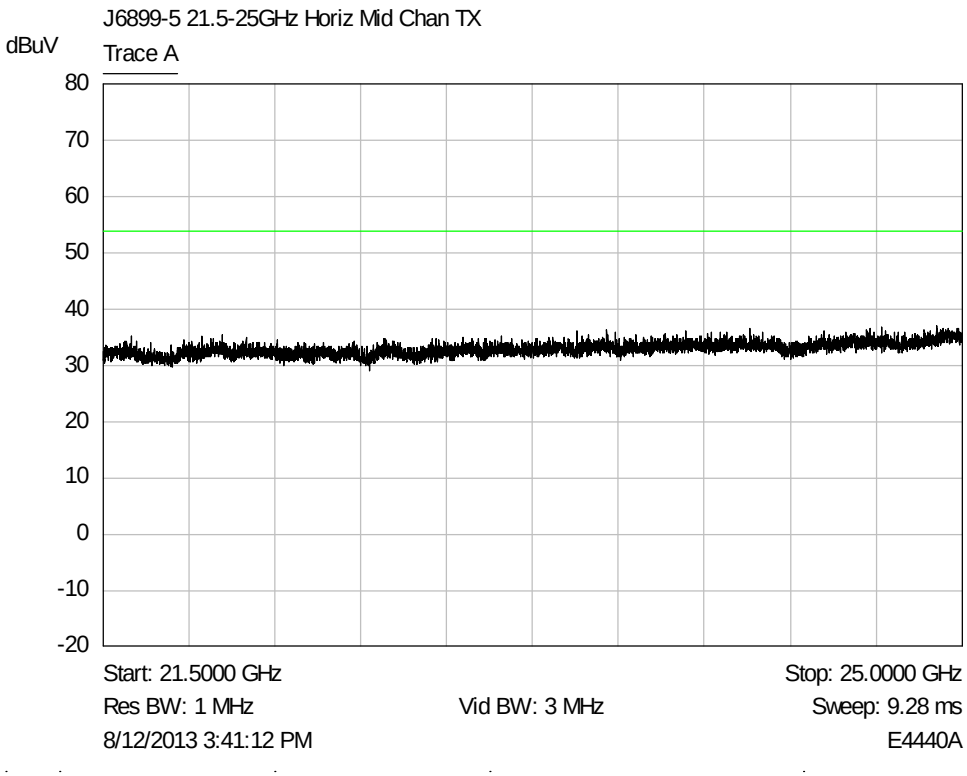
Middle channel (2437 MHz) – 18-21.5GHz - Vertical



Middle channel (2437 MHz) – 18-21.5GHz - Horizontal



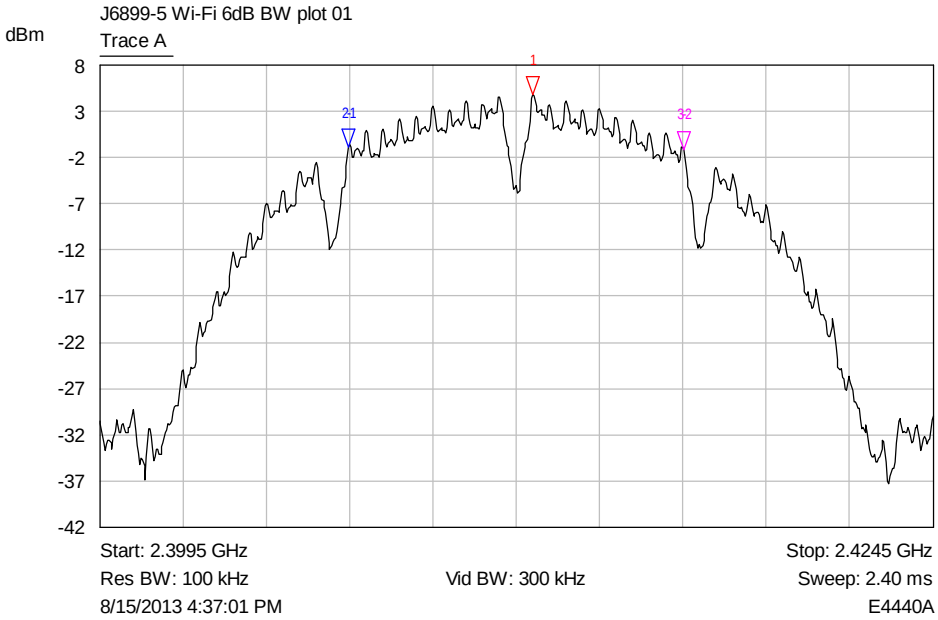
Middle channel (2437 MHz) – 21.5-25GHz - Vertical



Middle channel (2437 MHz) – 21.5-25GHz - Horizontal

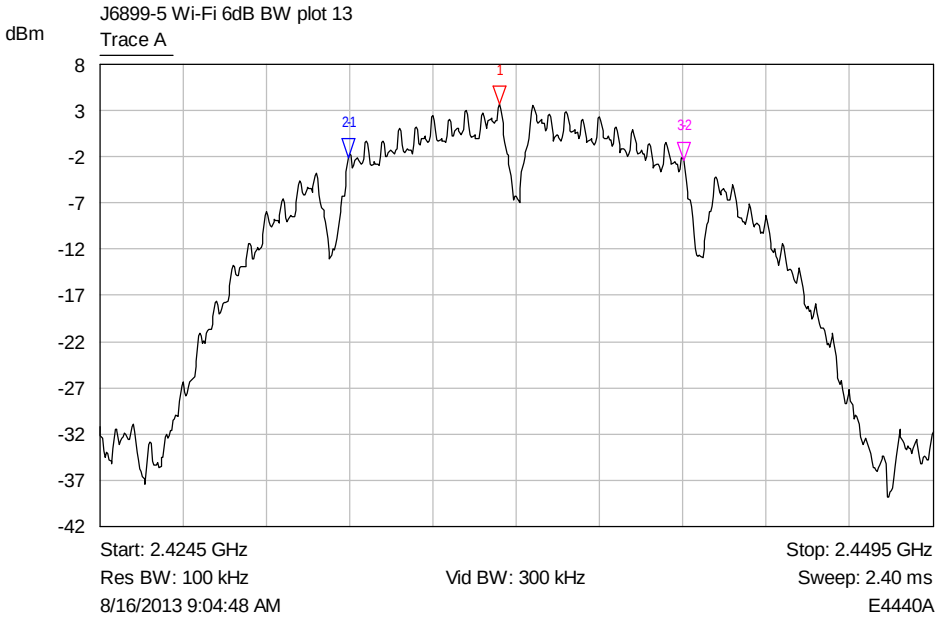
6.3 6dB bandwidth / occupied bandwidth plots

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



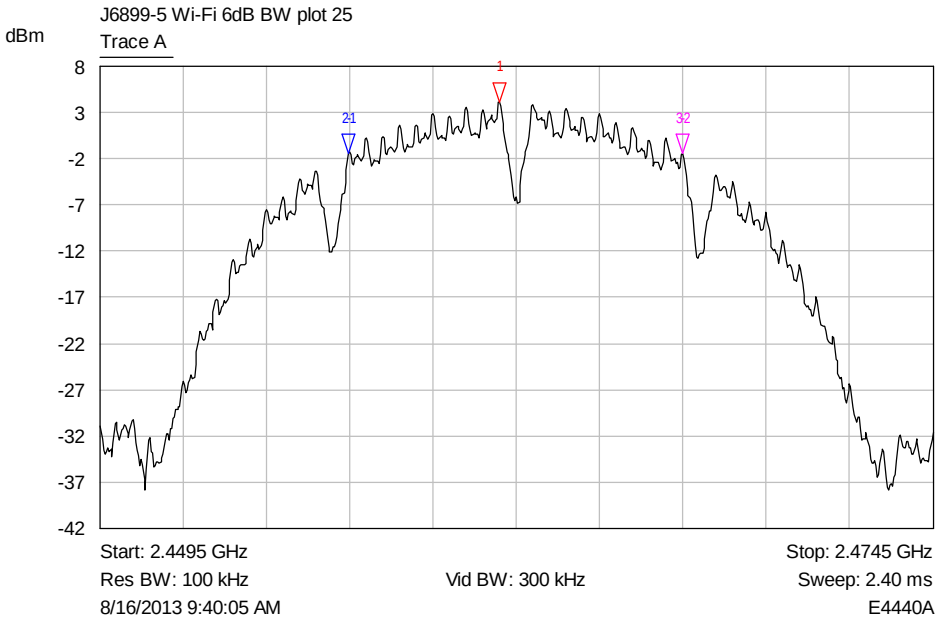
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4125 GHz	4.71 dBm	
21	Trace A	-5.5417 MHz	-5.64 dB	
32	Trace A	10.0833 MHz	-0.20 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4365 GHz	3.67 dBm	
21	Trace A	-4.5417 MHz	-5.72 dB	
32	Trace A	10.0833 MHz	-0.38 dB	

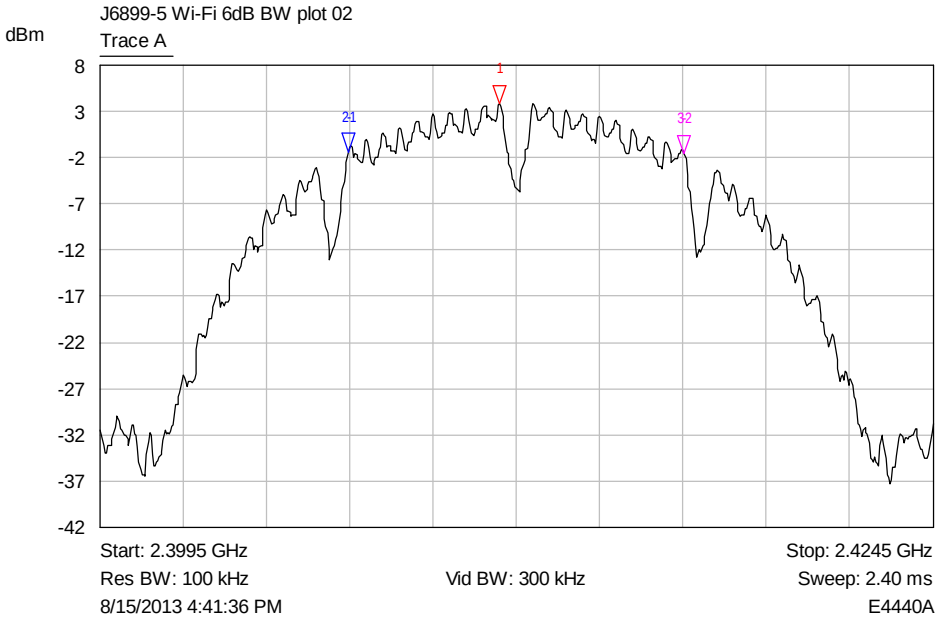
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4615 GHz	4.16 dBm	
21	Trace A	-4.5417 MHz	-5.59 dB	
32	Trace A	10.0417 MHz	0.01 dB	

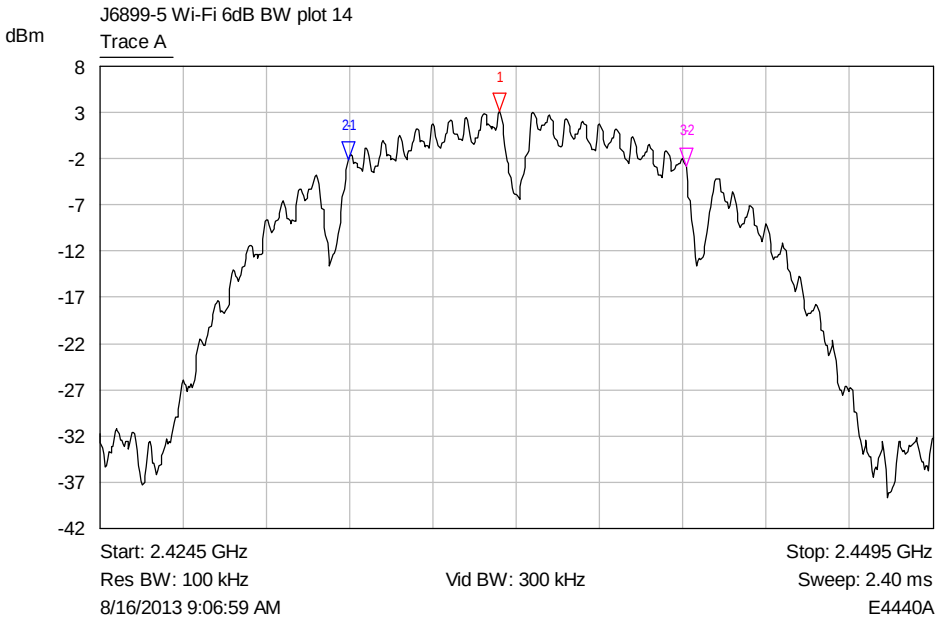
High channel

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



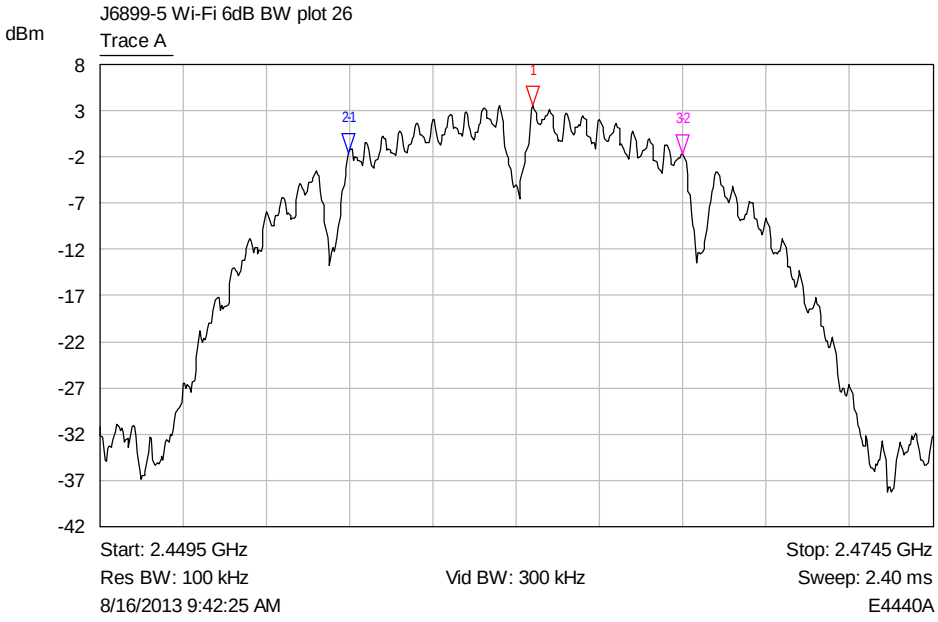
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4115 GHz	3.86 dBm	
21	Trace A	-4.5417 MHz	-5.24 dB	
32	Trace A	10.0833 MHz	-0.20 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4365 GHz	3.08 dBm	
21	Trace A	-4.5417 MHz	-5.23 dB	
32	Trace A	10.1250 MHz	-0.68 dB	

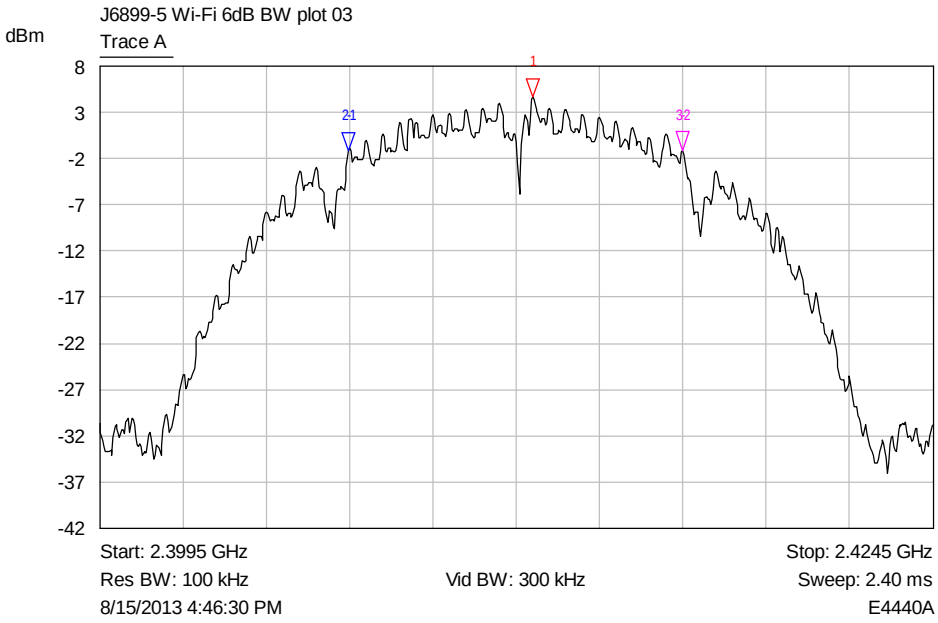
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4625 GHz	3.54 dBm	
21	Trace A	-5.5417 MHz	-5.01 dB	
32	Trace A	10.0417 MHz	-0.18 dB	

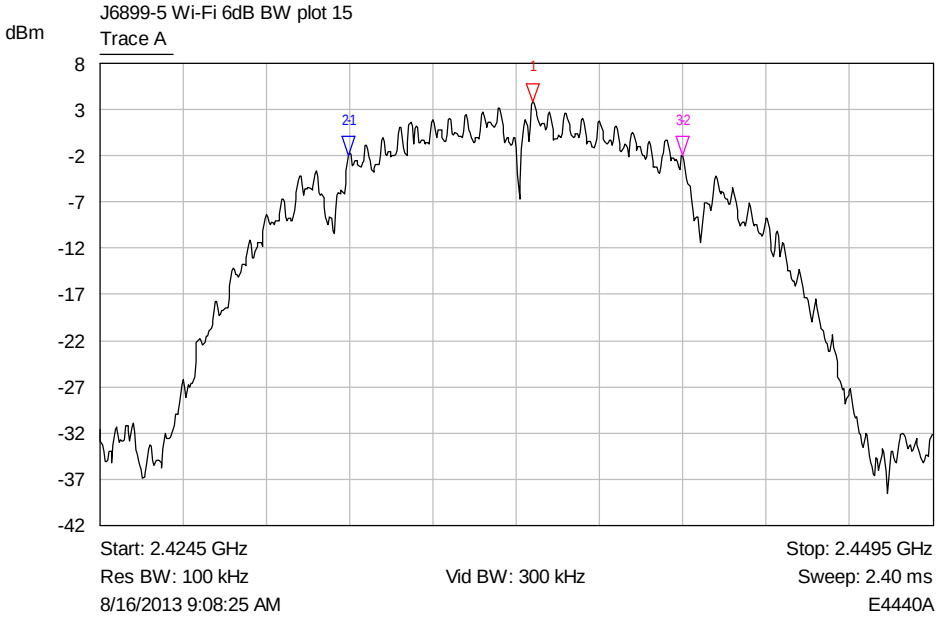
High channel

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



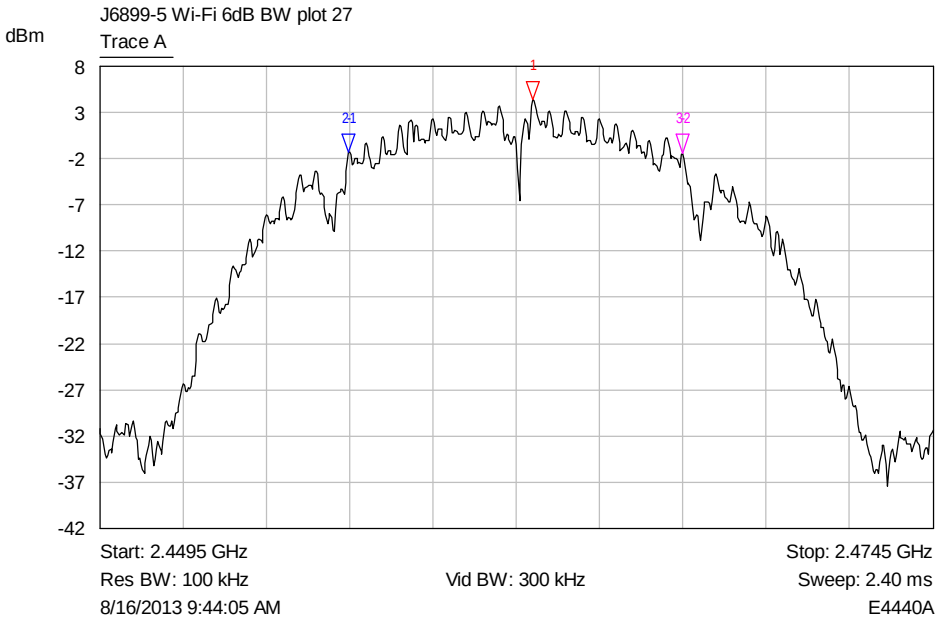
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4125 GHz	4.64 dBm	
21	Trace A	-5.5417 MHz	-5.85 dB	
32	Trace A	10.0417 MHz	0.09 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4375 GHz	3.88 dBm	
21	Trace A	-5.5417 MHz	-5.76 dB	
32	Trace A	10.0417 MHz	-0.01 dB	

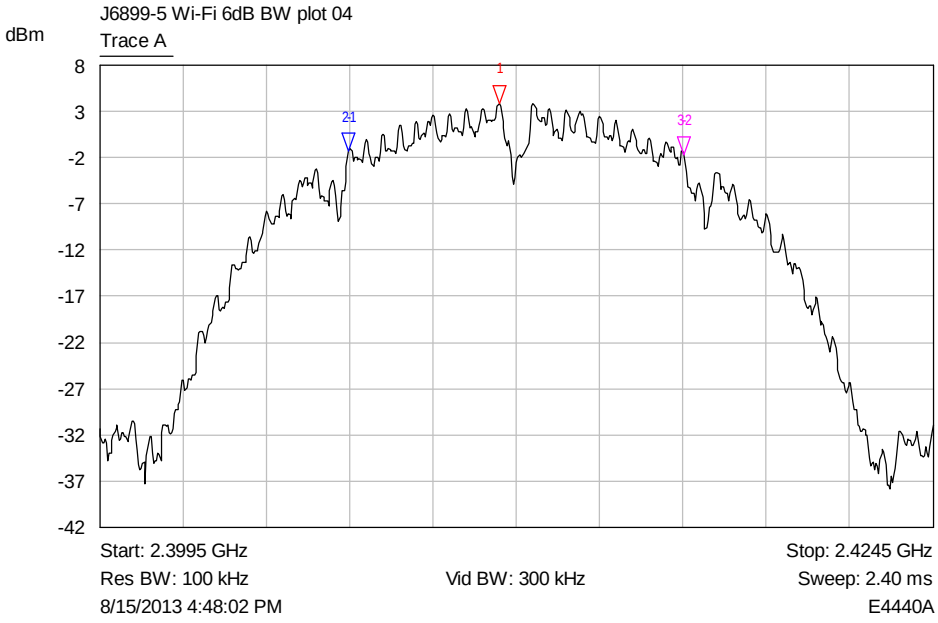
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4625 GHz	4.33 dBm	
21	Trace A	-5.5417 MHz	-5.67 dB	
32	Trace A	10.0417 MHz	-0.11 dB	

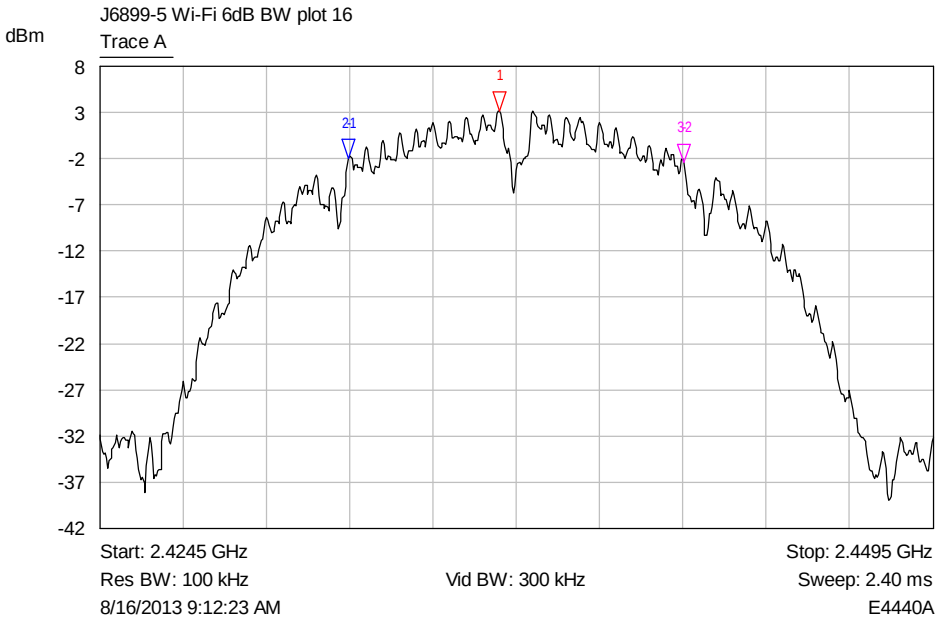
High channel

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



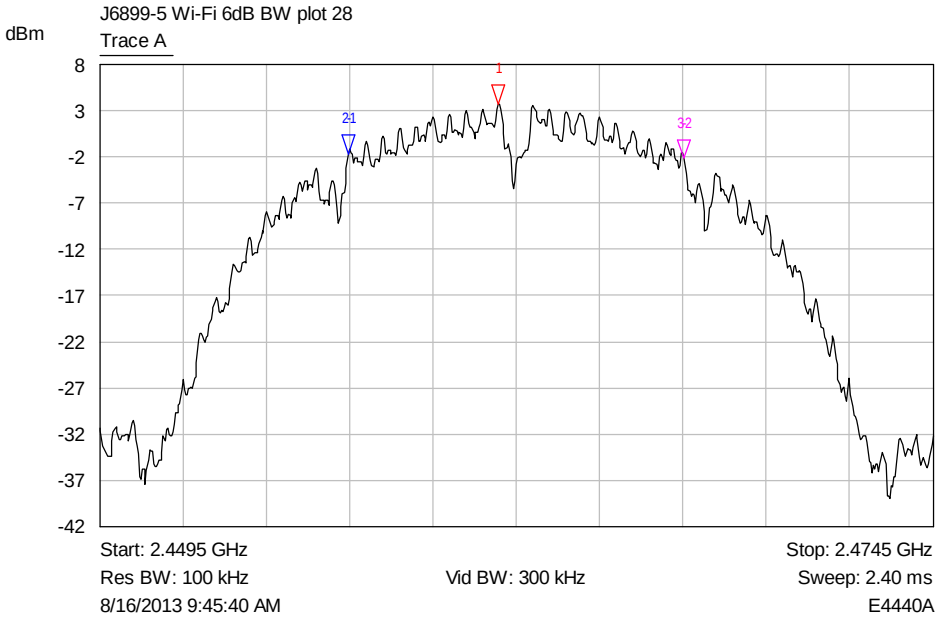
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4115 GHz	3.86 dBm	
21	Trace A	-4.5417 MHz	-5.16 dB	
32	Trace A	10.0833 MHz	-0.42 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4365 GHz	3.20 dBm	
21	Trace A	-4.5417 MHz	-5.10 dB	
32	Trace A	10.0833 MHz	-0.50 dB	

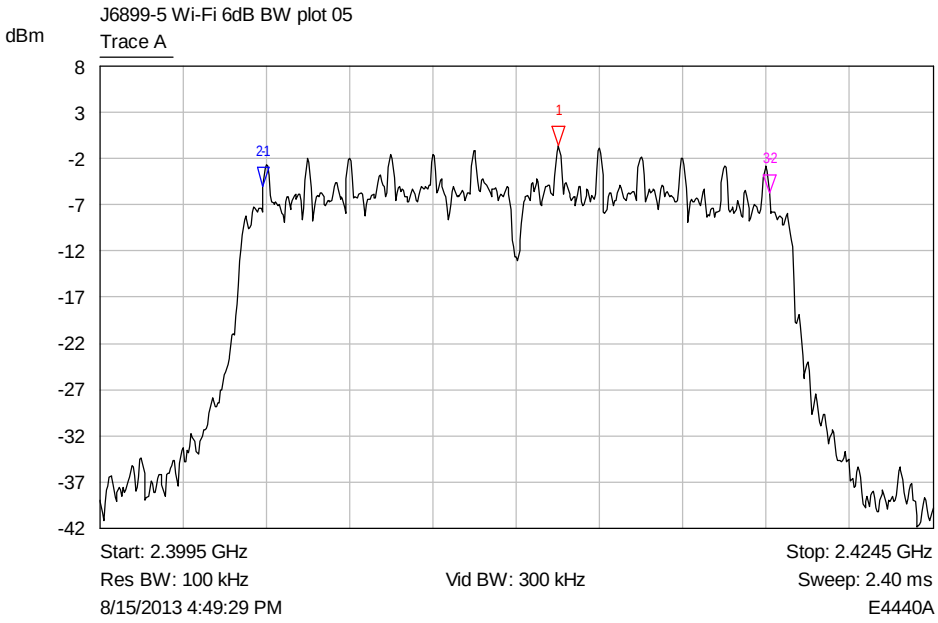
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4615 GHz	3.73 dBm	
21	Trace A	-4.5000 MHz	-5.39 dB	
32	Trace A	10.0833 MHz	-0.50 dB	

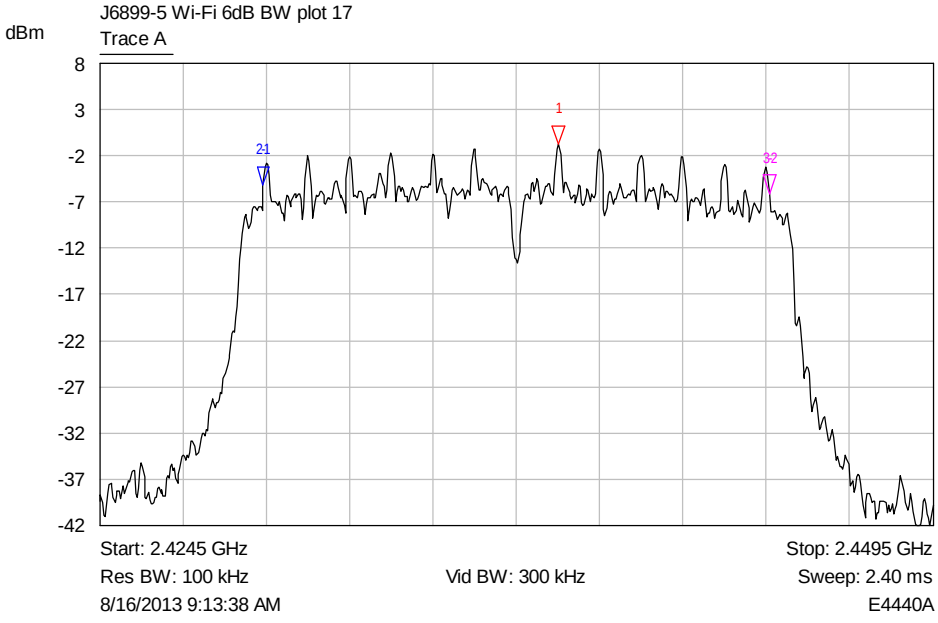
High channel

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



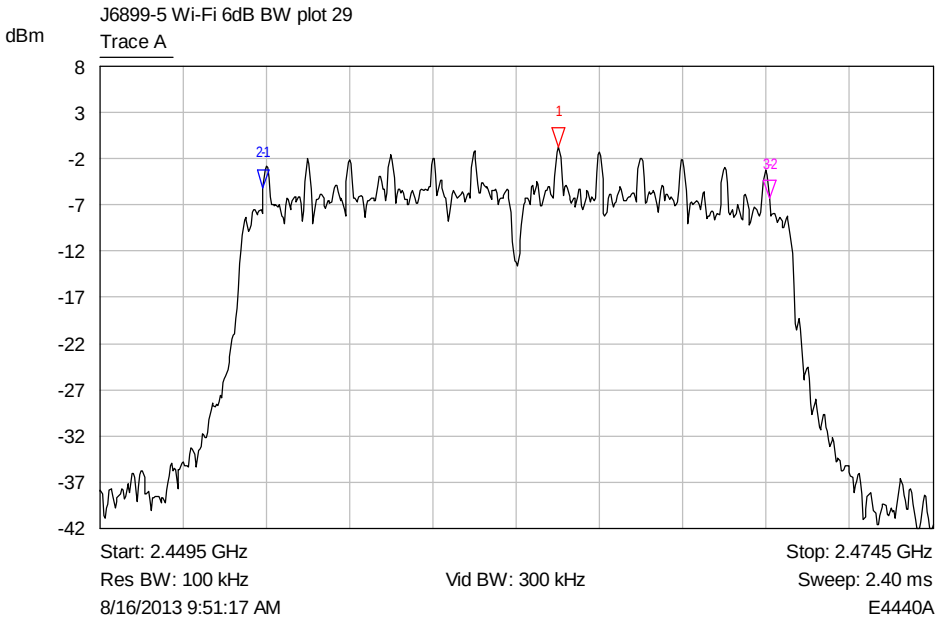
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-0.62 dBm	
21	Trace A	-8.8333 MHz	-4.36 dB	
32	Trace A	15.1667 MHz	-0.78 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-0.73 dBm	
21	Trace A	-8.8333 MHz	-4.42 dB	
32	Trace A	15.1667 MHz	-0.97 dB	

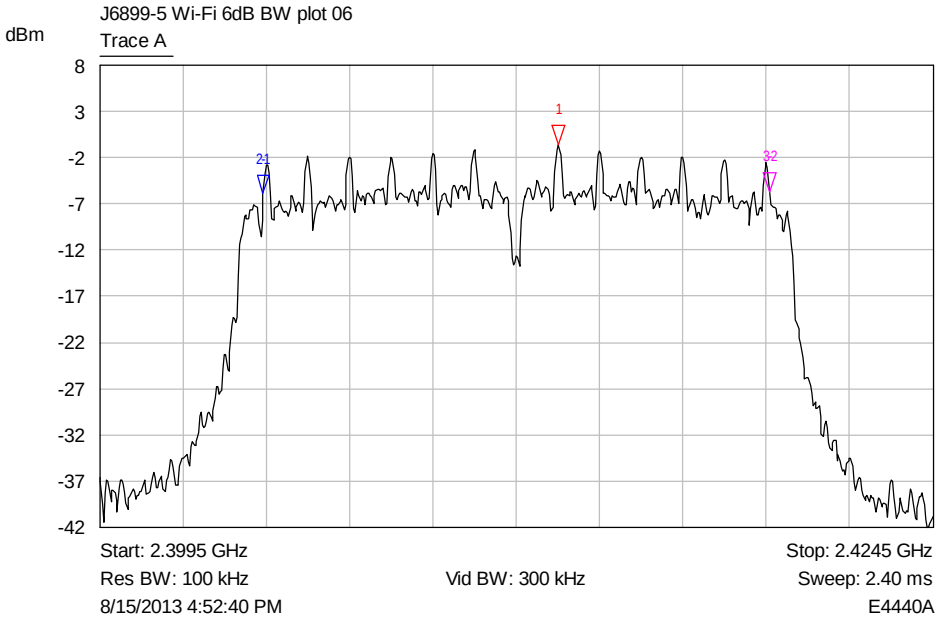
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-0.70 dBm	
21	Trace A	-8.8333 MHz	-4.48 dB	
32	Trace A	15.1667 MHz	-1.18 dB	

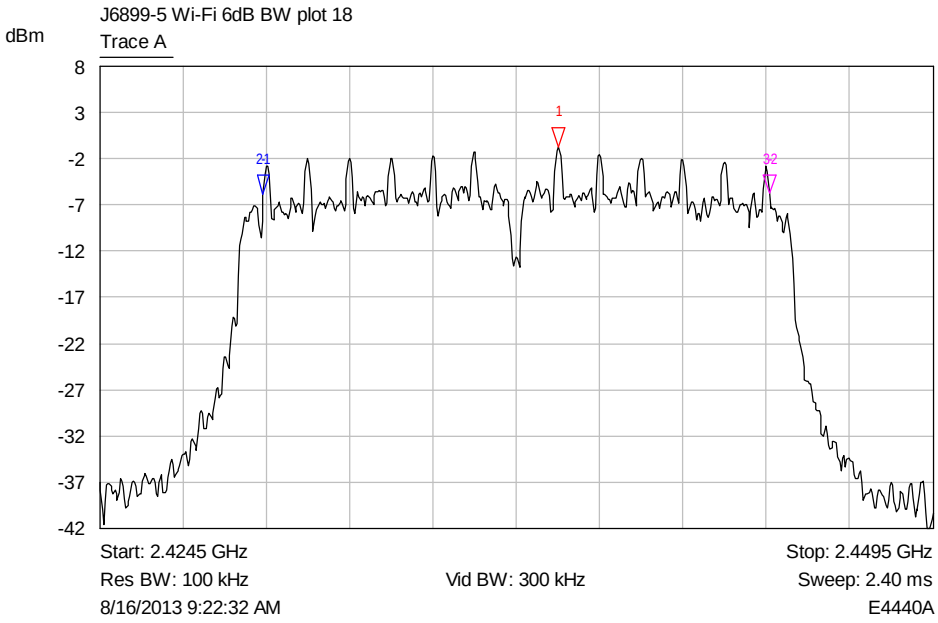
High channel

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



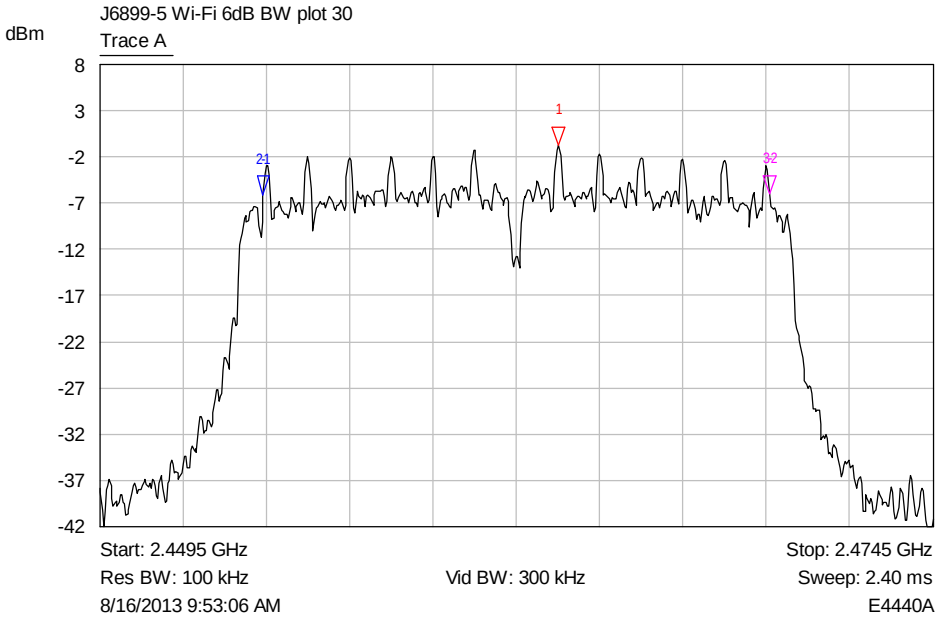
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-0.60 dBm	
21	Trace A	-8.8333 MHz	-5.35 dB	
32	Trace A	15.1667 MHz	0.27 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-0.68 dBm	
21	Trace A	-8.8333 MHz	-5.18 dB	
32	Trace A	15.1667 MHz	0.08 dB	

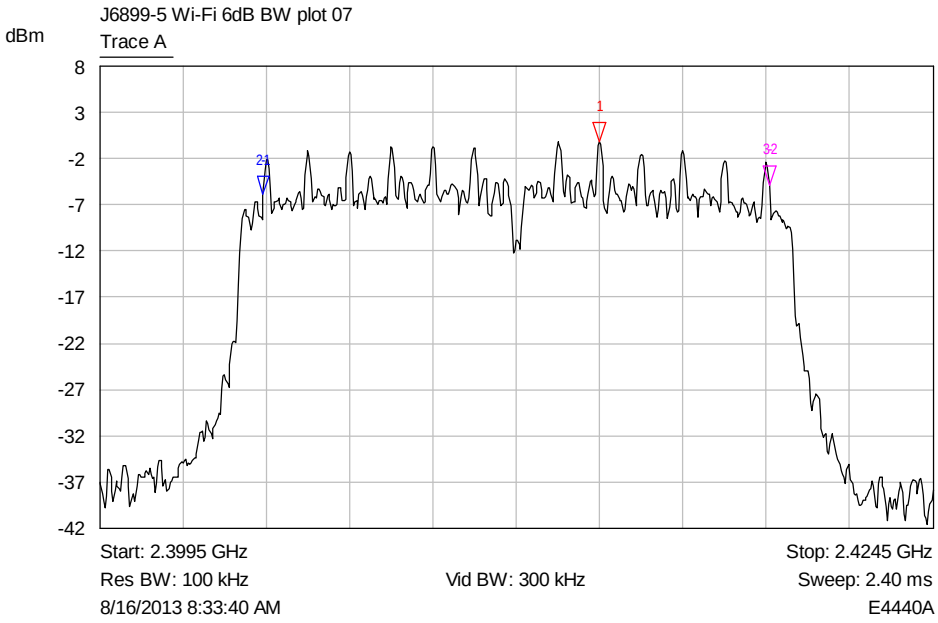
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-0.74 dBm	
21	Trace A	-8.8333 MHz	-5.36 dB	
32	Trace A	15.1667 MHz	0.09 dB	

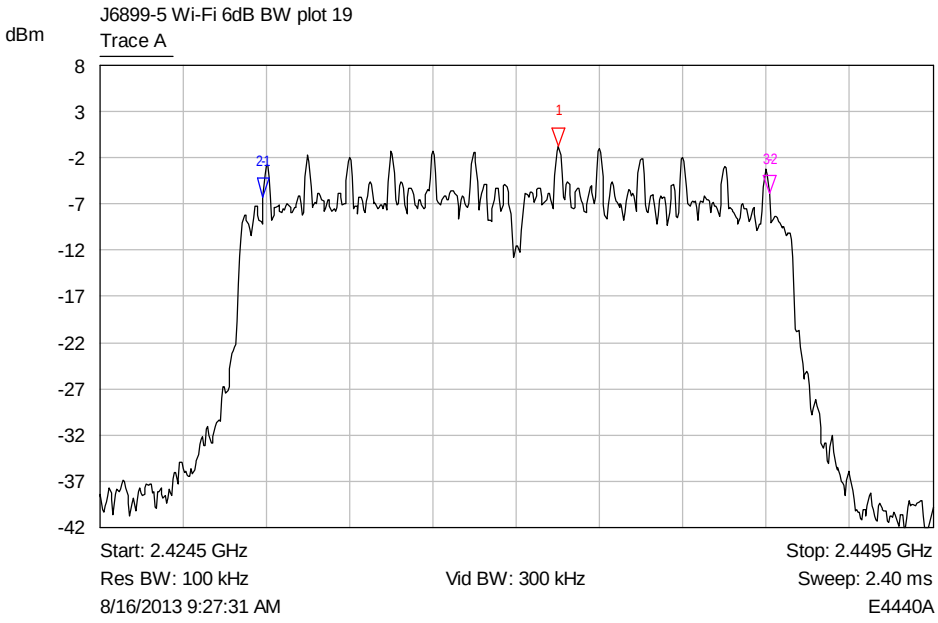
High channel

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



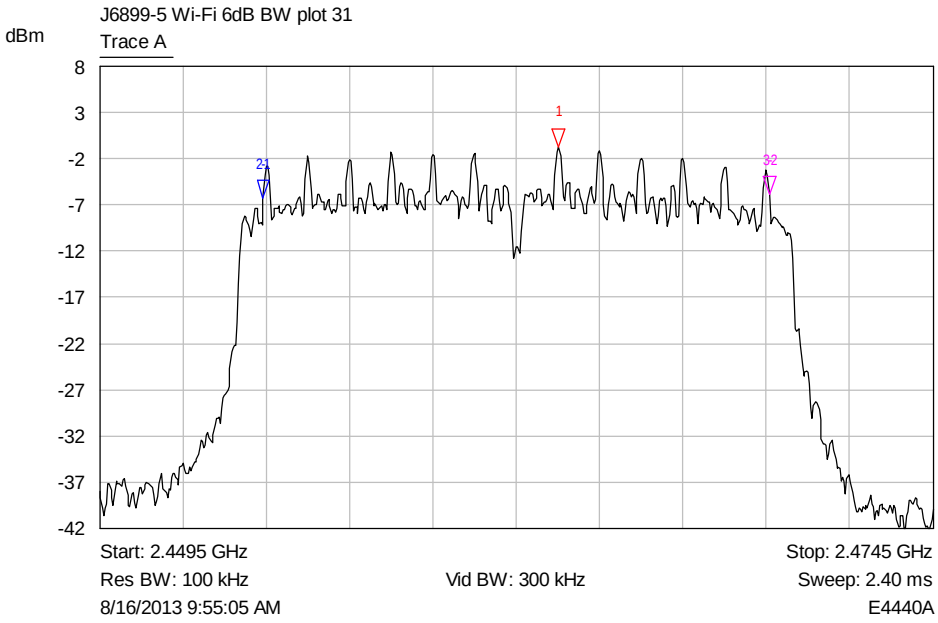
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4145 GHz	-0.20 dBm	
21	Trace A	-10.0833 MHz	-5.68 dB	
32	Trace A	15.1667 MHz	1.06 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-0.79 dBm	
21	Trace A	-8.8333 MHz	-5.43 dB	
32	Trace A	15.1667 MHz	0.29 dB	

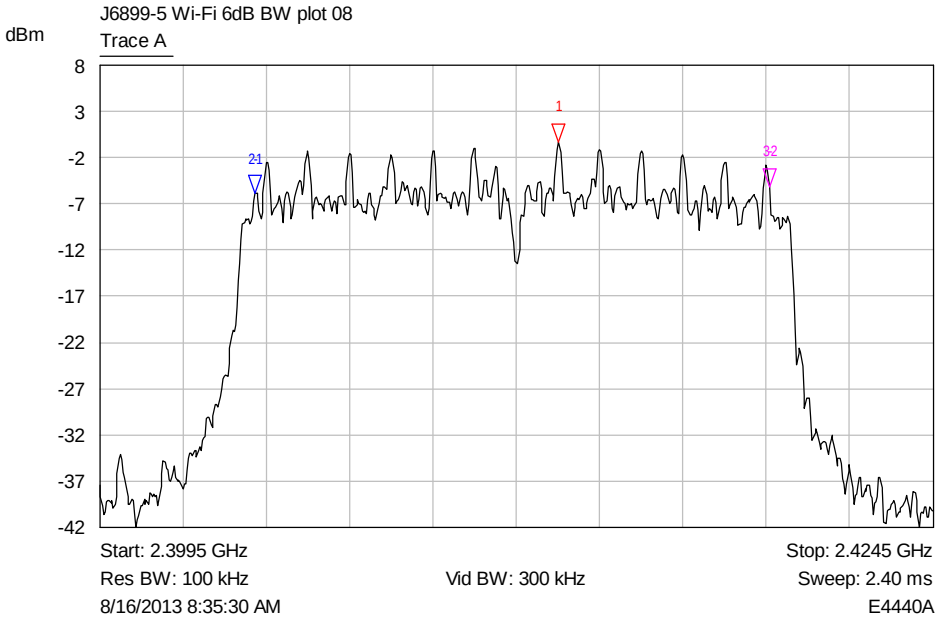
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-0.77 dBm	
21	Trace A	-8.8333 MHz	-5.59 dB	
32	Trace A	15.1667 MHz	0.47 dB	

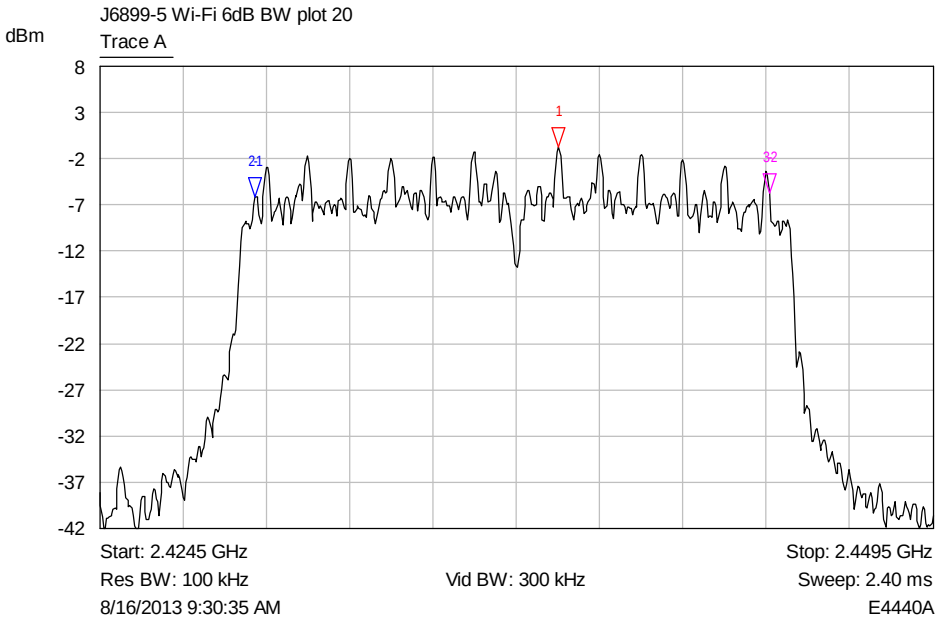
High channel

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



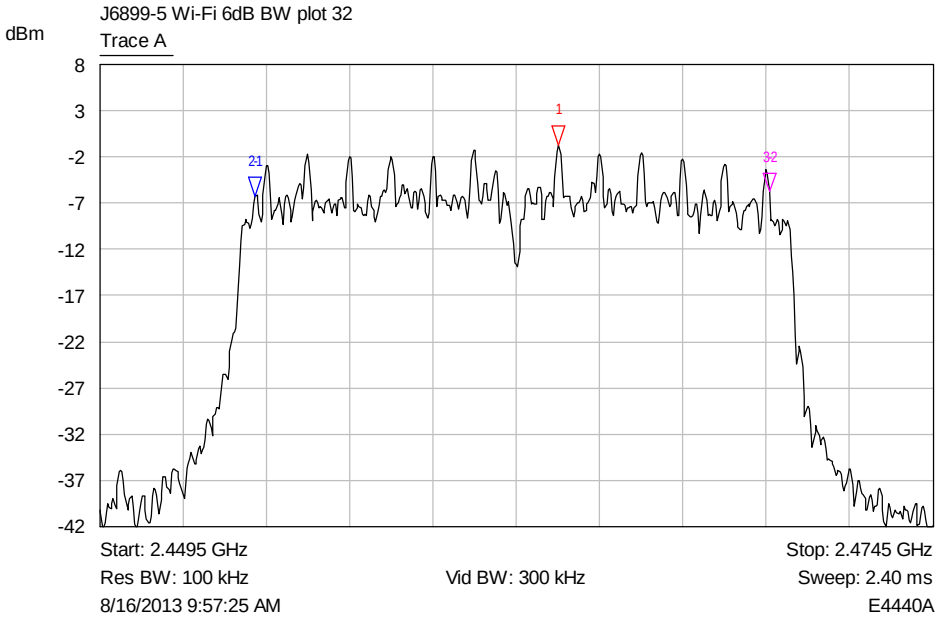
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-0.33 dBm	
21	Trace A	-9.0833 MHz	-5.59 dB	
32	Trace A	15.4167 MHz	0.79 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-0.63 dBm	
21	Trace A	-9.0833 MHz	-5.47 dB	
32	Trace A	15.4167 MHz	0.39 dB	

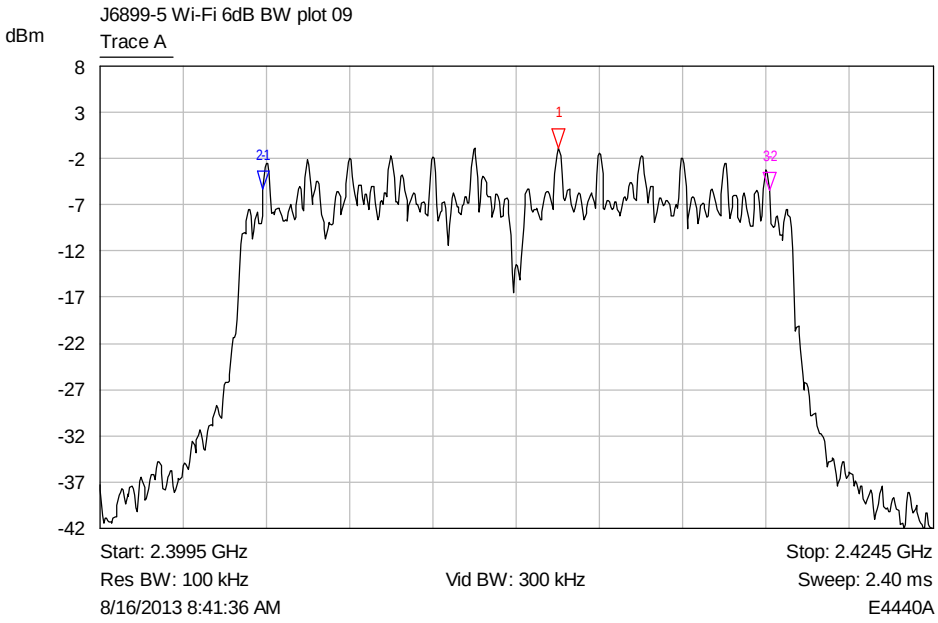
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-0.66 dBm	
21	Trace A	-9.0833 MHz	-5.55 dB	
32	Trace A	15.4167 MHz	0.50 dB	

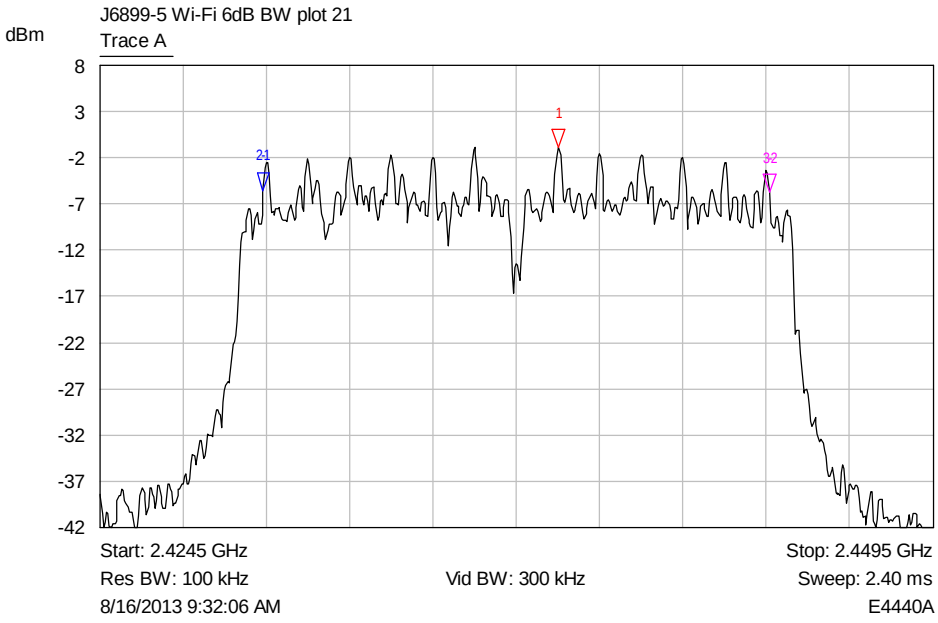
High channel

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



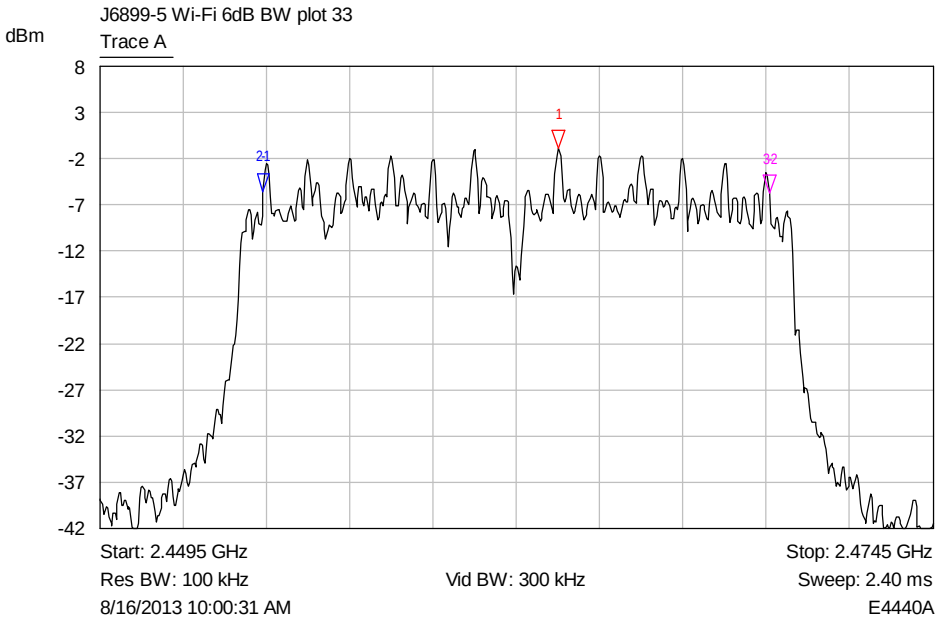
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-0.83 dBm	
21	Trace A	-8.8333 MHz	-4.54 dB	
32	Trace A	15.1667 MHz	-0.10 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-0.88 dBm	
21	Trace A	-8.8333 MHz	-4.70 dB	
32	Trace A	15.1667 MHz	-0.19 dB	

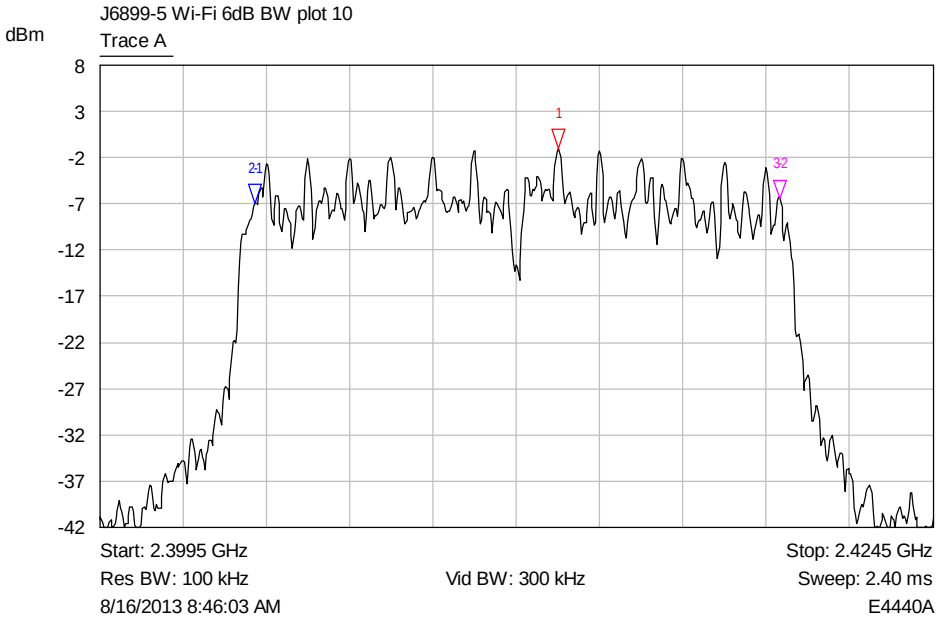
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-0.88 dBm	
21	Trace A	-8.8333 MHz	-4.69 dB	
32	Trace A	15.1667 MHz	-0.21 dB	

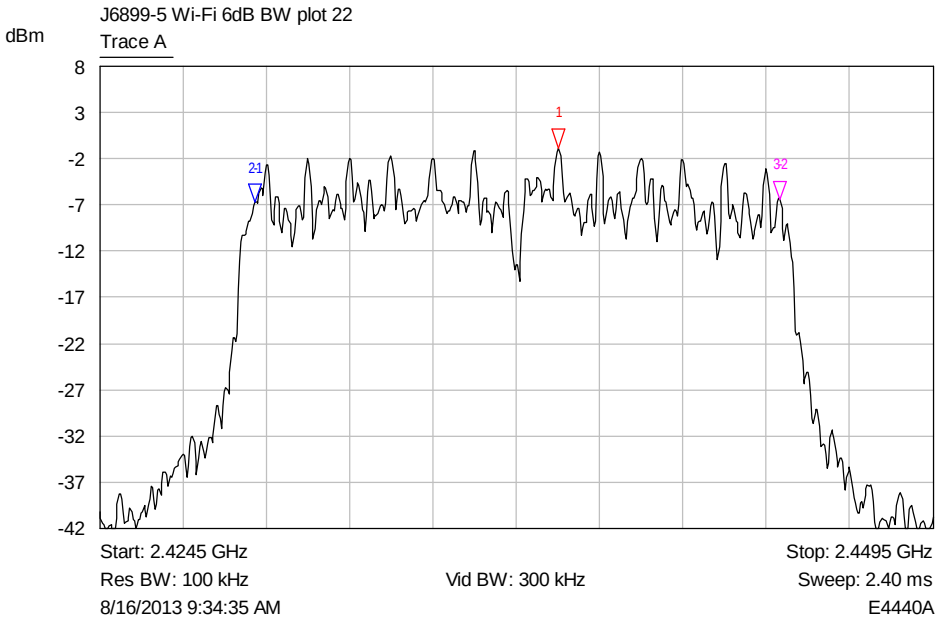
High channel

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



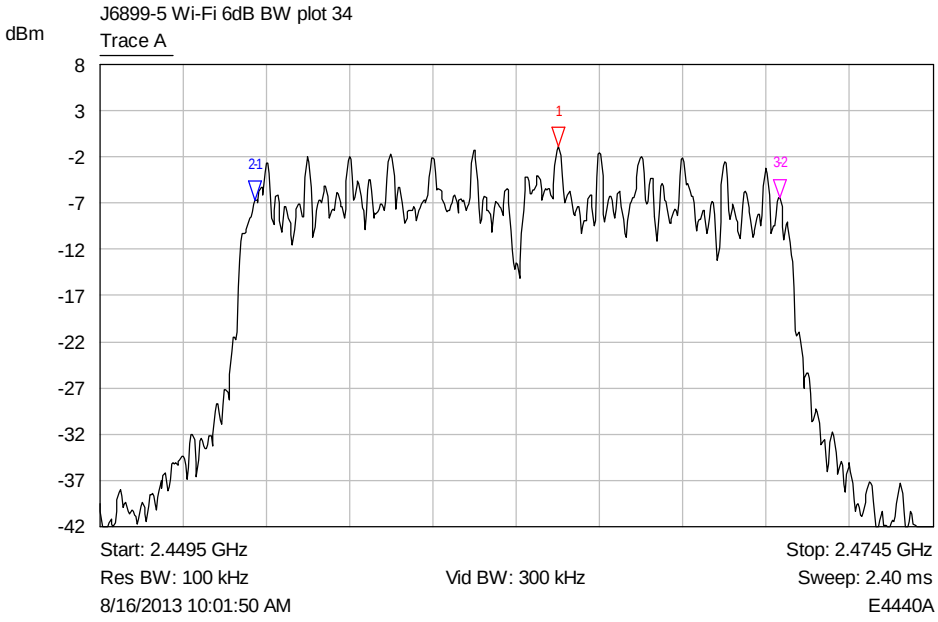
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-0.97 dBm	
21	Trace A	-9.0833 MHz	-5.93 dB	
32	Trace A	15.7500 MHz	0.51 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-0.86 dBm	
21	Trace A	-9.0833 MHz	-5.87 dB	
32	Trace A	15.7500 MHz	0.34 dB	

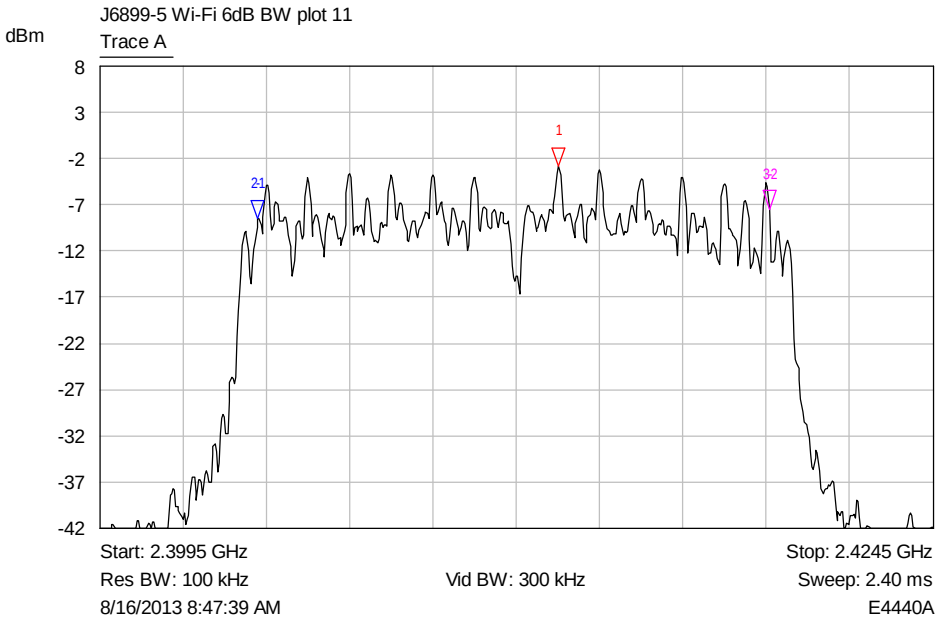
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-0.86 dBm	
21	Trace A	-9.0833 MHz	-5.82 dB	
32	Trace A	15.7500 MHz	0.26 dB	

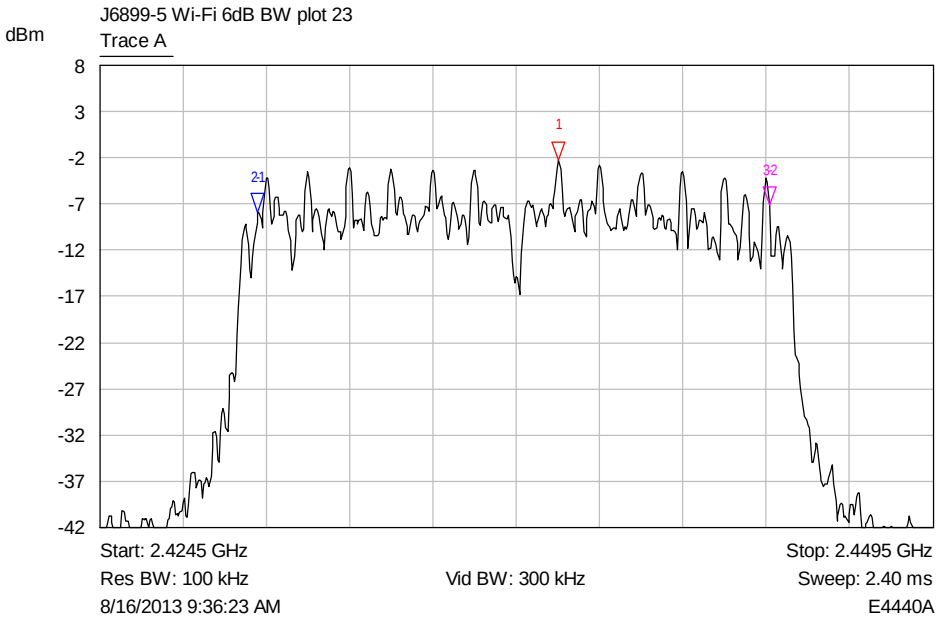
High channel

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



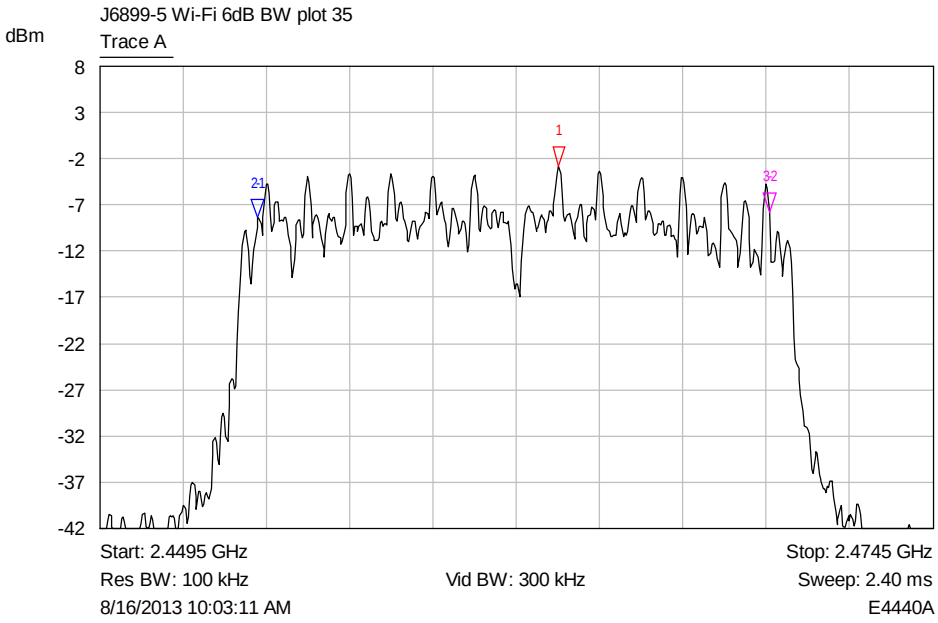
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-2.83 dBm	
21	Trace A	-9.0000 MHz	-5.65 dB	
32	Trace A	15.3333 MHz	0.98 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-2.27 dBm	
21	Trace A	-9.0000 MHz	-5.63 dB	
32	Trace A	15.3333 MHz	0.72 dB	

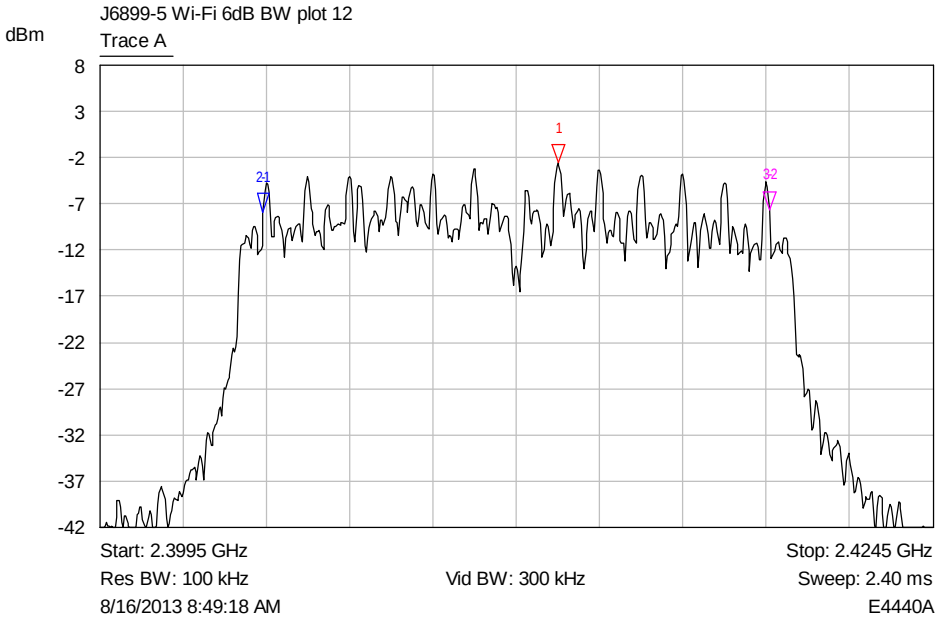
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-2.76 dBm	
21	Trace A	-9.0417 MHz	-5.67 dB	
32	Trace A	15.3333 MHz	0.64 dB	

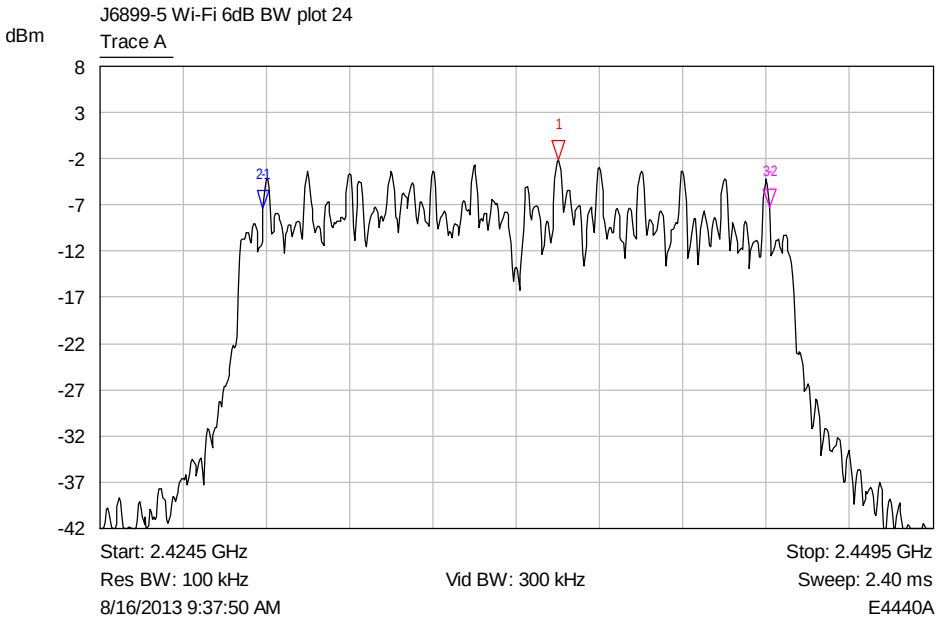
High channel

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



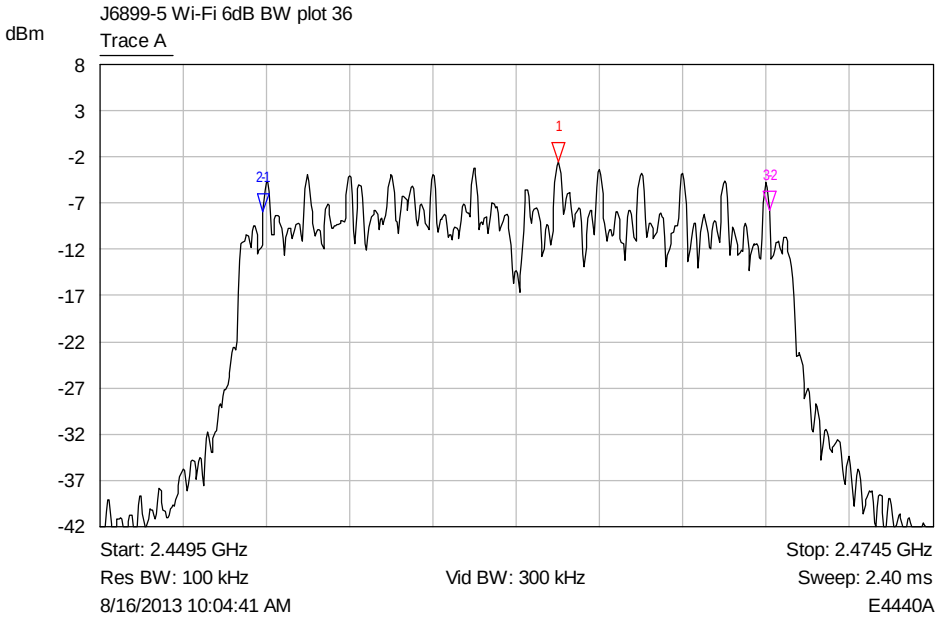
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	-2.62 dBm	
21	Trace A	-8.8333 MHz	-5.33 dB	
32	Trace A	15.1667 MHz	0.25 dB	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4383 GHz	-2.08 dBm	
21	Trace A	-8.8333 MHz	-5.36 dB	
32	Trace A	15.1667 MHz	0.16 dB	

Mid channel

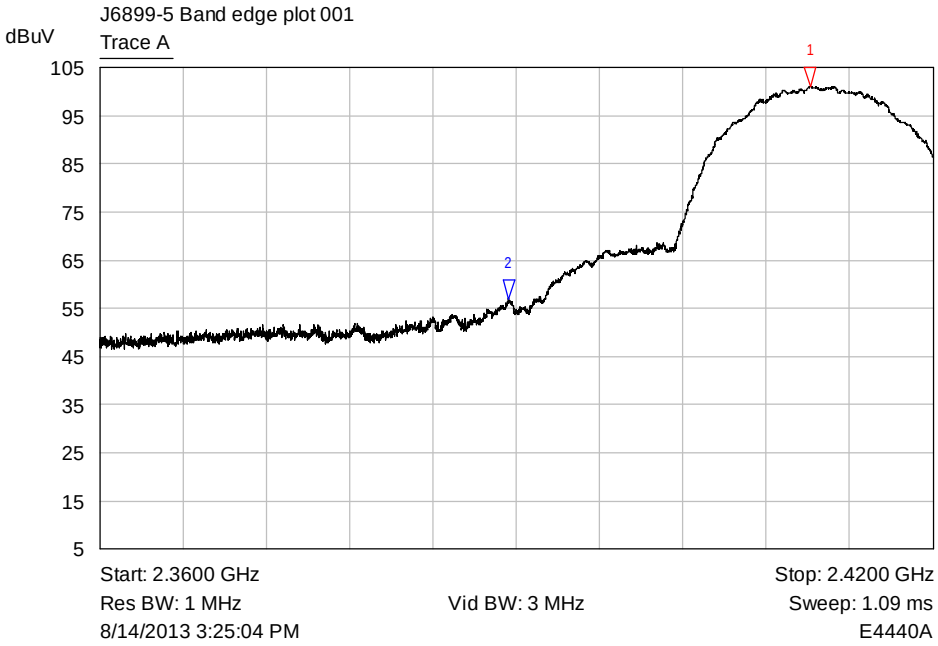


Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	-2.53 dBm	
21	Trace A	-8.8333 MHz	-5.43 dB	
32	Trace A	15.1667 MHz	0.19 dB	

High channel

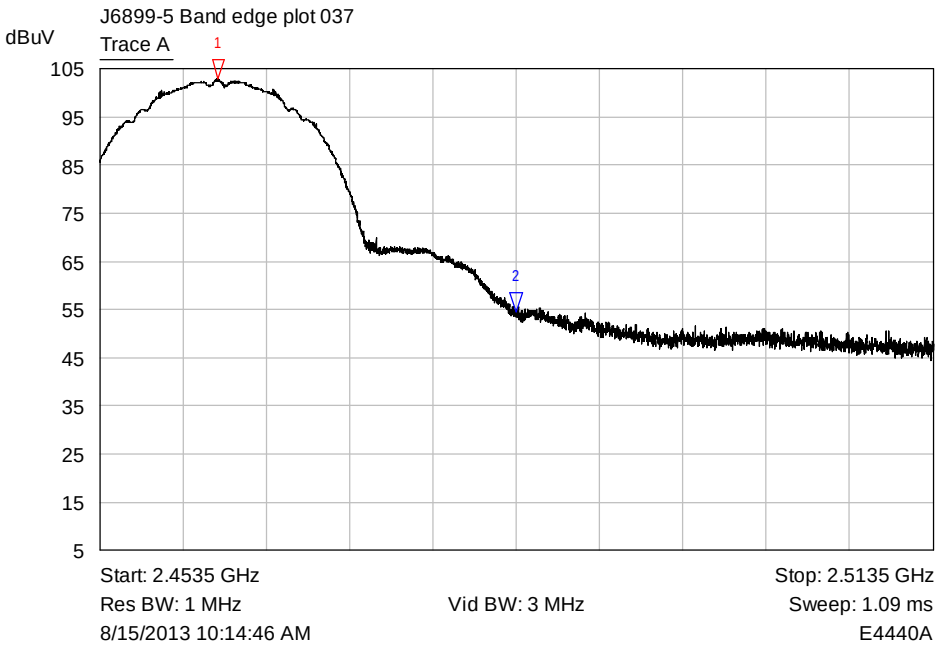
6.4 Band edge compliance plots

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



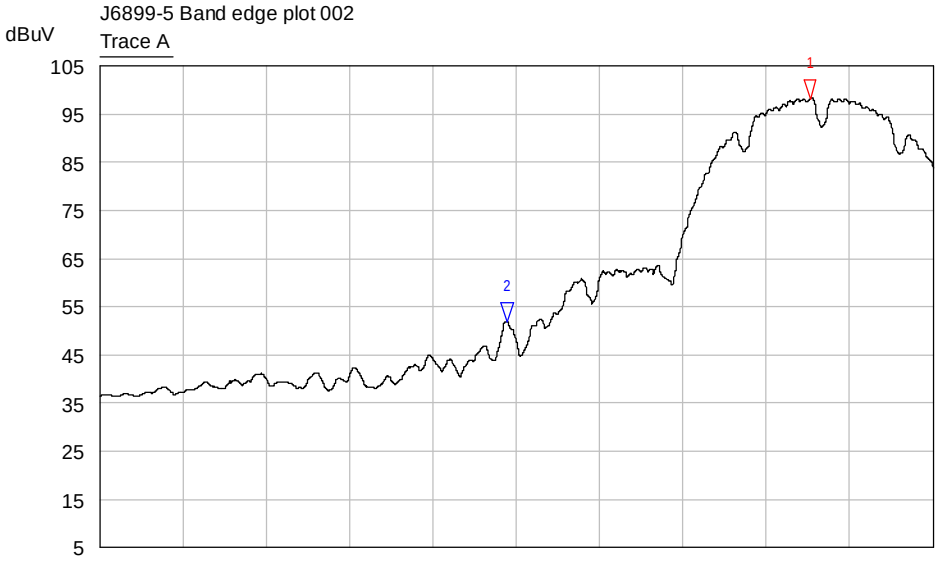
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4111 GHz	101.13 dBuV	
2	Trace A	2.3894 GHz	56.98 dBuV	

Restricted Band: Low channel Peak Plot



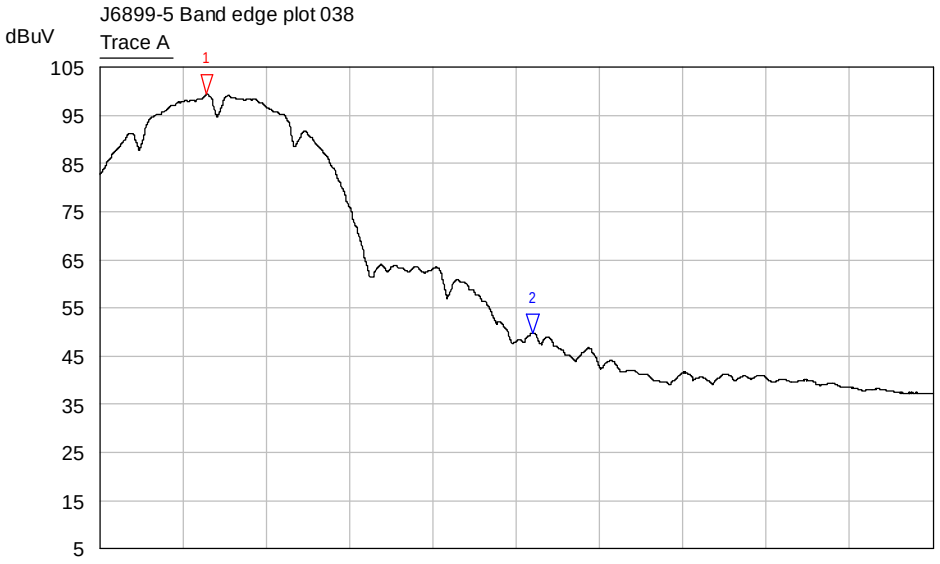
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4620 GHz	102.82 dBuV	
2	Trace A	2.4835 GHz	54.43 dBuV	

Restricted Band: High channel Peak Plot



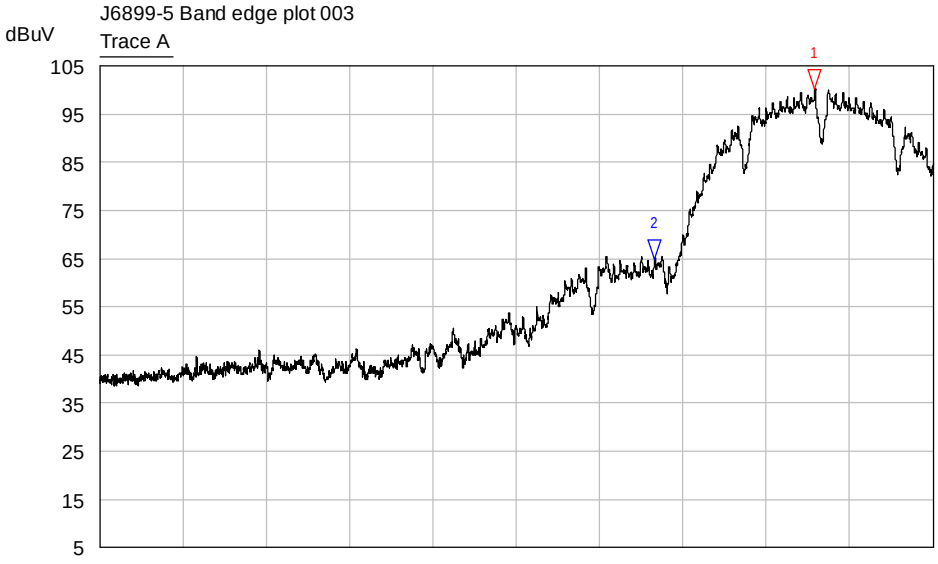
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4111 GHz	98.17 dBuV	
2	Trace A	2.3893 GHz	51.90 dBuV	

Restricted Band: Low channel Average Plot



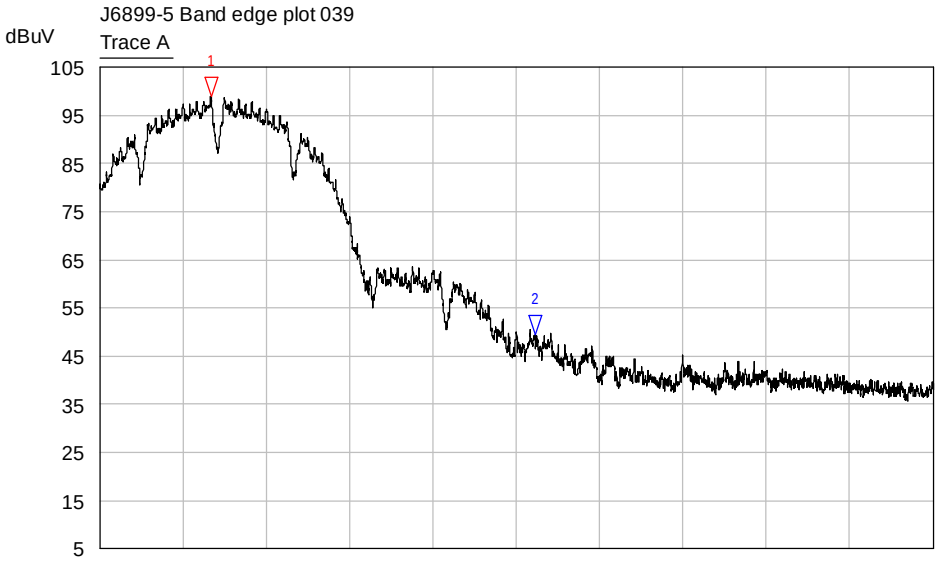
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4613 GHz	99.30 dBuV	
2	Trace A	2.4847 GHz	49.83 dBuV	

Restricted Band: High channel Average Plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4115 GHz	100.09 dBuV	
2	Trace A	2.4000 GHz	64.98 dBuV	

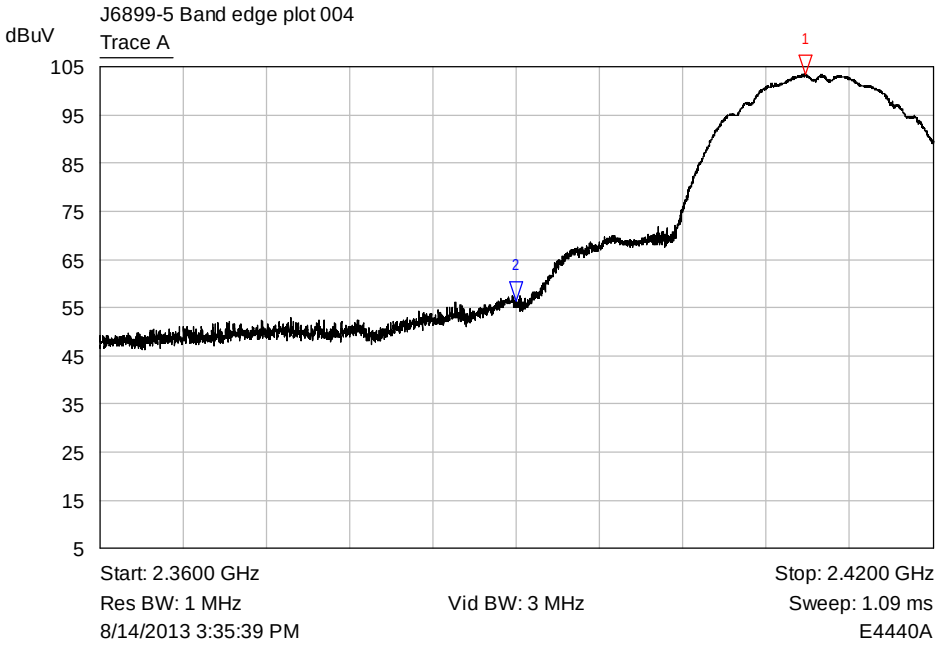
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4615 GHz	99.02 dBuV	
2	Trace A	2.4848 GHz	49.46 dBuV	

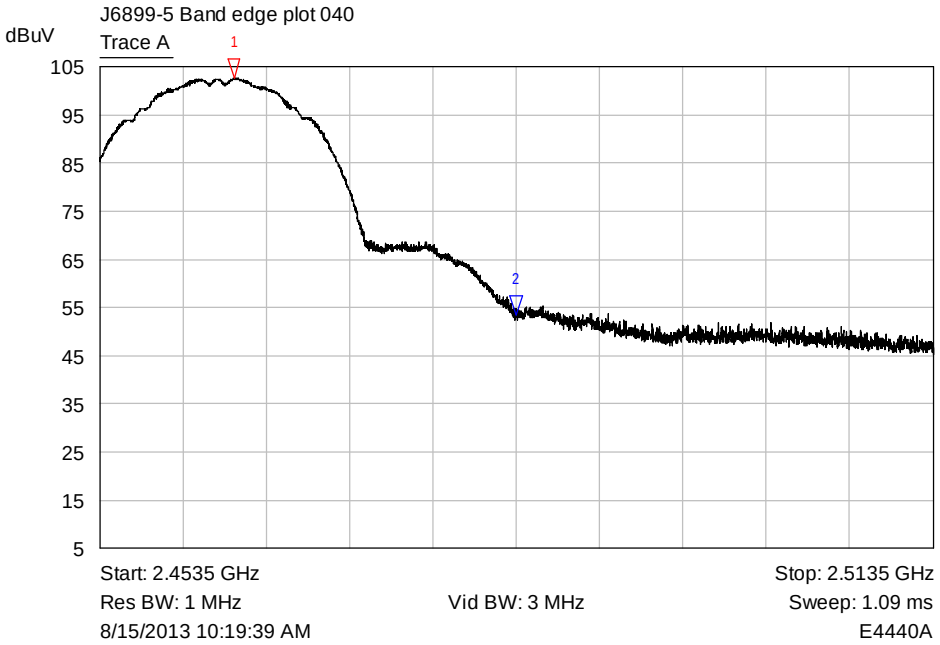
Band Edge: High channel

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



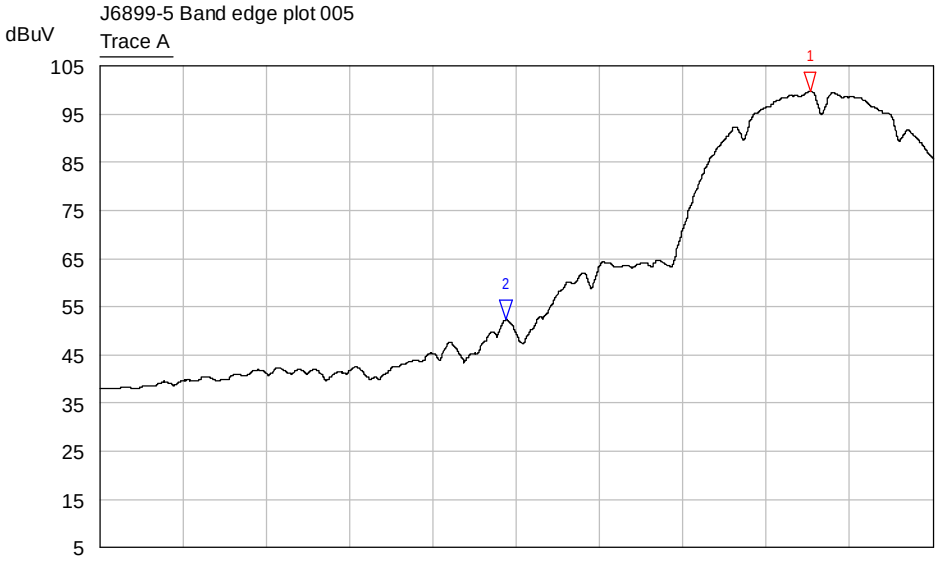
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4108 GHz	103.39 dBuV	
2 ▽	Trace A	2.3900 GHz	56.25 dBuV	

Restricted Band: Low channel Peak plot



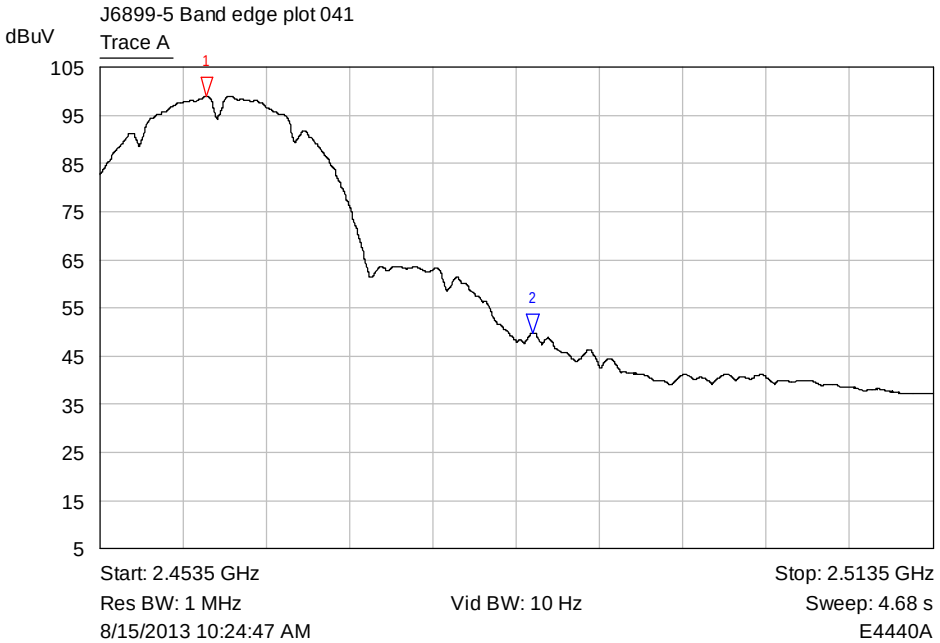
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4632 GHz	102.68 dBuV	
2 ▽	Trace A	2.4835 GHz	53.29 dBuV	

Restricted Band: High channel Peak plot



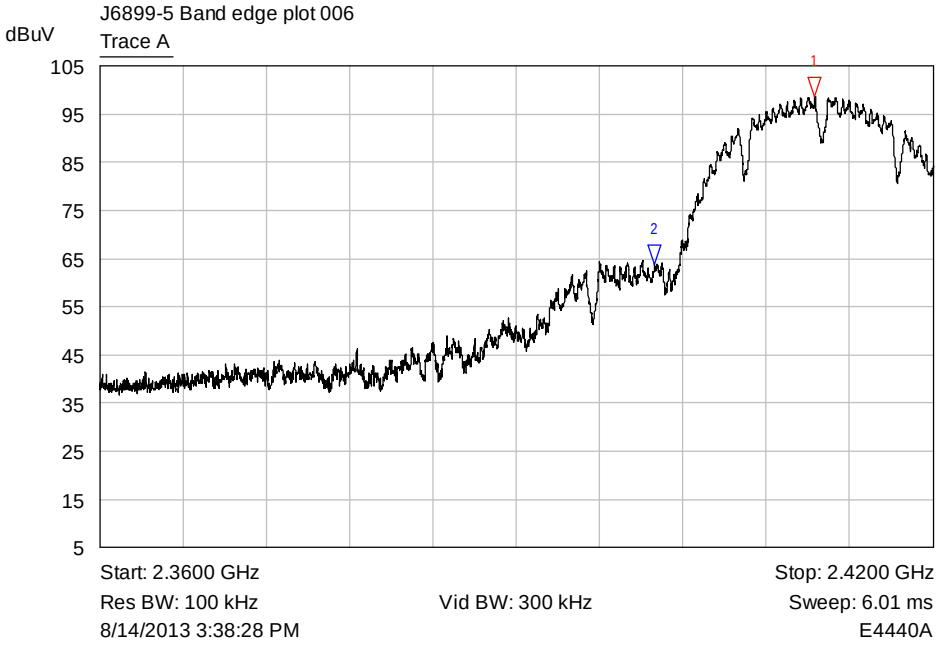
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4112 GHz	99.77 dBuV	
2	Trace A	2.3893 GHz	52.26 dBuV	

Restricted Band: Low channel Average plot



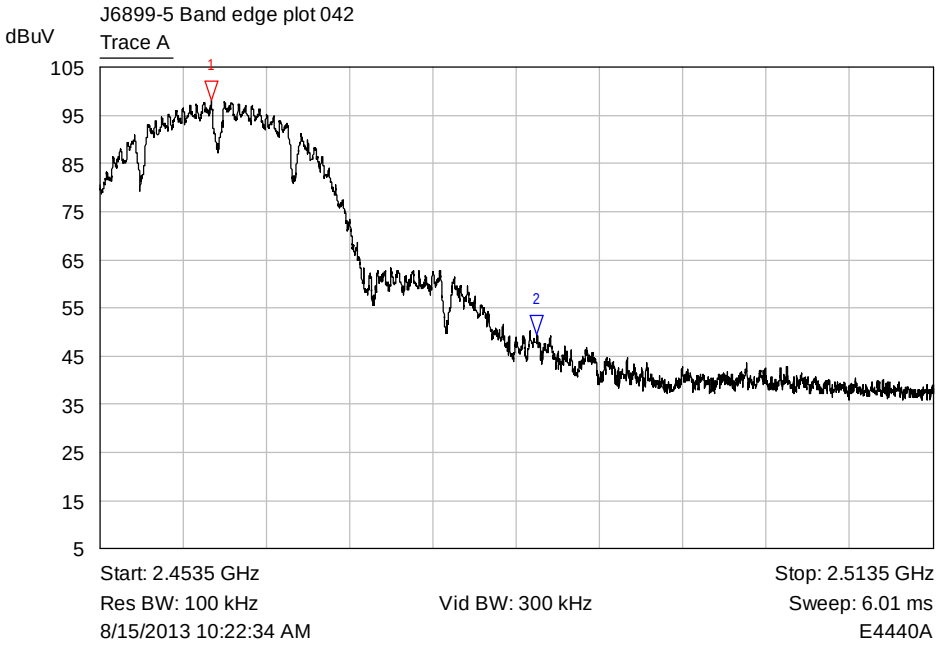
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4612 GHz	99.06 dBuV	
2	Trace A	2.4847 GHz	49.73 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4115 GHz	98.75 dBuV	
2	Trace A	2.4000 GHz	63.81 dBuV	

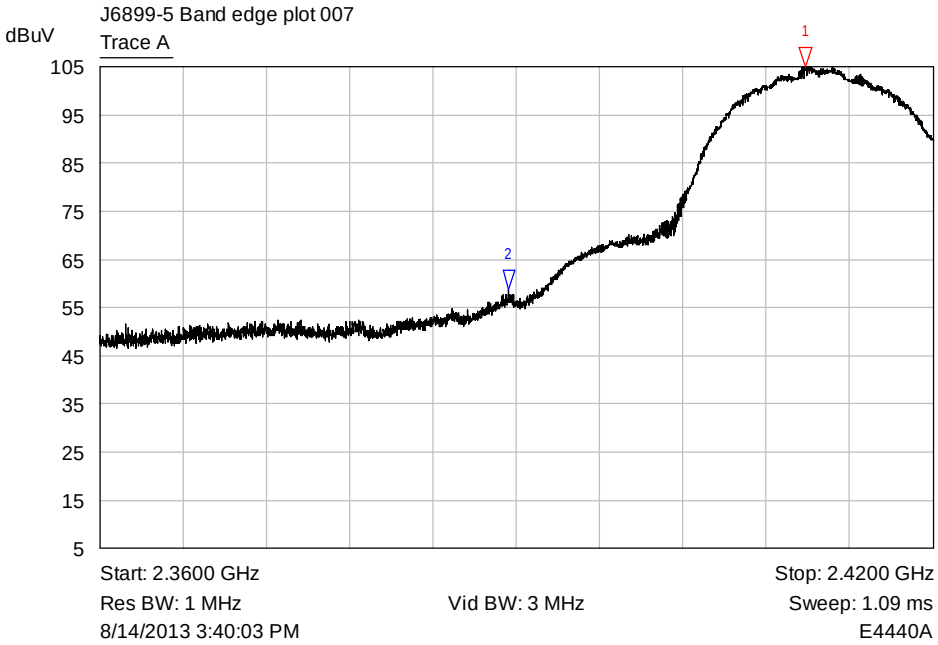
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4615 GHz	98.09 dBuV	
2	Trace A	2.4850 GHz	49.58 dBuV	

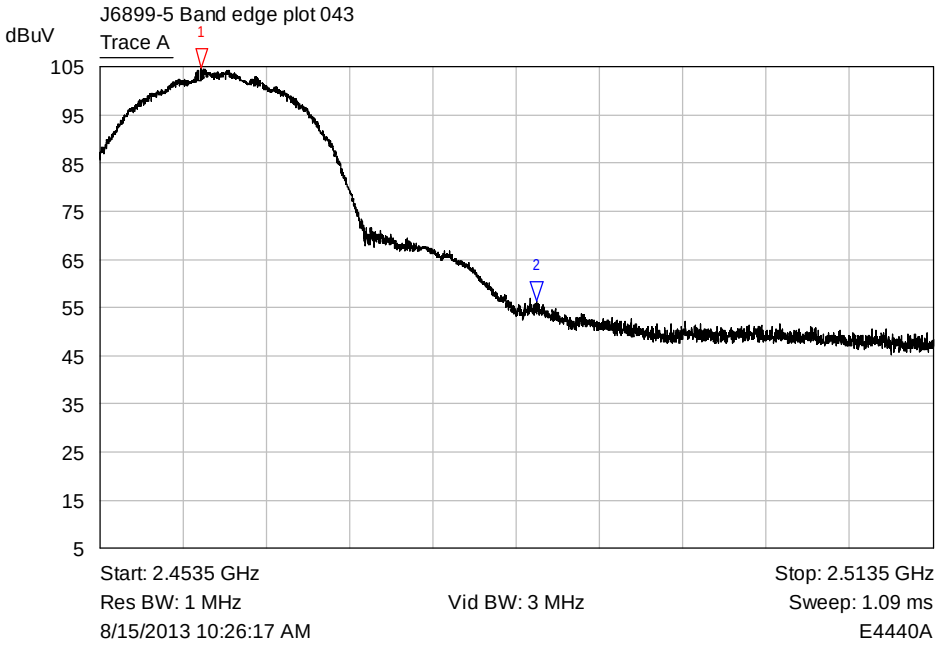
Band Edge: High channel

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



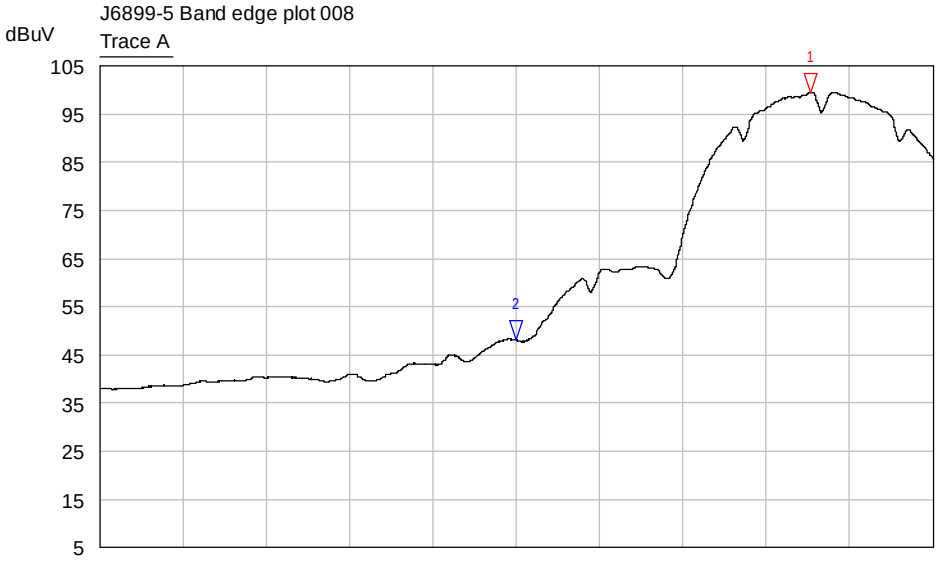
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4109 GHz	105.36 dBuV	
2	Trace A	2.3894 GHz	58.71 dBuV	

Restricted Band: Low channel Peak plot



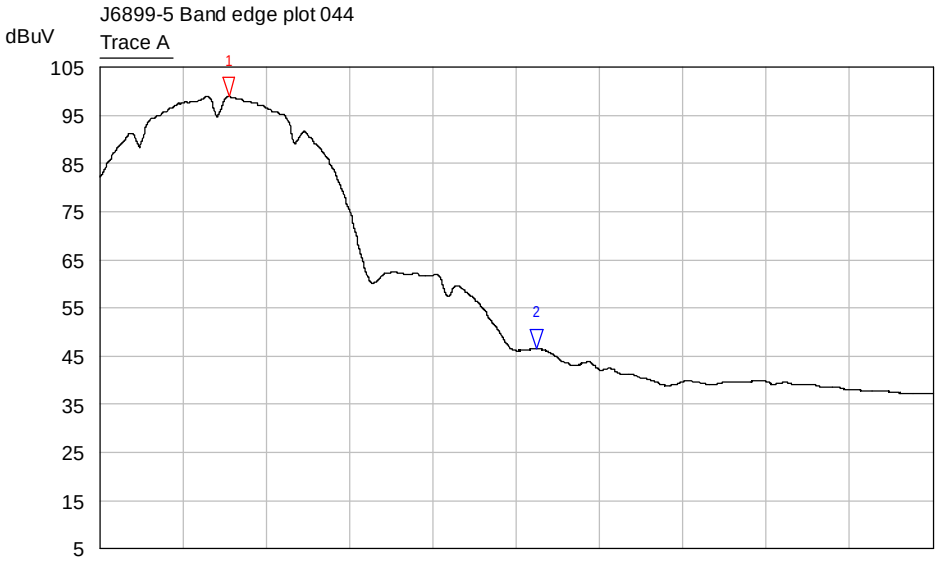
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4609 GHz	104.59 dBuV	
2	Trace A	2.4850 GHz	56.30 dBuV	

Restricted Band: High channel Peak plot



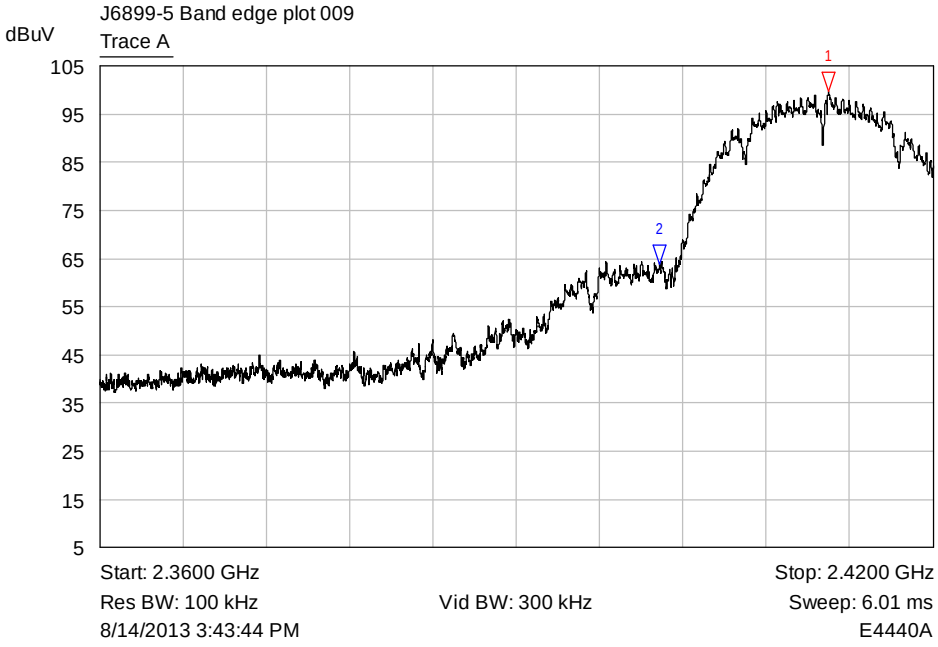
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4112 GHz	99.58 dBuV	
2	Trace A	2.3900 GHz	48.14 dBuV	

Restricted Band: Low channel Average plot



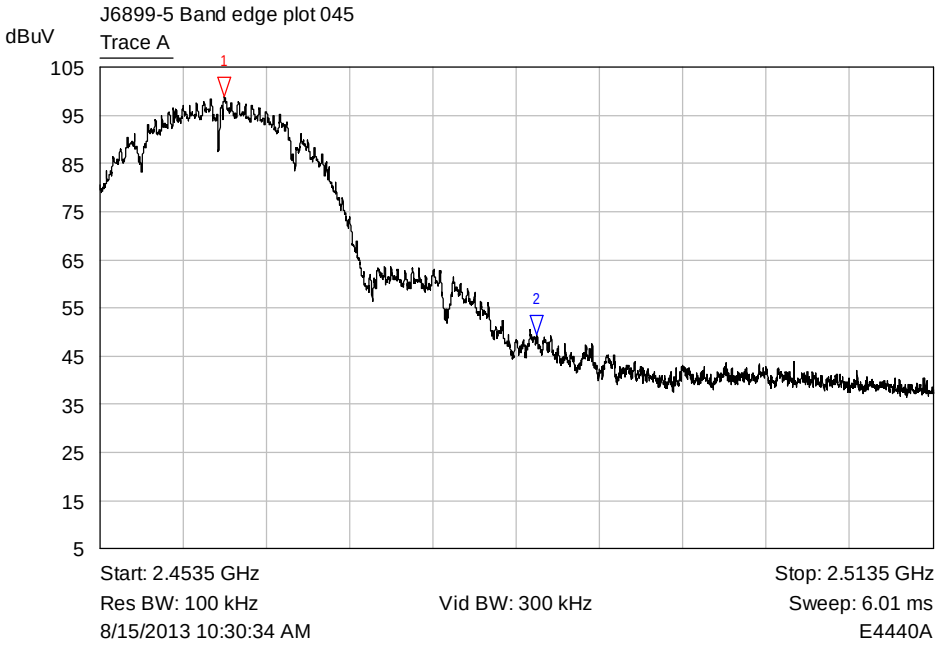
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4628 GHz	98.94 dBuV	
2	Trace A	2.4850 GHz	46.59 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4125 GHz	99.66 dBuV	
2	Trace A	2.4004 GHz	63.87 dBuV	

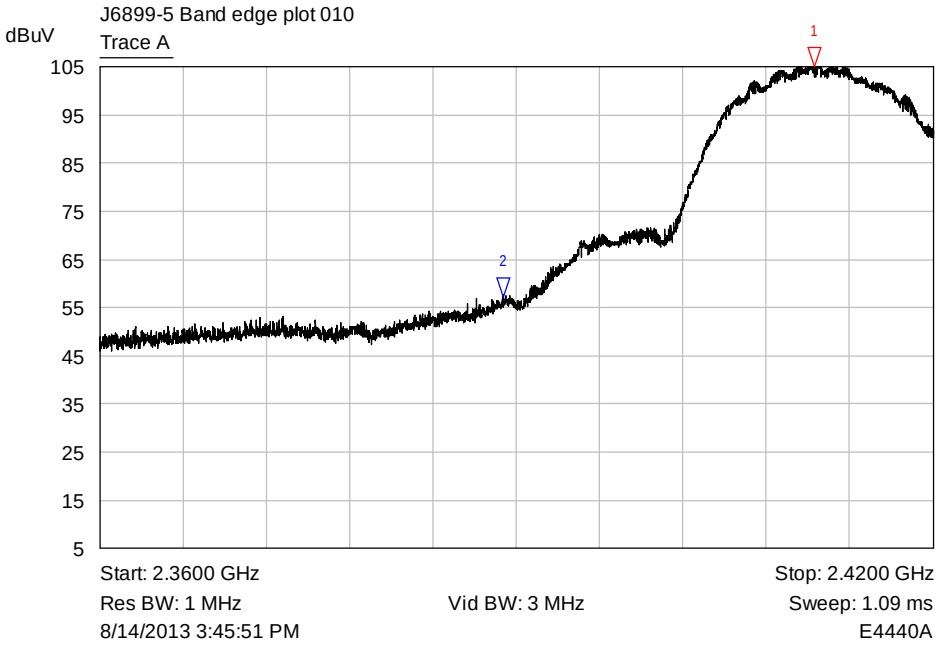
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4625 GHz	99.02 dBuV	
2	Trace A	2.4850 GHz	49.43 dBuV	

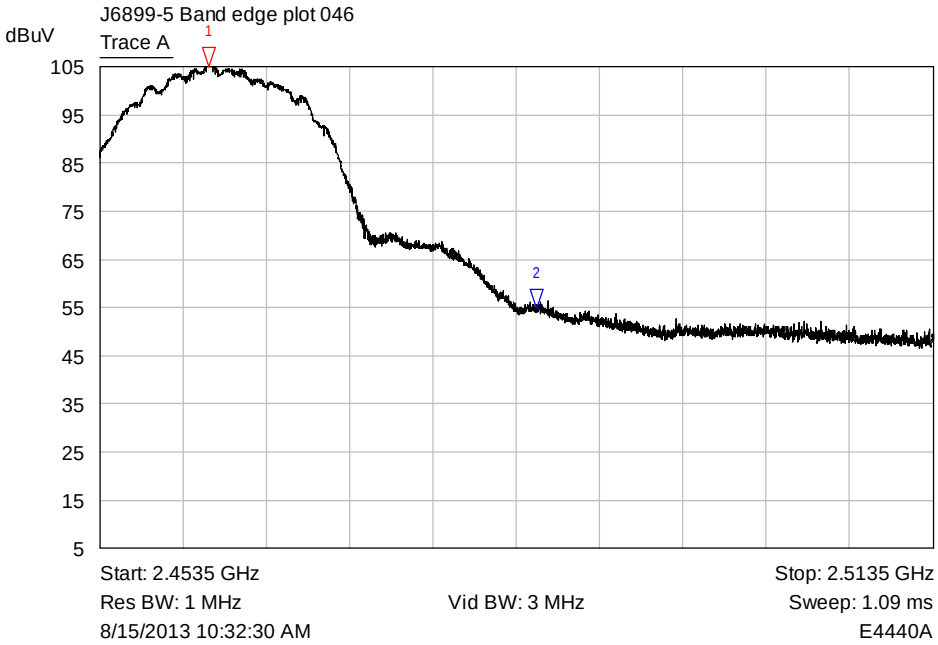
Band Edge: High channel

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



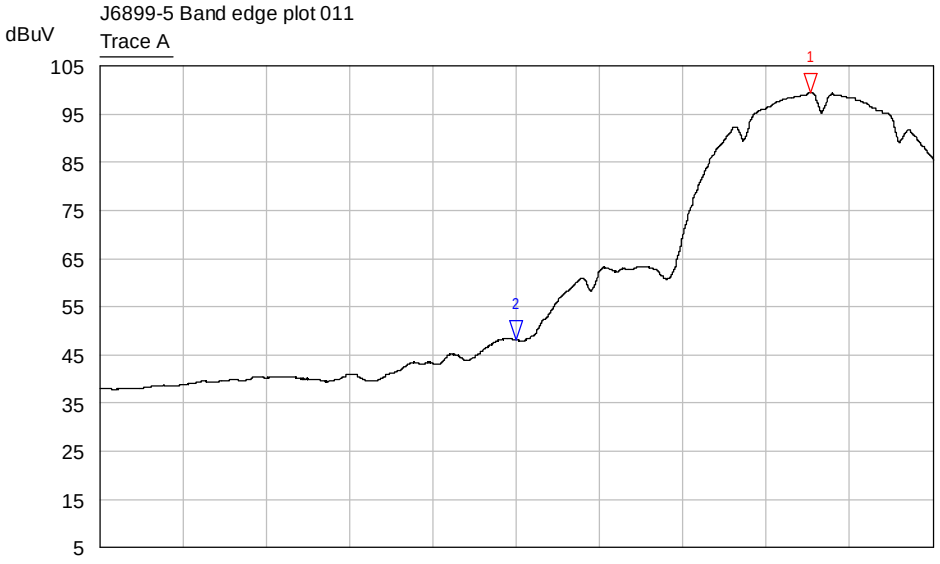
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4114 GHz	106.48 dBuV	
2 ▽	Trace A	2.3891 GHz	57.21 dBuV	

Restricted Band: Low channel Peak plot



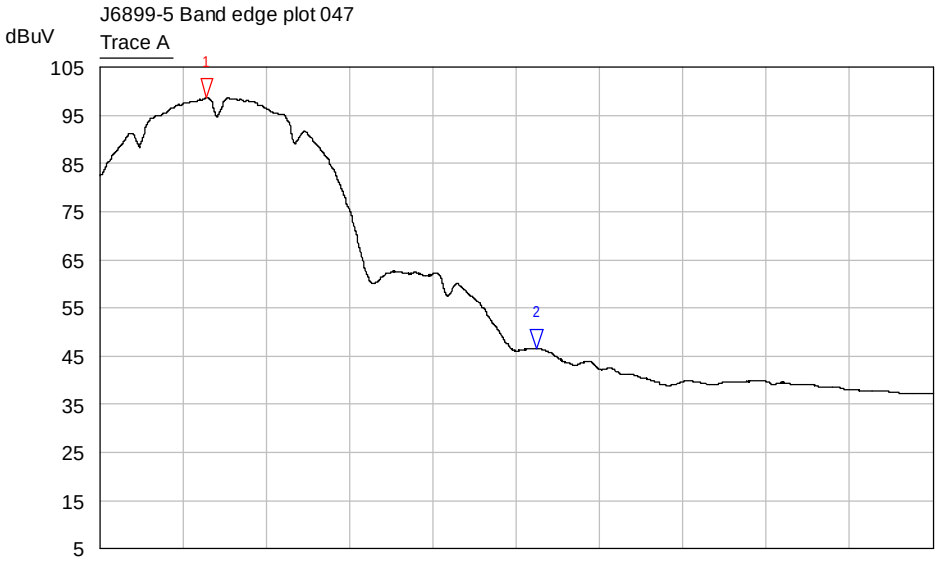
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4614 GHz	105.91 dBuV	
2 ▽	Trace A	2.4850 GHz	54.91 dBuV	

Restricted Band: High channel Peak plot



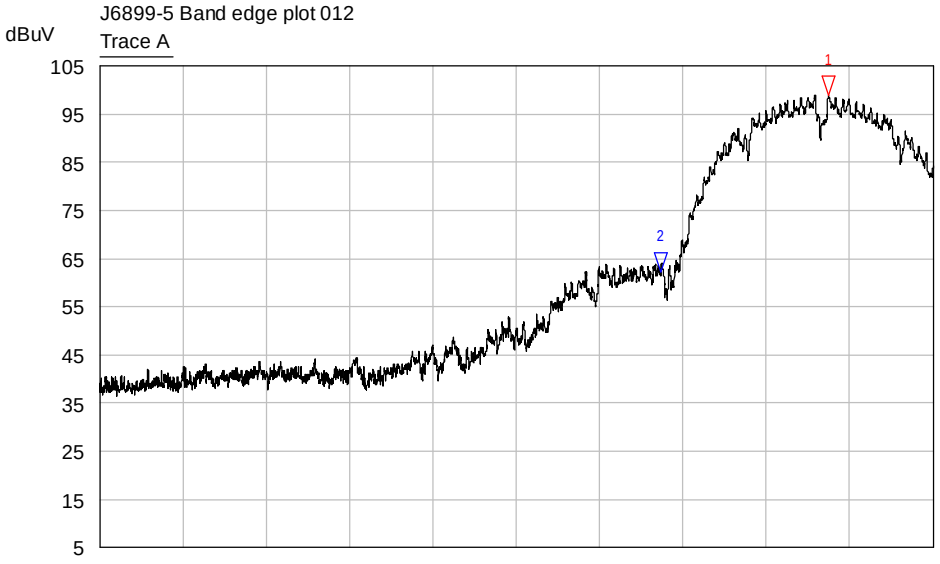
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4112 GHz	99.48 dBuV	
2	Trace A	2.3900 GHz	48.17 dBuV	

Restricted Band: Low channel Average plot



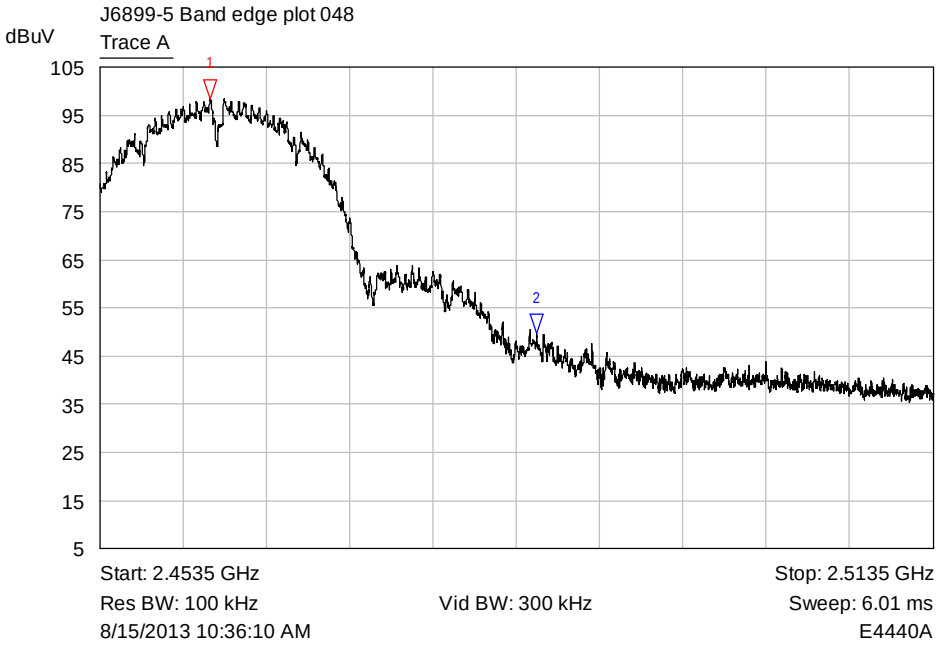
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4612 GHz	98.74 dBuV	
2	Trace A	2.4850 GHz	46.60 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4125 GHz	99.08 dBuV	
2	Trace A	2.4004 GHz	62.27 dBuV	

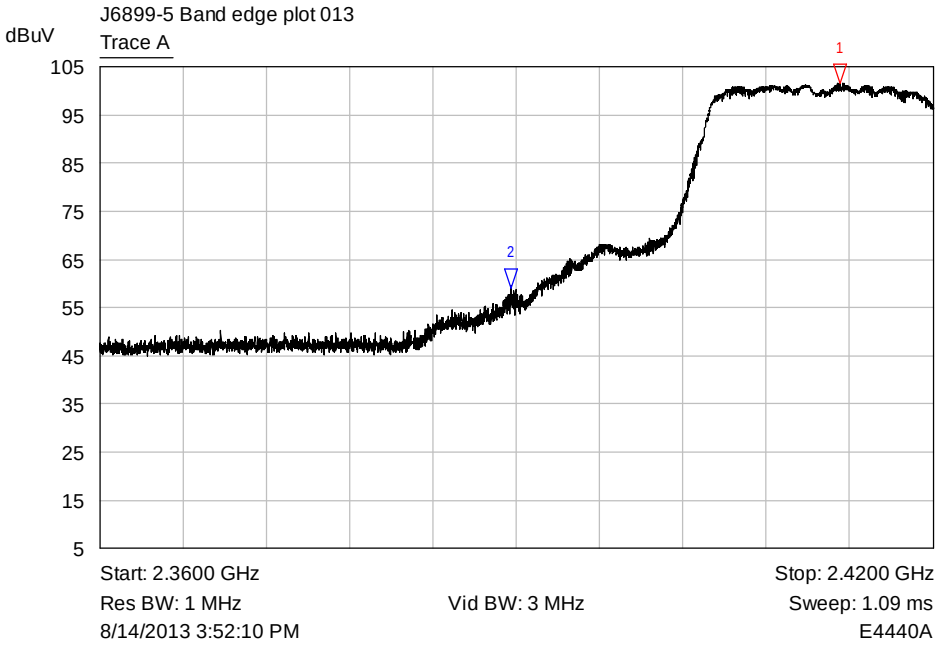
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4615 GHz	98.42 dBuV	
2	Trace A	2.4850 GHz	49.81 dBuV	

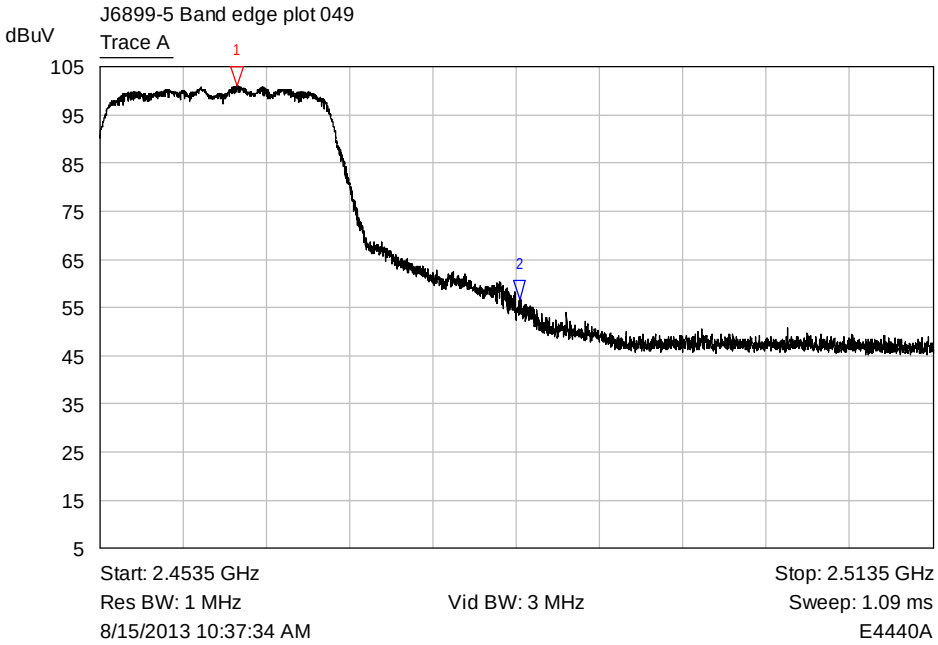
Band Edge: High channel

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



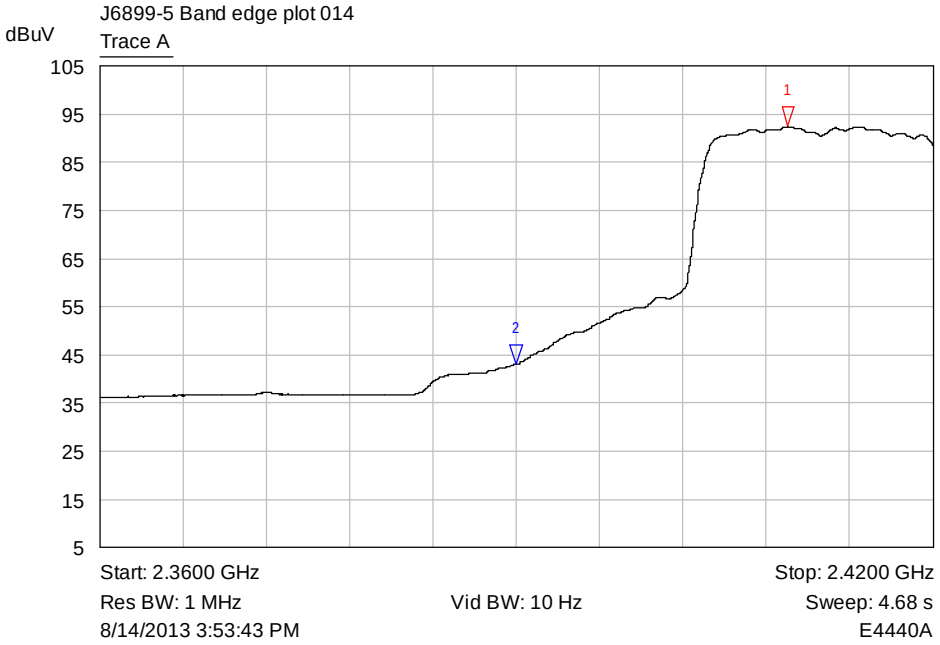
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	101.48 dBuV	
2	Trace A	2.3896 GHz	59.03 dBuV	

Restricted Band: Low channel Peak plot



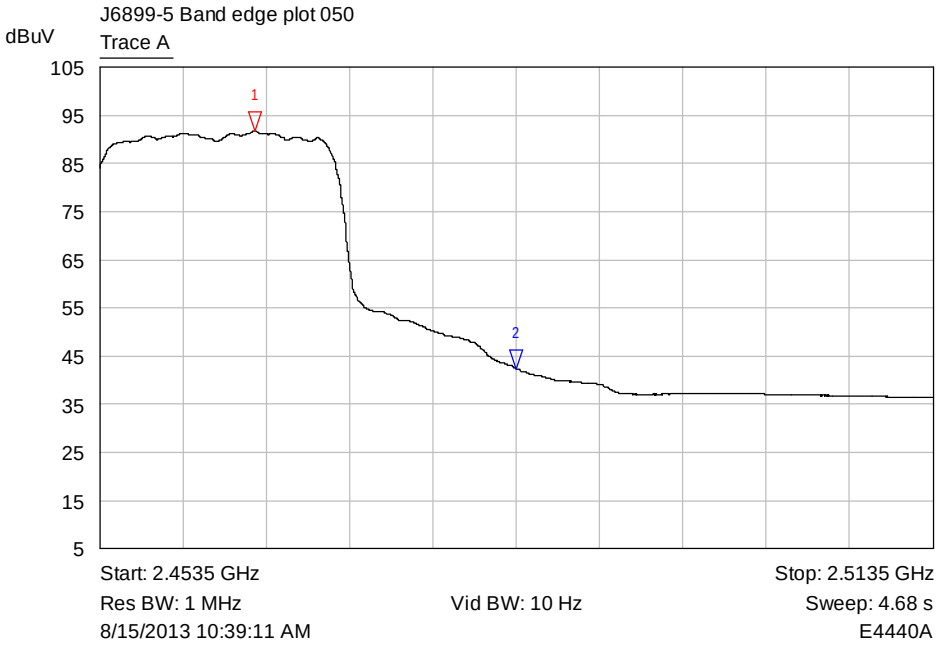
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4634 GHz	100.95 dBuV	
2	Trace A	2.4837 GHz	56.69 dBuV	

Restricted Band: High channel Peak plot



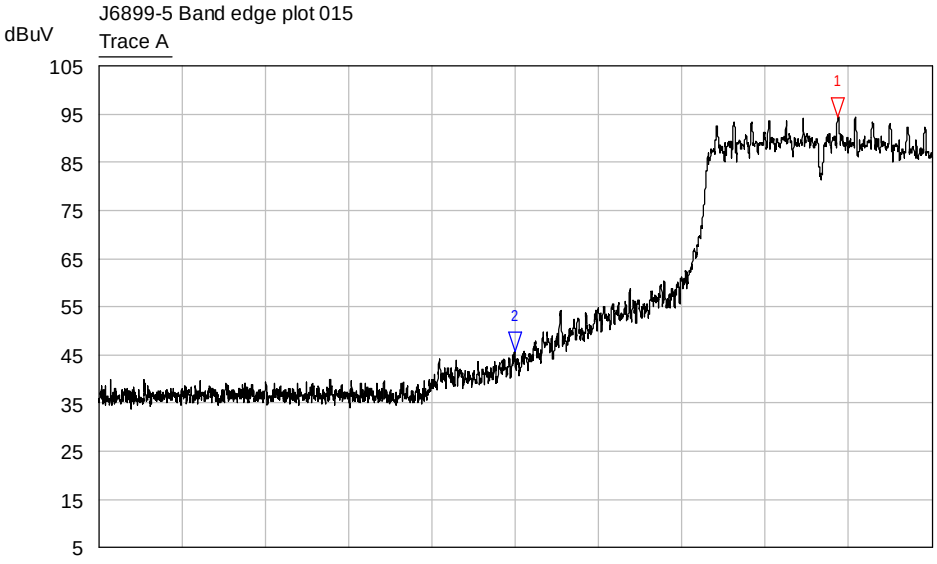
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4096 GHz	92.42 dBuV	
2	Trace A	2.3900 GHz	43.03 dBuV	

Restricted Band: Low channel Average plot



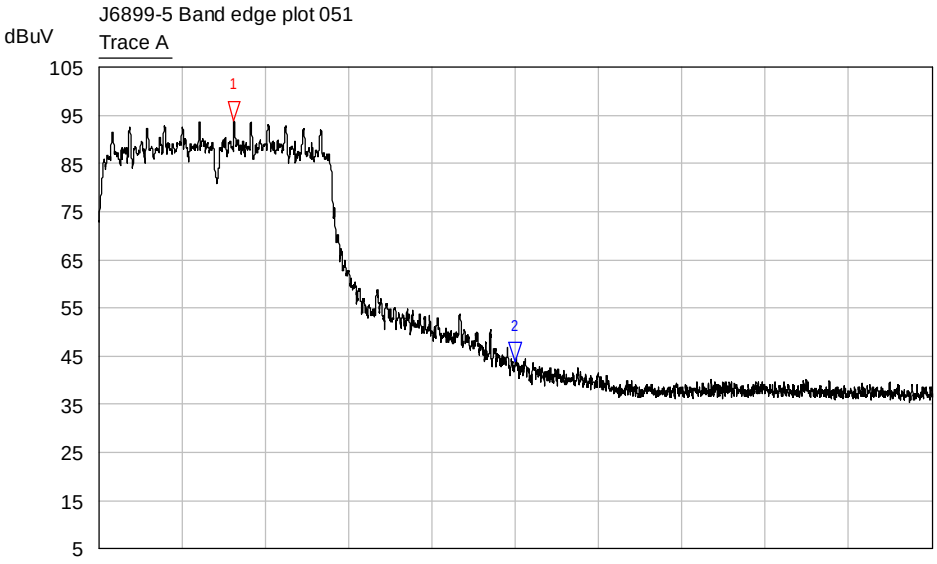
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4647 GHz	91.62 dBuV	
2	Trace A	2.4835 GHz	42.41 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	94.47 dBuV	
2	Trace A	2.3900 GHz	45.85 dBuV	

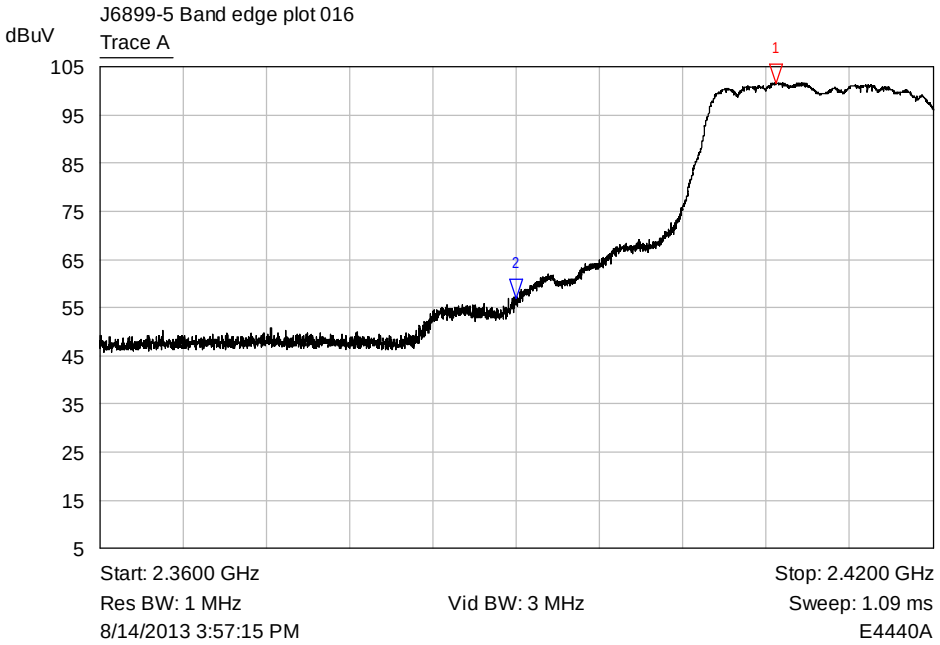
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	94.03 dBuV	
2	Trace A	2.4835 GHz	43.85 dBuV	

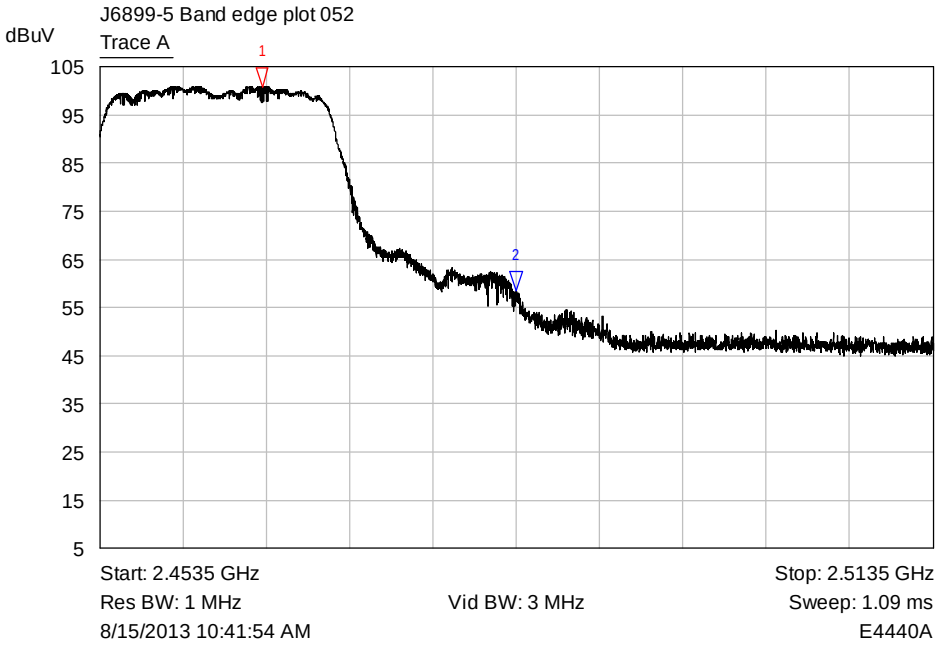
Band Edge: High channel

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



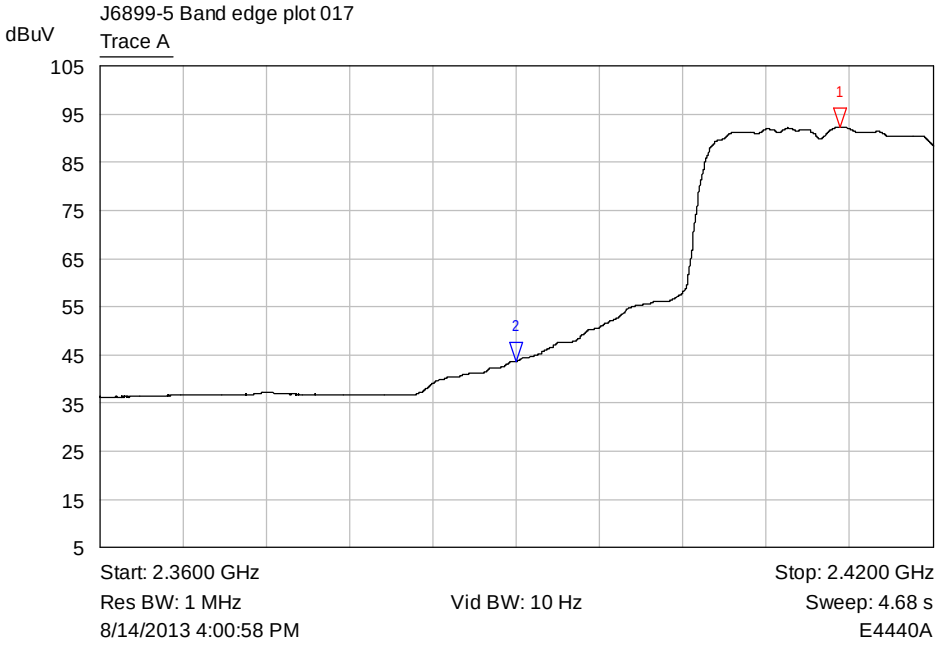
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4087 GHz	101.71 dBuV	
2 ▽	Trace A	2.3900 GHz	56.97 dBuV	

Restricted Band: Low channel Peak plot



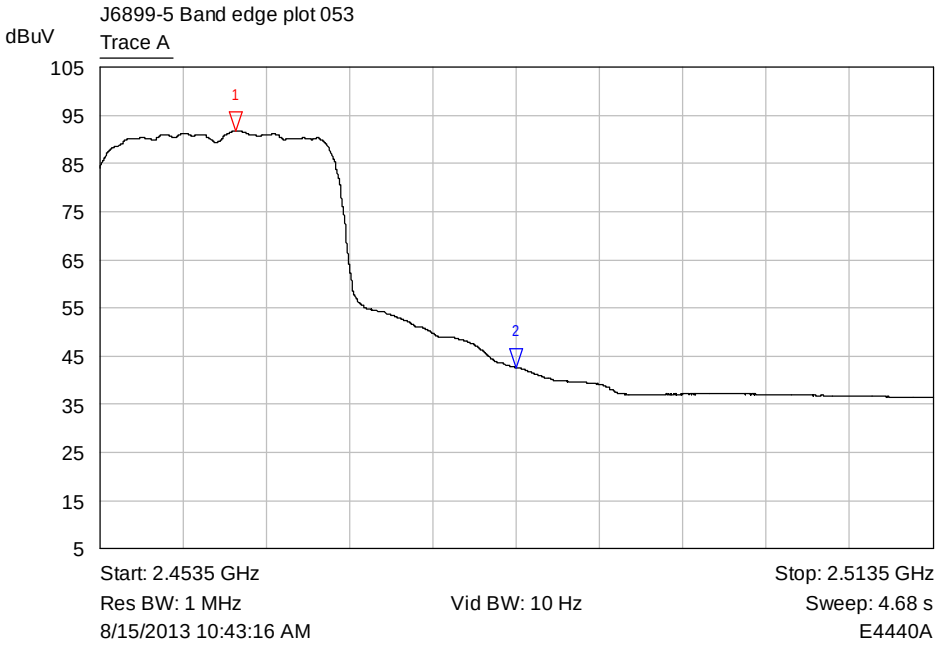
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4652 GHz	100.89 dBuV	
2 ▽	Trace A	2.4835 GHz	58.43 dBuV	

Restricted Band: High channel Peak plot



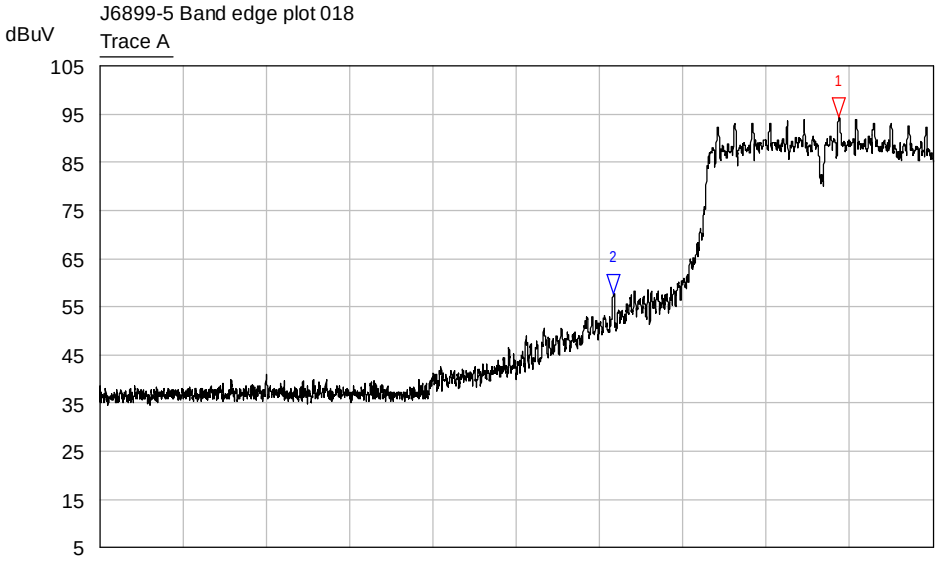
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	92.28 dBuV	
2	Trace A	2.3900 GHz	43.66 dBuV	

Restricted Band: Low channel Average plot



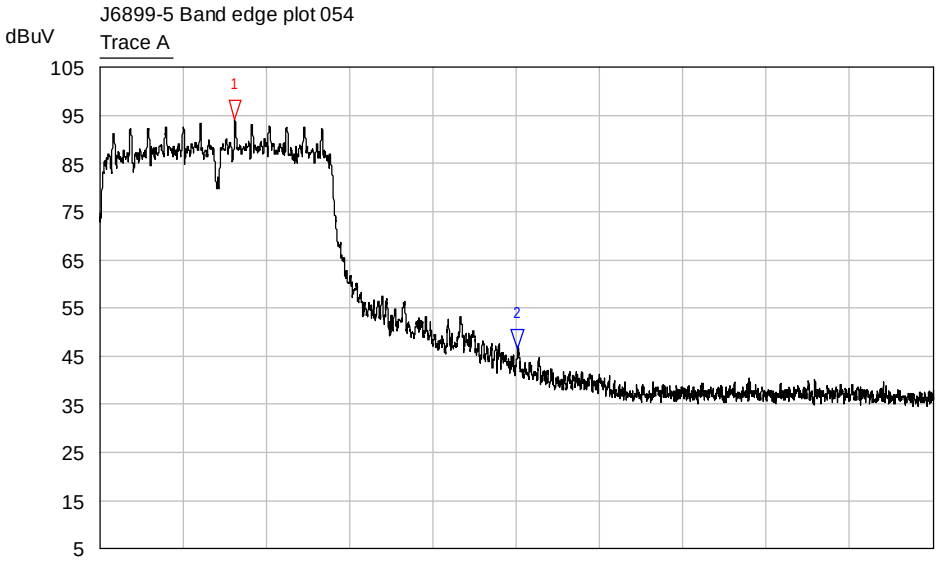
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4634 GHz	91.73 dBuV	
2	Trace A	2.4835 GHz	42.70 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	94.48 dBuV	
2	Trace A	2.3970 GHz	57.86 dBuV	

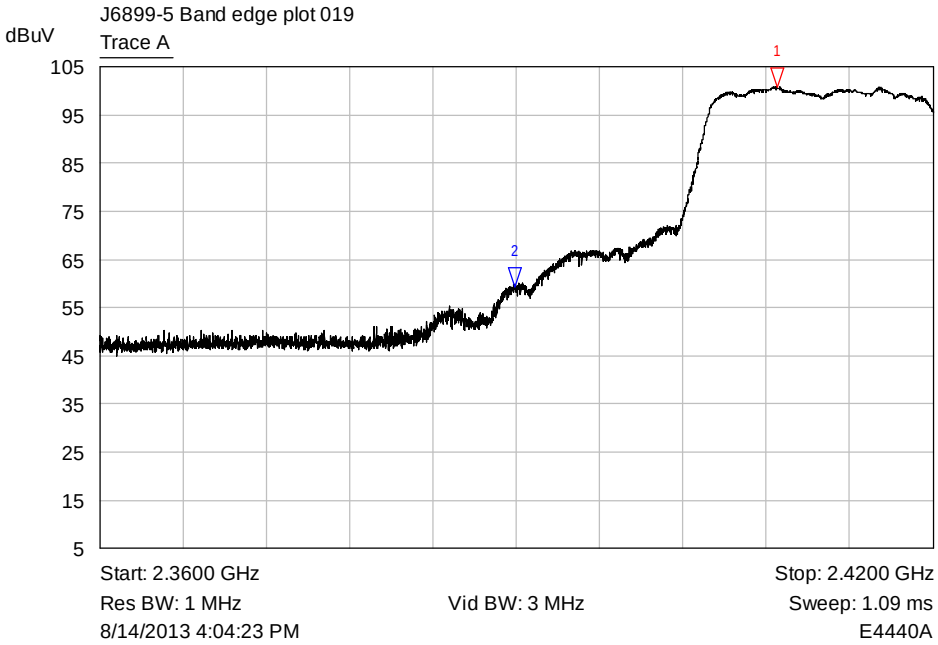
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	94.10 dBuV	
2	Trace A	2.4836 GHz	46.45 dBuV	

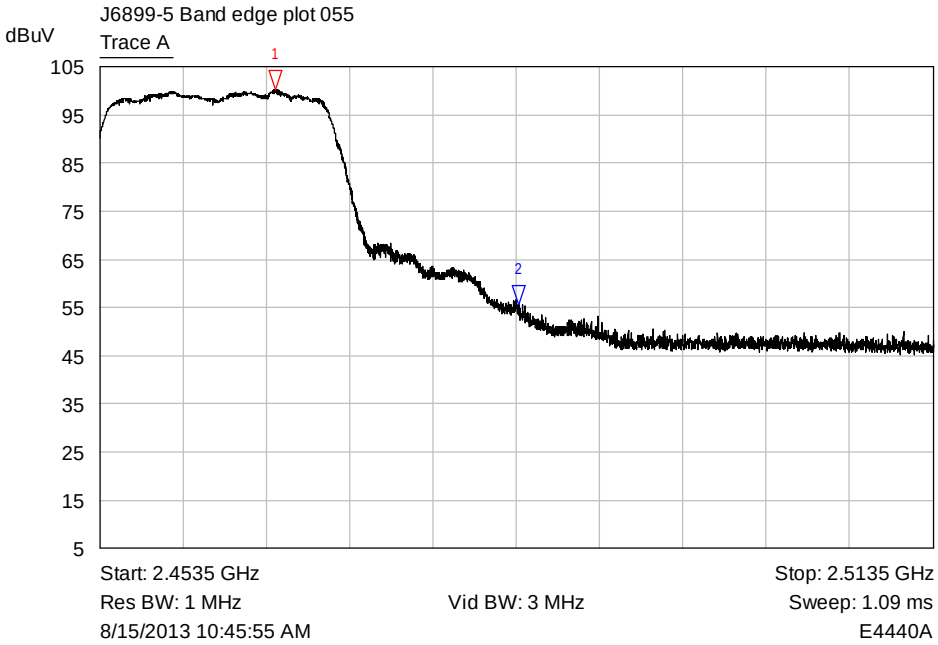
Band Edge: High channel

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



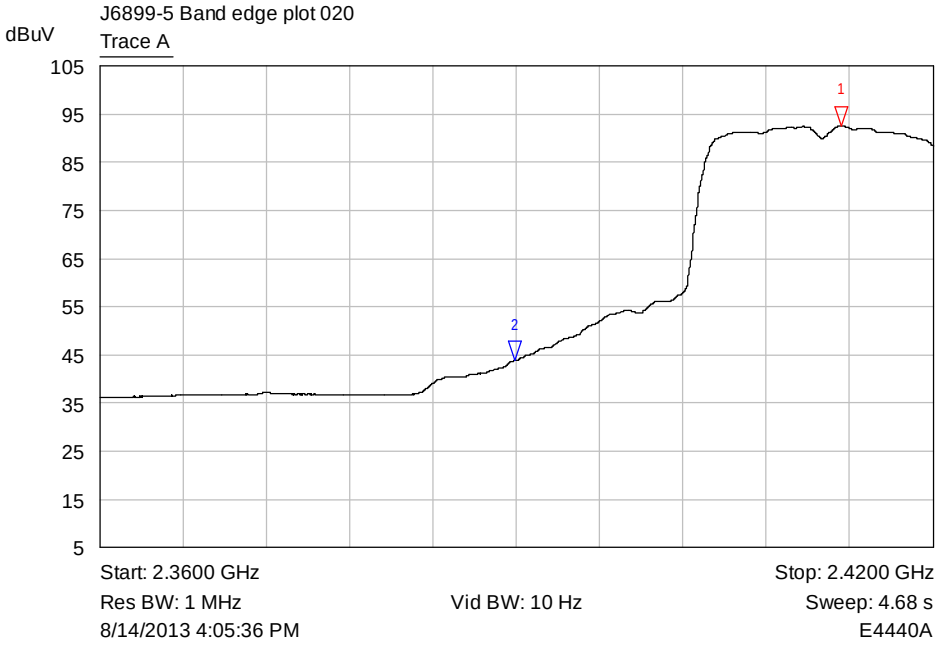
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4088 GHz	100.76 dBuV	
2	Trace A	2.3900 GHz	59.30 dBuV	

Restricted Band: Low channel Peak plot



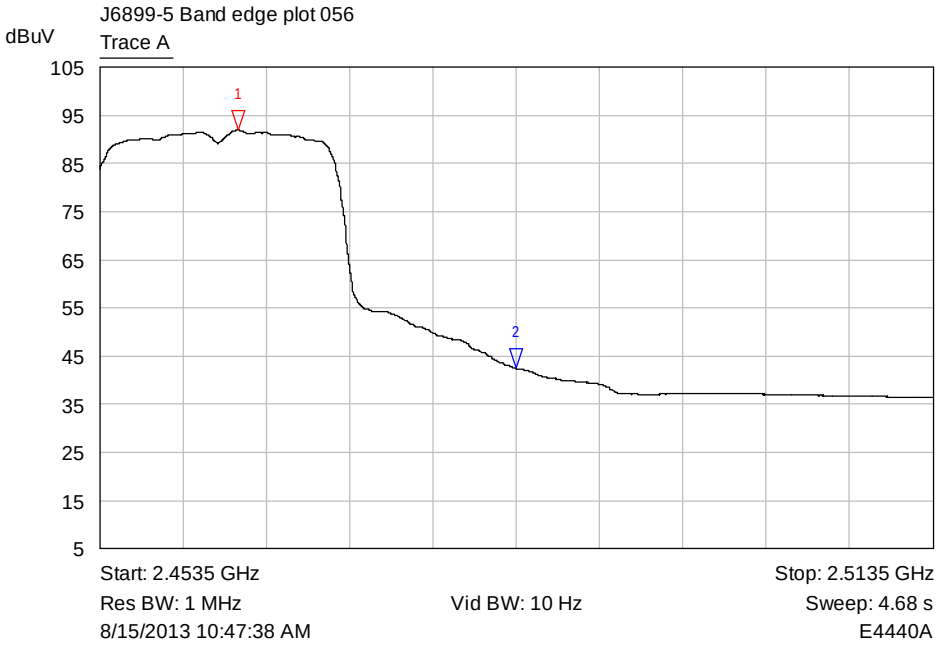
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4662 GHz	100.22 dBuV	
2	Trace A	2.4837 GHz	55.55 dBuV	

Restricted Band: High channel Peak plot



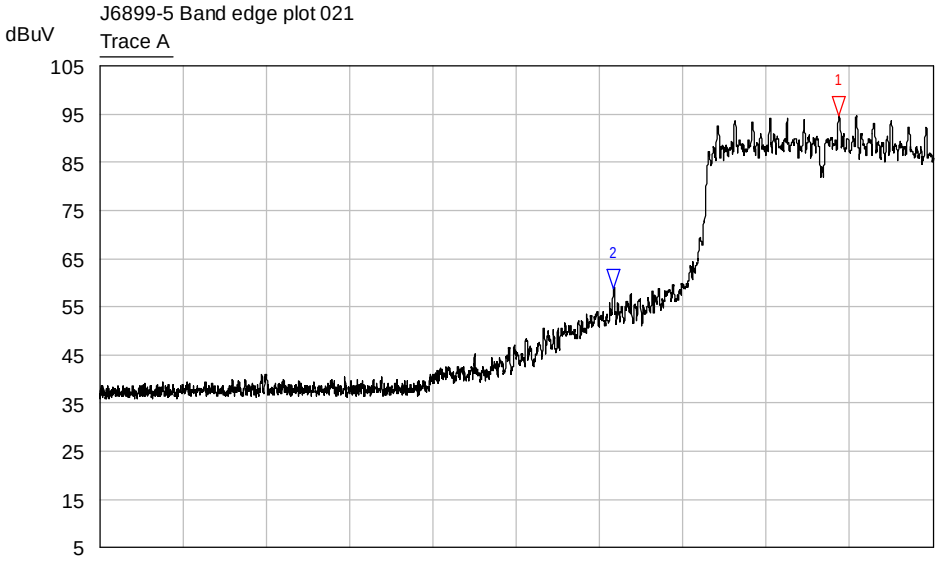
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4134 GHz	92.61 dBuV	
2	Trace A	2.3900 GHz	43.90 dBuV	

Restricted Band: Low channel Average plot



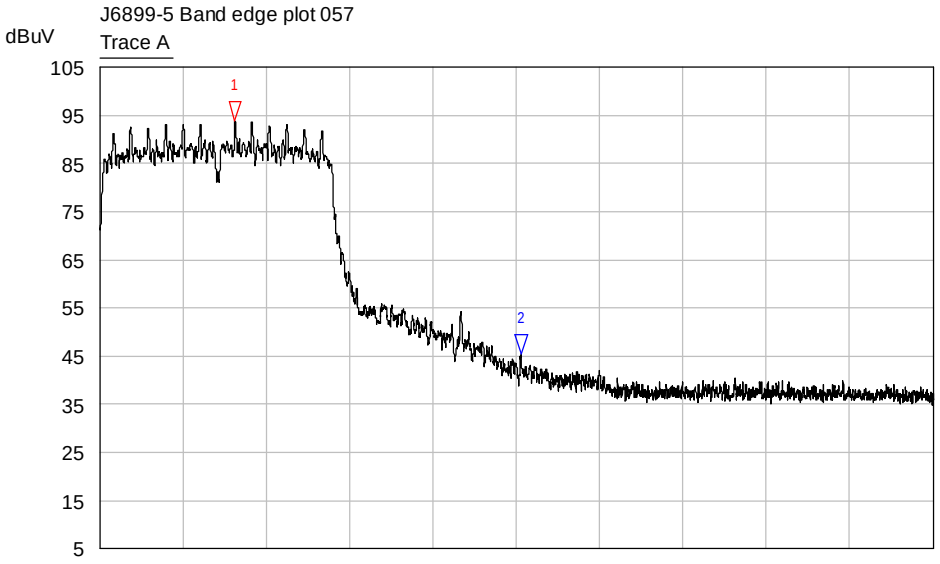
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4634 GHz	91.96 dBuV	
2	Trace A	2.4835 GHz	42.45 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	94.71 dBuV	
2	Trace A	2.3970 GHz	58.64 dBuV	

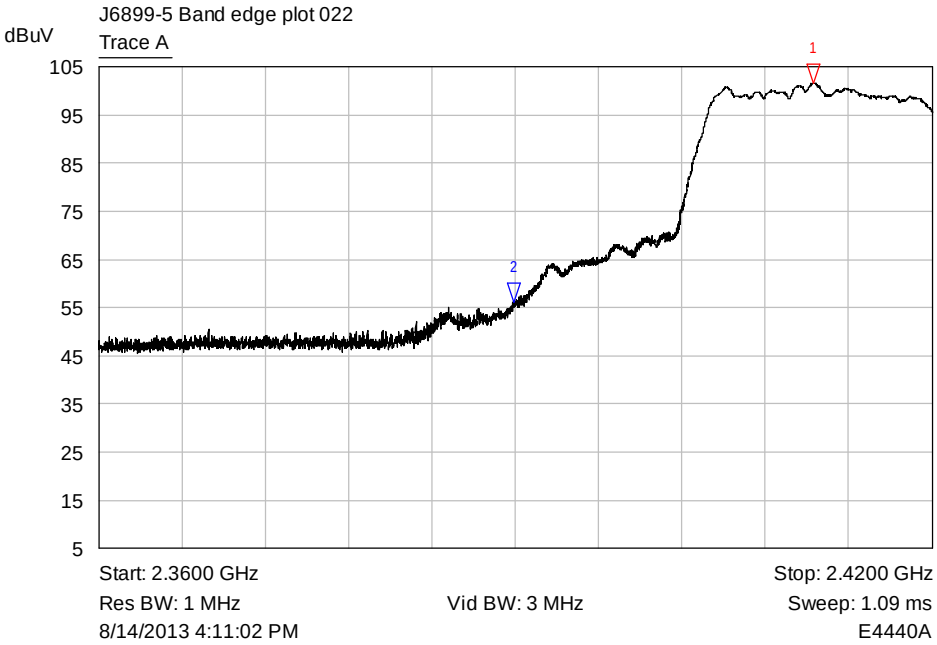
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	93.86 dBuV	
2	Trace A	2.4838 GHz	45.47 dBuV	

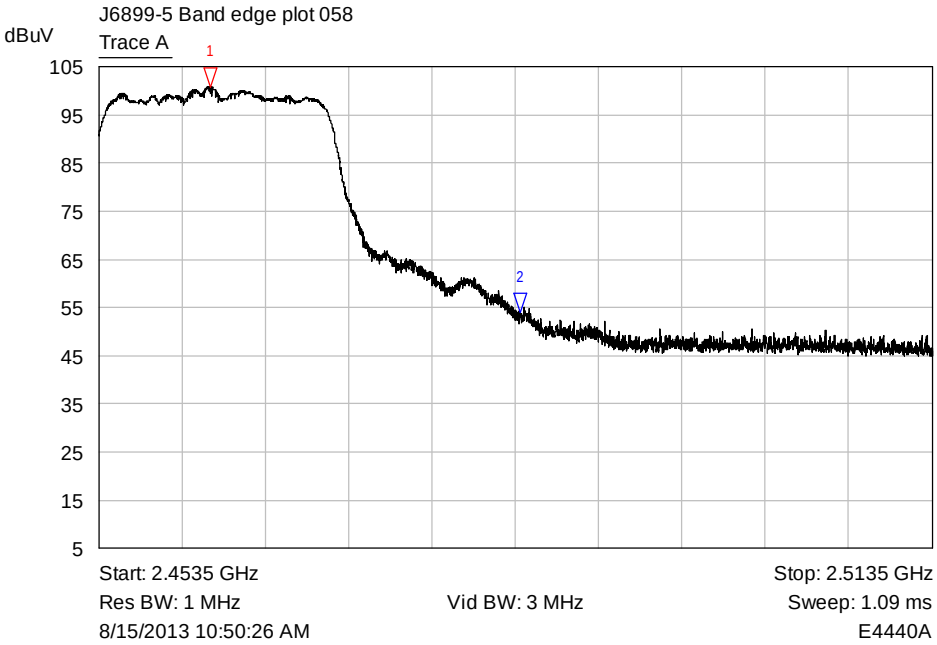
Band Edge: High channel

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



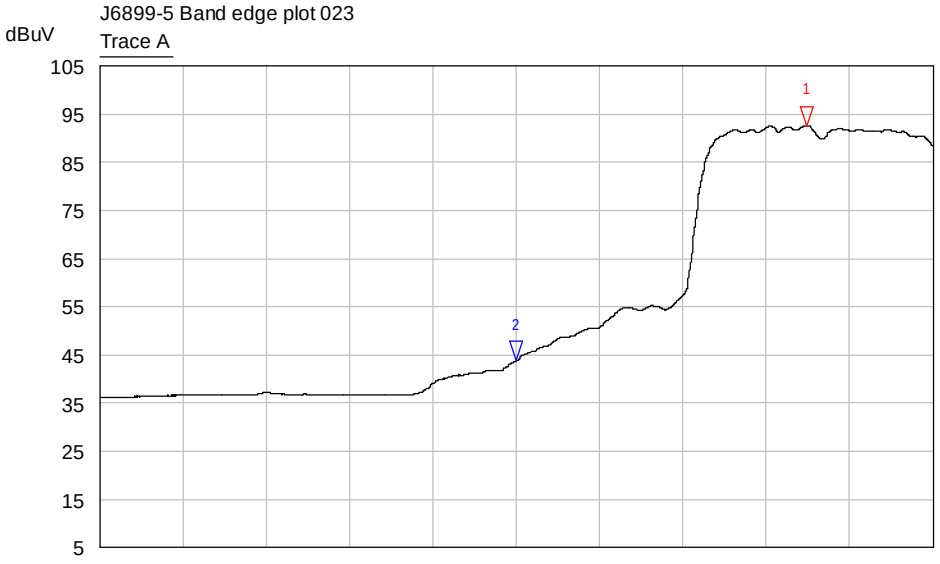
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4115 GHz	101.63 dBuV	
2 ▽	Trace A	2.3900 GHz	56.06 dBuV	

Restricted Band: Low channel Peak plot



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4615 GHz	100.85 dBuV	
2 ▽	Trace A	2.4838 GHz	54.04 dBuV	

Restricted Band: High channel Peak plot

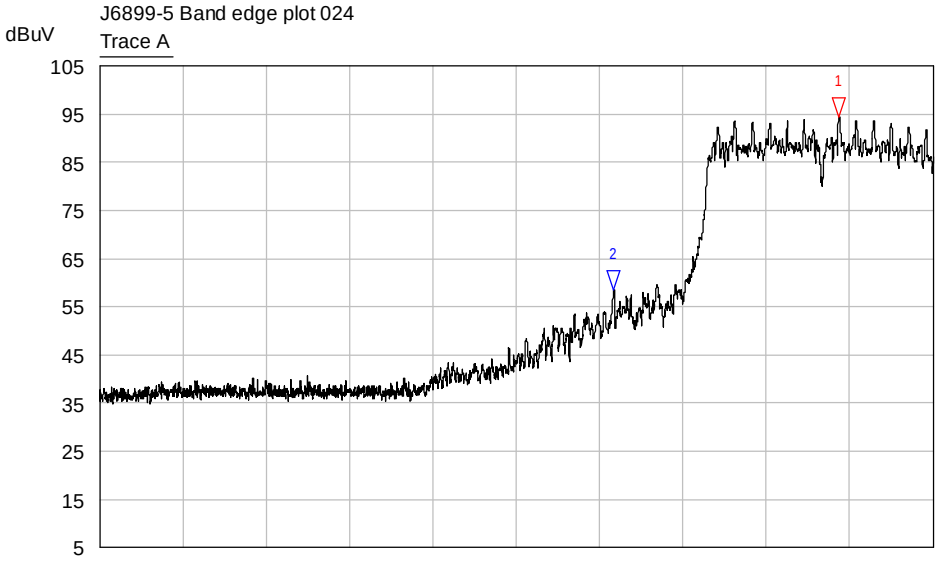


Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4109 GHz	92.74 dBuV	
2	Trace A	2.3900 GHz	43.80 dBuV	

Restricted Band: Low channel Average plot

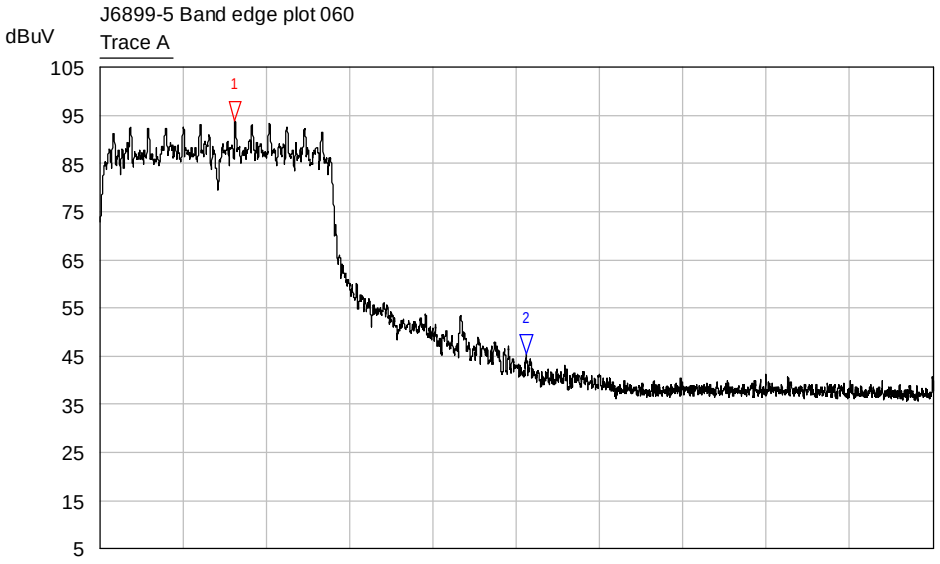
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4610 GHz	91.94 dBuV	
2	Trace A	2.4835 GHz	42.90 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	94.57 dBuV	
2	Trace A	2.3970 GHz	58.56 dBuV	

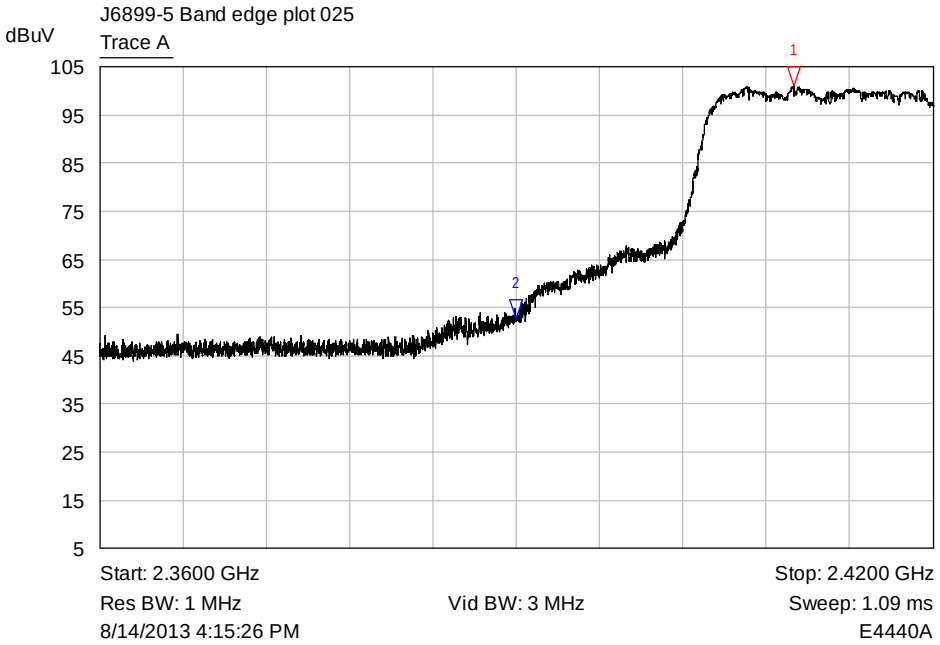
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	94.03 dBuV	
2	Trace A	2.4842 GHz	45.47 dBuV	

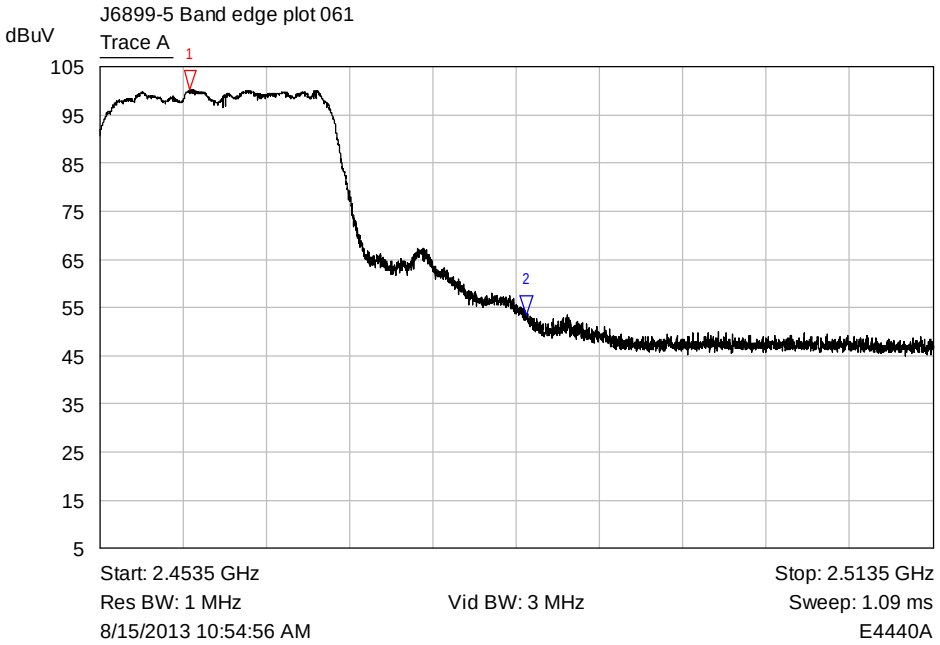
Band Edge: High channel

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



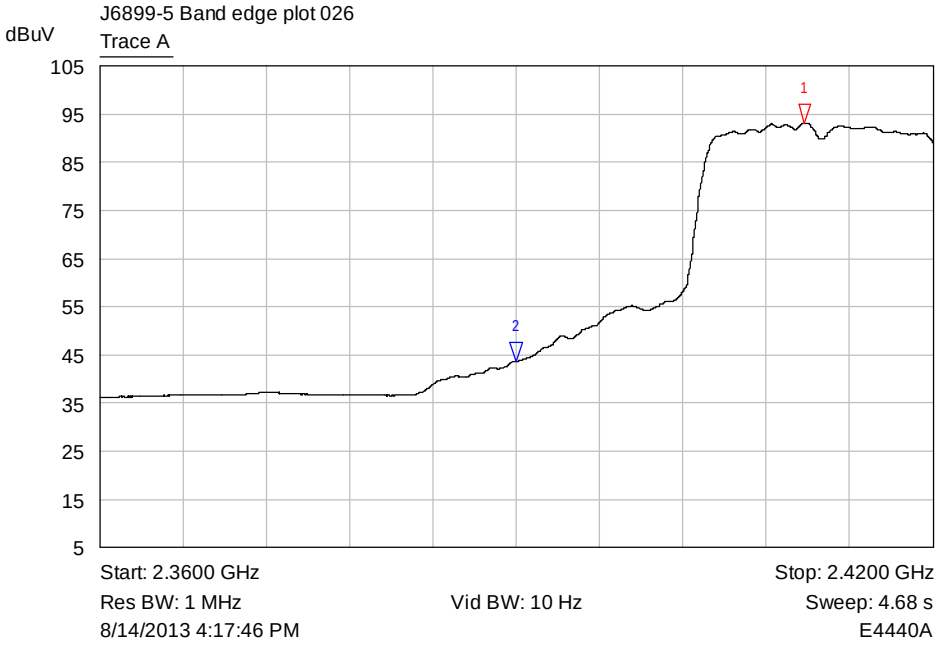
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4100 GHz	101.04 dBuV	
2 ▽	Trace A	2.3900 GHz	52.63 dBuV	

Restricted Band: Low channel Peak plot



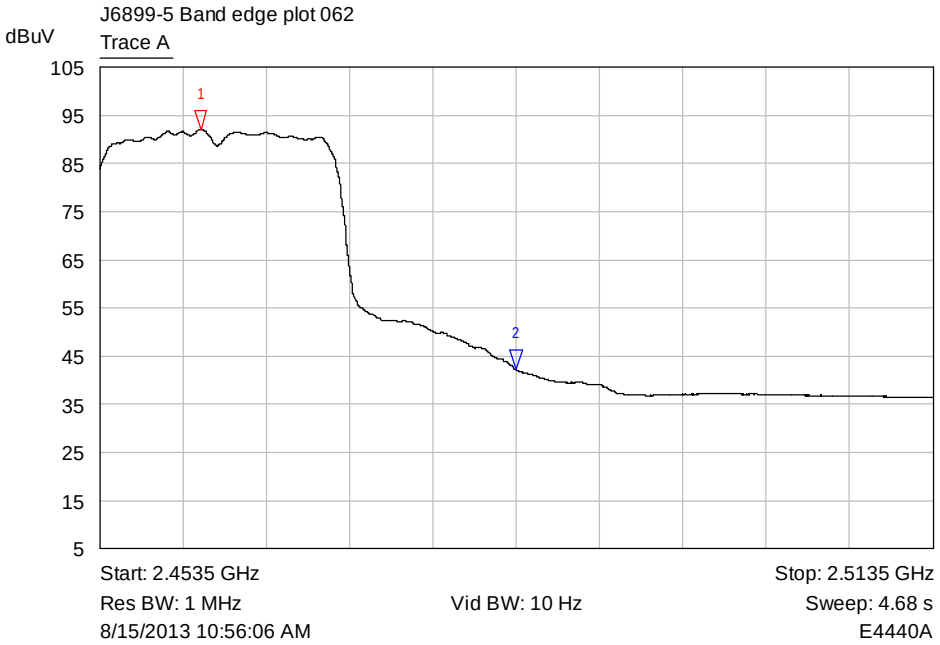
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4600 GHz	100.30 dBuV	
2 ▽	Trace A	2.4842 GHz	53.40 dBuV	

Restricted Band: High channel Peak plot



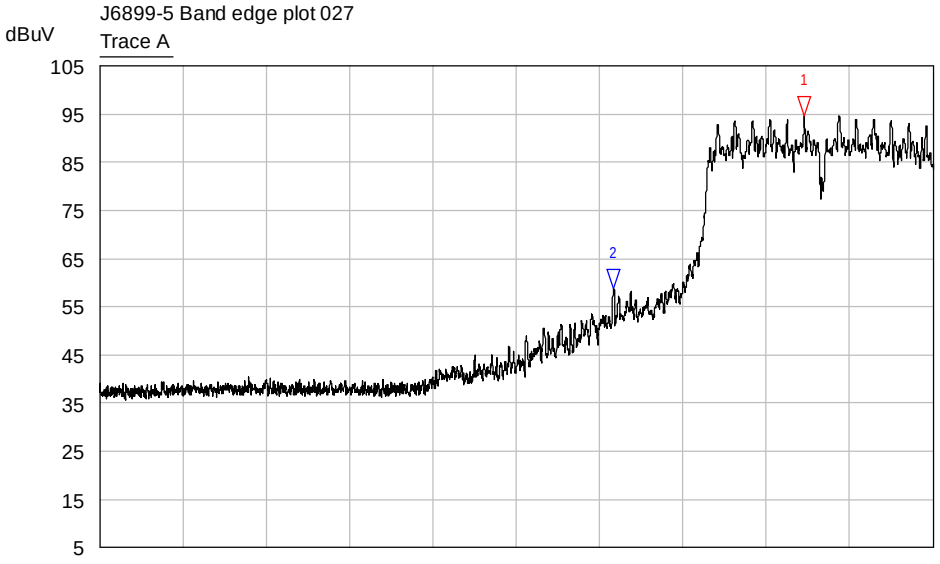
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4108 GHz	93.15 dBuV	
2	Trace A	2.3900 GHz	43.67 dBuV	

Restricted Band: Low channel Average plot



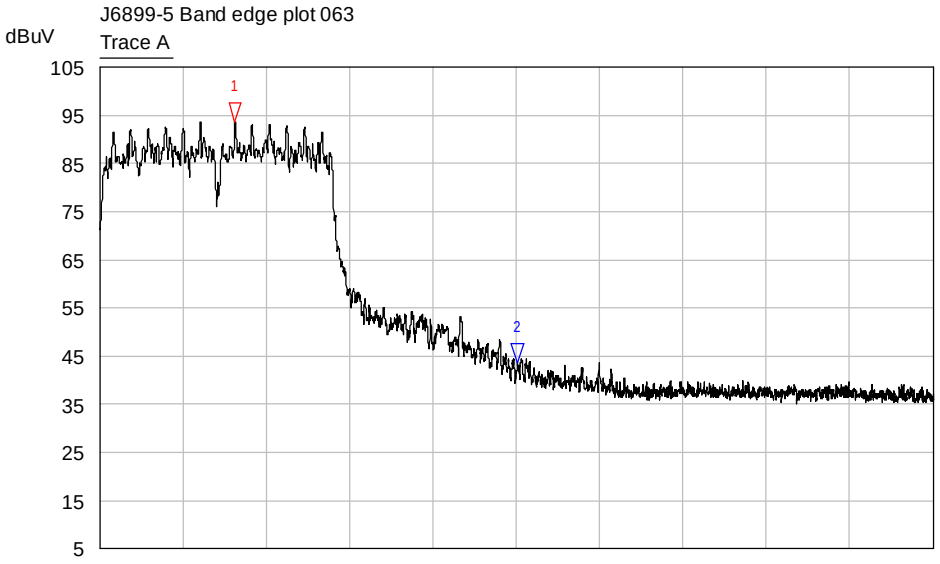
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4608 GHz	92.05 dBuV	
2	Trace A	2.4835 GHz	42.11 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4107 GHz	94.75 dBuV	
2	Trace A	2.3970 GHz	58.60 dBuV	

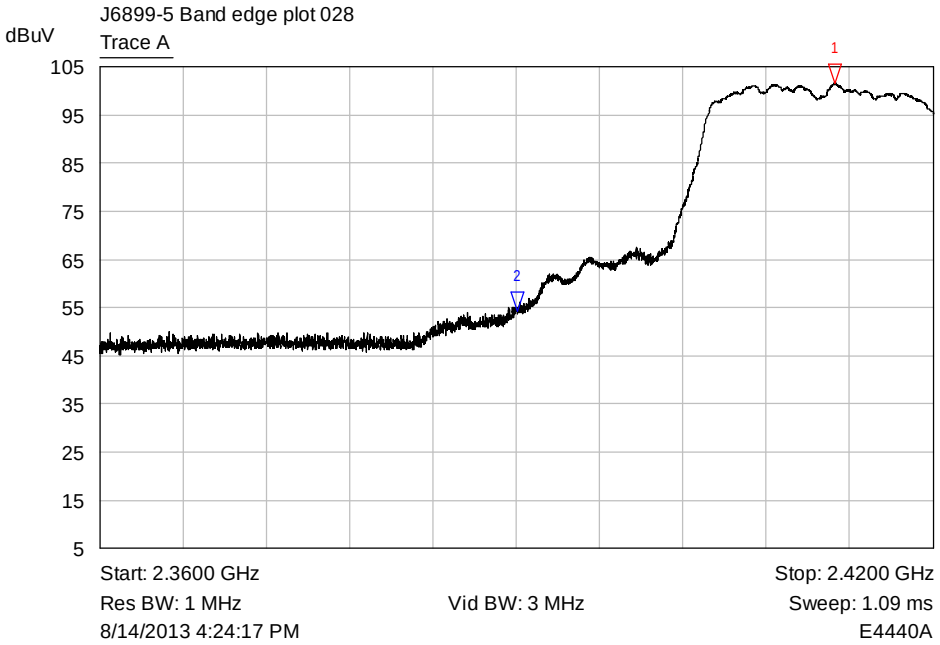
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	93.73 dBuV	
2	Trace A	2.4836 GHz	43.67 dBuV	

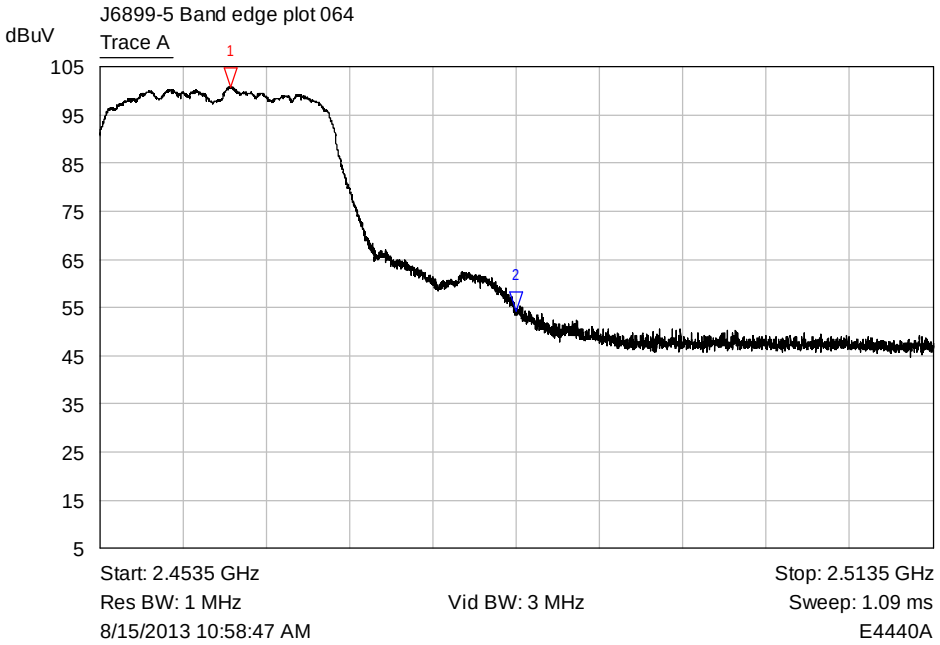
Band Edge: High channel

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



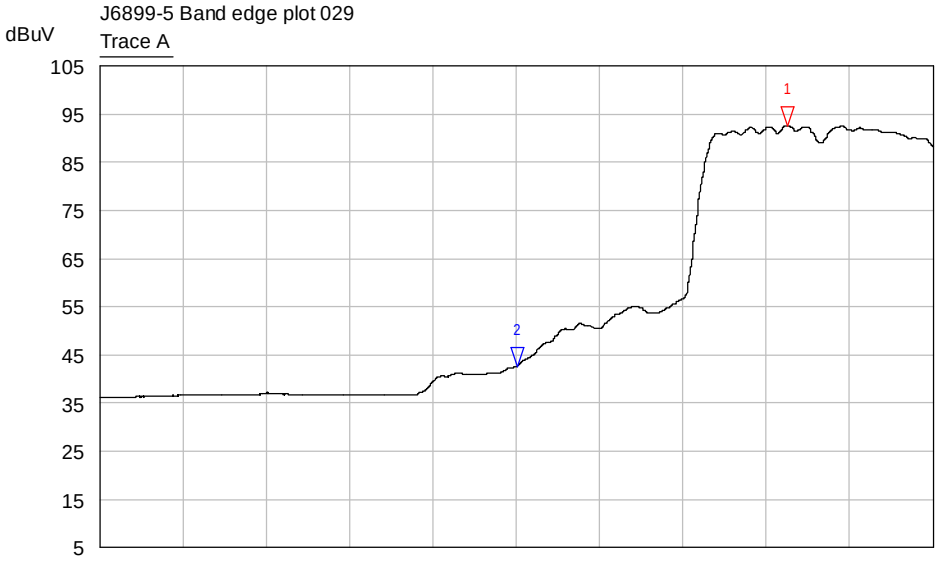
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4129 GHz	101.49 dBuV	
2 ▽	Trace A	2.3901 GHz	54.25 dBuV	

Restricted Band: Low channel Peak plot



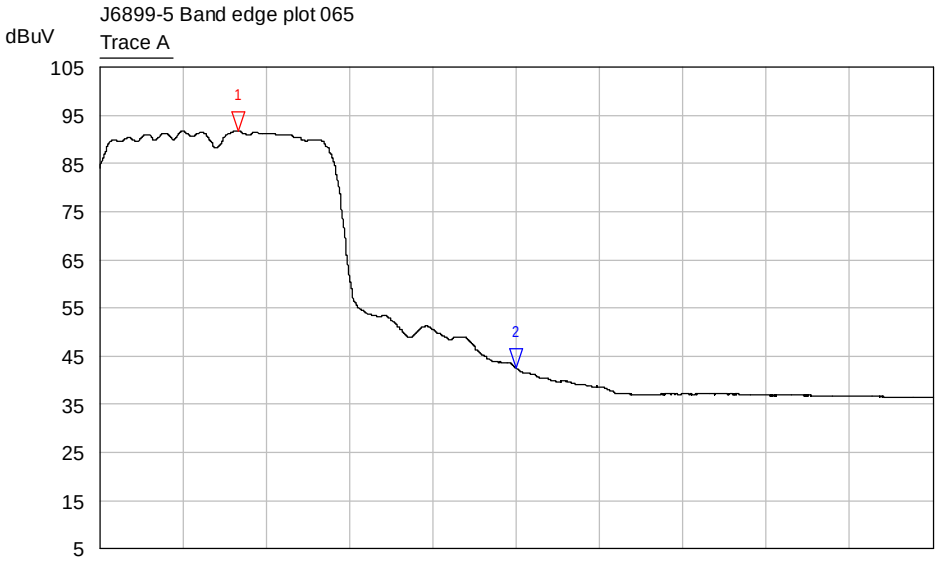
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4629 GHz	100.80 dBuV	
2 ▽	Trace A	2.4835 GHz	54.32 dBuV	

Restricted Band: High channel Peak plot



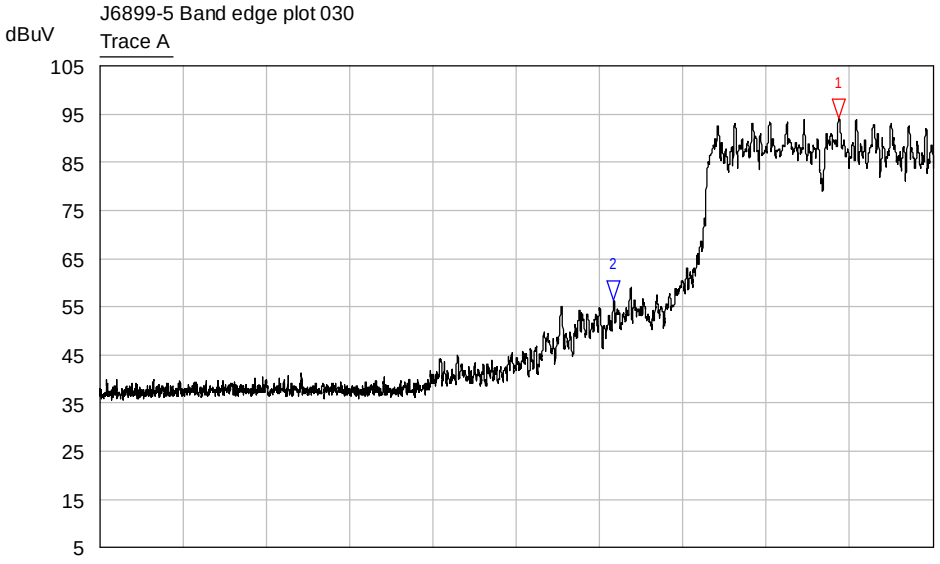
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4095 GHz	92.70 dBuV	
2	Trace A	2.3901 GHz	42.66 dBuV	

Restricted Band: Low channel Average plot



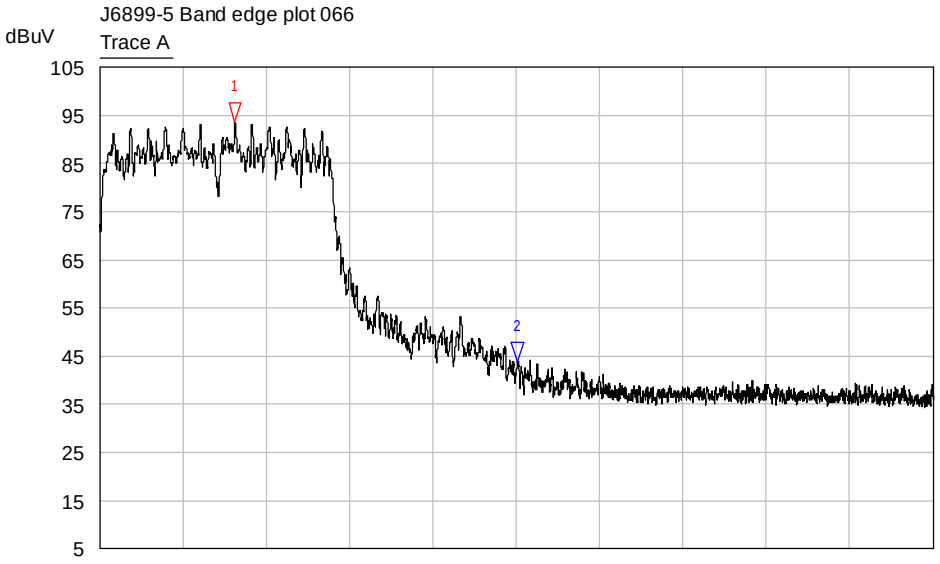
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4635 GHz	91.85 dBuV	
2	Trace A	2.4835 GHz	42.51 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	94.21 dBuV	
2	Trace A	2.3970 GHz	56.29 dBuV	

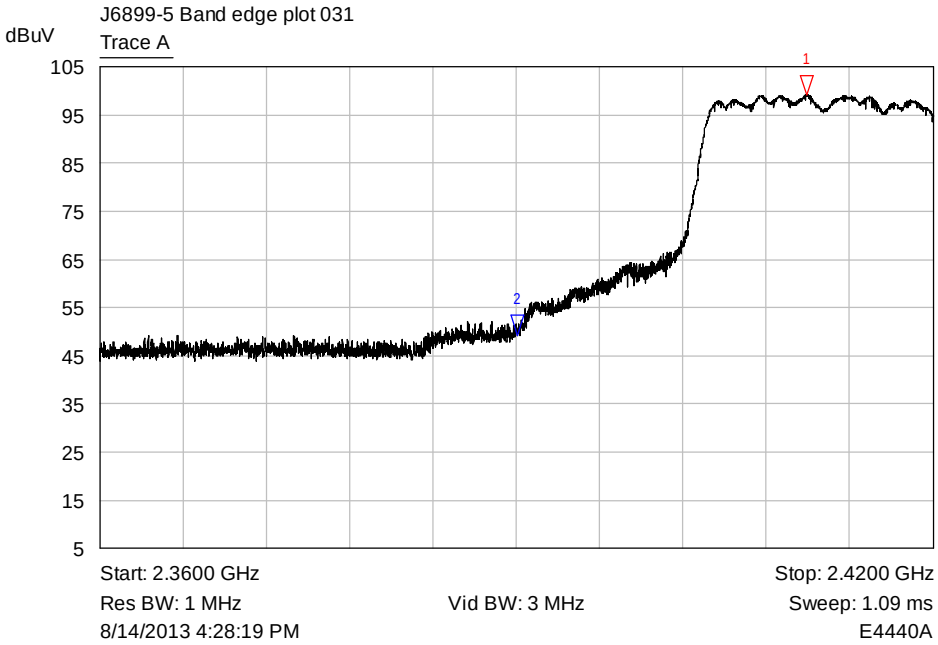
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	93.65 dBuV	
2	Trace A	2.4836 GHz	43.83 dBuV	

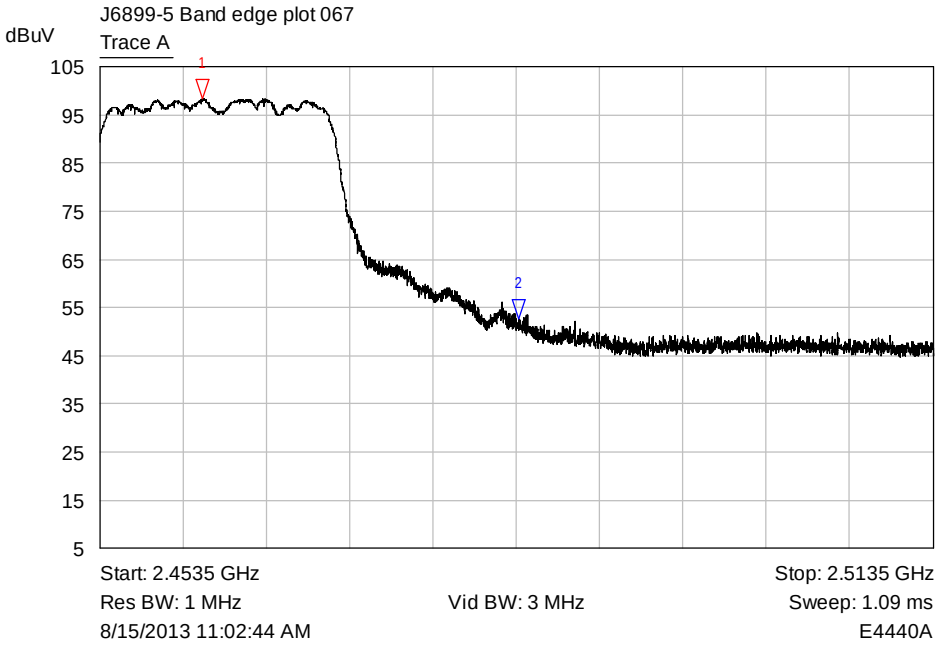
Band Edge: High channel

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



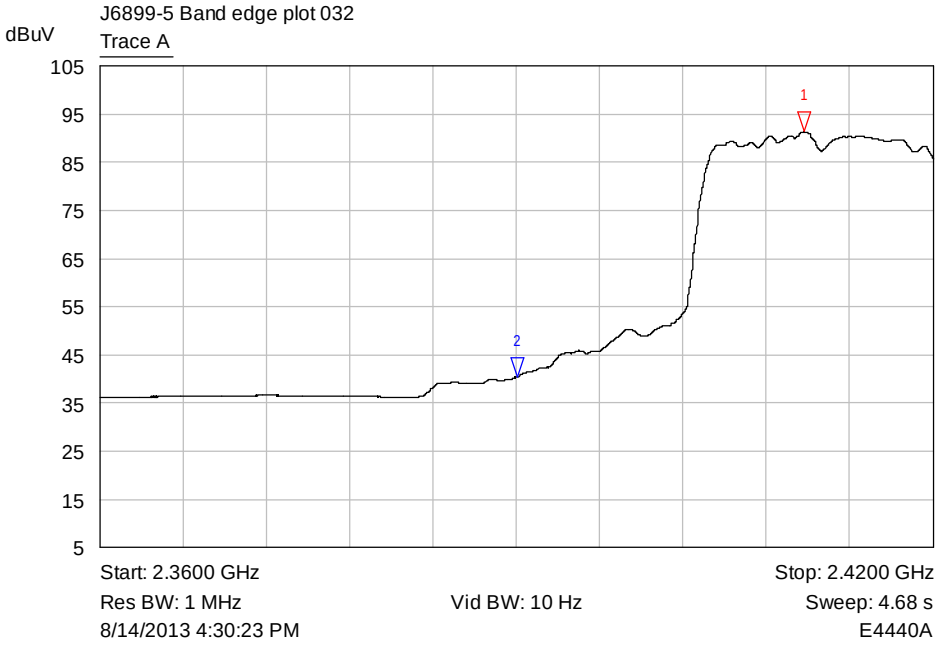
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4109 GHz	99.21 dBuV	
2 ▽	Trace A	2.3901 GHz	49.28 dBuV	

Restricted Band: Low channel Peak plot



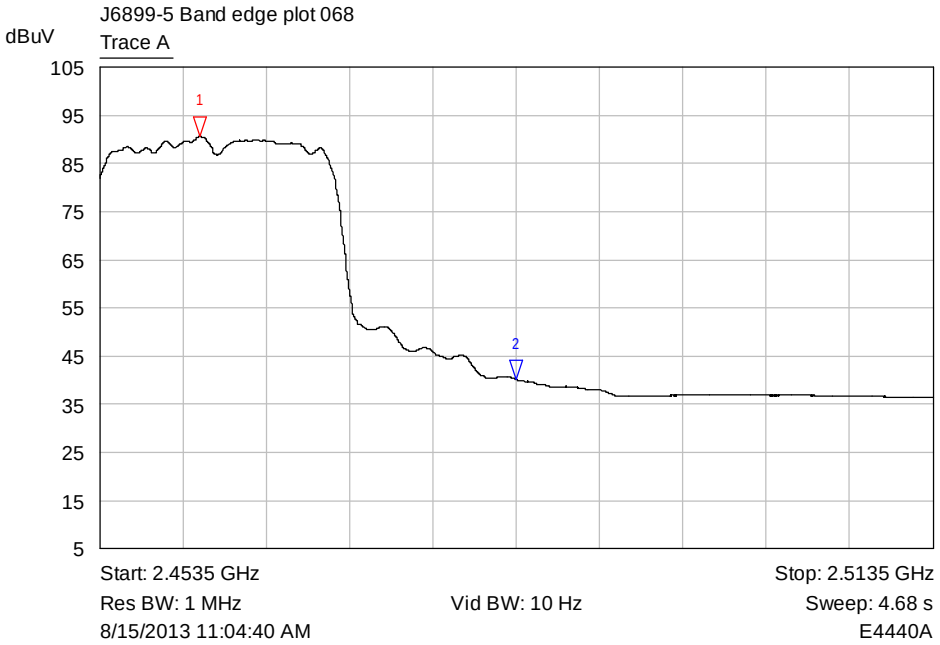
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4609 GHz	98.46 dBuV	
2 ▽	Trace A	2.4837 GHz	52.73 dBuV	

Restricted Band: High channel Peak plot



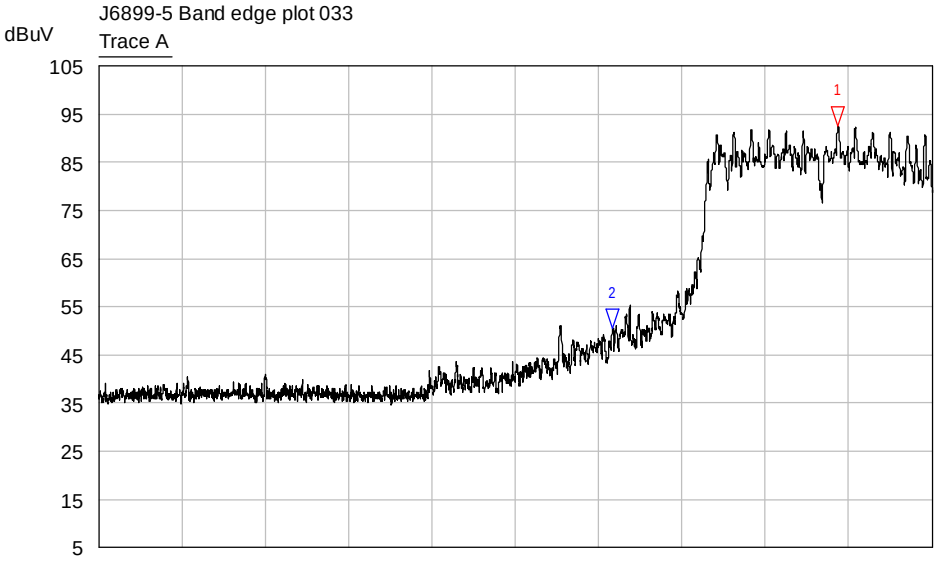
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4107 GHz	91.42 dBuV	
2	Trace A	2.3901 GHz	40.39 dBuV	

Restricted Band: Low channel Average plot



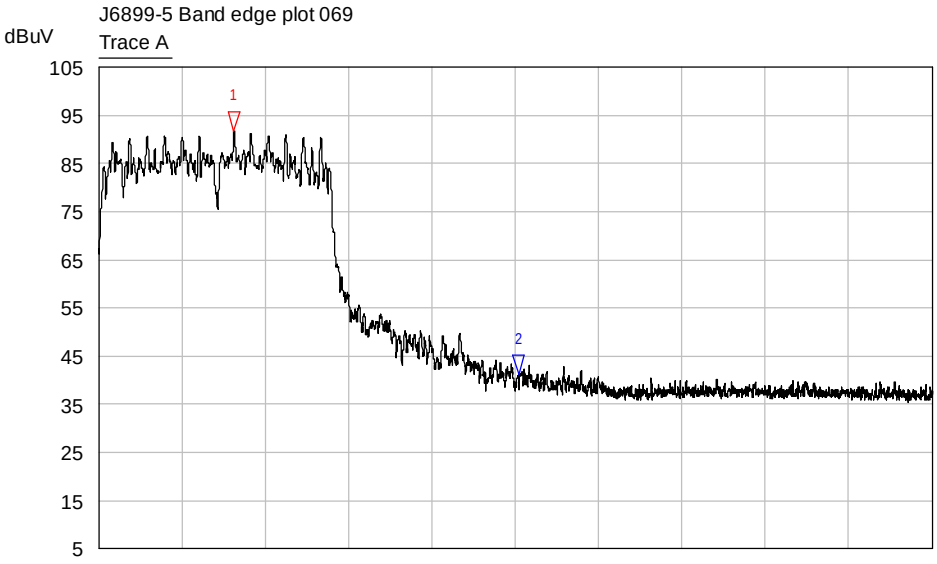
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4607 GHz	90.67 dBuV	
2	Trace A	2.4835 GHz	40.16 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	92.51 dBuV	
2	Trace A	2.3970 GHz	50.57 dBuV	

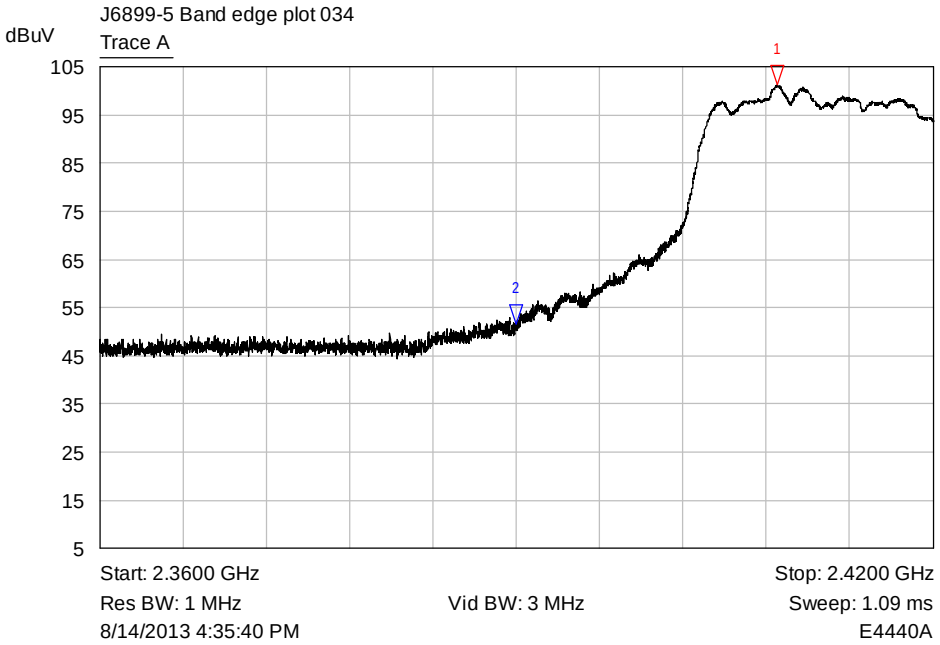
Band Edge: Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4633 GHz	91.84 dBuV	
2	Trace A	2.4837 GHz	41.30 dBuV	

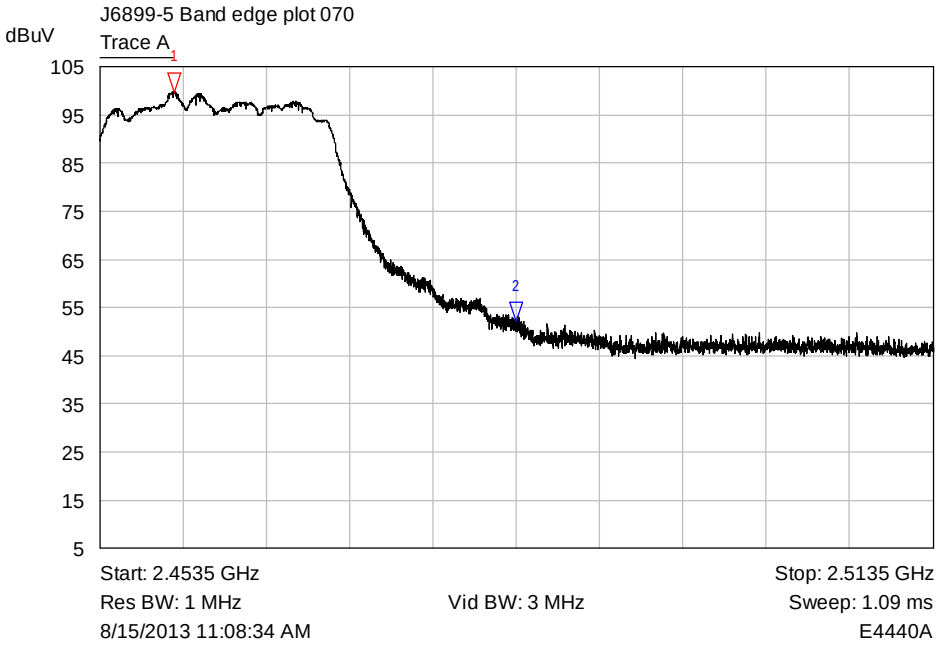
Band Edge: High channel

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



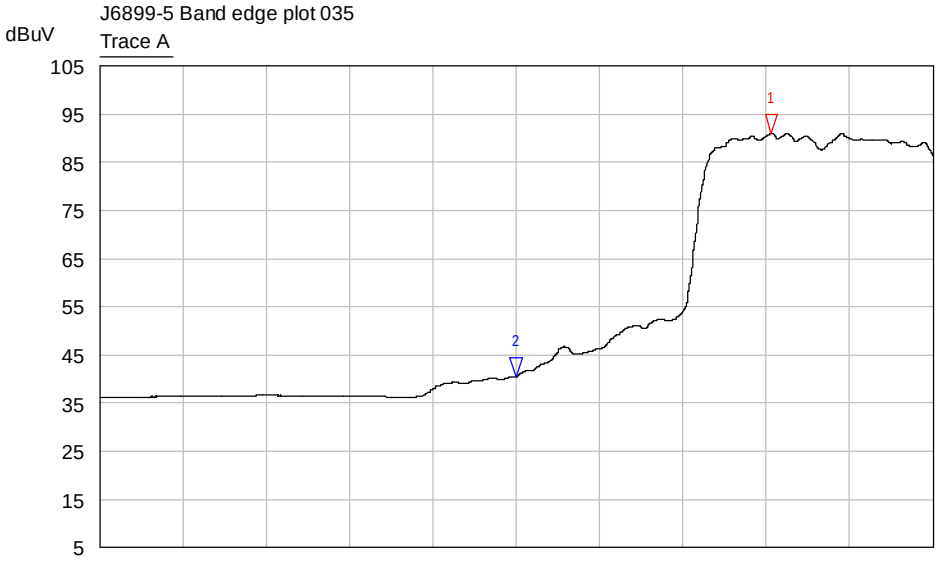
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4088 GHz	101.37 dBuV	
2 ▽	Trace A	2.3900 GHz	51.55 dBuV	

Restricted Band: Low channel Peak plot



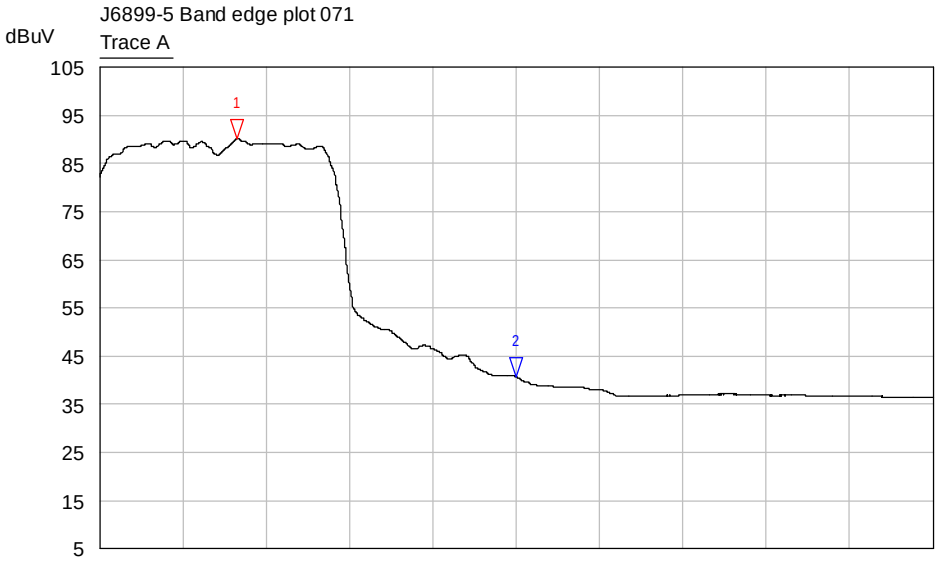
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4589 GHz	99.77 dBuV	
2 ▽	Trace A	2.4835 GHz	52.15 dBuV	

Restricted Band: High channel Peak plot



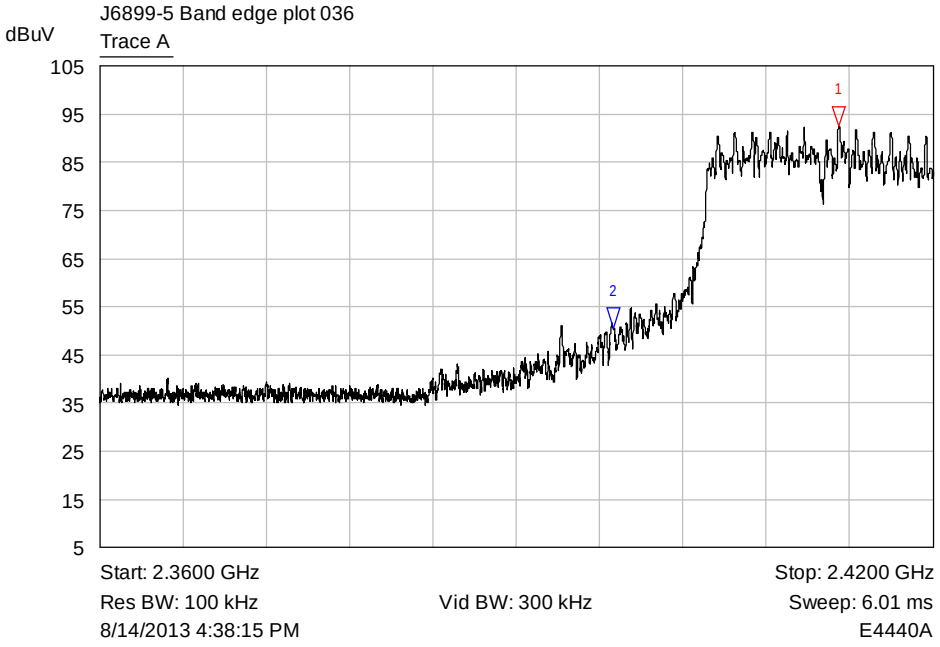
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4084 GHz	90.89 dBuV	
2	Trace A	2.3900 GHz	40.54 dBuV	

Restricted Band: Low channel Average plot



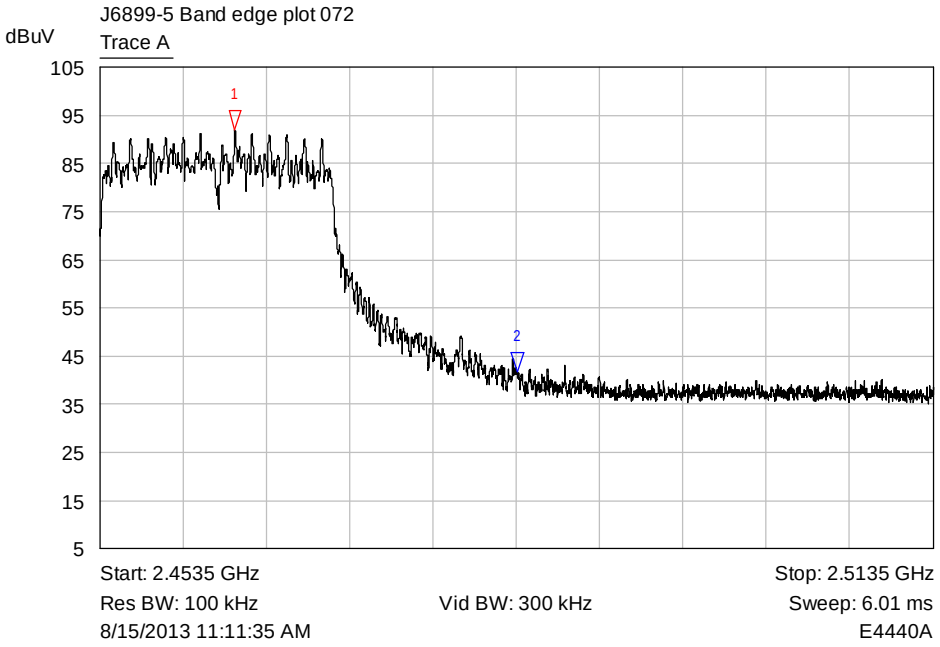
Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4634 GHz	90.14 dBuV	
2	Trace A	2.4835 GHz	40.67 dBuV	

Restricted Band: High channel Average plot



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4133 GHz	92.62 dBuV	
2	Trace A	2.3970 GHz	50.59 dBuV	

Band Edge: Low channel

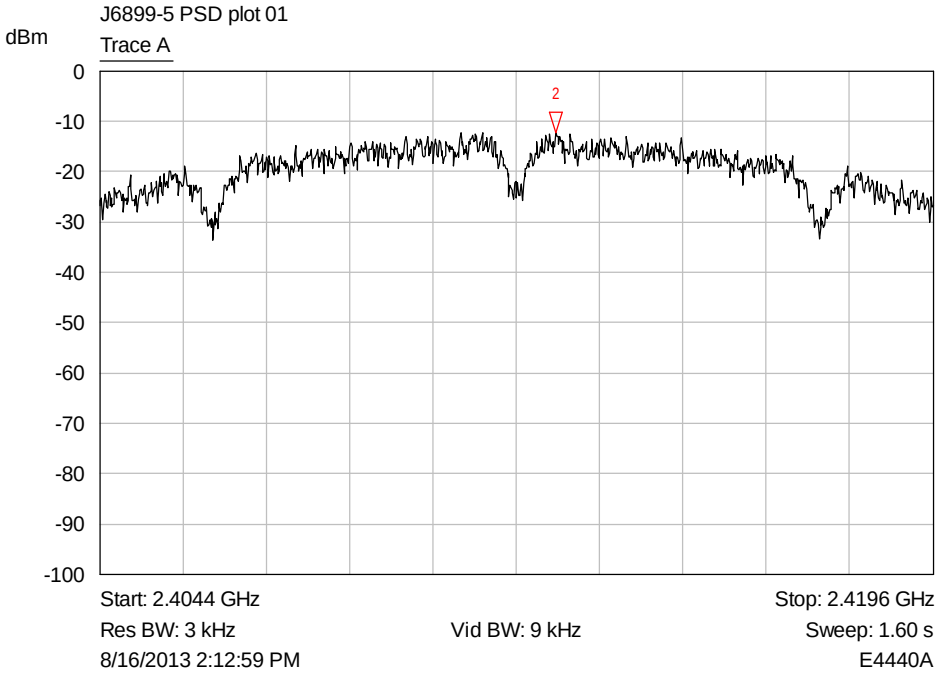


Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4632 GHz	91.99 dBuV	
2	Trace A	2.4836 GHz	41.62 dBuV	

Band Edge: High channel

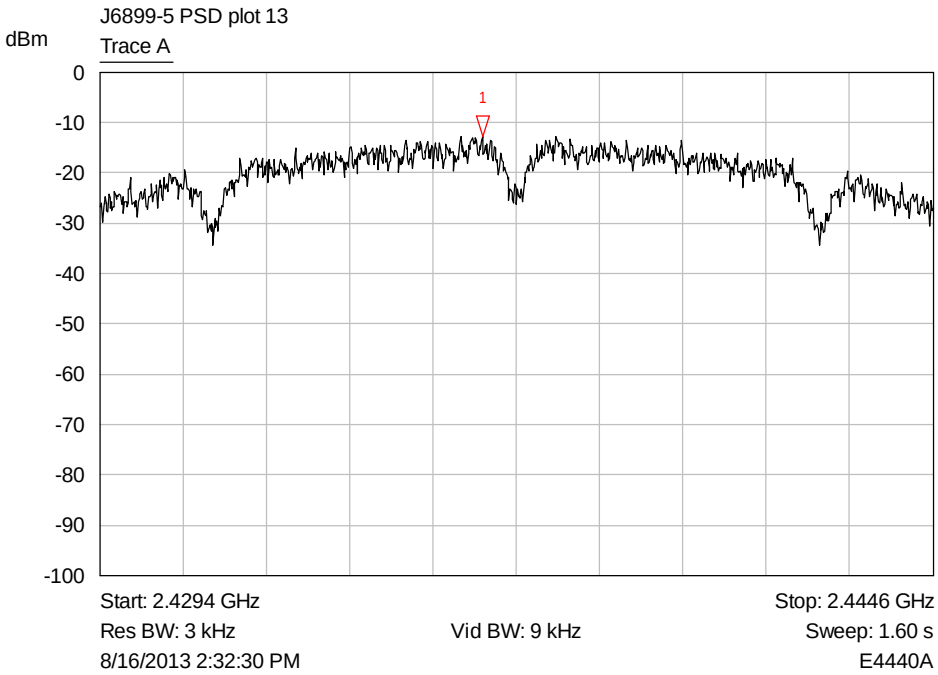
6.5 Power spectral density plots

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



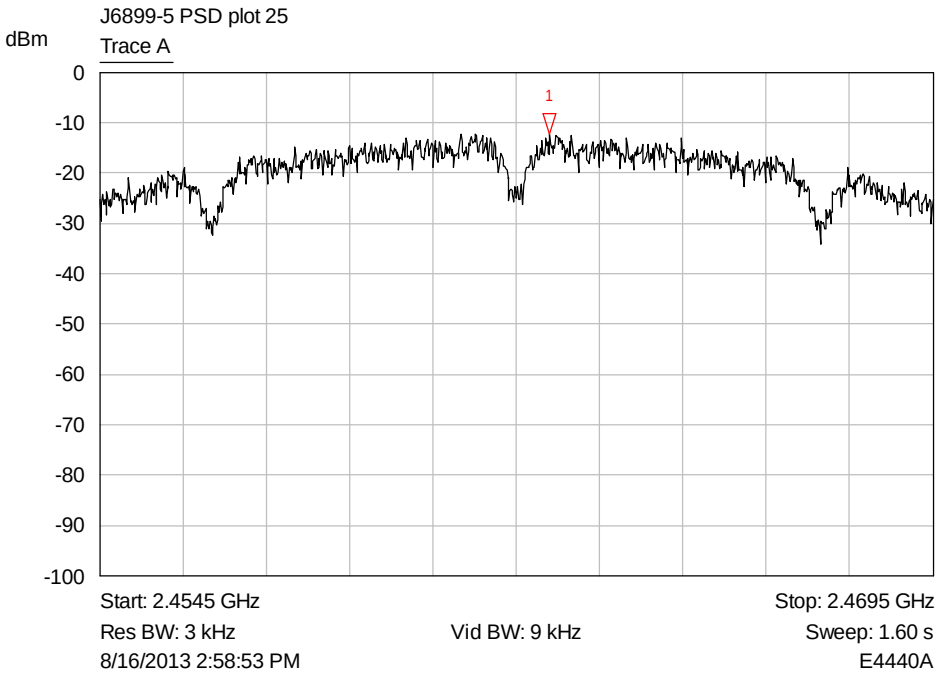
Mkr	Trace	X-Axis	Value	Notes
2 ▽	Trace A	2.4127 GHz	-12.19 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4364 GHz	-12.77 dBm	

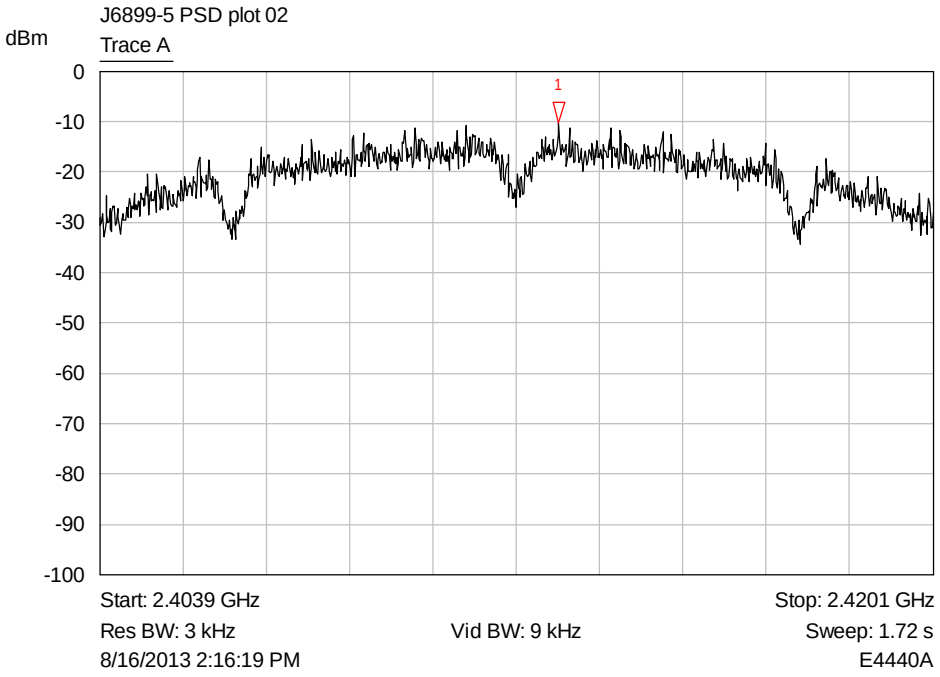
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4626 GHz	-12.29 dBm	

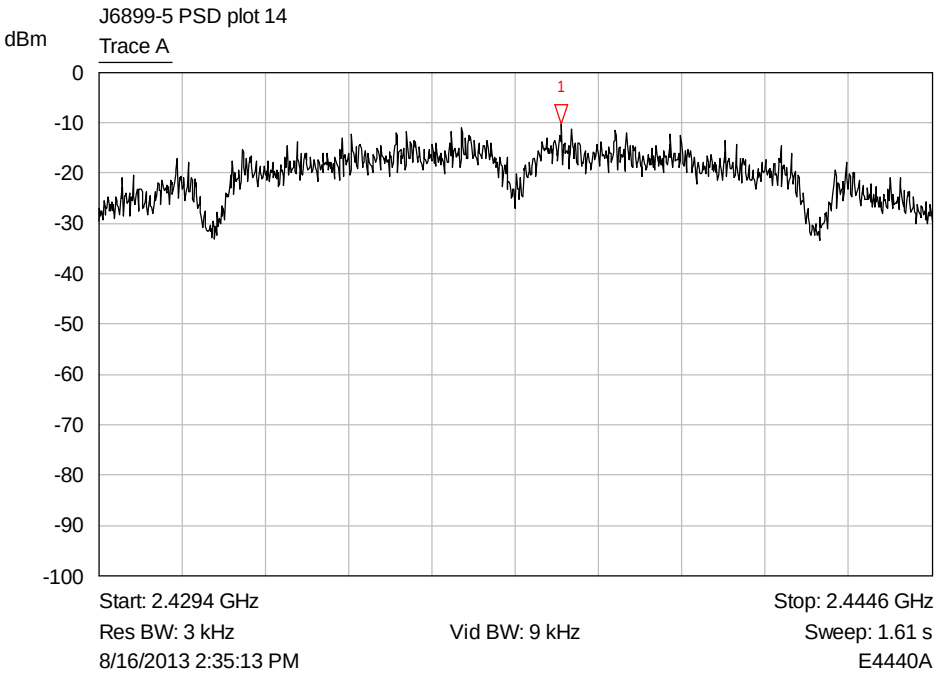
High channel

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



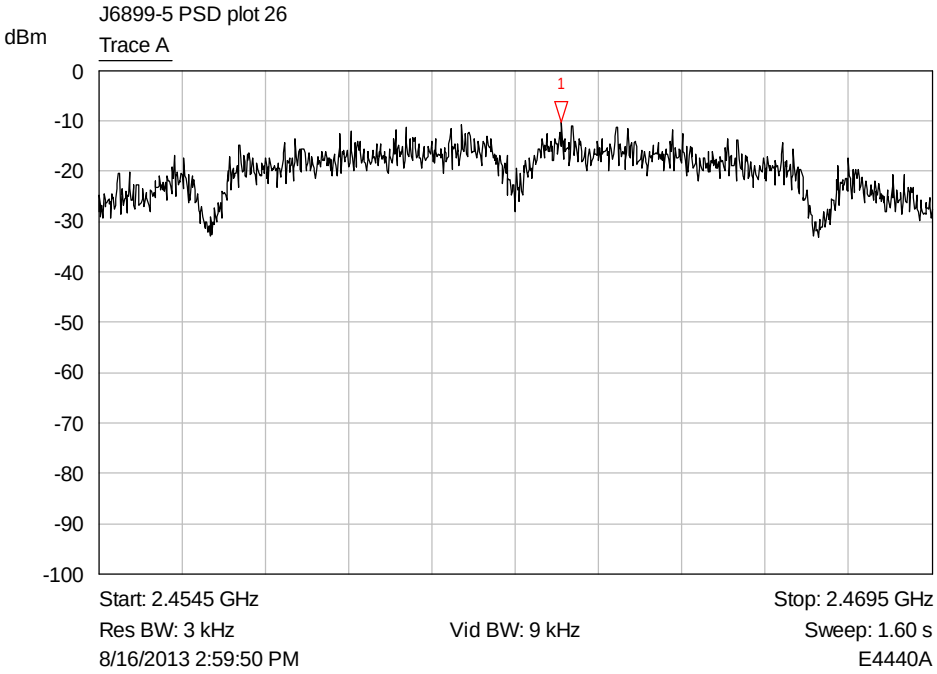
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4128 GHz	-10.23 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4378 GHz	-10.33 dBm	

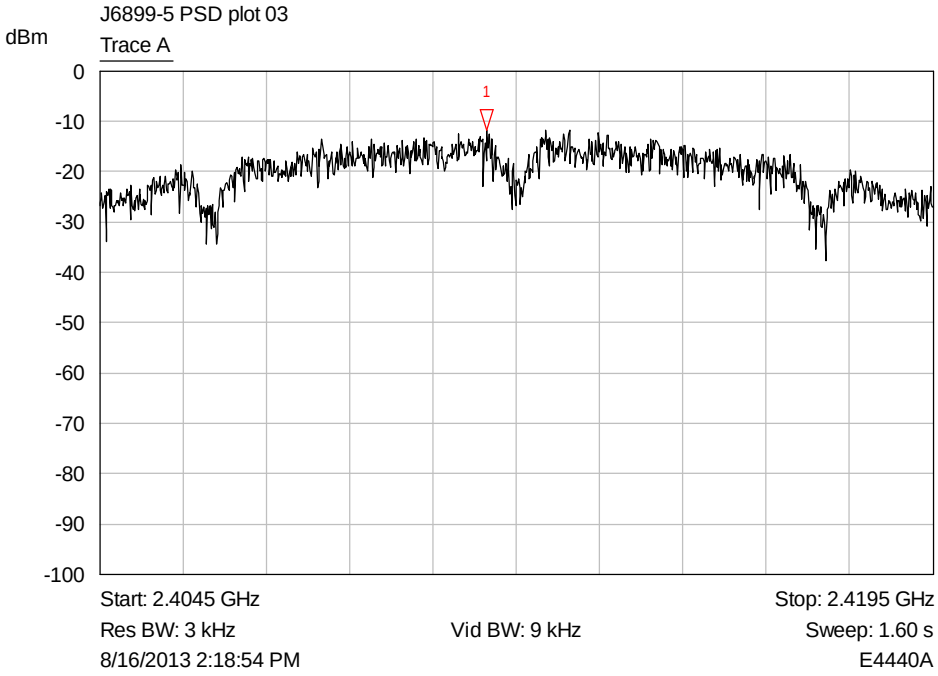
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4628 GHz	-10.11 dBm	

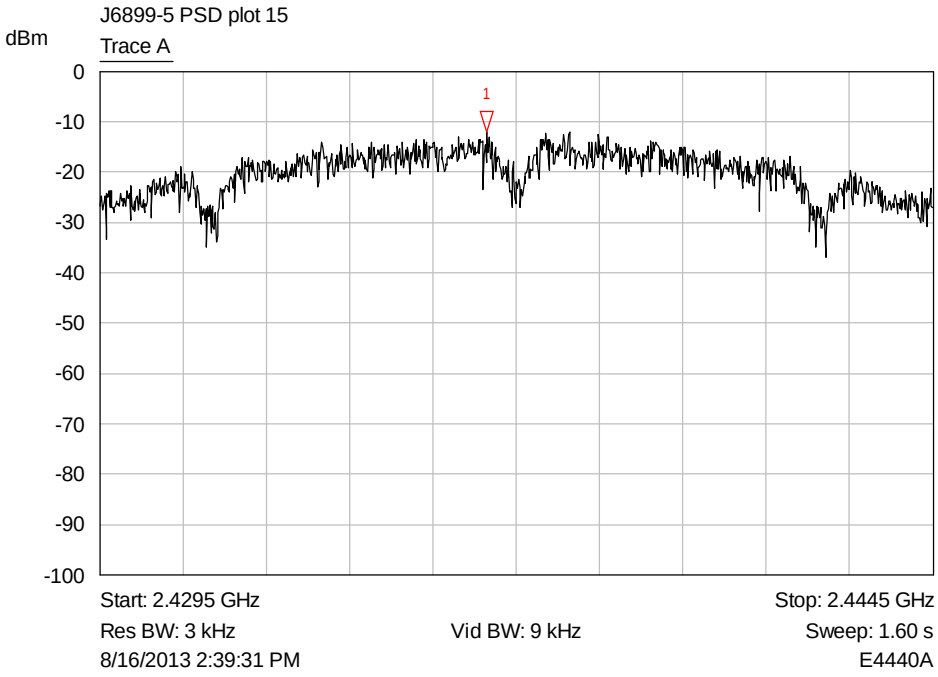
High channel

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



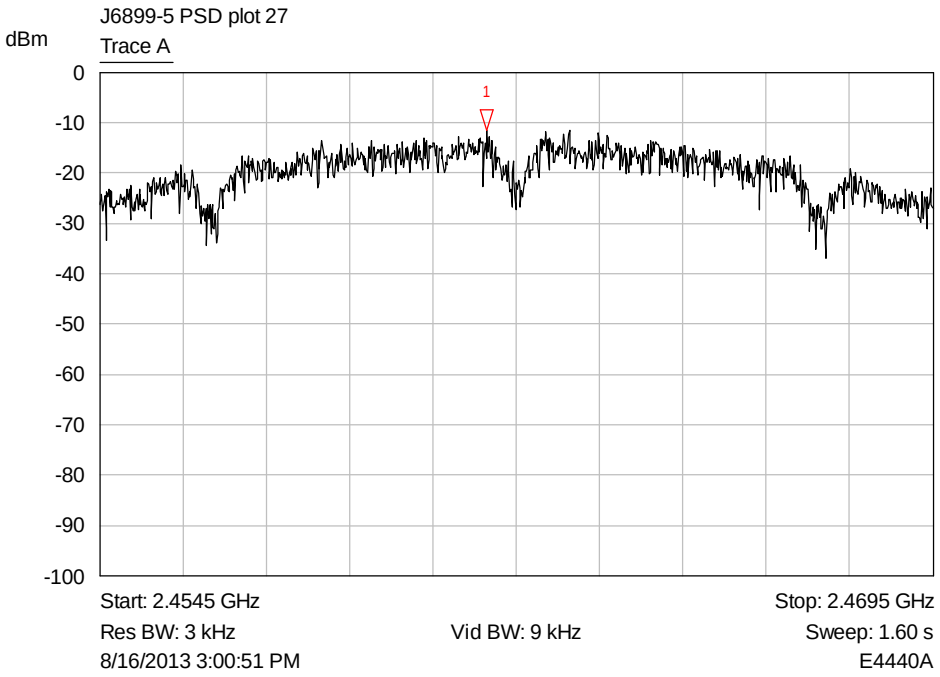
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4115 GHz	-11.67 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4365 GHz	-11.93 dBm	

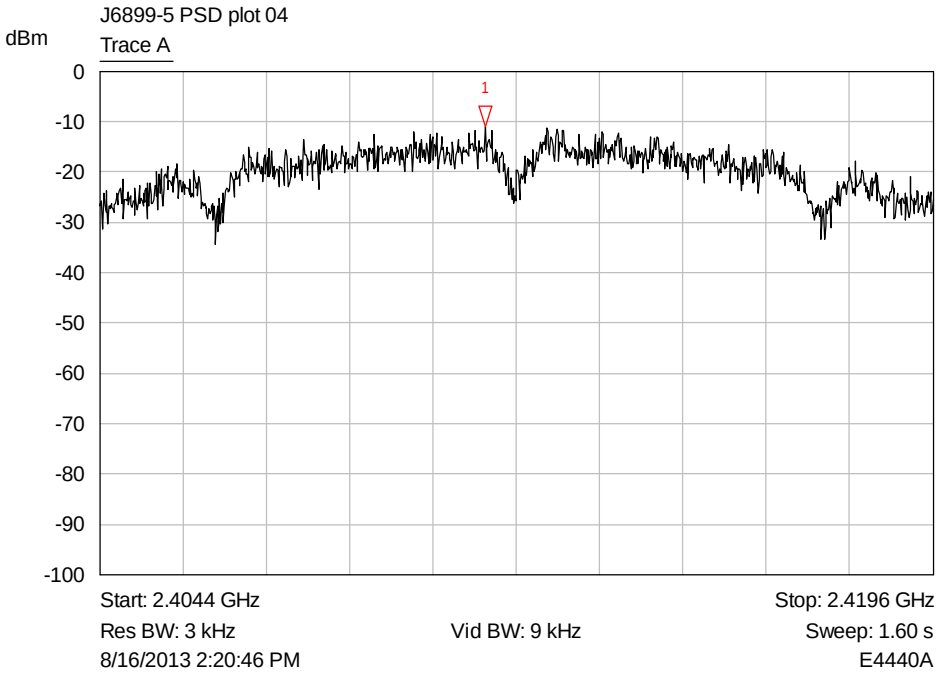
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4615 GHz	-11.43 dBm	

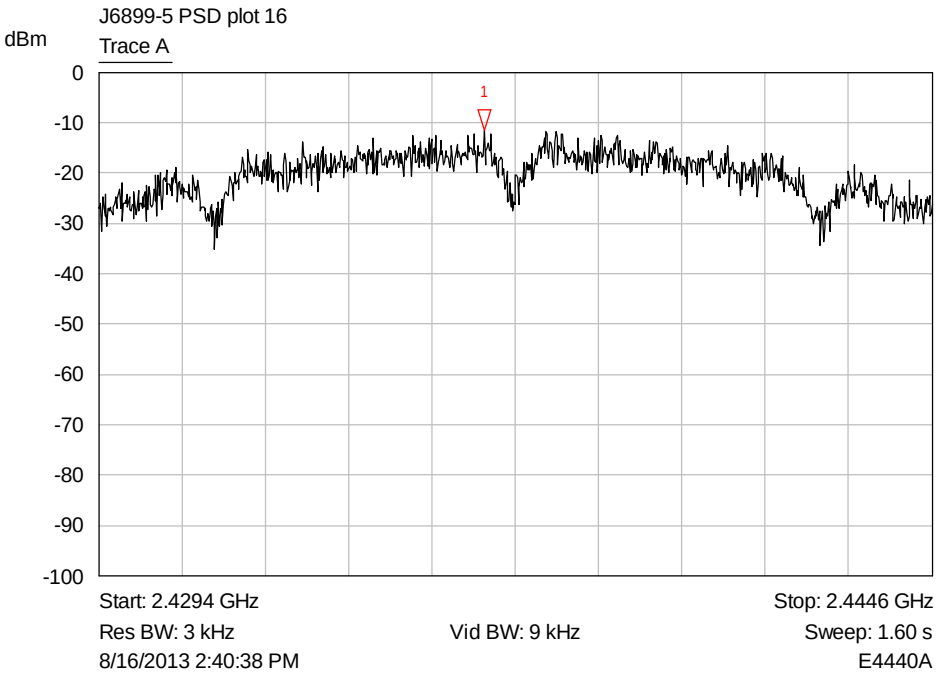
High channel

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



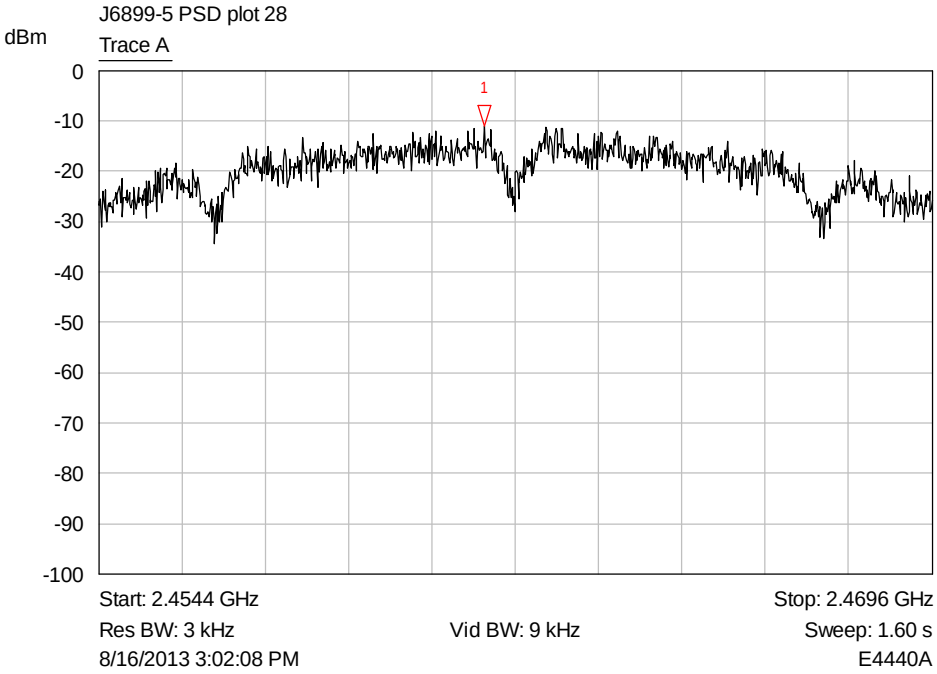
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4114 GHz	-10.99 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4364 GHz	-11.57 dBm	

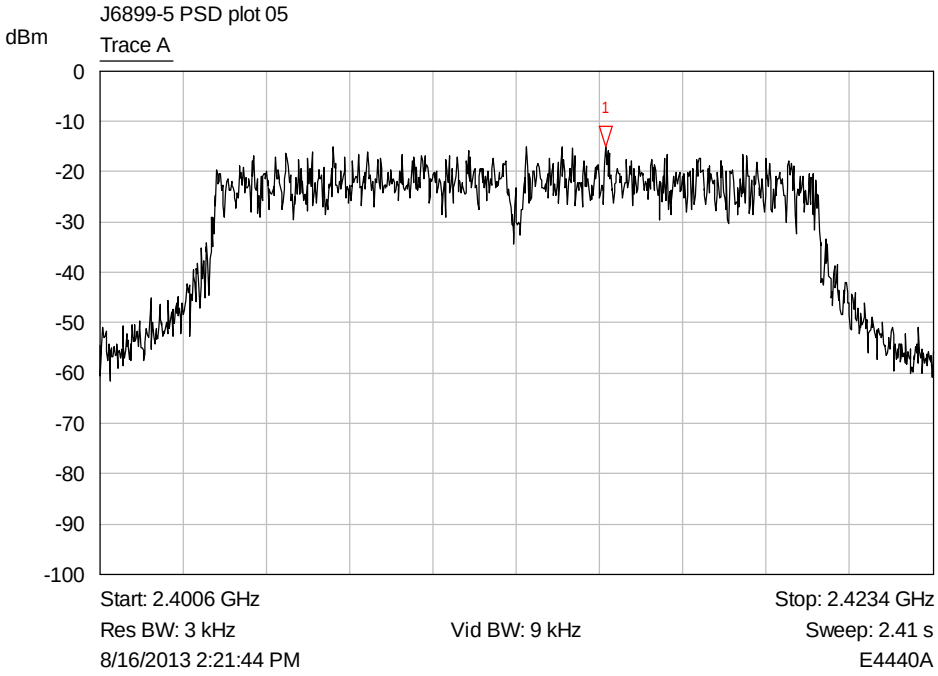
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4614 GHz	-11.02 dBm	

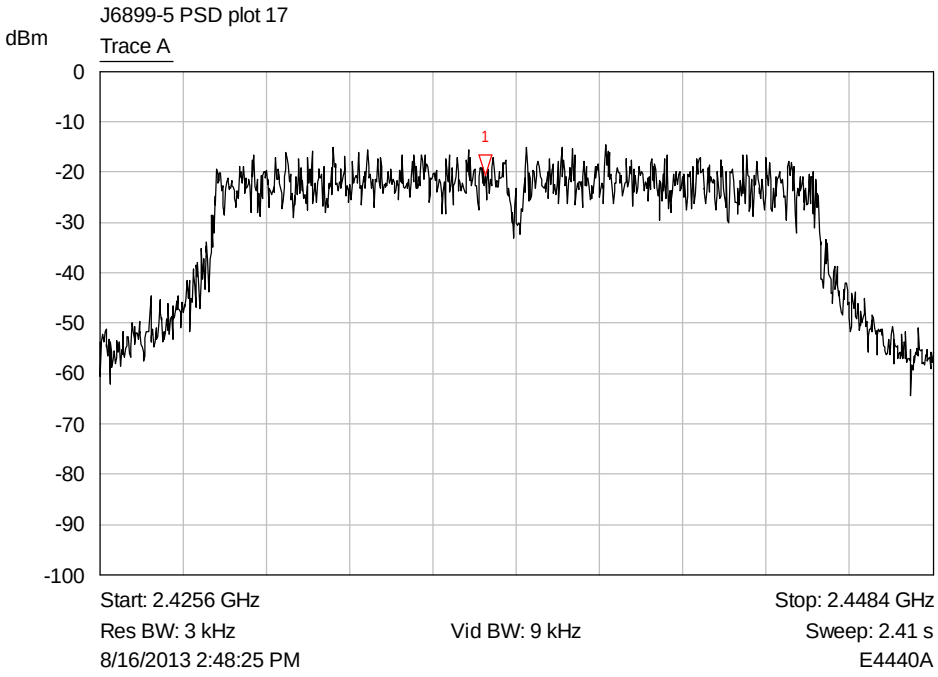
High channel

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



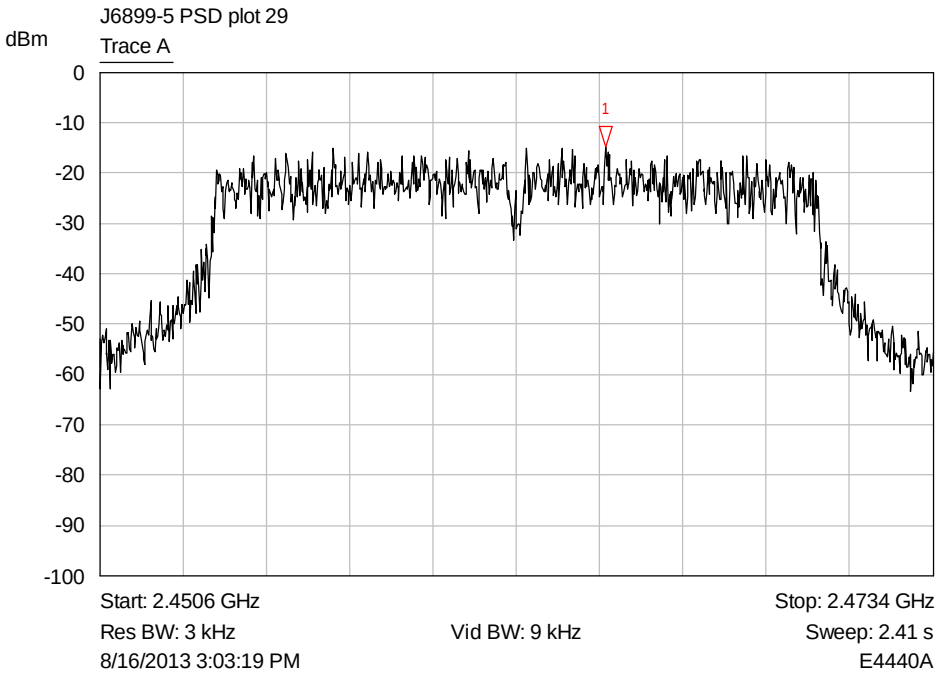
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4144 GHz	-14.95 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4361 GHz	-20.69 dBm	

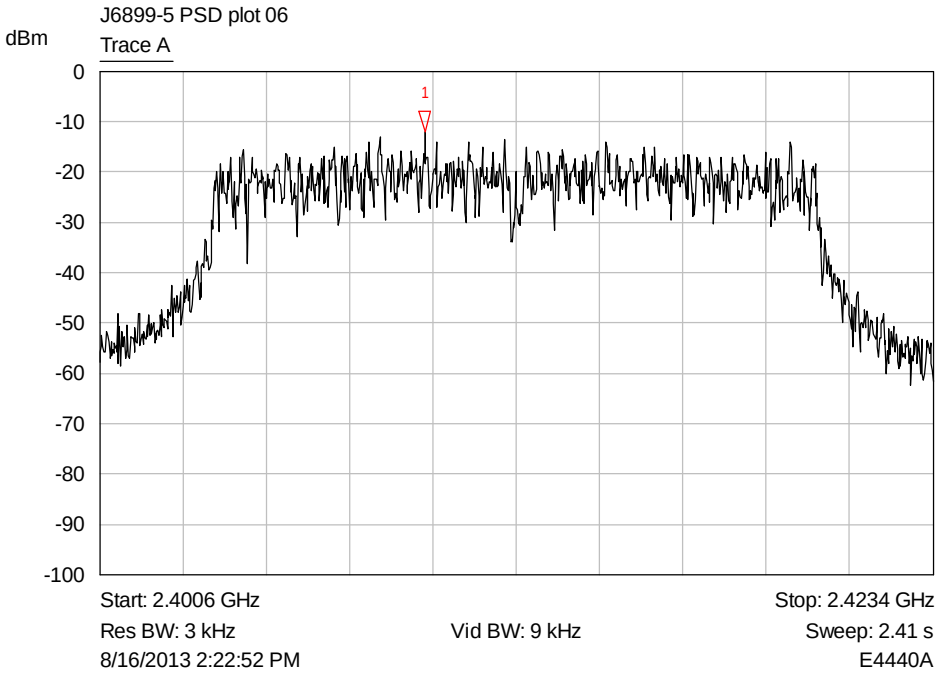
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4644 GHz	-14.91 dBm	

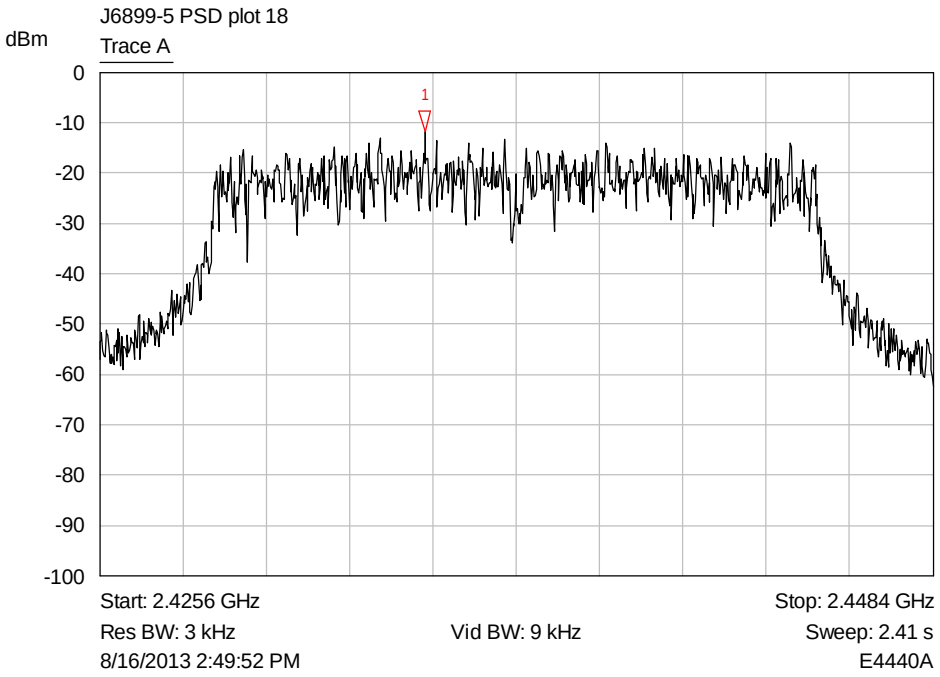
High channel

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



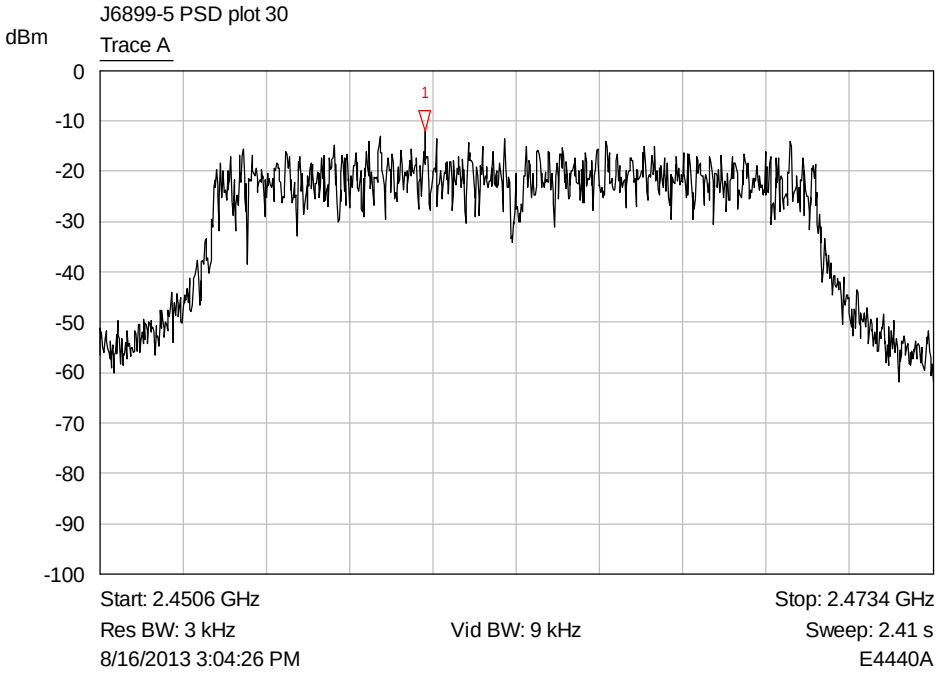
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4095 GHz	-12.08 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4345 GHz	-11.87 dBm	

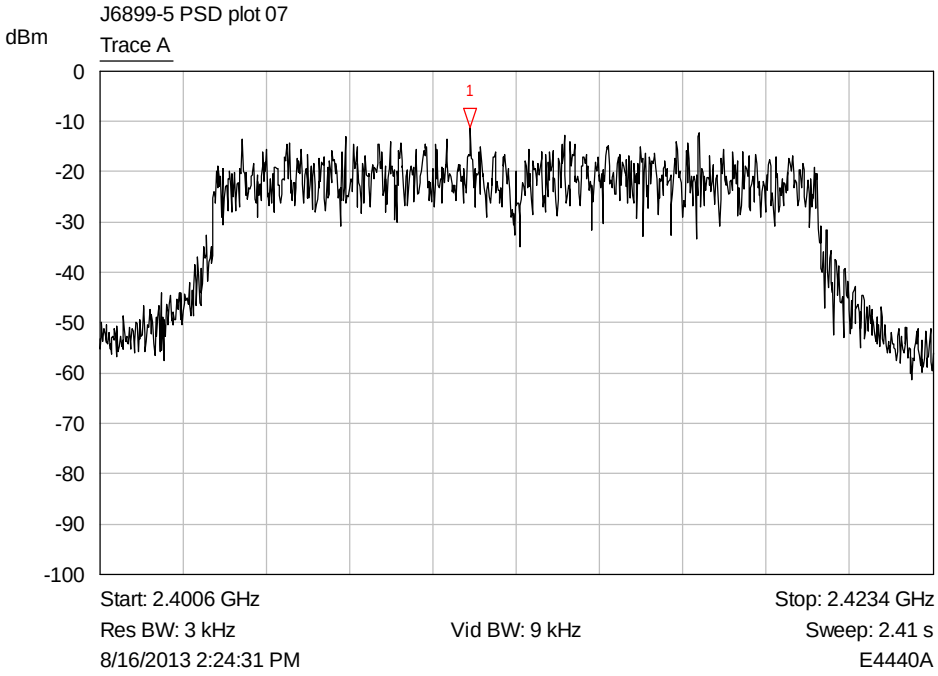
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4595 GHz	-12.04 dBm	

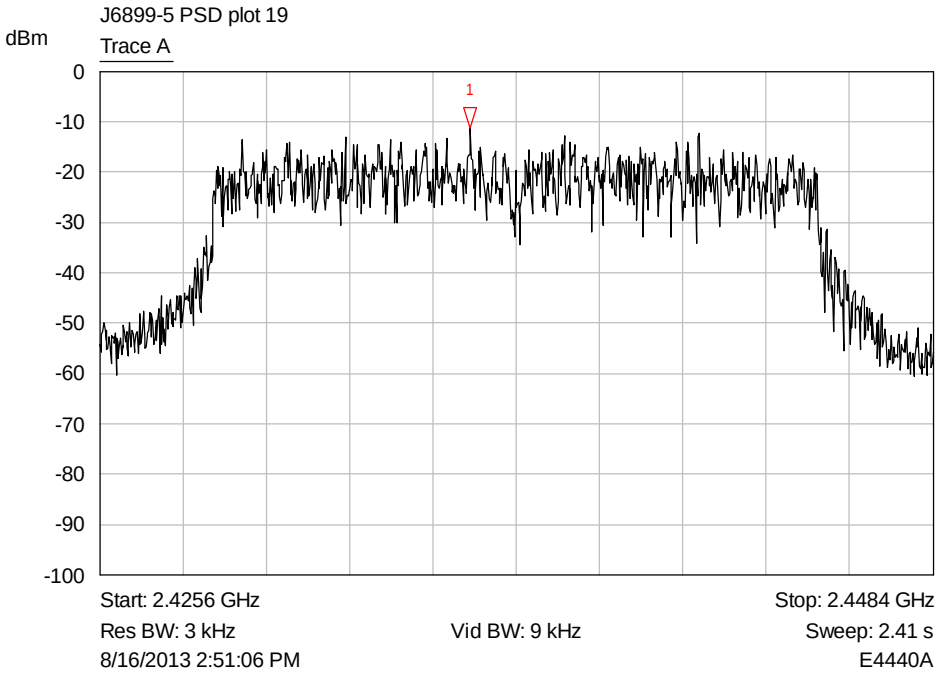
High channel

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



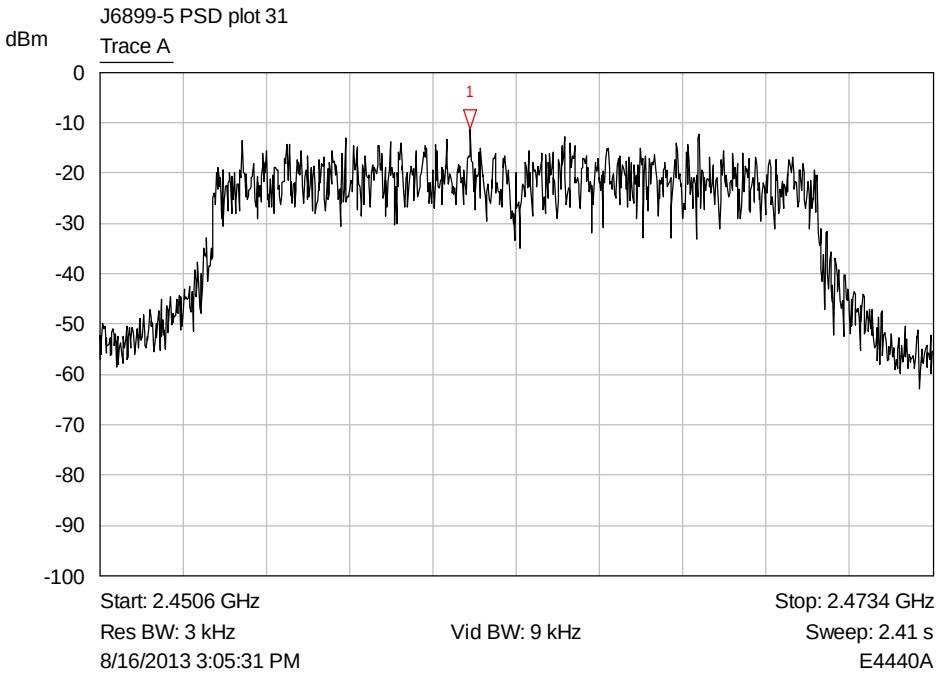
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4108 GHz	-11.36 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4358 GHz	-11.25 dBm	

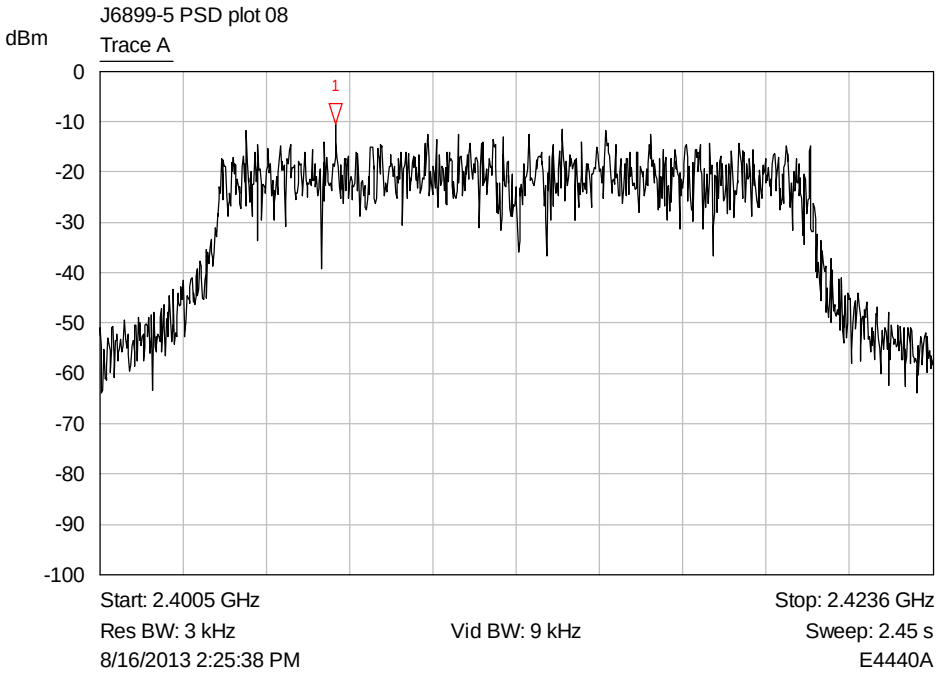
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4608 GHz	-11.35 dBm	

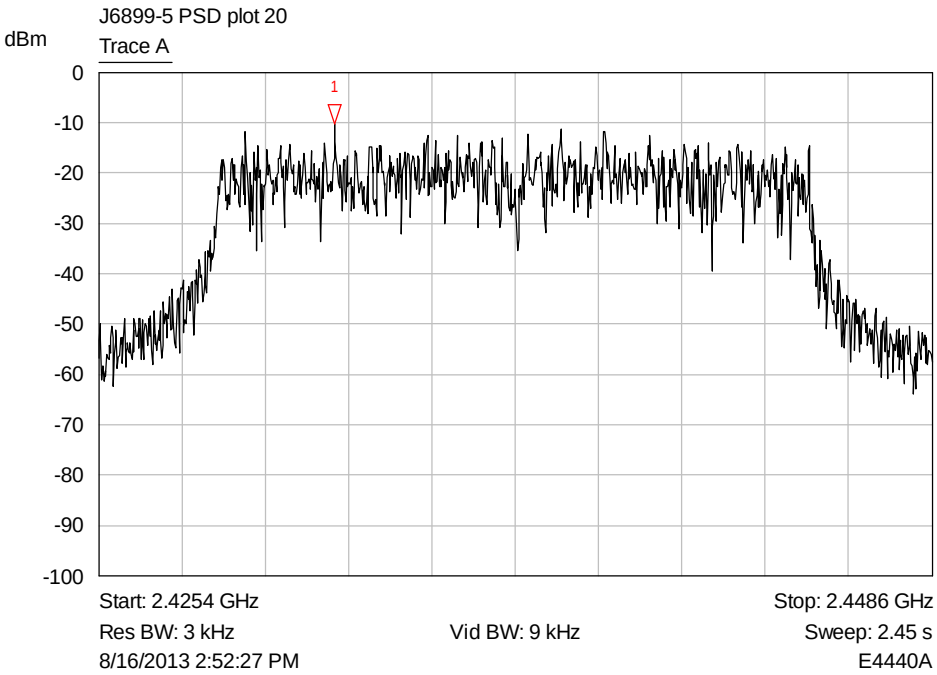
High channel

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



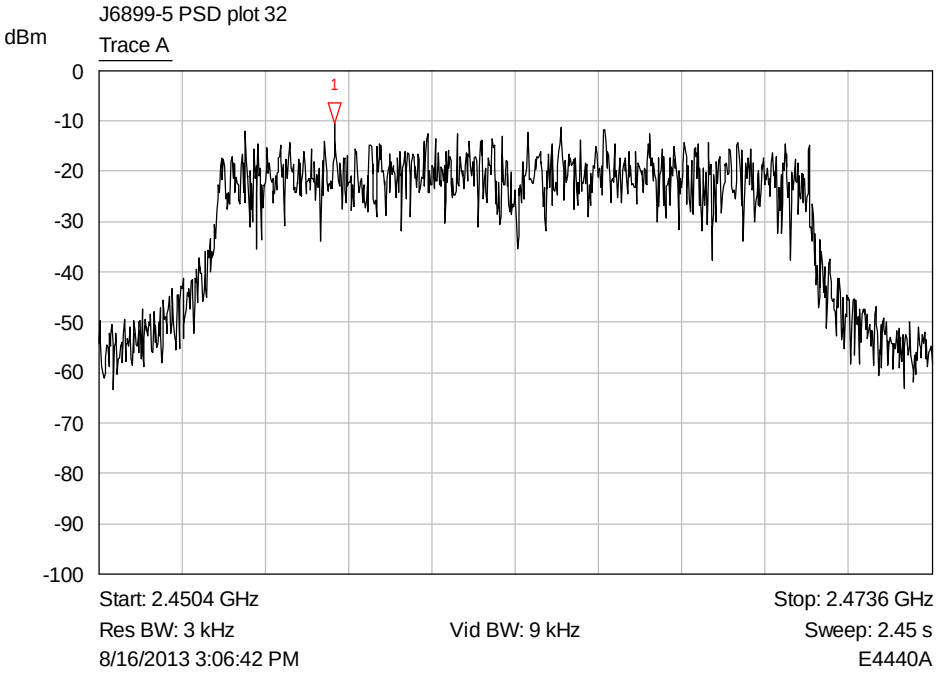
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4070 GHz	-10.55 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4320 GHz	-10.34 dBm	

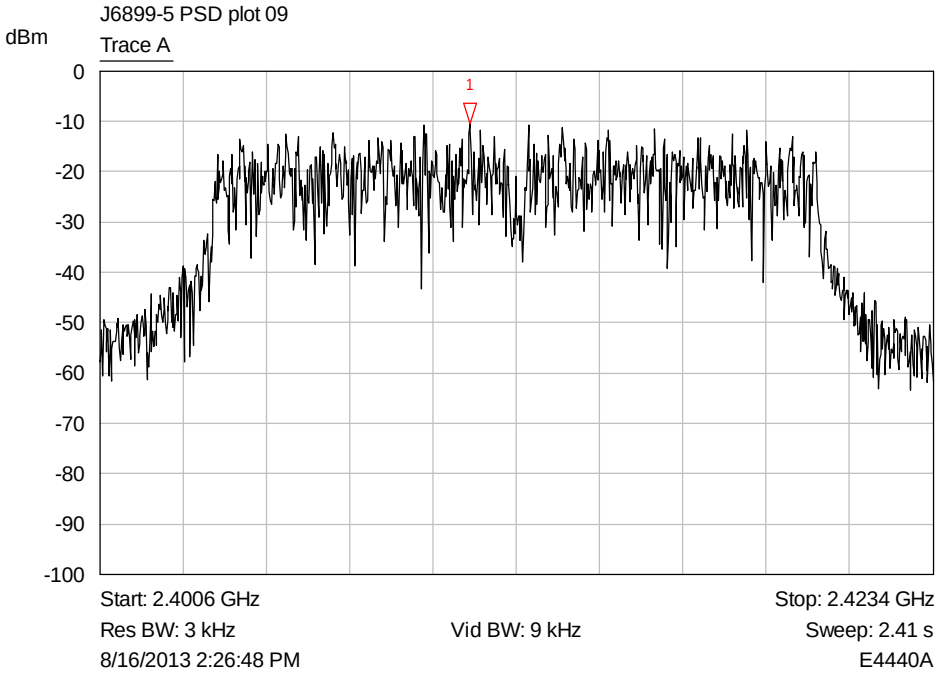
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4570 GHz	-10.55 dBm	

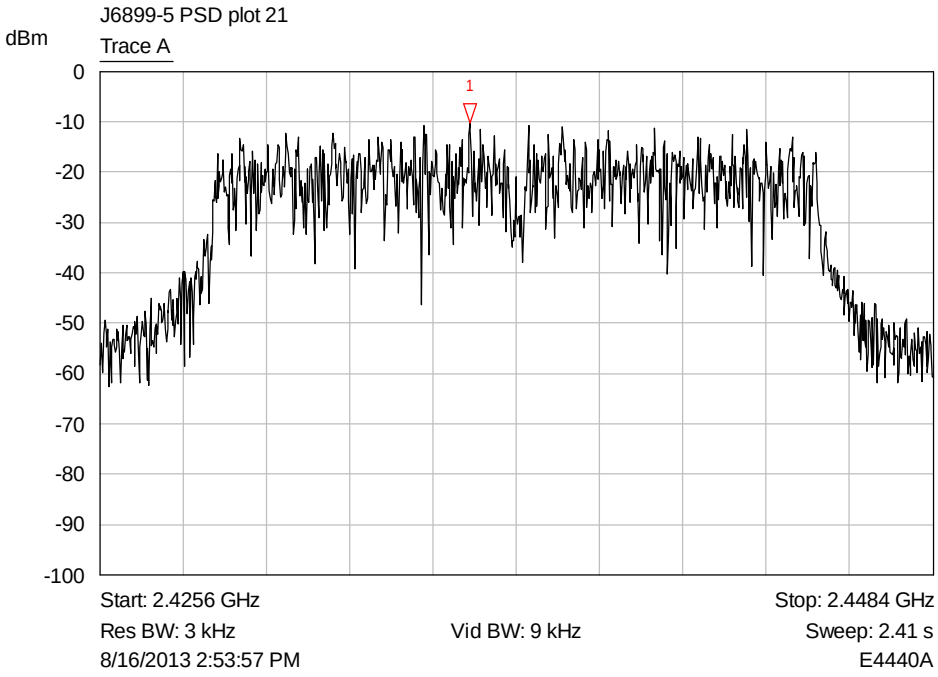
High channel

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



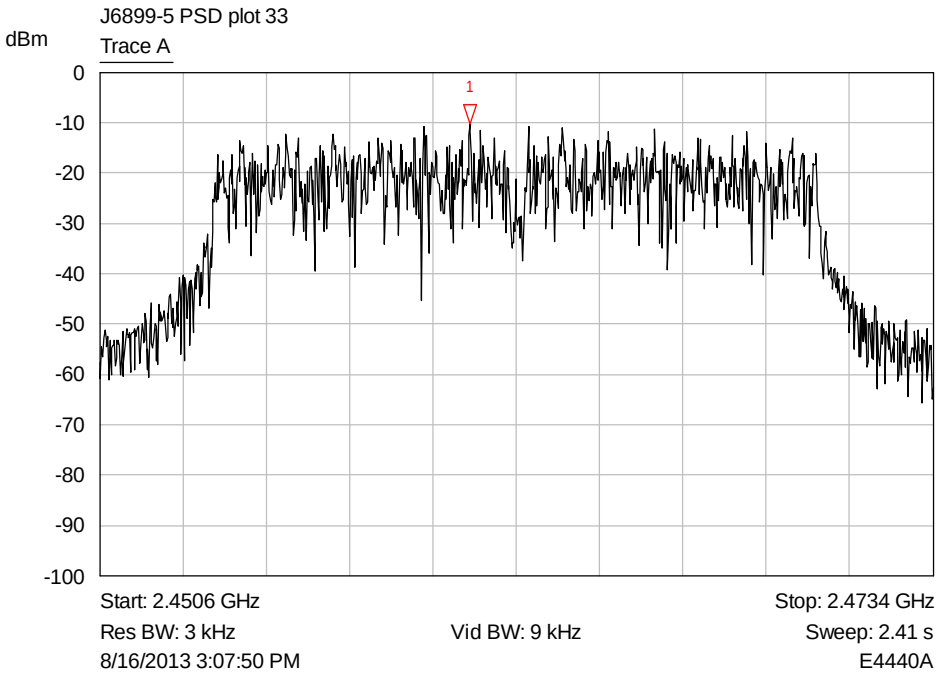
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4107 GHz	-10.50 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4357 GHz	-10.30 dBm	

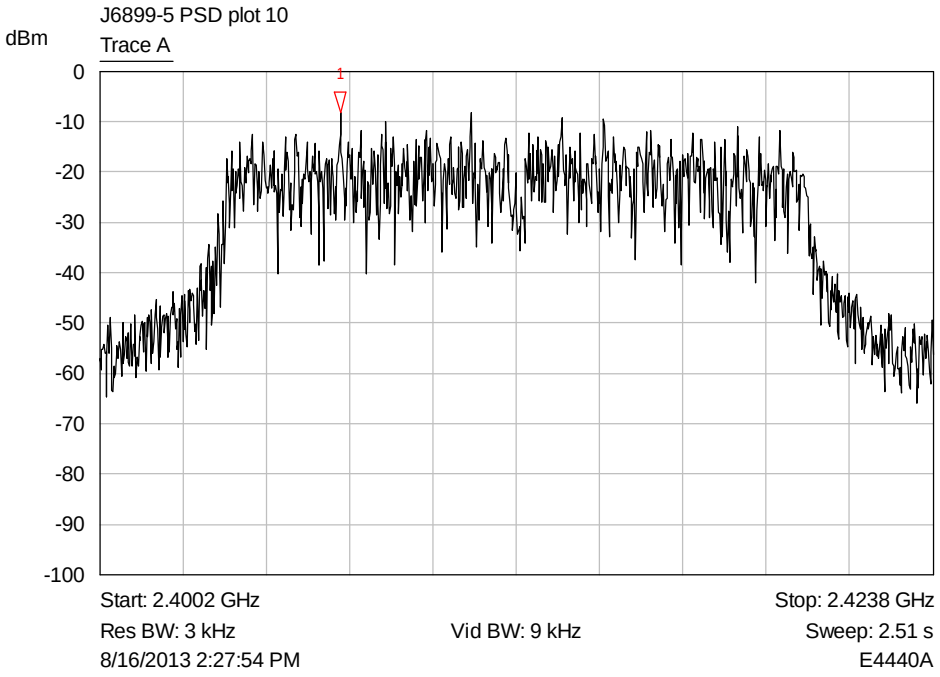
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4607 GHz	-10.38 dBm	

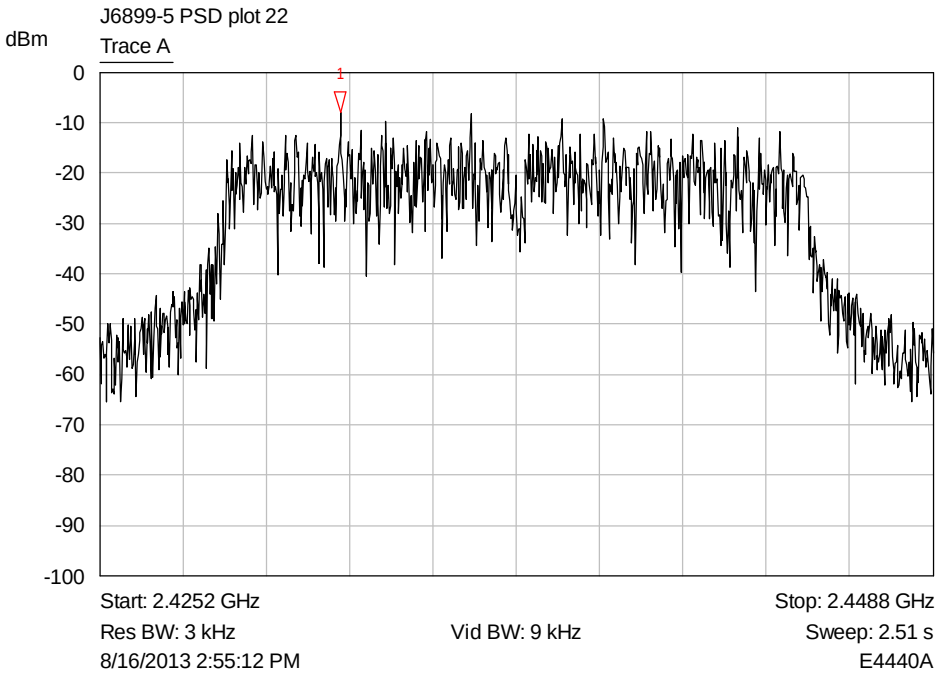
High channel

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



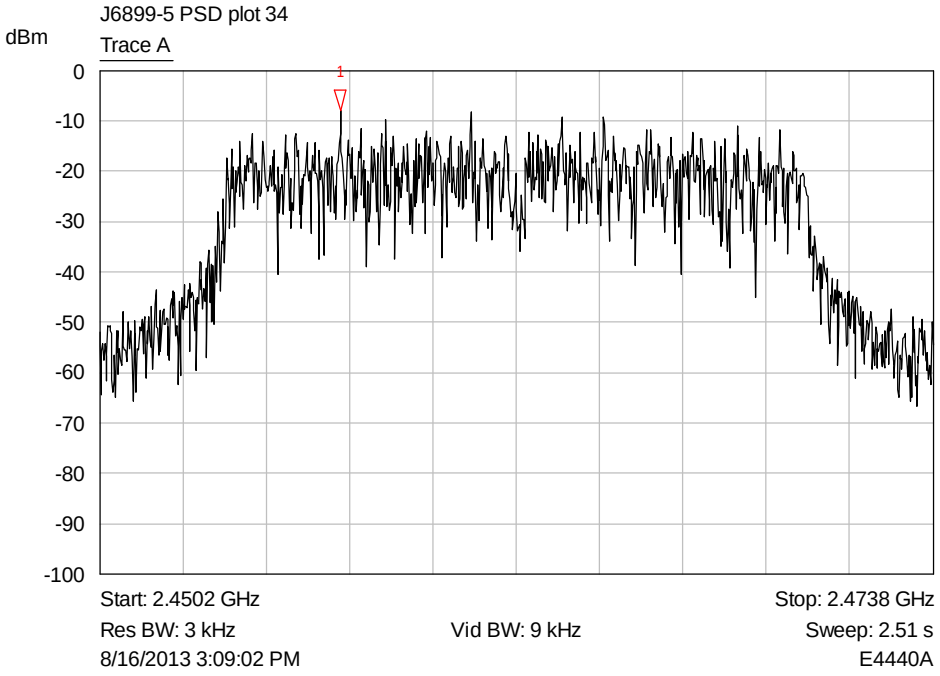
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4070 GHz	-8.15 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4320 GHz	-7.96 dBm	

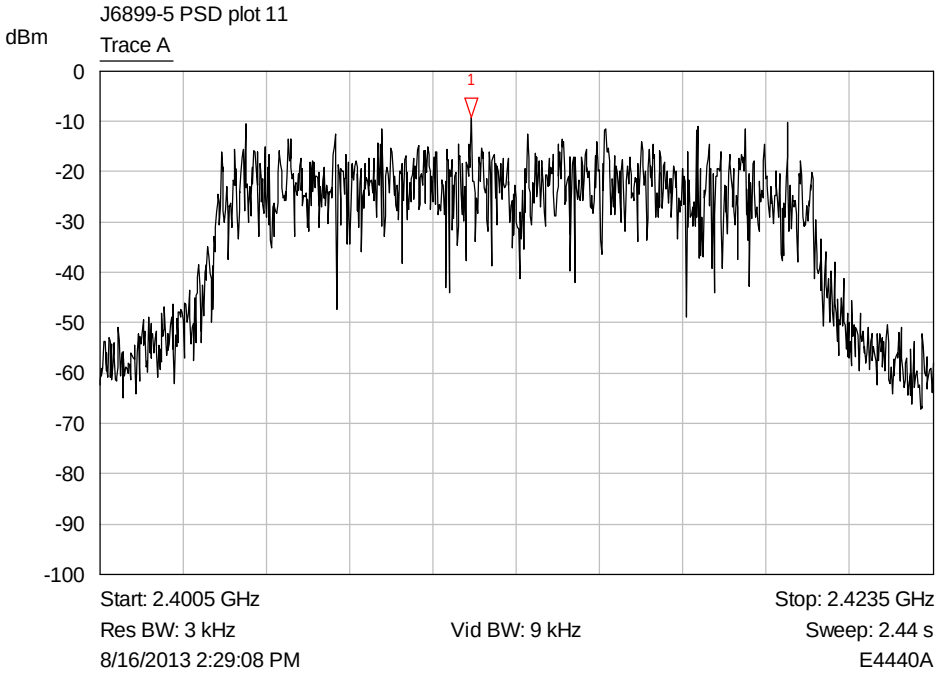
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1	Trace A	2.4570 GHz	-8.05 dBm	

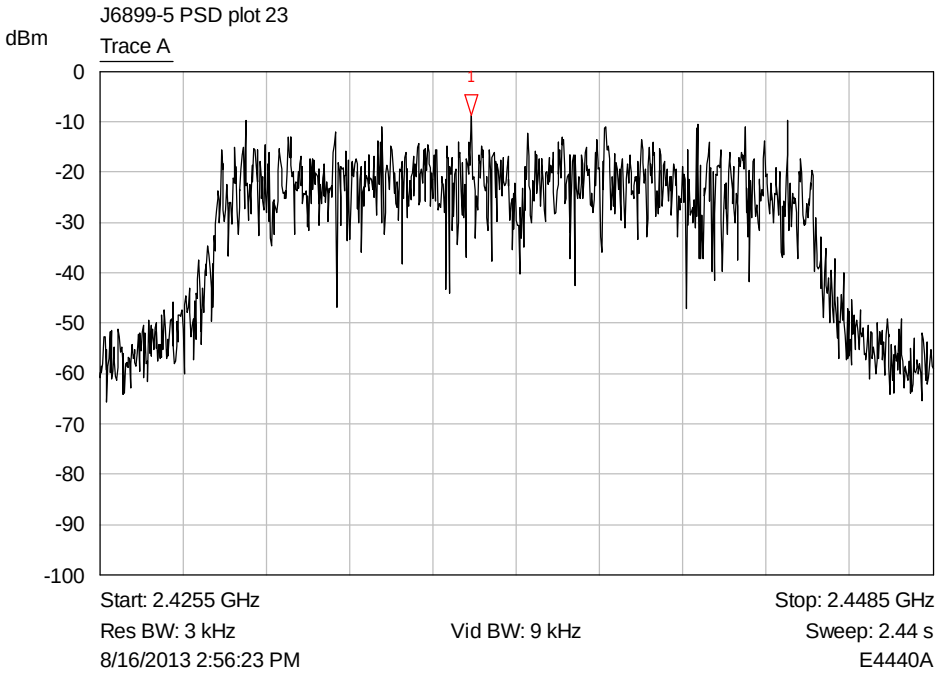
High channel

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



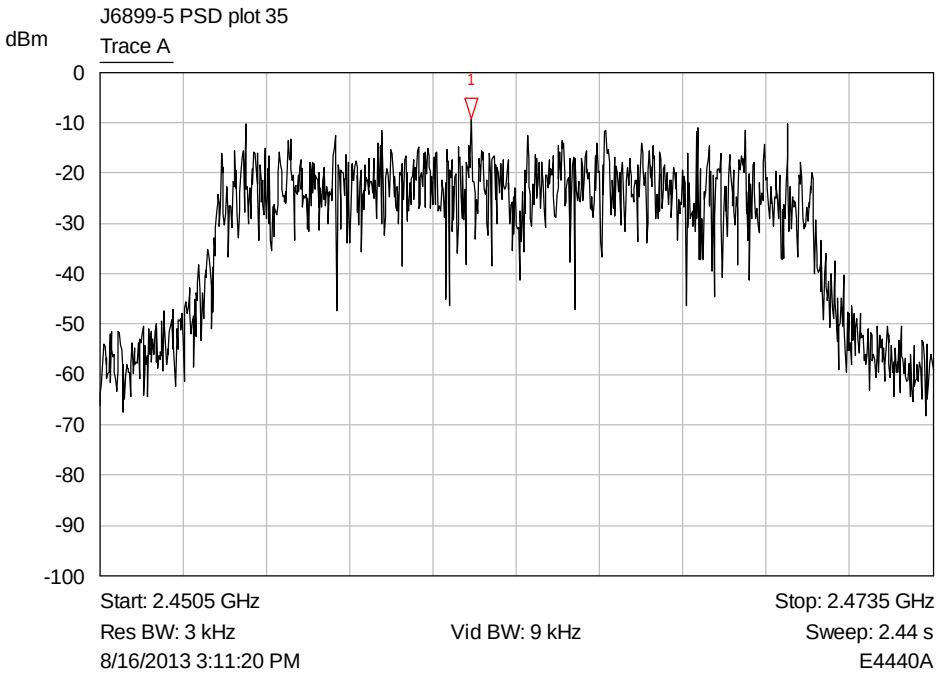
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4108 GHz	-9.28 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4358 GHz	-8.72 dBm	

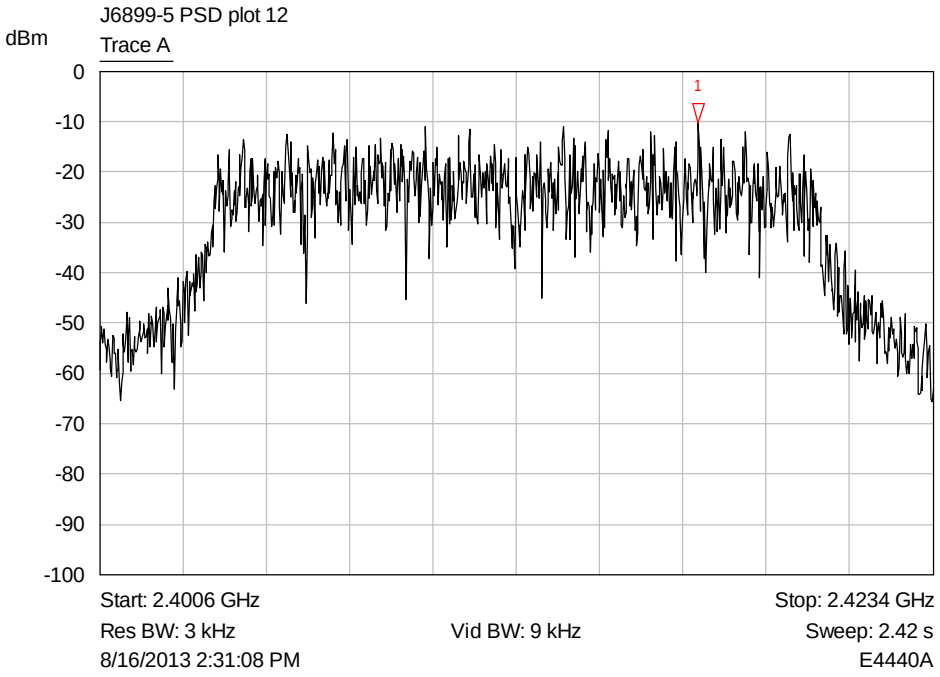
Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4608 GHz	-9.24 dBm	

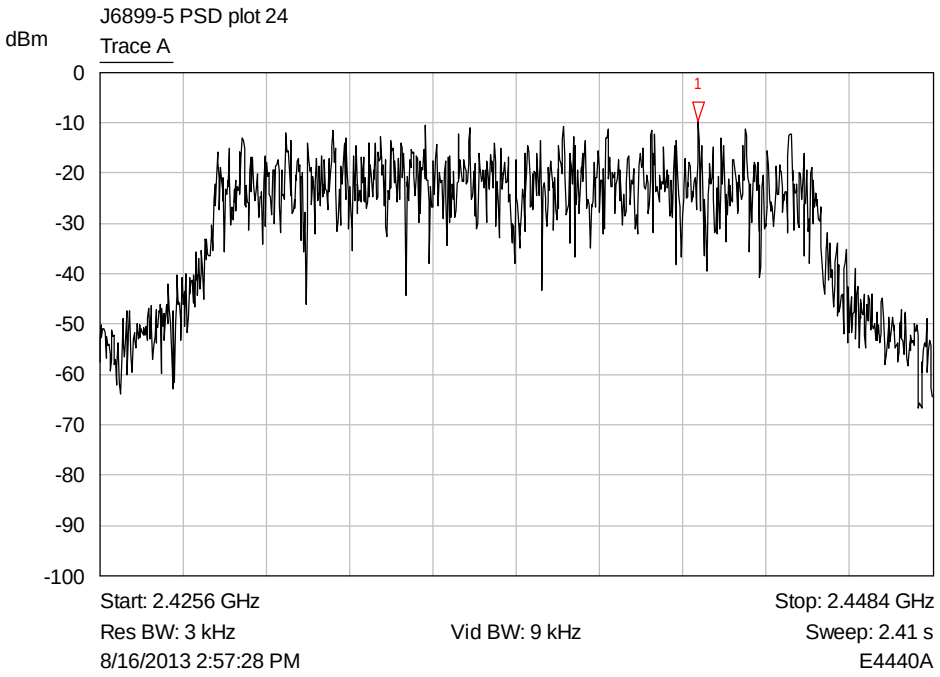
High channel

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



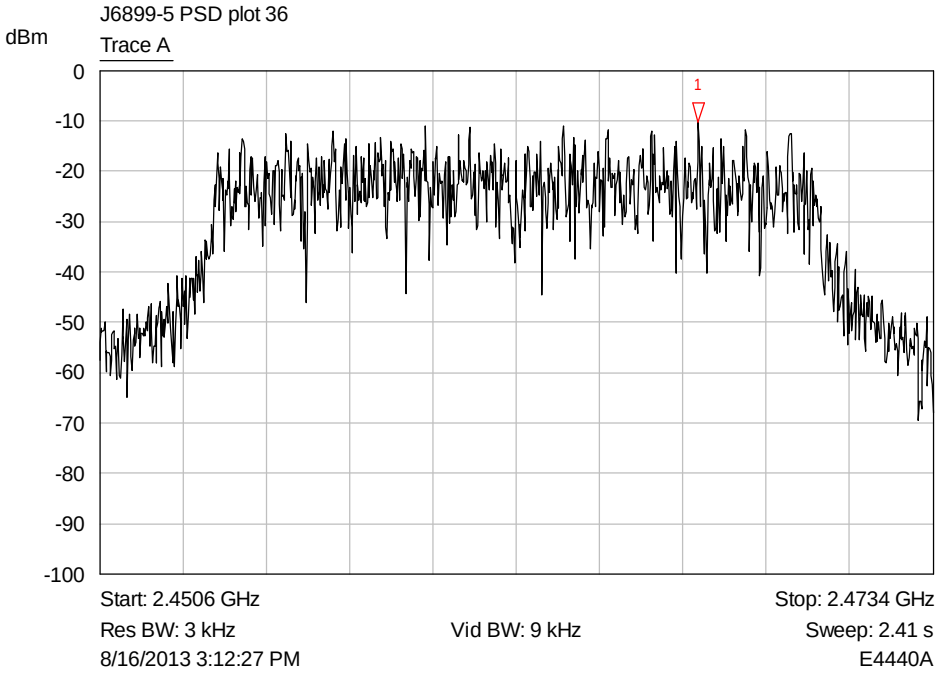
Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4170 GHz	-10.33 dBm	

Low channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4420 GHz	-9.82 dBm	

Mid channel



Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	2.4670 GHz	-10.29 dBm	

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 (dBµV)	Pk – Lim 1 (dB)	QP Amp (dBµV)	QP - Lim1 (dB)	Av Amp (dBµV)	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 (dBµV) is the level of received signal that was measured in dB above 1µV 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 (dBµV) is the level of received signal that was measured in dB above 1µV 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 (dBµV) is the level of received signal that was measured in dB above 1µV 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

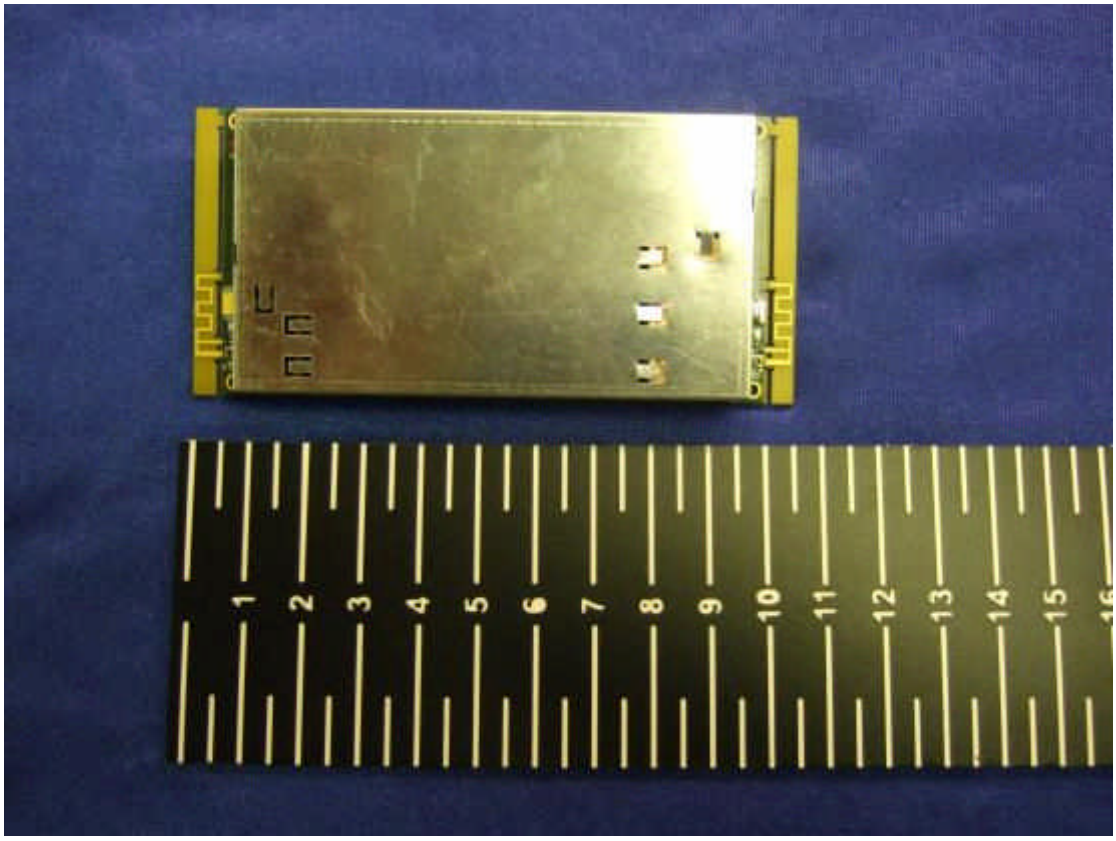
The limits given in the test standard are normally expressed as absolute values (e.g. in µV/m at a specified distance), whereas the measured values are expressed as peak, quasi peak or average values in dBµV/m referenced to the measuring instrument inputs. RN Electronics calibrate the test set-up to 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 µV/m equates to 20.log (500) = 54 dB µV/m.
(b) limit of 300 µV/m at 10m equates to 20.log (300 . 10/3) = 60 dB µV/m at 3m

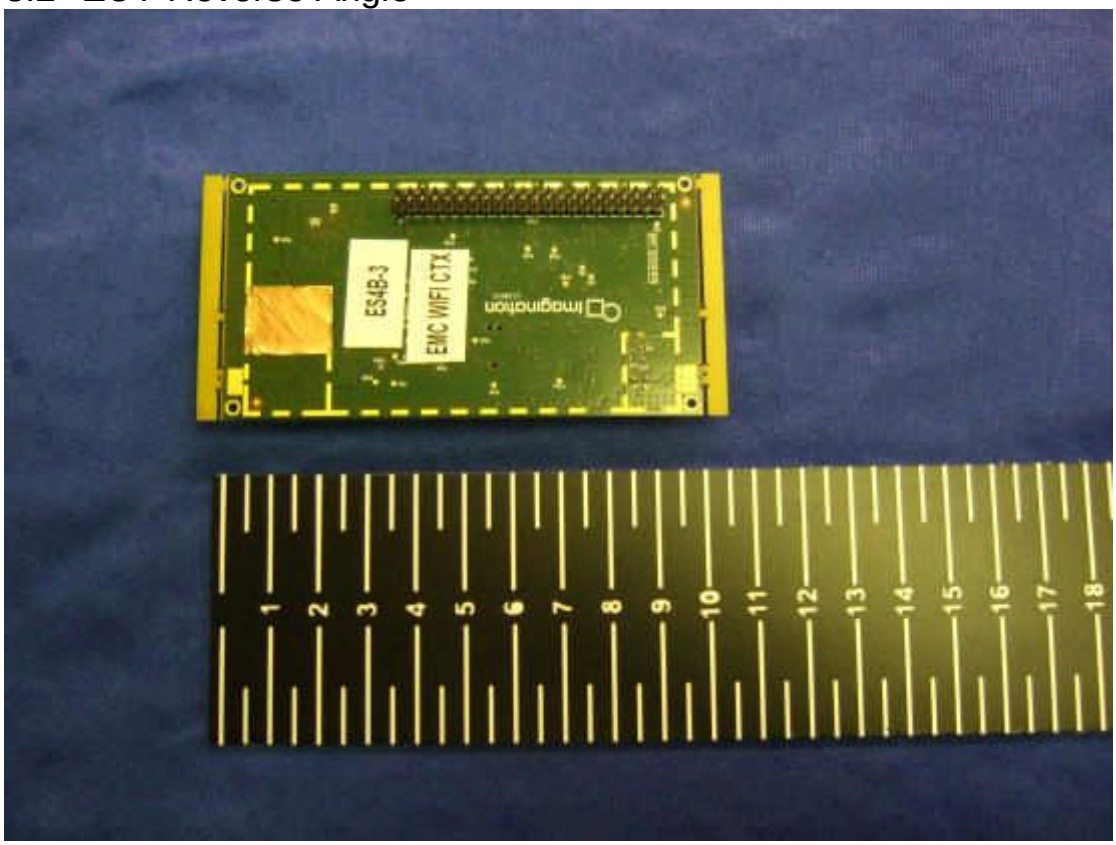
(c) limit of 30 µV/m at 30m, but below 30MHz, equates to 20.log(30) + 40.log(30/3) = 69.5 dBµV/m at 3m, as extrapolation factor below 30MHz is 40dB/decade per 15.31(f)(2).

8 Photographs

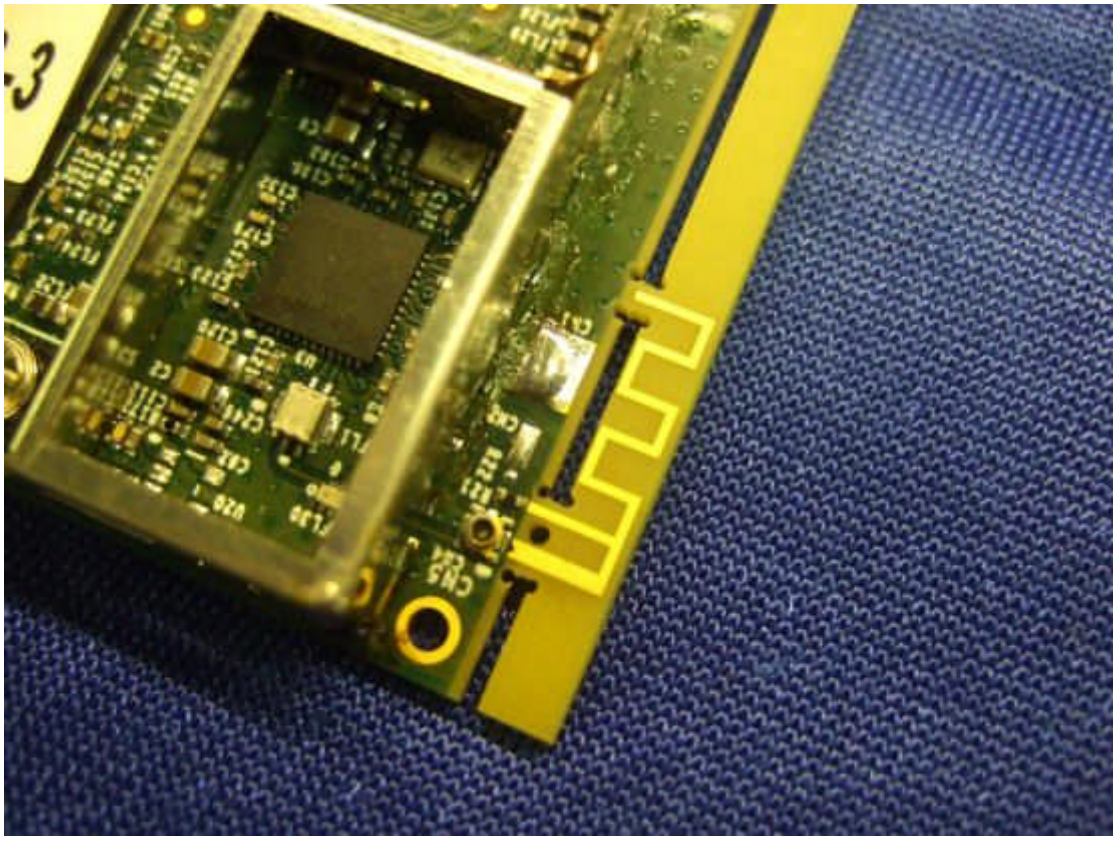
8.1 EUT Front View



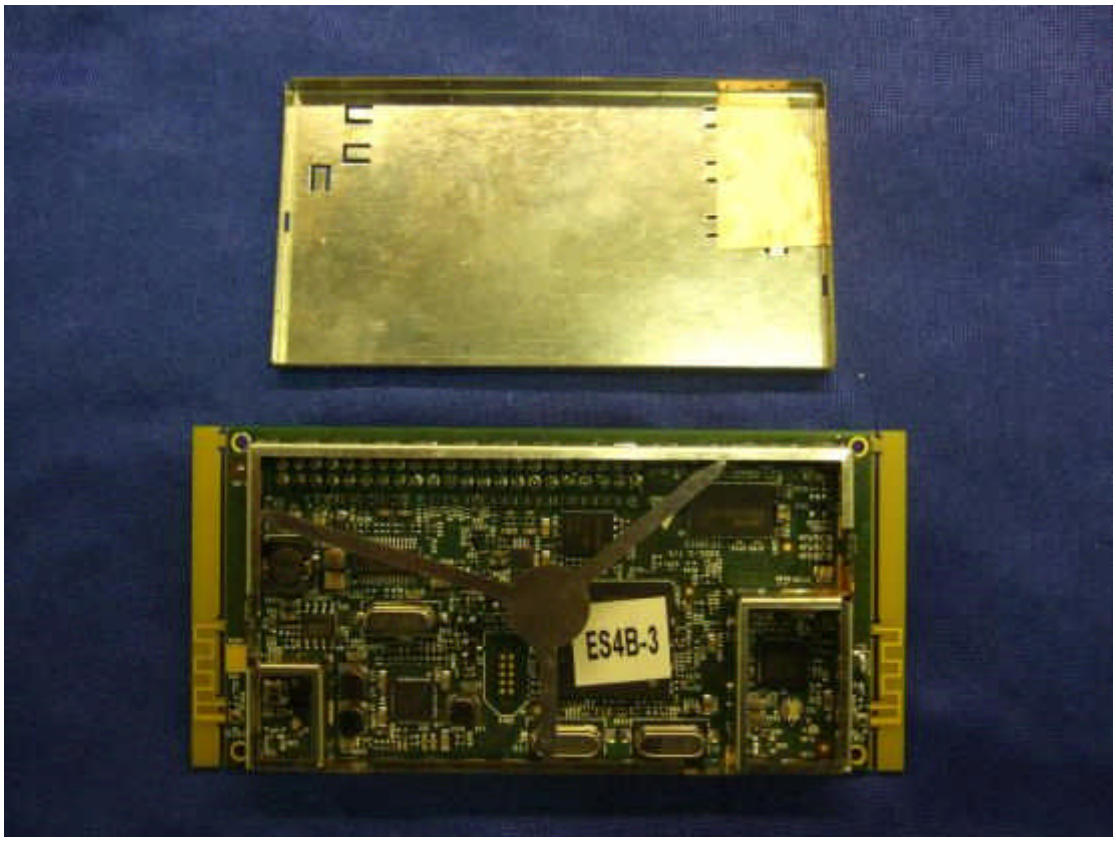
8.2 EUT Reverse Angle

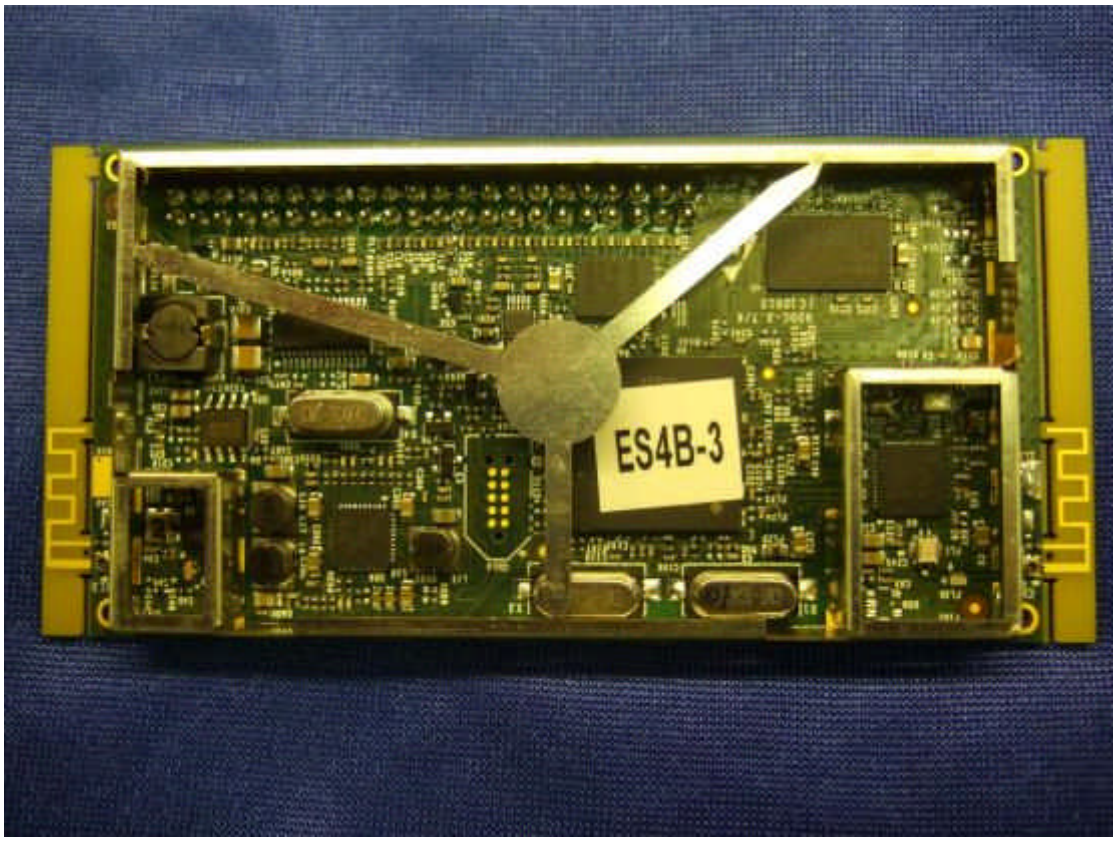


8.3 EUT Antenna & RF Connector Port

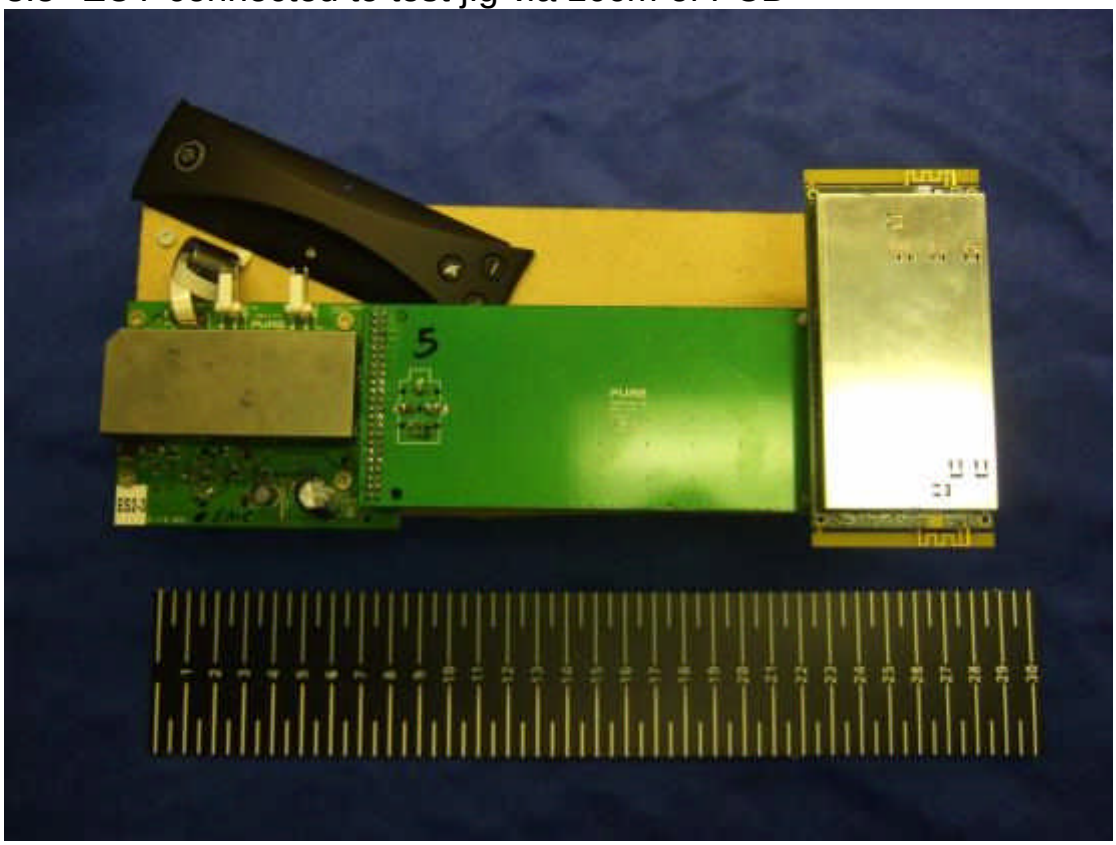


8.4 EUT Internal Construction

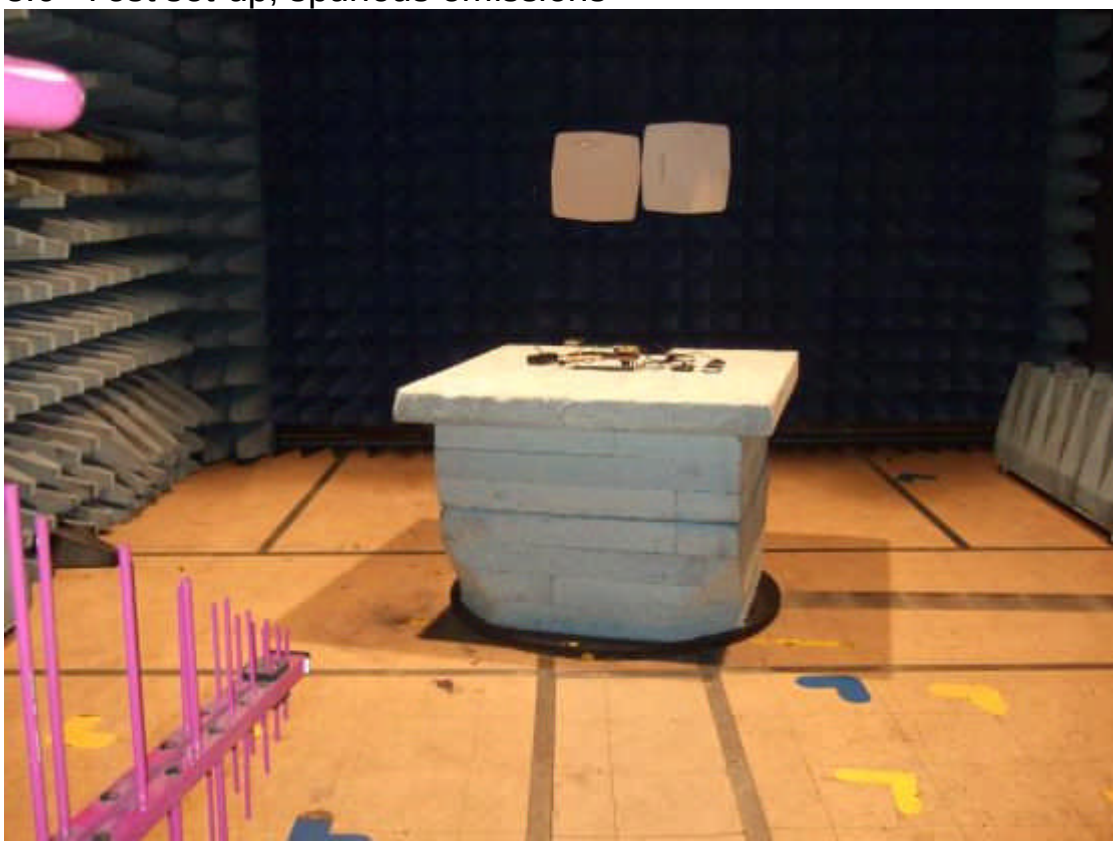


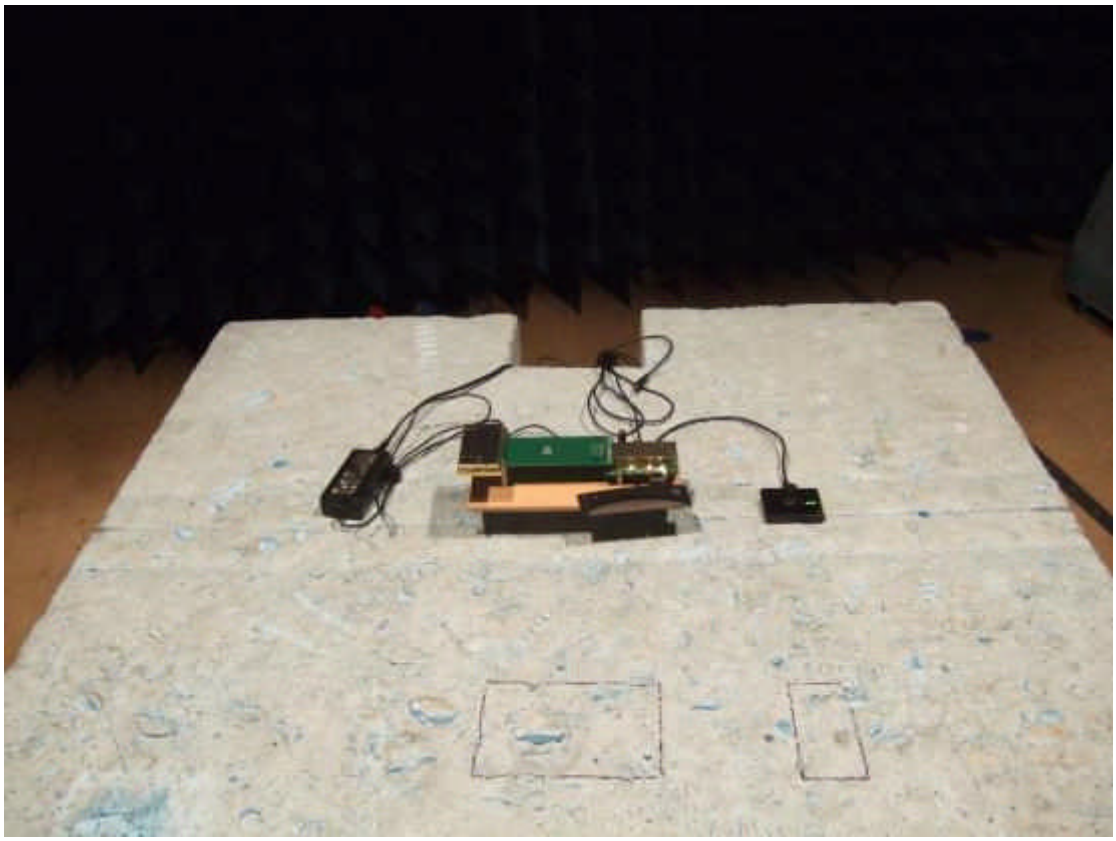


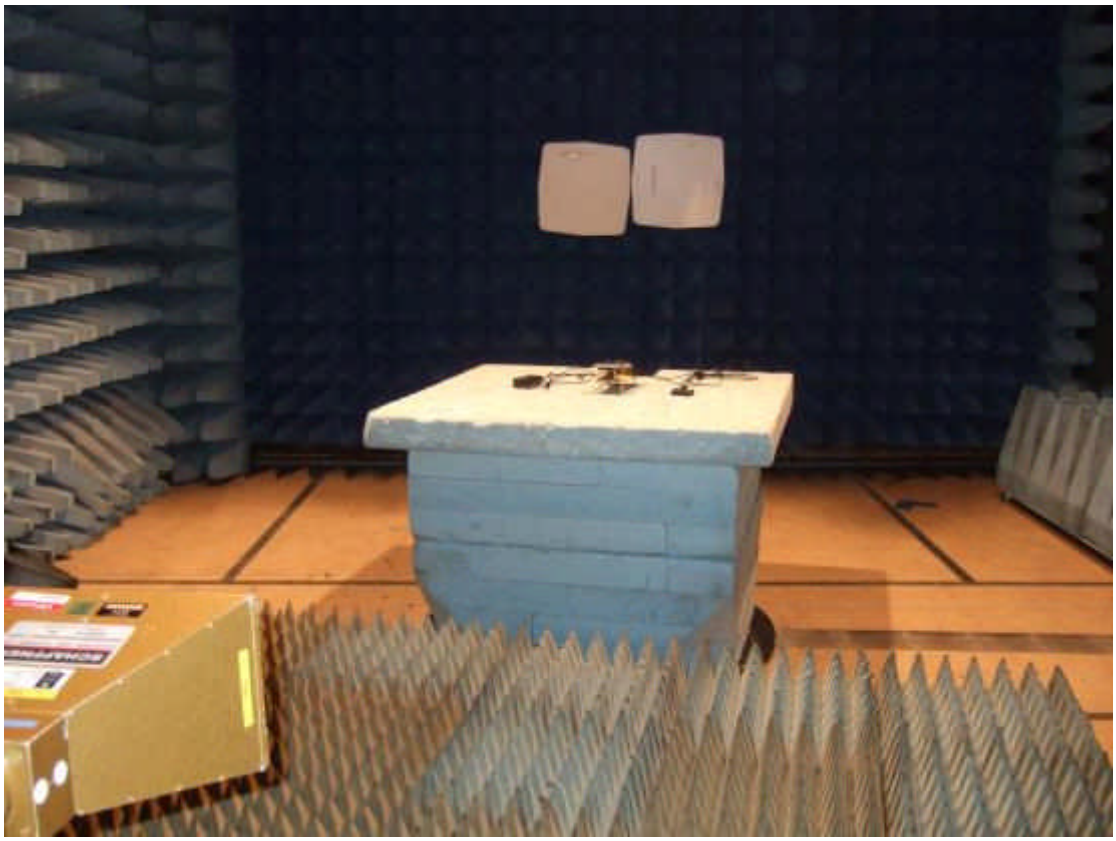
8.5 EUT connected to test jig via 10cm of PCB

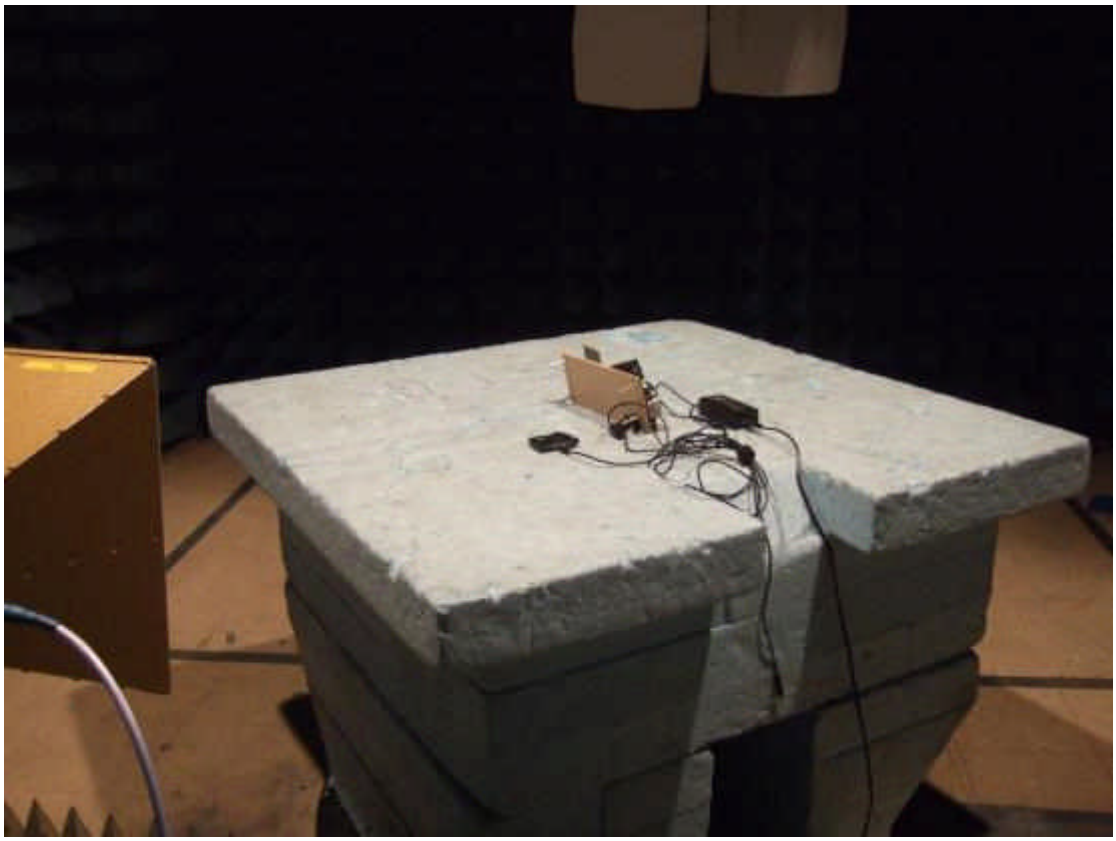


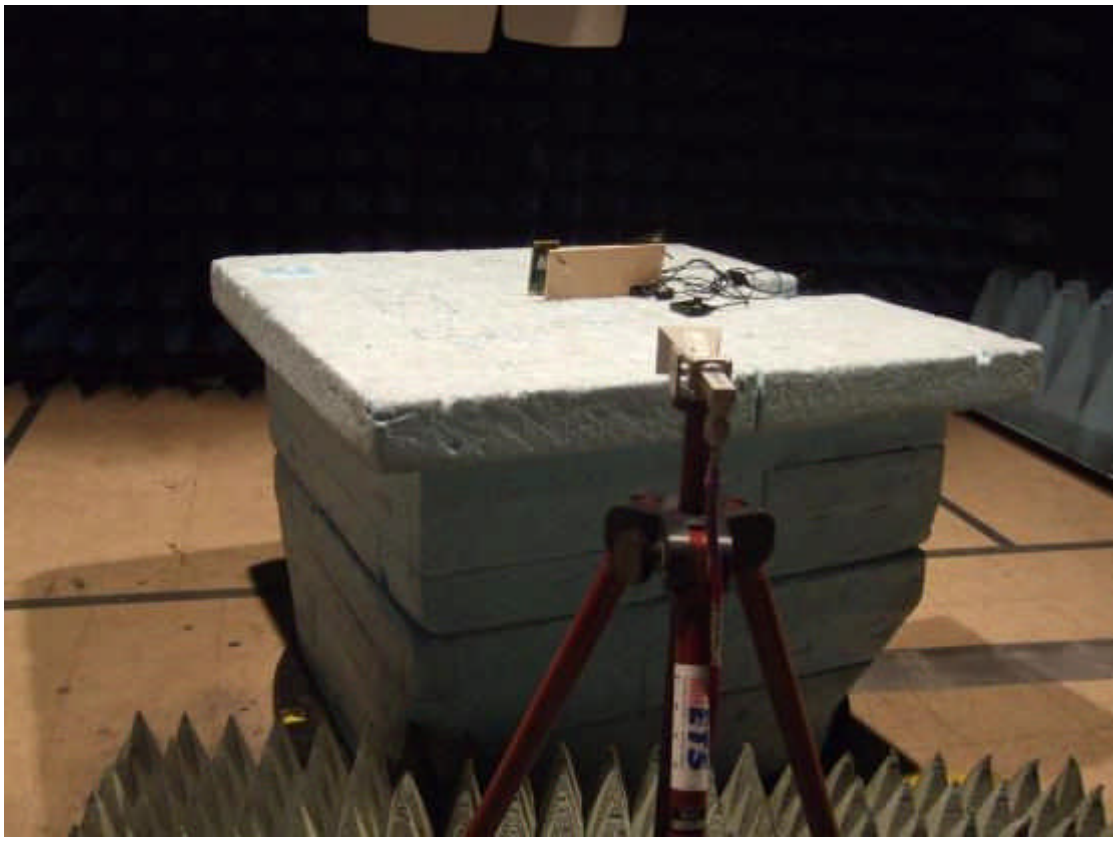
8.6 Test set-up, spurious emissions

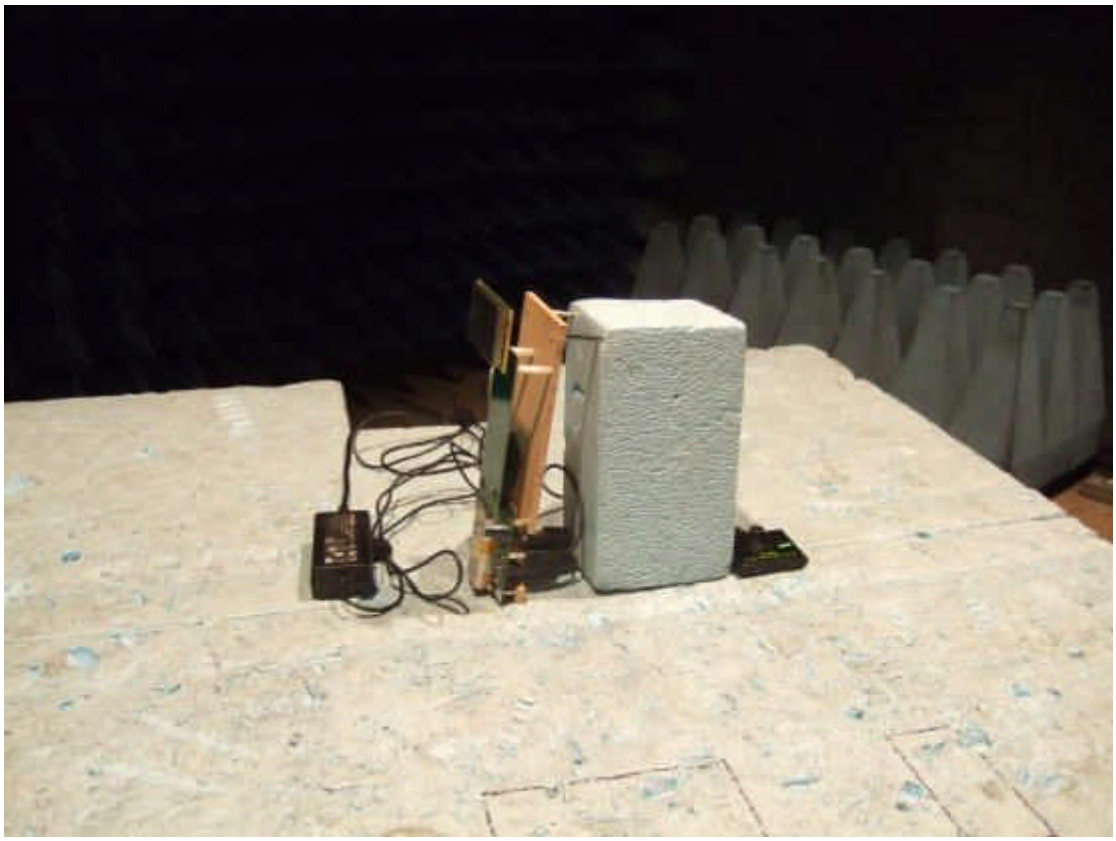


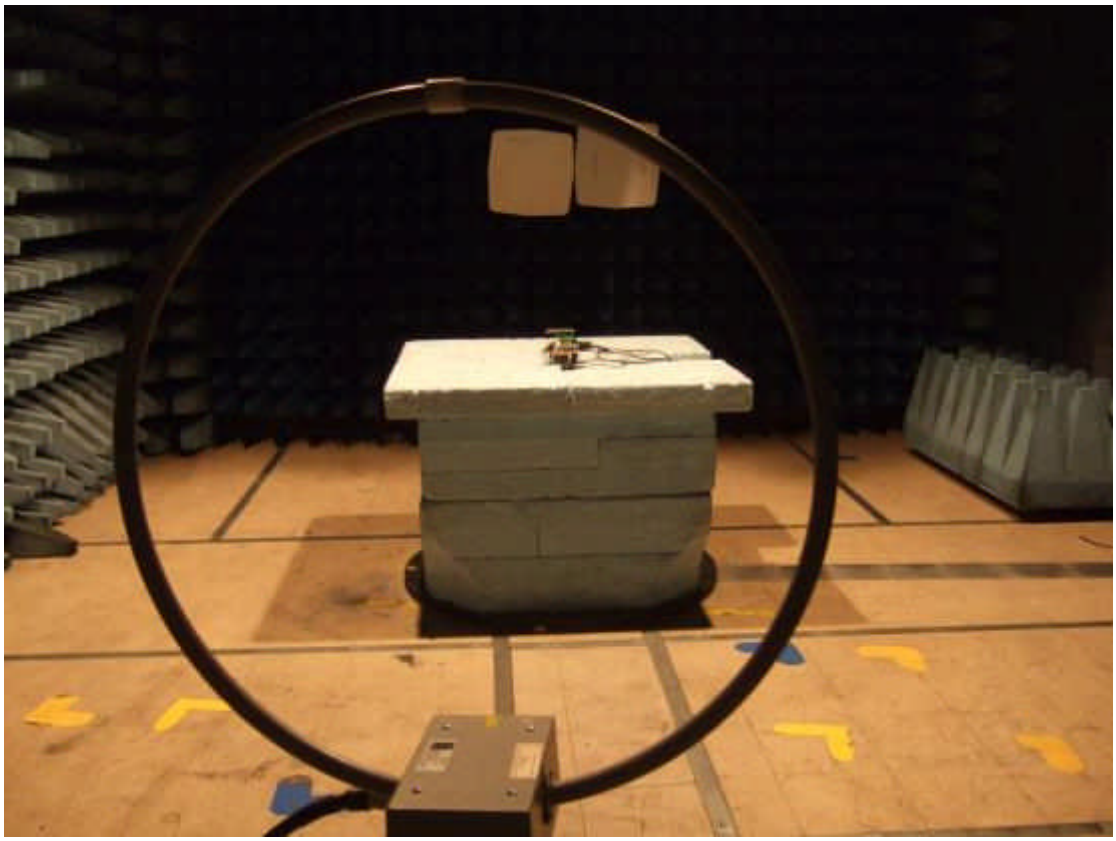




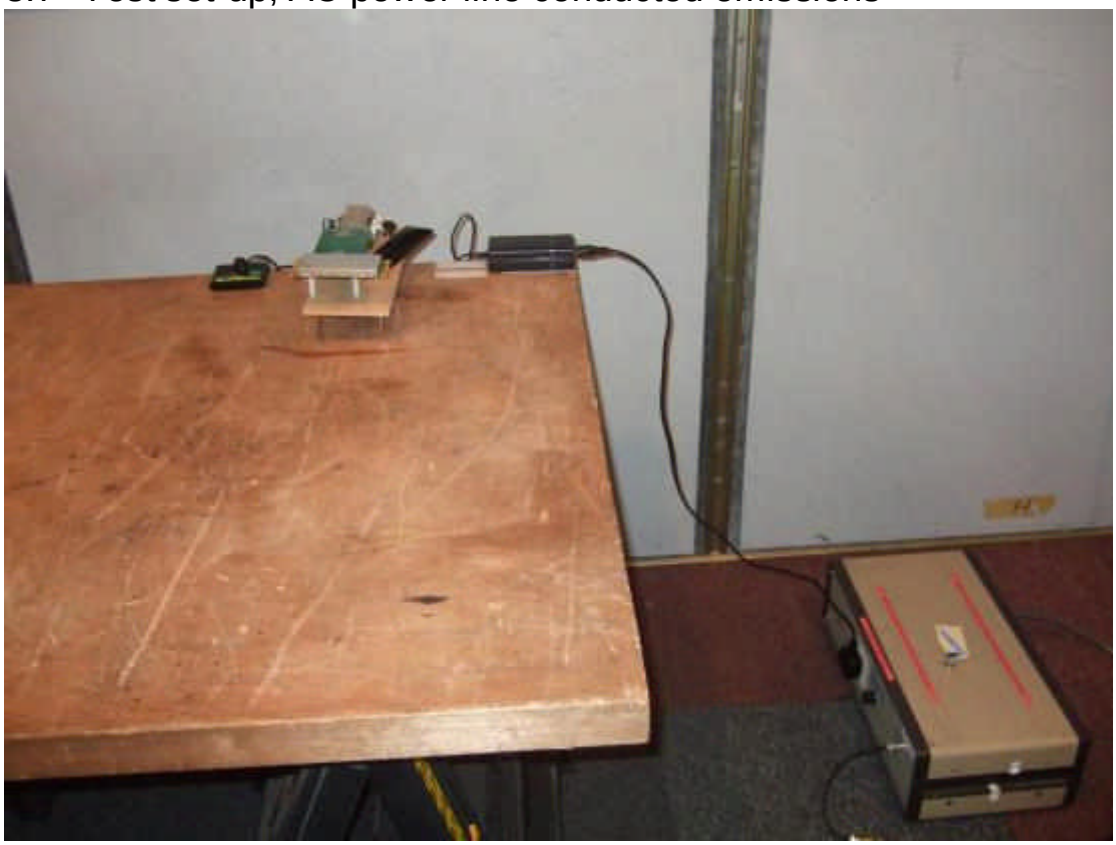


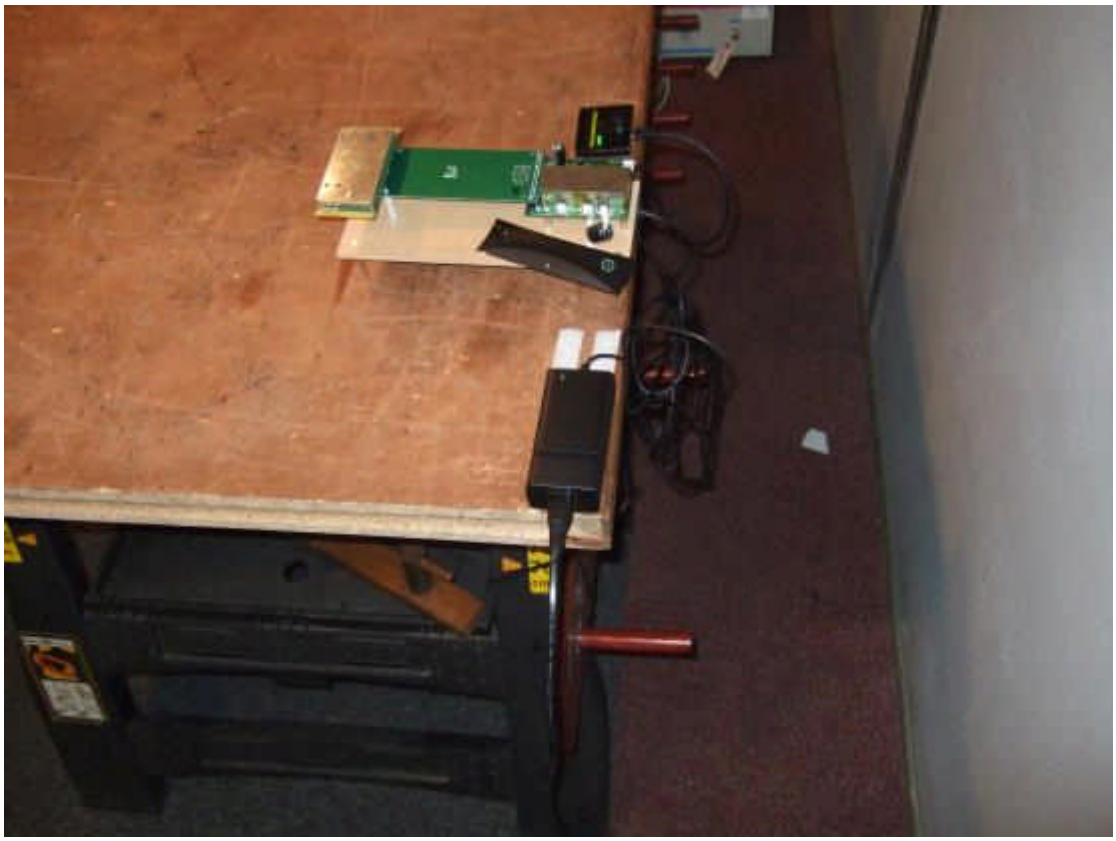






8.7 Test set-up, AC power line conducted emissions





8.8 Test set-up, Diagrams

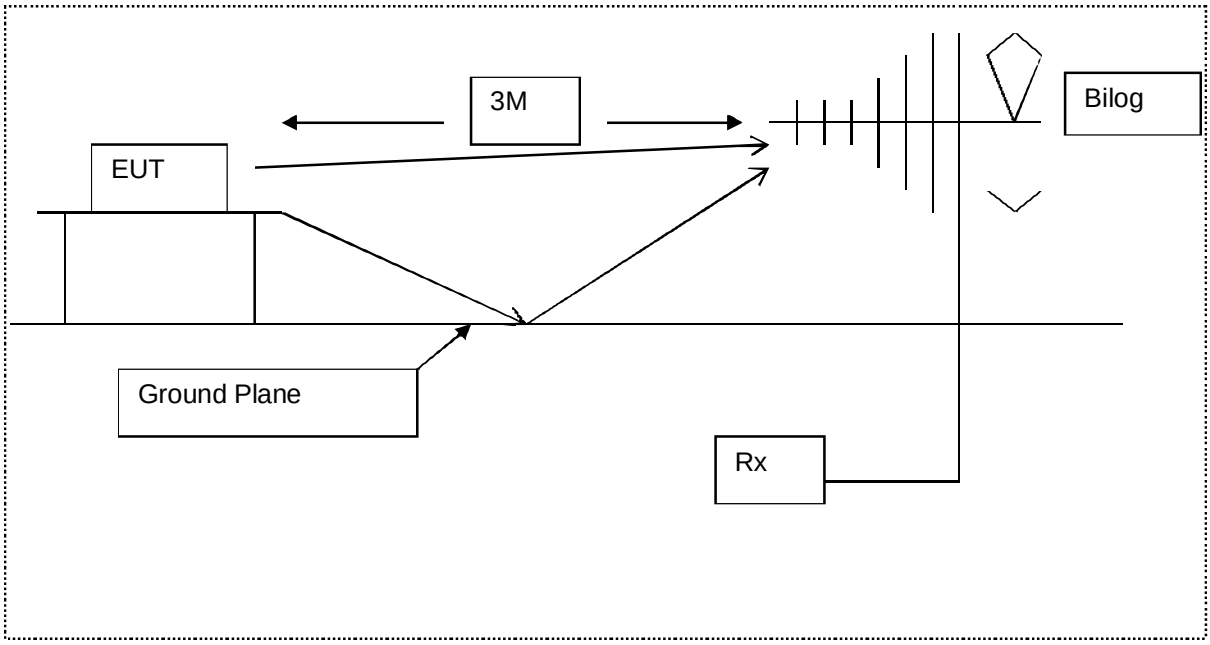


Diagram of the radiated emissions test setup.

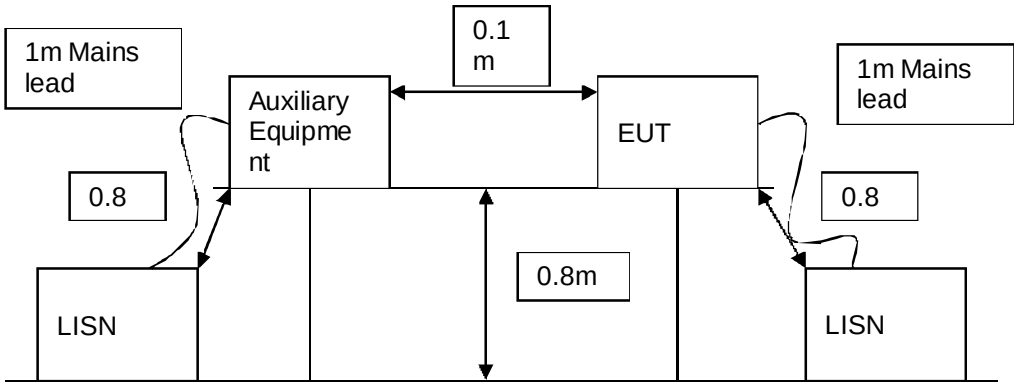


Diagram of the AC power line conducted emissions test setup.

9 Signal Leads

Port Name	Cable Type	Connected
AC/DC adapter	AC plug adapter to 2core DC lead	Yes
USB	Standard USB screened	Yes
Audio port	3.5mm jack audio lead	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
E035	HP11947A	Transient Limiter + 10dB Atten.	Hewlett Packard	19-Aug-13	6 months
E150	MN2050	LISN 13A	Chase	*03-Oct-13	12 months
E252	6810.19.A	10 dB Attenuator	Suhner	09-May-13	12 months
E268	BHA 9118	1-18 GHz Horn Antenna	Schaffner	14-Apr-13	24 months
E342	8563E	Spectrum Analyser 26.5 GHz	HP	28-May-13	24 months
E367	6534/4	20dB Attenuator	Marconi Instruments	24-Jun-13	12 months
E410	N5181A	3 GHz MXG Signal Generator	Agilent Technologies	26-Oct-11	36 months
E411	N9039A	9 kHz - 1 GHz RF Filter Section	Agilent Technologies	18-Oct-12	12 months
E412	E4440A	3 Hz - 26.5 GHz PSA	Agilent Technologies	18-Oct-12	12 months
E429	-	5 Switch Filter Box 0.91 GHz - 16.3 GHz	RN Electronics	20-Nov-12	12 months
E465	PCR2000LA	AC Power Supply	KIKUSUI	09-May-13	12 months
E533	N5182A	6 GHz MXG Signal Generator	Agilent Technologies	26-Feb-13	36 months
E534	E4440A	3 Hz - 26.5 GHz PSA	Agilent Technologies	22-Feb-13	36 months
E535	N9039A	9 kHz - 1 GHz RF Filter Section	Agilent Technologies	22-Feb-13	36 months
N240	CRT700/3/2 C	100v Transformer	N/A	N/A	N/A
TMS78	3160-08	Std Gain Horn Antenna 12.4-18 GHz	ETS Systems	07-Jun-13	24 months
TMS79	3160-09	Std Gain Horn Antenna 18-26.5 GHz	ETS Systems	07-Jun-13	24 months
TMS81	6502	Active Loop Antenna	EMCO	24-Oct-12	24 months
TMS82	8449B	Pre Amplifier 1 - 26 GHz	Agilent	19-Nov-12	12 months
TMS933	CBL6141A	Bilog Antenna 30MHz - 2GHz	York EMC	09-Sep-12	24 months

*Note: Calibrated since test and 12 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	V01.10
2	02DV-3.7/1	10cm Cougar module Extension board	Pure	5
3	02DI-3.5/2	Chilli Cougar carrier PCB	Pure	ES2-3

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

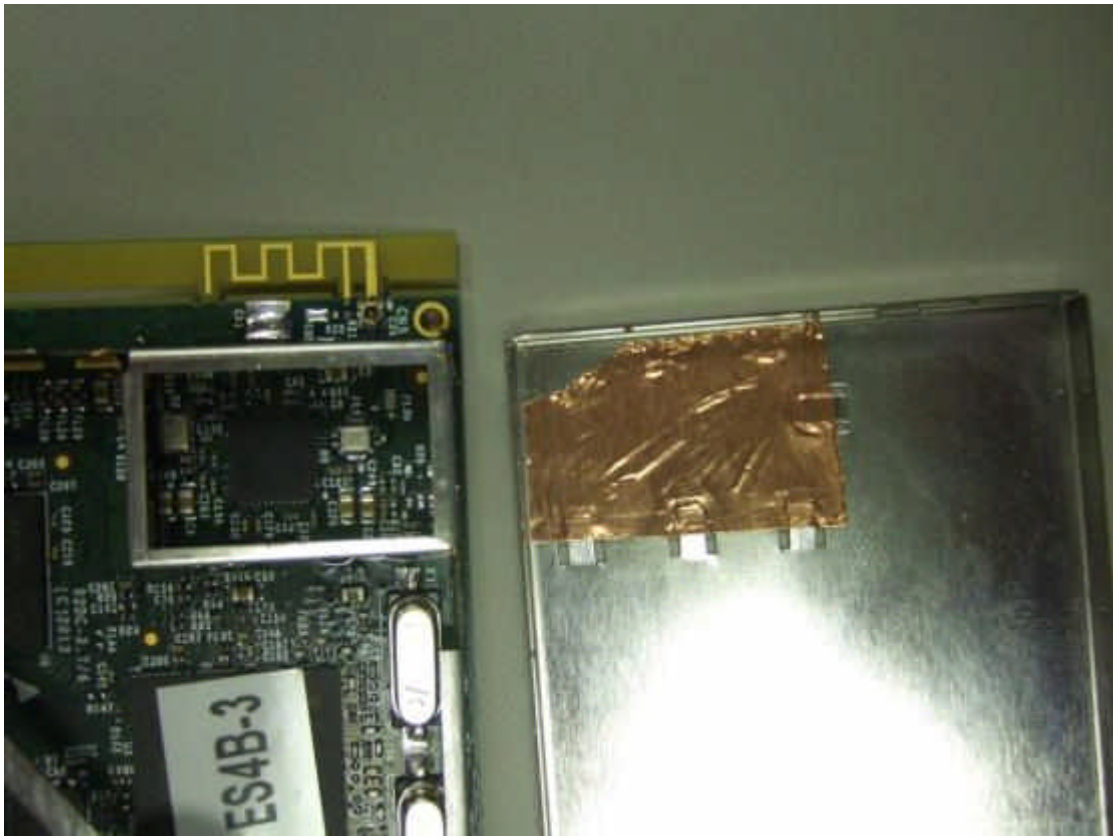
The following modifications were performed before tests.

12.2 Table of modifications

Modification	Time of modification	Photo Reference
Copper tape fitted over internal Max2830 RF can section to help RF can seal.	Before testing	MOD1
Small square of copper tape fitted over back of PCB under max2380 location and attached to ground fill plane, to mimic the burying of tracks to an internal layer.	Before testing	MOD2
Small piece of copper tape placed over corner gap in RF can to help RF seal.	Before testing	MOD3

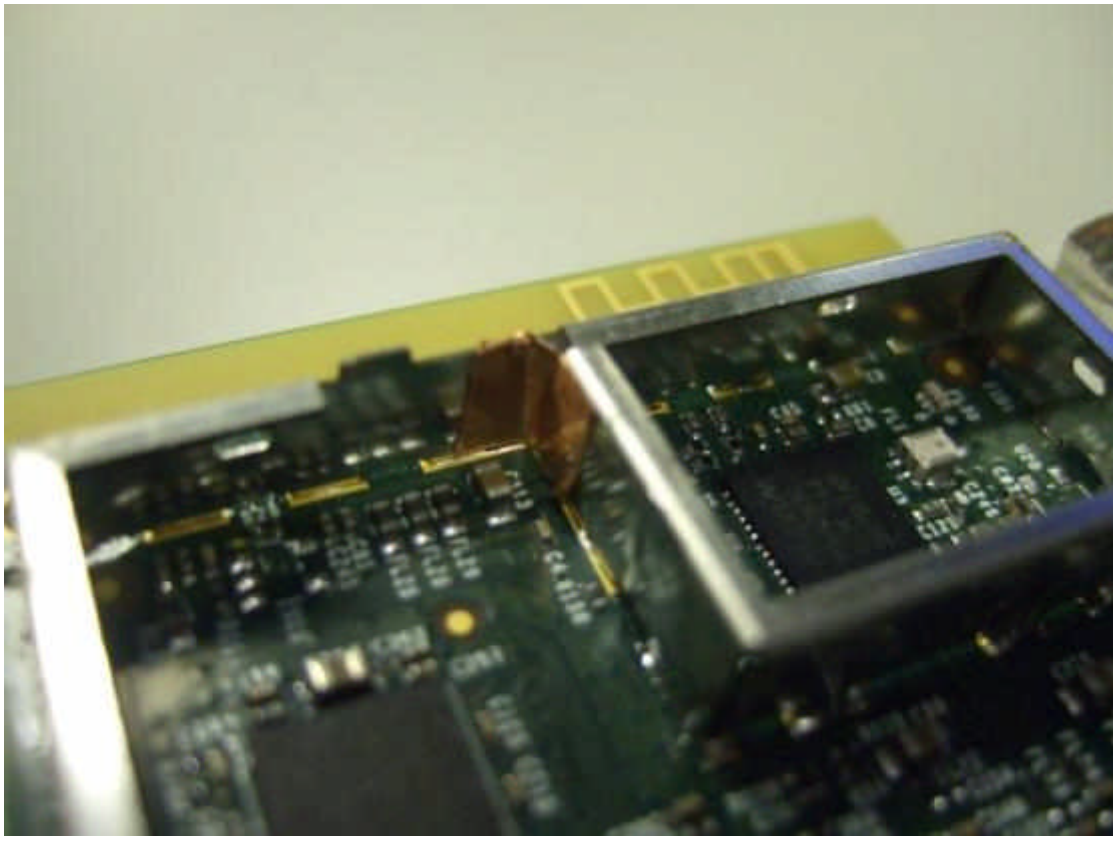
12.3 Modification photos

Mod 1



Mod 2

Mod 3



12.4 Modifications during test

No modifications were made during test by RN Electronics Ltd.

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