FCC 47CFR part 15C
Test Report
For
One Flow

Reference Standard: FCC 47CFR part 15C
Manufacturer: Imagination Technologies
For type of equipment and serial number, refer to section 3
Report Number: 01-435/4461/5/11
Report Produced by: -

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1. Contents

2. Summary of Test Results

The One Flow was tested to the following standards: -

FCC 47CFR Part 15C (effective date October 1st, 2010); 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. Conducted Emissions	FCC Part 15C §15.207	PASSED
2. Radiated Emissions	FCC Part 15C §15.205, §15.209 and §15.247(d)	PASSED
3. Modulation Bandwidth	FCC Part 15C §15.215(c), §15.247(a)(2)	PASSED
4. Peak Conducted Power	FCC Part 15C §15.247(b)	PASSED
5. Frequency Tolerance	FCC Part 15C §15.215(c)	NOT APPLICABLE[1]
6. Duty Cycle	FCC Part 15C §15.247	NOT APPLICABLE[2]
7. Power Spectral Density	FCC Part 15C §15.247(e)	PASSED
8. Band Edge Compliance	FCC Part 15C §15.205, §15.209 and §15.247	PASSED
9. Frequency separation	FCC Part 15C §15.247	NOT APPLICABLE[2]
10. No. of hopping channels	FCC Part 15C §15.247	NOT APPLICABLE[2]

[1] No test requirement or limit specified for this type of device.
[2] EUT is not FHSS equipment.

This report relates to the equipment tested as identified by a unique serial number and 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.

Date of Test: 2nd December 2010 to 27th January 2011

Test Engineer: Digitally signed by: Daniel Sims DN: CN = Daniel Sims C = GB O = RN Electronics Date: 2011.03.15 11:58:07 Z

Approved By:

Customer Representative:

3. Equipment Under Test (EUT)

3.1 Equipment Specification

Applicant	Imagination Technologies Home Park Estate Kings Langley Hertfordshire WD4 8DH
Manufacturer of EUT	Pure Digital Ltd
Brand name of EUT	Pure Digital Ltd
Model Number of EUT	One Flow
Serial Number of EUT	ES3-8
Date when equipment was received by RN Electronics	18th October 2010
Date of test:	2nd December 2010 to 27th January 2011
Customer order number:	PO101005 & PO101511
Visual description of EUT:	Small black enclosure with LCD display, controls and speaker on the front. The unit has four sockets on the side including a DC input from the supplied AC/DC PSU. The unit has a telescopic antenna and a battery compartment. The WIFI antenna is located inside the enclosure.
Main function of the EUT:	802.11b/g internet radio and audio file streaming.
Height	150mm
Width	210mm
Depth	70mm
Weight	<2kg
Voltage	100-240V AC/DC adapter. 5.5V DC from adapter @ 1A max
Current required from above voltage source	<1A

3.2 EUT Configurations for testing

Frequency range	2.412 - 2.462 GHz
Normal use position	Tabletop / Bench
Normal test signals	802.11B, 802.11G, OFMD, DSSS
Declared Power Level	+18dBm
Declared Channel Bandwidth	22MHz
Highest Frequencies generated/used	2.462 GHz

3.3 EUT Modes

Wi-Fi RF part

Mode	Description of mode	Used for Testing
TX channel 1	Unit constantly transmitting on 2.412GHz	YES
TX channel 6	Unit constantly transmitting on 2.437GHz	YES
TX channel 11	Unit constantly transmitting on 2.462GHz	YES
RX channel 1	Unit constantly Receiving on 2.412GHz	YES
RX channel 6	Unit constantly Receiving on 2.437GHz	YES
RX channel 11	Unit constantly Receiving on 2.462GHz	YES
Normal mode	Unit communicating with wireless Router network	NO

Wi-Fi modes were provided with 100% TX duty cycle.

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

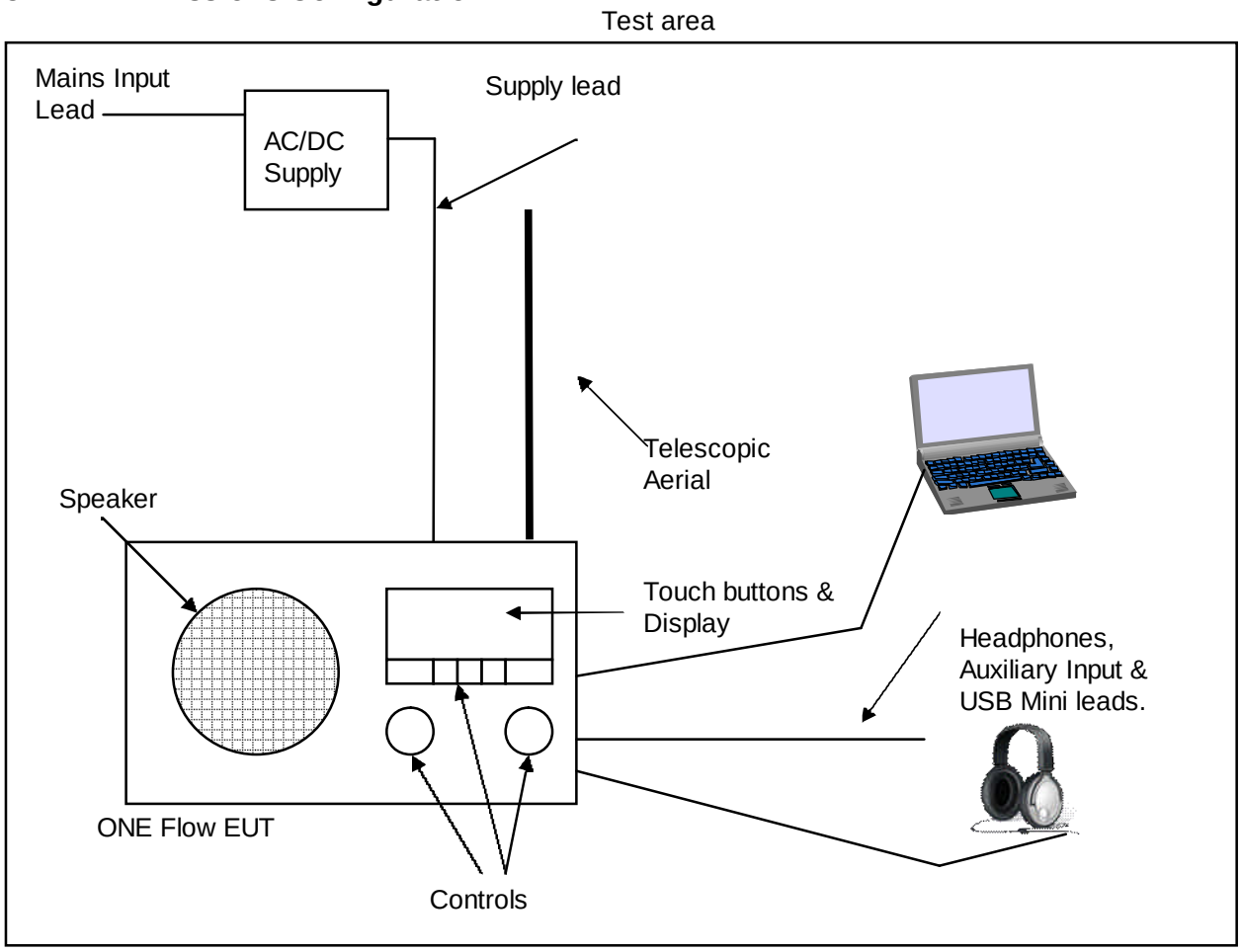
Mode	Rate
802.11B	1 Mbps
802.11B	2 Mbps
802.11B	5.5 Mbps
802.11B	11 Mbps
802.11G	6 Mbps
802.11G	9 Mbps
802.11G	12 Mbps
802.11G	18 Mbps
802.11G	24 Mbps
802.11G	36 Mbps
802.11G	48 Mbps
802.11G	54 Mbps

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

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

This report was printed on: 15 March 2011

3.4 Emissions Configuration



The unit was powered from the dedicated AC/DC adapter provided with the unit (see below for details). For conducted tests an internal RF port was provided on the PCB. The unit was software modified to allow permanent transmit and receive modes of the Wi-Fi device on the top, middle and bottom channels as stated within section 3.3 of this report. The Wi-Fi TX and RX modes were set using the engineering mode provided within the main unit.

For radiated and conducted emissions tests the unit was populated with typical leads, a pair of headphones and the USB mini lead connected to a laptop. The AC/DC adapter was also placed on to the test table along with the main enclosure of the EUT.

The One Flow EUT came supplied with a dedicated AC/DC power supply with the details as below:-

- Manufacturer: Pure Digital (made in China).
- Model number: KSAA0550100W1UK.
- Input: 100-240V AC 50/60 Hz 0.18A.
- Output: 5.5V DC 1.0A.

The same unit was used for both Radiated and Conducted tests. For conducted type power tests a short lead was provided by Imagination Technologies to connect to an Internal RF port.

4. Specifications

The tests were performed by RN Electronics Engineer Daniel Sims who set up the tests, the test equipment, and operated it in accordance with the ***R.N. Electronics Ltd*** procedures manual, FCC Part 15 and those specifications incorporated by reference into 47CFR15 (e.g. ANSI C63.4-2003).

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

4.1 Deviations

None.

4.2 Tests at Extremes of Temperature & Voltage

☒ A permanent integral antenna RF port was used for testing.
☐ A test fixture was used for testing.
☒ A permanent internal RF port was used for testing.
☐ The equipment external RF port was used for testing.

4.3 Measurement Uncertainties

Parameter	Uncertainty
Transmitter Tests	
RF frequency	<± 0.7 ppm
Conducted RF power	<± 1.0 dB*
Spectral power density	<± 1.5 dB
Bandwidth	<± 1.9 %
Radiated RF Power	<± 3.5 dB
Radiated Spurious Emissions	<± 3.4 dB
Receiver Tests	
Radiated Spurious Emissions	<± 3.4 dB

*Applies to average conducted power only

5. Tests, Methods and Results
5.1 Conducted Emissions

5.1.1 Test Methods

Test Requirements	FCC Part 15C, Reference (15.207)
Test Method:	ANSI C63.4, Reference (7.)

5.1.1.1 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.

Initial scans were made in transmit, receive and normal Wi-Fi modes to determine any worst case mode for emissions. No discernable difference was noted. Therefore full tests were performed in Wi-Fi mode TX channel 6 (see section 3.3).

5.1.1.2 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.

5.1.2 Test results

Temperature of test Environment: 21°C

Analyser plots for the Quasi-Peak / Average values as applicable and a table of signals within 20dB of the limit line can be found in Section 6.1 of this report.

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

5.1.2.1 Test Equipment used

E035, E150, E410, E411, E412, TMS952

See Section 10 for more details.

5.2 Radiated Emissions

5.2.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.209)

Test Method: ANSI C63.4, Reference (8.)

5.2.1.1 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.

5.2.1.2 Test Procedure

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

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

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

Above 1GHz, measurements were made in a semi-anechoic chamber with appropriate absorbing material for use in this range. The antenna was placed 1m above the ground in line with the EUT, which 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.

5.2.2 Test results

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

Test Environment: M
Temperature: 16-22°C Humidity: 33-54%

Analyser plots for the Quasi-Peak / Average values as applicable and any table of signals within 20dB of the limit line can be found in Section 6.2 of this report. Band Edge Compliance plots can be found in section 6.6 of this report.

Plot references above 1GHz

Frequency range	Plot reference
1 – 2 GHz	1 – 2 GHz Vert / 1 – 2 GHz Horiz
2 – 2.7 GHz	2 – 2.7 GHz Vert / 2 – 2.7 GHz Horiz
2.7 – 3 GHz	2.7 – 3 GHz Vert / 2.7 – 3 GHz Horiz
3 – 4 GHz	3 – 4 GHz Vert / 3 – 4 GHz Horiz
4 – 5 GHz	4 – 5 GHz Vert / 4 – 5 GHz Horiz
5 – 6 GHz	5 – 6 GHz Vert / 5 – 6 GHz Horiz
6 – 7 GHz	6 – 7 GHz Vert / 6 – 7 GHz Horiz
7 – 8 GHz	7 – 8 GHz Vert / 7 – 8 GHz Horiz

8 – 9 GHz	8 – 9 GHz Vert / 8 – 9 GHz Horiz
9 – 10 GHz	9 – 10 GHz Vert / 9 – 10 GHz Horiz
10 – 11 GHz	10 – 11 GHz Vert / 10 – 11 GHz Horiz
11 – 12 GHz	11 – 12 GHz Vert / 11 – 12 GHz Horiz
12 – 13 GHz	12 – 13 GHz Vert / 12 – 13 GHz Horiz
13 – 14 GHz	13 – 14 GHz Vert / 13 – 14 GHz Horiz
14 – 15 GHz	14 – 15 GHz Vert / 14 – 15 GHz Horiz
15 – 16 GHz	15 – 16 GHz Vert / 15 – 16 GHz Horiz
16 – 17 GHz	16 – 17 GHz Vert / 16 – 17 GHz Horiz
17 – 18 GHz	17 – 18 GHz Vert / 17 – 18 GHz Horiz
18 – 19 GHz	18 – 19 GHz Vert & Horiz
19 – 20 GHz	19 – 20 GHz Vert& Horiz
20 – 22 GHz	20 – 22 GHz Vert& Horiz
22 – 24 GHz	22 – 24 GHz Vert& Horiz

All applicable channels were measured and signal lists for all three channels accompany the plots in Section 6.2. Only middle channel (channel 6) plots are listed/shown.

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

5.2.2.1 Test Equipment used

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

See Section 10 for more details

5.3 Peak Conducted Power

5.3.1 Test Methods

Test Requirements: FCC Part 15C, Reference (15.247)

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

5.3.1.1 Configuration of EUT

The EUT was measured on a bench using a power meter / spectrum analyser connected to the Internal RF port. The EUT was set to each mode and test signal in turn (see sections 3.2 and 3.3) and highest power levels recorded.

5.3.1.2 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below.
Power meter reading stated is maximum power observed using an average power head. Where applicable, a duty cycle correction is applied to avoid averaging during blanking periods (see section 5.5 within this report).
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.

5.3.2 Test results

Test Environment: Temperature: 18-22°C Humidity: 26 %

Any Analyser plots can be found in Section 6.3 of this report.

Bottom channel results

Channel / scheme	Meter reading (dBm)	Duty cycle adjustment (dB)	Total (dBm)	Result (mW)	Peak ANSI C63.10 (mW)
bot 1Mbps	15.6	N/A	15.6	36.3	55.0
bot 2Mbps	15.6	N/A	15.6	36.3	57.5
bot 5.5Mbps	15.6	N/A	15.6	36.3	77.6
bot 11Mbps	15.6	N/A	15.6	36.3	97.7
bot 6Mbps	11.0	N/A	11.0	12.6	44.7
bot 9Mbps	11.0	N/A	11.0	12.6	46.8
bot 12Mbps	11.0	N/A	11.0	12.6	42.7
bot 18Mbps	11.0	N/A	11.0	12.6	42.7
bot 24Mbps	11.2	N/A	11.2	13.2	44.7
bot 36Mbps	11.3	N/A	11.3	13.5	43.7
bot 48Mbps	11.3	N/A	11.3	13.5	45.7
bot 54Mbps	11.0	N/A	11.0	12.6	39.8

Middle channel results

Channel / scheme	Meter reading (dBm)	Duty cycle adjustment (dB)	Total (dBm)	Result (mW)	Peak ANSI C63.10 (mW)
mid 1Mbps	15.4	N/A	15.4	34.7	52.5
mid 2Mbps	15.3	N/A	15.3	33.9	53.7
mid 5.5Mbps	15.3	N/A	15.3	33.9	70.8

mid 11Mbps	15.3	N/A	15.3	33.9	89.1
mid 6Mbps	11.5	N/A	11.5	14.1	50.1
mid 9Mbps	11.5	N/A	11.5	14.1	52.5
mid 12Mbps	11.5	N/A	11.5	14.1	49.0
mid 18Mbps	11.6	N/A	11.6	14.5	47.9
mid 24Mbps	11.7	N/A	11.7	14.8	51.3
mid 36Mbps	11.9	N/A	11.9	15.5	50.1
mid 48Mbps	11.9	N/A	11.9	15.5	51.3
mid 54Mbps	11.5	N/A	11.5	14.1	44.7

Top channel results

Channel / scheme	Meter reading (dBm)	Duty cycle adjustment (dB)	Total (dBm)	Result (mW)	Peak ANSI C63.10 (mW)
top 1Mbps	14.9	N/A	14.9	30.9	47.9
top 2Mbps	14.9	N/A	14.9	30.9	50.1
top 5.5Mbps	14.9	N/A	14.9	30.9	66.1
top 11Mbps	14.9	N/A	14.9	30.9	81.3
top 6Mbps	11.1	N/A	11.1	12.9	45.7
top 9Mbps	11.1	N/A	11.1	12.9	47.9
top 12Mbps	11.1	N/A	11.1	12.9	43.7
top 18Mbps	11.2	N/A	11.2	13.2	43.7
top 24Mbps	11.3	N/A	11.3	13.5	46.8
top 36Mbps	11.4	N/A	11.4	13.8	45.7
top 48Mbps	11.4	N/A	11.4	13.8	46.8
top 54Mbps	11.1	N/A	11.1	12.9	40.7

Limits: 1Watt.

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

5.3.2.1 Test Equipment used

E252, E434, C031, C032, E003

See Section 10 for more details

5.4 Frequency Tolerance

Test not applicable. No test requirement nor limit given for DTS devices.

5.5 Duty Cycle

Test not applicable. However, a basic duty cycle measurement was made in order to ascertain any duty cycle corrections required to be applied to the test results.

The Transmit mode was confirmed as being 100% TX On.

5.5.1 Test Equipment used

E412

See Section 10 for more details

5.6 Maximum Spectral Power Density

5.6.1 Test Methods

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

5.6.1.1 Configuration of EUT

The EUT was tested on a bench via the Internal RF Port.

5.6.1.2 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. PEP was recorded per KDB558074, PSD Option 1.

5.6.2 Test results

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

Temperature of test Environment: 18-22°C

Channel 1 Test results

Channel/ scheme	PEP (dBm/3kHz)	Plot reference
1MB	-8.5	J4461-5, Channel 1, 1MB scheme, PK power density
2MB	-9.8	J4461-5, Channel 1, 2MB scheme, PK power density
5.5MB	-7.8	J4461-5, Channel 1, 5.5MB scheme, PK power density
11MB	-6	J4461-5, Channel 1, 11MB scheme, PK power density
6MB	-14.5	J4461-5, Channel 1, 6MB scheme, PK power density
9MB	-9.2	J4461-5, Channel 1, 9MB scheme, PK power density
12MB	-10.7	J4461-5, Channel 1, 12MB scheme, PK power density
18MB	-7.2	J4461-5, Channel 1, 18MB scheme, PK power density
24MB	-6.2	J4461-5, Channel 1, 24MB scheme, PK power density
36MB	-3.7	J4461-5, Channel 1, 36MB scheme, PK power density
48MB	-4.8	J4461-5, Channel 1, 48MB scheme, PK power density
54MB	-4.8	J4461-5, Channel 1, 54MB scheme, PK power density

Channel 6 Test results

Channel/ scheme	PEP (dBm/3kHz)	Plot reference
1MB	-8.8	J4461-5, Channel 6, 1MB scheme, PK power density
2MB	-10.3	J4461-5, Channel 6, 2MB scheme, PK power density
5.5MB	-8.2	J4461-5, Channel 6, 5.5MB scheme, PK power density
11MB	-5.8	J4461-5, Channel 6, 11MB scheme, PK power density
6MB	-12.8	J4461-5, Channel 6, 6MB scheme, PK power density
9MB	-8.7	J4461-5, Channel 6, 9MB scheme, PK power density
12MB	-10.2	J4461-5, Channel 6, 12MB scheme, PK power density
18MB	-6.8	J4461-5, Channel 6, 18MB scheme, PK power density
24MB	-5.8	J4461-5, Channel 6, 24MB scheme, PK power density
36MB	-3.3	J4461-5, Channel 6, 36MB scheme, PK power density
48MB	-4.3	J4461-5, Channel 6, 48MB scheme, PK power density
54MB	-4.3	J4461-5, Channel 6, 54MB scheme, PK power density

Channel 11 Test results

Channel/ scheme	PEP (dBm/3kHz)	Plot reference
1MB	-9.3	J4461-5, Channel 11, 1MB scheme, PK power density
2MB	-10.3	J4461-5, Channel 11, 2MB scheme, PK power density
5.5MB	-8.7	J4461-5, Channel 11, 5.5MB scheme, PK power density
11MB	-6.3	J4461-5, Channel 11, 11MB scheme, PK power density
6MB	-13.3	J4461-5, Channel 11, 6MB scheme, PK power density
9MB	-9.3	J4461-5, Channel 11, 9MB scheme, PK power density
12MB	-10.7	J4461-5, Channel 11, 12MB scheme, PK power density
18MB	-7.3	J4461-5, Channel 11, 18MB scheme, PK power density
24MB	-6.2	J4461-5, Channel 11, 24MB scheme, PK power density
36MB	-3.7	J4461-5, Channel 11, 36MB scheme, PK power density
48MB	-4.8	J4461-5, Channel 11, 48MB scheme, PK power density
54MB	-4.8	J4461-5, Channel 11, 54MB scheme, PK power density

Limit: +8dBm/3kHz.

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

5.6.2.1 Test Equipment used

E342, E252, E434

See Section 10 for more details.

5.7 6 dB Bandwidth

5.7.1 Test Methods

Test Requirements	FCC Part 15C, Reference (15.247)
Test Method:	FCC Part 15C, Reference (15.247) KDB558074 - Bandwidth

5.7.1.1 Configuration of EUT

The EUT was tested on a bench via the Internal RF port.

5.7.1.2 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. In accordance with KDB558074, the analyser's RBW was set to 100kHz and the span was set greater than this. Readings of 6dB bandwidth are taken directly from the analyser.

5.7.2 Test results

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

Temperature of test Environment: 21°C

Analyser plots illustrating the 6dB bandwidth can be found in Section 6.5 of this report.

Test results

Channel 1 / Scheme	BW result (MHz)	Plot reference
1Mbps	13.20	0001
2Mbps	13.10	0002
5.5Mbps	12.70	0003
11Mbps	13.55	0004
6Mbps	16.40	0005
9Mbps	16.40	0006
12Mbps	16.55	0007
18Mbps	16.30	0008
24Mbps	16.50	0009
36Mbps	16.25	0010
48Mbps	16.15	0011
54Mbps	16.45	0012

Channel 6 / Scheme	BW result (MHz)	Plot reference
1Mbps	13.15	0013
2Mbps	12.95	0014
5.5Mbps	12.70	0015
11Mbps	13.05	0016
6Mbps	16.50	0017
9Mbps	16.45	0018
12Mbps	16.55	0019
18Mbps	16.55	0020

24Mbps	16.55	0021
36Mbps	16.55	0022
48Mbps	16.20	0023
54Mbps	16.55	0024

Channel 11 / Scheme	BW result (MHz)	Plot reference
1Mbps	13.15	0025
2Mbps	12.95	0026
5.5Mbps	12.75	0027
11Mbps	13.05	0028
6Mbps	16.45	0029
9Mbps	16.45	0030
12Mbps	16.50	0031
18Mbps	16.40	0032
24Mbps	16.55	0033
36Mbps	16.25	0034
48Mbps	16.20	0035
54Mbps	16.55	0036

Limits: > 500kHz BW.

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

5.7.2.1 Test Equipment used

E252, E342, E434

See Section 10 for more details.

5.8 Band Edge Compliance

5.8.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.215 and 15.247)

Test Method: FCC Part 15C, Reference (15.215)

5.8.1.1 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.

5.8.1.2 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.

5.8.2 Test results

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

Temperature of test Environment: 20°C

Analyser plots for the Band Edge Compliance can be found in Section 6.6 of this report. The following tables list the field strengths observed in the adjacent restricted bands, which are required to meet the tighter 15.209 limits:

Wi-Fi RF part results

Channel 1 / Scheme	Band edge PK reading (dBuV/m)	Band edge AV reading (dBuV/m)	Plot reference
1Mbps	57.4	49.7	J4461-5, Restricted band edge channel 1, 1MB
2Mbps	57.3	49.6	J4461-5, Restricted band edge channel 1, 2MB
5.5Mbps	56.2	45.7	J4461-5, Restricted band edge channel 1, 5.5MB
11Mbps	58.2	46.6	J4461-5, Restricted band edge channel 1, 5.5MB
6Mbps	54.8	41.0	J4461-5, Restricted band edge channel 1, 6MB
9Mbps	55.5	40.5	J4461-5, Restricted band edge channel 1, 9MB
12Mbps	57.5	40.7	J4461-5, Restricted band edge channel 1, 12MB
18Mbps	55.3	40.2	J4461-5, Restricted band edge channel 1, 18MB
24Mbps	52.8	40.1	J4461-5, Restricted band edge channel 1, 24MB
36Mbps	53.2	42.5	J4461-5, Restricted band edge channel 1, 36MB
48Mbps	52.5	40.9	J4461-5, Restricted band edge channel 1, 48MB
54Mbps	53.2	41.0	J4461-5, Restricted band edge channel 1, 54MB

Channel 11 / Scheme	Band edge PK reading (dBuV/m)	Band edge AV reading (dBuV/m)	Plot reference
1Mbps	51.8	43.7	J4461-5, Restricted band edge channel 11, 1MB
2Mbps	53.8	44.2	J4461-5, Restricted band edge channel 11, 2MB
5.5Mbps	53.6	41.7	J4461-5, Restricted band edge channel 11, 5.5MB
11Mbps	54.0	42.2	J4461-5, Restricted band edge channel 11,

			5.5MB
6Mbps	54.6	38.2	J4461-5, Restricted band edge channel 11, 6MB
9Mbps	50.9	38.8	J4461-5, Restricted band edge channel 11, 9MB
12Mbps	52.2	38.2	J4461-5, Restricted band edge channel 11, 12MB
18Mbps	51.8	37.7	J4461-5, Restricted band edge channel 11, 18MB
24Mbps	53.1	38.8	J4461-5, Restricted band edge channel 11, 24MB
36Mbps	52.3	40.0	J4461-5, Restricted band edge channel 11, 36MB
48Mbps	52.4	40.0	J4461-5, Restricted band edge channel 11, 48MB
54Mbps	51.8	37.8	J4461-5, Restricted band edge channel 11, 54MB

Limits: AV = 54dBuV/m at band edges
PK = 74dBuV/m at band edges

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

Non-Restricted band edges.

Analyser plots for the Band Edge Compliance can be found in Section 6.6 of this report. These show the 20dBc/30dBc requirement of 15.247(d) are met at the band edges of 2400 and 2483.5 MHz.

Channel	Scheme	Plot reference
1	1Mbps	J4461-5, Band edge channel 1, 1MB
1	2Mbps	J4461-5, Band edge channel 1, 2MB
1	5.5Mbps	J4461-5, Band edge channel 1, 5.5MB
1	11Mbps	J4461-5, Band edge channel 1, 11MB
1	6Mbps	J4461-5, Band edge channel 1, 6MB
1	9Mbps	J4461-5, Band edge channel 1, 9MB
1	12Mbps	J4461-5, Band edge channel 1, 12MB
1	18Mbps	J4461-5, Band edge channel 1, 18MB
1	24Mbps	J4461-5, Band edge channel 1, 24MB
1	36Mbps	J4461-5, Band edge channel 1, 36MB
1	48Mbps	J4461-5, Band edge channel 1, 48MB
1	54Mbps	J4461-5, Band edge channel 1, 54MB

Channel	Scheme	Plot reference
11	1Mbps	J4461-5, Band edge channel 11, 1MB
11	2Mbps	J4461-5, Band edge channel 11, 2MB
11	5.5Mbps	J4461-5, Band edge channel 11, 5.5MB
11	11Mbps	J4461-5, Band edge channel 11, 11MB
11	6Mbps	J4461-5, Band edge channel 11, 6MB
11	9Mbps	J4461-5, Band edge channel 11, 9MB
11	12Mbps	J4461-5, Band edge channel 11, 12MB
11	18Mbps	J4461-5, Band edge channel 11, 18MB
11	24Mbps	J4461-5, Band edge channel 11, 24MB
11	36Mbps	J4461-5, Band edge channel 11, 36MB
11	48Mbps	J4461-5, Band edge channel 11, 48MB
11	54Mbps	J4461-5, Band edge channel 11, 54MB

Limits: Average power complied with = 30dBc
Peak power complied with = 20dBc

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

5.8.2.1 Test Equipment used

E429, E252, E319, E463, E268, E342, TMS82

See Section 10 for more details.

5.9 Frequency Separation

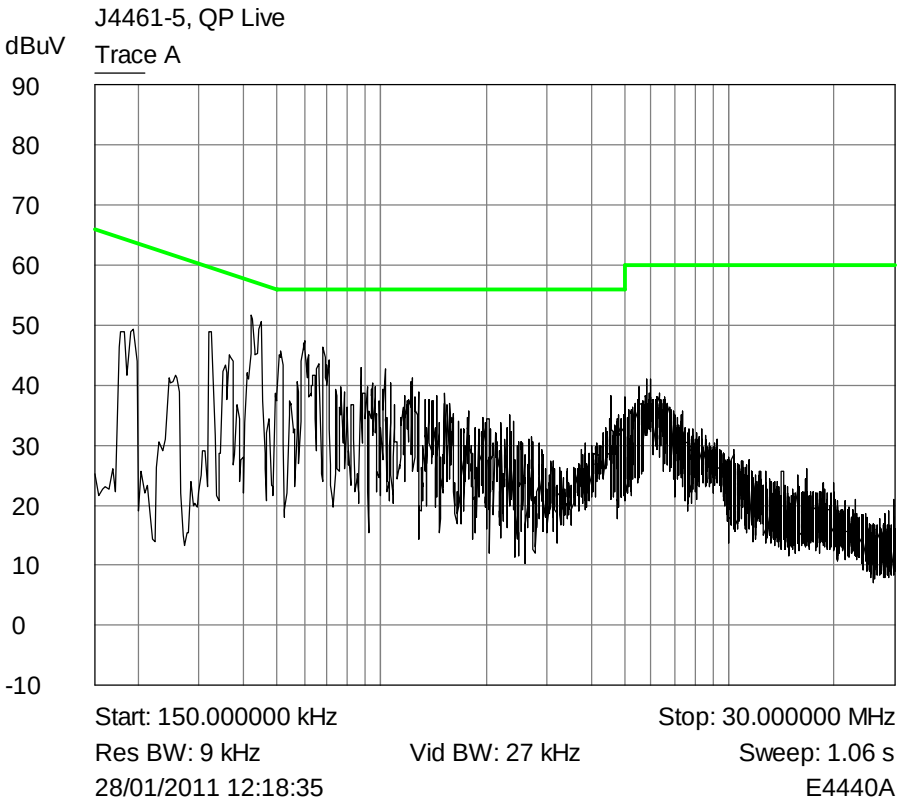
Test not applicable, EUT does not employ FHSS Technology.

5.10 Number of hopping Channels

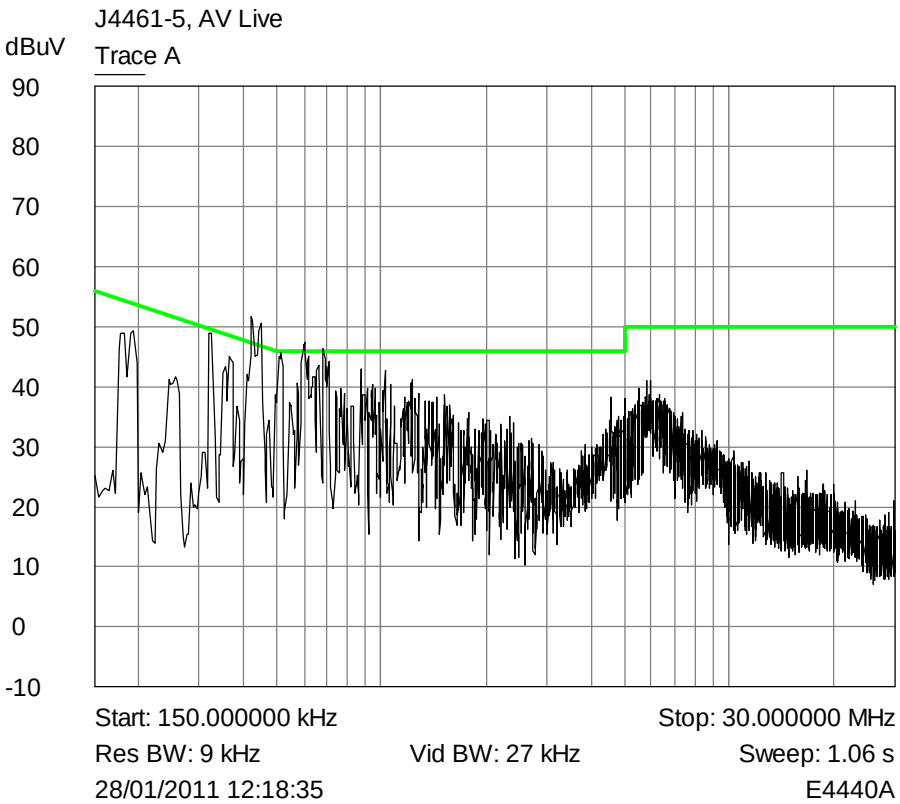
Test not applicable, EUT does not employ FHSS Technology.

6. Plots and Results

6.1 Conducted Emissions



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

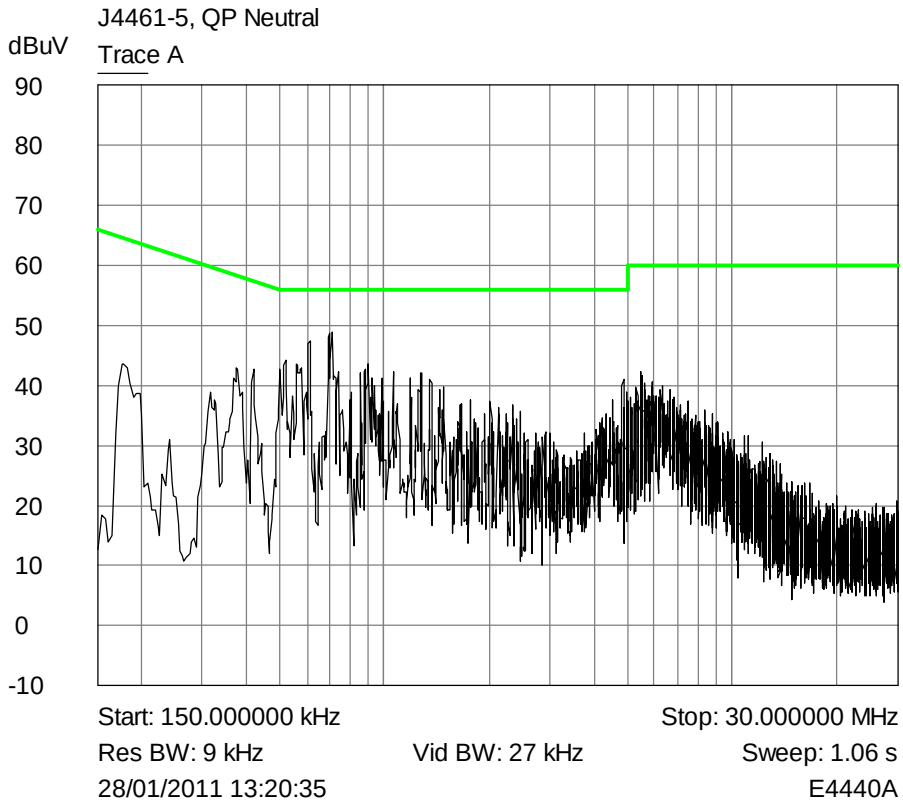


Plot of peak emissions 150kHz - 30MHz on the mains live terminal against the average limit line.

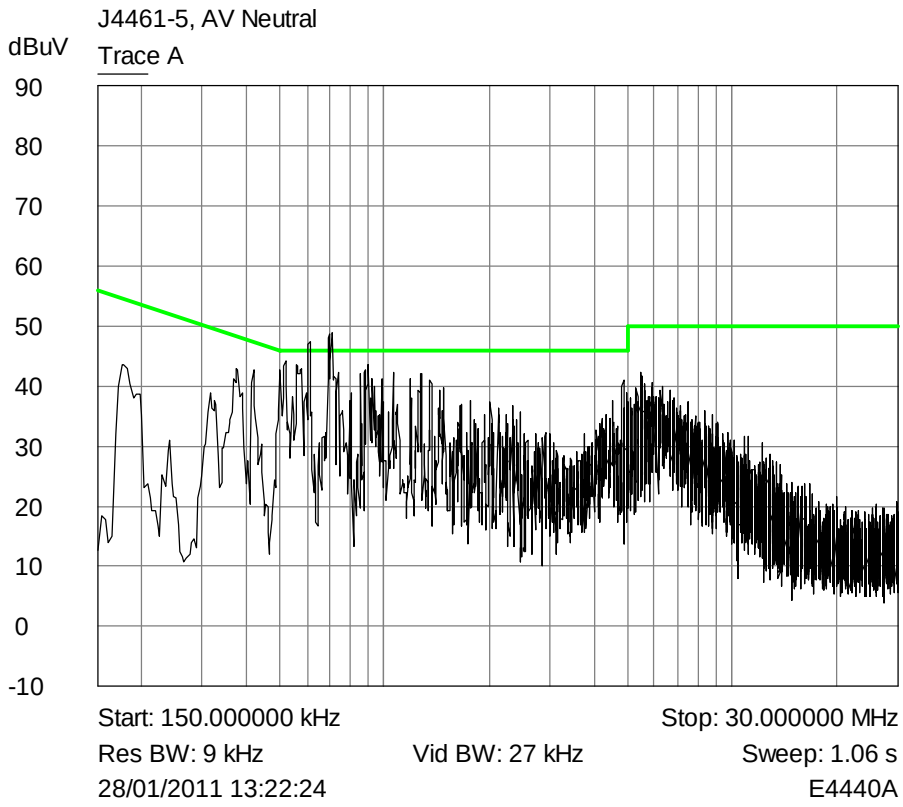
Table of signals measured.

Quasi-Peak and Average Live

Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)	AV Amp (dBuV)	AV - Lim1 (dB)
1	0.179	51.3	47.4	-17.1	28.3	-26.2
2	0.238	44.0	42.0	-20.2	22.6	-29.6
3	0.322	49.8	46.7	-13.0	25.2	-24.5
4	0.357	47.2	45.5	-13.3	26.1	-22.7
5	0.396	33.9	26.6	-31.3	10.6	-37.3
6	0.425	51.9	49.0	-8.3	29.1	-18.2
7	0.514	46.0	43.0	-13.0	21.2	-24.8
8	0.578	43.3	40.1	-15.9	19.4	-26.6
9	0.607	47.7	43.8	-12.2	23.3	-22.7
10	0.708	47.4	44.7	-11.3	22.9	-23.1
11	0.773	43.9	39.8	-16.2	20.4	-25.6
12	0.788	40.2	35.1	-20.9	15.9	-30.1
13	0.829	42.2	40.1	-15.9	19.2	-26.8
14	0.910	43.5	39.4	-16.6	17.9	-28.1
15	1.030	43.4	39.8	-16.2	18.2	-27.8
16	1.066	39.1	36.2	-19.8	16.7	-29.3
17	1.089	40.5	35.0	-21.0	16.0	-30.0
18	1.102	41.7	35.7	-20.3	15.5	-30.5
19	1.123	40.8	37.4	-18.6	17.2	-28.8
20	1.138	40.7	36.7	-19.3	16.3	-29.7
21	1.152	40.5	36.0	-20.0	16.3	-29.7
22	1.152	40.8	36.3	-19.7	16.2	-29.8
23	1.183	40.0	37.4	-18.6	18.8	-27.2
24	1.212	40.7	37.0	-19.0	18.0	-28.0
25	1.225	40.8	38.7	-17.3	18.6	-27.4
26	1.24	40.2	35.9	-20.1	16.9	-29.1
27	1.256	40.5	36.5	-19.5	16.9	-29.1
28	1.273	40.5	35.7	-20.3	17.2	-28.8
29	1.336	38.7	34.9	-21.1	15.8	-30.2
30	1.350	39.7	34.8	-21.2	15.9	-30.1
31	1.429	40.1	34.8	-21.2	15.2	-30.8
32	1.471	38.7	34.5	-21.5	14.5	-31.5
33	1.483	37.2	33.6	-22.4	17.4	-28.6
34	1.547	41.3	36.9	-19.1	16.1	-29.9



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



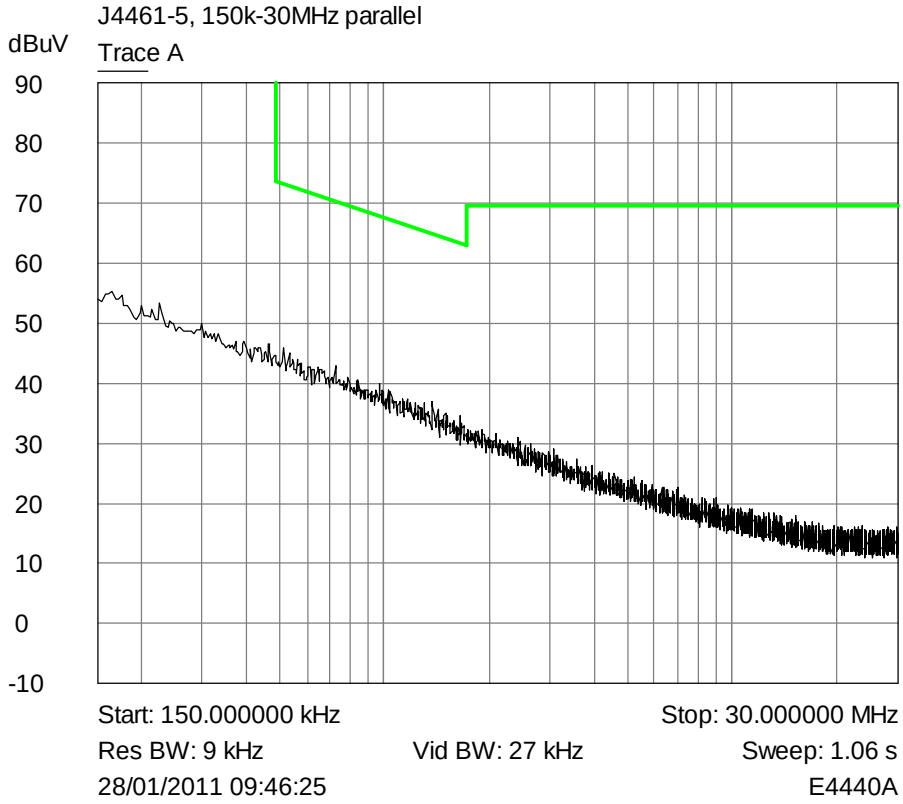
Plot of peak emissions 150kHz - 30MHz on the mains neutral terminal against the average limit line.

Table of signals measured.

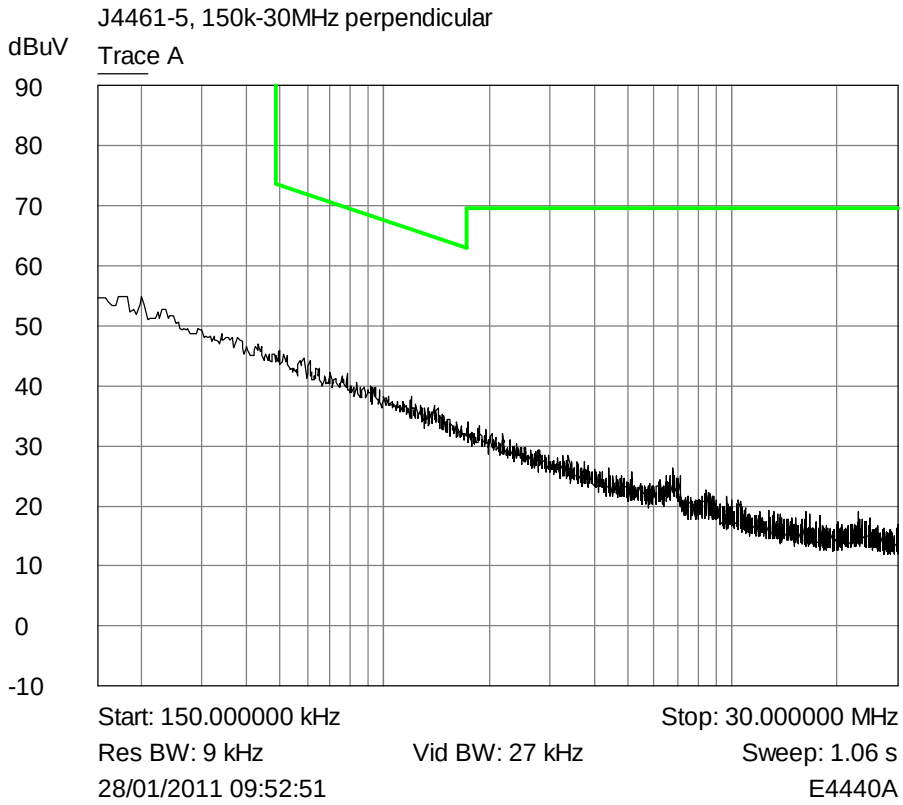
Quasi-Peak and Average Neutral

Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)	AV Amp (dBuV)	AV - Lim1 (dB)
1	0.179	49.8	46.2	-18.3	28.3	-26.2
2	0.240	43.1	41.1	-21.0	24.3	-27.8
3	0.320	47.2	45.2	-14.5	27.3	-22.4
4	0.356	48.3	46.4	-12.4	27.8	-21.0
5	0.426	51.3	48.7	-8.6	31.8	-15.5
6	0.509	44.4	41.6	-14.4	23.5	-22.5
7	0.565	46.2	40.1	-15.9	23.1	-22.9
8	0.578	45.5	41.2	-14.8	23.4	-22.6
9	0.593	49.6	47.1	-8.9	27.4	-18.6
10	0.773	44.6	41.7	-14.3	24.8	-21.2
11	0.829	45.6	42.7	-13.3	24.0	-22.0
12	0.908	46.5	41.6	-14.4	22.7	-23.3
13	0.953	44.1	40.4	-15.6	22.7	-23.3
14	1.030	44.6	42.1	-13.9	22.4	-23.6
15	1.065	44.1	39.4	-16.6	20.5	-25.5
16	1.079	43.1	38.4	-17.6	19.8	-26.2
17	1.091	43.5	39.2	-16.8	20.5	-25.5
18	1.102	43.1	38.5	-17.5	19.7	-26.3
19	1.124	44.5	40.8	-15.2	22.0	-24.0
20	1.165	42.6	38.6	-17.4	20.2	-25.8
21	1.181	43.0	39.0	-17.0	22.0	-24.0
22	1.224	44.7	40.9	-15.1	22.7	-23.3
23	1.241	43.0	38.6	-17.4	20.9	-25.1
24	1.257	43.2	38.4	-17.6	20.5	-25.5
25	1.270	41.8	38.5	-17.5	20.2	-25.8
26	1.289	44.4	40.5	-15.5	21.1	-24.9
27	1.301	42.3	38.7	-17.3	20.0	-26.0
28	1.362	42.1	39.0	-17.0	20.9	-25.1
29	1.418	42.5	37.9	-18.1	21.0	-25.0
30	1.426	41.4	37.4	-18.6	20.2	-25.8
31	1.439	40.3	36.8	-19.2	19.7	-26.3
32	1.483	42.1	38.4	-17.6	21.5	-24.5
33	1.530	40.5	35.4	-20.6	18.9	-27.1

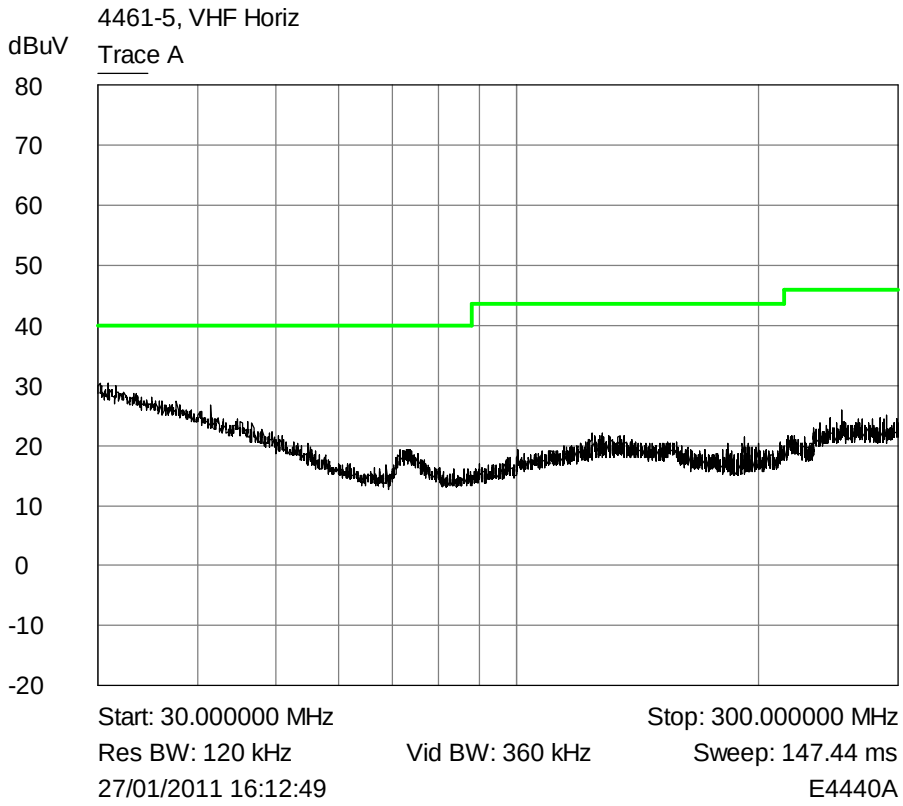
6.2 Radiated Emissions



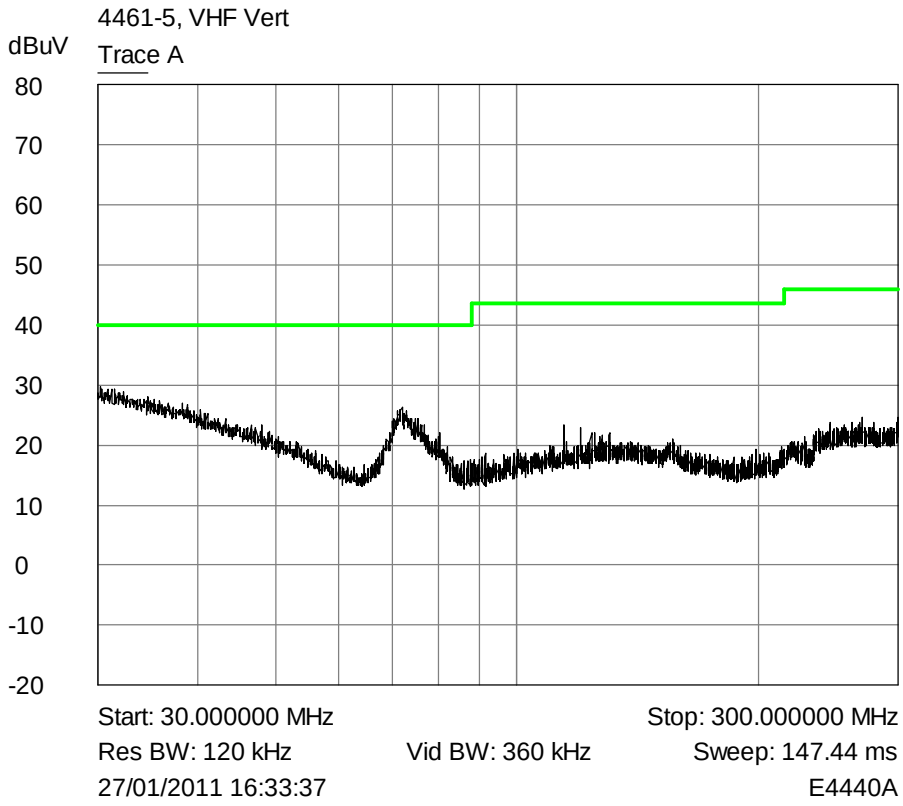
Plot of peak Parallel emissions 150kHz - 30MHz against the quasi-peak limit line.



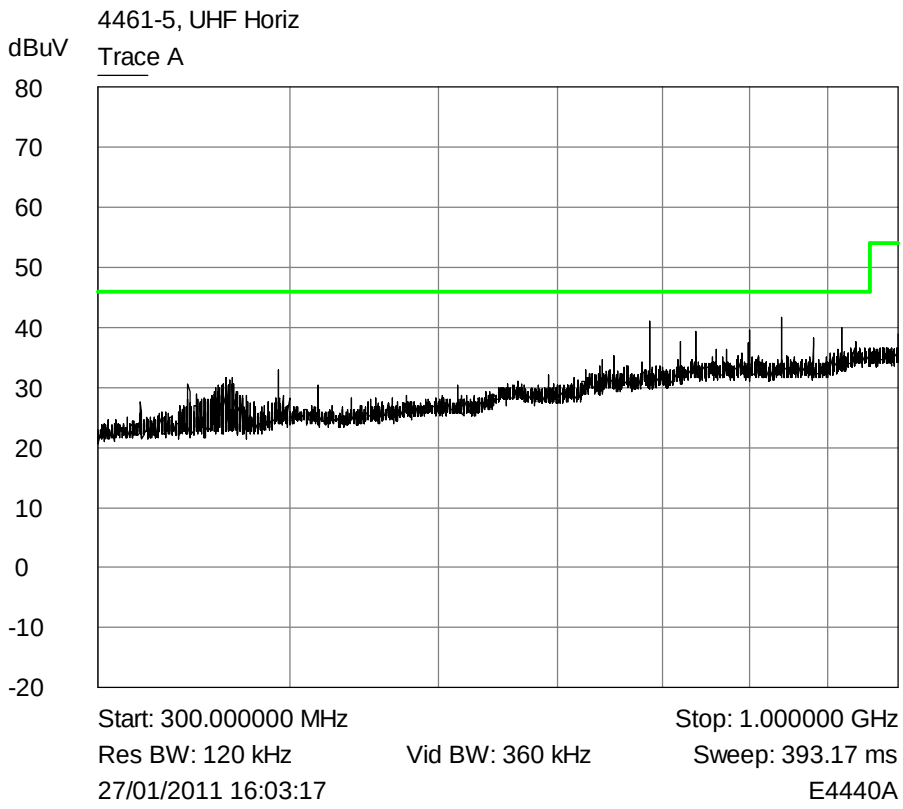
Plot of peak Perpendicular emissions 150kHz - 30MHz against the quasi-peak limit line.



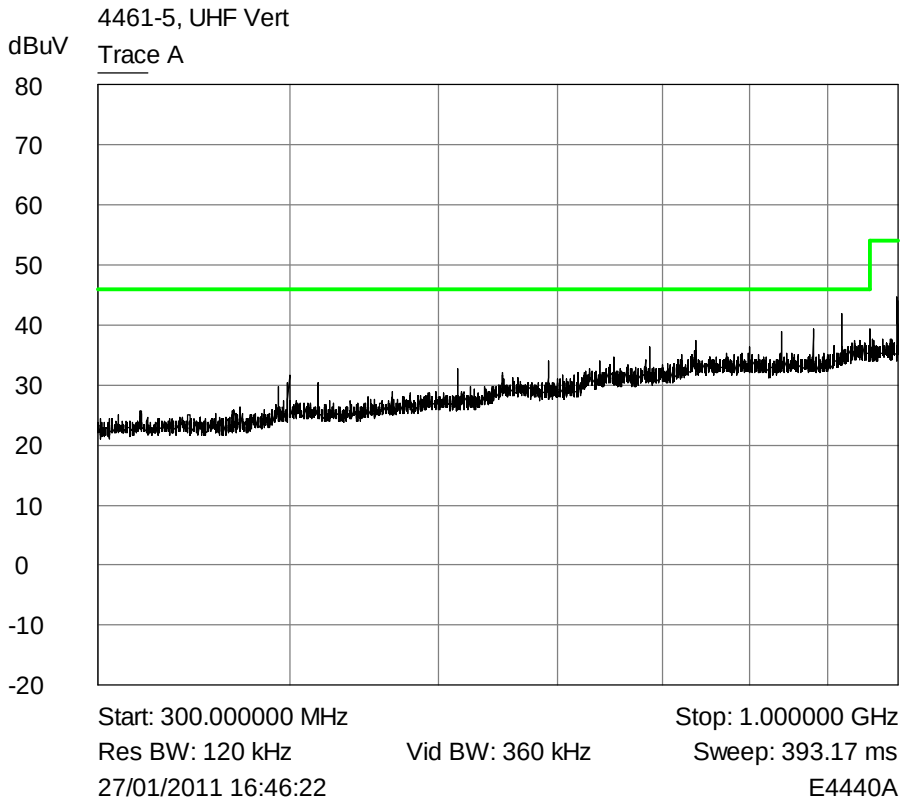
Plot of peak horizontal emissions 30MHz - 300MHz against the quasi-peak limit line.



Plot of peak vertical emissions 30MHz - 300MHz against the quasi-peak limit line.



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



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

Table of signals measured below 1GHz.

Horizontal

The signal list below is common to Top, Middle & Bottom channels

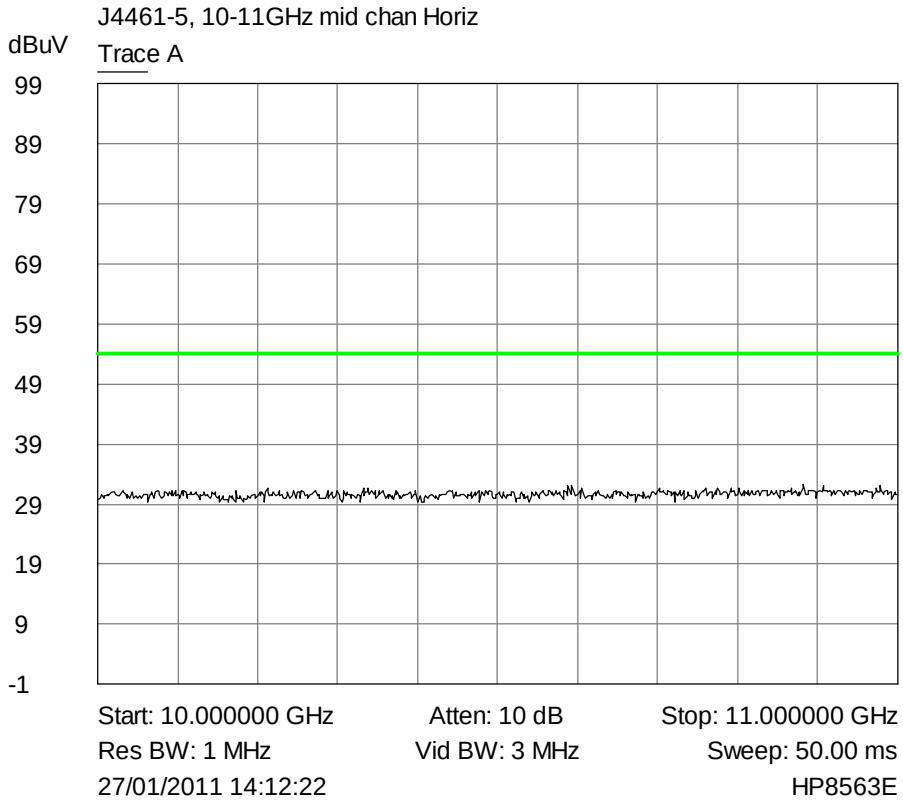
Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)
1	688.094	42.6	40.7	-5.3
2	719.996	40.5	38.2	-7.8
3	737.244	40.2	37.3	-8.7
4	798.681	38.4	34.2	-11.8
5	799.995	40.4	37.5	-8.5
6	839.995	42.7	41.0	-5.0
7	879.995	37.5	34.2	-11.8
8	919.995	40.9	38.1	-7.9

Vertical

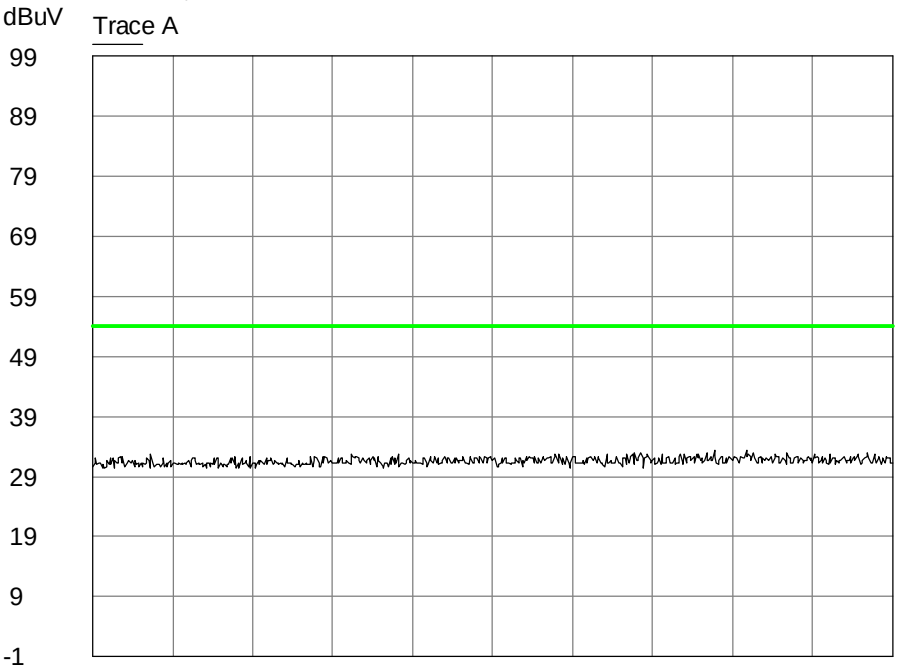
The signal list below is common to Top, Middle & Bottom channels

Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)
1	688.095	38.7	36.3	-9.7
2	737.247	39.3	36.5	-9.5
3	839.995	40.6	36.8	-9.2
4	879.995	39.5	36.5	-9.5
5	919.995	42.8	40.6	-5.4
6	998.380	42.6	33.9	-20.1

Plots of Average horizontal emissions 1GHz - 25GHz against the Average limit line.

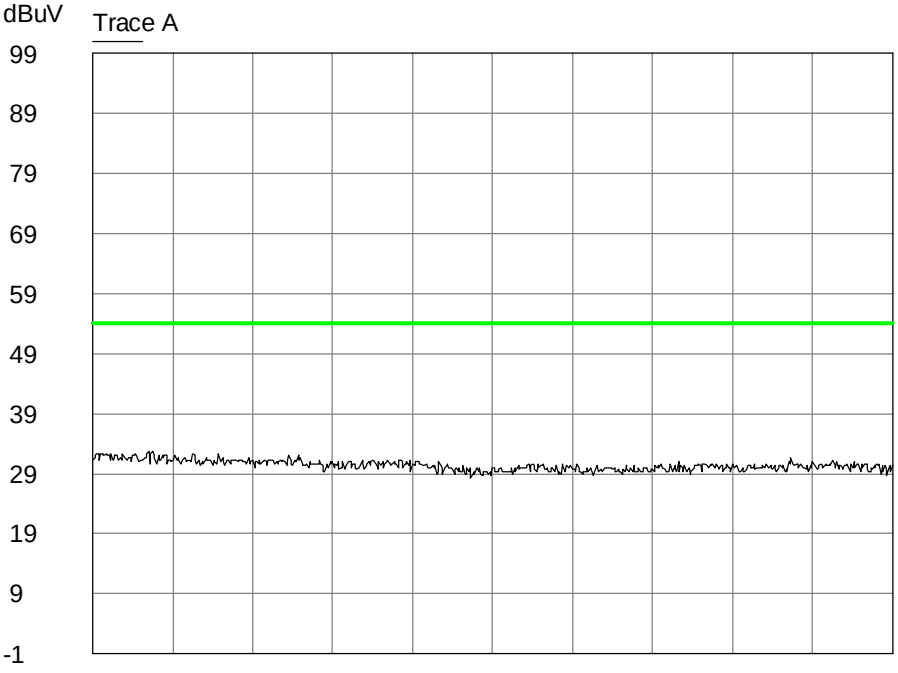


J4461-5, 11-12GHz mid chan Horiz



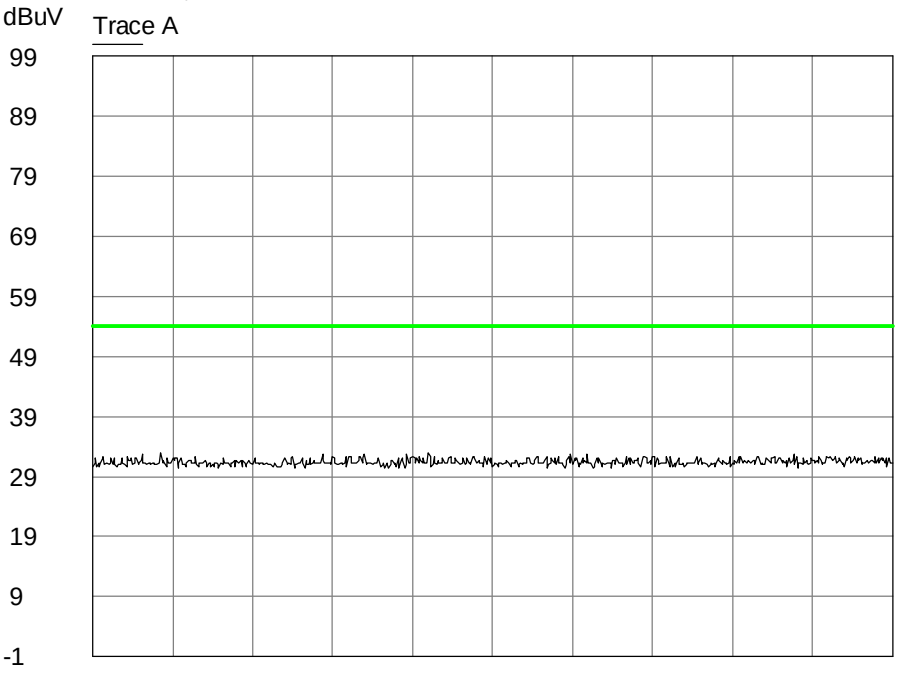
Start: 11.000000 GHz Atten: 10 dB Stop: 12.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:13:54 HP8563E

J4461-5, 12-13GHz mid chan Horiz



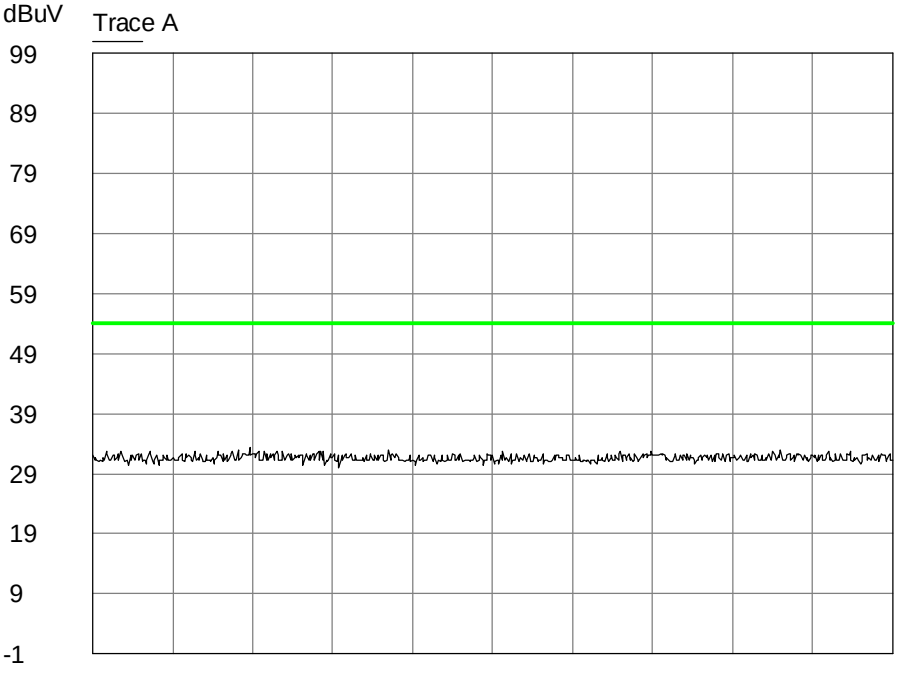
Start: 12.000000 GHz Atten: 10 dB Stop: 13.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:34:20 HP8563E

J4461-5, 13-14GHz mid chan Horiz



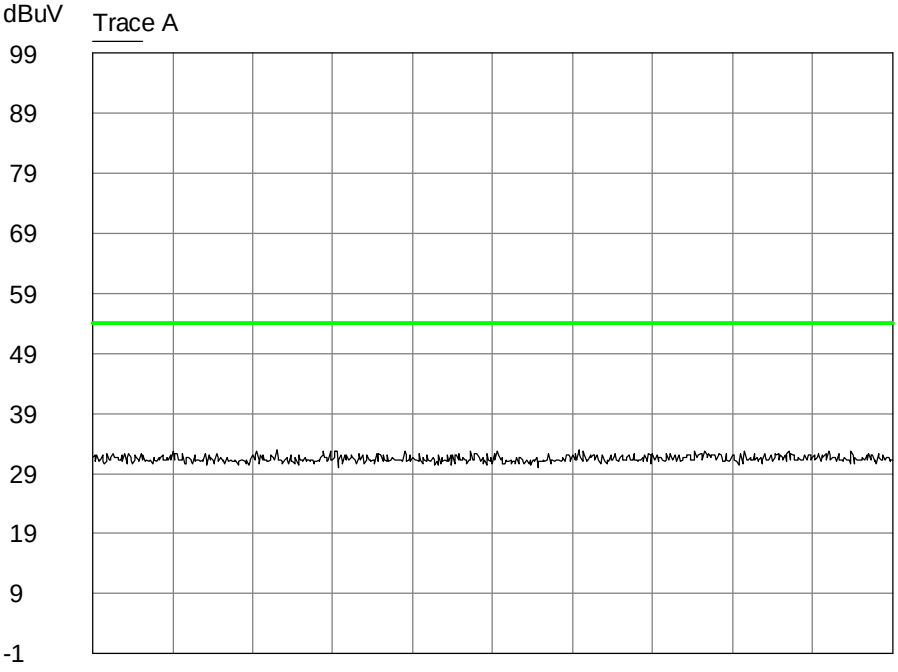
Start: 13.000000 GHz Atten: 10 dB Stop: 14.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:36:44 HP8563E

J4461-5, 14-15GHz mid chan Horiz



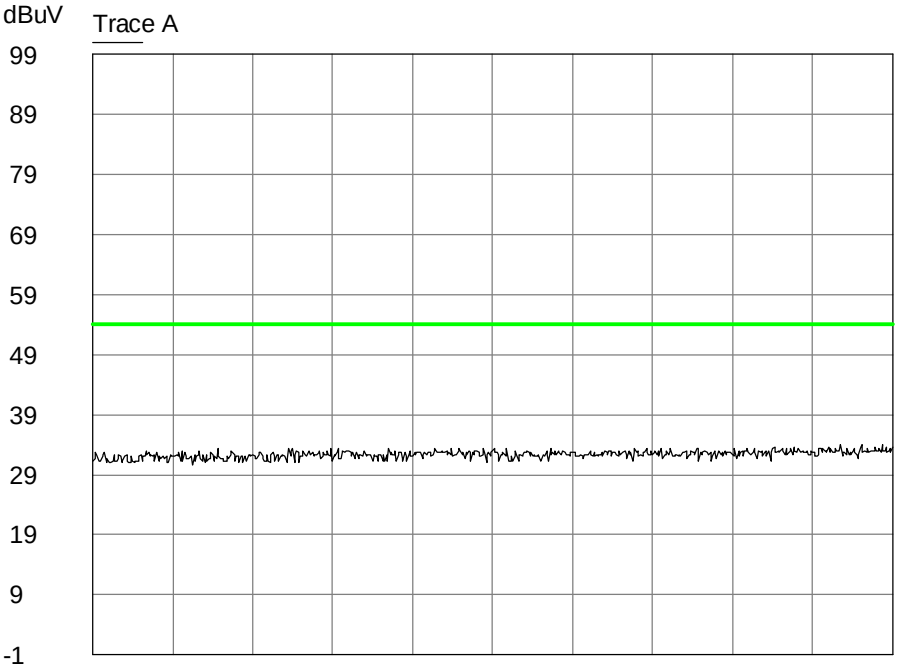
Start: 14.000000 GHz Atten: 10 dB Stop: 15.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:41:12 HP8563E

J4461-5, 15-16GHz mid chan Horiz



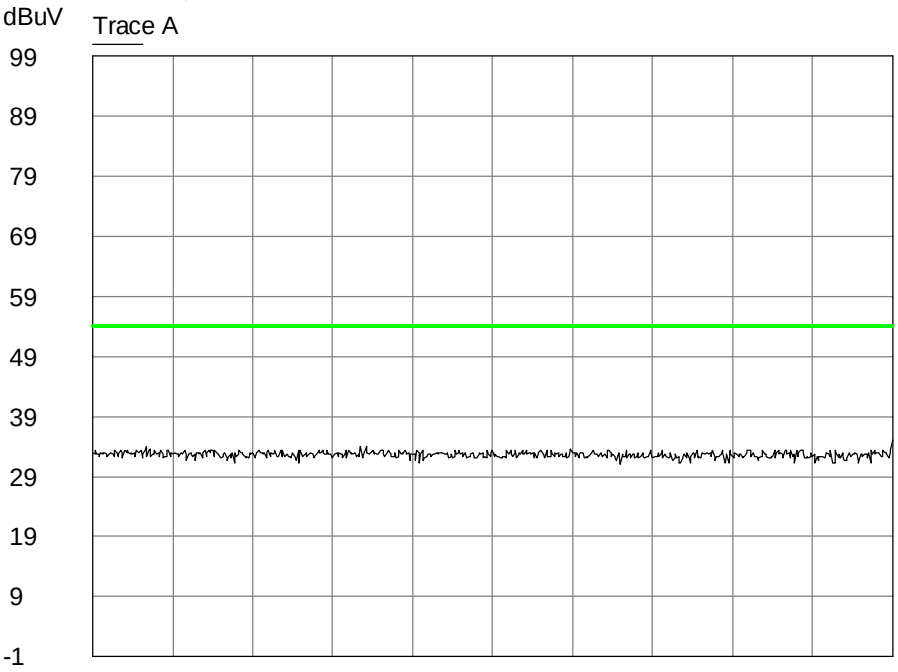
Start: 15.000000 GHz Atten: 10 dB Stop: 16.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:42:02 HP8563E

J4461-5, 16-17GHz mid chan Horiz



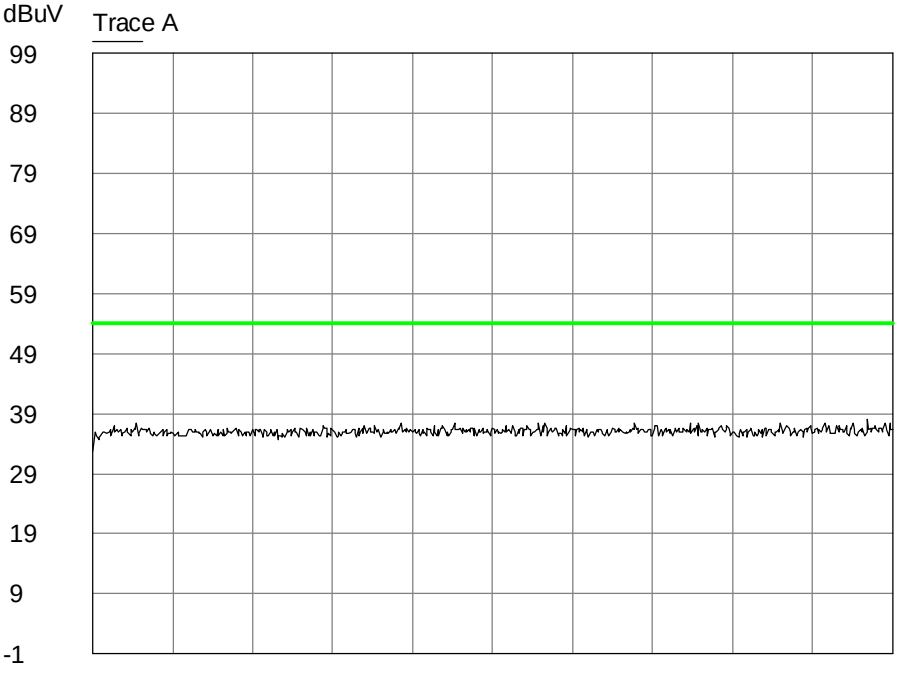
Start: 16.000000 GHz Atten: 10 dB Stop: 17.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:44:17 HP8563E

J4461-5, 17-18GHz mid chan Horiz



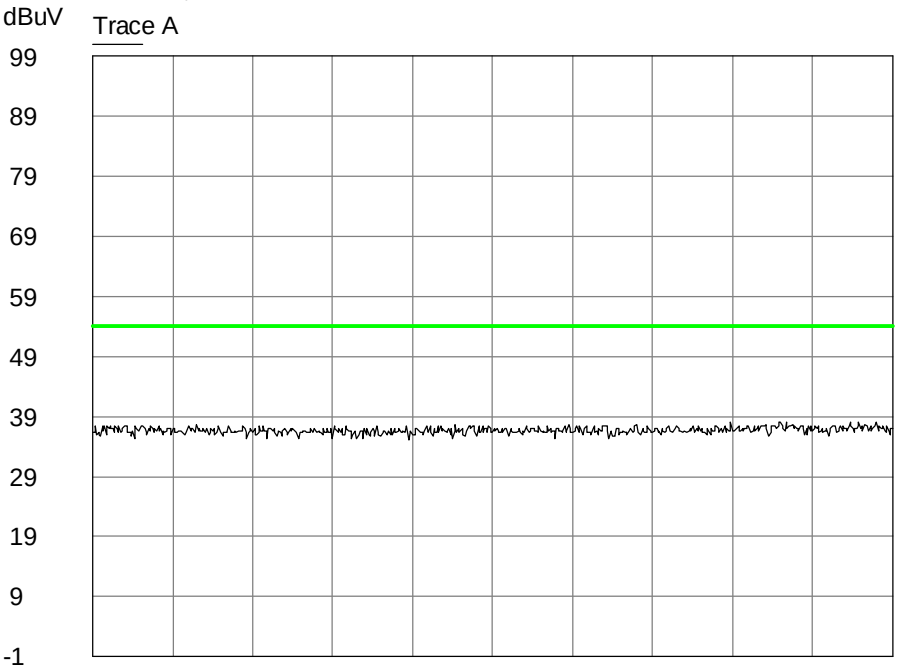
Start: 17.000000 GHz Atten: 10 dB Stop: 18.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:45:04 HP8563E

J4461-5, 18-19GHz mid chan Vert&Horiz



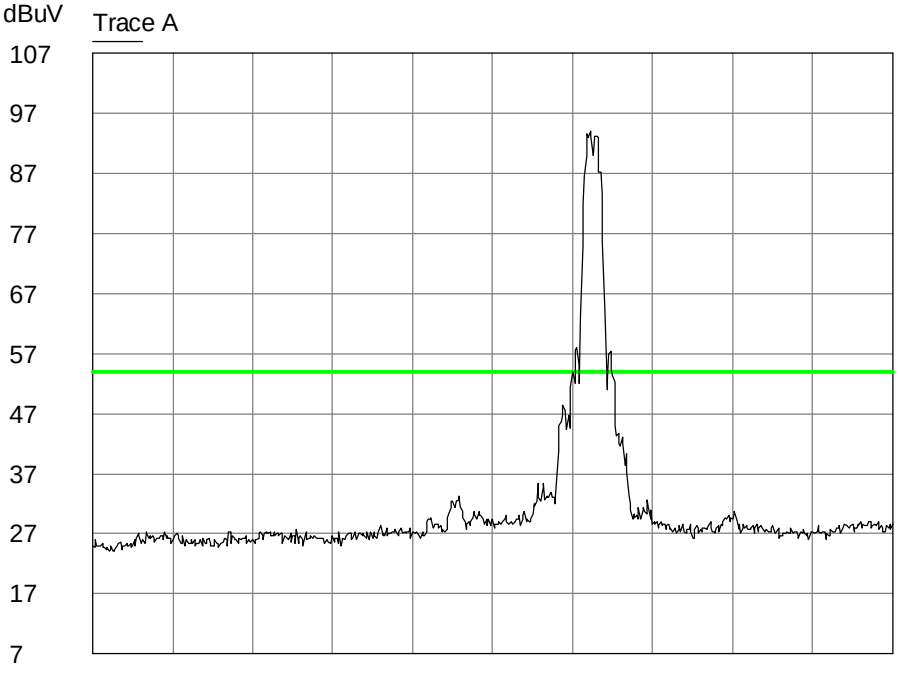
Start: 18.000000 GHz Atten: 10 dB Stop: 19.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:48:16 HP8563E

J4461-5, 19-20GHz mid chan Vert&Horiz



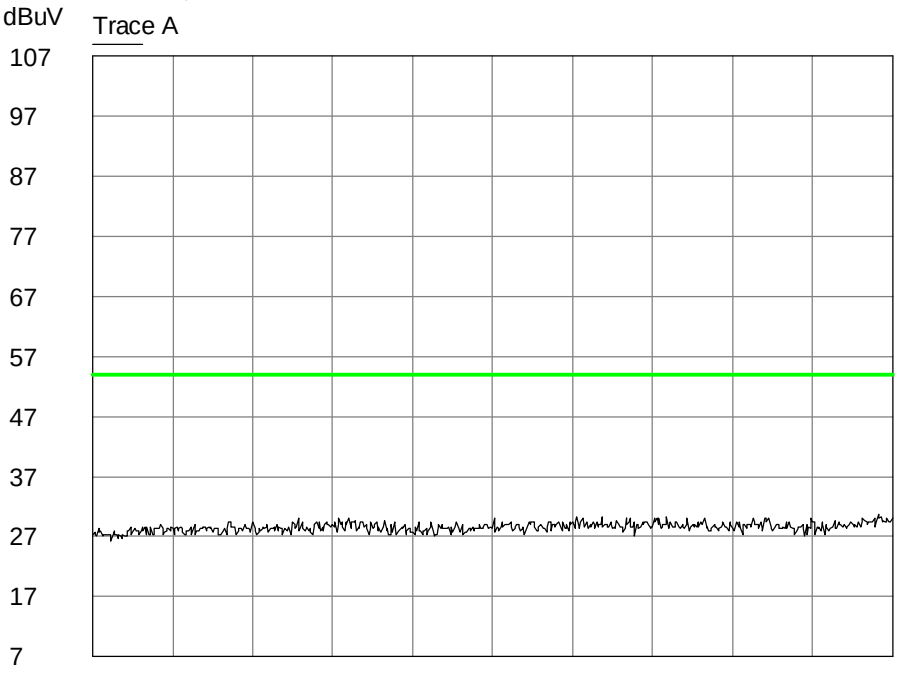
Start: 19.000000 GHz Atten: 10 dB Stop: 20.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:50:10 HP8563E

J4461-5, 2-2.7GHz mid chan Horiz



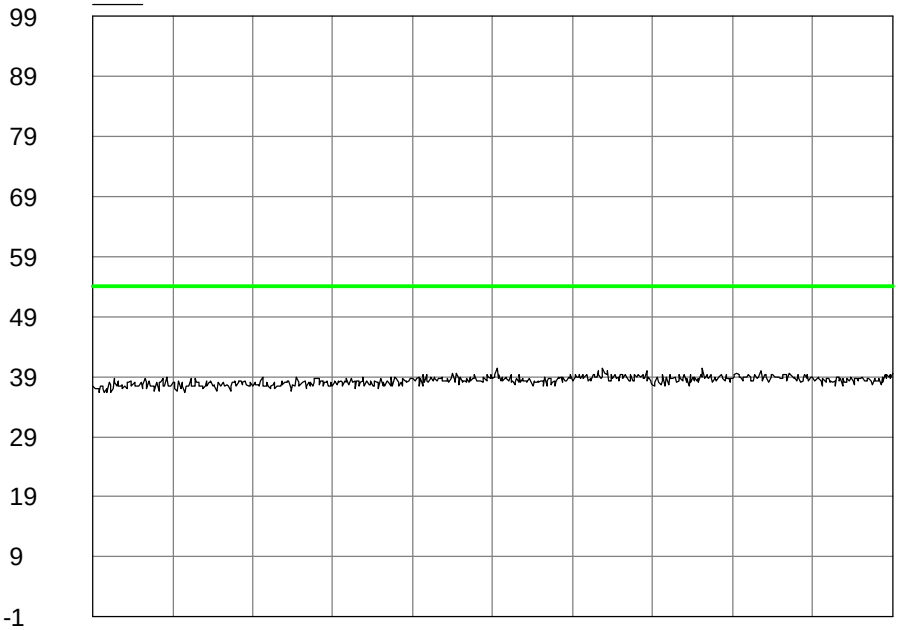
Start: 2.000000 GHz Atten: 10 dB Stop: 2.700000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:33:46 HP8563E

J4461-5, 2.7-3GHz mid chan Horiz



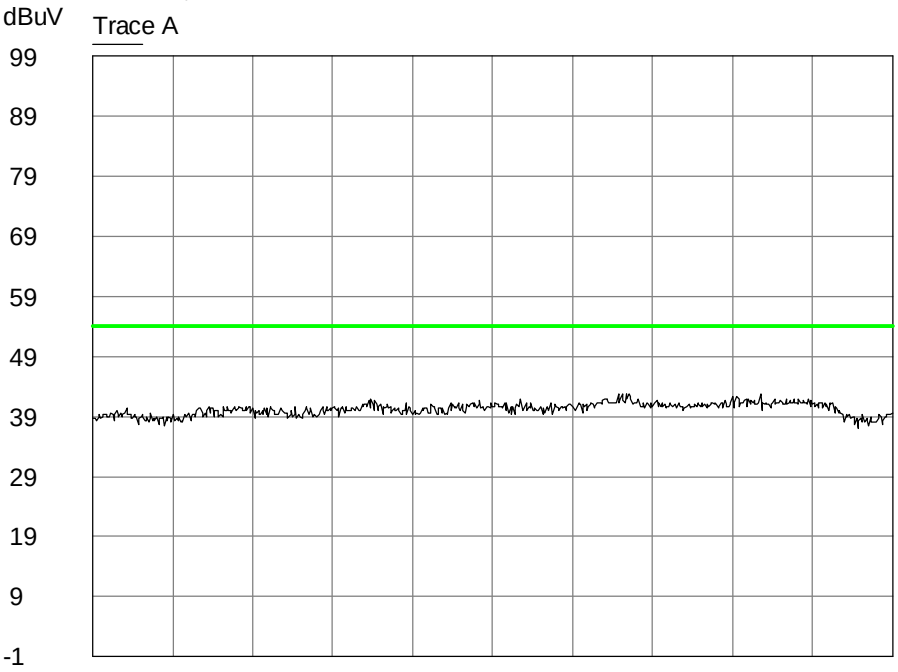
Start: 2.700000 GHz Atten: 10 dB Stop: 3.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:38:07 HP8563E

J4461-5, 20-22GHz mid chan Vert&Horiz



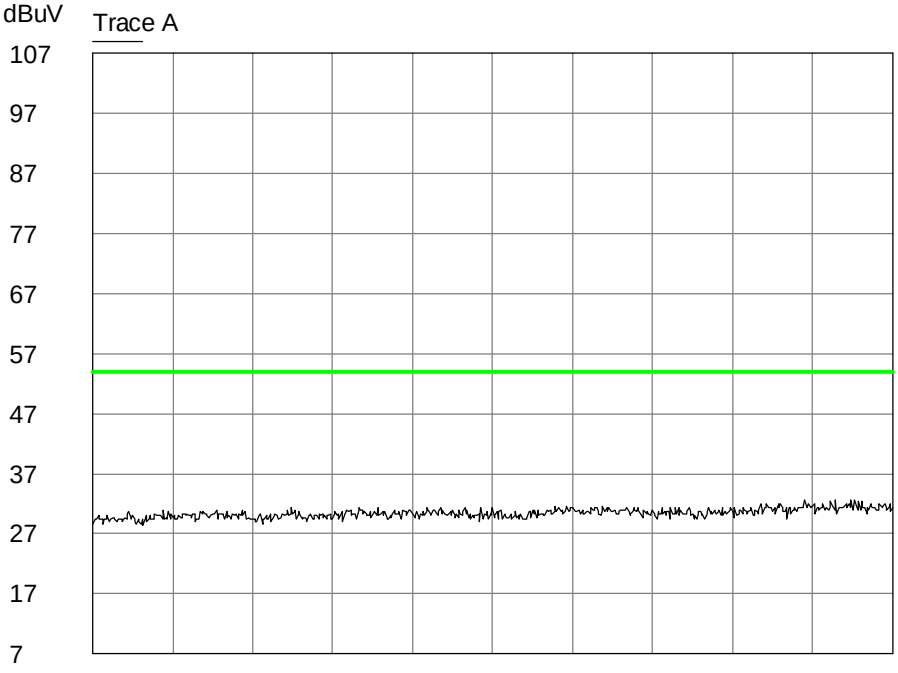
Start: 20.000000 GHz Atten: 10 dB Stop: 22.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:50:49 HP8563E

J4461-5, 22-25GHz mid chan Vert&Horiz



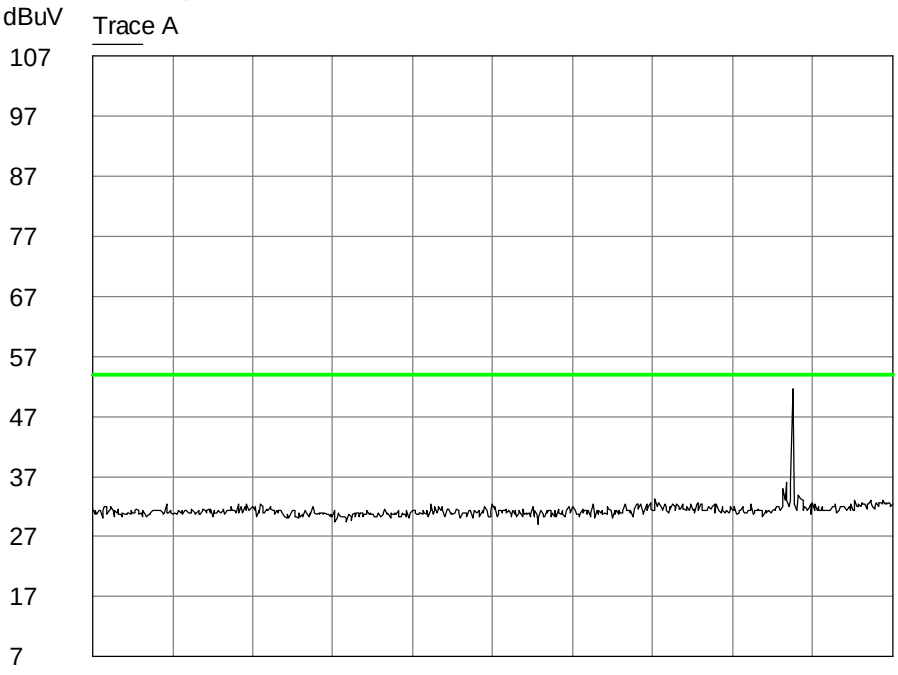
Start: 22.000000 GHz Atten: 10 dB Stop: 25.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 ms
27/01/2011 14:52:10 HP8563E

J4461-5, 3-4GHz mid chan Horiz



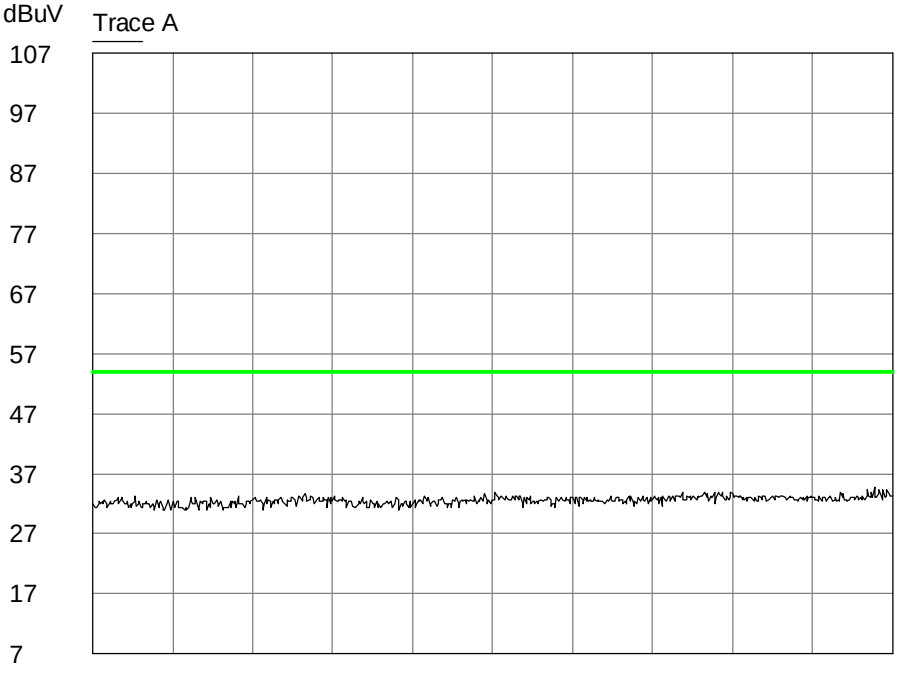
Start: 3.000000 GHz Atten: 10 dB Stop: 4.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:41:44 HP8563E

J4461-5, 4-5GHz mid chan Horiz



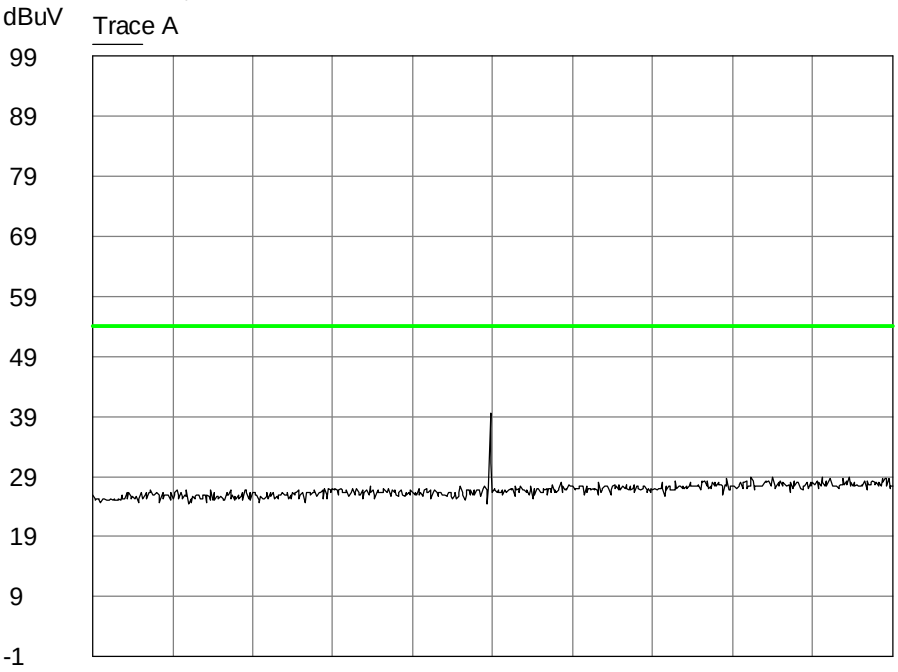
Start: 4.000000 GHz Atten: 10 dB Stop: 5.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:44:27 HP8563E

J4461-5, 5-6GHz mid chan Horiz



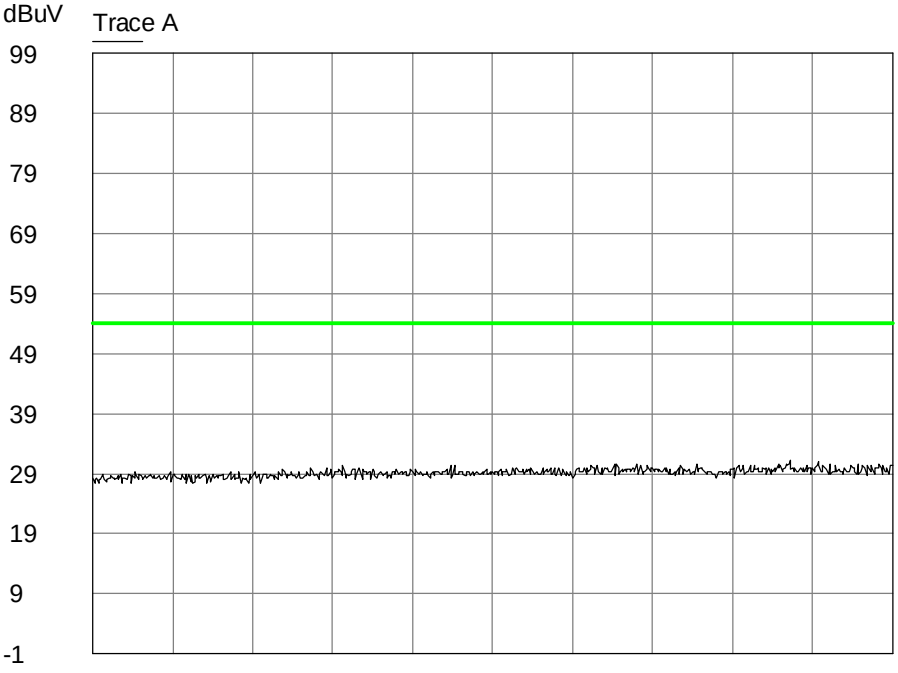
Start: 5.000000 GHz Atten: 10 dB Stop: 6.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:45:13 HP8563E

J4461-5, 6-7GHz mid chan Horiz



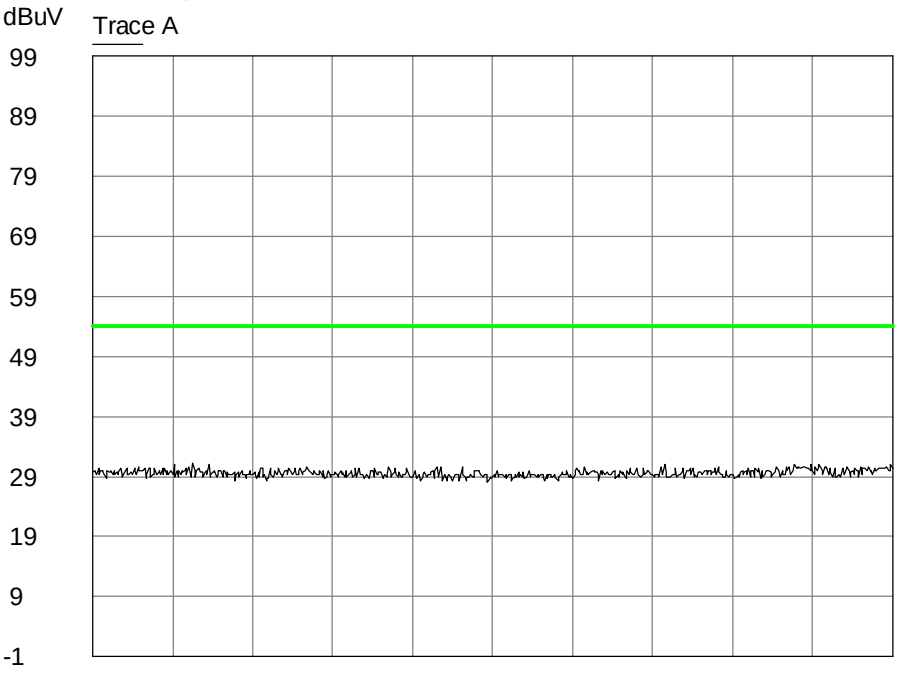
Start: 6.000000 GHz Atten: 10 dB Stop: 7.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:00:23 HP8563E

J4461-5, 7-8GHz mid chan Horiz



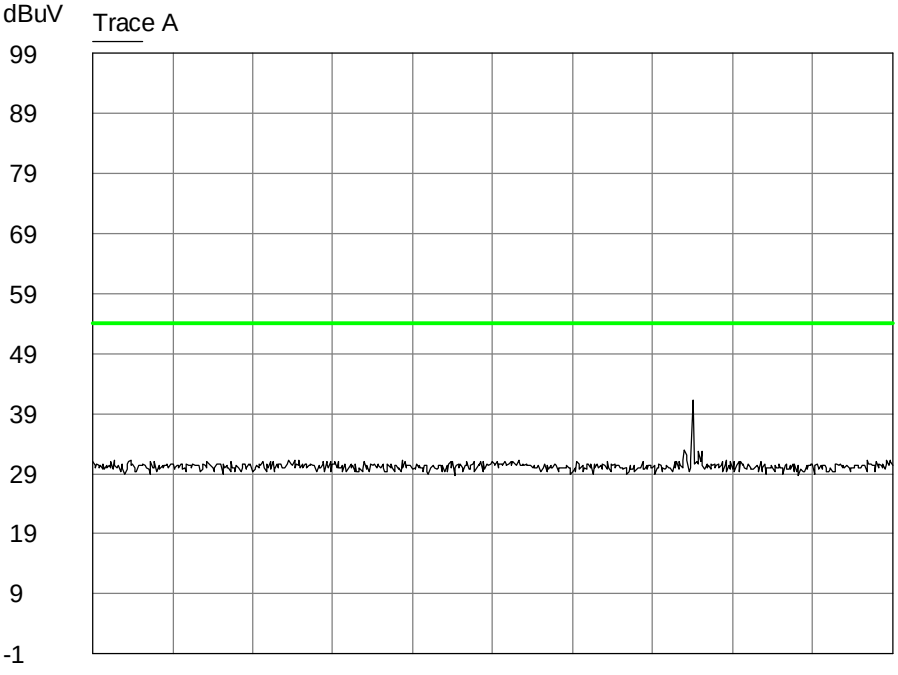
Start: 7.000000 GHz Atten: 10 dB Stop: 8.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:04:25 HP8563E

J4461-5, 8-9GHz mid chan Horiz



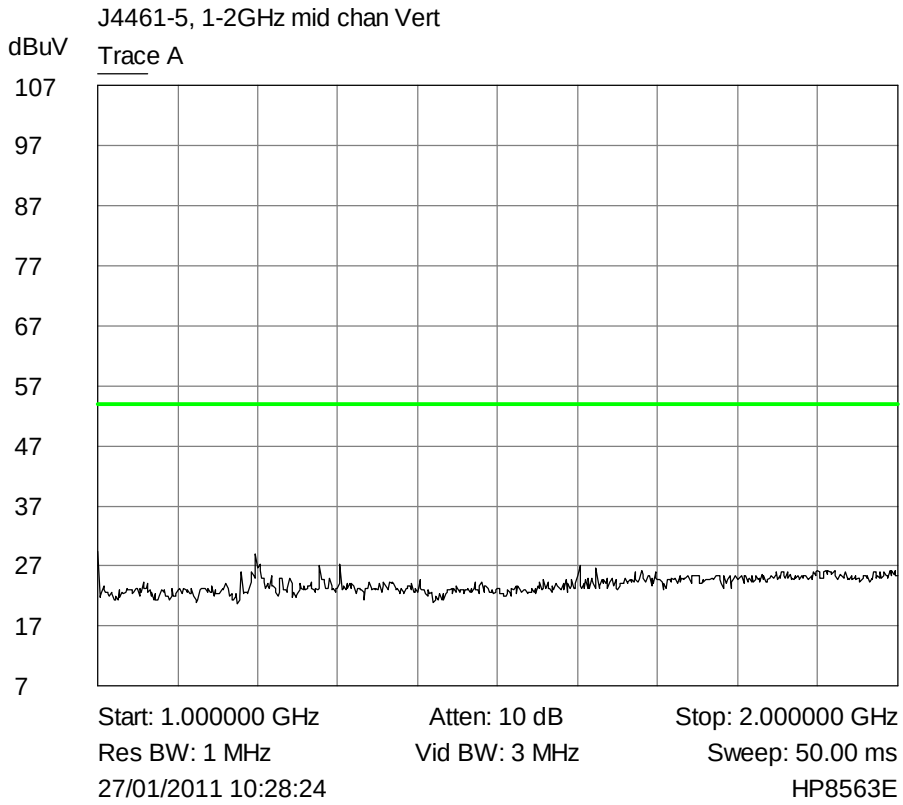
Start: 8.000000 GHz Atten: 10 dB Stop: 9.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:05:23 HP8563E

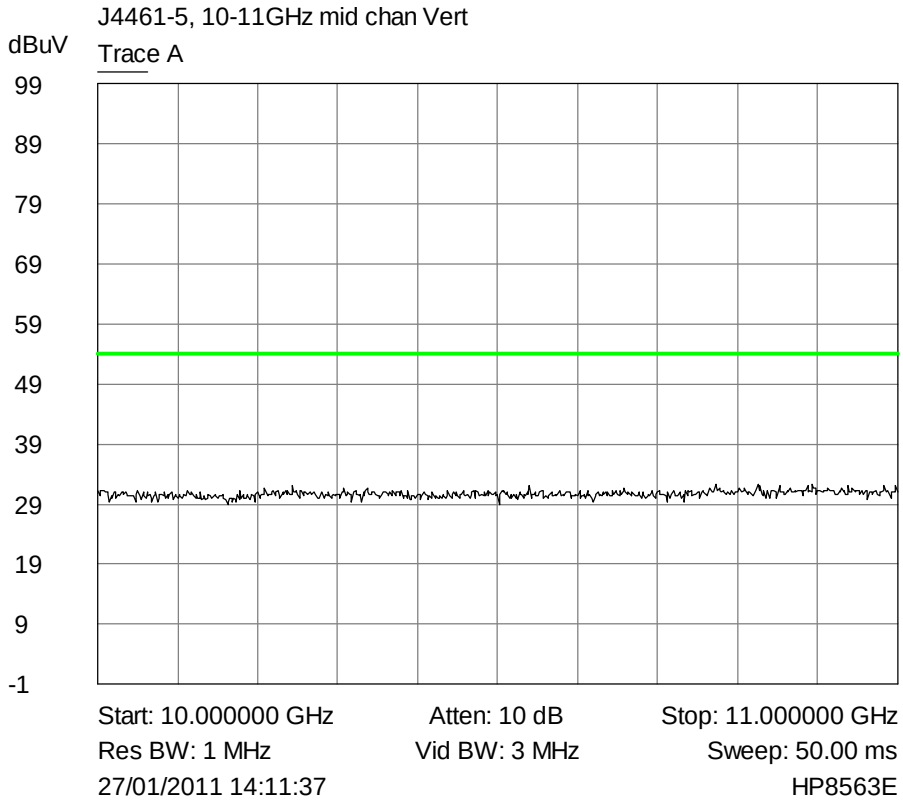
J4461-5, 9-10GHz mid chan Horiz



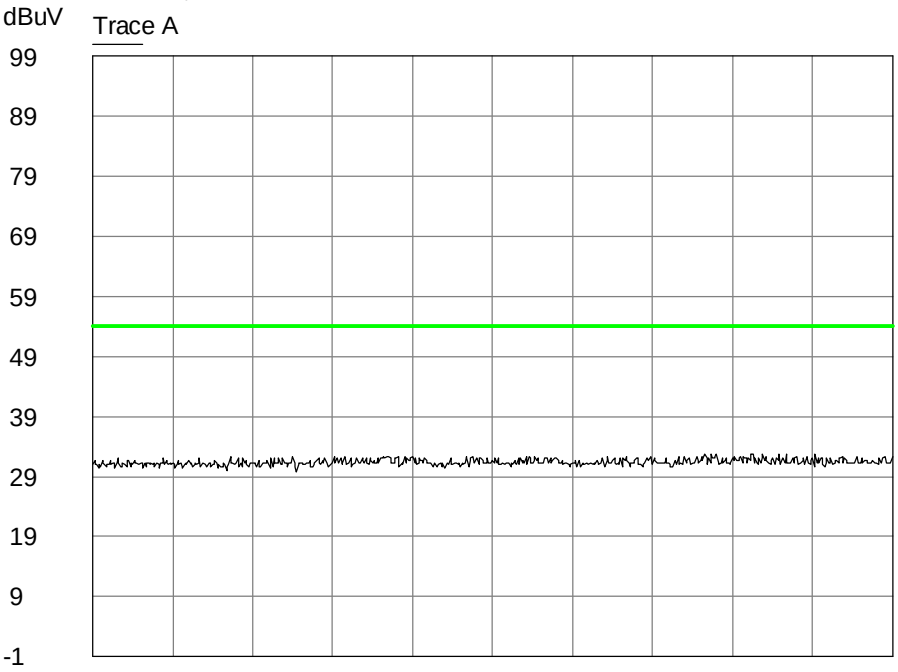
Start: 9.000000 GHz Atten: 10 dB Stop: 10.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:09:35 HP8563E

Plot of Average Vertical emissions 1GHz - 25GHz against the Average limit line.



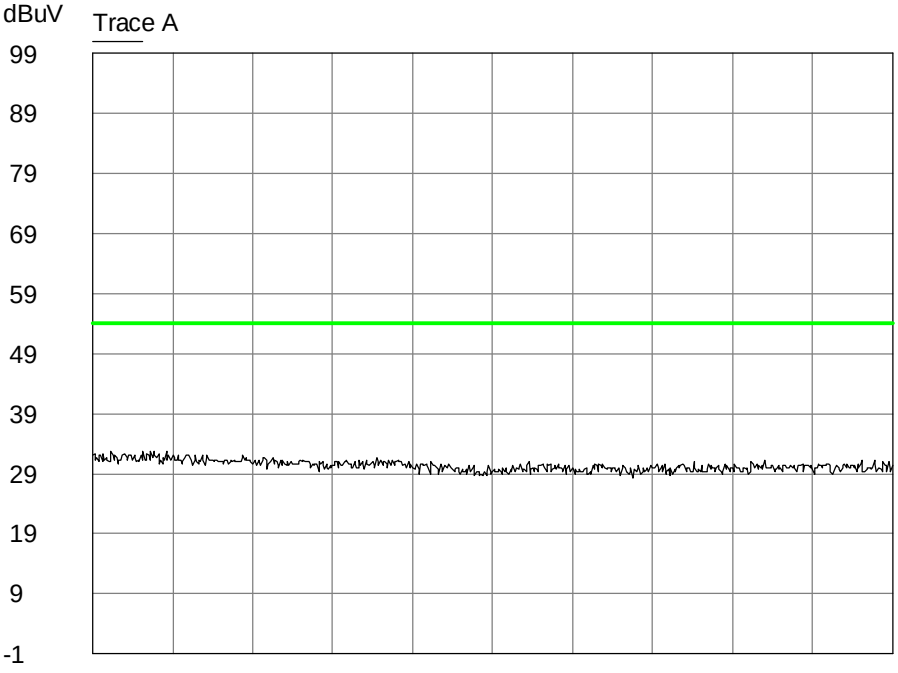


J4461-5, 11-12GHz mid chan Vert



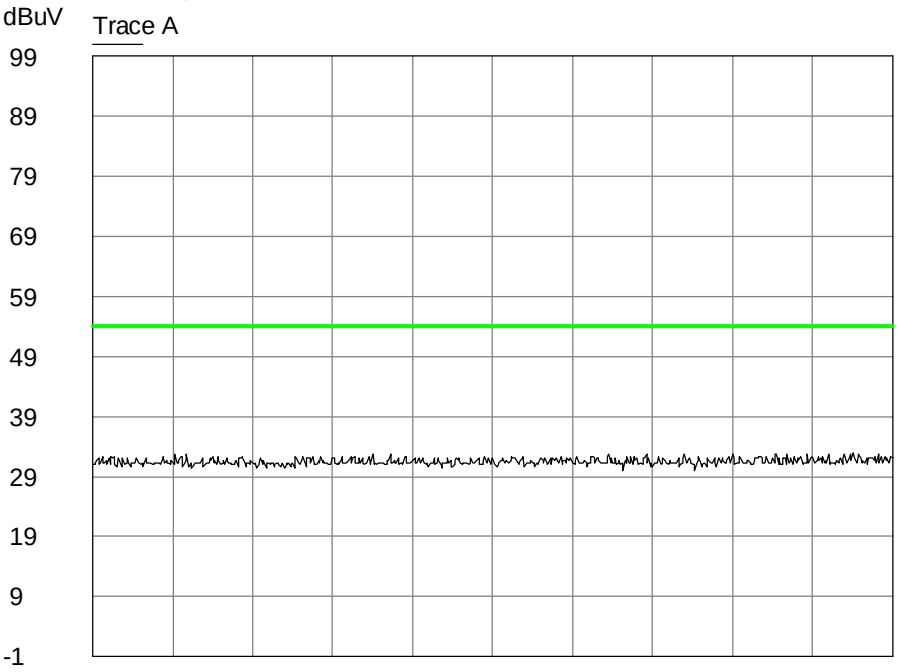
Start: 11.000000 GHz Atten: 10 dB Stop: 12.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:14:43 HP8563E

J4461-5, 12-13GHz mid chan Vert



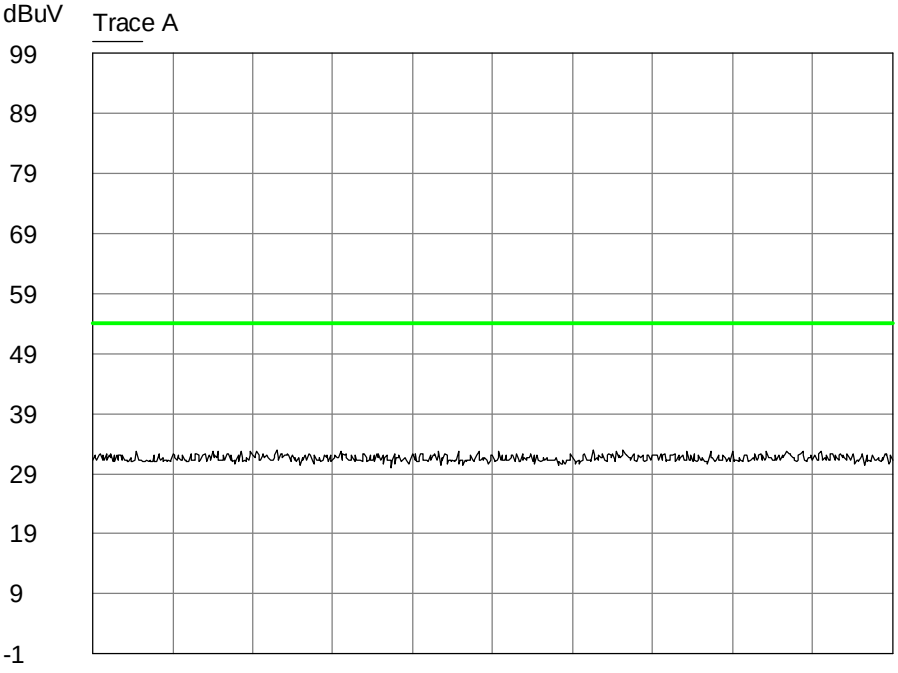
Start: 12.000000 GHz Atten: 10 dB Stop: 13.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:33:24 HP8563E

J4461-5, 13-14GHz mid chan Vert



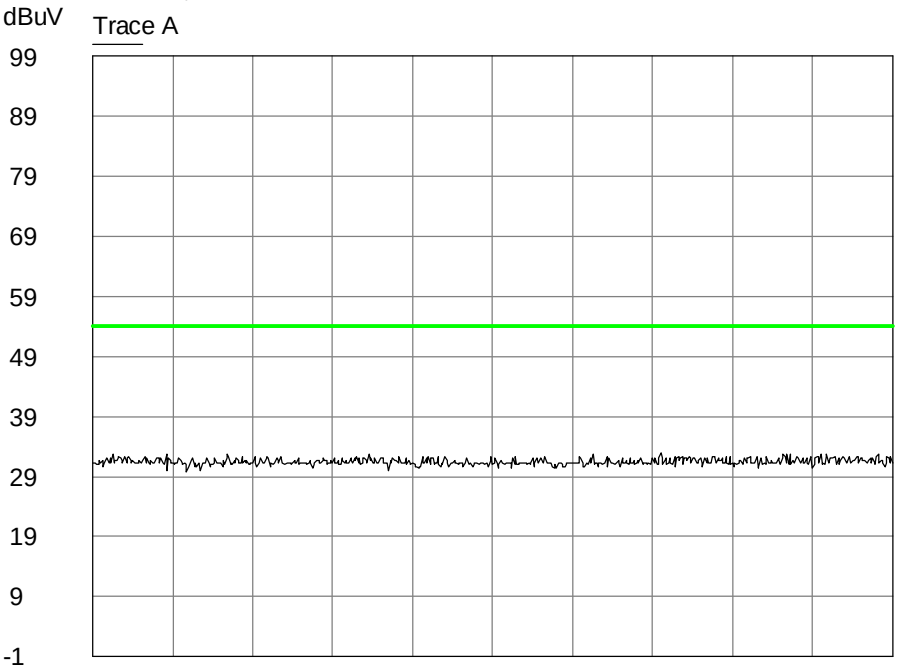
Start: 13.000000 GHz Atten: 10 dB Stop: 14.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:38:09 HP8563E

J4461-5, 14-15GHz mid chan Vert



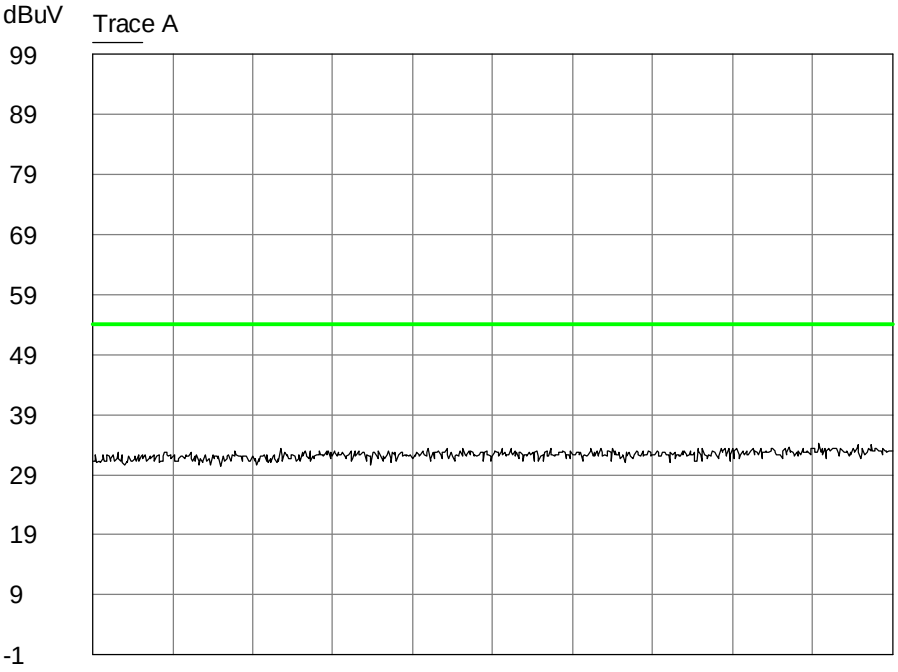
Start: 14.000000 GHz Atten: 10 dB Stop: 15.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:40:48 HP8563E

J4461-5, 15-16GHz mid chan Vert



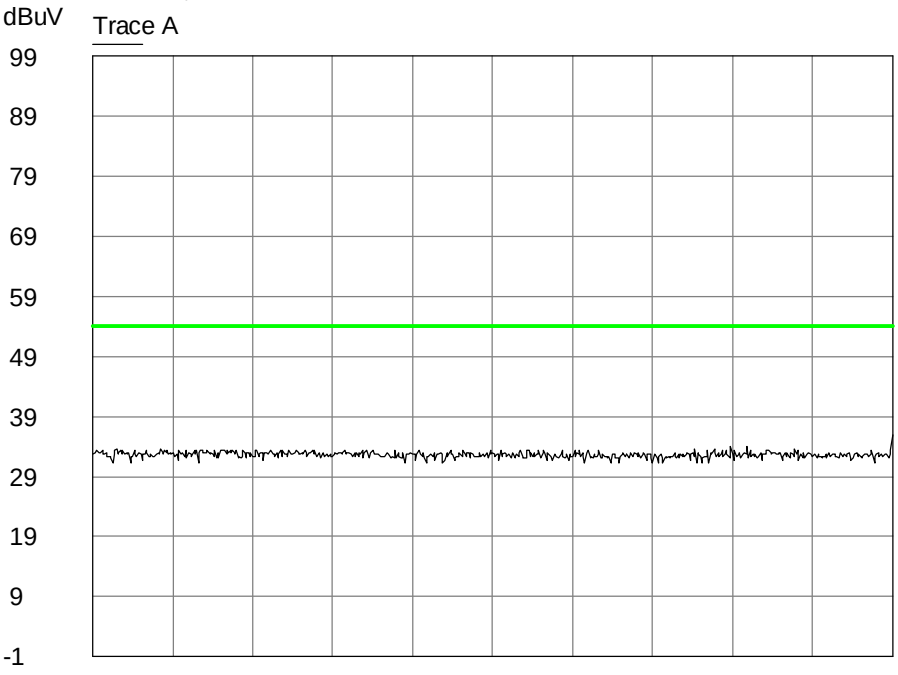
Start: 15.000000 GHz Atten: 10 dB Stop: 16.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:42:28 HP8563E

J4461-5, 16-17GHz mid chan Vert



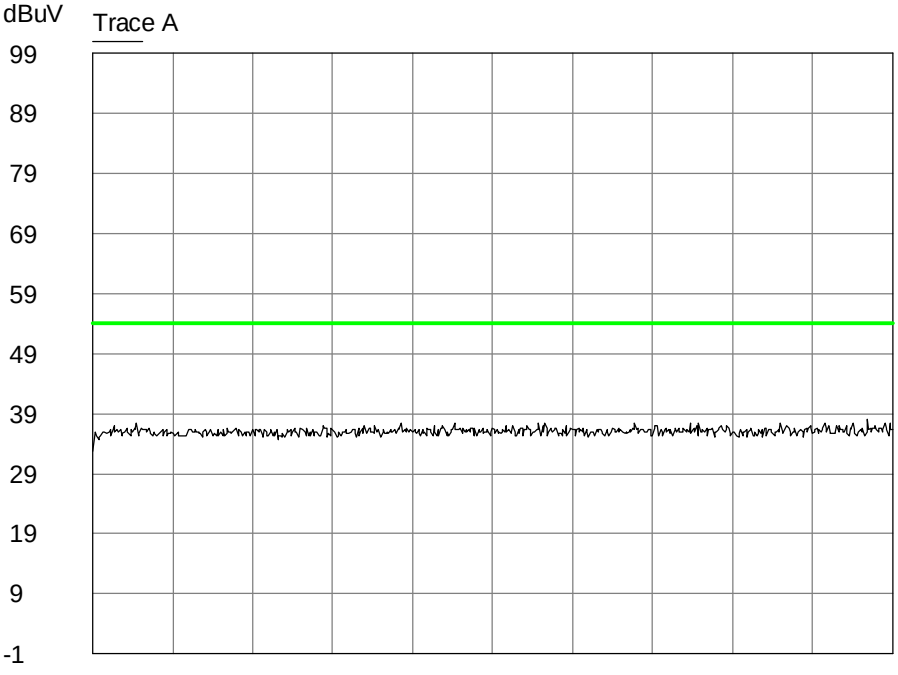
Start: 16.000000 GHz Atten: 10 dB Stop: 17.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:43:31 HP8563E

J4461-5, 17-18GHz mid chan Vert



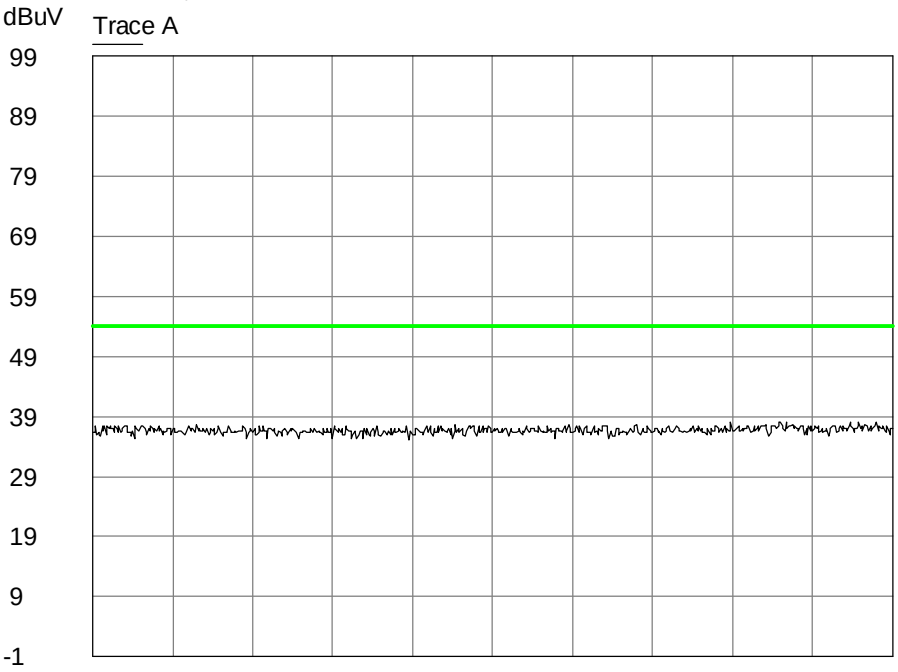
Start: 17.000000 GHz Atten: 10 dB Stop: 18.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:45:45 HP8563E

J4461-5, 18-19GHz mid chan Vert&Horiz



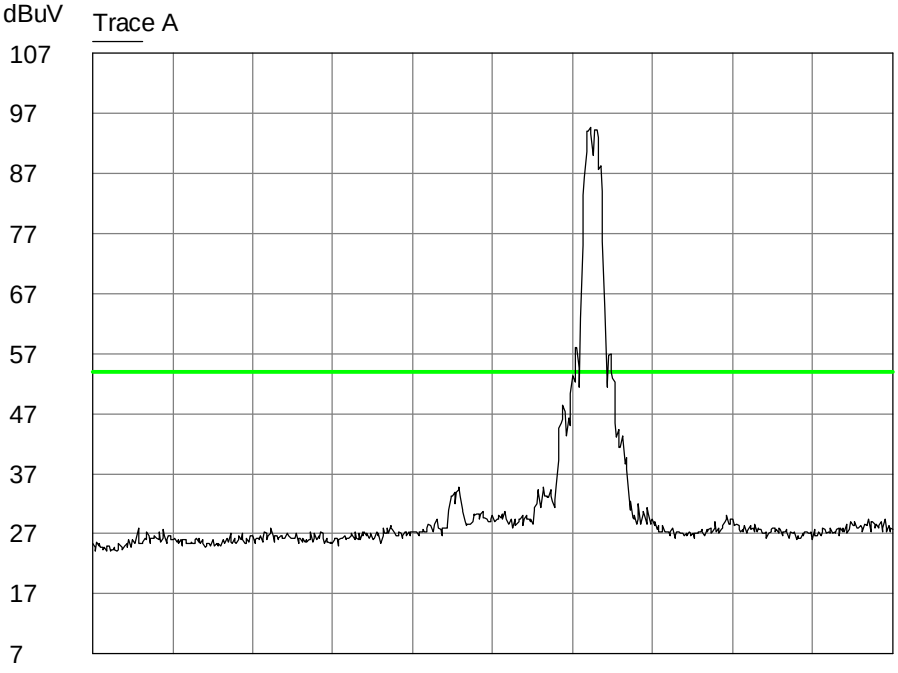
Start: 18.000000 GHz Atten: 10 dB Stop: 19.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:48:16 HP8563E

J4461-5, 19-20GHz mid chan Vert&Horiz



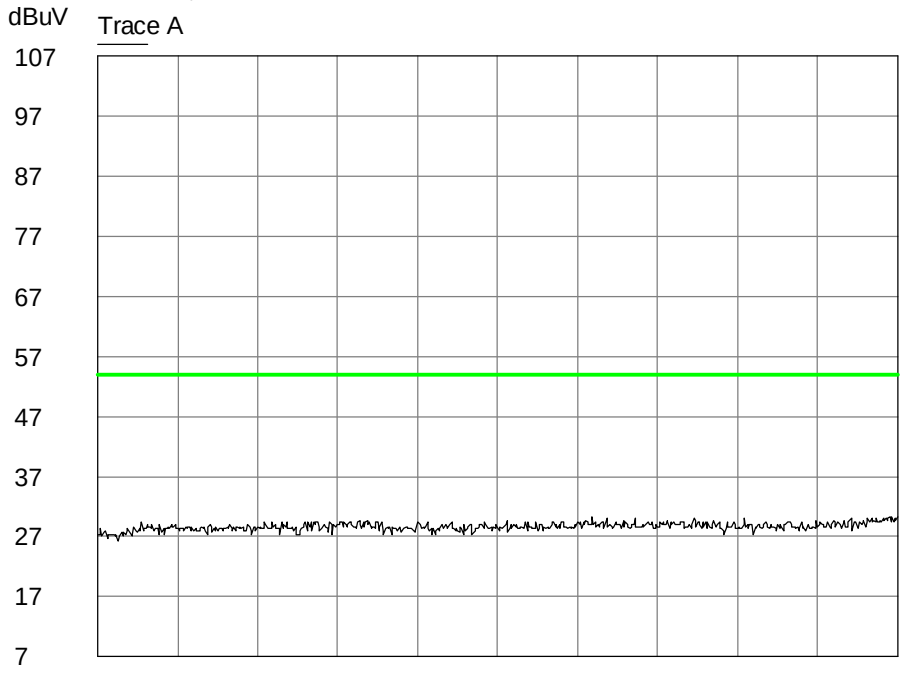
Start: 19.000000 GHz Atten: 10 dB Stop: 20.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:50:10 HP8563E

J4461-5, 2-2.7GHz mid chan Vert



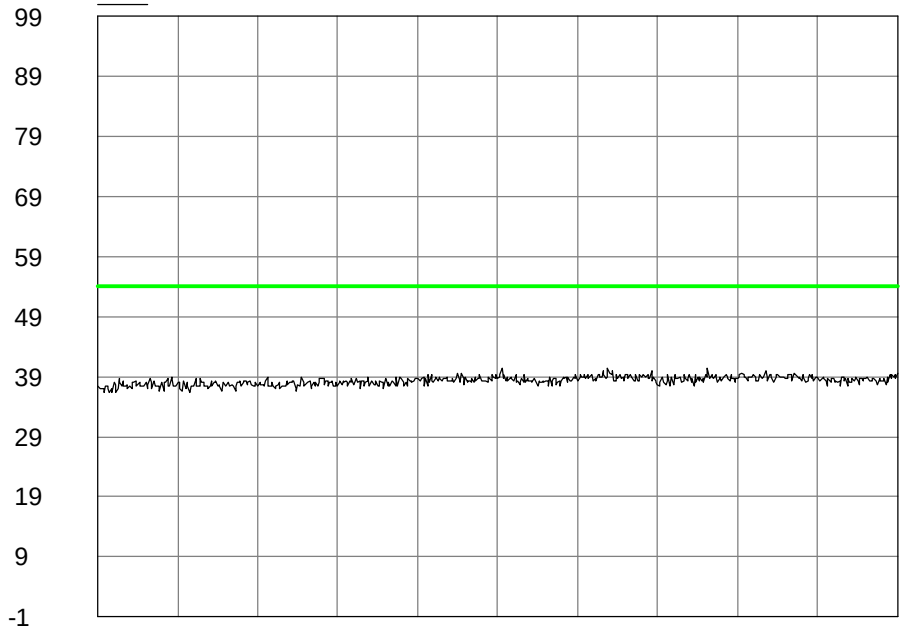
Start: 2.000000 GHz Atten: 10 dB Stop: 2.700000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:29:20 HP8563E

J4461-5, 2.7-3GHz mid chan Vert



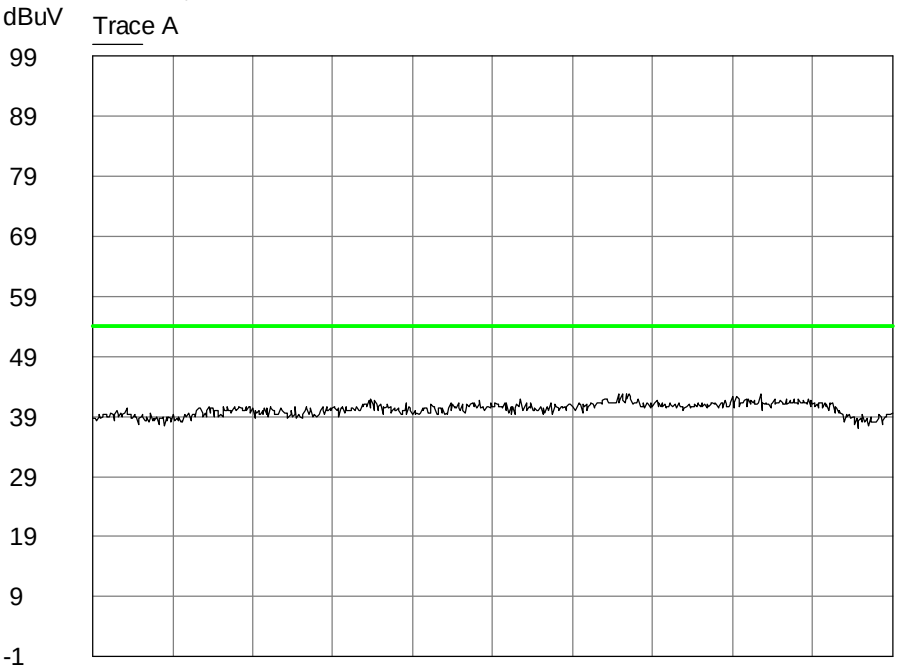
Start: 2.700000 GHz Atten: 10 dB Stop: 3.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:38:51 HP8563E

J4461-5, 20-22GHz mid chan Vert&Horiz



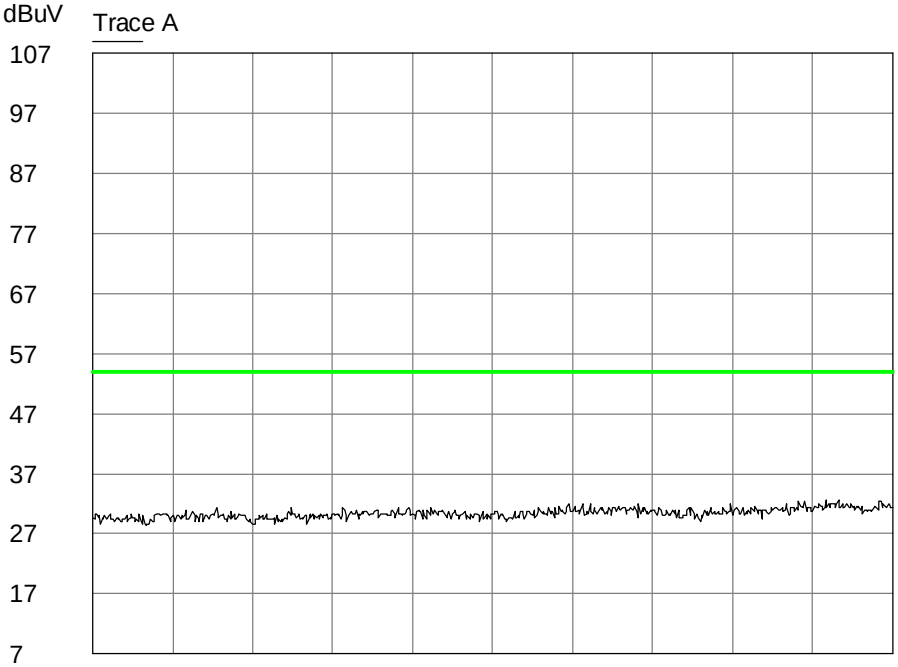
Start: 20.000000 GHz Atten: 10 dB Stop: 22.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:50:49 HP8563E

J4461-5, 22-25GHz mid chan Vert&Horiz



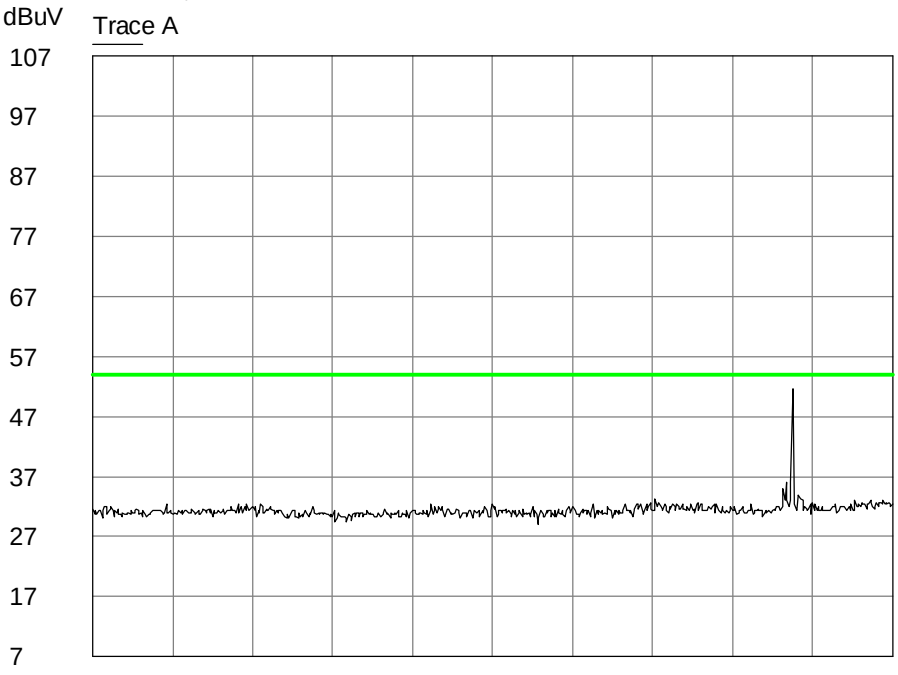
Start: 22.000000 GHz Atten: 10 dB Stop: 25.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 ms
27/01/2011 14:52:10 HP8563E

J4461-5, 3-4GHz mid chan Vert



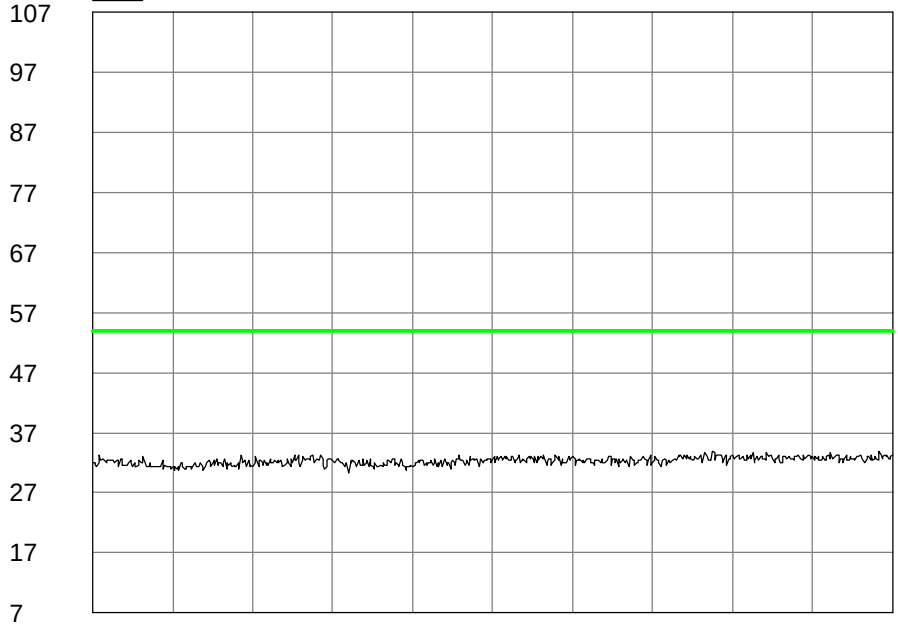
Start: 3.000000 GHz Atten: 10 dB Stop: 4.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:39:29 HP8563E

J4461-5, 4-5GHz mid chan Vert



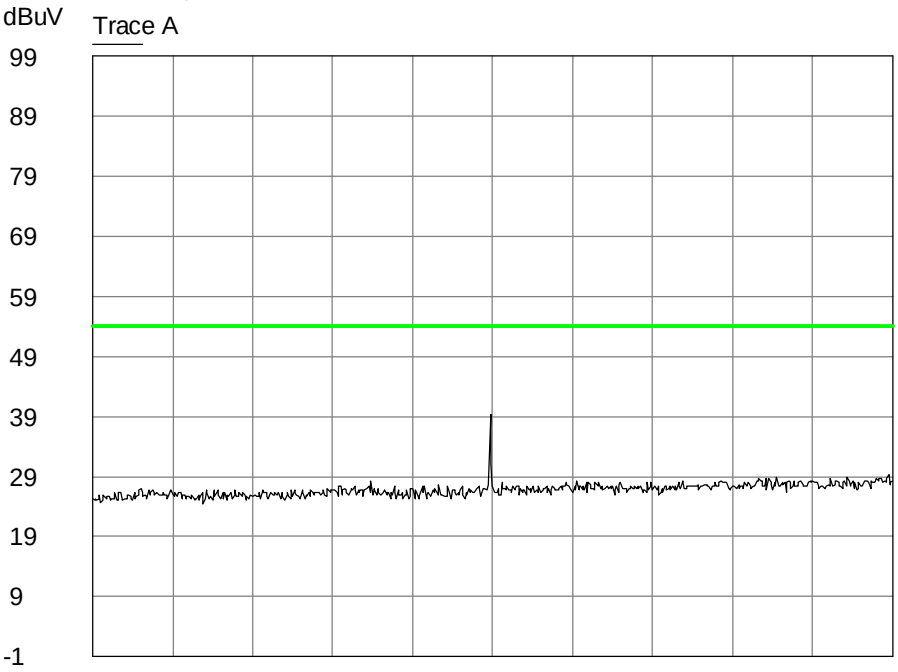
Start: 4.000000 GHz Atten: 10 dB Stop: 5.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:44:27 HP8563E

J4461-5, 5-6GHz mid chan Vert



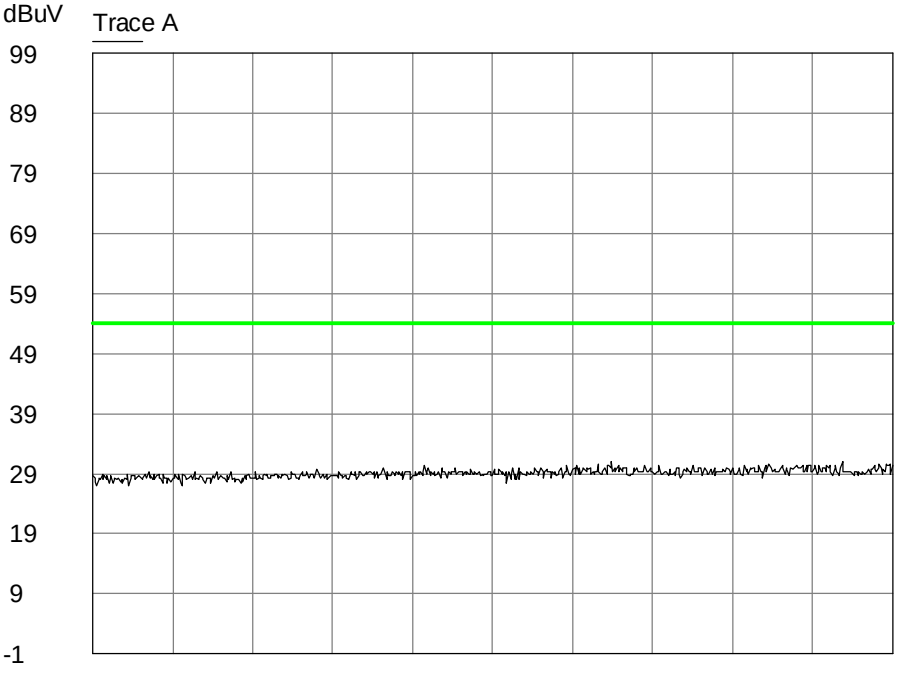
Start: 5.000000 GHz Atten: 10 dB Stop: 6.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 10:47:14 HP8563E

J4461-5, 6-7GHz mid chan Vert



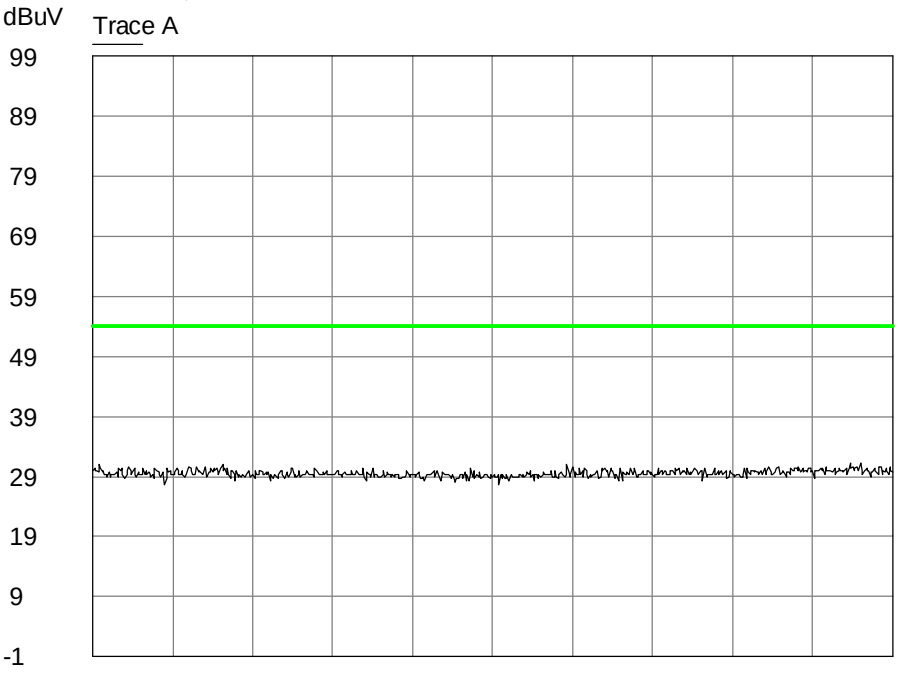
Start: 6.000000 GHz Atten: 10 dB Stop: 7.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:01:58 HP8563E

J4461-5, 7-8GHz mid chan Vert



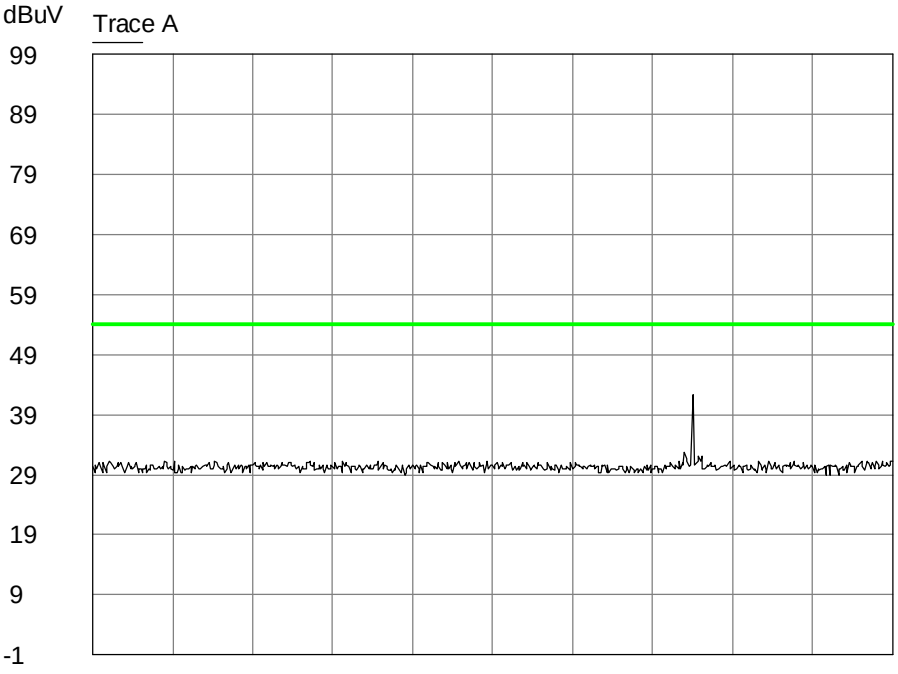
Start: 7.000000 GHz Atten: 10 dB Stop: 8.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:03:15 HP8563E

J4461-5, 8-9GHz mid chan Vert



Start: 8.000000 GHz Atten: 10 dB Stop: 9.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:06:25 HP8563E

J4461-5, 9-10GHz mid chan Vert



Start: 9.000000 GHz Atten: 10 dB Stop: 10.000000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
27/01/2011 14:10:29 HP8563E

Table of signals measured within 20dB of limits above 1GHz.

Horizontal

Bottom channel TX.

Signal	Frequency (MHz)	PK measured	AV measured	AV-Lim
1	2295	43.0	33.0	-21.0
2	4824	56.8	53.0	-1.0
3	6431	45.0	40.5	-13.5
4	9648	52.0	48.0	-6.0

Middle channel TX.

Signal	Frequency (MHz)	PK measured	AV measured	AV-Lim
1	2321	44.0	33.5	-20.5
2	4874	55.0	51.5	-2.5
3	6498	45.0	39.0	-15.0
4	7311	43.0	30.0	-24.0
5	9748	49.0	45.0	-9.0

Top channel TX.

Signal	Frequency (MHz)	PK measured	AV measured	AV-Lim
1	2347	45.0	35.0	-19.0
2	4924	54.5	50.7	-3.3
3	6565	46.0	40.0	-14.0
4	9848	45.0	36.0	-18.0

Vertical

Bottom channel TX.

Signal	Frequency (MHz)	PK measured	AV measured	AV-Lim
1	4824	56.0	53.8	-0.2
2	6431	48.7	45.0	-9.0
3	7236	46.8	37.0	-17.0
4	9648	48.0	40.0	-14.0

Middle channel TX.

Signal	Frequency (MHz)	PK measured	AV measured	AV-Lim
1	2321	45.5	34.5	-19.5
2	4874	52.0	46.5	-7.5
3	6498	49.3	46.5	-7.5
4	7311	45.3	34.0	-20.0
5	9748	47.0	39.5	-14.5

Top channel TX.

Signal	Frequency (MHz)	PK measured	AV measured	AV-Lim
1	2347	46.5	36.0	-18.0
2	4924	52.8	47.0	-7.0
3	6565	48.2	43.5	-10.5

4	9848	46.0	36.0	-18.0

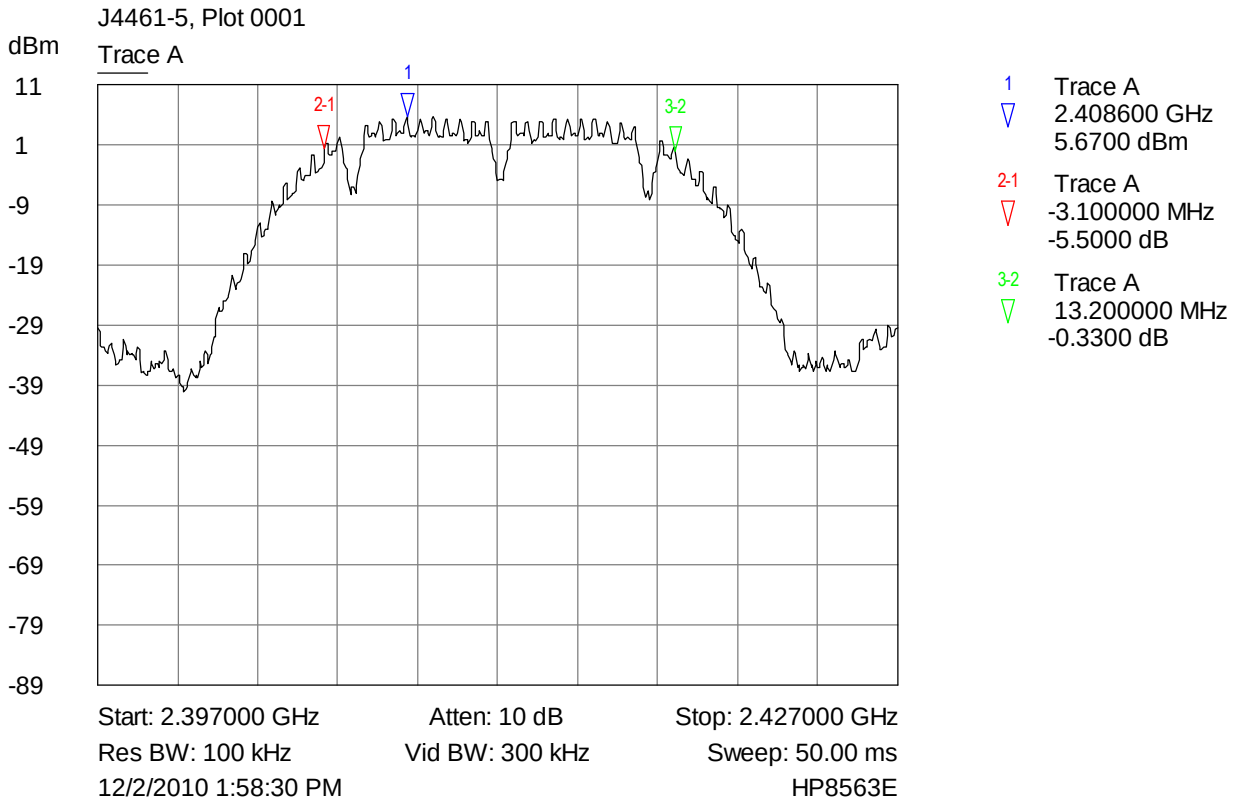
6.3 Fundamental Emissions

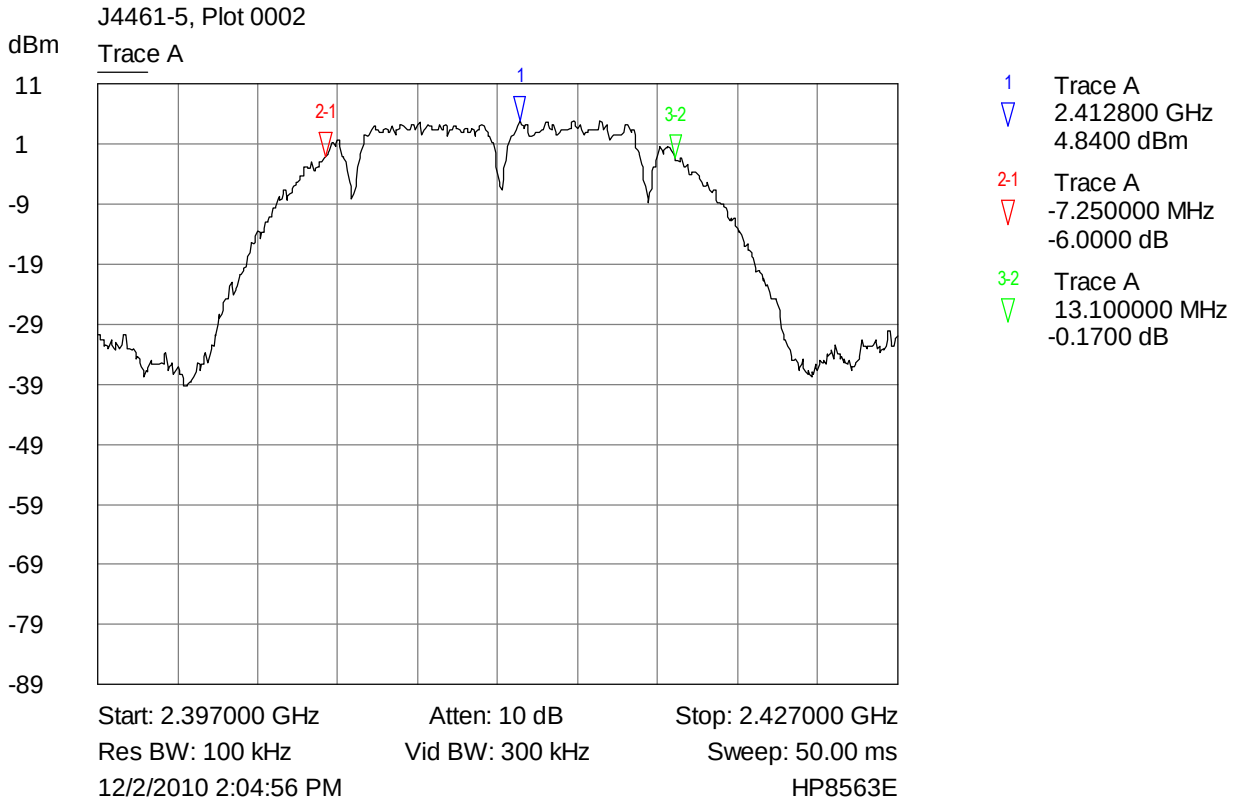
Please see Band edge plots for ERP field strength (PK)

6.4 Duty Cycle

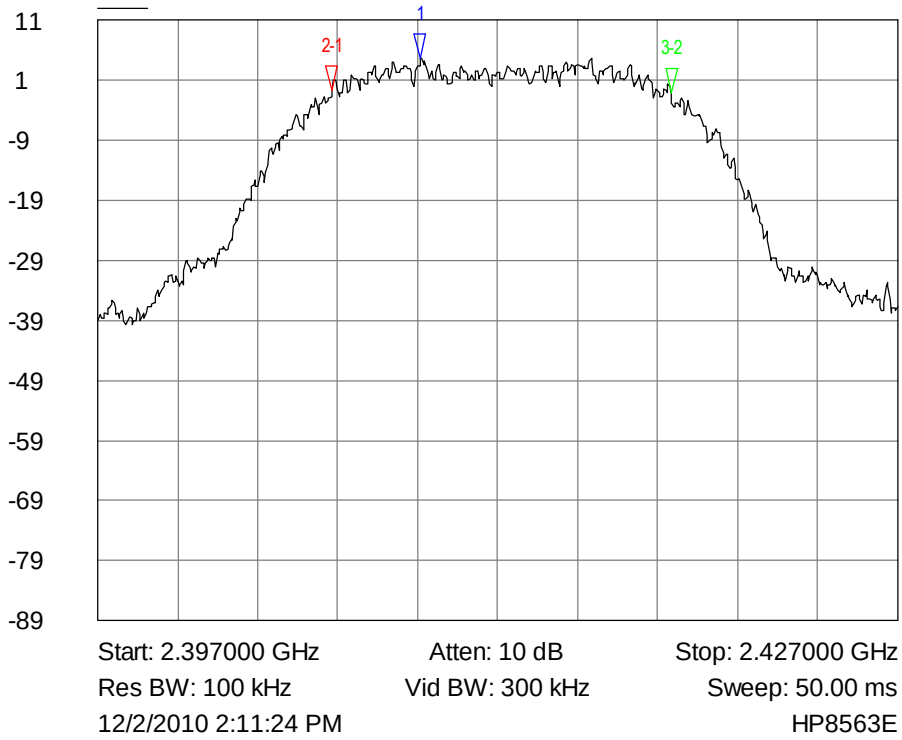
Not applicable, Tests performed with EUT in Constant 100% transmission state.

6.5 6dB Bandwidth





J4461-5, Plot 0003



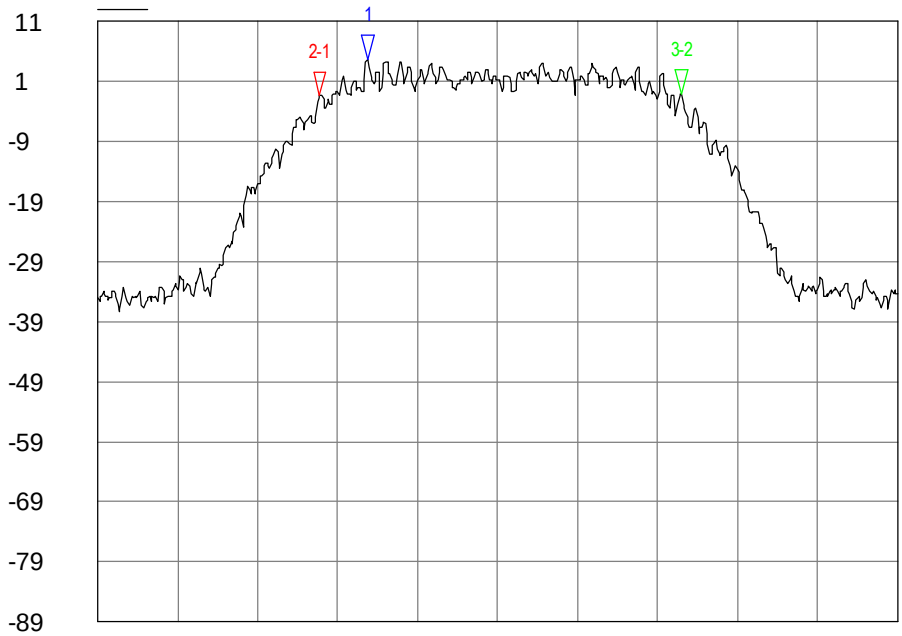
1 Trace A
2.409100 GHz
4.5000 dBm

2-1 Trace A
-3.300000 MHz
-5.3300 dB

3-2 Trace A
12.700000 MHz
-0.3300 dB

Start: 2.397000 GHz Atten: 10 dB Stop: 2.427000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:11:24 PM HP8563E

J4461-5, Plot 0004



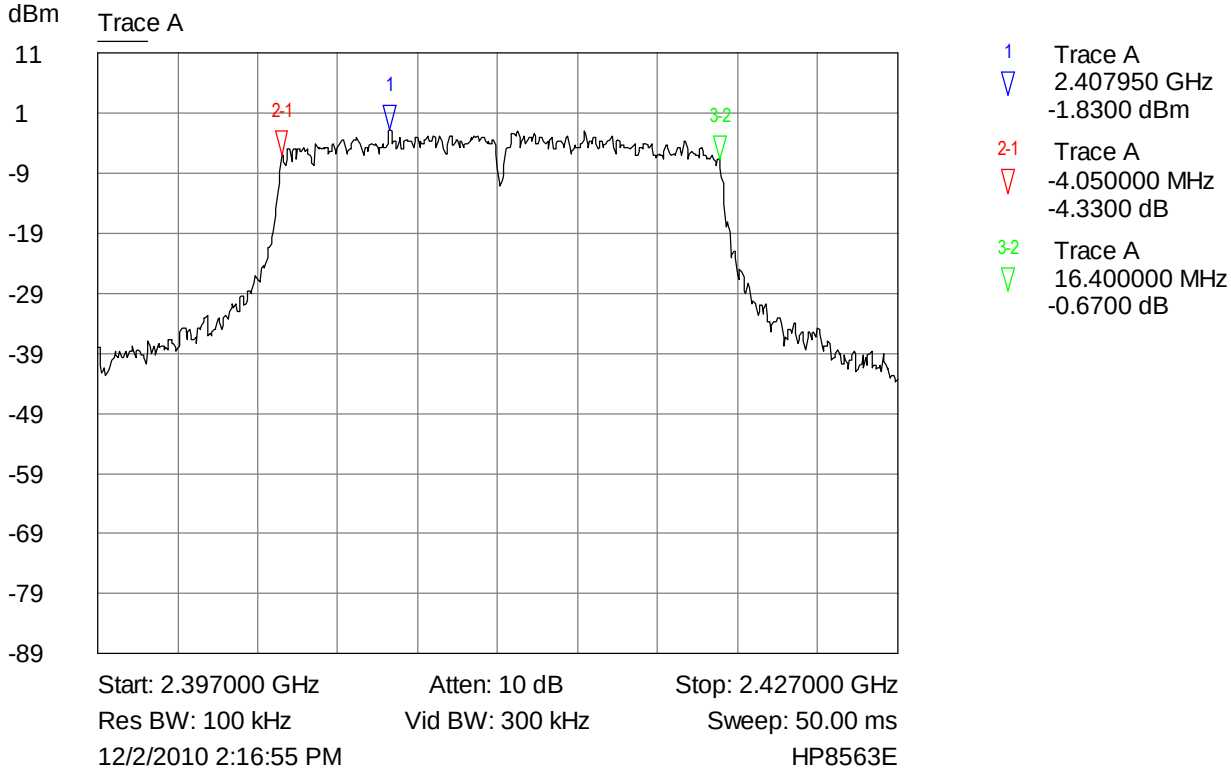
1 Trace A
2.407100 GHz
4.6700 dBm

2-1 Trace A
-1.750000 MHz
-6.0000 dB

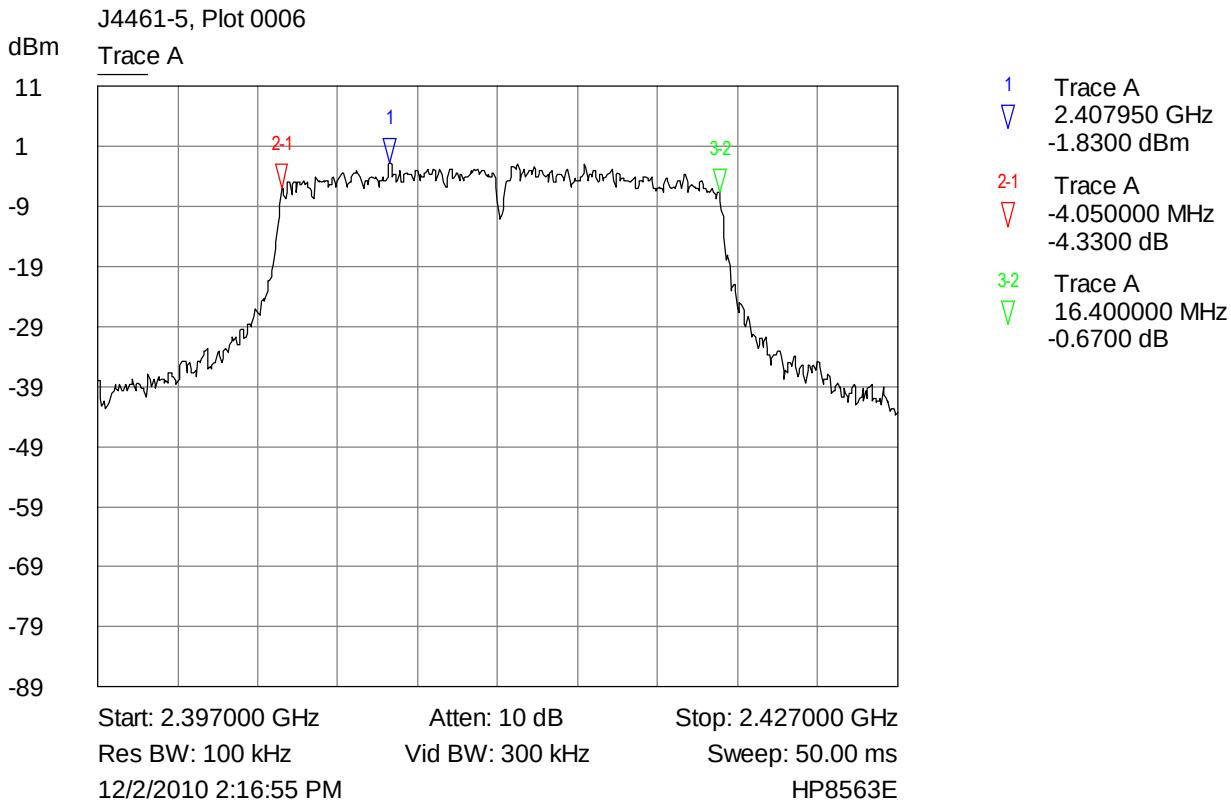
3-2 Trace A
13.550000 MHz
0.1700 dB

Start: 2.397000 GHz Atten: 10 dB Stop: 2.427000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:15:16 PM HP8563E

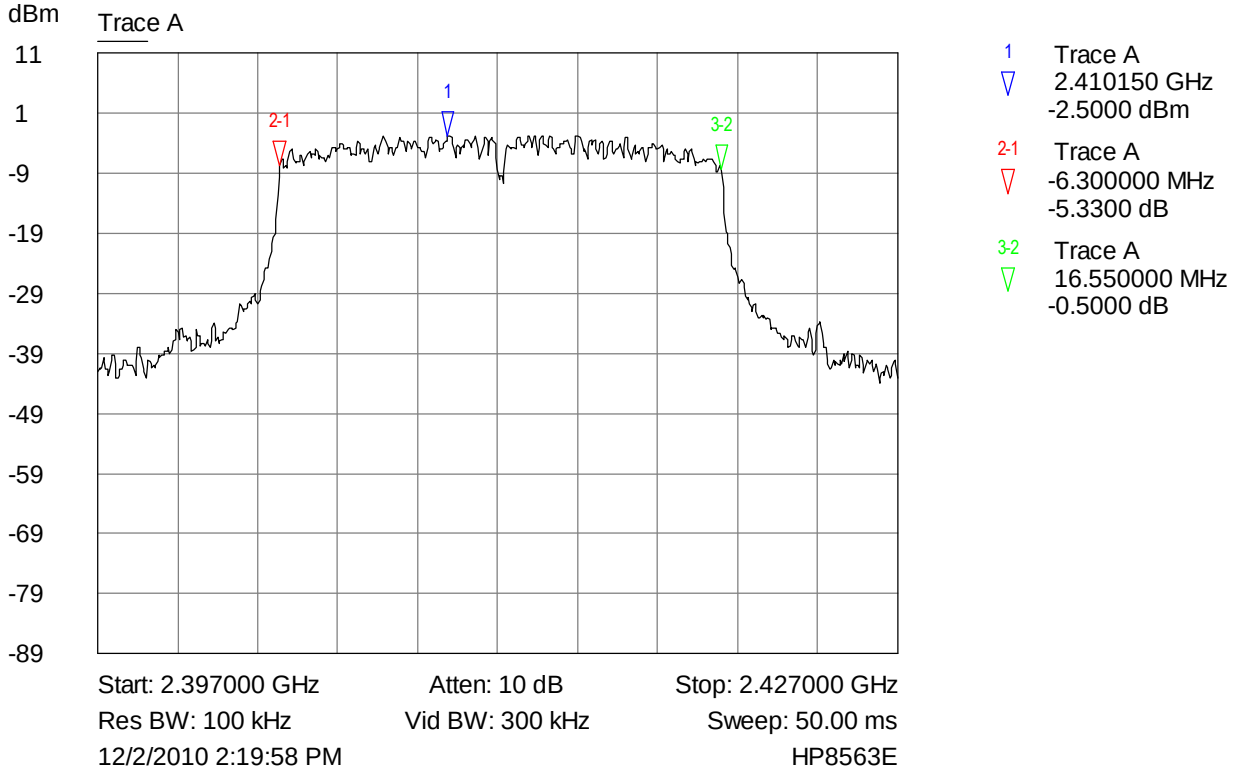
J4461-5, Plot 0005



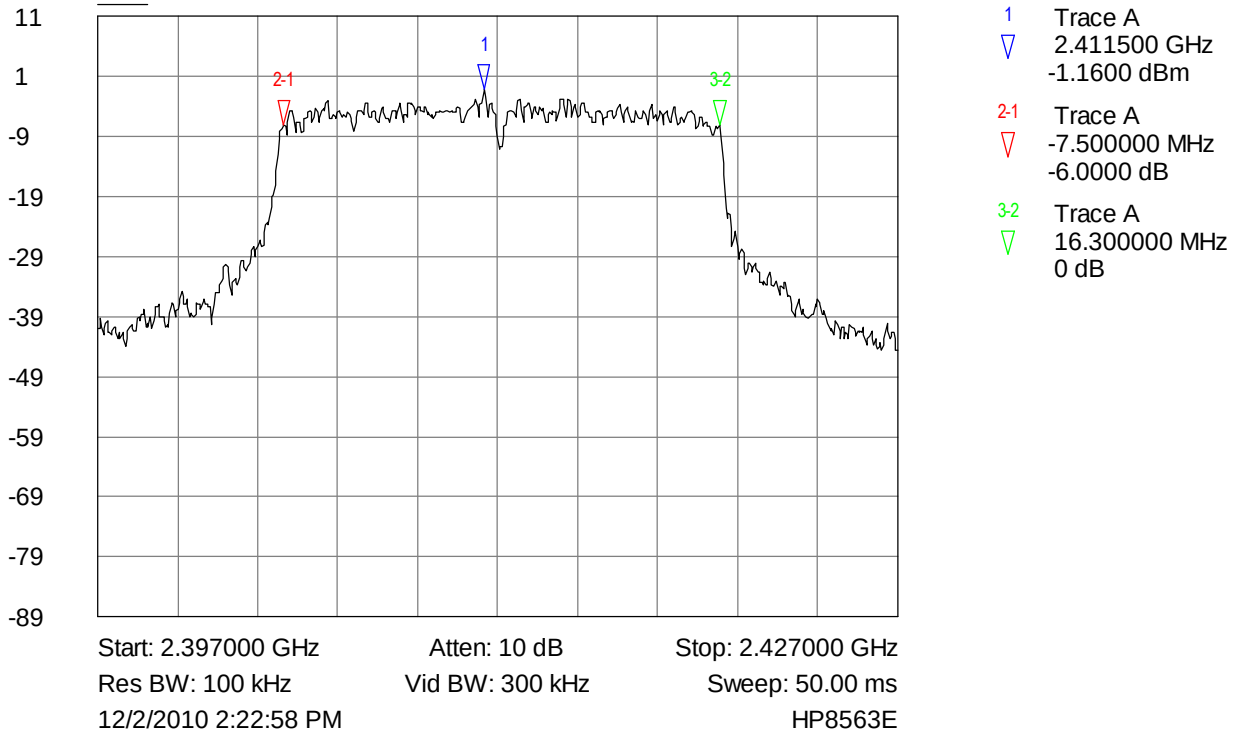
J4461-5, Plot 0006



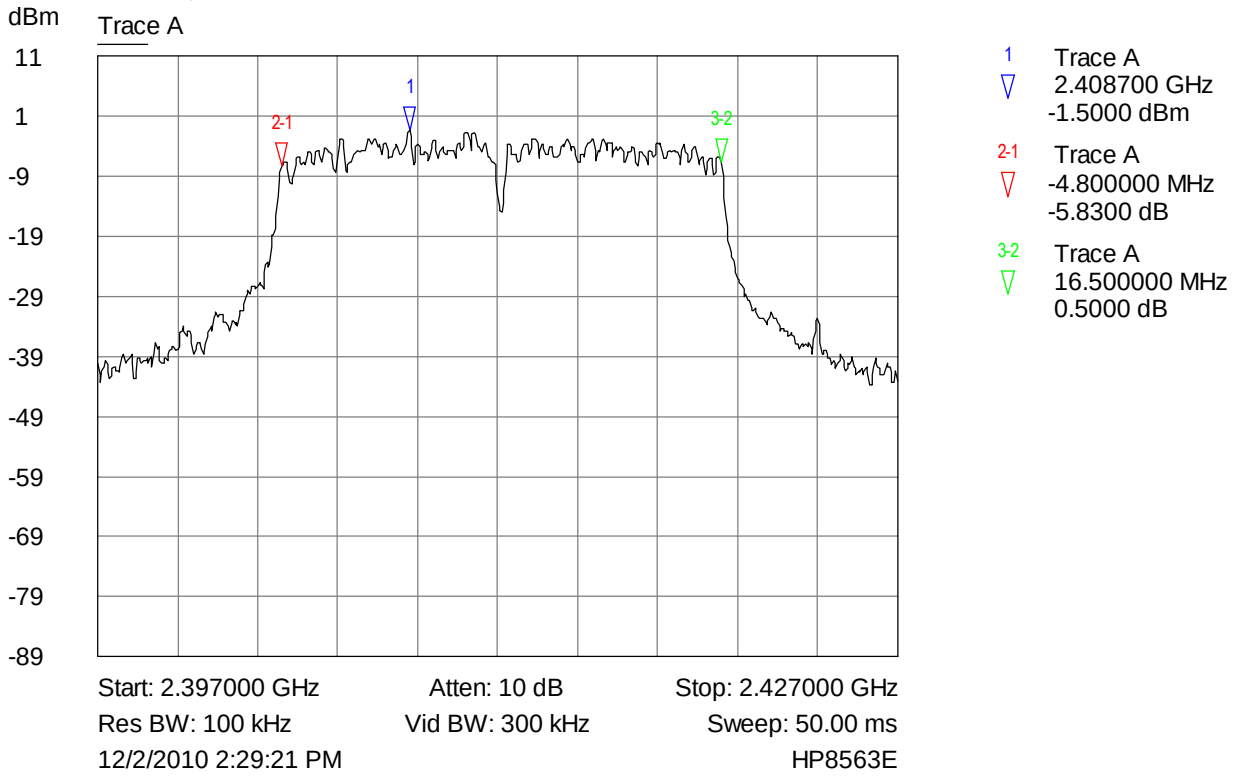
J4461-5, Plot 0007



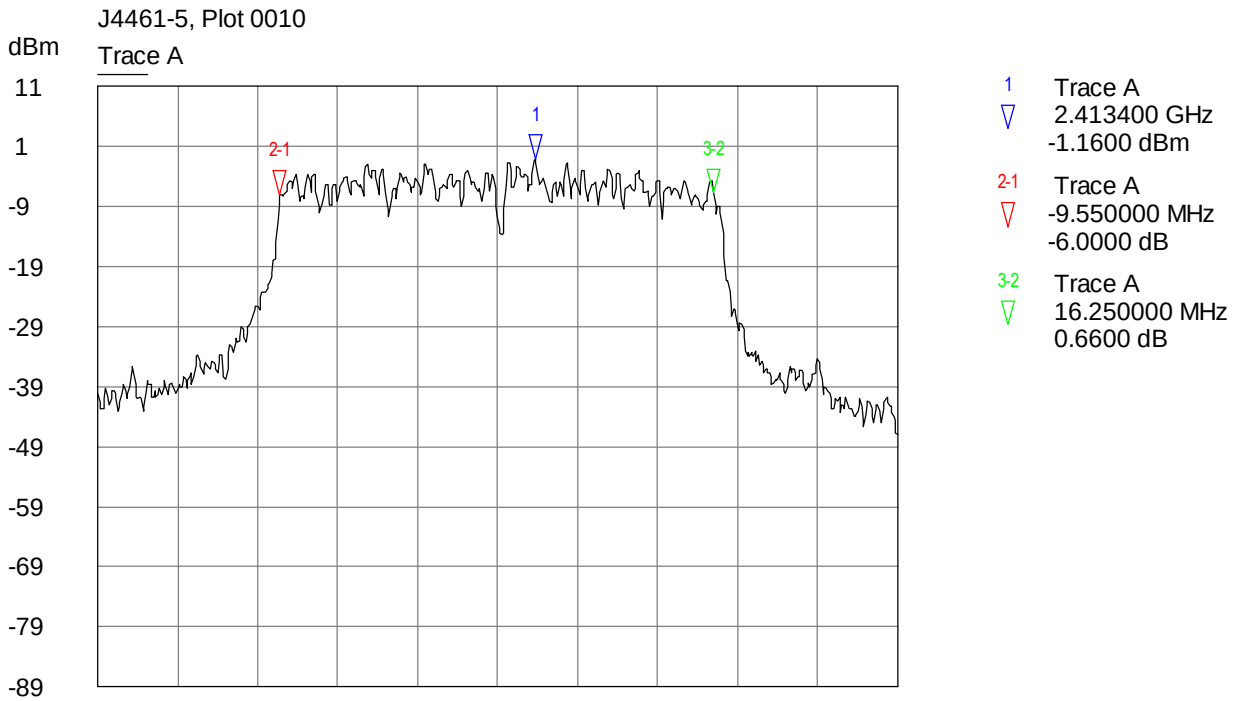
J4461-5, Plot 0008



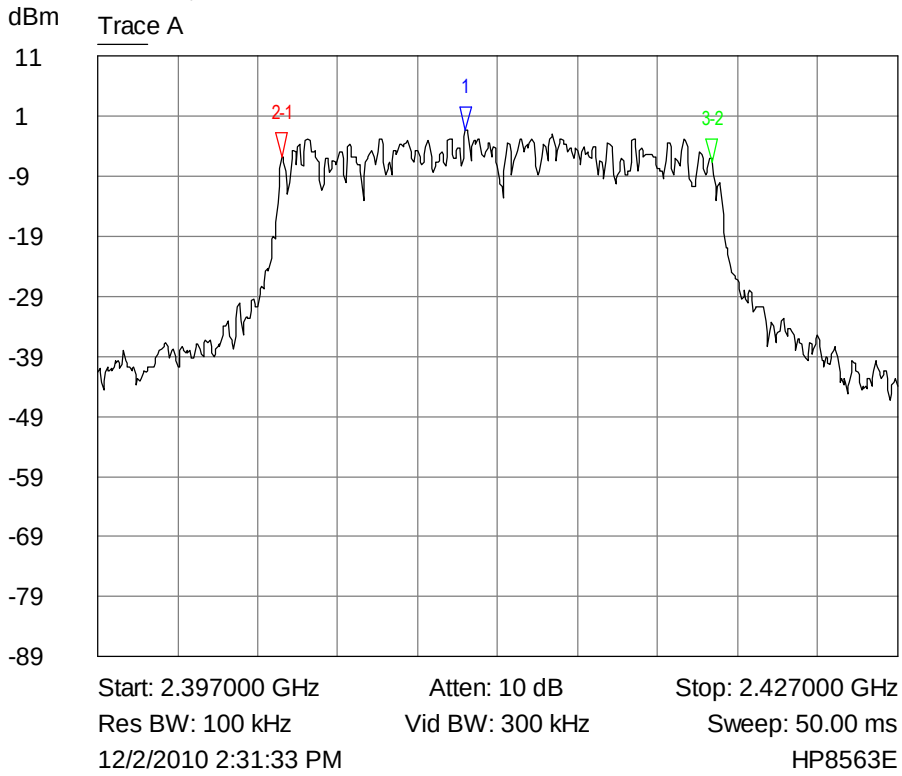
J4461-5, Plot 0009



J4461-5, Plot 0010



J4461-5, Plot 0011



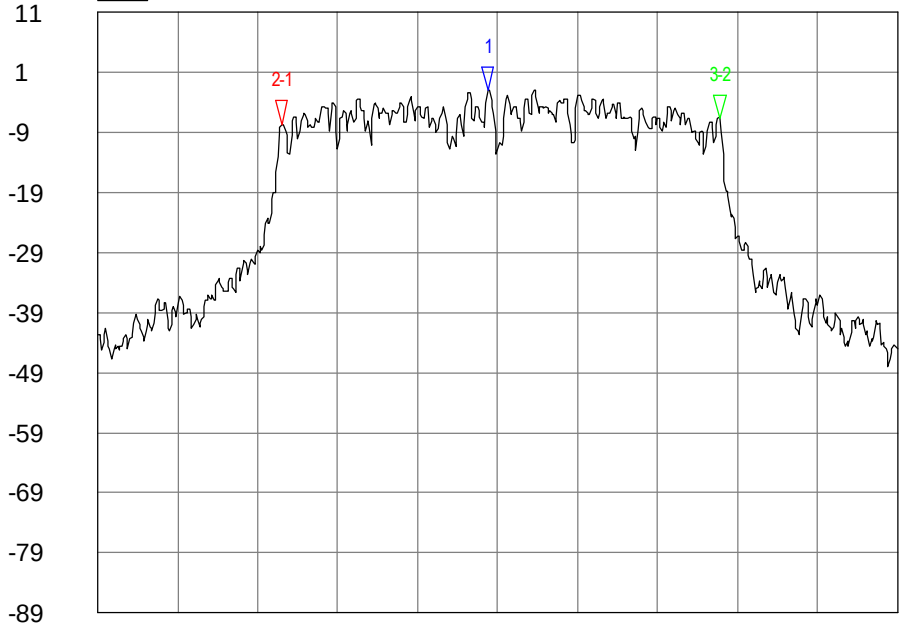
1 Trace A
2.410800 GHz
-1.3300 dBm

2-1 Trace A
-6.900000 MHz
-4.5000 dB

3-2 Trace A
16.150000 MHz
-0.8300 dB

Start: 2.397000 GHz Atten: 10 dB Stop: 2.427000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:31:33 PM HP8563E

J4461-5, Plot 0012



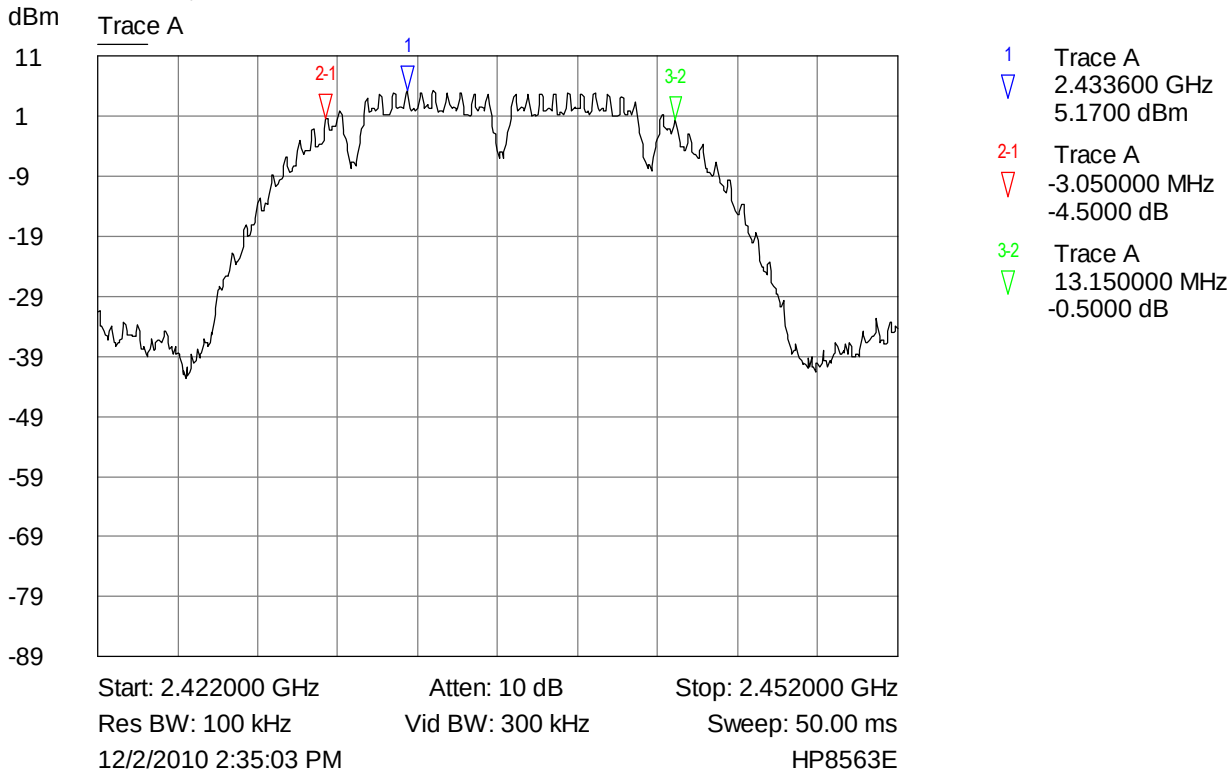
1 Trace A
2.411650 GHz
-2.0000 dBm

2-1 Trace A
-7.750000 MHz
-5.8300 dB

3-2 Trace A
16.450000 MHz
1.3300 dB

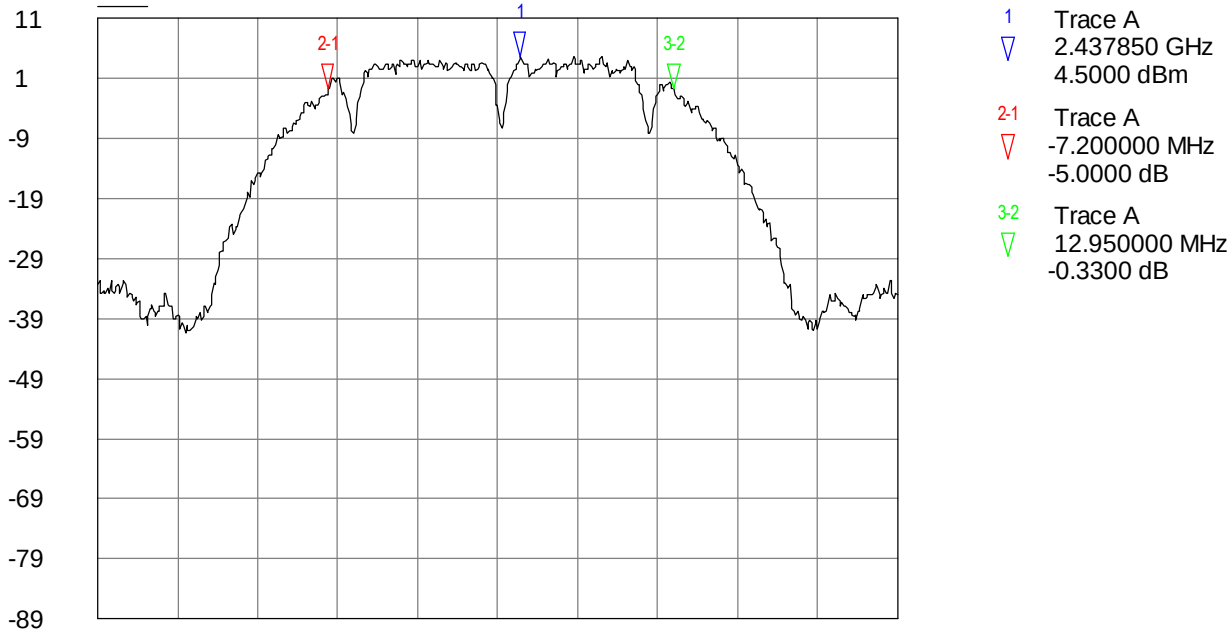
Start: 2.397000 GHz Atten: 10 dB Stop: 2.427000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:32:45 PM HP8563E

J4461-5, Plot 0013



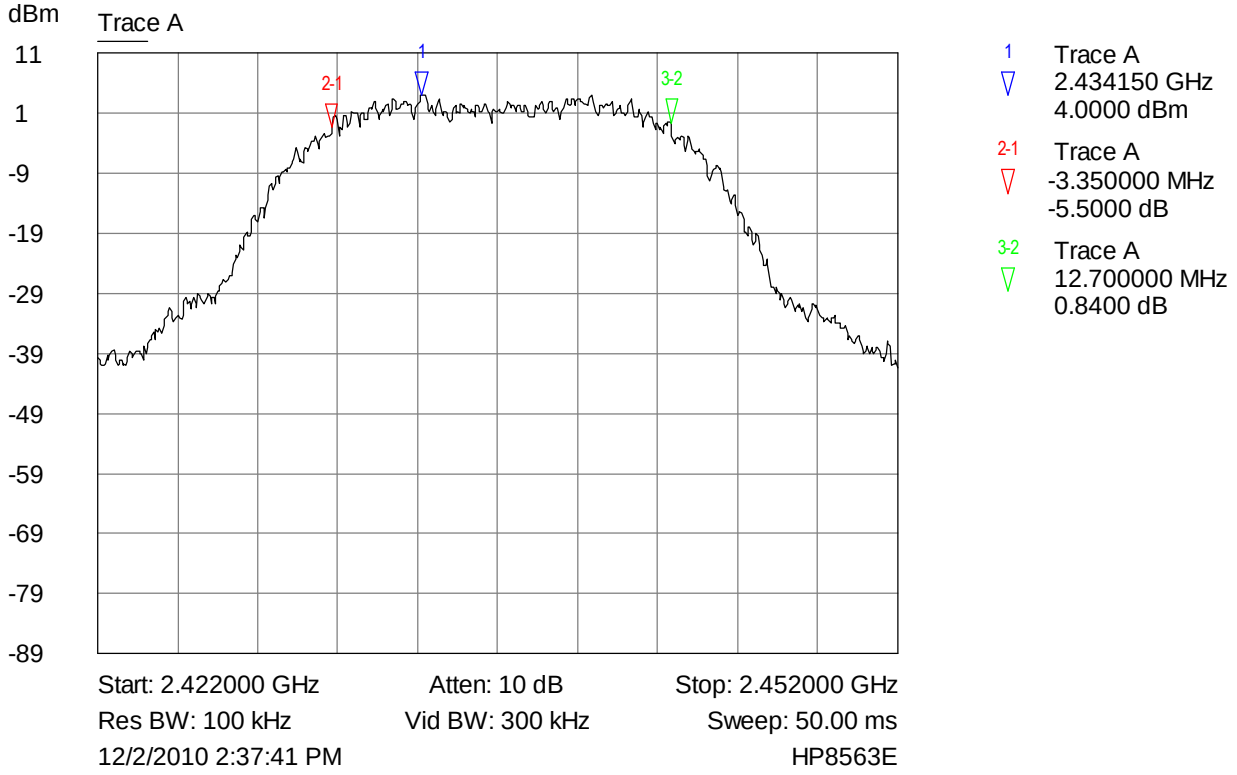
Start: 2.422000 GHz Atten: 10 dB Stop: 2.452000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:35:03 PM HP8563E

J4461-5, Plot 0014



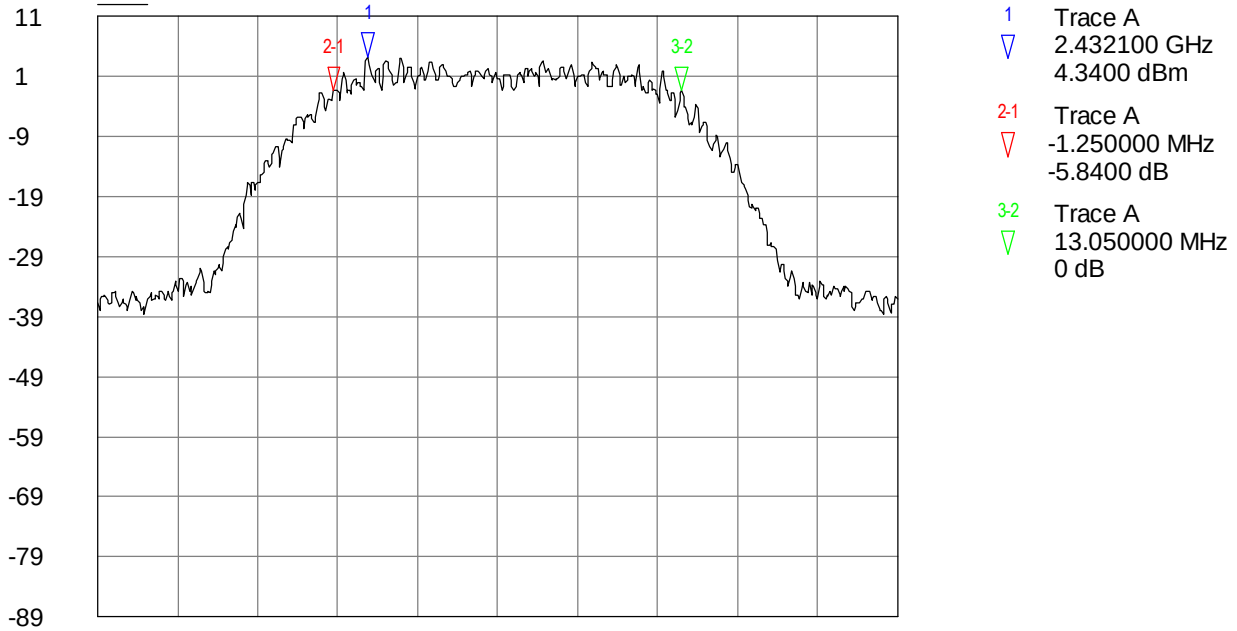
Start: 2.422000 GHz Atten: 10 dB Stop: 2.452000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:36:34 PM HP8563E

J4461-5, Plot 0015



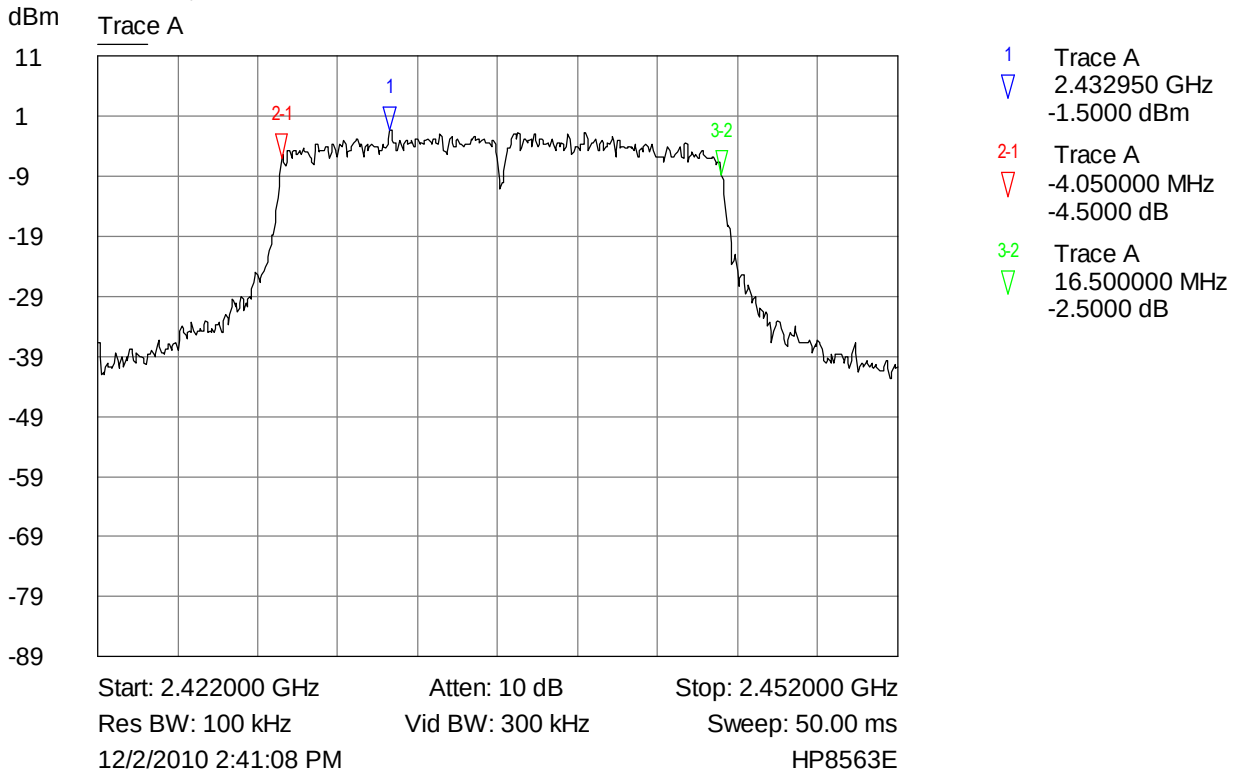
Start: 2.422000 GHz Atten: 10 dB Stop: 2.452000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:37:41 PM HP8563E

J4461-5, Plot 0016

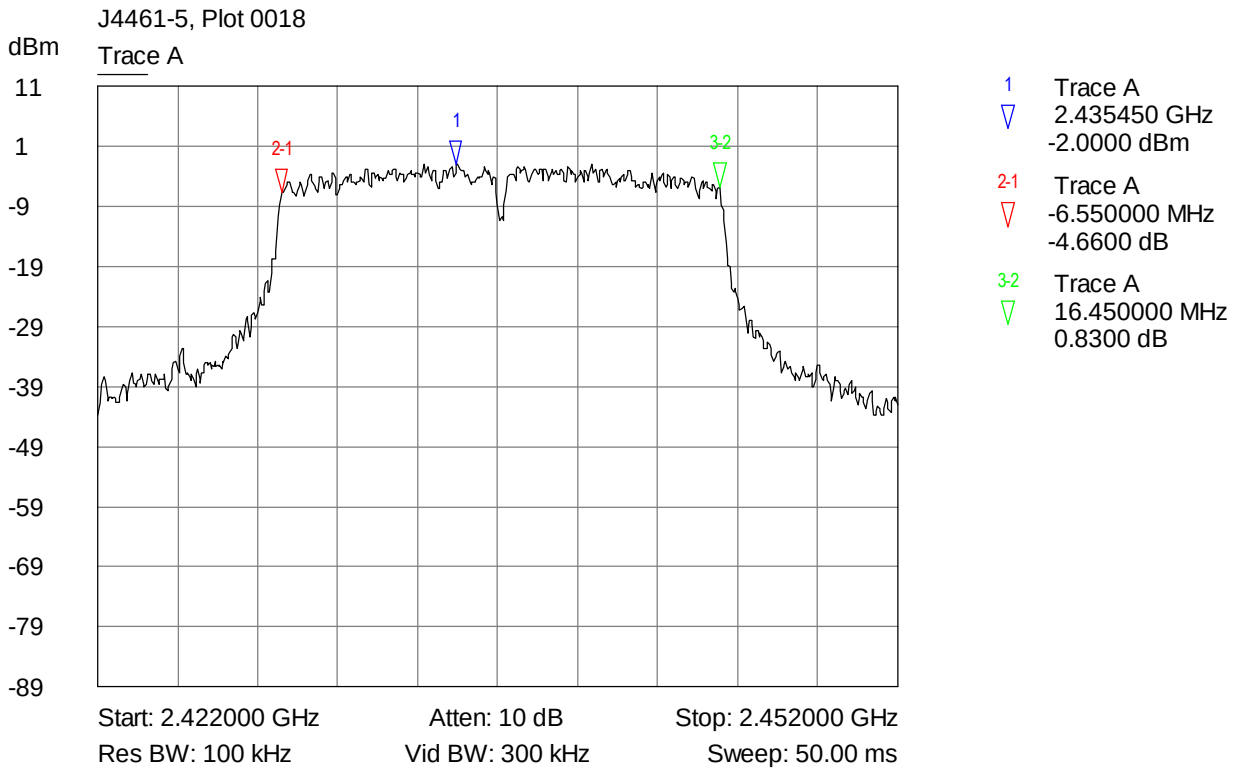


Start: 2.422000 GHz Atten: 10 dB Stop: 2.452000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:39:43 PM HP8563E

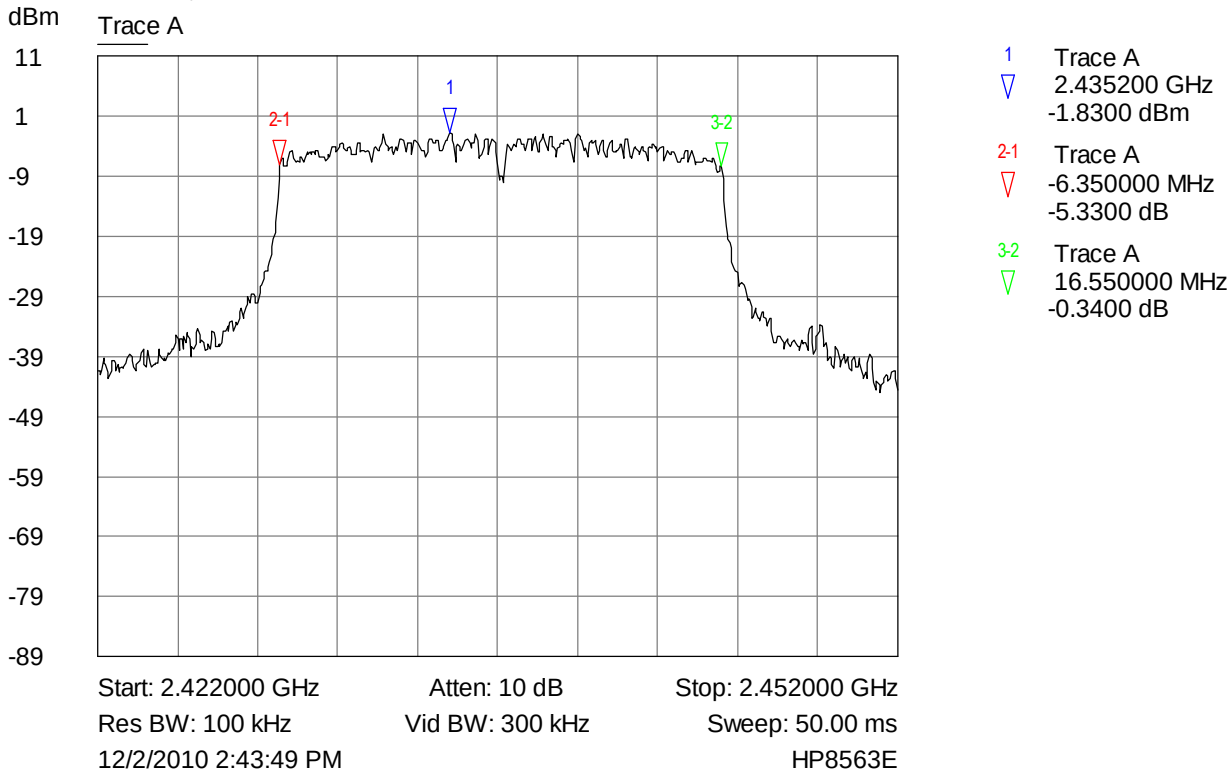
J4461-5, Plot 0017



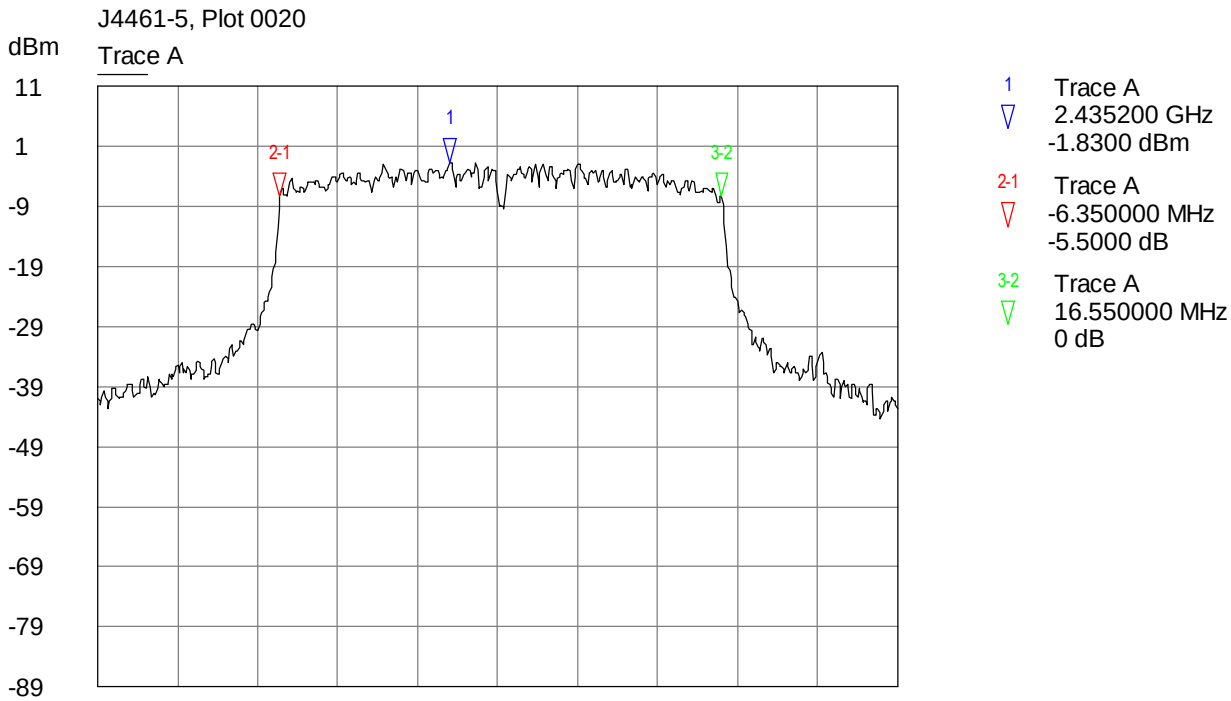
J4461-5, Plot 0018



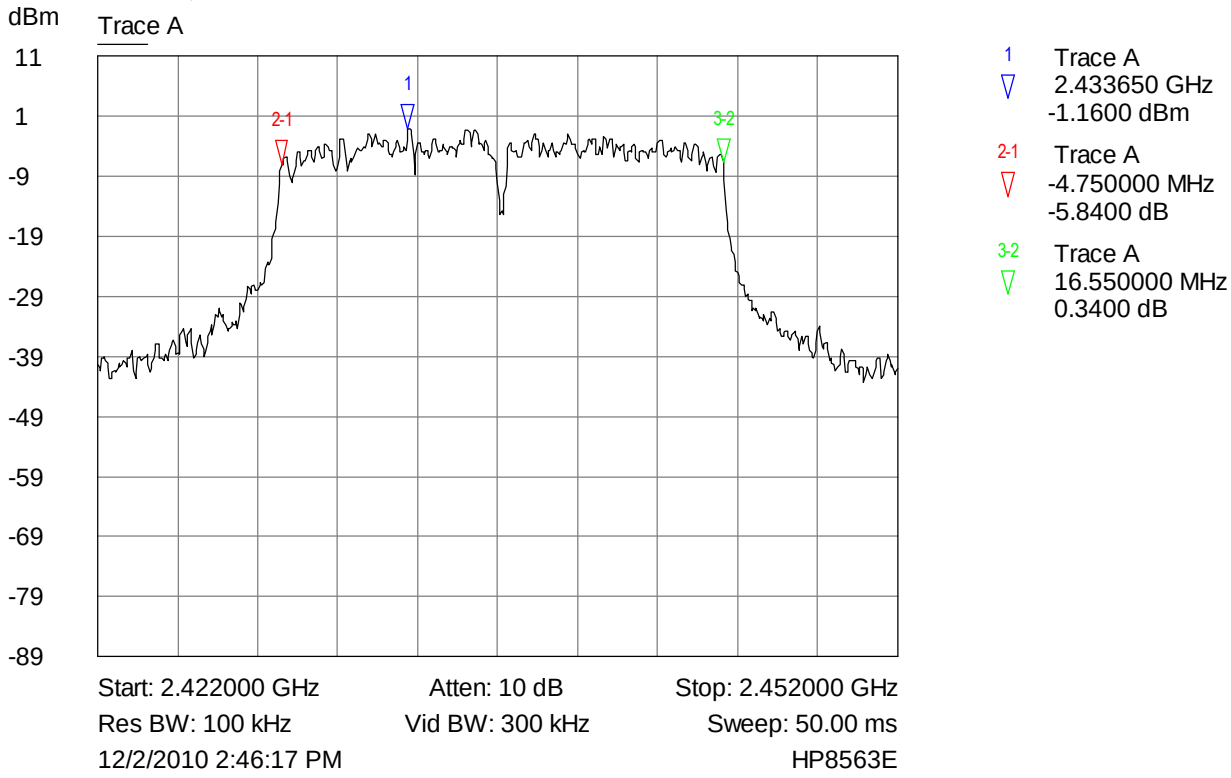
J4461-5, Plot 0019



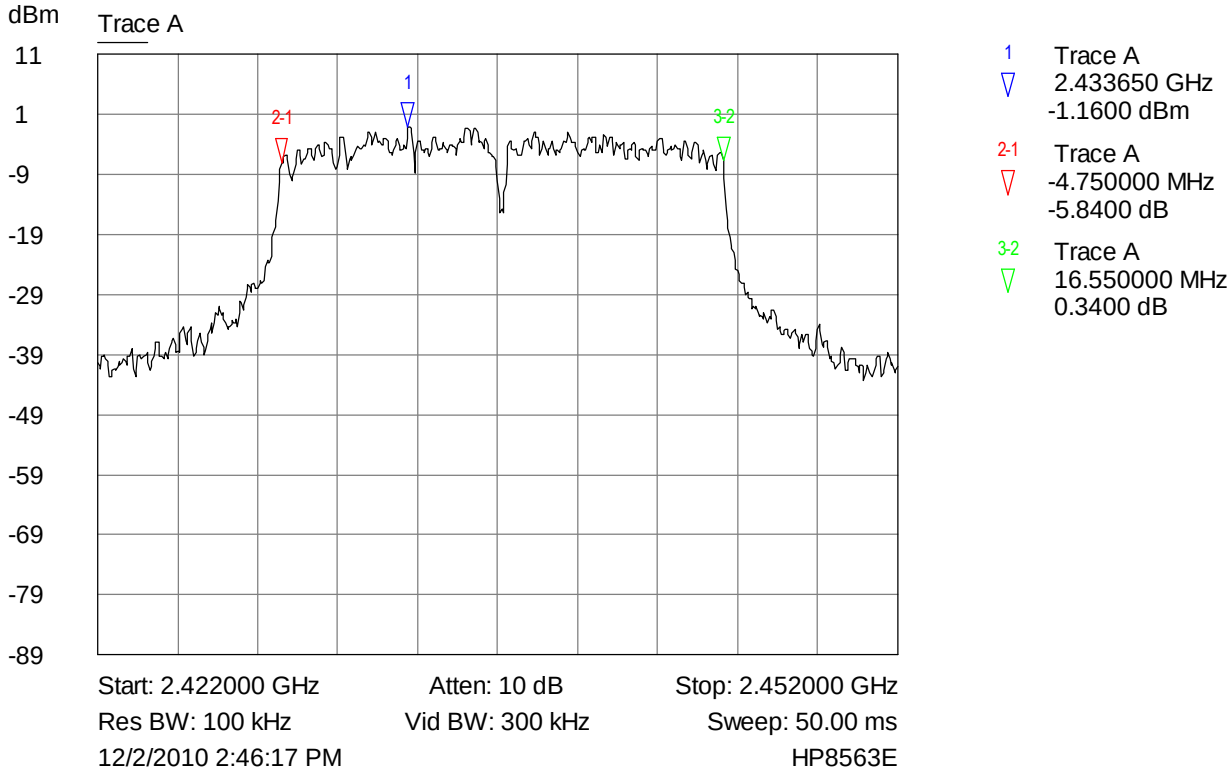
J4461-5, Plot 0020



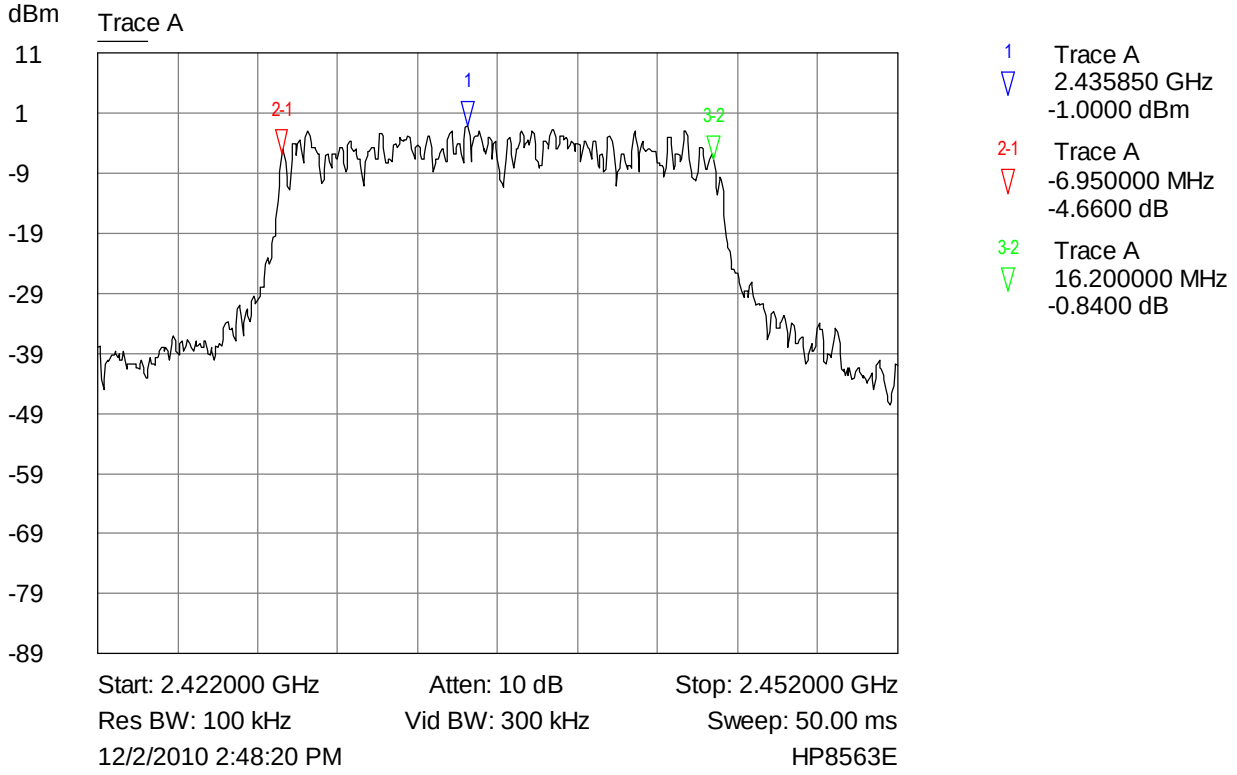
J4461-5, Plot 0021



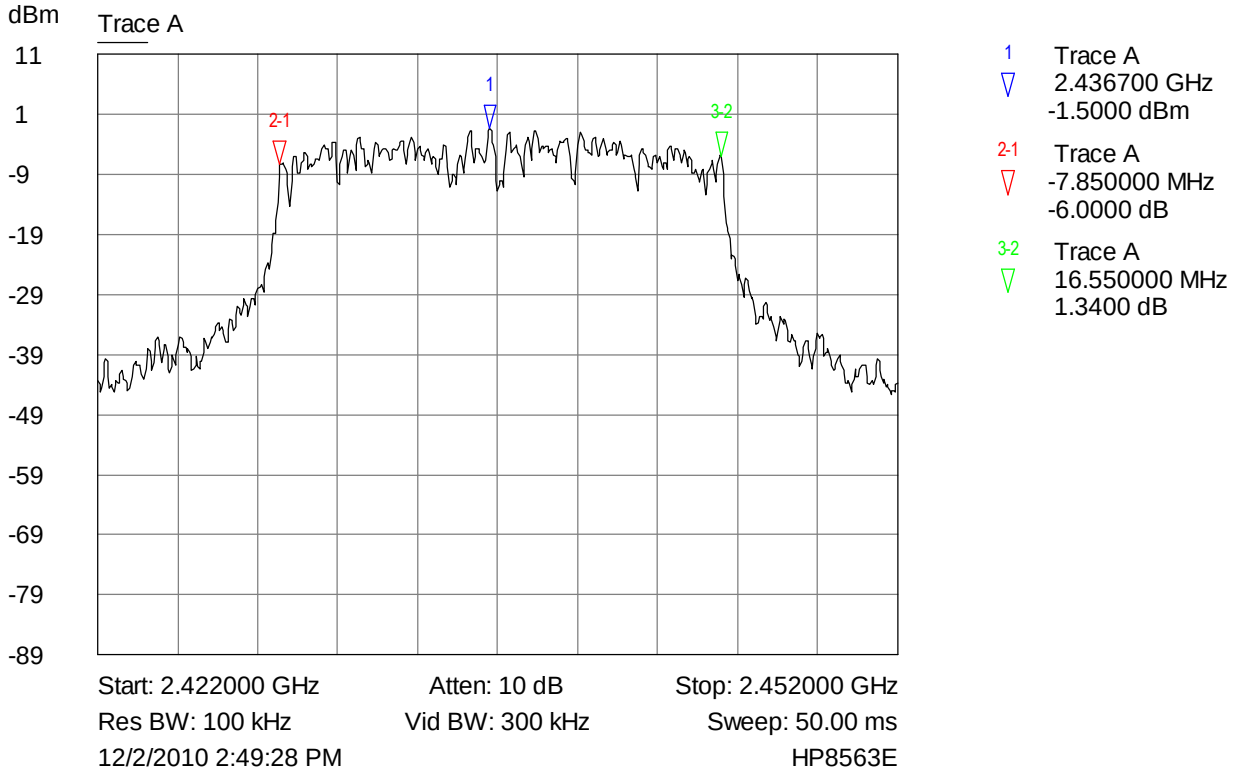
J4461-5, Plot 0022



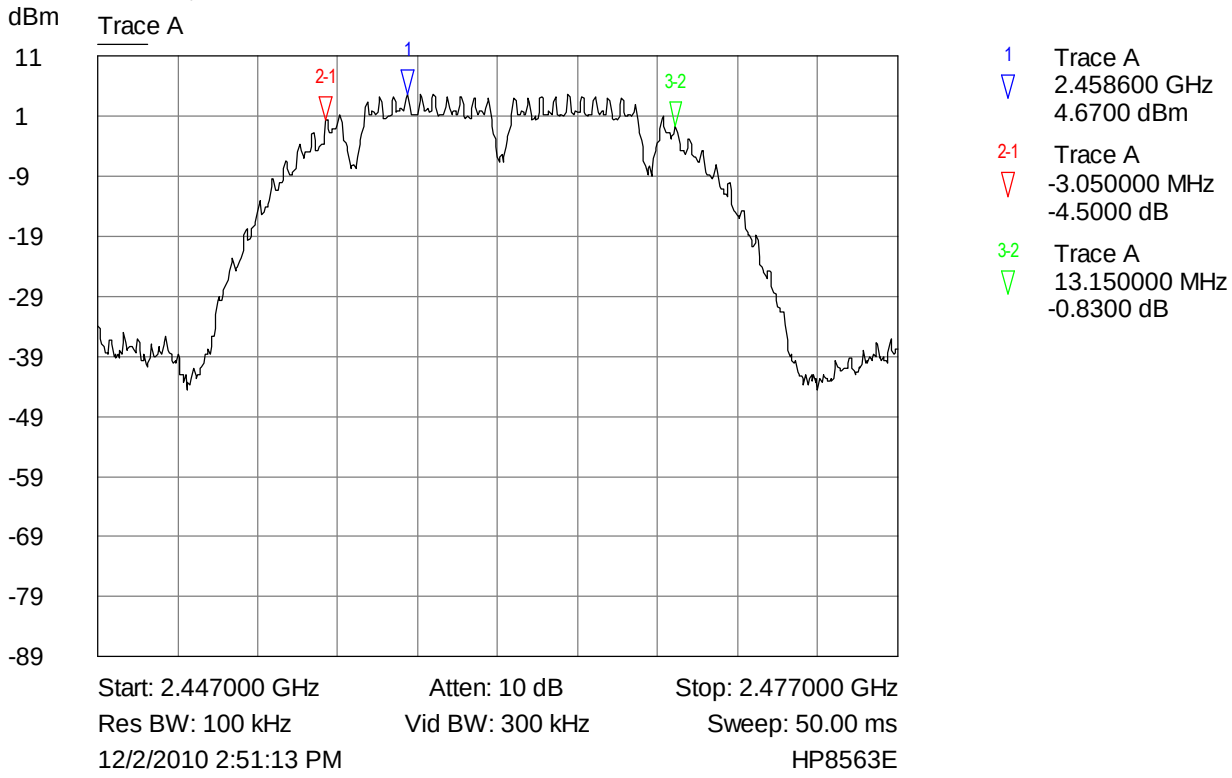
J4461-5, Plot 0023



J4461-5, Plot 0024

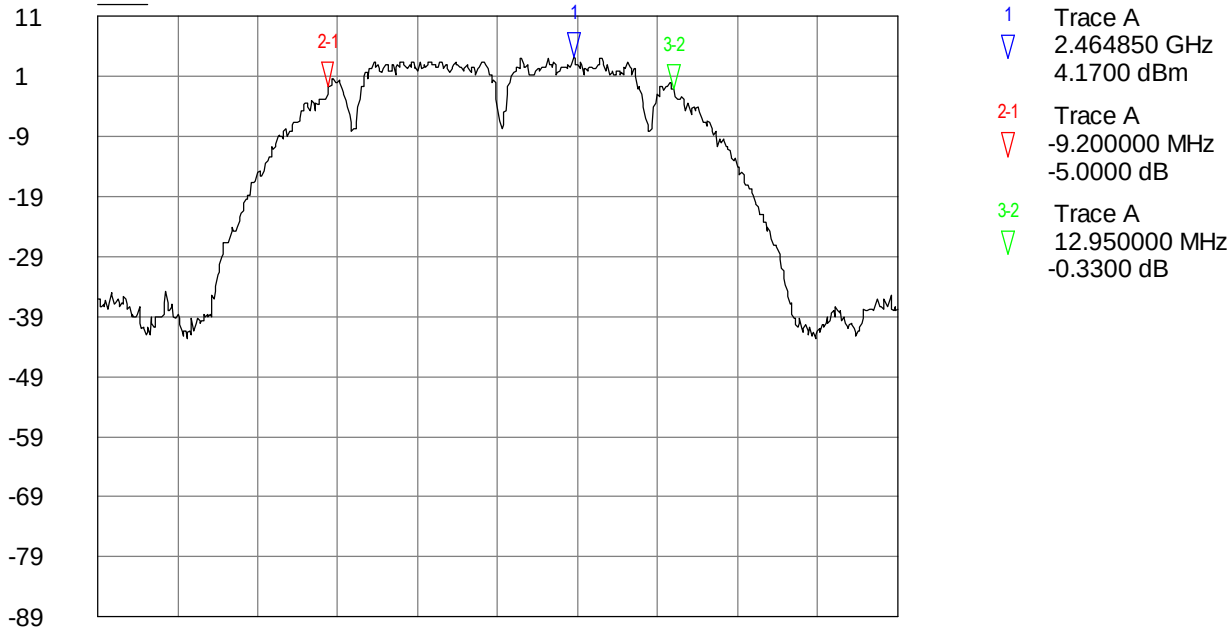


J4461-5, Plot 0025



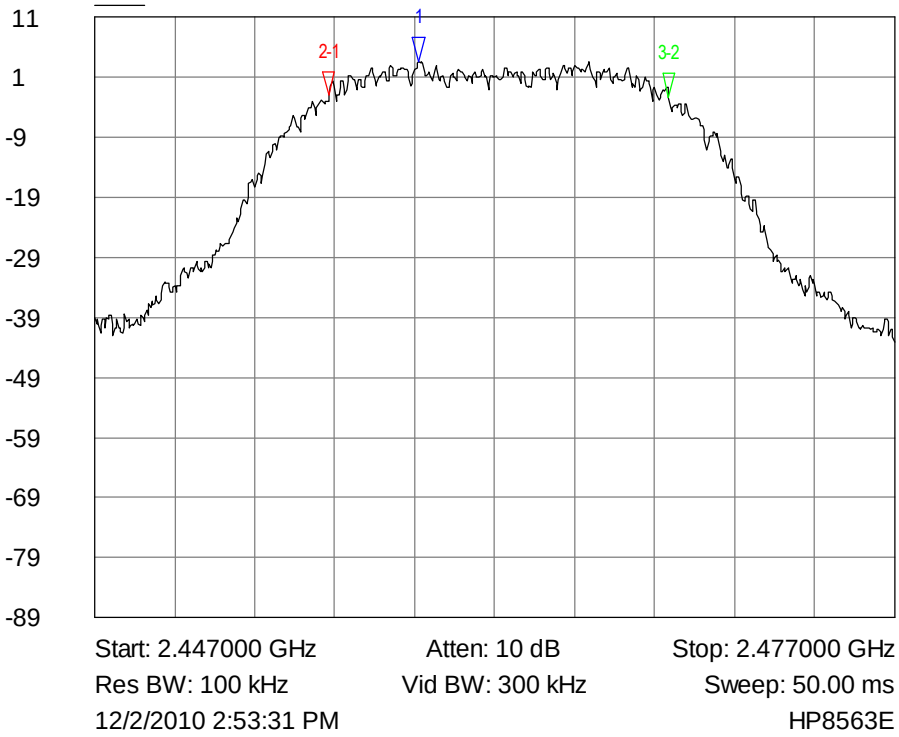
Start: 2.447000 GHz Atten: 10 dB Stop: 2.477000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:51:13 PM HP8563E

J4461-5, Plot 0026



Start: 2.447000 GHz Atten: 10 dB Stop: 2.477000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:52:29 PM HP8563E

J4461-5, Plot 0027



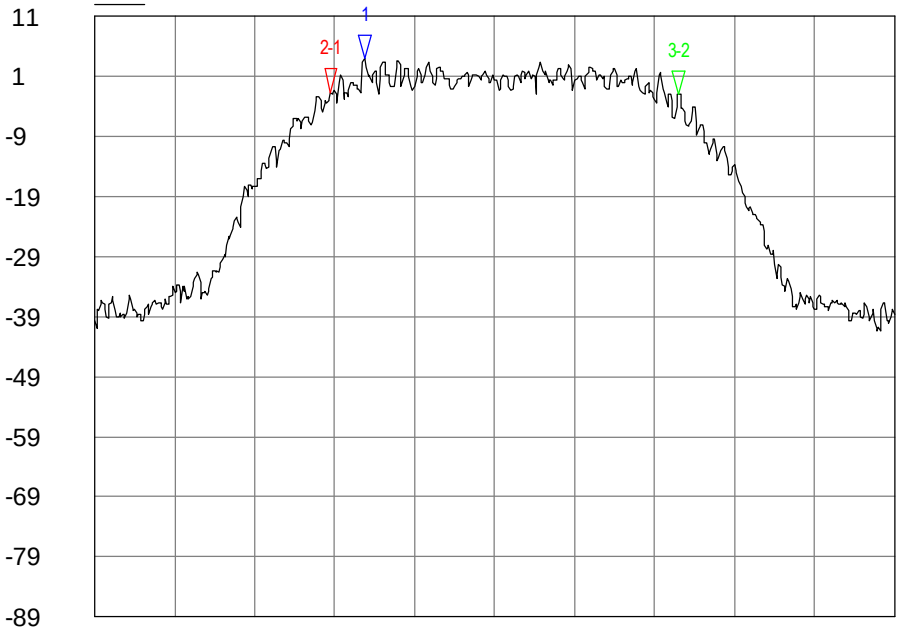
1 Trace A
2.459150 GHz
3.6700 dBm

2-1 Trace A
-3.350000 MHz
-5.6700 dB

3-2 Trace A
12.750000 MHz
-0.3300 dB

Start: 2.447000 GHz Atten: 10 dB Stop: 2.477000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:53:31 PM HP8563E

J4461-5, Plot 0028



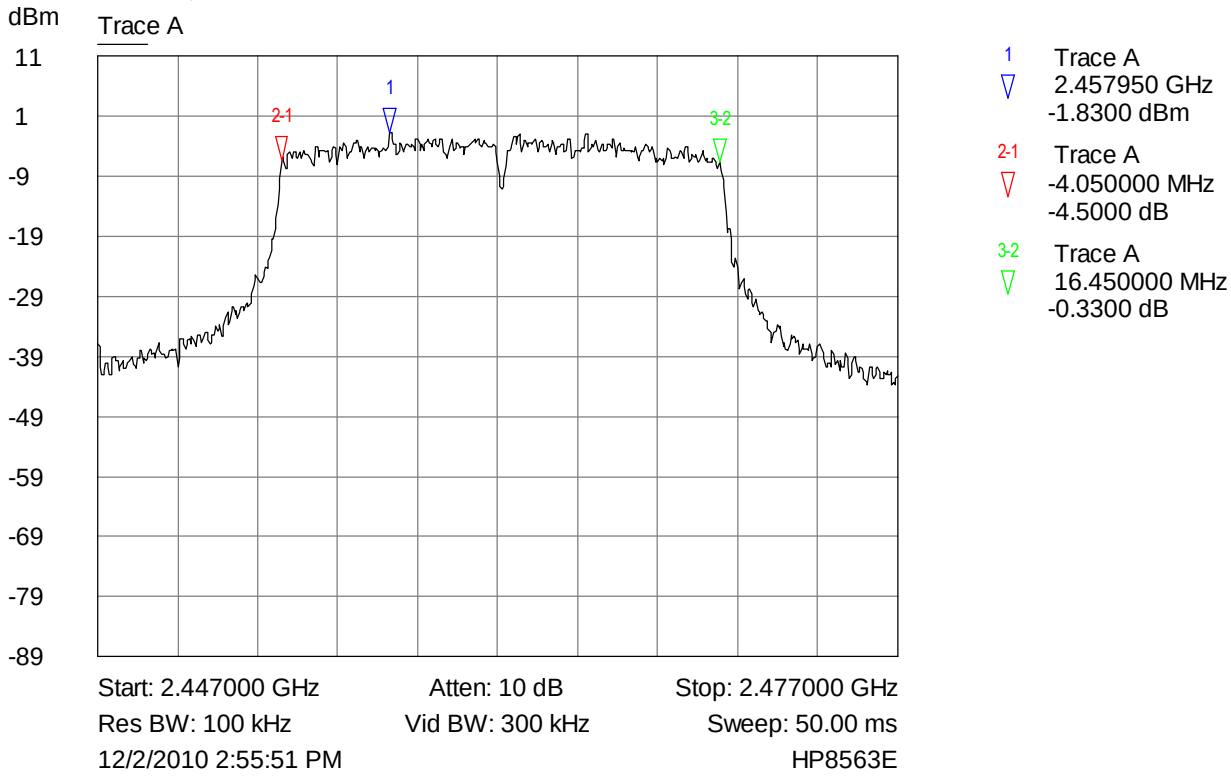
1 Trace A
2.457100 GHz
4.0000 dBm

2-1 Trace A
-1.250000 MHz
-5.8300 dB

3-2 Trace A
13.050000 MHz
-0.1700 dB

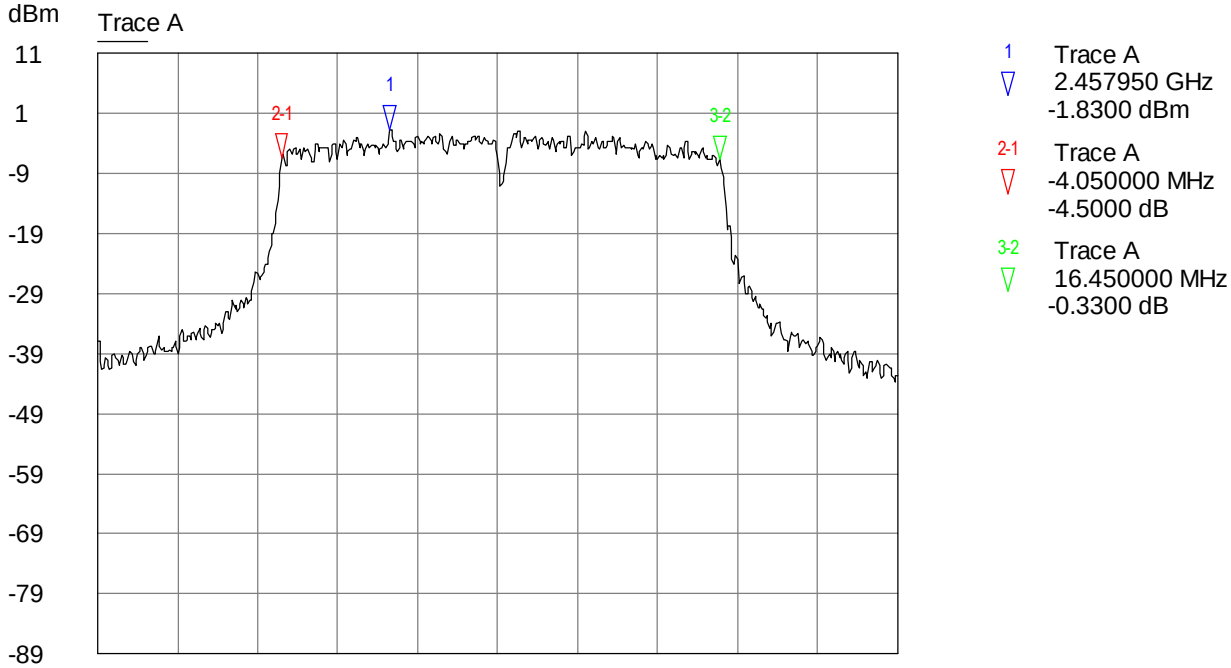
Start: 2.447000 GHz Atten: 10 dB Stop: 2.477000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:54:37 PM HP8563E

J4461-5, Plot 0029



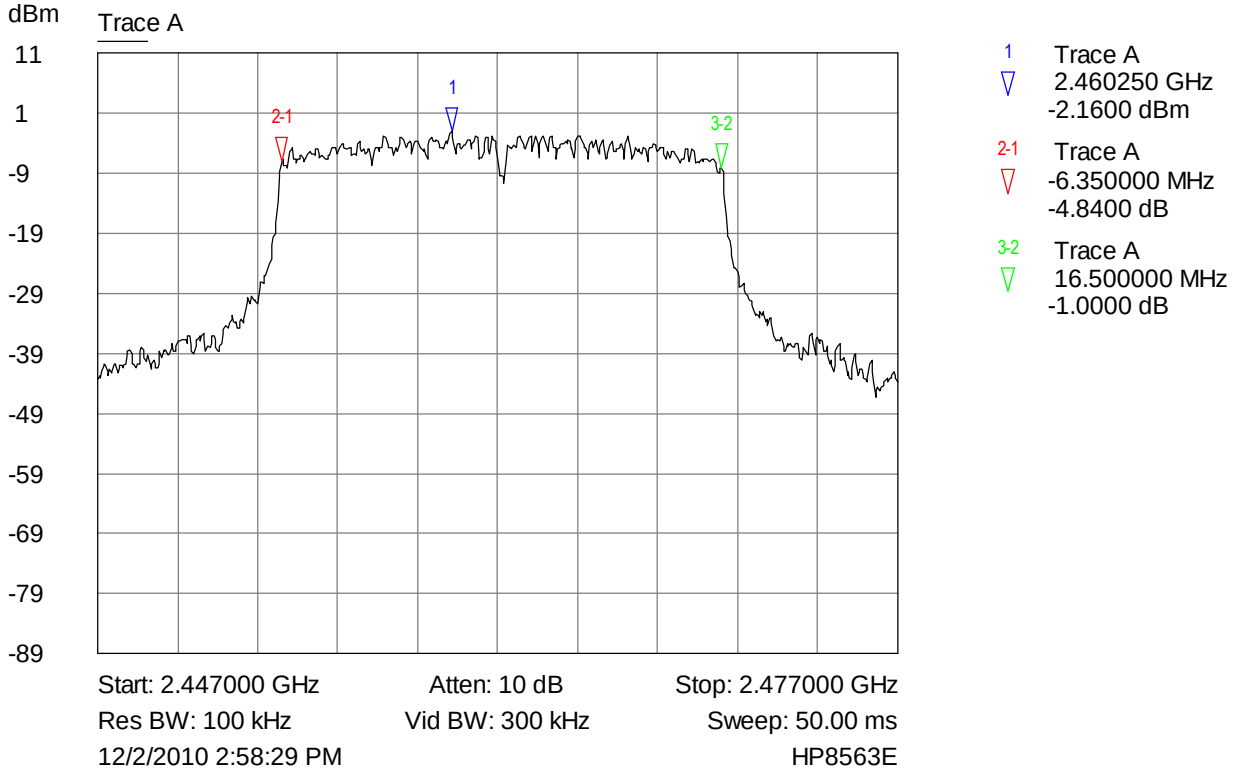
Start: 2.447000 GHz Atten: 10 dB Stop: 2.477000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:55:51 PM HP8563E

J4461-5, Plot 0030

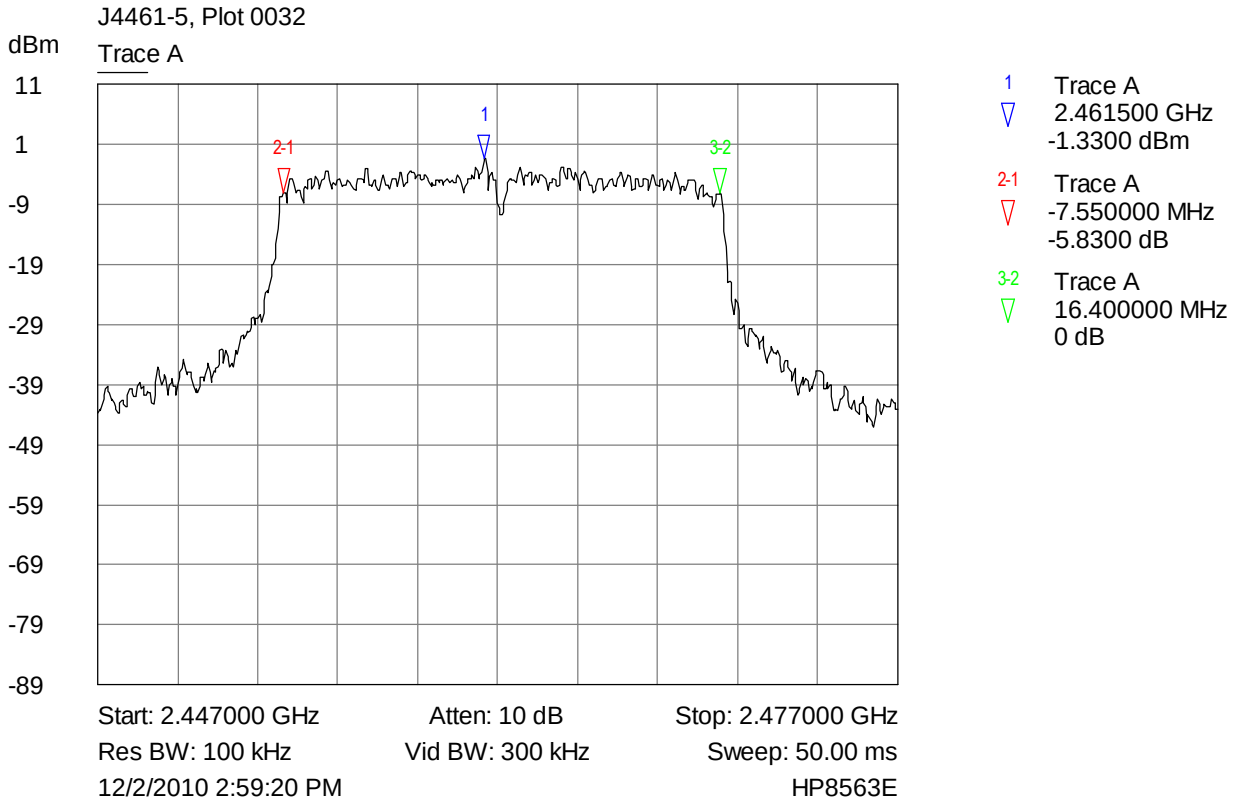


Start: 2.447000 GHz Atten: 10 dB Stop: 2.477000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
12/2/2010 2:57:08 PM HP8563E

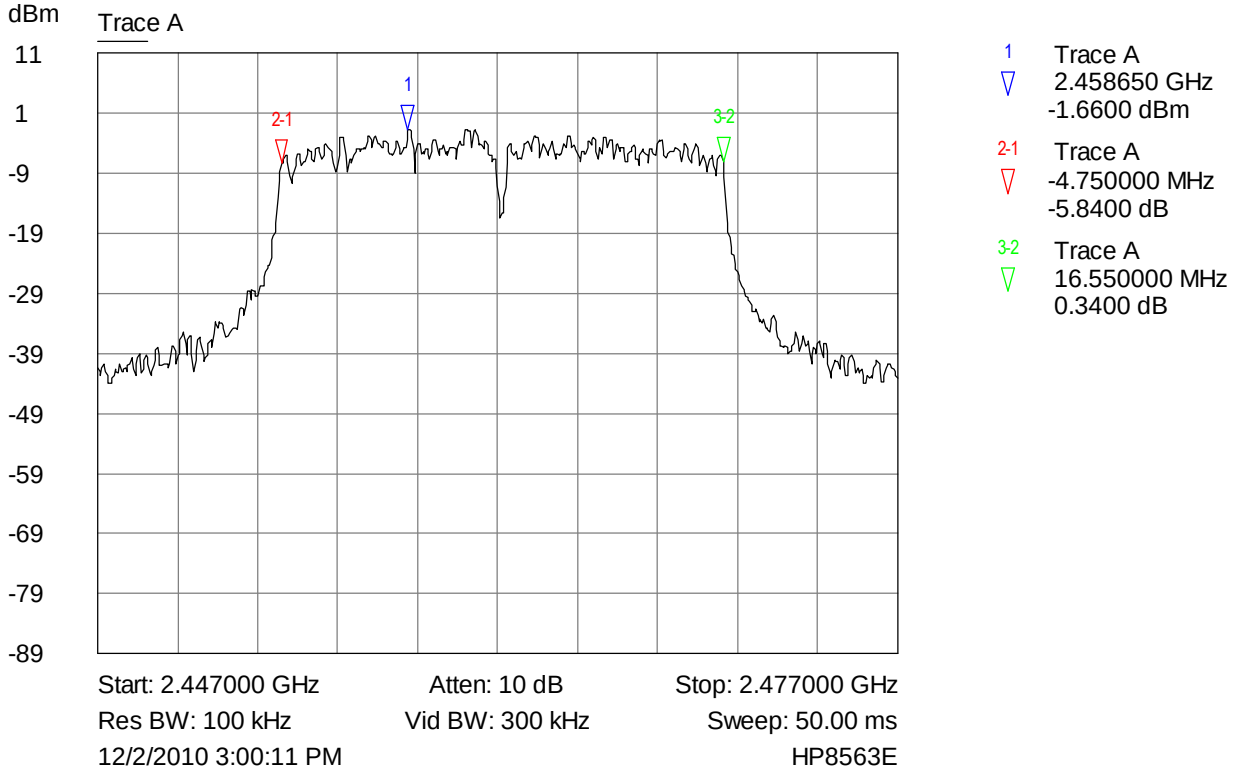
J4461-5, Plot 0031



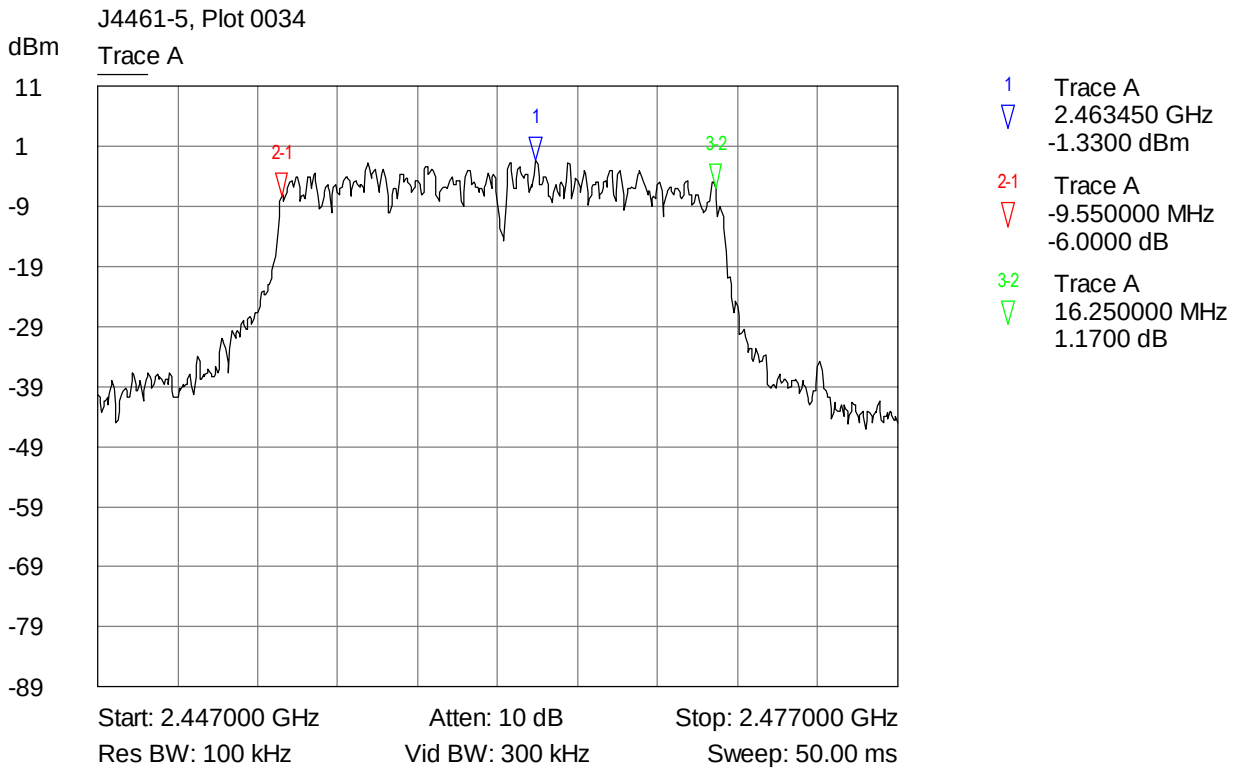
J4461-5, Plot 0032



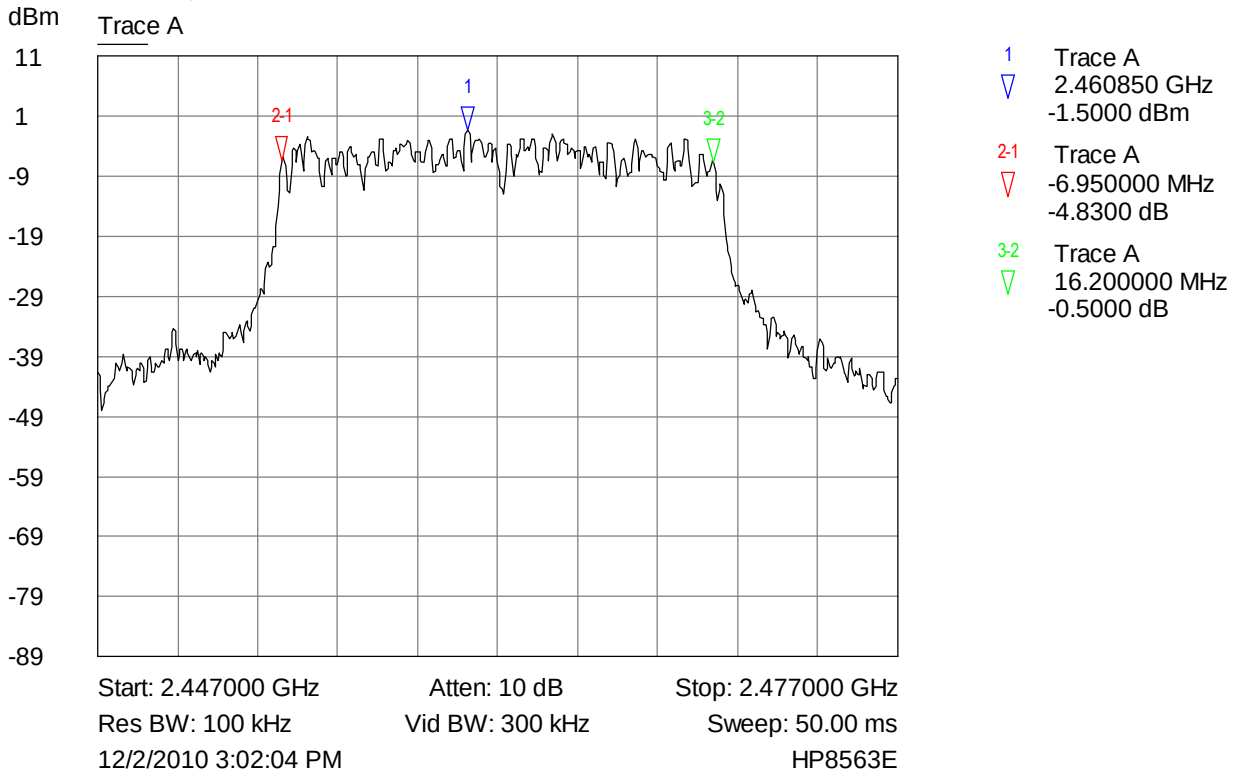
J4461-5, Plot 0033



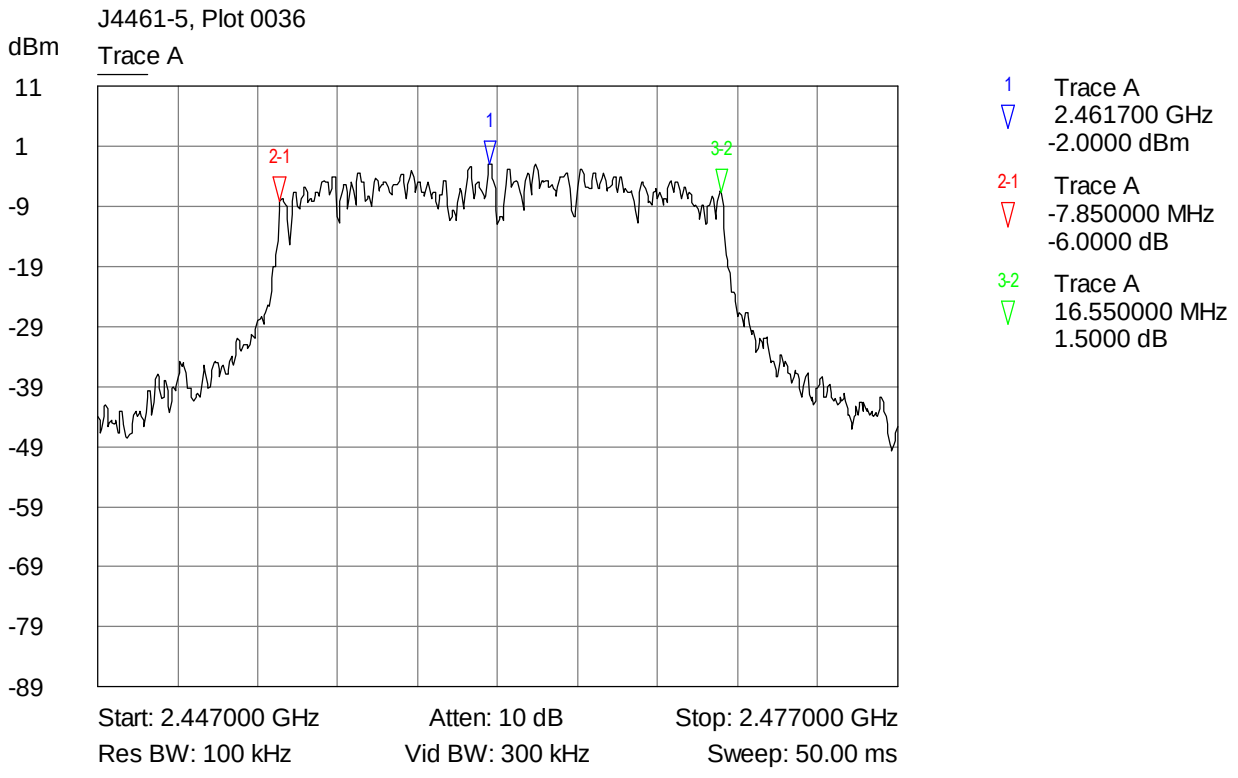
J4461-5, Plot 0034



J4461-5, Plot 0035



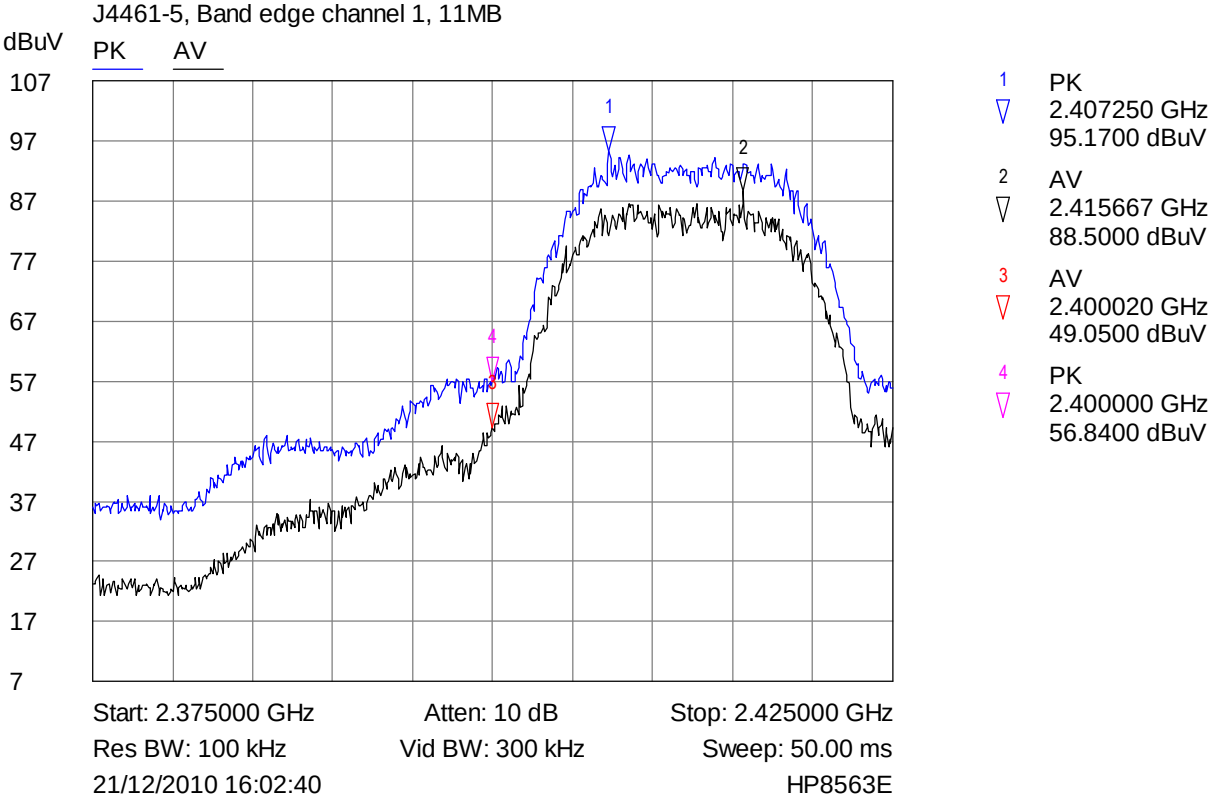
J4461-5, Plot 0036



6.6 Band Edge Compliance

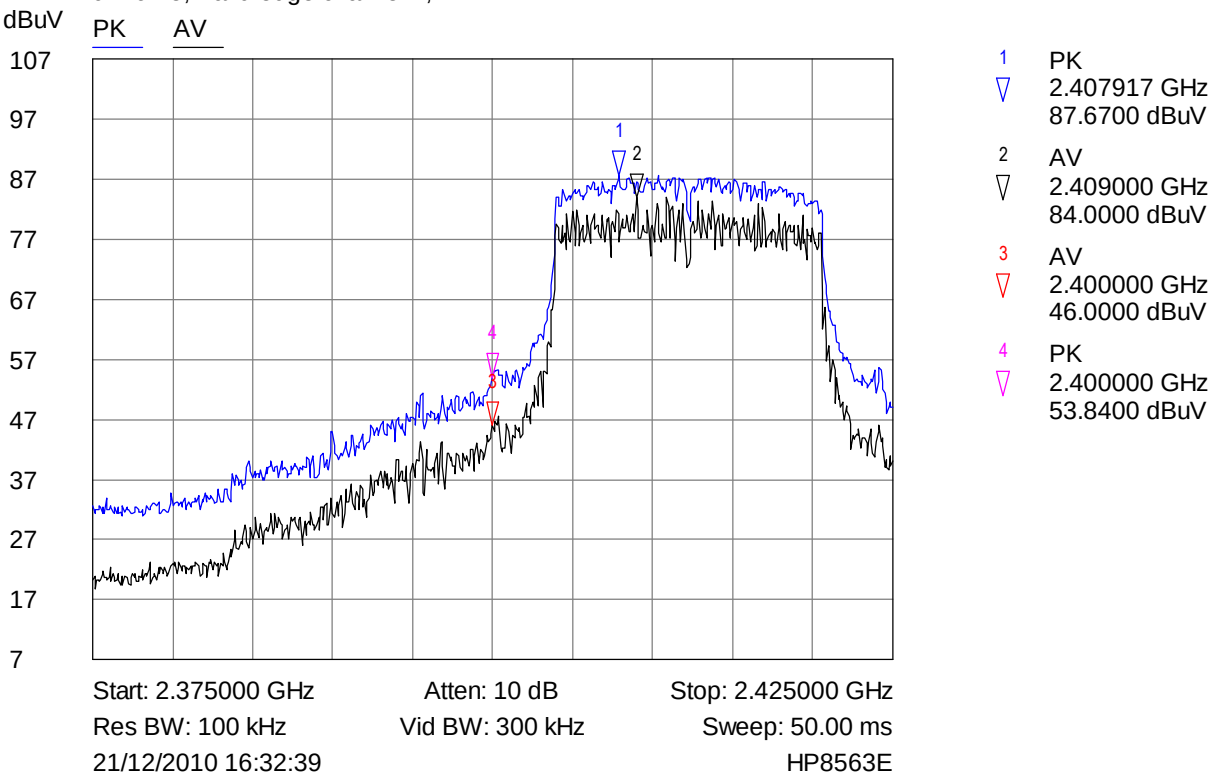
Band edge plots. (100kHz RBW)

J4461-5, Band edge channel 1, 11MB



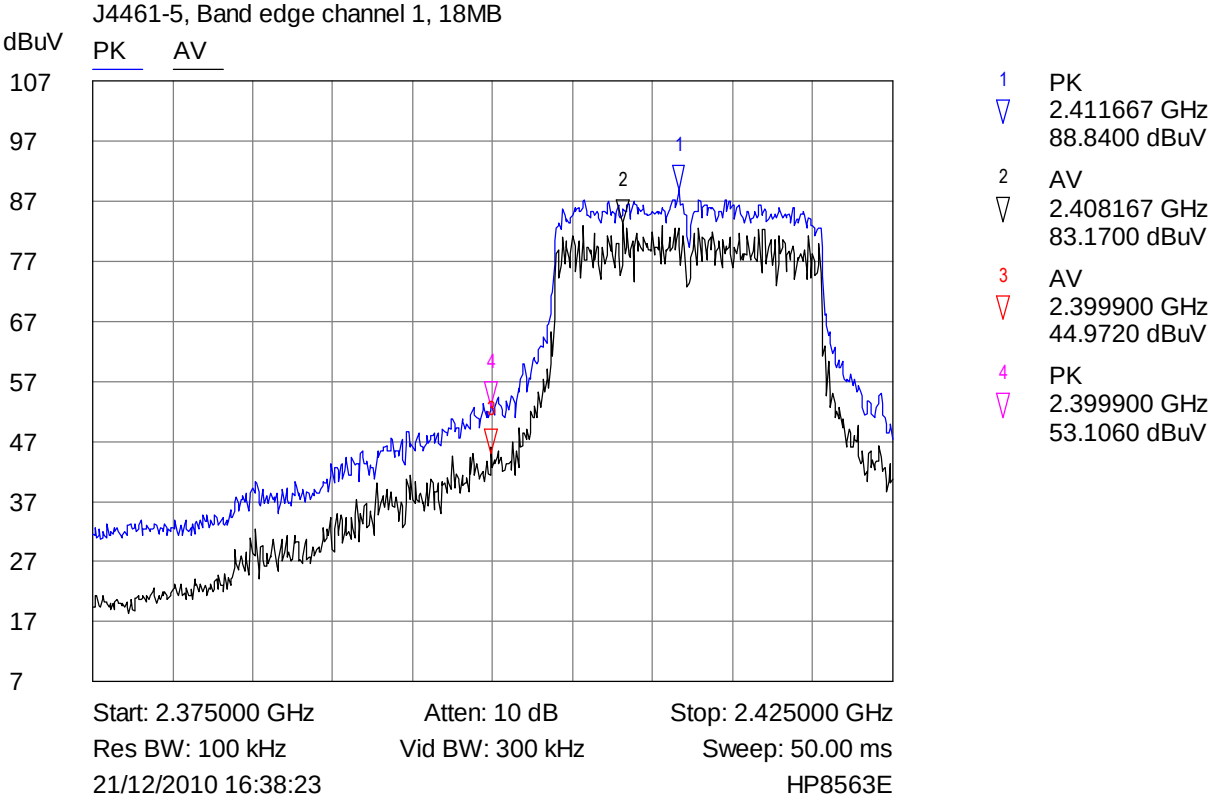
Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:02:40 HP8563E

J4461-5, Band edge channel 1, 12MB



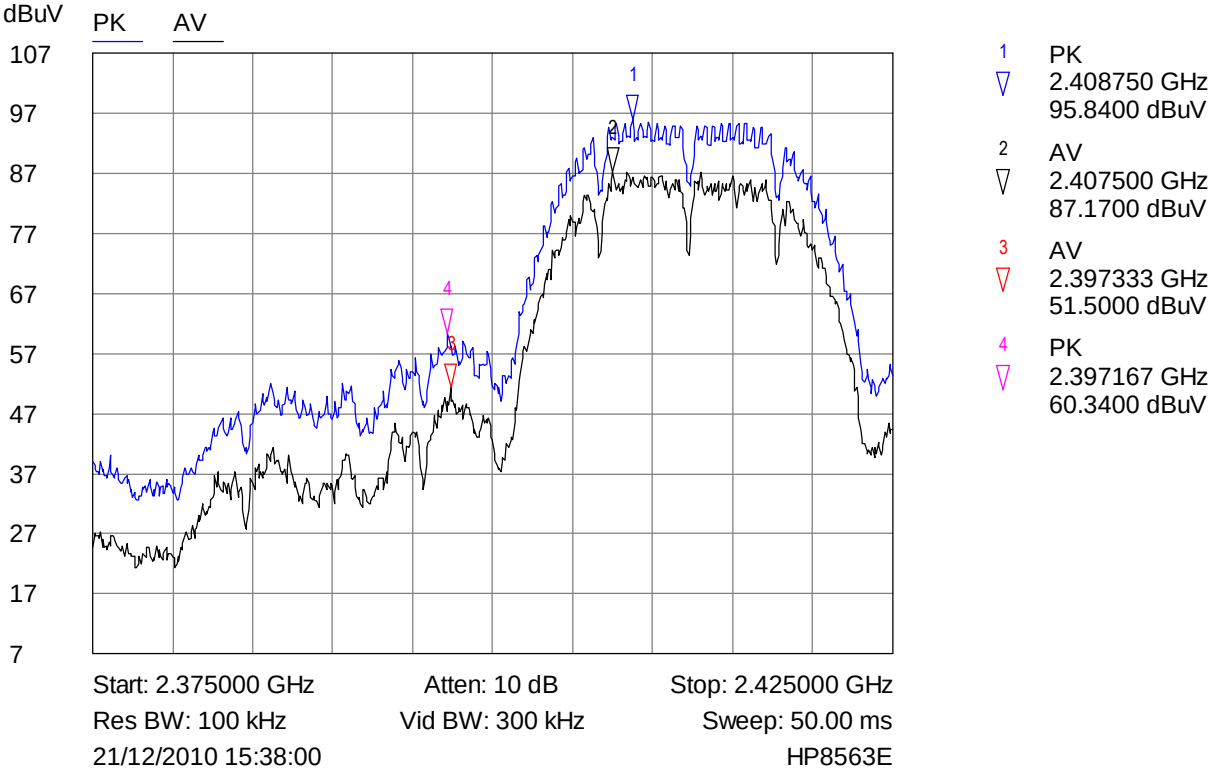
Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:32:39 HP8563E

J4461-5, Band edge channel 1, 18MB



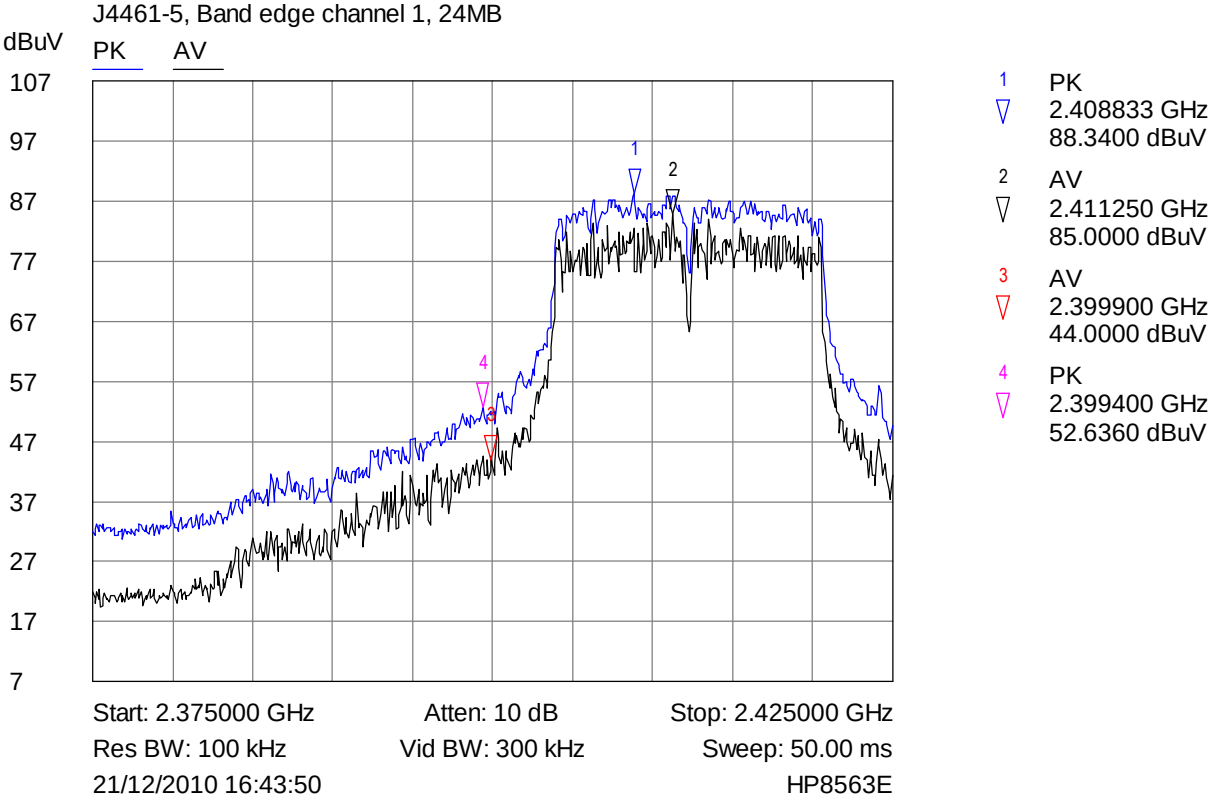
Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:38:23 HP8563E

J4461-5, Band edge channel 1, 1MB



Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 15:38:00 HP8563E

J4461-5, Band edge channel 1, 24MB



1 PK
2.408833 GHz
88.3400 dBuV

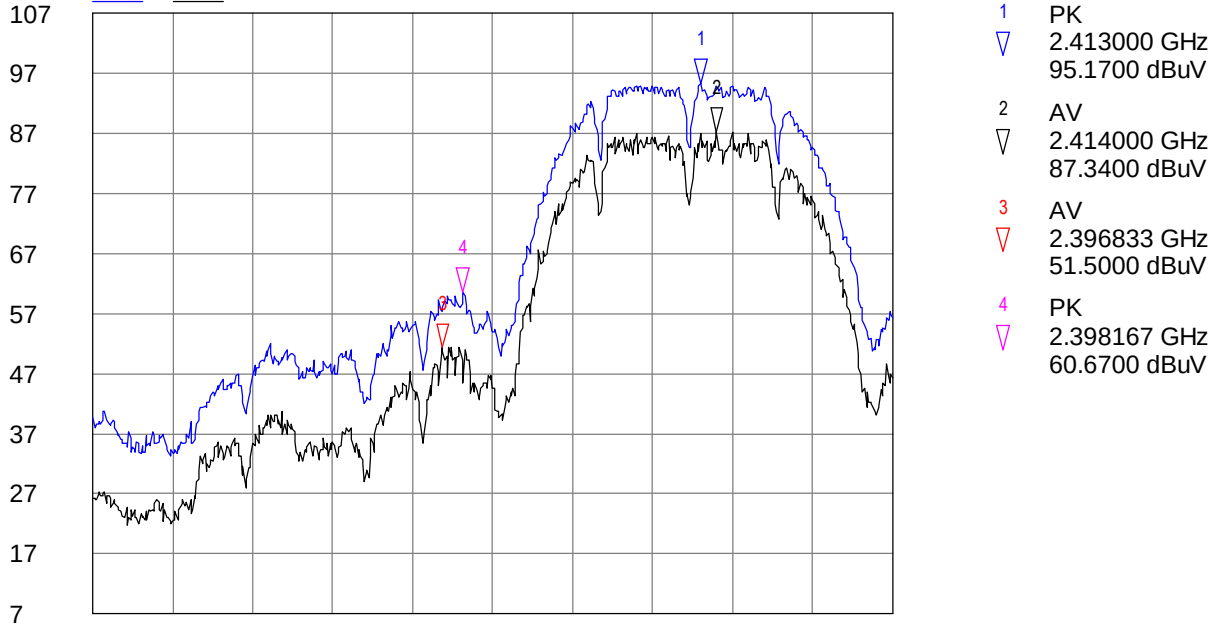
2 AV
2.411250 GHz
85.0000 dBuV

3 AV
2.399900 GHz
44.0000 dBuV

4 PK
2.399400 GHz
52.6360 dBuV

Start: 2.375000 GHz | Atten: 10 dB | Stop: 2.425000 GHz
Res BW: 100 kHz | Vid BW: 300 kHz | Sweep: 50.00 ms
21/12/2010 16:43:50 | HP8563E

J4461-5, Band edge channel 1, 2MB



1 PK
2.413000 GHz
95.1700 dBuV

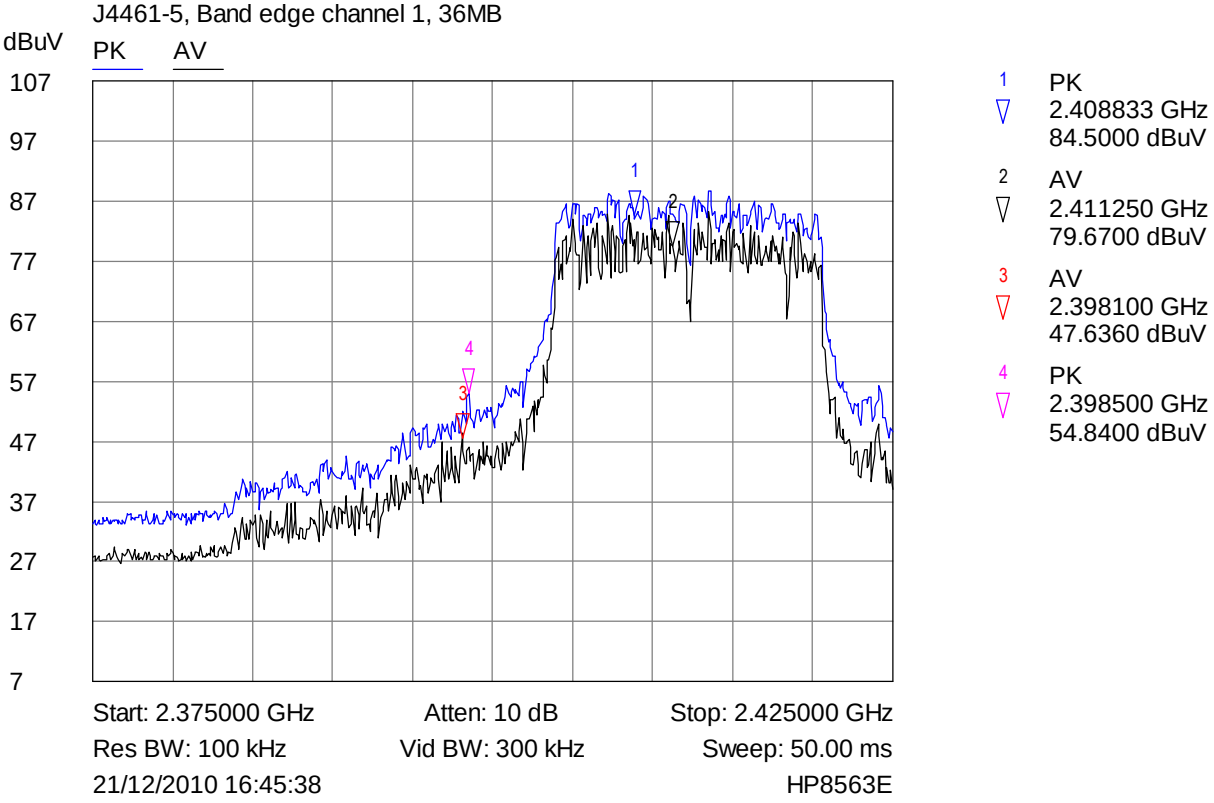
2 AV
2.414000 GHz
87.3400 dBuV

3 AV
2.396833 GHz
51.5000 dBuV

4 PK
2.398167 GHz
60.6700 dBuV

Start: 2.375000 GHz | Atten: 10 dB | Stop: 2.425000 GHz
Res BW: 100 kHz | Vid BW: 300 kHz | Sweep: 50.00 ms
21/12/2010 15:42:06 | HP8563E

J4461-5, Band edge channel 1, 36MB



1 PK
2.408833 GHz
84.5000 dBuV

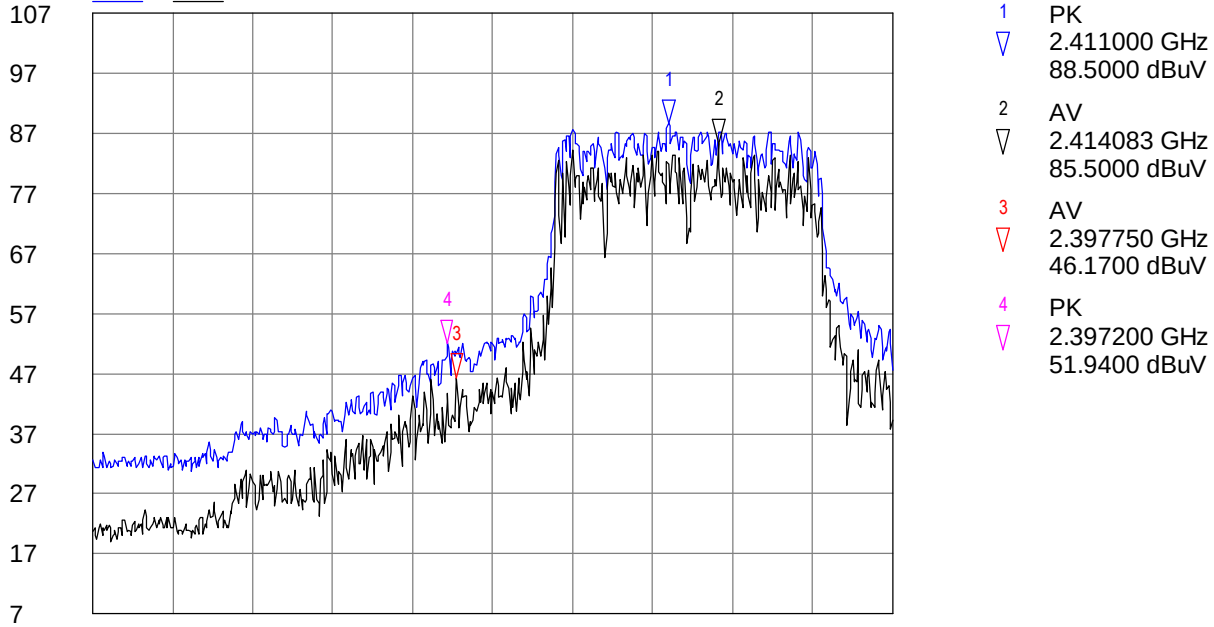
2 AV
2.411250 GHz
79.6700 dBuV

3 AV
2.398100 GHz
47.6360 dBuV

4 PK
2.398500 GHz
54.8400 dBuV

Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:45:38 HP8563E

J4461-5, Band edge channel 1, 48MB



1 PK
2.411000 GHz
88.5000 dBuV

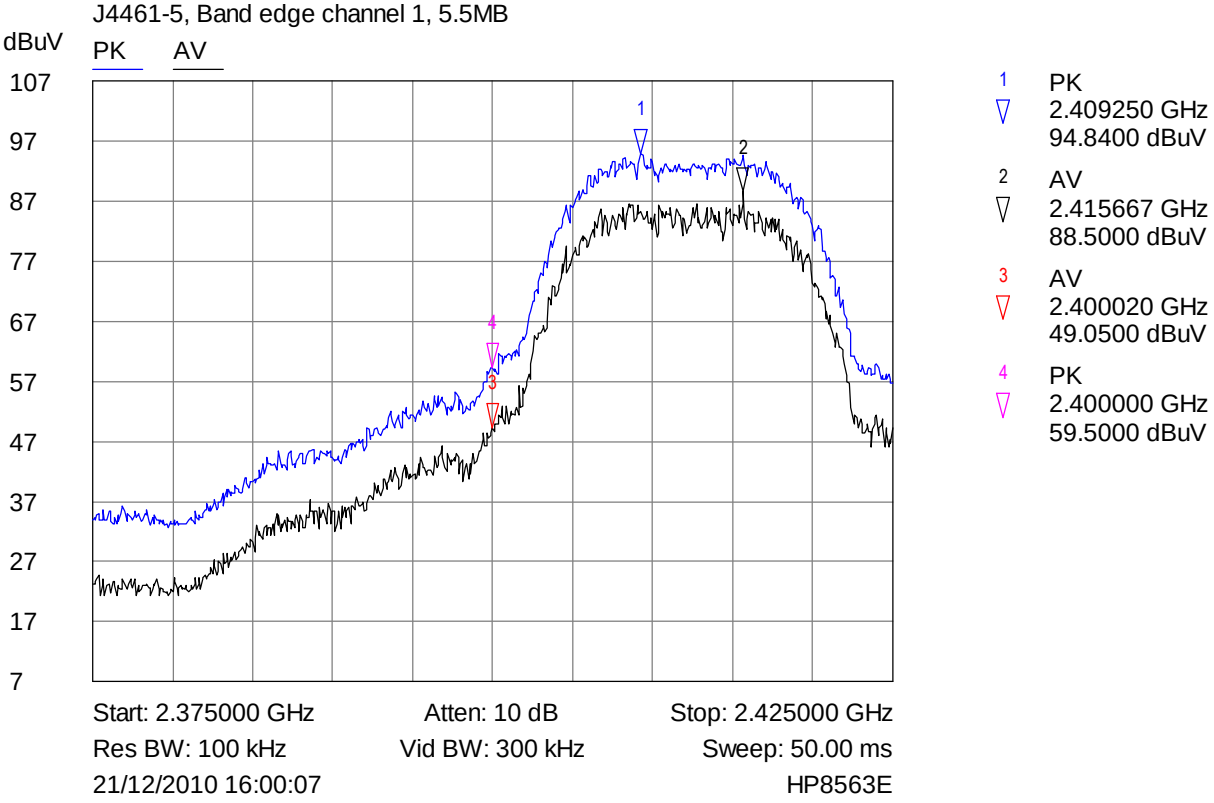
2 AV
2.414083 GHz
85.5000 dBuV

3 AV
2.397750 GHz
46.1700 dBuV

4 PK
2.397200 GHz
51.9400 dBuV

Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:49:55 HP8563E

J4461-5, Band edge channel 1, 5.5MB



1 PK
2.409250 GHz
94.8400 dBuV

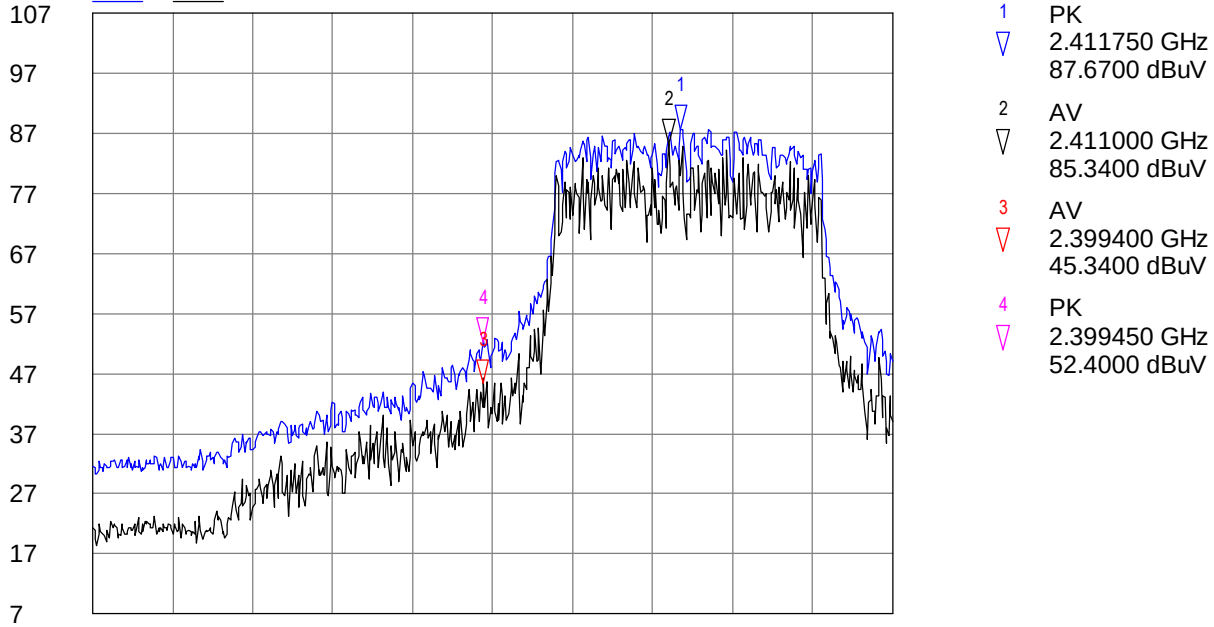
2 AV
2.415667 GHz
88.5000 dBuV

3 AV
2.400020 GHz
49.0500 dBuV

4 PK
2.400000 GHz
59.5000 dBuV

Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:00:07 HP8563E

J4461-5, Band edge channel 1, 54MB



1 PK
2.411750 GHz
87.6700 dBuV

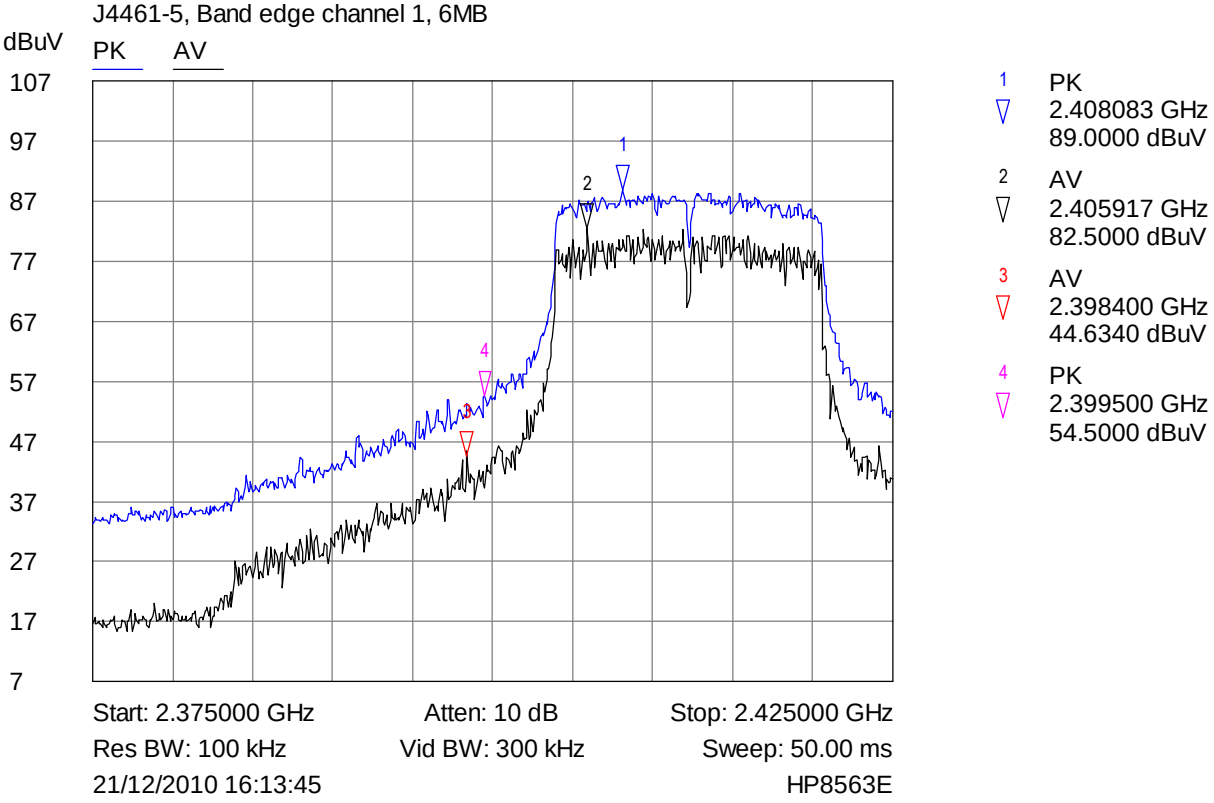
2 AV
2.411000 GHz
85.3400 dBuV

3 AV
2.399400 GHz
45.3400 dBuV

4 PK
2.399450 GHz
52.4000 dBuV

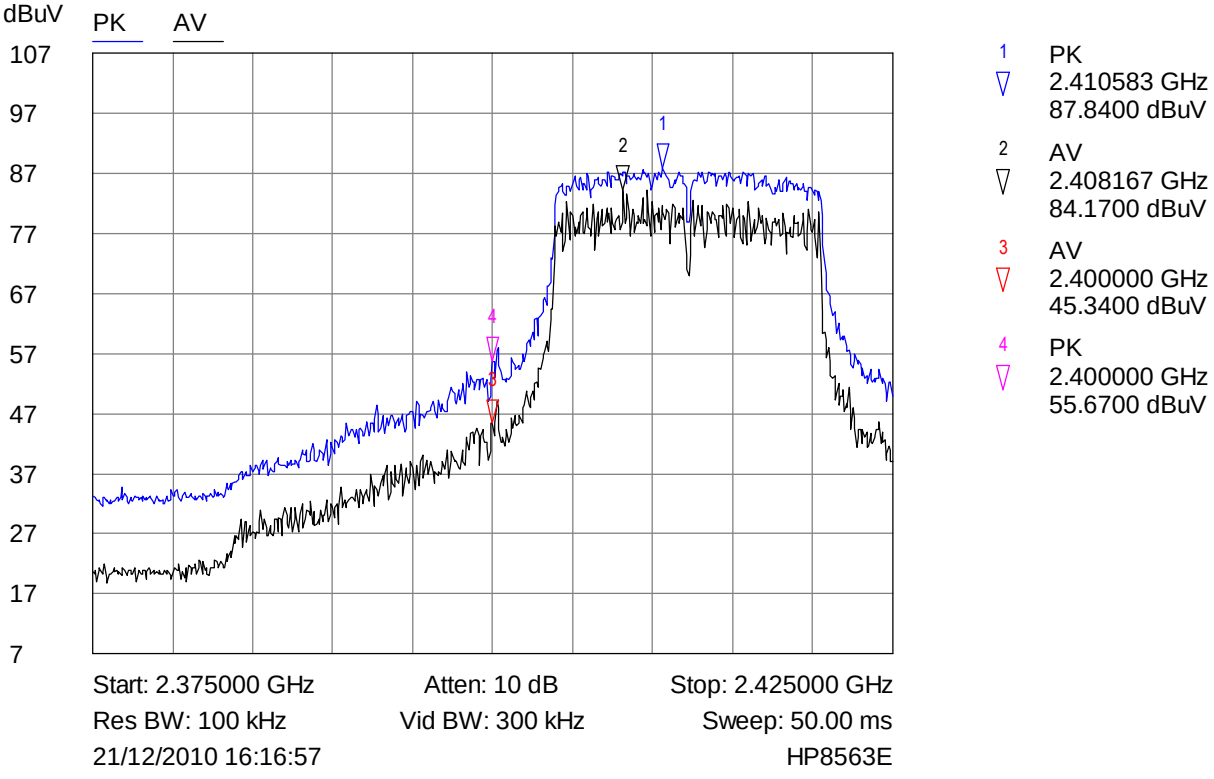
Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:51:33 HP8563E

J4461-5, Band edge channel 1, 6MB



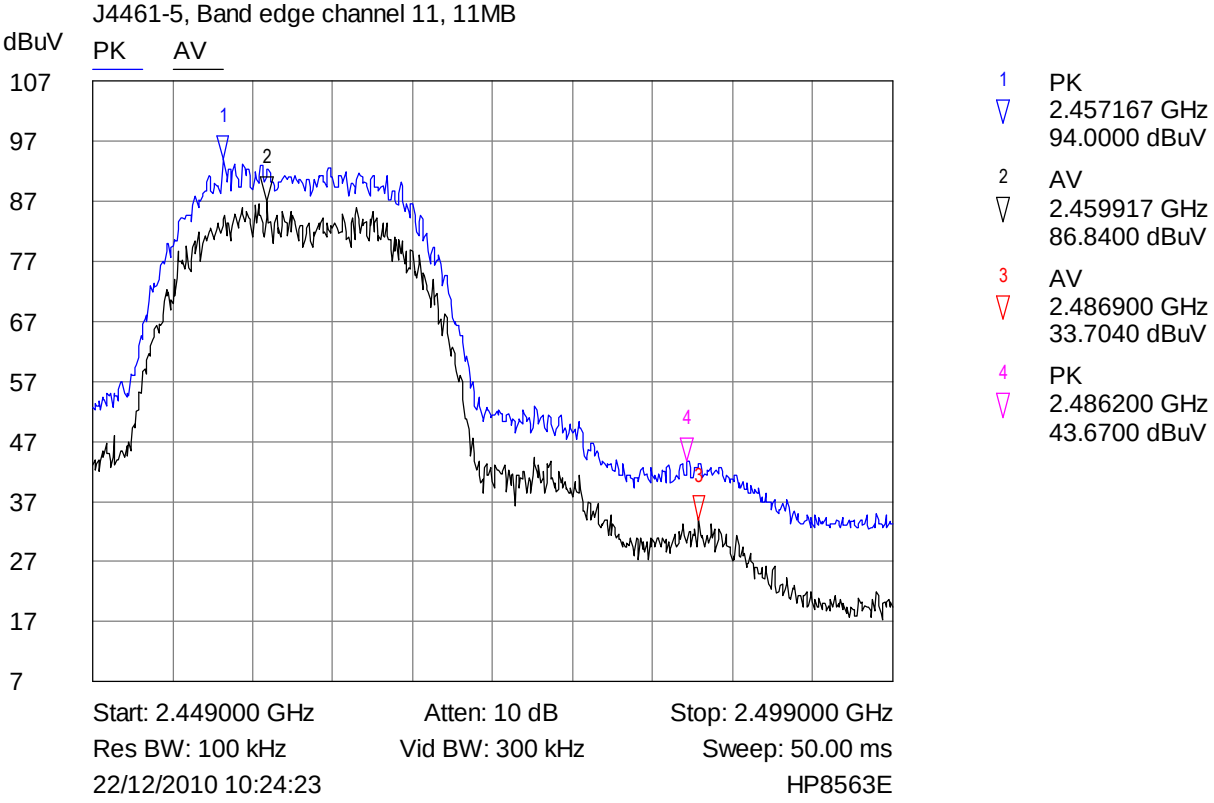
Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:13:45 HP8563E

J4461-5, Band edge channel 1, 9MB



Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
21/12/2010 16:16:57 HP8563E

J4461-5, Band edge channel 11, 11MB



1 PK
2.457167 GHz
94.0000 dBuV

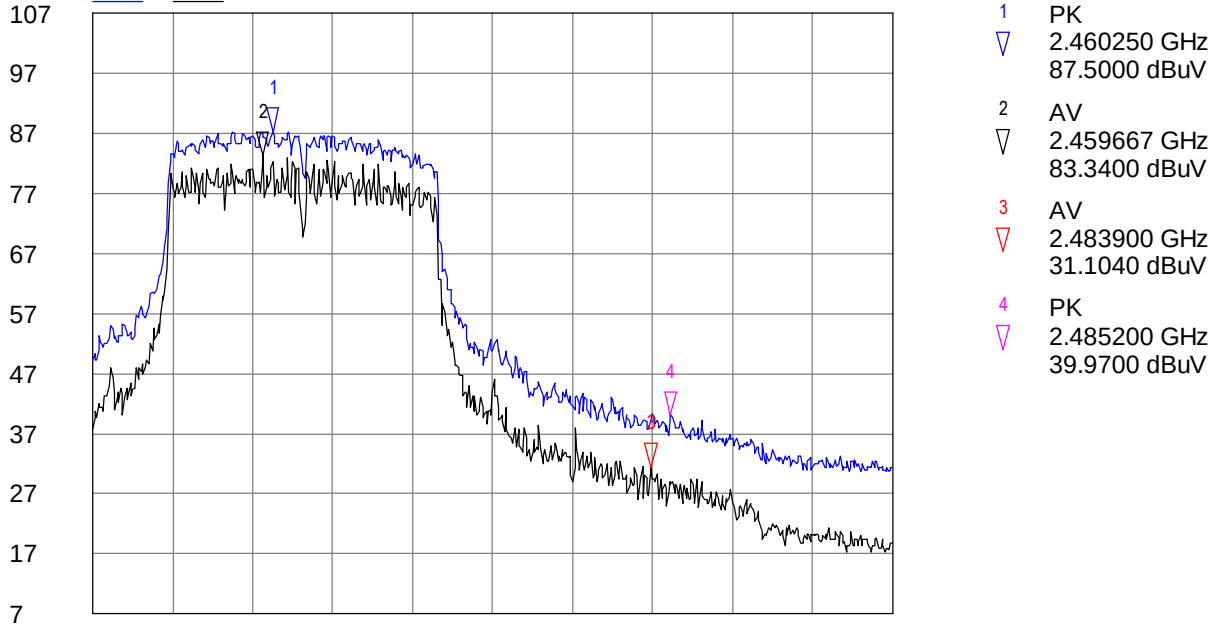
2 AV
2.459917 GHz
86.8400 dBuV

3 AV
2.486900 GHz
33.7040 dBuV

4 PK
2.486200 GHz
43.6700 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 10:24:23 HP8563E

J4461-5, Band edge channel 11, 12MB



1 PK
2.460250 GHz
87.5000 dBuV

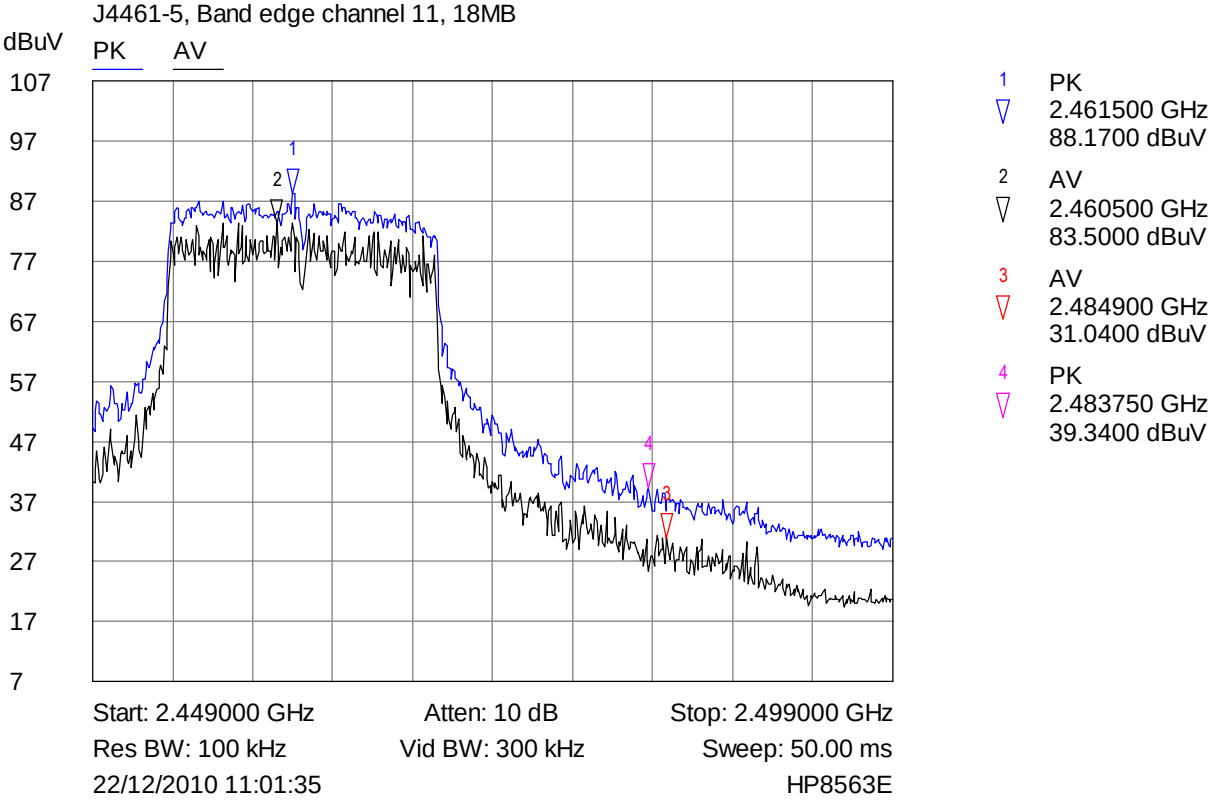
2 AV
2.459667 GHz
83.3400 dBuV

3 AV
2.483900 GHz
31.1040 dBuV

4 PK
2.485200 GHz
39.9700 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 10:53:33 HP8563E

J4461-5, Band edge channel 11, 18MB



1 PK
2.461500 GHz
88.1700 dBuV

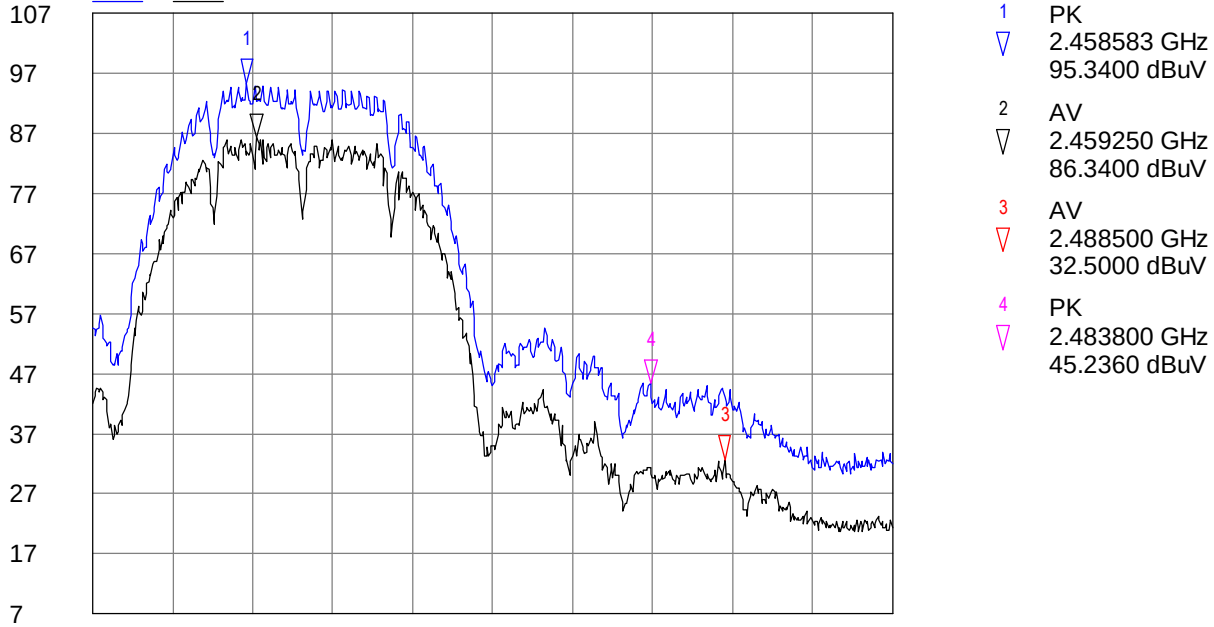
2 AV
2.460500 GHz
83.5000 dBuV

3 AV
2.484900 GHz
31.0400 dBuV

4 PK
2.483750 GHz
39.3400 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 11:01:35 HP8563E

J4461-5, Band edge channel 11, 1MB



1 PK
2.458583 GHz
95.3400 dBuV

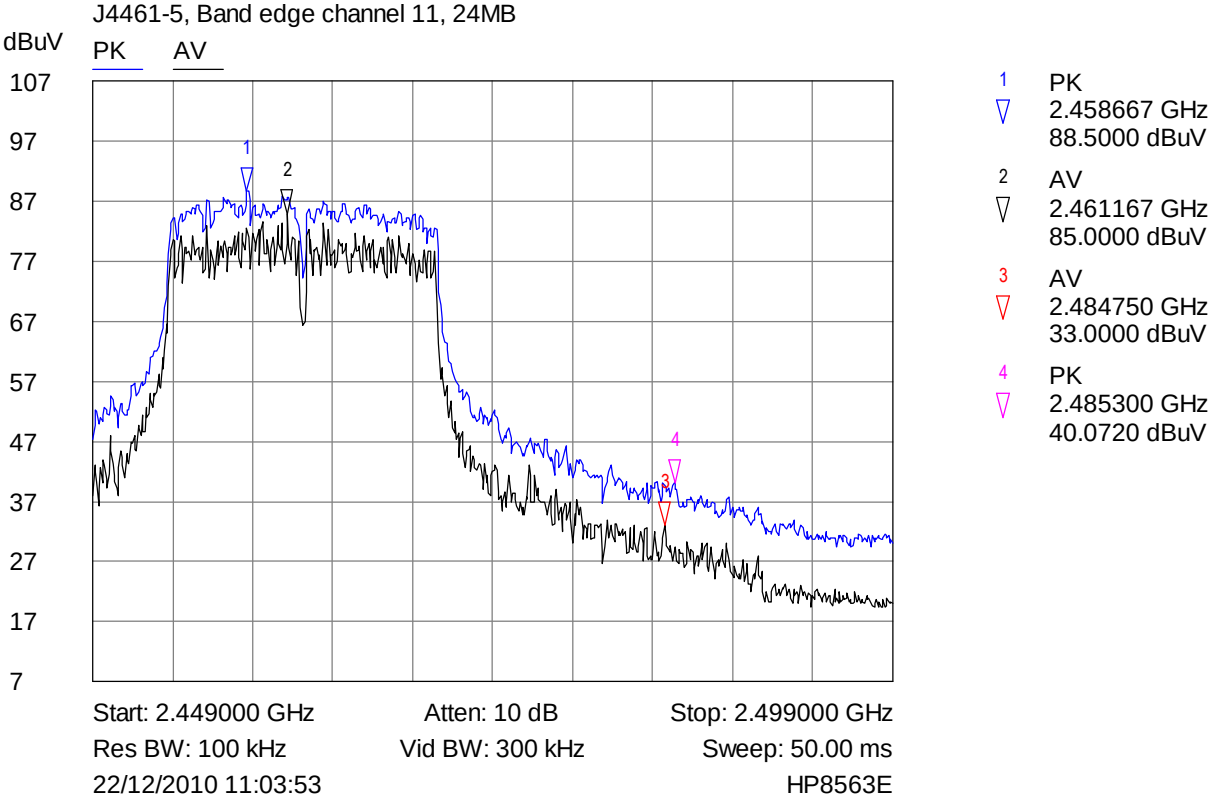
2 AV
2.459250 GHz
86.3400 dBuV

3 AV
2.488500 GHz
32.5000 dBuV

4 PK
2.483800 GHz
45.2360 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 09:29:20 HP8563E

J4461-5, Band edge channel 11, 24MB



1 PK
2.458667 GHz
88.5000 dBuV

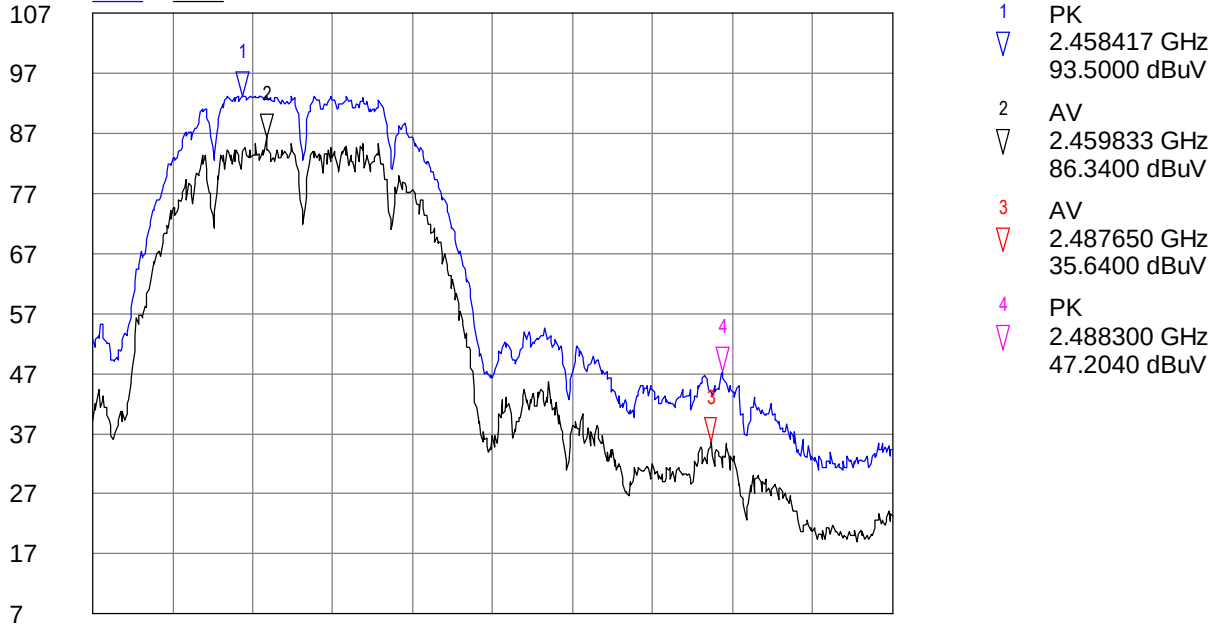
2 AV
2.461167 GHz
85.0000 dBuV

3 AV
2.484750 GHz
33.0000 dBuV

4 PK
2.485300 GHz
40.0720 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 11:03:53 HP8563E

J4461-5, Band edge channel 11, 2MB



1 PK
2.458417 GHz
93.5000 dBuV

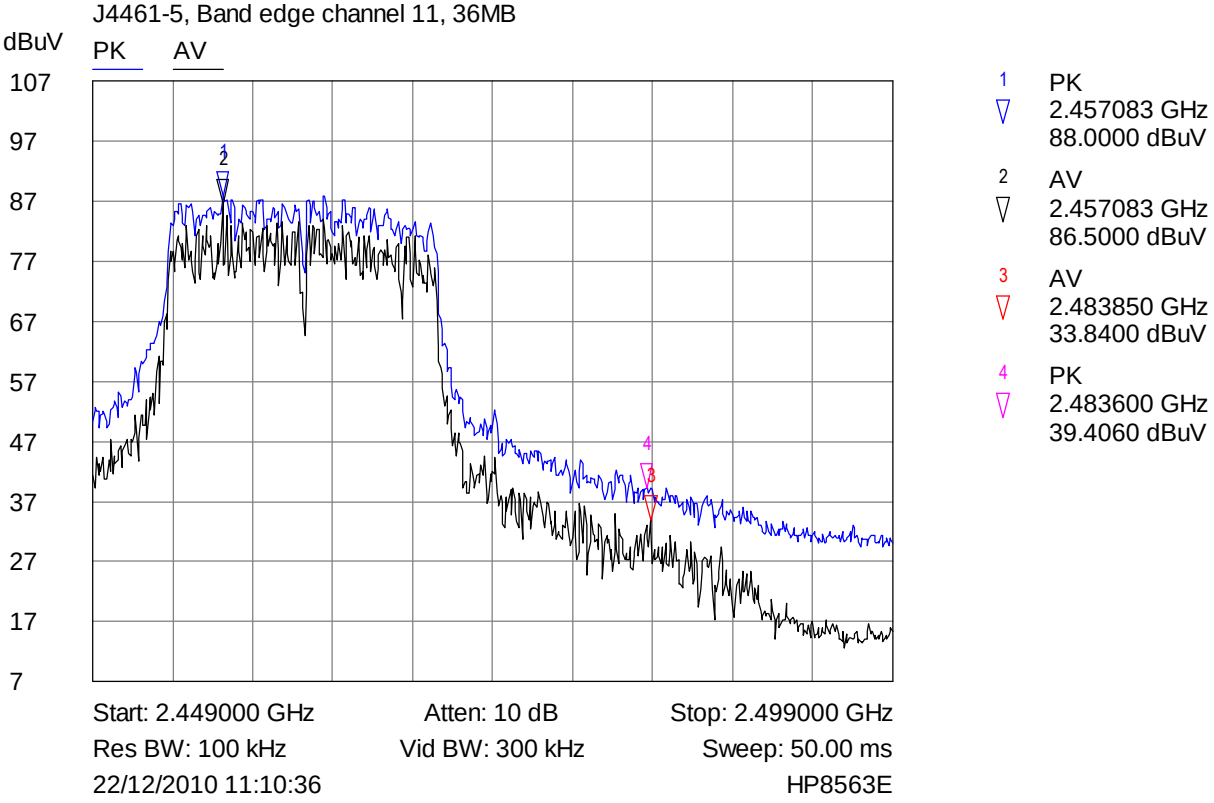
2 AV
2.459833 GHz
86.3400 dBuV

3 AV
2.487650 GHz
35.6400 dBuV

4 PK
2.488300 GHz
47.2040 dBuV

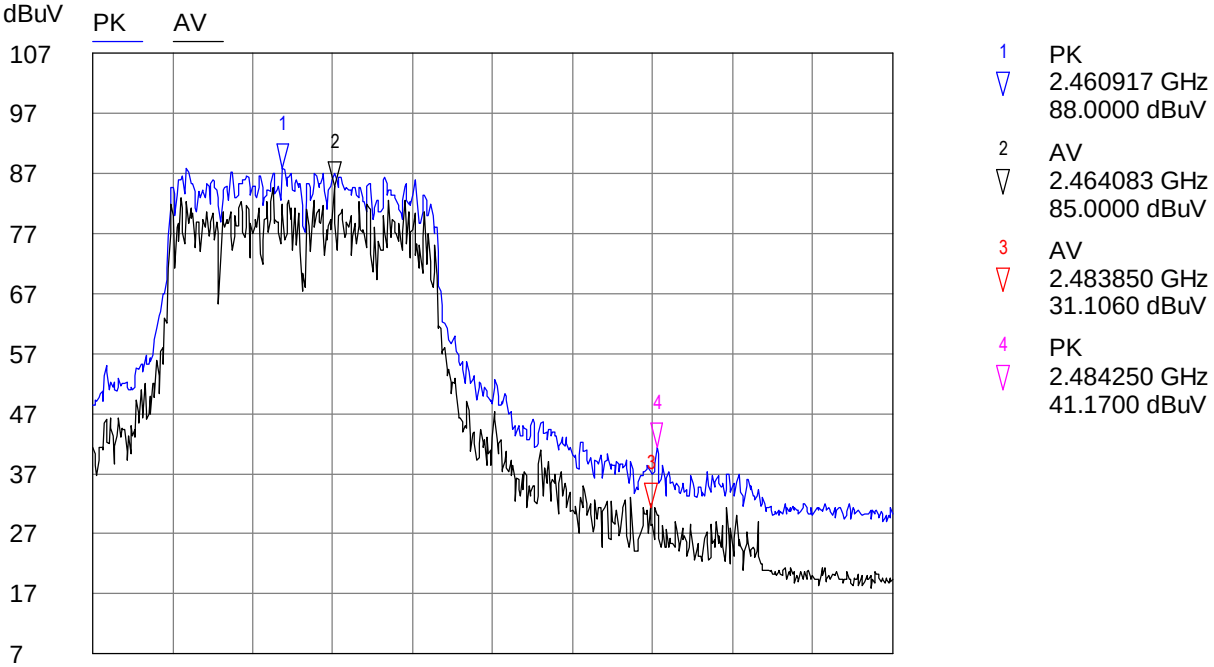
Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 10:10:06 HP8563E

J4461-5, Band edge channel 11, 36MB



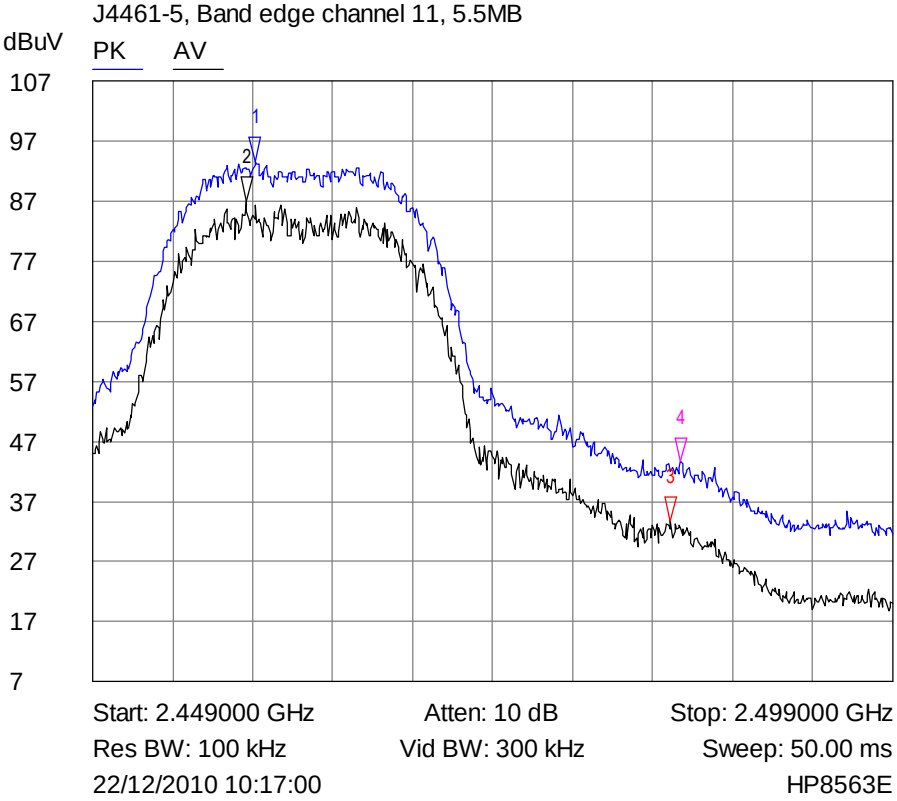
Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 11:10:36 HP8563E

J4461-5, Band edge channel 11, 48MB



Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 11:12:25 HP8563E

J4461-5, Band edge channel 11, 5.5MB



1 PK
2.459167 GHz
93.6700 dBuV

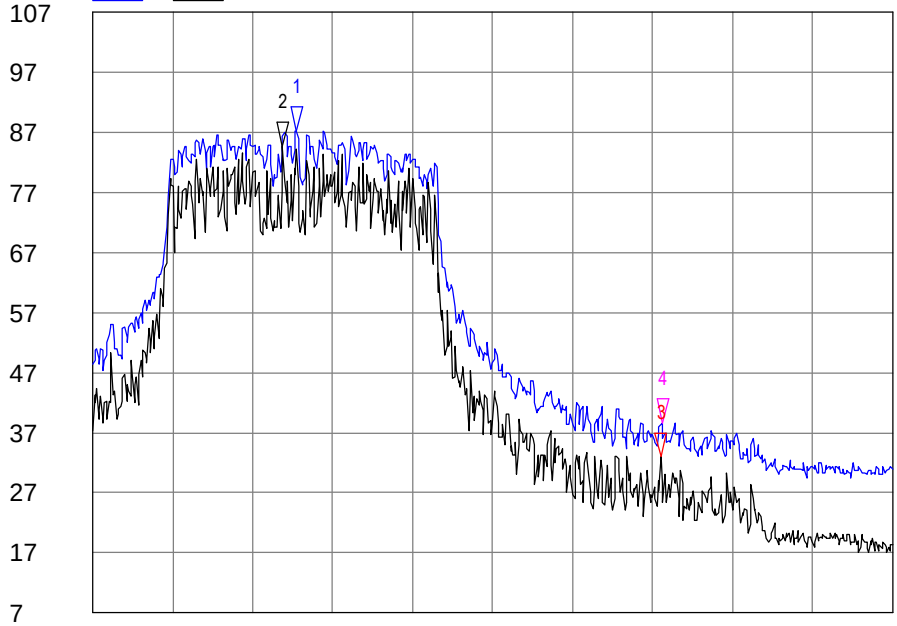
2 AV
2.458583 GHz
87.0000 dBuV

3 AV
2.485150 GHz
33.6680 dBuV

4 PK
2.485750 GHz
43.6700 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 10:17:00 HP8563E

J4461-5, Band edge channel 11, 54MB



1 PK
2.461750 GHz
87.3400 dBuV

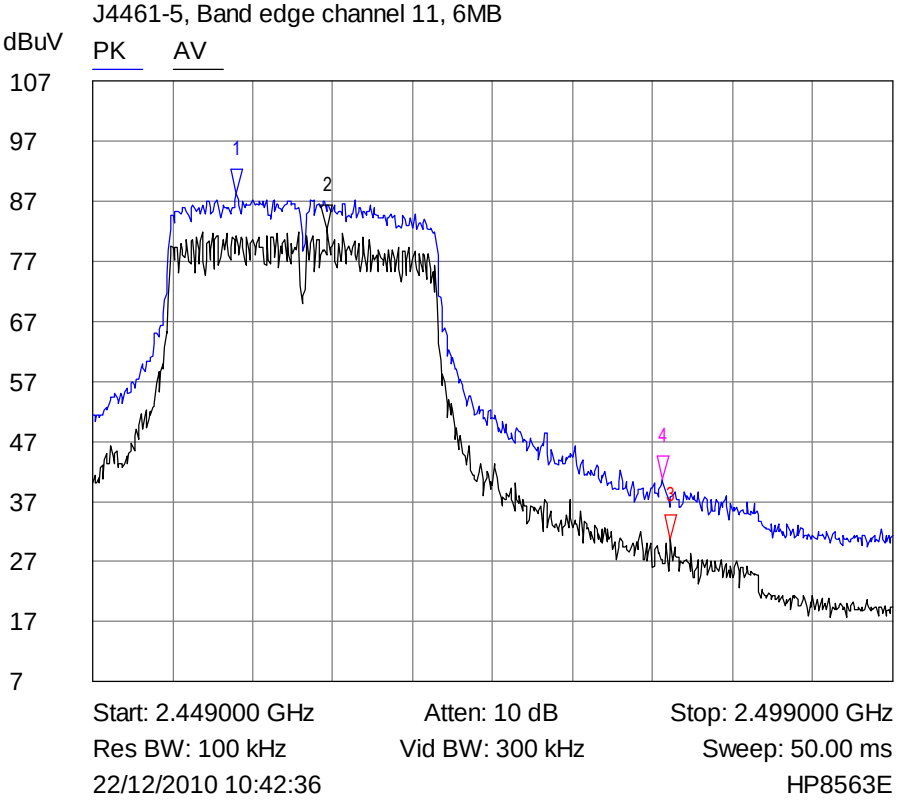
2 AV
2.460917 GHz
84.6700 dBuV

3 AV
2.484500 GHz
33.0000 dBuV

4 PK
2.484550 GHz
38.4360 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 11:19:54 HP8563E

J4461-5, Band edge channel 11, 6MB



1 PK
2.458000 GHz
88.3400 dBuV

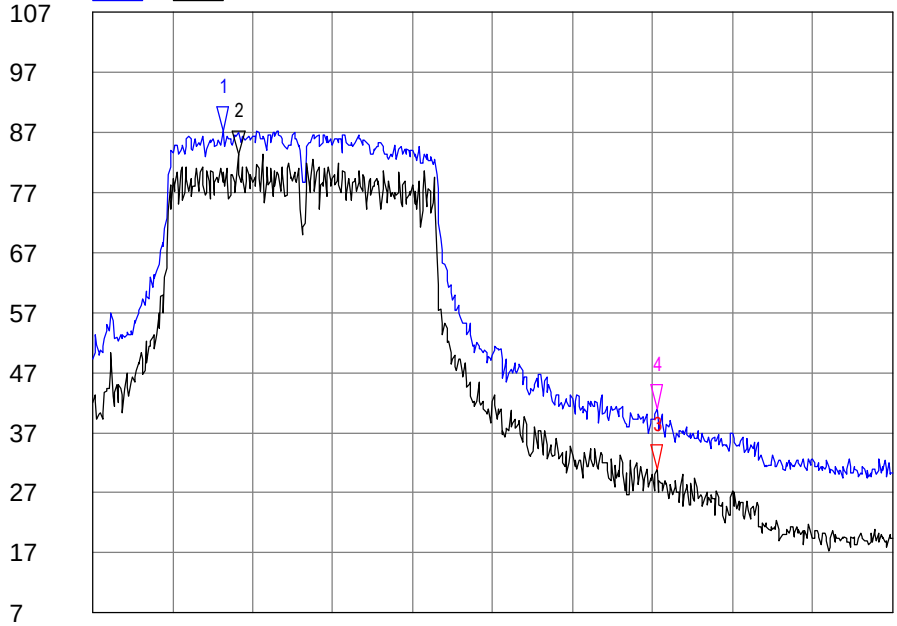
2 AV
2.463667 GHz
82.1700 dBuV

3 AV
2.485150 GHz
30.5000 dBuV

4 PK
2.484600 GHz
40.4680 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 10:42:36 HP8563E

J4461-5, Band edge channel 11, 9MB



1 PK
2.457167 GHz
87.5000 dBuV

2 AV
2.458083 GHz
83.3400 dBuV

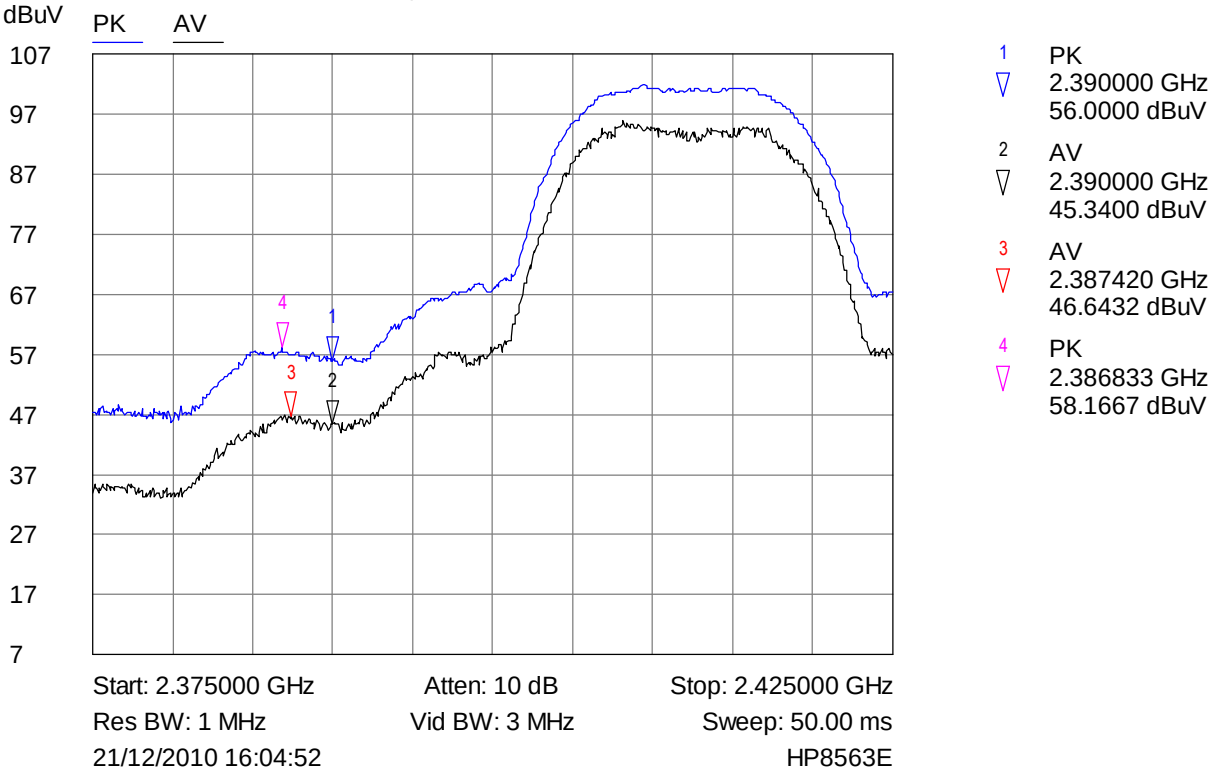
3 AV
2.484250 GHz
30.8400 dBuV

4 PK
2.484250 GHz
40.8400 dBuV

Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 100 kHz Vid BW: 300 kHz Sweep: 50.00 ms
22/12/2010 10:51:38 HP8563E

Restricted band edge. (1MHz RBW)

J4461-5, Restricted Band edge channel 1, 11MB



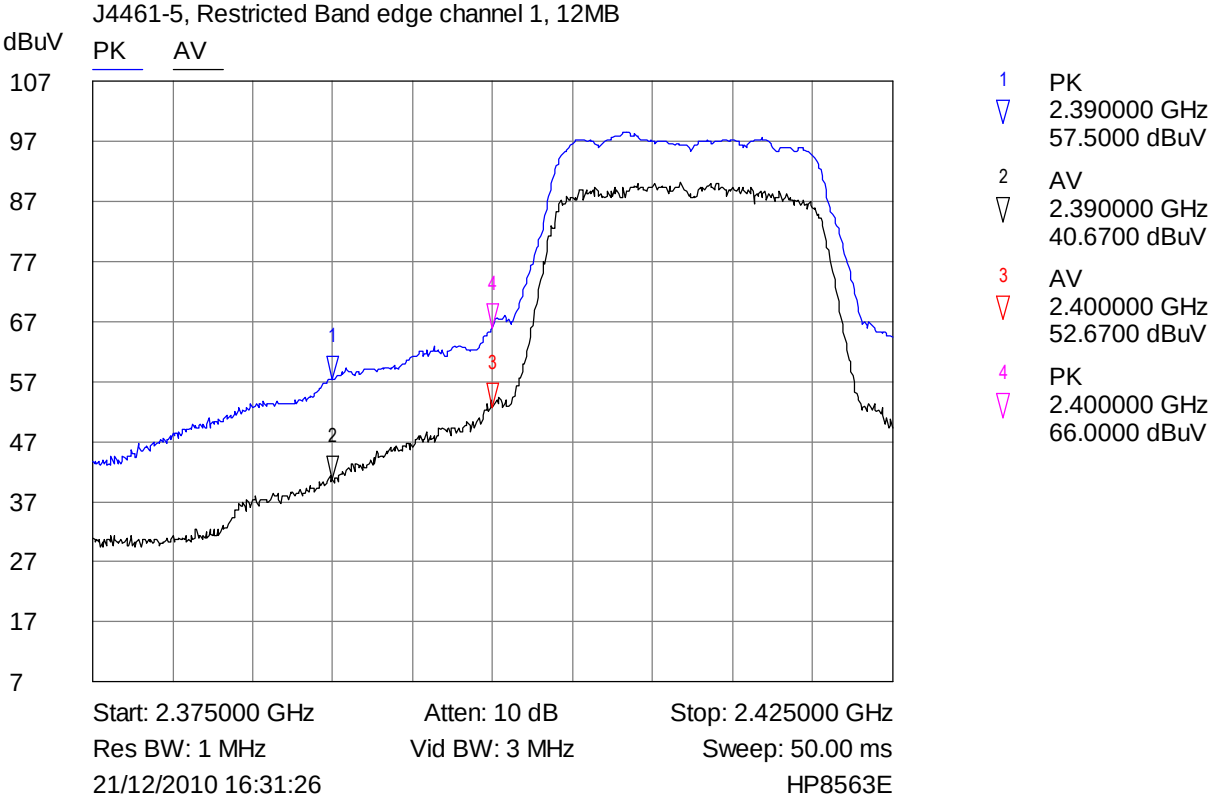
1 PK
2.390000 GHz
56.0000 dBuV

2 AV
2.390000 GHz
45.3400 dBuV

3 AV
2.387420 GHz
46.6432 dBuV

4 PK
2.386833 GHz
58.1667 dBuV

J4461-5, Restricted Band edge channel 1, 12MB



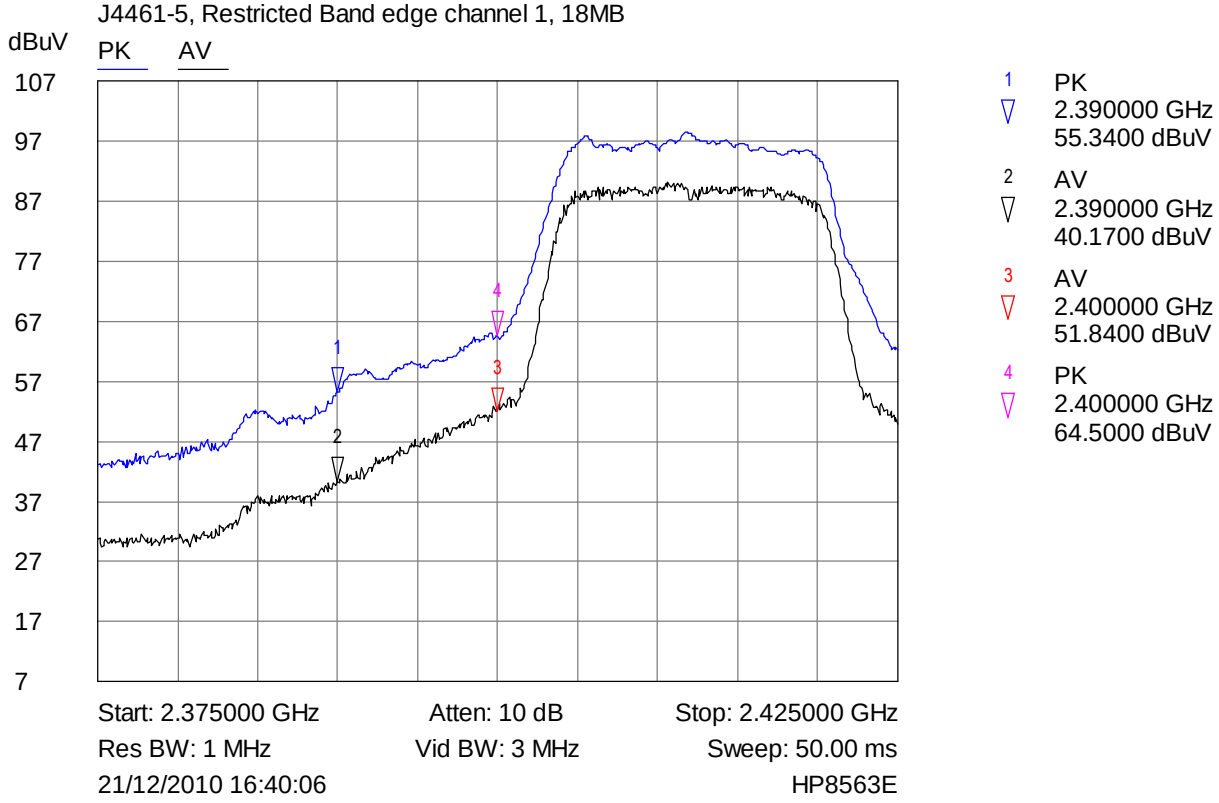
1 PK
2.390000 GHz
57.5000 dBuV

2 AV
2.390000 GHz
40.6700 dBuV

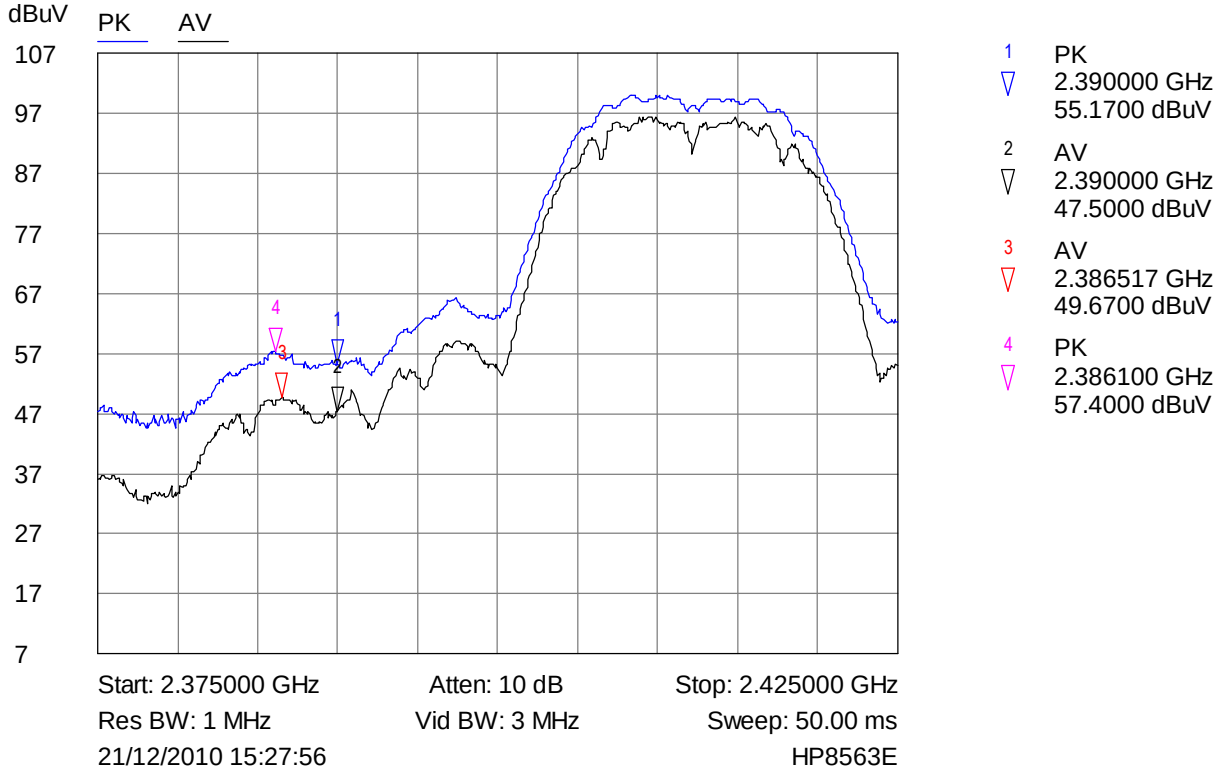
3 AV
2.400000 GHz
52.6700 dBuV

4 PK
2.400000 GHz
66.0000 dBuV

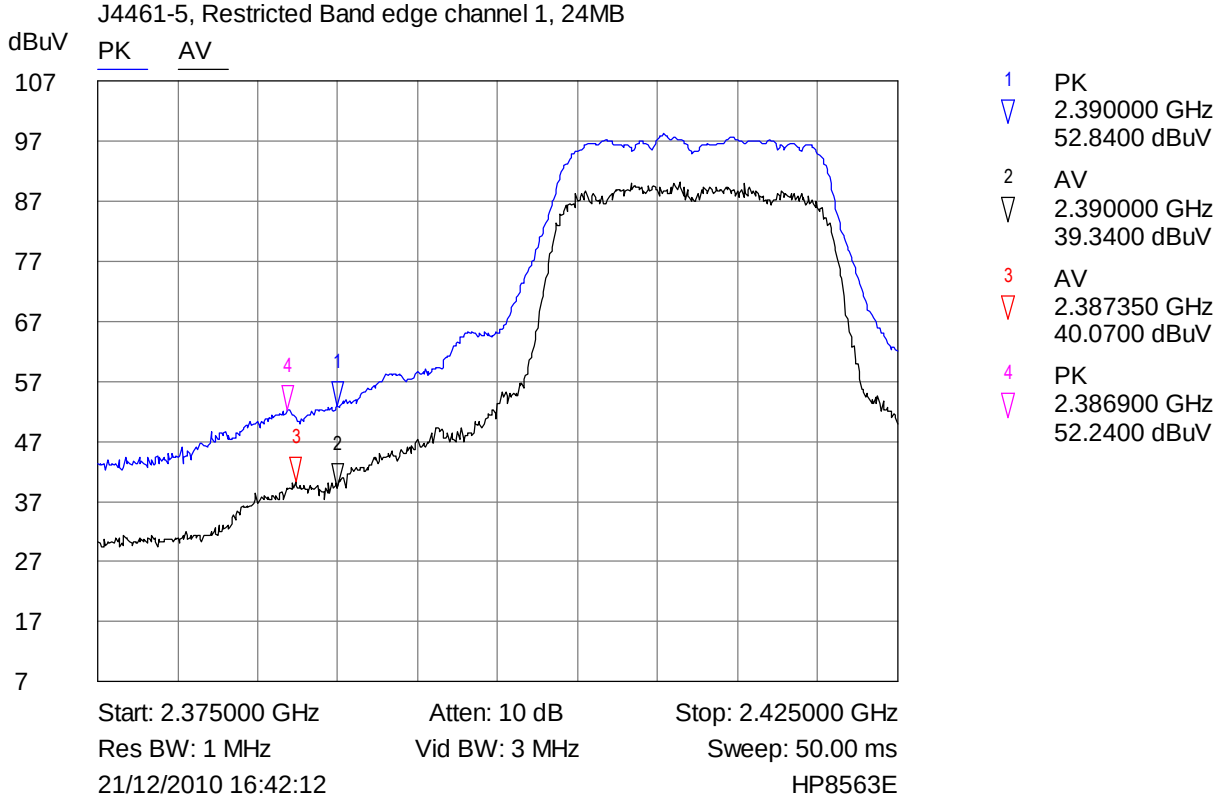
J4461-5, Restricted Band edge channel 1, 18MB



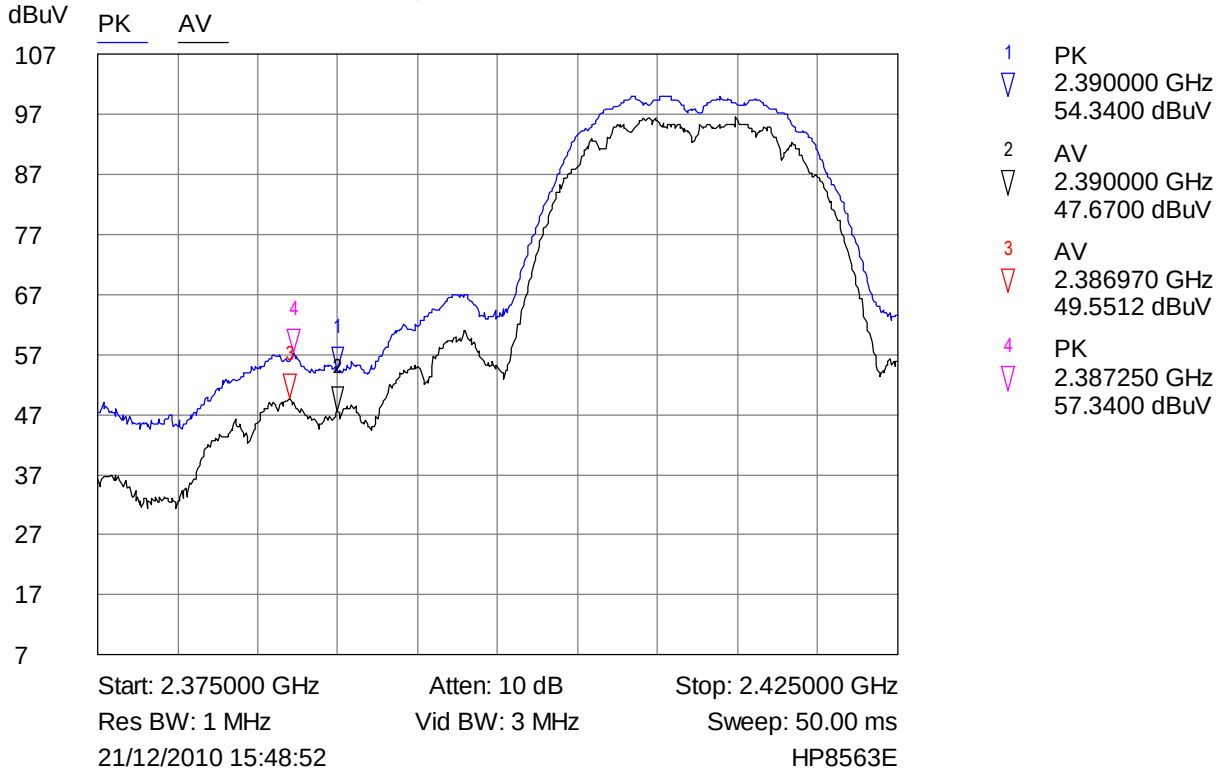
J4461-5, Restricted band edge channel 1, 1MB



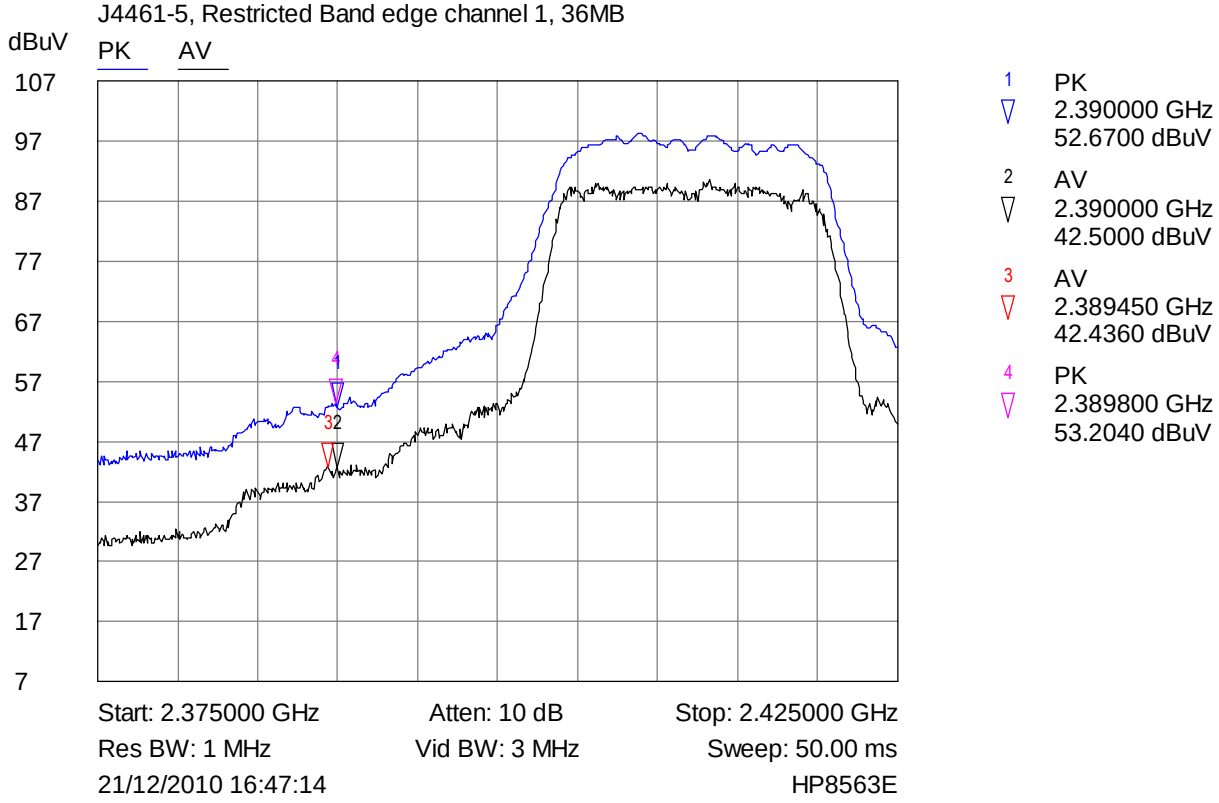
J4461-5, Restricted Band edge channel 1, 24MB



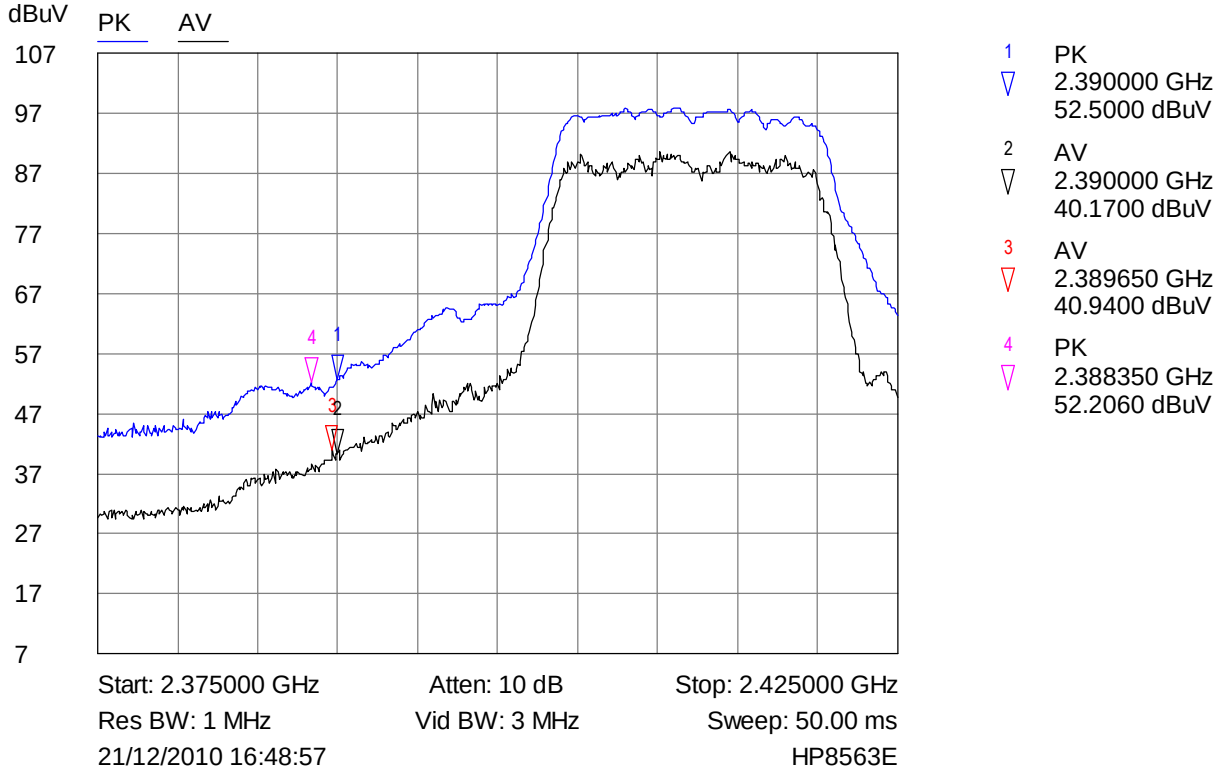
J4461-5, Restricted Band edge channel 1, 2MB



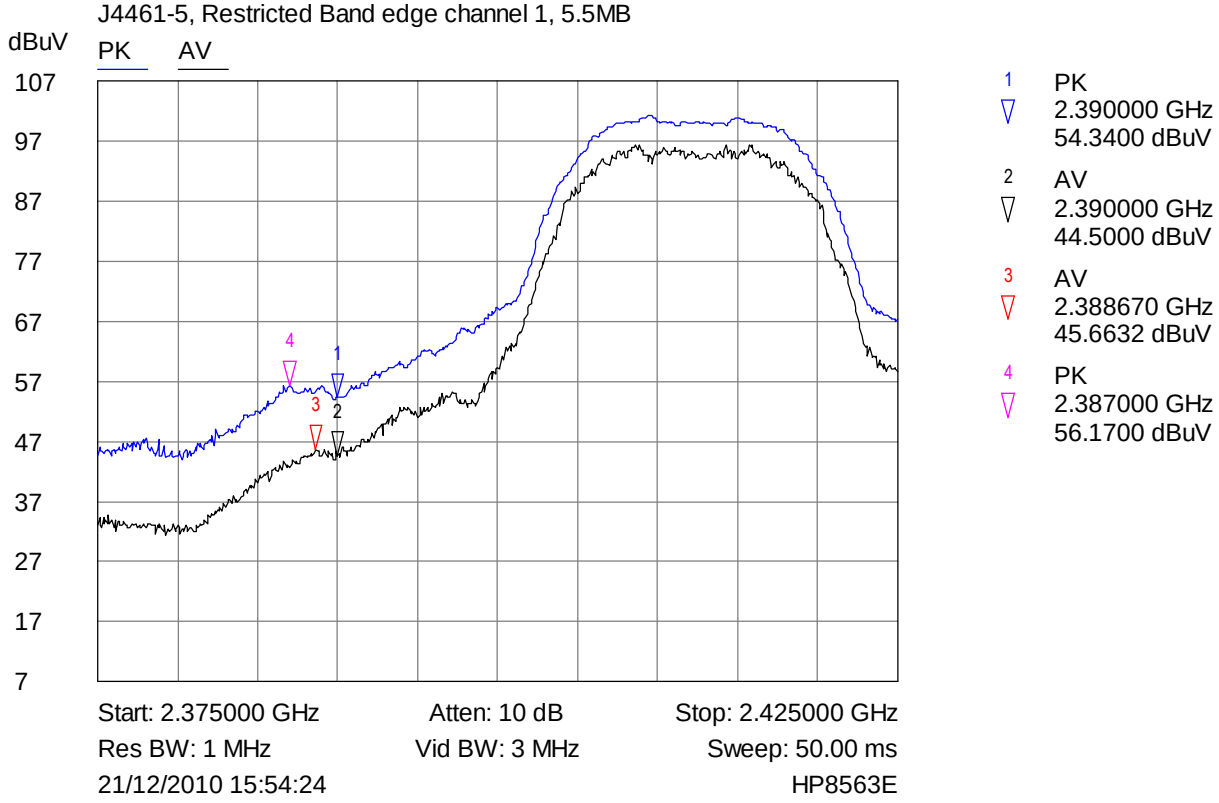
J4461-5, Restricted Band edge channel 1, 36MB



J4461-5, Restricted Band edge channel 1, 48MB

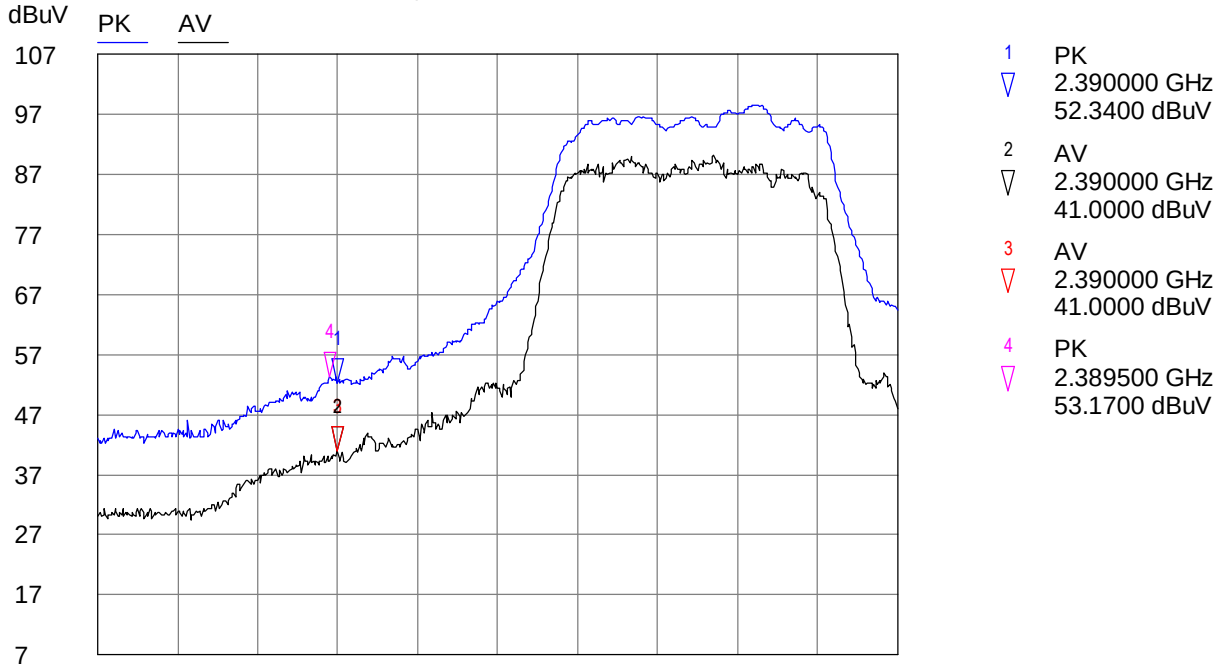


J4461-5, Restricted Band edge channel 1, 5.5MB



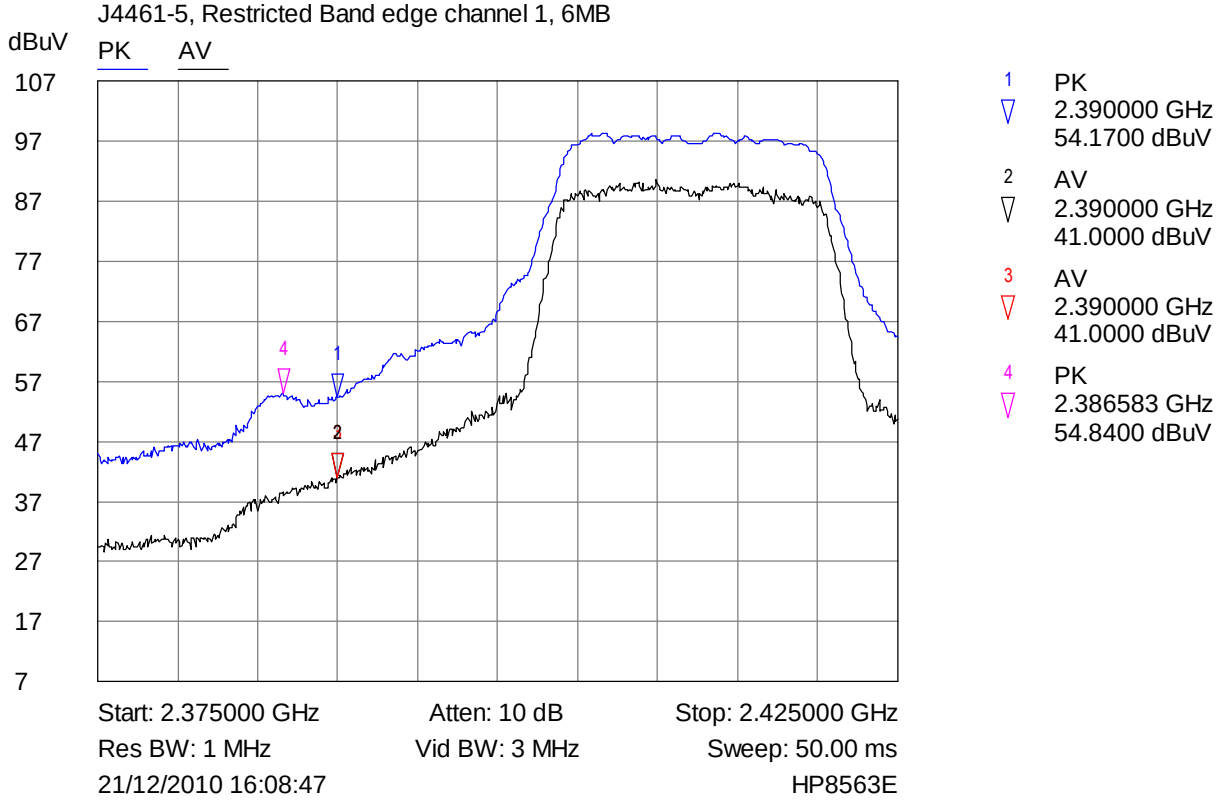
Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
21/12/2010 15:54:24 HP8563E

J4461-5, Restricted Band edge channel 1, 54MB

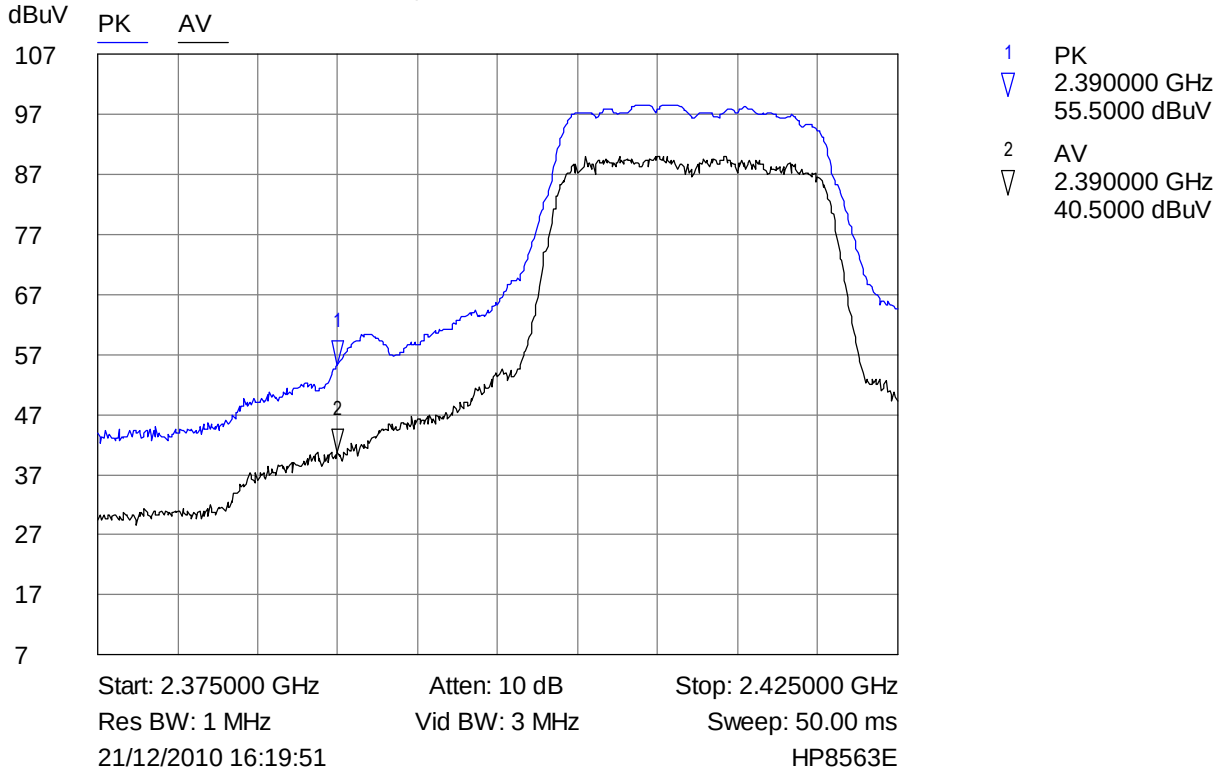


Start: 2.375000 GHz Atten: 10 dB Stop: 2.425000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
21/12/2010 16:53:18 HP8563E

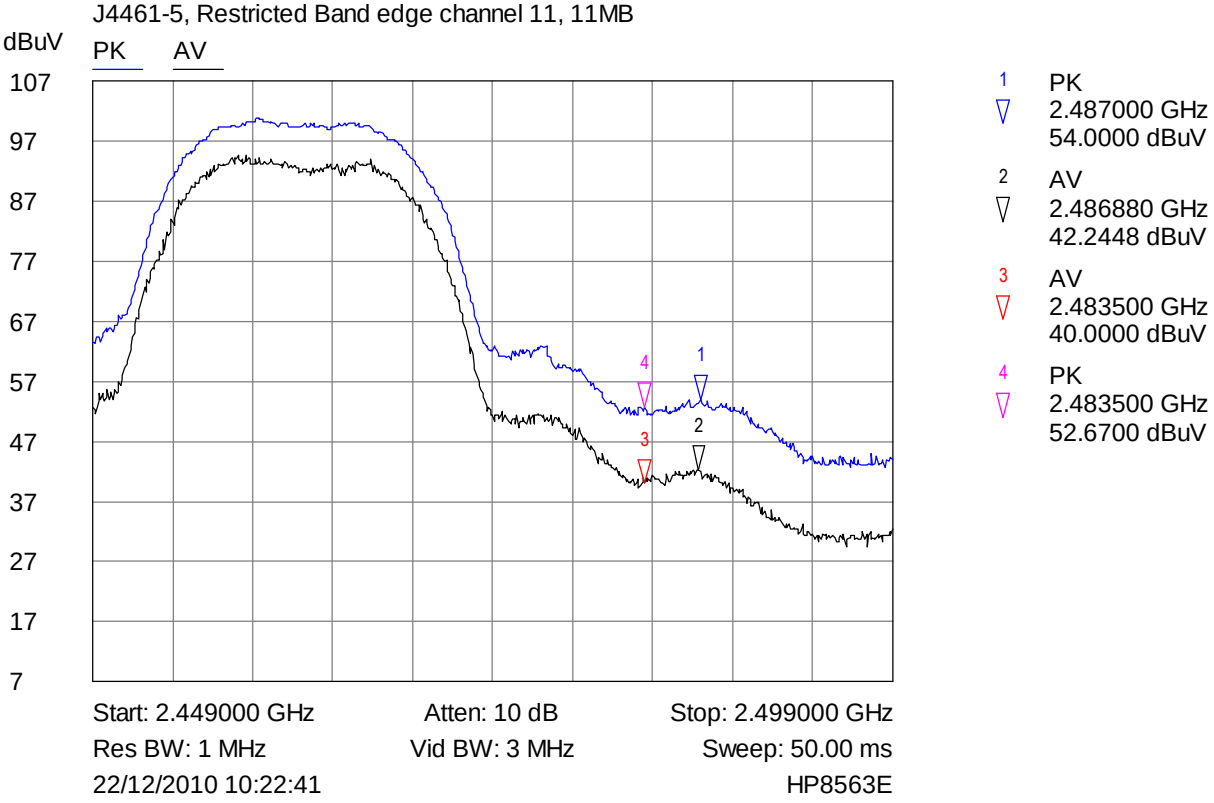
J4461-5, Restricted Band edge channel 1, 6MB



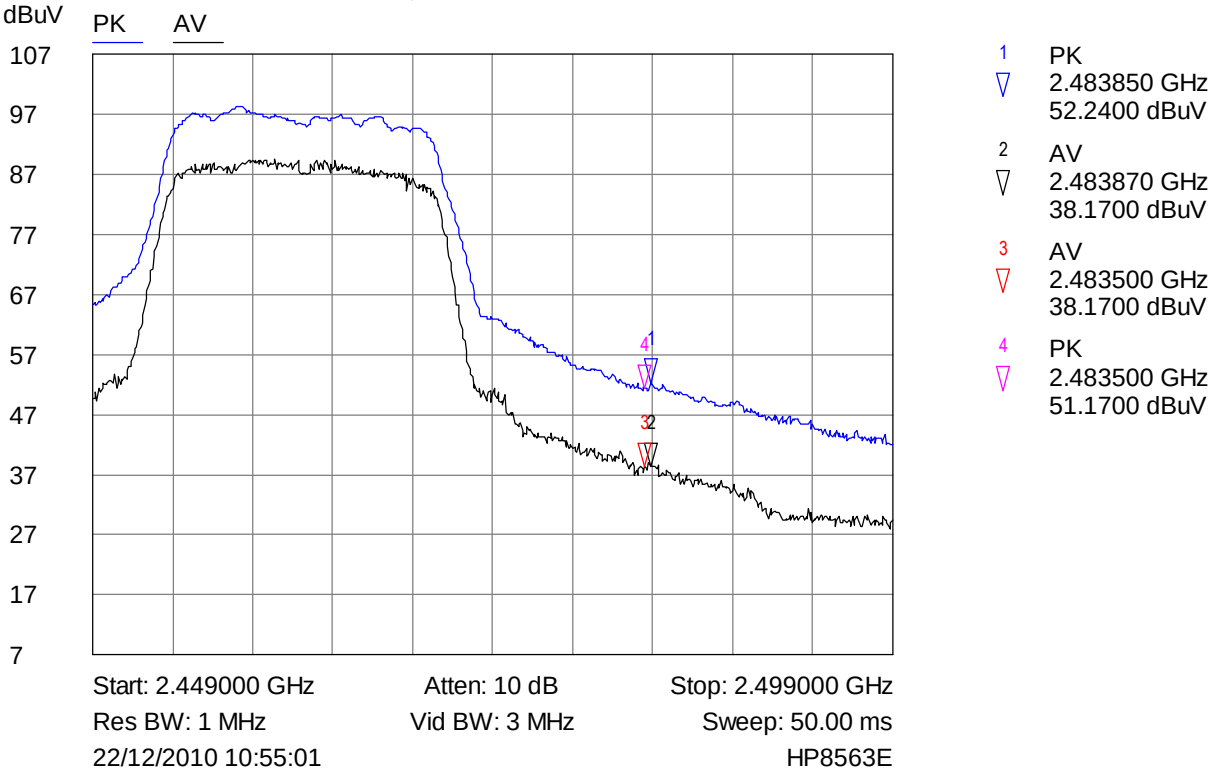
J4461-5, Restricted Band edge channel 1, 9MB



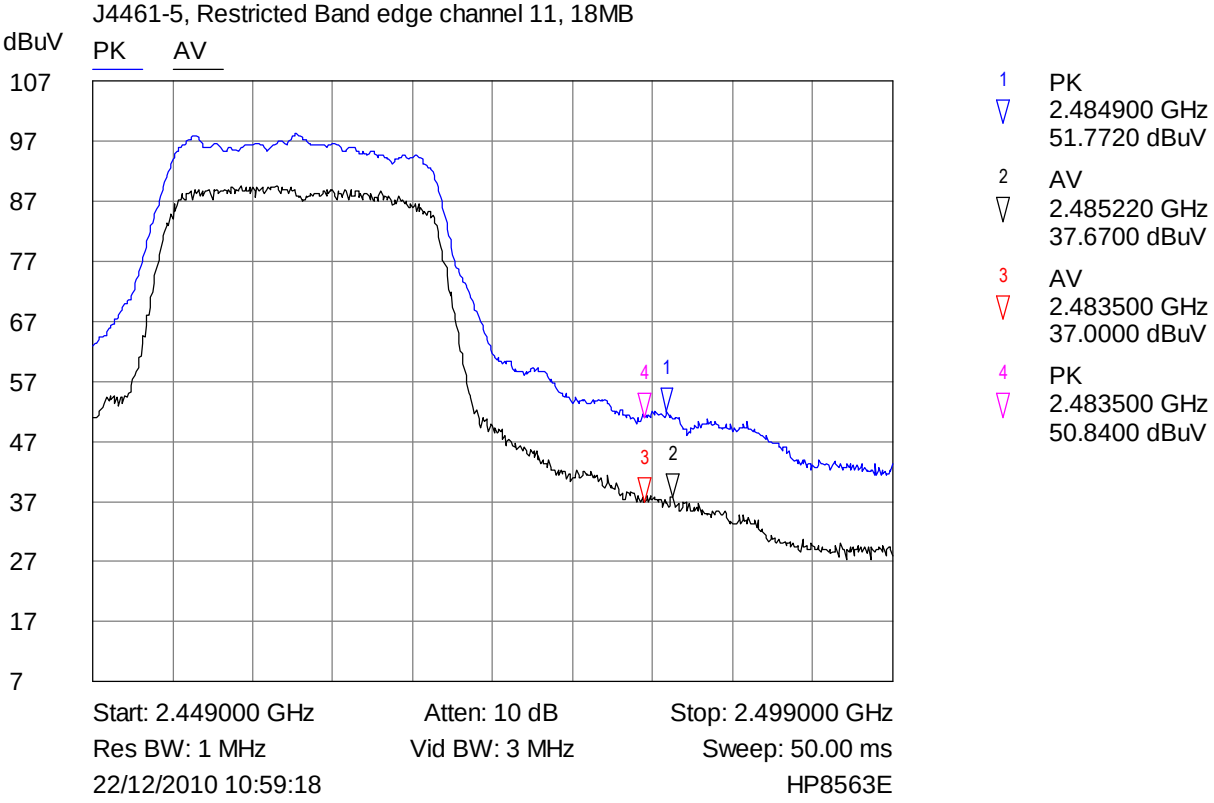
J4461-5, Restricted Band edge channel 11, 11MB



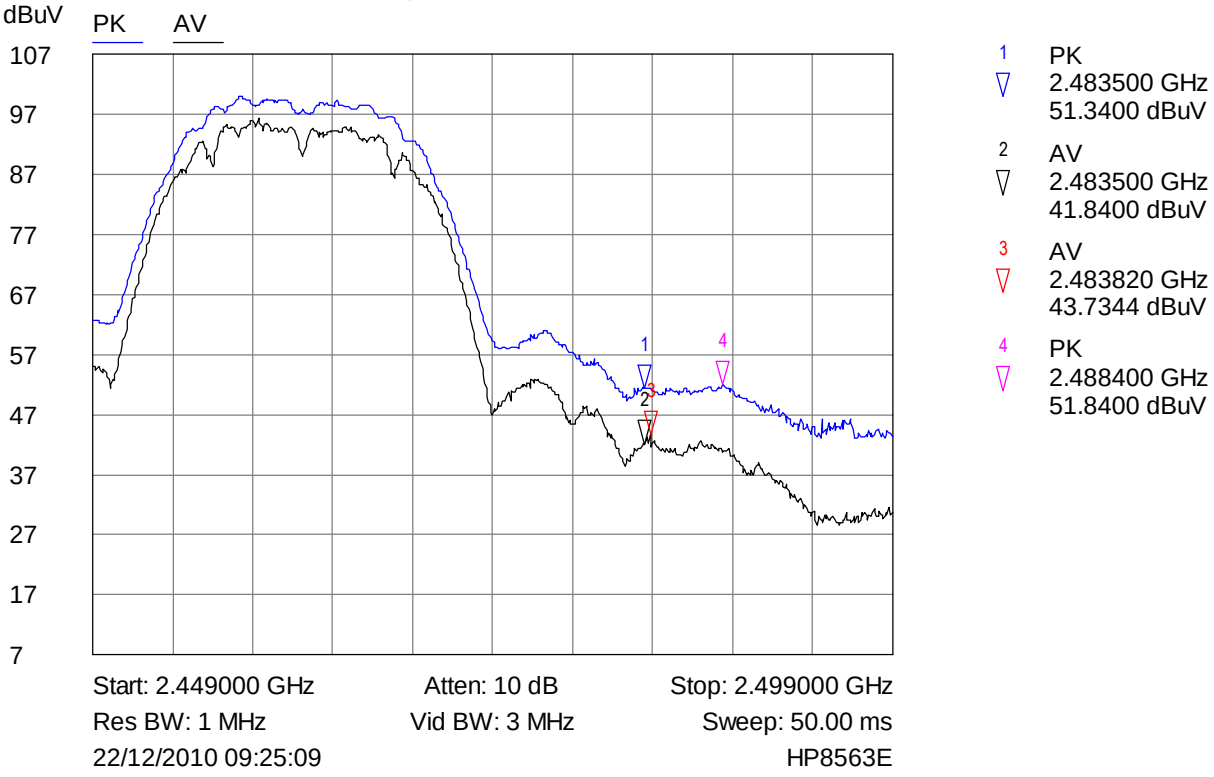
J4461-5, Restricted Band edge channel 11, 12MB



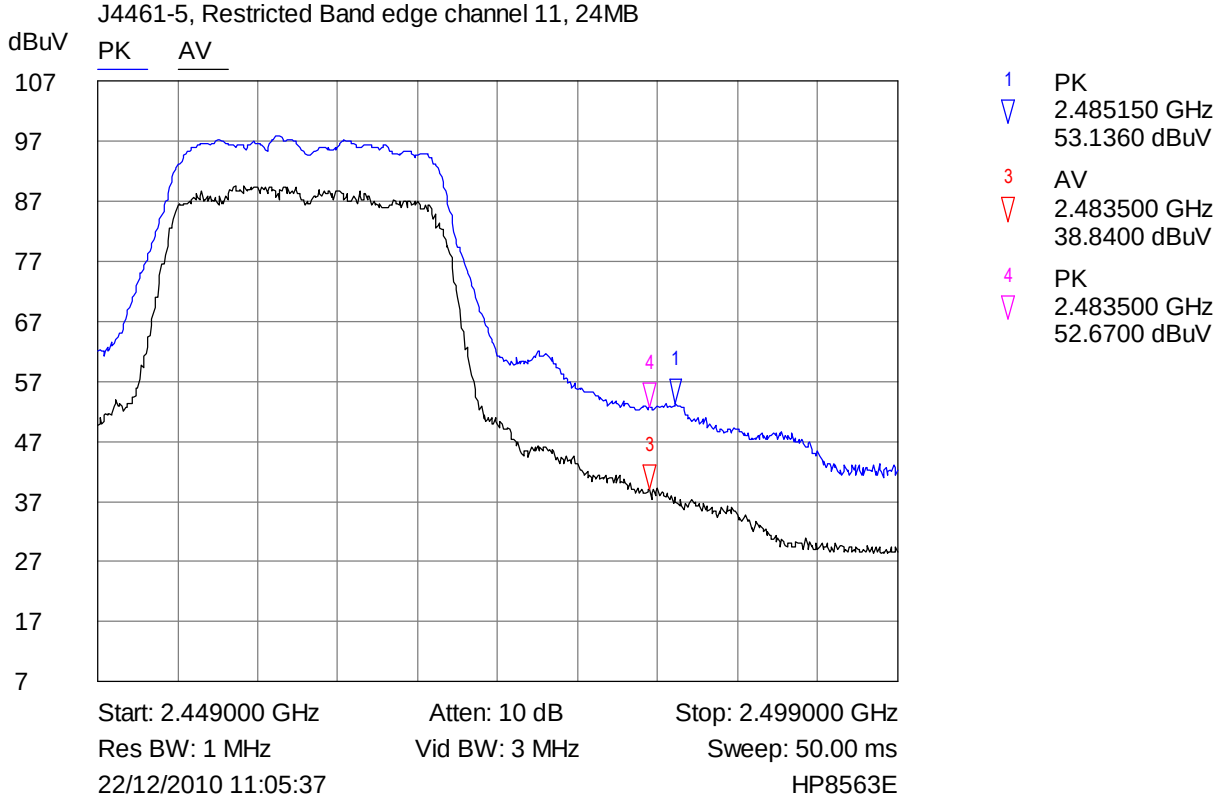
J4461-5, Restricted Band edge channel 11, 18MB



J4461-5, Restricted band edge channel 11, 1MB

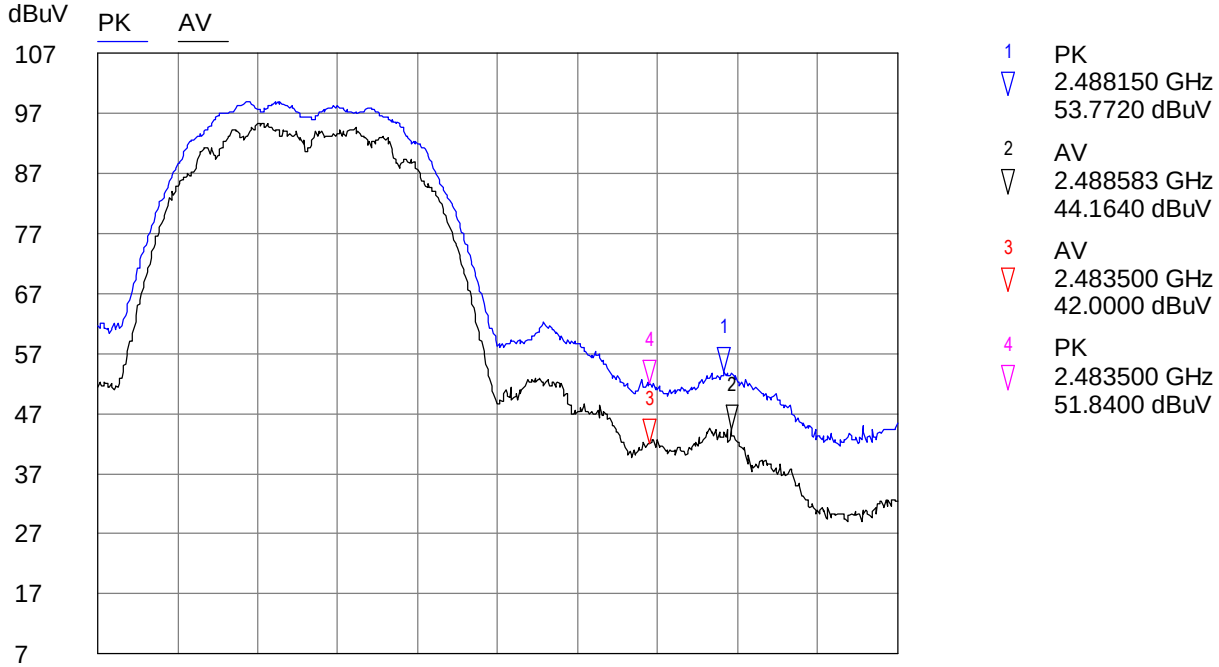


J4461-5, Restricted Band edge channel 11, 24MB



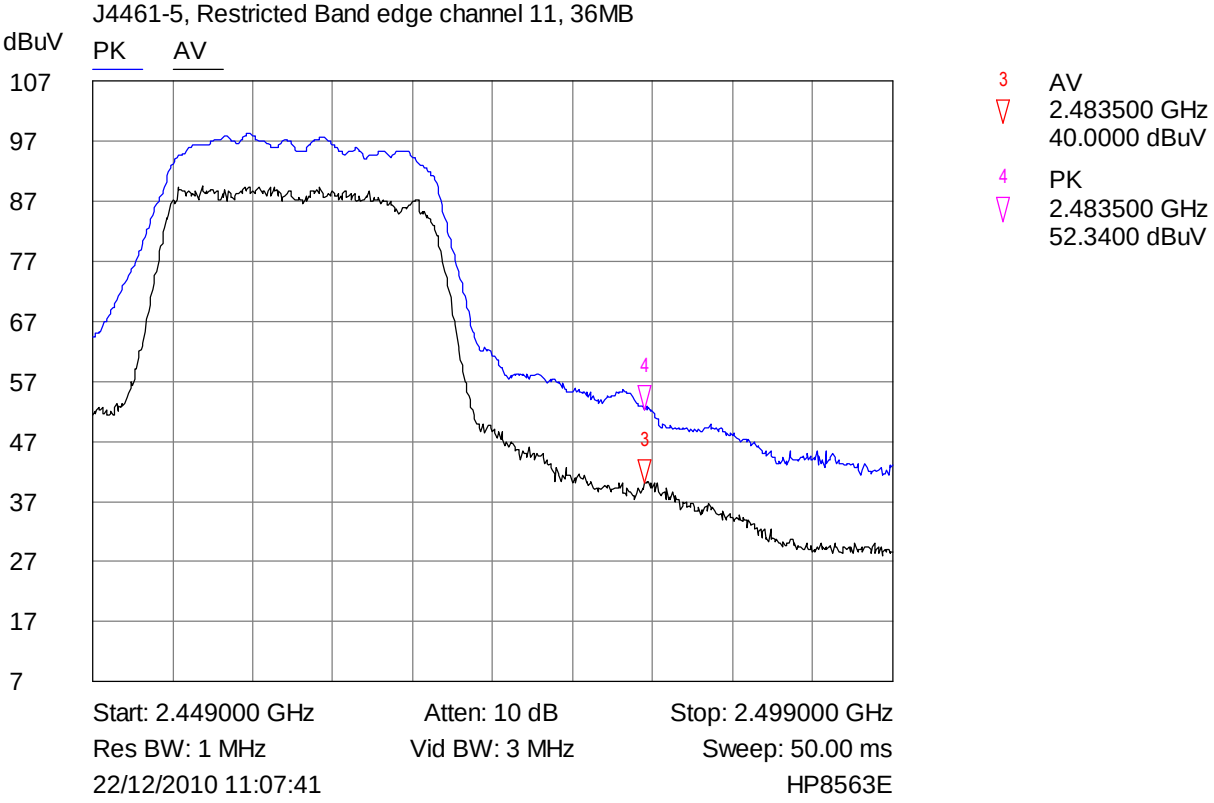
Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
22/12/2010 11:05:37 HP8563E

J4461-5, Restricted Band edge channel 11, 2MB

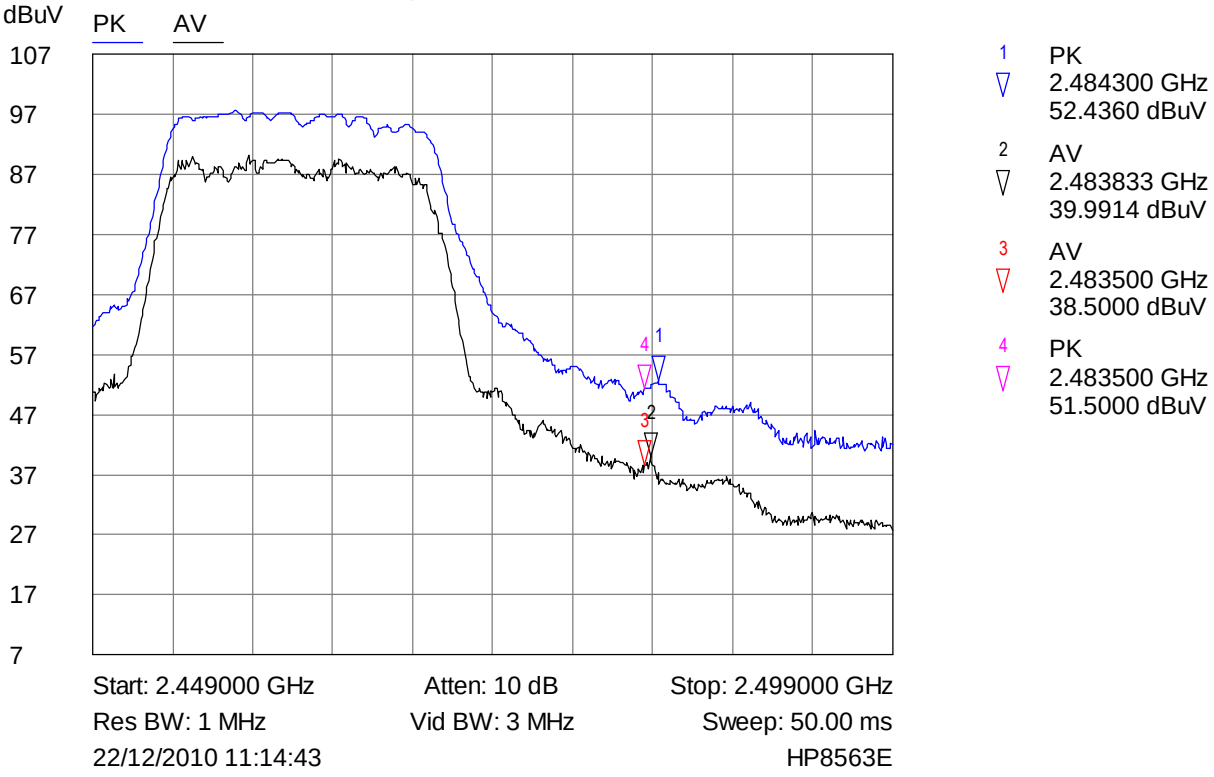


Start: 2.449000 GHz Atten: 10 dB Stop: 2.499000 GHz
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 50.00 ms
22/12/2010 10:11:38 HP8563E

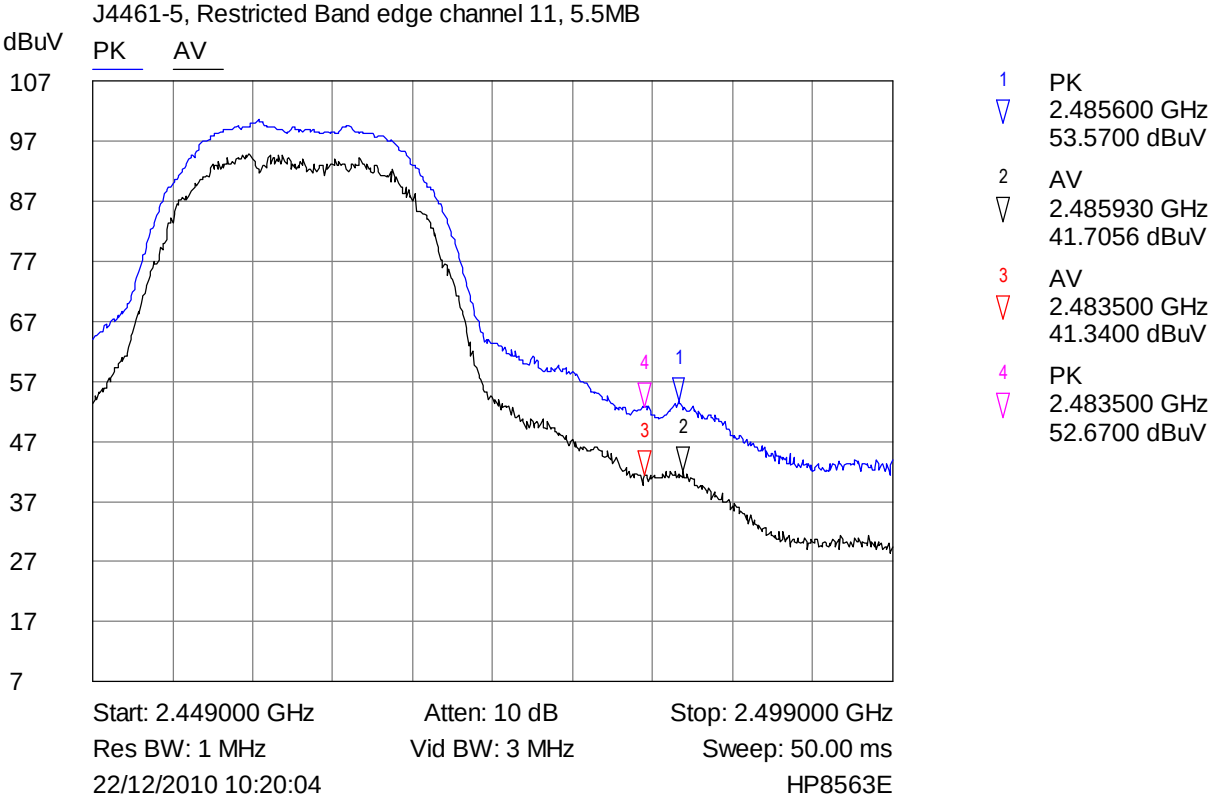
J4461-5, Restricted Band edge channel 11, 36MB



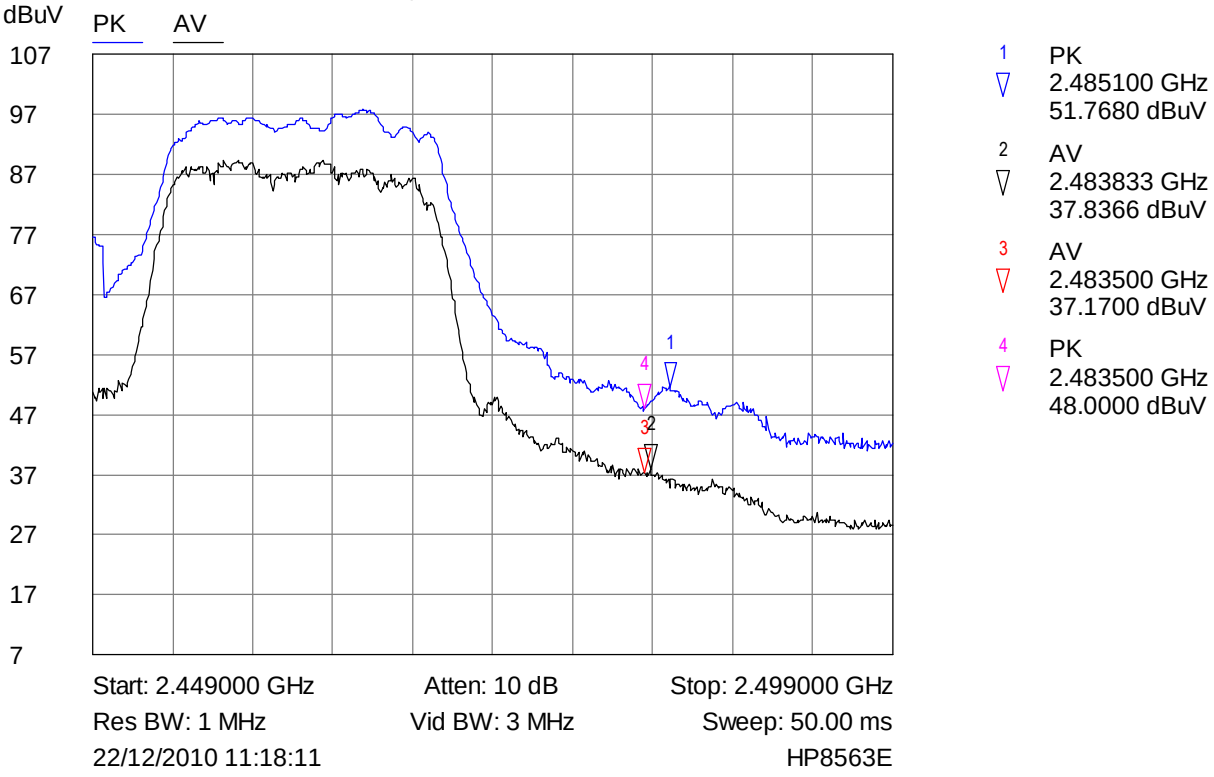
J4461-5, Restricted Band edge channel 11, 48MB



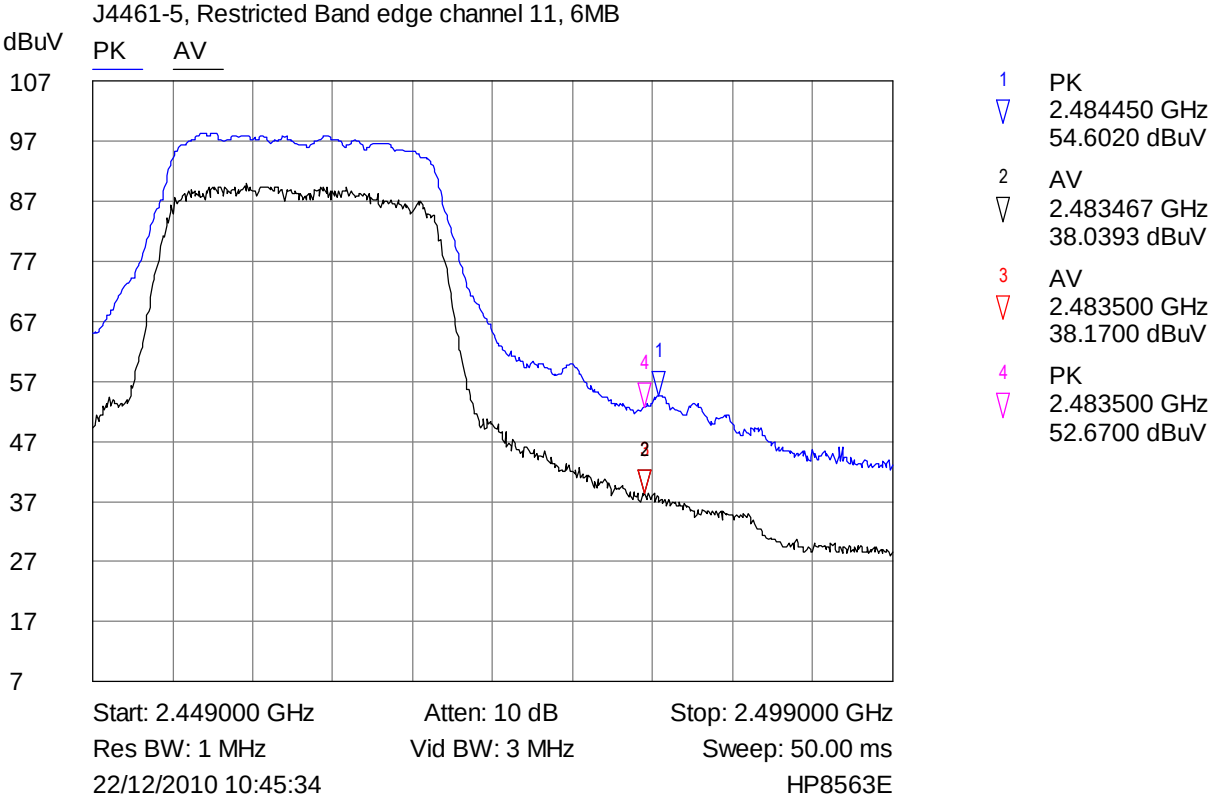
J4461-5, Restricted Band edge channel 11, 5.5MB



J4461-5, Restricted Band edge channel 11, 54MB



J4461-5, Restricted Band edge channel 11, 6MB



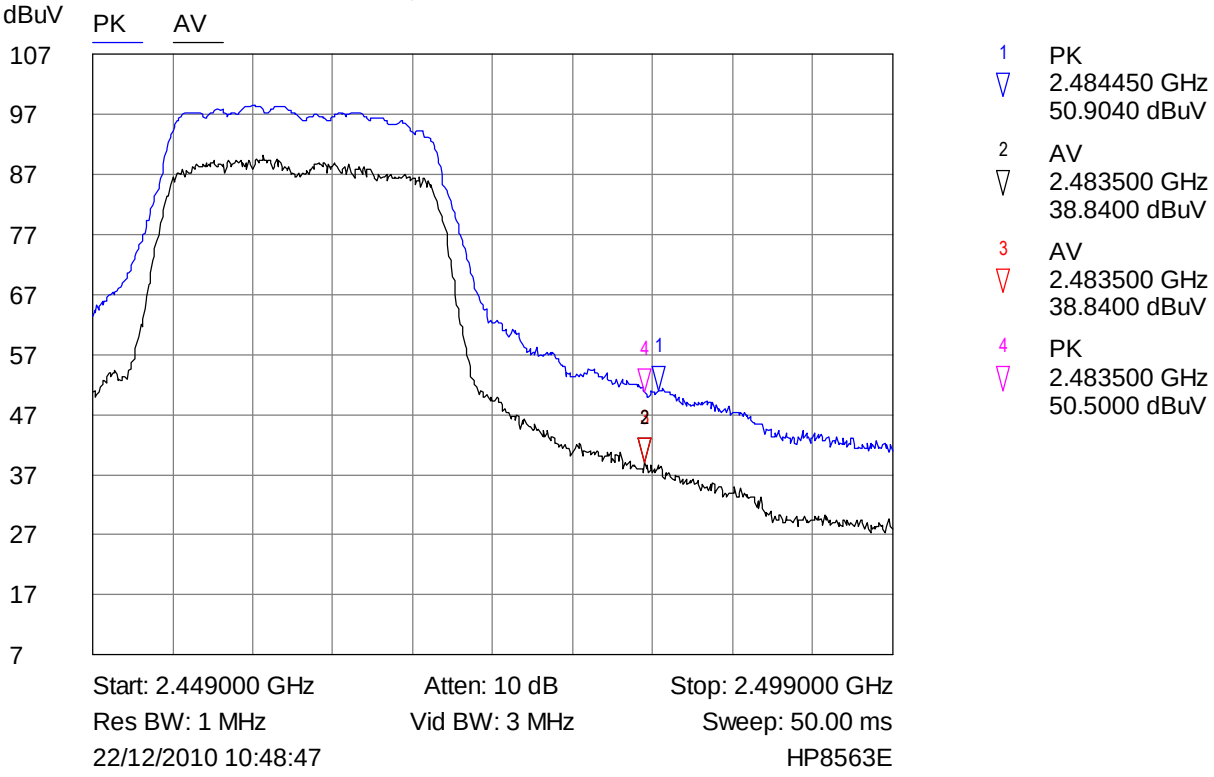
1 PK
2.484450 GHz
54.6020 dBuV

2 AV
2.483467 GHz
38.0393 dBuV

3 AV
2.483500 GHz
38.1700 dBuV

4 PK
2.483500 GHz
52.6700 dBuV

J4461-5, Restricted Band edge channel 11, 9MB



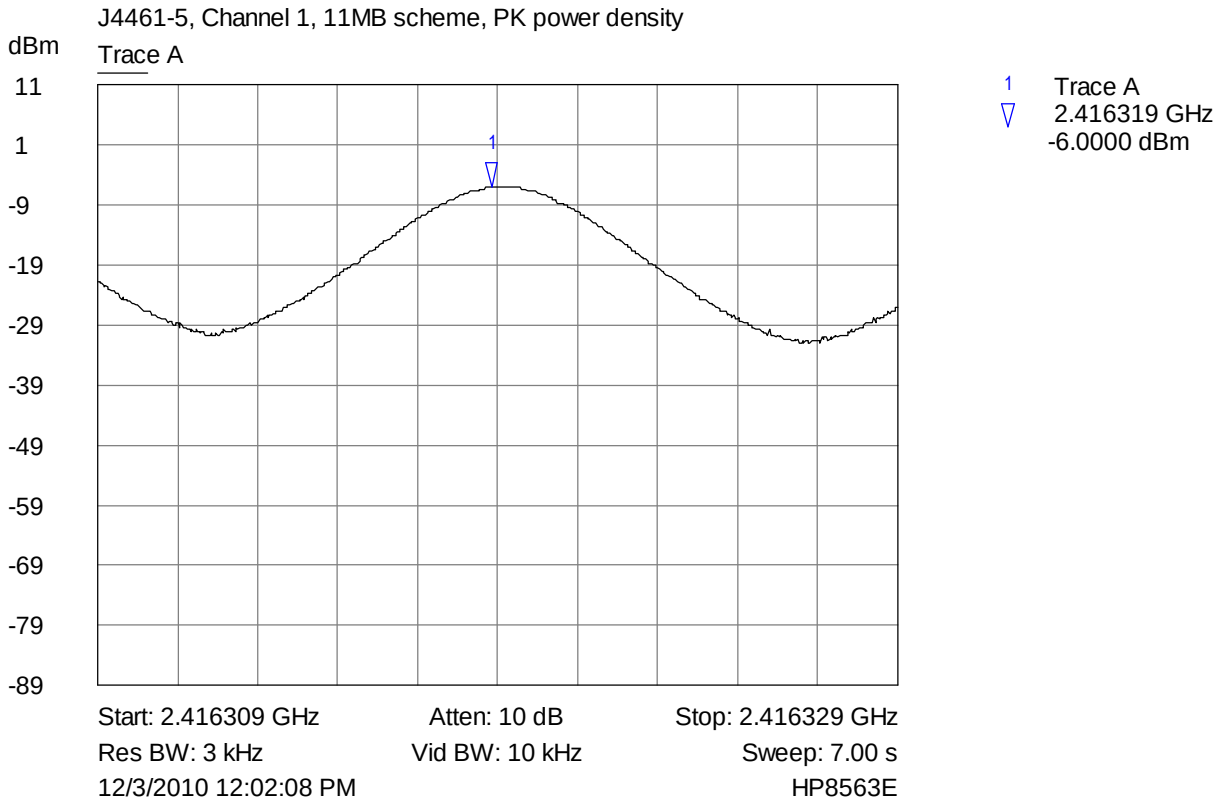
1 PK
2.484450 GHz
50.9040 dBuV

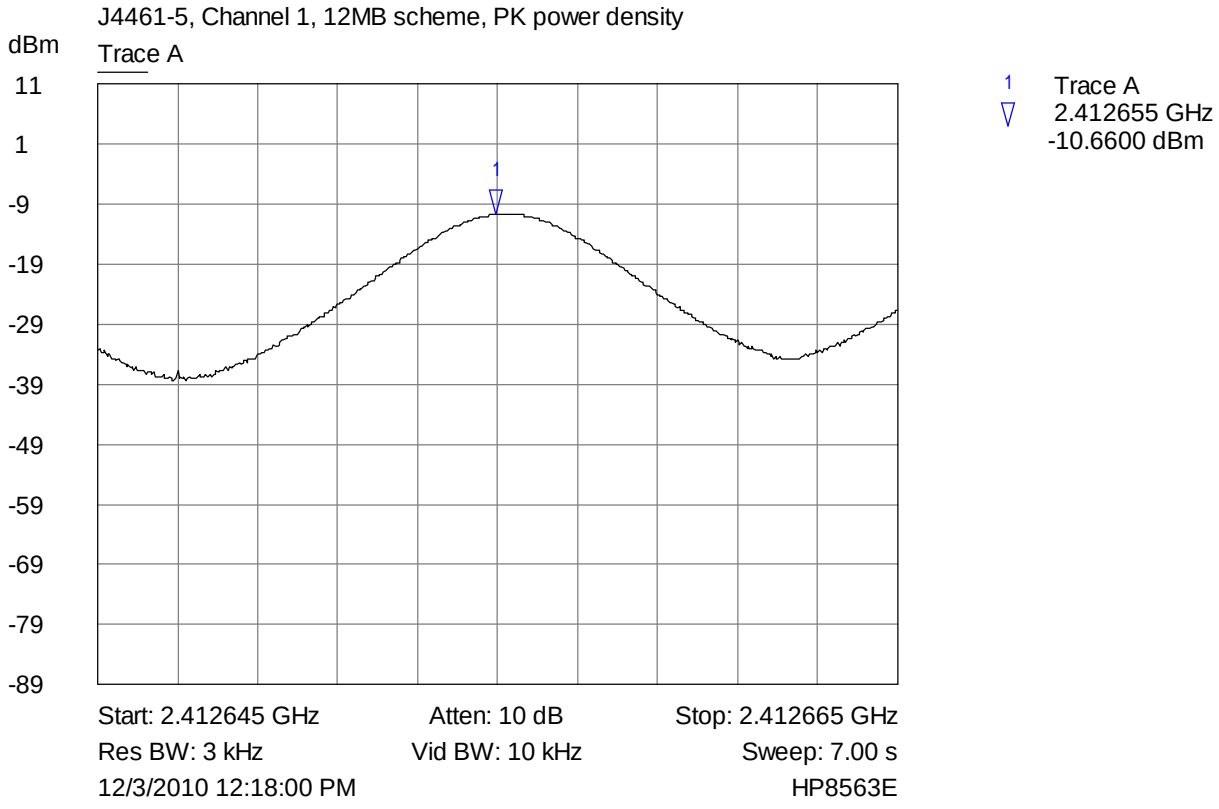
2 AV
2.483500 GHz
38.8400 dBuV

3 AV
2.483500 GHz
38.8400 dBuV

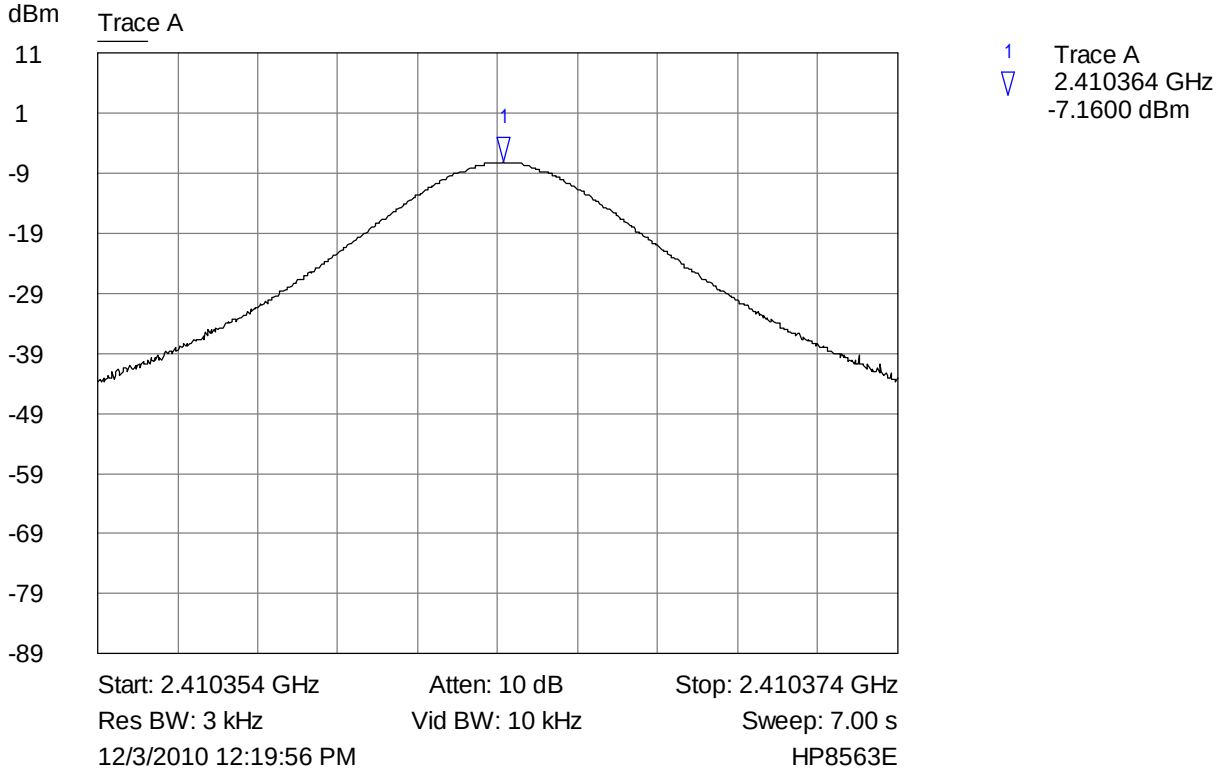
4 PK
2.483500 GHz
50.5000 dBuV

6.7 Power Spectral Density plots

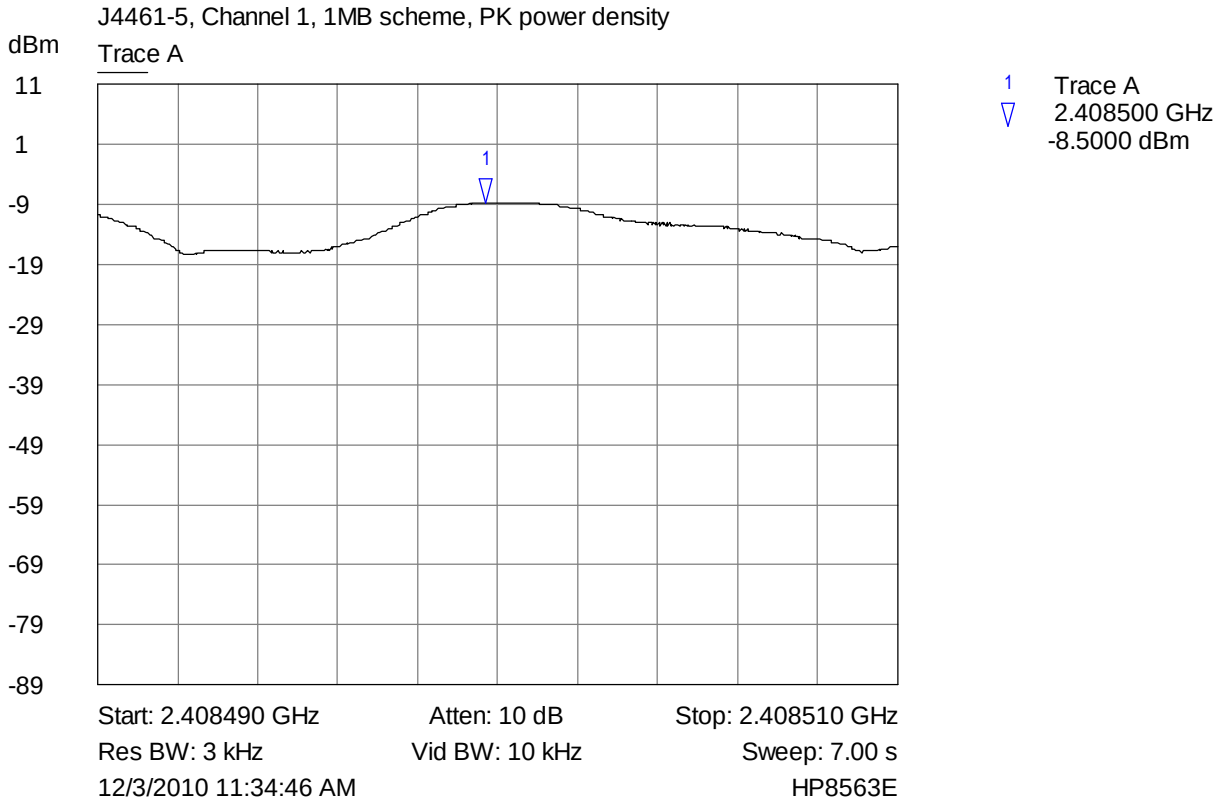




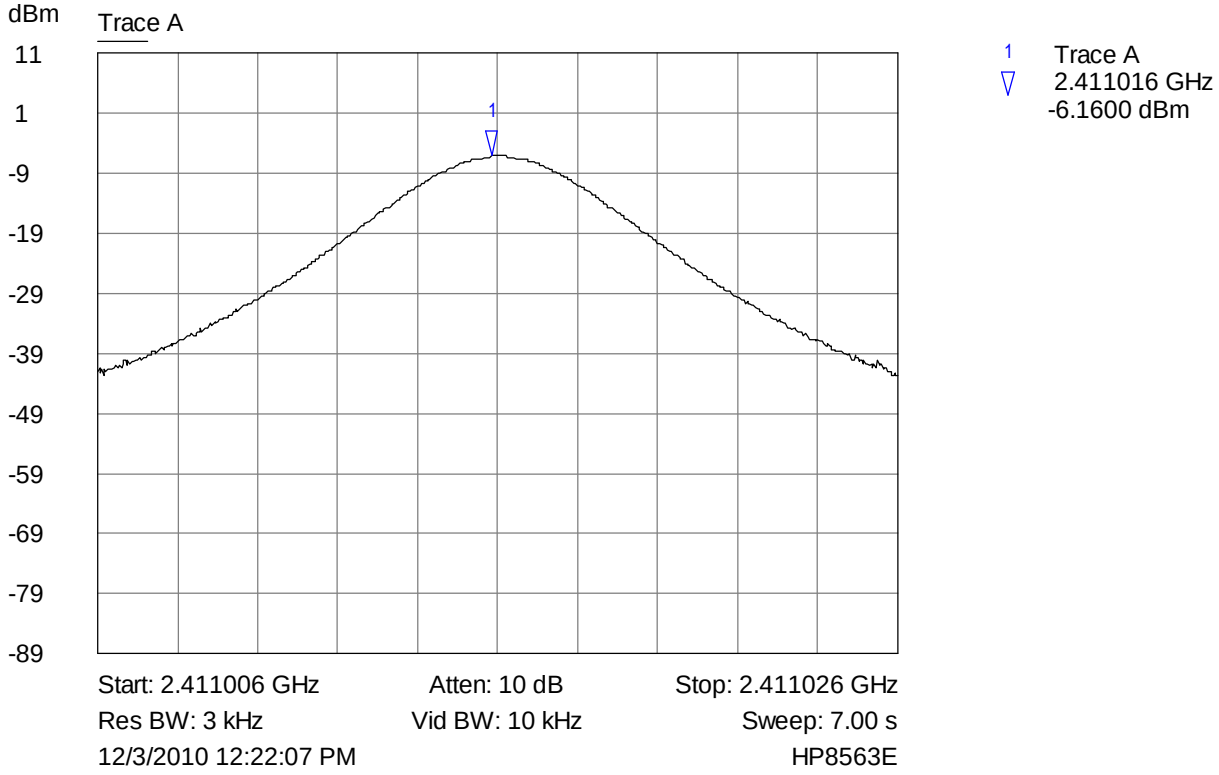
J4461-5, Channel 1, 18MB scheme, PK power density



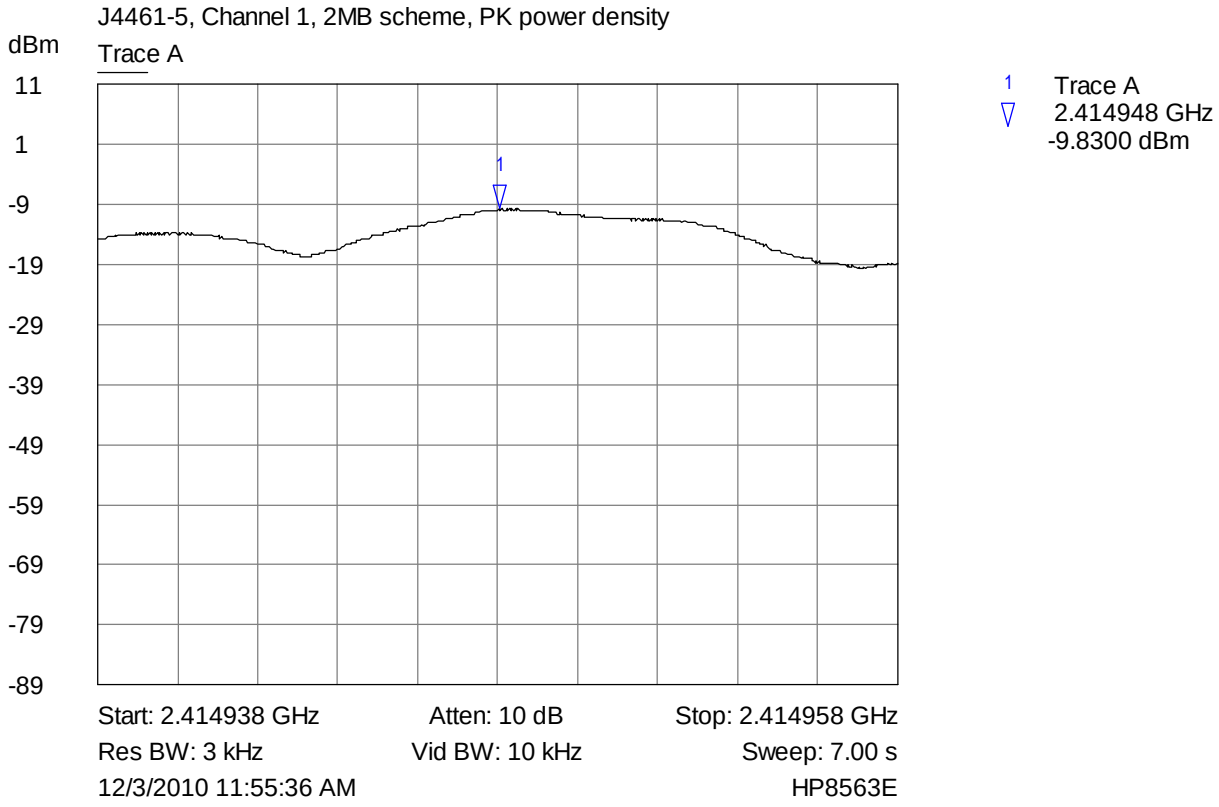
J4461-5, Channel 1, 1MB scheme, PK power density



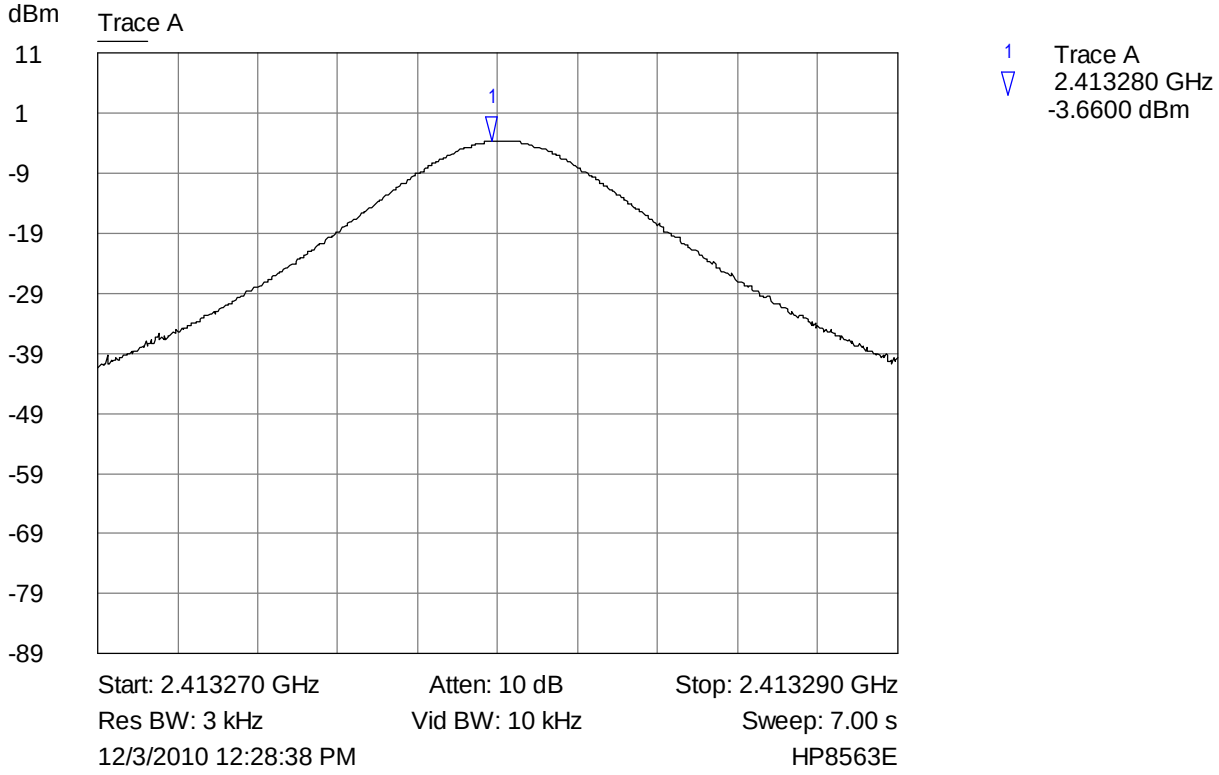
J4461-5, Channel 1, 24MB scheme, PK power density



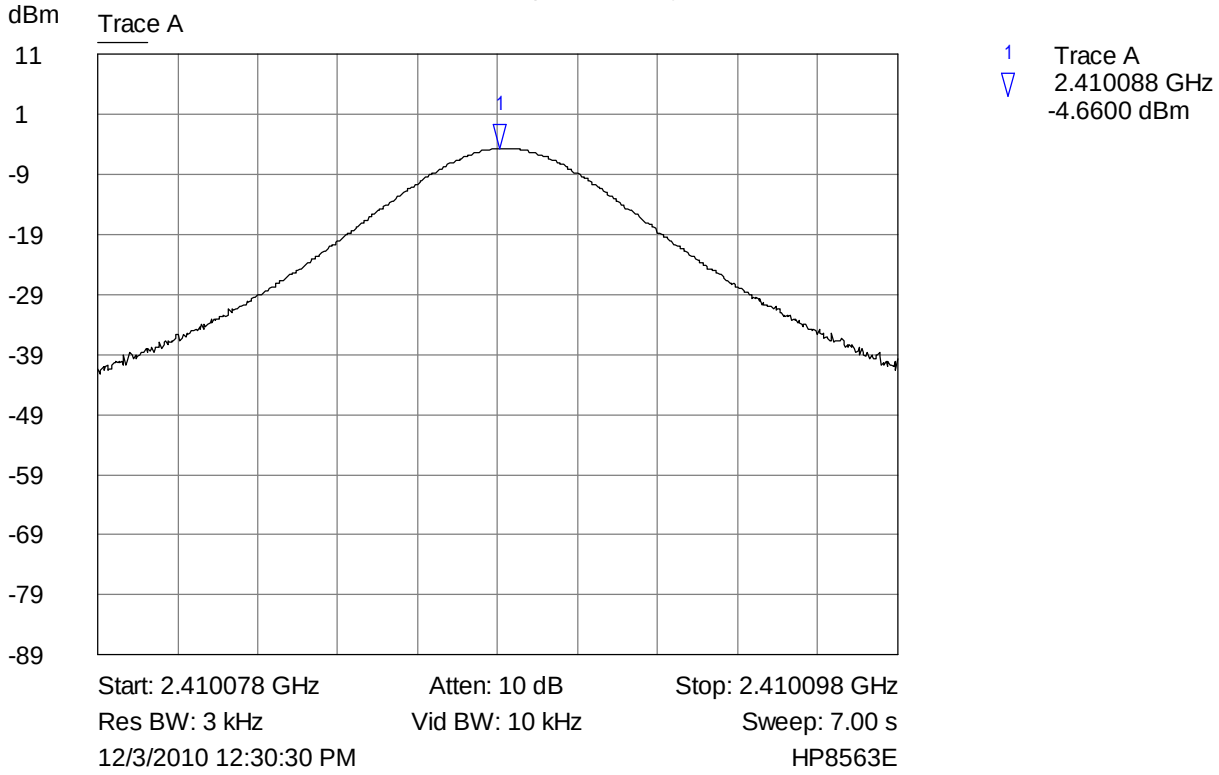
J4461-5, Channel 1, 2MB scheme, PK power density



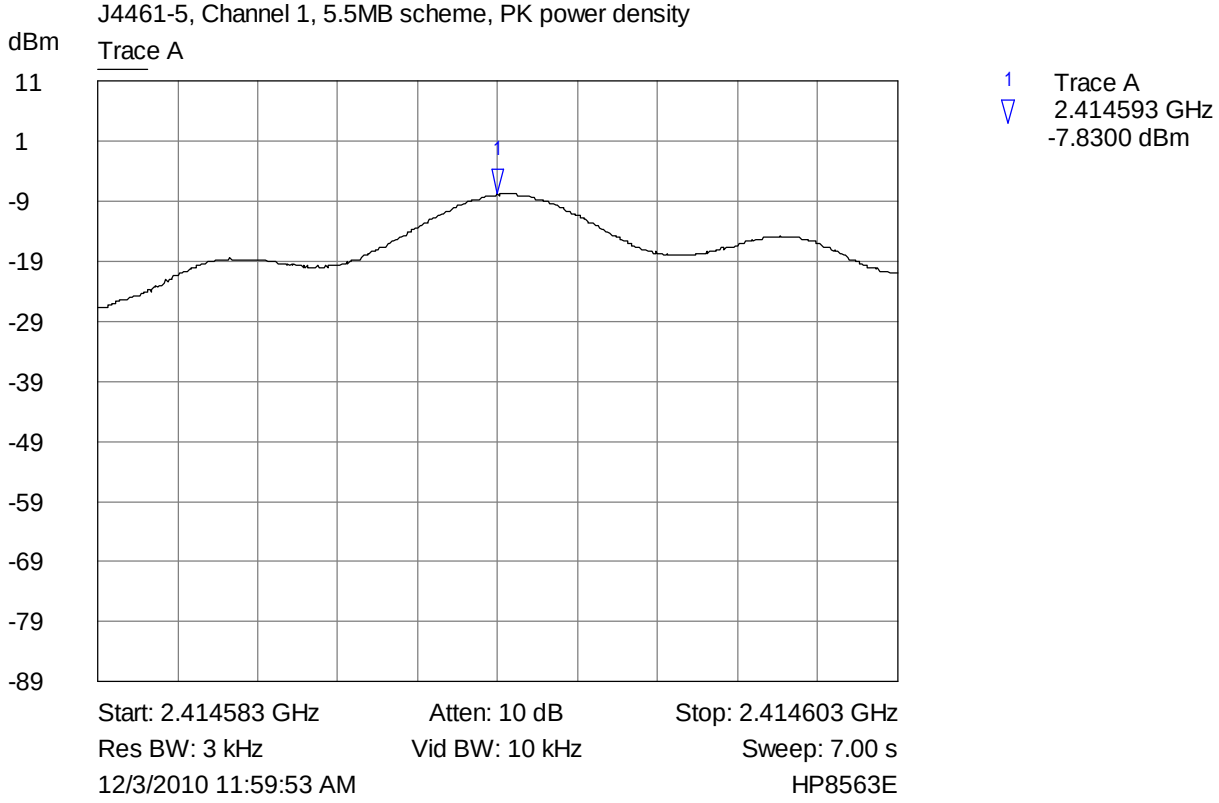
J4461-5, Channel 1, 36MB scheme, PK power density



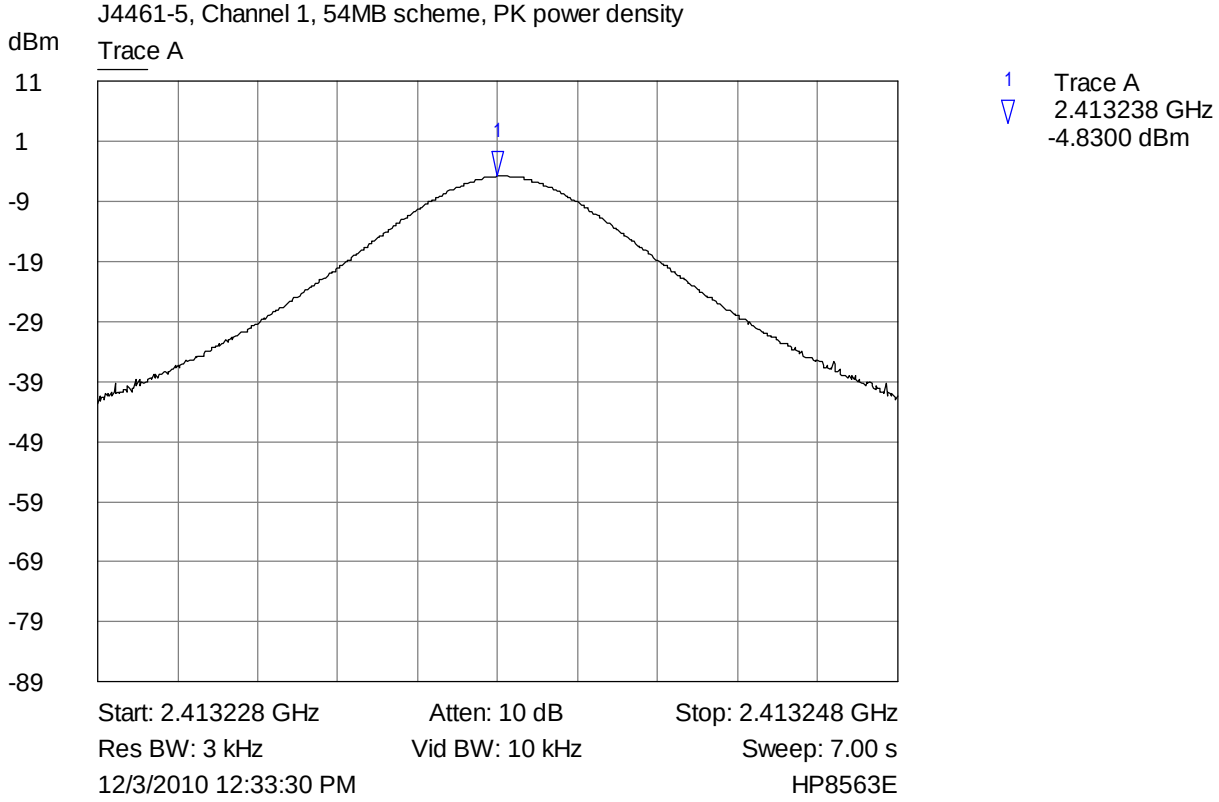
J4461-5, Channel 1, 48MB scheme, PK power density



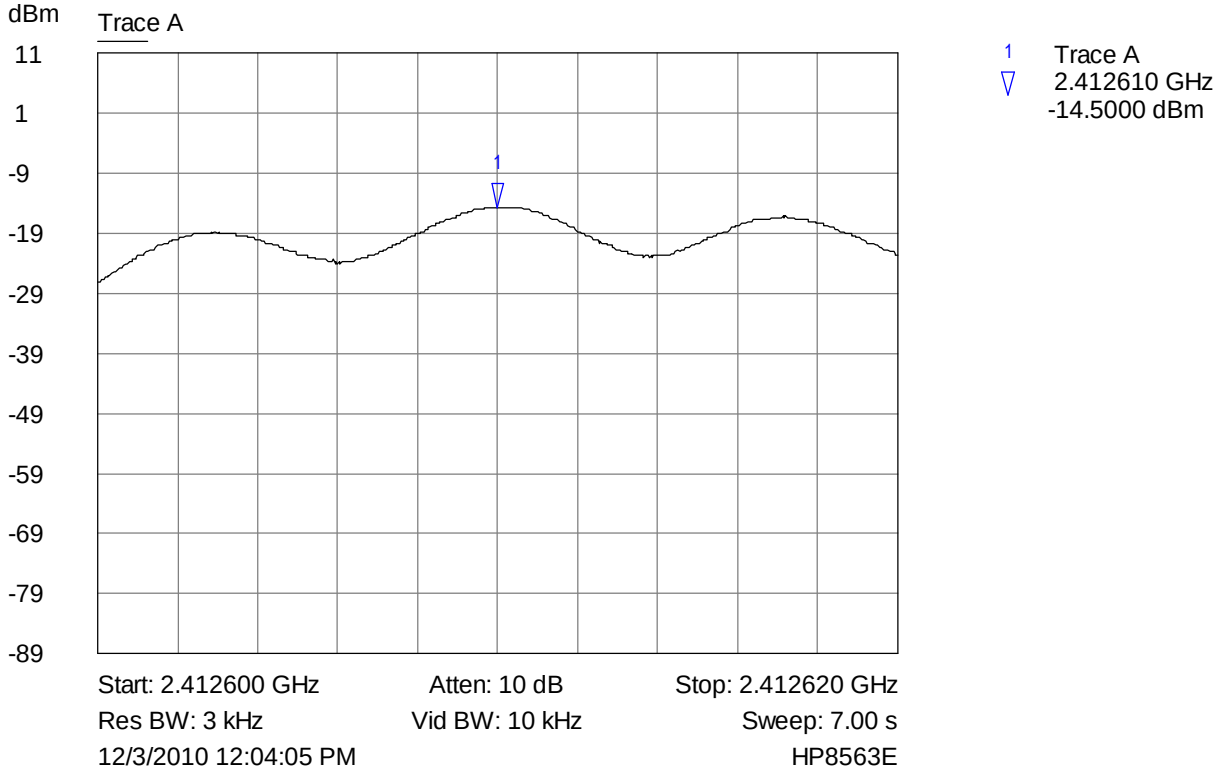
J4461-5, Channel 1, 5.5MB scheme, PK power density



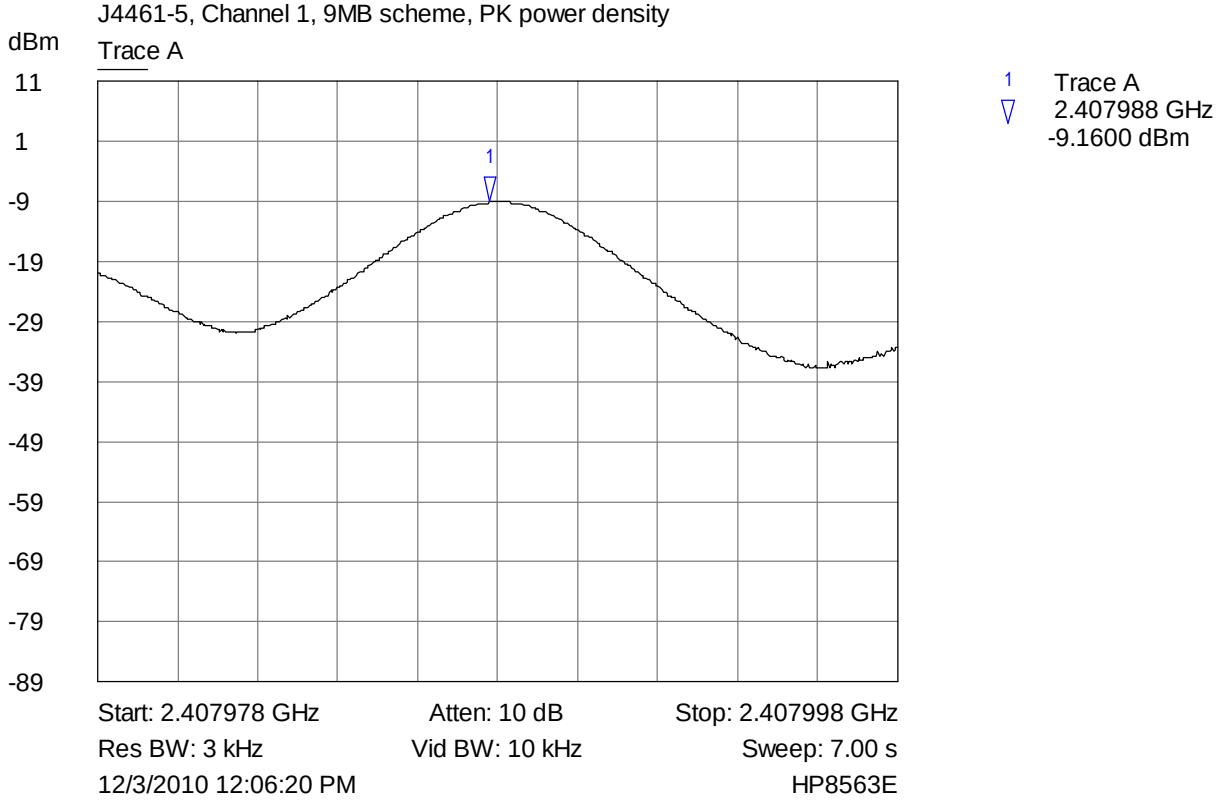
J4461-5, Channel 1, 54MB scheme, PK power density



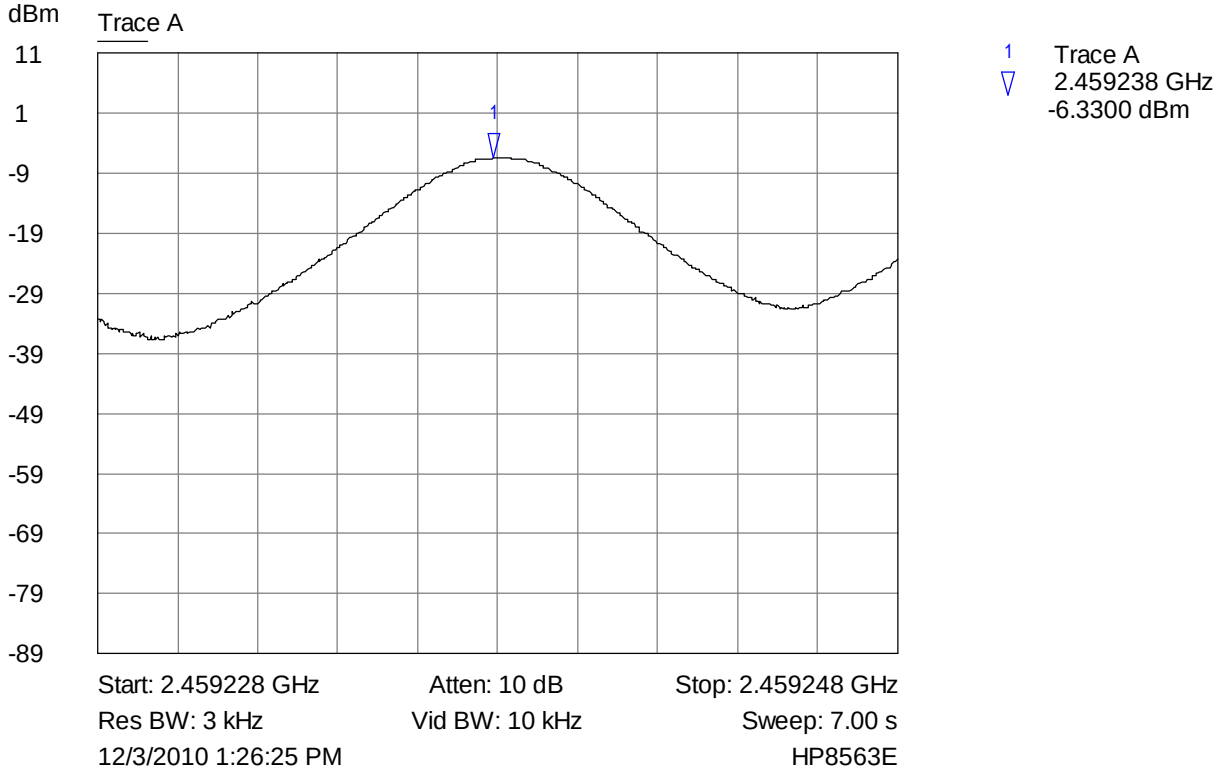
J4461-5, Channel 1, 6MB scheme, PK power density



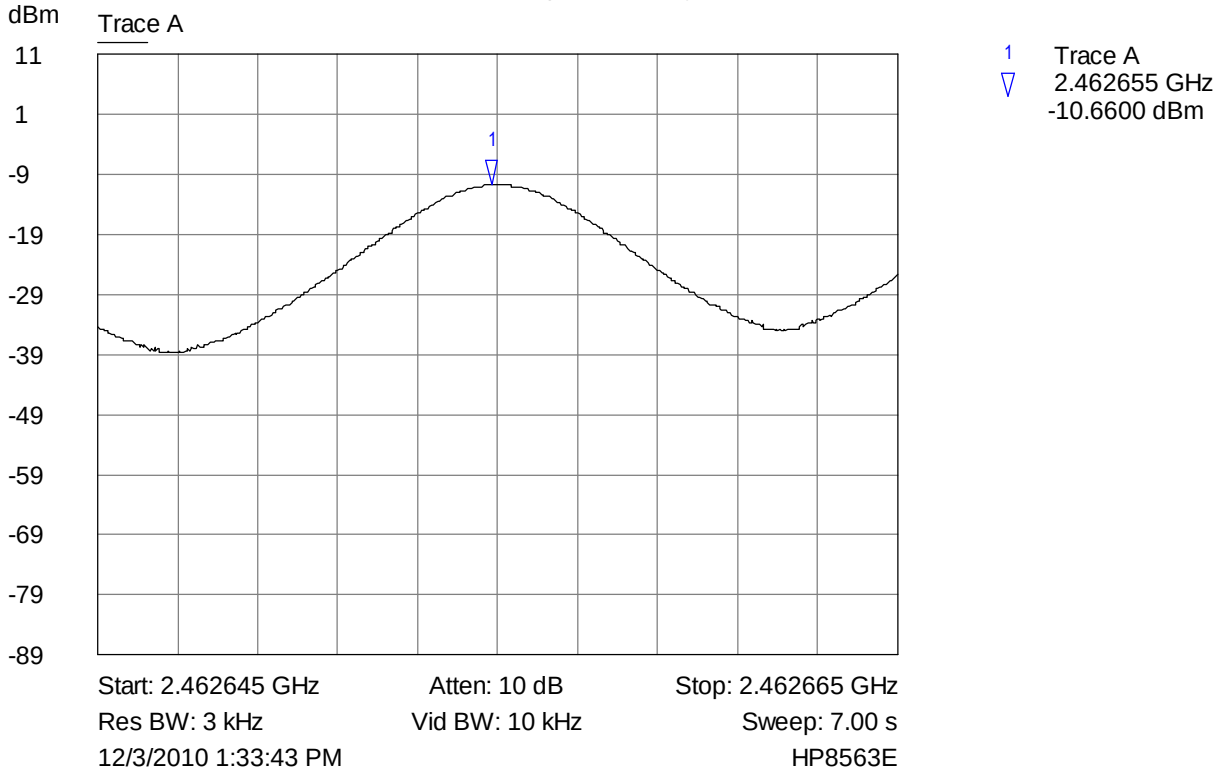
J4461-5, Channel 1, 9MB scheme, PK power density



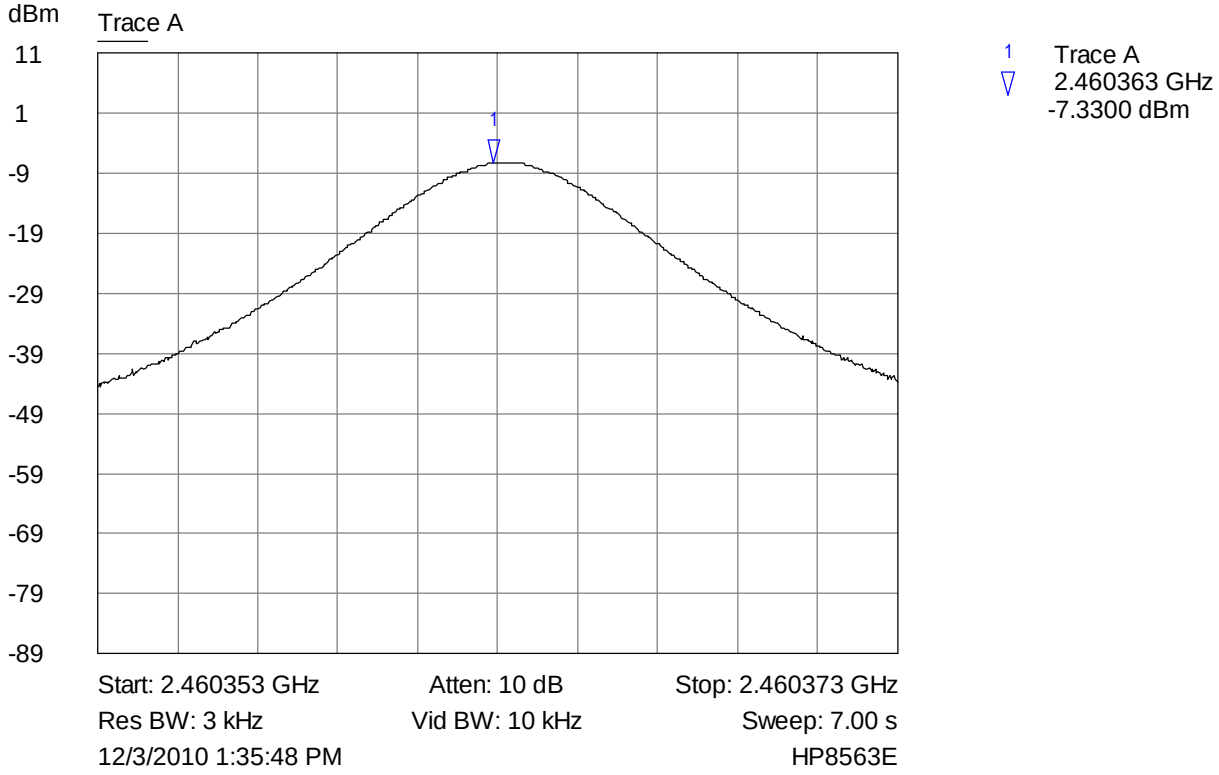
J4461-5, Channel 11, 11MB scheme, PK power density



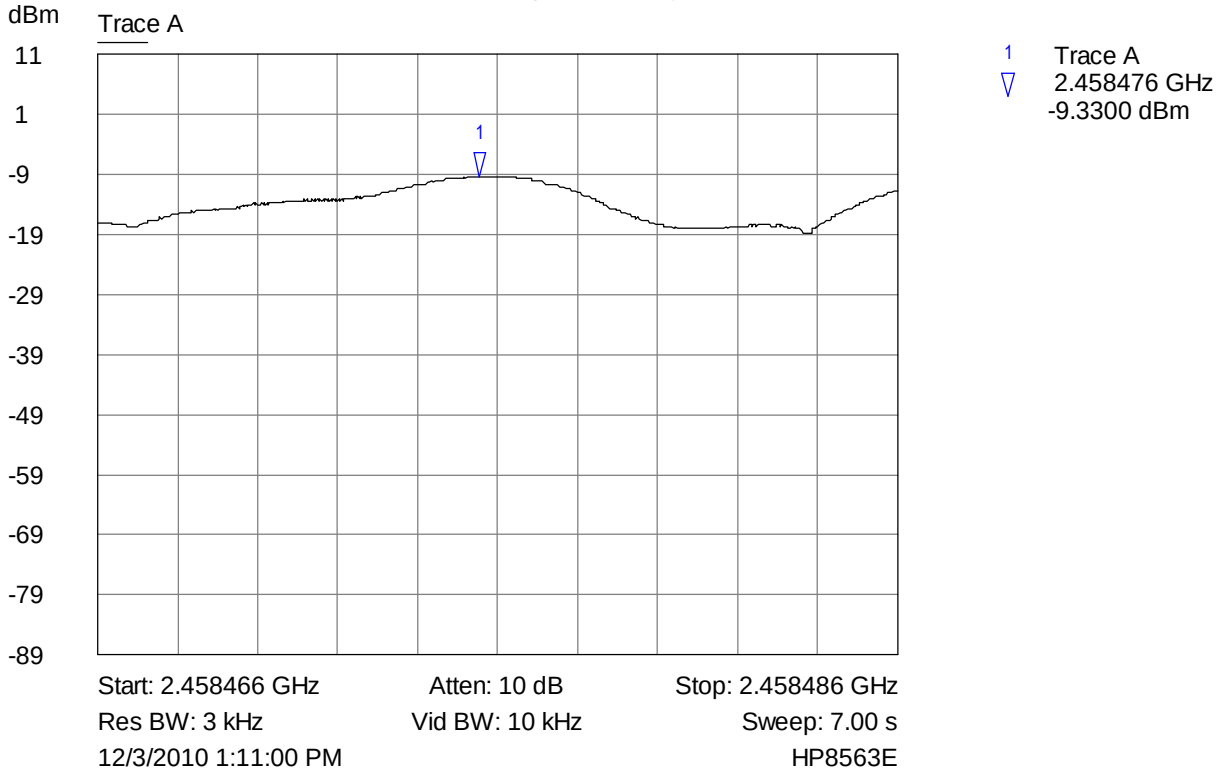
J4461-5, Channel 11, 12MB scheme, PK power density



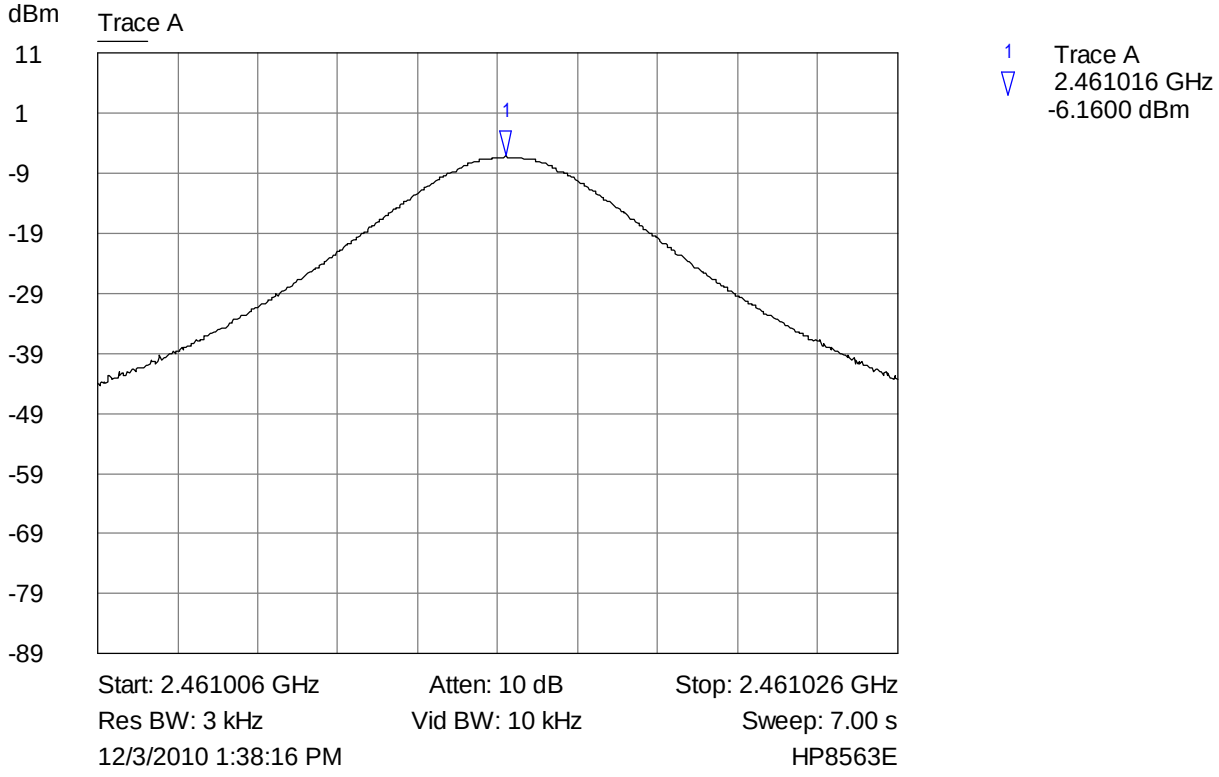
J4461-5, Channel 11, 18MB scheme, PK power density



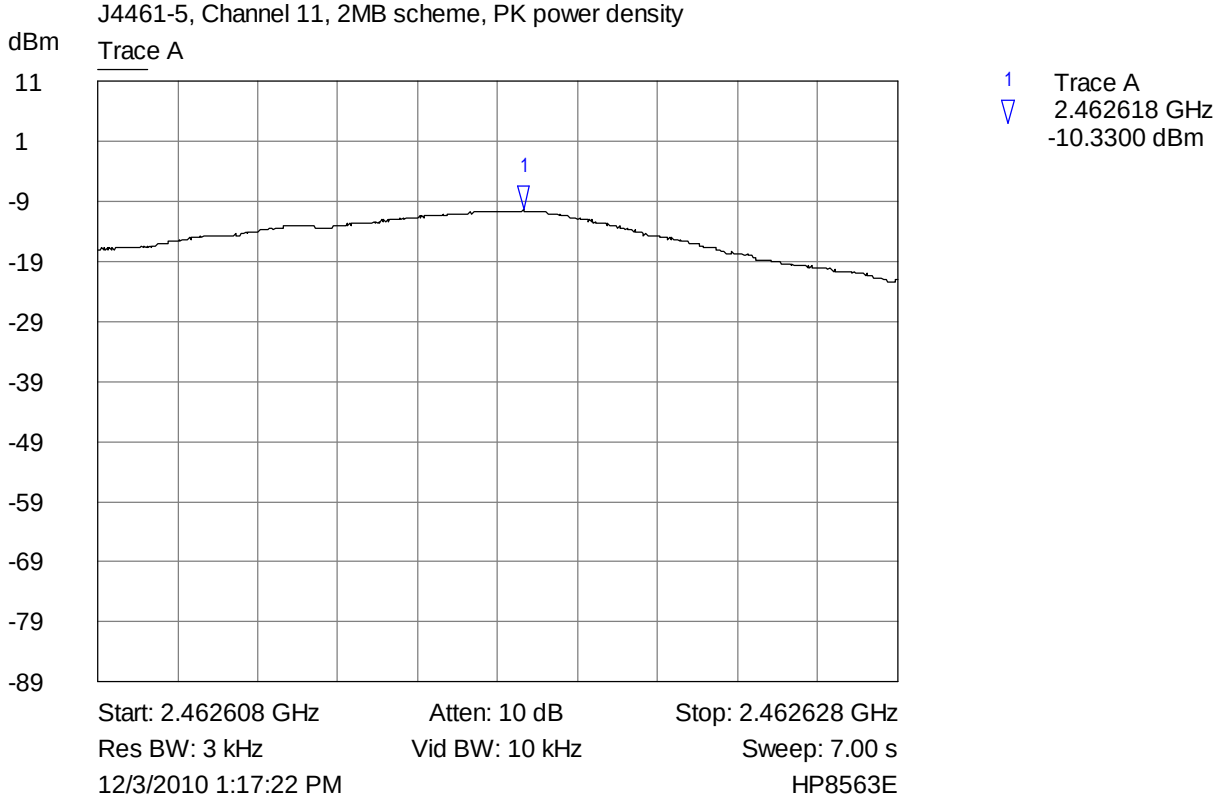
J4461-5, Channel 11, 1MB scheme, PK power density



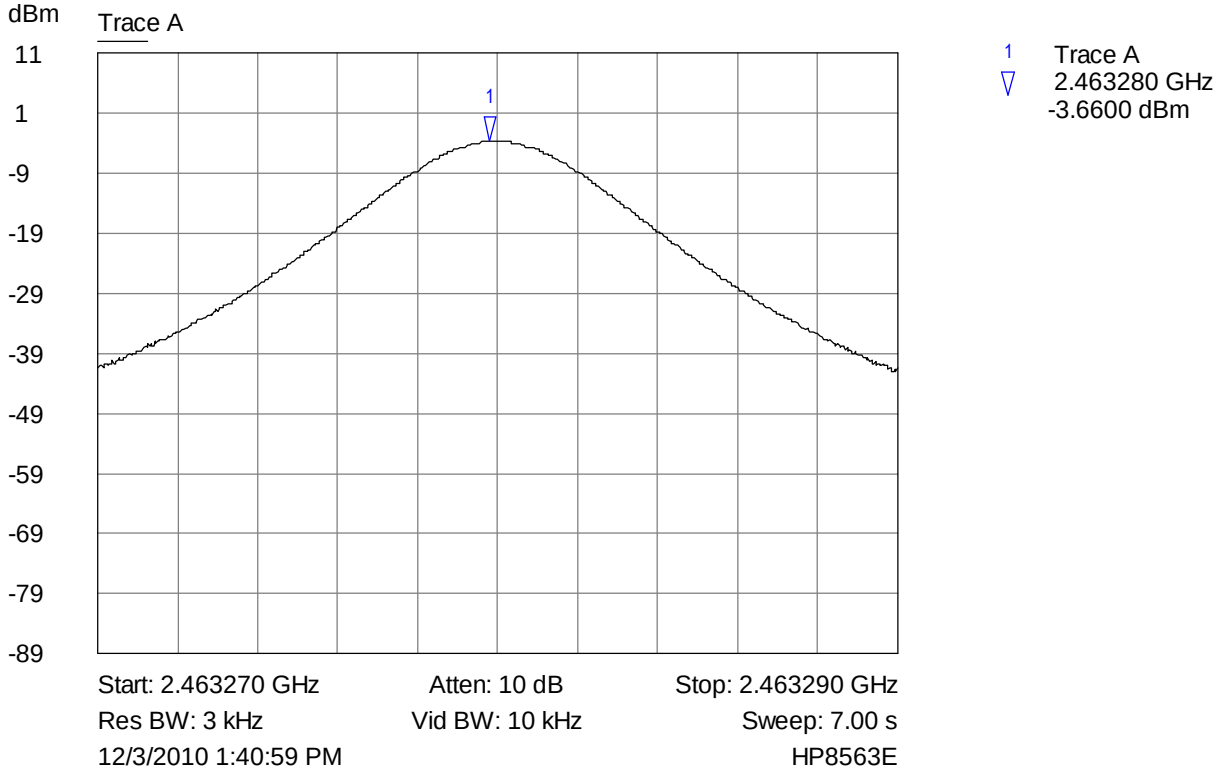
J4461-5, Channel 11, 24MB scheme, PK power density



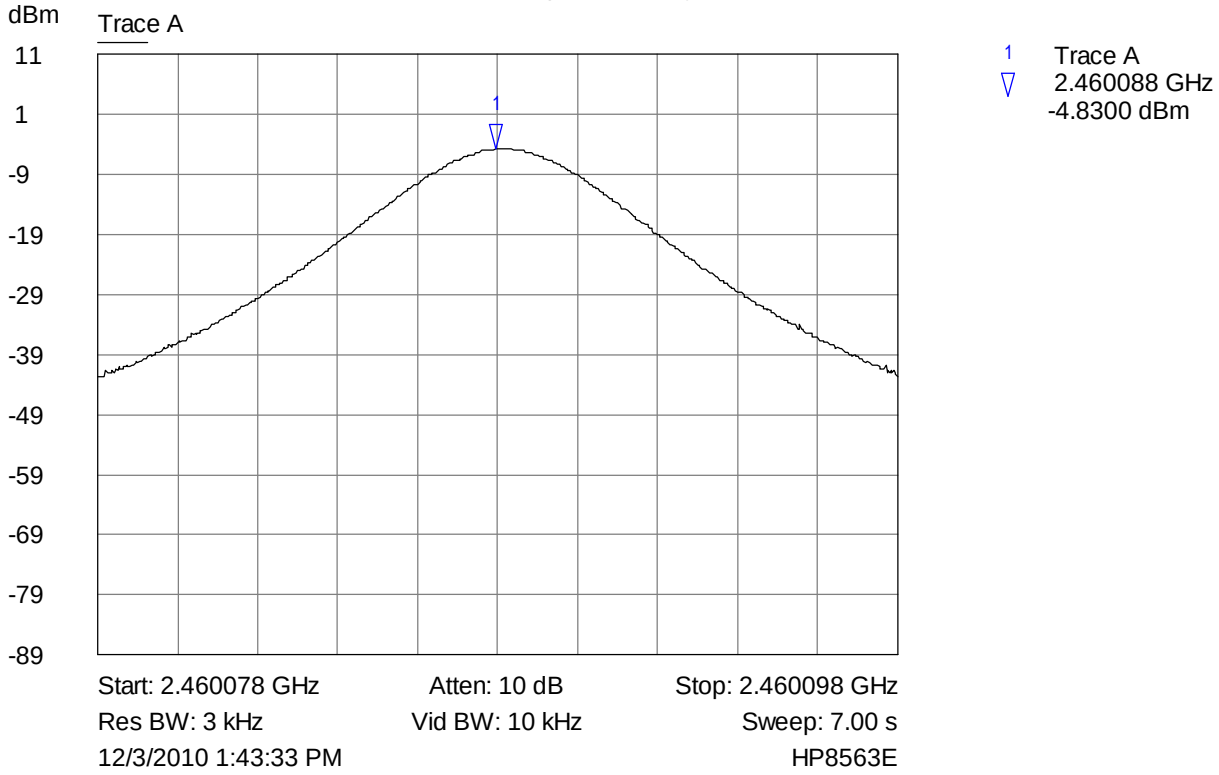
J4461-5, Channel 11, 2MB scheme, PK power density



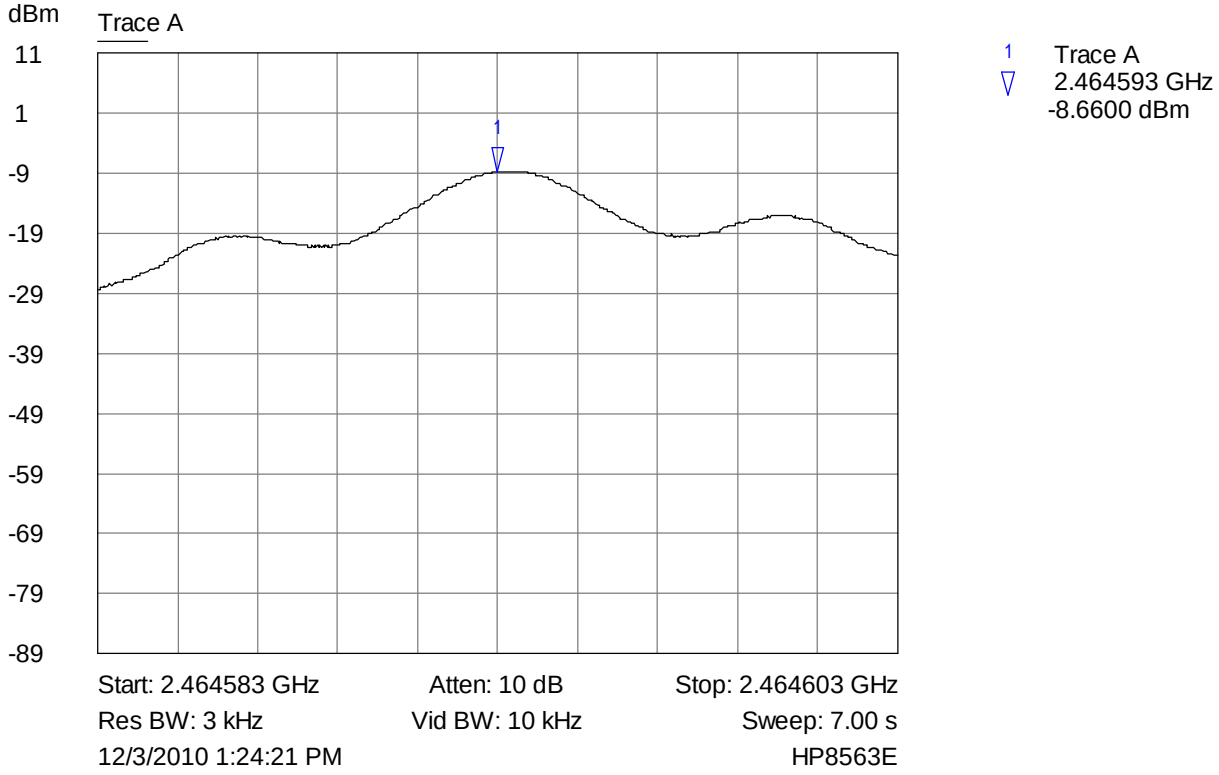
J4461-5, Channel 11, 36MB scheme, PK power density



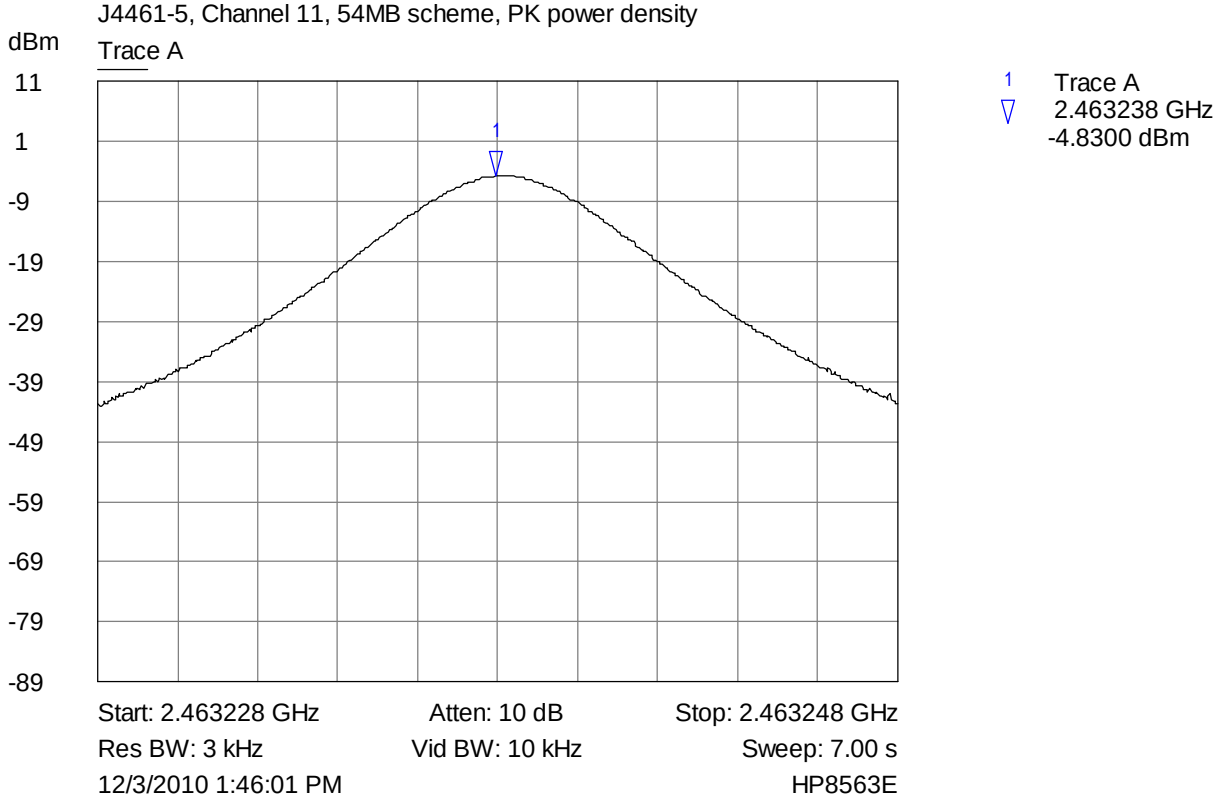
J4461-5, Channel 11, 48MB scheme, PK power density



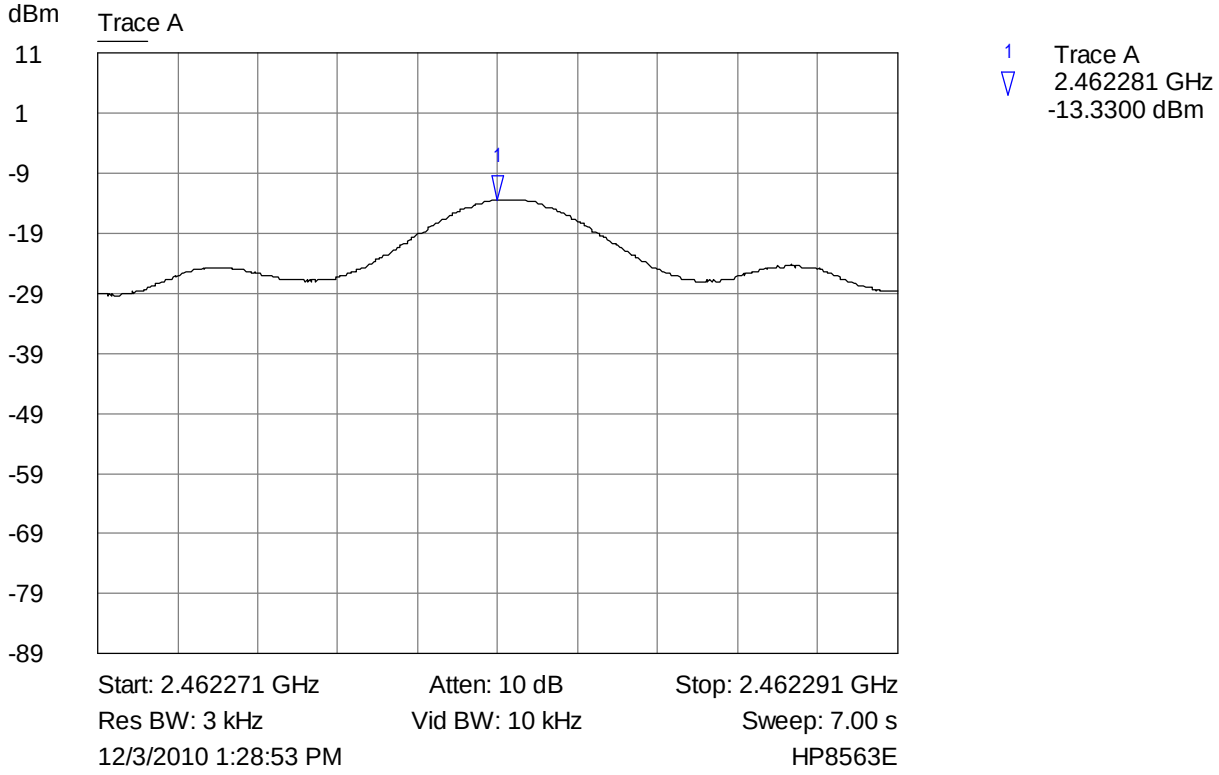
J4461-5, Channel 11, 5.5MB scheme, PK power density



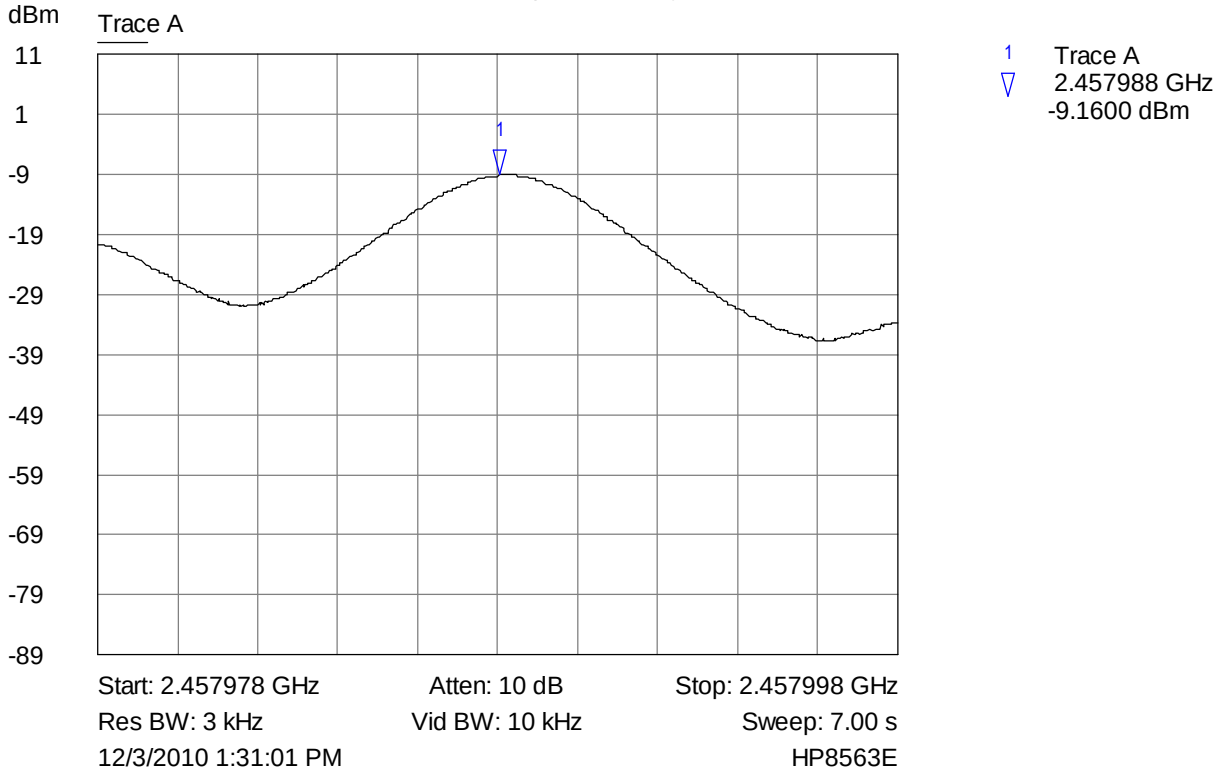
J4461-5, Channel 11, 54MB scheme, PK power density



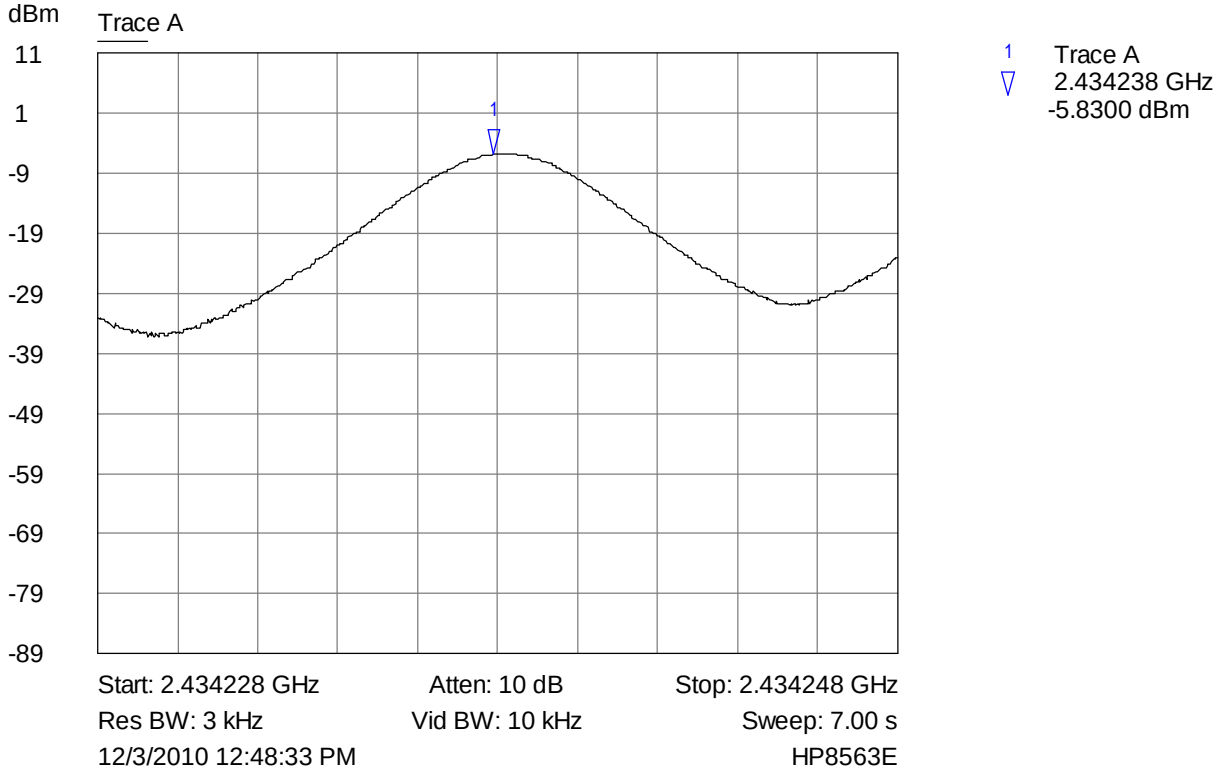
J4461-5, Channel 11, 6MB scheme, PK power density



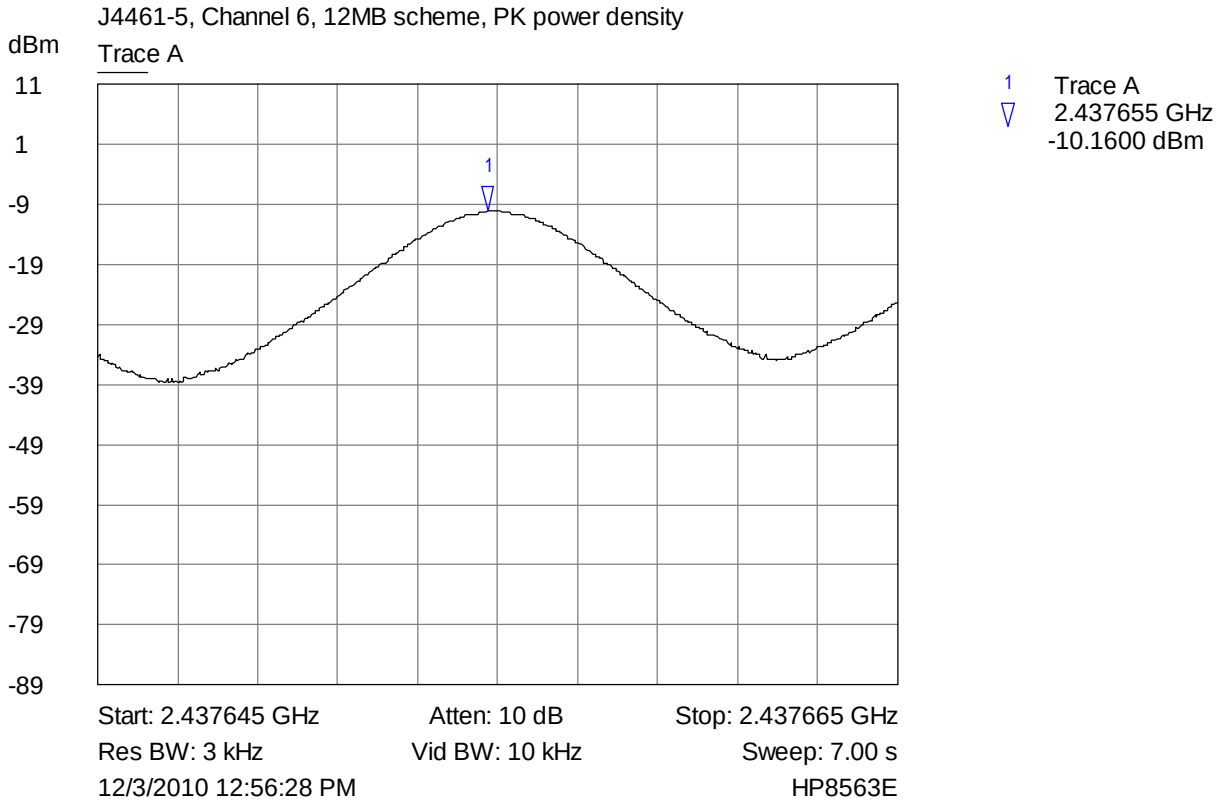
J4461-5, Channel 11, 9MB scheme, PK power density



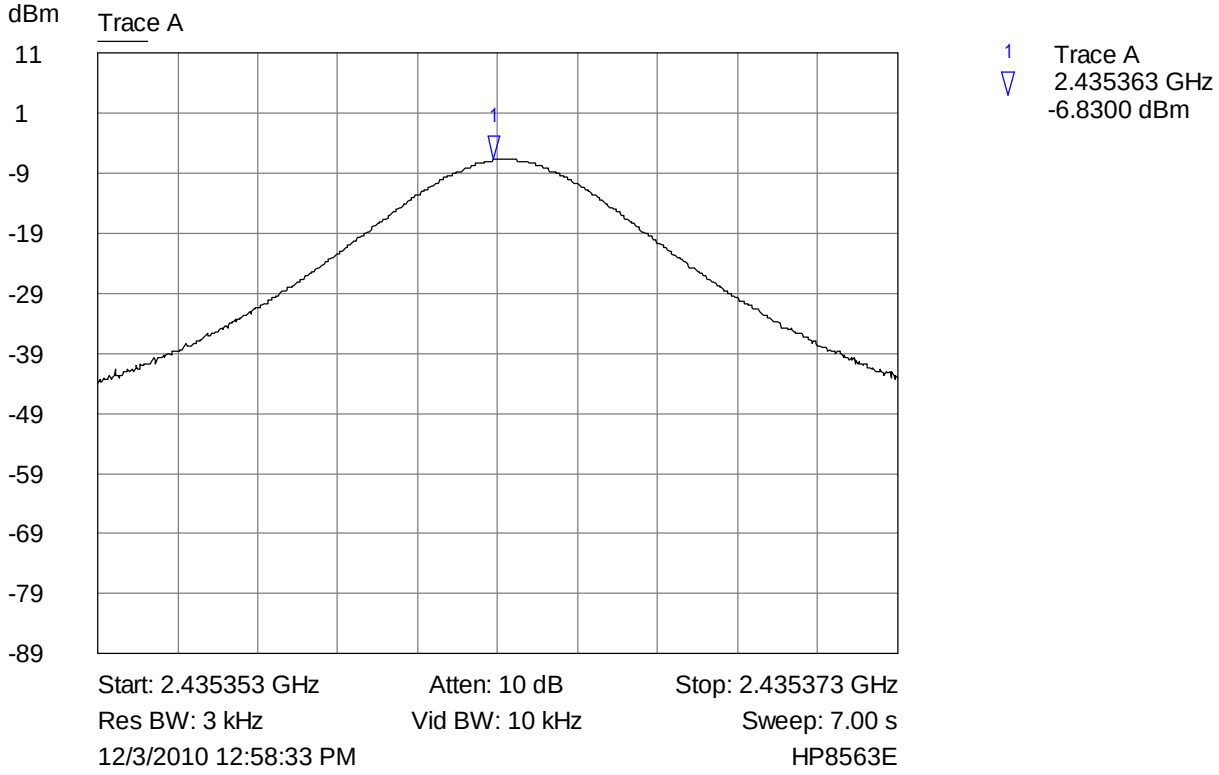
J4461-5, Channel 6, 11MB scheme, PK power density



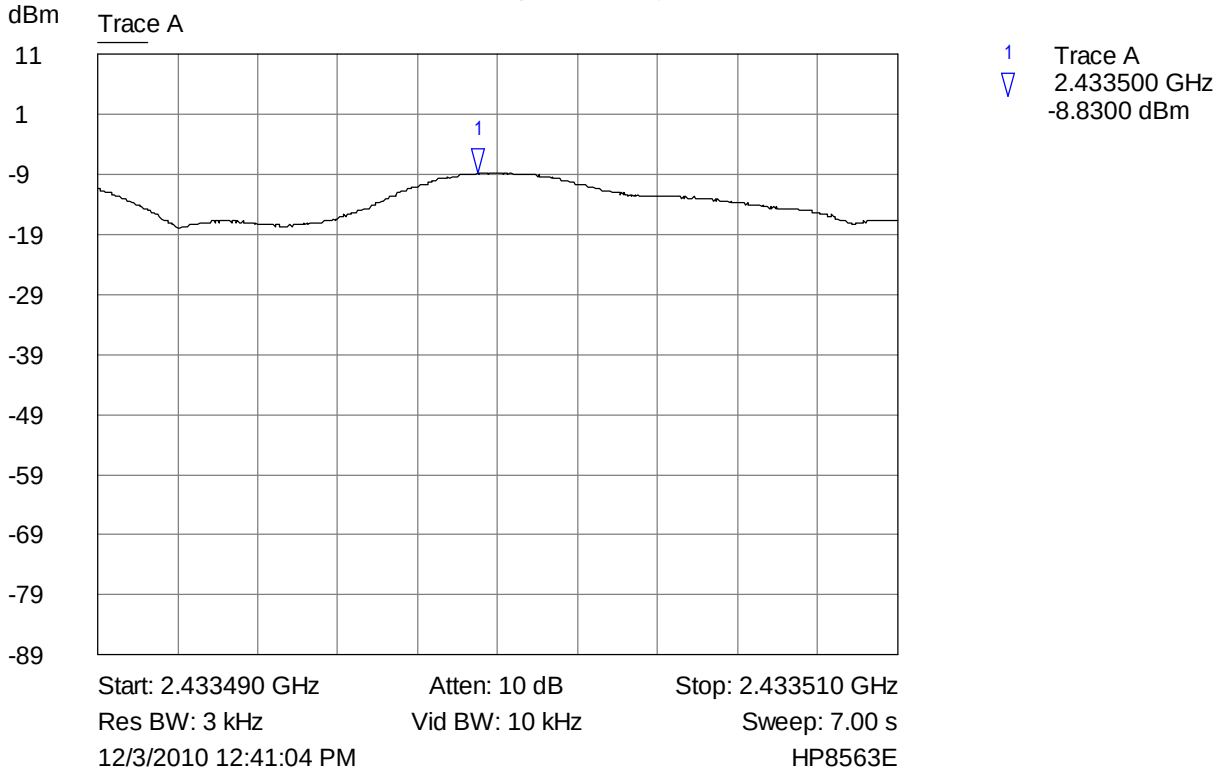
J4461-5, Channel 6, 12MB scheme, PK power density



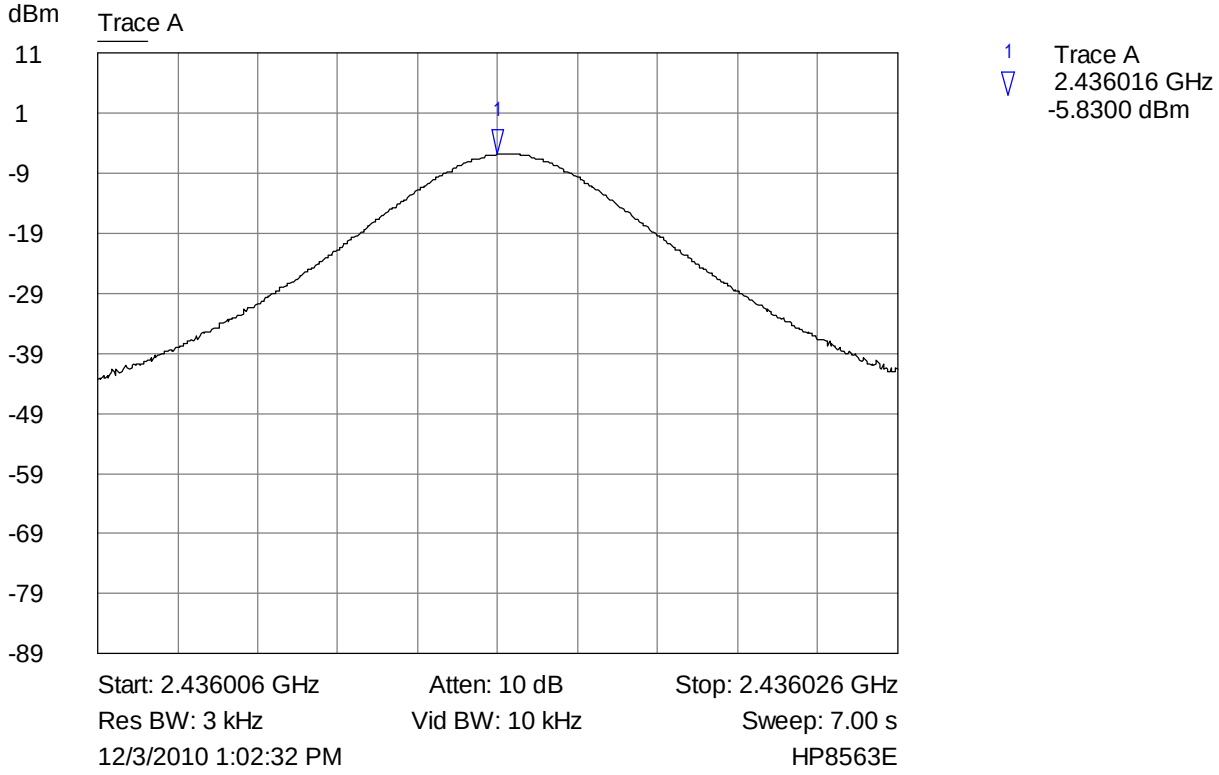
J4461-5, Channel 6, 18MB scheme, PK power density



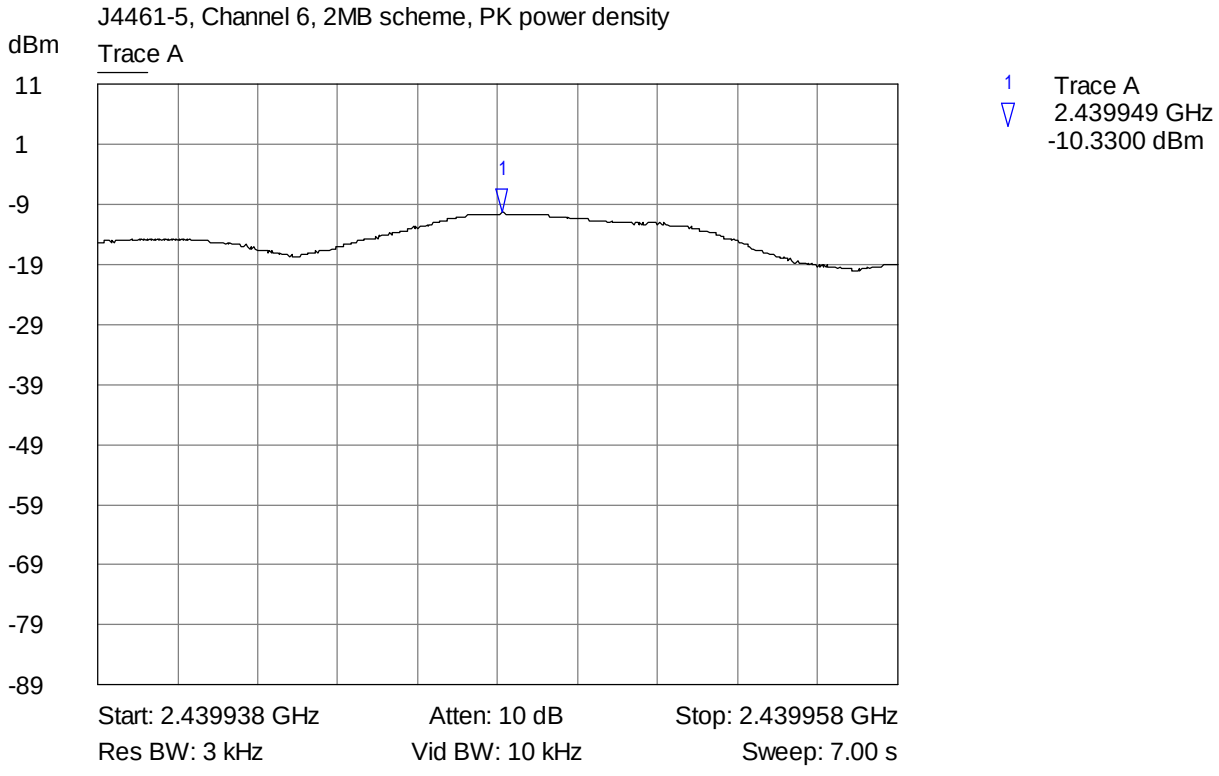
J4461-5, Channel 6, 1MB scheme, PK power density



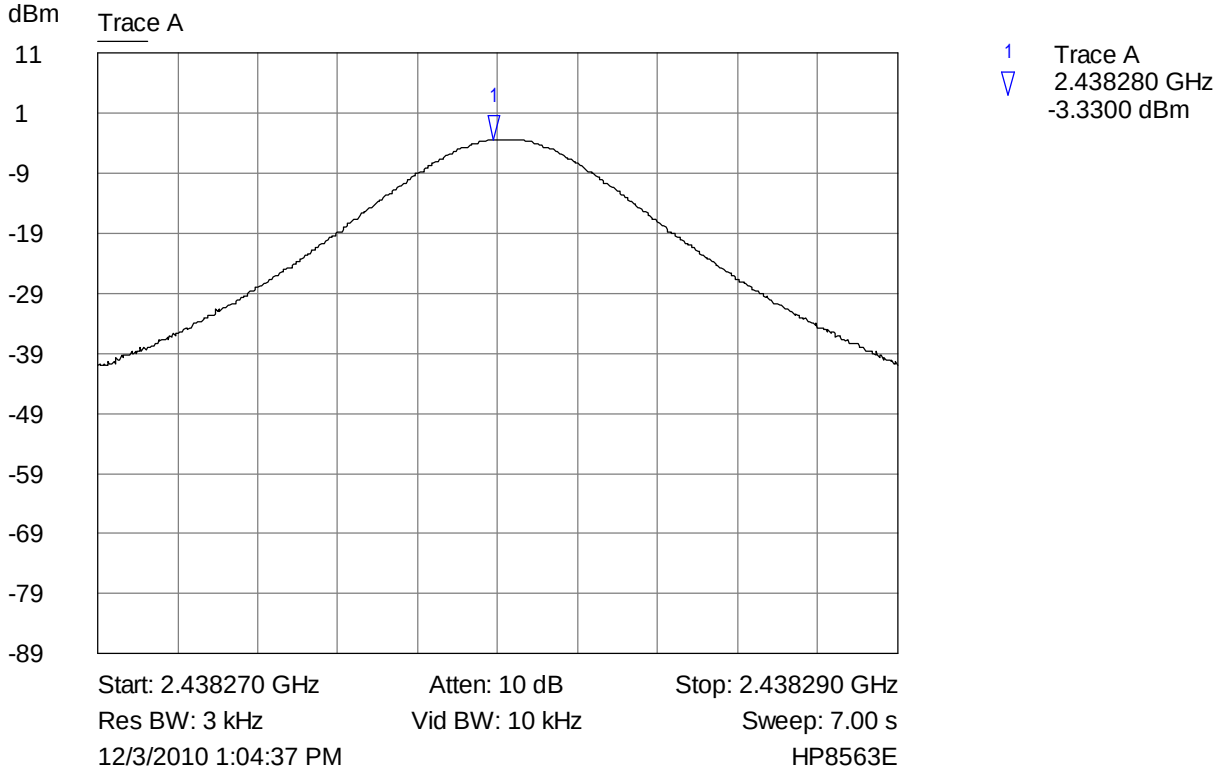
J4461-5, Channel 6, 24MB scheme, PK power density



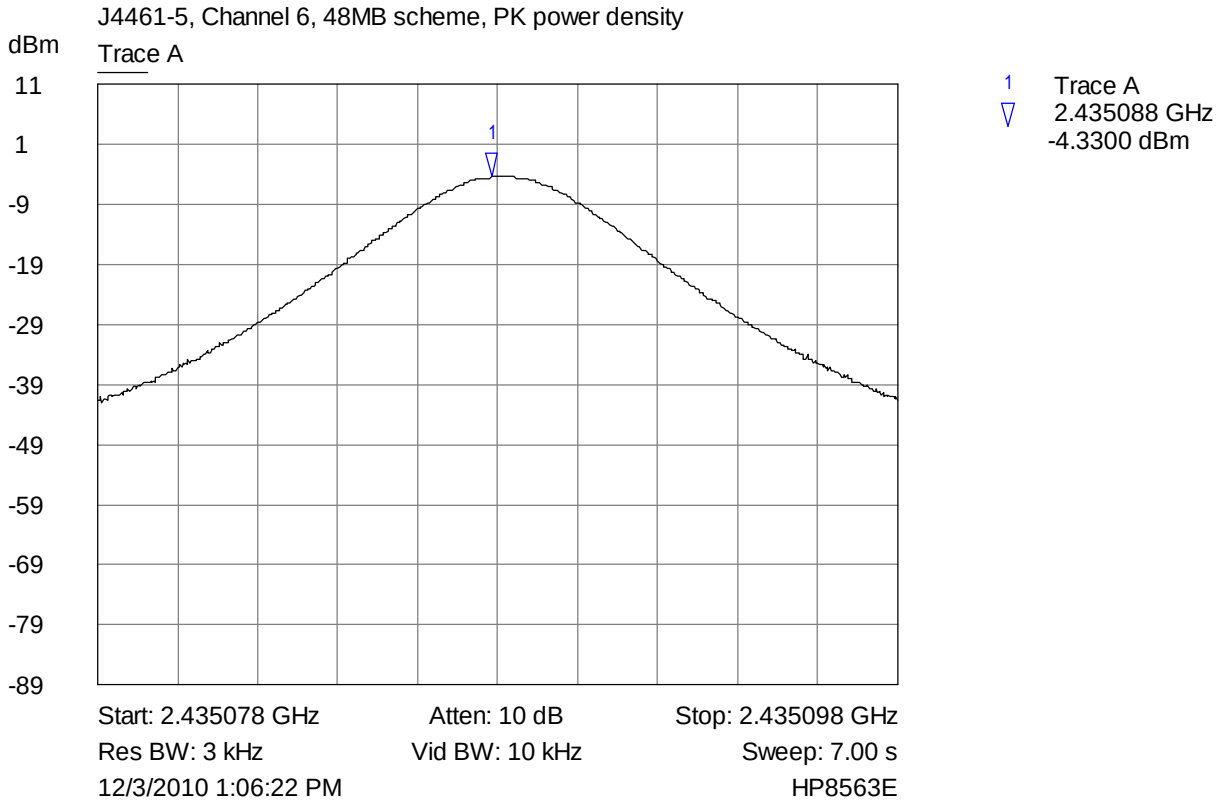
J4461-5, Channel 6, 2MB scheme, PK power density



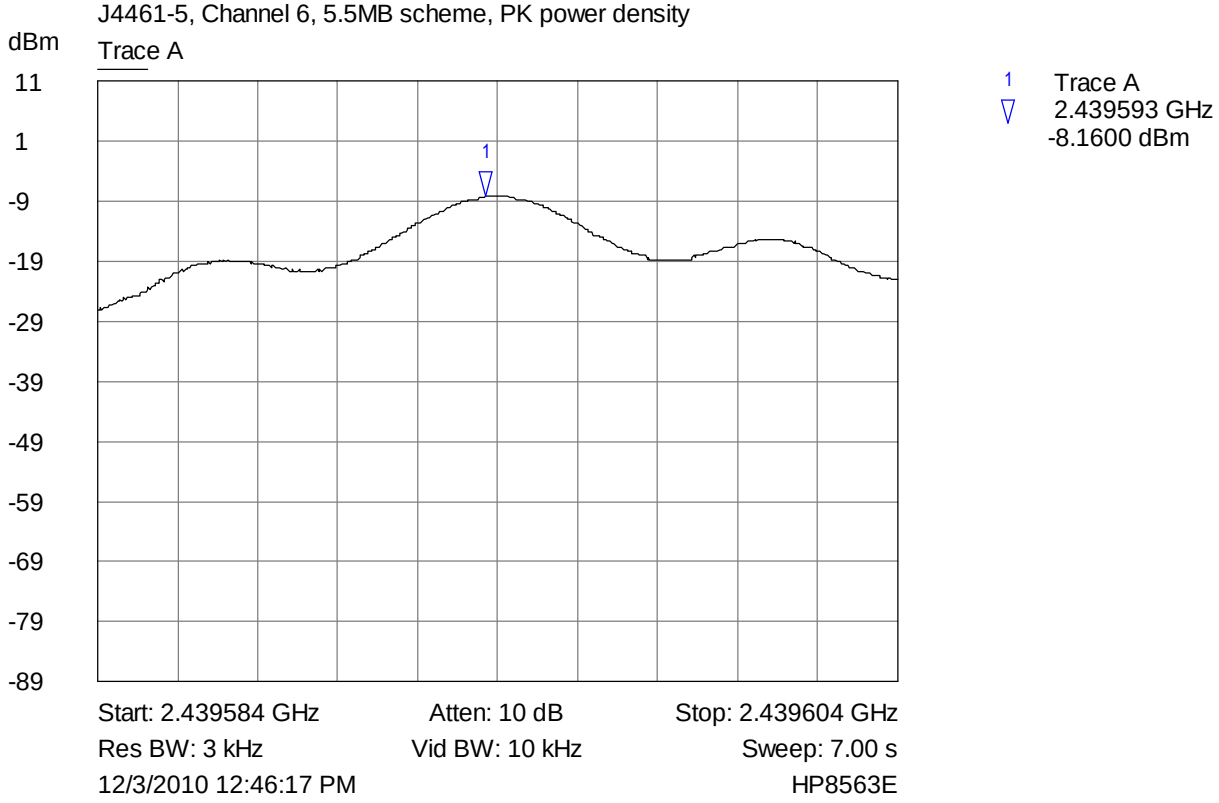
J4461-5, Channel 6, 36MB scheme, PK power density



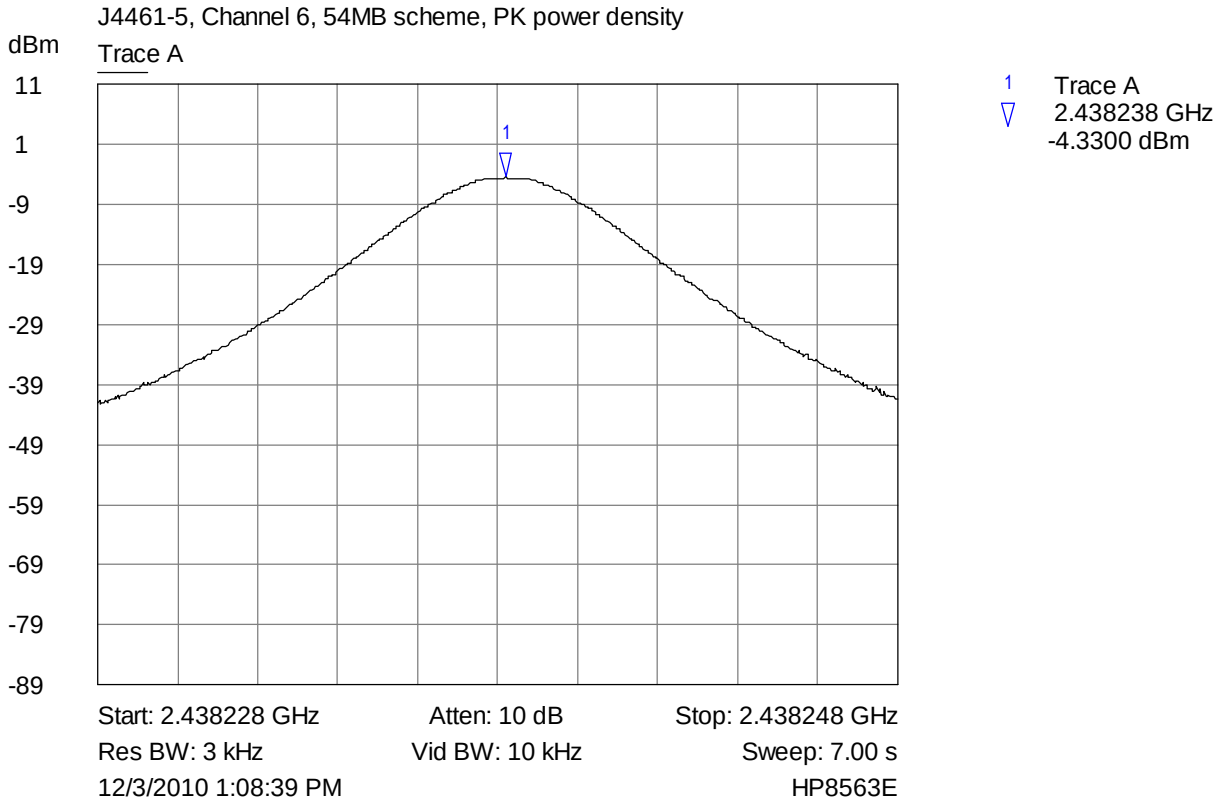
J4461-5, Channel 6, 48MB scheme, PK power density



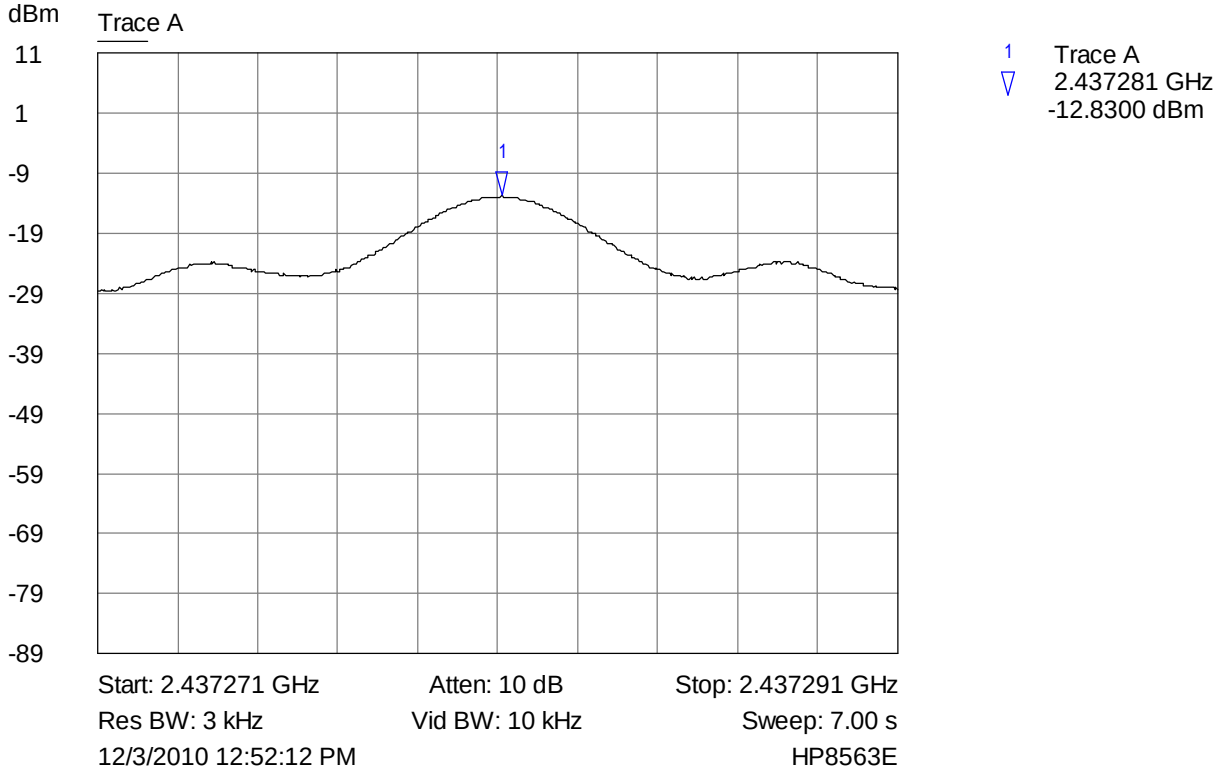
J4461-5, Channel 6, 5.5MB scheme, PK power density



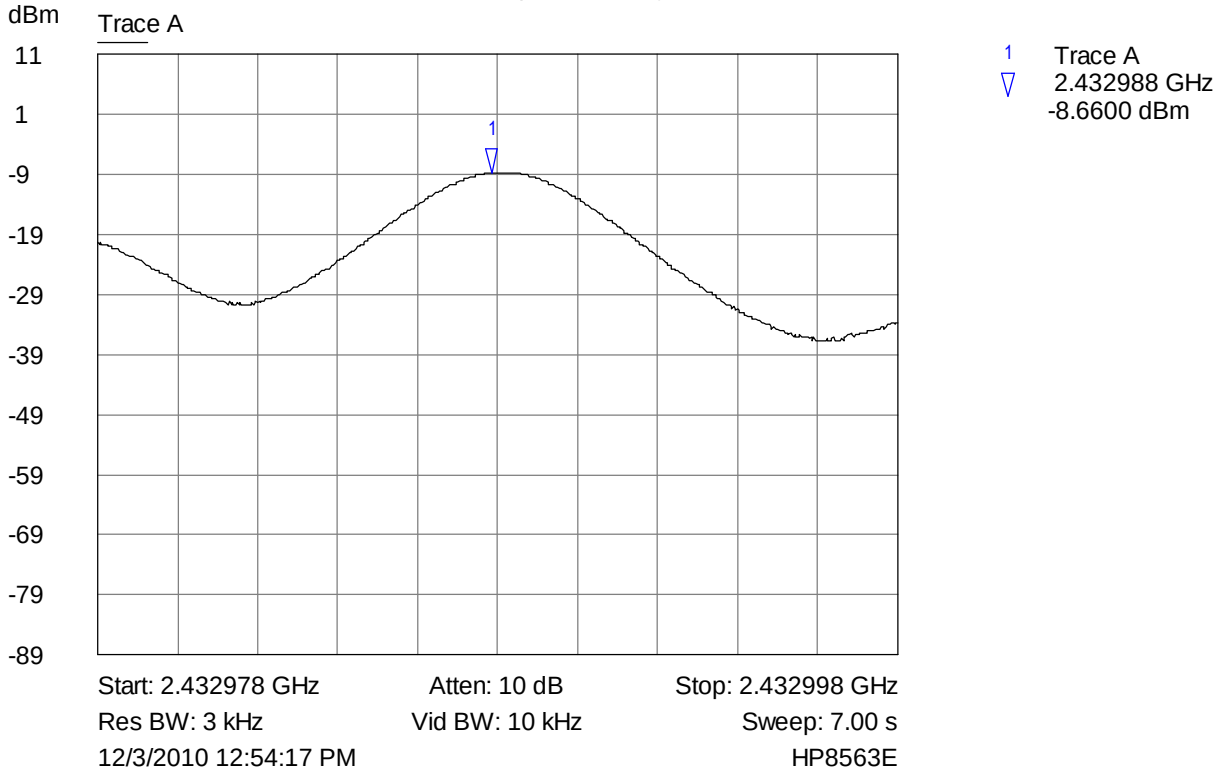
J4461-5, Channel 6, 54MB scheme, PK power density



J4461-5, Channel 6, 6MB scheme, PK power density



J4461-5, Channel 6, 9MB scheme, PK power density



7 Explanatory Notes

7.1 Explanation of FAIL LIMIT 1 Statement

The **FAIL MARGIN 1** statement(s) may appear on the graphical plots when the receiver used to measure your equipment detects a signal that exceeds the dashed line. This does not mean that the **EUT** has failed the test, only that the 10 dB calculation margin set, has been exceeded on a peak measurement.

Following the indication that the margin has been exceeded, measurements are made at the frequency (ies) of the peaks. These peaks have been calculated to either Quasi Peak or Average Peak dependant on the test. A table of results has been printed on the reverse of the page. This table looks similar to the one illustrated below: -

Signal Number	Frequency (MHz)	Peak (dBμV)	PK Delta L 1 (dB)	Avg (dBμV)	Av Delta L 1 (dB)
1	12345.0000	12.9	-2.5	10.2	-5.2

The First column, labelled Signal Number, is a number that the receiver has given to each signal, which has been calculated.

Column Two, labelled Frequency (MHz), is the frequency of the signal received.

Column Three, labelled Peak (dBμV), (can also be labelled, in the case of Quasi Peak, Peak dBμV/m) is the Level that was received at peak amount in dB above 1μV.

Column Four, labelled PK Delta L1 (dB), is the same level as Column three but is given in a level relative to the limit line required.

Column Five, labelled AVG (dBμV), (can also be labelled, in the case of Quasi Peak, QP dBμV/m) when undertaking a Quasi peak test, This is the Average or Quasi peak calculation results given in dBμV or dBμV/m above 1μV.

Column Six, labelled AV Delta L 1 (dB), (can also be labelled, in the case of Quasi Peak, QP Delta L 1 (dB)) is the Average or Quasi Peak calculation relevant to the limit line. The results entered in this column indicate the signal level relative to the compliance limit required. Negative numbers indicate that the product is compliant.

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

8. Photographs

Photograph of the EUT as viewed from in front of the antenna, site M.

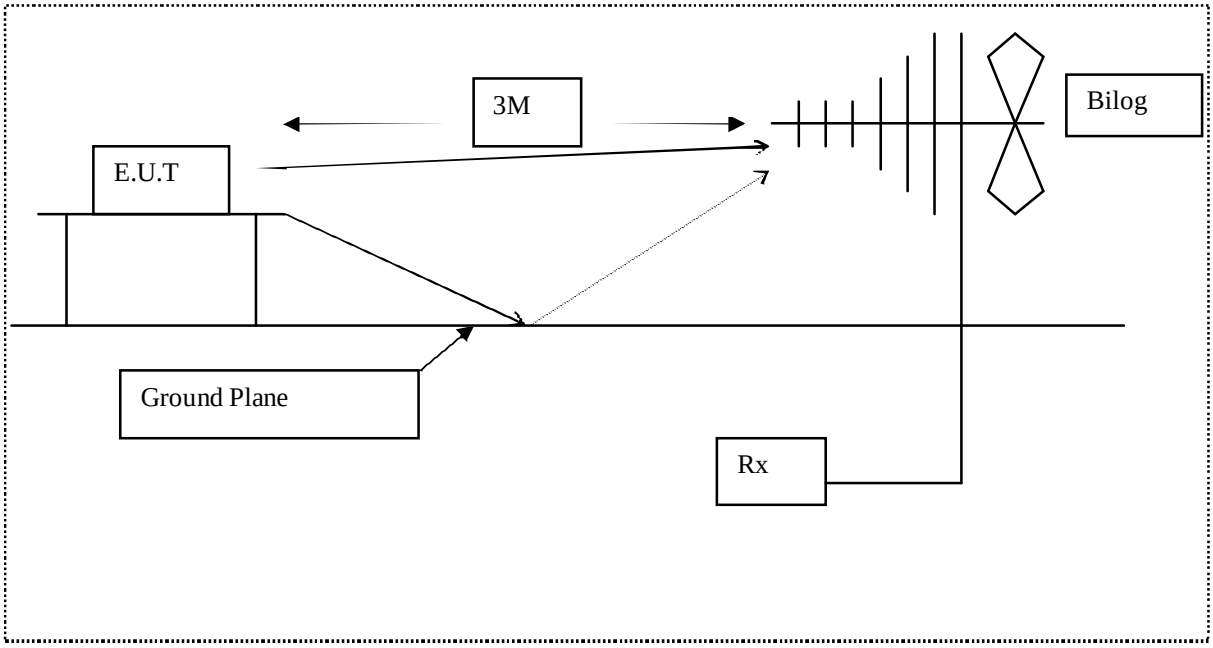


Diagram of the radiated emissions test setup.

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

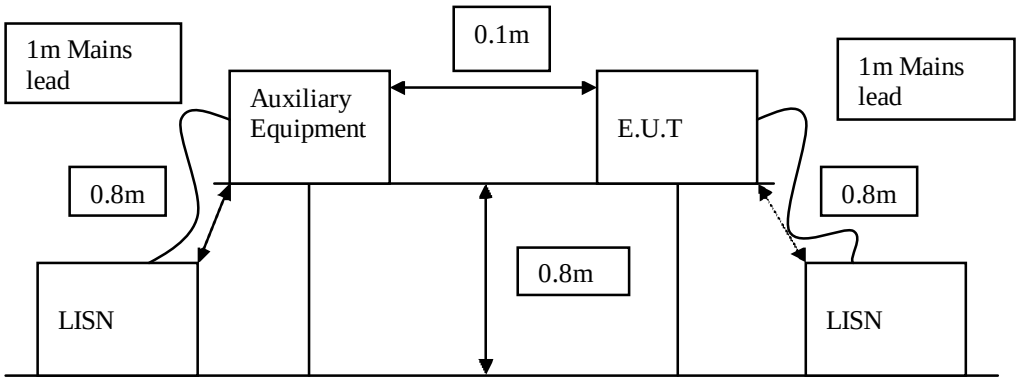


Diagram of the conducted emissions test setup.

Identifying Photograph of the EUT

9. Signal Leads

Port Name	Cable Type
AC/DC brick	AC plug to 2 core DC
Headphones	2.5mm audio screened
Auxiliary Input	2.5mm audio screened
USB Mini	USB screened

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.

RNNo	Model	Description	Manufacturer	Date Calibrated	Period
C031	437B	Power Meter	Hewlett Packard	10-Nov-10	12
C032	8482A	Power Sensor	Hewlett Packard	18-Nov-10	12
E003	HP8593E	Spectrum Analyser	Hewlett Packard	21-Oct-10	24
E035	HP11947A	Transient Limiter + 10dB Atten.	Hewlett Packard	21-Feb-11	6
E150	MN2050	LISN 13A	Chase	29-Oct-09	24
E252	6810.19.A	10 dB Attenuator	Suhner	29-Oct-10	12
E268	BHA 9118	1-18 GHz Horn Antenna	Schaffner	02-Mar-09	60
E319	H-34-2720-01	Transmit Filter 1.5-2.0 GHz	The Marconi Company Ltd	N/A	N/A
E342	8563E	Spectrum Analyser 26.5 GHz	HP	23-Feb-09	24
E410	N5181A	3 GHz MXG Signal Generator	Agilent Technologies	06-Oct-10	12
E411	N9039A	9 kHz - 1 GHz RF Filter Section	Agilent Technologies	05-Oct-10	12
E412	E4440A	3 Hz - 26.5 GHz PSA	Agilent Technologies	05-Oct-10	12
E429	-	5 Switch Filter Box 0.91 GHz - 16.3 GHz	RN Electronics	N/A	N/A
E434	G3RUH	10 MHz GPS Oscillator	James Miller	N/A	N/A
E463	8431A	Bandpass Filter 2-4 GHz	HP	N/A	N/A
TMS78	460420	Std Gain Horn Antenna 12.4-18 GHz	ETS Systems	03-Nov-10	24
TMS79	460451	Std Gain Horn Antenna 18-26.5 GHz	ETS Systems	03-Nov-10	24
TMS81	6502	Active Loop Antenna	EMCO	13-Apr-10	24
TMS82	8449B	Pre Amplifier 1 - 26 GHz	Agilent	29-Oct-10	12
TMS933	CBL6141A	Bilog Antenna 30MHz - 2GHz	York EMC	09-Sep-10	36
TMS952	MN2050D	LISN	Schaffner	24-Jul-09	24

11. Auxiliary equipment

11.1 Auxiliary equipment supplied by Imagination Technologies

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

No Auxiliary equipment was provided.

11.2 Auxiliary equipment supplied by RN Electronics Limited

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

RN No.	Model Number	Description	Manufacturer	Serial Number
I017	Inspiron 5150	Laptop PC	DELL	CN-0W0940-12961-44J-2047
N453	Uni Tone	Hi-Fi Stereo Headphones	HD-828	-

12. Modifications

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

12.1 Modifications before test

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

12.2 Modifications during test

In order to comply with the radiated emissions limits within this report the following modification was performed by an Imagination Technologies representative:

- A series 1n5 inductor and shunt network of a 0.3pF capacitor in series with a 2.7nH inductor was fitted to the antenna feed line.

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:

Not supplied.

EUT is subject to DoC as a Class B PC peripheral, details of which are to be held with the manufacturer.

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 (Conducted Emissions) VCCI Registration No. C-2823
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

15 Abbreviations and Units

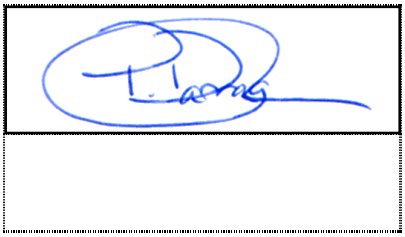
%	Percent
µA/m	microAmps per metre
µV	microVolts
µW	microWatts
AC	Alternating Current
ALSE	Absorber Lined Screened Enclosure
AM	Amplitude Modulation
Amb	Ambient
ATPC	Automatic Transmit Power Control
BER	Bit Error Rate
ºC	Degrees Celsius
C/I	Carrier / Interferer
CEPT	European Conference of Postal and Telecommunications Administrations
COFDM	Coherent OFDM
CS	Channel Spacing
CW	Continuous Wave
dB	deciBels
dBµA/m	deciBels relative to 1µA/m
dBµV	deciBels relative to 1µV
dBc	deciBels relative to Carrier
dBm	deciBels relative to 1mW
DC	Direct Current
DTA	Digital Transmission Analyser
EIRP	Equivalent Isotropic Radiated Power
ERP	Effective Radiated Power
EU	European Union
EUT	Equipment Under Test
FM	Frequency Modulation
FSK	Frequency Shift Keying
g	Grams
GHz	GigaHertz
Hz	Hertz
IF	Intermediate Frequency
kHz	kiloHertz
LBT	Listen Before Talk
LO	Local Oscillator
mA	milliAmps
max	maximum
mbar	milliBars
Mbit/s	MegaBits per second
MHz	MegaHertz
mic	Microphone
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
ppm	Parts per million
PRBS	Pseudo Random Bit Sequence
QAM	Quadrature Amplitude Modulation
QPSK	Quadrature Phase Shift Keying
R&TTE	Radio and Telecommunication Terminal Equipment
Ref	Reference
RF	Radio Frequency
RFC	Remote Frequency Control
RSL	Received Signal Level
RTP	Room Temperature and Pressure
RTPC	Remote Transmit Power Control
Rx	Receiver
s	Seconds
SINAD	Signal to Noise And Distortion
Tx	Transmitter
V	Volts

RN Electronics
EMC & RADIO TEST SERVICES

Certificate of Test 4461/5

The equipment noted below has been tested by ***R.N. Electronics Limited*** and conforms with the relevant subpart of FCC 47CFR part 15, subject to deviations as detailed in this report.

This certificate relates to the unit, as identified by unique serial number(s) and further detailed in the referenced report, in the condition(s) 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. Furthermore, this is a certificate of test only and should not be confused with an equipment authorisation.

Equipment:	One Flow
Model Number(s):	One Flow
Unique Serial Number(s):	ES3-8
Manufacturer:	Imagination Technologies Home Park Estate Kings Langley Hertfordshire WD4 8DH
Customer Purchase Order Number:	PO101005 & PO101511
R.N. Electronics Limited Report Number:	01-435/4461/5/11
Test Standards:	FCC 47CFR Part 15C: effective date **October 1st 2010,** Class **DTS** Intentional Radiator
Date:	2nd December 2010 to 27th January 2011
For and on behalf of R.N. Electronics Limited	
Signature:	
Notes:	

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