



FCC 47CFR part 15C

Test Report

For
Oasis Flow

Reference Standard: FCC 47CFR part 15C

Manufacturer: Pure Digital Ltd

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

Report Number: 06-412/4248/5/10

Report Produced by: -

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2. Summary of Test Results

The Oasis Flow was tested to the following standards: -

FCC Part 15C (effective date October 1st, 2009); 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:

29th April to 4th June 2010

Test Engineer:



Approved By
Technical Director:



Customer Representative:



3. Equipment Under Test (EUT)

3.1 Equipment Specification

Applicant	PURE Digital Ltd 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	Oasis Flow
Serial Number of EUT	CS1-7 & ES3-10
Date when equipment was received by RN Electronics	26th March 2010
Date of test:	29th April to 4th June 2010
Customer order number:	PO091657
Visual description of EUT:	Rectangular cube shaped enclosure with carry handle and telescopic FM antenna on the top. The unit has a touch screen display on the front along with 3 control knobs and a speaker. On the side are 4 ports. The unit has an internal battery pack and comes with a dedicated AC/DC adapter. The Wi-Fi 802.11 B/G antenna is located inside the enclosure.
Main function of the EUT:	A digital radio audio product with Internet, DAB, & FM radio & audio streaming.
Height	226mm
Width	153mm
Depth	140mm
Weight	2.5kg
Voltage	100- 230 V AC to 12V DC adapter. 7.4V Internal Lithium battery
Current required from above voltage source	0.8A AC, 2A DC

3.2 EUT Configurations for testing

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

3.3 EUT Modes

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

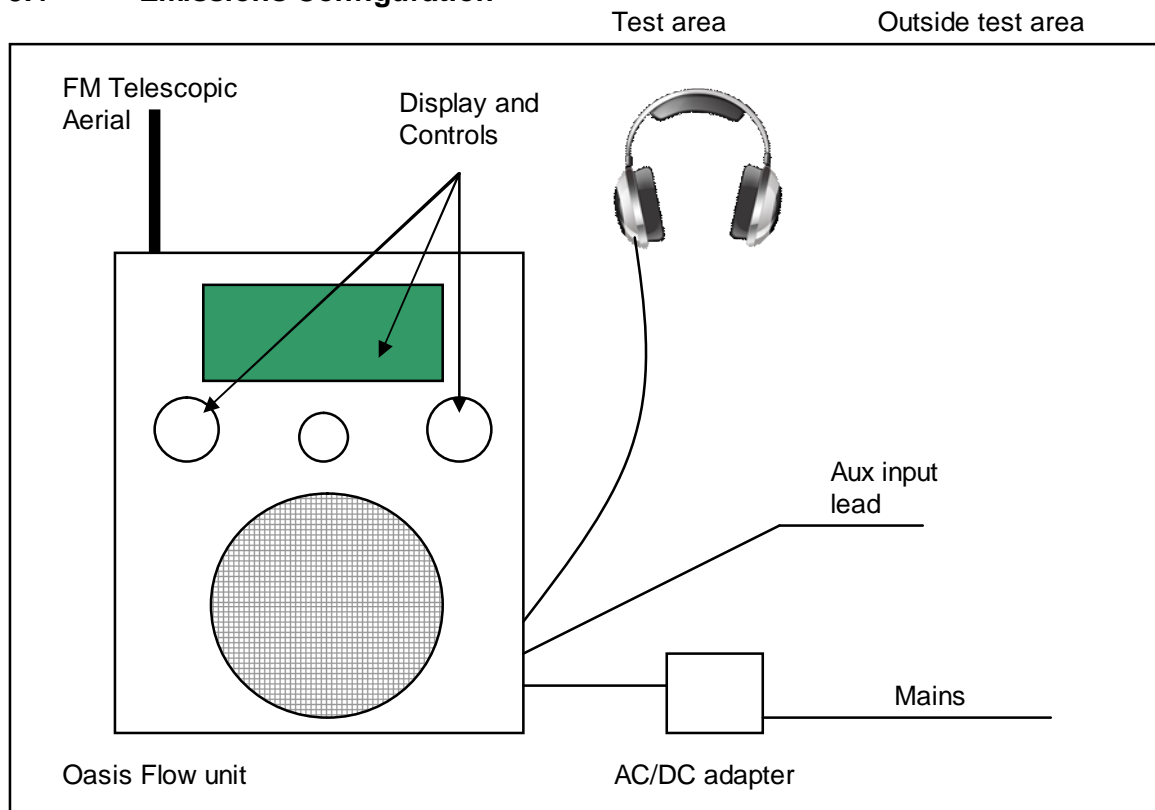
All Transmit modes were 100% duty cycle and modulated.

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: 22 September 2010

3.4 Emissions Configuration



The units were powered from the dedicated AC/DC adapter provided with the units (see below for details). Two units were provided by Pure Digital Ltd. The unit marked s/n CS1-7 was provided with its integral antenna intact as required for all radiated type tests. The unit marked ES3-10 was provided with a short coaxial cable soldered to the Wi-Fi antenna port with the antenna removed, for all conducted tests. Both units were also software modified to allow permanent transmit and receive modes to be selected 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 emissions tests the unit was populated with typical leads and a pair of headphones. The AC/DC adapter was also placed on to the test table along with the main enclosure of the EUT.

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

Manufacturer: Pure Digital Ltd
Model: KSAFF1200W1UV-1
S/N: Not specified.
100-240V AC input (0.8A), 12V Nominal DC output (2A).

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). Other external references, where used, have been stated in the applicable results section.

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 temporary RF port was created 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

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 & 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 modes of the Wi-Fi RF parts 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: 19°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, TMS938

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 tested/ checked in all applicable modes as listed in section 3.3 modes.

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). No emissions were found, hence final measurements on an OATS without a ground plane were not required. 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** for measurements under 1GHz and test site **B** for emissions above 1GHz.

Temperature: 17-20°C Humidity: 37-55%

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 Channel 6(Wi-Fi RF part)

Frequency range	Plot reference
1 – 2 GHz	Mid Vert 1-2GHz
2 – 2.7 GHz	Mid Vert 2-2.7GHz
2.7 – 4 GHz	Mid Vert 2.7-4GHz
4 – 5 GHz	Mid Vert 4-5GHz
5 – 6 GHz	Mid Vert 5-6GHz
6 – 7 GHz	Mid Vert 6-7GHz
7 – 8 GHz	Mid Vert 7-8GHz

8 – 9 GHz	Mid Vert 8-9GHz
9 – 10 GHz	Mid Vert 9-10GHz
10 – 11 GHz	Mid Vert 10-11GHz
11 – 12.5 GHz	Mid Vert 11-12.5GHz
12.5 – 14 GHz	Mid Vert 12.5-14GHz
14 – 16 GHz	Mid Vert 14-16GHz
16 – 18 GHz	Mid Vert 16-18GHz
18 – 20 GHz	Mid Vert 18-20GHz
20 – 22 GHz	Mid Vert 20-22GHz
22 – 25 GHz	Mid Vert 22-25GHz
1 – 2 GHz	Mid Horiz 1-2GHz
2 – 2.7 GHz	Mid Horiz 2-2.7GHz
2.7 – 4 GHz	Mid Horiz 2.7-4GHz
4 – 5 GHz	Mid Horiz 4-5GHz
5 – 6 GHz	Mid Horiz 5-6GHz
6 – 7 GHz	Mid Horiz 6-7GHz
7 – 8 GHz	Mid Horiz 7-8GHz
8 – 9 GHz	Mid Horiz 8-9GHz
9 – 10 GHz	Mid Horiz 9-10GHz
10 – 11 GHz	Mid Horiz 10-11GHz
11 – 12.5 GHz	Mid Horiz 11-12.5GHz
12.5 – 14 GHz	Mid Horiz 12.5-14GHz
14 – 16 GHz	Mid Horiz 14-16GHz
16 – 18 GHz	Mid Horiz 16-18GHz
18 – 20 GHz	Mid Horiz 18-20GHz
20 – 22 GHz	Mid Horiz 20-22GHz
22 – 25 GHz	Mid Horiz 22-25GHz

Only Middle Channel (6) plots are listed/shown in the report, however all applicable channels were measured and signal lists can be found in the applicable plots section.

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

5.2.2.1 Test Equipment used

E410, E411, E412, TMS933, E429, E250, E252, E268, E342, TMS79, TMS82

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)
KDB558074, Power output option 1

5.3.1.1 Configuration of EUT

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

5.3.1.2 Test Procedure

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

Avg meter reading stated is maximum power observed using an average power head.
Pk meter reading stated is maximum power observed using a peak power head with measurement bandwidth greater than the 6dB bandwidth, per KDB558074.

Measurements were made on a test bench.

5.3.2 Test results

Tests were performed using Test Site A.

Test Environment: Temperature: 20°C Humidity: 50 %

Wi-Fi RF Channel 1

Channel/ Mod Scheme	Avg meter reading (dBm)	Duty cycle adjustment (dB)	Total (dBm)	Avg Result (mW)	Pk meter reading (dBm)	Pk Result (mW)
1MB	11.9	N/A	11.9	15.5	12.3	17.0
2MB	12.0	N/A	12	15.8	12.4	17.4
5.5MB	11.9	N/A	11.9	15.5	12.3	17.0
11MB	11.9	N/A	11.9	15.5	12.3	17.0
22MB	10.0	N/A	10	10.0	10.6	11.5
6MB	10.1	N/A	10.1	10.2	10.4	11.0
9MB	10.0	N/A	10	10.0	10.6	11.5
12MB	10.1	N/A	10.1	10.2	10.4	11.0
18MB	10.1	N/A	10.1	10.2	10.6	11.5
24MB	10.0	N/A	10	10.0	10.6	11.5
36MB	9.9	N/A	9.9	9.8	10.6	11.5
48MB	10.0	N/A	10	10.0	10.8	12.0
54MB	10.0	N/A	10	10.0	10.7	11.7

Wi-Fi RF Channel 6

Channel/ Mod Scheme	Avg meter reading (dBm)	Duty cycle adjustment (dB)	Total (dBm)	Avg Result (mW)	Pk meter reading (dBm)	Pk Result (mW)
1MB	12.1	N/A	12.1	16.2	11.5	14.1
2MB	12.1	N/A	12.1	16.2	12.2	16.6
5.5MB	12.1	N/A	12.1	16.2	12.5	17.8
11MB	12.0	N/A	12	15.8	12.4	17.4
22MB	10.2	N/A	10.2	10.5	11.1	12.9
6MB	10.3	N/A	10.3	10.7	11.0	12.6
9MB	10.3	N/A	10.3	10.7	11.1	12.9
12MB	10.3	N/A	10.3	10.7	11.0	12.6
18MB	10.3	N/A	10.3	10.7	10.9	12.3
24MB	10.3	N/A	10.3	10.7	11.1	12.9
36MB	10.2	N/A	10.2	10.5	11.1	12.9
48MB	10.3	N/A	10.3	10.7	11.0	12.6
54MB	10.3	N/A	10.3	10.7	11.2	13.2

Wi-Fi RF Channel 11

Channel/ Mod Scheme	Avg meter reading (dBm)	Duty cycle adjustment (dB)	Total (dBm)	Avg Result (mW)	Pk meter reading (dBm)	Pk Result (mW)
1MB	12.5	N/A	12.5	17.8	12.9	19.5
2MB	12.4	N/A	12.4	17.4	12.8	19.1
5.5MB	12.4	N/A	12.4	17.4	12.8	19.1
11MB	12.4	N/A	12.4	17.4	12.8	19.1
22MB	11.0	N/A	11	12.6	11.8	15.1
6MB	11.1	N/A	11.1	12.9	11.6	14.5
9MB	11.1	N/A	11.1	12.9	11.8	15.1
12MB	11.1	N/A	11.1	12.9	11.6	14.5
18MB	11.1	N/A	11.1	12.9	11.8	15.1
24MB	11.1	N/A	11.1	12.9	11.8	15.1
36MB	11.0	N/A	11	12.6	11.8	15.1
48MB	11.1	N/A	11.1	12.9	12.0	15.8
54MB	11.1	N/A	11.1	12.9	11.9	15.5

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

5.3.2.1 Test Equipment used

E251, E290, E397, H1, H2

See Section 10 for more details

5.4 Frequency Tolerance

Test not applicable, No test requirement or limit given.

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 EUT was confirmed as operating with a 100% duty cycle.

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) EN 300 328 v1.7.1, Reference (5.7.3.1 option 2) KDB558074, PSD Option 1

5.6.1.1 Configuration of EUT

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

5.6.1.2 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. The peak of the power envelope was found and the spectrum analyser set to measure at zero span in 3kHz bandwidth. The resultant IF output of the analyser was calibrated against a known source to give the power reading in dBm. PSD was also read directly from a vector analyser, as per KDB558074, using a 3kHz RBW and a peak detector in max hold mode (results in 1Hz corrected to 3kHz by a factor of 34.8).

5.6.2 Test results

Tests were performed using Test Site **A**.
Temperature of test Environment: 20°C

Wi-Fi RF results

Channel:	1		6		11	
	EN 300 328 PSD (dBm/3kHz)	89441A pk detect (dBm/3kHz)	EN 300 328 PSD (dBm/3kHz)	89441A pk detect (dBm/3kHz)	EN 300 328 PSD (dBm/3kHz)	89441A pk detect (dBm/3kHz)
Mode						
1M	-20.0	-20.6	-20.4	-20.1	-19.9	-19.8
2M	-10.2	-10.3	-10.3	-10.6	-9.9	-9.7
5.5M	-11.3	-12.2	-11.7	-11.8	-10.7	-11.0
11M	-11.9	-10.8	-10.7	-10.3	-10.2	-10.0
22M	-18.2	-15.9	-17.2	-15.8	-19.5	-14.9
6M	-20.4	-18.4	-21.9	-18.1	-22.2	-17.1
9M	-22.8	-18.3	-21.4	-17.8	-22.1	-17.0
12M	-21.4	-17.1	-19.8	-17.1	-19.5	-16.6
18M	-21.2	-17.5	-21.1	-16.7	-21.4	-16.1
24M	-19.6	-15.4	-19.2	-14.9	-19.1	-14.4
36M	-20.0	-15.7	-20.2	-15.9	-20.4	-15.2
48M	-18.8	-14.9	-17.8	-14.4	-18.3	-13.3
54M	-20.8	-16.3	-20.1	-15.2	-19.9	-15.1

Limit: +8dBm/3kHz.

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

5.6.2.1 Test Equipment used

E397, E251, E434, E003, E005, E131, E290, H3

See Section 10 for more details.

5.7 6dB Bandwidth

5.7.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.215)

Test Method: FCC Part 15C, Reference (15.215)
KDB558074 - Bandwidth

5.7.1.1 Configuration of EUT

The EUT was tested on a bench via the temporary 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: 19-20°C

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

Wi-Fi RF results

Channel 1 / Scheme	BW result (MHz)	Plot reference
1Mbps	13.88	0001
2Mbps	13.88	0002
5.5Mbps	13.71	0003
11Mbps	13.71	0004
22Mbps	16.50	0005
6Mbps	16.58	0006
9Mbps	16.58	0007
12Mbps	16.54	0008
18Mbps	16.54	0009
24Mbps	16.50	0010
36Mbps	16.58	0011
48Mbps	16.54	0012
54Mbps	16.54	0013

Channel 6 / Scheme	BW result (MHz)	Plot reference
1Mbps	13.92	0014
2Mbps	13.92	0015
5.5Mbps	13.75	0016
11Mbps	13.67	0017
22Mbps	16.54	0018
6Mbps	16.63	0019
9Mbps	16.67	0020

12Mbps	16.58	0021
18Mbps	16.58	0022
24Mbps	16.54	0023
36Mbps	16.58	0024
48Mbps	16.54	0025
54Mbps	16.58	0026

Channel 11 / Scheme	BW result (MHz)	Plot reference
1Mbps	13.92	0027
2Mbps	13.92	0028
5.5Mbps	13.75	0029
11Mbps	13.71	0030
22Mbps	16.58	0031
6Mbps	16.63	0032
9Mbps	16.67	0033
12Mbps	16.58	0034
18Mbps	16.54	0035
24Mbps	16.54	0036
36Mbps	16.58	0037
48Mbps	16.54	0038
54Mbps	16.58	0039

Limits: > 500kHz BW.

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

5.7.2.1 Test Equipment used

E434, E251, E227, E342

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.

5.8.2 Test results

Tests were performed using Test Site B.

Temperature of test Environment: 15-21°C

Analyser plots for the Band Edge Compliance can be found in Section 6.5 and 6.6 of this report. These show the 20dBc requirement of 15.247(d) are met at the band edges of 2400 and 2483.5 MHz.

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 results 2310 – 2390 MHz

Channel 1 / Scheme	Band edge PK reading (dBuV/m)	Band edge AV reading (dBuV/m)	Plot reference
1Mbps	55.8	43.3	channel 1, 1Mbps mod scheme restricted band edge
2Mbps	56.7	43.3	channel 1, 2Mbps mod scheme restricted band edge
5.5Mbps	56.3	44.5	channel 1, 5.5Mbps mod scheme restricted band edge
11Mbps	56.5	43.7	channel 1, 11Mbps mod scheme restricted band edge
22Mbps	62.7	45.5	channel 1, 22Mbps mod scheme restricted band edge
6Mbps	62.7	47.0	channel 1, 6Mbps mod scheme restricted band edge
9Mbps	64.7	45.8	channel 1, 9Mbps mod scheme restricted band edge
12Mbps	64.0	46.7	channel 1, 12Mbps mod scheme restricted band edge
18Mbps	61.7	45.3	channel 1, 18Mbps mod scheme restricted band edge
24Mbps	63.8	46.0	channel 1, 24Mbps mod scheme restricted band edge
36Mbps	61.0	45.7	channel 1, 36Mbps mod scheme restricted band edge
48Mbps	62.3	45.5	channel 1, 48Mbps mod scheme restricted band edge
54Mbps	64.3	46.7	channel 1, 54Mbps mod scheme restricted band edge

Wi-Fi RF results 2483.5 – 2500 MHz

Channel 11 / Scheme	Band edge PK reading (dBuV/m)	Band edge AV reading (dBuV/m)	Plot reference
1Mbps	57.7	45.4	channel 11, 1Mbps mod scheme restricted band edge
2Mbps	57.7	44.8	channel 11, 2Mbps mod scheme restricted band edge
5.5Mbps	57.2	44.0	channel 11, 5.5Mbps mod scheme restricted band edge
11Mbps	57.8	45.4	channel 11, 11Mbps mod scheme restricted band edge
22Mbps	64.2	44.5	channel 11, 22Mbps mod scheme restricted band edge
6Mbps	63.3	45.5	channel 11, 6Mbps mod scheme restricted band edge
9Mbps	66.0	46.8	channel 11, 9Mbps mod scheme restricted band edge
12Mbps	62.8	47.3	channel 11, 12Mbps mod scheme restricted band edge
18Mbps	63.2	46.2	channel 11, 18Mbps mod scheme restricted band edge
24Mbps	65.2	46.0	channel 11, 24Mbps mod scheme restricted band edge
36Mbps	61.3	46.8	channel 11, 36Mbps mod scheme restricted band edge
48Mbps	65.2	46.0	channel 11, 48Mbps mod scheme restricted band edge
54Mbps	65.2	46.8	channel 11, 54Mbps mod scheme restricted band edge

Limits: Band edge > 20dB attenuation (> 30dB if only average power complied with)
AVG = 54dBuV/m at band edges
PK = 74dBuV/m at band edges

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

5.8.2.1 Test Equipment used

E250, E252, TMS82, E268, E342

See Section 10 for more details.

5.9 Frequency Separation

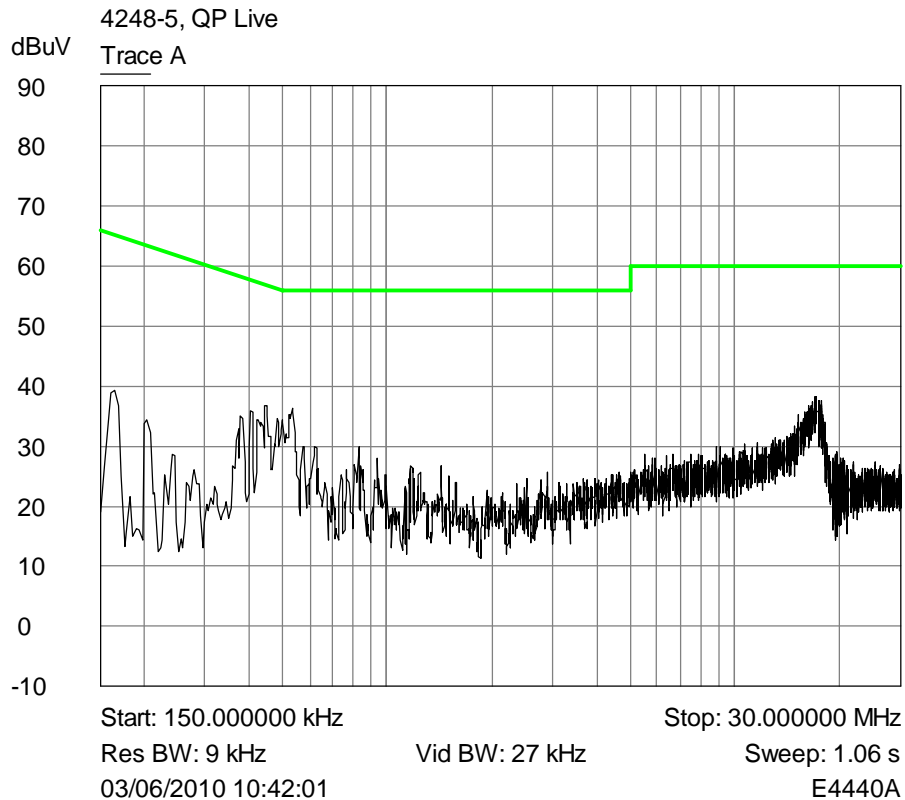
Test not applicable, EUT does not employ FHSS Technology.

5.10 Number of hopping Channels

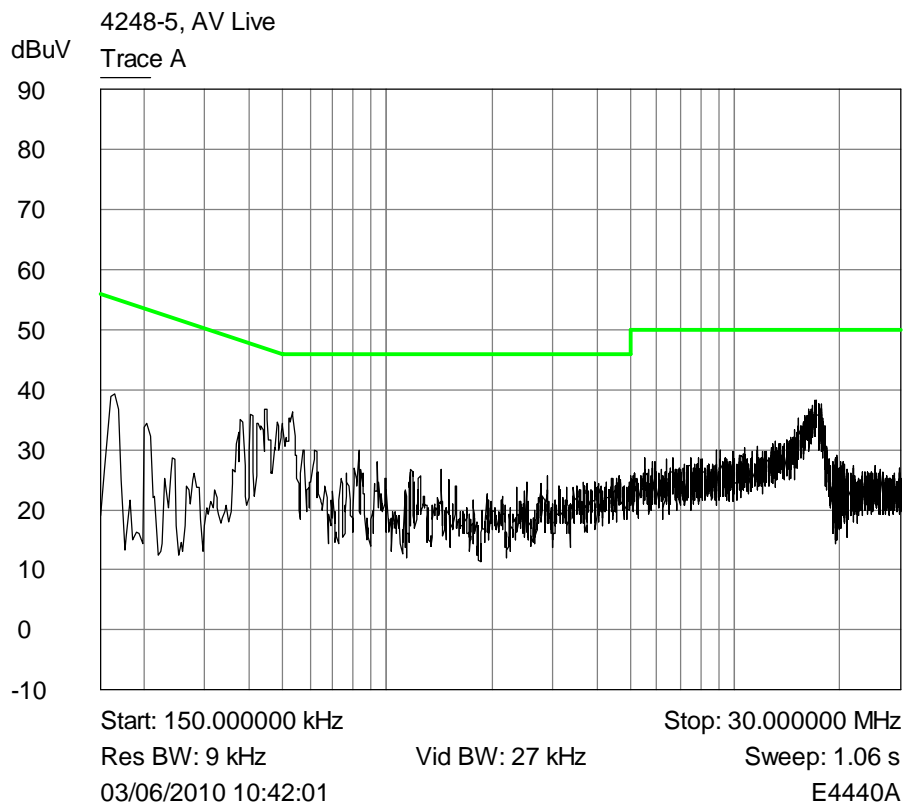
Test not applicable, EUT does not employ FHSS Technology.

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.**

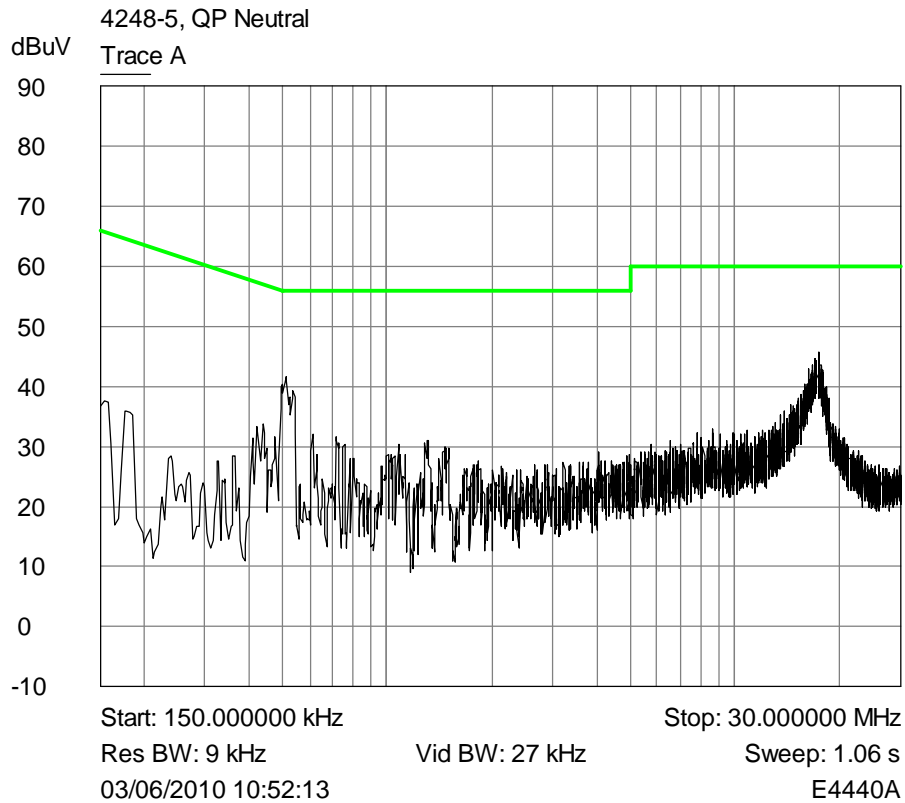


**Plot of peak emissions 150kHz - 30MHz on the mains live terminal
against the average limit line.**

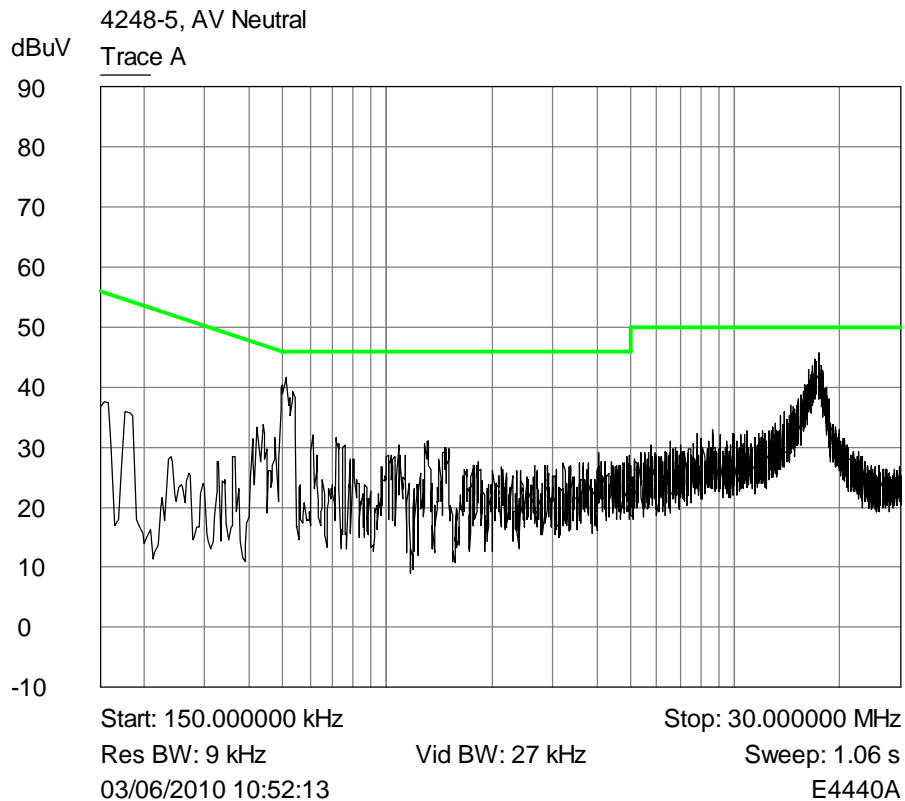
Table of signals measured.

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	0.181	37.2	34.3	-30.1	16.7	-37.7
2	0.399	35.7	32.6	-25.3	16.7	-31.2
3	0.429	36.4	32.9	-24.4	17.7	-29.6
4	0.441	37.4	33.5	-23.5	18.5	-28.5
5	0.472	36.4	32.2	-24.3	19	-27.5
6	0.49	38.1	33.2	-23	20.2	-26
7	0.578	30.9	28.2	-27.8	16.3	-29.7
8	0.609	30.1	26.6	-29.4	15.3	-30.7
9	0.651	28.2	24.5	-31.5	12.9	-33.1
10	0.787	27	22.5	-33.5	10.5	-35.5
11	0.843	28.4	22.8	-33.2	9.9	-36.1
12	0.94	29.2	24.2	-31.8	12.5	-33.5
13	13.248	30	26.6	-33.4	20.1	-29.9
14	14.036	30.9	27.6	-32.4	21	-29
15	14.904	31.9	29	-31	22.4	-27.6
16	16.757	36.4	33.8	-26.2	26.8	-23.2
17	17.172	37.6	35	-25	27.9	-22.1
18	17.228	37.8	34.7	-25.3	28	-22
19	17.48	37	34.2	-25.8	27.1	-22.9



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



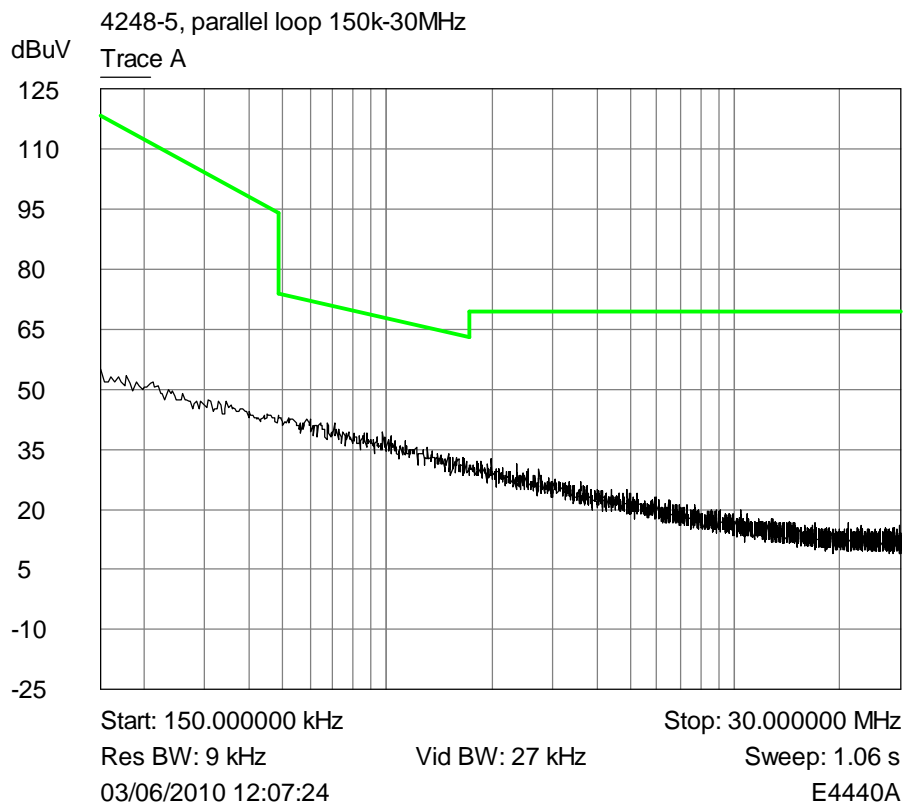
**Plot of peak emissions 150kHz - 30MHz on the mains neutral terminal
against the average limit line.**

Table of signals measured.

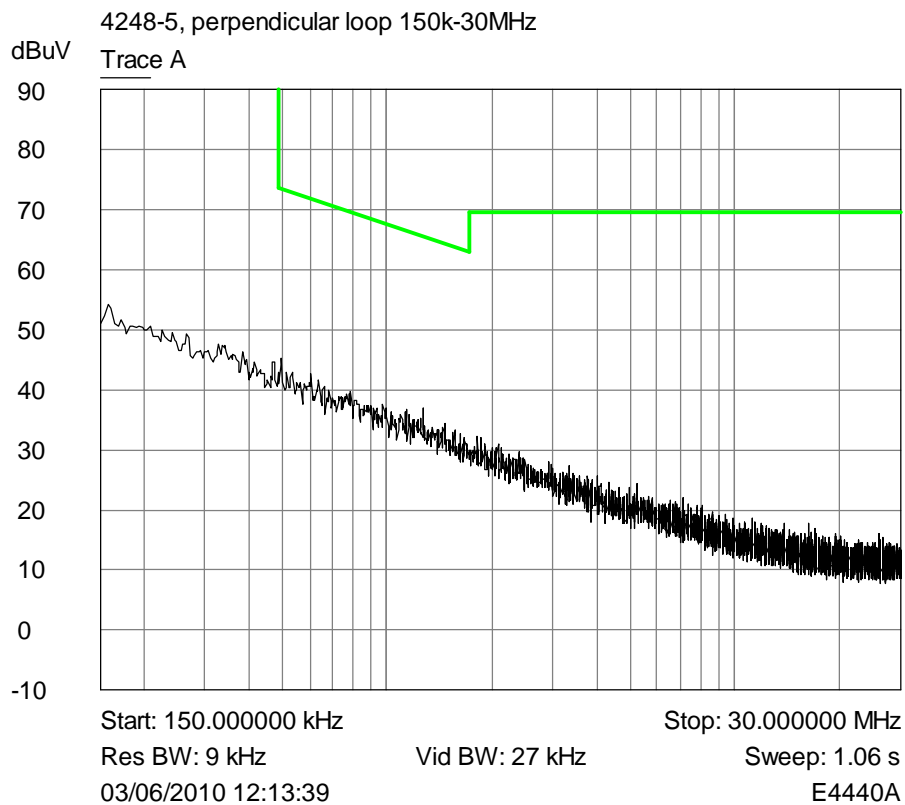
Quasi-Peak and Average Neutral

Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)	AV Amp (dBuV)	AV - Lim1 (dB)
1	0.504	43.7	39.2	-16.8	25.2	-20.8
2	0.531	44.9	38.6	-17.4	22.7	-23.3
3	14.838	36.6	33.2	-26.8	25.6	-24.4
4	15.003	37.4	33.5	-26.5	26.1	-23.9
5	15.122	38.2	33.9	-26.1	26.5	-23.5
6	15.224	37.9	33.8	-26.2	26.9	-23.1
7	15.393	38.3	34.7	-25.3	27.5	-22.5
8	15.495	39.0	35.1	-24.9	27.8	-22.2
9	15.798	40.0	36.2	-23.8	29.0	-21.0
10	15.883	40.7	36.6	-23.4	29.4	-20.6
11	15.953	41.6	36.7	-23.3	29.7	-20.3
12	16.183	41.4	37.5	-22.5	30.7	-19.3
13	16.348	42.1	38.5	-21.5	31.4	-18.6
14	16.404	42.9	38.6	-21.4	31.7	-18.3
15	16.508	43.4	39.0	-21.0	32.0	-18.0
16	16.927	44.9	41.2	-18.8	34.0	-16.0
17	17.213	45.7	41.8	-18.2	35.0	-15.0
18	17.458	46.2	41.6	-18.4	34.7	-15.3
19	17.819	43.5	39.7	-20.3	32.9	-17.1
20	18.391	39.4	35.6	-24.4	28.9	-21.1

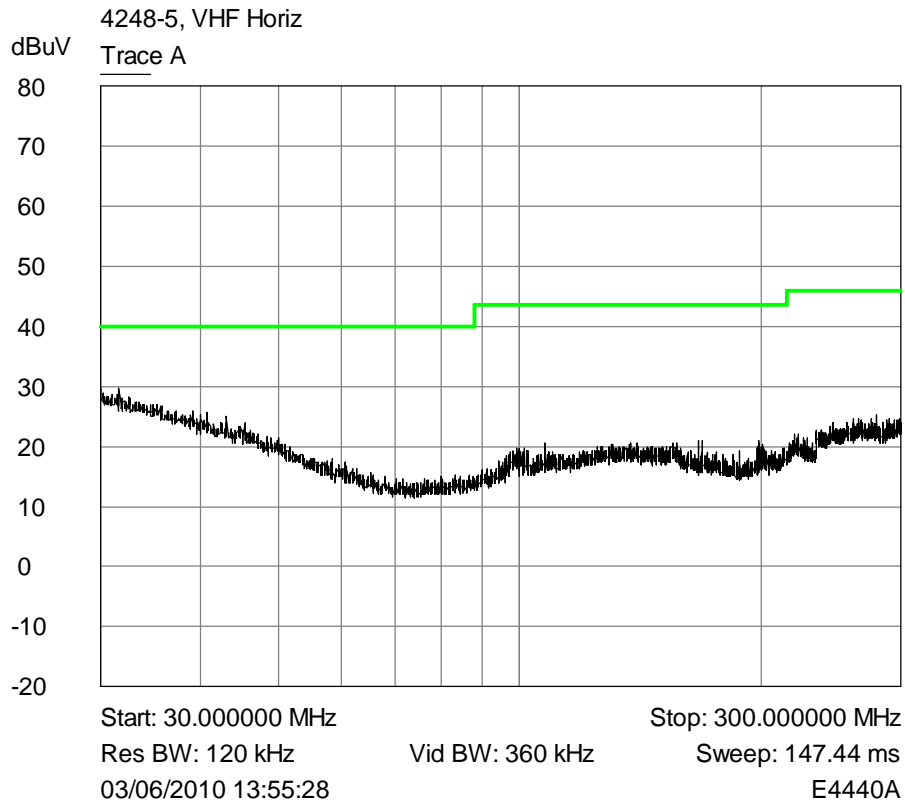
6.2 Radiated Emissions



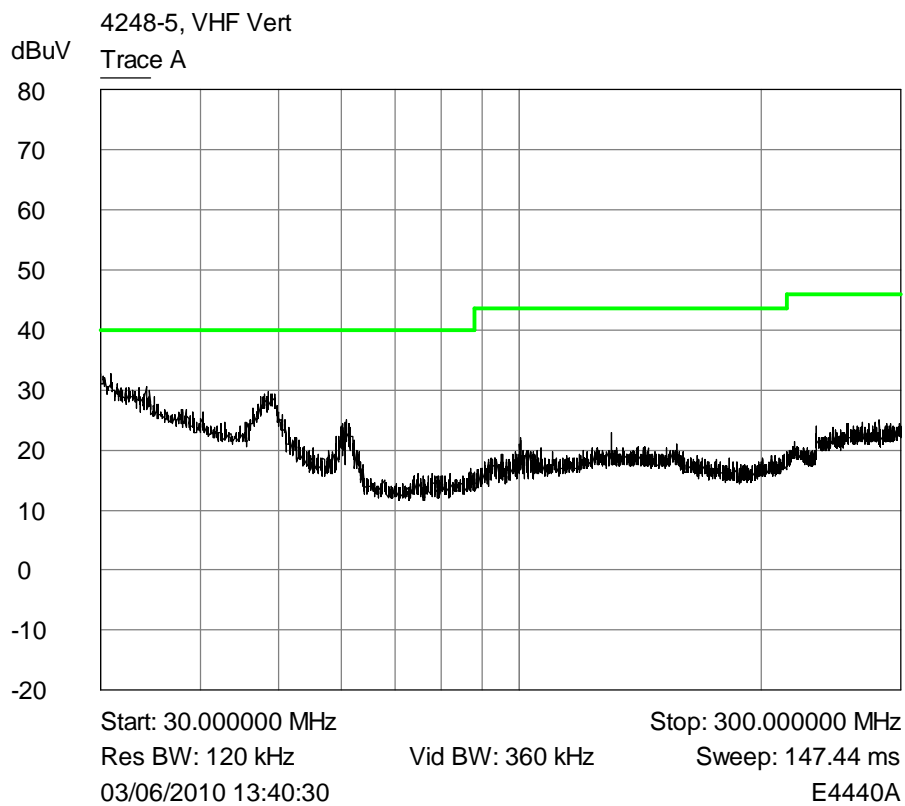
Plot of peak Parallel emissions 150kHz - 30MHz against the quasi-peak limit line.



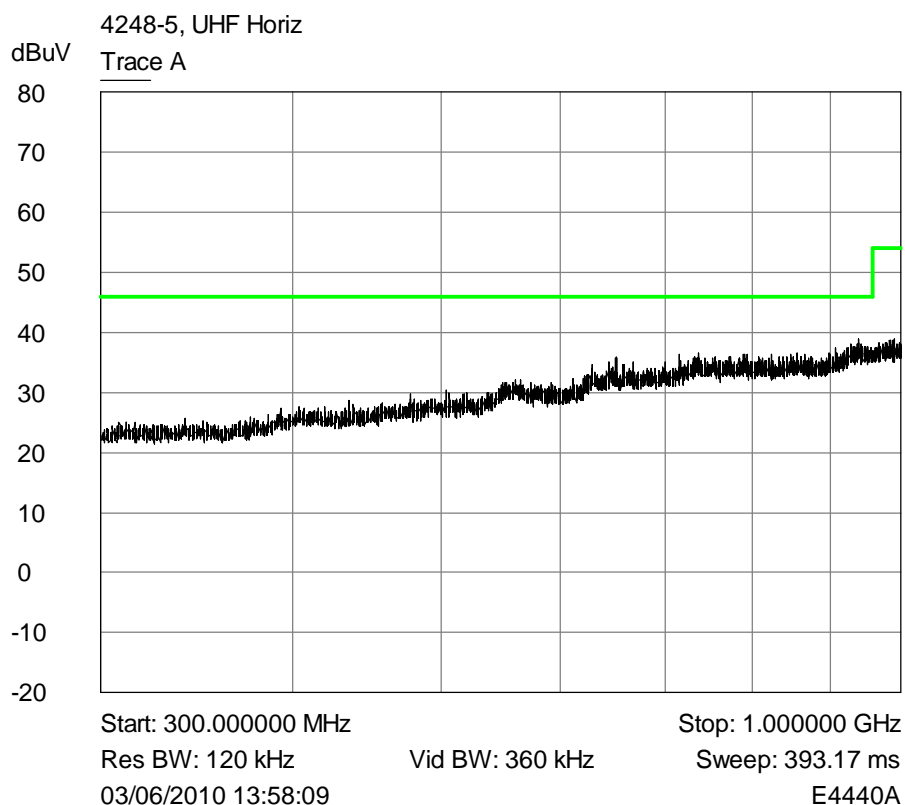
Plot of peak Perpendicular emissions 150kHz - 30MHz against the quasi-peak limit line.



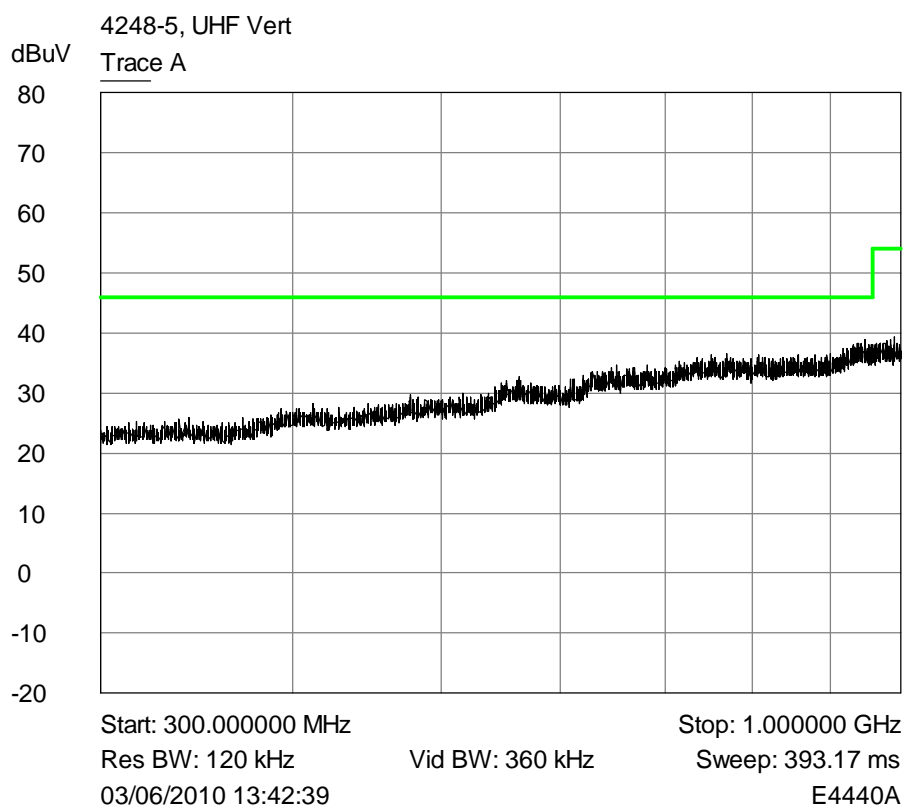
Plot of peak horizontal emissions 30MHz - 300MHz against the quasi-peak limit line.



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

Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)
1	30.033	28.8	23.0	-17
2	651.210	38.1	35.0	-11

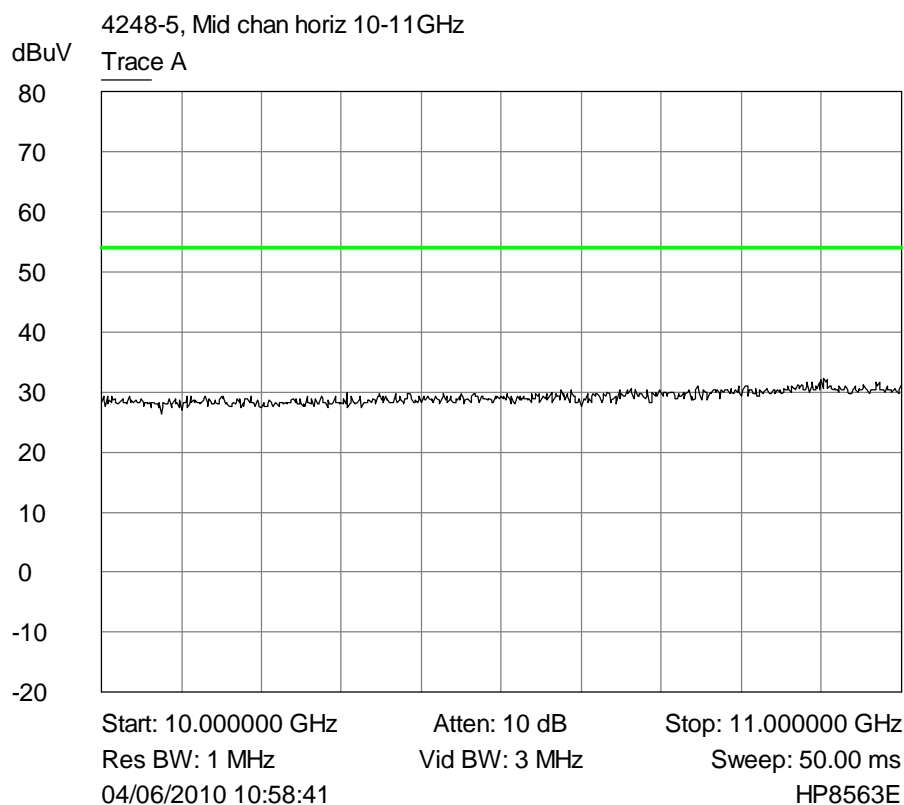
Vertical

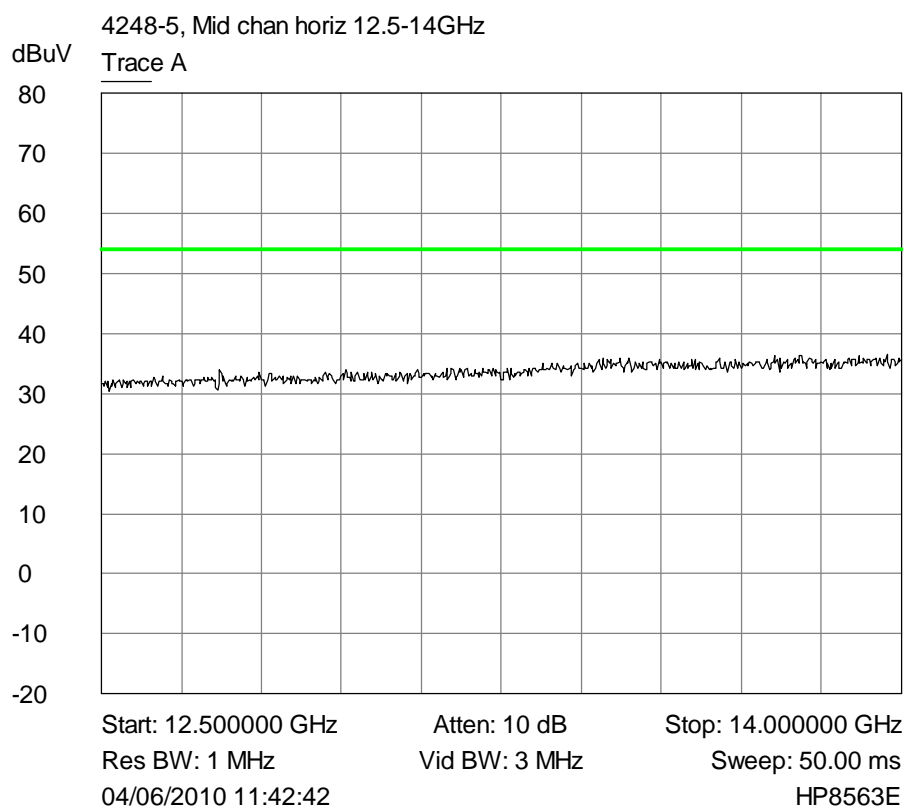
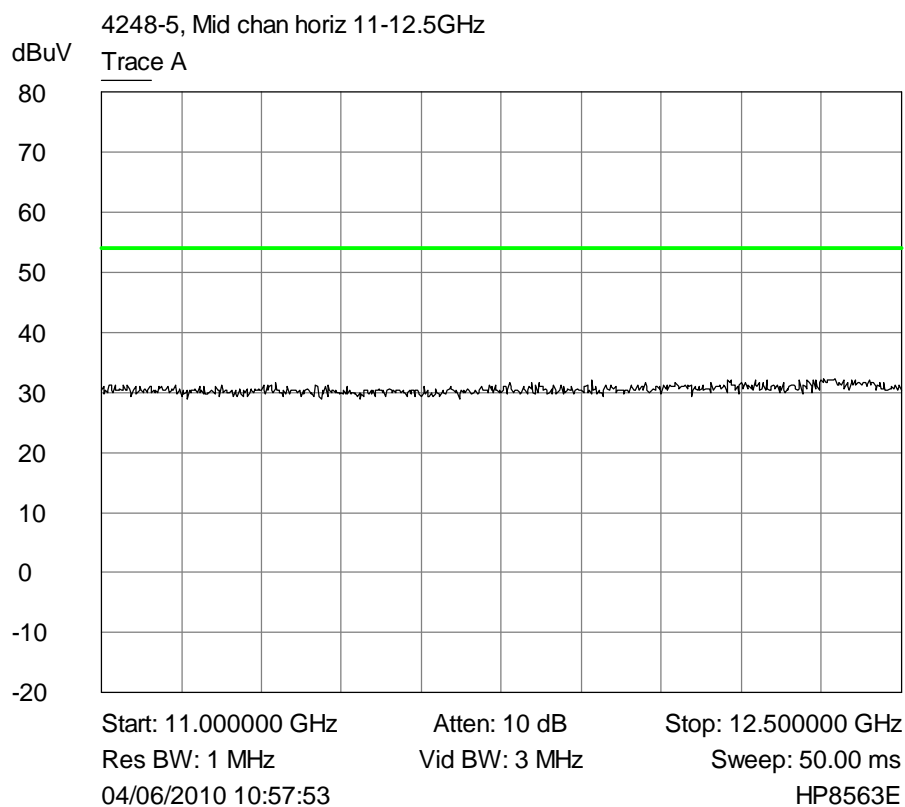
Signal No.	Freq (MHz)	Peak Amp (dBuV)	QP Amp (dBuV)	QP - Lim1 (dB)
1	30.000	17.6	12.5	-27.5
2	32.439	29.7	23.0	-17
3	48.315	29.5	23.1	-16.9
4	48.660	29.7	22.6	-17.4
5	50.055	27.6	19.9	-20.1
6	60.192	24.4	16.0	-24
7	60.992	23.3	15.5	-24.5
8	130.237	23.8	20.1	-23.9

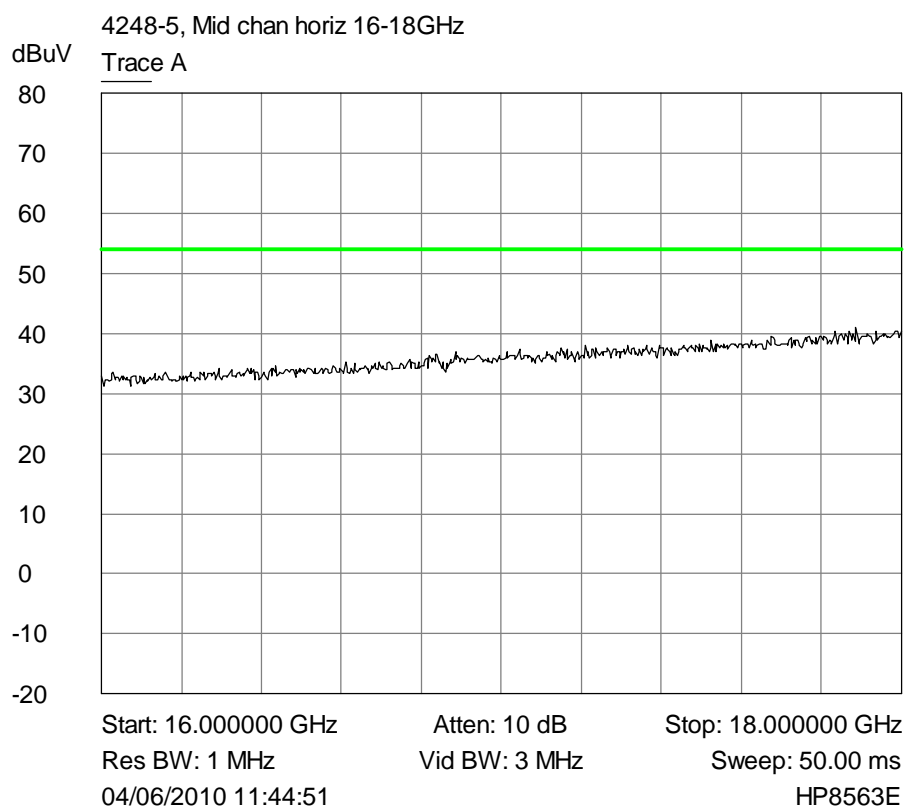
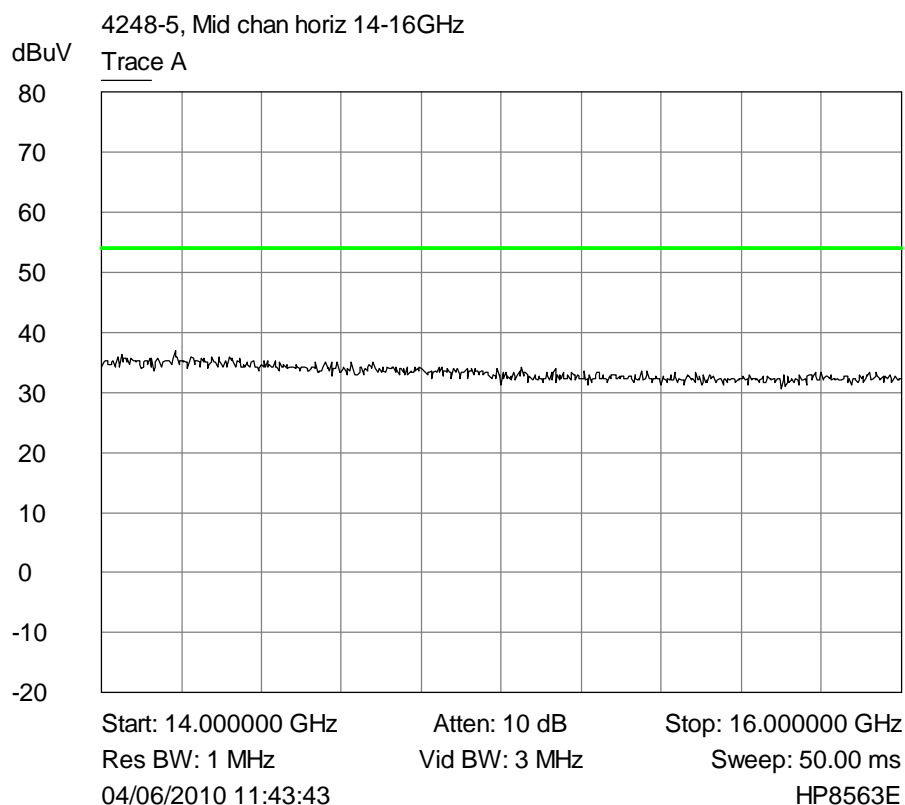
Table of signals shown are for Middle channel TX. All modes/ channels were checked and the signals remained the same for all modes/channels.

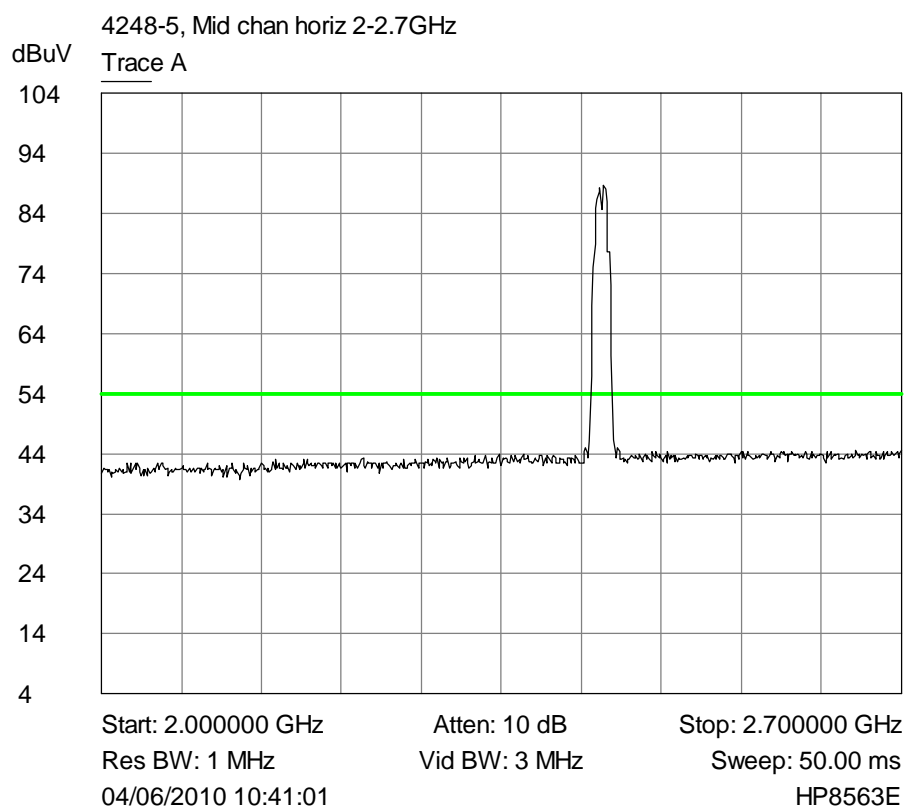
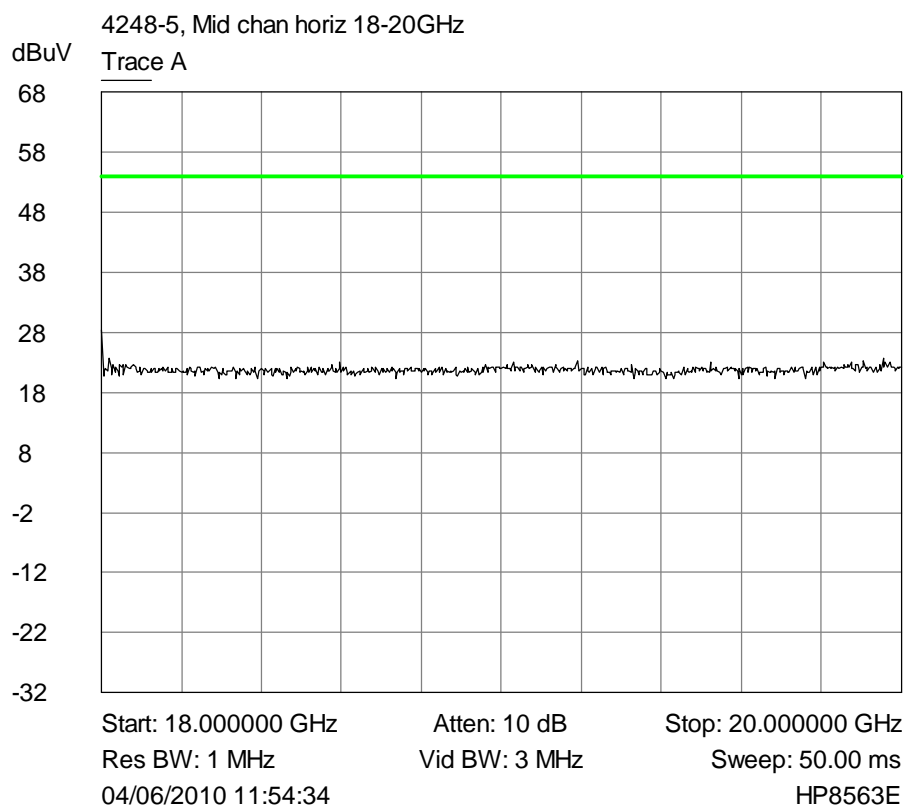
Plots of Average horizontal emissions 1GHz - 25GHz against the Average limit line.

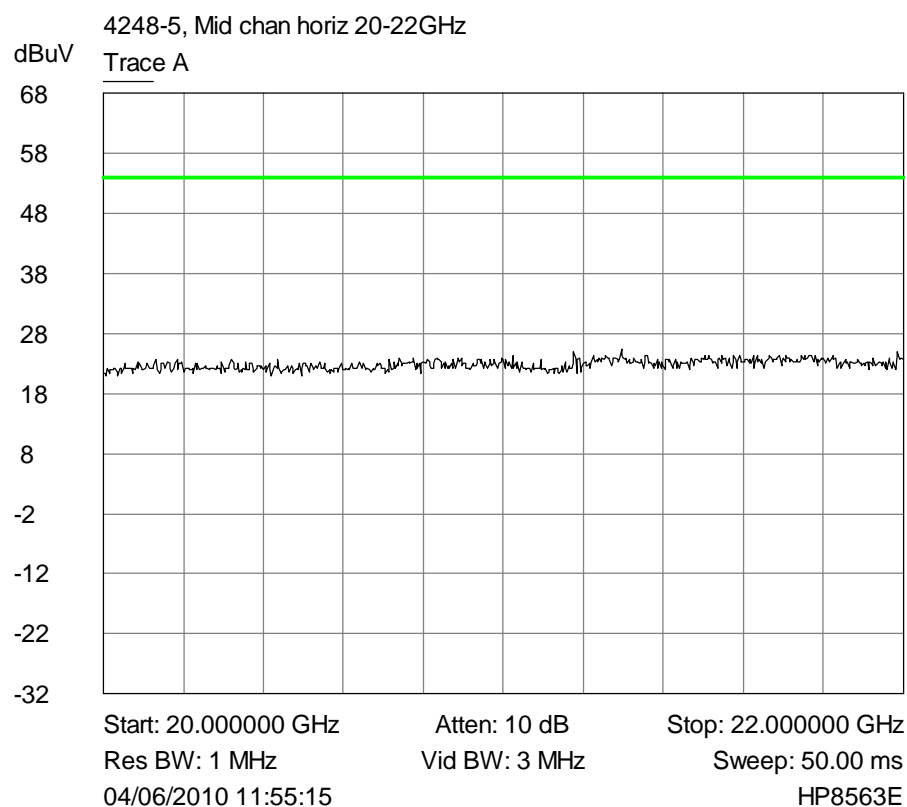
Middle channel TX plots shown only, however, all relevant channels/modes were tested/checked for emissions.

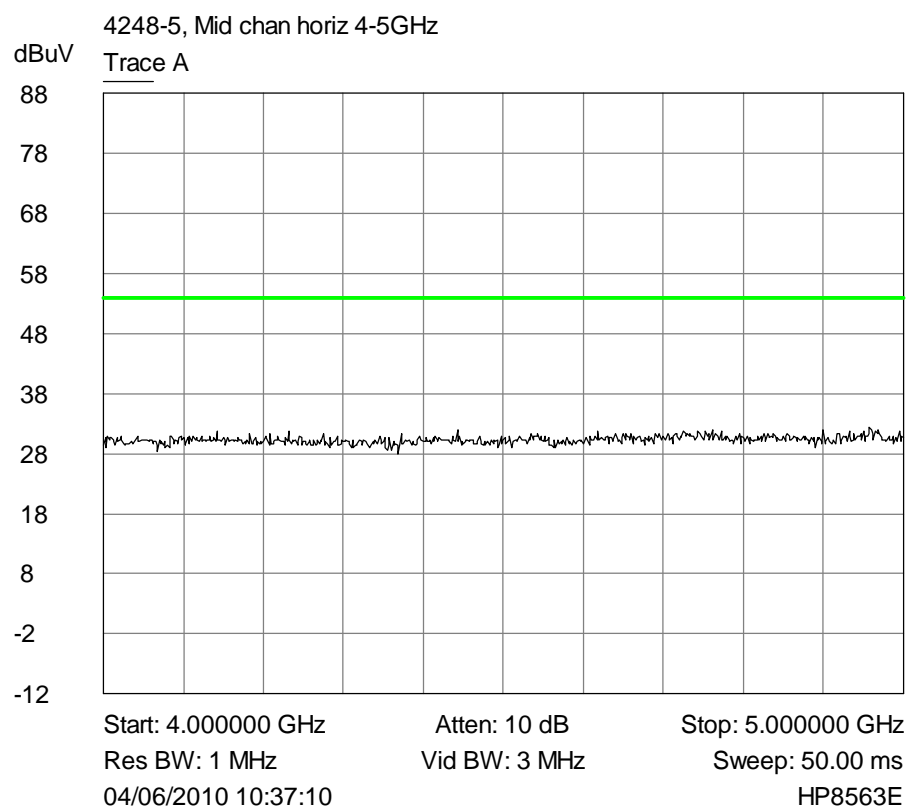
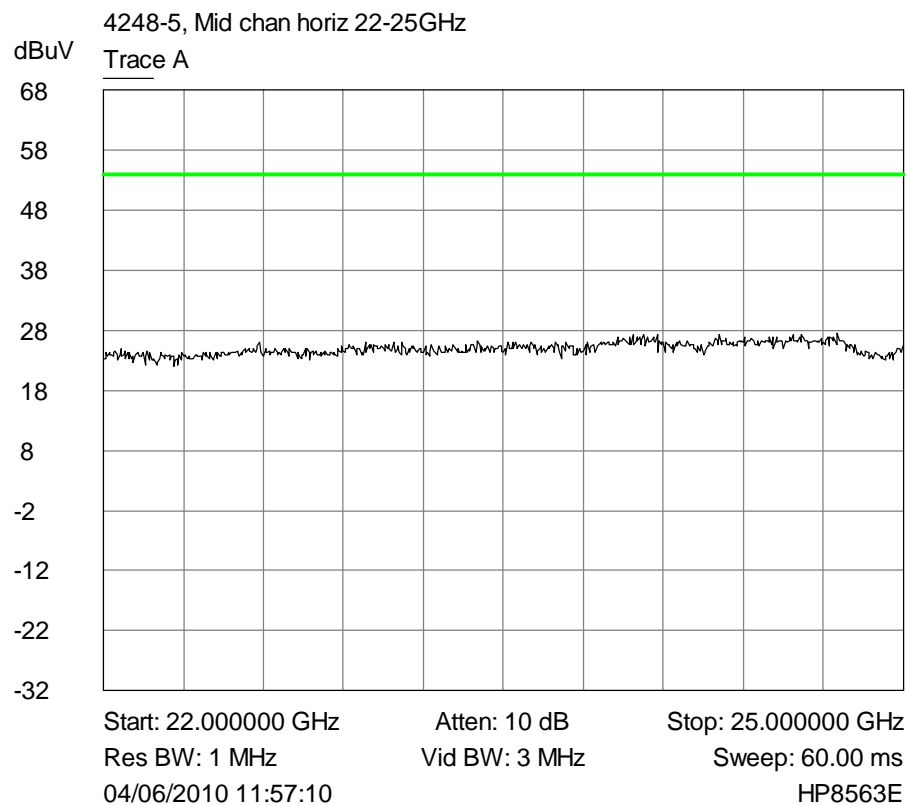


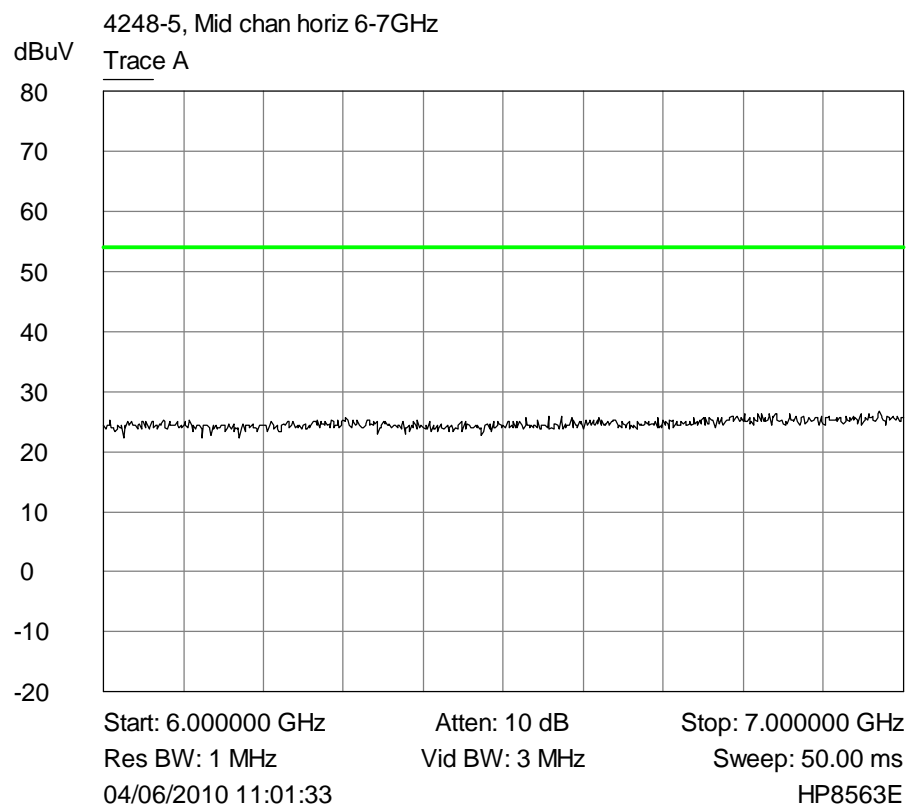
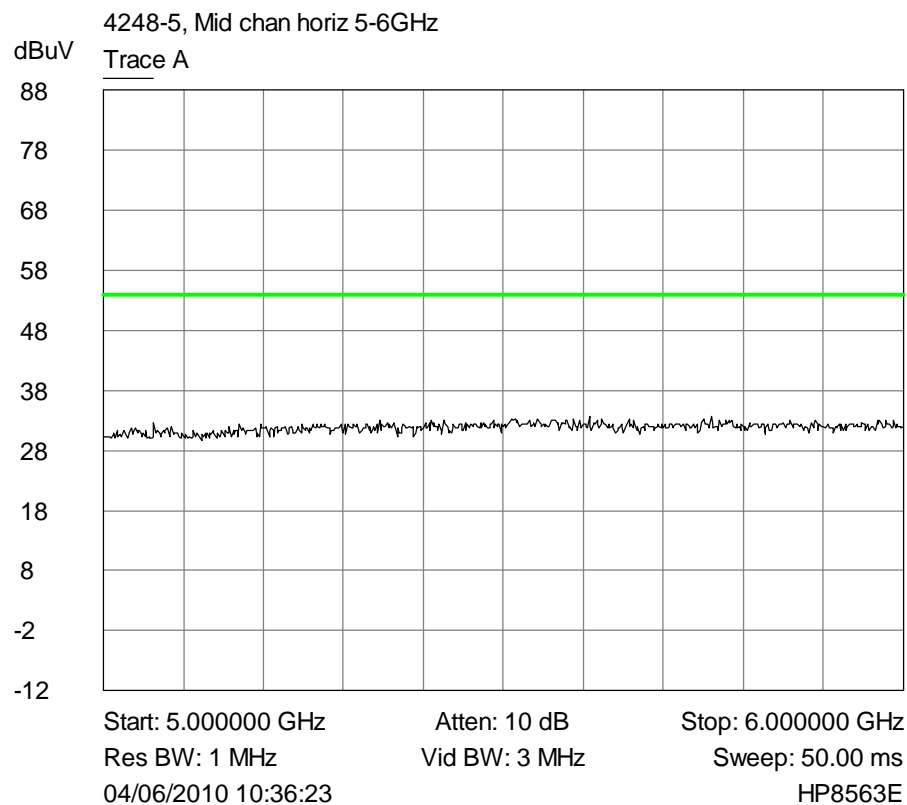


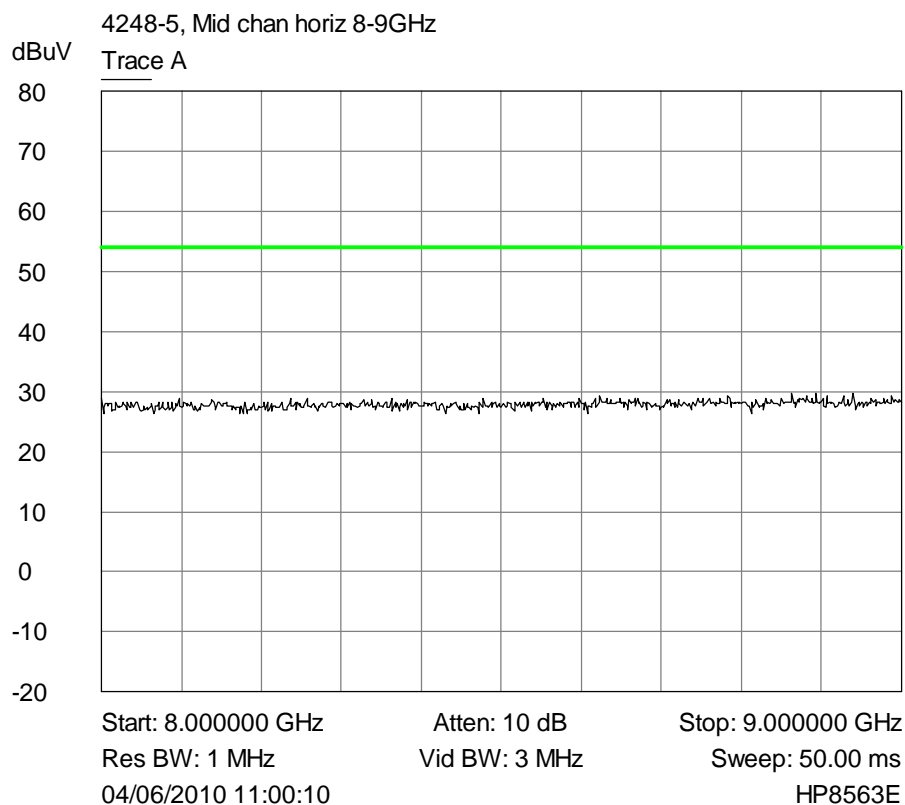
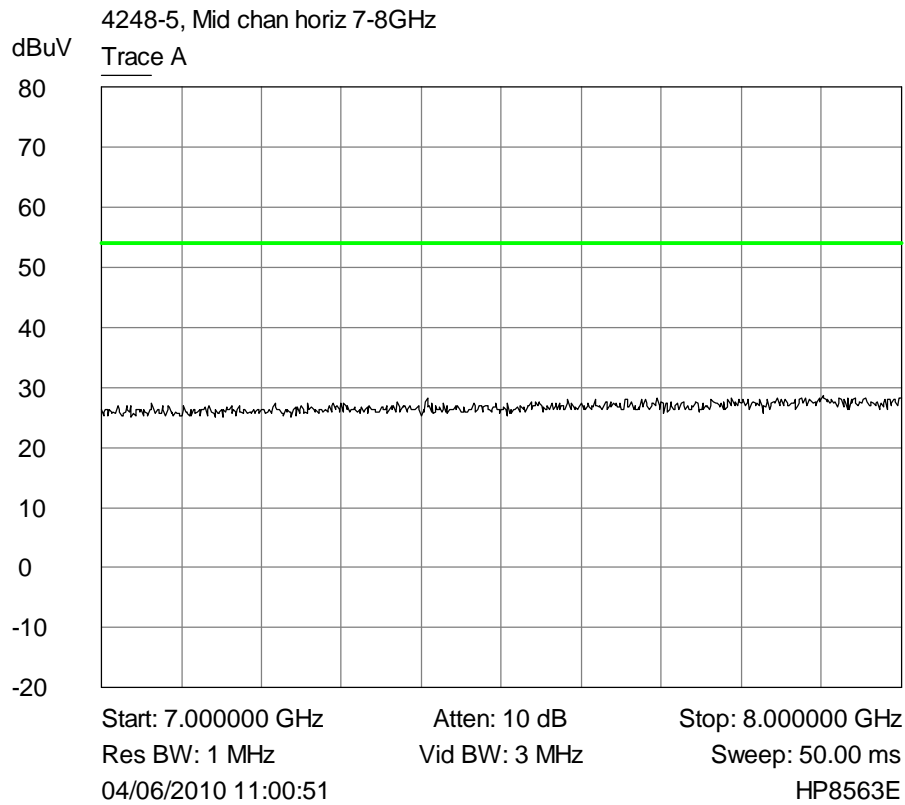


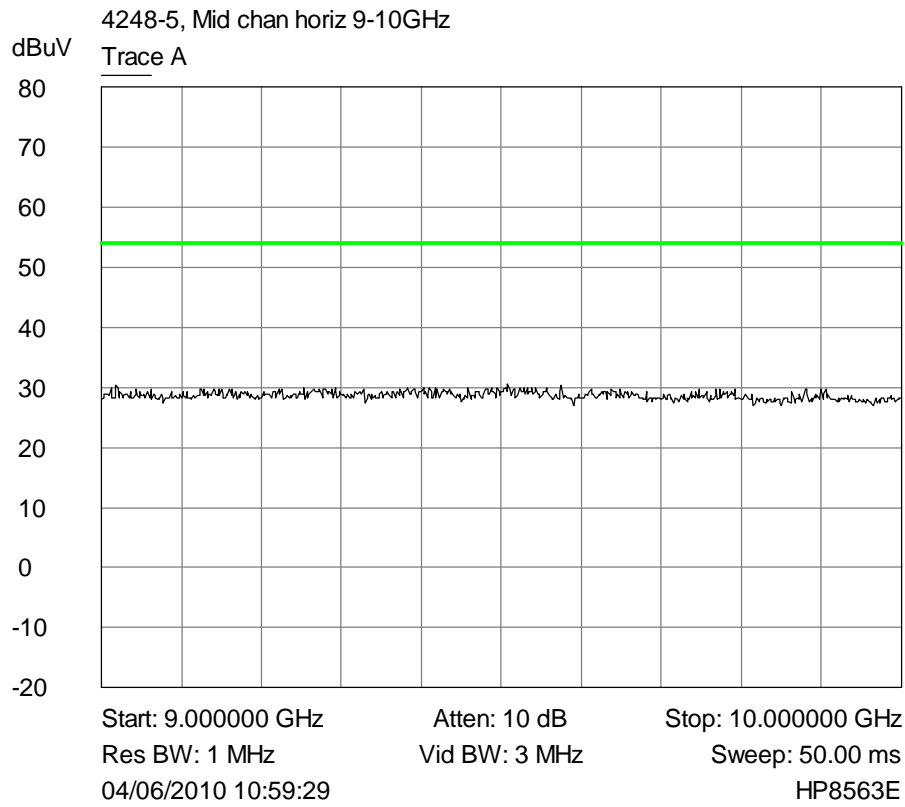




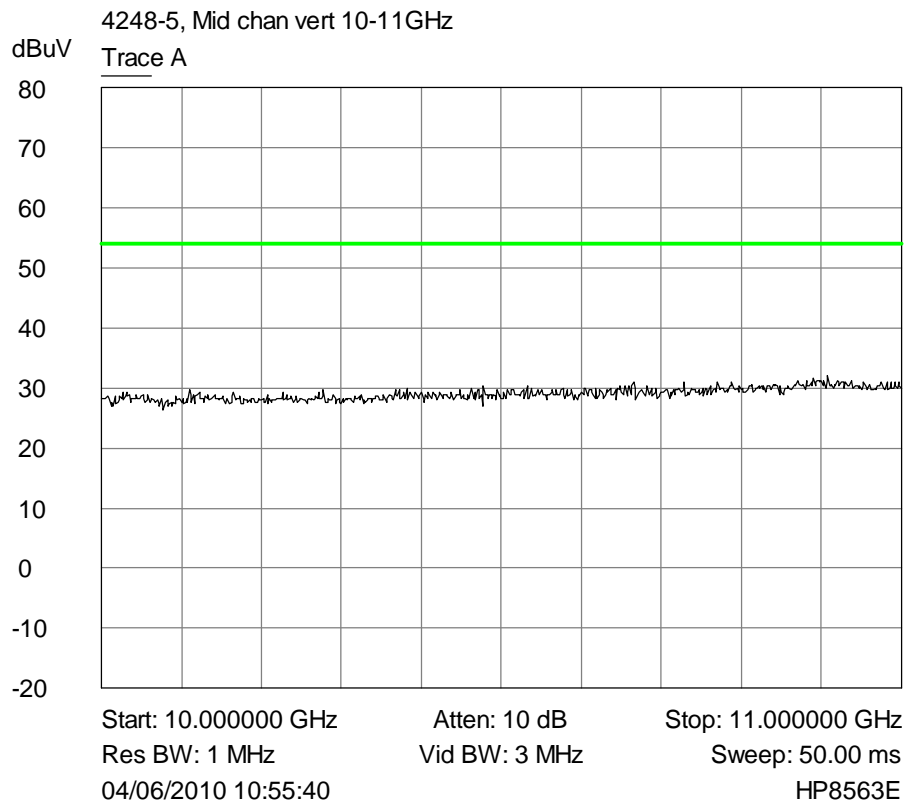


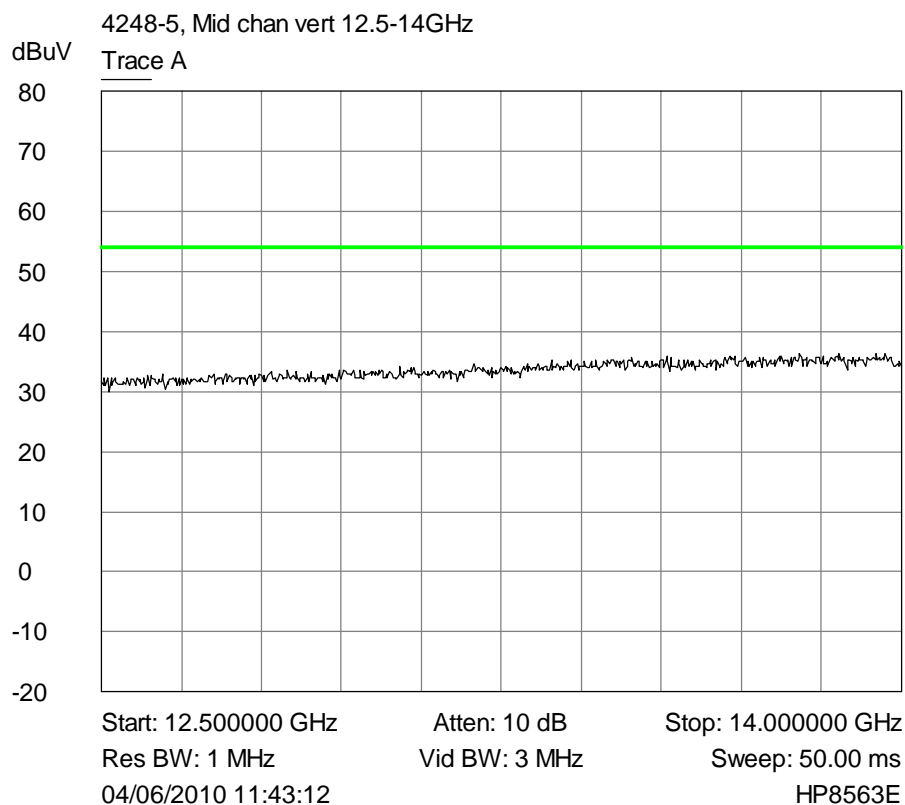
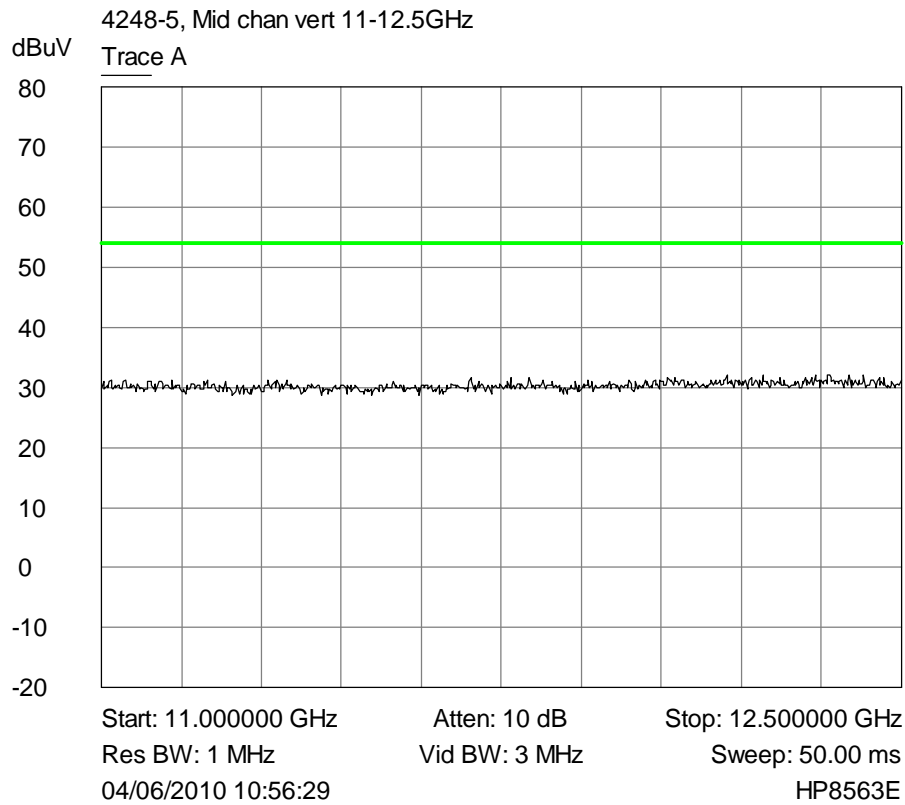


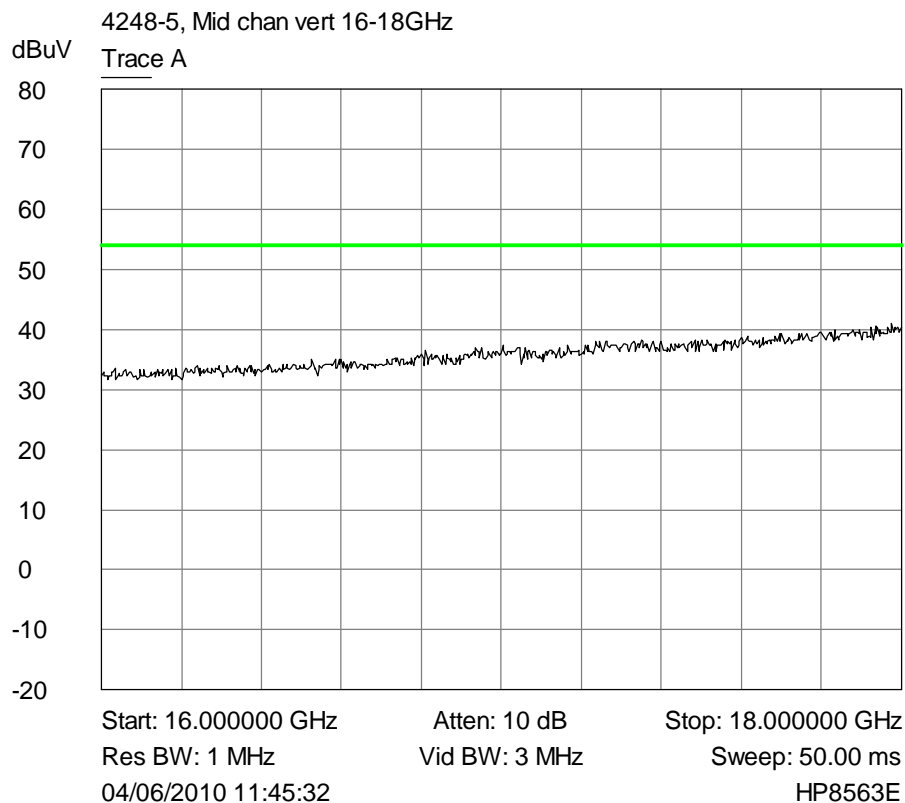
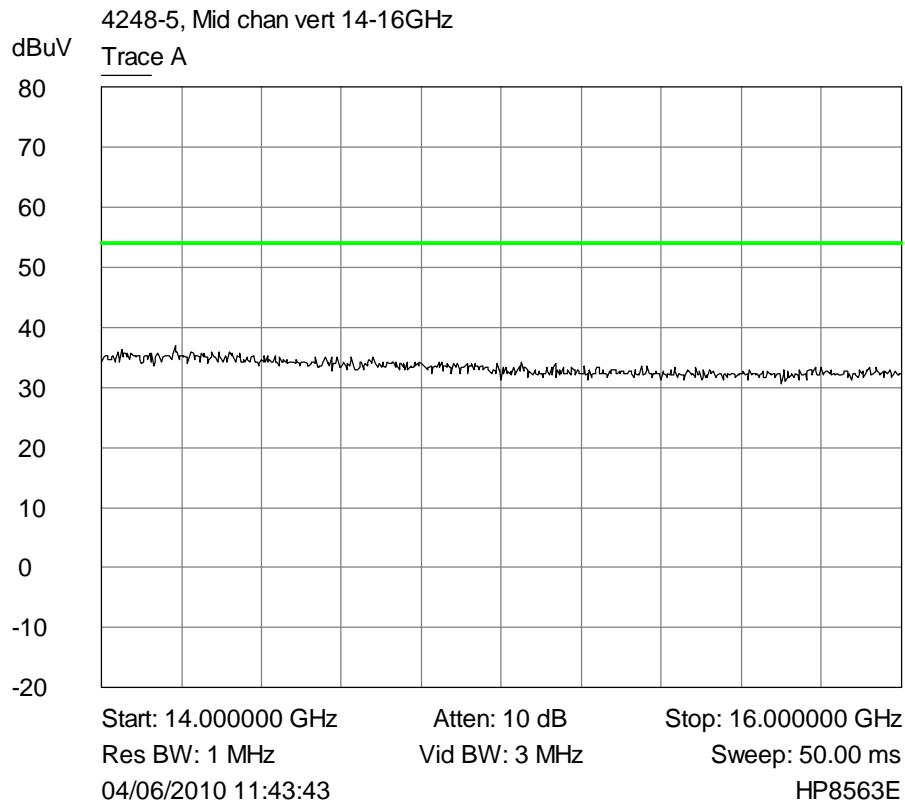


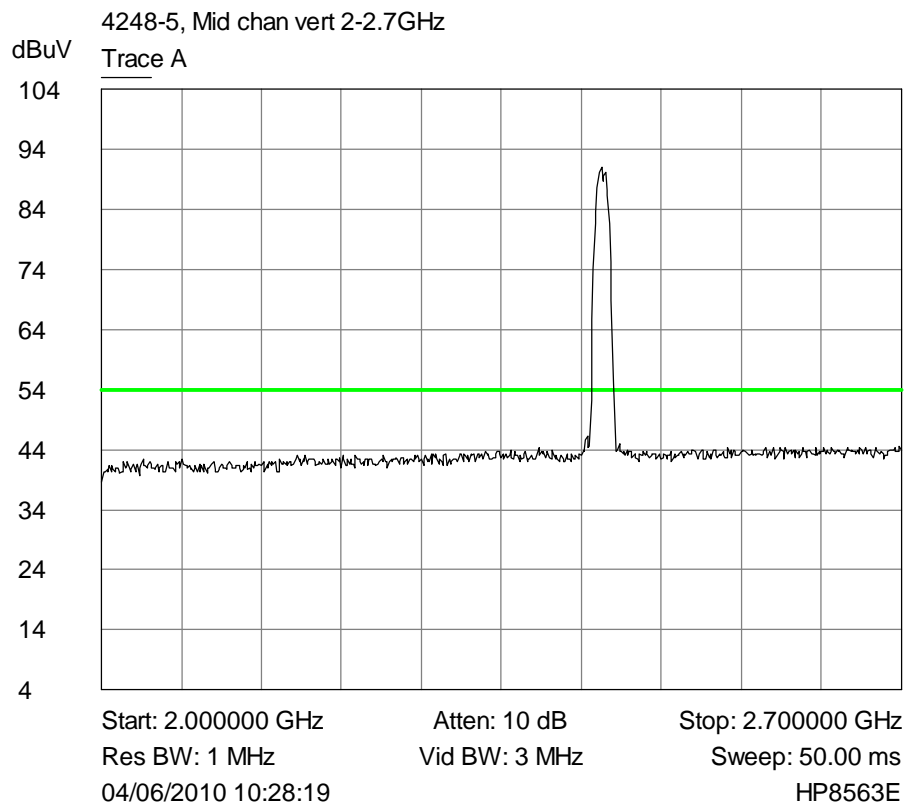
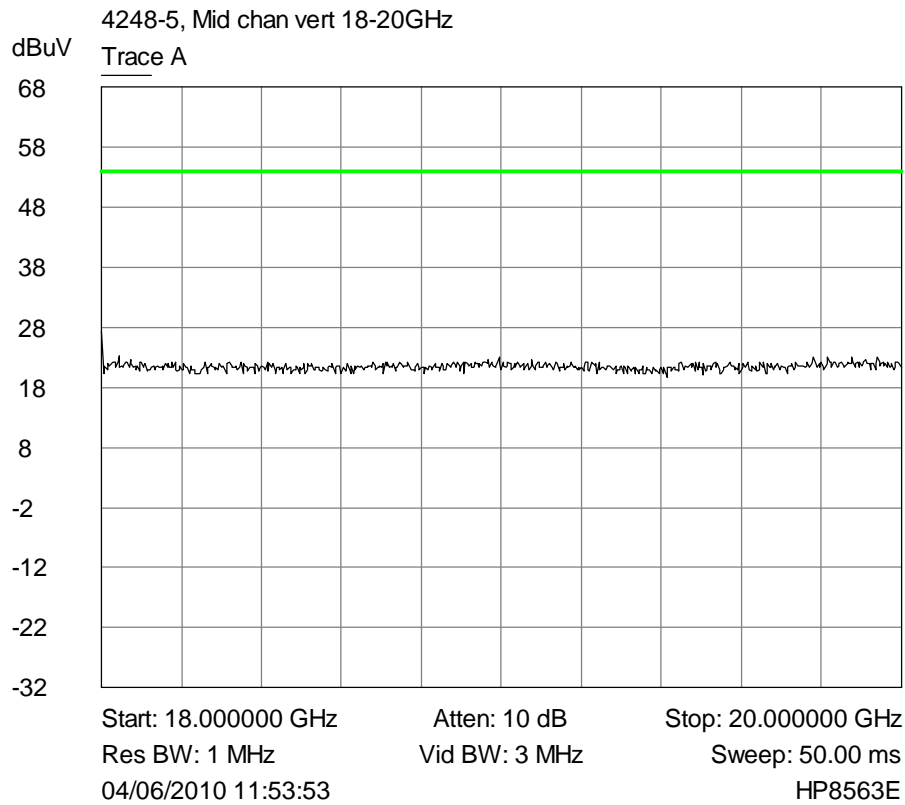


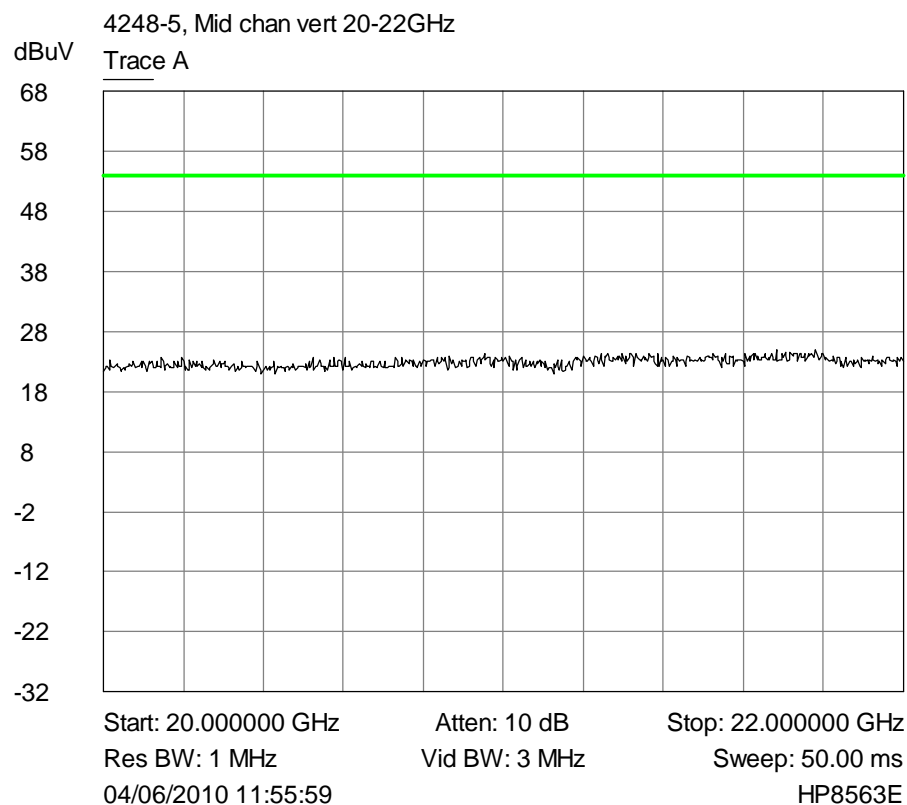
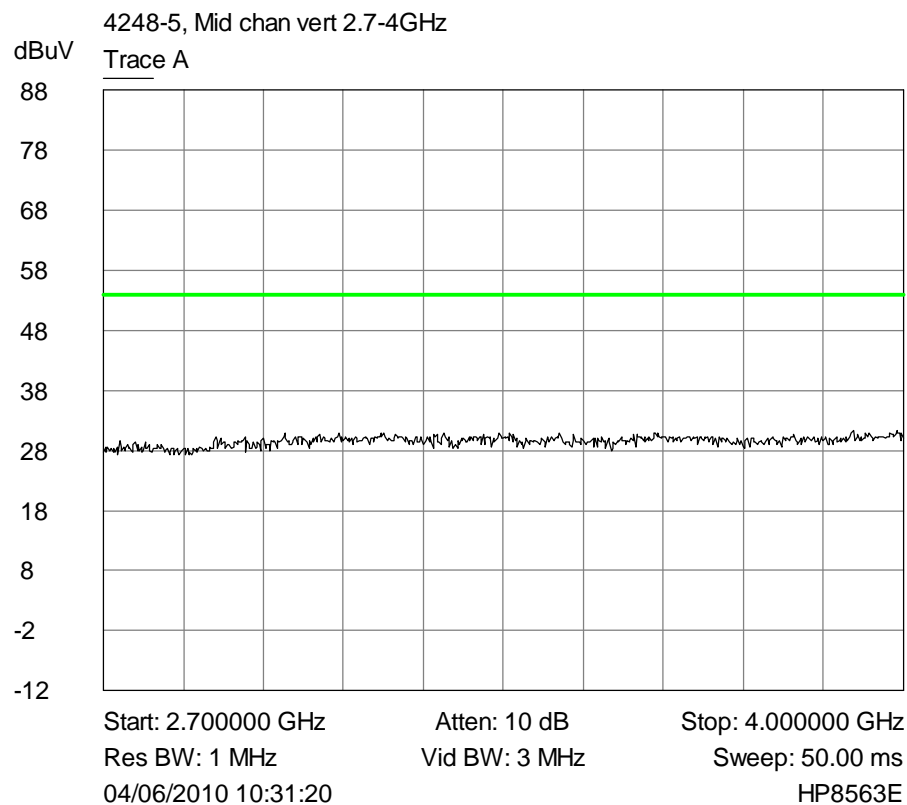
Plots of Average Vertical emissions 1GHz - 25GHz against the Average limit line.

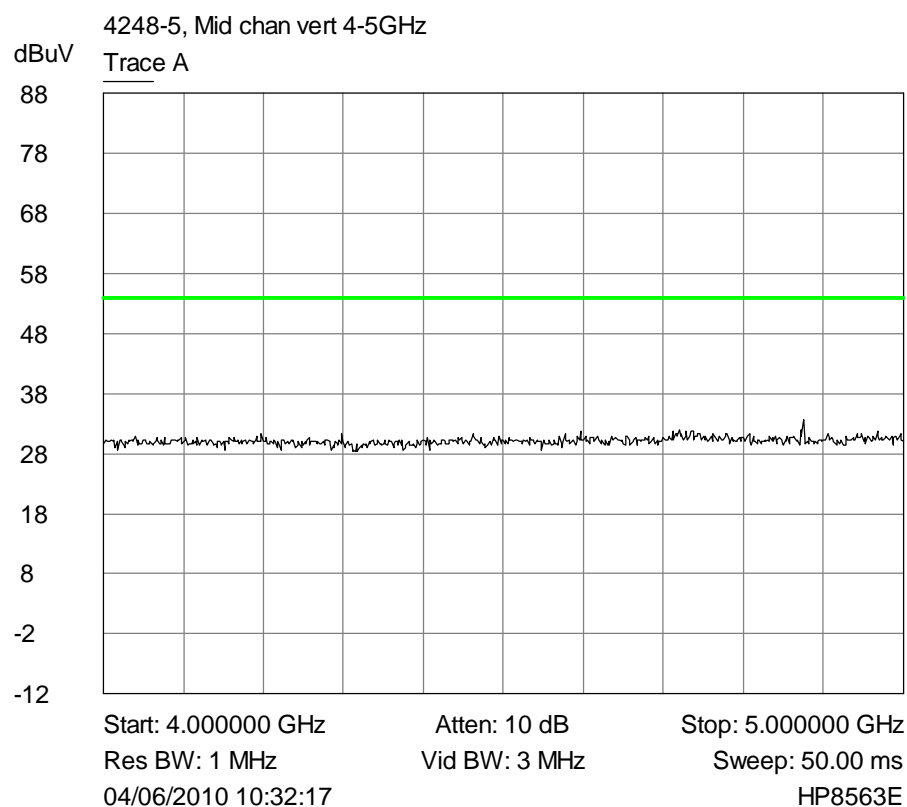
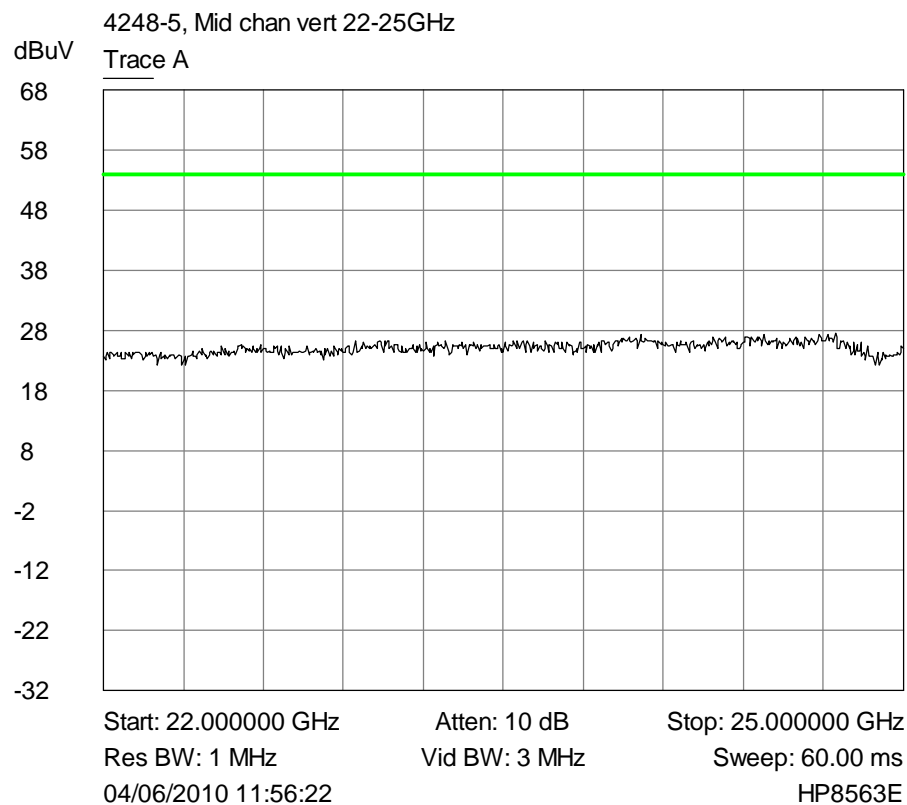


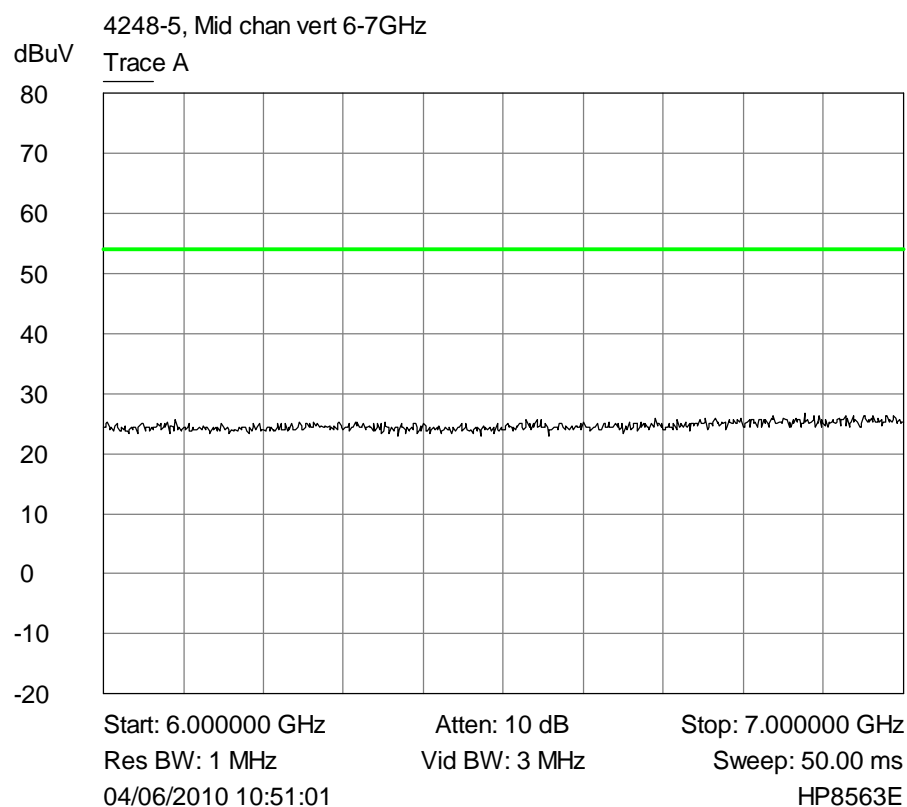


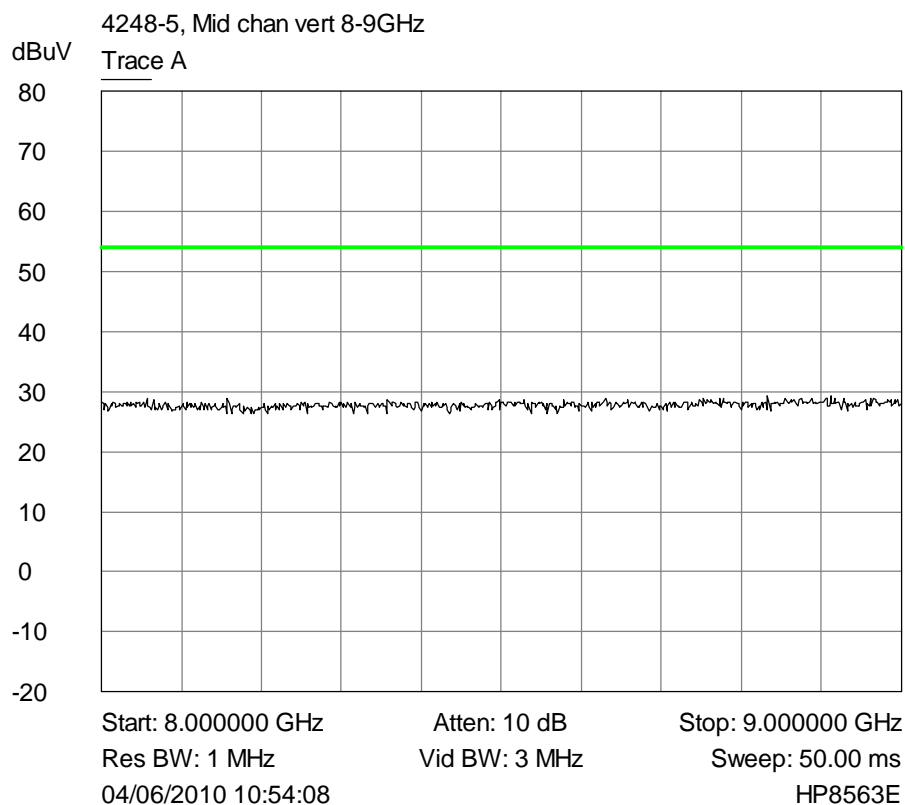
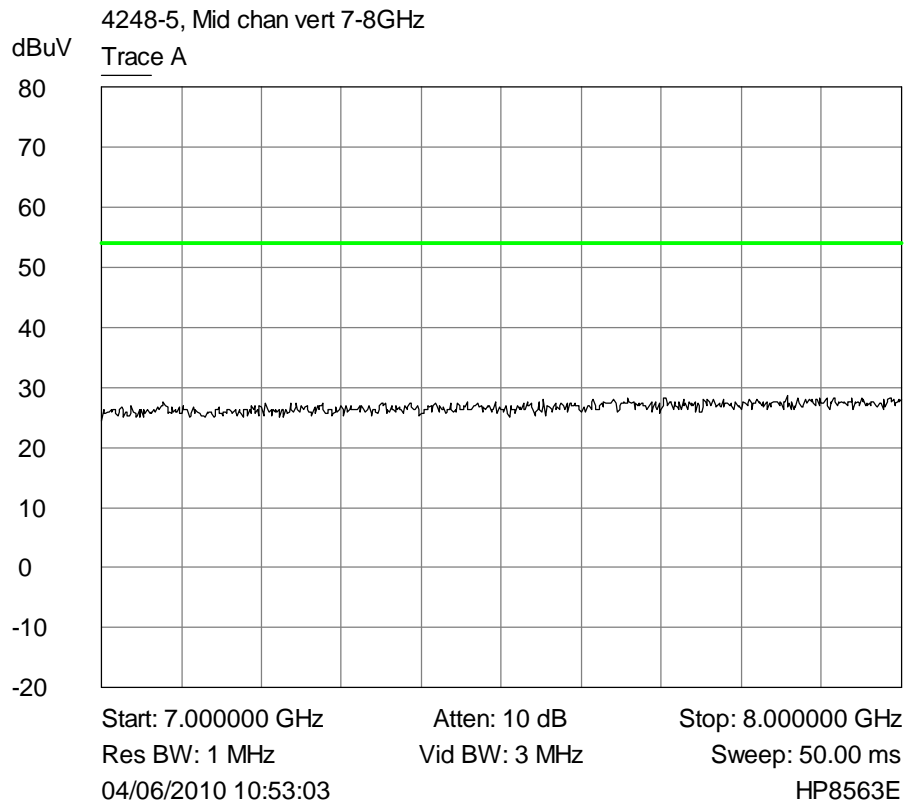












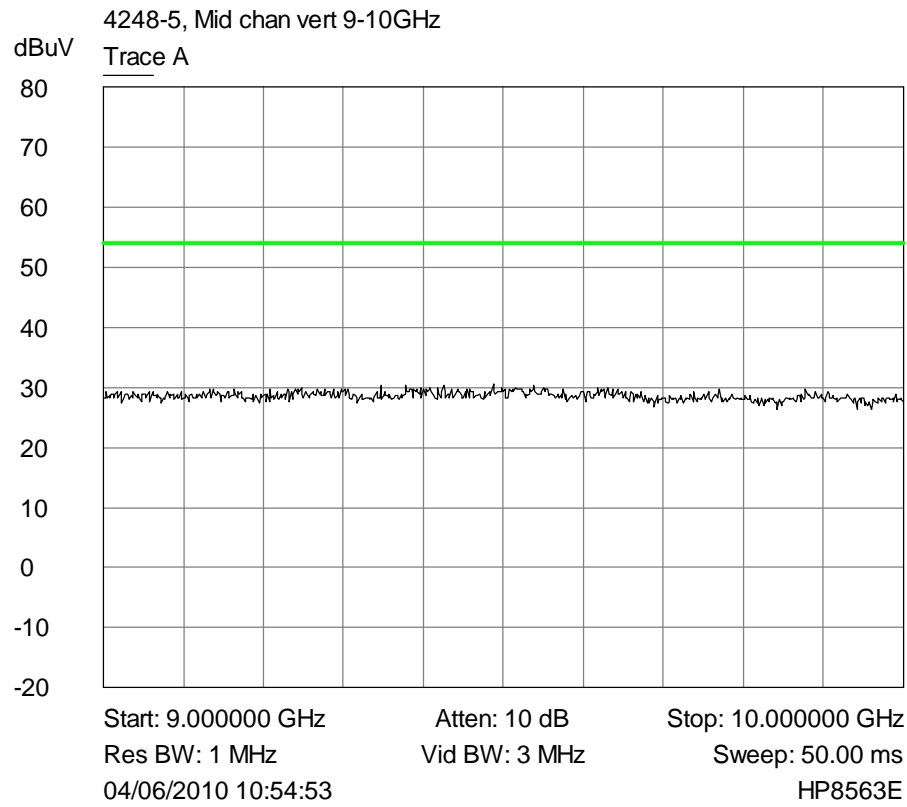


Table of signals measured above 1GHz.

Horizontal

No emissions were found in this polarisation.

Vertical

Bottom channel TX.

Signal	Frequency (MHz)	Polarisation	PK measured	AV measured	AV-Lim
1	4824	Vertical	44.0	38.0	-16.0

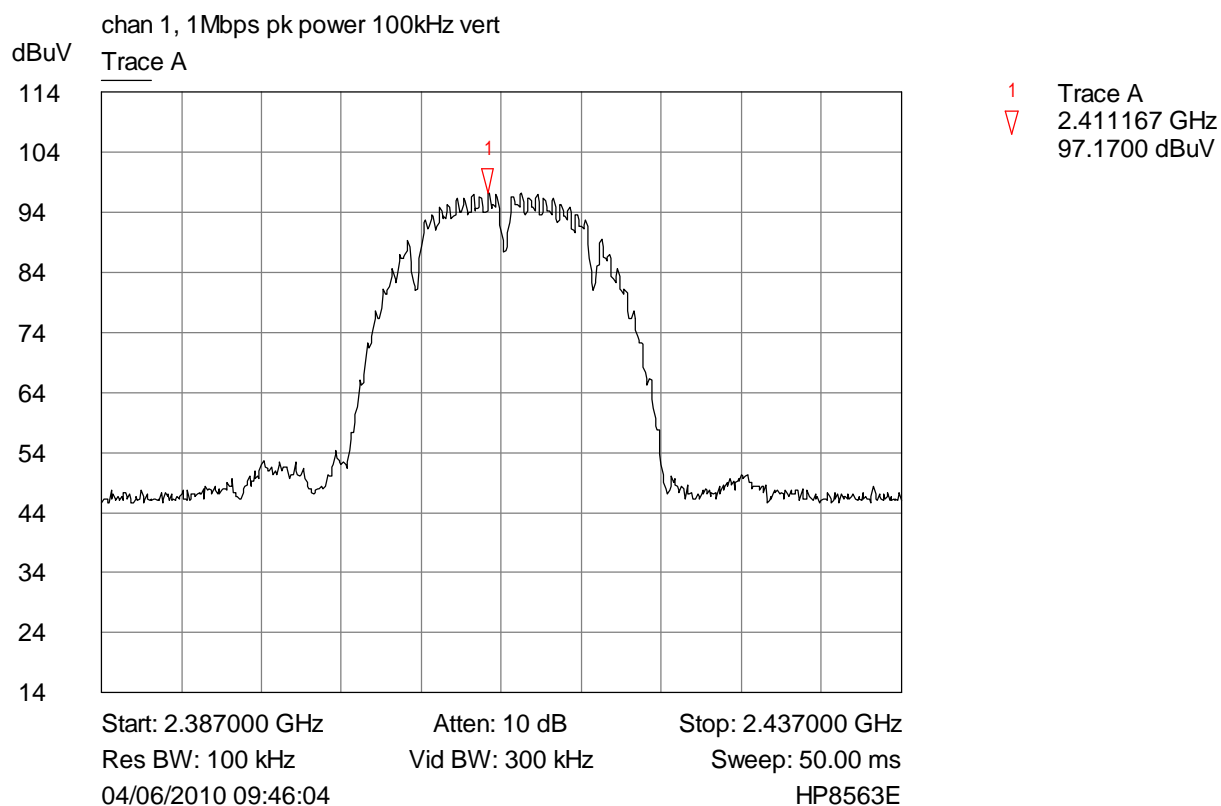
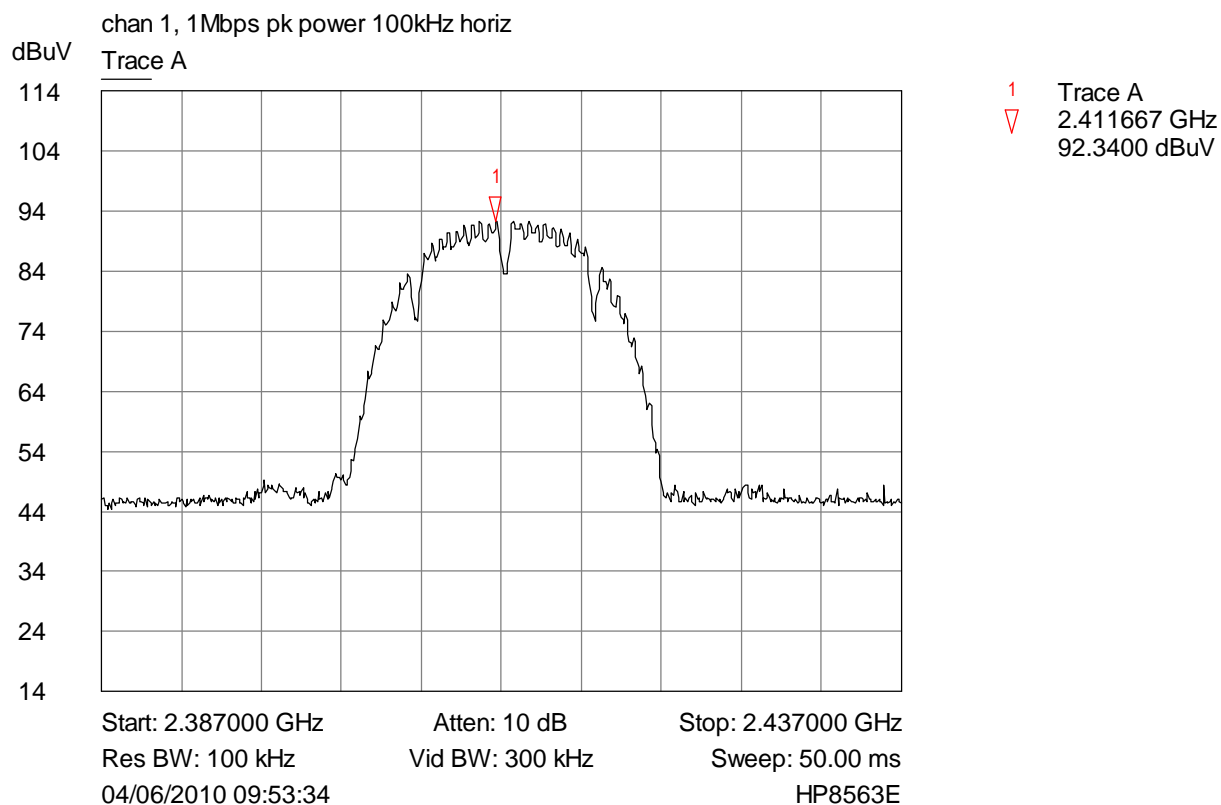
Middle channel TX.

Signal	Frequency (MHz)	Polarisation	PK measured	AV measured	AV-Lim
1	4874	Vertical	45.0	36.0	-18.0

Top channel TX.

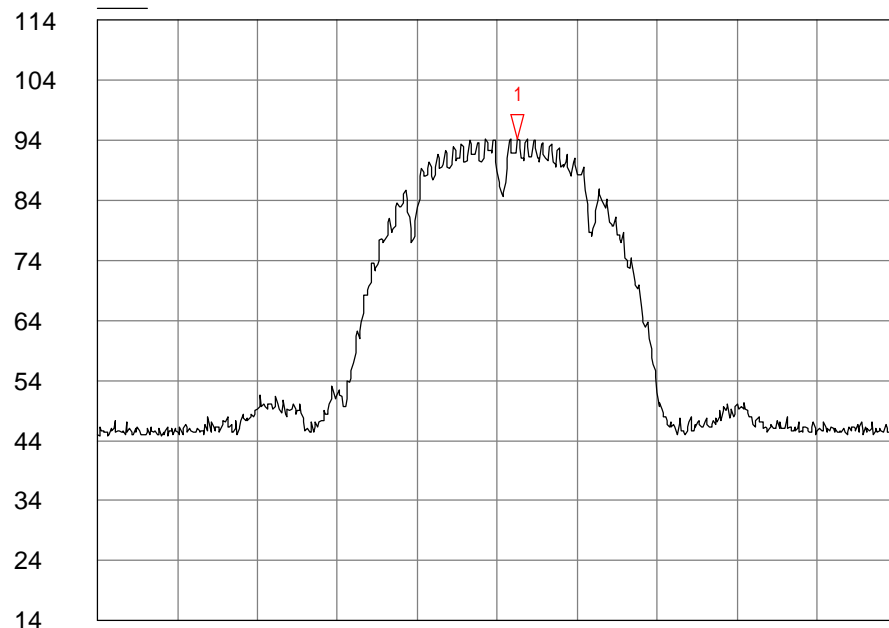
Signal	Frequency (MHz)	Polarisation	PK measured	AV measured	AV-Lim
1	4924	Vertical	45.0	37.0	-17.0

6.3 Fundamental Emissions



chan 11, 1Mbps pk power 100kHz horiz

dBuV
Trace A



1 Trace A
2.463250 GHz
94.5000 dBuV

Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 100 kHz

Vid BW: 300 kHz

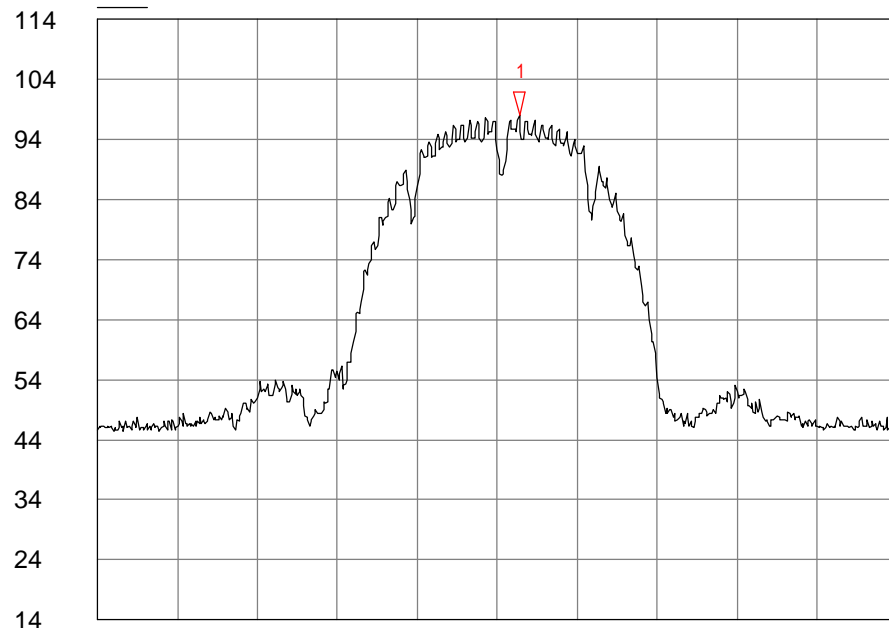
Sweep: 50.00 ms

04/06/2010 09:51:59

HP8563E

chan 11, 1Mbps pk power 100kHz vert

dBuV
Trace A



1 Trace A
2.463333 GHz
97.8400 dBuV

Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 100 kHz

Vid BW: 300 kHz

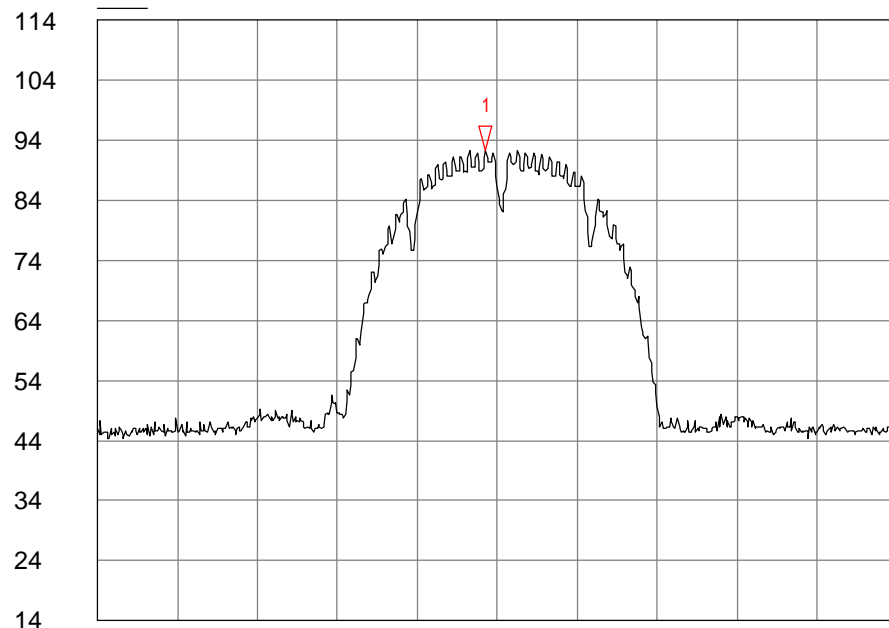
Sweep: 50.00 ms

04/06/2010 09:50:32

HP8563E

chan 6, 1Mbps pk power 100kHz horiz

dBuV
Trace A



1
▽ Trace A
2.436250 GHz
92.5000 dBuV

Start: 2.412000 GHz

Atten: 10 dB

Stop: 2.462000 GHz

Res BW: 100 kHz

Vid BW: 300 kHz

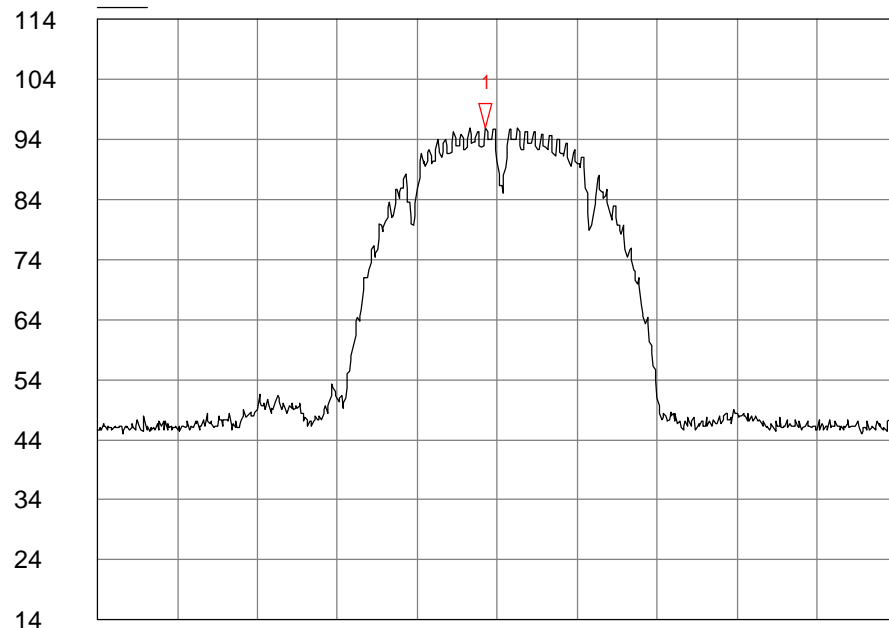
Sweep: 50.00 ms

04/06/2010 09:54:53

HP8563E

chan 6, 1Mbps pk power 100kHz vert

dBuV
Trace A



1
▽ Trace A
2.436250 GHz
96.0000 dBuV

Start: 2.412000 GHz

Atten: 10 dB

Stop: 2.462000 GHz

Res BW: 100 kHz

Vid BW: 300 kHz

Sweep: 50.00 ms

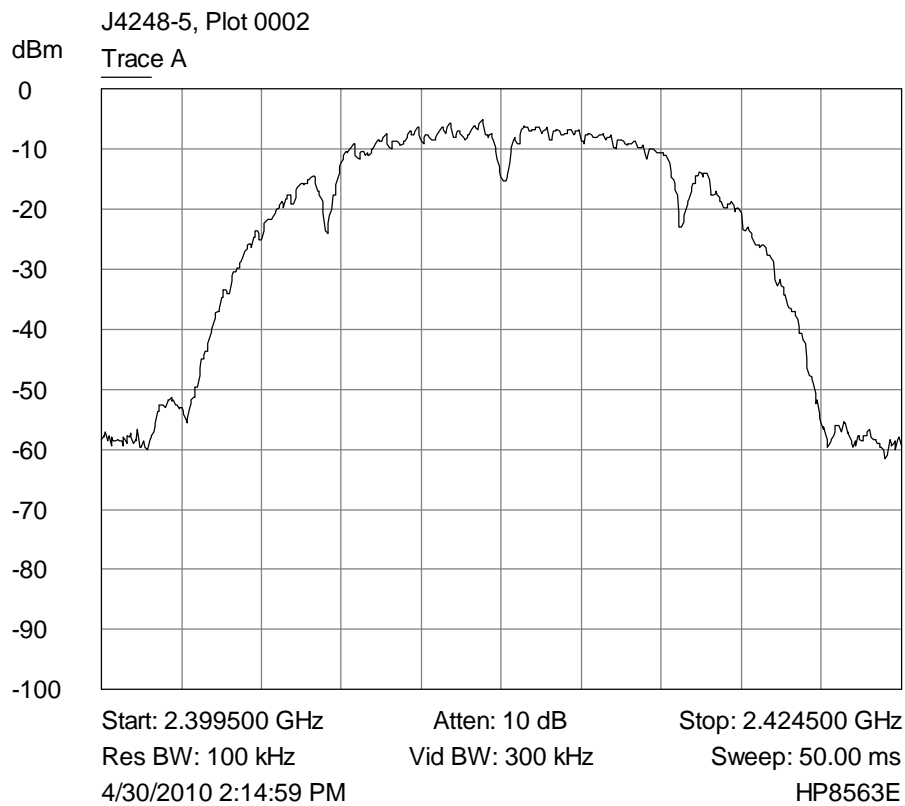
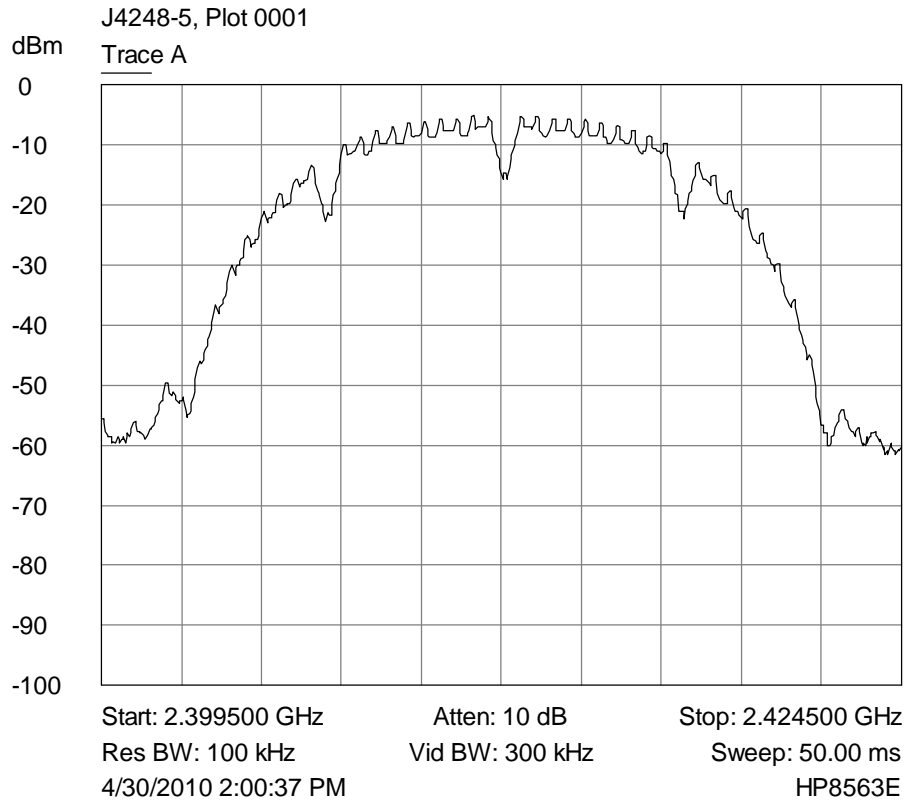
04/06/2010 09:48:37

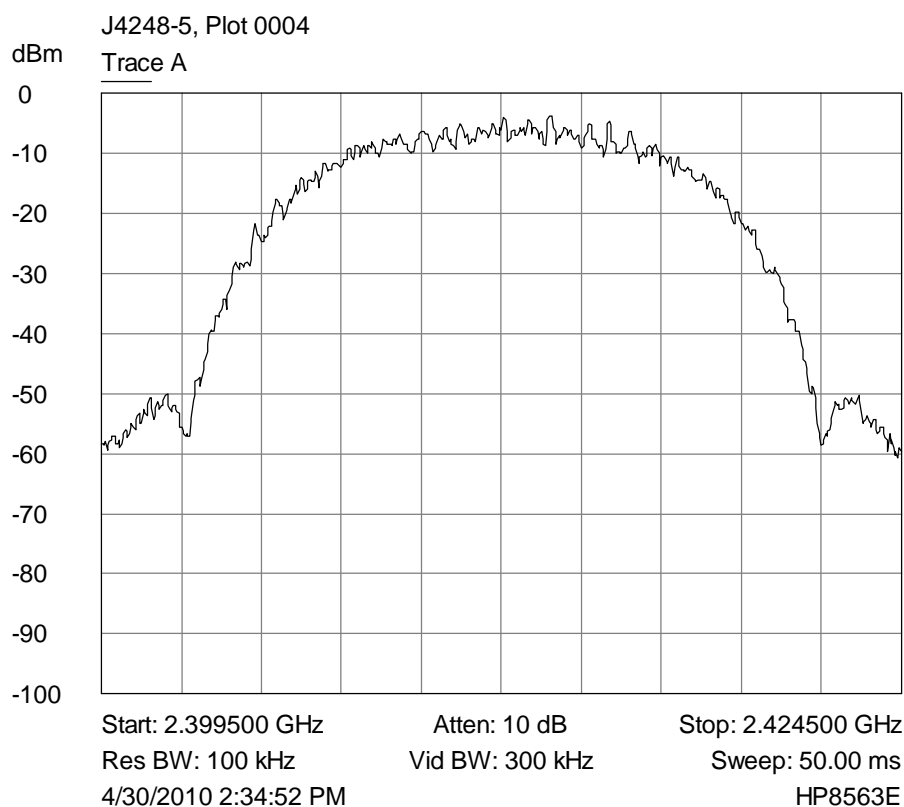
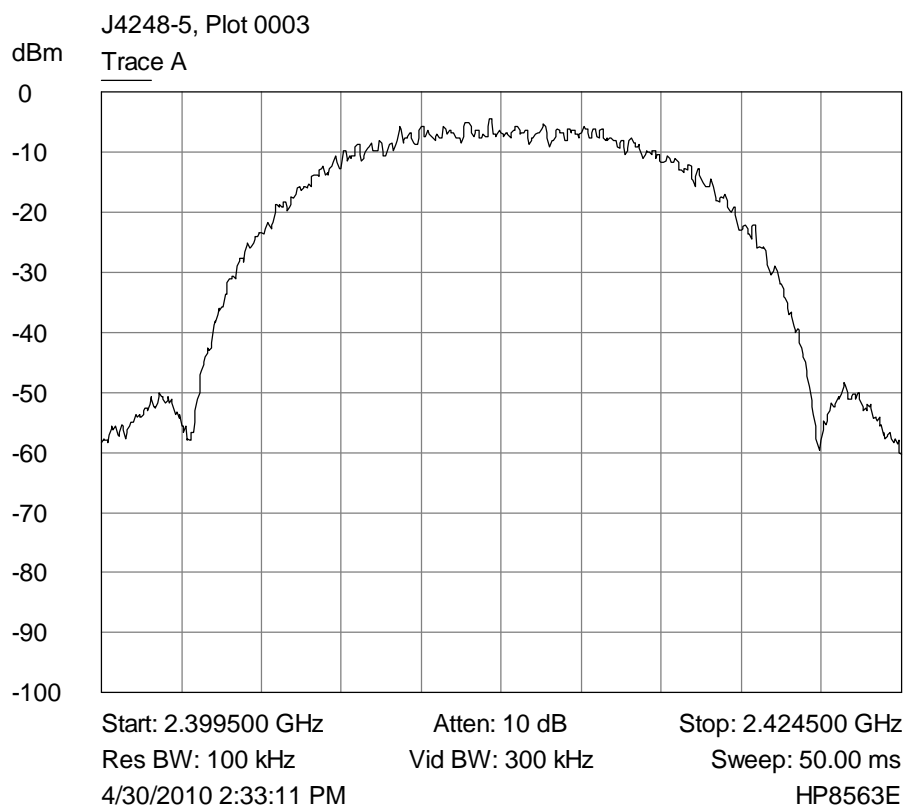
HP8563E

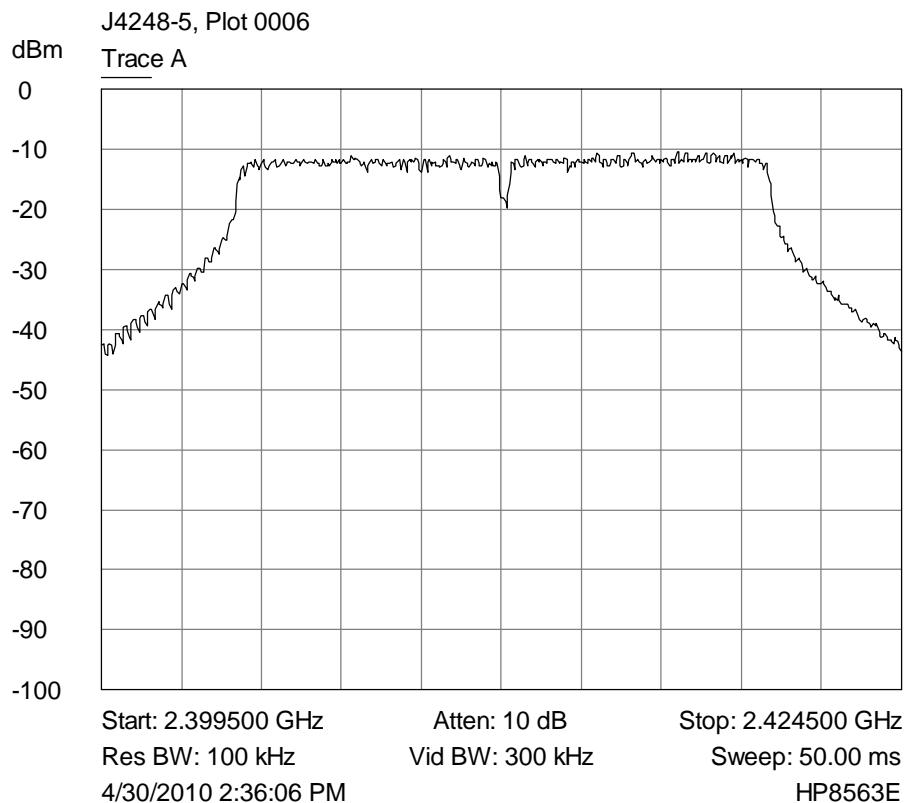
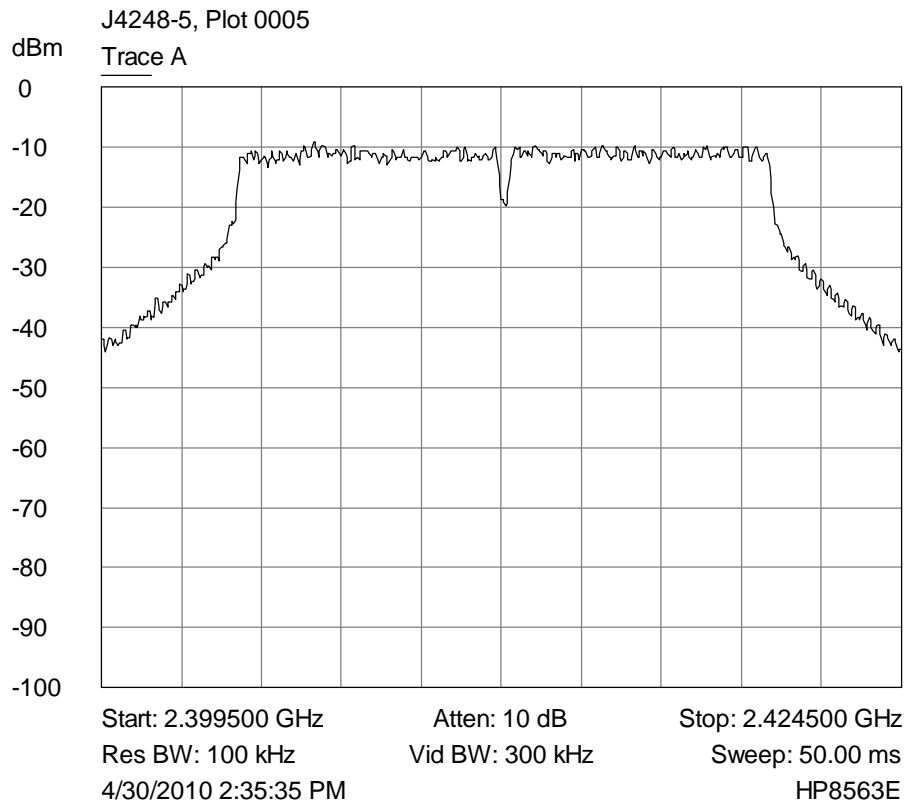
6.4 Duty Cycle

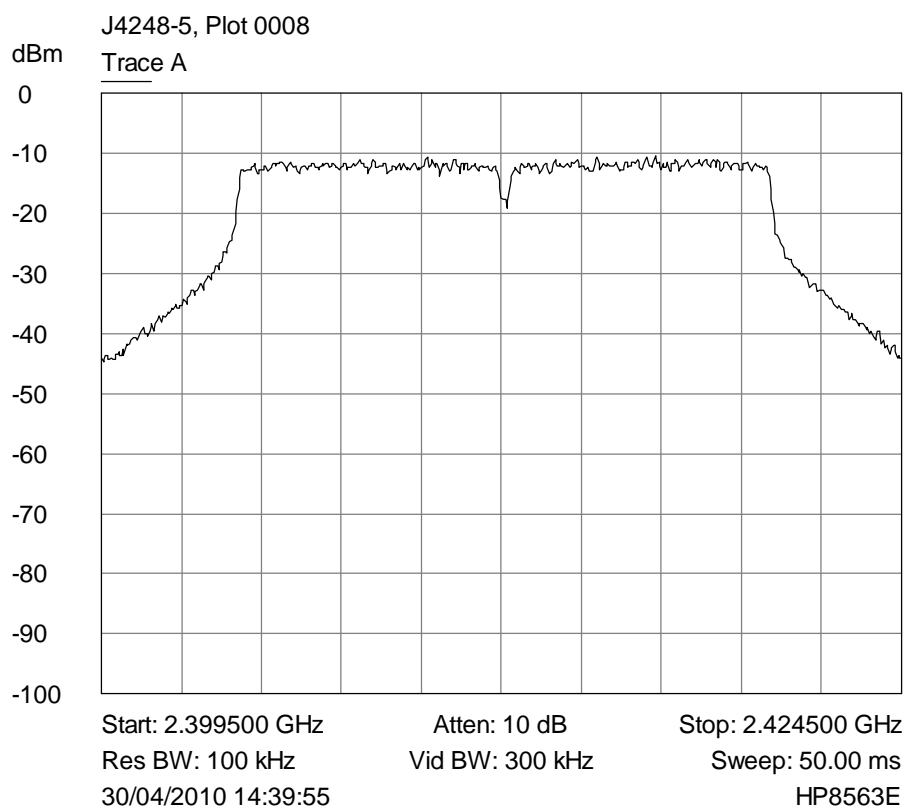
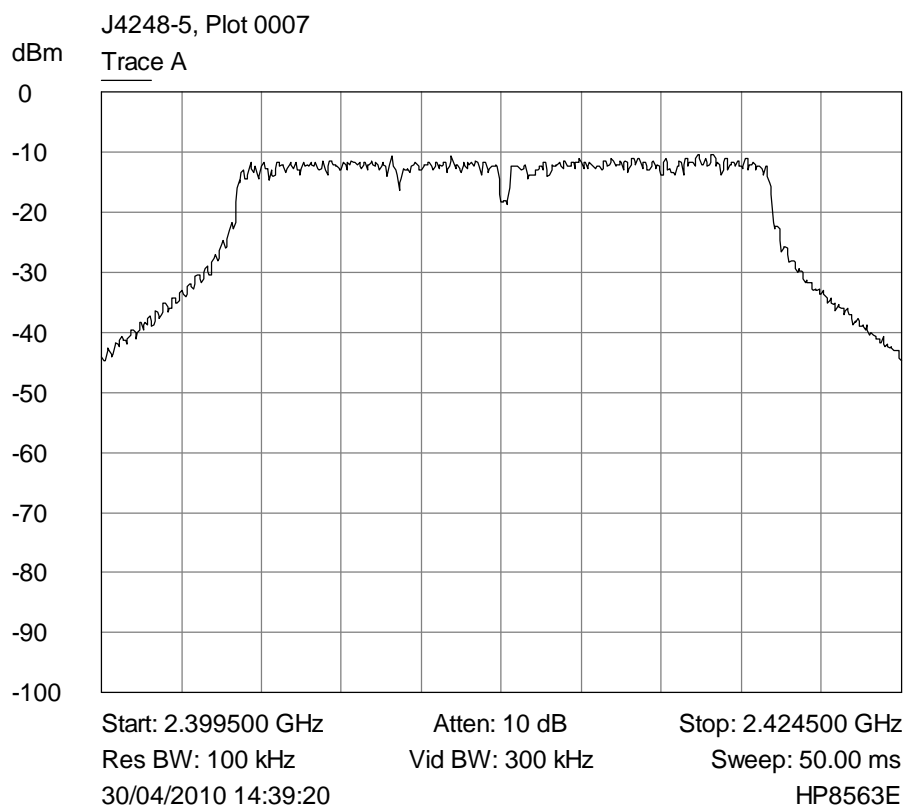
No plots required or taken.

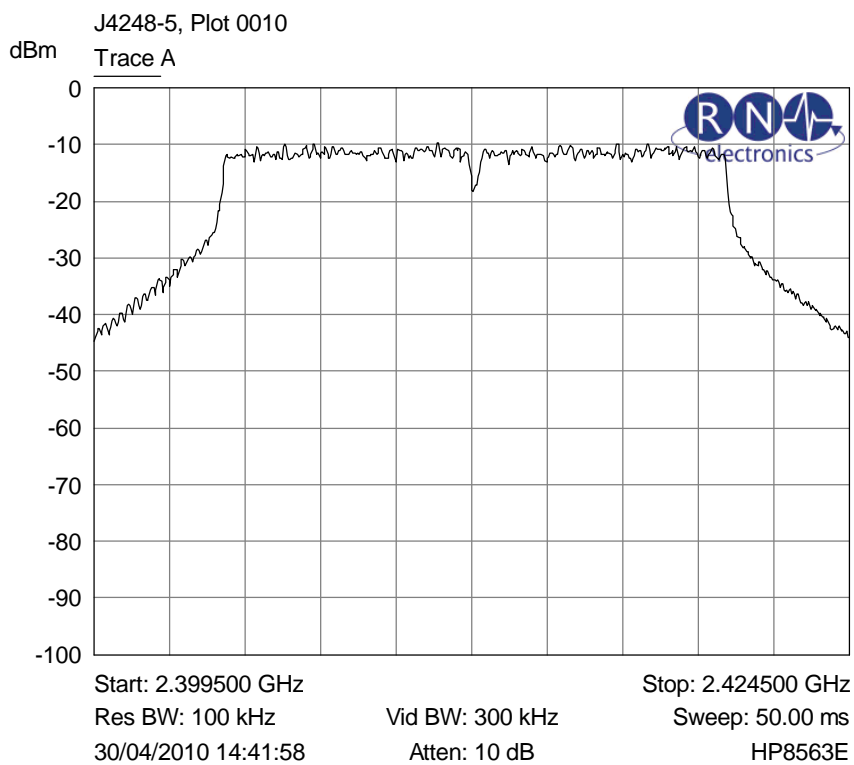
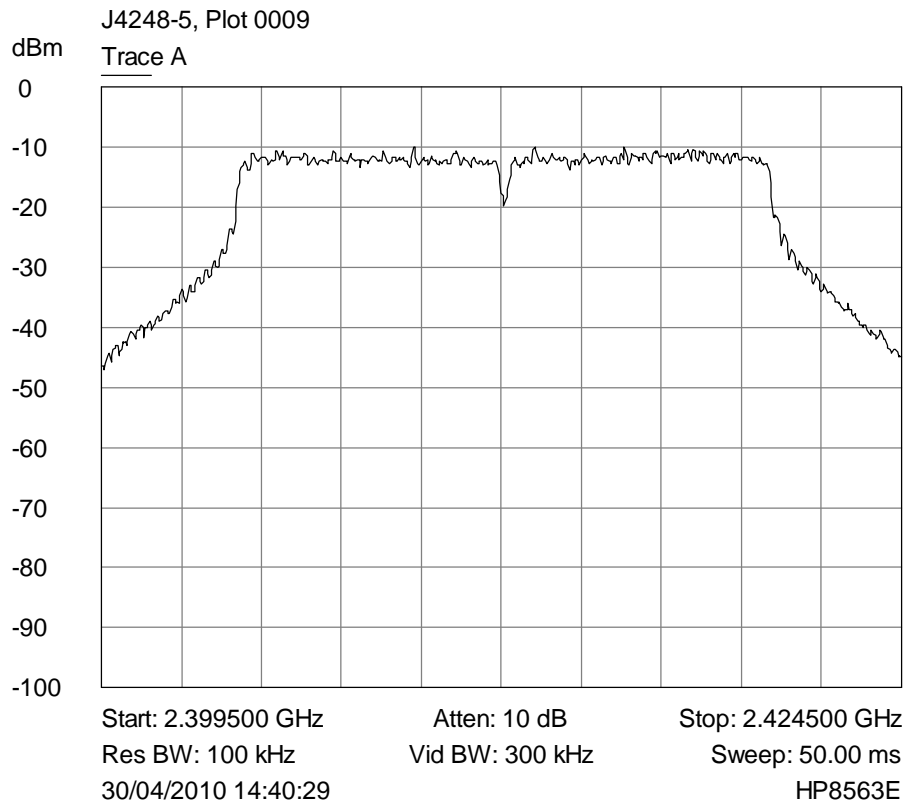
6.5 6dB Bandwidth

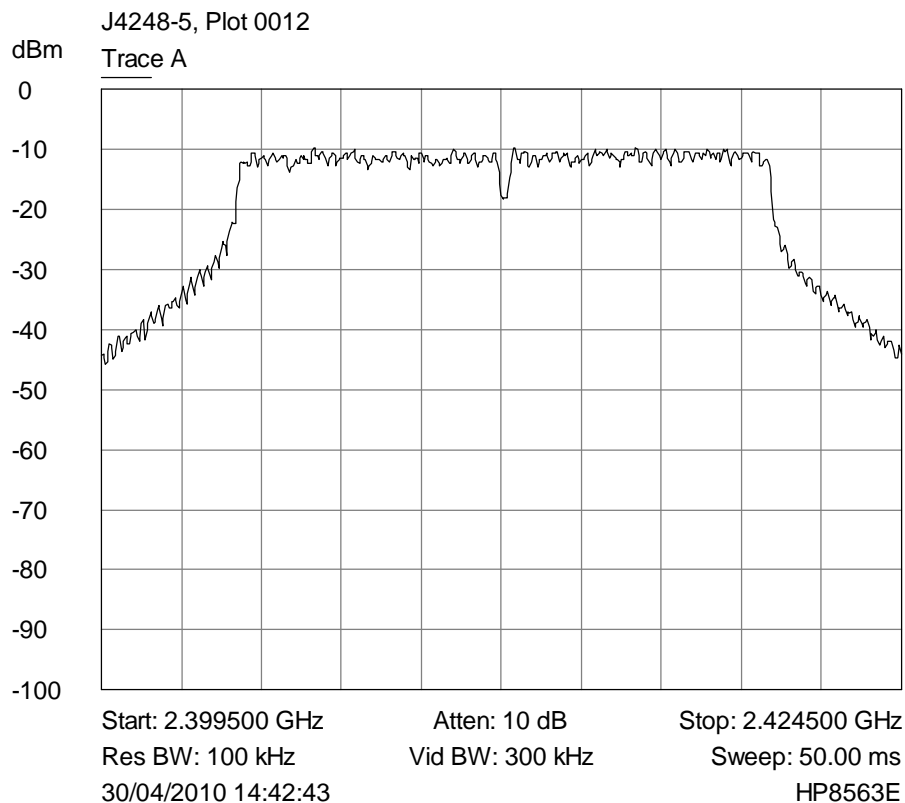
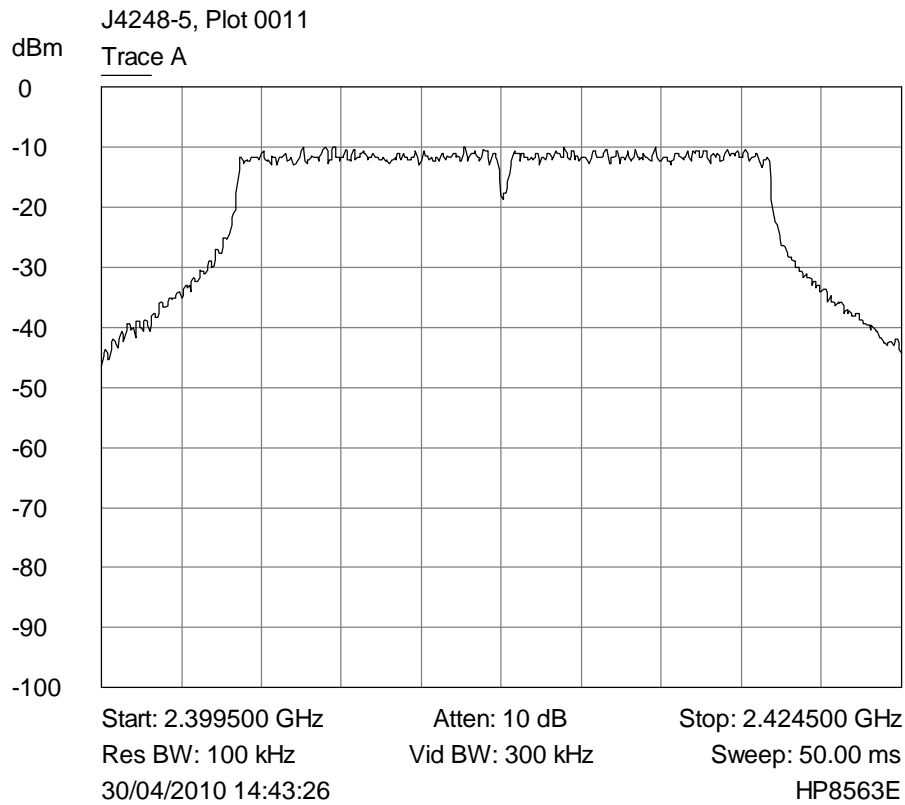


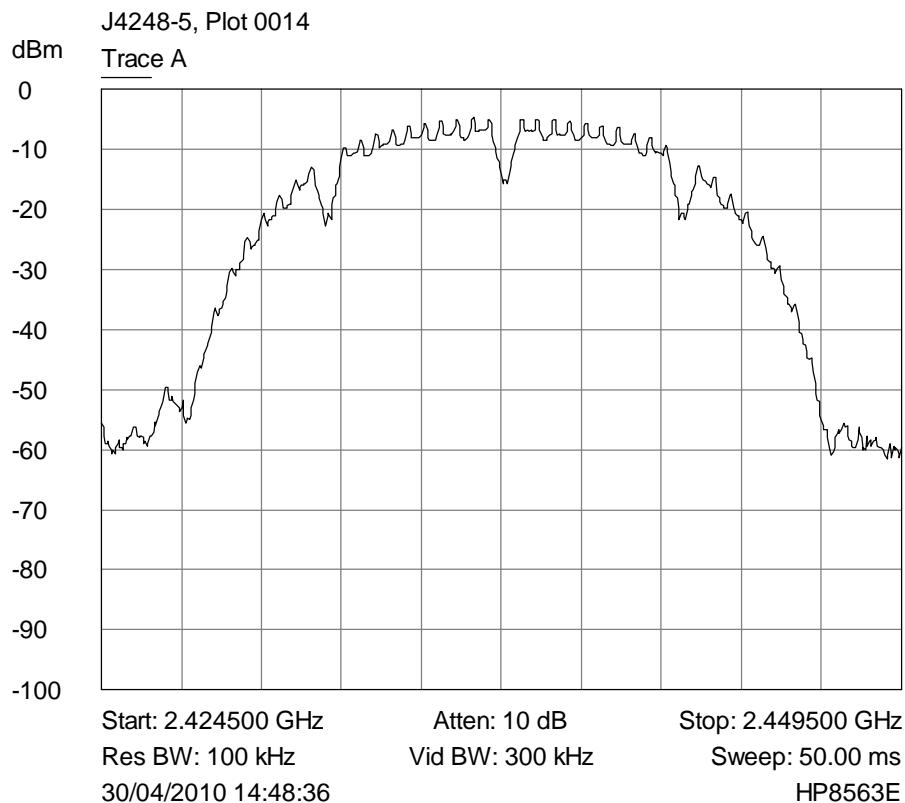
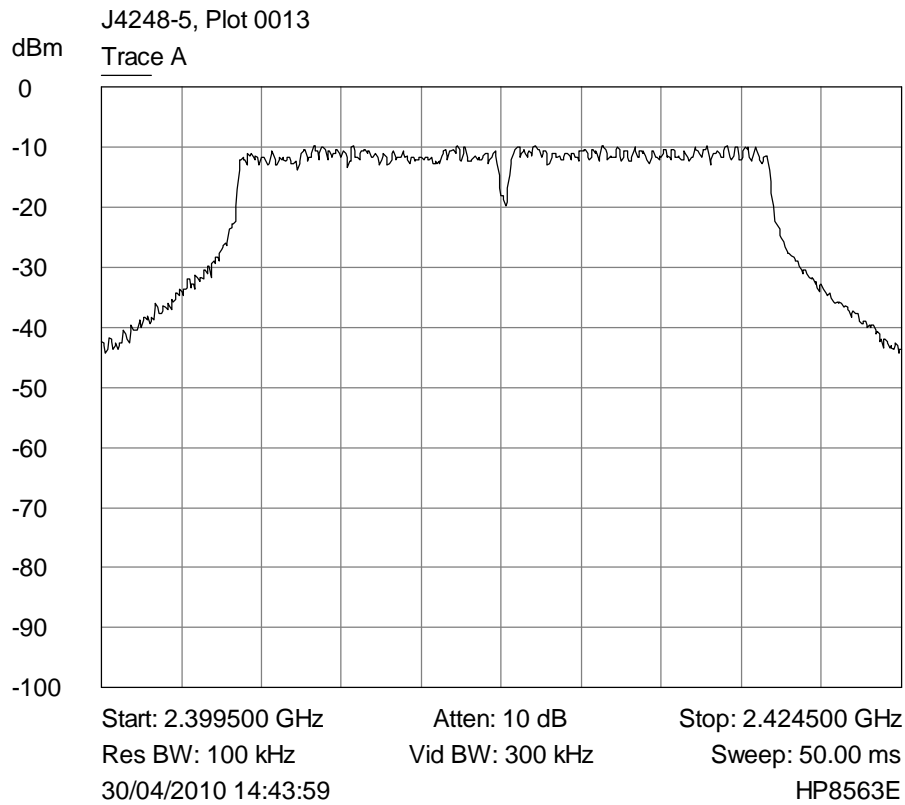


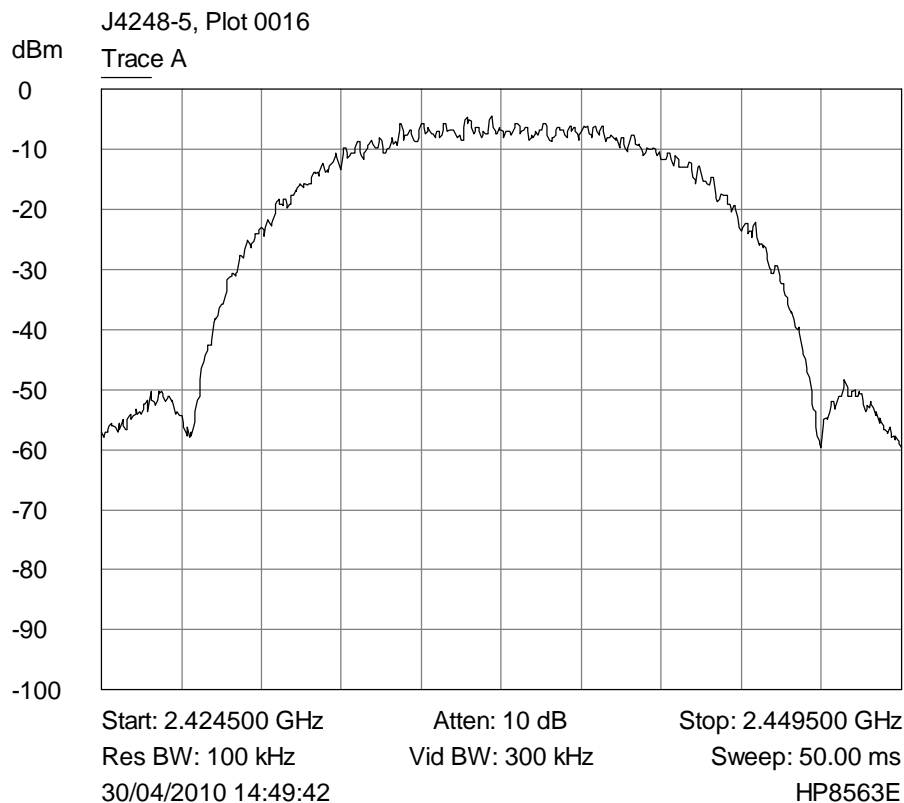
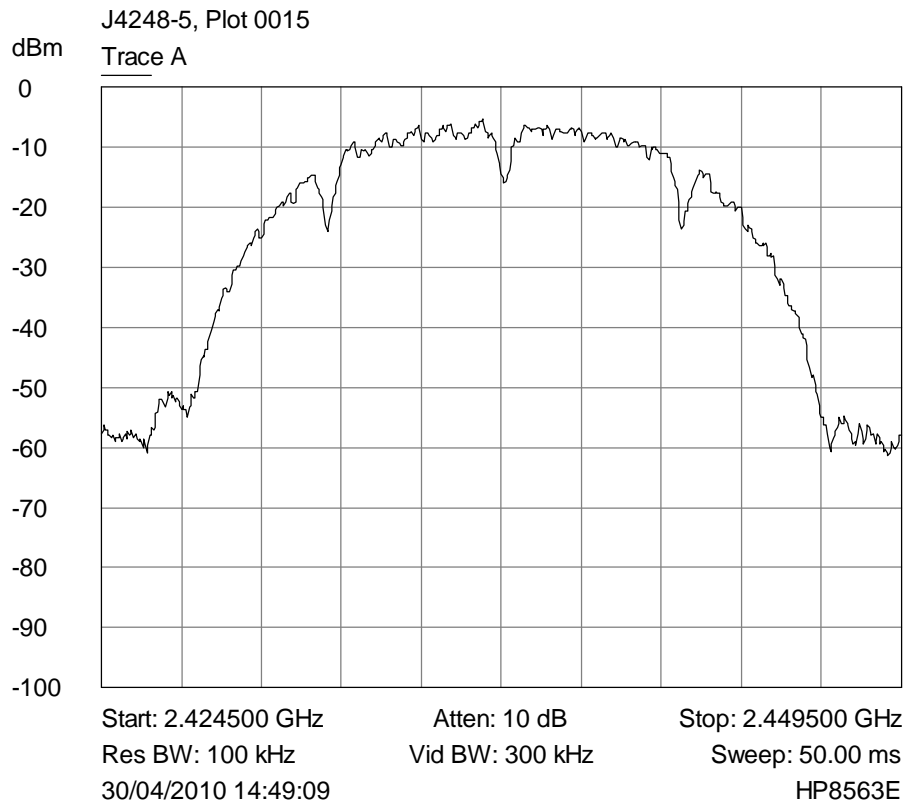


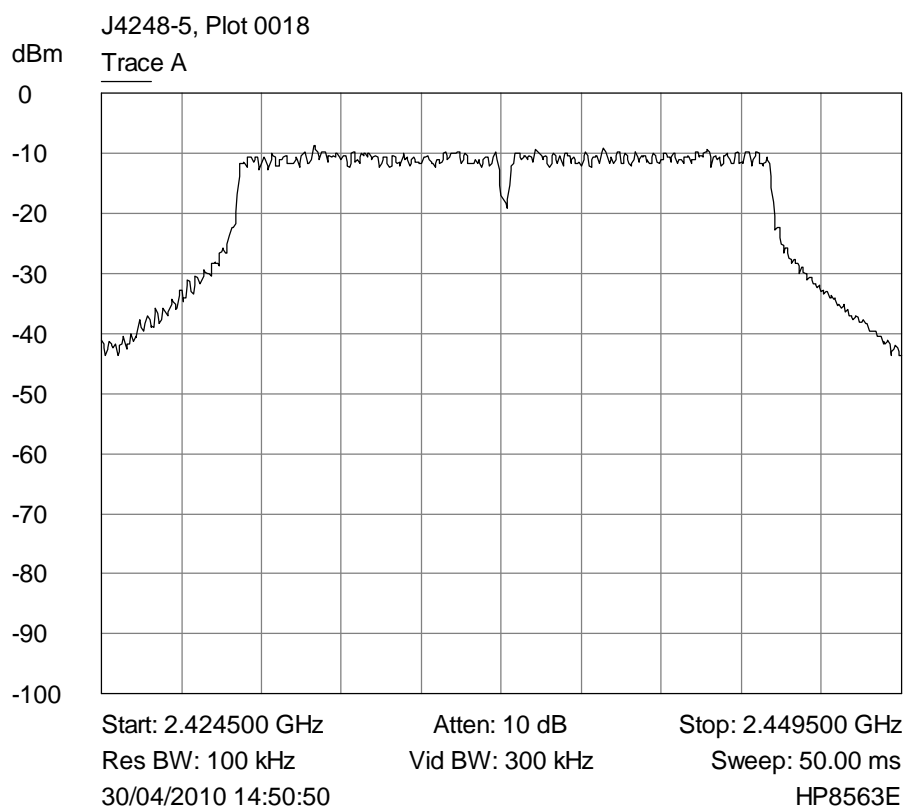
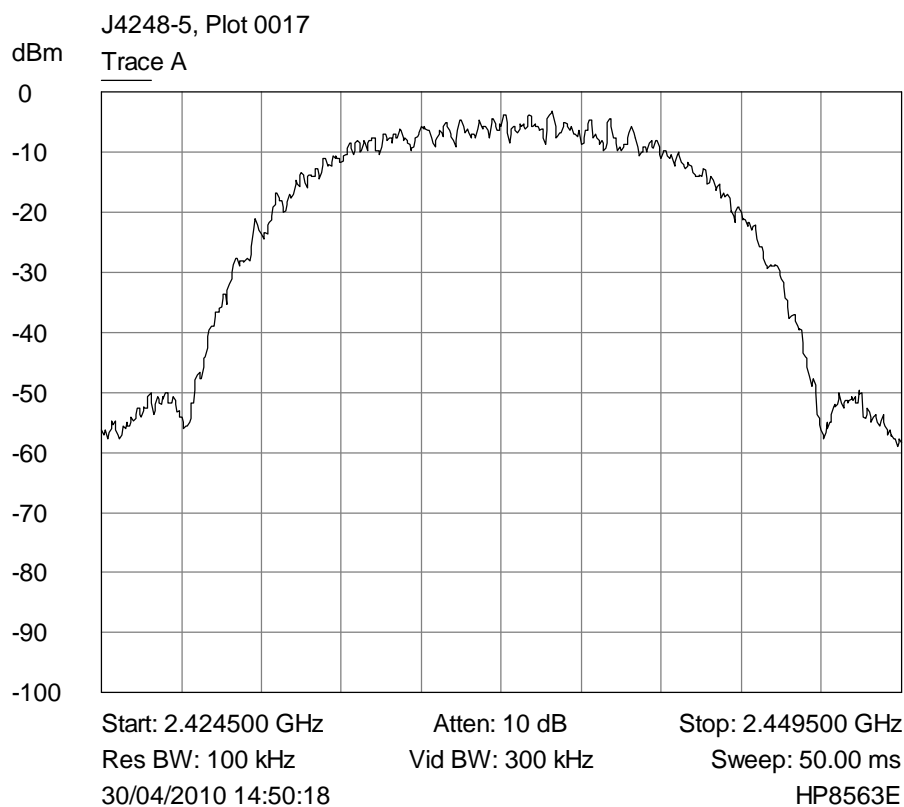


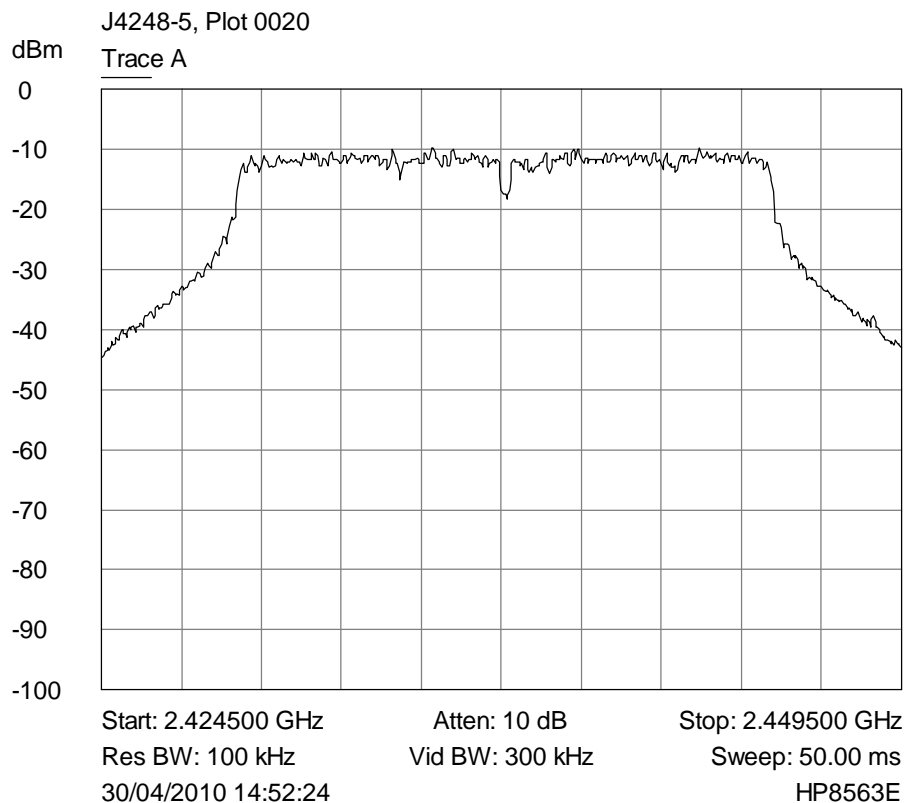
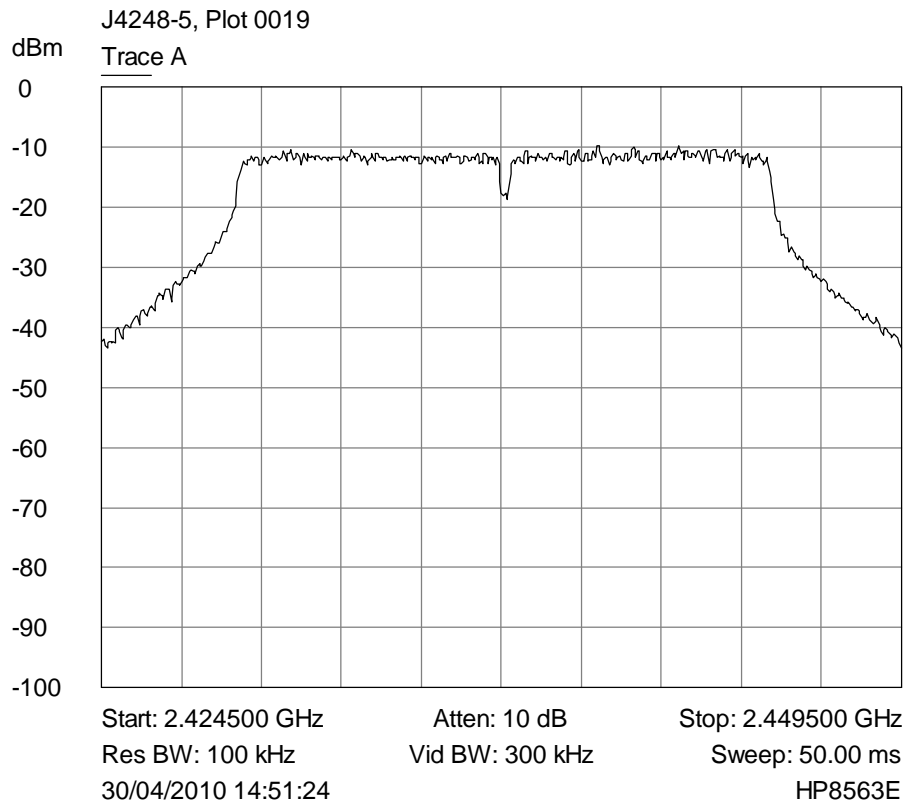


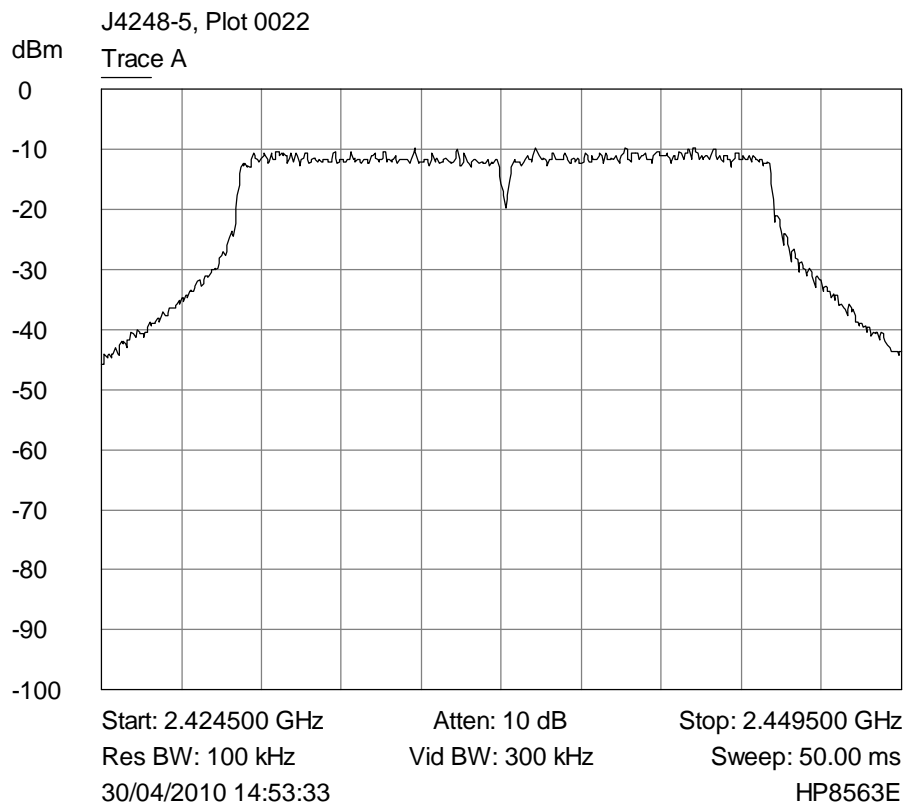
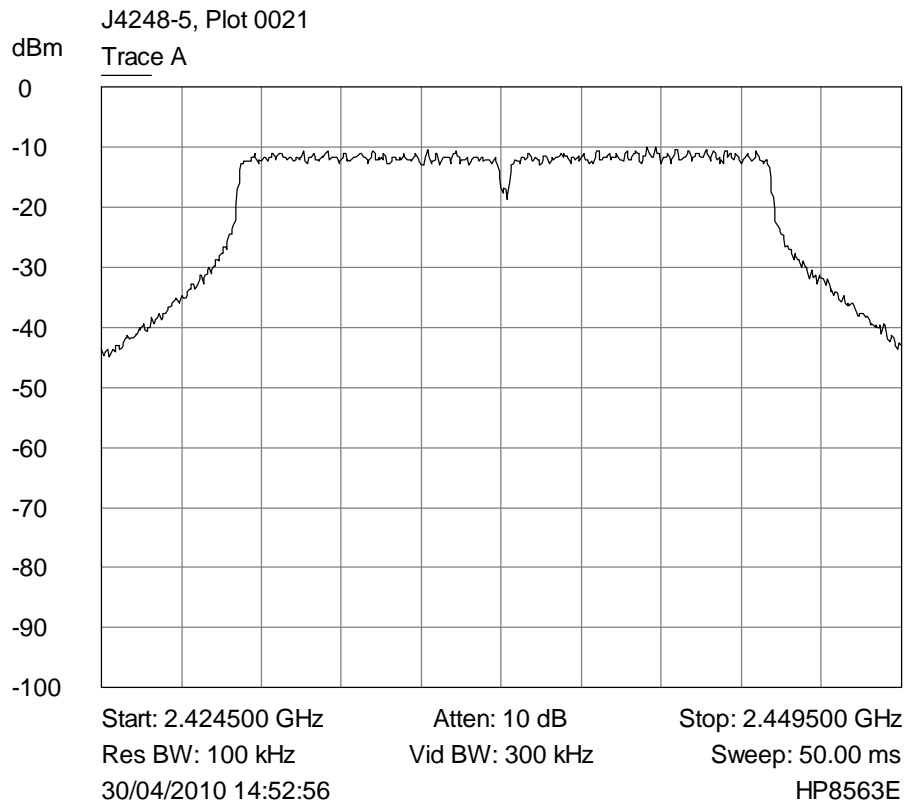


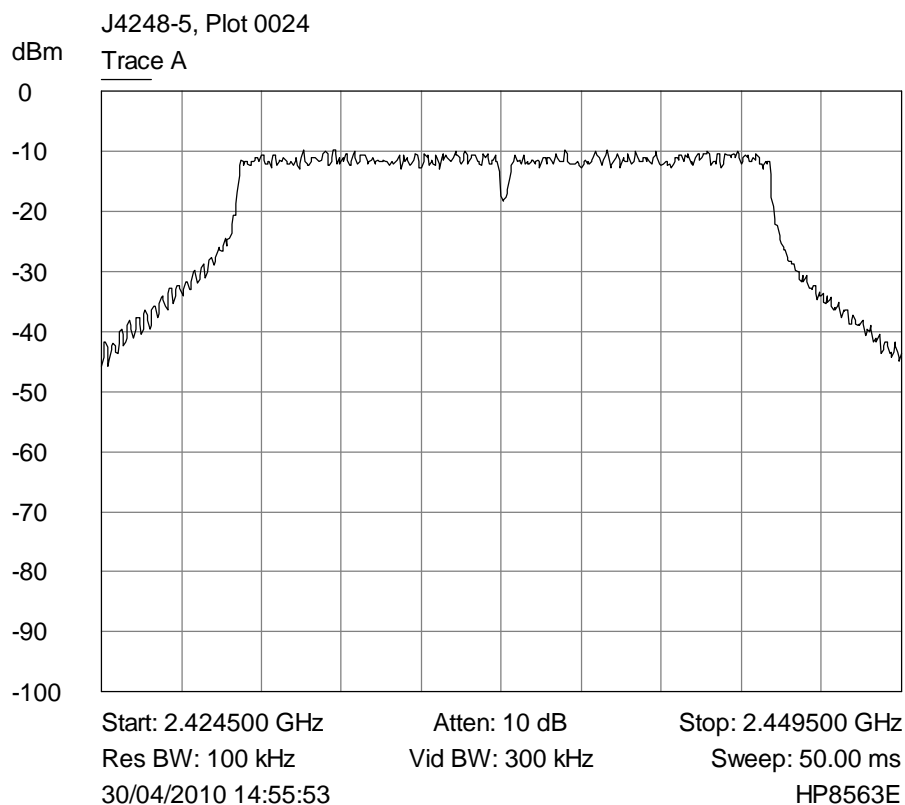
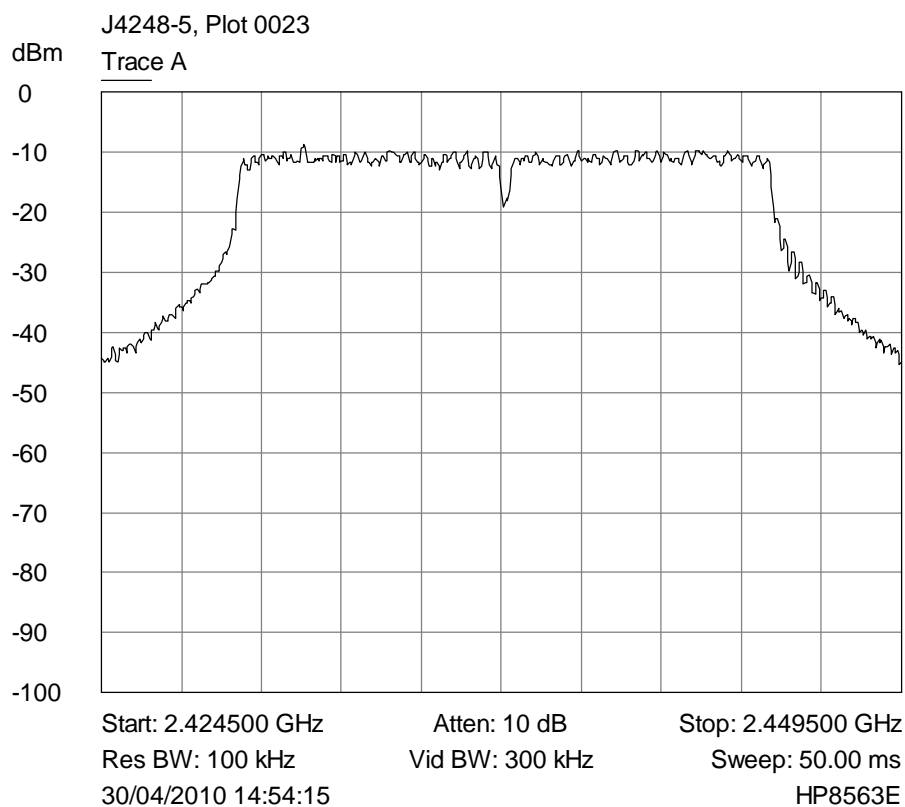


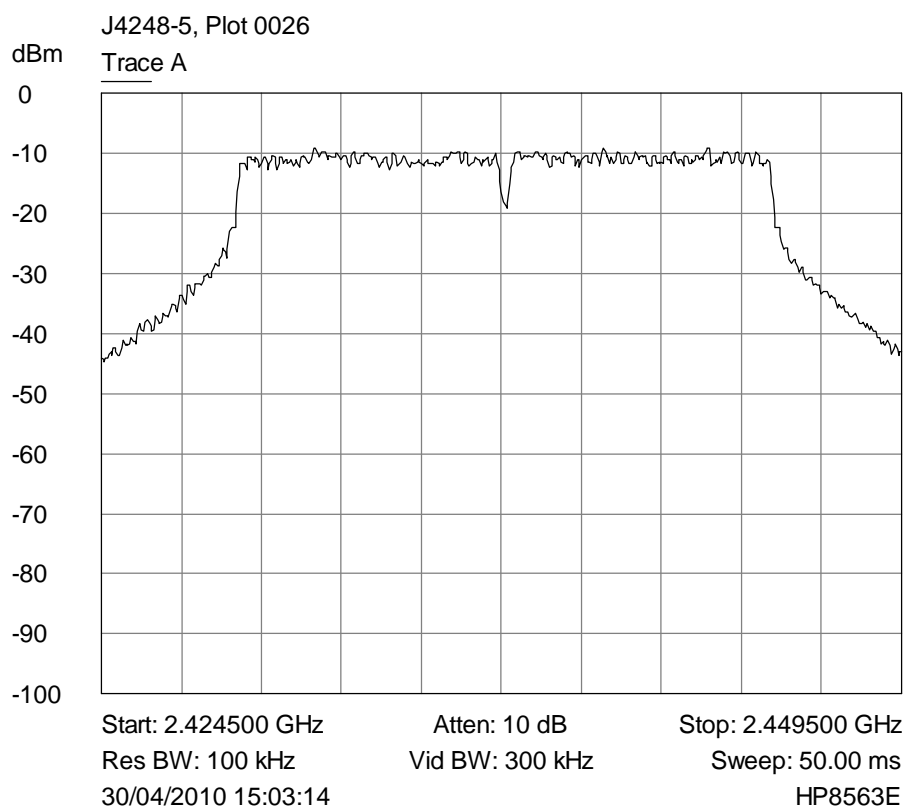
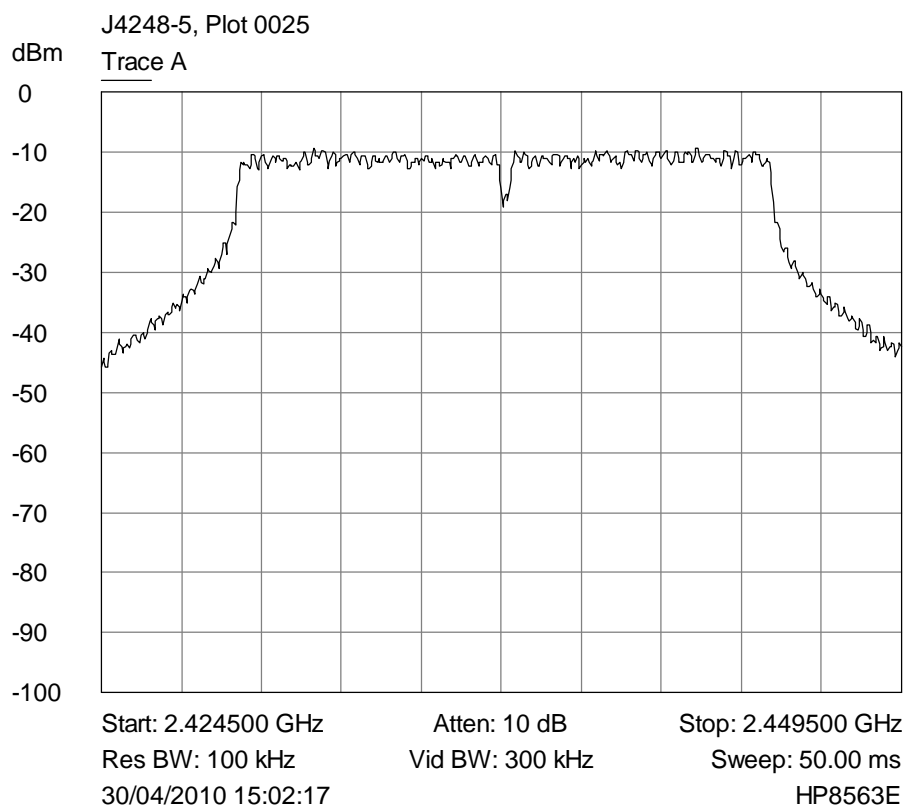


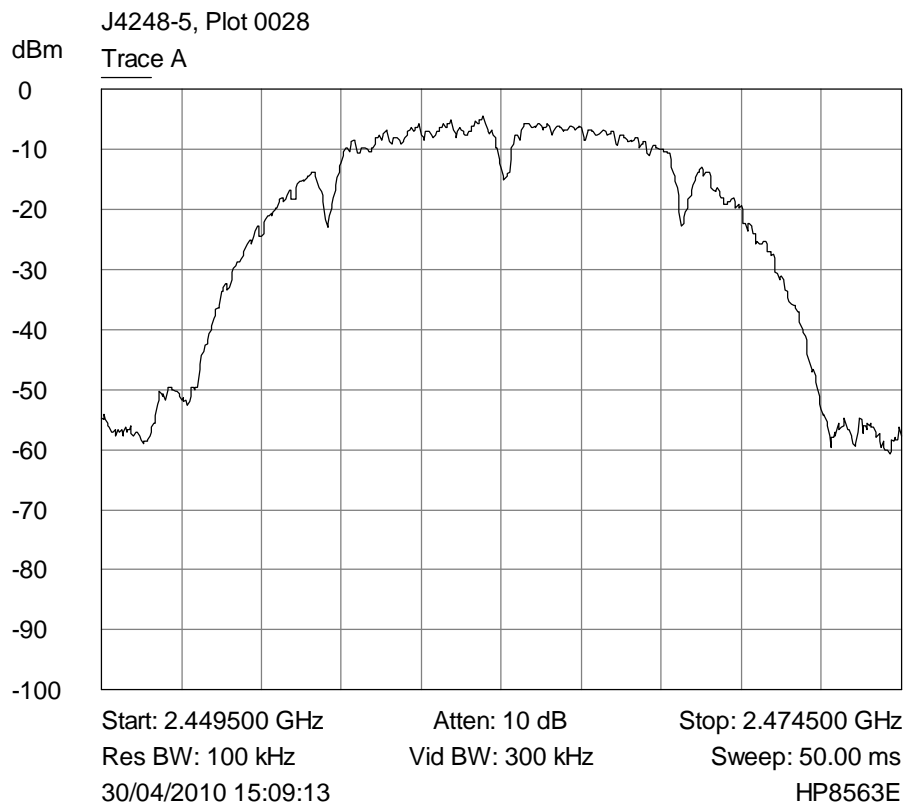
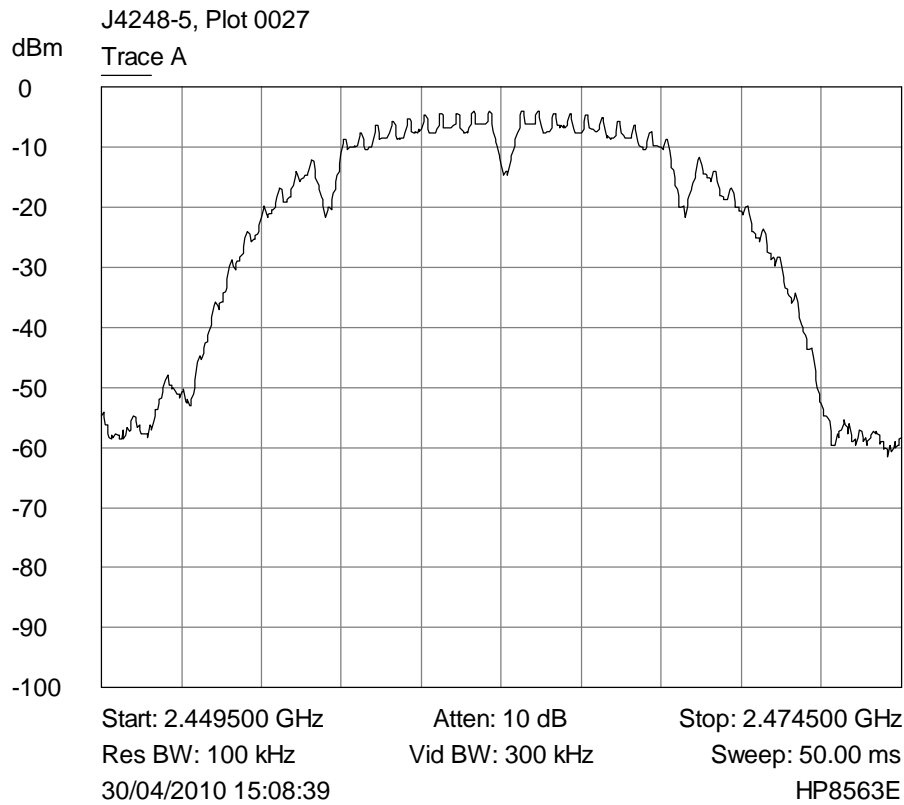


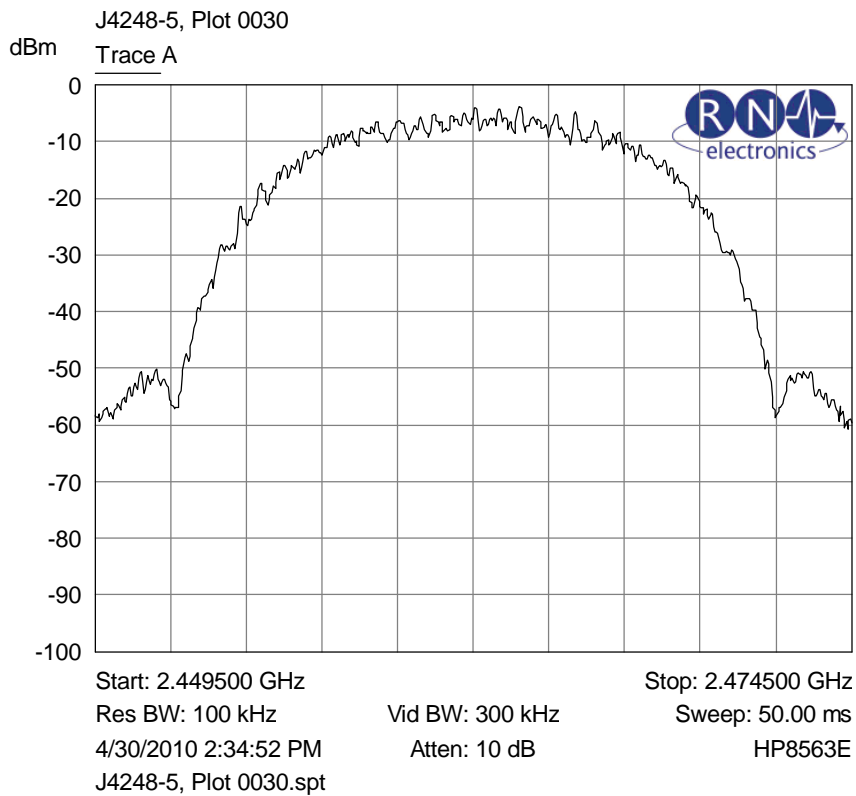
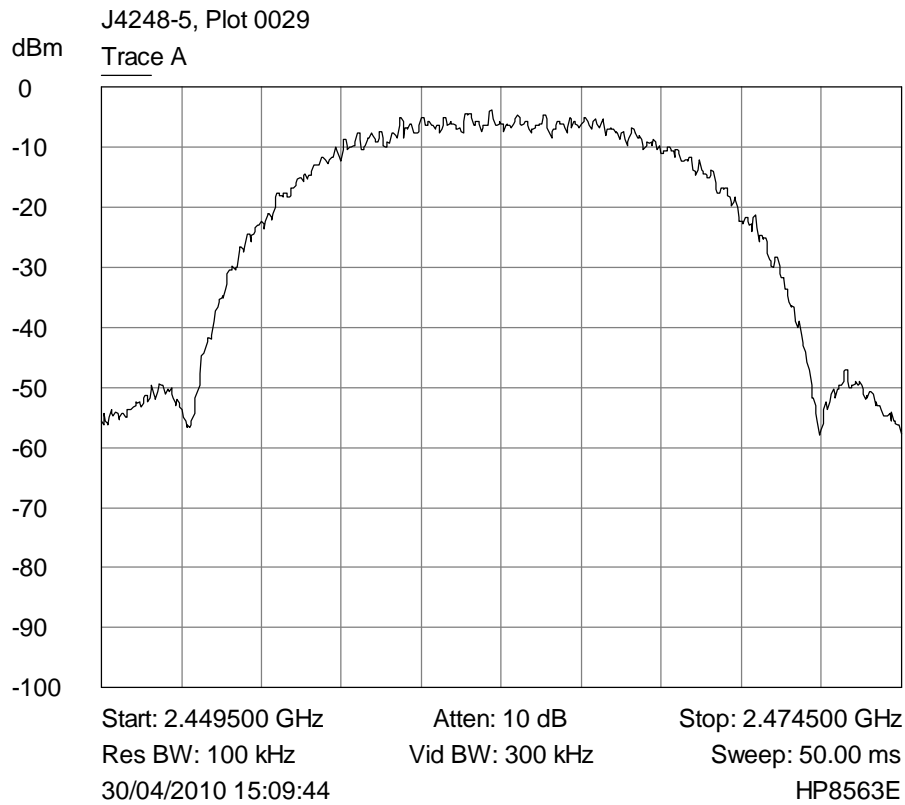


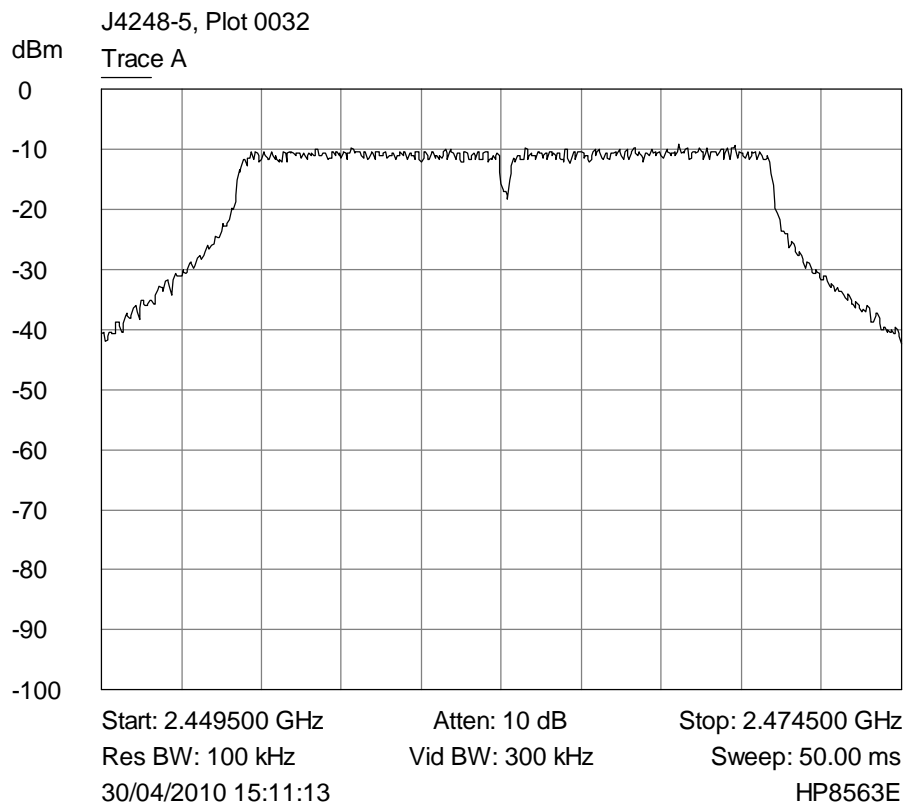
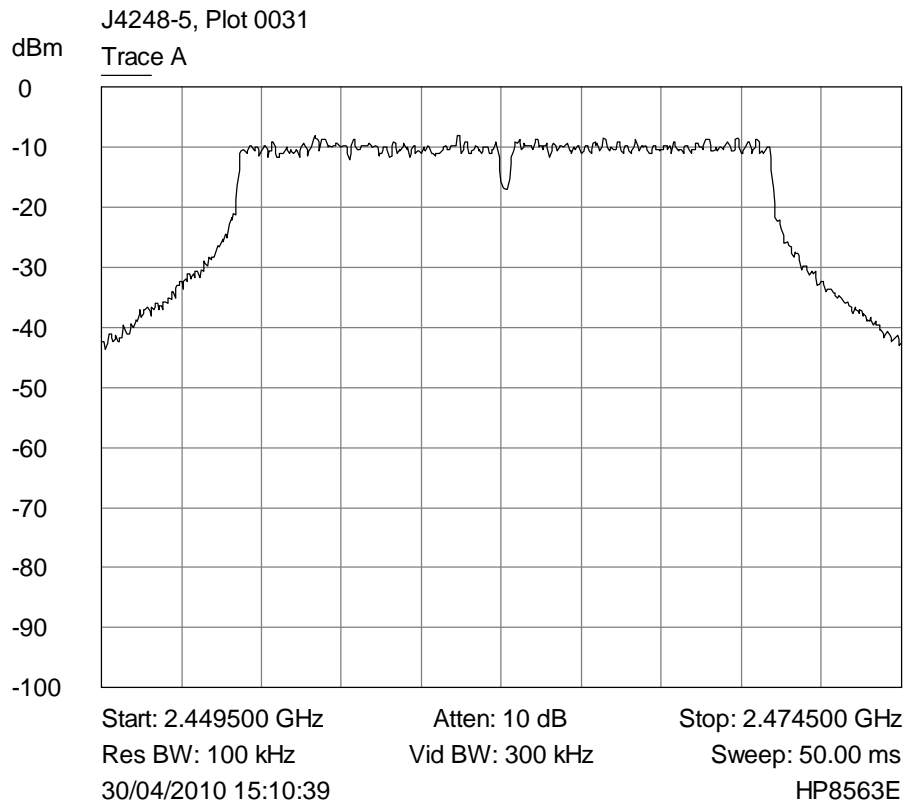


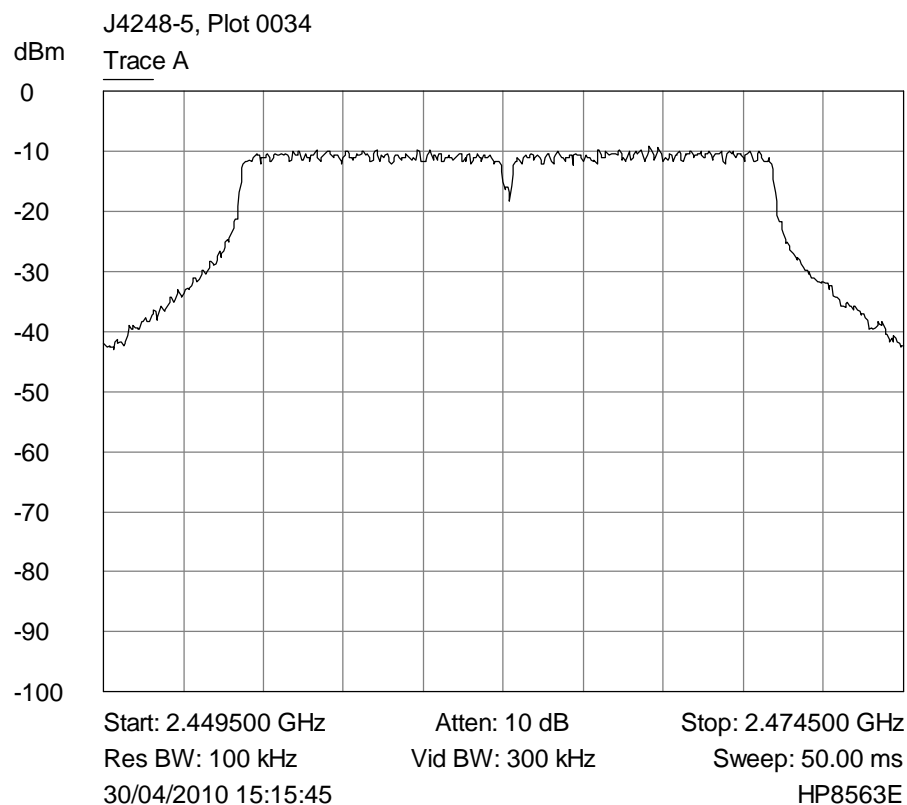
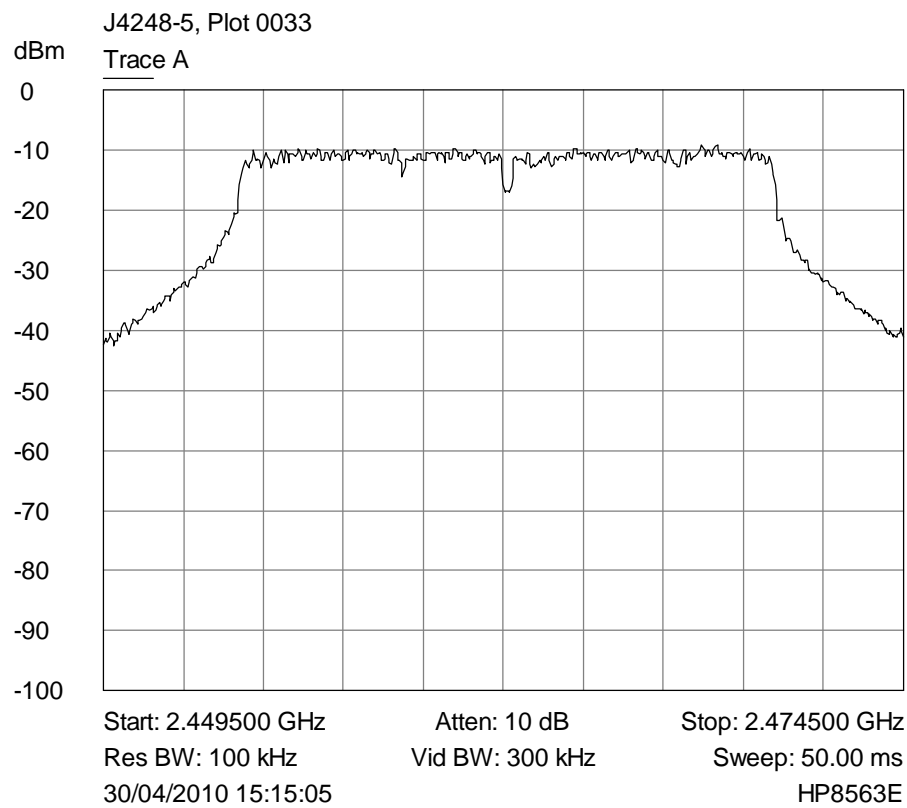


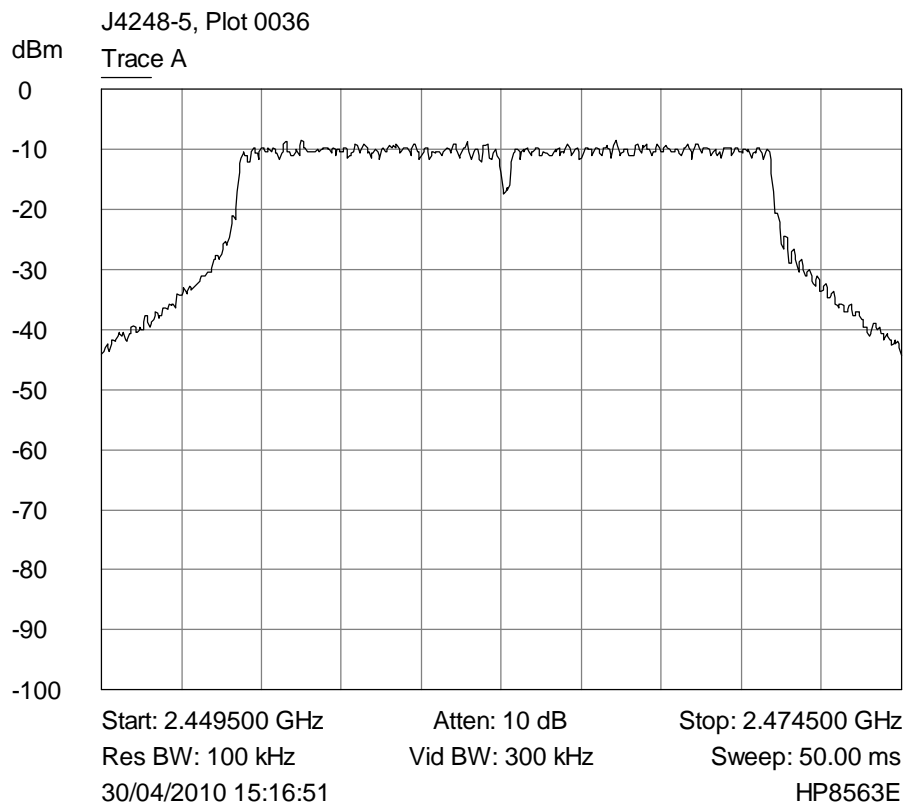
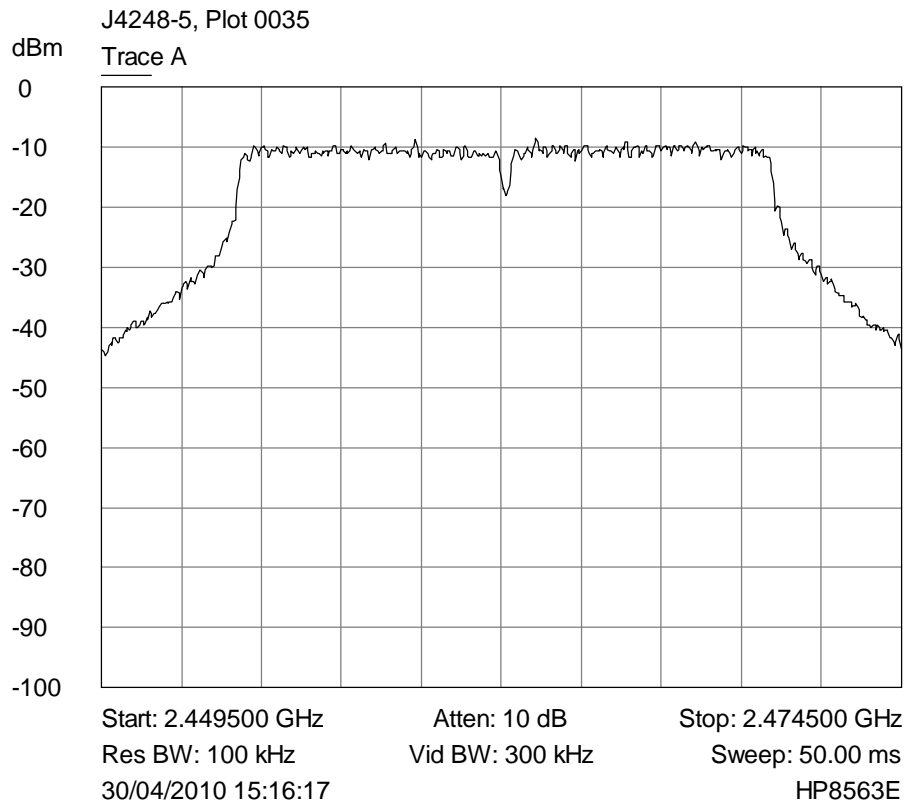


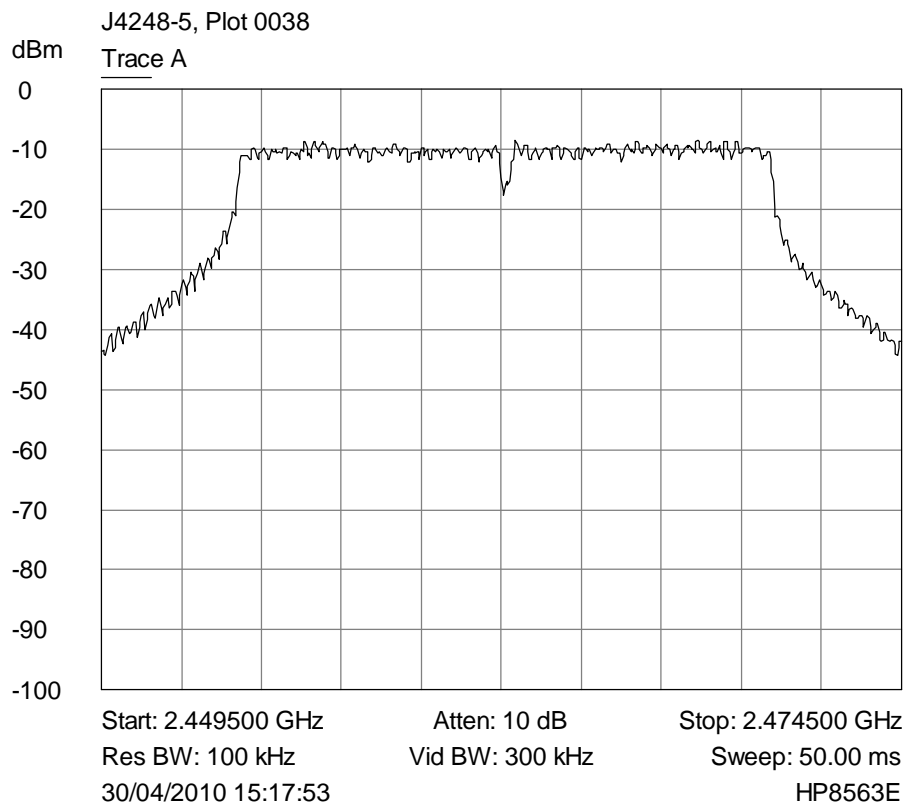
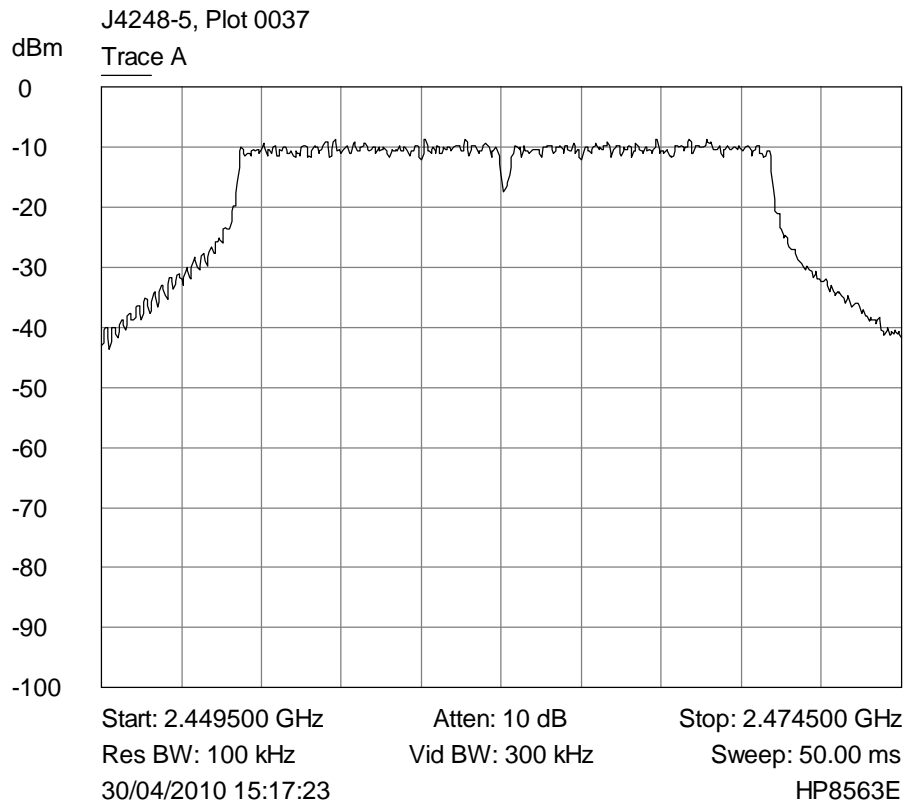


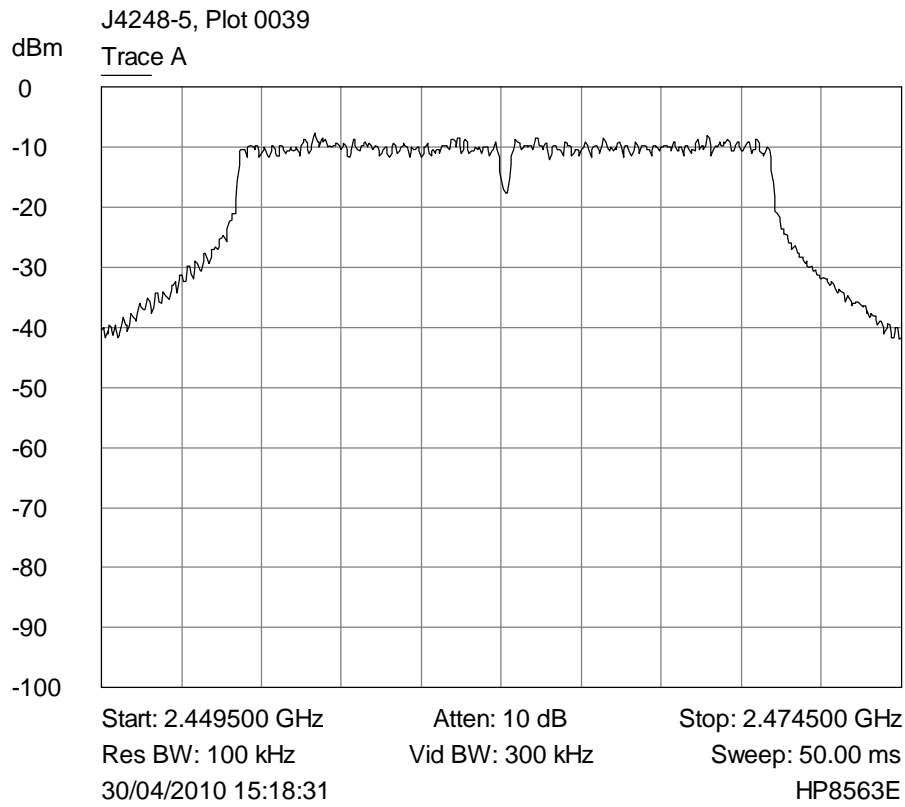






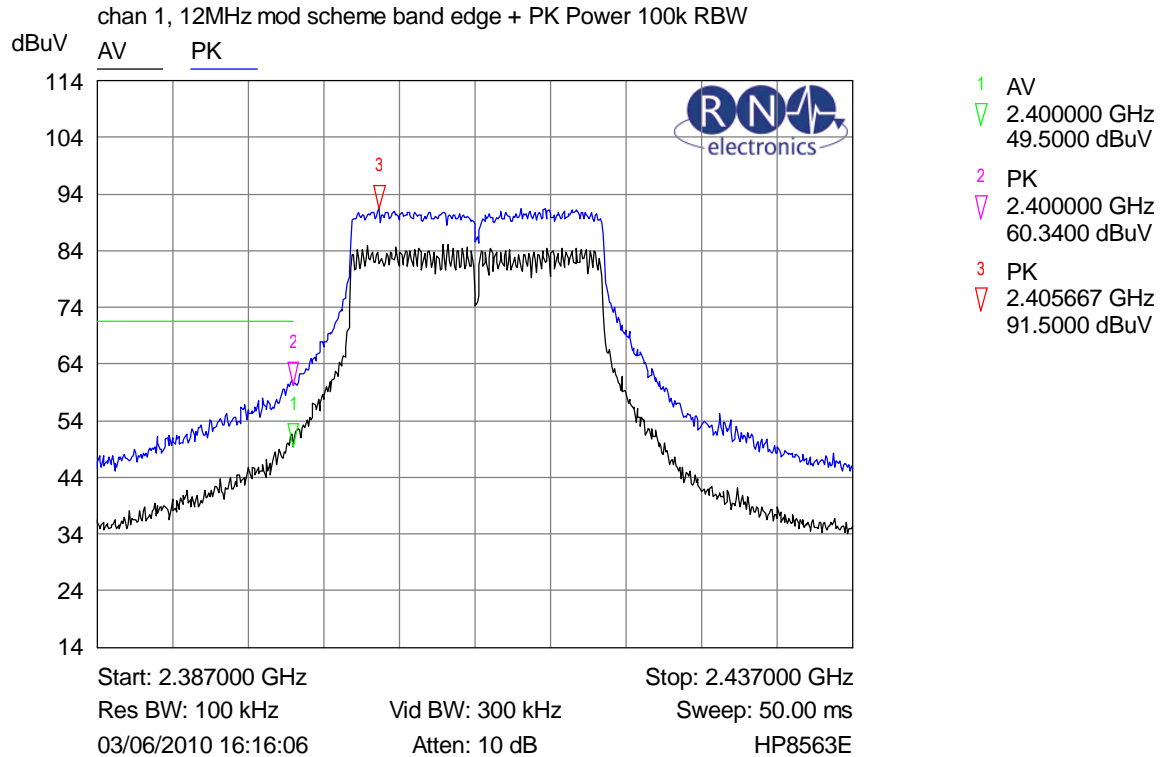
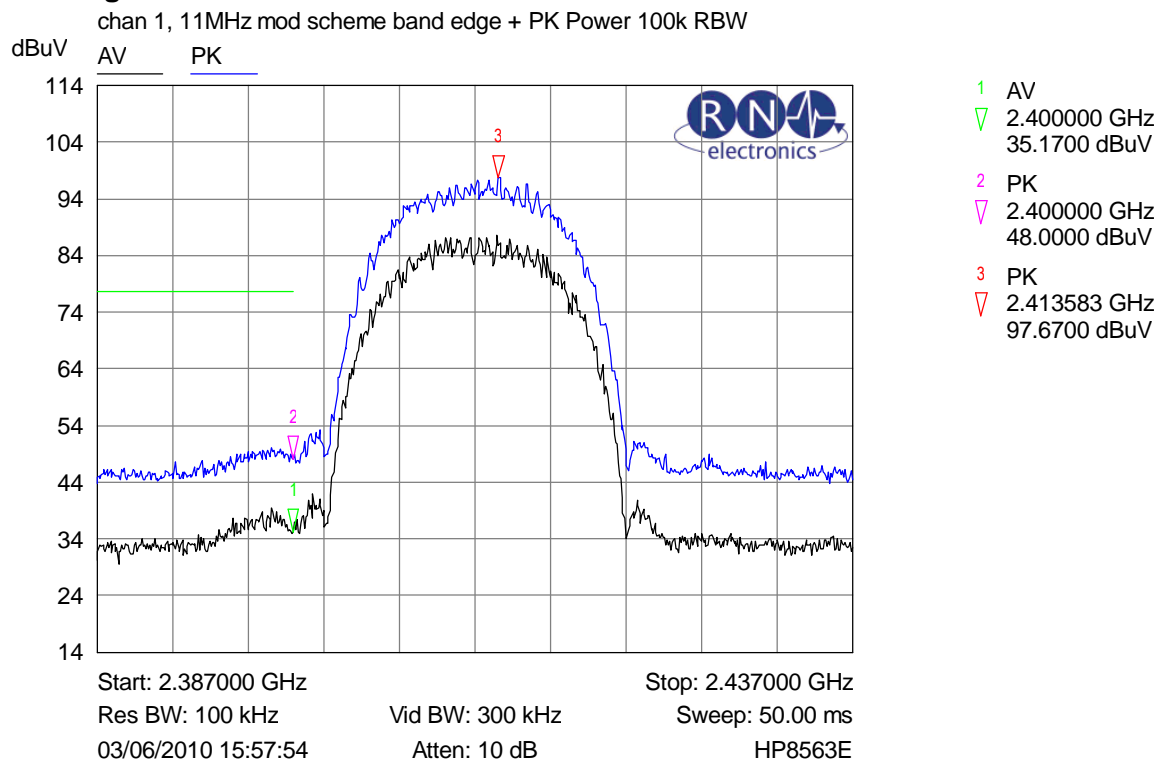


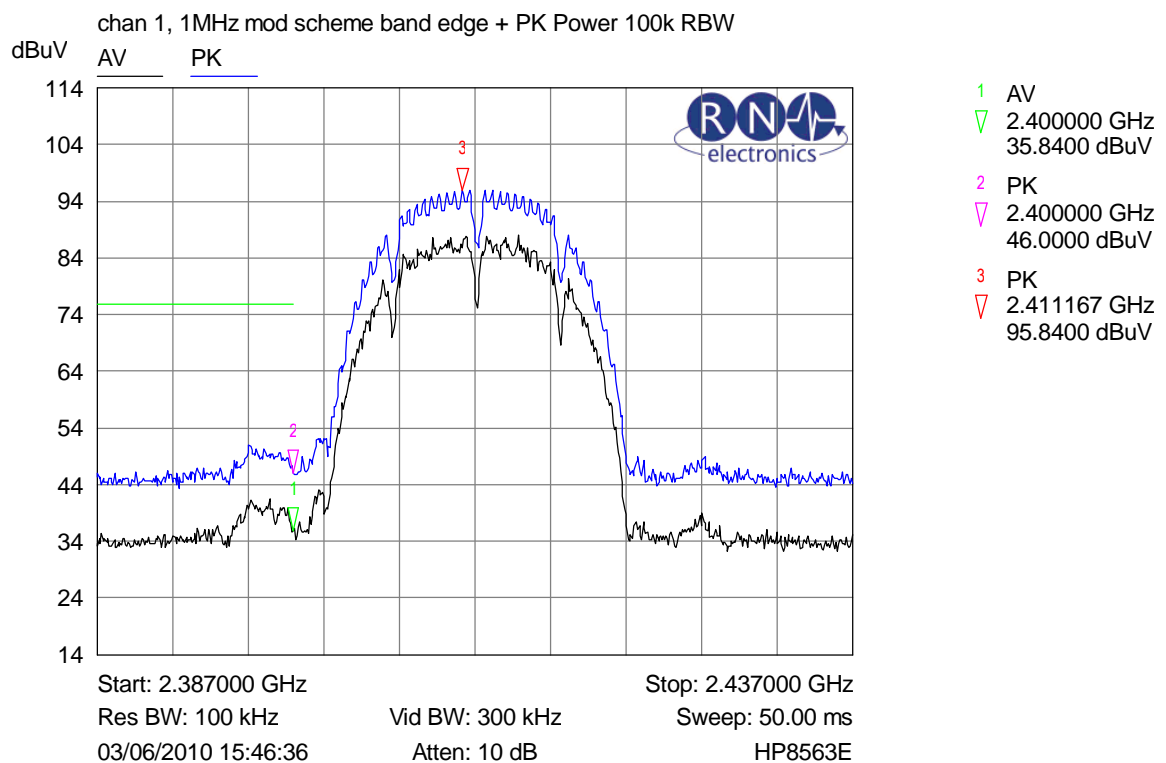
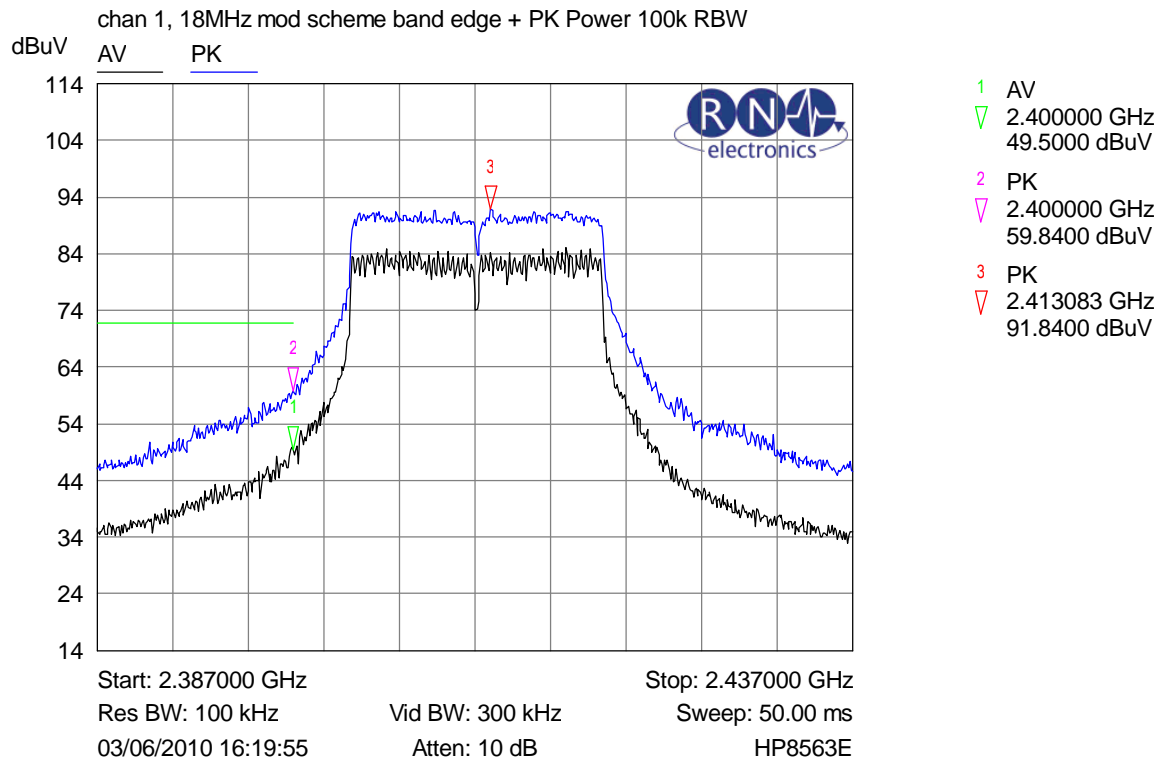


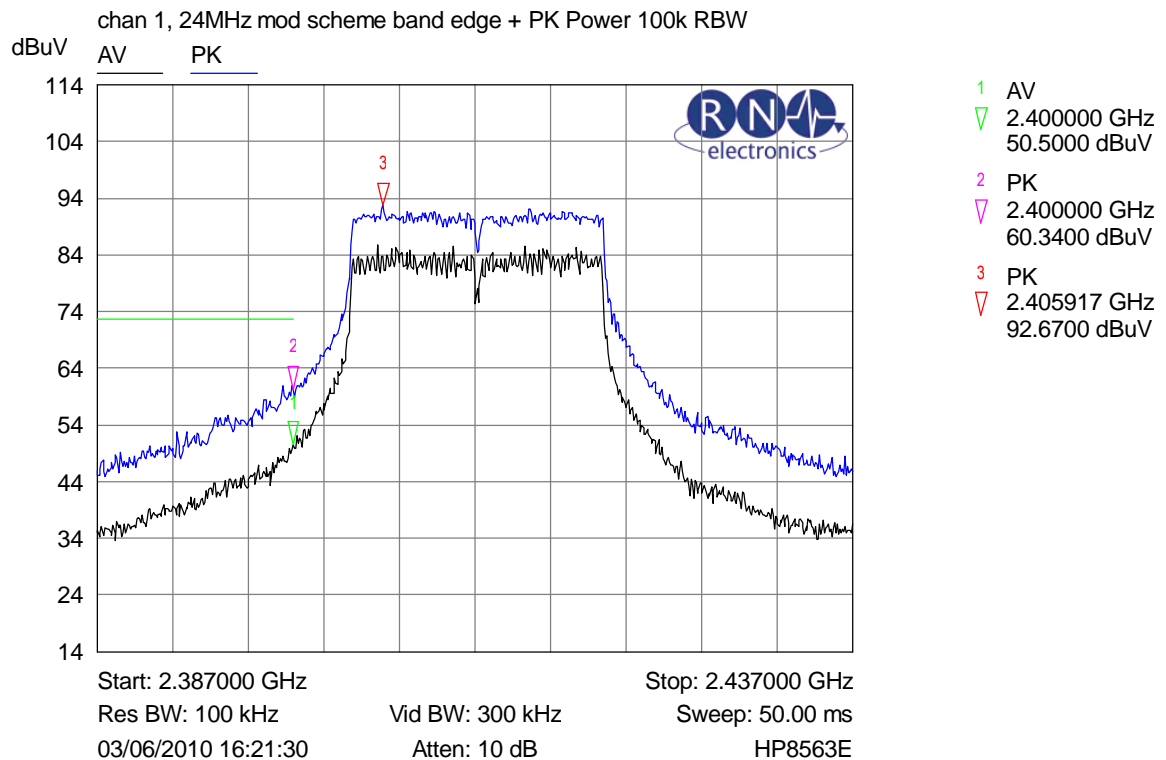
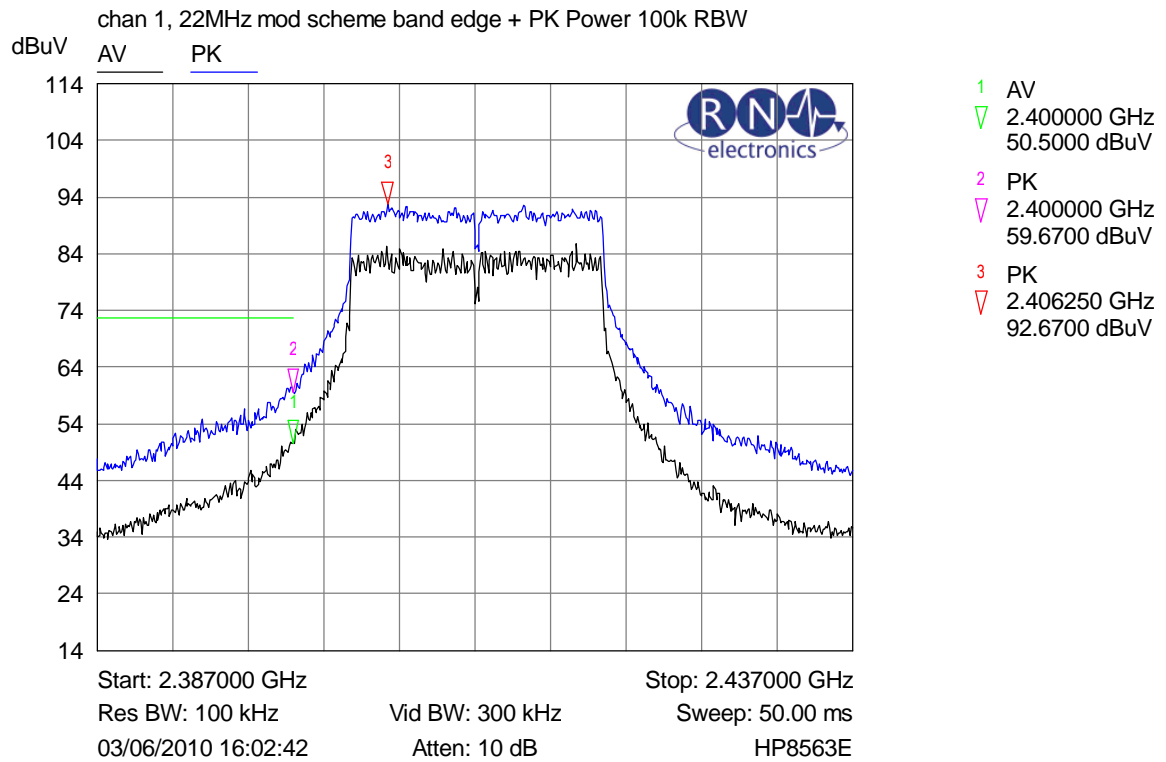


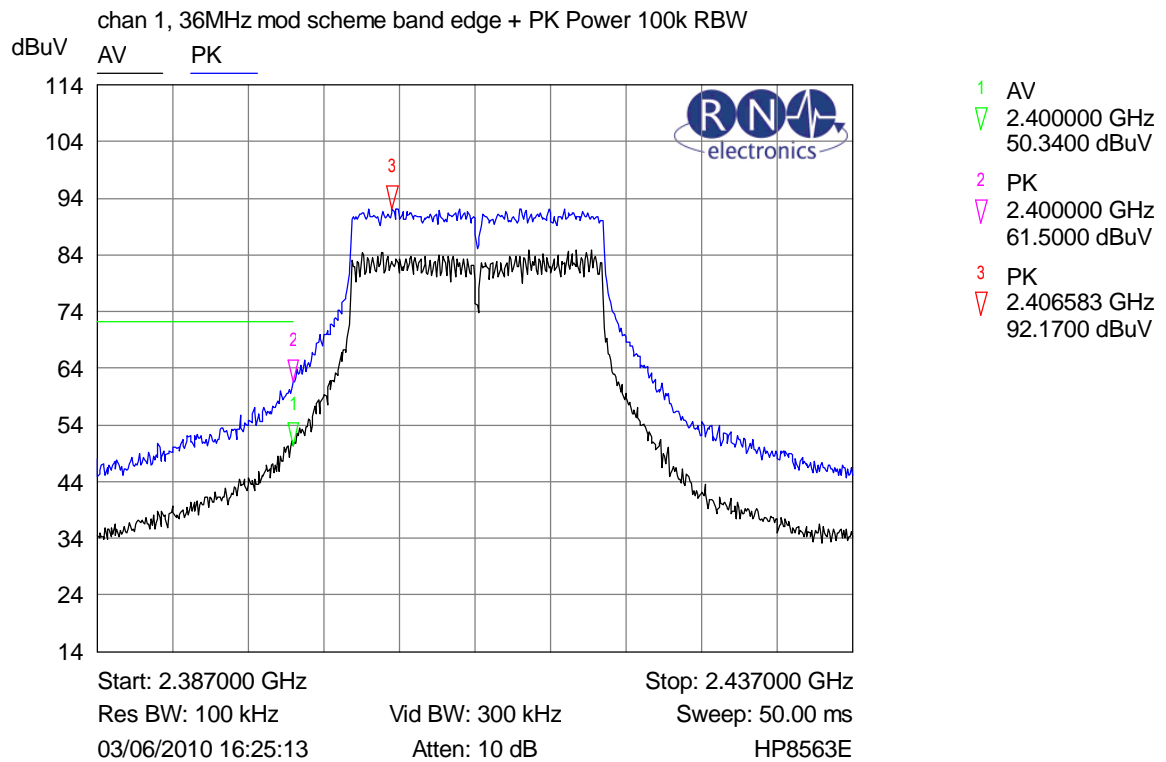
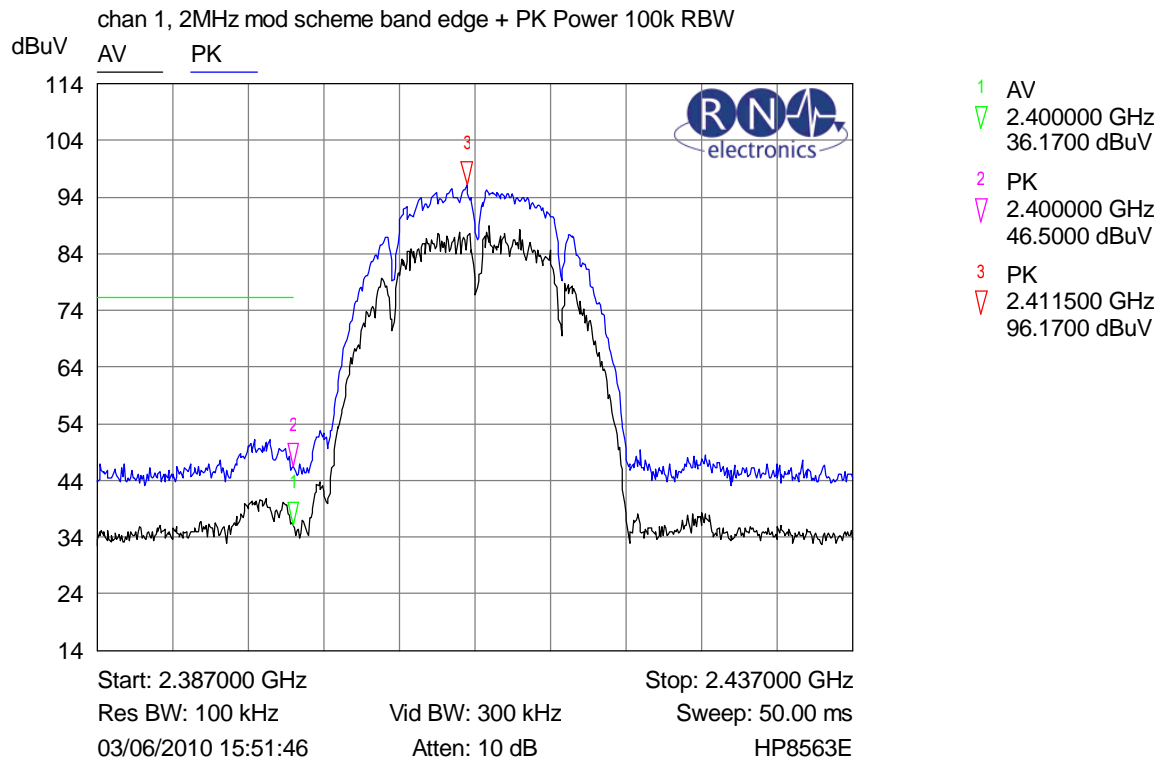
6.6 Band Edge Compliance

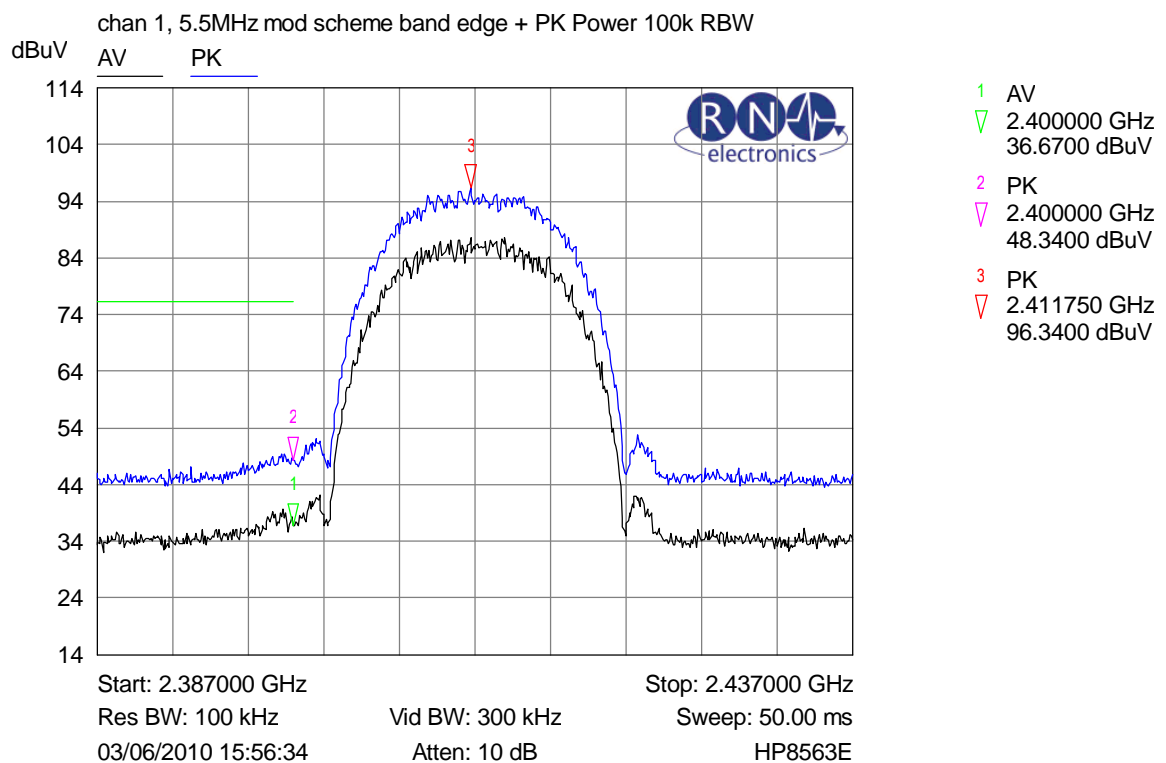
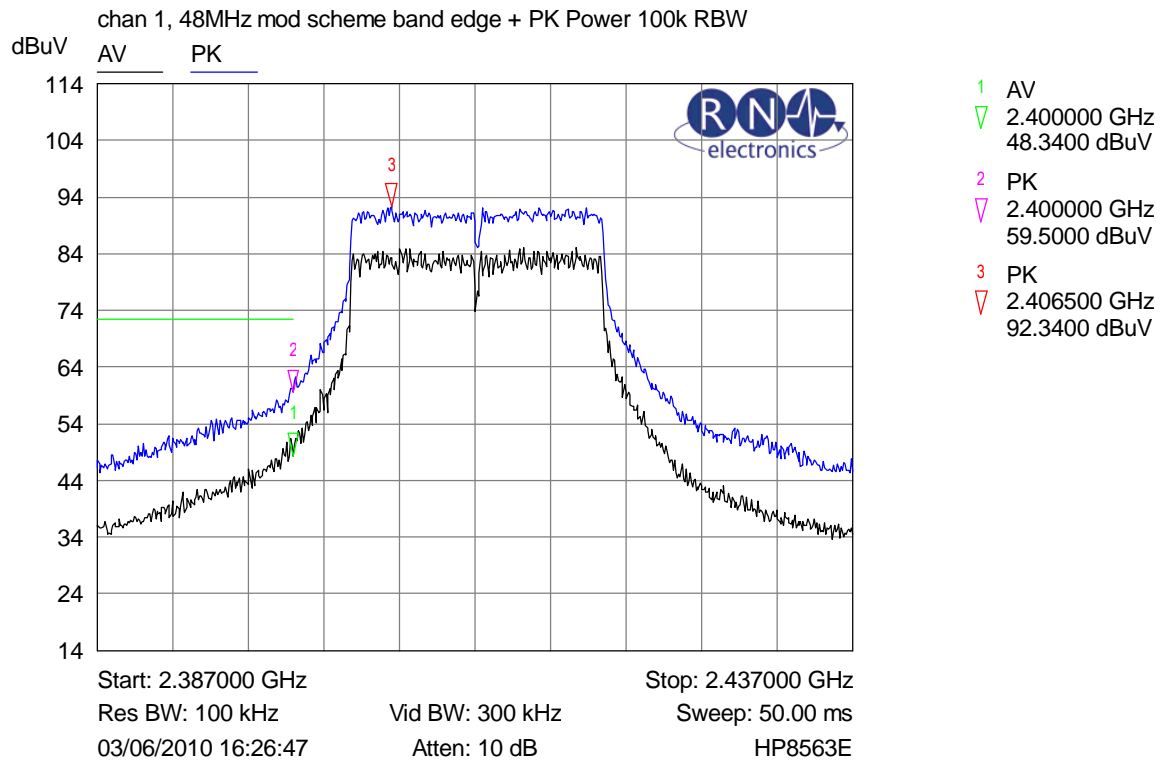
Band Edges.

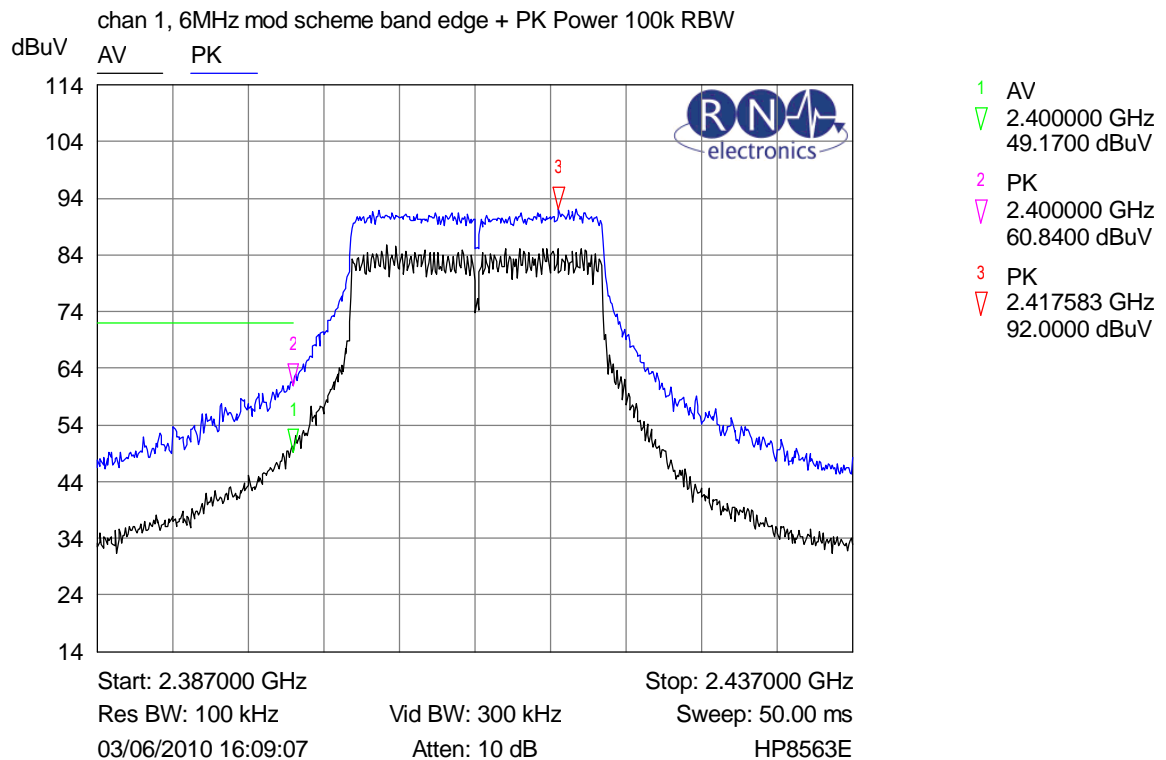
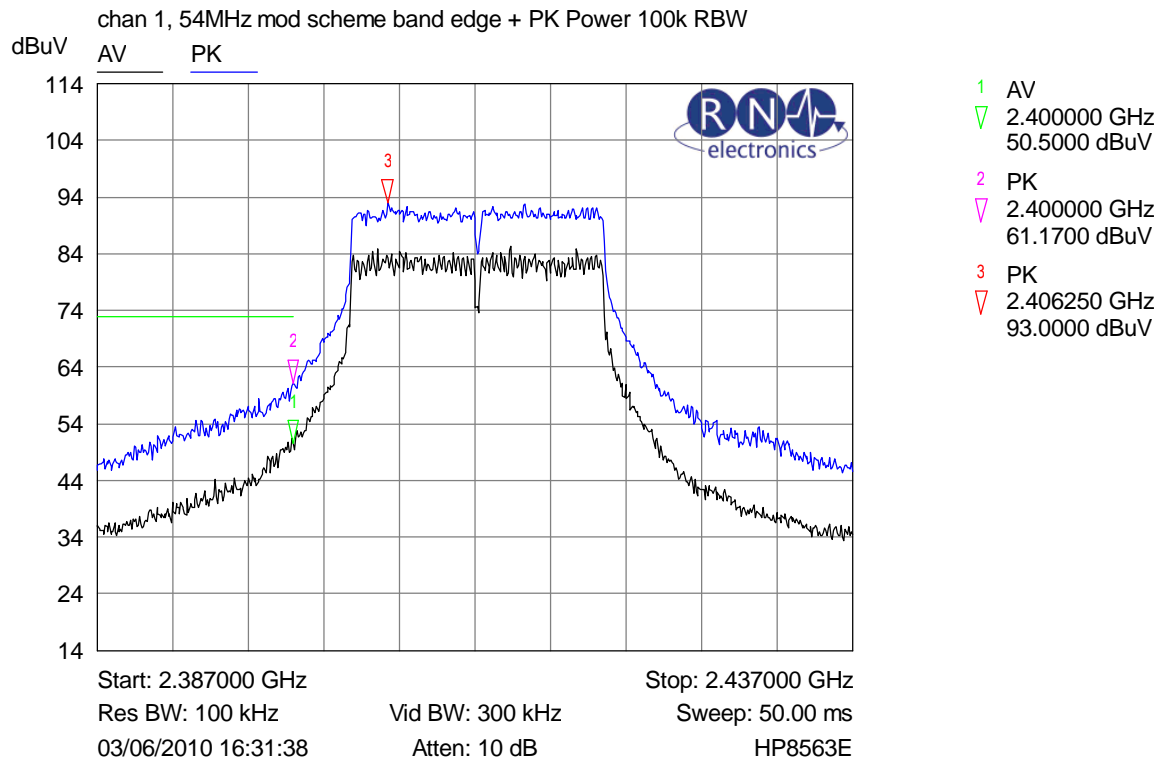






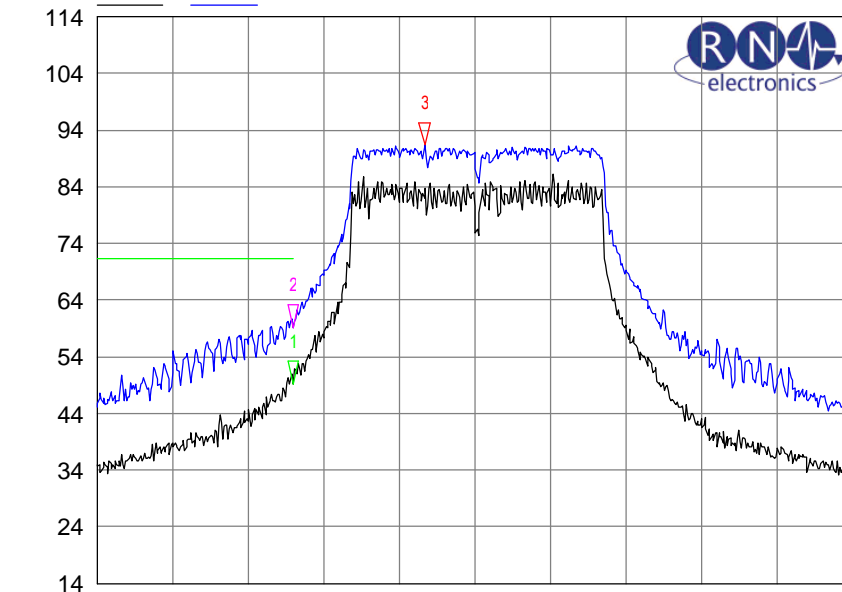






chan 1, 9MHz mod scheme band edge + PK Power 100k RBW

AV PK



- 1 AV
2.400000 GHz
49.1700 dBuV
- 2 PK
2.400000 GHz
59.1700 dBuV
- 3 PK
2.408667 GHz
91.3400 dBuV

Start: 2.387000 GHz

Res BW: 100 kHz

03/06/2010 16:14:25

Vid BW: 300 kHz

Atten: 10 dB

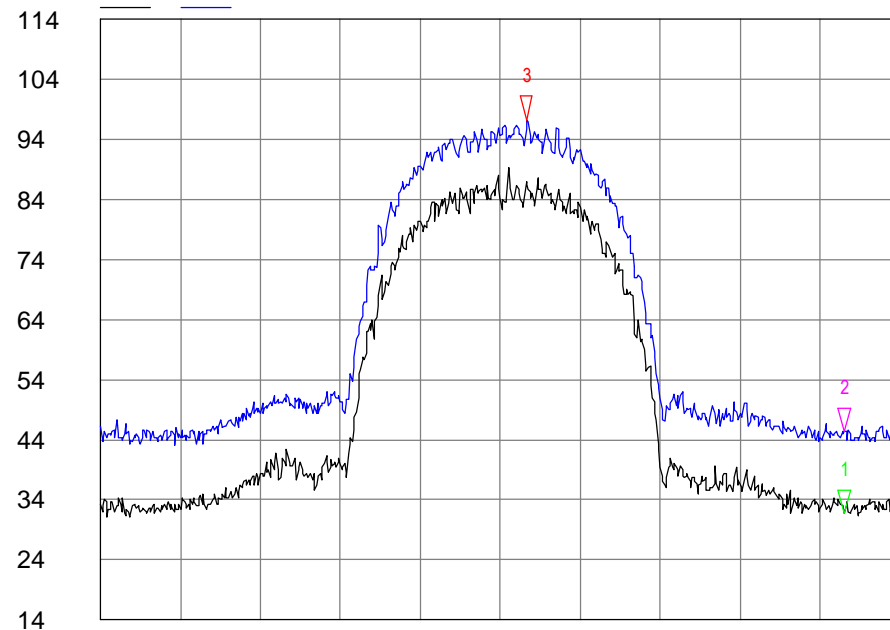
Stop: 2.437000 GHz

Sweep: 50.00 ms

HP8563E

chan 11, 11MHz mod scheme band edge + PK Power 100k RBW

AV PK



- 1 AV
2.483500 GHz
31.6700 dBuV
- 2 PK
2.483500 GHz
45.3400 dBuV
- 3 PK
2.463667 GHz
97.1700 dBuV

Start: 2.437000 GHz

Res BW: 100 kHz

03/06/2010 16:47:15

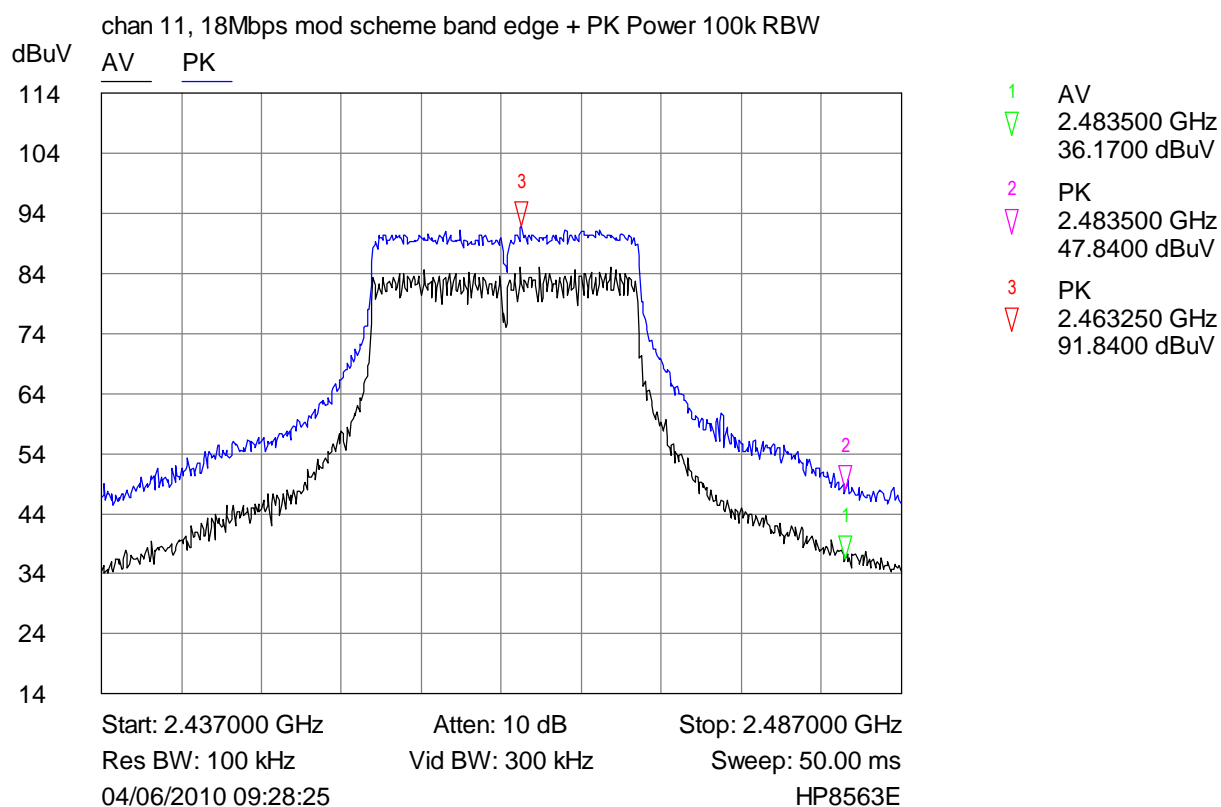
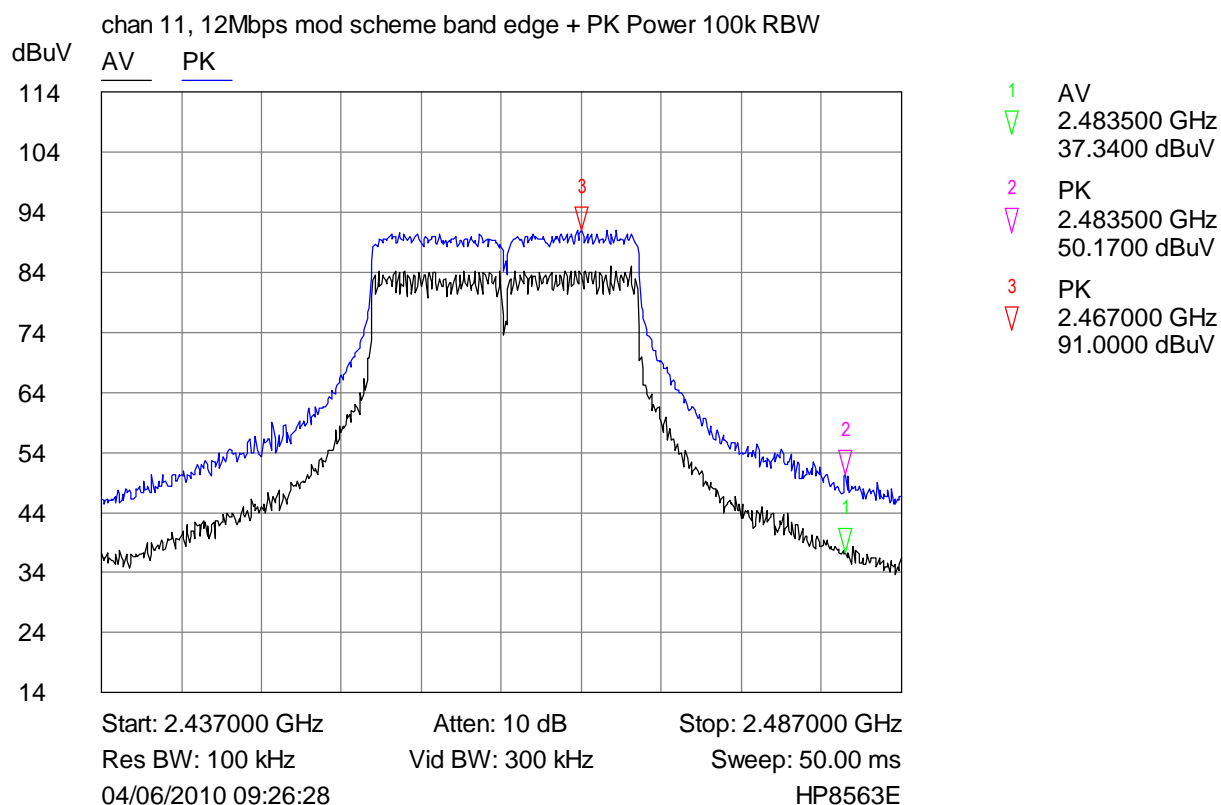
Atten: 10 dB

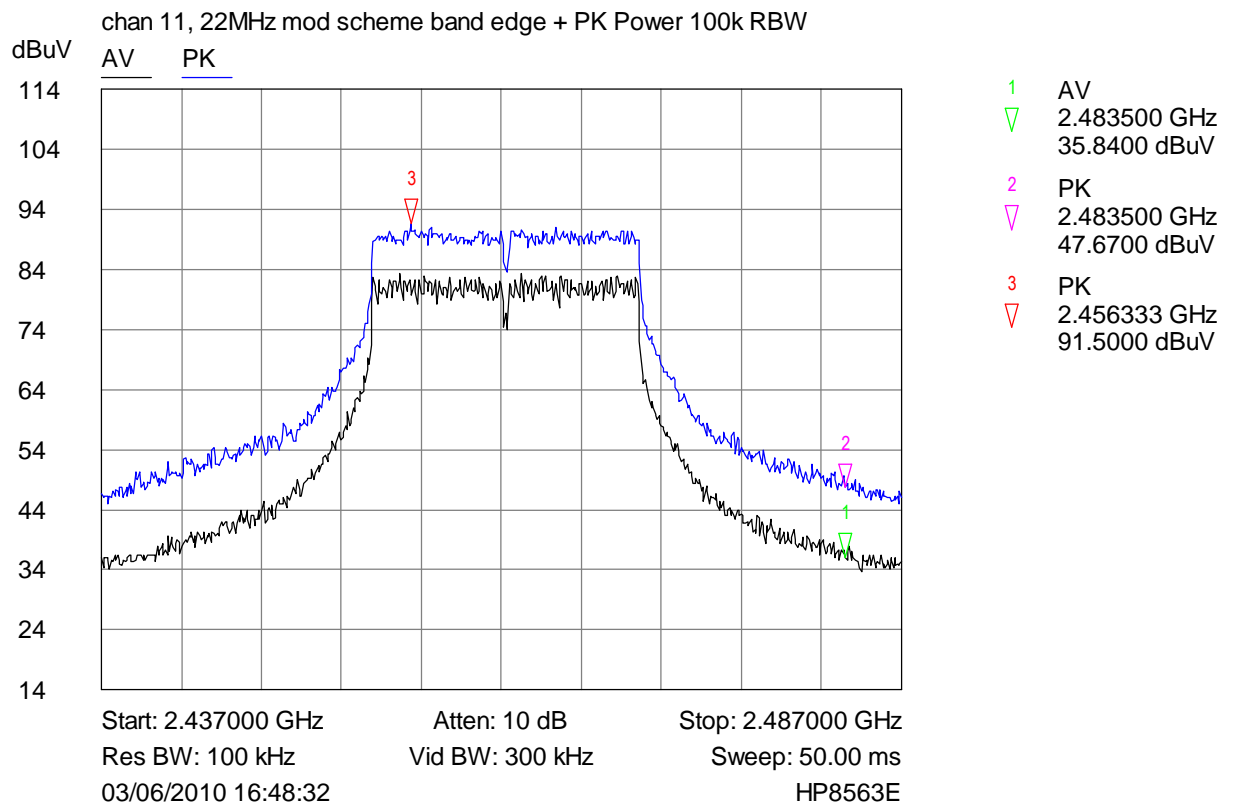
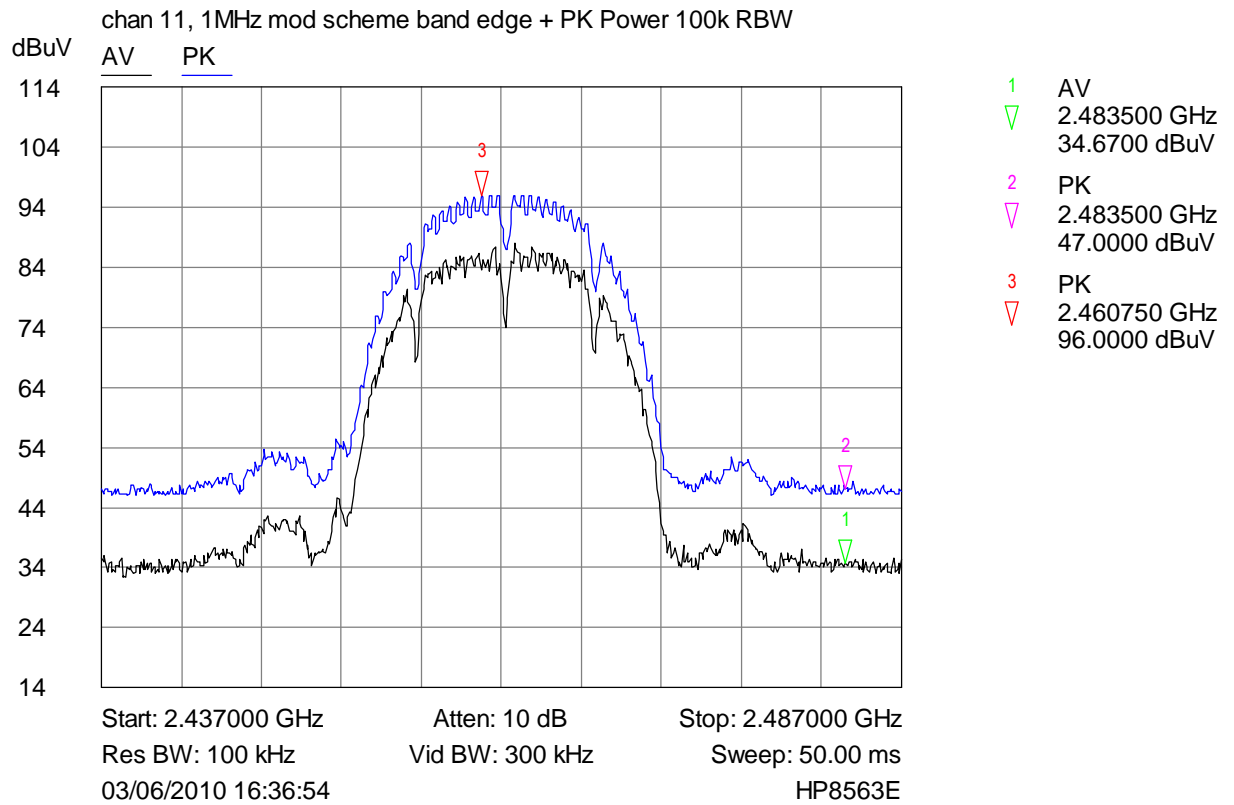
Vid BW: 300 kHz

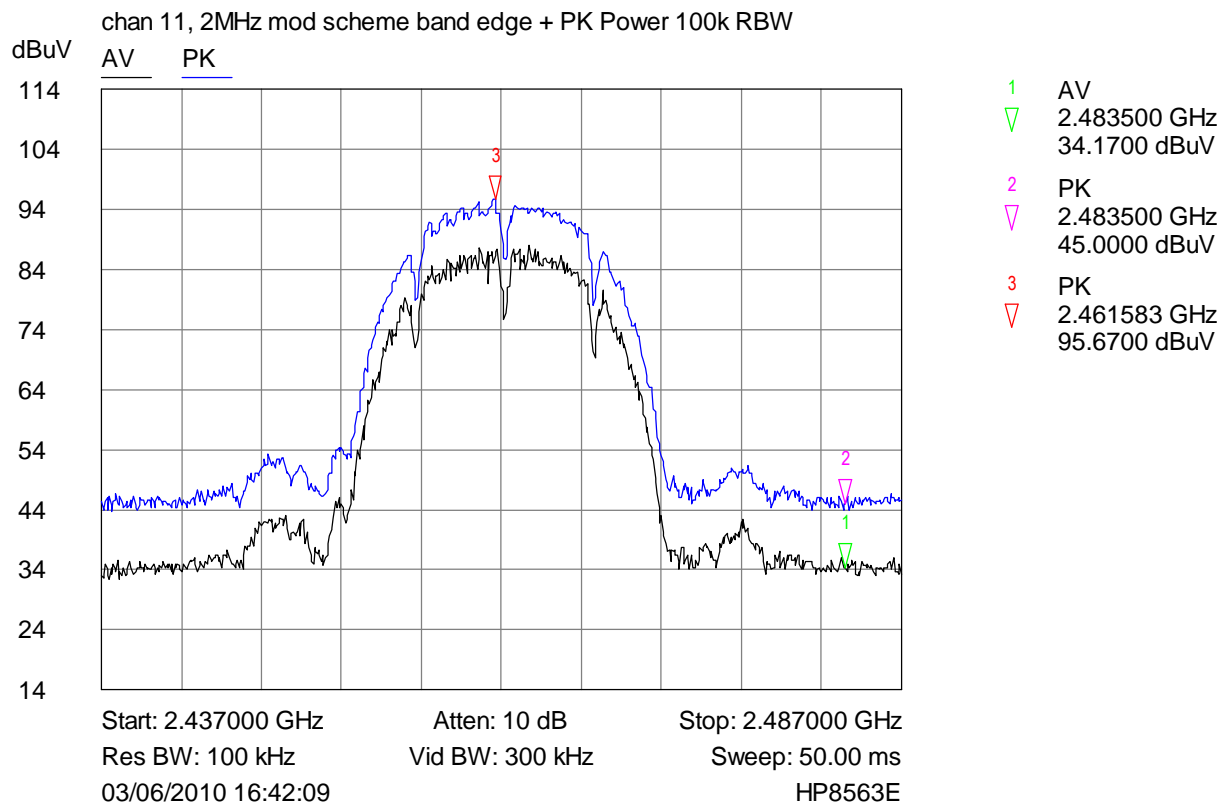
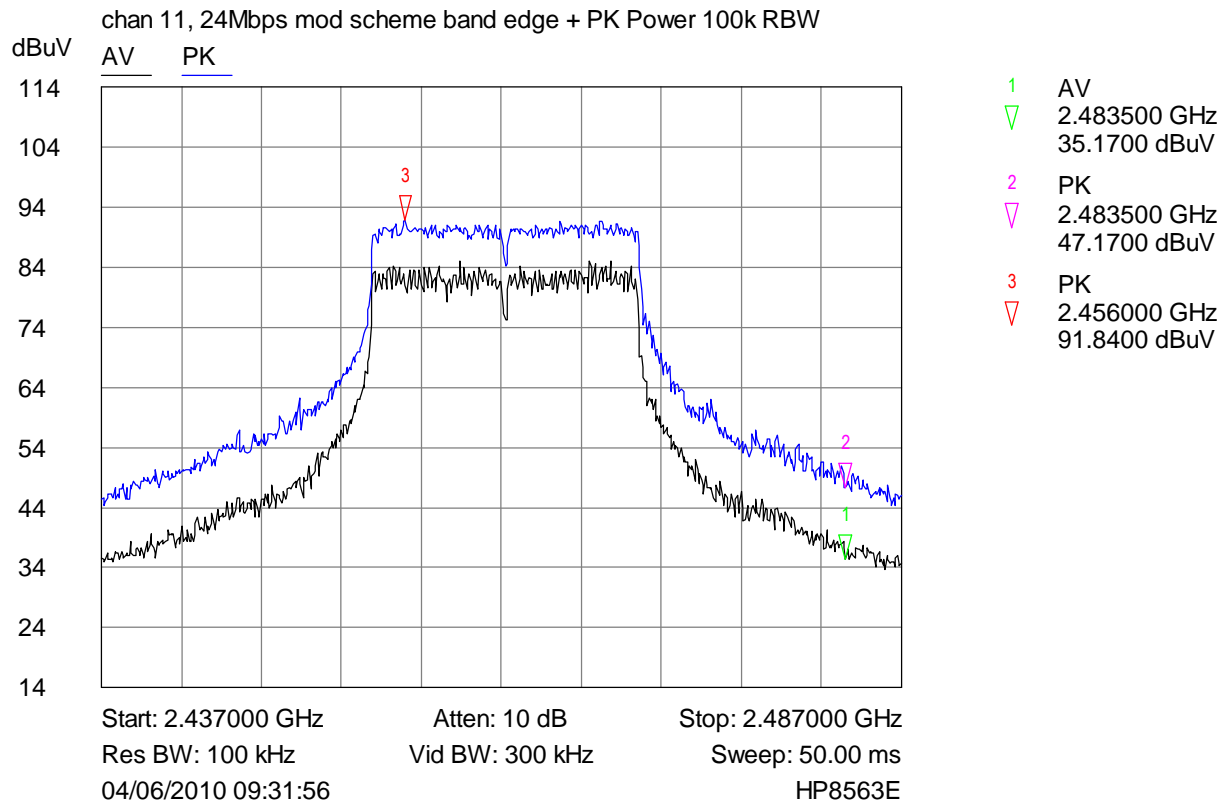
Stop: 2.487000 GHz

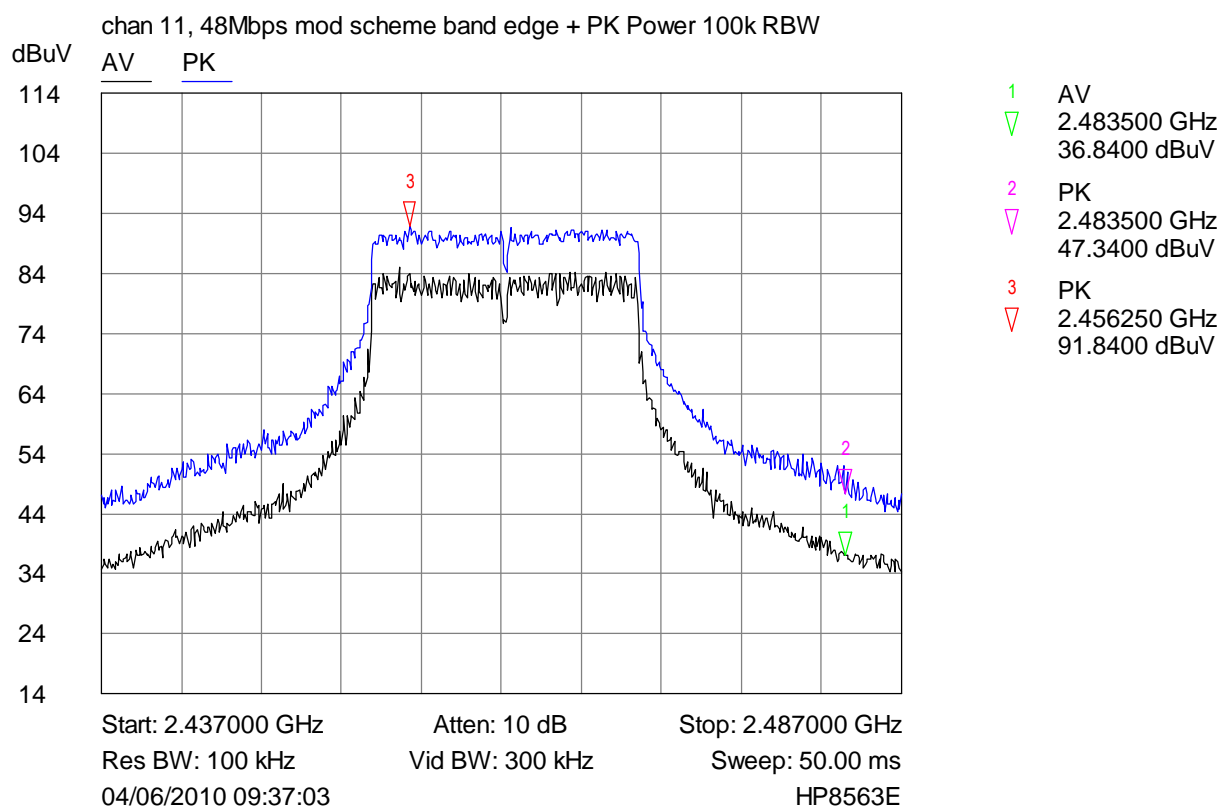
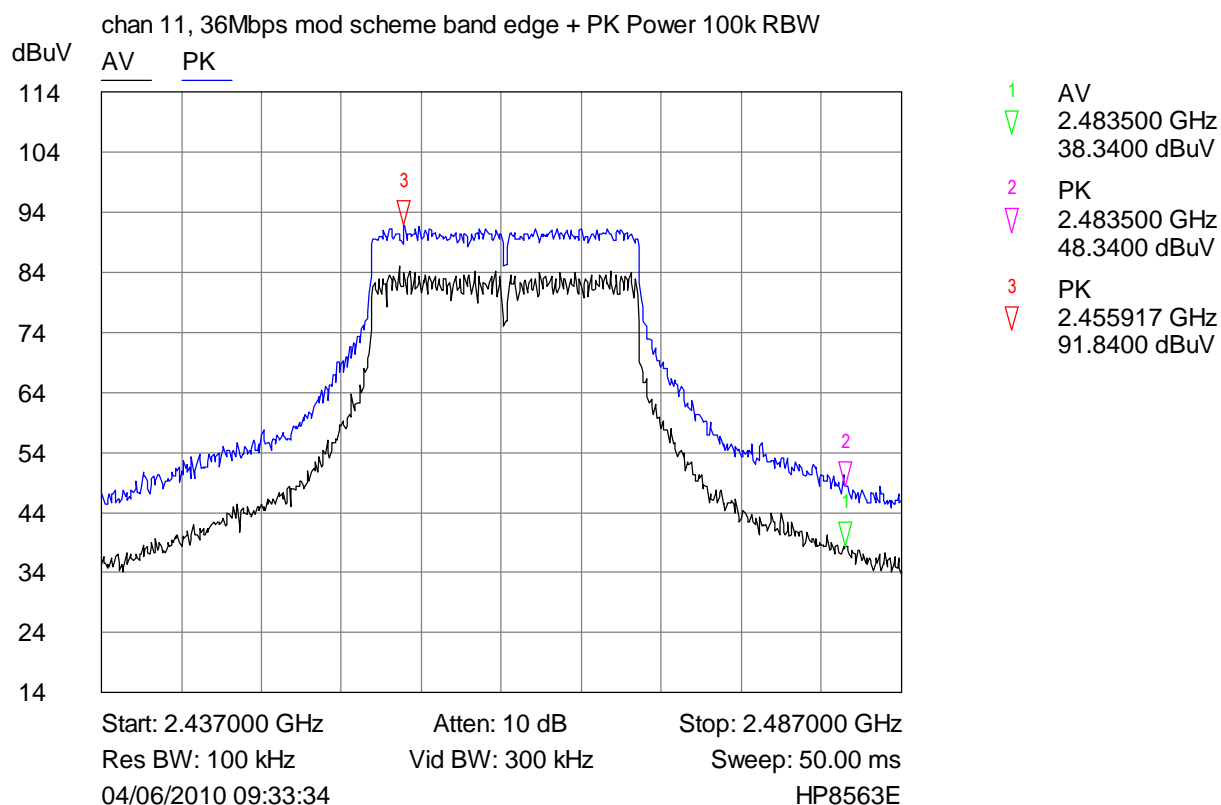
Sweep: 50.00 ms

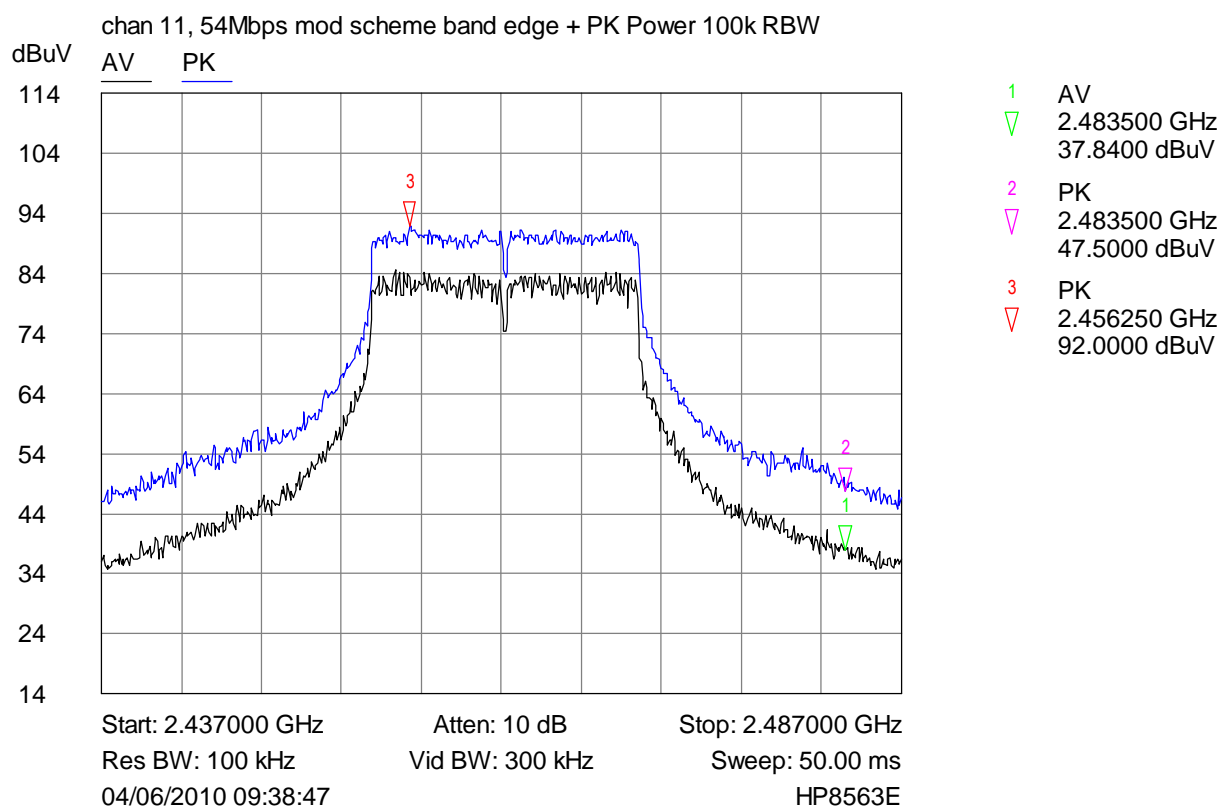
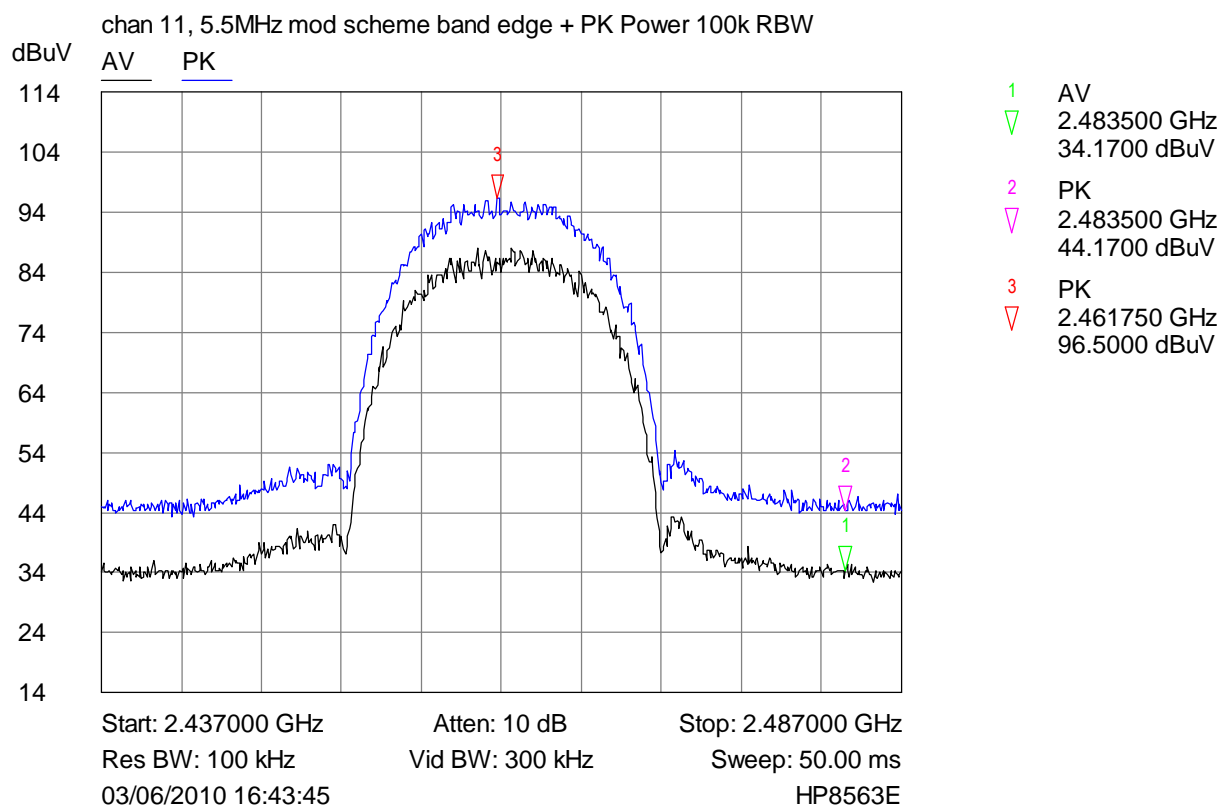
HP8563E

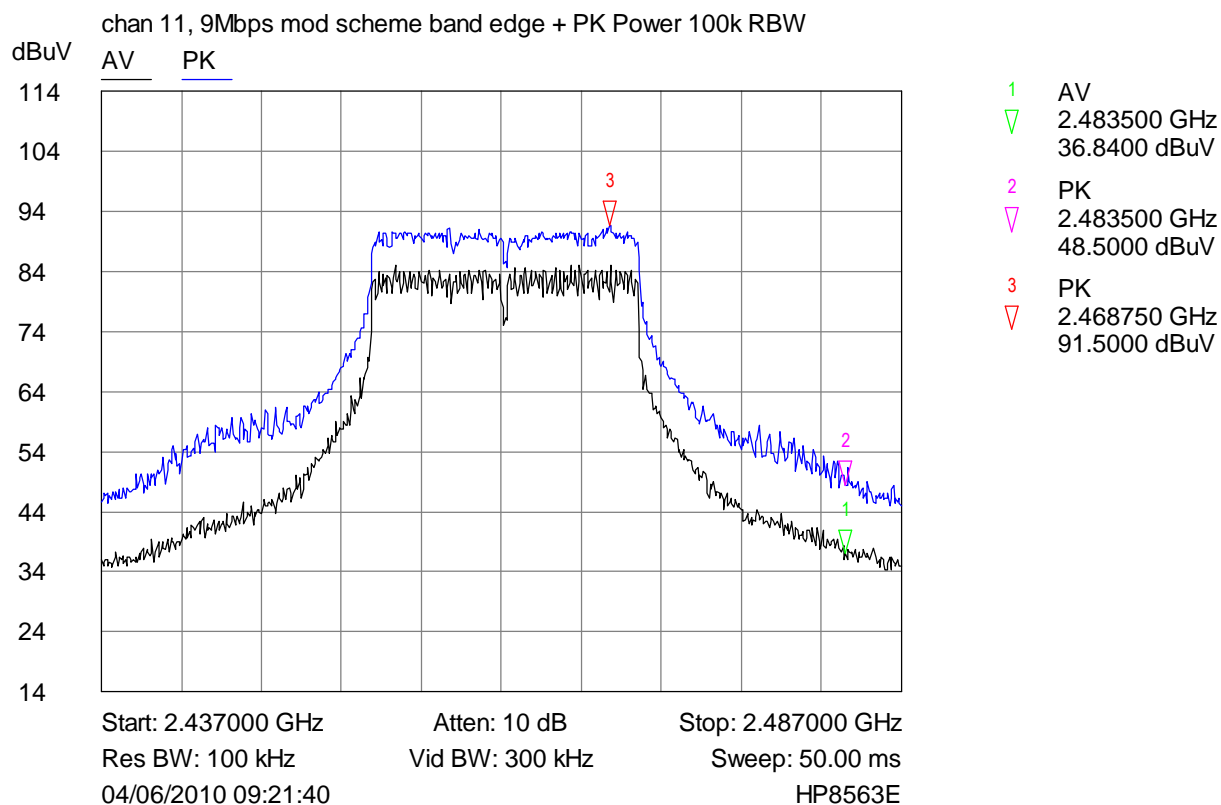
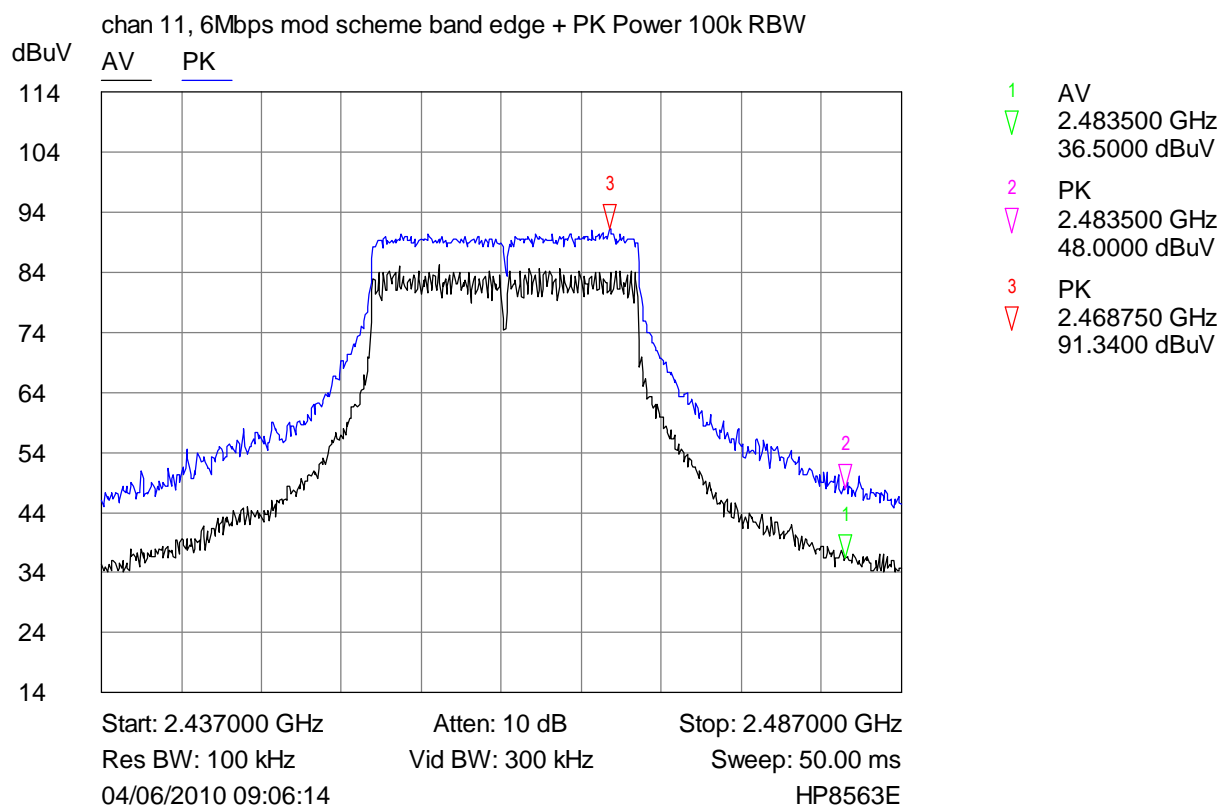








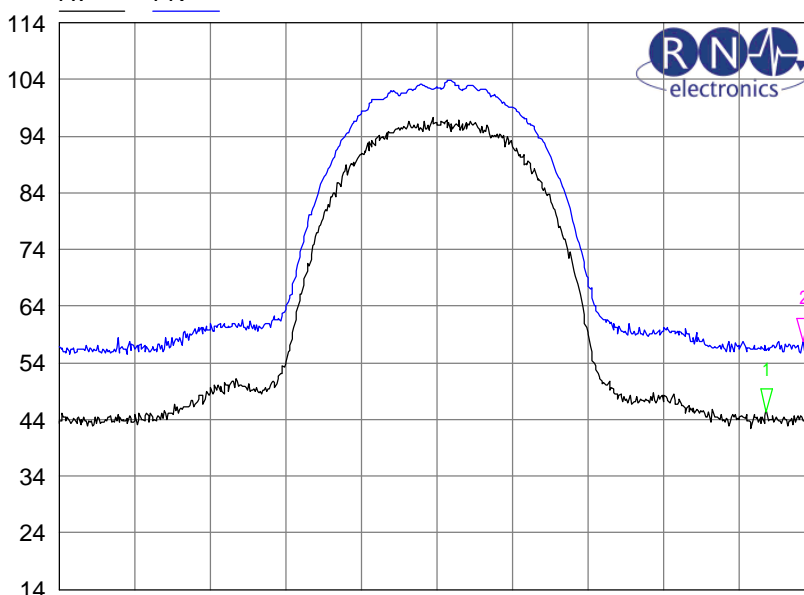




Restricted band Edges.

chan 11, 11MHz mod scheme restricted band edge

dBuV AV PK



Start: 2.437000 GHz

Res BW: 1 MHz

03/06/2010 16:46:14

Vid BW: 3 MHz

Atten: 10 dB

Stop: 2.487000 GHz

Sweep: 50.00 ms

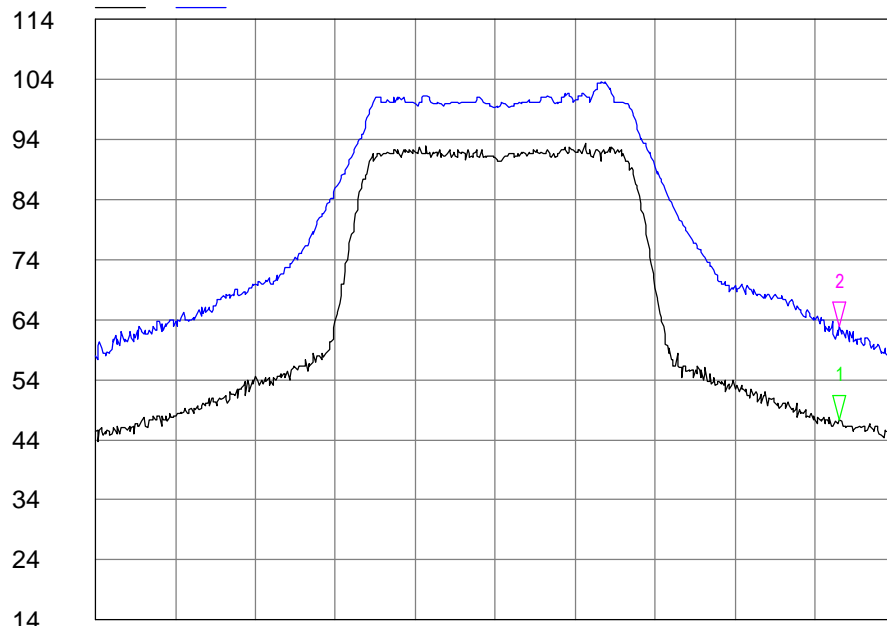
HP8563E

1 AV
2.483800 GHz
45.3720 dBuV

2 PK
2.486250 GHz
57.8400 dBuV

chan 11, 12Mbps restricted band edge

dBuV AV PK



Start: 2.437000 GHz

Res BW: 1 MHz

04/06/2010 09:25:22

Atten: 10 dB

Vid BW: 3 MHz

Stop: 2.487000 GHz

Sweep: 50.00 ms

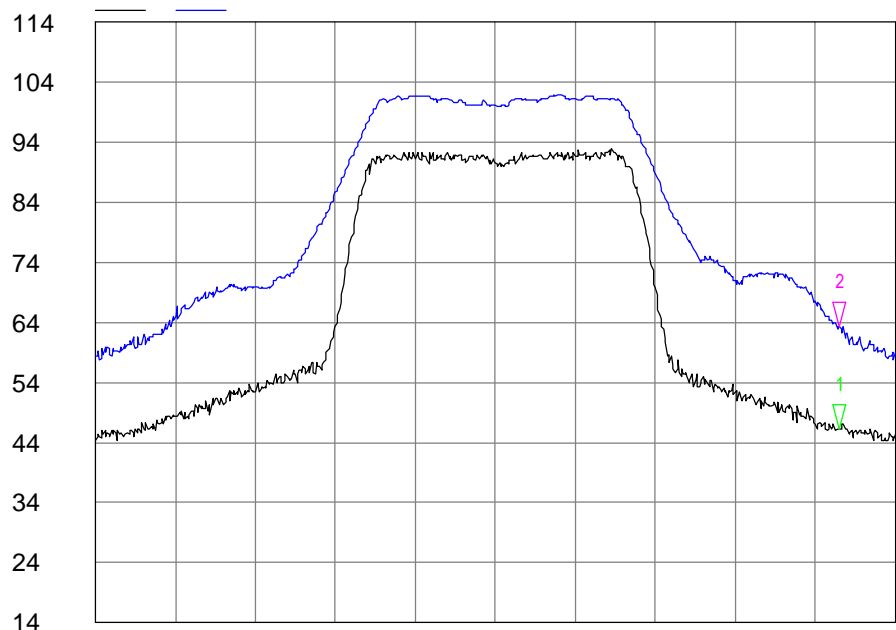
HP8563E

1 AV
2.483500 GHz
47.3400 dBuV

2 PK
2.483500 GHz
62.8400 dBuV

chan 11, 18Mbps restricted band edge

dBuV AV PK



Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 1 MHz

Vid BW: 3 MHz

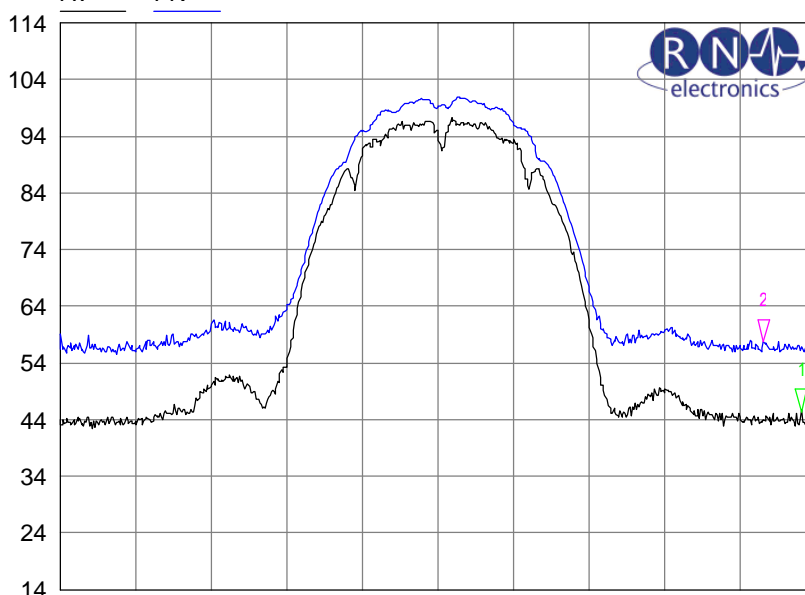
Sweep: 50.00 ms

04/06/2010 09:29:30

HP8563E

chan 11, 1MHz mod scheme restricted band edge

dBuV AV PK



Start: 2.437000 GHz

Vid BW: 3 MHz

Stop: 2.487000 GHz

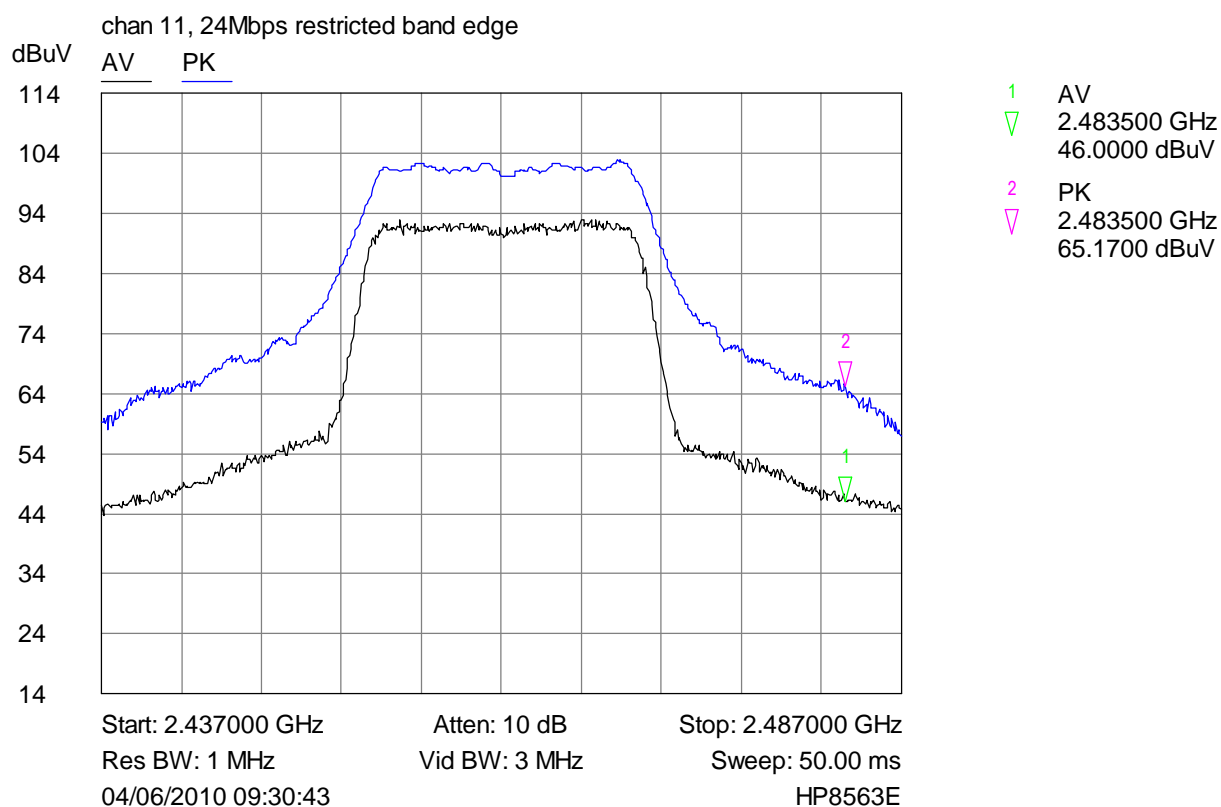
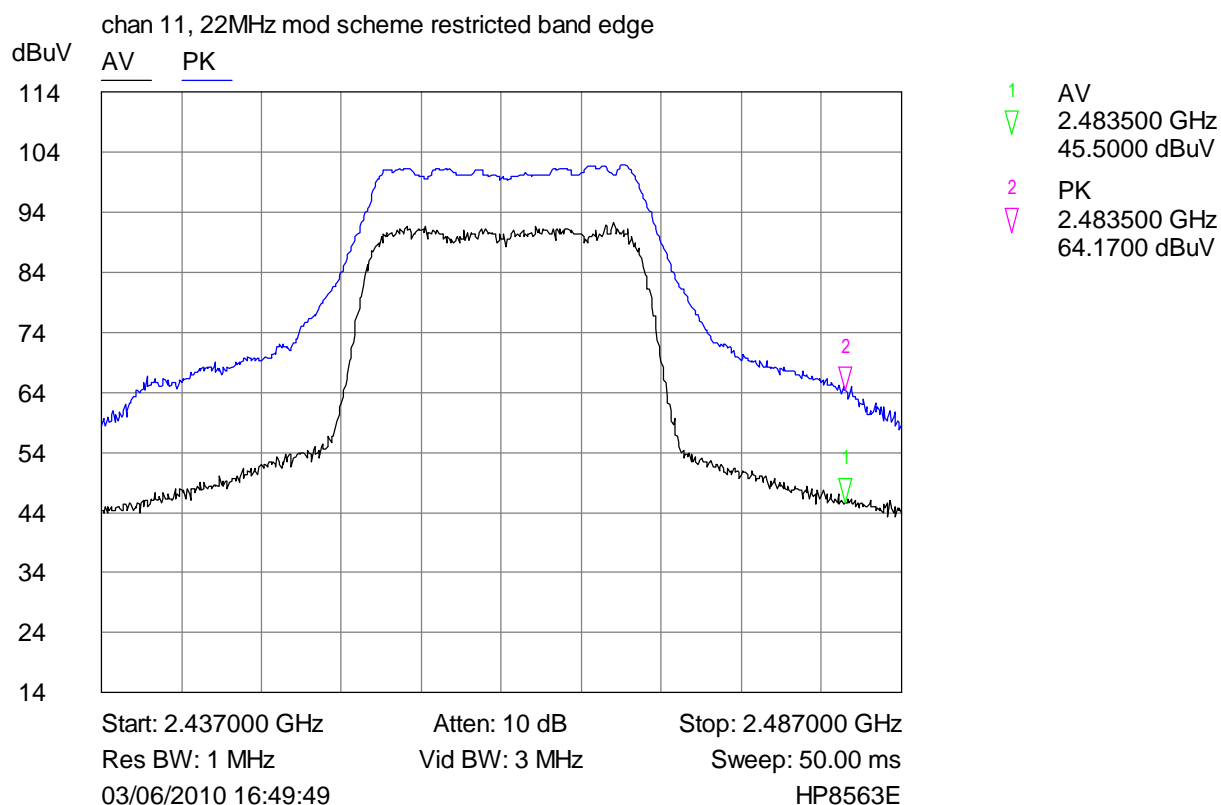
Res BW: 1 MHz

Sweep: 50.00 ms

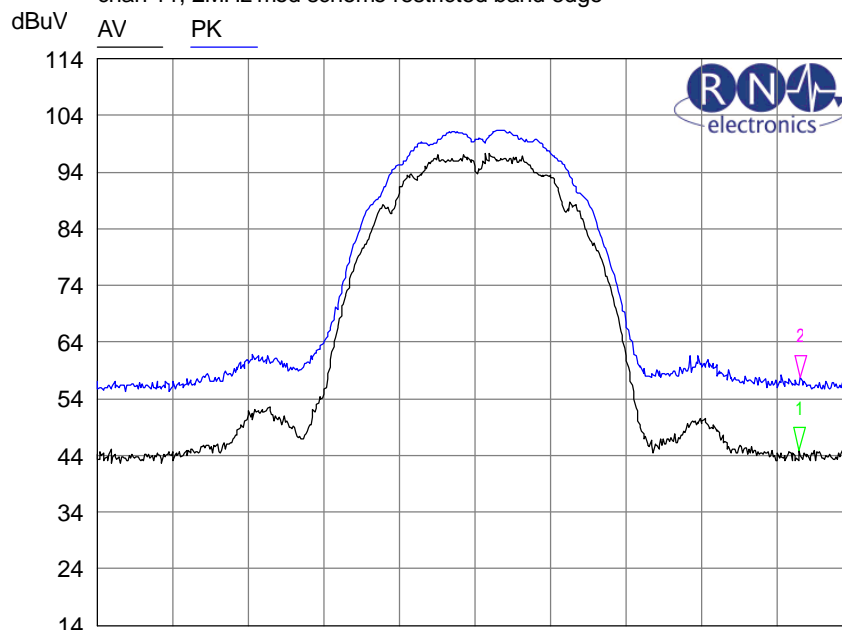
03/06/2010 16:38:56

Atten: 10 dB

HP8563E



chan 11, 2MHz mod scheme restricted band edge



1 AV
2.483500 GHz
44.8400 dBuV
2 PK
2.483600 GHz
57.6720 dBuV

Start: 2.437000 GHz

Res BW: 1 MHz

03/06/2010 16:40:59

Vid BW: 3 MHz

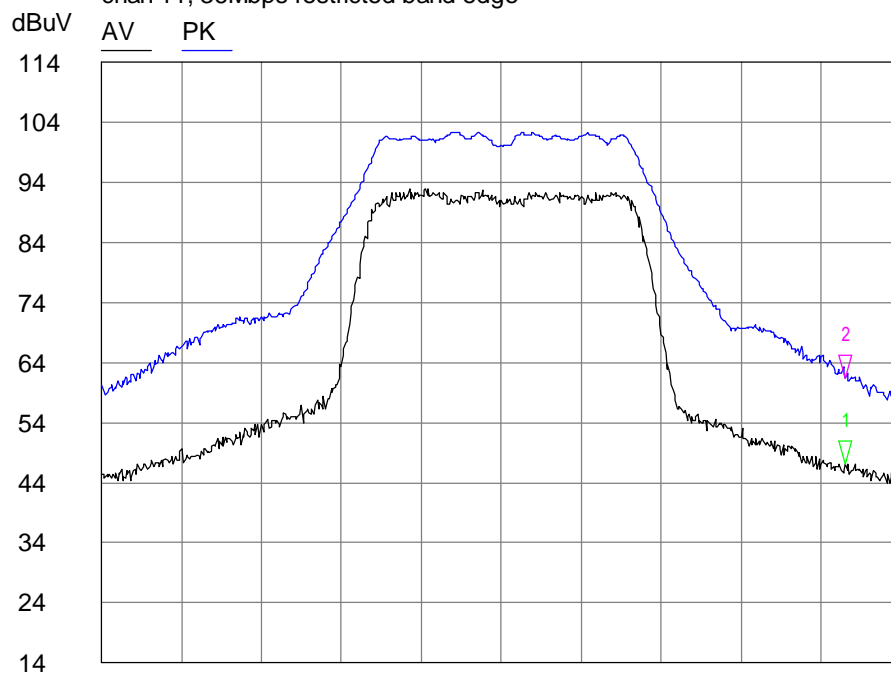
Atten: 10 dB

Stop: 2.487000 GHz

Sweep: 50.00 ms

HP8563E

chan 11, 36Mbps restricted band edge



1 AV
2.483500 GHz
46.8400 dBuV
2 PK
2.483500 GHz
61.3400 dBuV

Start: 2.437000 GHz

Res BW: 1 MHz

04/06/2010 09:34:39

Atten: 10 dB

Vid BW: 3 MHz

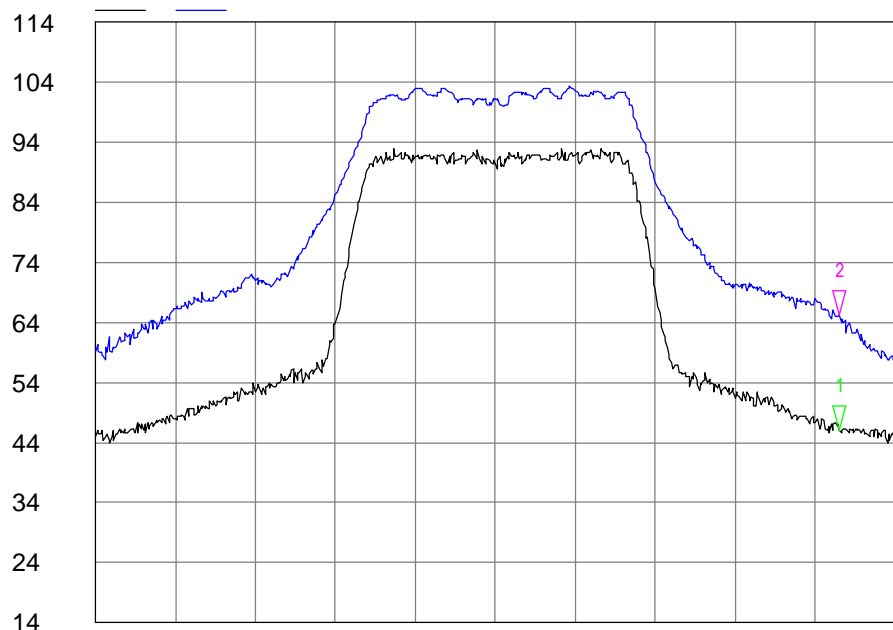
Stop: 2.487000 GHz

Sweep: 50.00 ms

HP8563E

chan 11, 48Mbps restricted band edge

dBuV AV PK



1 AV
2.483500 GHz
46.0000 dBuV

2 PK
2.483500 GHz
65.1700 dBuV

Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 1 MHz

Vid BW: 3 MHz

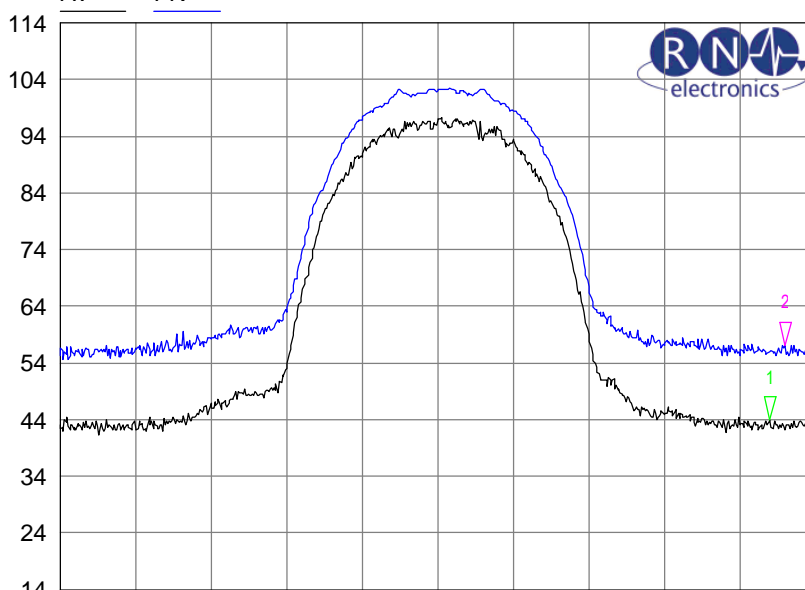
Sweep: 50.00 ms

04/06/2010 09:35:46

HP8563E

chan 11, 5.5MHz mod scheme restricted band edge

dBuV AV PK



1 AV
2.484000 GHz
44.0000 dBuV

2 PK
2.485000 GHz
57.1700 dBuV

Start: 2.437000 GHz

Vid BW: 3 MHz

Stop: 2.487000 GHz

Res BW: 1 MHz

Sweep: 50.00 ms

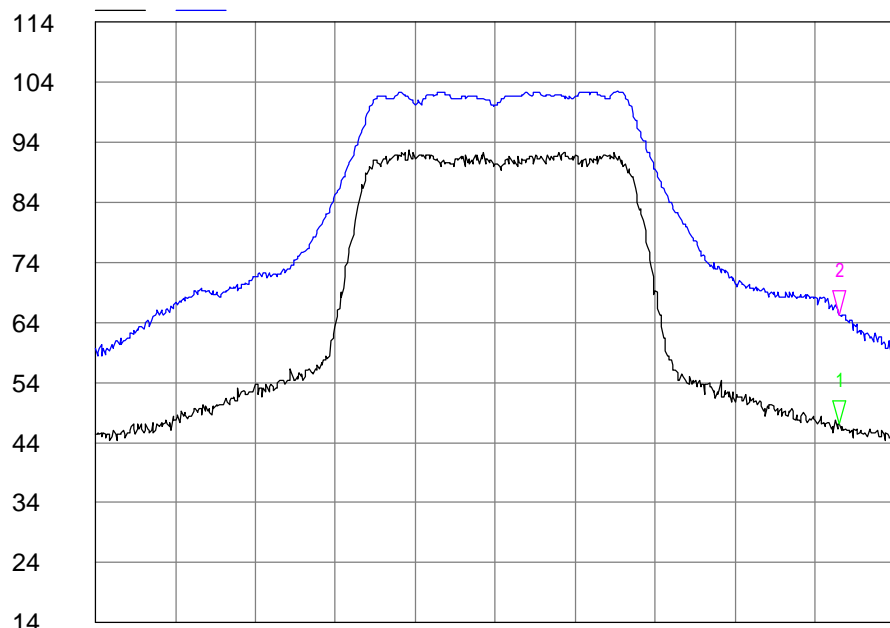
03/06/2010 16:45:07

Atten: 10 dB

HP8563E

chan 11, 54Mbps restricted band edge

dBuV AV PK



1 AV
2.483500 GHz
46.8400 dBuV

2 PK
2.483500 GHz
65.1700 dBuV

Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 1 MHz

Vid BW: 3 MHz

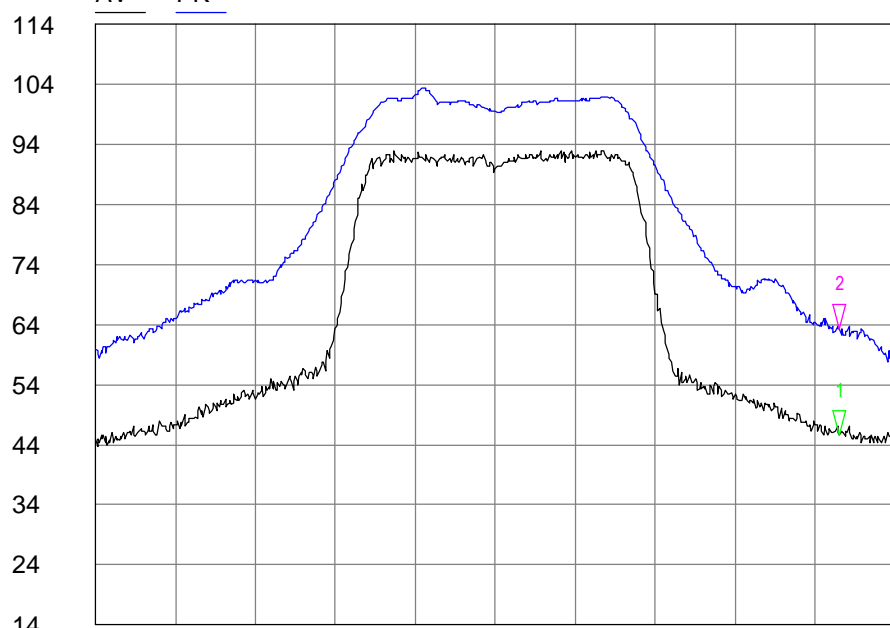
Sweep: 50.00 ms

04/06/2010 09:42:06

HP8563E

chan 11, 6Mbps restricted band edge

dBuV AV PK



1 AV
2.483500 GHz
45.5000 dBuV

2 PK
2.483500 GHz
63.3400 dBuV

Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 1 MHz

Vid BW: 3 MHz

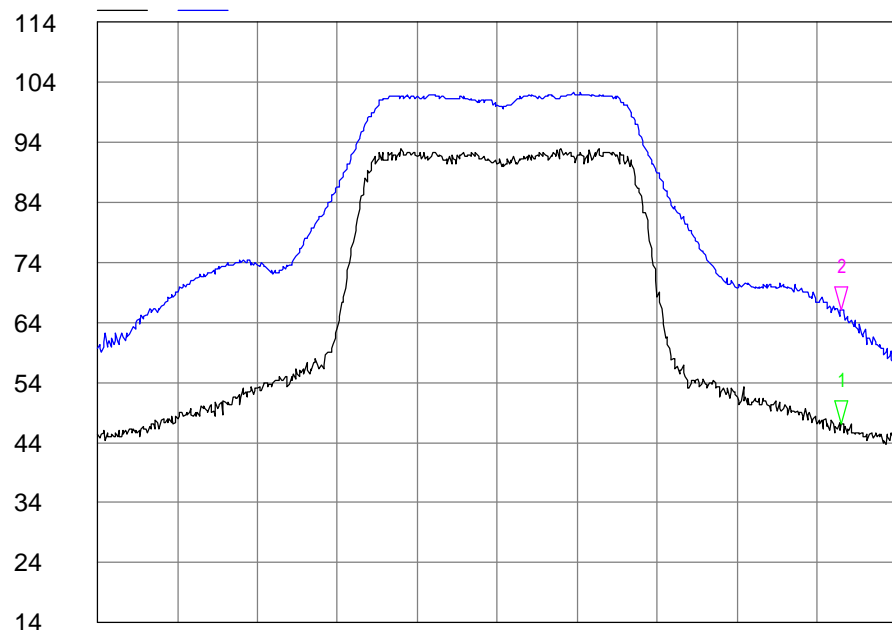
Sweep: 50.00 ms

04/06/2010 09:04:20

HP8563E

chan 11, 9Mbps restricted band edge

AV PK



1 AV
2.483500 GHz
46.8400 dBuV

2 PK
2.483500 GHz
66.0000 dBuV

Start: 2.437000 GHz

Atten: 10 dB

Stop: 2.487000 GHz

Res BW: 1 MHz

Vid BW: 3 MHz

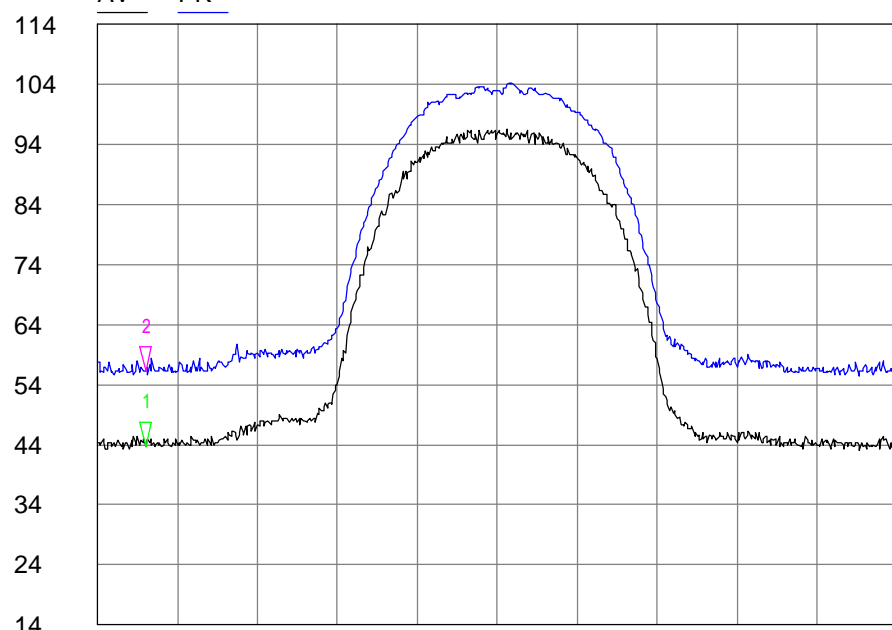
Sweep: 50.00 ms

04/06/2010 09:23:08

HP8563E

channel 1, 11MHz mod scheme restricted band edge

AV PK



1 AV
2.390000 GHz
43.6700 dBuV

2 PK
2.390000 GHz
56.5000 dBuV

Start: 2.387000 GHz

Atten: 10 dB

Stop: 2.437000 GHz

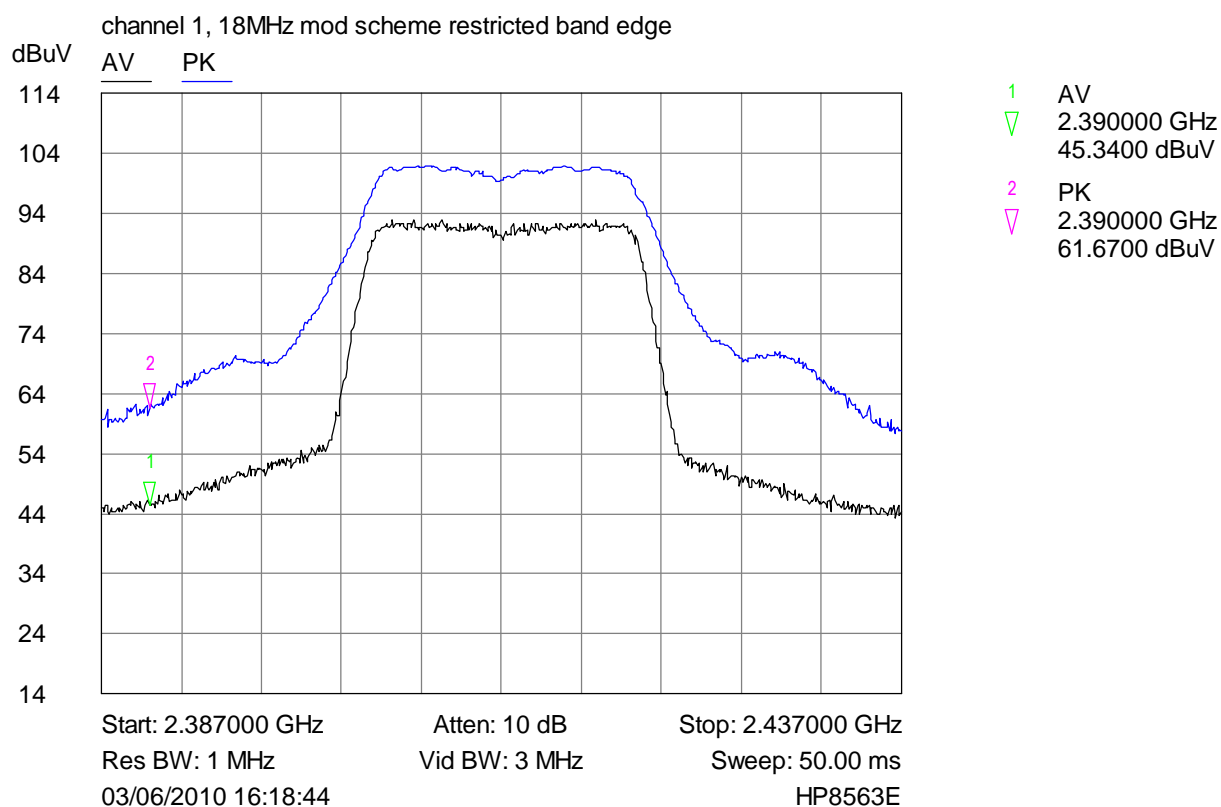
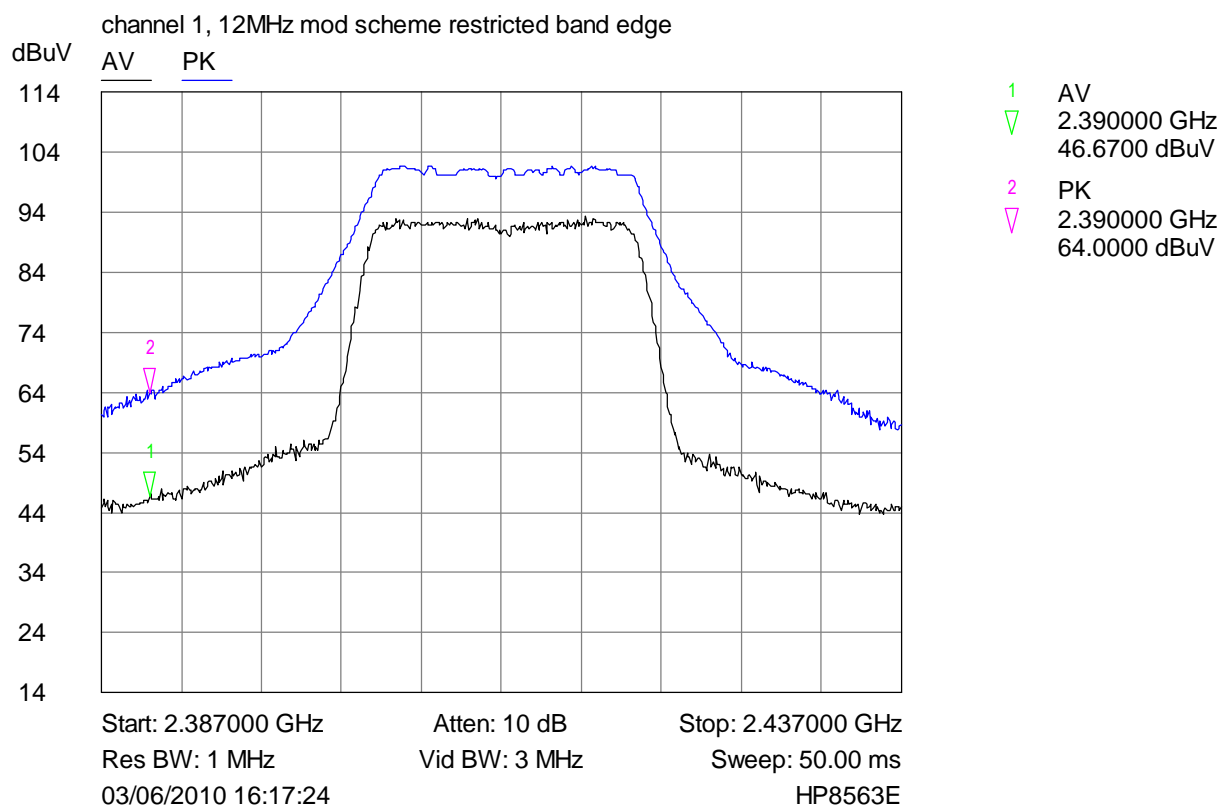
Res BW: 1 MHz

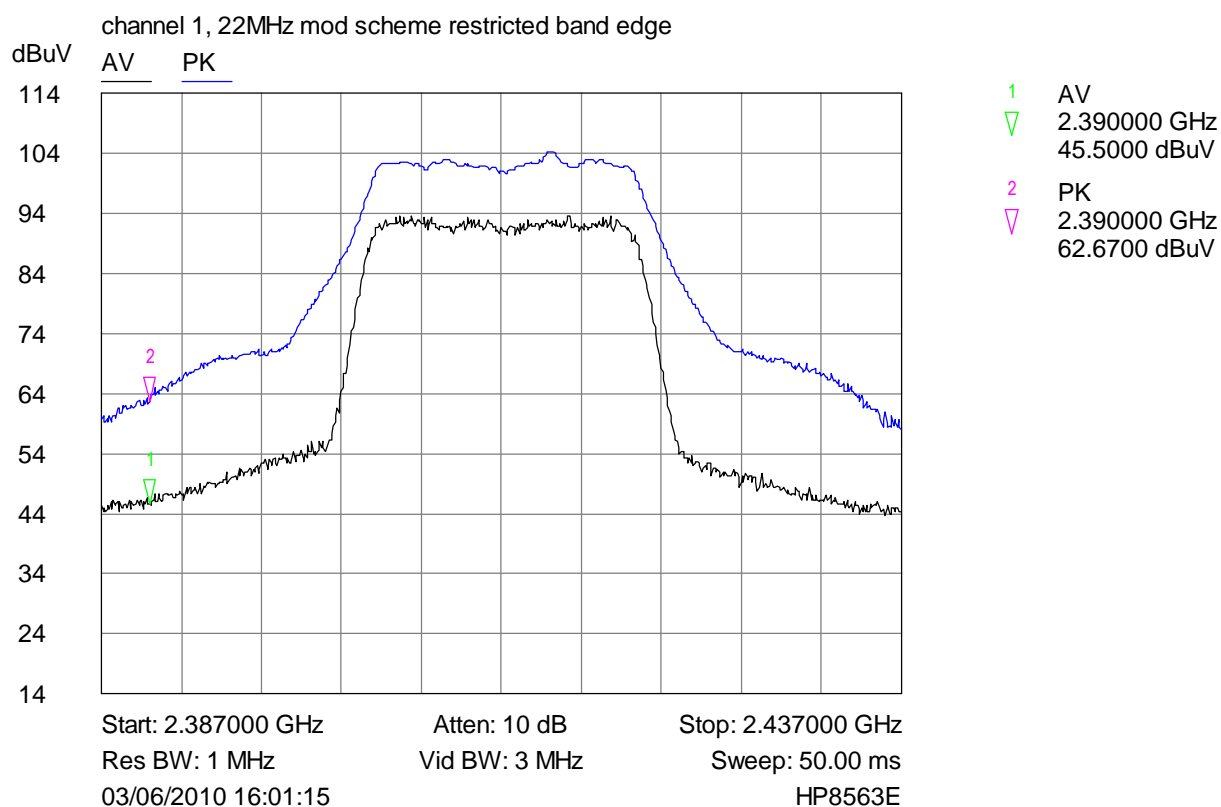
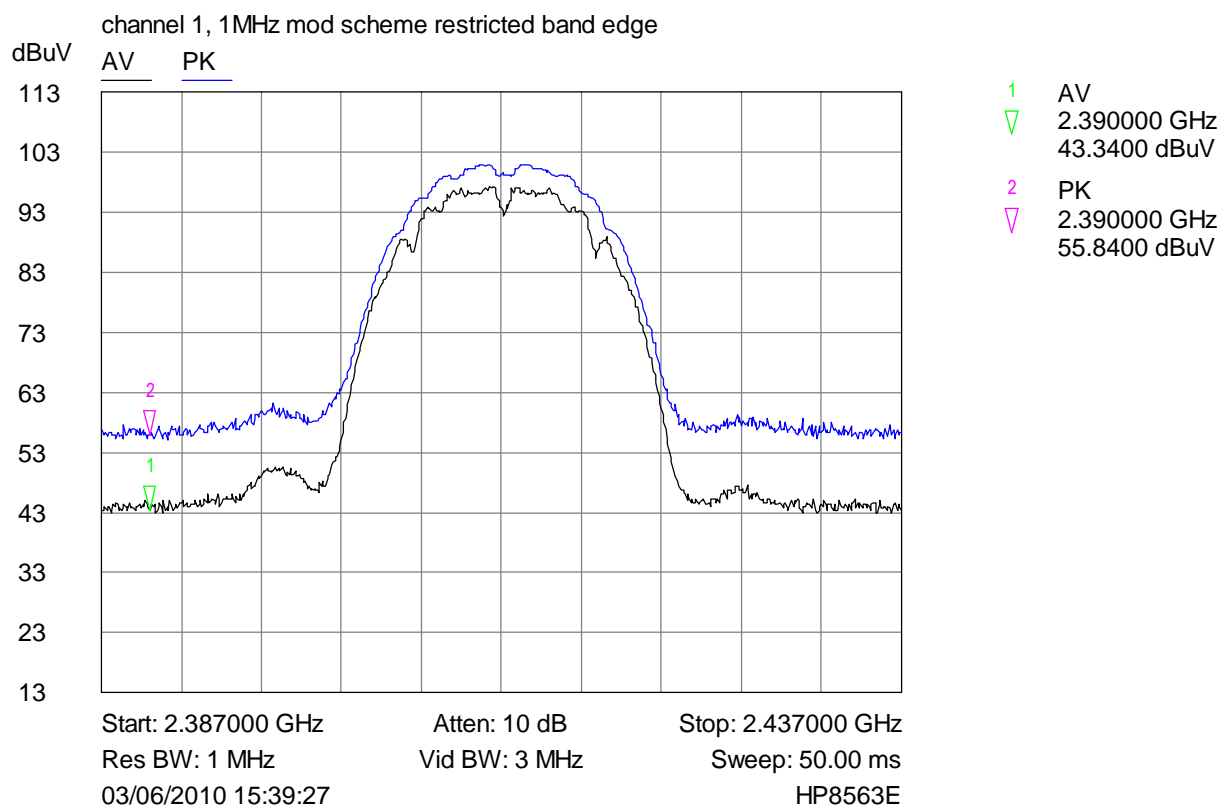
Vid BW: 3 MHz

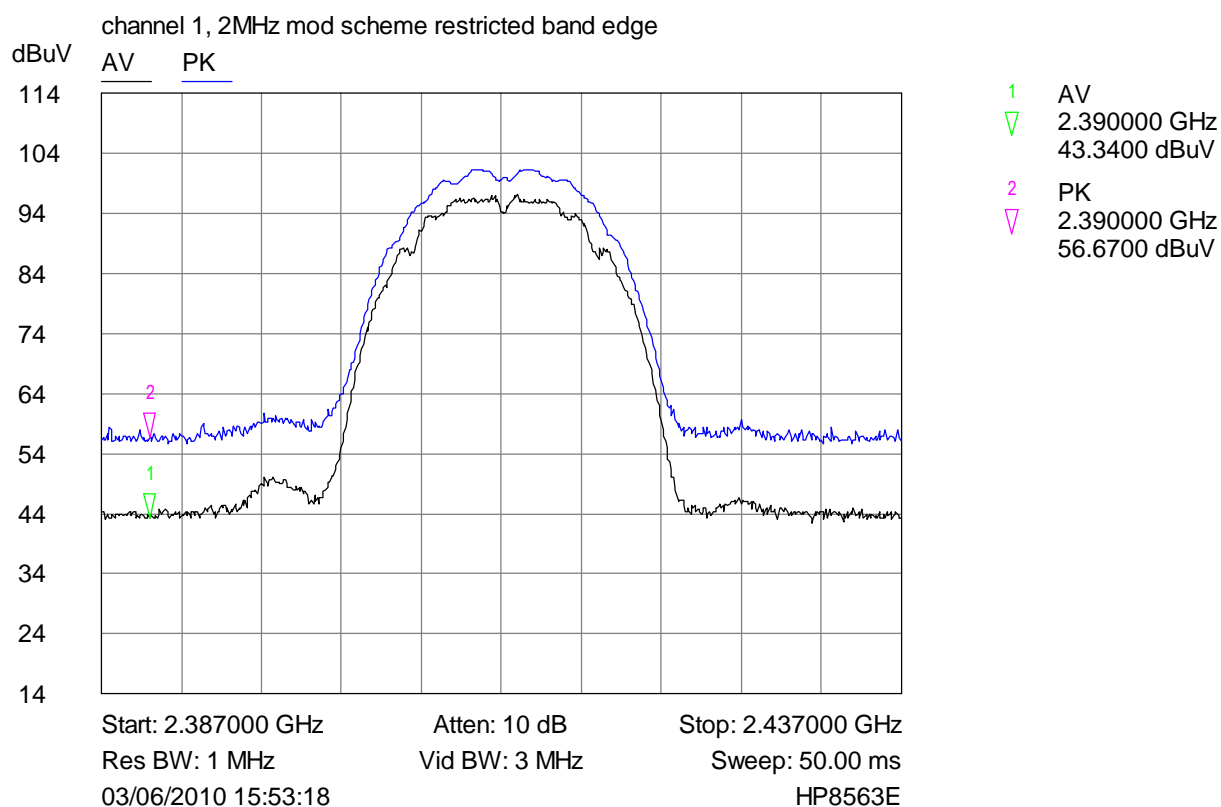
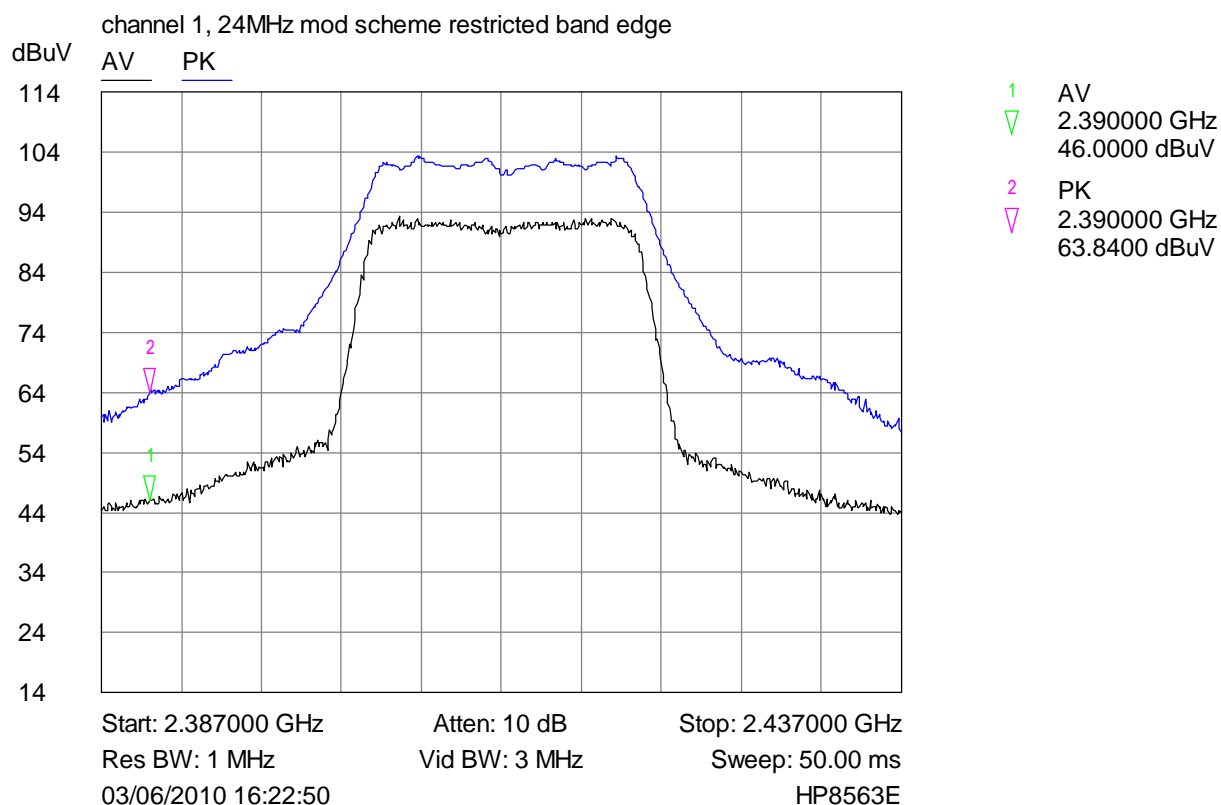
Sweep: 50.00 ms

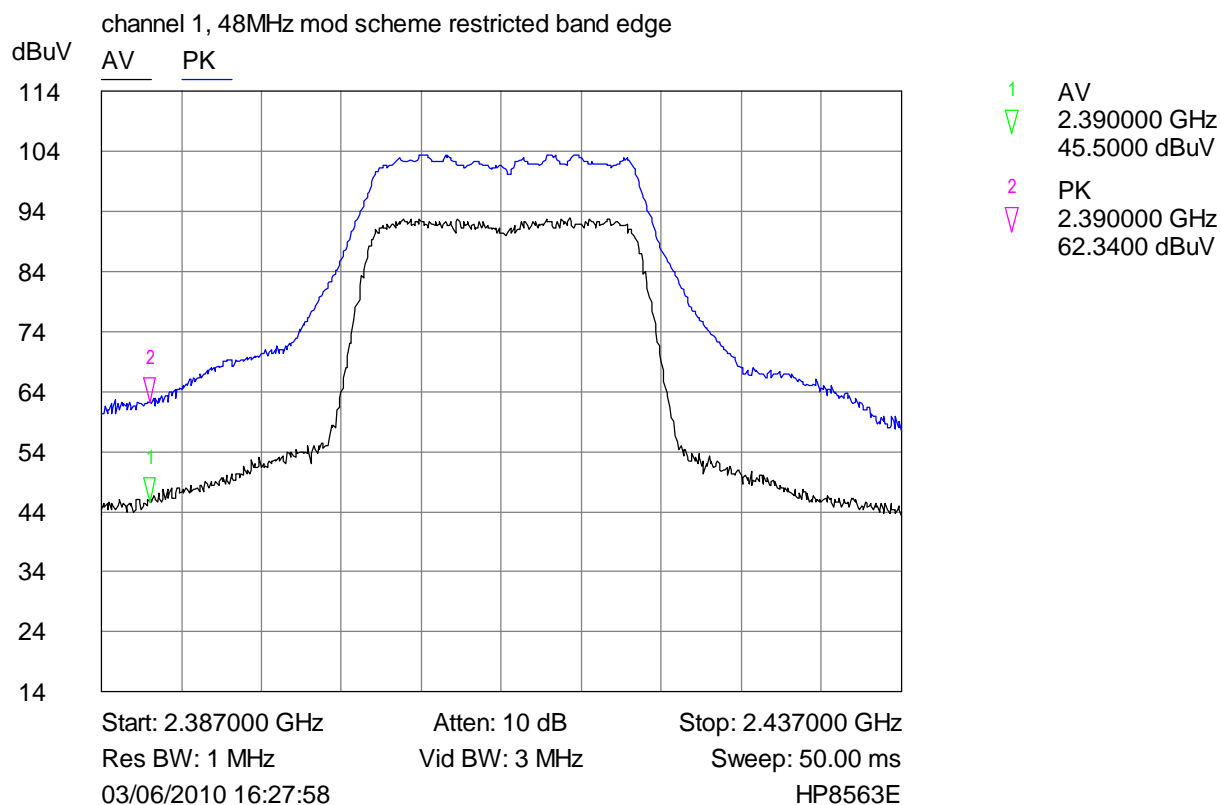
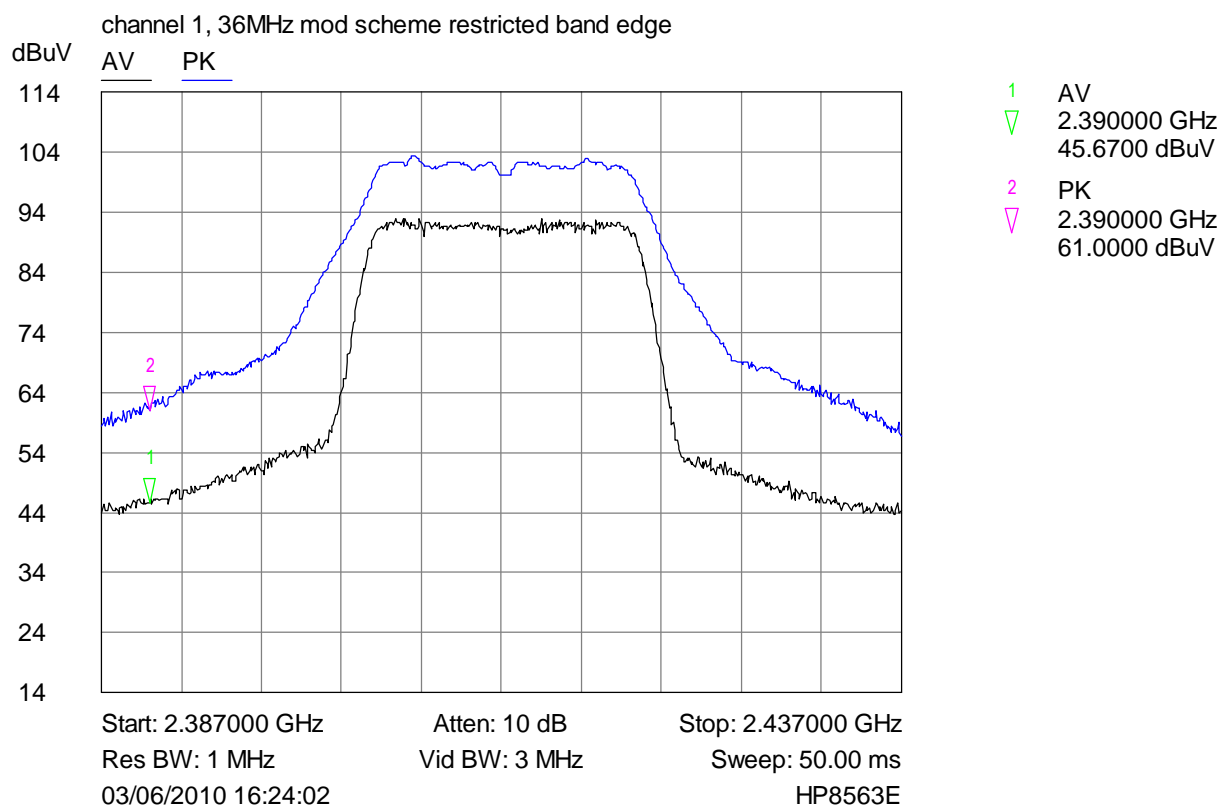
03/06/2010 15:59:43

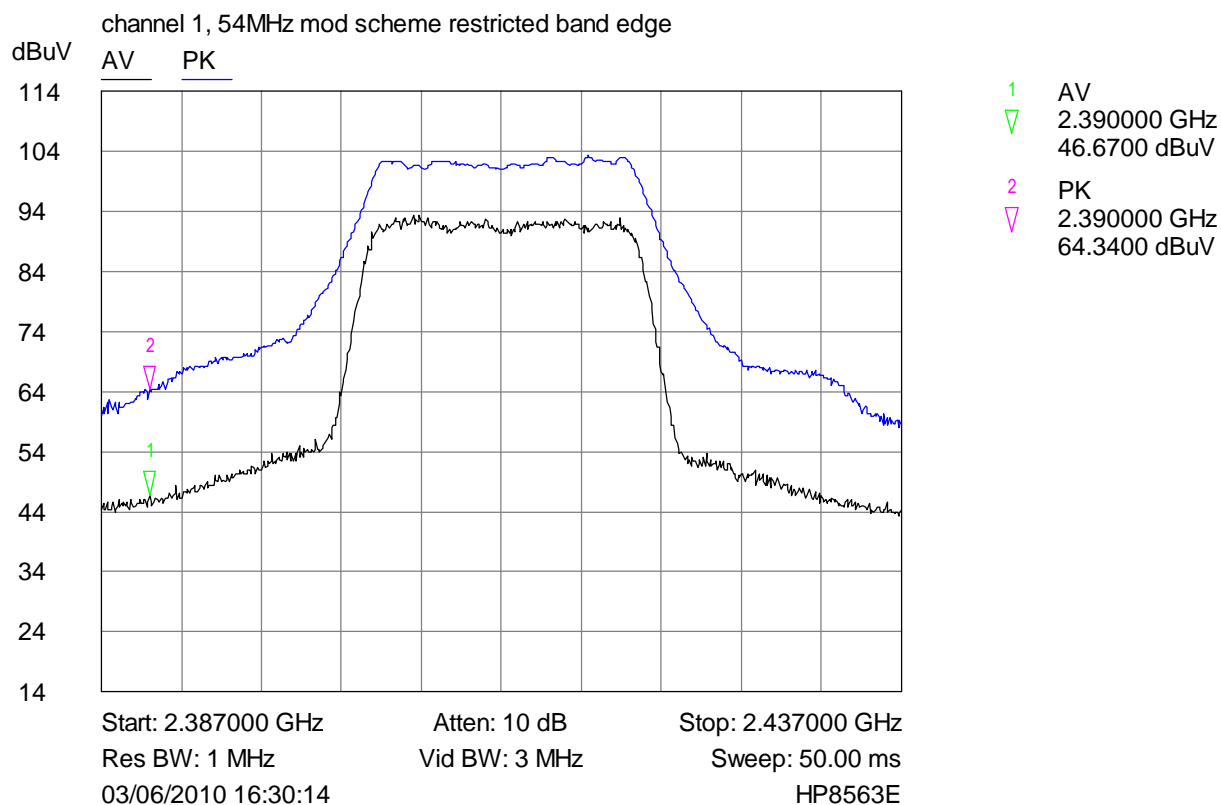
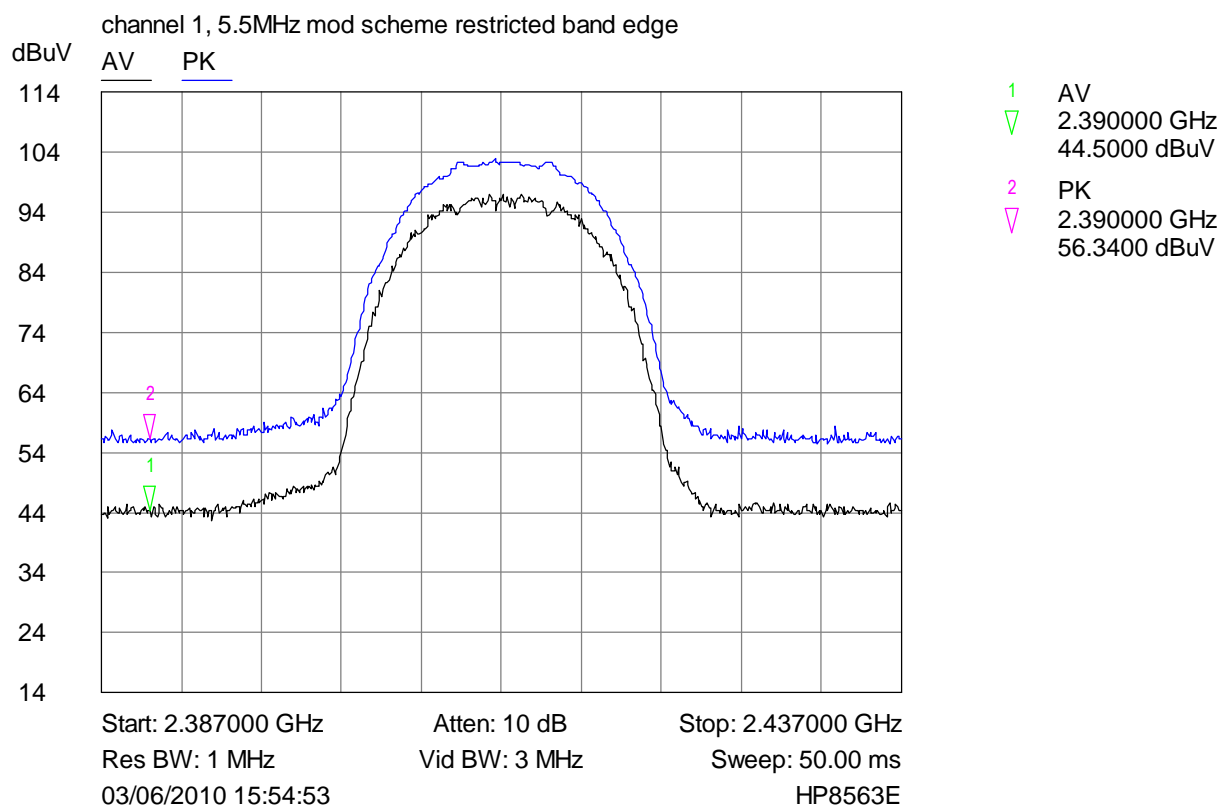
HP8563E

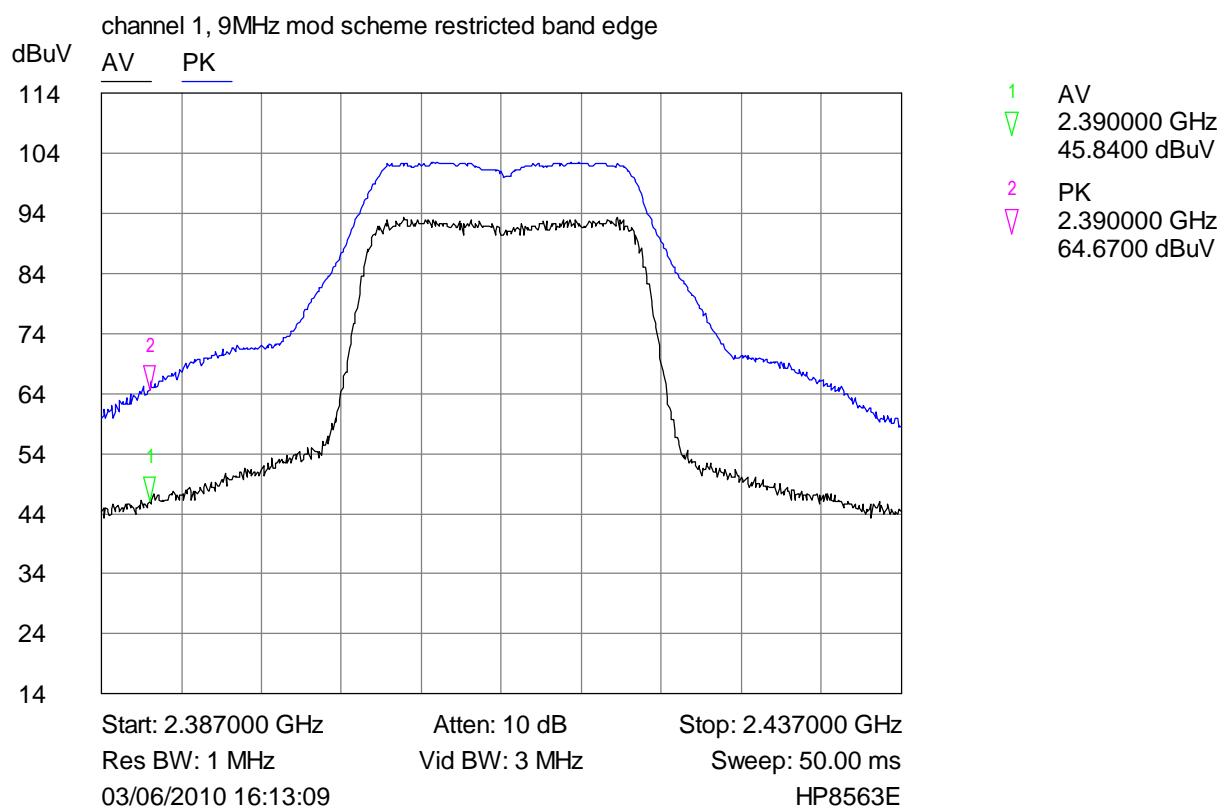
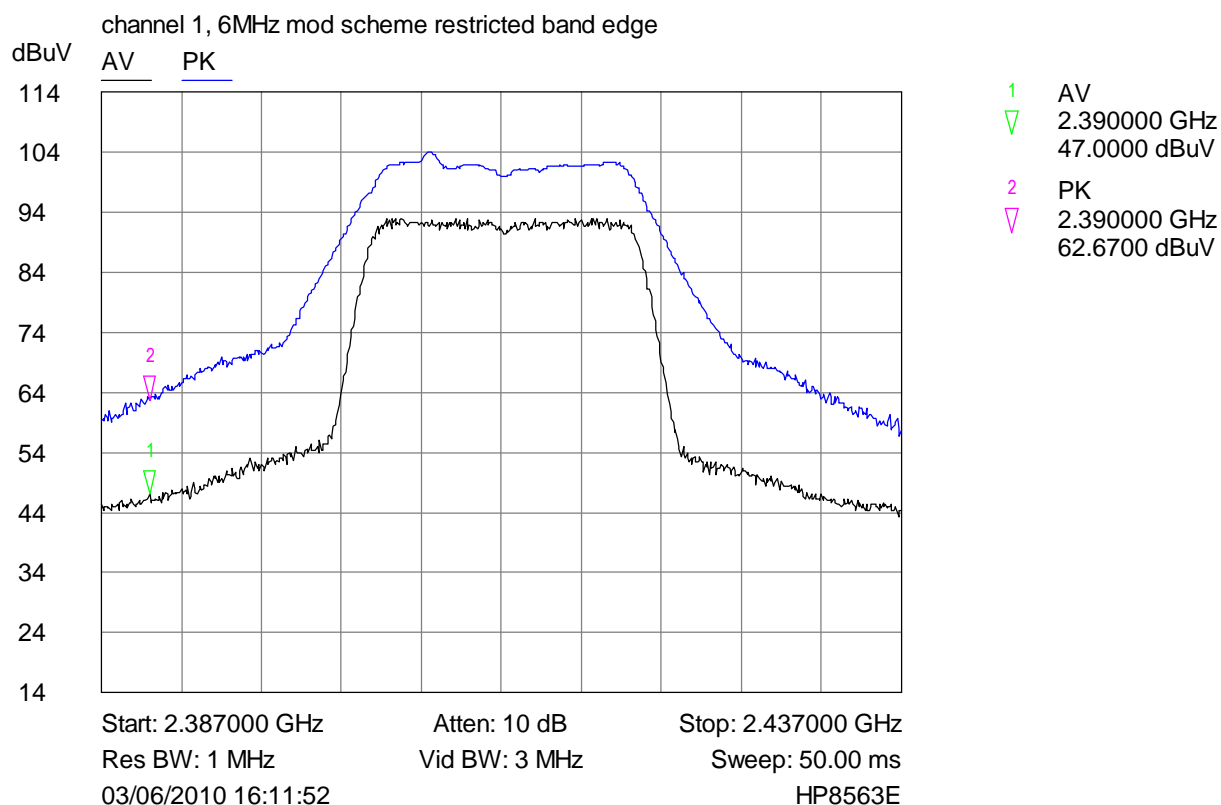












6.7 Frequency separation

Not applicable.

6.8 Number of hopping channels

Not applicable.

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 (dB μ V)	PK Delta L 1 (dB)	Avg (dB μ V)	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 (dB μ V), (can also be labelled, in the case of Quasi Peak, Peak dB μ V/m) is the Level that was received at peak amount in dB above 1 μ V.

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 (dB μ V), (can also be labelled, in the case of Quasi Peak, QP dB μ V/m) when undertaking a Quasi peak test, This is the Average or Quasi peak calculation results given in dB μ V or dB μ V/m above 1 μ V.

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 μ V/m at a specified distance), whereas the measured values are expressed as peak, quasi peak or average values in dB μ V/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 μ V/m equates to $20.\log(500) = 54$ dB μ V/m.
- (b) limit of 300 μ V/m at 10m equates to $20.\log(300 \cdot 10/3) = 60$ dB μ V/m at 3m

8. Photographs



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

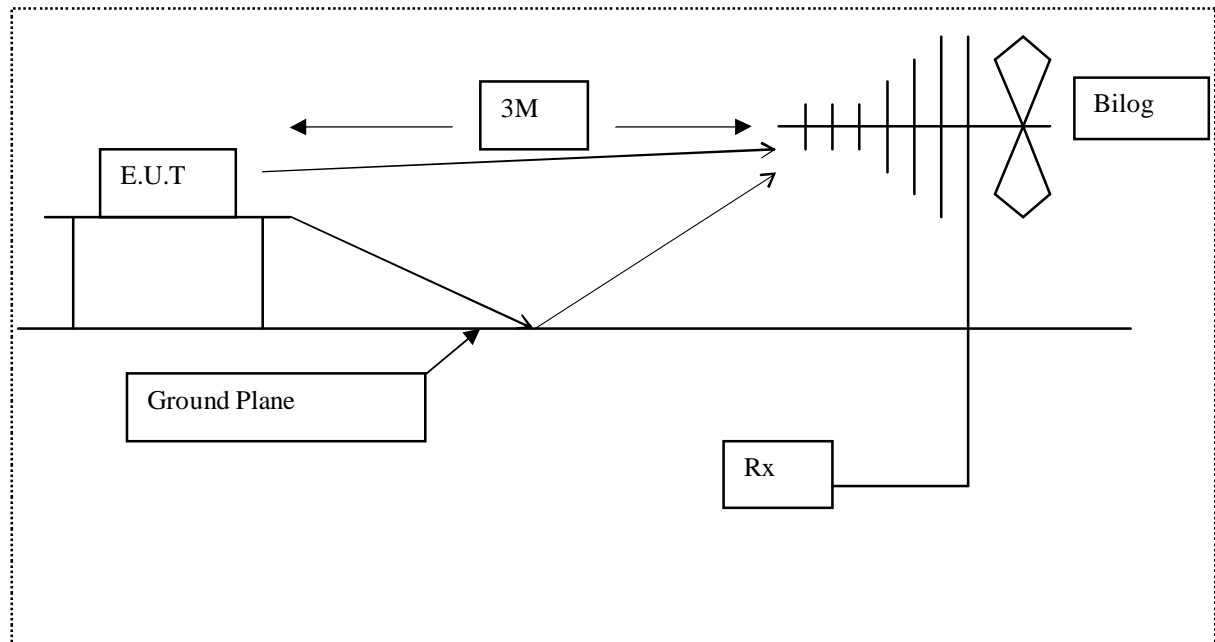


Diagram of the radiated emissions test setup.



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

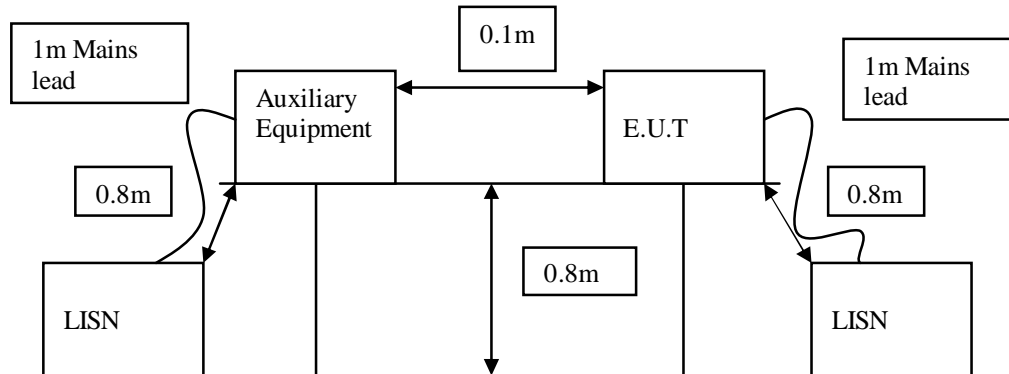


Diagram of the conducted emissions test setup.



Identifying Photograph of the EUT

9. Signal Leads

Port Name	Cable Type
AC/DC Brick	Mains (no earth) to DC
Headphone	3.5mm audio screened
Aux input	3.5mm audio screened
USB	mini USB, engineering/ upgrade only

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
E003	HP8593E	Spectrum Analyser	Hewlett Packard	10-Oct-08	24
E005	HP8447F	Pre-Amplifier	Hewlett Packard	23-Oct-09	12
E035	HP11947A	Transient Limiter + 10dB Atten.	Hewlett Packard	10-Feb-10	6
E131	ESG-3000A	Signal Generator	Hewlett Packard	21-Nov-08	24
E150	MN2050	LISN 13A	Chase	29-Oct-09	24
E227	6632A	System DC Power Supply	Hewlett Packard	09-Dec-09	12
E250	6806.19.A	6dB Attenuator	Hewlett Packard	29-Oct-09	12
E251	6806.19.A	6dB Attenuator	Suhner	29-Oct-09	12
E252	6810.19.A	10 dB Attenuator	Suhner	29-Oct-09	12
E268	BHA 9118	1-18 GHz Horn Antenna	Schaffner	02-Mar-09	60
E290	6914	Power Sensor	Marconi Instruments	01-Jun-09	24
E342	8563E	Spectrum Analyser 26.5 GHz	HP	23-Feb-09	24
E397	6960B	RF Power Meter	Marconi Instruments	21-Nov-08	24
E410	N5181A	100 kHz - 3 GHz MXG Signal Generator	Agilent Technologies	05-Oct-09	12
E411	N9039A	9 kHz - 1 GHz RF Filter Section	Agilent Technologies	07-Oct-09	12
E412	E4440A	3 Hz - 26.5 GHz PSA	Agilent Technologies	07-Oct-09	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
H1	4542	RF Power Meter	Boonton	22-Jan-09	24
H2	57318	Power Sensor	Boonton	19-Aug-09	24
H3	89441A	Vector Analyser	Agilent	N/A*	N/A
TMS79	460451	Std Gain Horn Antenna 18-26.5 GHz	ETS Systems	21-Apr-10	24
TMS81	6502	Active Loop Antenna	EMCO	13-Apr-10	24
TMS82	8449B	Pre Amplifier 1 - 26 GHz	Agilent	23-Oct-09	12
TMS933	CBL6141A	Bilog Antenna 30MHz - 2GHz	York EMC	10-Sep-07	36
TMS938	NSG1007	3kV AC Power Source	Schaffner	20-Apr-10	24

* Calibrated at time of test against E131.

11. Auxiliary equipment

11.1 Auxiliary equipment supplied by PURE Digital

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

None.

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 Number	Manufacturer	Description	Model Number	Serial Number
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

The Wi-Fi antenna matching/tuning components were adjusted by a Pure Digital Ltd representative and the EUT software was upgraded to version "Suez_2.58.1.7.006.dfu".

12.2 Modifications during test

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

13. Compliance information

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

Not supplied.

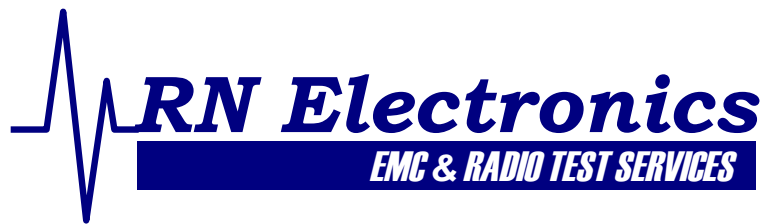
EUT is subject to DoC as a Class B PC peripheral, details of which are to be held with the manufacturer.

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	mA	milliAmps
µA/m	microAmps per metre	max	maximum
µV	microVolts	mbar	milliBars
µW	microWatts	Mbit/s	MegaBits per second
AC	Alternating Current	MHz	MegaHertz
ALSE	Absorber Lined Screened Enclosure	mic	Microphone
AM	Amplitude Modulation	min	minimum
Amb	Ambient	mm	milliMetres
ATPC	Automatic Transmit Power Control	ms	milliSeconds
BER	Bit Error Rate	mW	milliWatts
°C	Degrees Celsius	NA	Not Applicable
C/I	Carrier / Interferer	nom	Nominal
CEPT	European Conference of Postal and Telecommunications Administrations	nW	nanoWatt
COFDM	Coherent OFDM	OATS	Open Area Test Site
CS	Channel Spacing	OFDM	Orthogonal Frequency Division Multiplexing
CW	Continuous Wave	ppm	Parts per million
dB	decibels	PRBS	Pseudo Random Bit Sequence
dBµA/m	decibels relative to 1µA/m	QAM	Quadrature Amplitude Modulation
dBµV	decibels relative to 1µV	QPSK	Quadrature Phase Shift Keying
dBc	decibels relative to Carrier	R&TTE	Radio and Telecommunication Terminal Equipment
dBm	decibels relative to 1mW	Ref	Reference
DC	Direct Current	RF	Radio Frequency
DTA	Digital Transmission Analyser	RFC	Remote Frequency Control
EIRP	Equivalent Isotropic Radiated Power	RSL	Received Signal Level
ERP	Effective Radiated Power	RTP	Room Temperature and Pressure
EU	European Union	RTPC	Remote Transmit Power Control
EUT	Equipment Under Test	Rx	Receiver
FM	Frequency Modulation	s	Seconds
FSK	Frequency Shift Keying	SINAD	Signal to Noise And Distortion
g	Grams	Tx	Transmitter
GHz	GigaHertz	V	Volts
Hz	Hertz		
IF	Intermediate Frequency		
kHz	kiloHertz		
LBT	Listen Before Talk		
LO	Local Oscillator		



Certificate of Test

The Equipment noted below has been tested by **R.N. Electronics Limited** and conforms with the relevant subpart of FCC 47 CFR 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:	Oasis Flow
Model Number(s):	Oasis Flow
Unique Serial Number(s):	CS1-7 & ES3-10
Manufacturer:	PURE Digital Ltd Home Park Estate Kings Langley Hertfordshire WD4 8DH
Customer Purchase Order Number:	PO091657
R.N. Electronics Limited Report Number:	06-412/4248/5/10
Test Standards:	FCC 47CFR Part 15C effective date October 1st 2009 , Class DTS Intentional Radiator
Date:	29th April to 4th June 2010

For and on behalf of
R.N. Electronics Limited

Signature:

Notes:

QMF21J – 3: FCC PART 15C: RNE ISSUE 01: - APR 10