FCC
Test Report
For
Plextek
Base station controller with Base station Radio
ABSR1

Report Number 04-172/3327/1/07
Report Produced by: -

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1. Contents

2. Summary of Test Results

The Base station controller/ Base station Radio was tested to the following standards: -

FCC Part 15C (effective date February 7, 2007); Class DSS Intentional Radiator

Title	Reference	Results
1. Conducted Emissions	FCC Part 15C §15.207	PASSED
2. Spurious Emissions (conducted and/or radiated)	FCC Part 15C §15.205, §15.209 & §15.247(d)	PASSED
3. Peak conducted power	FCC Part 15C §15.247(b)(2)	PASSED
4. Frequency Tolerance	FCC Part 15C	NOT APPLICABLE[1]
5. Dwell Time / Duty Cycle	FCC Part 15C §15.247(a)(1)(i)	PASSED
6. Power Spectral Density	FCC Part 15C §15.247(e), §15.247(f)	NOT APPLICABLE[2]
7. Modulation Bandwidth (20dB bandwidth)	FCC Part 15C §15.215(c)(1)(i)	PASSED
8. No. of hopping channels	FCC Part 15C §15.247(a)(1)(i)	PASSED
9. Carrier frequency separation	FCC Part 15C §15.247(a)(1)	PASSED

[1] No specification requirement for this type of equipment.
[2] EUT employs Frequency Hopping Spread Spectrum technology.

Date of Test: 18th - 20th April 2007

Test Engineer: Daniel Sims — Digitally signed by Daniel Sims DN: CN = Daniel Sims, C = GB, O = RN Electronics Date: 2007.06.08 08:43:16 +01'00'

Approved By: Paul Darragh — Digitally signed by Paul Darragh DN: CN = Paul Darragh, C = GB, OU = RN Electronics Date: 2007.06.01 13:25:57 +01'00'

Customer Representative:

3. Information about Equipment Under Test

Applicant	Plextek Ltd London Road Great Chesterford Essex CB10 1NY
Full name of EUT	Base station controller/ Base station Radio
Model Number of EUT	ABSR1
Serial Number of EUT	6R515 (controller) & 6R508 (radio)
FCC ID (if applicable):	U3R-ABSR
Date when equipment was received By RN Electronics Limited	18th April 2007
Date of test:	18th - 20th April 2007
Customer order number:	P55068
A visual description of the EUT is as follows:	Two metal enclosures with front panel hinged doors. The controller has ethernet and mains input ports & also data & DC feeds to the radio cabinet. The radio cabinet has a 50ohm N-type antenna connector.
The main function of the EUT is:	Base station system designed for remote meter reading telemetry in the band 902-928 MHz.
Antenna:	50Ω N-type connector port, max. gain 8.1dBi.

Equipment Under Test Information specification:

	Controller	Radio
Height	580mm	450mm
Width	400mm	300mm
Depth	270mm	160mm
Weight	22kg	8kg
Voltage	110V AC	+12V DC supplied from controller
Current required from above voltage source	<1A	<1A
Lowest / Highest Frequencies used / generated	1.25 / 2.5 MHz	919.625 MHz

Channel arrangements:
The equipment is designed for FHSS within the 902 - 928 MHz band. Operation is possible in any one of 6 sub-bands each made up of 59 hopping channels.

Test channels reported (see 15.31(m)):
Bottom = 910.5 MHz. (sub band 0 channel 0).
Middle = 915.05 MHz. (LCC 5).
Top = 919.625 MHz. (LCC 11).

Description of ancillary equipment connected to the equipment under test, for the purpose of tests, can be found in Section 11. Any modifications made to the **EUT**, whilst under test, can be found in Section 12.

This report was printed on: 01 June 2007

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 Public Notice DA 00-705.

5. Tests, Methods and Results

5.1 Conducted Emissions

5.1.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.207)

Test Method: FCC Part 15C, Reference (15.207)

5.1.1.1 Configuration of EUT

The EUT was connected to the LISN, and operated in the mode found to produce the highest emissions.

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. The equipment under test was powered via a mains LISN with a mains lead of 1 metre. Any excess mains lead was placed in a 400mm bundle. At least 6 signals within 20dB and all signals within 10dB of the limit were investigated.

5.1.2 Test results

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

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

E1, E10, E35

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:	FCC Part 15C, Reference (15.209)

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.

5.2.1.2 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. The EUT was tested in both Receive and Transmit modes and on top, middle and bottom transmit channels to ensure worst case emissions were obtained.

Below 30MHz.
Measurements were made in a semi-anechoic chamber (pre-scan) with final measurements on an OATS without a ground plane. The loop 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 in a semi-anechoic chamber (pre-scan) with final measurements on an OATS. Test sites ‘M’ and 'OATS' have been listed with the FCC. The equipment was rotated 360° in its normal use orientation and the antenna scanned 1 – 4 metres in both horizontal and vertical polarisations to record the worst case emissions. At least 6 signals within 20dB and all signals within 10dB of the limit were investigated.

Above 1GHz,
Measurements were made is a semi-anechoic chamber. The equipment was rotated 360° in its normal use orientation whilst the antenna was directed towards the EUT from a height of 1m in horizontal and vertical polarisations to record the worst case emissions. Although average measurements are specified, peak emissions were also checked and any peaks above the average limit were recorded.

5.2.2 Test results

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

Test Environment:
M and OATS

Temperature: 17-24°C Humidity: 38-52%

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.

Below 30MHz, no discernable difference was observed between different modes, therefore only set of plots are shown for below 1 - 30MHz in section 6.2.

Above 1GHz, no peak emissions were observed above the average limit.

Limits §15.209 / §15.247(d)

Note the limits shown on the plots and in the tables are all referenced to §15.209. The limits for §15.209 are more severe than §15.247(d), but nevertheless apply in the restricted bands of §15.205.

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

5.2.2.1 Test Equipment used

E1, E285, TMS81, TMS933, TMS903, E268, E3, TMS82, E238, E239, E242, E319, N438, E328

See Section 10 for more details

5.3 Peak Output Power

5.3.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.247)

Test Method: FCC Public Notice **DA 00-705**

5.3.1.1 Configuration of EUT

The EUT was tested on a bench. Ambient temperature and humidity conditions were monitored.

5.3.1.2 Test Procedure

Tests were made in accordance with FCC Part 15 using the measuring equipment noted below. Supply voltage was varied between 85% and 115% of the nominal rated supply voltage.

5.3.2 Test results

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

Test Environment:
Temperature: 18°C Humidity: 49%

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

Conducted Power Measurements:

Bottom Channel	Middle Channel	Top Channel
24.31dBm	26.1dBm	26.43dBm

Effect of power supply variation was negligible.

Limit §15.247(b)(2) & §15.247(b)(4) : 1 Watt (30.0dBm).

These results show that the EUT has **PASSED** this test providing it is used with antennas of 9.57 dBi or less.

5.3.2.1 Test Equipment used

E3, E266

See Section 10 for more details

5.4 Frequency Tolerance

Test not applicable. No frequency stability specified for part 15.247. However, reference is made to band-edge emission plots (see Section 6.5).

5.5 Duty Cycle / Time of Occupancy (Dwell Time)

5.5.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.247)

Test Method: FCC Public Notice **DA 00-705**

5.5.1.1 Configuration of EUT

The EUT was tested on a bench. Ambient temperature and humidity conditions were monitored.

5.5.1.2 Test Procedure

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

5.5.2 Test results

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

Test Environment:
Temperature: 19°C Humidity: 49%

Analyser plots for the dwell time and duty cycle can be found in Section 6.4 of this report. The dwell time measured was 398.7ms. A total of 59 channels are used in the hopping subset. If each channel is used once before a channel can be occupied for a second time and without allowing for any delay between successive dwells, this gives a total time of 23.52 seconds between any two occupancies of the same channel.

Limits §15.247(a)(1)(i):
Time of occupancy = Not greater than 0.4 seconds within a 20 second period.

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

5.5.2.1 Test Equipment used

TMS6-2, E3

See Section 10 for more details.

5.6 Maximum Spectral Power Density

Test not applicable. EUT is Frequency Hoping (FHSS) as opposed to Digitally modulated Spread Spectrum type equipment.

5.7 20dB Bandwidth

5.7.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.247)

Test Method: FCC Public Notice **DA 00-705**

5.7.1.1 Configuration of EUT

The EUT was tested on a bench. Ambient temperature and humidity conditions were monitored.

5.7.1.2 Test Procedure

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

5.7.2 Test results

Tests were performed using Test Site A.

Temperature of test Environment: 19°C

20dB Bandwidth Measurements:

Bottom Channel	Middle Channel	Top Channel
1180 Hz	1190 Hz	1170 Hz

Limit: <500 kHz

Analyser plots for the 20dB bandwidth can be found in Section 6.5 of this report.

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

5.7.2.1 Test Equipment used

E3, TMS10, TMS6-2, TMS73

See Section 10 for more details.

5.8 Number of Hopping channels

5.8.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.247)

Test Method: FCC Public Notice **DA 00-705**

5.8.1.1 Configuration of EUT

The EUT was tested on a bench. Ambient temperature and humidity conditions were monitored.

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 A.

Temperature of test Environment: 19°C

Number of channels counted in sub band 3 was **59.**

Analyser plots can be found in Section 6.6 of this report.

Limit §15.247(a)(1)(i): minimum of 50 channels.

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

5.8.2.1 Test Equipment used

E3, TMS10, TMS6-2, TMS73

See Section 10 for more details.

5.9 Carrier Frequency Separation

5.9.1 Test Methods

Test Requirements FCC Part 15C, Reference (15.247)

Test Method: FCC Public Notice **DA 00-705**

5.9.1.1 Configuration of EUT

The EUT was tested on a bench. Ambient temperature and humidity conditions were monitored.

5.9.1.2 Test Procedure

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

5.9.2 Test results

Tests were performed using Test Site A.

Temperature of test Environment: 19°C

Frequency separation measured **25.125 KHz**.

Analyser plots can be found in Section 6.7 of this report.

Limit §15.247(a)(1): minimum of 25kHz.

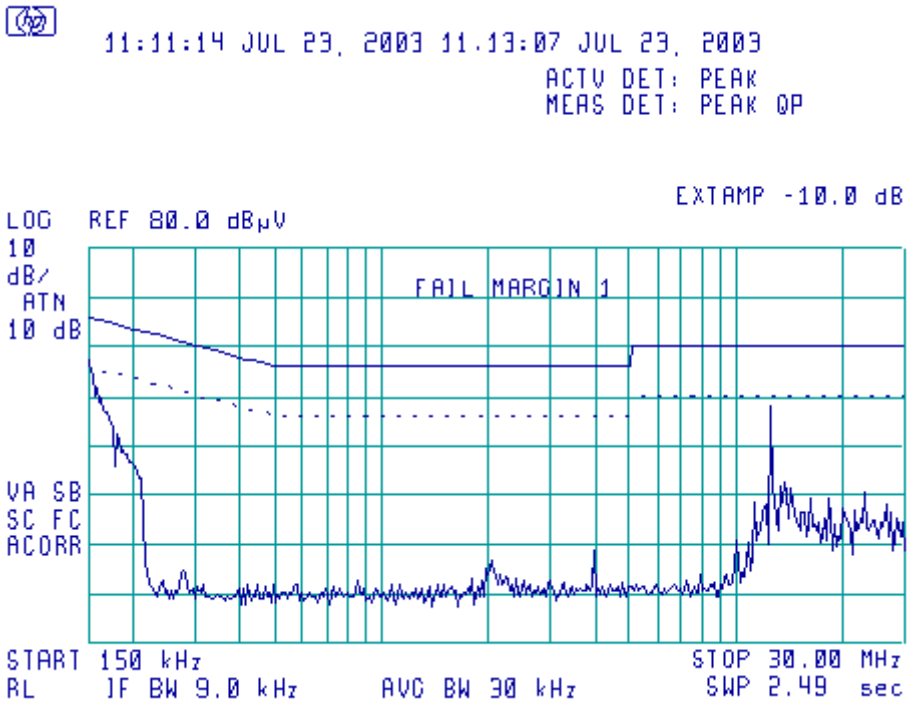
These results show that the **EUT** has **PASSED** this test.

5.9.2.1 Test Equipment used

E3, TMS10, TMS6-2, TMS73

See Section 10 for more details.

6. Plots and Results
6.1 Conducted Emissions



Quasi-peak values of mains live feed

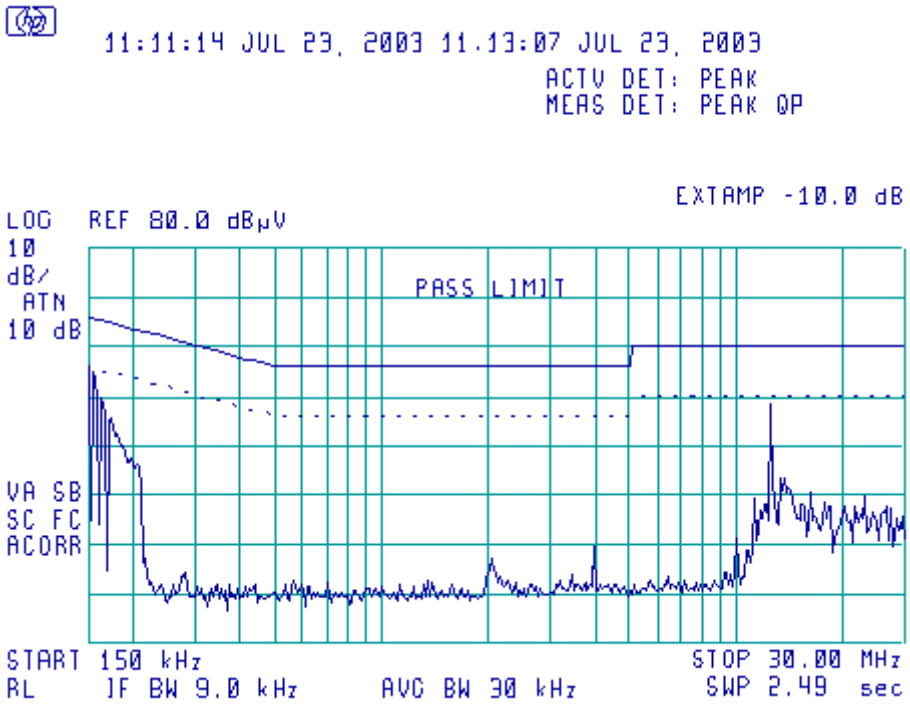
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Live

Signal	Freq (MHz)	Peak Amp (dBuV)	Peak - Lim1 (dB)	QP Amp (dBuV)	QP - Lim1 (dB)
1	0.152194	57.42	-8.47	52.89	-13.00
2	0.153788	56.50	-9.32	51.68	-14.14
3	0.156956	54.57	-11.09	49.78	-15.88
4	0.158906	53.78	-11.79	48.82	-16.75
5	0.163613	51.29	-14.05	46.83	-18.51
6	0.167644	49.12	-16.02	45.22	-19.92
7	0.170663	47.79	-17.20	44.16	-20.83
8	12.522110	48.45	-11.55	48.25	-11.75

Measurement Uncertainty of ± 3.6dB Applies



Quasi-peak values of mains neutral feed

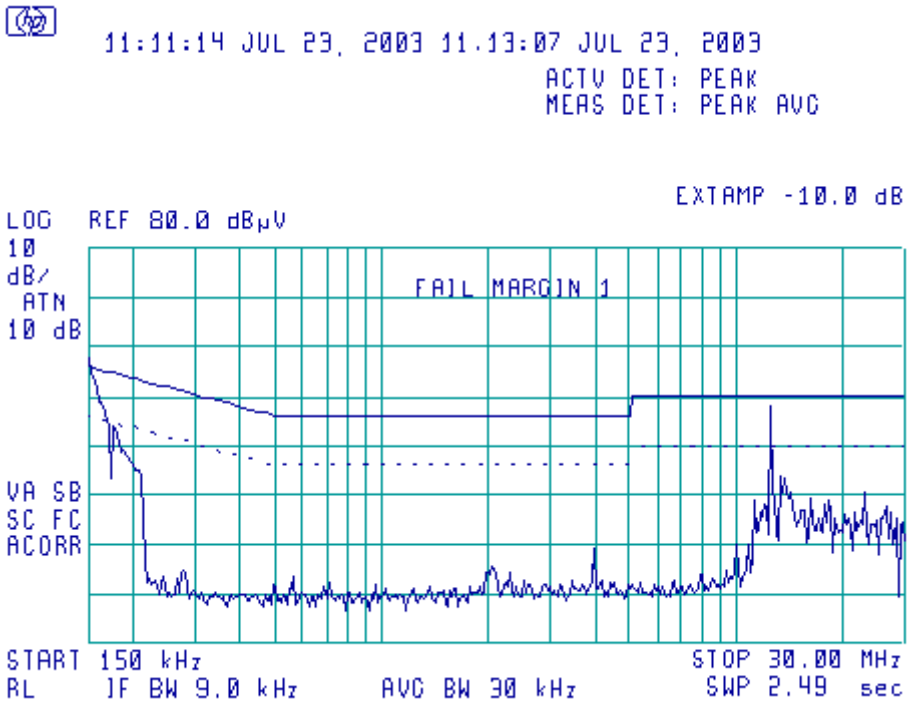
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Neutral

Signal	Freq (MHz)	Peak Amp (dBuV)	Peak - Lim1 (dB)	QP Amp (dBuV)	QP - Lim1 (dB)
1	0.151013	58.24	-7.71	53.88	-12.07
2	0.154838	56.12	-9.64	51.18	-14.58
3	0.156488	55.11	-10.57	50.16	-15.52
4	0.160763	52.71	-12.76	48.14	-17.33
5	0.165225	50.42	-14.84	46.30	-18.96
6	0.167194	49.56	-15.60	45.56	-19.60
7	12.522058	48.82	-11.18	48.63	-11.37

Measurement Uncertainty of ± 3.6dB Applies



Average values of mains live feed

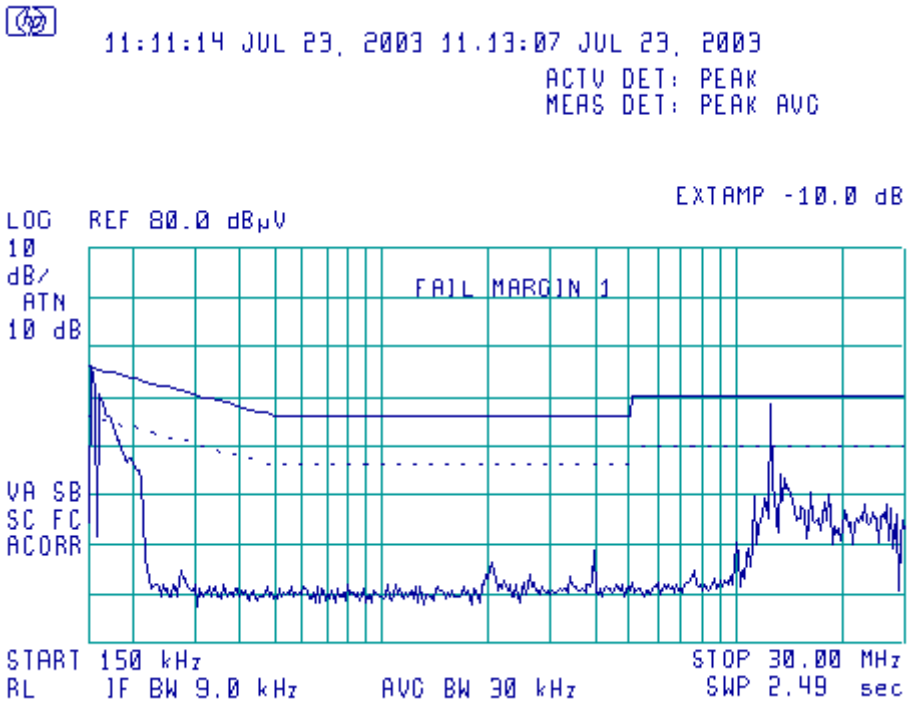
The plot shows a swept response of peak values using the average limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals for Average Live

Signal	Freq (MHz)	Peak Amp (dBuV)	Peak - Lim1 (dB)	Avg Amp (dBuV)	Avg - Lim1 (dB)
1	0.150544	58.83	2.86	30.32	-25.65
2	0.155325	55.64	-0.10	27.21	-28.53
3	0.159469	53.35	-2.19	24.87	-30.67
4	0.165769	50.28	-4.95	21.94	-33.29
5	0.169706	48.25	-6.79	20.96	-34.08
6	12.522043	48.48	-1.52	48.35	-1.65
7	13.773450	34.10	-15.90	32.18	-17.82
8	23.128833	31.39	-18.61	28.00	-22.00

Measurement Uncertainty of ± 3.6dB Applies



Average values of mains neutral feed

The plot shows a swept response of peak values using the average limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals for Average Neutral

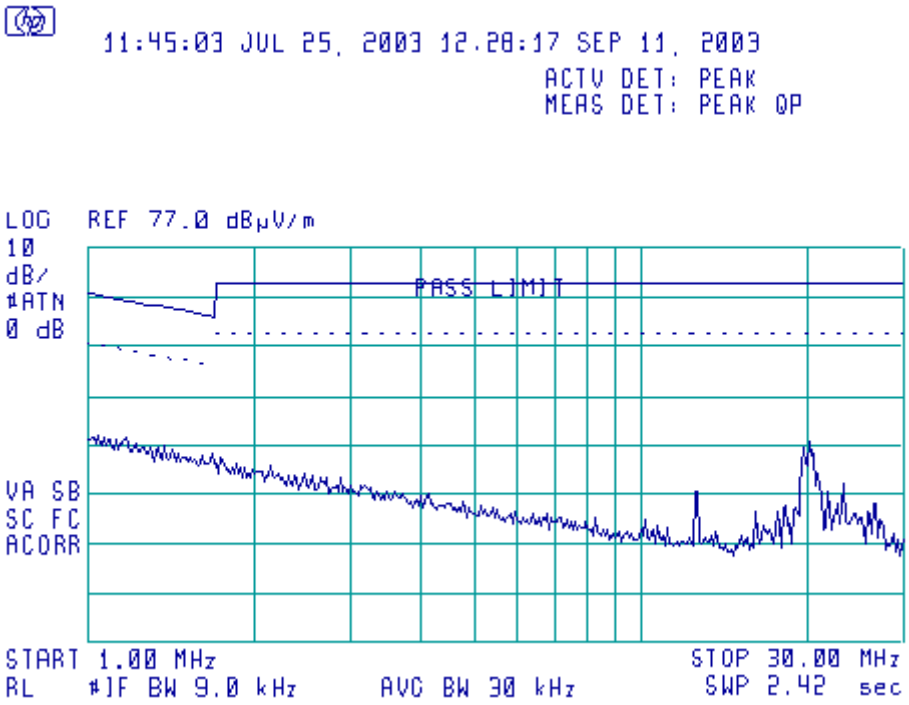
Signal	Freq (MHz)	Peak Amp (dBuV)	Peak - Lim1 (dB)	Avg Amp (dBuV)	Avg - Lim1 (dB)
1	0.151500	57.91	1.98	29.76	-26.17
2	0.158513	53.92	-1.66	25.45	-30.13
3	0.162375	51.84	-3.56	23.52	-31.88
4	0.165975	50.20	-5.02	22.16	-33.06
5	0.168863	48.62	-6.46	21.40	-33.68
6	12.522083	48.80	-1.20	48.71	-1.29
7	13.773195	34.57	-15.43	32.56	-17.44
8	23.128543	31.58	-18.42	28.29	-21.71

Measurement Uncertainty of ± 3.6dB Applies

6.2 Radiated Emissions

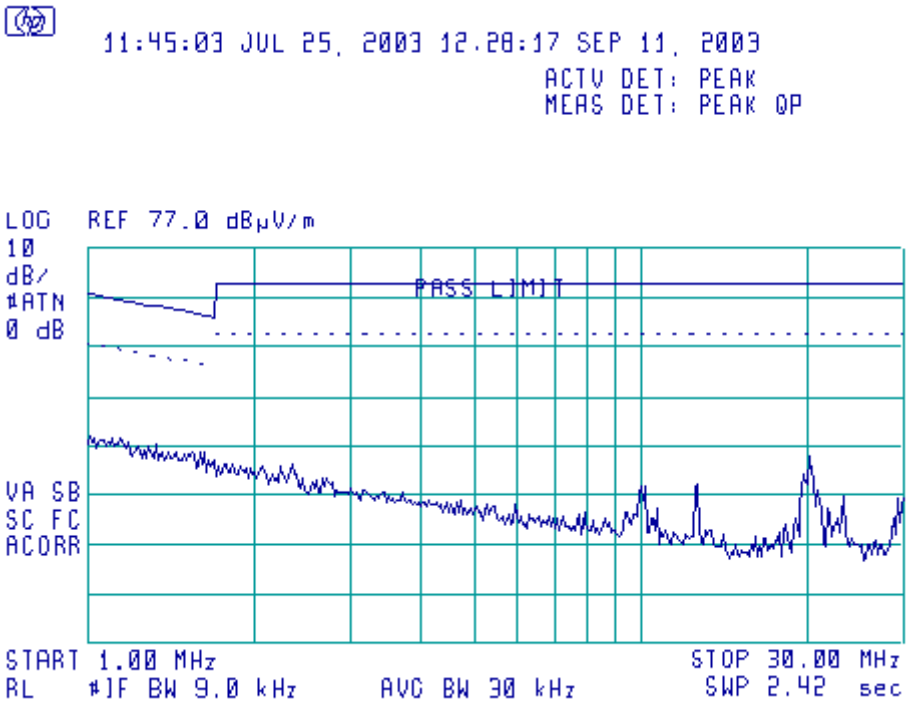
Note. The limit lines shown are per §15.209. Outside the restricted bands the limits for spurious emissions are actually governed by §15.209(d) which is less severe - 20dBC measured in 100kHz RBW.

Below 30MHz.



Quasi-Peak Values 1MHz to 30MHz Perpendicular.

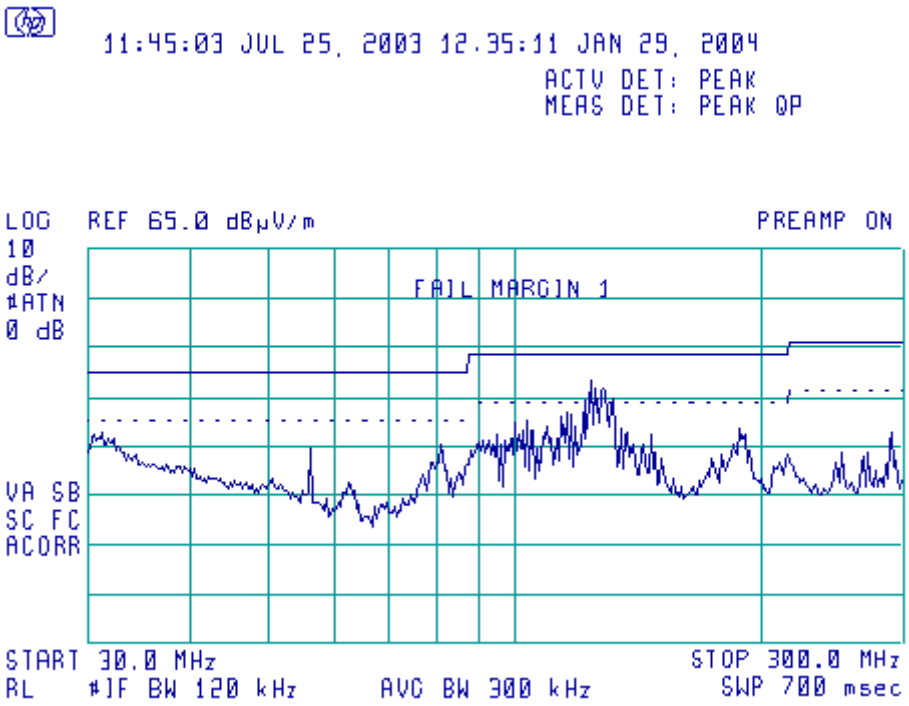
The plot shows a swept response of peak values using the quasi-peak limit line



Quasi-Peak Values 1MHz to 30MHz Parallel.

The plot shows a swept response of peak values using the quasi-peak limit line

Above 30MHz.



Quasi-Peak Values of 30 MHz. to 300 MHz.

Horizontal Polarisation RX mode

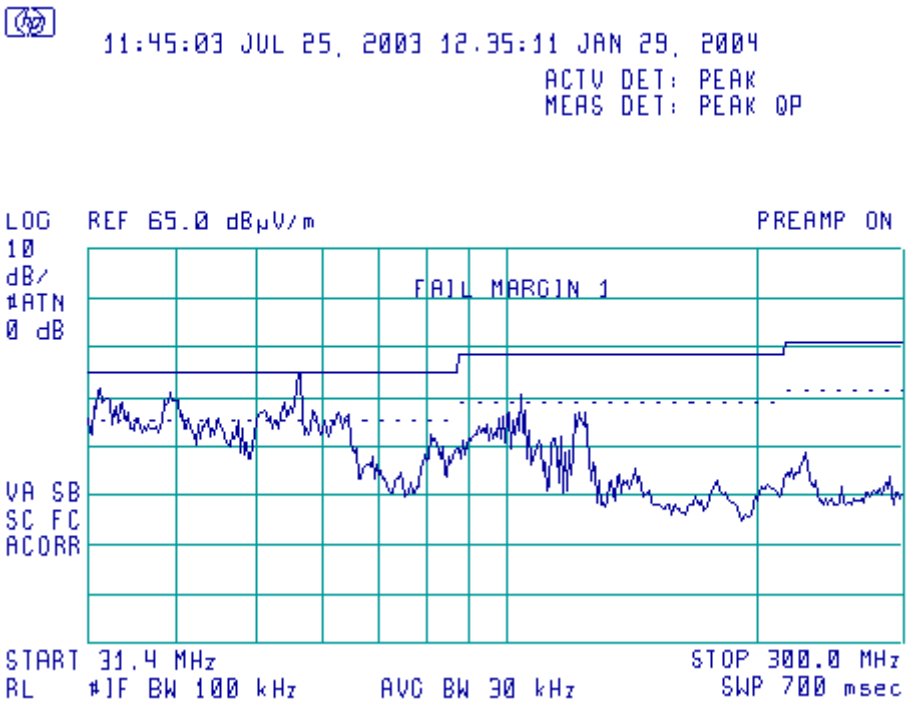
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal RX mode

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	95.166025	28.84	-14.66	26.69	-16.81
2	123.970525	39.49	-4.01	38.39	-5.11
3	128.974788	37.79	-5.71	36.15	-7.35
4	128.974675	37.59	-5.91	36.04	-7.46
5	127.731325	38.29	-5.21	36.48	-7.02
6	125.215675	37.74	-5.76	35.28	-8.22
7	121.459150	35.48	-8.02	33.84	-9.66
8	131.479750	35.01	-8.49	32.93	-10.57
9	187.831950	31.14	-12.36	28.45	-15.05

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 30 MHz. to 300 MHz.

Vertical Polarisation RX mode

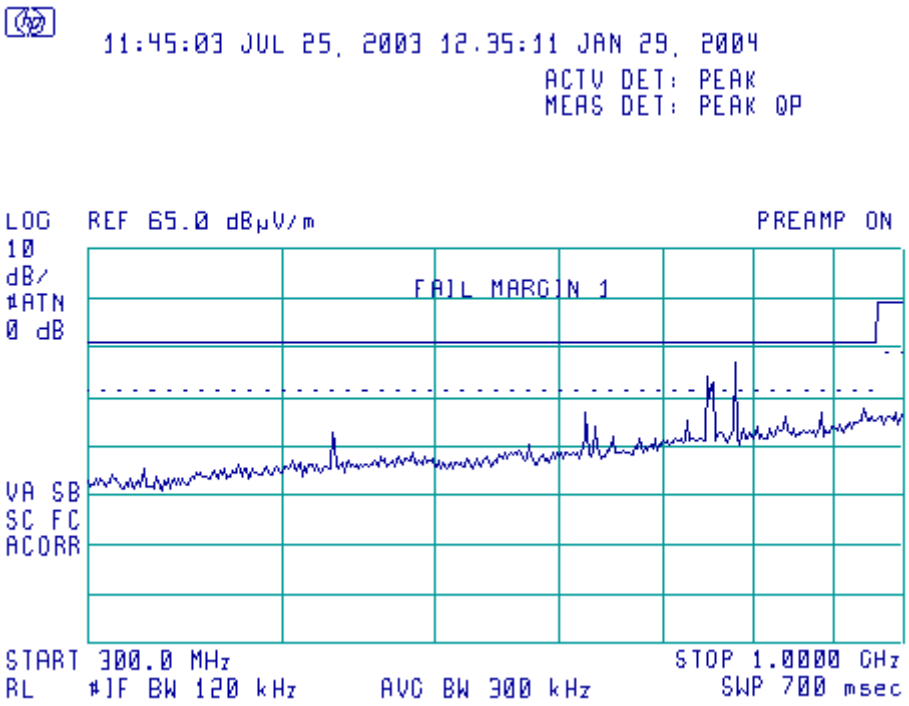
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical RX mode

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	30.618000	35.91	-4.09	36.04	-3.96
2	32.577000	37.59	-2.41	35.96	-4.04
3	35.344250	33.85	-6.15	31.83	-8.17
4	39.679750	35.12	-4.88	33.86	-6.14
5	50.443250	31.68	-8.32	31.28	-8.72
6	54.152250	34.27	-5.73	33.45	-6.55
7	56.340000	40.32	0.32	39.21	-0.79
8	56.349500	40.57	0.57	39.33	-0.67
9	56.356250	40.30	0.30	39.15	-0.85
10	58.701500	33.70	-6.30	32.68	-7.32
11	64.782250	32.52	-7.48	31.41	-8.59
12	103.928563	37.34	-6.16	35.87	-7.63
13	121.465322	32.39	-11.11	31.06	-12.44
14	122.714319	31.27	-12.23	29.76	-13.74
15	123.960659	32.80	-10.70	31.29	-12.21

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 300 MHz. to 1 GHz.

Horizontal Polarisation RX mode

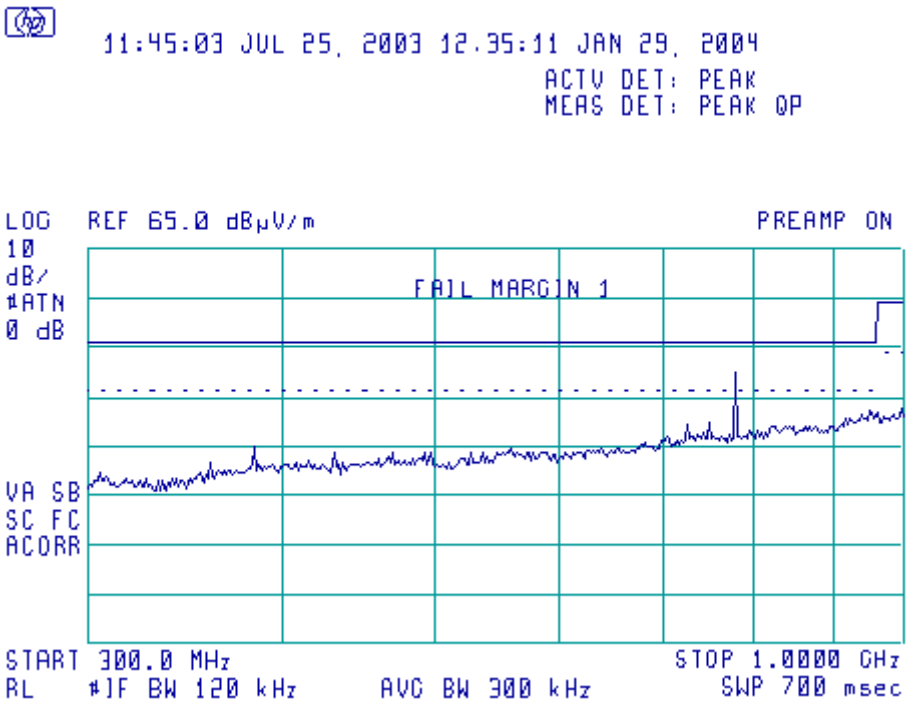
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal RX mode

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	624.000700	33.36	-12.64	30.99	-15.01
2	633.611950	31.68	-14.32	28.75	-17.25
3	748.800050	41.04	-4.96	39.55	-6.45
4	753.999350	39.25	-6.75	37.60	-8.40
5	779.999450	43.66	-2.34	42.50	-3.50

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 300 MHz. to 1 GHz.

Vertical Polarisation RX mode

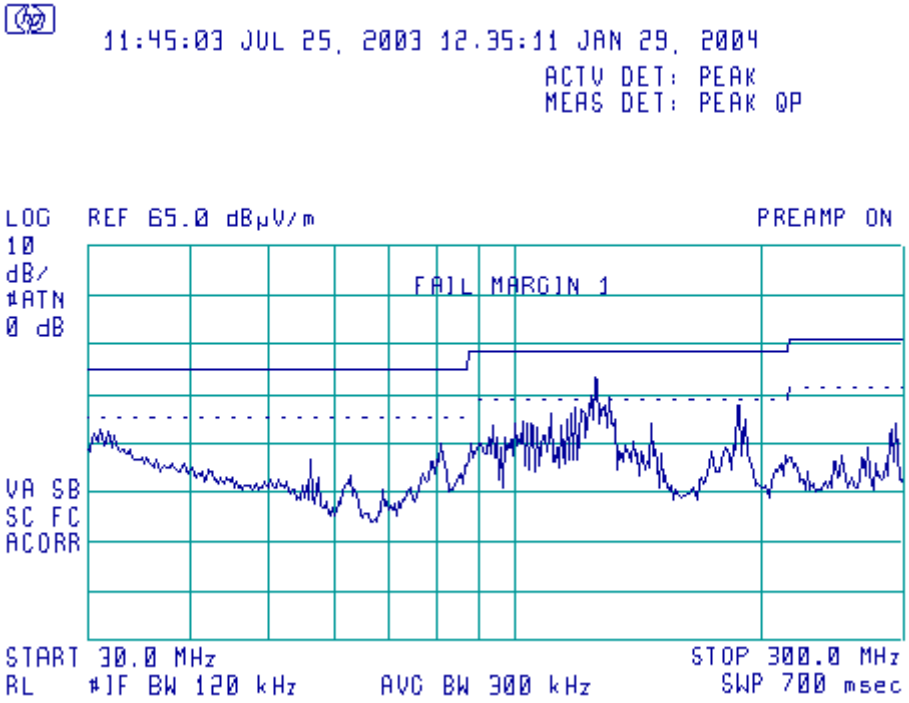
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical RX mode

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	780.002463	41.35	-4.65	39.92	-6.08

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 30 MHz. to 300 MHz.

Horizontal Polarisation TX bottom channel

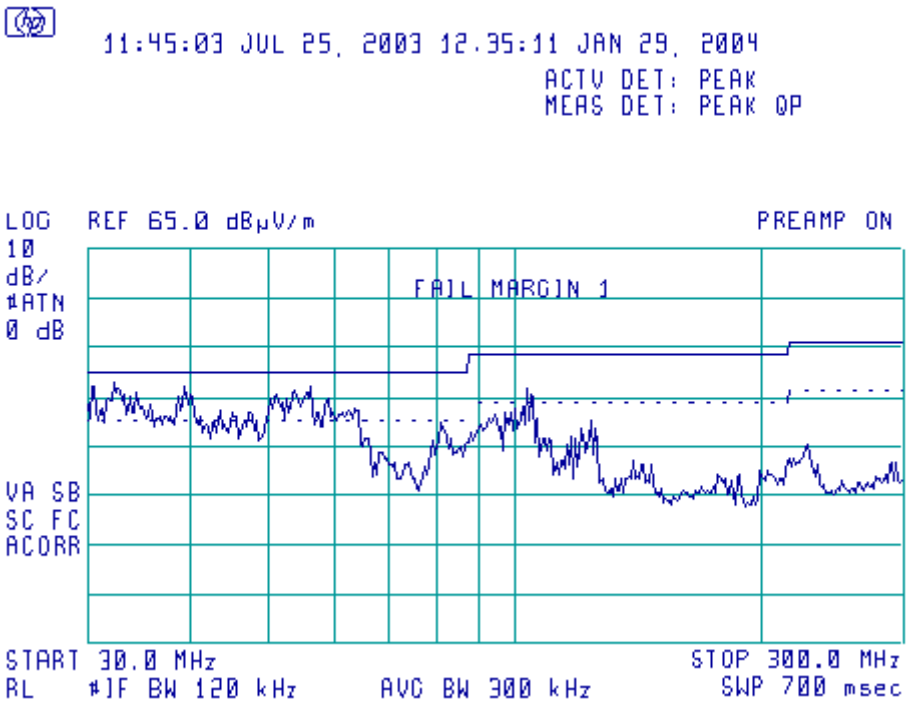
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal TX bottom channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	93.915175	29.32	-14.18	27.42	-16.08
2	125.217175	40.18	-3.32	38.95	-4.55
3	126.470313	40.10	-3.40	38.41	-5.09
4	123.966400	37.29	-6.21	34.49	-9.01
5	118.959475	34.10	-9.40	32.26	-11.24
6	130.237413	35.60	-7.90	33.66	-9.84
7	131.479825	32.62	-10.88	29.52	-13.98
8	132.728950	31.01	-12.49	28.93	-14.57
9	187.825544	34.39	-9.11	32.87	-10.63
10	293.005075	31.39	-14.61	29.26	-16.74

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 30 MHz. to 300 MHz.

Vertical Polarisation TX bottom channel

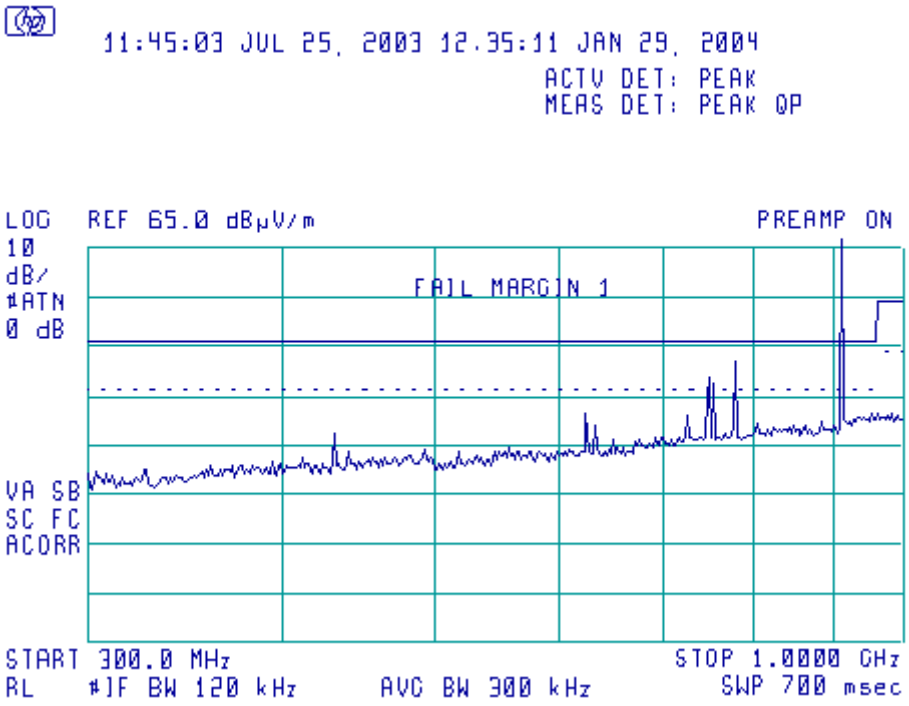
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical TX bottom channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	32.579700	38.01	-1.99	35.66	-4.34
2	34.661900	36.79	-3.21	31.70	-8.30
3	39.464300	37.03	-2.97	33.91	-6.09
4	40.371450	36.40	-3.60	32.59	-7.41
5	51.038550	34.94	-5.06	31.13	-8.87
6	53.582400	35.59	-4.41	33.10	-6.90
7	56.347350	38.51	-1.49	35.99	-4.01
8	59.343150	34.02	-5.98	28.39	-11.61
9	60.234550	33.68	-6.32	28.99	-11.01
10	62.974700	33.47	-6.53	29.48	-10.52
11	103.919903	37.95	-5.55	35.96	-7.54
12	105.192098	36.71	-6.79	34.88	-8.62
13	106.431967	32.38	-11.12	30.24	-13.26
14	117.698470	27.89	-15.61	25.65	-17.85
15	120.198919	29.62	-13.88	26.87	-16.63
16	123.973563	31.31	-12.19	29.03	-14.47
17	125.214869	30.13	-13.37	28.23	-15.27
18	126.464686	27.12	-16.38	24.72	-18.78

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 300 MHz. to 1 GHz.

Horizontal Polarisation TX bottom channel

The plot shows a swept response of peak values using the quasi-peak limit line

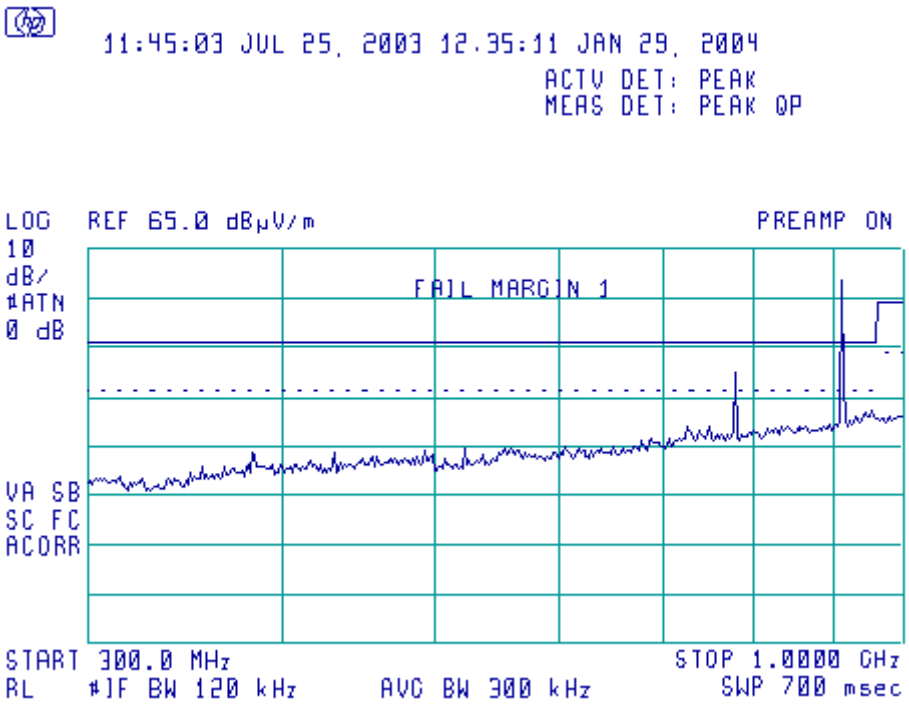
(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal TX bottom channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	624.001800	33.11	-12.89	30.77	-15.23
2	633.607650	32.06	-13.94	28.87	-17.13
3	748.799950	40.80	-5.20	39.33	-6.67
4	753.998250	39.46	-6.54	37.74	-8.26
5	780.003600	43.11	-2.89	41.97	-4.03
6	910.500650	70.80	24.80	70.50	24.50[1]

Measurement Uncertainty of ± 5.2dB Applies

[1] Fundamental carrier frequency.



Quasi-Peak Values of 300 MHz. to 1 GHz.

Vertical Polarisation TX bottom channel

The plot shows a swept response of peak values using the quasi-peak limit line

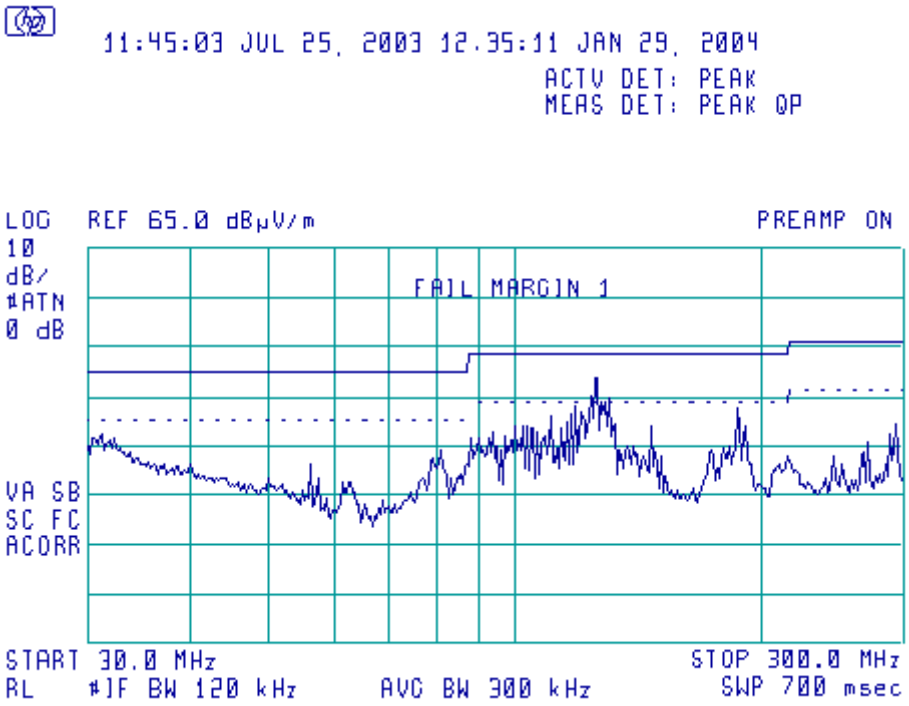
(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical TX bottom channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	779.990293	41.10	-4.90	39.51	-6.49
2	910.501367	59.18	13.18	58.90	12.90[2]

Measurement Uncertainty of ± 5.2dB Applies

[2] Fundamental carrier frequency.



Quasi-Peak Values of 30 MHz. to 300 MHz. Horizontal Polarisation TX middle channel

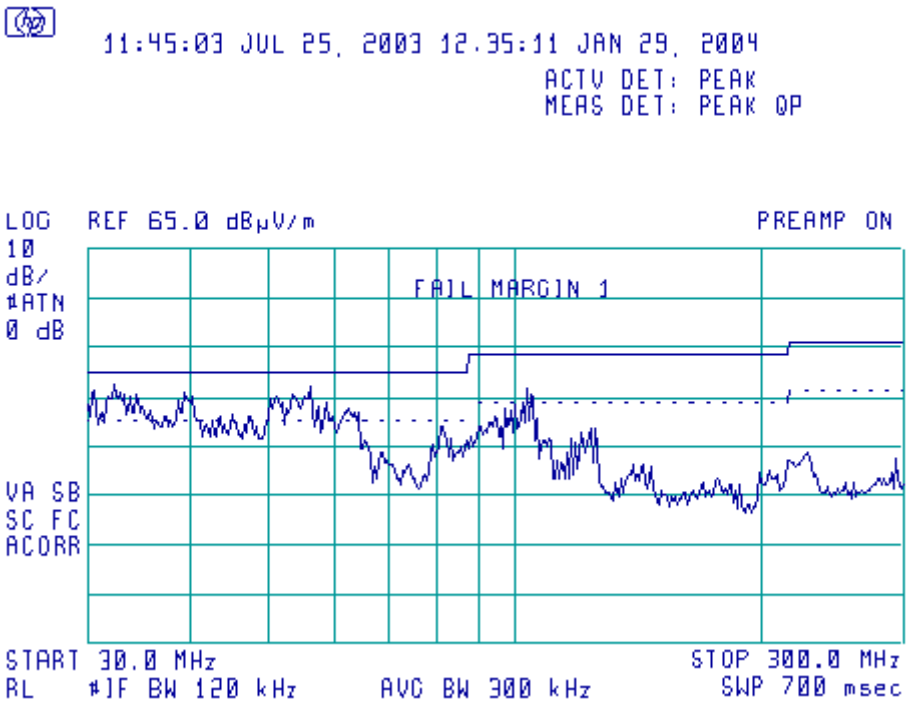
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal TX middle channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	93.918663	29.49	-14.01	27.32	-16.18
2	118.950212	34.38	-9.12	32.45	-11.05
3	123.966256	36.88	-6.62	34.53	-8.97
4	125.216488	40.09	-3.41	38.92	-4.58
5	125.217075	40.06	-3.44	38.95	-4.55
6	126.464838	40.05	-3.45	38.35	-5.15
7	130.239945	35.55	-7.95	33.60	-9.90
8	132.708900	30.72	-12.78	28.21	-15.29
9	187.822963	34.20	-9.30	32.77	-10.73

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 30 MHz. to 300 MHz.

Vertical Polarisation TX middle channel

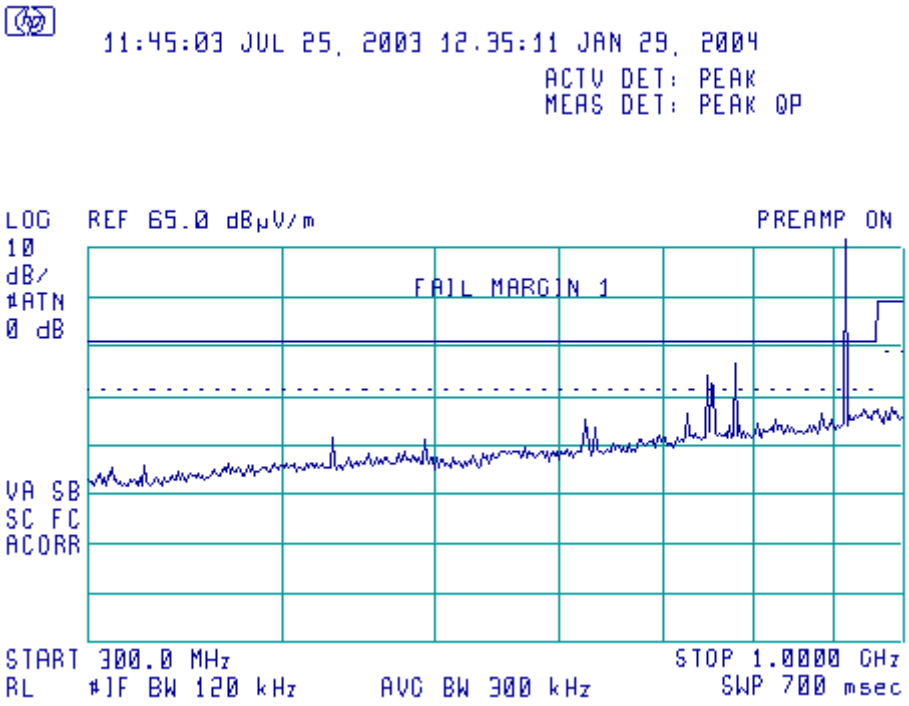
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical TX middle channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	32.565800	37.71	-2.29	34.94	-5.06
2	34.108900	35.07	-4.93	32.13	-7.87
3	39.486350	37.97	-2.03	33.85	-6.15
4	40.369750	35.95	-4.05	32.84	-7.16
5	45.261750	33.17	-6.83	28.07	-11.93
6	51.026250	34.82	-5.18	31.93	-8.07
7	56.348650	38.90	-1.10	36.27	-3.73
8	56.349000	38.74	-1.26	36.27	-3.73
9	58.813300	34.32	-5.68	29.98	-10.02
10	58.679400	34.29	-5.71	30.17	-9.83
11	62.965350	33.20	-6.80	29.50	-10.50
12	103.935500	38.20	-5.30	36.28	-7.22
13	103.932500	38.34	-5.16	36.33	-7.17
14	81.499500	29.12	-10.88	25.92	-14.08
15	103.921800	37.87	-5.63	36.19	-7.31
16	105.176191	36.95	-6.55	35.13	-8.37
17	106.455315	31.80	-11.70	29.86	-13.64
18	120.204677	29.91	-13.59	26.55	-16.95
19	123.960782	31.49	-12.01	28.73	-14.77
20	125.226281	30.28	-13.22	28.35	-15.15
21	126.457516	26.90	-16.60	24.16	-19.34

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 300 MHz. to 1 GHz.

Horizontal Polarisation TX middle channel

The plot shows a swept response of peak values using the quasi-peak limit line

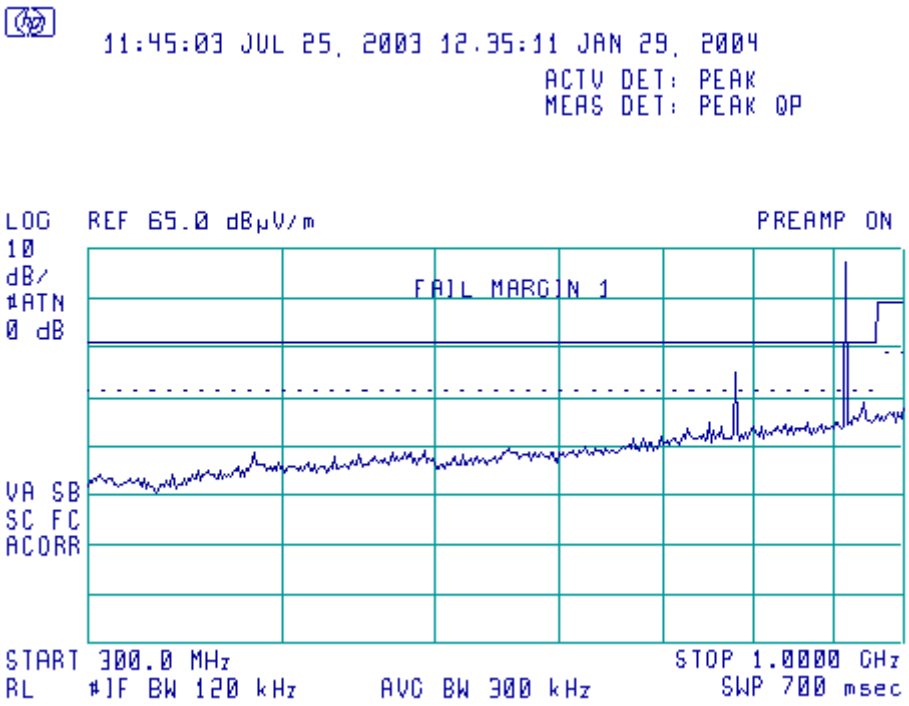
(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal TX middle channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	624.007600	33.65	-12.35	30.62	-15.38
2	748.805148	40.77	-5.23	39.07	-6.93
3	753.999212	39.87	-6.13	37.83	-8.17
4	779.999743	43.44	-2.56	42.29	-3.71
5	915.051850	71.35	25.35	71.12	25.12[3]

Measurement Uncertainty of ± 5.2dB Applies

[3] Fundamental carrier frequency.



Quasi-Peak Values of 300 MHz. to 1 GHz.

Vertical Polarisation TX middle channel

The plot shows a swept response of peak values using the quasi-peak limit line

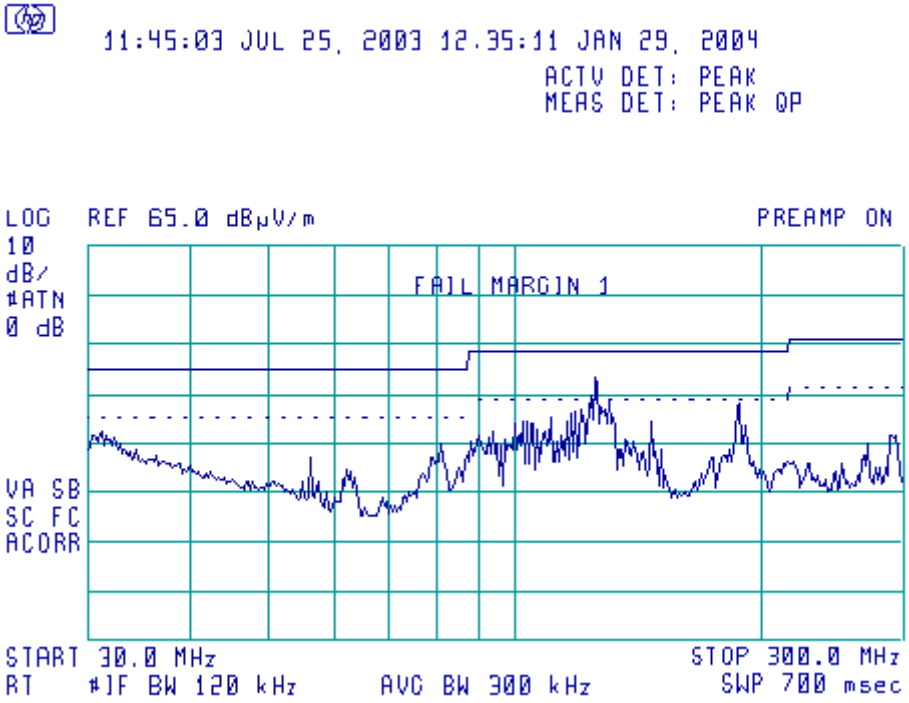
(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical TX middle channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	779.996550	41.10	-4.90	39.62	-6.38
2	915.050650	62.95	16.95	62.72	16.72[4]

Measurement Uncertainty of ± 5.2dB Applies

[4] Fundamental carrier frequency.



Quasi-Peak Values of 30 MHz. to 300 MHz.

Horizontal Polarisation TX top channel

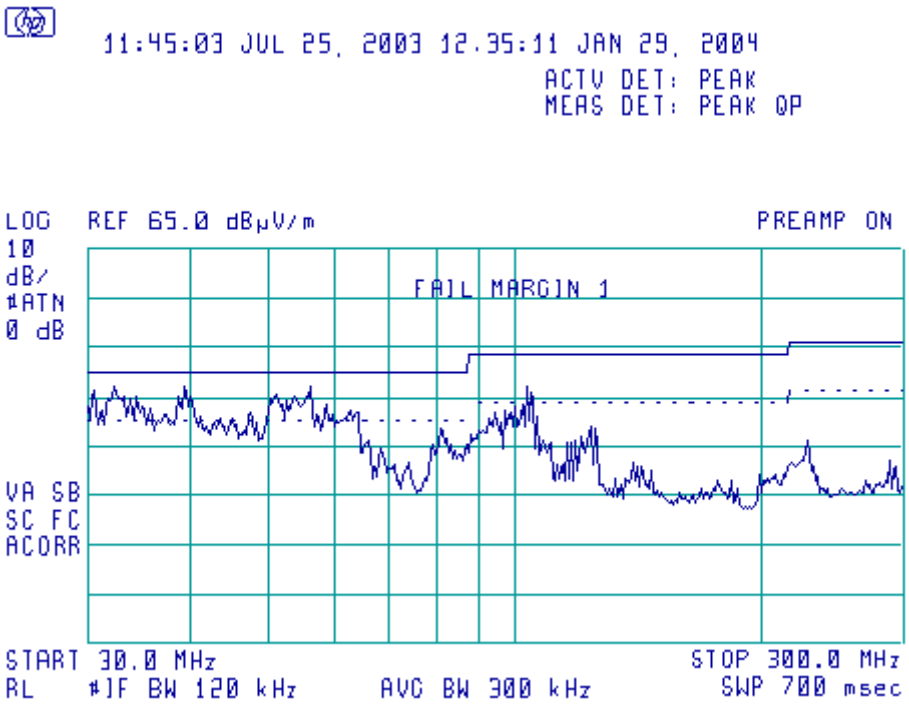
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal TX top channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	93.915650	29.14	-14.36	26.96	-16.54
2	118.956681	33.25	-10.25	31.35	-12.15
3	123.971759	36.66	-6.84	34.27	-9.23
4	125.213750	39.64	-3.86	38.37	-5.13
5	125.218050	39.69	-3.81	38.48	-5.02
6	126.477475	38.73	-4.77	36.77	-6.73
7	130.232100	35.03	-8.47	32.89	-10.61
8	131.481500	32.68	-10.82	30.02	-13.48
9	146.508800	30.93	-12.57	28.96	-14.54
10	187.822438	34.22	-9.28	32.68	-10.82

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 30 MHz. to 300 MHz.

Vertical Polarisation TX top channel

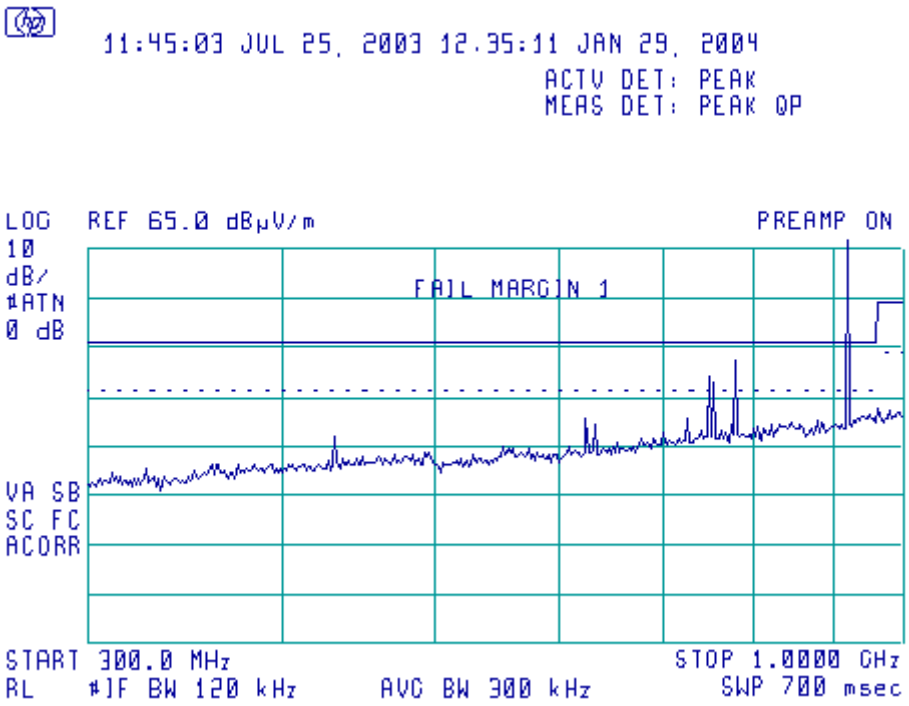
The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical TX top channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	30.601500	38.12	-1.88	34.23	-5.77
2	33.198200	36.82	-3.18	33.37	-6.63
3	39.476300	37.15	-2.85	34.59	-5.41
4	45.279650	31.60	-8.40	29.06	-10.94
5	47.800500	32.00	-8.00	30.54	-9.46
6	51.796650	34.45	-5.55	31.86	-8.14
7	56.353900	38.57	-1.43	36.42	-3.58
8	58.779850	35.20	-4.80	30.27	-9.73
9	62.784800	34.61	-5.39	29.42	-10.58
10	103.928119	38.16	-5.34	36.48	-7.02
11	105.180735	37.29	-6.21	35.35	-8.15
12	106.435110	32.57	-10.93	30.67	-12.83
13	122.707835	30.91	-12.59	27.35	-16.15
14	123.967870	30.96	-12.54	28.25	-15.25
15	125.214803	30.56	-12.94	28.91	-14.59

Measurement Uncertainty of ± 5.2dB Applies



Quasi-Peak Values of 300 MHz. to 1 GHz.

Horizontal Polarisation TX top channel

The plot shows a swept response of peak values using the quasi-peak limit line

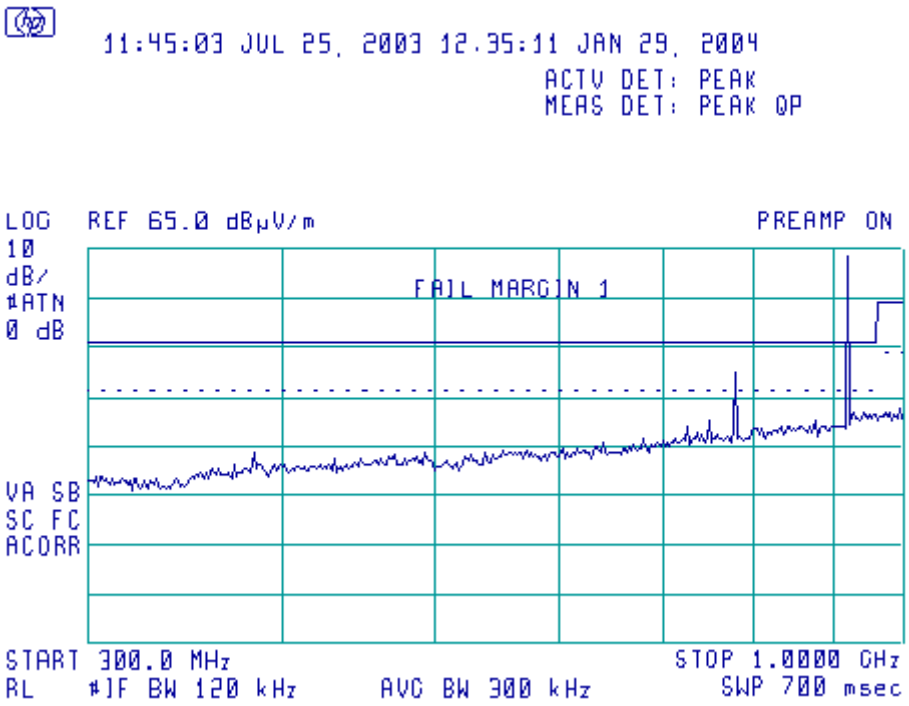
(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-Peak Horizontal TX top channel

Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	623.994300	32.91	-13.09	30.58	-15.42
2	748.802600	40.71	-5.29	39.13	-6.87
3	753.996746	39.47	-6.53	37.71	-8.29
4	779.998251	43.37	-2.63	42.29	-3.71
5	919.626270	69.68	23.68	69.39	23.39[5]

Measurement Uncertainty of ± 5.2dB Applies

[5] Fundamental carrier frequency.



Quasi-Peak Values of 300 MHz. to 1 GHz.

Vertical Polarisation TX top channel

The plot shows a swept response of peak values using the quasi-peak limit line

(Any peaks within 20dB of the limit line have been calculated and appear in the table on following page of this report)

Table of signals within 20dB of the limit line for Quasi-peak Vertical TX top channel

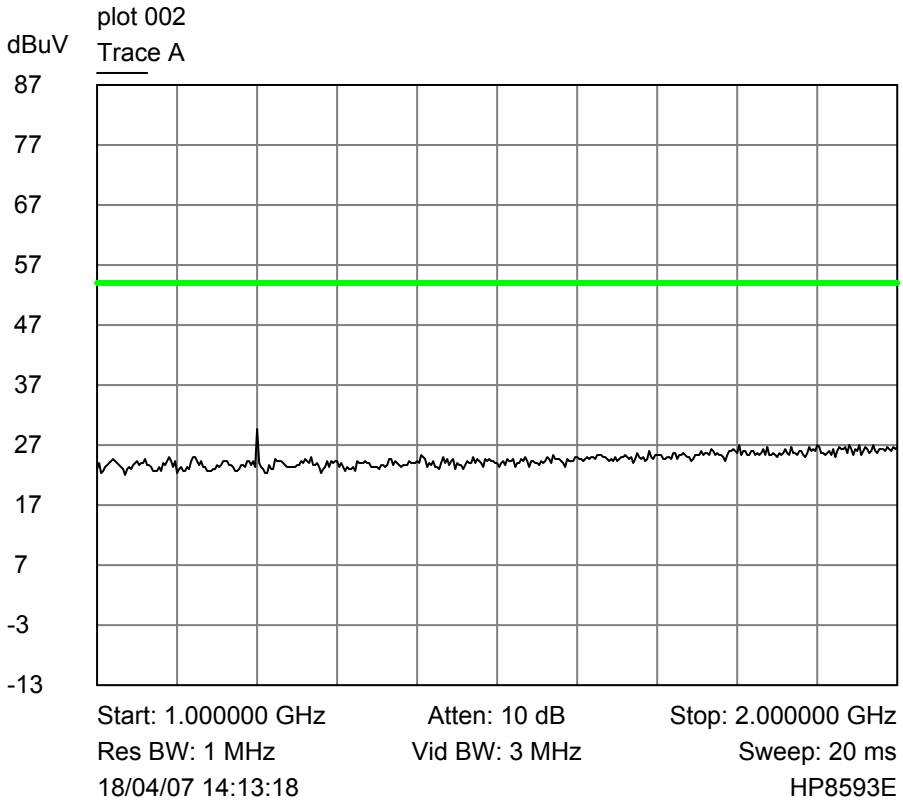
Signal	Freq (MHz)	Peak Amp (dBuV/m)	Peak - Lim1 (dB)	QP Amp (dBuV/m)	QP - Lim1 (dB)
1	780.000600	41.15	-4.85	39.70	-6.30
2	919.625650	64.24	18.24	64.04	18.04[6]

Measurement Uncertainty of ± 5.2dB Applies

[6] Fundamental carrier frequency.

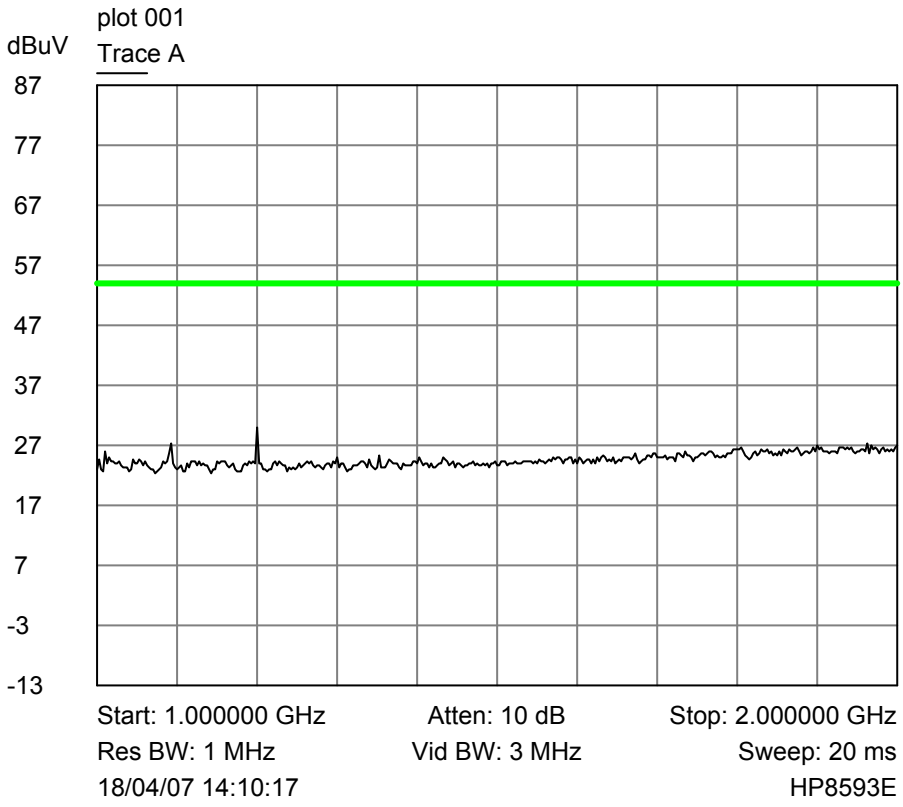
Plots above 1GHz.

RX MODE PLOTS.



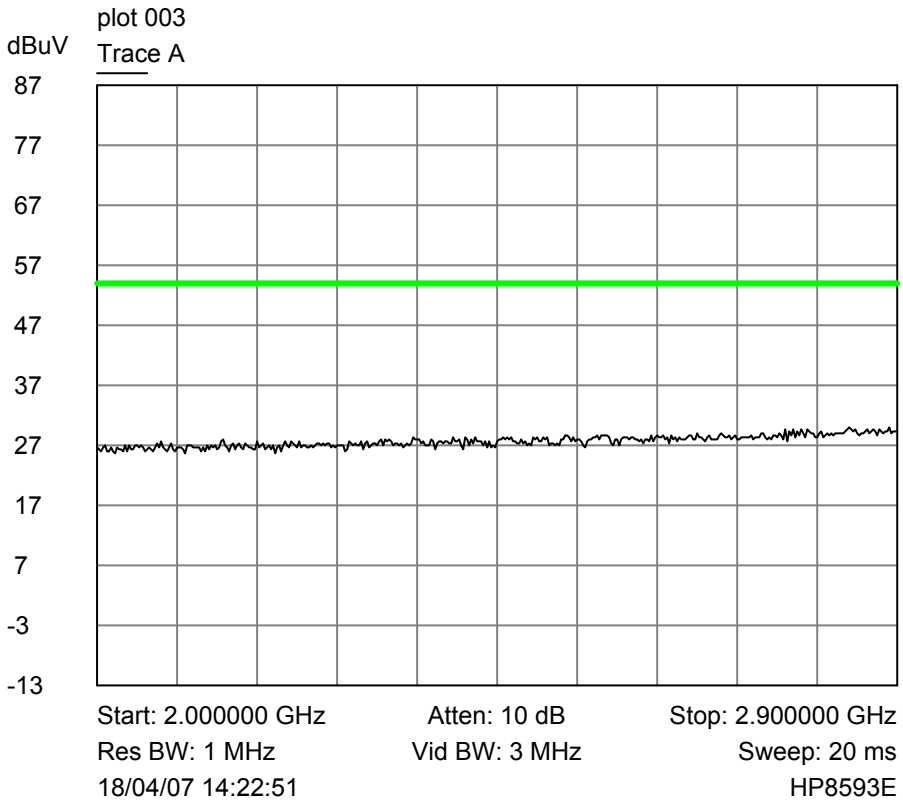
Average Values of 1 to 2GHz.

Horizontal Polarisation

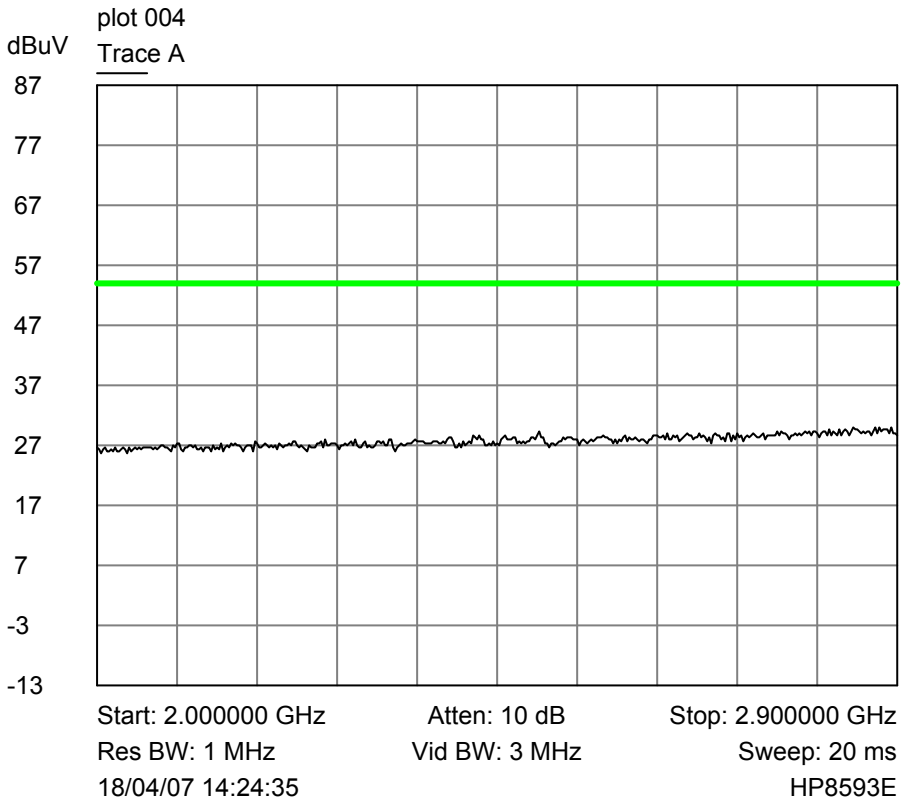


Average Values of 1 to 2GHz.

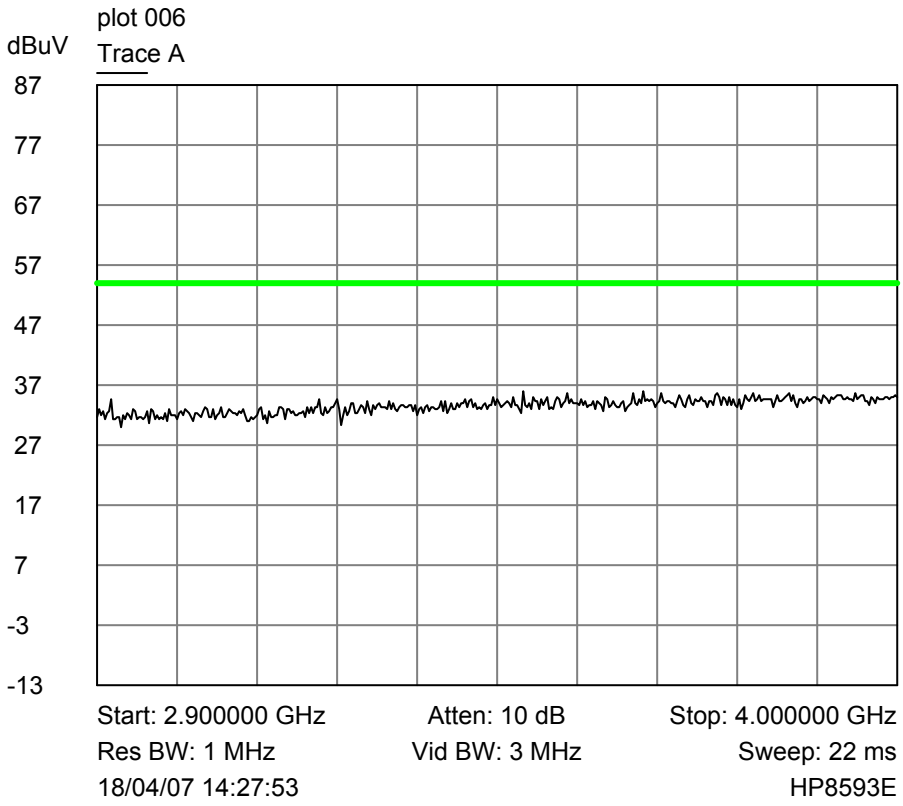
Vertical Polarisation



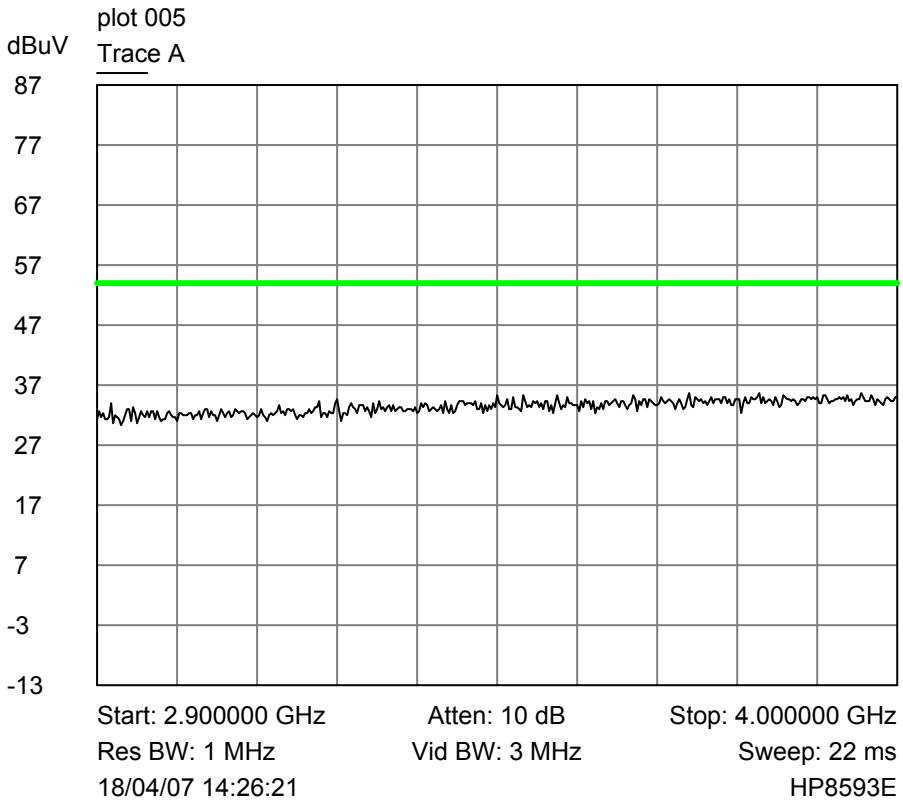
Average Values of 2 – 2.9 GHz.
Horizontal Polarisation



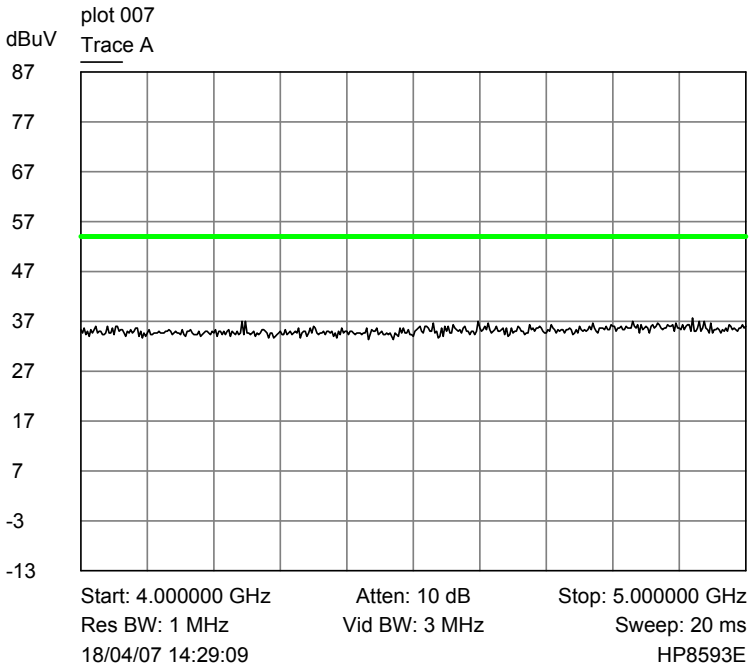
Average Values of 2 - 2.9 GHz.
Vertical Polarisation

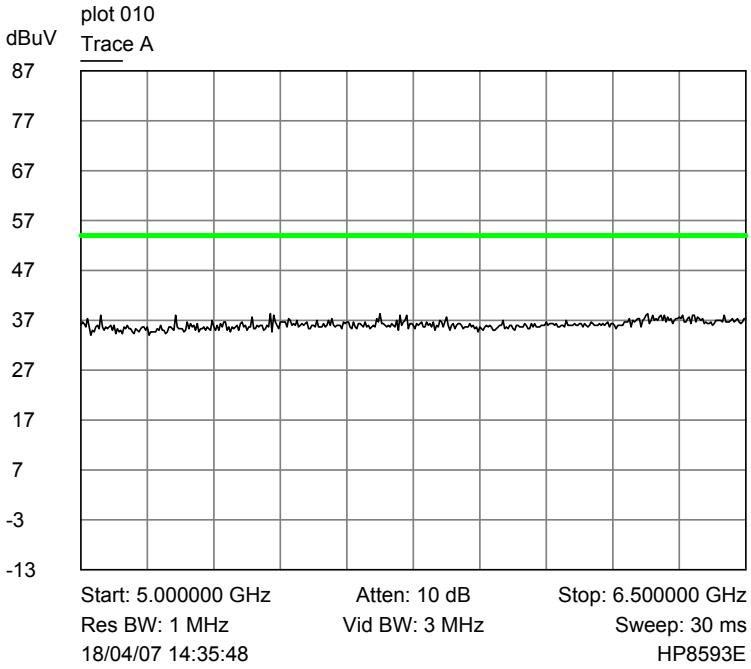


Average Values of 2.9 to 4 GHz.
Horizontal Polarisation



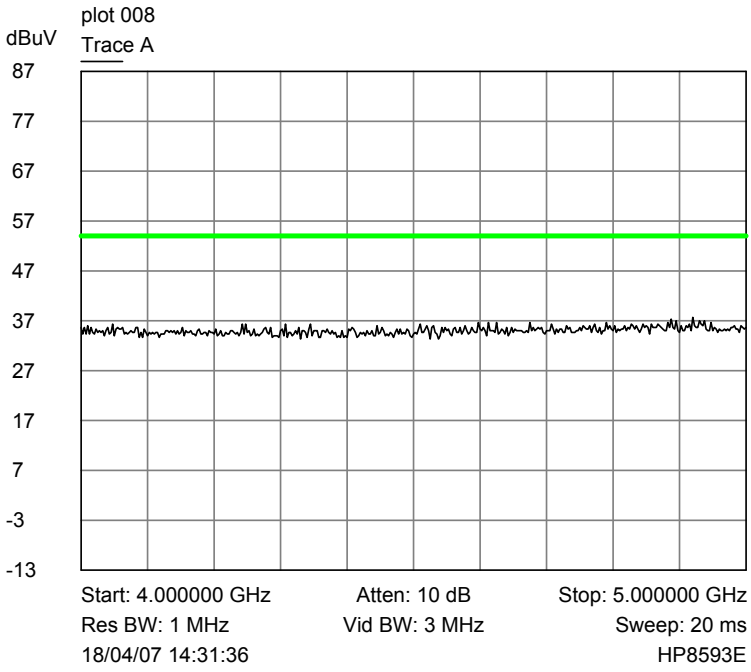
Average Values of 2.9 to 4 GHz.
Vertical Polarisation

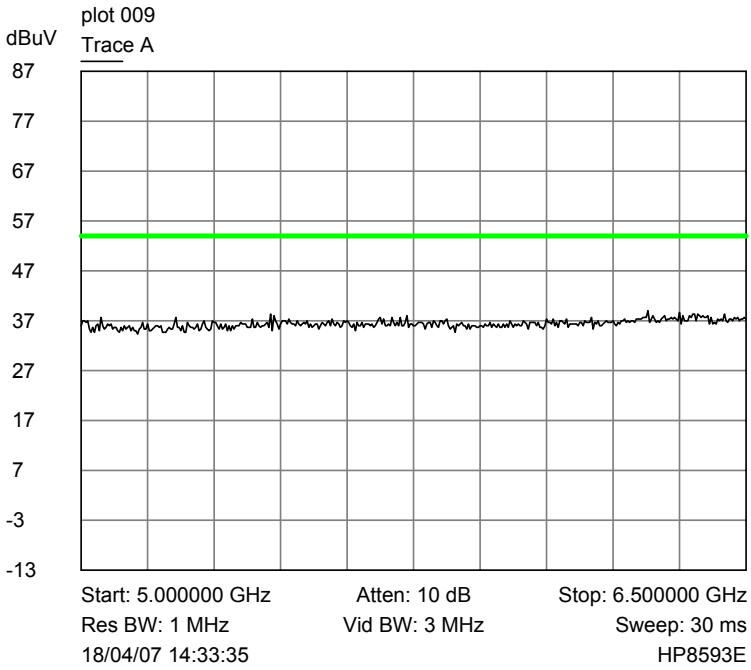




Average Values of 4 – 6.5 GHz.

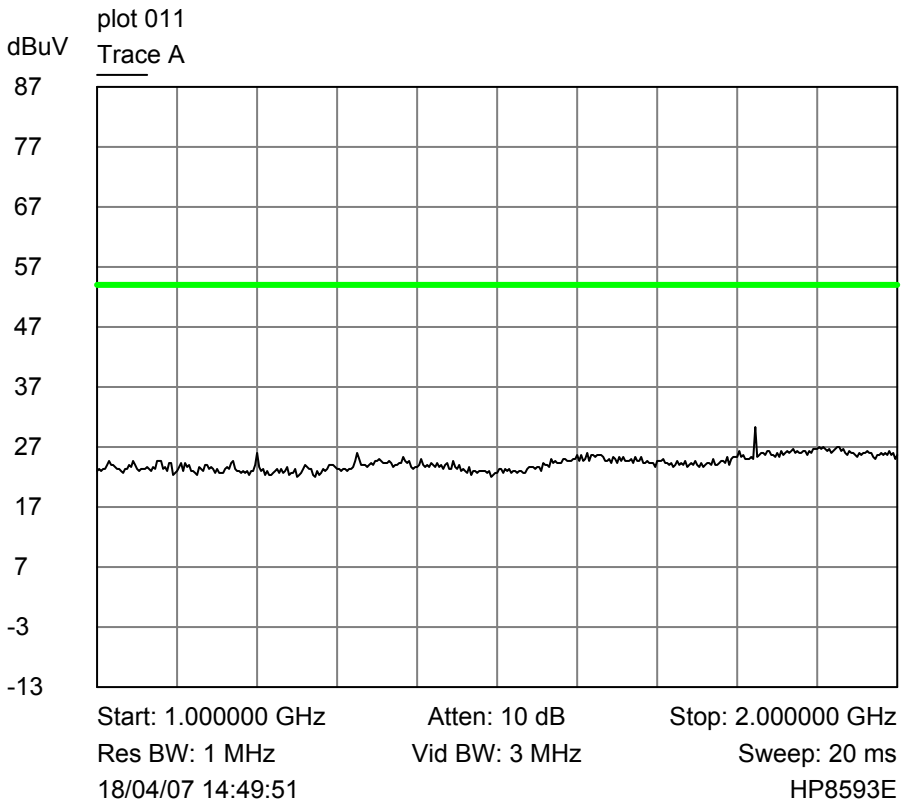
Horizontal Polarisation



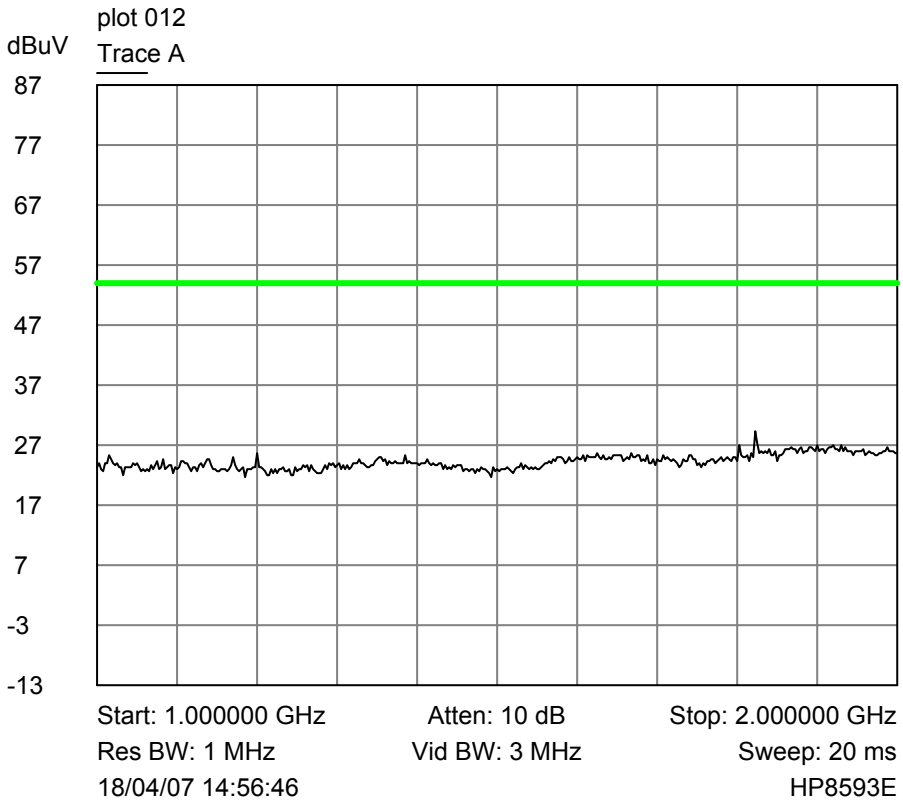


Average Values of 4 – 6.5 GHz.
Vertical Polarisation

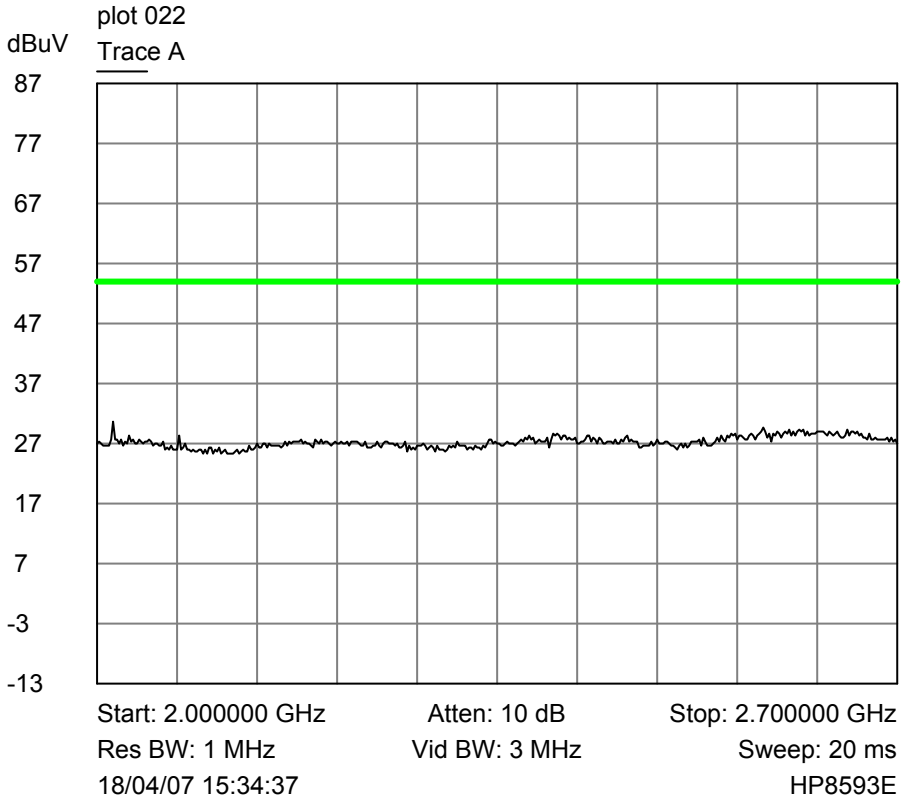
T**X bottom channel.**



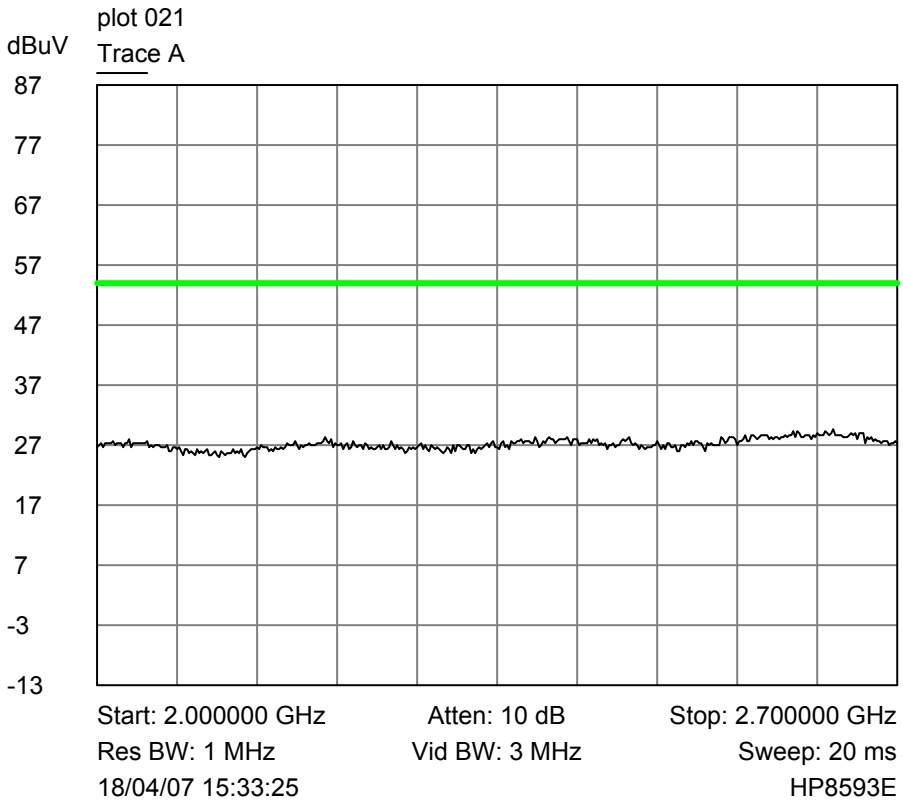
Average Values of 1 - 2 GHz.
Horizontal Polarisation



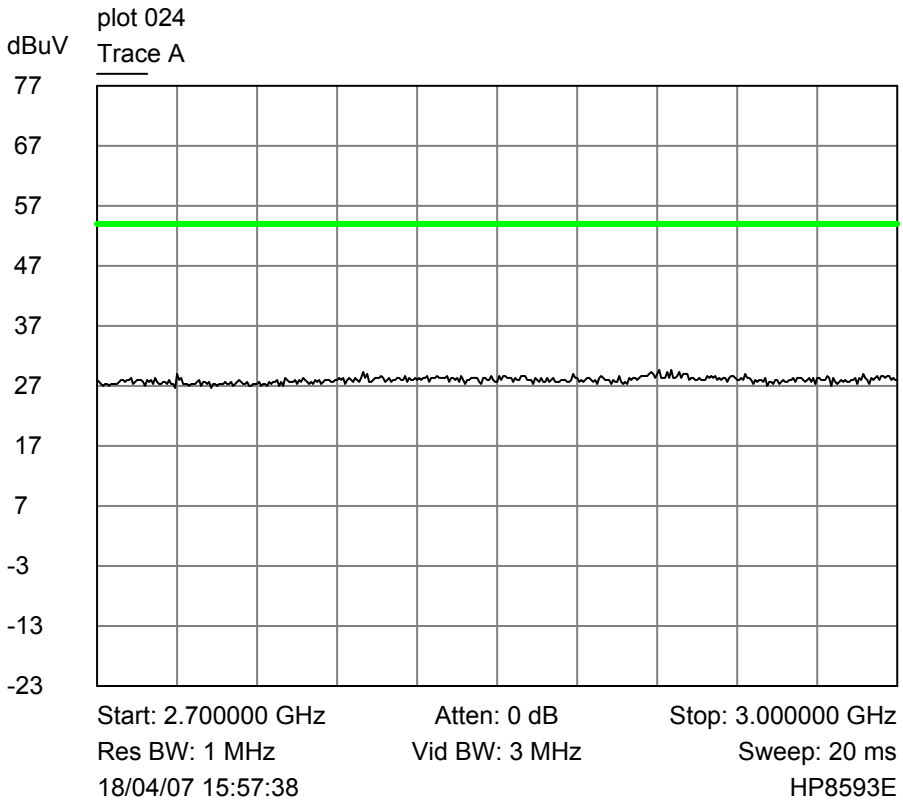
Average Values of 1 - 2 GHz.
Vertical Polarisation



Average Values of 2 – 2.7 GHz.
Horizontal Polarisation

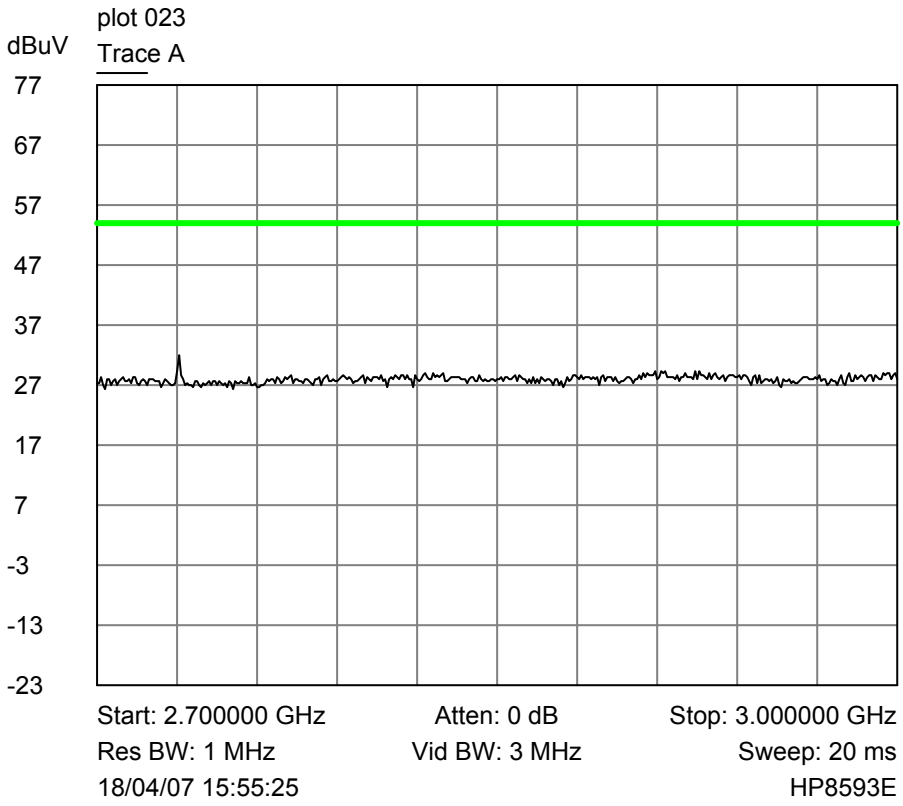


Average Values of 2 – 2.7 GHz.
Vertical Polarisation

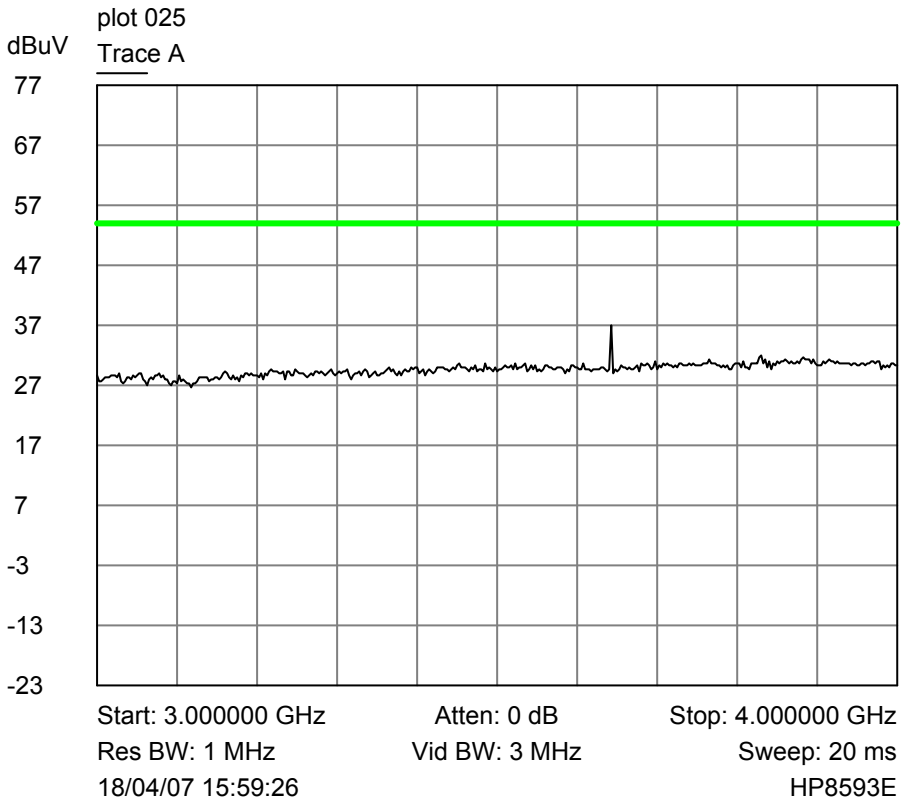


Average Values of 2.7 - 3 GHz.

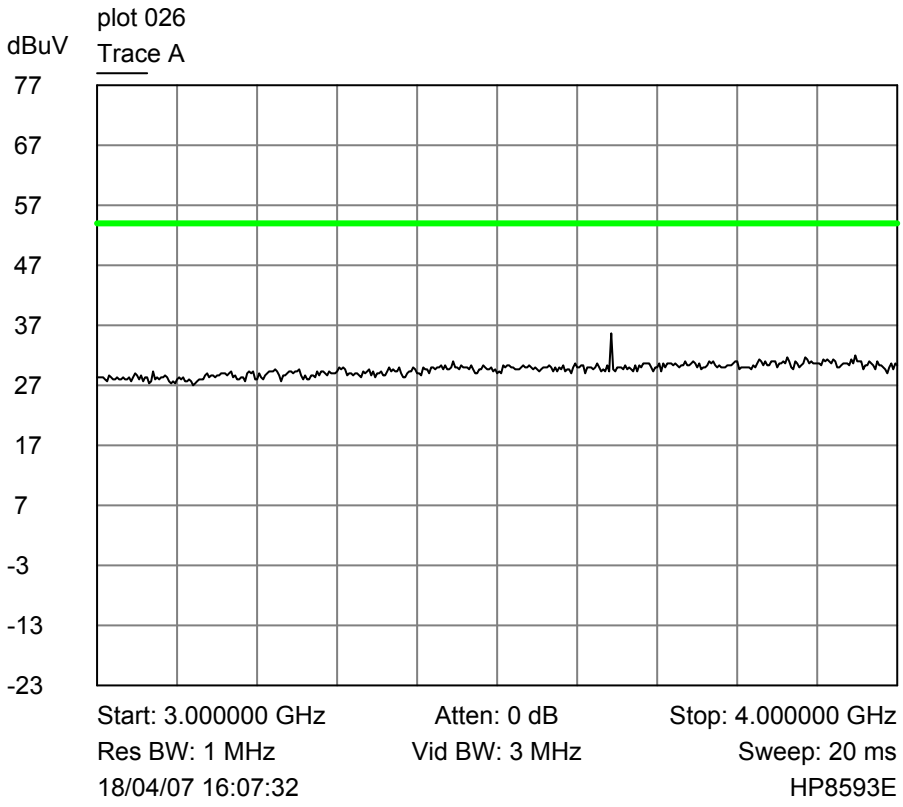
Horizontal Polarisation



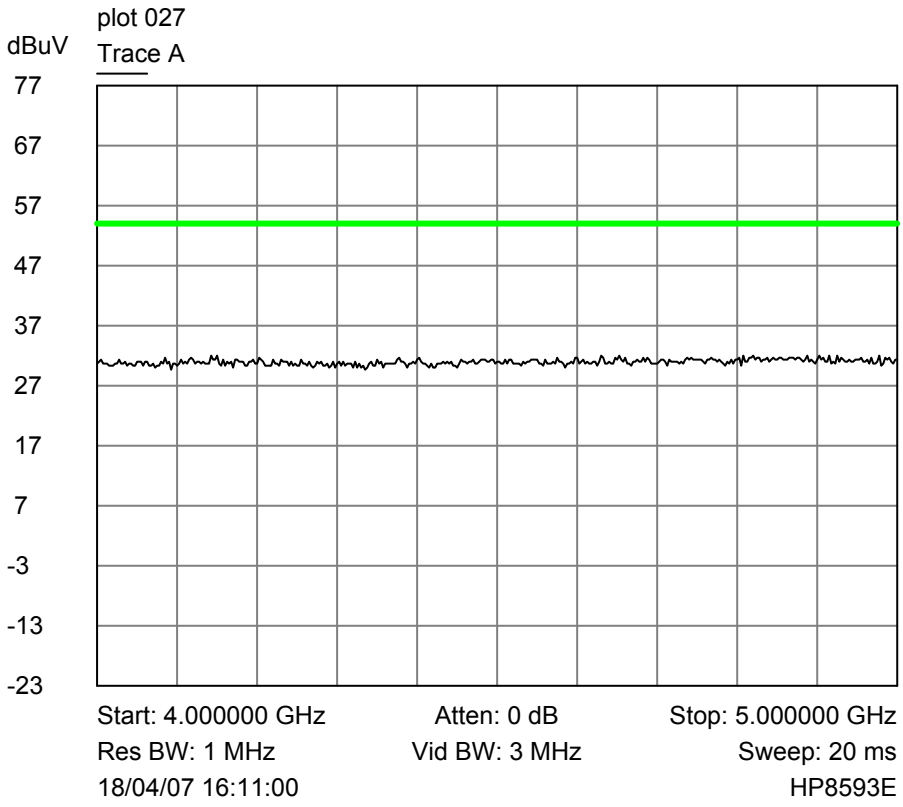
Average Values of 2.7 – 3 GHz.
Vertical Polarisation



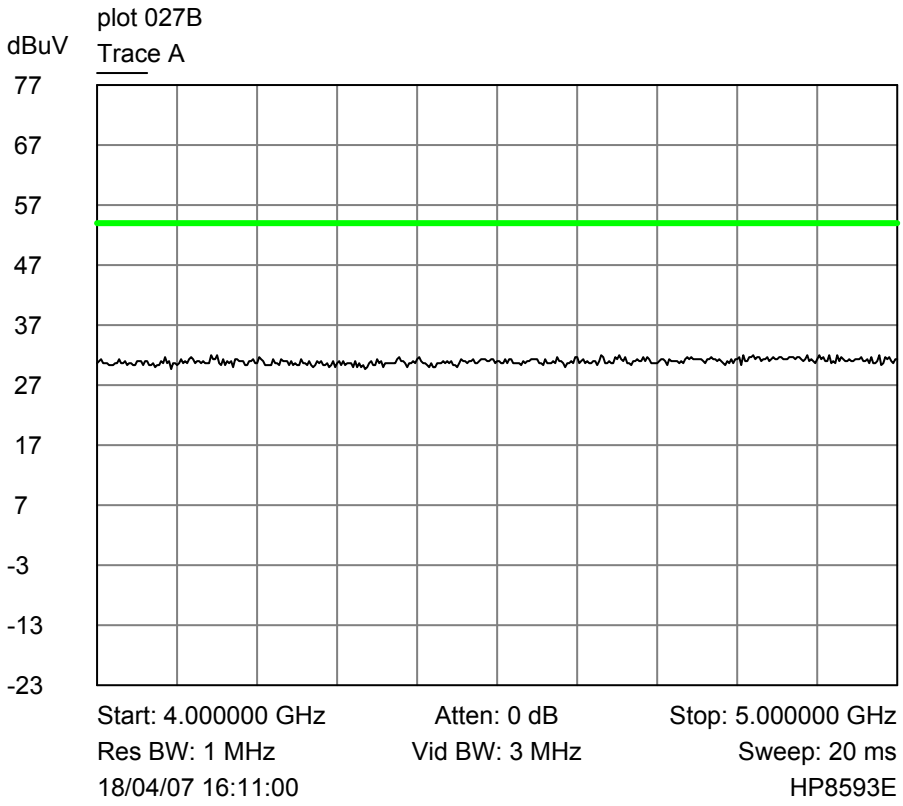
Average Values of 3 - 4 GHz.
Horizontal Polarisation



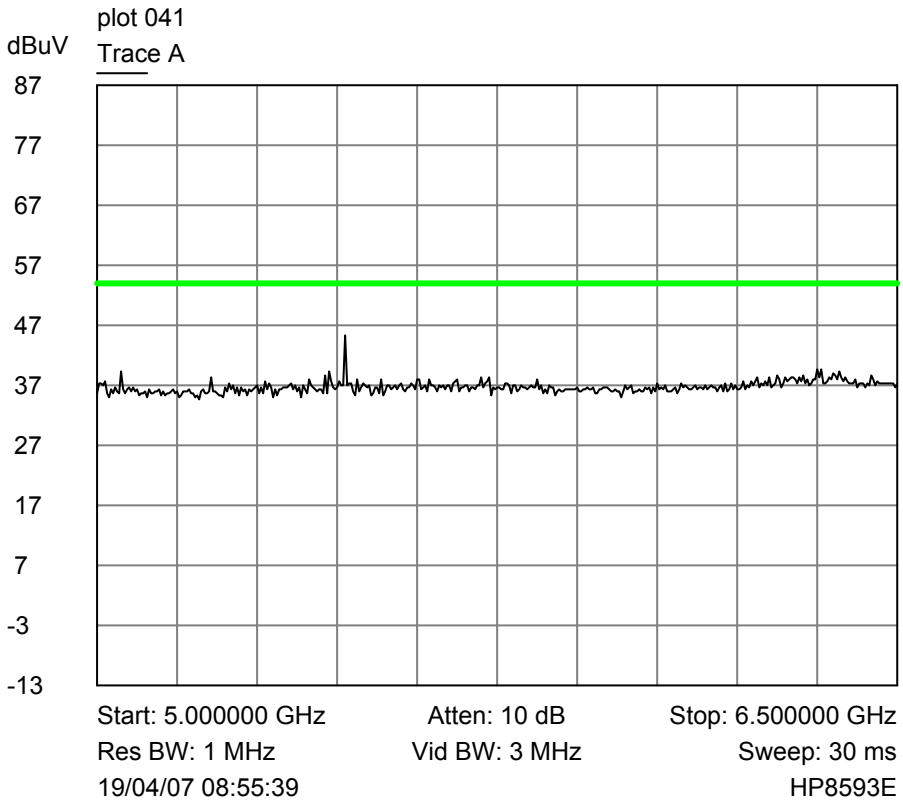
Average Values of 3 - 4 GHz.
Vertical Polarisation



Average Values of 4 - 5 GHz.
Horizontal Polarisation

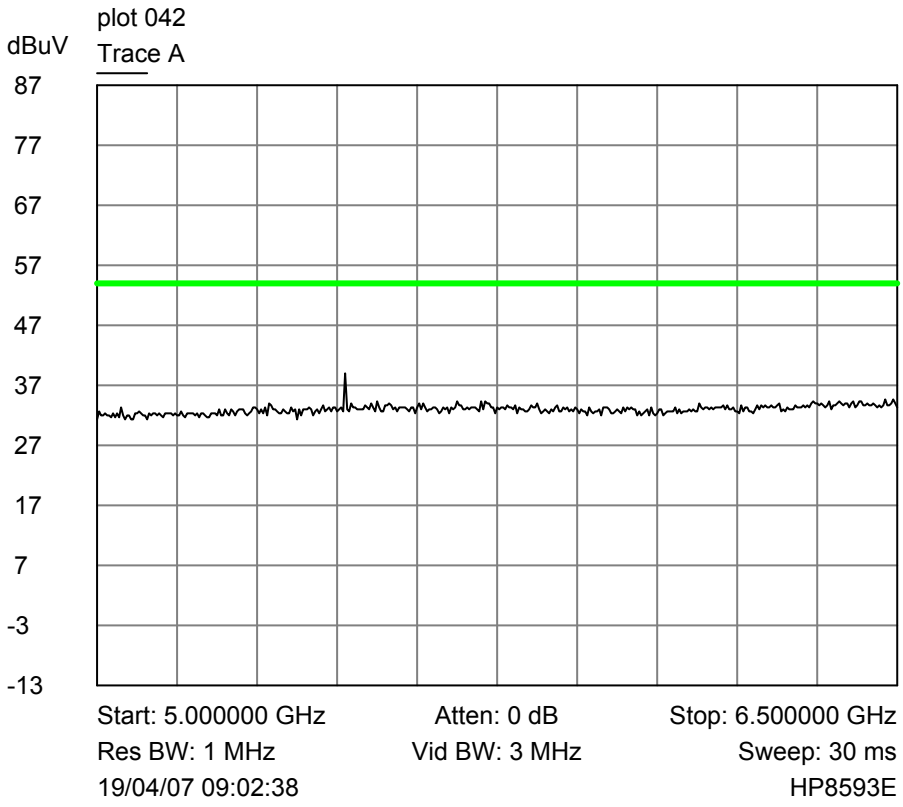


Average Values of 4 - 5 GHz.
Vertical Polarisation

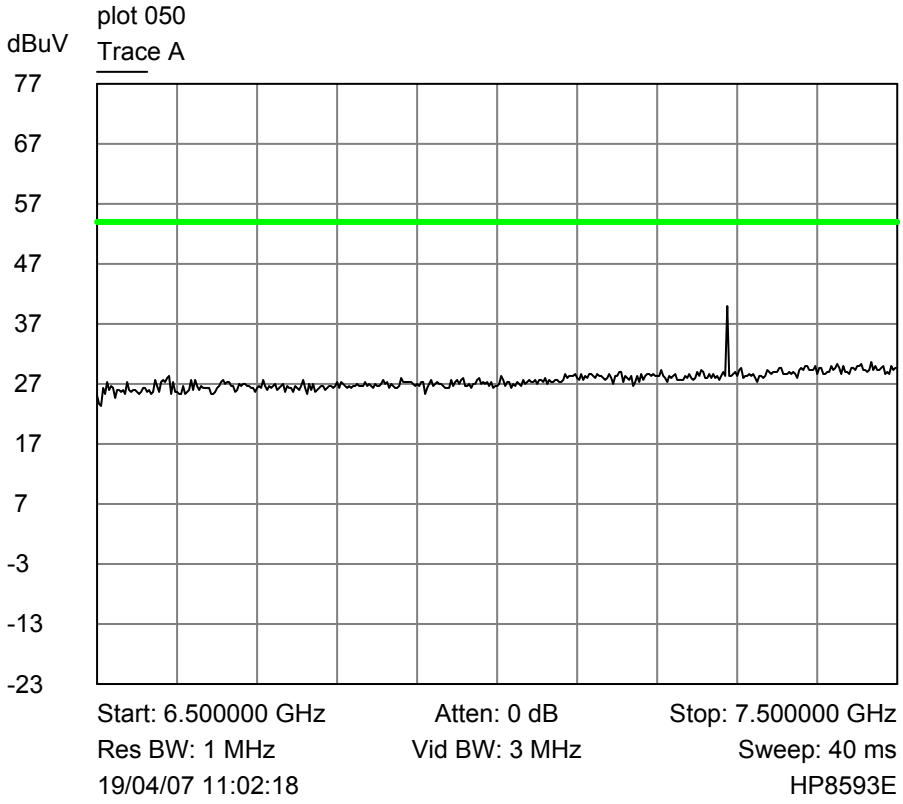


Average Values of 5 – 6.5 GHz.

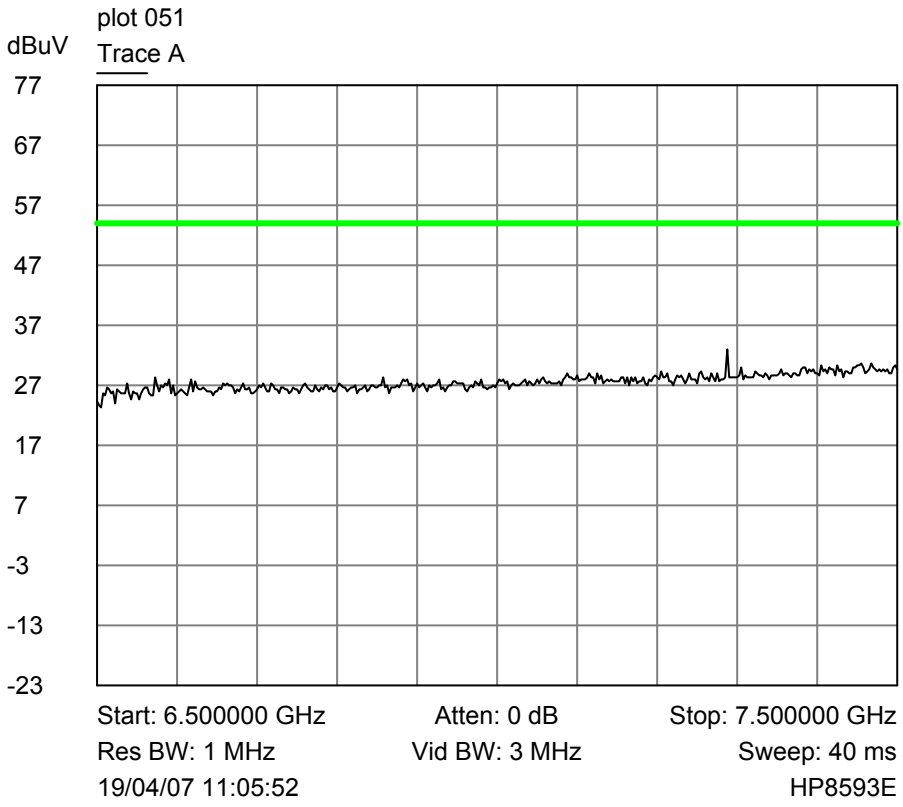
Horizontal Polarisation



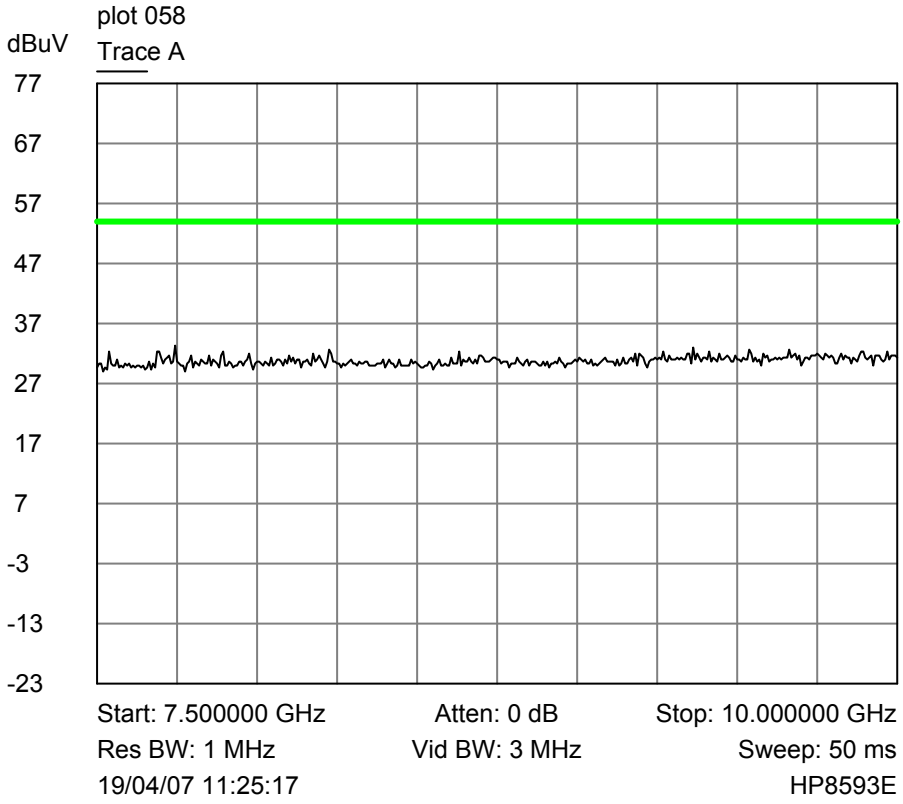
Average Values of 5 – 6.5 GHz.
Vertical Polarisation



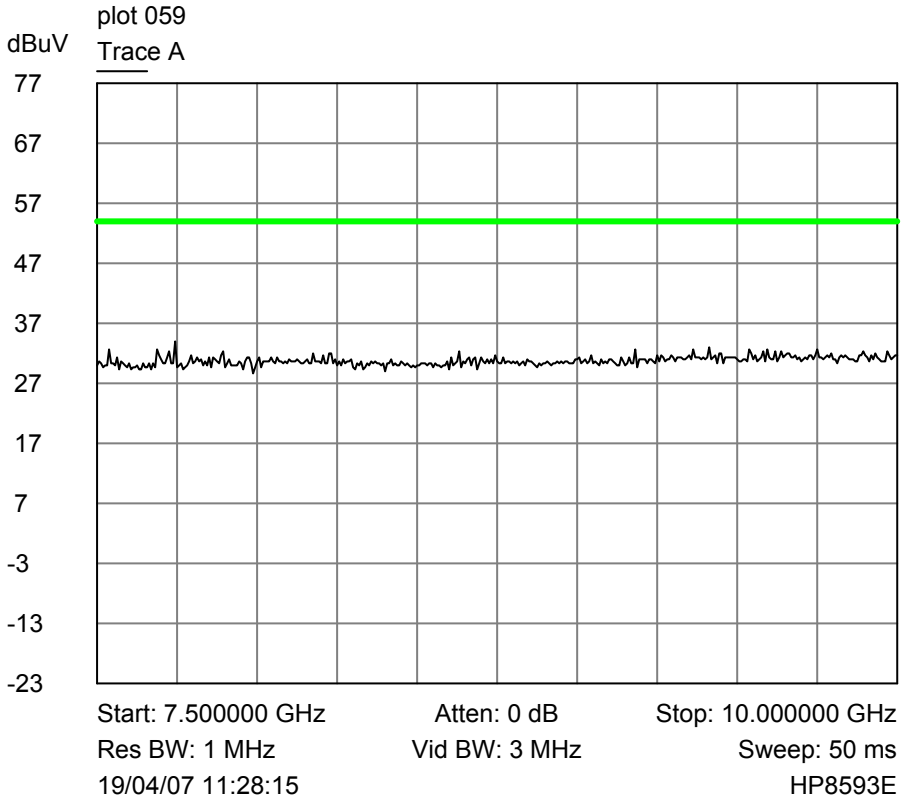
Average Values of 6.5 - 7.5 GHz.
Horizontal Polarisation



Average Values of 6.5 - 7.5 GHz.
Vertical Polarisation

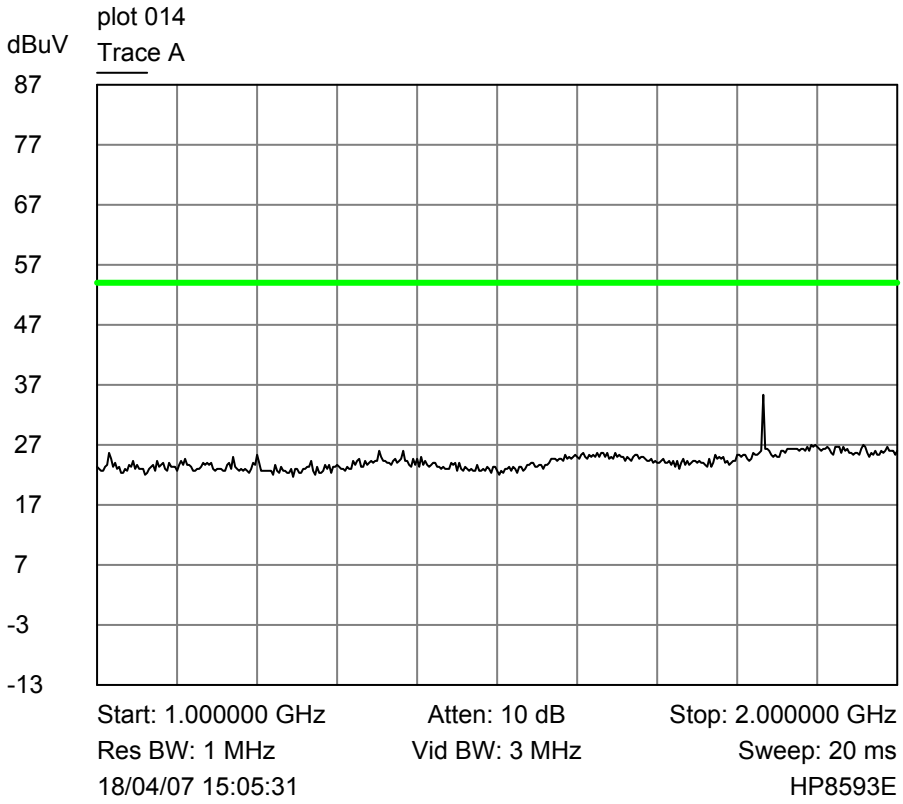


Average Values of 7.5 – 10 GHz.
Horizontal Polarisation



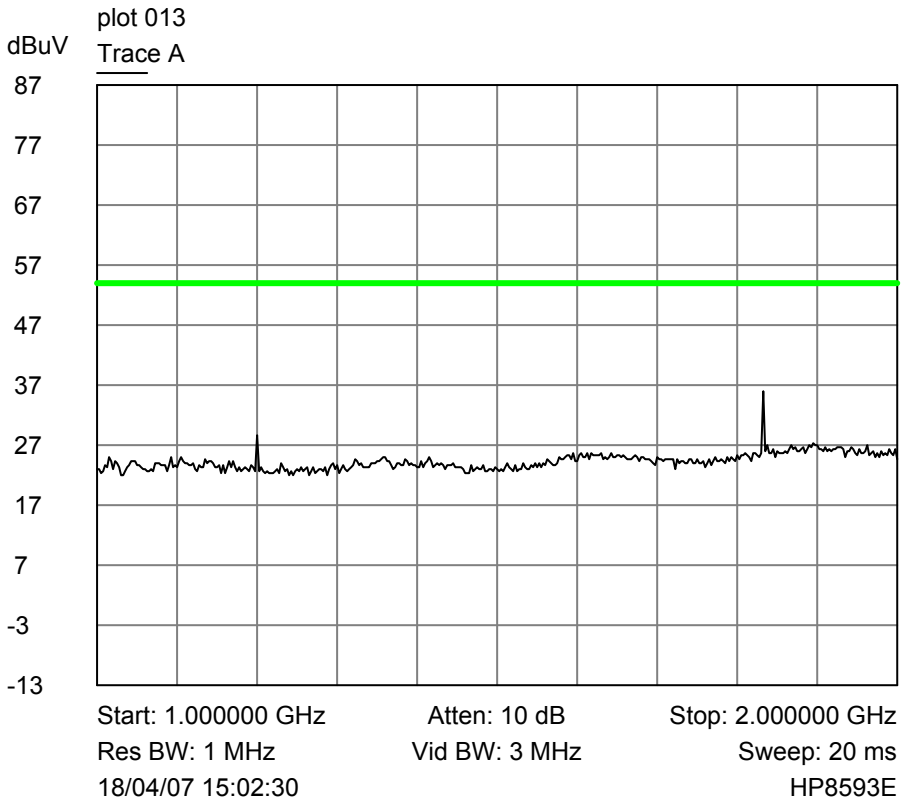
Average Values of 7.5 – 10 GHz.
Vertical Polarisation

TX Middle Channel.

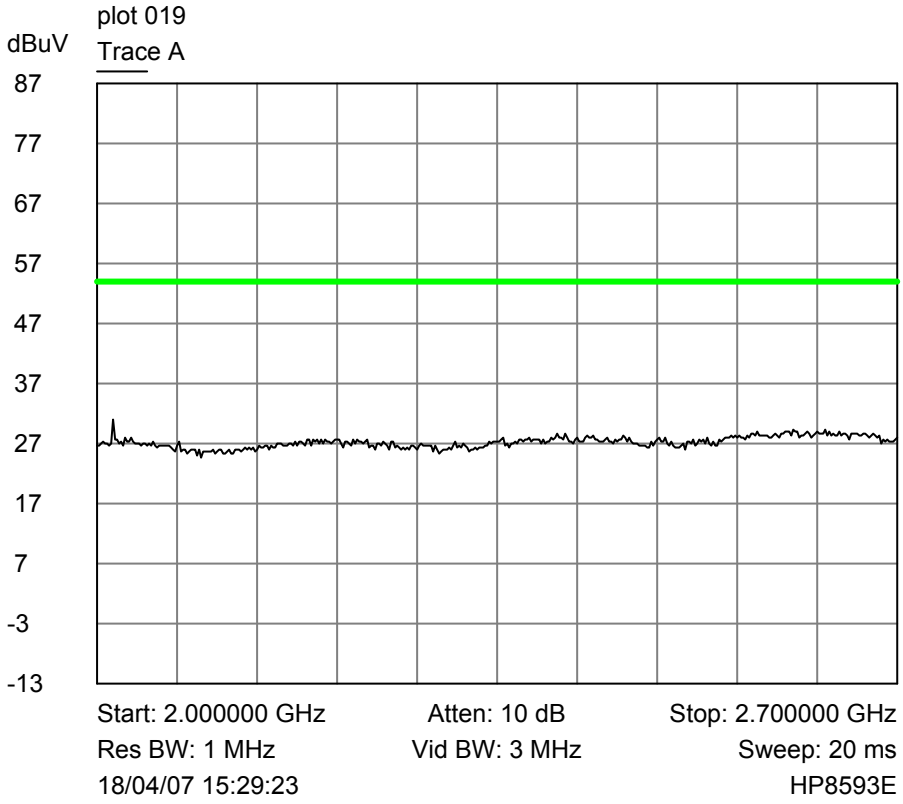


Average Values of 1 - 2 GHz.

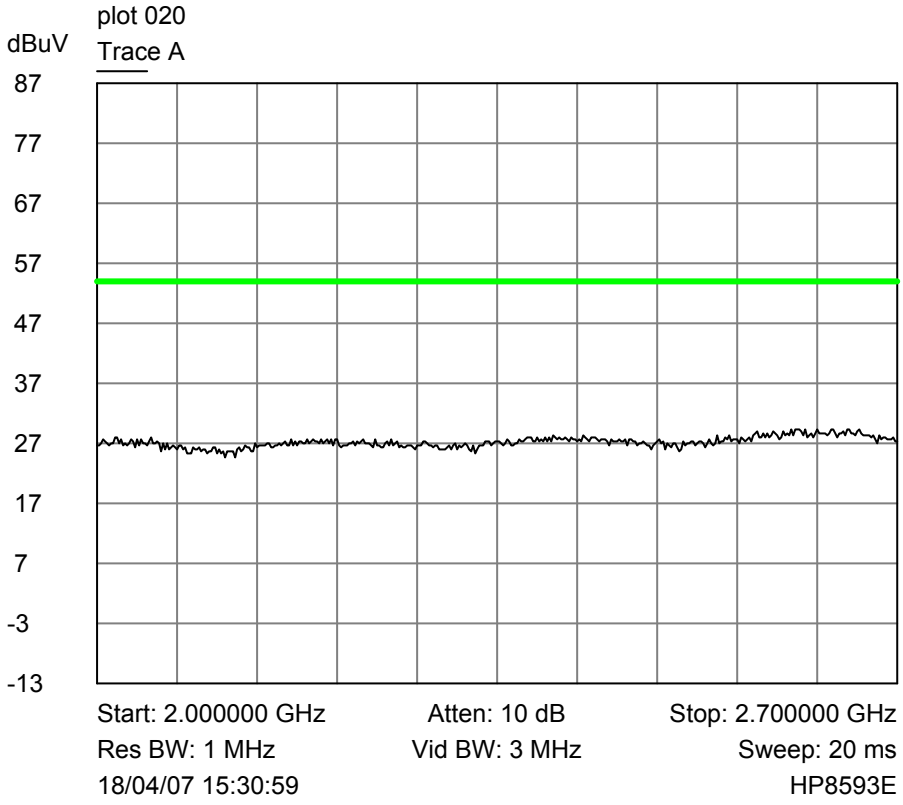
Horizontal Polarisation



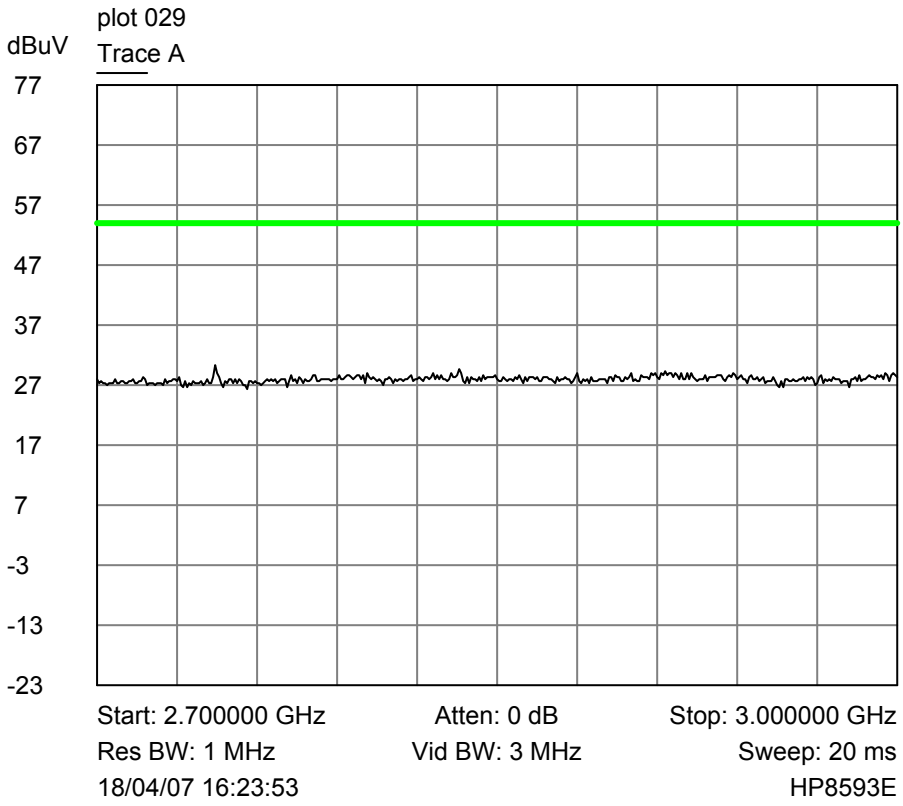
Average Values of 1 - 2 GHz.
Vertical Polarisation



Average Values of 2 – 2.7 GHz.
Horizontal Polarisation

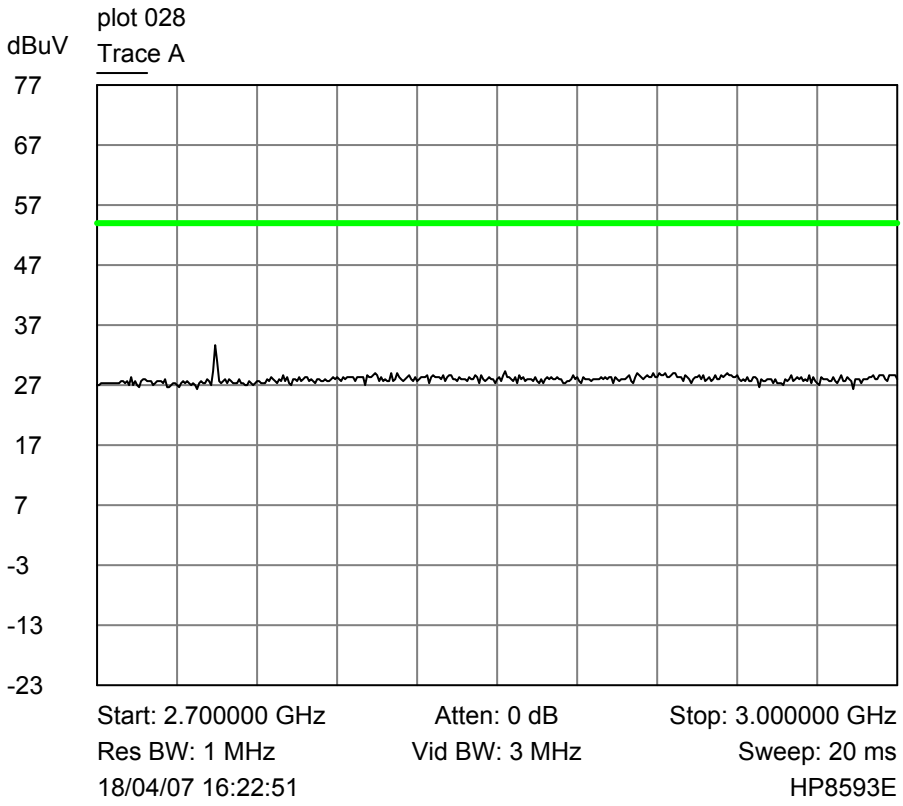


Average Values of 2 – 2.7 GHz.
Vertical Polarisation



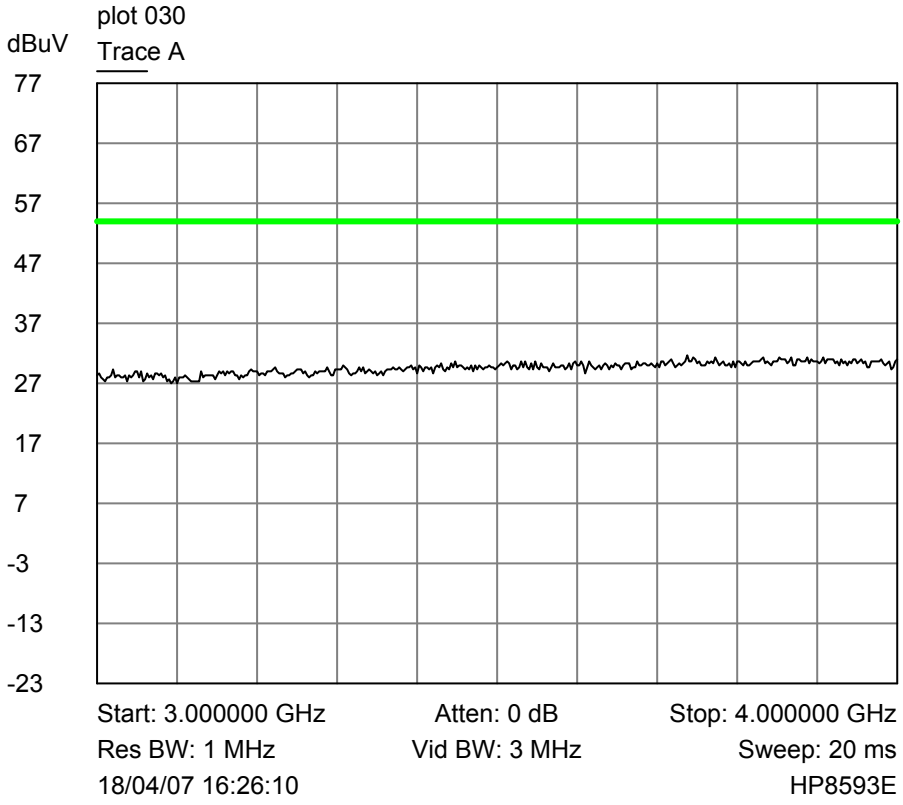
Average Values of 2.7 - 3 GHz.

Horizontal Polarisation

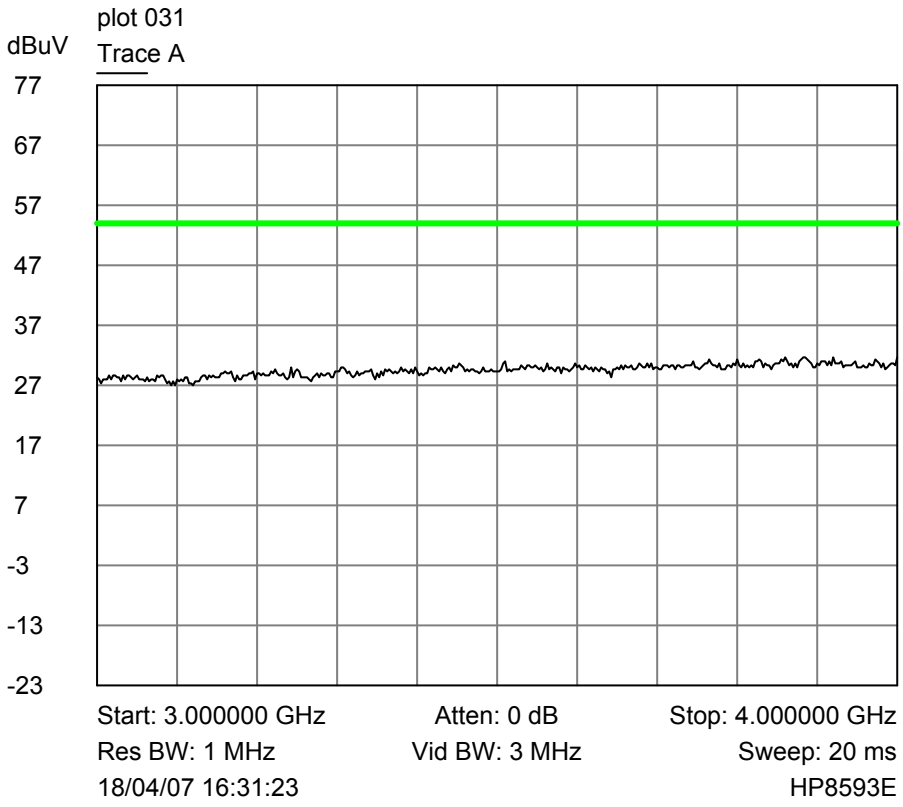


Average Values of 2.7 – 3 GHz.

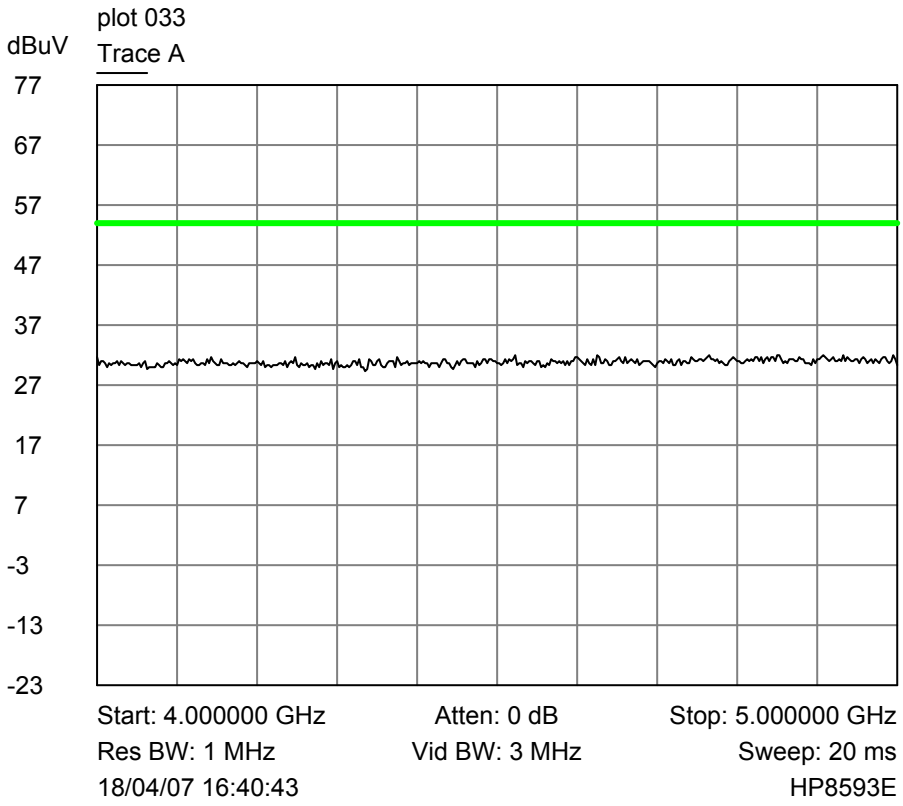
Vertical Polarisation



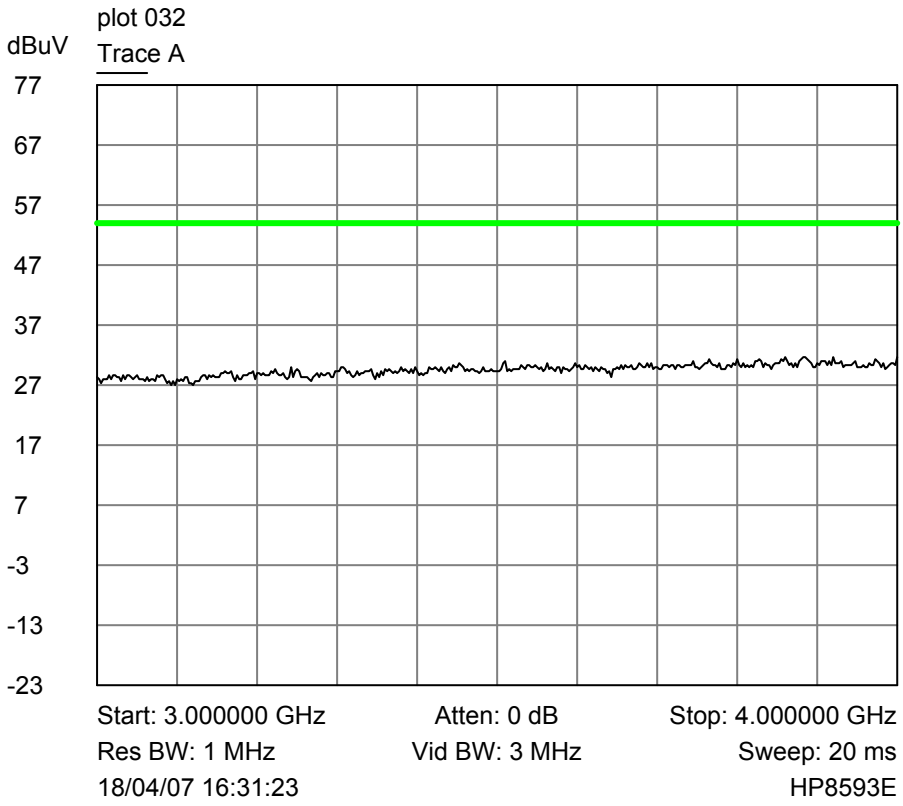
Average Values of 3 - 4 GHz.
Horizontal Polarisation



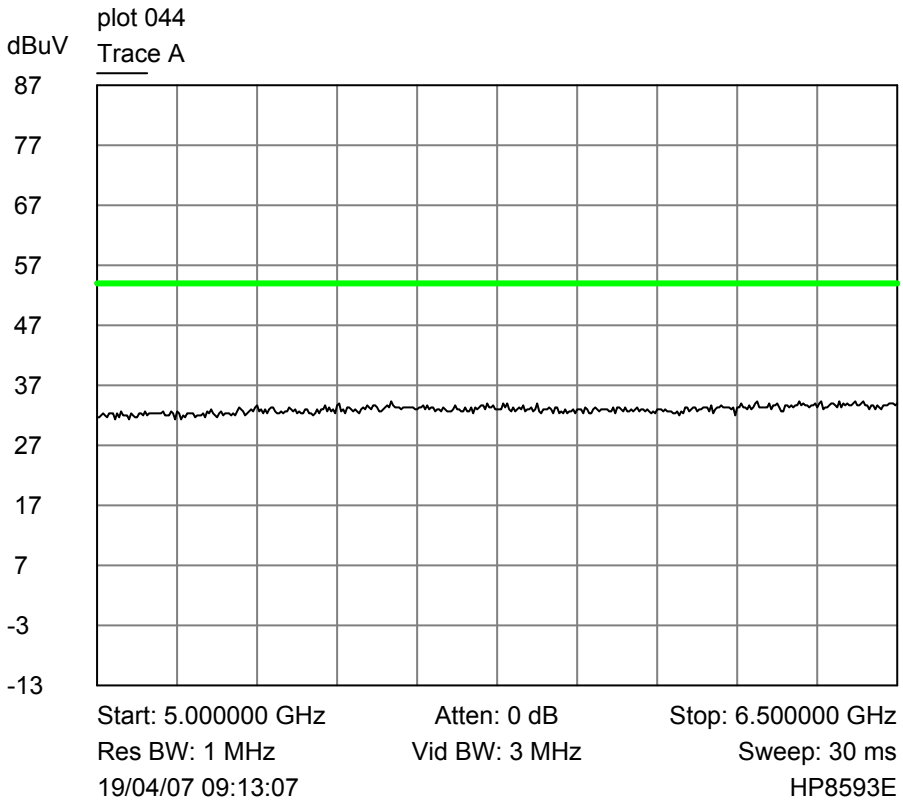
Average Values of 3 - 4 GHz.
Vertical Polarisation



Average Values of 4 - 5 GHz.
Horizontal Polarisation

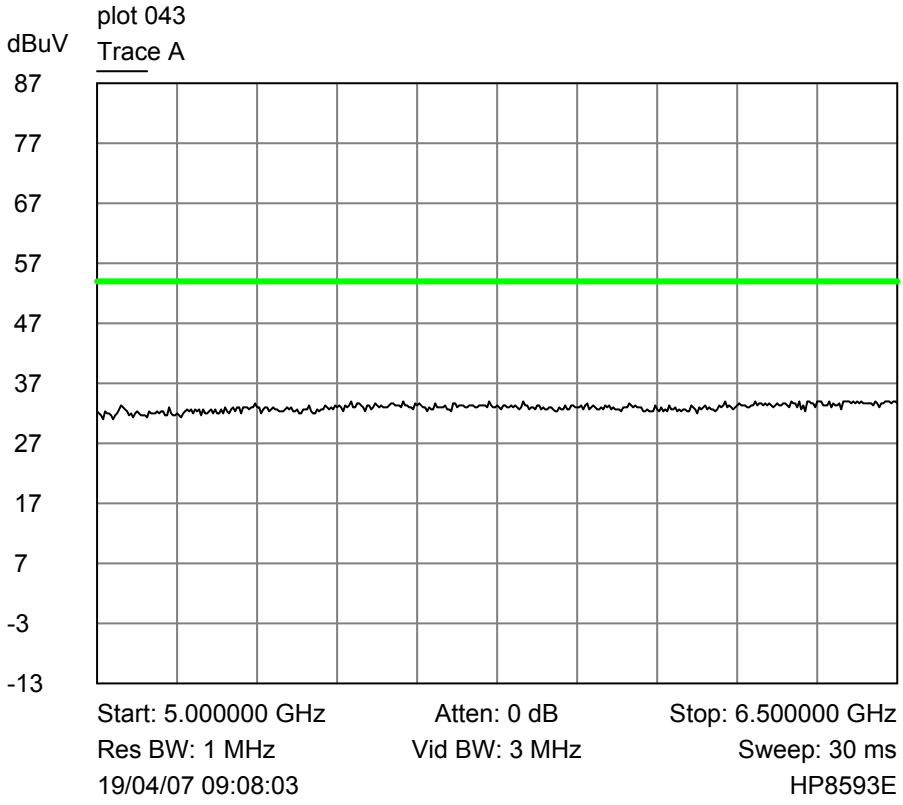


Average Values of 4 - 5 GHz.
Vertical Polarisation

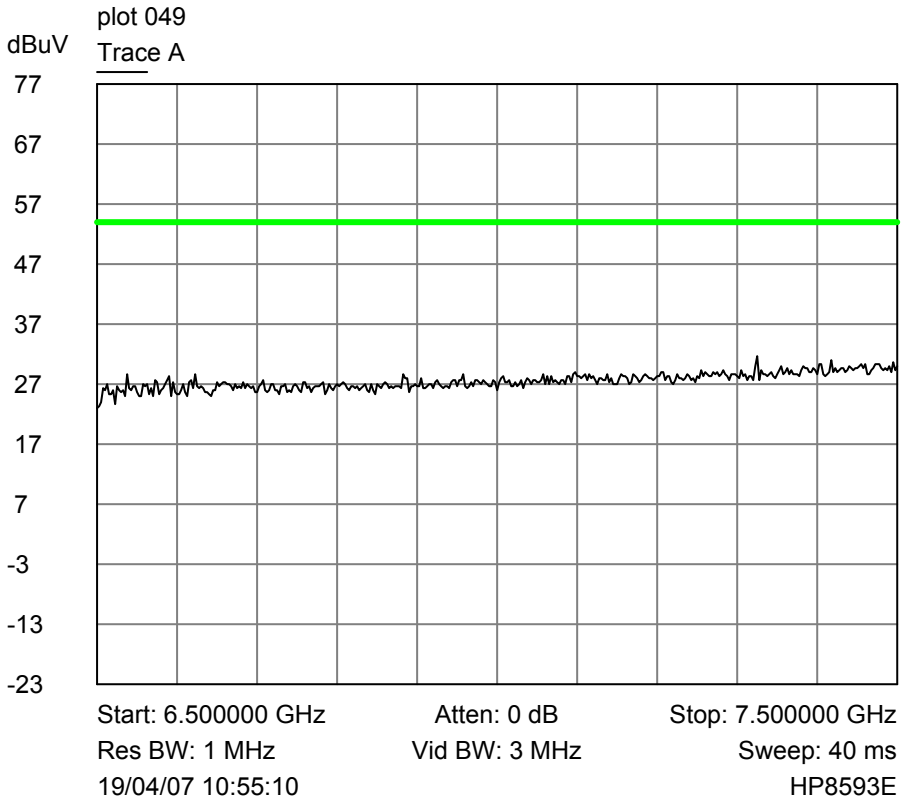


Average Values of 5 – 6.5 GHz.

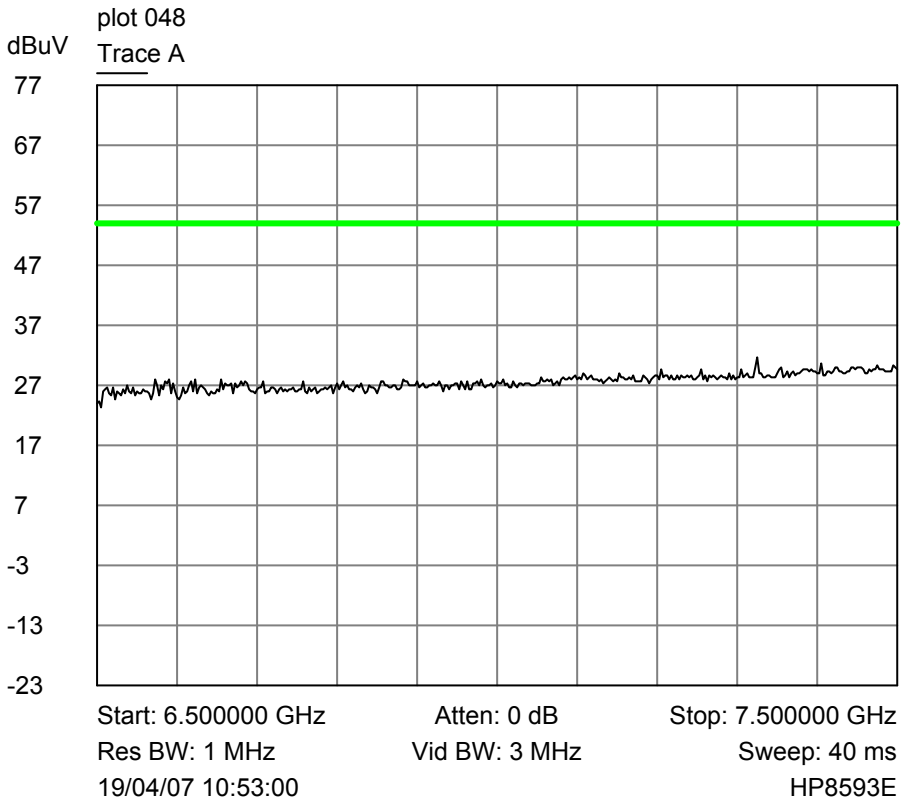
Horizontal Polarisation



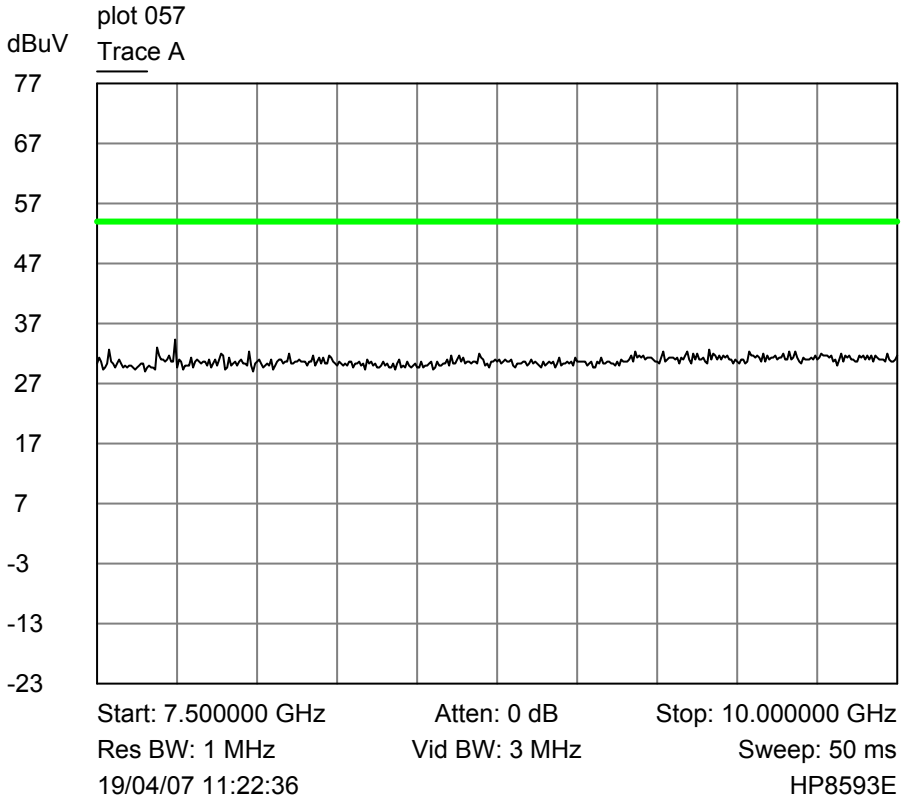
Average Values of 5 – 6.5 GHz.
Vertical Polarisation



Average Values of 6.5 - 7.5 GHz.
Horizontal Polarisation

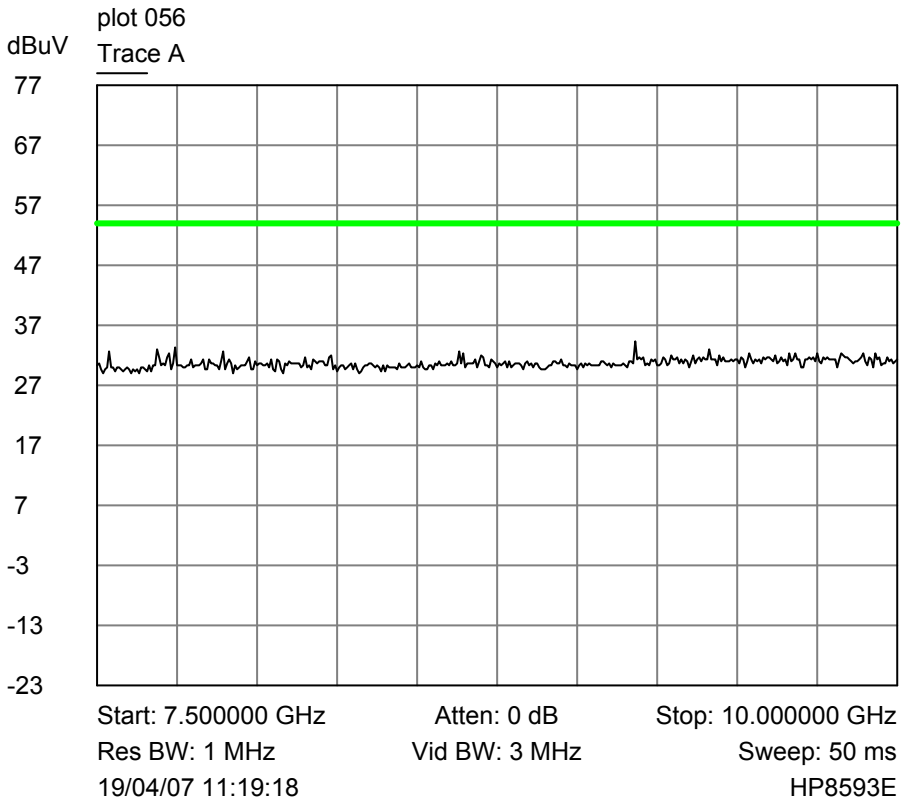


Average Values of 6.5 - 7.5 GHz.
Vertical Polarisation



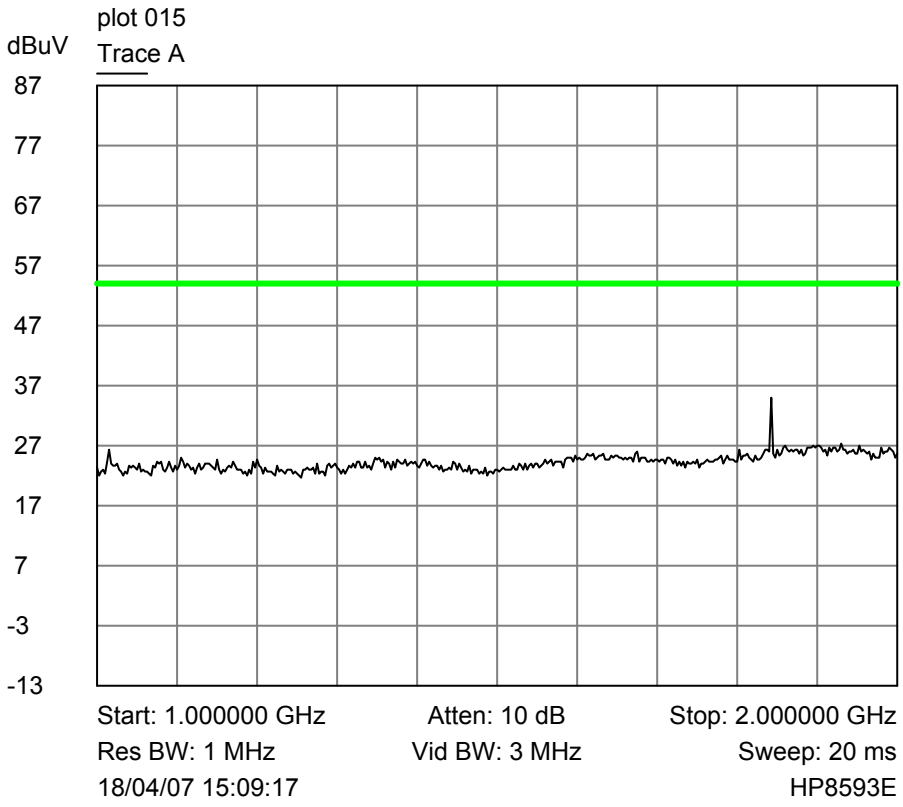
Average Values of 7.5 – 10 GHz.

Horizontal Polarisation



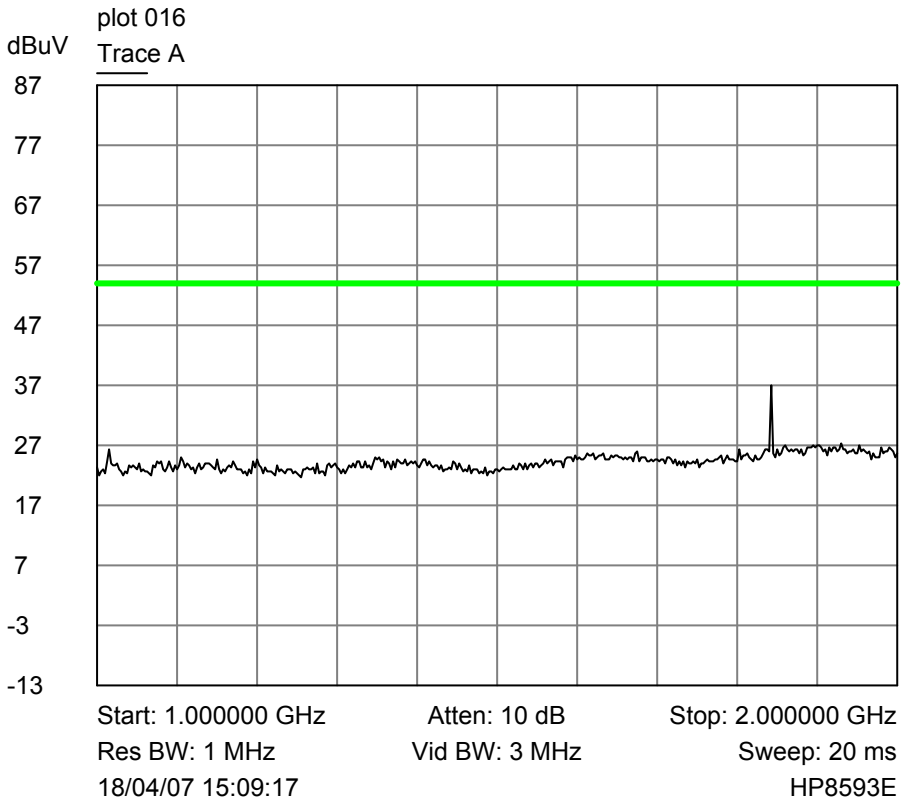
Average Values of 7.5 – 10 GHz.
Vertical Polarisation

TX Top channel.



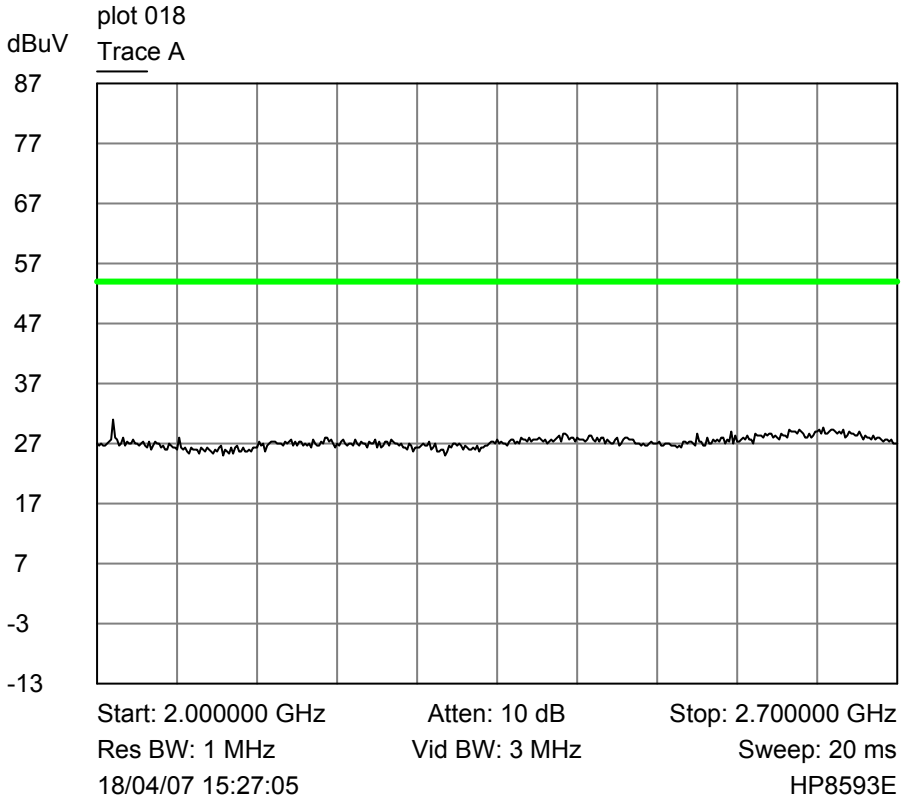
Average Values of 1 - 2 GHz.

Horizontal Polarisation

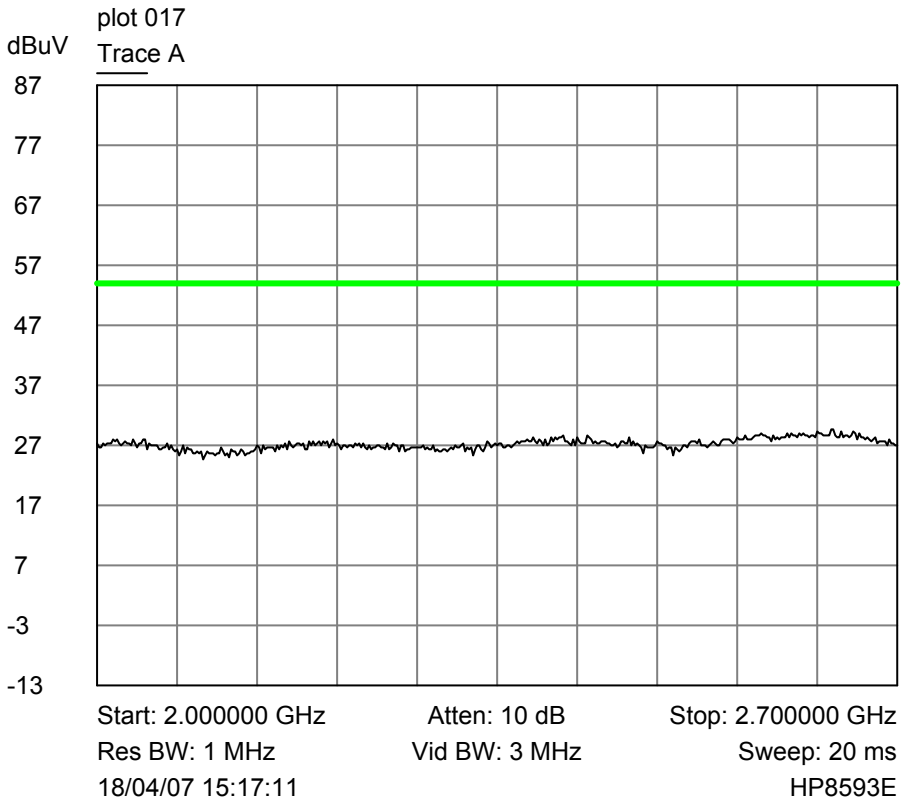


Average Values of 1 - 2 GHz.

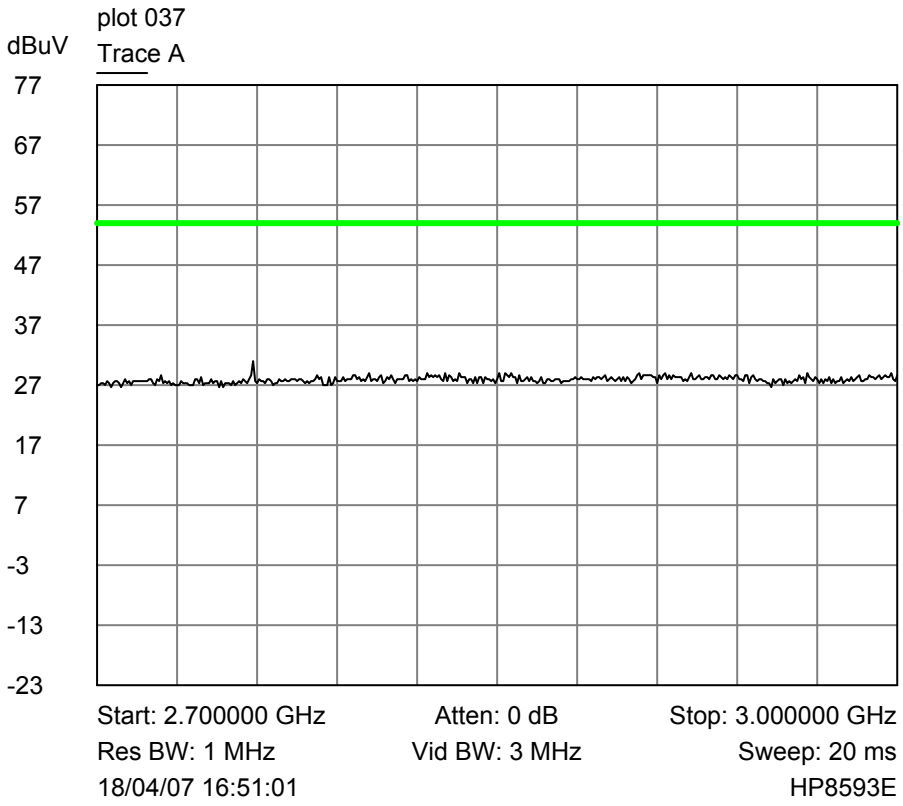
Vertical Polarisation



Average Values of 2 – 2.7 GHz.
Horizontal Polarisation

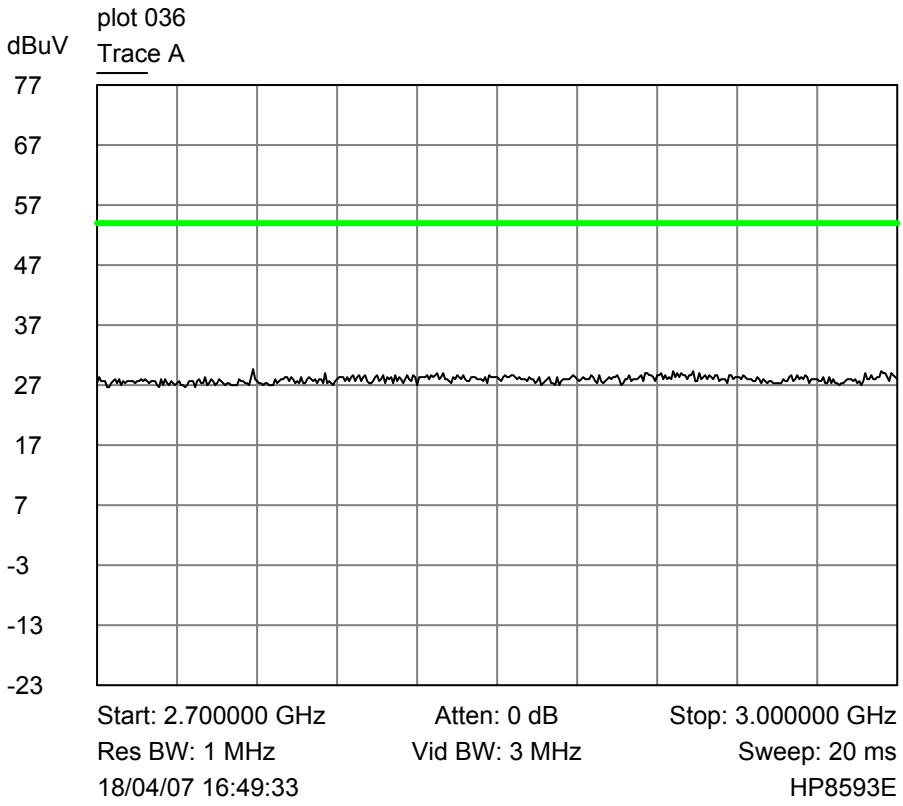


Average Values of 2 – 2.7 GHz.
Vertical Polarisation

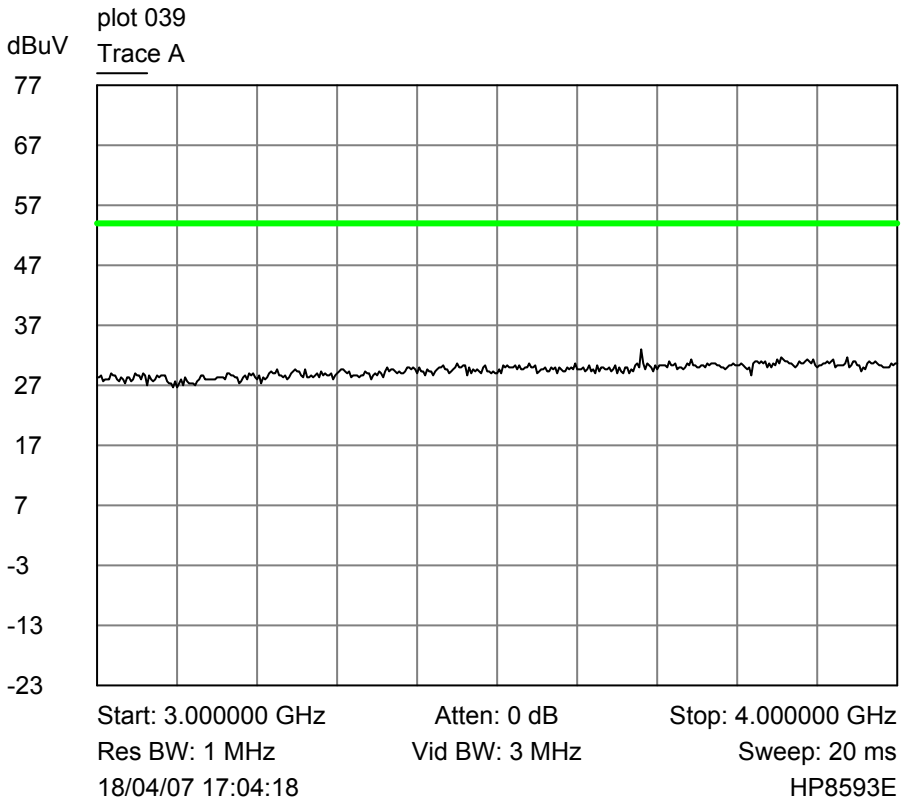


Average Values of 2.7 - 3 GHz.

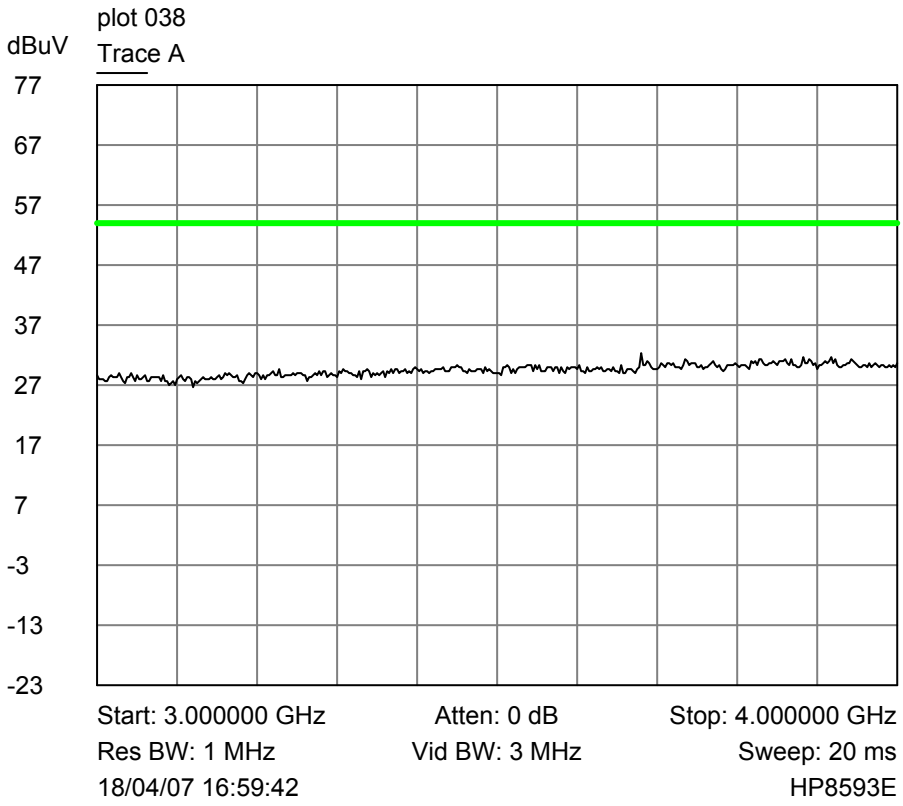
Horizontal Polarisation



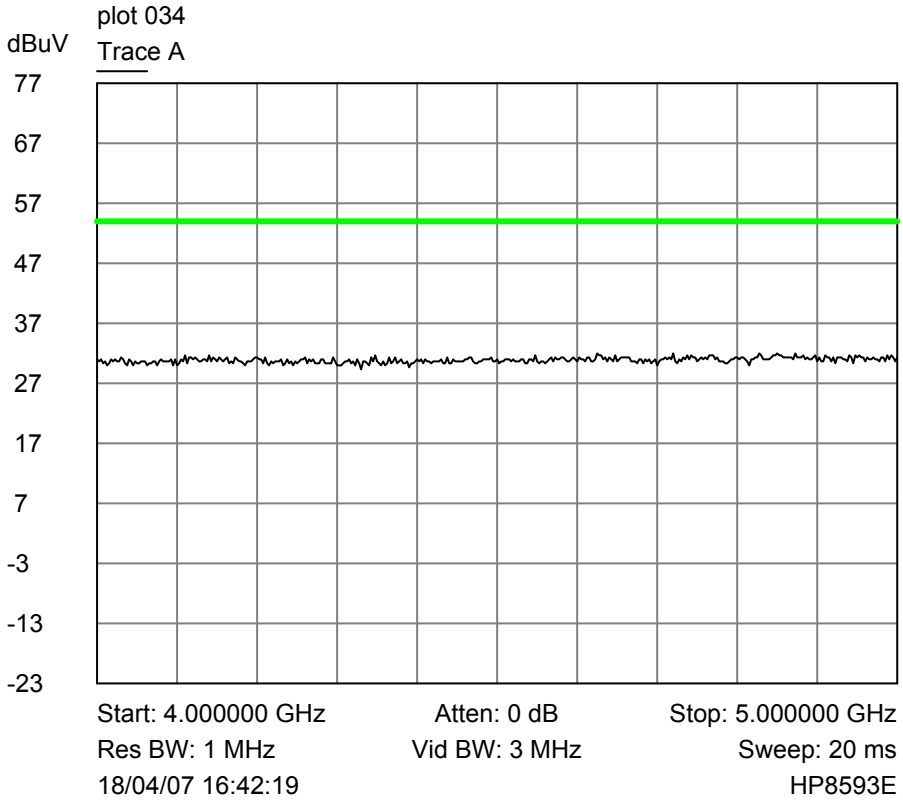
Average Values of 2.7 – 3 GHz.
Vertical Polarisation



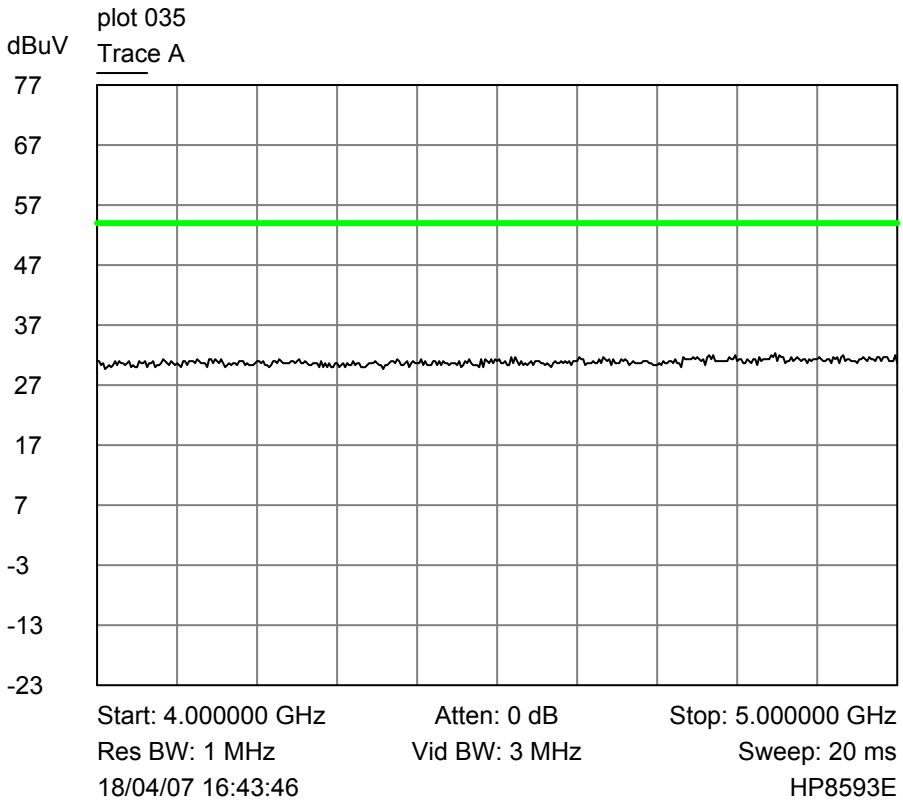
Average Values of 3 - 4 GHz.
Horizontal Polarisation



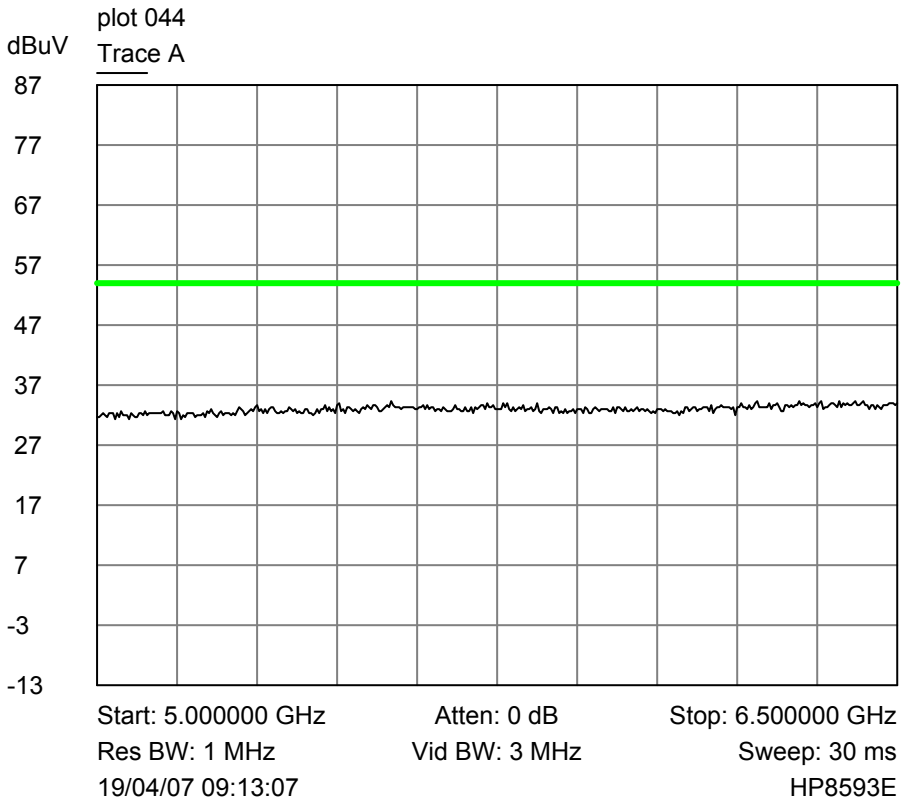
Average Values of 3 - 4 GHz.
Vertical Polarisation



Average Values of 4 - 5 GHz.
Horizontal Polarisation

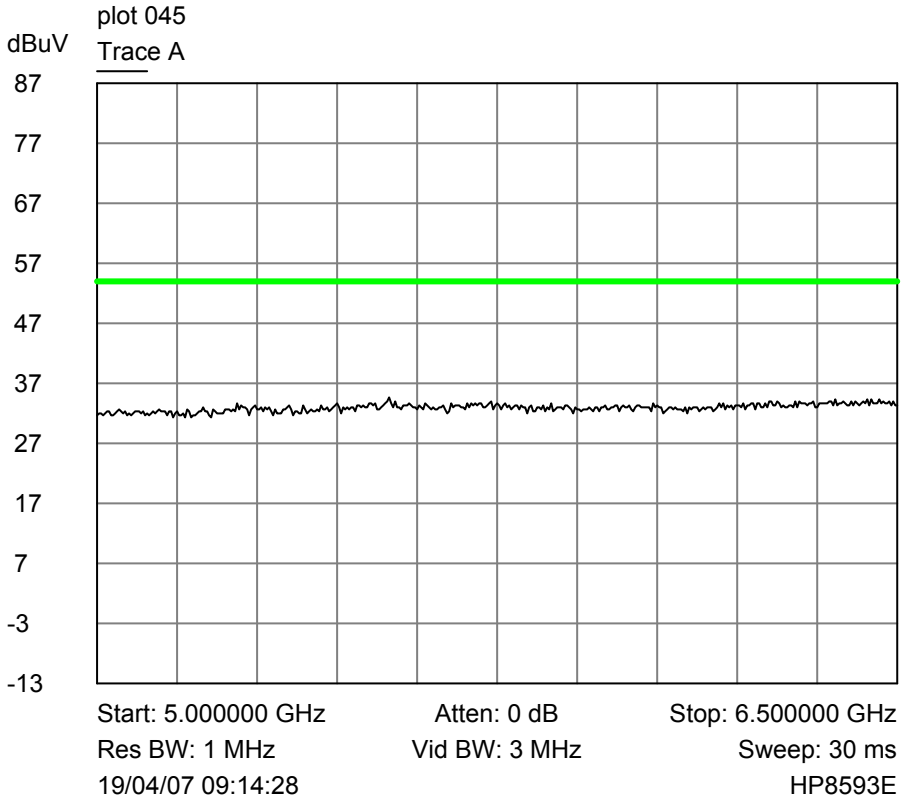


Average Values of 4 - 5 GHz.
Vertical Polarisation

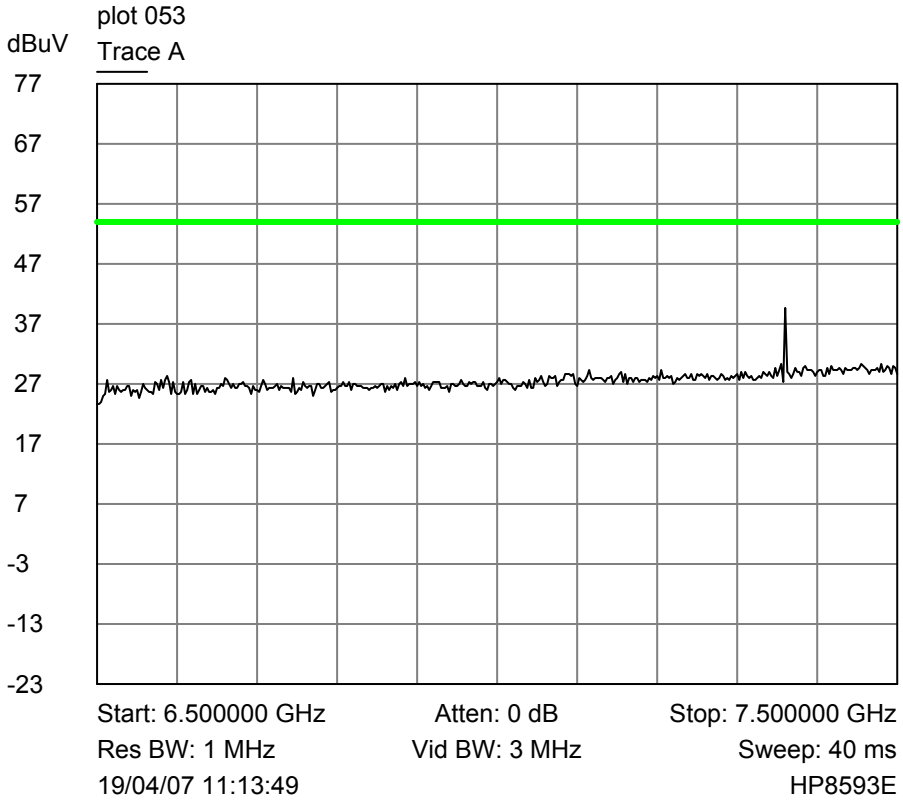


Average Values of 5 – 6.5 GHz.

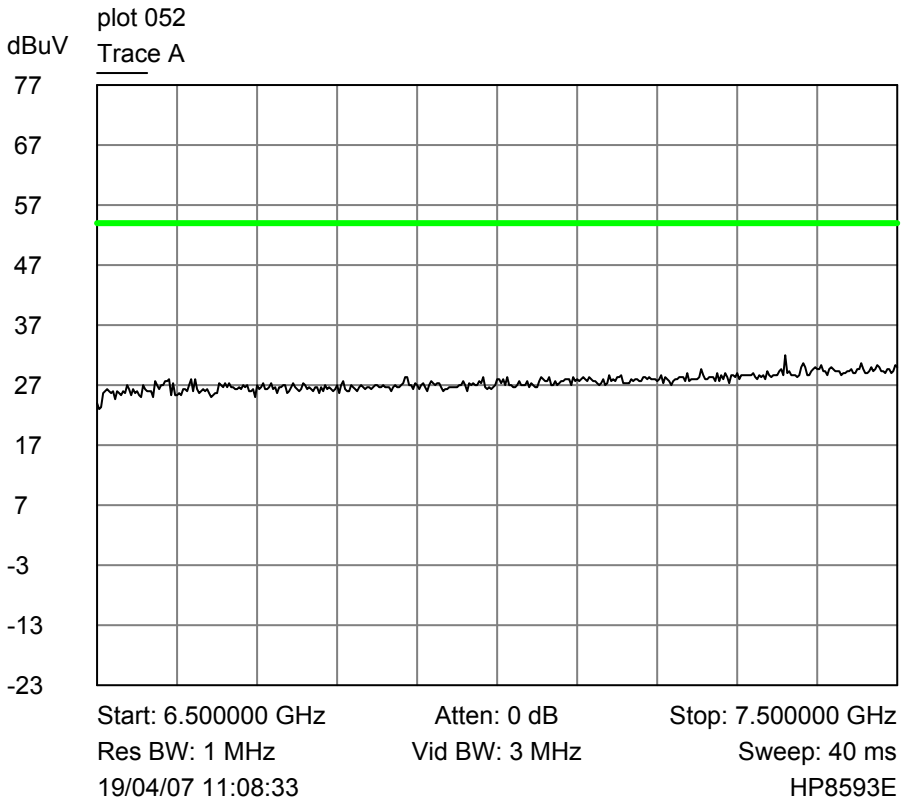
Horizontal Polarisation



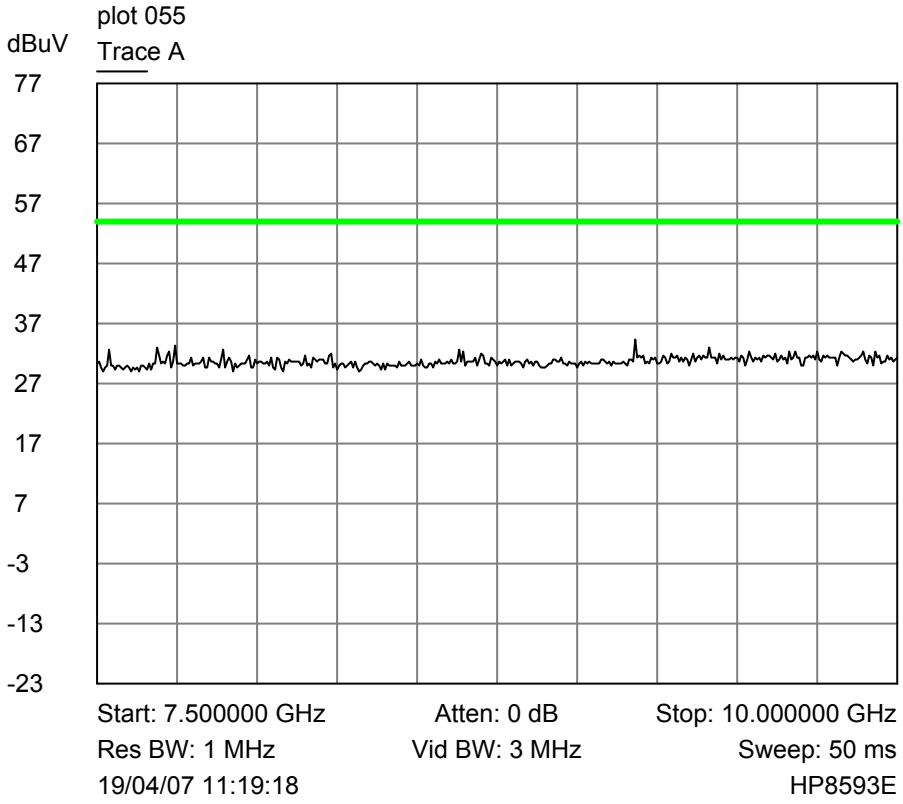
Average Values of 5 – 6.5 GHz.
Vertical Polarisation



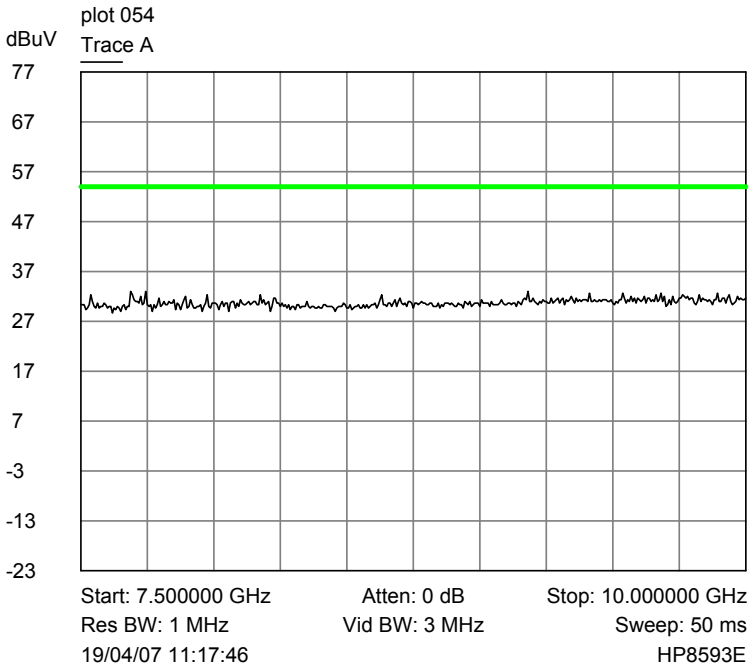
Average Values of 6.5 - 7.5 GHz.
Horizontal Polarisation



Average Values of 6.5 - 7.5 GHz.
Vertical Polarisation



Average Values of 7.5 – 10 GHz.
Horizontal Polarisation



Average Values of 7.5 – 10 GHz.

Vertical Polarisation

Tables of signals measured within 20dB of limit for Frequencies over 1GHz.

Bottom channel

Signal	Frequency MHz	Polarisation	Average amplitude	Average – Limit
1	1821	V	37.4	-16.6
2	1821	H	36.8	-17.2
3	3640	V	39.5	-14.5
4	3640	H	43.5	-10.5
5	5463	H	45.0	-9.0
6	5463	V	38.0	-16.0
7	7283	H	40.5	-13.5
8	7283	V	40.3	-13.7
9	8194	H	34.6	-19.4
10	8194	V	34.5	-19.5

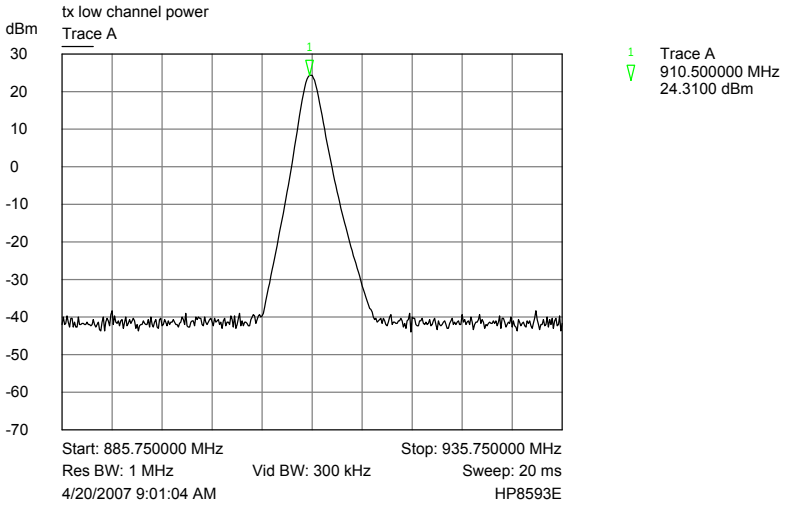
Middle Channel

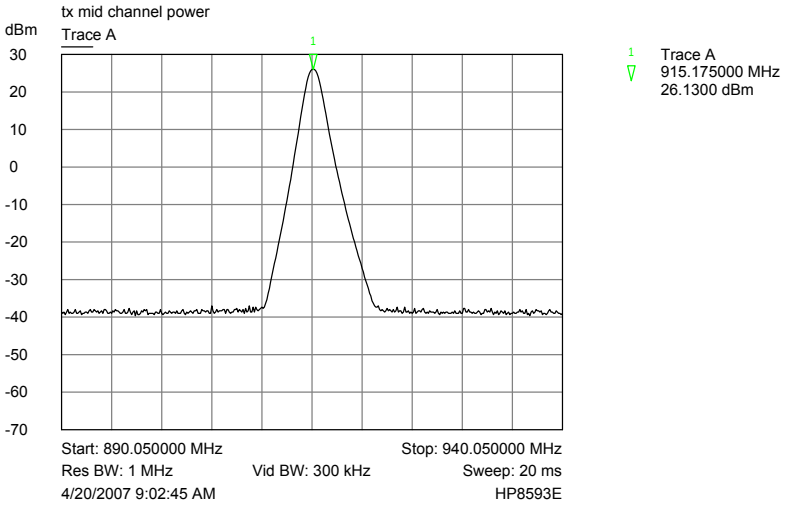
Signal	Frequency MHz	Polarisation	Average amplitude	Average – Limit
1	1830	V	39.6	-14.4
2	1830	H	37.8	-16.2
3	2745	V	33.8	-20.2
4	3660	H	36.4	-17.6
5	3660	V	40.3	-13.7
6	7320.4	H	44.2	-9.8
7	7320.4	V	42.9	-11.1
8	8235	V	34.2	-19.8

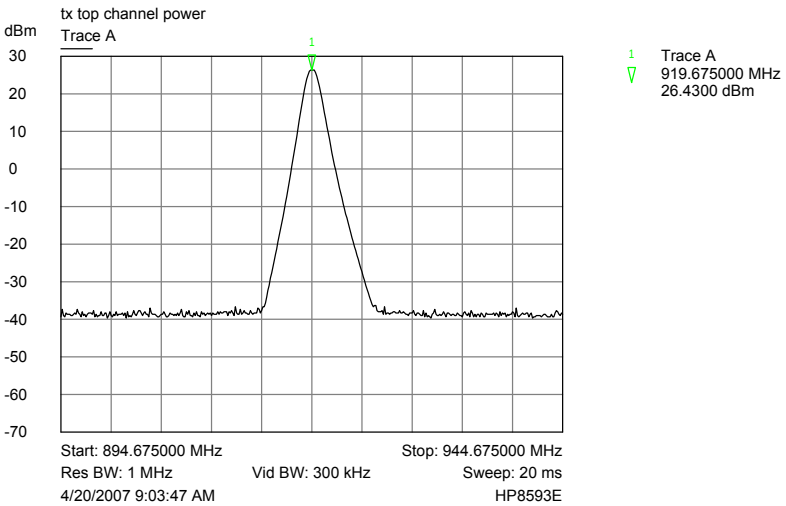
Top Channel

Signal	Frequency MHz	Polarisation	Average amplitude	Average – Limit
1	1839.25	V	38.3	-15.7
2	1839.25	H	36.5	-17.5
3	3678	V	33.5	-20.5
4	5517.75	H	36.8	-17.2
5	7357	H	44.2	-9.8
6	7357	V	43.8	-10.2
7	8276	V	35.0	-19.0

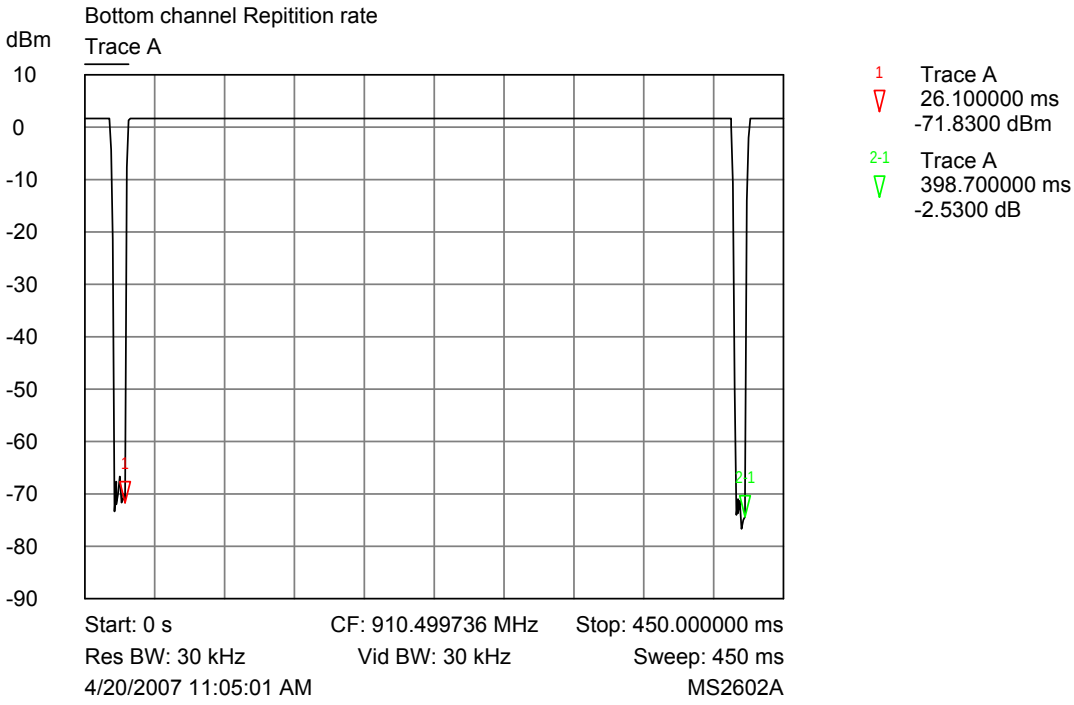
6.3 Fundamental Emissions

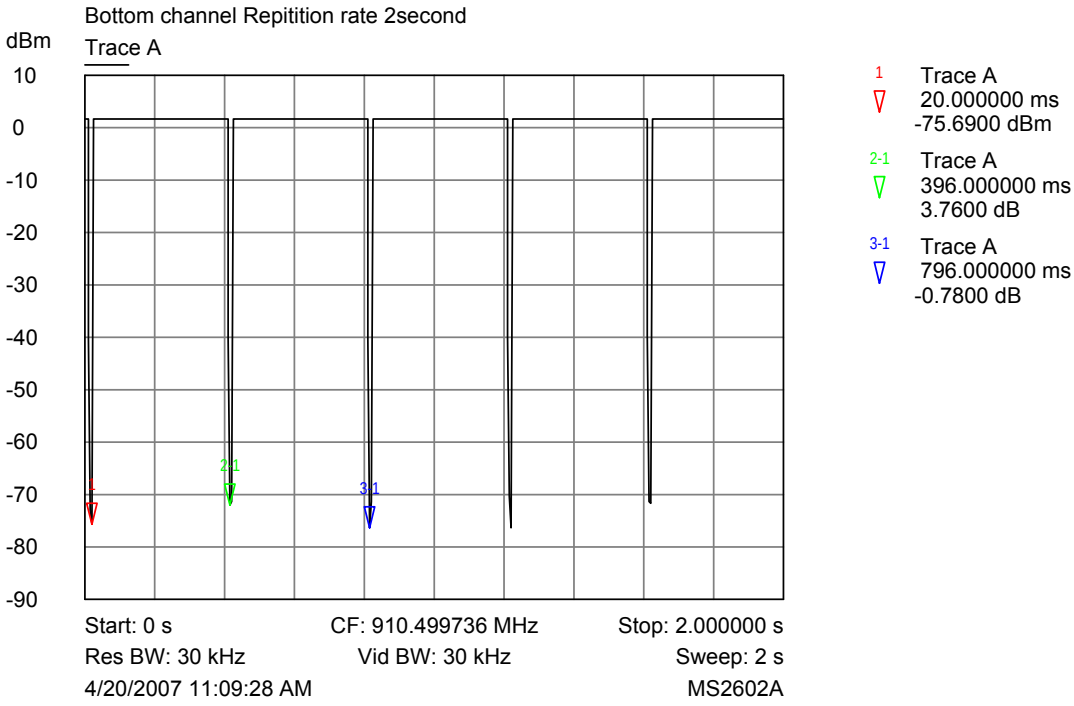






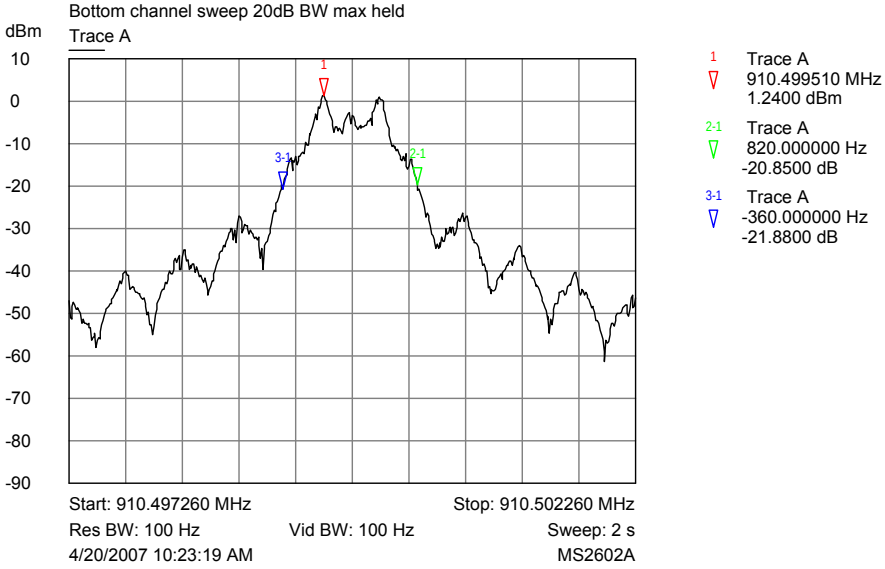
6.4 Duty Cycle



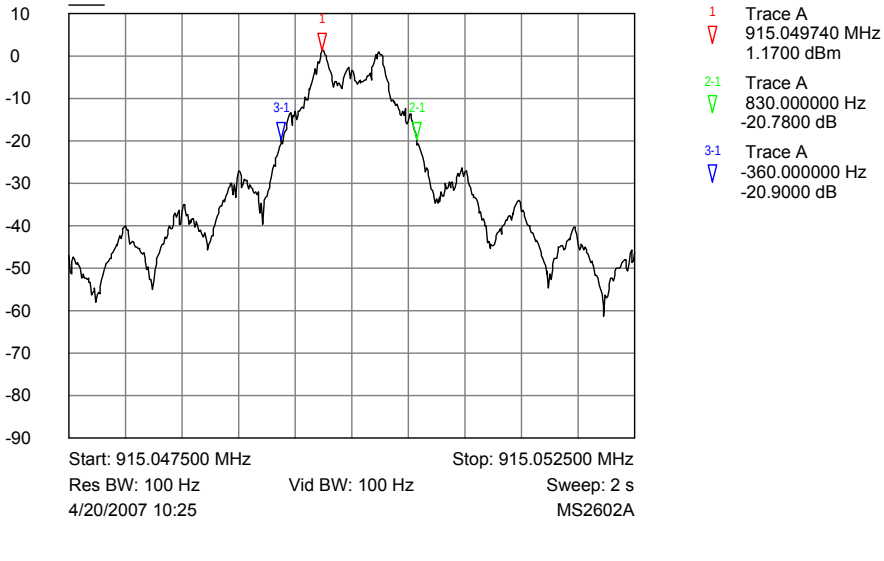


6.5 Modulation Bandwidth

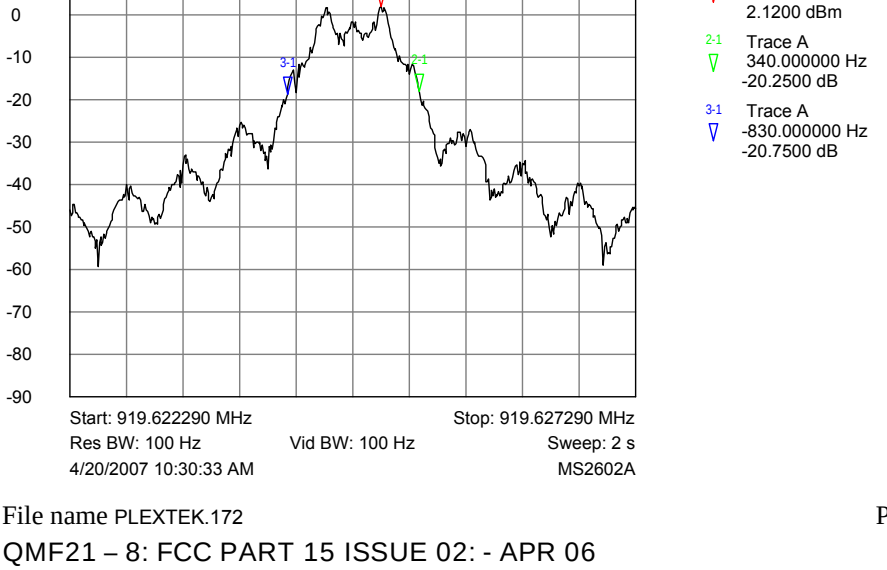
Bottom channel sweep 20dB BW max held



mid channel sweep 20dB BW max held

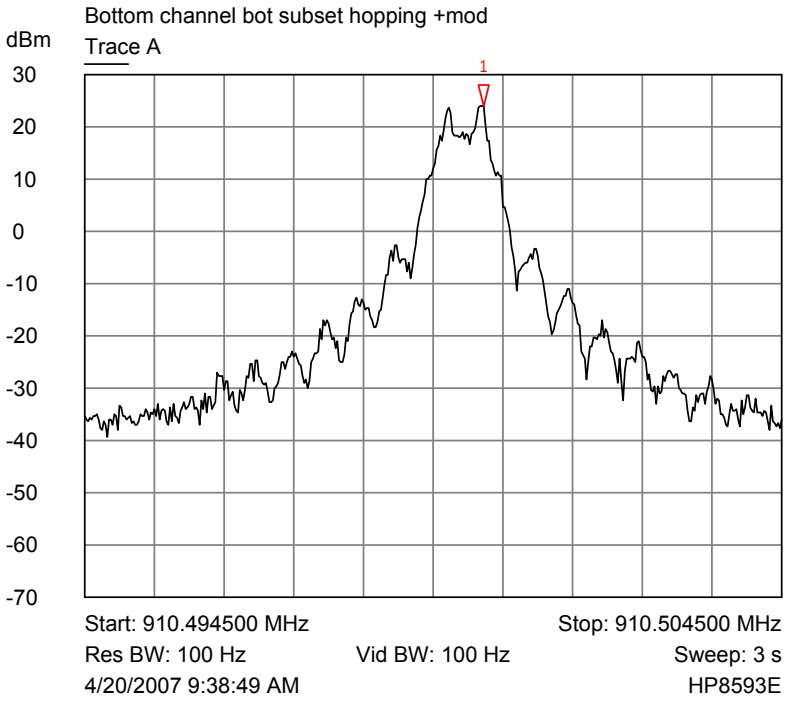


top channel sweep 20dB BW max held

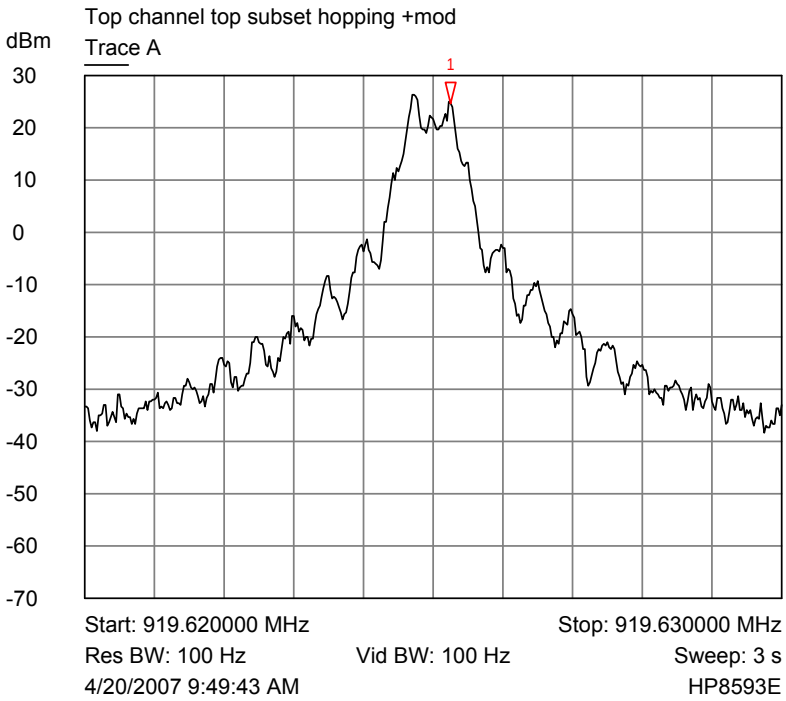


Band edge Compliance.

Hopping.

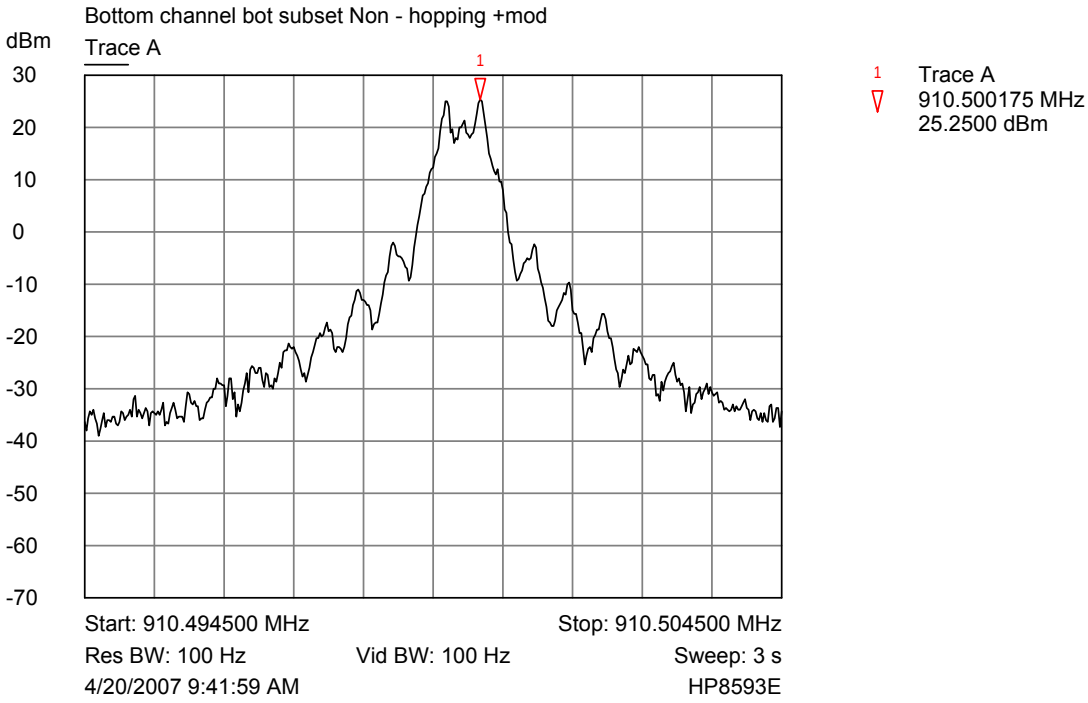


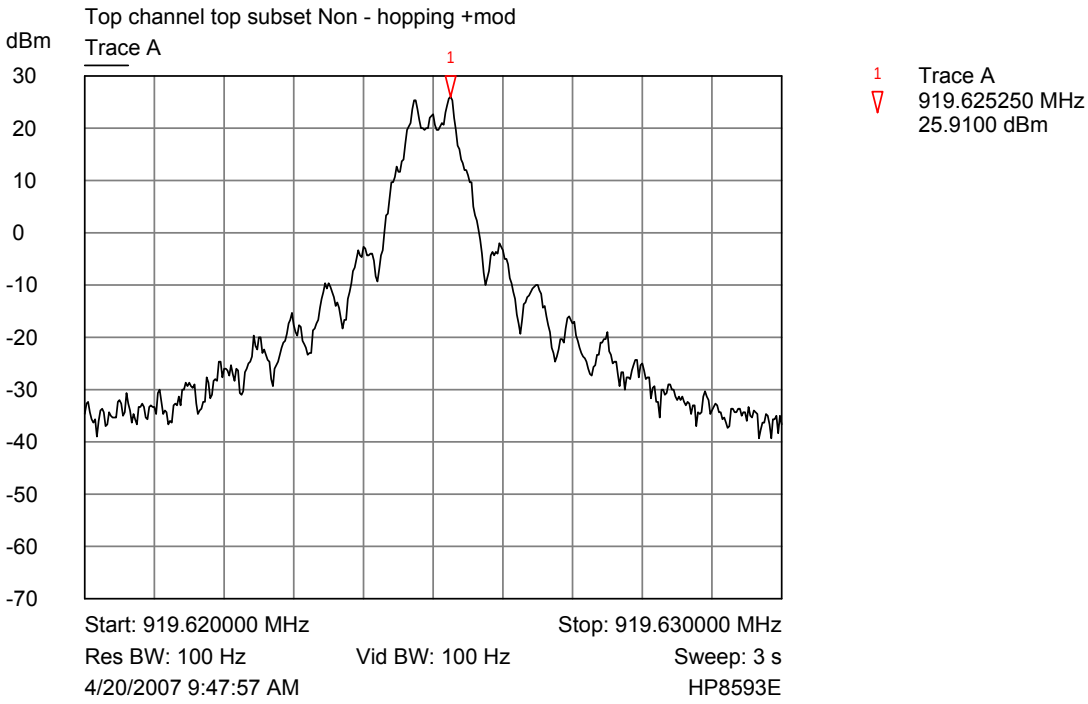
1 Trace A
910.500225 MHz
24.1500 dBm



1 Trace A
919.625250 MHz
24.8200 dBm

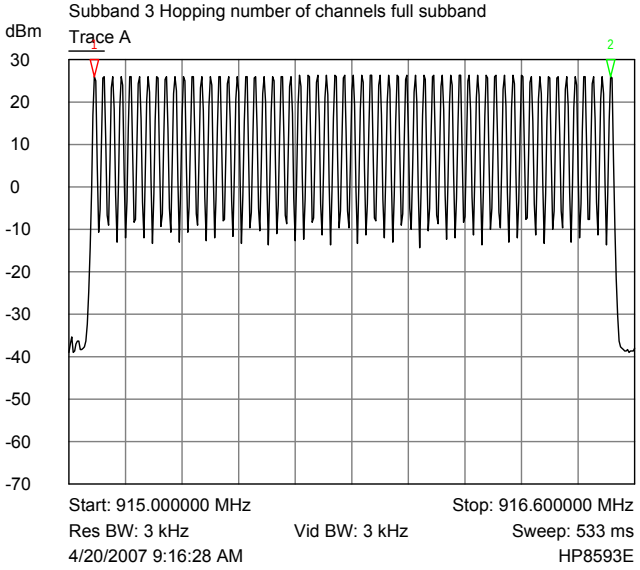
Non Hopping.


Bottom channel bot subset Non - hopping +mod
Trace A
dBm
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
1
Start: 910.494500 MHz
Stop: 910.504500 MHz
Res BW: 100 Hz
Vid BW: 100 Hz
Sweep: 3 s
4/20/2007 9:41:59 AM
HP8593E
1 Trace A
910.500175 MHz
25.2500 dBm


Top channel top subset Non - hopping +mod
Trace A
dBm
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
1
Start: 919.620000 MHz
Stop: 919.630000 MHz
Res BW: 100 Hz
Vid BW: 100 Hz
Sweep: 3 s
4/20/2007 9:47:57 AM
HP8593E
1 Trace A
919.625250 MHz
25.9100 dBm

6.6 Number of hopping channels

Subband 3 Hopping number of channels full subband

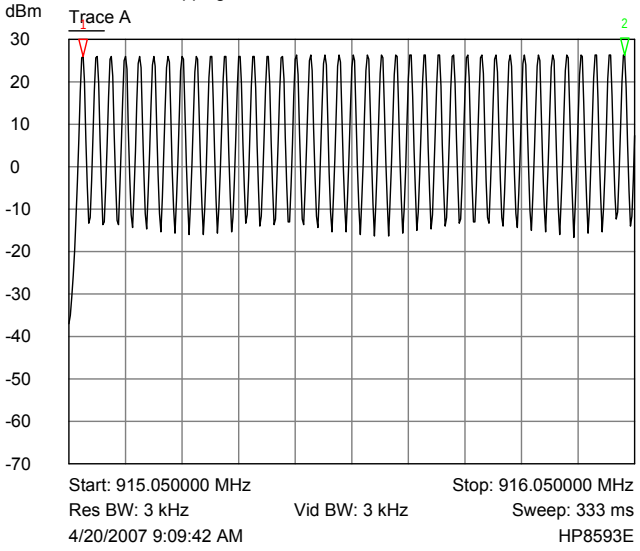


1 Trace A
915.072000 MHz
25.9200 dBm

2 Trace A
916.532000 MHz
26.0600 dBm

Start: 915.000000 MHz Stop: 916.600000 MHz
Res BW: 3 kHz Vid BW: 3 kHz Sweep: 533 ms
4/20/2007 9:16:28 AM HP8593E

Subband 3 Hopping number of channels bottom half

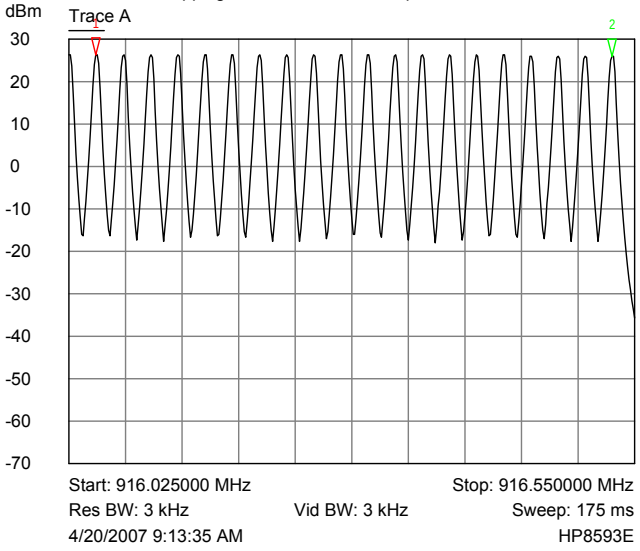


1 Trace A
915.075000 MHz
25.9900 dBm

2 Trace A
916.032500 MHz
26.3200 dBm

Start: 915.050000 MHz Stop: 916.050000 MHz
Res BW: 3 kHz Vid BW: 3 kHz Sweep: 333 ms
4/20/2007 9:09:42 AM HP8593E

Subband 3 Hopping number of channels top half

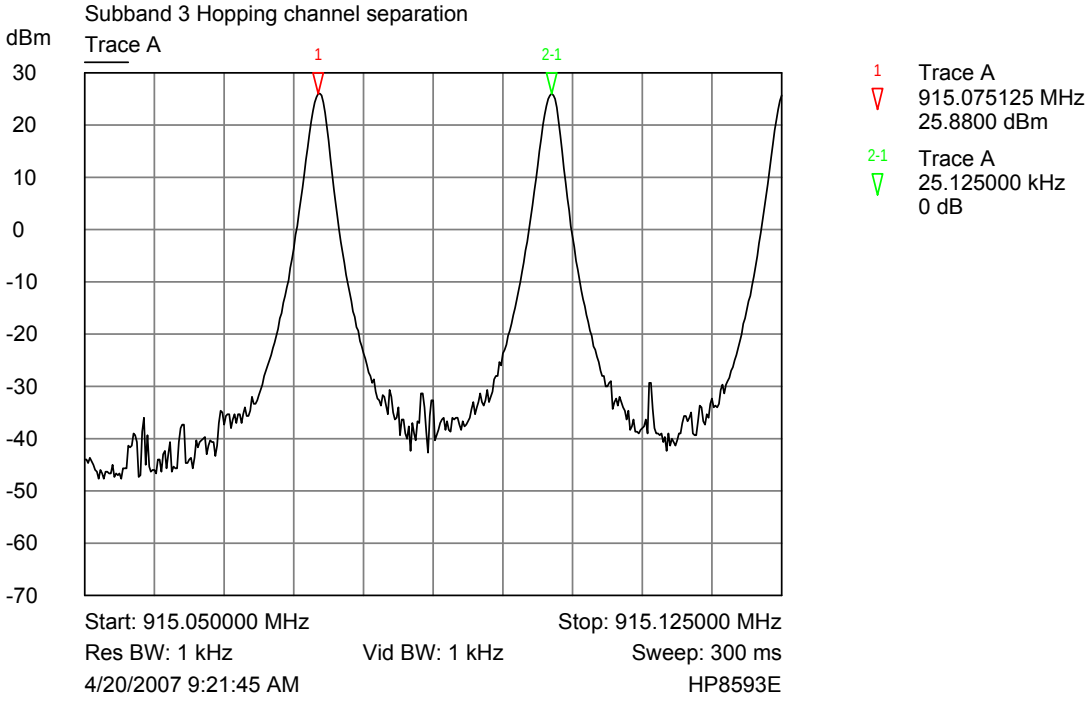


1 Trace A
916.049938 MHz
26.2200 dBm

2 Trace A
916.529000 MHz
26.1300 dBm

Start: 916.025000 MHz Stop: 916.550000 MHz
Res BW: 3 kHz Vid BW: 3 kHz Sweep: 175 ms
4/20/2007 9:13:35 AM HP8593E

6.7 Frequency Separation



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

Below 30MHz, an extrapolation factor of 40dB/decade is used for measurements closer than specified. Example: limit of 30 µV/m at 30m equates to 20.log (30) = 29.5 dB µV/m at 30m or 29.5 + 40 = 69.5 dB µV/m at 3m

8. Photographs

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

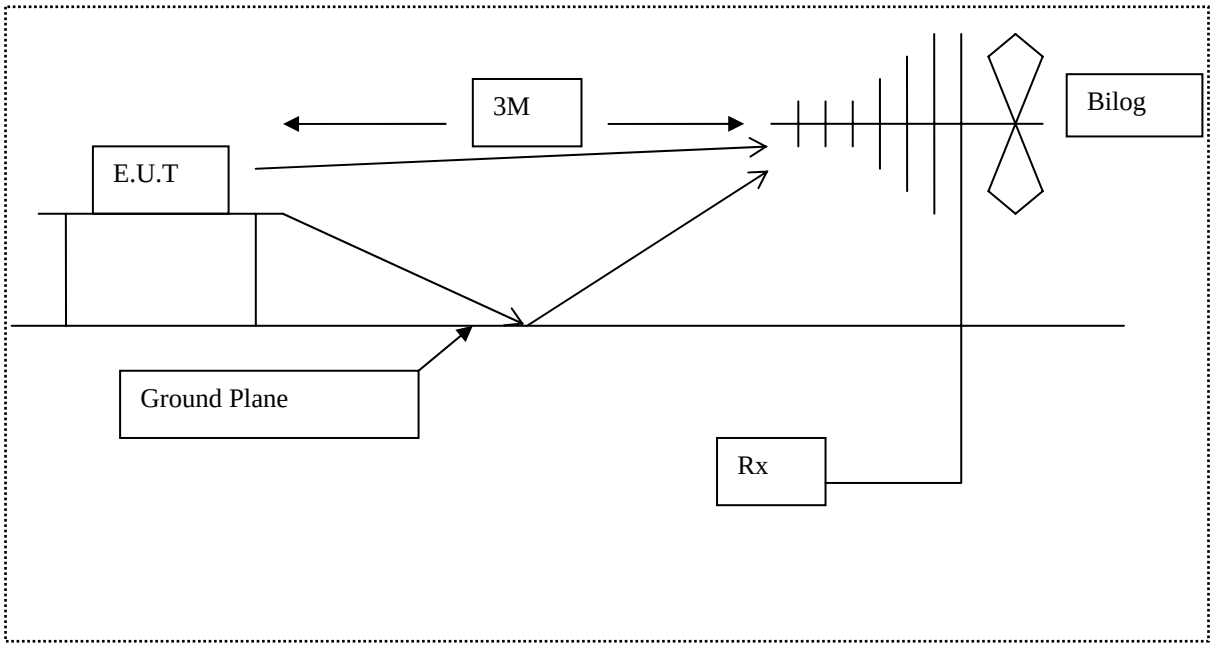


Diagram of the radiated emissions test setup.

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

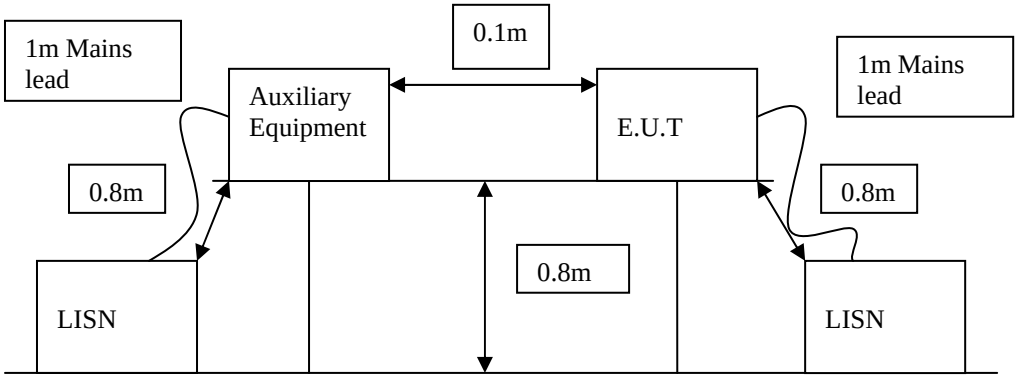
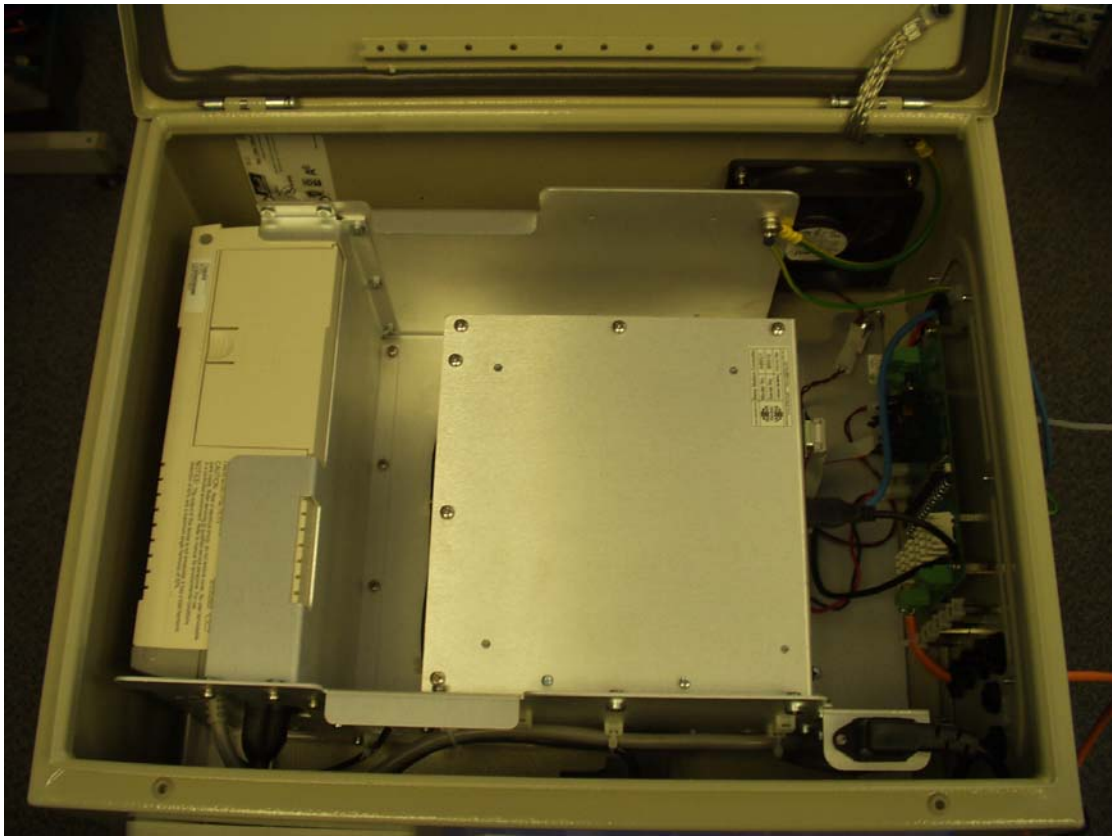


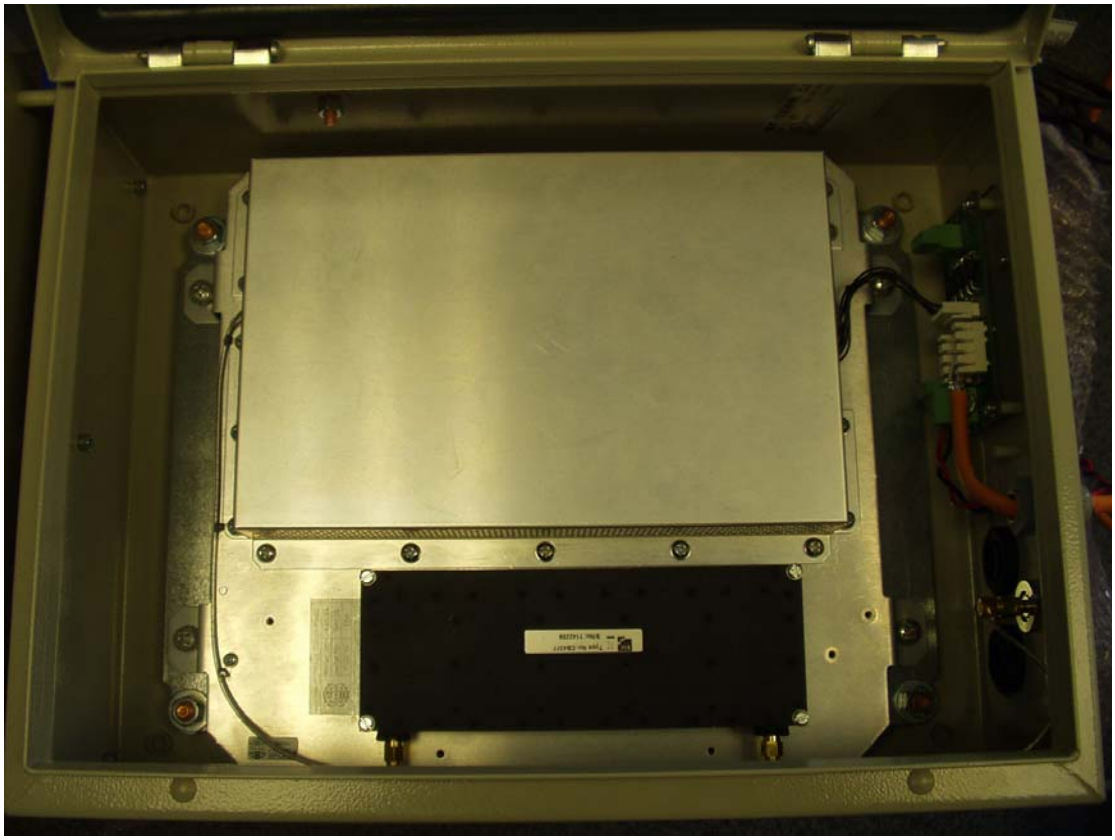
Diagram of the conducted emissions test setup.

Photograph of EUT on OATS

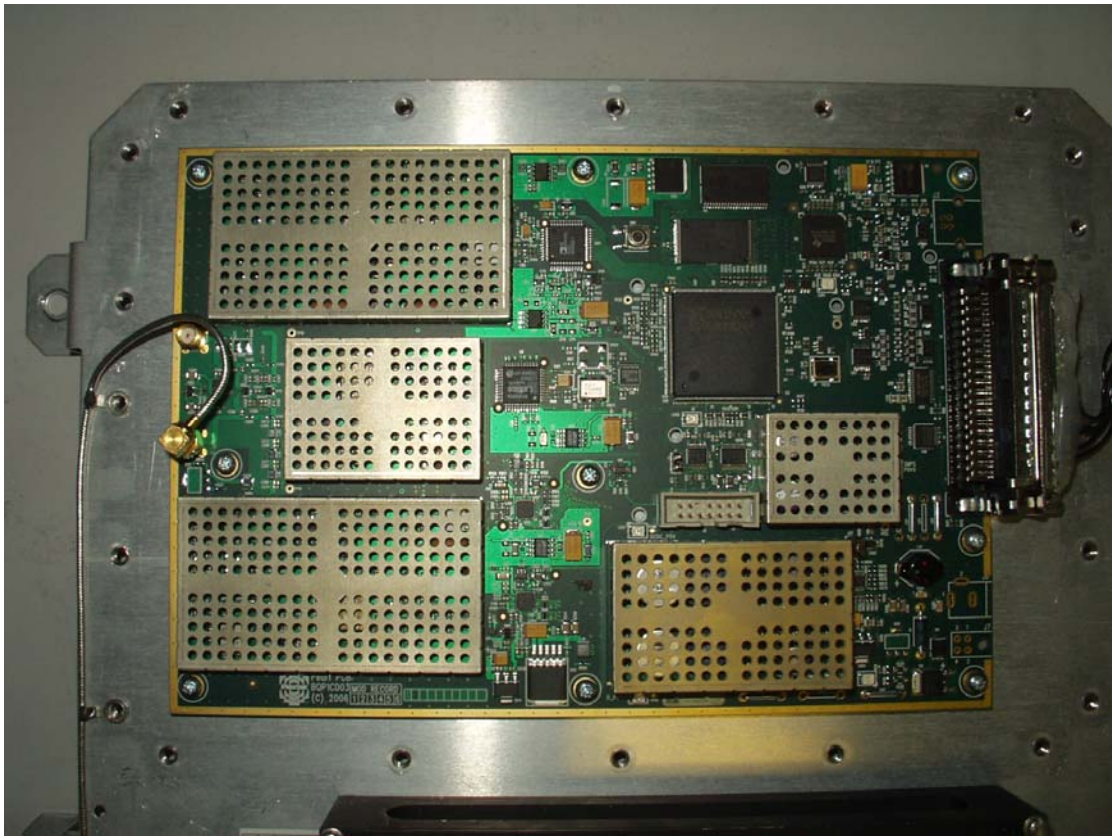
Identifying Photograph of EUT



Internal Photograph of EUT controller



Internal Photograph of EUT Radio



PCB Photograph of EUT RF module

9. Signal Leads

Port Name	Cable Type
Mains Input (controller)	3 core mains (IEC)
Ethernet (controller)	Cat 5 data cable
DC cable (controller to radio)	twisted pair
Data (controller to radio)	Cat - 7
Antenna (radio)	N-type coaxial

10. Test Equipment Calibration list

The following table lists the test equipment used, last calibration date and calibration interval. All equipment used has been maintained within the calibration requirements of R.N. Electronics Ltd. quality management system.

RNNo	Model	Description	Manufacturer	Last Cal	Interval
C031	437B	Power Meter	Hewlett Packard	Sep-19-06	12 mths
C032	8482A	Power Sensor	Hewlett Packard	Sep-22-06	12 mths
E1	HP8542E	EMI Receiver & RF Filter	Hewlett Packard	Oct-31-06	12 mths
E10	MN2050	LISN 13A	Chase	May-15-06	12 mths
E238	FC5343A	2.7 - 5.0 GHz BPF	IFR	N/A	N/A
E239	H-34-2720-01	2.0 - 2.9 GHz BPF	Marconi	N/A	N/A
E242	22102	Bandpass filter 7.8 - 16 GHz	Merimec	N/A	N/A
E266	2032	5.4GHz Signal Generator	Marconi Instruments	Feb-14-06	24 mths
E268	BHA 9118	1-18 GHz Horn Antenna	Schaffner	May-26-06	60 mths
E285	8546A	EMI Receiver	Hewlett Packard	Jul-03-06	12 mths
E3	HP8593E	Spectrum Analyser	Hewlett Packard	Sep-20-06	24 mths
E309	392	30 dB Attenuator	Midwest Microwave	Mar-20-07	12 mths
E319	H-34-2720-01	Transmit Filter 1.5-2.0 GHz	The Marconi Company Ltd	N/A	N/A
E328	564230-001	Notch Filter 915 MHz	BRF	N/A	N/A
E35	HP11947A	Transient Limiter + 10dB Atten.	Hewlett Packard	Jan-30-07	6 mths
E5	HP8447F	Pre-Amplifier	Hewlett Packard	Aug-15-06	12 mths
N438	3513 172 1208	3.9 - 7.5 GHz BPF	MEL	N/A	N/A
TMS10	TH200	ThermoHygrometer	RS Components	May-18-06	24 mths
TMS6-2	MS2602A	Spectrum Analyser	Anritsu	Jan-25-07	24 mths
TMS73	0.083333333	Off Air Standard	Quartzlock	N/A	N/A
TMS81	6502	Active Loop Antenna	EMCO	Dec-05-06	24 mths
TMS82	8449B	Pre Amplifier 1 - 26 GHz	Agilent	Oct-17-06	12 mths
TMS903	CBL6111A	Bilog Antenna 30MHz - 1GHz	Chase	Feb-28-06	36 mths
TMS933	CBL6141A	Bilog Antenna 30MHz - 2GHz	York EMC	Aug-17-06	36 mths

11. Auxiliary equipment

11.1 Auxiliary equipment supplied by Plextek Ltd

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

Manufacturer	Description	Model Number	Serial Number
HP	Compaq Laptop PC	NX7400	CNU64221QH

Purpose:
For communicating test parameters (changes in channel / hopping status) during testing.

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

NONE.

12. Modifications

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

1) To comply with Radiated emissions limits above 1 GHz **Section 5.2** within this report the maximum Power setting in software of the transmitter was set to a value of 400.

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:

RN Electronics
EMC & RADIO TEST SERVICES

Certificate of Test

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

This certificate relates to the equipment, 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:	Base station controller/ Base station Radio
Model Number(s):	ABSR1
Unique Serial Number(s):	6R515 (controller) & 6R508 (radio)
Applicant:	Plextek Ltd
Customer Purchase Order Number:	P55068
R.N. Electronics Limited Report Number:	04-172/3327/1/07
Test Standards:	FCC Part 15C: effective date February 7th 2007 Class **DSS** Intentional Radiator
Date:	18th - 20th April 2007
For and on behalf of R.N. Electronics Limited	
Signature:	Paul Darragh — Digitally signed by Paul Darragh DN: CN = Paul Darragh, C = GB, OU = RN Electronics Date: 2007.06.01 13:25:47 +01'00'

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