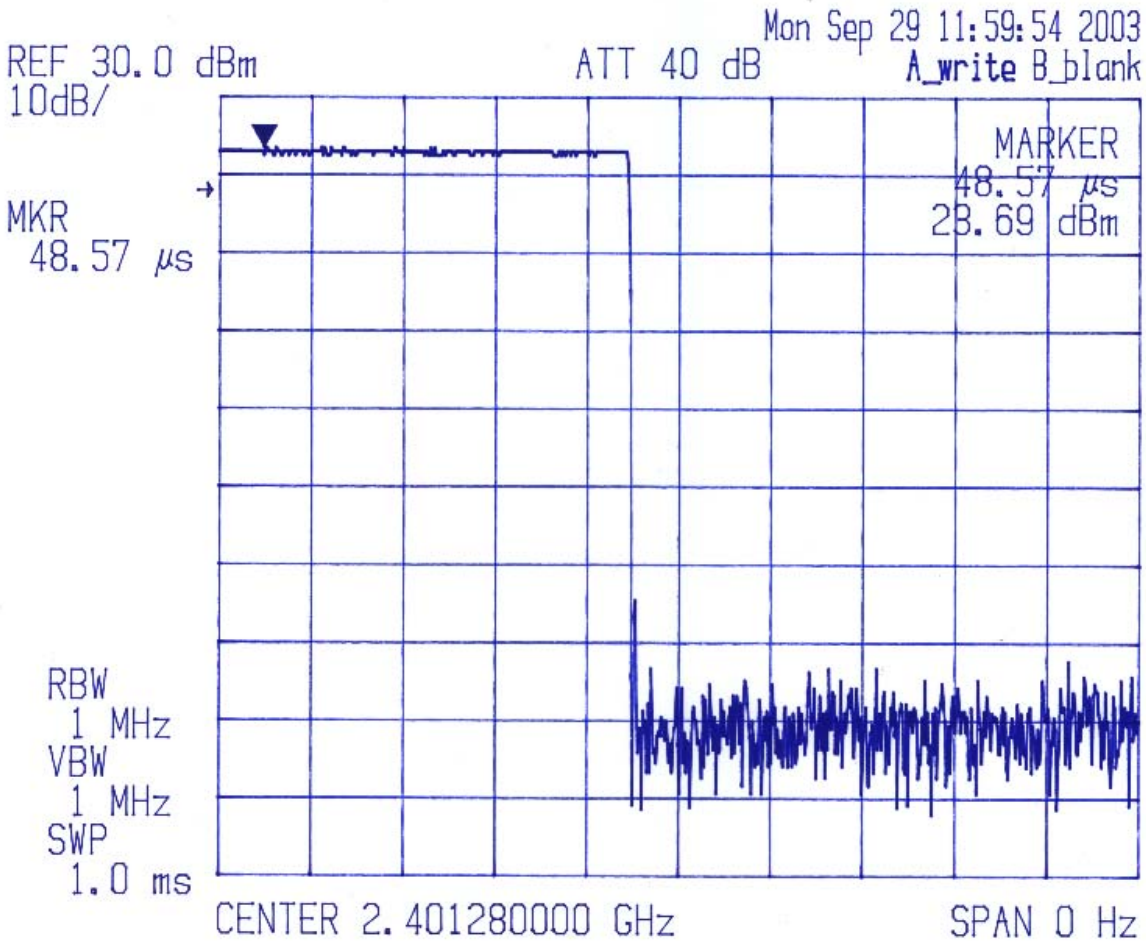
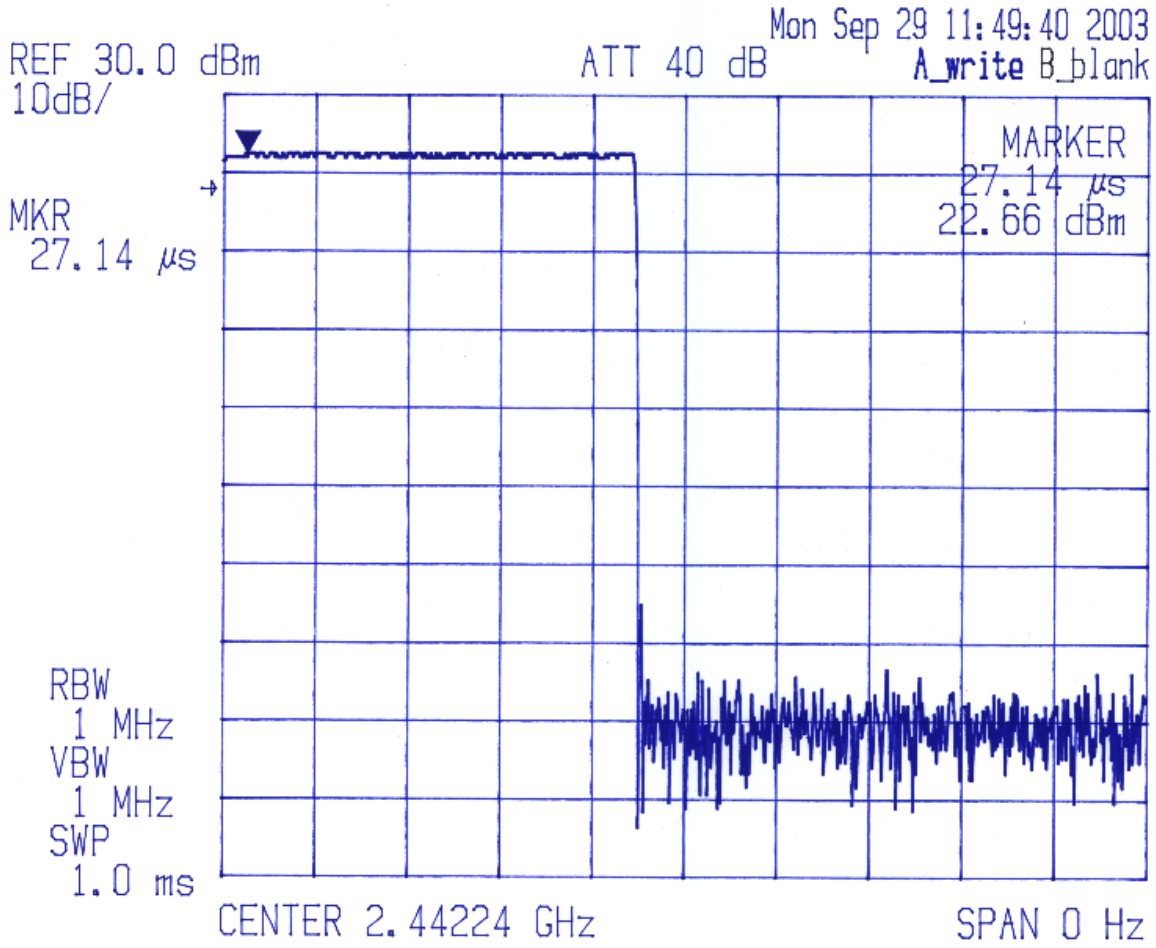
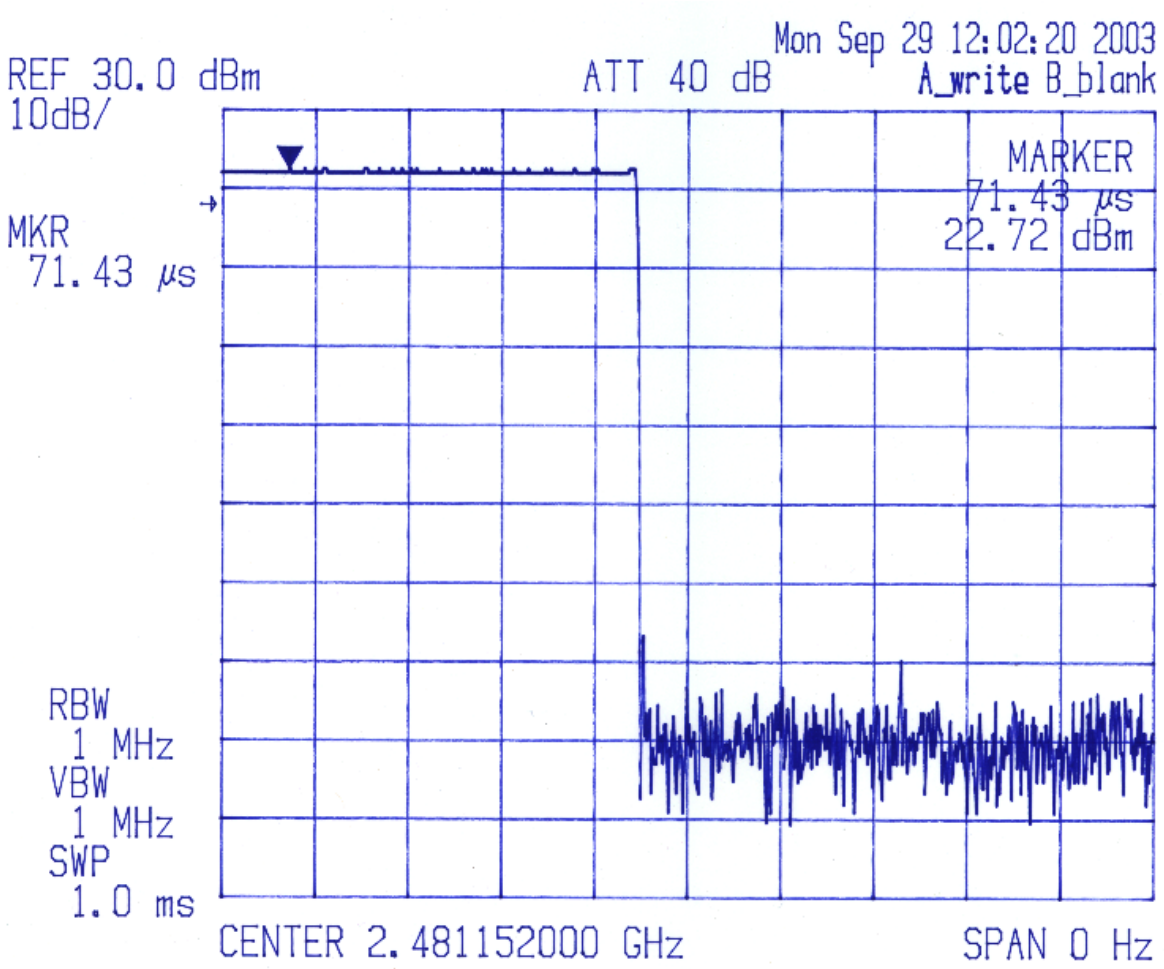


Portable part ch. 1



Portable part ch. 41



Portable part ch. 79

4.7 Spurious Emissions (Radiated)

Para. No.: 15.247 (c)

Test Performed By: Egil Hauger	**Date of Test: 2 July to 29 September 2003**

Test Results: Complies

Measurement Data:

Band-edge conducted power.

Frequency	EUT	Power below nearest channel	Limit	Margin
GHz	Fixed part/ Portable part	dBµV/m	dBµV/m	dB
2,4	Fixed, Ant1	49,0	54,0	5,0
2,4835	Fixed, Ant1	44,1	54,0	9,9
2,4	Fixed, Ant2	47,7	54,0	6,3
2,4835	Fixed, Ant2	43,2	54,0	10,8
2,4	Portable	45,3	54,0	8,7
2,4835	Portable	43,3	54,0	10,7

See attached graph

RF conducted power to 25 GHz see attached graph.

Maximum RF level outside operating band: - 38 dB/C.

Radiated emission, see attached table.

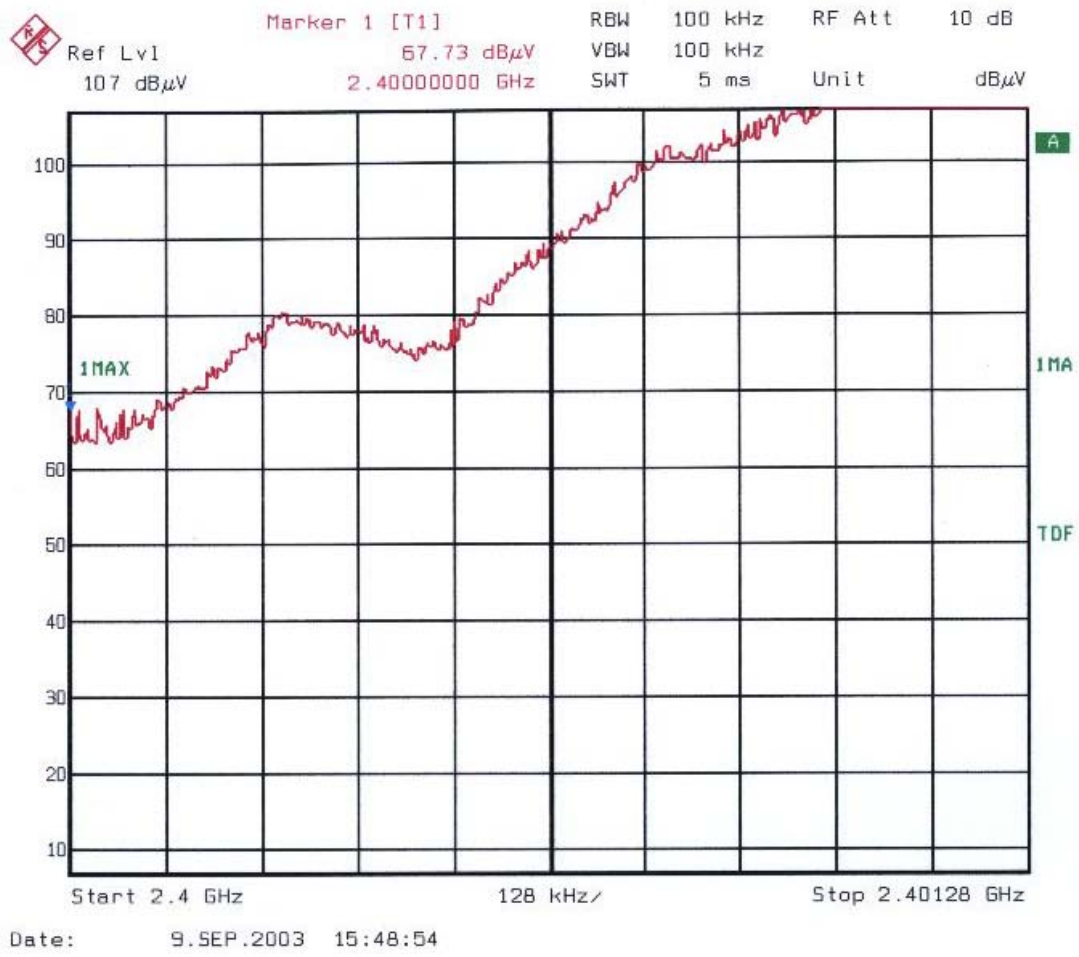
Highest value fixed part: 17,368 GHz: Peak value 67,0 dBµV/m, average 47,0 dBµV/m

Highest value portable part: 17,097 GHz: Peak value 69,9 dBµV/m, average 49,9 dBµV/m.

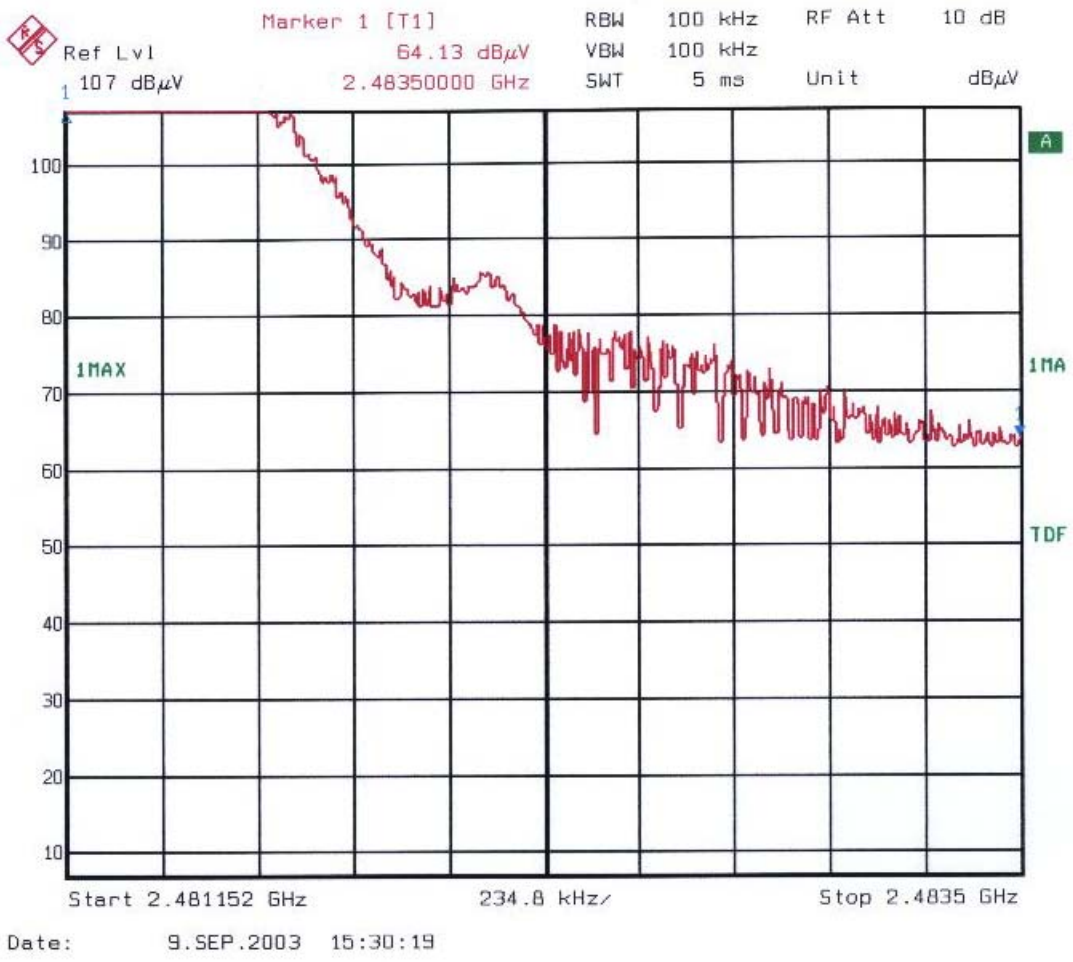
Example of frequency graph of radiated emission is also attached.

Antenna factor, amplifier gain and cable loss are included in spectrum analyzer "Transducer factor".

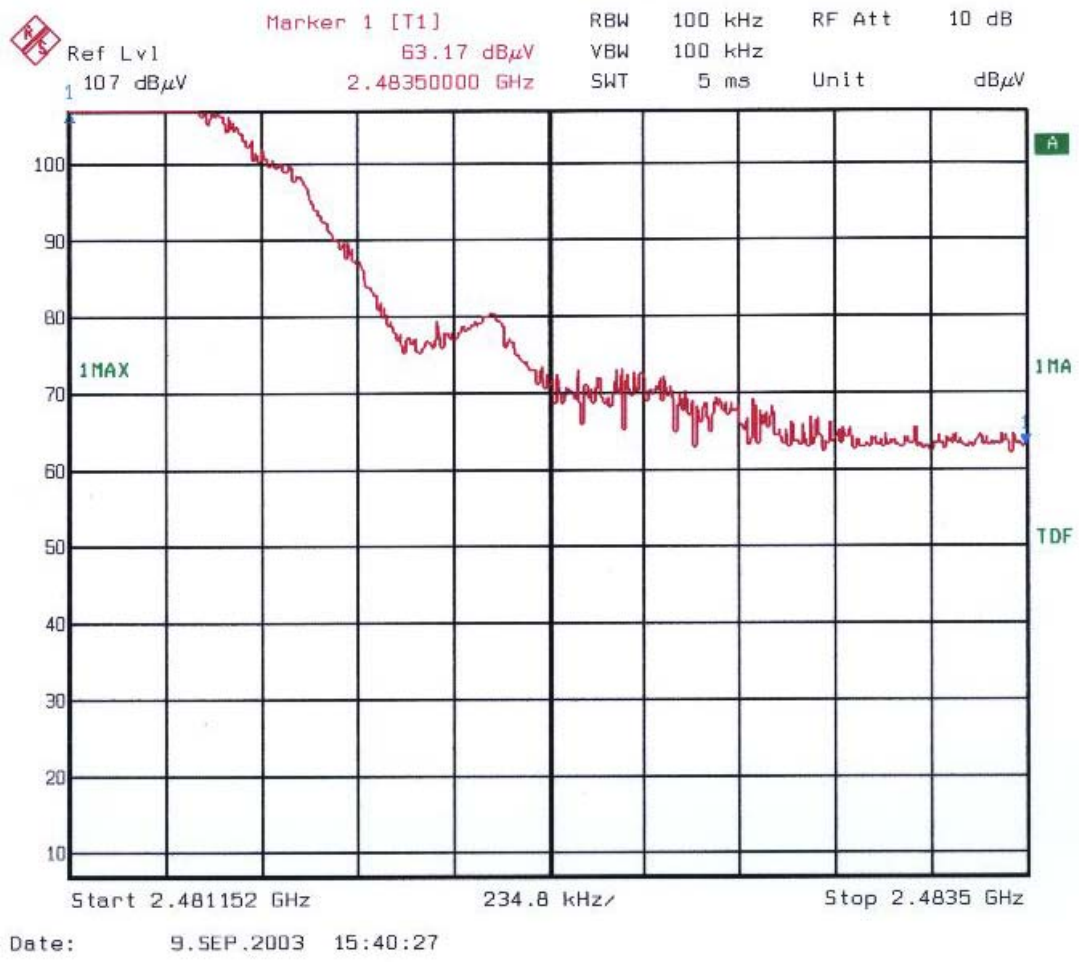
Fixed part, lower frequency end, antenna 1, peak detector.



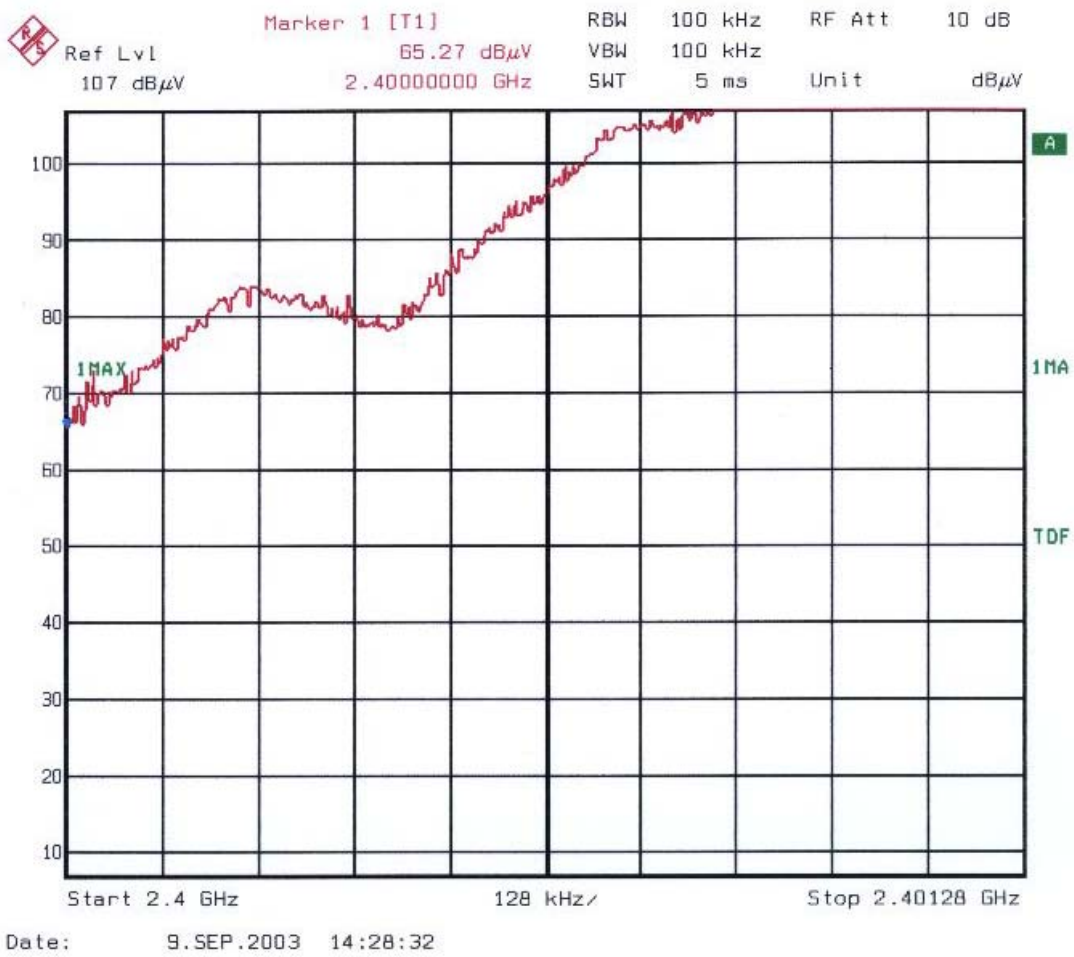
Fixed part, lower frequency end, antenna 2, peak detector.



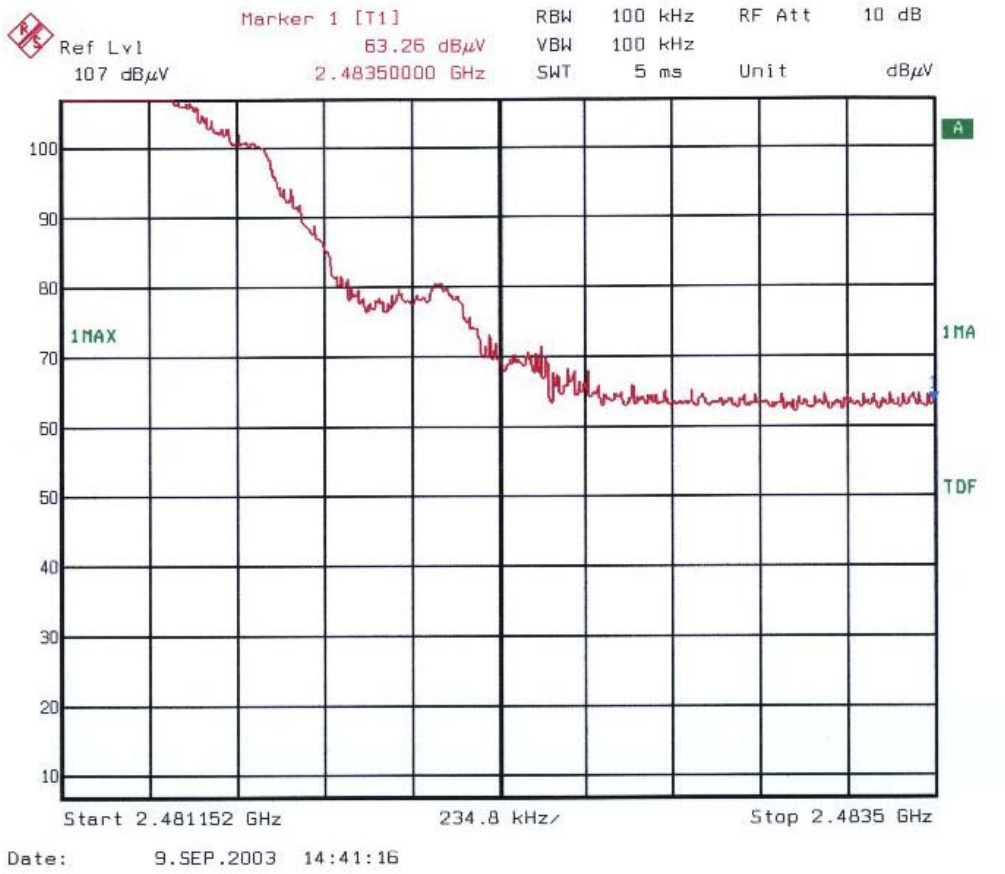
Fixed part, upper frequency end, antenna 1, peak detector.



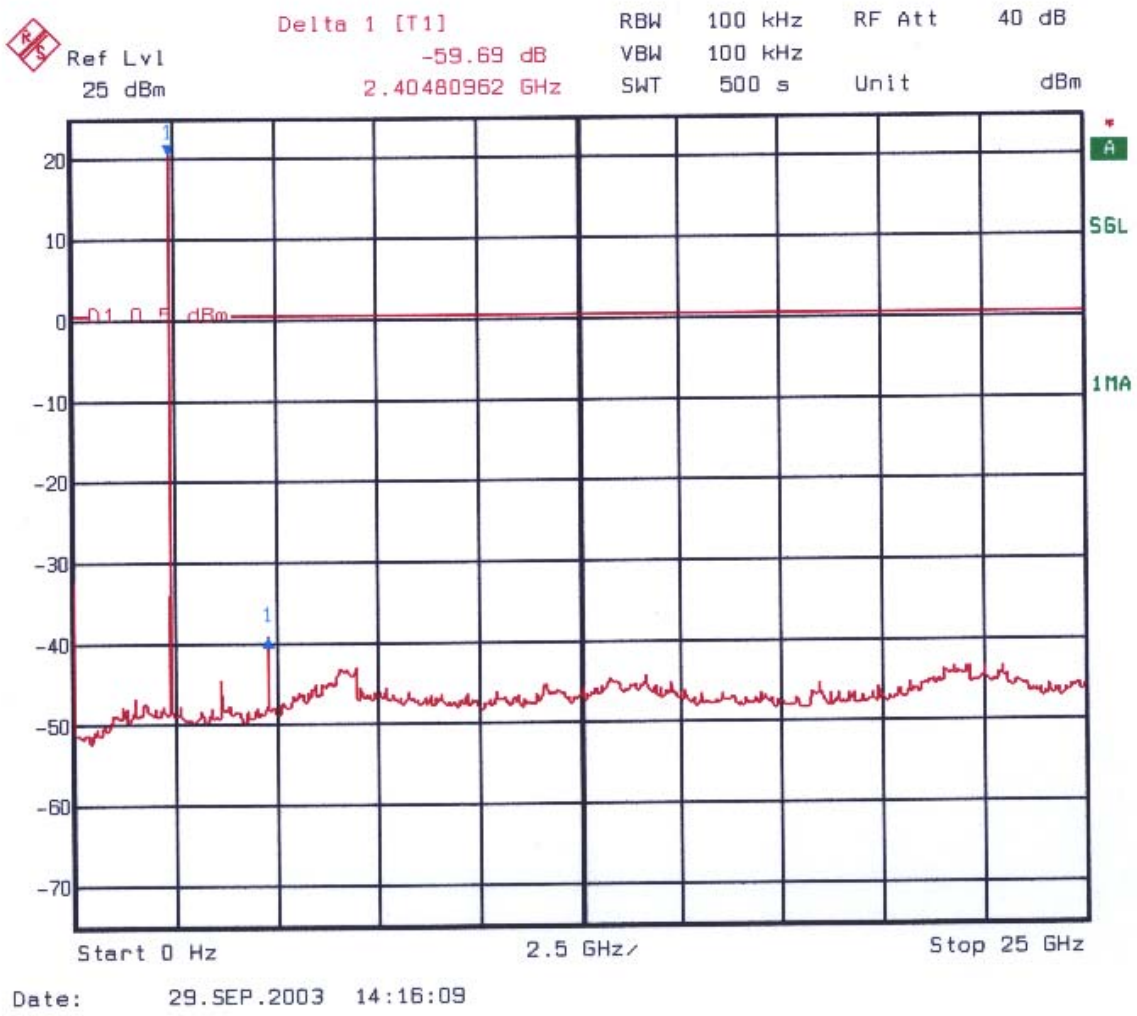
Fixed part, upper frequency end, antenna 2, peak detector.



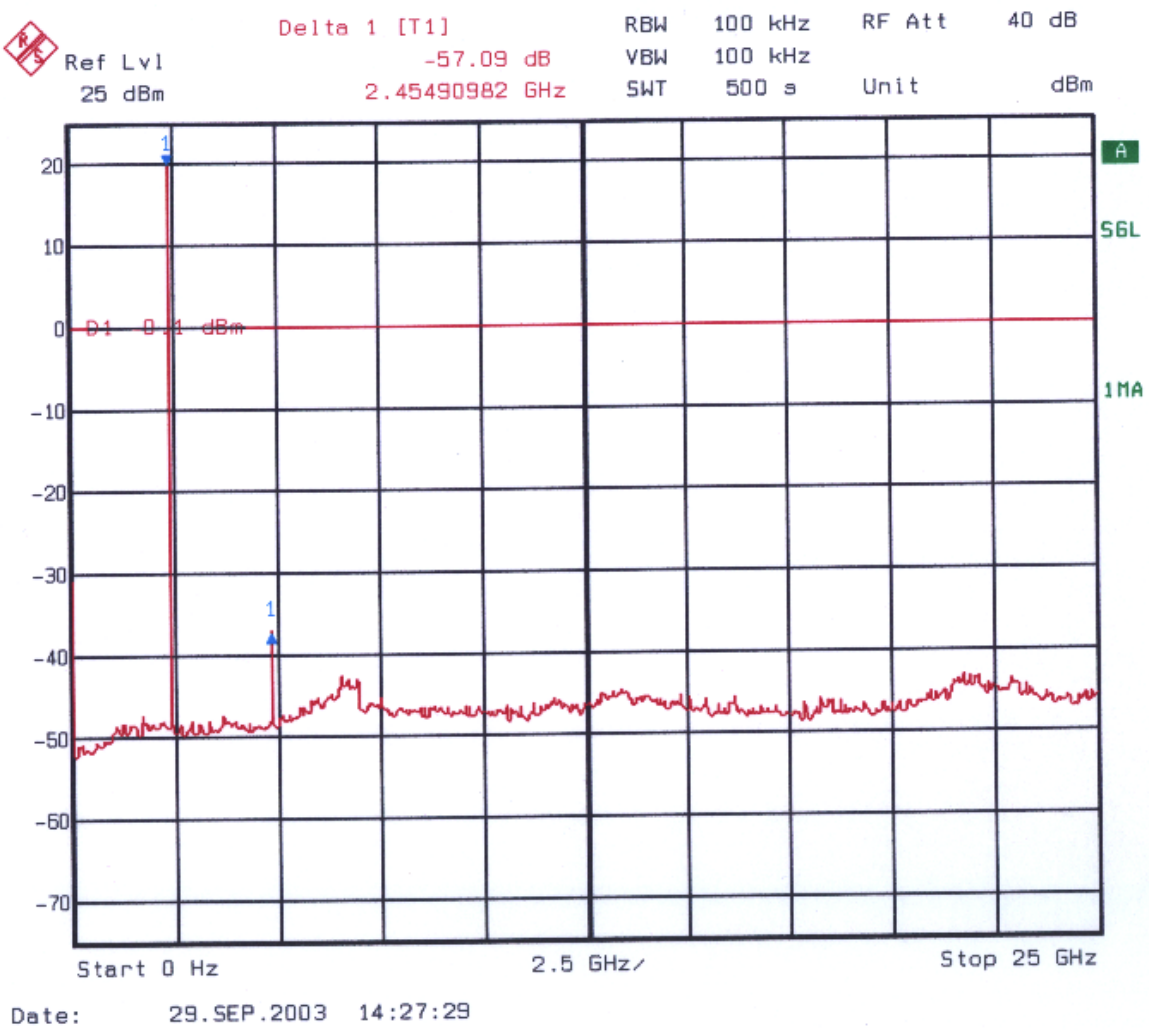
Portable part, lower frequency end, peak detector.



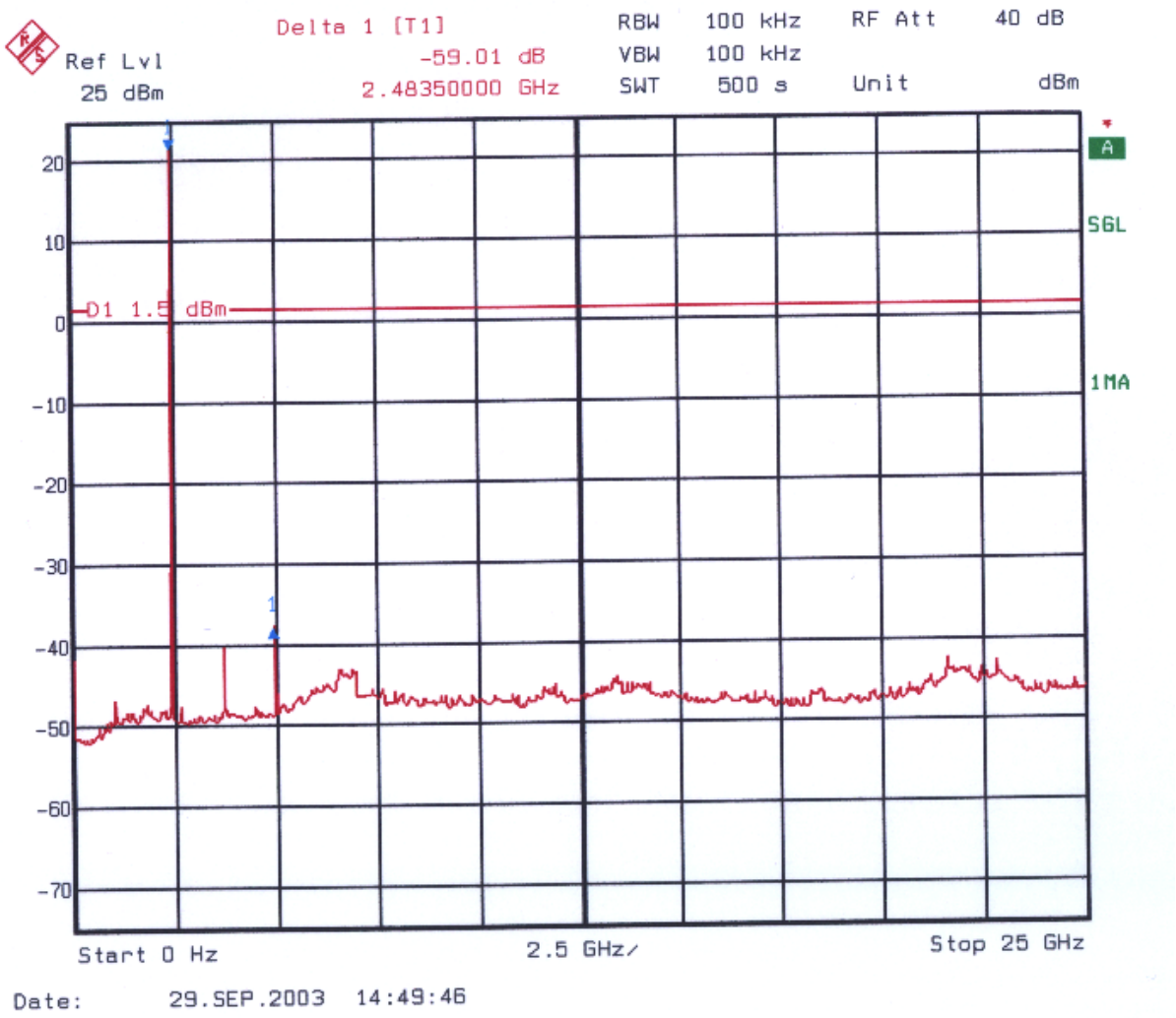
Portable part, upper frequency end, peak detector.



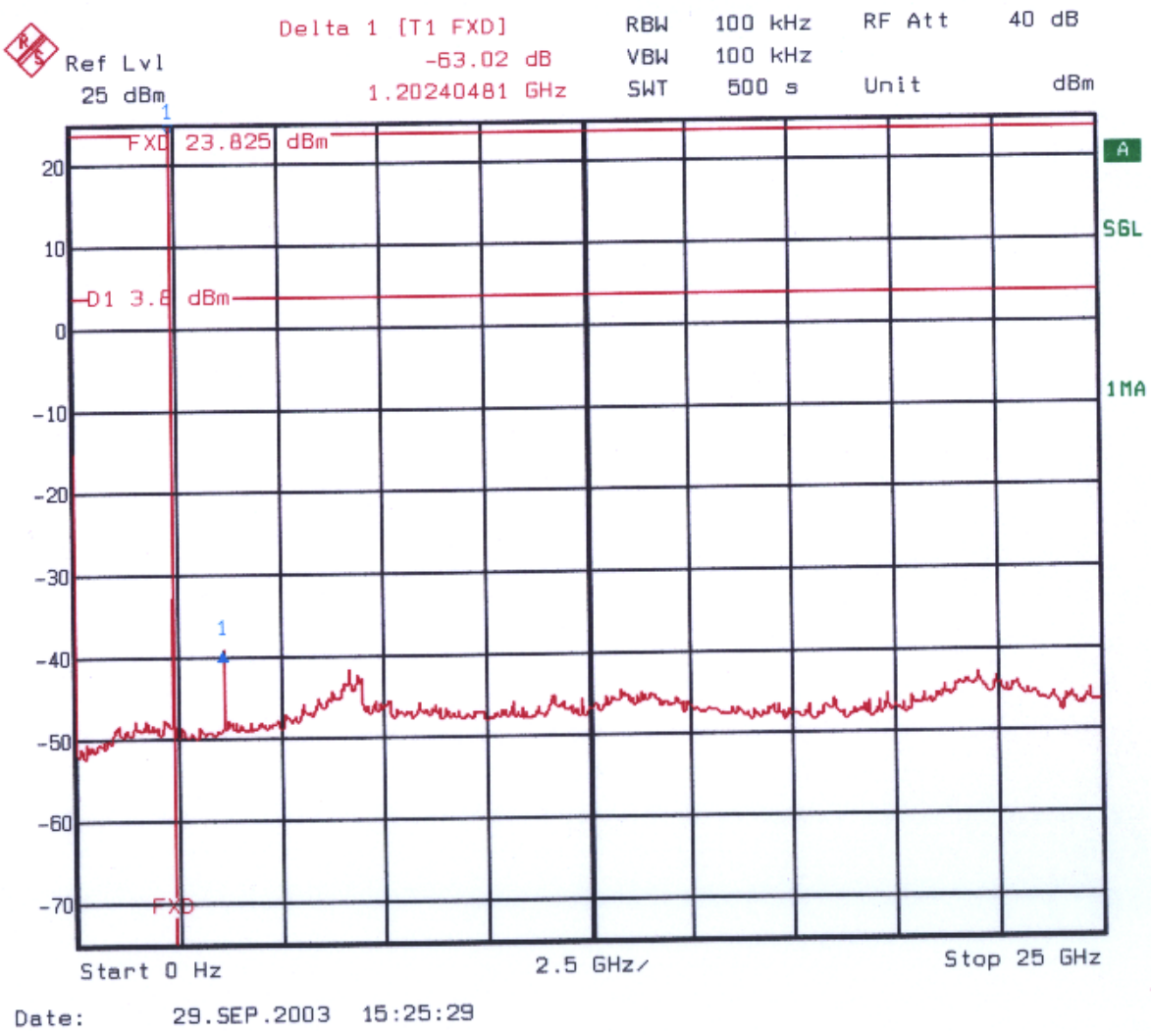
Portable part ch.1



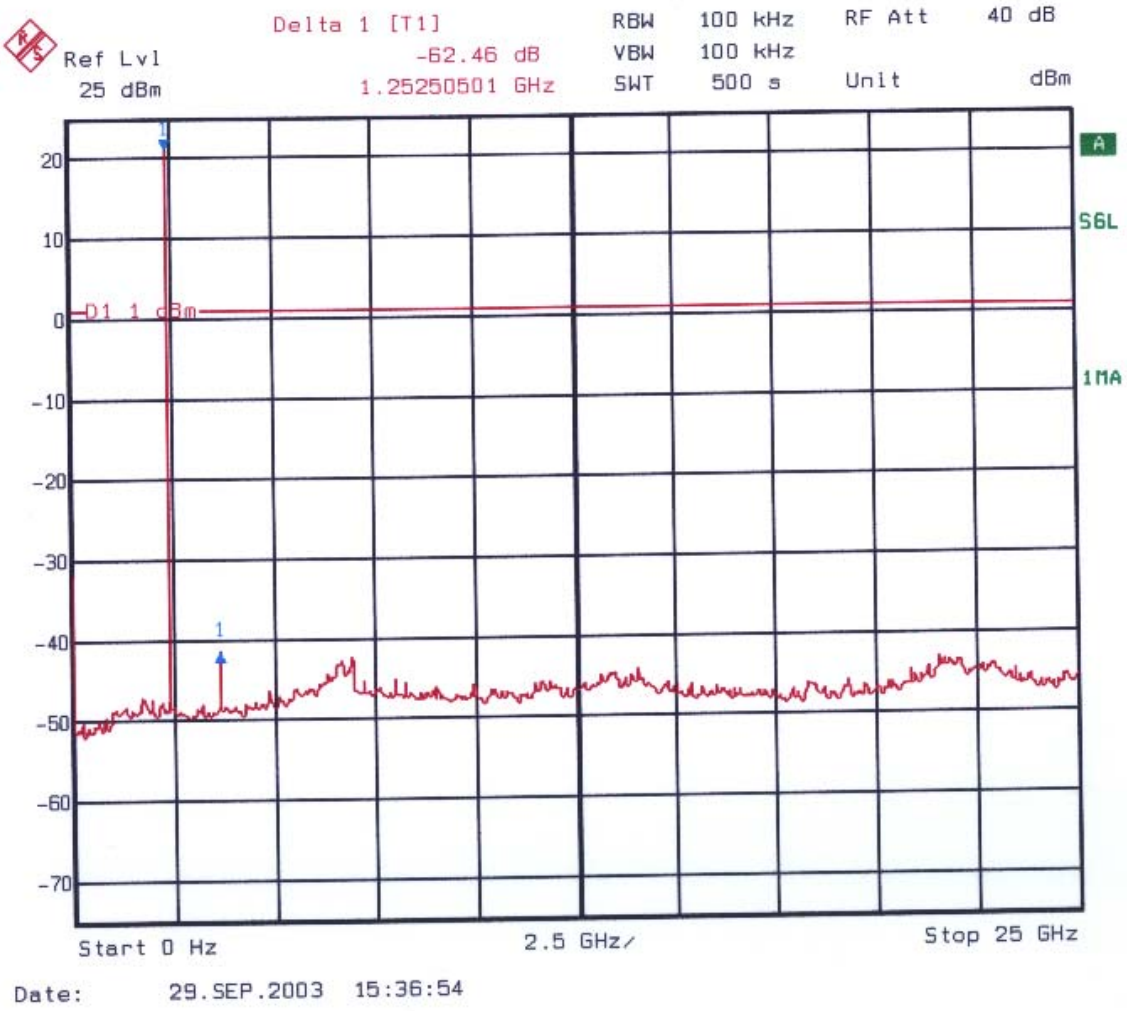
Portable part ch. 41



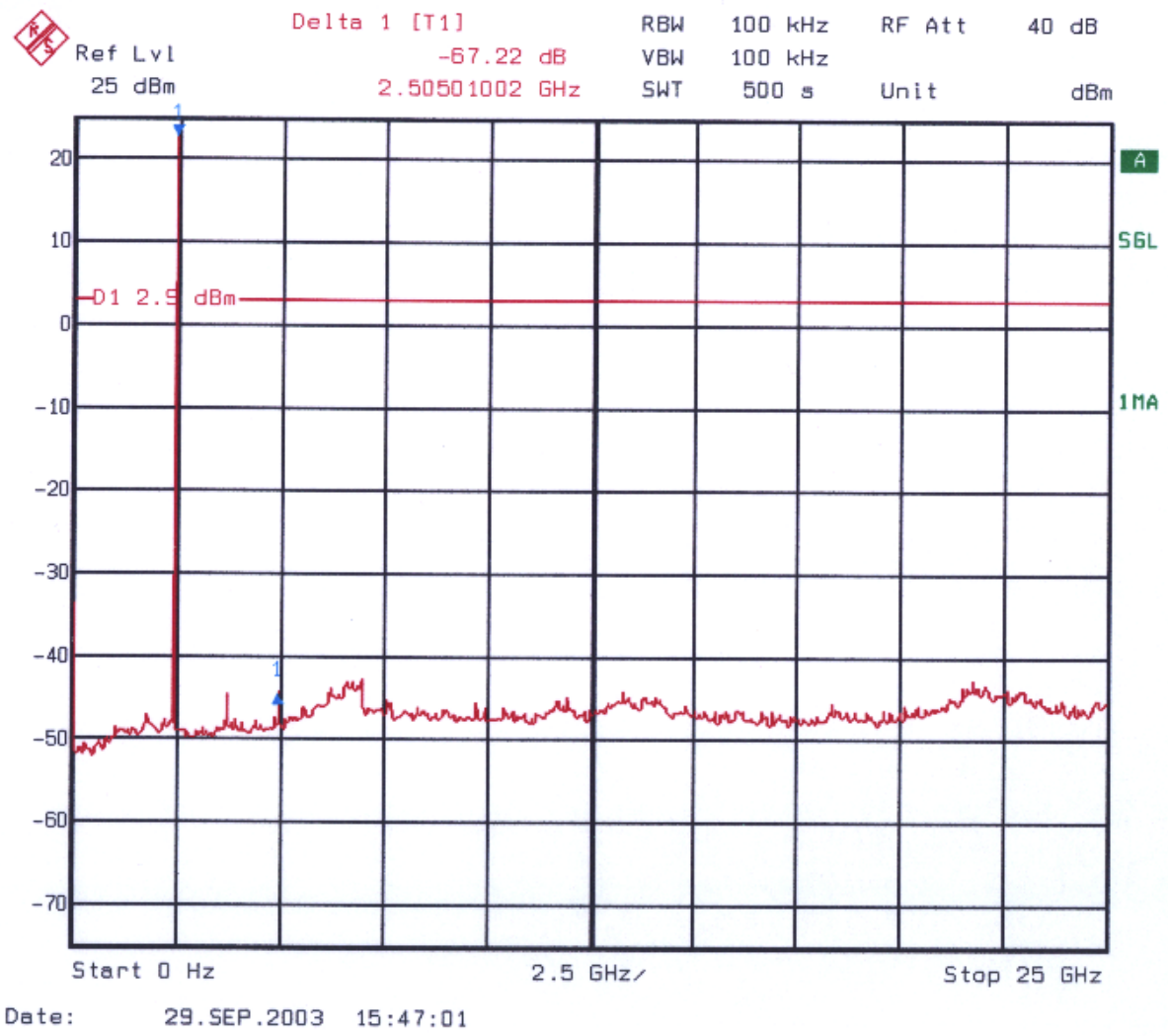
Portable part ch 79



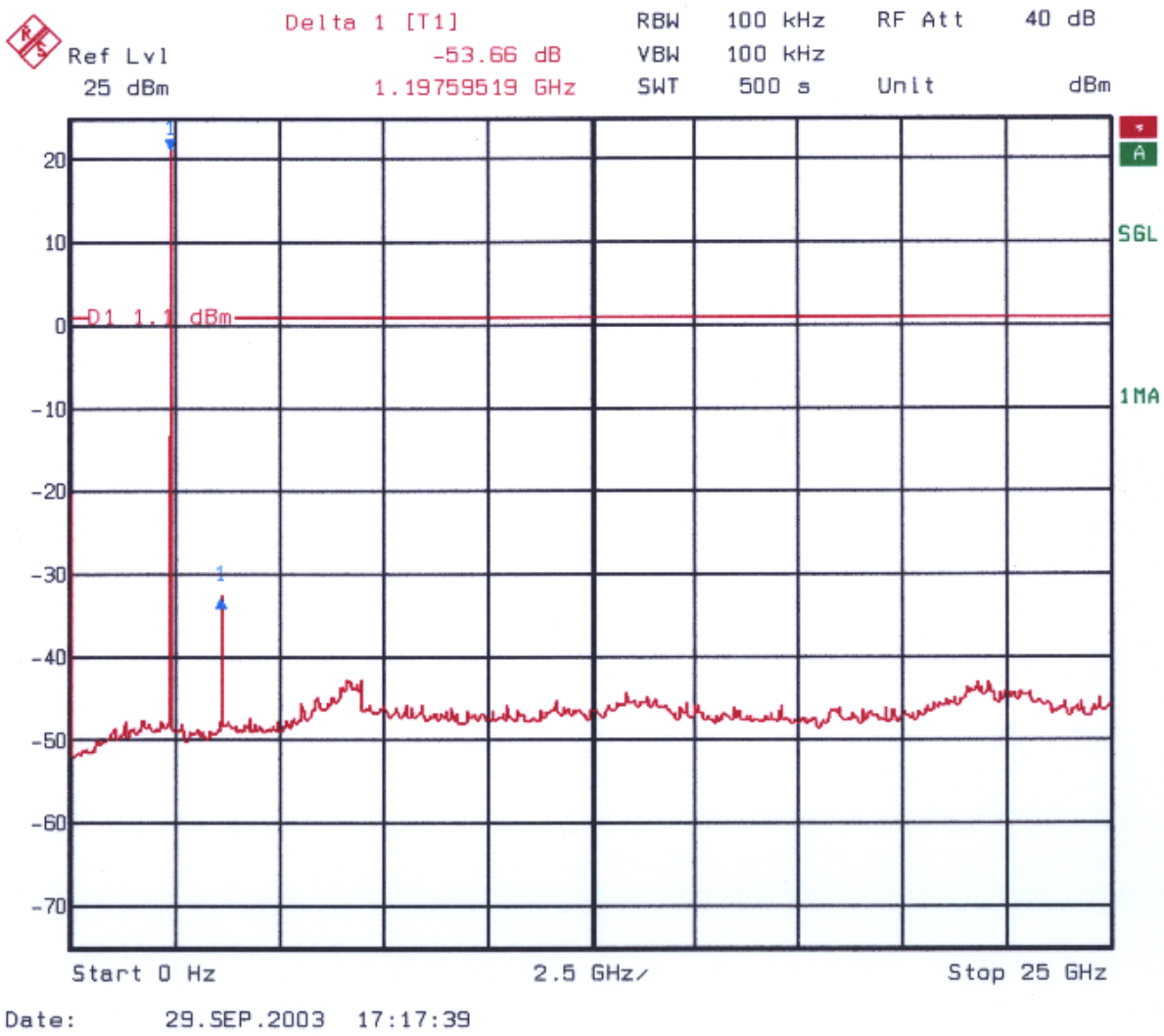
Fixed part ant. 1 ch 01



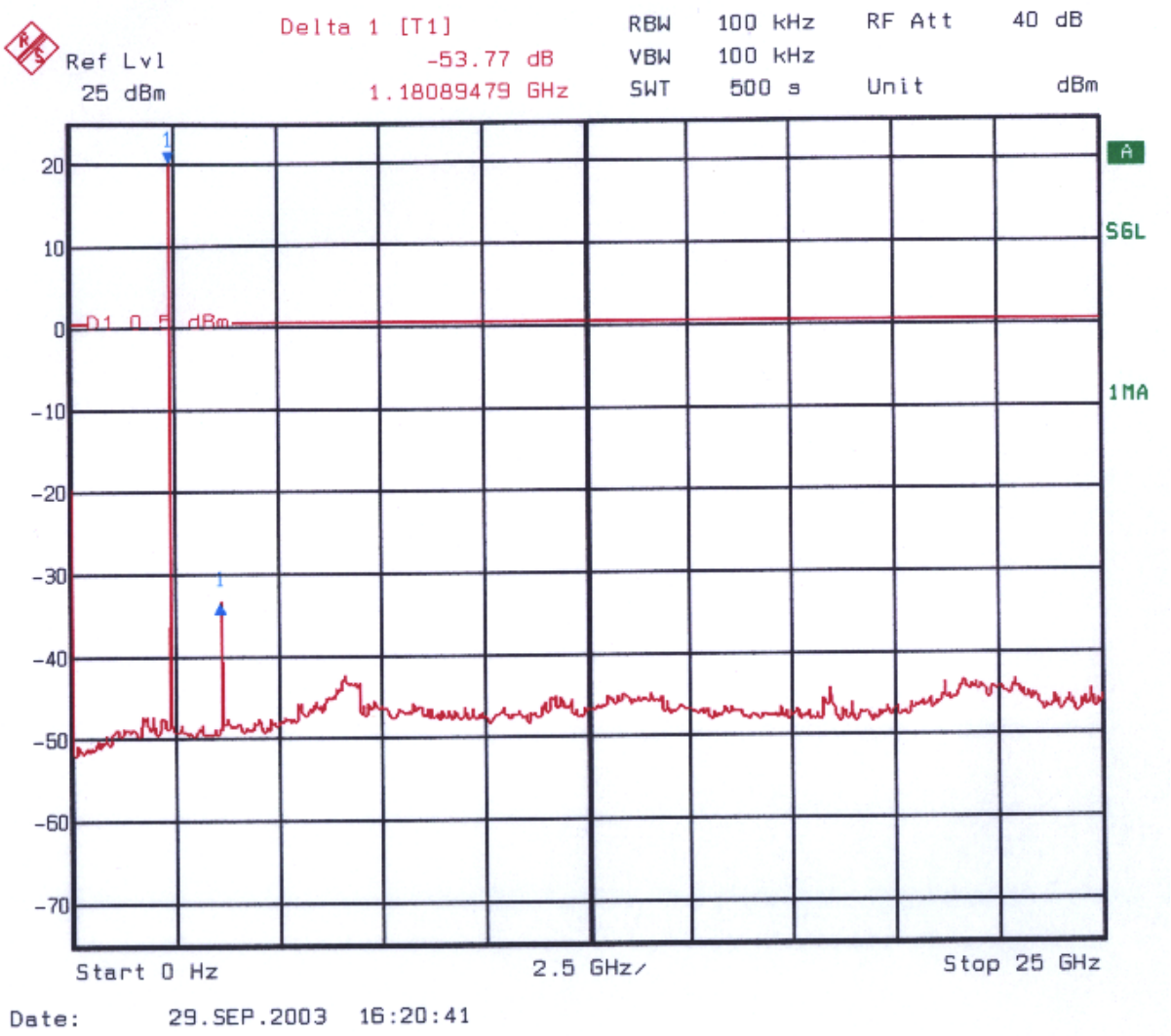
Fixed part ant. 1 ch. 41



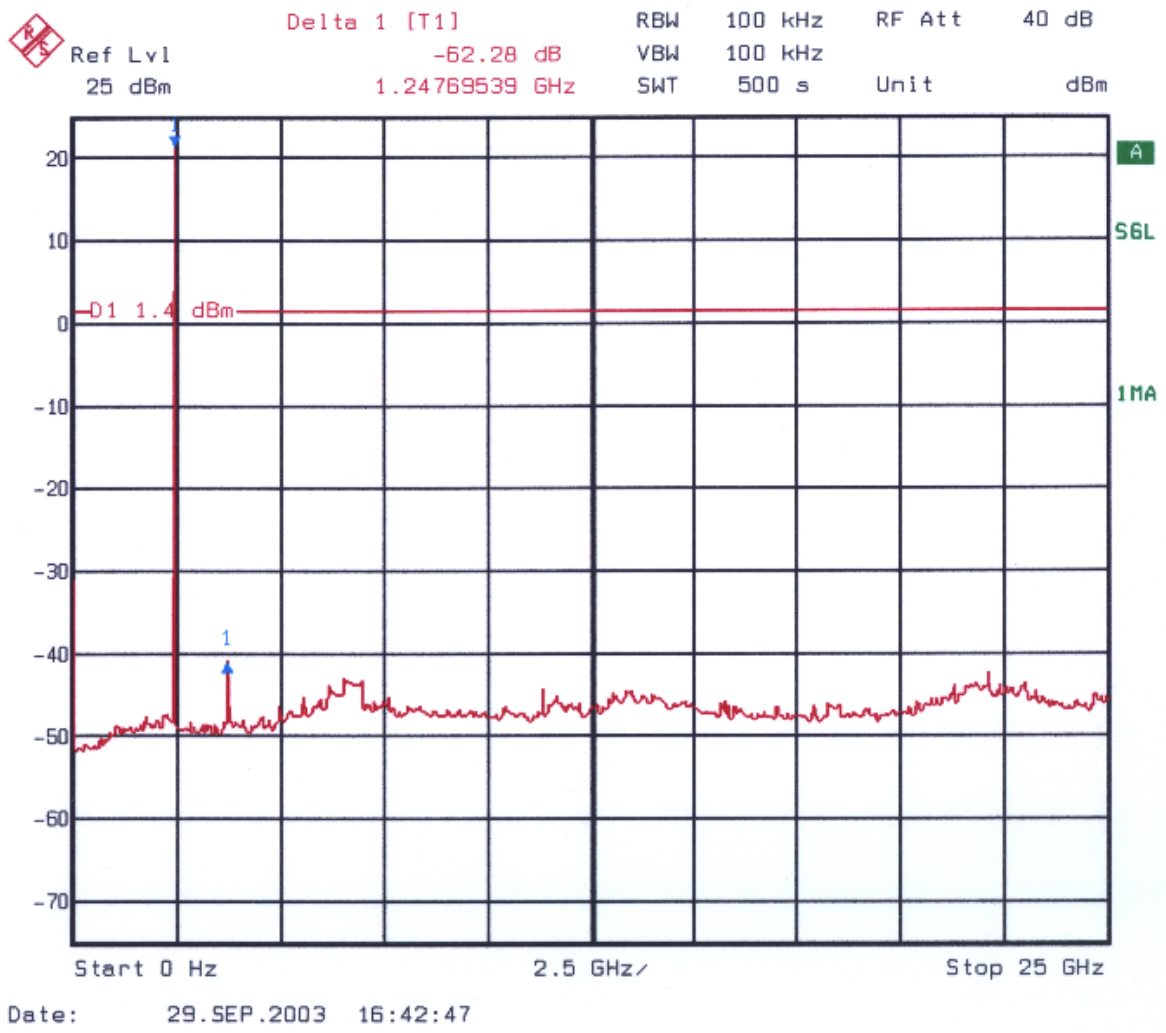
Fixed part ant.1 ch. 79.



Fixed part ant. 2 ch. 1



Fixed part ant. 2 ch. 41



Fixed part ant. 2 ch. 79

Radiated Emission 1 – 25 GHz, Fixed Part (Peak)

Measured with Peak Detector

Frequency	EUT ant	RF channel	Dist. corr. factor	Field strength, Peak, 3 metres	Duty cycle	Limit	Margin
GHz	1/2	1-79	dB	dBμV/m	dB	dBμV/m	dB
4,802	1	1	0	49,7		74	24,3
7,203	1	1	0	52,5		74	21,5
4,884	1	41	0	54,5		74	19,5
7,326	1	41	0	55,2		74	18,8
4,962	1	79	0	55,1		74	18,9
12,405	1	79	0	64,2		74	9,8
17,368	1	79	0	67,0		74	7,0
19,849	1	79	-9,5 [1)]	66,4		74	7,6
1,2	2	1	0	46,0		74	28,0
3,6	2	1	0	64,1		74	9,9
4,802	2	1	0	51,2		74	22,8
3,669	2	41	0	57,9		74	16,1
4,884	2	41	0	52,3		74	21,7
7,326	2	41	0	53,6		74	20,6
12,211	2	41	0	63,8		74	10,2
3,6	2	79	0	49,0		74	25,0
4,962	2	79	0	59,7		74	14,3
12,405	2	79	0	65,7		74	8,3
19,849	2	79	-9,5 [1)]	65,5		74	8,5

[1)] Measured at a distance of 1.0 meters.

Radiated emission 1 – 25 GHz, Portable part (Peak)

Measured with Peak Detector

Frequency	RF channel	Dist. corr. factor	Field strength, Peak, 3 metres	Duty cycle	Limit	Margin
GHz	1-79	dB	dBμV/m	dB	dBμV/m	dB
1,290	1	0	53,8		74	20,2
2,2	1	0	54,0		74	20,0
4,802	1	0	67,4		74	6,6
6,003	1	0	55,6		74	18,4
9,605	1	0	58,6		74	15,4
12,006	1	0	65,1		74	8,9
16,8 09	1	0	67,8		74	6,2
1,288	41	0	55,4		74	18,6
4,884	41	0	66,1		74	7,9
9,769	41	0	59,6		74	14,4
17,097	41	0	69,9		74	4,1
1,240	79	0	50,6		74	23,4
4,962	79	0	65,9		74	8,1
7,442	79	0	66,5		74	7,5
9,924	79	0	60,9		74	13,1
12,406	79	0	62,2		74	11,8
17,367	79	0	63,1		74	10,9

Radiated emission 1- 25 GHz, Fixed part, Average

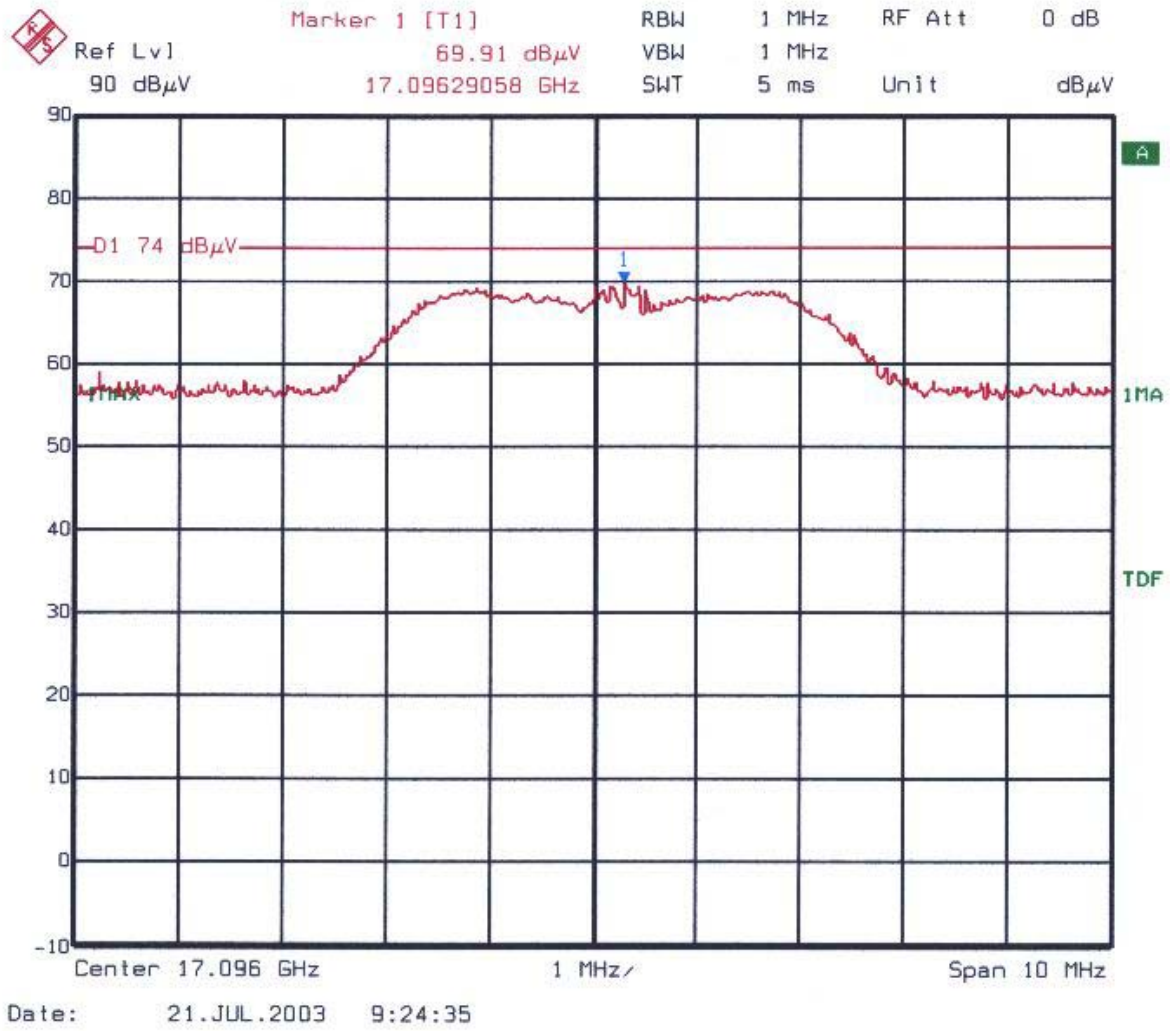
Measured with Peak Detector.

Frequency	EUT ant	RF channel	Dist. corr. factor	Field strength, Peak, 3 metres	Duty cycle	Limit	Margin
GHz	1/2	1-79	dB	dBμV/m	dB	dBμV/m	dB
4,802	1	1	0	49,7	-20	54	24,3
7,203	1	1	0	52,5	-20	54	21,5
4,884	1	41	0	54,5	-20	54	19,5
7,326	1	41	0	55,2	-20	54	18,8
4,962	1	79	0	55,1	-20	54	18,9
12,405	1	79	0	64,2	-20	54	9,8
17,368	1	79	0	67,0	-20	54	7,0
19,849	1	79	-9,5	66,4	-20	54	7,6
1,2	2	1	0	46,0	-20	54	28,0
3,6	2	1	0	64,1	-20	54	9,9
4,802	2	1	0	51,2	-20	54	22,8
3,669	2	41	0	57,9	-20	54	16,1
4,884	2	41	0	52,3	-20	54	21,7
7,326	2	41	0	53,6	-20	54	20,6
12,211	2	41	0	63,8	-20	54	10,2
3,6	2	79	0	49,0	-20	54	25,0
4,962	2	79	0	59,7	-20	54	14,3
12,405	2	79	0	65,7	-20	54	8,3
19,849	2	79	-9,5	65,5	-20	54	8,5

Radiated emission 1 – 25 GHz, Portable part, Average

Measured with Peak Detector

Frequency	RF channel	Dist. corr. factor	Field strength, Peak, 3 metres	Duty cycle	Limit	Margin
GHz	1-79	dB	dBμV/m	dB	dBμV/m	dB
1,290	1	0	53,8	-20	54	20,2
2,2	1	0	54,0	-20	54	20,0
4,802	1	0	67,4	-20	54	6,6
6,003	1	0	55,6	-20	54	38,4
9,605	1	0	58,6	-20	54	15,4
12,006	1	0	65,1	-20	54	8,9
16,809	1	0	67,8	-20	54	6,2
1,288	41	0	55,4	-20	54	18,6
4,884	41	0	66,1	-20	54	7,9
9,769	41	0	59,6	-20	54	14,4
17,097	41	0	69,9	-20	54	4,1
1,240	79	0	50,6	-20	54	23,4
4,962	79	0	65,9	-20	54	8,1
7,442	79	0	66,5	-20	54	7,5
9,924	79	0	60,9	-20	54	13,1
12,406	79	0	62,2	-20	54	11,8
17,367	79	0	63,1	-20	54	10,9



Portable Part ch. 41.

Duty Cycle Calculation:

See also Para 4.4 Occupancy Time.

RF duty cycle Portable part: Calculation according to RF burst Para 15.35 (c)

20*log(444,9 μsec/0,1 sec) = - 47,03 dB

RF duty cycle Fixed Part with four active lines:

20*log(4*444,9 μsec/0,1 sec) = -34,99 dB

Maximum duty cycle according to Para 15.35 (b): -20 dB

This value is used when measuring average field strength above 1 GHz with Peak Detector function employed on spectrum analyzer.

Radiated emission 30 – 1000 MHz.

Detector: Quasi-Peak

Frequency	EUT	Operational condition	Field strength	Measuring distance	Limit	Margin
MHz	Portable/Fixed part		dBμV/m	metres	dBμV/m	dB
546,3	Portable	standby	18,6	3	46	27,4
546,3	Portable	Active	25,5	3	46	20,5
26,87	Fixed part	One line active	19,7	10	30	10,3
55,3	Fixed part	One line active	17,5	10	30	12,5
122,5	Fixed part	One line active	11,5	10	30	18,5
294,9	Fixed part	One line active	22,1	10	37	14,9
763,8	Fixed part	One line active	28,2	10	37	8,8
766,35	Fixed part	No line active	22,5	10	37	14,5

See attached graph.

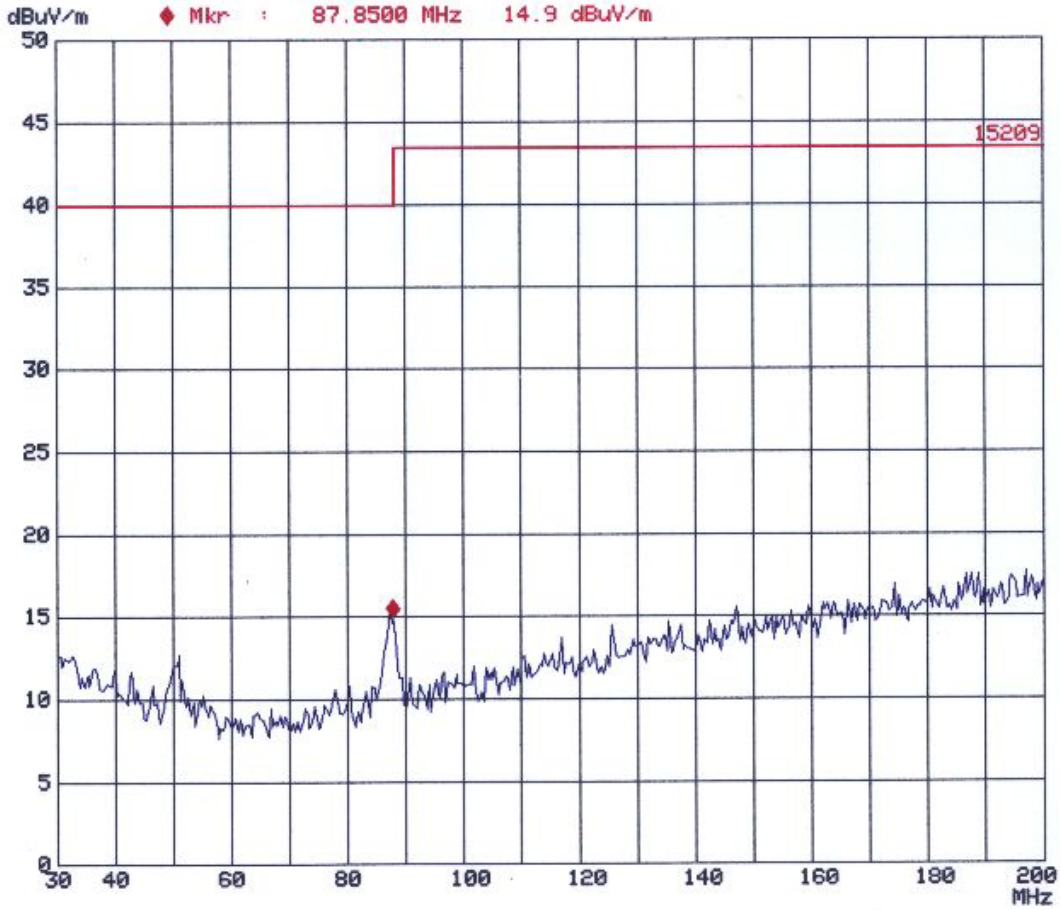
Nemco Comlab AS
Peak

EUT:	Beoline PP
Manuf:	B O
Op Cond:	VP 1 m
Operator:	Egh
Test Spec:	15209
Date:	15. Sep 03 19:27

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
30M	200M	50k	120k	PK	20ms	AUTO	LN ON	60dB

Transducer	No.	Start	Stop	Name
	20	30M	200M	HK116



Portable part