

CETECOM ICT Services GmbH

Radio Satellite Communication

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RSC14

issue test report consist of 71 Pages

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Accredited Testing Laboratory

**DAR-Registration number:
TTI-P-G 166/98-00**

**Test report no.: 4-0304-A/00
FCC Part 15.247
Siemens Gigaset B420data**

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1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in 1.5. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.

1.2 Testing laboratory

CETECOM ICT Services GmbH

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66117 Saarbrücken

Germany

Telephone: + 49 681 598 - 9100

Telefax : + 49 681 598 - 9075

E-mail : Harro.Ames@ict.cetecom.de

Internet : www.cetecom.de

Accredited testing laboratory

DAR-registration number : TTI-P-G 166/98-00

1.3 Details of applicant

Name : Siemens AG / ICP CD DP PSI
Street : Frankenstrasse 2
City : D-46395 Bocholt
Country : Germany
Telephone : +49-2871 91 28 57
Telefax : +49-2871 91 24 95
Contact : Mr. Uwe Alt
Telephone : +49-2871 91 28 57

1.4 Application details

Date of receipt of application : 24.01.01
Date of receipt of test item : 24.01.01
Date of test : 24.01.01

1.5 Test item

Type of equipment : **Bluetooth transceiver with USB**
Type designation : **Gigaset B427data**
Manufacturer : applicant
Street :
City :
Country :
Serial number :

Additional informations: :

Frequency : 2400 – 2483.5 MHz
Type of modulation : 1M00FXD / 79M8FXD (FHSS)
Number of channels : 79
Antenna : integral antenna
Power supply : 5 V DC according to USB convention
Output power : 100 mW EIRP
Type of equipment : Temperature range : -20°C - +55°C

1.6 Test standards: FCC Part 15 §15.247

2 Technical test

2.1 Summary of test results

The radiated measurements were performed vertically, horizontal results are about 2 dB lower over the whole frequency range.

The antenna gain measurement was performed by the difference between conducted and radiated output measurement.

All measurement settings are according to FCC 15.35, 15.205, 15.209, 15.247 and the „Measurement guidelines for FHSS systems“.

No deviations from the technical specification(s) were ascertained in the course of the tests performed.

Technical responsibility for area of testing :

30.01.01	RSC 8414	Ames H.
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Date	Section	Name	Signature
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Technical responsibility for area of testing :

30.01.01	RSC8412	Hausknecht D.
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Date	Section	Name	Signature
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2.2 Testreport

TEST REPORT

Testreport no. : 4-0304-A/00

TEST REPORT REFERENCE

LIST OF MEASUREMENTS

Paragraph	PARAMETER TO BE MEASURED	PAGE
	Transmitter parameters	
§ 15.204	Antenna gain	7
§ 15.247 (a)	Carrier frequency separation	8
§ 15.247 (a)	Number of hopping channels	9
§ 15.247 (a)	Time of occupancy (dwell time)	13
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	Photographs of the equipment	62

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

Antenna Gain

SUBCLAUSE § 15.204

The gain is +3.0 dBi

(measured effective radiated power over dipole – measured conducted power with a temporary RF-connector)

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(for reference numbers see test equipment listing)

-

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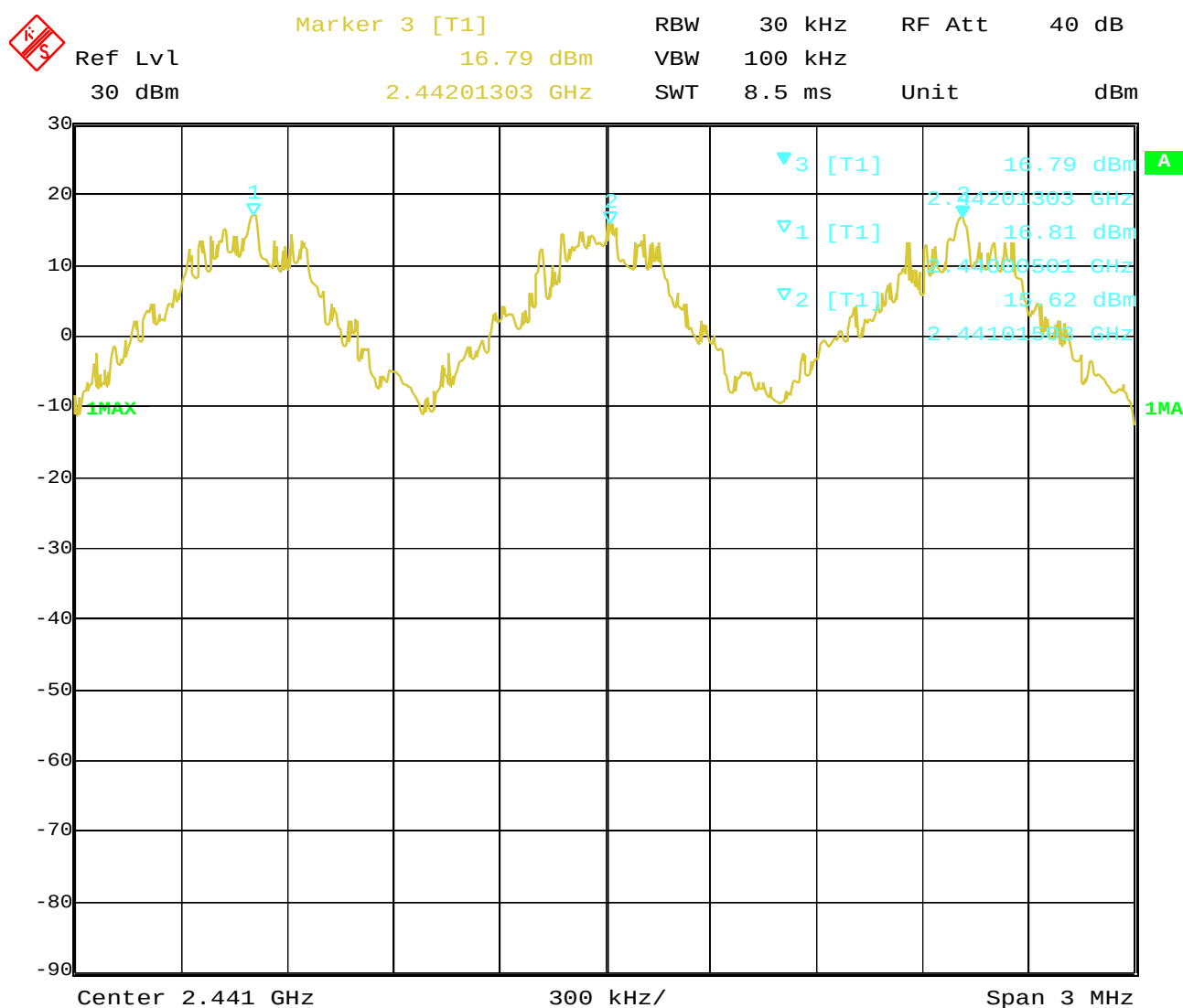
Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

Carrier frequency separation

\$15.247(a)



Date: 24. JAN. 2001 13:32:57

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

Number of hopping channels

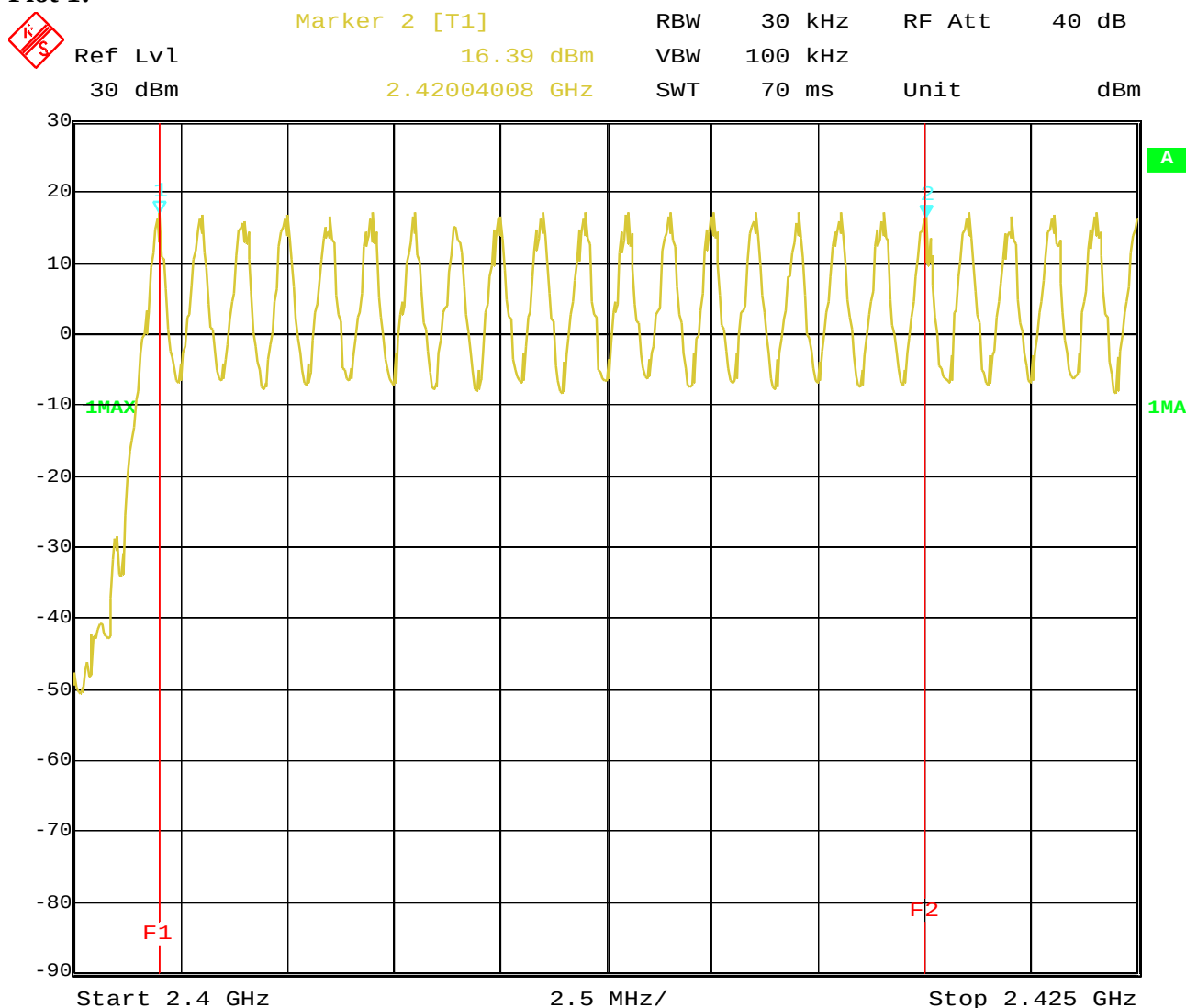
§15.247(a)

The number of hopping channels is 79.

The next 4 plots shows the number.

The right red line corresponds to the left red line from the next plot.

Plot 1:



Date: 24. JAN. 2001 13:40:41

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

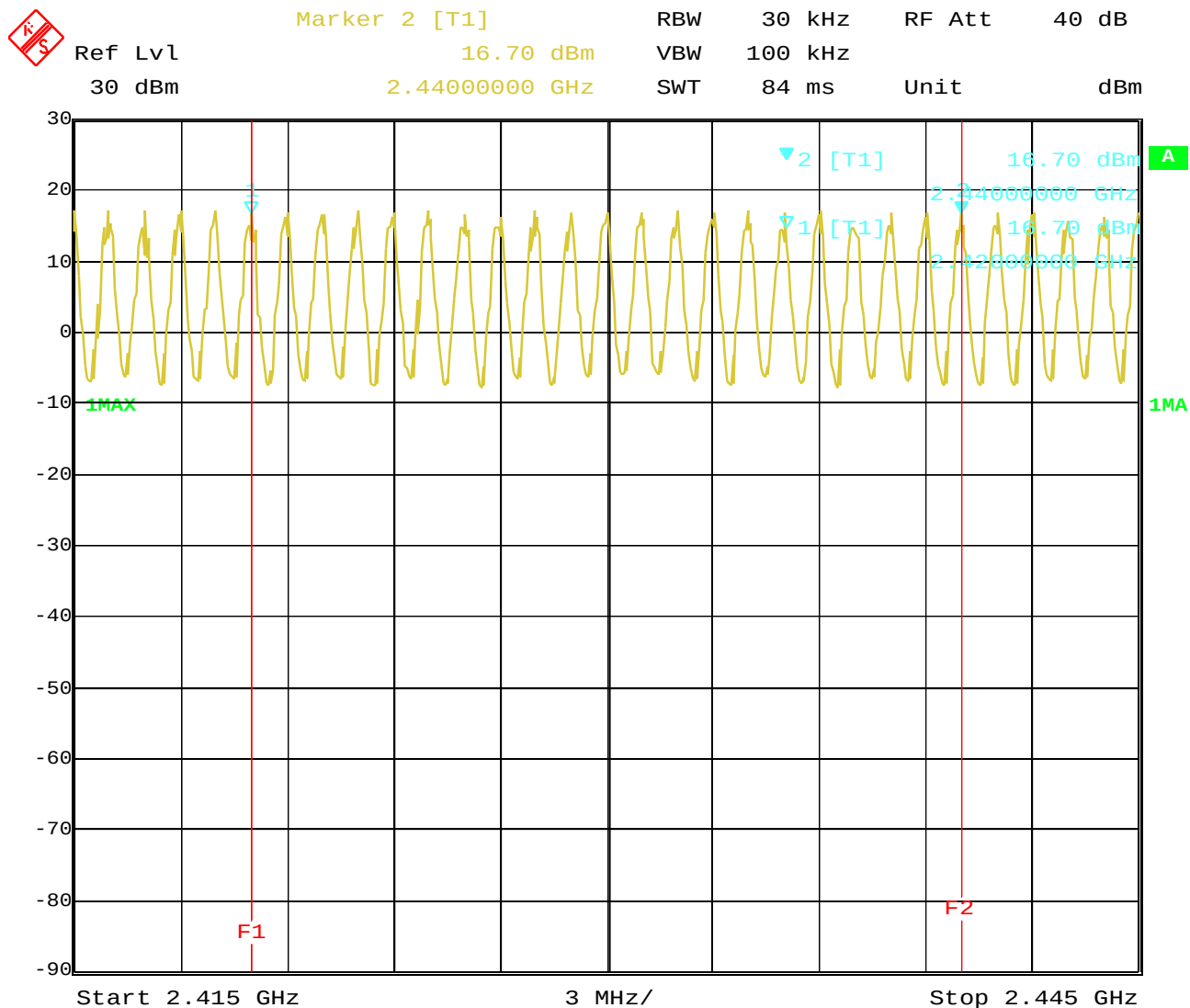
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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

Plot 2:



Date: 24. JAN. 2001 13:52:26

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

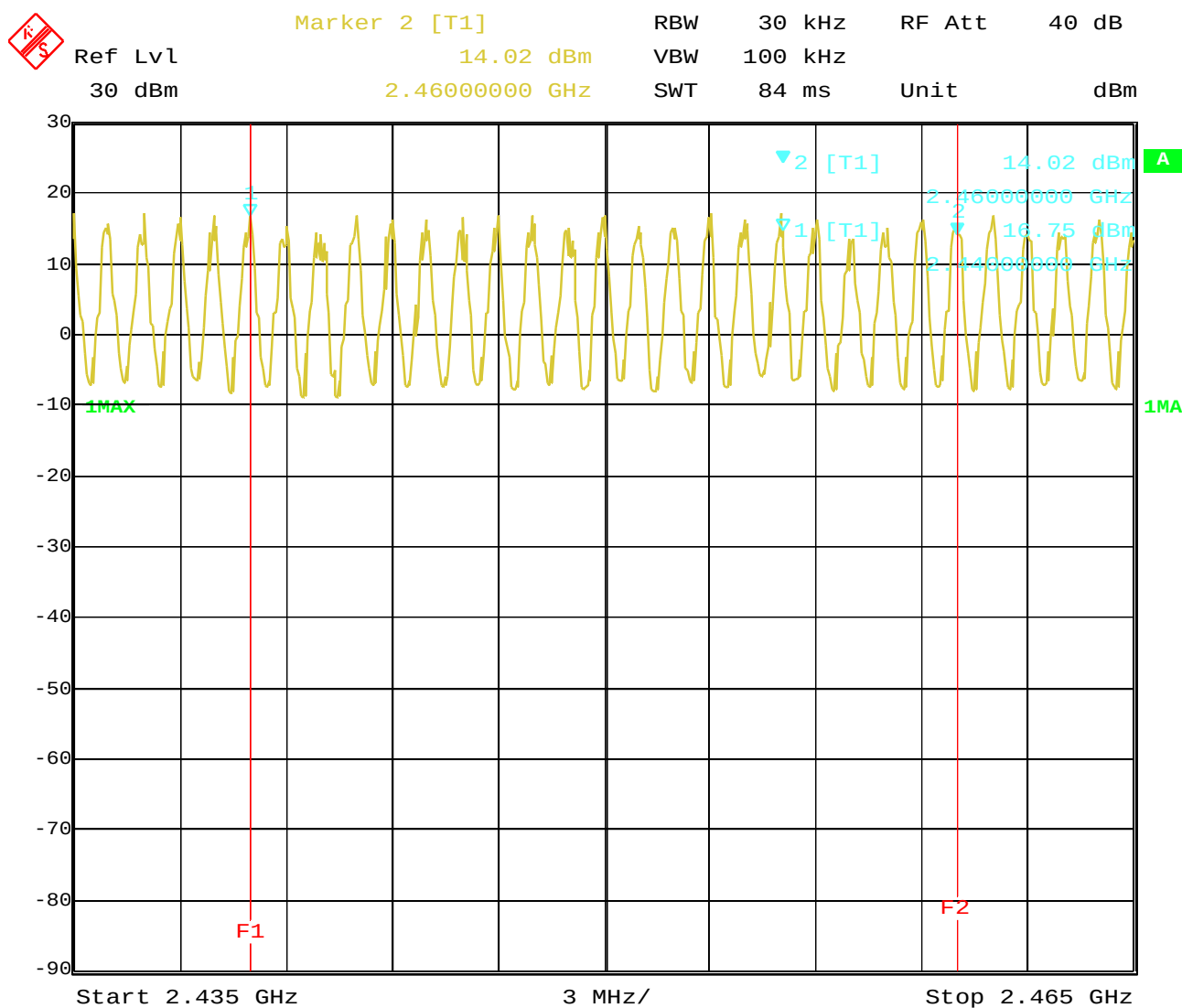
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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

Plot 3:



Date: 24. JAN. 2001 13:47:21

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

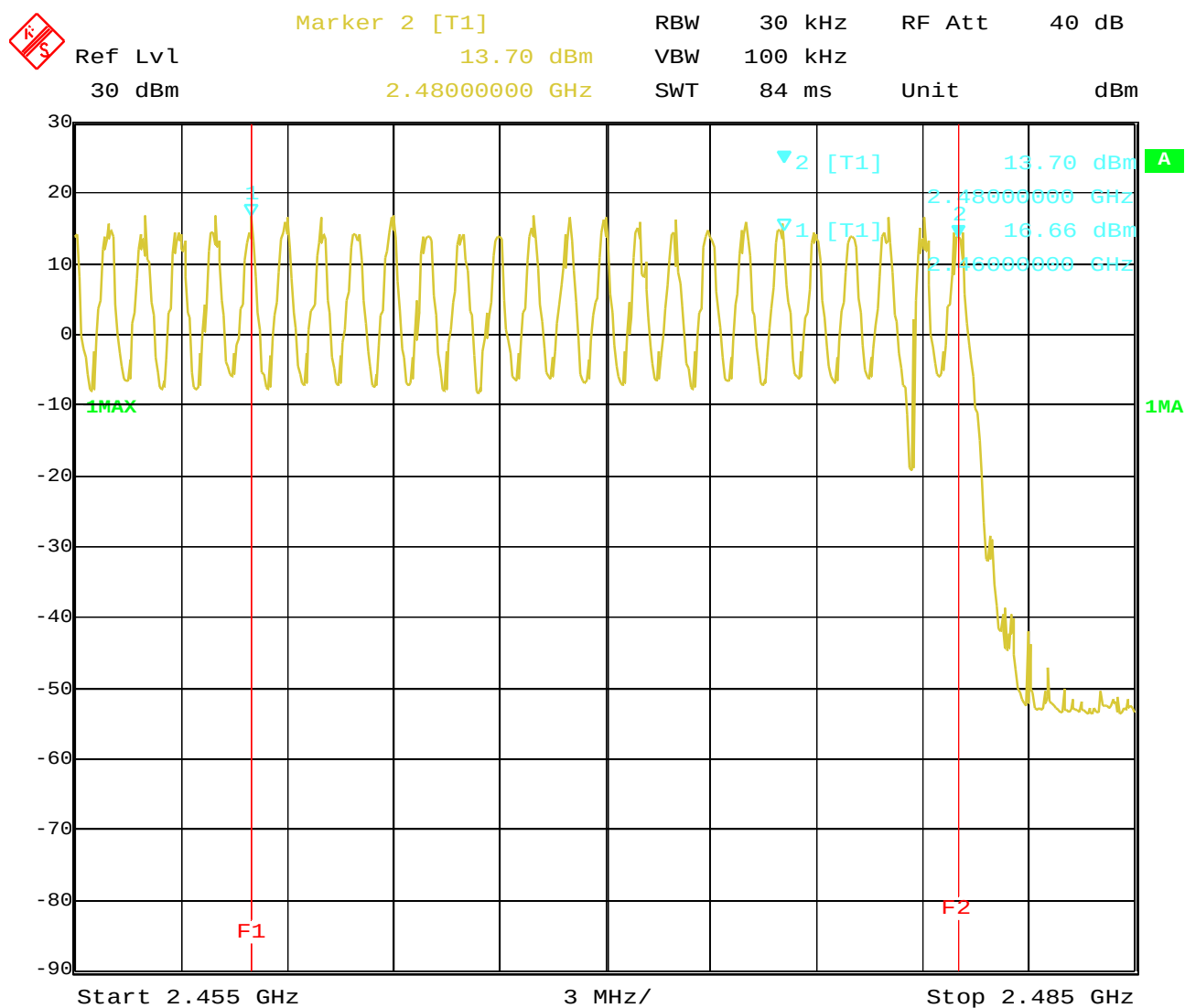
Page 12 (71)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

Plot 4:



Date: 24. JAN. 2001 13:56:01

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

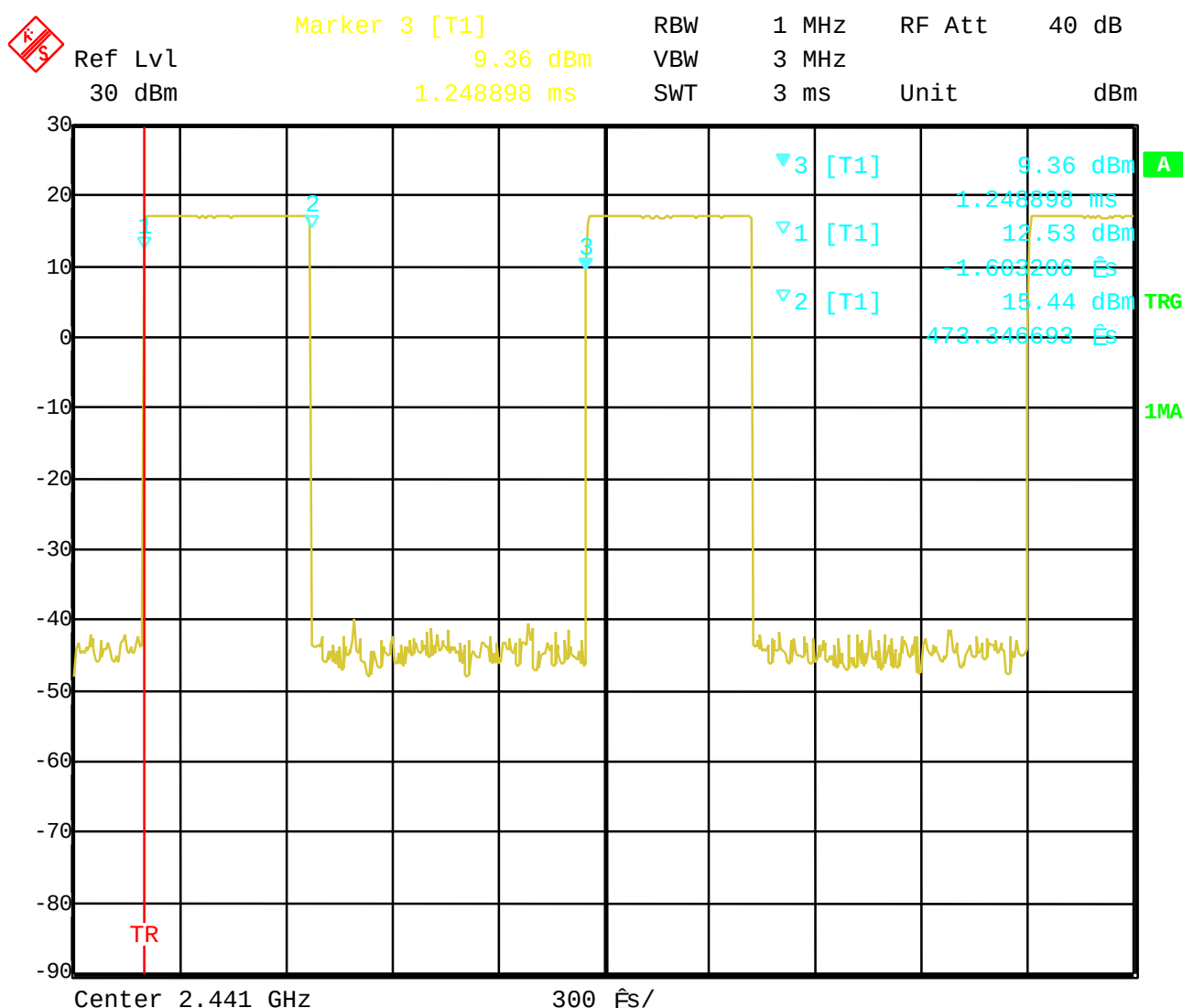
Time of occupancy (dwell time) for DH1

§15.247(a)

The system makes worst case 1600 hops per second or 1 time slot has a length of 625µs with 79 channels. A DH1 Packet need 1 time slot for transmitting and 1 time slot for receiving. Then the system makes worst case 800 hops per second with 79 channels. So you have each channel 10.13 times per second and so for 30 seconds you have 303.9 times of appearance .

Each tx-time per appearance is 470 µs.

So we have $303.9 * 473 \mu s = 143.7 \text{ ms}$ per 30 seconds.



Date: 24. JAN. 2001 14:00:05

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

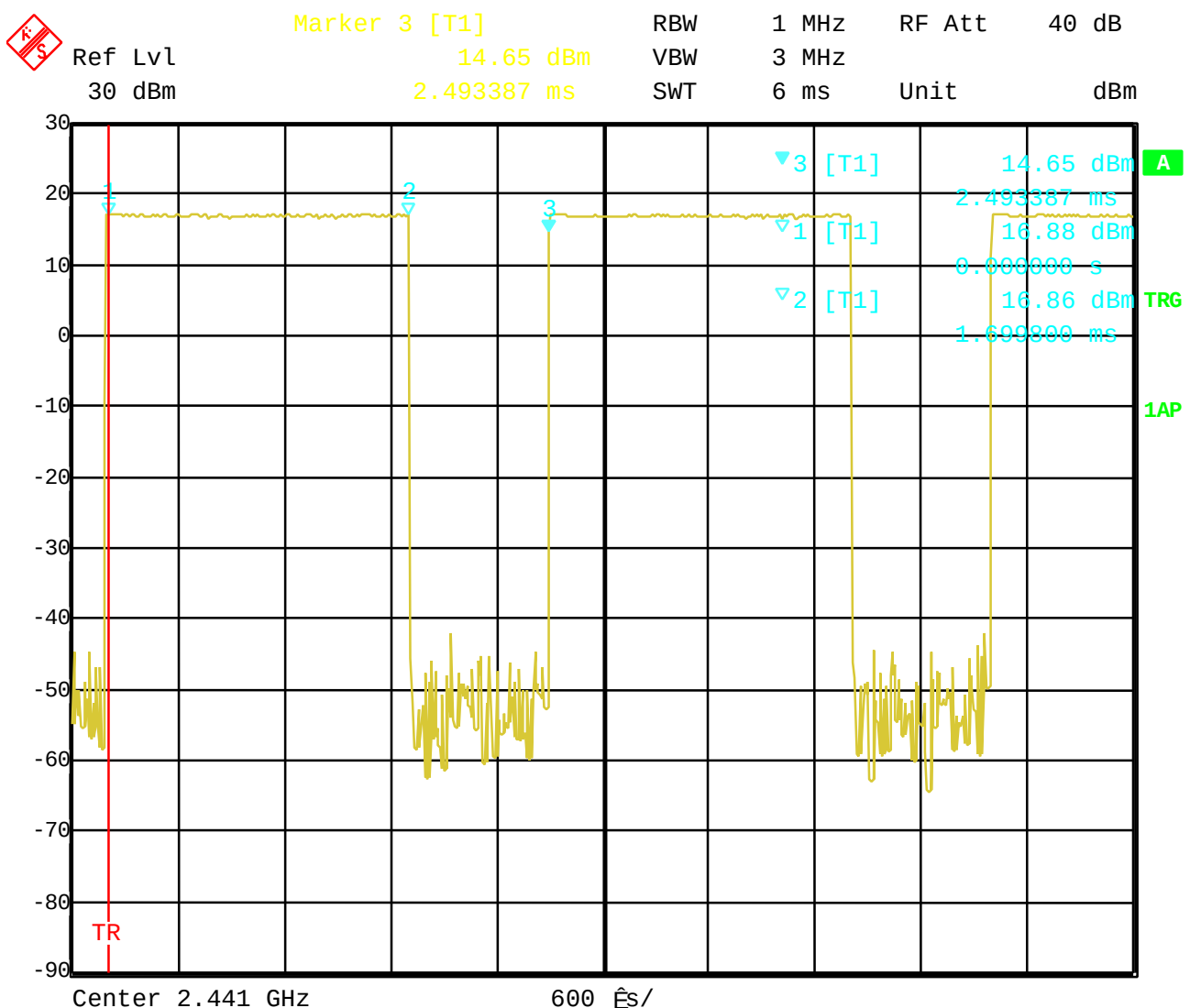
Time of occupancy (dwell time) for DH3

\$15.247(a)

A DH3 Packets need 3 time slots for transmit and 1 for receicing, then the system makes worst case 400 hops per second with 79 channels. So you have each channel 5.1 times per second and so for 30 seconds you have 153 times of appearance .

Each tx-time per appearance is 1.70 ms.

So we have $153 * 1.70 \text{ ms} = 260.1 \text{ ms}$ per 30 seconds.



Date: 24. JAN. 2001 14:12:06

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

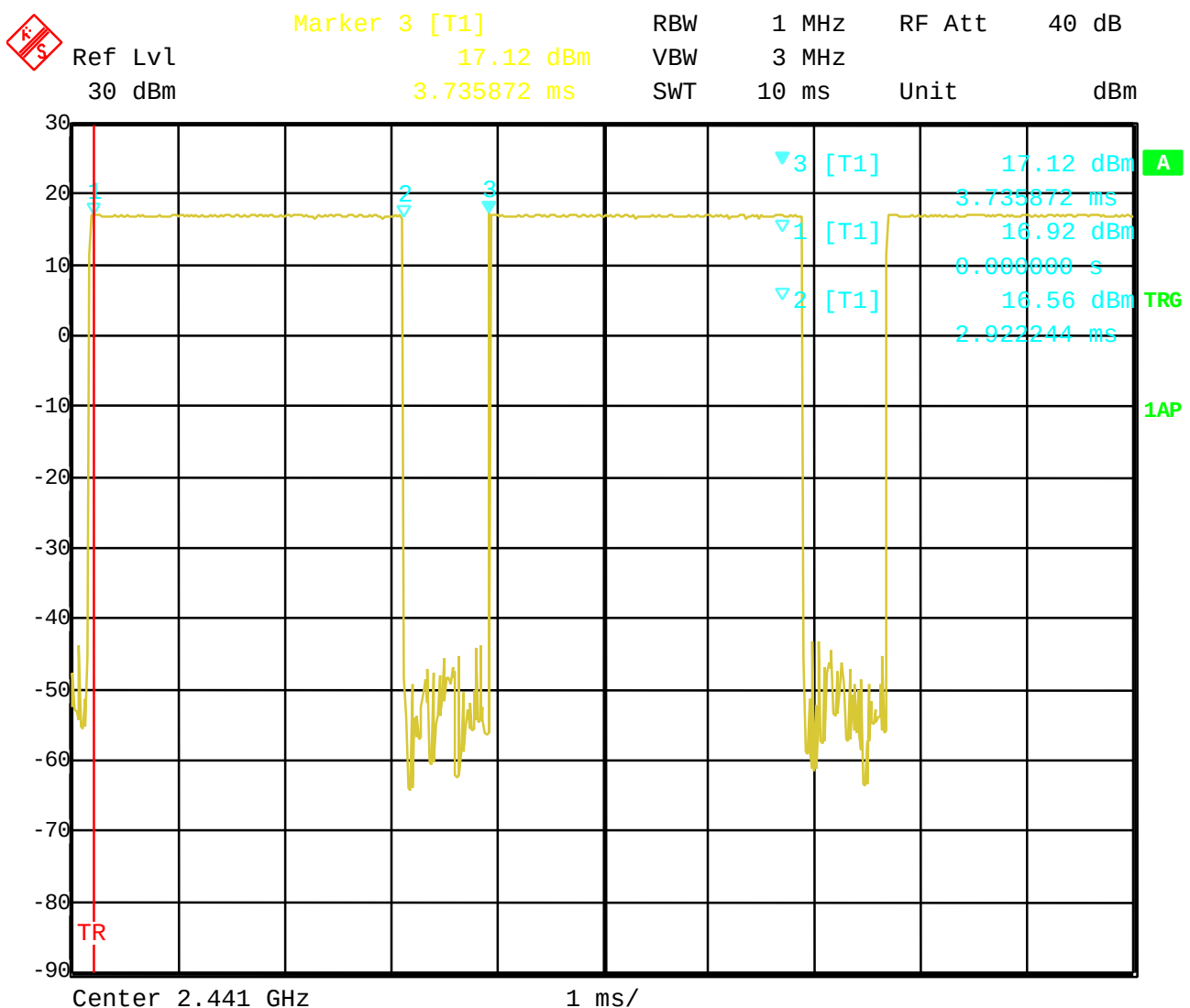
Time of occupancy (dwell time) for DH5

\$15.247(a)

At DH5 Packets you need 5 time slots for transmit and 1 for receicing, then the system makes worst case 266,7 hops per second with 79 channels. So you have each channel 3.36 times per second and so for 30 seconds you have 100,8 times of appearance .

Each tx-time per appearance is 3.7 ms.

So we have $100,8 * 3.7 \text{ ms} = 372.96 \text{ ms}$ per 30 seconds.



Date: 24. JAN. 2001 14:14:12

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

Spectrum Bandwidth of a FHSS System
20 dB bandwidth

§15.247(a)

TEST CONDITIONS		20 dB BANDWIDTH (kHz)		
Frequency (MHz)		2402	2442	2481
T _{nom} (23) °C	V _{nom} (3.6)V	691.383	697.395	679.359
Measurement uncertainty		±3dB		

RBW / VBW as provided in the „Measurement Guidelines“ (DA 00-705, March 30, 2000)

LIMIT

SUBCLAUSE §15.247(a) (1)

The maximum 20dB bandwidth shall be at maximum 1000 KHz

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

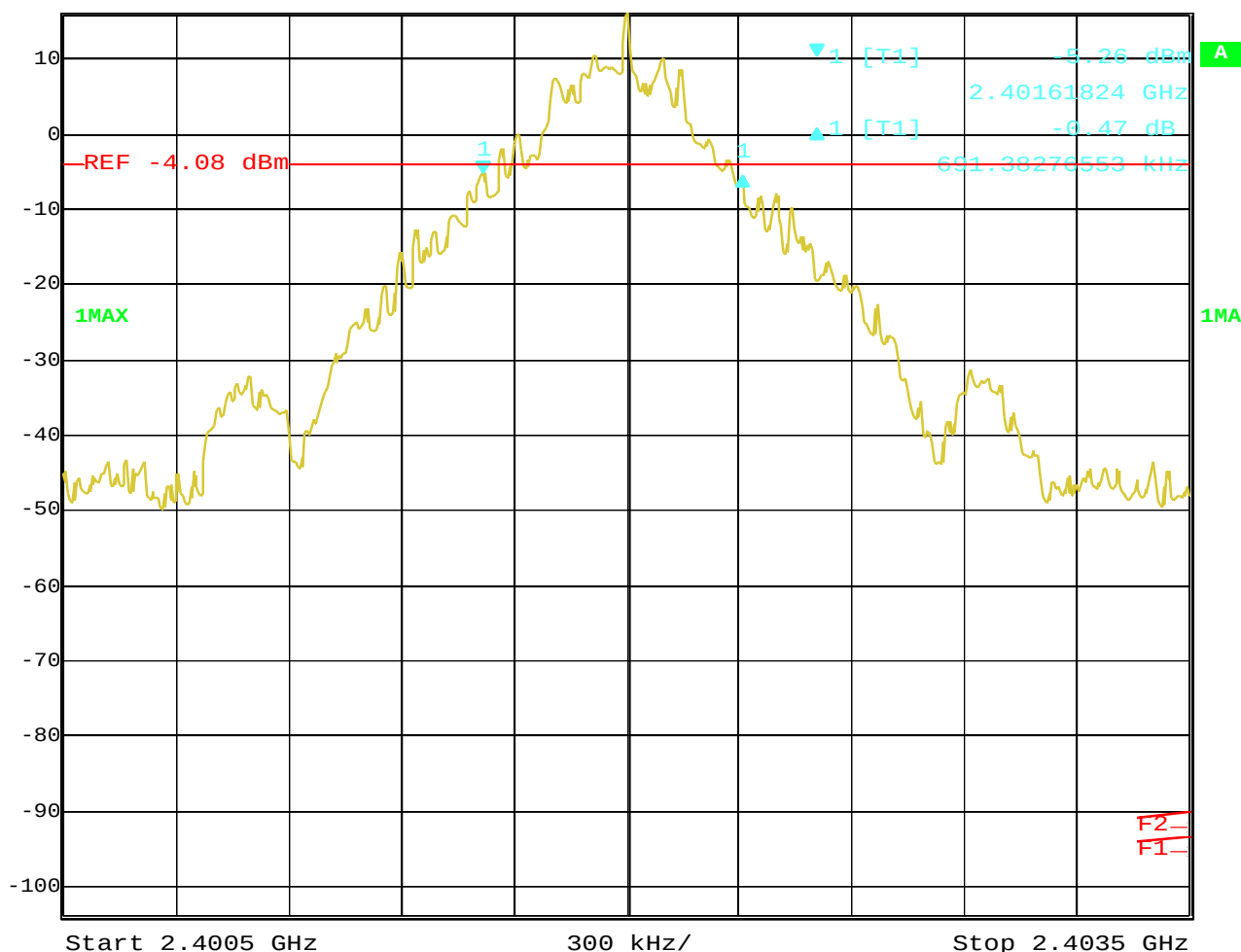
Relative humidity : 31%

Spectrum Bandwidth of a FHSS System
20 dB bandwidth

§15.247(a)

Channel 1

	Delta 1 [T1]	RBW	10 kHz	RF Att	40 dB
	Ref Lvl	-0.47 dB	VBW	30 kHz	
	16.1 dBm	691.38276553 kHz	SWT	76 ms	Unit
					dBm



Date: 24. JAN. 2001 14:20:22

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

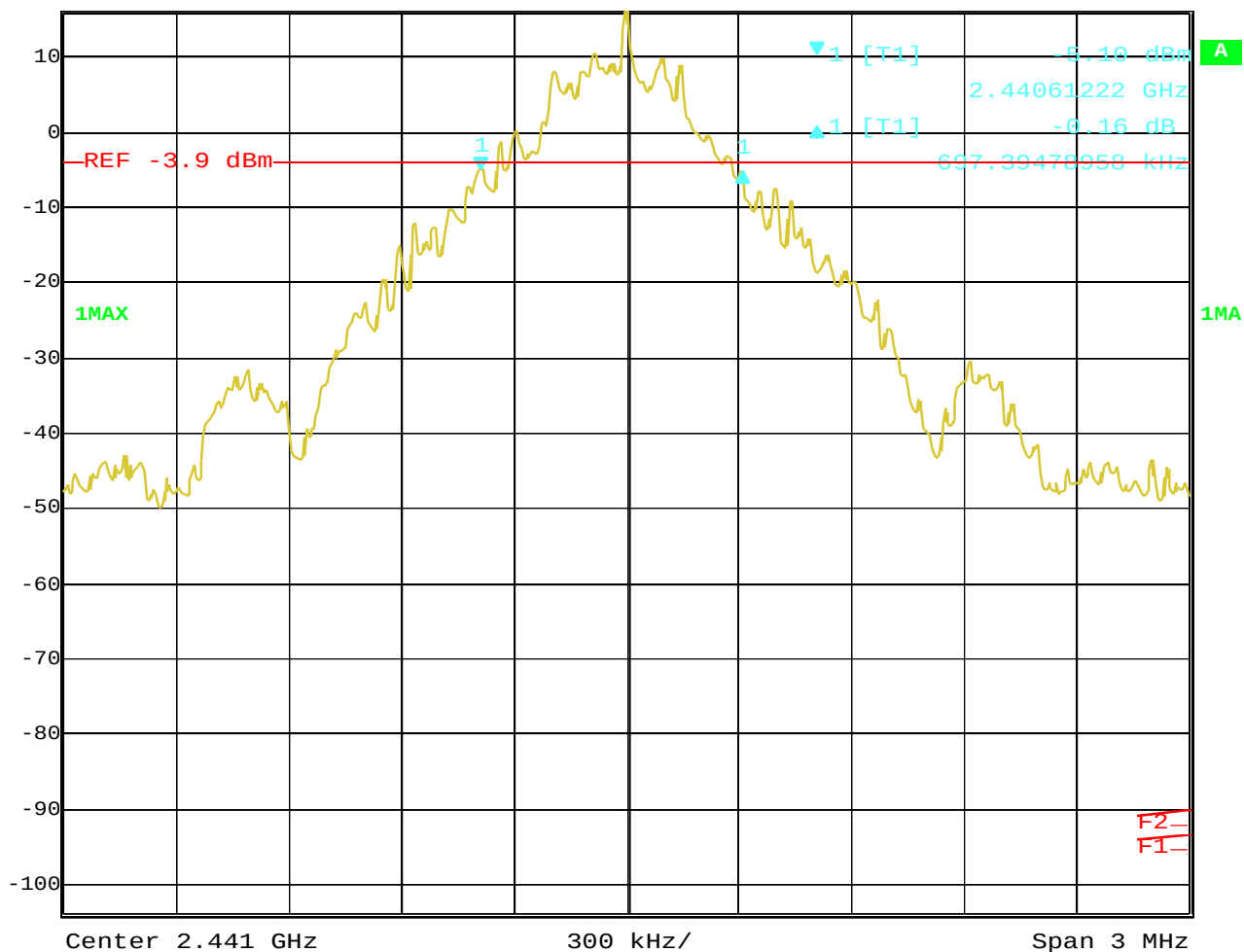
Relative humidity : 31%

Spectrum Bandwidth of a FHSS System
20 dB bandwidth

§15.247(a)

Channel 2

	Delta 1 [T1]	RBW	10 kHz	RF Att	40 dB
	Ref Lvl	-0.16 dB	VBW	30 kHz	
	16.1 dBm	697.39478958 kHz	SWT	76 ms	Unit
					dBm



Date: 24. JAN. 2001 14:27:21

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

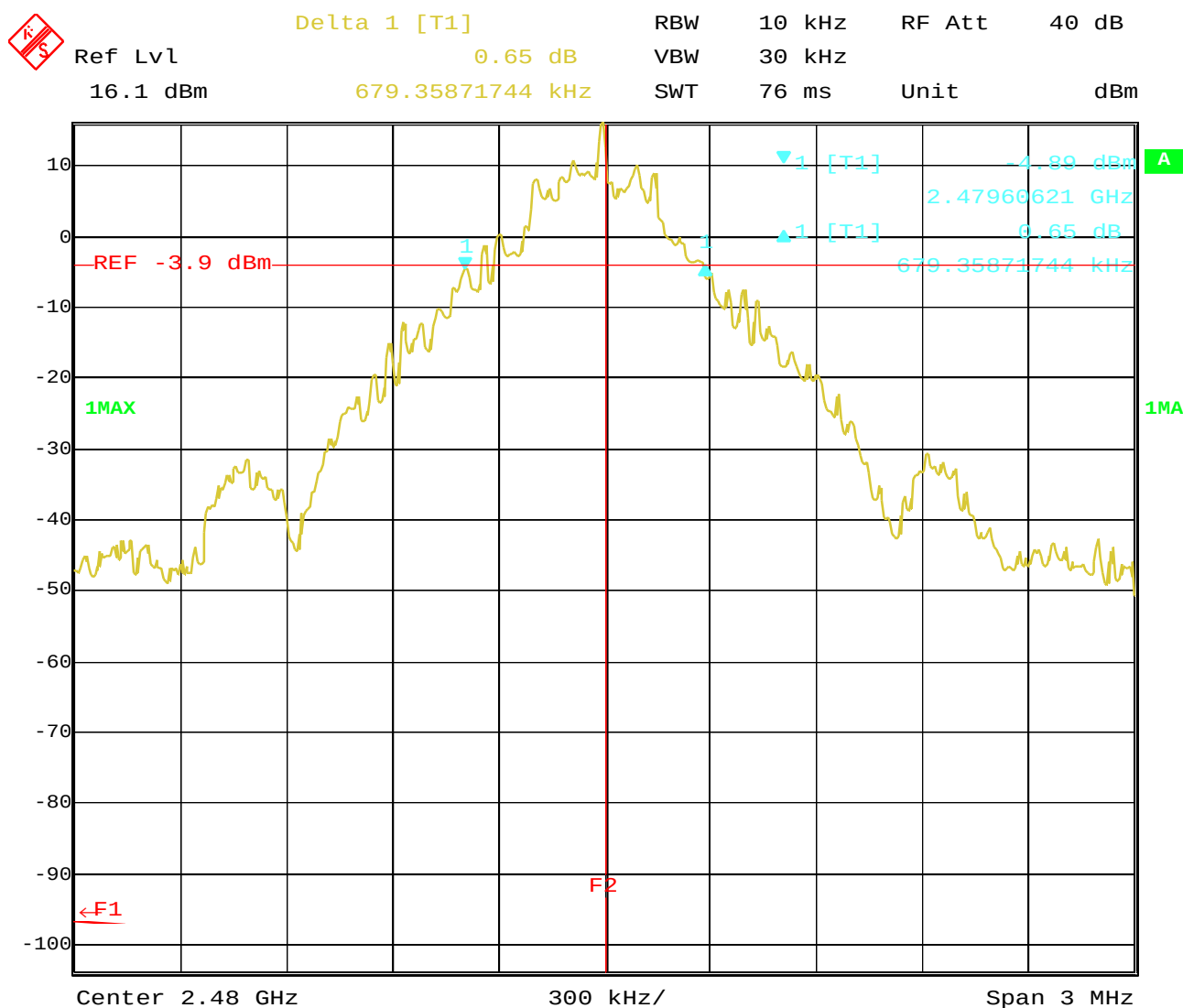
Ambient temperature : 20 °C

Relative humidity : 31 %

Spectrum Bandwidth of a FHSS System
20 dB bandwidth

§15.247(a)

Channel 3:



Date: 24. JAN. 2001 14:26:18

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

MAXIMUM PEAK OUTPUT POWER (conducted)

SUBCLAUSE § 15.247 (b) (1)

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (mW)				
Frequency (MHz)		2402		2442	2481	
T _{nom} (20) °C	V _{nom} (5.0)V	PK	48.86	48.86	50.0	
		AV	19.7	20.14	20.23	
Maximum deviation from output power under extreme test conditions (dBc)		+0.21 / -0.58		+0.29 / -0.59	+0.22 / -0.61	
Measurement uncertainty		±3dB				

RBW / VBW : 3 MHz

LIMIT

SUBCLAUSE § 15.247 (b) (1)

Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt

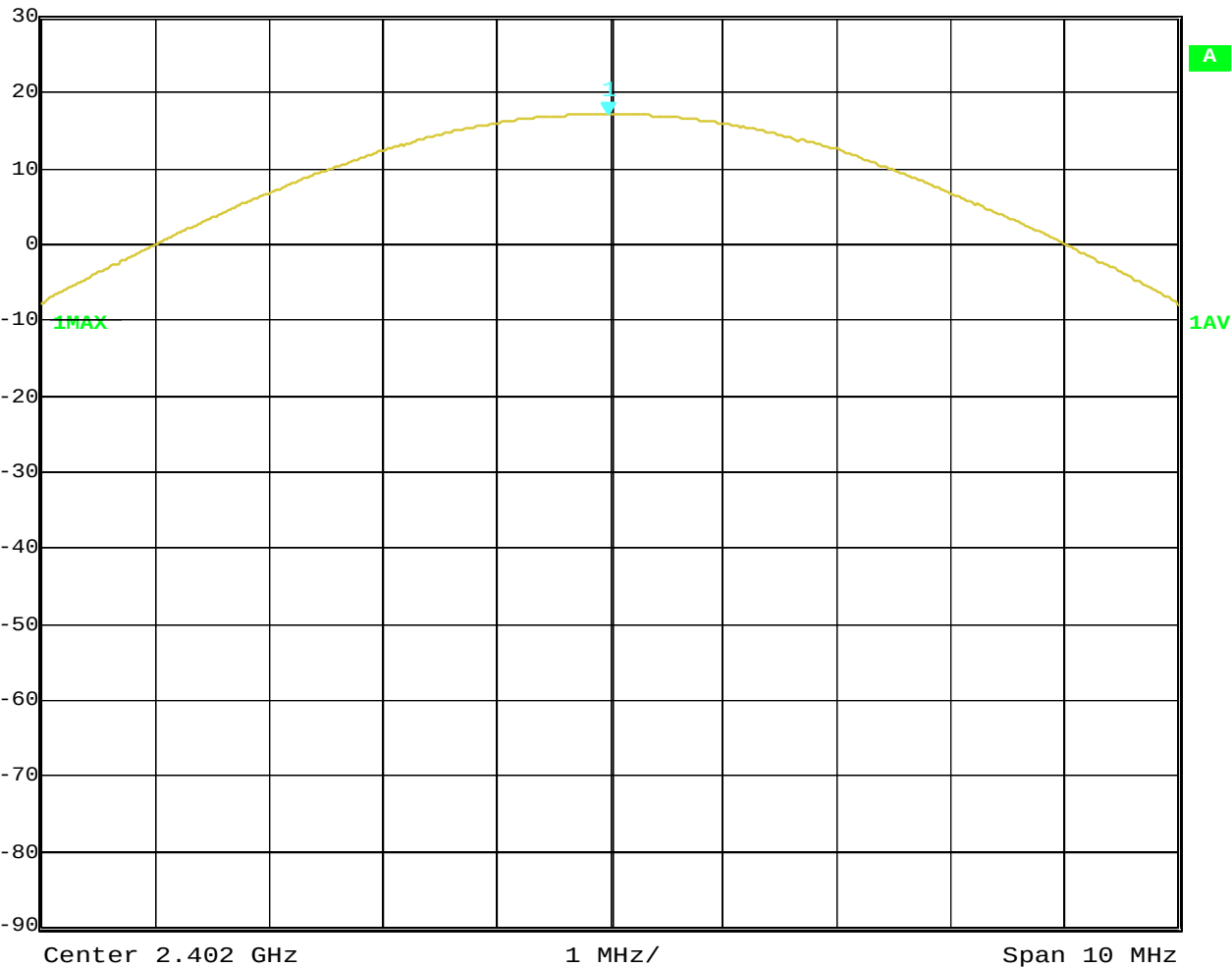
REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data
Ambient temperature : 20 °C
Relative humidity : 31 %

Peak output power (conducted) §15.247 (b)

Channel 1: +16.89 dBm at 2402 MHz
De facto EIRP with +3.0 dbI max. antenna gain is +19.89 dBm

 Marker 1 [T1] RBW 3 MHz RF Att 40 dB
Ref Lvl 16.89 dBm VBW 3 MHz
30 dBm 2.40198998 GHz SWT 5 ms Unit dBm



Date: 24. JAN. 2001 14:42:59

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

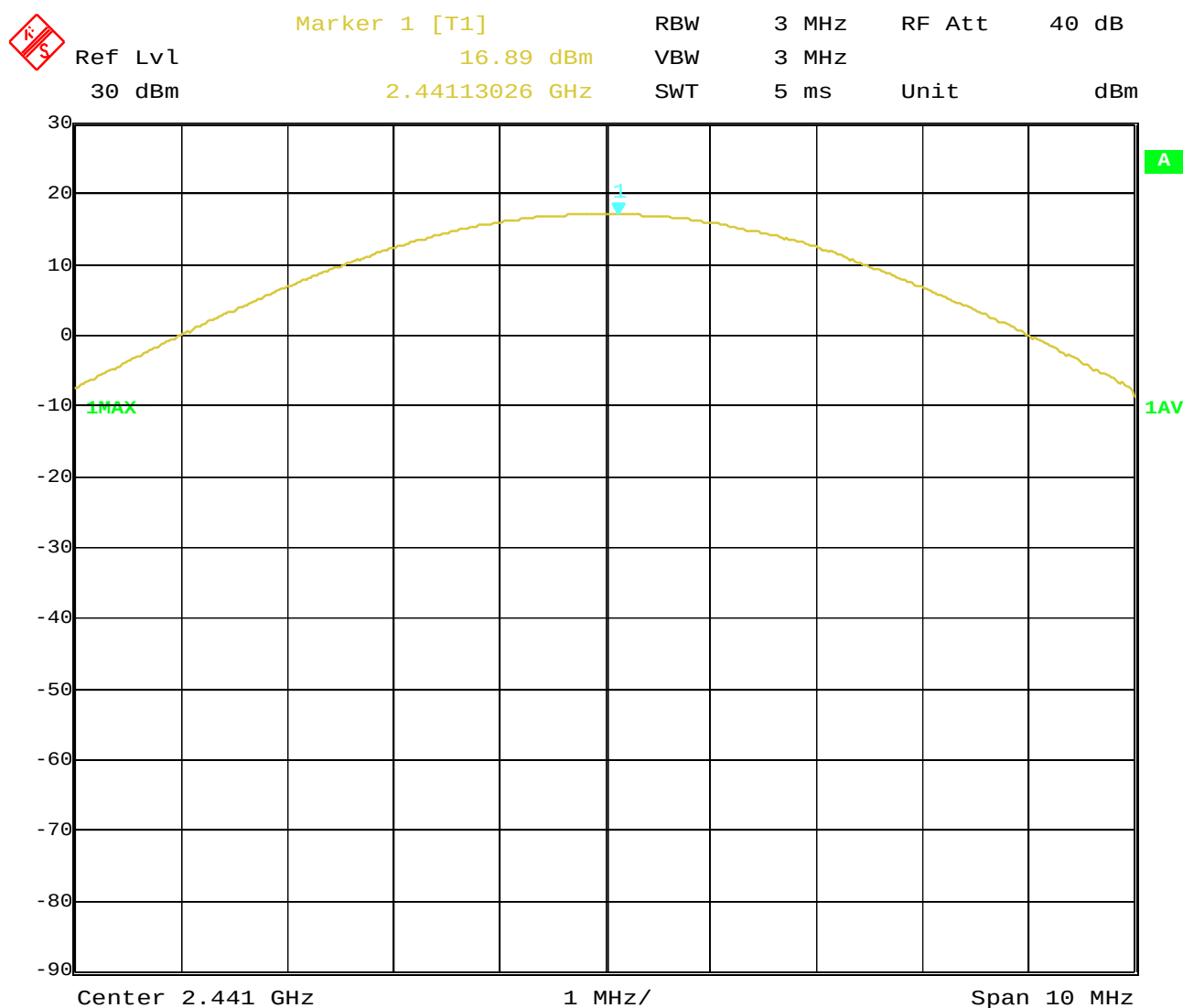
Relative humidity : 31%

Peak output power (conducted)

§15.247 (b)

Channel 2: +16.89 dBm at 2441 MHz

De facto EIRP with +3.0 dbI max. antenna gain is +19.89 dBm



Date: 24. JAN. 2001 14:42:14

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

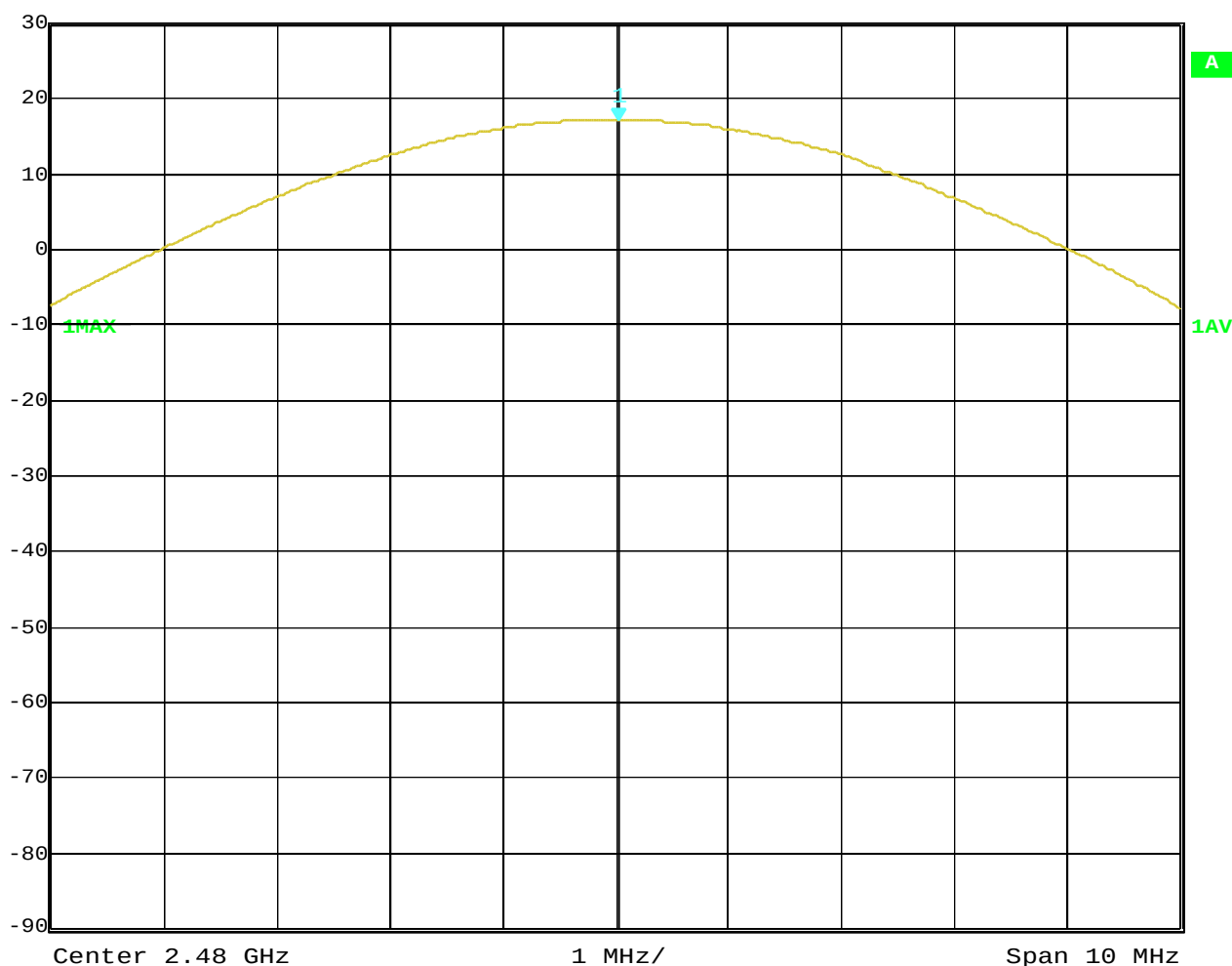
Peak output power (conducted)

§15.247 (b)

Channel 3: +16.96 dBm at 2481 MHz

De facto EIRP with +3.0 dbI max. antenna gain is +19.96 dBm

	Marker 1 [T1]	RBW	3 MHz	RF Att	40 dB
	Ref Lvl	16.96 dBm	VBW	3 MHz	
	30 dBm	2.48003908 GHz	SWT	5 ms	Unit dBm



Date: 24. JAN. 2001 14:39:46

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

MAXIMUM PEAK OUTPUT POWER (RADIATED)

SUBCLAUSE § 15.247 (b) (1)

TEST CONDITIONS		MAXIMUM PEAK OUTPUT POWER (mW)		
Frequency (MHz)		2402	2441	2481
T _{nom} (20) °C	V _{nom} (5.0)V	100.0	70.8	52.5
Maximum deviation from output power under extreme test conditions (dBc)		+0.21 / -0.58	+0.29 / -0.59	+0.22 / -0.61
Measurement uncertainty		±3dB		

RBW/VBW : 3 MHz

Measured at a distance of 3m

LIMIT

SUBCLAUSE § 15.247 (b) (1)

Frequency range	RF power output
2400-2483.5 MHz	1.0 Watt

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

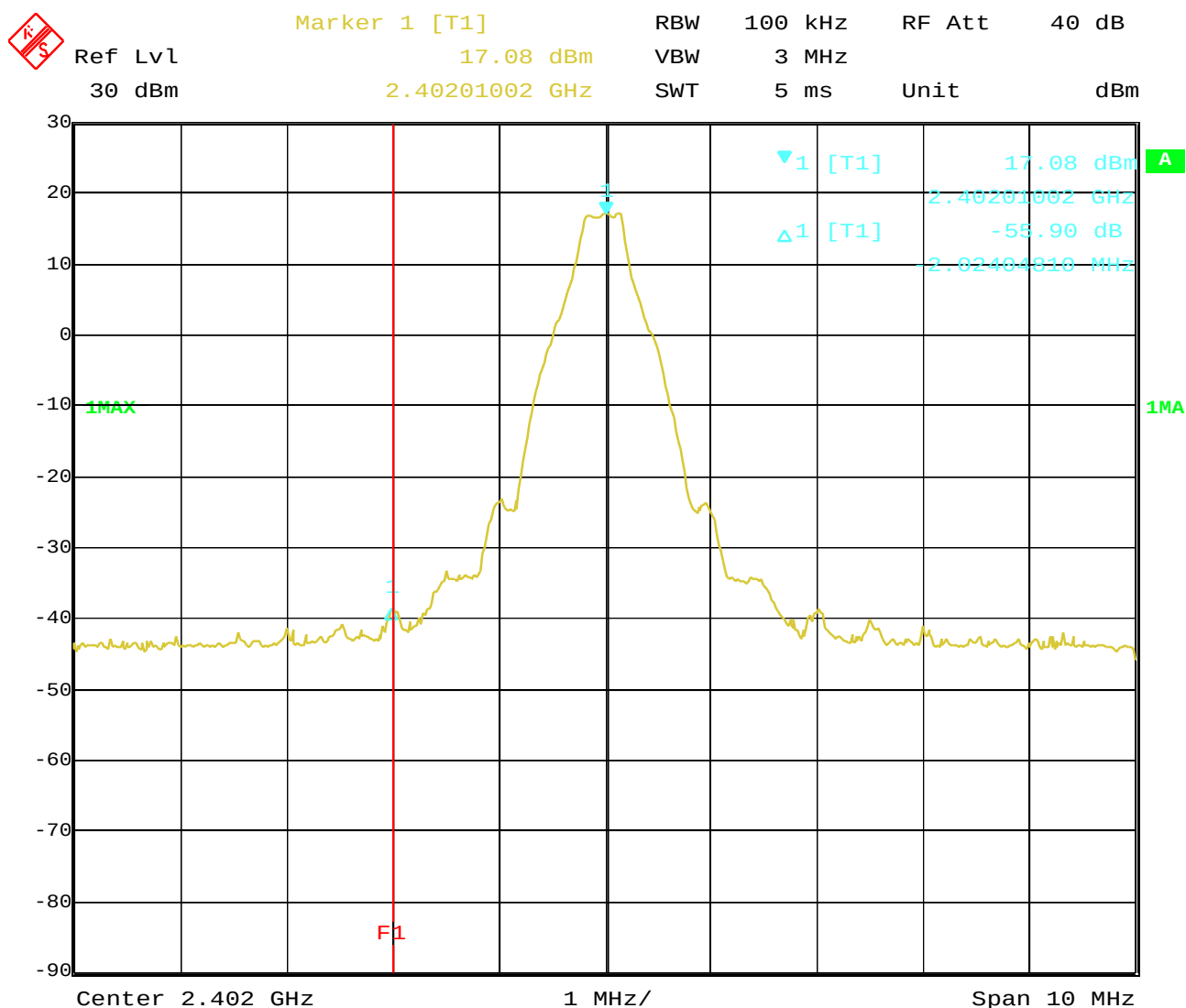
Ambient temperature : 20 °C

Relative humidity : 31%

Band-edge compliance of conducted emissions

§15.247 (c)

Low frequency section (hopping off)



Date: 24.JAN.2001 14:53:19

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

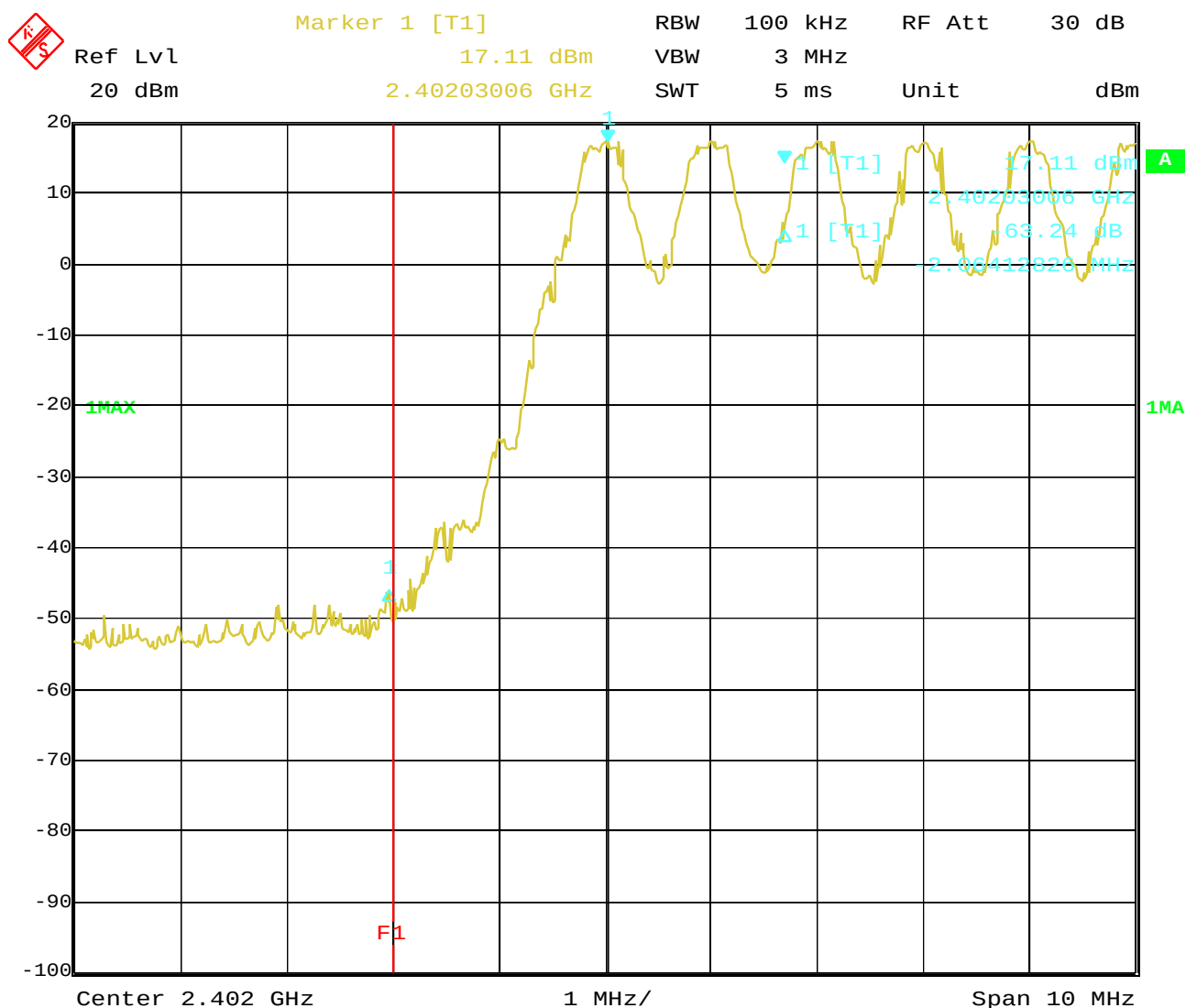
Ambient temperature : 20 °C

Relative humidity : 31%

Band-edge compliance of conducted emissions

§15.247 (c)

Low frequency section (hopping on)



Date: 24.JAN.2001 14:55:39

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

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Equipment under test : Gigaset B427data

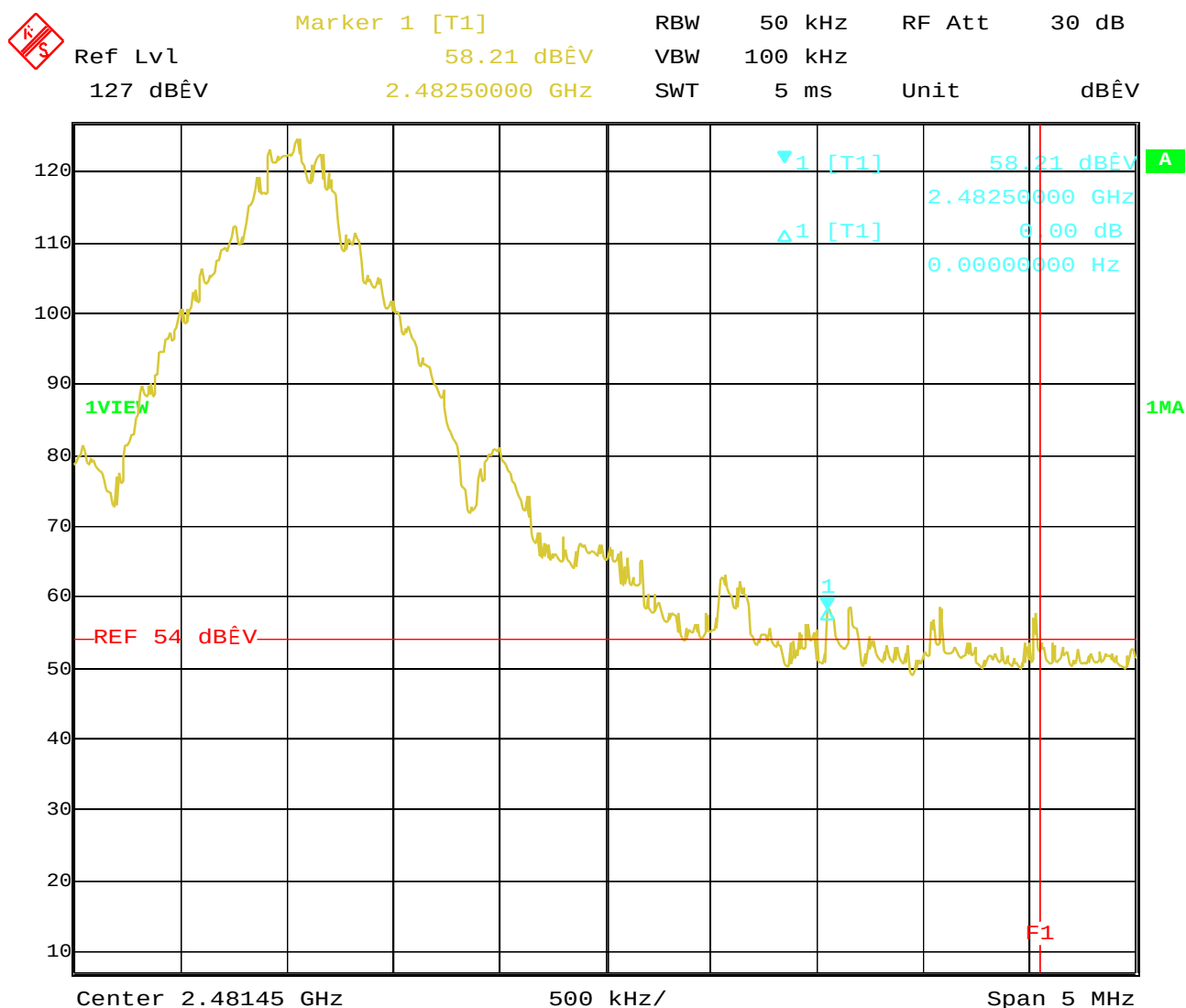
Ambient temperature : 20 °C

Relative humidity : 31%

Band-edge compliance of conducted emissions

§15.247 (c)

high frequency section (hopping off)

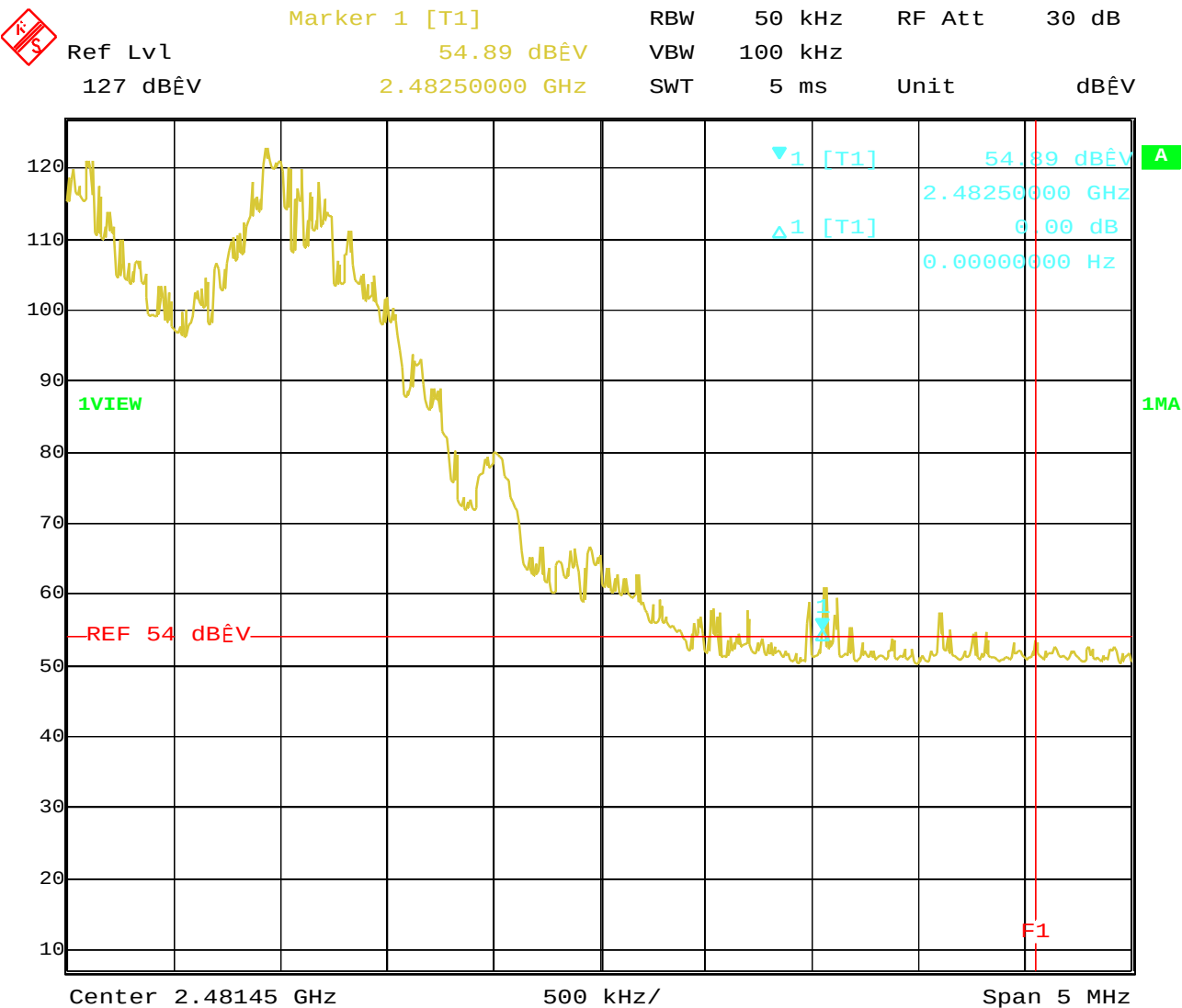


Date: 24.JAN.2001 15:03:03

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data
Ambient temperature : 20 °C
Relative humidity : 31%

Band-edge compliance of conducted emissions §15.247 (c)
high frequency section (hopping on)



Date: 24. JAN. 2001 15:02:17

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

EMISSION LIMITATIONS					
f (MHz)		amplitude of emission (dBm)	limit max. allowed emmission power	actual attenuation below frequency of operation (dB)	results
2402		+16.89	30 dBm	-	Operating frequency
all peaks <<limit			-20 dBc	see plot	complies
2441		+16.89	30 dBm	-	Operating frequency
all peaks <<limit			-20 dBc	see plot	complies
2480		+16.96	30 dBm		Operating frequency
all peaks <<limit			-20 dBc	see plot	complies
Measurement uncertainty		± 3dB			

RBW : 100 kHz VBW: 1 MHz

For emissions that fall into restricted bands you find the radiated emissions later in the report.

LIMITS

SUBCLAUSE § 15.247 (c)

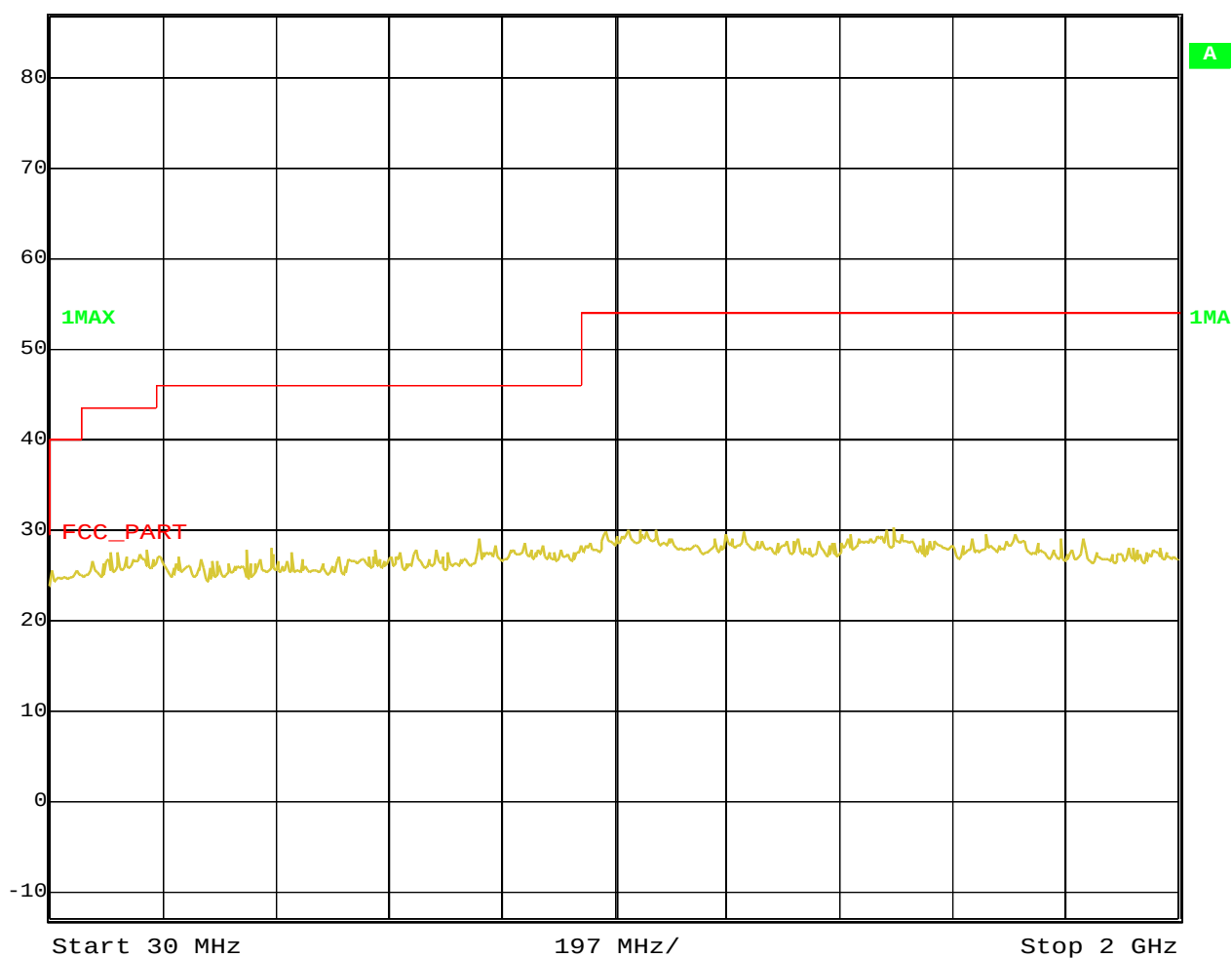
In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

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Relative humidity : 31%

§ 15.247 (c) (1)

 Ref Lvl 87 dBμV	RBW	100 kHz	RF Att	10 dB
	VBW	1 MHz		
	SWT	500 ms	Unit	dBμV



Date: 25.JAN.2001 08:48:57

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Equipment under test : Gigaset B427data

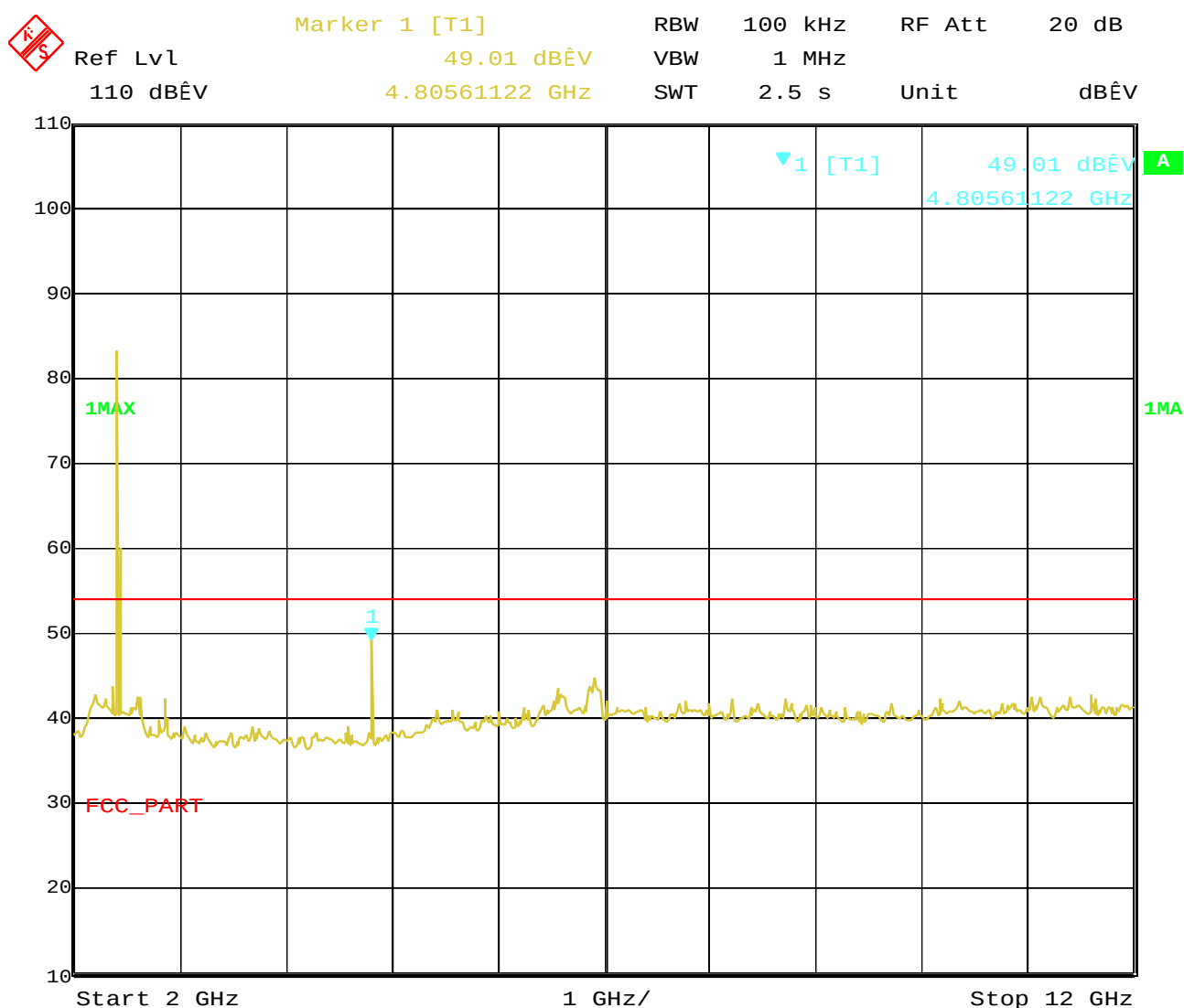
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 1: 2 – 12 GHz peak



Date: 25. JAN. 2001 09:05:26

Carrier at 2402 MHz was suppressed by a stubbtuner to increase the dynamic of the analyzer.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

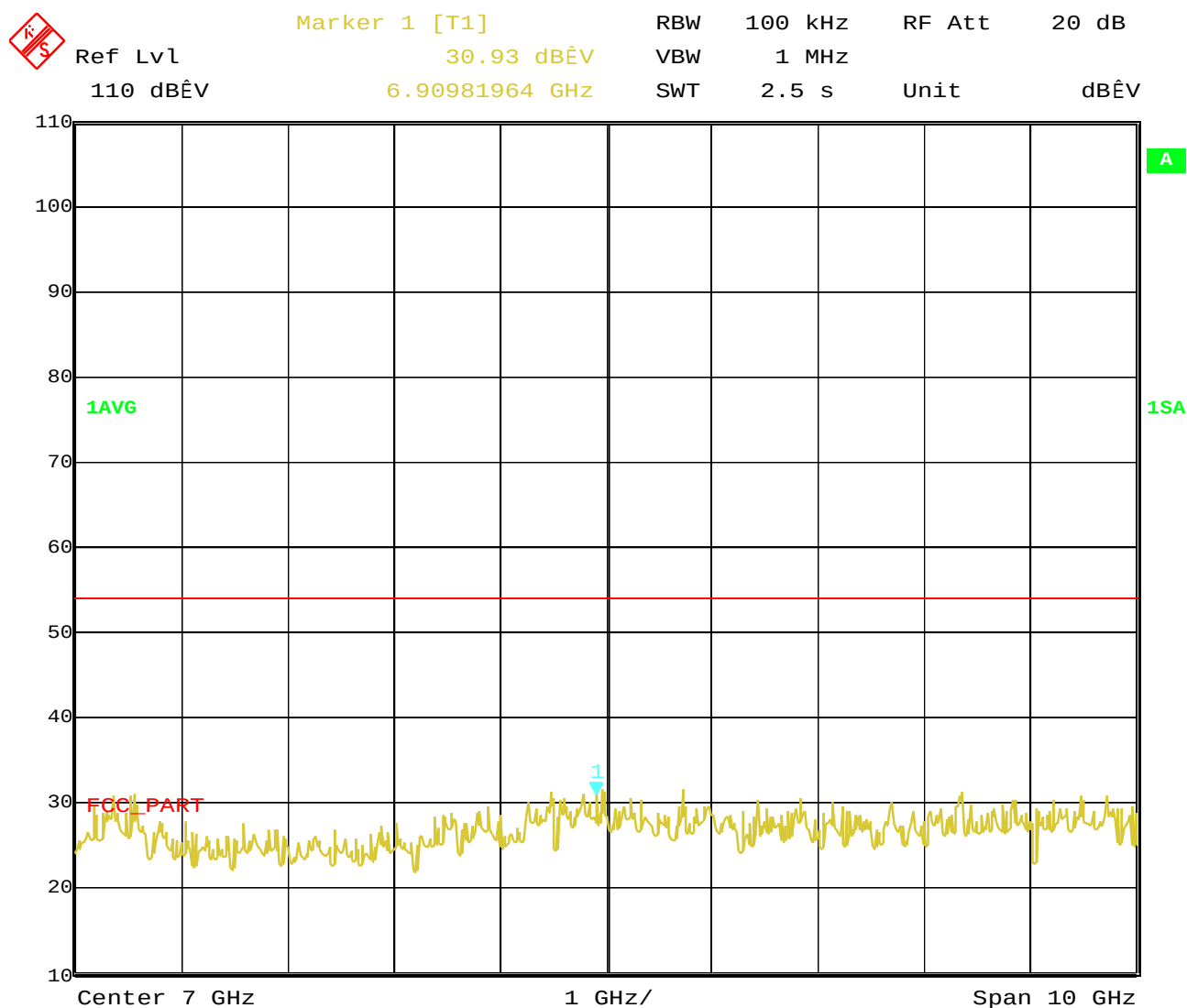
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 1: 2 – 12 GHz average



Date: 25. JAN. 2001 09:28:49

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
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Equipment under test : Gigaset B427data

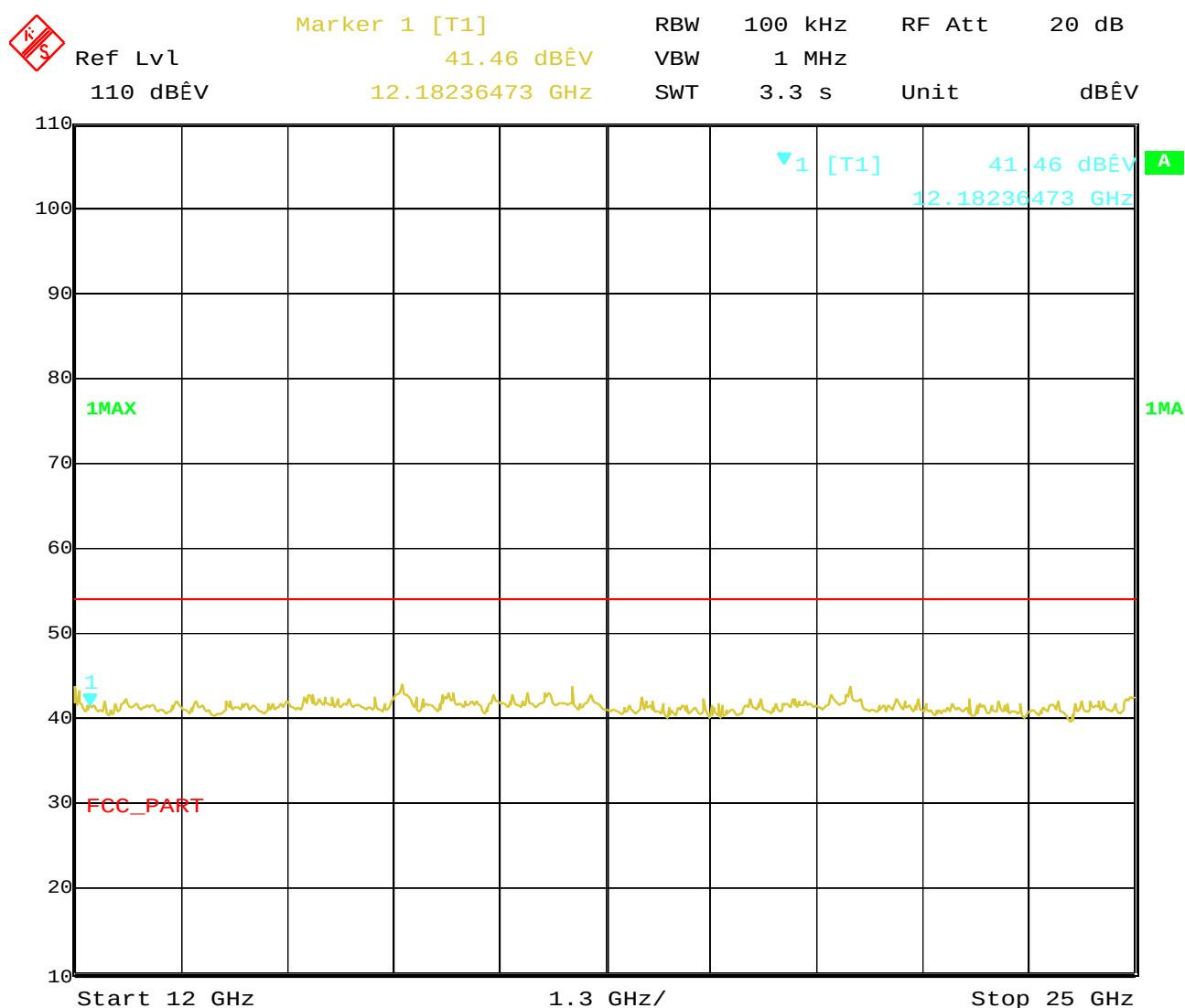
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 1: 12 - 25 GHz peak



Date: 25.JAN.2001 09:15:30

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

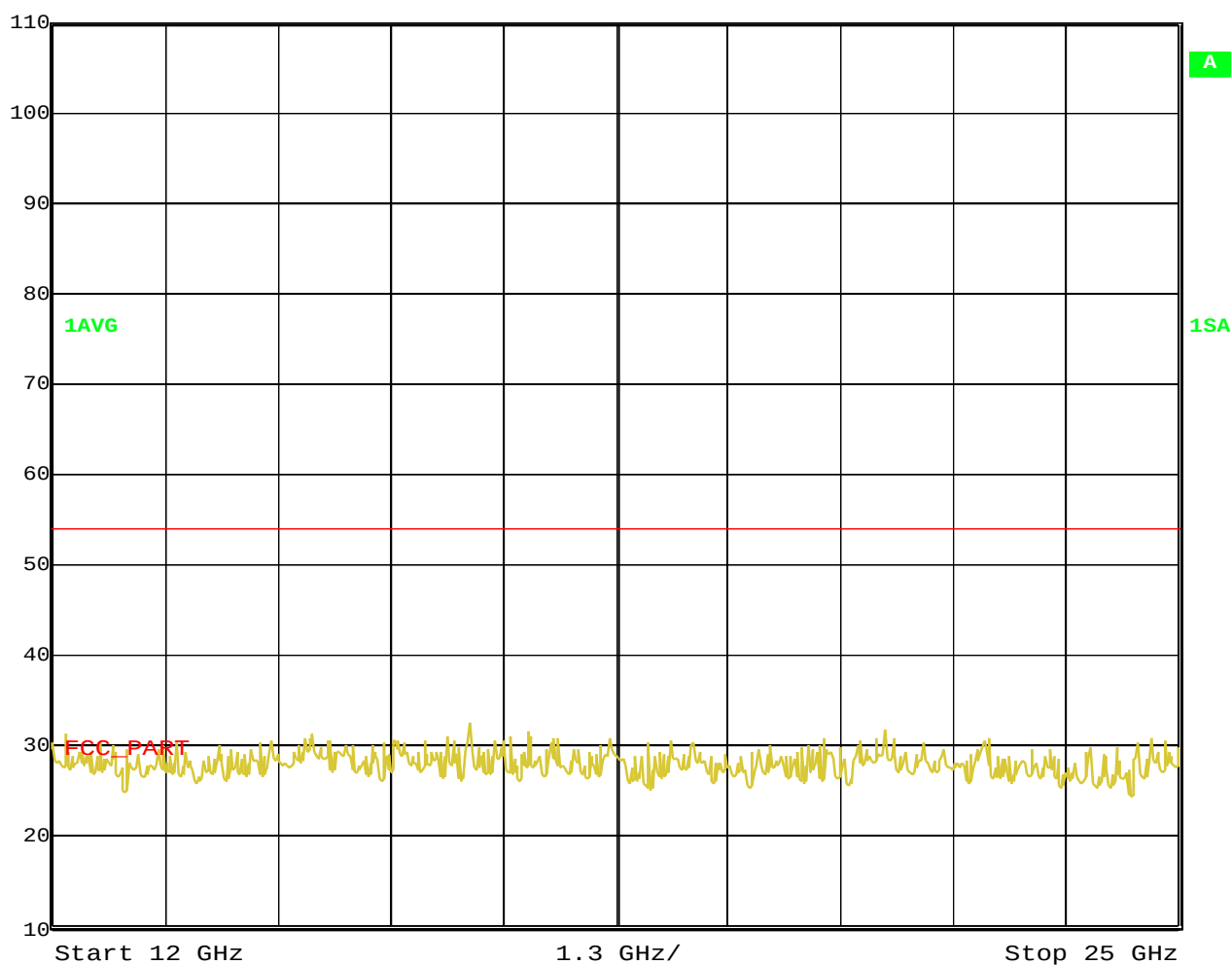
§ 15.247 (c) (1)

Channel 1: 12 - 25 GHz average



Ref Lvl
110 dB μ V

RBW	100 kHz	RF Att	20 dB
VBW	1 MHz		
SWT	3.3 s	Unit	dB μ V



Date: 25. JAN. 2001 09:17:50

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

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Relative humidity : 31%

Channel 2: 30 MHz - 2 GHz



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Equipment under test : Gigaset B427data

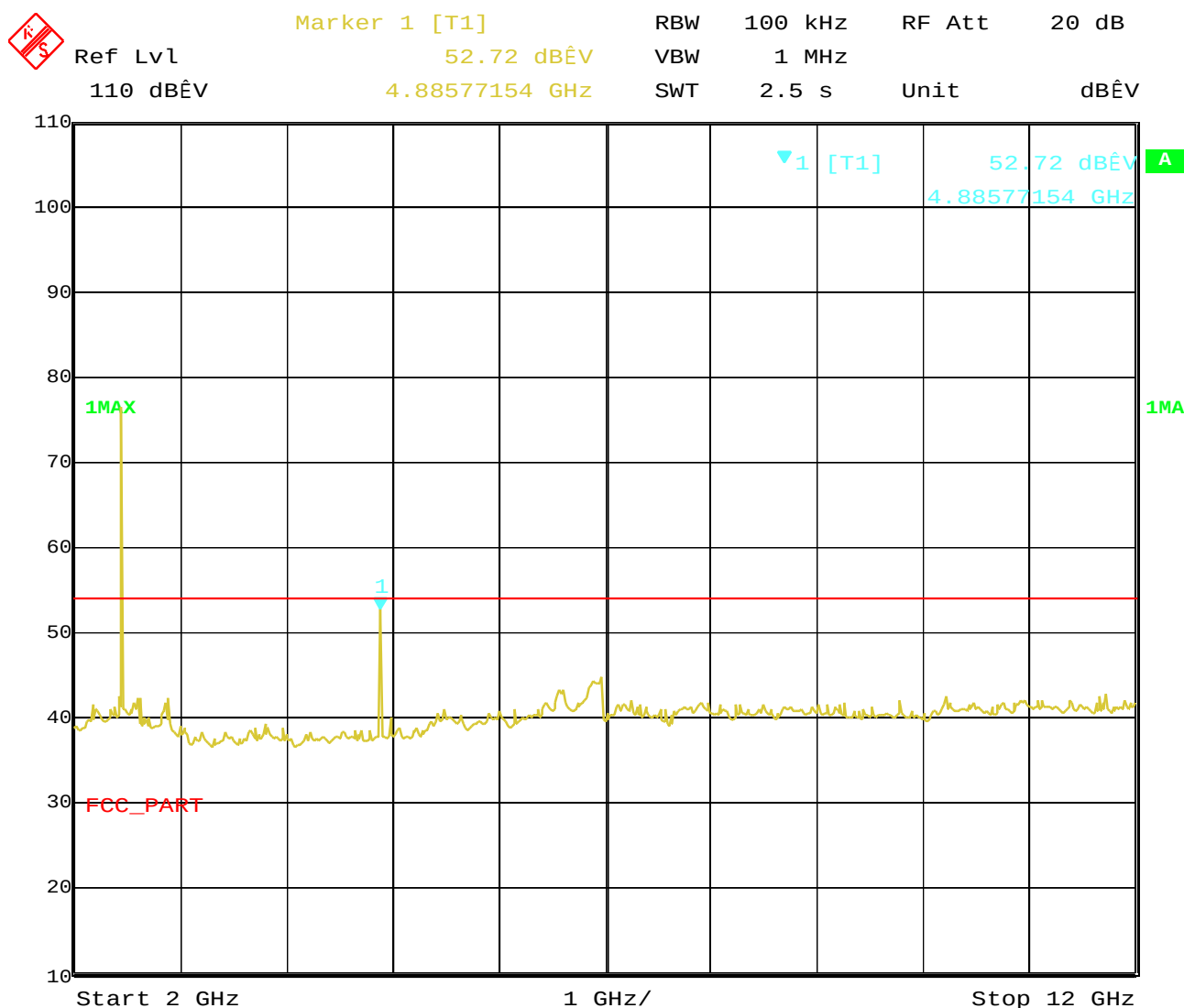
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 2: 2 –12 GHz peak



Date: 25. JAN. 2001 09:04:37

Carrier at 2441 MHz was suppressed by a stubtuner to increase the dynamic of the analyzer.

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

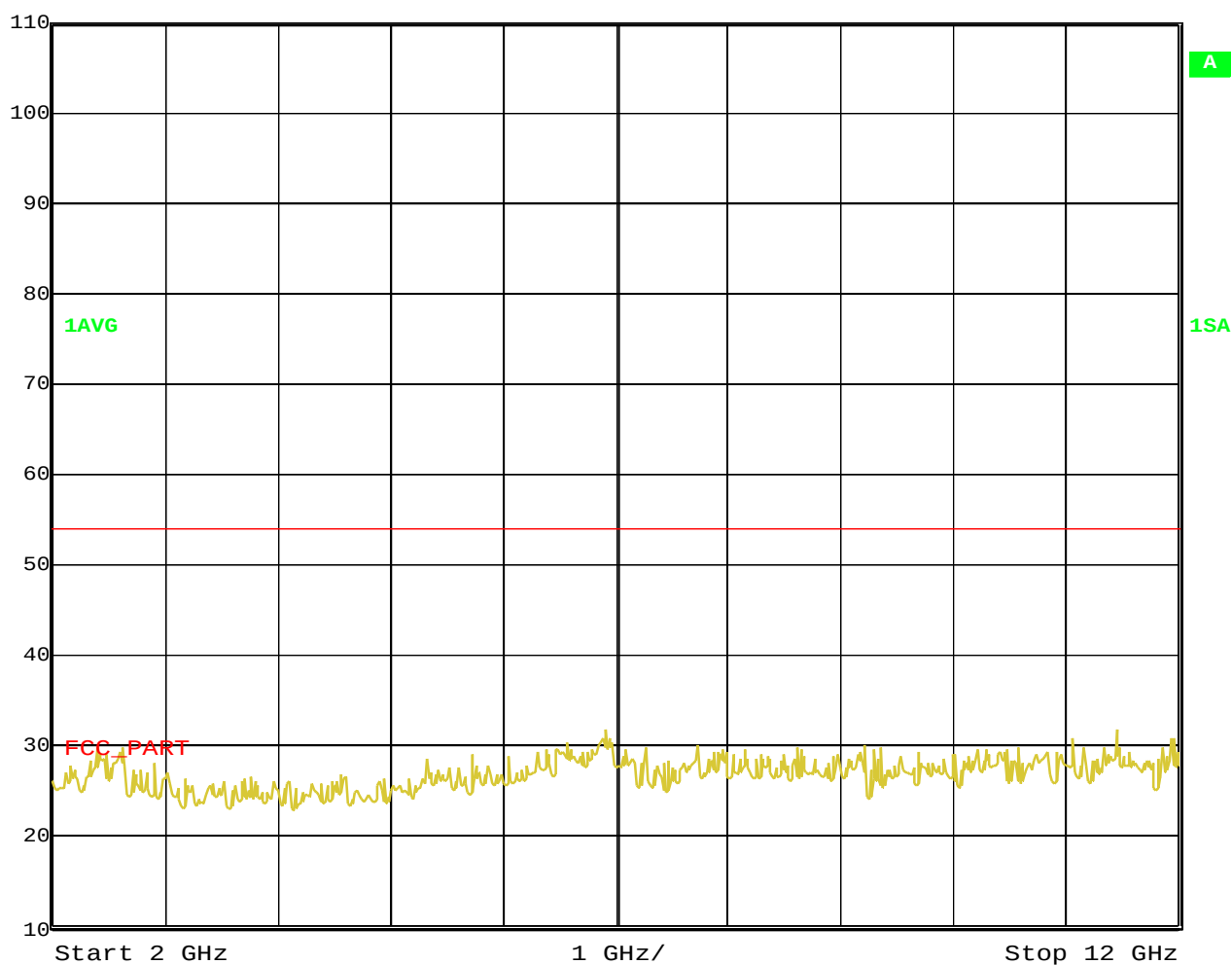
§ 15.247 (c) (1)

Channel 2: 2 –12 GHz average



Ref Lvl
110 dB μ V

RBW 100 kHz RF Att 20 dB
VBW 1 MHz
SWT 2.5 s Unit dB μ V



Date: 25. JAN. 2001 09:26:07

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

Page 38 (71)

Equipment under test : Gigaset B427data

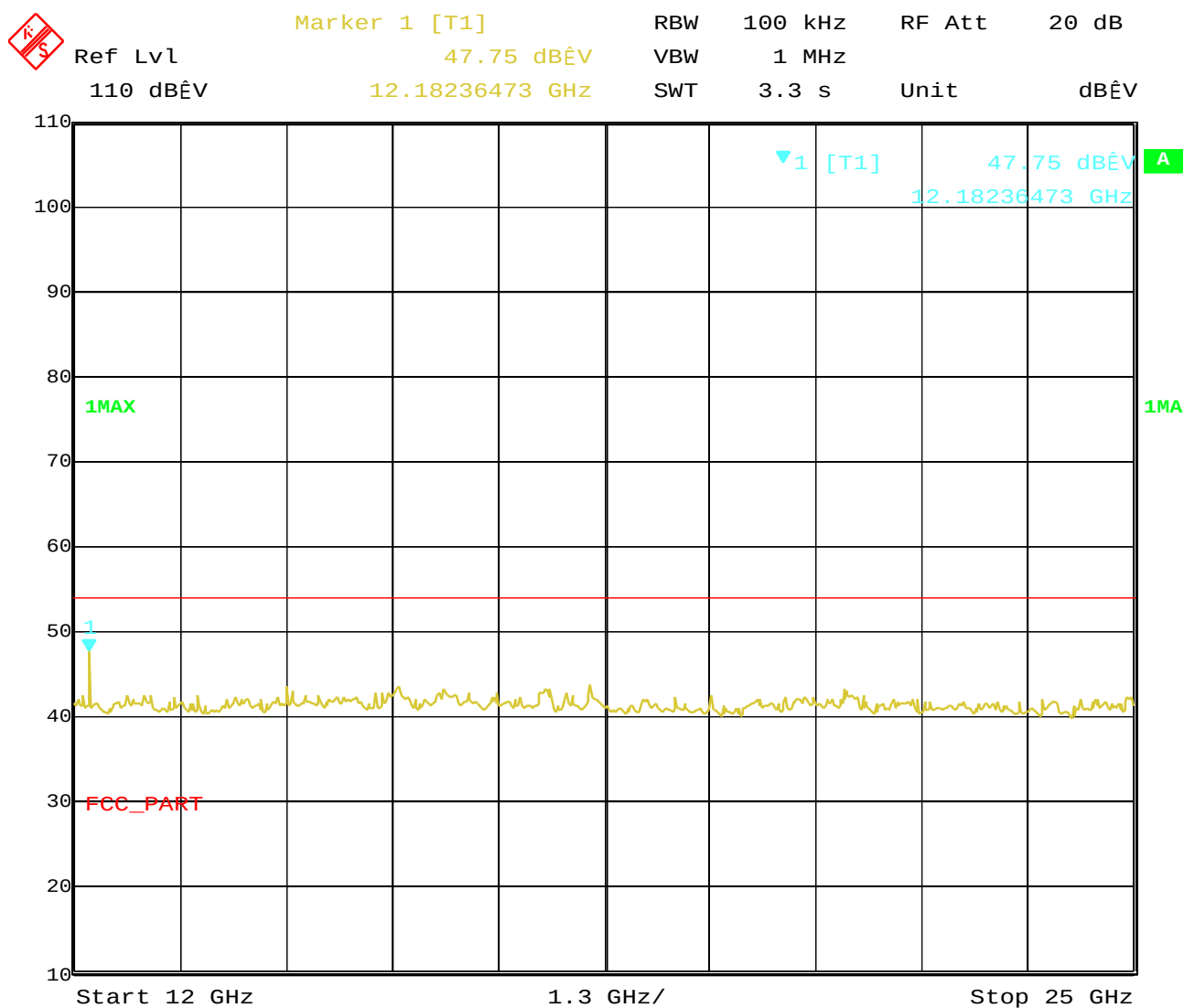
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 2: 12 – 25 GHz peak



Date: 25. JAN. 2001 09:14:12

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

Page 39 (71)

Equipment under test : Gigaset B427data

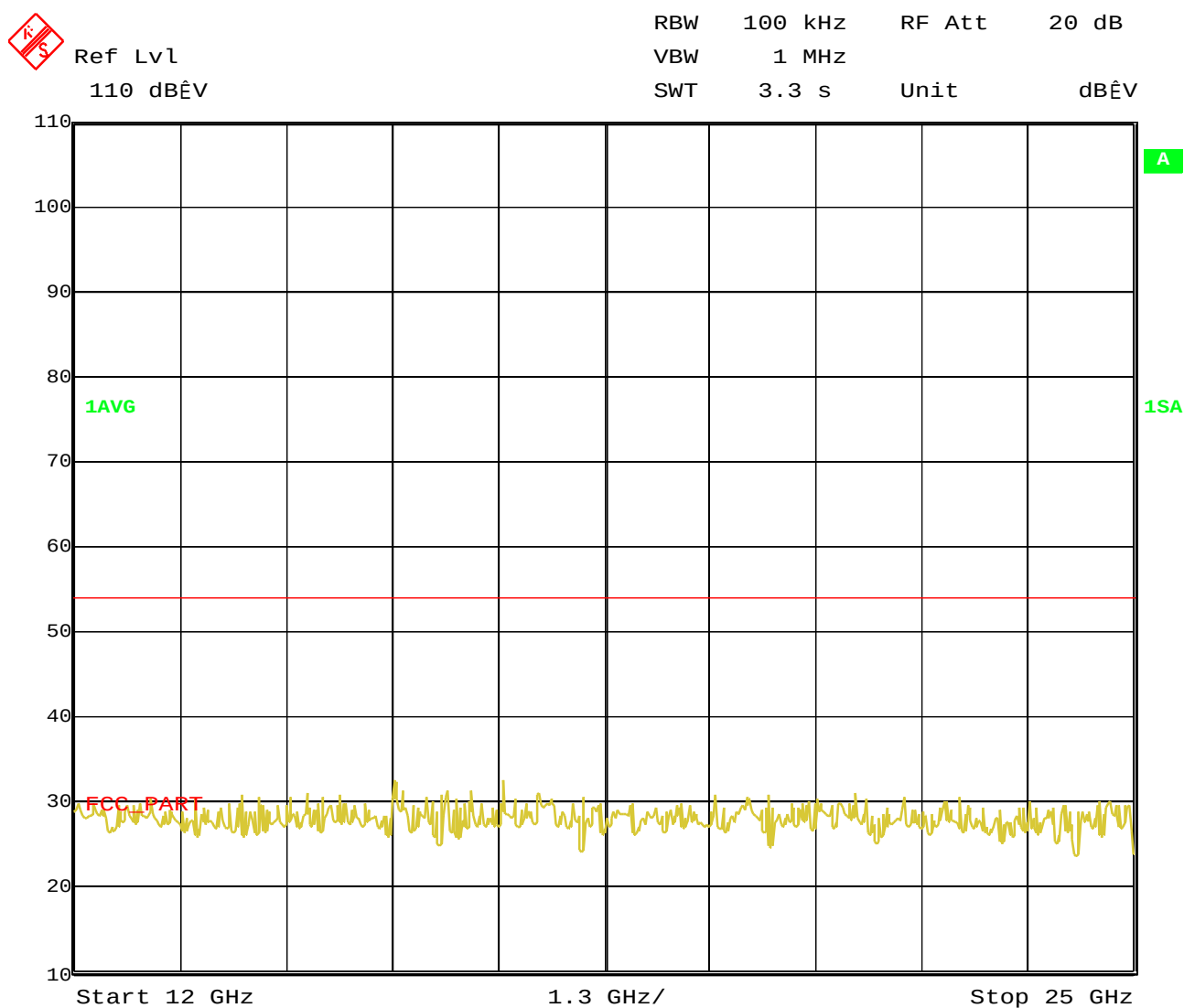
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 2: 12 – 25 GHz average



Date: 25. JAN. 2001 09:19:32

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

Page 40 (71)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS- Conducted (Transmitter)

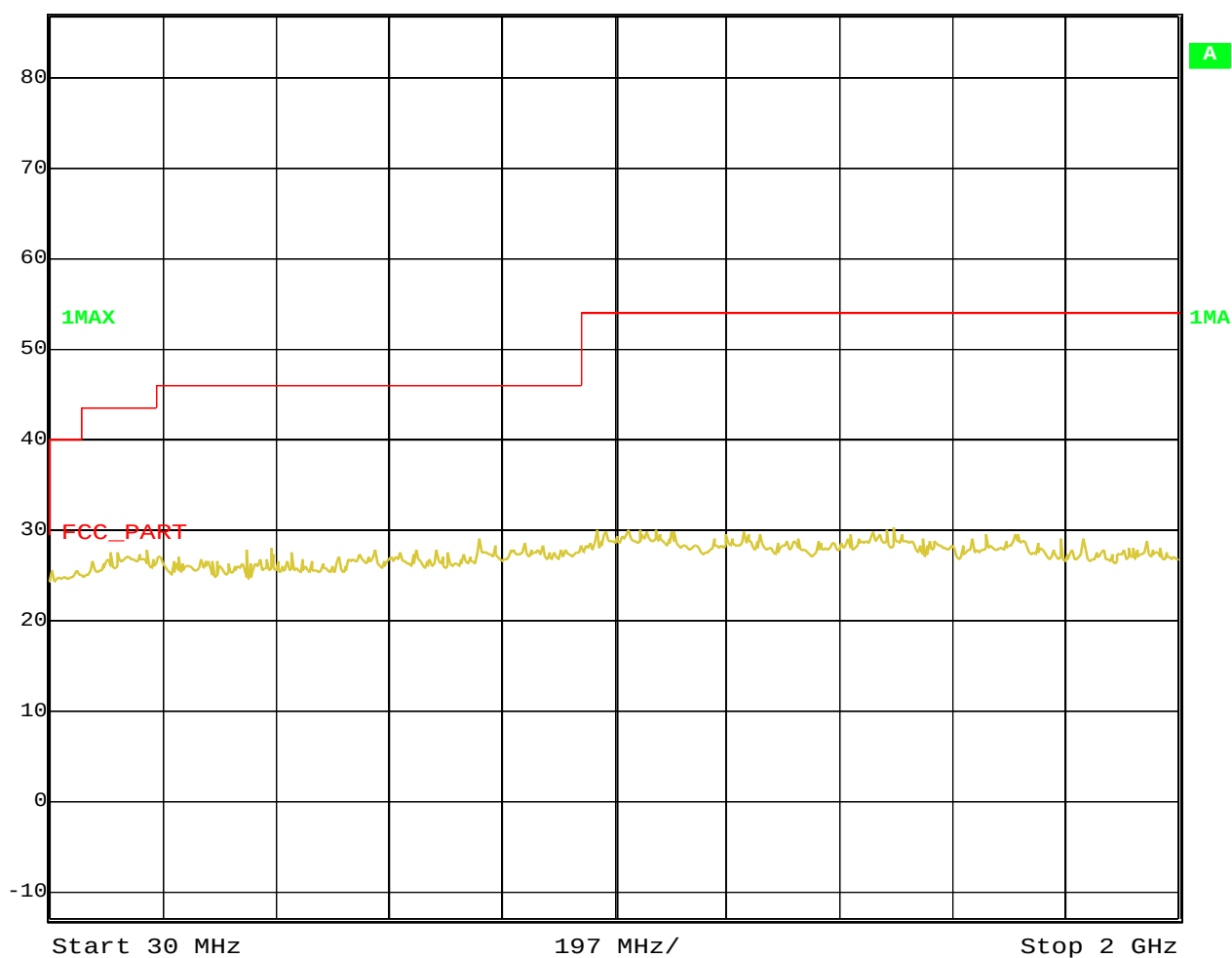
§ 15.247 (c) (1)

Channel 3: 30 MHz - 2 GHz



Ref Lvl
87 dB μ V

RBW	100 kHz	RF Att	10 dB
VBW	1 MHz		
SWT	500 ms	Unit	dB μ V



Date: 25. JAN. 2001 08:49:08

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Page 41 (71)

Relative humidity : 31%

Channel 3: 2 - 12 GHz peak



64

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

Page 42 (71)

Equipment under test : Gigaset B427data

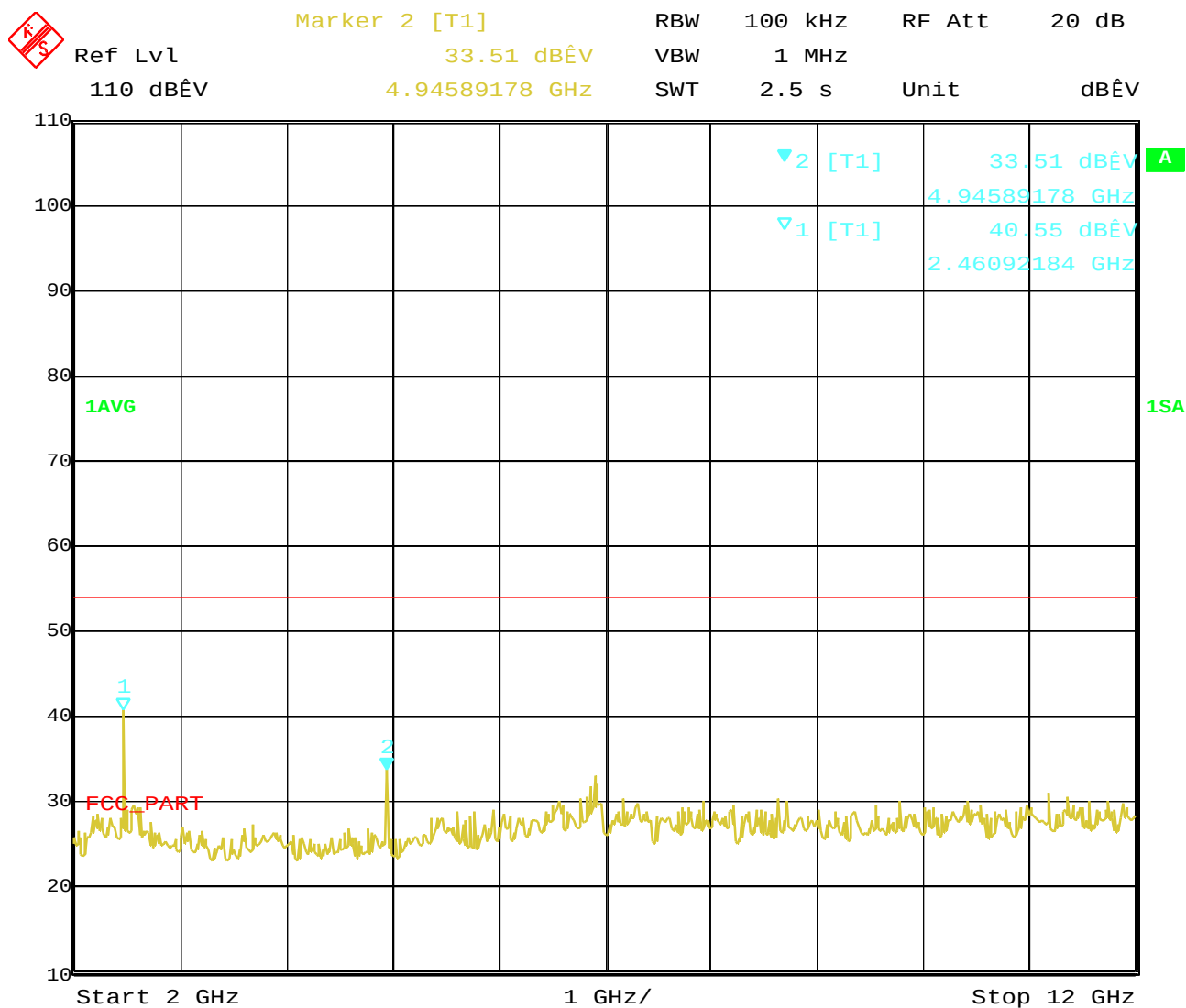
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 3: 2 - 12 GHz average



Date: 25. JAN. 2001 09:23:43

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

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Equipment under test : Gigaset B427data

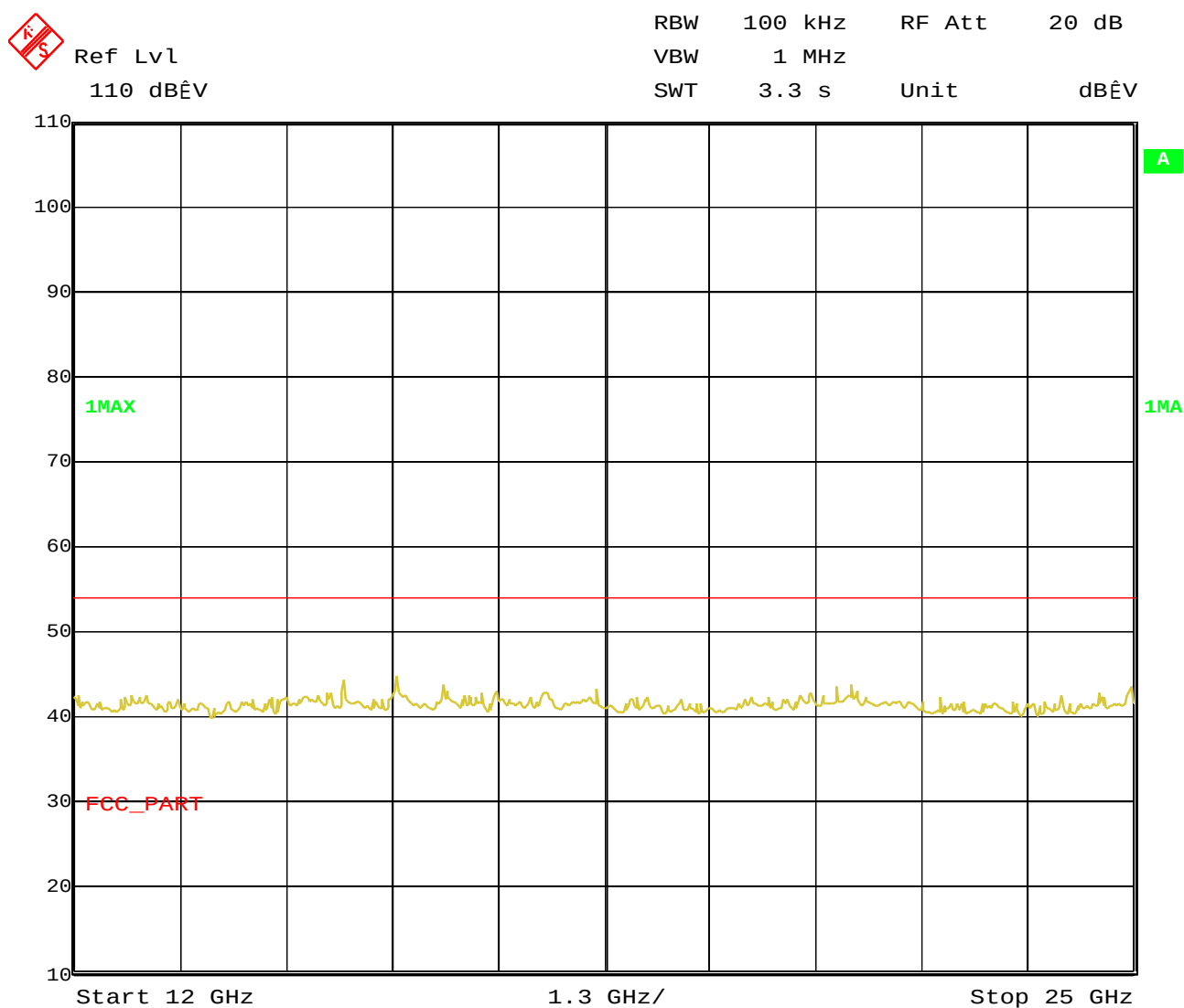
Ambient temperature : 20 °C

Relative humidity : 31%

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 3: 12 - 25 GHz peak



Date: 25. JAN. 2001 09:12:51

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

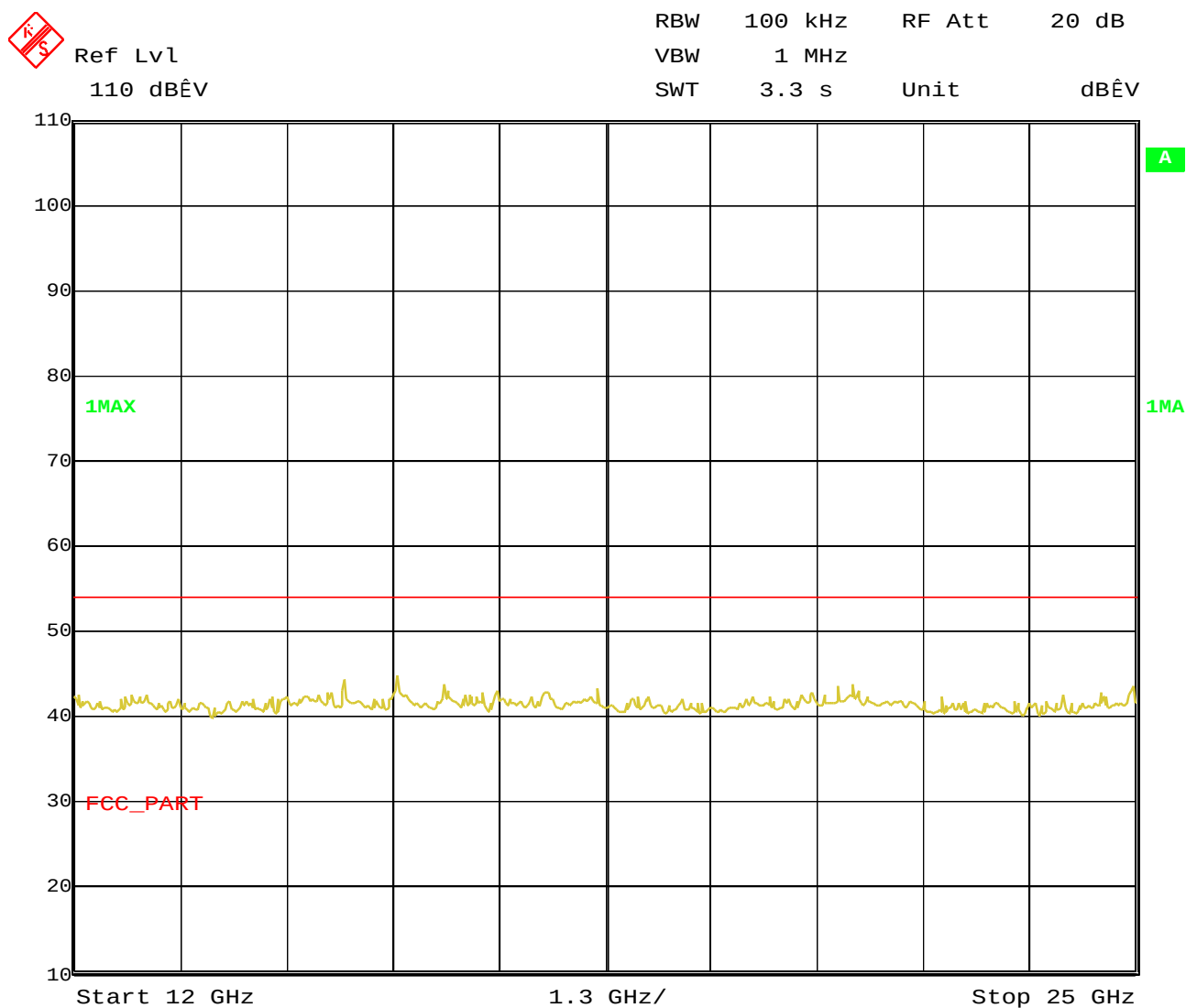
Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS- Conducted (Transmitter)

§ 15.247 (c) (1)

Channel 3: 12 - 25 GHz average



Date: 25. JAN. 2001 09:12:51

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

SPURIOUS RADIATED EMISSION

§ 15.247 (c) (1)

EMISSION LIMITATIONS					
f (MHz)	polarization	amplitude of emission (dBµV/m) PEAK	amplitude of emission (dBµV/m) average	limit max. allowed emmission power (dBµV/m)	results
CH 1					
4804.0	vertical	29.1	15.2	54.0	complies
CH 2					
4882.0	vertical	27.8	14.2	54.0	complies
CH 3					
4960.0	vertical	36.2	17.2	54.0	complies
Measurement uncertainty		± 3dB			

Horizontal measurements were about 2 dB lower

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

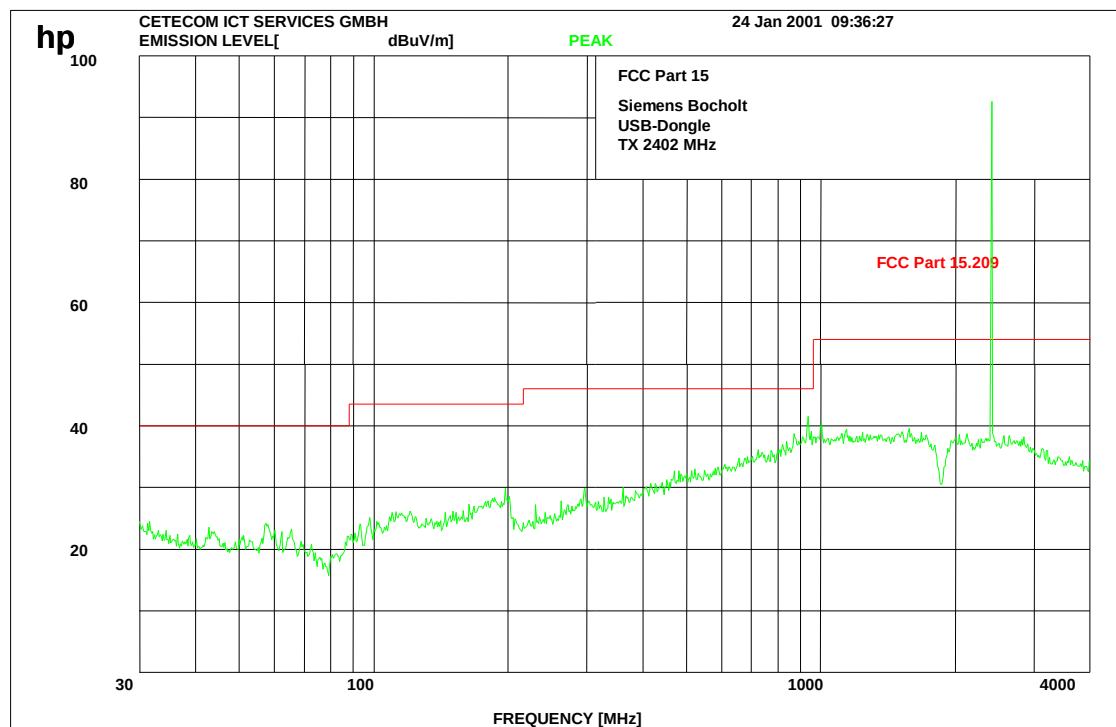
Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (1)

2402 MHz



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

Carrier was suppressed by a stub tuner to avoid overload of the system.

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

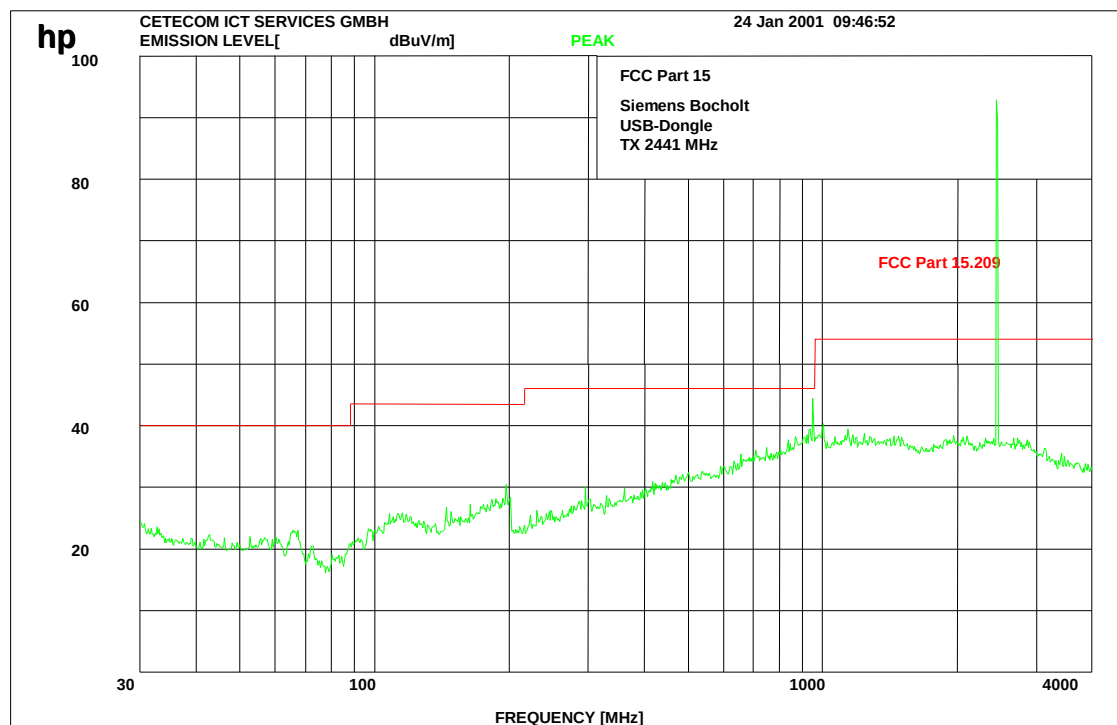
Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (1)

2442 MHz



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

Carrier was suppressed by a stub tuner to avoid overload of the system.

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

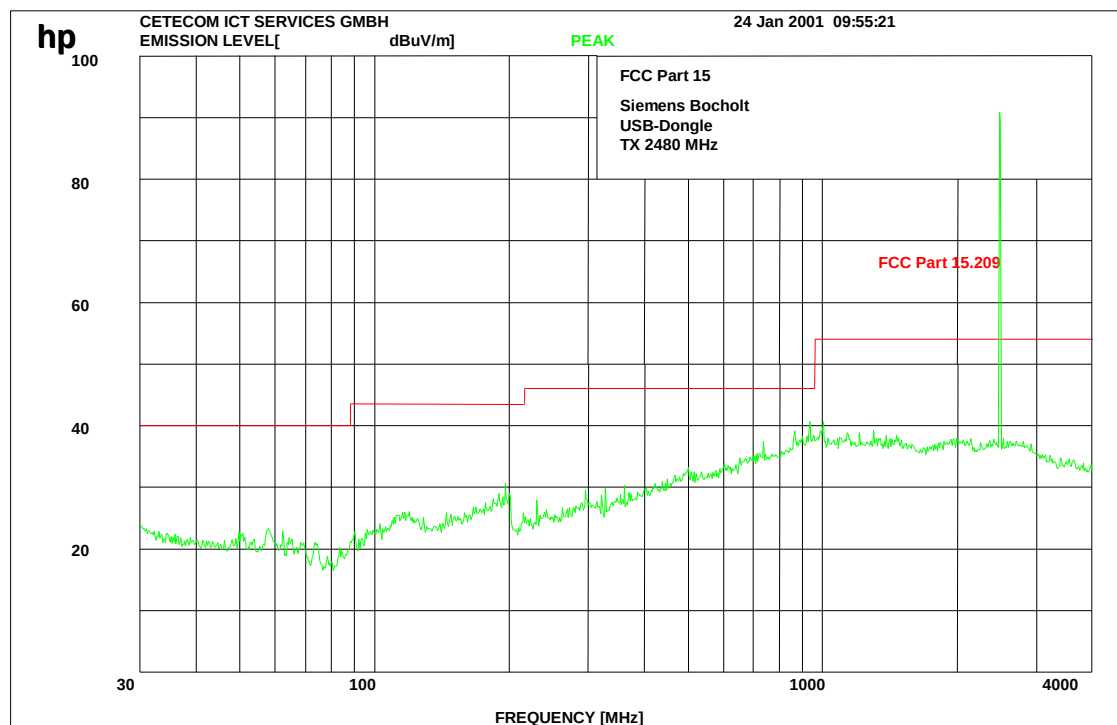
Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS (Transmitter) SUBCLAUSE § 15.247 (c) (1)

2480 MHz



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

Carrier was suppressed by a stub tuner to avoid overload of the system.

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

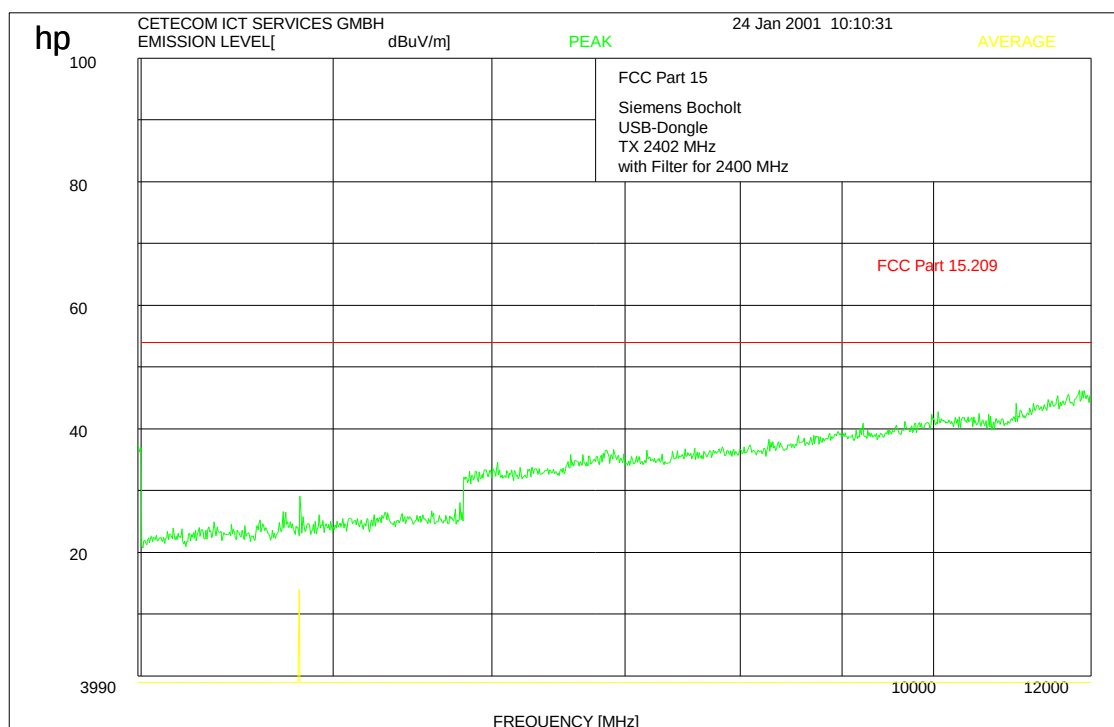
Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS (Transmitter)

CLAUSE § 15.247 (c) (1)

Channel 1



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

Carrier was suppressed by a stub tuner to avoid overload of the system.

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

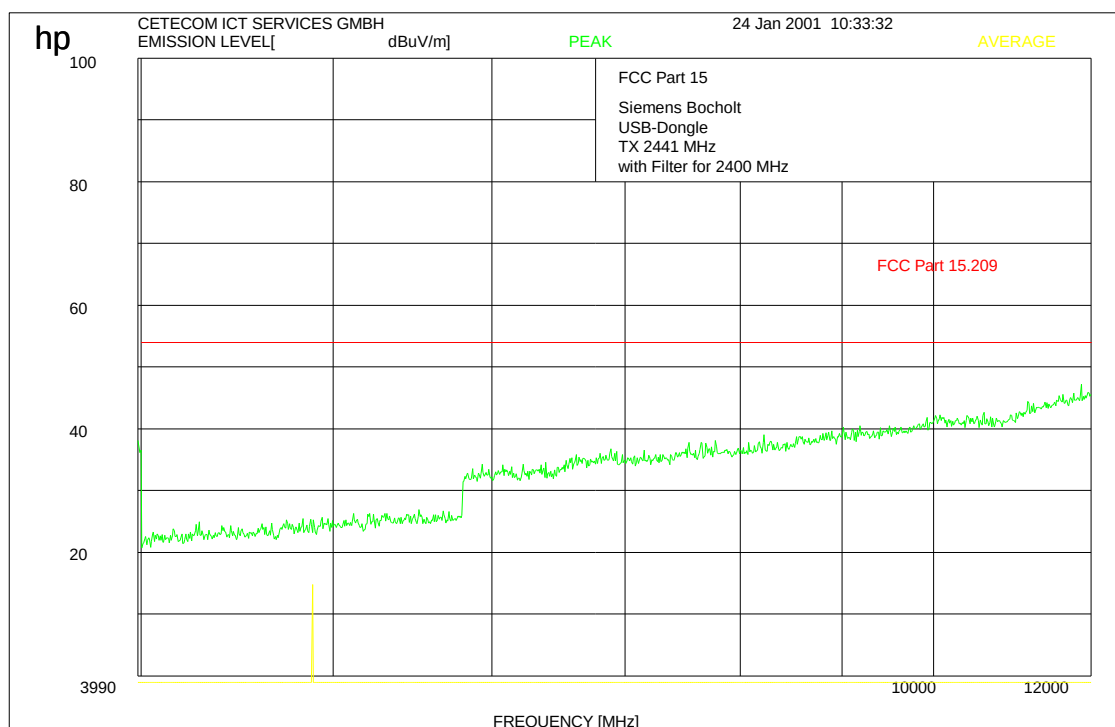
Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS (Transmitter)

CLAUSE § 15.247 (c) (1)

Channel 2



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

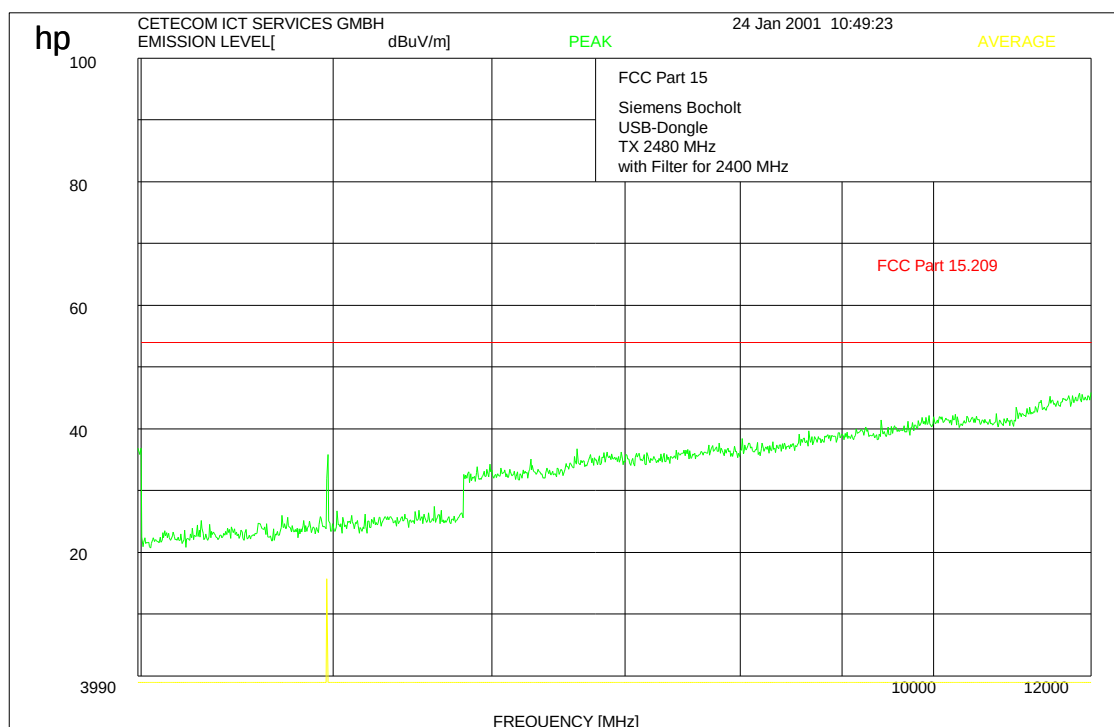
Ambient temperature : 20 °C

Relative humidity : 31 %

EMISSION LIMITATIONS (Transmitter)

CLAUSE § 15.247 (c) (1)

Channel 3



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

Carrier was suppressed by a stub tuner to avoid overload of the system.

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

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Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

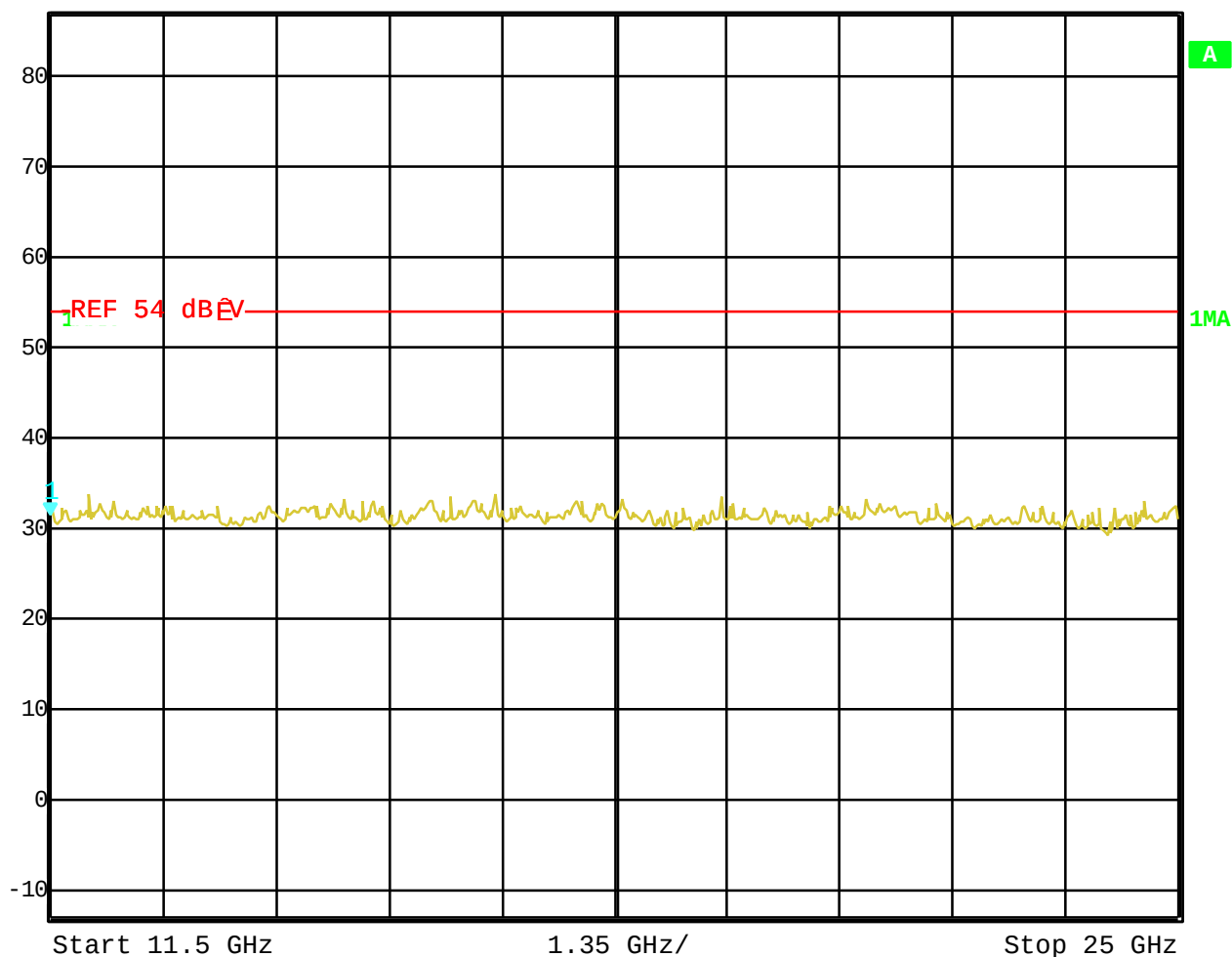
EMISSION LIMITATIONS (Transmitter)

CLAUSE § 15.247 (c) (1)

Channel 1-3 (this is valid for all 3 channels)

Peak

	Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	10 dB
	87 dB $\hat{V}$	31.46 dB $\hat{V}$	VBW	1 MHz		
		11.50000000 GHz	SWT	3.4 s	Unit	dB $\hat{V}$



Date: 24.JAN.2001 11:14:56

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Test report nr.: 4-0304-A/00

Issue Date: 29.01.2001

Page 53 (71)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

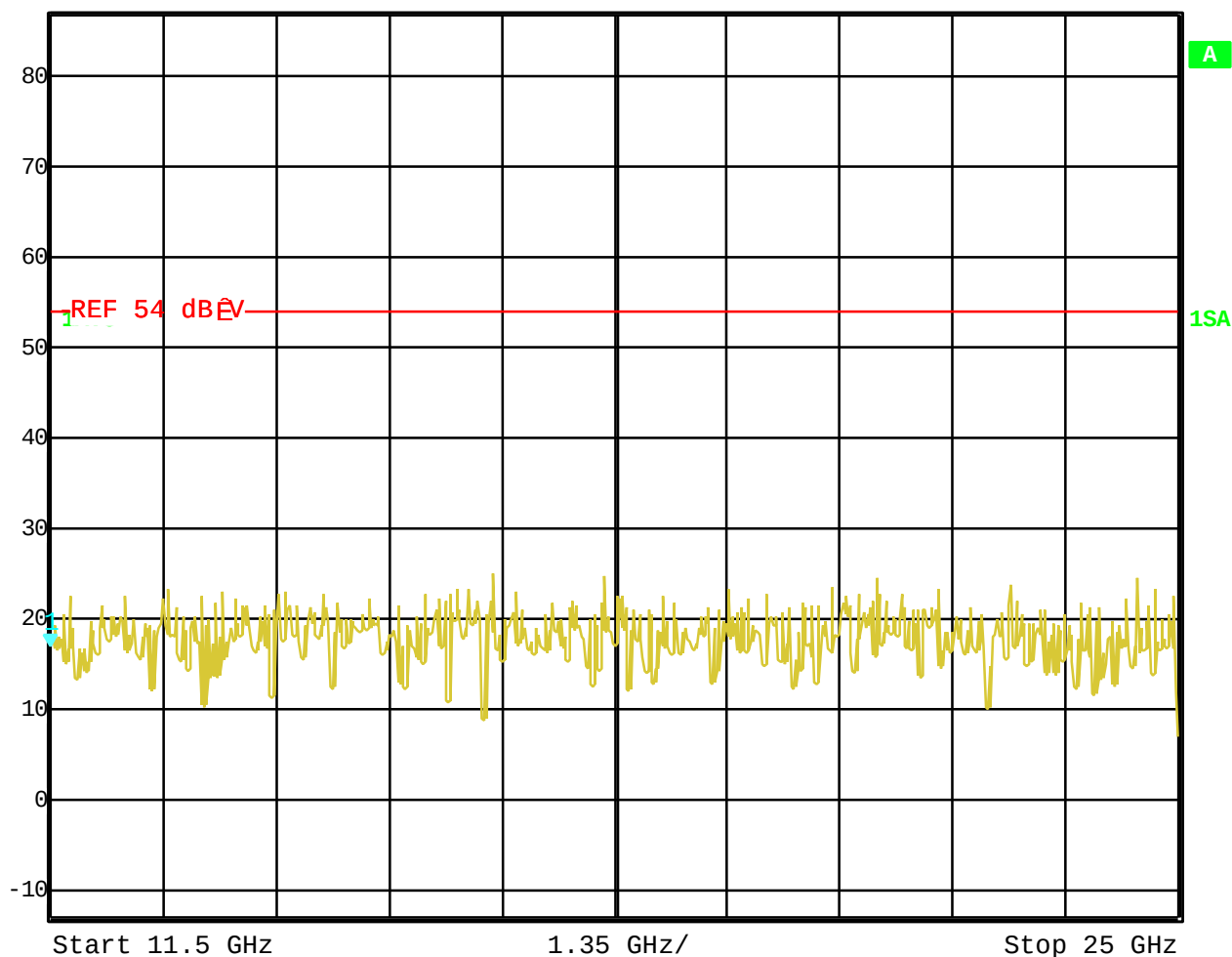
EMISSION LIMITATIONS (Transmitter)

CLAUSE § 15.247 (c) (1)

Channel 1-3 (this is valid for all 3 channels)

Average

	Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	10 dB
	87 dB $\hat{V}$	16.76 dB $\hat{V}$	VBW	1 MHz		
		11.50000000 GHz	SWT	3.4 s	Unit	dB $\hat{V}$



Date: 24.JAN.2001 11:15:48

LIMITS

SUBCLAUSE § 15.247 (c)

In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

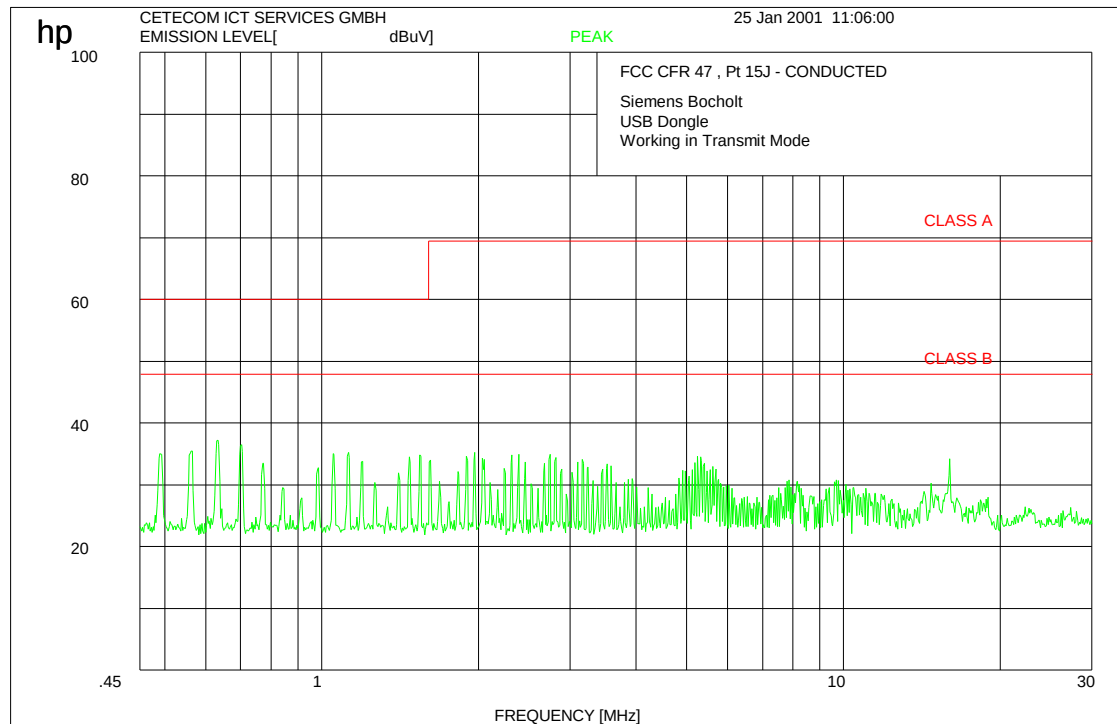
Ambient temperature : 20 °C

Relative humidity : 31 %

Conducted emissions

§ 15.107/207

Measured withlaptop powered by an AC/DC power adapter



Technical specification : 15.207 (Revised as of October 1, 1991)

Limit

0.45 to 30 MHz	250 µV / 47.96 dBµV
----------------	---------------------

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

52 - 57

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

RECEIVER SPURIOUS RADIATION

§ 15.209

Radiated

SPURIOUS EMISSIONS LEVEL (µV/m)								
2402 MHz			2442 MHz			2481 MHz		
f (MHz)	Detector	Level (µV/m)	f (MHz)	Detector	Level (µV/m)	f (MHz)	Detector	Level (µV/m)
998	QP	39.5	998	QP	39.5	998	QP	39.5
1133	Peak	49.2	1133	Peak	49.2	1133	Peak	49.2
1133	Average	41.8	1133	Average	41.8	1133	Average	41.8
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Measurement distance see table

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

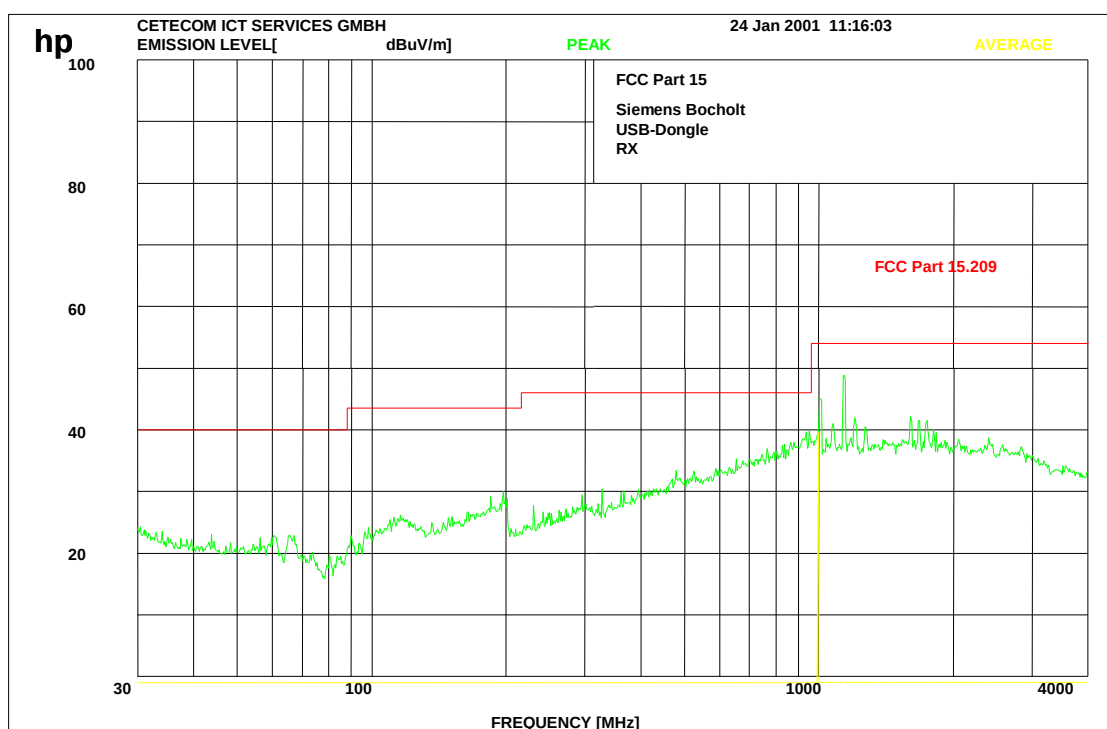
Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

RECEIVER SPURIOUS RADIATION

§ 15.209



$f < 1 \text{ GHz}$: RBW/VBW: 100 kHz

$f \geq 1 \text{ GHz}$: RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

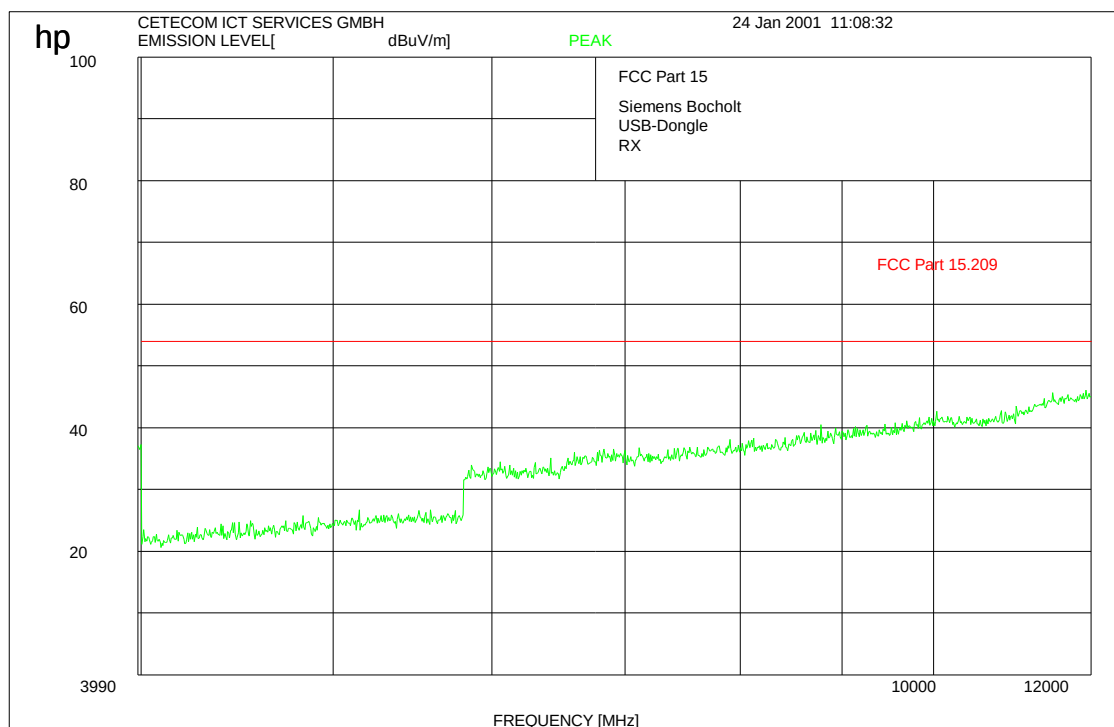
Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31 %

RECEIVER SPURIOUS RADIATION

§ 15.209



f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

Relative humidity : 31%

RECEIVER SPURIOUS RADIATION

§ 15.209

peak



Marker 1 [T1]

RBW 100 kHz RF Att 10 dB

Ref Lvl

31.09 dBÊV

VBW 1 MHz

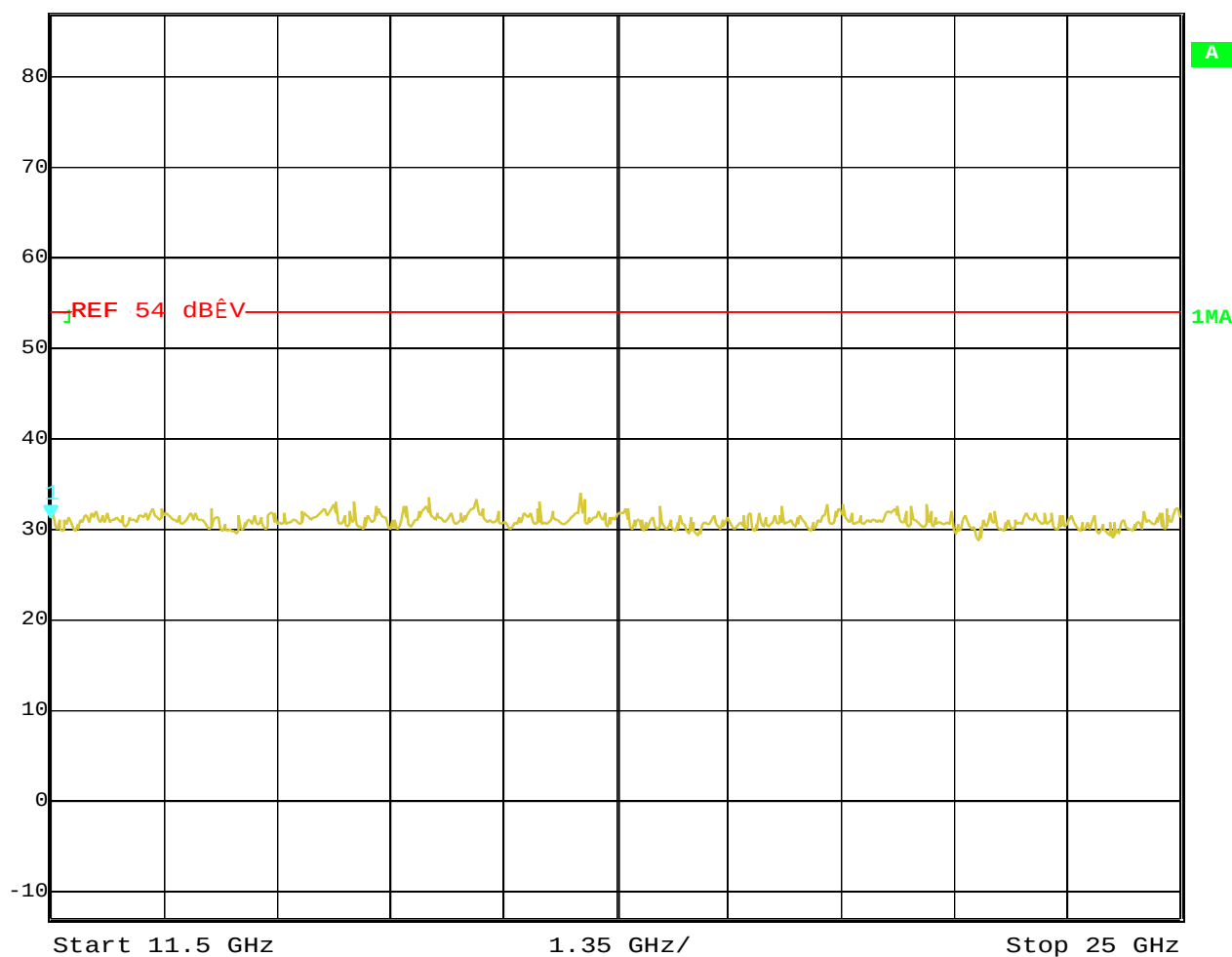
87 dBÊV

11.50000000 GHz

SWT 3.4 s

Unit

dBÊV



Date: 24. JAN. 2001 11:25:18

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1 GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : Gigaset B427data

Ambient temperature : 20 °C

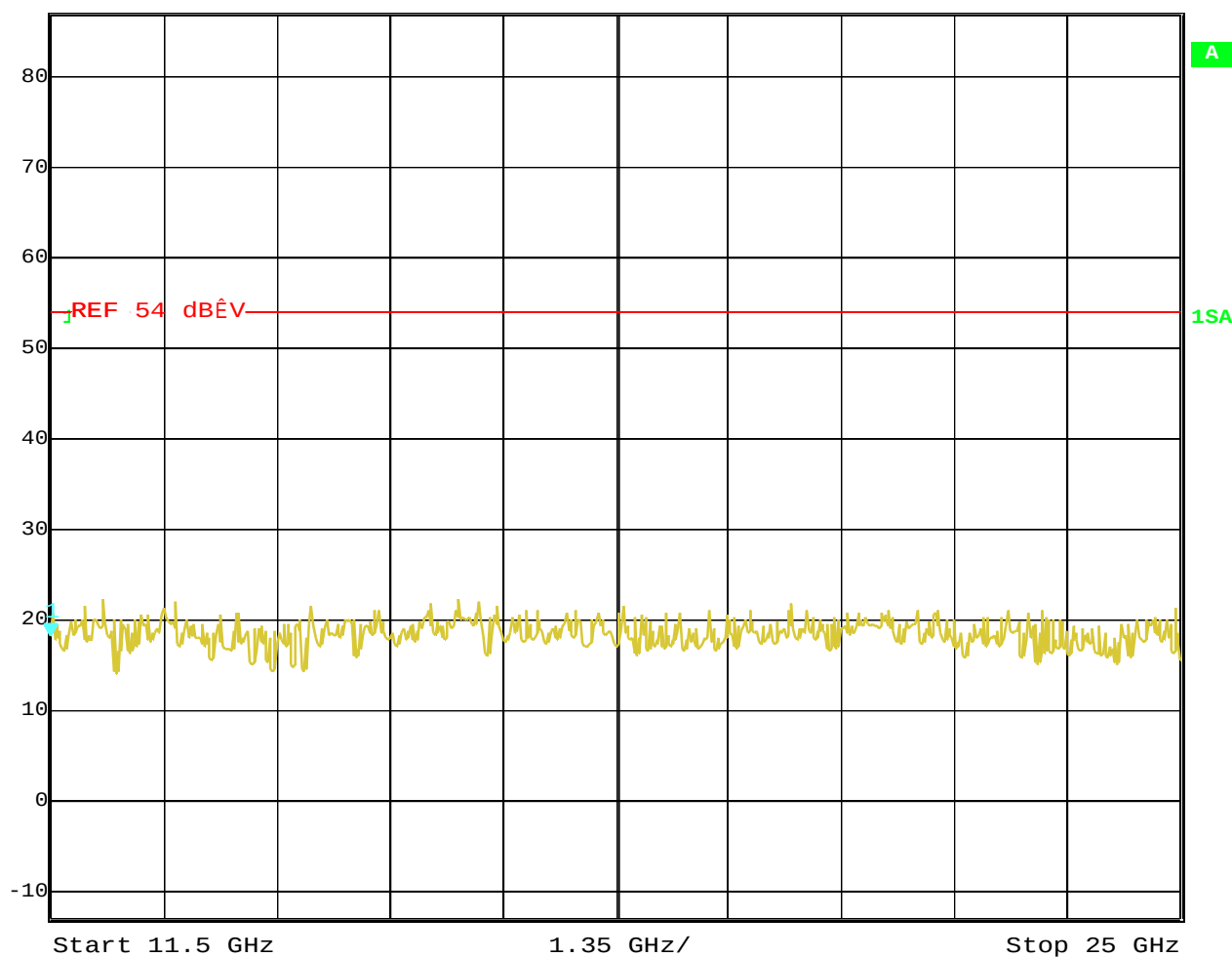
Relative humidity : 31%

RECEIVER SPURIOUS RADIATION

§ 15.209

average


 Marker 1 [T1] RBW 100 kHz RF Att 10 dB
 Ref Lvl 18.23 dBÊV VBW 1 MHz
 87 dBÊV 11.50000000 GHz SWT 3.4 s Unit dBÊV



Date: 24. JAN. 2001 11:17:18

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1 GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

17 - 24

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

No	Instrument/Ancillary	Type	Manufacturer	Serial No.
01	Spectrum Analyzer	8566 A	Hewlett-Packard	1925A00257
02	Analyzer Display	8566 A	Hewlett-Packard	1925A00860
03	Oscilloscope	7633	Tektronix	230054
04	Radio Analyzer	CMTA 54	Rohde & Schwarz	894 043/010
05	System Power Supply	6038 A	Hewlett-Packard	2848A07027
06	Signal Generator	8111 A	Hewlett-Packard	2215G00867
07	Signal Generator	8662 A	Hewlett-Packard	2224A01012
08	Funktionsgenerator	AFGU	Rohde & Schwarz	862 480/032
09	Regeltrenntrafo	MPL	Erfi	91350
10	Netznachbildung	NNLA 8120	Schwarzbeck	8120331
11	Relais-Matrix	PSU	Rohde & Schwarz	893 285/020
12	Power-Meter	436 A	Hewlett-Packard	2101A12378
13	Power-Sensor	8484 A	Hewlett-Packard	2237A10156
14	Power-Sensor	8482 A	Hewlett-Packard	2237A00616
15	Modulationsmeter	9008	Racal-Dana	2647
16	Frequenzzähler	5340 A	Hewlett-Packard	1532A03899
17	Absorber Schirmkabine	---	MWB	87400/002
18	Spectrum Analyzer	85660 B	Hewlett-Packard	2747A05306
19	Analyzer Display	85662 A	Hewlett-Packard	2816A16541
20	Quasi Peak Adapter	85650 A	Hewlett-Packard	2811A01131
21	RF-Preselector	85685 A	Hewlett-Packard	2833A00768
22	Biconical Antenne	3104	Emco	3758
23	Log. Per. Antenne	3146	Emco	2130
24	Double Ridge Horn	3115	Emco	3088
25	EMI-Testreceiver	ESAI	Rohde & Schwarz	863 180/013
26	EMI-Analyzer-Display	ESAI-D	Rohde & Schwarz	862 771/008
27	Biconical Antenne	HK 116	Rohde & Schwarz	888 945/013
28	Log. Per. Antenne	HL 223	Rohde & Schwarz	825 584/002
29	Relais-Switch-Unit	RSU	Rohde & Schwarz	375 339/002
30	Highpass	HM985955	FSY Microwave	001
31	Amplifier	P42-GA29	Tron-Tech	B 23602
32	Absorber Schirmkabine		Frankonia	
33	Steuerrechner	PSM 7	Rohde & Schwarz	834 621/004
34	EMI Test Receiver	ESMI	Rohde & Schwarz	827 063/010
35	EMI Test Receiver	Display	Rohde & Schwarz	829 808/010

TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

No	Instrument/Ancillary	Type	Manufacturer	Serial No.
36	Controler	HD 100	Deisel	100/322/93
37	Relais Matrix	PSN	Rohde & Schwarz	829 065/003
38	Control Unit	GB 016 A2	Rohde & Schwarz	344 122/008
39	Relais Switch Unit	RSU	Rohde & Schwarz	316 790/001
40	Power Supply	6032A	Hewlett Packard	2846A04063
41	Spektrum Monitor	EZM	Rohde & Schwarz	883 720/006
42	Meßempfänger	ESH 3	Rohde & Schwarz	890 174/002
43	Meßempfänger	ESVP	Rohde & Schwarz	891 752/005
44	Biconi Ant. 20-300MHz	HK 116	Rohde & Schwarz	833 162/011
45	Logper Ant. 0.3-1 GHz	HL 223	Rohde & Schwarz	832 914/010
46	Amplifier 0.1-4 GHz	AFS4	Miteq Inc.	206461
47	Logper Ant. 1-18 GHz	HL 024 A2	Rohde & Schwarz	342 662/002
48	Polarisationsnetzwerk	HL 024 Z1	Rohde & Schwarz	341 570/002
49	Double Ridge G Horn Antenne 1-26.5 GHz	3115	EMCO	9107-3696
50	Microw. Sys. Amplifier 0.5- 26.5 GHz	8317A	Hewlett Packard	3123A00105
51	Audio Analyzer	UPD	Rohde & Schwarz	1030.7500.04
52	Steuerrechner	PSM 7	Rohde & Schwarz	883 086/026
53	DC V-Netzwerk	ESH3-Z6	Rohde & Schwarz	861 406/005
54	DC V-Netzwerk	ESH3-Z6	Rohde & Schwarz	893 689/012
55	AC 2 Phasen V-Netzwerk	ESH3-Z5	Rohde & Schwarz	861 189/014
56	AC 2 Phasen V-Netzwerk	ESH3-Z5	Rohde & Schwarz	894 981/019
57	AC-3 Phasen V-Netzwerk	ESH2-Z5	Rohde & Schwarz	882 394/007
58	Stromversorgung	6032A	Rohde & Schwarz	2933A05441
59	HF-Test Empfänger	ESVP.52	Rohde & Schwarz	881 487/021
60	Spectrum Monitor	EZM	Rohde & Schwarz	883 086/026
61	HF-Test Empfänger	ESH3	Rohde & Schwarz	881 515/002
62	Relais Matrix	PSU	Rohde & Schwarz	882 943/029
63	Relais Matrix	PSU	Rohde & Schwarz	828 628/007
64	Spectrum Analyzer	FSIQ 26	Rohde & Schwarz	119.6001.27
65	Spectrum Analyzer	HP 8565E	Hewlett Packard	3473A00773
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