

CETECOM ICT Services GmbH

Radio Satellite Communication

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Telefax: -9075

RSC14

issue test report consist of 108 Pages

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TTI-P-G166/98

Accredited Bluetooth™ Test Facility (BQTF)

Test report no.: 5_3928-01-01/02
FCC Part 2, 15, 90
MC9635 CS G1 UM

CETECOM – ICT Services GmbH
Untertürkheimerstr. 6-10
66117 Saarbrücken, Germany

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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

Untertürkheimer Straße 6 - 10

66117 Saarbrücken

Germany

Telefone : + 49 681 598 - 9100

Telefax : + 49 681 598 - 9075

E-mail : Michael.Berg@ict.cetecom.de

Internet : www.cetecom.de

Accredited testing laboratory:

The Test laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025.

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

Accredited Bluetooth™ Test Facility (BQTF)

[BLUETOOTH is a trademark owned by Bluetooth SIG, Inc. and licensed to CETECOM](#)

1.3 Details of applicant

Name : EADS Defence and Security Networks
Street : Rue J.P Timbaud-MS01, BP 26
City : F78392 Bois d'Arcy Cedex
Country : France
Telephone : +33 1 34 60 88 94
Telefax : +33 1 34 60 78 98
Contact : Yann Lebail
Telephone : +33 1 34 60 88 94

1.4 Application details

Date of receipt of application : 2002-02-12
Date of receipt of test item : 2002-02-19
Date of test : 2002-02-19

1.5 Test item

Type of equipment : **Stationary Radio Terminal**
Type designation : **MC9635 CS G1 UM**
Consists: Stationary radio terminal box: RB1251EAA01 010200335
BER (Transceiver Box) RA1336 ABA01 014505755 with SW B40105
Power supply: HR1419AD ALCATEL AS538AAAA or MARTEK
POWER MAT 072.2.A02 204901601020
Interface Board CIF: HJ2653BB01 FE03
Car Control Panel: CCP A25 53.1952.570.00.004 952570 24412
CCP Desk Holder: 53.1559.020.00
Loudspeaker PIONEER: TS-44
Goosnek Microphone : HC1054D ELNO F6122
Antenna: HT0947
Manufacturer : applicant
Street :
City :
Country :
Serial number : see photographs
Additional informations: :
Frequency : 440 - 490 MHz
Type of modulation : 12K0F1D
Number of channels : 4000
Antenna : HT0947x
Power supply : 110V AC
Output power : 10.0 W
Type of equipment : RA1636ABA01 with SW version B40105
Temperature range : -30°C - +60°C
1.6 Test standards: FCC Part 2, 15, 90

2 Technical test

The radiated measurements were performed vertical and horizontal over the whole frequency range. We start at 1 m high with vertical receiving antenna and rotate the dish continuously. During rotation we use the antenna lift system to vary the high from 1 to 4 m. So we find maximum radiation output. At this points we do manual remeasurements. After this we do the same measurements in horizontal position of the receiving antenna. This (horizontal and vertical) is made for all the three planes of the test sample. We use the maximum received results.

The detector function and selection of bandwidth are according ANSI C63.2-1996 item 8.2.1 and ANSI C63.4-1992 Item 4.2.

Antennas are conform with ANSI C63.2-1996 item 15.

150 kHz - 30 MHz: Quasi Peak measurement, 9kHz Bandwidth, passive loop antenna.

30 MHz - 200 MHz: Quasi Peak measurement, 120KHz Bandwidth, biconical antenna

200MHz - 1GHz: Quasi Peak measurement, 120KHz Bandwidth, log periodic antenna

1GHz: Average, RBW 1MHz, VBW 10 MHz, wave guide horn

2.1 Summary of test results

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

Final verdict : PASS

Technical responsibility for area of testing :

19.04.02 RSC 8411 Berg M.

Date

Section

Name

Signature



Technical responsibility for area of testing :

19.04.02 RSC8414 Ames H.

Date

Section

Name

Signature



2.2 Testreport

TEST REPORT

Testreport no. : 5_3928-01-01/02

TEST REPORT REFERENCE

LIST OF MEASUREMENTS

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Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

AC Power Input**SUBCLAUSE § 2.993**

Measured with power supply: HR1419AD ALCATEL AS538AAAA

Power (W)					
Frequency	440 MHz	465 MHz	490 MHz		
Low power	10.45	9.90	9.90		
High power	39.4	36.85	36.3		
Measurement uncertainty	± 3 %				

Measured with power supply: HR1419AD MARTEK POWER MAT 072.2.A02 204901601020

Power (W)					
Frequency	440 MHz	465 MHz	490 MHz		
Low power	13.20	12.65	12.65		
High power	42.90	39.60	39.60		
Measurement uncertainty	± 3 %				

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

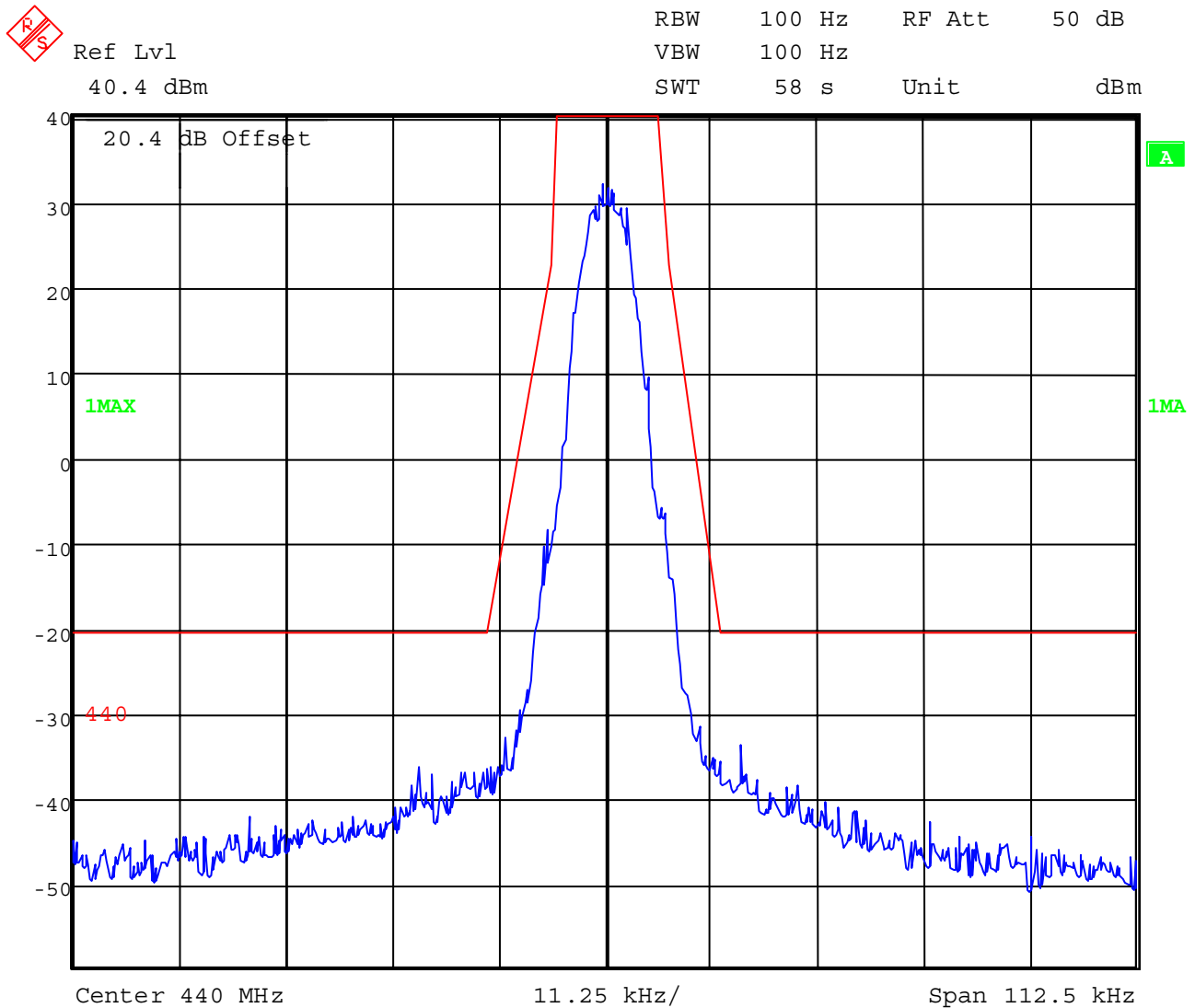
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

OCCUPIED BANDWIDTH §2.989

440 MHz (max. power)



Date: 20.MAR.2002 09:27:21

measured with normal Test modulation : Pseudo random data stream max. 8kBit/s

LIMITS

SUBCLAUSE § 90.210

Emission Mask D – 12.5 kHz channel bandwidth

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

Test report nr.: 5_3928-01-01/02

Issue Date: 05.03.01

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Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

OCCUPIED BANDWIDTH

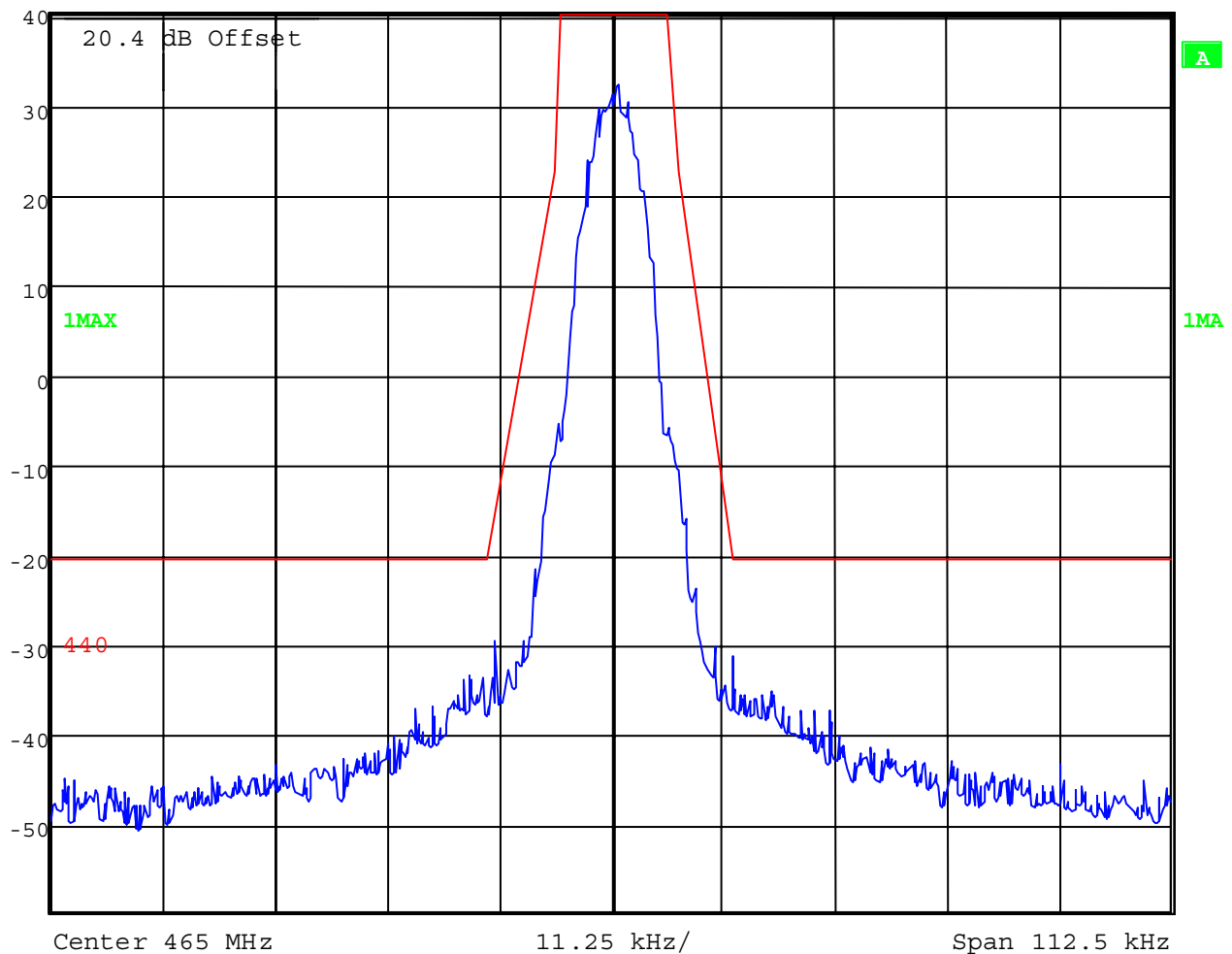
§2.989

465 MHz (max. power)



Ref Lvl
40.4 dBm

RBW 100 Hz RF Att 50 dB
VBW 100 Hz
SWT 58 s Unit dBm



Date: 20.MAR.2002 09:36:42

measured with normal Test modulation : Pseudo random data stream max. 8kBit/s

LIMITS

SUBCLAUSE § 90.210

Emission Mask D – 12.5 kHz channel bandwidth

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

Test report nr.: 5_3928-01-01/02

Issue Date: 05.03.01

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Equipment under test : MC9635 CS G1 UM

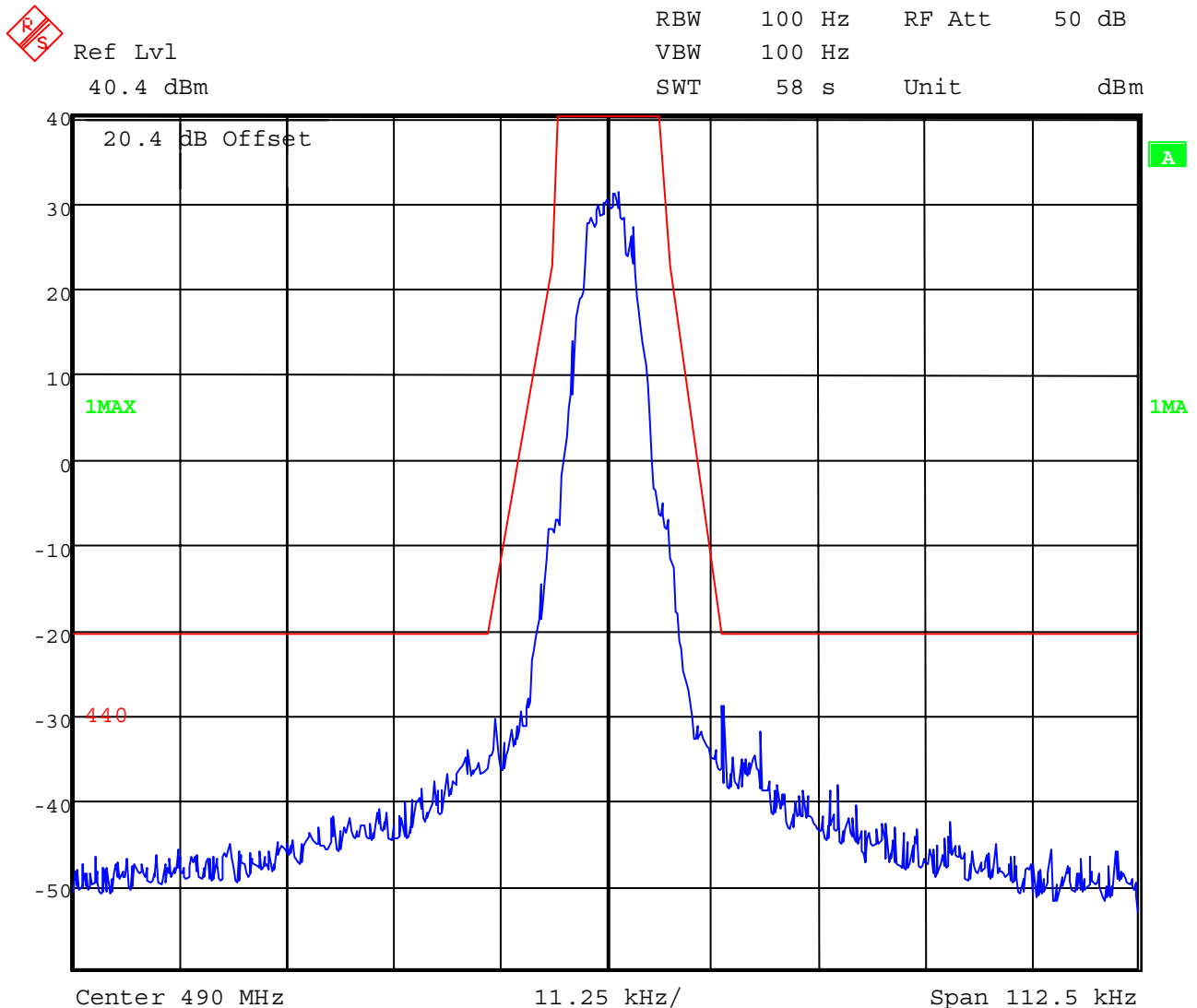
Ambient temperature : 23°C

Relative humidity : 41%

OCCUPIED BANDWIDTH

§2.989

490 MHz (max. power)



Date: 20.MAR.2002 09:39:28

measured with normal Test modulation : Pseudo random data stream max. 8kBit/s

LIMITS

SUBCLAUSE § 90.210

Emission Mask D – 12.5 kHz channel bandwidth

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

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Issue Date: 05.03.01

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Equipment under test : MC9635 CS G1 UM

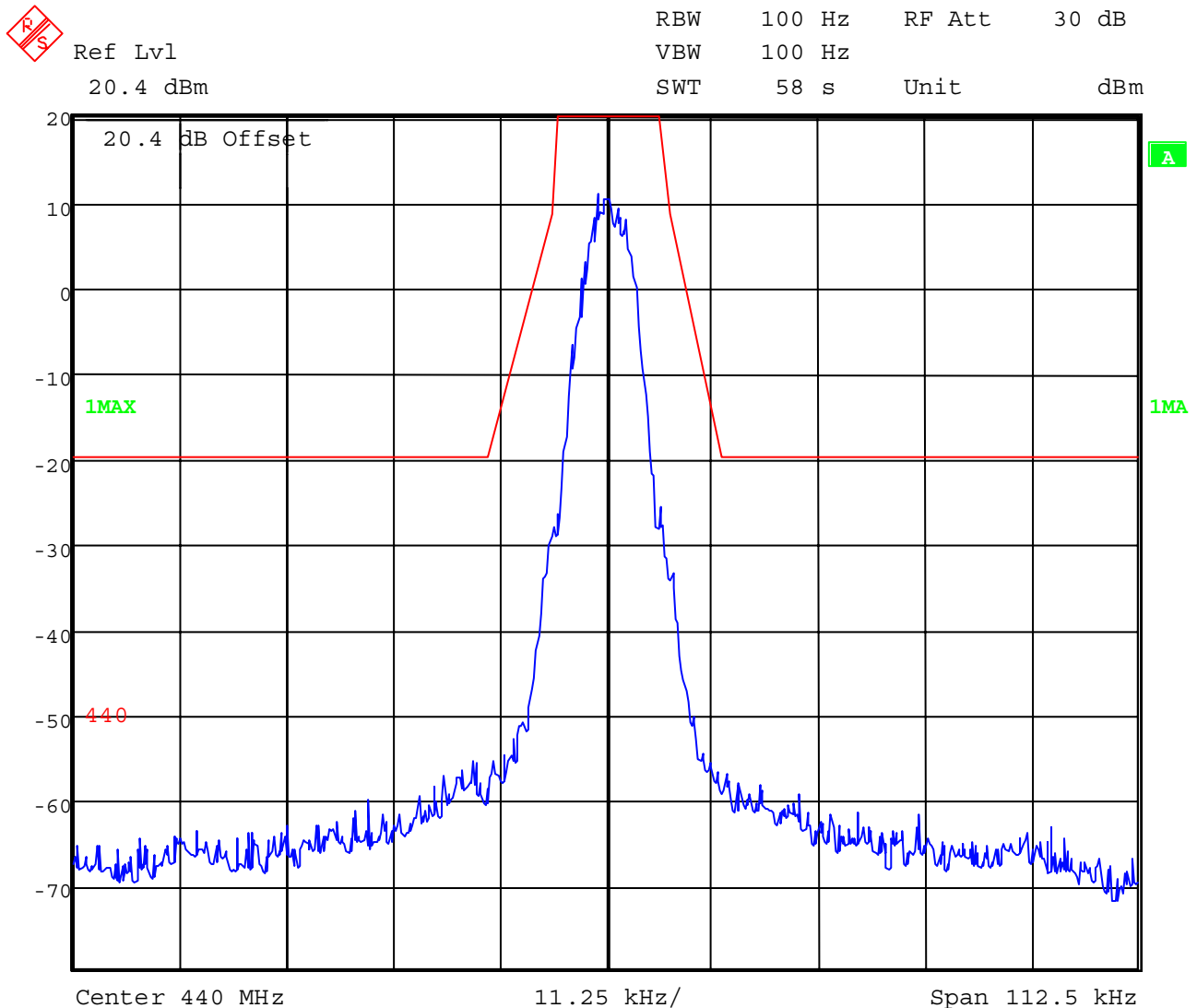
Ambient temperature : 23°C

Relative humidity : 41%

OCCUPIED BANDWIDTH

§2.989

440 MHz (min. power)



Date: 20.MAR.2002 09:30:52

measured with normal Test modulation : Pseudo random data stream max. 8kBit/s

LIMITS

SUBCLAUSE § 90.210

Emission Mask D – 12.5 kHz channel bandwidth

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

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Equipment under test : MC9635 CS G1 UM

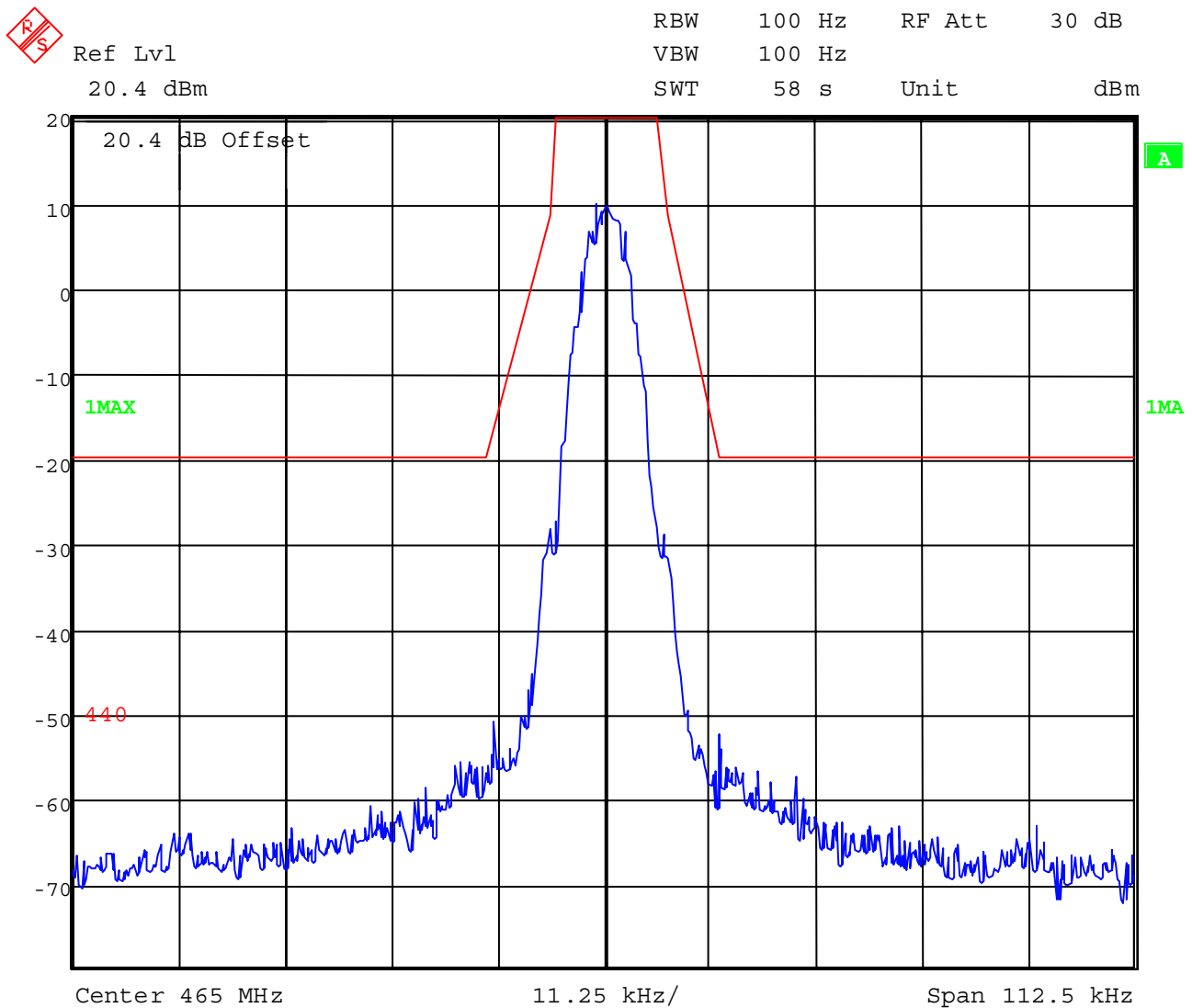
Ambient temperature : 23°C

Relative humidity : 41%

OCCUPIED BANDWIDTH

§2.989

465 MHz (min. power)



Date: 20.MAR.2002 09:33:32

measured with normal Test modulation : Pseudo random data stream max. 8kBit/s

LIMITS

SUBCLAUSE § 90.210

Emission Mask D – 12.5 kHz channel bandwidth

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

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Equipment under test : MC9635 CS G1 UM

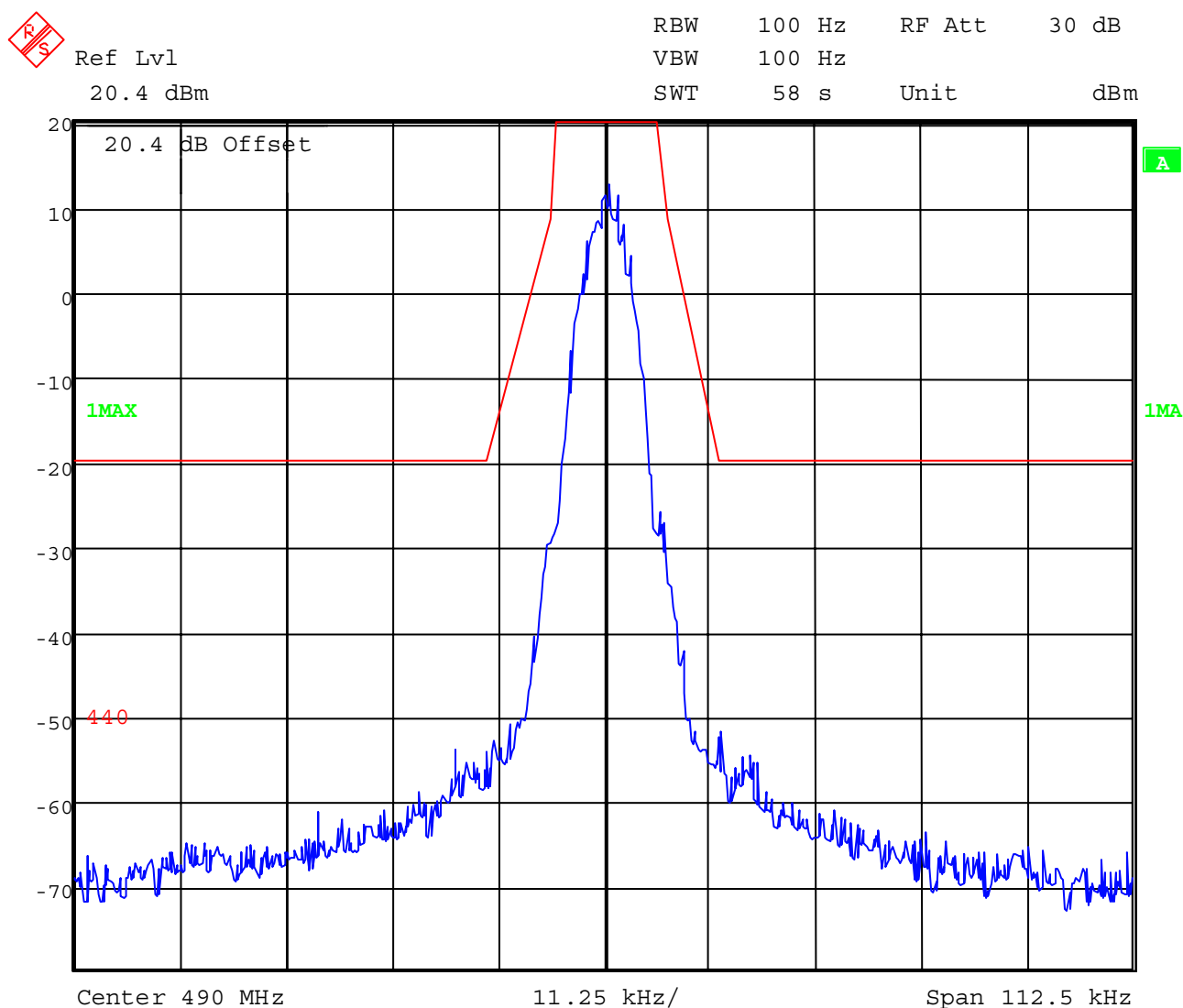
Ambient temperature : 23°C

Relative humidity : 41%

OCCUPIED BANDWIDTH

§2.989

490 MHz (min. power)



Date: 20.MAR.2002 09:41:54

measured with normal Test modulation : Pseudo random data stream max. 8kBit/s

LIMITS

SUBCLAUSE § 90.210

Emission Mask D – 12.5 kHz channel bandwidth

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

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

MAXIMUM PEAK OUTPUT POWER SUBCLAUSE § 2.1046 (conducted)

TEST CONDITIONS			MAXIMUM PEAK OUTPUT POWER (W)				
Frequency (MHz)			440	465	490		
T _{nom} (23)° C	V _{nom} (110/13,2)V	Max	10.07	10.00	10.02		
		Min	0.084	0.080	0.085		
Maximum deviation from output power under extreme test conditions (dBc)			not applicable		not applicable		not applicable
Measurement uncertainty			±0.5dB				

RBW / VBW : 1000 kHz

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Equipment under test : MC9635 CS G1 UM

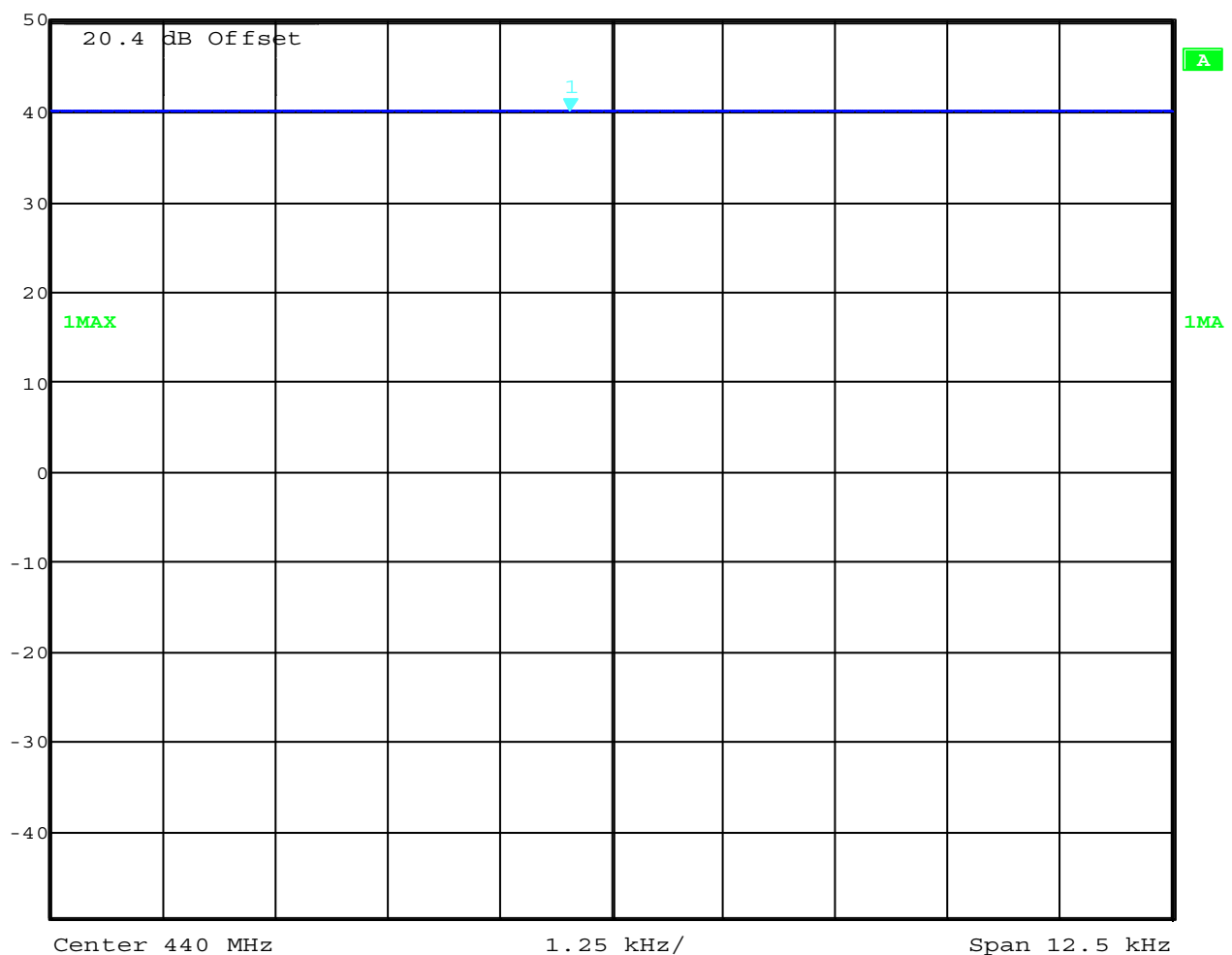
Ambient temperature : 23°C

Relative humidity : 41%

Peak output power (conducted)

440 MHz (max. power)

 Marker 1 [T1] RBW 1 MHz RF Att 60 dB
Ref Lvl 40.05 dBm VBW 1 MHz
50.4 dBm 439.99953657 MHz SWT 5 ms Unit dBm



Date: 20.MAR.2002 09:03:19

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

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Equipment under test : MC9635 CS G1 UM

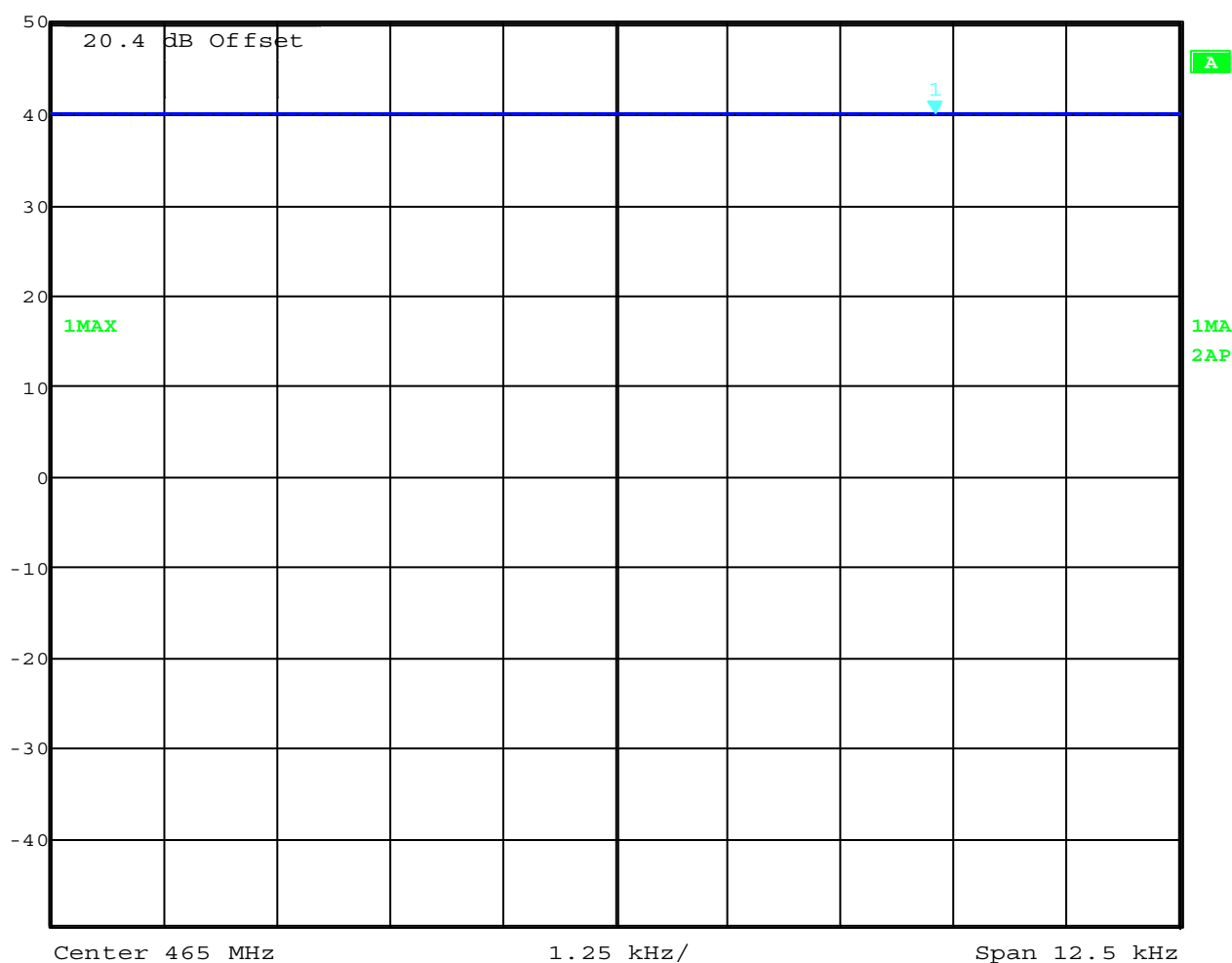
Ambient temperature : 23°C

Relative humidity : 41%

Peak output power (conducted)

465 MHz (max. power)


 Marker 1 [T1] RBW 1 MHz RF Att 60 dB
 Ref Lvl 40.00 dBm VBW 1 MHz
 50.4 dBm 465.00354459 MHz SWT 5 ms Unit dBm



Date: 20.MAR.2002 09:05:45

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

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Equipment under test : MC9635 CS G1 UM

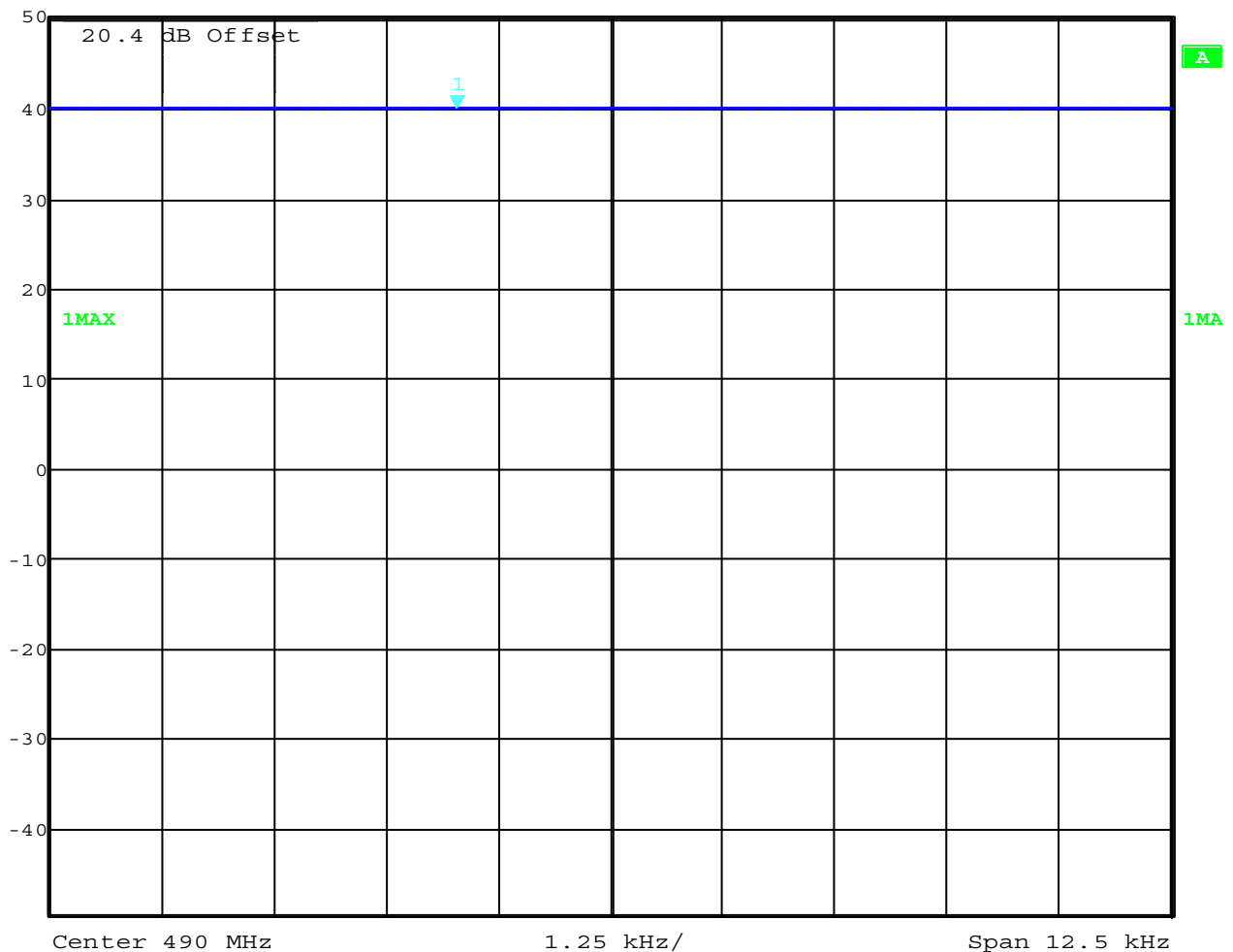
Ambient temperature : 23°C

Relative humidity : 41%

Peak output power (conducted)

490 MHz (max. power)

 Marker 1 [T1] RBW 1 MHz RF Att 60 dB
Ref Lvl 40.01 dBm VBW 1 MHz
50.4 dBm 489.99828407 MHz SWT 5 ms Unit dBm



Date: 20.MAR.2002 09:08:13

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

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Equipment under test : MC9635 CS G1 UM

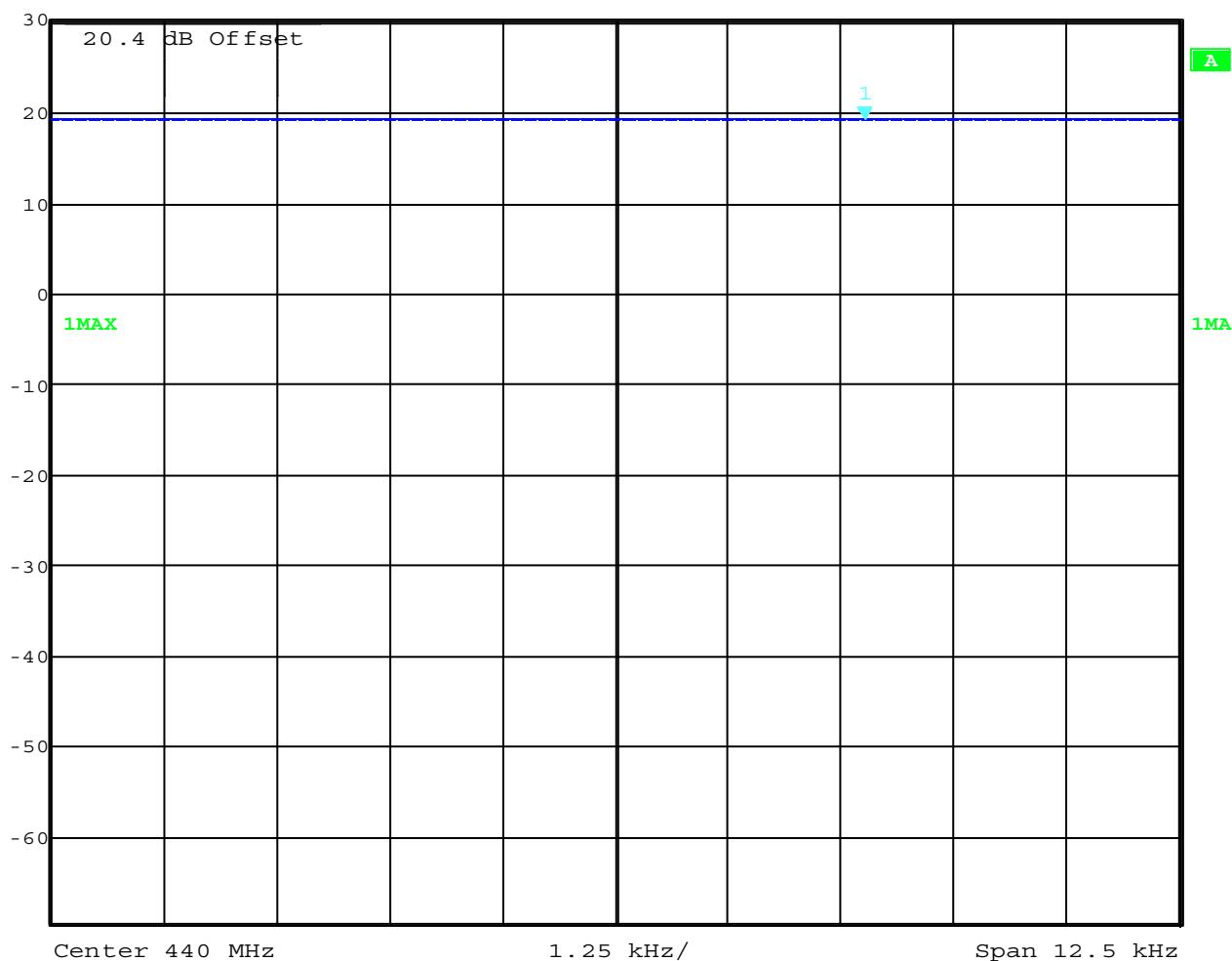
Ambient temperature : 23°C

Relative humidity : 41%

Peak output power (conducted)

440 MHz (min. power)

 Marker 1 [T1] RBW 1 MHz RF Att 40 dB
 Ref Lvl 19.24 dBm VBW 1 MHz
 30.4 dBm 440.00276804 MHz SWT 5 ms Unit dBm



Date: 20.MAR.2002 09:04:05

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

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Equipment under test : MC9635 CS G1 UM

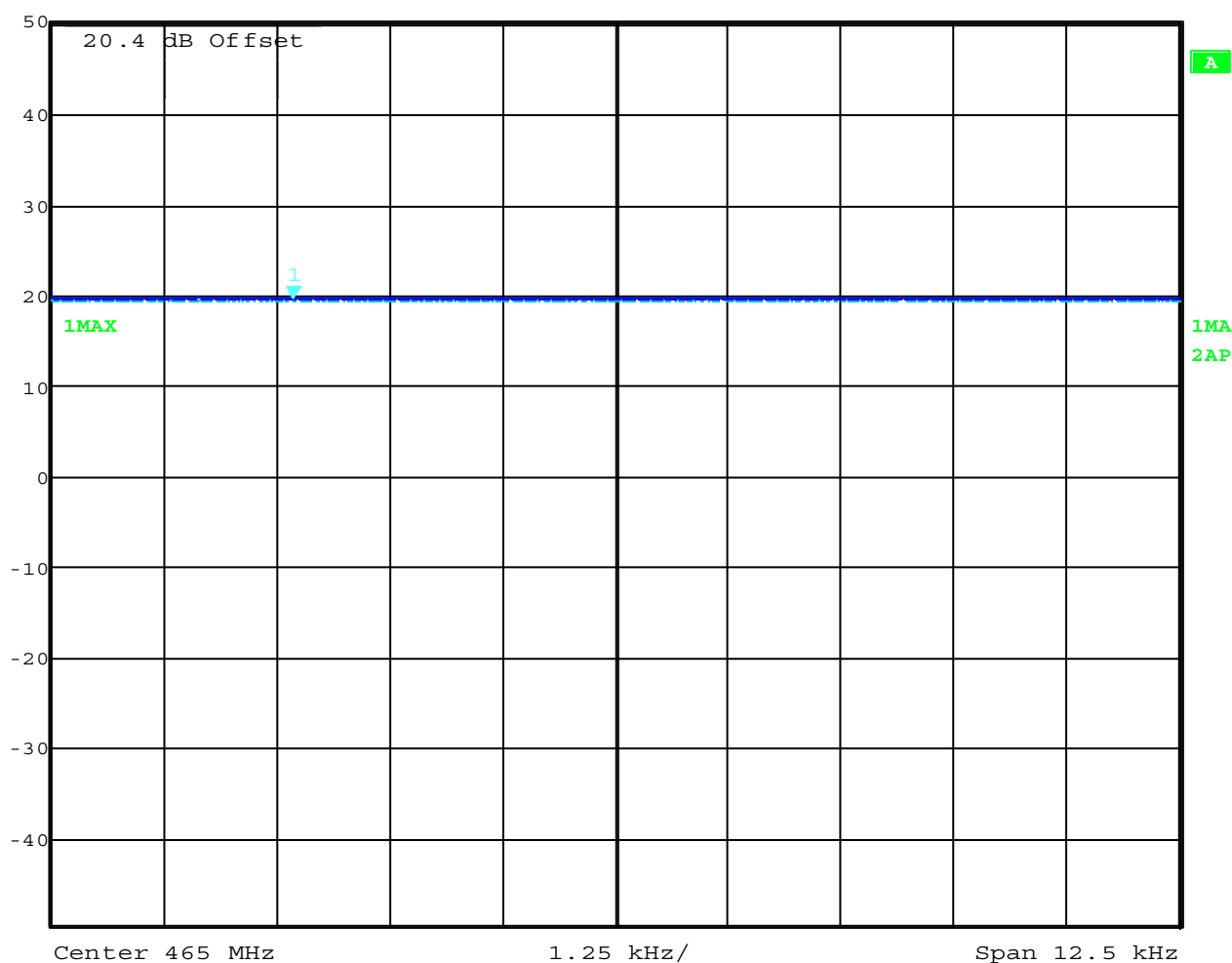
Ambient temperature : 23°C

Relative humidity : 41%

Peak output power (conducted)

465 MHz (min. power)


 Marker 1 [T1] RBW 1 MHz RF Att 60 dB
 Ref Lvl 19.61 dBm VBW 1 MHz
 50.4 dBm 464.99643036 MHz SWT 5 ms Unit dBm



Date: 20.MAR.2002 09:06:35

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

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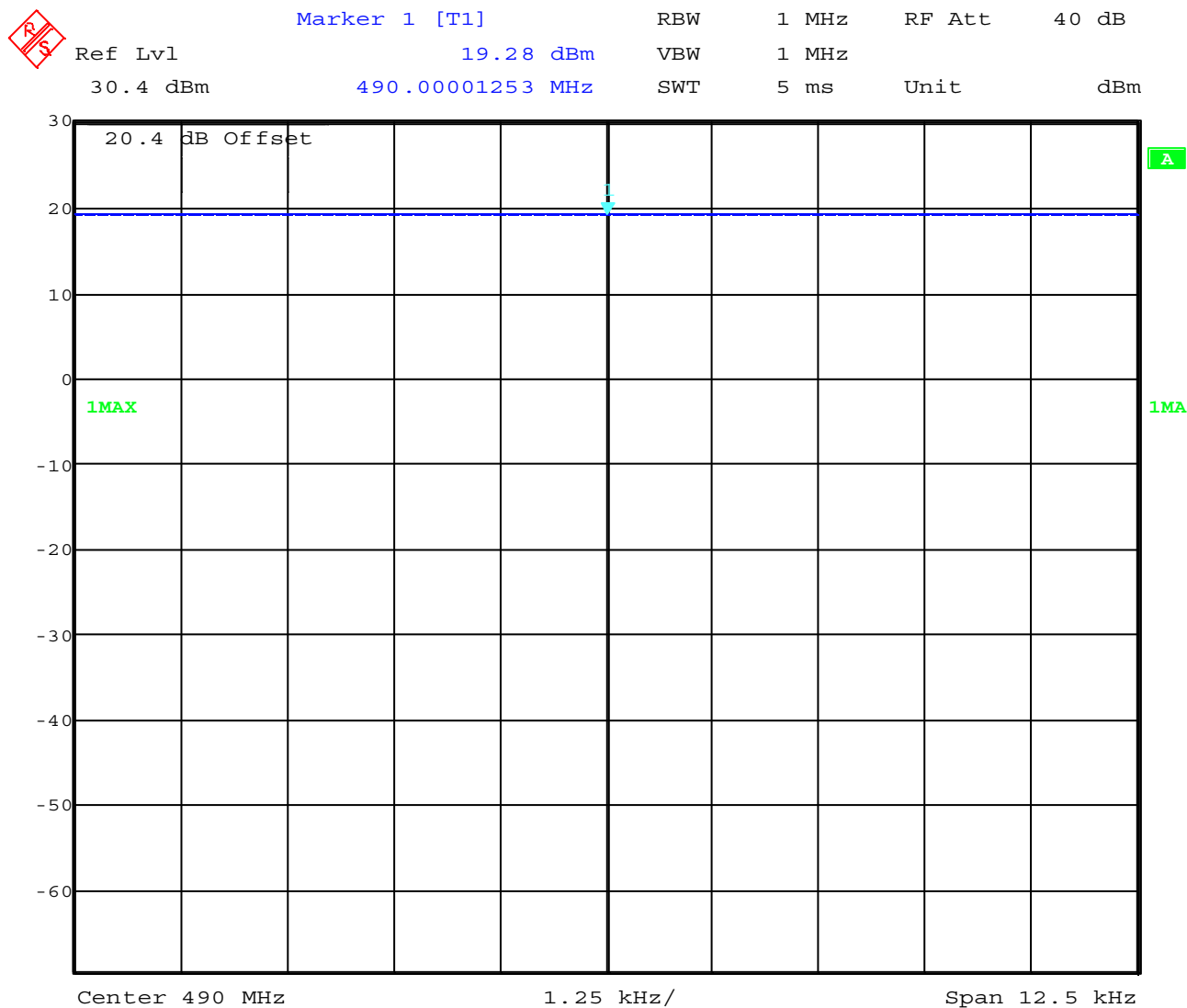
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

Peak output power (conducted)

490 MHz (min. power)



Date: 20.MAR.2002 09:07:34

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

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

EMISSION LIMITATIONS					
f (MHz)		amplitude of emission (dBm)	limit max. allowed emmission power	actual attenuation below frequency of operation (dB)	results
See plots ; all peaks << Limit (-20 dBm)					
Measurement uncertainty		± 3dB			

RBW : 100 kHz VBW: 1 MHz

At all measurements the carrier was notched with a rejection filter
(TELONIC TTR 375-3EE; S/N 95052-1)

LIMITS

SUBCLAUSE § 2.991

Conducted spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

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Equipment under test : MC9635 CS G1 UM

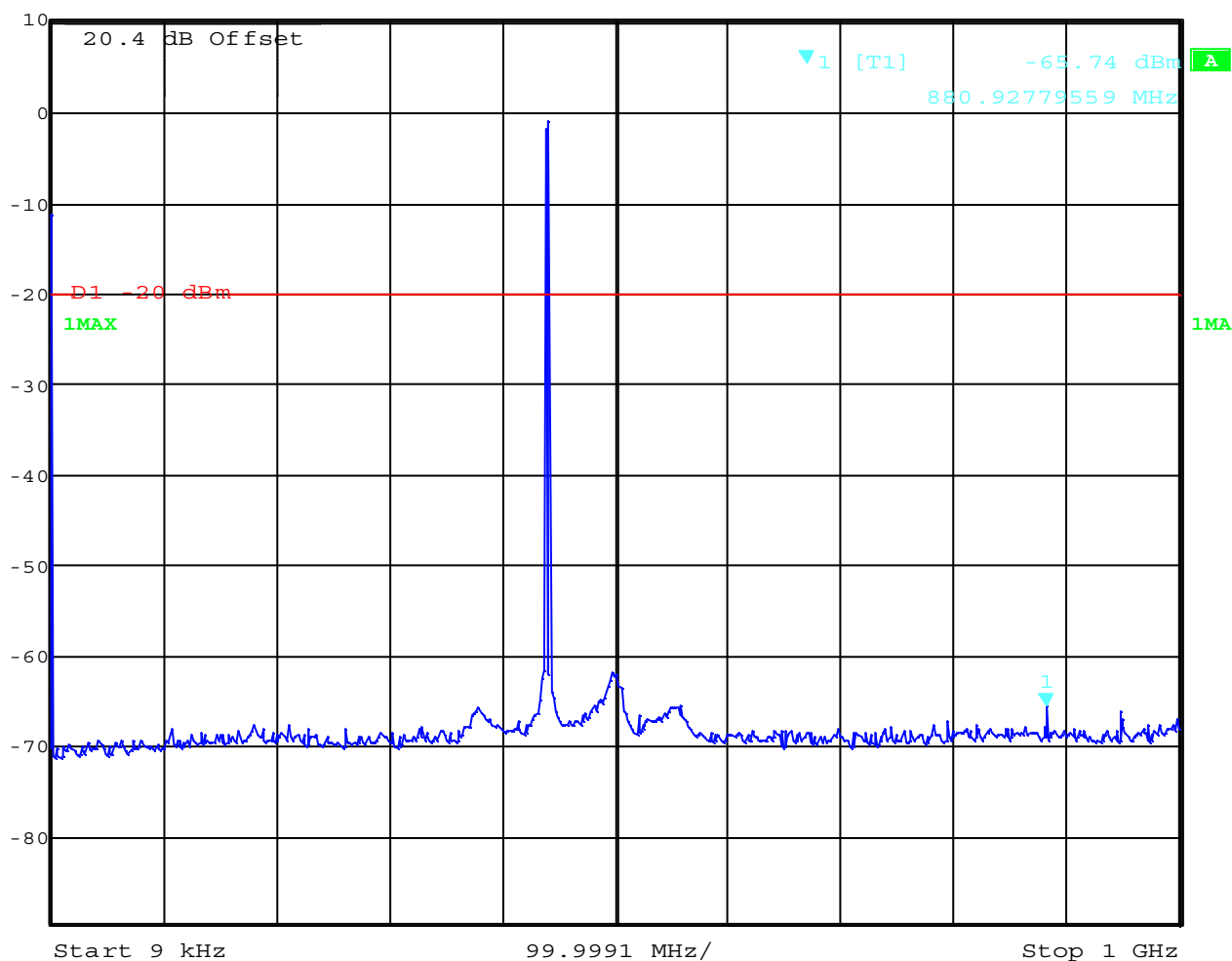
Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

440 MHz max power


 Marker 1 [T1] RBW 100 kHz RF Att 0 dB
 Ref Lvl -65.74 dBm VBW 100 kHz
 10.4 dBm 880.92779559 MHz SWT 250 ms Unit dBm



Date: 20.MAR.2002 09:52:49

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

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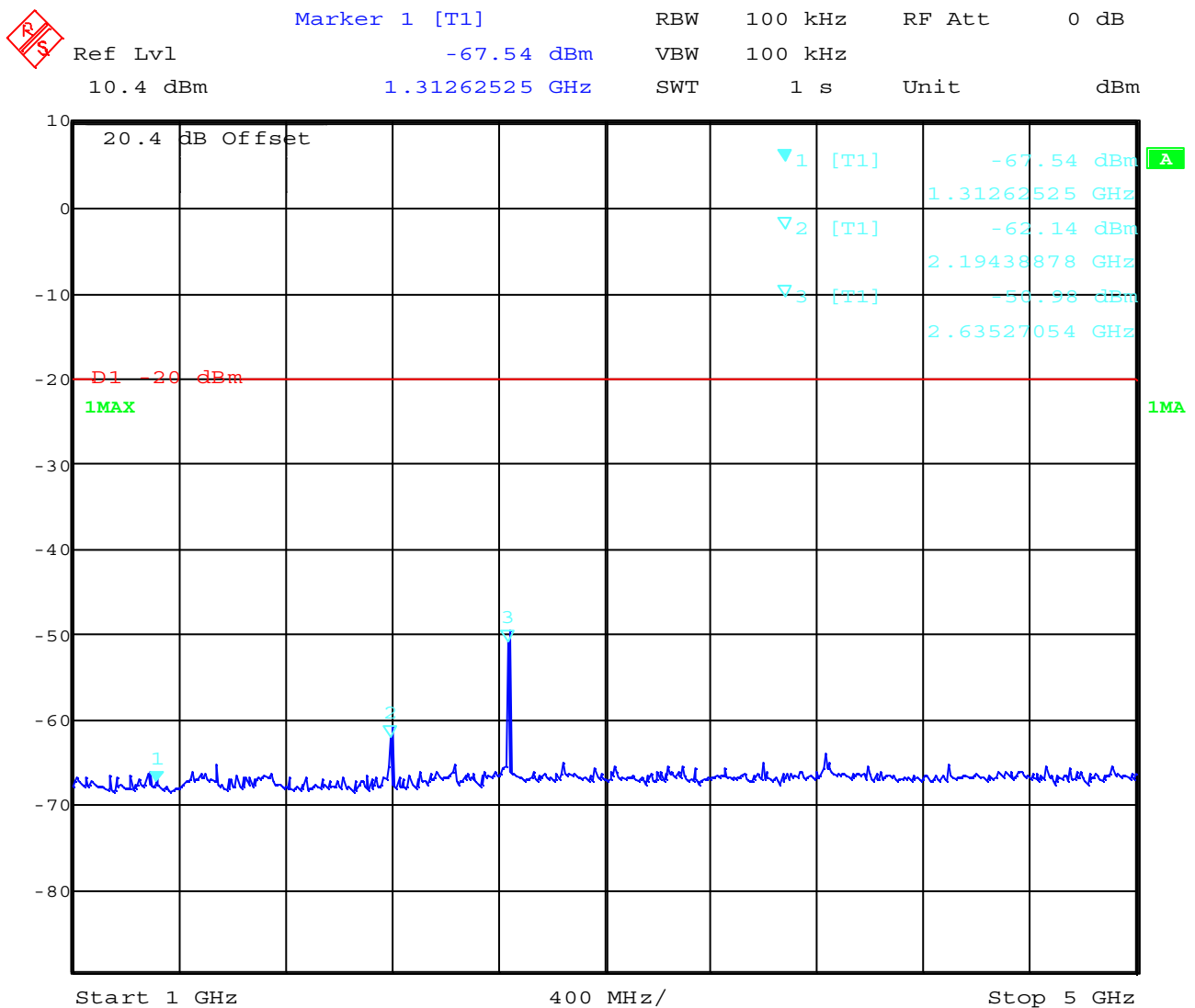
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

440 MHz max power



Date: 20.MAR.2002 09:58:00

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

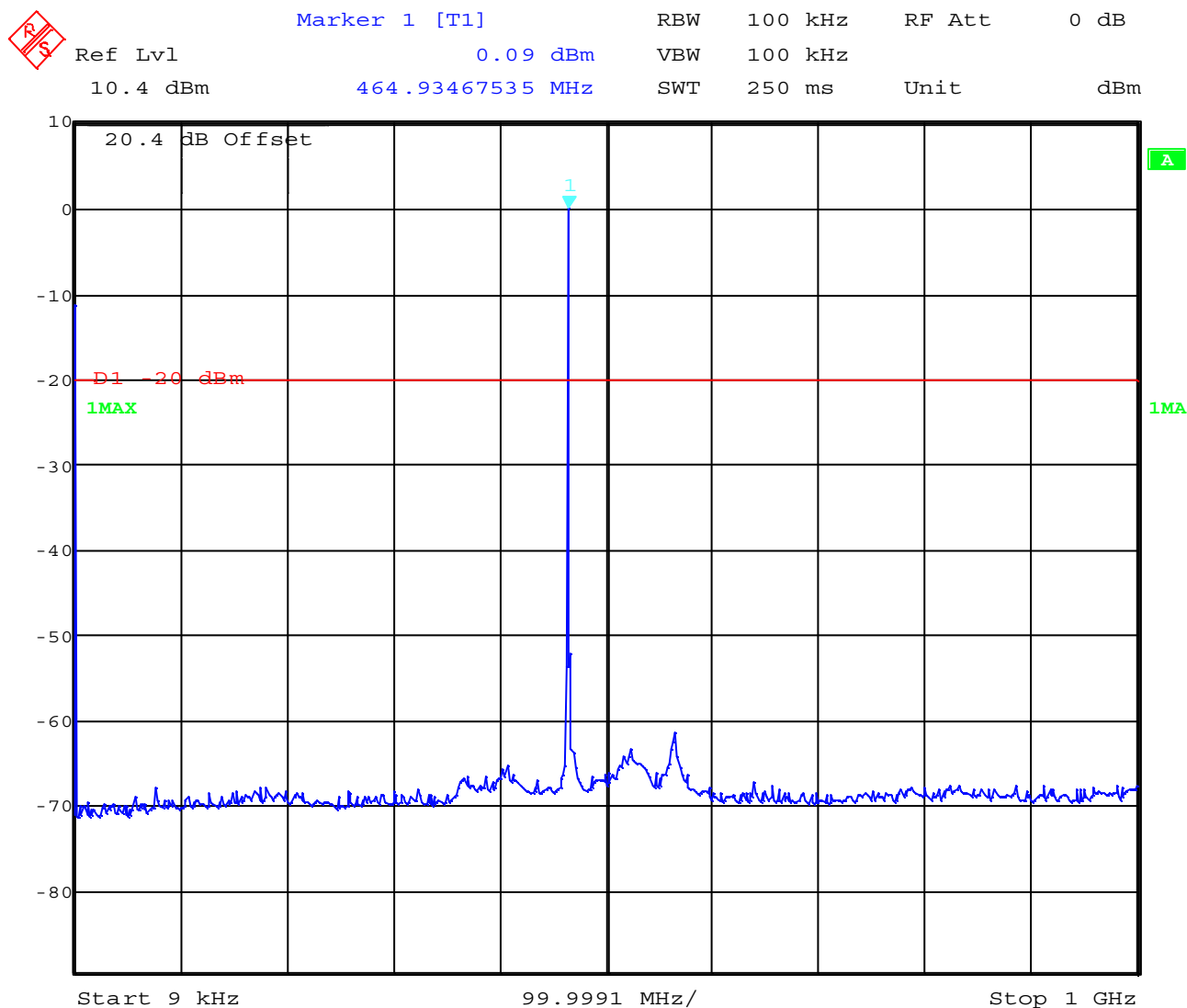
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

465 MHz max power



Date: 20.MAR.2002 10:04:09

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

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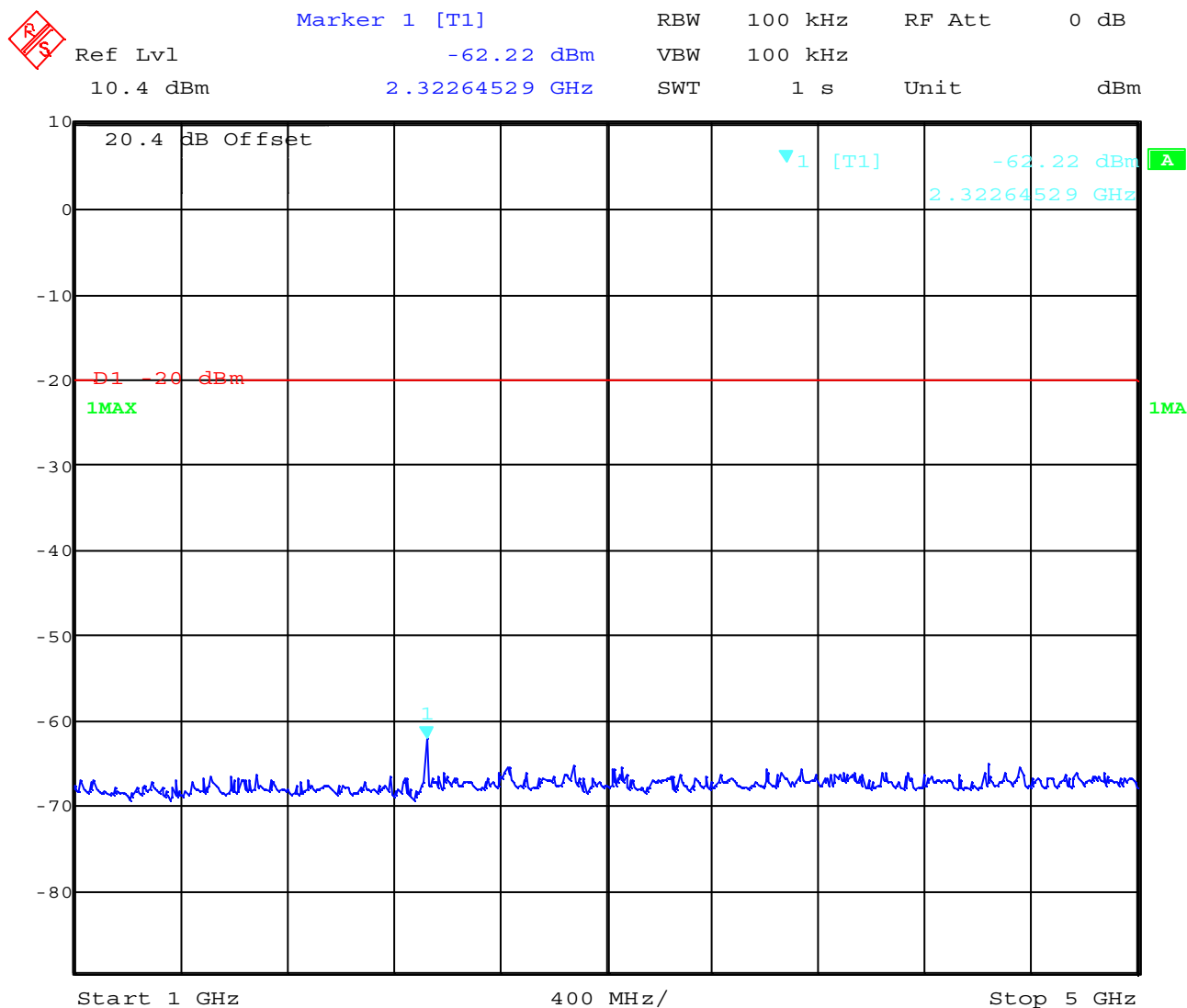
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

465 MHz max power



Date: 20.MAR.2002 10:14:03

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

Test report nr.: 5_3928-01-01/02

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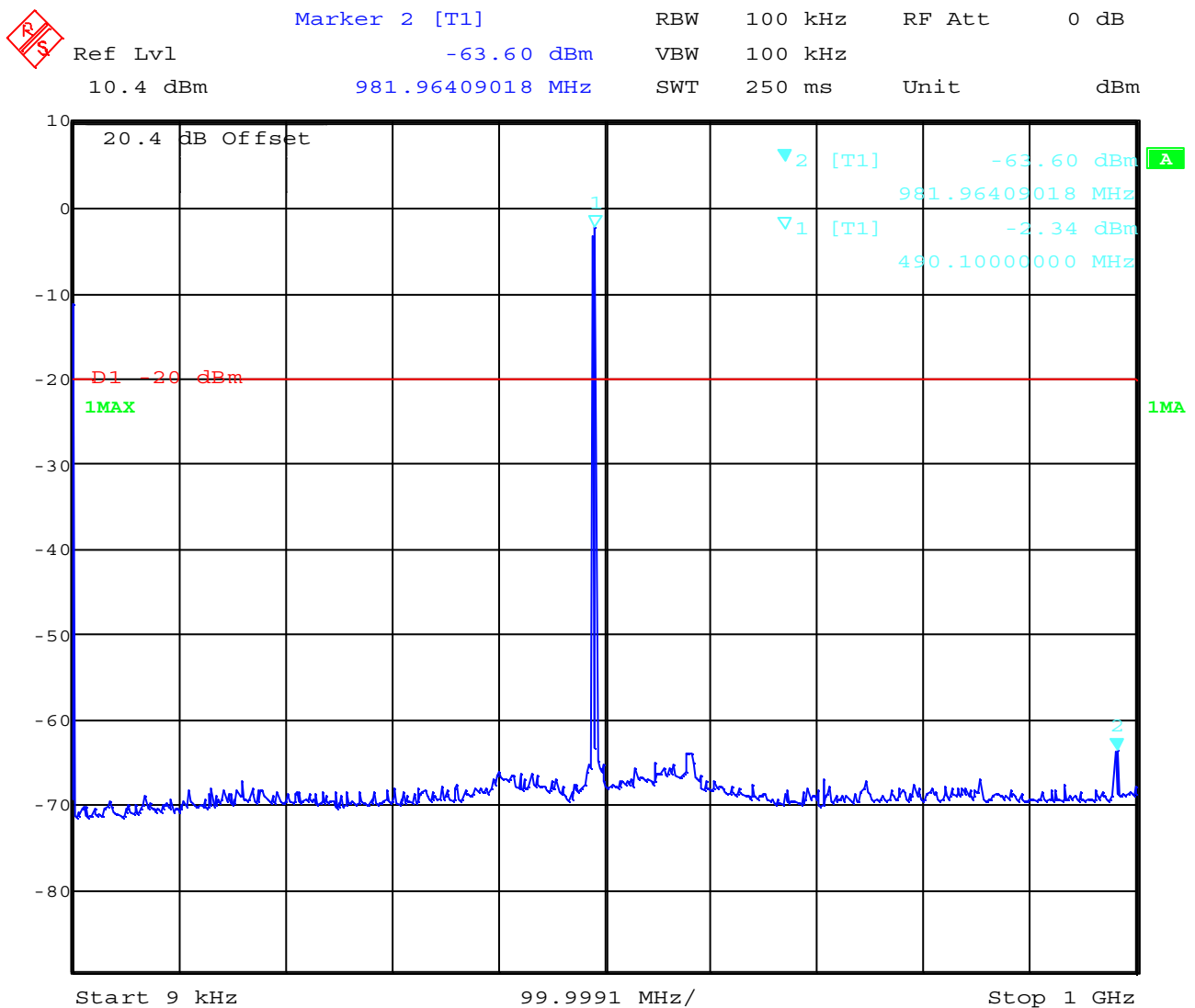
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

490 MHz max power



Date: 20.MAR.2002 10:19:26

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

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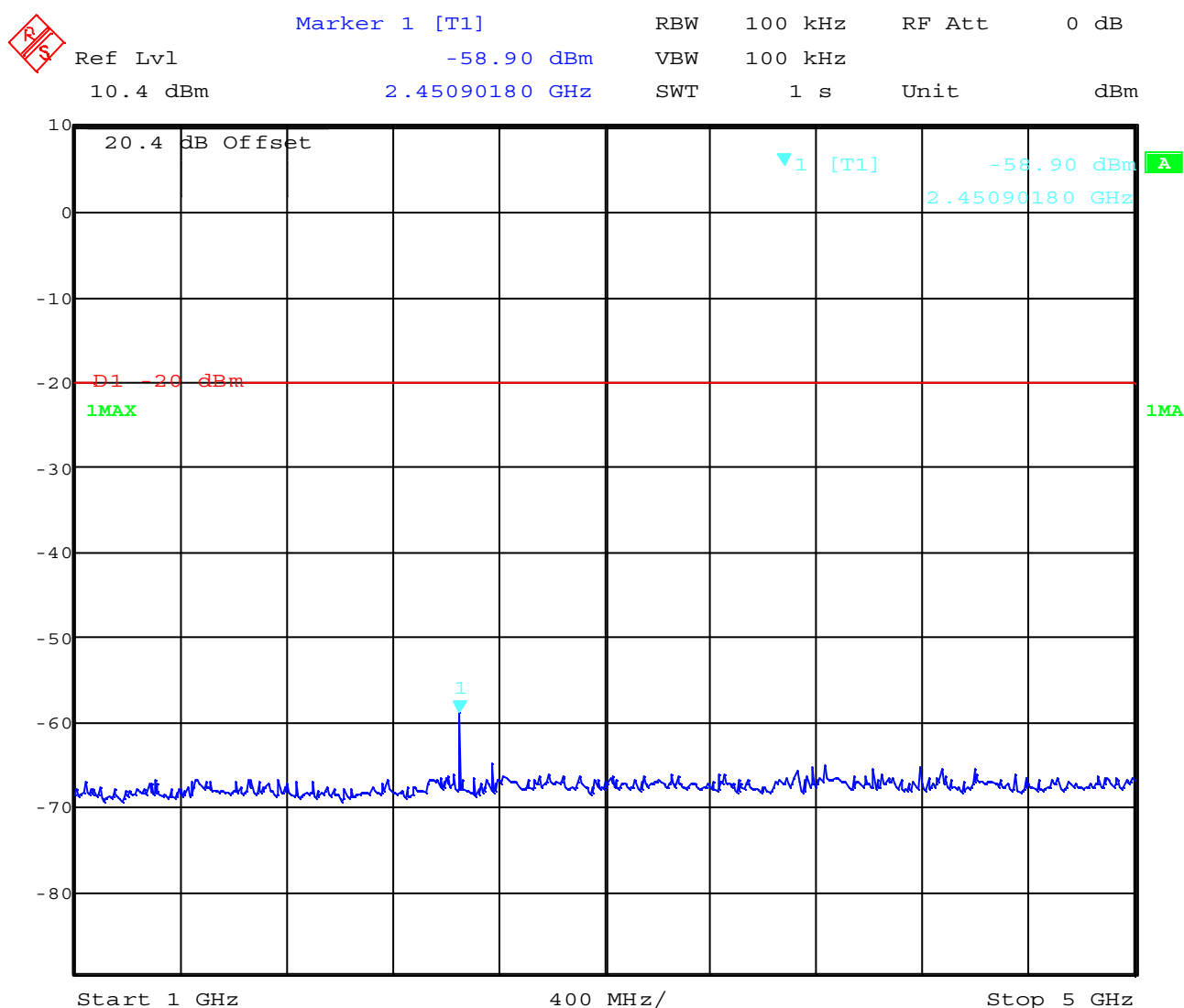
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

490 MHz max power



Date: 20.MAR.2002 10:16:14

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

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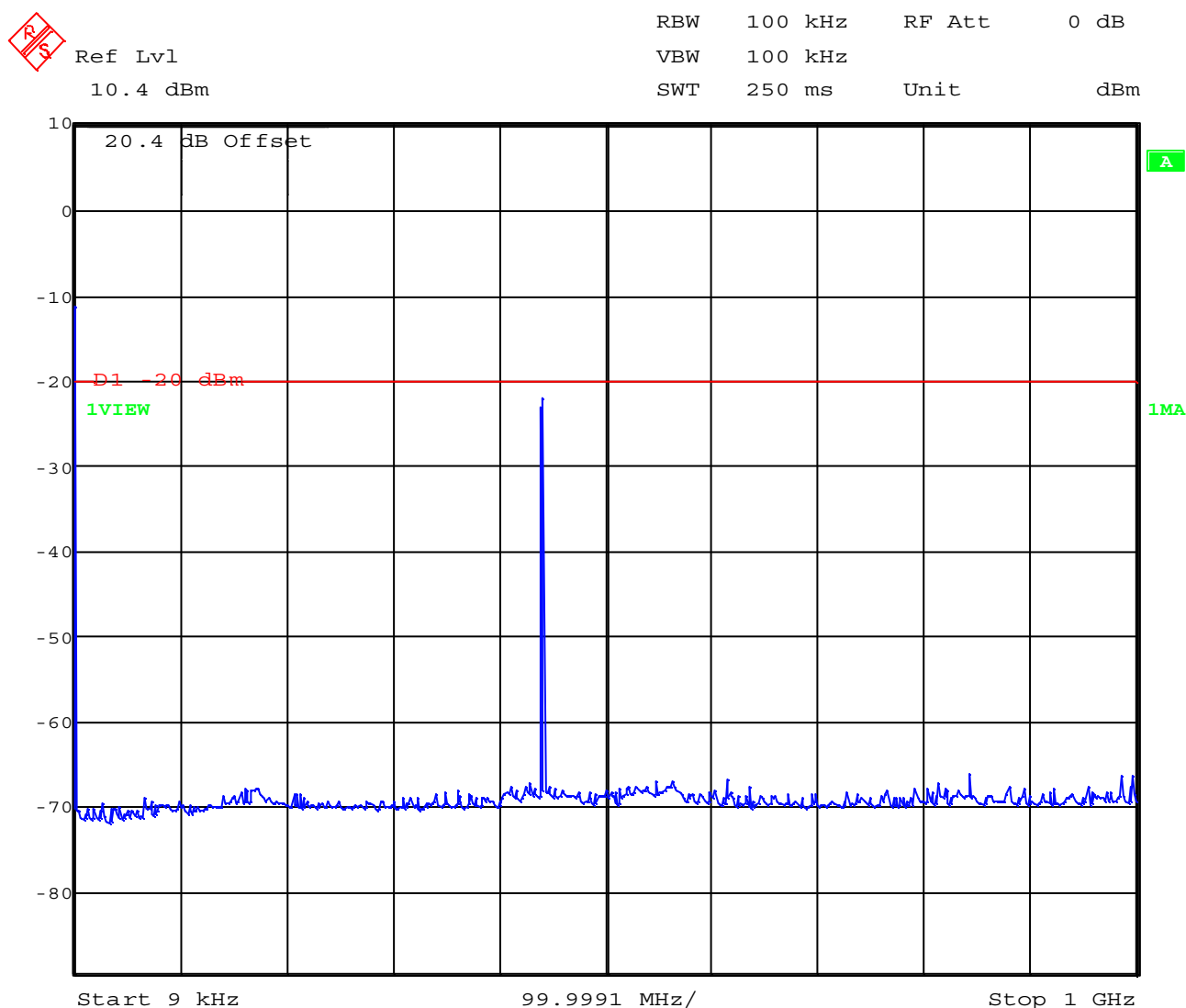
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

440 MHz min power



Date: 20.MAR.2002 10:01:17

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
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Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

440 MHz min power



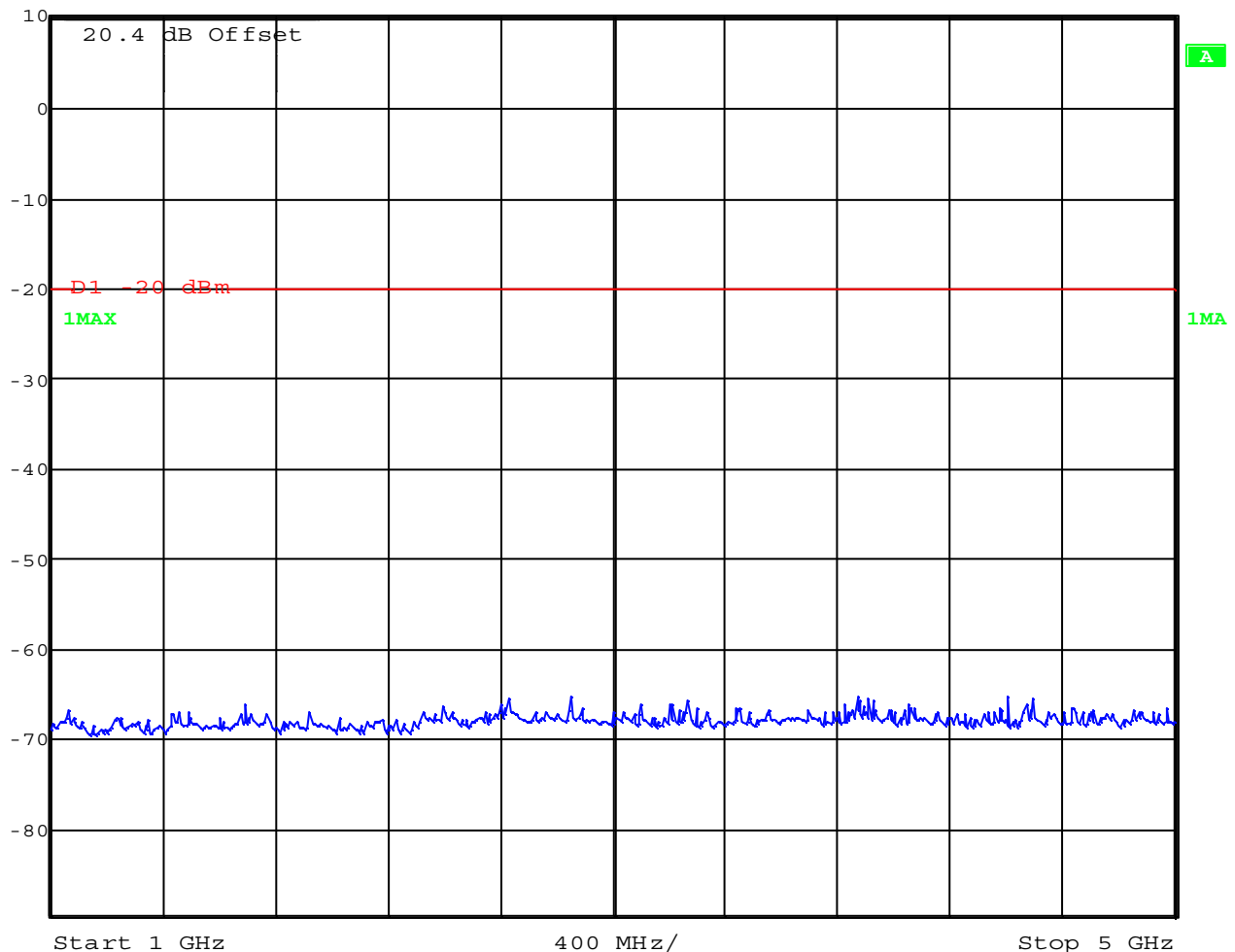
Ref Lvl

10.4 dBm

RBW 100 kHz RF Att 0 dB

VBW 100 kHz

SWT 1 s Unit dBm



Date: 20.MAR.2002 09:59:55

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

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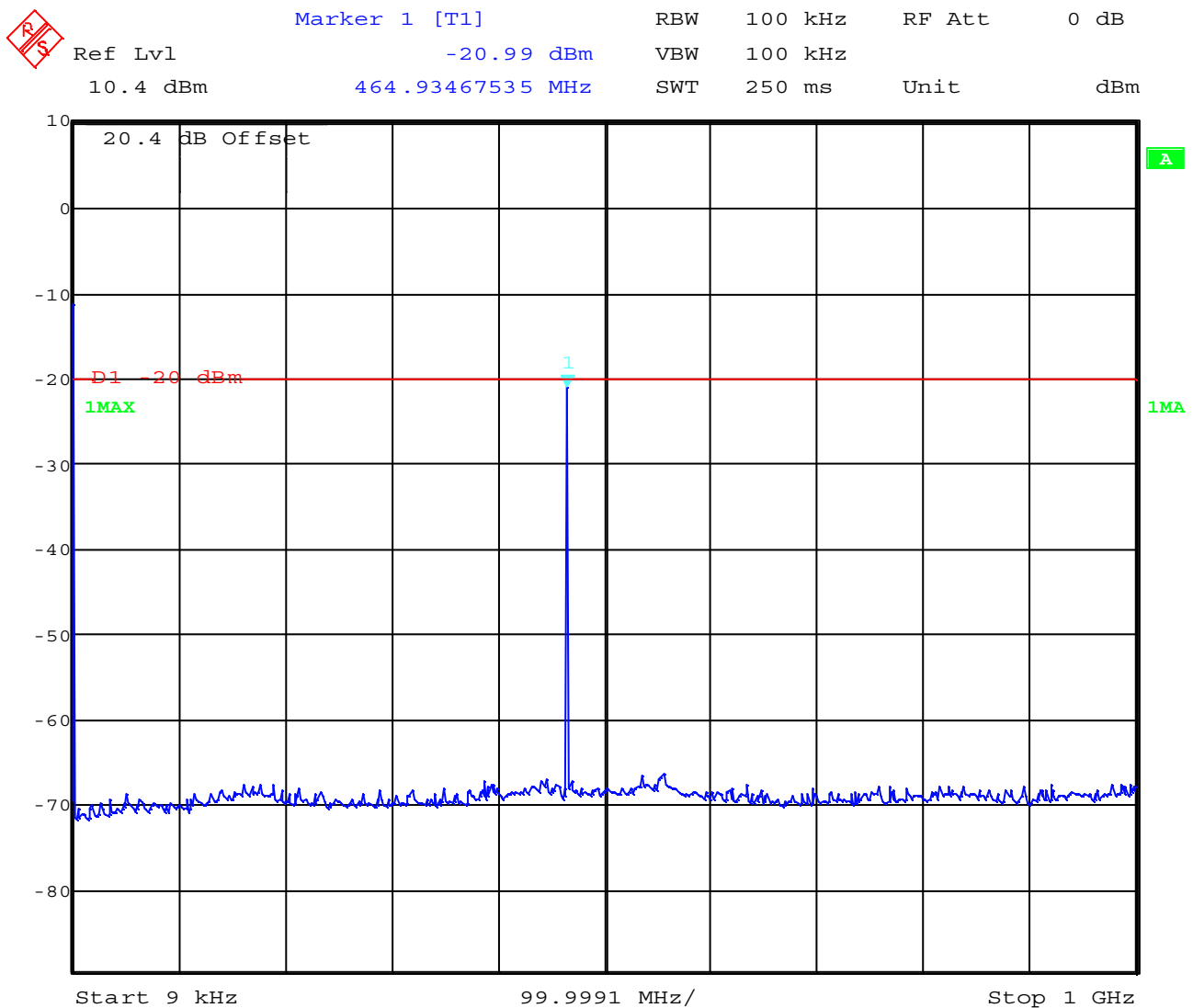
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

465 MHz min power



Date: 20.MAR.2002 10:02:41

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
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Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

465 MHz min power



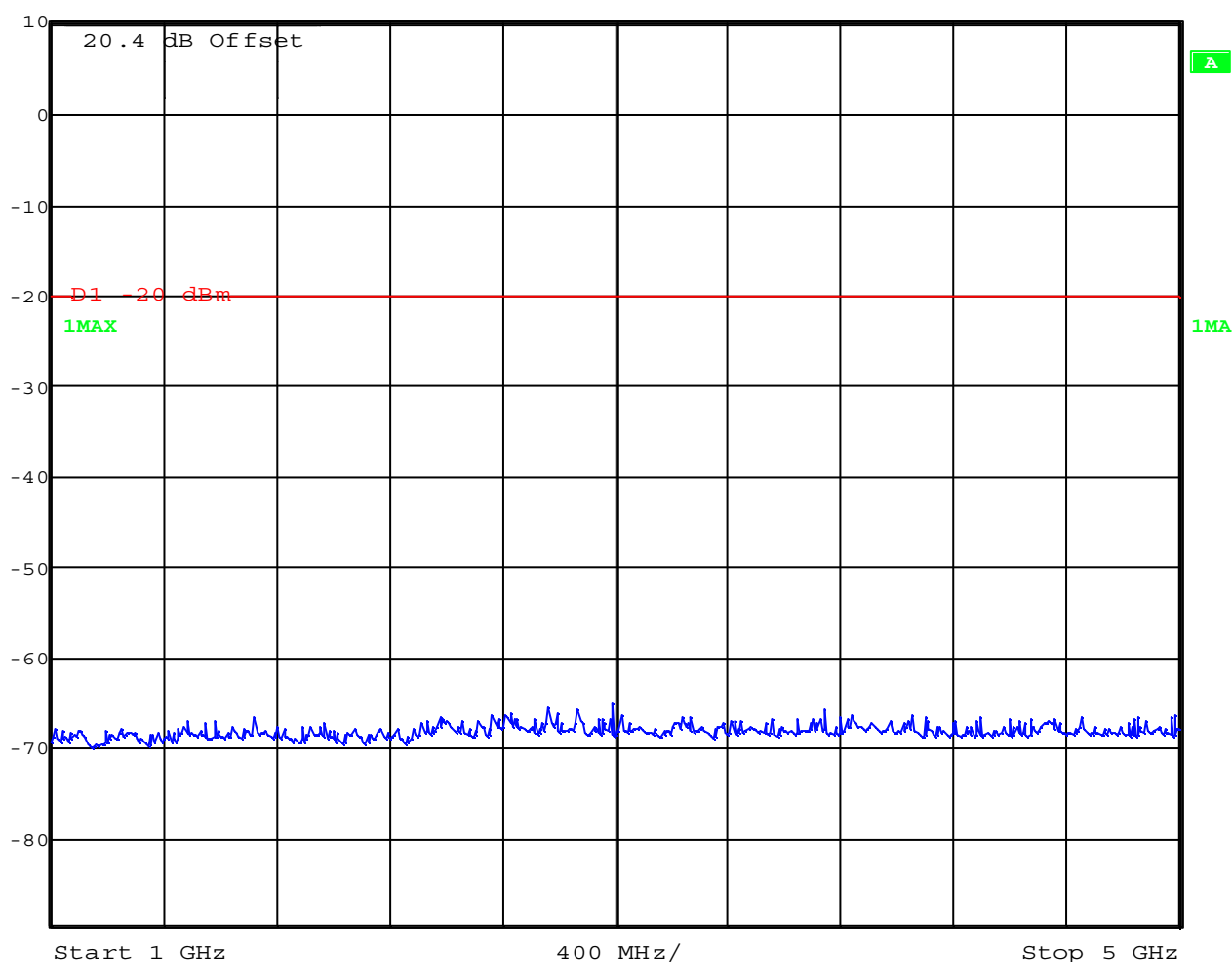
Ref Lvl

10.4 dBm

RBW 100 kHz RF Att 0 dB

VBW 100 kHz

SWT 1 s Unit dBm



Date: 20.MAR.2002 10:14:34

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
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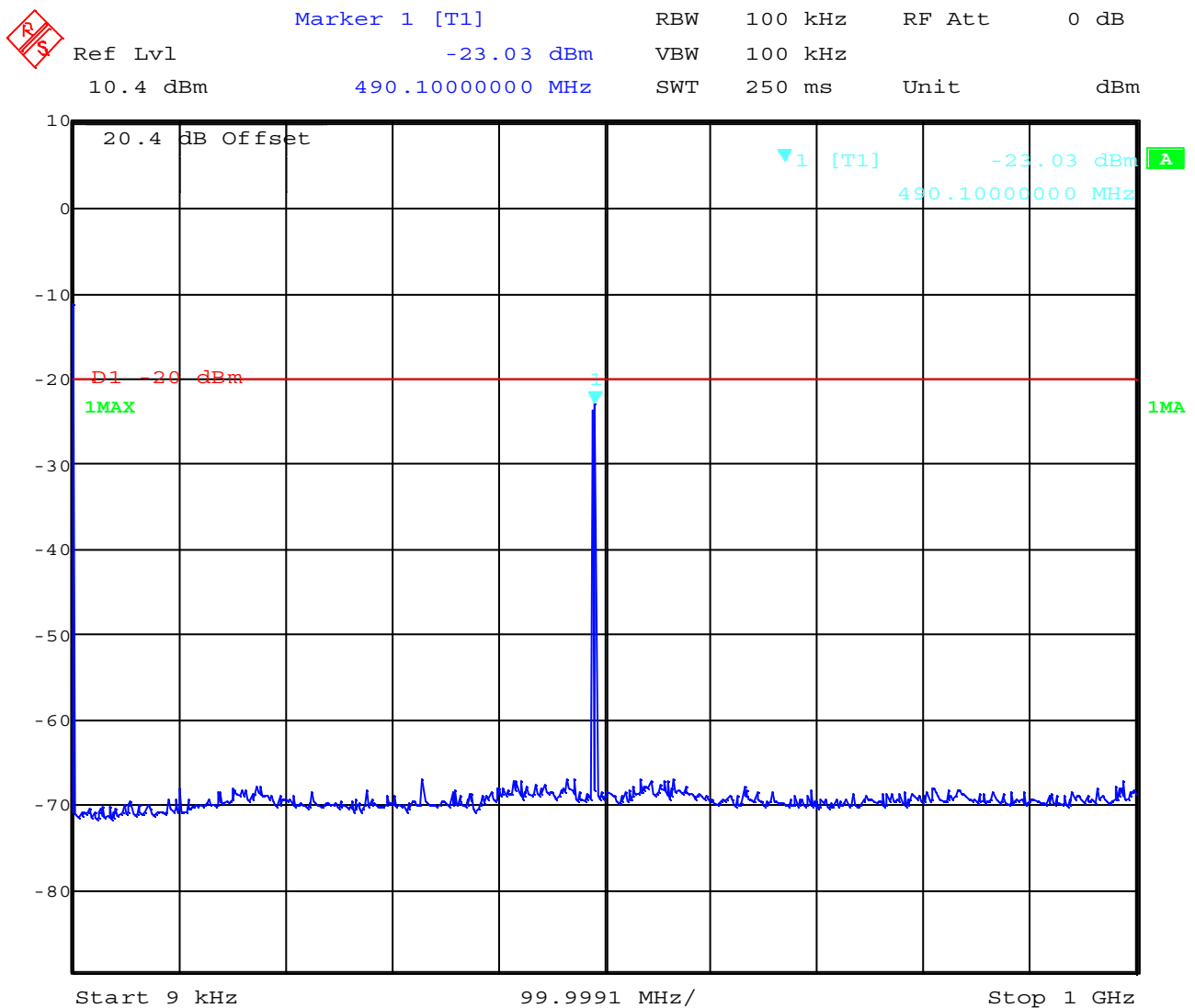
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

490 MHz min power



Date: 20.MAR.2002 10:19:55

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

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Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

CONDUCTED SPURIOUS EMISSIONS § 2.991

490 MHz min power



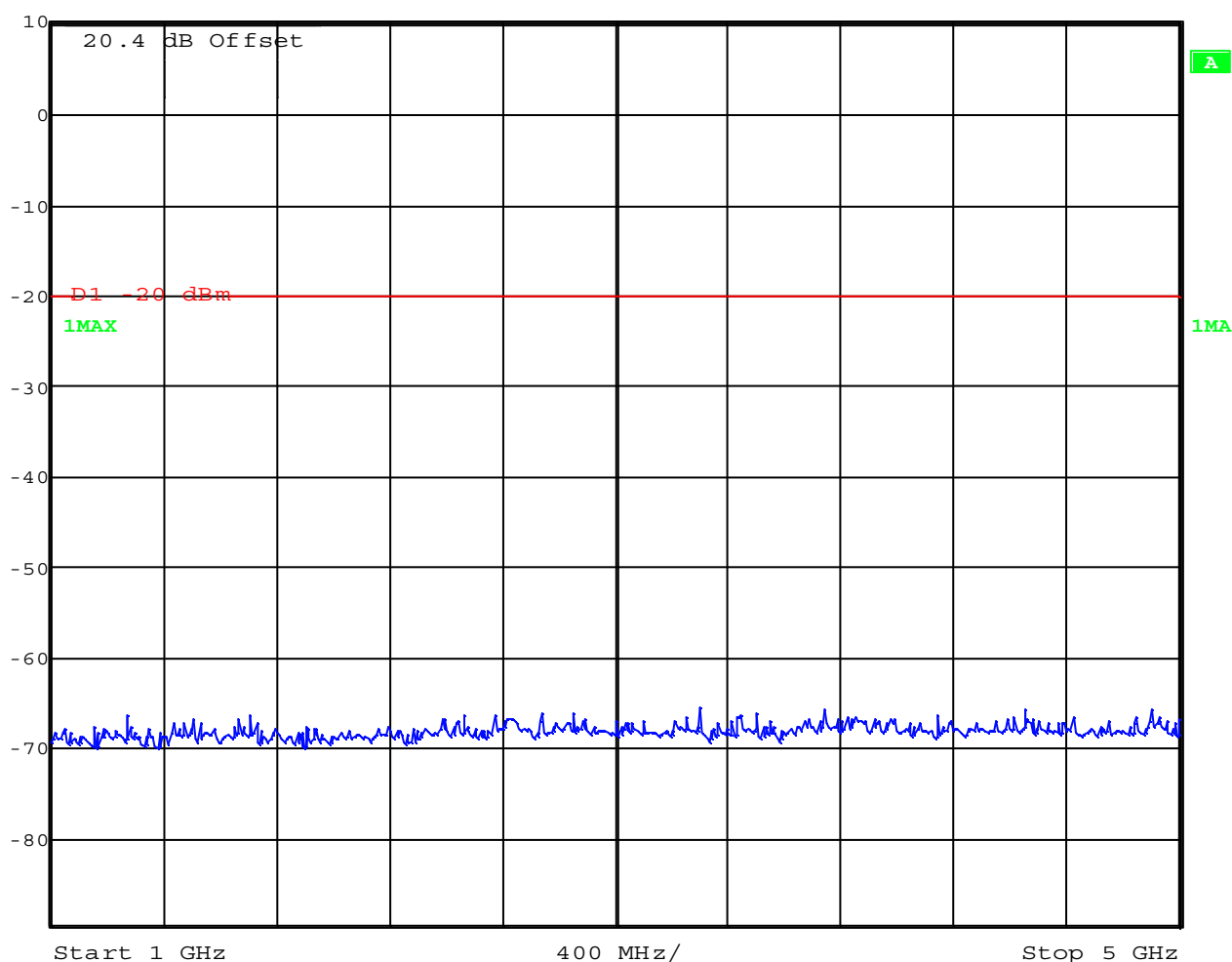
Ref Lvl

10.4 dBm

RBW 100 kHz RF Att 0 dB

VBW 100 kHz

SWT 1 s Unit dBm



Date: 20.MAR.2002 10:15:33

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

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSION §2.1053

Measured with both Power supplies (ALCATEL and MARTEK)

EMISSION LIMITATIONS					
f (MHz)	Polarization	amplitude of emission (dBm)	limit max. allowed emmission power	actual attenuation below frequency of operation (dB)	results
440 MHz					
2200	H	-45.6	-20.0	85.6	complies
465 MHz					
No peak	found				
490 MHz					
No peak	found				
Measurement uncertainty		± 3dB			

At all measurements the carrier was notched with a rejection filter
(TELONIC TTR 375-3EE; S/N 95052-1)

The test setups for transmitter spurious radiated measurements are according ANSI C63.4
Clause 11

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

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

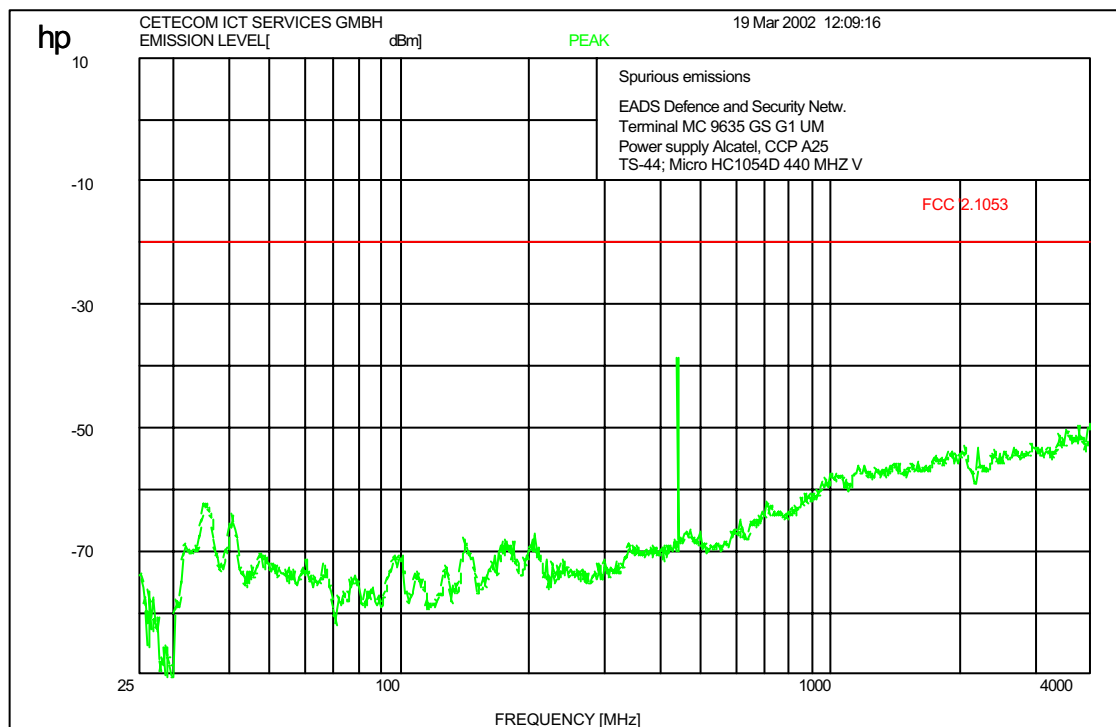
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

440 MHz max. power vertical



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

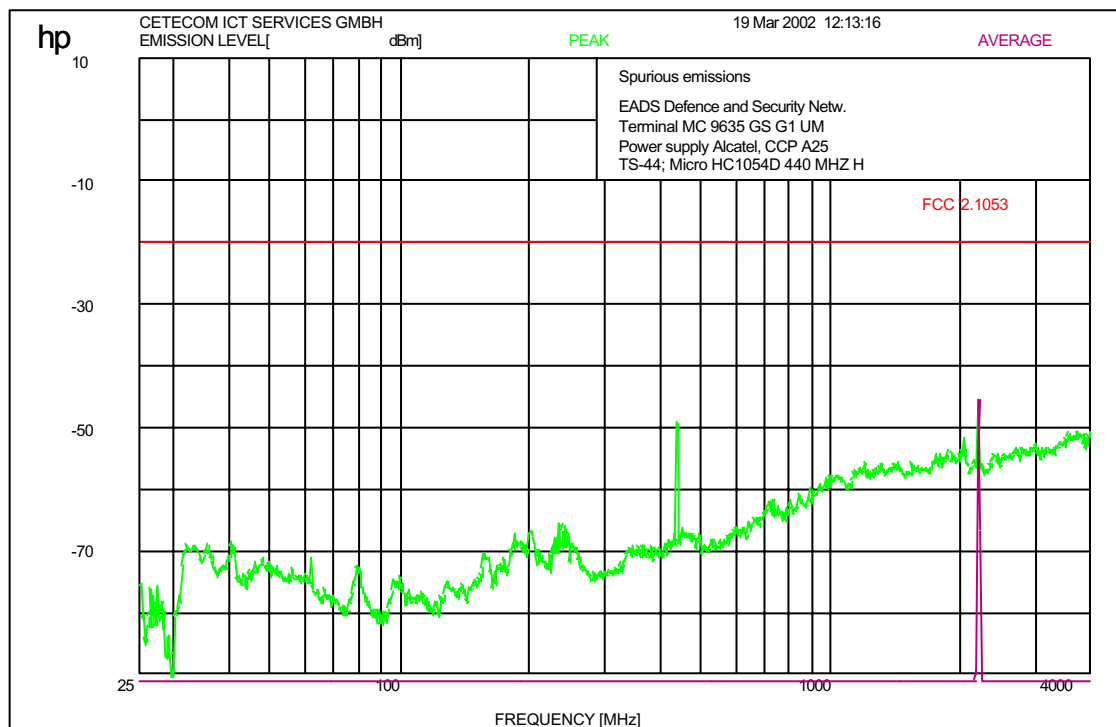
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

440 MHz max. power horizontal



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

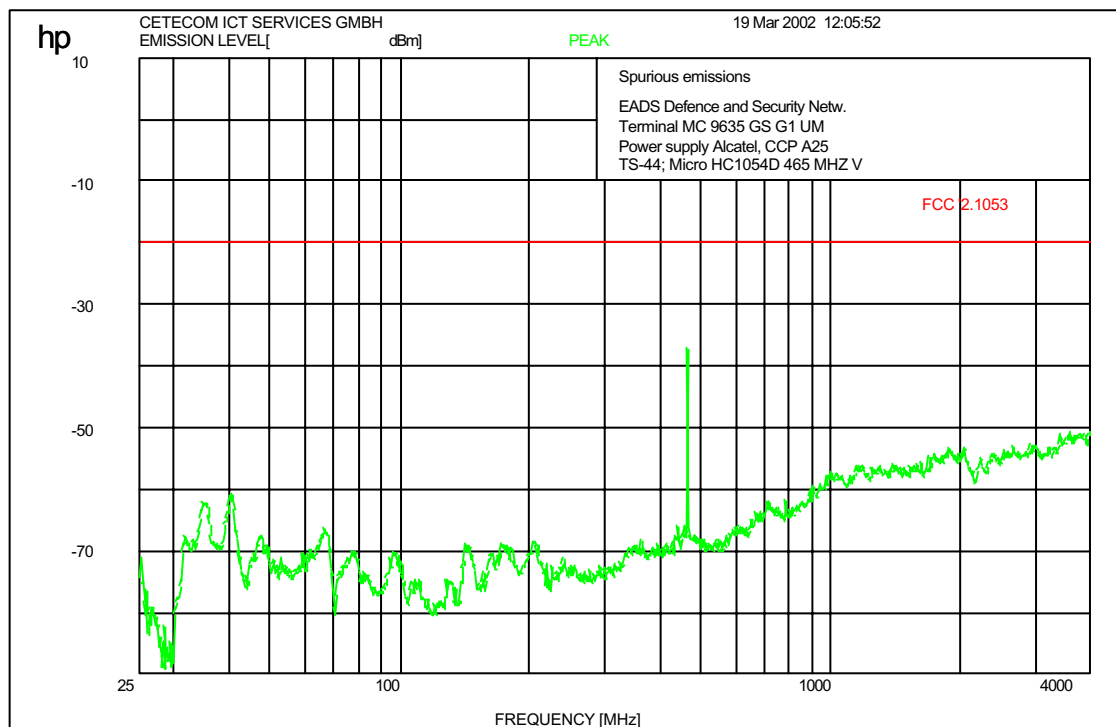
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 MHz max. power vertical



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

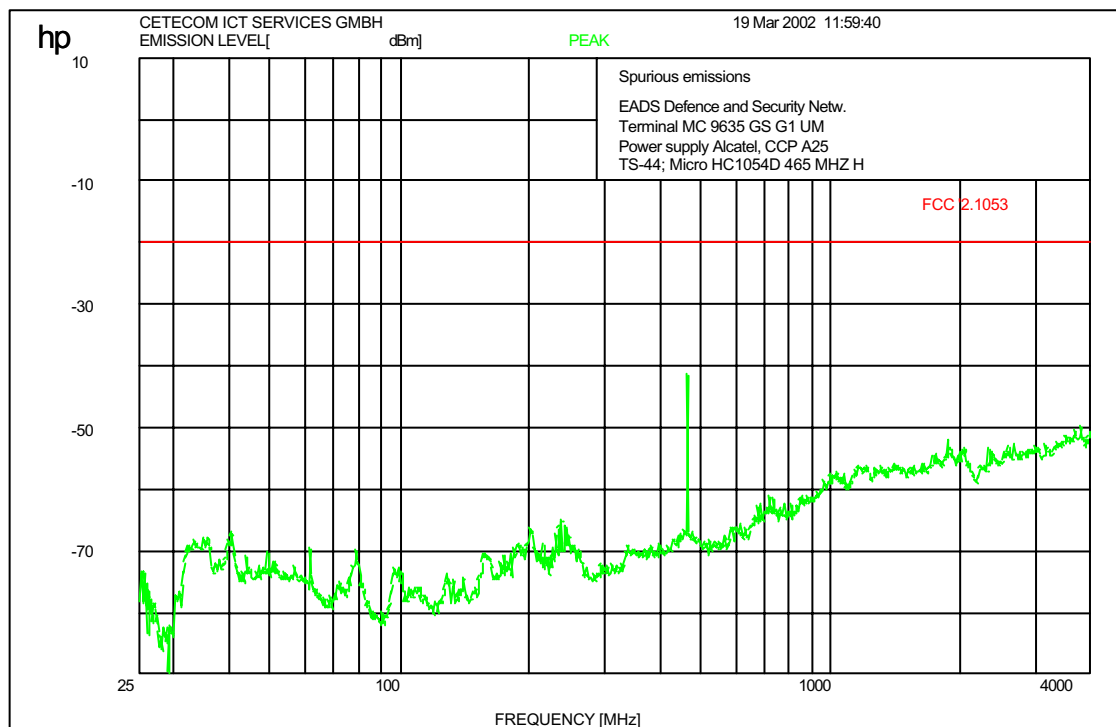
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 MHz max. power horizontal



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

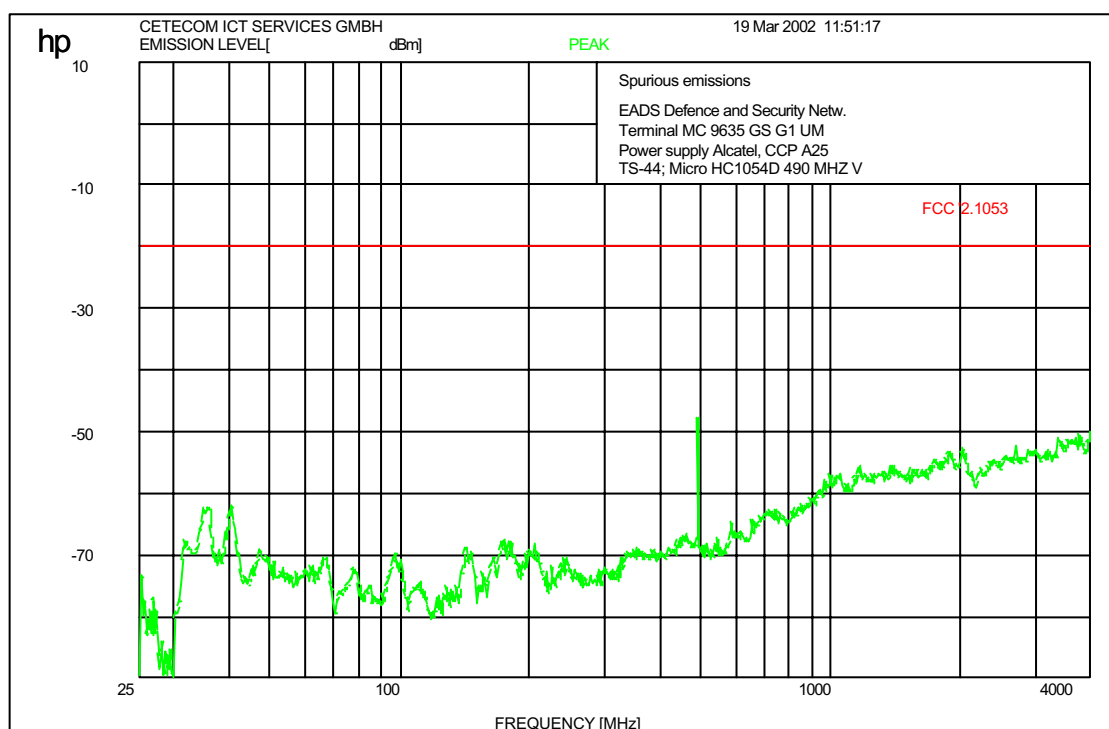
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

490 MHz max. power vertical



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

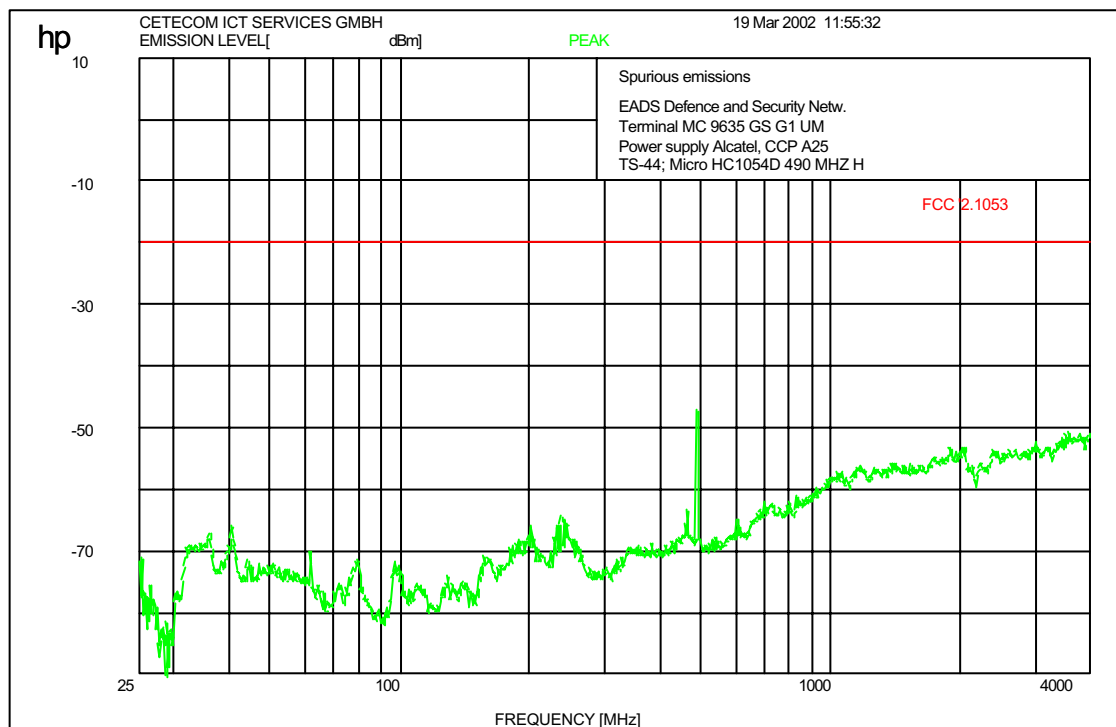
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

490 MHz max. power horizontal



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

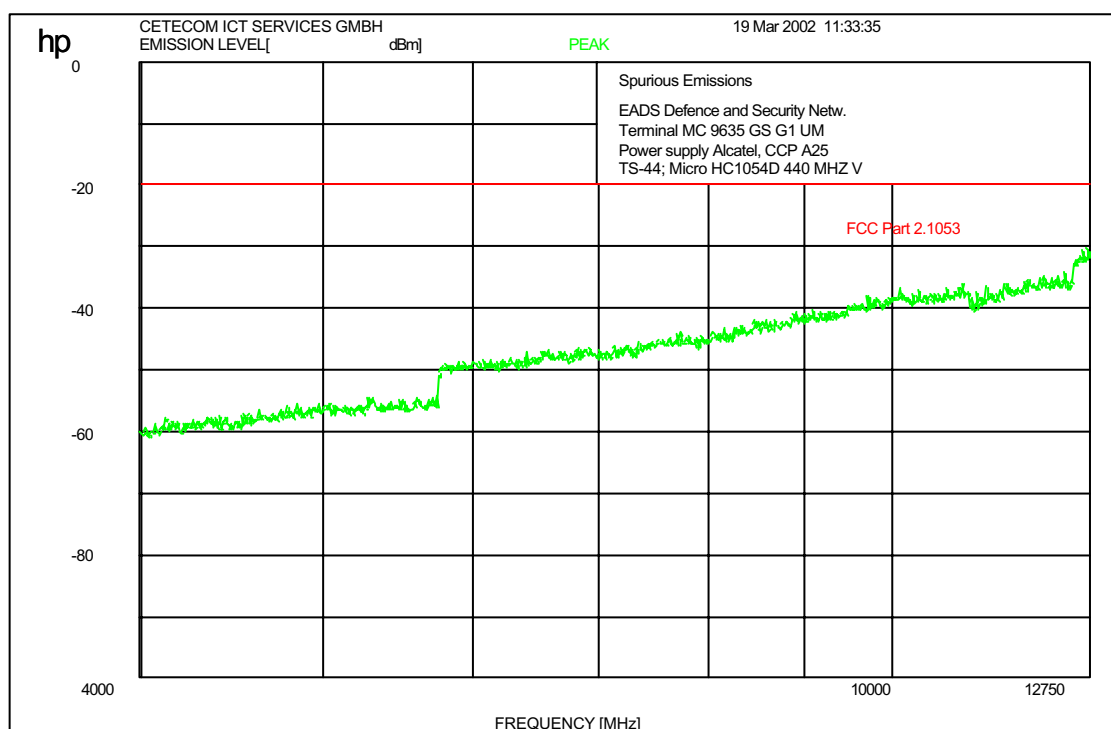
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

440 MHz max. power vertical



f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

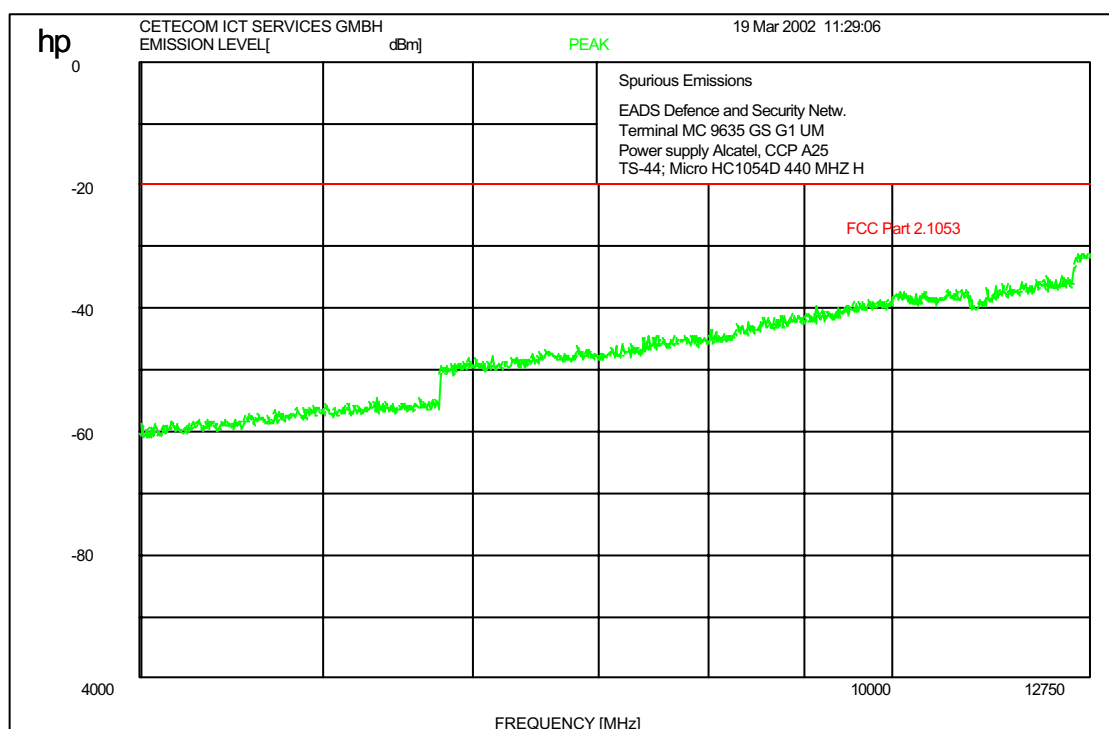
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

440 MHz max. power horizontal



f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

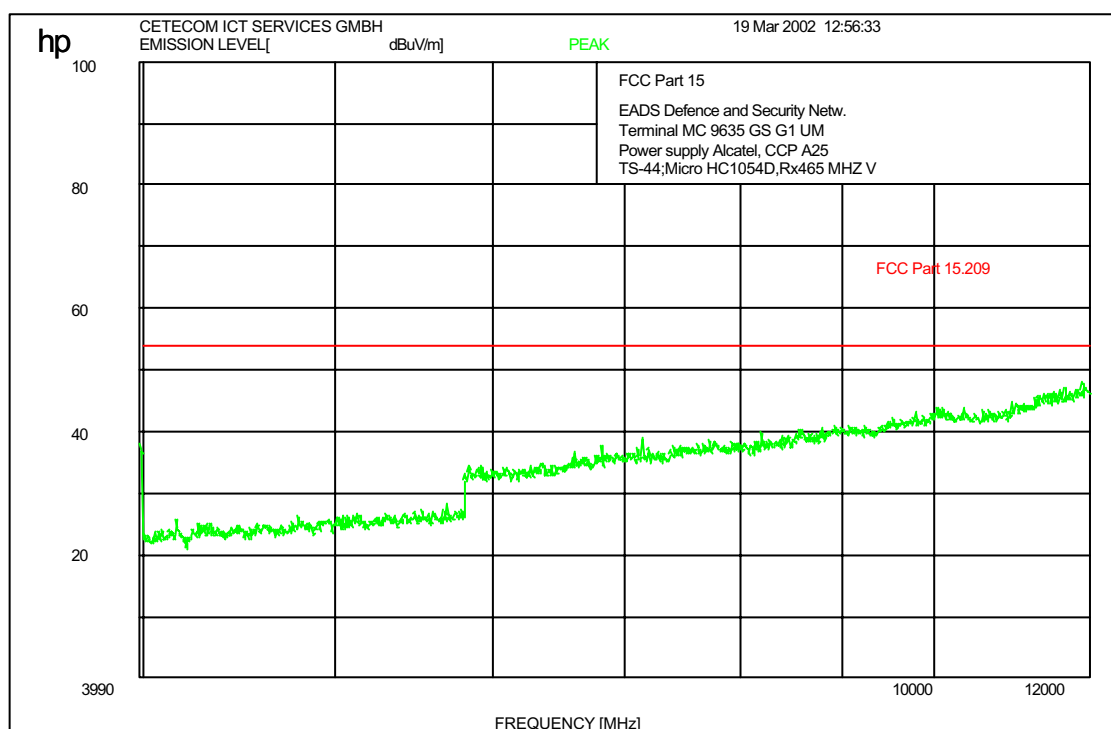
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 MHz max. power vertical



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

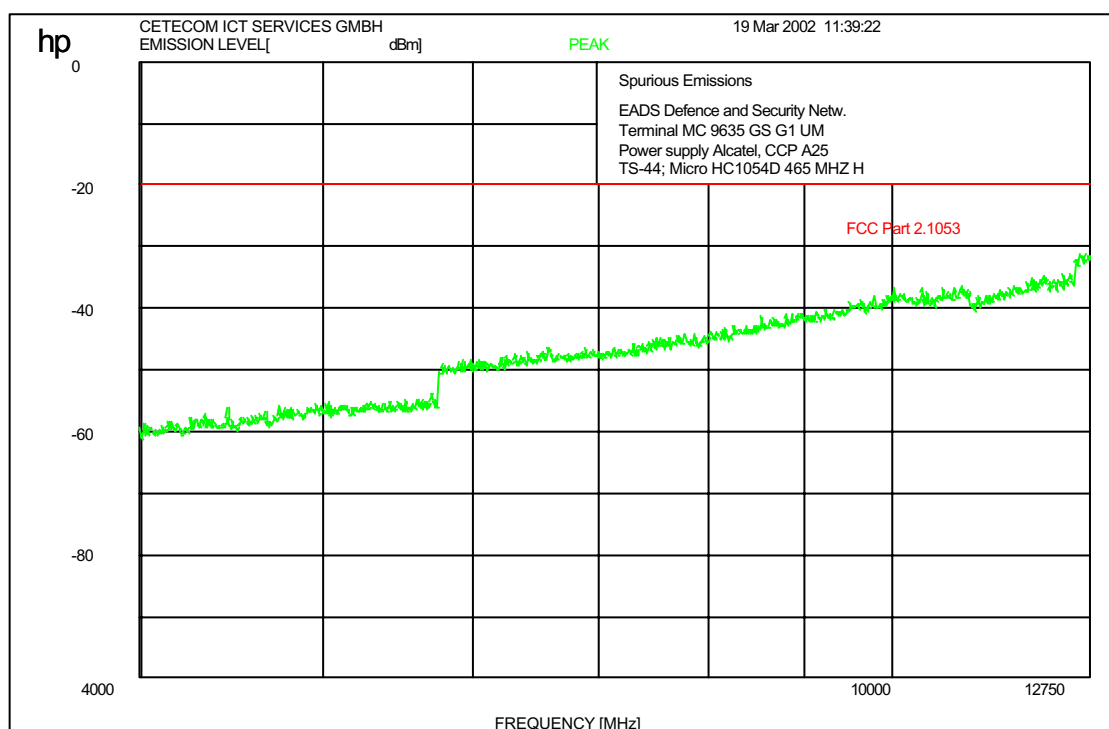
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 MHz max. power horizontal



f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

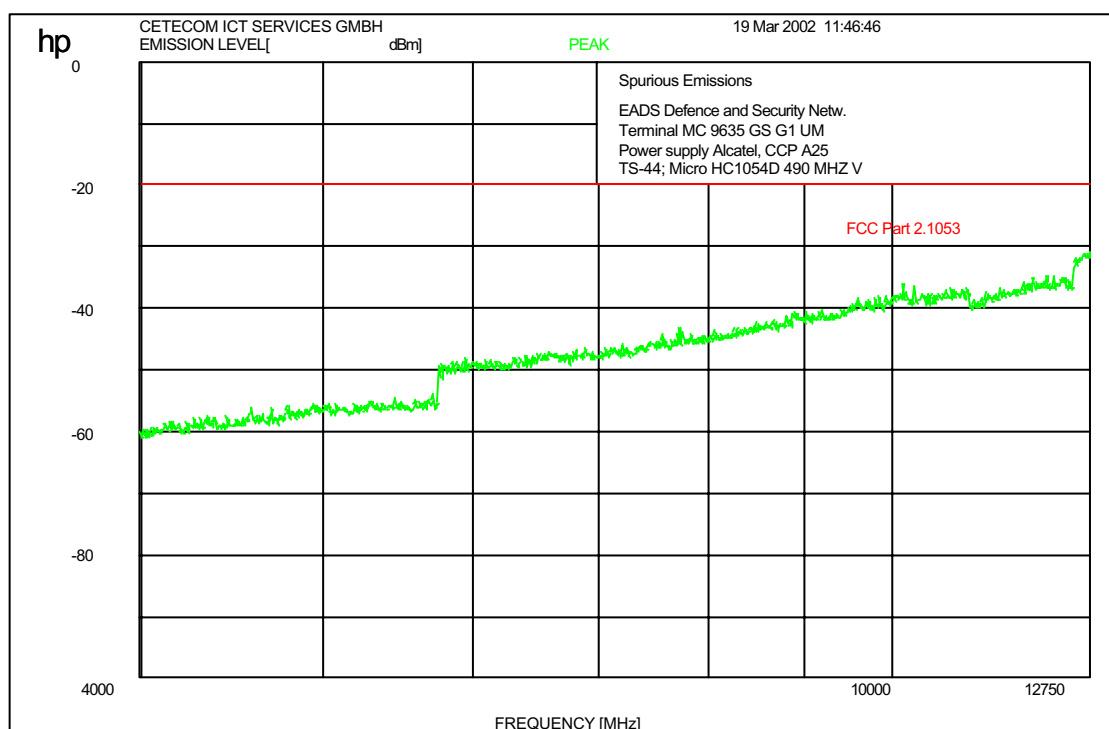
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

490 MHz max. power vertical



f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

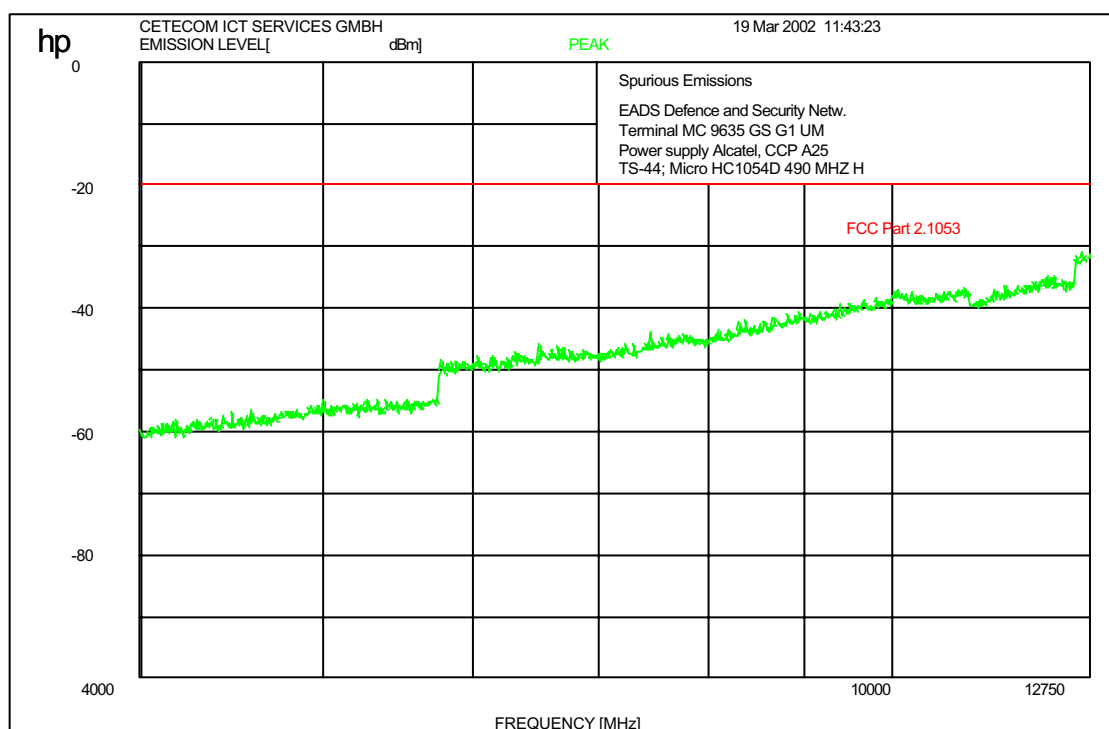
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

490 MHz max. power horizontal



f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

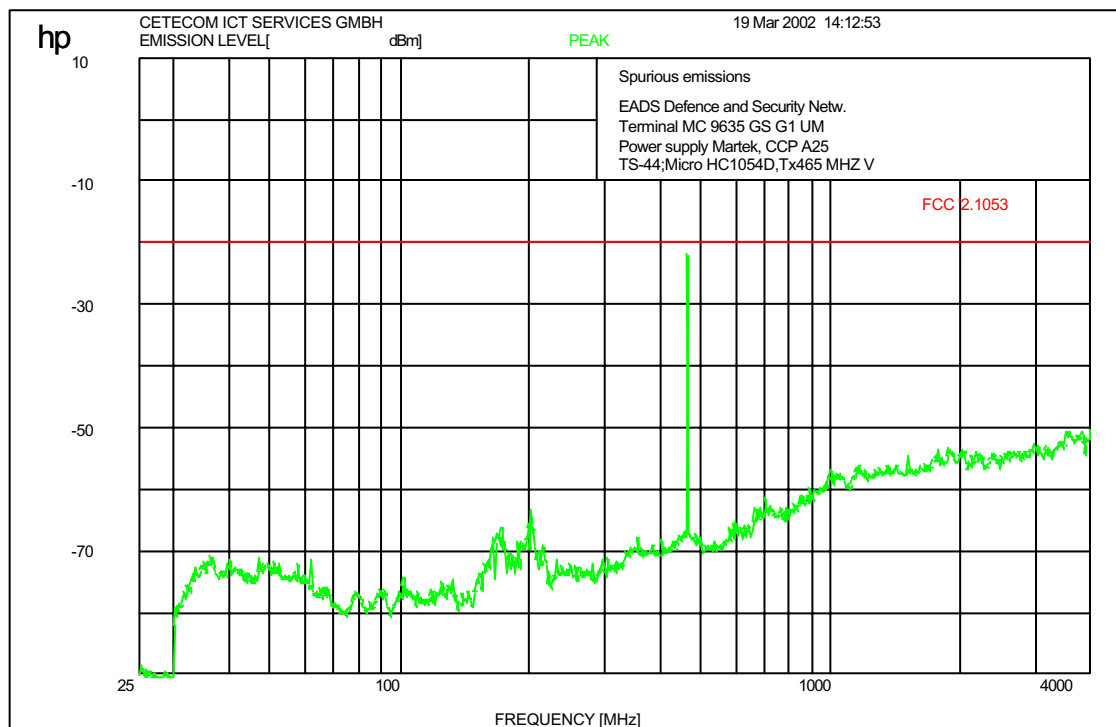
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 MHz max. power with MARTEK POWER SUPPLY, vertical



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

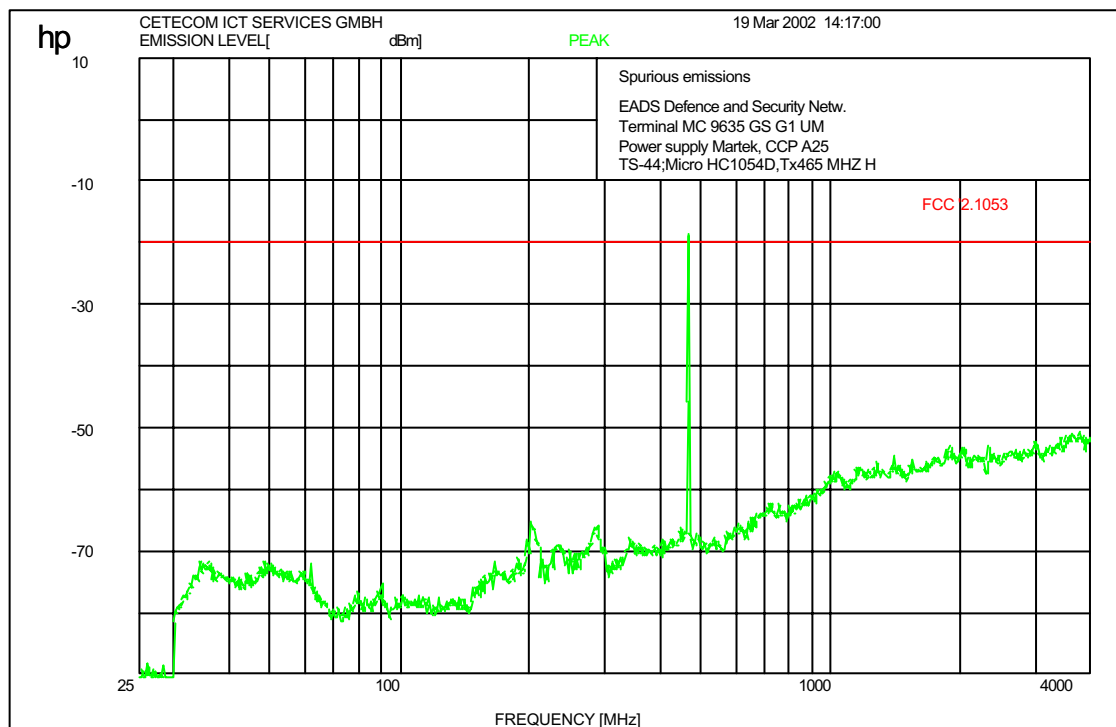
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 MHz max. power with MARTEK POWER SUPPLY, horizontal



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

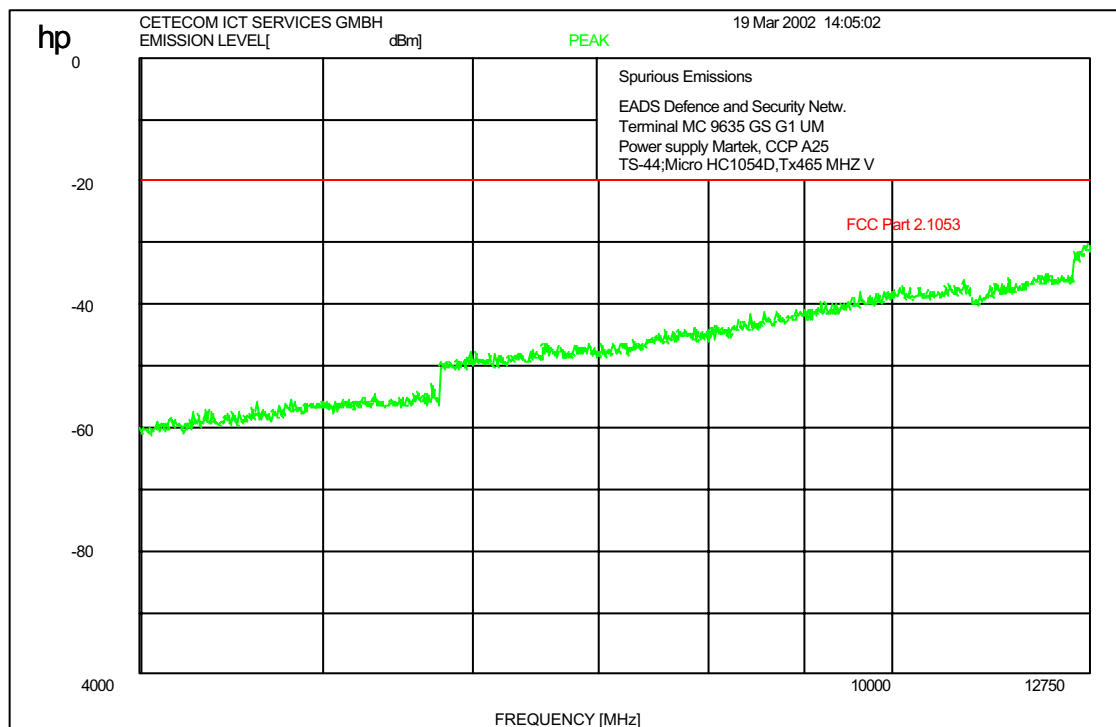
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 max. power with MARTEK POWER SUPPLY, vertical



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

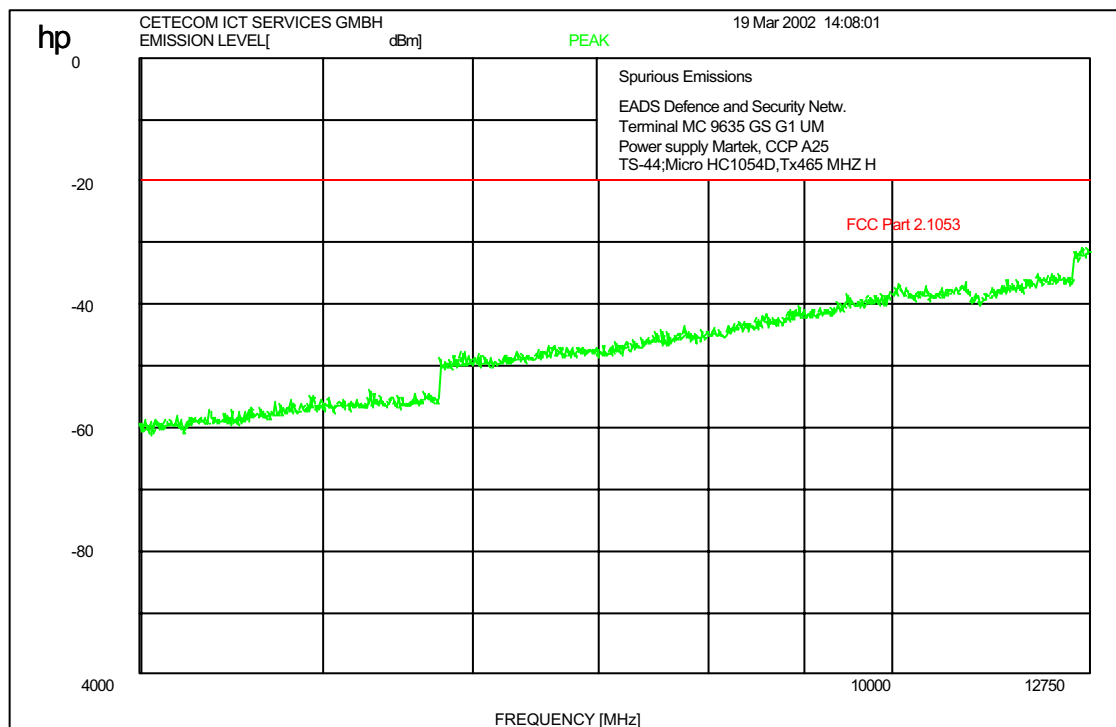
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RADIATED SPURIOUS EMISSIONS

465 max. power with MARTEK POWER SUPPLY, horizontal



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

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

LIMITS

SUBCLAUSE § 2.1053

Spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

For 12.5 kHz channel bandwidth :

$$\text{Spurious attenuation in dB} = 50 + 10 \log_{10} (\text{Power output in watt})$$

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

FREQUENCY STABILITY Vs. TEMPERATURE § 2.995

Temperature [°C]	Frequency error [Hz]	Frequency [MHz]	Error in %	Error in ppm
-30°	685	440,000	0,00015568	1,5568
-20°	457	440,000	0,00010386	1,0386
-10°	395	440,000	0,00008977	0,8977
0,0°	346	440,000	0,00007864	0,7864
+10°	235	440,000	0,00005341	0,5341
+20°	151	440,000	0,00003432	0,3432
+30°	183	440,000	0,00004159	0,4159
+40°	237	440,000	0,00005386	0,5386
+50°	292	440,000	0,00006636	0,6636
+60°	303	440,000	0,00006886	0,6886

Temperature [°C]	Frequency error [Hz]	Frequency [MHz]	Error in %	Error in ppm
-30°	728	465,000	0,00015656	1,5656
-20°	486	465,000	0,00010452	1,0452
-10°	416	465,000	0,00008946	0,8946
0,0°	346	465,000	0,00007441	0,7441
+10°	245	465,000	0,00005269	0,5269
+20°	165	465,000	0,00003548	0,3548
+30°	193	465,000	0,00004151	0,4151
+40°	250	465,000	0,00005376	0,5376
+50°	307	465,000	0,00006602	0,6602
+60°	322	465,000	0,00006925	0,6925

Temperature [°C]	Frequency error [Hz]	Frequency [MHz]	Error in %	Error in ppm
-30°	770	490,000	0,00015714	1,5714
-20°	515	490,000	0,00010510	1,0510
-10°	432	490,000	0,00008816	0,8816
0,0°	394	490,000	0,00008041	0,8041
+10°	250	490,000	0,00005102	0,5102
+20°	174	490,000	0,00003551	0,3551
+30°	203	490,000	0,00004143	0,4143
+40°	260	490,000	0,00005306	0,5306
+50°	324	490,000	0,00006612	0,6612
+60°	340	490,000	0,00006939	0,6939

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

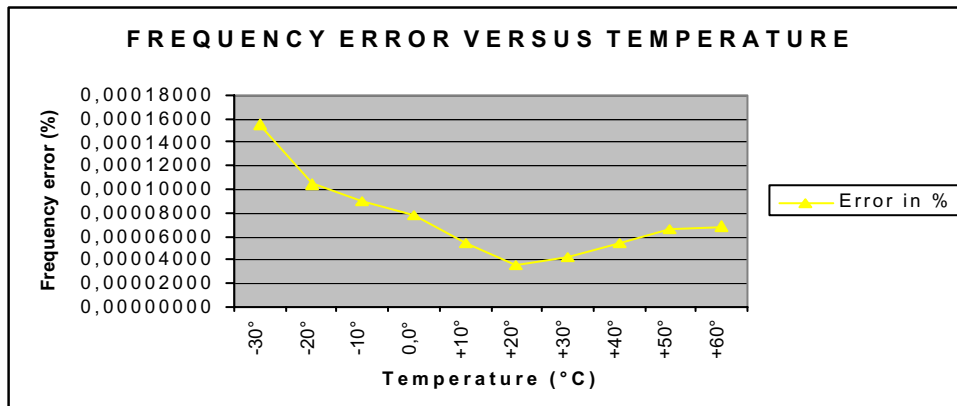
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

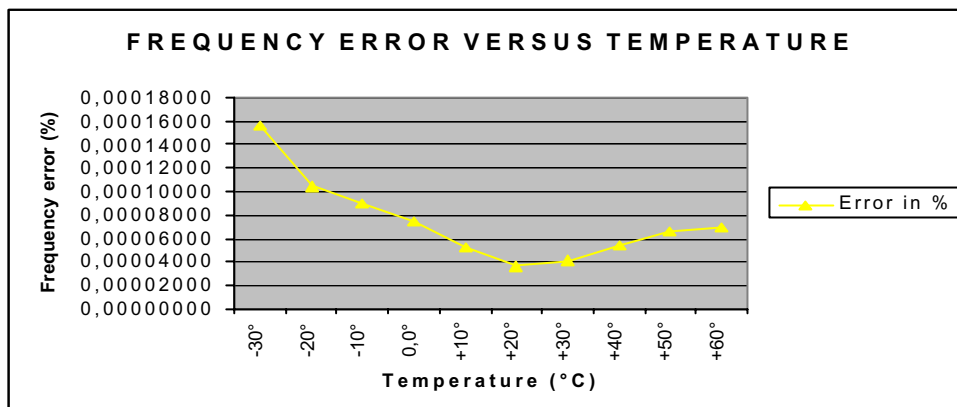
Relative humidity : 41%

FREQUENCY STABILITY Vs. TEMPERATURE § 2.995

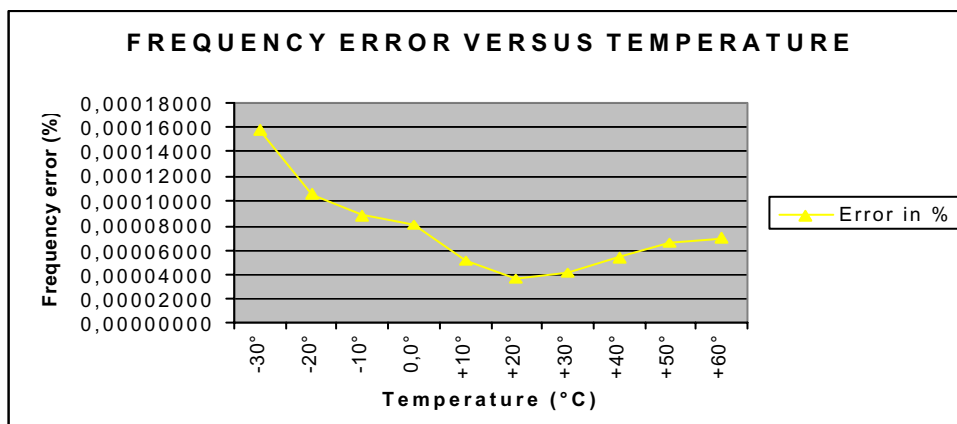
440 MHz



465 MHz



490 MHz



LIMITS

SUBCLAUSE § 90.213

Temperature – Frequency Stability of 2.5ppm from –30 to +60 °C

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

FREQUENCY STABILITY Vs. VOLTAGE § 2.991

nom. Voltage	nom. Voltage	Voltage [V]	Frequency error [Hz]	Frequency [MHz]	Error in %	Error in ppm
0.90	12	10.80	61	440	0,00001386	0,1386
0.92		11.04	60	440	0,00001364	0,1364
0.95		11.40	60	440	0,00001364	0,1364
0.97		11.64	61	440	0,00001386	0,1386
1.00		12.00	63	440	0,00001432	0,1432
1.02		12.24	65	440	0,00001477	0,1477
1.05		12.60	68	440	0,00001545	0,1545
1.07		12.84	76	440	0,00001727	0,1727
1.10		13.20	79	440	0,00001795	0,1795
1.12		13.44	80	440	0,00001818	0,1818
1.15		13.80	82	440	0,00001864	0,1864
1.18		14.16	83	440	0,00001886	0,1886
1.21		14.52	86	440	0,00001955	0,1955
1.24		14.88	86	440	0,00001955	0,1955
1.27		15.24	87	440	0,00001977	0,1977
1.30		15.60	89	440	0,00002023	0,2023

nom. Voltage	nom. Voltage	Voltage [V]	Frequency error [Hz]	Frequency [MHz]	Error in %	Error in ppm
0.90	12	10.80	98	465	0,00002108	0,2108
0.92		11.04	99	465	0,00002129	0,2129
0.95		11.40	98	465	0,00002108	0,2108
0.97		11.64	98	465	0,00002108	0,2108
1.00		12.00	97	465	0,00002086	0,2086
1.02		12.24	97	465	0,00002086	0,2086
1.05		12.60	98	465	0,00002108	0,2108
1.07		12.84	96	465	0,00002065	0,2065
1.10		13.20	96	465	0,00002065	0,2065
1.12		13.44	97	465	0,00002086	0,2086
1.15		13.80	98	465	0,00002108	0,2108
1.18		14.16	100	465	0,00002151	0,2151
1.21		14.52	102	465	0,00002194	0,2194
1.24		14.88	102	465	0,00002194	0,2194
1.27		15.24	103	465	0,00002215	0,2215
1.30		15.60	102	465	0,00002194	0,2194

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

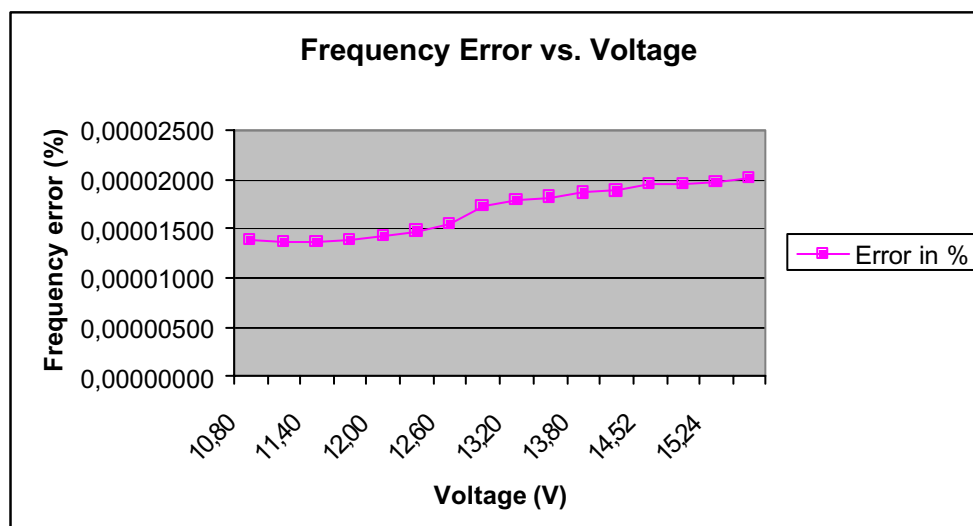
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

nom. Voltage	nom. Voltage	Voltage [V]	Frequency error [Hz]	Frequency [MHz]	Error in %	Error in ppm
0.90	12	10.80	119	490	0,00002429	0,2429
0.92		11.04	116	490	0,00002367	0,2367
0.95		11.40	117	490	0,00002388	0,2388
0.97		11.64	118	490	0,00002408	0,2408
1.00		12.00	118	490	0,00002408	0,2408
1.02		12.24	120	490	0,00002449	0,2449
1.05		12.60	119	490	0,00002429	0,2429
1.07		12.84	119	490	0,00002429	0,2429
1.10		13.20	118	490	0,00002408	0,2408
1.12		13.44	115	490	0,00002347	0,2347
1.15		13.80	115	490	0,00002347	0,2347
1.18		14.16	114	490	0,00002327	0,2327
1.21		14.52	113	490	0,00002306	0,2306
1.24		14.88	112	490	0,00002286	0,2286
1.27		15.24	110	490	0,00002245	0,2245
1.30		15.60	108	490	0,00002204	0,2204

440 MHz



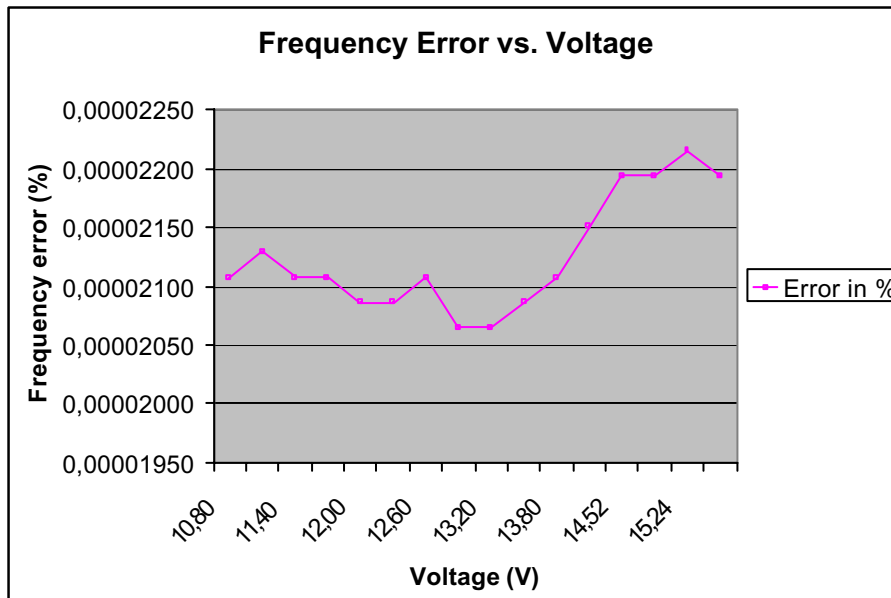
REFERENCE NUMBER(S) OF TEST EQUIPMENT USED
(for reference numbers see test equipment listing)

Equipment under test : MC9635 CS G1 UM

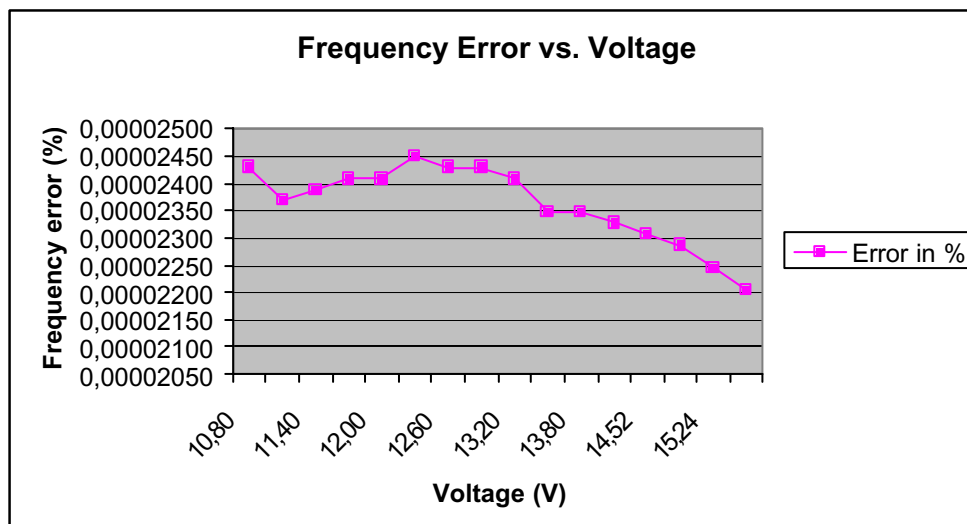
Ambient temperature : 23°C

Relative humidity : 41%

465 MHz



490 MHz



LIMITS

SUBCLAUSE § 90.213

Power Supply Voltage – Frequency Stability of 2.5ppm from 90% to 130% of nominal voltage at the DC Input ports

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : MC9635 CS G1 UM

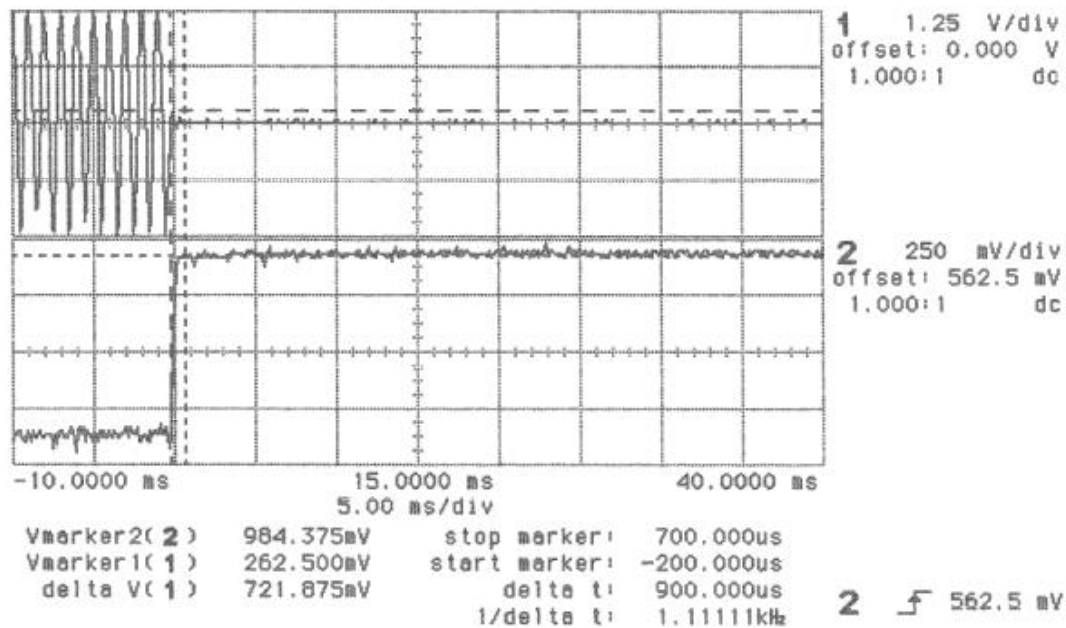
Ambient temperature : 23°C

Relative humidity : 41%

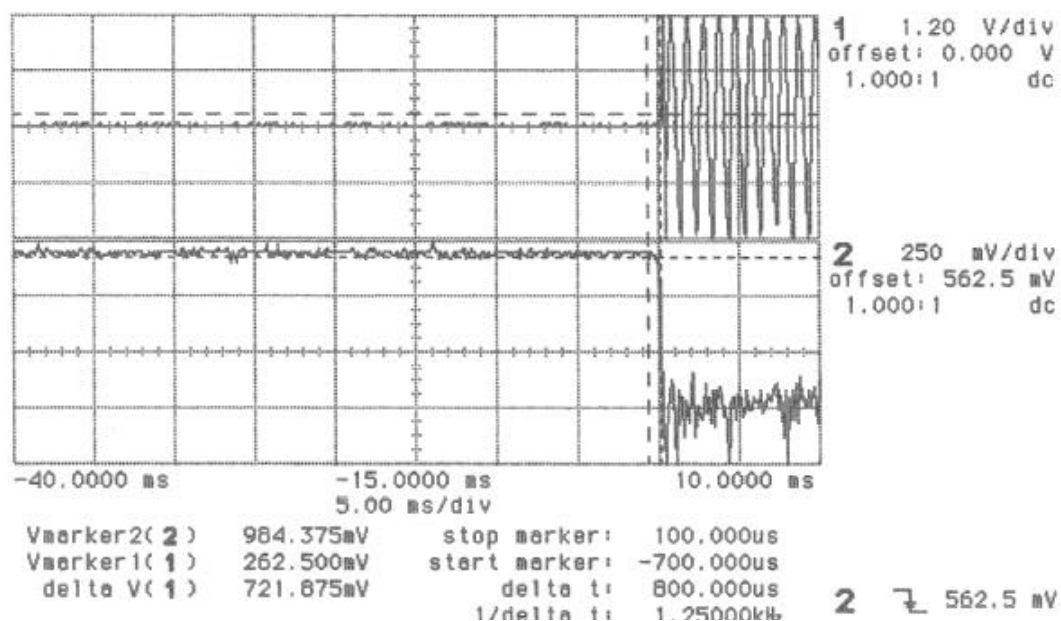
TRANSIENT FREQUENCY BEHAVIOR §90.214

440 MHz

hp awaiting trigger



hp stopped



REFERE

(for reference numbers see test equipment listing)

07, 64, 66-68

Equipment under test : MC9635 CS G1 UM

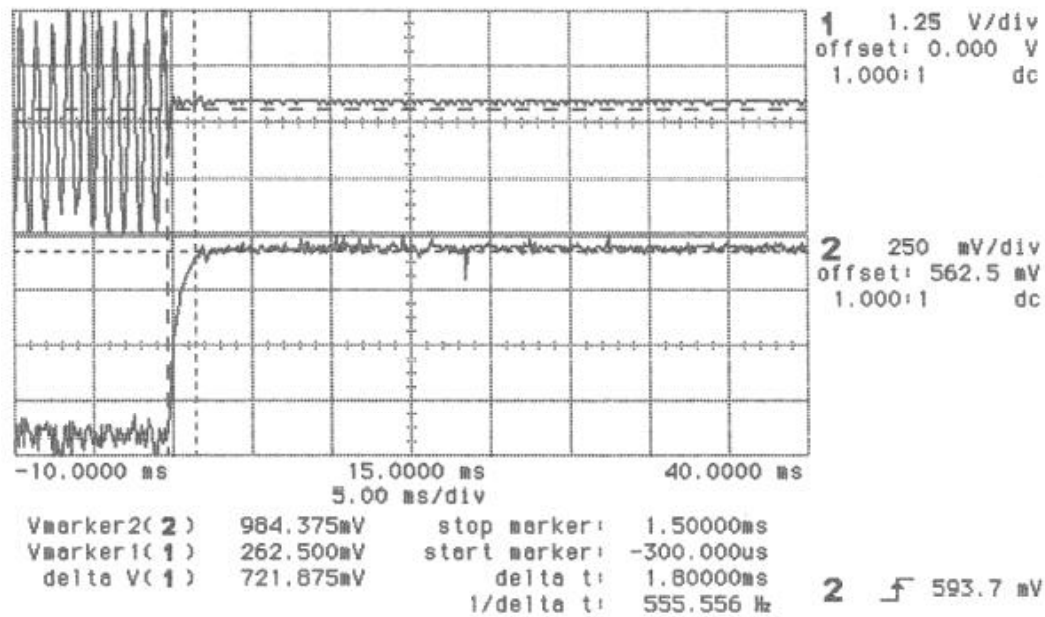
Ambient temperature : 23°C

Relative humidity : 41%

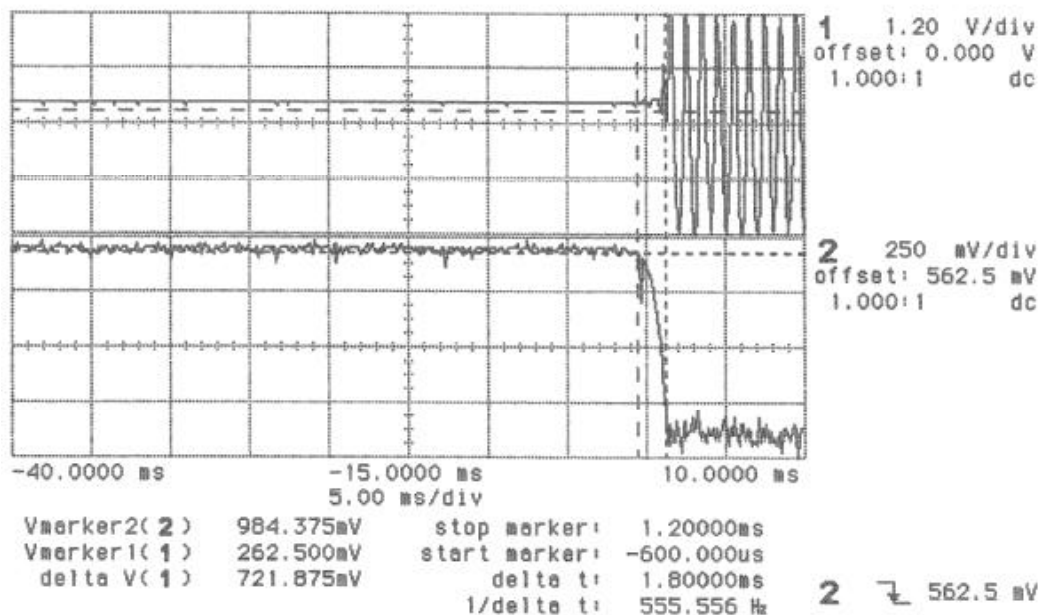
TRANSIENT FREQUENCY BEHAVIOR §90.214

465 MHz

hp awaiting trigger



hp stopped



REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

07, 64 , 66 -68

Equipment under test : MC9635 CS G1 UM

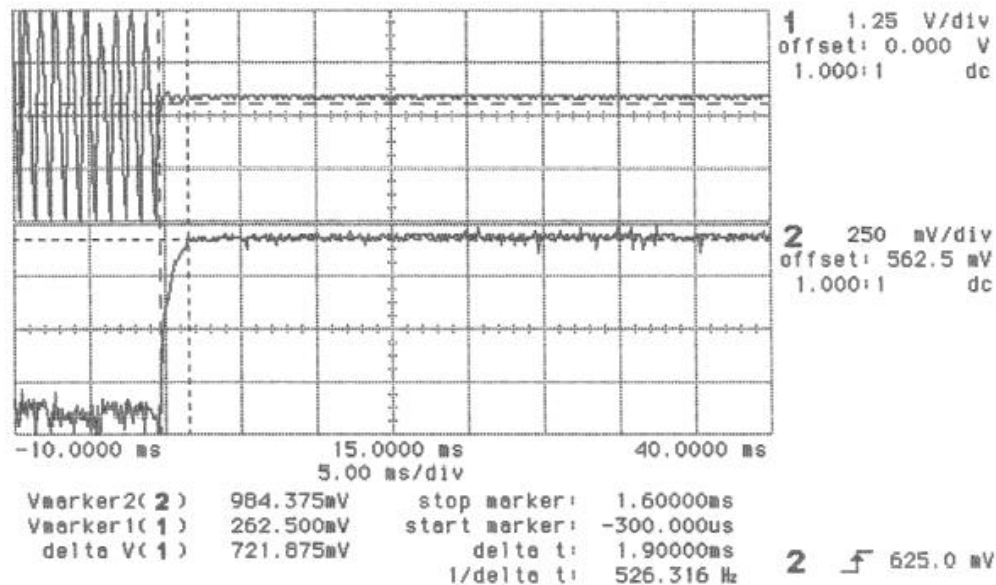
Ambient temperature : 23°C

Relative humidity : 41%

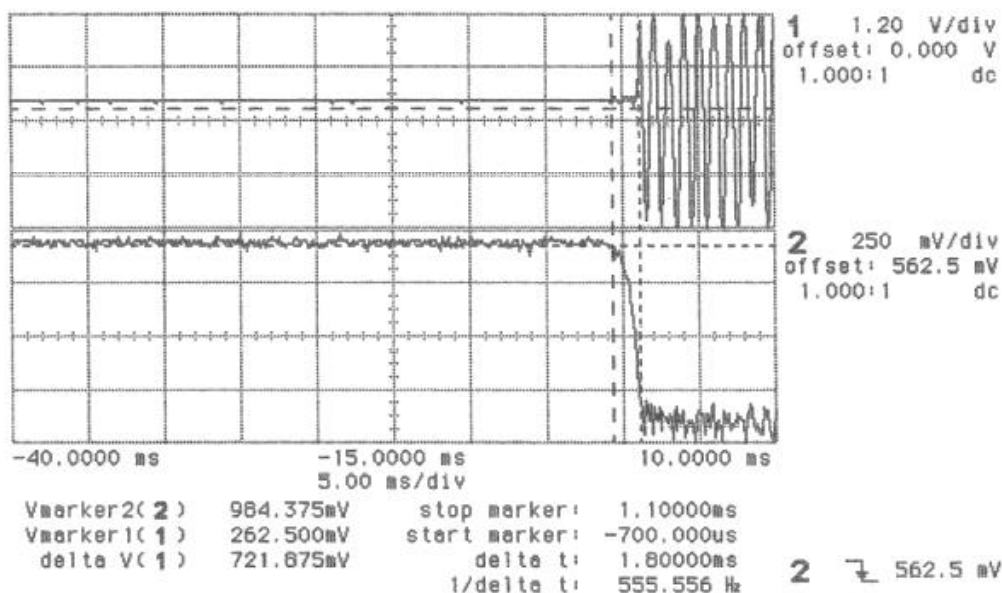
TRANSIENT FREQUENCY BEHAVIOR §90.214

490 MHz

hp stopped



hp stopped



REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

07, 64, 66 -68

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

This measurements are done in accordance with TEST SET-UP PROCEDURES used for Submitted Data.(2.2.19 of the TIA/EIA 603, specifically the triggering level was set in a different manner, as described in the TEST SET-UP PROCEDURES used for Submitted Data).

LIMITS**SUBCLAUSE § 90.214**

Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
	Maximum frequency difference	150 to 174 MHz	421 to 512 MHz
t₁	±12.5 kHz	5.0 ms	10.0 ms
t₂	±6.25 kHz	20.0 ms	25.0 ms
t₃	±12.5 kHz	5.0 ms	10.0ms

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

07, 64 , 66 -68

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

Radiated

SPURIOUS EMISSIONS LEVEL (µV/m)								
440 MHz			465 MHz			490 MHz		
f (MHz)	Detector Polarisation	Level (µV/m)	f (MHz)	Detector	Level (µV/m)	f (MHz)	Detector	Level (µV/m)
no	peak	found	no	peak	found	no	peak	found
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

The test setups for transmitter spurious radiated measurements are according ANSI C63.4 Clause 11

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)

Test report nr.: 5_3928-01-01/02

Issue Date: 05.03.01

Page 61 (108)

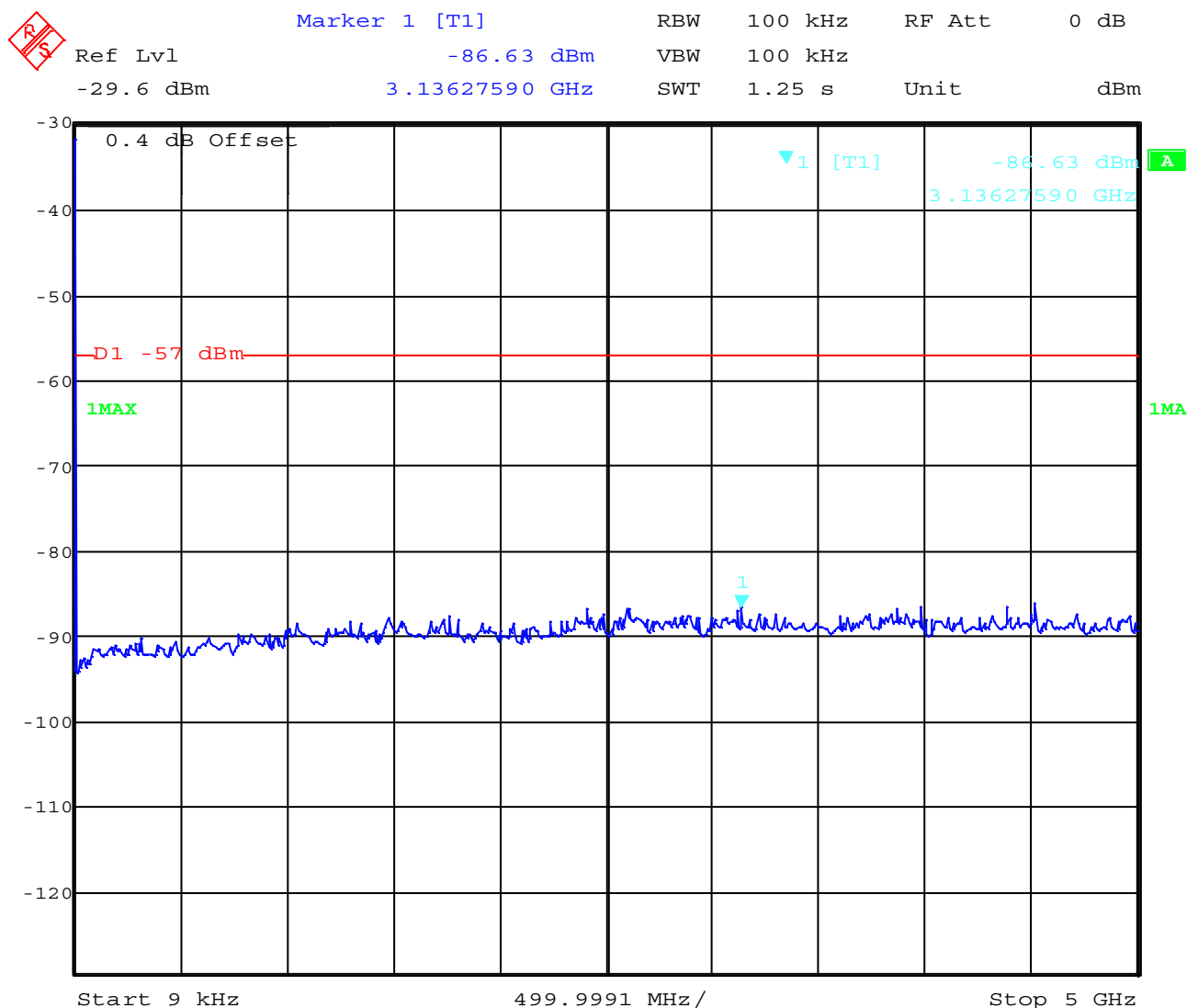
Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS EMISSIONS (conducted) § 15.111

440 MHz



Date: 20.MAR.2002 10:25:00

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.111

Frequency (MHz)	Max. allowed Level
9 kHz – 40 GHz	-57.0 dBm

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

Test report nr.: 5_3928-01-01/02

Issue Date: 05.03.01

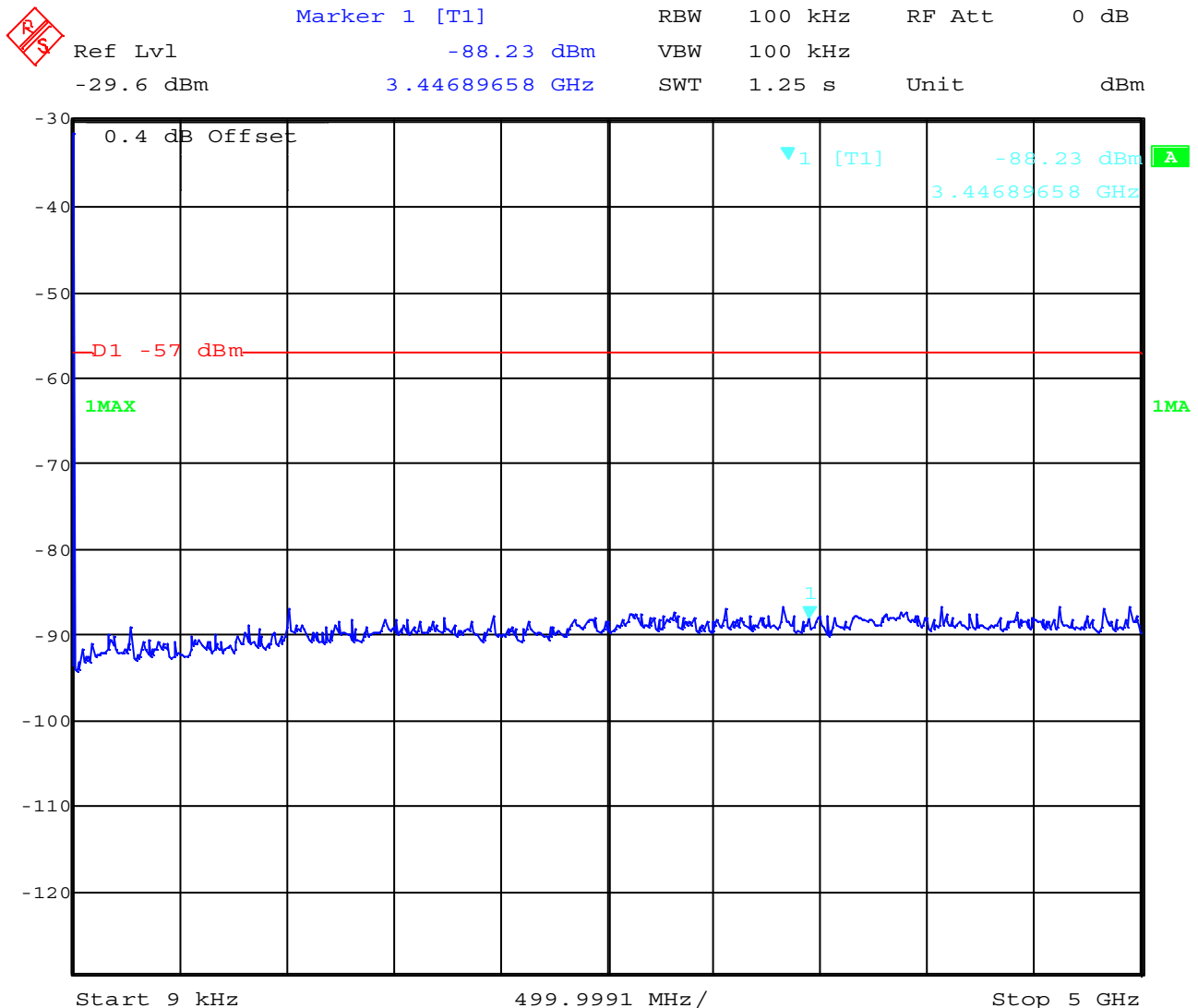
Page 62 (108)

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS EMISSIONS (conducted) § 15.111 465 MHz



Date: 20.MAR.2002 10:24:25

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.111

Frequency (MHz)	Max. allowed Level
9 kHz – 40 GHz	-57.0 dBm

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

Test report nr.: 5_3928-01-01/02

Issue Date: 05.03.01

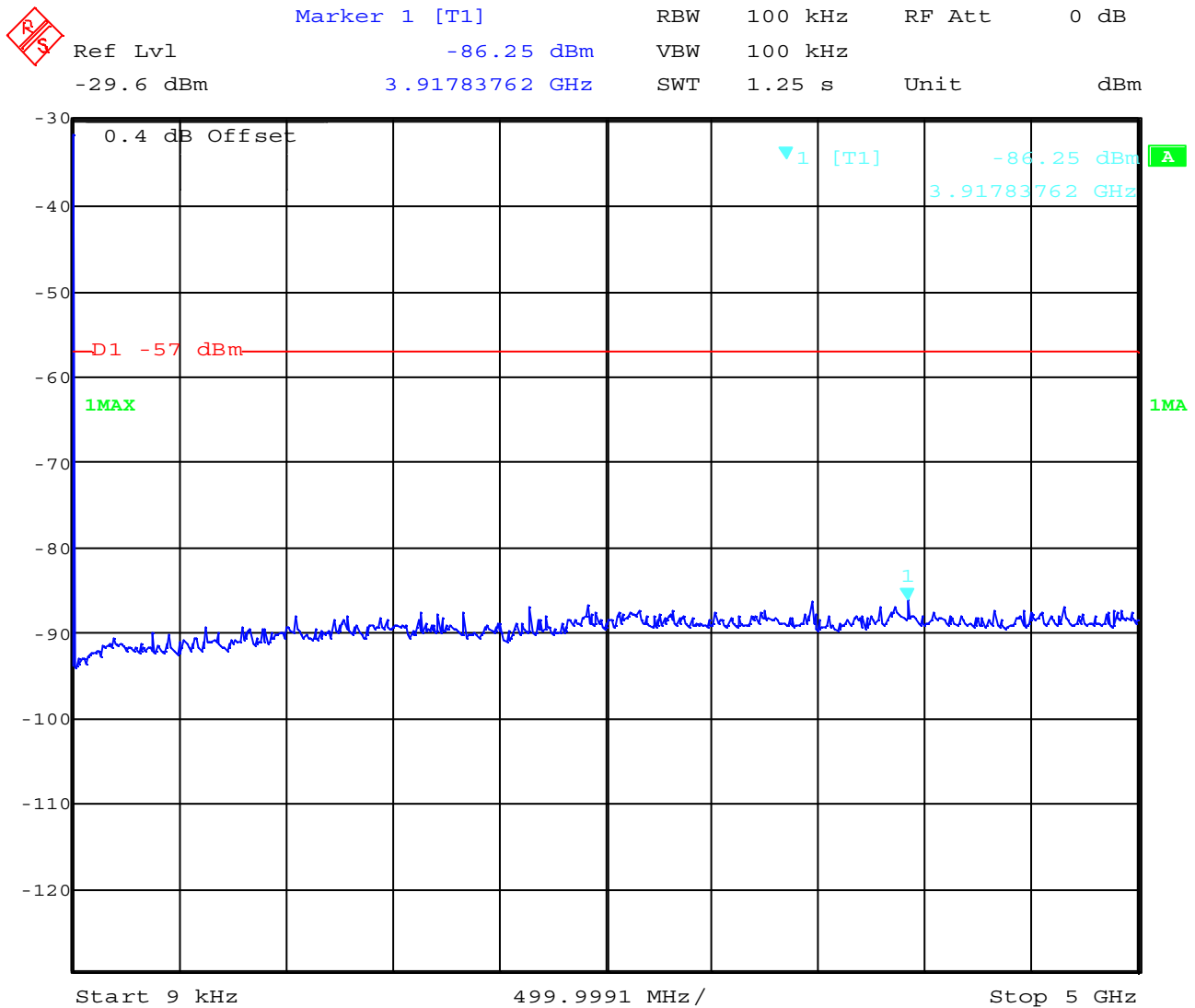
Page 63 (108)

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS EMISSIONS (conducted) § 15.111 490 MHz



Date: 20.MAR.2002 10:25:38

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.111

Frequency (MHz)	Max. allowed Level
9 kHz – 40 GHz	-57.0 dBm

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

Equipment under test : MC9635 CS G1 UM

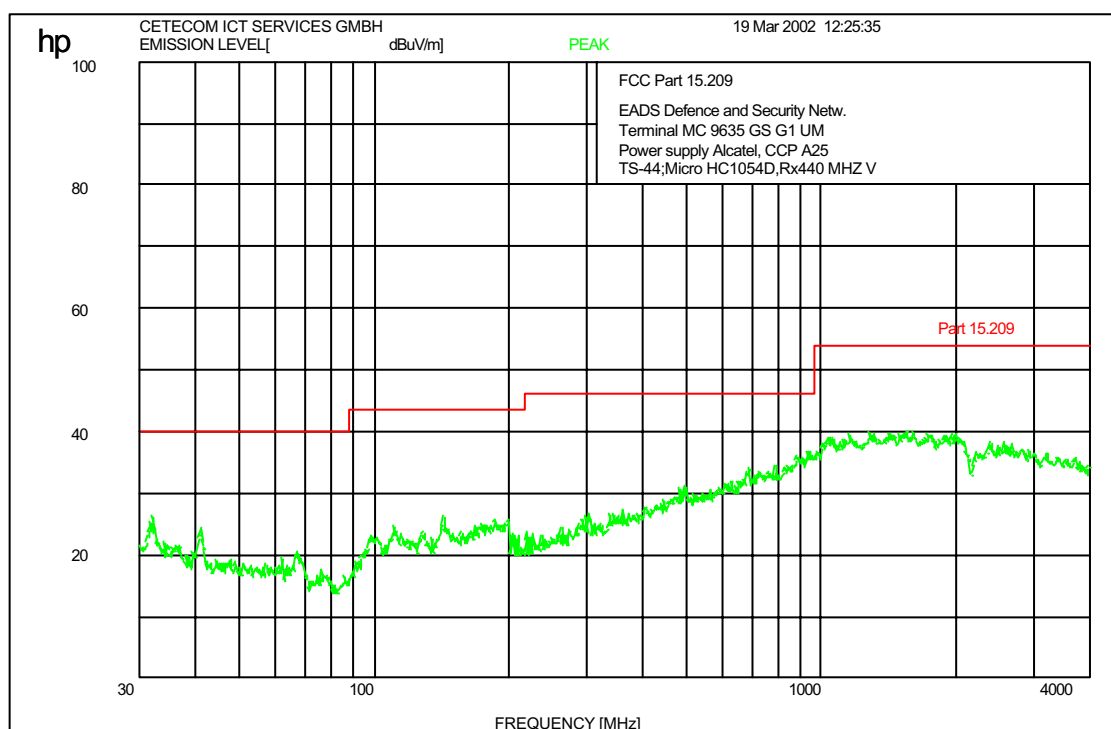
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

440 MHz vertical with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

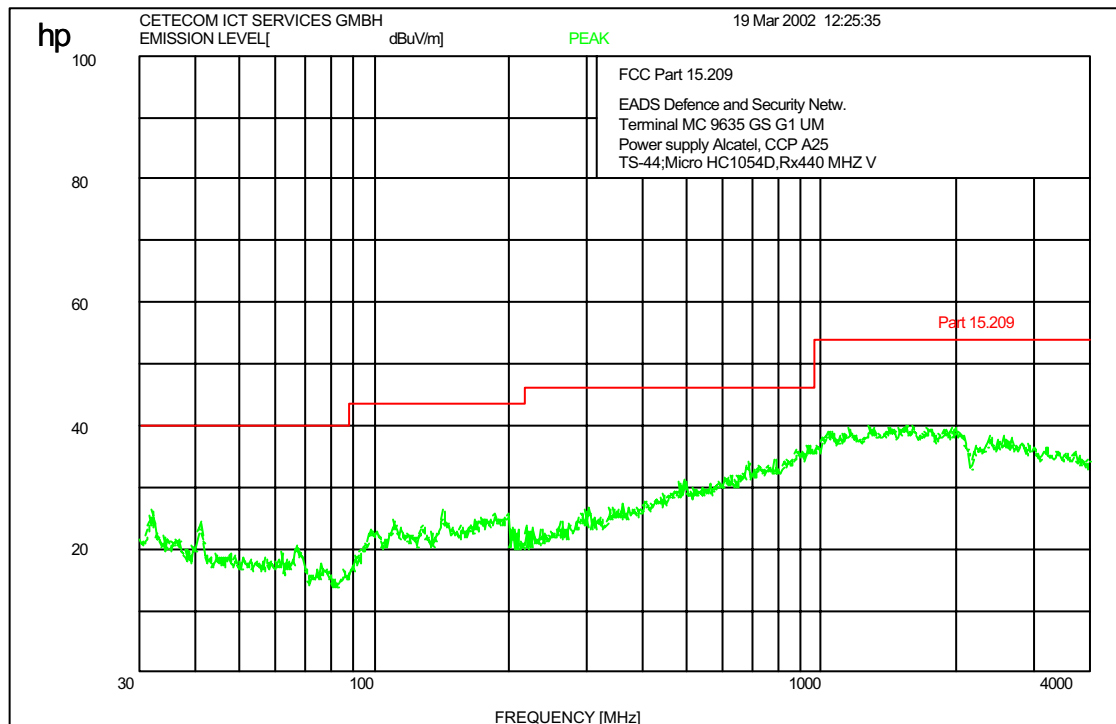
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

440 MHz horizontal with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

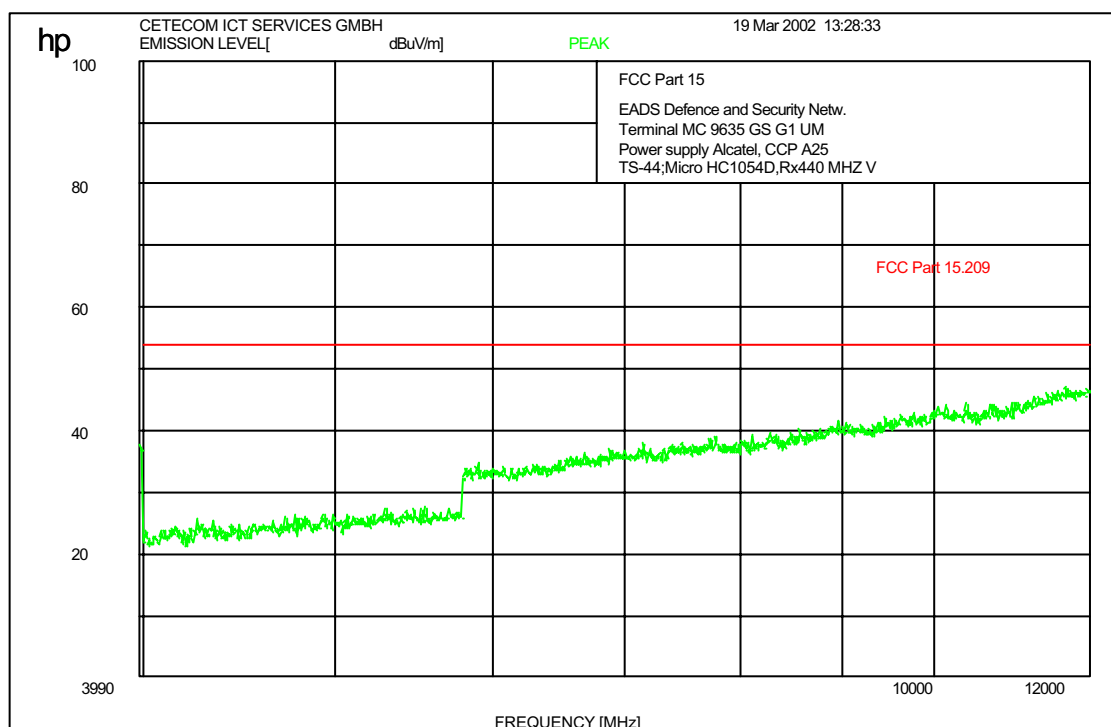
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

440 MHz vertical with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

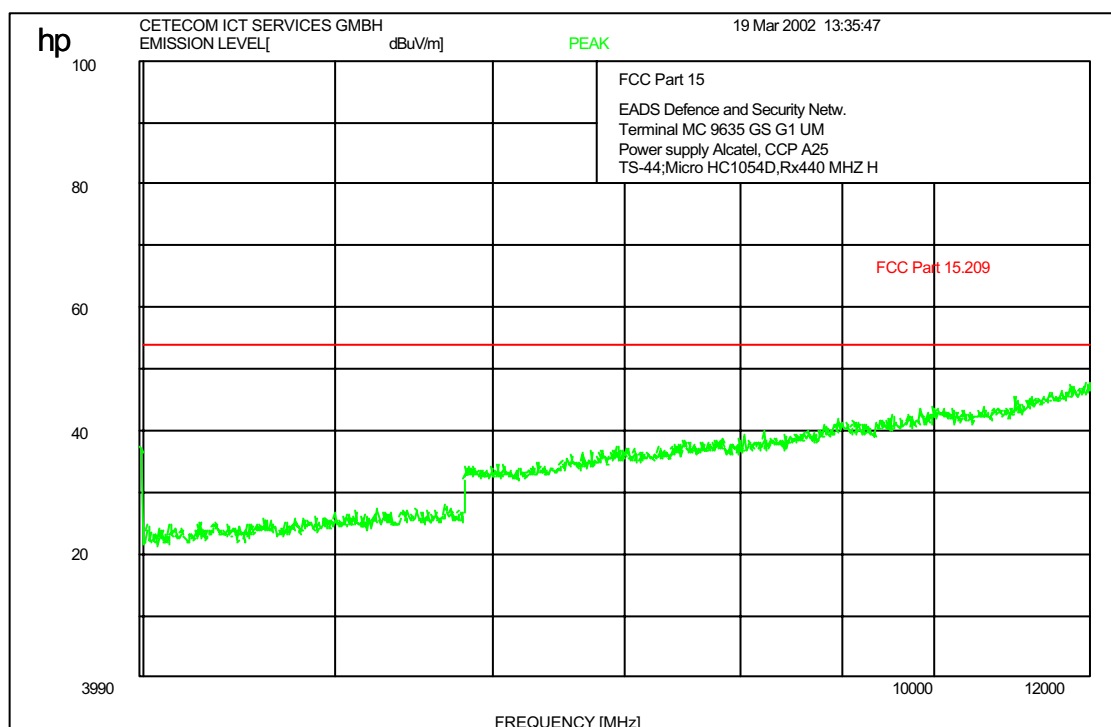
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

440 MHz horizontal with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

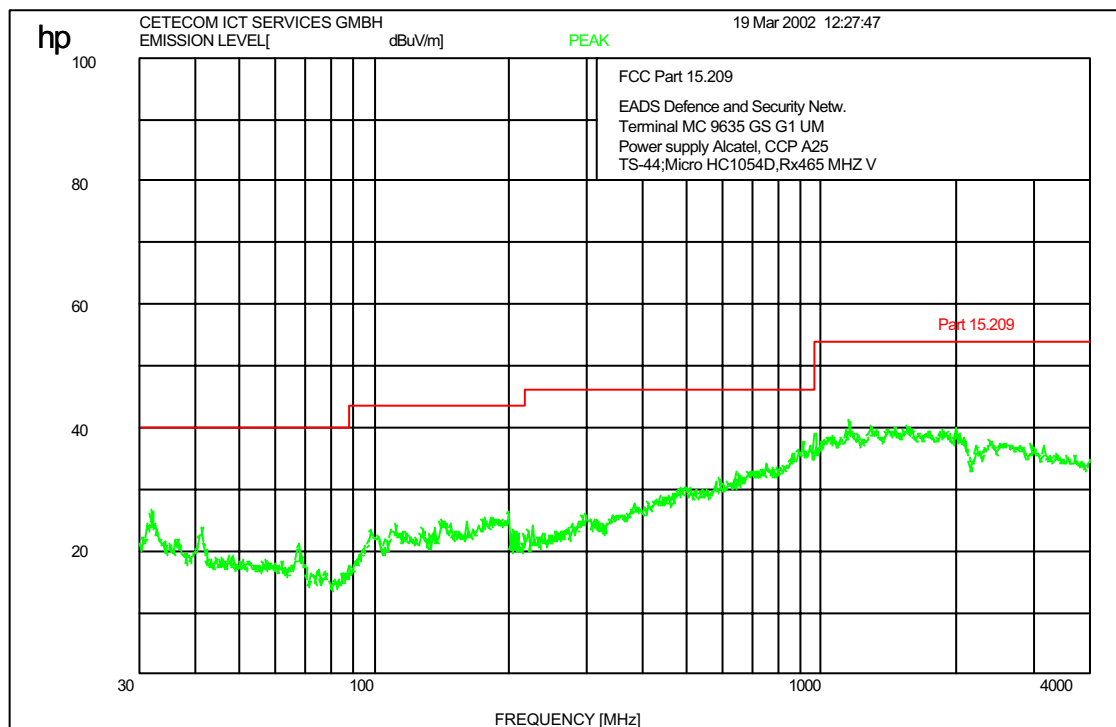
Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz vertical with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

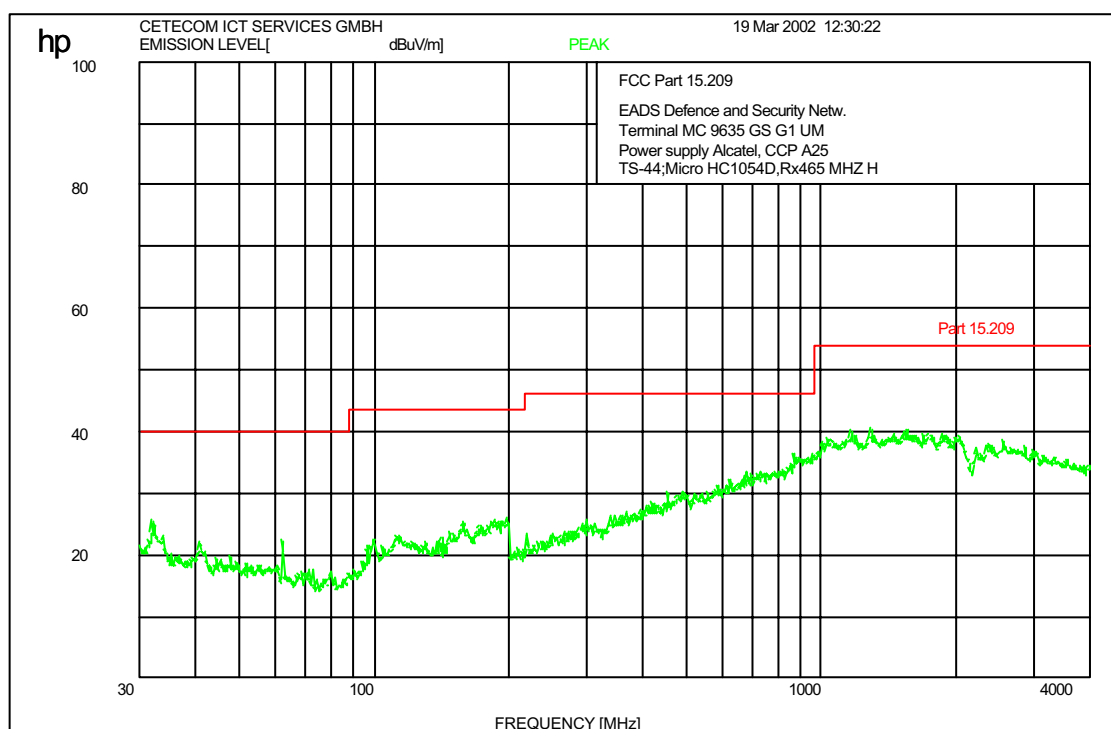
Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz horizontal with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

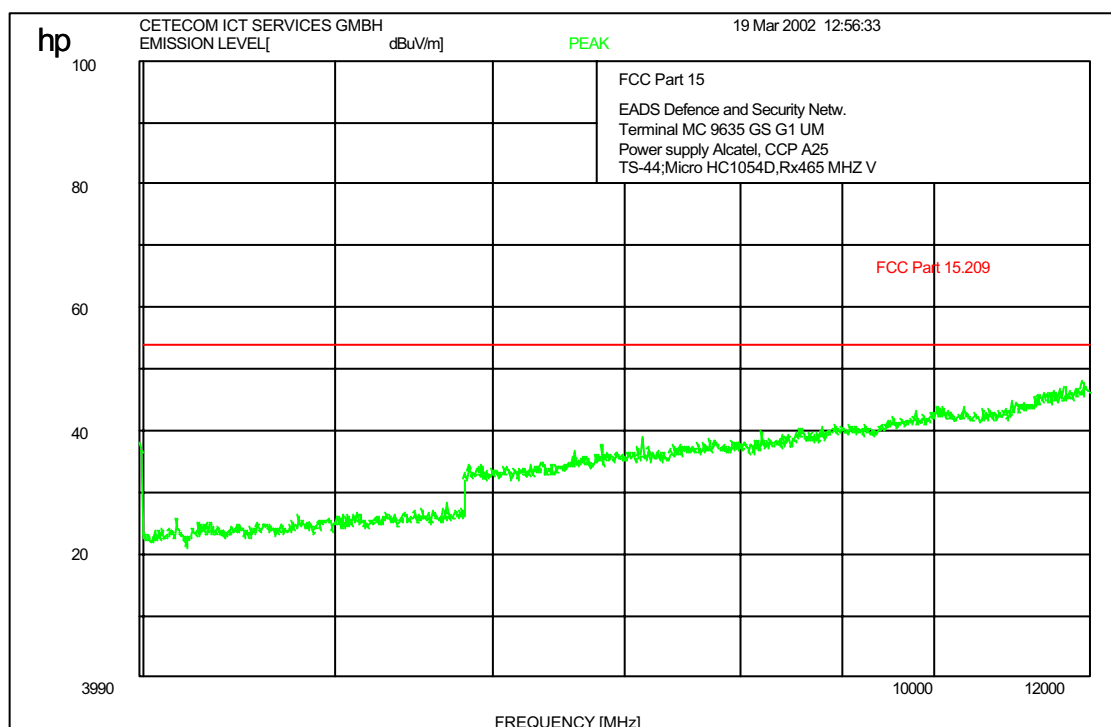
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz vertical with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

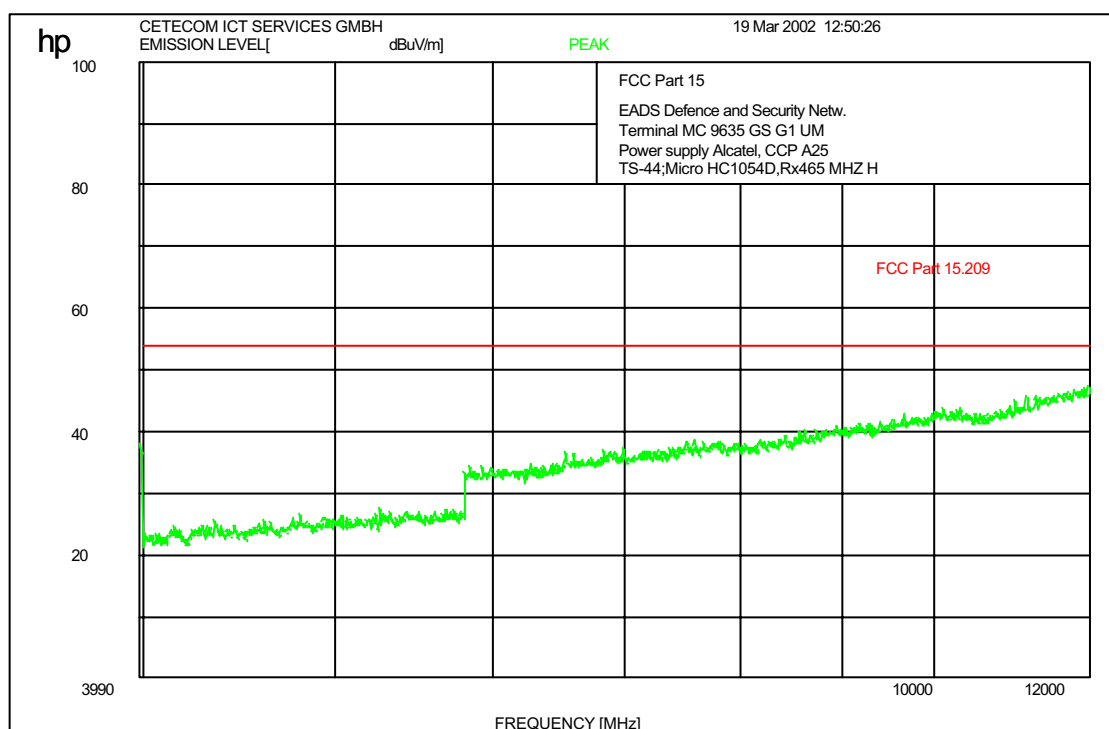
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz horizontal with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

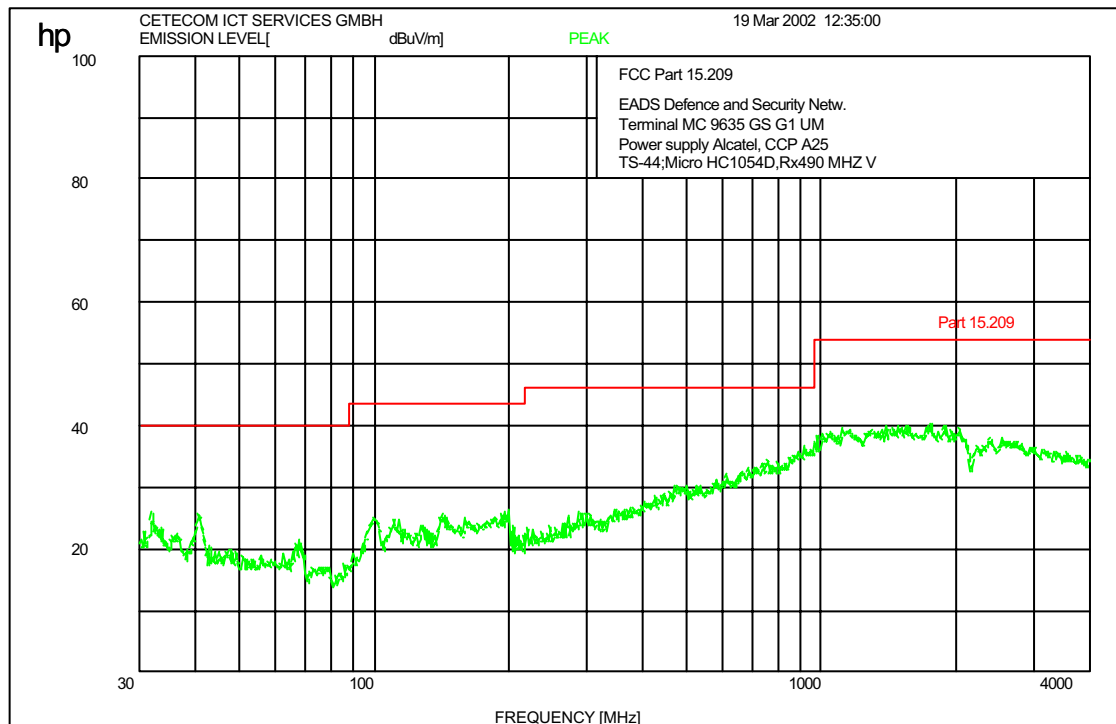
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

490 MHz vertical with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

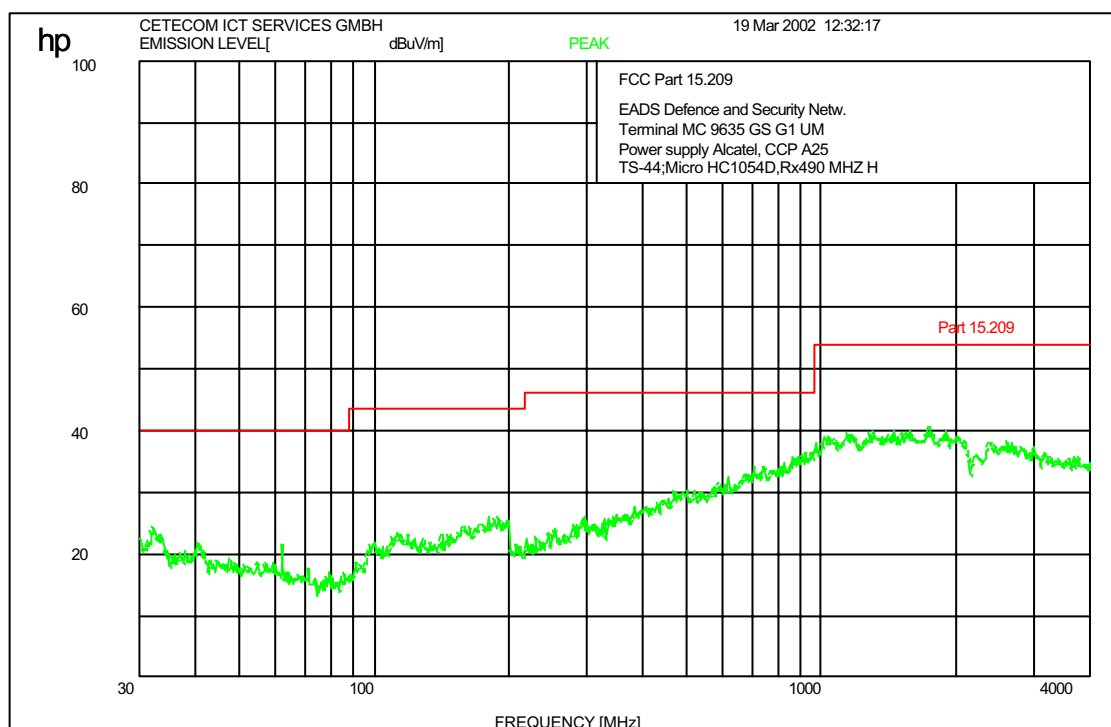
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

490 MHz horizontal with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

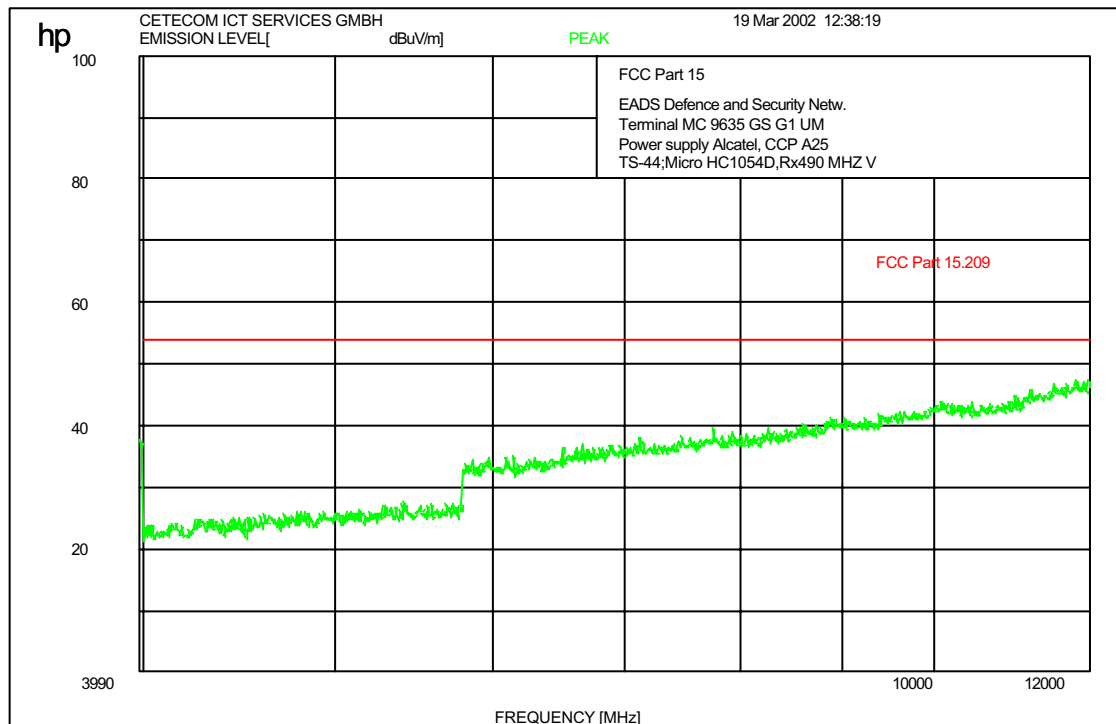
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

490 MHz vertical with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

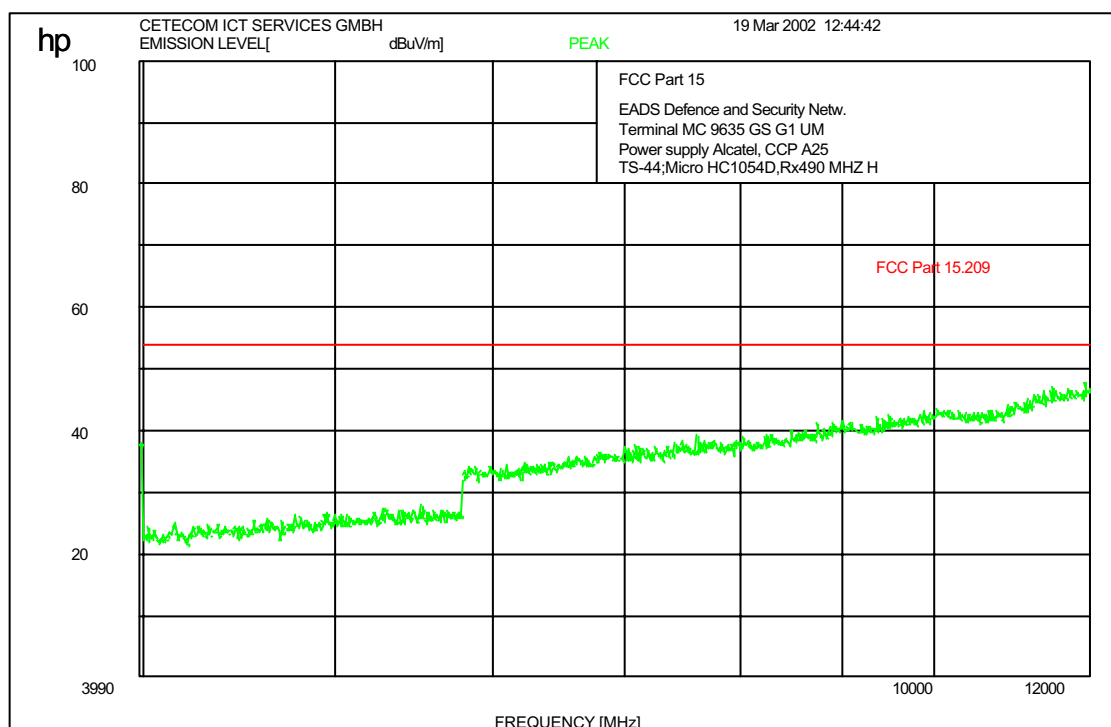
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

490 MHz horizontal with ALCATEL POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

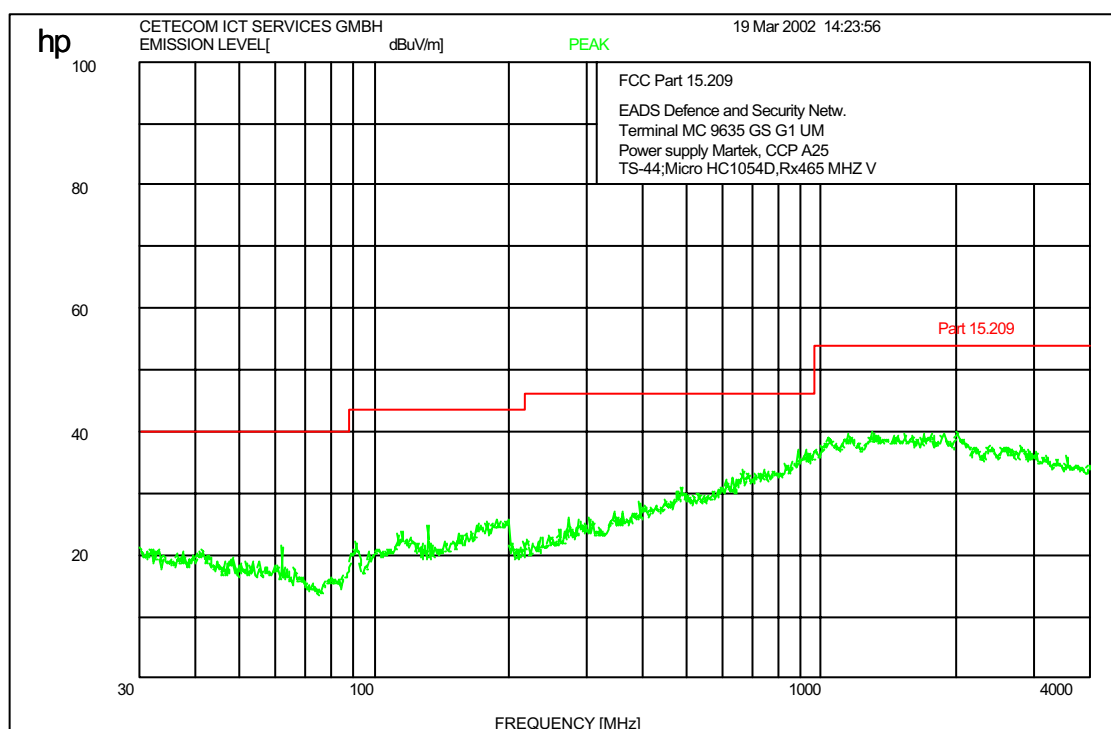
Ambient temperature : 23°C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz vertical with MARTEK POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

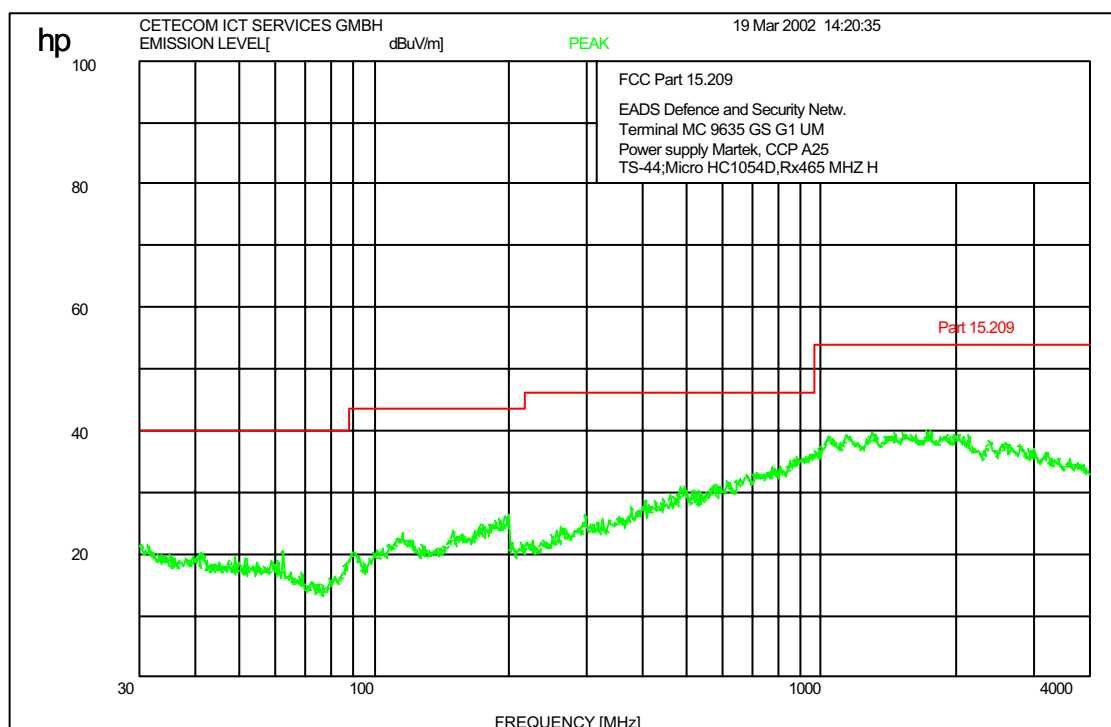
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz horizontal with MARTEK POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

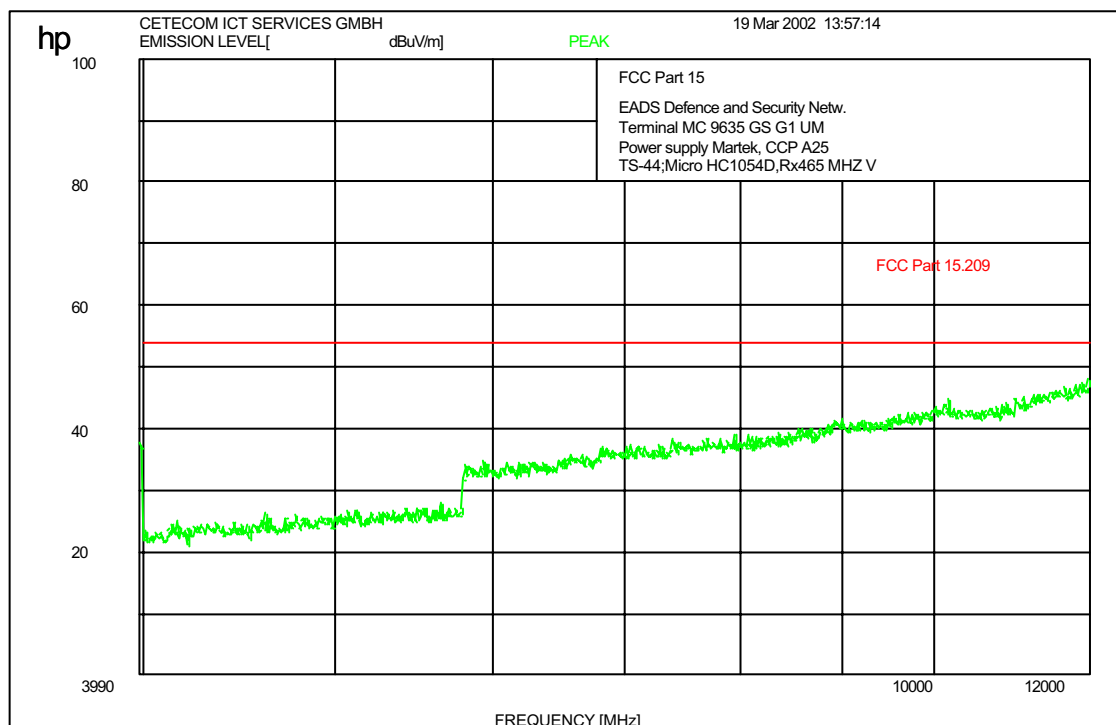
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz vertical with MARTEK POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

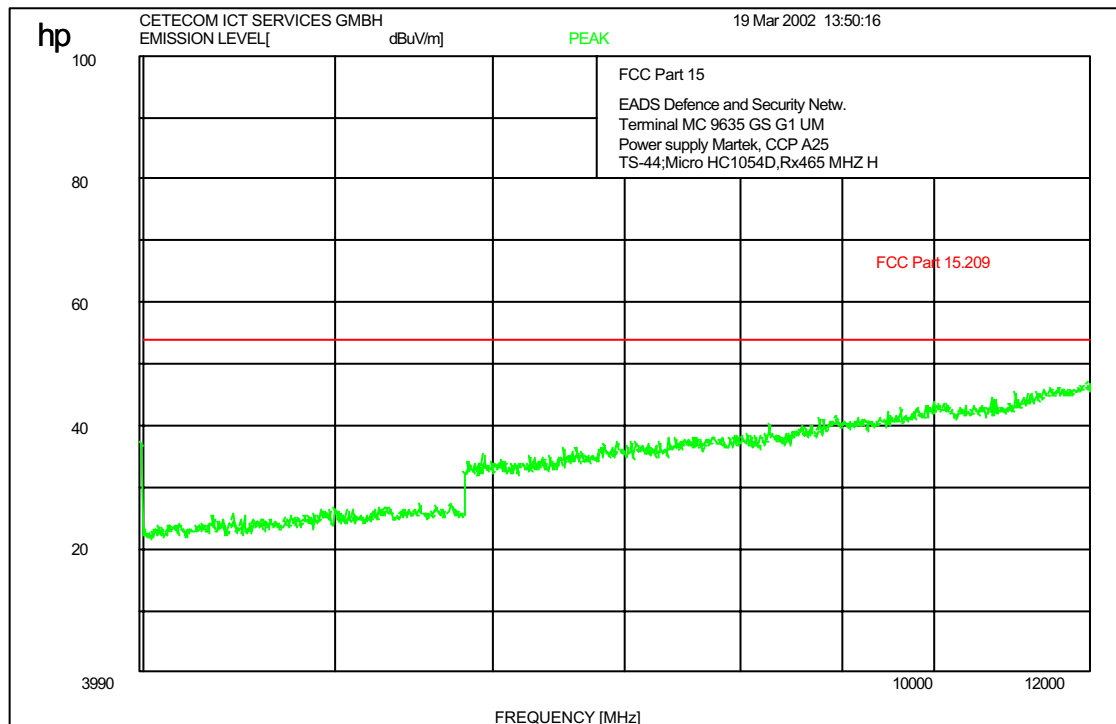
Ambient temperature : 23° C

Relative humidity : 41%

RECEIVER SPURIOUS RADIATION

§ 15.209

465 MHz horizontal with MARTEK POWER SUPPLY



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

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

Limits

SUBCLAUSE § 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	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 : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

Conducted emissions

§ 15.107/207

EUT : MC9635 CS G1 UM, Alcatel PS

Applicant :EDSN

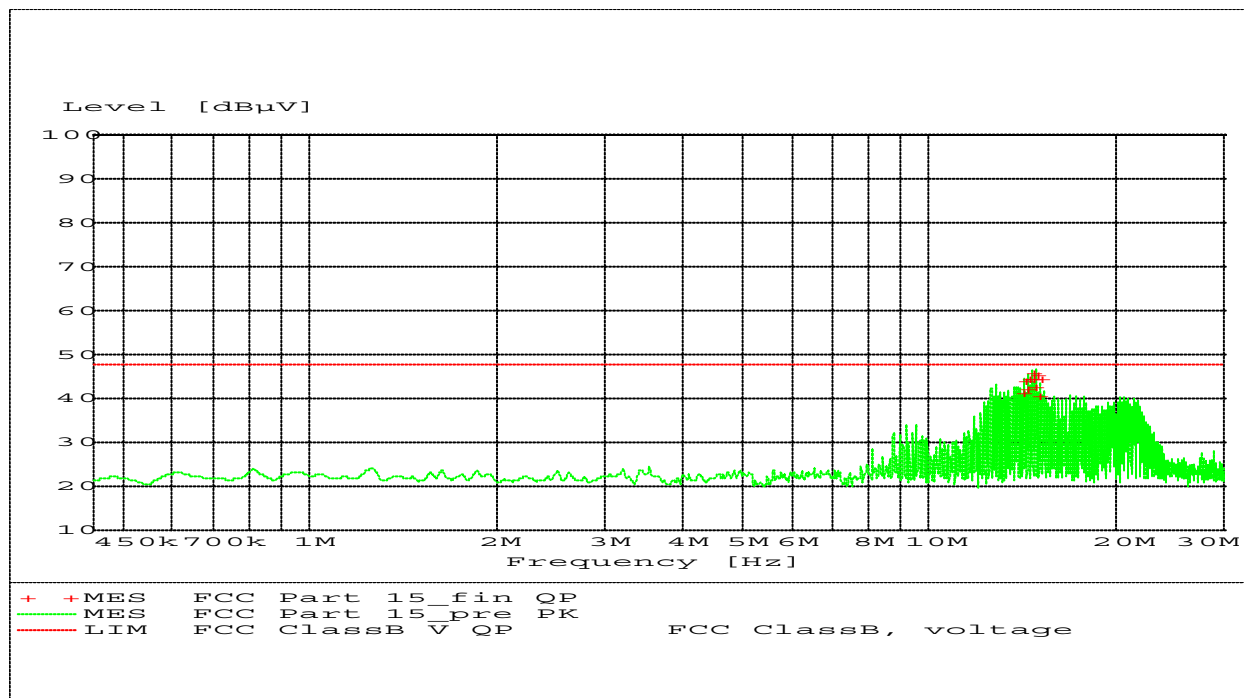
Operating condition : RX

Test Site : CETECOM ICT Services GmbH Saarbrücken, Room 006

Operator : Pink

Power Supply: 115V

Start of Test: 21.03.02 / 10:35:30



MEßERGEBNIS: "FCC Part 15_fin QP"

Frequenz MHz	Pegel dBµV	Transd dB	Limit dB	Margin dB	Line	PE
-----------------	---------------	--------------	-------------	--------------	------	----

14.130000	41.40	10.5	48	6.5	N	GND
14.244000	44.10	10.5	48	3.8	N	GND
14.352000	42.50	10.5	48	5.4	L1	GND
14.460000	44.40	10.5	48	3.5	L1	GND
14.676000	44.50	10.5	48	3.5	L1	FLO
14.682000	46.00	10.5	48	2.0	L1	GND
14.790000	43.00	10.5	48	5.0	L1	FLO
14.898000	45.70	10.5	48	2.3	L1	FLO
15.006000	40.50	10.5	48	7.5	L1	GND
15.120000	44.70	10.5	48	3.3	L1	GND

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

Conducted emissions

§ 15.107/207

EUT: MC9635 CS G1 UM, Alcatel PS

Applicant: EDSN

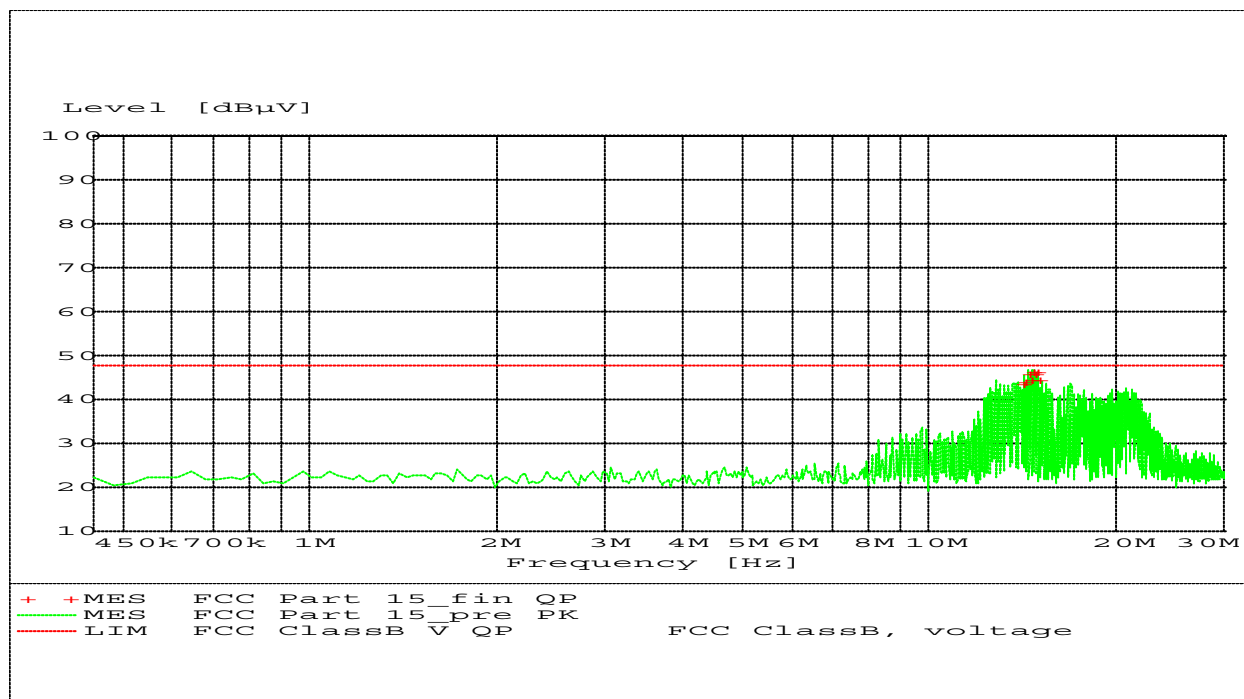
Operating condition: TX

Test Site: CETECOM ICT Services GmbH Saarbrücken, Room 006

Operator: Pink

Power Supply: 115V

Start of Test: 21.03.02 / 10:21:27



MEßERGEBNIS: "FCC Part 15_fin QP"

21.03.02 10:25

Frequenz MHz	Pegel dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
14.118000	43.70	10.5	48	4.2	L1	GND
14.226000	44.30	10.5	48	3.6	L1	GND
14.448000	46.10	10.5	48	1.8	L1	GND
14.556000	44.80	10.5	48	3.1	L1	GND
14.664000	46.50	10.5	48	1.5	N	GND
14.778000	46.10	10.5	48	1.9	N	GND
14.886000	46.40	10.5	48	1.6	N	GND
14.994000	44.40	10.5	48	3.6	L1	GND

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23° C

Relative humidity : 41%

Conducted emissions

§ 15.107/207

EUT: MC9635 CS G1 UM, Martek PS

Applicant: EDSN

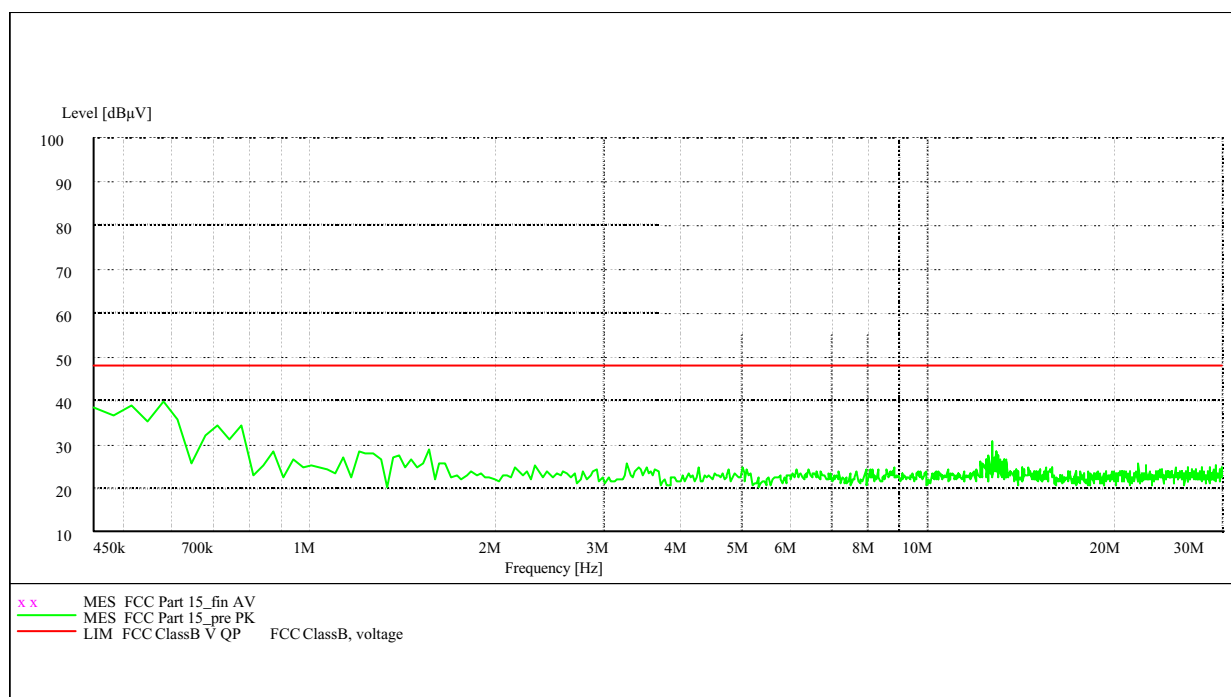
Operating condition: RX

Test Site: CETECOM ICT Services GmbH Saarbrücken, Room 006

Operator: Pink

Power Supply: 115V

Start of Test: 21.03.02 / 10:01:26



REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

52-63

Equipment under test : MC9635 CS G1 UM

Ambient temperature : 23°C

Relative humidity : 41%

Conducted emissions

§ 15.107/207

EUT: MC9635 CS G1 UM, Martek PS

Applicant: EDSN

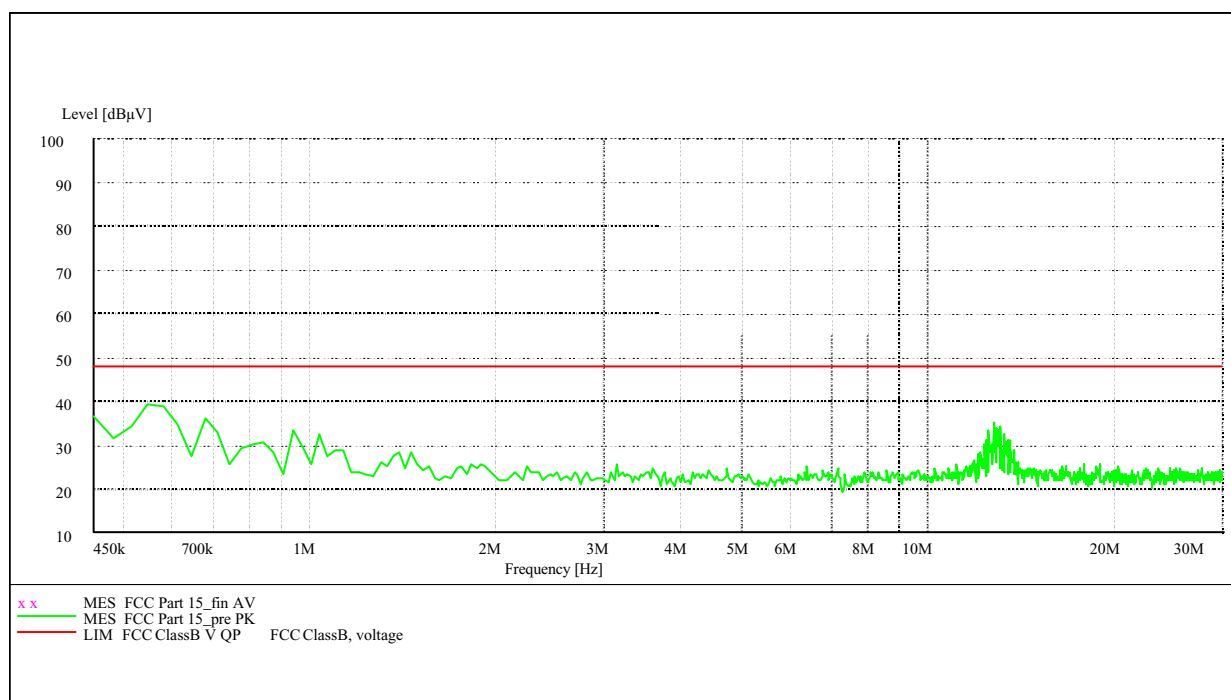
Operating condition: TX

Test Site: CETECOM ICT Services GmbH Saarbrücken, Room 006

Operator: Pink

Power Supply: 115V

Start of Test: 21.03.02 / 09:50:11



REFERENCE NUMBER(S) OF TEST EQUIPMENT USED

(for reference numbers see test equipment listing)

52-63

Equipment under test : Car Control Panel CCP

Ambient temperature : 23° C

Relative humidity : 41%

ADDENDUM FOR VERIFICATION OF THE CCP

All measurements was done based on ANSI C63.4. Especially for the digital part of the system which is subject to the Verification procedure Class A, the test setups for transmitter spurious radiated are according ANSI C63.4 Clause 11 . For all measurements follow configuration was used:

Stationary radio terminal box: RB1251EAA01 010200335

BER (Transceiver Box) RA1336 ABA01 014505755 with SW B40105

Power supply: HR1419AD ALCATEL AS538AAAA or MARTEK POWER MAT 072.2.A02
204901601020

Interface Board CIF: HJ2653BB01 FE03

Car Control Panel: CCP A25 53.1952.570.00.004 952570 24412

CCP Desk Holder: 53.1559.020.00

Loudspeaker PIONEER: TS-44

Goosnek Microphone : HC1054D ELNO F6122

Antenna: HT0947

All devices including CCP was operating during tests

See spurious emissions radiated plots

Test results : PASS

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
66	Bidirektionalkoppler	DC 3010	Amplifier res.	12306
67	Oscilloscope	54502A	HP	2934A01917
68	Radiocommunic.Analyz.	4040	Schlumberger	1725117