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Laboratory 'RSC'

This test report consists of 60 pages

page 1 (60)

Accredited testing laboratory

DAR-Registration number:

TTI-P-166/98

Test report no.:

2-1987-01-03/00

SAT600



Table of contents

1	General Information	3
1.1	Notes	3
1.2	Test laboratory	4
1.3	Applicant's details	4
1.4	Details of application	4
1.5	Test item.....	5
1.5.1	General description.....	5
1.5.2	Operating conditions	6
1.6	Test standard(s).....	6
2	Technical test.....	7
2.1	Summary of test results	7
2.2	Test environment	7
2.3	Measurement and test setup, measurement uncertainties	7
2.4	Test equipment utilized.....	7
2.5	Test results	8
2.5.1	Test result overview.....	8
2.5.2	Test documentation.....	9

Enclosure

- Annex 1: Measurement and test setups - schematic diagrams
- Annex 2: Measuring equipment used (statement of inventory)
- Annex 3: Measurement results
- Annex 4: Data of correction
- Annex 5: Photographs
- Annex 6: Technical description(s) of the test item



1 General Information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in subclause 1.5. 'CETECOM ICT Services GmbH' does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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Tester:

Date	Name	Signature
10.08.2000	Andrea Kirsch
10.08.2000	Karsten Gerald

Technical responsibility for area of testing:

Date	Name	Signature
10.08.2000	Karsten Gerald



1.2 Test laboratory

CETECOM ICT Services GmbH

Untertürkheimer Straße 6 - 10,

D-66117 Saarbrücken

P.O. Box 10 04 45

D-66004 Saarbrücken

Germany

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Fax: + 49 681 5 98 - 90 75

Accredited testing laboratory

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

Test location, where different from 'CETECOM ICT Services GmbH':

Name : - not applicable -

Street : - not applicable -

Town : - not applicable -

Country : - not applicable -

Telephone and Telefax : - not applicable -

1.3 Applicant's details

Name : Telit Mobile Terminals S.p.A

Department : R&D Measurement Group

Street : Viale Stazione di Prosecco 5/b

P.O. Box :

Town : 34010 Sgonico - Trieste

Country : Italy

Telephone and Telefax : +39 040 4192244 / +39 040 251257

Contact person's name : Mr. Tomaz Petaros

Telephone and Telefax : +39 040 4192244 / +39 040 251257

1.4 Details of application

Date of receipt of order : 01.04.2000

Date of receipt of test item : 04.04.2000

Date(s) of test : 11. - 12.04.2000

File number : 2-1987/00

Laboratory reference number : 013.00



1.5 Test item

1.5.1 General description

Type of test item : Dual Mode GSM/Globalstar handheld user terminal
 Operating characteristics : Dual Mode 900/1600 MHz, QPSK, CDMA, data, voice
 Identification : **SAT600**
 Serial number(s) : see following table

List of components:

No.	Equipment	Manufacturer	Type name (version, partnumber)		Serial number	Note no.	tested (Y/N)
			Manufacturer's	Client's			
1	Dual Mode GSM/Globalstar user terminal	Telit	SAT600	Hardware Rev. 1, Software Ver. 6.9.3	IMEI: 004400/44/055029/9		yes
2	Globalstar Tester	Anritsu	Globalstar User Terminal Tester MT8803G		MB05384	7)	no

Note:

- 1) The item can optionally be equipped with this additional component.
- 2) The item can optionally be equipped with this component instead of no. xxx
- 3) Because of conceptional and mechanical equality the no. xxx was/were representatively tested.
- 4) This component corresponds with the no. xxx but it's not fully provided.
- 5) The item can be combined with this component. The test of this component is documented in test report no. xxxxx/xxxxx/xx.
- 6) This component was sufficiently taken into account, see test report no. xxxxx/xxxxx/xx.
- 7) This component is not part of the test item - it was representatively used to establish the operation and test modes.
- 8) This component is integrated repeatedly in the item because of redundancy - the redundant components were not tested because of equality to the primary parts.
- 9) This component is not relevant relating to the requirements of the test specification as well as baseband equipment - the EMC conformity (CE-Sign) and eventually the approval for connection to public telecommunication networks are only expected.

Antenna system(s):

Reflector Size (m)	Reflector shape	Concept	Manufacturer	Type	Transmit gain dBi (midband)	Receive gain dBi (midband)	Polarization
0.143 * 0.015	-/-	single substrate, microstrip antenna, with radome	ALLGON Mobile Communications AB	Product No. 72560	max. 3.5	no spec.	LHCP

Technical descriptions and documents:

No.	Document(s)
1	Manufacturer Declarations for SAT600
2	Telit GS/GSM SAT600 Dual Mode User Terminal, Technical Manual, Code: 1vv0300471, Rev. 0, Mar. 17, 2000
3	Dual Mode Globalstar/GSM Antenna for SAT600, short description
4	Anritsu MT8803G, Globalstar User Terminal Tester, 300 kHz to 3 GHz, user's manual (second edition), doc.no.: 12000-00001, Rev. B



Technical Data

Transmitter frequency range(s)	: 1610 - 1626.5 MHz	Channel spacing	: 1.23 MHz
Receiver frequency range(s)	: 2483.5 - 2500 MHz		
Transmitter power	max. : 0.5 W	typical	: 0.5 W
Radiated power (EIRP)	max. : 0.5 dBW ¹⁾	typical	: 0.5 dBW ¹⁾
Frequency stability	max. : 10 ppm	measured values	: <1.5 ppm
Kind of baseband signal	: data, voice		
Kind of modulation (s)	: QPSK		
Nominated bandwidth	: approx. 1.6 MHz (see plots no. 2, 3, 5, 6, 8, 9, 16, 17, 25, 26, 33, 34) ²⁾		
Data rate(s)	: 2400, 4800, 9600 bps		
Power supply	: 7.4 Vdc, max. 650 mA		
Kind of transmission acc. 'VO -Funk'	: G1D, G1E		

¹⁾ for an antenna with a maximum antenna gain of 3.5 dBi

²⁾ for operating conditions defined below

Additional information

The system "SAT600" is a dual mode handheld user terminal for personal communication. It consists of two different transceivers: GSM 900 and Globalstar. The tests documented in this test report were performed with the Globalstar-part of the user terminal. For performing the tests the mobile was prepared by the manufacturer with connectors at the antenna ports (Rx/Tx) and a Globalstar Tester was necessary.

1.5.2 Operating conditions

Operating condition 1: 1618.11MHz/channel R7 (=fm, 1610.73MHz/channel R1 =fu, 1625.49MHz/channel R13 =fo)
approx. 0.5W, QPSK, 9.6kbps, test pattern

Operating condition 2: carrier off

1.6 Test standard(s)

- 1) FCC 47 CFR (01.10.1998), Part 2: Frequency allocations and radio treaty matters; general rules and regulations
§2.106 731E Table of Frequency Allocations, EIRP emission density
- 2) FCC 47 CFR (01.10.1998), Part 25: Satellite communications
§25.202(d) Frequency tolerance of Earth stations
§25.202(f) Emission limitations
§25.213(b) Protection of the radionavigation-satellite service
- 3) FCC 98-338 (23.12.1998), Appendix A, Part 10(c)
§25.200(c) Interim equipment authorization, out-of-band emissions limitation



2 Technical test

2.1 Summary of test results

- ☒ No deviations from the technical specification(s) were ascertained in the course of the tests performed.
- ☐ The deviations as specified in subclause 2.5 and annex 3 were ascertained in the course of the tests performed.

This test report:

- ☒ documents a first test
- ☐ documents a repeat examination
- ☐ documents a verification of documents
- ☐ is only valid in association with test report no.: ----/----/--.

Single test results are listed under subclause 2.5 and annex 3 of this report.

The test item was **not** tested to connect it with the public telecommunication network.

Following representative(s) was/were present at the test: -/-

2.2 Test environment

The environment conditions are documented specially for each test in 2.5.2 and annex 3.

2.3 Measurement and test setup, measurement uncertainties

The measurement and test setup is in accordance to the specification and schematically shown in annex 1. The reference to each test is shown in 2.5.2 and annex 3. The measurement uncertainties are within the ranges, which are required in the test specifications. A closer inspection and precise consideration of the real measurement uncertainty and its documentation within this test report will be made only if any measured data is closer to the corresponding limit than the maximum uncertainty which is given in the specification. In this case special tests were performed by use of comparable methods and/or measuring equipment in order to prove the given test results are correct. The results of these additional tests will be reported only then if it is very critical to show that the limit is met or not.

2.4 Test equipment utilized

See annex 2



2.5 Test results

2.5.1 Test result overview

☐ in addition to test report no.:

Correspondance of the test item and its technical description:

☒ in accordance to the technical description
☐ not in accordance to the technical description

Performance test: Output power and spectrum of transmission:

☒ in accordance to the technical description
☐ not in accordance to the technical description

FCC 47 CFR (01.10.1998)

Part 2: Frequency allocations and radio treaty matters; general rules and regulations
section 2.106 731E Table of Frequency Allocations, EIRP emission density

☒ pass
☐ fail
☐ already tested (see test report no. xxx)
☐ not applicable

FCC 47 CFR (01.10.1998)

Part 25: Satellite communications

section 25.202(d) Frequency tolerance of Earth stations

☒ pass
☐ fail
☐ already tested (see test report no. xxx)
☐ not applicable

FCC 47 CFR (01.10.1998)

Part 25: Satellite communications

section 25.202(f) Emission limitations

☒ pass
☐ fail
☐ already tested (see test report no. xxx)
☐ not applicable



FCC 47 CFR (01.10.1998)

Part 25: Satellite communications

section 25.213(b) Protection of the radionavigation-satellite service

<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

pass

fail

already tested (see test report no. xxx)

not applicable

FCC 98-338 (23.12.1998), Appendix A, Part 10(c)

section 25.200(c) Interim equipment authorization, out-of-band emissions limitation

<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

pass

fail

already tested (see test report no. xxx)

not applicable

2.5.2 Test documentation

Contents:

- Correspondance of the test item and its technical description
- Function test
- Table of Frequency Allocations, EIRP emission density
- Frequency tolerance of Earth stations
- Emission limitations
- Protection of the radionavigation-satellite service
- Interim equipment authorization, out-of-band emissions limitation

- ☒ -/-
- ☒ -/-
- ☒ FCC 47 CFR §2.106 731E
- ☒ FCC 47 CFR §25.202(d)
- ☒ FCC 47 CFR §25.202(f)
- ☒ FCC 47 CFR §25.213(b)
- ☒ FCC 98-338 (23.12.1998),
Appendix A, Part 10(c)
FCC 47 CFR §25.200(c)



Test report no.: 2-1987-01-03/00

date: 10.08.2000

page 10 (60)

Reference document:

FCC 47 CFR, 1st of October 1998**S-PCN: MES, operating in the 1.6/2.4 GHz bands**

Section:

-/- Correspondance of the test item and its technical description

Remark and establishing:

The test item and its technical description (see subclause 1.5.1) was compared by spot checking.

Result of test:**In accordance to the technical description****[X]****No accordance to the technical description****[]**

Reference document:

FCC 47 CFR, 1st of October 1998**S-PCN: MES, operating in the 1.6/2.4 GHz bands**

Section:

-/- Function test and finding out the 'assigned bandwidth'

Environment conditions: see also plots given below

date	temperature in °C	rel. humidity in %	voltage in V	laboratory / test system
11.04.2000	23	55	7.5 dc	Laboratory 'RSC-Sat'

Test results: Power measurement by power meter

state	frequency (range)	reading level	data of correction attenuation / loss				result				remark	
			direct coupl. dB	cable dB	att. dB	power splitt. dB	referred to output HPA dBm	(-30) dBW	(10^) W	ant. gain dBi	EIRP dBW	
mod	1618.11 MHz	approx. 9.0 dBm			10.0 dB	6.0 dB	25.0 dBm	-5.0 dBW	320m W	3.0 dBi	-2.0 dBW	-/-

cw = continuous wave mod = modulated

Operating conditions of DUT:

see subclause 1.5.2: Operating condition 1 (deviations see table above)

Special quality of measurement:Test setup(s):

see annex 1, test setup 1.2hk and 1.2hgj

Test equipment:

see annex 2, subclause 2: C027, R001, R011, R013, U015, U023

Data of correction:

see annex 4

Photo documentation:

see annex 5

Remark and establishing:

see annex 3, plot 1 - 9, too

Result of test:**In accordance to the technical description****[X]****No accordance to the technical description****[]**



Test report no.: 2-1987-01-03/00

date: 10.08.2000

page 11 (60)

Reference document:

FCC 47 CFR, 1st of October 1998S-PCN: MES, operating in the 1.6/2.4 GHz bands

Section:

2.106 731E

Table of Frequency Allocations, EIRP emission density

Conducted measurements at the antenna port: within the band

Result of test:**see annex 3, plot 10 - 12**

Reference document:

FCC 47 CFR, 1st of October 1998S-PCN: MES, operating in the 1.6/2.4 GHz bands

Section:

25.202(d)

Frequency tolerance of Earth stations

Conducted measurements at the antenna port: within the band
and evaluation by Anritsu Globalstar User Terminal Tester

Environment conditions:

date	temperature in °C	rel. humidity in %	voltage in V	laboratory / test system
11.04.2000	23	55	7.5 dc	Laboratory 'RSC -Sat'
12.04.2000	22	55	7.5 dc	Laboratory 'RSC -Sat'

Test results:

no.	frequency (range) MHz	reading frequency MHz ¹⁾	deviation kHz ¹⁾	deviation ppm ¹⁾	deviation ppm ²⁾	limit ppm
1	1610.73 / channel R1	1610.7319	+1.9	1.18	0.04127	10
2	1618.11 / channel R7	1618.1112	+1.2	0.74	0.04092	10
3	1625.49 / channel R13	1625.4923	+2.3	1.41	0.07891	10
4						
5						

1) Tests performed with Microwave Frequency Counter HP 5351B.

2) Tests performed with Anritsu MT 8803G Globalstar User Terminal Tester (see also screen dumps in annex 5).

Operating conditions of DUT:

see subclause 1.5.2: Operating condition 1

Special quality of measurement:**Test setup(s):**

see annex 1, test setup 1.2 hgj

Test equipment:

see annex 2, subclause 1 and 2: C217, R008, U015, U023

Data of correction:**Photo documentation:**

see annex 5

Remark and establishing:**Result of test:**

pass [X]

fail []



Reference document:

FCC 47 CFR, 1st of October 1998

S-PCN; MES, operating in the 1.6/2.4 GHz bands

Section:

25.202(f)

Emission limitations

Conducted measurements at the antenna port: 9 kHz - 20 GHz

Result of test:

see annex 3, plot 16 - 41

Reference document:

FCC 47 CFR, 1st of October 1998

S-PCN; MES, operating in the 1.6/2.4 GHz bands

Section:

25.213(b)

Protection of the radionavigation-satellite service

Conducted measurements at the antenna port: 1559 MHz- 1605 MHz

Result of test:

see annex 3, plot 13 - 15

Reference document:

FCC 98-338, 23rd of October 1998

S-PCN; MES, operating in the 1.6/2.4 GHz bands

Section:

Appendix A, Part 10(c)

Reference document:

FCC 47 CFR, 1st of October 1998

S-PCN; MES, operating in the 1.6/2.4 GHz bands

Section:

25.200(c)

Interim equipment authorization, out-of-band emissions limitation

Conducted measurements at the antenna port: 1559 MHz- 1605 MHz

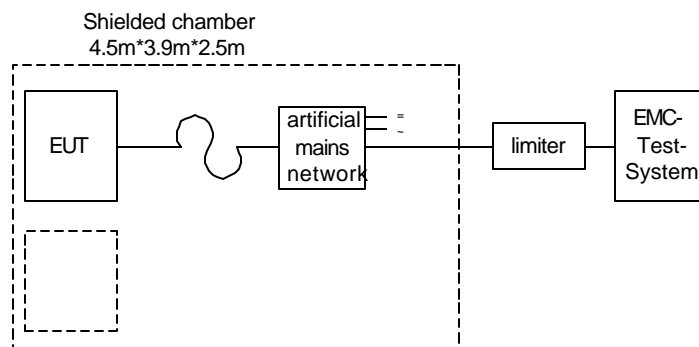
Result of test:

see annex 3, plot 13 - 15

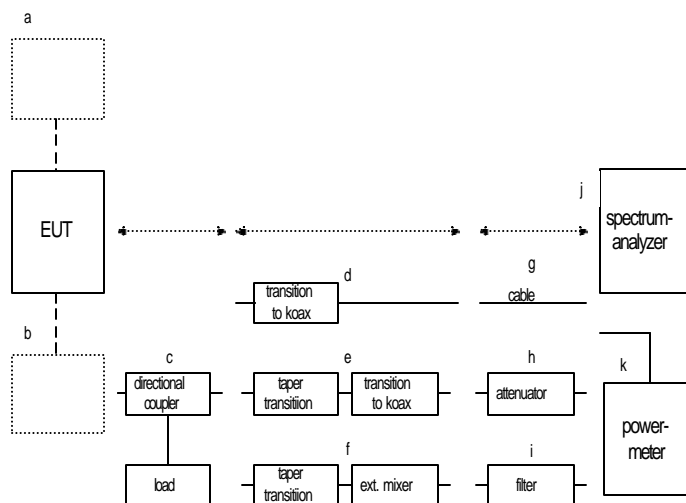


Annex 1: Measurement and test setups - schematic diagrams

1. Conducted measurements

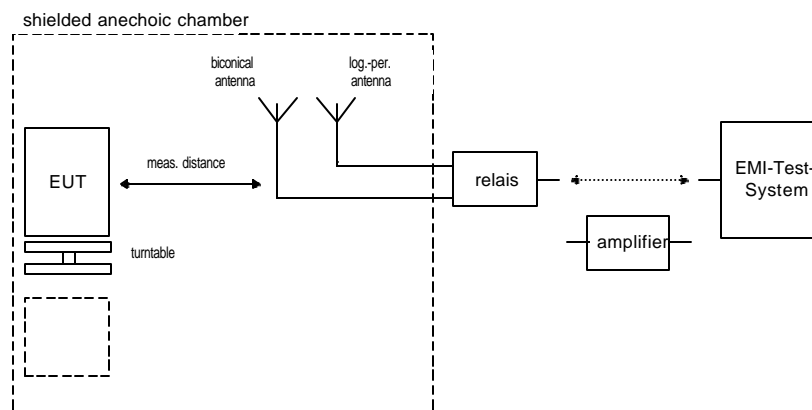


Setup 1.1

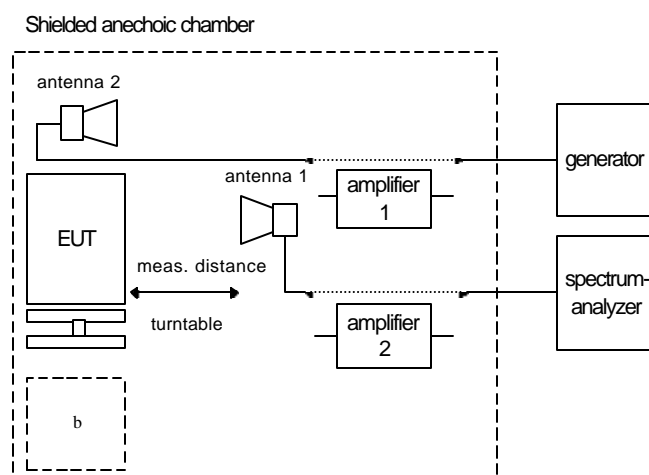


Setup 1.2 x...x

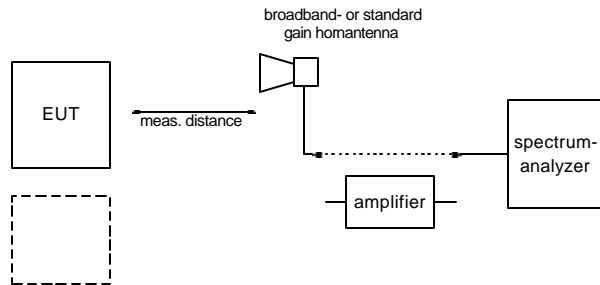
2. Radiation measurements



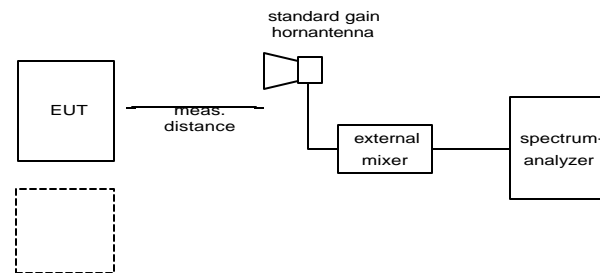
Setup 2.1



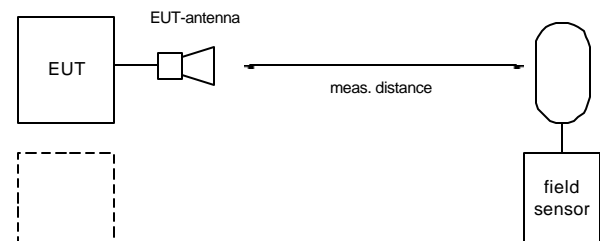
Setup 2.2



Setup 2.3



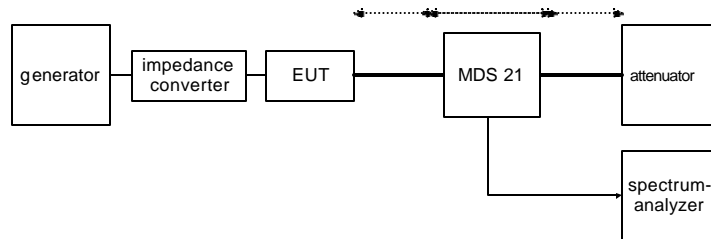
Setup 2.4



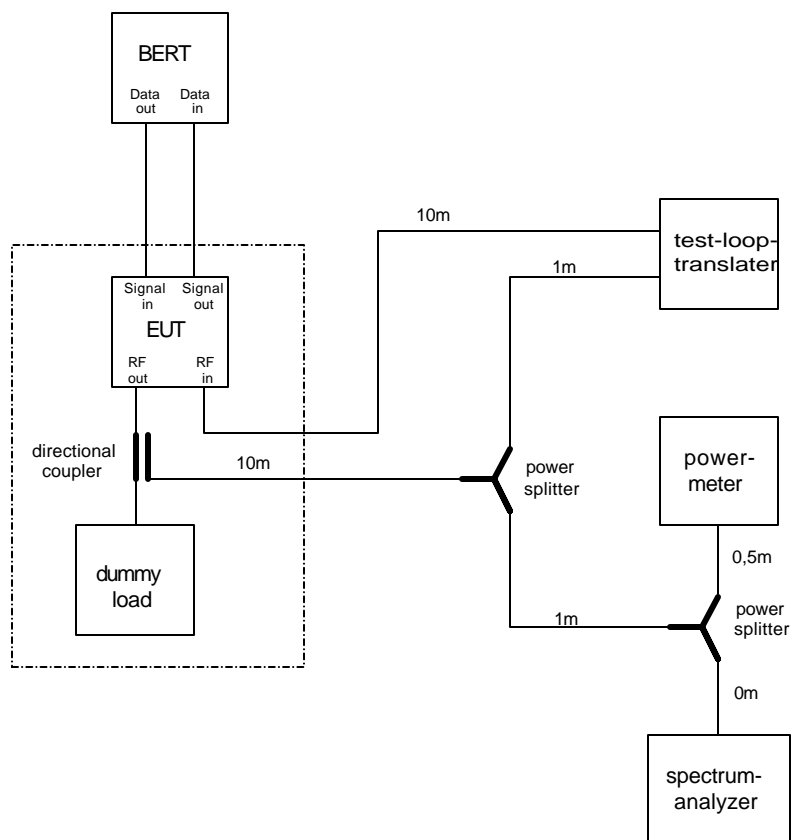
Setup 2.5



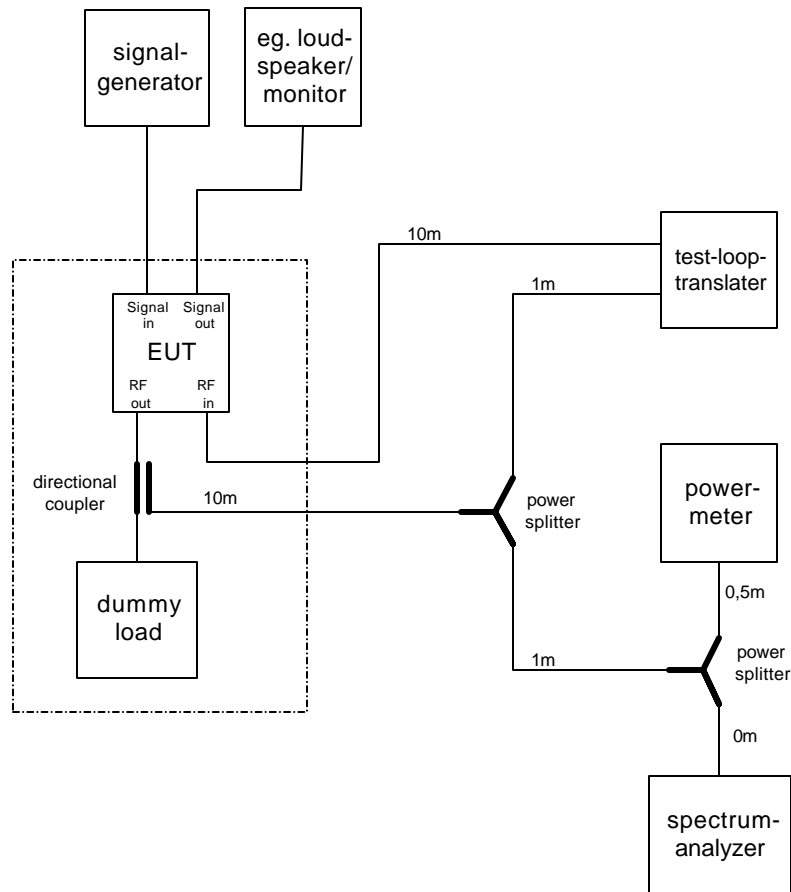
3. Immunity measurements



Setup 3.1



Setup 3.2



Setup 3.3



Annex 2: Measuring equipment used (statement of inventory)

1. Laboratory 'RSC-Sat'

Item No.	X Measuring-equipment	Manufacturer	Type	Serialnumber	Identnumber	#	Cal.-/Verif.-cycle
C027	2.0 m 50 Ω / 2.4mm	Spectrum	37-2000-HM	*	300002291	1	12 Mon.
R001	Spectrum analyzer	Hewlett Packard	HP 8565E	3515A00283	300000916	1	12 Mon.
R008	Frequency counter	Hewlett Packard	5351B	2719U00174	300000893	1	12 Mon.
R011	Power Meter	Hewlett Packard	438A	2730U00683	300000852	1	12 Mon.
R013	Power-Sensor	Hewlett-Packard	8481A	2702A56276	300000891	1	12 Mon.
U015	Power splitter	Hewlett Packard	11667B	00621	300000937	1	12 Mon.
U019	Attenuator	Narda	375 BNM	43	300000315	1	12 Mon.
U023	Attenuator 10dB, k-con.	Inmet	40A-10dB	-/-		3	24 Mon.

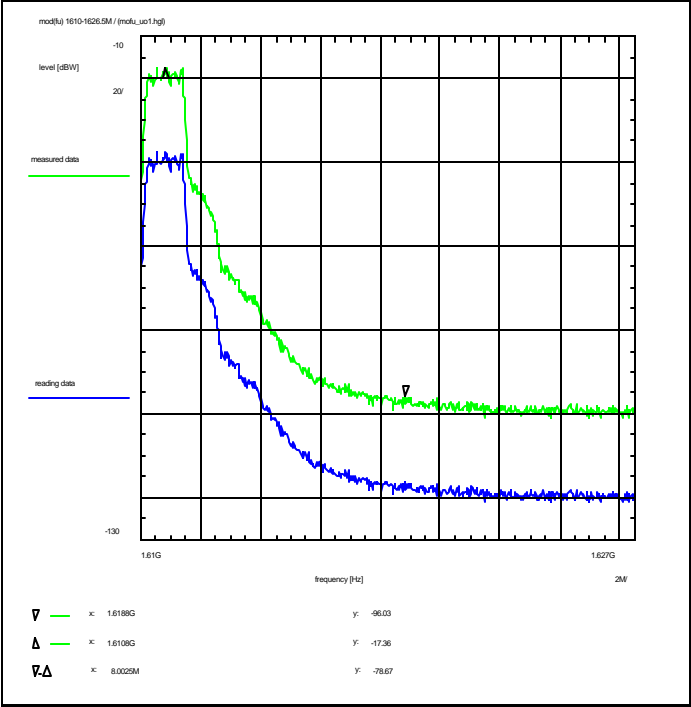


Annex 3: Measurement results

Annex 3 consists of 42 pages including this page.



Annex 3: Measurement result no. 1 (41)



Information on the measurement:

Environment condition:

Date & Time: Wed 12/Apr/2000 08:57:06

Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat

Temperature: 21 °C

Humidity: 60 %

Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.61 GHz

Stop frequency: 1.6265 GHz

Center frequency: 1.61825 GHz

Frequency span: 16.5 MHz

Input attenuation: 10 dB

Resolution-BW: 30 kHz

Video-BW: 30 kHz

Video-Average: 100 sweep(s) (>1)

Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C027) + 1.1 dB

DUT - Antenna (on-axis) + 3.2 dBi

Test antenna + 0.0 dB

BW correction factor + 0.0 dB

Atten. between HPA and feedhorn + 0.0 dB

Attenuation (U023) + 10.0 dB

Power splitter (U015) + 6.0 dB

TOTAL CORRECTION: + 20.3 dB

Limit:

no limits defined

This test serves to verify the general function of the EUT and for orientation regarding to the spurious emissions which are expected within the band, furthermore for comparison of the actual power with the rated value at modulated carrier adjusted as close to the lower edge of the operating frequency band.

Remarks:

Test of general function of the EUT and measurement for orientation

Subclause: 4-

Function test

Modulated rf-carrier at the lower edge of the band (fu)

Measurement within the band

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fu, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

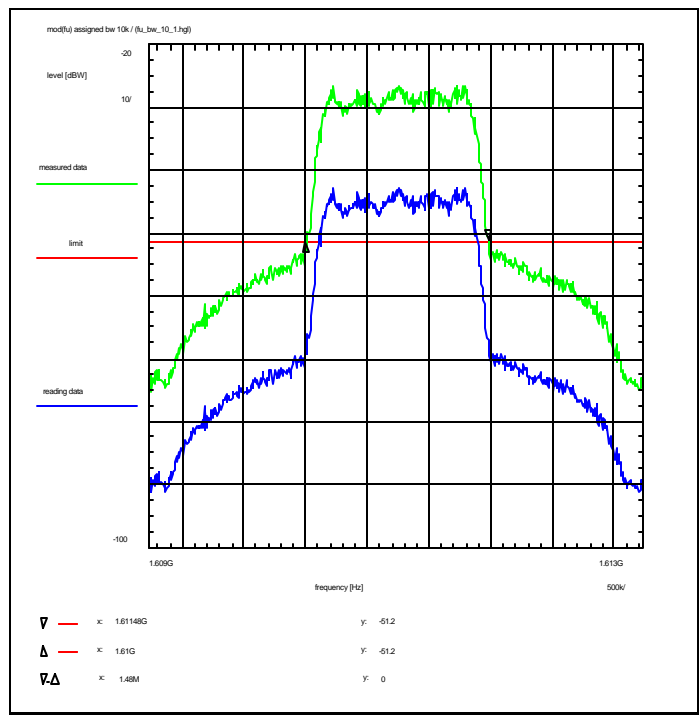
see annex 4

Remark:

Test result: measurement for orientation



Annex 3: Measurement result no. 2 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 09:00:54
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.60873 GHz
Stop frequency: 1.61273 GHz
Center frequency: 1.61073 GHz
Frequency span: 4 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.2 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.3 dB

Limit:
no limits defined
The limit line in the plot of -25dBc/4kHz is useful for orientation and corresponds to the restriction for 'Emission limitations' (see 25.202 f)).

Subclause: 4- Function test
Modulated rf-carrier at the lower edge of the band (fu)
Determination of the 'assigned bandwidth'

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

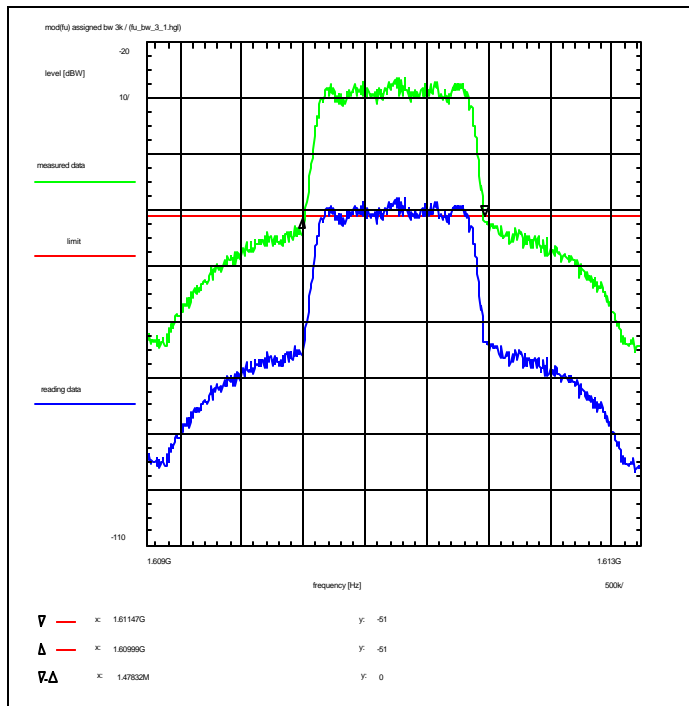
Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

Test result: determination of the 'assigned bandwidth'

Remarks:
Determination of the 'assigned bandwidth' at fu:
The measured value is about 1480 kHz (delta marker)
Measurement with 10 kHz resolution filter and noise averaging.

Information on the measurement:

Environment condition:

Date & Time:	Wed 12/Apr/2000 09:05:00
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat
Temperature:	21 °C
Humidity:	60 %
Voltage:	7.5 Vdc

Setup of measurement equipment:

Start frequency:	1.60873	GHz
Stop frequency:	1.61273	GHz
Center frequency:	1.61073	GHz
Frequency span:	4	MHz
Input attenuation:	10	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	100	sweep(s) (>1)
Detector Mode:	1	Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler	+	0.0	dB
Coaxial cable (C027)	+	1.1	dB
DUT - Antenna (on-axis)	+	3.2	dB
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U023)	+	10.0	dB
Power splitter (U015)	+	6.0	dB
TOTAL CORRECTION:		21.5	dB

Limit:

no limits defined

The limit line in the plot of $-25\text{dBc}/4\text{kHz}$ is useful for orientation and corresponds to the restriction for 'Emission limitations' (see 25.202 f)).

Remarks:

Determination of the 'assigned bandwidth' at fu:
The measured value is about 1480 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Subclause:	4-	Function test Modulated rf-carrier at the lower edge of the band (fu) Determination of the 'assigned bandwidth'
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Test results:
see plot (an explizit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

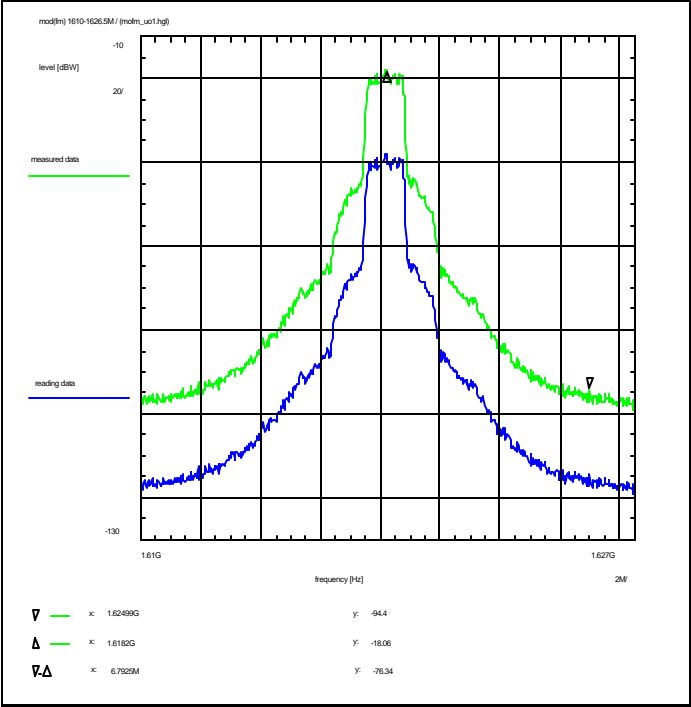
Data of correction:
see annex 4

Remark:

Test result: determination of the 'assigned bandwidth'



Annex 3: Measurement result no. 4 (41)



Information on the measurement:

Environment condition:
Date & Time: Tue 11/Apr/2000 13:27:06
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61 GHz
Stop frequency: 1.6265 GHz
Center frequency: 1.61825 GHz
Frequency span: 16.5 MHz
Input attenuation: 10 dB
Resolution-BW: 30 kHz
Video-BW: 30 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 20.1 dB

Limit:
no limits defined

This test serves to verify the general function of the EUT and for orientation regarding to the spurious emissions which are expected within the band, furthermore for comparison of the actual power with the rated value at modulated carrier adjusted in the middle of the band (EIRP).

Subclause: 4- Function test
Modulated rf-carrier in the middle of the band (fm)
Measurement within the band

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fm, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

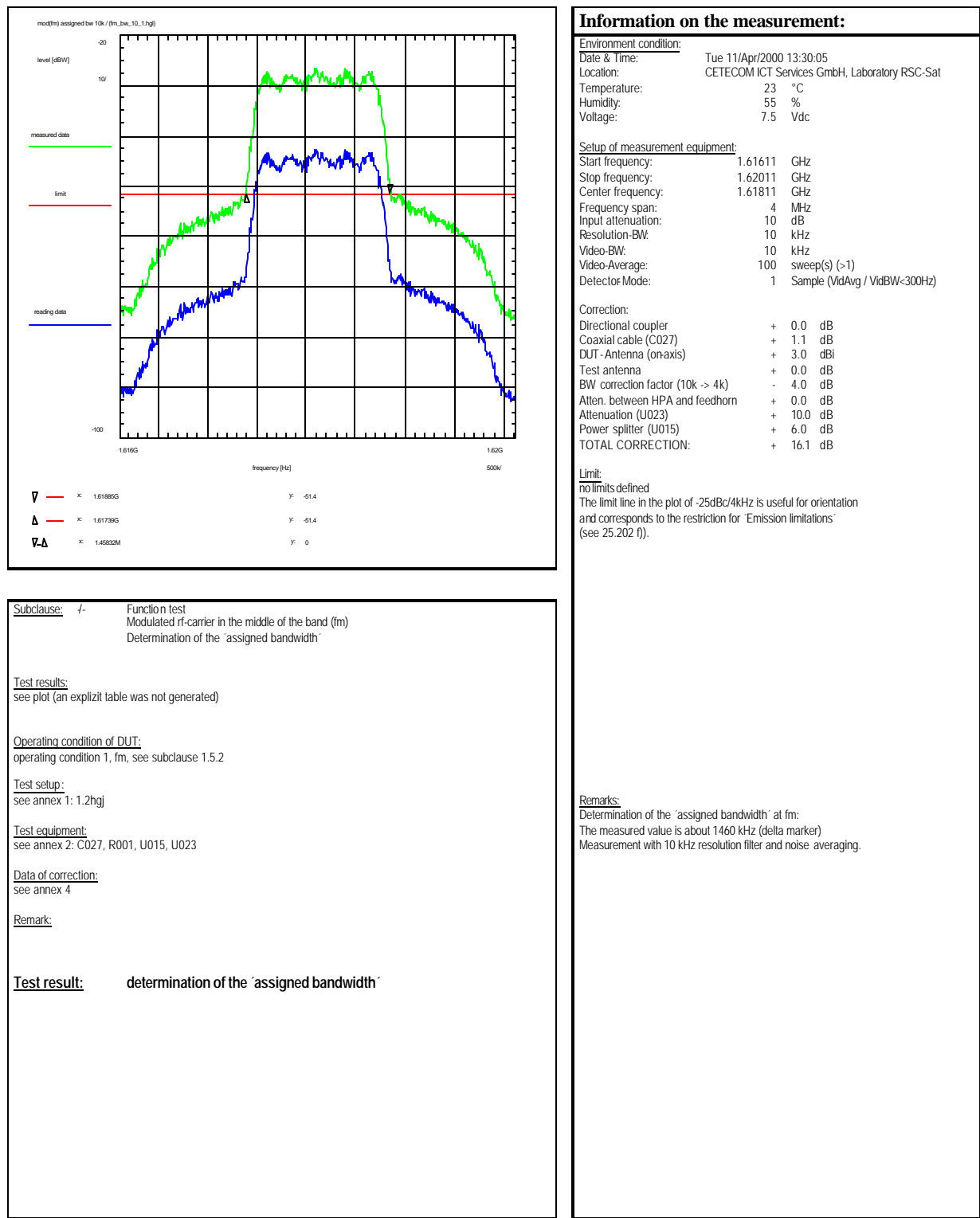
Remark:

Test result: measurement for orientation

Remarks:
Test of general function of the EUT and measurement for orientation

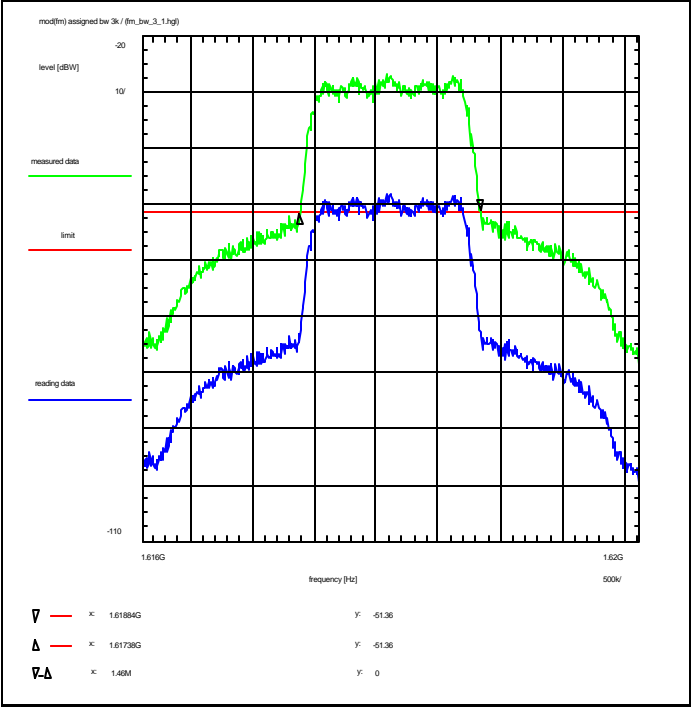


Annex 3: Measurement result no. 5 (41)





Annex 3: Measurement result no. 6 (41)



Information on the measurement:

Environment condition:
Date & Time: Tue 11/Apr/2000 13:31:52
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61611 GHz
Stop frequency: 1.62011 GHz
Center frequency: 1.61811 GHz
Frequency span: 4 MHz
Input attenuation: 10 dB
Resolution-BW: 3 kHz
Video-BW: 3 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (3k -> 4k) + 1.2 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 21.3 dB

Limit:
no limits defined
The limit line in the plot of -25dBc/4kHz is useful for orientation and corresponds to the restriction for 'Emission limitations' (see 25.202 f)).

Remarks:
Determination of the 'assigned bandwidth' at fm:
The measured value is about 1460 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Subclause: 4- Function test
Modulated rf-carrier in the middle of the band (fm)
Determination of the 'assigned bandwidth'

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fm, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

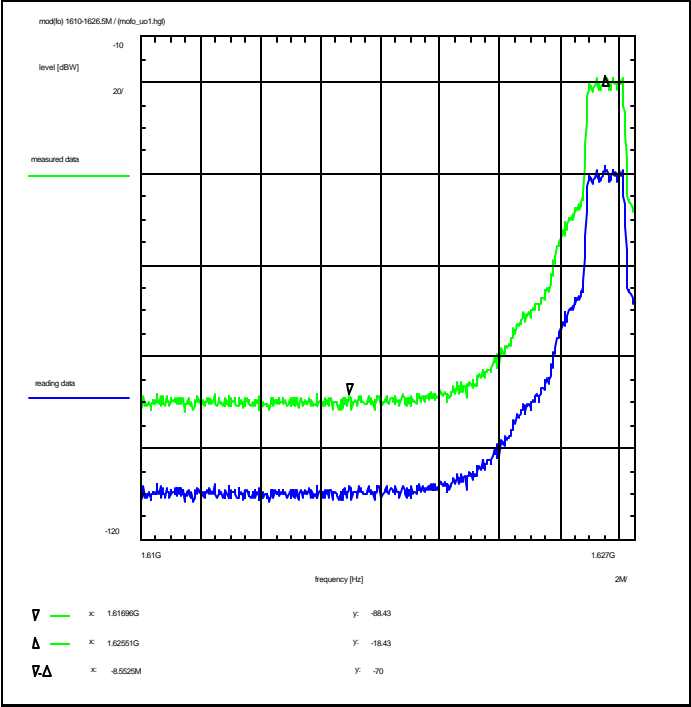
Data of correction:
see annex 4

Remark:

Test result: determination of the 'assigned bandwidth'



Annex 3: Measurement result no. 7 (41)



Information on the measurement:
Environment condition:
Date & Time: Wed 12/Apr/2000 10:39:00
Location: CETECOM ICT Services GmbH, Laboratory RSC-Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61 GHz
Stop frequency: 1.6265 GHz
Center frequency: 1.61825 GHz
Frequency span: 16.5 MHz
Input attenuation: 20 dB
Resolution-BW: 30 kHz
Video-BW: 30 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 2.8 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 19.9 dB

Limit:
no limits defined

This test serves to verify the general function of the EUT and for orientation regarding to the spurious emissions which are expected within the band, furthermore for comparison of the actual power with the rated value at modulated carrier adjusted as close to the upper edge of the operating frequency band.

Remarks:
Test of general function of the EUT and measurement for orientation

Subclause: 4-
Function test
Modulated rf-carrier at the upper edge of the band (fo)
Measurement within the band

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subcl ause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

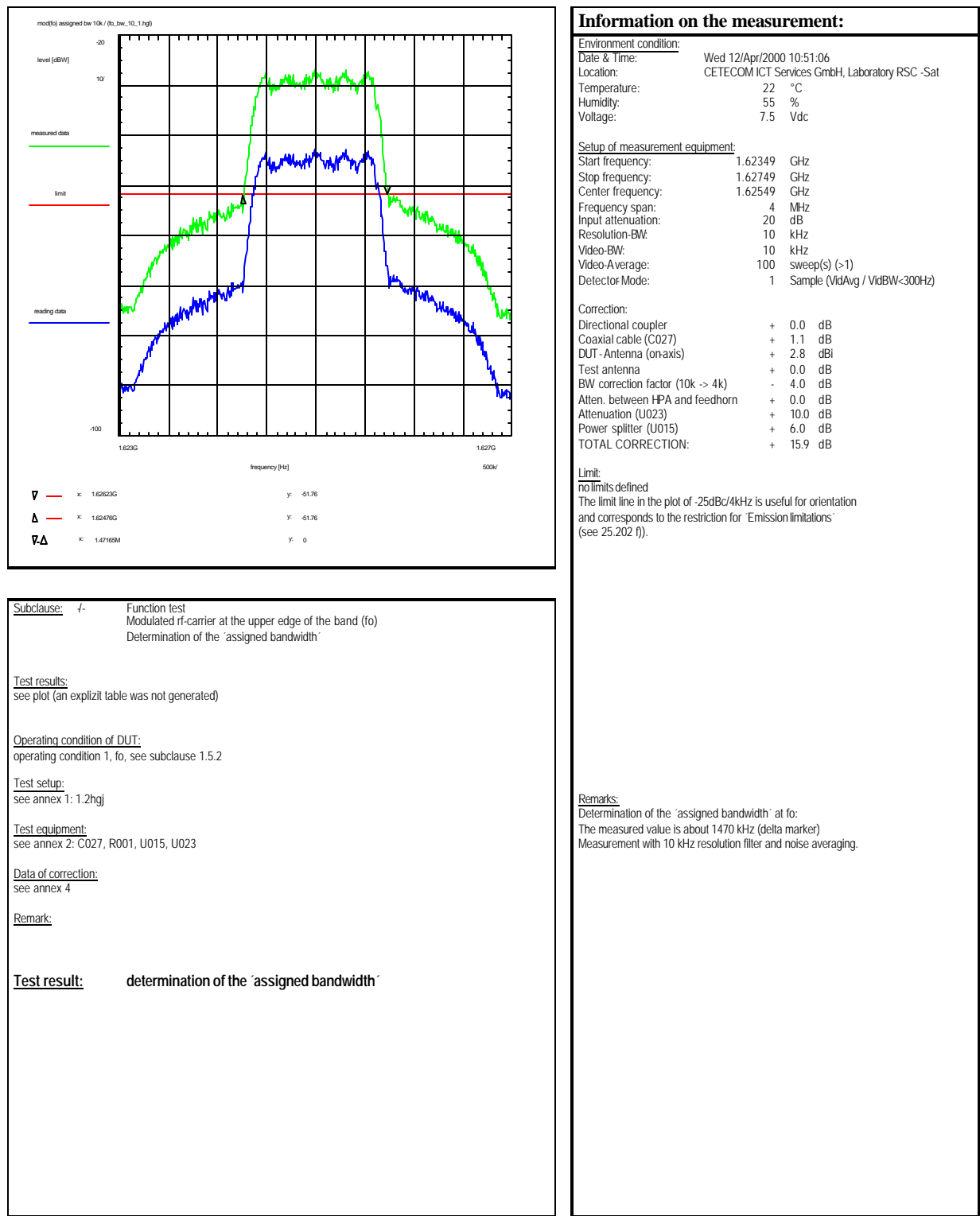
Data of correction:
see annex 4

Remark:

Test result: measurement for orientation

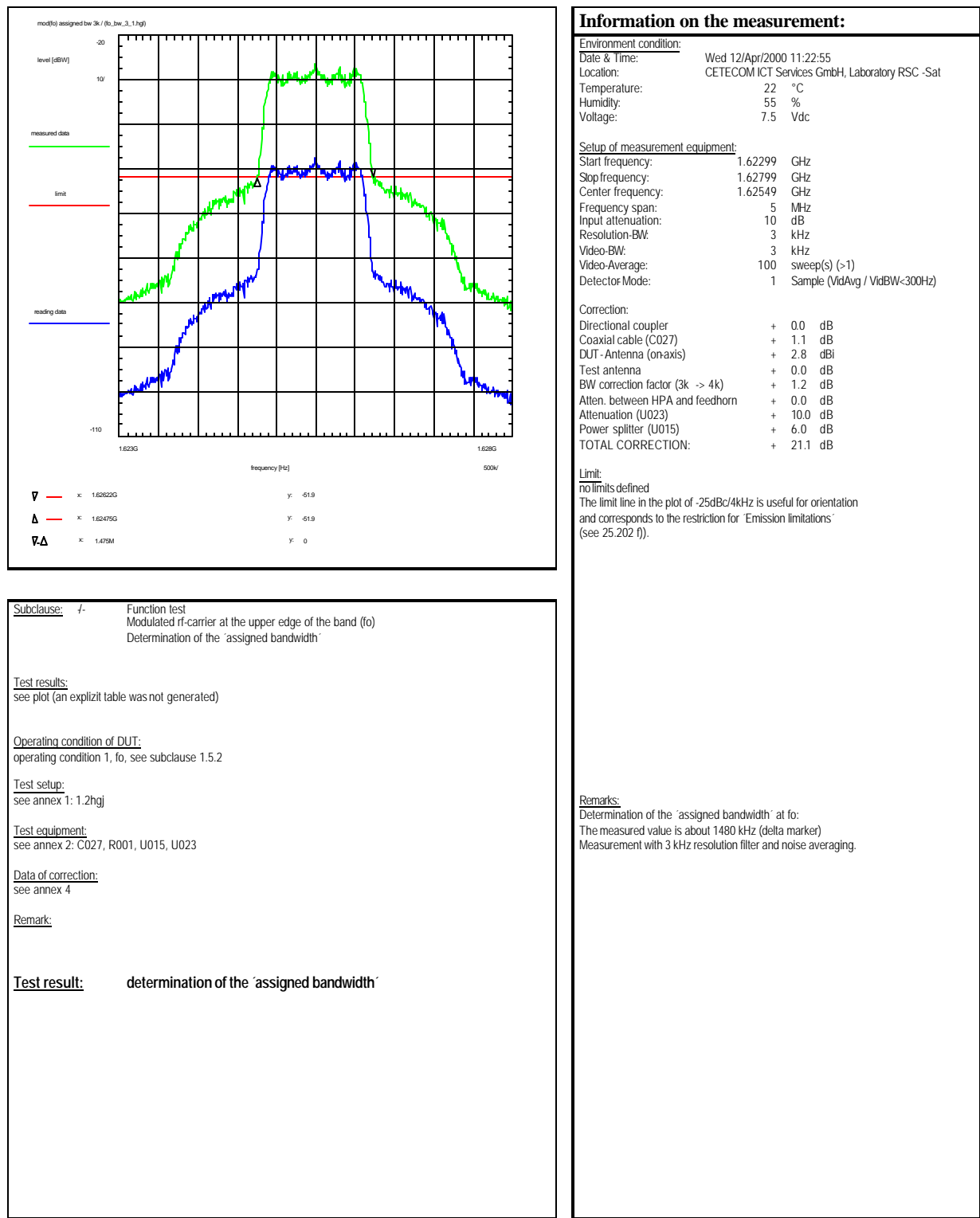


Annex 3: Measurement result no. 8 (41)



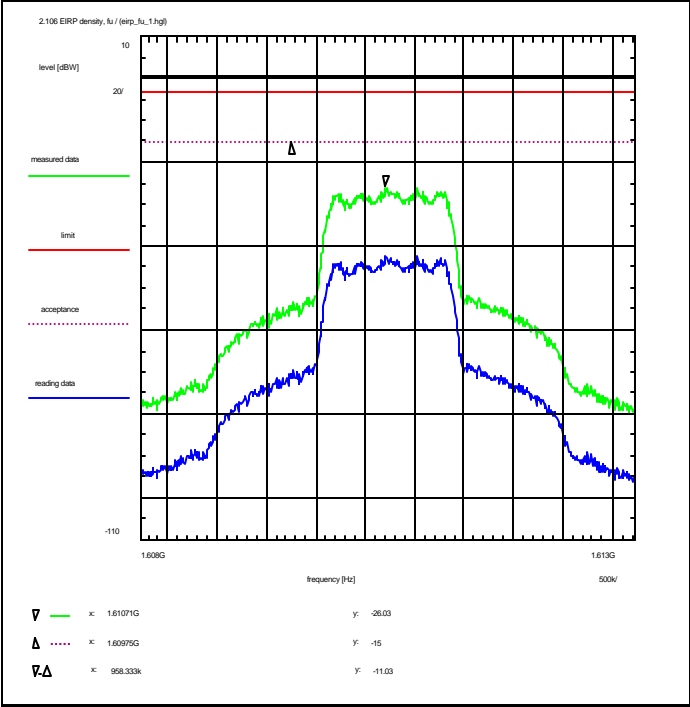


Annex 3: Measurement result no. 9 (41)





Annex 3: Measurement result no. 10 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 09:06:56
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.60823 GHz
Stop frequency: 1.61323 GHz
Center frequency: 1.61073 GHz
Frequency span: 5 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.2 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.3 dB

Limit:
Limits acc. to 2.106: -3.0 dBW/4kHz
(-15 dBW/4kHz)

Subclause: 2.106 EIRP density within the operational band
Carrier-on state, modulated carrier at the lower edge of the band (fu)
Conducted measurement at the antenna -connector

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

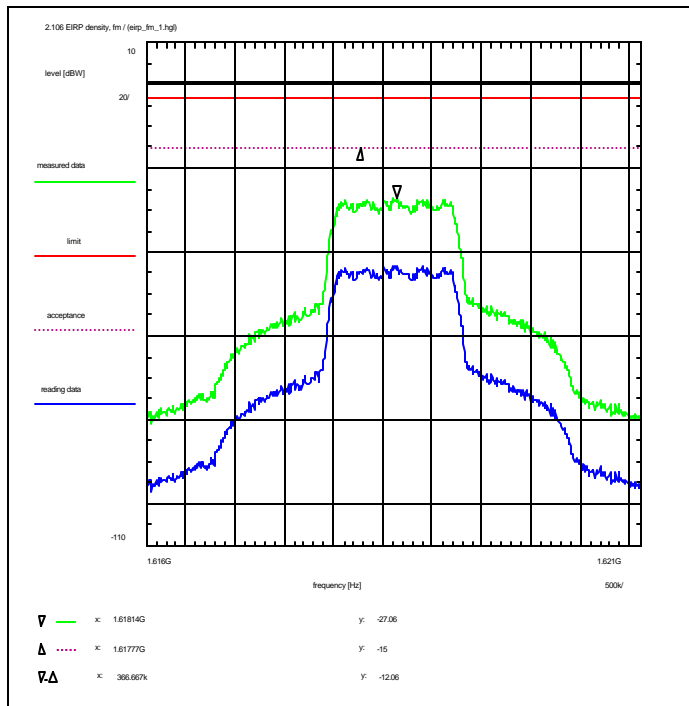
Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

Test result: Test passed

Remarks:
Carrier-on state / Carrier at the lower edge of the band (fu)
Measurement with 10 kHz resolution filter and noise averaging

**Annex 3: Measurement result no. 11 (41)****Information on the measurement:**Environment condition:

Date & Time: Tue 11/Apr/2000 13:34:40
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.61561 GHz
Stop frequency: 1.62061 GHz
Center frequency: 1.61811 GHz
Frequency span: 5 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:

Limits acc. to 2.106: -3.0 dBW/4kHz
(-15 dBW/4kHz)

Subclause: 2.106 EIRP density within the operational band
Carrier-on state, modulated carrier in the middle of the band (fm)
Conducted measurement at the antenna -connector

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fm, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

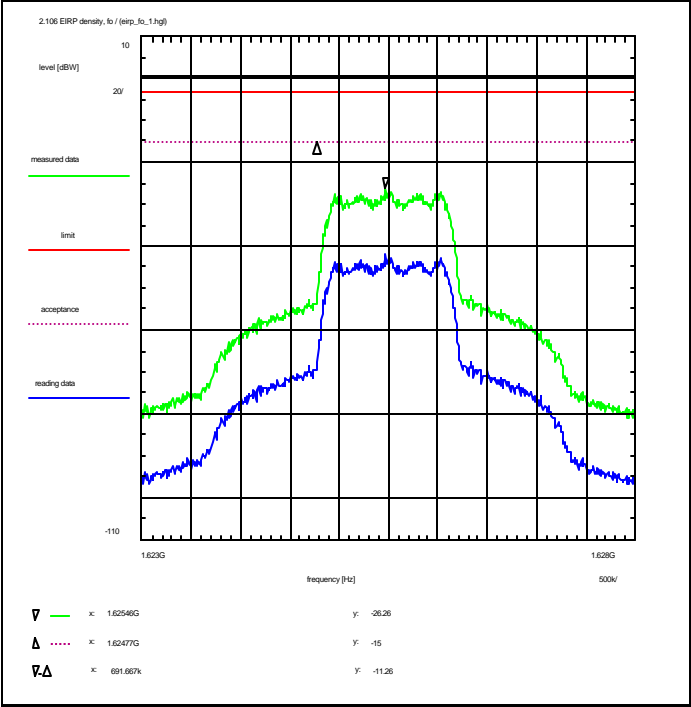
Test result: Test passed

Remarks:

Carrier-on state / Carrier in the middle of the band (fm)
Measurement with 10 kHz resolution filter and noise averaging



Annex 3: Measurement result no. 12 (41)



Information on the measurement:

Environment condition:

Date & Time: Wed 12/Apr/2000 11:24:23

Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat

Temperature: 22 °C

Humidity: 55 %

Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.62299 GHz

Stop frequency: 1.62799 GHz

Center frequency: 1.62549 GHz

Frequency span: 5 MHz

Input attenuation: 10 dB

Resolution-BW: 10 kHz

Video-BW: 10 kHz

Video-Average: 100 sweep(s) (>1)

Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C027) + 1.1 dB

DUT - Antenna (on-axis) + 2.8 dBi

Test antenna + 0.0 dB

BW correction factor (10k -> 4k) - 4.0 dB

Atten. between HPA and feedhorn + 0.0 dB

Attenuation (U023) + 10.0 dB

Power splitter (U015) + 6.0 dB

TOTAL CORRECTION: + 15.9 dB

Limit:

Limits acc. to 2.106: -3.0 dBW/4kHz

(-15 dBW/4kHz)

Subclause: 2.106

EIRP density within the operational band

Carrier-on state, modulated carrier at the upper edge of the band (fo)

Conducted measurement at the antenna -connector

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fo, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

Test result:

Test passed

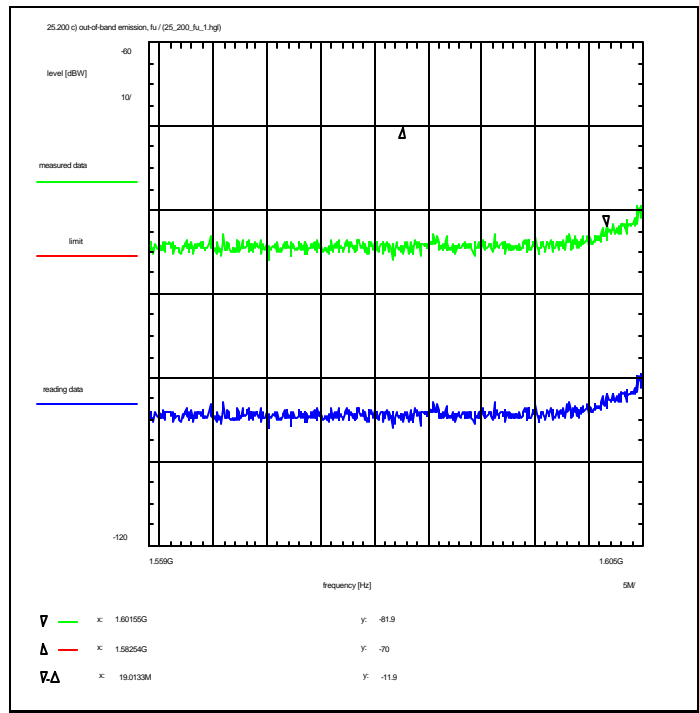
Remarks:

Carrier-on state / Carrier at the upper edge of the band (fo)

Measurement with 10 kHz resolution filter and noise averaging



Annex 3: Measurement result no. 13 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 09:10:26
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.559 GHz
Stop frequency: 1.605 GHz
Center frequency: 1.582 GHz
Frequency span: 46 MHz
Input attenuation: 10 dB
Resolution-BW: 1 MHz
Video-BW: 1 MHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 20.1 dB

Limit:
Limit acc. to 25.200 c) and 25.213 b):
-70.0 dBW/1MHz
-80.0 dBW (for spurious only)

Subclause: 25.200 c) Interim equipment authorization, out-of-band limitation and
25.213 b) Inter Service coordination requirements for the 1.6/2.4 GHz MSS
Protection of the radio-navigation-satellite service

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

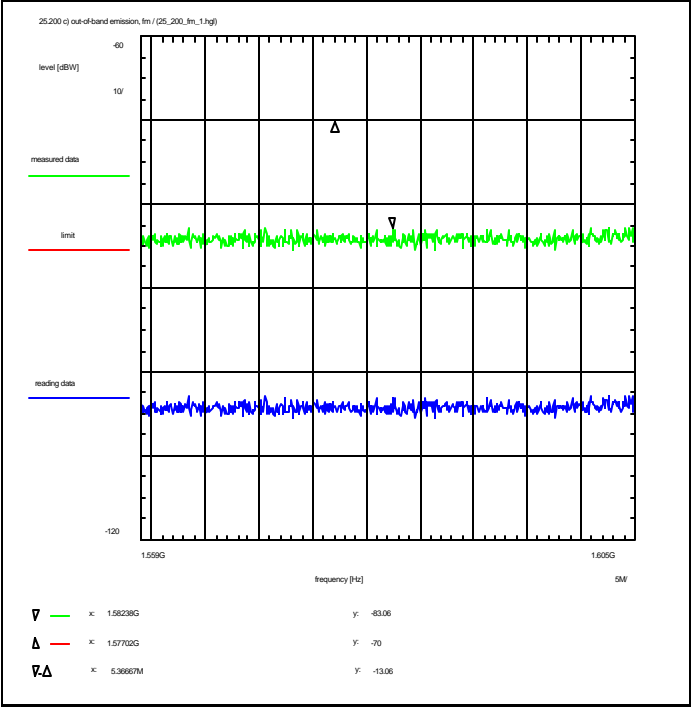
Remark:

Test result: Test passed

Remarks:
Carrier on state / Carrier at the lower edge of the band (fu)
For EIRP calculation:
'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 14 (41)



Information on the measurement:

Environment condition:

Date & Time: Tue 11/Apr/2000 13:36:17

Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat

Temperature: 23 °C

Humidity: 55 %

Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.559 GHz

Stop frequency: 1.605 GHz

Center frequency: 1.582 GHz

Frequency span: 46 MHz

Input attenuation: 10 dB

Resolution-BW: 1 MHz

Video-BW: 1 MHz

Video-Average: 100 sweep(s) (>1)

Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB

Coaxial cable (C027) + 1.1 dB

DUT - Antenna (on-axis) + 3.0 dBi

Test antenna + 0.0 dB

BW correction factor + 0.0 dB

Atten. between HPA and feedhorn + 0.0 dB

Attenuation (U023) + 10.0 dB

Power splitter (U015) + 6.0 dB

TOTAL CORRECTION: + 20.1 dB

Limit:

Limit acc. to 25.200 c) and 25.213 b):

-70.0 dBW/1MHz

-80.0 dBW (for spurious only)

Subclause: 25.200 c) Interim equipment authorization, out-of-band limitation and 25.213 b) Inter Service coordination requirements for the 1.6/2.4 GHz MSS

Protection of the rad io-navigation-satellite service

Test results:

see plot (an explizit table was not generated)

Operating condition of DUT:

operating condition 1, fm, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

Test result:

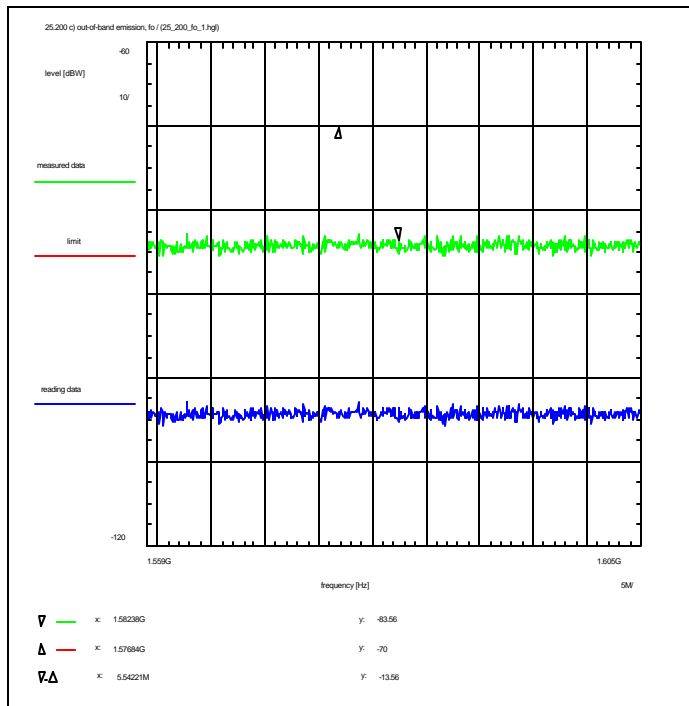
Test passed

Remarks:

Carrier on state / Carrier in the middle of the band (fm)

For EIRP calculation:

'worst-case' = maximum antenna gain

**Annex 3: Measurement result no. 15 (41)****Information on the measurement:**Environment condition:

Date & Time: Wed 12/Apr/2000 11:26:56
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.559 GHz
Stop frequency: 1.605 GHz
Center frequency: 1.582 GHz
Frequency span: 46 MHz
Input attenuation: 10 dB
Resolution-BW: 1 MHz
Video-BW: 1 MHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.0 dB
Test antenna + 0.0 dB
BW correction factor + 0.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 20.1 dB

Limit:

Limit acc. to 25.200 c) and 25.213 b):
-70.0 dBW/1MHz
-80.0 dBW (for spurious only)

Subclause: 25.200 c) Interim equipment authorization, out-of-band limitation and
25.213 b) Inter Service coordination requirements for the 1.6/2.4 GHz MSS
Protection of the radio-navigation-satellite service

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fo, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

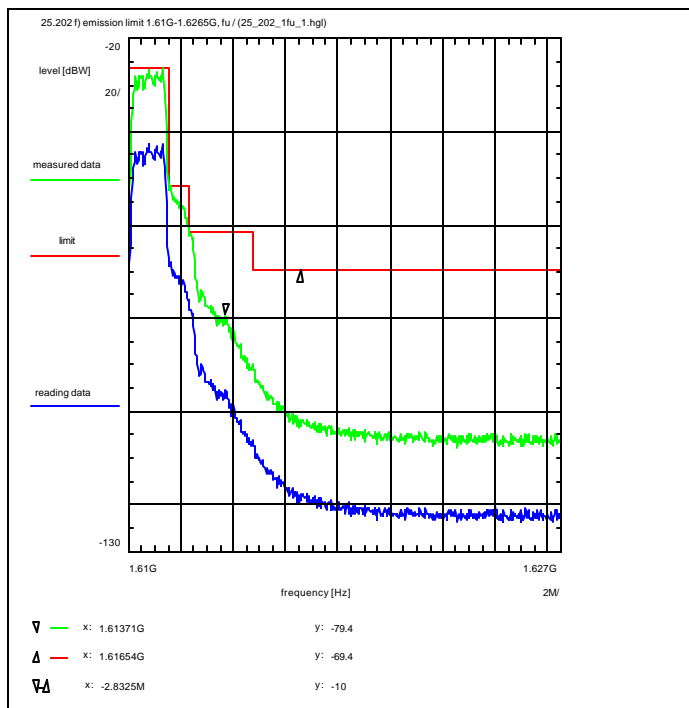
Test result: Test passed

Remarks:

Carrier on state / Carrier at the upper edge of the band (fo)

For EIRP calculation:

'worst-case' = maximum antenna gain

**Annex 3: Measurement result no. 16 (41)****Information on the measurement:**Environment condition:

Date & Time: Wed 12/Apr/2000 09:15:02
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.61 GHz
Stop frequency: 1.6265 GHz
Center frequency: 1.61825 GHz
Frequency span: 16.5 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:Limit acc. to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Remarks:

Carrier on state / Carrier at the lower edge of the band (fu)

For EIRP calculation:

'worst-case' = maximum antenna gain

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fu, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgi

Test equipment:

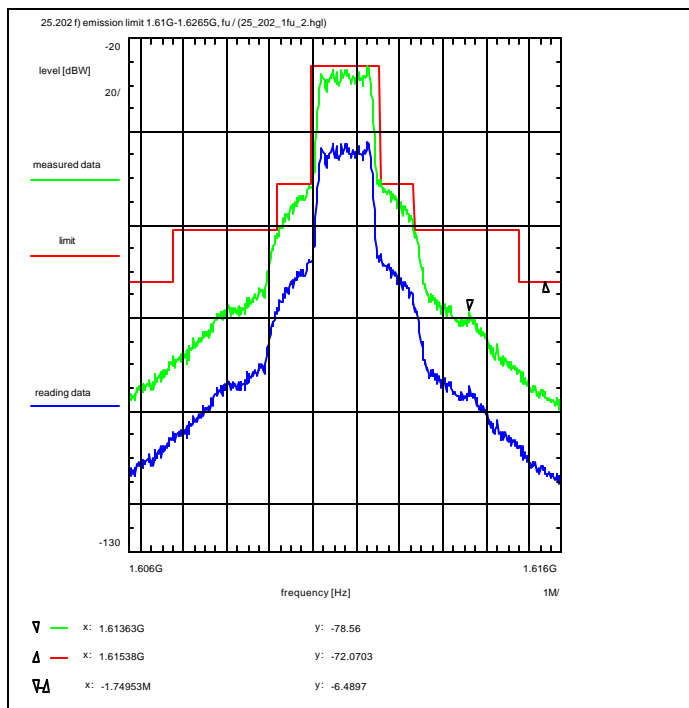
see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

Test result: see next plot

**Annex 3: Measurement result no. 17 (41)****Information on the measurement:**

Environment condition:
Date & Time: Wed 12/Apr/2000 09:35:29
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.60573 GHz
Stop frequency: 1.61573 GHz
Center frequency: 1.61073 GHz
Frequency span: 10 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

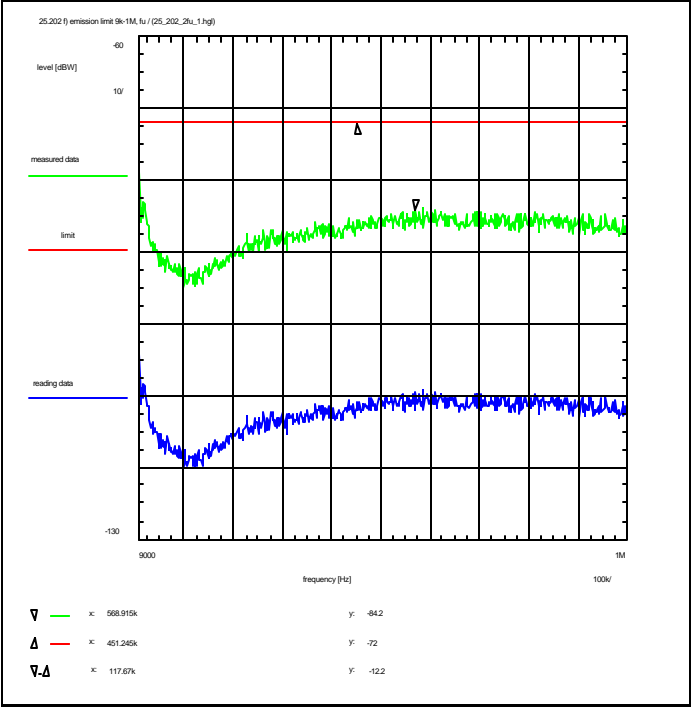
Remark:
Test passed after increasing the measured 'assigned bandwidth' to 1600 kHz.

Test result: Test passed

Remarks:
Carrier on state / Carrier at the lower edge of the band (fu)
For EIRP calculation:
'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 18 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 09:42:17
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 9 kHz
Stop frequency: 1 MHz
Center frequency: 504.5 kHz
Frequency span: 991 kHz
Input attenuation: 10 dB
Resolution-BW: 1 kHz
Video-BW: 1 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 0.3 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (1k -> 4k) + 6.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 25.3 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Remarks:
Carrier on state / Carrier at the lower edge of the band (fu)
For EIRP calculation:
'worst-case' = maximum antenna gain

Rather left the plot shows the zero-line of the spectrum analyzer.

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

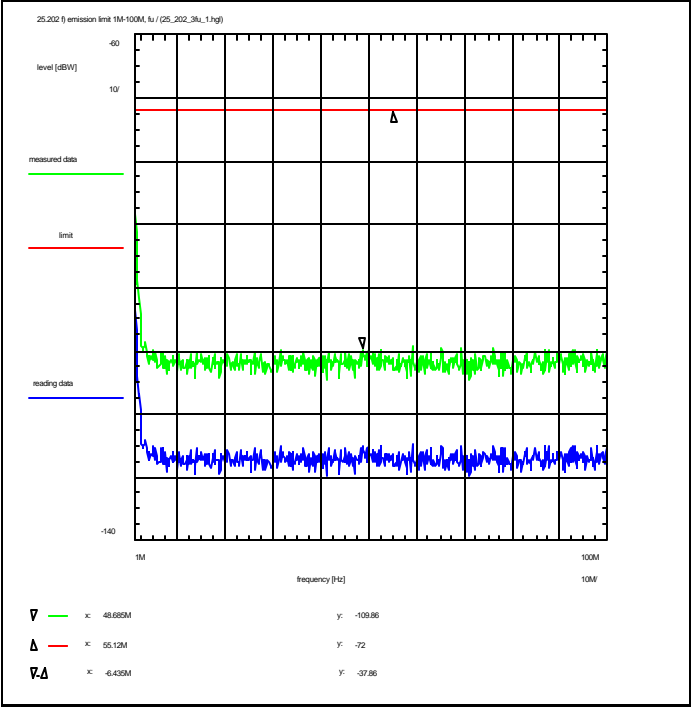
Data of correction:
see annex 4

Remark:

Test result: Test passed



Annex 3: Measurement result no. 19 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 09:49:58
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1 MHz
Stop frequency: 100 MHz
Center frequency: 50.5 MHz
Frequency span: 99 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 0.3 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 15.3 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Remarks:
Carrier on state / Carrier at the lower edge of the band (fu)
For EIRP calculation:
'worst-case' = maximum antenna gain

Rather left the plot shows the zero-line of the spectrum analyzer.

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

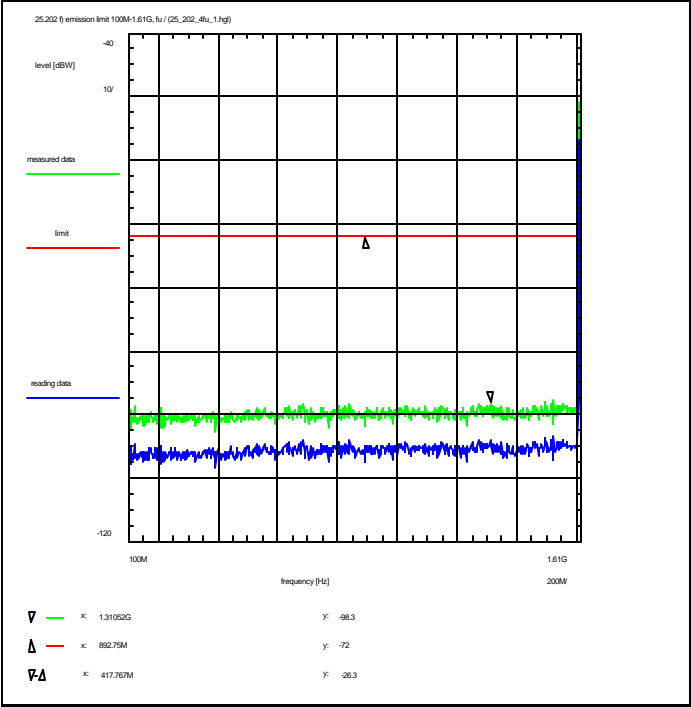
Data of correction:
see annex 4

Remark:

Test result: Test passed



Annex 3: Measurement result no. 20 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 09:52:34
Location: CETECOM ICT Services GmbH, Laboratory RSC-Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 100 MHz
Stop frequency: 1.61 GHz
Center frequency: 855 MHz
Frequency span: 1.51 GHz
Input attenuation: 20 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 0.7 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 5.7 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Remarks:
Carrier on state / Carrier at the lower edge of the band (fu)
For EIRP calculation:
"worst-case" = maximum antenna gain

Rather right the plot shows parts of the wanted signal.

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fu, see subclause 1.5.2

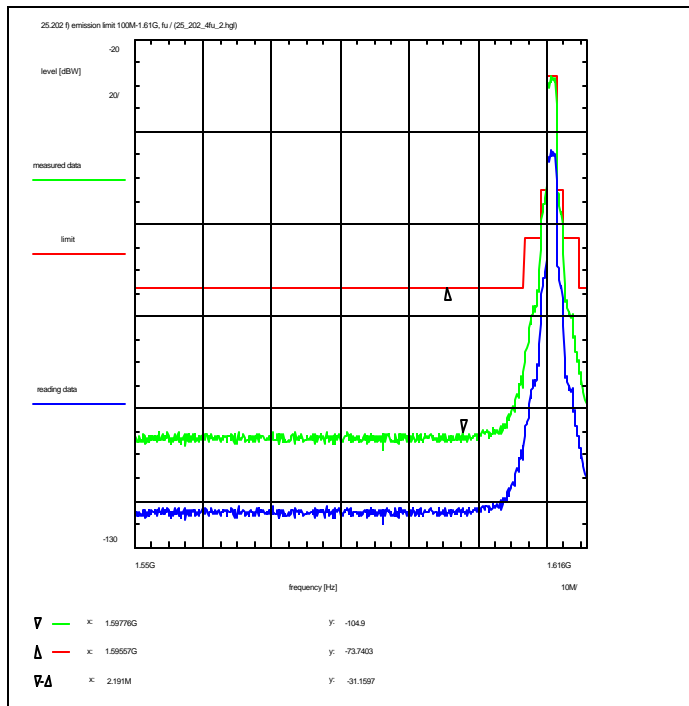
Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

Test result: see next plot

**Annex 3: Measurement result no. 21 (41)****Information on the measurement:**Environment condition:

Date & Time: Wed 12/Apr/2000 09:58:03
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 21 °C
Humidity: 60 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.55 GHz
Stop frequency: 1.61573 GHz
Center frequency: 1.582865 GHz
Frequency span: 65.73 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:Limit acc. to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Remarks:

Carrier on state / Carrier at the lower edge of the band (fu)

For EIRP calculation:

'worst-case' = maximum antenna gain

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the lower edge of the band (fu)

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fu, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

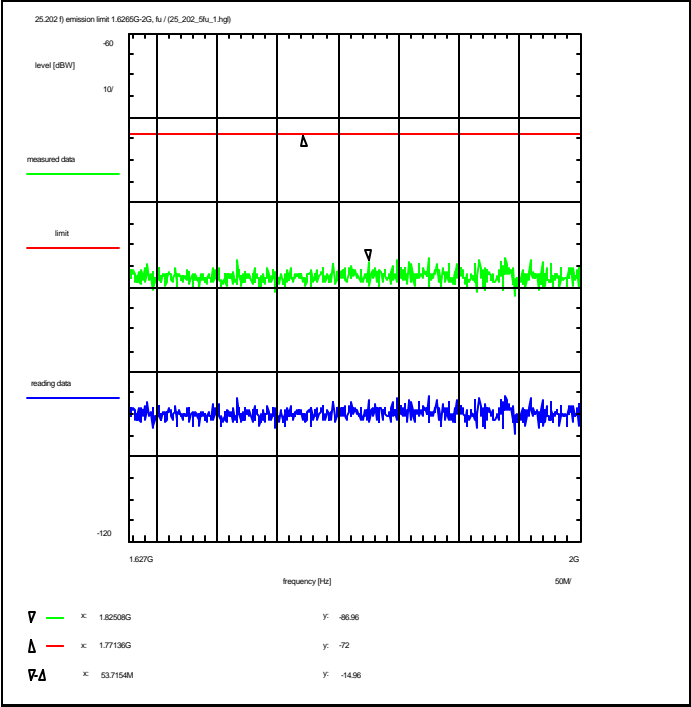
see annex 4

Remark:

Test result: Test passed



Annex 3: Measurement result no. 22 (41)



Information on the measurement:	
Environment condition:	
Date & Time:	Wed 12/Apr/2000 10:00:12
Location:	CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature:	21 °C
Humidity:	60 %
Voltage:	7.5 Vdc
Setup of measurement equipment:	
Start frequency:	1.6265 GHz
Stop frequency:	2 GHz
Center frequency:	1.81325 GHz
Frequency span:	373.5 MHz
Input attenuation:	20 dB
Resolution-BW:	100 kHz
Video-BW:	100 kHz
Video-Average:	100 sweep(s) (>1)
Detector Mode:	1 Sample (VidAvg / VidBW<300Hz)
Correction:	
Directional coupler	+ 0.0 dB
Coaxial cable (C027)	+ 1.2 dB
DUT - Antenna (onaxis)	+ 3.0 dBi
Test antenna	+ 0.0 dB
BW correction factor (10k -> 4k)	- 4.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Attenuation (U023)	+ 10.0 dB
Power splitter (U015)	+ 6.0 dB
TOTAL CORRECTION:	+ 16.2 dB
Limit:	
Limit acc. to 25.202 f):	
50-100% of assigned bw:	-25dBc/4kHz
100-250% of assigned bw:	-35dBc/4kHz
> 250% of assigned bw:	-43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations	
Emission limitations	
Modulated rf-carrier at the lower edge of the band (fu)	
Test results:	
see plot (an explicit table was not generated)	
Operating condition of DUT:	
operating condition 1, fu, see subclause 1.5.2	
Test setup:	
see annex 1: 1.2hgj	
Test equipment:	
see annex 2: C027, R001, U015, U023	
Data of correction:	
see annex 4	
Remark:	
Test result: Test passed	

Remarks:

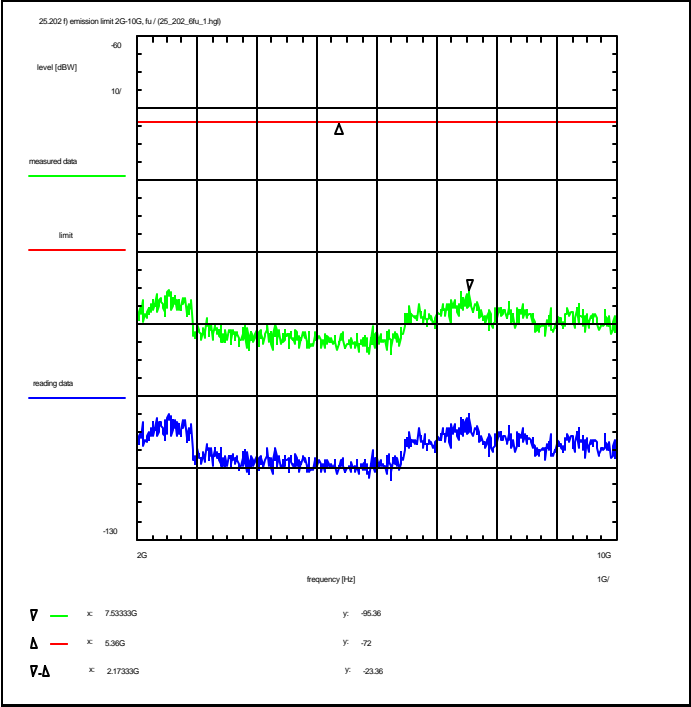
Carrier on state / Carrier at the lower edge of the band (fu)

For EIRP calculation:

'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 23 (41)

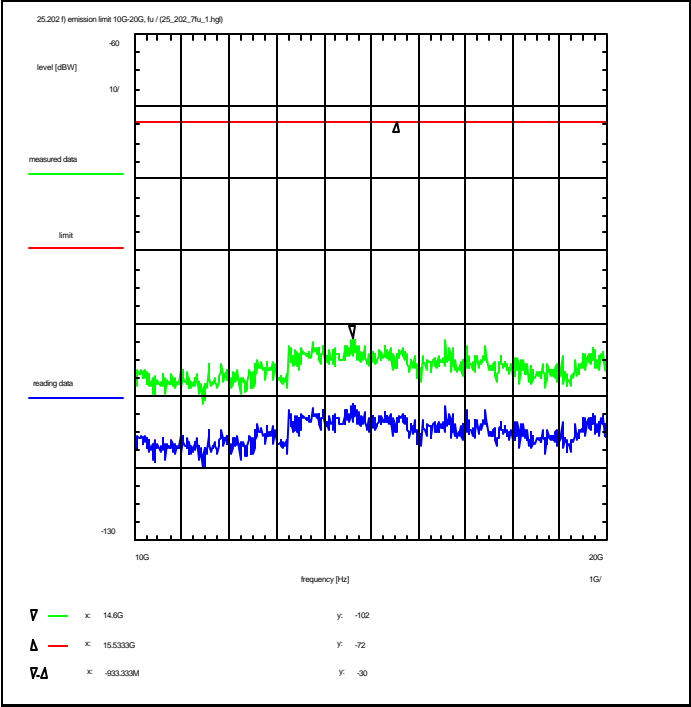


Information on the measurement:	
Environment condition:	
Date & Time:	Wed 12/Apr/2000 10:02:41
Location:	CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature:	21 °C
Humidity:	60 %
Voltage:	7.5 Vdc
Setup of measurement equipment:	
Start frequency:	2 GHz
Stop frequency:	10 GHz
Center frequency:	6 GHz
Frequency span:	8 GHz
Input attenuation:	10 dB
Resolution-BW:	100 kHz
Video-BW:	100 kHz
Video-Average:	100 sweep(s) (>1)
Detector Mode:	1 Sample (VidAvg / VidBW<300Hz)
Correction:	
Directional coupler	+ 0.0 dB
Coaxial cable (C027)	+ 2.3 dB
DUT - Antenna (on-axis)	+ 3.0 dBi
Test antenna	+ 0.0 dB
BW correction factor (10k -> 4k)	- 4.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Attenuation (U023)	+ 10.0 dB
Power splitter (U015)	+ 6.0 dB
TOTAL CORRECTION:	+ 17.3 dB
Limit:	
Limit acc. to 25.202 f):	
50-100% of assigned bw:	-25dBc/4kHz
100-250% of assigned bw:	-35dBc/4kHz
> 250% of assigned bw:	-43+10log(Pmax)dBc/4kHz
Remarks:	
Carrier on state / Carrier at the lower edge of the band (fu)	
For EIRP calculation:	
'worst-case' = maximum antenna gain	

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations	
Emission limitations	
Modulated rf-carrier at the lower edge of the band (fu)	
Test results:	
see plot (an explicit table was not generated)	
Operating condition of DUT:	
operating condition 1, fu, see subclause 1.5.2	
Test setup:	
see annex 1: 1.2hgj	
Test equipment:	
see annex 2: C027, R001, U015, U023	
Data of correction:	
see annex 4	
Remark:	
Test result: Test passed	



Annex 3: Measurement result no. 24 (41)

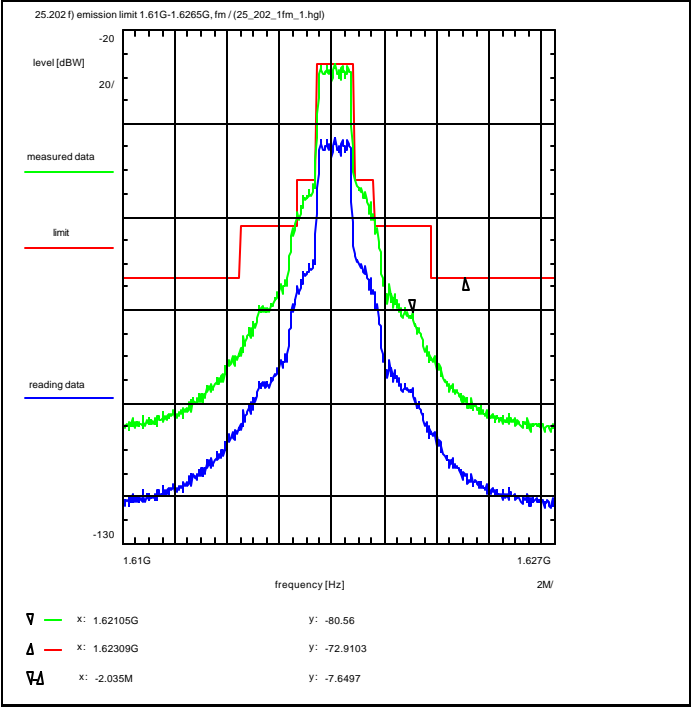


Information on the measurement:	
Environment condition:	
Date & Time:	Wed 12/Apr/2000 10:04:48
Location:	CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature:	21 °C
Humidity:	60 %
Voltage:	7.5 Vdc
Setup of measurement equipment:	
Start frequency:	10 GHz
Stop frequency:	20 GHz
Center frequency:	15 GHz
Frequency span:	10 GHz
Input attenuation:	10 dB
Resolution-BW:	100 kHz
Video-BW:	100 kHz
Video-Average:	100 sweep(s) (>1)
Detector Mode:	1 Sample (VidAvg / VidBW<300Hz)
Correction:	
Directional coupler	+ 0.0 dB
Coaxial cable (C027)	+ 3.7 dB
DUT - Antenna (onaxis)	+ 3.0 dBi
Test antenna	+ 0.0 dB
BW correction factor (100k -> 4k)	- 14.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Attenuation (U023)	+ 10.3 dB
Power splitter (U015)	+ 6.0 dB
TOTAL CORRECTION:	+ 9.0 dB
Limit:	
Limit acc. to 25.202 f):	
50-100% of assigned bw:	-25dBc/4kHz
100-250% of assigned bw:	-35dBc/4kHz
> 250% of assigned bw:	-43+10log(Pmax)dBc/4kHz
Remarks:	
Carrier on state / Carrier at the lower edge of the band (fu)	
For EIRP calculation:	
'worst-case' = maximum antenna gain	

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations	
Emission limitations	
Modulated rf-carrier at the lower edge of the band (fu)	
Test results:	
see plot (an explicit table was not generated)	
Operating condition of DUT:	
operating condition 1, fu, see subclause 1.5.2	
Test setup:	
see annex 1: 1.2hgj	
Test equipment:	
see annex 2: C027, R001, U015, U023	
Data of correction:	
see annex 4	
Remark:	
Test result: Test passed	



Annex 3: Measurement result no. 25 (41)



Information on the measurement:

Environment condition:
Date & Time: Tue 11/Apr/2000 14:33:19
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61 GHz
Stop frequency: 1.6265 GHz
Center frequency: 1.61825 GHz
Frequency span: 16.5 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fm, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

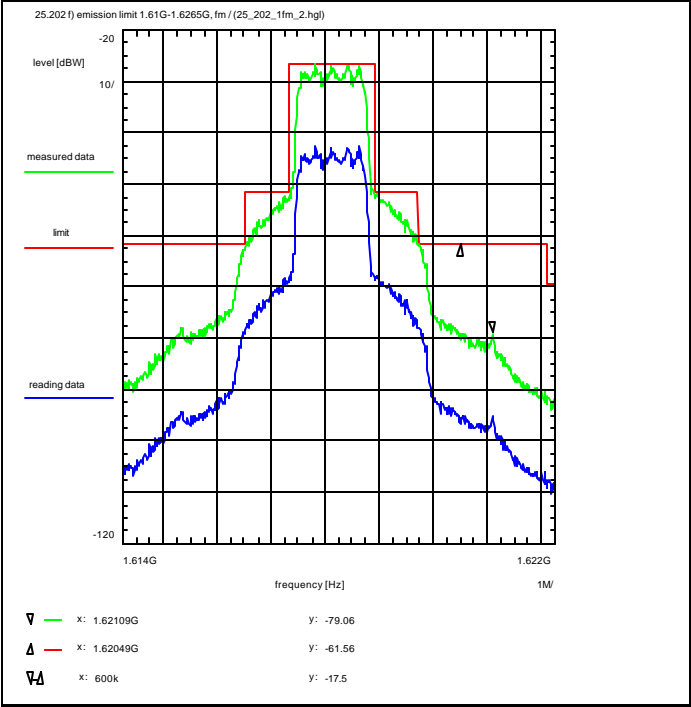
Remark:

Test result: see next plot

Remarks:
Carrier on state / Carrier in the middle of the band (fm)
For EIRP calculation:
'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 26 (41)



Information on the measurement:

Environment condition:
Date & Time: Tue 11/Apr/2000 14:55:37
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61425 GHz
Stop frequency: 1.62225 GHz
Center frequency: 1.61825 GHz
Frequency span: 8 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (on-axis) + 3.0 dB
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Remarks:
Carrier on state / Carrier in the middle of the band (fm)
For EIRP calculation:
worst-case = maximum antenna gain

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fm, see subclause 1.5.2

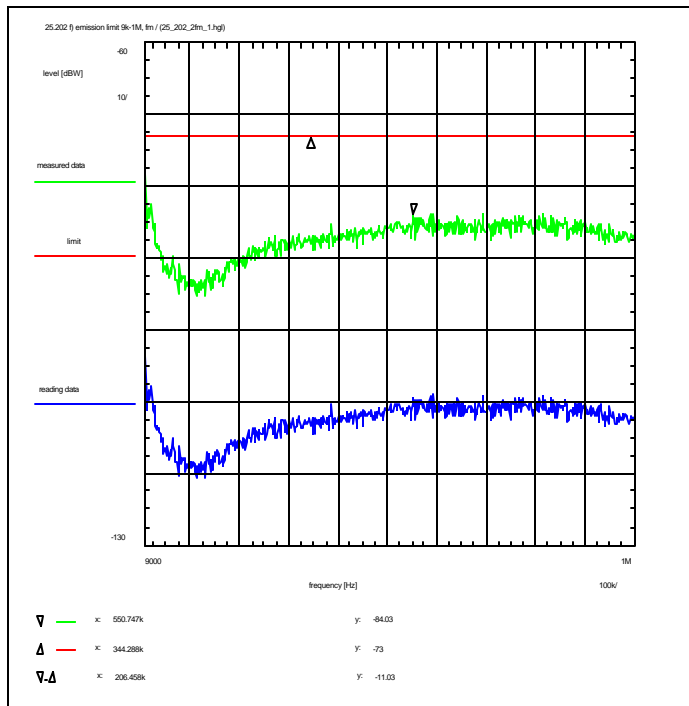
Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:
Test passed after increasing the measured 'assigned bandwidth' to 1600 kHz.

Test result: Test passed

**Annex 3: Measurement result no. 27 (41)****Information on the measurement:**Environment condition:

Date & Time: Tue 11/Apr/2000 15:04:50
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 9 kHz
Stop frequency: 1 MHz
Center frequency: 504.5 kHz
Frequency span: 991 kHz
Input attenuation: 10 dB
Resolution-BW: 1 kHz
Video-BW: 1 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 0.3 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (1k -> 4k) + 6.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 25.3 dB

Limit:Limit acc. to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fm, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

Test result: Test passed

Remarks:

Carrier on state / Carrier in the middle of the band (fm)

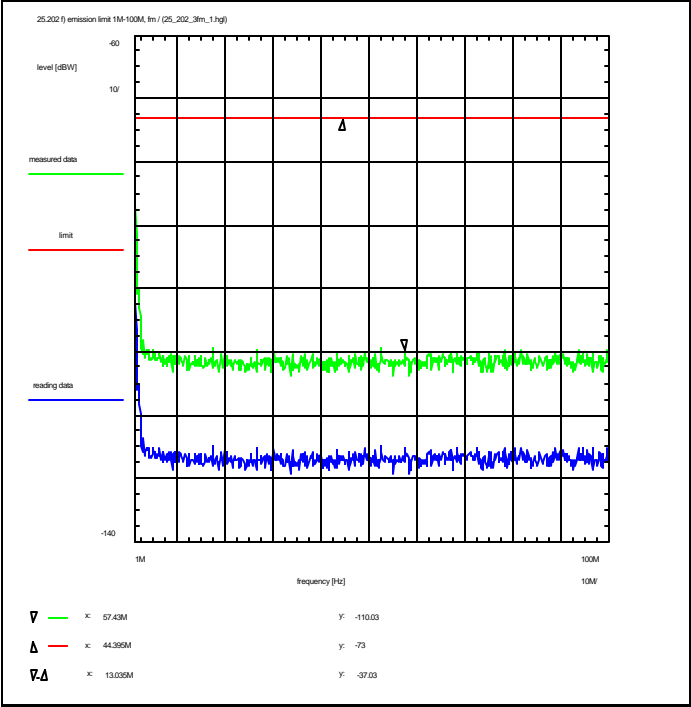
For EIRP calculation:

'worst-case' = maximum antenna gain

Rather left the plot shows the zero-line of the spectrum analyzer.

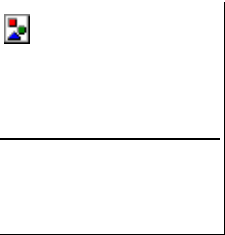


Annex 3: Measurement result no. 28 (41)

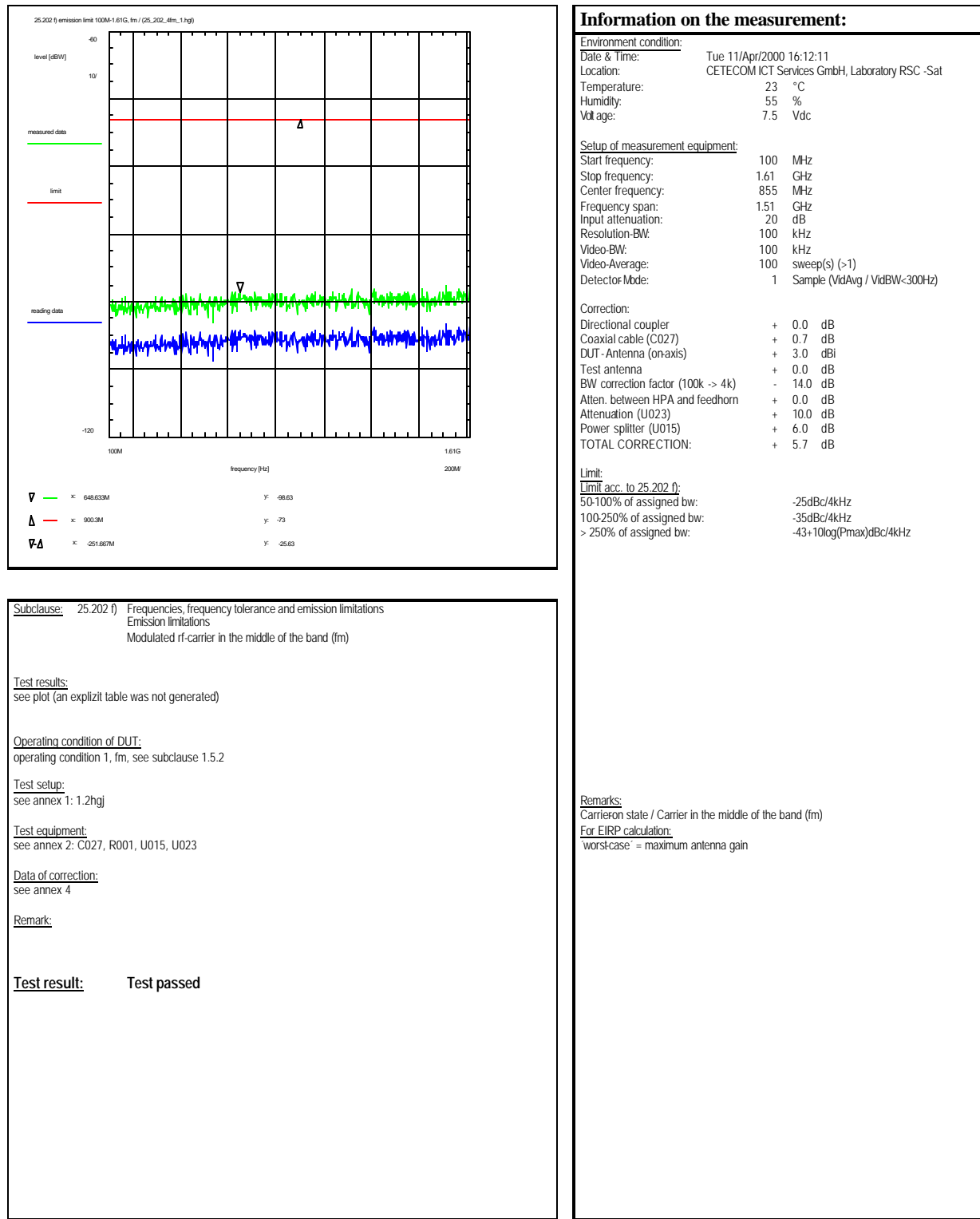


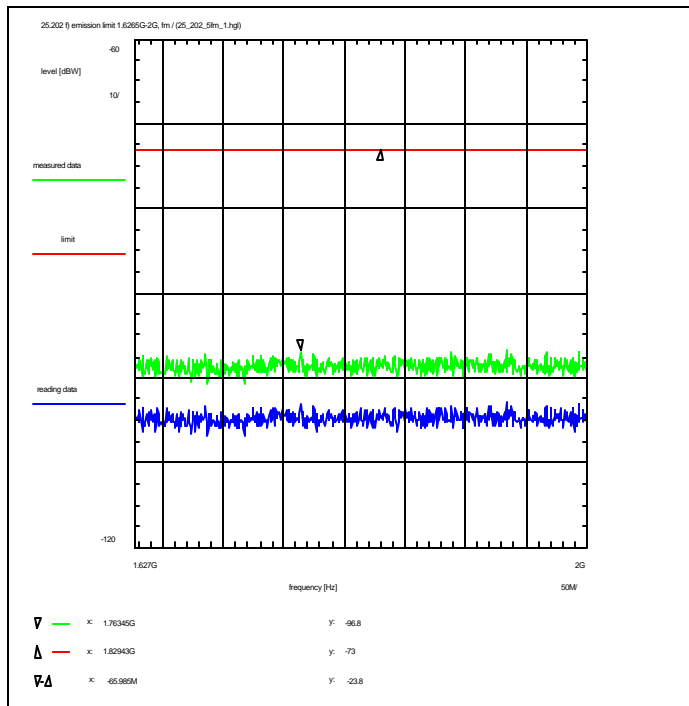
Information on the measurement:	
Environment condition:	
Date & Time:	Tue 11/Apr/2000 16:10:02
Location:	CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature:	23 °C
Humidity:	55 %
Voltage:	7.5 Vdc
Setup of measurement equipment:	
Start frequency:	1 MHz
Stop frequency:	100 MHz
Center frequency:	50.5 MHz
Frequency span:	99 MHz
Input attenuation:	10 dB
Resolution-BW:	10 kHz
Video-BW:	10 kHz
Video-Average:	100 sweep(s) (>1)
Detector Mode:	1 Sample (VidAvg / VidBW<300Hz)
Correction:	
Directional coupler	+ 0.0 dB
Coaxial cable (C027)	+ 0.3 dB
DUT - Antenna (onaxis)	+ 3.0 dBi
Test antenna	+ 0.0 dB
BW correction factor (10k -> 4k)	- 4.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Attenuation (U023)	+ 10.0 dB
Power splitter (U015)	+ 6.0 dB
TOTAL CORRECTION:	+ 15.3 dB
Limit:	
<u>Limit acc. to 25.202 f):</u>	
50-100% of assigned bw:	-25dBc/4kHz
100-250% of assigned bw:	-35dBc/4kHz
> 250% of assigned bw:	-43+10log(Pmax)/dBc/4kHz
Remarks:	
Carrier on state / Carrier in the middle of the band (fm)	
<u>For EIRP calculation:</u>	
'worst-case' = maximum antenna gain	
Rather left the plot shows the zero-line of the spectrum analyzer.	

<u>Subclause:</u> 25.202 f)	Frequencies, frequency tolerance and emission limitations
	Emission limitations
	Modulated rf-carrier in the middle of the band (fm)
Test results:	
see plot (an explicit table was not generated)	
Operating condition of DUT:	
operating condition 1, fm, see subclause 1.5.2	
Test setup:	
see annex 1: 1.2hgj	
Test equipment:	
see annex 2: C027, R001, U015, U023	
Data of correction:	
see annex 4	
Remark:	
Test result: Test passed	



Annex 3: Measurement result no. 29 (41)



**Annex 3: Measurement result no. 30 (41)****Information on the measurement:**Environment condition:

Date & Time: Tue 11/Apr/2000 16:16:09
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 1.6265 GHz
Stop frequency: 2 GHz
Center frequency: 1.81325 GHz
Frequency span: 373.5 MHz
Input attenuation: 20 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.2 dB
DUT - Antenna (onaxis) + 3.0 dB
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 6.2 dB

Limit:Limit acc. to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fm, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

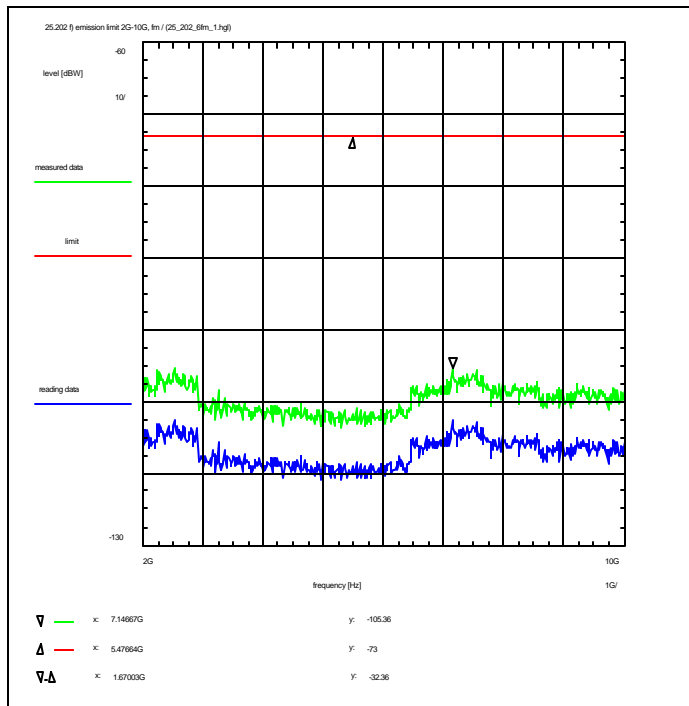
Test result: Test passed

Remarks:

Carrier on state / Carrier in the middle of the band (fm)

For EIRP calculation:

'worst-case' = maximum antenna gain

**Annex 3: Measurement result no. 31 (41)****Information on the measurement:**Environment condition:

Date & Time: Tue 11/Apr/2000 16:34:05
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 2 GHz
Stop frequency: 10 GHz
Center frequency: 6 GHz
Frequency span: 8 GHz
Input attenuation: 10 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 2.3 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 7.3 dB

Limit:Limit acc. to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fm, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

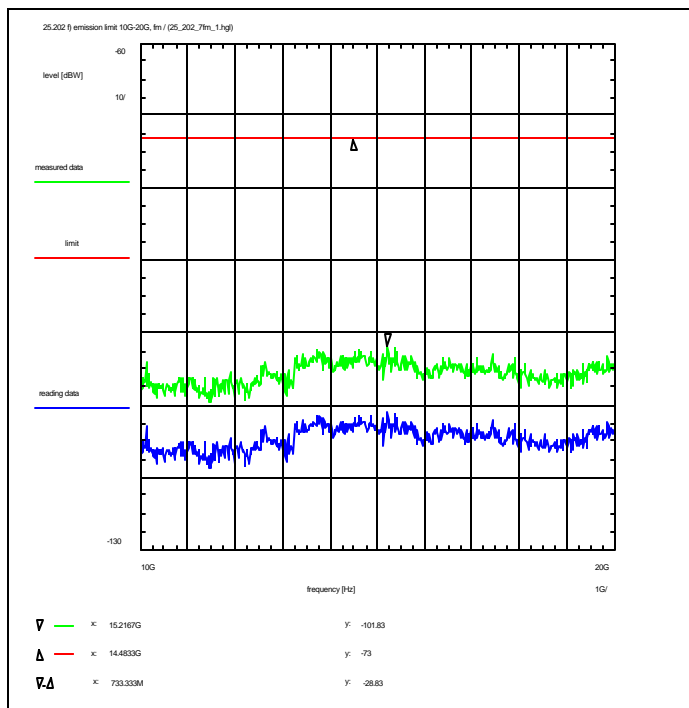
Test result: Test passed

Remarks:

Carrier on state / Carrier in the middle of the band (fm)

For EIRP calculation:

'worst-case' = maximum antenna gain

**Annex 3: Measurement result no. 32 (41)****Information on the measurement:**Environment condition:

Date & Time: Tue 11/Apr/2000 16:38:05
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 23 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:

Start frequency: 10 GHz
Stop frequency: 20 GHz
Center frequency: 15 GHz
Frequency span: 10 GHz
Input attenuation: 10 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:

Directional coupler + 0.0 dB
Coaxial cable (C027) + 3.7 dB
DUT - Antenna (onaxis) + 3.0 dB
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.3 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 9.0 dB

Limit:Limit acc. to 25.202 f):

50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier in the middle of the band (fm)

Test results:

see plot (an explicit table was not generated)

Operating condition of DUT:

operating condition 1, fm, see subclause 1.5.2

Test setup:

see annex 1: 1.2hgj

Test equipment:

see annex 2: C027, R001, U015, U023

Data of correction:

see annex 4

Remark:

Test result: Test passed

Remarks:

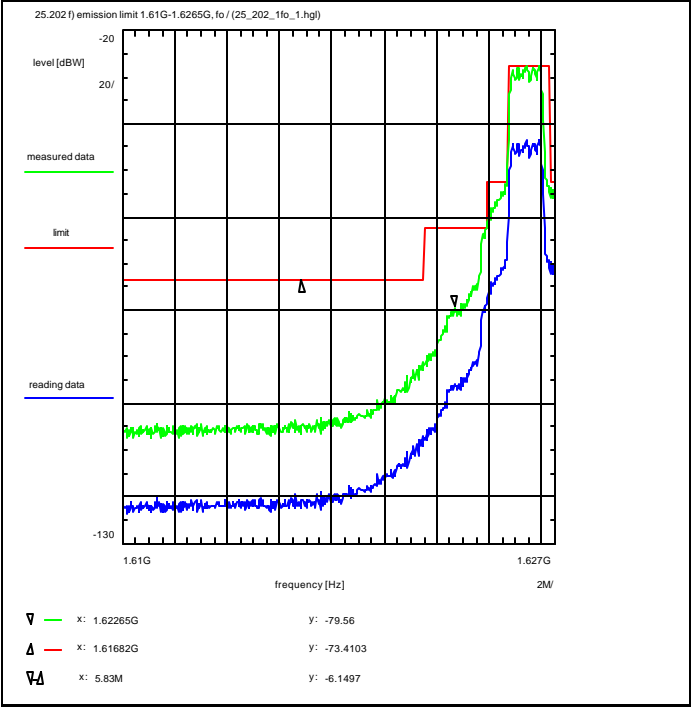
Carrier on state / Carrier in the middle of the band (fm)

For EIRP calculation:

'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 33 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 11:31:26
Location: CETECOM ICT Services GmbH, Laboratory RSC-Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61 GHz
Stop frequency: 1.6265 GHz
Center frequency: 1.61825 GHz
Frequency span: 16.5 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

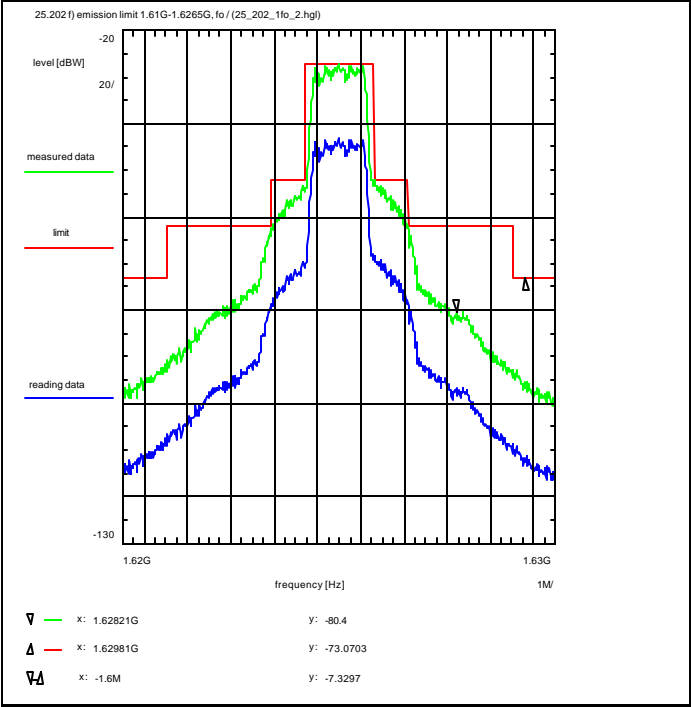
Data of correction:
see annex 4

Remark:

Test result: see next plot



Annex 3: Measurement result no. 34 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 11:39:08
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.62049 GHz
Stop frequency: 1.63049 GHz
Center frequency: 1.62549 GHz
Frequency span: 10 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

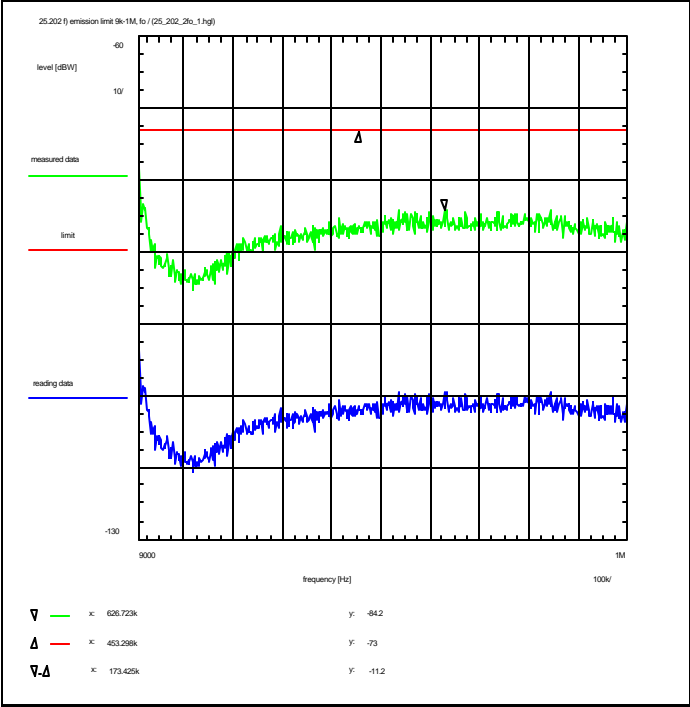
Remark:
Test passed after increasing the measured 'assigned bandwidth' to 1600 kHz.

Test result: Test passed

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 35 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 11:42:45
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 9 kHz
Stop frequency: 1 MHz
Center frequency: 504.5 kHz
Frequency span: 991 kHz
Input attenuation: 10 dB
Resolution-BW: 1 kHz
Video-BW: 1 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 0.3 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (1k -> 4k) + 6.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 25.3 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

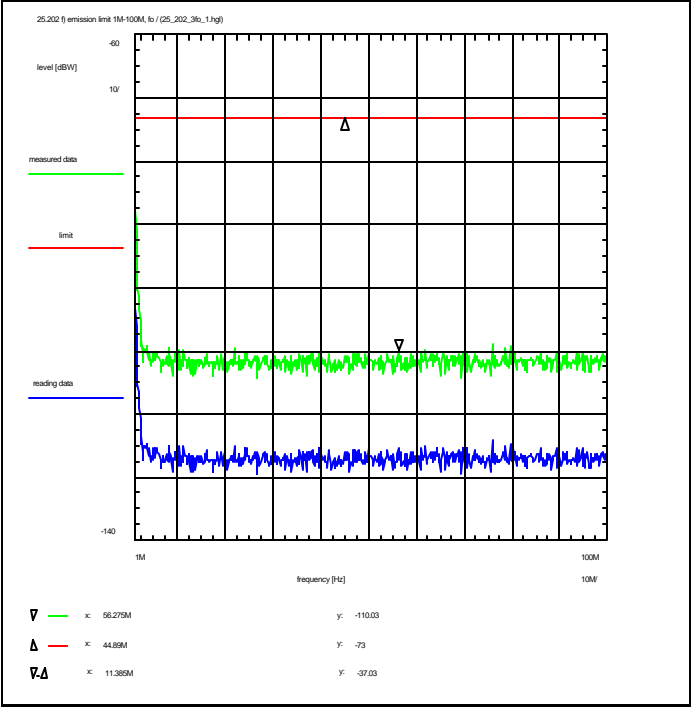
Test result: Test passed

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain

Rather left the plot shows the zero-line of the spectrum analyzer.



Annex 3: Measurement result no. 36 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 11:44:53
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1 MHz
Stop frequency: 100 MHz
Center frequency: 50.5 MHz
Frequency span: 99 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 0.3 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 15.3 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (a n explizit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

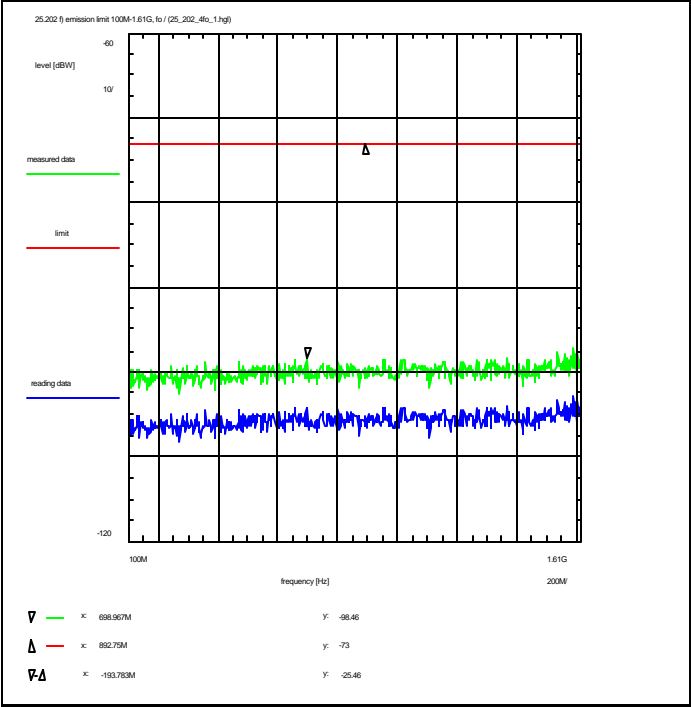
Test result: Test passed

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain

Rather left the plot shows the zero-line of the spectrum analyzer.



Annex 3: Measurement result no. 37 (41)

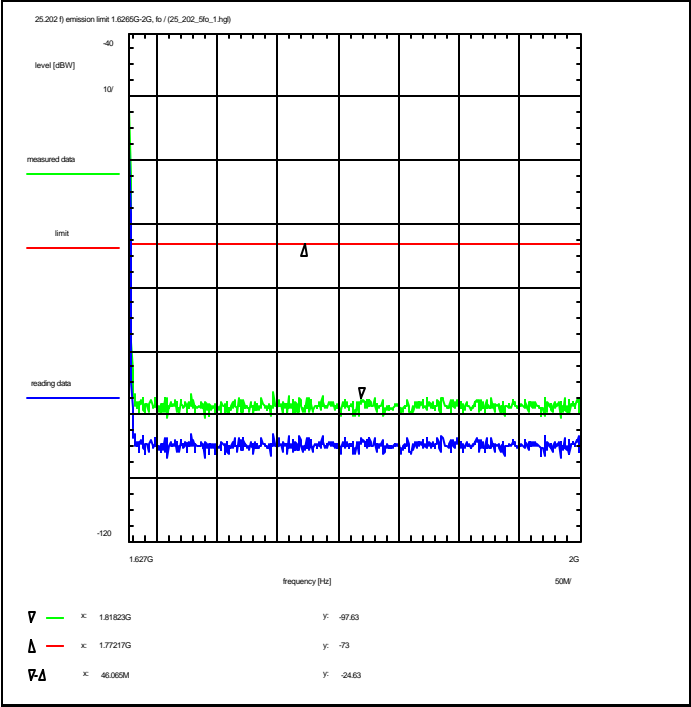


Information on the measurement:	
Environment condition:	
Date & Time:	Wed 12/Apr/2000 11:46:51
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat
Temperature:	22 °C
Humidity:	55 %
Voltage:	7.5 Vdc
Setup of measurement equipment:	
Start frequency:	100 MHz
Stop frequency:	1.61 GHz
Center frequency:	855 MHz
Frequency span:	1.51 GHz
Input attenuation:	20 dB
Resolution-BW:	100 kHz
Video-BW:	100 kHz
Video-Average:	100 sweep(s) (>1)
Detector Mode:	1 Sample (VidAvg / VidBW<300Hz)
Correction:	
Directional coupler	+ 0.0 dB
Coaxial cable (C027)	+ 0.7 dB
DUT - Antenna (onaxis)	+ 3.0 dBi
Test antenna	+ 0.0 dB
BW correction factor (100k -> 4k)	- 14.0 dB
Atten. between HPA and feedhorn	+ 0.0 dB
Attenuation (U023)	+ 10.0 dB
Power splitter (U015)	+ 6.0 dB
TOTAL CORRECTION:	+ 5.7 dB
Limit:	
<u>Limit acc. to 25.202 f):</u>	
50-100% of assigned bw:	-25dBc/4kHz
100-250% of assigned bw:	-35dBc/4kHz
> 250% of assigned bw:	-43+10log(Pmax)dBc/4kHz
Remarks:	
Carrier on state / Carrier at the upper edge of the band (fo)	
<u>For EIRP calculation:</u>	
'worst-case' = maximum antenna gain	

<u>Subclause:</u> 25.202 f)	Frequencies, frequency tolerance and emission limitations Emission limitations Modulated rf-carrier at the upper edge of the band (fo)
<u>Test results:</u> see plot (an explicit table was not generated)	
<u>Operating condition of DUT:</u> operating condition 1, fo, see subclause 1.5.2	
<u>Test setup:</u> see annex 1: 1.2hgj	
<u>Test equipment:</u> see annex 2: C027, R001, U015, U023	
<u>Data of correction:</u> see annex 4	
<u>Remark:</u>	
<u>Test result:</u>	Test passed



Annex 3: Measurement result no. 38 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 11:48:28
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.6265 GHz
Stop frequency: 2 GHz
Center frequency: 1.81325 GHz
Frequency span: 373.5 MHz
Input attenuation: 20 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.2 dB
DUT - Antenna (on-axis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 6.2 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

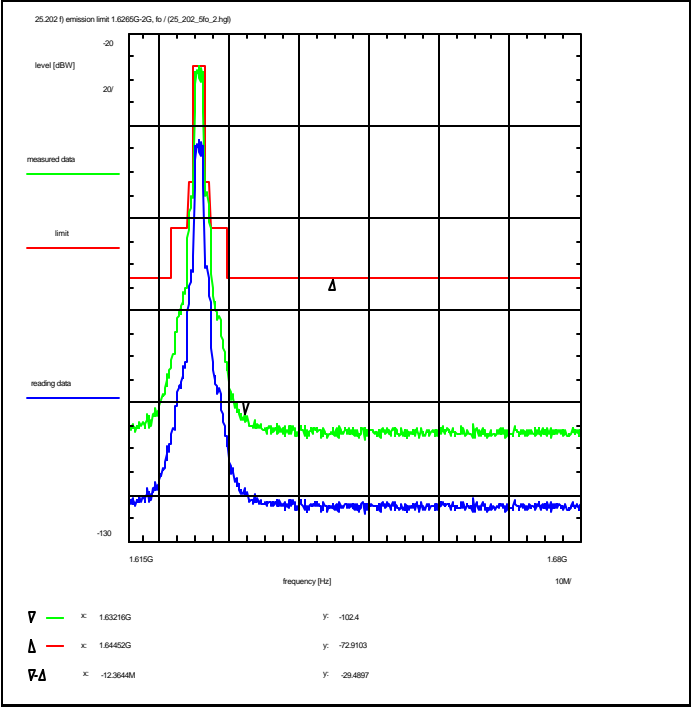
Test result: see next plot

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
"worst-case" = maximum antenna gain

Rather left the plot shows parts of the wanted signal.



Annex 3: Measurement result no. 39 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 11:51:54
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 1.61549 GHz
Stop frequency: 1.68 GHz
Center frequency: 1.647745 GHz
Frequency span: 64.51 MHz
Input attenuation: 10 dB
Resolution-BW: 10 kHz
Video-BW: 10 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 1.1 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (10k -> 4k) - 4.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 16.1 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

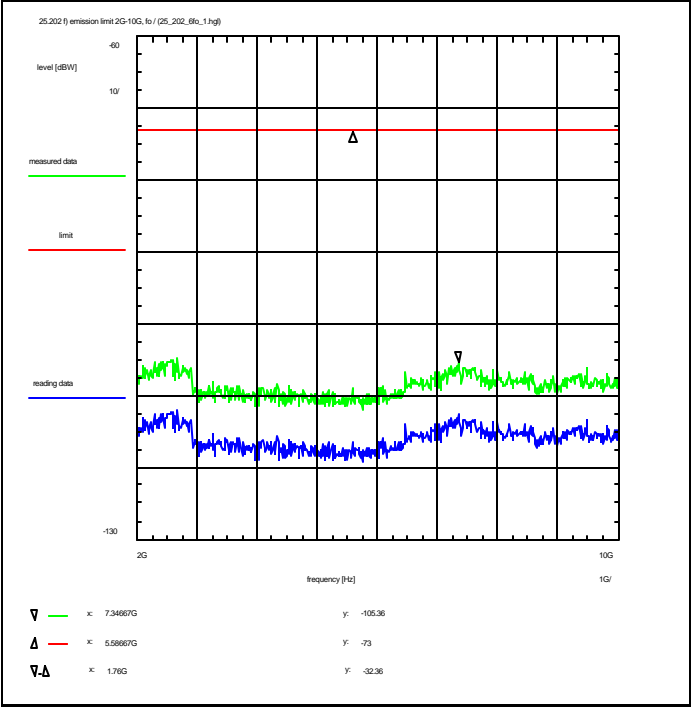
Remark:

Test result: Test passed

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain



Annex 3: Measurement result no. 40 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 12:00:24
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 2 GHz
Stop frequency: 10 GHz
Center frequency: 6 GHz
Frequency span: 8 GHz
Input attenuation: 10 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 2.3 dB
DUT - Antenna (onaxis) + 3.0 dBi
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.0 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 7.3 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)/dBc/4kHz

Remarks:
Carrier on state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

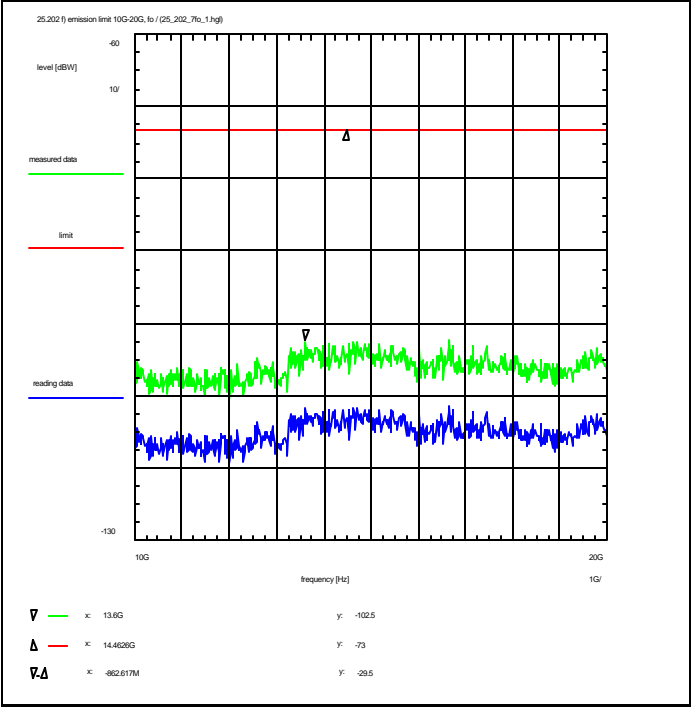
Data of correction:
see annex 4

Remark:

Test result: Test passed



Annex 3: Measurement result no. 41 (41)



Information on the measurement:

Environment condition:
Date & Time: Wed 12/Apr/2000 12:02:19
Location: CETECOM ICT Services GmbH, Laboratory RSC -Sat
Temperature: 22 °C
Humidity: 55 %
Voltage: 7.5 Vdc

Setup of measurement equipment:
Start frequency: 10 GHz
Stop frequency: 20 GHz
Center frequency: 15 GHz
Frequency span: 10 GHz
Input attenuation: 10 dB
Resolution-BW: 100 kHz
Video-BW: 100 kHz
Video-Average: 100 sweep(s) (>1)
Detector Mode: 1 Sample (VidAvg / VidBW<300Hz)

Correction:
Directional coupler + 0.0 dB
Coaxial cable (C027) + 3.7 dB
DUT - Antenna (on-axis) + 3.0 dB
Test antenna + 0.0 dB
BW correction factor (100k -> 4k) - 14.0 dB
Atten. between HPA and feedhorn + 0.0 dB
Attenuation (U023) + 10.3 dB
Power splitter (U015) + 6.0 dB
TOTAL CORRECTION: + 9.0 dB

Limit:
Limit acc. to 25.202 f):
50-100% of assigned bw: -25dBc/4kHz
100-250% of assigned bw: -35dBc/4kHz
> 250% of assigned bw: -43+10log(Pmax)dBc/4kHz

Subclause: 25.202 f) Frequencies, frequency tolerance and emission limitations
Emission limitations
Modulated rf-carrier at the upper edge of the band (fo)

Test results:
see plot (an explicit table was not generated)

Operating condition of DUT:
operating condition 1, fo, see subclause 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C027, R001, U015, U023

Data of correction:
see annex 4

Remark:

Test result: Test passed

Remarks:
Carrier state / Carrier at the upper edge of the band (fo)
For EIRP calculation:
'worst-case' = maximum antenna gain



Annex 4: Data of correction

Annex 4 consists of 2 pages including this page.

no.	list of contents
1	Coaxial cable 'C027': Transmission data (NWA-measurement)
2	10dB-Attenuator k-connected 'U023': Transmission data (NWA-measurement)



Annex 4: Data of correction 1 - 2

