CETECOM ICT Services GmbH

Telephone: +49 (0)681 598-0 Telefax: -9075

Laboratory for Radio/Satellite Communications:
Untertürkheimer Straße 6-10 . D-66117 Saarbrücken Telephone: +49 (0)681 598-8435 Telefax: -9075

Accredited testing laboratory

DAR-Registration number:
DAT-P-176/94-D1

Test report no.:
4-1620-01-04/05
SO-2510

Table of contents

Enclosure

Annex 1: Measurement and test setups - schematic diagrams
Annex 2: Measuring equipment used (statement of inventory)
Annex 3: Measurement results, part 1
Annex 3: Measurement results, part 2
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.

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 CETECOM ICT Services GmbH.

Tester:

Date	Name	Signature
03.04.2006	Andrea Kirsch	Andrea Kirsch
03.04.2006	Karsten Geraldy	Geraldy Karsten

Technical responsibility for area of testing:

Date	Name	Signature
03.04.2006	Karsten Geraldy	Geraldy Karsten

CETECOM
Cetecom ICT Services
Accredited Test Laboratory
Untertürkheimer Str. 6-10
D-66117 Saarbrücken

1.2 Test laboratory

CETECOM ICT Services GmbH
Untertürkheimer Straße 6 - 10
D-66117 Saarbrücken
Germany
Telephone: + 49 681 5 98 - 0
Fax: + 49 681 5 98 - 90 75
e-mail: info@ict.cetecom.de
Internet: http://www.cetecom-ict.de

State of accreditation: The Test laboratory is accredited according to DIN EN ISO/IEC 17025.
DAR-Registration number: DAT-P-176/94-D1

Accredited Bluetooth® Test Facility (BQTF)
BLUETOOTH is a trademark owned by Bluetooth SIG, Inc. and licensed to CETECOM

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 : APSI Asia Pacific Satellit Industries Co., Ltd.
Department : Att. Mr. Hyoung-Won Ahn, General Manager
Street : 9FL, IT Castle 2-Dong, #550-1, Gasan-Dong,
Town : GeumCheon-Gu, Seoul
Country : Korea
Telephone and Telefax : +82 2 2026 7780 / +82 2 2026 7772

Contact person's name : Mr. Hyoung-Won Ahn, General Manager
Telephone and Telefax : +82 2 2026 7780 / +82 2 2026 7772

1.4 Details of application

Date of receipt of order : 23.02.2006
Date of receipt of test item : 20.02.2006
Date(s) of test : 20. - 24.02.2006
Laboratory reference number : 003.06

Person(s) who have been present during the test: Mr. PyoJin (Gerald) Kim, Mr. KyungYong Kim, Mr. JeaWoon Choi, Mr. Hyung-Won Ahn, Mr. Won-Jae

1.5 Test item

1.5.1 General description

Type of test item : Thuraya Satellite Mobile Hand Held Terminal
Operating characteristics : GEM mode
Type identification : **SO-2510**
Serial number(s) : see following table

List of components:

No.	Equipment	Manufacturer	Type name (version, part number)		Serial number	Note no.	tested (Y/N)
1	GEM Mode Mobile Hand Held Terminal	Asia Pacific Satellite Industries Co., Ltd.	SO-2510		IMEI: 35601300-030031-2		yes

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 and eventually the approval for connection to public telecommunication networks are only expected.

Antenna system(s):

Antenna size (mm)	Reflector shape	Concept	Manufacturer	Type	Transmit gain dBi (midband)	Receive gain dBi (midband)	Polarization
134.05	-/-	vertical rod antenna	Asia Pacific Satellite Industries Co., Ltd.	SO-2510	more than +3.0dBic	more than +3.0dBic	LHCP

Technical descriptions and documents:

No.	Document(s)
1	APSI, GMPCS Compliance Test Plan
2	APSI, Type Approval Requirement, Revision 1.0, Document Number: SE Team, Type Approval Requirement (2005.2.15).doc
3	APSI, SO-2510 Description.doc
4	APSI, Type Approval (Block diagrams & Features).ppt
5	APSI, CMF declaration.doc, THURAYA 2nd Generation HHT SO-2510 Control and Monitoring Function Declarations, APSI-0307, Mar. 07. 2006
6	APSI, SO2510 Antenna.doc

Technical Data

Transmitter frequency range(s)		: 1626.5 - 1660.5 MHz	Channel spacing	: 31.25 kHz [1]
Receiver frequency range(s)		: 1525.0 - 1559.0 MHz		
Transmitter power	max.	: 2 W [4]	typical	: 1.8 W [4]
Radiated power (EIRP)	max.	: 7.2 dBW [2]	typical	: 5 dBW [2] [4]
Intermediate frequency(ies)		: 246 MHz [4]	Level (range)	: -20 dBm [4]
Frequency stability		: Uncorrected: < ±5 ppm, Corrected: < ±0.006 ppm [4]		
Kind of baseband signal		: voice / circuit data / packet data / fax		
Kind of modulation (s)		: π/4 - CQPSK [4]		
Occupied bandwidth (99% / 20 dB bandwidth)		: approx. 71.0 kHz (see annex 3, plot no, 4, 7 and 11) [3]		
Assigned bandwidth		: approx. 86.25 kHz (see annex 3, plot no. 3, 6 and 10) [3]		
Data rate(s) / FEC		: Tx: 2.4 / 4.8 / 9.6 / 14.4kbps / Convolution (1/2, 1/3, 1/4, 1/5) [4]		
Power supply		: typ. 3.7Vdc [4]		
Kind of transmission acc. to FCC §2.201 + §2.202		: 30k0G1W [4]		
FCC ID		: TZ5SO-2510		

[1] channel spacing of Mobile

[2] for an antenna with an on-axis gain of at least +3.0 dBi

[3] for operating conditions defined below

[4] manufacturer's declaration

Additional information

SO-2510 is the Satellite Mobile Hand Held Terminal for Thuraya satellite mobile communication service based on GMR-1 and GMPRS-1. It supports various services such as voice, circuit data, packet data and fax etc.

1.5.2 Operating conditions

Operating condition 1: 1643.5 MHz / CH 544 (=fm, 1626.59375 MHz / Ch 3 =fu, 1660.46875 MHz / CH 1087), approx 2 W Pi/4-CQPSK, 23.4 ksps (voice), IMEI 35601300-030031-2

1.6 Test specifications

1) FCC 47 CFR (February 1, 2006), Part 15: Radio frequency devices
   §15.207 Conducted limits
   §15.209 Radiated emission limits, general requirement
2) FCC 47 CFR (October 1, 2005), Part 25: Satellite communications
   §25.202(d) Frequency tolerance of Earth stations
   §25.202(f) Emission limitations
   §25.253 Special requirements for ancillary terrestrial components operating

2 Technical test

2.1 Summary of test results

[X] 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:

[X] 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.

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 (February 1, 2006)
Part 15: Radio frequency devices
section 15.207 Conducted limits

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

FCC 47 CFR (February 1, 2006)
Part 15: Radio frequency devices
section 15.209 Radiated emission limits, general requirements

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

FCC 47 CFR (October 1, 2005)
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 (October 1, 2005)
Part 25: Satellite communications
section 25.202(f) Emission limitations

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

FCC 47 CFR (October 1, 2005)
Part 25: Satellite communications
section 25.253 - Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz/1525-1559 MHz bands

[X]	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	[X]	-/-
- Function test	[X]	-/-
- Conducted limits	[X]	FCC 47 CFR §15.207
- Radiated emission limits, general requirements	[X]	FCC 47 CFR §15.209
- Frequency tolerance of Earth stations	[X]	FCC 47 CFR §25.202(d)
- Emission limitations	[X]	FCC 47 CFR §25.202(f)
- Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz/1525-1559 MHz bands	[X]	FCC 47 CFR §25.253

Reference document: **FCC 47 CFR (October 1, 2005)**
Part 25 - Satellite Communications
Section: -/- Correspondence 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 (October 1, 2005)**
Part 25 - Satellite Communications
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
20.02.2006	22	35	4.2	Laboratory ´RSC-Sat´

Test results: Power measurement by power meter

state	frequency (range)	reading level	data of correction attenuation / loss					result					remark
			di-rect. coupl.		cable	att.	power	referred to output HPA			ant.	EIRP	
	MHz	dBm	dB	dB	dB	dB	splitt. dB	dBm	(-30) dBW	(10^) W	gain dBi	dBW	
mod	mod	1.6435	34.2				-/-	34.2	4.2	2.6	3.0	7.2	

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 4: C217, R001, R022, R023, U214

Data of correction:
see annex 4

Photo documentation:
see annex 5

Remark and establishing:
see annex 3, part 1 plot 1 - 11 and annex 3, part 2 plot 1 - 2, too

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

Reference document: **FCC 47 CFR (February 1,2006)**
Part 15 - Radio frequency devices
Section: 15.207 Conducted limits (150 kHz - 30 MHz)

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

Reference document: **FCC 47 CFR (February 1,2006)**
Part 15 - Radio frequency devices
Section: 15.209 Radiated emission limits, general requirements

Environment conditions: see following plots

date	temperature in °C	rel. humidity in %	voltage in V	laboratory / test system
23.02.2006	22	35	4.2	Anechoic chamber ´C´
22.02.2006	22	35	4.2	Laboratory ´RSC-Sat´

Test results:

no.	frequency (range)	reading level	angle	data of correction							ant.-pol.		result		limit value	result above limit	plot
				attenuation / loss				gain									
				free field		cable		ant.	ampl.		h	v					
	GHz	dBm	°	m	dB	dB	dB	dB	dB	dB	x	x	dBµV/m	dBµV/m	dBµV/m	dB	No.
1	.009 - 30											X					13
2	30 - 4000										X						19
3	30 - 4000											X					20
4	4G - 12G										X						21
5	4G - 12G											X					22
6	12G - 20G										X	X					23

[X] Data of correction is considered in the reading level. These correction values are reported in the quality assurance documentation of the test system - because of clearness these correction data are not included in this test report.
[X] The spurious emissions which are shown in the plots given above were detected.
[ ] No spurious emissions were detected.
[ ] The table above contains the most important emissions only. Further information are shown in the given plots.
[ ] The measurement value is out of spec. The difference to the limit value is in the range of measurement uncertainty, however.

Operating conditions of DUT:
see subclause 1.5.2: Operating condition 1, Idle Mode

Special quality of measurement:

Test setup(s):
see annex 1, test setup 2.2 and 2.3

Test equipment:
see annex 2, subclause 1, 2 and 3: 1001 - 1013, 3001 - 3010, A037, C217, R001, U214

Data of correction:
see annex 4

Photo documentation:
see annex 5

Remark and establishing:
If the table above is not completely filled out the missing values can be found in the given plots.
The necessary calculations are done there.

Result of test: **pass [X]** **fail [ ]**

Reference document: **FCC 47 CFR (October 1, 2005)**
Part 25 - Satellite Communications
Section: 25.202(d) Frequency tolerance of Earth stations
2.1055 Measurements required: frequency stability
Conducted measurements within the band

Environment conditions:

date	temperature in °C	rel. humidity in %	voltage in V dc	laboratory / test system
24.02.2006	-30 to +50		4.2	Laboratory ´RSC-Sat´

Test results:

no.	temperature in °C	deviation in Hz	deviation ppm	remark
1	-30	+350	+0.21	
2	-20	+850	+0.52	
3	-10	+300	+0.18	
4	0	+350	+0.21	
5	+10	-150	-0.09	
6	+20	-100	-0.06	
7	+30	-150	-0.09	
8	+40	-100	-0.06	
9	+50	-250	-0.15	

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

Special quality of measurement:

Test setup(s):
see annex 1, test setup 1.2cdhgj

Test equipment:
see annex 2, subclause 3: C217, R001, U214

Data of correction:

Photo documentation:
see annex 5

Limit information:
reference frequency ± 0.001 % (1 ppm)

Remark and establishing:
Tests were performed with Spectrum analyser HP 8565E.
After reaching the temperature given in the table above tests were paused for 15 minutes for compensation of the DUT.

Result of test: **pass [X]** **fail [ ]**

Reference document: **FCC 47 CFR (February 1,2006)**
Part 25 - Satellite Communications
Section: 25.202(f) Emission limitations
Radiated measurements

Environment conditions:

date	temperature in °C	rel. humidity in %	voltage in V	laboratory / test system
23.02.2006	22	35	4.2	EMC-Testcenter (006)
22.02.2006	22	35	4.2	Anechoic chamber ´C´

Test results:

no.	frequency (range)	reading level	angle	data of correction							ant.-polar.		result		limit value	result above limit	plot
				attenuation / loss				gain						(-6dB)			
				free field		cable		ant.	ampl.		h	v		10m			
	MHz	dBµV/m	°	m	dB	dB	dB	dB	dB	dB	x	x	dBµV/m	dBµV/m	dBµV/m	dB	no.
1	25 - 4000										X						14
2	25 - 4000											X					15
3	4G -12.5G										X						16
4	4G -12.5G											X					17
5	12G - 20G										X	X					18
6																	
7																	
8																	
9																	
10																	

[X] Data of correction is considered in the reading level. These correction values are reported in the quality assurance documentation of the test system - because of clearness these correction data are not included in this test report.
[X] The spurious emissions which are shown in the plots given above were detected.
[ ] No spurious emissions were detected.
[ ] The table above contains the most important emissions only. Further information are shown in the given plots.
[ ] The measurement value is out of spec. The difference to the limit value is in the range of measurement uncertainty, however.

Operating conditions of DUT:
see subclause 1.5.2: Operating condition 1

Special quality of measurement:

Test setup(s):
see annex 1, test setup 2.1

Test equipment:
see annex 2, subclause 1, 2 and 3: 3001 - 3010, A037, C217, R001, U214

Data of correction:

Photo documentation:
see annex 5

Remark and establishing:
If the table above is not completely filled out the missing values can be found in the given plots.
The necessary calculations are done there.
The radiated measurements were performed with the build-in antenna and a measuring system including turntable and antenna lift to cover all three antenna planes.

Result of test: **pass [X]** **fail [ ]**

Reference document:		**FCC 47 CFR (October 1, 2005)** Part 25 - Satellite Communications
Section:	25.202(f)	Emission limitations Conducted measurements

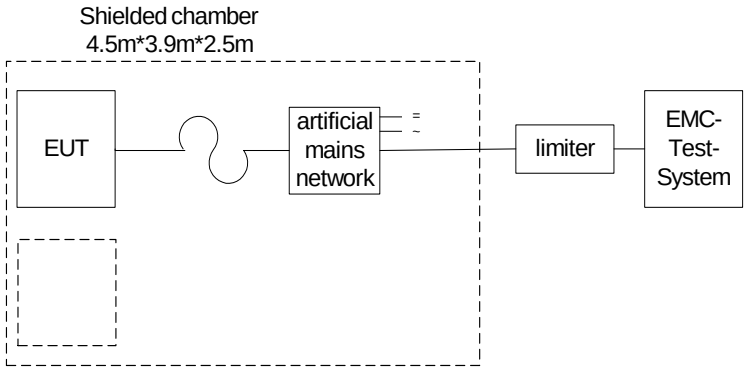
Result of test: **see annex 3, plot 24 - 74**

Reference document:		**FCC 47 CFR (October 1, 2005)** Part 25 - Satellite Communications
Section:	25.253	Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz/1525-1559 MHz bands Conducted measurements

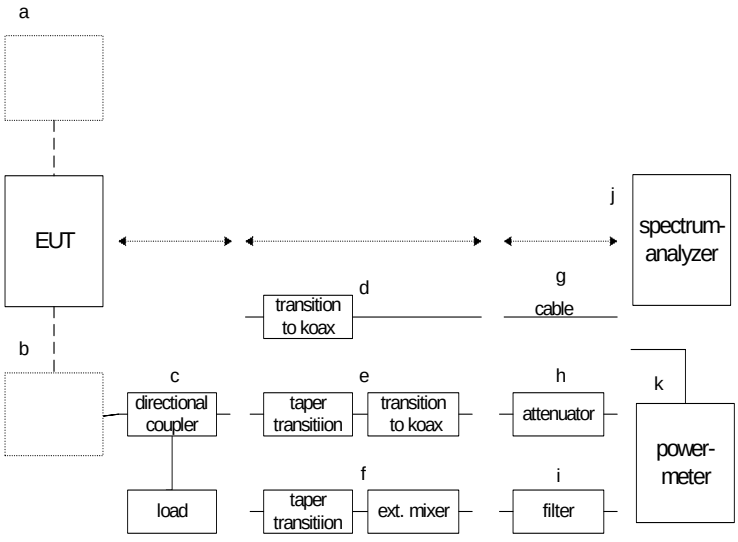
Result of test: **see annex 3, plot 75 - 76**

Annex 1: Measurement and test setups - schematic diagrams

1. Conducted measurements

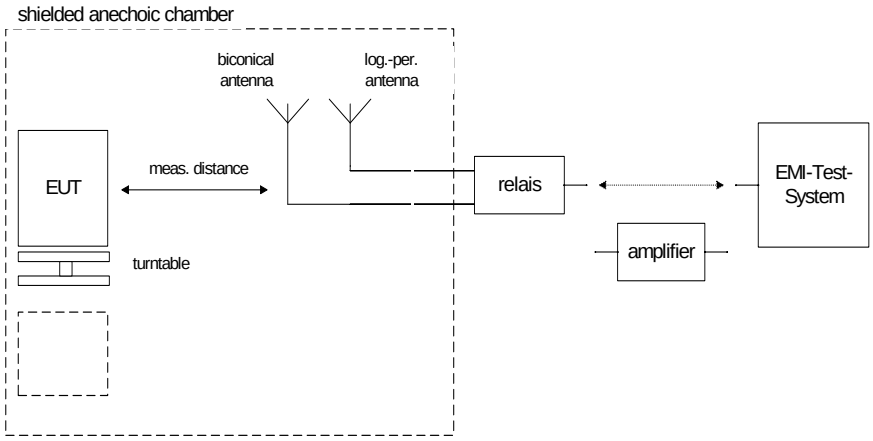


Setup 1.1

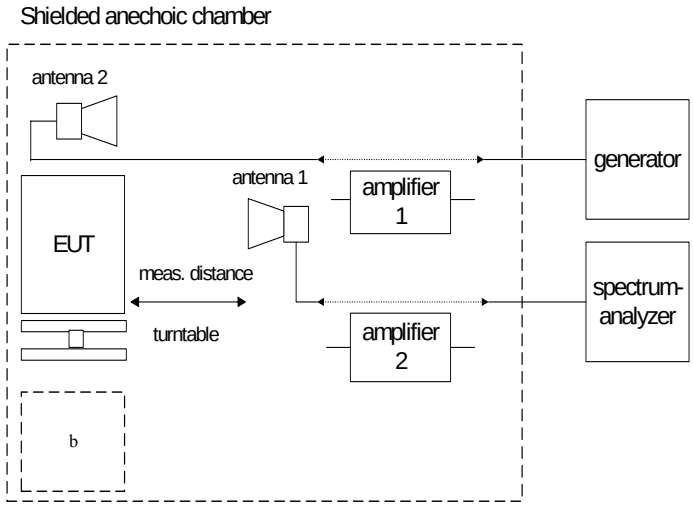


Setup 1.2 x...x

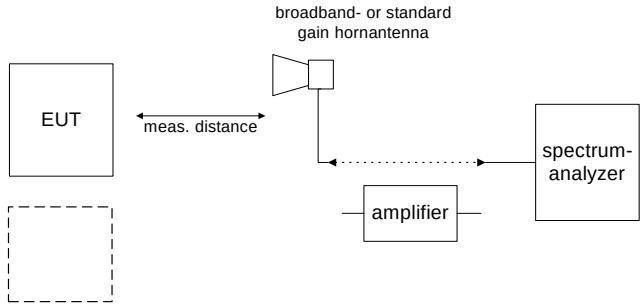
2. Radiation measurements



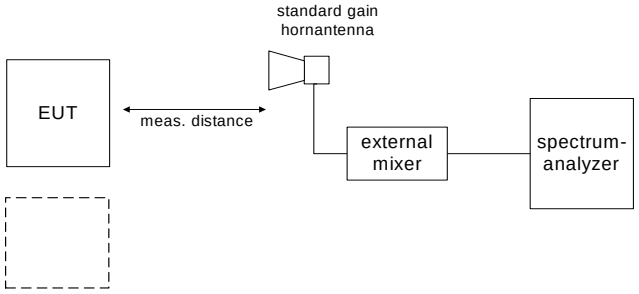
Setup 2.1



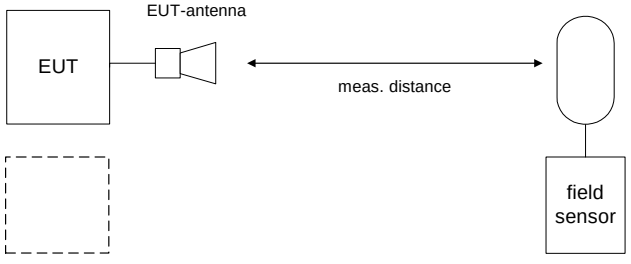
Setup 2.2



Setup 2.3



Setup 2.4



Setup 2.5

3. Measuring the EIRP of Spurious/Harmonic Emissions using Substitution Method

The following steps describe the procedure used to measure the radiated emissions from the mobile station. The site is constructed in accordance with ANSI C63.4:2003 requirements and is recognized by the FCC to be in compliance for a 3 and a 10 meter site. The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1660.5 MHz. This was rounded up to 20 GHz. The spectrum was scanned with the mobile station transmitting at carrier in the middle of the transmit band.

The final open field emission (here 10m semi-anechoic chamber listed by FCC) test procedure is as follows:

a) The test item was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna.
b) The antenna output was terminated in a 50 ohm load.
c) A double ridged waveguide antenna was placed on an adjustable height antenna mast 3 meters from the test item for emission measurements.
d) Detected emissions were maximized at each frequency by rotating the test item and adjusting the receive antenna height and polarization. The maximum meter reading was recorded. The radiated emission measurements of the harmonics of the transmit frequency through the 10th harmonic were measured with peak detector and 1 MHz bandwidth. If the harmonic could not be detected above the noise floor, the ambient level was recorded.
e) Now each detected emissions were substituted by the Substitution method, in accordance with the TIA/EIA 603.

All measurements were done in horizontal and vertical polarization plane, the plot(s) show the worst case of both.

Annex 2: Measuring equipment used (statement of inventory)

1. EMC-Testcenter (006)

Item No.	X	Measuring-equipment	Manufacturer	Type	Serialnumber	Identnumber	#	Cal.-/Verif.-cycle
1001		Controler	Rohde & Schwarz	PSM 7	883086/026	300002208	1	12 Mon.
1002		Spectrum monitor	Rohde & Schwarz	EZM	883086/026	300002208	1	12 Mon.
1003		Test receiver	Rohde & Schwarz	ESH3	881515/002	300002490	1	12 Mon.
1004		Relais matrix	Rohde & Schwarz	PSU	882943/029	300001484	1	12 Mon.
1005		Artificial mains network	Rohde & Schwarz	ESH2 Z5	882394/007	300001481	1	12 Mon.
1006		Artificial mains network	Rohde & Schwarz	ESH3 Z5	861189/014	300001458	1	12 Mon.
1007		Artificial mains network	Rohde & Schwarz	ESH3 Z5	892475/017	300002209	1	12 Mon.
1008		Artificial mains network	Rohde & Schwarz	ESH3 Z5	894981/019	300001077	1	12 Mon.
1009		Artificial mains network	Rohde & Schwarz	ESH3 Z6	836501652	300002210	1	12 Mon.
1010		Artificial mains network	Rohde & Schwarz	ESH3 Z6	861406/005	300001518	1	12 Mon.
1011		Artificial mains network	Rohde & Schwarz	ESH3 Z6	893689/012	300001504	1	12 Mon.
1012		Power supply	Hewlett Packard	6032A	2818A-03449	300002120	1	12 Mon.
1013		Loop antenna	Rohde & Schwarz	HMO20	832211/003	300002243	1	12 Mon.

2. Anechoic chamber ´C´

Item No.	X	Measuring-equipment	Manufacturer	Type	Serialnumber	Identnumber	#	Cal.-/Verif.-cycle
3001		Spectrum Analyzer	Hewlett Packard	8566B	2747A05306	300001000	1	12 Mon.
3002		Spec. Analyzer Display	Hewlett Packard	85662A	2816A16541	300002297	1	12 Mon.
3003		Quasi-Peak-Adapter	Hewlett Packard	85650A	2811A01131	300000999	1	12 Mon.
3004		RF-Preselector	Hewlett Packard	85685A	2833A00768	400000081	1	12 Mon.
3005		Relais matrix	Hewlett Packard	3488A	2719A15012	300001143	1	12 Mon.
3006		Power supply	Hewlett Packard	6032A	2818A03450	300001040	1	12 Mon.
3007		Amplifier	Parzich GMBH	js42-00502650-28-5a	928979	300003143	1	12 Mon.
3008		Biconical antenna	Emco	3104	3758	300001602	1	12 Mon.
3009		Log.-per. antenna	Emco	3146	2130	300001603	1	12 Mon.
3010		Double ridged guide ant.	Emco	3115	3088	300001032	1	12 Mon.

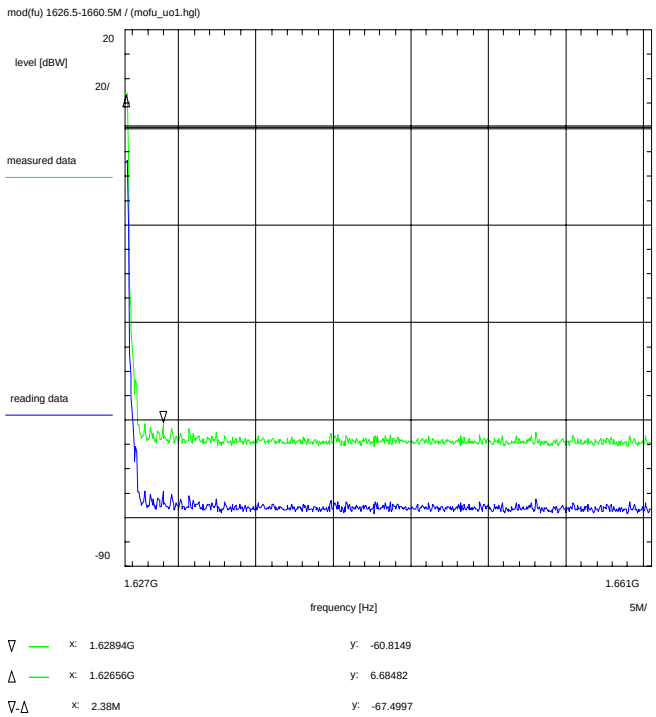
3. Laboratory ´RSC-Sat´

Item No.	X	Measuring-equipment	Manufacturer	Type	Serialnumber	Identnumber	#	Cal.-/Verif.-cycle
A037		Horn Ant. 1-26.5GHz	EMCO	3115	8812-3089	300000307	1	12 Mon.
C217		1.5 m 50 Ω / K	Insulated Wire Inc.	KPS-1533-590	101995	300002290	1	12 Mon.
R001		Spectrum analyzer	Hewlett Packard	HP 8565E	3515A00283	300000916	1	12 Mon.
R022		Peak Power Analyser	Hewlett-Packard	8990A	3128A00169	300002263	1	12 Mon.
R023		Peak Power Sensor	Hewlett-Packard	84813A	3128A00169	300002264	1	12 Mon.
11b		Microw. Sys. Amplif. 0.5-26.5GHz	Hewlett-Packard	83017A	3123A00105	300002267	1	24 Mon.
U214		Attenuator 10dB, N-con.	Spinner	BN 745379	7/93	400000047	1	24 Mon.
WHPF		Highpass filter	TRILITHIC	5HC2600/12750-1.5-KK	-/-	300000104	1	24 Mon.

Annex 3: Measurement results, part 1

Annex 3 consists of 77 pages including this page.

Annex 3: Measurement result no. 1 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: measurement for orientation

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:04:39	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6265	GHz
Stop frequency:	1.6605	GHz
Center frequency:	1.6435	GHz
Frequency span:	34	MHz
Input attenuation:	40	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

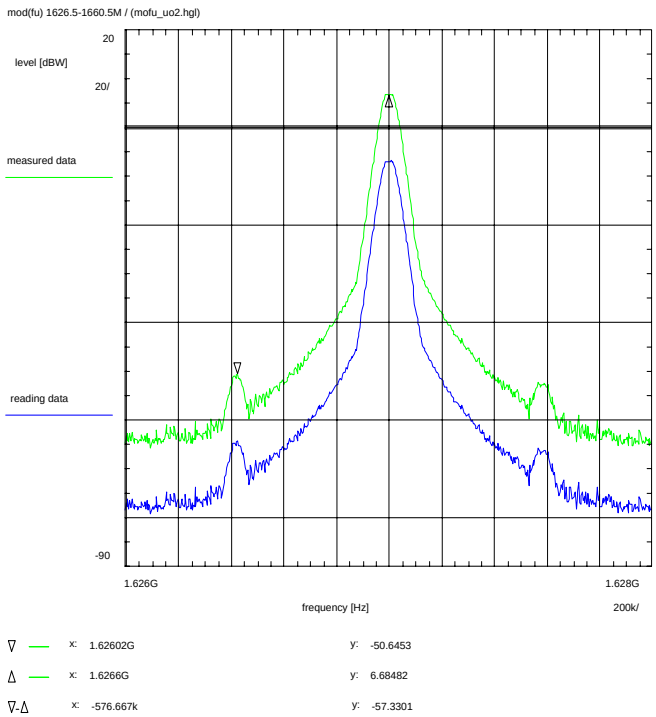
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	+	0.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	13.7	dB

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

Annex 3: Measurement result no. 2 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: measurement for orientation

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:06:10	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.62559375	GHz
Stop frequency:	1.62759375	GHz
Center frequency:	1.62659375	GHz
Frequency span:	2	MHz
Input attenuation:	40	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

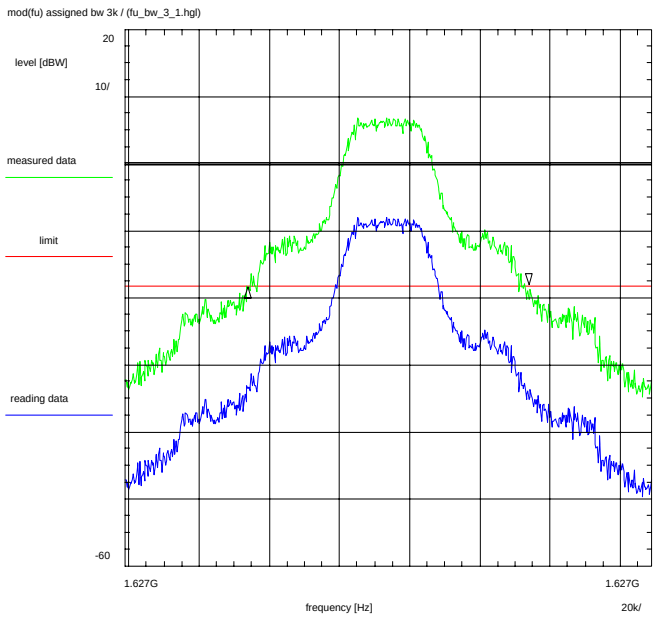
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	+	0.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	13.7	dB

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

Annex 3: Measurement result no. 3 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Determination of the ´assigned bandwidth´

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 13:28:22	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.62651875	GHz
Stop frequency:	1.62666875	GHz
Center frequency:	1.62659375	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

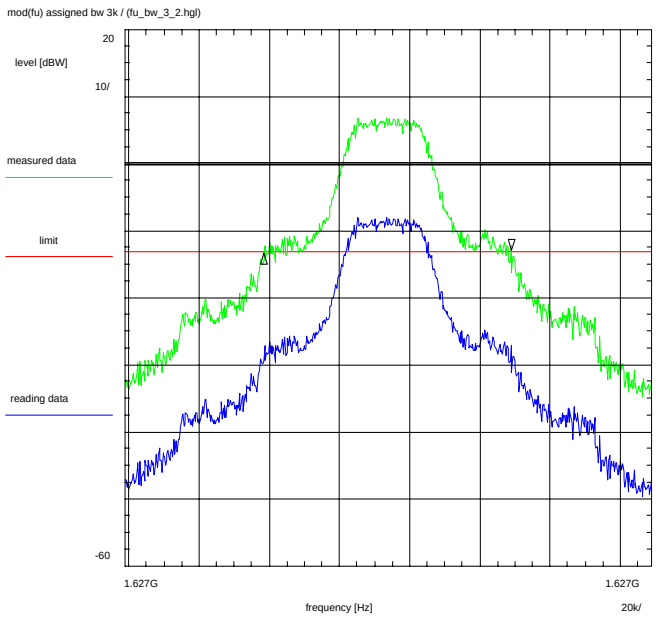
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	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 fu:
The measured value is about 80 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Annex 3: Measurement result no. 4 (76)



Subclause: -/- Function test
Modulated rf-carrier at the lower edge of the band (fu)
Determination of the ´occupied bandwidth´

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

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

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Determination of the ´occupied bandwidth´

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 13:24:17	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.62651875	GHz
Stop frequency:	1.62666875	GHz
Center frequency:	1.62659375	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

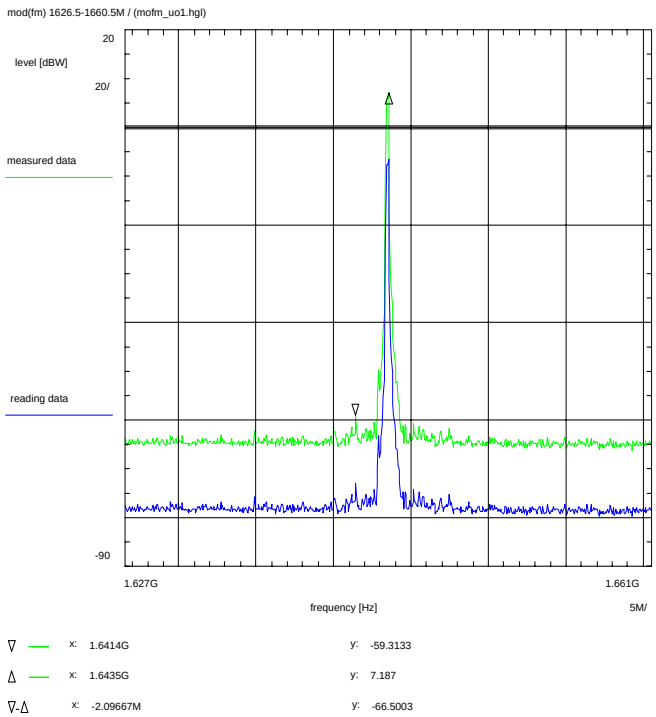
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

Limit:

The limit line in the plot of -20dBc is useful for orientation
and corresponds to the restriction for ´Occupied Bandwidth´.

Remarks:
Determination of the ´occupied bandwidth´ at fu:
The measured value is about 70.5 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Annex 3: Measurement result no. 5 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: measurement for orientation

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:06:37	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6265	GHz
Stop frequency:	1.6605	GHz
Center frequency:	1.6435	GHz
Frequency span:	34	MHz
Input attenuation:	40	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

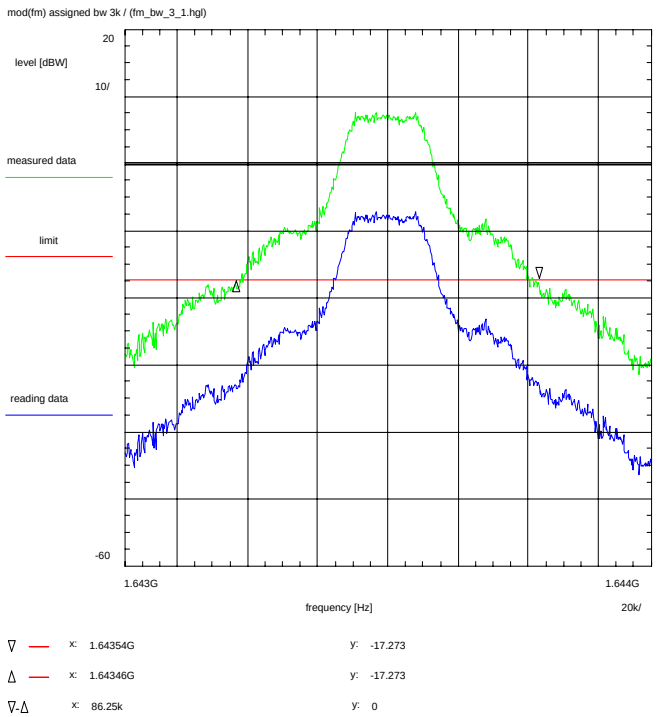
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	+	0.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	13.7	dB

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).

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

Annex 3: Measurement result no. 6 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Determination of the ´assigned bandwidth´

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:26:02	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.643425	GHz
Stop frequency:	1.643575	GHz
Center frequency:	1.6435	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

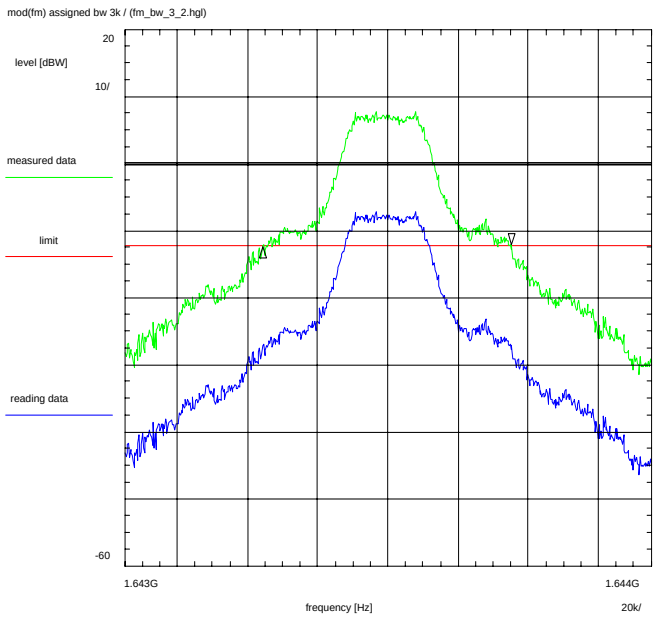
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	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 86.25 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Annex 3: Measurement result no. 7 (76)



Subclause: -/- Function test
Modulated rf-carrier in the middle of the band (fm)
Determination of the ´occupied bandwidth´

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

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

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Determination of the ´occupied bandwidth´

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:11:12	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.643425	GHz
Stop frequency:	1.643575	GHz
Center frequency:	1.6435	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

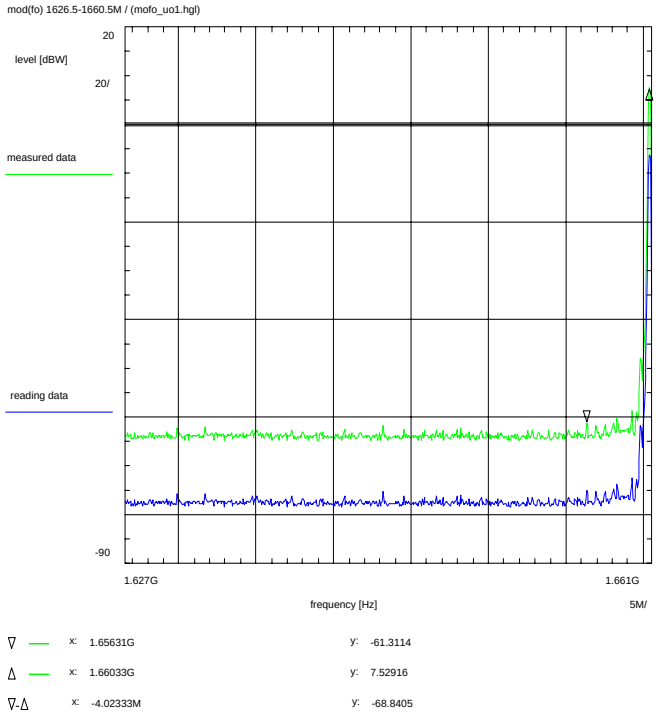
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

Limit:

The limit line in the plot of -20dBc is useful for orientation
and corresponds to the restriction for ´Occupied Bandwidth´.

Remarks:
Determination of the ´occupied bandwidth´ at fm:
The measured value is about 71 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Annex 3: Measurement result no. 8 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: measurement for orientation

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:50:14	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6265	GHz
Stop frequency:	1.6605	GHz
Center frequency:	1.6435	GHz
Frequency span:	34	MHz
Input attenuation:	40	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

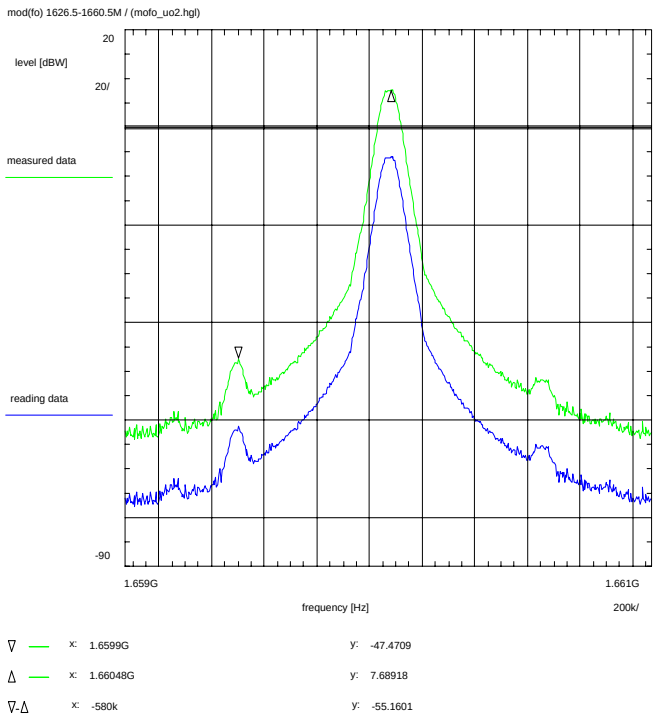
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	+	0.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	13.7	dB

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

Annex 3: Measurement result no. 9 (76)



Subclause: -/- 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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: measurement for orientation

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:53:52	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.65946875	GHz
Stop frequency:	1.66146875	GHz
Center frequency:	1.66046875	GHz
Frequency span:	2	MHz
Input attenuation:	40	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

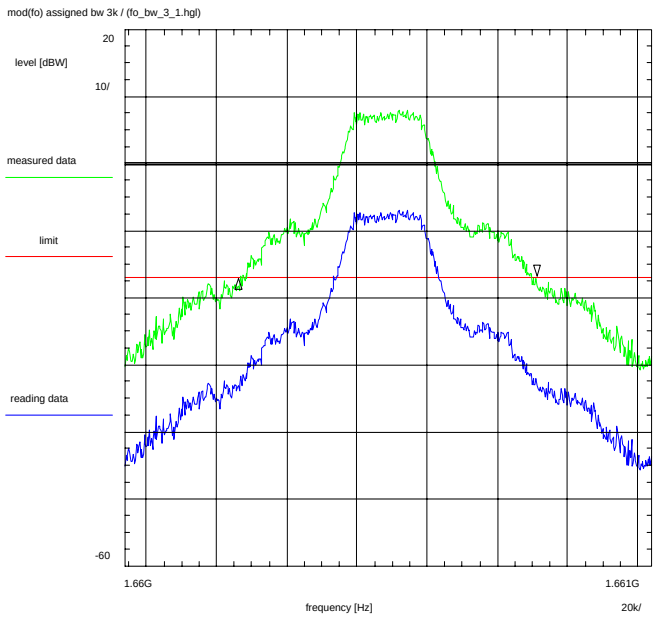
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	+	0.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	13.7	dB

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

Annex 3: Measurement result no. 10 (76)



Subclause: -/- Function test
Modulated rf-carrier at the upper edge of the band (fo)
Determination of the ´assigned bandwidth´

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

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

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Determination of the ´assigned bandwidth´

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:03:07	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.66039375	GHz
Stop frequency:	1.66054375	GHz
Center frequency:	1.66046875	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

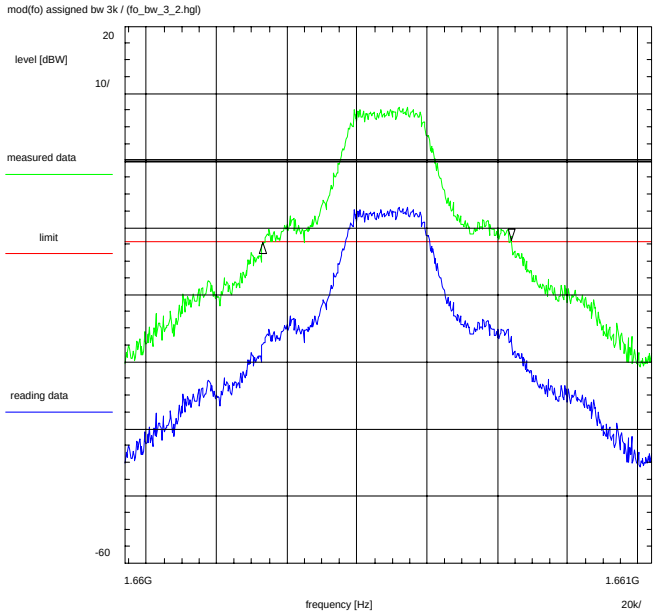
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	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 fo:
The measured value is about 85 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

Annex 3: Measurement result no. 11 (76)



Subclause: -/- Function test
Modulated rf-carrier at the upper edge of the band (fo)
Determination of the ´occupied bandwidth´

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

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

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Determination of the ´occupied bandwidth´

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:59:05	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.66039375	GHz
Stop frequency:	1.66054375	GHz
Center frequency:	1.66046875	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

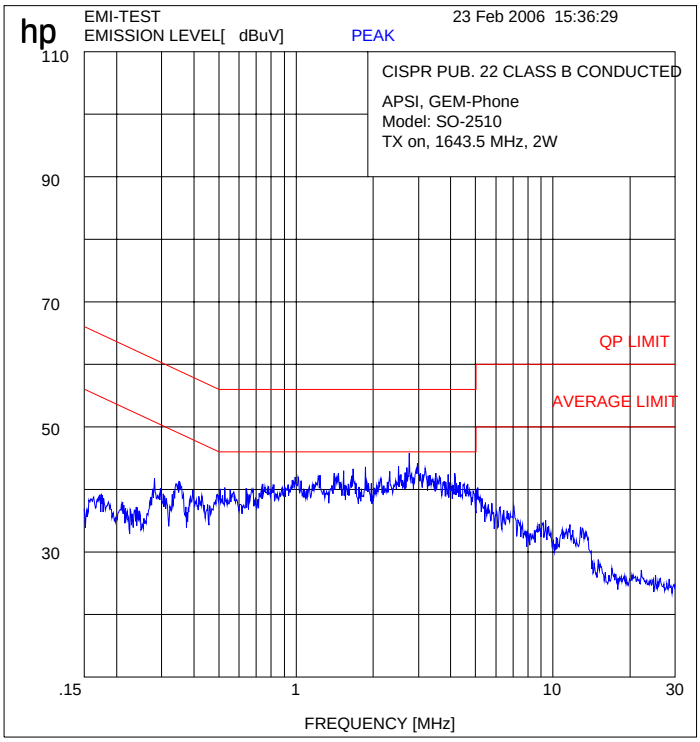
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

Limit:

The limit line in the plot of -20dBc is useful for orientation
and corresponds to the restriction for ´Occupied Bandwidth´.

Remarks:
Determination of the ´occupied bandwidth´ at fo:
The measured value is about 71 kHz (delta marker)
Measurement with 3 kHz resolution filter and noise averaging.

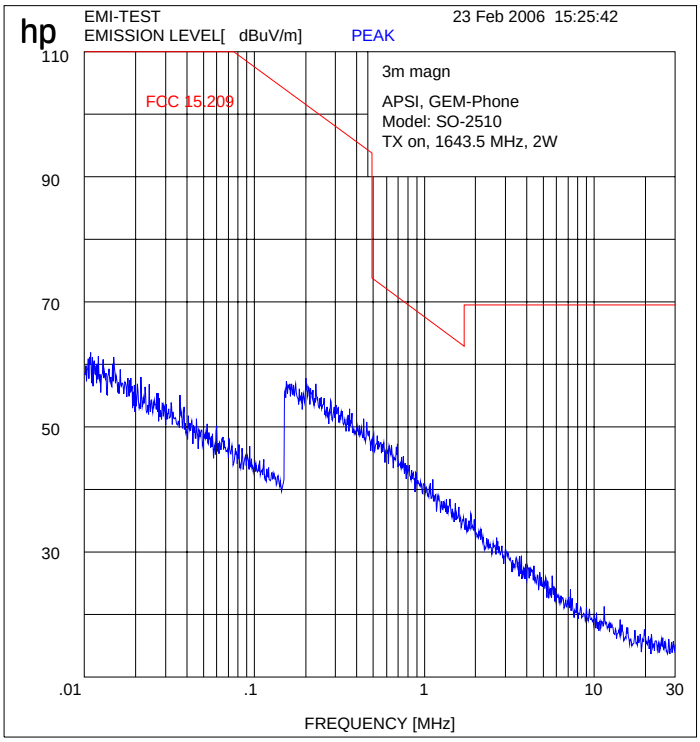
Annex 3: Measurement result no. 12 (76)



-/-

Information on the measurement:

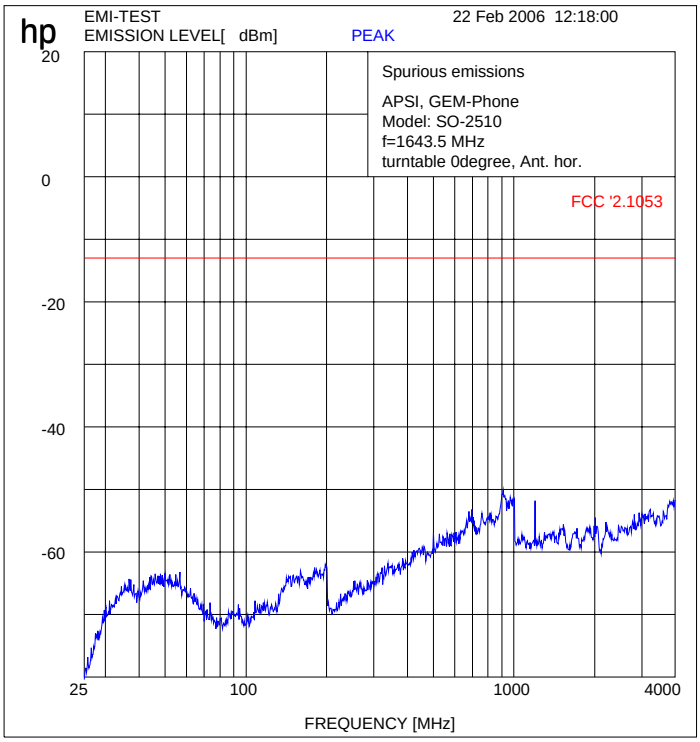
Annex 3: Measurement result no. 13 (76)



-/-

Information on the measurement:

Annex 3: Measurement result no. 14 (76)



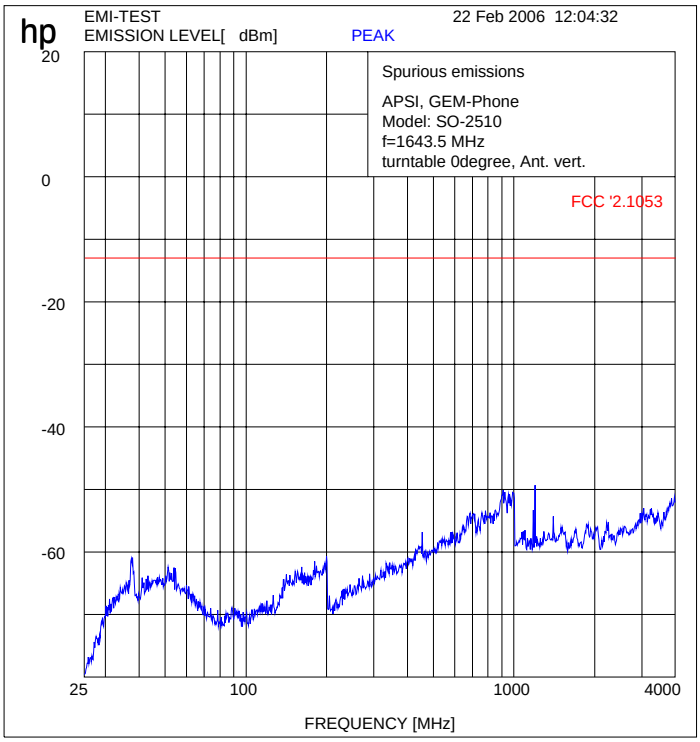
-/-

Information on the measurement:

```
==================================================
EMI-TEST                  22 Feb 2006  12:18:00
==================================================
 1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
   1.6  FCC '2.1053 25 MHz - 4 GHz
==================================================
Peaks above -45 dB of Limit Line #1
  peak criteria = 6 dB

PEAK#   FREQ (MHz)      (dBm)       DELTA
  1      910.12          -50.1      -37.1
  2      1196.8          -51.8      -38.8
```

Annex 3: Measurement result no. 15 (76)



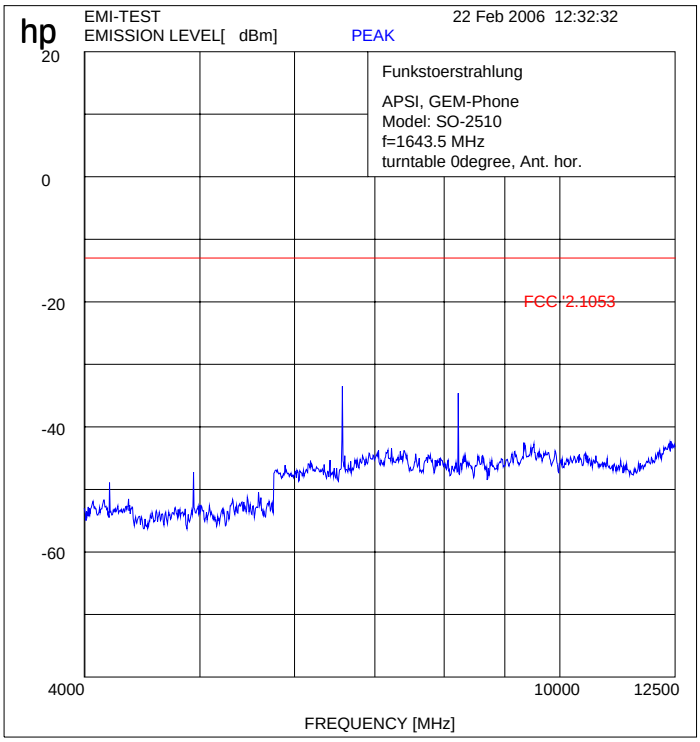
-/-

Information on the measurement:

```
==================================================
EMI-TEST                  22 Feb 2006  12:04:32
==================================================
 1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
   1.6  FCC 72.1053 25 MHz - 4 GHz
==================================================
Peaks above -45 dB of Limit Line #1
  peak criteria = 6 dB

PEAK#   FREQ (MHz)      (dBm)       DELTA
  1      910.12          -50.1      -37.1
  2      1196.8          -49.3      -36.3
```

Annex 3: Measurement result no. 16 (76)



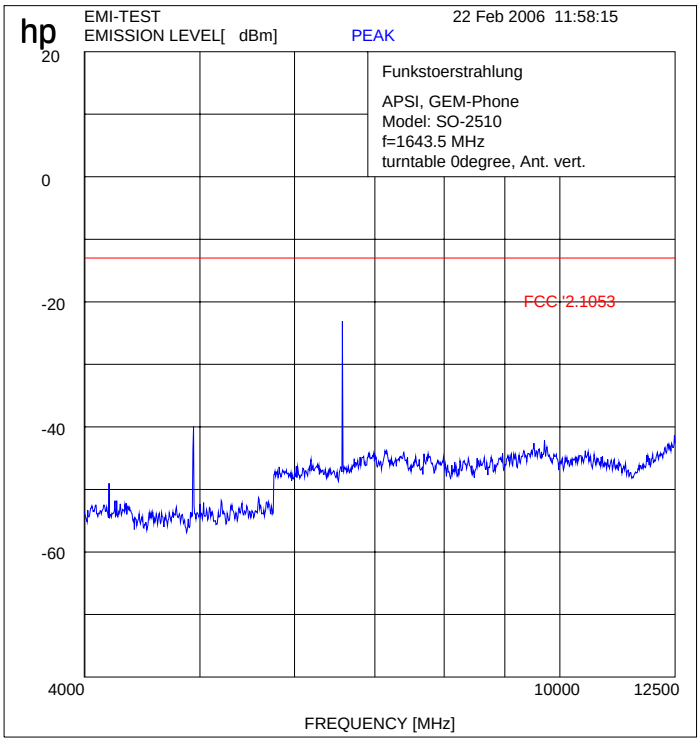
-/-

Information on the measurement:

```
==================================================
EMI-TEST                22 Feb 2006  12:32:32
==================================================
 1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
   1.7  FCC 72.1053 4-12 GHz
==================================================
Peaks above -45 dB of Limit Line #1
 peak criteria = 6 dB

PEAK#   FREQ (MHz)      (dBm)       DELTA
  1     4200.7          -48.9       -35.9
  2     4937.6          -47.2       -34.2
  3     6578            -33.5       -20.5
  4     8222.2          -34.6       -21.6
```

Annex 3: Measurement result no. 17 (76)



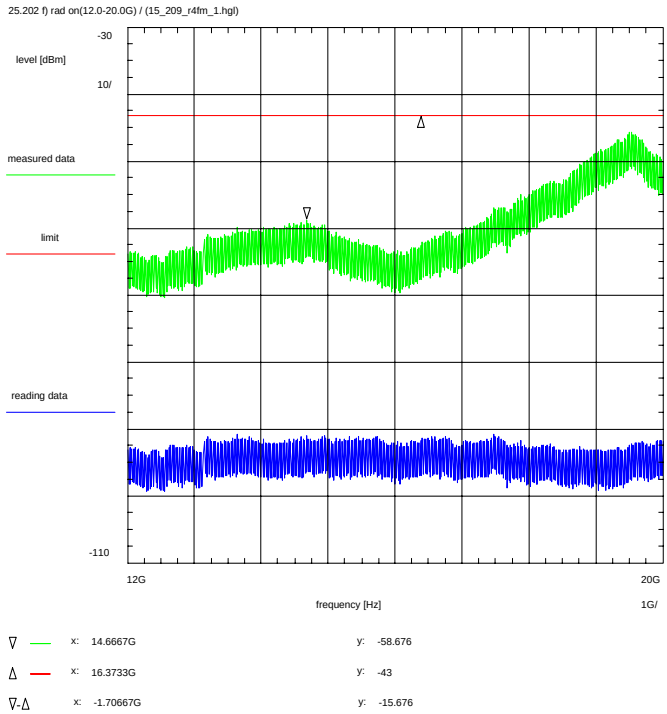
-/-

Information on the measurement:

```
==================================================
EMI-TEST                22 Feb 2006  11:58:15
==================================================
 1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
   1.7  FCC 72.1053 4-12 GHz
==================================================
Peaks above -30 dB of Limit Line #1
 peak criteria = 6 dB

PEAK#   FREQ (MHz)      (dBm)       DELTA
  1     4937.6          -39.9       -26.9
  2     6578            -23.1       -10.1
  3     9708.7          -42.1       -29.1
```

Annex 3: Measurement result no. 18 (76)



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 section 1.5.2

Test setup:
see annex 1: 2.3

Test equipment:
see annex 2: A037, C217, R001

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 30/Mar/2006 14:33:15	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	55	%
Voltage:	230	Vac

Setup of measurement equipment:

Start frequency:	12	GHz
Stop frequency:	20	GHz
Center frequency:	16	GHz
Frequency span:	8	GHz
Input attenuation:	0	dB
Resolution-BW:	100	kHz
Video-BW:	1	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	0	Normal (Clear-Write)

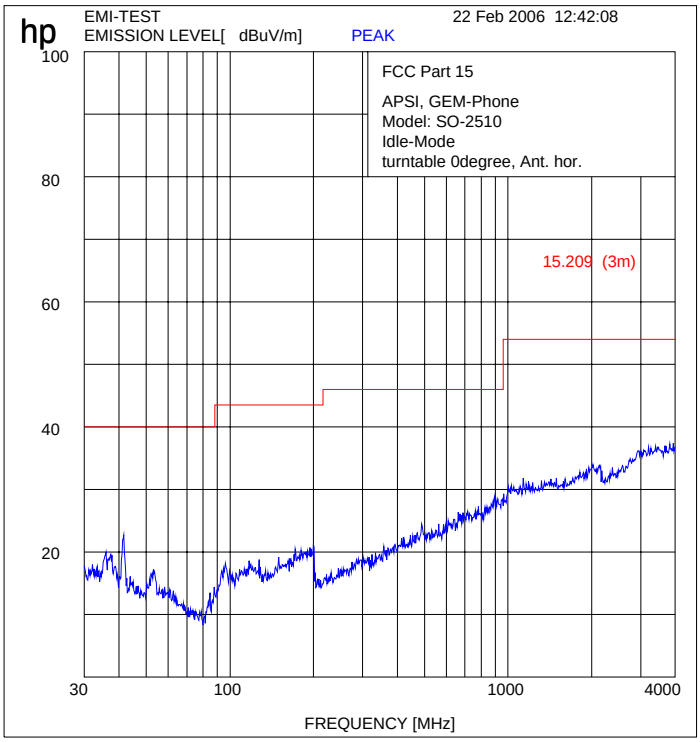
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna	+	0.0	dBi
Test antenna (A037)	-	12.6	dB
BW correction factor (100k -> 4k)	-	14.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Freefield attenuation (16.00GHz, 1m)	+	56.5	dB
TOTAL CORRECTION:	+	32.2	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

Remarks:
Carrier-on state / Carrier in the middle of the band (fm)
Radiated measurements in 1m measurement distance.

Annex 3: Measurement result no. 19 (76)



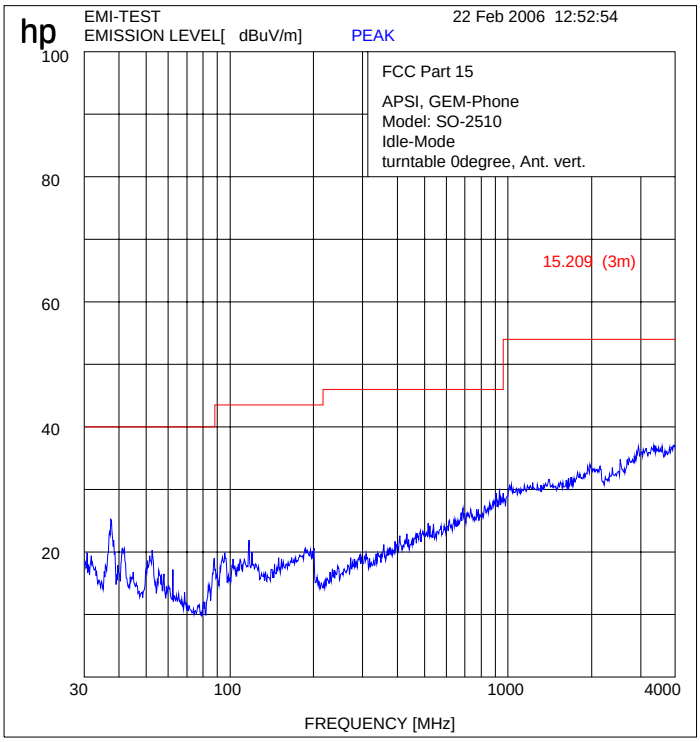
-/-

Information on the measurement:

```
==================================================
EMI-TEST                22 Feb 2006  12:42:08
==================================================
 1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
    1.3  FCC Part 15 30 MHz - 4 GHz
==================================================
Peaks above -45 dB of Limit Line #1
  peak criteria = 6 dB

PEAK#   FREQ (MHz)      (dBuV/m)     DELTA
  1       41.62           22.7        -17.3
  2      199.88           21.2        -22.3
```

Annex 3: Measurement result no. 20 (76)



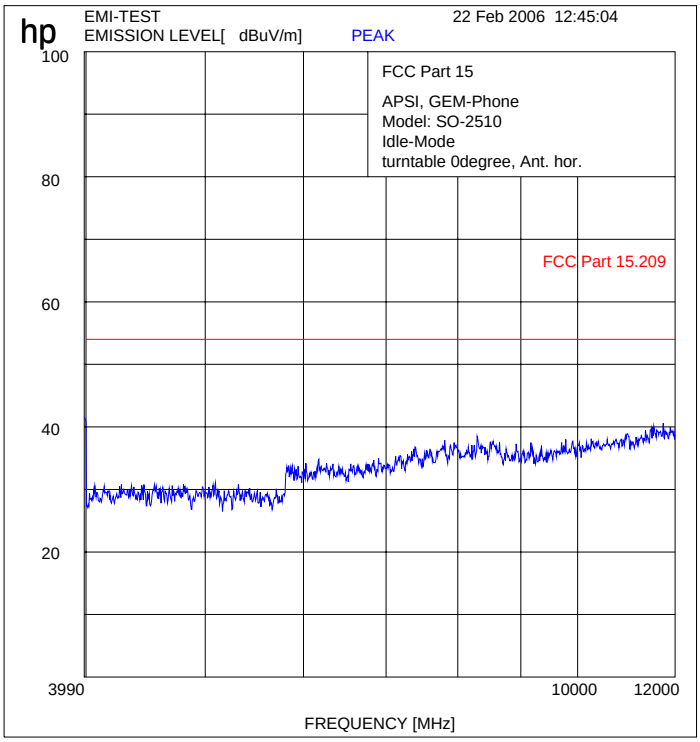
-/-

Information on the measurement:

```
==================================================
EMI-TEST                  22 Feb 2006  12:52:54
==================================================
 1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
    1.3  FCC Part 15 30 MHz - 4 GHz
==================================================
Peaks above -45 dB of Limit Line #1
  peak criteria = 6 dB

PEAK#   FREQ (MHz)      (dBuV/m)     DELTA
  1       37.38           25.2        -14.8
  2       52.63           20.3        -19.7
  3      117.32           21.9        -21.6
```

Annex 3: Measurement result no. 21 (76)

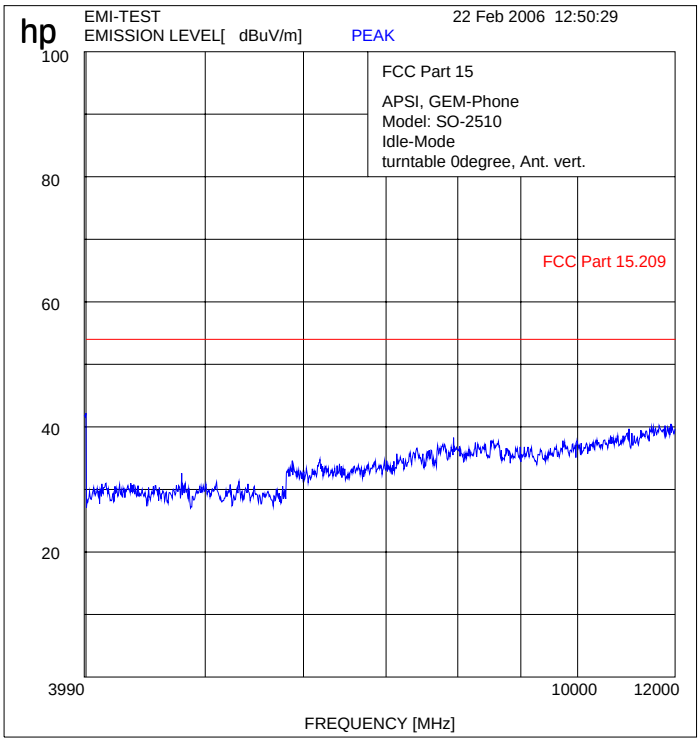


-/-

Information on the measurement:

==========
EMI-TEST 22 Feb 2006 12:45:04
==========
1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
1.4 FCC Part 15 4 - 12 GHz
==========
No Peaks above -45 dB of Limit Line #1

Annex 3: Measurement result no. 22 (76)

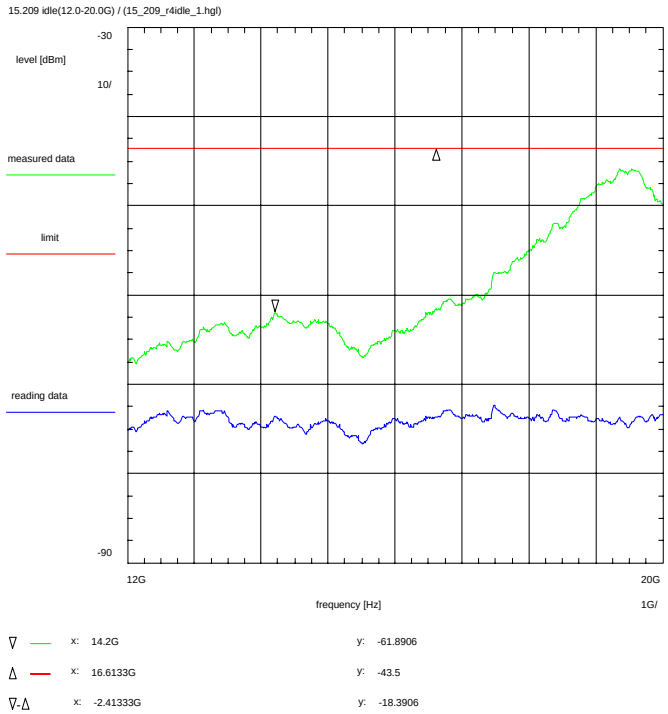


-/-

Information on the measurement:

==========
EMI-TEST 22 Feb 2006 12:50:29
==========
1. FCC CFR 47,Part 15J WITHOUT PRESELECTOR
1.4 FCC Part 15 4 - 12 GHz
==========
No Peaks above -45 dB of Limit Line #1

Annex 3: Measurement result no. 23 (76)



Subclause: 15.209 Radiated emission limits, general requirements
Idle mode

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

Operating condition of DUT:
operating condition 1, fm, see section 1.5.2
Idle mode

Test setup:
see annex 1: 2.3

Test equipment:
see annex 2: 11b, A037, C217, R001

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 30/Mar/2006 14:40:17	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	55	%
Voltage:	230	Vac

Setup of measurement equipment:

Start frequency:	12	GHz
Stop frequency:	20	GHz
Center frequency:	16	GHz
Frequency span:	8	GHz
Input attenuation:	0	dB
Resolution-BW:	1	MHz
Video-BW:	1	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	0	Normal (Clear-Write)

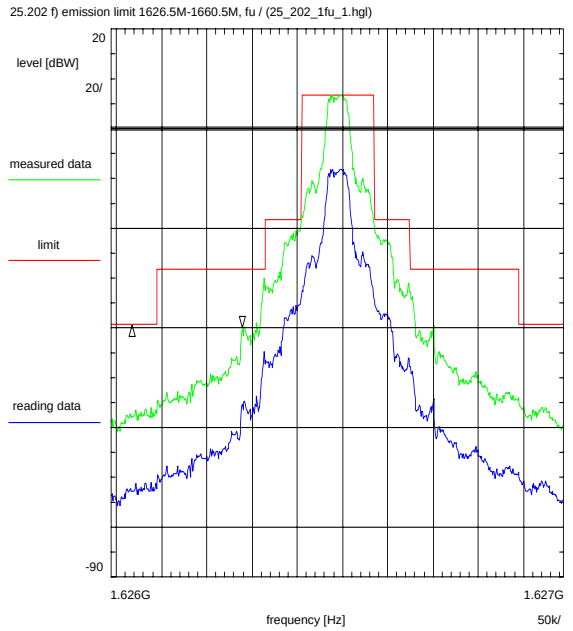
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna	+	0.0	dBi
Test antenna (A037)	-	12.6	dB
BW correction factor	+	0.0	dB
Atten. between HPA and feedhorn	-	0.0	dB
Freefield attenuation (16.00GHz, 1m)	+	56.5	dB
Amplifier (11b)	-	33.5	dB
TOTAL CORRECTION:	+	12.7	dB

Limit:
Limit acc. to 15.209:
54 dBuV/m in 3 m = -43.5 dBm

Remarks:
Idle-mode

Annex 3: Measurement result no. 24 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:32:51	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.62634375	GHz
Stop frequency:	1.62684375	GHz
Center frequency:	1.62659375	GHz
Frequency span:	500	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

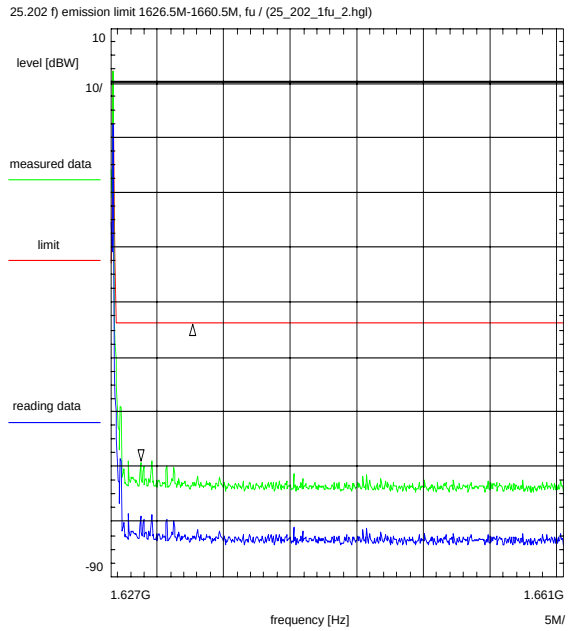
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

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

Out-off-band limit for further tests (see left marker): -40 dBm
See also next plot.

Annex 3: Measurement result no. 25 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:38:51	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6265	GHz
Stop frequency:	1.6605	GHz
Center frequency:	1.6435	GHz
Frequency span:	34	MHz
Input attenuation:	40	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

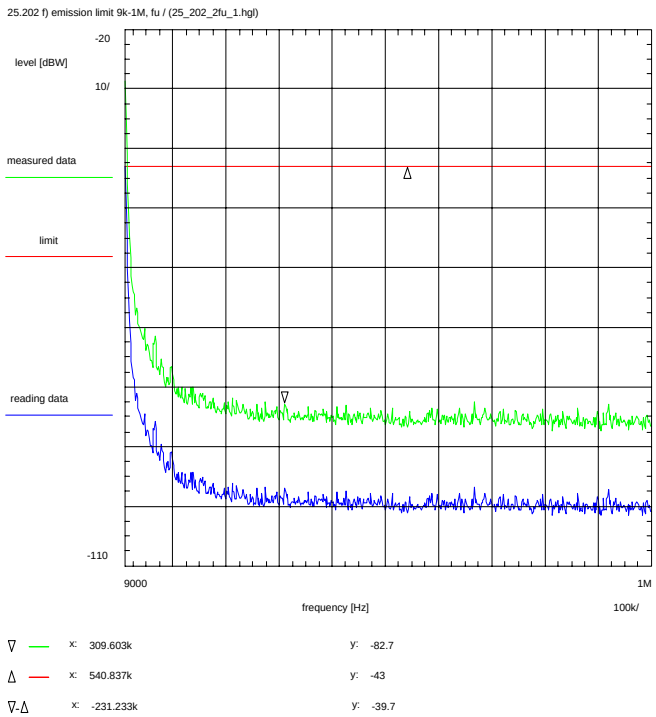
Directional coupler	+	0.0	dB
Coaxial cable	+	0.7	dB
DUT-Antenna	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Freefield attenuation	+	10.0	dB
TOTAL CORRECTION:	+	9.7	dB

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

Out-off-band limit for further tests (worst case of this and previous measurement): -43 dBm

Annex 3: Measurement result no. 26 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:41:20	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	9	kHz
Stop frequency:	1	MHz
Center frequency:	504.5	kHz
Frequency span:	991	kHz
Input attenuation:	30	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

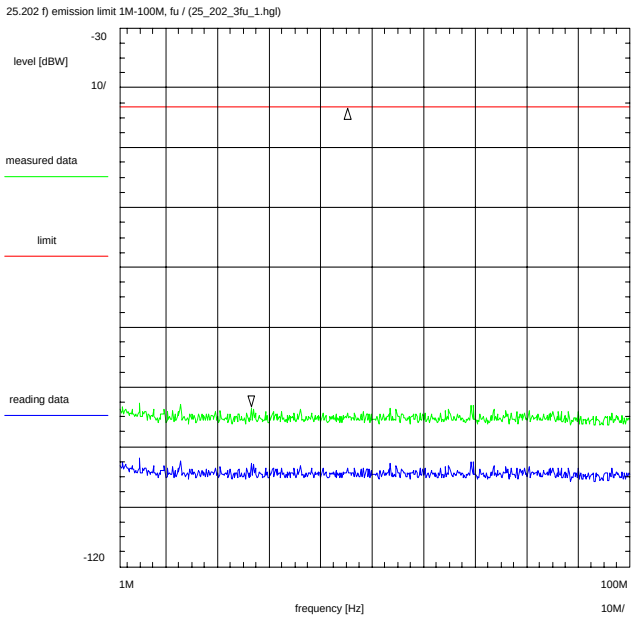
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Freefield attenuation (U214)	+	9.9	dB
TOTAL CORRECTION:	+	14.3	dB

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

The plot shows the limit is not met. This is not caused by the EUT.
Rather left the plot shows the zero line of the spectrum analyzer.

Annex 3: Measurement result no. 27 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:42:43	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1	MHz
Stop frequency:	100	MHz
Center frequency:	50.5	MHz
Frequency span:	99	MHz
Input attenuation:	20	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

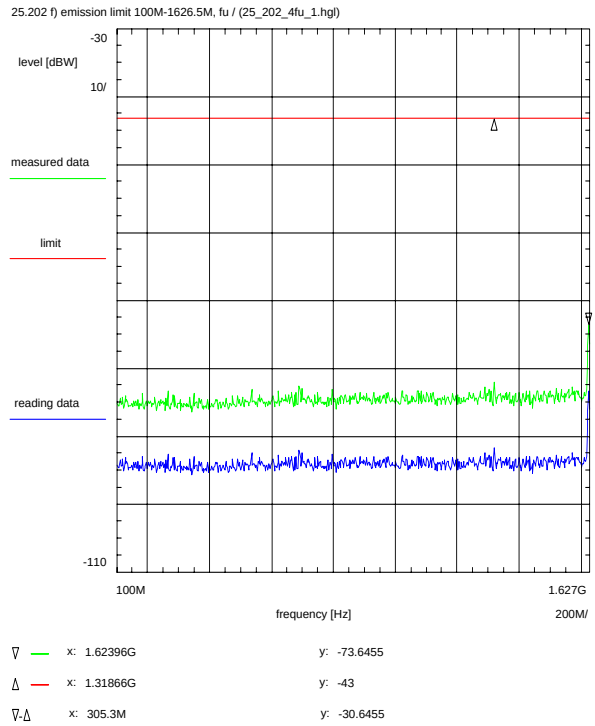
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.4	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
Freefield attenuation (U214)	+	9.9	dB
TOTAL CORRECTION:	+	9.3	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

Annex 3: Measurement result no. 28 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 17:45:23	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	100	MHz
Stop frequency:	1.6265	GHz
Center frequency:	863.25	MHz
Frequency span:	1.5265	GHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

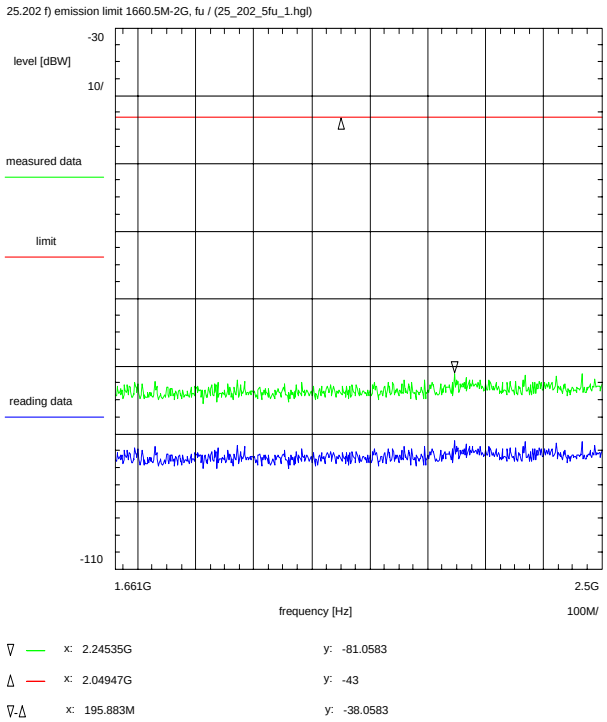
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.5	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
Freefield attenuation (U214)	+	9.9	dB
TOTAL CORRECTION:	+	9.4	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

Annex 3: Measurement result no. 29 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:37:52	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6605	GHz
Stop frequency:	2.5	GHz
Center frequency:	2.08025	GHz
Frequency span:	839.5	MHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

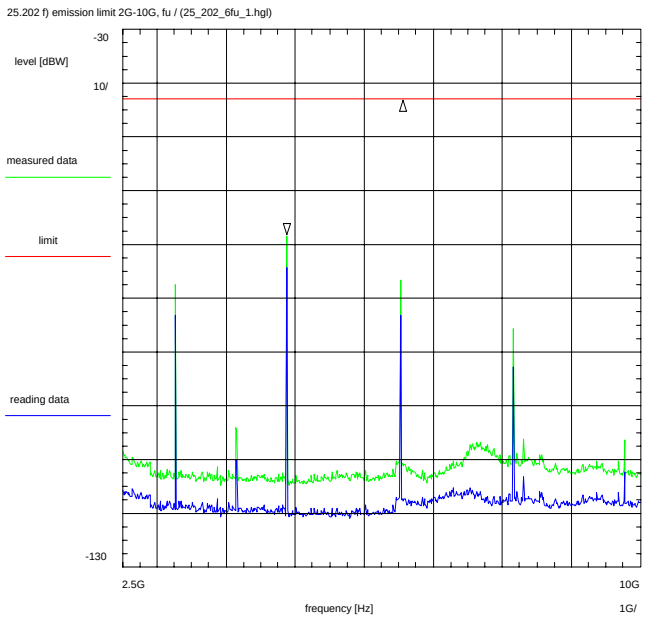
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.8	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	9.8	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

Annex 3: Measurement result no. 30 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:17:06	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	2.5	GHz
Stop frequency:	10	GHz
Center frequency:	6.25	GHz
Frequency span:	7.5	GHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

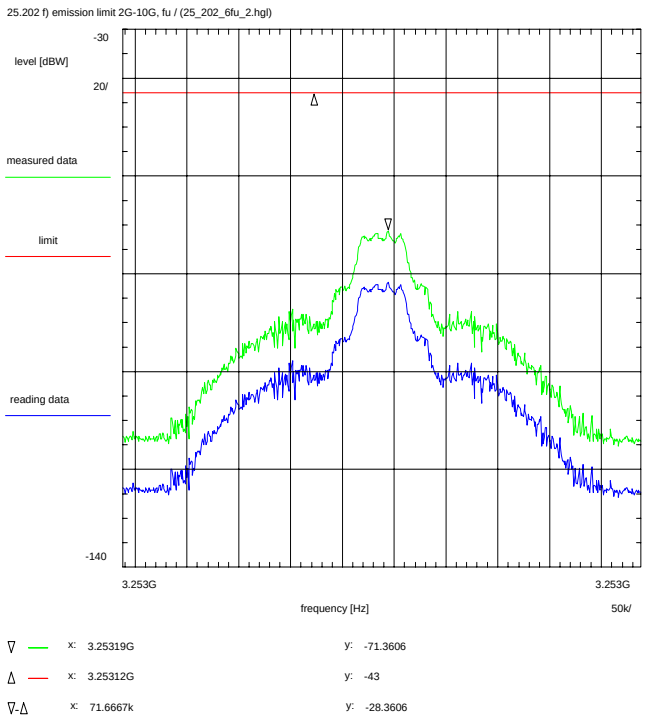
Directional coupler (WHPF)	+	0.4	dB
Coaxial cable (C217)	+	1.4	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.3	dB
TOTAL CORRECTION:	+	6.3	dB

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

The plot shows the 2nd to 6th harmonic and spurious signals.

Annex 3: Measurement result no. 31 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:21:47	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	3.2529375	GHz
Stop frequency:	3.2534375	GHz
Center frequency:	3.2531875	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

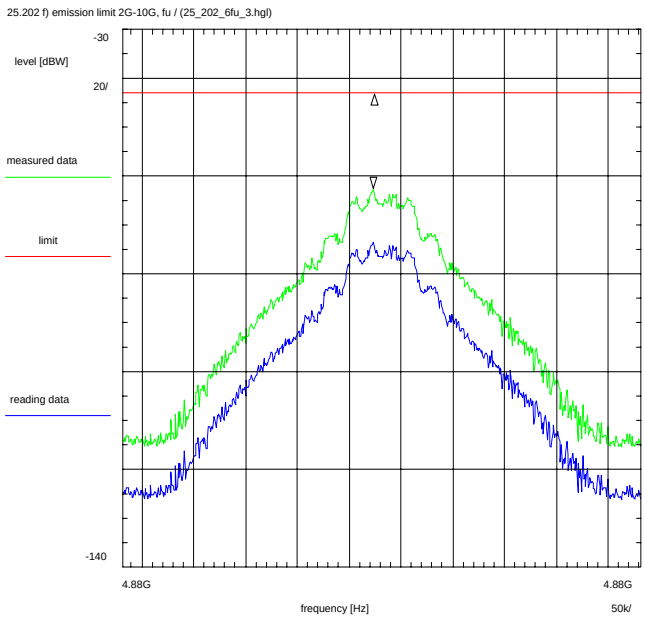
Directional coupler (WHPF)	+	0.5	dB
Coaxial cable (C217)	+	1.0	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	10.5	dB

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

The plot shows the 2nd harmonic.

Annex 3: Measurement result no. 32 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:22:56	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	4.87953125	GHz
Stop frequency:	4.88003125	GHz
Center frequency:	4.87978125	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

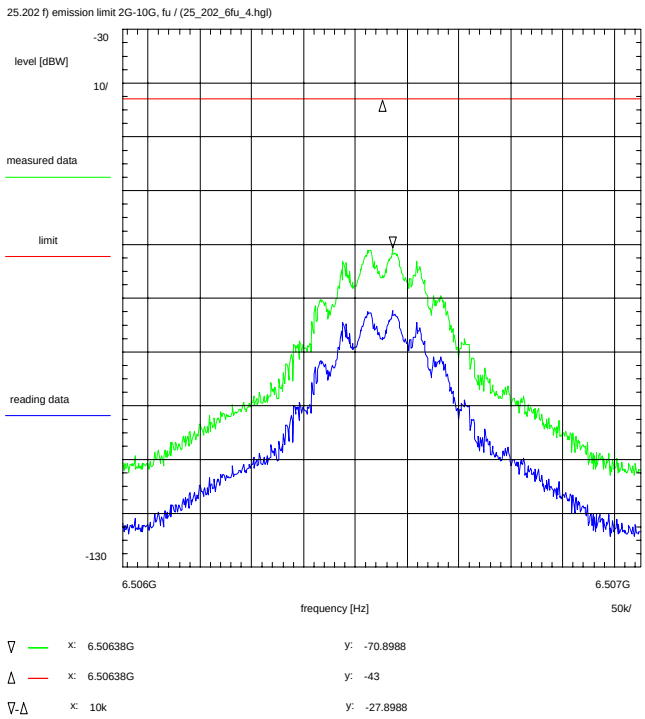
Directional coupler (WHPF)	+	0.3	dB
Coaxial cable (C217)	+	1.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.1	dB
TOTAL CORRECTION:	+	10.6	dB

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

The plot shows the 3rd harmonic.

Annex 3: Measurement result no. 33 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:23:54	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	6.506125	GHz
Stop frequency:	6.506625	GHz
Center frequency:	6.506375	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

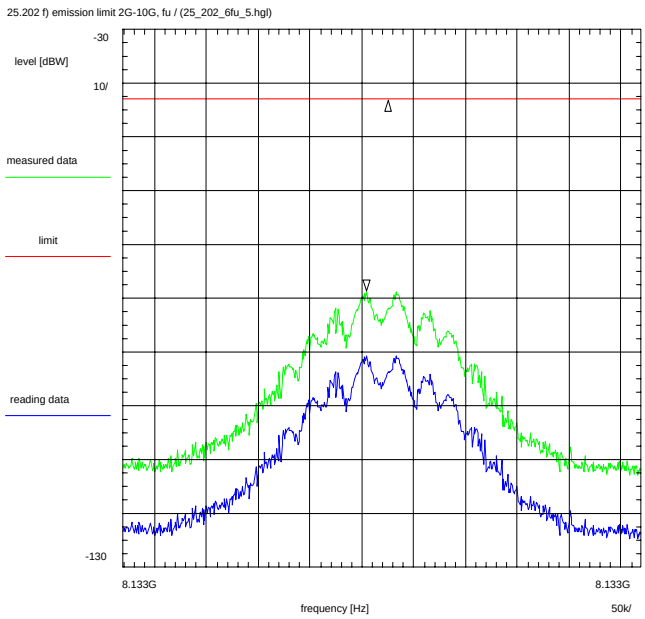
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	1.4	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.8	dB
TOTAL CORRECTION:	+	11.4	dB

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

The plot shows the 4th harmonic.

Annex 3: Measurement result no. 34 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:24:52	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	8.13271875	GHz
Stop frequency:	8.133218750	GHz
Center frequency:	8.13296875	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

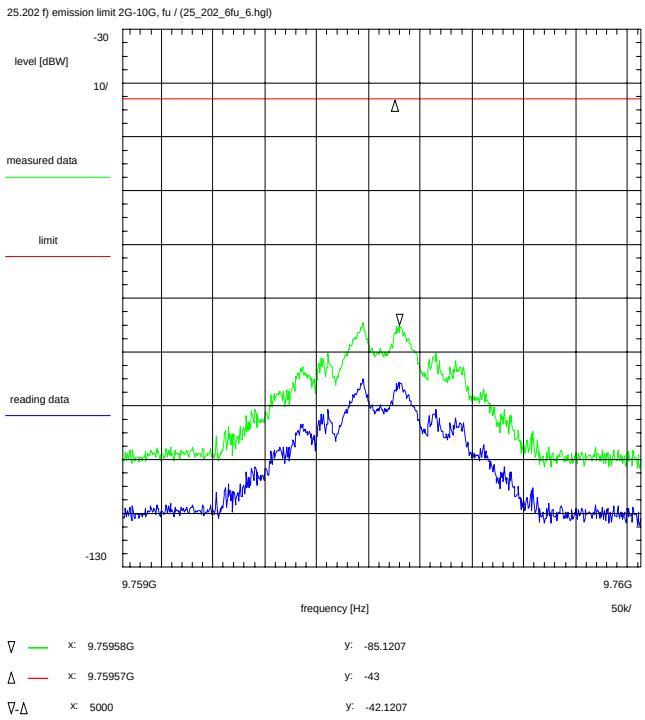
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	1.6	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	11.0	dB
TOTAL CORRECTION:	+	11.8	dB

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

The plot shows the 5th harmonic.

Annex 3: Measurement result no. 35 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:27:02	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	9.7593125	GHz
Stop frequency:	9.7598125	GHz
Center frequency:	9.7595625	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

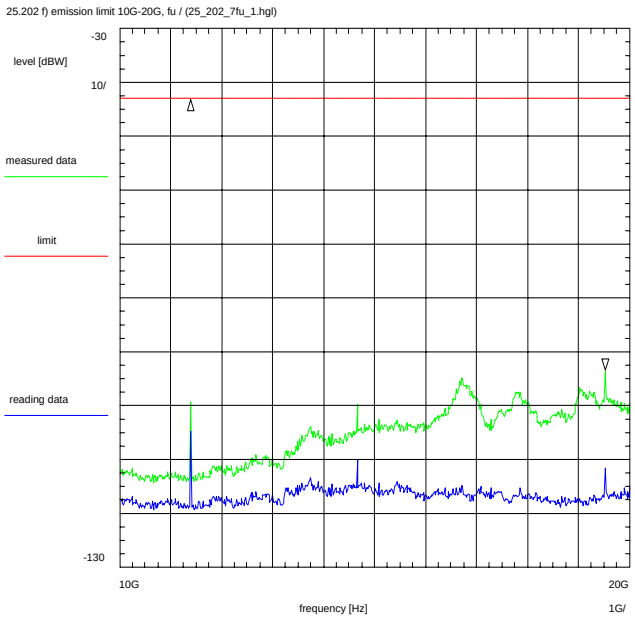
Directional coupler (WHPF)	+	0.3	dB
Coaxial cable (C217)	+	1.8	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.5	dB
TOTAL CORRECTION:	+	10.6	dB

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

The plot shows the 6th harmonic.

Annex 3: Measurement result no. 36 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:20:16	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	10	GHz
Stop frequency:	20	GHz
Center frequency:	15	GHz
Frequency span:	10	GHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

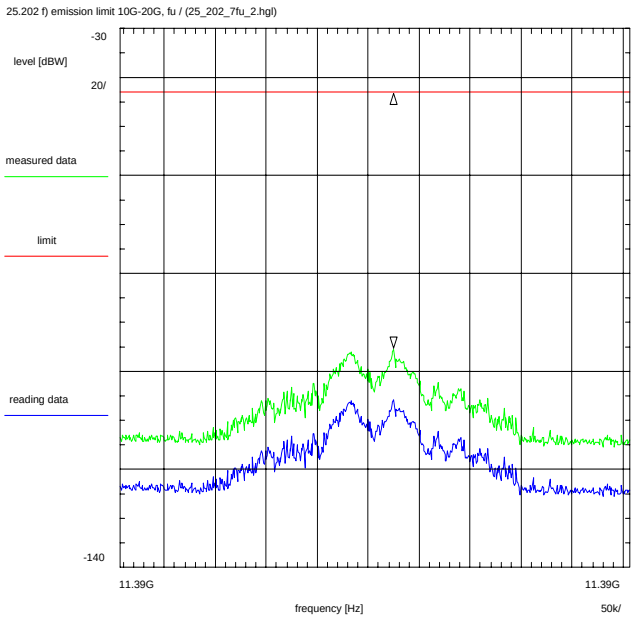
Directional coupler (WHPF)	+	0.7	dB
Coaxial cable (C217)	+	2.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	14.2	dB
TOTAL CORRECTION:	+	11.3	dB

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

The plot shows the 7th, 9th and 12th harmonic.

Annex 3: Measurement result no. 37 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:28:41	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	11.38590625	GHz
Stop frequency:	11.38640625	GHz
Center frequency:	11.38615625	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

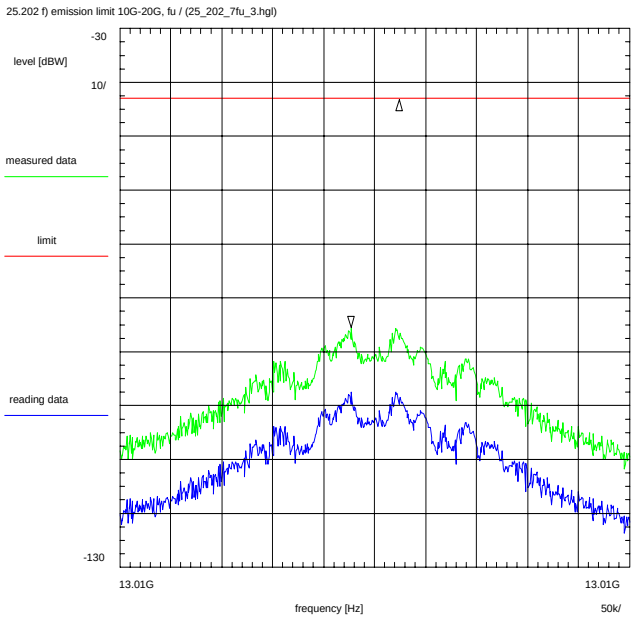
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	1.9	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	8.9	dB
TOTAL CORRECTION:	+	10.0	dB

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

The plot shows the 7th harmonic.

Annex 3: Measurement result no. 38 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:29:48	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	13.0125	GHz
Stop frequency:	13.013	GHz
Center frequency:	13.01275	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

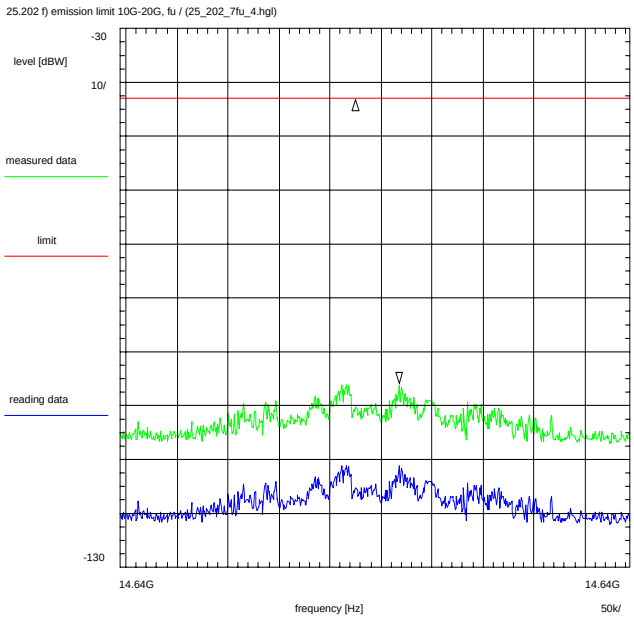
Directional coupler (WHPF)	+	0.5	dB
Coaxial cable (C217)	+	2.1	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.1	dB
TOTAL CORRECTION:	+	11.7	dB

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

The plot shows the 8th harmonic.

Annex 3: Measurement result no. 39 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:30:51	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	14.63909375	GHz
Stop frequency:	14.63959375	GHz
Center frequency:	14.63934375	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

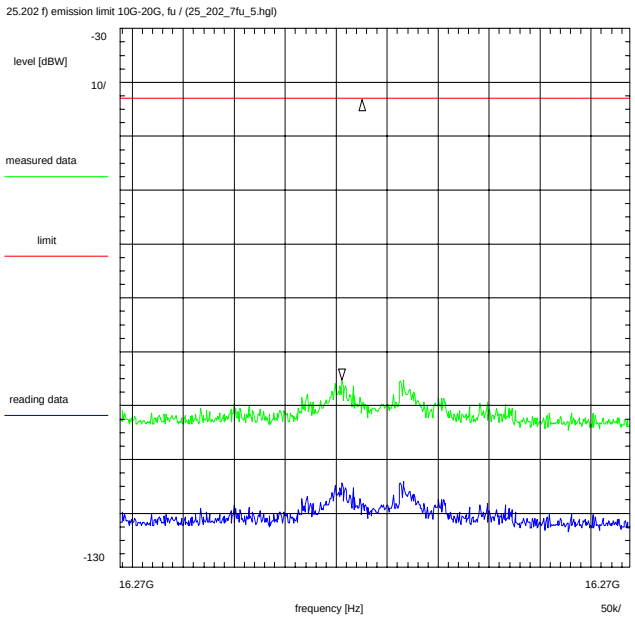
Directional coupler (WHPF)	+	0.6	dB
Coaxial cable (C217)	+	2.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	12.9	dB
TOTAL CORRECTION:	+	14.7	dB

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

The plot shows the 9th harmonic.

Annex 3: Measurement result no. 40 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Wed 22/Feb/2006 18:32:15	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	16.2656875	GHz
Stop frequency:	16.2661875	GHz
Center frequency:	16.2659375	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

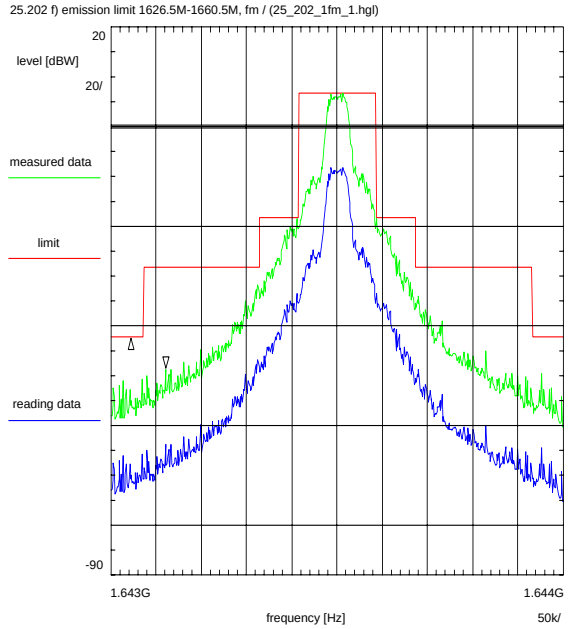
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	16.9	dB
TOTAL CORRECTION:	+	18.4	dB

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

The plot shows the 10th harmonic.

Annex 3: Measurement result no. 41 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:32:34	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.64325	GHz
Stop frequency:	1.64375	GHz
Center frequency:	1.6435	GHz
Frequency span:	500	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

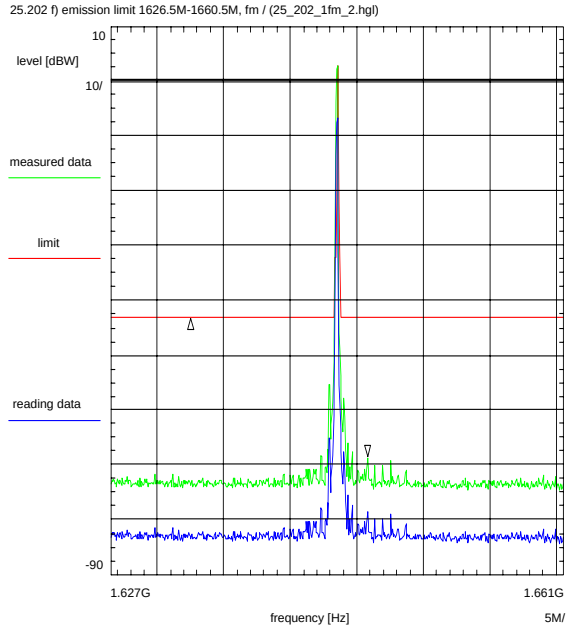
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

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

Out-off-band limit for further tests (see left marker): -43 dBm
See also next plot.

Annex 3: Measurement result no. 42 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:35:17		
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat		
Temperature:	22	°C	
Humidity:	35	%	
Voltage:	4.2	Vdc	

Setup of measurement equipment:

Start frequency:	1.6265	GHz
Stop frequency:	1.6605	GHz
Center frequency:	1.6435	GHz
Frequency span:	34	MHz
Input attenuation:	40	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

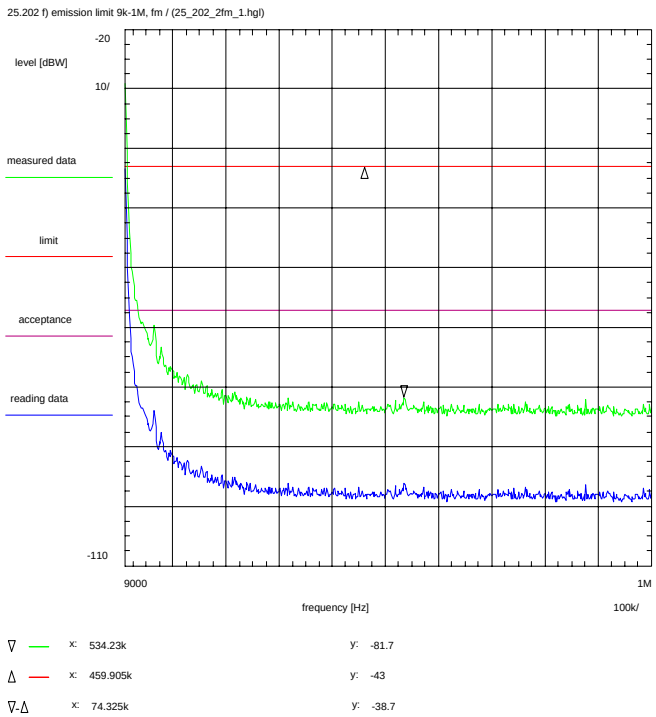
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	9.7	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

Out-off-band limit for further tests (see left marker): -43 dBm
See also next plot.

Annex 3: Measurement result no. 43 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:43:22	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	9	kHz
Stop frequency:	1	MHz
Center frequency:	504.5	kHz
Frequency span:	991	kHz
Input attenuation:	30	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

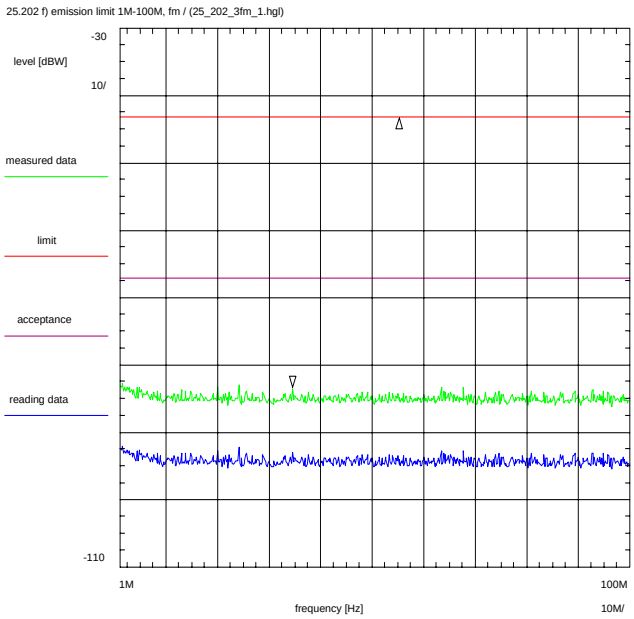
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.9	dB
TOTAL CORRECTION:	+	14.3	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the limit is not met. This is not caused by the EUT.
Rather left the plot shows the zero line of the spectrum analyzer.

Annex 3: Measurement result no. 44 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:45:20		
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat		
Temperature:	22	°C	
Humidity:	35	%	
Voltage:	4.2	Vdc	

Setup of measurement equipment:

Start frequency:	1	MHz
Stop frequency:	100	MHz
Center frequency:	50.5	MHz
Frequency span:	99	MHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

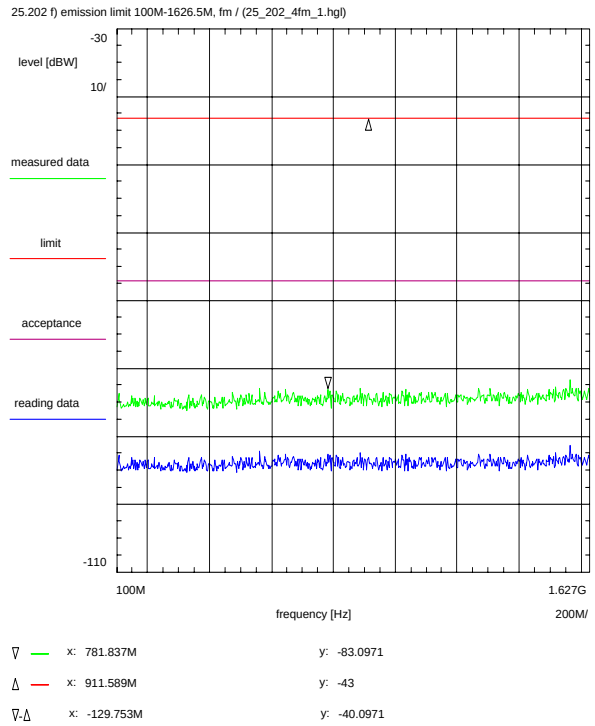
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.4	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 (U214)	+	9.9	dB
TOTAL CORRECTION:	+	9.3	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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

Annex 3: Measurement result no. 45 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:49:06	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	100	MHz
Stop frequency:	1.6265	GHz
Center frequency:	863.25	MHz
Frequency span:	1.5265	GHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

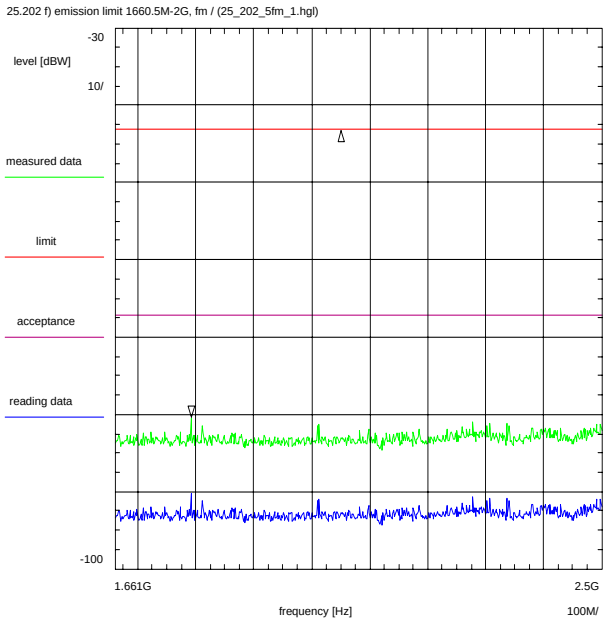
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.5	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 (U214)	+	9.9	dB
TOTAL CORRECTION:	+	9.4	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

Annex 3: Measurement result no. 46 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 09:52:11	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6605	GHz
Stop frequency:	2.5	GHz
Center frequency:	2.08025	GHz
Frequency span:	839.5	MHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

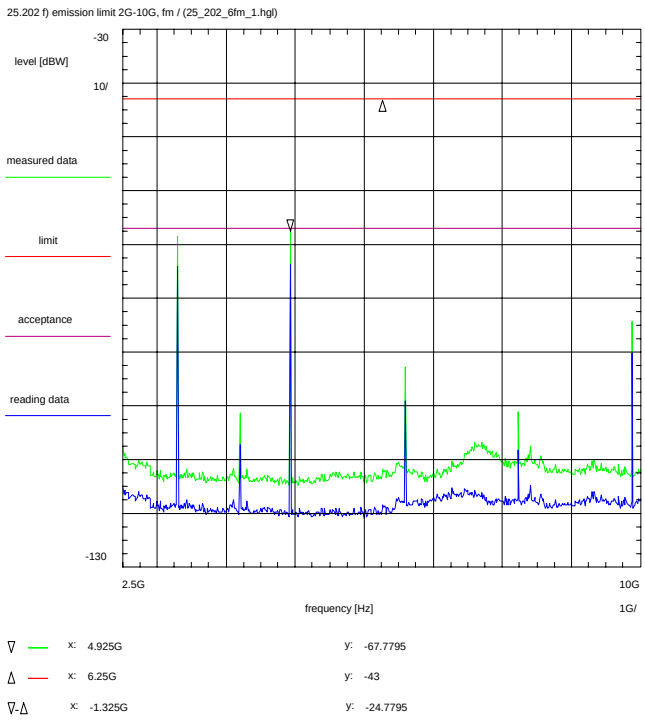
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.8	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	9.8	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

Annex 3: Measurement result no. 47 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:31:05	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	2.5	GHz
Stop frequency:	10	GHz
Center frequency:	6.25	GHz
Frequency span:	7.5	GHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

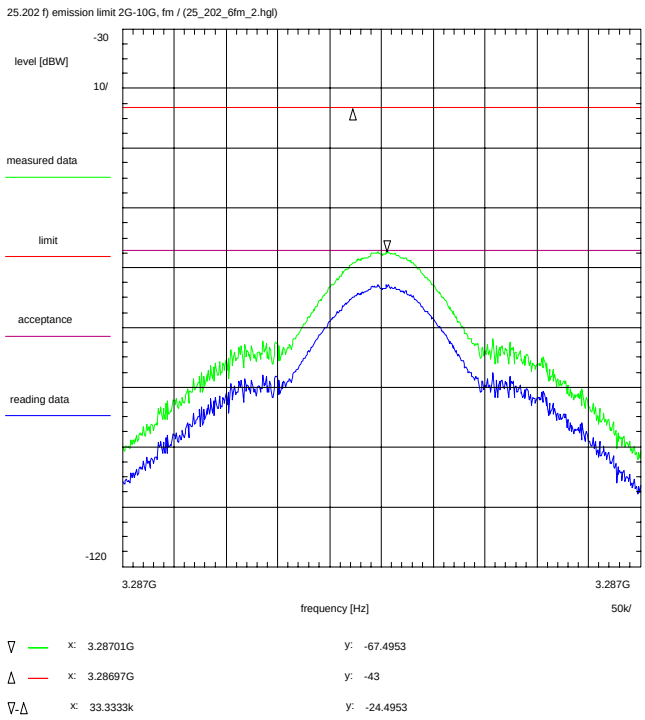
Directional coupler (WHPF)	+	0.4	dB
Coaxial cable (C217)	+	1.4	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.3	dB
TOTAL CORRECTION:	+	6.3	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 2nd, 3rd, 4th, 5th and 6th harmonic.

Annex 3: Measurement result no. 48 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:02:46	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	3.28675	GHz
Stop frequency:	3.28725	GHz
Center frequency:	3.287	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

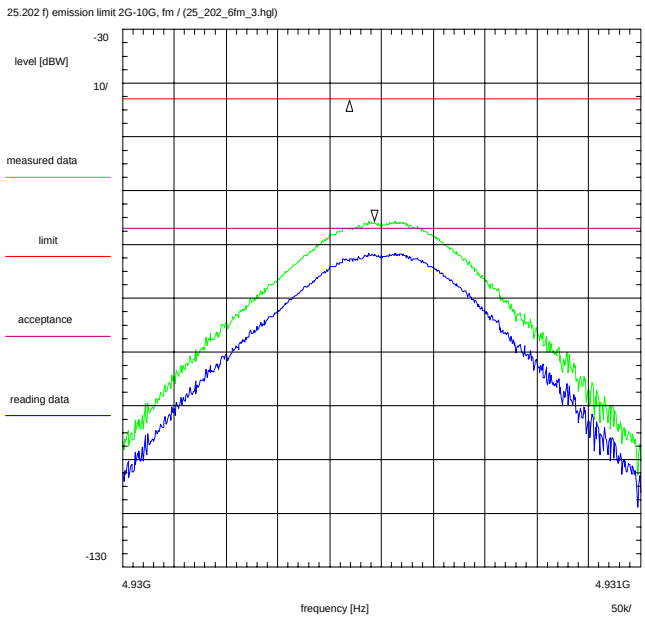
Directional coupler (WHPF)	+	0.5	dB
Coaxial cable (C217)	+	1.0	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	5.7	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 2nd harmonic.

Annex 3: Measurement result no. 49 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:04:04	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	4.93025	GHz
Stop frequency:	4.93075	GHz
Center frequency:	4.9305	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

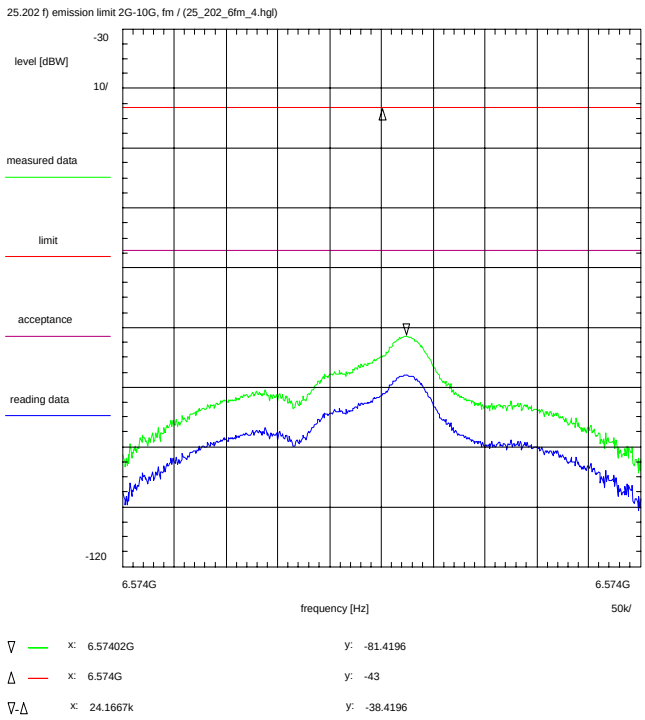
Directional coupler (WHPF)	+	0.3	dB
Coaxial cable (C217)	+	1.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.2	dB
TOTAL CORRECTION:	+	5.9	dB

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

The plot shows the 3rd harmonic.

Annex 3: Measurement result no. 50 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:08:51	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	6.57375	GHz
Stop frequency:	6.57425	GHz
Center frequency:	6.574	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

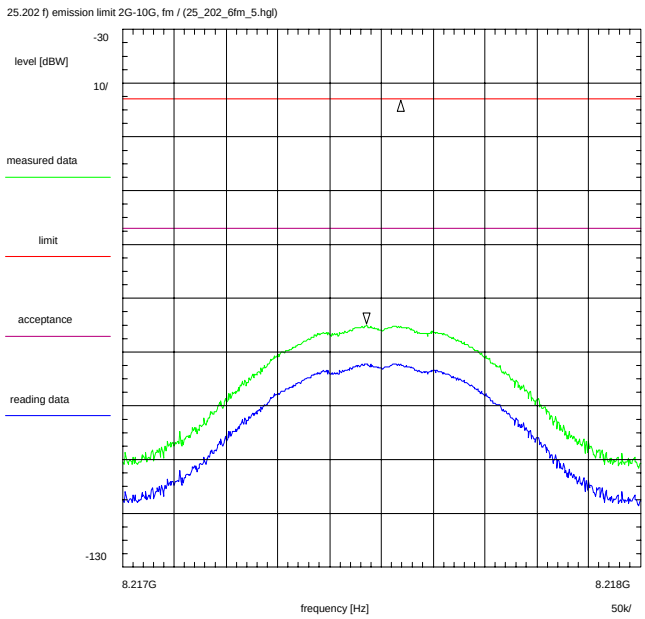
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	1.4	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.7	dB
TOTAL CORRECTION:	+	6.5	dB

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

The plot shows the 4th harmonic.

Annex 3: Measurement result no. 51 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plot

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:12:33	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	8.21725	GHz
Stop frequency:	8.21775	GHz
Center frequency:	8.21750	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

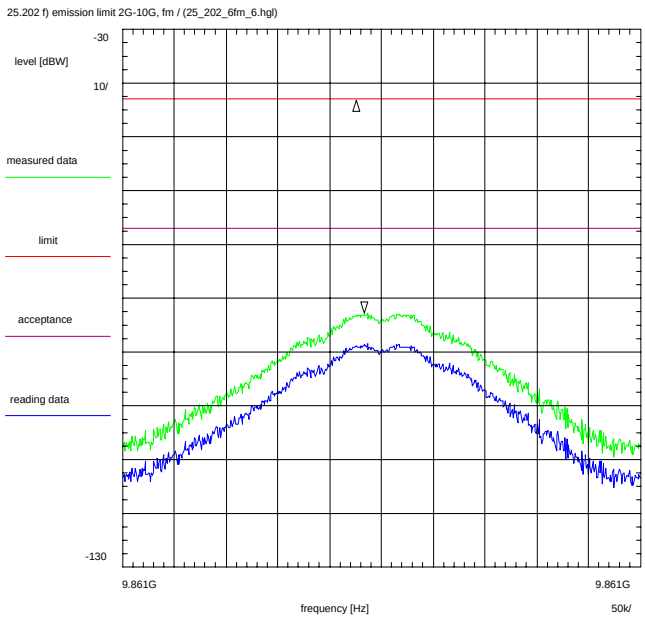
Directional coupler (WHPF)	+	0.4	dB
Coaxial cable (C217)	+	1.6	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.9	dB
TOTAL CORRECTION:	+	7.1	dB

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

The plot shows the 5th harmonic.

Annex 3: Measurement result no. 52 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:33:34	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	9.86075	GHz
Stop frequency:	9.86125	GHz
Center frequency:	9.861	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

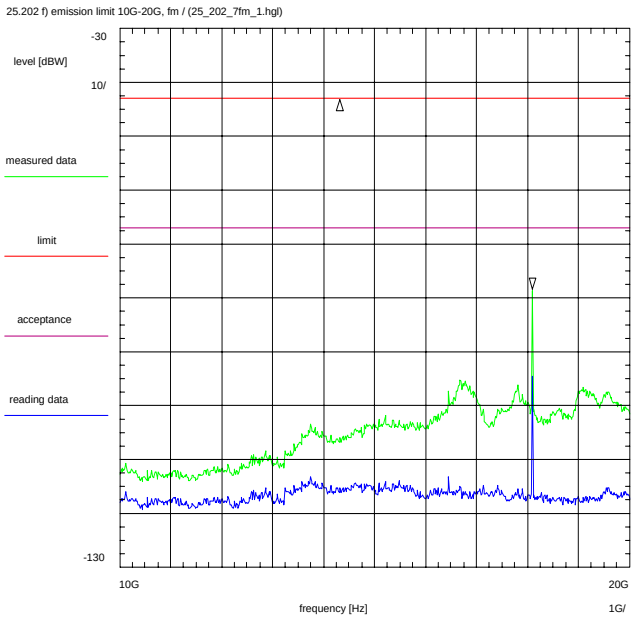
Directional coupler (WHPF)	+	0.3	dB
Coaxial cable (C217)	+	1.8	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.4	dB
TOTAL CORRECTION:	+	5.7	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 6th harmonic.

Annex 3: Measurement result no. 53 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:16:40	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	10	GHz
Stop frequency:	20	GHz
Center frequency:	15	GHz
Frequency span:	10	GHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

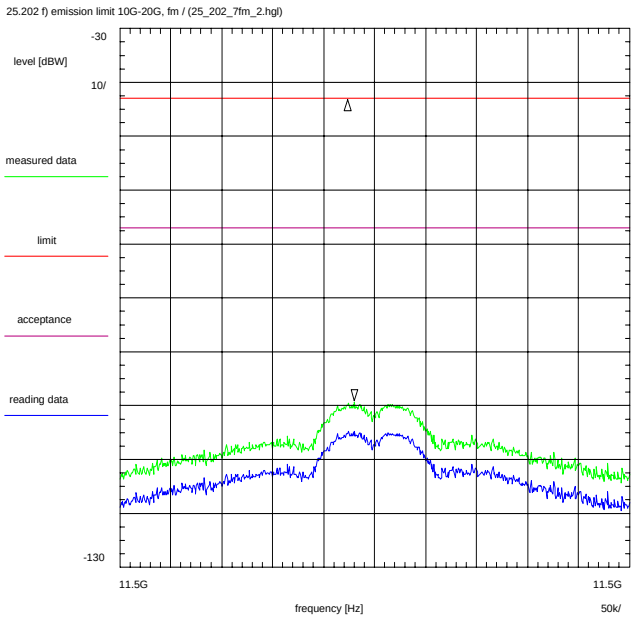
Directional coupler (WHPF)	+	0.7	dB
Coaxial cable (C217)	+	2.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	14.2	dB
TOTAL CORRECTION:	+	11.3	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 11th harmonic.

Annex 3: Measurement result no. 54 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:19:45	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	11.50425	GHz
Stop frequency:	11.50475	GHz
Center frequency:	11.5045	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

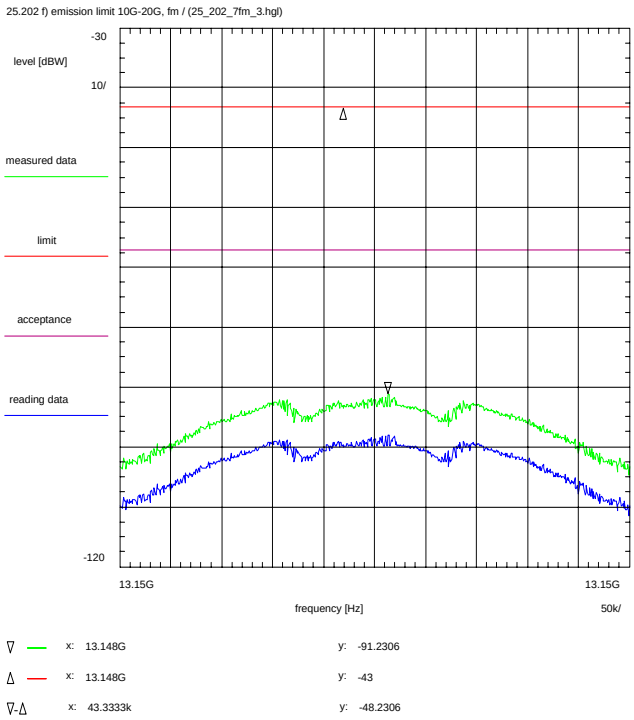
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	1.9	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.0	dB
TOTAL CORRECTION:	+	5.3	dB

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 in the middle of the band (fm)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 7th harmonic.

Annex 3: Measurement result no. 55 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:21:26	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	13.14775	GHz
Stop frequency:	13.14825	GHz
Center frequency:	13.148	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

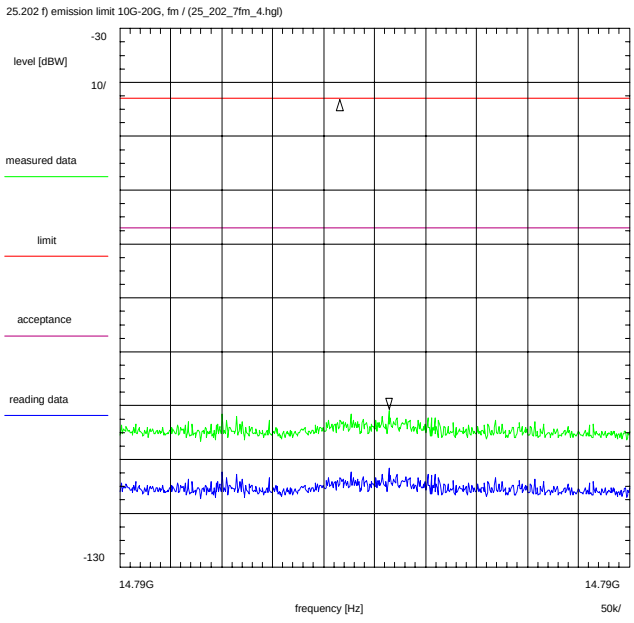
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	2.1	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.1	dB
TOTAL CORRECTION:	+	6.6	dB

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

The plot shows the 8th harmonic.

Annex 3: Measurement result no. 56 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plot

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:22:27	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	14.79125	GHz
Stop frequency:	14.79175	GHz
Center frequency:	14.7915	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

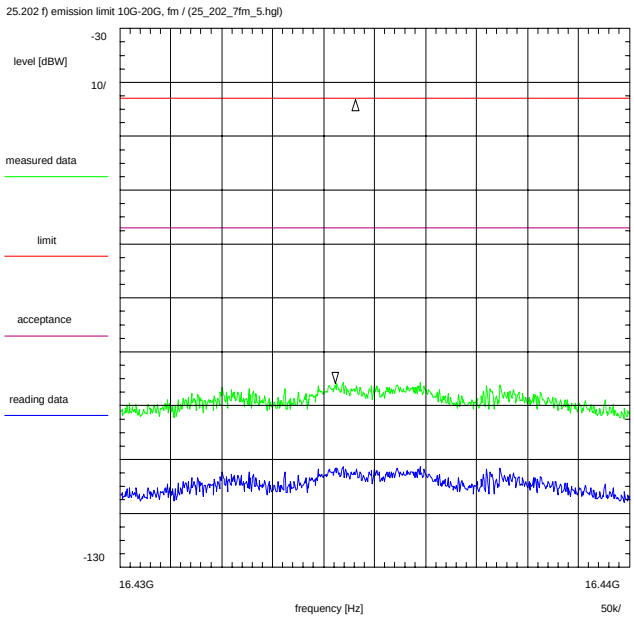
Directional coupler (WHPF)	+	0.4	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	13.5	dB
TOTAL CORRECTION:	+	10.4	dB

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

The plot shows the 9th harmonic.

Annex 3: Measurement result no. 57 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 10:23:56	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	16.43475	GHz
Stop frequency:	16.43525	GHz
Center frequency:	16.435	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	0	Normal (Clear-Write)

Correction (average):

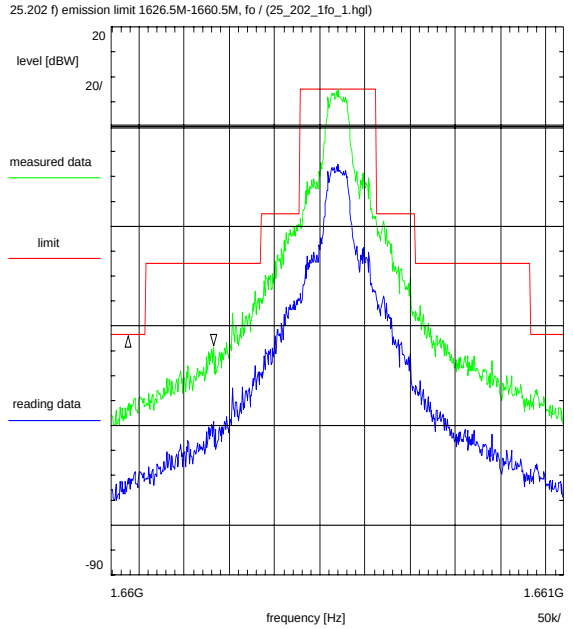
Directional coupler (WHPF)	+	0.5	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	18.2	dB
TOTAL CORRECTION:	+	15.2	dB

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

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

The plot shows the 10th harmonic.

Annex 3: Measurement result no. 58 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:10:41	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.66021875	GHz
Stop frequency:	1.66071875	GHz
Center frequency:	1.66046875	GHz
Frequency span:	500	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

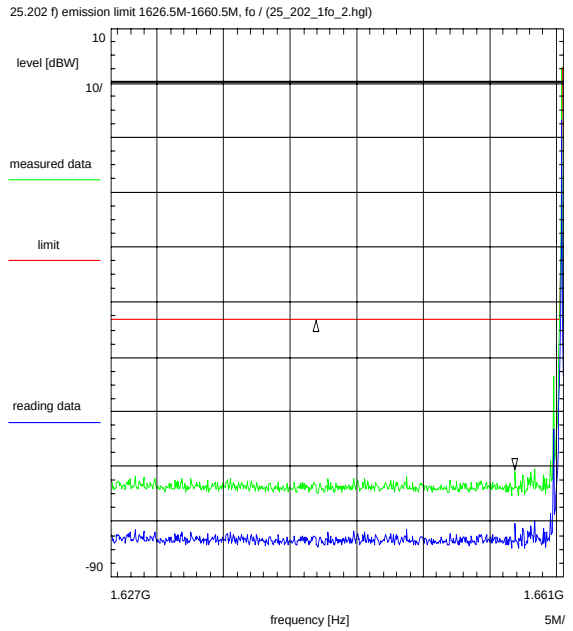
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

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

Out-off-band limit for further tests (see left marker): -43 dBm
See also next plot.

Annex 3: Measurement result no. 59 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:15:45	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6265	GHz
Stop frequency:	1.6605	GHz
Center frequency:	1.6435	GHz
Frequency span:	34	MHz
Input attenuation:	40	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

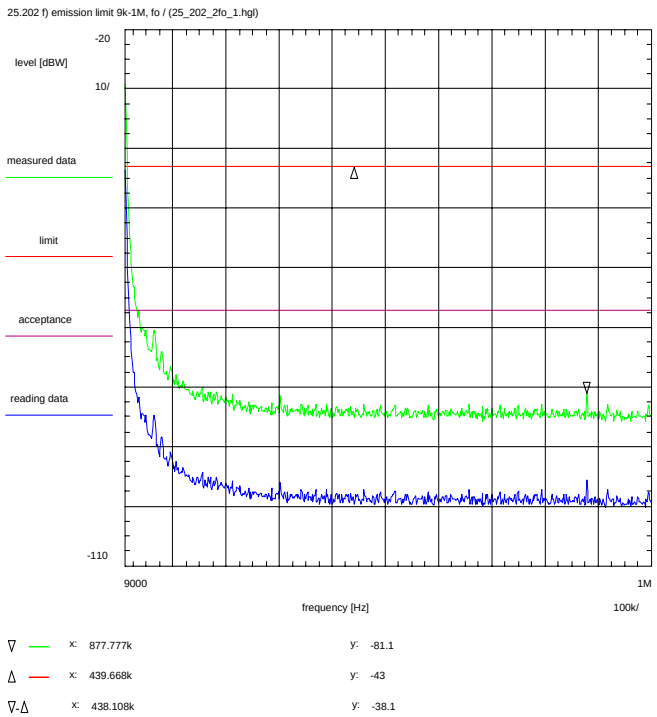
Directional coupler	+	0.0	dB
Coaxial cable	+	0.7	dB
DUT-Antenna	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation	+	10.0	dB
TOTAL CORRECTION:	+	9.7	dB

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 upper edge of the band (fo)
For EIRP calculation:
´worst-case´ = maximum antenna gain

Out-off-band limit for further tests (see left marker): -43 dBm

Annex 3: Measurement result no. 60 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:18:11	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	9	kHz
Stop frequency:	1	MHz
Center frequency:	504.5	kHz
Frequency span:	991	kHz
Input attenuation:	30	dB
Resolution-BW:	3	kHz
Video-BW:	3	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

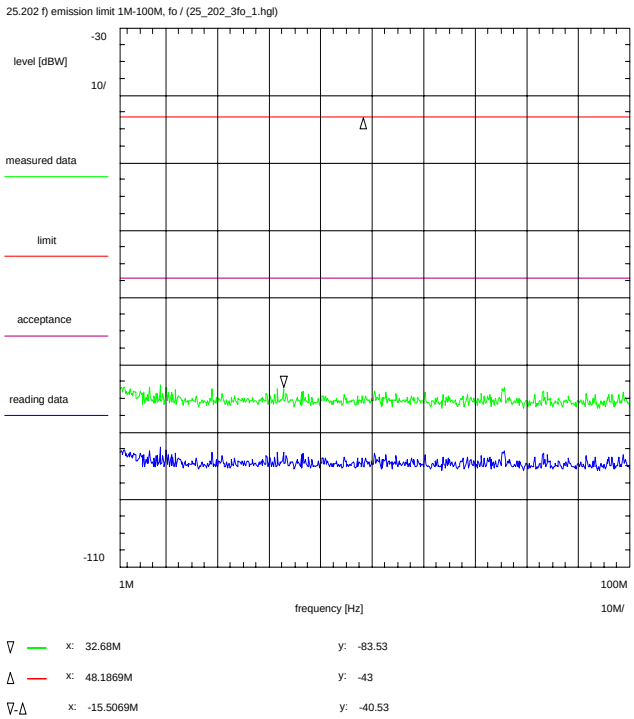
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.3	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (3k -> 4k)	+	1.2	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.9	dB
TOTAL CORRECTION:	+	14.4	dB

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

The plot shows the limit is not met. This is not caused by the EUT.
Rather left the plot shows the zero line of the spectrum analyzer.

Annex 3: Measurement result no. 61 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:20:33	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1	MHz
Stop frequency:	100	MHz
Center frequency:	50.5	MHz
Frequency span:	99	MHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

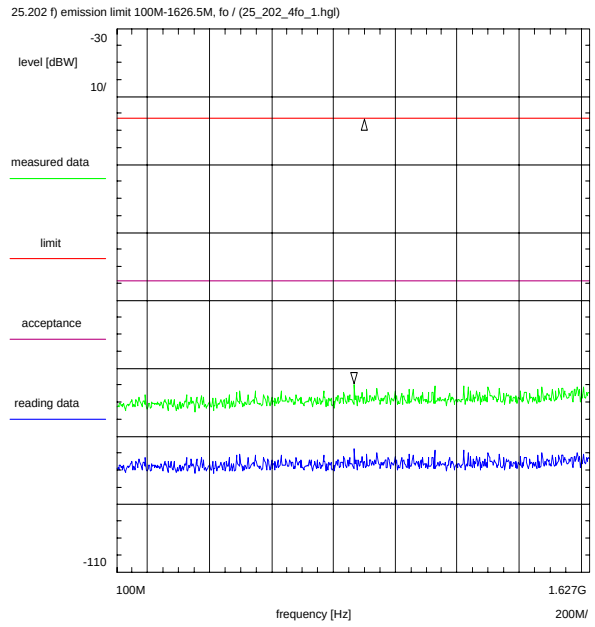
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.4	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 (U214)	+	9.9	dB
TOTAL CORRECTION:	+	9.3	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

Annex 3: Measurement result no. 62 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:24:57	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	100	MHz
Stop frequency:	1.6265	GHz
Center frequency:	863.25	MHz
Frequency span:	1.5265	GHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

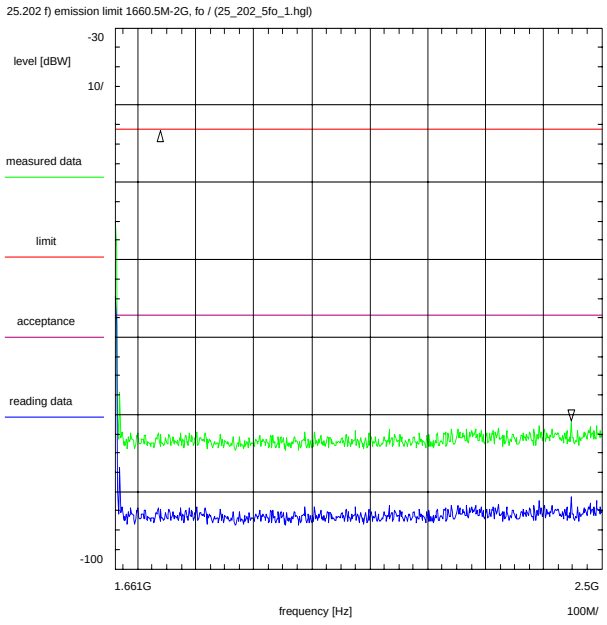
Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.5	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 (U214)	+	9.9	dB
TOTAL CORRECTION:	+	9.4	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

Annex 3: Measurement result no. 63 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 11:29:55	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.6605	GHz
Stop frequency:	2.5	GHz
Center frequency:	2.08025	GHz
Frequency span:	839.5	MHz
Input attenuation:	30	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

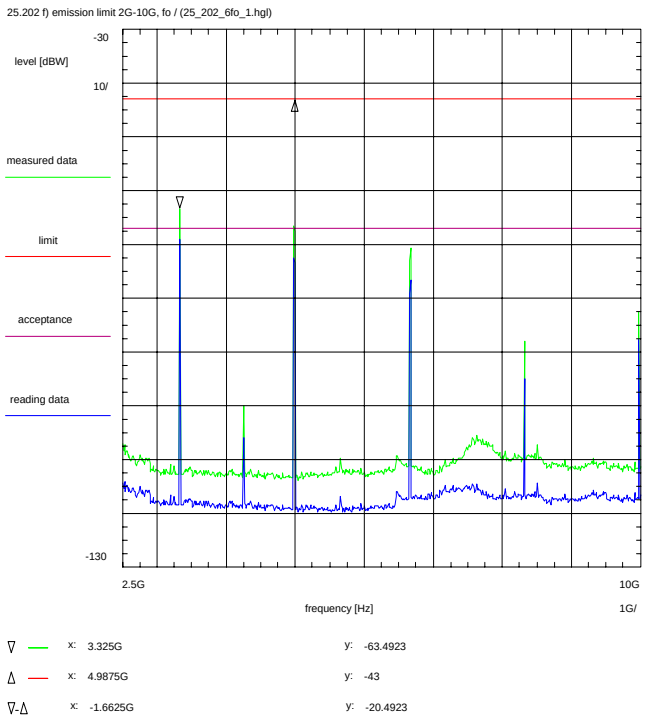
Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.8	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	9.8	dB

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

Rather left the plot shows parts of the wanted signal.

Annex 3: Measurement result no. 64 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:25:50	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	2.5	GHz
Stop frequency:	10	GHz
Center frequency:	6.25	GHz
Frequency span:	7.5	GHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

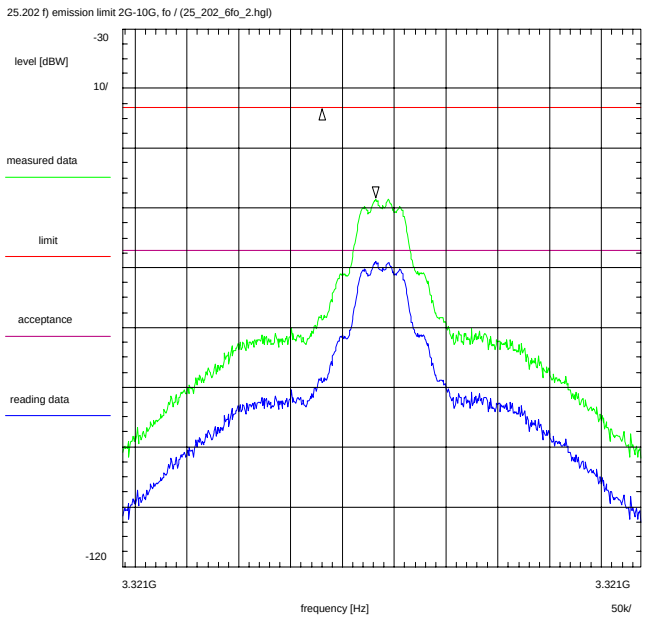
Directional coupler (WHPF)	+	0.4	dB
Coaxial cable (C217)	+	1.4	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.3	dB
TOTAL CORRECTION:	+	6.3	dB

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

The plot shows 2nd - 6th harmonic.

Annex 3: Measurement result no. 65 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:31:16	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	3.3206875	GHz
Stop frequency:	3.3211875	GHz
Center frequency:	3.3209375	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

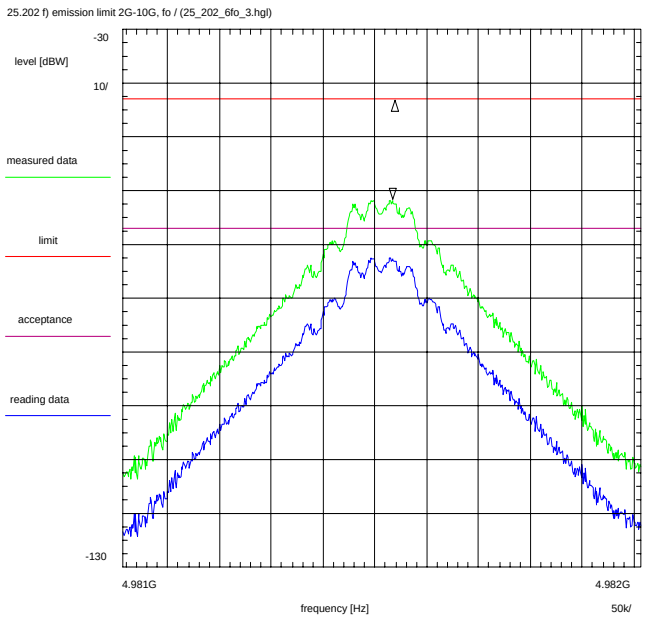
Directional coupler (WHPF)	+	0.5	dB
Coaxial cable (C217)	+	1.0	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.0	dB
TOTAL CORRECTION:	+	10.5	dB

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

The plot shows the 2nd harmonic.

Annex 3: Measurement result no. 66 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:33:36	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	4.98115625	GHz
Stop frequency:	4.98165625	GHz
Center frequency:	4.98140625	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

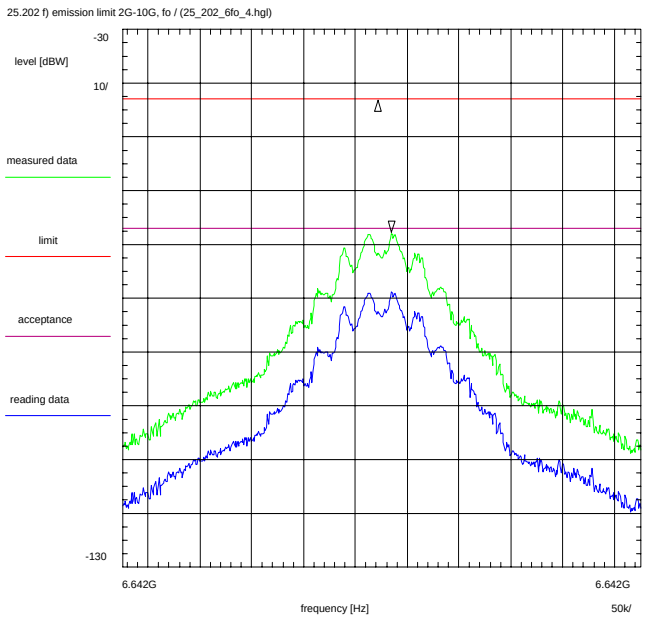
Directional coupler (WHPF)	+	0.3	dB
Coaxial cable (C217)	+	1.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.2	dB
TOTAL CORRECTION:	+	10.7	dB

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 upper edge of the band (fo)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 3rd harmonic.

Annex 3: Measurement result no. 67 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:36:19	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	6.641625	GHz
Stop frequency:	6.642125	GHz
Center frequency:	6.641875	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

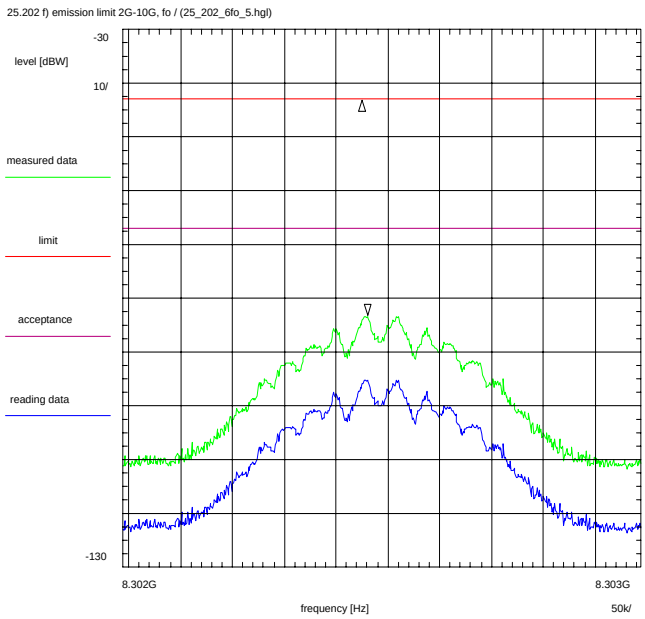
Directional coupler (WHPF)	+	0.1	dB
Coaxial cable (C217)	+	1.4	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.5	dB
TOTAL CORRECTION:	+	11.0	dB

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 upper edge of the band (fo)
For EIRP calculation:
´worst-case´ = maximum antenna gain

The plot shows the 4th harmonic.

Annex 3: Measurement result no. 68 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plot

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:40:32	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	8.302093750	GHz
Stop frequency:	8.30259375	GHz
Center frequency:	8.30234375	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

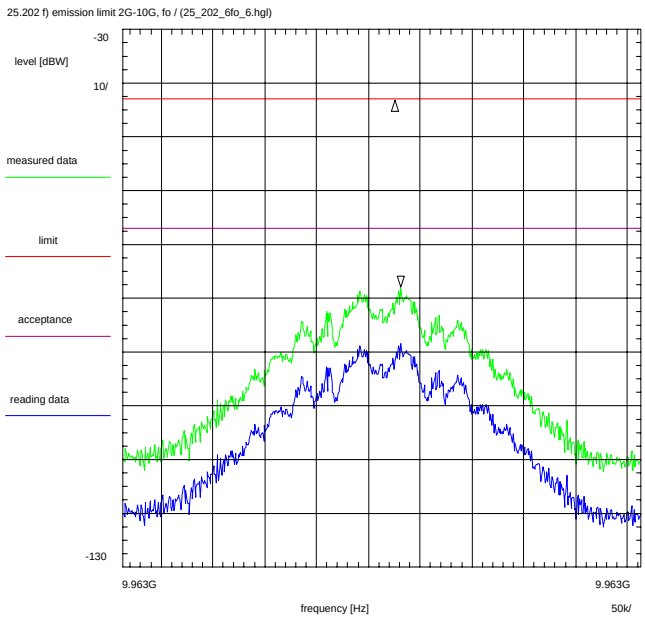
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	1.6	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	11.1	dB
TOTAL CORRECTION:	+	11.9	dB

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

The plot shows the 5th harmonic.

Annex 3: Measurement result no. 69 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:42:30	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	9.9625625	GHz
Stop frequency:	9.9630625	GHz
Center frequency:	9.9628125	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

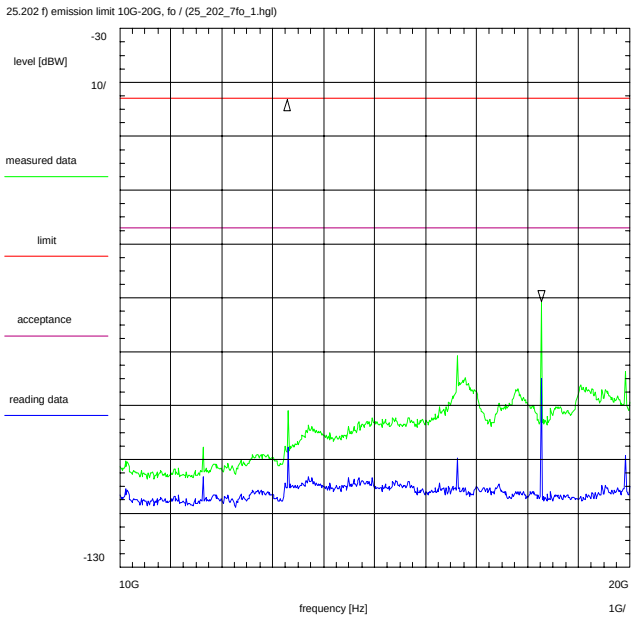
Directional coupler (WHPF)	+	0.1	dB
Coaxial cable (C217)	+	1.8	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.4	dB
TOTAL CORRECTION:	+	10.3	dB

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

The plot shows the 6th harmonic.

Annex 3: Measurement result no. 70 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:56:51	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	10	GHz
Stop frequency:	20	GHz
Center frequency:	15	GHz
Frequency span:	10	GHz
Input attenuation:	0	dB
Resolution-BW:	30	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

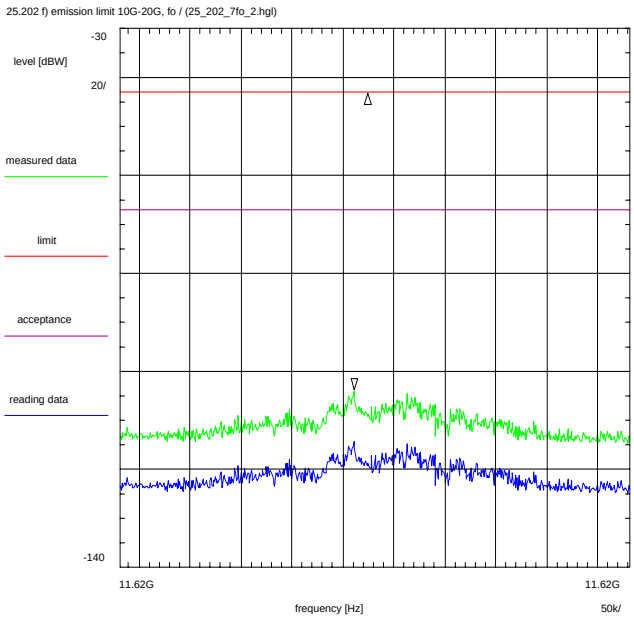
Directional coupler (WHPF)	+	0.7	dB
Coaxial cable (C217)	+	2.2	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (30k -> 4k)	-	8.8	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	14.2	dB
TOTAL CORRECTION:	+	11.3	dB

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

The plot shows the 7th - 12th harmonic.

Annex 3: Measurement result no. 71 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:57:55	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	11.62303125	GHz
Stop frequency:	11.62353125	GHz
Center frequency:	11.62328125	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

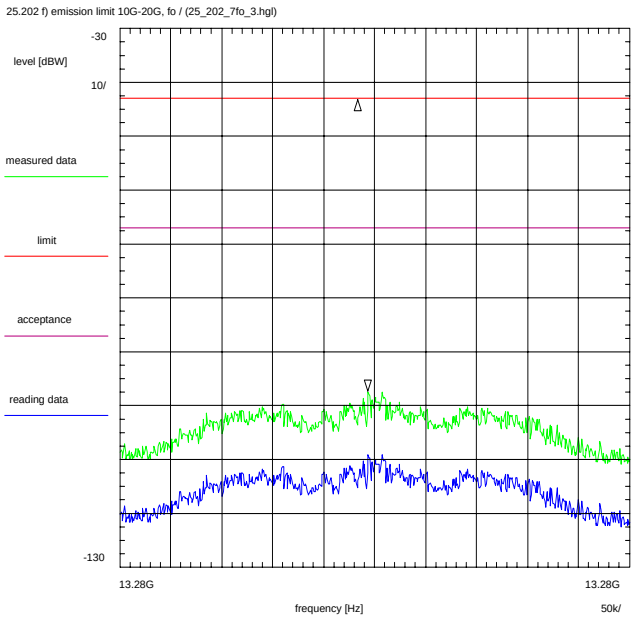
Directional coupler (WHPF)	+	0.3	dB
Coaxial cable (C217)	+	1.9	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	9.0	dB
TOTAL CORRECTION:	+	10.2	dB

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

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

The plot shows the 7th harmonic.

Annex 3: Measurement result no. 72 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plots

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 12:59:15	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	13.2835	GHz
Stop frequency:	13.284	GHz
Center frequency:	13.28375	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

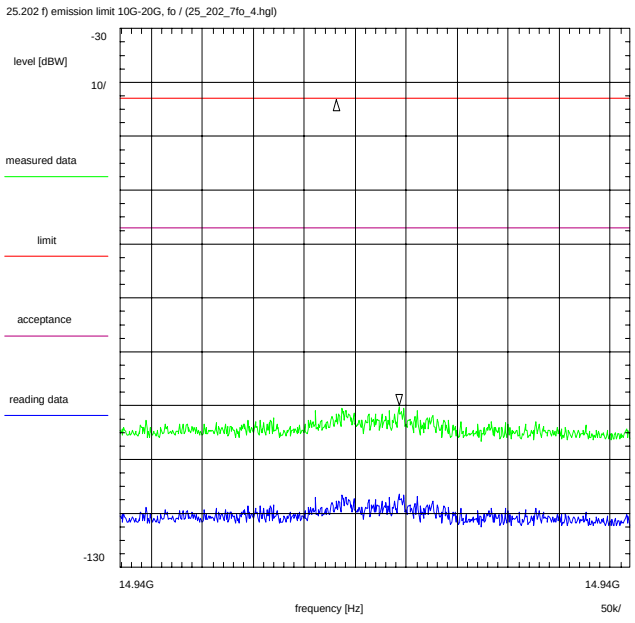
Directional coupler (WHPF)	+	0.2	dB
Coaxial cable (C217)	+	2.1	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	10.2	dB
TOTAL CORRECTION:	+	11.5	dB

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

The plot shows the 8th harmonic.

Annex 3: Measurement result no. 73 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:
see also next plot

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 13:00:29	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	14.94396875	GHz
Stop frequency:	14.94446875	GHz
Center frequency:	14.94421875	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

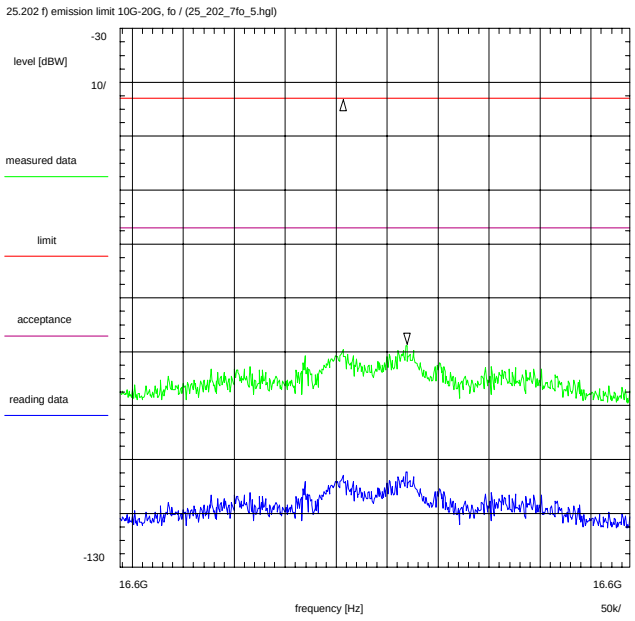
Directional coupler (WHPF)	+	0.4	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	14.2	dB
TOTAL CORRECTION:	+	15.9	dB

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

The plot shows the 9th harmonic.

Annex 3: Measurement result no. 74 (76)



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 section 1.5.2

Test setup:
see annex 1: 1.2higj

Test equipment:
see annex 2: C217, R001, U214, WHPF

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 13:01:41	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	16.6044375	GHz
Stop frequency:	16.6049375	GHz
Center frequency:	16.6046875	GHz
Frequency span:	500	kHz
Input attenuation:	0	dB
Resolution-BW:	10	kHz
Video-BW:	10	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

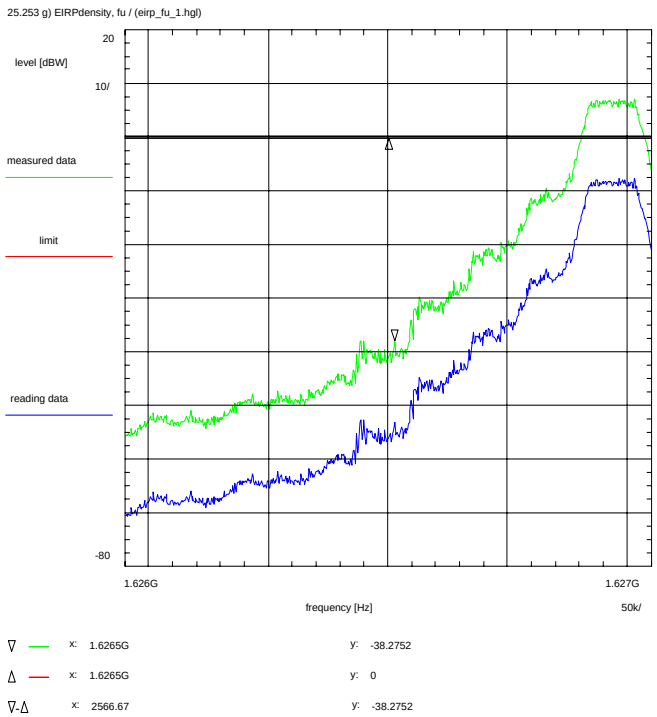
Directional coupler (WHPF)	+	0.5	dB
Coaxial cable (C217)	+	2.3	dB
DUT-Antenna (on-axis)	+	3.0	dBi
Test antenna	+	0.0	dB
BW correction factor (10k -> 4k)	-	4.0	dB
Atten. between HPA and feedhorn	+	0.0	dB
Attenuation (U214)	+	21.0	dB
TOTAL CORRECTION:	+	22.8	dB

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

The plot shows the 10th harmonic.

Annex 3: Measurement result no. 75 (76)



Subclause: 25.253 Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz / 1525-1559 MHz bands
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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 13:33:48	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.62639	GHz
Stop frequency:	1.62661	GHz
Center frequency:	1.6265	GHz
Frequency span:	220	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

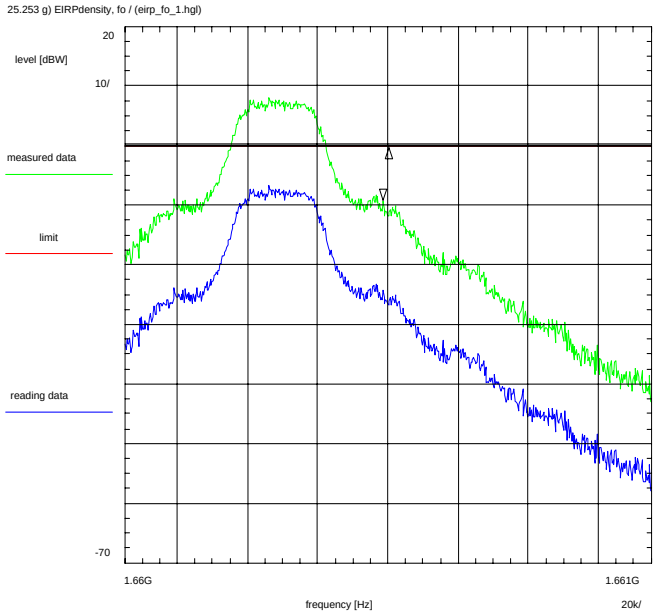
Limit:

Limits acc. to 25.253 g):	0.0	dBW/4kHz

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

The pot shows band edge compliance for the bottom channel (CH no. 3).

Annex 3: Measurement result no. 76 (76)



Subclause: 25.253 Special requirements for ancillary terrestrial components operating in the 1626.5-1660.5 MHz / 1525-1559 MHz bands
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 section 1.5.2

Test setup:
see annex 1: 1.2hgj

Test equipment:
see annex 2: C217, R001, U214

Data of correction:
see annex 4

Remark:

Test result: Test passed

Information on the measurement:

Environment condition:

Date & Time:	Thu 23/Feb/2006 13:10:33	
Location:	CETECOM ICT Services GmbH, Laboratory RSC-Sat	
Temperature:	22	°C
Humidity:	35	%
Voltage:	4.2	Vdc

Setup of measurement equipment:

Start frequency:	1.660425	GHz
Stop frequency:	1.660575	GHz
Center frequency:	1.6605	GHz
Frequency span:	150	kHz
Input attenuation:	40	dB
Resolution-BW:	3	kHz
Video-BW:	30	kHz
Video-Average:	1	sweep(s) (>1)
Detector-Mode:	2	Pos Peak (Maximum-Hold)

Correction (average):

Directional coupler	+	0.0	dB
Coaxial cable (C217)	+	0.7	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 (U214)	+	10.0	dB
TOTAL CORRECTION:	+	14.9	dB

Limit:

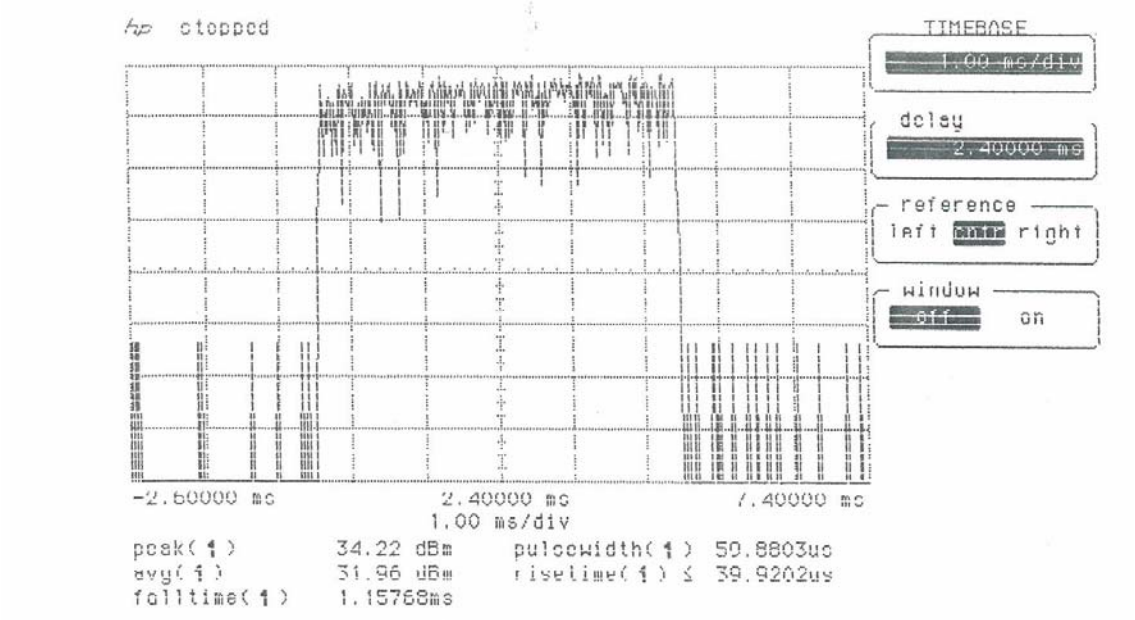
Limits acc. to 25.253 g):	0.0	dBW/4kHz

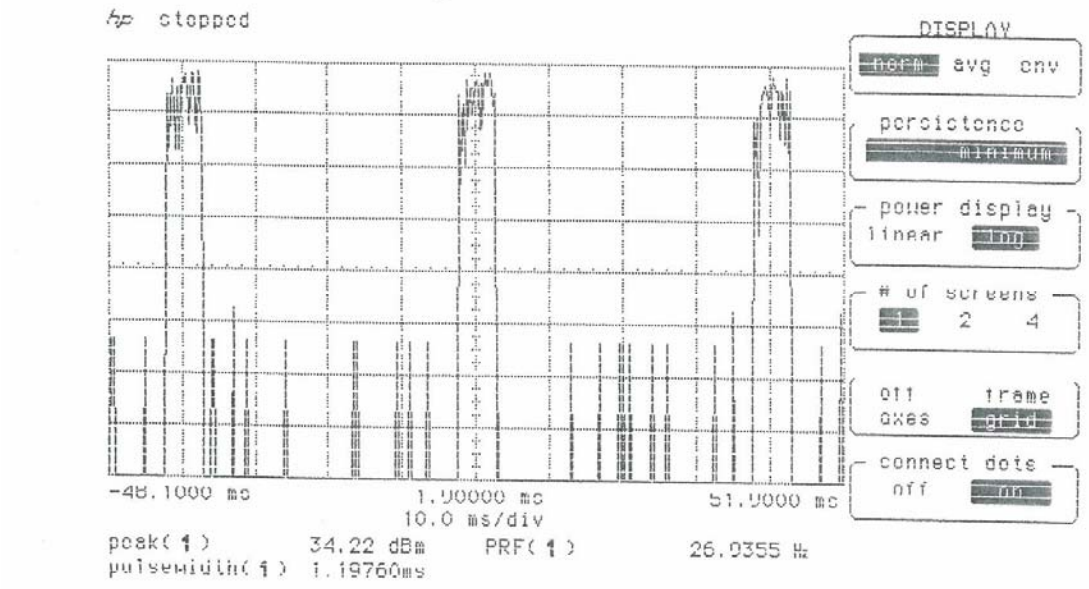
Remarks:
Carrier-on state / Carrier at the upper edge of the band (fo)
Max-Hold measurement

The pot shows band edge compliance for the top channel (CH no. 1087).

Annex 3: Measurement results, part 2

Annex 3 part 2 consists of 1 pages including this page.



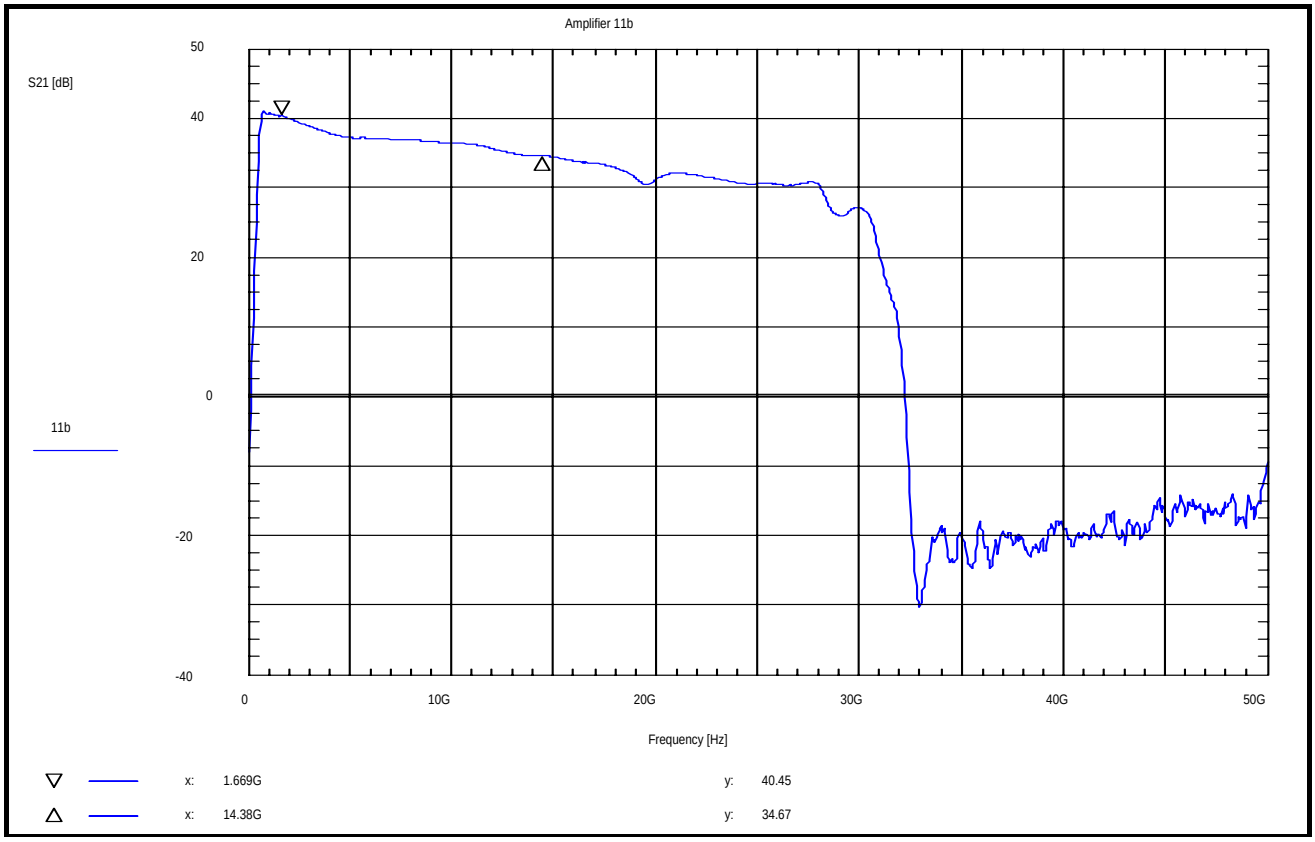


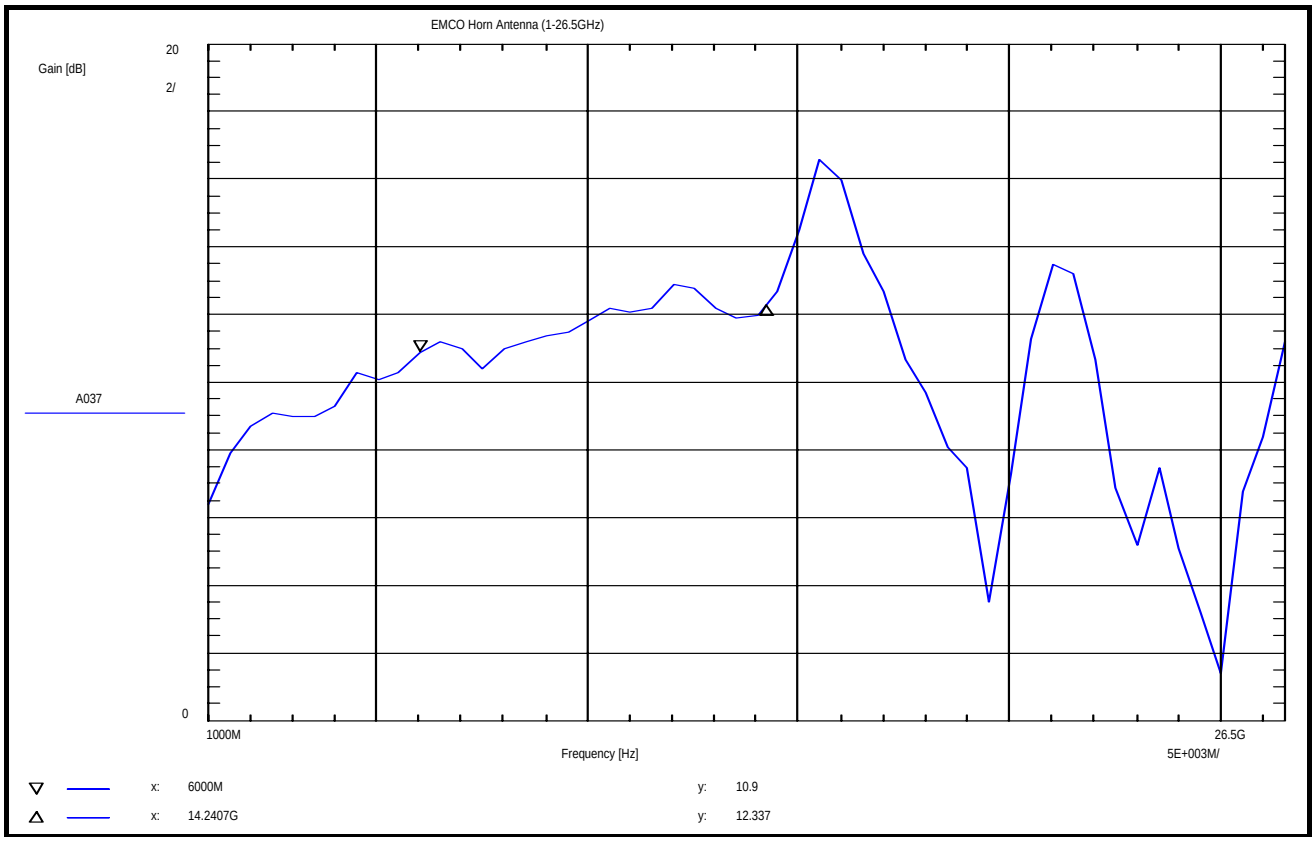
Annex 4: Data of correction

Annex 4 consists of 4 pages including this page.

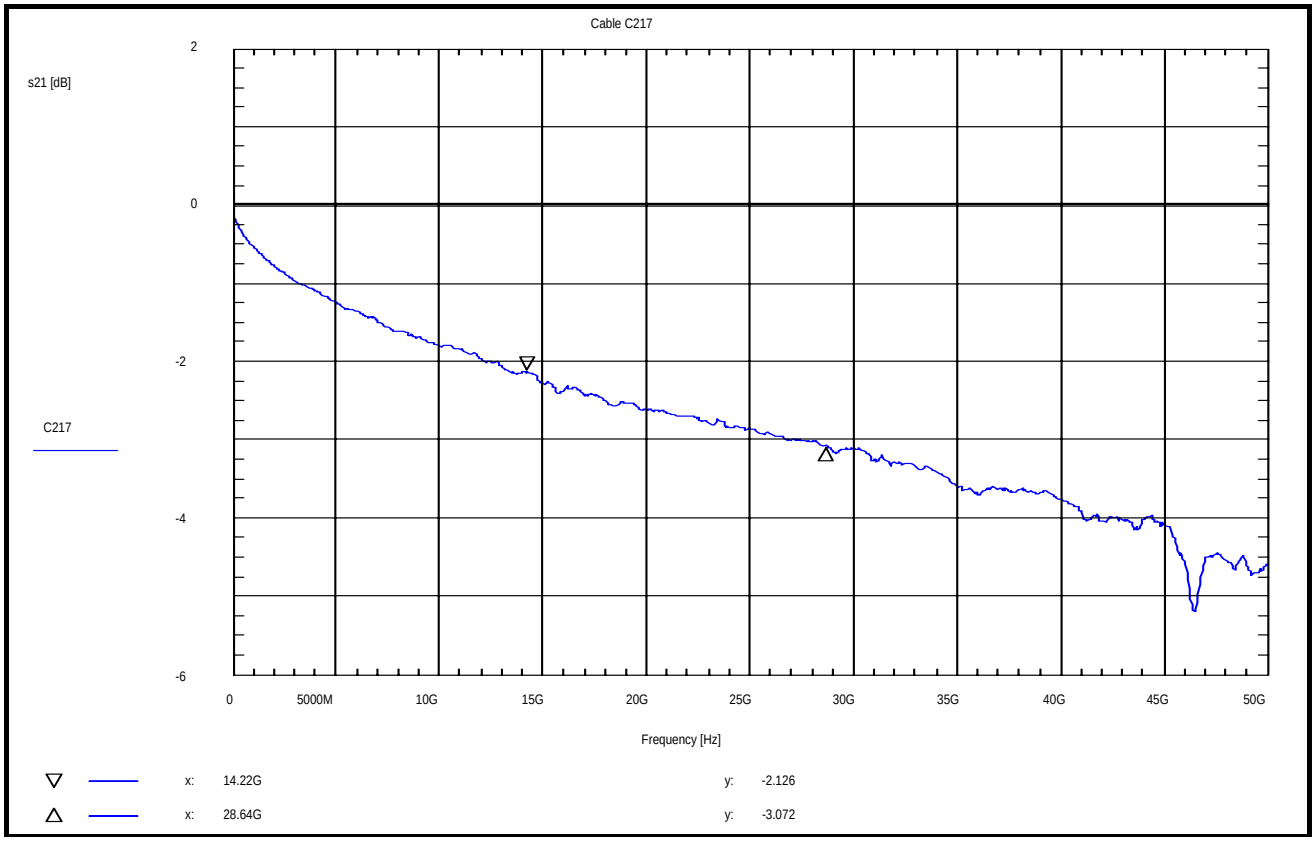
no.	list of contents
1	Amplifier ´11b´: Transmission data (NWA-measurement)
2	Gain versus frequency diagrams of Horn Ant. 1-26.5GHz: ´A037´ ´
3	Coaxial cable ´C217´: Transmission data (NWA-measurement)
4	10dB-Attenuator N-connected ´U214´: Transmission data (NWA-measurement)
5	High Pass Filter 2 GHz SMA-connected ´WHPF´: Transmission data (NWA-measurement)

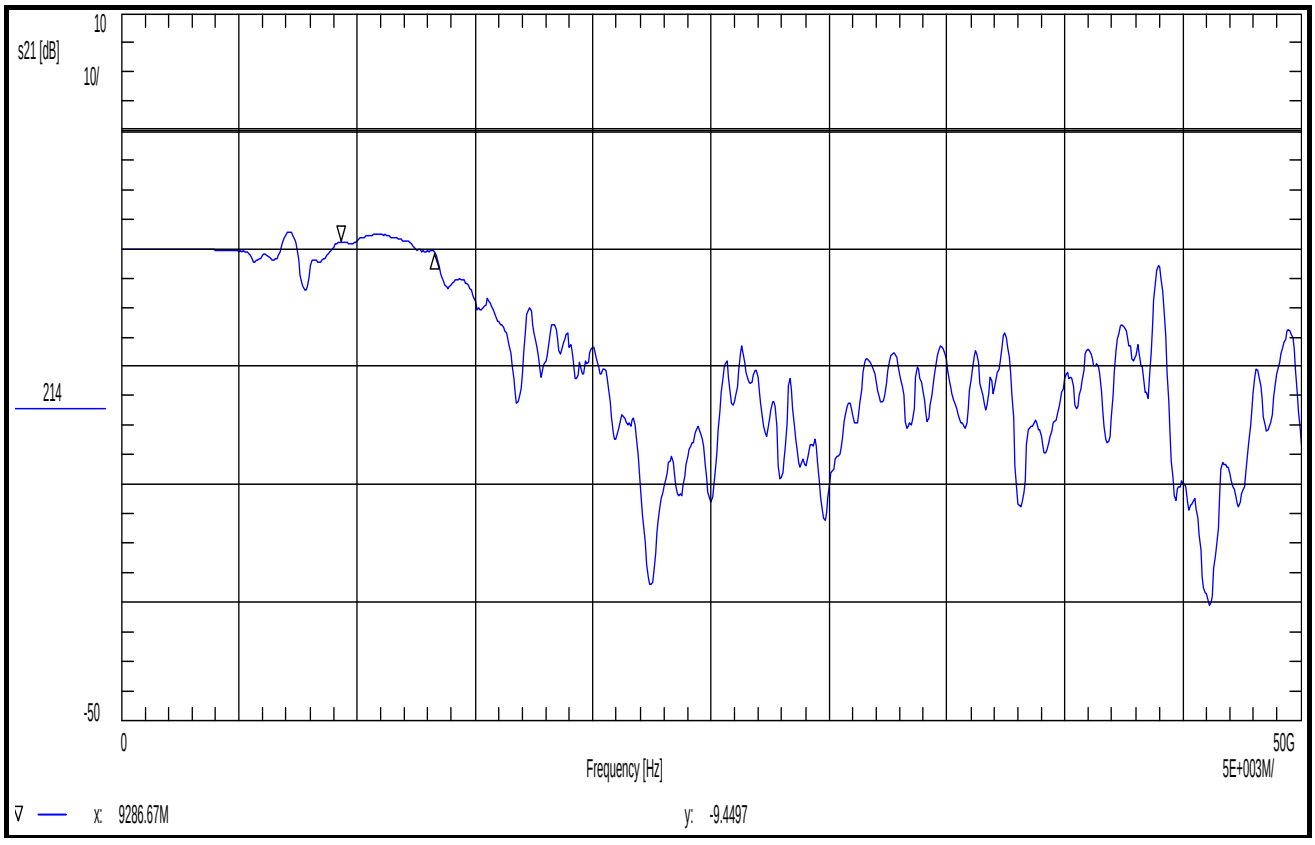
Annex 4: Data of correction 1 - 2



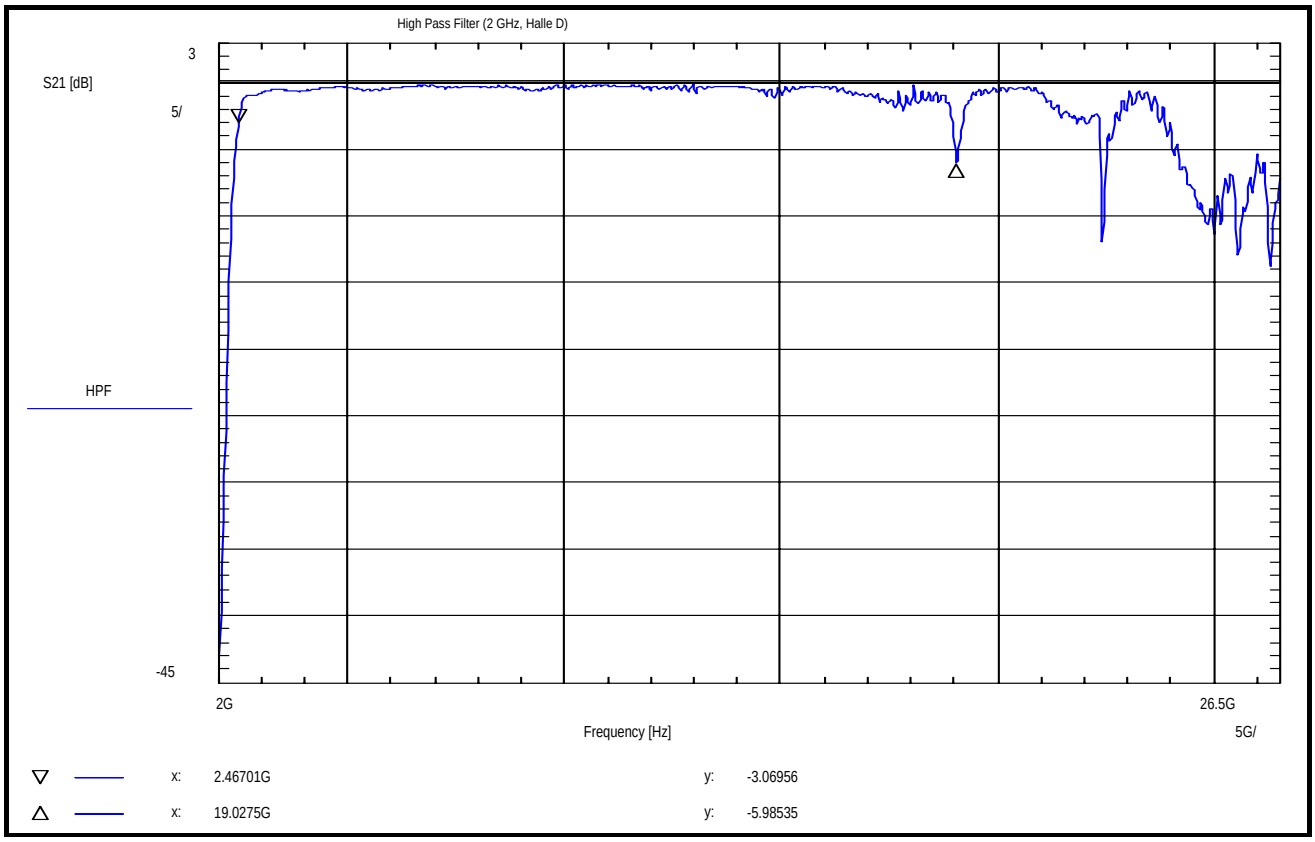


Annex 4: Data of correction 3 - 4





Annex 4: Data of correction 5



Annex 5: Photographs

Annex 5 consists of 18 pages including this page.

no.:	list of contents
1	Test setup for conducted measurements in the test laboratory: cable, Waveguide High-pass filter,10 dB Attenuator and GEM Mode Mobile Hand Held Terminal
2	Stub Tuner, Highpass filter,10 dB Attenuator and GEM Mode Mobile Hand Held Terminal
3	GEM Mode Mobile Hand Held Terminal SO-2510, front side
4	see #3, Satellite Mobile phone Antenna fold up
5	see #3, Satellite Mobile phone Antenna fold out
6	GEM Mode Mobile Hand Held Terminal, type label
7	GEM Mode Mobile Hand Held Terminal, cover removed (circuit board)
8	see #7, detail view
9	see #7
10	see #9, detail view
11	see #7, GPS receiver
12	GEM Mode Mobile Hand Held Terminal, front cover
13	GEM Mode Mobile Hand Held Terminal, back cover
14	AC/DC Adapter
15	Test setup for radiated measurements in anechoic chamber (30 MHz - 18 GHz), turnta-ble 0°
16	see #15, detail view
17	see #15, rear side

Photo no.: 1

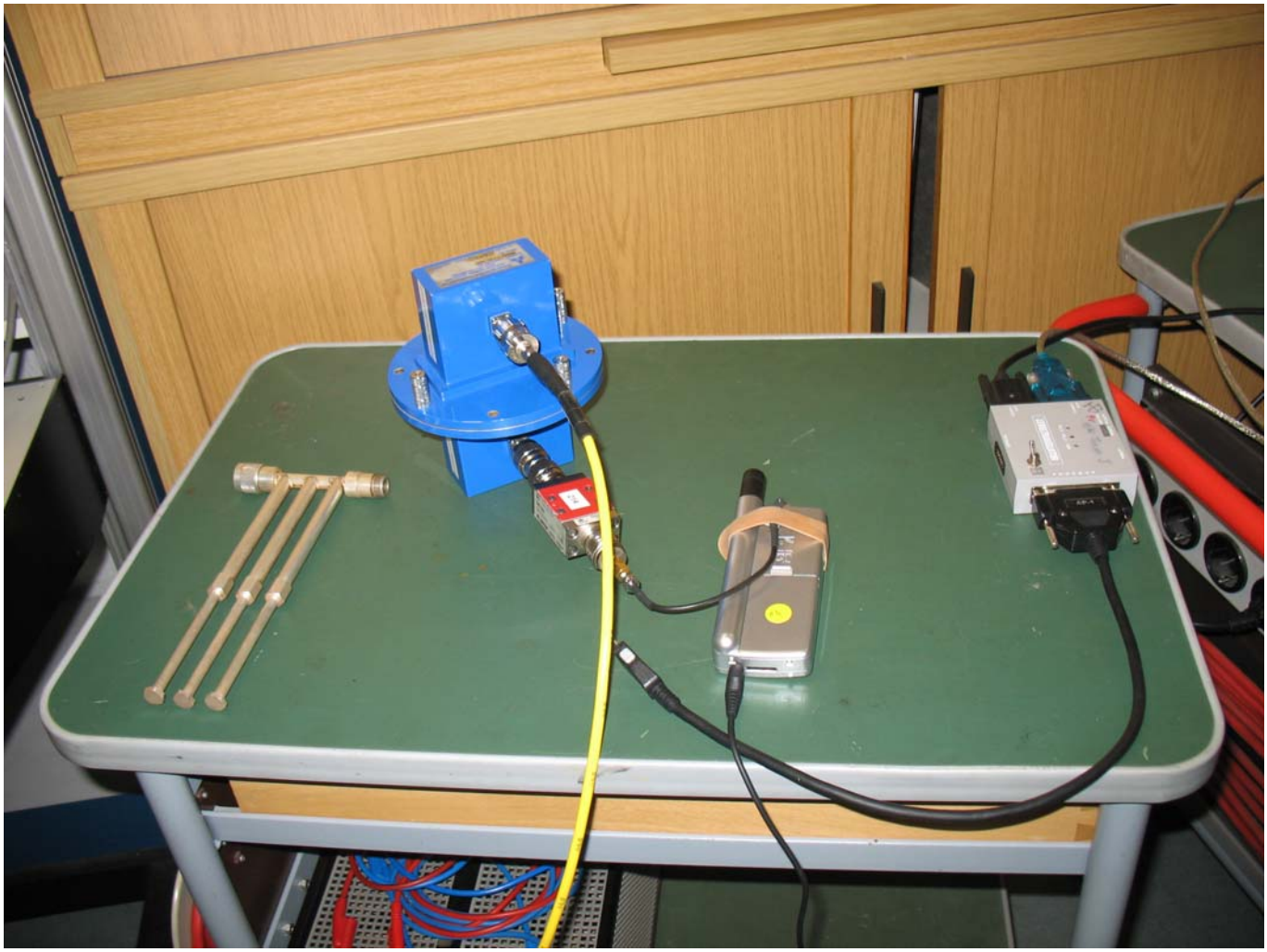


Photo no.: 2

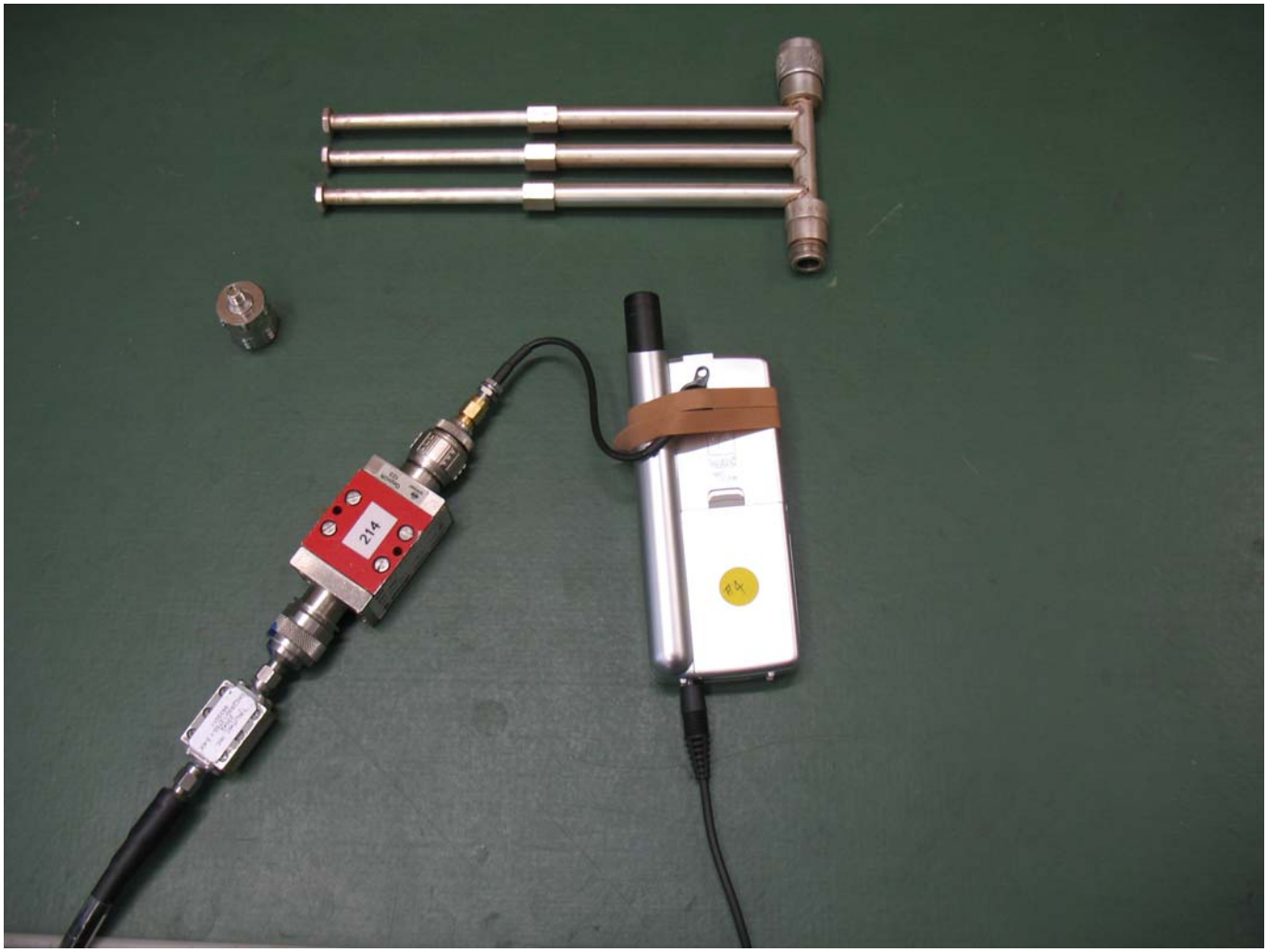


Photo no.: 3

Photo no.: 4

Photo no.: 5

Photo no.: 6

Photo no.: 7

Photo no.: 8

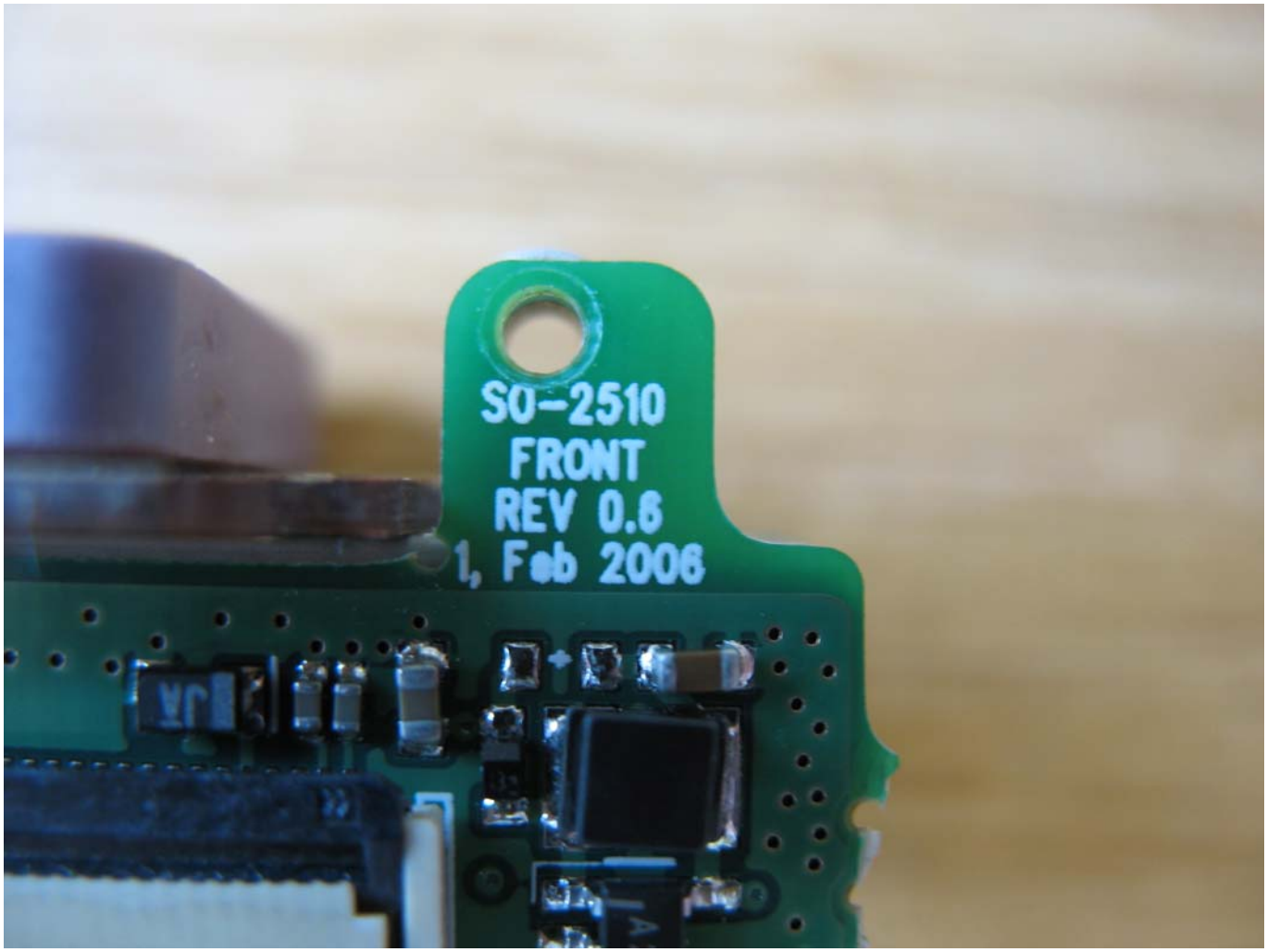


Photo no.: 9

Photo no.: 10

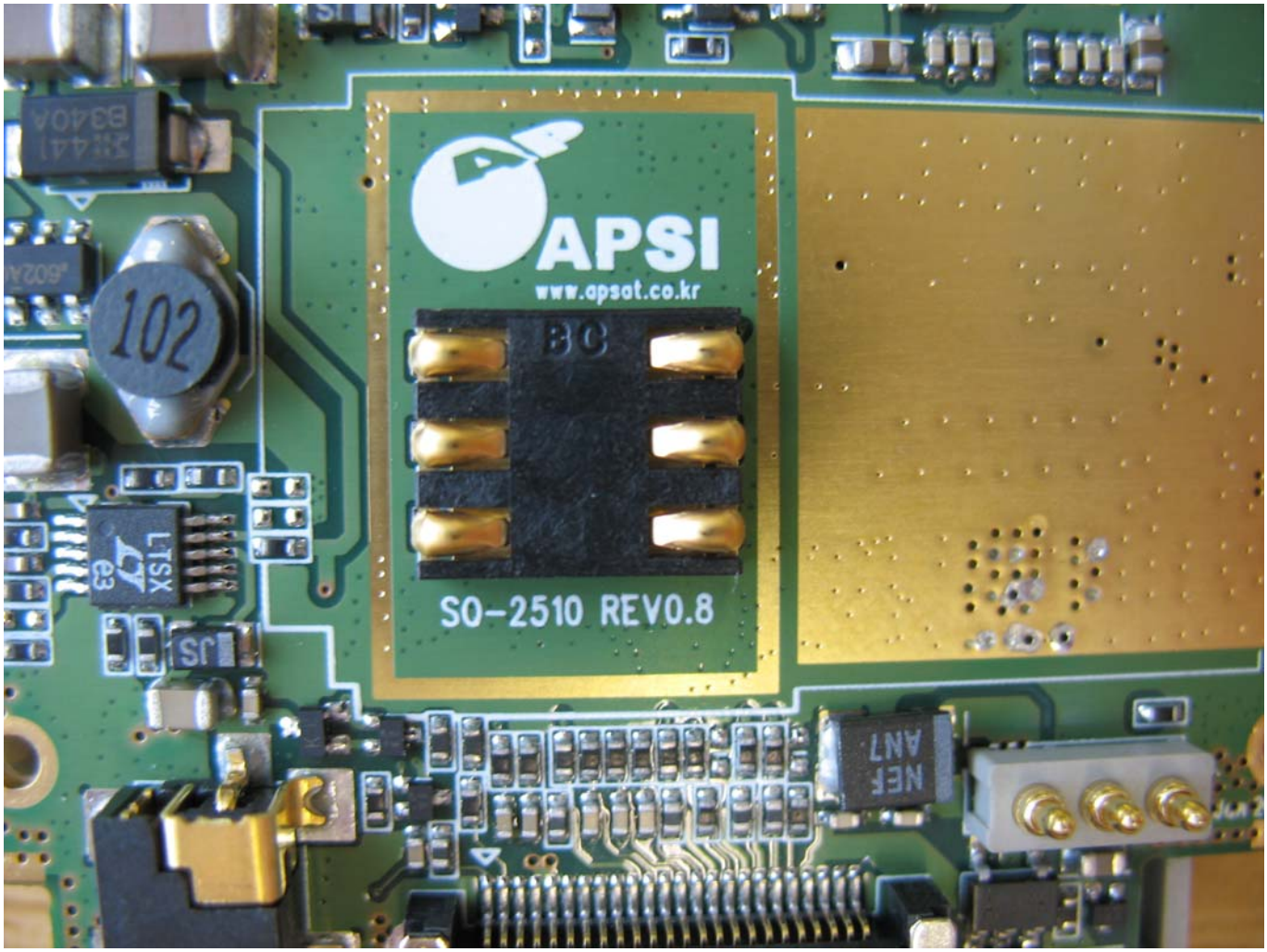


Photo no.: 11

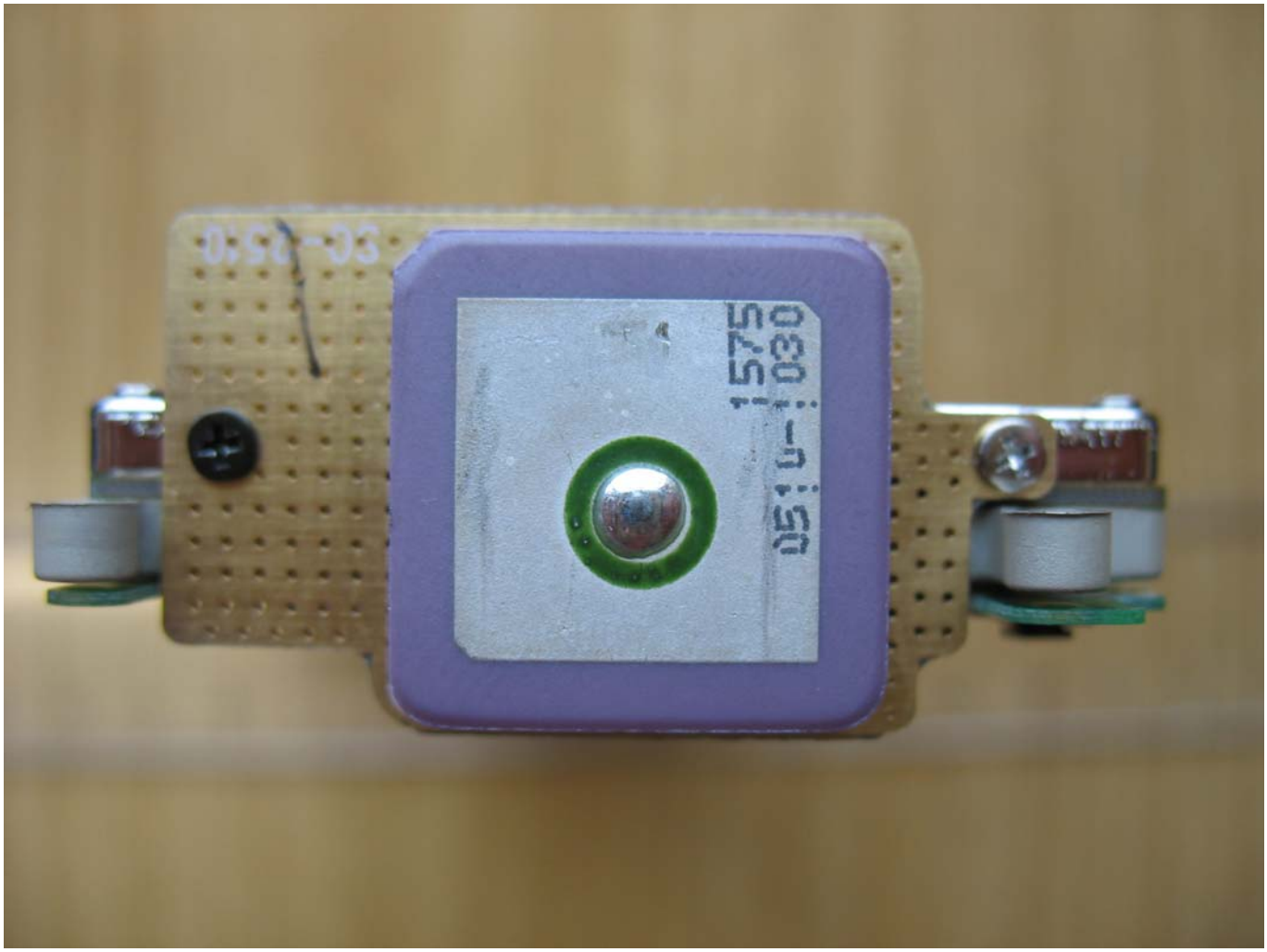


Photo no.: 12

Photo no.: 13

Photo no.: 14


FIT MAINS INPUT PLUG BEFORE USE
AC/DC ADAPTER
Type: FW7650/05
Input: 100-240V~/ 50-60Hz/ 150mA
Output: 5V=/ 1000mA
FWHK
CAUTION:
Made in China
RISK OF ELECTRICAL SHOCK
DRY LOCATION USE ONLY
220-240V
IP40
T40/A
120V Class 2
I.T.E. Power Supply
APSI
Asia Pacific Satellite Industries Co., Ltd.

Photo no.: 15

Photo no.: 16

Photo no.: 17

Annex 6: Technical description(s) of the test item

Annex 6 consists of 3 pages including this page.

no.	list of contents
1	APSI, SO2510 Antenna.doc (2 pages)

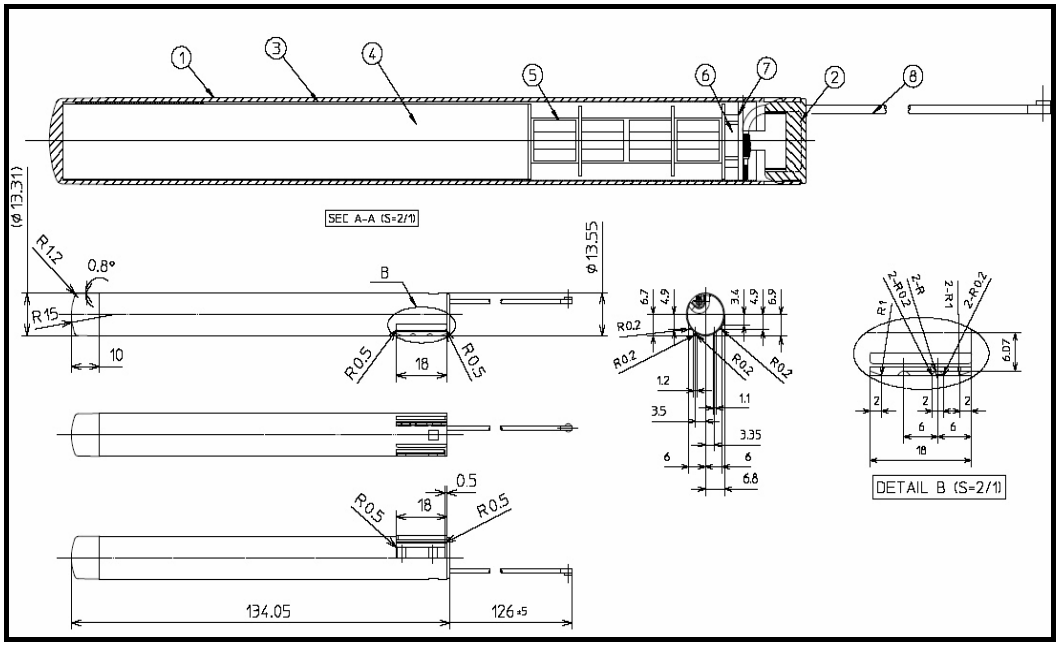
SO-2510, Satellite Mobile phone Antenna

1. Specifications

1.1 Electrical Specifications

Item	Specifications
Tx-band Frequencies	1626.5 - 1660.5 MHz
Rx-band Frequencies	1525 - 1559 MHz
Polarization:	LHCP
Beamwidth	> 90 degree
Maximum Gain @zenith	More than +3.0dBic (Over Rx, and Tx frequency bands)
VSWR	2.0:1 max (over Rx and Tx bands)
Axial Ratio:	5 dB max over freq range at 20 degree elevation. 2 dB max over frequency range at zenith

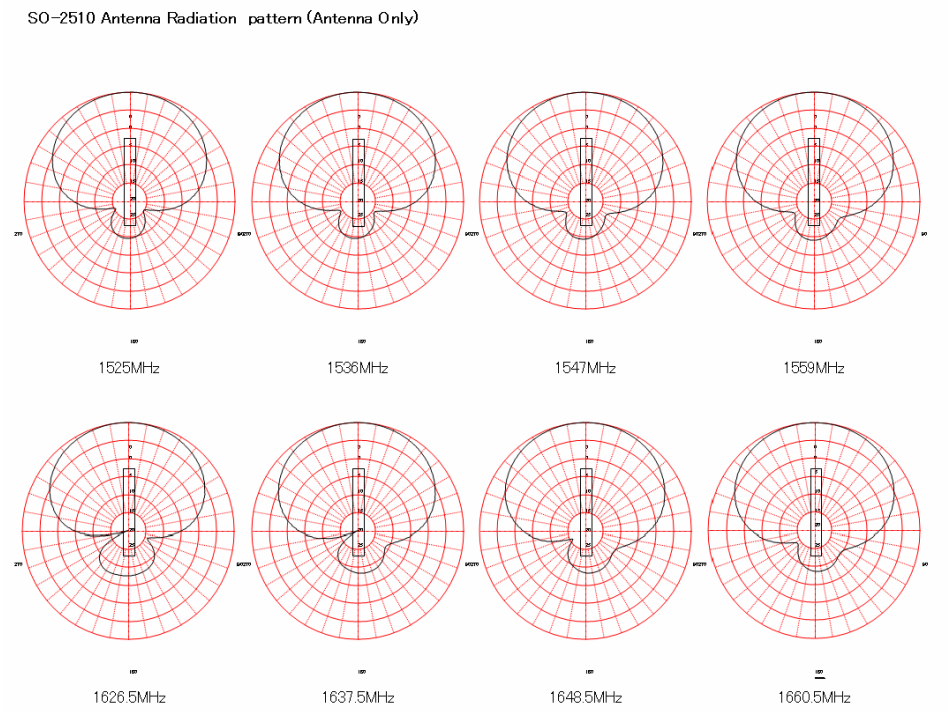
1.2 Mechanical Drawing



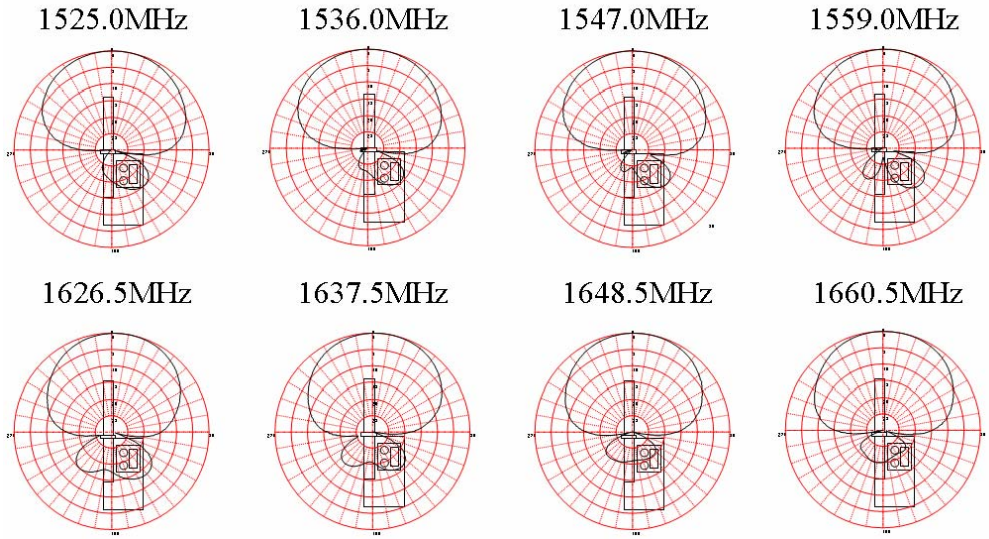
Asia Pacific Satellite Industries Co., Ltd.

2. Antenna Radiation Patterns

2.1 Antenna Only



2.2 Antenna Deployed from Chassis



H. W. Ahn

Hyoung Won Ahn

Asia Pacific Satellite Industries Co., Ltd.