



Accredited testing-laboratory

DAR registration number: DGA-PL-176/94-D1

**Federal Motor Transport Authority (KBA)
DAR registration number: KBA-P 00070-97**

Recognized by the Federal Communications Commission

Anechoic chamber registration no.: 90462 (FCC)

Anechoic chamber registration no.: 3462C-1 (IC)

Certification ID: DE 0001

Accreditation ID: DE 0002

Accredited Bluetooth® Test Facility (BQTF)

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Test report no. : 1-1954-03-06/10-A
Type identification : AAD-3880063-BV
Applicant : Sony Ericsson Mobile Communications AB
FCC ID : PY7A3880063
IC Certification No : 4170B-A3880063
Test standards : 47 CFR Part 15
RSS - 210 Issue 7

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1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in 3.1.1. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.

Test laboratory manager:

2010-02-10

Date

Marco Bertolino

Name



Signature

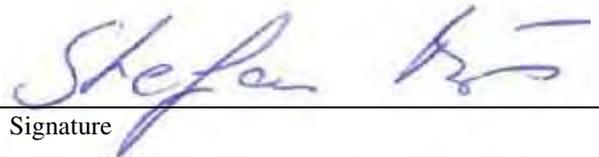
Technical responsibility for area of testing:

2010-02-10

Date

Stefan Bös

Name



Signature

1.2 Testing laboratory

CETECOM ICT Services GmbH

Address: Untertürkheimer Straße 6 - 10
66117 Saarbrücken
Germany
Phone: + 49 681 5 98 - 0
Fax: + 49 681 5 98 - 9075
e-mail: info@ICT.cetecom.de
Internet: http://www.cetecom-ict.de

State of accreditation:

The test laboratory (area of testing) is accredited according to
DIN EN ISO/IEC 17025
DAR registration number: DGA-PL-176/94-D1

Accredited by:

Federal Motor Transport Authority (KBA)
DAR registration number: KBA-P 00070-97

Testing location, if different from CETECOM ICT Services GmbH:

Name :
Street :
Town :
Country :
Phone :
Fax :

1.3 Details of applicant

Name:	Sony Ericsson Mobile Communications AB
Street:	Nya Vattentornet
Town:	22188 Lund
Country:	Sweden
Telephone:	+46-46-19-3000
Fax:	+46-10-800-2441
Contact:	Mr. Johan Wedin
E-mail:	Johan.Wedin@sonyericsson.com
Telephone:	

1.4 Application details

Date of receipt of order:	2010-02-01
Date of receipt of test item:	2010-02-01
Date of start test:	2010-02-08
Date of end test:	2010-02-10
Persons(s) who have been present during the test:	-/-

2 Test standard/s

47 CFR Part 15	2008-07	Title 47 of the Code of Federal Regulations; Chapter I- Federal Communications Commission subchapter A - general, Part 15-Radio frequency devices
RSS - 210 Issue 7	2007-06	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

3 Technical tests

3.1 Details of manufacturer

Name:	Sony Ericsson Mobile Communications AB
Street:	Nya Vattentorget
Town:	22188 Lund
Country:	Sweden

3.1.1 Test item

Kind of test item	: Mobile Phone GSM 850/900/1800/1900/UMTS FDD1/FDD8/ HSDPA / HSUPA / WLAN BT2.1+EDR, A-GPS, FM Rx
Type identification	: AAD-3880063-BV
S/N serial number	: BT / WLAN radiated units: BX901721R5 BX90176ZL3 BT / WLAN conducted units: BX90176ZMB BX901755RR
HW hardware status	: AP1.1
SW software status	: R7BA037 ITP
Frequency Band [MHz]	: ISM band 2400,0 – 2483,5 MHz (channel 1 - 2412 MHz; channel 11 - 2462 MHz)
Type of Modulation	: DSSS & OFDM: BPSK; QPSK; (16 & 64) QAM
Number of channels	: 11
Antenna	: Integrated PCB antenna – for more information, please take a look at sub-clause 8 → Photos of the EUT
Power Supply	: 4.0 V by power supply / Li-polymer battery BST-43
Temperature Range	: -20°C to +55 °C

Max. power radiated: 23.02 dBm (OFDM – mode)

Max. power conducted: 22.15 dBm (OFDM – mode)

Max. power radiated: 21.94 dBm (DSSS – mode)

Max. power conducted: 21.07 dBm (DSSS – mode)

FCC ID: PY7A3880063

IC: 4170B-A3880063

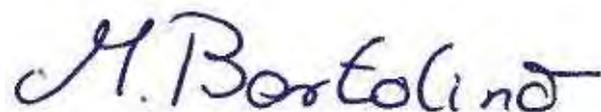
3.1.2 Additional EUT information For IC Canada (appendix 2)

IC Registration Number:	4170B-A3880063
Model Name:	AAD-3880063-BV
Manufacturer (complete Address):	Sony Ericsson Mobile Communications AB Nya Vattentorget 22188 Lund Sweden
Tested to Radio Standards Specification (RSS) No.:	RSS-210 Issue 7
Open Area Test Site Industry Canada Number:	IC 3462C-1
Frequency Range (or fixed frequency) [MHz]:	ISM band 2400,0 – 2483,5 MHz (channel 1 - 2412 MHz; channel 11 - 2462 MHz)
RF: Power [W] (max):	<u>DSSS:</u> Rad. EIRP: 156.31 mW Conducted : 127.94 mW <u>OFDM:</u> Rad. EIRP: 200.45 mW Conducted : 164.06 mW
Antenna Type:	Integrated PCB antenna – for more information, please take a look at sub-clause 8 → Photos of the EUT
Occupied Bandwidth (99% BW) [MHz]:	DSSS: 16.60 OFDM: 18.39
Type of Modulation:	DSSS & OFDM: BPSK; QPSK; (16 & 64) QAM
Emission Designator (TRC-43):	16M6G1D (DSSS) 18M4GXD (OFDM)
Transmitter Spurious (worst case) [dBµV/m in 3m]:	44.69
Receiver Spurious (worst case) [dBµV/m in 3m]:	44.76

ATTESTATION:

I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned departmental standard(s), and that the radio equipment identified in this application has been subject to all applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

Signature:



Test engineer: Marco Bertolino

Date: 2010-02-10

3.1.3 EUT operating modes

EUT operating mode no.*)	Description of operating modes	Additional information
Op. 0	normal mode	normal temperature and power source conditions
Op. 1		low temperature, low power source conditions
Op. 2		low temperature, high power source conditions
Op. 3		high temperature, low power source conditions
Op. 4		high temperature, high power source conditions

*) EUT operating mode no. is used to simplify the test plan

3.1.4 Extreme conditions testing values

Description	Shortcut	Unit	Value
Nominal Temperature / humidity	T_{nom}	°C / %	20 / 38
Low Temperature	T_{low}	°C	-20
High Temperature	T_{high}	°C	+55
Nominal Power Source	V_{nom}	V	4.0
Low Power Source	V_{low}	V	3.4
High Power Source	V_{high}	V	4.6

Type of power source: DC by power supply / Li-polymer battery BST-43

4 Summary of Measurement Results and list of all performed test cases

- No deviations from the technical specifications were ascertained
- There were deviations from the technical specifications ascertained

TC identifier	Description	verdict	date	Remark
RF-Testing	FCC Part 15 §15.247 - CANADA RSS-210	PASS	2010-02-10	-/-

Test Specification Clause	Test Case	Pass	Fail	Not applicable	Not performed
None	Antenna Gain	Yes			
§15.247 (e)	Peak power spectral density	Yes			
§15.247(a)(2)	Spectrum Bandwidth of a DSSS System / 6dB BW	Yes			
§15.247(a)(2)	Spectrum Bandwidth of a DSSS System / 20dB BW	Yes			
§ 15.247 (b)(3)	Maximum output power (conducted)	Yes			
§ 15.247 (b)(3)	Max. peak output power (radiated)	Yes			
§15.247 (d)	Band-edge compliance of conducted emissions	Yes			
§15.205	Band-edge compliance of radiated emissions	Yes			
§15.247 (d)	Spurious Emission - conducted (Transmitter)	Yes			
§ 15.209	Spurious Emission -radiated (Transmitter)	Yes			
§ 15.109	Spurious Emissions-radiated (Receiver)	Yes			
§ 15.209	Spurious Emissions-radiated <30 MHz	Yes			
§ 15.107/207	Conducted Emissions <30 MHz	Yes			

5 RF measurement testing

5.1 Description of test set-up

5.1.1 Radiated measurements

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 20 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber.

The receiving antennas are confirmed with specifications ANSI C63.2-1996 clause 15 and ANSI C63.4-2003 clause 4.1.5. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test set-ups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received.

The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.4-2003 clause 4.2.

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

9 kHz - 150 MHz: Quasi Peak measurement, 200 Hz Bandwidth, active loop antenna.

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

30 MHz - 200 MHz: Quasi Peak measurement, 120 kHz Bandwidth, tri-log antenna

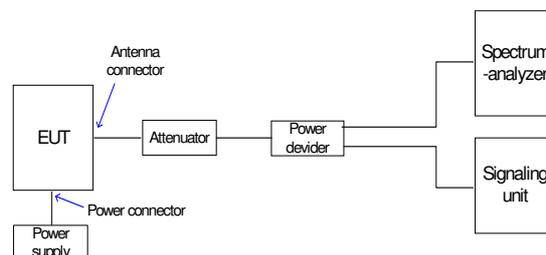
200MHz - 1GHz: Quasi Peak measurement, 120 kHz Bandwidth, tri-log antenna

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

All measurement settings are according to FCC 15.209 and 15.207

5.1.2 Conducted measurements

The EUT's RF signal is coupled out by the antenna connector which is supplied by the manufacturer. The signal is connected to the spectrum analyzer. The specific losses for signal path are first checked within a calibration. The measurement readings on the spectrum analyzer are corrected by the specific test set-up loss. The attenuator, power divider, signalling unit and the spectrum analyzer are impedance matched on 50 Ohm.



5.2 Referenced Documents

None

5.3 Additional comments

DSSS – mode: power setting 17

OFDM – mode: power setting 13

5.4 Antenna gain

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.

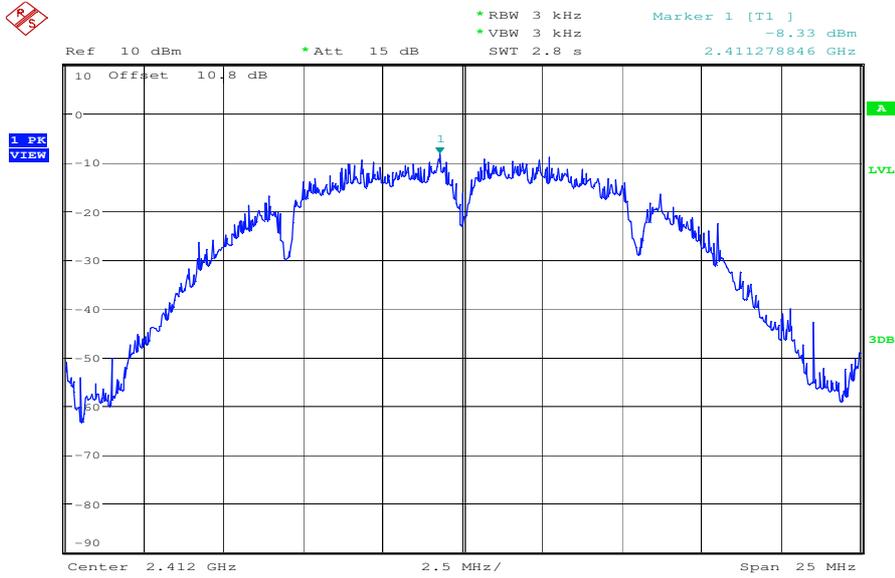
Results:

DSSS – mode	low channel	mid channel	high channel
Conducted power [dBm] <i>(measured)</i>	19.73	20.40	21.07
Radiated power [dBm] <i>(measured)</i>	21.07	21.43	21.94
Gain [dBi] <i>(calculated)</i>	1.34	1.03	0.87

5.5 Peak Power Spectral density (digitally modulated systems) §15.247(e)

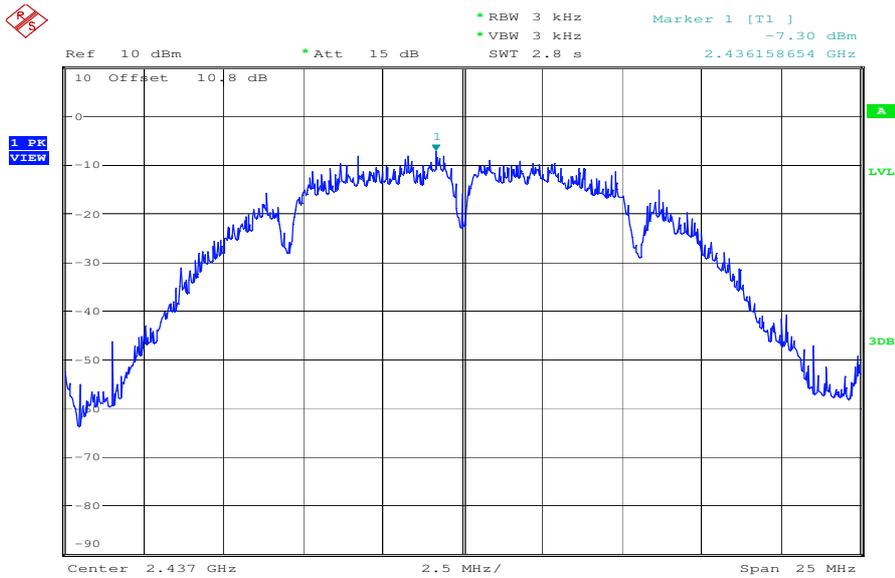
DSSS – mode:

Plot 1: lowest channel



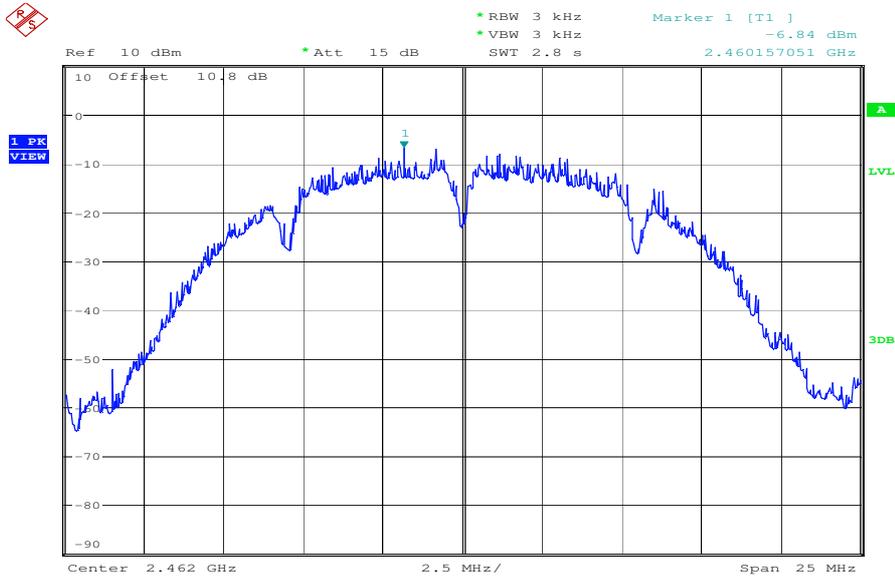
Date: 10.FEB.2010 09:28:40

Plot 2: middle channel



Date: 10.FEB.2010 09:29:44

Plot 3: highest channel



Date: 10.FEB.2010 09:33:15

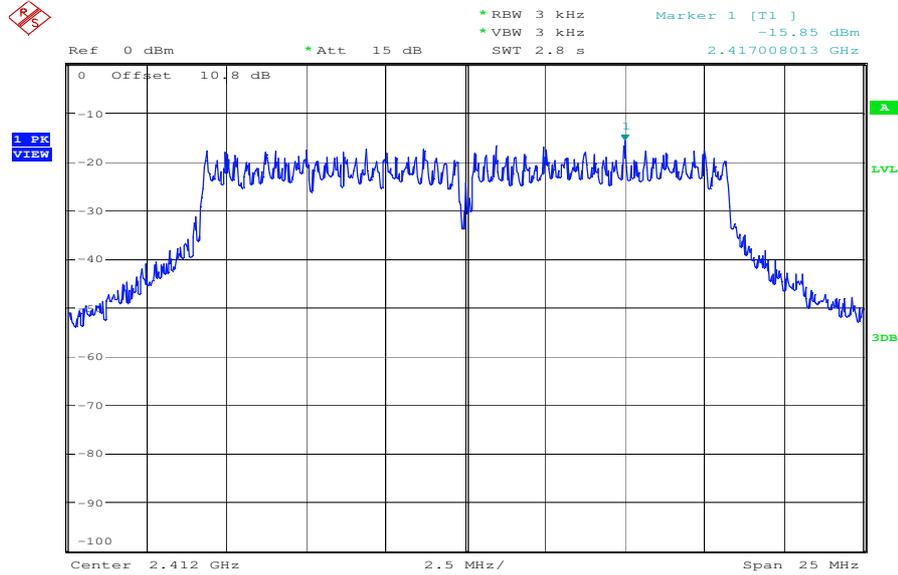
- Results:**
- Plot 1: Power density: -8.33 dBm / 3 kHz
 - Plot 2: Power density: -7.30 dBm / 3 kHz
 - Plot 3: Power density: -6.84 dBm / 3 kHz

Limits:

Under normal test conditions only	For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission
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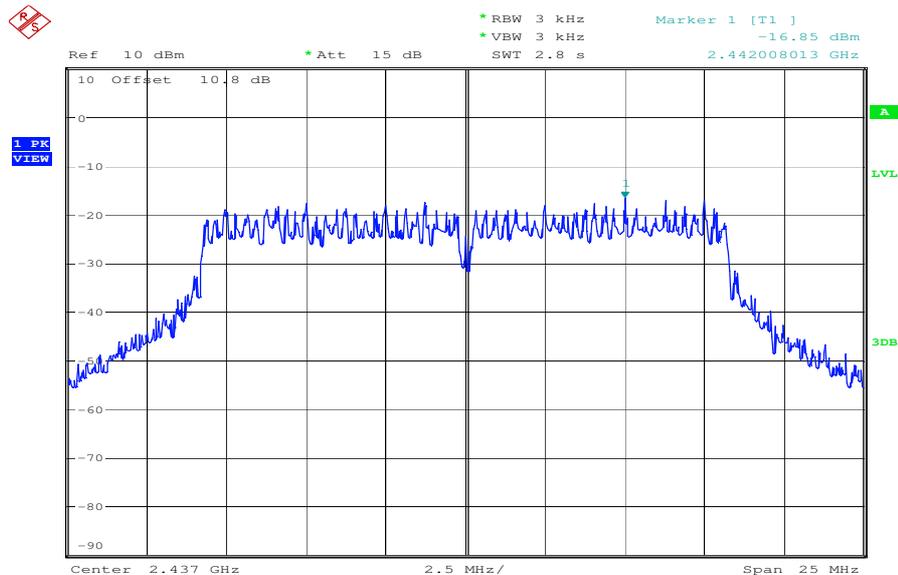
OFDM – mode:

Plot 1: lowest channel



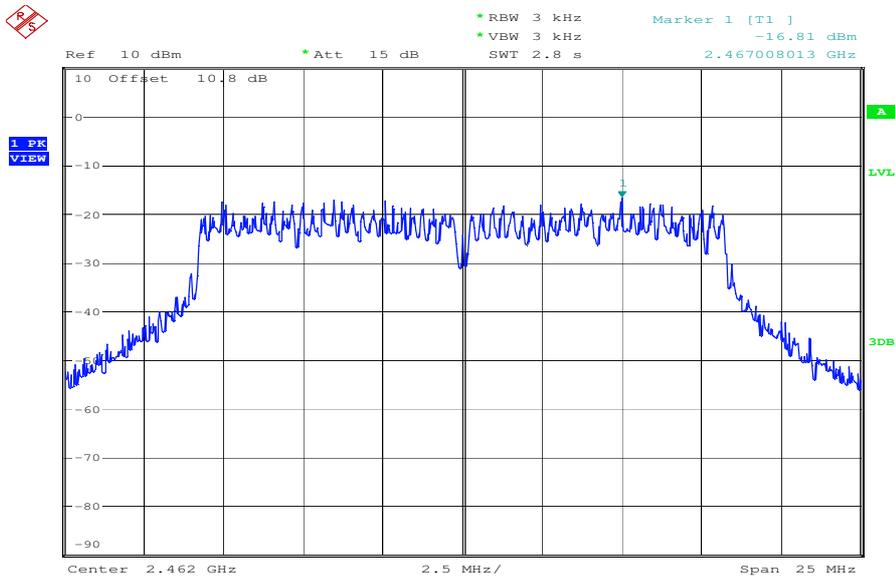
Date: 10.FEB.2010 09:24:54

Plot 2: middle channel



Date: 10.FEB.2010 09:30:35

Plot 3: highest channel



Date: 10.FEB.2010 09:32:19

- Results:**
- Plot 1: Power density: -15.85 dBm / 3 kHz
 - Plot 2: Power density: -16.85 dBm / 3 kHz
 - Plot 3: Power density: -16.81 dBm / 3 kHz

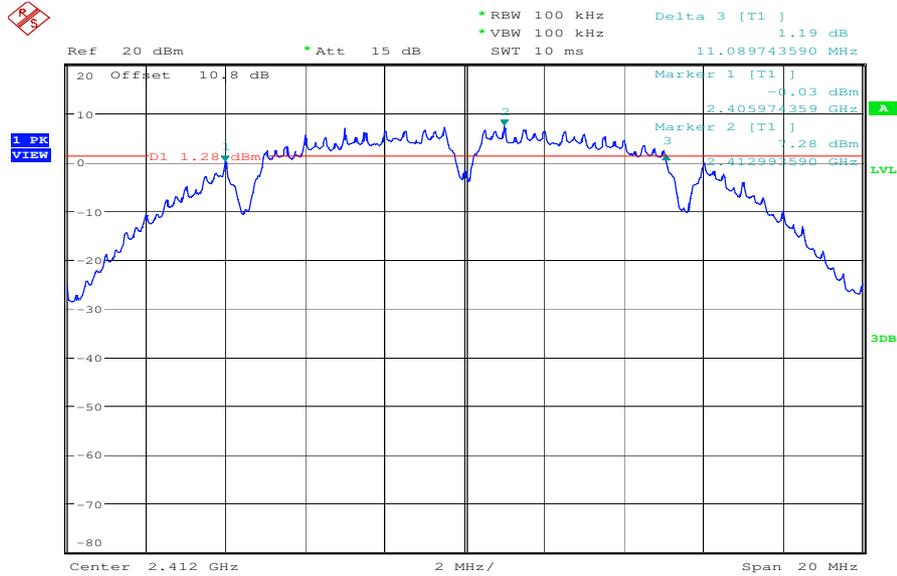
Limits:

Under normal test conditions only	For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission
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5.6 Spectrum Bandwidth of a DSSS System / 6 dB Bandwidth §15.247(a)(2)

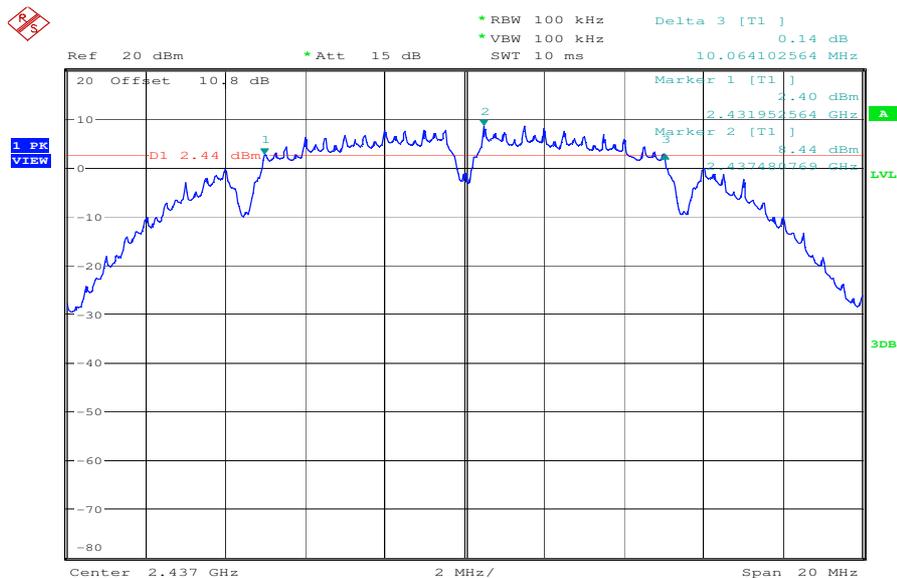
DSSS – mode:

Plot 1: lowest channel



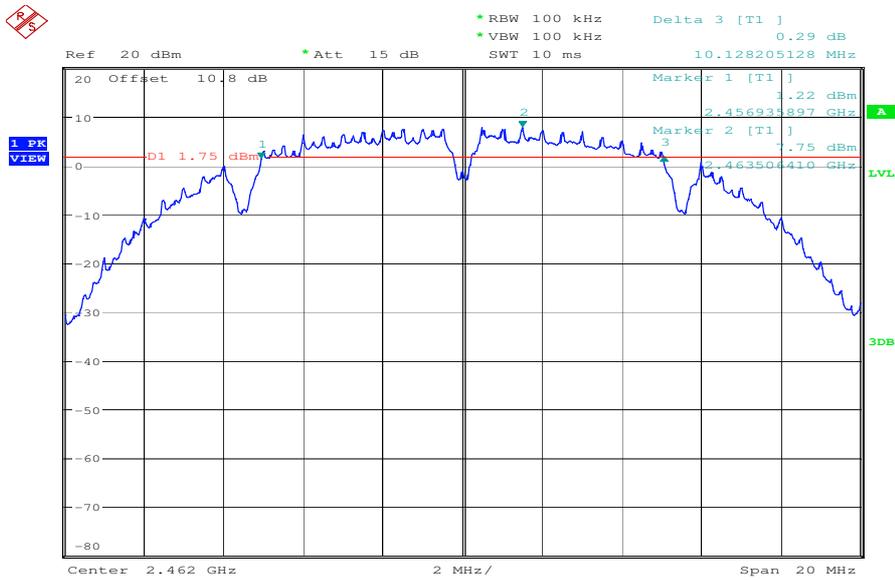
Date: 10.FEB.2010 08:50:05

Plot 2: middle channel



Date: 10.FEB.2010 08:56:12

Plot 3: highest channel



Date: 10.FEB.2010 09:01:09

Results:

Test conditions		6 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	11.09	10.06	10.13
Measurement uncertainty		± 100 kHz		

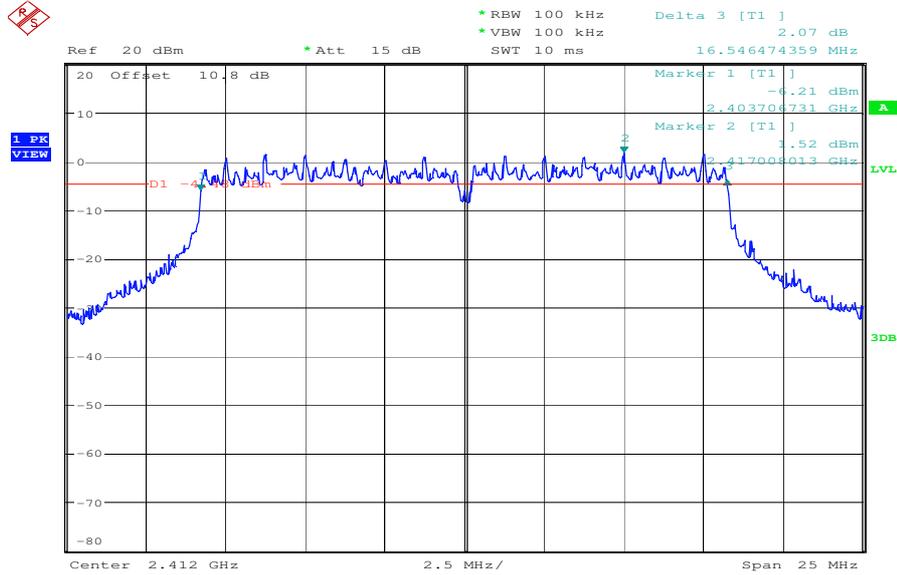
RBW: 100 kHz / VBW 100 kHz

Limits:

Under normal test conditions only	> 500 kHz
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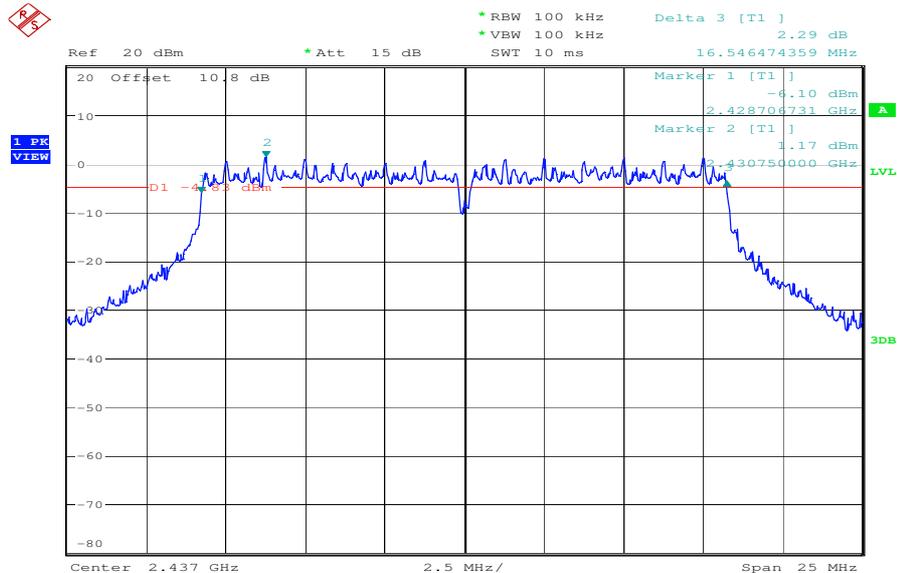
OFDM – mode:

Plot 1: lowest channel



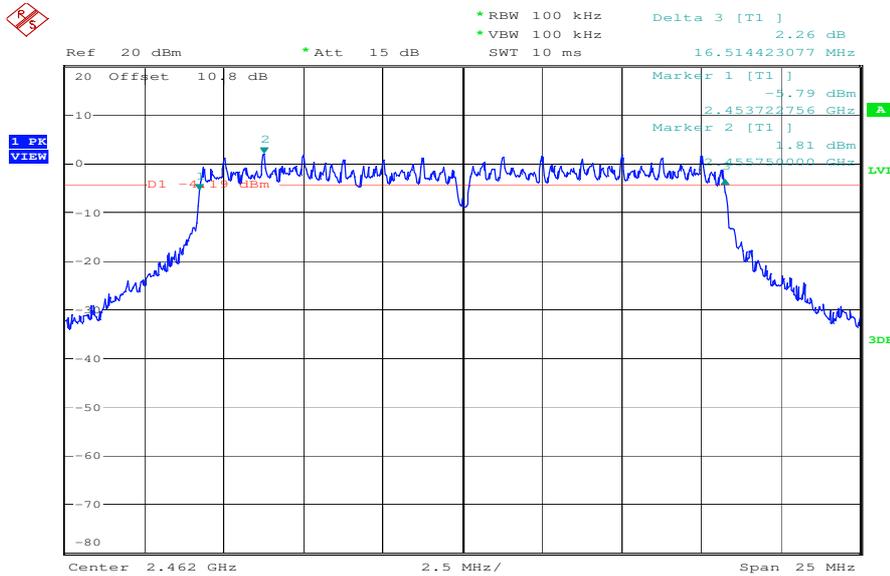
Date: 10.FEB.2010 09:16:41

Plot 2: middle channel



Date: 10.FEB.2010 09:12:29

Plot 3: highest channel



Date: 10.FEB.2010 09:07:31

Results:

Test conditions		6 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	16.55	16.55	16.51
Measurement uncertainty		± 100 kHz		

RBW: 100 kHz / VBW 100 kHz

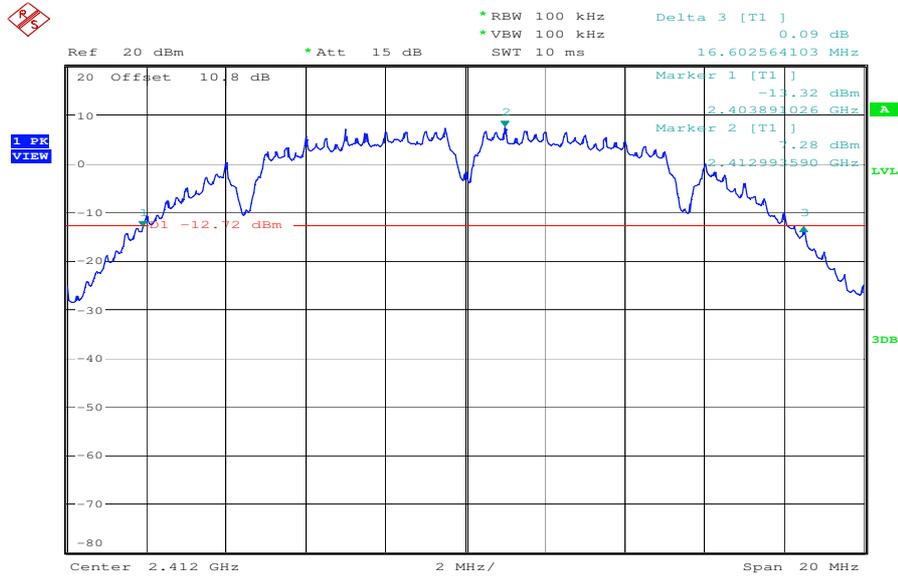
Limits:

Under normal test conditions only	> 500 kHz
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5.7 Spectrum Bandwidth of a DSSS System / 20 dB Bandwidth

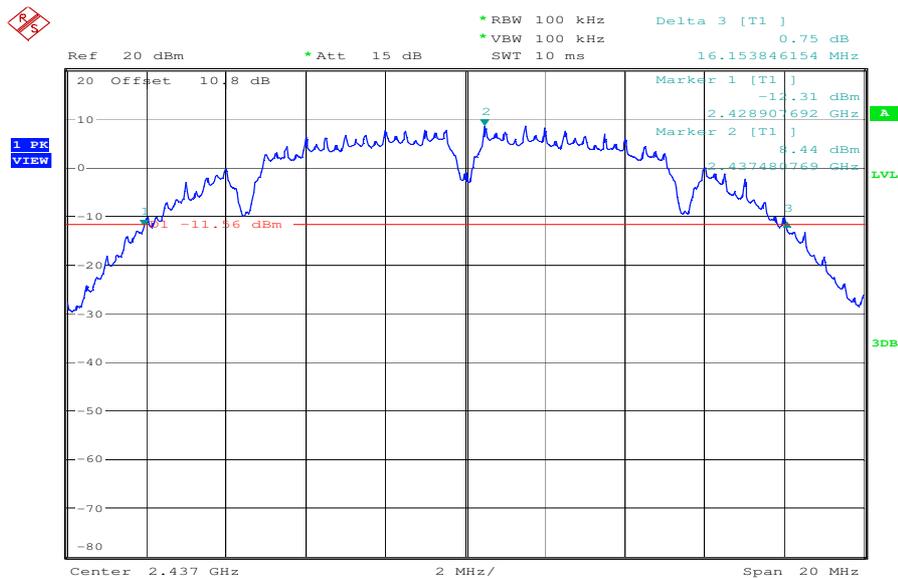
DSSS – mode:

Plot 1: lowest channel



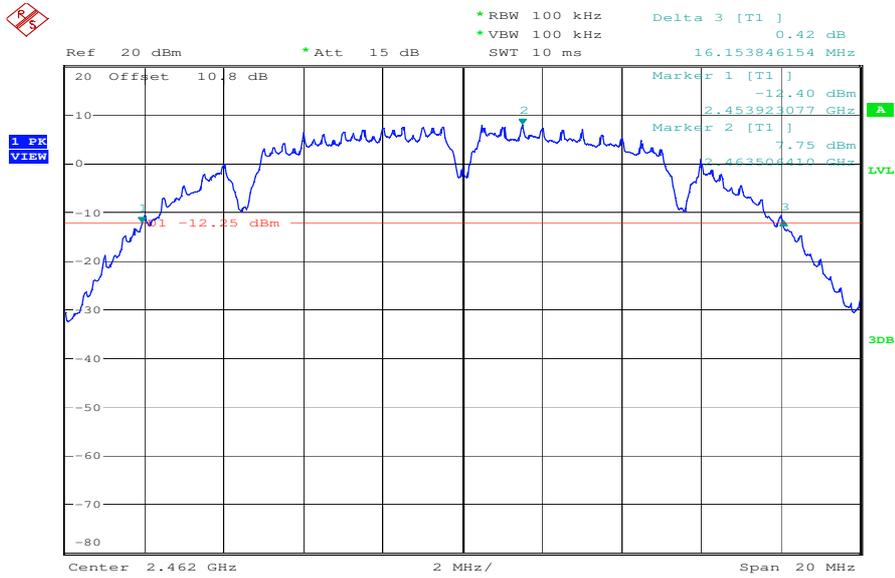
Date: 10.FEB.2010 08:52:18

Plot 2: middle channel



Date: 10.FEB.2010 08:57:29

Plot 3: highest channel



Date: 10.FEB.2010 09:02:00

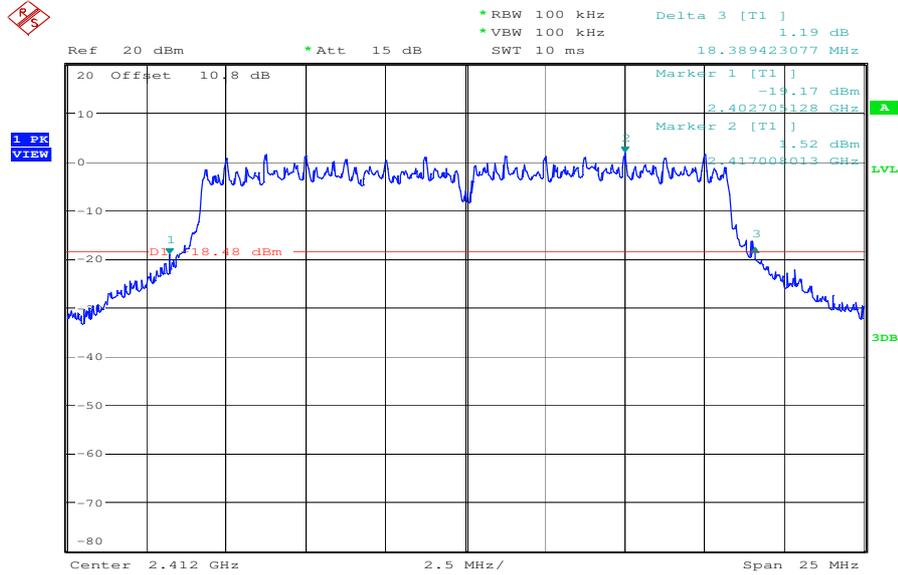
Results:

Test conditions		20 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	16.60	16.15	16.15
Measurement uncertainty		± 100 kHz		

RBW: 100 kHz / VBW 100 kHz

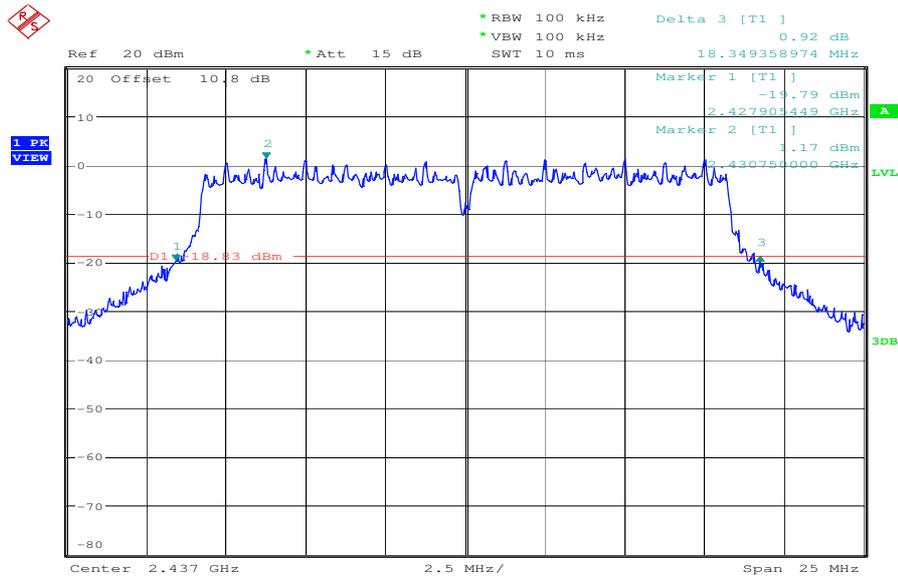
OFDM – mode:

Plot 1: lowest channel



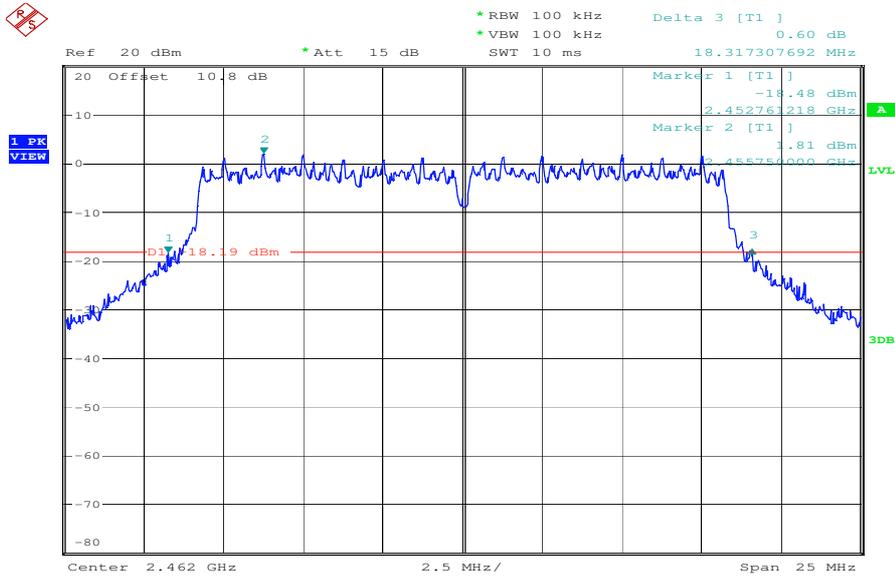
Date: 10.FEB.2010 09:17:28

Plot 2: middle channel



Date: 10.FEB.2010 09:14:12

Plot 3: highest channel



Date: 10.FEB.2010 09:08:32

Results:

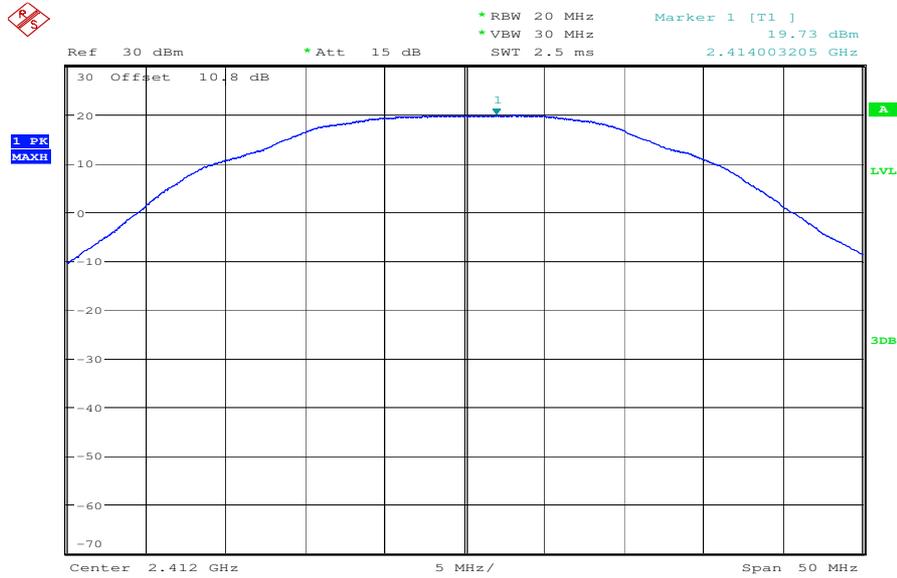
Test conditions		20 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	18.39	18.35	18.32
Measurement uncertainty		± 100 kHz		

RBW: 100 kHz / VBW 100 kHz

5.8 Maximum output power (conducted) §15.247 (b)(3)

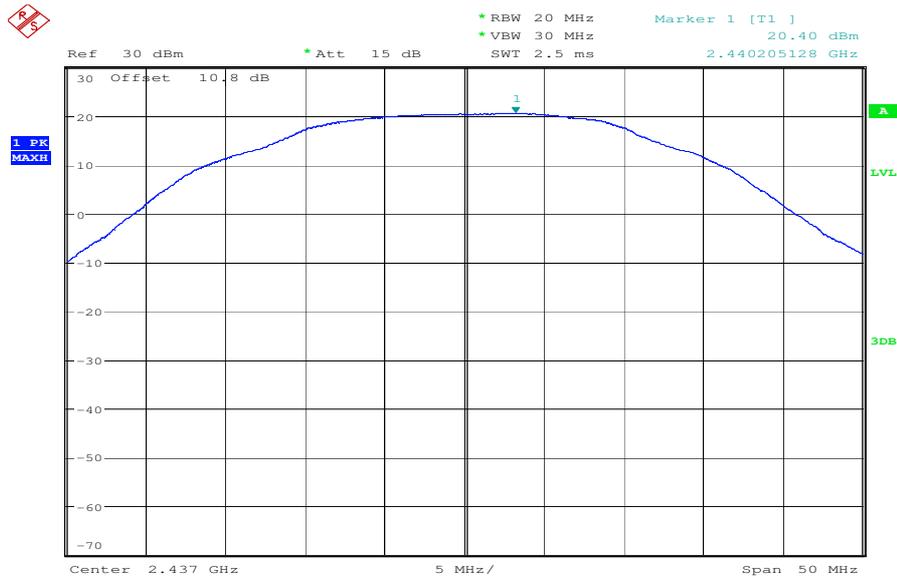
DSSS – mode:

Plot 1: lowest channel



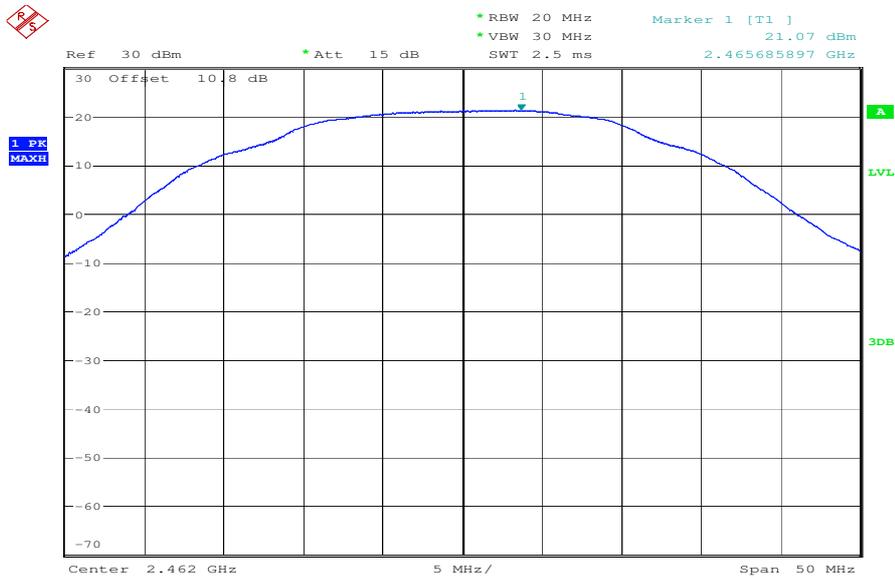
Date: 10.FEB.2010 09:36:37

Plot 2: middle channel



Date: 10.FEB.2010 09:43:58

Plot 3: highest channel



Date: 10.FEB.2010 09:57:48

Results:

Test conditions		Max. peak output power [dBm]			
Frequency [MHz]		2412		2437	2462
T _{nom}	V _{nom}	PK	19.73	20.40	21.07
Measurement uncertainty		±3dB			

RBW / VBW: 20 MHz / 50 MHz

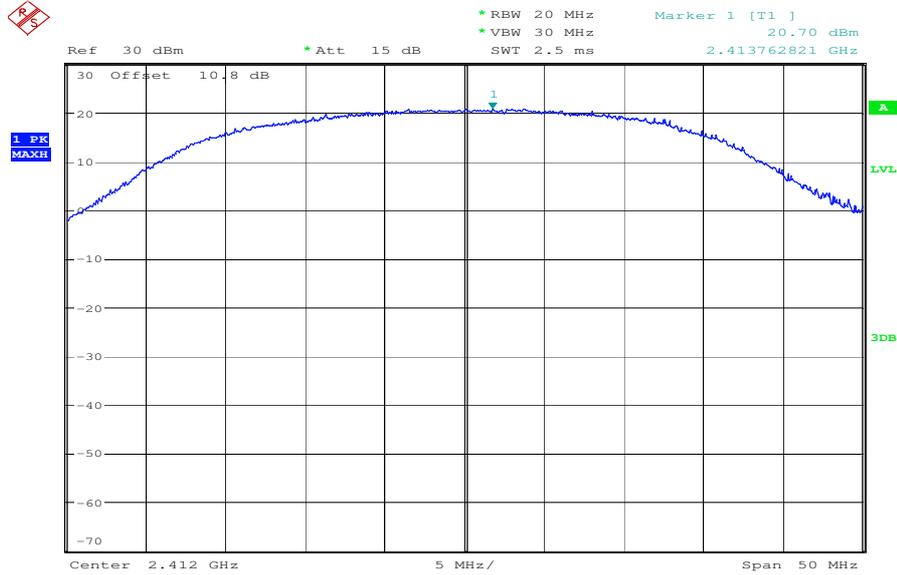
TEST CONDITIONS		TRANSMITTER POWER [dBm] (Average value)					
		lowest frequency		middle frequency		highest frequency	
T _{nom}	V _{nom}	cond	17.45	cond	17.95	cond	17.49

Limits:

Under normal test conditions only, for frequency range 2400-2483.5 MHz	Max. 1.0 Watt / 30 dBm
--	------------------------

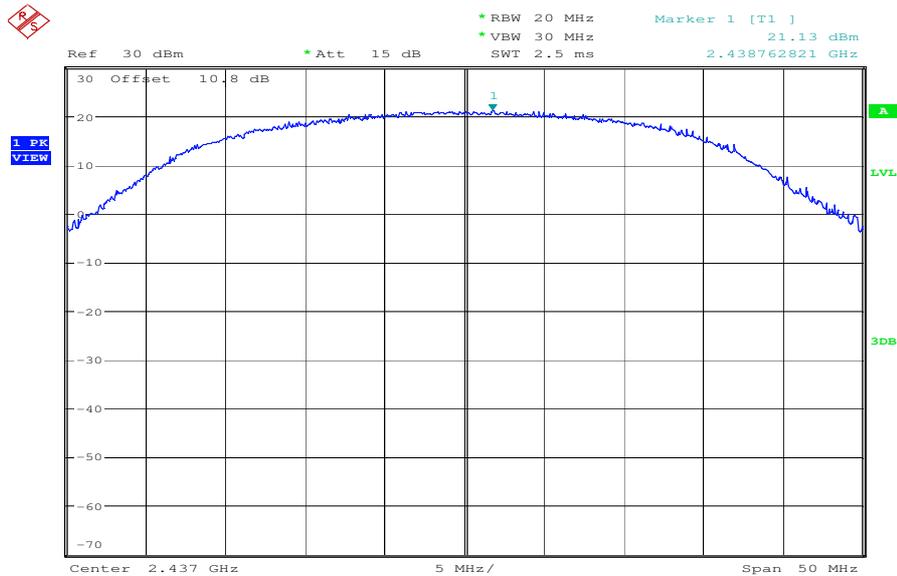
OFDM – mode:

Plot 1: lowest channel



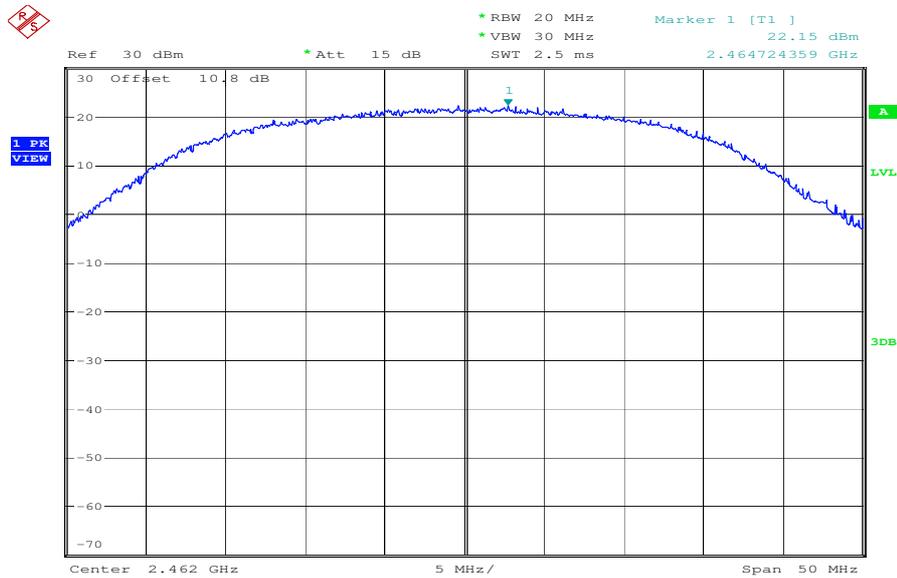
Date: 10.FEB.2010 09:38:26

Plot 2: middle channel



Date: 10.FEB.2010 09:39:50

Plot 3: highest channel



Date: 10.FEB.2010 09:59:15

Results:

Test conditions		Max. peak output power [dBm]					
Frequency [MHz]		2412		2437		2462	
T _{nom}	V _{nom}	PK	20.70	21.13	22.15		
Measurement uncertainty		±3dB					

RBW / VBW: 20 MHz / 50 MHz

TEST CONDITIONS		TRANSMITTER POWER [dBm] (Average value)					
		lowest frequency		middle frequency		highest frequency	
T _{nom}	V _{nom}	cond	13.04	cond	13.62	cond	13.43

Limits:

Under normal test conditions only, for frequency range 2400-2483.5 MHz	Max. 1.0 Watt / 30 dBm
--	------------------------

5.9 Max. peak output power (radiated) §15.247 (b)(3)

DSSS – mode:

Results:

Test conditions		Max. peak output power EIRP [dBm]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	21.07	21.43	21.94
Measurement uncertainty		±3dB		

RBW / VBW: 20 MHz / 50 MHz

Measured at a distance of 3m

TEST CONDITIONS		TRANSMITTER POWER [dBm] (Average value)					
		lowest frequency		middle frequency		highest frequency	
T _{nom}	V _{nom}	rad	18.79	rad	18.98	rad	18.36

OFDM – mode:

Results:

Test conditions		Max. peak output power EIRP [dBm]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	22.04	22.16	23.02
Measurement uncertainty		±3dB		

RBW / VBW: 20 MHz / 50 MHz

Measured at a distance of 3m

TEST CONDITIONS		TRANSMITTER POWER [dBm] (Average value)					
		lowest frequency		middle frequency		highest frequency	
T _{nom}	V _{nom}	rad	14.38	rad	14.65	rad	14.30

Limits:

Under normal test conditions only, for frequency range 2400-2483.5 MHz	Max. 1.0 Watt
--	---------------

MPE calculation

These equations are generally accurate in the far field of an antenna but will over predict power density in the near field, where they could be used for making a “worst case” prediction.

$$S = PG/4\pi R^2$$

where S = power density (in appropriate units, e.g. mW/cm²)
P = power input to the antenna (in appropriate units e.g. mW)
G = power gain of the antenna in the direction of interest relative to the isotropic radiator
R = distance to the centre of radiation of the antenna (appropriate units e.g. cm)

Or

$$S = EIRP/4\pi R^2$$

where EIRP = equivalent isotropically radiated power

Calculation:

(Calculated for max. EIRP)

EIRP: 23.02 dBm (200.45 mW)

calculated at distance of 20 cm:

power density = $200.45 / 4 \pi 20^2 = 0.0399 \text{ mW/cm}^2$

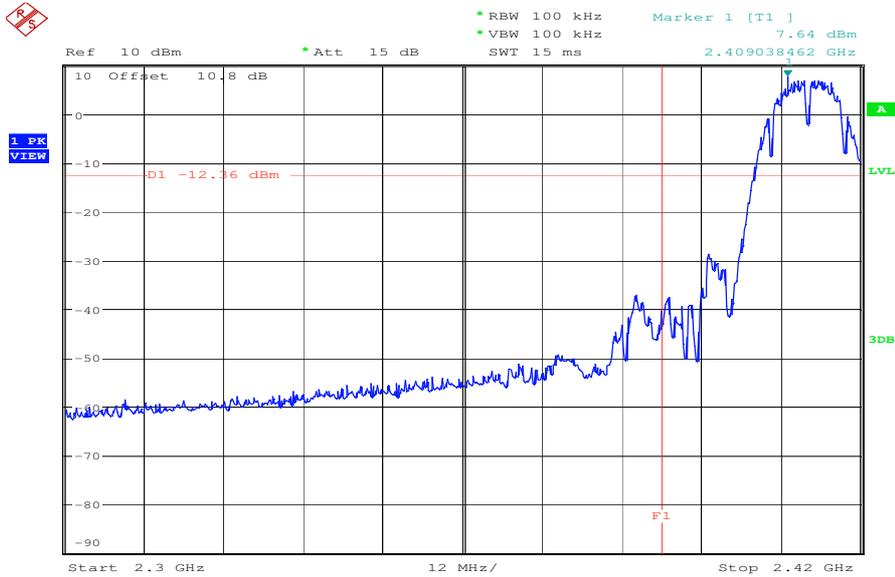
Limit:

1mW/cm ² is the reference level for general public exposure according to the OET Bulletin 65, Edition 97-01 Table 1.
--

5.10 Band-edge compliance of conducted emissions §15.247 (d)

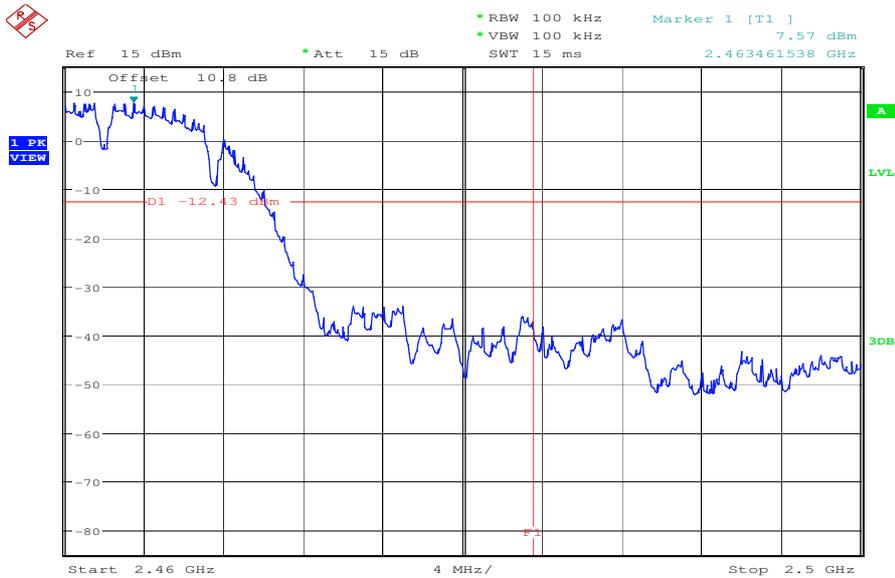
DSSS – mode:

Plot 1: lowest channel



Date: 10.FEB.2010 10:07:01

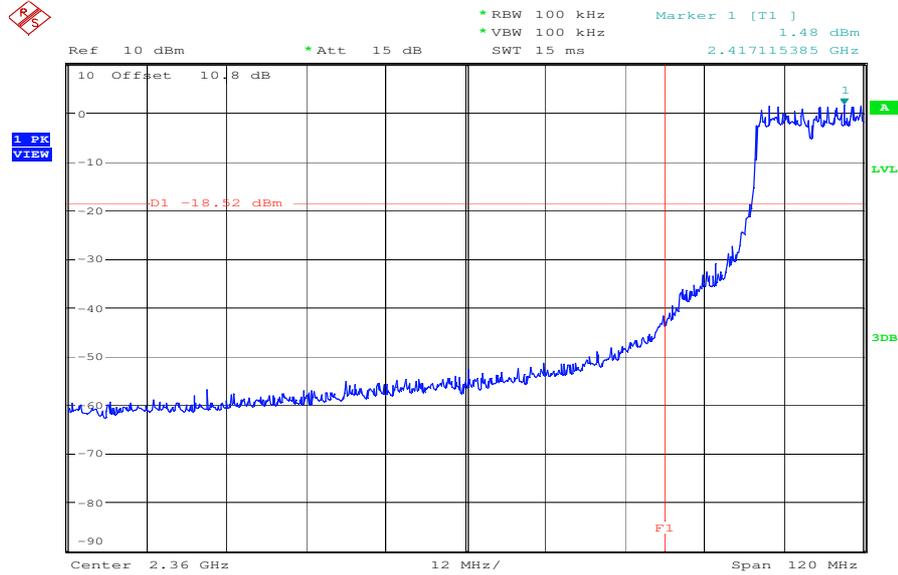
Plot 2: highest channel



Date: 10.FEB.2010 10:20:34

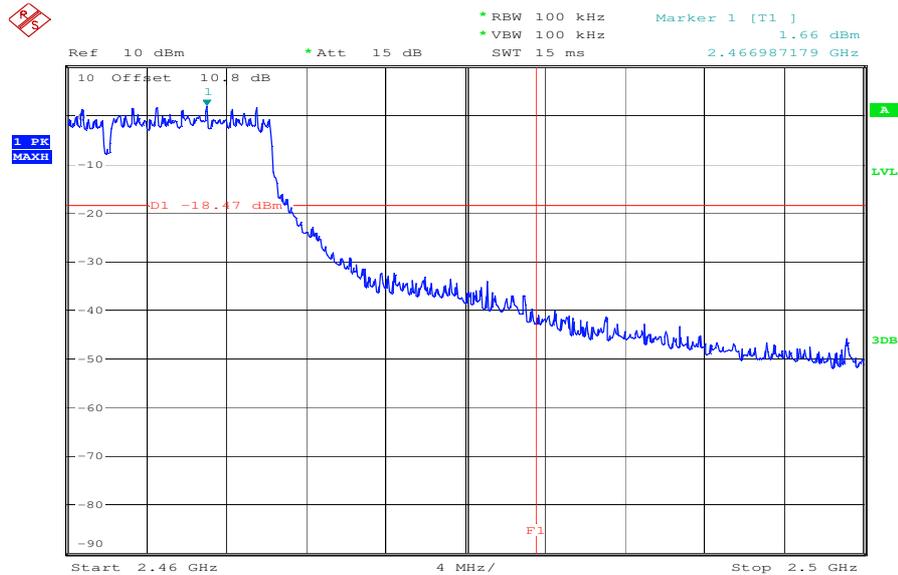
OFDM – mode:

Plot 1: lowest channel



Date: 10.FEB.2010 10:15:02

Plot 2: highest channel



Date: 10.FEB.2010 10:19:08



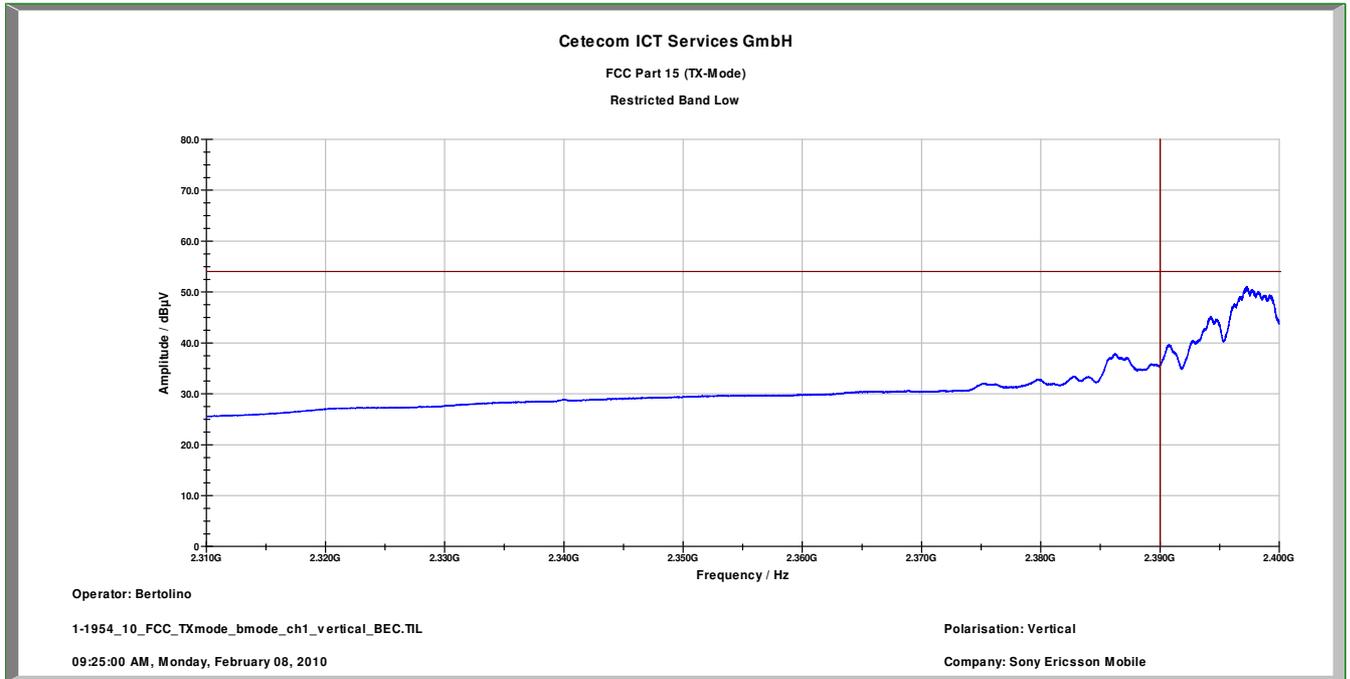
Limits:

Under normal test conditions only	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).
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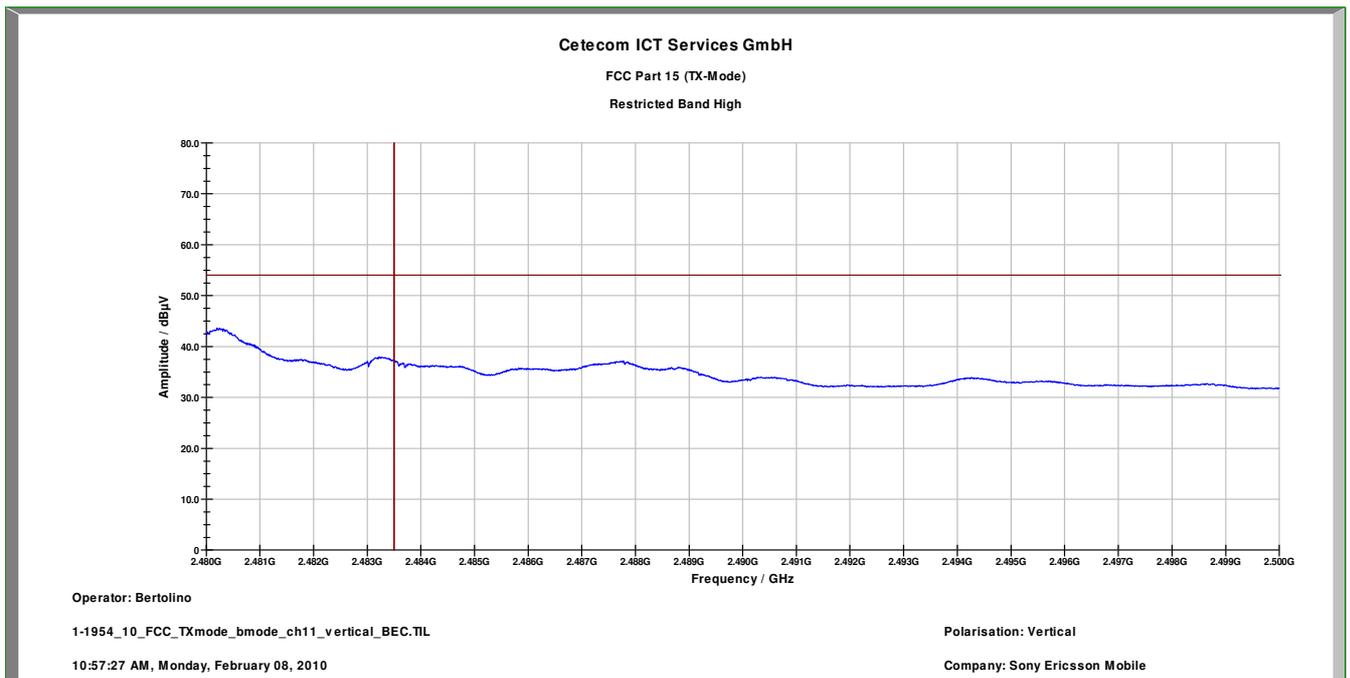
5.11 Band-edge compliance of radiated emissions §15.205

DSSS – mode:

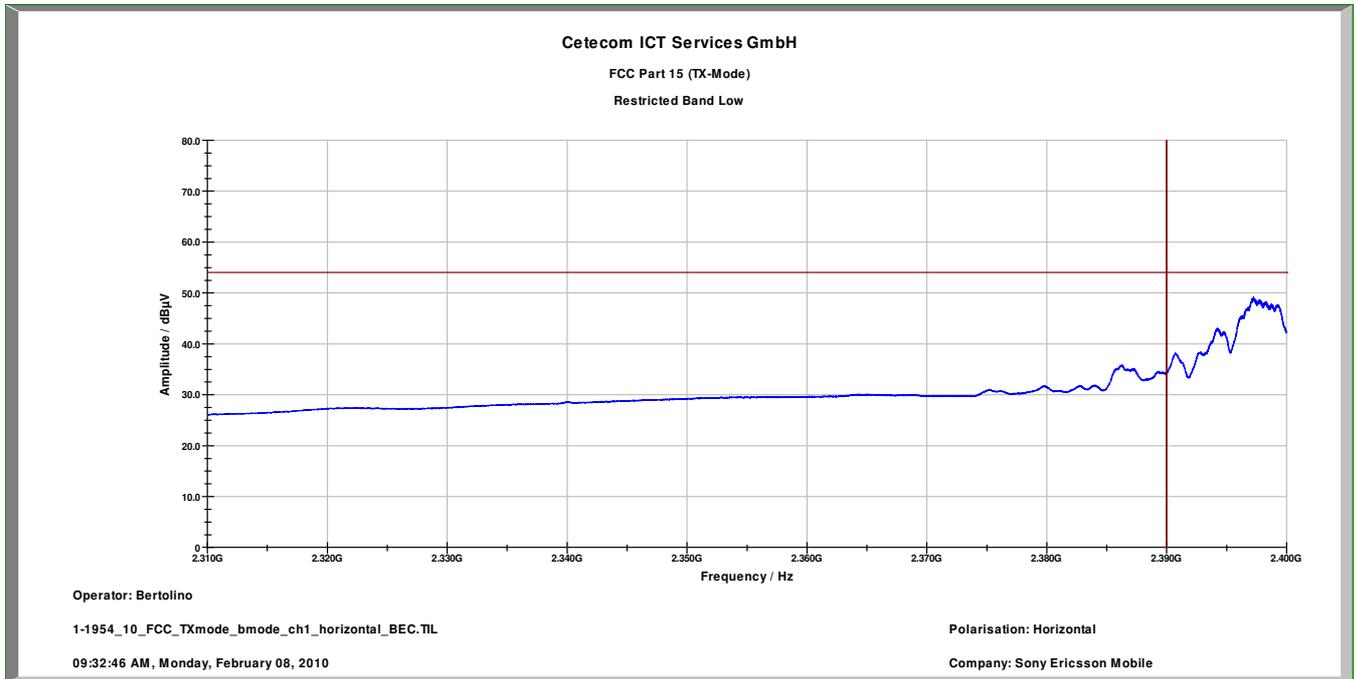
Plot 1: Restricted band low, vertical polarization



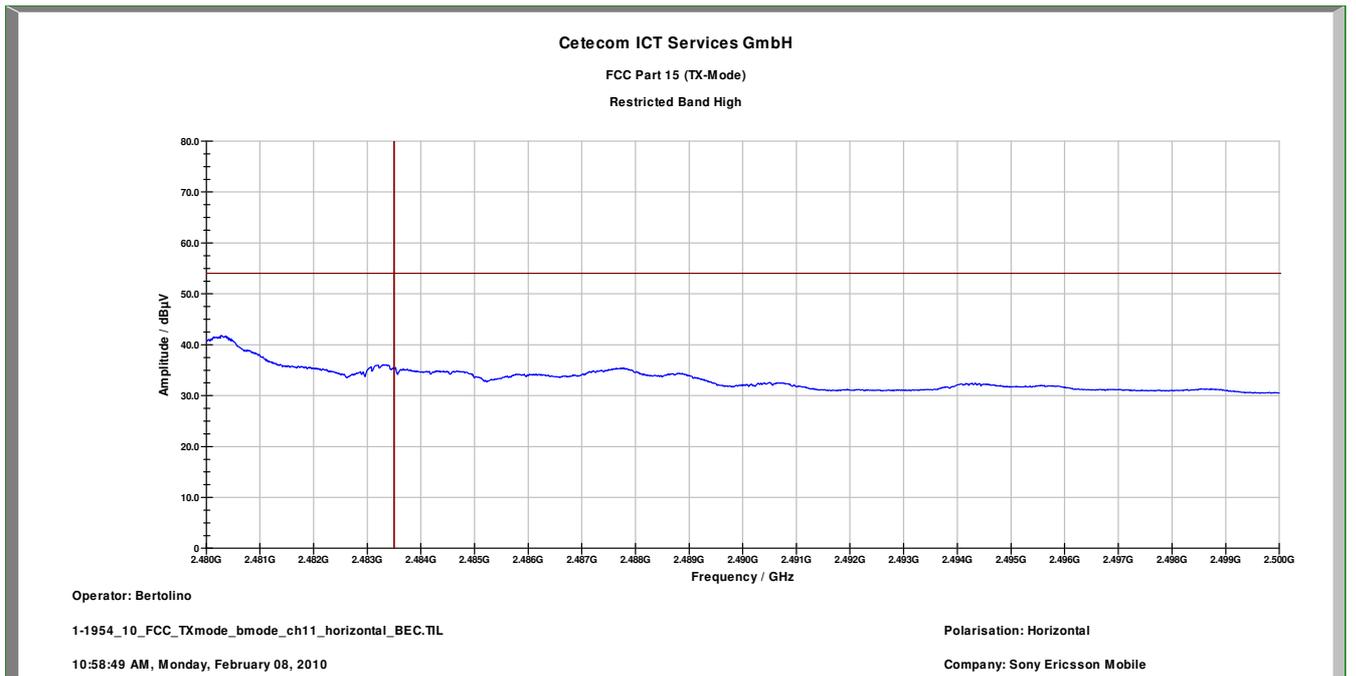
Plot 2: Restricted band high, vertical polarization



Plot 3: Restricted band low, horizontal polarization

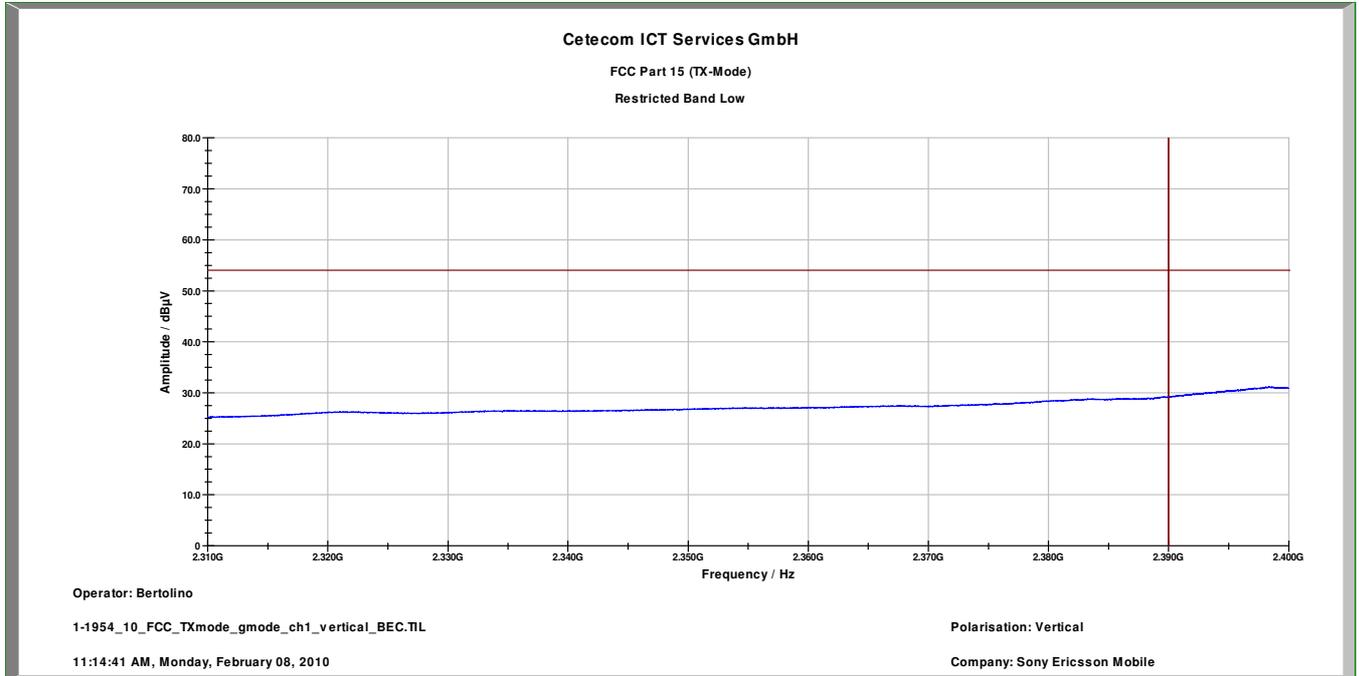


Plot 4: Restricted band high, horizontal polarization

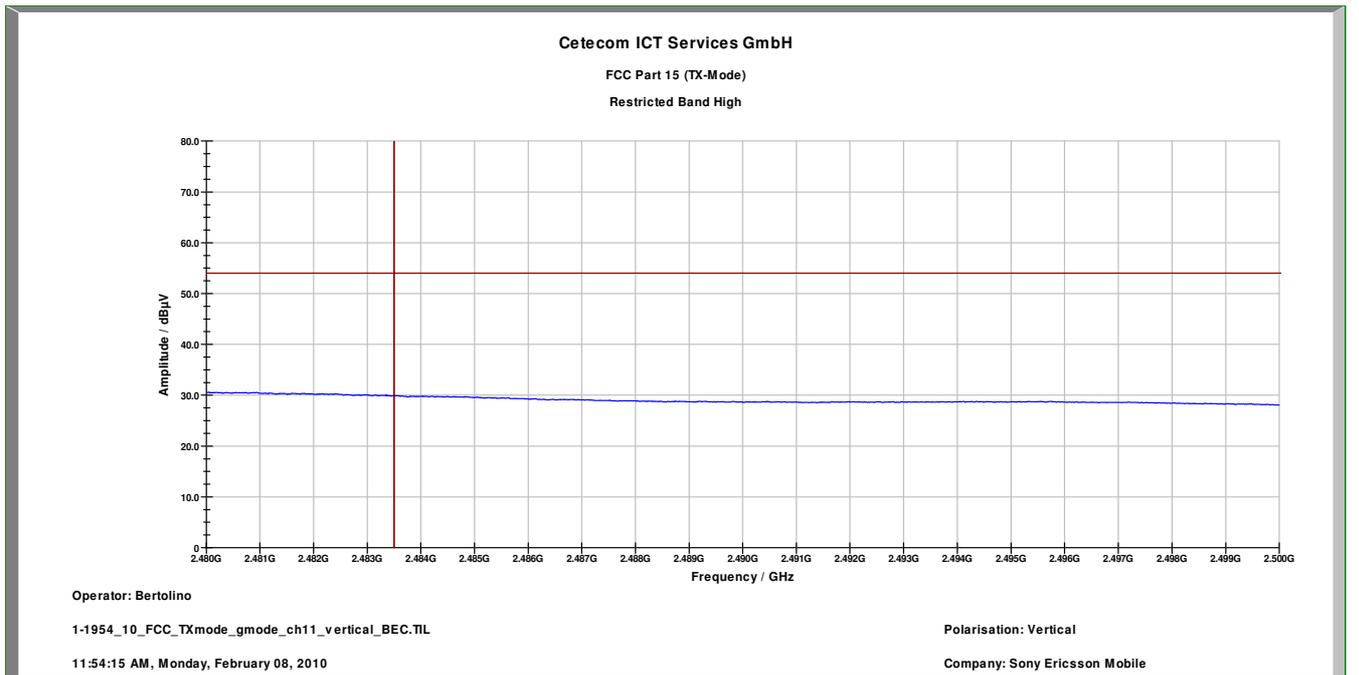


OFDM – mode:

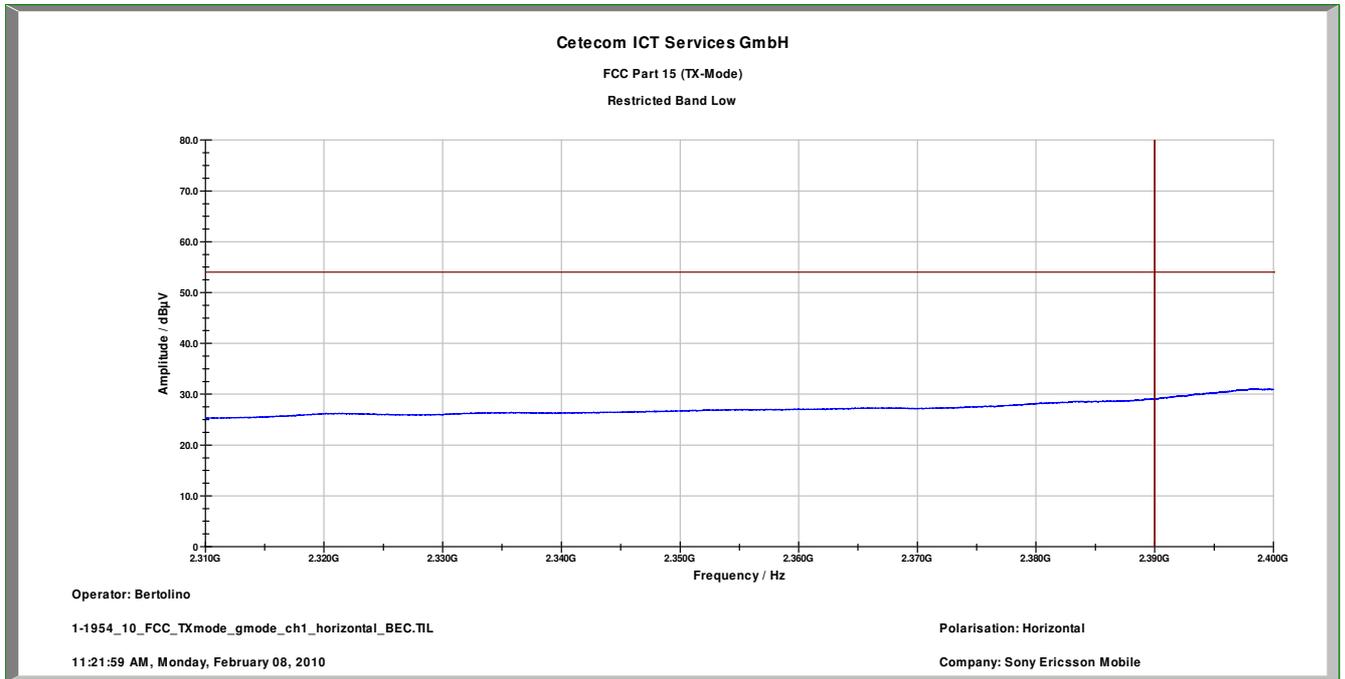
Plot 1: Restricted band low, vertical polarization



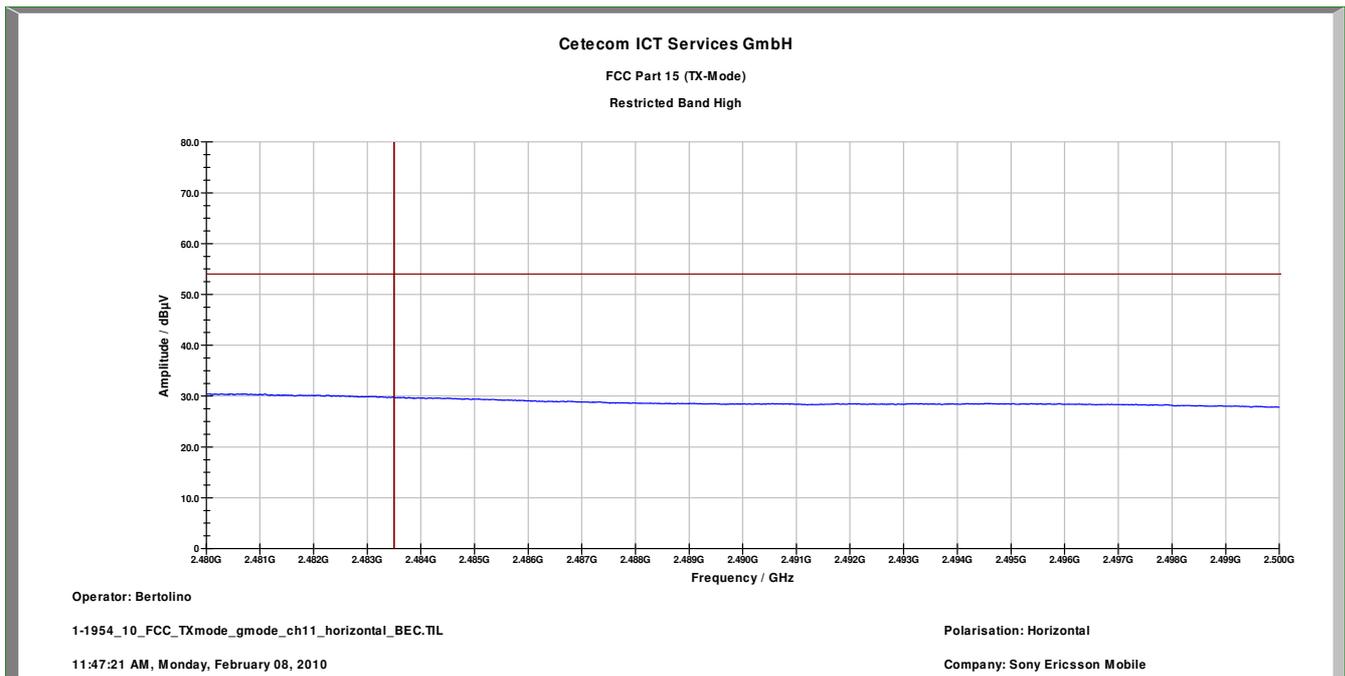
Plot 2: Restricted band high, vertical polarization



Plot 3: Restricted band low, horizontal polarization



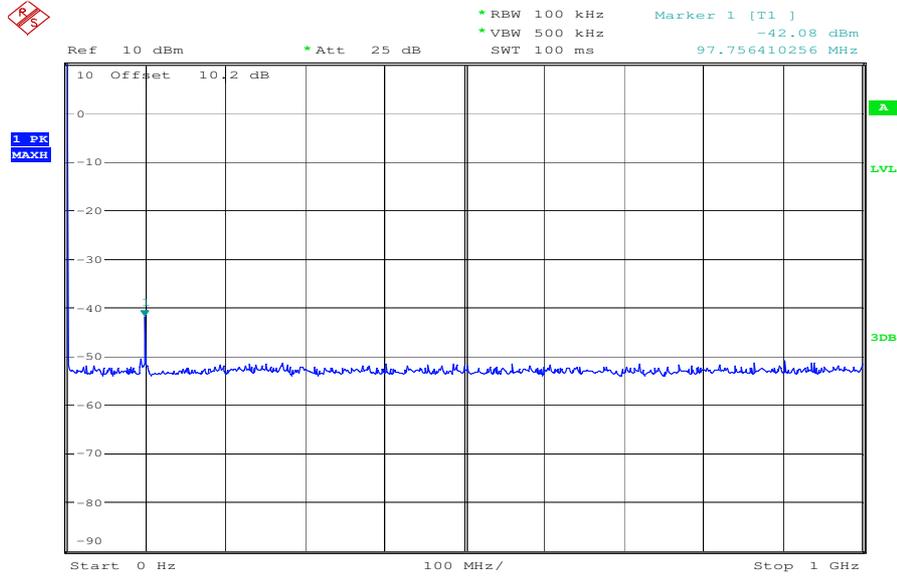
Plot 4: Restricted band high, horizontal polarization



5.12 Spurious Emissions - conducted (Transmitter) §15.247 (c)

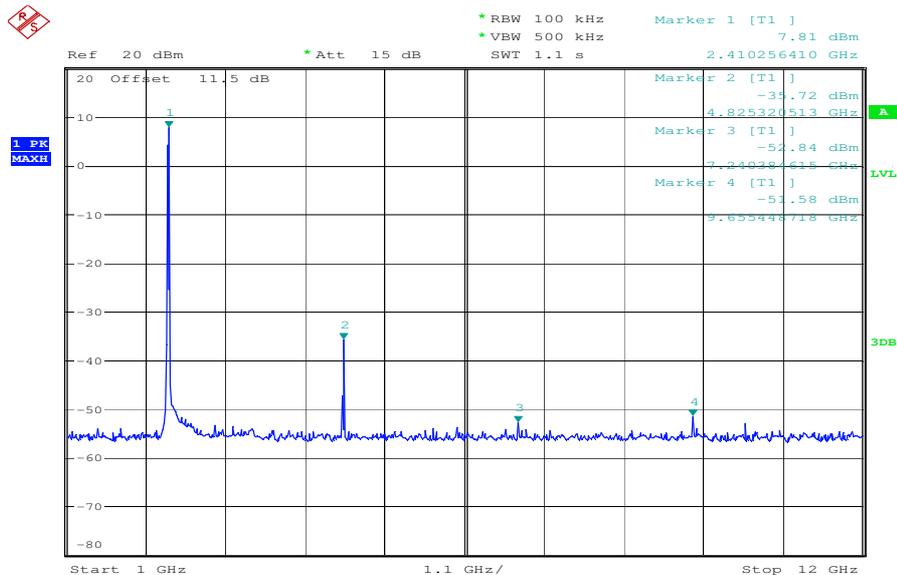
DSSS – mode:

Plot 1: Lowest channel, 0 Hz – 1 GHz



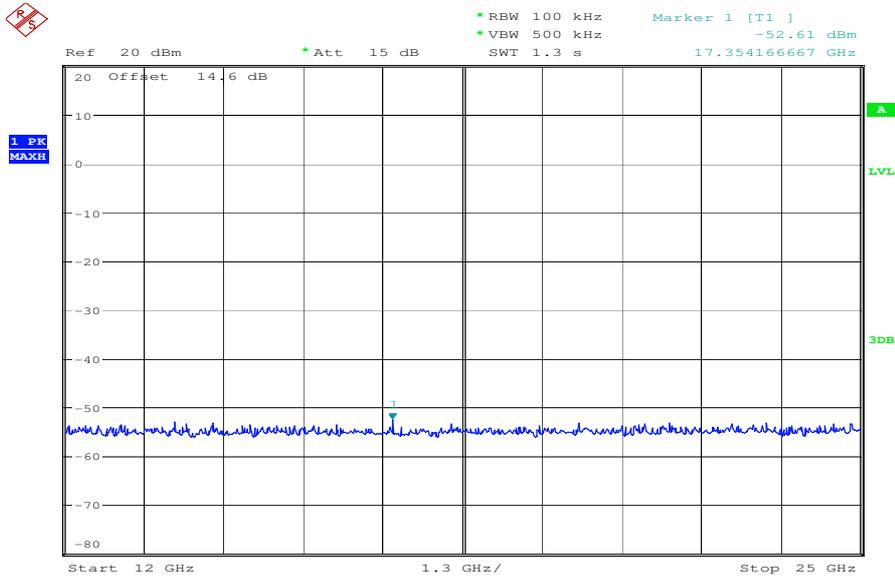
Date: 10.FEB.2010 10:26:44

Plot 2: Lowest channel, 1 GHz – 12 GHz



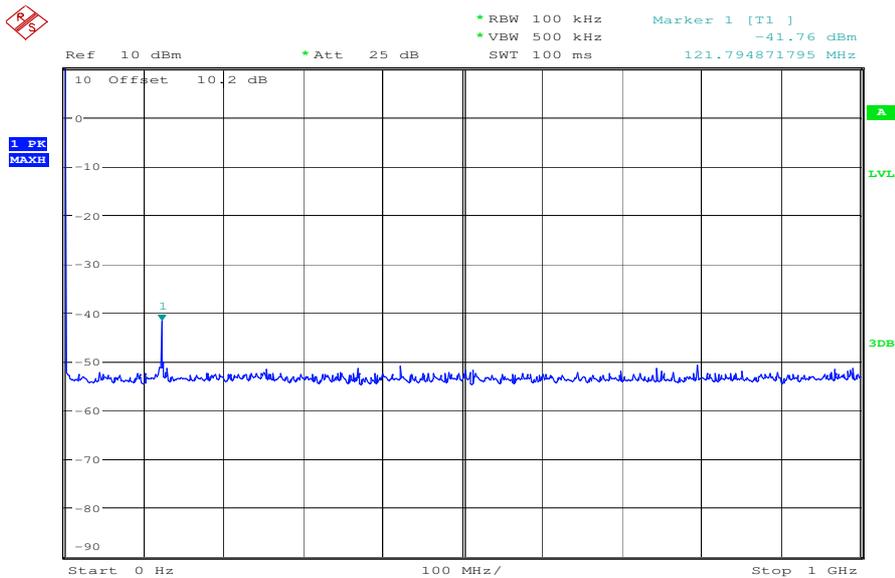
Date: 10.FEB.2010 10:41:29

Plot 3: Lowest channel, 12 GHz – 25 GHz



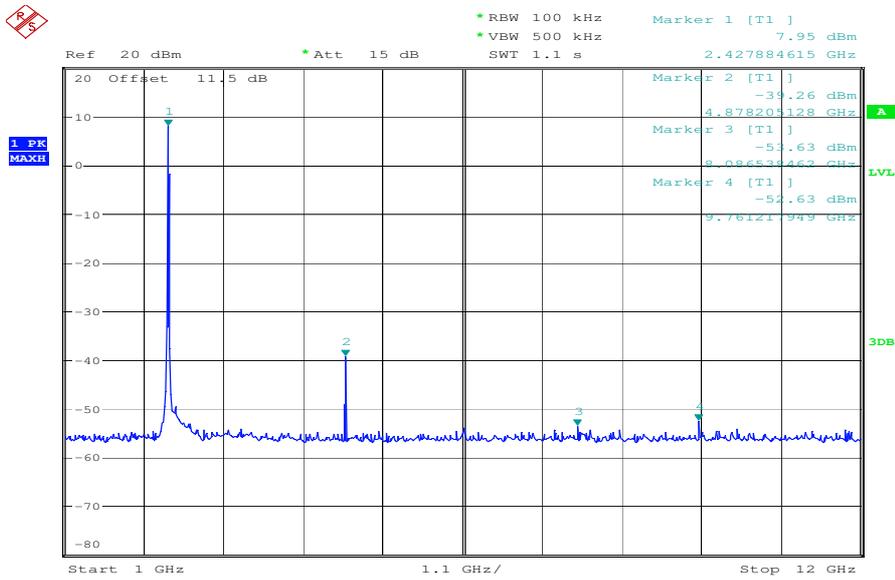
Date: 10.FEB.2010 10:50:32

Plot 1: Middle channel, 0 Hz – 1 GHz



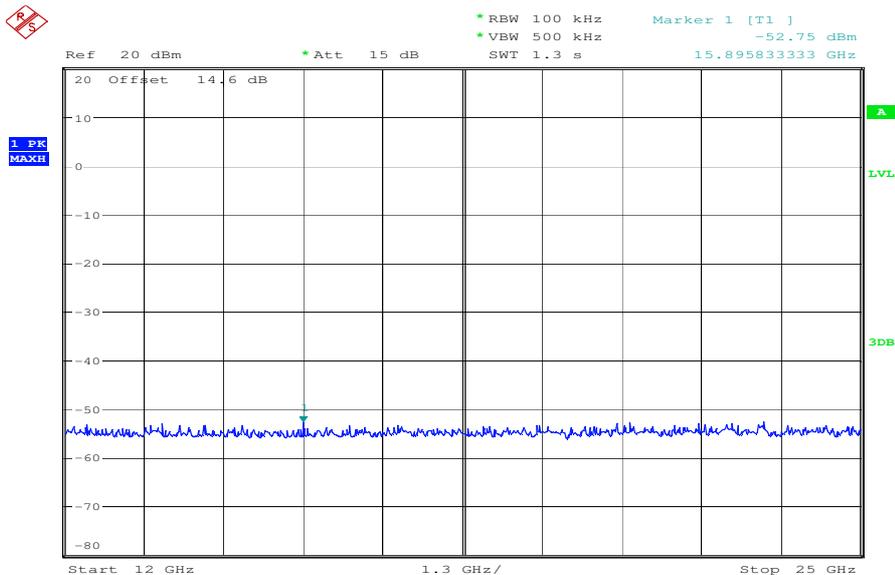
Date: 10.FEB.2010 10:28:17

Plot 2: Middle channel, 1 GHz – 12 GHz



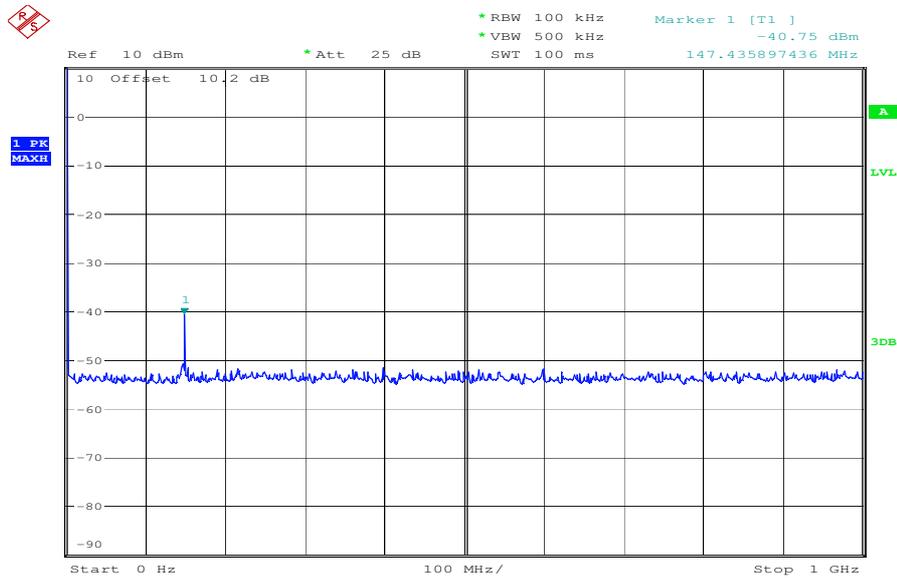
Date: 10.FEB.2010 10:42:35

Plot 3: Middle channel, 12 GHz – 25 GHz



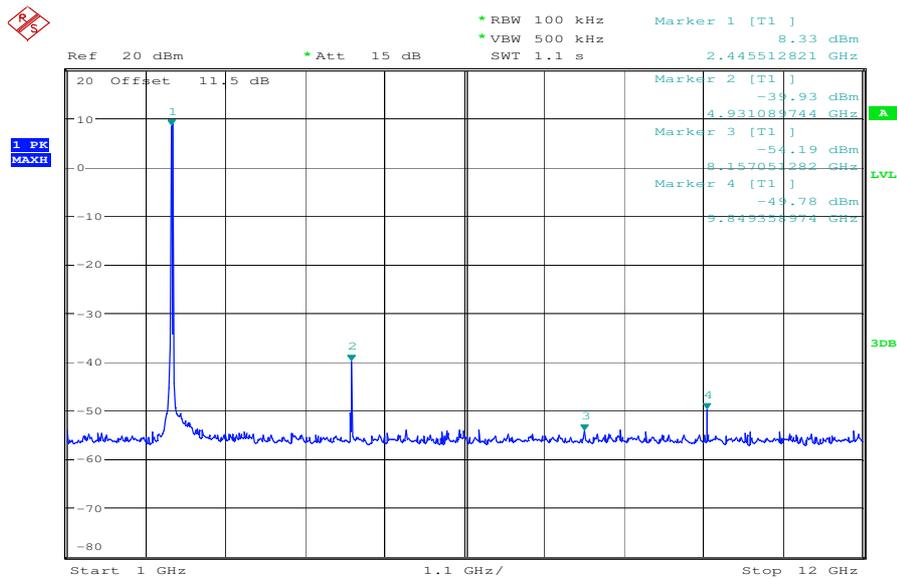
Date: 10.FEB.2010 10:51:28

Plot 1: Highest channel, 0 Hz – 1 GHz



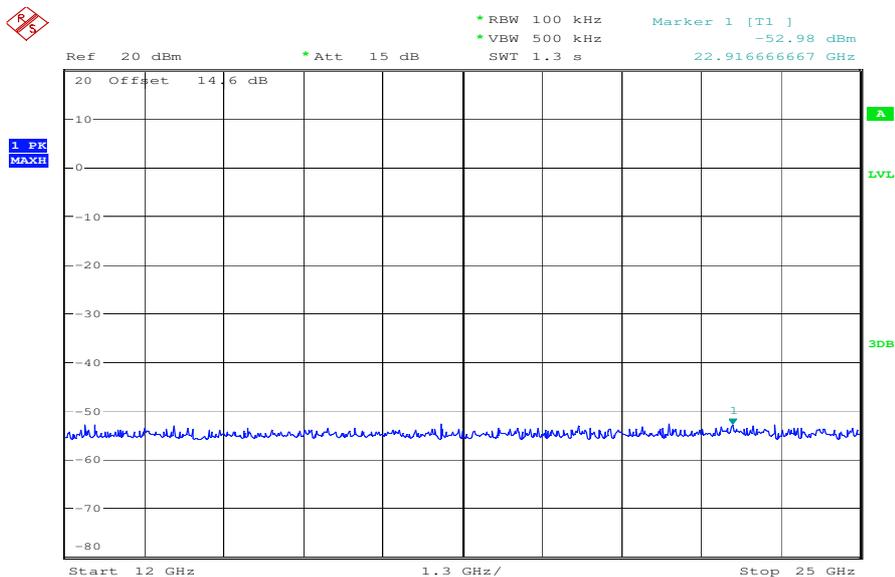
Date: 10.FEB.2010 10:28:59

Plot 2: Highest channel, 1 GHz – 12 GHz



Date: 10.FEB.2010 10:43:38

Plot 3: Highest channel, 12 GHz – 25 GHz



Date: 10.FEB.2010 10:52:13

Result & Limits:

Emission Limitations					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412		7.81	30 dBm		Operating frequency
97.76		-42.08	-20 dBc	>> 20 dB	complies
4825.32		-35.72		>> 20 dB	complies
7240.38		-52.84		>> 20 dB	complies
9655.45		-51.58		>> 20 dB	complies
2437		7.95	30 dBm		Operating frequency
121.79		-41.76	-20 dBc	>> 20 dB	complies
4878.21		-39.26		>> 20 dB	complies
8086.54		-53.63		>> 20 dB	complies
9761.22		-52.63		>> 20 dB	complies
2462		8.33	30 dBm		Operating frequency
147.44		-40.75	-20 dBc	>> 20 dB	complies
4931.09		-39.93		>> 20 dB	complies
8157.05		-54.19		>> 20 dB	complies
9849.36		-49.78		>> 20 dB	complies
Measurement uncertainty		± 3dB			

F < 1 GHz: RBW: 100 kHz VBW: 500 kHz
 F > 1 GHz: RBW: 100 kHz VBW: 500 kHz

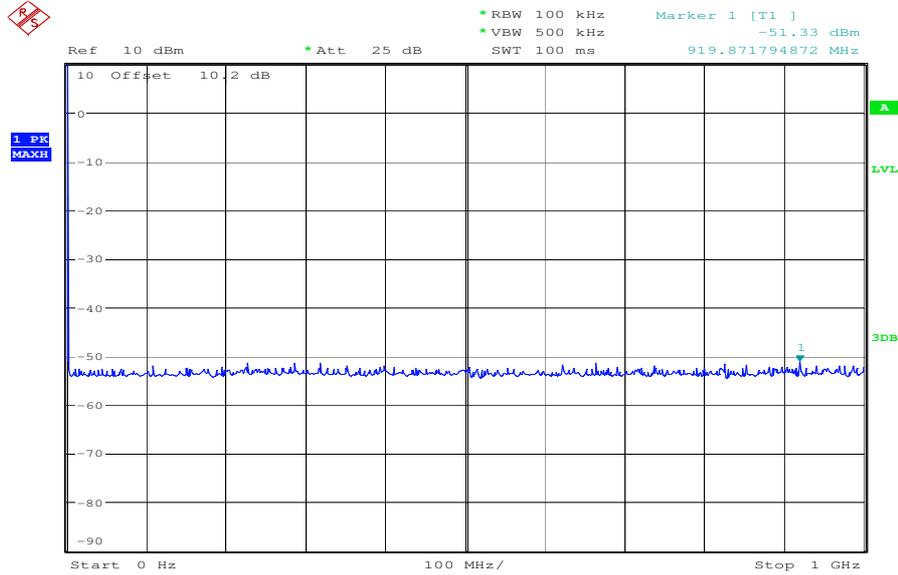
Limit:

Under normal test conditions only	In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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Note: For emissions that fall into restricted bands you find the radiated emissions later in the report.

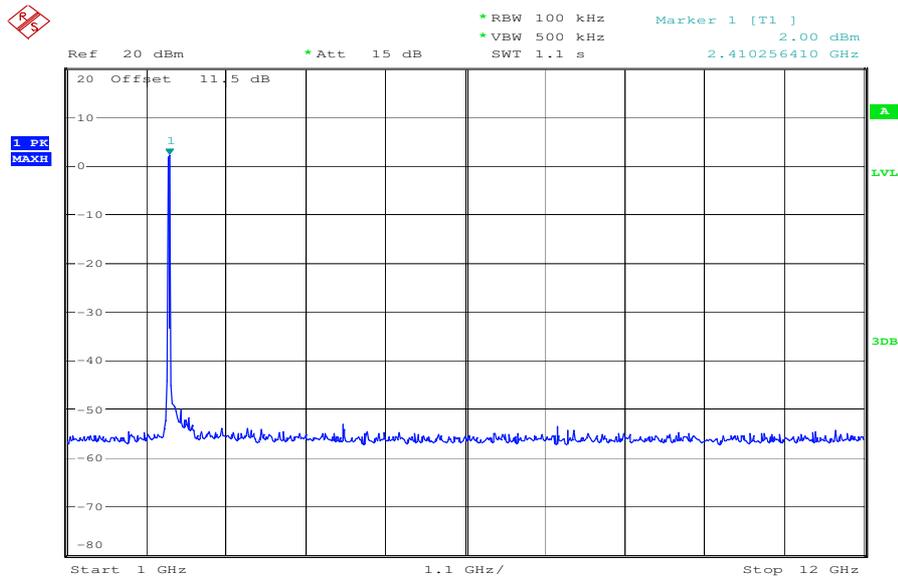
OFDM – mode:

Plot 1: Lowest channel, 0 Hz – 1 GHz



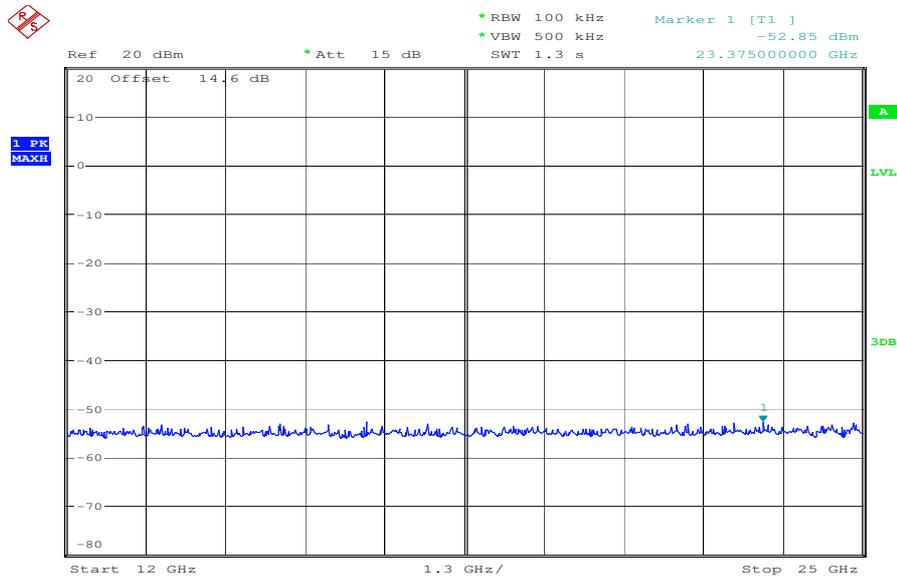
Date: 10.FEB.2010 10:30:12

Plot 2: Lowest channel, 1 GHz – 12 GHz



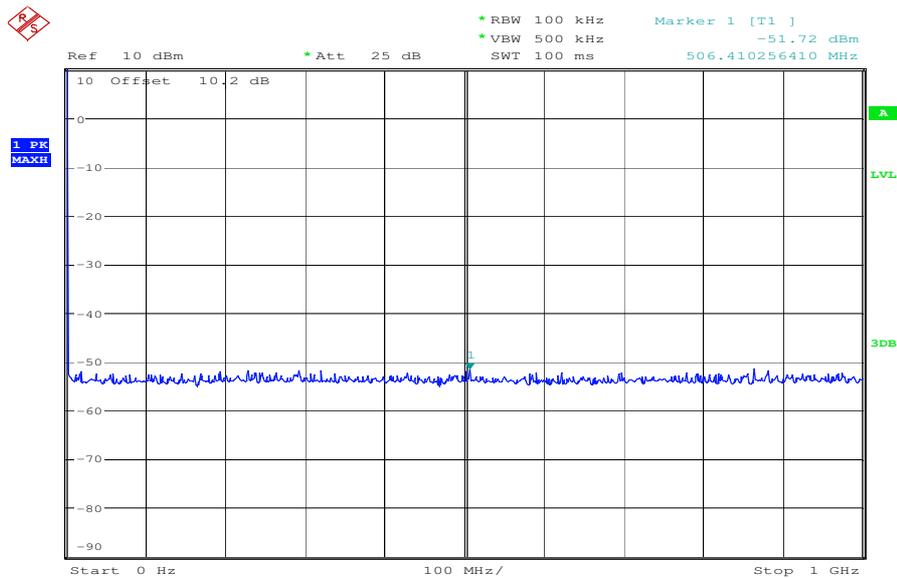
Date: 10.FEB.2010 10:44:17

Plot 3: Lowest channel, 12 GHz – 25 GHz



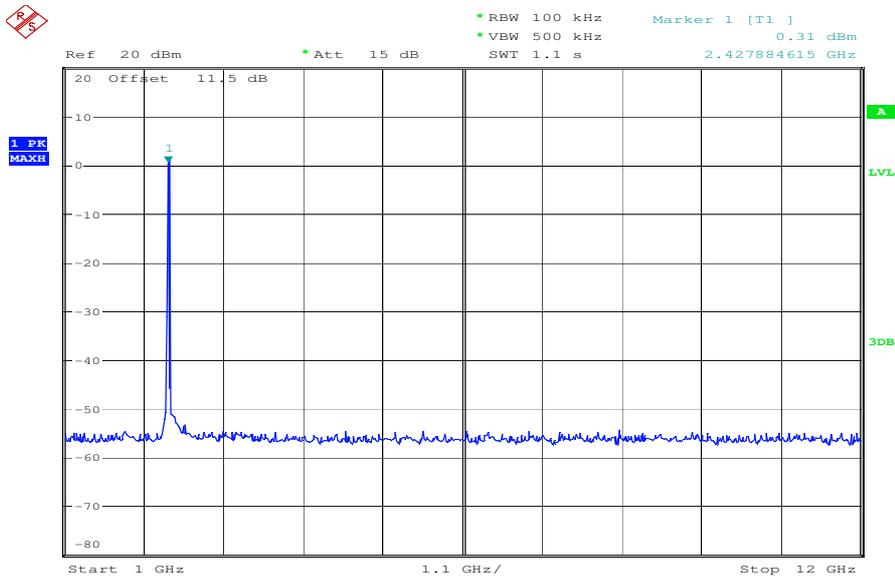
Date: 10.FEB.2010 10:49:25

Plot 1: Middle channel, 0 Hz – 1 GHz



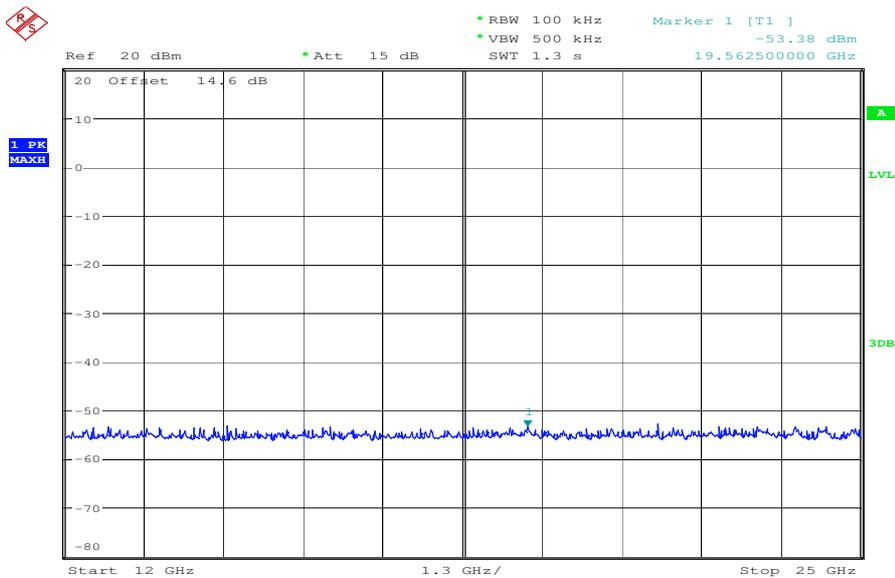
Date: 10.FEB.2010 10:31:00

Plot 2: Middle channel, 1 GHz – 12 GHz



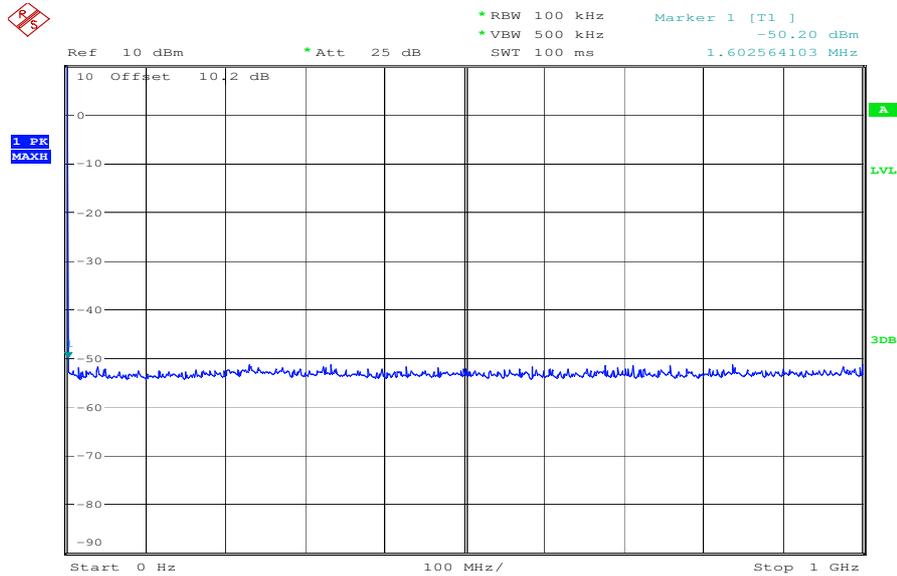
Date: 10.FEB.2010 10:45:02

Plot 3: Middle channel, 12 GHz – 25 GHz



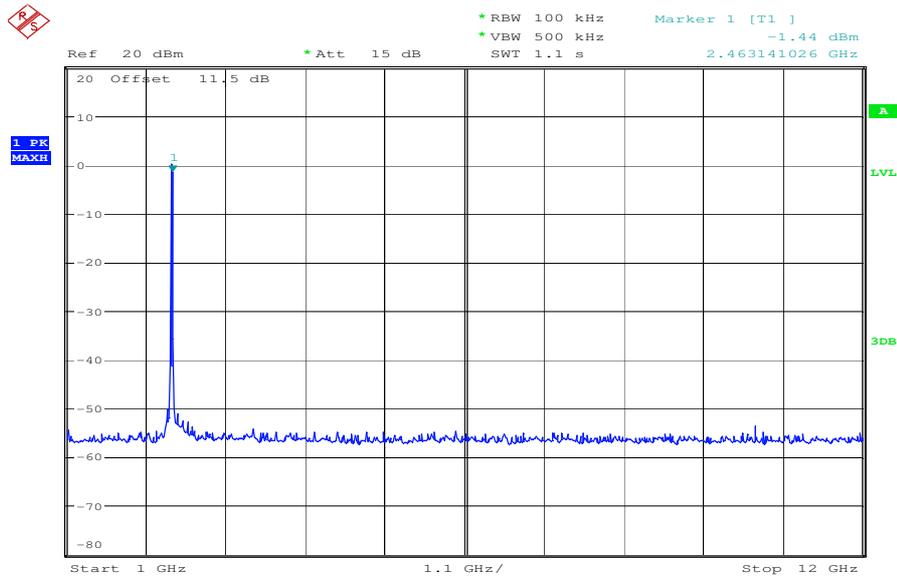
Date: 10.FEB.2010 10:48:40

Plot 1: Highest channel, 0 Hz – 1 GHz



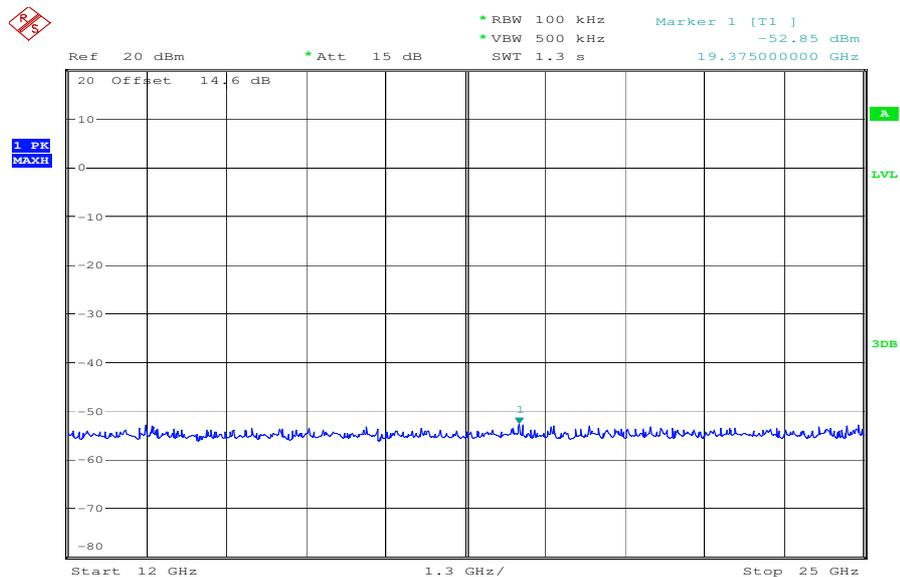
Date: 10.FEB.2010 10:32:41

Plot 2: Highest channel, 1 GHz – 12 GHz



Date: 10.FEB.2010 10:45:48

Plot 3: Highest channel, 12 GHz – 25 GHz



Date: 10.FEB.2010 10:47:19

Result & Limits:

Emission Limitations					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412		2.00	30 dBm		Operating frequency
No critical peaks detected! All emissions are below the 20 dBc criteria!			-20 dBc		
2437		0.31	30 dBm		Operating frequency
No critical peaks detected! All emissions are below the 20 dBc criteria!			-20 dBc		
2462		-1.44	30 dBm		Operating frequency
No critical peaks detected! All emissions are below the 20 dBc criteria!			-20 dBc		
Measurement uncertainty		± 3dB			

F < 1 GHz: RBW: 100 kHz VBW: 500 kHz
 F > 1 GHz: RBW: 100 kHz VBW: 500 kHz

Limit:

Under normal test conditions only	In any 100 kHz bandwidth outside the frequency band at least 20dB below the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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Note: For emissions that fall into restricted bands you find the radiated emissions later in the report.

5.13 Spurious Emissions - radiated (Transmitter) §15.209

DSSS – mode:

Plot 1: 0.03 - 1 GHz (lowest channel), vertical & horizontal polarization

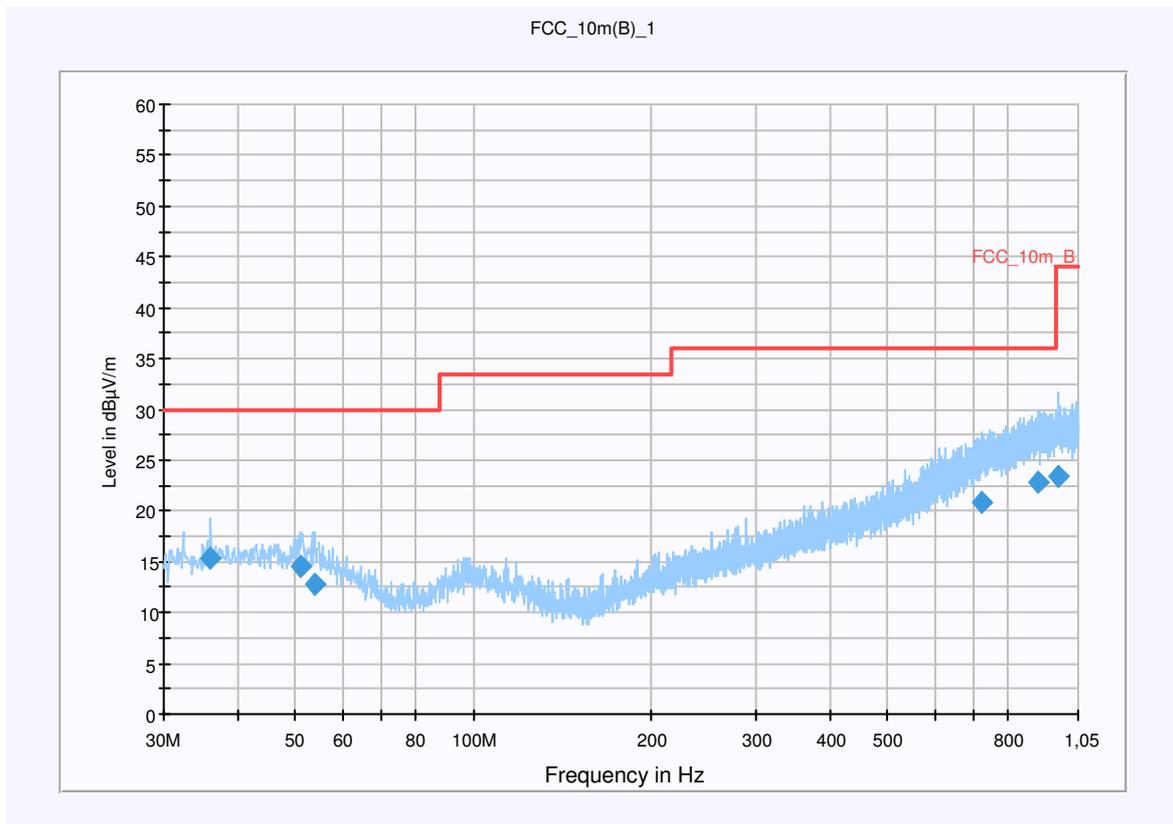
Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FF Part 15 < 1GHz @ 10 m
 Operating Conditions: WLAN TX Channel 1
 Operator Name: Klos
 Comment: battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1,05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

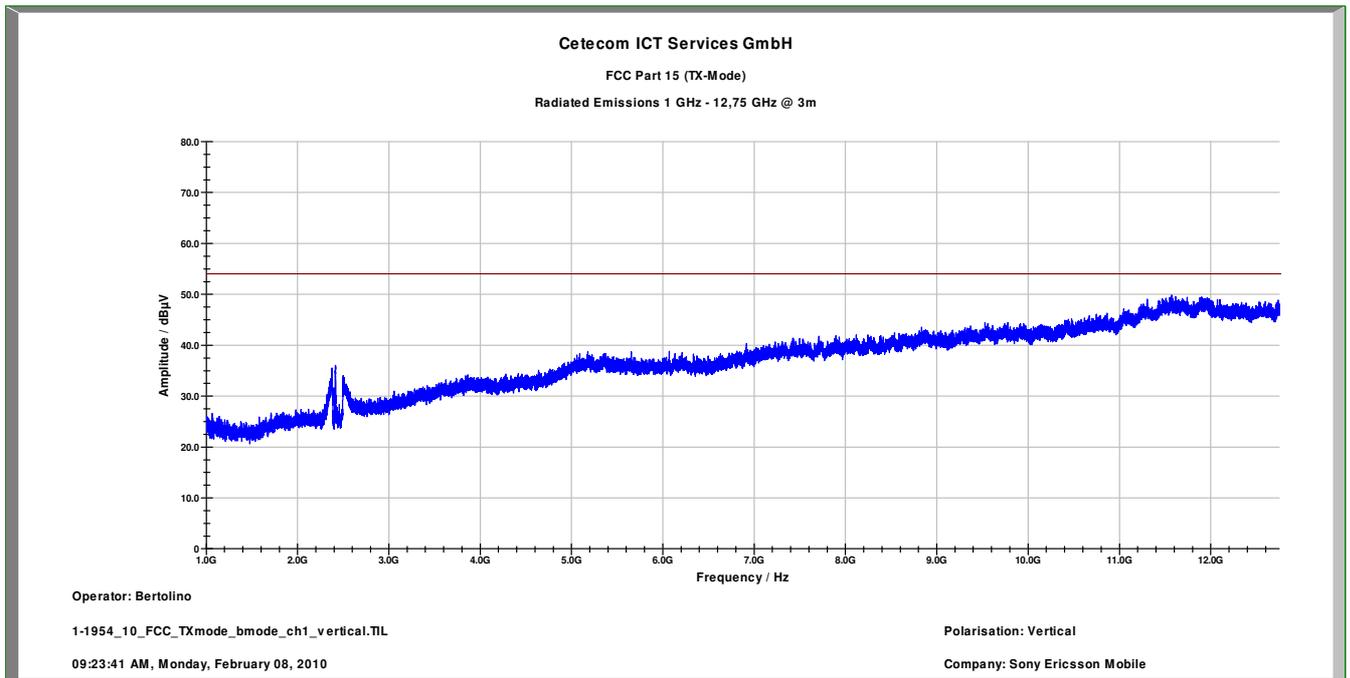
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
36.005250	15.3	15000.000	120.000	114.0	V	69.0	13.2	14.7	30.0	
51.002850	14.5	15000.000	120.000	162.0	V	234.0	13.4	15.5	30.0	
53.974650	12.8	15000.000	120.000	243.0	V	49.0	13.2	17.2	30.0	
722.208150	20.9	15000.000	120.000	200.0	V	58.0	23.5	15.1	36.0	
895.501200	22.9	15000.000	120.000	324.0	H	193.0	25.6	13.1	36.0	
970.187100	23.3	15000.000	120.000	400.0	V	324.0	26.0	20.7	44.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113
Antenna Tower:	Correction Table: Cable_EN_1GHz (0909) Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

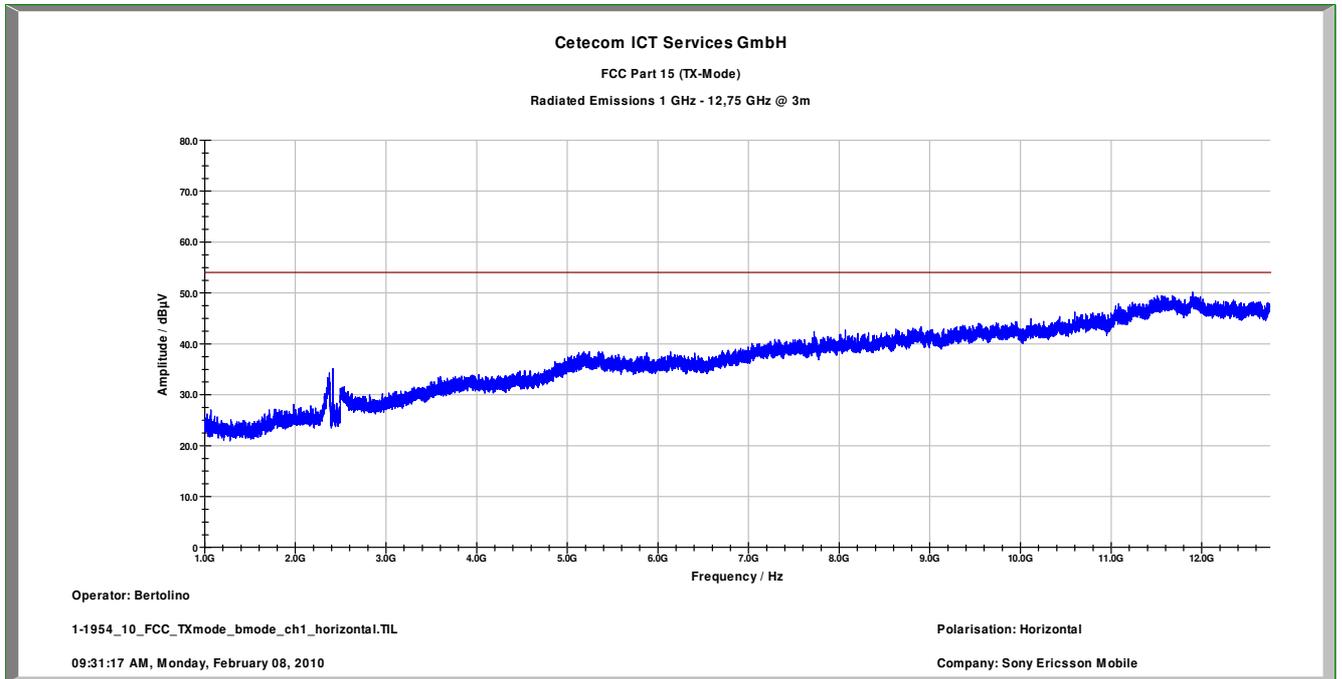
EMC 32 Version 8.10.00

Plot 2: 1 – 12.75 GHz (lowest channel), vertical polarization



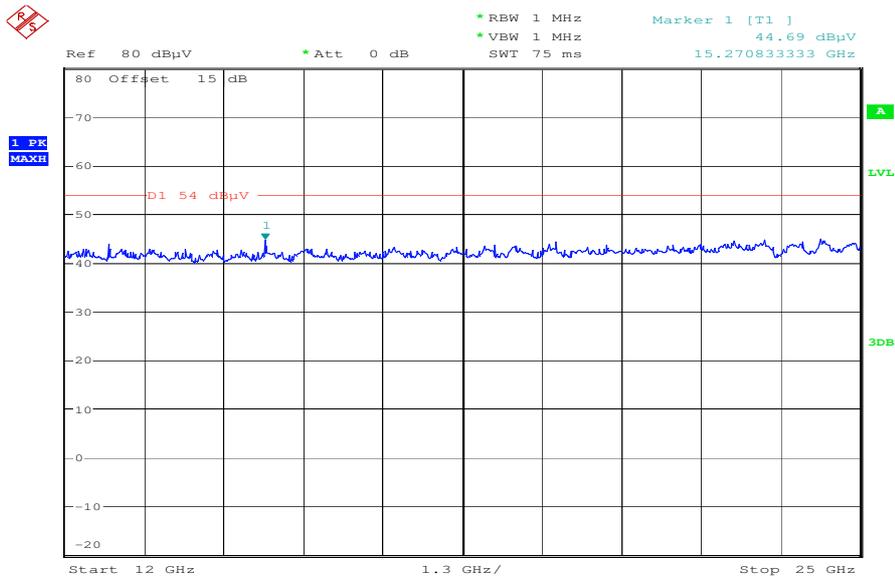
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 3: 1 – 12.75 GHz (lowest channel), horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 4: 12 – 25 GHz (valid for all channels), vertical & horizontal polarization



Date: 10.FEB.2010 14:16:56

Plot 5: 0.03 - 1 GHz (middle channel), vertical & horizontal polarization

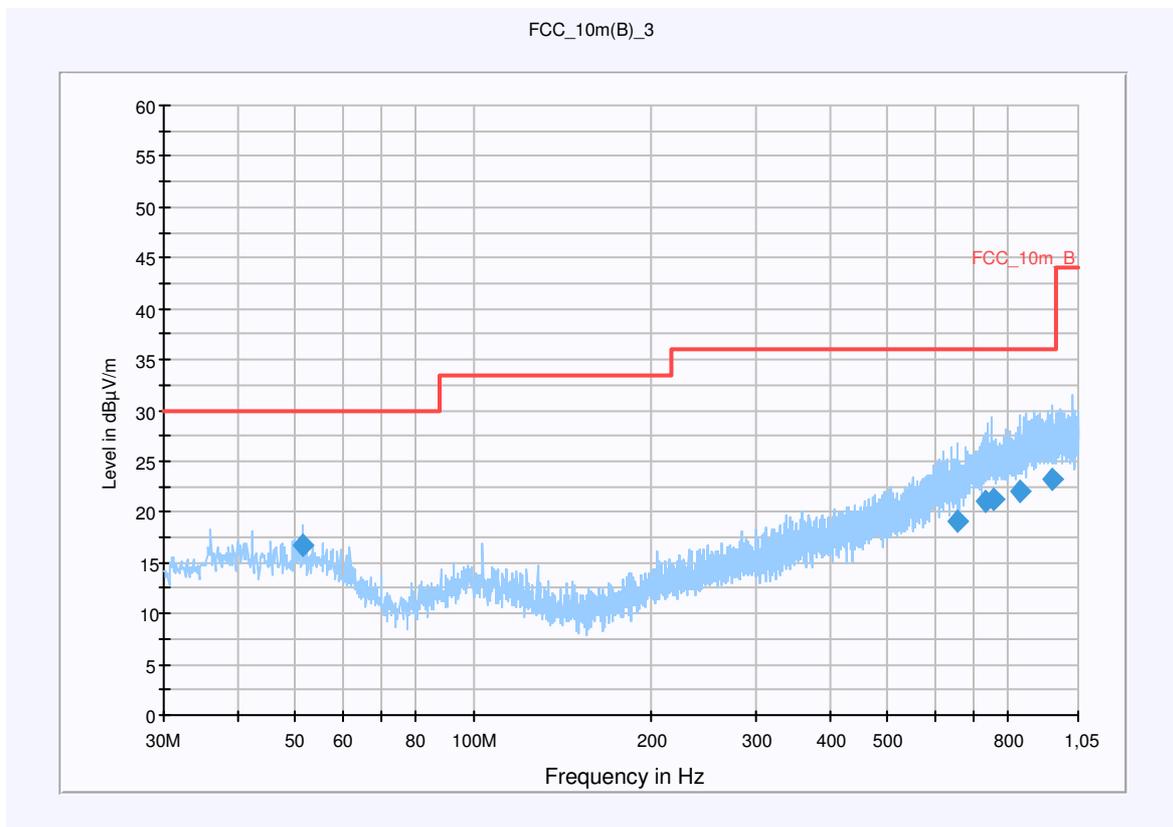
Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FCC part 15 < 1 GHz @ 10 m
 Operating Conditions: WLAN TX Ch 6
 Operator Name: Klos
 Comment: powered by battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1,05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

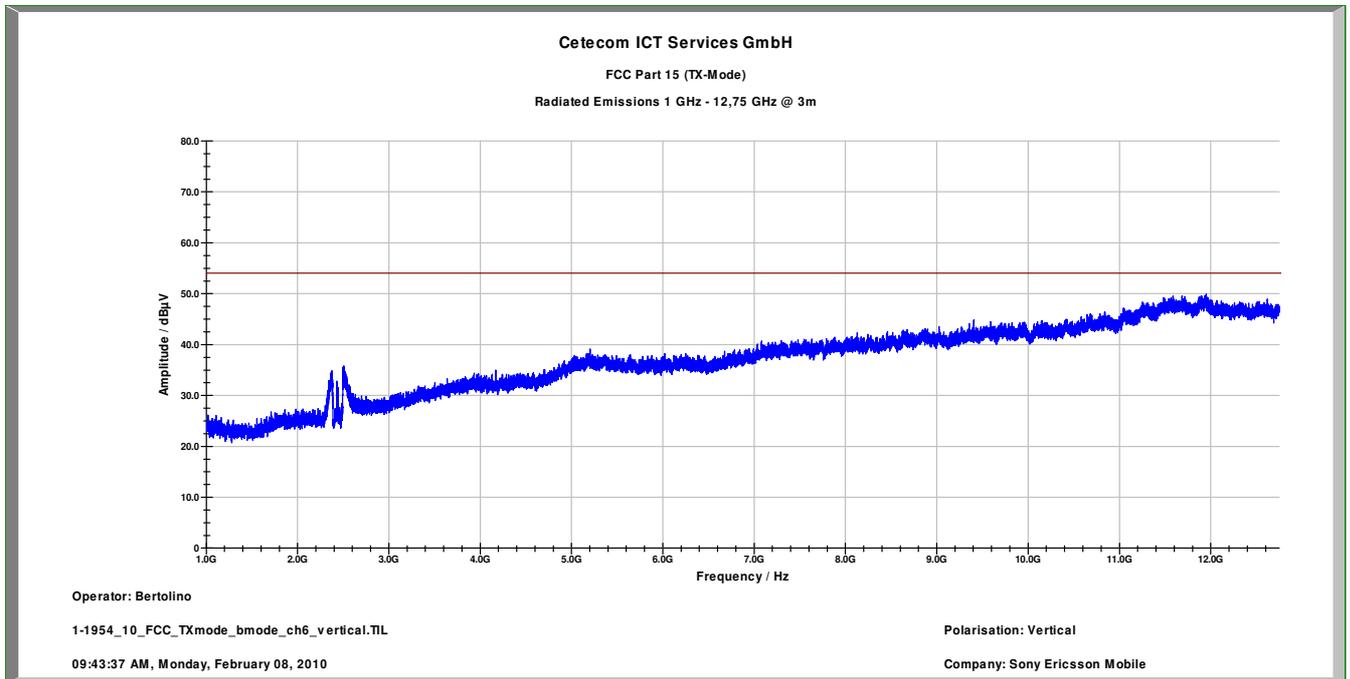
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
51.614700	16.8	15000.000	120.000	98.0	V	240.0	13.4	13.2	30.0	
656.230650	19.1	15000.000	120.000	220.0	V	262.0	21.8	16.9	36.0	
732.442800	21.1	15000.000	120.000	220.0	H	290.0	23.8	14.9	36.0	
752.969400	21.3	15000.000	120.000	204.0	H	46.0	24.2	14.7	36.0	
835.822050	22.0	15000.000	120.000	98.0	V	25.0	24.8	14.0	36.0	
950.964450	23.2	15000.000	120.000	220.0	H	6.0	25.9	12.8	36.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113
Antenna Tower:	Correction Table: Cable_EN_1GHz (0909) Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

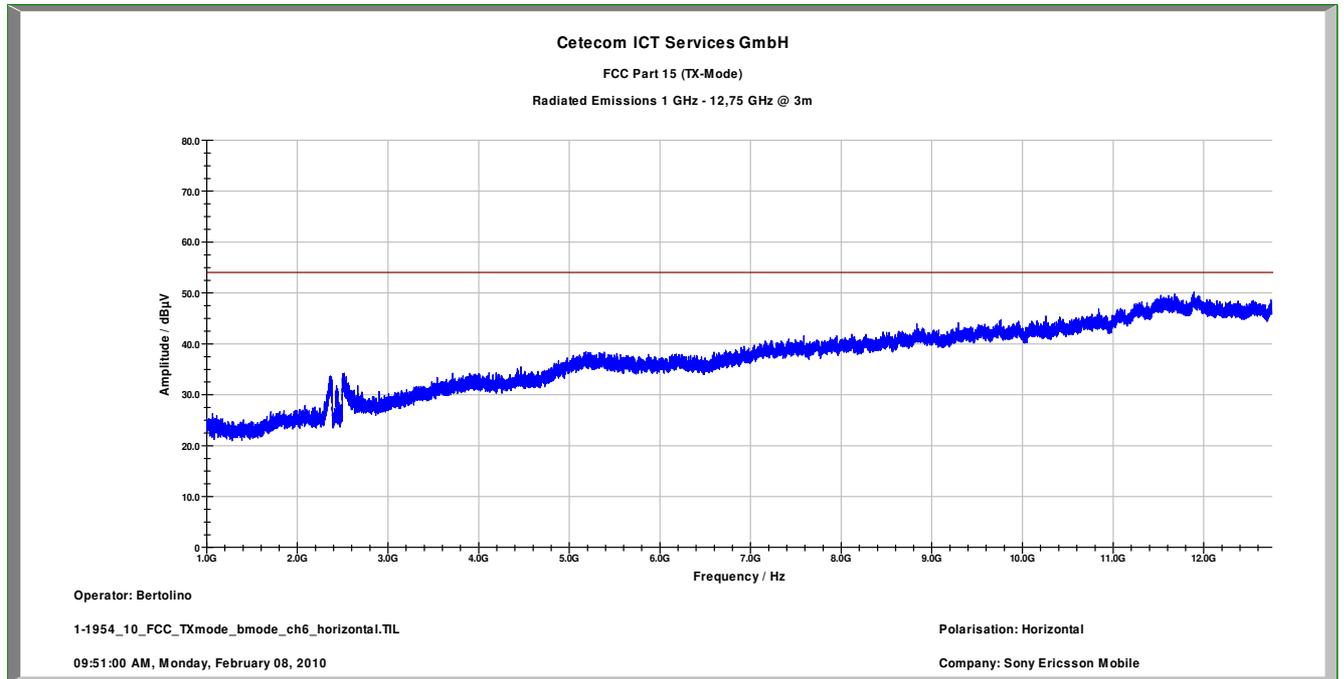
EMC 32 Version 8.10.00

Plot 6: 1 – 12.75 GHz (middle channel), vertical polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 7: 1 – 12.75 GHz (middle channel), horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: 0.03 - 1 GHz (highest channel), vertical & horizontal polarization

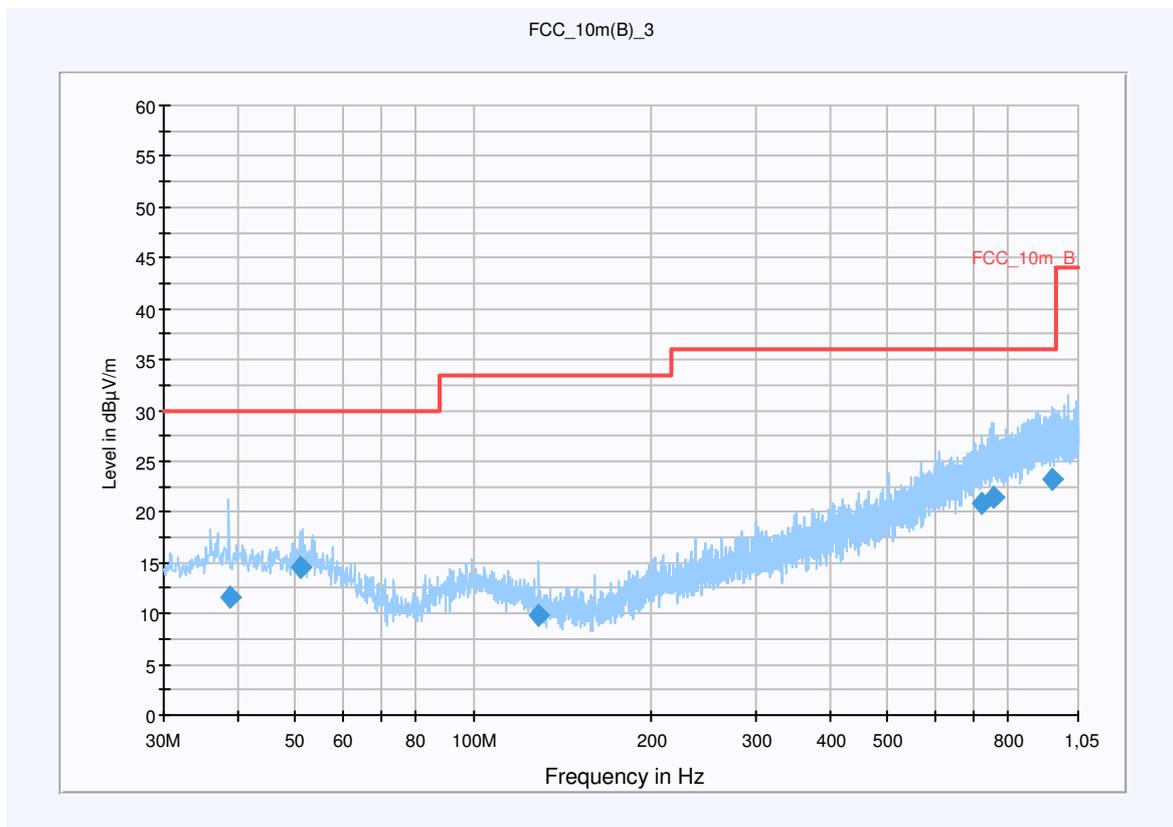
Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FCC part 15 < 1 GHz @ 10 m
 Operating Conditions: WLAN TX Ch 11
 Operator Name: Klos
 Comment: powered by battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1,05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

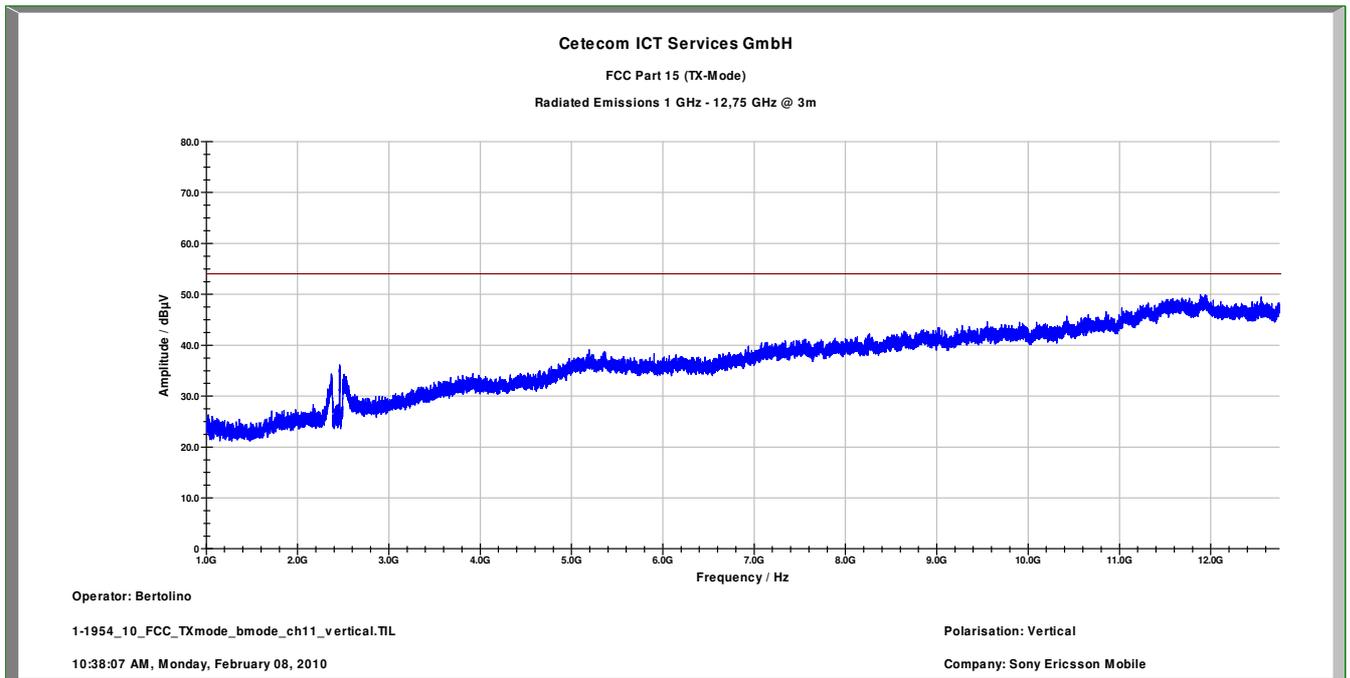
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
38.975400	11.6	15000.000	120.000	98.0	V	226.0	13.5	18.4	30.0	
51.001650	14.6	15000.000	120.000	176.0	V	153.0	13.4	15.4	30.0	
129.066300	9.8	15000.000	120.000	116.0	V	37.0	9.8	23.7	33.5	
723.393150	20.8	15000.000	120.000	166.0	H	168.0	23.5	15.2	36.0	
755.833500	21.4	15000.000	120.000	205.0	V	56.0	24.2	14.6	36.0	
945.363750	23.2	15000.000	120.000	220.0	H	128.0	25.8	12.8	36.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113
Antenna Tower:	Correction Table: Cable_EN_1GHz (0909) Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

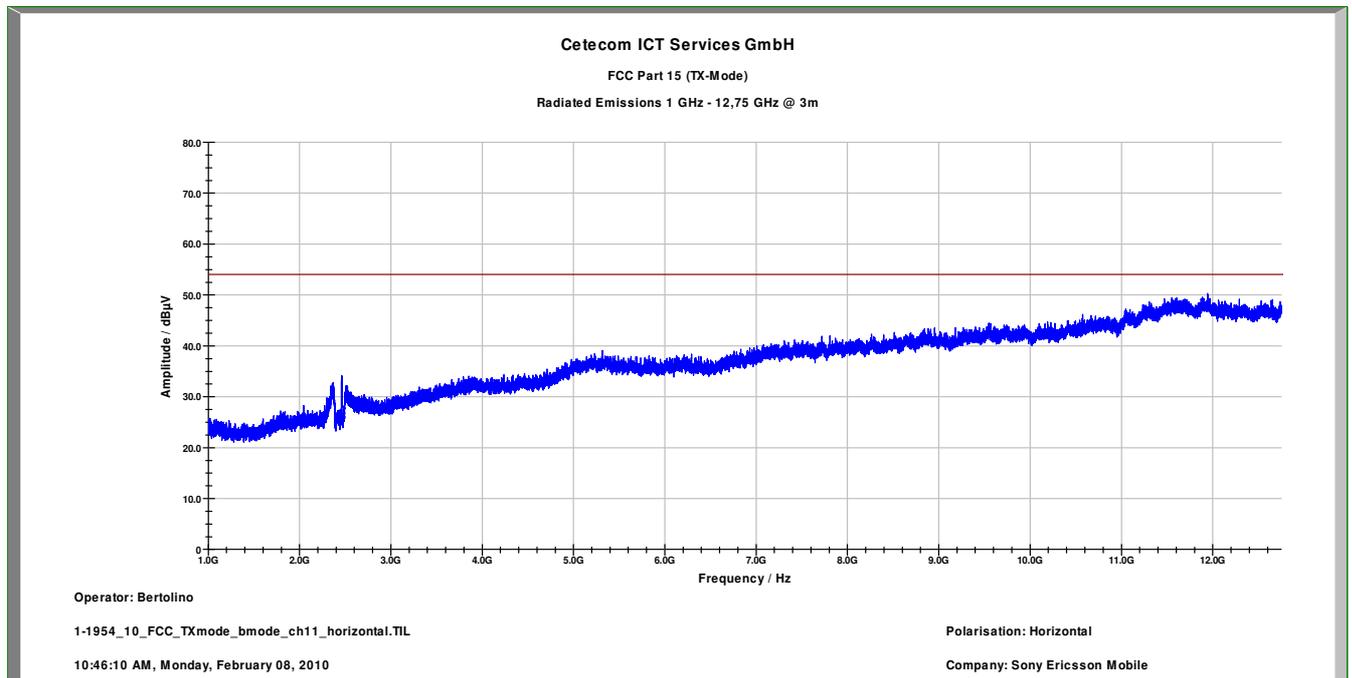
EMC 32 Version 8.10.00

Plot 9: 1 – 12.75 GHz (highest channel), vertical polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 10: 1 – 12.75 GHz (highest channel), horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Results:

SPURIOUS EMISSIONS LEVEL §15.209								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
No critical peaks detected! All emissions are below the limit!			No critical peaks detected! All emissions are below the limit!			No critical peaks detected! All emissions are below the limit!		
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits: § 15.247 (c)

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

Limits: § 15.109

Frequency (MHz)	Field strength (dBµV/m)	Measurement distance (m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
above 960	54.0	3

OFDM – mode:

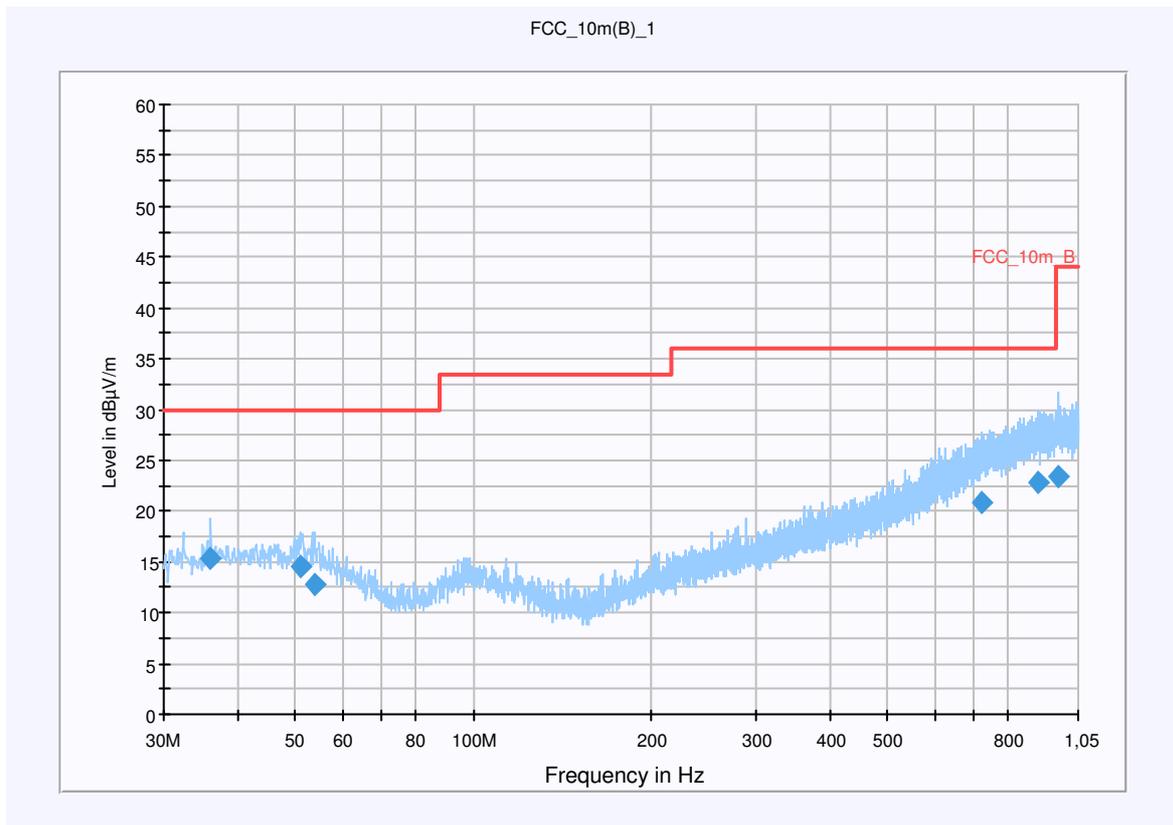
Plot 1: 0.03 - 1 GHz (lowest channel), vertical & horizontal polarization

Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FF Part 15 < 1GHz @ 10 m
 Operating Conditions: WLAN TX Channel 1
 Operator Name: Klos
 Comment: battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 1,05 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

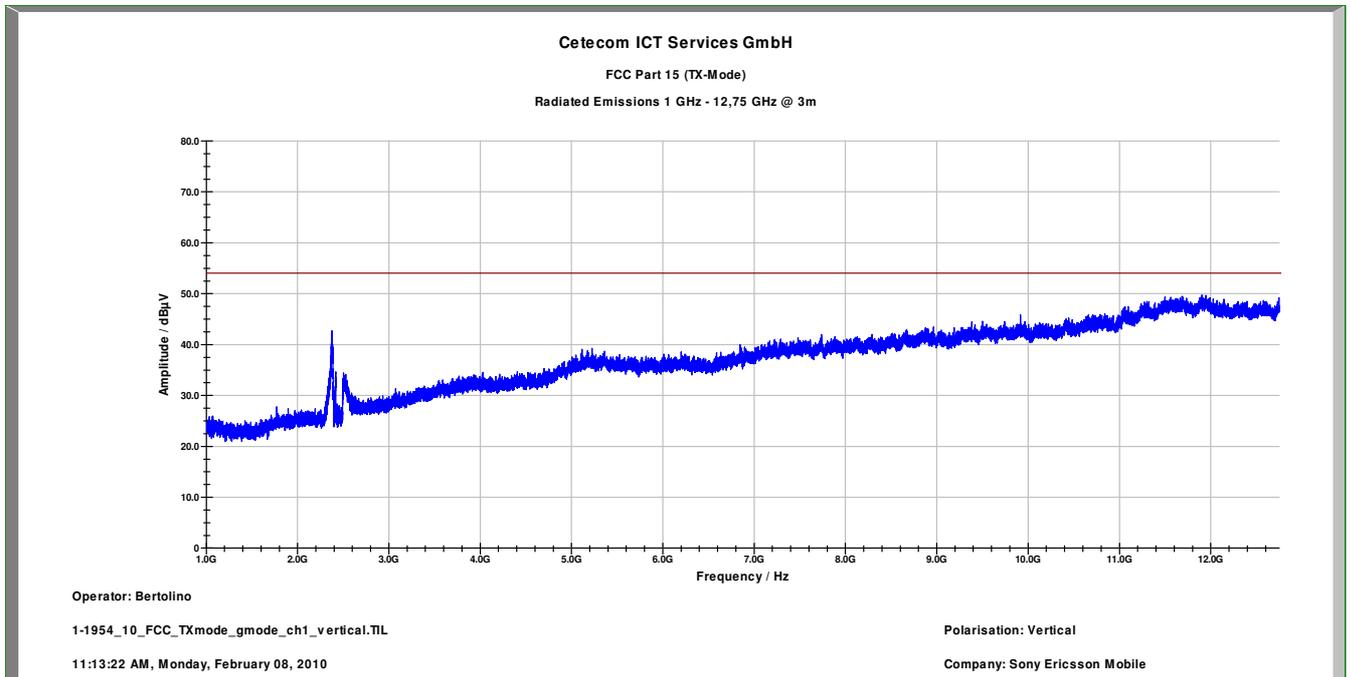
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
36.005250	15.3	15000.000	120.000	114.0	V	69.0	13.2	14.7	30.0	
51.002850	14.5	15000.000	120.000	162.0	V	234.0	13.4	15.5	30.0	
53.974650	12.8	15000.000	120.000	243.0	V	49.0	13.2	17.2	30.0	
722.208150	20.9	15000.000	120.000	200.0	V	58.0	23.5	15.1	36.0	
895.501200	22.9	15000.000	120.000	324.0	H	193.0	25.6	13.1	36.0	
970.187100	23.3	15000.000	120.000	400.0	V	324.0	26.0	20.7	44.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113
Antenna Tower:	Correction Table: Cable_EN_1GHz (0909) Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

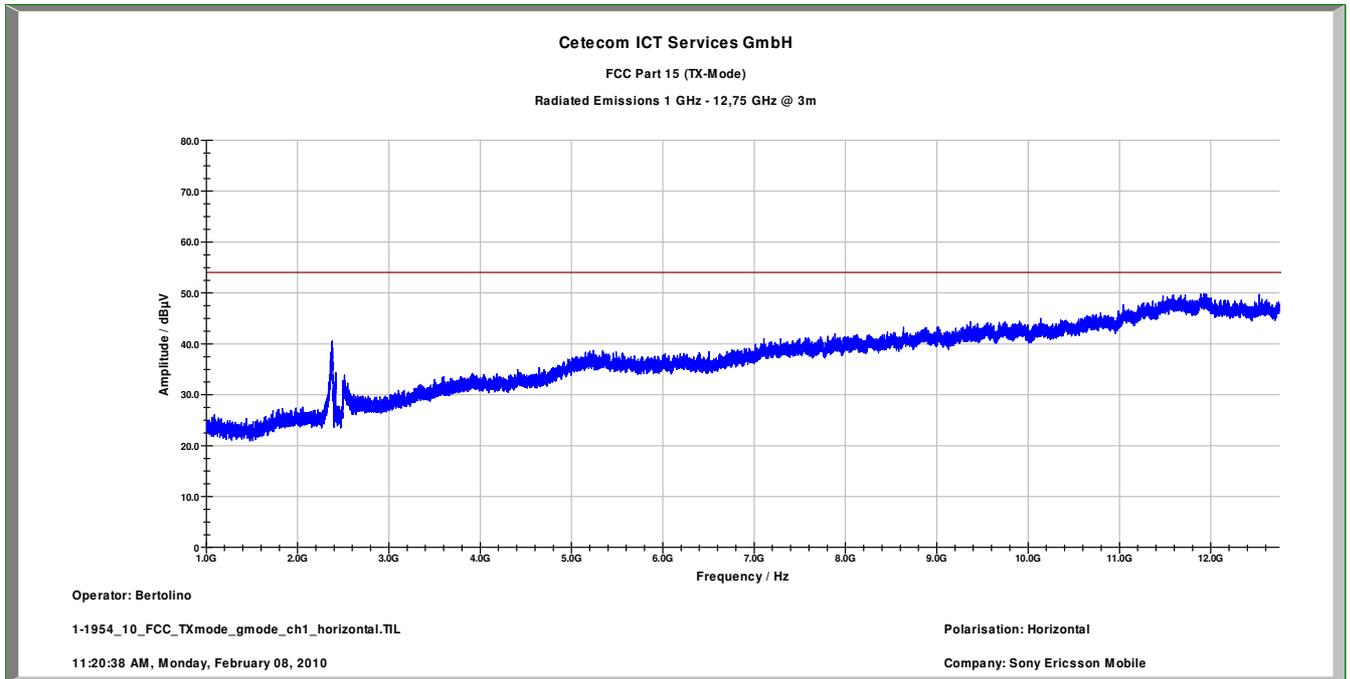
EMC 32 Version 8.10.00

Plot 2: 1 – 12.75 GHz (lowest channel), vertical polarization



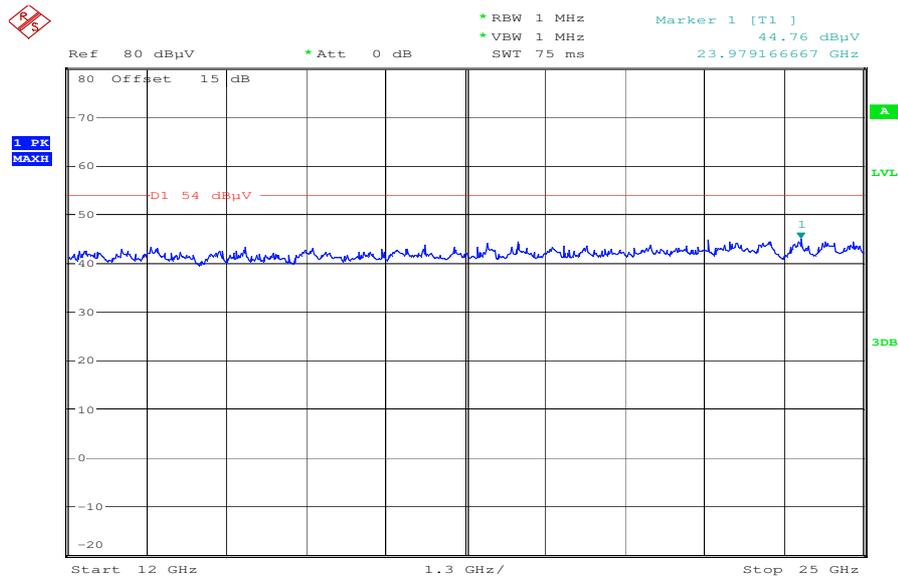
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 3: 1 – 12.75 GHz (lowest channel), horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 4: 12 – 25 GHz (valid for all channels), vertical & horizontal polarization



Plot 5: 0.03 - 1 GHz (middle channel), vertical & horizontal polarization

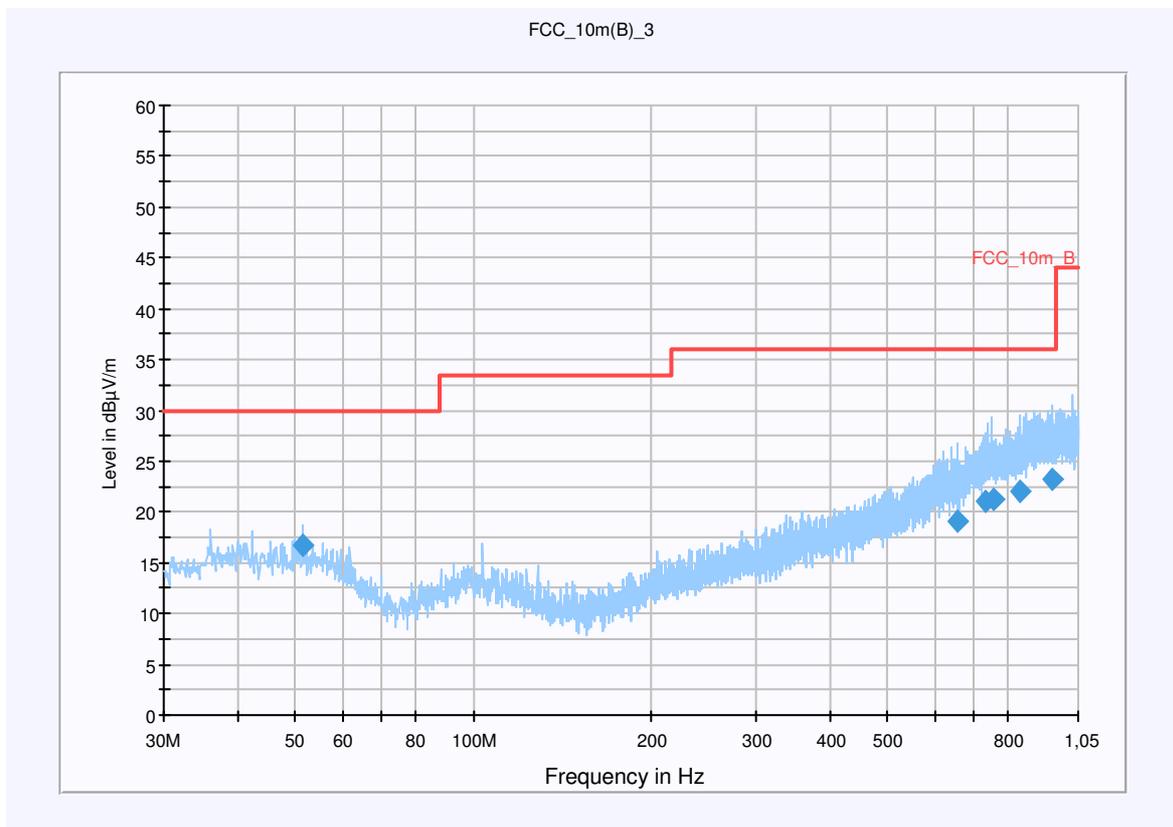
Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FCC part 15 < 1 GHz @ 10 m
 Operating Conditions: WLAN TX Ch 6
 Operator Name: Klos
 Comment: powered by battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1,05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

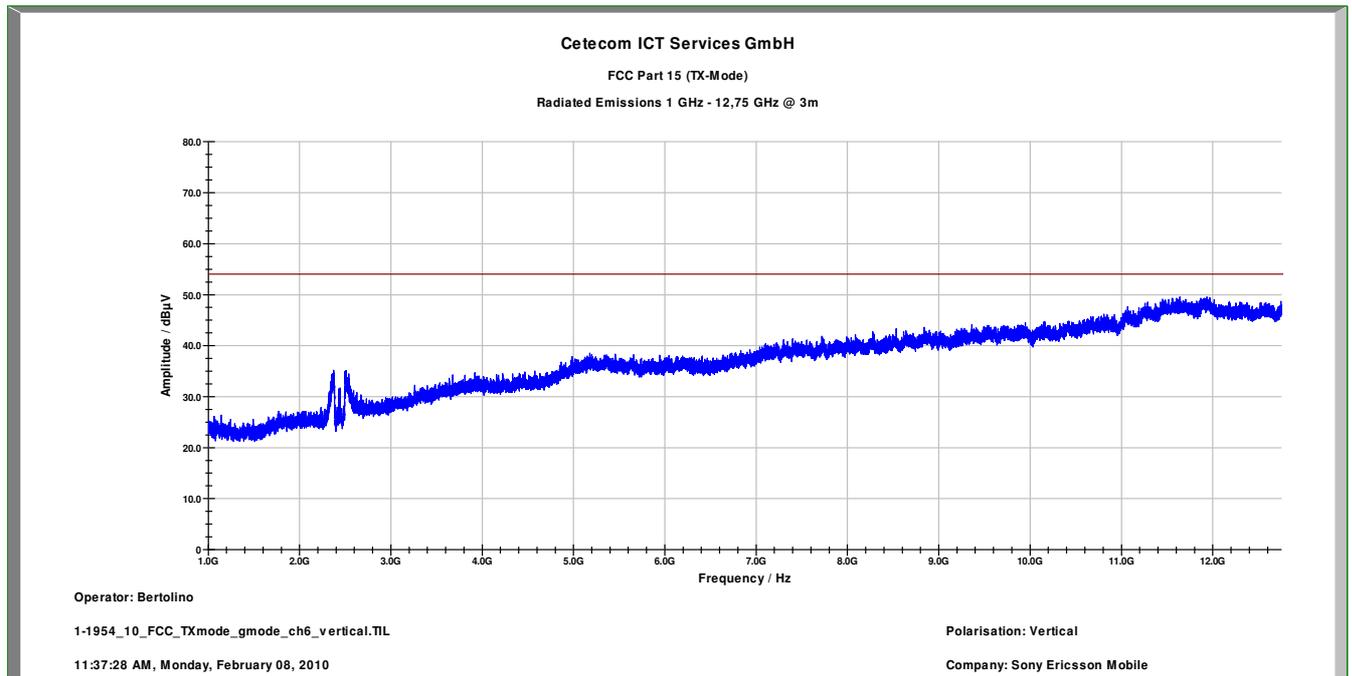
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
51.614700	16.8	15000.000	120.000	98.0	V	240.0	13.4	13.2	30.0	
656.230650	19.1	15000.000	120.000	220.0	V	262.0	21.8	16.9	36.0	
732.442800	21.1	15000.000	120.000	220.0	H	290.0	23.8	14.9	36.0	
752.969400	21.3	15000.000	120.000	204.0	H	46.0	24.2	14.7	36.0	
835.822050	22.0	15000.000	120.000	98.0	V	25.0	24.8	14.0	36.0	
950.964450	23.2	15000.000	120.000	220.0	H	6.0	25.9	12.8	36.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113
Antenna Tower:	Correction Table: Cable_EN_1GHz (0909) Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

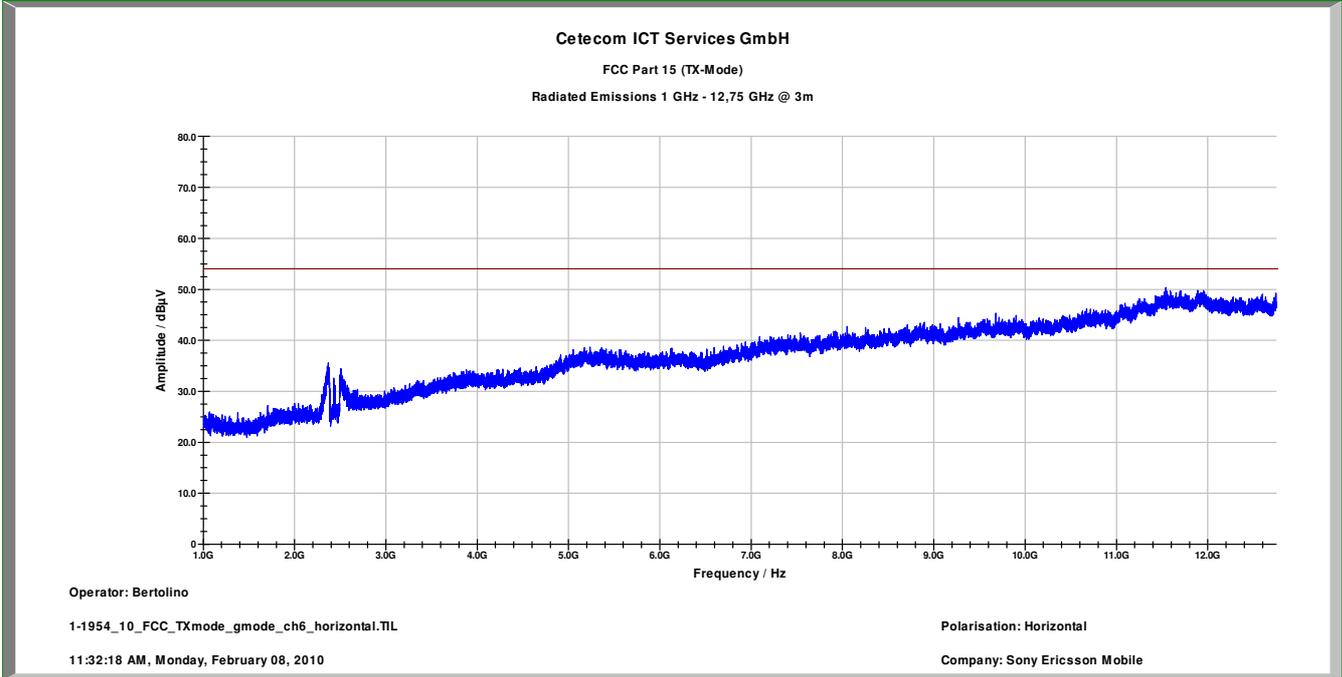
EMC 32 Version 8.10.00

Plot 6: 1 – 12.75 GHz (middle channel), vertical polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 7: 1 – 12.75 GHz (middle channel), horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: 0.03 - 1 GHz (highest channel), vertical & horizontal polarization

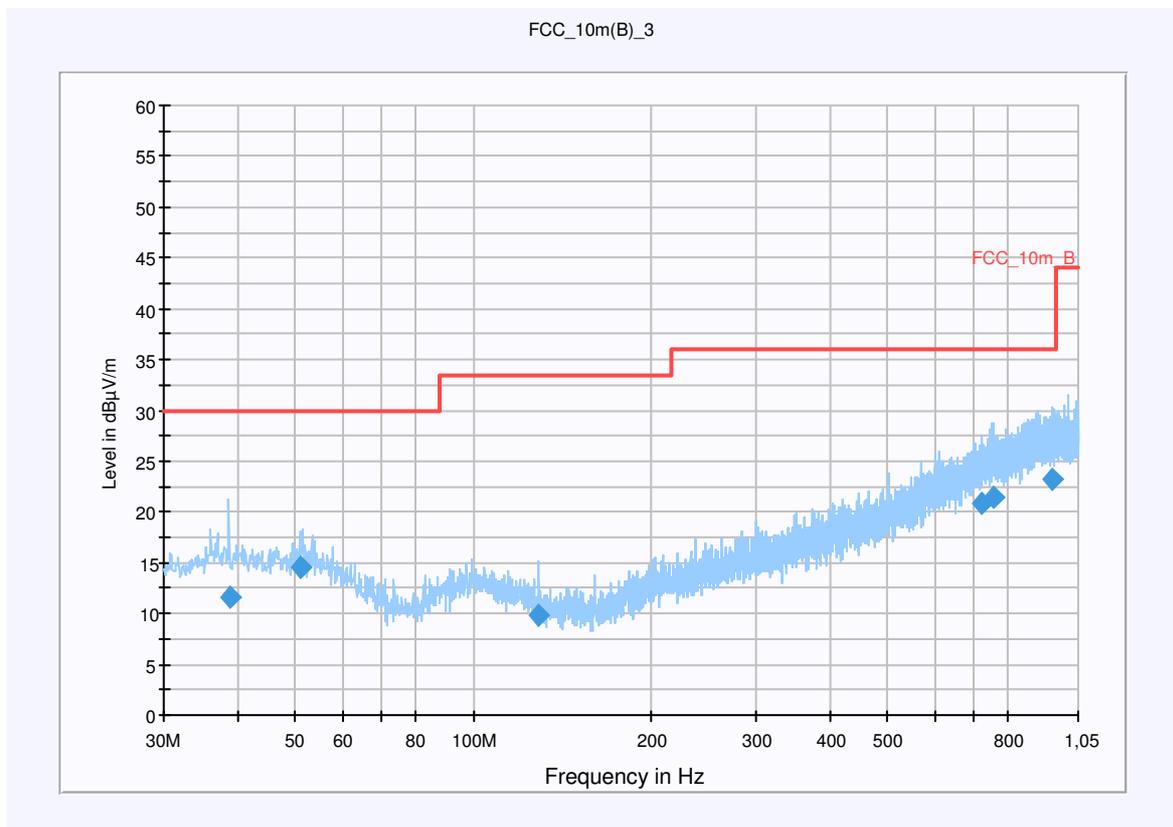
Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FCC part 15 < 1 GHz @ 10 m
 Operating Conditions: WLAN TX Ch 11
 Operator Name: Klos
 Comment: powered by battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1,05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

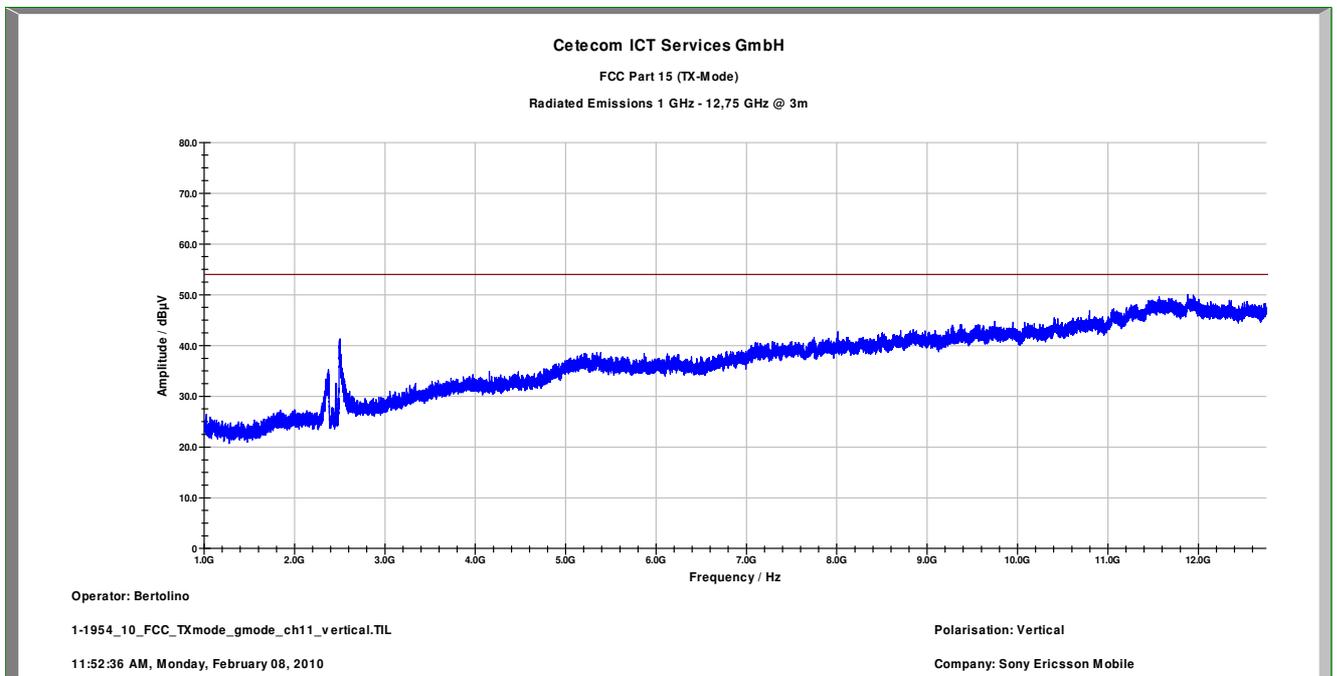
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
38.975400	11.6	15000.000	120.000	98.0	V	226.0	13.5	18.4	30.0	
51.001650	14.6	15000.000	120.000	176.0	V	153.0	13.4	15.4	30.0	
129.066300	9.8	15000.000	120.000	116.0	V	37.0	9.8	23.7	33.5	
723.393150	20.8	15000.000	120.000	166.0	H	168.0	23.5	15.2	36.0	
755.833500	21.4	15000.000	120.000	205.0	V	56.0	24.2	14.6	36.0	
945.363750	23.2	15000.000	120.000	220.0	H	128.0	25.8	12.8	36.0	

Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113
Antenna Tower:	Correction Table: Cable_EN_1GHz (0909) Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

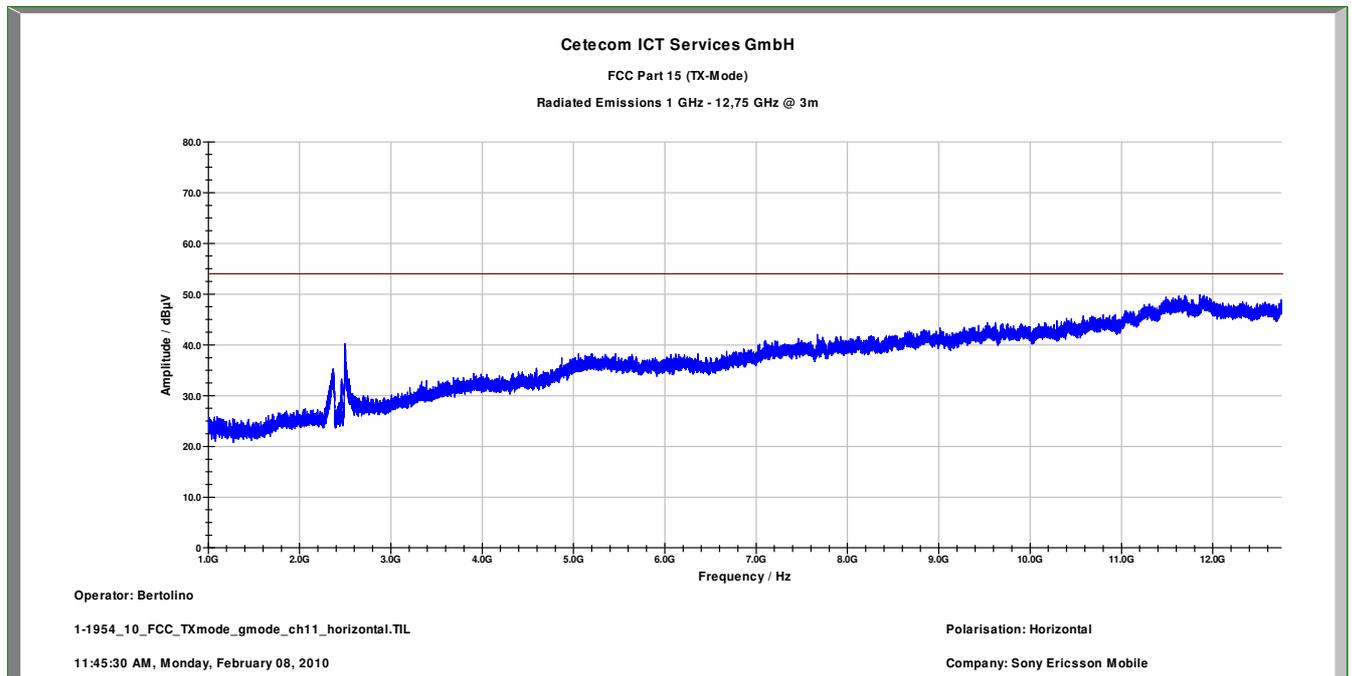
EMC 32 Version 8.10.00

Plot 9: 1 – 12.75 GHz (highest channel), vertical polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 10: 1 – 12.75 GHz (highest channel), horizontal polarization



The carrier signal is notched with a 2.4 GHz band rejection filter.

Results:

SPURIOUS EMISSIONS LEVEL §15.209								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
No critical peaks detected! All emissions are below the limit!			No critical peaks detected! All emissions are below the limit!			No critical peaks detected! All emissions are below the limit!		
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits: § 15.247 (c)

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

Limits: § 15.109

Frequency (MHz)	Field strength (dBµV/m)	Measurement distance (m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
above 960	54.0	3

5.14 Spurious Emissions - radiated (Receiver) §15.109 / 209

Plot 1: 0.03 - 1 GHz, vertical & horizontal polarization

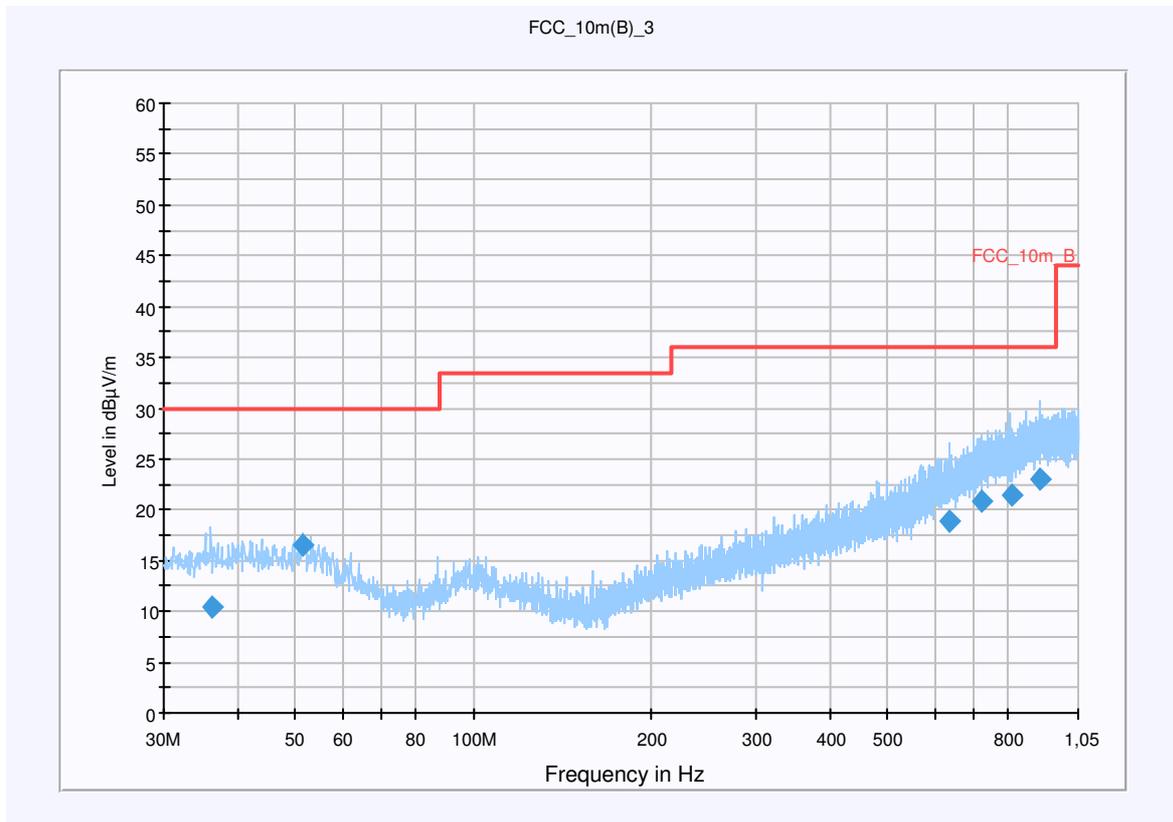
Common Information

EUT: AAD-3880063-BV
 Serial Number: BX9017220V
 Test Description: FCC part 15 < 1 GHz @ 10 m
 Operating Conditions: WLAN RX
 Operator Name: Klos
 Comment: powered by battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBμV/m

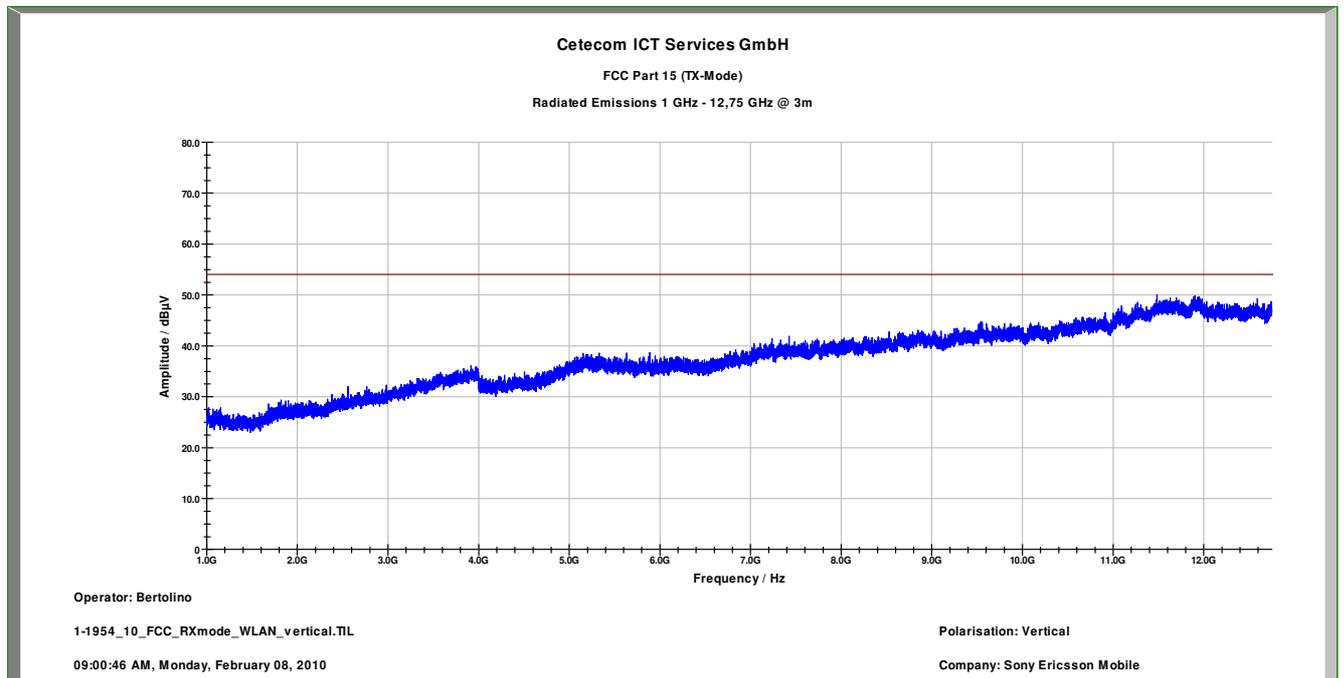
Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1,05 GHz	QuasiPeak	120 kHz	15 s	Receiver



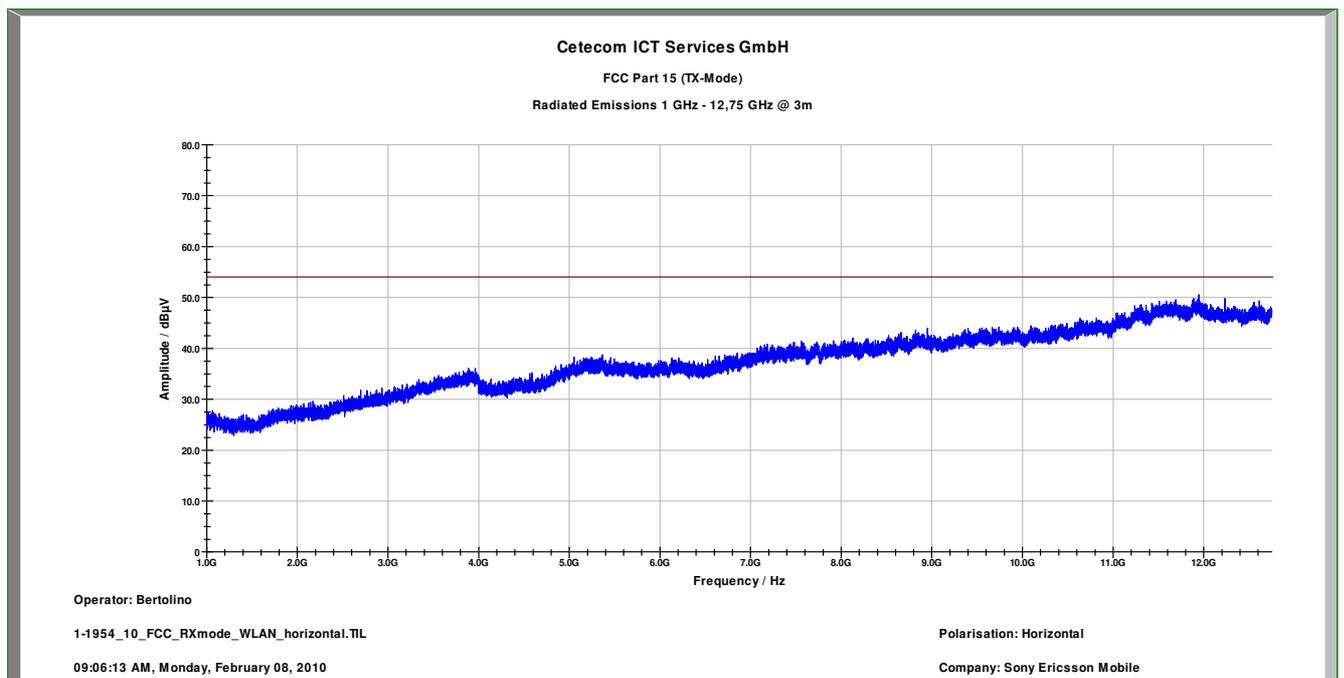
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
36.129900	10.5	15000.000	120.000	137.0	V	1.0	13.2	19.6	30.0	
51.589650	16.4	15000.000	120.000	98.0	V	13.0	13.4	13.6	30.0	
638.238750	18.9	15000.000	120.000	149.0	H	231.0	21.6	17.1	36.0	
721.693950	20.9	15000.000	120.000	220.0	V	272.0	23.5	15.1	36.0	
807.938100	21.5	15000.000	120.000	220.0	H	235.0	24.4	14.5	36.0	
903.489300	23.0	15000.000	120.000	98.0	H	6.0	25.7	13.0	36.0	

Plot 2: 1 GHz – 12.75 GHz vertical polarization



Plot 3: 1 GHz – 12.75 GHz horizontal polarization



Results:

Spurious Emissions level [dB μ V/m]		
f[MHz]	Detector	Level [dB μ V/m]
No critical peaks detected! All emissions are below the limit!		
Measurement uncertainty		±3 dB

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

See above plots

Measurement distance see table

Limits: § 15.109

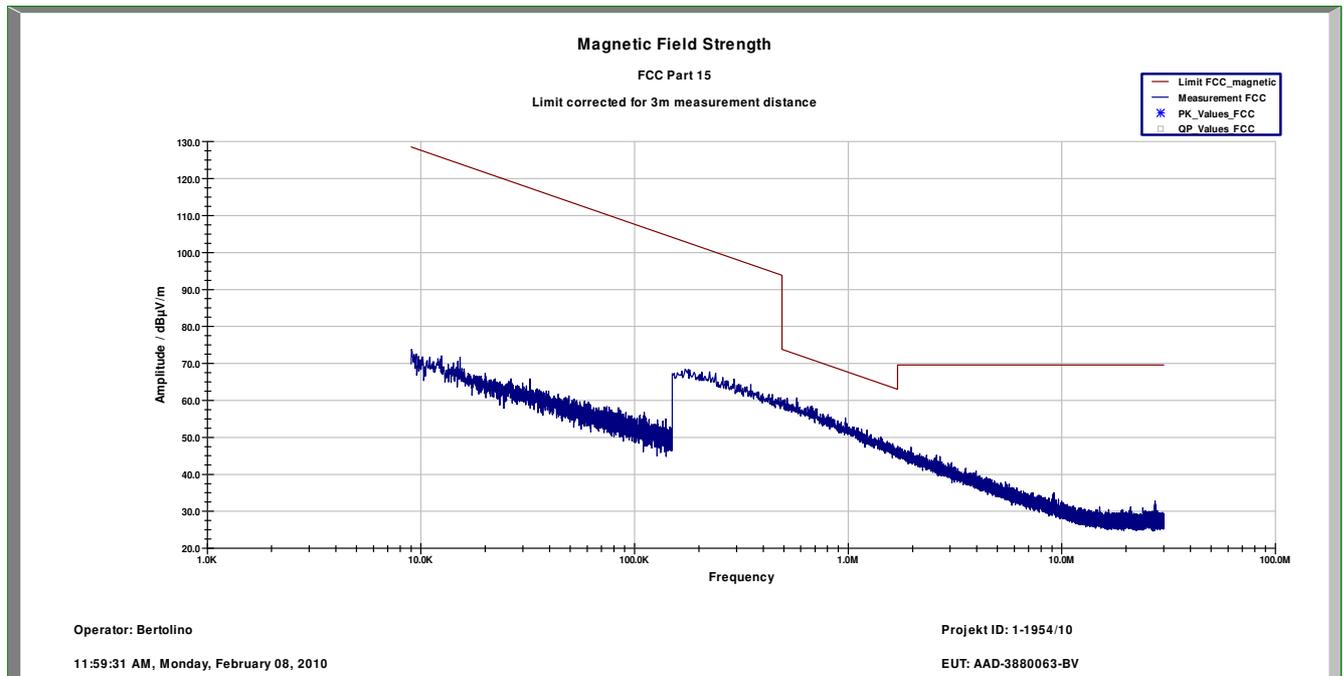
Frequency (MHz)	Field strength (dB μ V/m)	Measurement distance (m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
above 960	54.0	3

5.15 Spurious Emissions - radiated <30 MHz §15.209

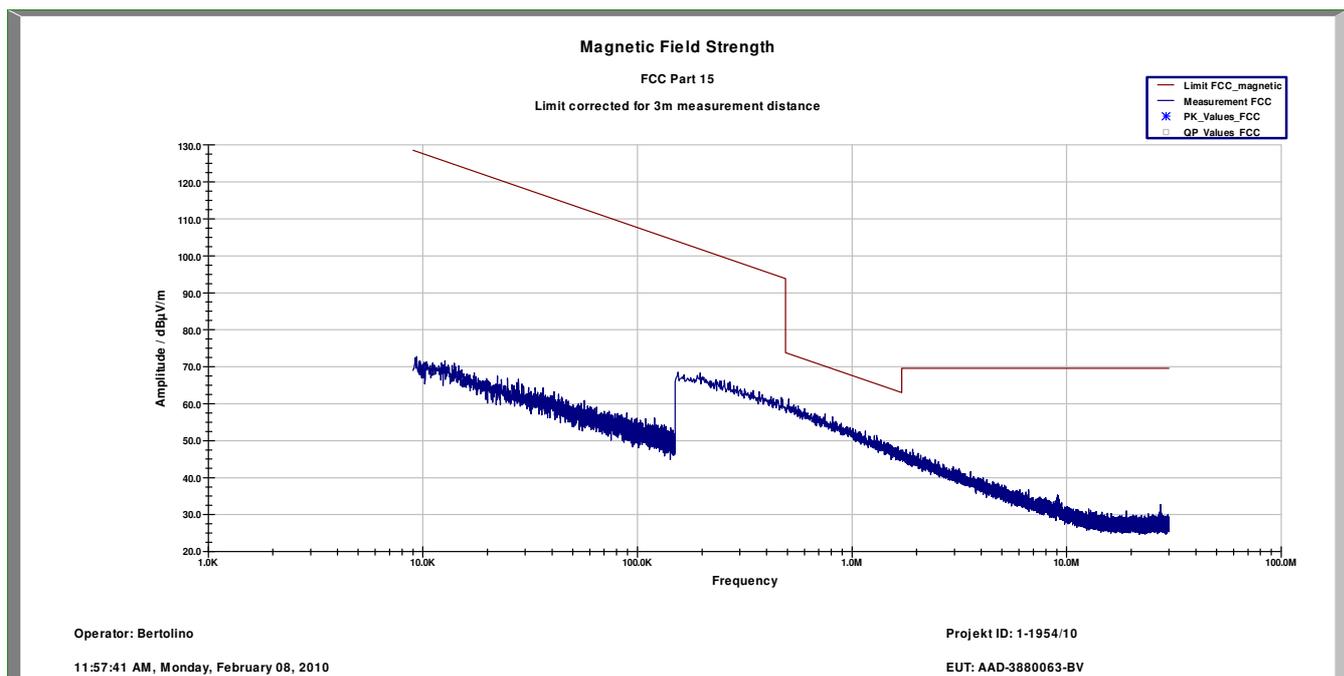
Measured at 3 m distance.

Values recalculated with 40 dB/decade according to FCC rules.

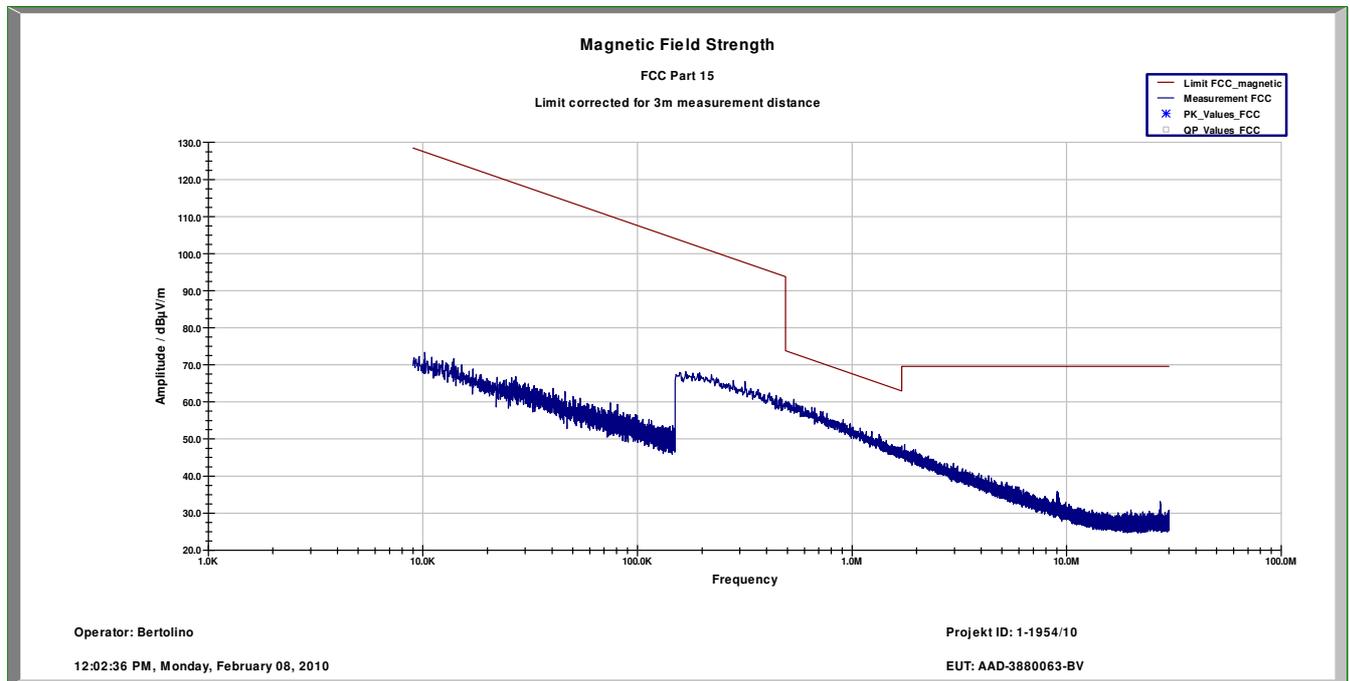
Plot 1: TX mode, DSSS – mode



Plot 2: TX mode, OFDM – mode



Plot 3: RX mode

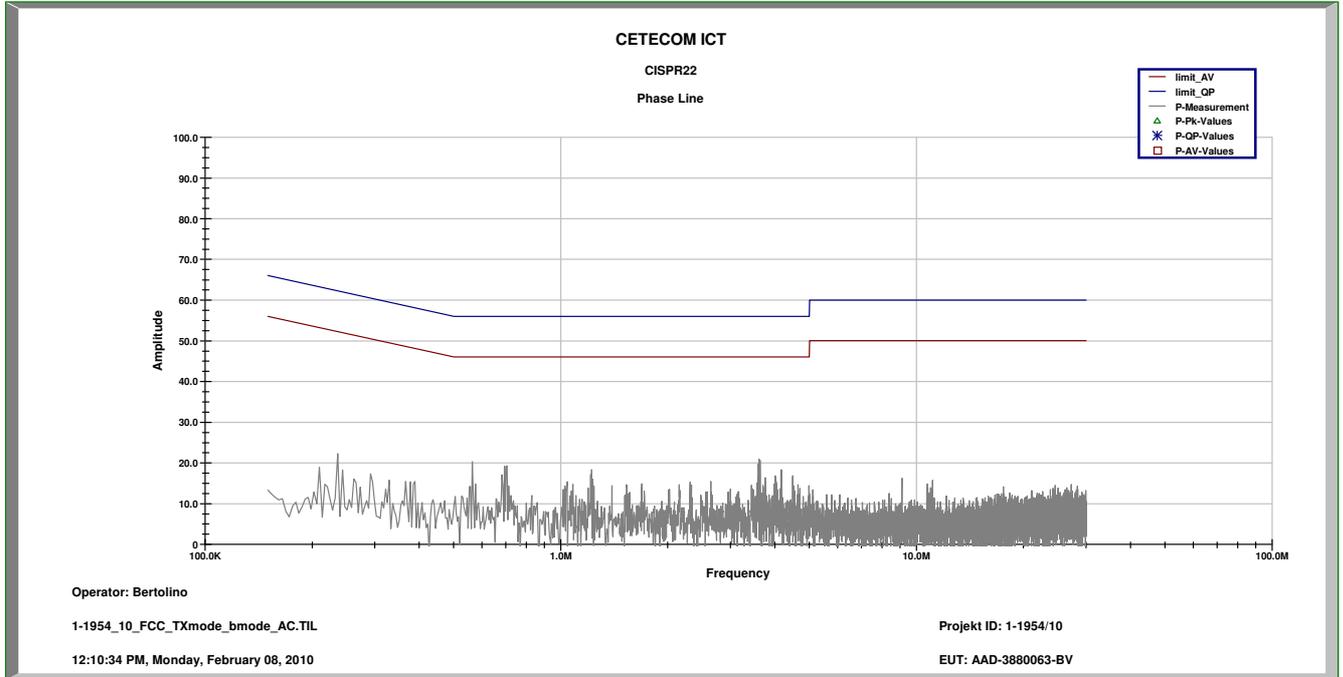


Limits:

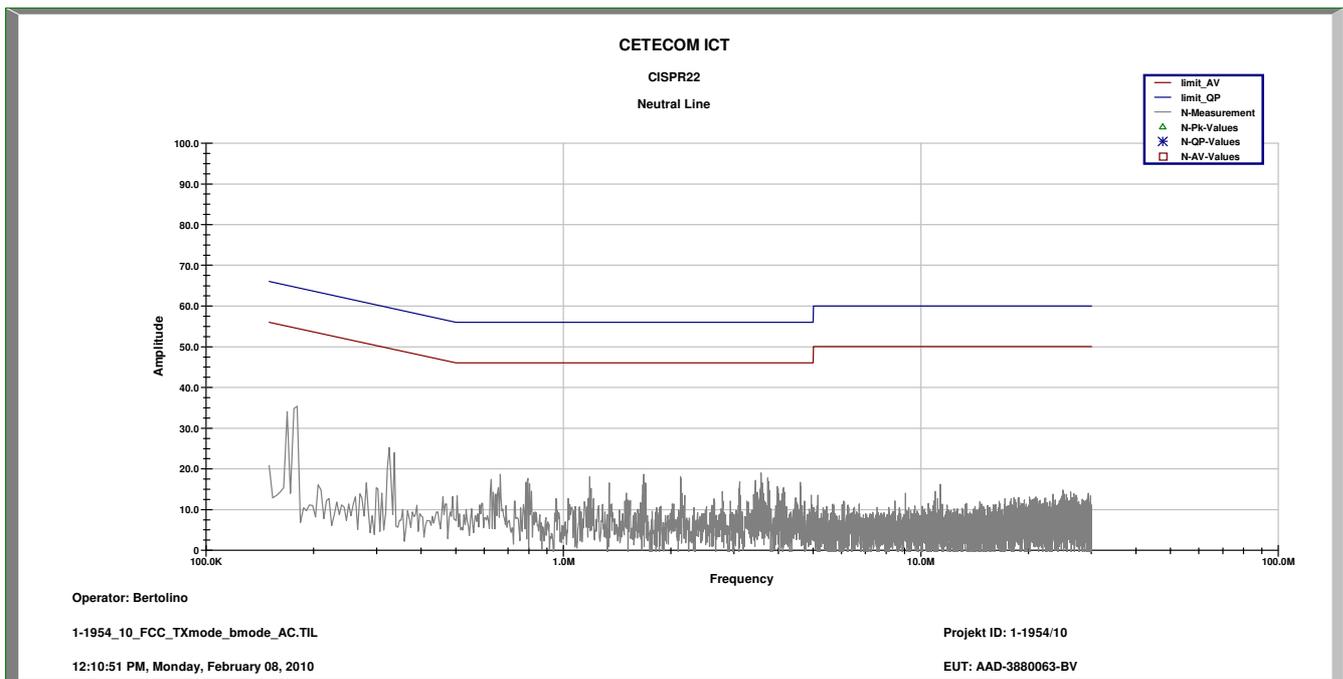
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30 / 29.5 dB $\mu\text{V/m}$	30
30 - 88	100 / 40 dB $\mu\text{V/m}$	3
88 - 216	150 / 43.5 dB $\mu\text{V/m}$	3
216 - 960	200 / 46 dB $\mu\text{V/m}$	3
above 960	54 dB $\mu\text{V/m}$	3

5.16 Conducted Emissions <30 MHz §15.107/207

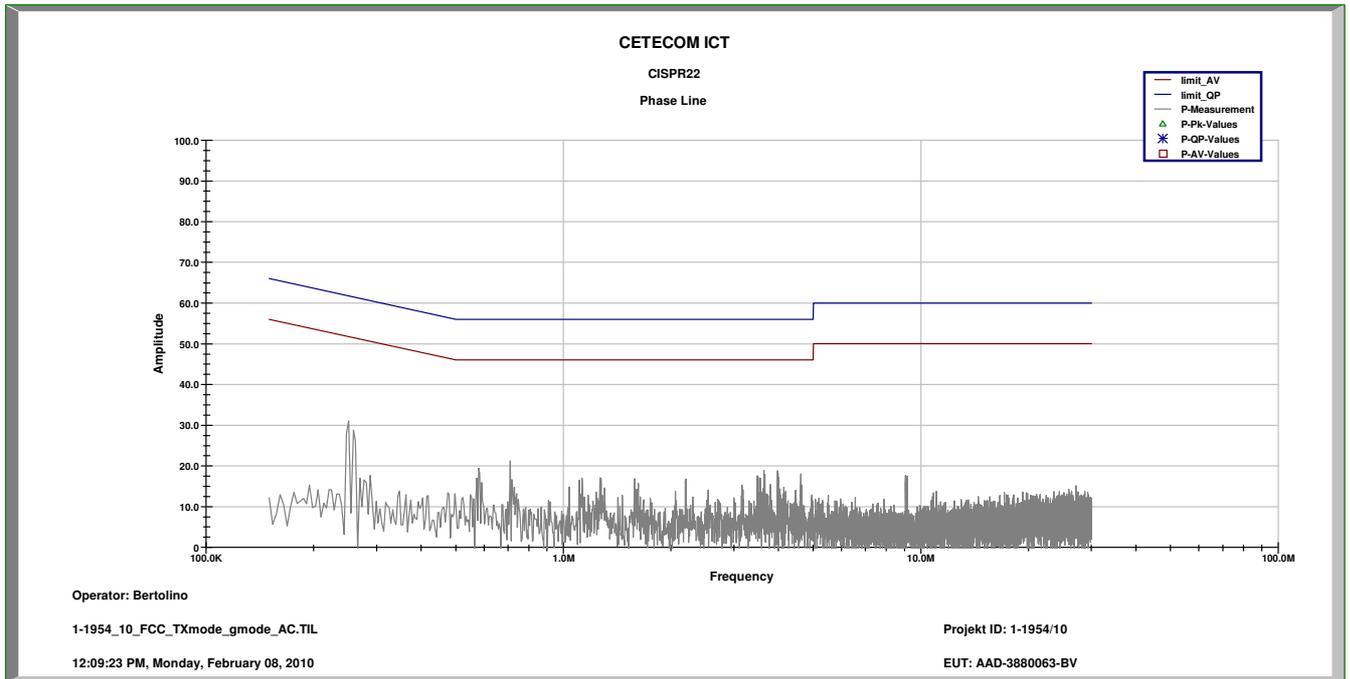
Plot 1: TX mode, DSSS – mode, Phase line



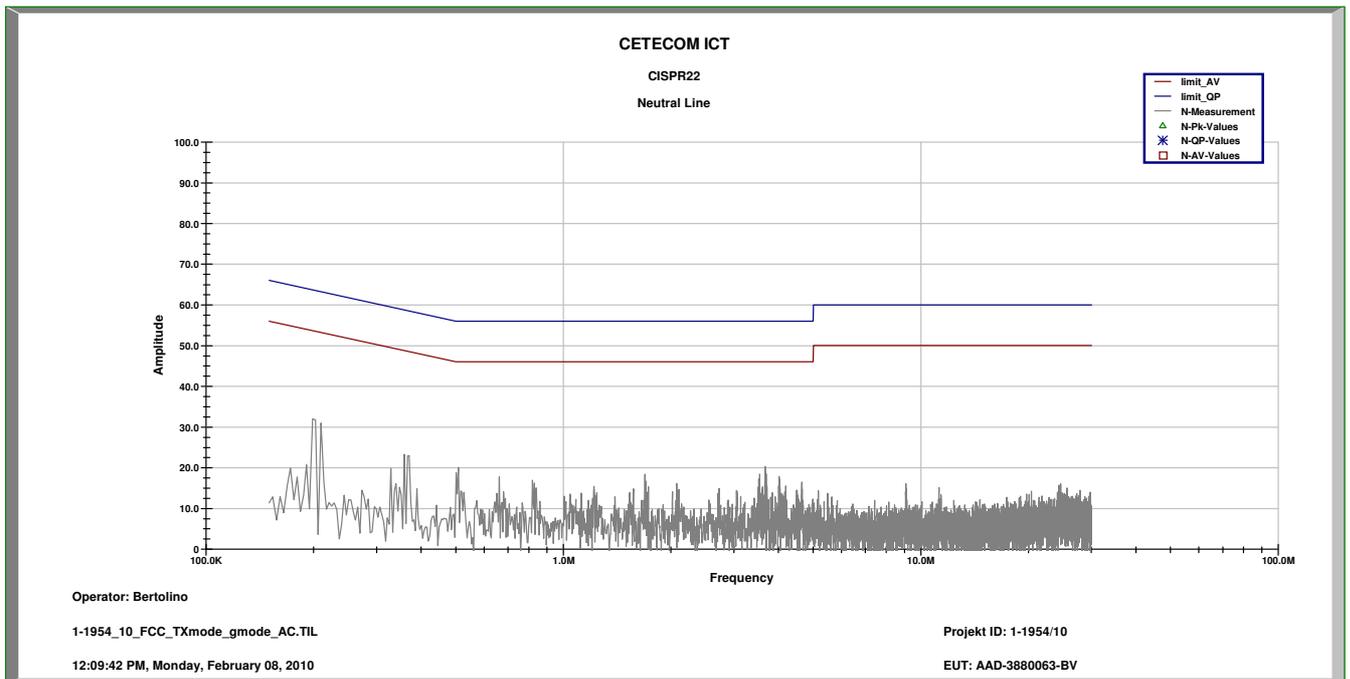
Plot 2: TX mode, DSSS – mode, Neutral line



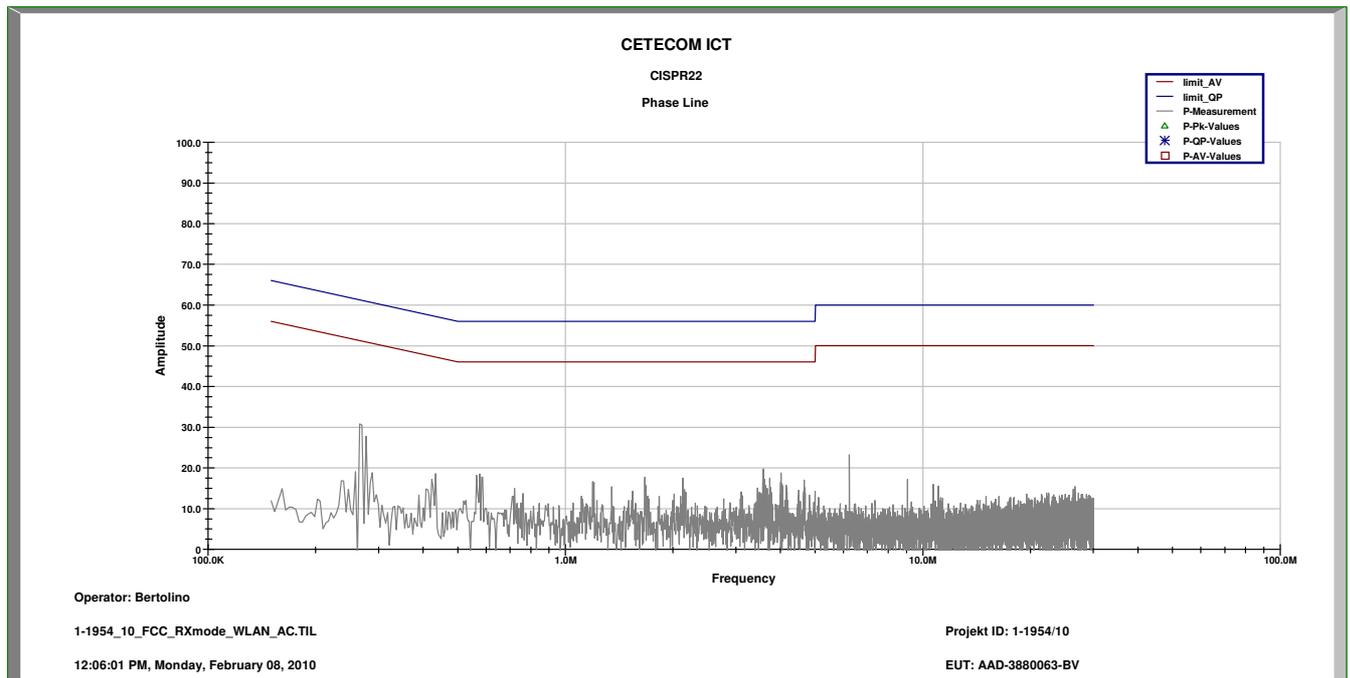
Plot 3: TX mode, OFDM – mode, Phase line



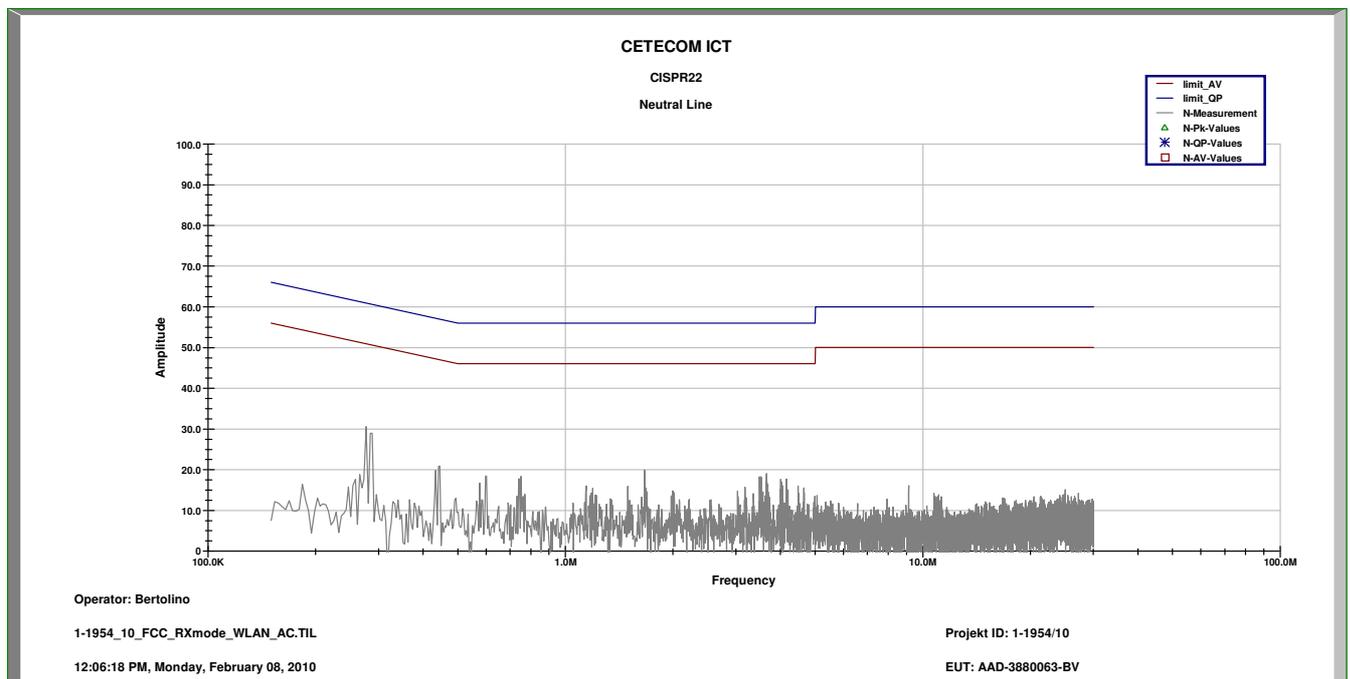
Plot 4: TX mode, OFDM – mode, Neutral line



Plot 5: RX mode, Phase line



Plot 6: RX mode, Neutral line



We measured in TX and RX mode, L1 and N floating and grounded, max value was hold.

Limits:

Under normal test conditions only	See plots
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6 Test equipment and ancillaries used for tests

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

All reported calibration intervals are calibrations according to the EN/ISO/IEC 17025 standard. These calibrations were performed from an accredited external calibration laboratory.

Additional to these calibrations the laboratory performed comparison measurements with other calibrated systems and performed a weekly chamber inspection.

All used devices are connected with a 10 MHz external reference.

According to the manufacturers' instruction is it possible to establish a calibration interval for the FSP unit of 24 month, if the device has an external 10 MHz reference.

No.	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kal. Art	Last Calibration	Next Calibration
1	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
2	Netzgerät	6032A	HP Meßtechnik	2920A04466	300000580	k	06.01.09	06.01.11
3	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081; B5979	300000210	k	03.09.01	03.09.03
4	EMI- Messem Empfänger Analysator- Referenz- System	ESCI 1166.5950.03	R&S	100083	300003312	k	08.01.10	08.01.12
5	(Harmonics u. Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	k	06.06.07	06.06.09
6	Amplifier	JS42- 00502650-28- 5A	MITEQ	1084532	300003379	ev		
7	Antennenmast	Model 2175	ETS- LINDGREN	64762	300003745	izw		
8	Steuergerät	Model 2090	ETS- LINDGREN	64672	300003746	izw		
9	Interface-Box für Drehtisch	Model 105637	ETS- LINDGREN	44583	300003747	izw		
10	Breitbandantenn e	VULB9163	Schwarzbeck	295	300003787	k	01.04.08	01.04.10
11	Spectrum- Analyzer	FSU26	R&S	200809	300003874	k	08.01.10	08.01.12
12	Netzgerät	6032A	HP Meßtechnik	2818A03450	300001040	Ve	08.01.09	08.01.12
13	Horn Antenne 1-26.5GHz	3115	EMCO	8812-3088	300001032	vlK I!	05.03.09	05.03.11
14	Active Loop Antenne	6502	EMCO	2210	300001015	ne		
15	Monitor	35731	HP		300002294			
16	Workstation	9000/300	HP		300002295			
17	SRM-Laufwerk	9144A	HP	2823e46556	300001044	g		
18	Software	EMI Halle C	HP		300000983			
19	Vectra	4	HP	fr64068117	300000974			
20	Monitor	ultra vga 1280	HP	kr63253592	300000977			
21	Busisolator		Kontron		300001056	g		
22	Absorberhalle		MWB	87400/02	300000996			
23	Antennen Mast	AM9104	Schwarzbeck		300001278			

24	Antennen Mast	UAAIp9107	Schwarzbeck		300002478			
25	System-Rack	85900	HP I.V.	*	300000222	ne		
26	Relaismatrix (FTA)	HP3488A	HP	2719A15013	300000151	ne		
27	NF PCM Tester	PCM 23	Meßtechnik	W&G	P-0049	300000196	k	
28	Leitungsteiler	11850C	HP		300000997	ne		
	Breitband-Hornantenne		Meßtechnik					
29	EMI	35155P	HP		300002300	ne		
	Arbeitsplatzrechner		Meßtechnik					
30		Vectra VL	HP		300001688			
			Meßtechnik					
31	Band Reject filter	WRCG1855/1 910- 1835/1925- 40/8SS	Wainwright	7	300003350	ev		
32	Band Reject filter	WRCG2400/2 483- 2375/2505- 50/10SS	Wainwright	11	300003351	ev		
33	USB/GPIB Interface	82357A	Meilhaus	MY4546864 6	300003428	ne		
34	EGPRS-Treiber	EGPRS-Treiber für EMQ-100 Software Quantum	EMCO	none	300003441	ne		
35	TILE-Software Emission	Change, Modell TILE-ICS/FULL	EMCO	none	300003451	ne		
36	Hochpassfilter	WHKX2.9/18 G-12SS	Wainwright	1	300003492	ev		
37	Hygro-Thermometer	-/, 5-45°C, 20-100%rF		-/-	400000110	izw	08.04.20 09	08.04.20 10
38	Hochpassfilter	WHK1.1/15G -10SS	Wainwright	3	300003255	ev		
39	Hochpassfilter	WHKX7.0/18 G-8SS	Wainwright	18	300003789	ne		
40	PSA-Spektrumanalysator 3 Hz - 26,5 GHz	E4440A	Agilent Vertr. Bad Hom	MY4825008 0	300003812	k	05.08.20 08	05.08.20 10
41	Microwave Analog Signal Generator	N5183A	Agilent Vertr. Bad Hom	MY4742022 0	300003813	k	06.08.20 08	06.08.20 10
42	EMI Preselector 9kHz - 1 GHz	N9039A	Agilent Vertr. Bad Hom	MY4826000 3	300003825	vIK I!	19.08.20 08	19.08.20 10
43	Conical Log-Spiral Antenna TRILOG Super	3102	ETS-LINDGREN	00091823	300003849	NK !	30.10.20 08	
44	Breitband Antenne	VULB9163	Schwarzbeck	371	300003854	vIK I!	17.12.20 08	17.12.20 10
45	High Pass Filter	VHF-3500+	Mini Circuits	-/-	400000193	ne		
46	Horn Antenne 1-26.5GHz	3115	EMCO	9107-3697	300001605	Ve	30.06.20 08	30.06.20 10
47	Spectrum Analyzer 9kHz-50GHz portable spectrum analyzer	8565E	HP Meßtechnik	3738A00773	300001665	Ve	08.01.20 10	08.01.20 12

48	Powermeter	NRVD	R&S	835430/044	300002681-0004	k	26.08.2008	26.08.2010
49	Klimaschrank	VT 4002	Heraeus Voetsch	521/84193	300003889	vIK I!	28.05.2009	28.05.2011