



Accredited testing-laboratory

DAR registration number: DAT-P-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. : 1-1290-01-11/09
Type identification : OT8x0
Applicant : Sagem Wireless
FCC ID : M9HOT8X0
IC Certification No : 2599N-OT8X0
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:

2009-09-03

Date

Marco Bertolino

Name



Signature

Technical responsibility for area of testing:

2009-09-03

Date

Stefan Bös

Name



Signature

1.2 Testing laboratory

CETECOM ICT Services GmbH

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: DAT-P-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:	Sagem Wireless
Street:	2, rue du Petit Albi BP 28250
Town:	95801 Cergy Pontoise Cedex
Country:	France
Telephone:	86-574-27960929
Fax:	86-574-27960000
Contact:	Ms. Xinni Yang
E-mail:	Xinni.Yang@sagemwireless.com.cn
Telephone:	86-574-27960929

1.4 Application details

Date of receipt of order:	2009-08-14
Date of receipt of test item:	2009-08-14
Date of start test:	2009-08-27
Date of end test:	2009-09-03
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:	Sagem Wireless
Street:	2, rue du Petit Albi BP 28250
Town:	95801 Cergy Pontoise Cedex
Country:	France

3.1.1 Test item

Kind of test item	:	GSM Mobile Phone
Type identification	:	OT8x0
S/N serial number	:	Conducted: EUT 1: 354797030000130 EUT 2: 354797030000114 Radiated: EUT 1: 354797030000023 EUT 2: 354797030000049
HW hardware status	:	V0x
SW software status	:	EYN,VA
Frequency Band [MHz]	:	ISM band 2400 – 2483.5
Type of Modulation	:	DSSS & OFDM
Number of channels	:	11
Antenna	:	Integrated PCB antenna
Power Supply	:	3.6 / 230 V DC by Li-Ion battery / AC/DC power supply DCH3-050
Temperature Range	:	-20 °C to +55 °C

Max. power radiated: 20.89 dBm DSSS
Max. power conducted: 19.73 dBm DSSS

Max. power radiated: 17.22 dBm OFDM
Max. power conducted: 16.06 dBm OFDM

FCC ID: M9HOT8X0
IC: 2599N-OT8X0

3.1.2 Additional EUT information For IC Canada (appendix 2)

IC Registration Number:	2599N-OT8X0
Model Name:	OT8x0
Manufacturer (complete Address):	SAGEM Wireless 2, rue du Petit Albi BP 28250 France
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 – 2483.5
RF: Power [W] (max):	<u>DSSS:</u> Rad. EIRP: 122.74 mW Conducted : 93.97 mW <u>OFDM:</u> Rad. EIRP: 52.72 mW Conducted : 40.36 mW
Antenna Type:	Integrated PCB antenna
Occupied Bandwidth (99% BW) [kHz]:	DSSS: 15.77 OFDM: 18.17
Type of Modulation:	DSSS & OFDM
Emission Designator (TRC-43):	15M8G1D (DSSS) 18M2G7D (OFDM)
Transmitter Spurious (worst case) [dBμV/m in 3m]:	DSSS: 39.31 OFDM: 40.02
Receiver Spurious (worst case) [dBμV/m in 3m]:	39.74

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: 2009-09-03

3.1.3 RF Technical Brief Cover Sheet acc. To RSS-102

All Fields must be completed with the requested information or the following codes: N/A for Not Applicable, N/P for Not Performed or N/V for Not Available. Where applicable, check appropriate box.

1. COMPANY NUMBER: **2599N**
2. MODEL NUMBER: **OT8x0**
3. MANUFACTURER: **SAGEM Wireless**
4. TYPE OF EVALUATION: **(c) RF Evaluation**

- Evaluated against exposure limits: General Public Use ☒ Controlled Use ☐
- Duty cycle used in evaluation: 100 %
- Standard used for evaluation: RSS-102 Issue 2 (2005-11)
- Measurement distance: 0.20 m
- RF value: 0.244 V/m ☐ A/m ☐ W/m² ☒
- Measured ☐ Computed ☐ Calculated ☒

Declaration of RF Exposure Compliance

ATTESTATION:

I attest that the information provided in this test report is correct; that a Technical Brief was prepared and the information it contains is correct; that the device evaluation was performed or supervised by me; that applicable measurement methods and evaluation methodologies have been followed and that the device meets the SAR and/or RF exposure limits of RSS-102.

Name: Dipl.-Ing. (FH) Marco Bertolino
Title: Engineer
Company: Cetecom ICT Services GmbH

Signature:



Date: 2009-09-03

3.1.4 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

3.1.5 Extreme conditions testing values

Description	Shortcut	Unit	Value
Nominal Temperature	T _{nom}	°C	-20
Nominal Humidity	H _{nom}	%	51
Nominal Power Source	V _{nom}	V	3.6 / 230

Type of power source: DC by Li-Ion battery / AC/DC power supply DCH3-050

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	PASSED	2009-09-03	-/-

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.

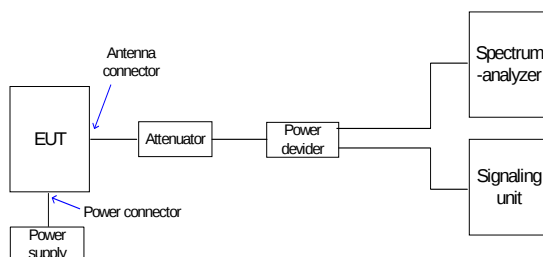
Antennas are confirmed with ANSI C63.2-1996 item 15.

9 kHz - 150 MHz: Quasi Peak measurement, 200 Hz Bandwidth, passive loop antenna.
150 kHz - 30 MHz: Quasi Peak measurement, 9 kHz Bandwidth, passive loop antenna.
30 MHz - 200 MHz: Quasi Peak measurement, 120 kHz Bandwidth, biconical antenna
200MHz - 1GHz: Quasi Peak measurement, 120 kHz Bandwidth, log periodic 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

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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.

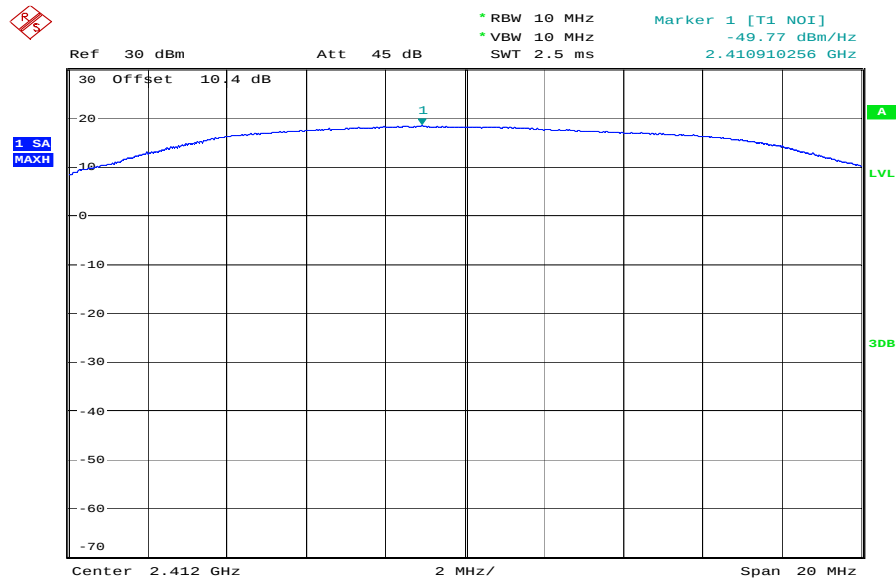
	low channel	mid channel	high channel
Conducted power [dBm] (<i>measured</i>)	18.68	19.73	19.66
Radiated power [dBm] (<i>measured</i>)	18.79	20.89	20.40
Gain [dBi] (<i>calculated</i>)	0.11	1.16	0.74

Measurement settings: RBW 50 MHz
VBW 30 MHz
Detector Peak
Span 100 MHz
Sweep time auto

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

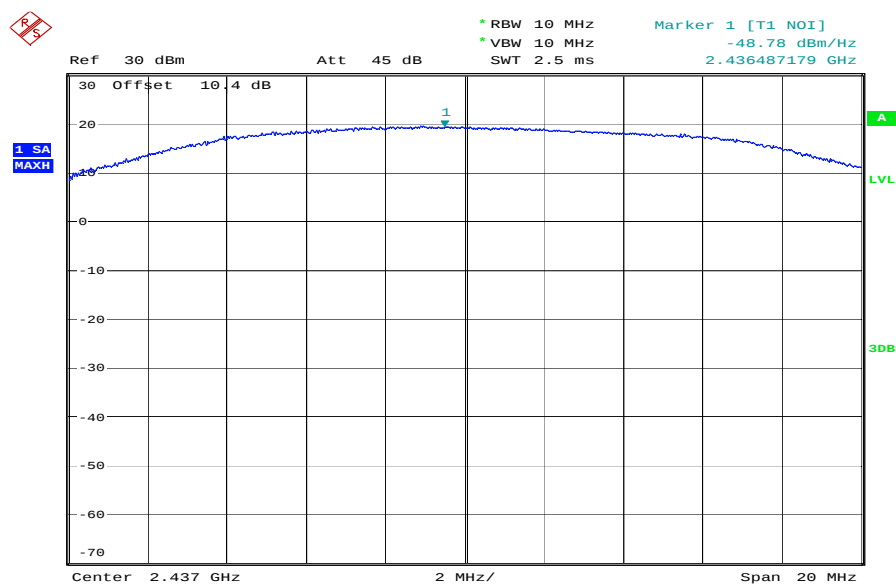
DSSS

Plot 1: (result calculated by the Signal analyzer FSP from Rohde & Schwarz)



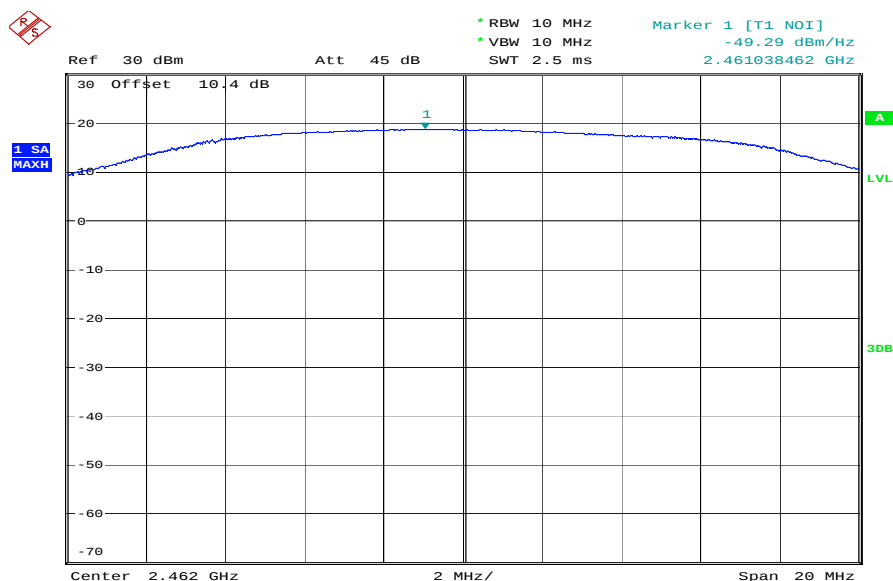
Date: 2.SEP.2009 11:40:14

Plot 2: (result calculated by the Signal analyzer FSP from Rohde & Schwarz)



Date: 2.SEP.2009 11:41:32

Plot 3: (result calculated by the Signal analyzer FSP from Rohde & Schwarz)



Date: 2.SEP.2009 11:43:41

Conducted:

Results:

Plot 1: Power density: -49.77 dBm / Hz = -14.97 dBm / 3 kHz

Plot 2: Power density: -48.78 dBm / Hz = -13.98 dBm / 3 kHz

Plot 3: Power density: -49.29 dBm / Hz = -14.49 dBm / 3 kHz

Correction factor from dBm / Hz to dBm / 3 kHz is +34.8 dB

Radiated:

Results:

Plot 1: Power density: -14.97 dBm / 3 kHz + 0.11 (antenna gain) = -14.86 dBm / 3 kHz

Plot 2: Power density: -13.98 dBm / 3 kHz + 1.16 (antenna gain) = -12.82 dBm / 3 kHz

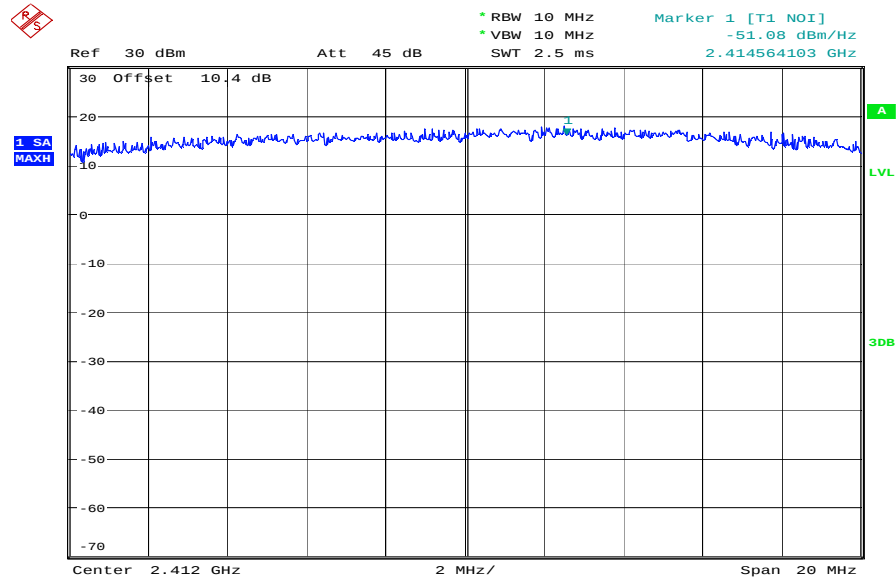
Plot 3: Power density: -14.49 dBm / 3 kHz + 0.74 (antenna gain) = -13.75 dBm / 3 kHz

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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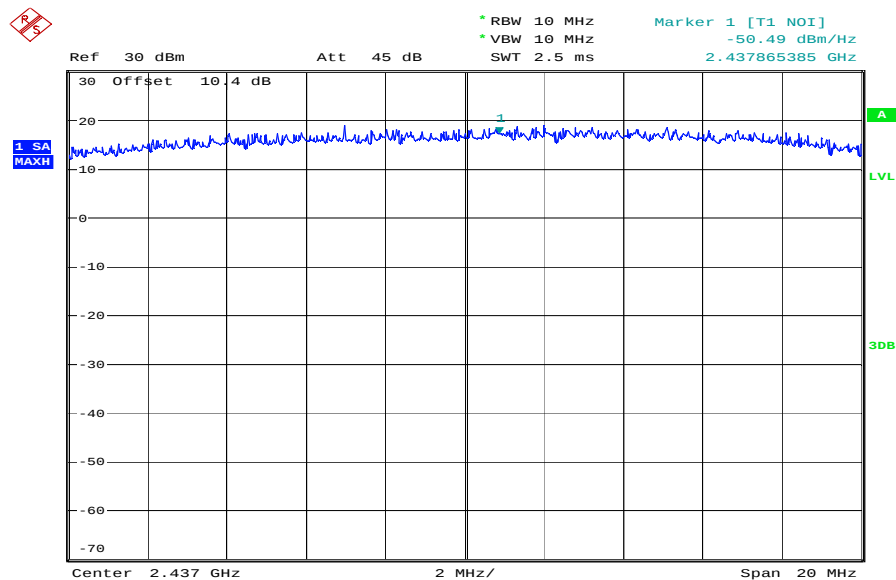
OFDM

Plot 1: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



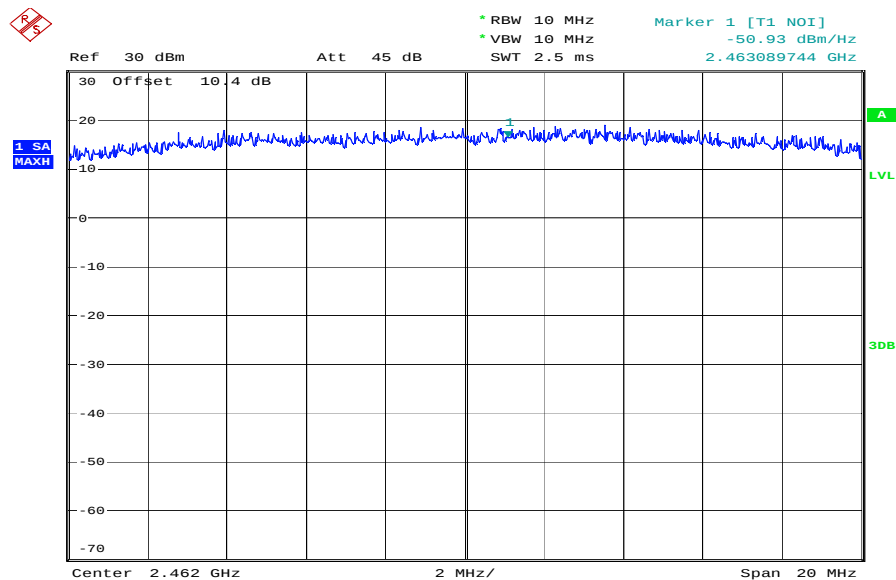
Date: 2.SEP.2009 12:57:20

Plot 2: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



Date: 2.SEP.2009 12:53:14

Plot 3: (result calculated by the Signal analyzer FSIQ 26 from Rohde & Schwarz)



Date: 2.SEP.2009 12:50:43

Conducted:

Results: Plot 1: Power density: -51.08 dBm / Hz = -16.28 dBm / 3 kHz
Plot 2: Power density: -50.49 dBm / Hz = -15.69 dBm / 3 kHz
Plot 3: Power density: -50.93 dBm / Hz = -16.13 dBm / 3 kHz

Correction factor from dBm / Hz to dBm / 3 kHz is +34.8 dB

Radiated:

Results: Plot 1: Power density: -16.28 dBm / 3 kHz + 0.11 (antenna gain) = -16.17 dBm / 3 kHz
Plot 2: Power density: -15.69 dBm / 3 kHz + 1.16 (antenna gain) = -14.53 dBm / 3 kHz
Plot 3: Power density: -16.13 dBm / 3 kHz + 0.74 (antenna gain) = -15.39 dBm / 3 kHz

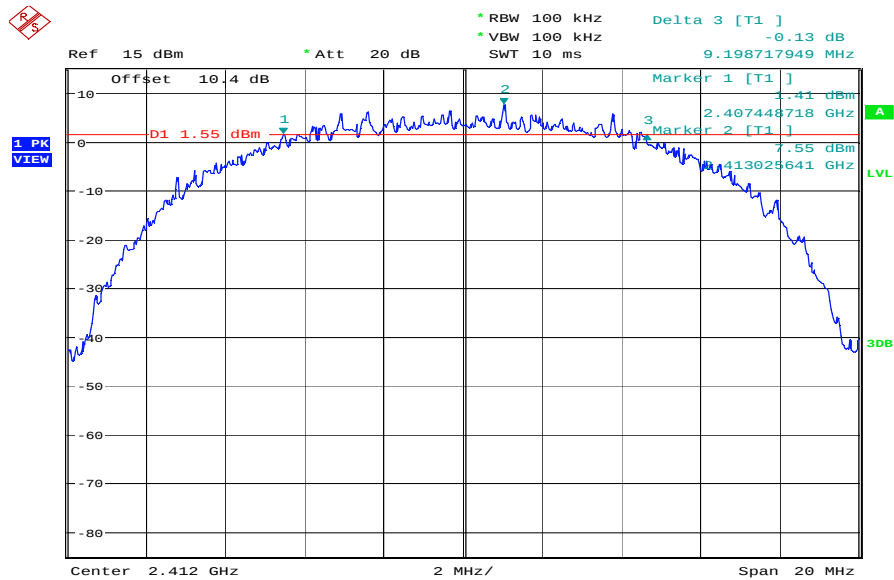
Limits:

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)

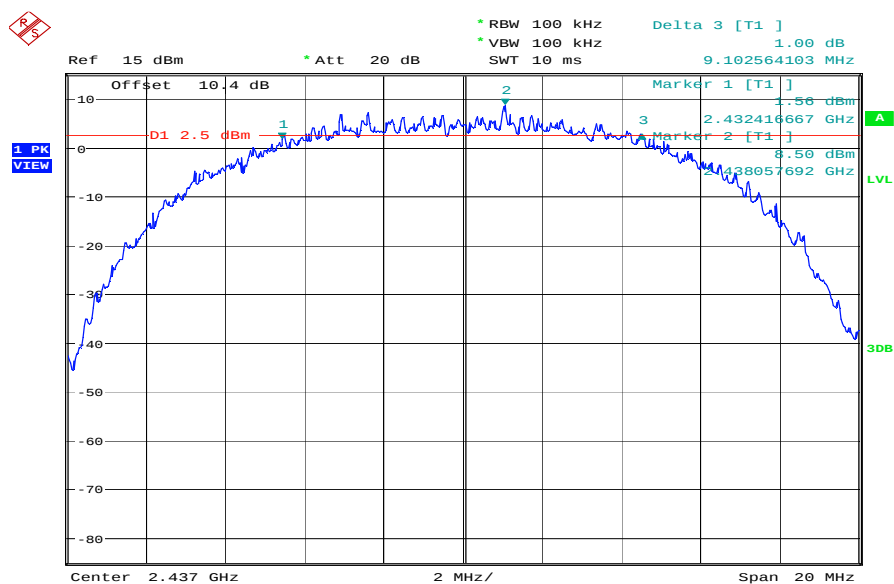
DSSS

Plot 1:



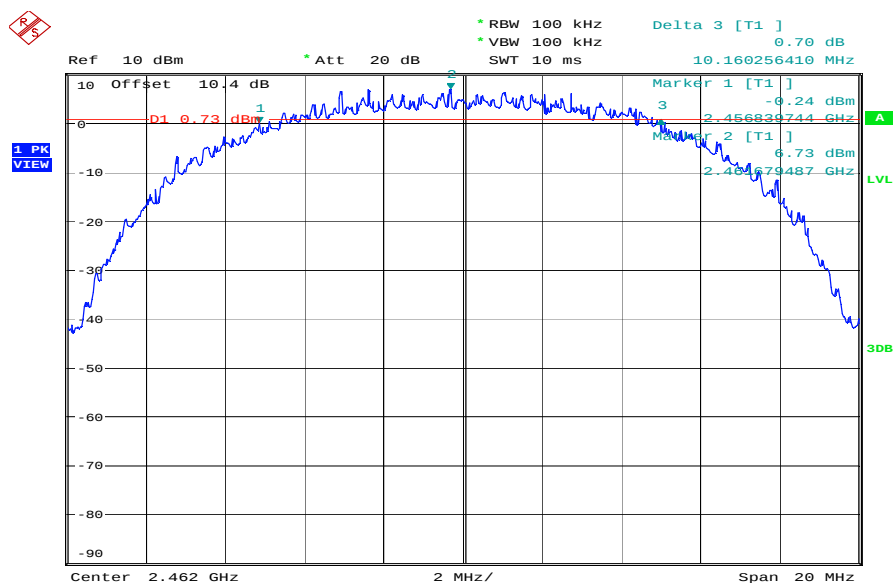
Date: 2.SEP.2009 13:48:22

Plot 2:



Date: 2.SEP.2009 13:45:20

Plot 3:



Date: 2.SEP.2009 13:42:18

Results:

Test conditions		6 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T_{nom}	V_{nom}	9.20	9.10	10.16
Measurement uncertainty		± 10 kHz		

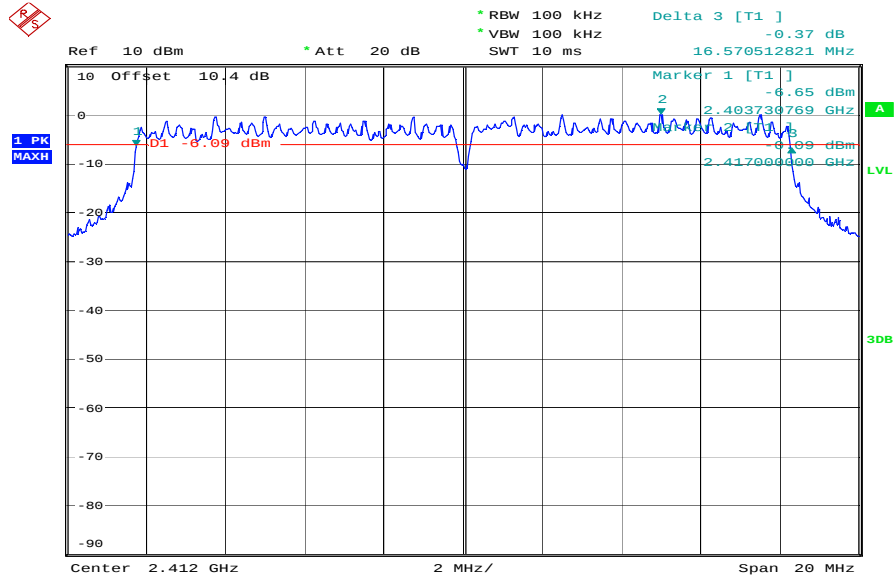
RBW: 100 kHz / VBW 100 kHz

Limits:

Under normal test conditions only	> 500 kHz
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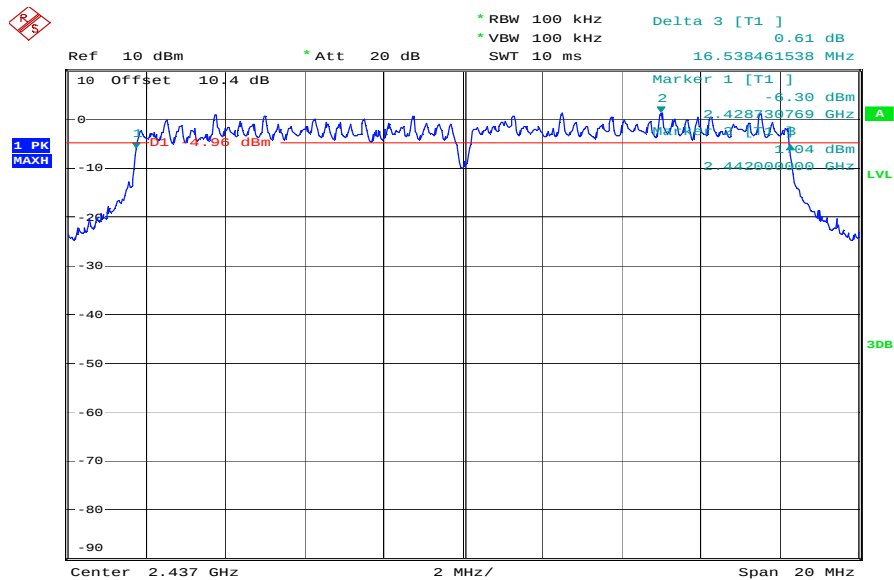
OFDM

Plot 1:



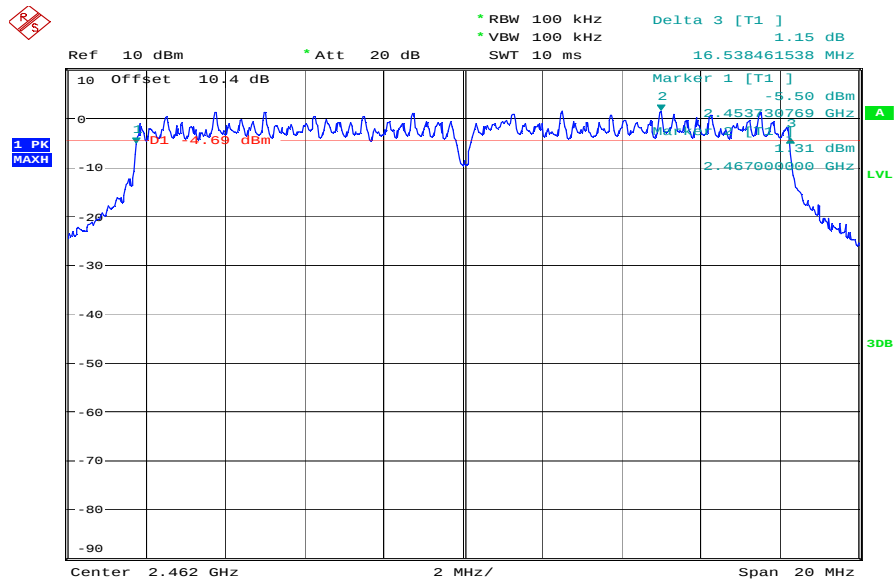
Date: 2.SEP.2009 13:13:34

Plot 2:



Date: 2.SEP.2009 13:17:33

Plot 3:



Date: 2.SEP.2009 13:20:49

Results:

Test conditions		6 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	16.57	16.54	16.54
Measurement uncertainty		± 10 kHz		

RBW: 100 kHz / VBW 100 kHz

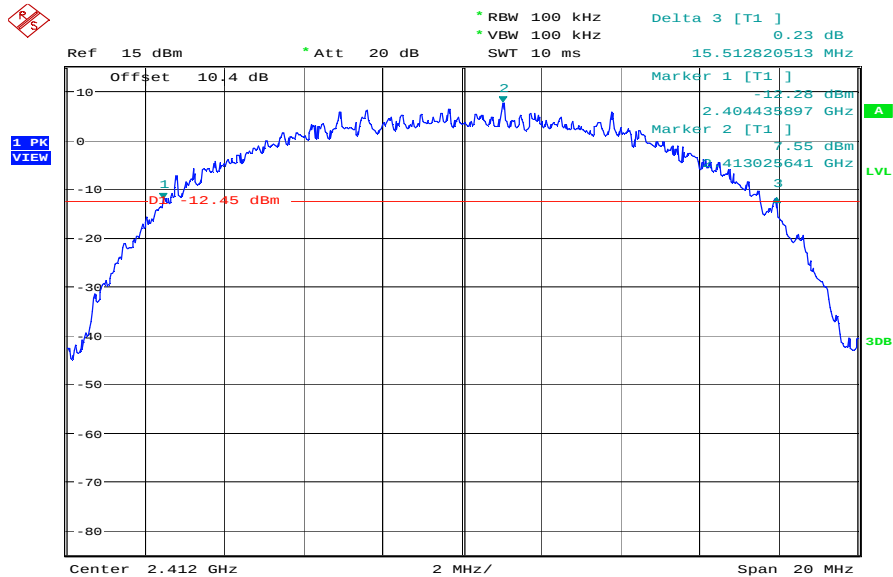
Limits:

Under normal test conditions only	> 500 kHz
-----------------------------------	-----------

5.7 Spectrum Bandwidth of a DSSS System / 20 dB Bandwidth

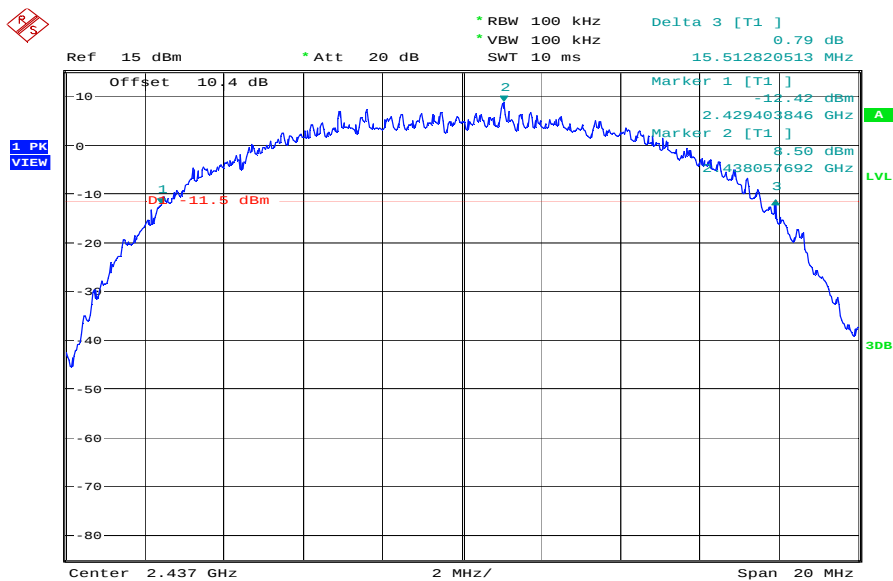
DSSS

Plot 1:



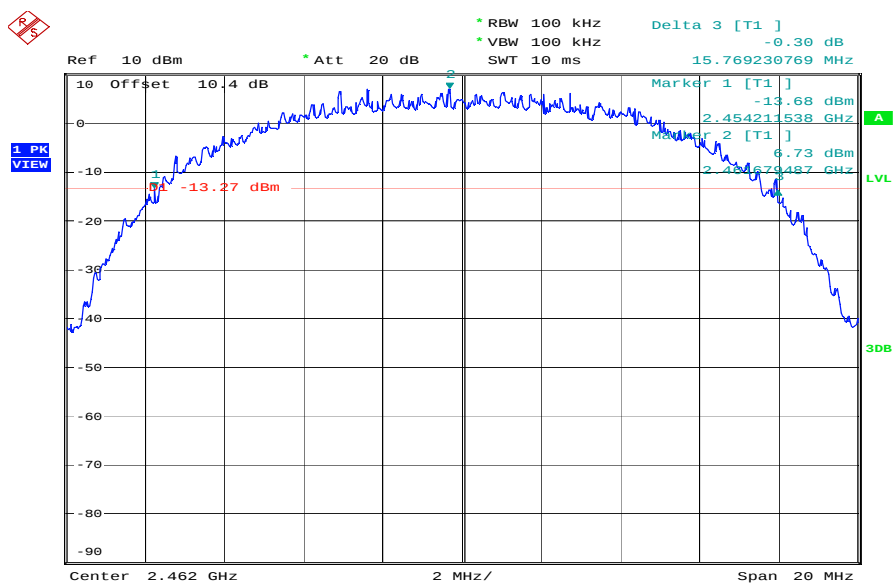
Date: 2.SEP.2009 13:49:07

Plot 2:



Date: 2.SEP.2009 13:46:06

Plot 3:



Date: 2.SEP.2009 13:43:01

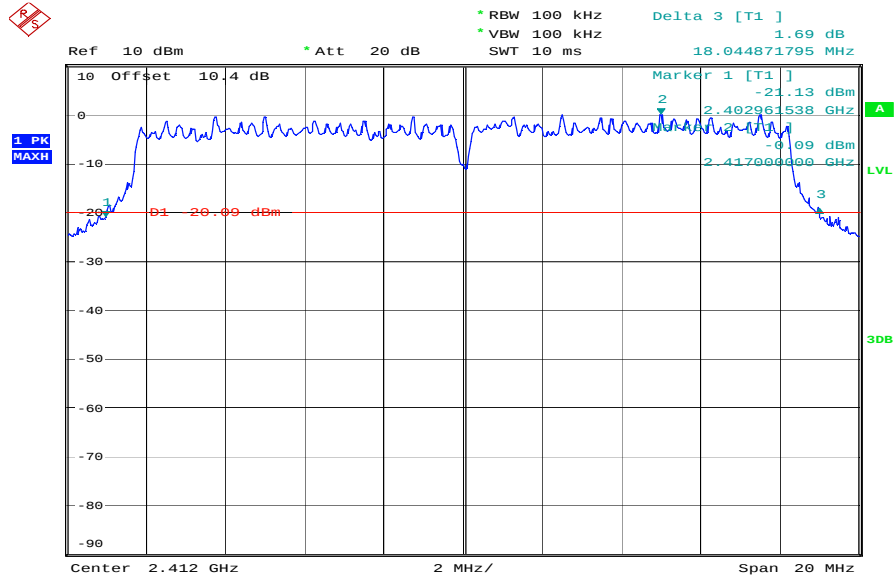
Results:

Test conditions		20 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T_{nom}	V_{nom}	15.51	15.51	15.77
Measurement uncertainty		± 10 kHz		

RBW: 100 kHz / VBW 100 kHz

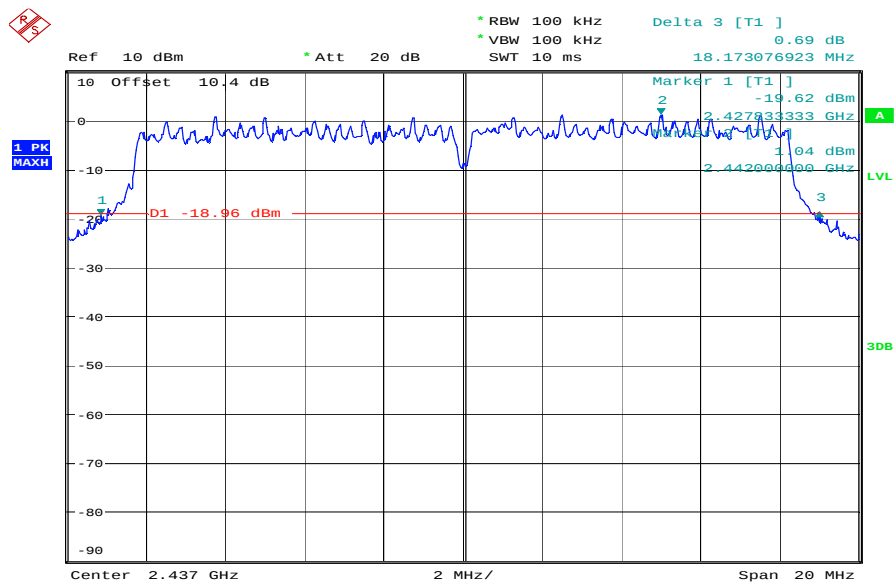
OFDM

Plot 1:



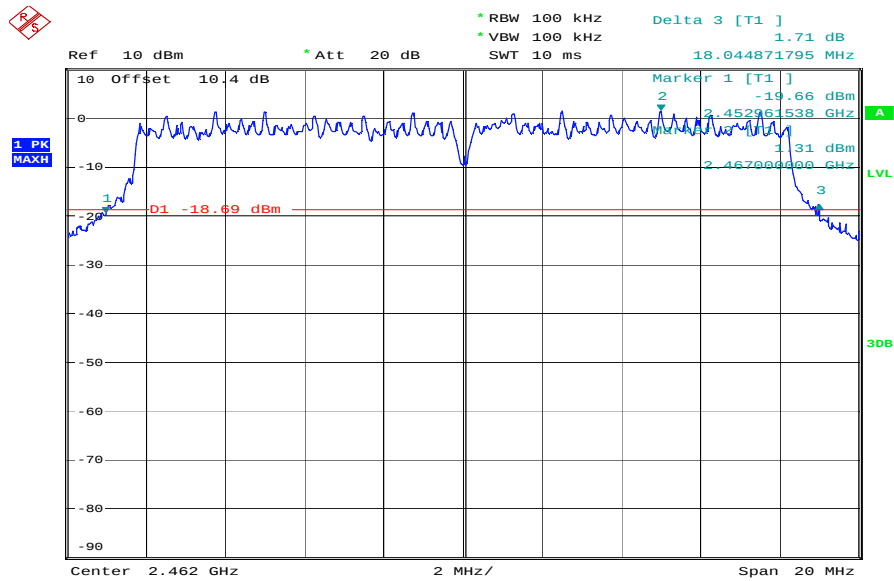
Date: 2.SEP.2009 13:14:41

Plot 2:



Date: 2.SEP.2009 13:18:24

Plot 3:



Date: 2.SEP.2009 13:21:26

Results:

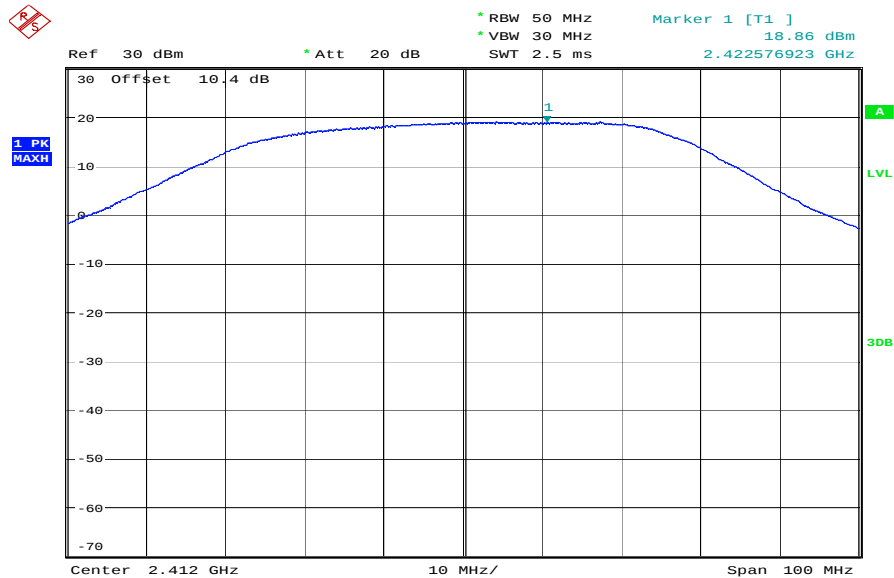
Test conditions		20 dB BANDWIDTH [MHz]		
Frequency [MHz]		2412	2437	2462
T_{nom}	V_{nom}	18.04	18.17	18.04
Measurement uncertainty		± 10 kHz		

RBW: 100 kHz / VBW 100 kHz

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

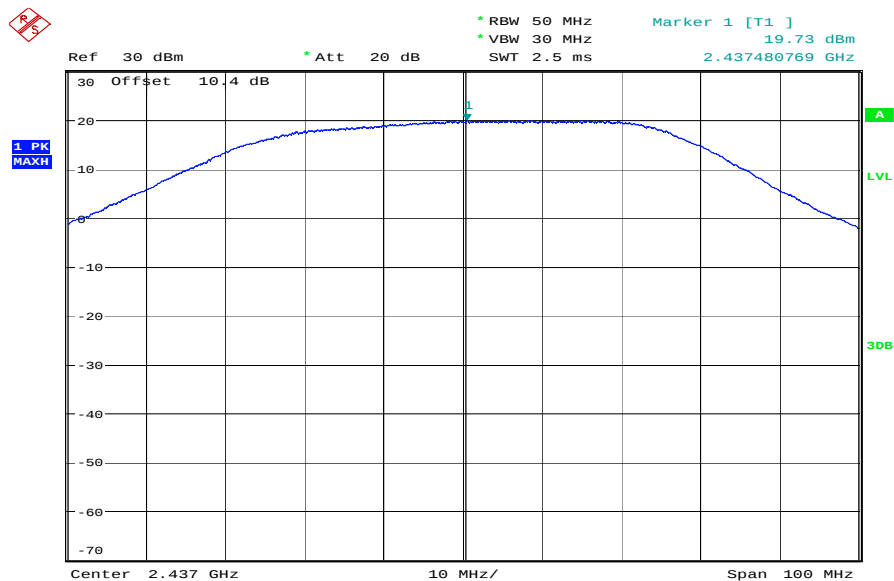
DSSS

Plot 1:



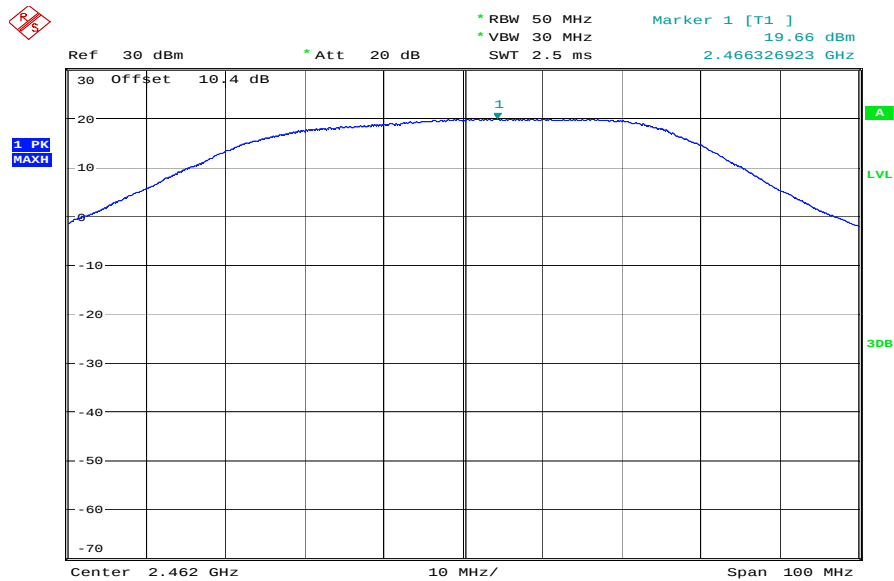
Date: 2.SEP.2009 13:50:56

Plot 2:



Date: 2.SEP.2009 13:51:58

Plot 3:



Date: 2.SEP.2009 13:53:07

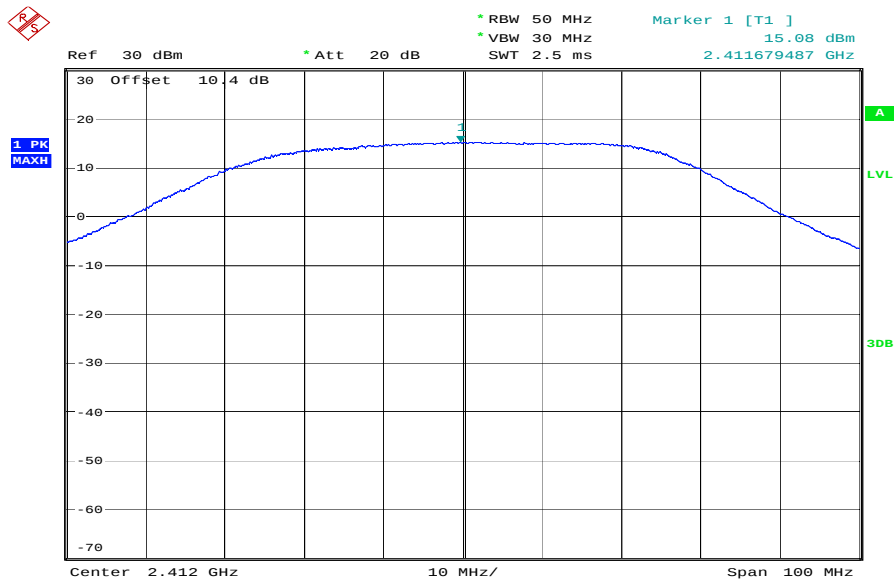
Results:

Test conditions		Max. peak output power [dBm]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	18.68	19.73	19.66
Measurement uncertainty		±3dB		

RBW / VBW: 50 MHz / 30 MHz

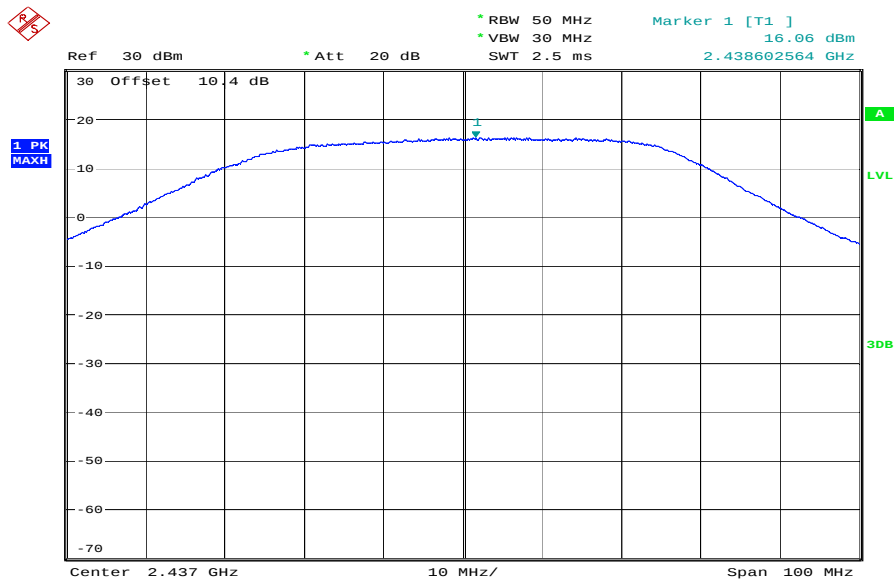
OFDM

Plot 1:



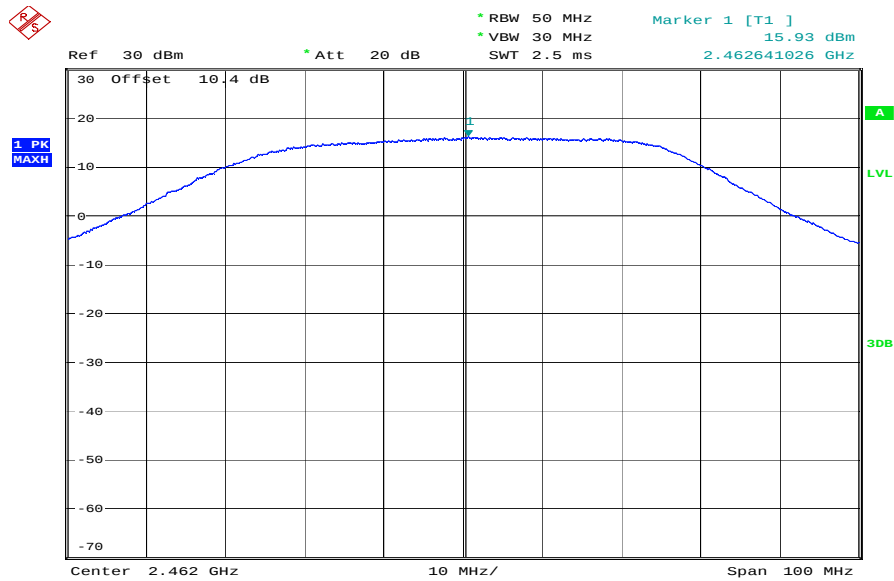
Date: 2.SEP.2009 13:57:06

Plot 2:



Date: 2.SEP.2009 13:55:37

Plot 3:



Date: 2.SEP.2009 13:54:35

Results:

Test conditions		Max. peak output power [dBm]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	15.08	16.06	15.93
Measurement uncertainty		±3dB		

RBW / VBW: 50 MHz / 30 MHz

Limits:

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

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: 20.89 dBm (122.74mW)

calculated at distance of 20 cm:

$$\text{power density} = 122.74 / 4 \pi 20^2 = 0.0244 \text{ mW/ cm}^2$$

Limit:

1mW/ cm² is the reference level for general public exposure according to the OET Bulletin 65,
Edition 97-01 Table 1.

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

DSSS

Results:

Test conditions		Max. peak output power EIRP [dBm]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	18.79	20.89	20.40
Measurement uncertainty		±3dB		

OFDM

Results:

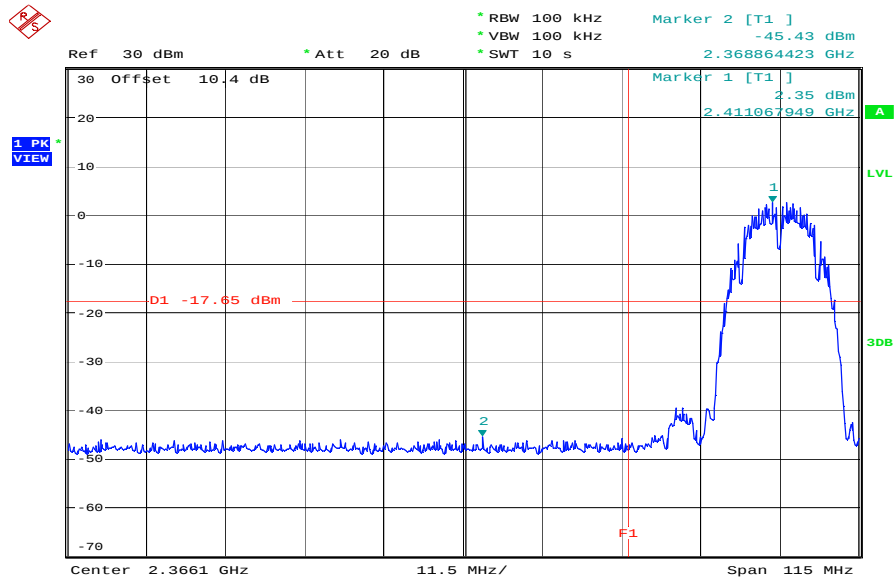
Test conditions		Max. peak output power EIRP [dBm]		
Frequency [MHz]		2412	2437	2462
T _{nom}	V _{nom}	15.19	17.22	16.67
Measurement uncertainty		±3dB		

Limits:

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

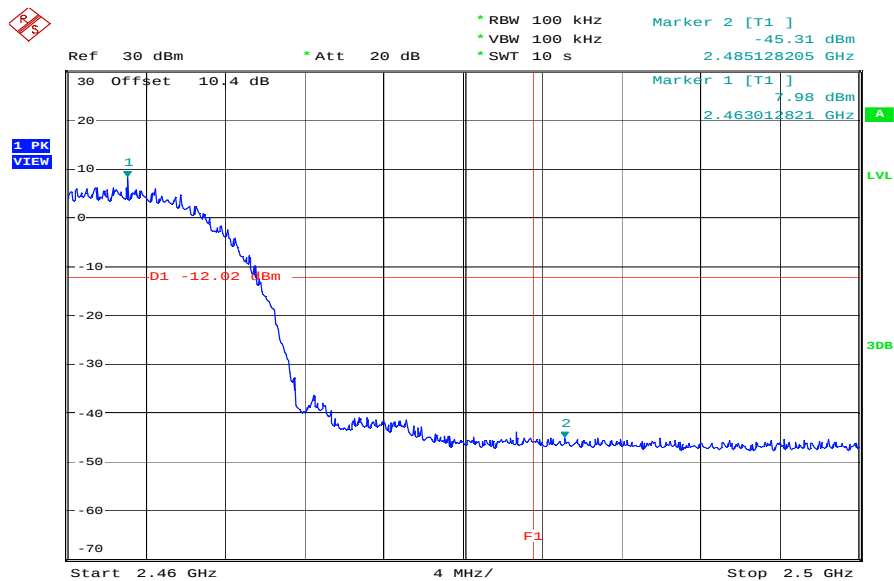
5.10 Band-edge compliance of conducted emissions §15.247 (d)

Plot 1: lowest channel, b – mode



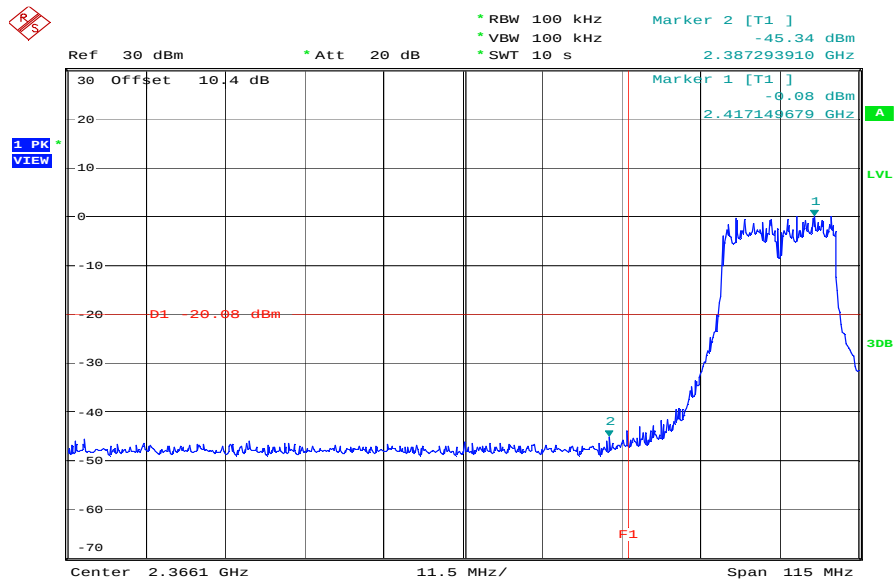
Date: 2.SEP.2009 14:48:10

Plot 2: highest channel, b – mode

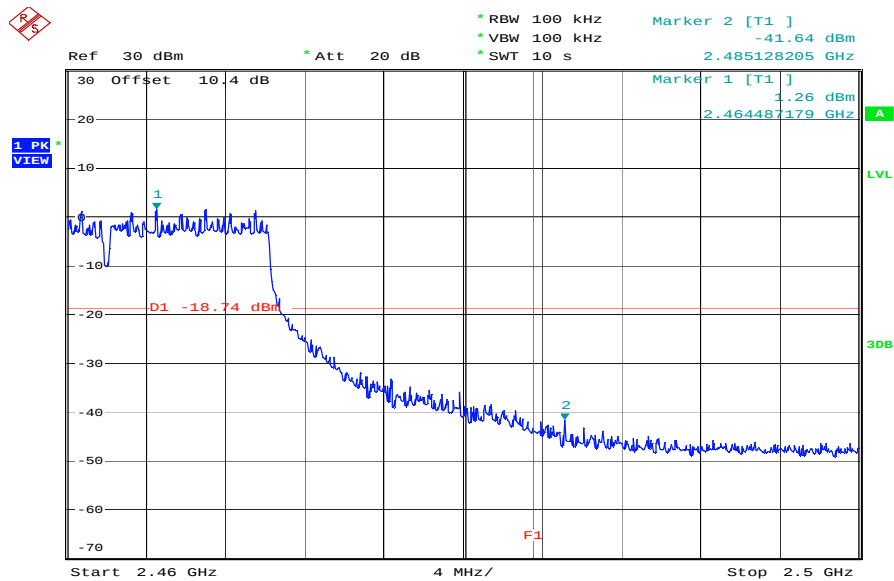


Date: 2.SEP.2009 14:58:53

Plot 3: lowest channel, g – mode



Plot 4: highest channel, g – mode



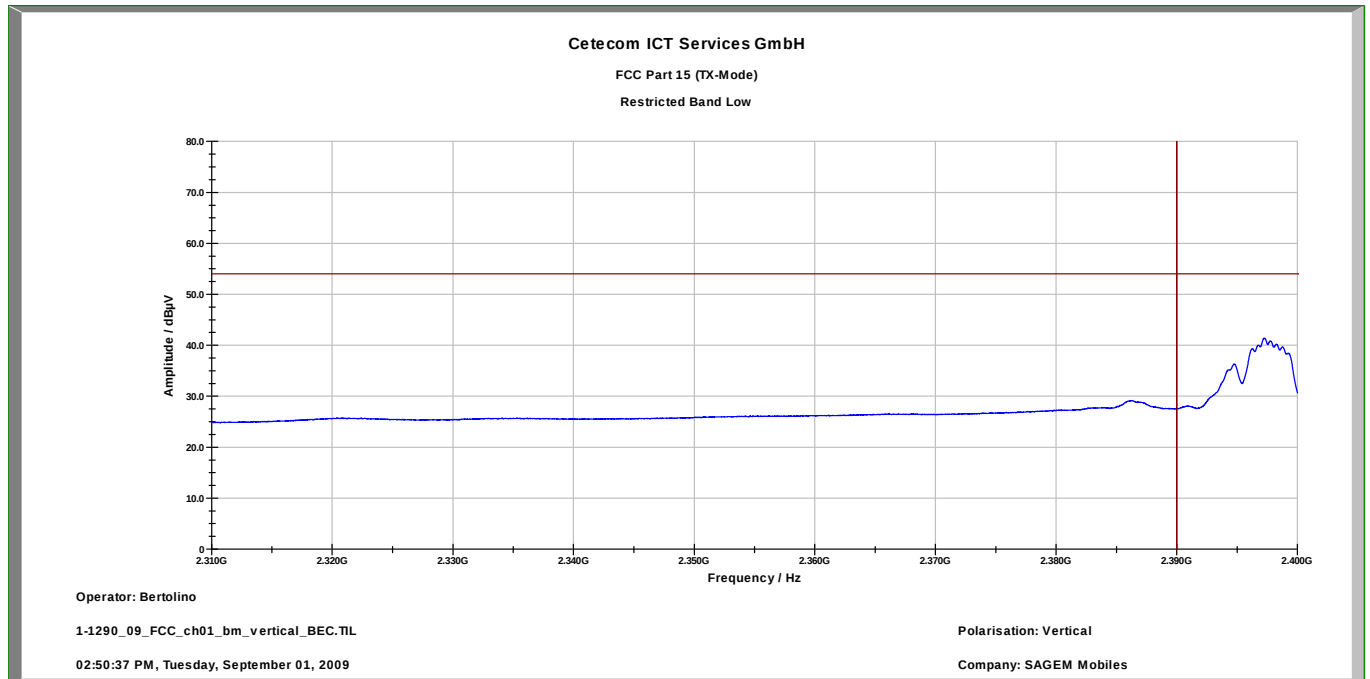
Limits:

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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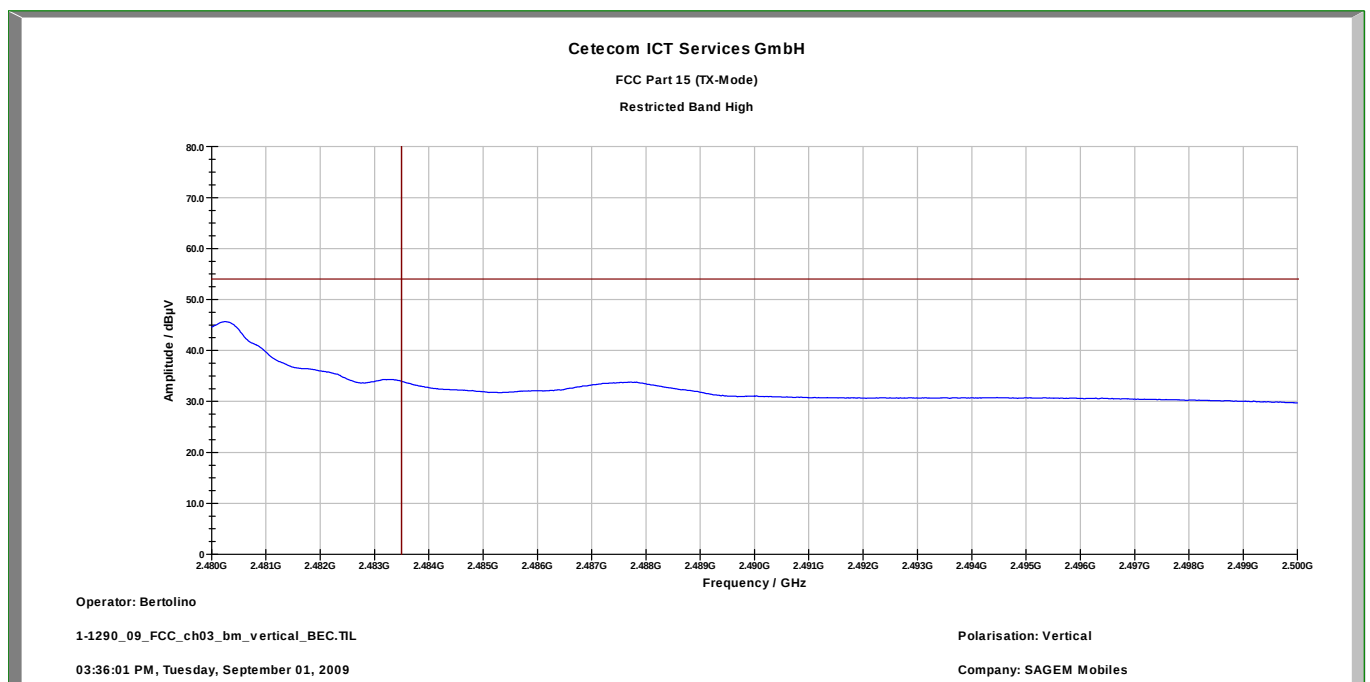
5.11 Band-edge compliance of radiated emissions §15.205

DSSS – mode

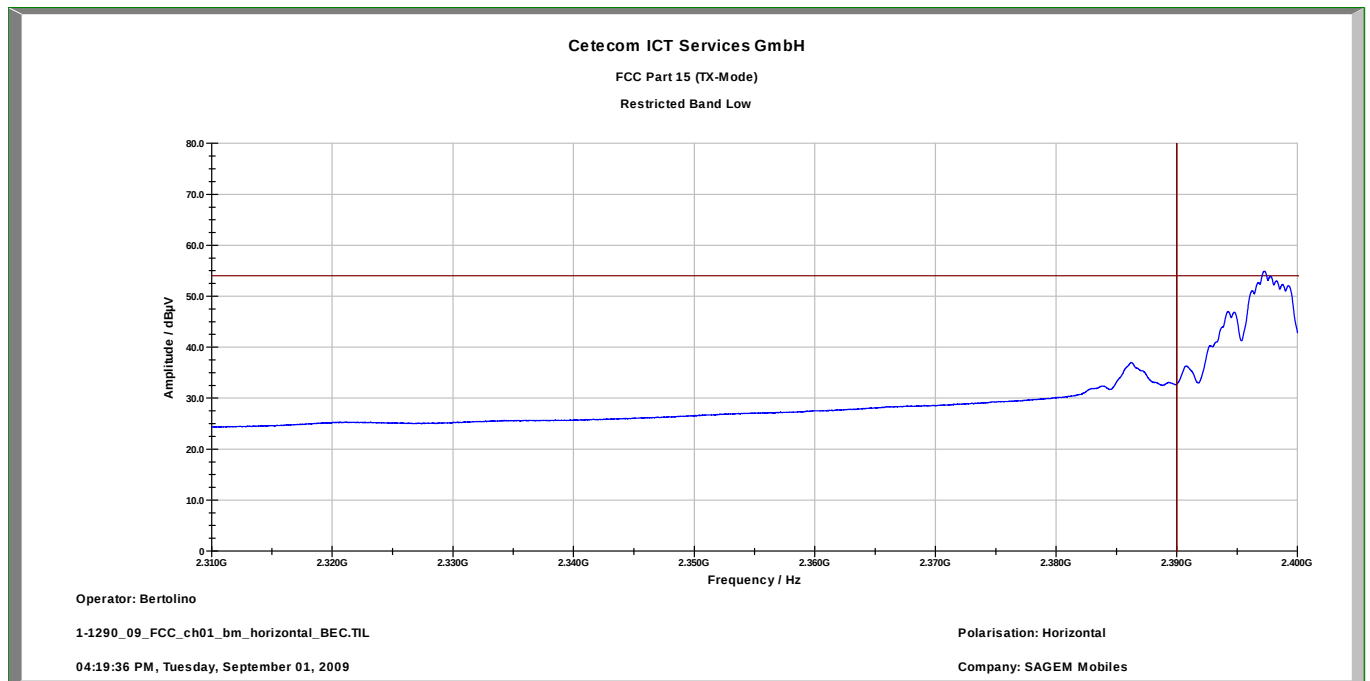
Plot 1: restricted band low, vertical polarization



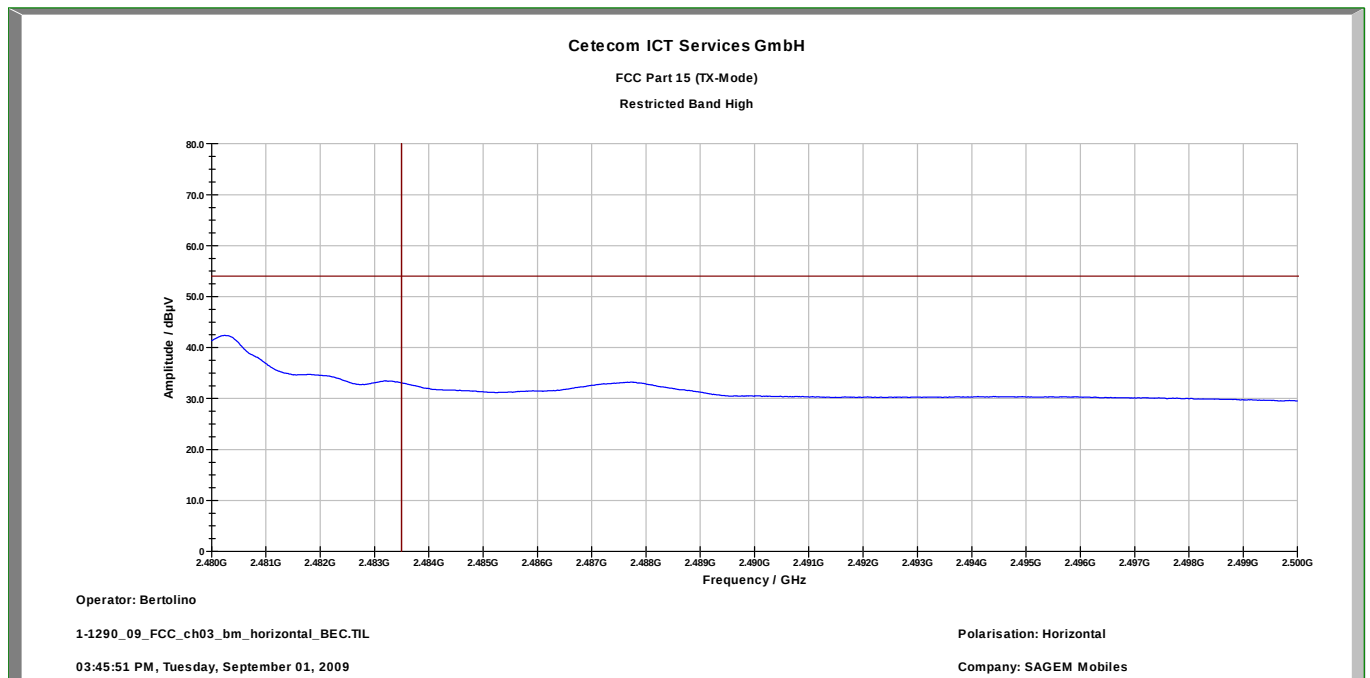
Plot 2: restricted band high, vertical polarisation



Plot 3: restricted band low, horizontal polarization

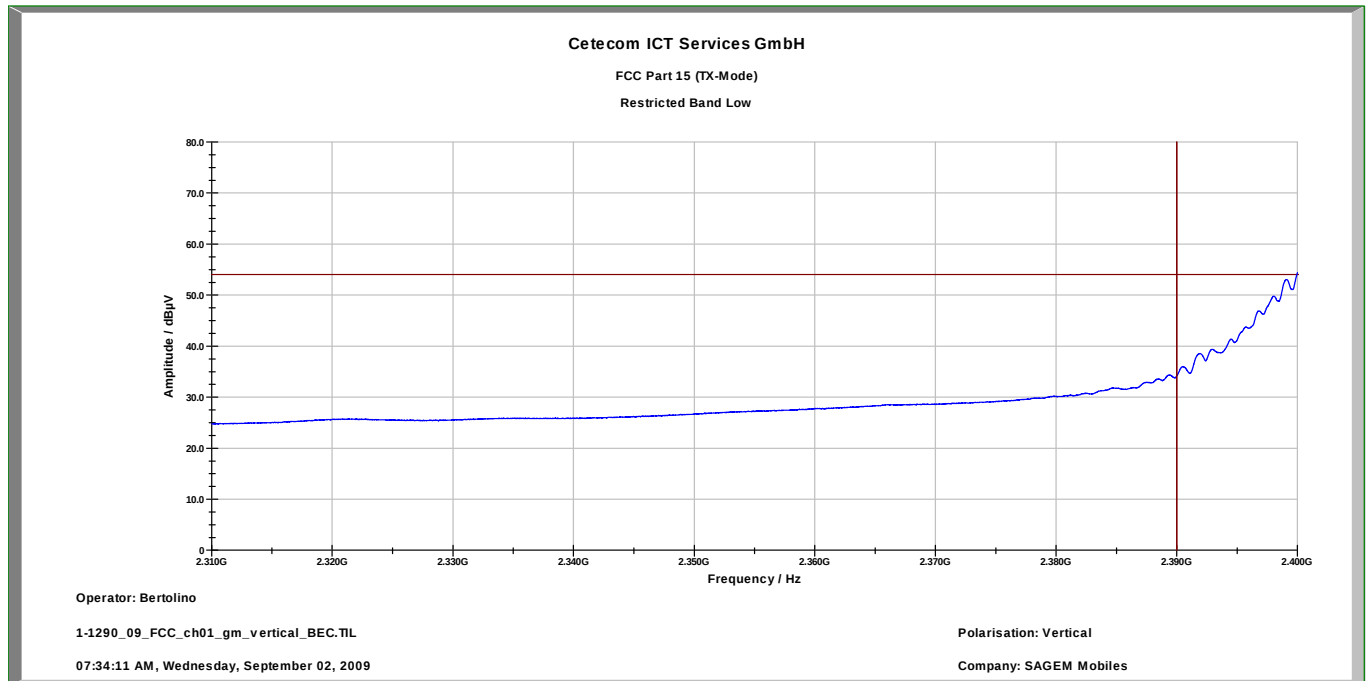


Plot 4: restricted band high, horizontal polarisation

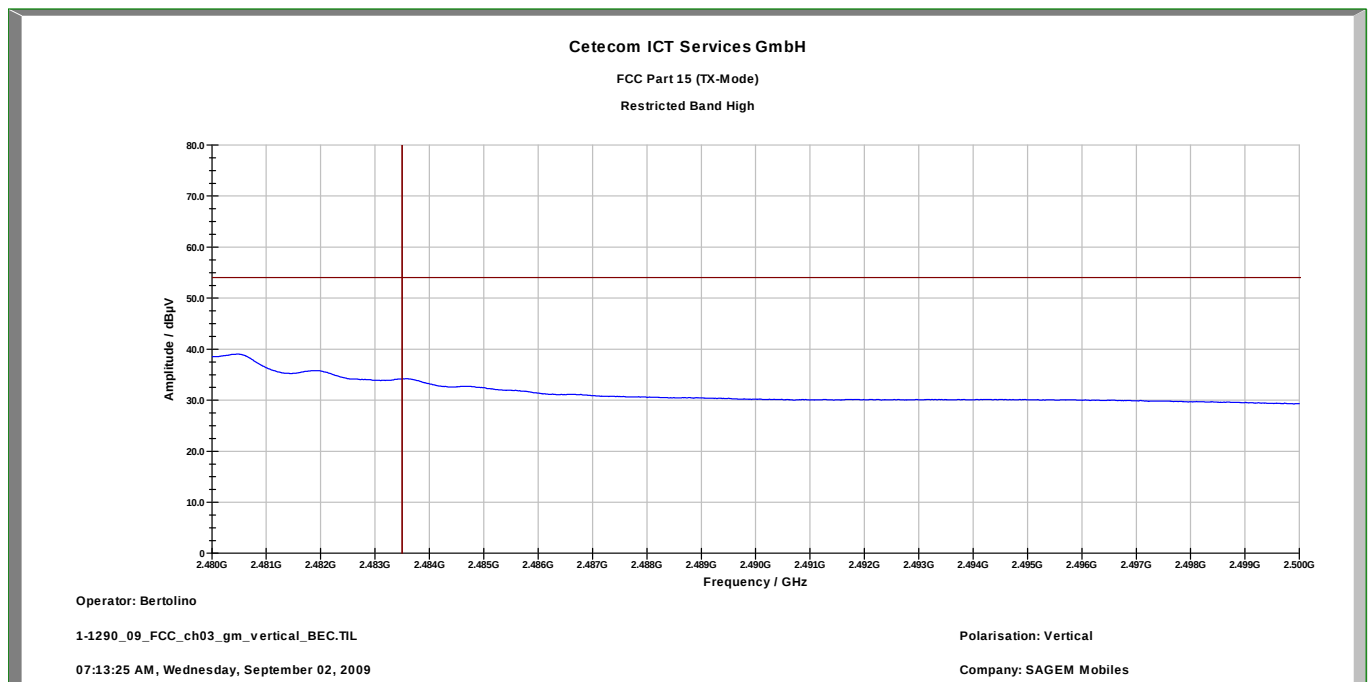


OFDM – mode

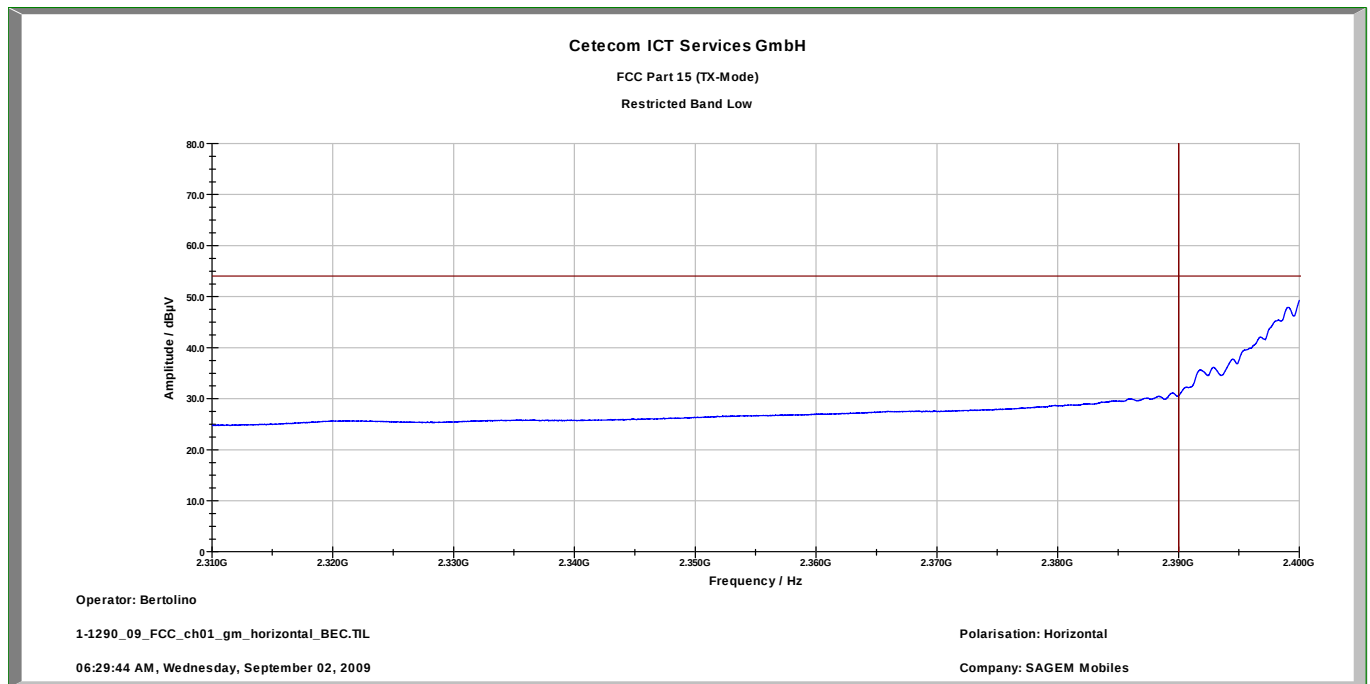
Plot 1: restricted band low, vertical polarization



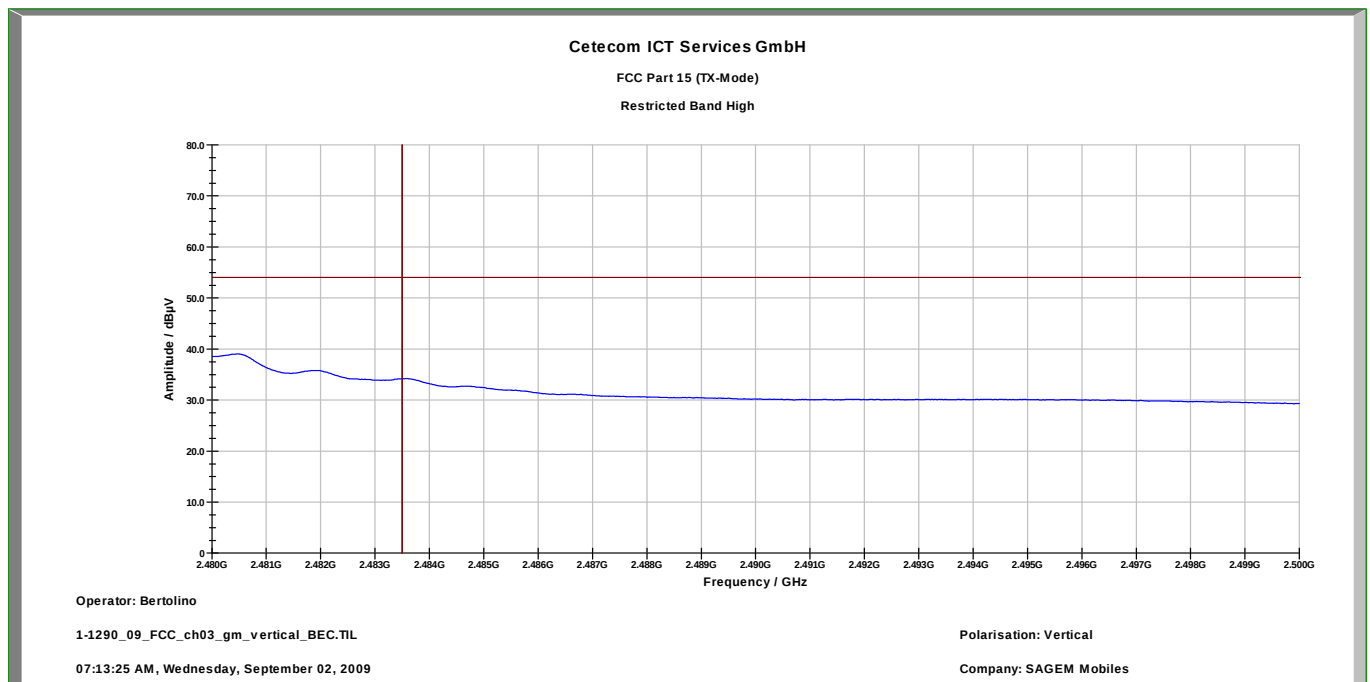
Plot 2: restricted band high, vertical polarisation



Plot 3: restricted band low, horizontal polarization



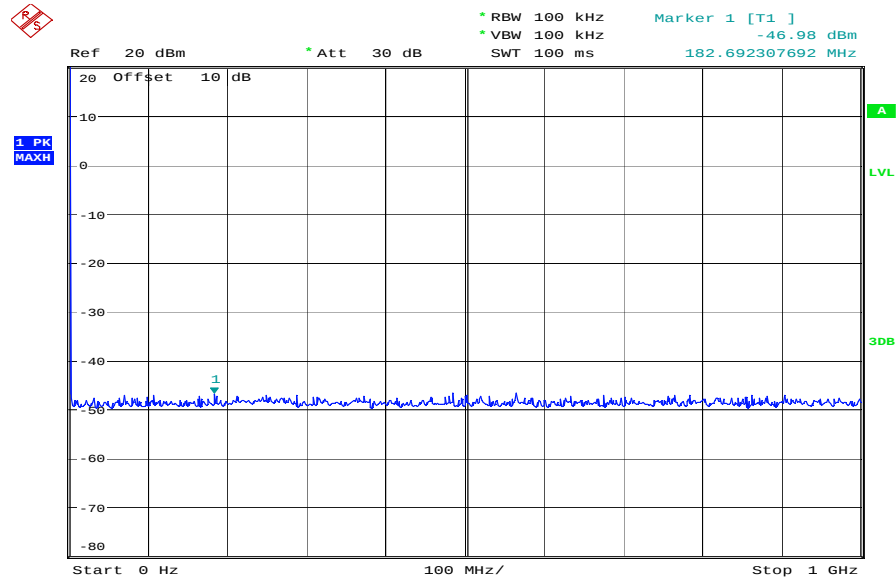
Plot 4: restricted band high, horizontal polarisation



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

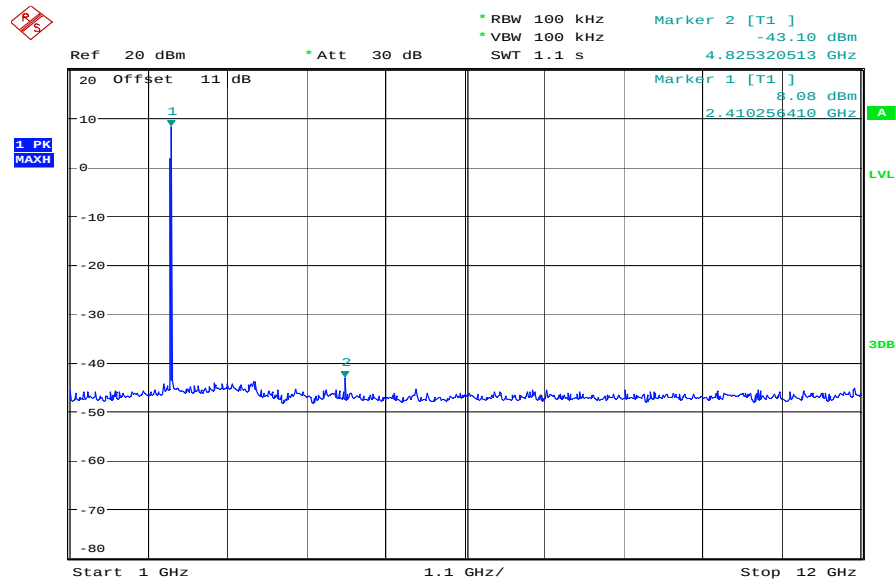
DSSS

Plot 1: Lowest Channel



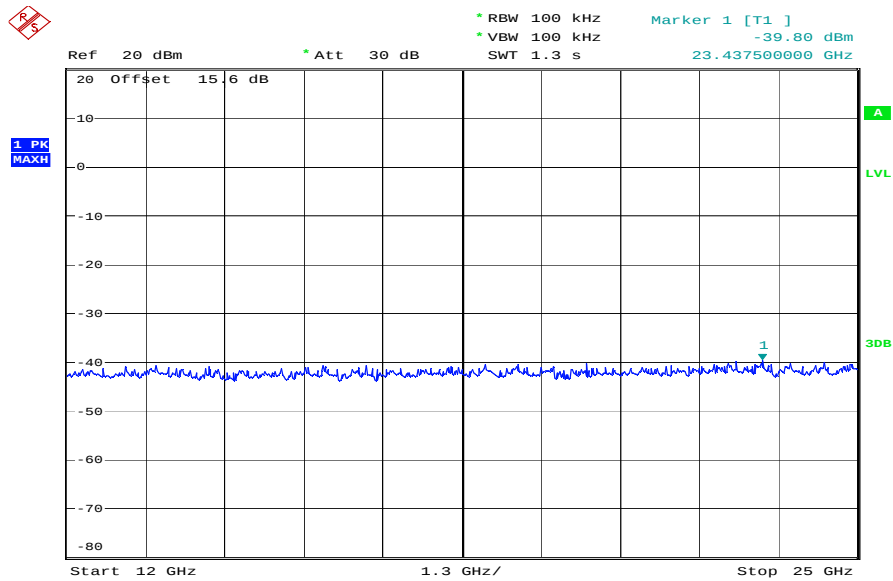
Date: 2.SEP.2009 15:22:14

Plot 2: Lowest Channel



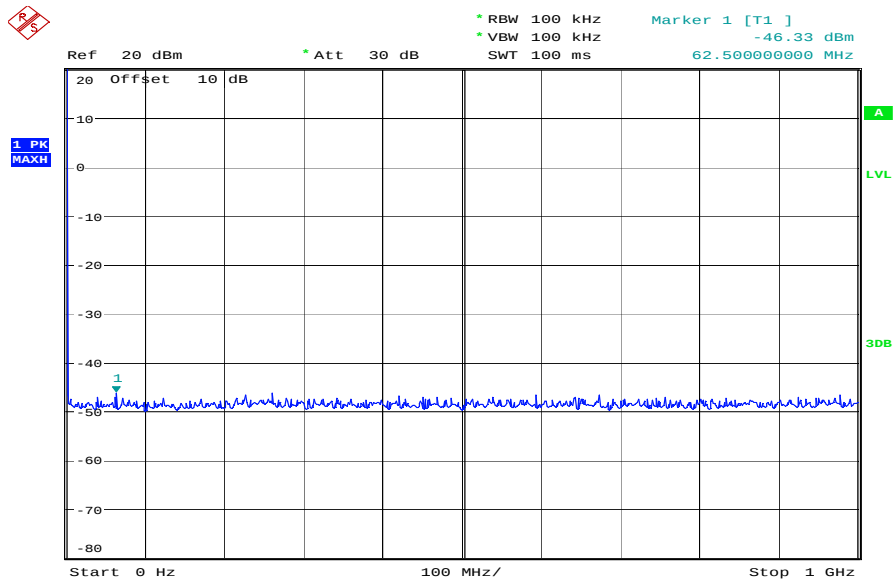
Date: 2.SEP.2009 15:24:38

Plot 3: Lowest Channel



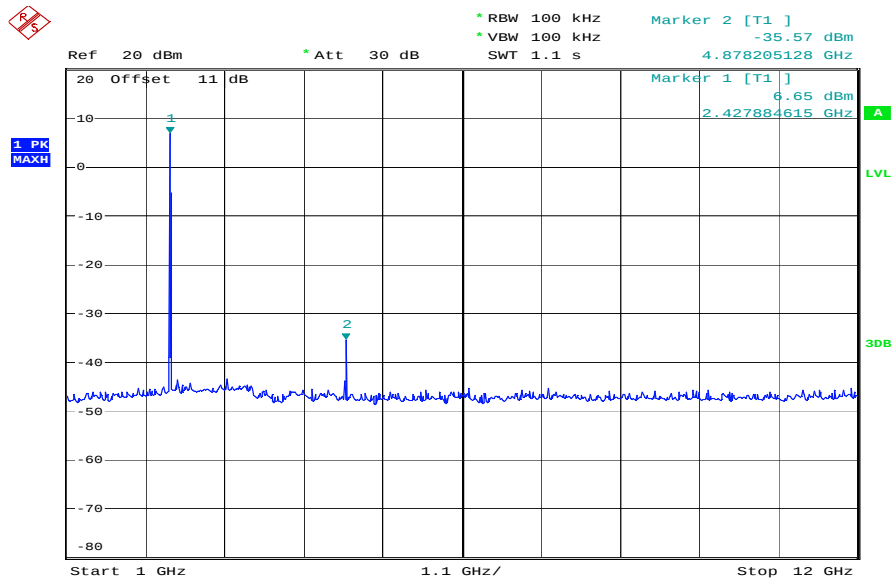
Date: 2.SEP.2009 15:48:05

Plot 4: Middle Channel



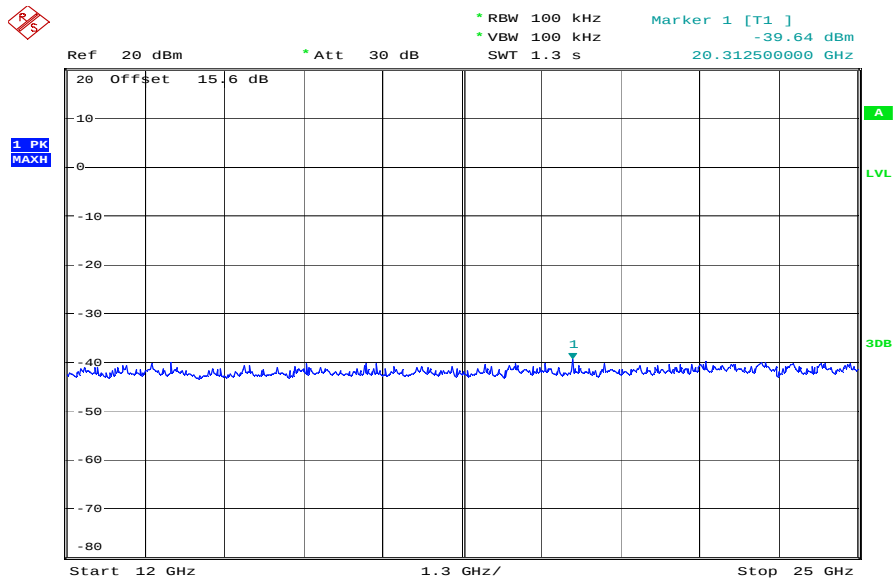
Date: 2.SEP.2009 15:21:15

Plot 5: Middle Channel



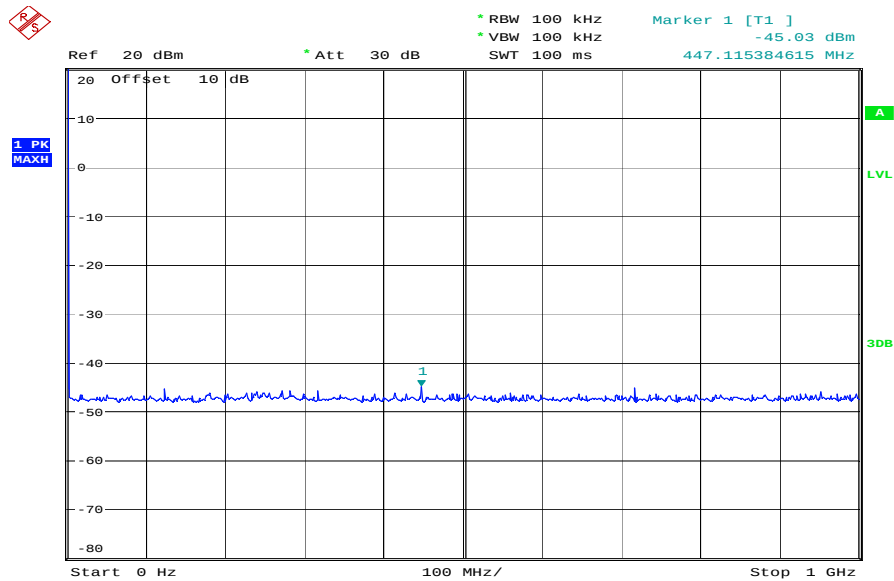
Date: 2.SEP.2009 15:25:46

Plot 6: Middle Channel



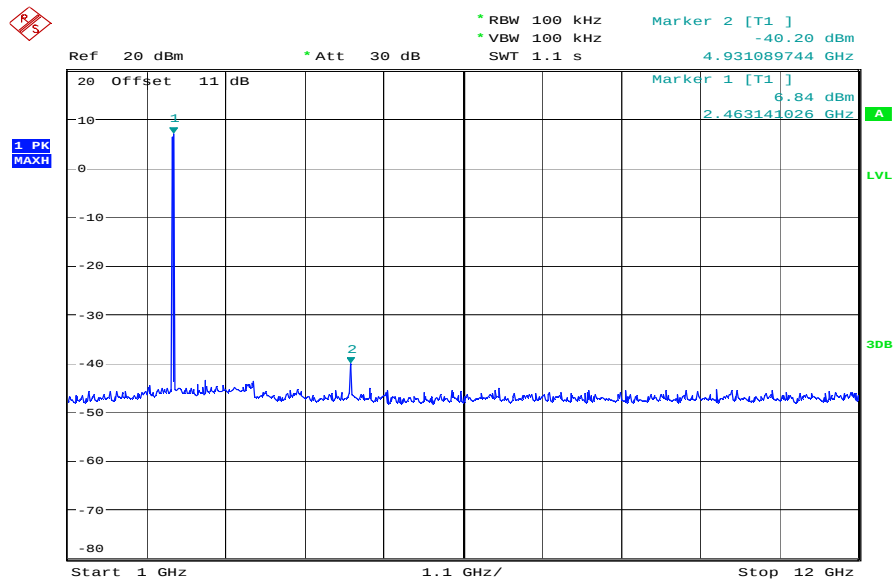
Date: 2.SEP.2009 15:46:59

Plot 7: Highest Channel



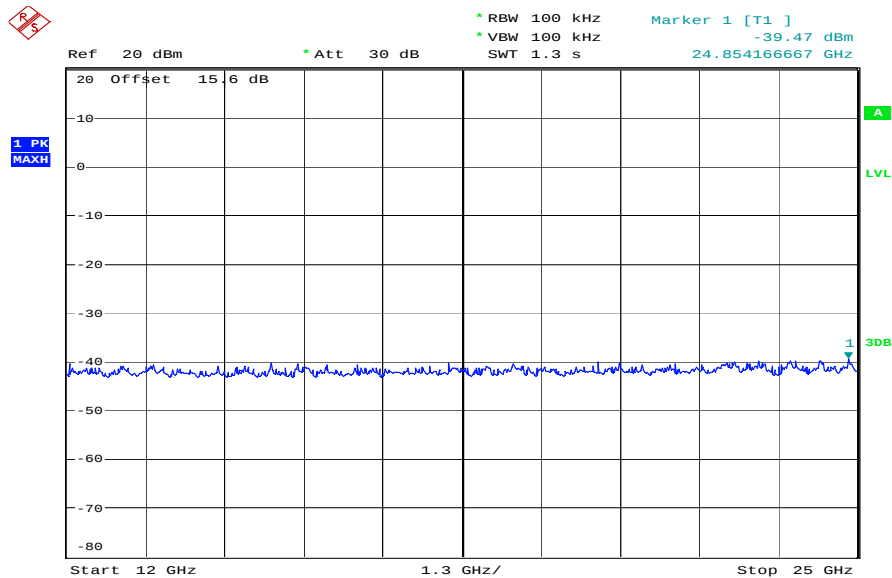
Date: 2.SEP.2009 15:20:20

Plot 8: Highest Channel



Date: 2.SEP.2009 15:26:56

Plot 9: Highest Channel



Date: 2.SEP.2009 15:45:12

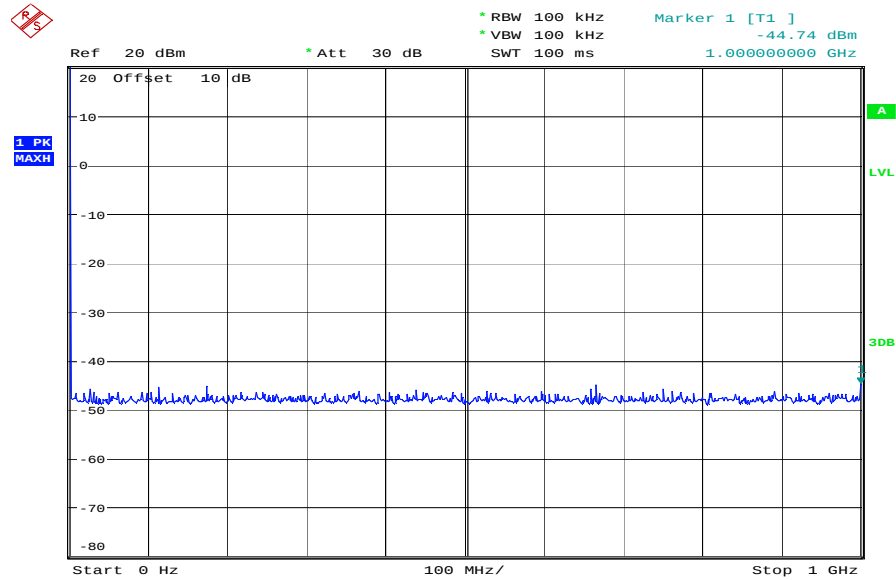
Result & Limits:

Emission Limitations					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412			30 dBm		Operating frequency
No critical peaks detected. All emissions are below the 20 dBc criteria.			-20 dBc		
2437			30 dBm		Operating frequency
No critical peaks detected. All emissions are below the 20 dBc criteria.			-20 dBc		
2462			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: 100 kHz
F > 1 GHz: RBW: 1 MHz VBW: 1 MHz

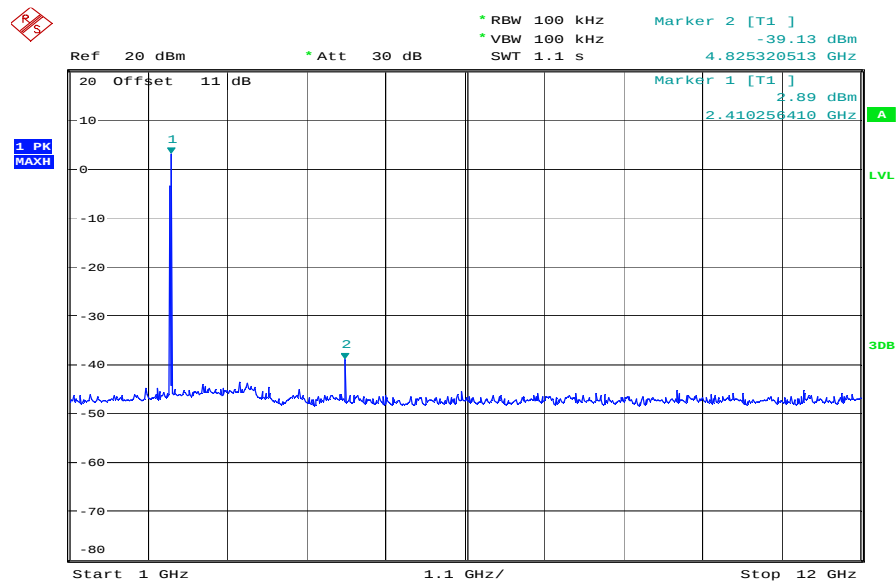
OFDM

Plot 1: Lowest Channel



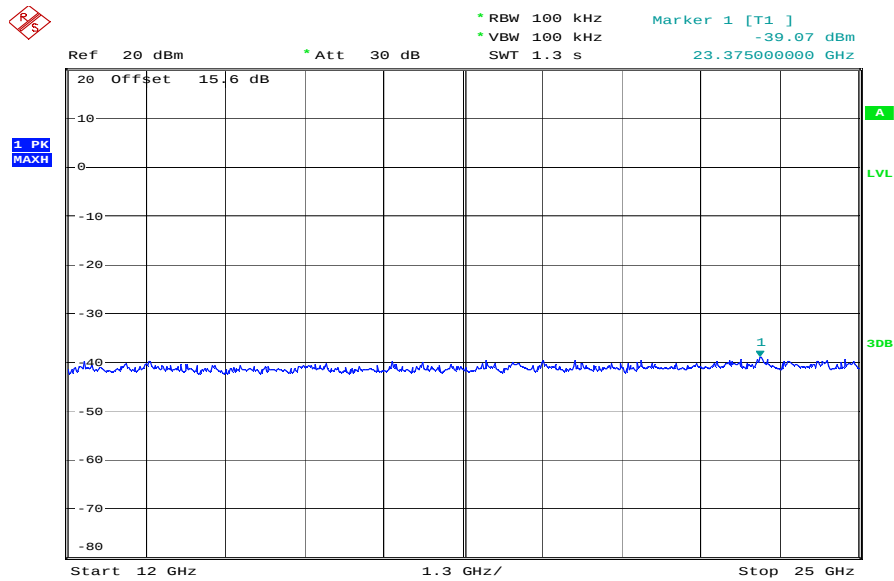
Date: 2.SEP.2009 15:08:59

Plot 2: Lowest Channel



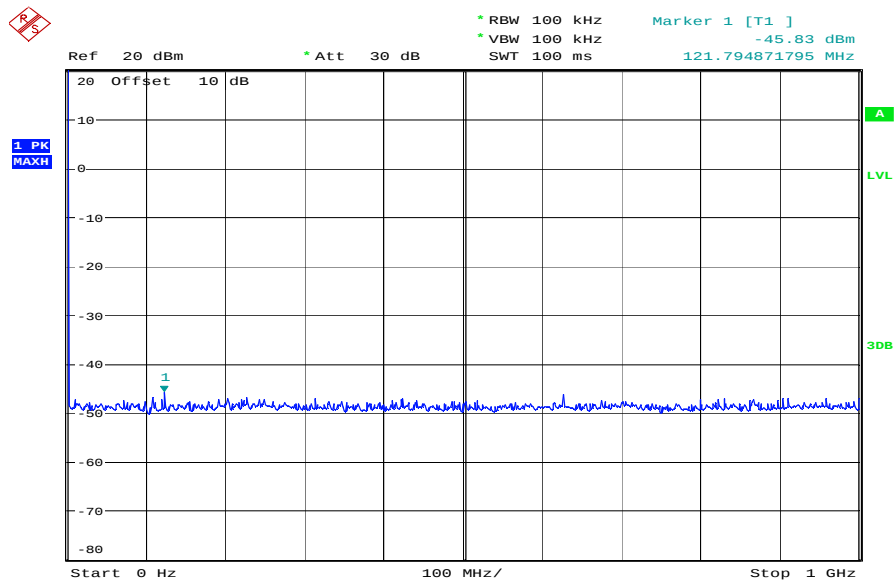
Date: 2.SEP.2009 15:30:34

Plot 3: Lowest Channel



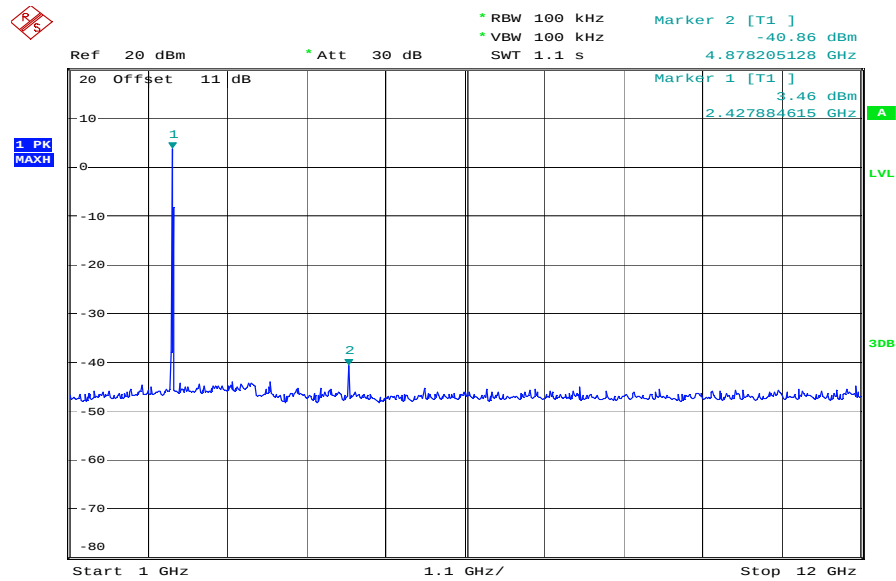
Date: 2.SEP.2009 15:39:40

Plot 4: Middle Channel



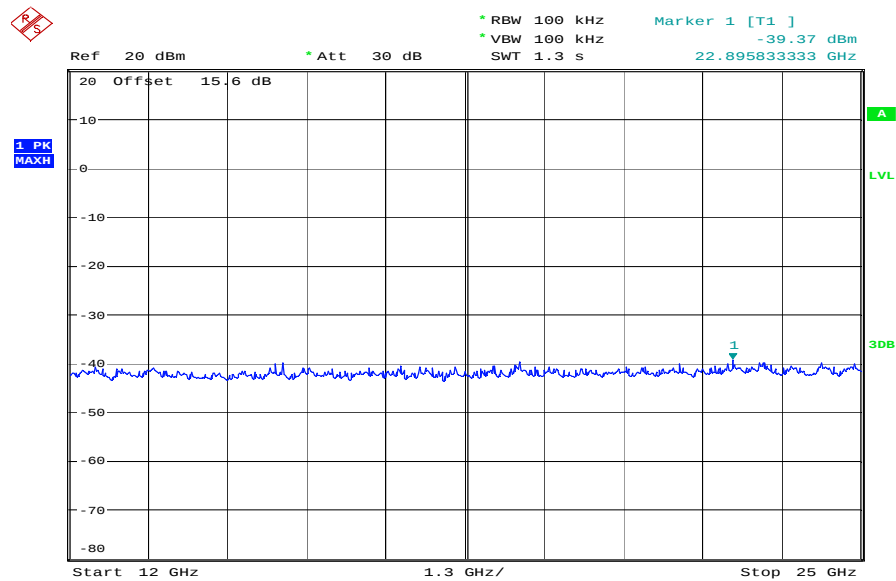
Date: 2.SEP.2009 15:09:55

Plot 5: Middle Channel



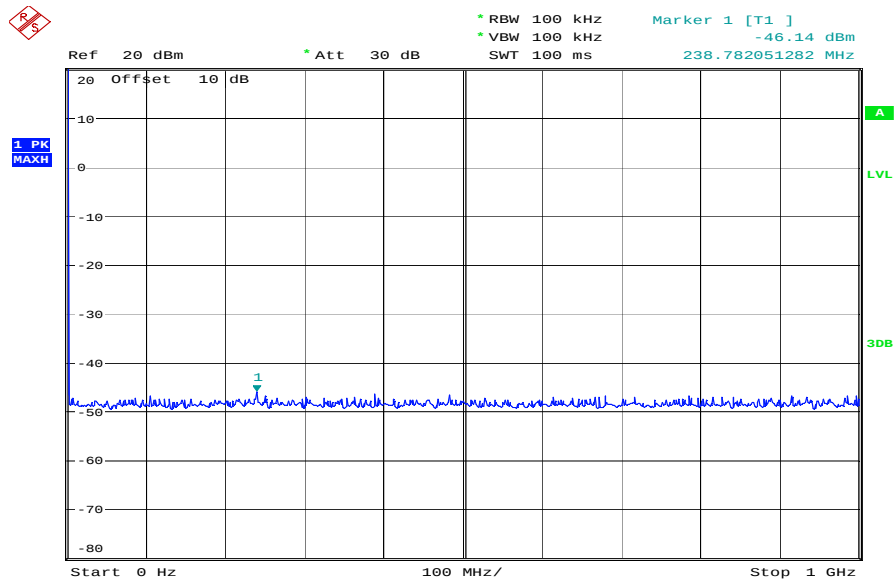
Date: 2.SEP.2009 15:29:44

Plot 6: Middle Channel



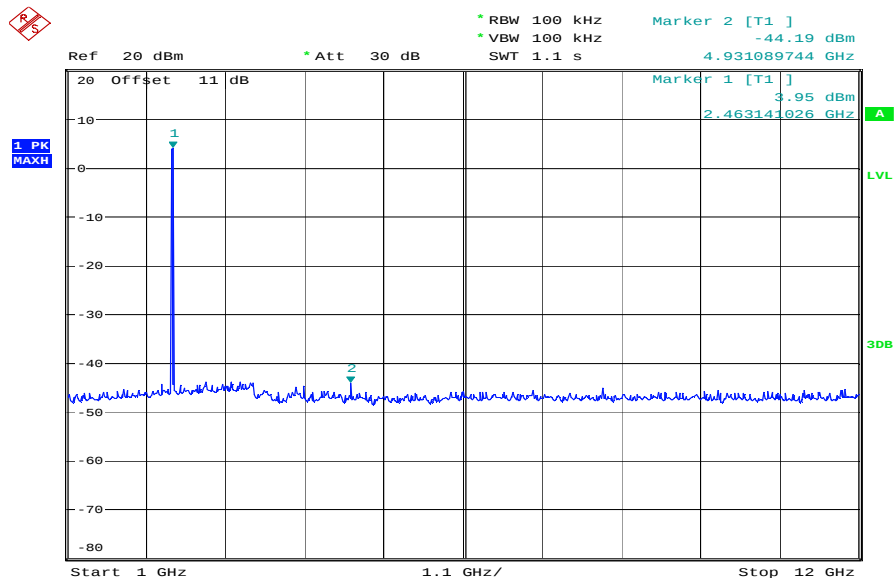
Date: 2.SEP.2009 15:41:29

Plot 7: Highest Channel



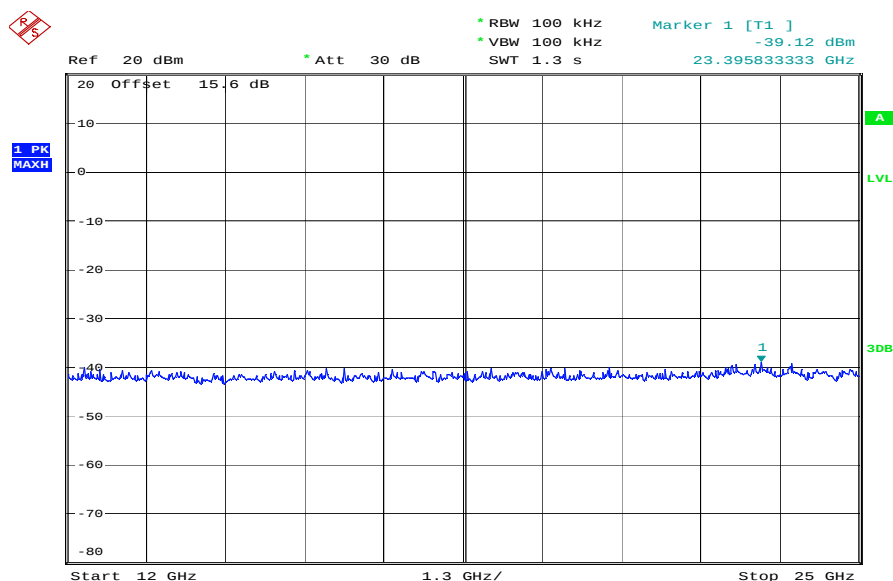
Date: 2.SEP.2009 15:10:57

Plot 8: Highest Channel



Date: 2.SEP.2009 15:28:20

Plot 9: Highest Channel



Date: 2.SEP.2009 15:43:23

Result & Limits:

Emission Limitations					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412			30 dBm		Operating frequency
No critical peaks detected. All emissions are below the 20 dBc criteria.			-20 dBc		
2437			30 dBm		Operating frequency
No critical peaks detected. All emissions are below the 20 dBc criteria.			-20 dBc		
2462			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: 100 kHz

F > 1 GHz: RBW: 1 MHz VBW: 1 MHz

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

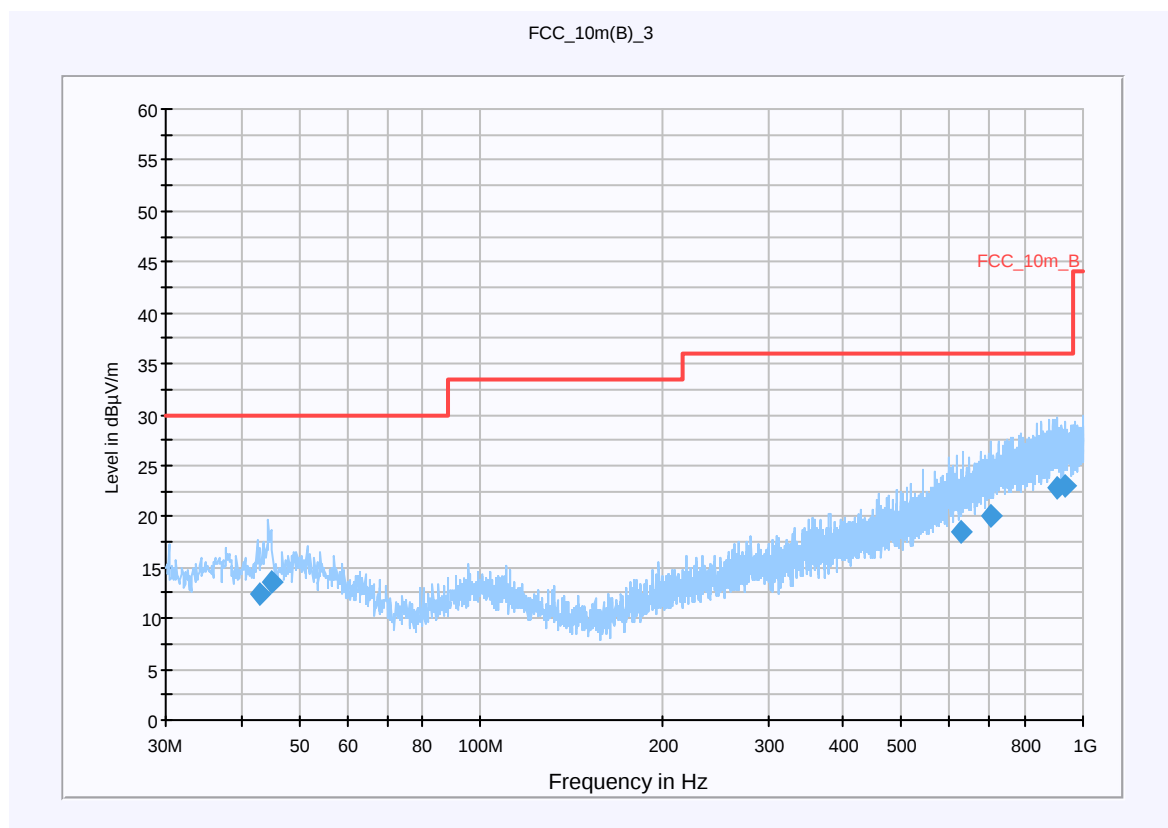
Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN TX Ch. 1 + charging / b - mode
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

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 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

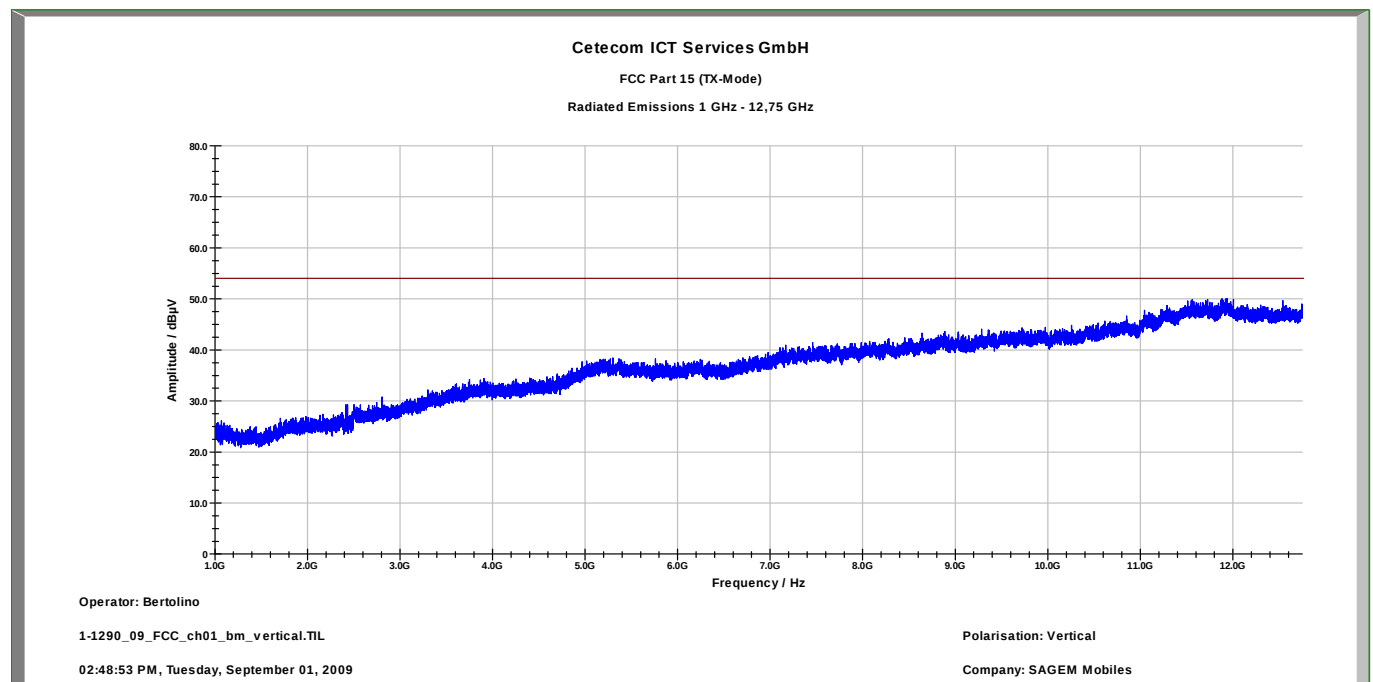
Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
42.954550	12.4	15000.000	120.000	104.0	V	124.0	13.5	17.6	30.0	
44.872000	13.6	15000.000	120.000	191.0	V	26.0	13.4	16.4	30.0	
629.233700	18.6	15000.000	120.000	220.0	V	24.0	21.5	17.4	36.0	
702.240850	20.1	15000.000	120.000	220.0	V	65.0	23.1	15.9	36.0	
902.317500	22.9	15000.000	120.000	202.0	H	25.0	25.7	13.1	36.0	
931.070800	23.0	15000.000	120.000	220.0	V	225.0	25.8	13.0	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 100083/0033, 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 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

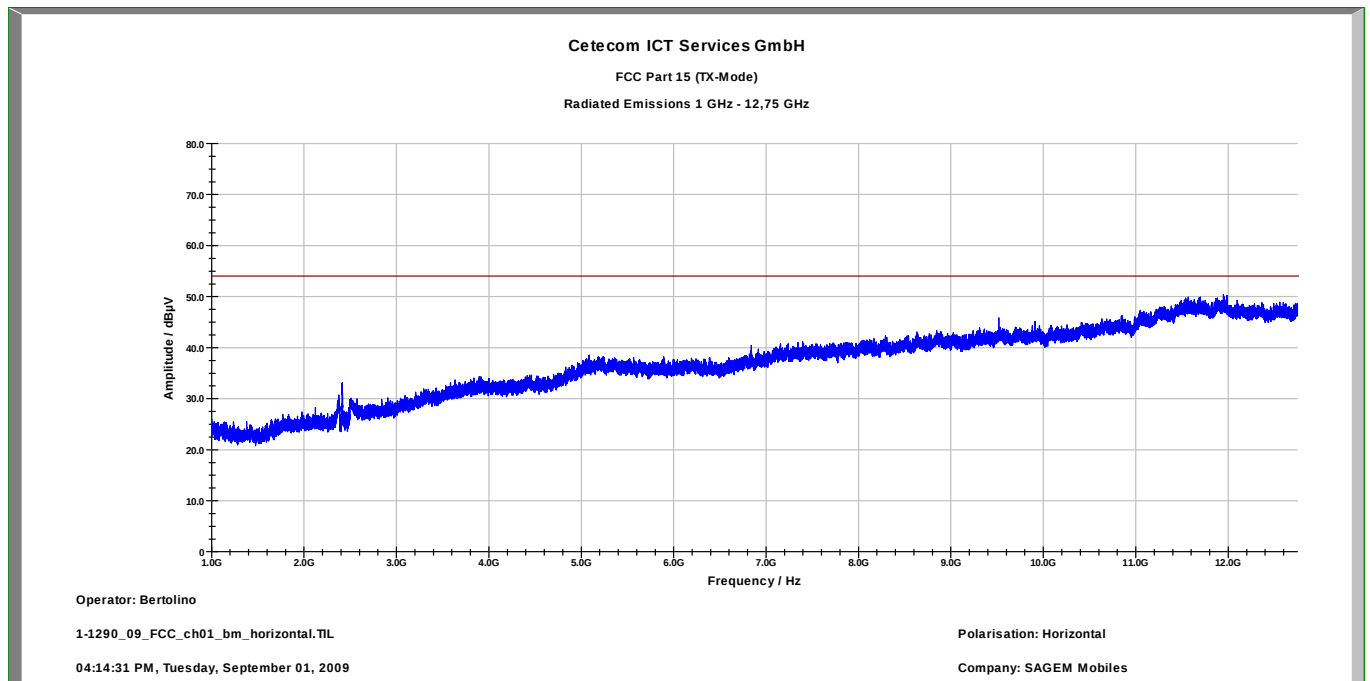
EMC 32 Version 8.10.00

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



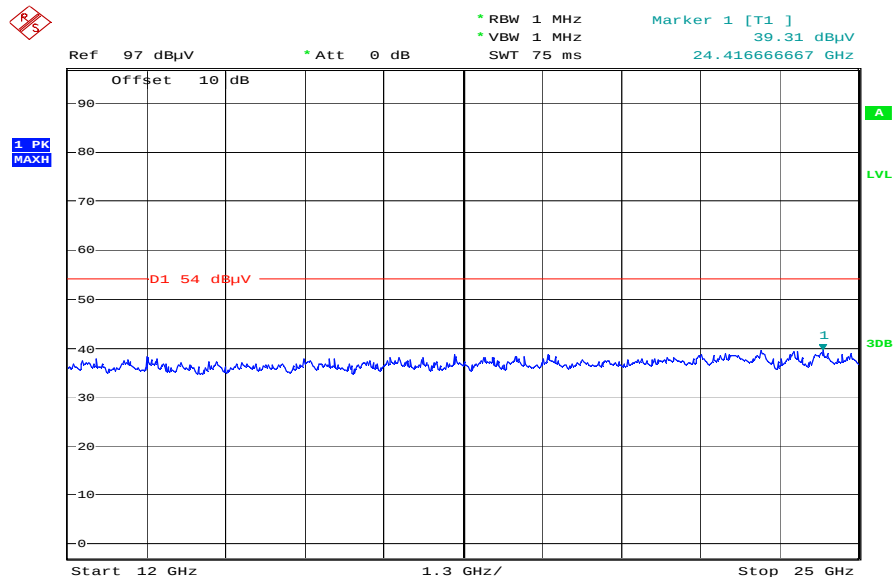
The carrier signal is suppressed with a 2.4 GHz band rejection filter.

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



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

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



Date: 2.SEP.2009 16:20:27

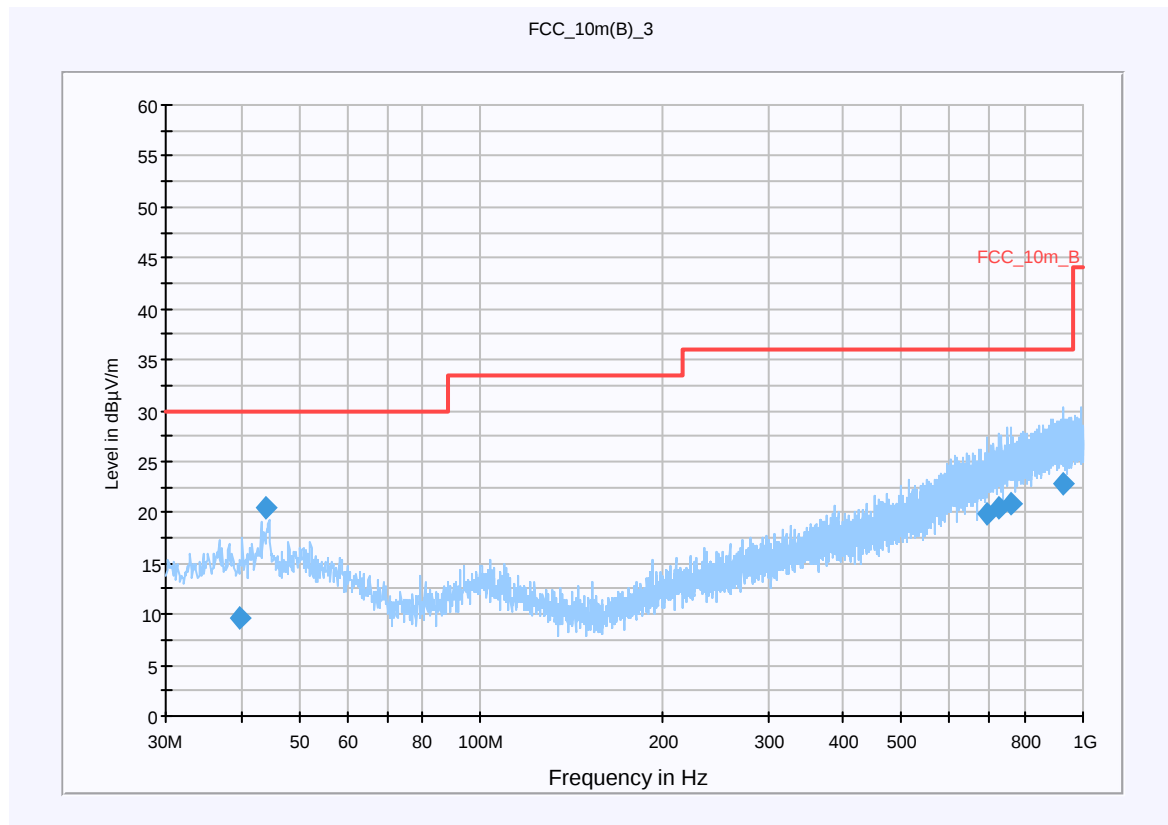
Plot 5: 0.03 – 1 GHz (middle channel), vertical & horizontal polarization

Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN TX Ch. 6 + charging / b - mode
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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



Final Result 1

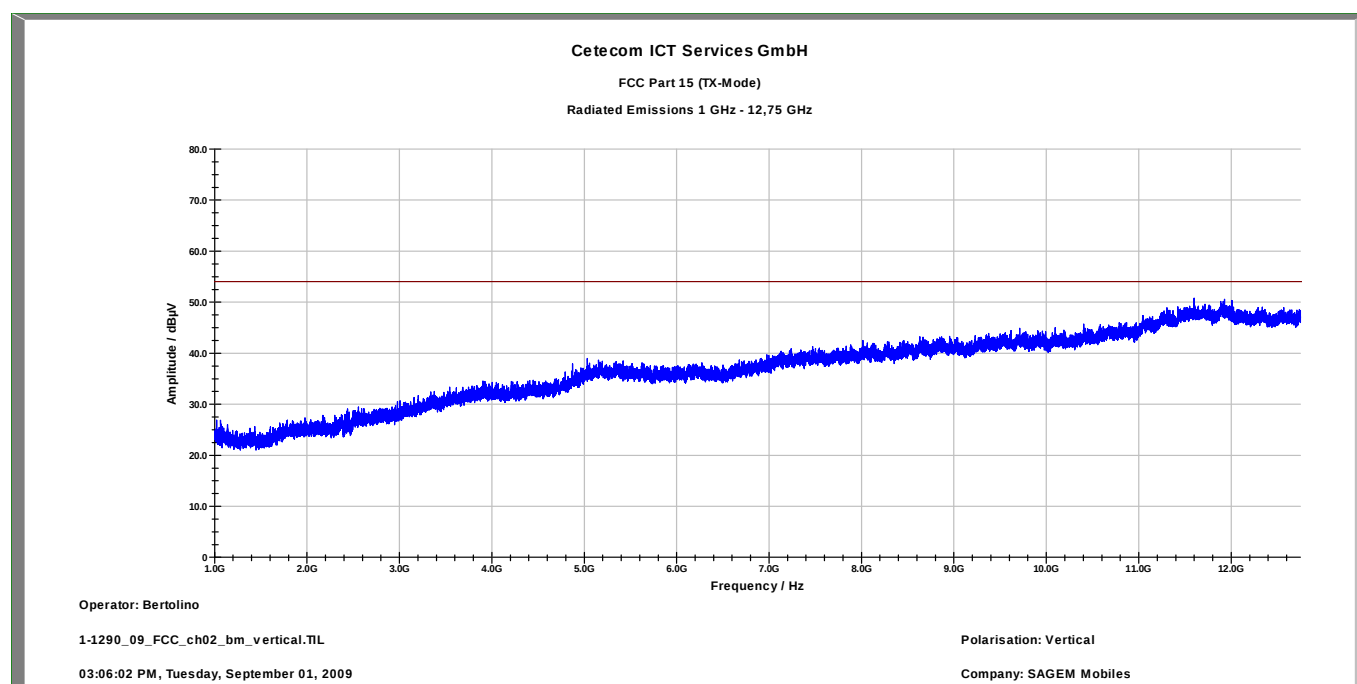
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
39.959700	9.6	15000.000	120.000	98.0	V	142.0	13.6	20.4	30.0	
44.154450	20.5	15000.000	120.000	98.0	V	142.0	13.4	9.5	30.0	
694.043050	19.9	15000.000	120.000	220.0	H	323.0	22.8	16.1	36.0	
727.554950	20.5	15000.000	120.000	98.0	H	251.0	23.6	15.5	36.0	
758.085700	20.9	15000.000	120.000	220.0	V	220.0	24.2	15.1	36.0	
928.645900	22.8	15000.000	120.000	208.0	V	174.0	25.8	13.2	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 100083/0033, 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 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

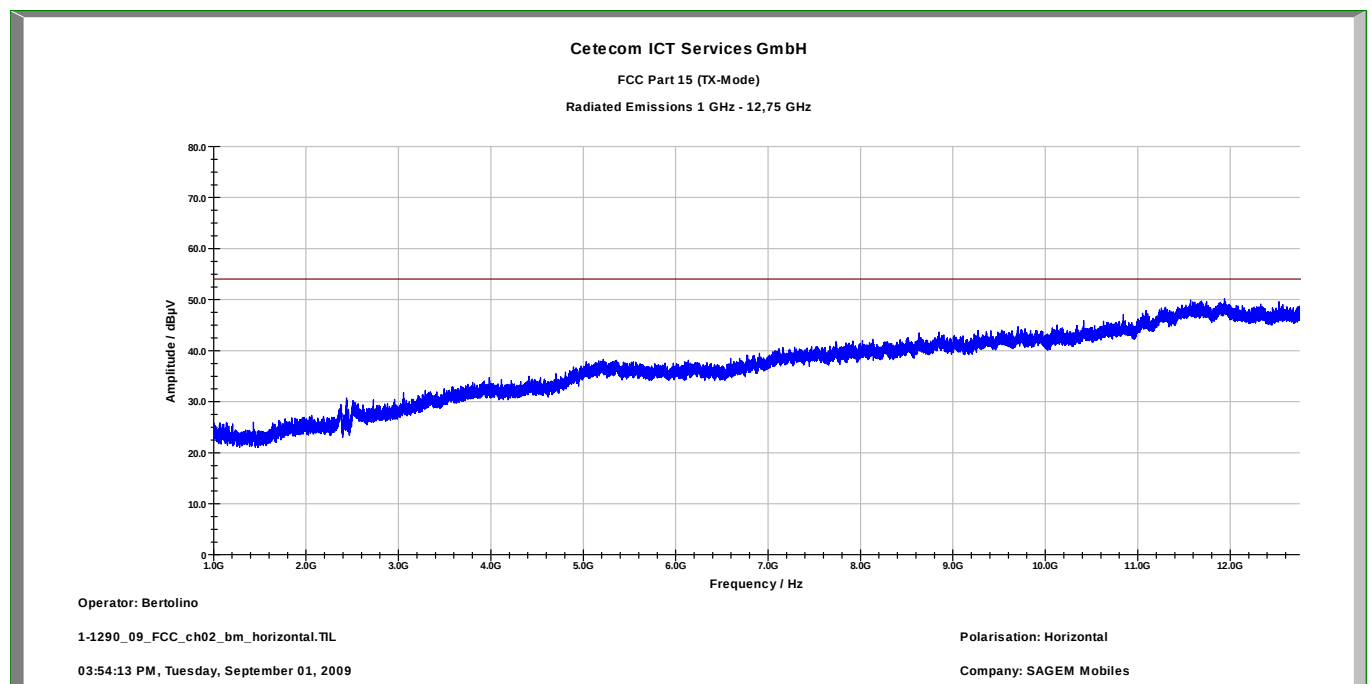
EMC 32 Version 8.10.00

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



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

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



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

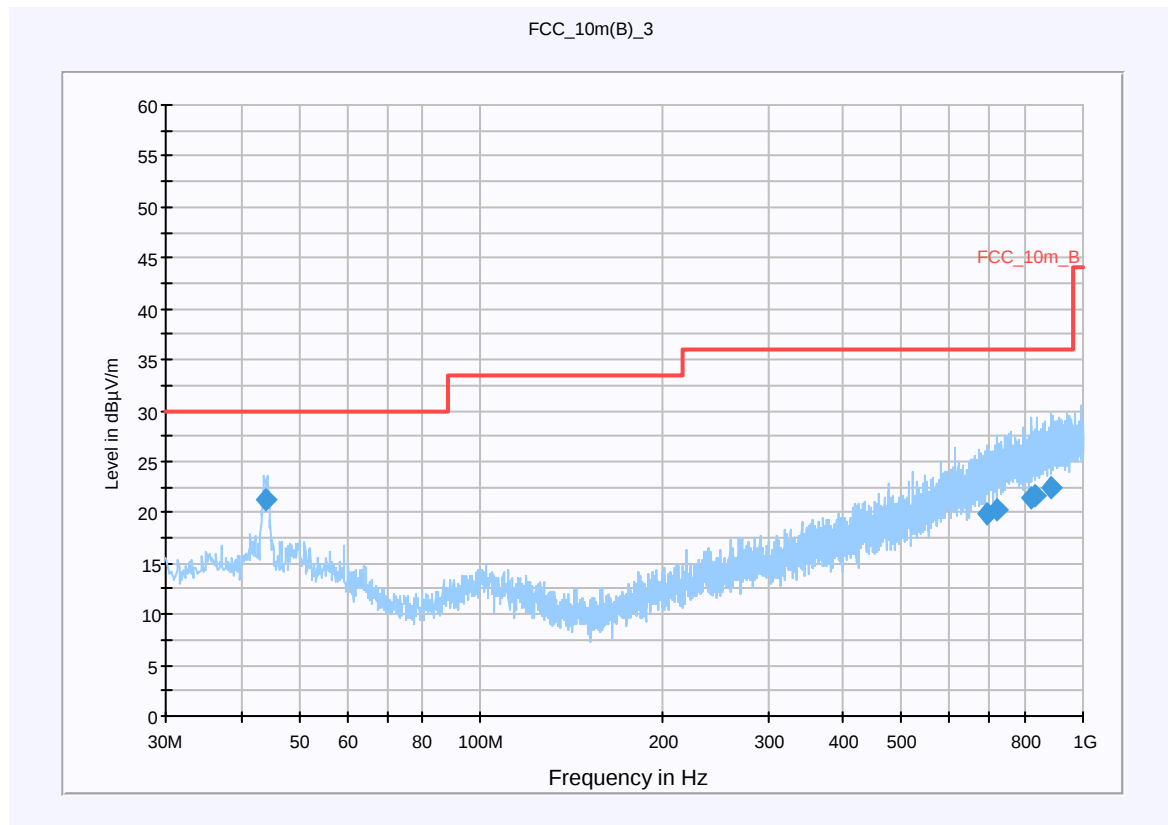
Plot 8: 0.03 – 1 GHz (highest channel), vertical & horizontal polarization

Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN TX Ch. 11 + charging / b - mode
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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



Final Result 1

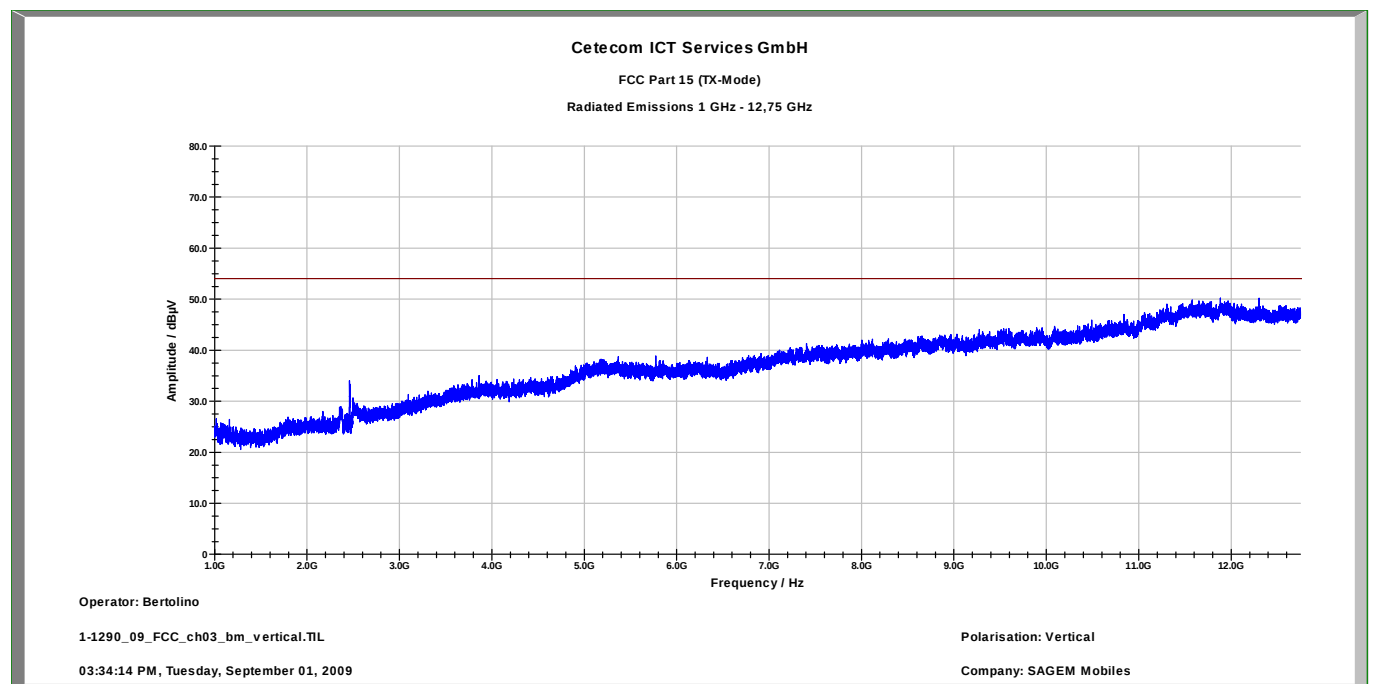
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
44.061150	21.2	15000.000	120.000	98.0	V	83.0	13.4	8.8	30.0	
692.999300	19.8	15000.000	120.000	142.0	V	98.0	22.8	16.2	36.0	
717.763600	20.3	15000.000	120.000	220.0	H	306.0	23.4	15.7	36.0	
821.655700	21.4	15000.000	120.000	112.0	V	23.0	24.6	14.6	36.0	
835.238400	21.6	15000.000	120.000	130.0	H	208.0	24.8	14.4	36.0	
882.205900	22.4	15000.000	120.000	155.0	V	138.0	25.5	13.6	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 100083/0033, 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 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

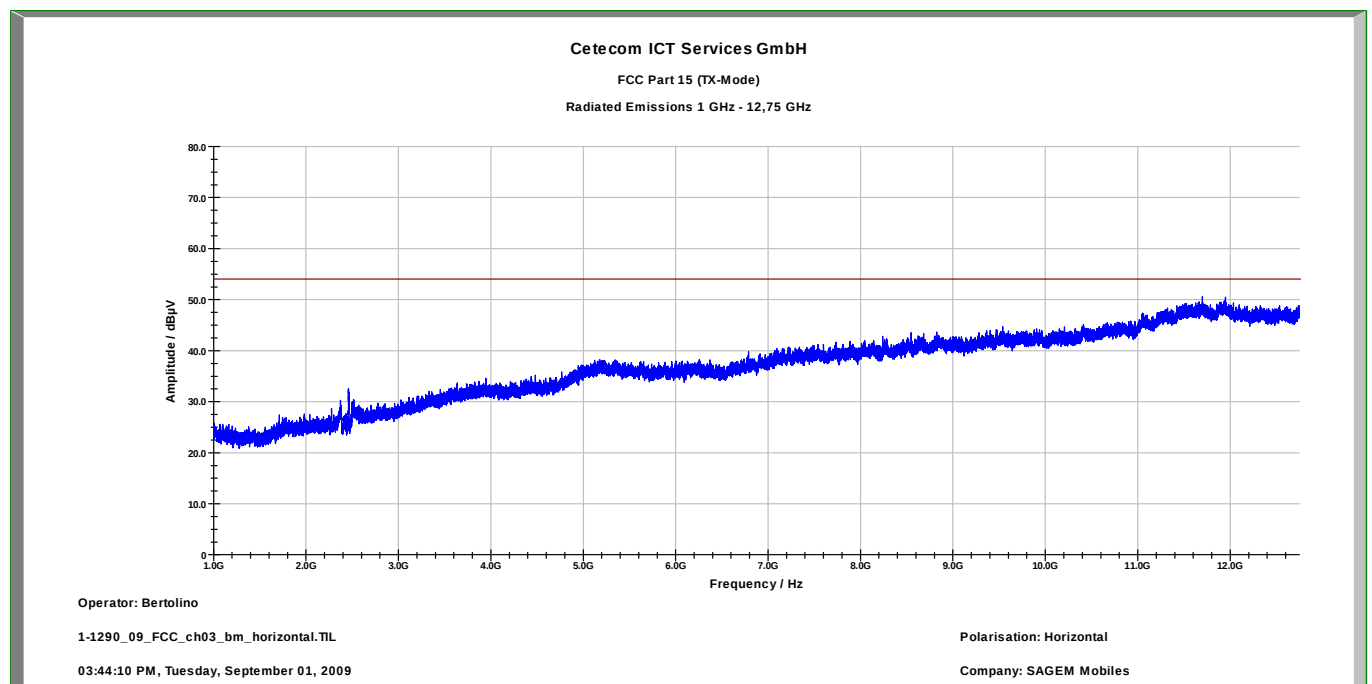
EMC 32 Version 8.10.00

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



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

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



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

Results:

SPURIOUS EMISSIONS LEVEL §15.209								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
No critical peaks detected.			No critical peaks detected.			No critical peaks detected.		
Measurement uncertainty			± 3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f $\geq$ 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 (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

OFDM – mode:

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

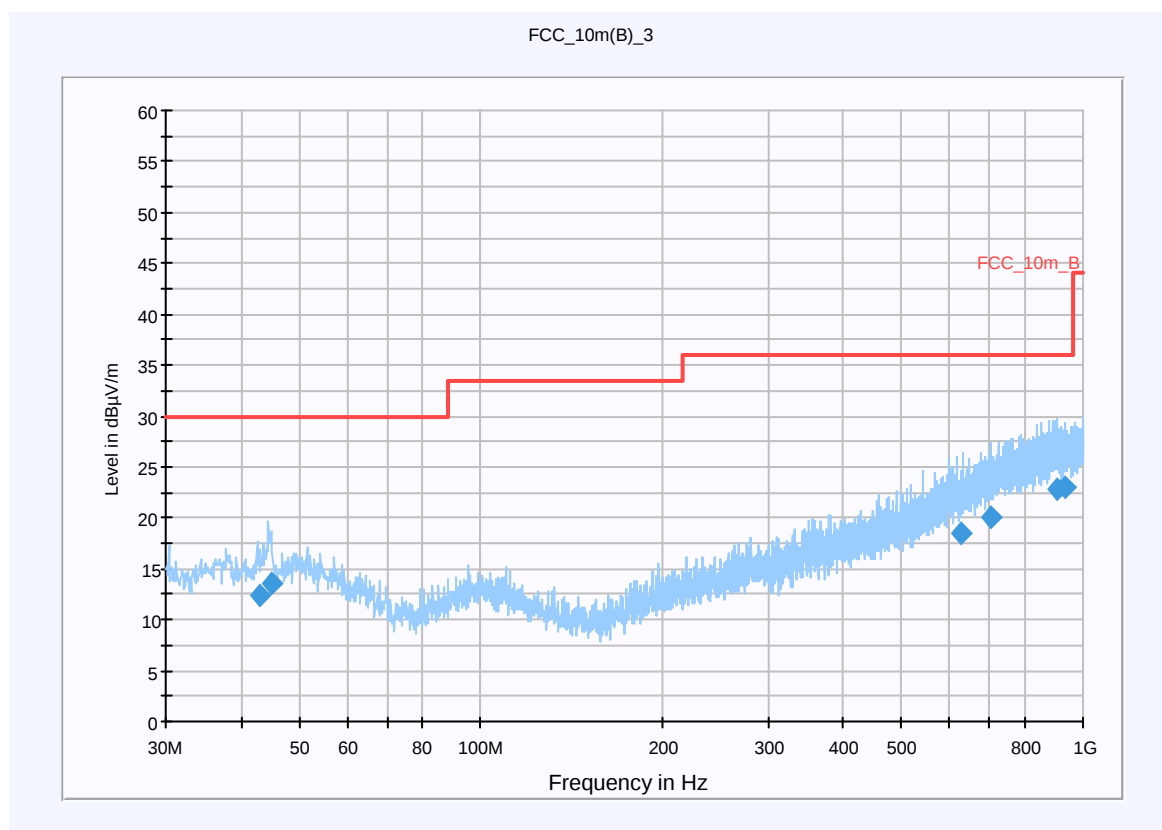
Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN TX Ch. 1 + charging / g - mode
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dB μ V/m

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

**Final Result 1**

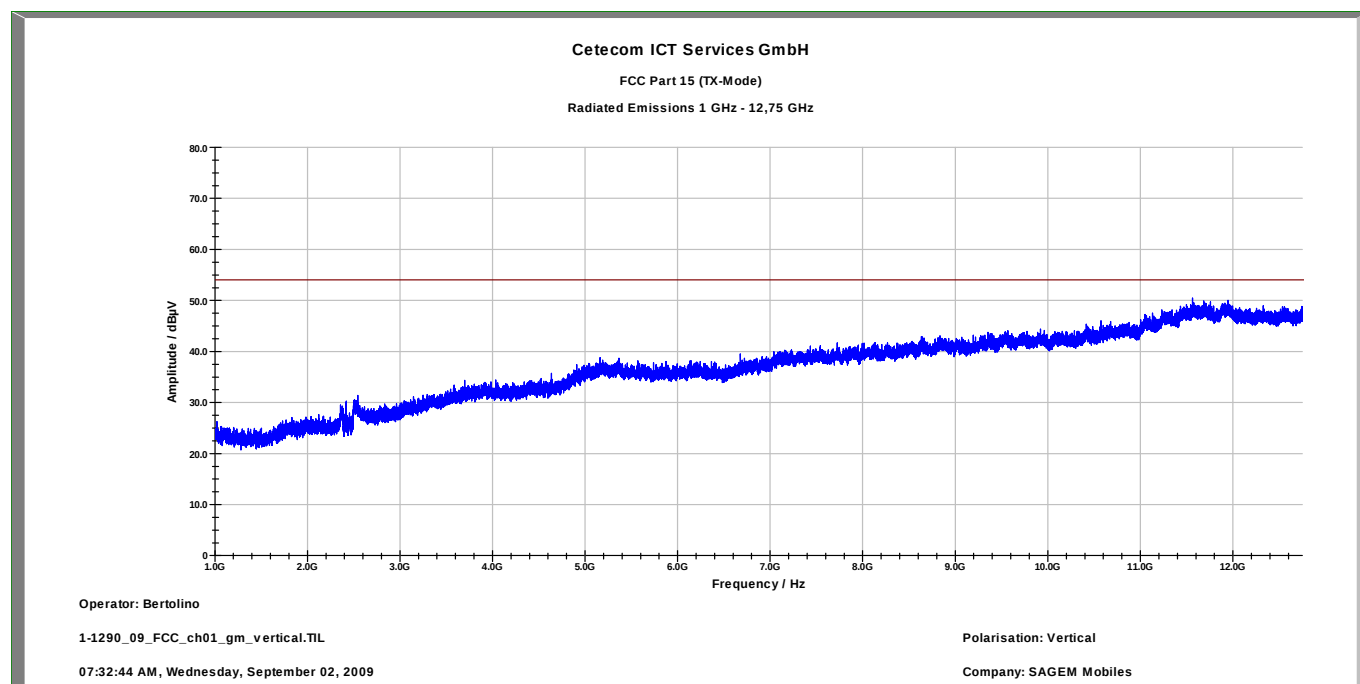
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
42.954550	12.4	15000.000	120.000	104.0	V	124.0	13.5	17.6	30.0	
44.872000	13.6	15000.000	120.000	191.0	V	26.0	13.4	16.4	30.0	
629.233700	18.6	15000.000	120.000	220.0	V	24.0	21.5	17.4	36.0	
702.240850	20.1	15000.000	120.000	220.0	V	65.0	23.1	15.9	36.0	
902.317500	22.9	15000.000	120.000	202.0	H	25.0	25.7	13.1	36.0	
931.070800	23.0	15000.000	120.000	220.0	V	225.0	25.8	13.0	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 100083/0033, 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 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

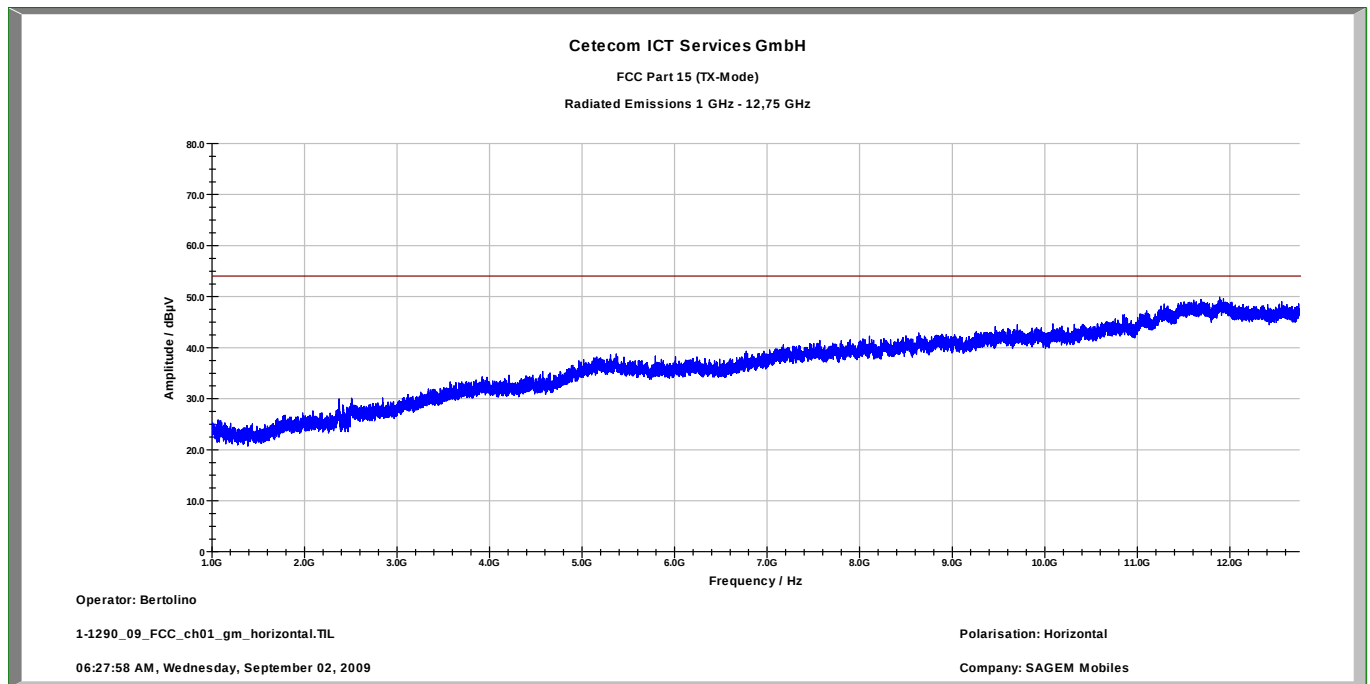
EMC 32 Version 8.10.00

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



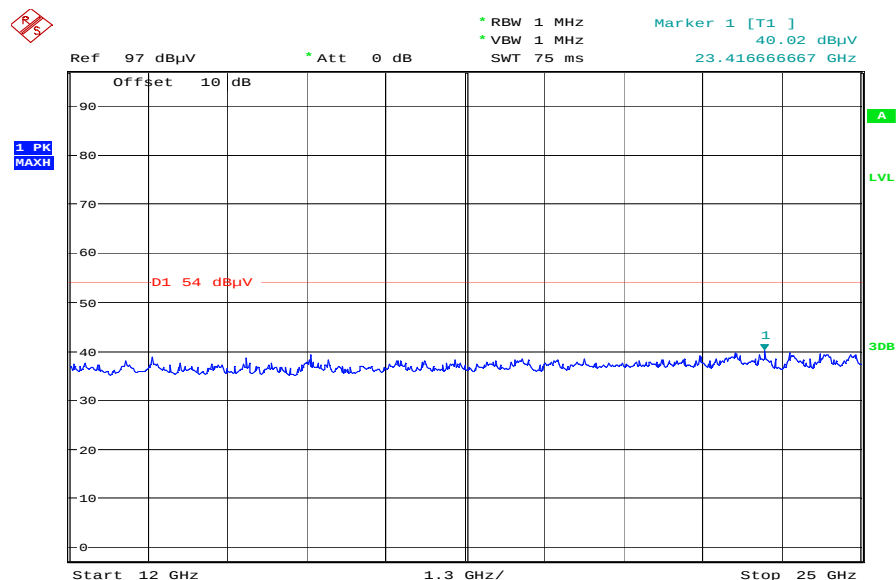
The carrier signal is suppressed with a 2.4 GHz band rejection filter.

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



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

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



Date: 2.SEP.2009 16:21:14

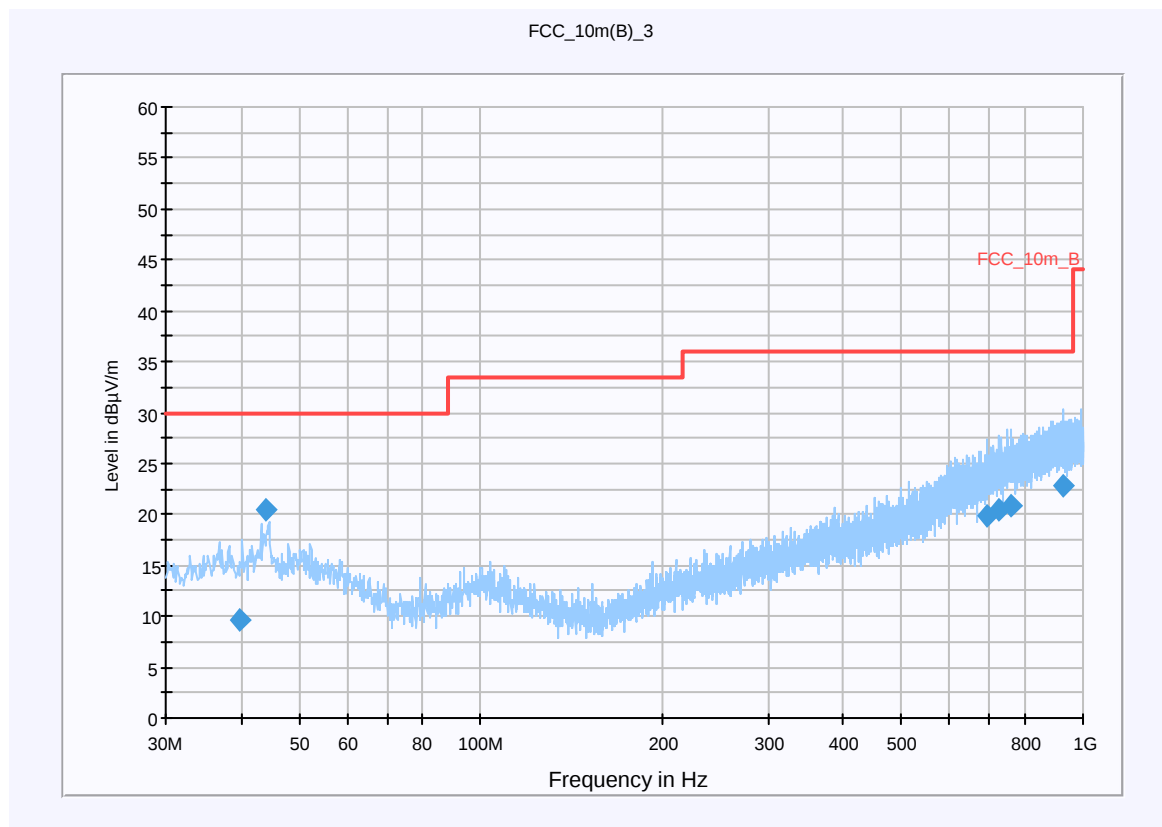
Plot 5: 0.03 – 1 GHz (middle channel), vertical & horizontal polarization

Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN TX Ch. 6 + charging / g - mode
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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



Final Result 1

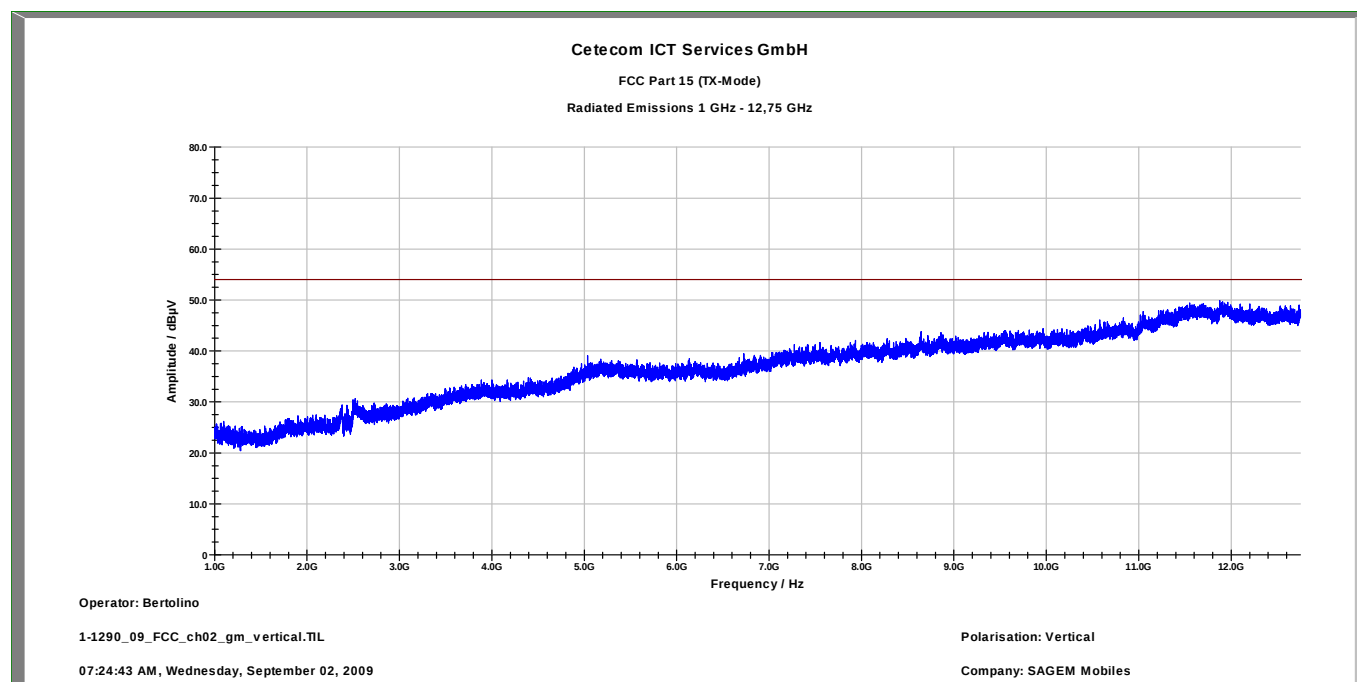
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
39.959700	9.6	15000.000	120.000	98.0	V	142.0	13.6	20.4	30.0	
44.154450	20.5	15000.000	120.000	98.0	V	142.0	13.4	9.5	30.0	
694.043050	19.9	15000.000	120.000	220.0	H	323.0	22.8	16.1	36.0	
727.554950	20.5	15000.000	120.000	98.0	H	251.0	23.6	15.5	36.0	
758.085700	20.9	15000.000	120.000	220.0	V	220.0	24.2	15.1	36.0	
928.645900	22.8	15000.000	120.000	208.0	V	174.0	25.8	13.2	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 100083/0033, 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 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

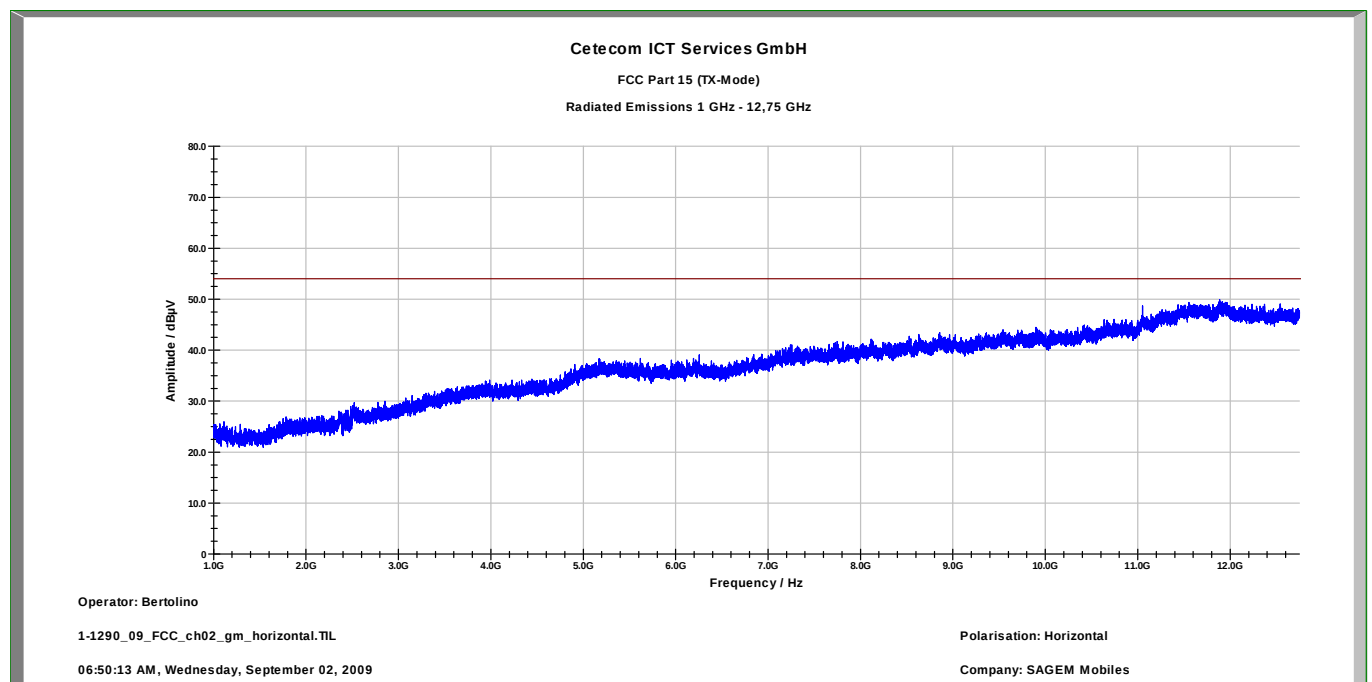
EMC 32 Version 8.10.00

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



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

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



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

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

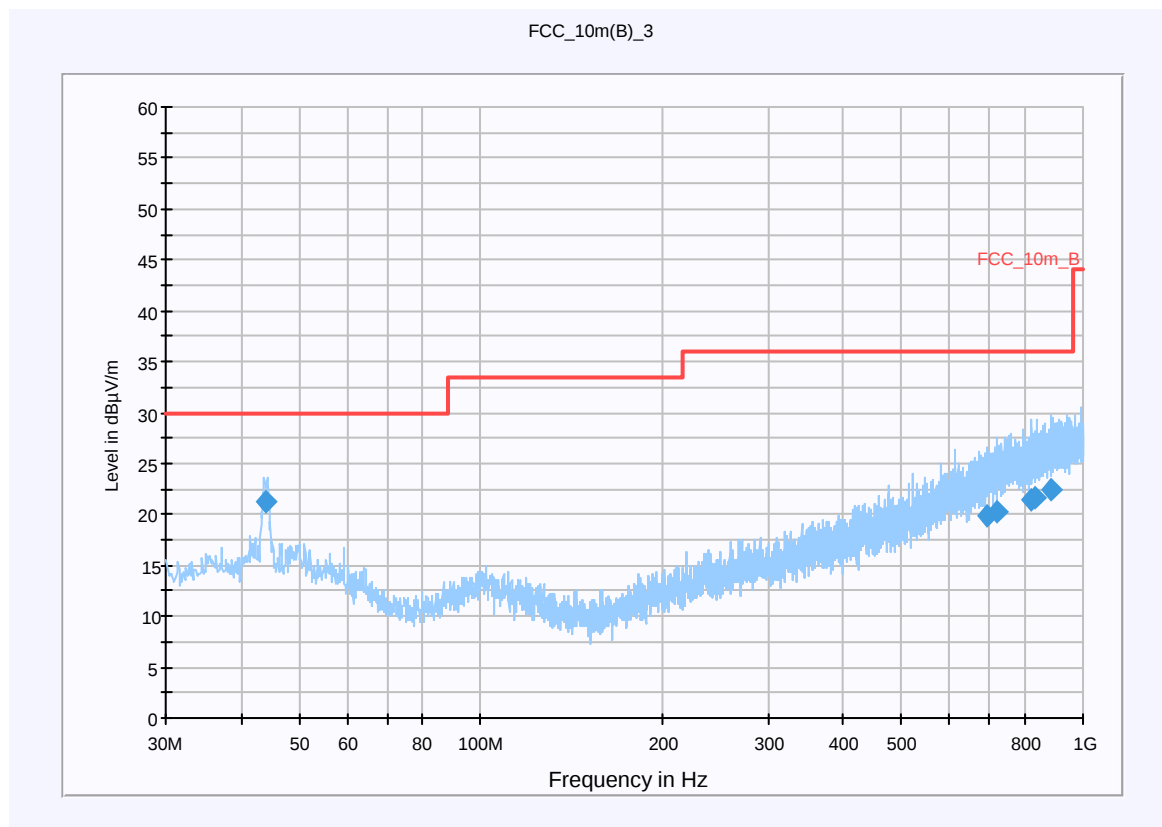
Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN TX Ch. 11 + charging / g - mode
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dB μ V/m

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

**Final Result 1**

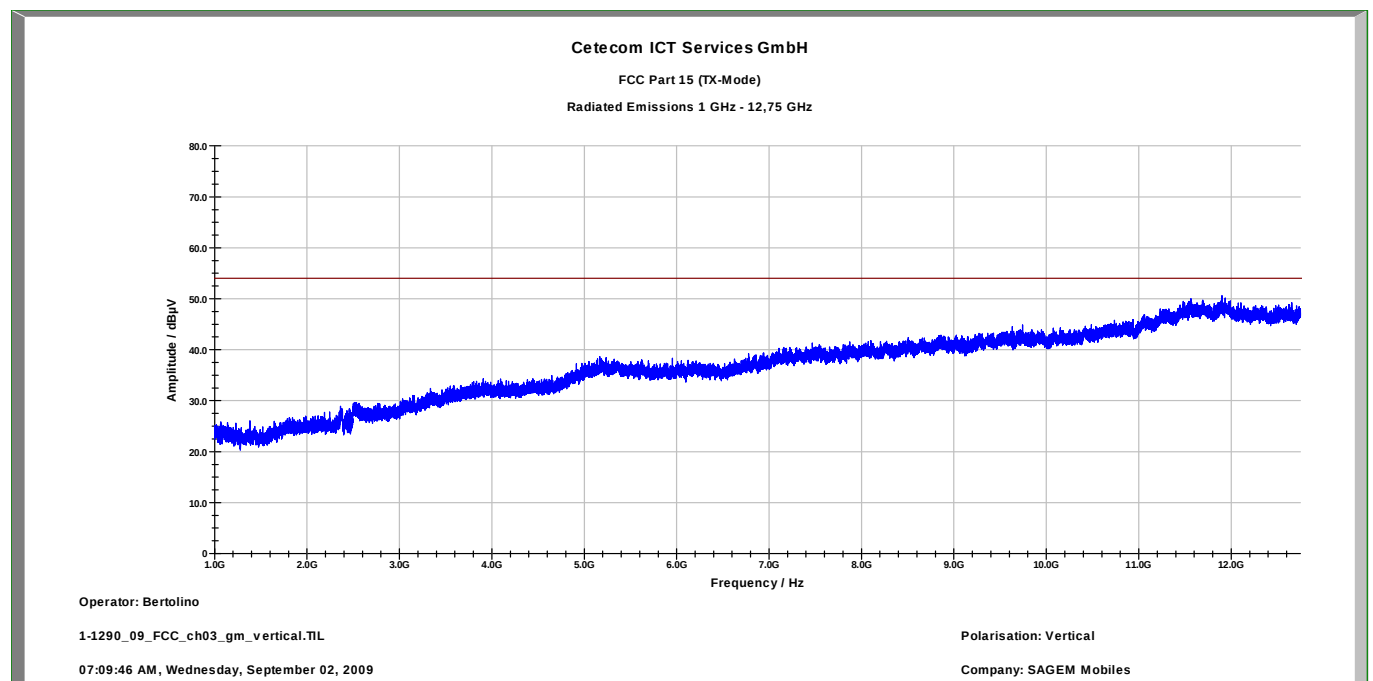
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
44.061150	21.2	15000.000	120.000	98.0	V	83.0	13.4	8.8	30.0	
692.999300	19.8	15000.000	120.000	142.0	V	98.0	22.8	16.2	36.0	
717.763600	20.3	15000.000	120.000	220.0	H	306.0	23.4	15.7	36.0	
821.655700	21.4	15000.000	120.000	112.0	V	23.0	24.6	14.6	36.0	
835.238400	21.6	15000.000	120.000	130.0	H	208.0	24.8	14.4	36.0	
882.205900	22.4	15000.000	120.000	155.0	V	138.0	25.5	13.6	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 100083/0033, 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 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

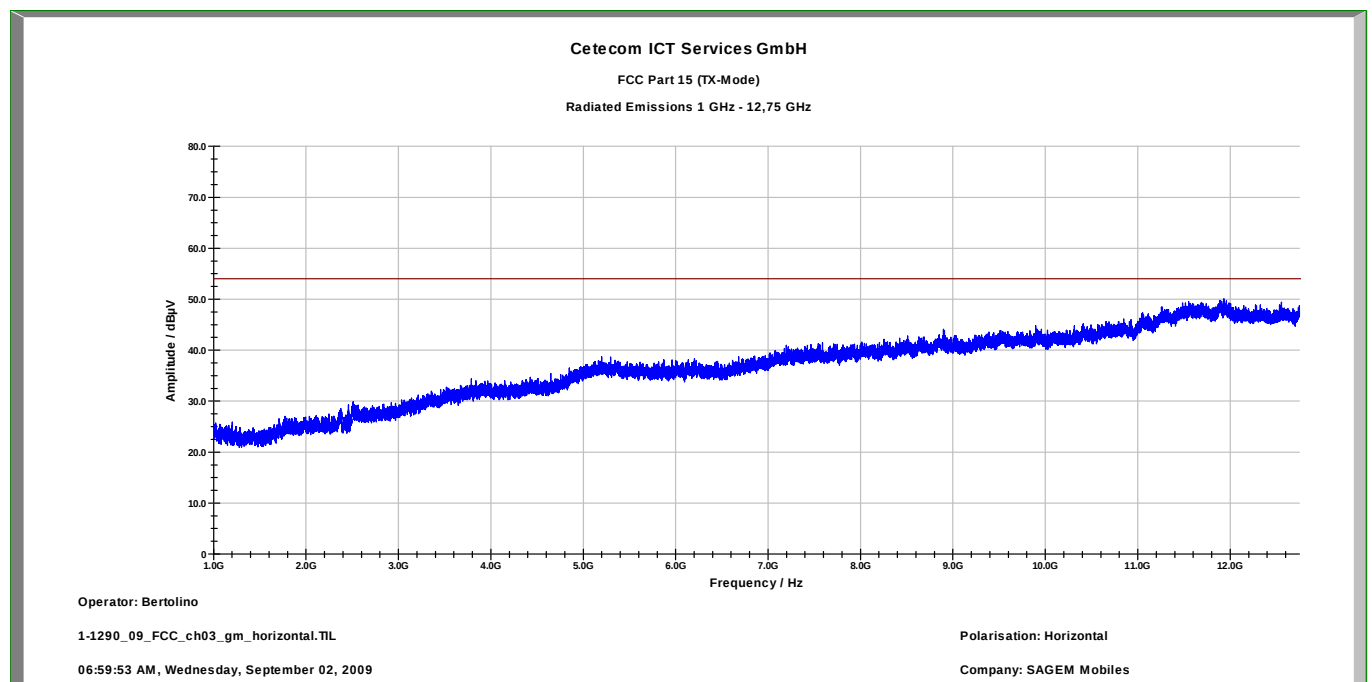
EMC 32 Version 8.10.00

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



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

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



The carrier signal is suppressed 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.			No critical peaks detected.			No critical peaks detected.		
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

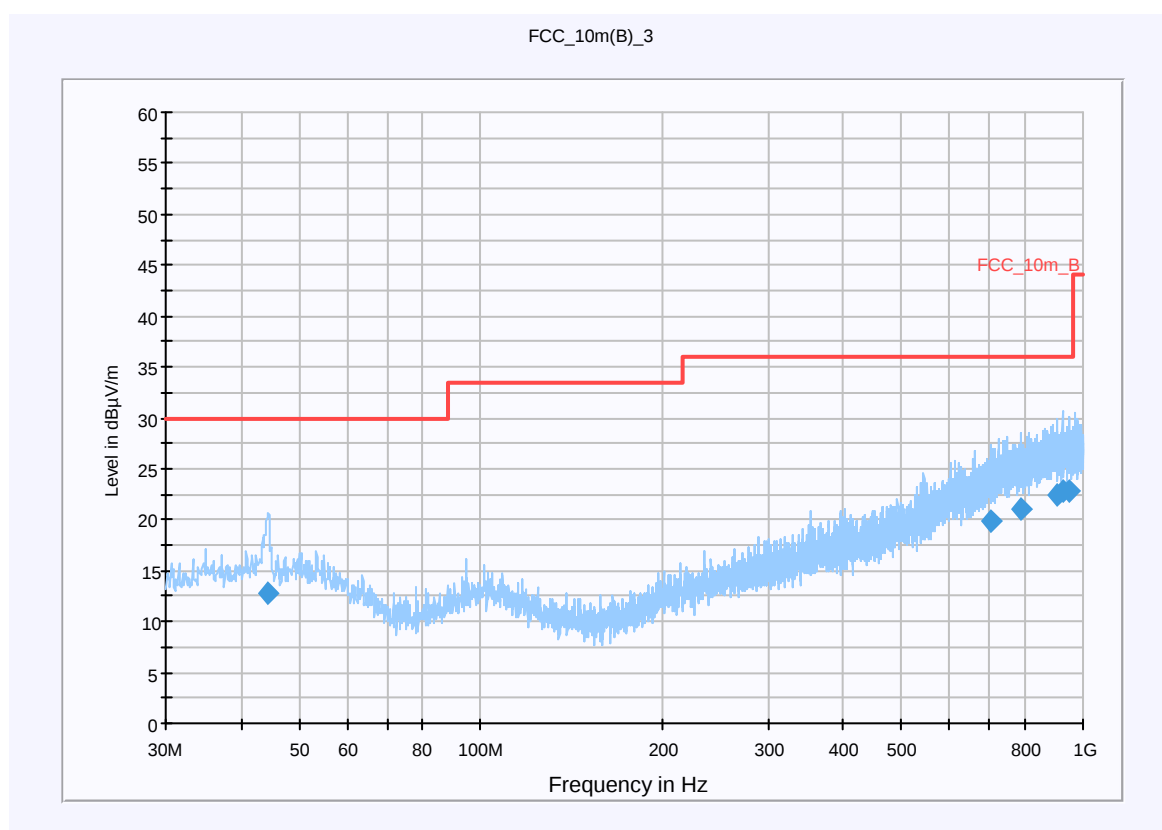
Plot 1: 0.03 - 1 GHz vertical & horizontal polarization (receiver)

Common Information

EUT: OT800/890
 Serial Number: 254077116 / IMEI: 354797030000148
 Test Description: FCC class B @ 10 m
 Operating Conditions: WLAN RX + charging
 Operator Name: Hennemann
 Comment: AC: 115 V / 60 Hz

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 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

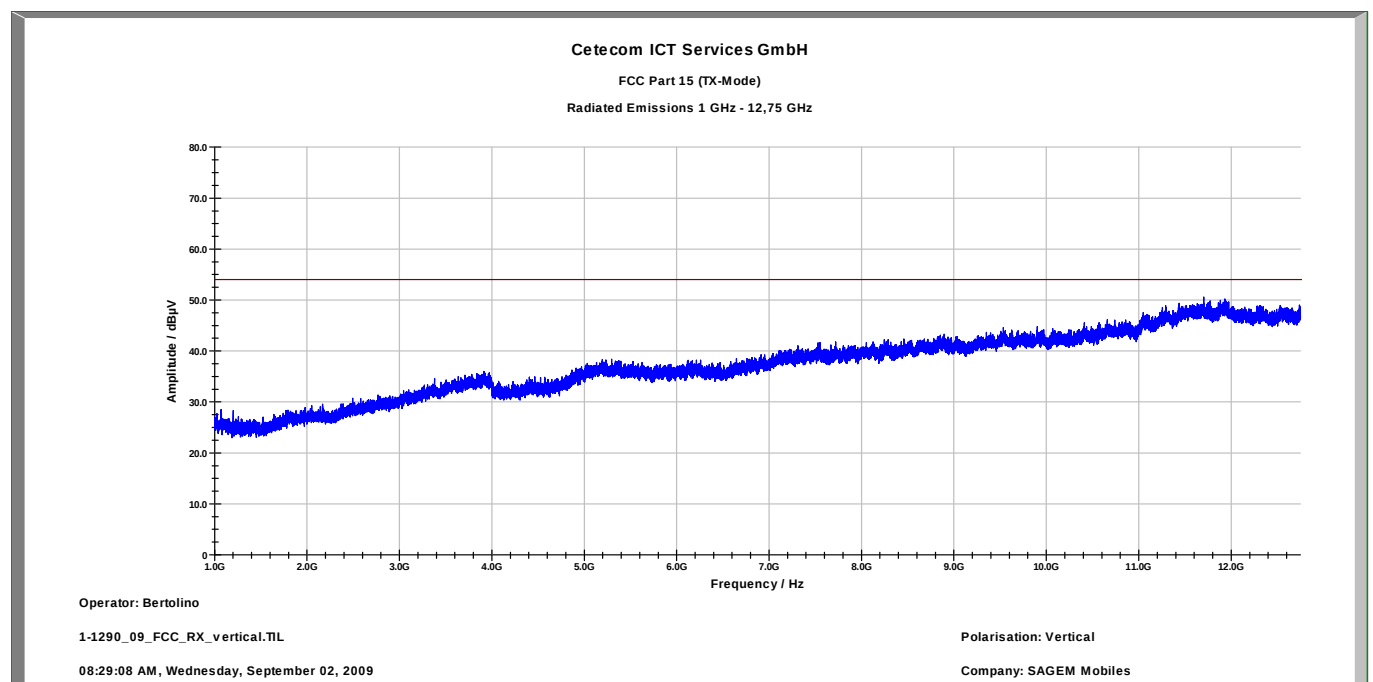
Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
44.411350	12.8	15000.000	120.000	149.0	V	280.0	13.4	17.2	30.0	
703.431500	20.0	15000.000	120.000	220.0	H	244.0	23.1	16.0	36.0	
786.553550	21.0	15000.000	120.000	165.0	H	161.0	24.3	15.0	36.0	
904.470050	22.5	15000.000	120.000	220.0	V	117.0	25.7	13.5	36.0	
922.761050	22.8	15000.000	120.000	140.0	V	170.0	25.8	13.2	36.0	
948.961200	22.7	15000.000	120.000	98.0	V	48.0	25.8	13.3	36.0	

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

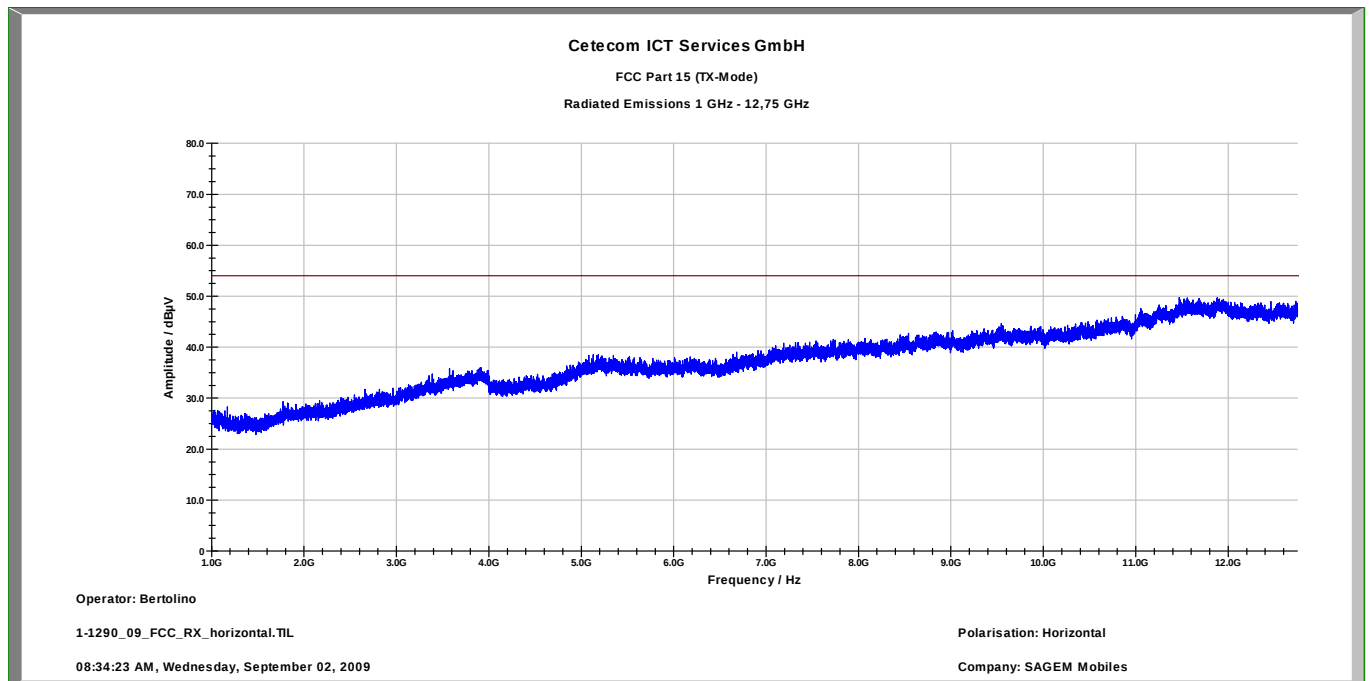
Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/0033, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0109)
Antenna Tower:	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

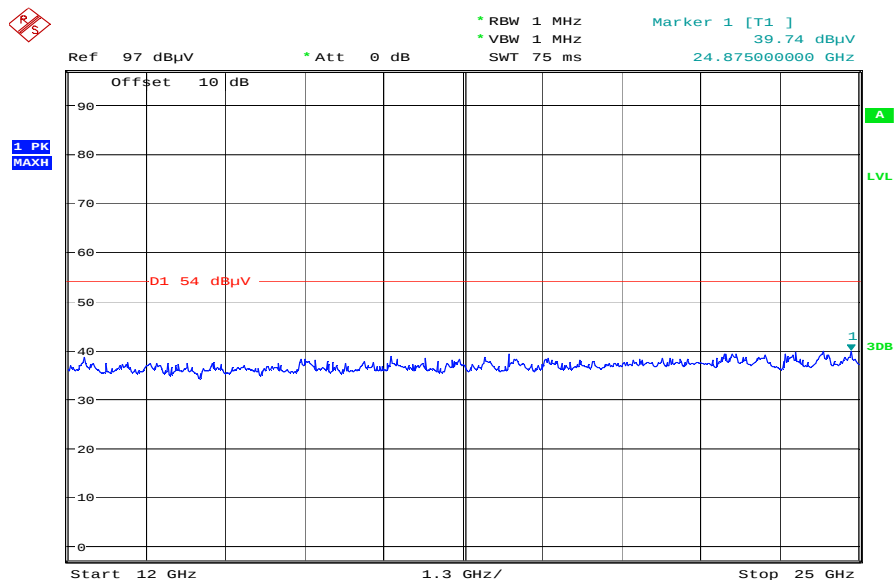
Plot 2: 1 – 12.75 GHz vertical polarization (receiver)



Plot 3: 1 – 12.75 GHz horizontal polarization (receiver)



Plot 4: 12 – 25 GHz vertical & horizontal polarization (receiver)



Date: 2.SEP.2009 16:23:12

Results:

Spurious Emissions level [dB μ V/m]		
f[MHz]	Detector	Level [dB μ V/m]
No critical peaks detected.		
Measurement uncertainty		± 3 dB

f < 1 GHz : RBW/VBW: 100 kHz

f $\geq$ 1GHz : RBW/VBW: 1 MHz**Limits:** § 15.109

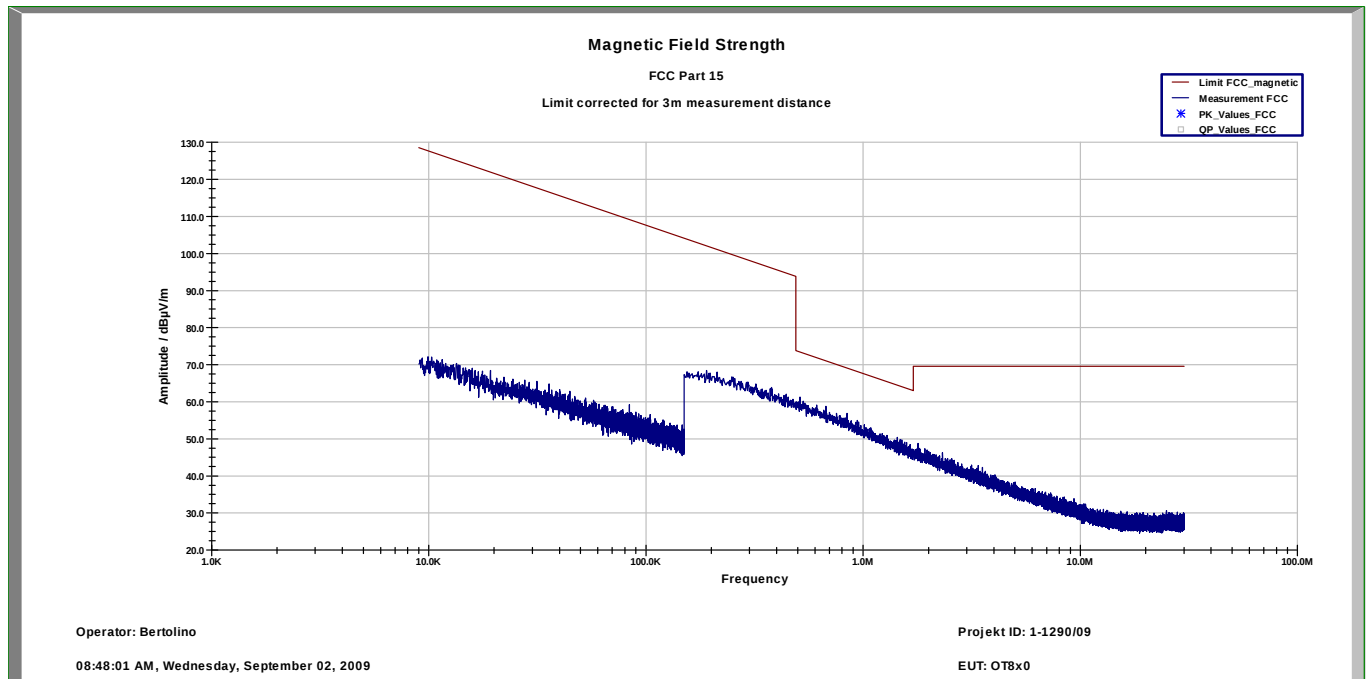
Frequency (MHz)	Field strength (dB μ V/m)	Measurement distance (m)
30 - 88	30.0	10
88 - 216	33.5	10
216 - 960	36.0	10
above 960	54.0	3

5.15 Spurious Emissions - radiated <30 MHz §15.209

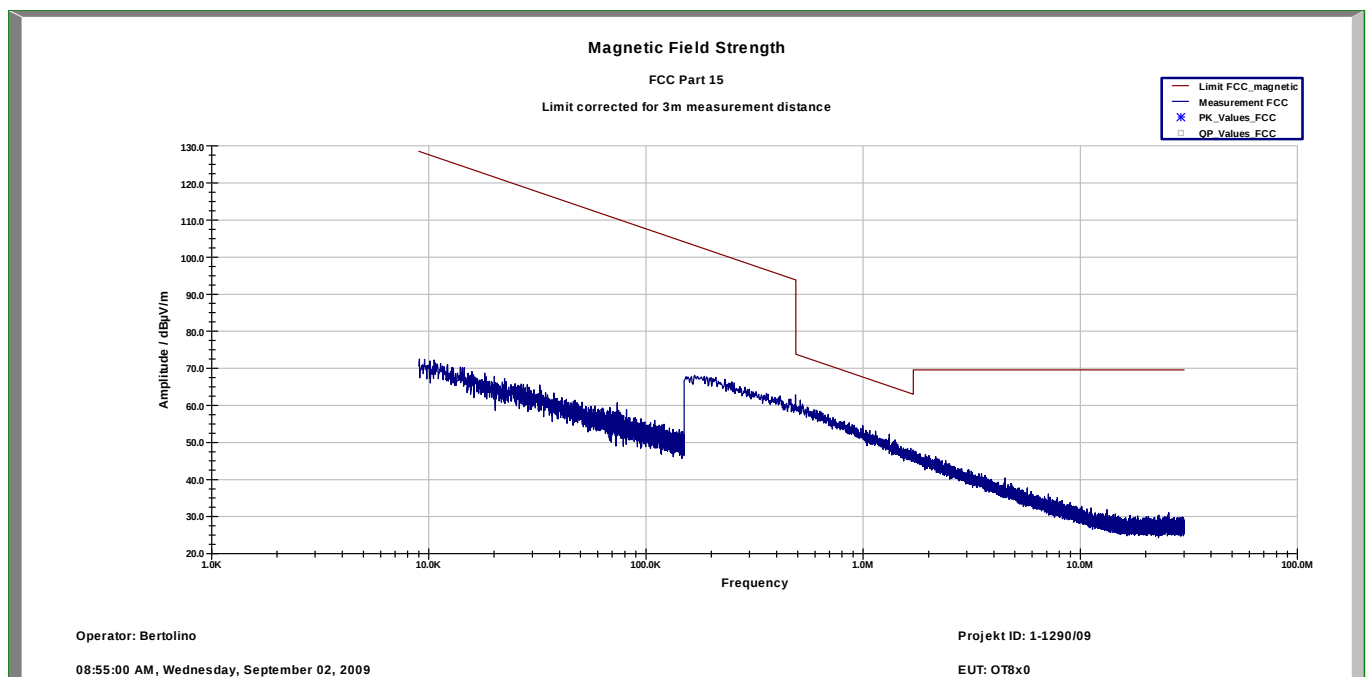
Measured at 3 m distance.

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

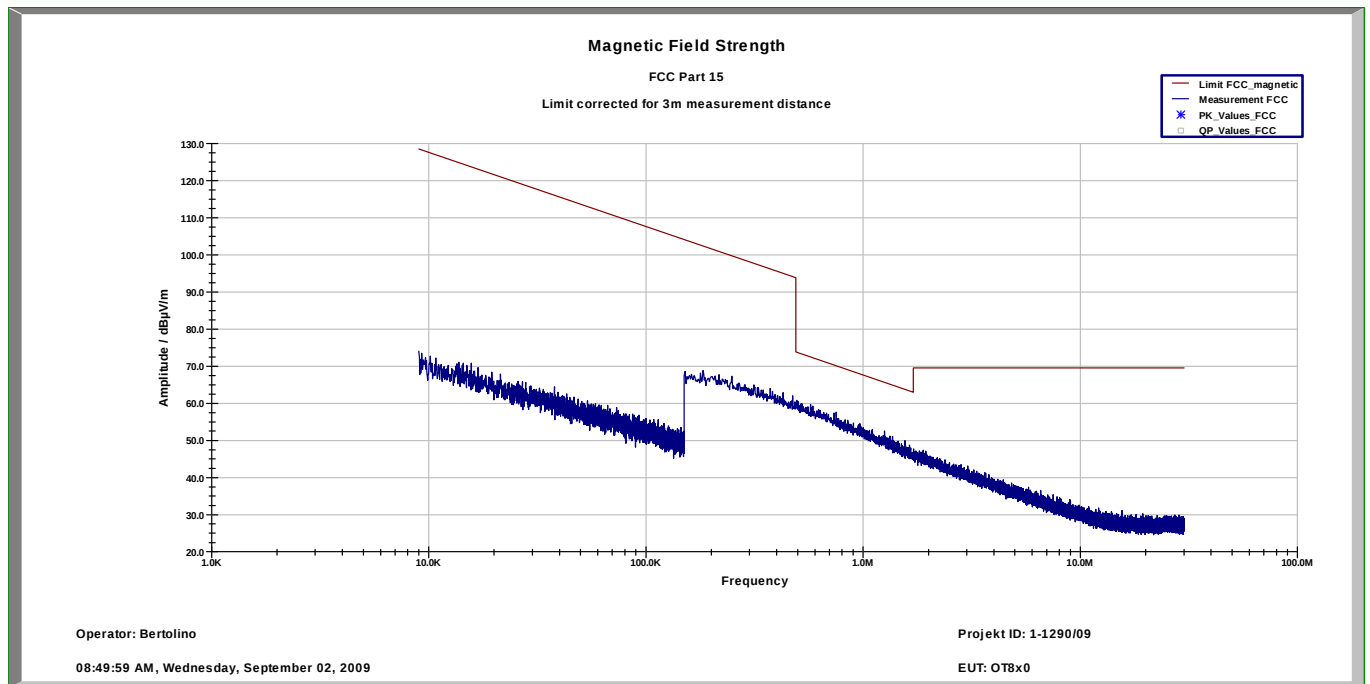
Plot 1: TX mode, antenna position 1, b – mode



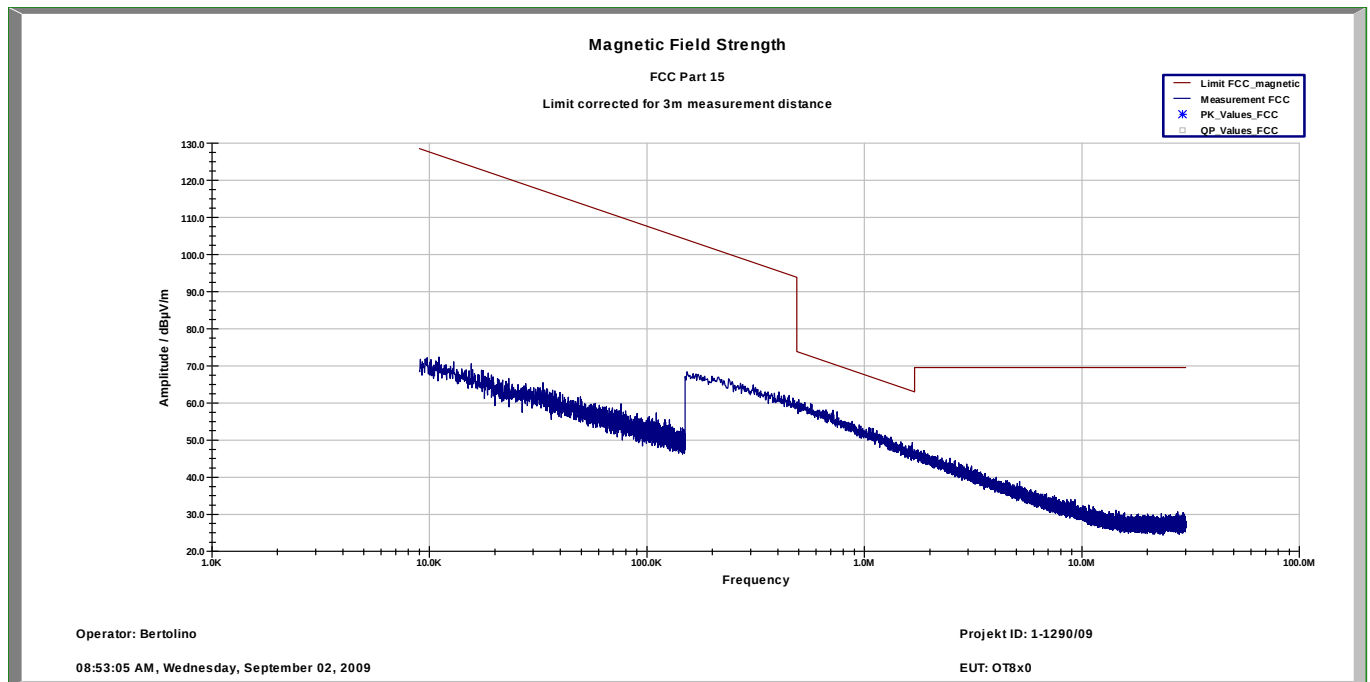
Plot 2: TX mode, antenna position 2 (90° rotated), b – mode



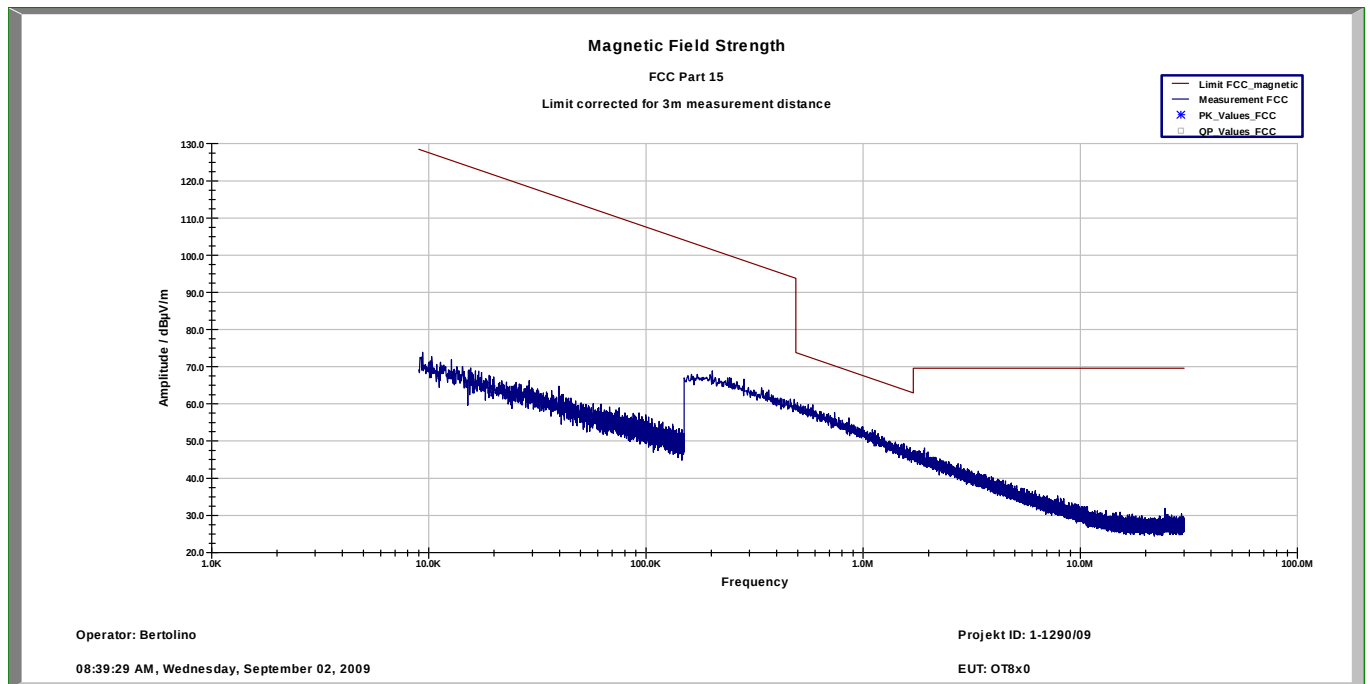
Plot 3: TX mode, antenna position 1, g – mode



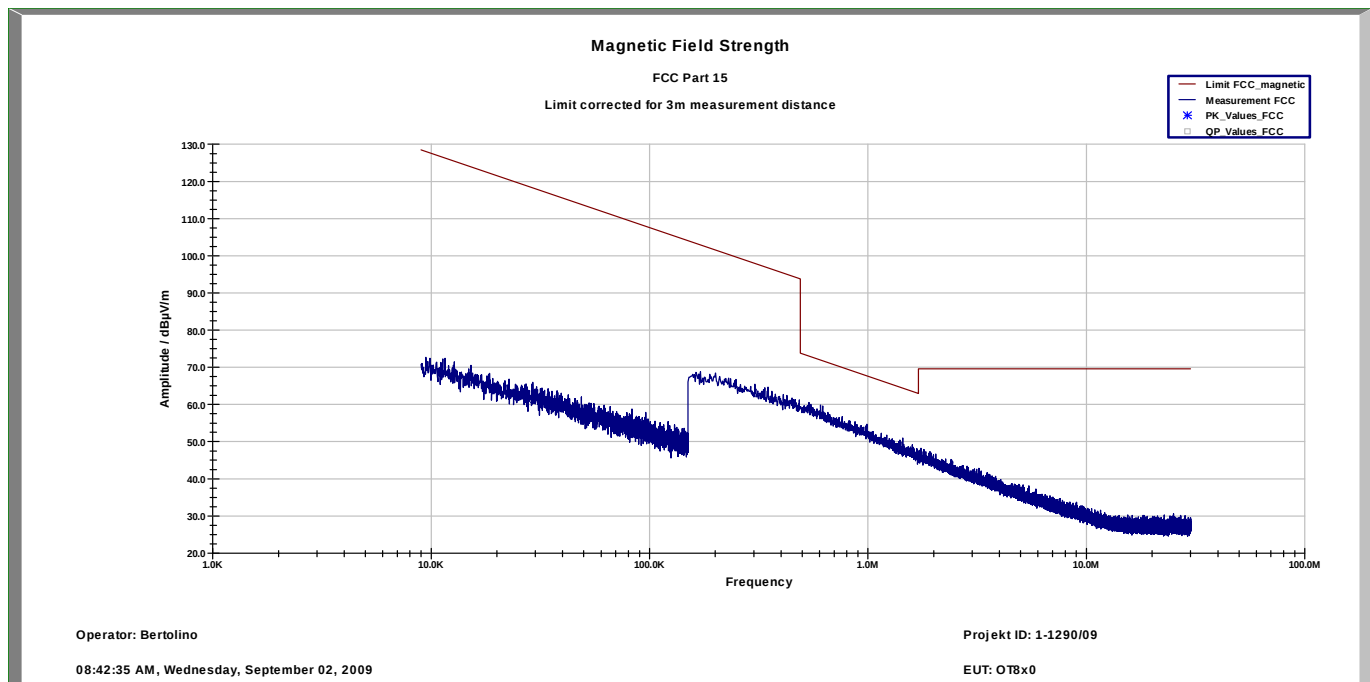
Plot 4: TX mode, antenna position 2 (90° rotated), g – mode



Plot 5: RX mode, antenna position 1



Plot 6: RX mode, antenna position 2 (90° rotated)

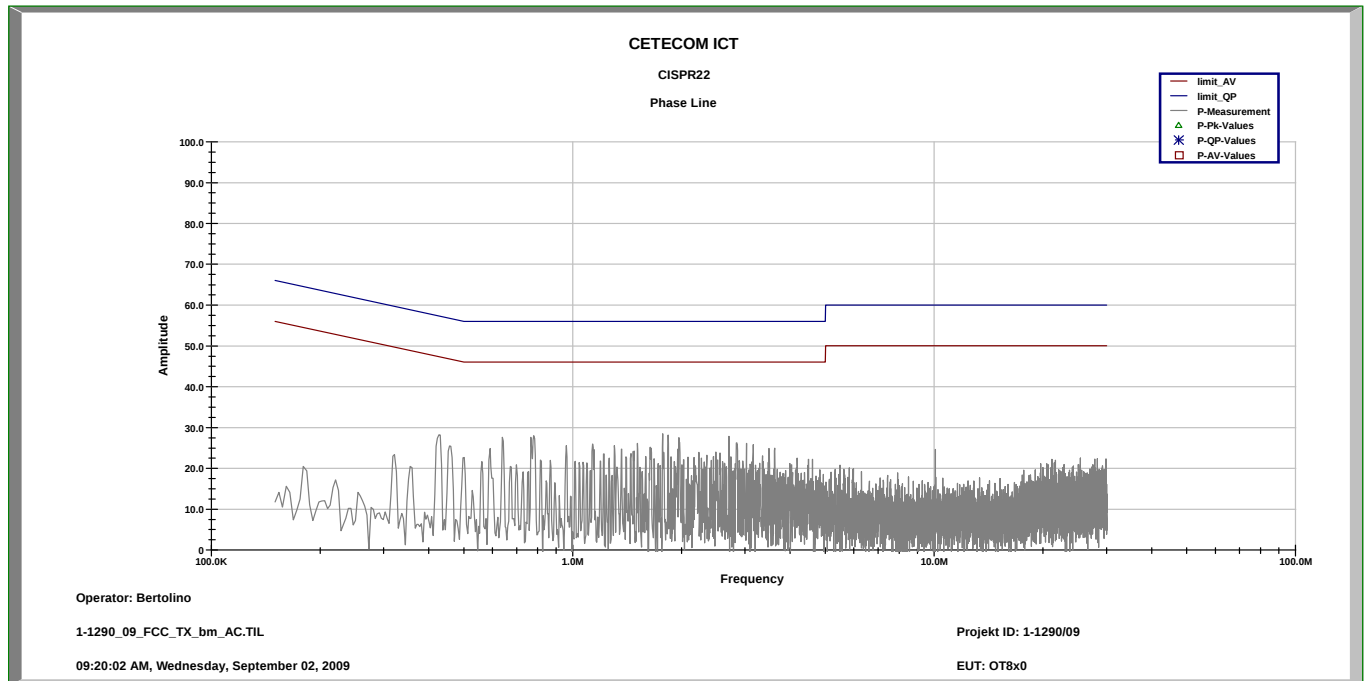


Limits:

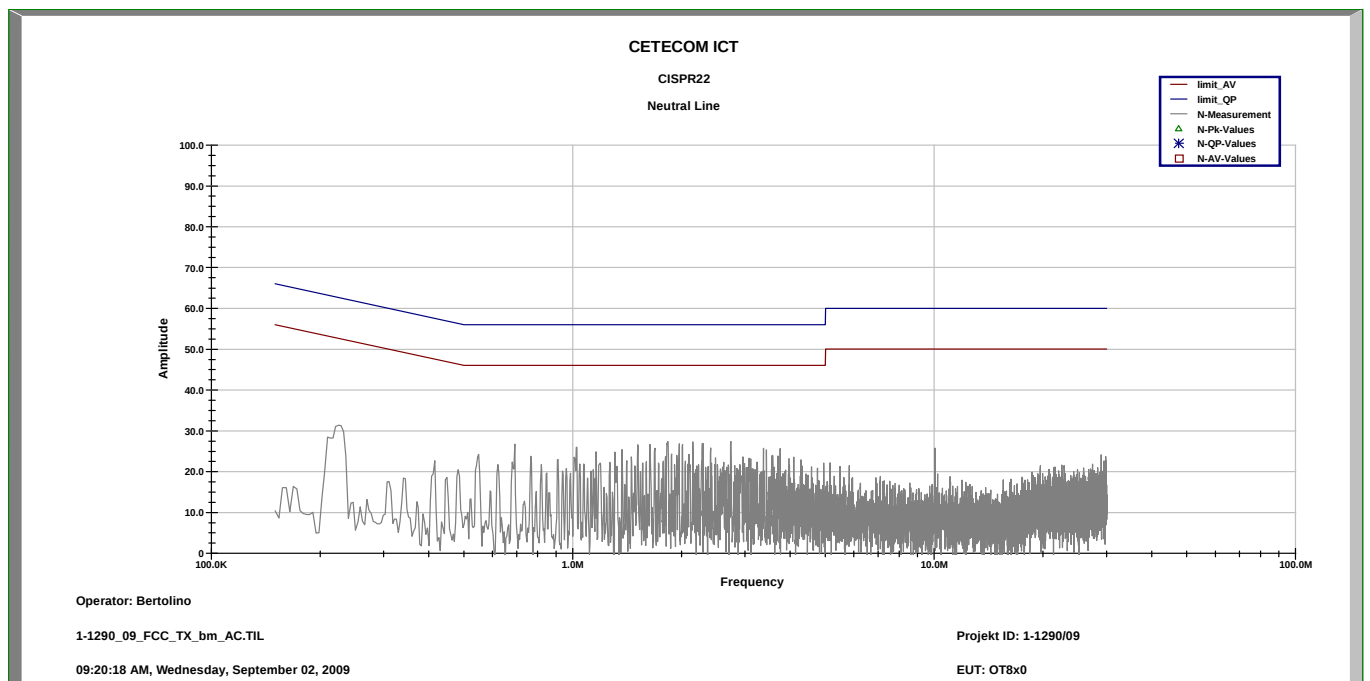
Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Measurement distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30 / 29.5 dB $\mu\text{V/m}$	30
30 - 88	100 / 40 dB $\mu\text{V/m}$	3
88 - 216	150 / 43.5 dB $\mu\text{V/m}$	3
216 - 960	200 / 46 dB $\mu\text{V/m}$	3
above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

5.16 Conducted Emissions <30 MHz §15.107/207

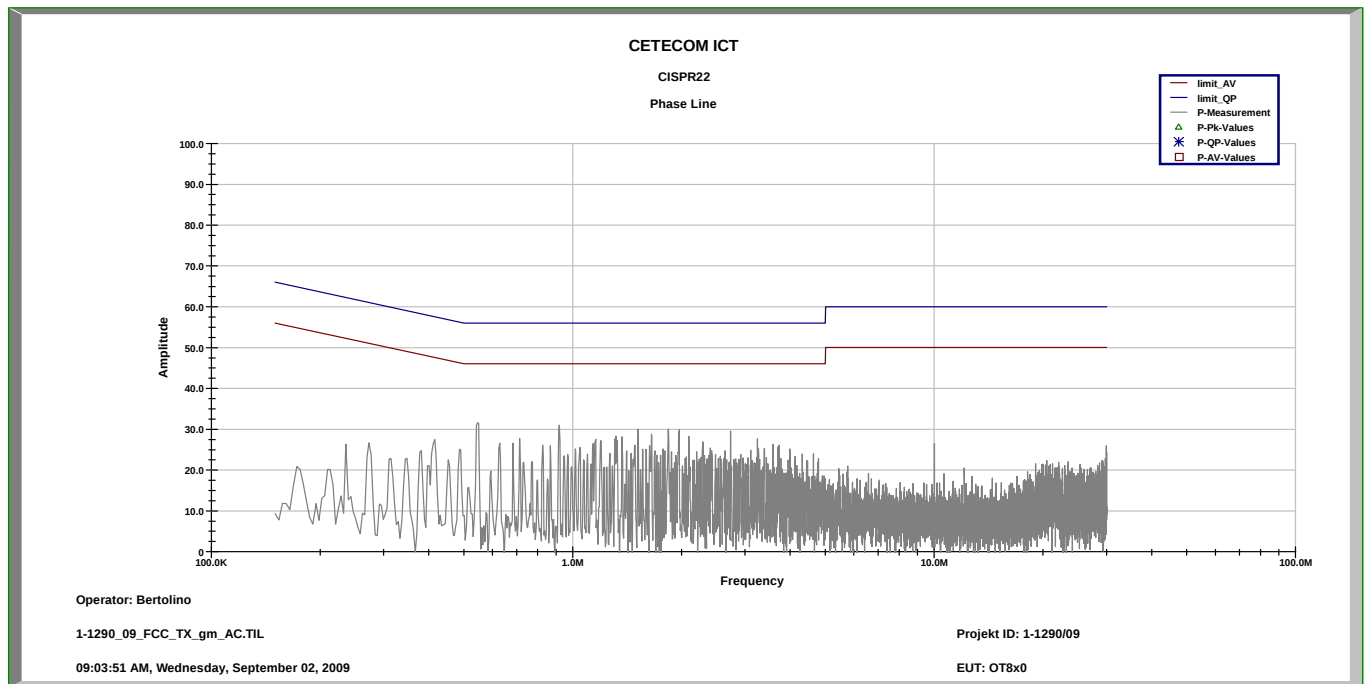
Plot 1: TX mode, b – mode, Phase line



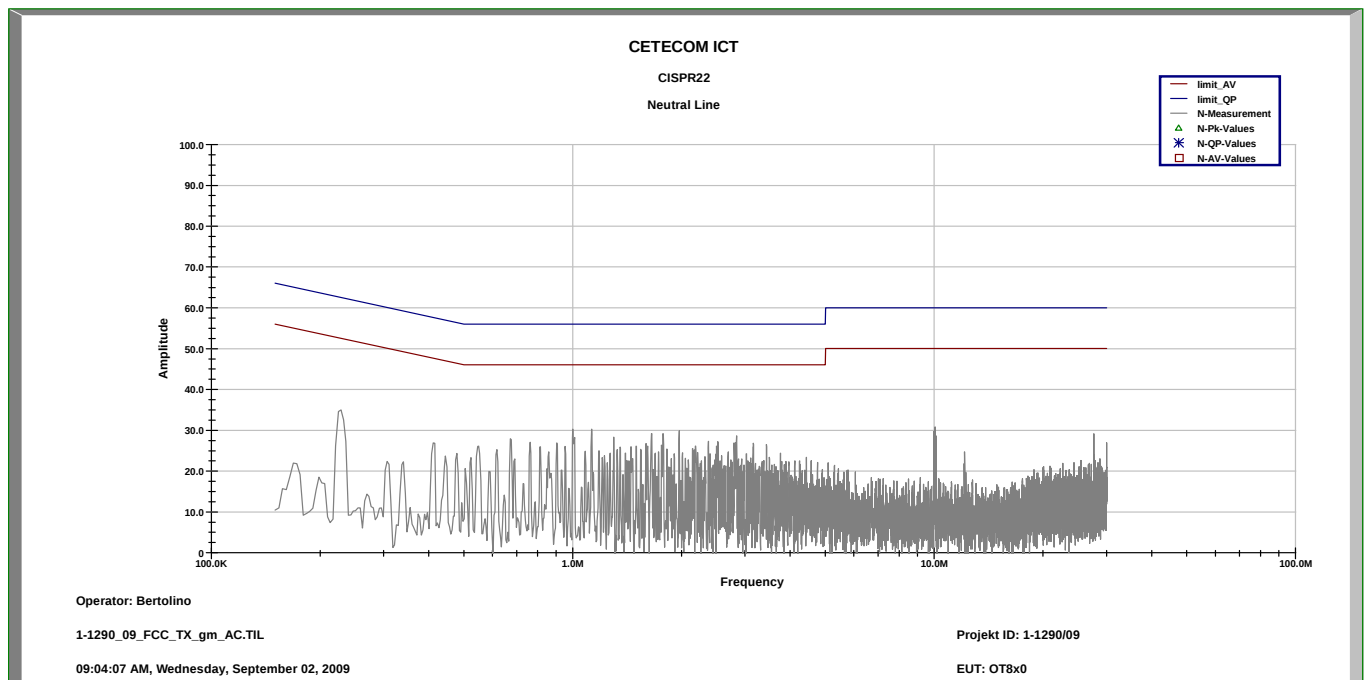
Plot 2: TX mode, b – mode, Neutral line



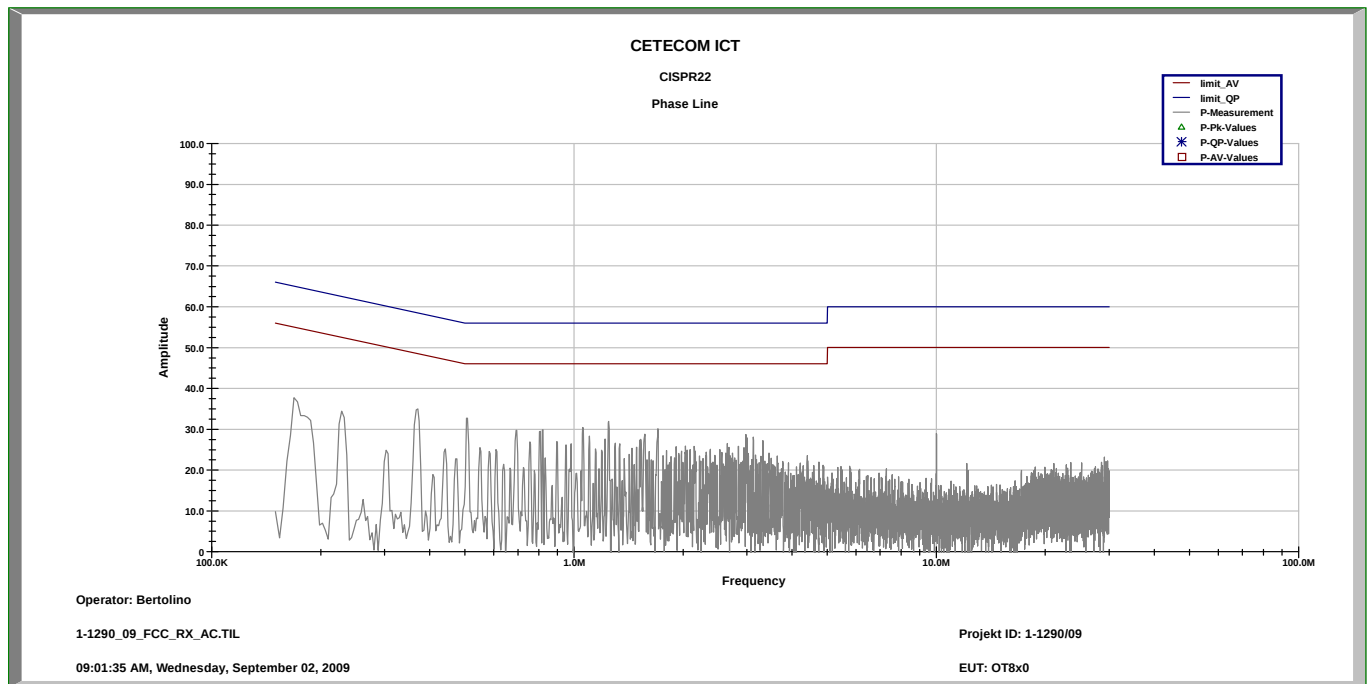
Plot 3: TX mode, g – mode, Phase line



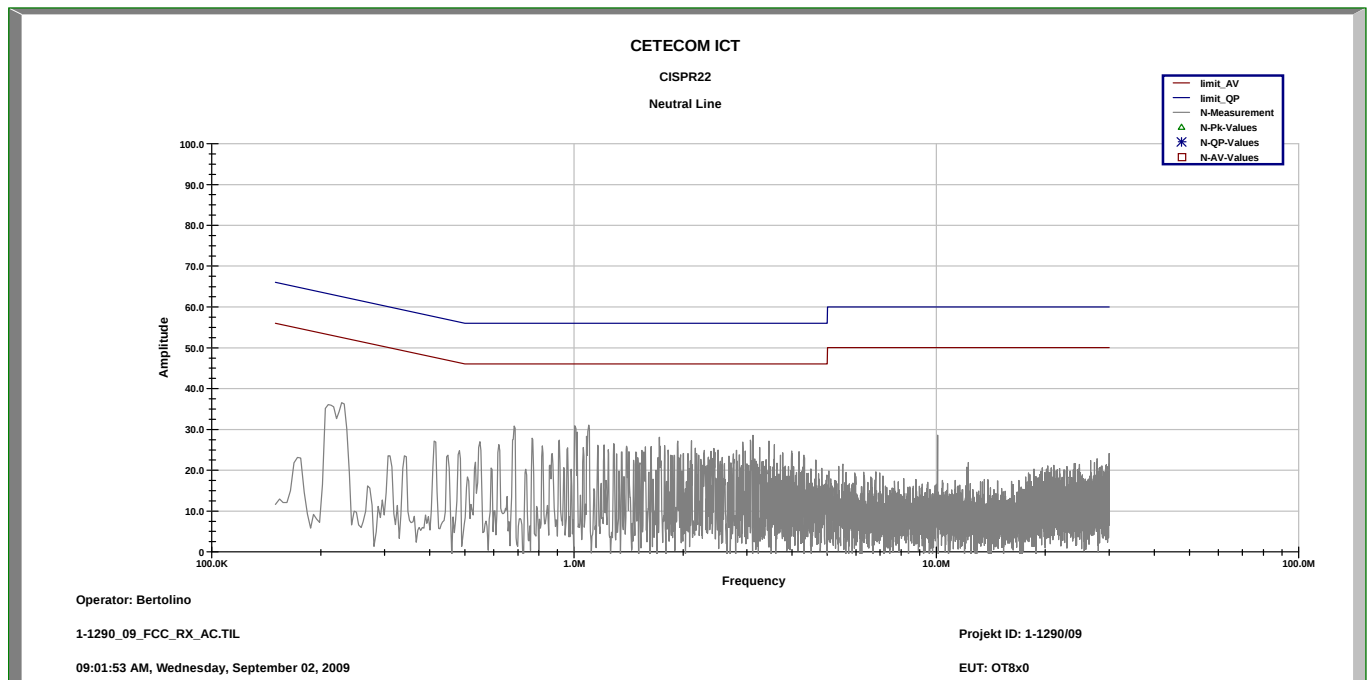
Plot 4: TX mode, g – mode, Neutral line



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.

Anechoic chamber C:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Anechoic chamber	MWB	87400/02	300000996	Monthly verification		
2	System-Rack 85900	HP I.V.	*	300000222	n.a.		
3	Measurement System 1						
4	PSA-Spektrumanalysator 3 Hz - 26.5 GHz (E4440A)	Agilent	MY48250080	300003812	05.08.2008	24	05.08.2010
5	EMI Preselector 9 kHz - 1 GHz (N9039A)	Agilent	MY48260003	300003825	19.08.2008	24	19.08.2010
6	Microwave Analog Signal Generator (N5183A)	Agilent	MY47420220	300003813	06.08.2008	24	06.08.2010
7	PC	F+W			n.a.		
8	TILE	TILE			n.a.		
9	TRILOG Super Broadband Antenna (VULB9163)	Schwarzbeck	371	300003854	Monthly verification (System cal.)		
10	Double Ridged Antenna 3115	EMCO	3088	300001032	Monthly verification (System cal.)		
11	Active Loop Antenna 6502	EMCO	2210	300001015	Monthly verification (System cal.)		
12	Switch / Control Unit 3488A	HP	2719A15013	300001156	n.a.		
13	Power Supply 6032A	HP	2818A03450	300001040	08.01.2009	36	08.01.2012
14	Busisolator	Kontron		300001056	n.a.		
15	Leitungsteiler 11850C	HP		300000997	Monthly verification (System cal.)		
16	Power attenuator 8325	Byrd	1530	300001595	Monthly verification (System cal.)		
17	Band reject filter WRCG1855/1910	Wainwright	7	300003350	Monthly verification (System cal.)		
18	Band reject filter WRCG2400/2483	Wainwright	11	300003351	Monthly verification (System cal.)		
19	Hochpassfilter WHK1.1/15G-10SS	Wainwright	3	300003255	Monthly verification (System cal.)		
20	Hochpassfilter WHKX2.9/18G-12SS	Wainwright	1	300003492	Monthly verification (System cal.)		
21	Hochpassfilter WHKX7.0/18G-8SS	Wainwright	18	300003789	Monthly verification (System cal.)		
22	Switch / Control Unit 3488A	HP	2605e08770	300001443	n.a.		
23	Trenntrafo RT5A	Grundig	9242	300001263	n.a.		
24	Relais Matrix PSU	R&S	890167/024	300001168	n.a.		
25	Netznachbildung ESH3-Z5	R&S	828576/020	300001210	n.a.		

System Rack Room 005:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	FSP 30	R&S	100886	300003575	25.08.2008	24	25.08.2010
2	CBT	R&S	100313	300003516	03.09.2008	24	03.09.2010
3	Switch Matrix	HP		300000929	n.a.		
4	Power Supply 6625A	HP	3041A00544	300002270	13.05.2007	36	13.05.2010
5	Signal Generator SMIQ03B	R&S	836206/0092	300002680	30.05.2007	36	30.05.2010

Signalling Units:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	CBT	R&S	100313	300003516	03.09.2008	24	03.09.2010
2	CBT	R&S	100185	300003416	27.08.2008	24	27.08.2010
3	CMU-200	R&S	106240	300003321	27.08.2008	24	27.08.2010
4	CMU-200	R&S	832221/0055	300002862	20.03.2008	24	20.03.2010

Climatic Box:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Climatic box VT 4002	Heraeus Vötsch	58566046820010	300003019	28.05.2009	24	28.05.2011
2	Climatic box CTS T-40/50	CTS	064023	300003540	04.06.2009	24	04.06.2011

SRD Laboratory Room 005:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Spektrum Analyzer 8566B	HP	2747A05275	300000219	18.01.2008	24	18.01.2010
2	Spektrum Analyzer Display 85662A	HP	2816A16497	300001690	23.01.2008	24	23.01.2010
3	Quasi-Peak-Adapter 85650A	HP	2811A01135	300000216	23.01.2008	24	23.01.2010
4	Power Supply	Heiden	003202	300001187	12.05.2007	36	12.05.2010
5	Power Supply	Heiden	1701	300001392	12.05.2007	36	12.05.2010

SRD Laboratory Room 011:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	NRP Power Meter	R&S	100212	300003780	27.02.2008	24	27.02.2010

Anechoic chamber F:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Control Computer	F+W	FW0502032	300003303	-/-	-/-	-/-
2	Trilog Antenna VULB 9163	Schwarzbeck	295	300003787	01.04.2008	24	01.04.2010
3	Amplifier - 0518C-138	Veritech Micro-wave Inc.	-/-	-/-	-/-	-/-	-/-
4	Switch - 3488A	HP		300000368	-/-	-/-	-/-
5	EMI Test receiver - ESCI	R&S	100083	300003312	01.06.2009	24	01.06.2011
6	Turntable Controller - 1061 3M	EMCO	1218	300000661	-/-	-/-	-/-
7	Tower Controller 1051 Controller	EMCO	1262	300000625	-/-	-/-	-/-
8	Tower - 1051	EMCO	1262	300000625	-/-	-/-	-/-
10	Ultra Notch-Filter Rejected band Ch. 62	WRCD	9	-/-	-/-	-/-	-/-

Test laboratory 011:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Climatic box VUK 04/500	Heraeus Vötsch	32678	300000297	29.07.2008	24	27.07.2010
2	Spectrum Analyser 8565E	HP	3738A00773	300001665	08.01.2008	24	08.01.2010
3	Spectrum Analyser FSU 50	R&S	200012	300003443	05.06.2008	24	05.06.2010
4	SGH 12 ... 18 GHz	narda	01005	300000787	cyclic verification		
5	SGH 18 ... 27 GHz	narda	01005	300000487	cyclic verification		
6	SGH 27 ... 40 GHz	narda	82016	300000510	cyclic verification		
7	SGH 33 ... 50 GHz	Thomson		300000812	cyclic verification		
8	Adapter WG/SMA	narda	64088	-/-	cyclic verification		
9	Adapter WG/SMA	flann	213	-/-	cyclic verification		
10	Adapter WG/SMA	HP	00231	-/-	cyclic verification		
11	SGH 50 ... 75GHz	Thomson	-/-	300000813	cyclic verification		
12	Mixer 50 ... 75 GHz 11970V	HP	-/-	30000781i	07.08.2007	36	07.08.2010
13	SGH 75 ... 110 GHz	Thomson	-/-	30000798b	cyclic verification		
14	Mixer 75 ... 110 GHz 11970W	HP	-/-	30000781e	07.08.2007	36	07.08.2010
15	SGH 110 ... 170 GHz	Flann	-/-	300001999	cyclic verification		
16	Mixer 110 ... 170 GHz	Tektronix	B010186	300001685d	cyclic verification		
17	SGH 170 ... 325 GHz	Flann	-/-	300002000	cyclic verification		
18	Mixer 170 ... 325 GHz	Tektronix	B010241	300001685j	cyclic verification		

7 Photographs of the Test Set-up

Photo documentation:

Photo 1:

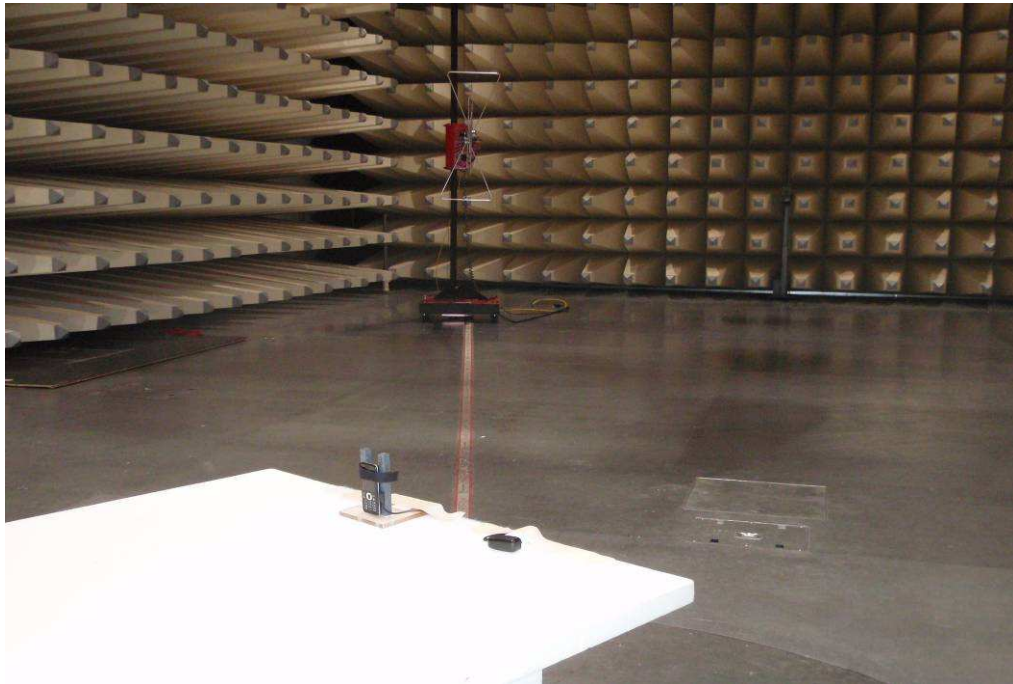


Photo 2:



Photo 3:

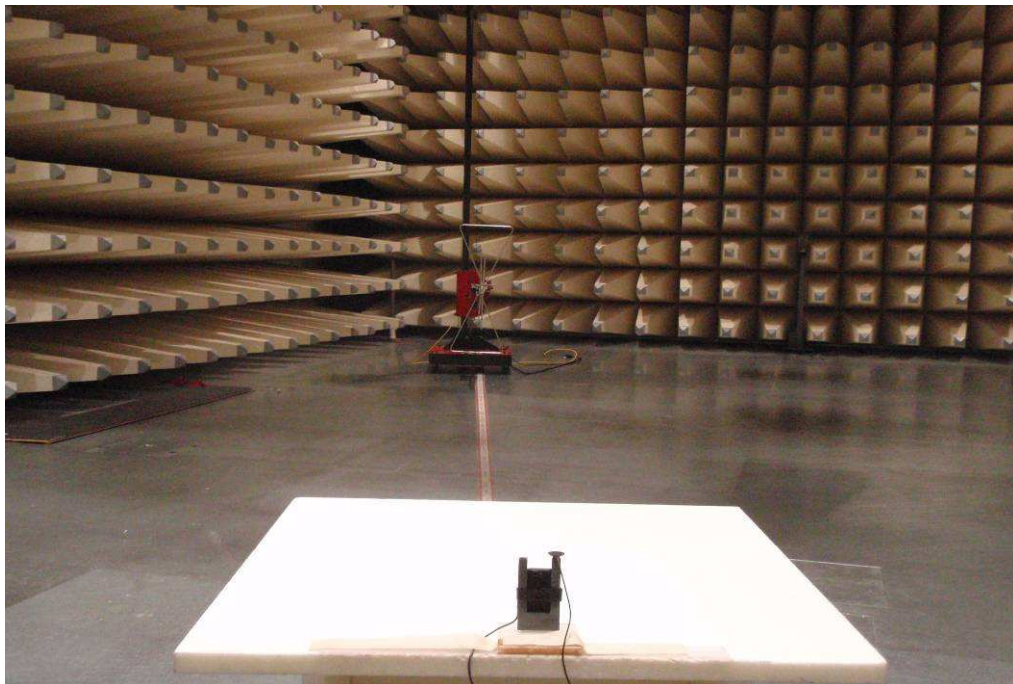


Photo 4:



8 Photographs of the EUT

Photo documentation:

Photo 1:



Photo 2:



Photo 3:



Photo 4:



Photo 5:



Photo 6:



Photo 7:



Photo 8:



Photo 9:



Photo 10:



Photo 11:



Photo 12:



Photo 13:



Photo 14:

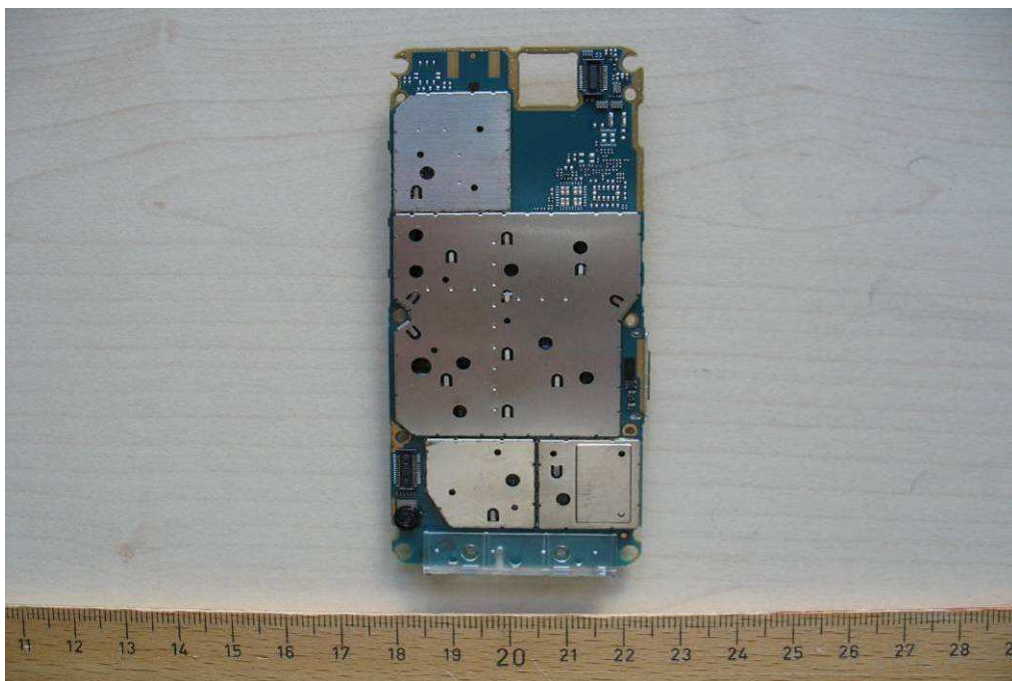


Photo 15:

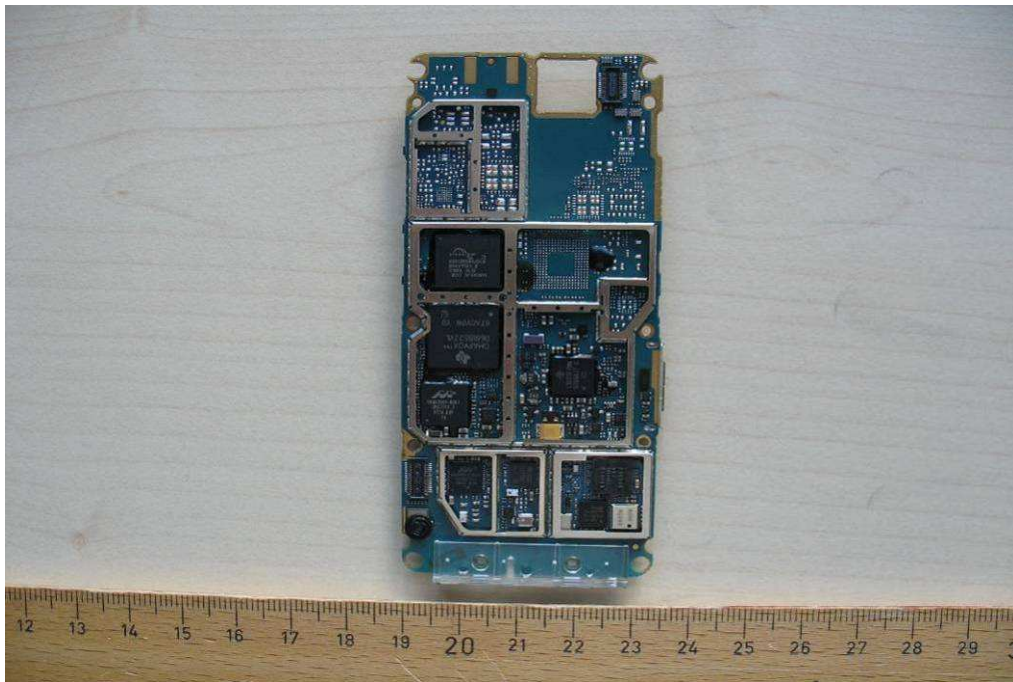


Photo 16:

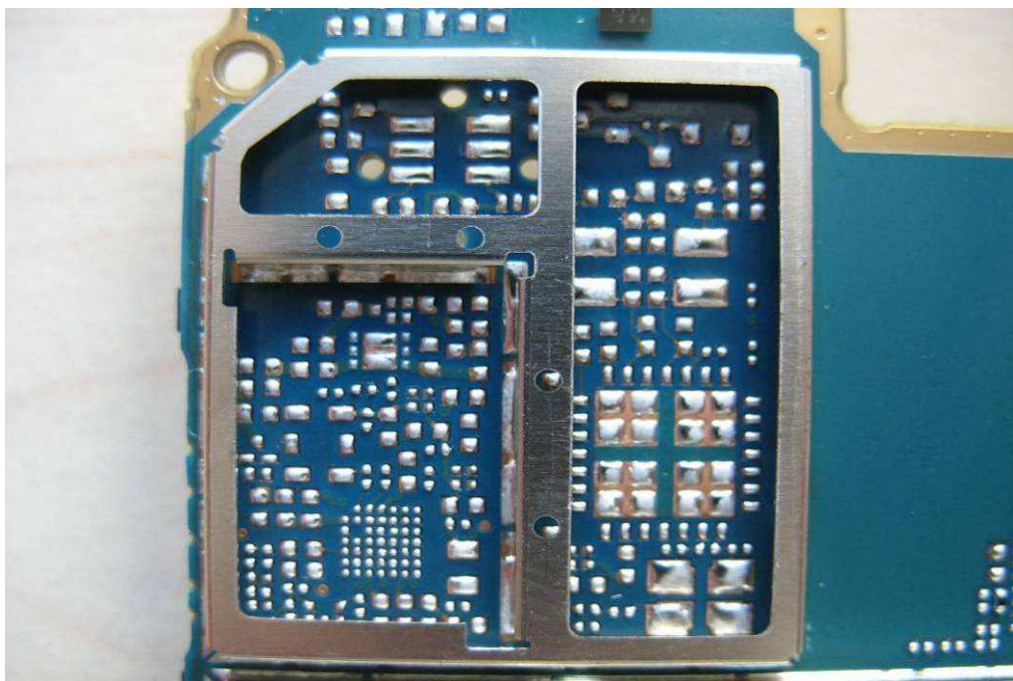


Photo 17:

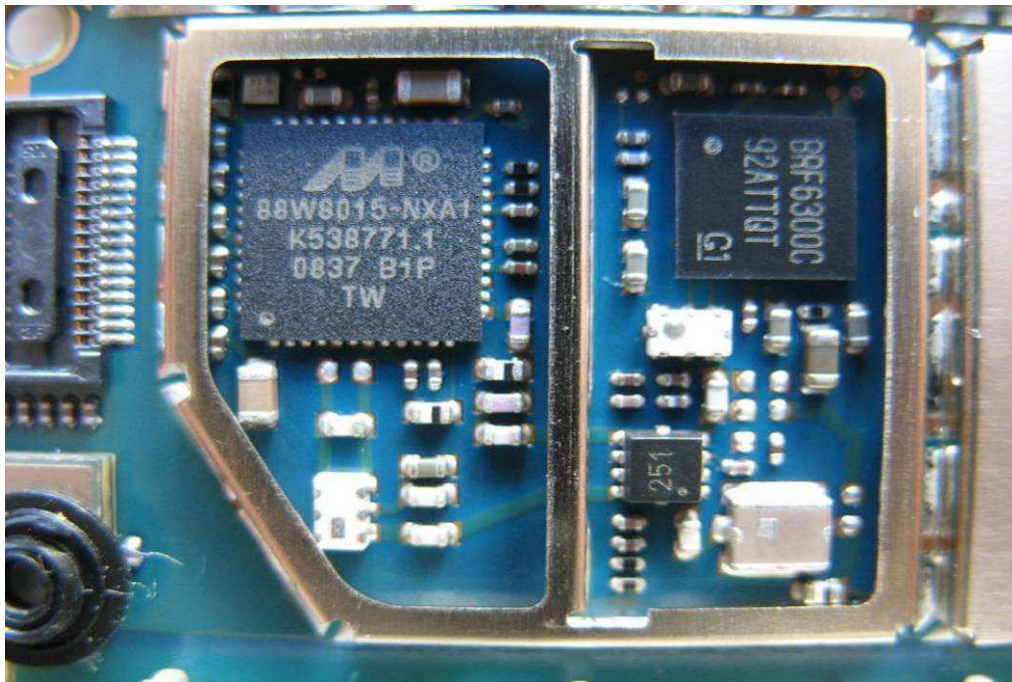


Photo 18:

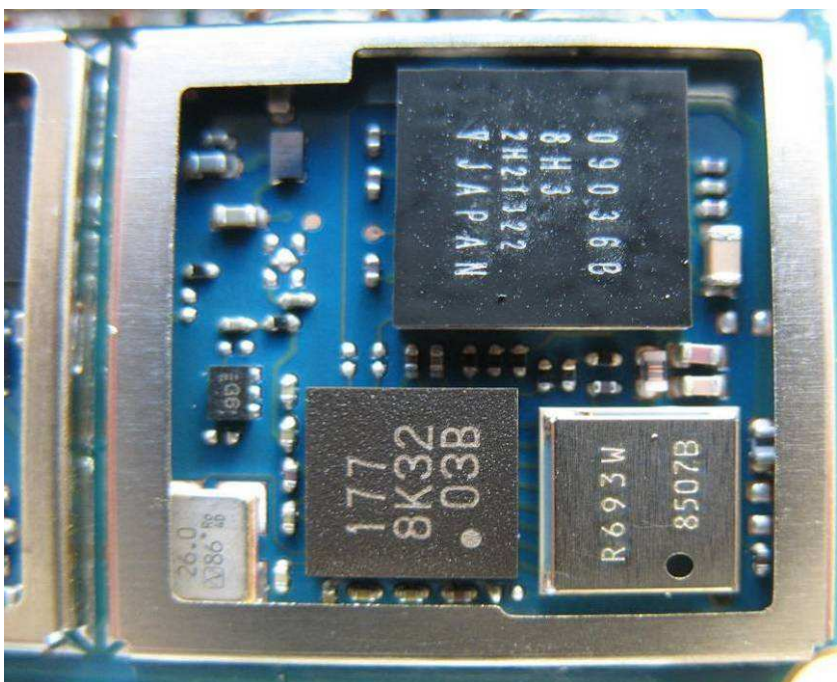


Photo 19:

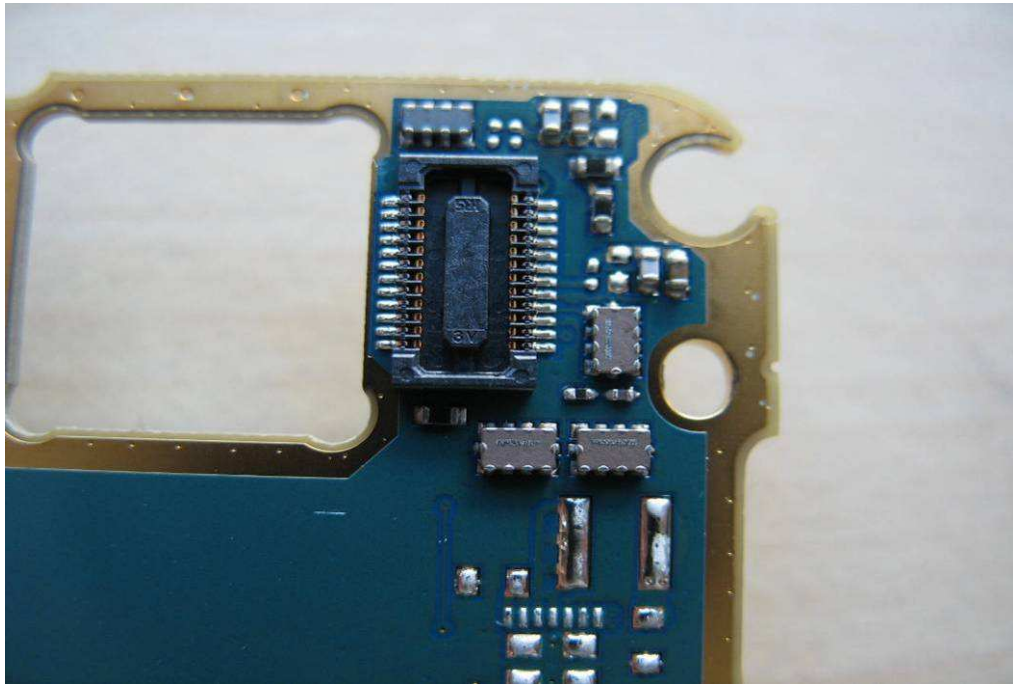


Photo 20:

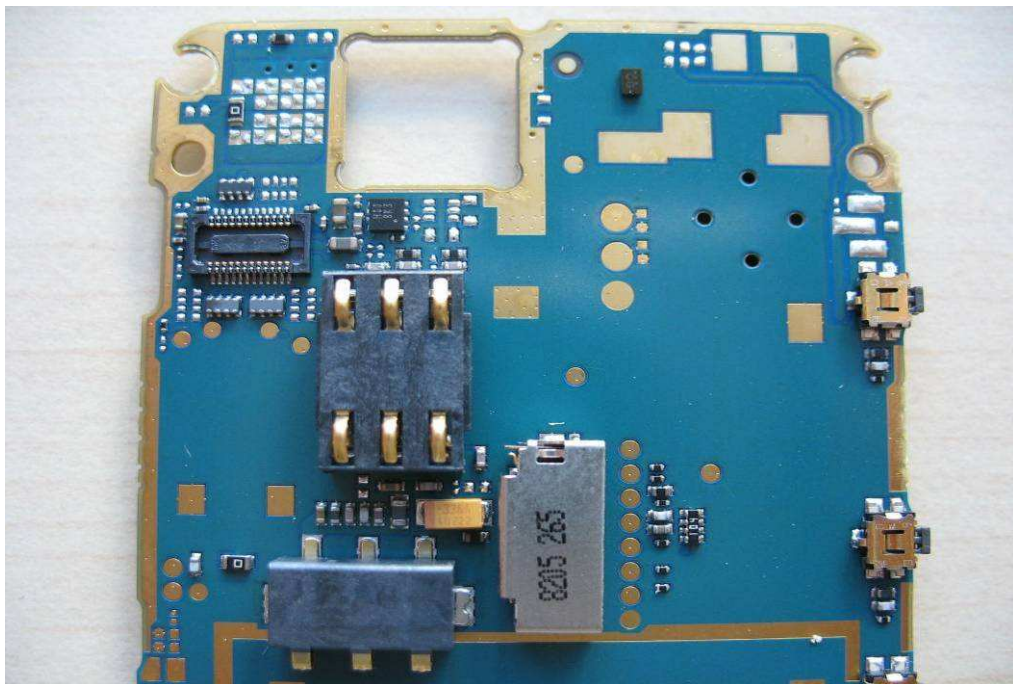


Photo 21:

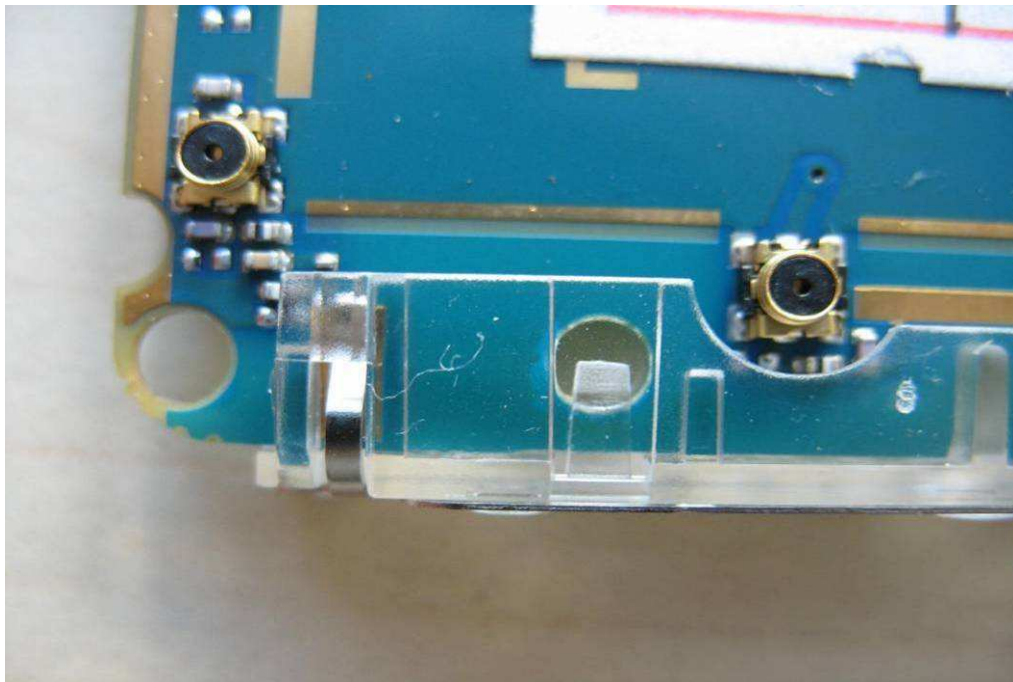


Photo 22:



Photo 23:

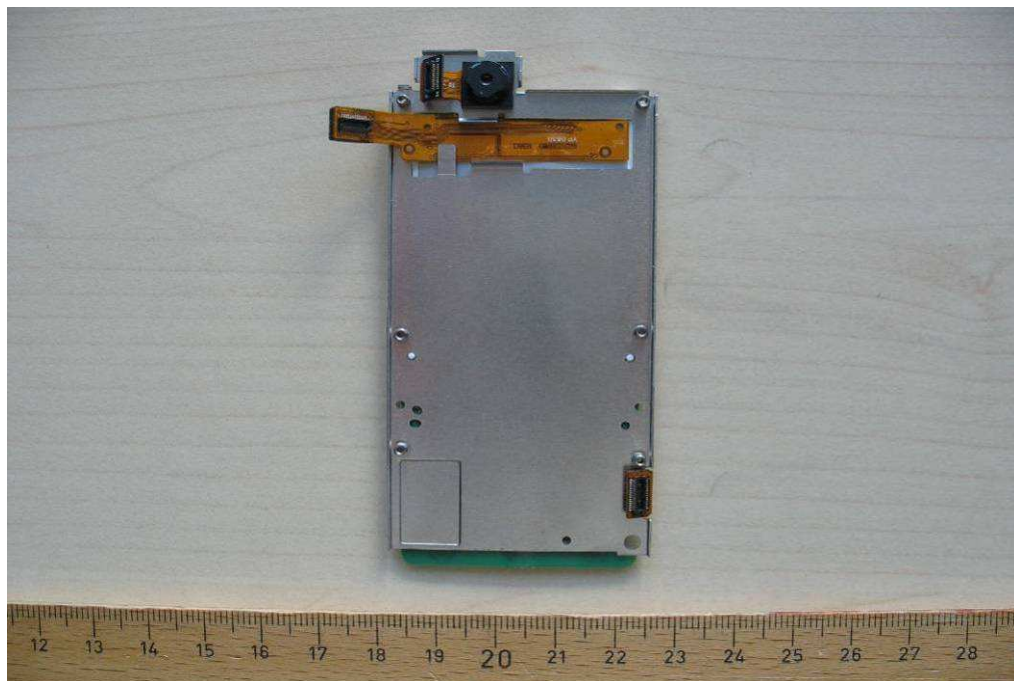


Photo 24:

