



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.: 3463A-1 (IC)

Certification ID: DE 0001

Accreditation ID: DE 0002

Accredited Bluetooth® Test Facility (BQTF)

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Annex to Test

report no. : 1-0345-06-03/08

Type identification : GI0401

Applicant : Option N.V.

FCC ID : NCMOGI0401

IC Certification No : --

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

Test laboratory manager:

2008-05-13	René Oelmann	
Date	Name	Signature

Technical responsibility for area of testing:

2008-05-13	Michael Berg	
Date	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:	Option N.V.
Street:	Gaston Geenslaan 14
Town:	3001 Leuven
Country:	BELGIUM
Telephone:	+32-16-317-411
Fax:	+32-16-207-164
Contact:	Joeri Boeckx
E-mail:	J.Boeckx@option.com
Telephone:	+32 16 311-692

1.4 Application details

Date of receipt of order:	2008-04-30
Date of receipt of test item:	2008-05-05
Date of start test:	2008-05-05
Date of end test	2008-05-10
Persons(s) who have been present during the test:	Joris Nys; Eric Ngouana

2 Technical tests

2.1 Details of manufacturer

Name:	Option N.V.
Street:	Gaston Geenslaan 14
Town:	3001 Leuven
Country:	BELGIUM

2.2 Test item(s) and test configuration

No.: 1	GI0401 Radiated Sample SN: RE2483W08A	with	IBM Type 2373 (SPQ-Testunit-29)
		with	DELL PP01X (SPQ-Testunit-47)
		with	Fujitsu/Siemens AmiloPro (SPQ-Testunit-193)
No.: 2	GI0401 conducted Sample SN: RE2483W08A	with	IBM Type 2373 (SPQ-Testunit-29)
No.: 3		with	
No.: 4		with	
No.: 5		with	
No.: 6		with	
No.: 7		with	
No.: 8		with	

3 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

Section in this Report	Test Name	Verdict
5.1	Conducted limits CFR Part 15.207, 15.107 RSS 210, Issue 7, Section 6.6 , 7.4	Pass
5.2	Receiver spurious emission radiated (Idle mode) CFR Part SUBCLAUSE § 15.109 RSS 210, Issue 7, Section 7.3 Receiver Spurious Emissions (Radiated)	Pass

4 Measurements and results

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 conforming to 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 conforming to ANSI C63.2-1996 item 15.

9 kHz – 150 kHz ,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 15.109 and 15.107

5 Annex A: FCC Part 15 Subpart B

5.1 Conducted Limits

Reference

FCC:	CFR Part 15.207, 15.107
IC:	RSS 210, Issue 7, Section 6.6 , 7.4

Limits: § 15.107 / 15.207

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 - 30	60	50

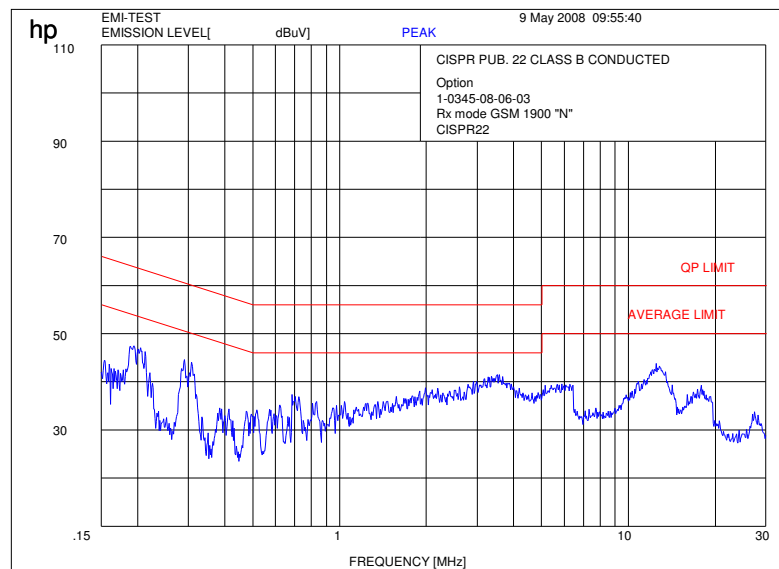
* Decreases with the logarithm of the frequency

Measurement Results exemplarily with 2nd Laptop – DELL PP01X (SPQ-Testunit-47)

PCS 1900

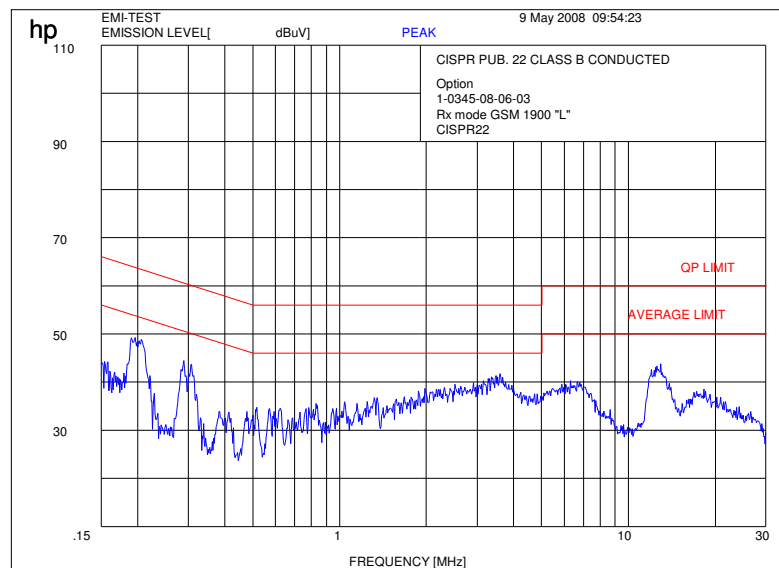
Plot 1:

Idle Mode (N): 150 kHz – 30 MHz



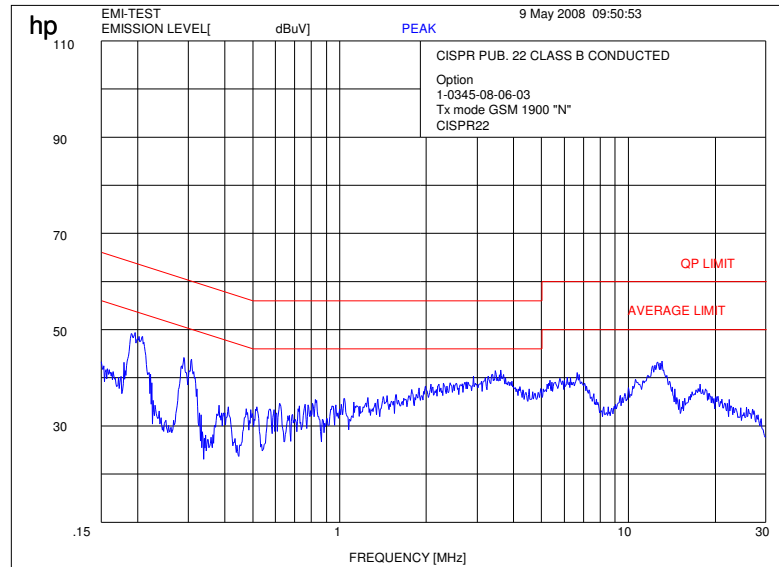
Plot 2:

Idle Mode (L): 150 kHz – 30 MHz



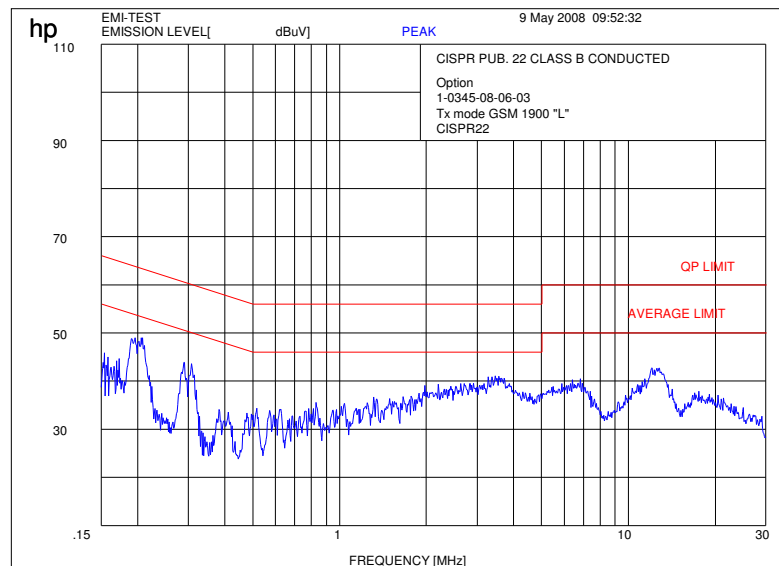
Plot 3:

Traffic Mode (N): 150 kHz – 30 MHz



Plot 4:

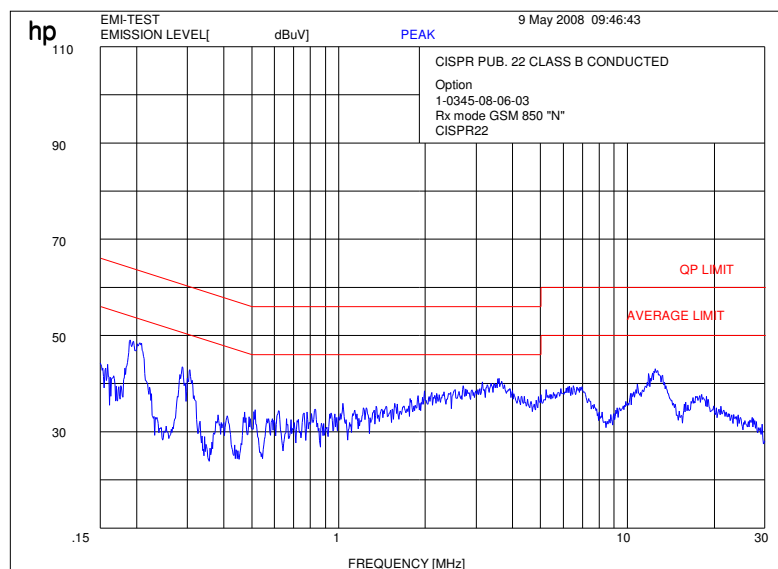
Traffic Mode (L): 150 kHz – 30 MHz



PCS 850

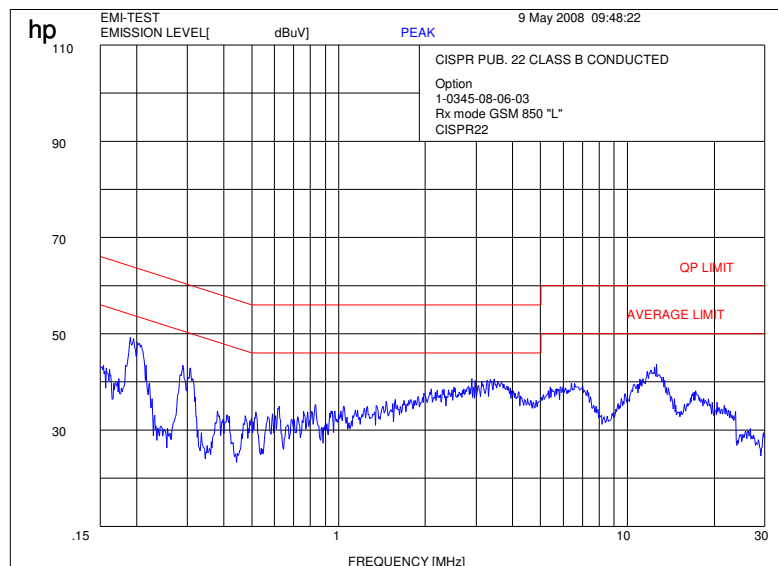
Plot 1:

Idle Mode (N): 150 kHz – 30 MHz



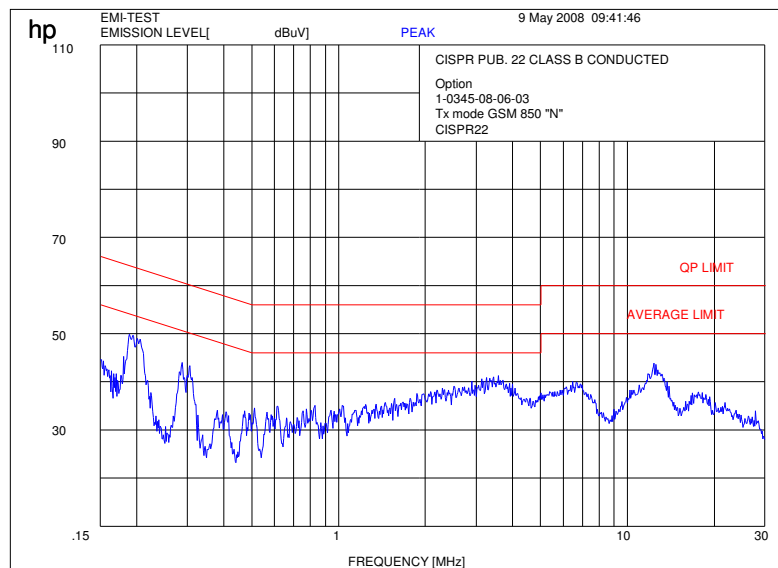
Plot 2:

Idle Mode (L): 150 kHz – 30 MHz



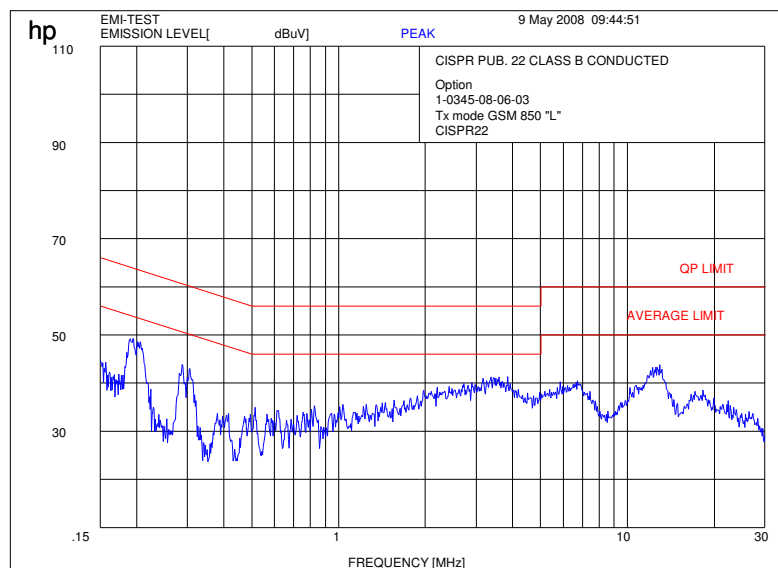
Plot 3:

Traffic Mode (N): 150 kHz – 30 MHz



Plot 4:

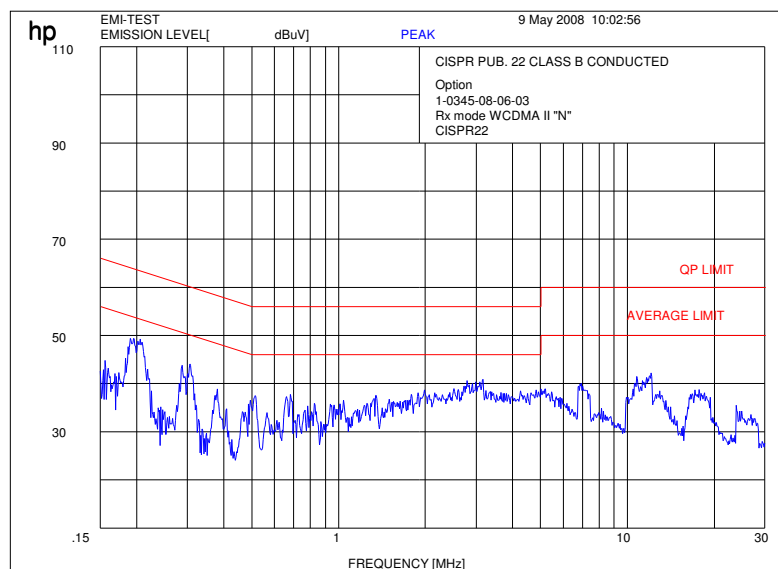
Traffic Mode (L): 150 kHz – 30 MHz



FDD II

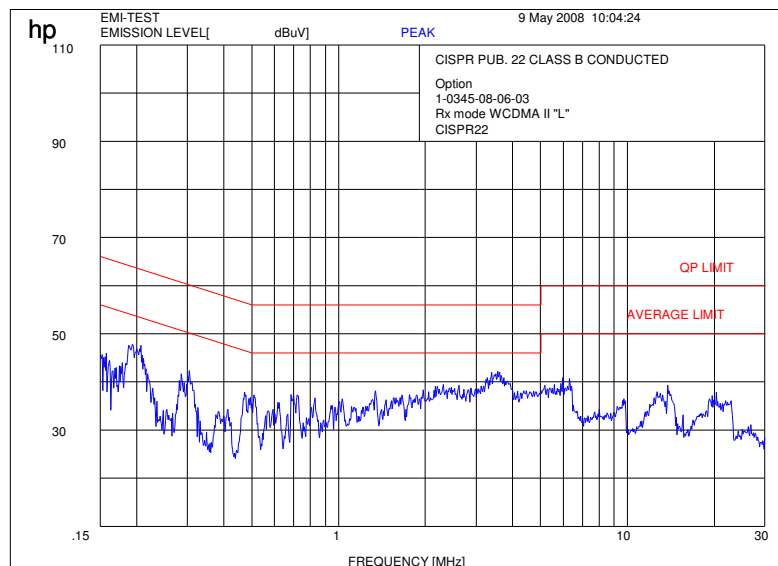
Plot 1:

Idle Mode (N): 150 kHz – 30 MHz



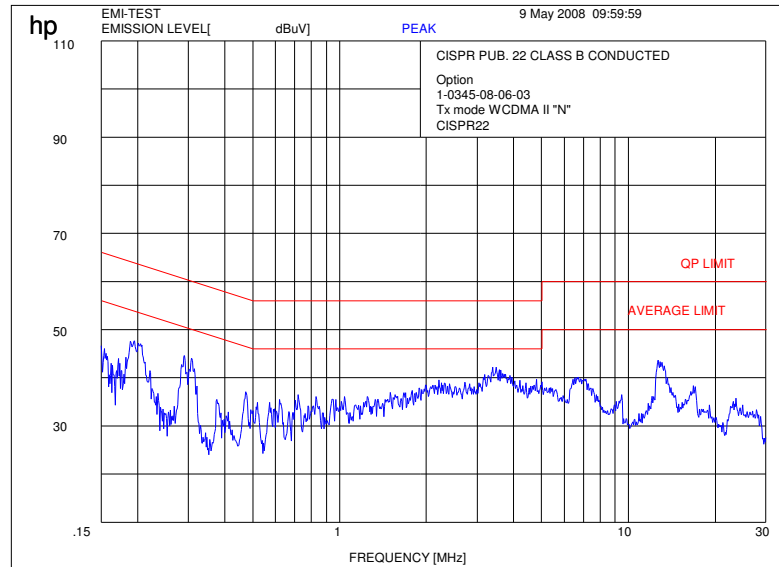
Plot 2:

Idle Mode (L): 150 kHz – 30 MHz



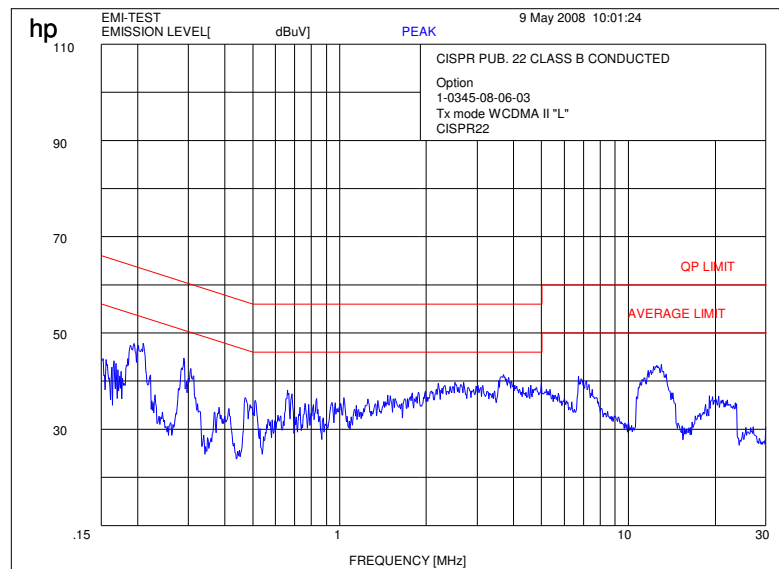
Plot 3:

Traffic Mode (N): 150 kHz – 30 MHz



Plot 4:

Traffic Mode (L): 150 kHz – 30 MHz



5.2 Receiver spurious emission radiated (Idle mode)

Reference

FCC:	CFR Part SUBCLAUSE § 15.109
IC:	RSS 210, Issue 7, Section 7.3 Receiver Spurious Emissions (Radiated)

PCS 1900

Measurement Results: Radiated Emissions with 1st Laptop – IBM Type 2373 (SPQ-Testunit-29)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

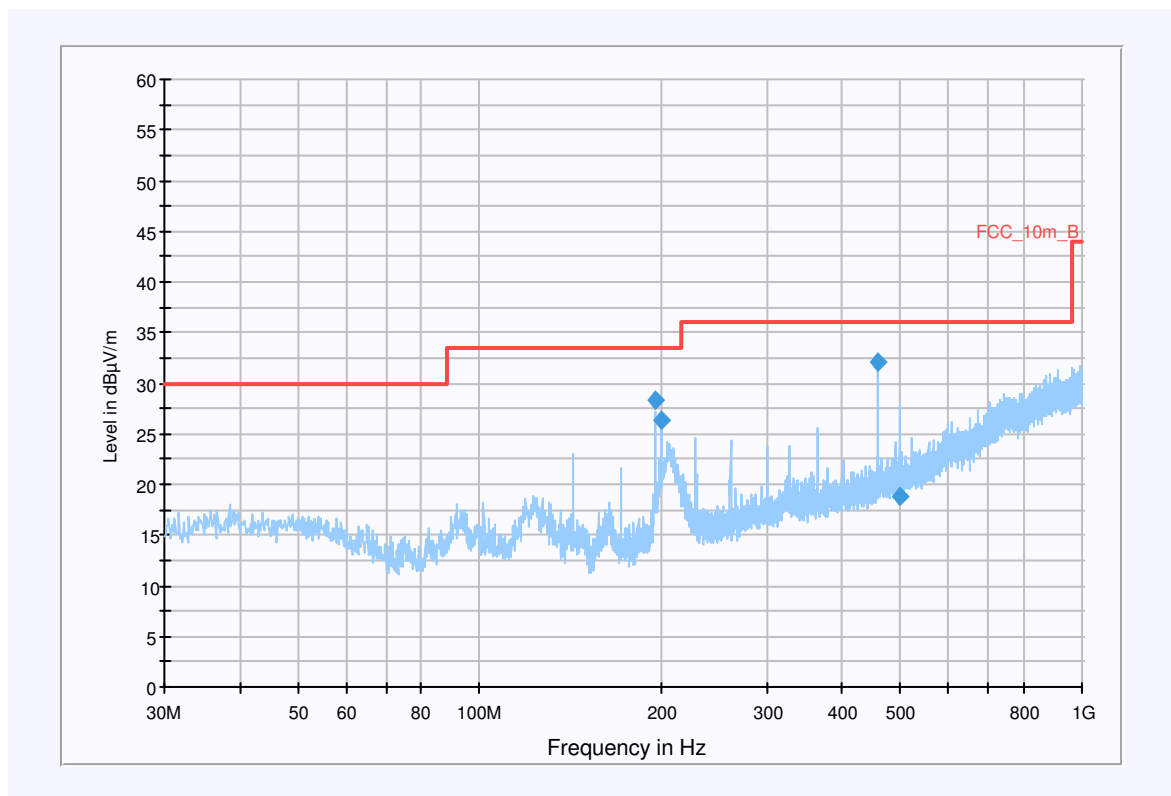
EUT:	GI0401 + SPQ-TESTUNIT-29
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE 1900
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
195.756700	28.3	15000.000	120.000	100.0	V	16.0	11.6	5.2	33.5	
200.459050	26.4	15000.000	120.000	100.0	V	0.0	11.9	7.1	33.5	
456.766850	32.1	15000.000	120.000	333.0	V	159.0	17.9	3.9	36.0	
496.997350	18.9	15000.000	120.000	163.0	H	15.0	18.7	17.2	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

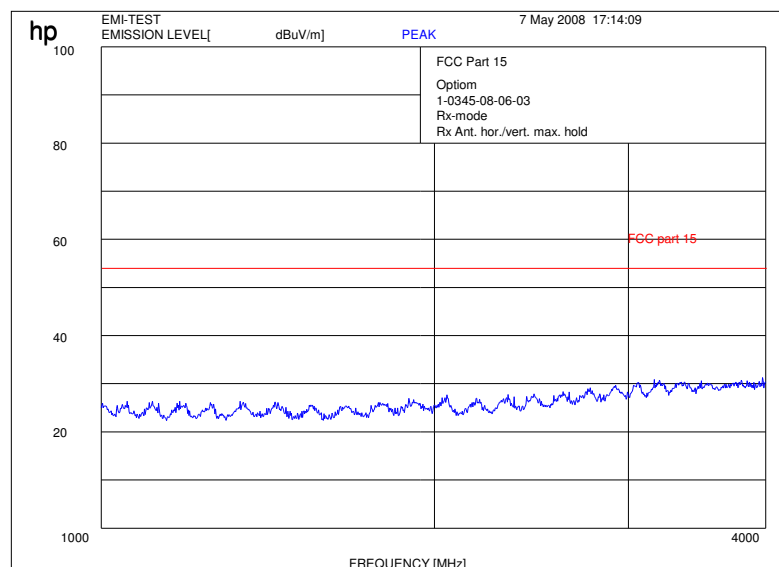
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

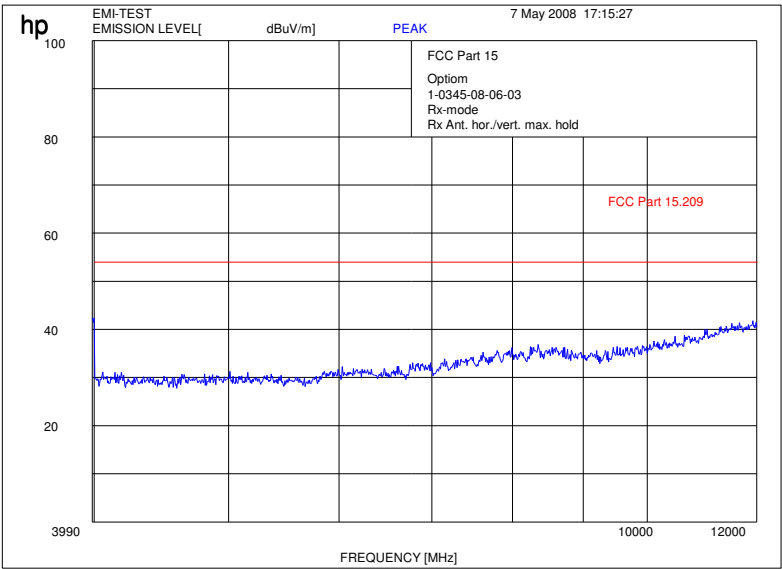
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

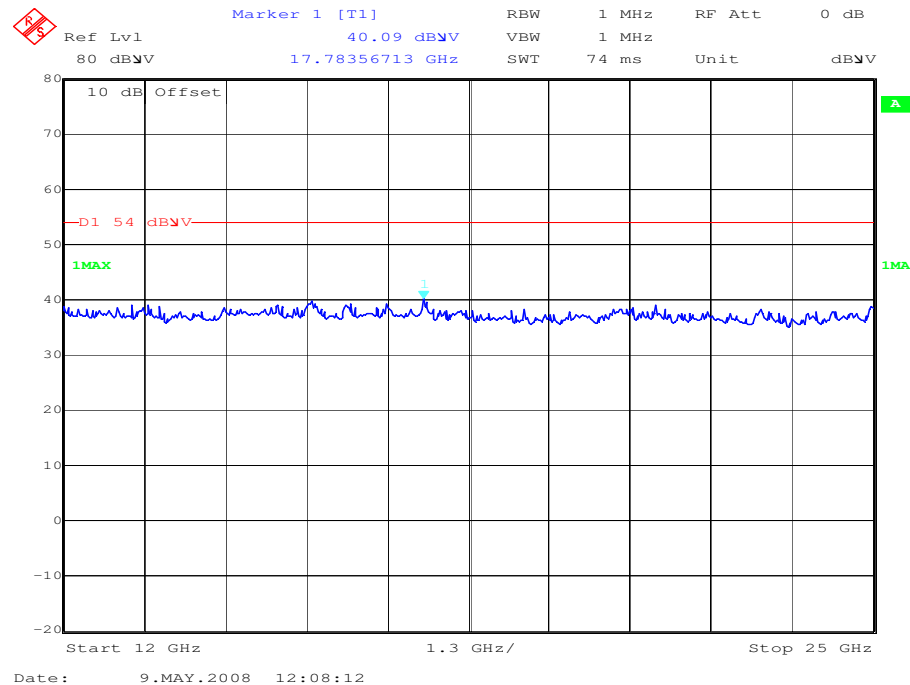
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



Measurement Results: Radiated Emissions with 2nd Laptop – DELL PP01X (SPQ-Testunit-47)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

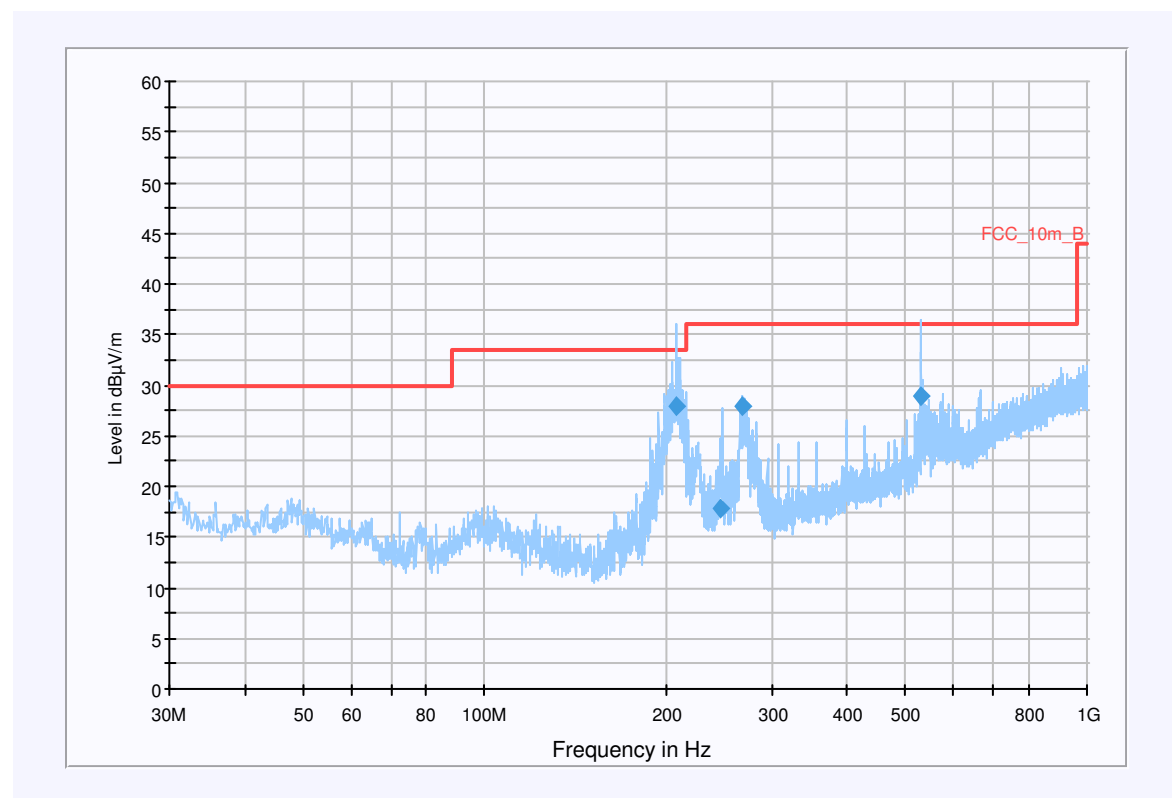
EUT:	GI0401 + SPQ-TESTUNIT-47
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE 1900
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
208.065750	27.9	15000.000	120.000	141.0	V	119.0	12.2	5.6	33.5	
247.005450	17.8	15000.000	120.000	100.0	V	343.0	13.4	18.2	36.0	
268.952950	27.9	15000.000	120.000	115.0	V	15.0	14.0	8.1	36.0	
530.861000	28.9	15000.000	120.000	180.0	H	107.0	19.3	7.1	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

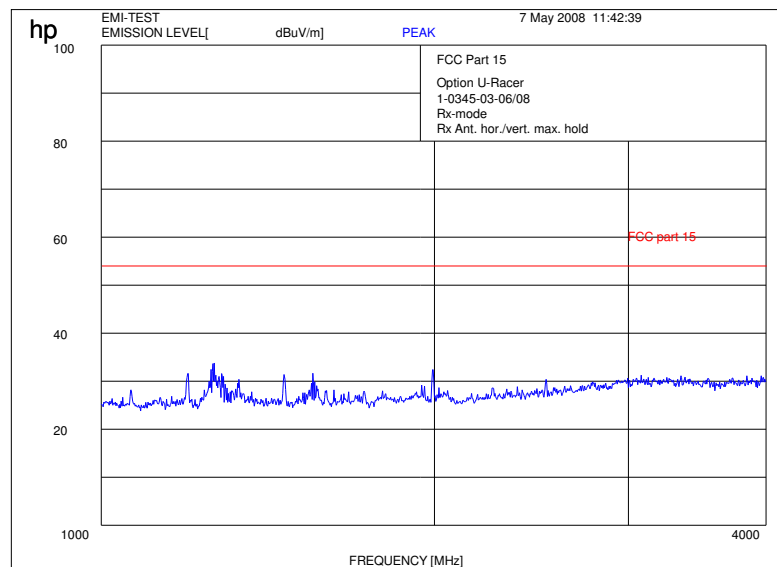
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

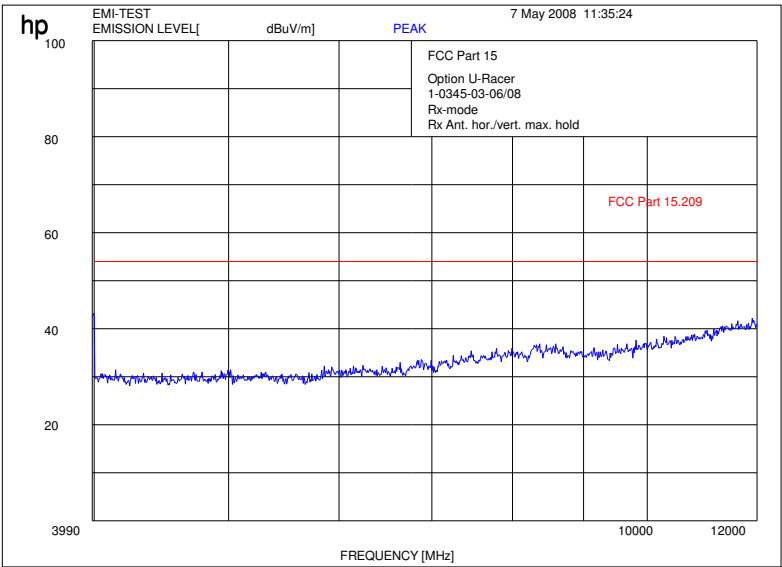
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

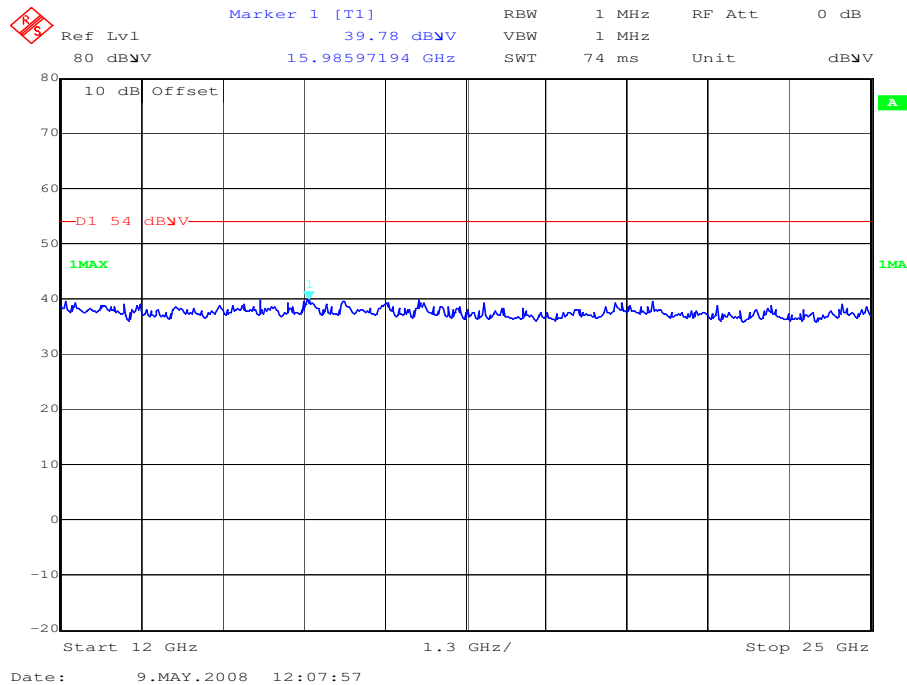
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



Measurement Results: Radiated Emissions with 3rd Laptop – Fujitsu/Siemens AmiloPro (SPQ-Testunit-193)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

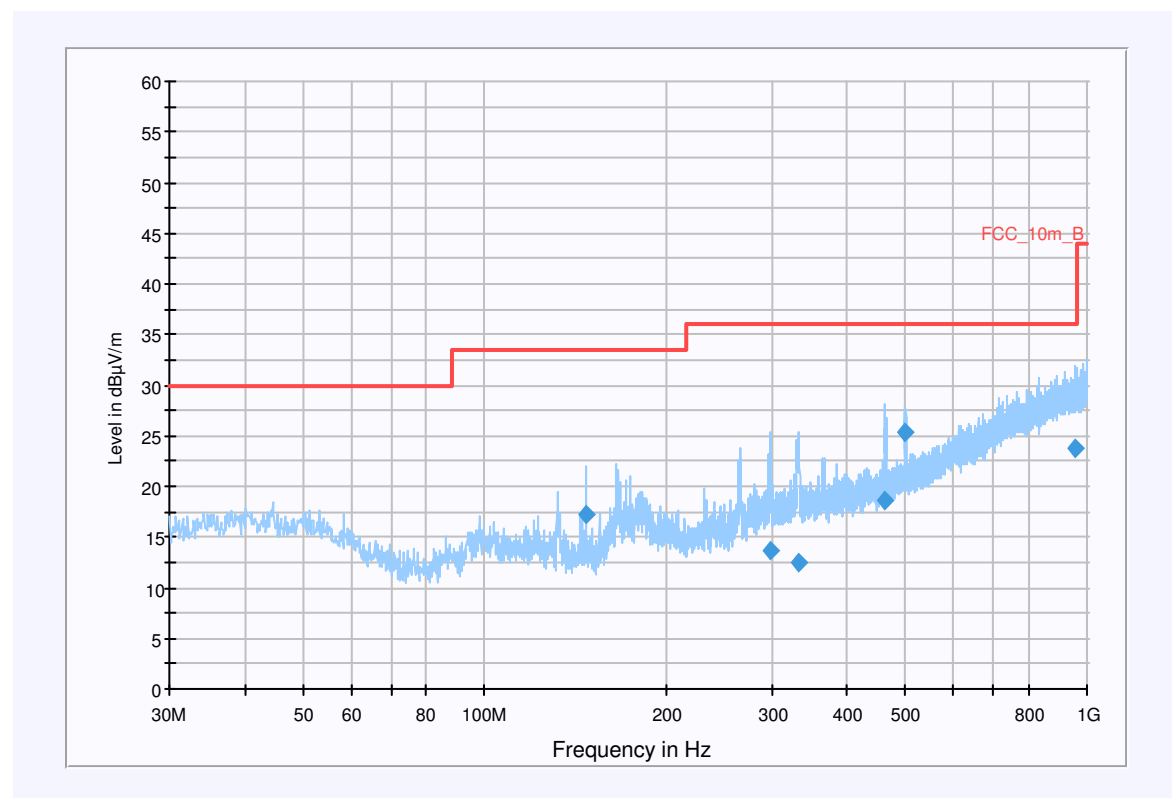
EUT:	GI0401 + SPQ-TESTUNIT-193
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE 1900
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
147.475500	17.3	15000.000	120.000	100.0	V	235.0	9.2	16.2	33.5	
297.373450	13.7	15000.000	120.000	100.0	V	-1.0	14.6	22.3	36.0	
331.319900	12.5	15000.000	120.000	127.0	V	99.0	15.7	23.5	36.0	
461.761800	18.6	15000.000	120.000	250.0	V	-1.0	18.0	17.4	36.0	
500.046200	25.3	15000.000	120.000	100.0	V	198.0	18.8	10.7	36.0	
954.043400	23.7	15000.000	120.000	100.0	H	19.0	26.5	12.3	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

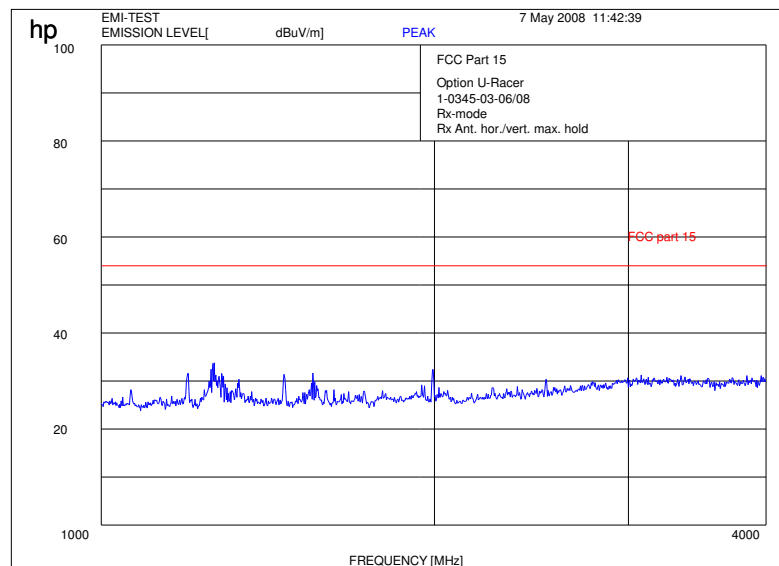
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

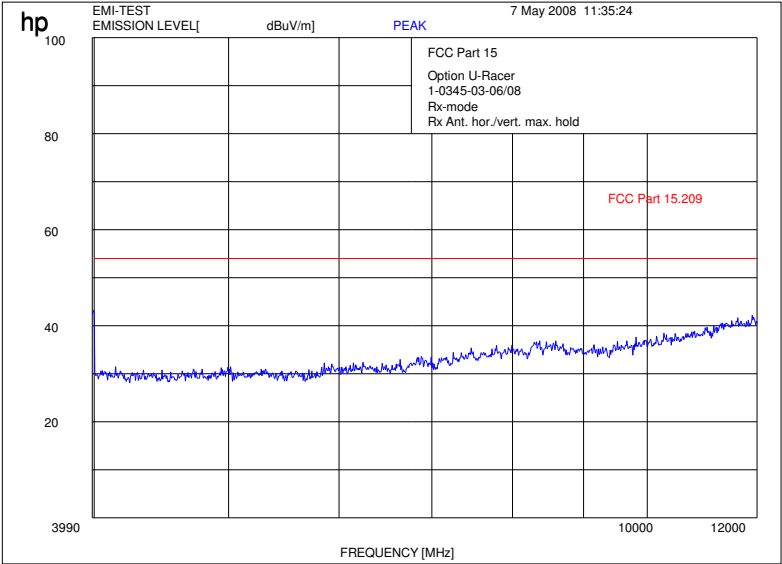
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

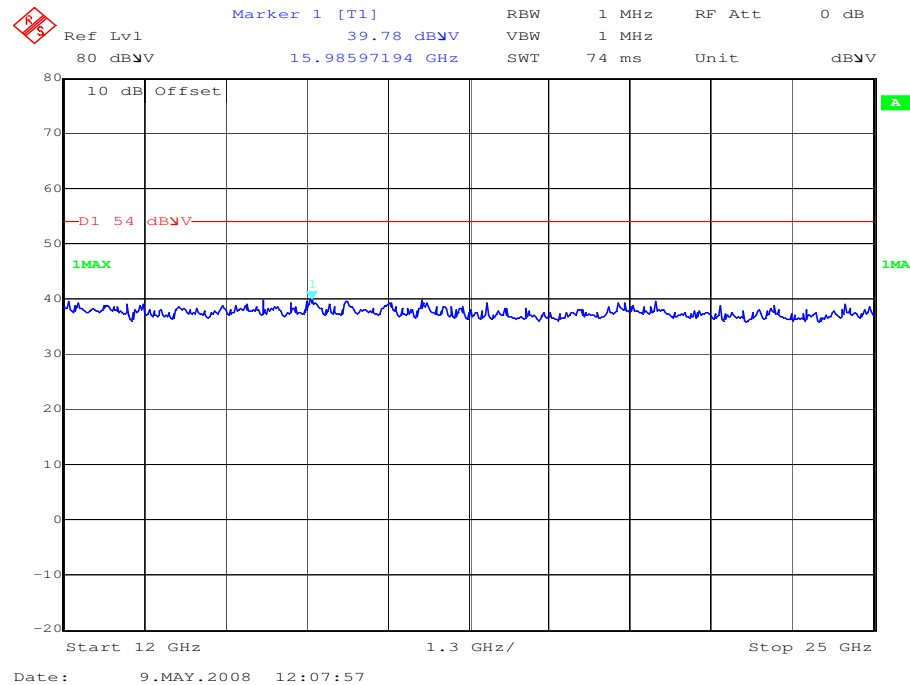
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



PCS 850

Measurement Results: Radiated Emissions with 1st Laptop – IBM Type 2373 (SPQ-Testunit-29)

SPURIOUS EMISSIONS LEVEL (μV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [μV/m]	F [MHz]	Detector	Level [μV/m]	F [MHz]	Detector	Level [μV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (μV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

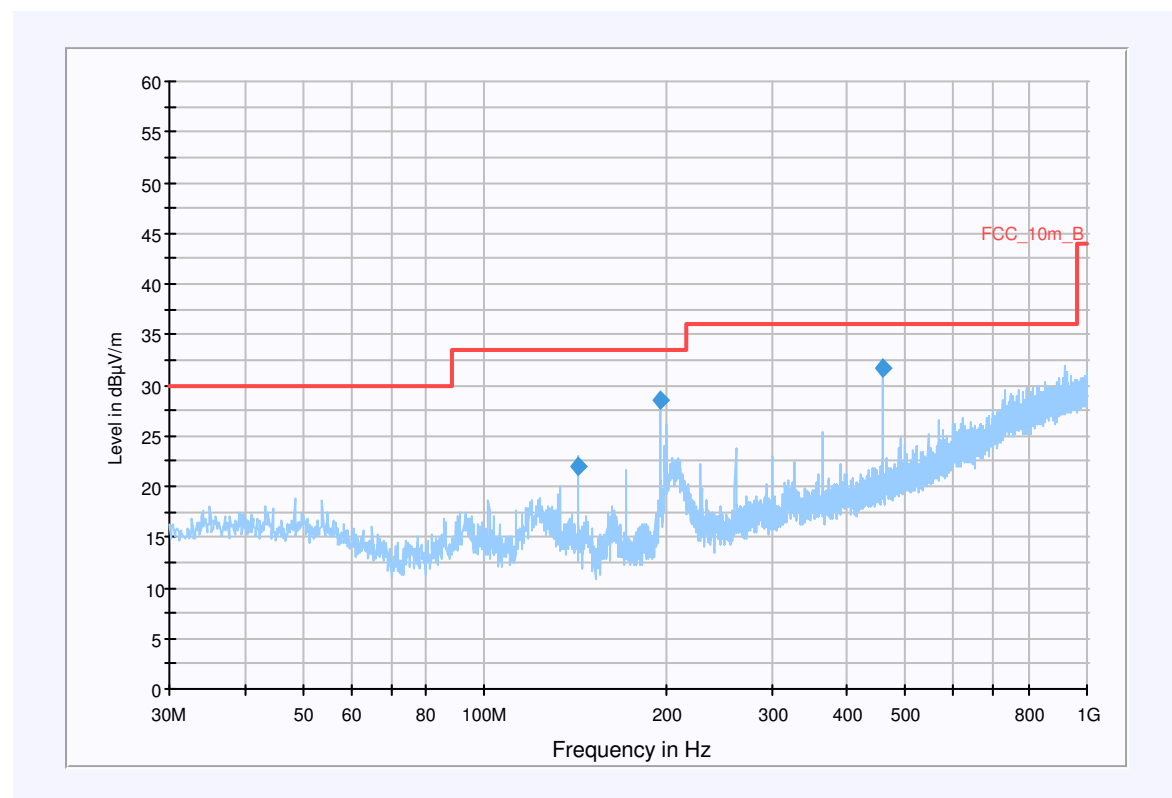
EUT:	GI0401 + SPQ-TESTUNIT-29
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE 850
Operator Name:	WAL
Comment:	EUT connect to Notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
143.196300	22.0	15000.000	120.000	128.0	V	176.0	9.1	11.5	33.5	
195.746200	28.5	15000.000	120.000	100.0	V	0.0	11.6	5.0	33.5	
456.770600	31.8	15000.000	120.000	344.0	V	170.0	17.9	4.2	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

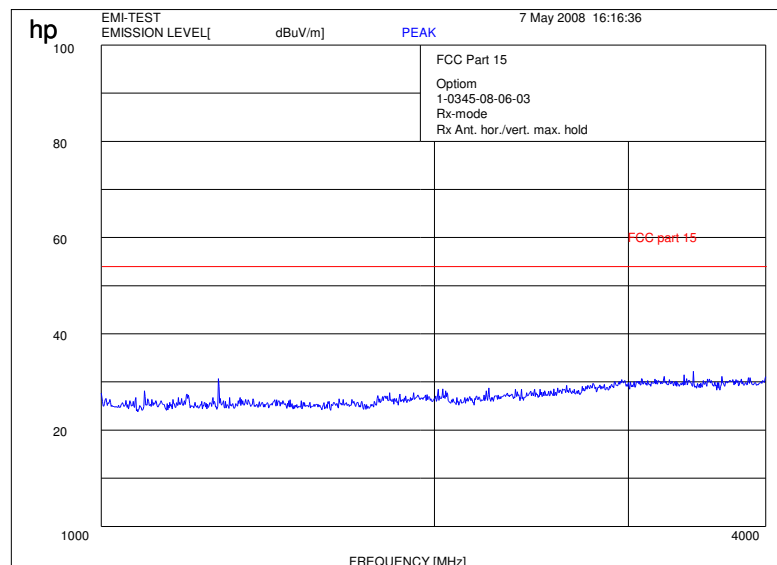
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

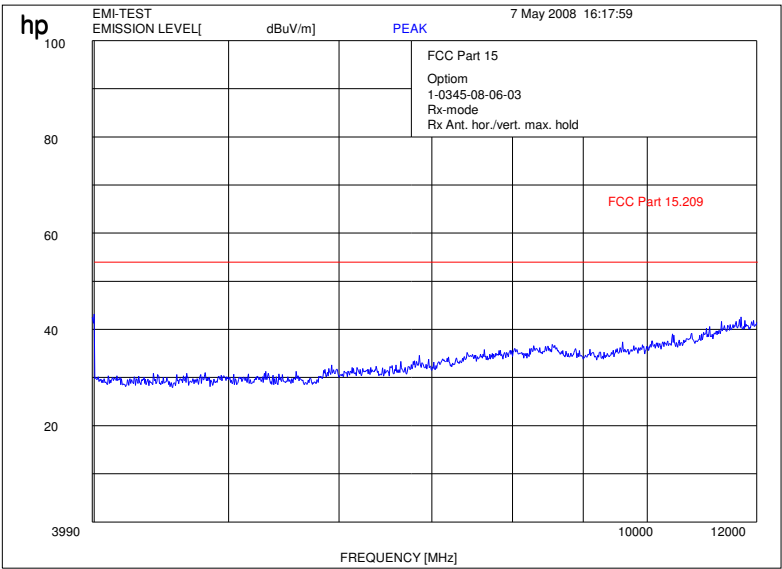
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

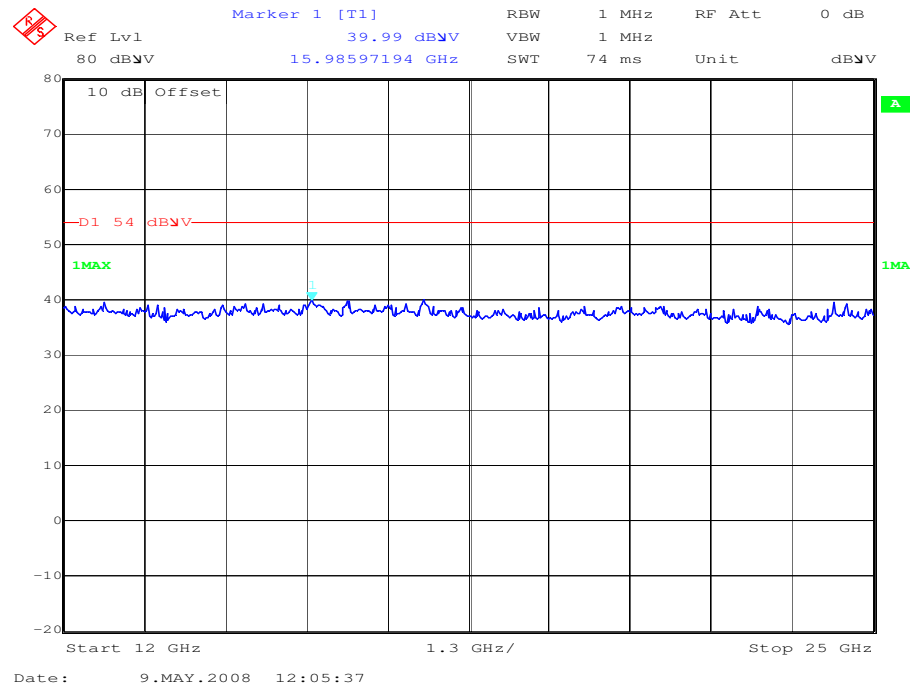
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



Measurement Results: Radiated Emissions with 2nd Laptop – DELL PP01X (SPQ-Testunit-47)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

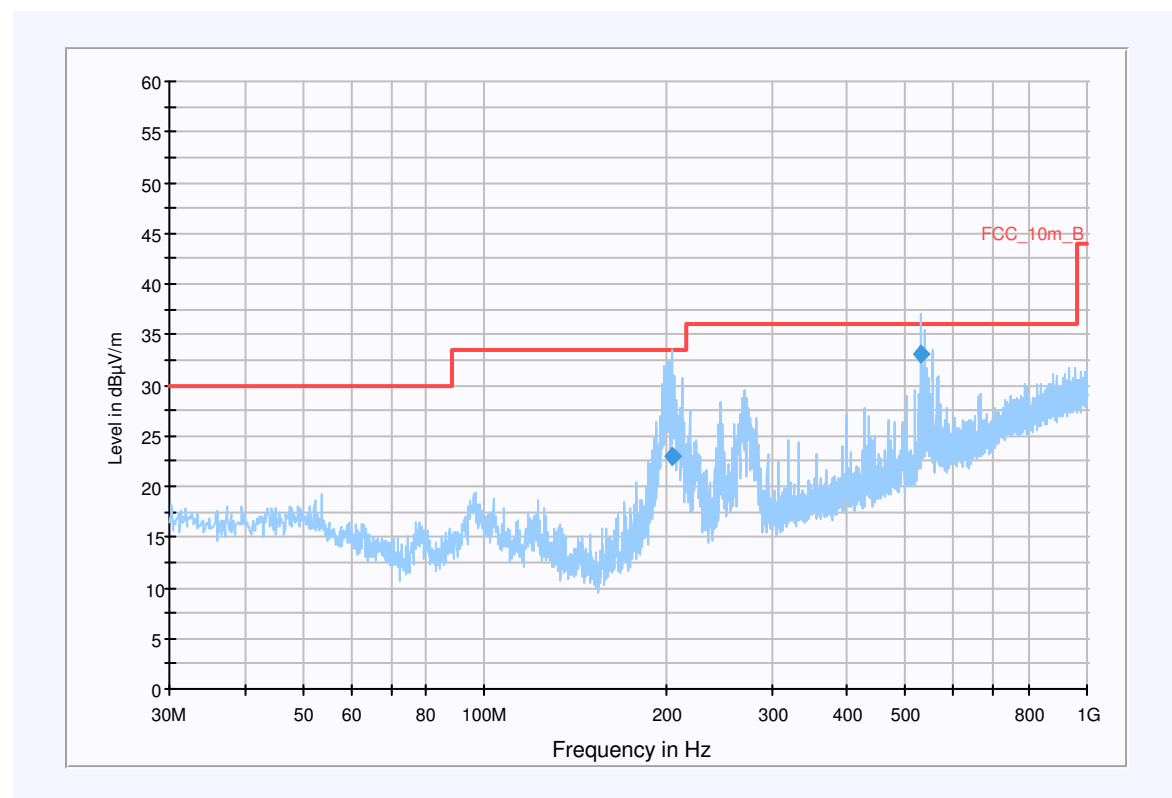
EUT:	GI0401 + SPQ-TESTUNIT-47
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE 850
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
204.262400	22.9	15000.000	120.000	150.0	V	60.0	12.1	10.6	33.5	
531.595400	33.0	15000.000	120.000	140.0	H	220.0	19.3	3.0	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

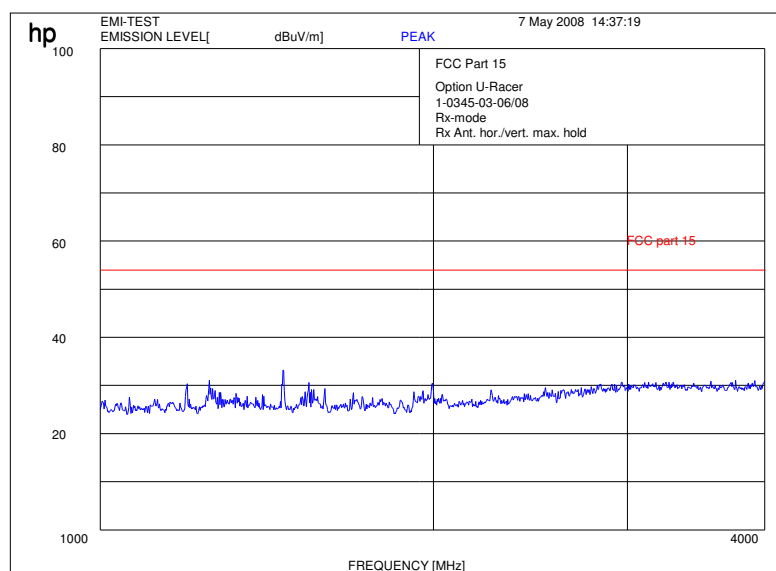
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

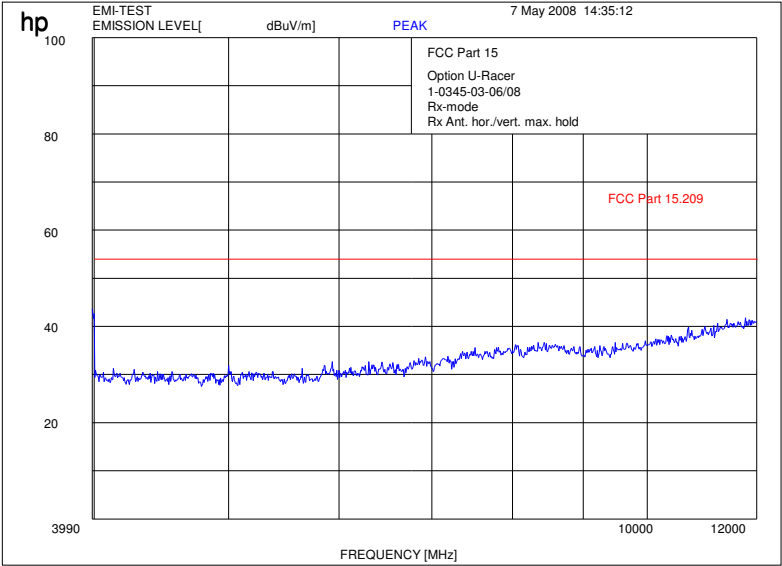
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

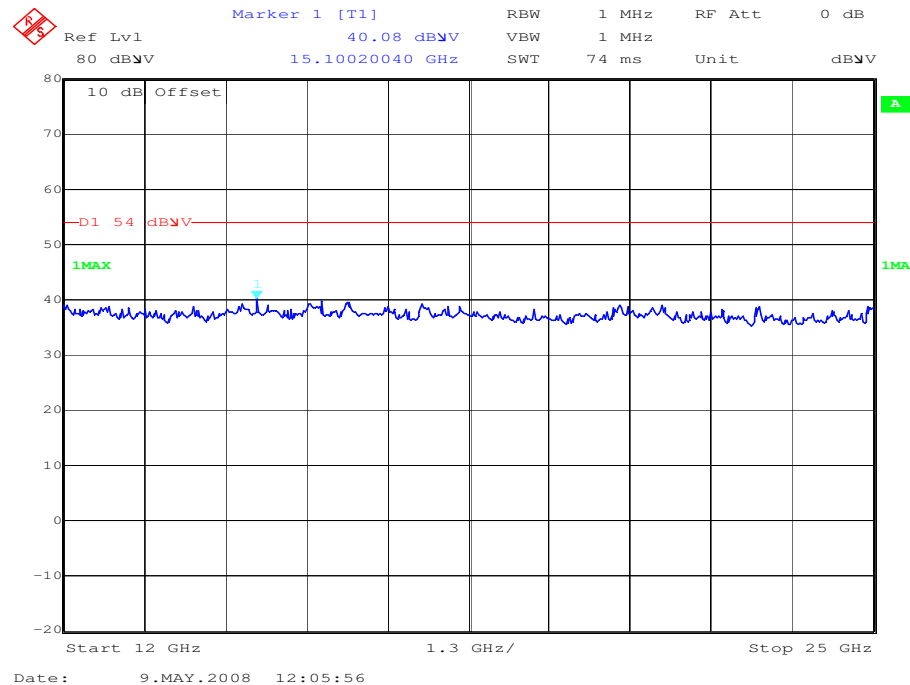
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



Measurement Results: Radiated Emissions with 3rd Laptop – Fujitsu/Siemens AmiloPro (SPQ-Testunit-193)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

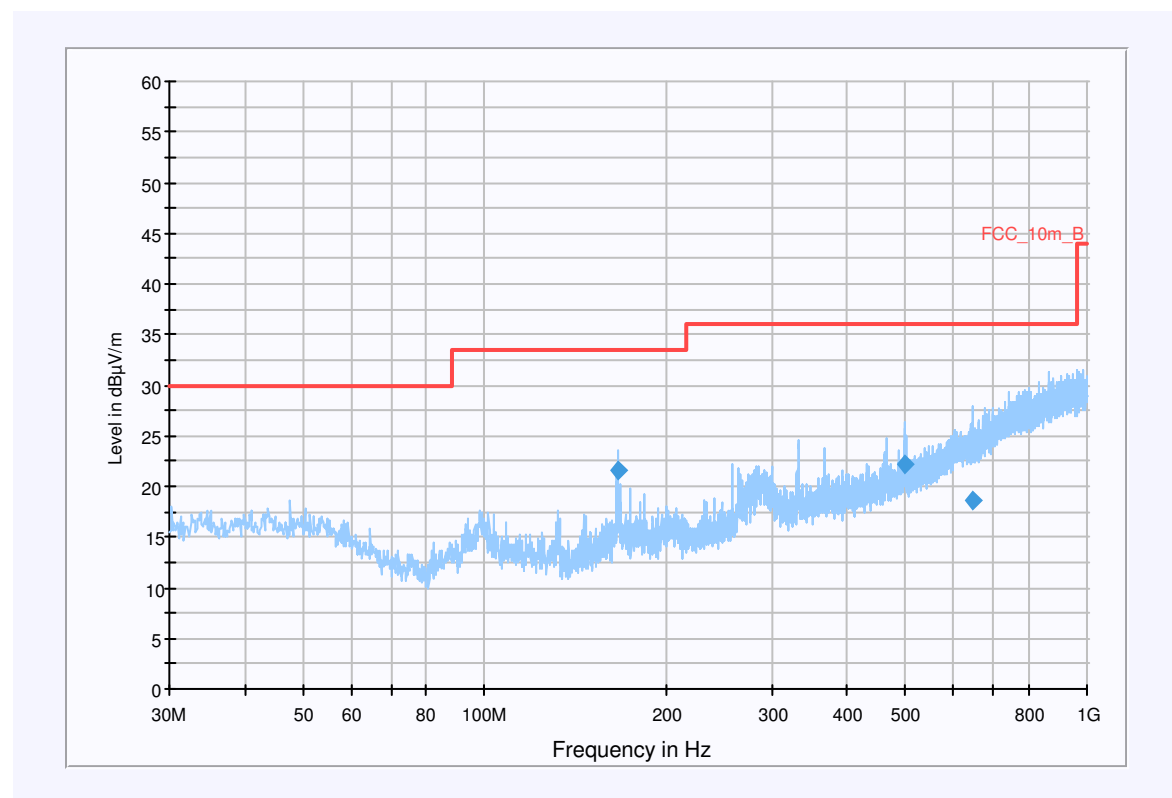
EUT:	GI0401 + SPQ-TESTUNIT-193
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE 850
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
166.654450	21.7	15000.000	120.000	115.0	V	229.0	9.9	11.8	33.5	
497.743200	22.2	15000.000	120.000	100.0	V	49.0	18.8	13.8	36.0	
645.577650	18.7	15000.000	120.000	150.0	V	218.0	21.4	17.3	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

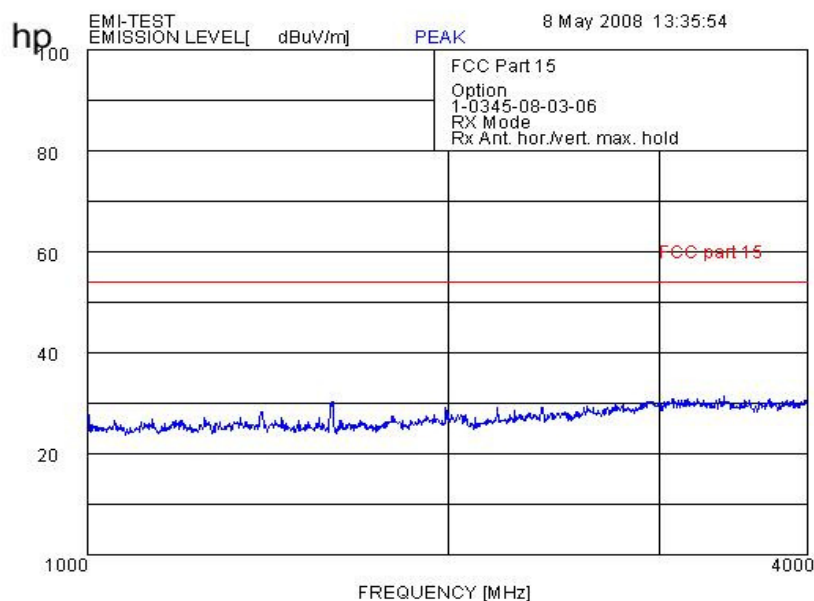
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

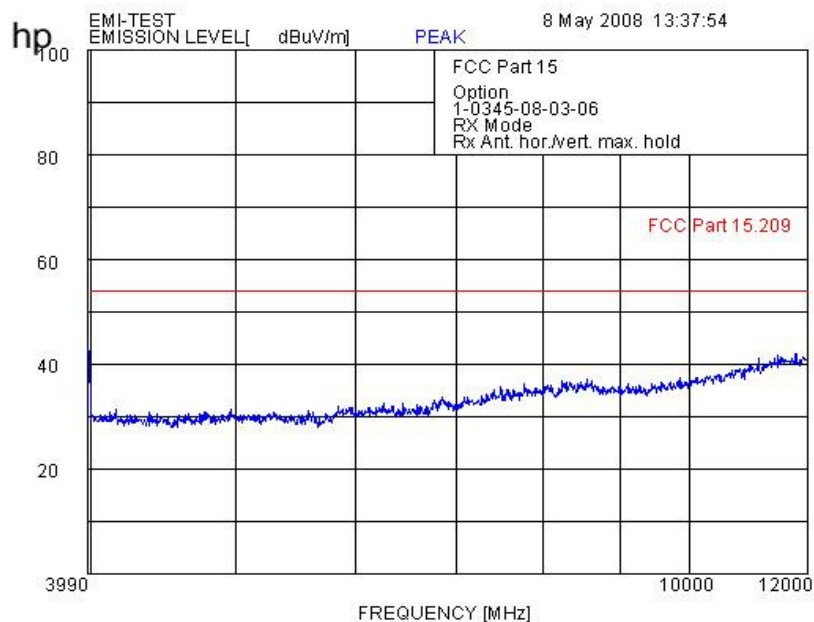
Plot 2:

RX (1 GHz to 4 GHz)



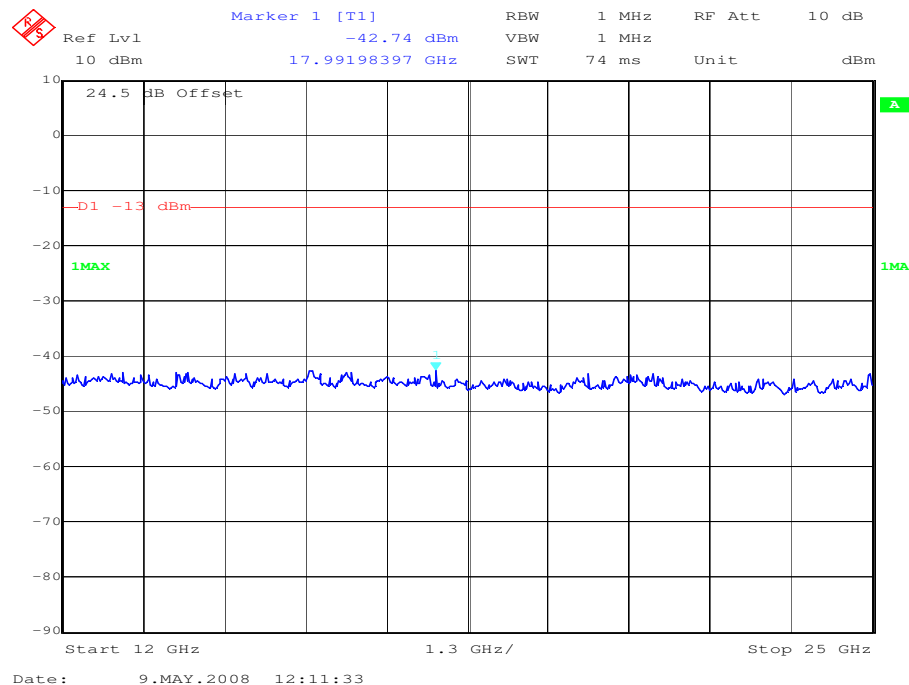
Plot 3:

RX (4 GHz to 12 GHz)



Plot 4:

RX (12 GHz to 25 GHz)



FDD II

Measurement Results: Radiated Emissions with 1st Laptop – IBM Type 2373 (SPQ-Testunit-29)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

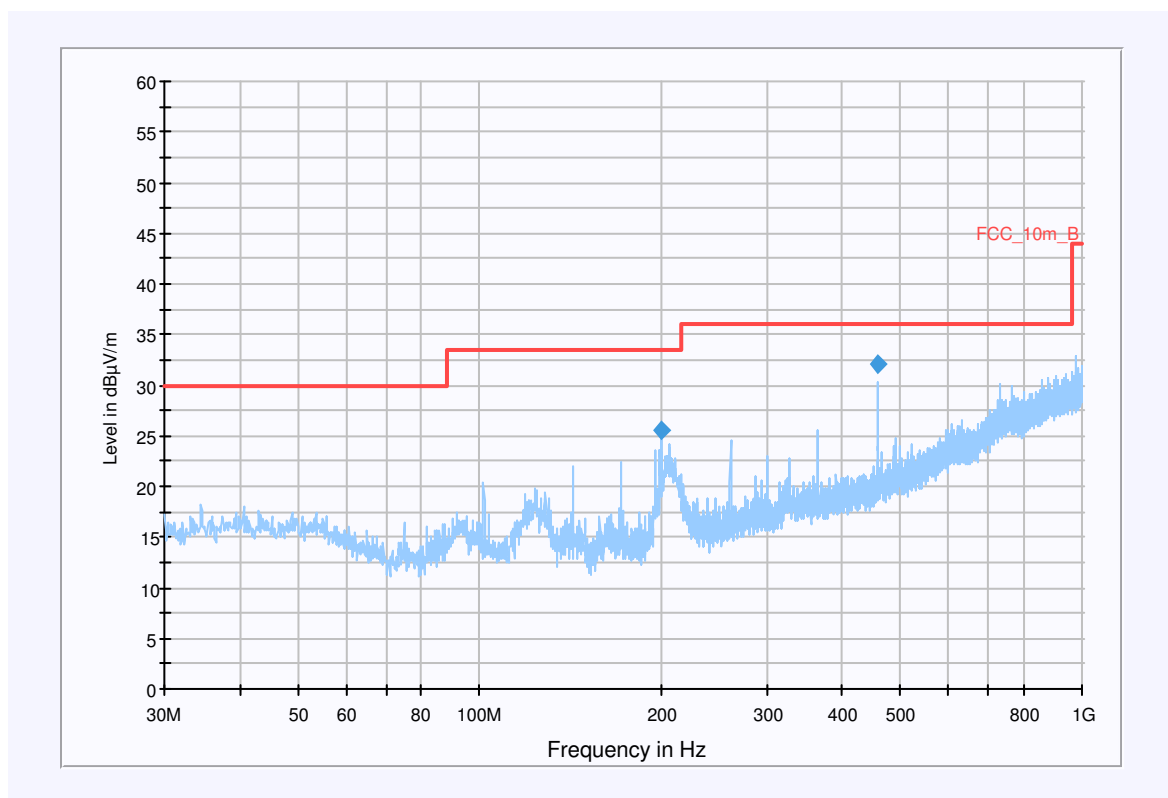
EUT:	GI0401 + SPQ-TESTUNIT-29
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE WCDMA II
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
200.463100	25.5	15000.000	120.000	127.0	V	342.0	11.9	8.0	33.5	
456.757250	32.1	15000.000	120.000	349.0	V	158.0	17.9	3.9	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

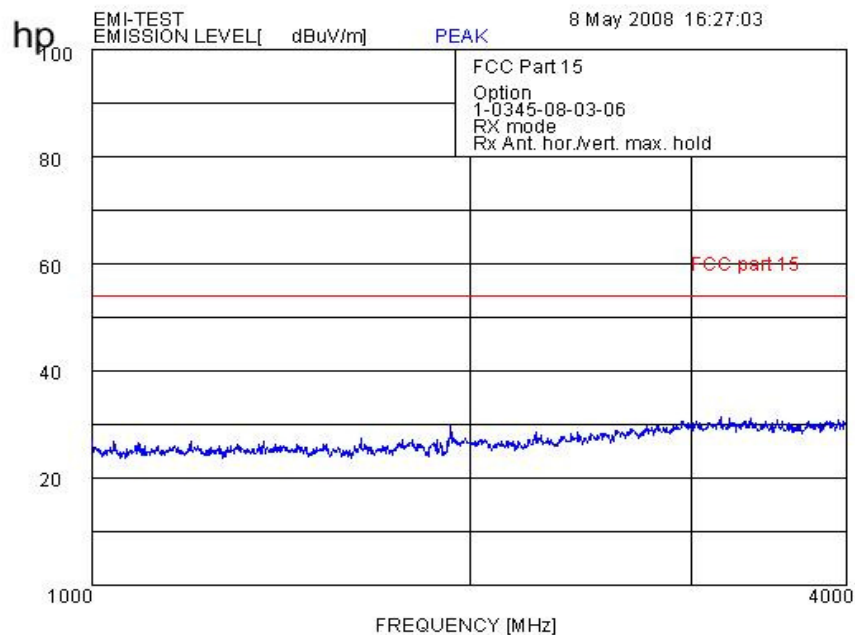
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

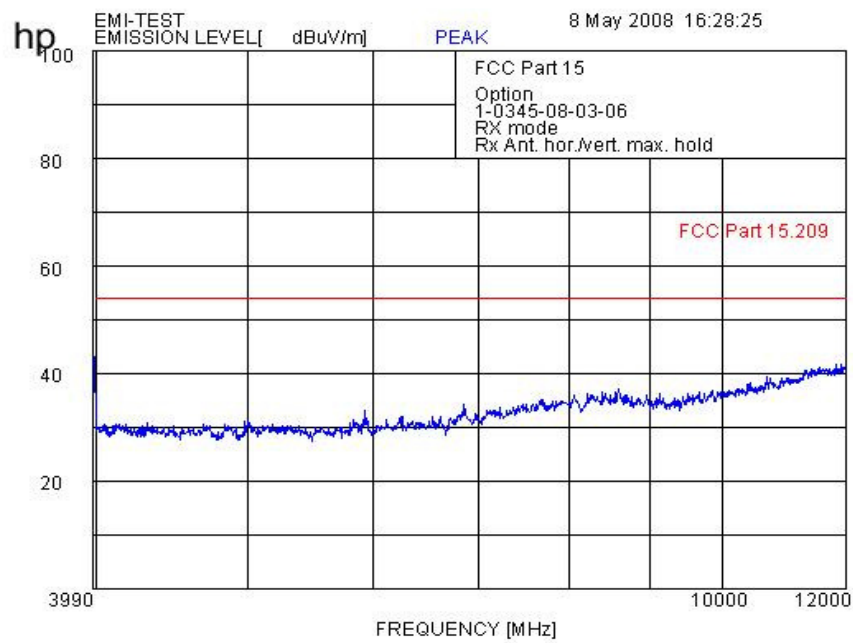
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

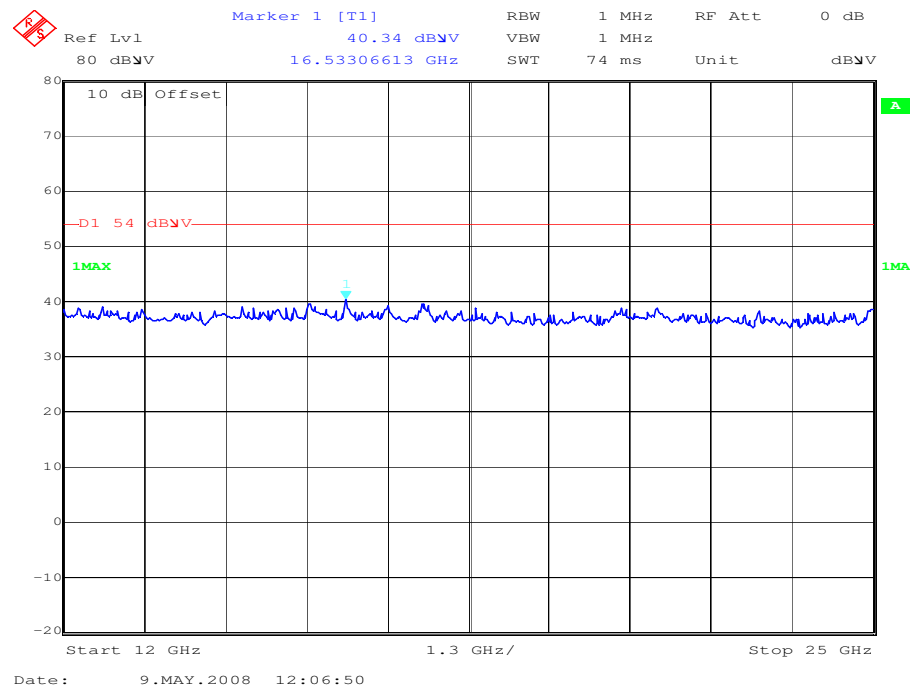
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



Measurement Results: Radiated Emissions with 2nd Laptop – DELL PP01X (SPQ-Testunit-47)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

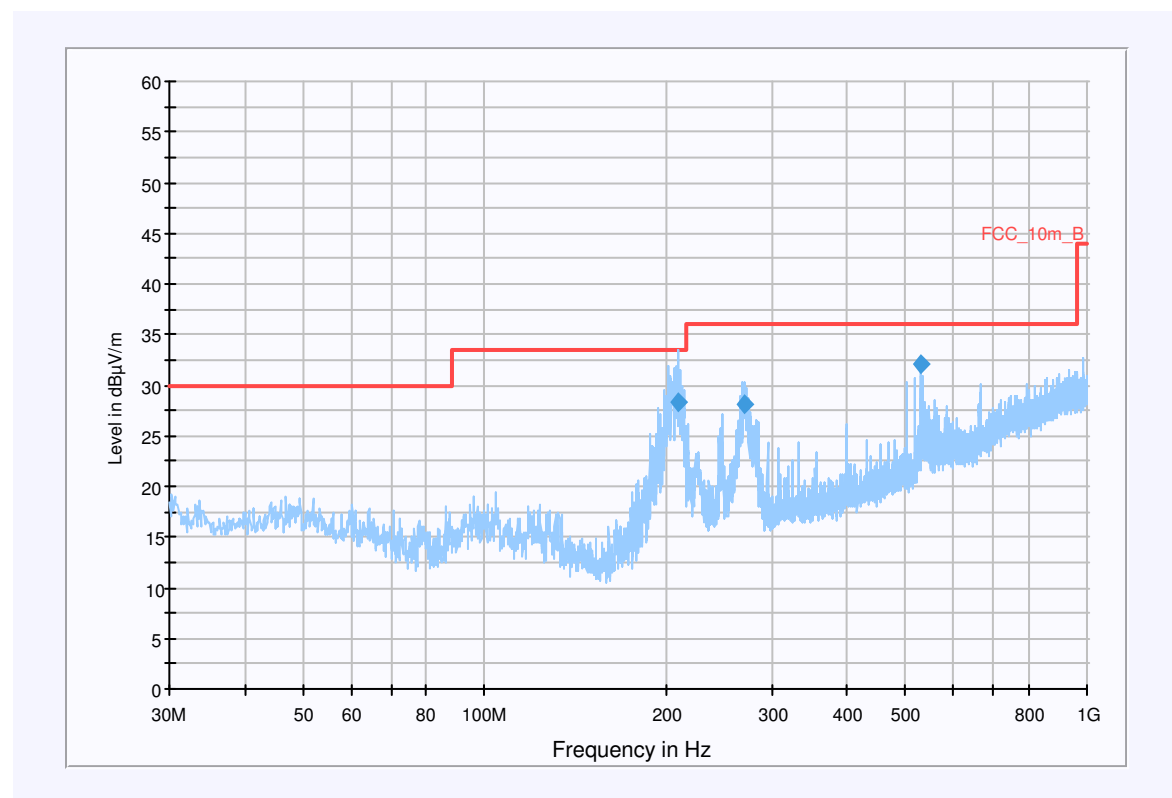
EUT:	GI0401 + SPQ-TESTUNIT-47
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE WCDMA II
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
209.621150	28.4	15000.000	120.000	166.0	V	246.0	12.2	5.1	33.5	
270.149700	28.2	15000.000	120.000	100.0	V	5.0	14.0	7.8	36.0	
528.376650	32.1	15000.000	120.000	100.0	V	219.0	19.2	3.9	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009

Signal Path: without Notch
FW 1.0

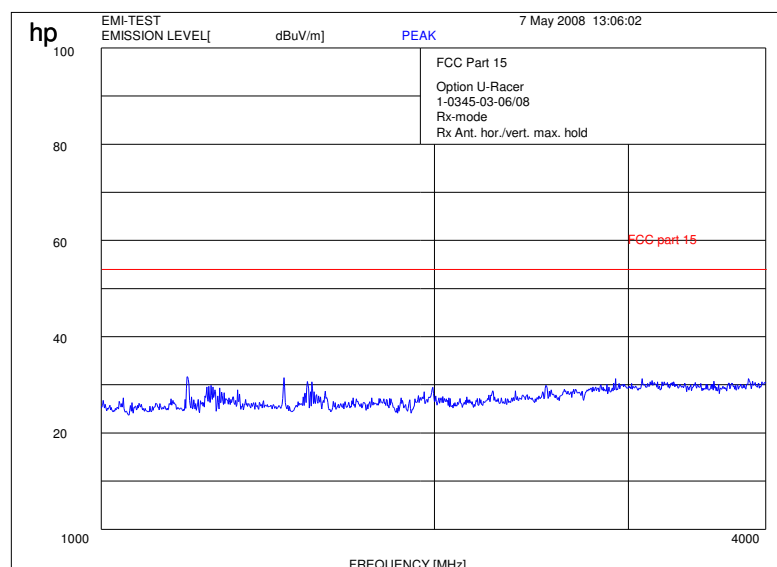
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

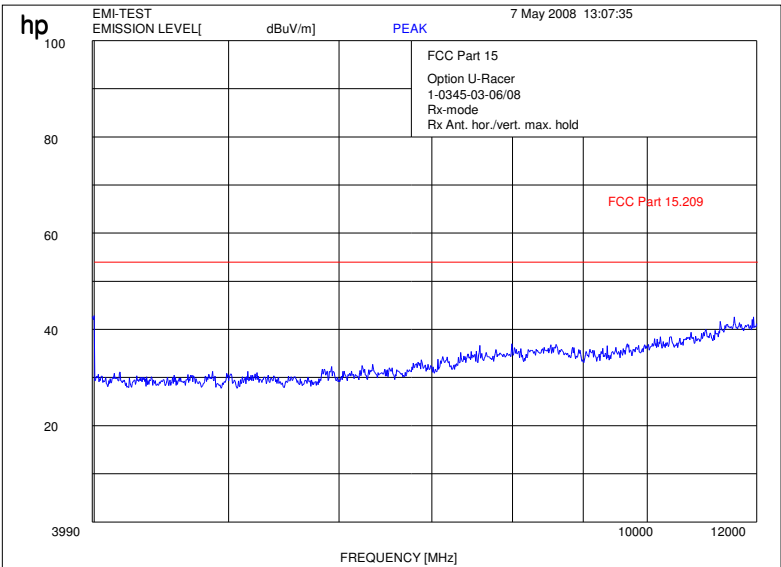
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

Plot 2:

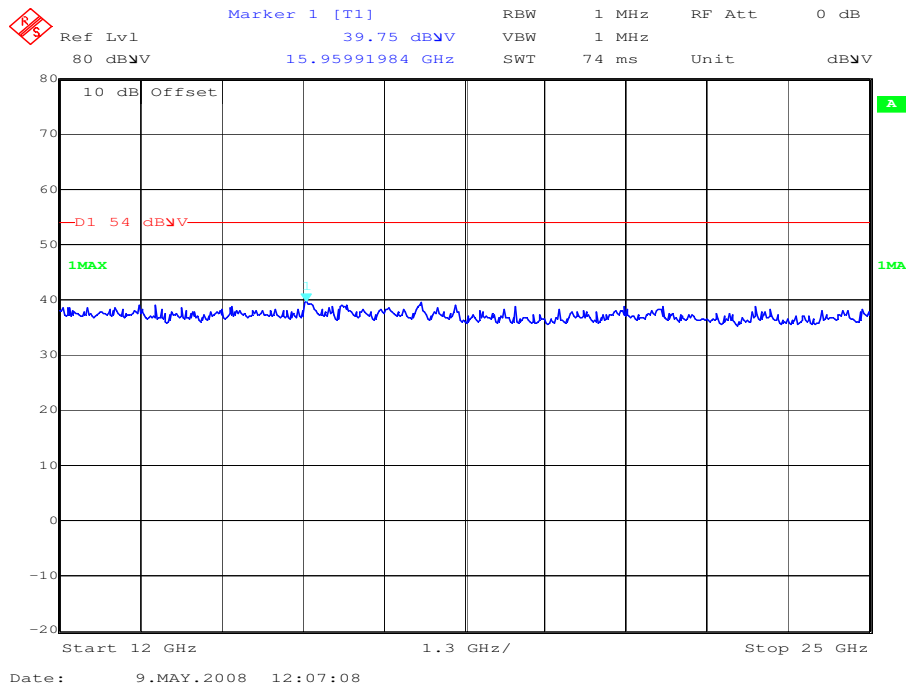
RX (1 GHz to 4 GHz)



Plot 3:
RX (4 GHz to 12 GHz)



Plot 4:
RX (12 GHz to 25 GHz)



Measurement Results: Radiated Emissions with 3rd Laptop – Fujitsu/Siemens AmiloPro (SPQ-Testunit-193)

SPURIOUS EMISSIONS LEVEL (µV/m)								
MHz			MHz			MHz		
F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]	F [MHz]	Detector	Level [µV/m]
1315.5	peak	32.2						
2001.4	peak	35.1						
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW/VBW: 1 MHz

Limits

SUBCLAUSE § 15.109

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

Plot 1:

RX (30 MHz to 1 GHz)

Information

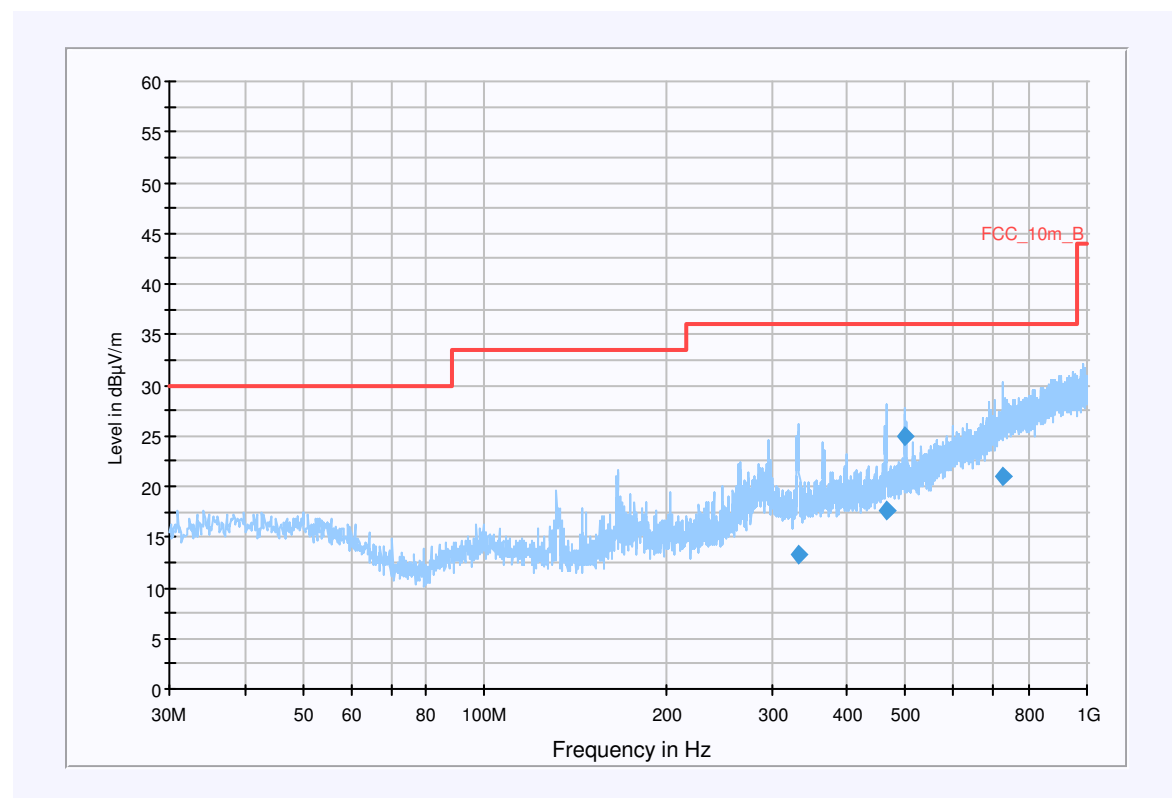
EUT:	GI0401 + SPQ-TESTUNIT-193
Serial Number:	none
Test Description:	FCC class B @ 10 m
Operating Conditions:	IDLE WCDMA II
Operator Name:	WAL
Comment:	EUT connect to notebook

Scan Setup: STAN_Fin [EMI radiated]

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

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

FCC_10m_FCCLIMIT(B)



Final Measurement Detector 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
332.924400	13.2	15000.000	120.000	178.0	H	69.0	15.7	22.8	36.0	
466.168950	17.7	15000.000	120.000	379.0	V	219.0	18.1	18.3	36.0	
497.796900	24.9	15000.000	120.000	100.0	V	188.0	18.8	11.1	36.0	
726.420950	21.1	15000.000	120.000	140.0	H	205.0	23.6	14.9	36.0	

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

Subrange 1

Frequency Range: 30MHz - 2GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 3.32, CAL 07.01.2009
Signal Path: without Notch
FW 1.0

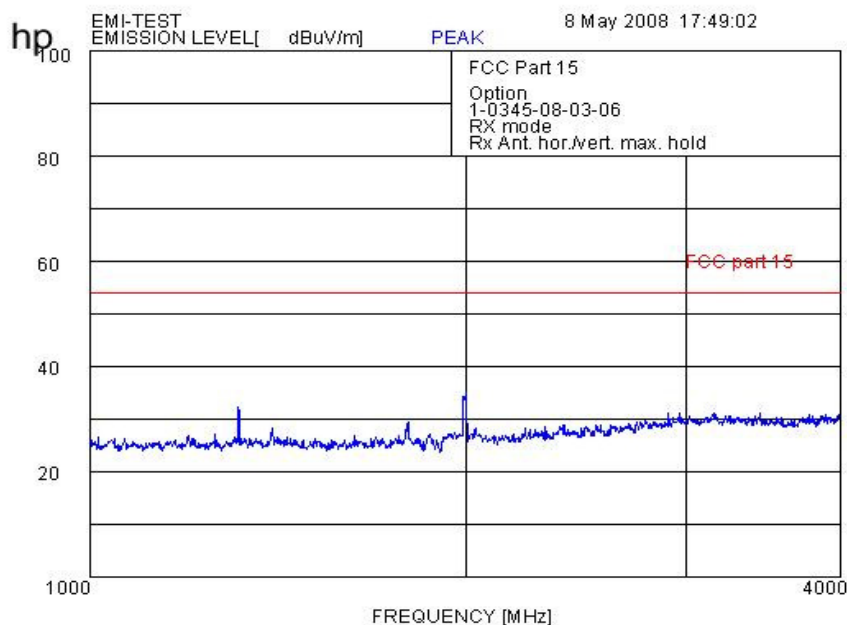
Antenna: VULB 9163
SN 9163-295, FW ---, CAL 08.04.2010
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cabel with switch (0408)

Antenna Tower: Tower [EMCO 2090 Antenna Tower]
@ GPIB0 (ADR 8), FW REV 3.12

Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9)

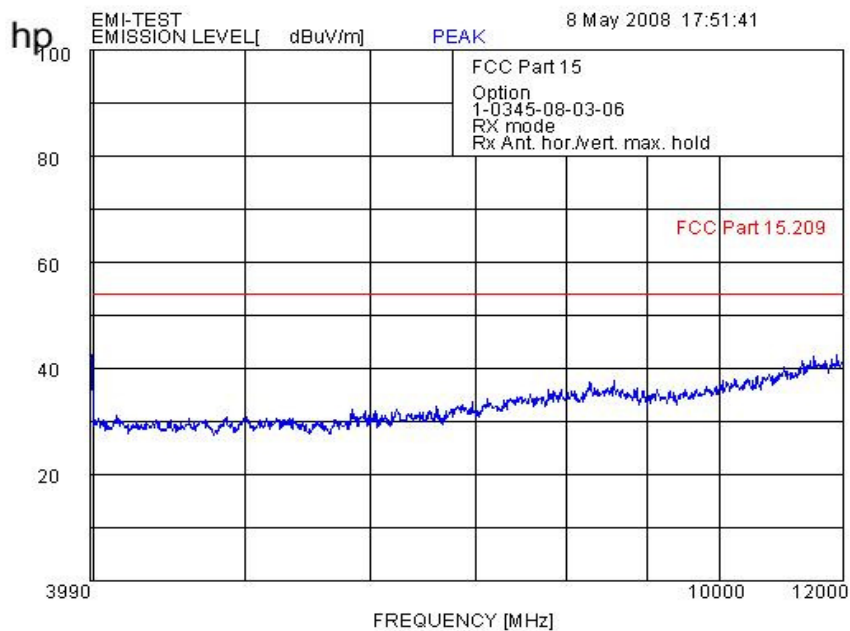
Plot 2:

RX (1 GHz to 4 GHz)



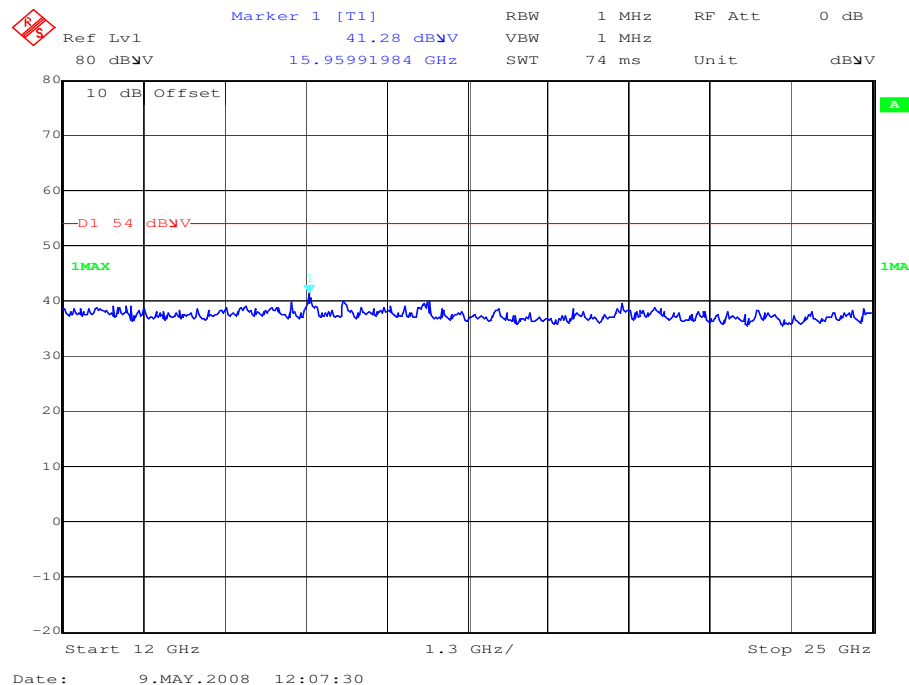
Plot 3:

RX (4 GHz to 12 GHz)



Plot 4:

RX (12 GHz to 25 GHz)



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.

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	Spektrum Analyzer 8566B	HP	2747A05306	300001000	05.10.2006	24	05.10.2008
5	Spektrum Analyzer Display 85662A	HP	2816A16541	300002297	05.10.2006	24	05.10.2008
6	Quasi-Peak-Adapter 85650A	HP	2811A01131	300000999	05.10.2006	24	05.10.2008
7	RF-Preselector 85685A	HP	2837A00779	300000218	08.11.2006	24	08.11.2008
8	PC Vectra VL	HP		300001688	n.a.		
9	Software EMI	HP		300000983	n.a.		
10	Measurement System 2						
11	FSP 30	R&S	100623	ICT 300003464	05.10.2007	24	15.10.2009
12	PC	F+W			n.a.		
13	TILE	TILE			n.a.		
14	Biconical antenna	EMCO	S/N: 860 942/003		Monthly verification (System cal.)		
15	Log. Period. Antenna 3146	EMCO	2130	300001603	Monthly verification (System cal.)		
16	Double Ridged Antenna HP 3115P	EMCO	3088	300001032	Monthly verification (System cal.)		
17	Active Loop Antenna 6502	EMCO	2210	300001015	Monthly verification (System cal.)		
18	Power Supply 6032A	HP	2818A03450	300001040	12.05.2007	36	12.05.2010
19	Busisolator	Kontron		300001056	n.a.		
20	Leitungsteiler 11850C	HP		300000997	Monthly verification (System cal.)		
21	Power attenuator 8325	Byrd	1530	300001595	Monthly verification (System cal.)		
22	Band reject filter WRCG1855/1910	Wainwright	7	300003350	Monthly verification (System cal.)		
23	Band reject filter WRCG2400/2483	Wainwright	11	300003351	Monthly verification (System cal.)		

Systtem Rack Room 005 :

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	FSP 30	R&S		300003575	02.04.2007	24	02.04.2009
2	CBT	R&S	100313	300003516	24.10.2006	24	24.10.2008
3	Switch Matrix	HP		300000929	n.a.		
4	Power Supply	HP	3041A00544	300002270	13.05.2007	36	13.05.2010
5	Signal Generator	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	24.10.2006	24	24.10.2008
2	CBT	R&S	100185	300003416	21.02.2006	24	21.02.2008
3	CMU-200	R&S	103992	300003231	27.04.2007	12	27.04.2008

CETECOM ICT Services GmbH

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4	CMU-200	R&S	106240	300003321	02.05.2006	24	02.05.2008
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SRD Laboratory Room 002:

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	System Controller PSM 12	R&S	835259/007	3000002681-00xx	n.a.		
2	Memory Extension PSM-K10	R&S	To 1	3000002681	n.a.		
3	Operating Software PSM-B2	R&S	To 1	3000002681	n.a.		
4	19" Monitor		22759020-ED	3000002681	n.a.		
5	Mouse		LZE 0095/6639	3000002681	n.a.		
6	Keyboard		G00013834L461	3000002681	n.a.		
7	Spectrum Analyser FSIQ 26	R&S	835540/018	3000002681-0005	01.08.2006	24	01.08.2008
8	Tracking Generator FSIQ-B10	R&S	835107/015	3000002681	s.No.7		
10	RF-Generator SMIQ03 (B1 Signal)	R&S	835541/056	3000002681-0002	01.08.2006	36	01.08.2009
11	Modulation Coder SMIQ-B20	R&S	To 10	3000002681	s.No.10		
12	Data Generator SMIQ-B11	R&S	To 10	3000002681	s.No.10		
13	RF Rear Connection SMIQ-B19	R&S	To 10	3000002681	s.No.10		
14	Fast CPU SM-B50	R&S	To 10	3000002681	s.No.10		
15	FM Modulator SM-B5	R&S	835676/033	3000002681	s.No.10		
16	RF-Generator SMIQ03 (B2 Signal)	R&S	835541/055	3000002681-0001	01.08.2006	36	01.08.2009
17	Modulation Coder SMIQ-B20	R&S	To 16	3000002681	s.No.16		
18	Data Generator SMIQ-B11	R&S	To 16	3000002681	s.No.16		
19	RF Rear Connection SMIQ-B19	R&S	To 16	3000002681	s.No.16		
20	Fast CPU SM-B50	R&S	To 16	3000002681	s.No.16		
21	FM Modulator SM-B5	R&S	836061/022	3000002681	s.No.16		
22	RF-Generator SMP03 (B3 Signal)	R&S	835133/011	3000002681-0003	01.08.2006	36	01.08.2009
23	Attenuator SMP-B15	R&S	835136/014	3000002681	S.No.22		
24	RF Rear Connection SMP-B19	R&S	834745/007	3000002681	S.No.22		
25	Power Meter NRVD	R&S	835430/044	3000002681-0004	01.08.2006	24	01.08.2008
26	Power Sensor NRVD-Z1	R&S	833894/012	3000002681-0013	01.08.2006	24	01.08.2008
27	Power Sensor NRVD-Z1	R&S	833894/011	3000002681-0010	01.08.2006	24	01.08.2008
28	Rubidium Standard RUB	R&S		3000002681-0009	01.08.2006	24	01.08.2008
29	Switching and Signal Conditioning Unit SSCU	R&S	338864/003	3000002681-0006	01.08.2006	24	01.08.2008
30	Laser Printer HP Deskjet 2100	HP	N/A	3000002681-0011	n.a.		
31	19" Rack	R&S	11138363000004	3000002681	n.a.		
32	RF-cable set	R&S	N/A	3000002681	n.a.		
33	IEEE-cables	R&S	N/A	3000002681	n.a.		
34	Sampling System FSIQ-B70	R&S	835355/009	3000002681	s.No.7		
35	RSP programmable attenuator	R&S	834500/010	3000002681-0007	01.08.2006	24	01.08.2008
36	Signalling Unit	R&S	838312/011	3000002681	n.a.		
37	NGPE programmable Power Supply for EUT	R&S	192.033.41	3000002681			
38	Climatic box VT 4002	Heraeus Vötsch	58566046820010	300003019	11.05.2007	24	11.05.2009
39	Signaling Unit CMU200	R&S	832221/0055	300002862	12.01.2006	24	12.01.2008
40	Power Splitter 6005-3	Inmet Corp.	none	300002841	23.12.2006	24	23.12.2008
41	SMA Cables SPS-1151-985-SPS	Insulated Wire	different	different	n.a.		

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42	CBT32 with EDR Signaling Unit	R&S					
43	Coupling unit	Narda	N/A	--	n.a.		
44	2xSwitch Matrix PSU	R&S	872584/021	300001329	n.a.		
45	RF-cable set	R&S	N/A	different	n.a.		
46	IEEE-cables	R&S	N/A	--	n.a.		

Anmerkung: 3000002681-00xx als Systeme inventarisiert

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	08.11.2006	24	08.11.2008
2	Spektrum Analyzer Display 85662A	HP	2816A16497	300001690	08.11.2006	24	08.11.2008
3	Quasi-Peak-Adapter 85650A	HP	2811A01135	300000216	08.11.2006	24	08.11.2008
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

Anechoic chamber F:

No.	Instrument/Ancillary	Manufacturer	Type	Serial-No.	Internal identification
Radiated emission in chamber F					
F-1	Control Computer	F+W		FW0502032	300003303
F-2	Bilog antenna	Chase	CBL 6112A	2110	300000573
F-3a	Amplifier	Veritech Microwave Inc.	0518C-138	- / -	- / -
F-4b	Switch	HP	3488A	- / -	300000368
F-5	EMI Test receiver	R&S	ESCI	100083	300003312
F-6	Turntable Controller	EMCO	1061 3M	1218	300000661
F-7	Tower Controller	EMCO	1051 Controller	1262	300000625
F-8	Tower	EMCO	1051 Tower	1262	300000625
F-9	Ultra Notch-Filter Rejected band Ch. 62	WRCD		9	
Radiated immunity in chamber F					
F-10	Control Computer	F+W		FW0502032	300003303
F-11	Signal Generator	R&S	SML 03	102519	300003407
F-12	RF-Amplifier	ar	50W1000	12932	300001438
F-13	Directional Coupler	ar	DC 3010	12708	300001428
F-14	Logger Antenna	R&S	HL023A1	323704/016	300001476
F-15	RF-Amplifier	ar	60S1G3	313649	300003410
F-16	Directional Coupler	ar	DC7144A	312786	300003411
F-17	Horn Antenna	ar	AT 4002	19739	300000633
F-18	Power Meter	R&S	NRV	860327/024	F033
F-19	Power sensor	R&S	URV5-Z2	839080/005	300002844.02
F-20	Power sensor	R&S	URV5-Z2	830755/057	F032
Harmonics and flicker in front of chamber F					
F-21	Flicker and Harmonics Test System	Spitzenberger & Spies	PHE4500/B I PHE4500/B II	B5983 B5984	300000210
F-22	Control Unit	Spitzenberger & Spies	STE	B5980	300000210
F-23	Power Amplifier	Spitzenberger & Spies	EP 4500/B	B5976	300000210
F-24	Conect Panel	Spitzenberger & Spies	Conect panel	B5982	300000210
F-25	Power Supply	Spitzenberger & Spies	NT-EP 4500	B3977	300000210
F-26	Additional transformer	Spitzenberger & Spies	UT-EP 4500	B5978	300000210
F-27	Analyzer Reference System	Spitzenberger & Spies	ARS 16/1	A3509 07/0 0205	300003314
F-26	Power Supply	Hewlett Packard	6032 A	2920 A 04466	300000580

C.BER Bluetooth Rack Room AC2:

No	Equipment/Type	Manufact.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	System Controller with XP Prof. & C.BER Control Software	F&W	300003580	na		
2	GPIO to USB Converter	Agilent	300003426	na		
3	Spectrum Analyser FSIQ26	R&S	300002681-005	1.08.2006	24	1.08.2008
	Sampling System FSIQ-B70	R&S	300002681-005	1.08.2006	24	1.08.2008
	Tracking Generator FSIQ-B10 for FSIQ26	R&S	300002681-005	1.08.2006	24	1.08.2008
4	RF-Generator SMIQ03 (Interferer Signal)	R&S	300002681-001	1.08.2006	24	1.08.2008
	Modulation Coder SMIQ-B20	R&S	300002681-001	1.08.2006	24	1.08.2008
	Data Generator SMIQ-B11	R&S	300002681-001	1.08.2006	24	1.08.2008
	RF Rear Connection SMIQ-B19	R&S	300002681-001	1.08.2006	24	1.08.2008
	Fast CPU SM-B50	R&S	300002681-001	1.08.2006	24	1.08.2008
	FM Modulator SM-B5	R&S	300002681-001	1.08.2006	24	1.08.2008
5	Rubidium Standard RUB	R&S	300002681-009	1.08.2006	24	1.08.2008
6	Switching Unit 3488A including 2 44476A cards	HP	300000926	Verified with path compensation		
	44472A VHF switch	HP	300000926	Verified with path compensation		
7	Signalling Unit: CBT with EDR	R&S	300003416	24.06.2006	24	24.06.2008
8	RF-cable set	different	no	Verified with path compensation		
9	IEEE-cables	R&S	no	na		
10	NGPE programmable Power Supply for EUT	R&S	400000078	1.08.2006	24	1.08.2008
11	Coupling Unit 4324-2	Narda	no	Verified with path compensation		
12	Climatic Chamber VT4002	Voetch	300003019	11.05.2207	24	11.05.2009
13	6 dB Attenuator 1W	Narda	no	Verified with path compensation		
14	DCBlocker 30 MHz to 12.75 GHz 1W	Narda	no	Verified with path compensation		

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OTA chamber:

No	Equipment	Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Splitter	15542	Mini Circuits	15542	400000086	Verified with path compensation		
2	Splitter	42000	Anaren	4730	400000085	Verified with path compensation		
3	Cable N-Con. 15m	Aircell 7	Aircell	--	400000087	Verified with path compensation		
4	CTIA-Chamber	AMS 8500	ETS-Lindgren	--	300003327-0000	Verified with chamber and ripple tests		
5	CTIA-Chamber - Positioning Equipment	--	EMCO	--	300003328-0000	na		
6	CTIA-Chamber – Software EMQuest	--	EMCO	--	300003328-0001	na		
7	CTIA-Chamber - Antennas	Double Ridged Horn, Dipoles/ Loops	EMCO	--	300003328-0002	na		
8	Power supply 0-50V	6633A	HP Meßtechnik	2851A-01222	300001530	12.5.07	24	12.5.09
9	MP5 Five-Beam-Laser	MP5	CST/berger		400000088	na		
10	Mount kit for Laptop	--	EMCO		300003295	na		
15	Antenna for signalling	3102 L Conical log spir	EMCO	40953	300003296	na		
16	Cable SMA-Con. 15m	KK-MF141-15	Huber & Suhner		400000090	Verified with path compensation		
17	Cables	--	Huber & Suhner	different	400000083	Verified with path compensation		
18	Limiting Amplifier	LA 02-801	JCA Tech.	101	300003341	na		
19	Spectrum Analyzer	FSP-7	R&S	100289	300003282	12.5.07	24	12.5.09
20	Switch Unit	TS-RSP	R&S	100155	300003281	Verified with path compensation		
21	Step Attenuator 0 ...139.9 dB	RSP	R&S	860712002	400000079	Verified with path compensation		
22	Signalgenerator	SMIQ03 B	R&S	836206 /0091	300002679	1.6.07	36	1.6.10
23	Universal Communication Tester	CMU 200	R&S	106240	300003321	2.5.07	24	2.5.09
24	Hygro-Thermometer	-/-, 5-45°C, 20-100%rF	Thies Clima	-/-	400000089	27.4.07	12	27.4.08