



Accredited testing-laboratory

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

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

Recognized by the Federal Communications Commission

Anechoic chamber registration no.: 90462 (FCC)

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

Certification ID: DE 0001

Accreditation ID: DE 0002

Accredited Bluetooth® Test Facility (BQTF)

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Test report no. : 1-1775-01-27/09
Type identification : Single SRR Module 865215
Single SRR Module 865220
Single SRR Module 865244
Applicant : Philips Medizin Systeme Böblingen GmbH
FCC ID : PQC-SRRBV2
IC Certification No : 3549C-SRRBV2
Test standards : 47 CFR Part 2
47 CFR Part 15
RSS – 210 Issue 7

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1 General information

1.1 Notes

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

Test laboratory manager:

2010-09-07	Andreas Keller	
Date	Name	Signature

Technical responsibility for area of testing:

2010-09-07	Stefan Bös	
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: DGA-PL-176/94-D1

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

Testing location, if different from CETECOM ICT Services GmbH:

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

1.3 Details of applicant

Name:	Philips Medizin Systeme Böblingen GmbH
Street:	Hewlett-Packard-Strasse 2
Town:	71034 Böblingen
Country:	Germany
Telephone:	+49 (0)7031-463-2840
Fax:	+49 (0)7031-463-2442
Contact:	Mr. Markus Stacha
E-mail:	markus.stacha@philips.com
Telephone:	+49 (0)7031-463-2840

1.4 Application details

Date of receipt of order:	2009-11-18
Date of receipt of test item:	2009-11-18
Date of start test:	2009-11-23
Date of end test	2010-03-17
Persons(s) who have been present during the test:	-/-

2 Test standard/s

47 CFR Part 2	2009-10	Title 47 of the Code of Federal Regulations; Chapter I- Federal Communications Commission Frequency allocations and radio treaty matters; general rules and regulations
47 CFR Part 15	2009-10	Title 47 of the Code of Federal Regulations; Chapter I- Federal Communications Commission Subchapter A - general, Part 15-Radio frequency devices Subchapter B—Unintentional Radiators Subchapter C—Intentional Radiators
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:	Philips Medizin Systeme Böblingen GmbH
Street:	Hewlett-Packard-Strasse 2
Town:	71034 Böblingen
Country:	Germany

3.1.1 Test item

Kind of test item :	Components of the Single SRR Module Wireless Measurement System (former IntelliVue Wireless Measurement System)
Type identification :	<p>Single SRR Module 865215 (former IntelliVue CL SpO2 Pod) Product Number 865215 Serial Number DE932Y0151 HW Status 0919 SW Status A.00.31</p> <p>Single SRR Module 865220 (former IntelliVue CL Charging Station) Product Number 865220 Serial Number DE932Y0086 HW Status 0935 SW Status A.00.41</p> <p>Single SRR Module 865244 (former 865244 Remote Control) Product Number 865244 Serial Number EP1#11 HW Status 0934 SW Status 0.2</p>
Duty Cycle :	<p>Provided test samples with 100% duty cycle From the manufacturer declared normal use duty cycle = 17.024% For SRR Module 865220 only: Normal use duty cycle = 13.3%.</p>
Frequency Band [MHz] :	ISM 2400 - 2483.5
Type of Modulation :	OQPSK
Number of channels :	16
Antenna :	<p>Single SRR Module 865215: Printed PCB antenna Single SRR Module 865220, Single SRR Module 865244: Chip antenna</p>
Power Supply :	<p>Single SRR Module 865215: 3.6 V DC by internal Li-Ion battery Single SRR Module 865244: 3V DC by internal battery (2xLR6) Single SRR Module 865220: 100-240V/AC</p>
Oper. Temperature Range :	0 °C to 40°C

Conducted Max. power: -2.8dBm

Single SRR Module 865215: Max. power radiated (EIRP): -9.0dBm (0.13 mW)
 Single SRR Module 865220: Max. power radiated (EIRP): +1.3dBm (1.35 mW)
 Single SRR Module 865244: Max. power radiated (EIRP): -1.1dBm (0.78 mW)

FCC ID: PQC-SRRBV2
 IC: 3549C-SRRBV2

3.1.2 Additional EUT information For IC Canada (appendix 2)

IC Registration Number:	3549C-SRRBV2 (Module)
Model Name:	Single SRR Module 865215 Single SRR Module 865220 Single SRR Module 865244
Manufacturer (complete Address):	Philips Medizin Systeme Böblingen GmbH Hewlett-Packard-Strasse 2 71034 Böblingen Germany
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]:	2405 MHz – 2480 MHz
RF: Power [W] (max):	Conducted max. power: -2.8dBm (0.52mW) Single SRR Module 865215: EIRP: -9.0dBm (0.13 mW) Single SRR Module 865220: EIRP: +1.3dBm (1.35 mW) Single SRR Module 865244: EIRP: -1.1dBm (0.78 mW)
Antenna Type:	PCB mounted antenna
Occupied Bandwidth (99% BW) [kHz]:	2565 (see test report 1-1775-01-08/09)
Type of Modulation:	OQPSK
Emission Designator (TRC-43):	2M57G1D (see test report 1-1775-01-08/09)
Transmitter Spurious (worst case) [dBµV/m at 3m]:	Single SRR Module 865215: 52dBµV (noise floor) Single SRR Module 865220: 52dBµV (noise floor) Single SRR Module 865244: 52dBµV (noise floor)
Receiver Spurious (worst case) [dBµV/m at 3m]:	Single SRR Module 865215: 52dBµV (noise floor) Single SRR Module 865220: 52dBµV (noise floor) Single SRR Module 865244: 52dBµV (noise floor)

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 the applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

Signature:



Testing manager: Andreas Keller Date: 2010-09-07

3.1.3 EUT operating modes

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

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

3.1.4 Extreme conditions testing values

Description	Shortcut	Unit	Value
Nominal Temperature	T _{nom}	°C	24
Nominal Humidity	H _{nom}	%	42
Nominal Power Source	V _{nom}	V	3.6 DC / 3.0 DC / 115 AC

Type of power source:

Single SRR Module 865215: 3.6 V DC by internal Li-Ion battery

Single SRR Module 865244: 3V DC by internal battery (2xLR6)

Single SRR Module 865220: 100-240V/AC

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 FCC Part 15 - Radio frequency devices Subchapter B - Unintentional Radiators Subchapter C - Intentional Radiators	PASSED	2010-09-07	-/-

Test Specification Clause	Test Case	pass	fail	Not applicable	Not performed
None	Antenna Gain				Yes
§15.247(a1)	Carrier frequency separation			Yes	
§15.247(a1)	Number of hopping channels			Yes	
§15.247(a)(1)(iii)	Time of occupancy (dwell time)			Yes	
§15.247(e)	Power Spectral density (Hybrid system in Inquiry mode/Page scan)			Yes	
§15.247(a)(1)	Spectrum Bandwidth of a FHSS System / 20dB Bandwith			Yes	
§ 15.247 (b)(1)	Maximum output power (conducted)			Yes	
§ 15.247 (b)(1)	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	
§ 15.247 (d)	Spurious Emission - radiated (Transmitter) >30 MHz	Yes			
§ 15.109	Spurious Emissions - radiated (Receiver)	Yes			
§ 15.209	Spurious Emissions - radiated (Transmitter) <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 25 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 setups 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 kHz: Quasi Peak measurement, 200 Hz Bandwidth, active loop antenna.
- 150 kHz - 30 MHz: Quasi Peak measurement, 9 kHz Bandwidth, active loop antenna.
- 30 MHz - 1GHz: Quasi Peak measurement, 120 kHz Bandwidth, trilob antenna
- >1GHz: Average, RBW 1MHz, VBW 10 Hz, waveguide horn

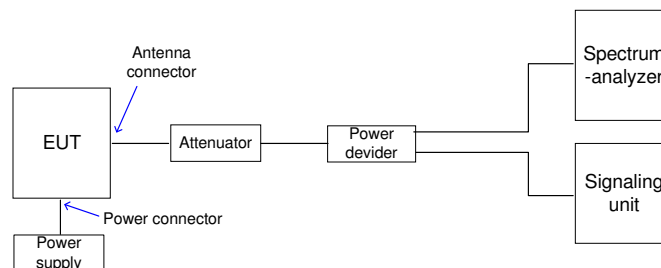
All measurements are done in accordance with the Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems DA 00-705 and Appendix A “BLUETOOTH APPROVALS”

The EUT is powered by an external power supply with nominal voltage. The signalling is performed from outside the chamber with a signalling unit (CMU200 or other) by air link using signalling antenna.

5.1.2 Conducted measurements

n.a.

The EUT’s RF signal is coupled out by the antenna connector which is supplied by the manufacturer. The signal is first 10dB attenuated before it is power divided (~6dB loss per branch). One of the signal paths is connected to the communication base Station (CMU200 or other), the other one is connected to the spectrum analyzer. The specific losses for both signal paths are first checked within a calibration. The measurement readings on the signalling unit/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

FCC part 15 test report Single Short Range Radio Module - test report: 1-1775-01-08/09

Tests documented in this report are delta tests compared to those documented in test report 1-1775-01-08/09

5.3 Additional comments

Valid for all samples:

Test sample with 100% duty cycle.

Normal use duty cycle 17.024% declared by the manufacturer.

For Single SRR Module 865220 only: Normal use duty cycle 13.3% declared by the manufacturer.

The output power setting of 0dB, as stated for all transmission measurements, was adjusted with aid of a control software, named RISP Test Tool, provided and described in a short manual by the customer.

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.

Single SRR Module 865215, transmitter modulated, 0dBm, RBW=VBW=3MHz

	low channel 2405 MHz	mid channel 2445 MHz	high channel 2480 MHz
Conducted power [dBm]	-3.6	-2.9	-2.8
Radiated power [dBm]	-9.0	-9.5	-10.0
Gain [dBi] Calculated	-5.4	-6.6	-7.2

Single SRR Module 865220, transmitter modulated, 0dBm, RBW=VBW=3MHz

	low channel 2405 MHz	mid channel 2445 MHz	high channel 2480 MHz
Conducted power [dBm]	-3.6	-2.9	-2.8
Radiated power [dBm]	1.1	0.7	1.3
Gain [dBi] Calculated	4.7	3.6	4.1

Single SRR Module 865244, transmitter modulated, 0dBm, RBW=VBW=3MHz

	low channel 2405 MHz	mid channel 2445 MHz	high channel 2480 MHz
Conducted power [dBm]	-3.6	-2.9	-2.8
Radiated power [dBm]	-1.1	-1.8	-1.6
Gain [dBi] Calculated	2.5	1.1	1.2

5.5 Carrier frequency separation §15.247(a)(1)

Not applicable

5.6 Number of hopping channels §15.247(a)(1)

Not applicable

5.7 Time of occupancy (dwell time) §15.247(a)(1)(iii)

Not applicable

5.8 Power Spectral density (Hybrid system in Inquiry mode/Page scan) §15.247(e)

Not performed

(see test report 1-1775-01-08/09)

5.9 Spectrum Bandwidth of a FHSS System / 20dB Bandwidth §15.247(a)(1)

Not applicable

5.10 Maximum output power (conducted) § 15.247 (b)(1)

Not performed

(see test report 1-1775-01-08/09)

5.11 Max. peak output power (radiated) § 15.247 (b) (1)

5.11.1 Single SRR Module 865215

Results:

Test conditions		Max. peak output power EIRP [dBm]		
Frequency [MHz]		2405	2445	2480
T _{nom}	V _{nom}	-9.0	-9.5	-10.0
Measurement uncertainty		±3dB		

RBW / VBW: 3 MHz

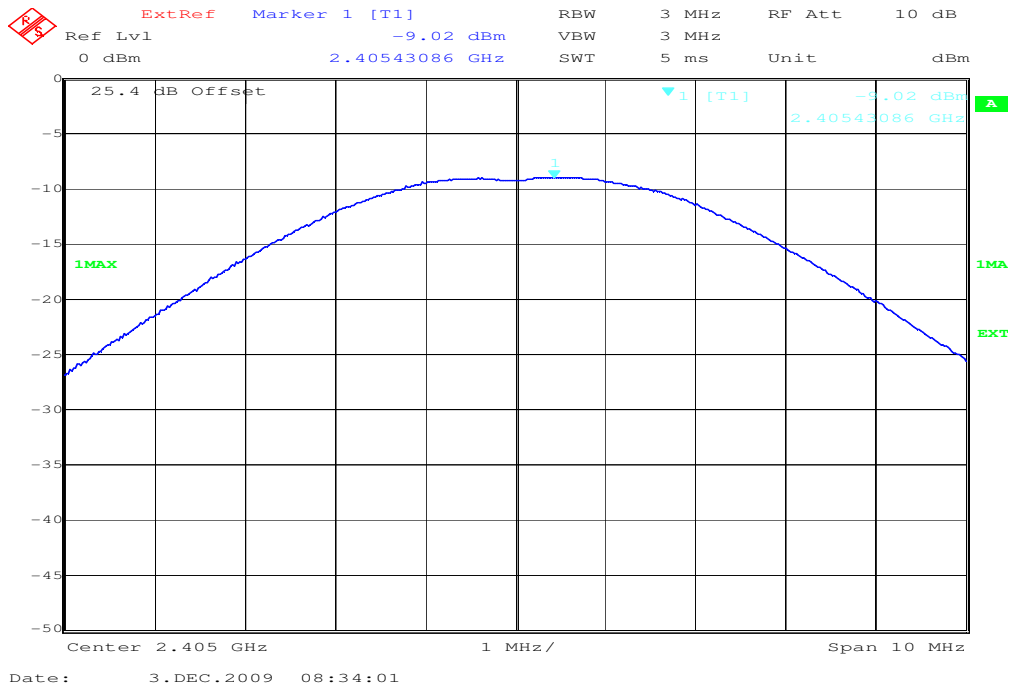
Measured at a distance of 3m

Limits:

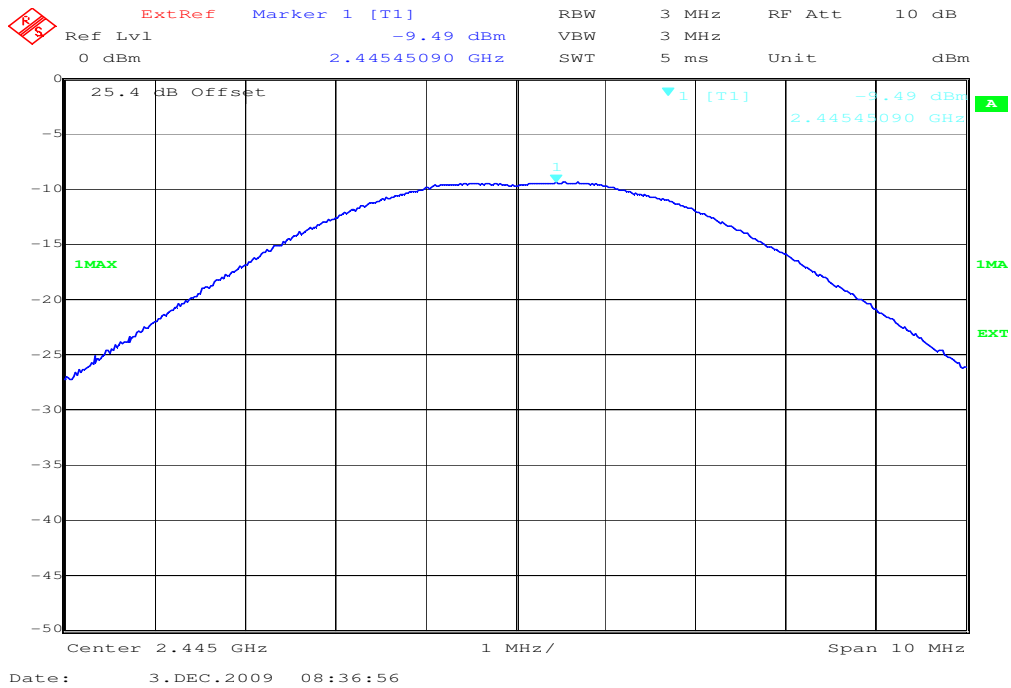
Under normal test conditions only, for frequency range 2400-2483.5 MHz	Max. 1.0 Watt
--	---------------

Plots of measurements

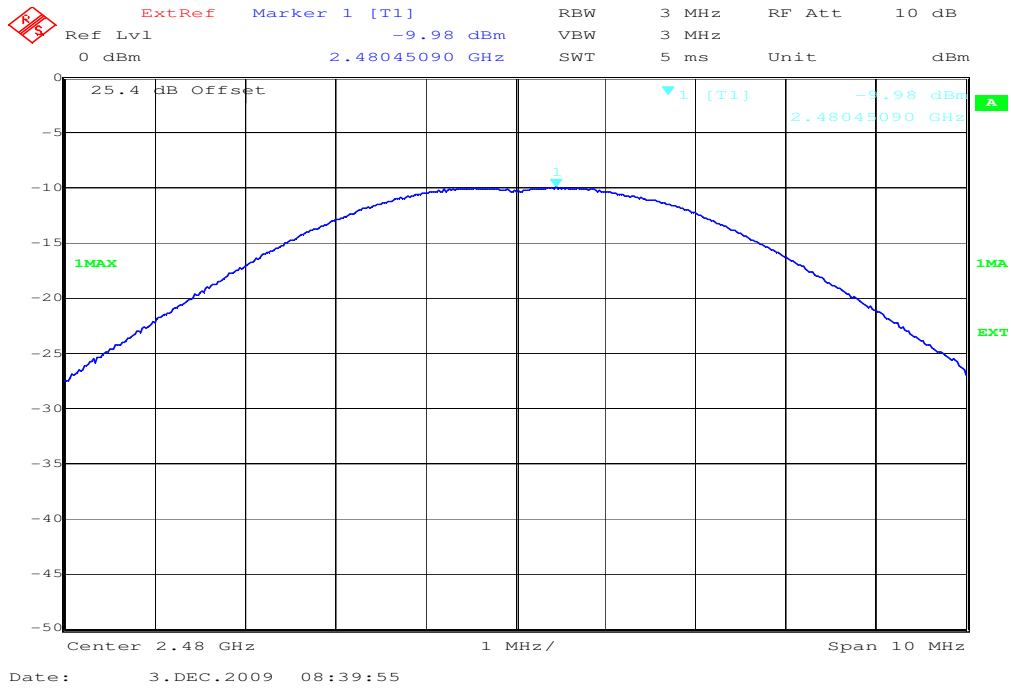
Plot 1: Lowest channel



Plot 2: Middle channel



Plot 3: Highest channel



5.11.2 Single SRR Module 865220

Results:

Test conditions		Max. peak output power EIRP [dBm]		
		2405	2445	2480
Frequency [MHz]				
T _{nom}	V _{nom}	1.1	0.7	1.3
Measurement uncertainty		±3dB		

RBW / VBW: 3 MHz

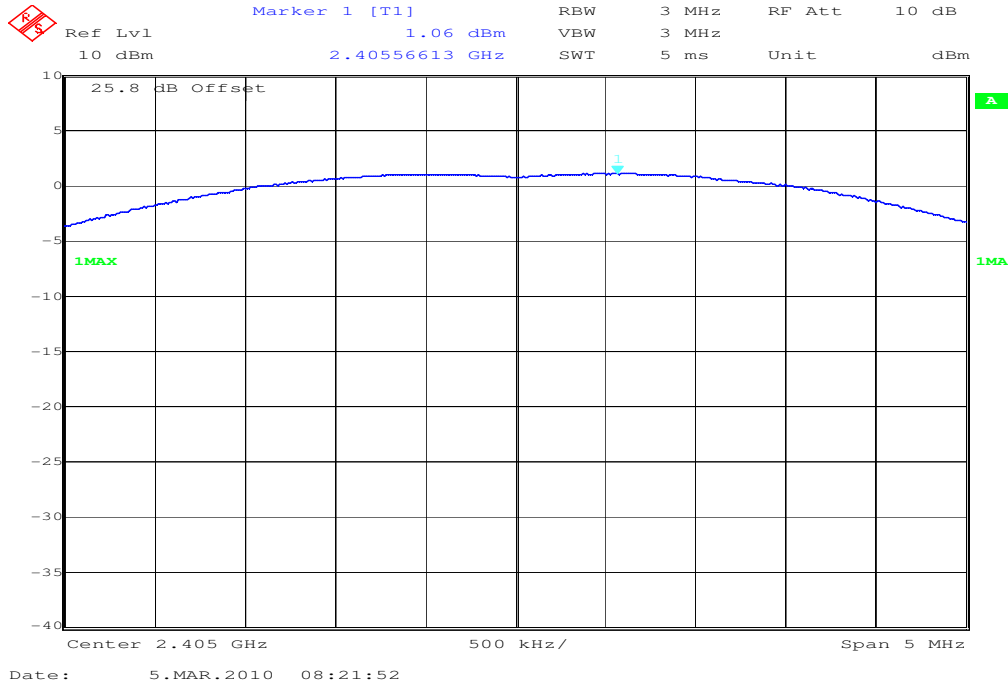
Measured at a distance of 3m

Limits:

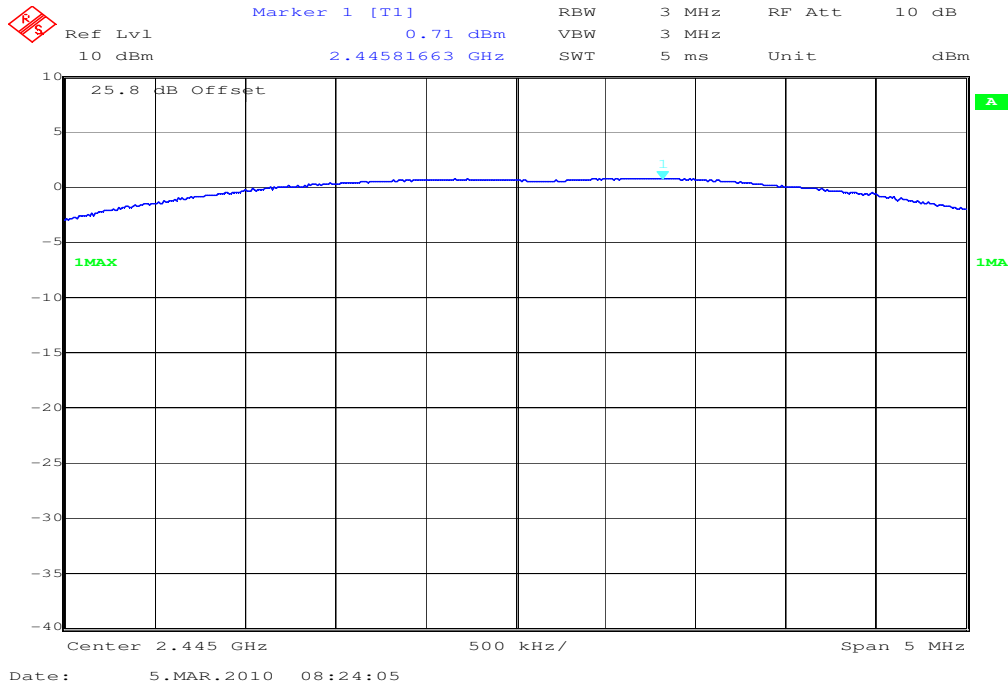
Under normal test conditions only, for frequency range 2400-2483.5 MHz	Max. 1.0 Watt
--	---------------

Plots of measurements

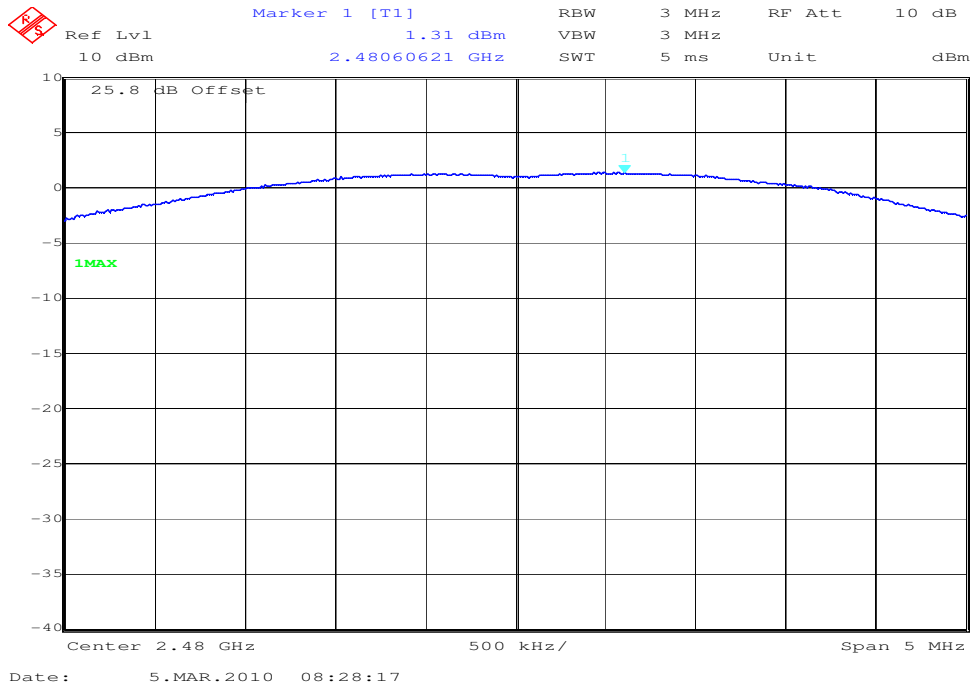
Plot 1: Lowest channel



Plot 2: Middle channel



Plot 3: Highest channel



5.11.3 Single SRR Module 865244

Results:

Test conditions		Max. peak output power EIRP [dBm]		
		2405	2445	2480
Frequency [MHz]				
T_{nom}	V_{nom}	-1.1	-1.8	-1.6
Measurement uncertainty		±3dB		

RBW / VBW: 3 MHz

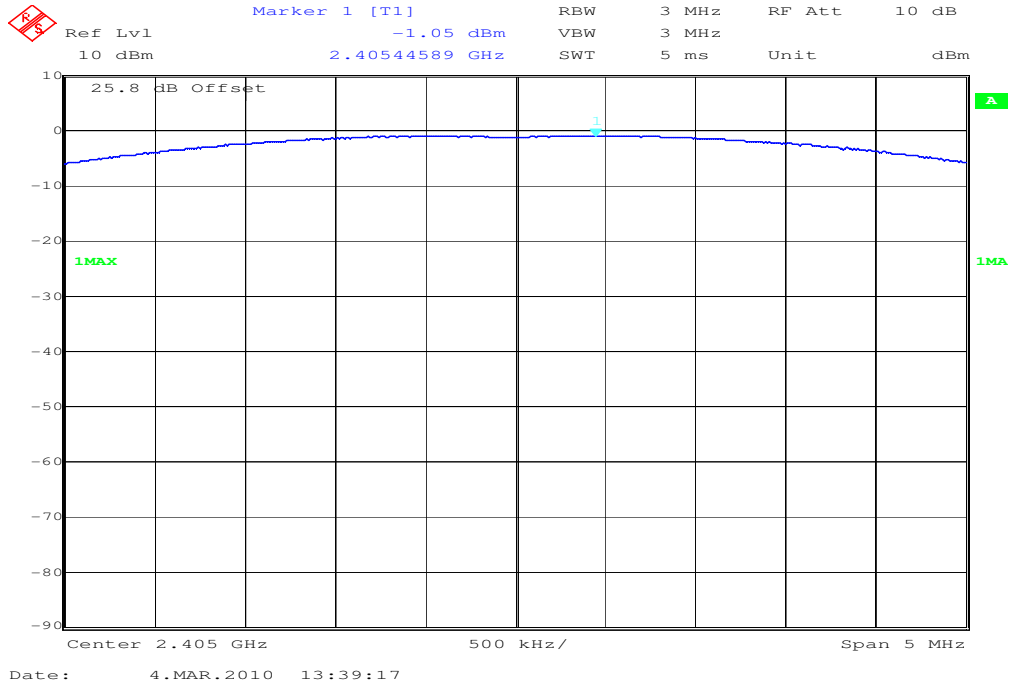
Measured at a distance of 3m

Limits:

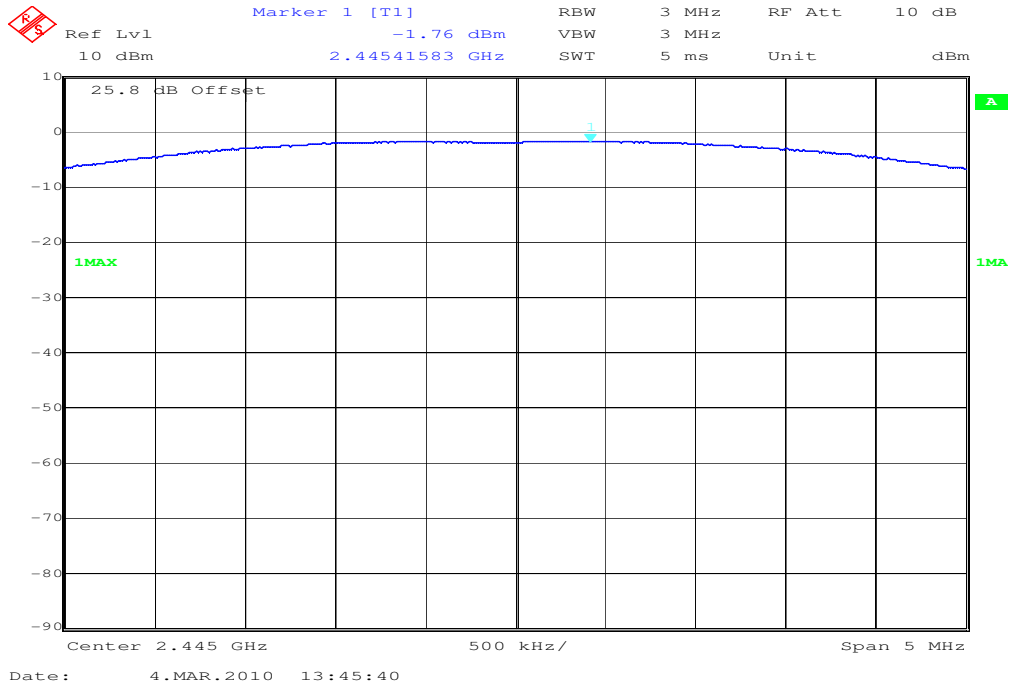
Under normal test conditions only, for frequency range 2400-2483.5 MHz	Max. 1.0 Watt
--	---------------

Plots of measurements

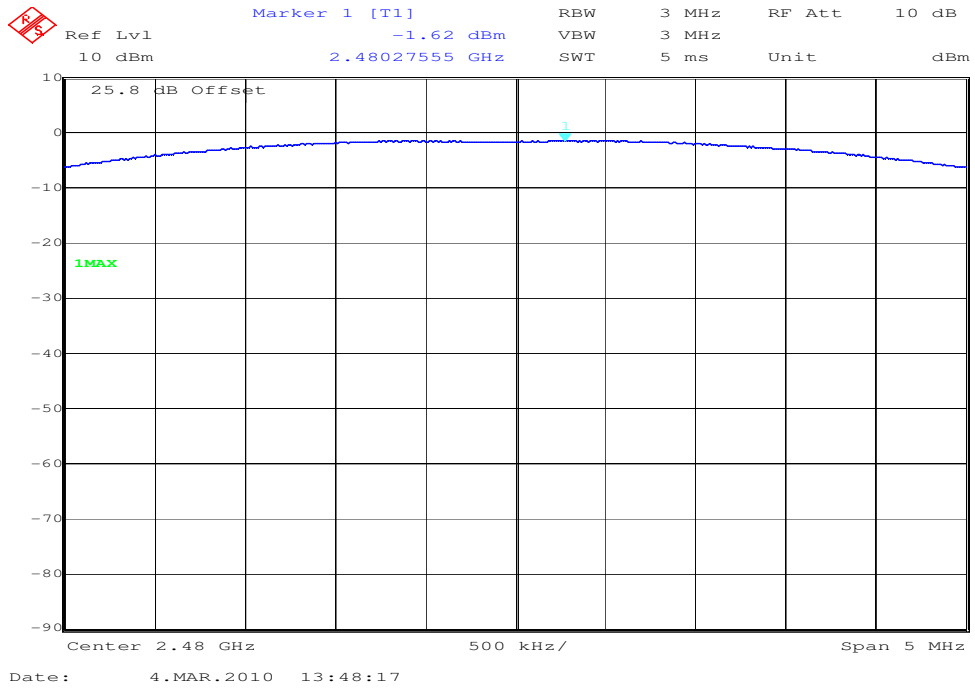
Plot 1: Lowest channel



Plot 2: Middle channel



Plot 3: Highest channel



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

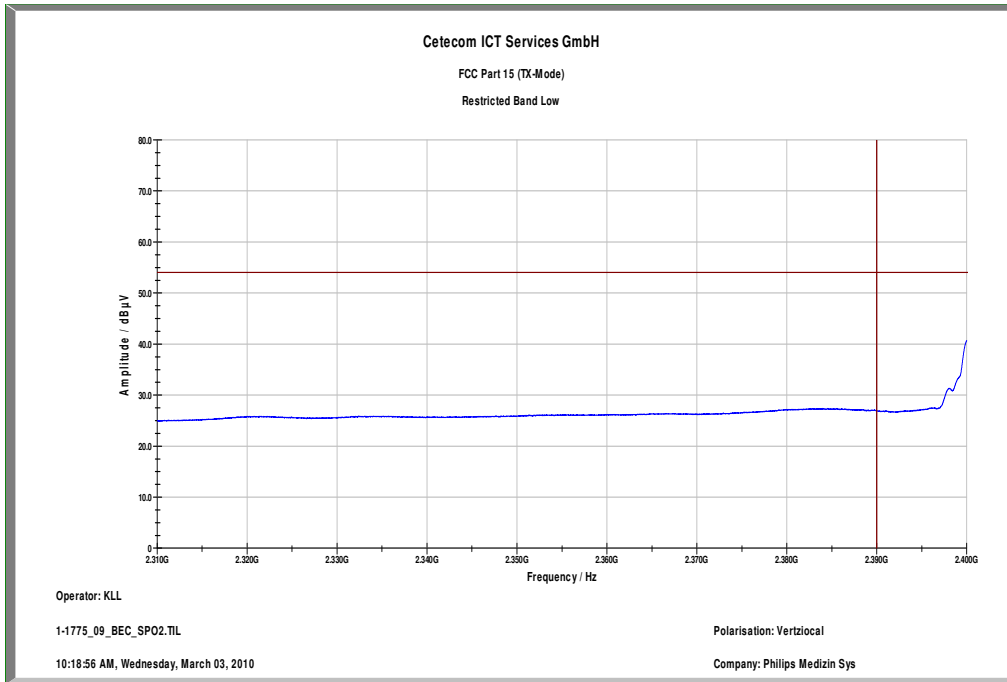
Not performed

(see test report 1-1775-01-08/09)

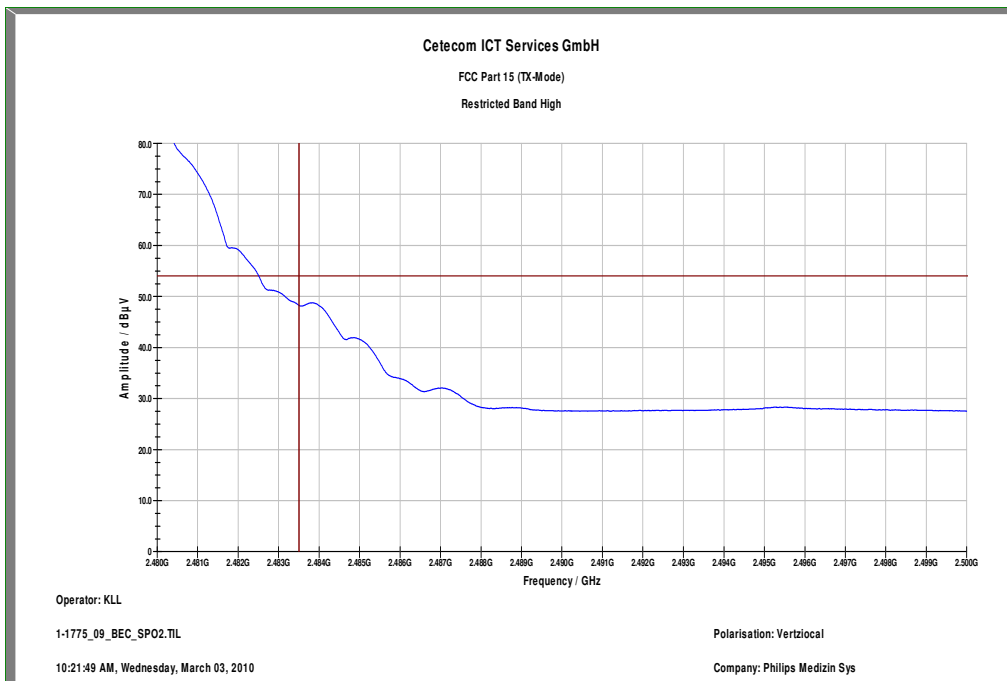
5.13 Band-edge compliance of radiated emissions §15.205

5.13.1 Single SRR Module 865215

Plot 1: Restricted band low

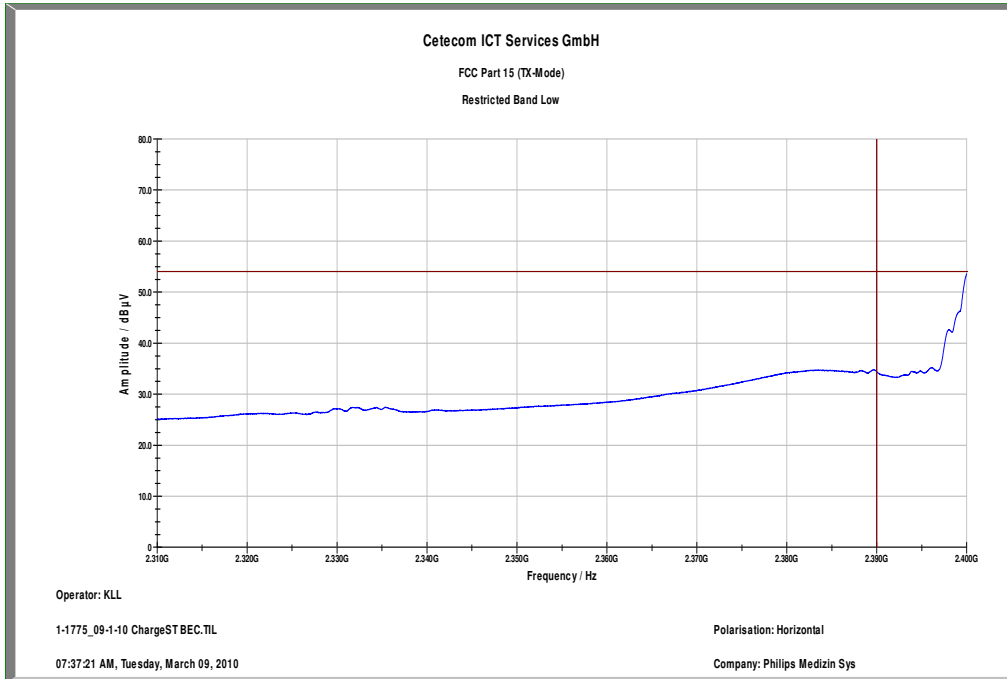


Plot 2: Restricted band high

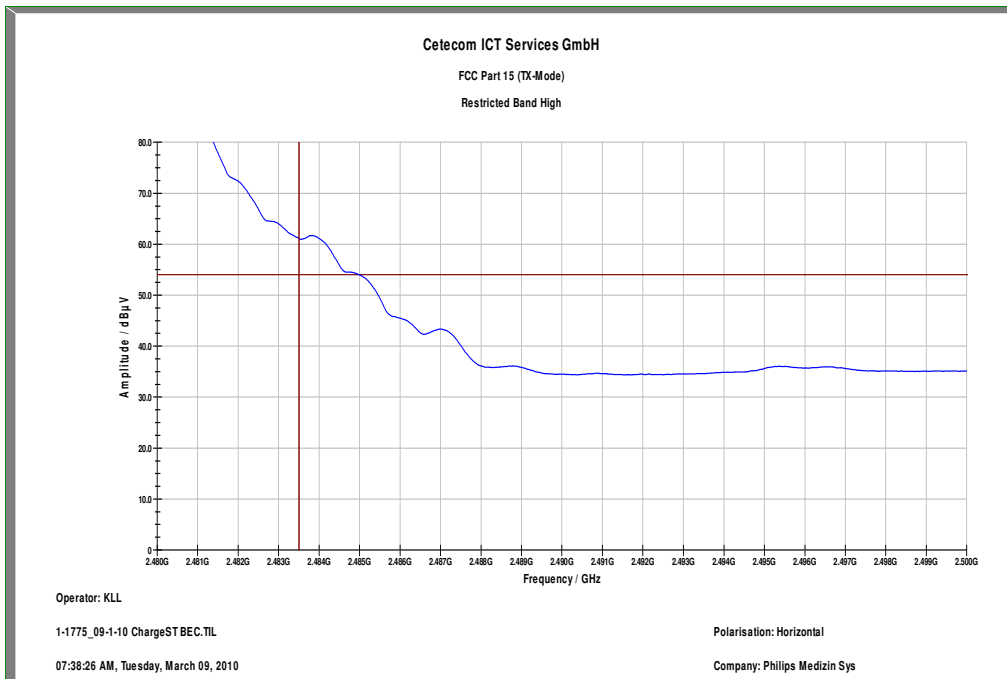


5.13.2 Single SRR Module 865220

Plot 1: Restricted band low



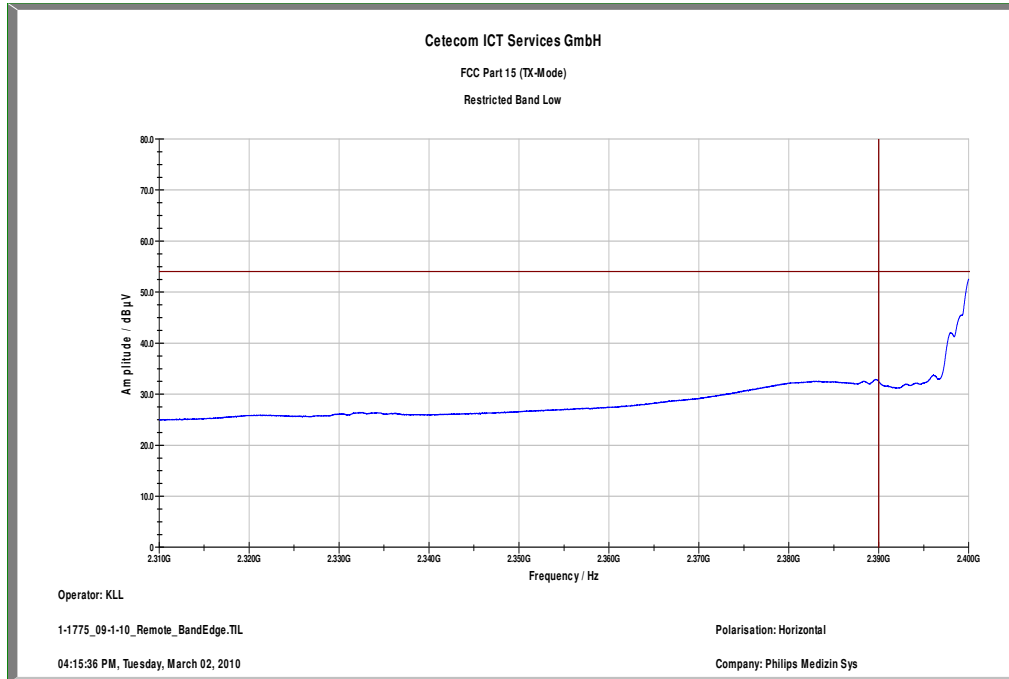
Plot 2: Restricted band high



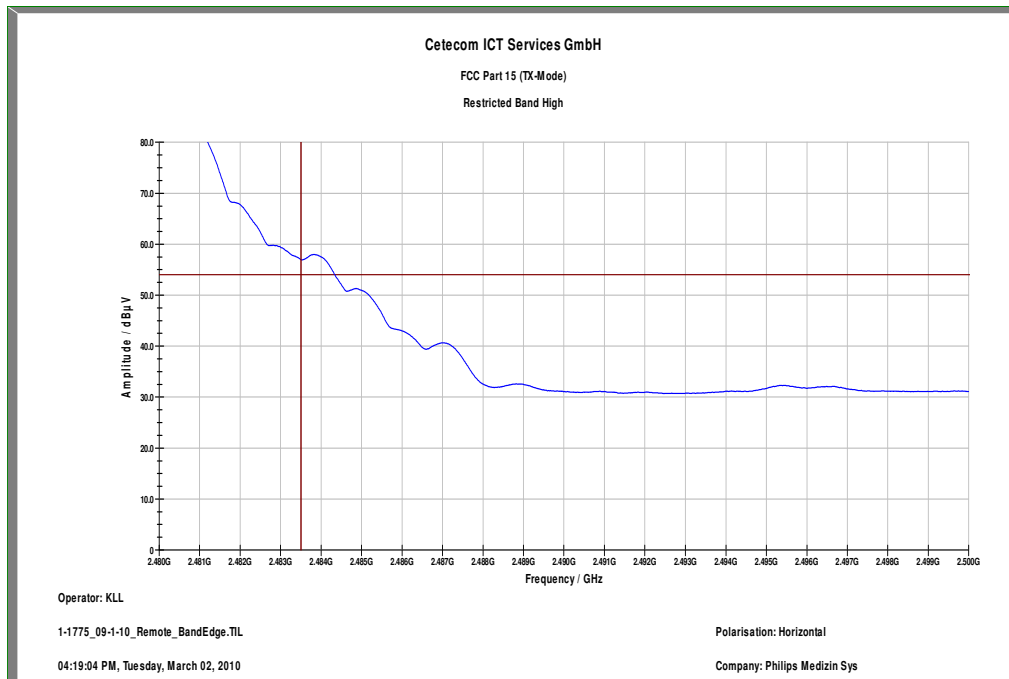
From the manufacturer declared normal use duty cycle = 13.3%
 Duty cycle correction factor = $20 \cdot \log(\text{TX_time}@100\text{ms}/100\text{ms}) = -17.52\text{dB}$
 Highest measured value in the restricted band = $62.33\text{dB}\mu\text{V/m}$
 Highest value in the restricted band = $44.8\text{dB}\mu\text{V/m}$

5.13.3 Single SRR Module 865244

Plot 1: Restricted band low



Plot 2: Restricted band high



From the manufacturer declared normal use duty cycle = 17.024%
 Duty cycle correction factor = $20 \cdot \log(\text{TX_time@100ms}/100\text{ms}) = -15.38\text{dB}$
 Highest measured value in the restricted band = 57.80dBµV/m
 Highest value in the restricted band = 42.4dBµV/m

5.14 Spurious Emissions - conducted (Transmitter) § 15.247 (c)(1)

Not performed

(see test report 1-1775-01-08/09)

5.15 Spurious Emissions > 30 MHz- radiated (Transmitter) § 15.247 (c)(1)

5.15.1 Single SRR Module 865215

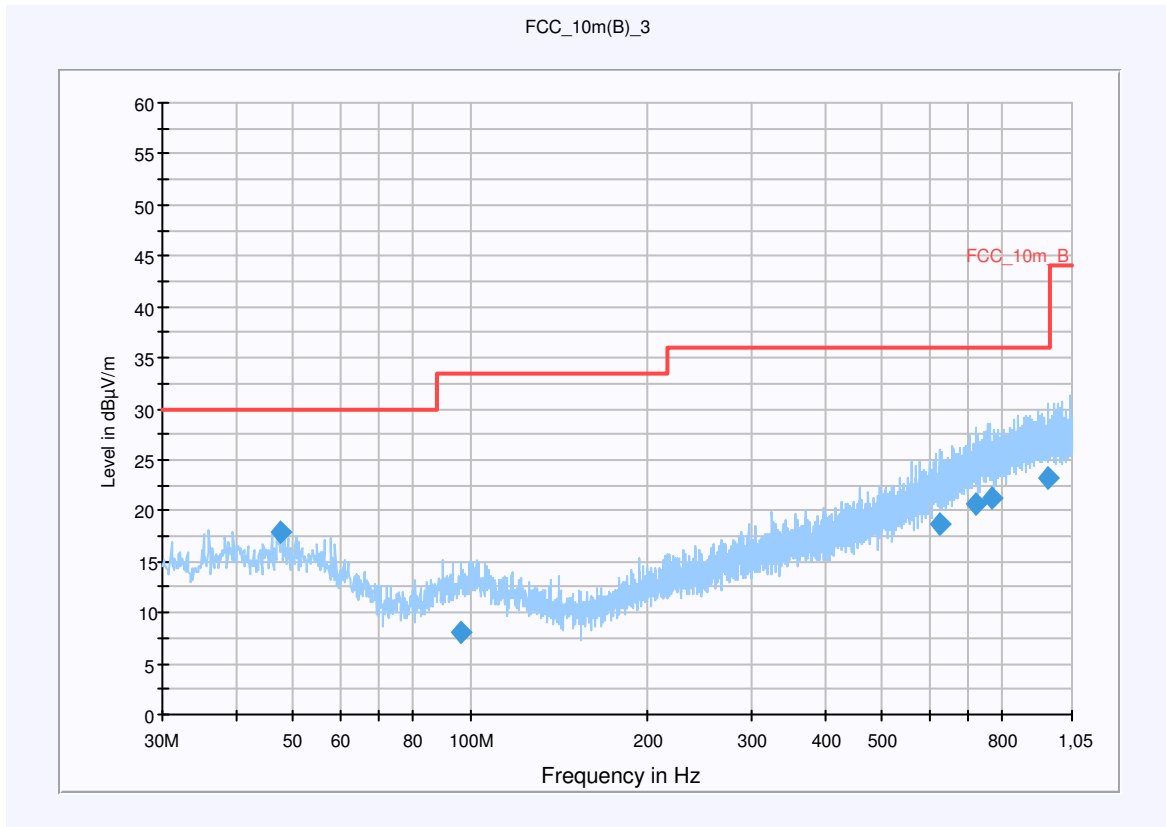
Plot 1: 0.03 - 1 GHz (lowest channel) Halle F

EUT: IntelliVue CL SpO2 Pod
 Serial Number: PN: 865215 SN: DE932Y0151
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX Channel 11
 Operator Name: Klos
 Comment: powered with battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)

Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 0 MHz - 1.05 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
47.792100	18.0	15000.000	120.000	98.0	V	-5.0	13.5	12.0	30.0	
96.651750	8.0	15000.000	120.000	130.0	H	55.0	11.8	25.5	33.5	
626.154450	18.7	15000.000	120.000	220.0	H	243.0	21.5	17.3	36.0	
720.431250	20.7	15000.000	120.000	154.0	V	23.0	23.5	15.3	36.0	
764.743800	21.2	15000.000	120.000	190.0	H	109.0	24.2	14.8	36.0	
953.344500	23.1	15000.000	120.000	153.0	V	173.0	25.9	12.9	36.0	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

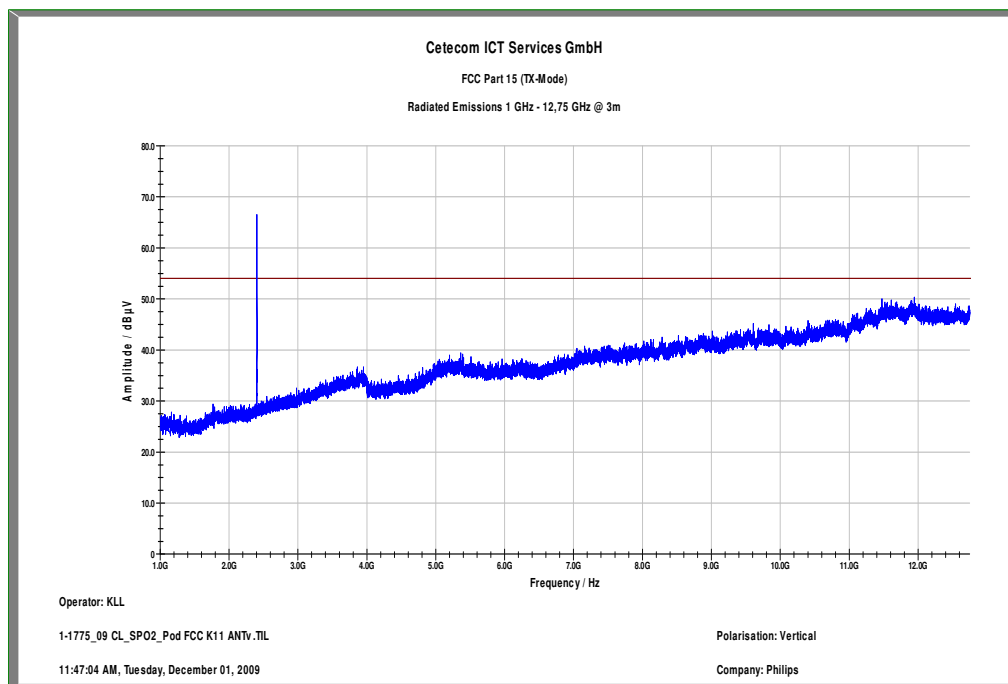
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

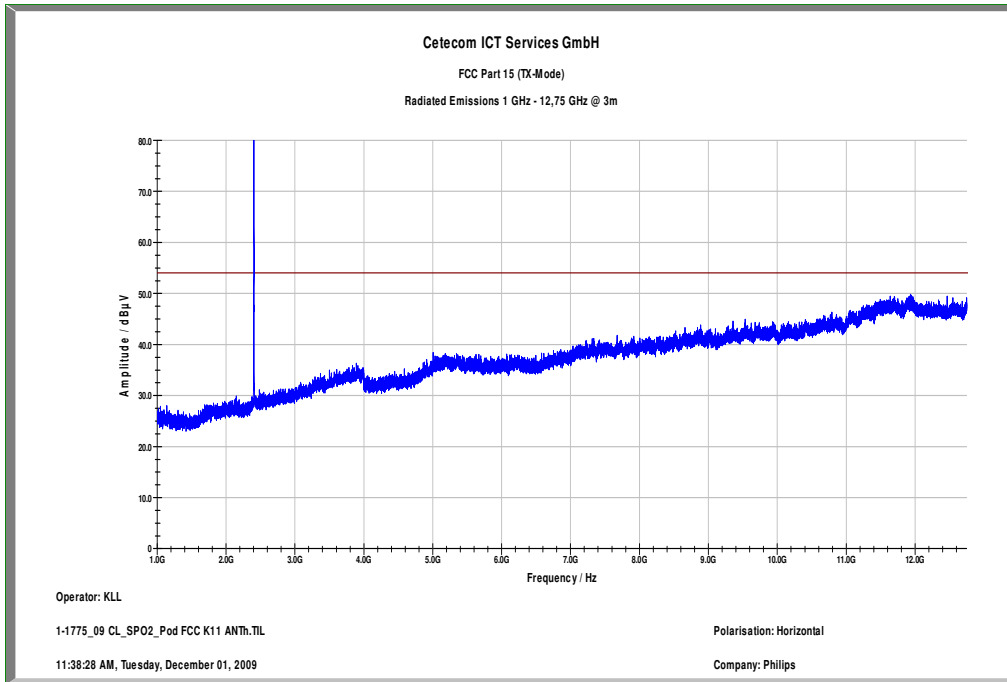
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

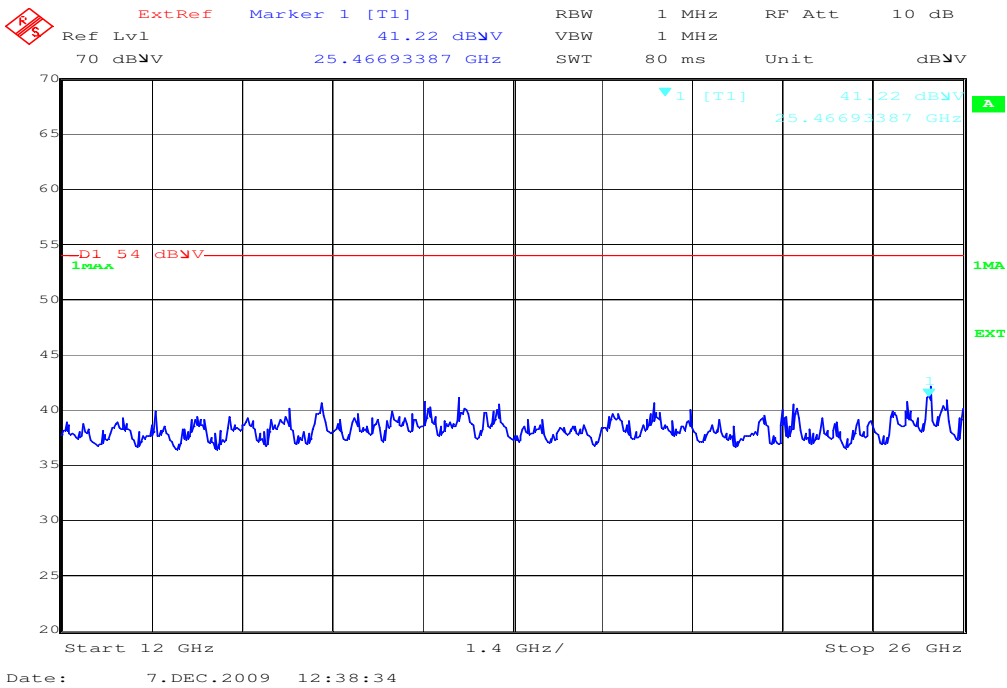
Plot 2: 1 -13 GHz vertical (lowest channel)



Plot 3: 1 -13 GHz horizontal (lowest channel)



Plot 4: 12 - 25 GHz vertical/horizontal (valid for all channels)

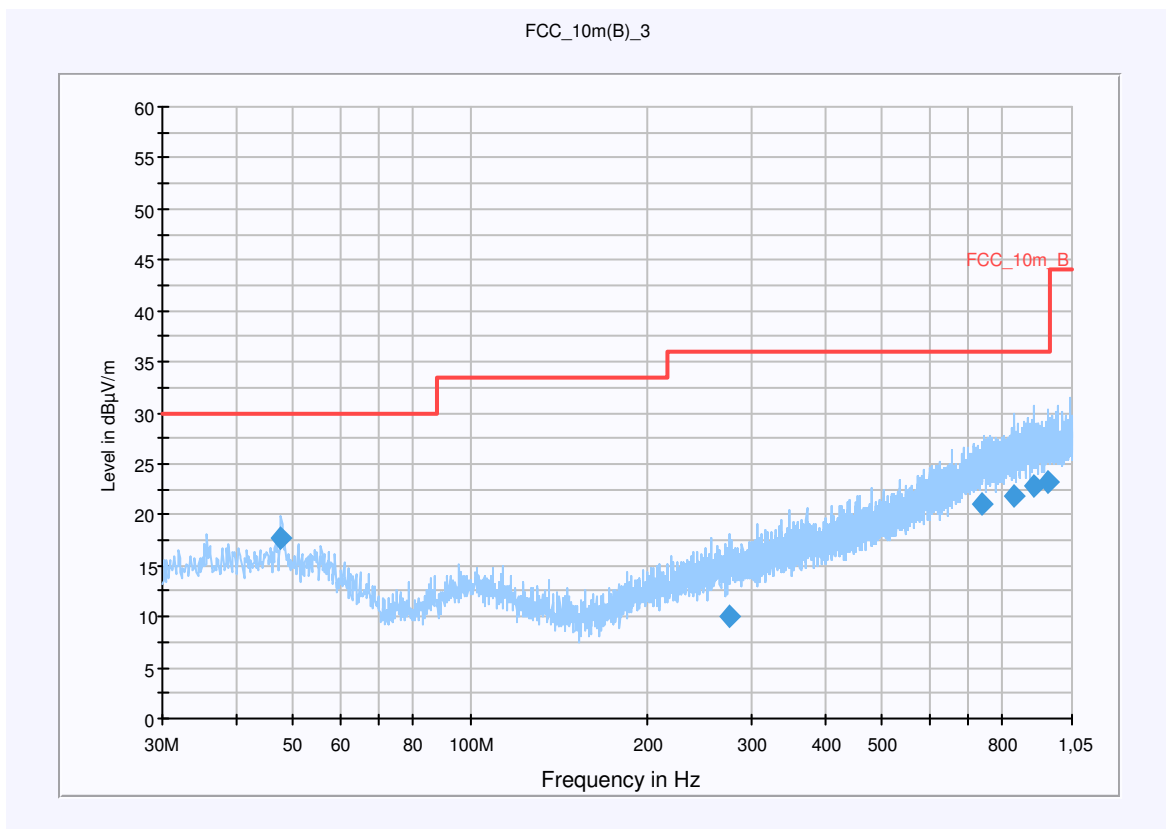


Plot 5: 0.03 - 1 GHz (middle channel) Halle F

EUT: IntelliVue CL SpO2 Pod
 Serial Number: PN: 865215 SN: DE932Y0151
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX Channel 19
 Operator Name: Klos
 Comment: powered with battery

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 1.05 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
47.804100	17.7	15000.000	120.000	159.0	V	298.0	13.5	12.3	30.0	
275.653800	9.9	15000.000	120.000	220.0	H	297.0	14.2	26.1	36.0	
735.555000	21.0	15000.000	120.000	220.0	V	15.0	23.8	15.0	36.0	
838.556250	21.9	15000.000	120.000	220.0	H	246.0	24.9	14.1	36.0	
907.430700	22.8	15000.000	120.000	220.0	H	41.0	25.7	13.2	36.0	
958.602150	23.2	15000.000	120.000	220.0	V	198.0	25.9	12.8	36.0	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

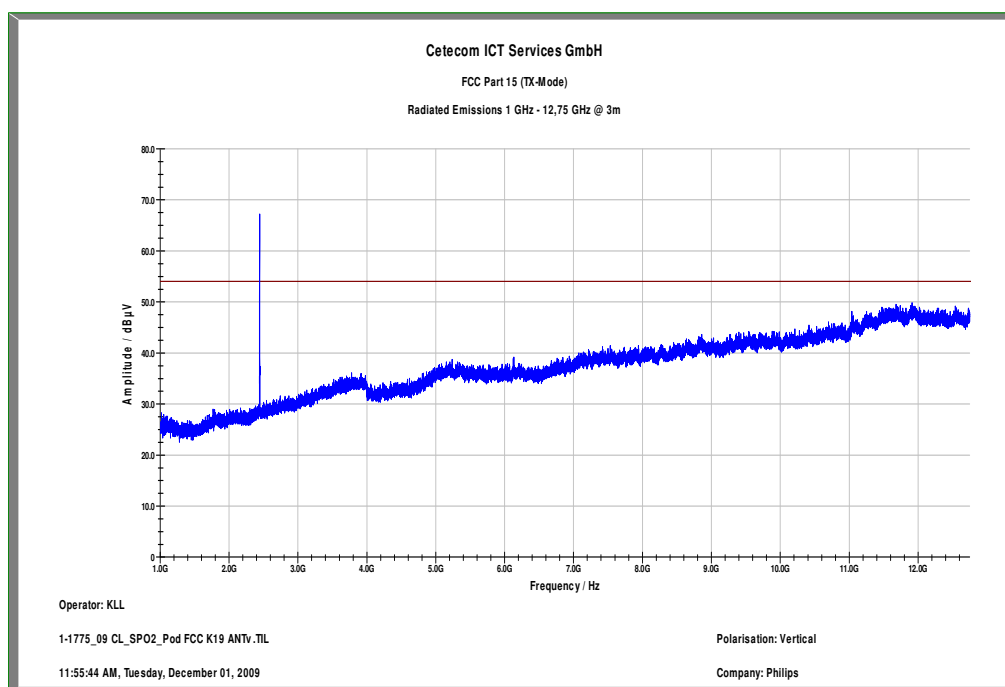
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

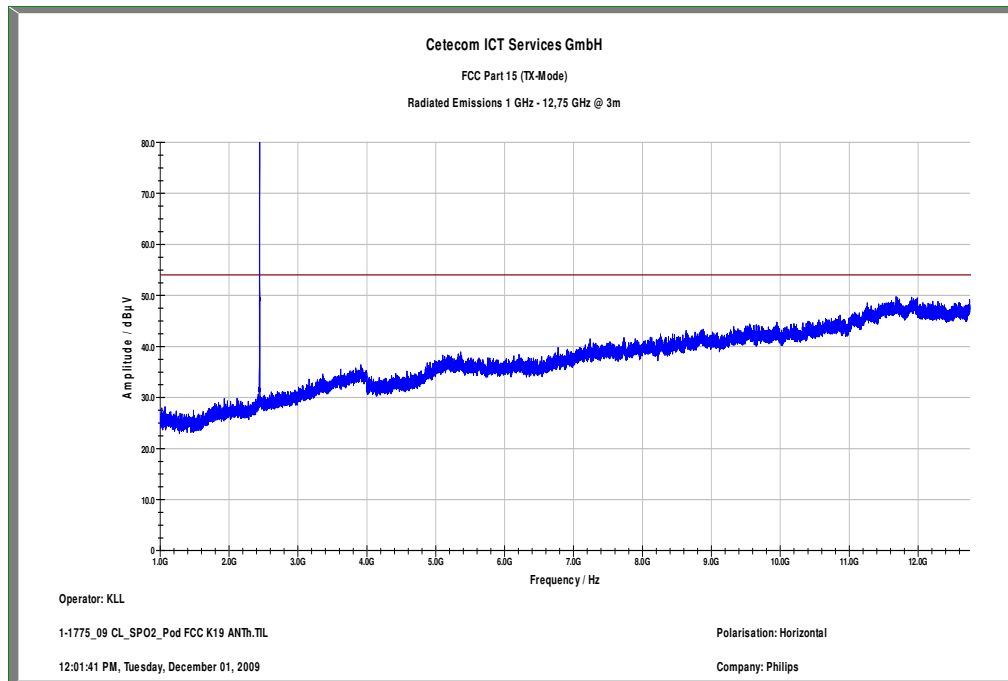
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

Plot 6: 1 -13 GHz vertical (middle channel)



Plot 7: 1 -13 GHz horizontal (middle channel)



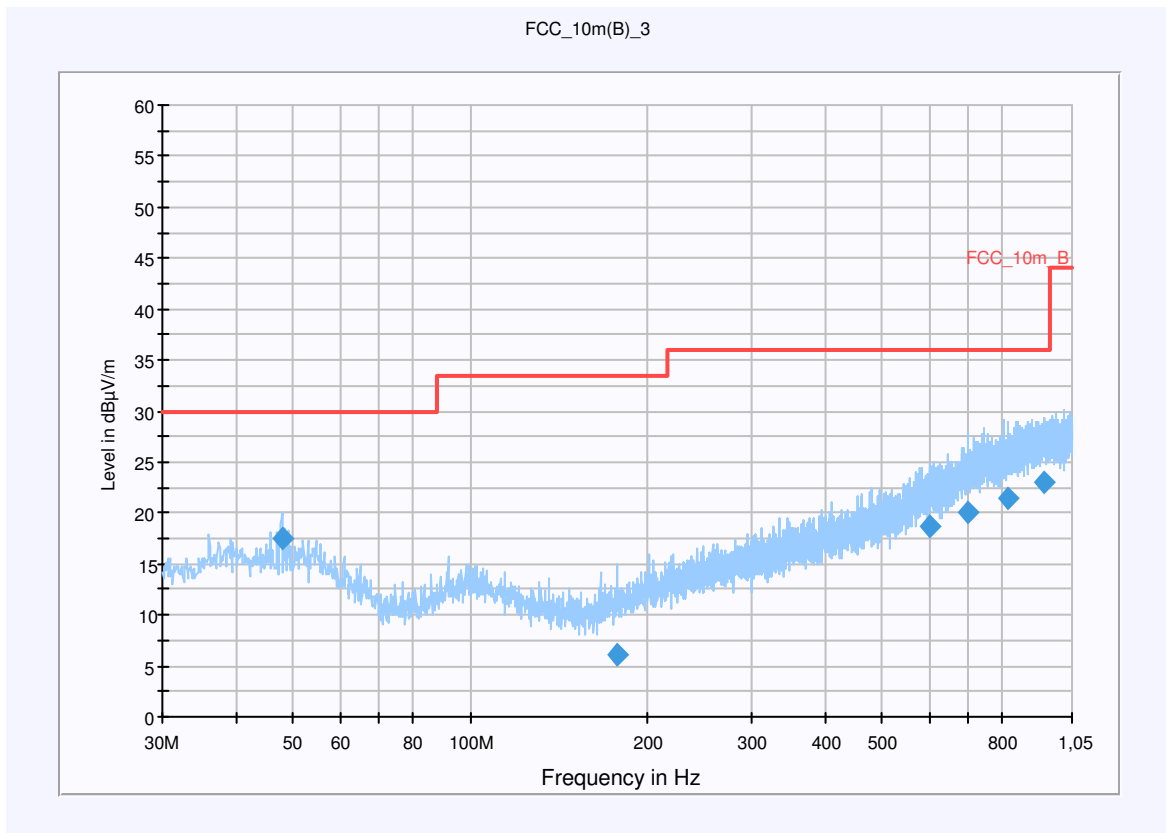
Plot 8: 0.03 - 1 GHz (highest channel) Halle F

EUT: IntelliVue CL SpO2 Pod
 Serial Number: PN: 865215 SN: DE932Y0151
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX Channel 26
 Operator Name: Klos
 Comment: powered with battery

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1.05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
47.811000	17.5	15000.000	120.000	98.0	V	183.0	13.5	12.5	30.0	
178.033950	6.1	15000.000	120.000	220.0	H	192.0	10.6	27.4	33.5	
600.990150	18.6	15000.000	120.000	195.0	H	313.0	21.4	17.4	36.0	
699.592050	20.0	15000.000	120.000	220.0	H	290.0	23.0	16.0	36.0	
814.436100	21.5	15000.000	120.000	220.0	H	324.0	24.5	14.5	36.0	
939.879600	23.0	15000.000	120.000	98.0	V	103.0	25.8	13.0	36.0	

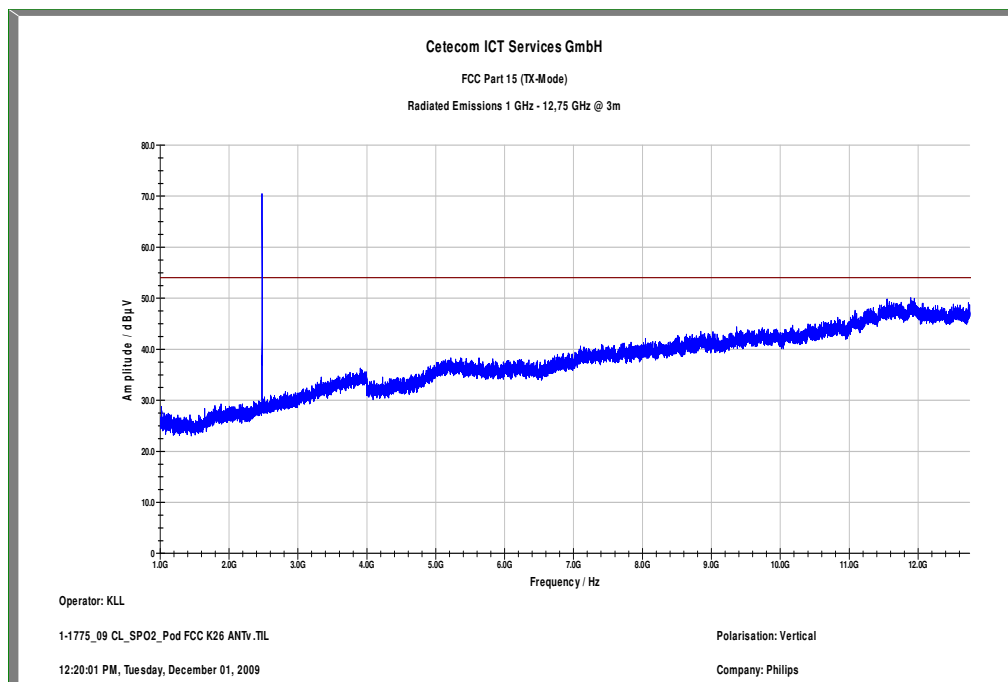
Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1

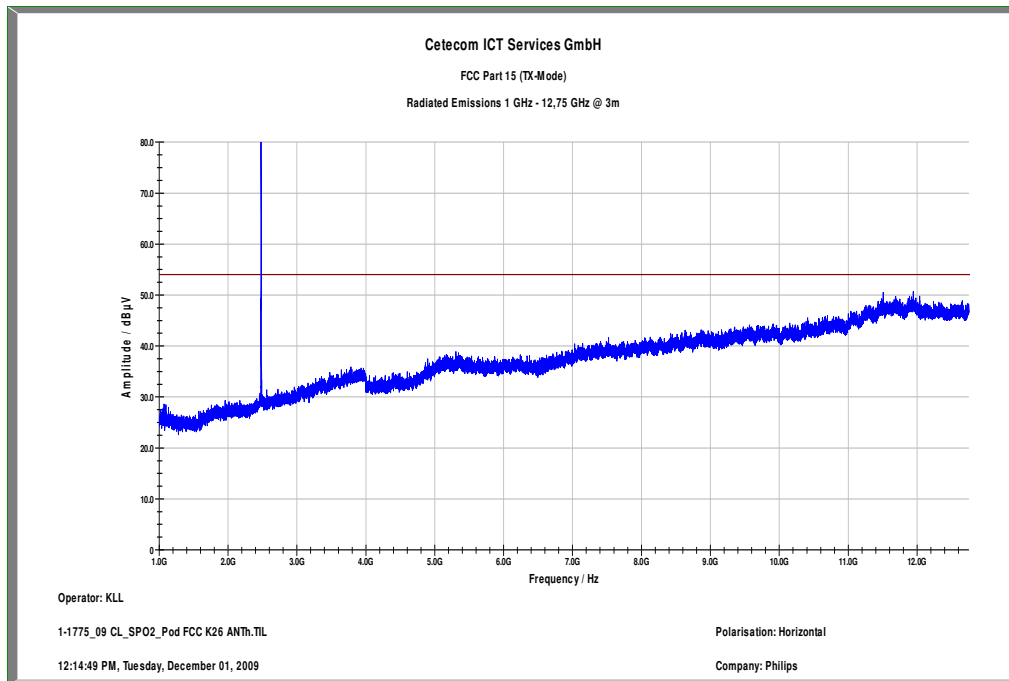
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0909)
Antenna Tower:	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 -13 GHz vertical (highest channel)



Plot 10: 1 -13 GHz horizontal (highest channel)



Results:

SPURIOUS EMISSIONS LEVEL (dB μ V/m)								
2405 MHz			2445 MHz			2480 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: 1 MHz/VBW: 10 Hz

- (v) = measurement antenna vertical
- (h) = measurement antenna horizontal

Azimuth scan DUT position 0° and 90°

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: § 15.209

Frequency [MHz]	Field strength [μ V/m]	Measurement distance (m)
30 - 88	100 (40 dB μ V/m)	3
88 - 216	150 (43.5 dB μ V/m)	3
216 - 960	200 (46 dB μ V/m)	3
above 960	500 (54 dB μ V/m)	3

5.15.2 Single SRR Module 865220

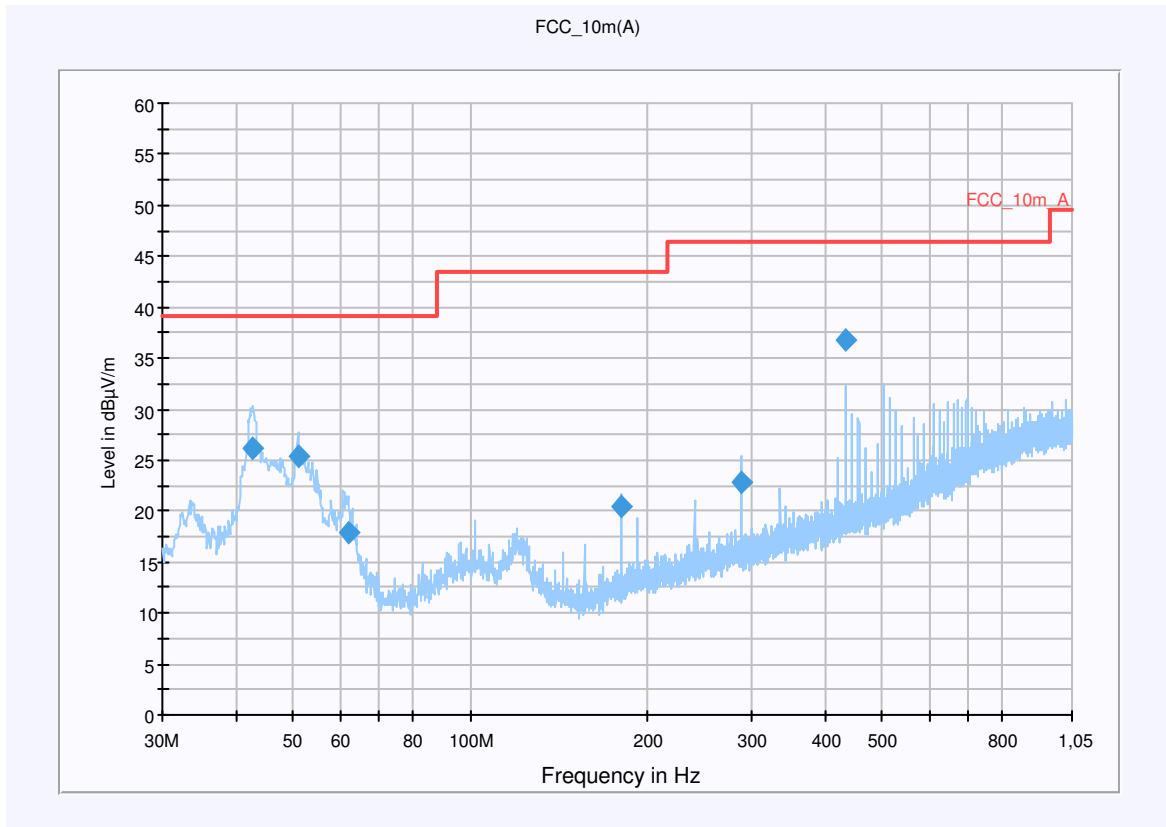
Plot 1: 0.03 - 1 GHz (lowest channel) Halle F

EUT: IntelliVue CL Charging Station
 Serial Number: PN: 865220 SN: DE932Y0086
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX CH 11
 Operator Name: Lang
 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 - 1.05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
42.780000	26.2	15000.000	120.000	100.0	V	87.0	13.3	12.9	39.1	
51.000000	25.3	15000.000	120.000	100.0	V	307.0	13.3	13.8	39.1	
61.972050	17.9	15000.000	120.000	260.0	V	161.0	11.1	21.2	39.1	
179.993100	20.4	15000.000	120.000	100.0	V	-3.0	10.4	23.1	43.5	
287.991750	22.7	15000.000	120.000	300.0	H	33.0	14.1	23.7	46.4	
432.004050	36.8	15000.000	120.000	200.0	H	158.0	17.4	9.6	46.4	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

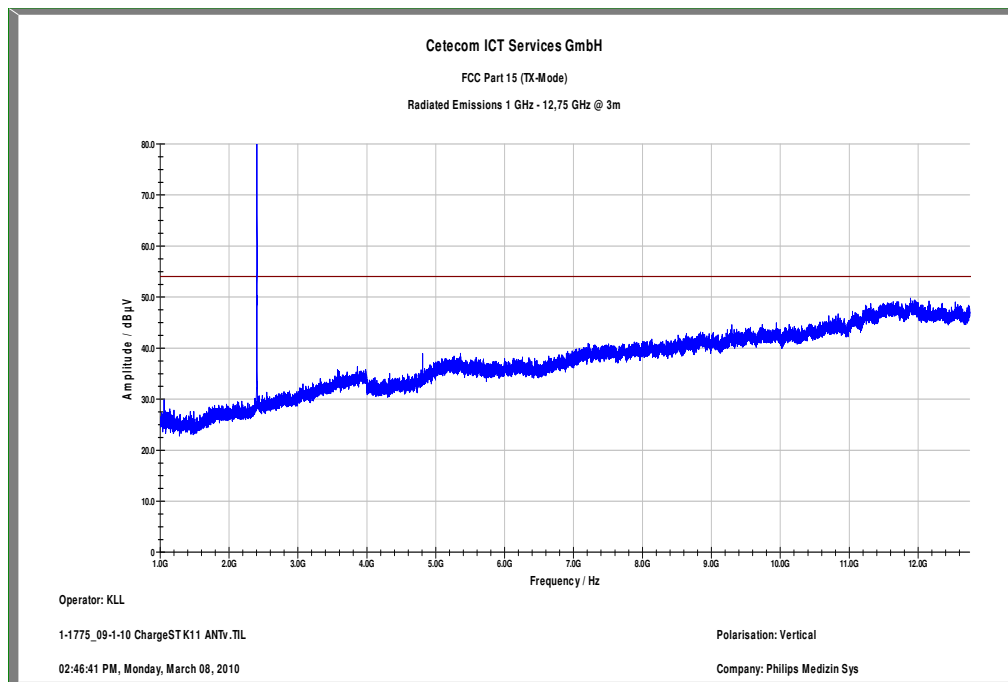
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

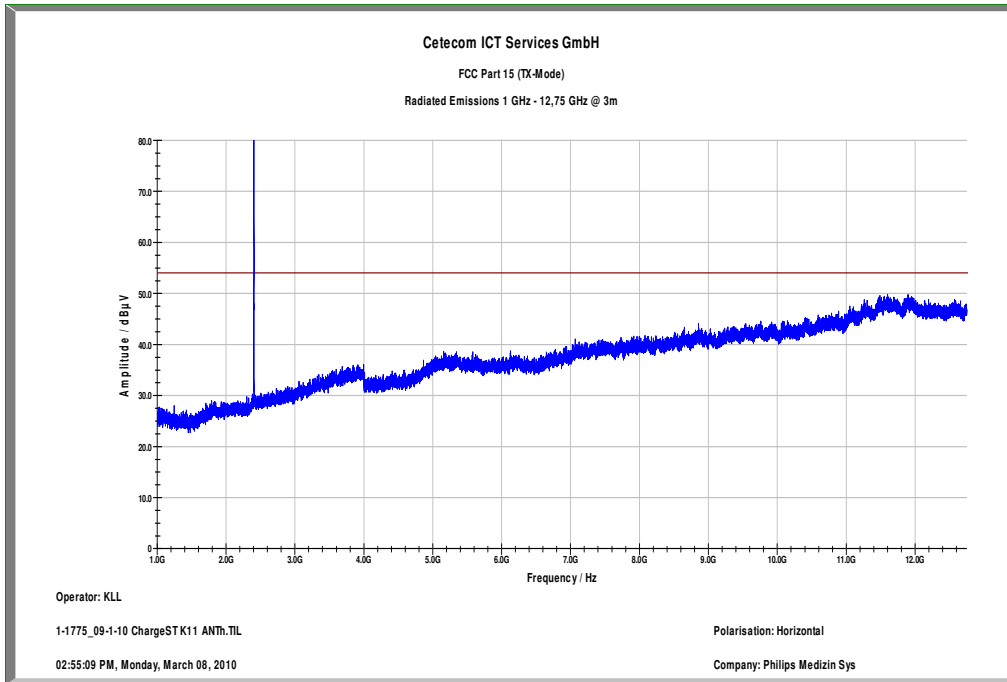
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

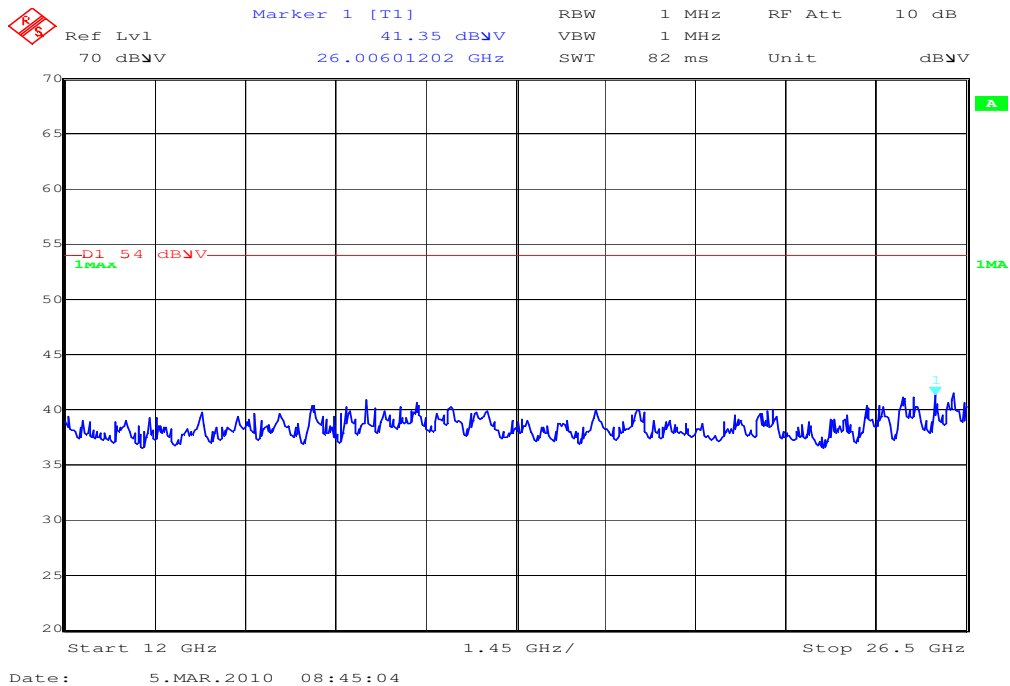
Plot 2: 1 -13 GHz vertical (lowest channel)



Plot 3: 1 -13 GHz horizontal (lowest channel)



Plot 4: 12 - 25 GHz vertical/horizontal (valid for all channels)



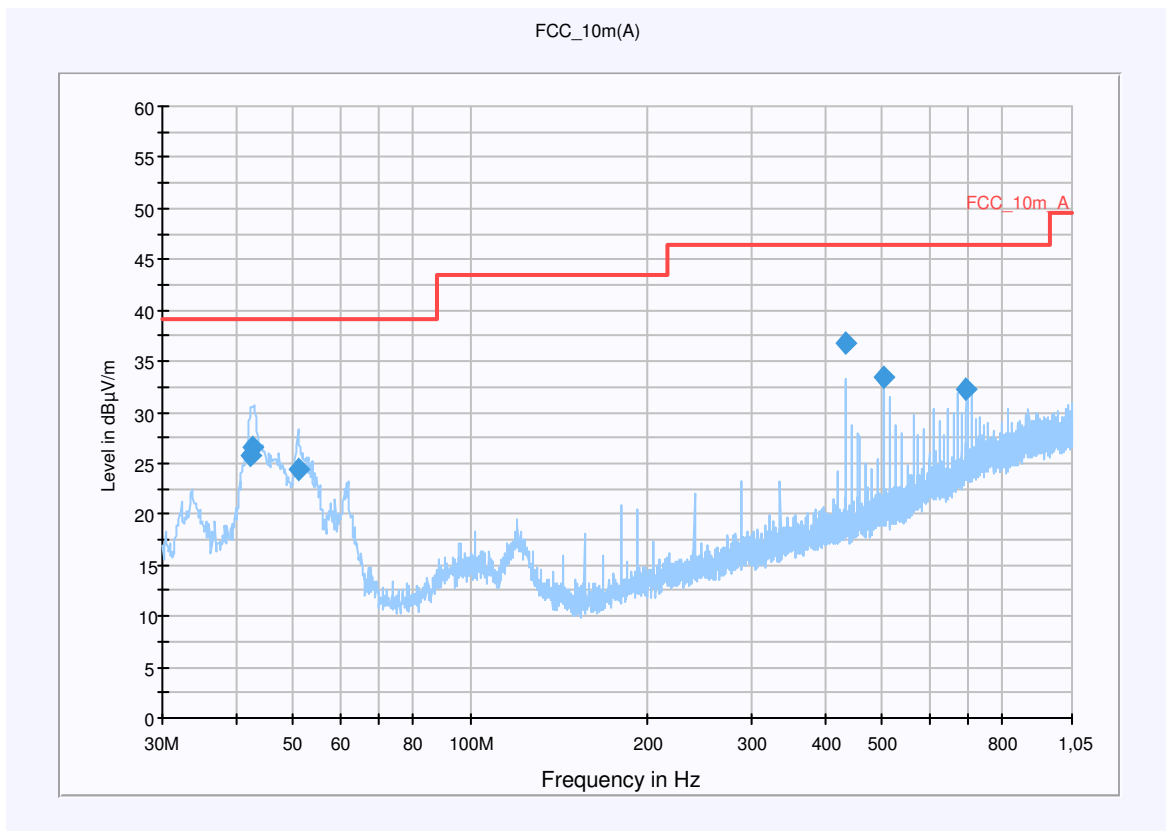
Plot 5: 0.03 - 1 GHz (middle channel) Halle F

EUT: IntelliVue CL Charging Station
 Serial Number: PN: 865220 SN: DE932Y0086
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX CH 19
 Operator Name: Lang
 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 - 1.05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
42.487200	25.7	15000.000	120.000	149.0	V	138.0	13.3	13.4	39.1	
42.699450	26.5	15000.000	120.000	98.0	V	107.0	13.3	12.6	39.1	
50.956350	24.4	15000.000	120.000	98.0	V	269.0	13.3	14.7	39.1	
432.008250	36.8	15000.000	120.000	200.0	H	155.0	17.4	9.6	46.4	
504.015300	33.4	15000.000	120.000	150.0	H	140.0	18.8	13.0	46.4	
695.990850	32.3	15000.000	120.000	124.0	H	273.0	22.3	14.1	46.4	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

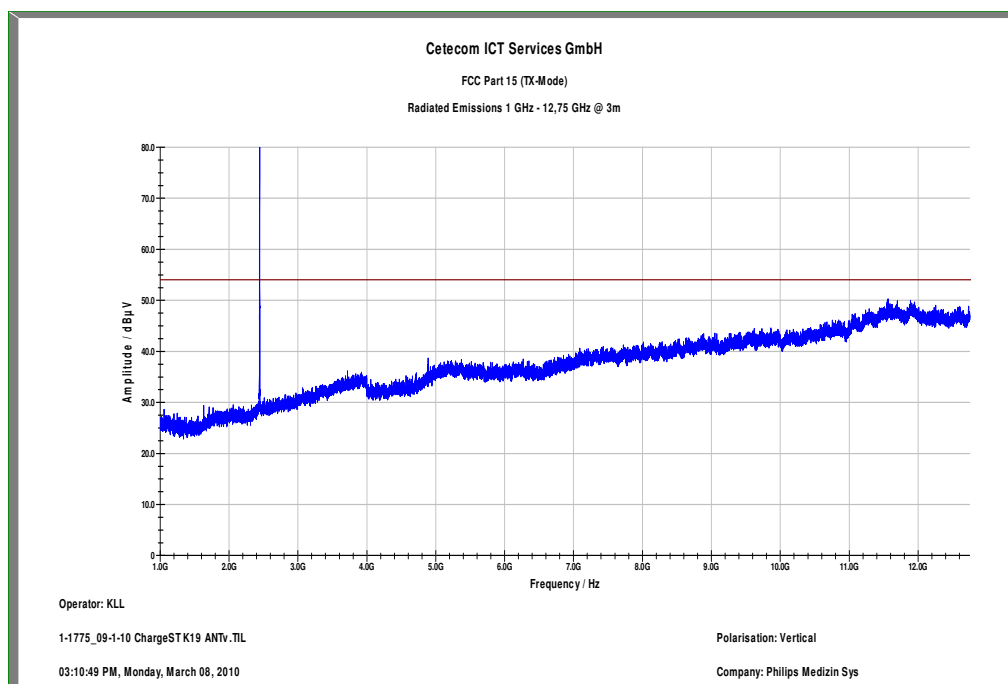
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

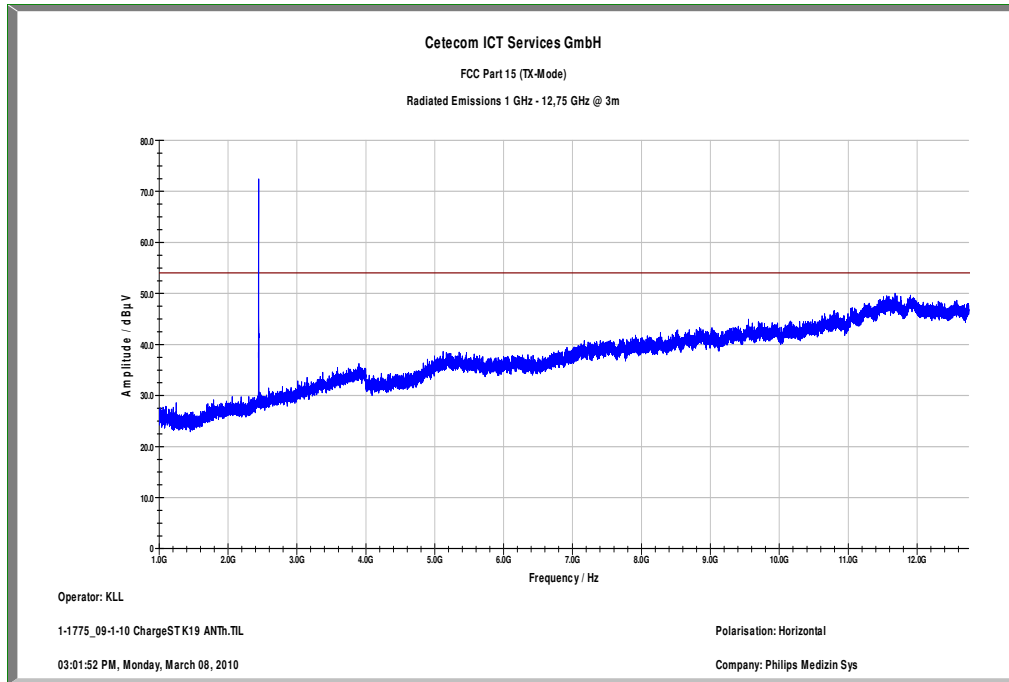
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

Plot 6: 1 -13 GHz vertical (middle channel)



Plot 7: 1 -13 GHz horizontal (middle channel)



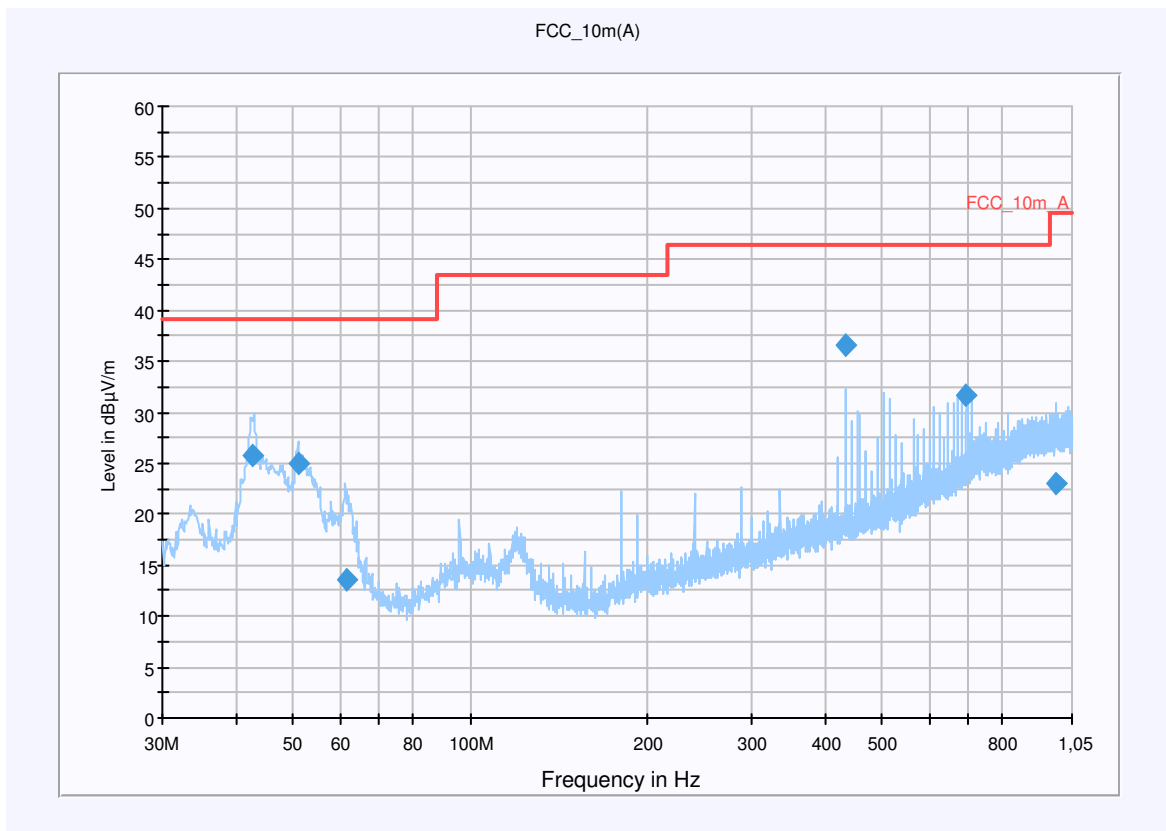
Plot 8: 0.03 - 1 GHz (highest channel) Halle F

EUT: IntelliVue CL Charging Station
 Serial Number: PN: 865220 SN: DE932Y0086
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX CH 26
 Operator Name: Lang
 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 - 1.05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
42.807300	25.7	15000.000	120.000	100.0	V	112.0	13.3	13.4	39.1	
51.000150	25.0	15000.000	120.000	100.0	V	323.0	13.3	14.1	39.1	
61.646250	13.7	15000.000	120.000	400.0	V	184.0	11.2	25.4	39.1	
431.981550	36.5	15000.000	120.000	200.0	H	161.0	17.4	9.9	46.4	
696.001050	31.7	15000.000	120.000	126.0	H	304.0	22.3	14.7	46.4	
987.409350	23.1	15000.000	120.000	186.0	V	271.0	25.7	26.4	49.5	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

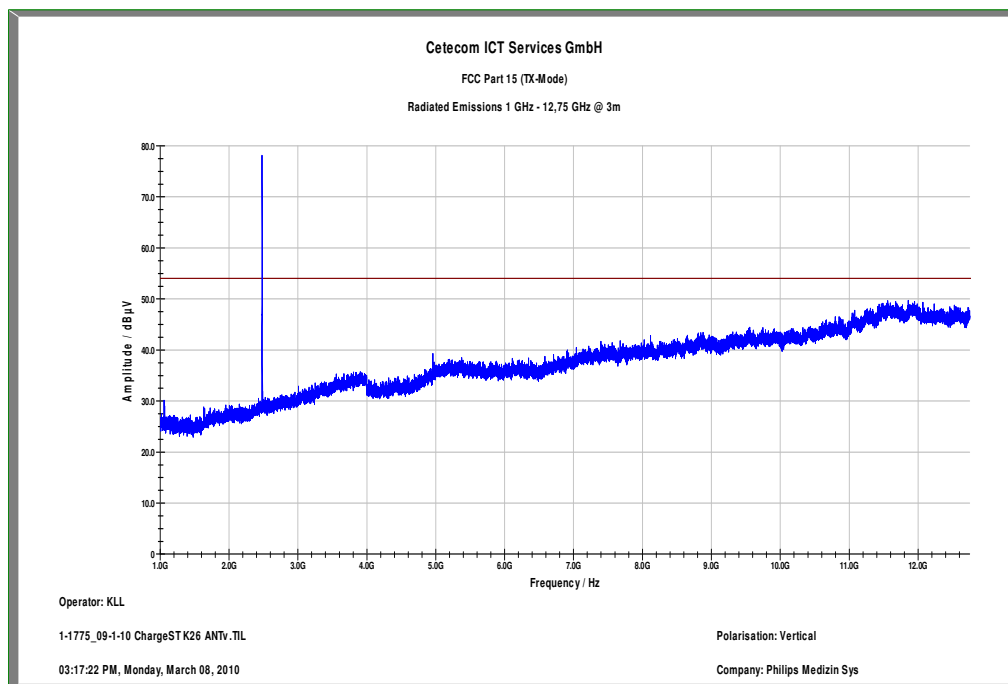
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

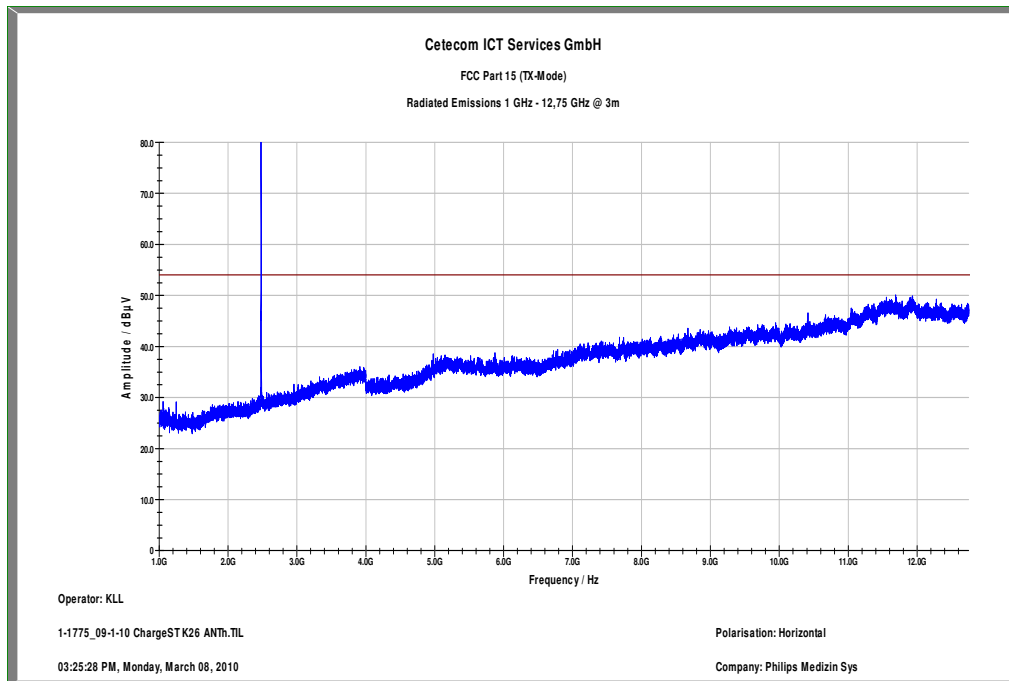
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

Plot 9: 1 -13 GHz vertical (highest channel)



Plot 10: 1 -13 GHz horizontal (highest channel)



Results:

SPURIOUS EMISSIONS LEVEL (dB μ V/m)								
2405 MHz			2445 MHz			2480 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]
4810.0	Pk	39.6	No critical peaks detected			4960.0	Pk	40.3
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW: 1 MHz/VBW: 10 Hz

(v) = measurement antenna vertical
 (h) = measurement antenna horizontal

Azimuth scan DUT position 0° and 90°

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: § 15.209

Frequency [MHz]	Field strength [μ V/m]	Measurement distance (m)
30 - 88	100 (40 dB μ V/m)	3
88 - 216	150 (43.5 dB μ V/m)	3
216 - 960	200 (46 dB μ V/m)	3
above 960	500 (54 dB μ V/m)	3

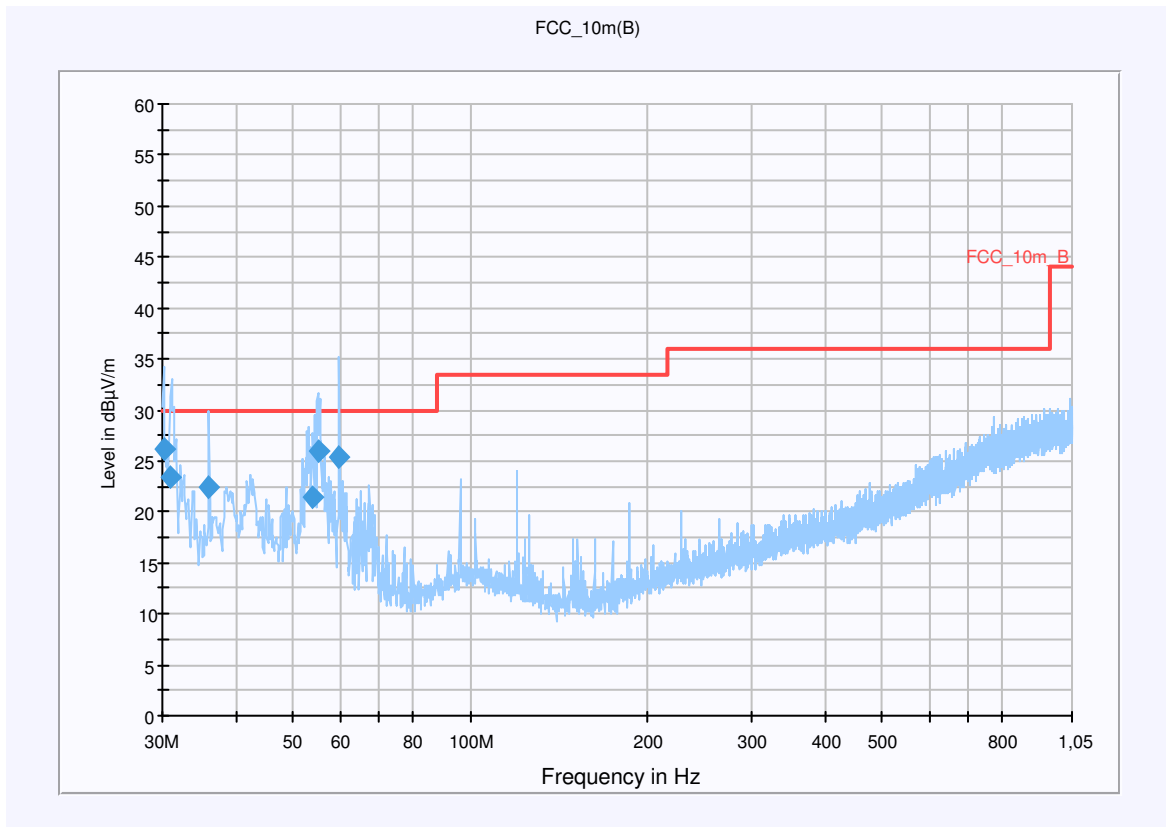
5.15.3 Single SRR Module 865244

Plot 1: 0.03 - 1 GHz vertical (lowest channel) Halle F

EUT: 865244 Remote Control
 Serial Number: PN: 865244 S/N: EP1#11
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX CH 11
 Operator Name: Lang
 Comment: Battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 1.05 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
30.164779	26.2	15000.000	120.000	360.0	V	313.0	12.5	3.8	30.0	
31.020150	23.4	15000.000	120.000	100.0	V	64.0	12.6	6.6	30.0	
36.042750	22.4	15000.000	120.000	200.0	V	40.0	13.1	7.6	30.0	
54.085350	21.4	15000.000	120.000	200.0	V	268.0	13.0	8.6	30.0	
55.101750	25.9	15000.000	120.000	305.0	V	108.0	12.9	4.1	30.0	
59.940150	25.3	15000.000	120.000	282.0	V	301.0	11.6	4.7	30.0	

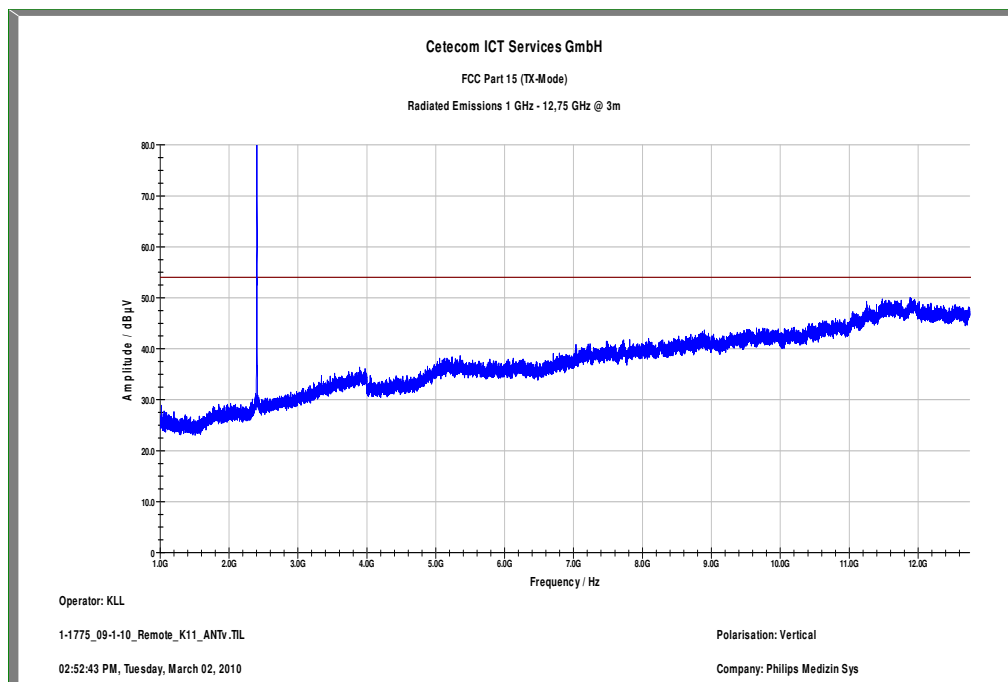
Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1

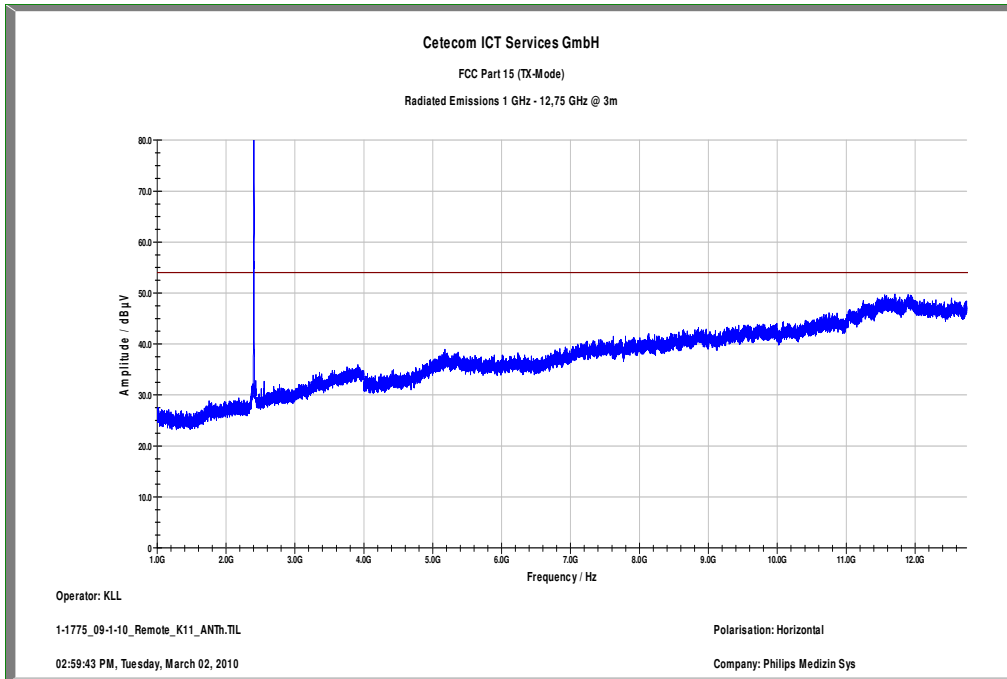
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0909)
Antenna Tower: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

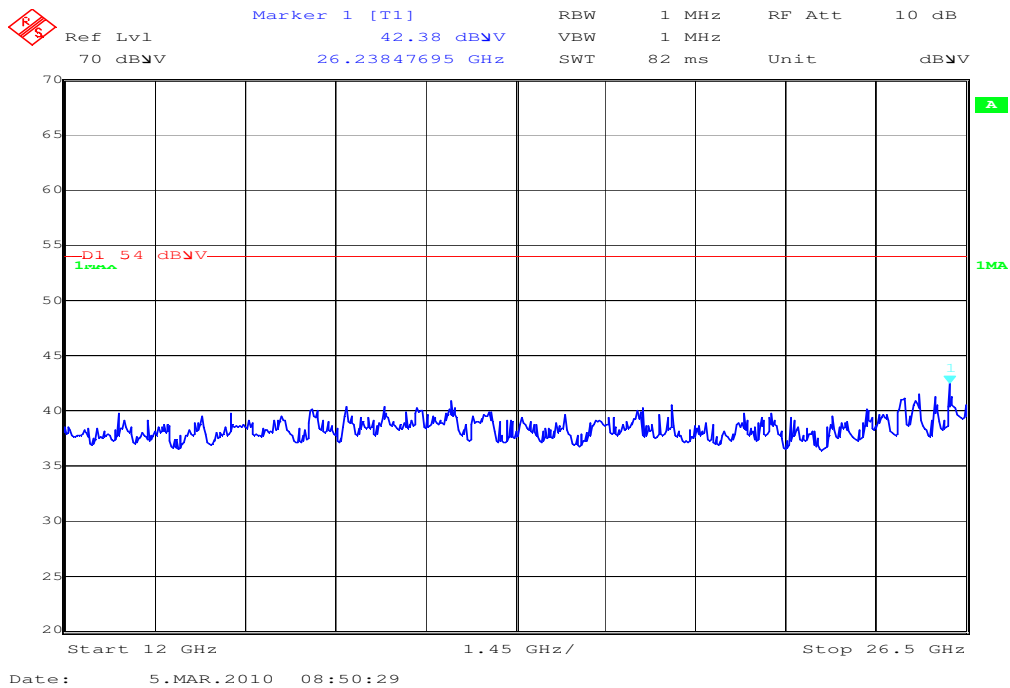
Plot 2: 1 -13 GHz vertical (lowest channel)



Plot 3: 1 -13 GHz horizontal (lowest channel)



Plot 4: 12 - 25 GHz vertical/horizontal (valid for all channels)

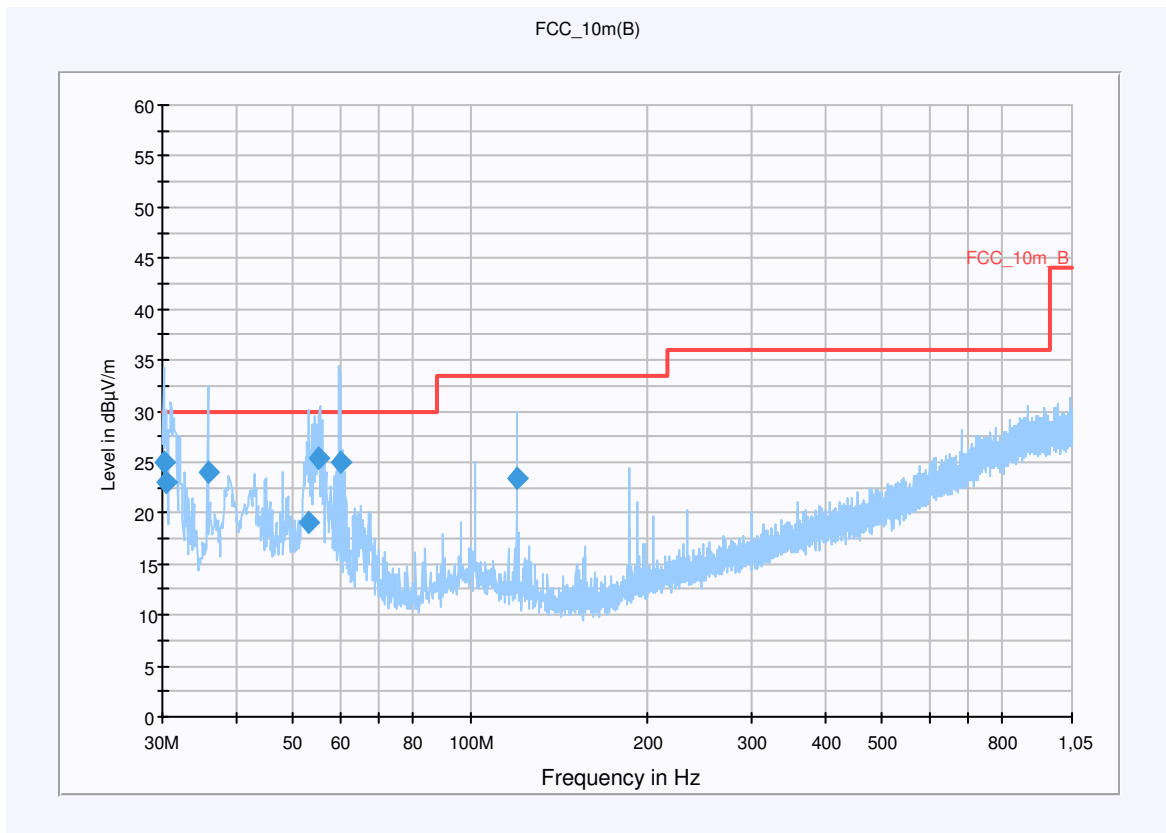


Plot 5: 0.03 - 1 GHz vertical (middle channel) Halle F

EUT: 865244 Remote Control
 Serial Number: PN: 865244 S/N: EP1#11
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX CH 19
 Operator Name: Lang
 Comment: Battery powered

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup: Electric Field (NOS)
 Level Unit: dBµV/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 1.05 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
30.188968	25.1	15000.000	120.000	400.0	V	106.0	12.5	4.9	30.0	
30.530850	23.0	15000.000	120.000	210.0	V	5.0	12.6	7.0	30.0	
35.987400	24.0	15000.000	120.000	108.0	V	304.0	13.1	6.0	30.0	
53.104200	19.0	15000.000	120.000	98.0	V	159.0	13.1	11.0	30.0	
55.084800	25.4	15000.000	120.000	317.0	V	90.0	12.9	4.6	30.0	
60.032850	25.1	15000.000	120.000	219.0	V	209.0	11.6	4.9	30.0	
119.975400	23.4	15000.000	120.000	124.0	V	314.0	10.2	10.1	33.5	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

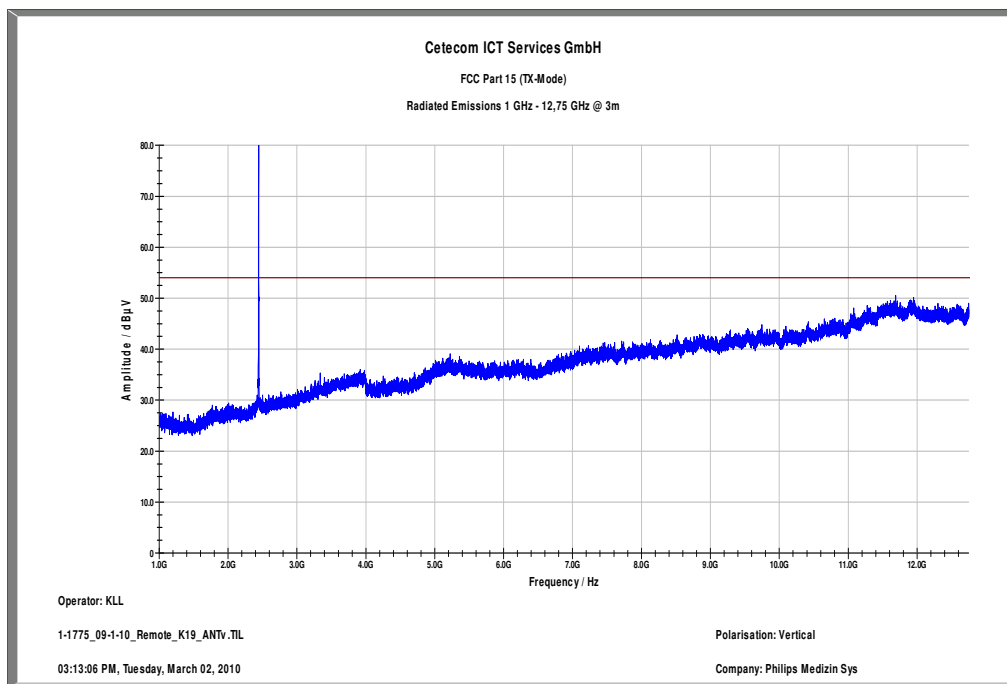
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

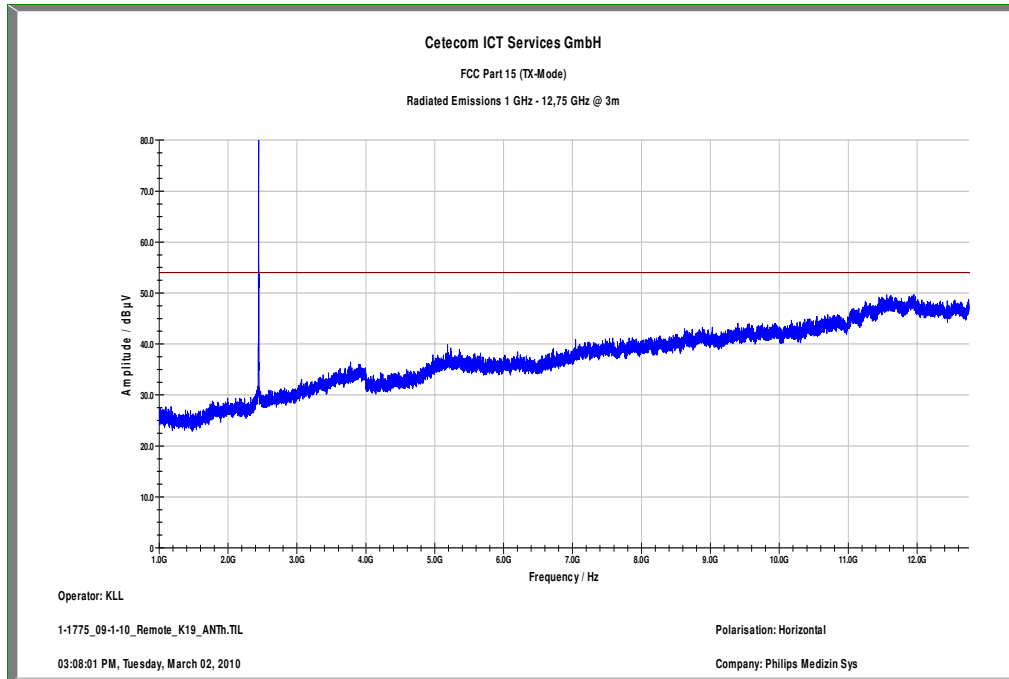
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

Plot 6: 1 -13 GHz vertical (middle channel)



Plot 7: 1 -13 GHz horizontal (middle channel)



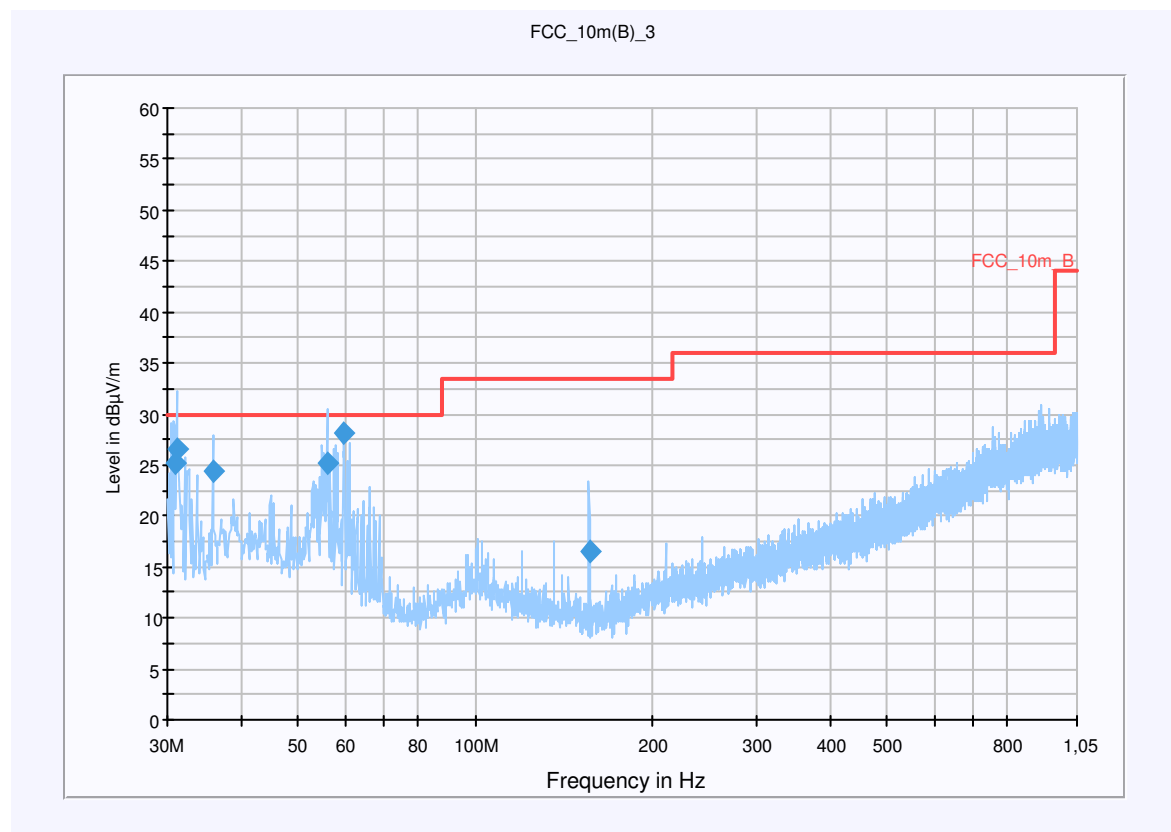
Plot 8: 0.03 - 1 GHz vertical (highest channel) Halle F

EUT: 865244 Remote Control
 Serial Number: PN: 865244 S/N: EP1#11
 Test Description: FCC Part 15 Subpart C @ 10 m
 Operating Conditions: TX CH 26
 Operator Name: Lang
 Comment: Battery powered

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange 30 MHz - 1.05 GHz **QuasiPeak** **IF Bandwidth** 120 kHz **Meas. Time** 15 s **Receiver** 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
31.047750	25.2	15000.000	120.000	131.0	V	233.0	12.6	4.8	30.0	
31.088700	26.5	15000.000	120.000	98.0	V	138.0	12.6	3.5	30.0	
36.020550	24.5	15000.000	120.000	98.0	V	133.0	13.1	5.6	30.0	
56.038350	25.3	15000.000	120.000	220.0	V	28.0	12.6	4.7	30.0	
59.988450	28.2	15000.000	120.000	220.0	V	71.0	11.6	1.8	30.0	
156.024150	16.6	15000.000	120.000	111.0	V	323.0	9.1	16.9	33.5	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

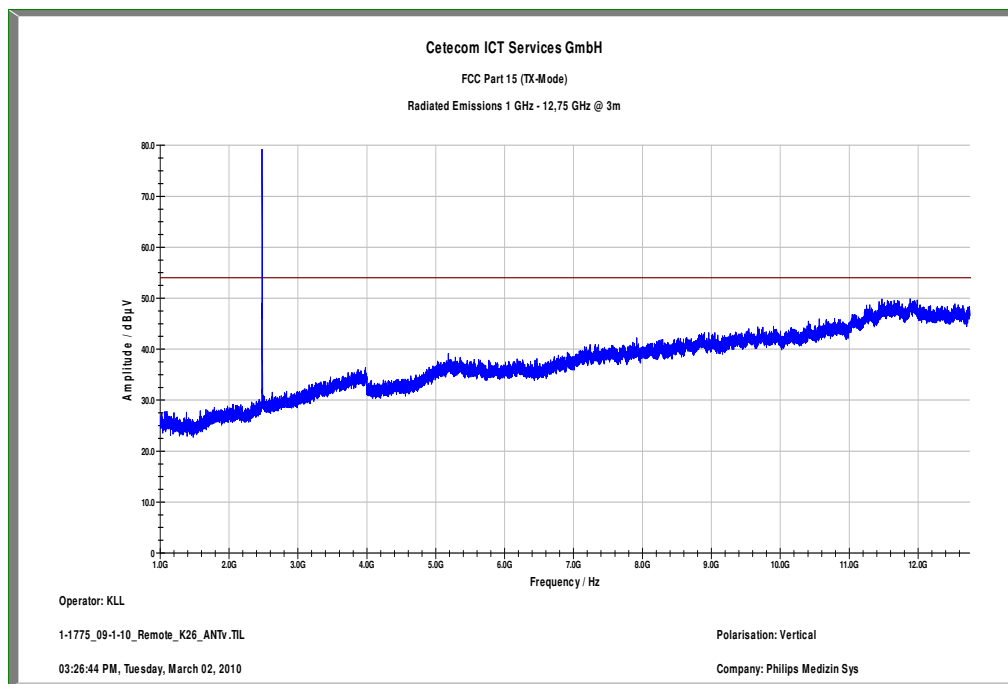
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

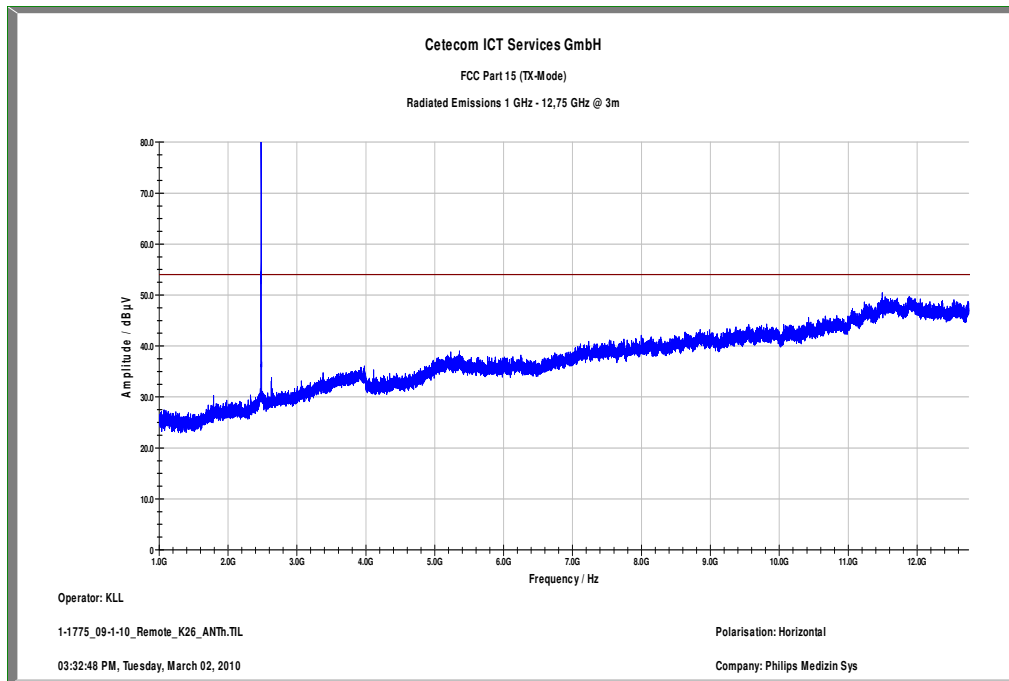
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

Plot 9: 1 -13 GHz vertical (highest channel)



Plot 10: 1 -13 GHz horizontal (highest channel)



Results:

SPURIOUS EMISSIONS LEVEL (dB μ V/m)								
2405 MHz			2445 MHz			2480 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			5.898	QP	28.2
Measurement uncertainty			±3 dB					

f < 1 GHz : RBW/VBW: 100 kHz

f ≥ 1GHz : RBW: 1 MHz/VBW: 10 Hz

(v) = measurement antenna vertical

(h) = measurement antenna horizontal

Azimuth scan DUT position 0° and 90°

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: § 15.209

Frequency [MHz]	Field strength [μ V/m]	Measurement distance (m)
30 - 88	100 (40 dB μ V/m)	3
88 - 216	150 (43.5 dB μ V/m)	3
216 - 960	200 (46 dB μ V/m)	3
above 960	500 (54 dB μ V/m)	3

5.16 Spurious Emissions - radiated (Receiver) § 15.109

5.16.1 Single SRR Module 865215

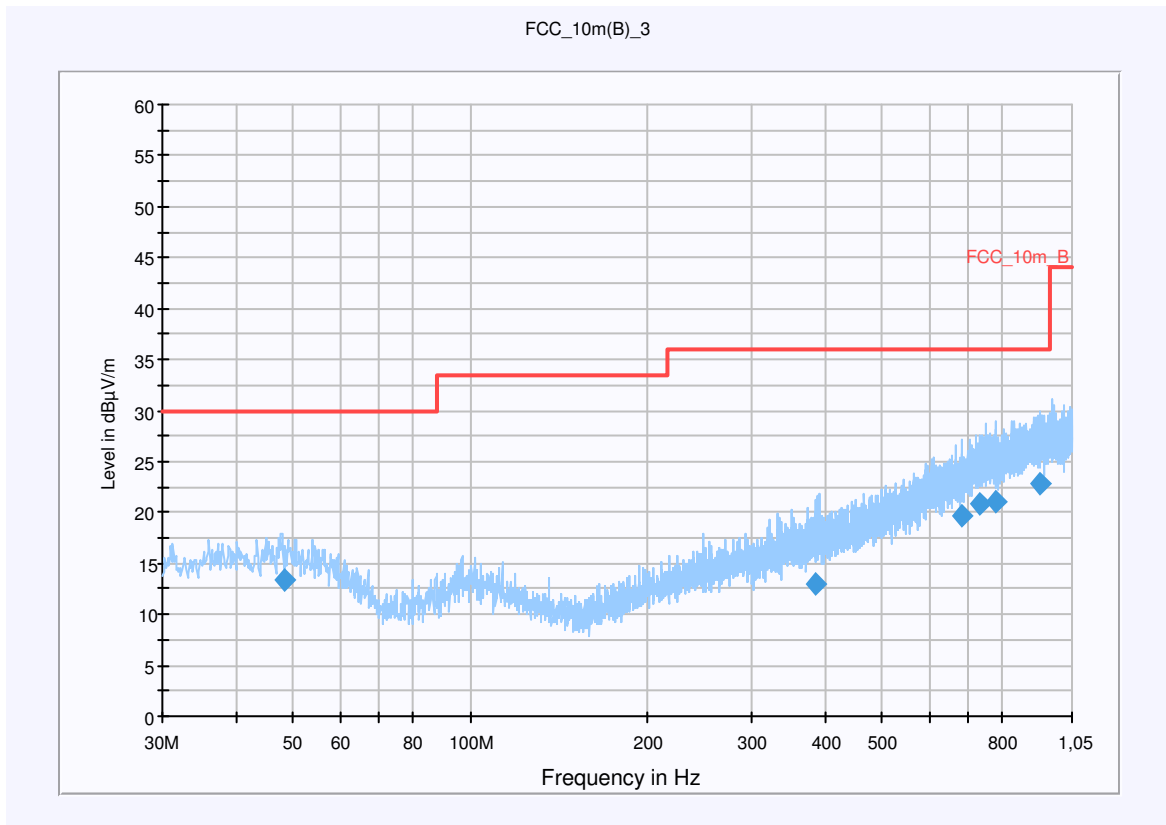
Plot 1: 0.03 - 1 GHz vertical (idle) Halle F

EUT: IntelliVue
 Serial Number: PN: 865215 SN: DE932Y0151
 Test Description: FCC Part 15 B @ 10 m
 Operating Conditions: RX
 Operator Name: Klos
 Comment: powered with battery

Scan Setup: STAN_Fin [EMI radiated]

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

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



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
8.427950	13.4	15000.000	120.000	220.0	V	226.0	13.5	16.6	30.0	
386.279700	12.9	15000.000	120.000	220.0	H	135.0	17.1	23.1	36.0	
733.962450	20.9	15000.000	120.000	220.0	H	-1.0	23.8	15.1	36.0	
777.683400	21.1	15000.000	120.000	220.0	V	88.0	24.2	14.9	36.0	
24.645300	22.8	15000.000	120.000	220.0	H	150.0	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 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

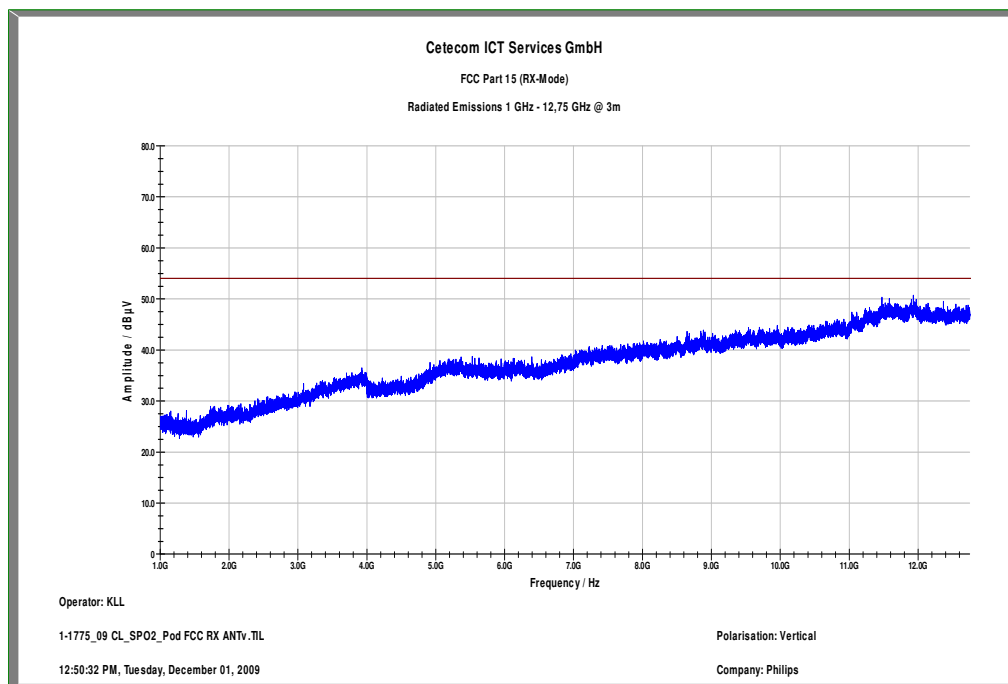
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

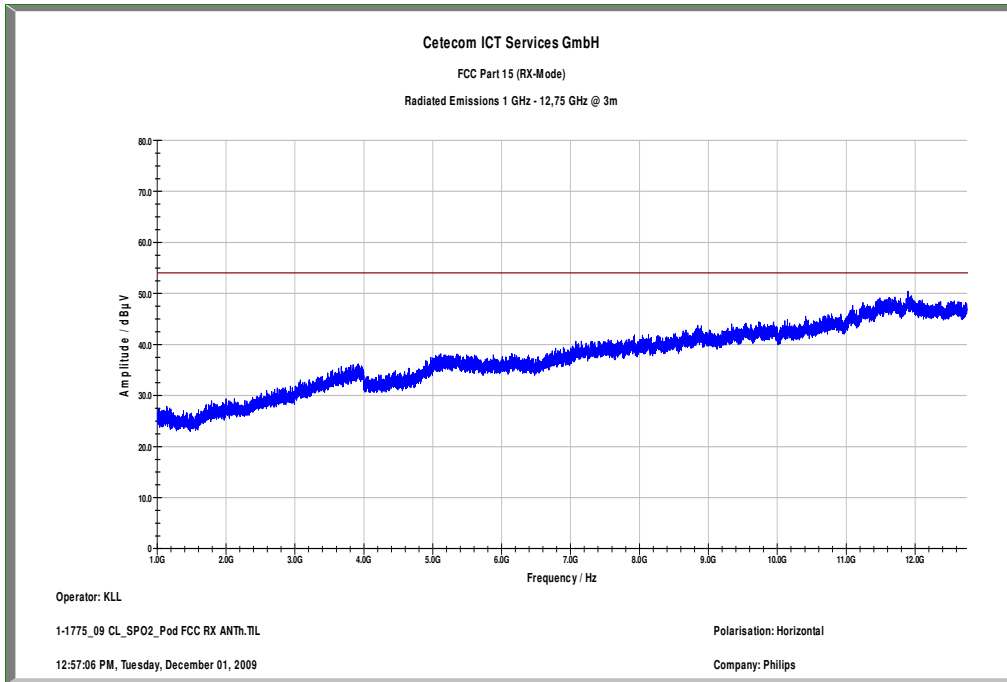
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

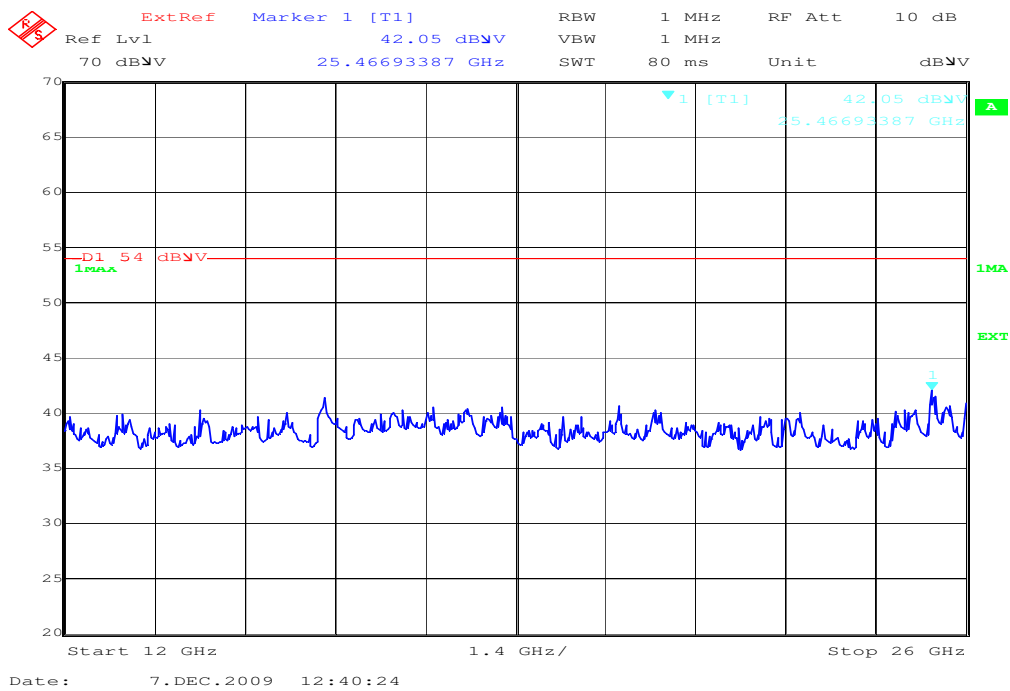
Plot 2: 1 -13 GHz vertical (idle)



Plot 3: 1 -13 GHz horizontal (idle)



Plot 4: 12 - 25 GHz vertical/horizontal (max hold)



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 ≥ 1GHz : RBW/VBW: 1 MHz

See above plots

(v) = measurement antenna vertical

(h) = measurement antenna horizontal

Azimuth scan DUT position 0° and 90°

Measurement distance see table

Limits: § 15.109

Frequency (MHz)	Field strength (μ V/m)	Measurement distance (m)
30 - 88	100 (40 dB μ V/m)	3
88 - 216	150 (43.5 dB μ V/m)	3
216 - 960	200 (46 dB μ V/m)	3
above 960	500 (54 dB μ V/m)	3

5.16.2 Single SRR Module 865220

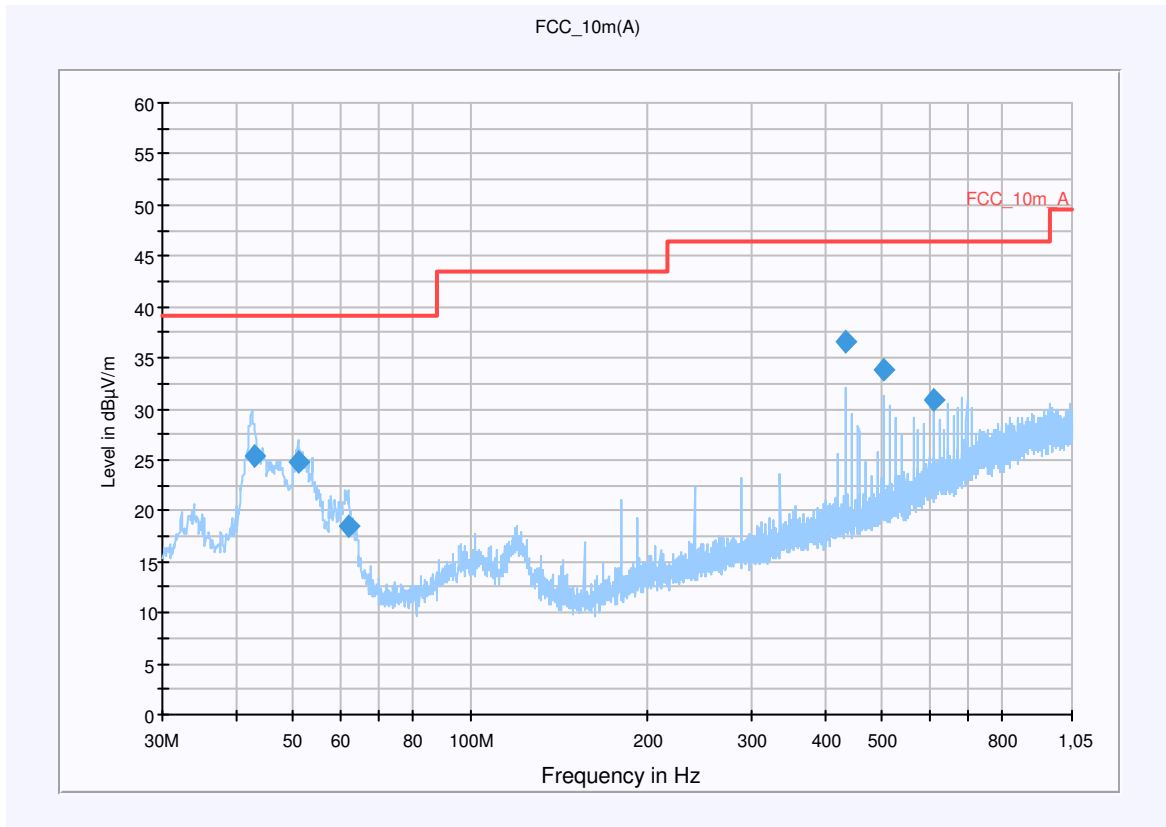
Plot 1: 0.03 - 1 GHz (idle) Halle F

EUT: IntelliVue CL Charging Station
 Serial Number: PN: 865220 SN: DE932Y0086
 Test Description: FCC Part 15 Subpart B Class A @ 10 m
 Operating Conditions: RX Mode
 Operator Name: Lang
 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 - 1.05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
42.845550	25.3	15000.000	120.000	98.0	V	109.0	13.3	13.8	39.1	
50.975400	24.7	15000.000	120.000	98.0	V	279.0	13.3	14.4	39.1	
62.009400	18.4	15000.000	120.000	346.0	V	139.0	11.1	20.7	39.1	
432.010650	36.7	15000.000	120.000	200.0	H	162.0	17.4	9.7	46.4	
503.996250	33.8	15000.000	120.000	159.0	H	113.0	18.8	12.6	46.4	
612.007050	30.9	15000.000	120.000	134.0	H	90.0	20.9	15.5	46.4	

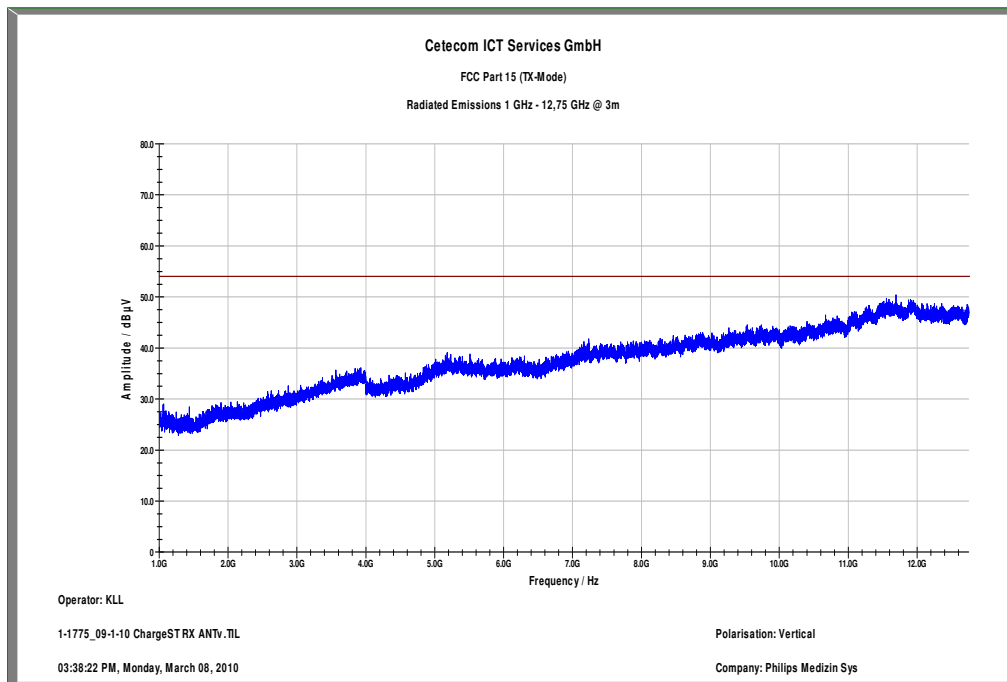
Hardware Setup: EMI radiated\Electric Field (NOS) - [EMI radiated]

Subrange 1

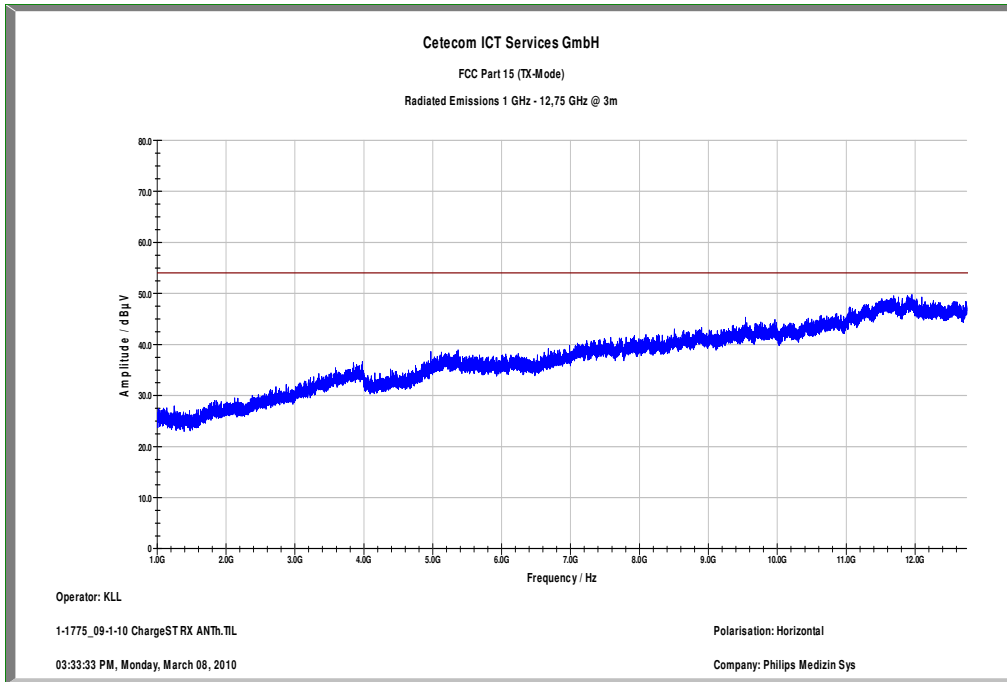
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (0909)
Antenna Tower: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

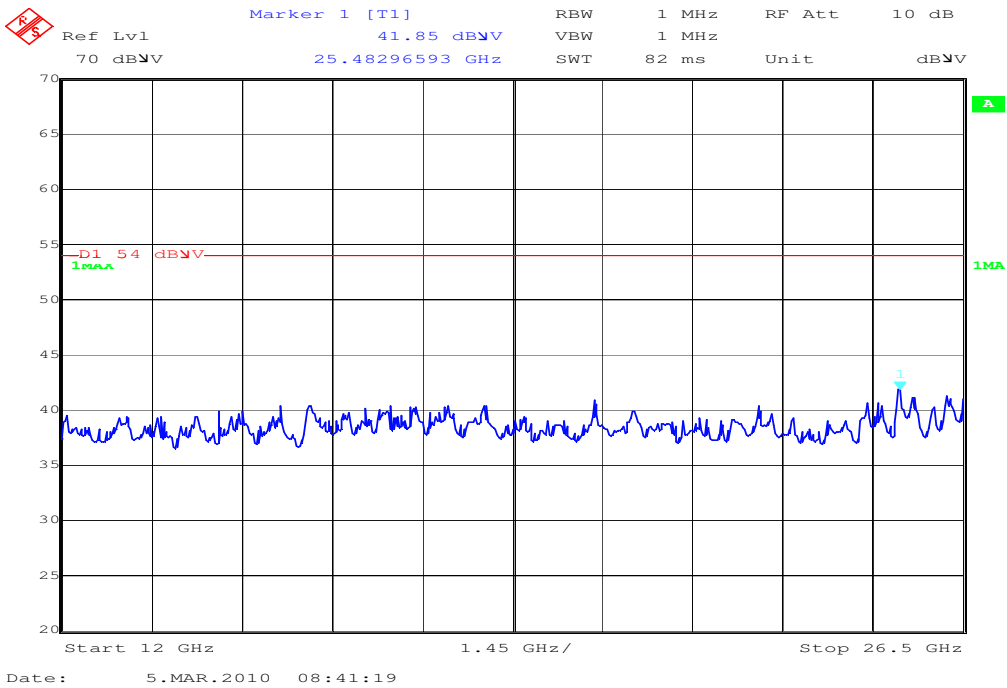
Plot 2: 1 -13 GHz vertical (idle)



Plot 3: 1 -13 GHz horizontal (idle)



Plot 4: 12 - 25 GHz vertical/horizontal (max hold)



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

See above plots

(v) = measurement antenna vertical

(h) = measurement antenna horizontal

Azimuth scan DUT position 0° and 90°

Measurement distance see table

Limits: § 15.109

Frequency (MHz)	Field strength (μ V/m)	Measurement distance (m)
30 - 88	100 (40 dB μ V/m)	3
88 - 216	150 (43.5 dB μ V/m)	3
216 - 960	200 (46 dB μ V/m)	3
above 960	500 (54 dB μ V/m)	3

5.16.3 Single SRR Module 865244

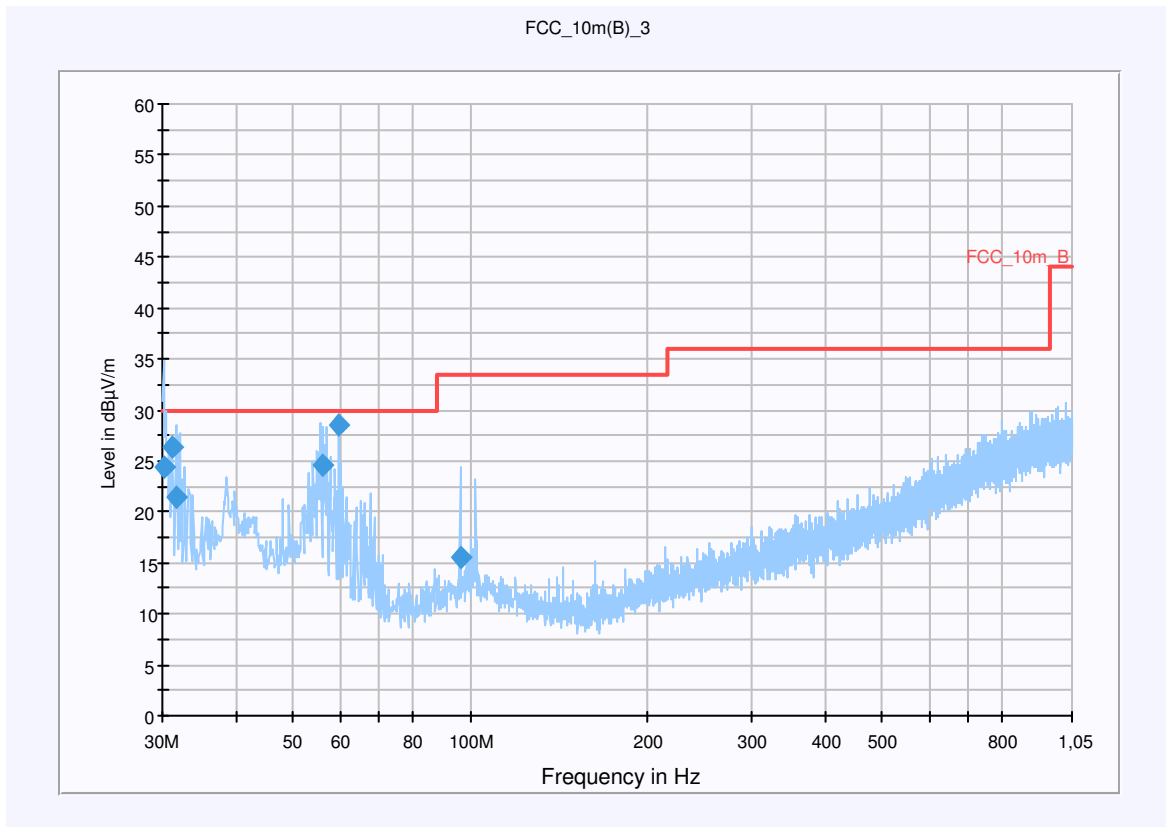
Plot 1: 0.03 - 1 GHz vertical (idle) Halle F

EUT: 865244 Remote Control
 Serial Number: PN: 865244 S/N: EP1#11
 Test Description: FCC part 15 Subpart B Class B @ 10 m
 Operating Conditions: RX-Mode
 Operator Name: Lang
 Comment: Battery powered

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 1.05 GHz	QuasiPeak	120 kHz	15 s	Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
30.251169	24.5	15000.000	120.000	98.0	V	197.0	12.5	5.5	30.0	
31.116000	26.4	15000.000	120.000	98.0	V	143.0	12.6	3.6	30.0	
31.735050	21.5	15000.000	120.000	98.0	V	323.0	12.7	8.5	30.0	
56.028750	24.5	15000.000	120.000	220.0	V	9.0	12.6	5.5	30.0	
59.950200	28.4	15000.000	120.000	220.0	V	34.0	11.6	1.6	30.0	
95.981550	15.5	15000.000	120.000	116.0	V	178.0	11.4	18.0	33.5	

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

Subrange 1

Frequency Range: 30 MHz - 2 GHz

Receiver: Receiver [ESCI 3]
@ GPIB0 (ADR 20), SN 100083/003, FW 4.32

Signal Path: without Notch
FW 1.0

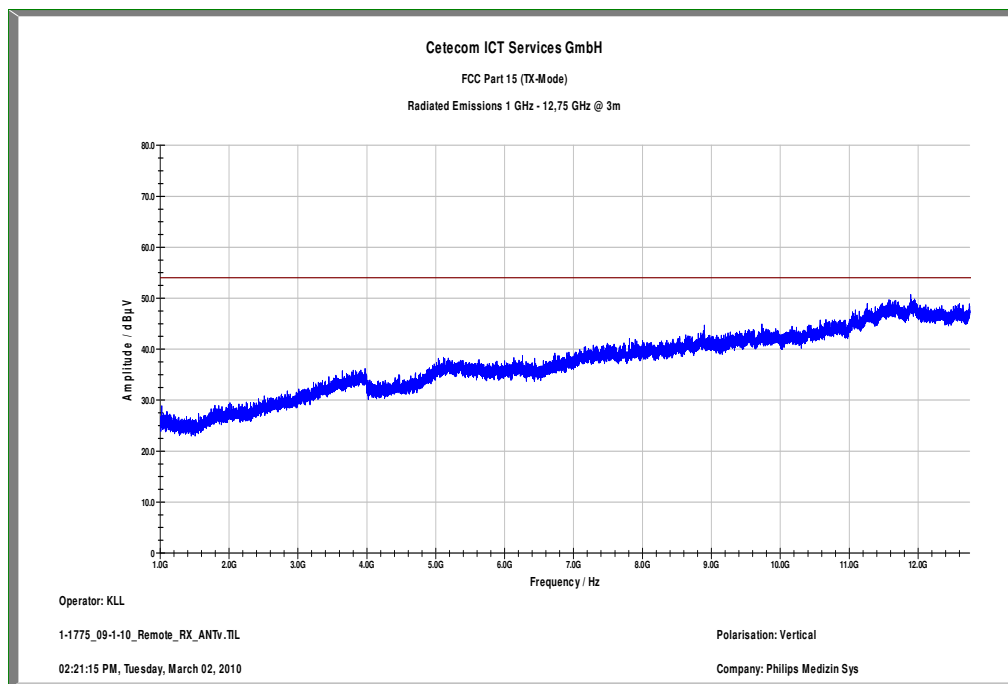
Antenna: VULB 9163
SN 9163-295, FW ---
Correction Table (vertical): VULP6113
Correction Table (horizontal): VULP6113
Correction Table: Cable_EN_1GHz (0909)

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

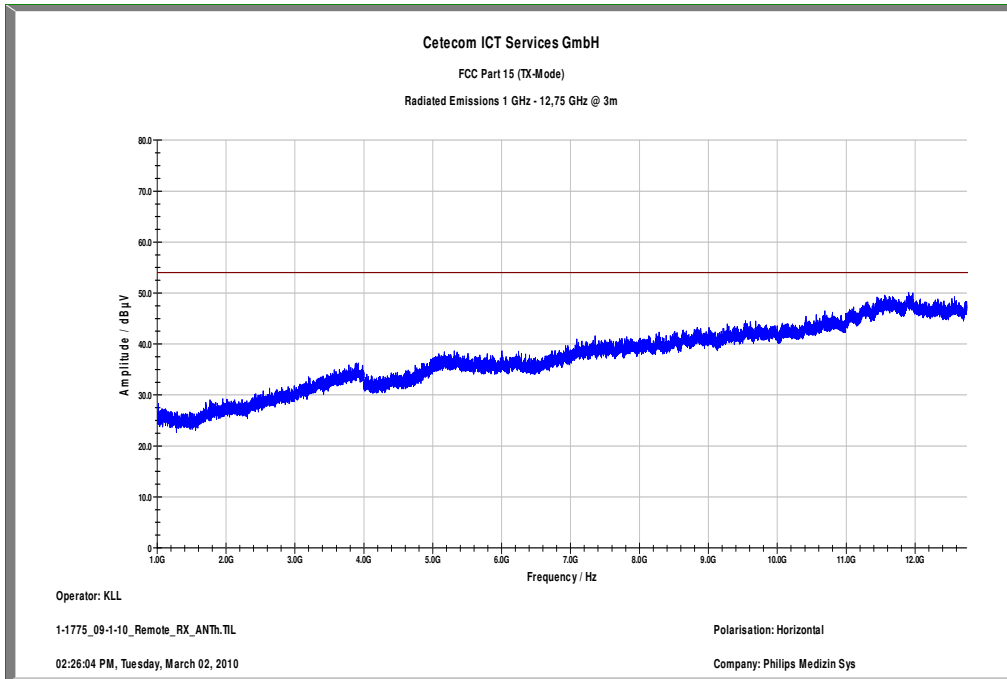
Turntable: Turntable [EMCO Turntable]
@ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

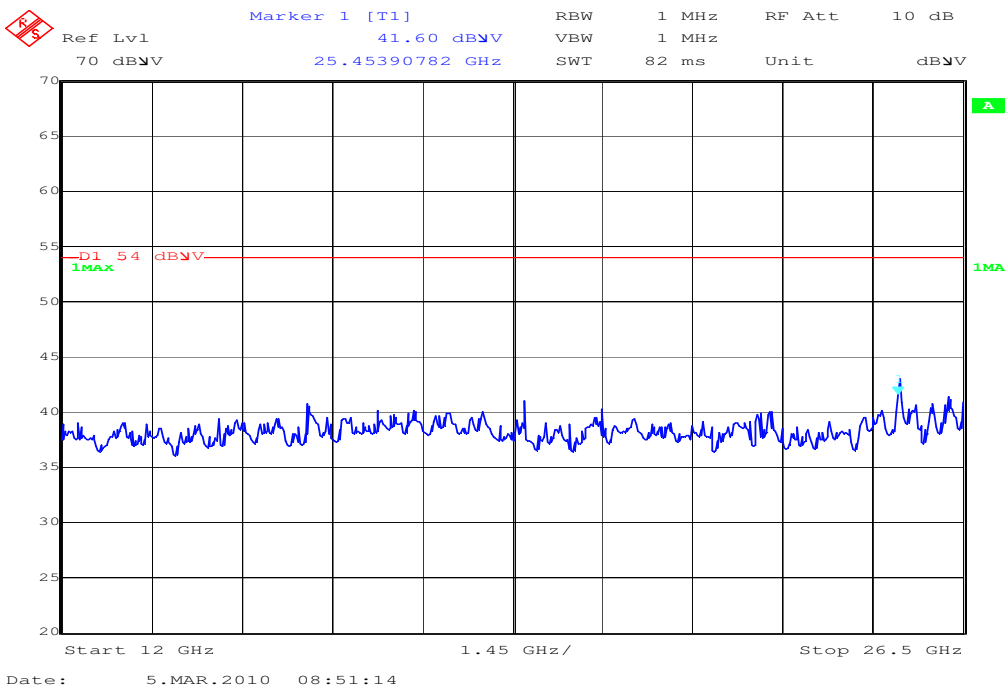
Plot 2: 1 -13 GHz vertical (idle)



Plot 3: 1 -13 GHz horizontal (idle)



Plot 4: 12 - 25 GHz vertical/horizontal (max hold)

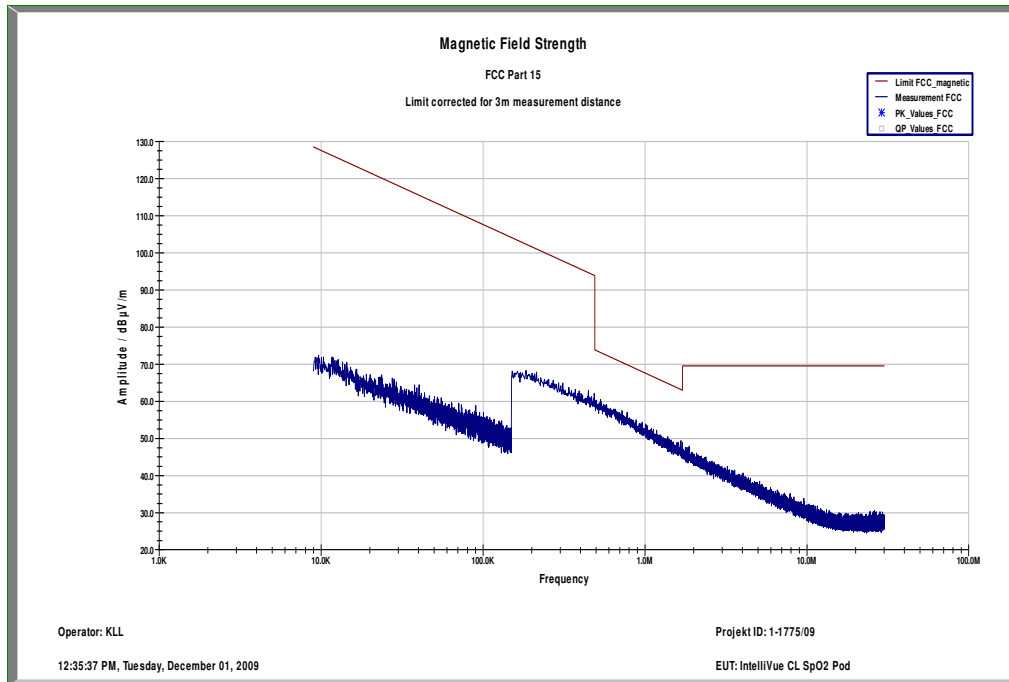


5.17 Spurious Emissions < 30 MHz – Transmitter and Receiver radiated § 15.209

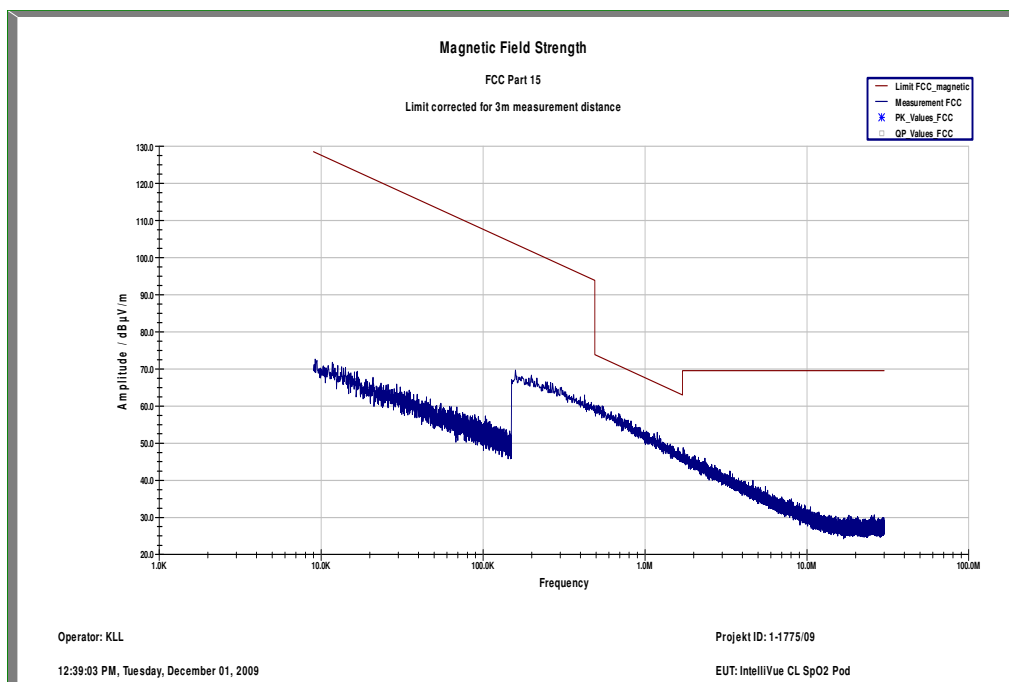
5.17.1 Single SRR Module 865215

Measured at 10 m distance. Values recalculated with 40 dB/decade according to FCC rules.

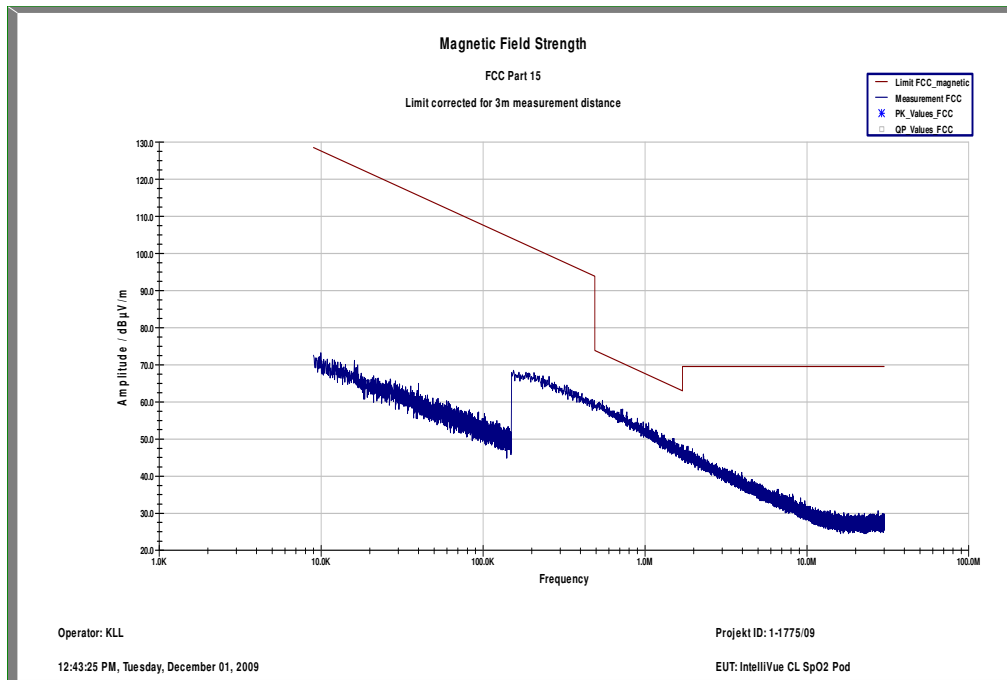
Plot 1: Transmitter operation (middle channel), position 0°



Plot 2: Transmitter operation (middle channel), position 90°



Plot 3: Idle mode (worst case)



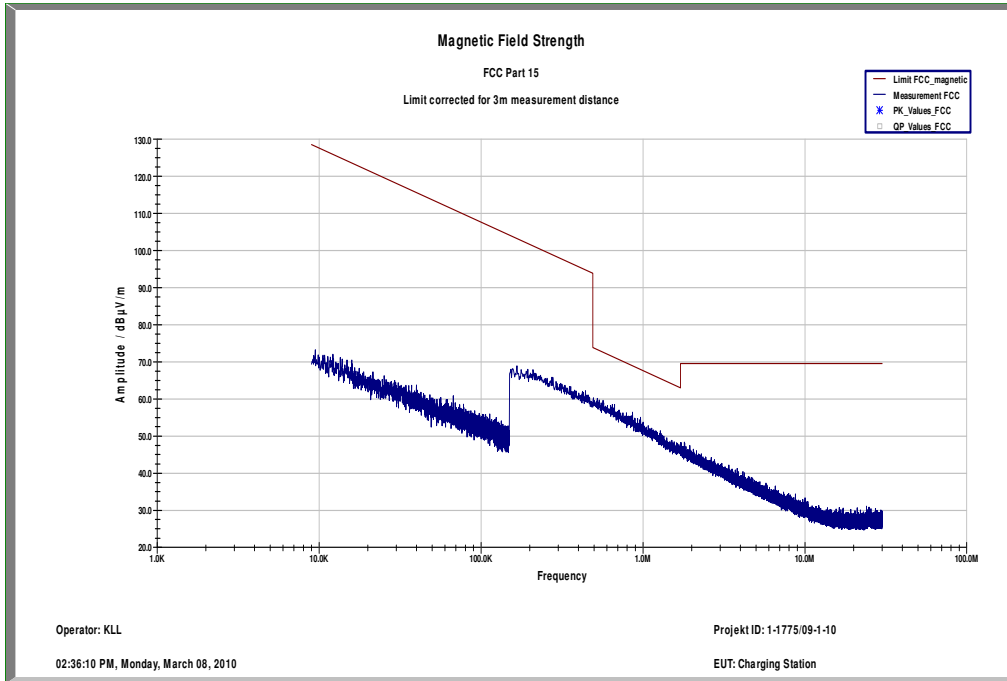
Limits:

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Measurement distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30.0	$30 / 29.5 \text{ dB}\mu\text{V/m}$	30

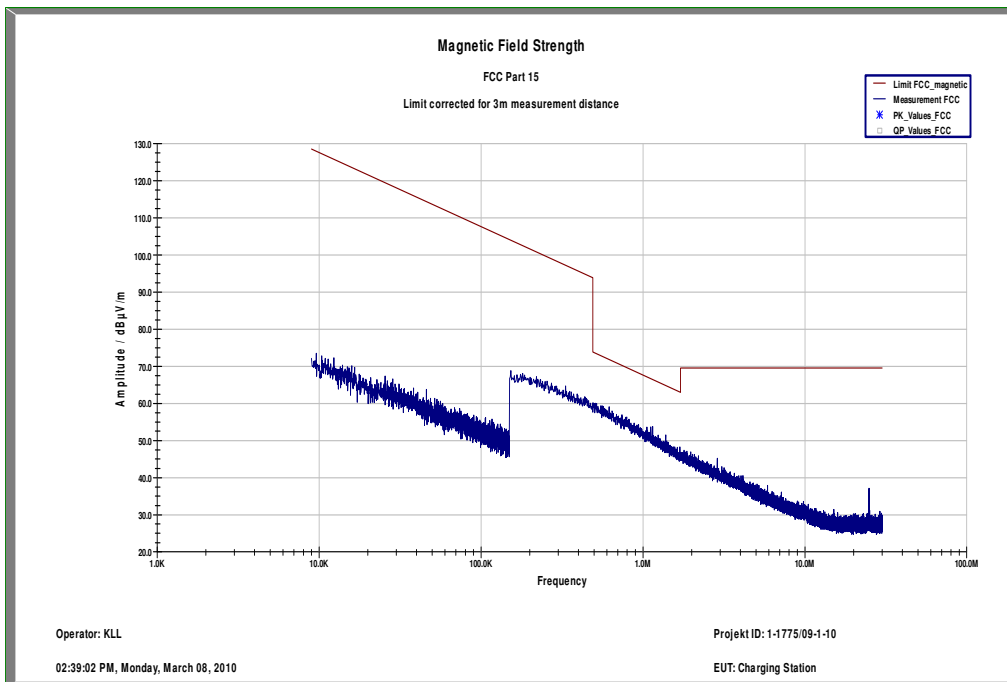
5.17.2 Single SRR Module 865220

Measured at 10 m distance.
Values recalculated with 40 dB/decade according to FCC rules.

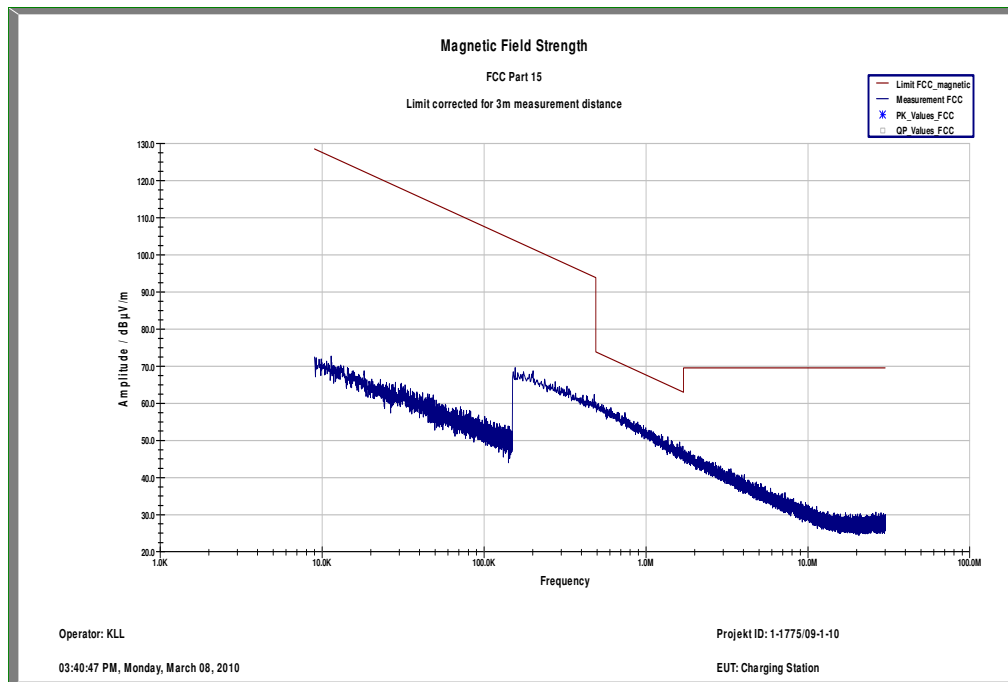
Plot 1: Transmitter operation (middle channel), position 0°



Plot 2: Transmitter operation (middle channel), position 90°



Plot 3: Idle mode (worst case)



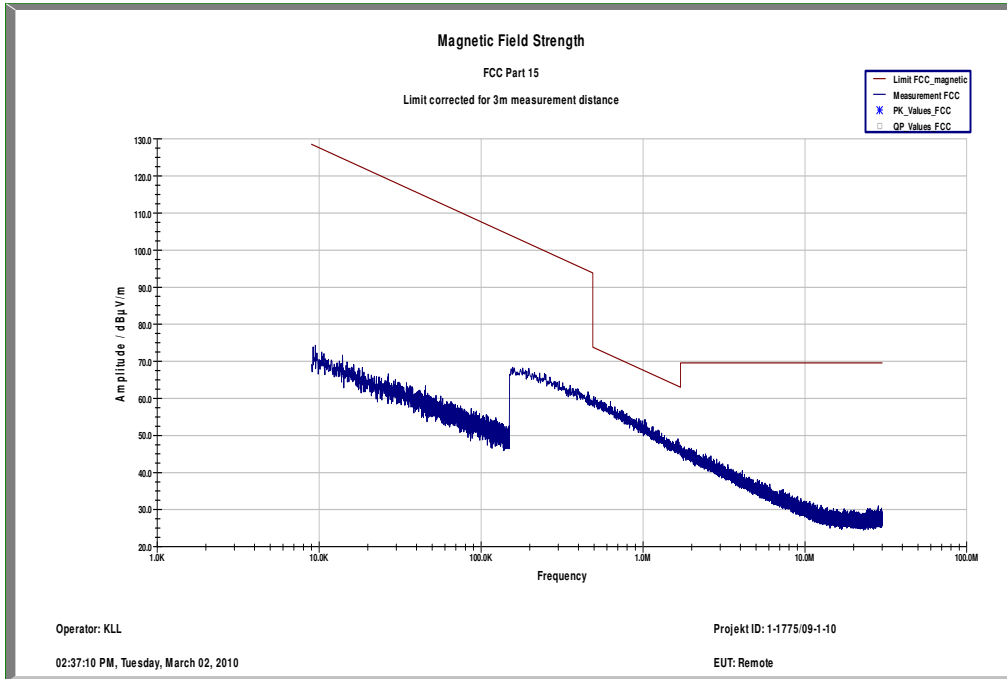
Limits:

Frequency (MHz)	Field strength (µV/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 dBµV/m	30

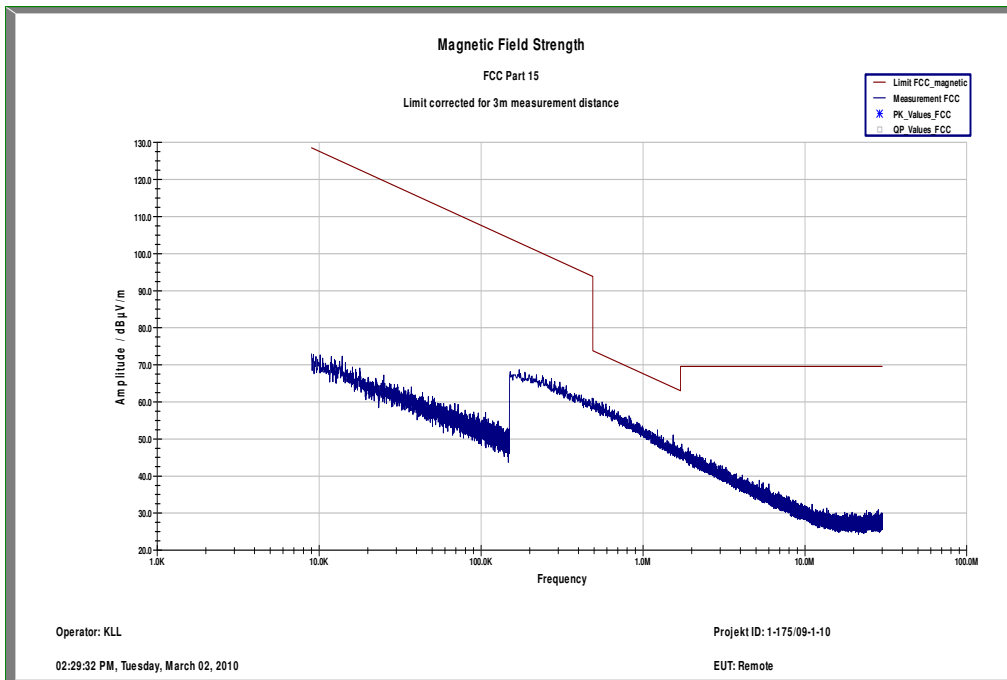
5.17.3 Single SRR Module 865244

Measured at 10 m distance.
Values recalculated with 40 dB/decade according to FCC rules.

Plot 1: Transmitter operation (middle channel/ worst case)



Plot 2: Idle mode (worst case)



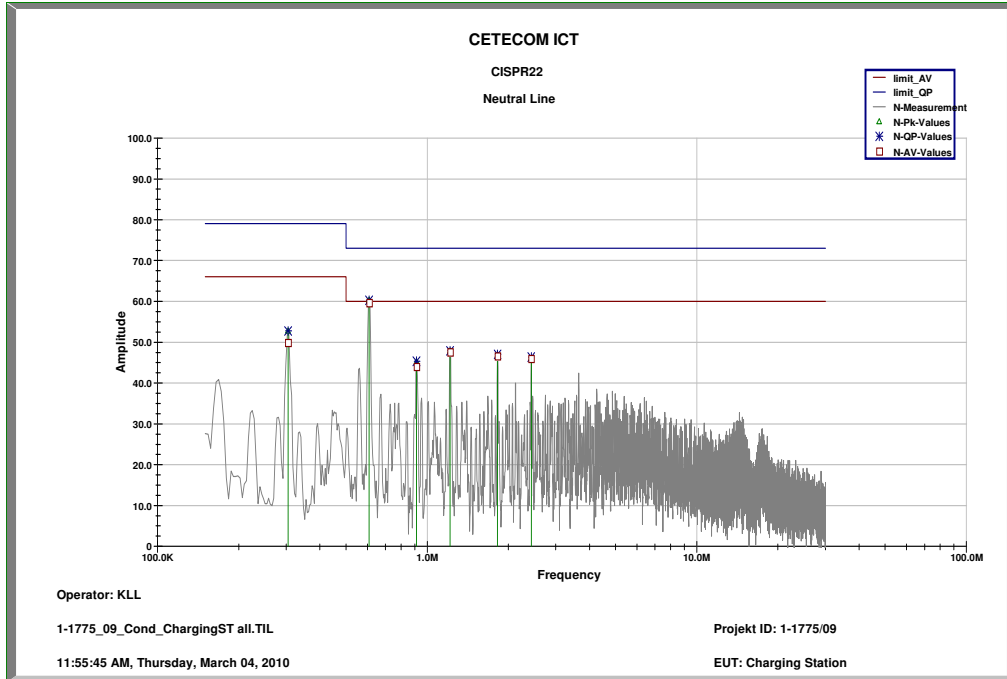
Limits:

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

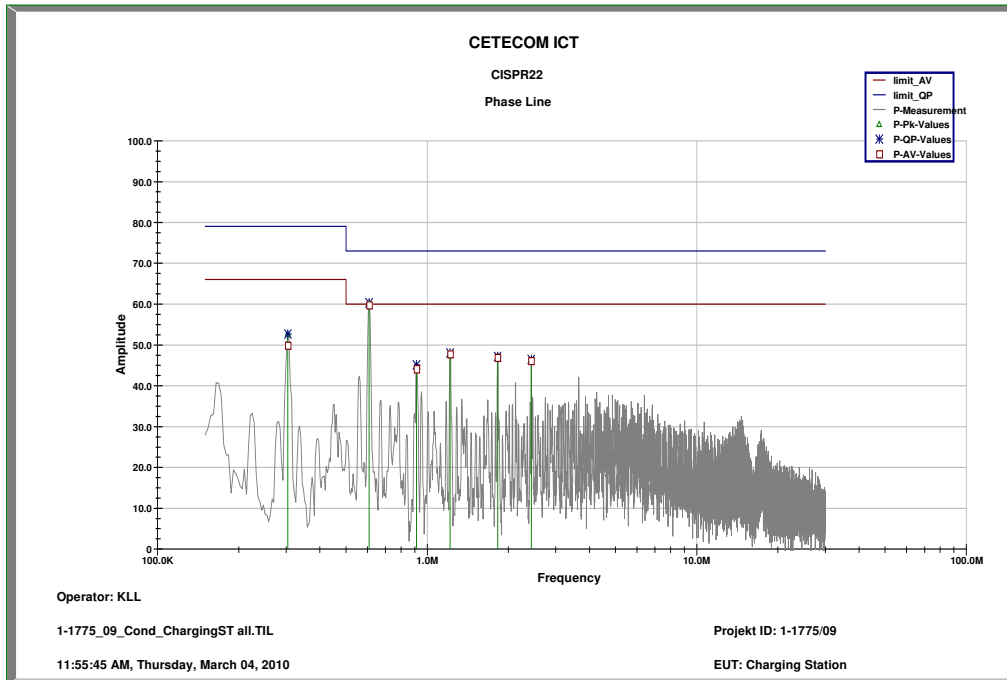
5.18 Conducted Emissions <30 MHz §15.107/207

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

Plot 1: CISPR 22, Neutral Line



Plot 2: CISPR 22, Phase line



Limits:

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

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.		

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 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	300002681-00xx	n.a.		
2	Memory Extension PSM-K10	R&S	To 1	300002681	n.a.		
3	Operating Software PSM-B2	R&S	To 1	300002681	n.a.		
4	19" Monitor		22759020-ED	300002681	n.a.		
5	Mouse		LZE 0095/6639	300002681	n.a.		
6	Keyboard		G00013834L461	300002681	n.a.		
7	Spectrum Analyser FSIQ 26	R&S	835540/018	300002681-0005	10.01.2008	24	10.01.2010
8	Tracking Generator FSIQ-B10	R&S	835107/015	300002681	s.No.7		
10	RF-Generator SMIQ03 (B1 Signal)	R&S	835541/056	300002681-0002	26.08.2008	36	26.08.2011
11	Modulation Coder SMIQ-B20	R&S	To 10	300002681	s.No.10		
12	Data Generator SMIQ-B11	R&S	To 10	300002681	s.No.10		
13	RF Rear Connection SMIQ-B19	R&S	To 10	300002681	s.No.10		
14	Broadband horn antenna (1-18 GHz)	EMCO	9107-3696	300001604	16.04.2008	24	16.04.2010
15	Broadband horn antenna (1-18 GHz)	EMCO	9107-3697	300001605	21.08.2008	24	21.08.2010
16	Std gain horn antenna (18- 26.5 GHz)	Narda	Model no. 638	300000486	n.a.		
17	Std gain horn antenna (18- 26.5 GHz)	Narda	Model no. 638	300000487	n.a.		
18	Sleeve dipole antenna Model 3126-880	ETS-Lindgren	00040887	3000000	n.a.		
19	Fast CPU SM-B50	R&S	To 10	300002681	s.No.10		
20	FM Modulator SM-B5	R&S	835676/033	300002681	s.No.10		
21	RF-Generator SMIQ03 (B2 Signal)	R&S	835541/055	300002681-0001	25.08.2008	36	25.08.2011
22	Modulation Coder SMIQ-B20	R&S	To 21	300002681	s.No.21		
23	Data Generator SMIQ-B11	R&S	To 21	300002681	s.No.21		
24	RF Rear Connection SMIQ-B19	R&S	To 21	300002681	s.No.21		
25	Fast CPU SM-B50	R&S	To 21	300002681	s.No.21		
26	FM Modulator SM-B5	R&S	836061/022	300002681	s.No.21		
27	RF-Generator SMP03 (B3 Signal)	R&S	835133/011	300002681-0003	26.08.2008	36	26.08.2011
28	Attenuator SMP-B15	R&S	835136/014	300002681	S.No.27		
29	RF Rear Connection SMP-B19	R&S	834745/007	300002681	S.No.27		
30	Power Meter NRVD	R&S	835430/044	300002681-0004	26.08.2008	24	26.08.2010
31	Power Sensor NRVD-Z1	R&S	833894/012	300002681-0013	26.08.2008	24	26.08.2010
32	Power Sensor NRVD-Z1	R&S	833894/011	300002681-0010	26.08.2008	24	26.08.2010
33	Rubidium Standard RUB	R&S		300002681-0009	27.08.2008	24	27.08.2010
34	Switching and Signal Conditioning Unit SSCU	R&S	338864/003	300002681-0006	Verified with path compensation		
35	Laser Printer HP Deskjet 2100	HP	N/A	300002681-0011	n.a.		
36	19" Rack	R&S	11138363000004	300002681	n.a.		
37	RF-cable set	R&S	N/A	300002681	n.a.		
39	IEEE-cables	R&S	N/A	300002681	n.a.		
40	Sampling System FSIQ-B70	R&S	835355/009	300002681	s.No.7		
41	RSP programmable attenuator	R&S	834500/010	300002681-0007	26.08.2008	24	26.08.2010
42	Signalling Unit	R&S	838312/011	300002681	n.a.		
43	NGPE programmable Power Supply for EUT	R&S	192.033.41	300002681			
44	Power Splitter 6005-3	Inmet Corp.	none	300002841	n.a.		
45	SMA Cables SPS-1151-985-SPS	Insulated Wire	different	different	n.a.		
46	CBT32 with EDR Signaling Unit	R&S					
47	Coupling unit	Narda	N/A	--	n.a.		
48	2xSwitch Matrix PSU	R&S	872584/021	300001329	n.a.		
49	RF-cable set	R&S	N/A	different	n.a.		
50	IEEE-cables	R&S	N/A	--	n.a.		

Note: 300002681-00xx inventoried as a system

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	-/-	-/-	-/-	-/-