

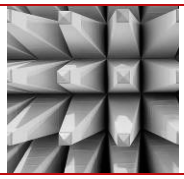

CETECOM™
CETECOM ICT Services
consulting - testing - certification

TEST REPORT

Test report no.: 1-3469/11-01-11

Testing laboratory

CETECOM ICT Services GmbH
Untertuerkheimer Strasse 6 – 10
66117 Saarbruecken / Germany
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Accredited Testing Laboratory:
The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)
The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12076-01-01
Area of Testing: Radio/Satellite Communications

Applicant

beyerdynamic GmbH & Co. KG
Theresienstraße 8
74072 Heilbronn / GERMANY
Phone: +49 7131 617-0
Fax: +49 7131 617-215
Contact: Ulrich Roth
e-mail: roth@beyerdynamic.de
Phone: +49 7131 617-155

Manufacturer

beyerdynamic GmbH & Co. KG
Theresienstraße 8
74072 Heilbronn / GERMANY

Test standard/s

47 CFR Part 15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices
RSS - 210 Issue 8	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item:	**Wireless Conference System**
Model name:	**Quinta**
FCC ID:	**OSDQUINTACU**
IC:	**3628A-QUINTACU**
Frequency:	ISM band 2400 MHz to 2483.5 MHz (2412 MHz; 2438 MHz; 2464 MHz)
Technology tested:	Proprietary DSSS
Antenna:	Two external N-connectors / Dedicated antennas (Rod antenna, Planar antenna, Omnidirectional antenna)
Power Supply:	110 V AC by AC / DC power supply
Temperature Range:	+10°C to +50 °C

This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorised:

p. o. cn=Marco Bertolino, o=CETECOM ICT Services GmbH, ou=BTL-100826, email=marco.bertolino@cetecom.com, c=DE
2012.04.19 09:05:12 +02'00'

Stefan Bös
Senior Testing Manager

Test performed:

p. o. cn=Andreas Luckenbill, o=CETECOM ICT Services GmbH, ou=LUC-111202, email=andreas.luckenbill@cetecom.com, c=DE
2012.04.19 11:44:04 +02'00'

Jakob Reschke
Testing Manager

1 Table of contents

2 General information

2.1 Notes and disclaimer

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2.2 Application details

Date of receipt of order:	2011-10-12
Date of receipt of test item:	2012-02-21
Start of test:	2012-02-21
End of test:	2012-04-10
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	2010-10	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices
RSS - 210 Issue 8	2010-12	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

4 Test environment

Temperature:	T_{nom}	+22 °C	during room temperature tests
	T_{max}	+50 °C	during high temperature tests
	T_{min}	+10 °C	during low temperature tests
Relative humidity content:		43 %	
Barometric pressure:		not relevant for this kind of testing	
Power supply:	V_{nom}	110 V	AC by AC / DC power supply
	V_{max}	121 V	
	V_{min}	100 V	

5 Test item

Kind of test item	**:**	**Wireless Conference System**
Type identification	**:**	**Quinta CU**
S/N serial number	**:**	**00102**
HW hardware status	**:**	**Rev. 2**
SW software status	**:**	**PNP: V015** **MAINAPP: V121**
Frequency band [MHz]	**:**	**2412 MHz; 2438 MHz; 2464 MHz**
Type of radio transmission **Use of frequency spectrum**	**:** **:**	**BPSK/QPSK (DSSS)**
Channel access method	**:**	**3 (test software)**
Type of modulation	**:**	**Two external N-connectors** **Dedicated antennas (Rod antenna, Planar antenna, Omnidirectional antenna)**
Number of channels	**:**	**00102**
Antenna	**:**	**Rev. 2**
Power supply	**:**	**110 V AC by AC / DC power supply**
Temperature range	**:**	**+10 °C to +50 °C**

6 Test laboratories sub-contracted

None

7 Summary of measurement results

☒	**No deviations from the technical specifications were ascertained**
☐	There were deviations from the technical specifications ascertained

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Part 15 RSS 210, Issue 8, Annex 8	Passed	2012-04-19	-/-

Test specification clause	Test case	Temperature conditions	Power source voltages	Mode	Pass	Fail	NA	NP	Remark
§15.247(b)(4) RSS 210 / A8.4(2)	Antenna gain	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(e) RSS 210 / A8.2(b)	Power spectral density	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth of a FHSS system 6dB bandwidth	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth of a FHSS system 20dB bandwidth	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(b)(3) RSS-210 / A8.4(4)	Maximum output power	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	Band edge compliance conducted	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.205 RSS-210 / A8.5	Band edge compliance radiated	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions conducted	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions radiated	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.109 RSS-Gen.	RX spurious emissions radiated	Nominal	Nominal	-/-	☒	☐	☐	☐	complies
§15.209(a) RSS-Gen	TX spurious emissions radiated < 30 MHz	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies
§15.107(a)	Conducted emissions < 30 MHz	Nominal	Nominal	DSSS	☒	☐	☐	☐	complies

Note: NA = Not Applicable; NP = Not Performed

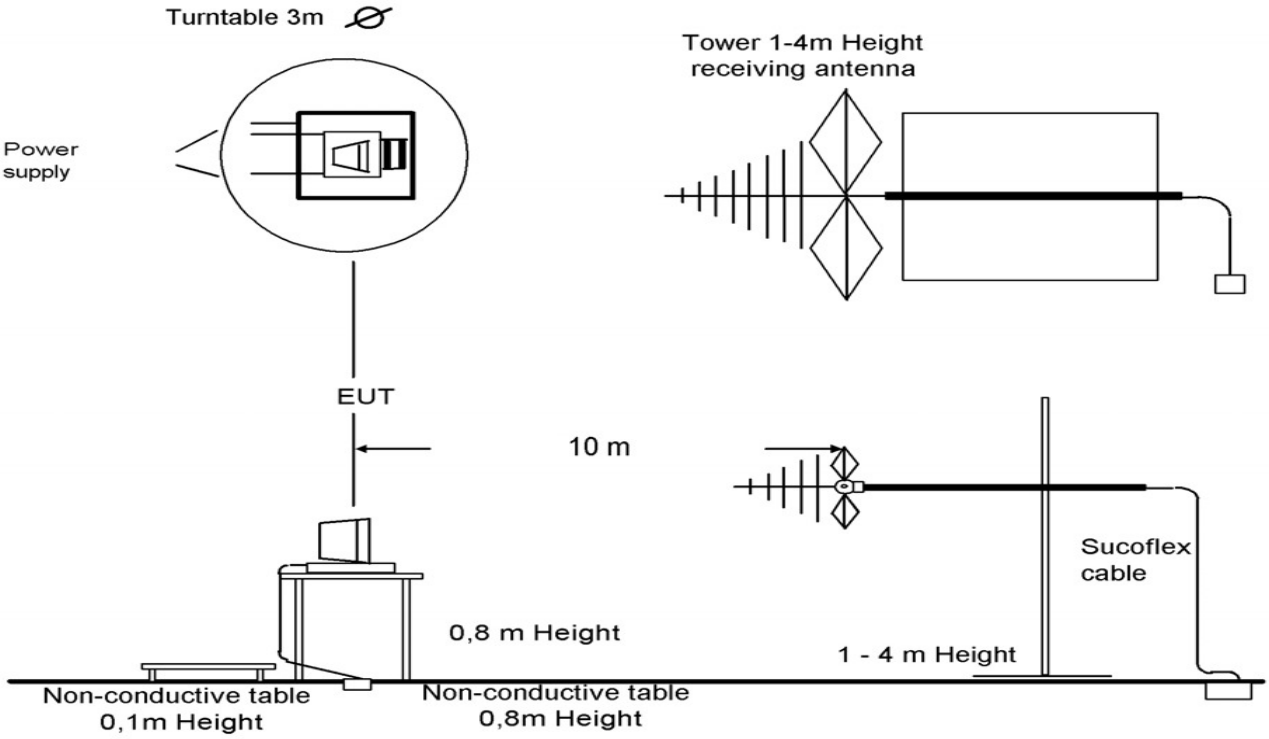
8 RF measurements

8.1 Description of test setup

8.1.1 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 C63.4-2009 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 C63-4-2009 clause 4.2.
Antennas are confirmed with ANSI C63.2-1996 item 15.

Semi anechoic chamber



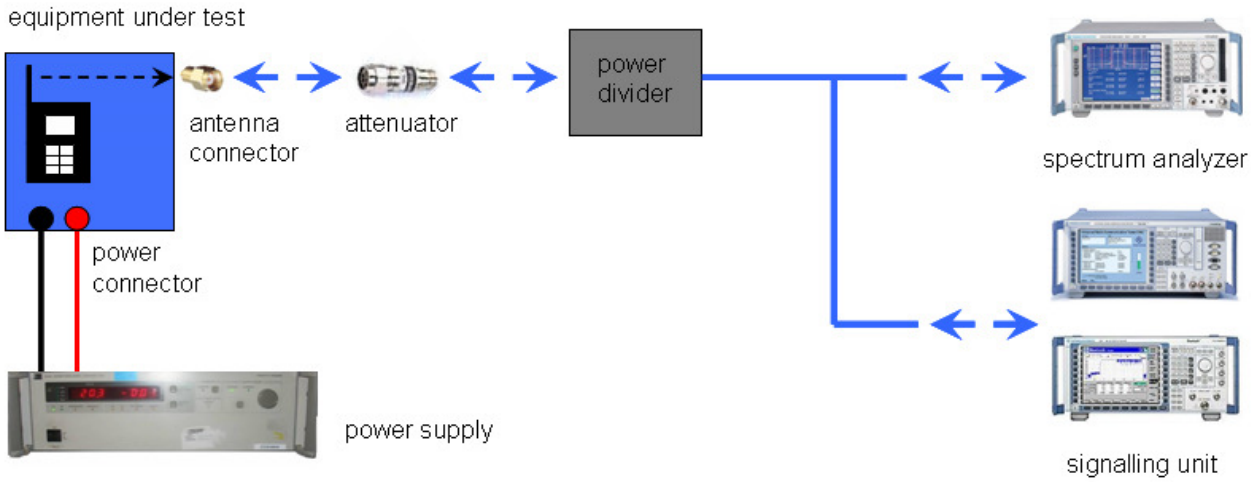
Picture 1: Diagram radiated measurements

9 kHz - 30 MHz:	active loop antenna
30 MHz – 1 GHz:	tri-log antenna
> 1 GHz:	horn antenna

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.

8.1.2 Conducted measurements

The EUT's RF signal is coupled out by the antenna connector which is supplied by the manufacturer. The signal is 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.



Picture 2: Diagram conducted measurements

8.2 Additional comments

Involved employees:	Jakob Reschke, Marco Bertolino, Stefan Bös, Christoph Schneider
Reference documents:	None
Special test descriptions:	None
Configuration descriptions:	EUT has three different antenna types. All radiated measurements were performed with all three antenna types. The polar antenna and the omnidirectional antenna were conducted using 10m cable. This assured the maximum radiated output power. The output power settings of the EUT was always the same: 400/-15
Test mode:	☐ No test mode available. ☒ Special software is used. EUT is transmitting pseudo random data by itself

8.3 RSP100 test report cover sheet / performance test data

Test report number	:	**1-3469/11-01-11**
Equipment model number	:	**Quinta**
Certification number	:	**3628A-QUINTACU**
Manufacturer (complete address)	:	**beyerdynamic GmbH & Co. KG Theresienstraße 8 74072 Heilbronn / GERMANY**
Tested to radio standards specification no.	:	**RSS 210, Issue 8**
Open area test site IC No.	:	**IC 3462C-1**
Frequency range	:	**ISM band 2400 MHz to 2483.5 MHz (lowest channel 2412 MHz, highest channel 2464 MHz)**
RF-power [mW] (max.)	:	**cond.: 34.99 mW (Rod antenna A) EIRP: 85.31 mW (Rod antenna A) cond.: 31.55 mW (Rod antenna B) EIRP: 81.10 mW (Rod antenna B) cond.: 34.99 mW (Planar antenna A @ 10m) EIRP: 119.95 mW (Planar antenna A @ 10m) cond.: 34.99 mW (Planar antenna A @ 20m) EIRP: 101.16 mW (Planar antenna A @ 20m) cond.: 31.55 mW (Planar antenna B @ 10m) EIRP: 104.71 mW (Planar antenna B @ 10m) cond.: 31.55 mW (Planar antenna B @ 20m) EIRP: 96.16 mW (Planar antenna B @ 20m) cond.: 34.99 mW (Omnid. antenna A @ 10m) EIRP: 50.47 mW (Omnid. antenna A @ 10m) cond.: 34.99 mW (Omnid. antenna A @ 20m) EIRP: 28.77 mW (Omnid. antenna A @ 20m) cond.: 31.55 mW (Omnid. antenna B @ 10m) EIRP: 47.42 mW (Omnid. antenna B @ 10m) cond.: 31.55 mW (Omnid. antenna B @ 20m) EIRP: 27.35 mW (Omnid. antenna B @ 20m)**
Occupied bandwidth (99%-BW) [MHz]	:	**13.85 MHz**
Type of modulation	:	**DSSS**
Emission designator (TRC-43)	:	**13M9G1D**
Antenna information	:	**Two external N-connectors / Dedicated antennas (Rod antenna, Planar antenna, Omni directional antenna)**
Transmitter spurious (worst case) [dBµV/m @ 3m]:		**53.97 @ 4824 MHz Peak**
Receiver spurious (worst case) [dBµV/m @ 3m]:		**45 @ 12 GHz (noise floor)**

ATTESTATION:
DECLARATION OF COMPLIANCE:

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

Laboratory manager:

2012-04-19	Jakob Reschke	
Date	Name	Signature

9 Measurement results

9.1 Antenna gain

Measurement:

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. This measurement was performed with port A.

Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	30 MHz
Resolution bandwidth:	50 MHz
Trace-Mode:	Max hold

Limits:

FCC	IC
CFR Part 15.247 (b)(4)	RSS 210, Issue 8, A 8.4(2)
Antenna Gain	
6 dBi	

Results: Rod antenna

T_{nom}	V_{nom}	lowest channel 2412 MHz	middle channel 2438 MHz	highest channel 2464 MHz
Conducted power [dBm] Measured with DSSS modulation		15.21	15.44	15.09
Radiated power [dBm] Measured with DSSS modulation		19.31	18.74	18.17
Gain [dBi] Calculated		4.10	3.30	3.08
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

Results: Planar antenna with 10 m cable

T_{nom}	V_{nom}	lowest channel 2412 MHz	middle channel 2438 MHz	highest channel 2464 MHz
Conducted power [dBm] Measured with DSSS modulation		15.21	15.44	15.09
Radiated power [dBm] Measured with DSSS modulation		20.42	20.79	19.95
Gain [dBi] Calculated		5.21	5.35	4.86
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

Results: Planar antenna with 20 m cable

T_{nom}	V_{nom}	lowest channel 2412 MHz	middle channel 2438 MHz	highest channel 2464 MHz
Conducted power [dBm] Measured with DSSS modulation		15.21	15.44	15.09
Radiated power [dBm] Measured with DSSS modulation		20.05	19.47	18.30
Gain [dBi] Calculated		4.84	4.03	3.21
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

Results: Omnidirectional antenna with 10 m cable

T_{nom}	V_{nom}	lowest channel 2412 MHz	middle channel 2438 MHz	highest channel 2464 MHz
Conducted power [dBm] Measured with DSSS modulation		15.21	15.44	15.09
Radiated power [dBm] Measured with DSSS modulation		16.63	17.03	17.01
Gain [dBi] Calculated		1.42	1.59	1.92
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

Results: Omnidirectional antenna with 20 m cable

T_{nom}	V_{nom}	lowest channel 2412 MHz	middle channel 2438 MHz	highest channel 2464 MHz
Conducted power [dBm] Measured with DSSS modulation		15.21	15.44	15.09
Radiated power [dBm] Measured with DSSS modulation		14.59	14.20	12.69
Gain [dBi] Calculated		-0.62	-1.24	-2.40
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)		

Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)

Result: Passed

9.2 Maximum output power

Description:

Measurement of the maximum output power conducted and radiated. The measurements are performed using the data rate producing the highest conducted output power. The determination of these data rates was performed at the beginning of the tests.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	50 MHz
Resolution bandwidth:	30 MHz
Span:	30 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (b)(3)	RSS 210, Issue 8, A 8.4(4)
Maximum Output Power	
Conducted: 1.0 W – Antenna Gain max. 6 dBi	

Results: Rod antenna Port A

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	15.21	15.44	15.09
Output Power Radiated – EIRP*)	19.31	18.74	18.17
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Rod antenna Port B

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	14.99	14.65	14.84
Output Power Radiated – EIRP*)	19.09	17.95	17.92
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Planar antenna Port A with 10 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	15.21	15.44	15.09
Output Power Radiated – EIRP*)	20.42	20.79	19.95
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Planar antenna Port B with 10 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	14.99	14.65	14.84
Output Power Radiated – EIRP*)	20.20	20.00	19.70
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Planar antenna Port A with 20 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	15.21	15.44	15.09
Output Power Radiated – EIRP*)	20.05	19.47	18.30
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Planar antenna Port B with 20 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	14.99	14.65	14.84
Output Power Radiated – EIRP*)	19.83	18.68	18.05
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Omnidirectional antenna Port A with 10 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	15.21	15.44	15.09
Output Power Radiated – EIRP*)	16.63	17.03	17.01
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Omnidirectional antenna Port B with 10 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	14.99	14.65	14.84
Output Power Radiated – EIRP*)	16.41	16.24	16.76
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Omnidirectional antenna Port A with 20 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	15.21	15.44	15.09
Output Power Radiated – EIRP*)	14.59	14.20	12.69
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Results: Omnidirectional antenna Port B with 20 m cable

DSSS	Maximum Output Power [dBm]		
Frequency	2412 MHz	2438 MHz	2464 MHz
Peak Output Power Conducted	14.99	14.65	14.84
Output Power Radiated – EIRP*)	14.37	13.41	12.44
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)		

*) calculated with Antenna gain

Result: **Passed**

9.3 Power spectral density

Description:

Measurement of the power spectral density of a digital modulated system. The measurement is repeated for both modulations at the lowest, middle and highest channel.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	500 s
Video bandwidth:	500 kHz
Resolution bandwidth:	100 kHz
Span:	10 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (e)	RSS 210, Issue 8, A 8.2(b)
Power Spectral Density	
The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission or over 1.0 second if the transmission exceeds 1.0-second duration.	

Results: Antenna A

Modulation	Power Spectral density [dBm/3kHz]		
Frequency	2412 MHz	2438 MHz	2464 MHz
DSSS	-5.27	-4.95	-5.37
Measurement uncertainty	± 1.5 dB		

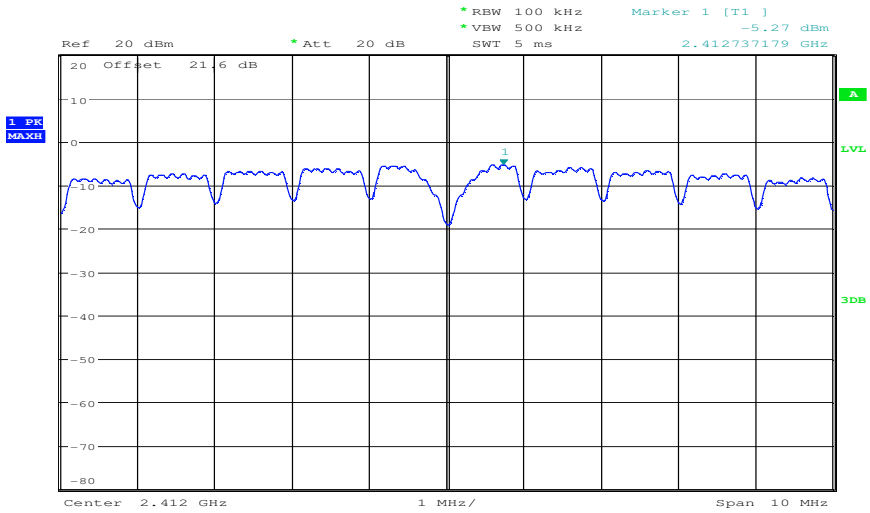
Results: Antenna B

Modulation	Power Spectral density [dBm/3kHz]		
Frequency	2412 MHz	2438 MHz	2464 MHz
DSSS	-5.47	-5.14	-5.55
Measurement uncertainty	± 1.5 dB		

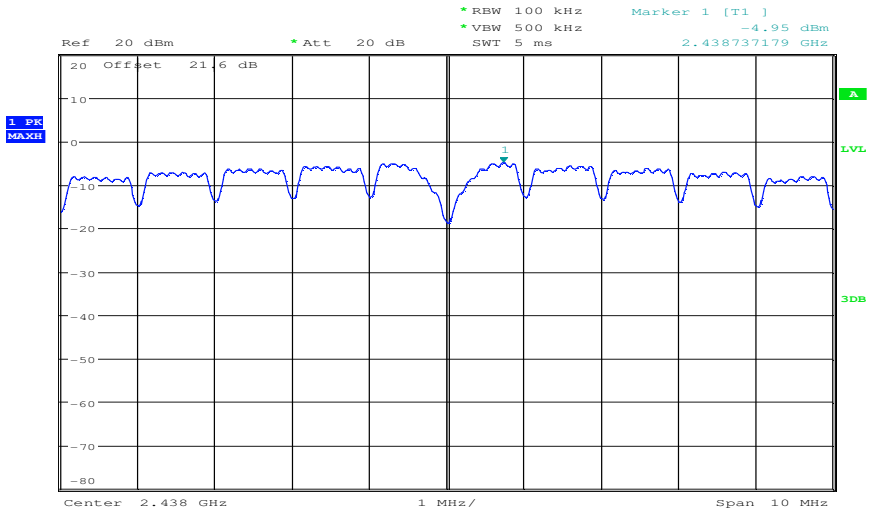
Result: Passed

Plots: Antenna A

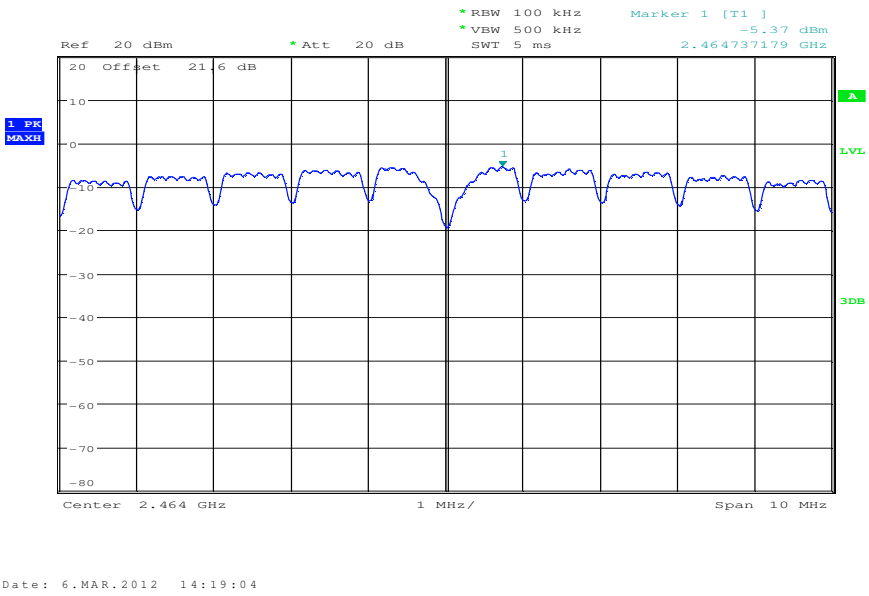
Plot 1: TX mode, lowest channel



Plot 2: TX mode, middle channel

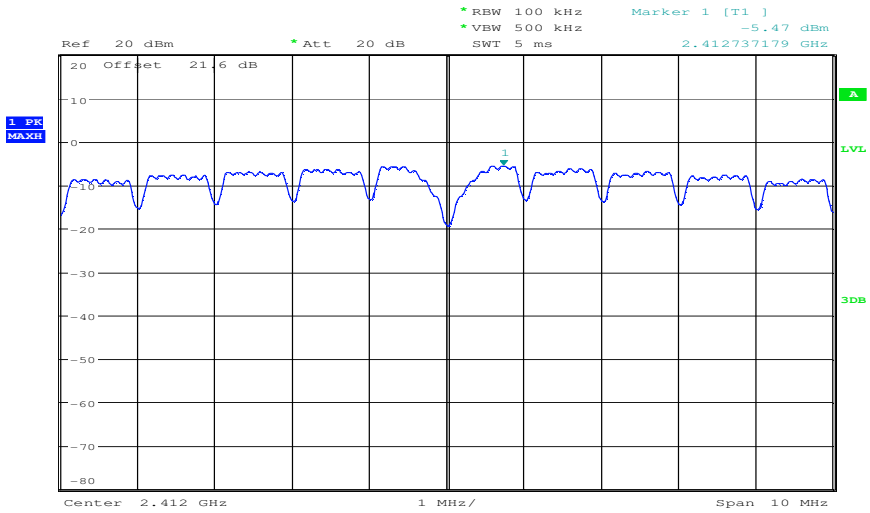


Plot 3: TX mode, highest channel



Plots: Antenna B

Plot 1: TX mode, lowest channel



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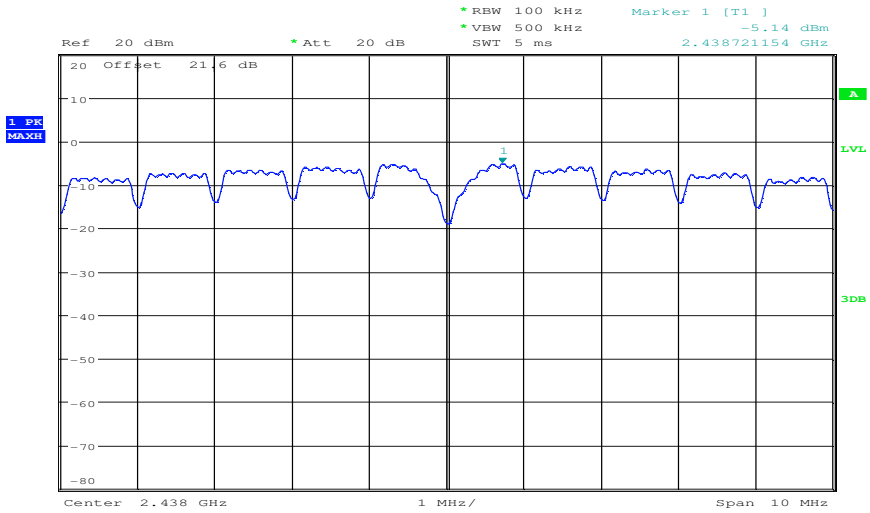
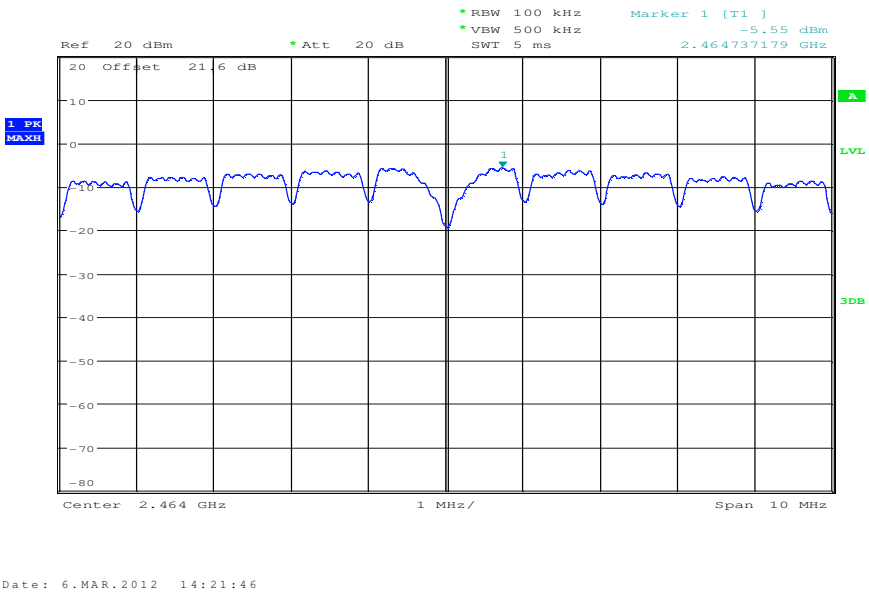
Plot 2: TX mode, middle channel



Date: 6.MAR.2012 14:21:09

Plot 3: TX mode, highest channel



9.4 Spectrum bandwidth – 6 dB bandwidth

Description:

Measurement of the 6 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	100 kHz
Resolution bandwidth:	100 kHz
Span:	See plots
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (a)(2)	RSS 210, Issue 8, A 8.2(a)
Spectrum Bandwidth– 6 dB Bandwidth	
Systems using digital modulation techniques may operate in the 2400–2483.5 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.	

Results: Antenna A

Modulation	6 dB BANDWIDTH [MHz]		
Frequency	2412 MHz	2438 MHz	2464 MHz
DSSS	7.57	7.63	7.63
Measurement uncertainty	± 100 kHz		

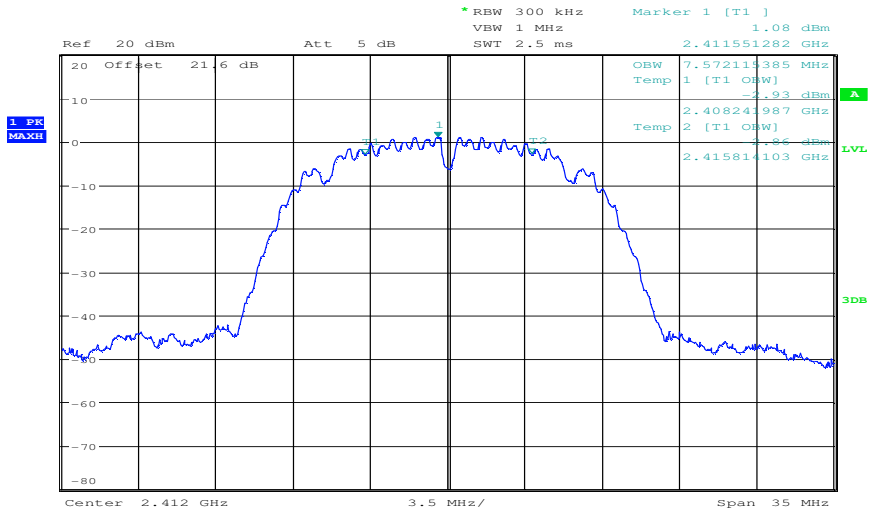
Results: Antenna B

Modulation	6 dB BANDWIDTH [MHz]		
Frequency	2412 MHz	2438 MHz	2464 MHz
DSSS	7.57	7.63	7.63
Measurement uncertainty	± 100 kHz		

Result: Passed

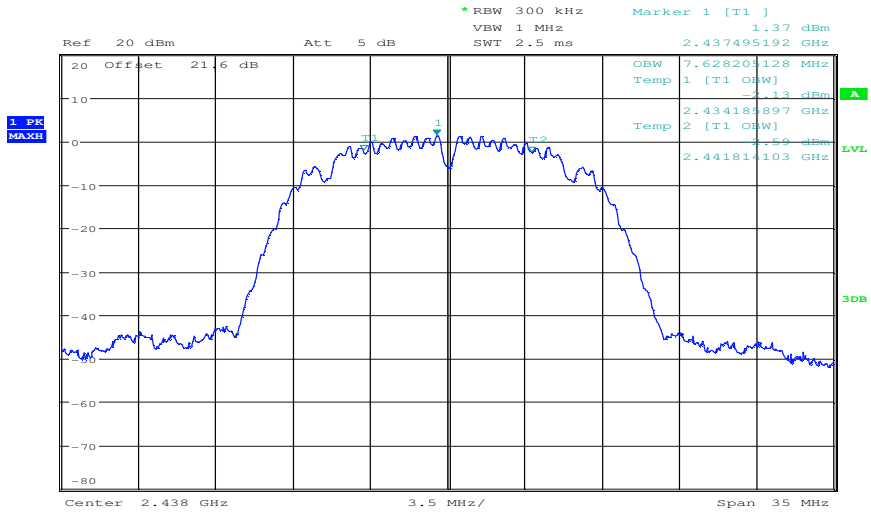
Plots: Antenna A

Plot 1: TX mode, lowest channel, 6 dB bandwidth



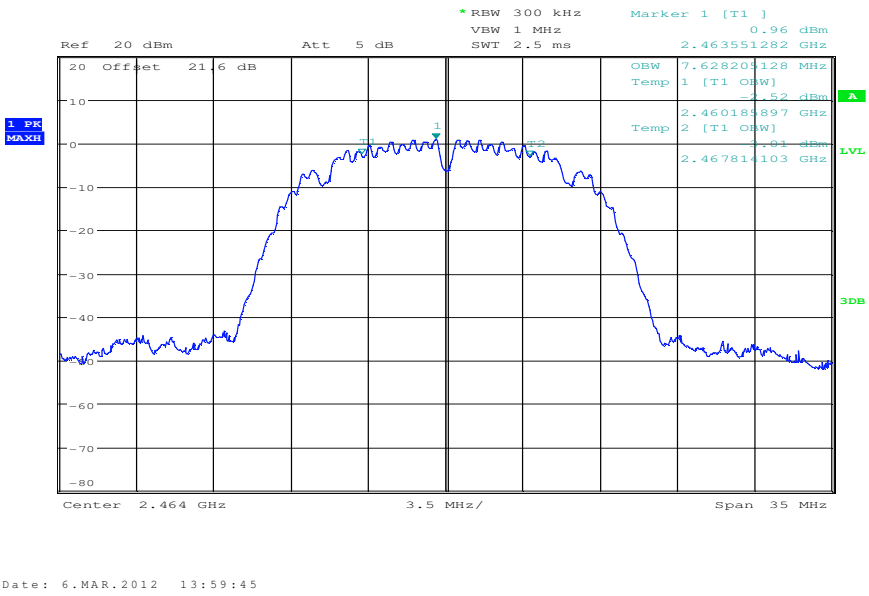
Date: 6.MAR.2012 13:56:32

Plot 2: TX mode, middle channel, 6 dB bandwidth



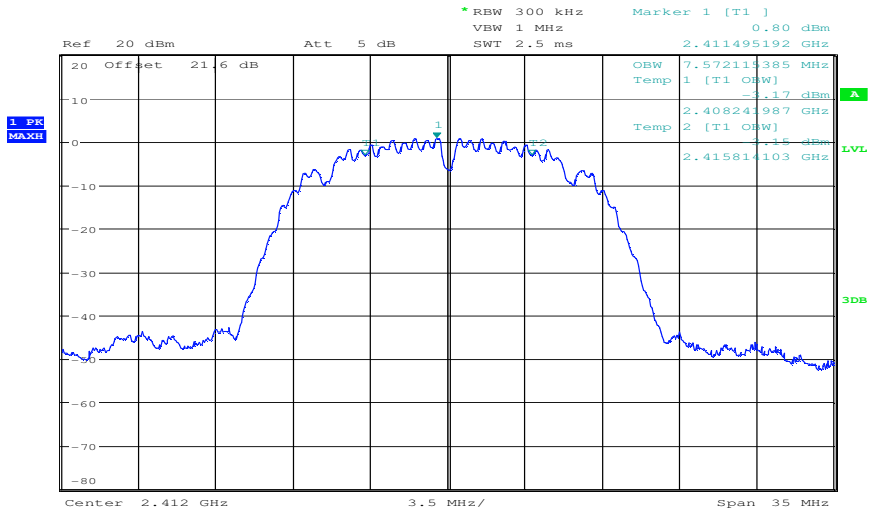
Date: 6.MAR.2012 13:58:49

Plot 3: TX mode, highest channel, 6 dB bandwidth



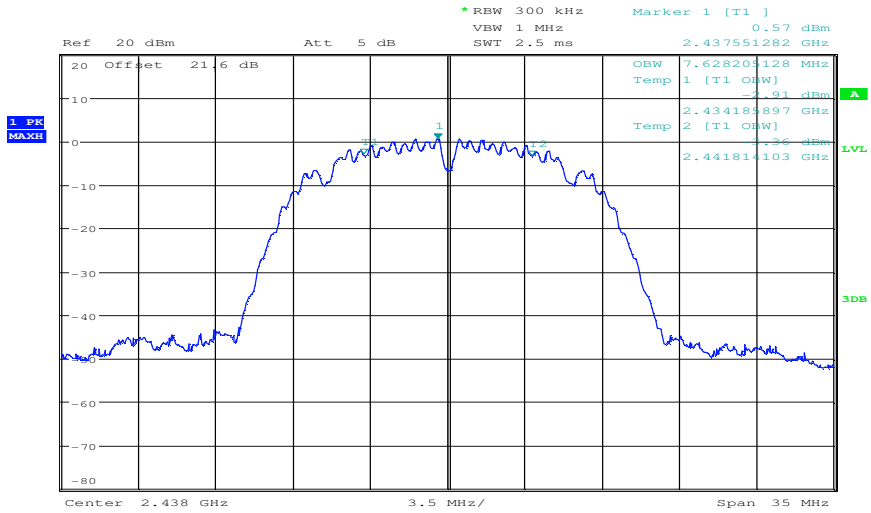
Plots: Antenna B

Plot 1: TX mode, lowest channel, 6 dB bandwidth



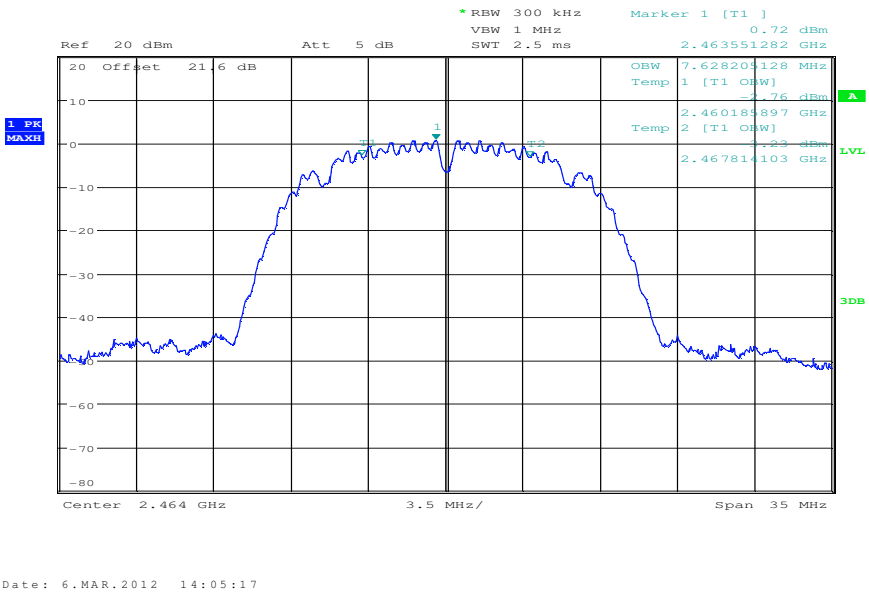
Date: 6.MAR.2012 14:02:36

Plot 2: TX mode, middle channel, 6 dB bandwidth



Date: 6.MAR.2012 14:03:25

Plot 3: TX mode, highest channel, 6 dB bandwidth



9.5 Spectrum bandwidth – 20 dB bandwidth

Description:

Measurement of the 20 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	100 kHz
Resolution bandwidth:	100 kHz
Span:	See plots
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (a)(2)	RSS 210, Issue 8, A 8.2(a)
Spectrum Bandwidth – 20 dB Bandwidth	
Systems using digital modulation techniques may operate in the 2400–2483.5 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.	

Results: Antenna A

Modulation	20 dB BANDWIDTH [MHz]		
Frequency	2412 MHz	2438 MHz	2464 MHz
DSSS	13.85	13.85	13.85
Measurement uncertainty	± 100 kHz		

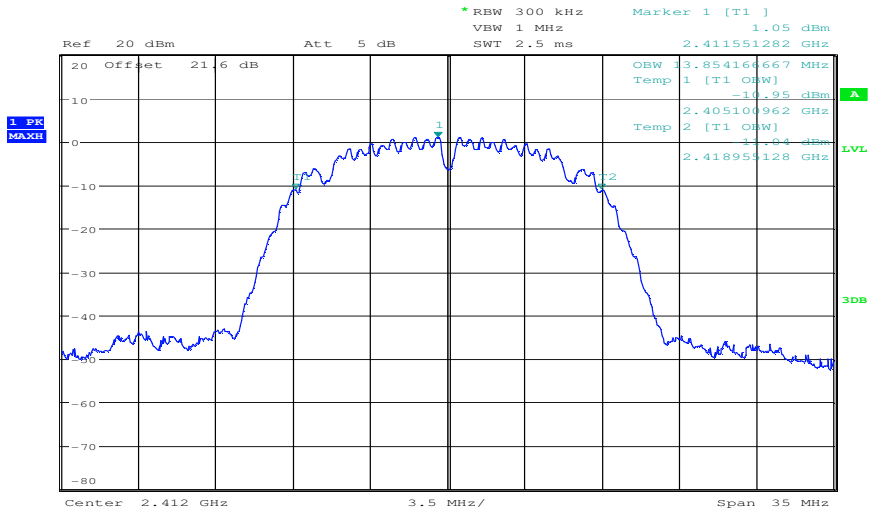
Results: Antenna B

Modulation	20 dB BANDWIDTH [MHz]		
Frequency	2412 MHz	2438 MHz	2464 MHz
DSSS	13.85	13.85	13.85
Measurement uncertainty	± 100 kHz		

Result: Passed

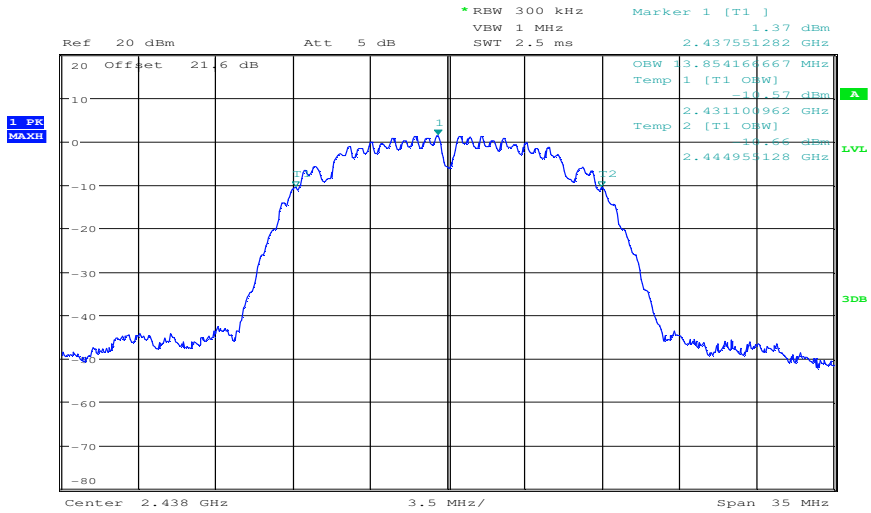
Plots: Antenna A

Plot 1: TX mode, lowest channel, 20 dB bandwidth



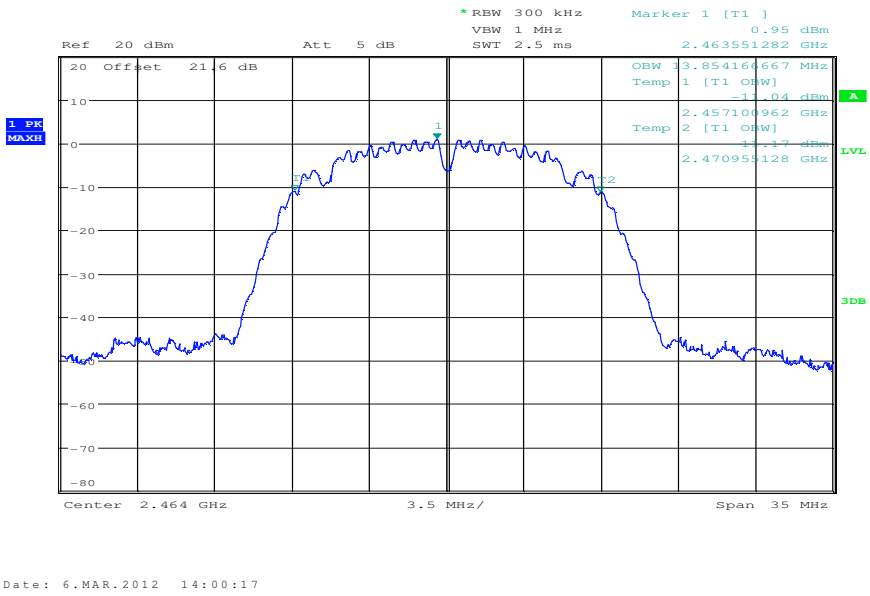
Date: 6.MAR.2012 13:57:08

Plot 2: TX mode, middle channel, 20 dB bandwidth



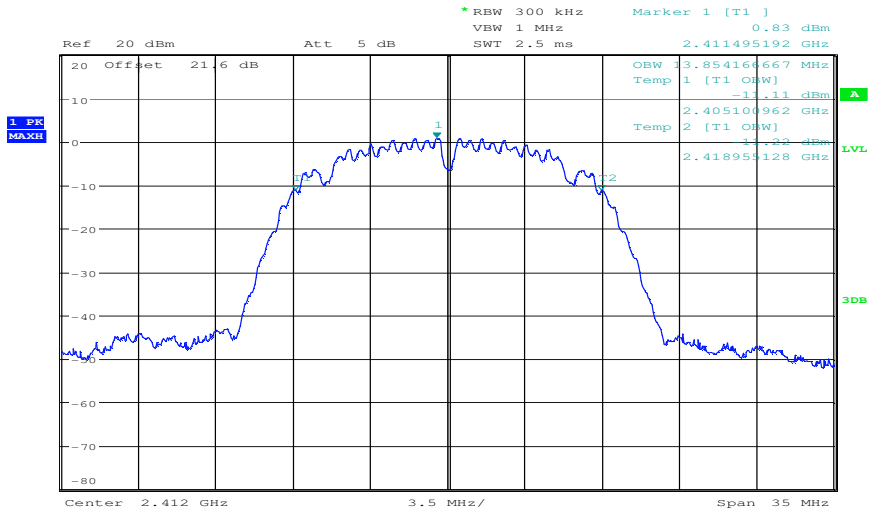
Date: 6.MAR.2012 13:57:55

Plot 3: TX mode, highest channel, 20 dB bandwidth



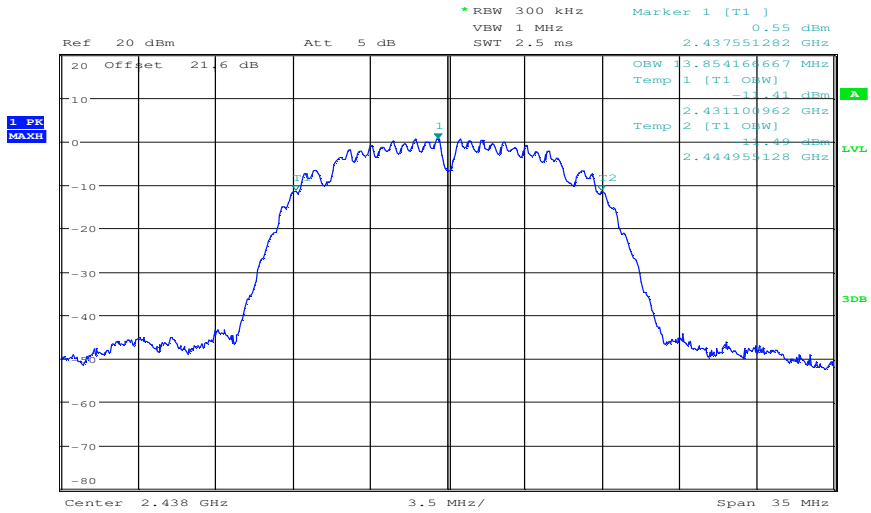
Plots: Antenna B

Plot 1: TX mode, lowest channel, 20 dB bandwidth



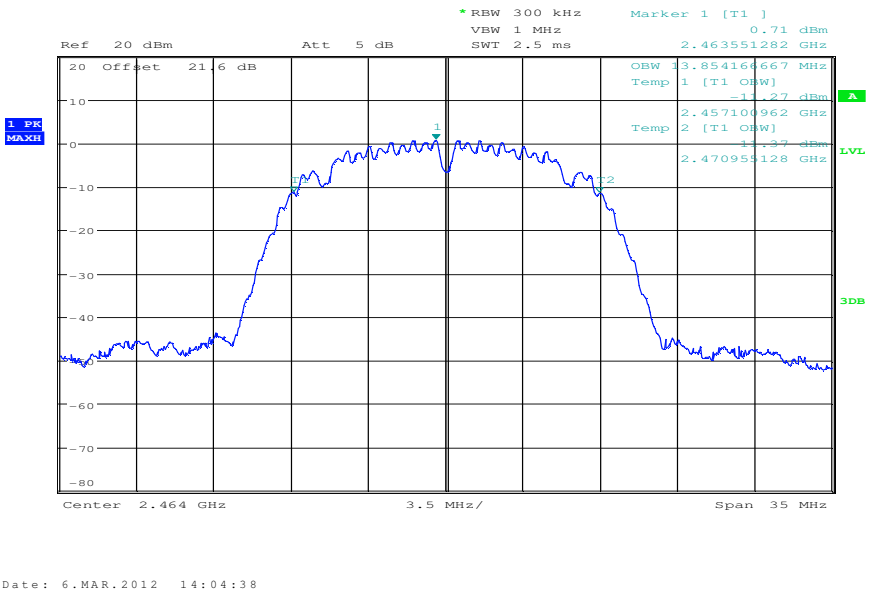
Date: 6.MAR.2012 14:01:53

Plot 2: TX mode, middle channel, 20 dB bandwidth



Date: 6.MAR.2012 14:04:00

Plot 3: TX mode, highest channel, 20 dB bandwidth



9.6 Band edge compliance conducted

Description:

Measurement of the conducted band edge compliance. EUT is measured at the lower and upper band edge in both modes.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	500 kHz
Resolution bandwidth:	100 kHz
Span:	Lower Band Edge: 2300 – 2425 MHz Upper Band Edge: 2450 – 2500 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (d)	RSS 210, Issue 8, A 8.5
Band Edge Compliance Conducted	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.	

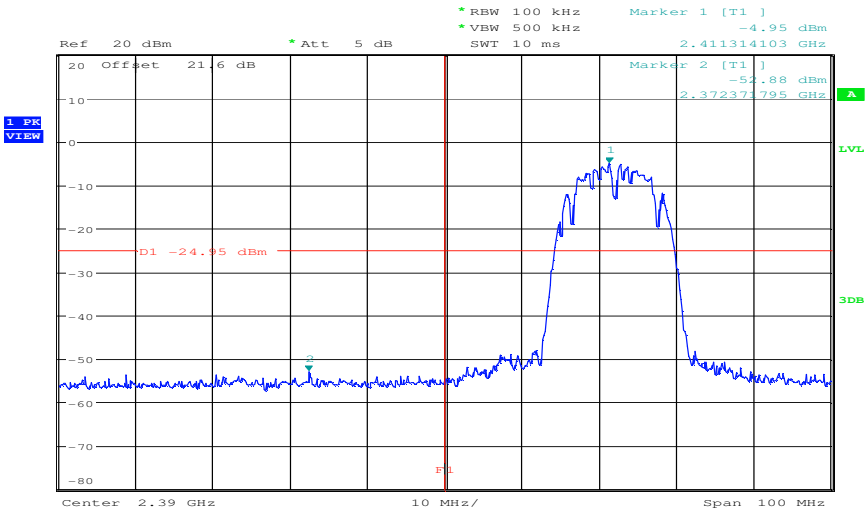
Results:

Scenario Modulation	Band Edge Compliance Conducted [dB]	
	Antenna A	Antenna B
Lower Band Edge – Lowest channel	> 20 dB (see plot 1)	> 20 dB (see plot 3)
Upper Band Edge – Highest channel	> 20 dB (see plot 2)	> 20 dB (see plot 4)
Measurement uncertainty	± 1.5 dB	

Result: Passed

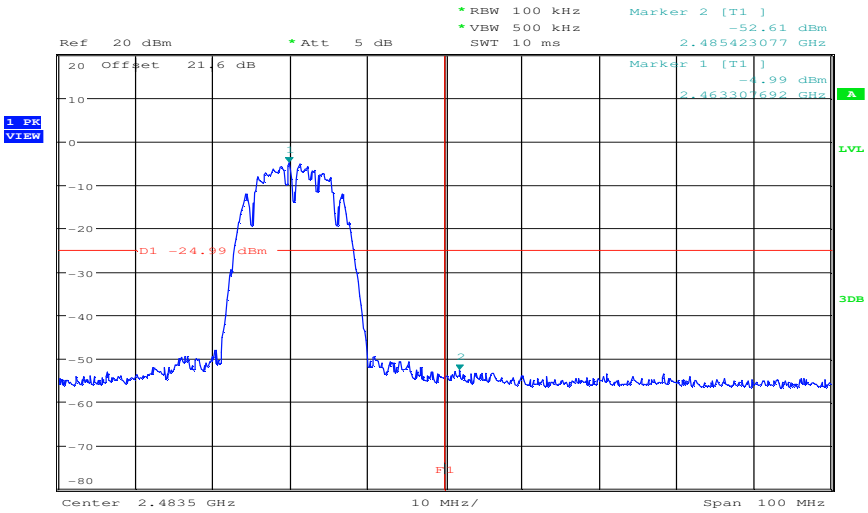
Plots: Antenna A

Plot 1: TX mode, lower band edge



Date: 6.MAR.2012 14:27:21

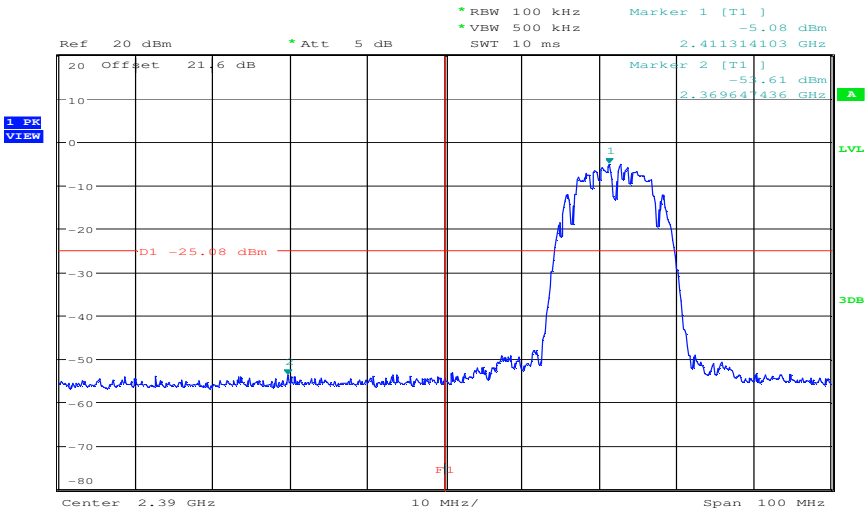
Plot 2: TX mode, upper band edge



Date: 6.MAR.2012 14:29:19

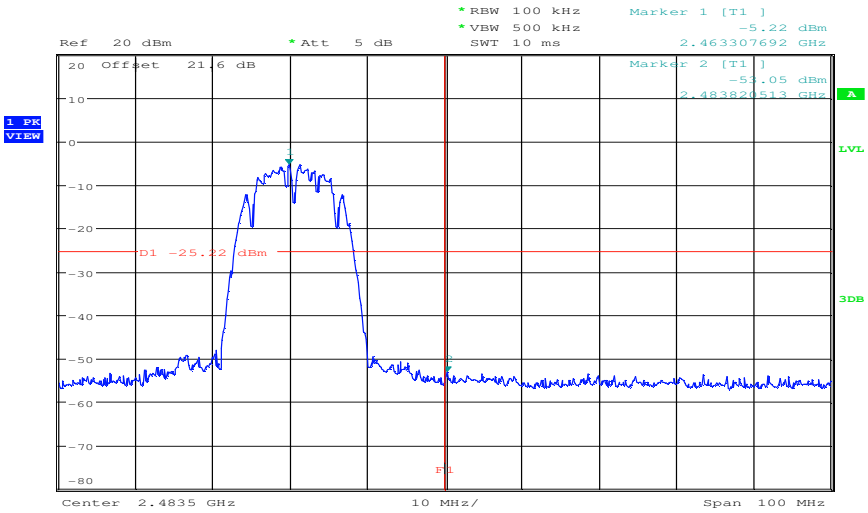
Plots: Antenna B

Plot 1: TX mode, lower band edge



Date: 6.MAR.2012 14:25:44

Plot 2: TX mode, upper band edge



Date: 6.MAR.2012 14:33:37

9.7 Band edge compliance radiated

Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to channel 1 for the lower restricted band and to channel 11 for the upper restricted band. The measurement is repeated for all modulations. Measurement distance is 3m.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	10 Hz
Resolution bandwidth:	1 MHz
Span:	Lower Band: 2300 – 2400 MHz Higher Band: 2480 – 2500 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.205	RSS 210, Issue 8, A 8.5
Band Edge Compliance Radiated	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).	
54 dBµV/m AVG	

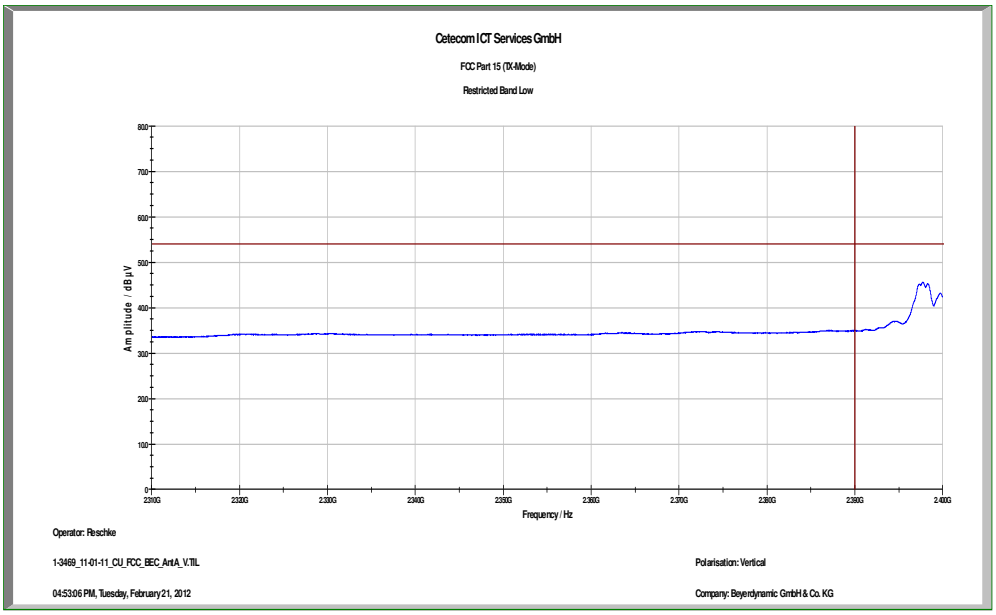
Results:

Scenario Modulation	Band Edge Compliance Radiated [dB]	
	Antenna A	Antenna B
Lower Band Edge – Lowest channel	> 20 dB (see plot 1)	> 20 dB (see plot 3)
Upper Band Edge – Highest channel	> 20 dB (see plot 2)	> 20 dB (see plot 4)
Measurement uncertainty	± 1.5 dB	

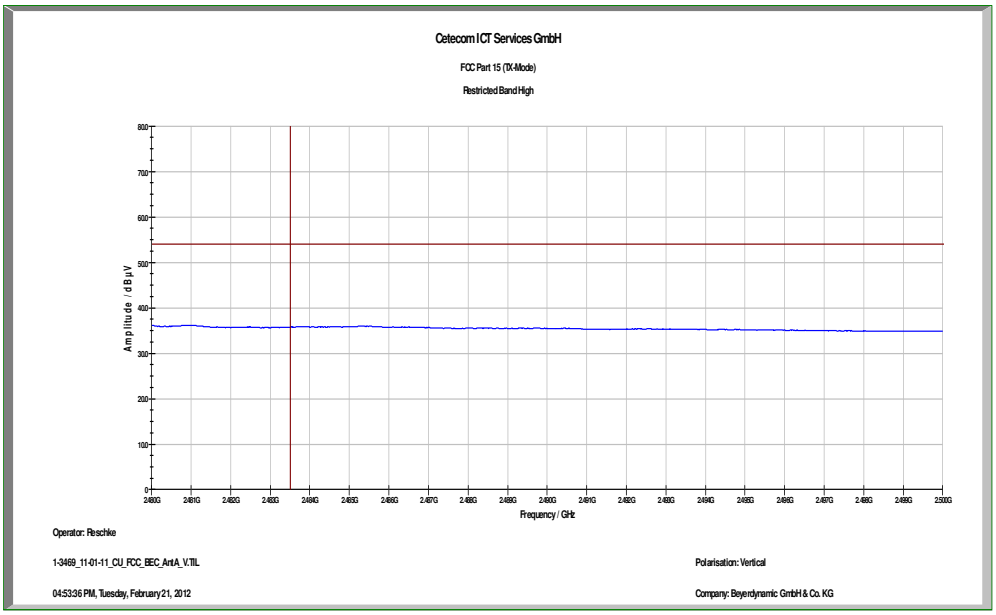
Result: Passed

Plots: Rod antenna A

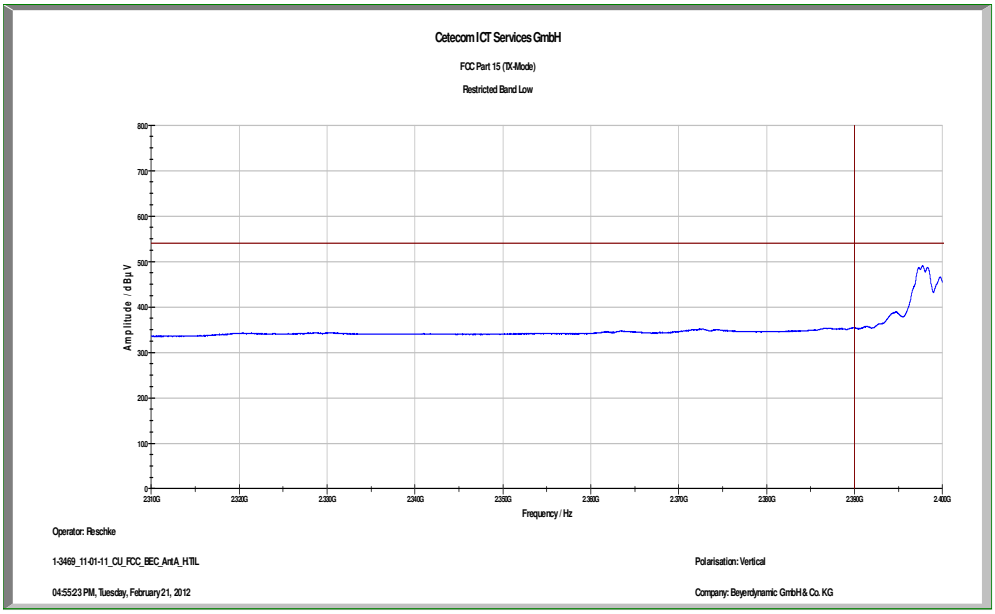
Plot 1: TX mode, lower band edge, vertical polarization



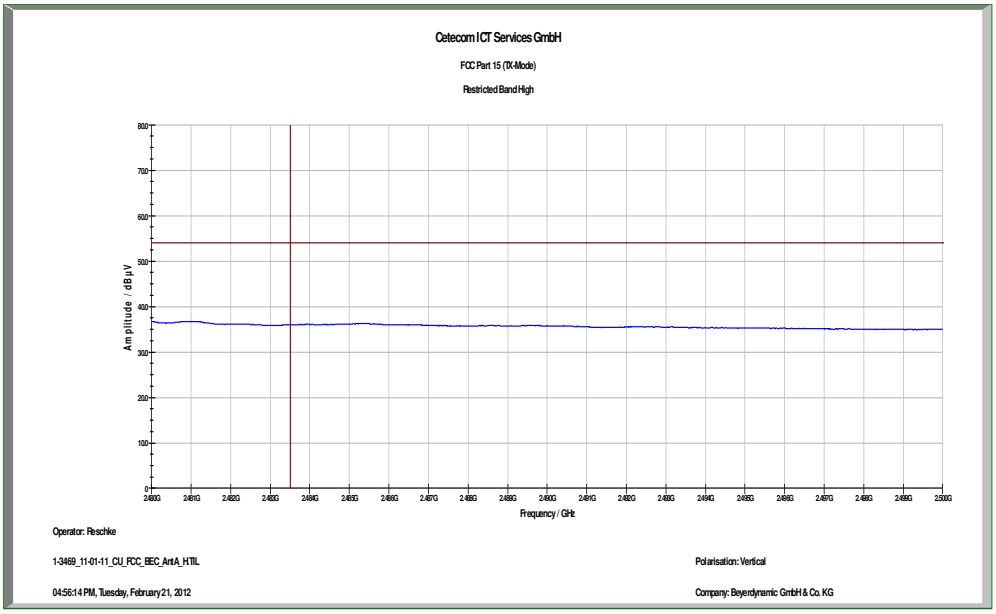
Plot 2: TX mode, upper band edge, vertical polarization



Plot 3: TX mode, lower band edge, horizontal polarization

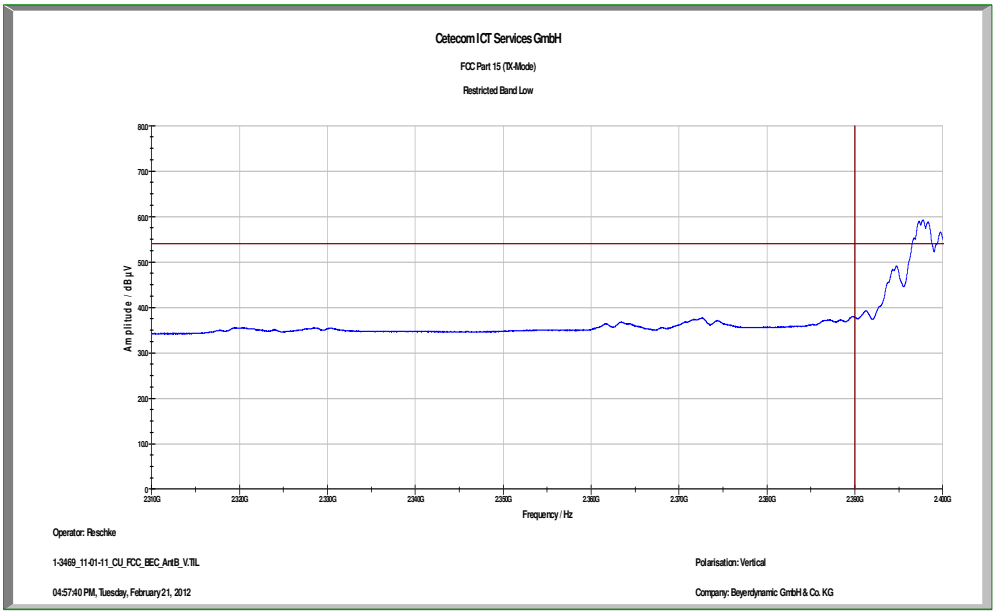


Plot 4: TX mode, upper band edge, horizontal polarization

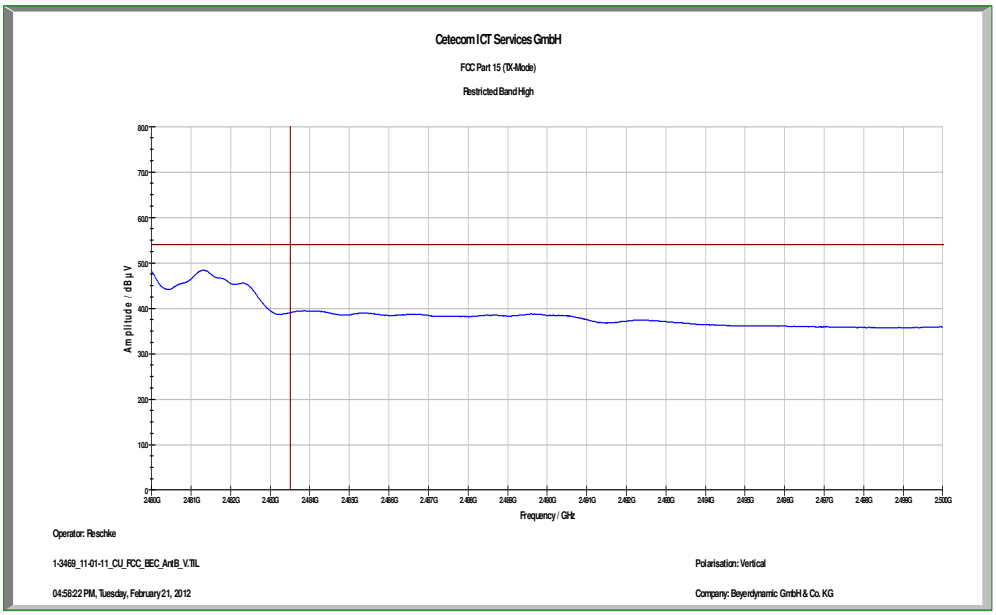


Plots: Rod antenna B

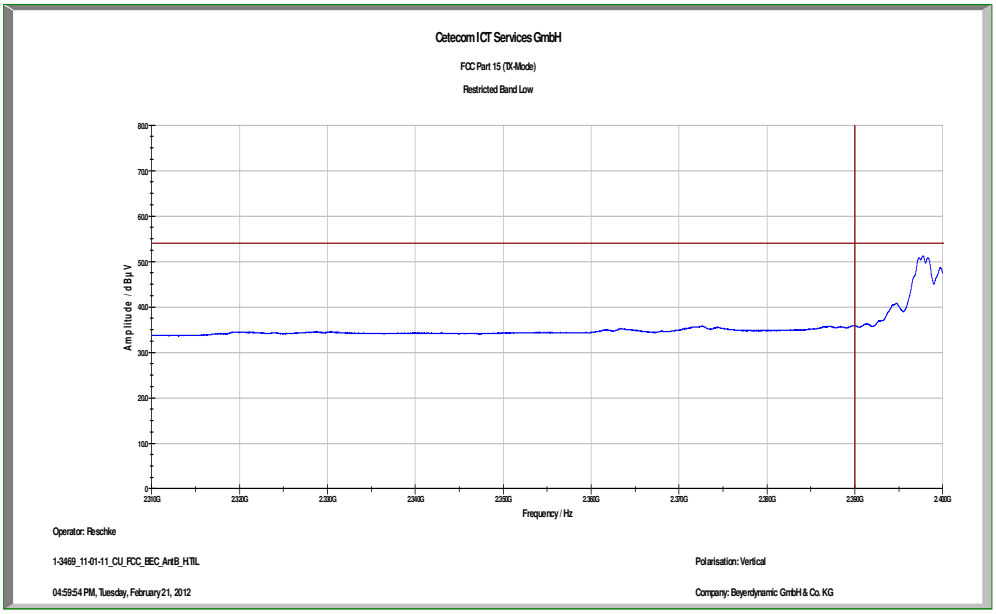
Plot 1: TX mode, lower band edge, vertical polarization



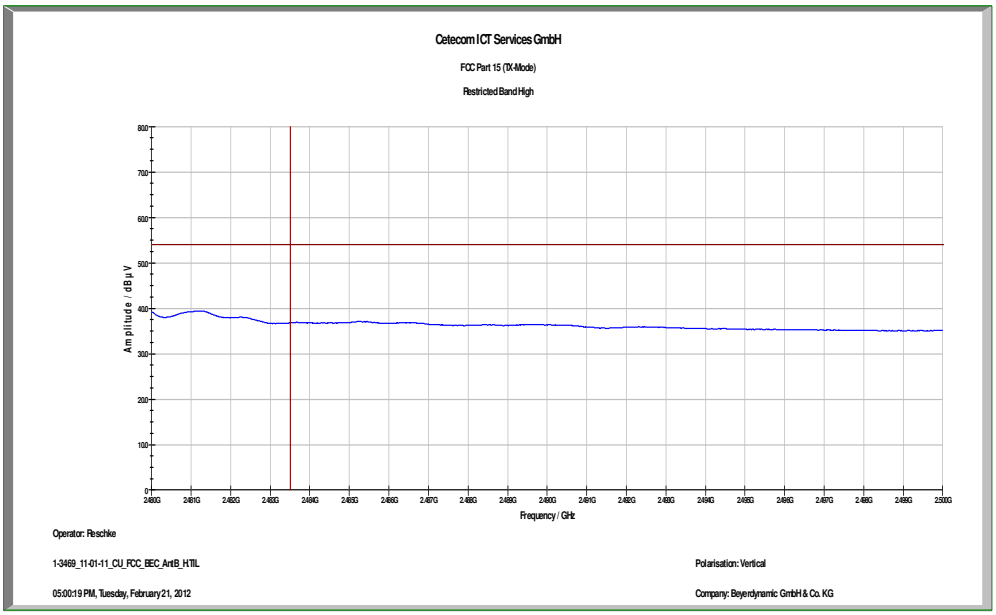
Plot 2: TX mode, upper band edge, vertical polarization



Plot 3: TX mode, lower band edge, horizontal polarization

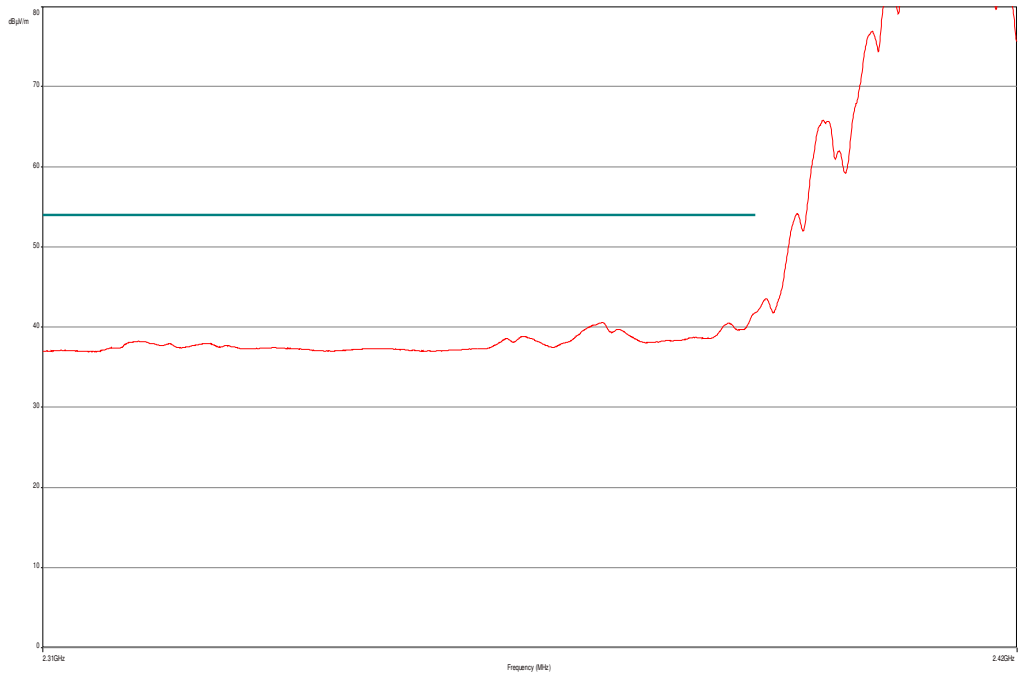


Plot 4: TX mode, upper band edge, horizontal polarization

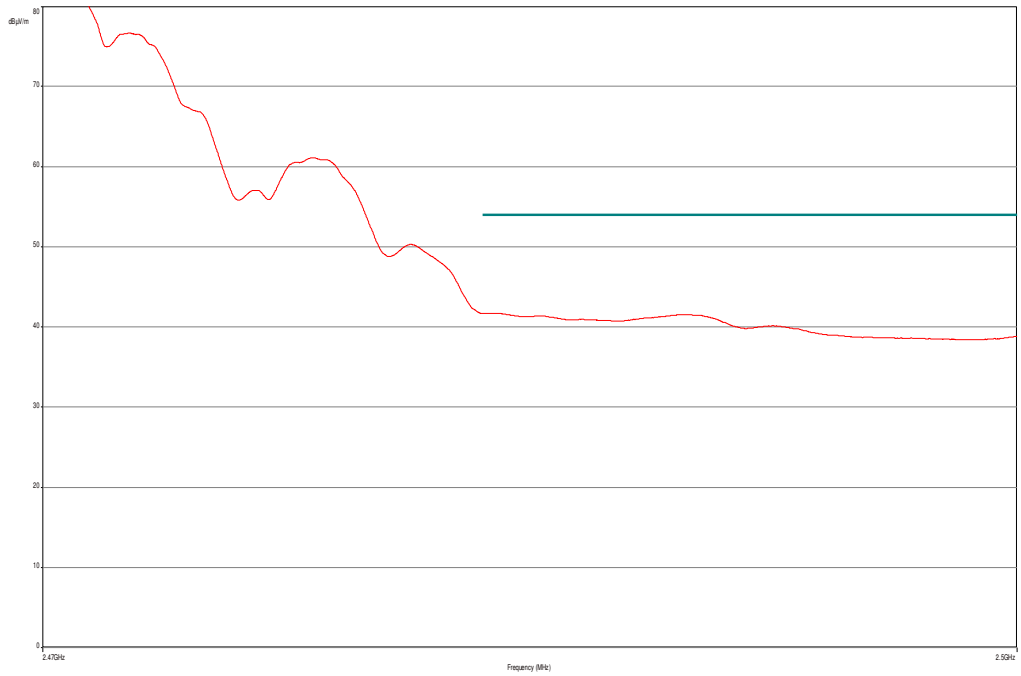


Plots: Planar antenna A (valid for 10m and 20m cable)

Plot 1: TX mode, lower band edge, vertical & horizontal polarization

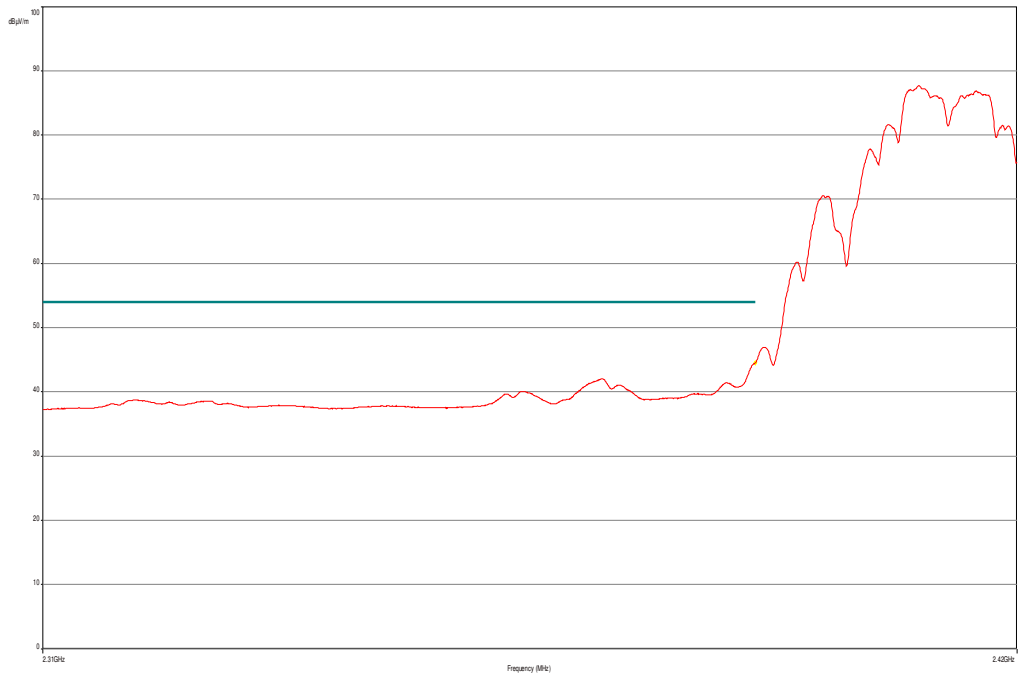


Plot 2: TX mode, upper band edge, vertical & horizontal polarization

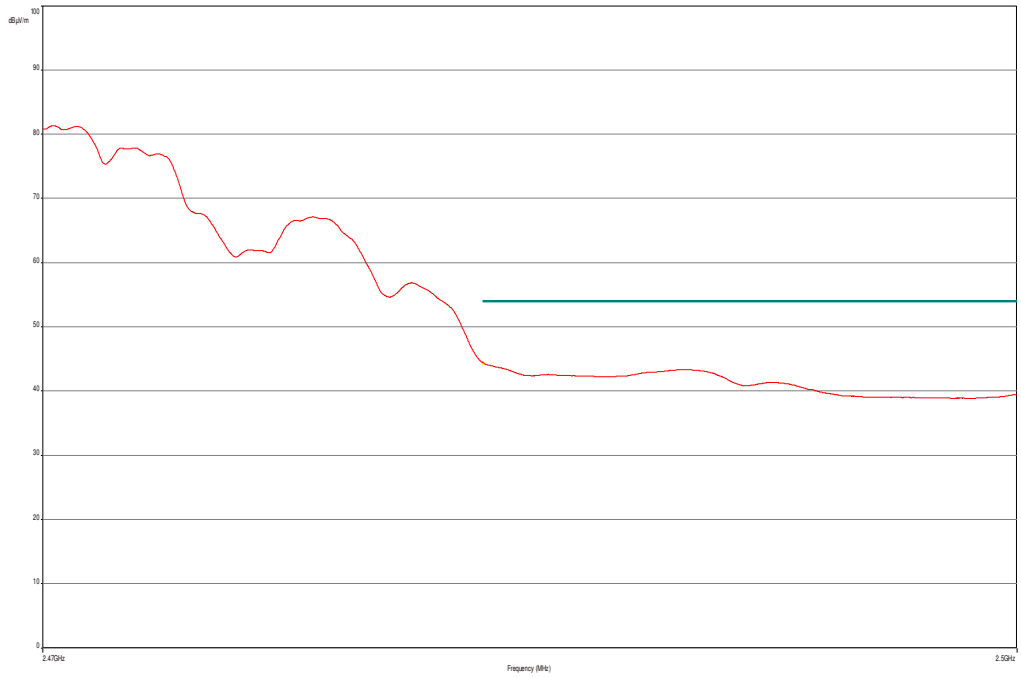


Plots: Planar antenna B (valid for 10m and 20m cable)

Plot 1: TX mode, lower band edge, vertical & horizontal polarization

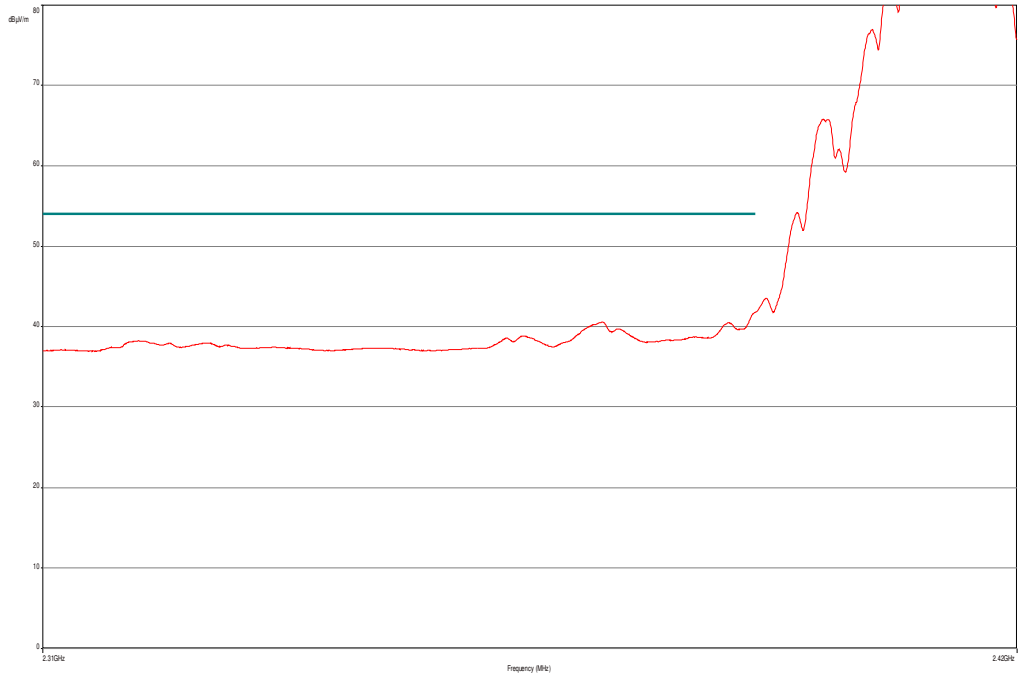


Plot 2: TX mode, upper band edge, vertical & horizontal polarization

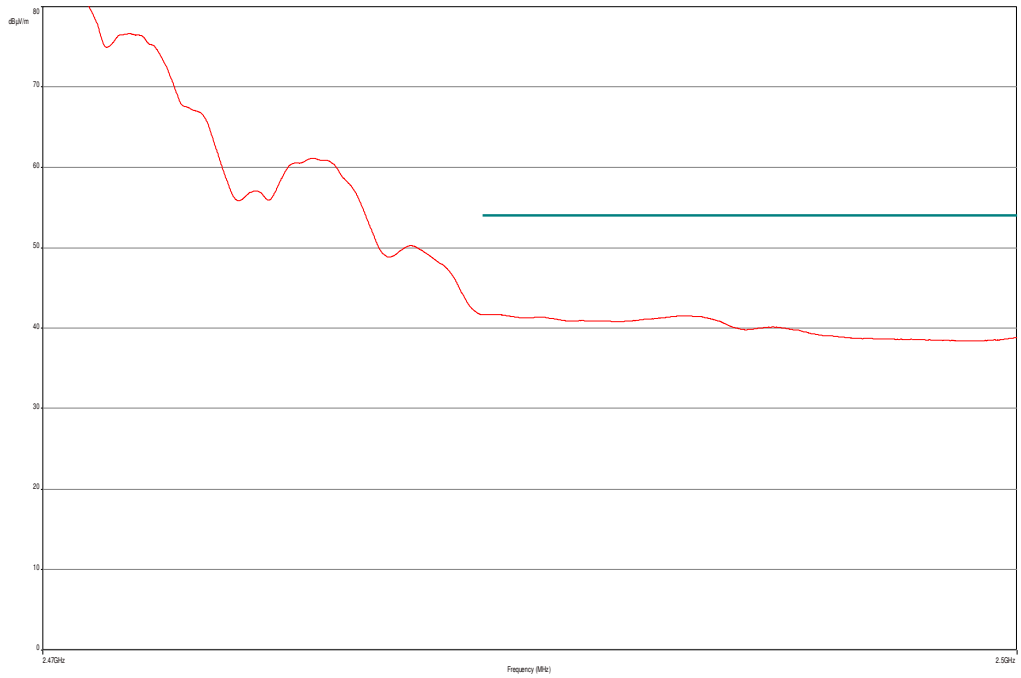


Plots: Omnidirectional antenna A (valid for 10m and 20m cable)

Plot 1: TX mode, lower band edge, vertical & horizontal polarization

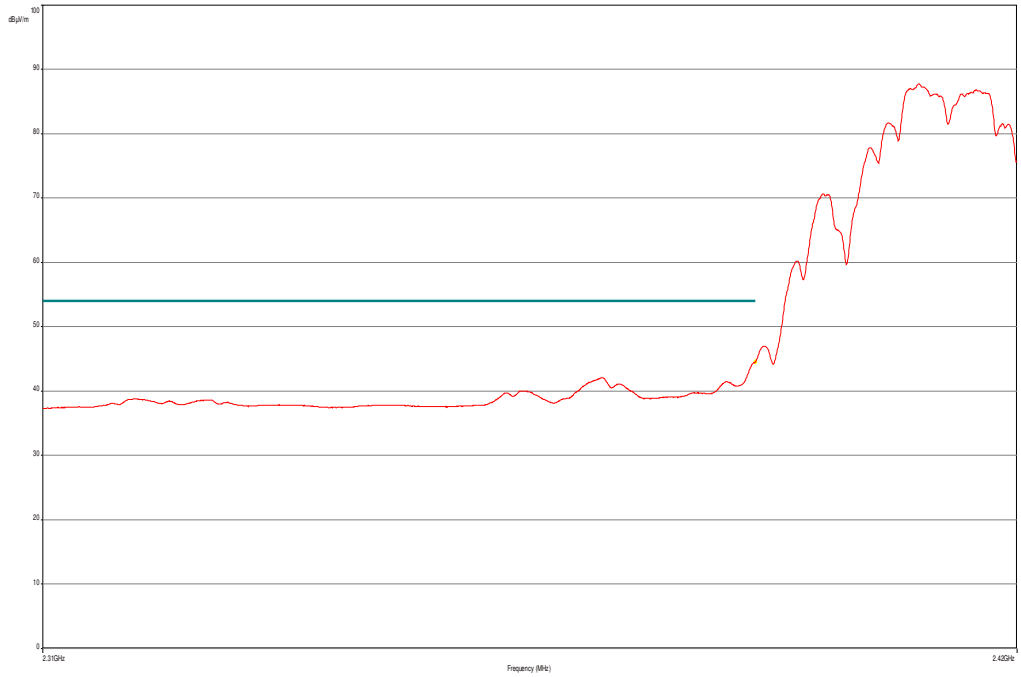


Plot 2: TX mode, upper band edge, vertical & horizontal polarization

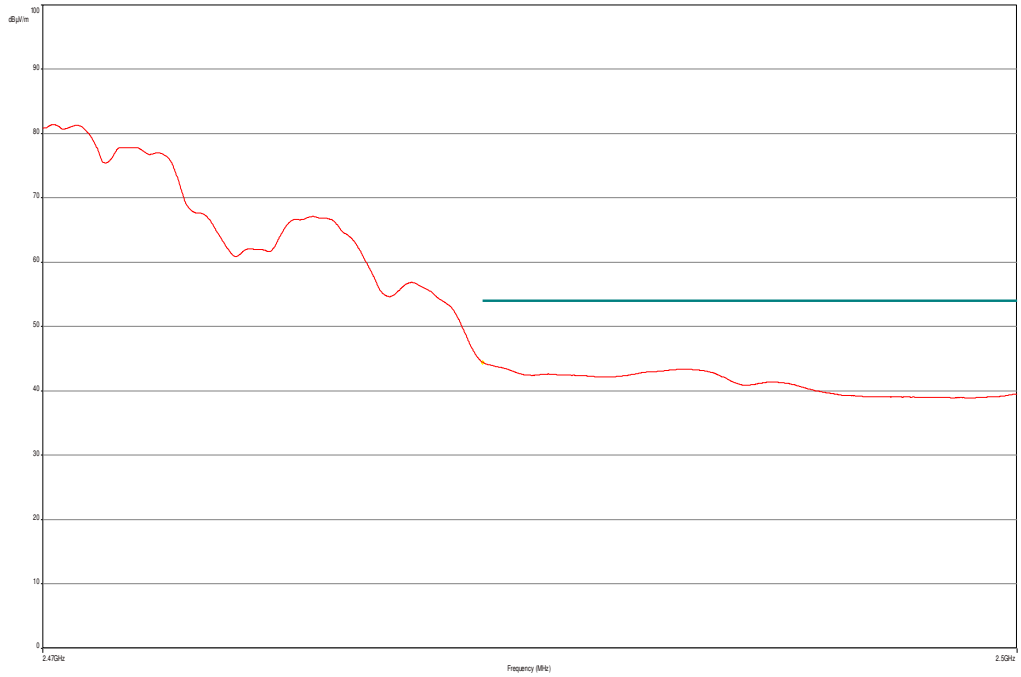


Plots: Omnidirectional antenna B (valid for 10m and 20m cable)

Plot 1: TX mode, lower band edge, vertical & horizontal polarization



Plot 2: TX mode, upper band edge, vertical & horizontal polarization



9.8 TX spurious emissions conducted

Description:

Measurement of the conducted spurious emissions in transmit mode.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	F < 1 GHz: 500 kHz F > 1 GHz: 500 kHz
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 100 kHz
Span:	9 kHz to 25 GHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247(d)	RSS 210, Issue 8, A 8.5
TX Spurious Emissions Conducted	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required	

Results: Antenna A

TX Spurious Emissions Conducted					
DSSS - mode					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412		-3.18	30 dBm		Operating frequency
No critical peaks detected			-20 dBc		complies
2437		-2.72	30 dBm		Operating frequency
No critical peaks detected			-20 dBc		complies
2462		-3.21	30 dBm		Operating frequency
No critical peaks detected			-20 dBc		complies
Measurement uncertainty		± 3 dB			

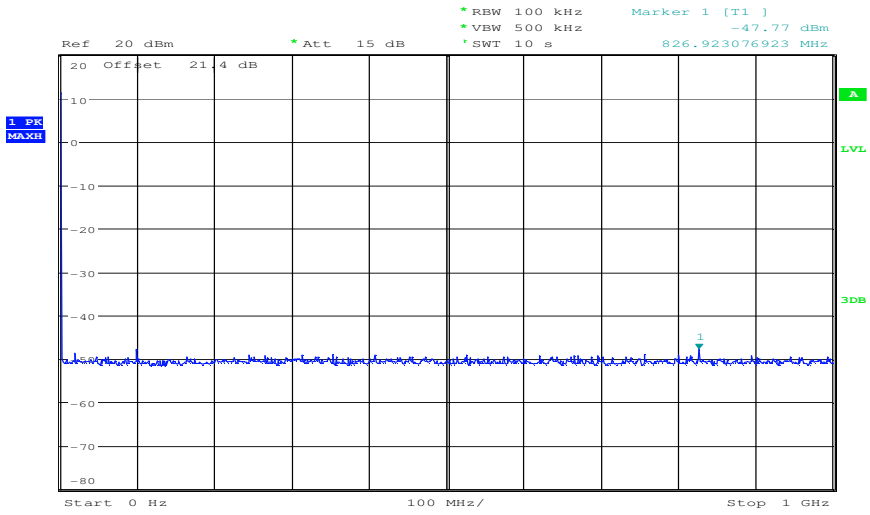
Results: Antenna B

TX Spurious Emissions Conducted					
DSSS - mode					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2412		-3.32	30 dBm		Operating frequency
No critical peaks detected			-20 dBc		complies
2437		-2.96	30 dBm		Operating frequency
No critical peaks detected			-20 dBc		complies
2462		-3.42	30 dBm		Operating frequency
No critical peaks detected			-20 dBc		complies
Measurement uncertainty		± 3 dB			

Result: Passed

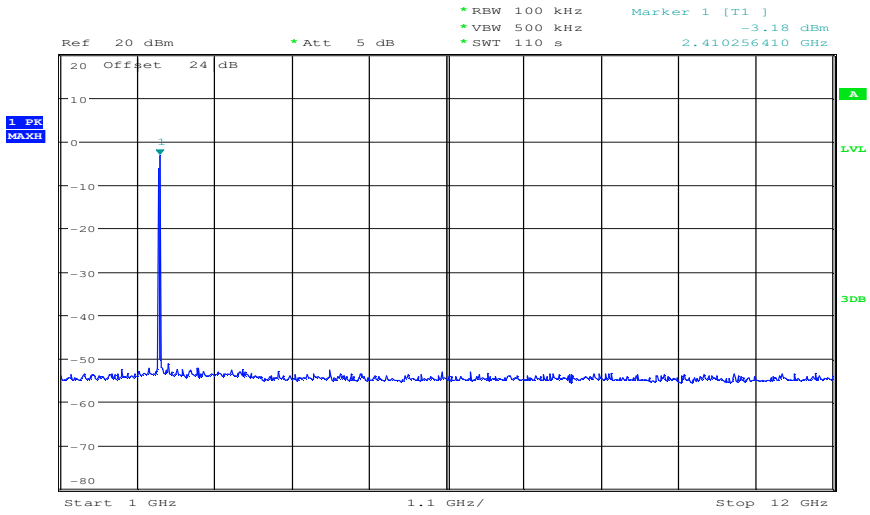
Plots: Antenna A

Plot 1: TX mode, lowest channel, 0 Hz - 1 GHz

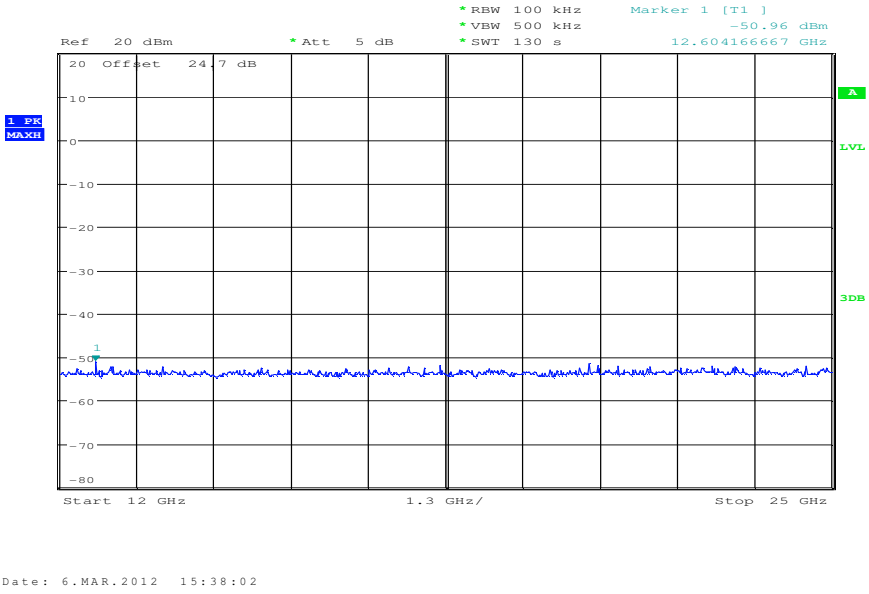


The peak at the beginning of the plot is the LO from the SA.

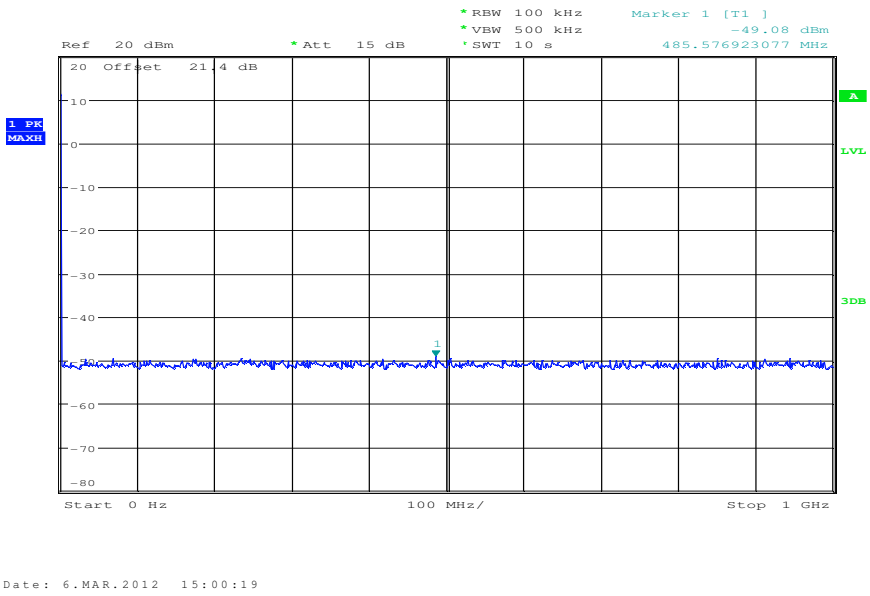
Plot 2: TX mode, lowest channel, 1 GHz - 12 GHz



Plot 3: TX mode, lowest channel, 12 GHz - 25 GHz

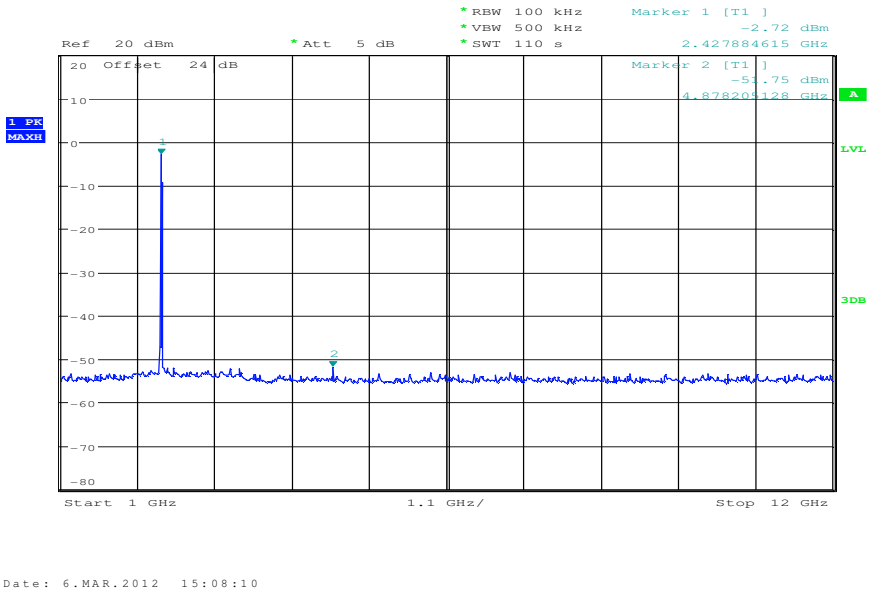


Plot 4: TX mode, middle channel, 0 Hz - 1 GHz

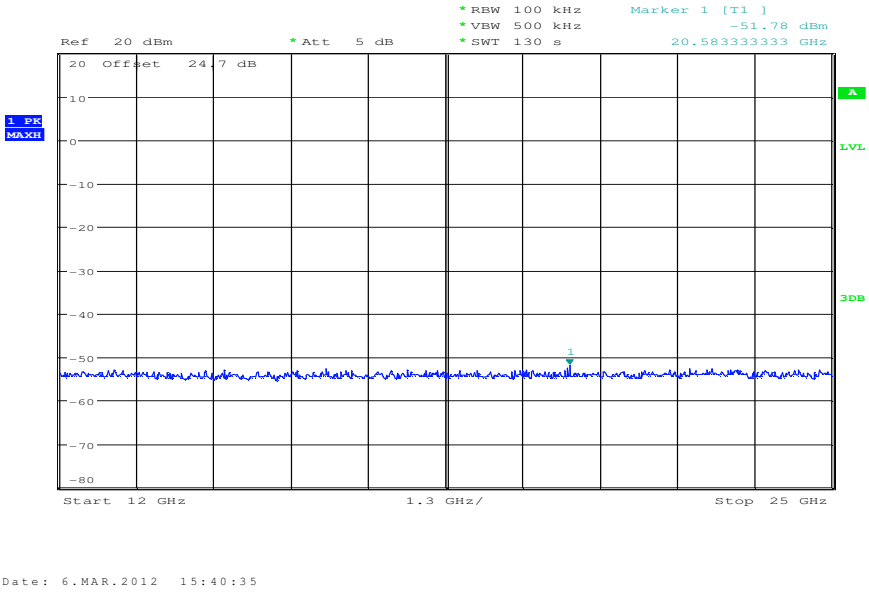


The peak at the beginning of the plot is the LO from the SA.

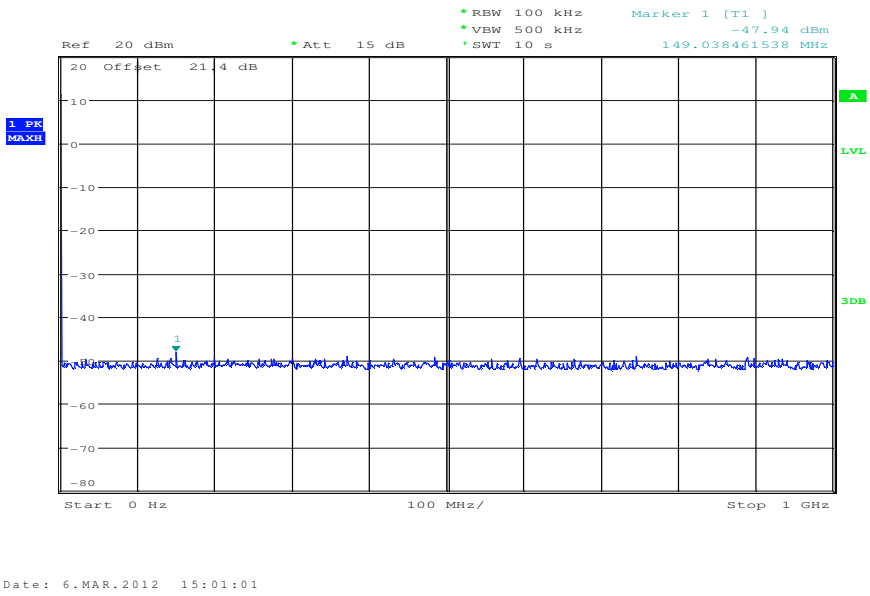
Plot 5: TX mode, middle channel, 1 GHz - 12 GHz



Plot 6: TX mode, middle channel, 12 GHz - 25 GHz

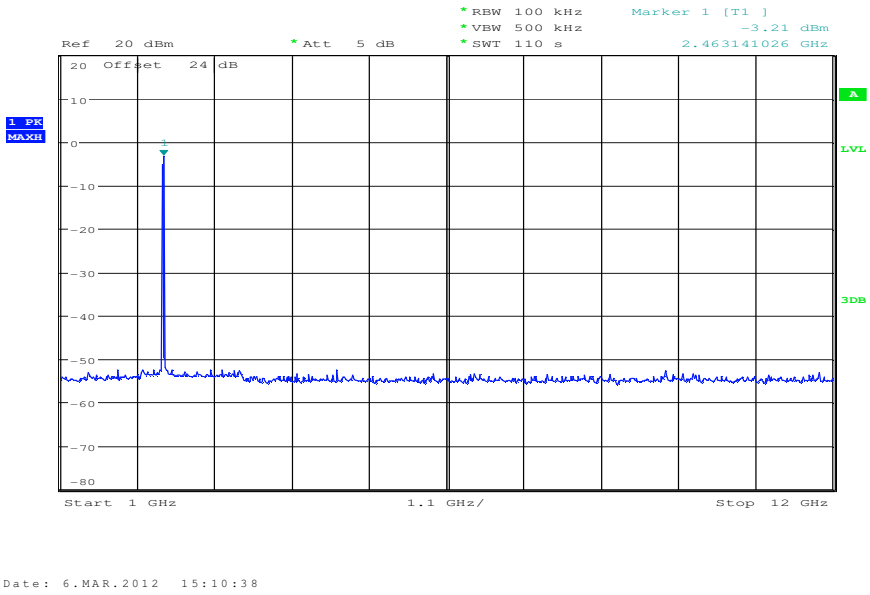


Plot 7: TX mode, highest channel, 0 Hz - 1 GHz

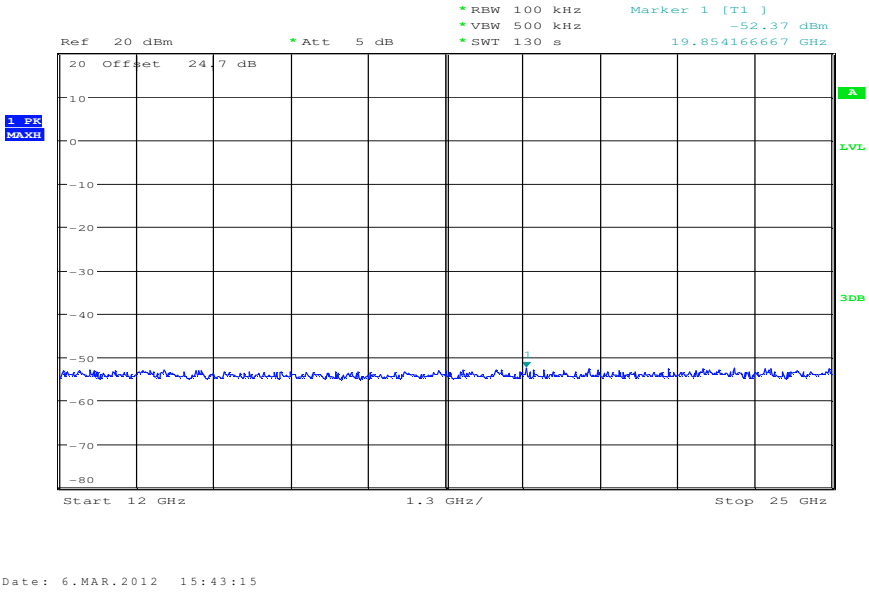


The peak at the beginning of the plot is the LO from the SA.

Plot 8: TX mode, highest channel, 1 GHz - 12 GHz

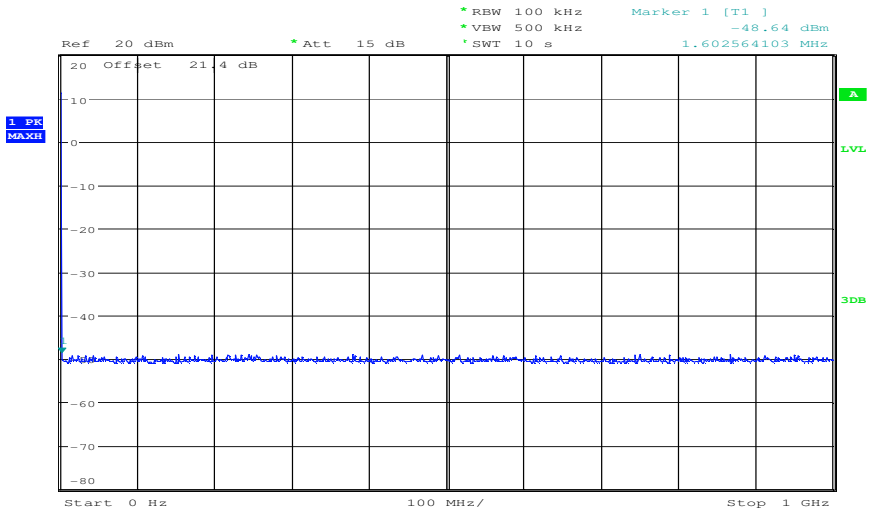


Plot 9: TX mode, highest channel, 12 GHz - 25 GHz



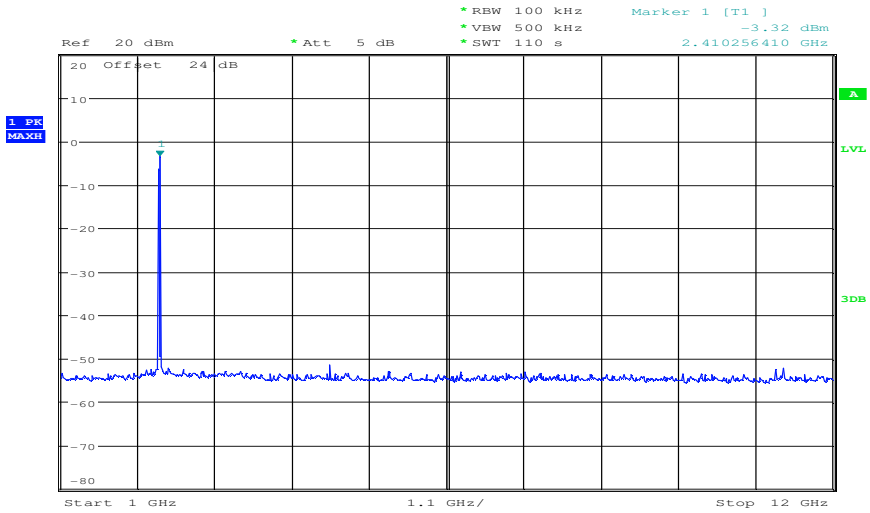
Plots: Antenna B

Plot 1: TX mode, lowest channel, 0 Hz - 1 GHz

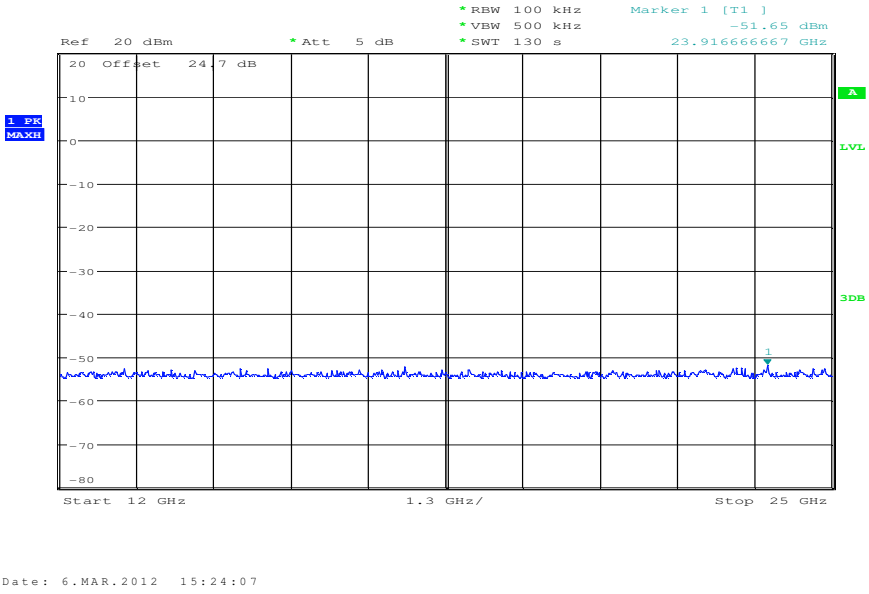


The peak at the beginning of the plot is the LO from the SA.

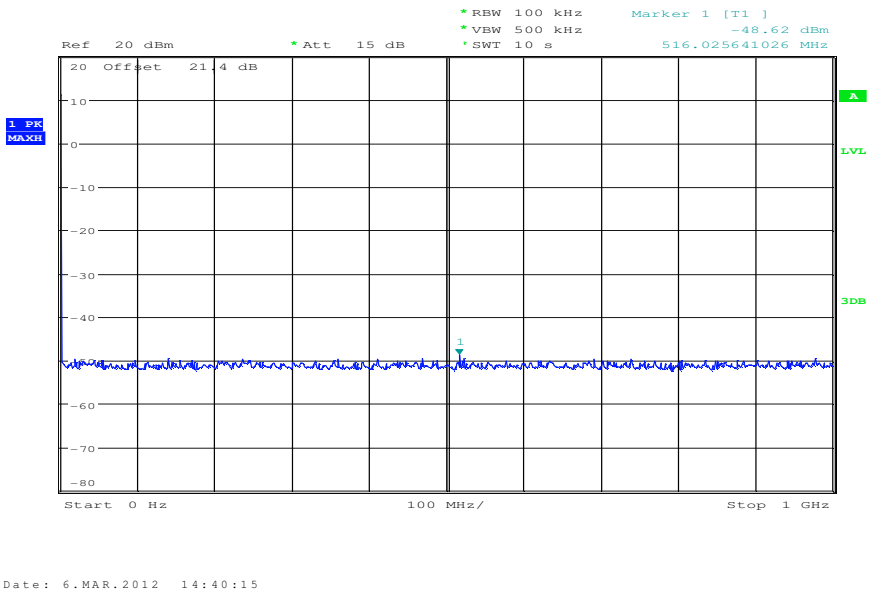
Plot 2: TX mode, lowest channel, 1 GHz - 12 GHz



Plot 3: TX mode, lowest channel, 12 GHz - 25 GHz

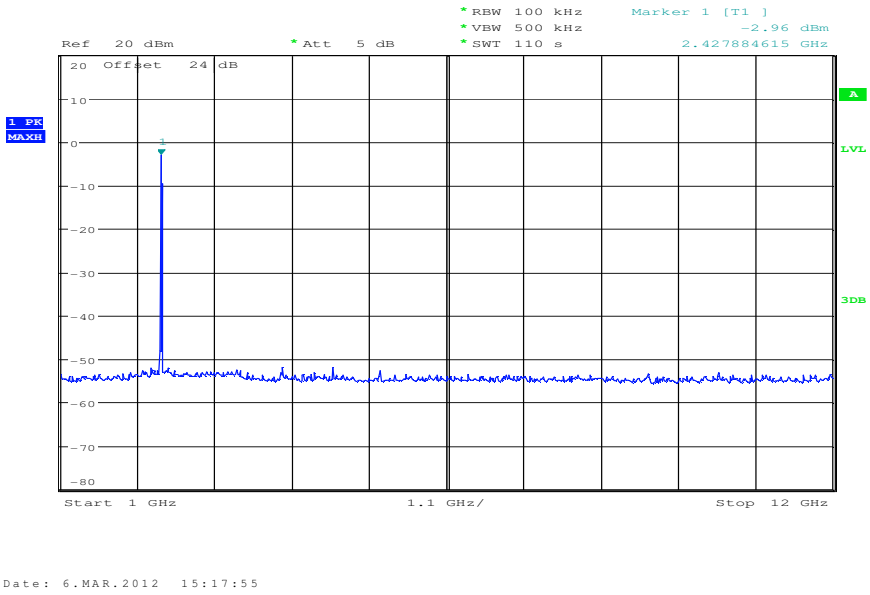


Plot 4: TX mode, middle channel, 0 Hz - 1 GHz

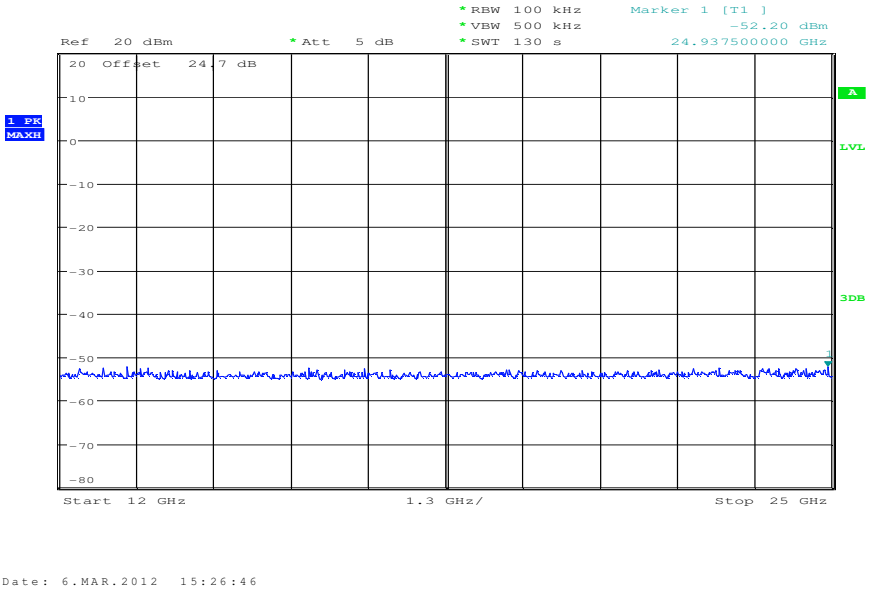


The peak at the beginning of the plot is the LO from the SA.

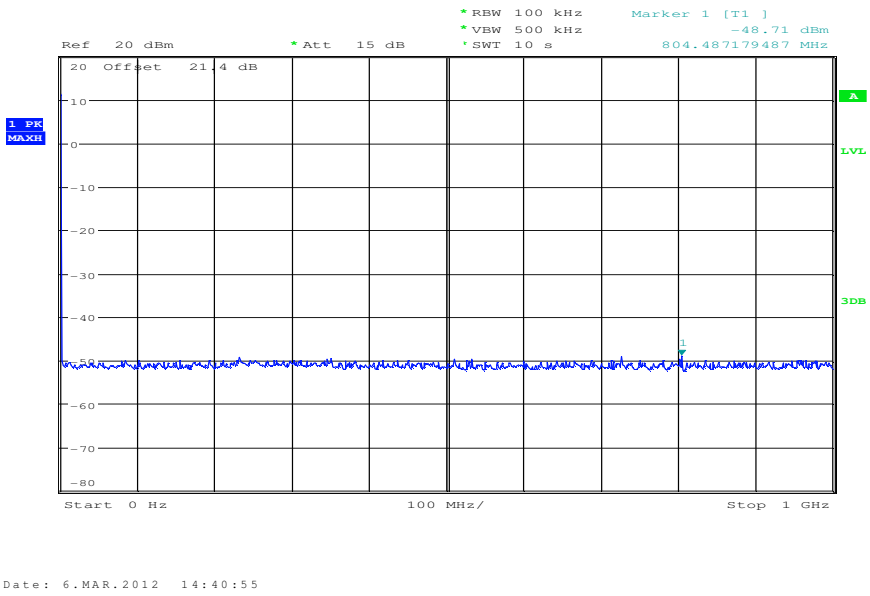
Plot 5: TX mode, middle channel, 1 GHz - 12 GHz



Plot 6: TX mode, middle channel, 12 GHz - 25 GHz

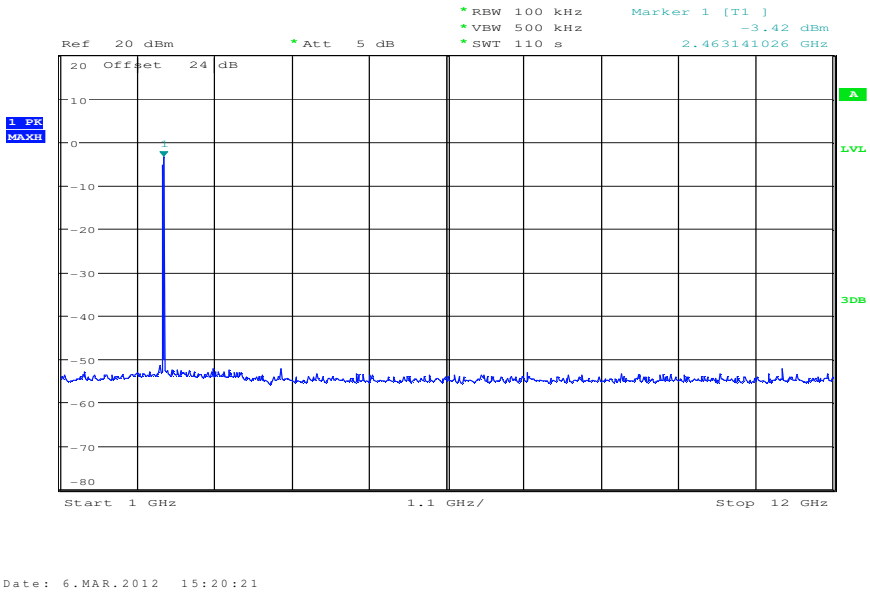


Plot 7: TX mode, highest channel, 0 Hz - 1 GHz

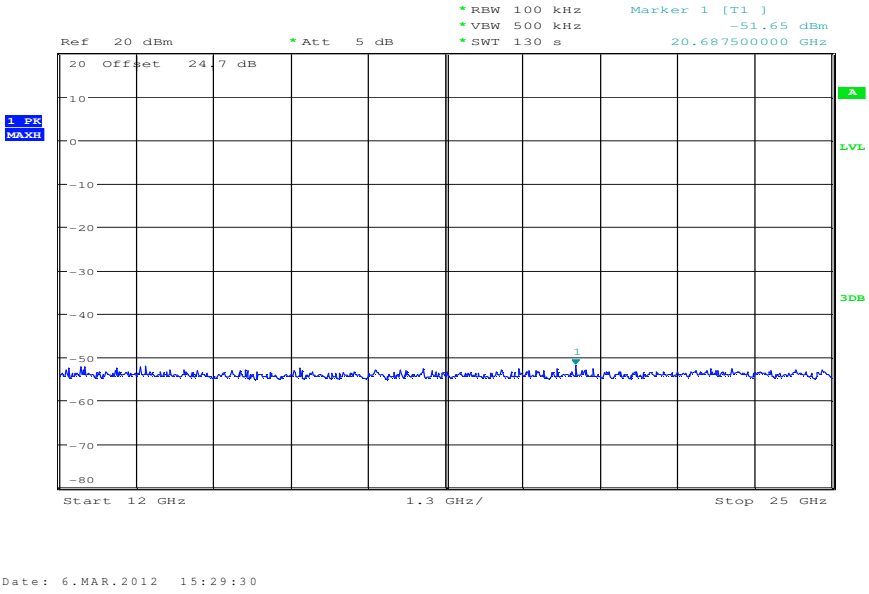


The peak at the beginning of the plot is the LO from the SA.

Plot 8: TX mode, highest channel, 1 GHz - 12 GHz



Plot 9: TX mode, highest channel, 12 GHz - 25 GHz



9.9 TX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in transmit mode.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	Sweep: 100 kHz Remeasurement: 10 Hz
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Span:	30 MHz to 26 GHz
Trace-Mode:	Max Hold
Measured Modulation	☒ DSSS

Limits:

FCC	IC	
CFR Part 15.247(d)	RSS 210, Issue 8, A 8.5	
TX Spurious Emissions Radiated		
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).		
§15.209		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Results: Rod antenna A

TX Spurious Emissions Radiated [dBµV/m]								
DSSS – mode								
2412 MHz			2438 MHz			2464 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
4824	Peak	53.97	4876	Peak	50.70	4928	Peak	50.20
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: Rod antenna B

TX Spurious Emissions Radiated [dBµV/m]								
DSSS – mode								
2412 MHz			2438 MHz			2464 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
4824	Peak	53.47	4876	Peak	51.02	4928	Peak	50.30
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: Planar antenna A with 10 m cable

TX Spurious Emissions Radiated [dBµV/m]								
DSSS – mode								
2412 MHz			2438 MHz			2464 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
4824	Peak	50.66	4876	Peak	50.38	4928	Peak	49.74
Measurement uncertainty			± 3 dB					

Result: Passed

Results: Planar antenna B with 10 m cable

TX Spurious Emissions Radiated [dBµV/m]								
DSSS – mode								
2412 MHz			2438 MHz			2464 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
4824	Peak	52.66	4876	Peak	50.39	4928	Peak	47.60
Measurement uncertainty			± 3 dB					

Result: Passed

Results: Omnidirectional antenna A with 10 m cable

TX Spurious Emissions Radiated [dBµV/m]								
DSSS – mode								
2412 MHz			2438 MHz			2464 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
No critical peaks detected!			No critical peaks detected!			No critical peaks detected!		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: Omnidirectional antenna B with 10 m cable

TX Spurious Emissions Radiated [dBµV/m]								
DSSS – mode								
2412 MHz			2438 MHz			2464 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
No critical peaks detected!			No critical peaks detected!			No critical peaks detected!		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Plots: Rod antenna A

Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

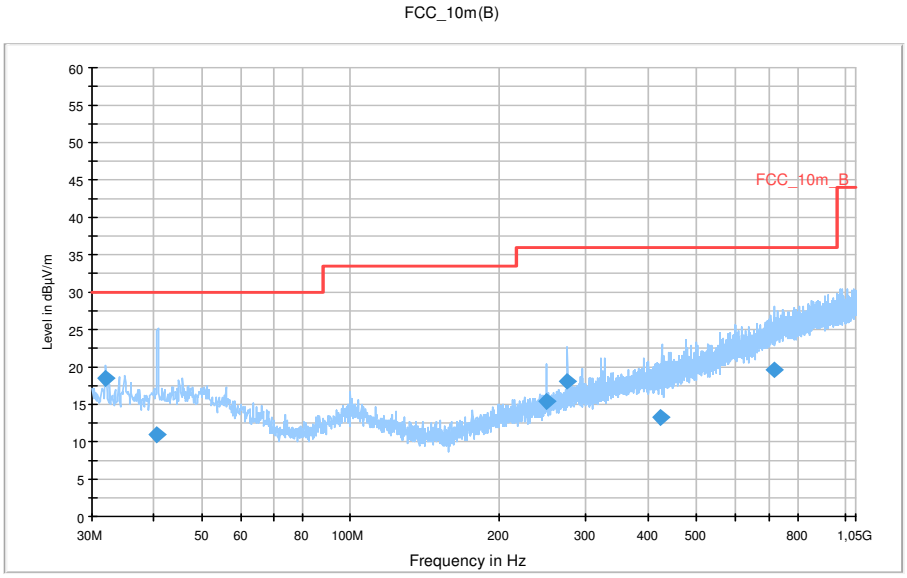
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant A tx@2412MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x planar antenna

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

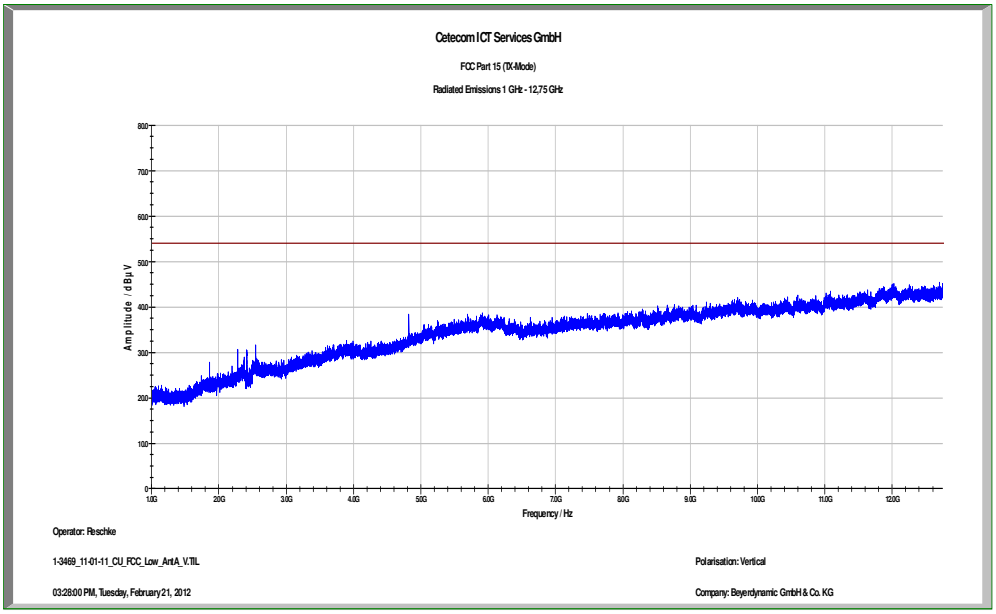
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

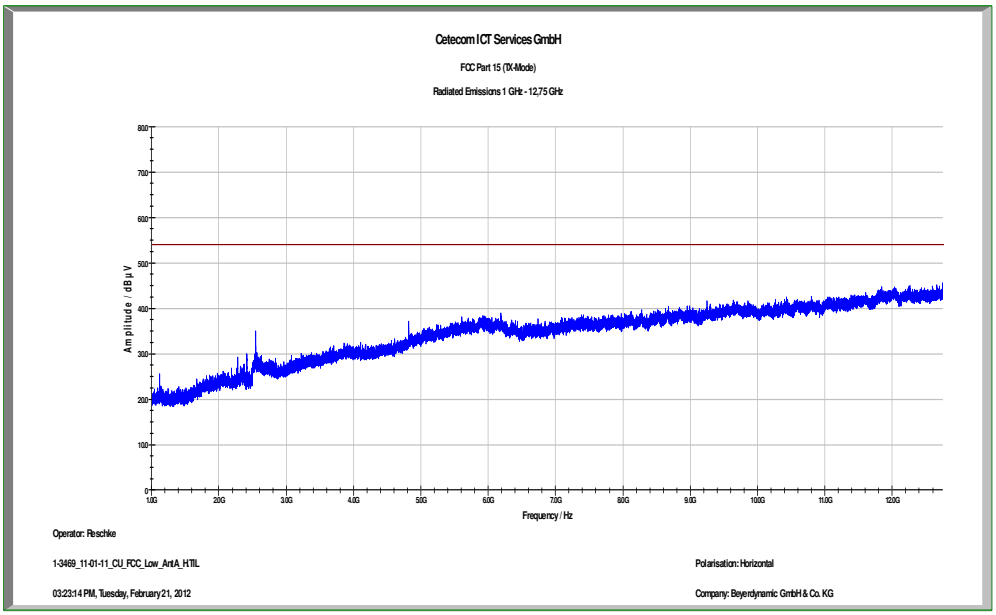
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
32.002950	18.4	1000.0	120.000	383.0	H	202.0	12.7	11.6	30.0	
40.622700	10.9	1000.0	120.000	200.0	V	325.0	13.4	19.1	30.0	
250.020000	15.5	1000.0	120.000	400.0	H	131.0	13.3	20.5	36.0	
274.982250	18.0	1000.0	120.000	400.0	H	223.0	13.9	18.0	36.0	
424.809900	13.3	1000.0	120.000	317.0	H	93.0	17.3	22.7	36.0	
720.347400	19.7	1000.0	120.000	200.0	H	191.0	23.0	16.3	36.0	

Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization



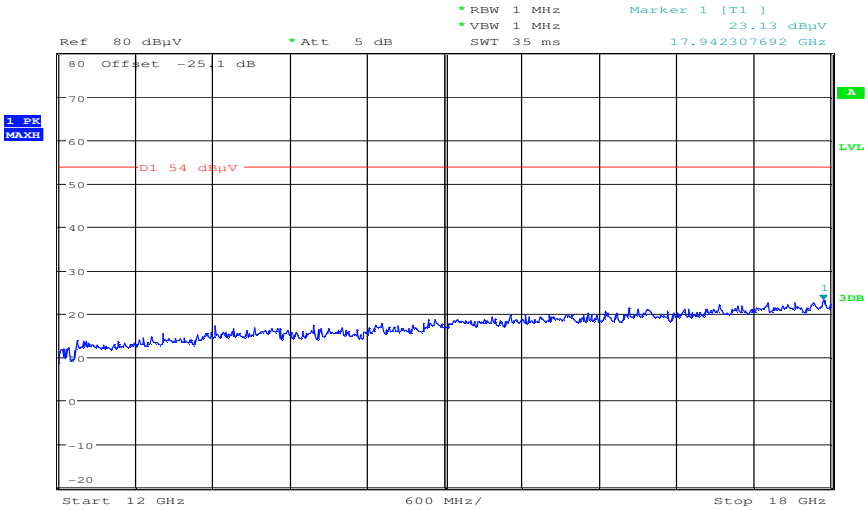
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 3: Lowest channel, 1 GHz to 12.75 GHz, horizontal polarization



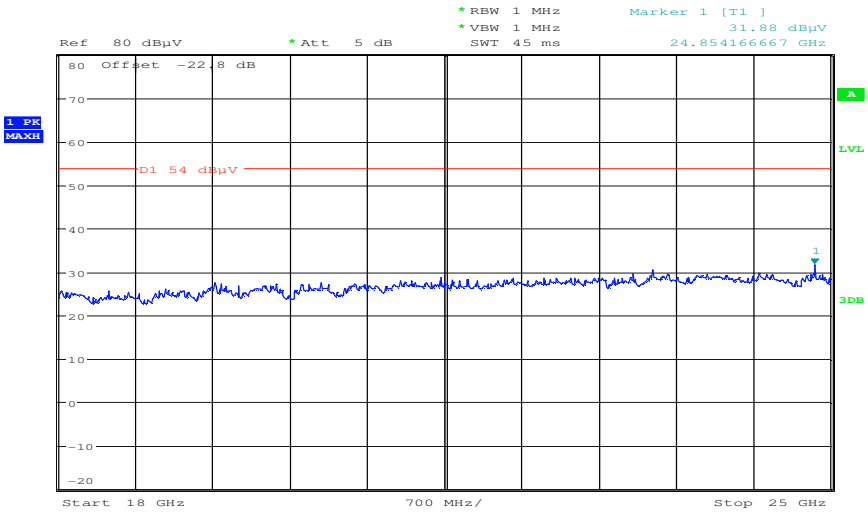
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 4: Lowest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 12:52:53

Plot 5: Lowest channel, 18 GHz to 25 GHz (vertical & horizontal – max hold)



Date: 12.MAR.2012 10:00:43

Plot 6: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

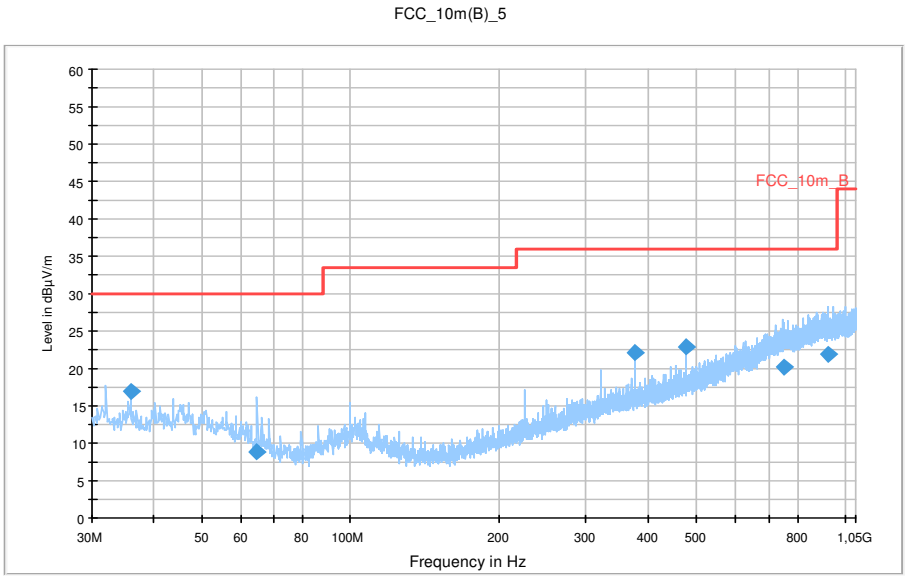
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant A tx@2438MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x planar antenna

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

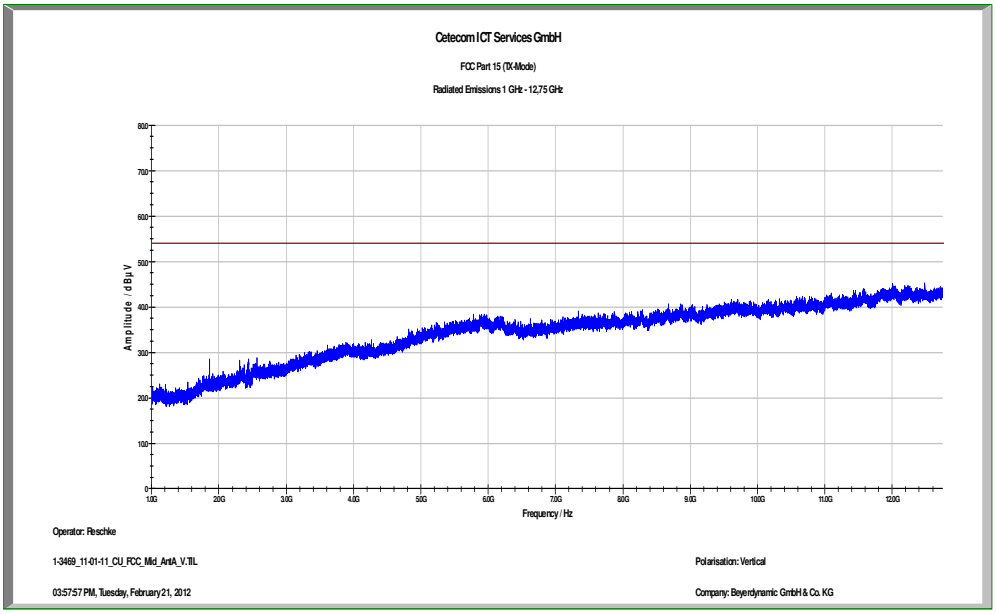
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

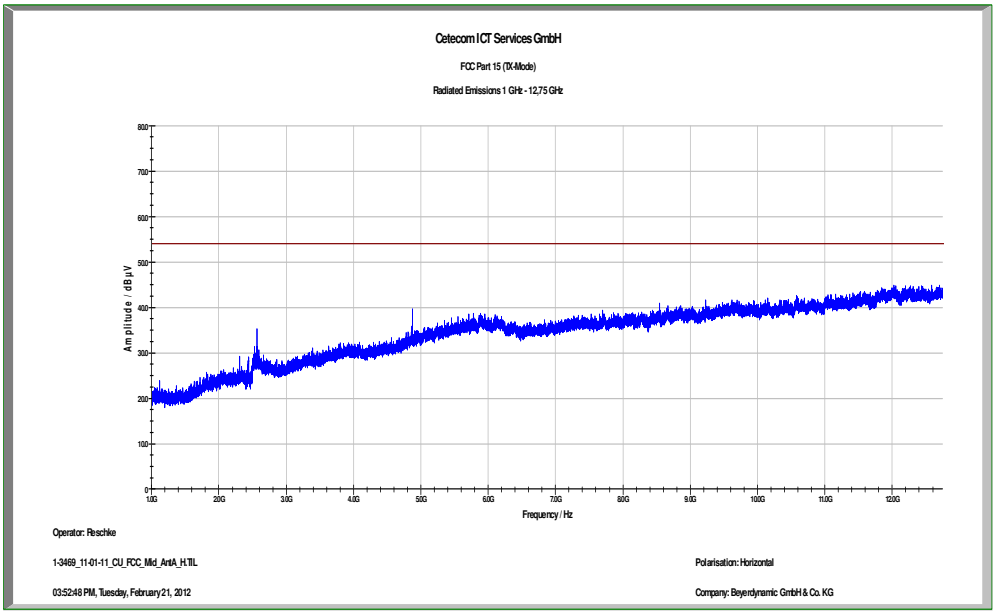
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
36.000000	16.8	1000.0	120.000	260.0	V	207.0	13.1	13.2	30.0	
64.800000	8.9	1000.0	120.000	218.0	V	109.0	10.5	21.1	30.0	
375.000000	22.1	1000.0	120.000	98.0	V	71.0	16.5	13.9	36.0	
474.960000	22.9	1000.0	120.000	199.0	H	92.0	18.2	13.1	36.0	
753.240000	20.3	1000.0	120.000	270.0	H	56.0	23.7	15.7	36.0	
927.240000	21.8	1000.0	120.000	209.0	H	314.0	25.3	14.2	36.0	

Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical polarization



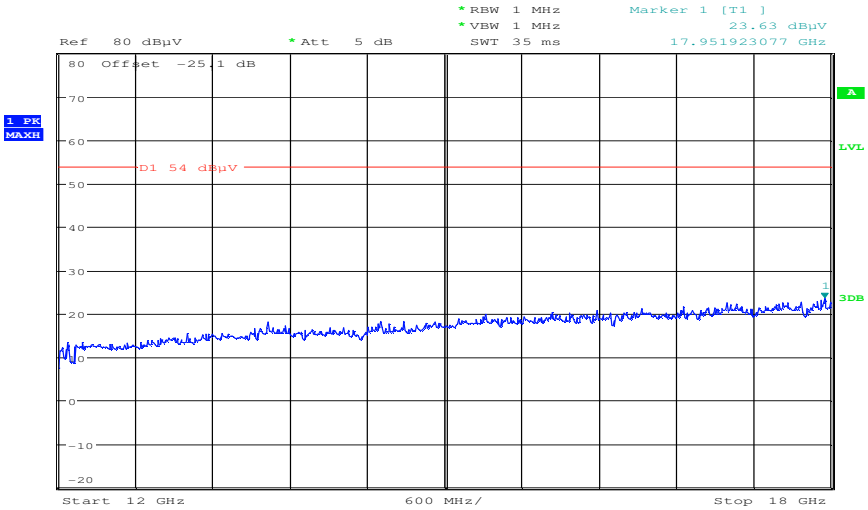
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization



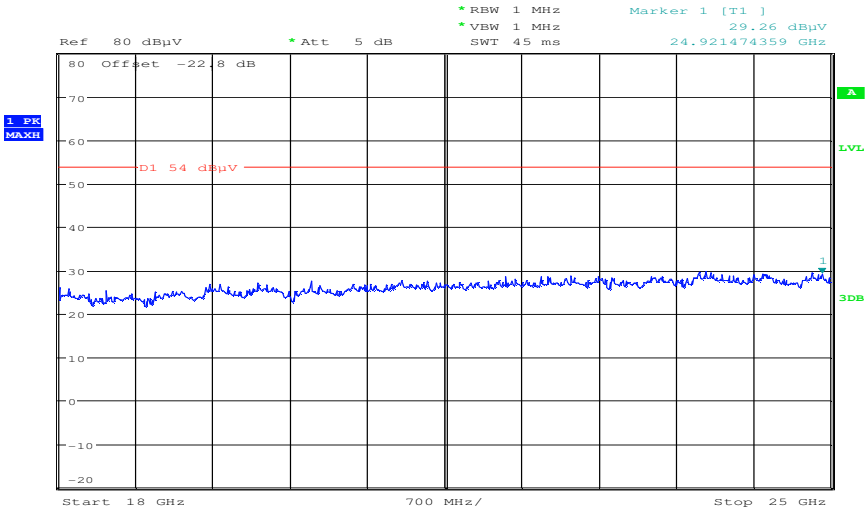
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 9: Middle channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 12:53:35

Plot 10: Middle channel, 18 GHz to 25 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 10:01:22

Plot 11: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

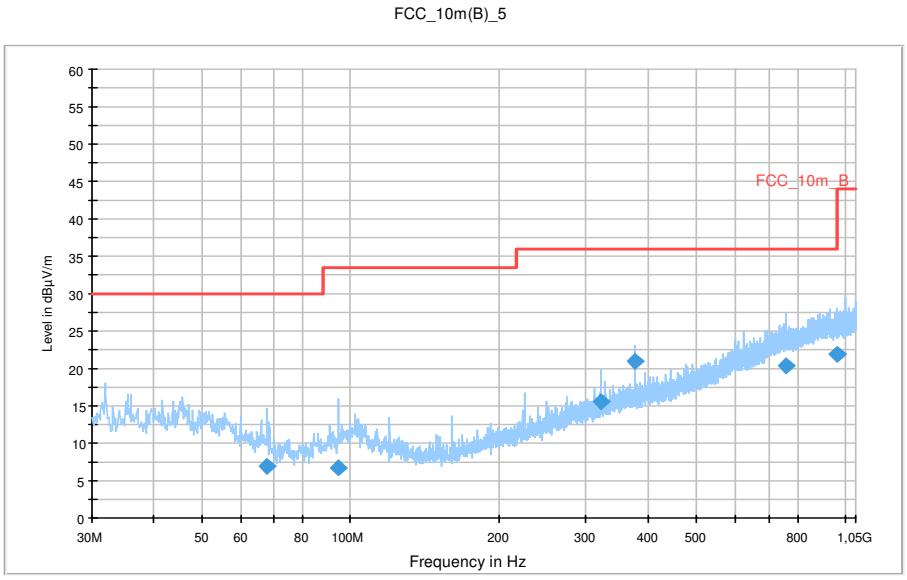
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant A tx@2464MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x planar antenna

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

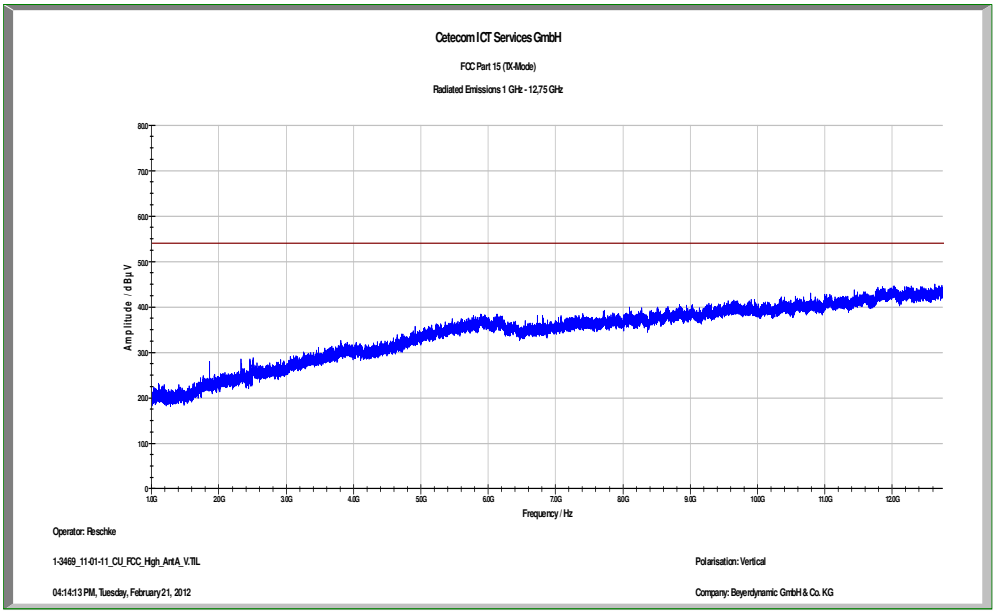
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

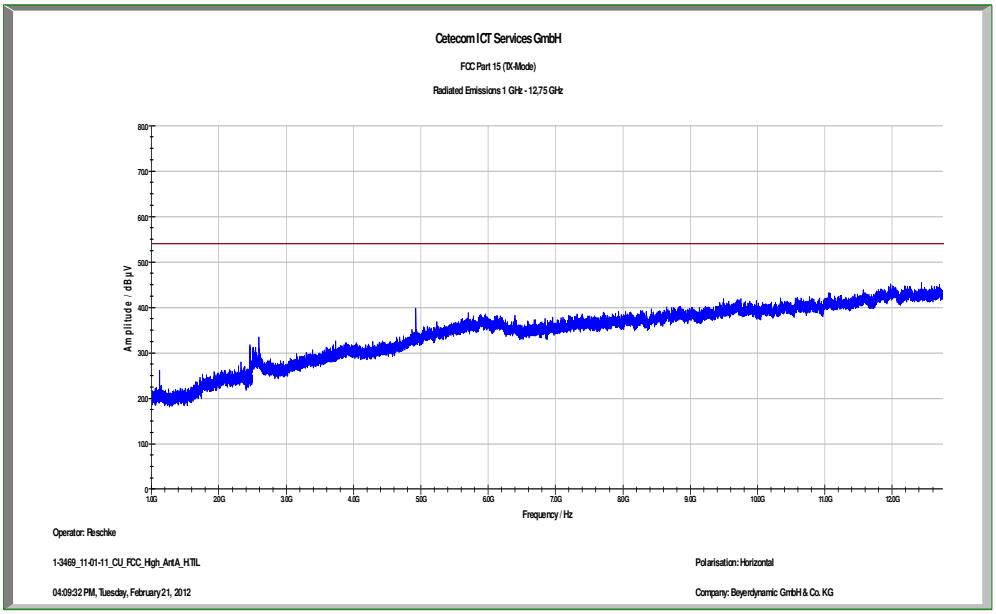
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
67.800000	6.9	1000.0	120.000	203.0	V	328.0	9.8	23.1	30.0	
94.560000	6.8	1000.0	120.000	165.0	V	328.0	11.2	26.7	33.5	
319.920000	15.6	1000.0	120.000	98.0	V	279.0	15.2	20.4	36.0	
375.000000	21.0	1000.0	120.000	105.0	V	206.0	16.5	15.0	36.0	
759.840000	20.3	1000.0	120.000	98.0	V	279.0	23.7	15.7	36.0	
958.920000	22.0	1000.0	120.000	120.0	V	135.0	25.4	14.0	36.0	

Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical polarization



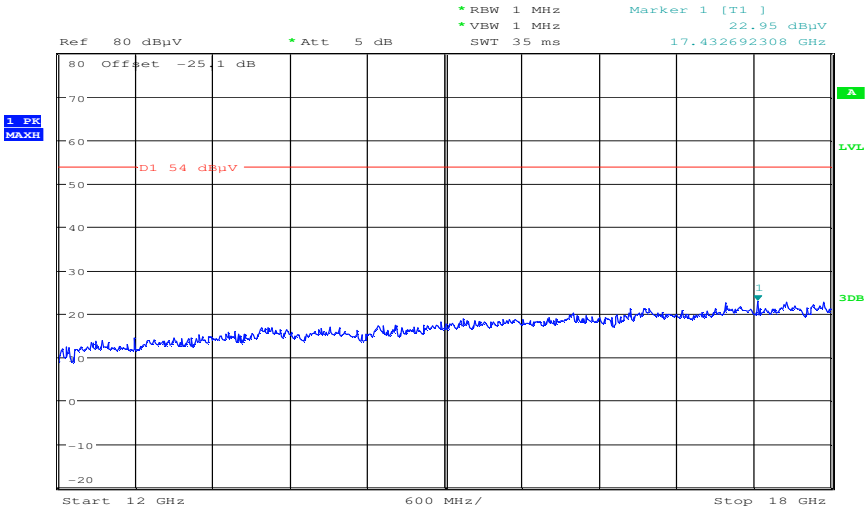
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 13: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization



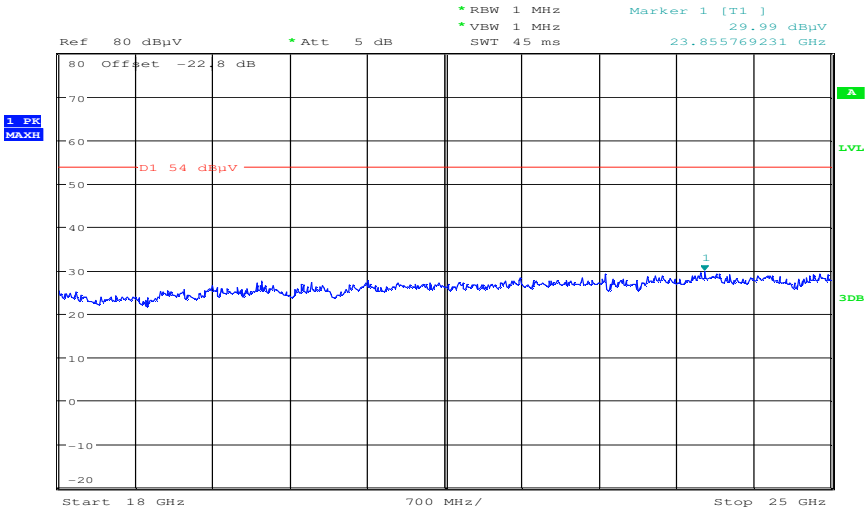
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 14: Highest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 12:54:07

Plot 15: Highest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 10:02:02

Plots: Rod antenna B

Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

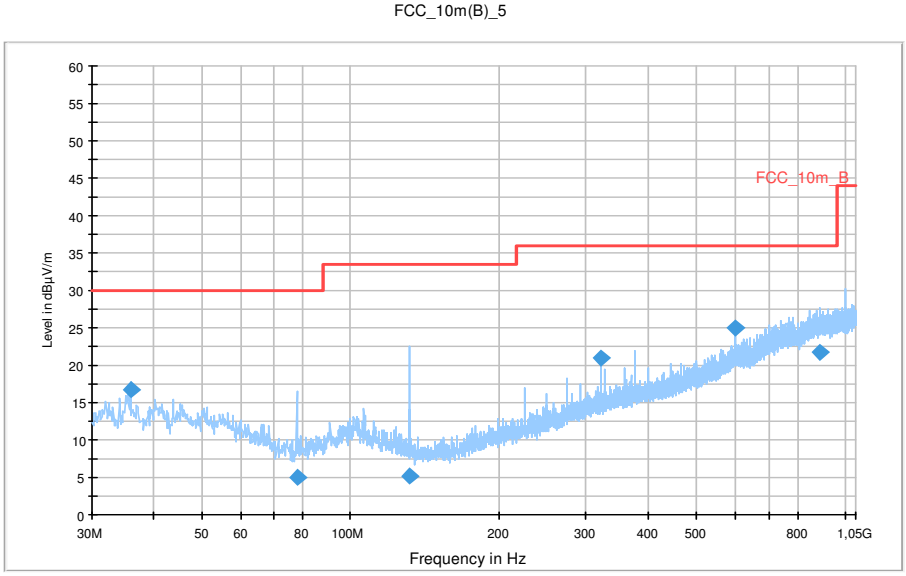
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant B tx@2412MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x planar antenna

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

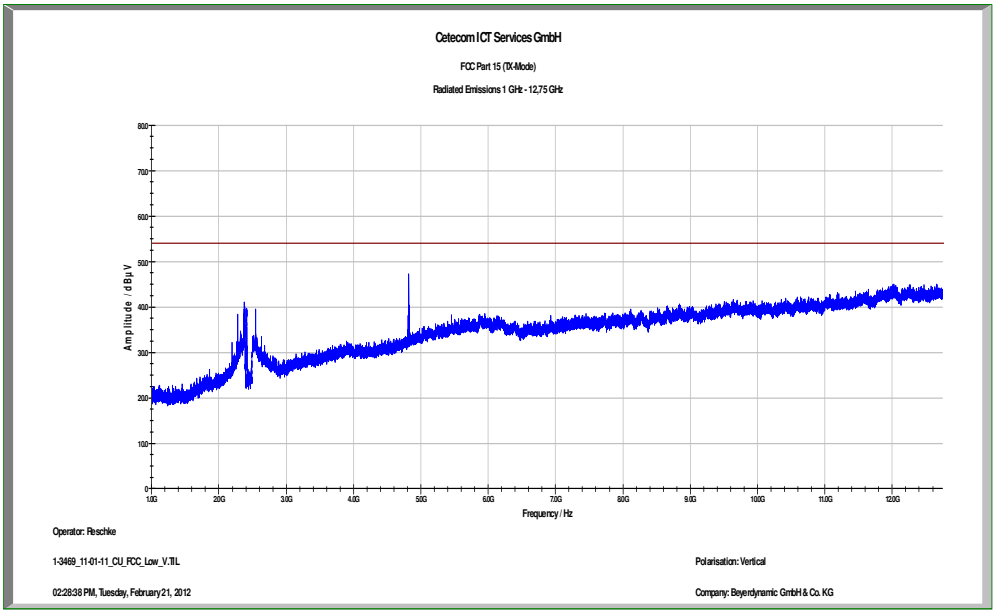
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

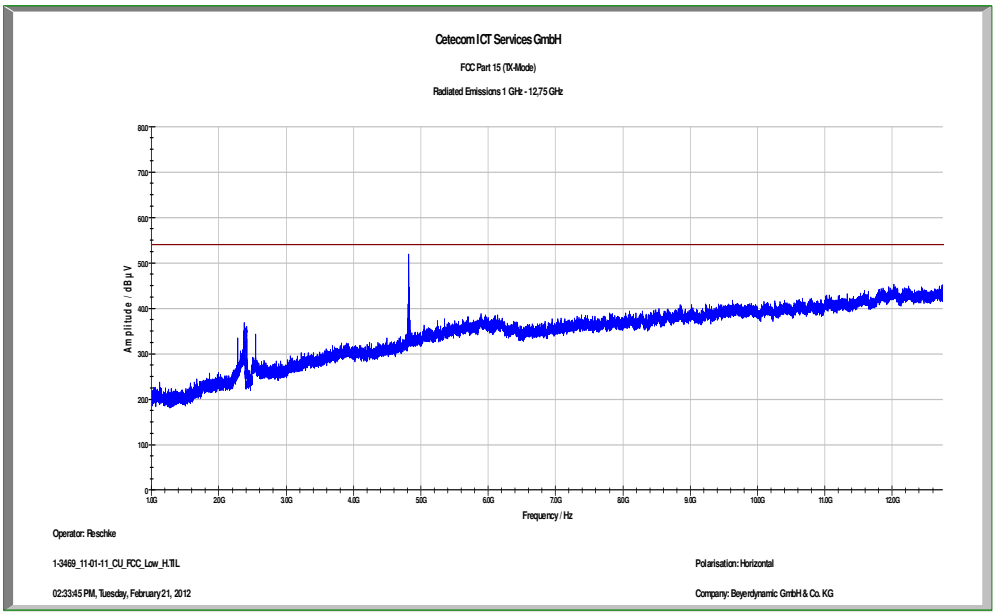
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
36.000000	16.7	1000.0	120.000	270.0	V	307.0	13.1	13.3	30.0	
77.760000	5.0	1000.0	120.000	262.0	V	325.0	9.1	25.0	30.0	
131.160000	5.3	1000.0	120.000	270.0	V	-2.0	9.3	28.2	33.5	
320.040000	21.0	1000.0	120.000	98.0	V	11.0	15.2	15.0	36.0	
600.000000	25.1	1000.0	120.000	157.0	H	98.0	20.8	10.9	36.0	
887.640000	21.7	1000.0	120.000	270.0	H	139.0	25.0	14.3	36.0	

Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization



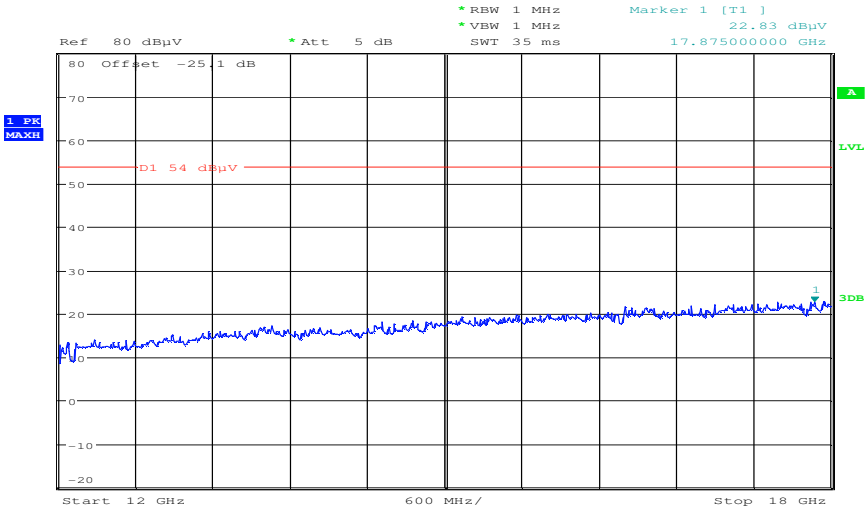
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 3: Lowest channel, 1 GHz to 12.75 GHz, horizontal polarization



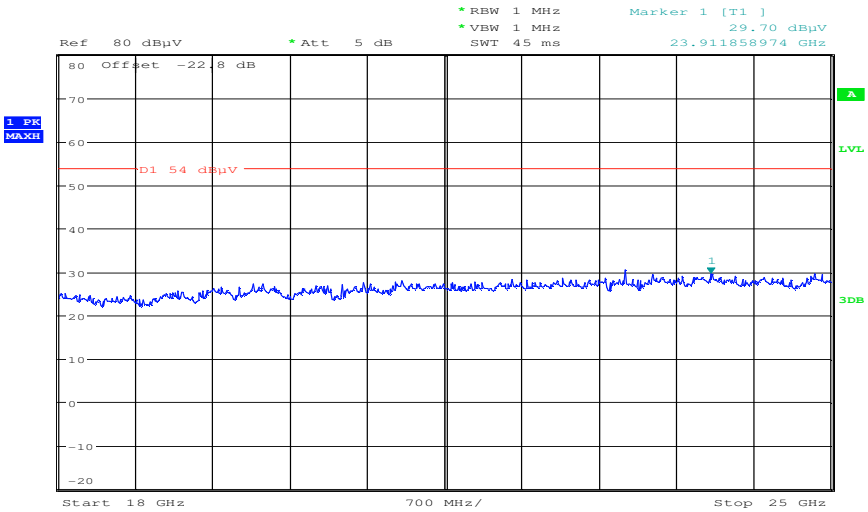
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 4: Lowest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 12:55:05

Plot 5: Lowest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 10:02:53

Plot 6: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

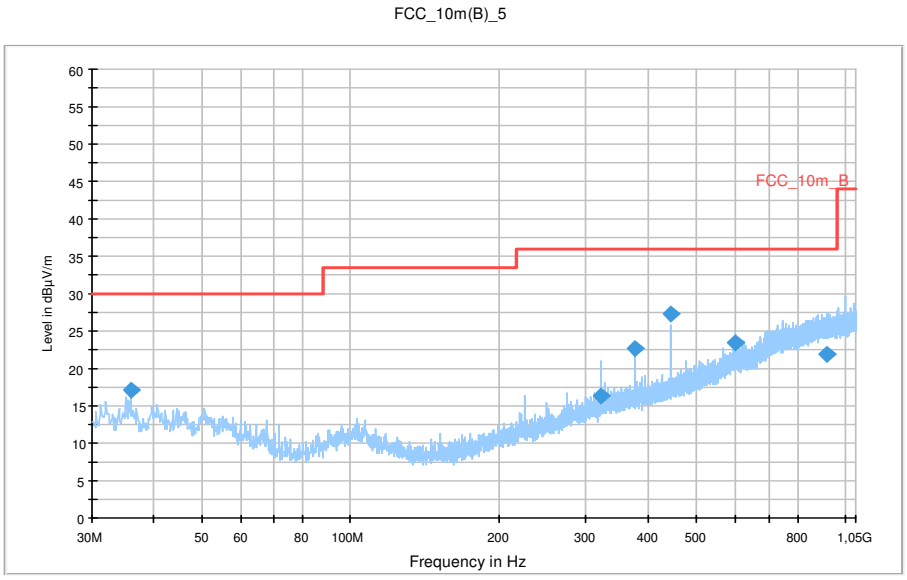
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant B tx@2438MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x planar antenna

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

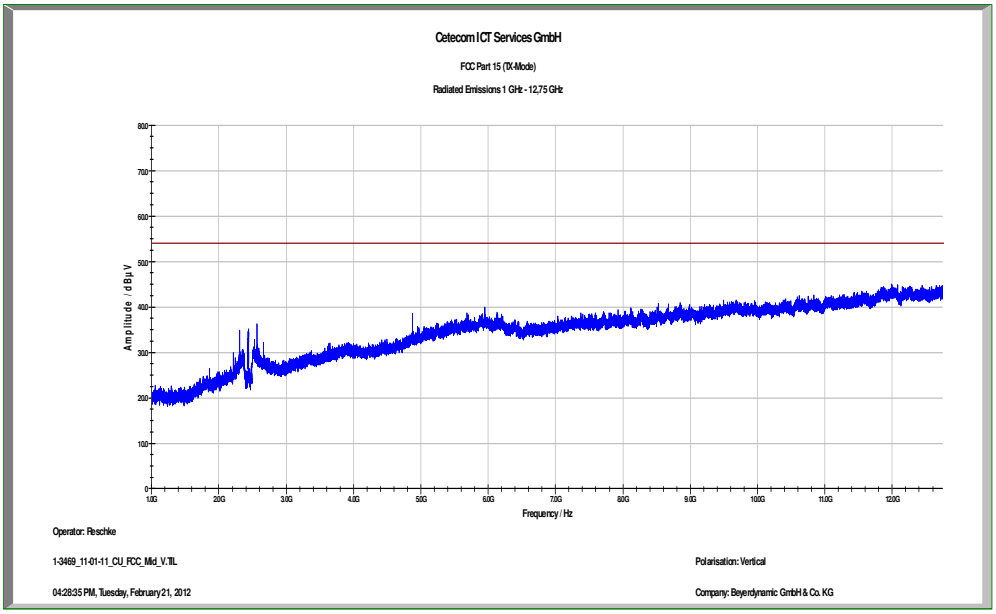
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

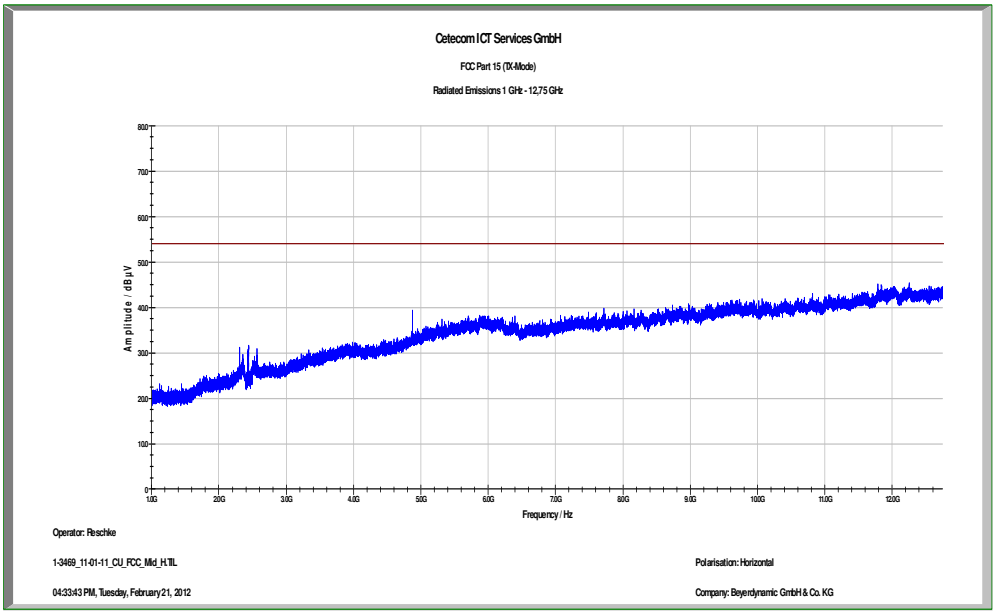
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
36.000000	17.2	1000.0	120.000	258.0	V	95.0	13.1	12.8	30.0	
319.920000	16.3	1000.0	120.000	98.0	V	27.0	15.2	19.7	36.0	
375.000000	22.7	1000.0	120.000	98.0	V	104.0	16.5	13.3	36.0	
442.320000	27.2	1000.0	120.000	176.0	H	290.0	17.5	8.8	36.0	
600.000000	23.5	1000.0	120.000	195.0	H	95.0	20.8	12.5	36.0	
918.960000	21.9	1000.0	120.000	270.0	H	83.0	25.3	14.1	36.0	

Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical polarization



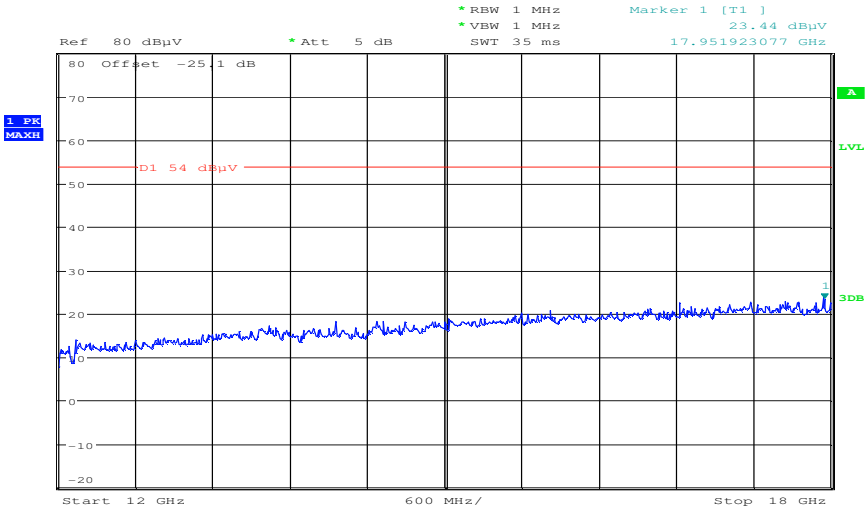
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization



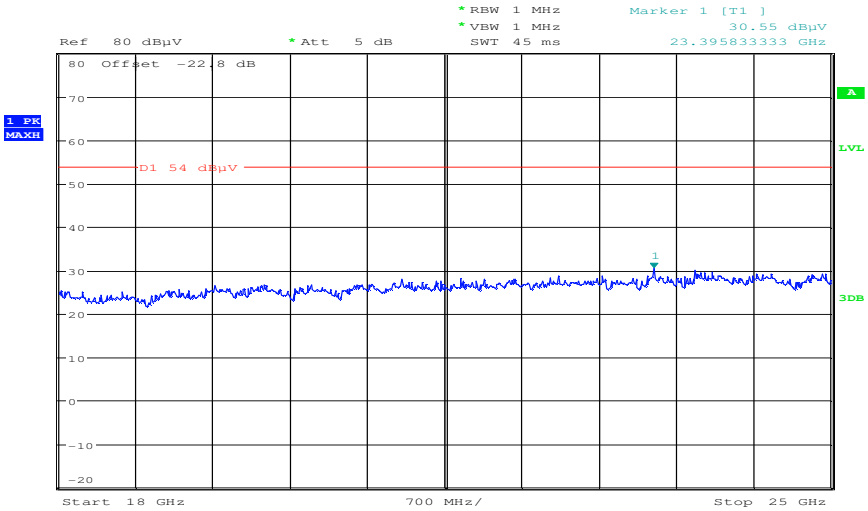
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 9: Middle channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 12:55:34

Plot 10: Middle channel, 18 GHz to 25 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 10:03:34

Plot 11: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

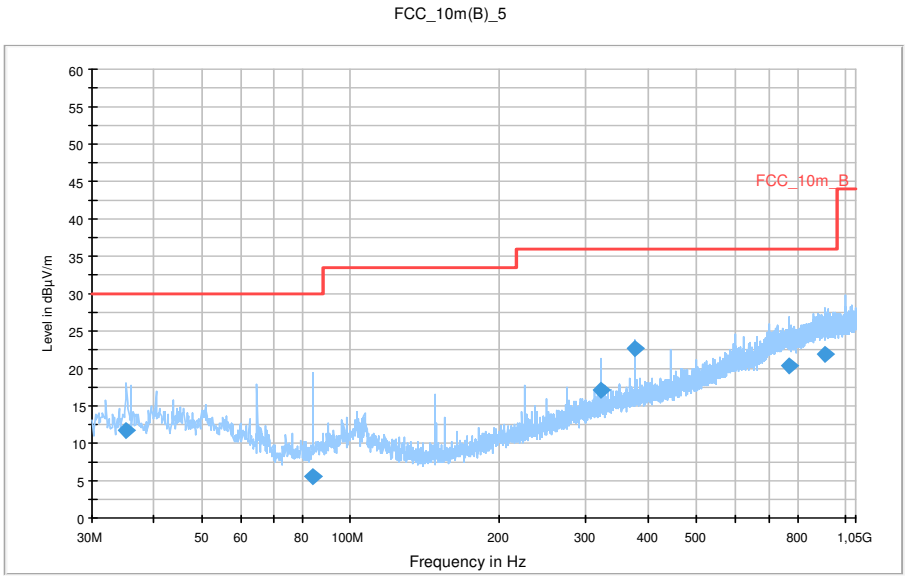
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant B tx@2464MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x planar antenna

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

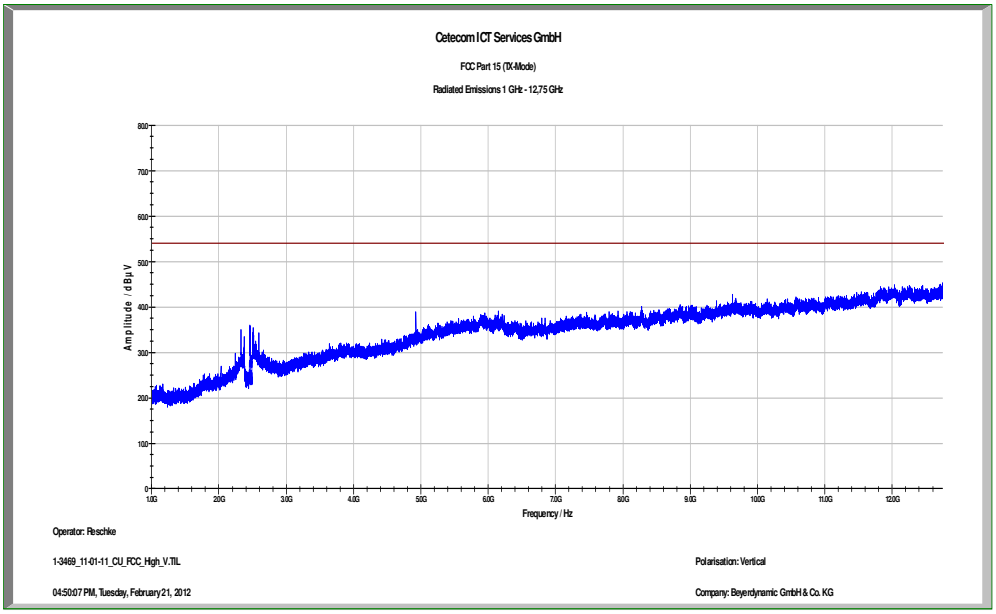
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

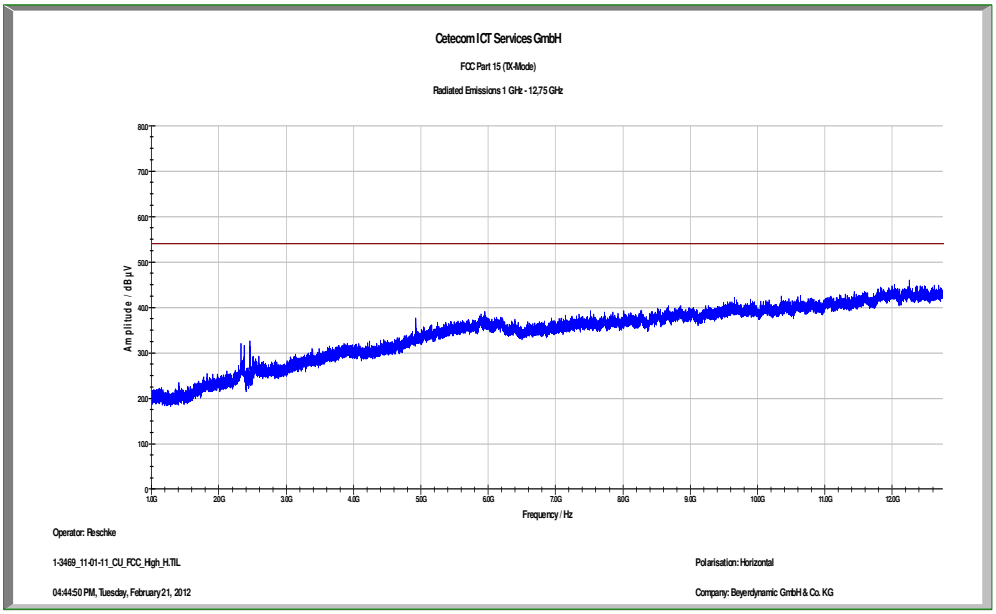
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.160000	11.7	1000.0	120.000	270.0	V	194.0	13.0	18.3	30.0	
83.880000	5.6	1000.0	120.000	112.0	V	329.0	9.7	24.4	30.0	
320.040000	17.2	1000.0	120.000	144.0	V	37.0	15.2	18.8	36.0	
375.000000	22.6	1000.0	120.000	98.0	V	87.0	16.5	13.4	36.0	
772.440000	20.4	1000.0	120.000	104.0	H	96.0	23.7	15.6	36.0	
908.280000	21.9	1000.0	120.000	262.0	H	29.0	25.2	14.1	36.0	

Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical polarization



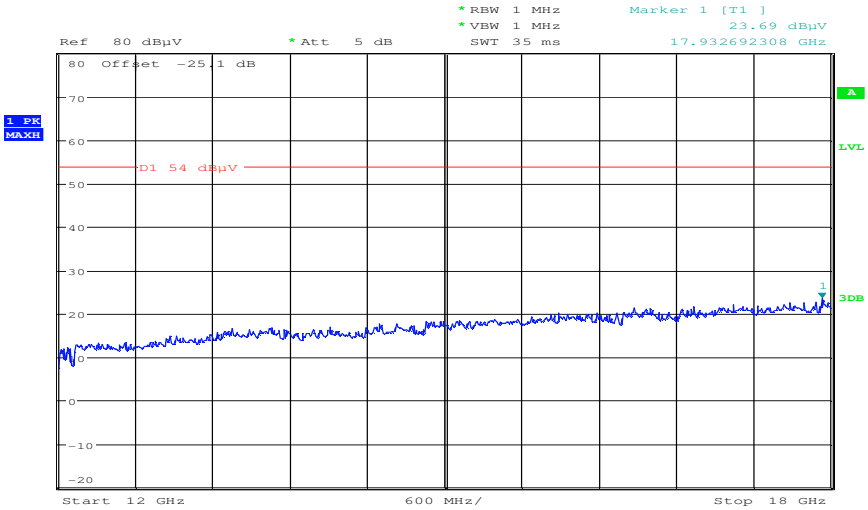
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 13: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization



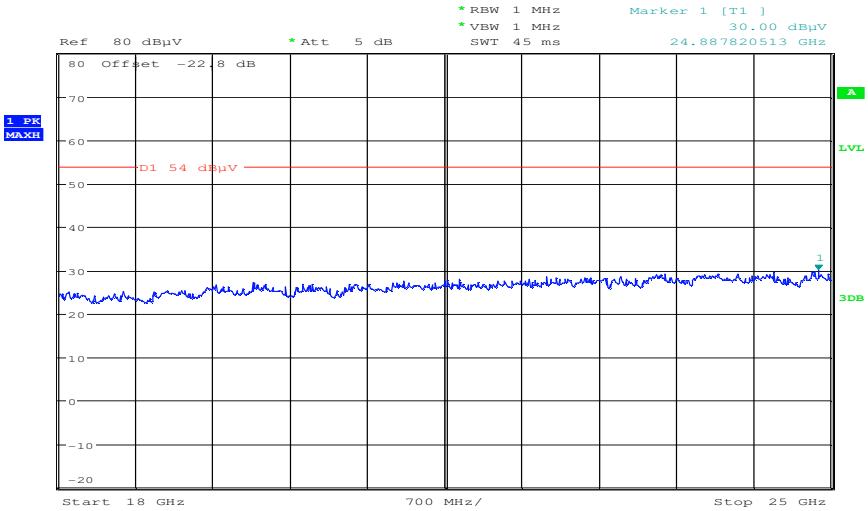
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 14: Highest channel, 12.75 GHz to 18 GHz (vertical & horizontal – max hold)



Date: 12.MAR.2012 12:56:08

Plot 15: Highest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 10:04:37

Plots: Planar antenna A with 10 m cable

Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

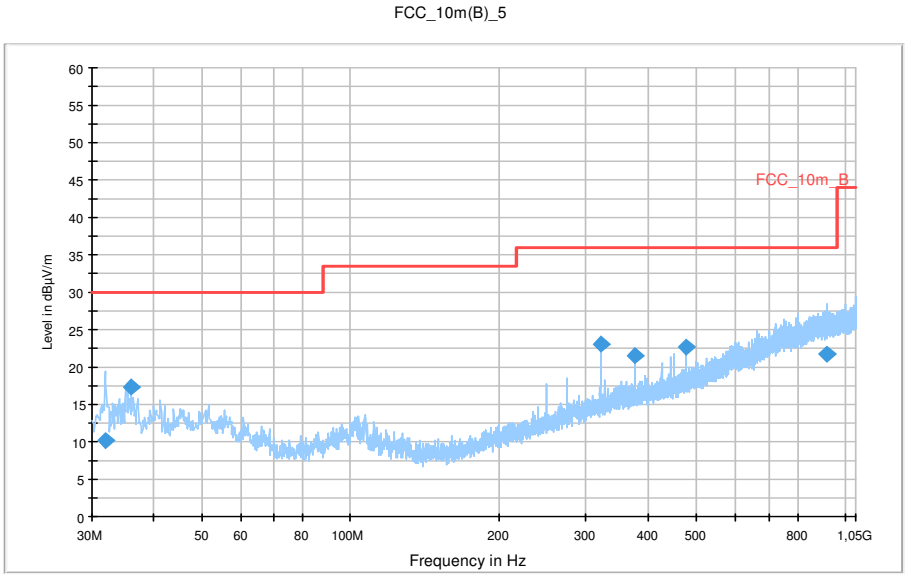
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Ant A tx@2412MHz
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

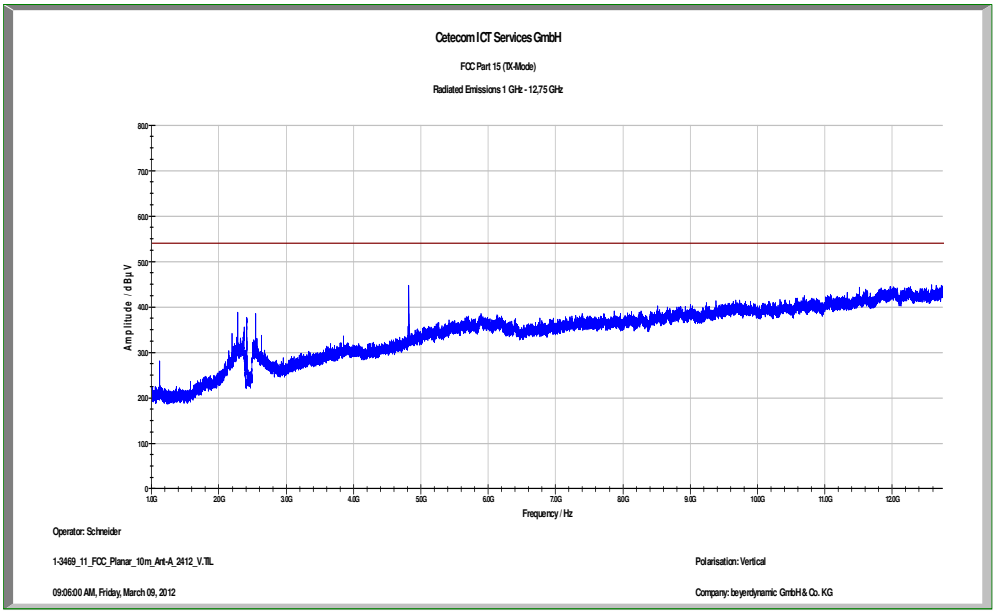
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

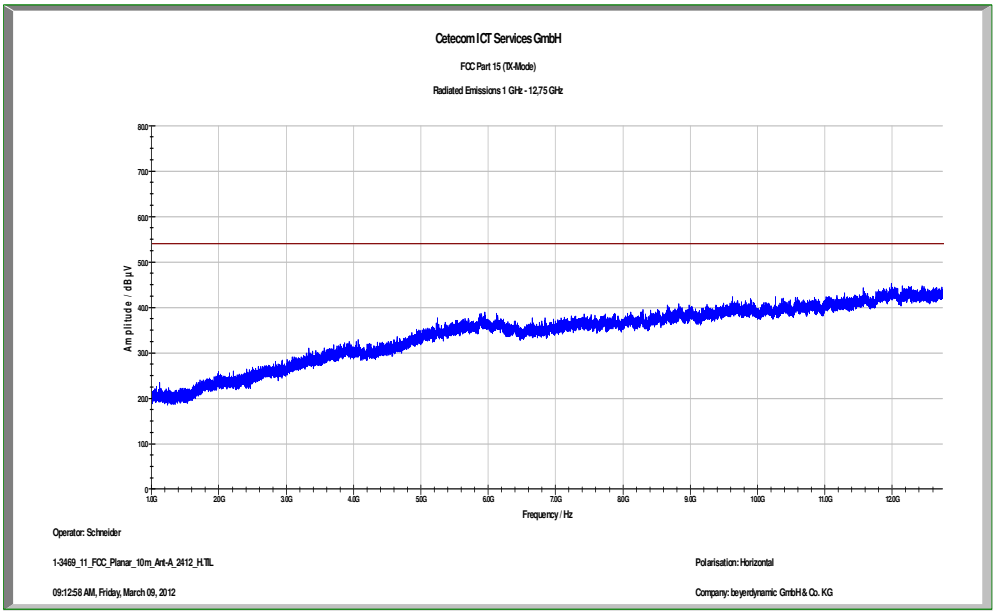
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
31.920000	10.2	1000.0	120.000	98.0	V	218.0	12.7	19.8	30.0	
36.000000	17.4	1000.0	120.000	226.0	V	100.0	13.1	12.6	30.0	
320.040000	23.0	1000.0	120.000	98.0	V	278.0	15.2	13.0	36.0	
375.000000	21.6	1000.0	120.000	98.0	V	50.0	16.5	14.4	36.0	
474.960000	22.7	1000.0	120.000	209.0	H	331.0	18.2	13.3	36.0	
915.840000	21.8	1000.0	120.000	147.0	V	64.0	25.2	14.2	36.0	

Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization



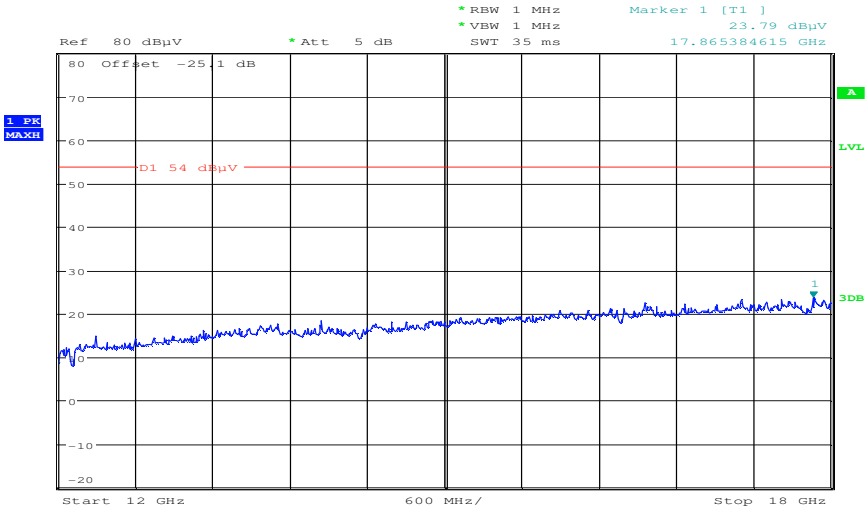
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 3: Lowest channel, 1 GHz to 12.75 GHz, horizontal polarization

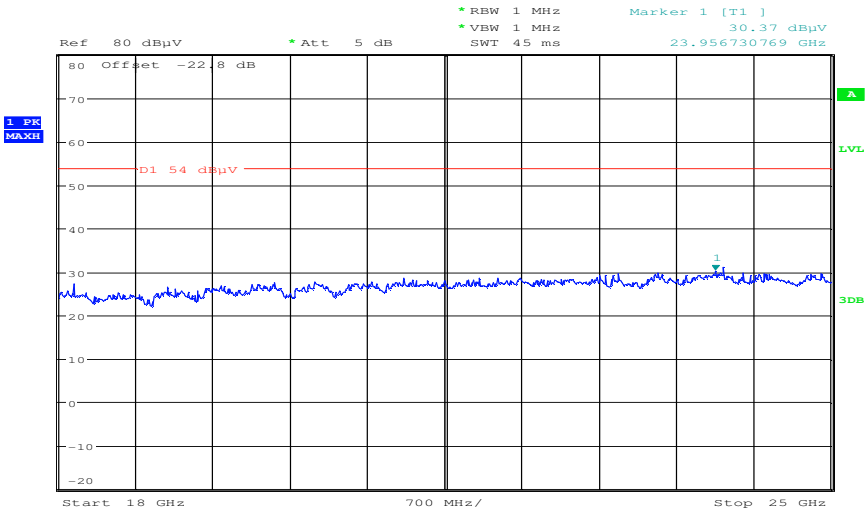


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 4: Lowest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 5: Lowest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 6: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

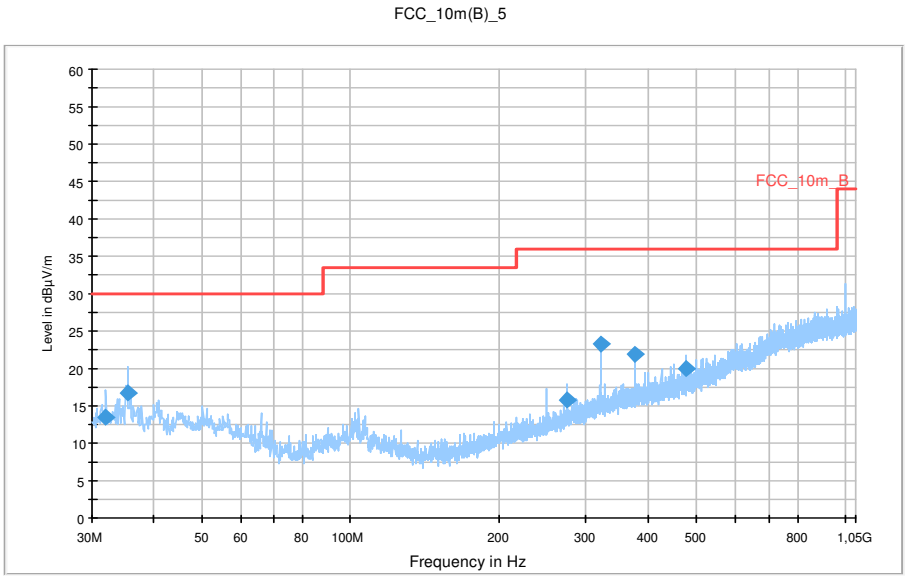
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Ant A tx@2438MHz
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

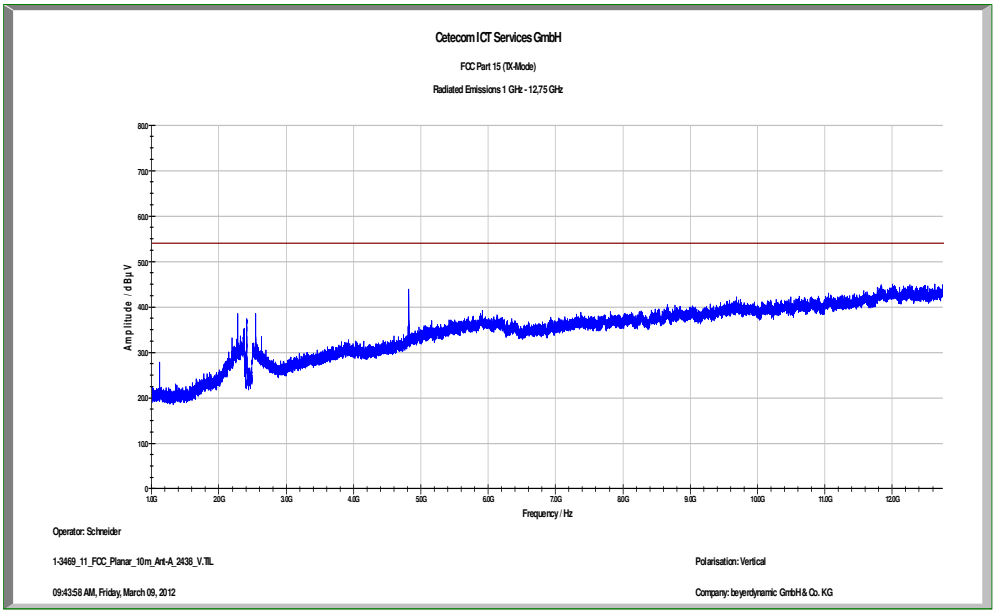
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

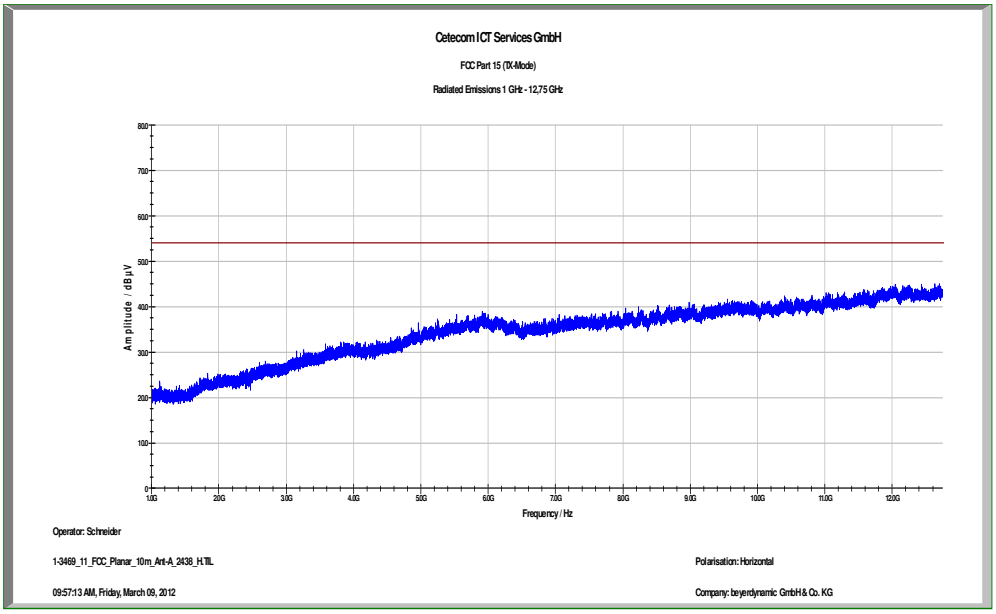
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
32.040000	13.5	1000.0	120.000	133.0	V	55.0	12.7	16.5	30.0	
35.400000	16.8	1000.0	120.000	261.0	V	133.0	13.1	13.2	30.0	
275.040000	15.8	1000.0	120.000	98.0	V	-2.0	13.9	20.2	36.0	
320.040000	23.2	1000.0	120.000	98.0	V	280.0	15.2	12.8	36.0	
375.000000	22.0	1000.0	120.000	98.0	V	109.0	16.5	14.0	36.0	
474.960000	20.1	1000.0	120.000	155.0	H	310.0	18.2	15.9	36.0	

Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical polarization



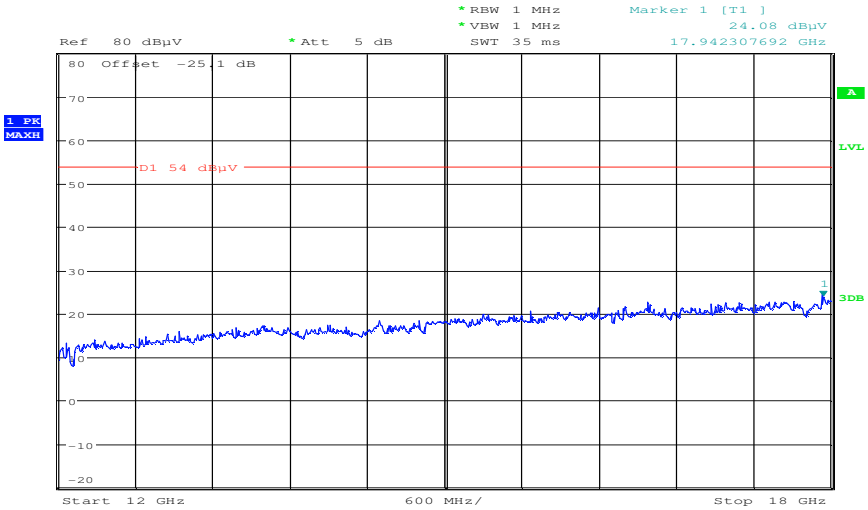
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization

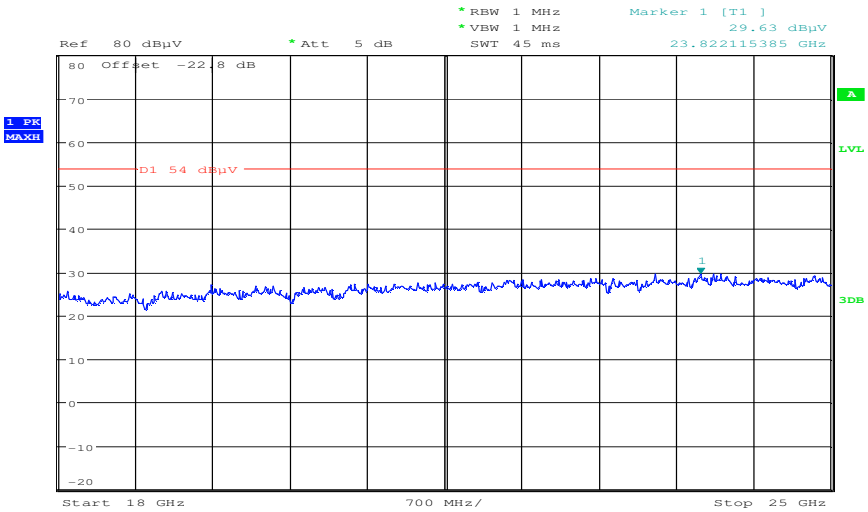


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 9: Middle channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 10: Middle channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 11: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

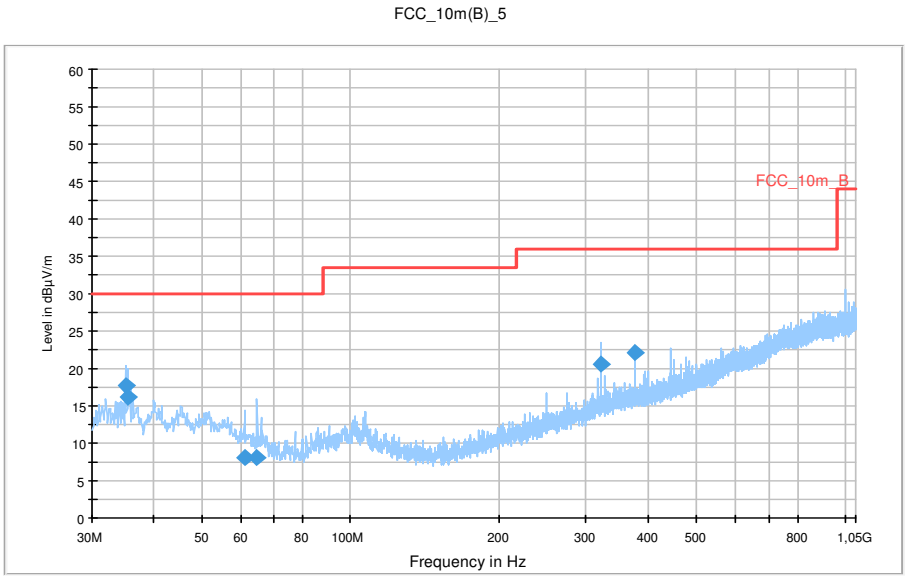
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Ant A tx@2464MHz
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

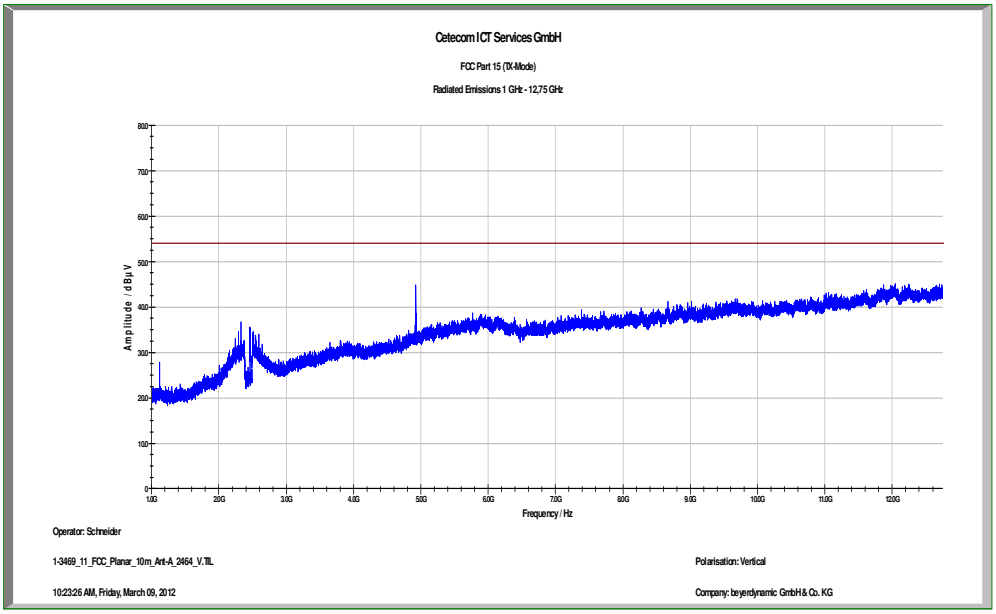
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

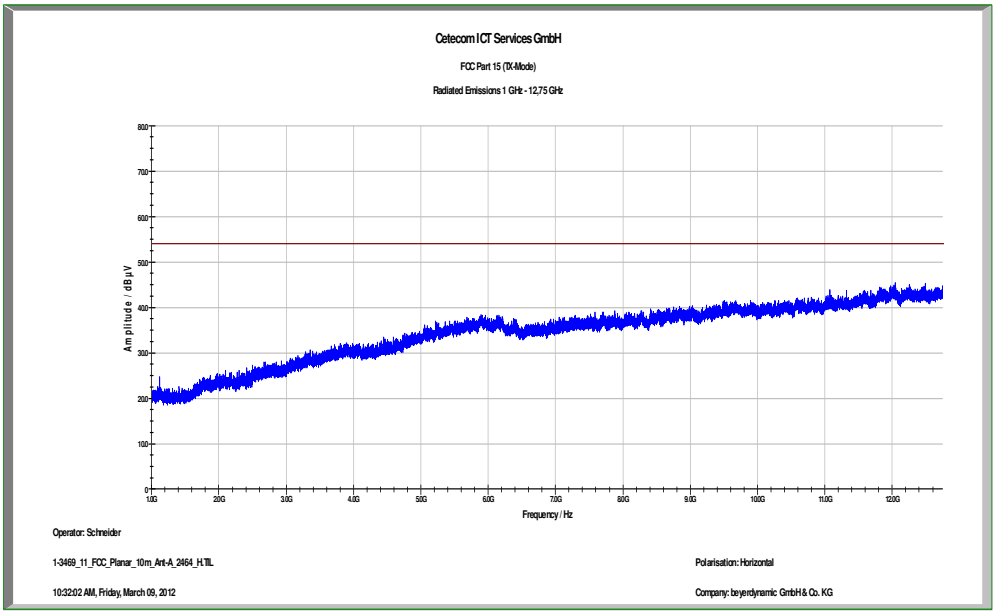
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.040000	17.8	1000.0	120.000	241.0	V	172.0	13.0	12.2	30.0	
35.400000	16.2	1000.0	120.000	270.0	V	352.0	13.1	13.8	30.0	
61.200000	8.2	1000.0	120.000	270.0	V	333.0	11.3	21.8	30.0	
64.800000	8.1	1000.0	120.000	223.0	V	315.0	10.5	21.9	30.0	
320.040000	20.6	1000.0	120.000	114.0	V	284.0	15.2	15.4	36.0	
375.000000	22.0	1000.0	120.000	105.0	V	110.0	16.5	14.0	36.0	

Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical polarization



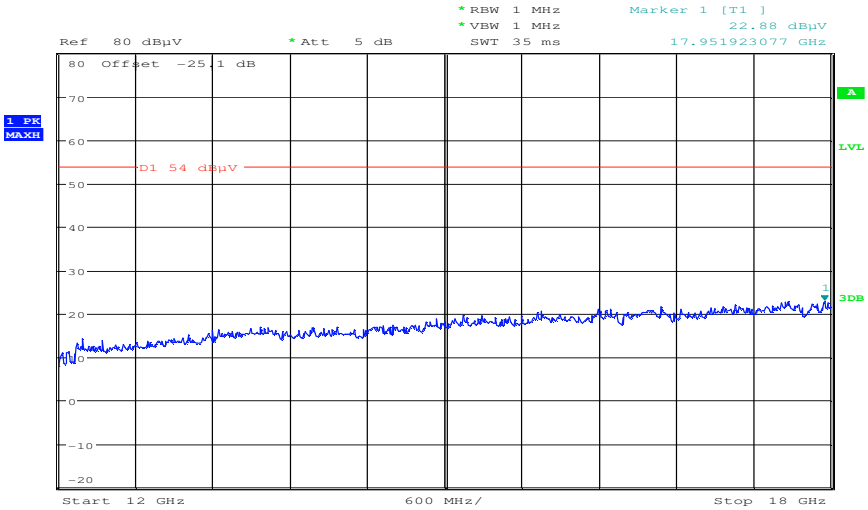
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 13: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization

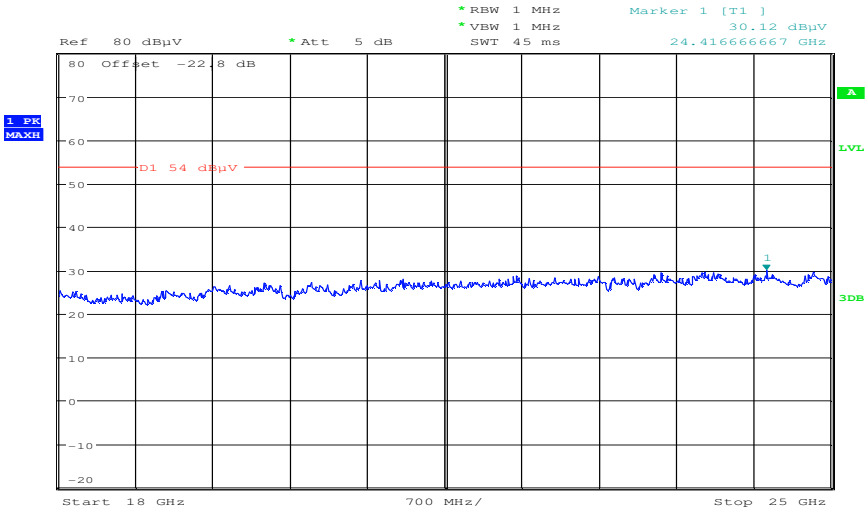


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 14: Highest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 15: Highest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plots: Planar antenna B with 10 m cable

Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

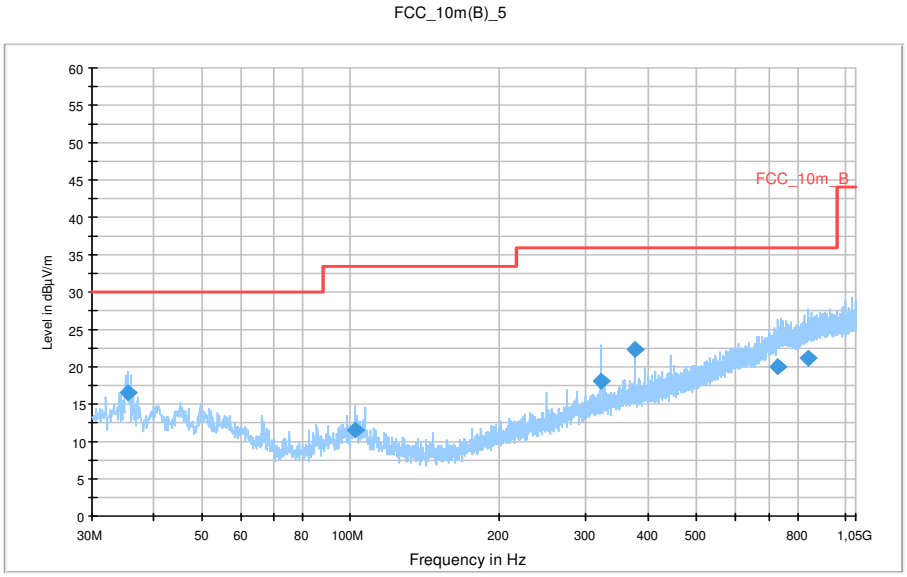
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Ant B tx@2412MHz
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

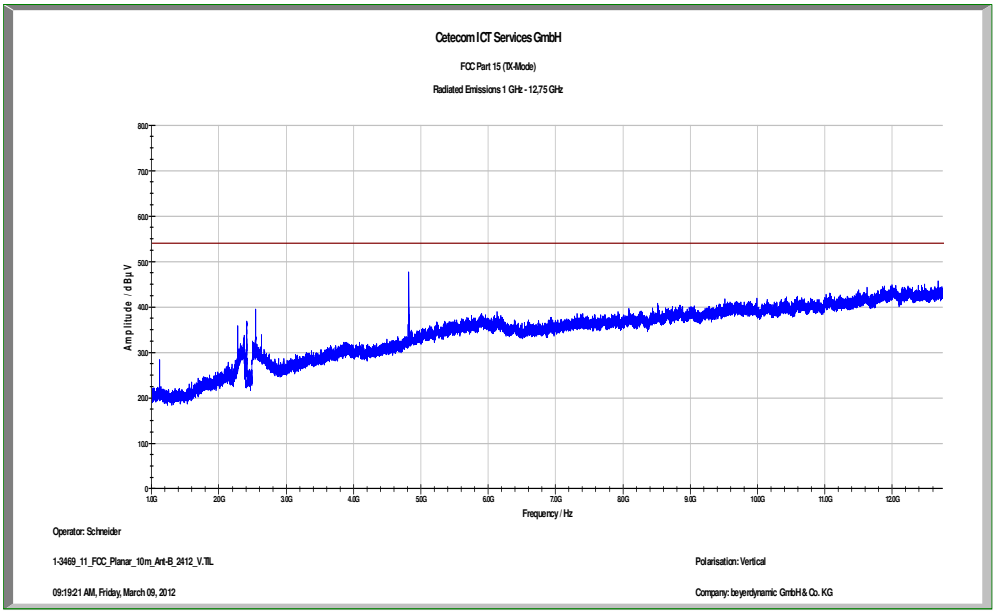
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

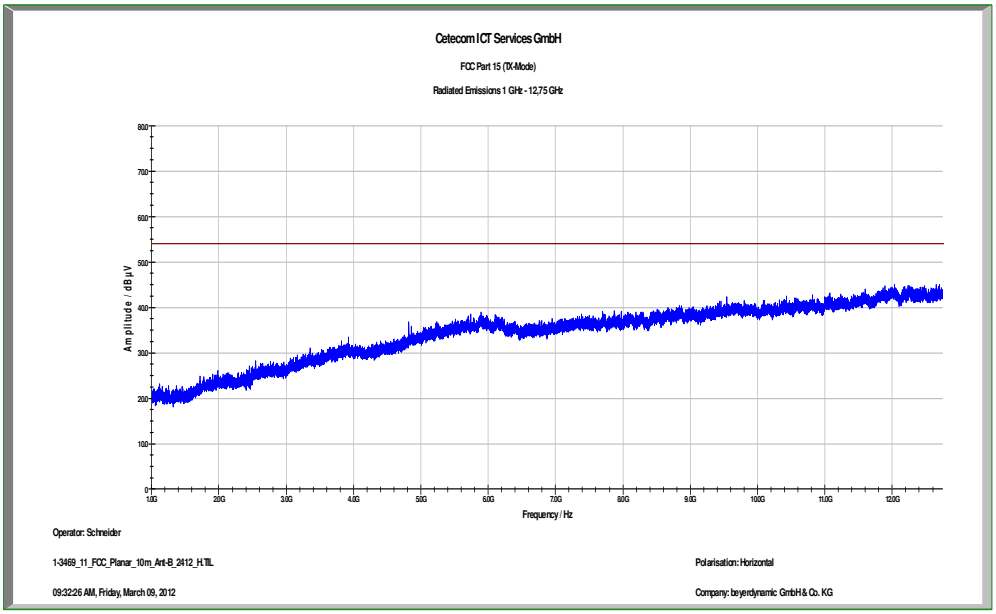
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.400000	16.6	1000.0	120.000	259.0	V	222.0	13.1	13.4	30.0	
101.880000	11.6	1000.0	120.000	155.0	V	305.0	11.7	21.9	33.5	
319.920000	18.1	1000.0	120.000	98.0	V	286.0	15.2	17.9	36.0	
375.000000	22.2	1000.0	120.000	98.0	V	101.0	16.5	13.8	36.0	
730.320000	19.9	1000.0	120.000	270.0	H	115.0	23.2	16.1	36.0	
839.040000	21.1	1000.0	120.000	270.0	H	245.0	24.4	14.9	36.0	

Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization, also valid for 20 m



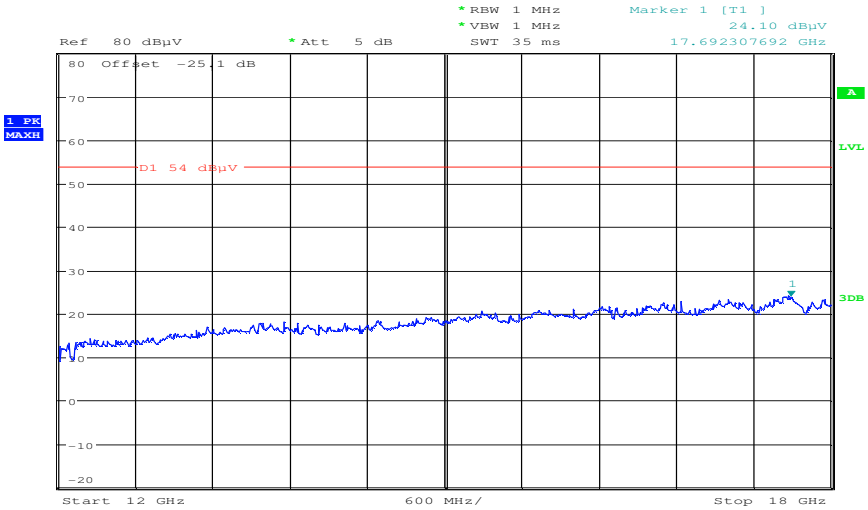
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 3: Lowest channel, 1 GHz to 12.75 GHz, horizontal polarization, also valid for 20 m

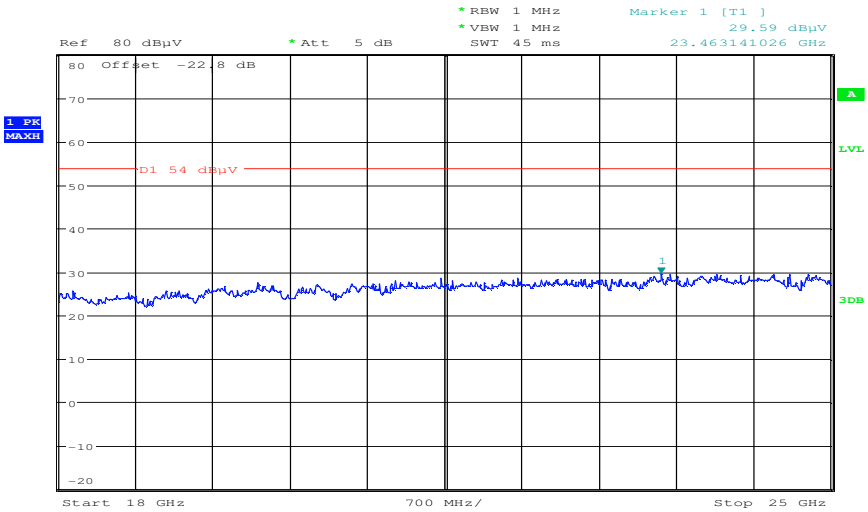


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 4: Lowest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 5: Lowest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 6: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

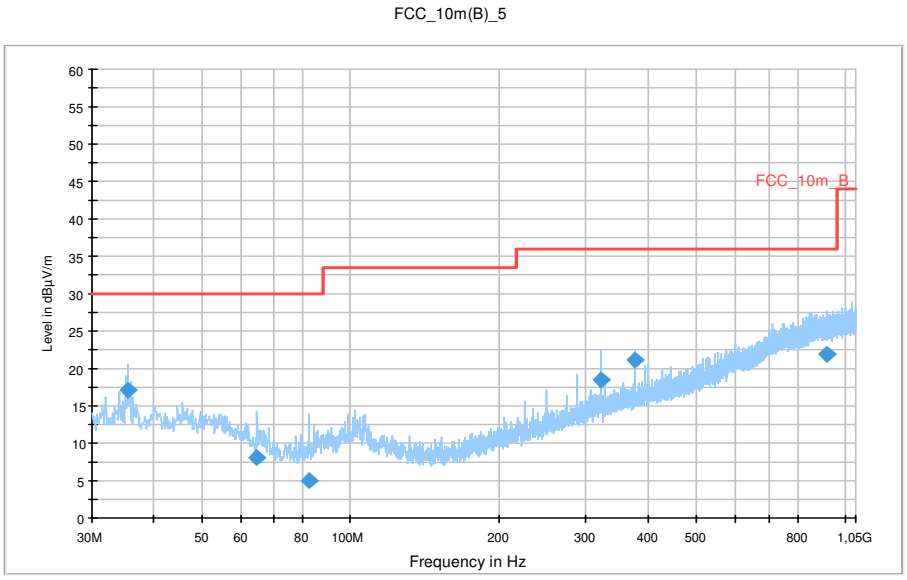
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Ant B tx@2438MHz
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

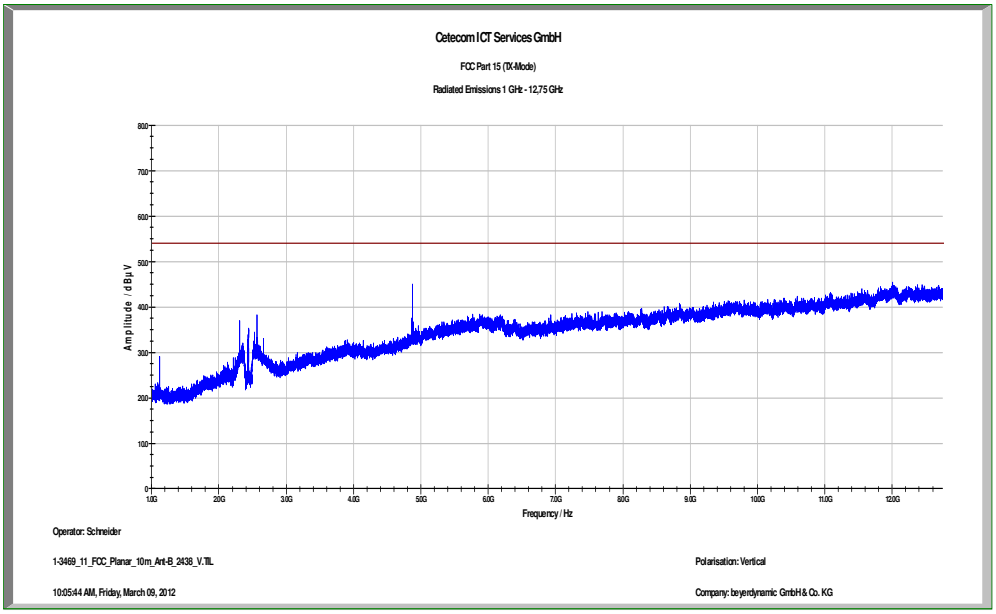
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

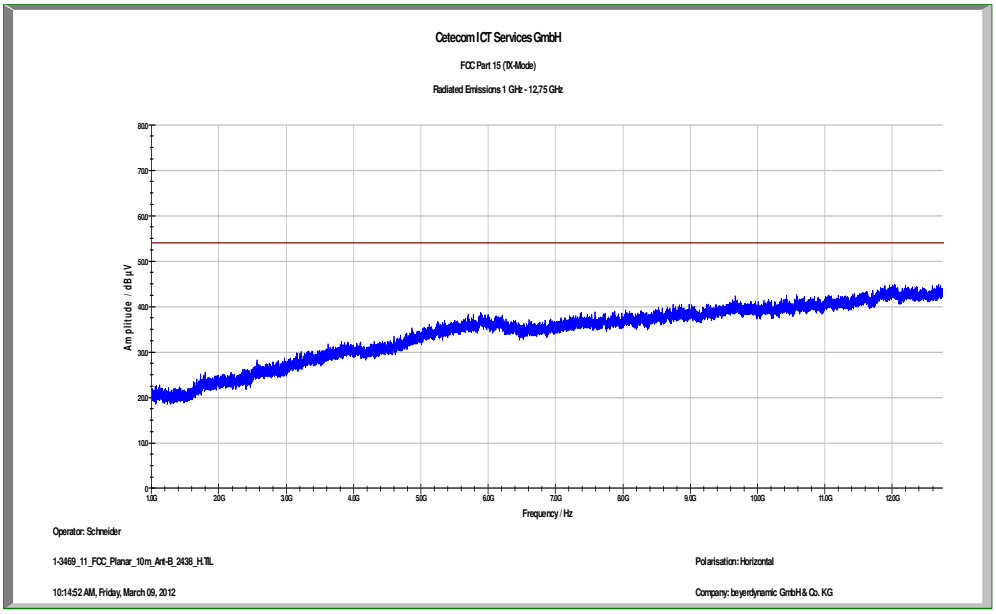
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.400000	17.1	1000.0	120.000	270.0	V	97.0	13.1	12.9	30.0	
64.800000	8.1	1000.0	120.000	224.0	V	331.0	10.5	21.9	30.0	
82.320000	5.1	1000.0	120.000	230.0	V	122.0	9.4	24.9	30.0	
319.920000	18.4	1000.0	120.000	105.0	V	278.0	15.2	17.6	36.0	
375.000000	21.1	1000.0	120.000	98.0	V	122.0	16.5	14.9	36.0	
919.200000	21.9	1000.0	120.000	270.0	V	97.0	25.3	14.1	36.0	

Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical polarization, also valid for 20 m



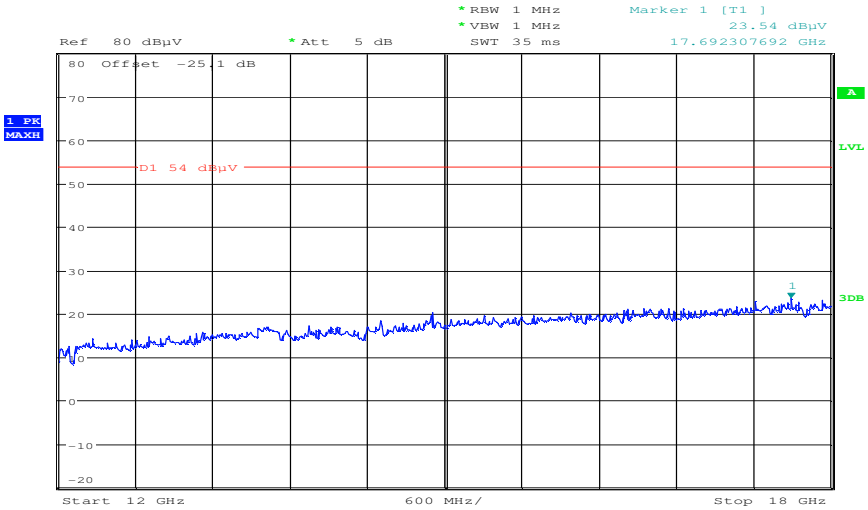
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 8: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization, also valid for 20 m

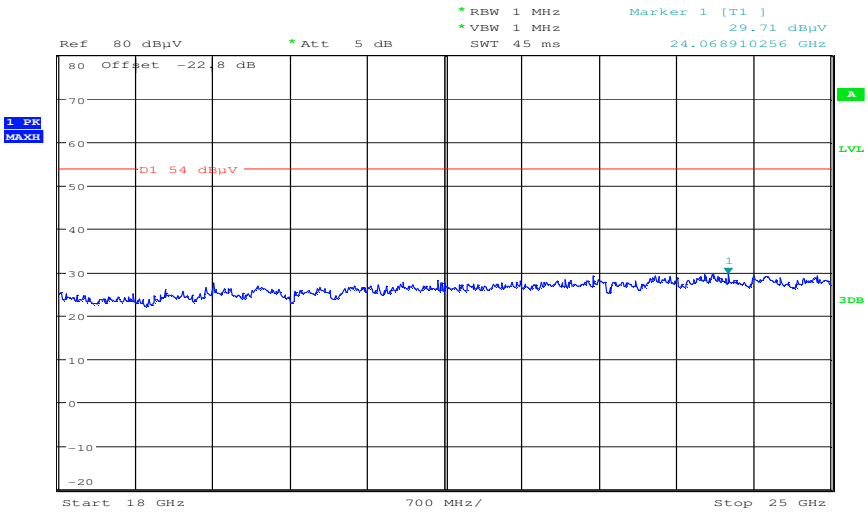


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 9: Middle channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 10: Middle channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 11: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

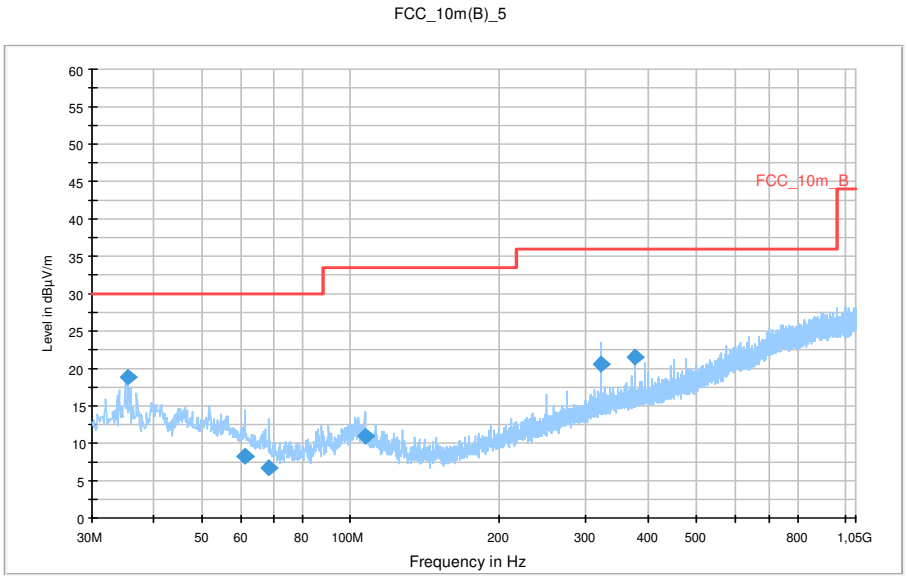
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Ant B tx@2464MHz
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

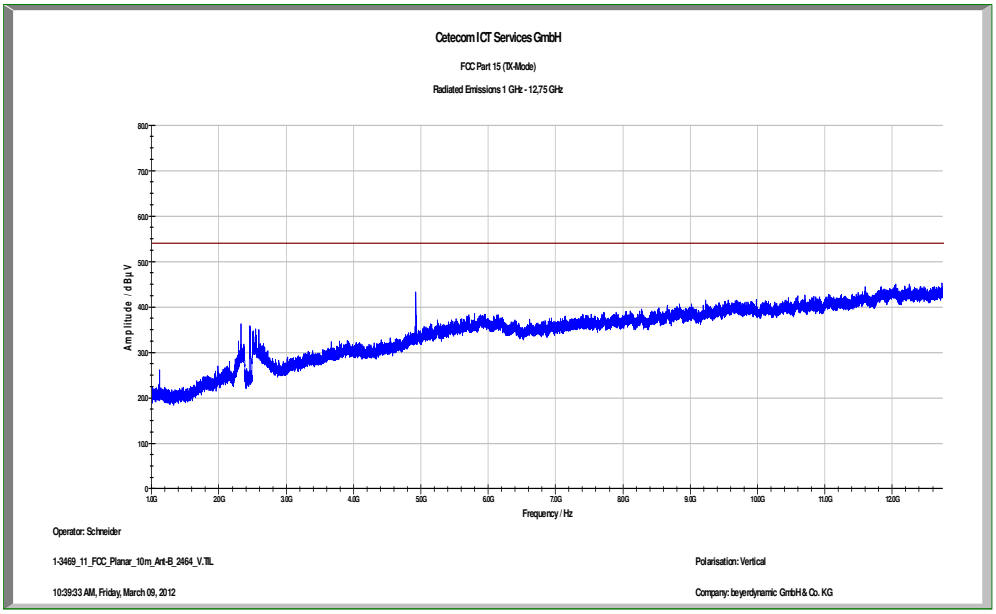
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

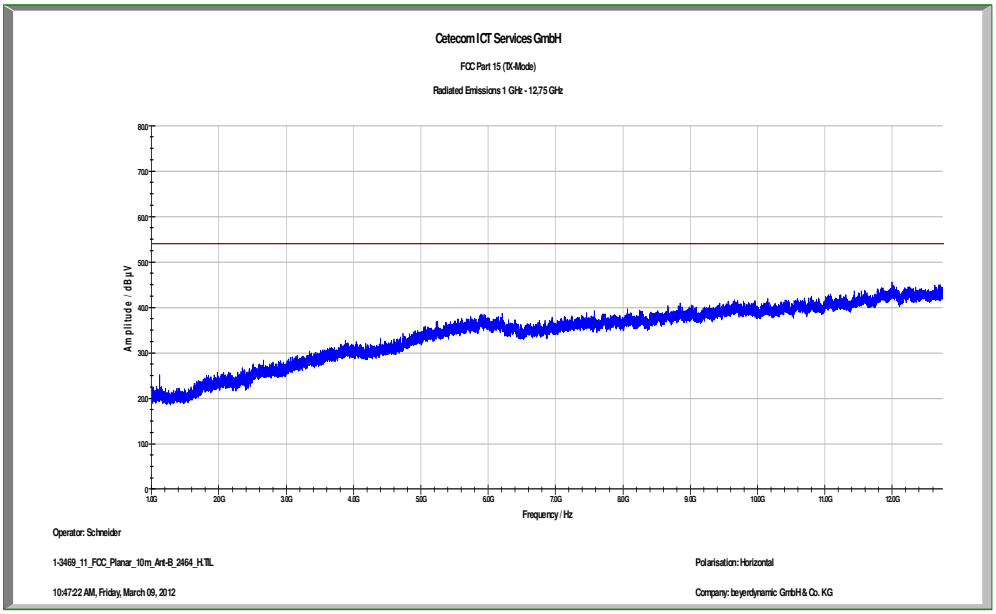
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.400000	18.9	1000.0	120.000	113.0	V	200.0	13.1	11.1	30.0	
61.200000	8.2	1000.0	120.000	270.0	V	159.0	11.3	21.8	30.0	
68.400000	6.8	1000.0	120.000	270.0	V	7.0	9.6	23.2	30.0	
106.680000	11.0	1000.0	120.000	120.0	V	335.0	11.3	22.5	33.5	
320.040000	20.5	1000.0	120.000	98.0	V	296.0	15.2	15.5	36.0	
375.000000	21.5	1000.0	120.000	114.0	V	115.0	16.5	14.5	36.0	

Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical polarization, also valid for 20 m



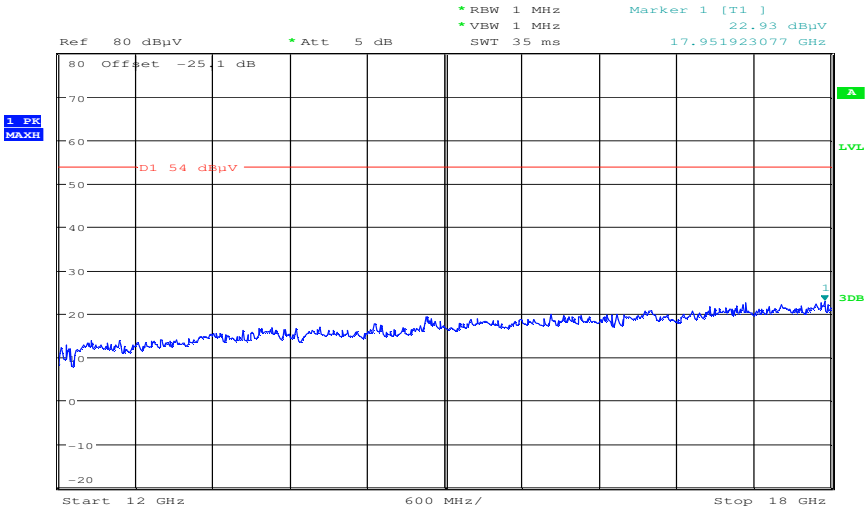
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 13: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization, also valid for 20 m

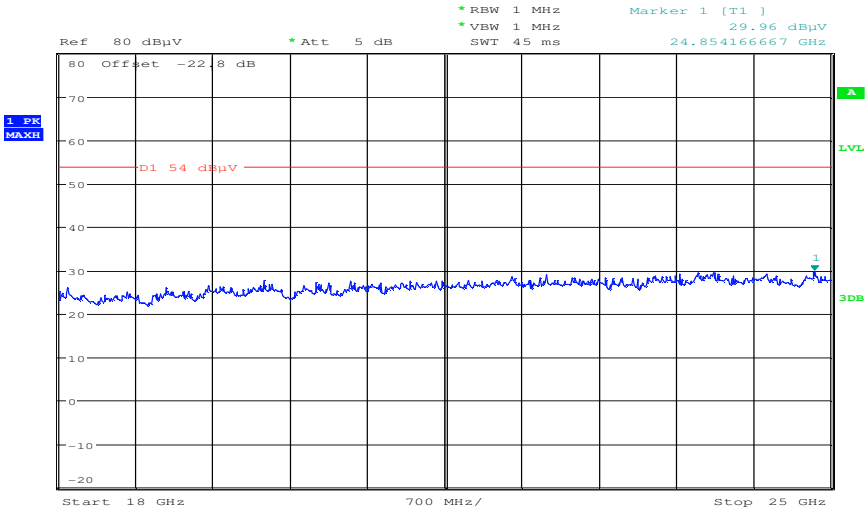


The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 14: Highest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 15: Highest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plots: Omnidirectional antenna A with 10 m cable (also valid for 20m cable)

Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

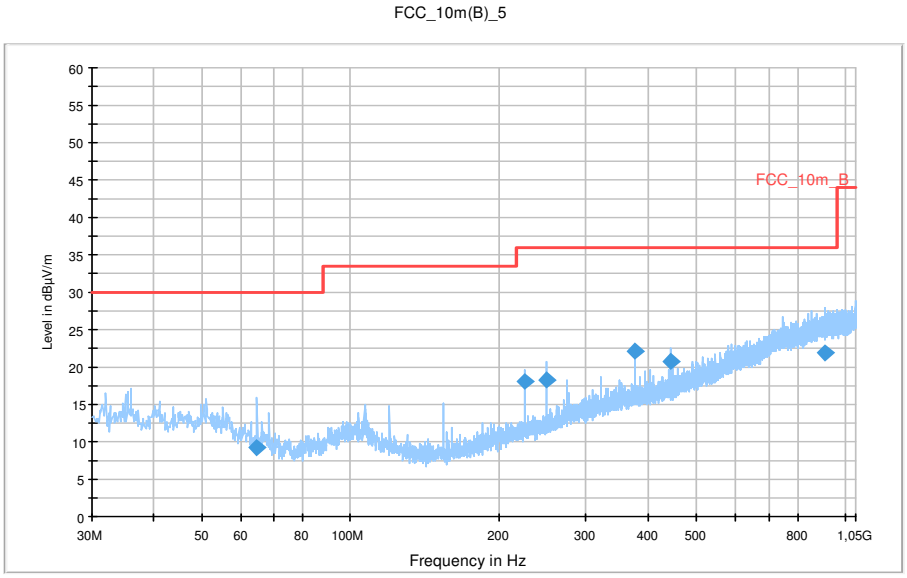
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant A tx@2412MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SWA2459+10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

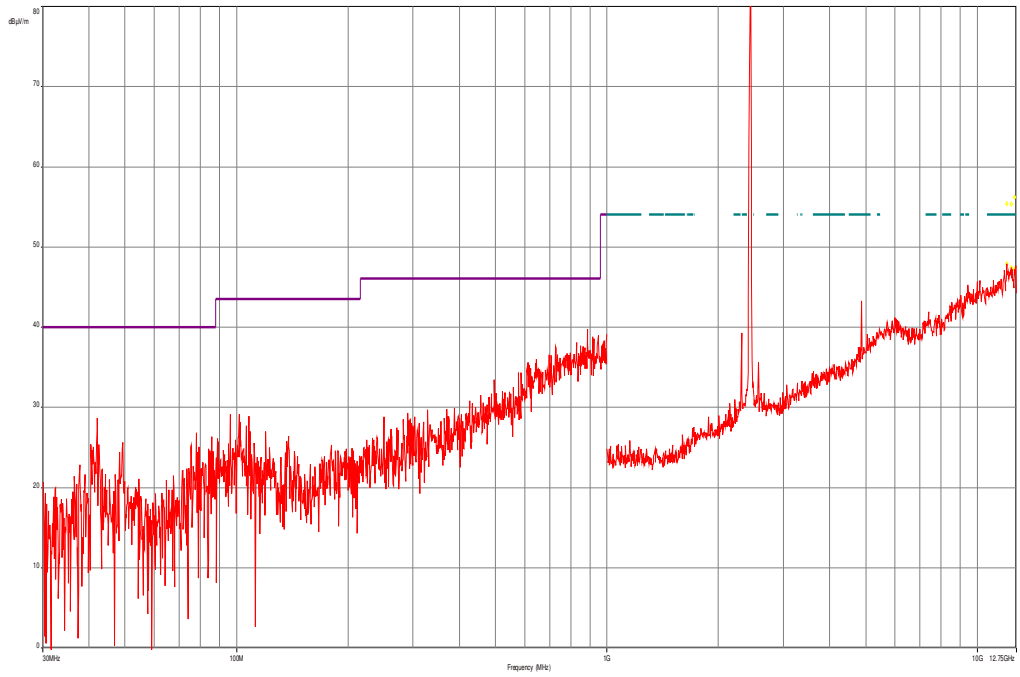
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



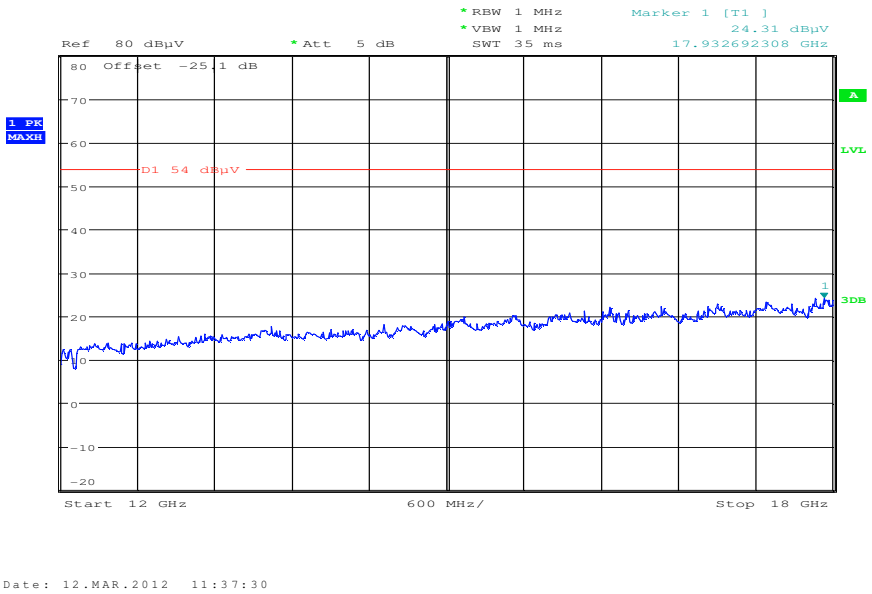
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
64.800000	9.2	1000.0	120.000	98.0	V	47.0	10.5	20.8	30.0	
225.000000	18.2	1000.0	120.000	105.0	V	47.0	12.5	17.8	36.0	
249.960000	18.3	1000.0	120.000	98.0	V	-2.0	13.3	17.7	36.0	
375.000000	22.0	1000.0	120.000	98.0	V	47.0	16.5	14.0	36.0	
442.320000	20.8	1000.0	120.000	270.0	H	309.0	17.5	15.2	36.0	
913.920000	21.9	1000.0	120.000	208.0	V	342.0	25.2	14.1	36.0	

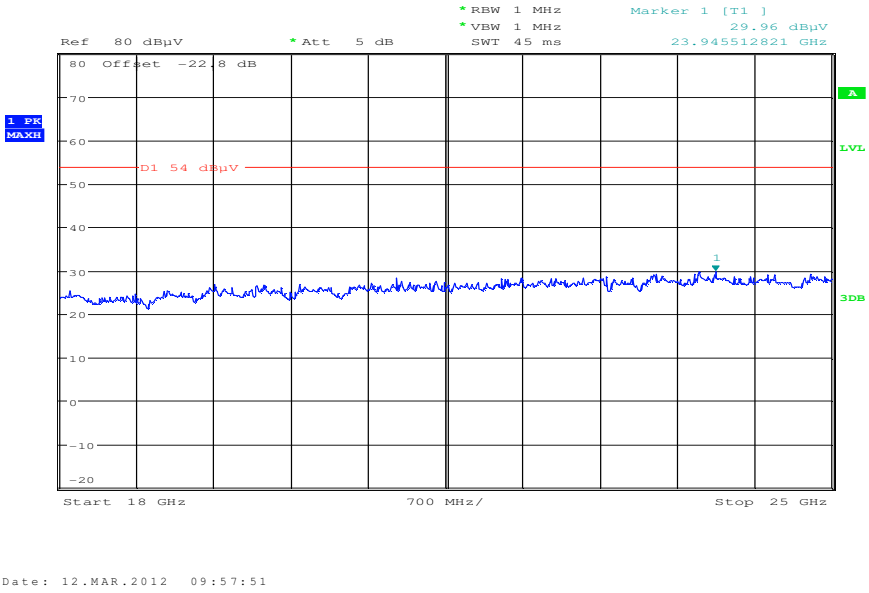
Plot 2: Lowest channel, 30MHz to 12.75 GHz, vertical and horizontal polarization, also valid for 20 m



Plot 3: Lowest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 4: Lowest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

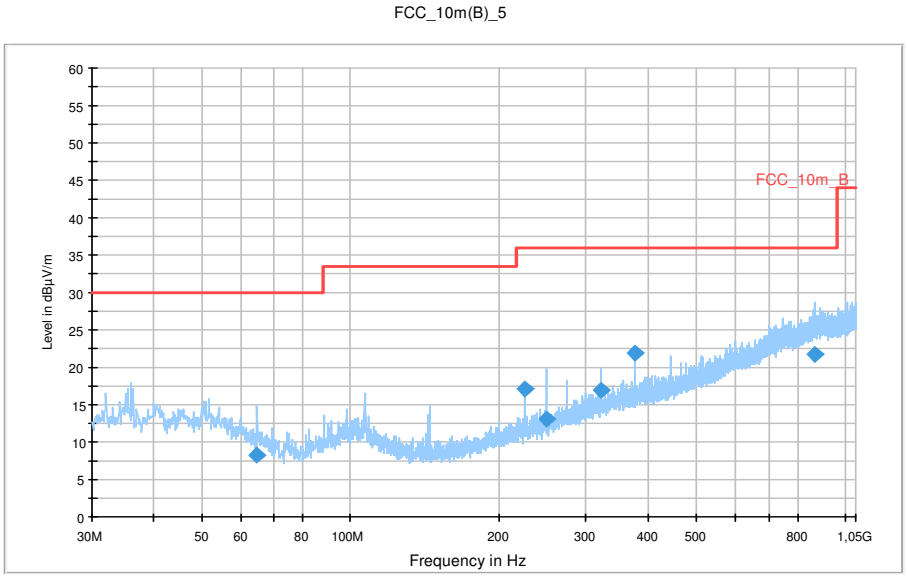
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant A tx@2438MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SWA2459+10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

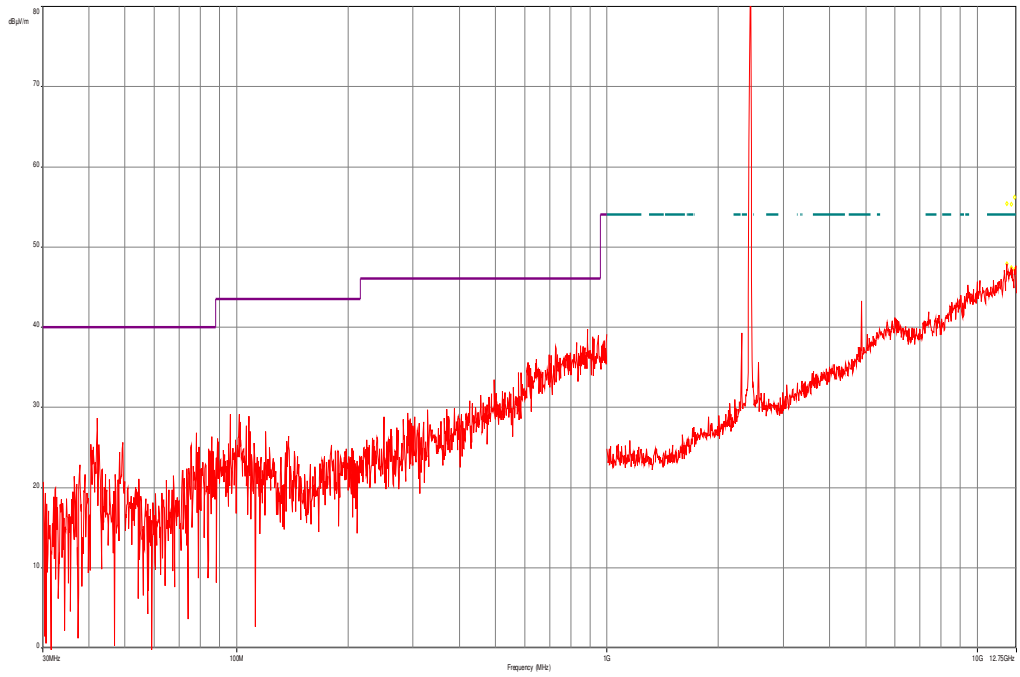
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



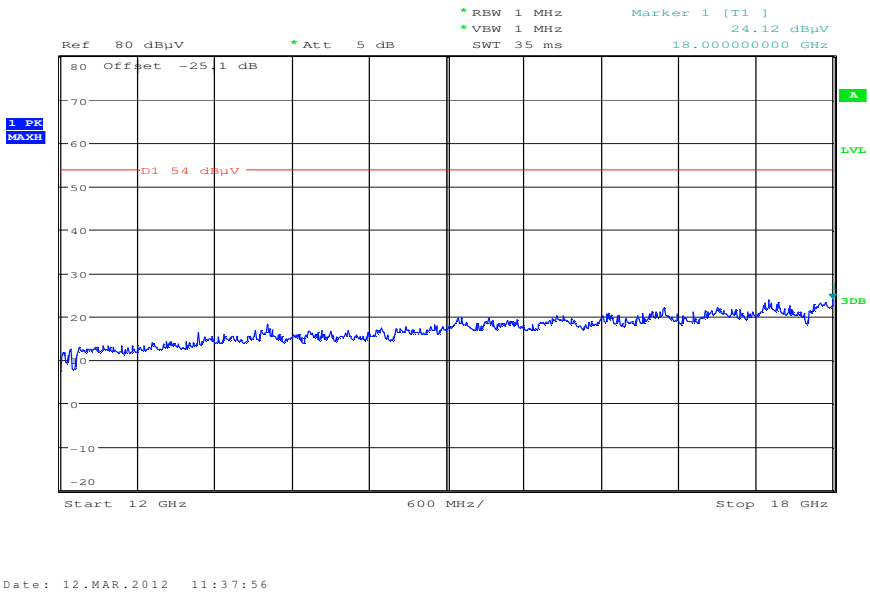
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
64.800000	8.2	1000.0	120.000	270.0	V	343.0	10.5	21.8	30.0	
225.000000	17.2	1000.0	120.000	98.0	V	-2.0	12.5	18.8	36.0	
250.080000	13.2	1000.0	120.000	98.0	V	353.0	13.3	22.8	36.0	
320.040000	17.0	1000.0	120.000	98.0	V	63.0	15.2	19.0	36.0	
375.000000	22.0	1000.0	120.000	98.0	V	80.0	16.5	14.0	36.0	
869.760000	21.7	1000.0	120.000	270.0	H	223.0	24.8	14.3	36.0	

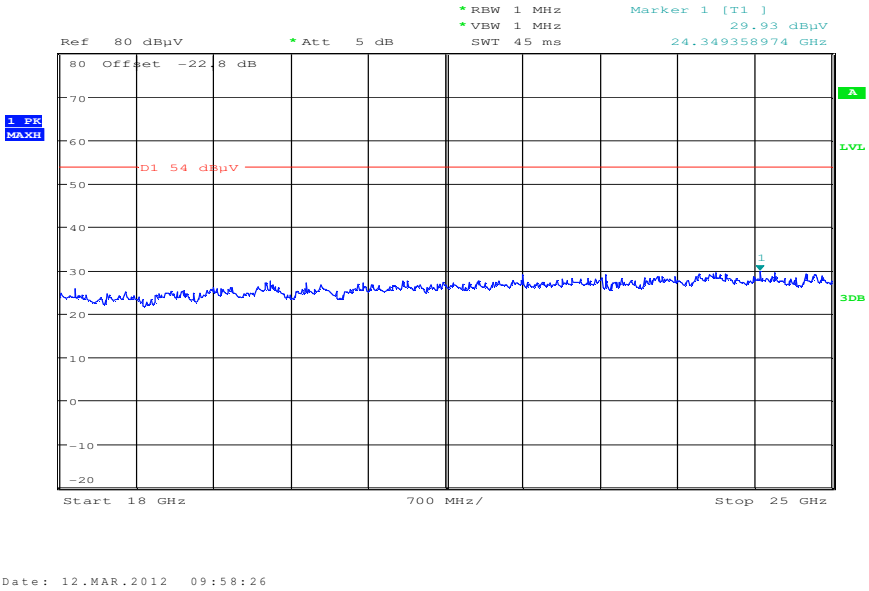
Plot 6: Middle channel, 30MHz to 12.75 GHz, vertical and horizontal polarization, also valid for 20 m



Plot 7: Middle channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 8: Middle channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 9: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

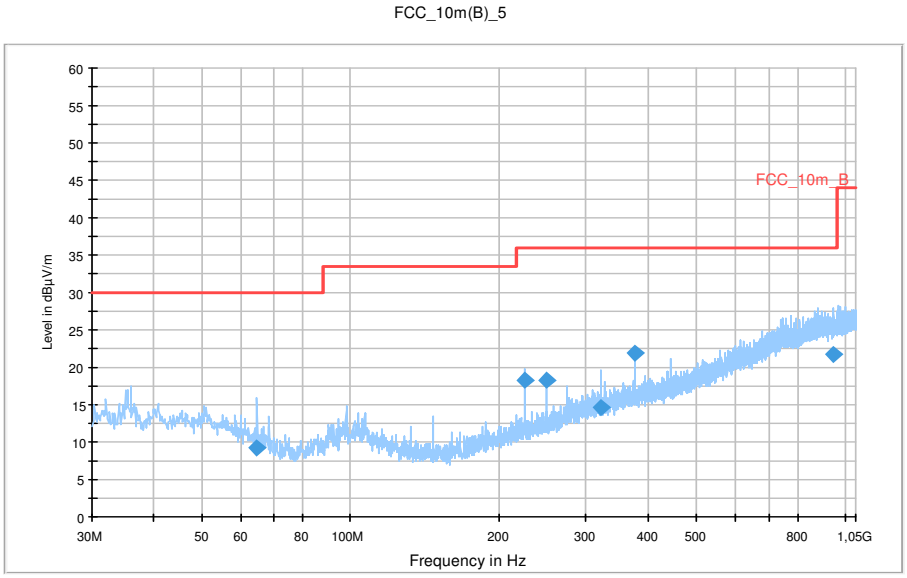
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant A tx@2464MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SWA2459+10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

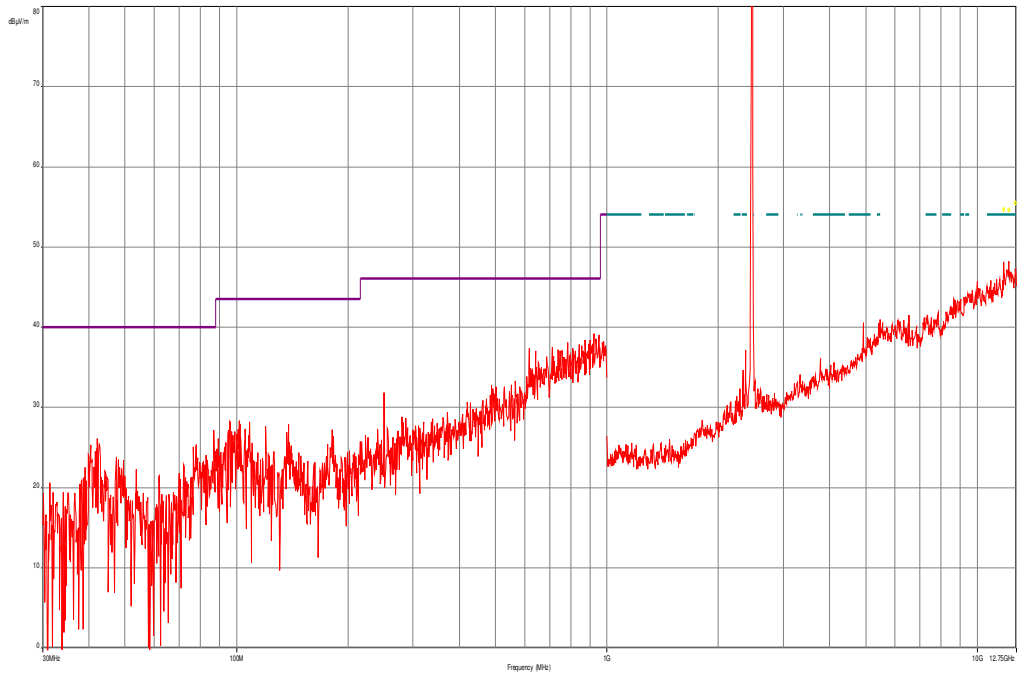
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



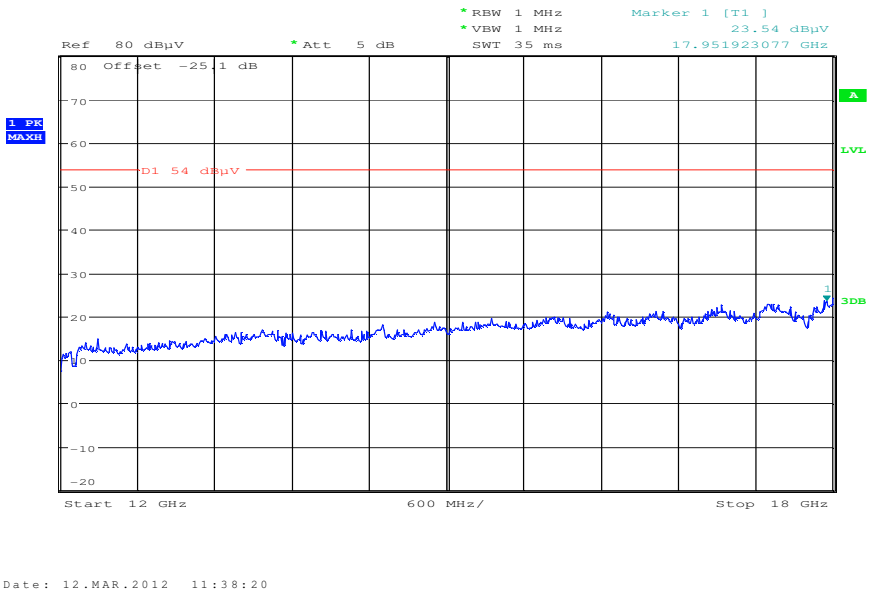
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
64.800000	9.3	1000.0	120.000	196.0	V	45.0	10.5	20.7	30.0	
225.000000	18.2	1000.0	120.000	98.0	V	45.0	12.5	17.8	36.0	
249.960000	18.3	1000.0	120.000	98.0	V	-2.0	13.3	17.7	36.0	
319.920000	14.5	1000.0	120.000	120.0	V	62.0	15.2	21.5	36.0	
375.000000	22.0	1000.0	120.000	112.0	V	72.0	16.5	14.0	36.0	
945.600000	21.8	1000.0	120.000	164.0	H	277.0	25.3	14.2	36.0	

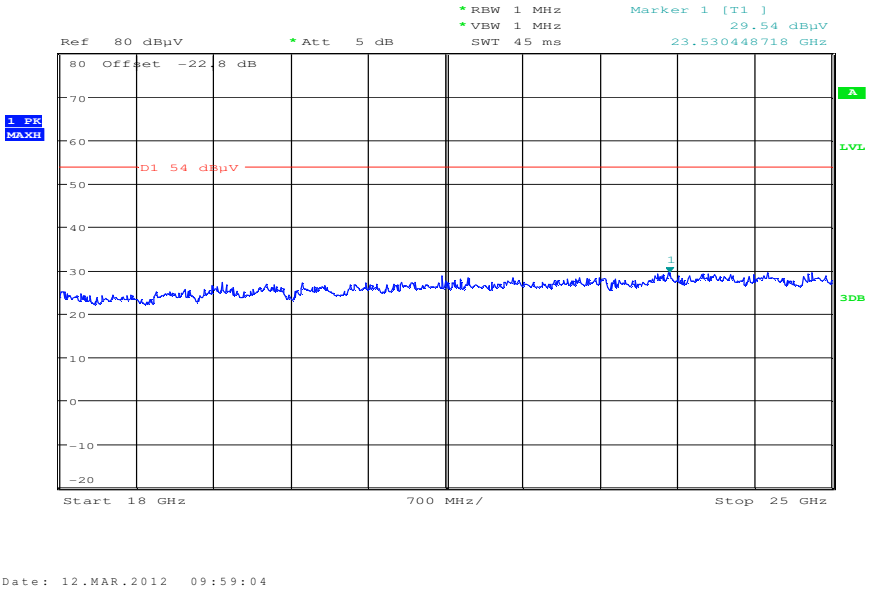
Plot 10: Highest channel, 30MHz to 12.75 GHz, vertical and horizontal polarization, also valid for 20 m



Plot 11: Highest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 12: Highest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plots: Omnidirectional antenna B with 10 m cable

Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

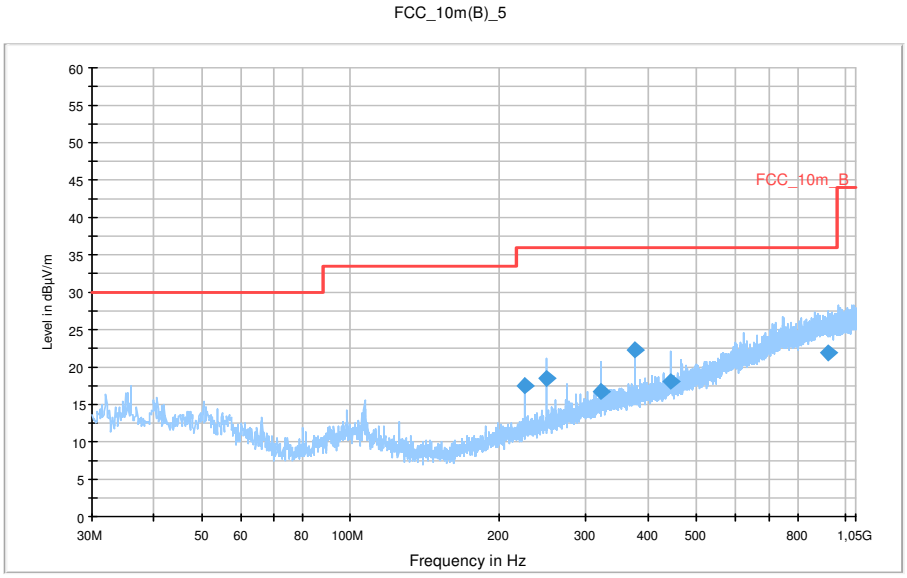
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant B tx@2412MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SWA2459+10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

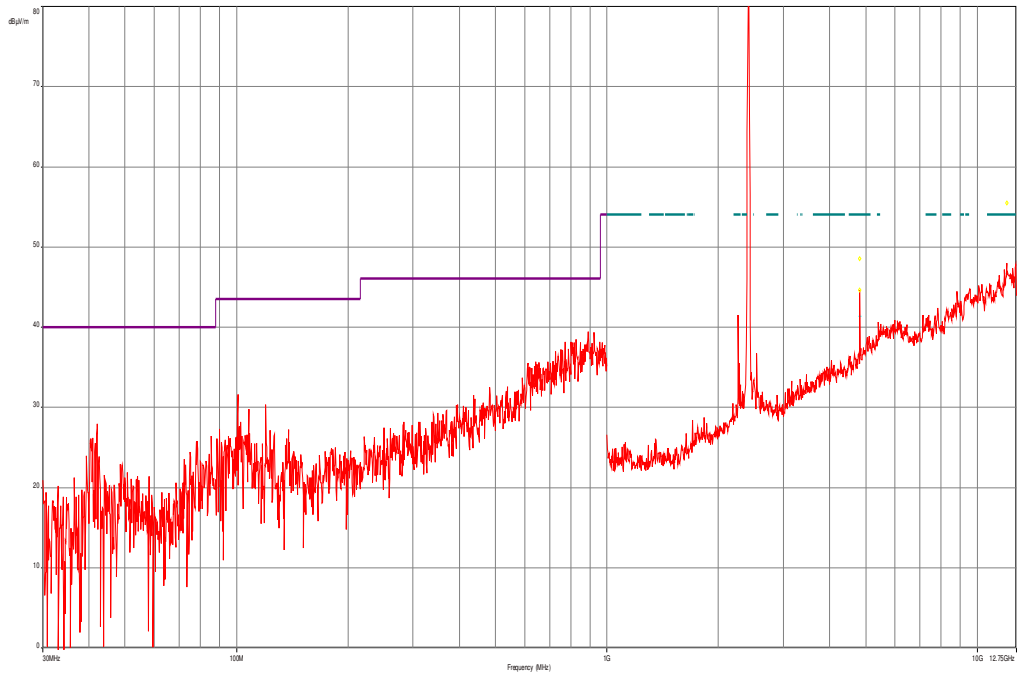
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



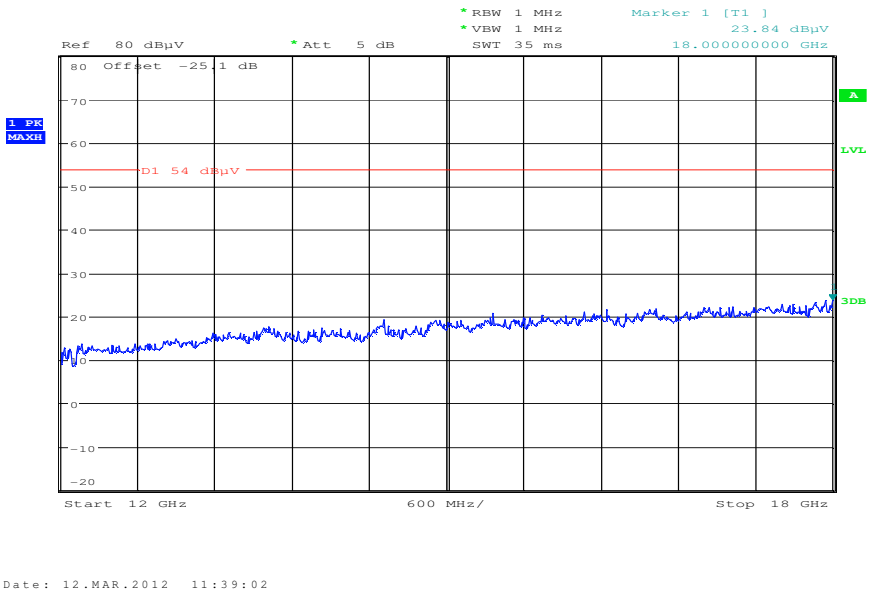
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
225.000000	17.5	1000.0	120.000	98.0	V	66.0	12.5	18.5	36.0	
249.960000	18.5	1000.0	120.000	98.0	V	-2.0	13.3	17.5	36.0	
320.040000	16.8	1000.0	120.000	104.0	V	84.0	15.2	19.2	36.0	
375.000000	22.4	1000.0	120.000	98.0	V	44.0	16.5	13.6	36.0	
442.320000	18.1	1000.0	120.000	270.0	H	66.0	17.5	17.9	36.0	
925.680000	21.9	1000.0	120.000	270.0	V	108.0	25.3	14.1	36.0	

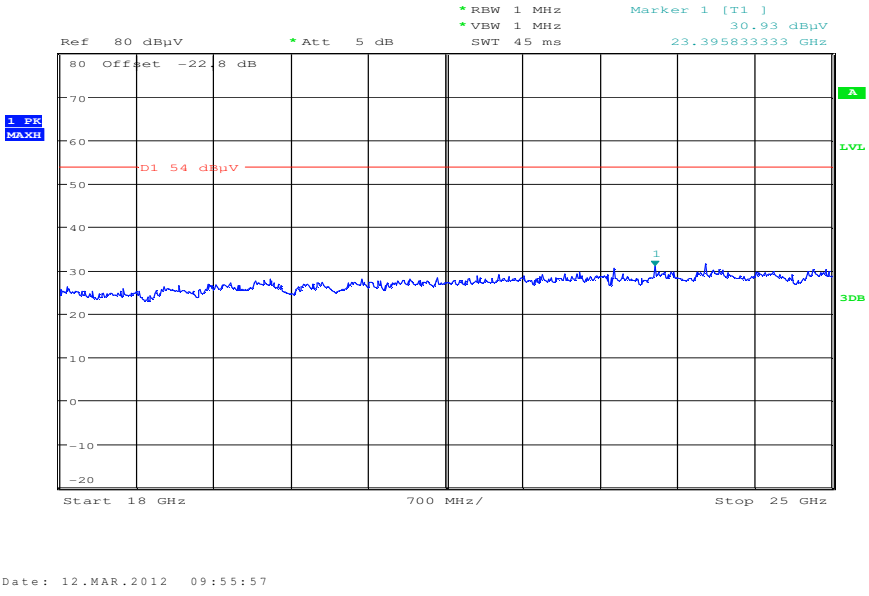
Plot 2: Lowest channel, 30 MHz to 12.75 GHz, vertical and horizontal polarization, also valid for 20 m



Plot 3: Lowest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 4: Lowest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

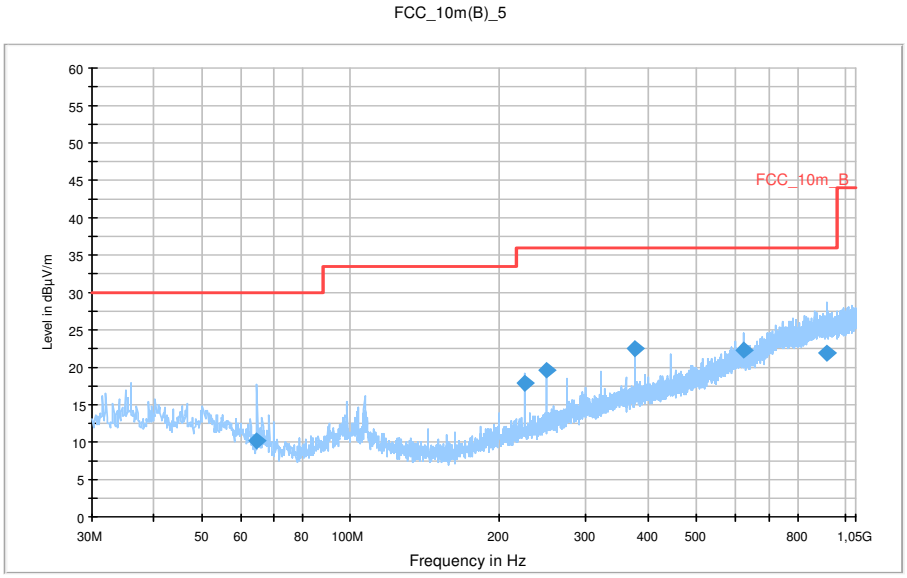
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	Ant B tx@2438MHz
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SWA2459+10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

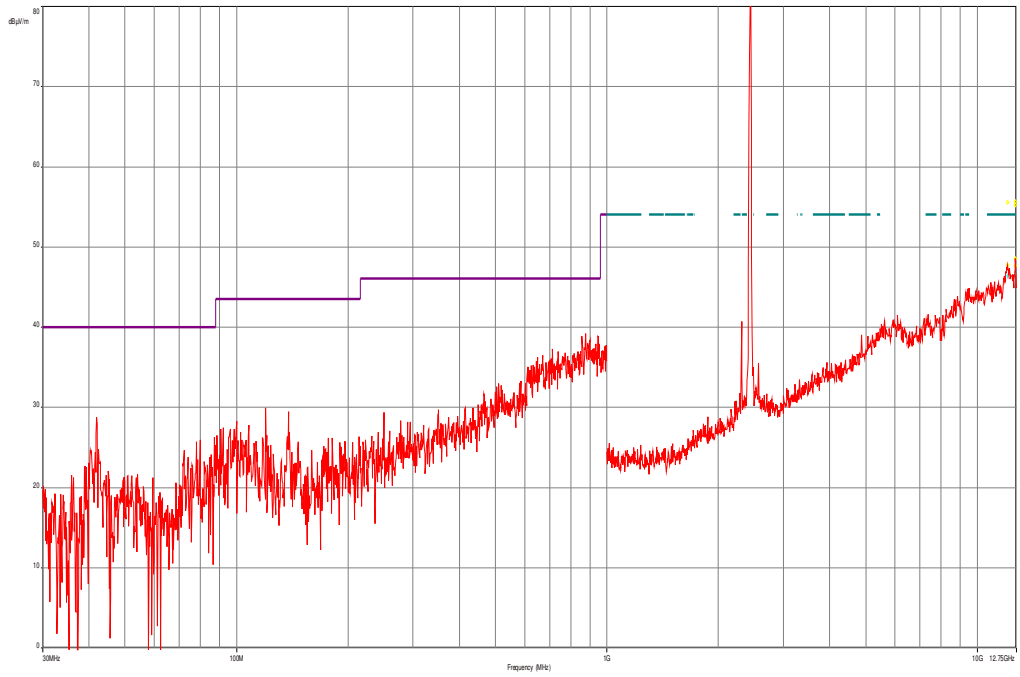
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



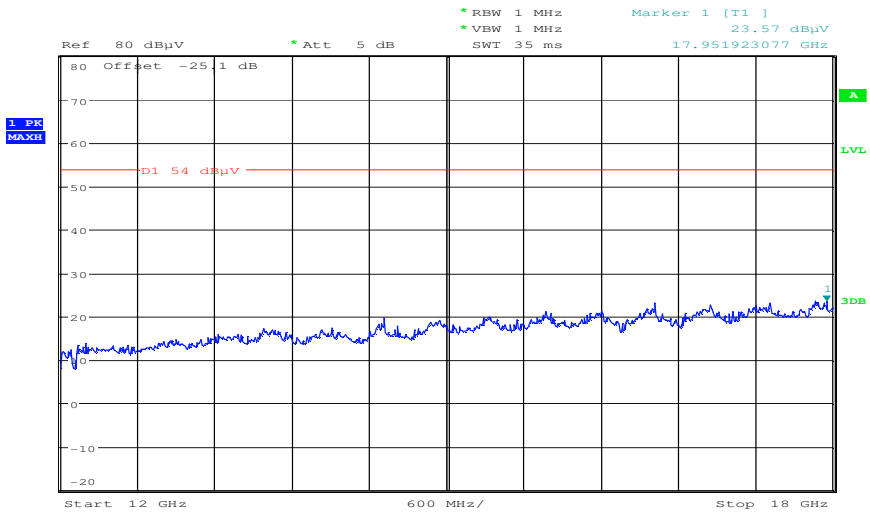
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
64.800000	10.2	1000.0	120.000	225.0	V	157.0	10.5	19.8	30.0	
225.000000	17.9	1000.0	120.000	98.0	V	57.0	12.5	18.1	36.0	
249.960000	19.5	1000.0	120.000	105.0	V	348.0	13.3	16.5	36.0	
375.000000	22.5	1000.0	120.000	98.0	V	26.0	16.5	13.5	36.0	
624.960000	22.3	1000.0	120.000	167.0	H	86.0	21.0	13.7	36.0	
919.080000	21.9	1000.0	120.000	270.0	H	26.0	25.3	14.1	36.0	

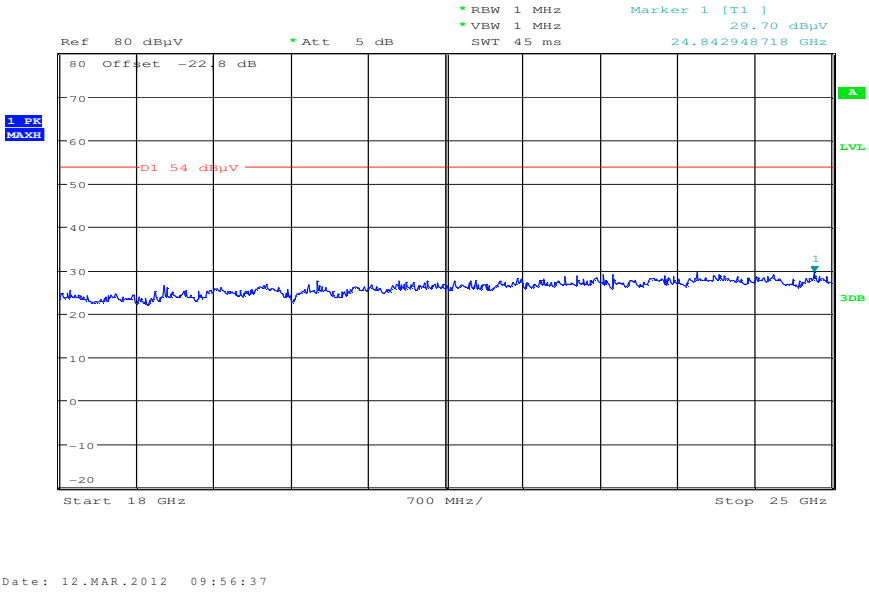
Plot 6: Middle channel, 30 MHz to 12.75 GHz, vertical and horizontal polarization, also valid for 20 m



Plot 7: Middle channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 8: Middle channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 9: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization, also valid for 20 m

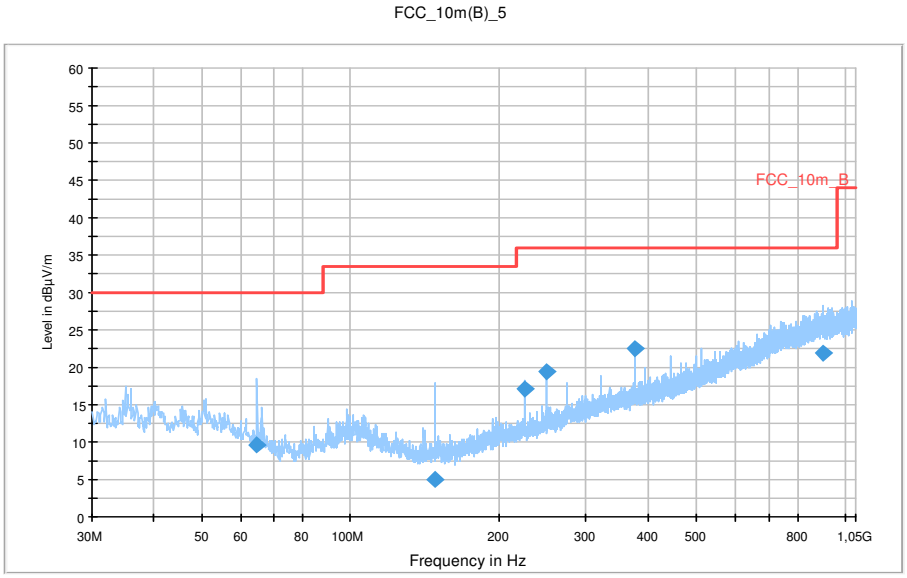
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15C class B
Operating Conditions:	RX
Operator Name:	Kraus
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SWA2459+10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

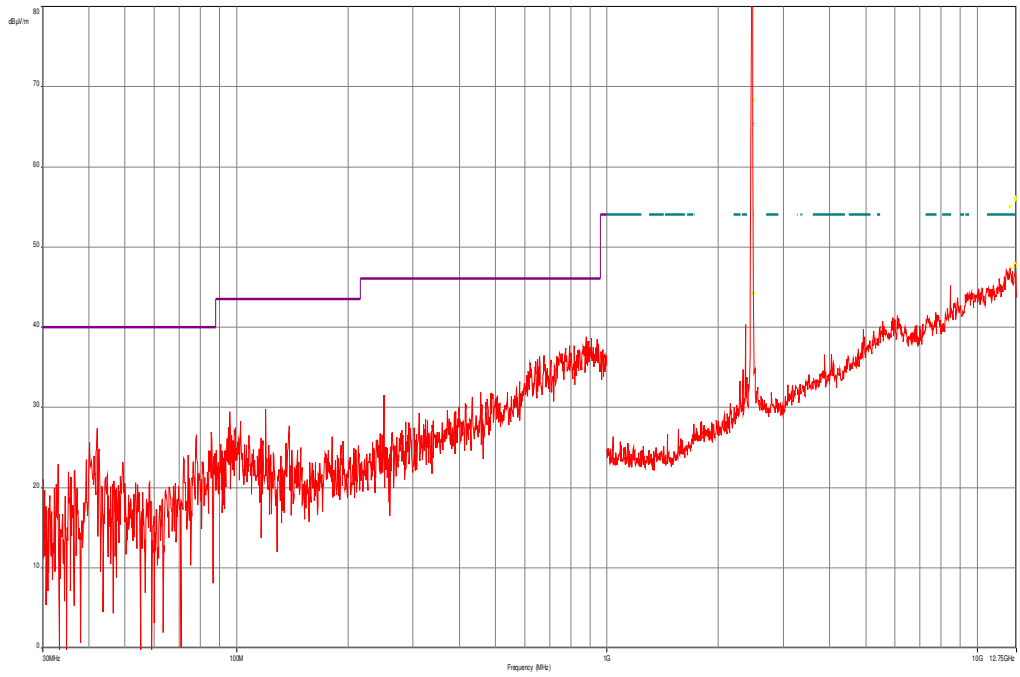
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



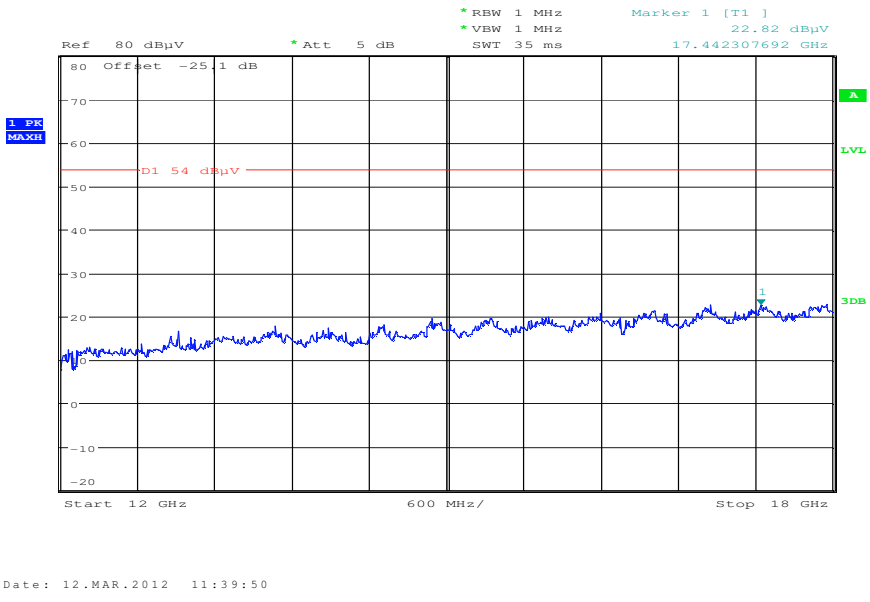
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
64.800000	9.6	1000.0	120.000	270.0	V	123.0	10.5	20.4	30.0	
147.600000	5.0	1000.0	120.000	255.0	V	123.0	8.9	28.5	33.5	
225.000000	17.2	1000.0	120.000	167.0	V	16.0	12.5	18.8	36.0	
249.960000	19.5	1000.0	120.000	98.0	V	348.0	13.3	16.5	36.0	
375.000000	22.5	1000.0	120.000	112.0	V	34.0	16.5	13.5	36.0	
903.600000	21.9	1000.0	120.000	218.0	V	260.0	25.2	14.1	36.0	

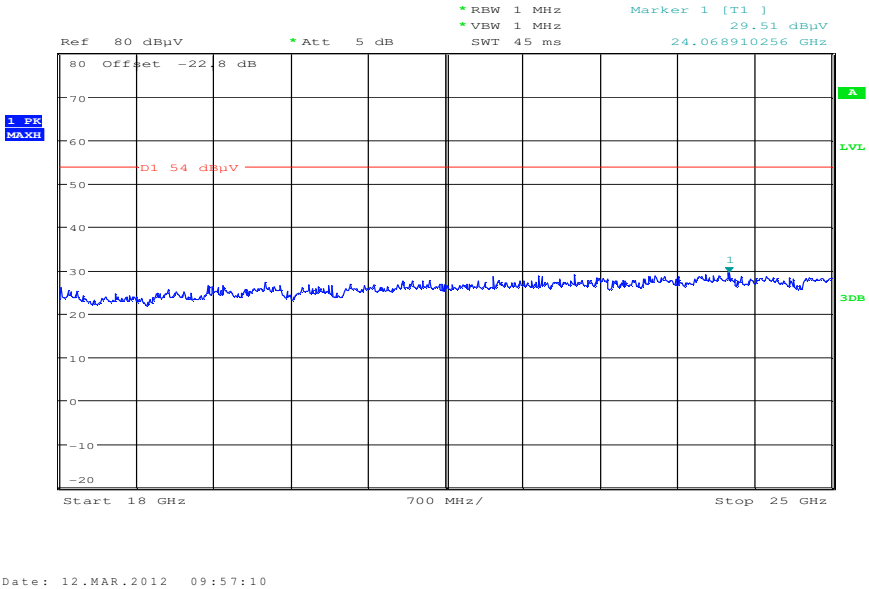
Plot 10: Highest channel, 30 MHz to 12.75 GHz, vertical and horizontal polarization, also valid for 20 m



Plot 11: Highest channel, 12.75 GHz to 18 GHz (vertical & horizontal - max hold - also valid for 20 m)



Plot 12: Highest channel, 18 GHz to 25 GHz (vertical & horizontal - max hold - also valid for 20 m)



9.10 RX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in idle/receive mode. The results are valid for both antennas.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	Sweep: 100 kHz Remeasurement: 10 Hz
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Span:	30 MHz to 26 GHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
CFR Part 15.109		RSS Gen, Issue 2, 4.10
RX Spurious Emissions Radiated		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Results:

RX Spurious Emissions Radiated [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No critical peaks detected		
Measurement uncertainty	± 3 dB	

Result: Passed

Plots: RX / Idle – mode

Plot 1: 30 MHz to 1 GHz, vertical & horizontal polarization

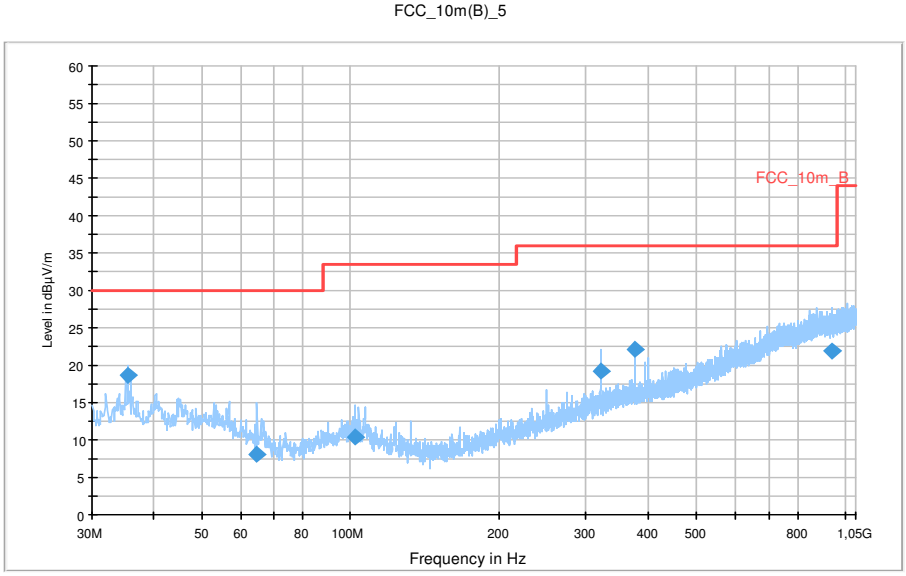
Common Information

EUT:	Quinta CU
Serial Number:	00101
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	RX
Operator Name:	Wolsdorfer
Comment:	AC: 115 V / 60 Hz; ETH-cable S/FTP; 2x SPA2456 antenna + 10m cable

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

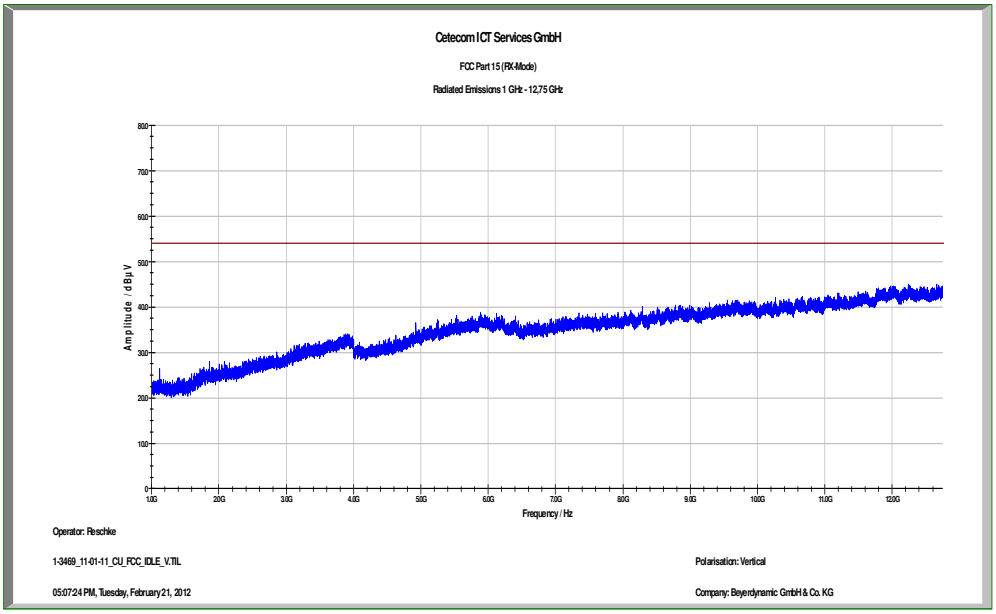
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



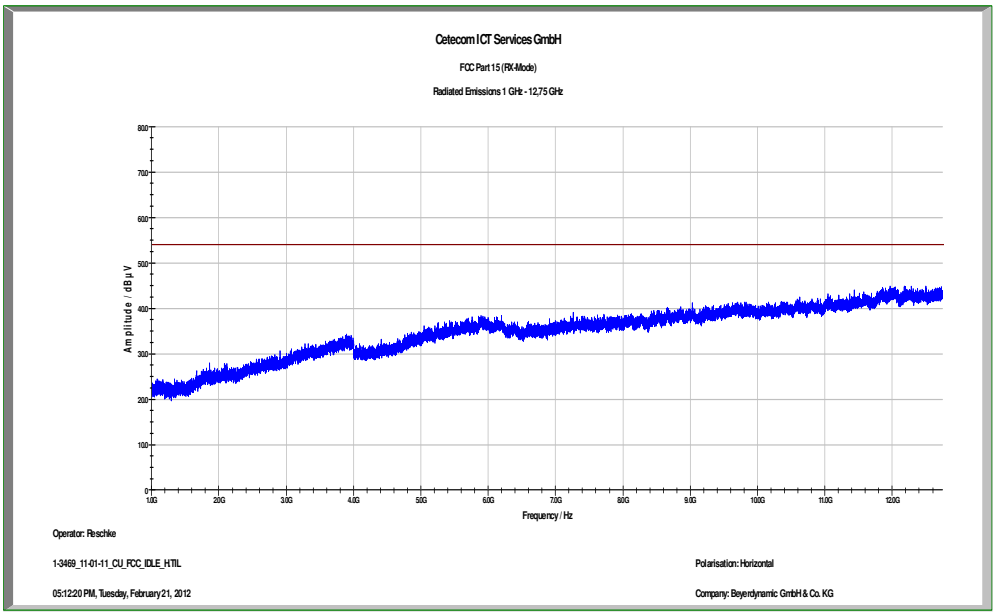
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.400000	18.6	1000.0	120.000	124.0	V	48.0	13.1	11.4	30.0	
64.800000	8.1	1000.0	120.000	250.0	V	80.0	10.5	21.9	30.0	
101.880000	10.3	1000.0	120.000	98.0	V	244.0	11.7	23.2	33.5	
319.920000	19.3	1000.0	120.000	98.0	V	270.0	15.2	16.7	36.0	
375.000000	22.1	1000.0	120.000	105.0	V	107.0	16.5	13.9	36.0	
938.280000	21.9	1000.0	120.000	219.0	V	226.0	25.3	14.1	36.0	

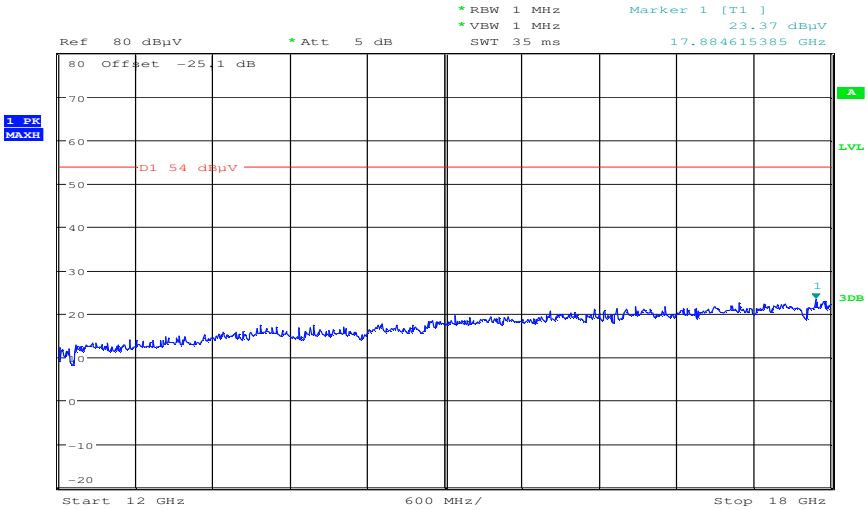
Plot 2: 1 GHz to 12.75 GHz, vertical polarization



Plot 3: 1 GHz to 12.75 GHz, horizontal polarization

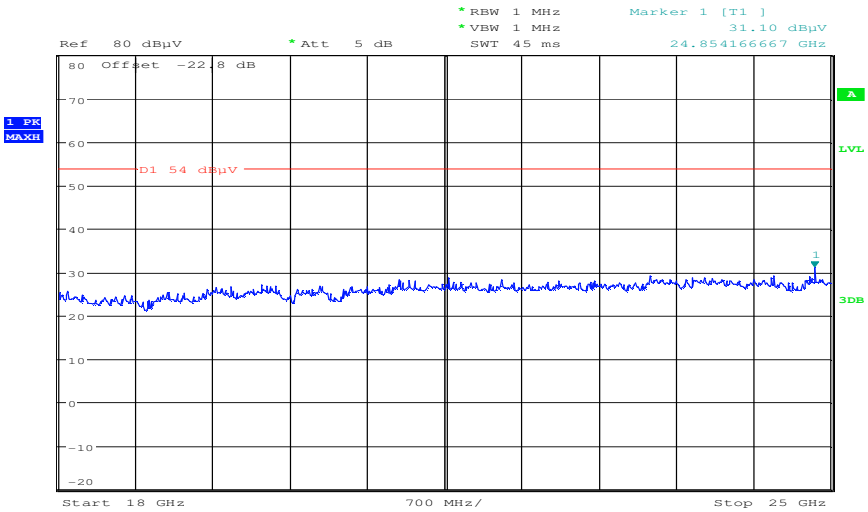


Plot 4: 12.75 GHz to 18 GHz (vertical & horizontal - max hold)



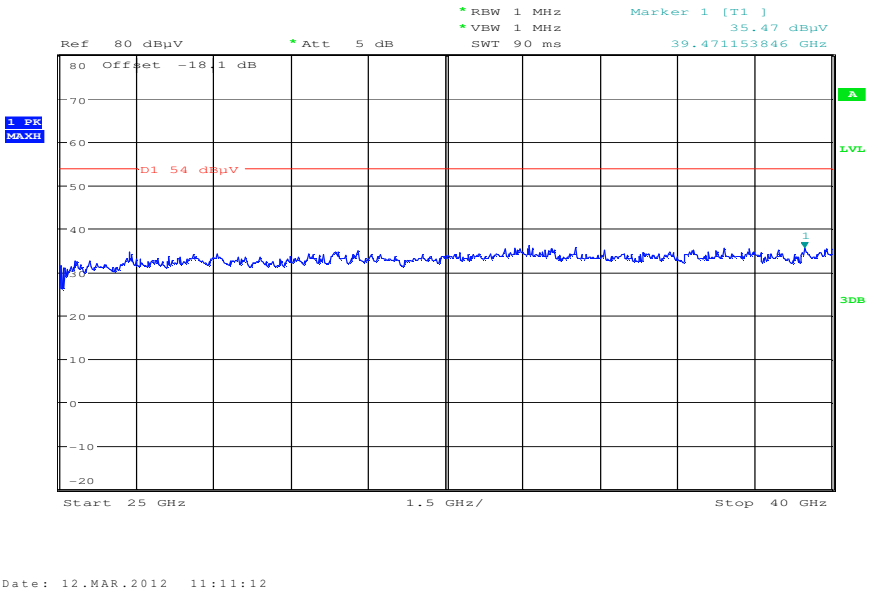
Date: 12.MAR.2012 11:16:13

Plot 5: 18 GHz to 25 GHz (vertical & horizontal - max hold)



Date: 12.MAR.2012 11:11:52

Plot 5: 25 GHz to 40 GHz (vertical & horizontal - max hold)



9.11 TX spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The EUT is set to channel 6. This measurement is representative for all channels and modes. If critical peaks are found channel 1 and channel 11 will be measured too. The measurement is performed with the data rate producing the highest output power. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
CFR Part 15.209(a)		RSS –Gen
TX Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

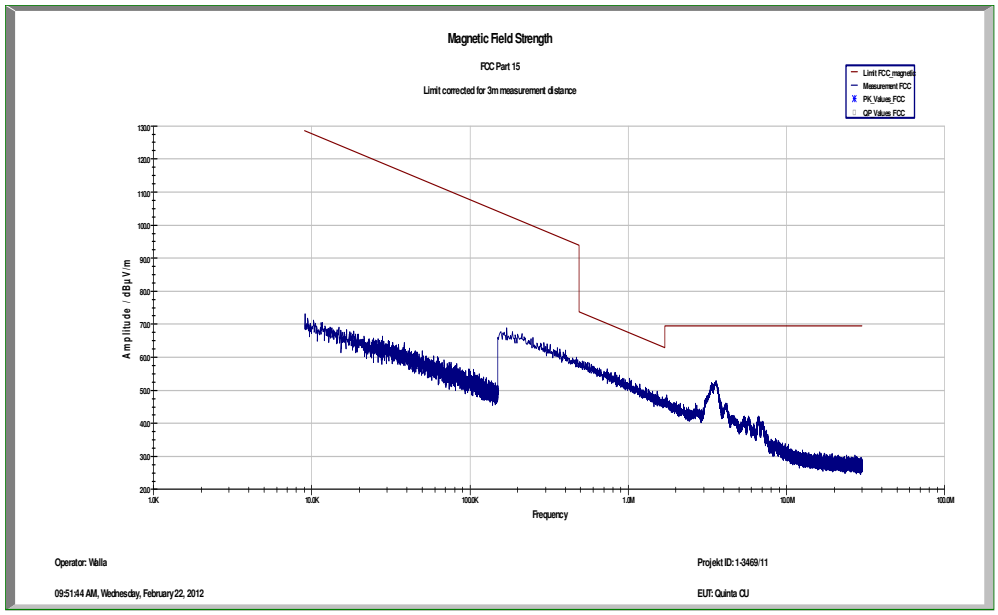
Results:

TX Spurious Emissions Radiated < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No critical peaks found. All detected emissions are 20 dB below the limit!		
Measurement uncertainty	± 3 dB	

Result: Passed

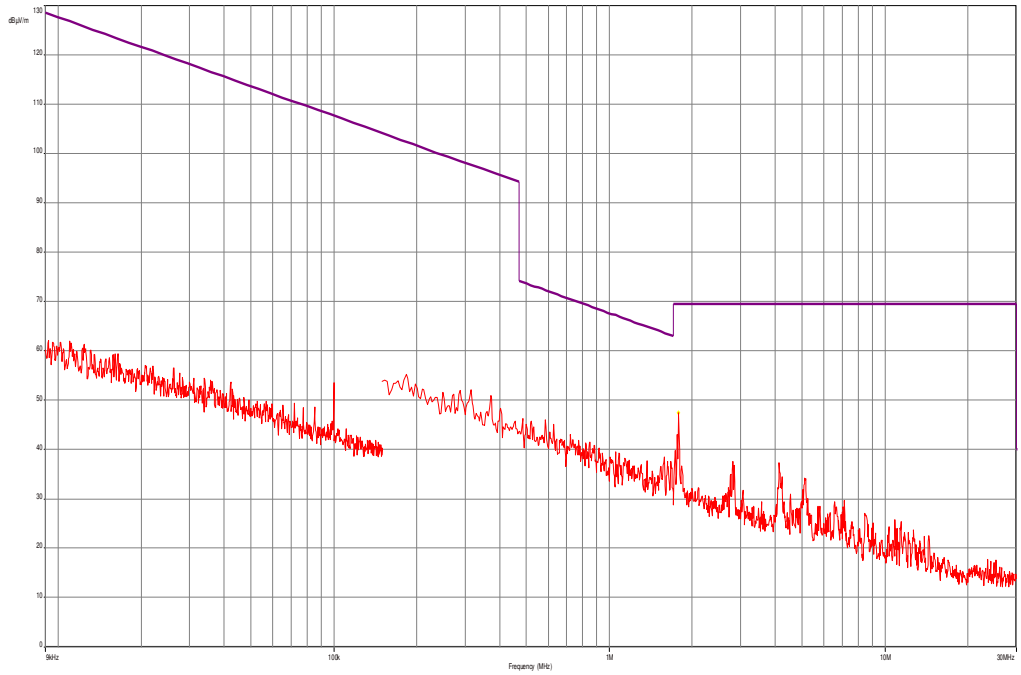
Plots: Rod antenna (valid for antenna A and antenna B)

Plot 1: 9 kHz to 30 MHz (valid for all channels)



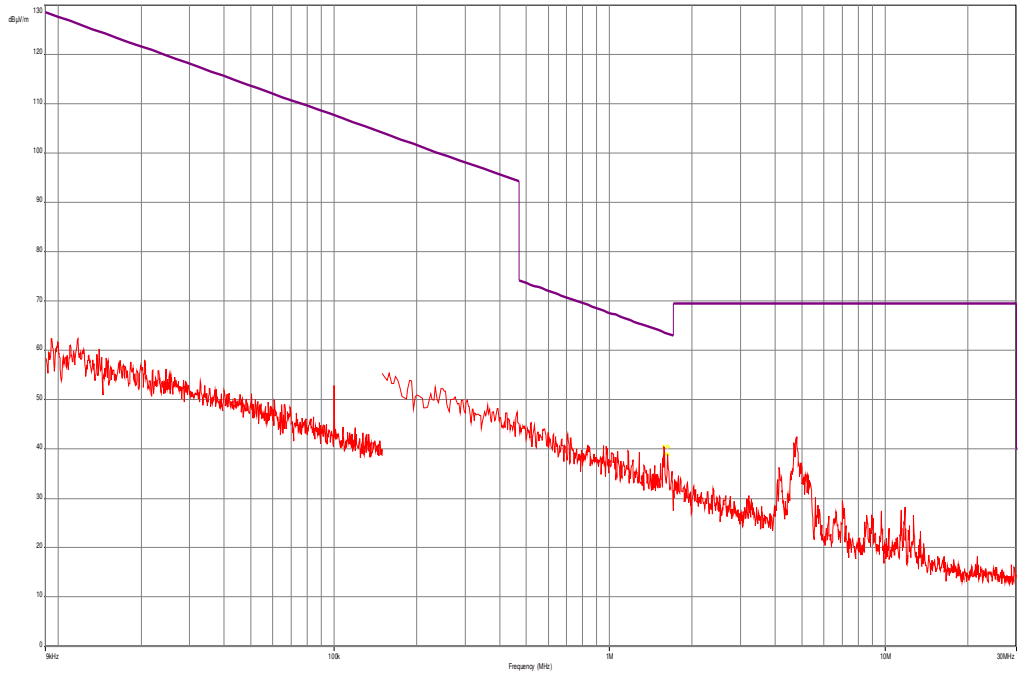
Plots: Planar antenna (valid for antenna A and antenna B)

Plot 2: Middle channel, (valid for all channels)



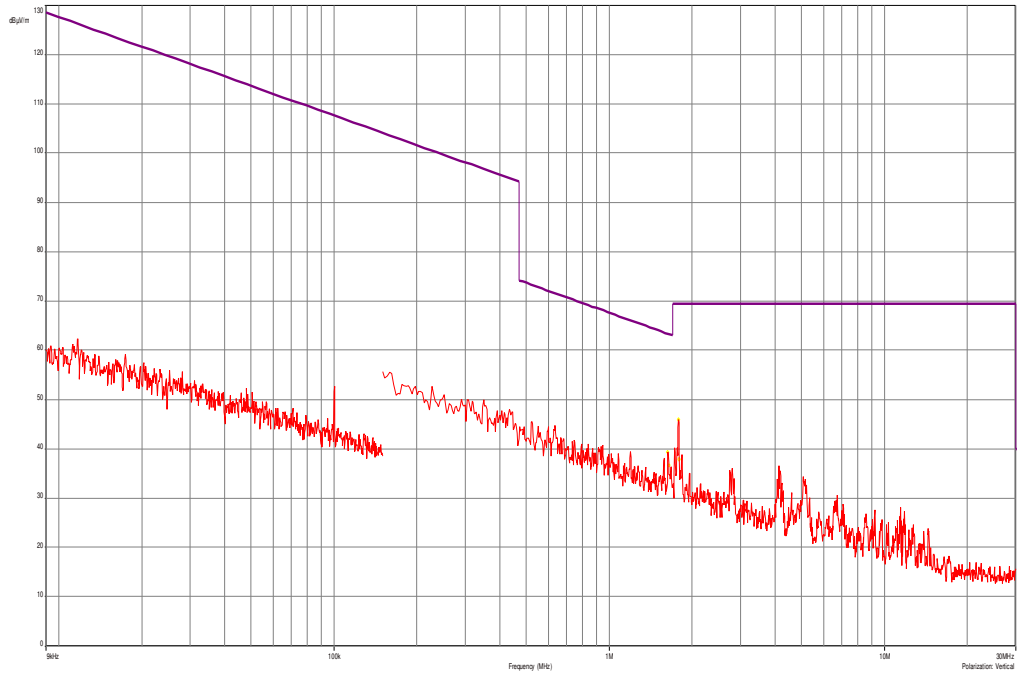
Plots: Omnidirectional antenna (valid for antenna A and antenna B)

Plot 3: 9 kHz to 30 MHz (valid for all channels)



Plots: RX / Idle – mode (valid for antenna A and antenna B)

Plot 1: 9 kHz to 30 MHz



9.12 TX spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to channel 6. This measurement is repeated for DSSS and OFDM modulation. If critical peaks are found channel 1 and channel 11 will be measured too. The measurement is performed with the data rate producing the highest output power. Both power lines, phase and neutral line, are measured. Found peaks are remeasured with average and quasi peak detection to show compliance to the limits.

Measurement:

Measurement parameter	
Detector:	Peak - Quasi Peak / Average
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
CFR Part 15.107(a)		ICES-003, Issue 4
TX Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dBµV/m)	Average (dBµV/m)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30.0	60	50

*Decreases with the logarithm of the frequency

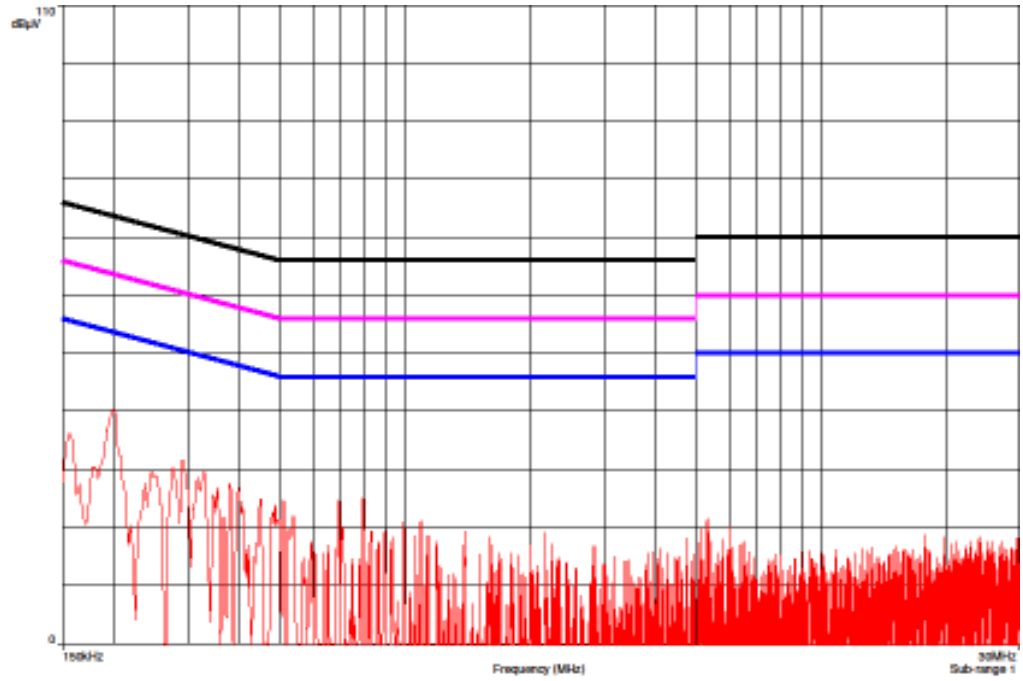
Results:

TX Spurious Emissions Conducted < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No critical peaks detected		
Measurement uncertainty	± 3 dB	

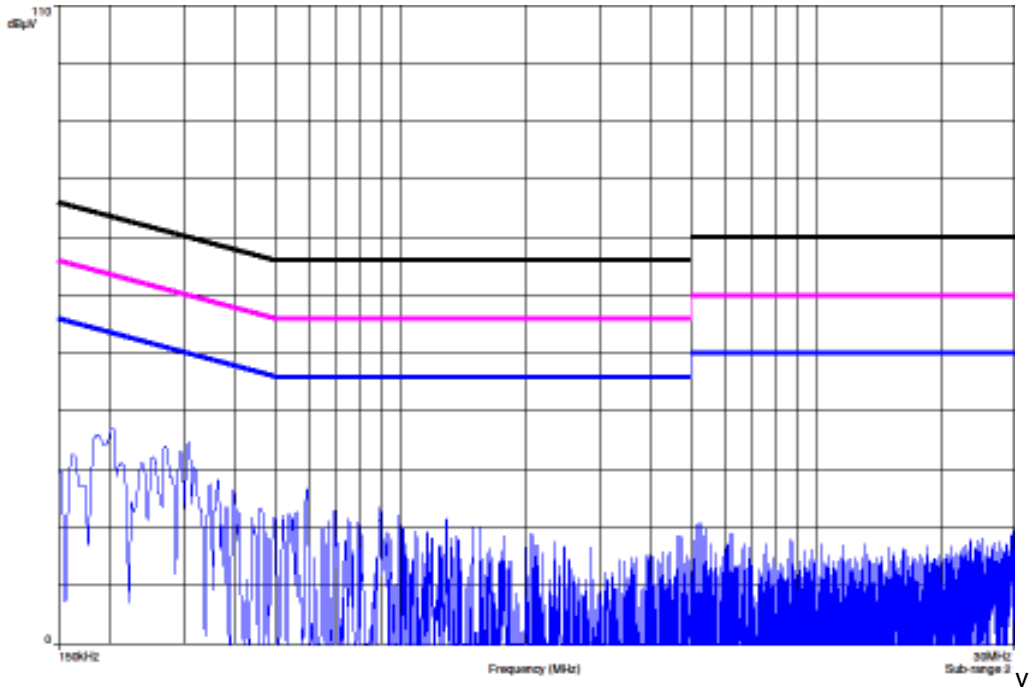
Result: Passed

Plots:

Plot 1: 9 kHz to 30 MHz, phase line (TX mode)

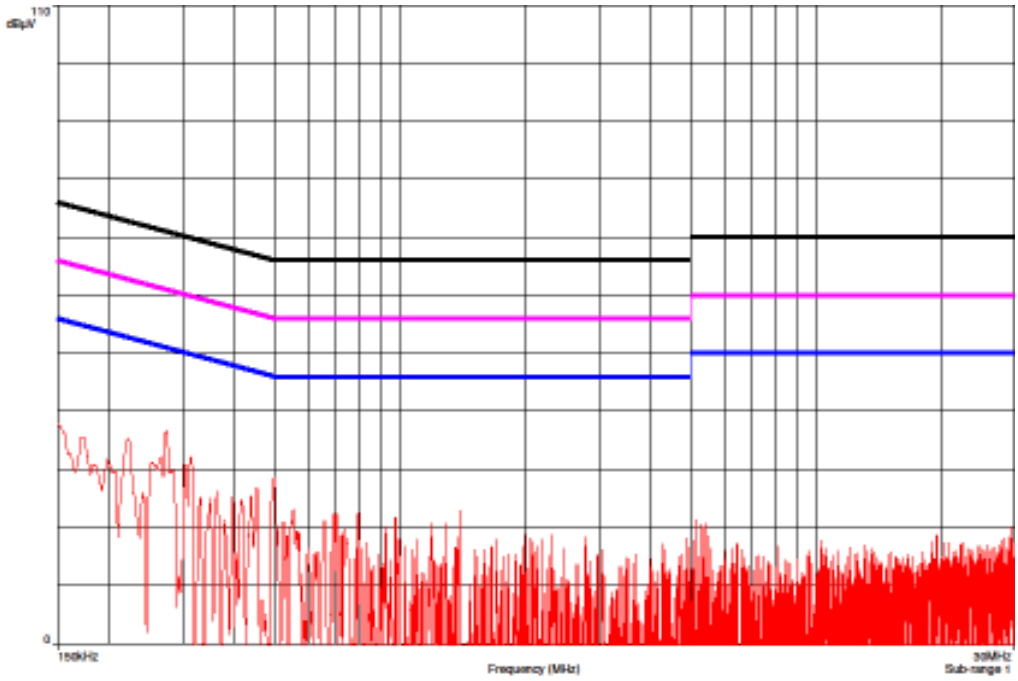


Plot 2: 9 kHz to 30 MHz, neutral line (TX mode)

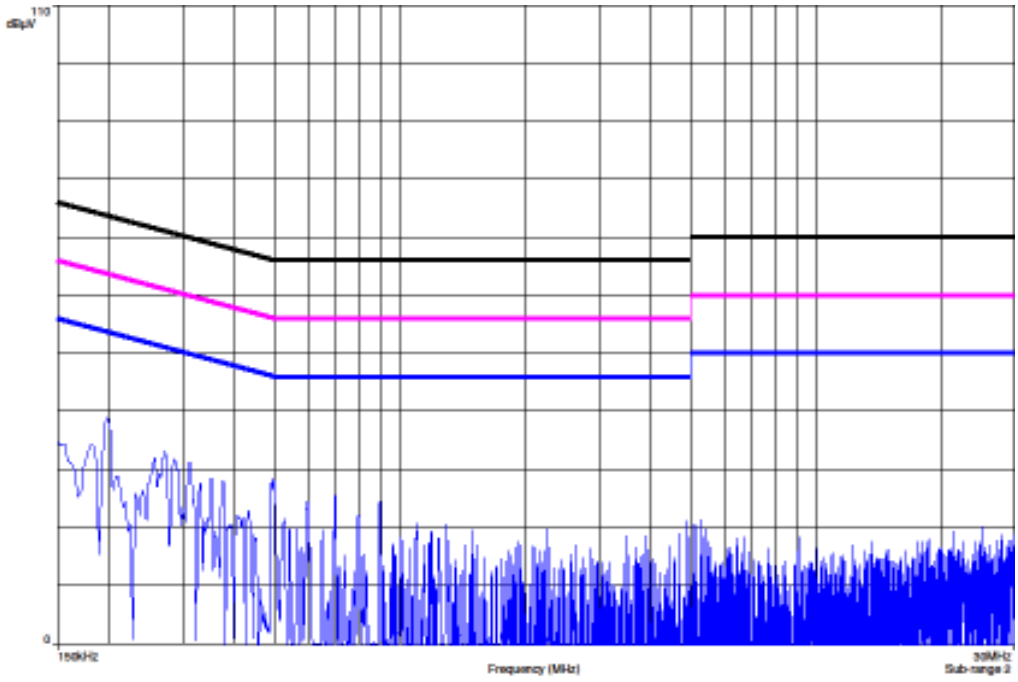


V

Plot 3: 9 kHz to 30 MHz, phase line (Idle)



Plot 4: 9 kHz to 30 MHz, neutral line (Idle)



10 Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Labor/Item).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
2	50	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580	ne		
3	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B597 9	300000210	ne		
4	n. a.	EMI Test Receiver	ESCI 1166.5950. 03	R&S	100083	300003312	k	05.01.2011	05.01.2013
5	n. a.	Analyzer-Reference-System (Harmonics and Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	k	14.07.2011	14.07.2013
6	n. a.	Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379	ev		
7	n. a.	Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745	izw		
8	n. a.	Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746	izw		
9	n. a.	Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747	izw		
10	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbe ck	295	300003787	k	01.04.2010	01.04.2012
11	n. a.	Spectrum-Analyzer	FSU26	R&S	200809	300003874	k	10.01.2011	10.01.2013
12	n. a.	Isolating Transformer	RT5A	Grundig	8041	300001626	g		
13	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	12.01.2012	12.01.2015
14	n. a.	Coaxial Attenuator 30dB/500W	8325	Bird	1530	300001595	ev		
15	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vIKI!	11.05.2011	11.05.2013
16	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
17	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996		23.03.2009	
18	Spec.A. 2_2e	System rack for EMI measurement solution	85900	HP I.V.	*	300000222	ne		
19	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	06.01.2012	06.01.2014
20	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
21	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
22	n. a.	Isolating Transformer	RT5A	Grundig	9242	300001263	ne		
23	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
24	n. a.	Switch / Control	3488A	HP	2605e08770	300001443	ne		

		Unit							
25	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
26	n. a.	Band Reject filter	WRCG1855/1910-1835/1925-40/8SS	Wainwright	7	300003350	ev		
27	n. a.	Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351	ev		
28	n. a.	TILE-Software Emission	Quantum Change, Modell TILE-ICS/FULL	EMCO	none	300003451	ne		
29	n. a.	Highpass Filter	WHKX2.9/18G-12SS	Wainwright	1	300003492	ev		
30	n. a.	Highpass Filter	WHK1.1/15G-10SS	Wainwright	3	300003255	ev		
31	n. a.	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789	ne		
32	n. a.	PSA Spectrum Analyzer 3 Hz - 26.5 GHz	E4440A	Agilent Technologies	MY48250080	300003812	k	08.09.2010	08.09.2012
33	n. a.	MXG Microwave Analog Signal Generator	N5183A	Agilent Technologies	MY47420220	300003813	k	13.09.2010	13.09.2012
34	n. a.	RF Filter Section 9kHz - 1GHz	N9039A	Agilent Technologies	MY48260003	300003825	vlKl!	08.09.2010	08.09.2012
35	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vlKl!	14.10.2011	14.10.2014
36	11b	Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268	ev	10.03.2011	
37	A026	Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda		300000787	ne		
38	A029	Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda		300002442	ne		
39	n. a.	Spectrum Analyzer 20 Hz - 50 GHz	FSU50	R&S	200012	300003443	ve	01.07.2010	01.07.2012
40	n. a.	Signal Analyzer 20Hz-26,5GHz-150 to + 30 DBM	FSiQ26	R&S	835111/0004	300002678	Ve	04.11.2010	04.11.2012

Agenda: Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlkl!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress

11 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A Photographs of the test setup

Photo documentation

Photo 1:

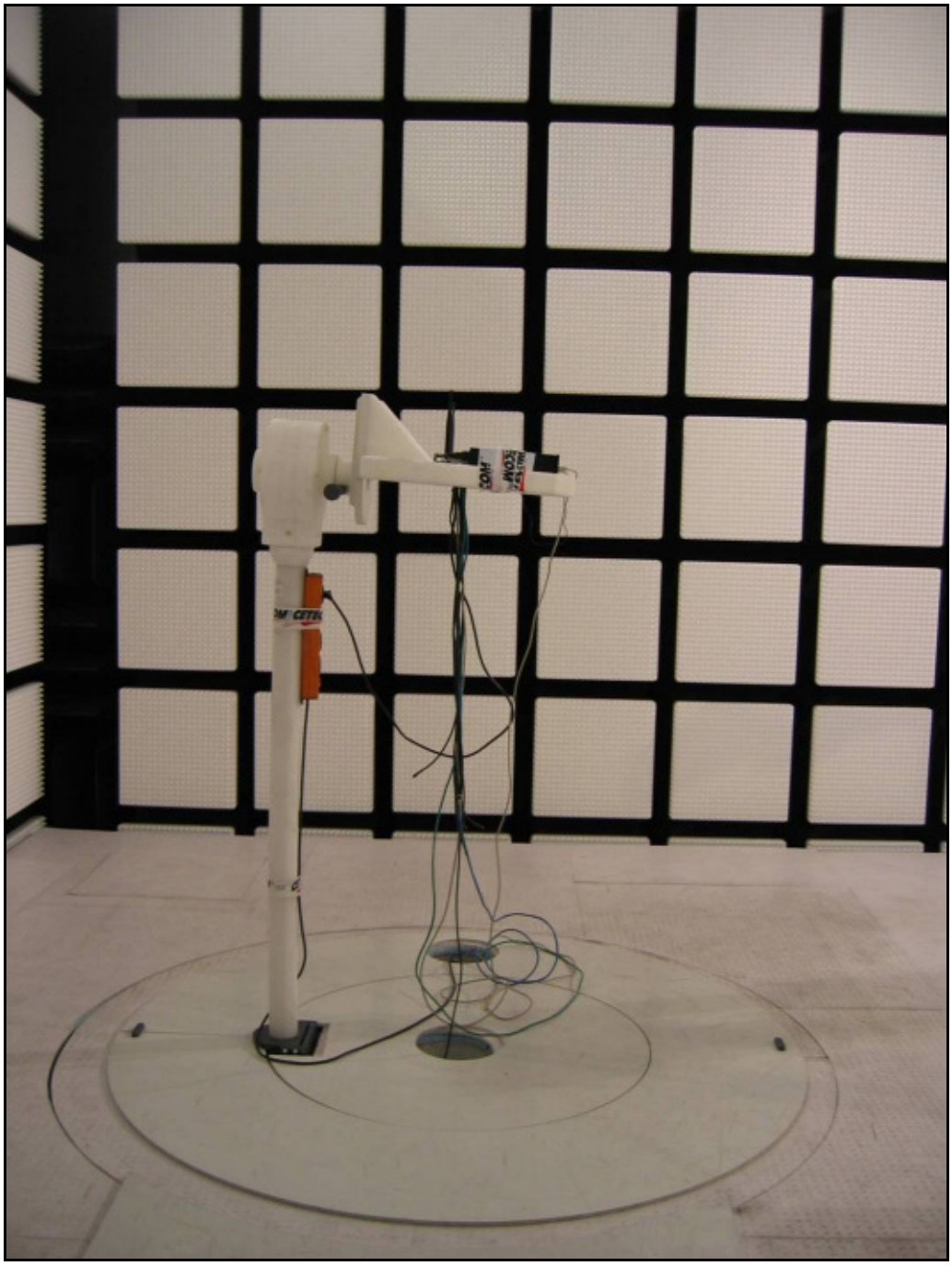


Photo 2:

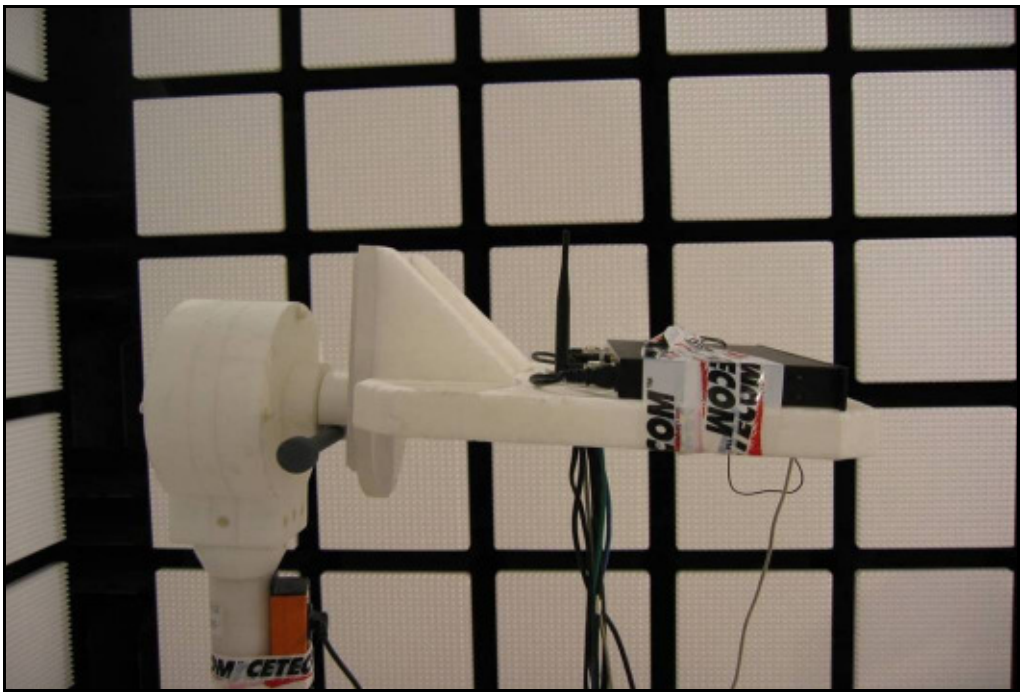


Photo 3:

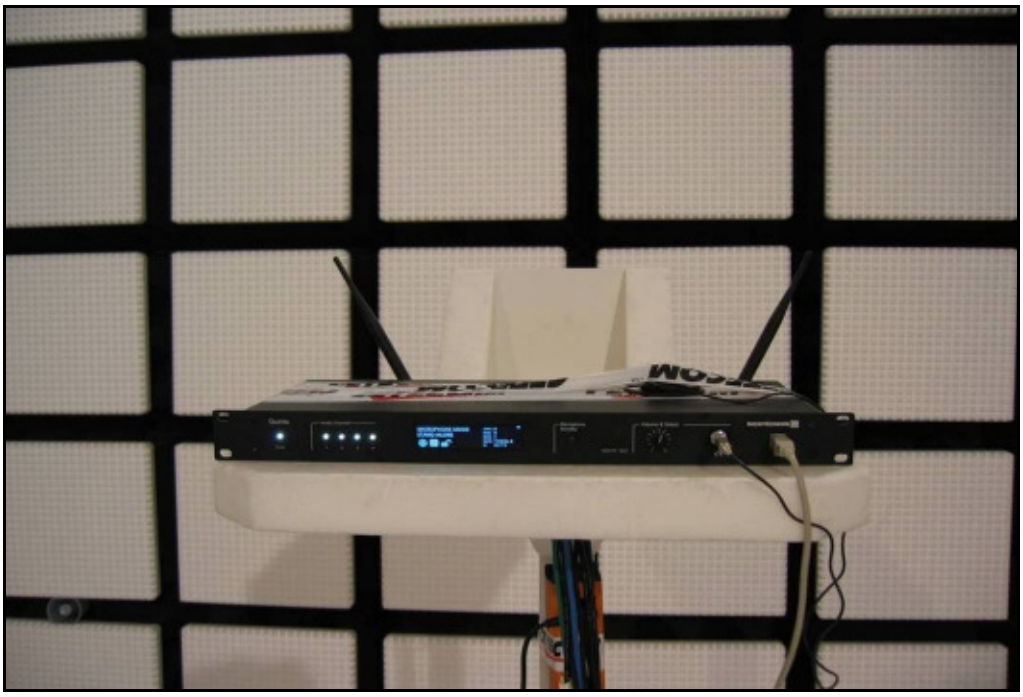


Photo 4:

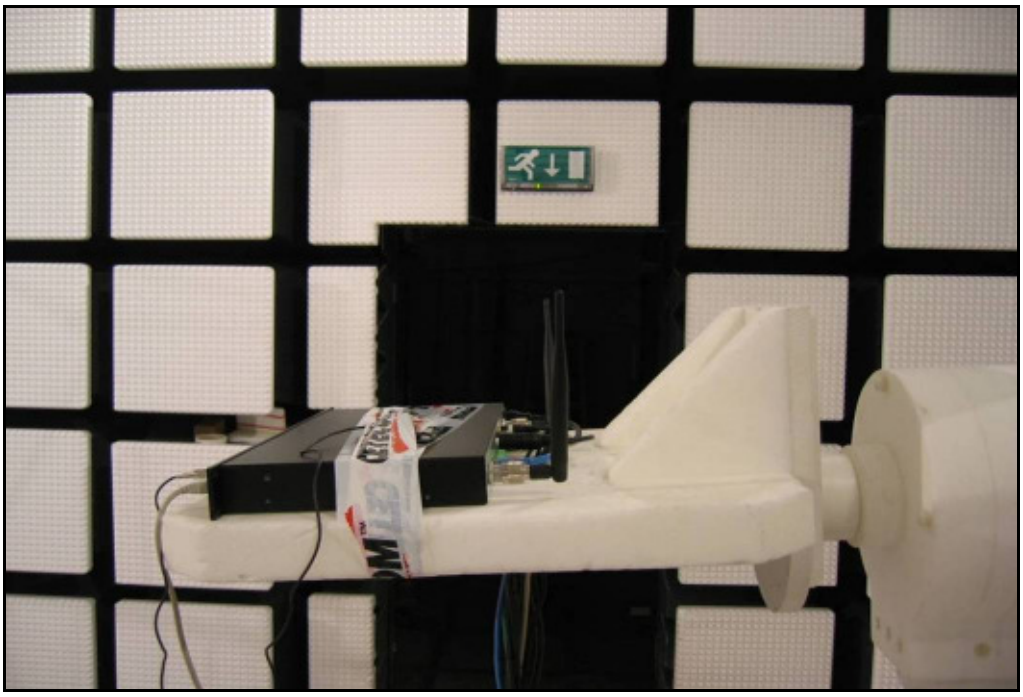


Photo 5:

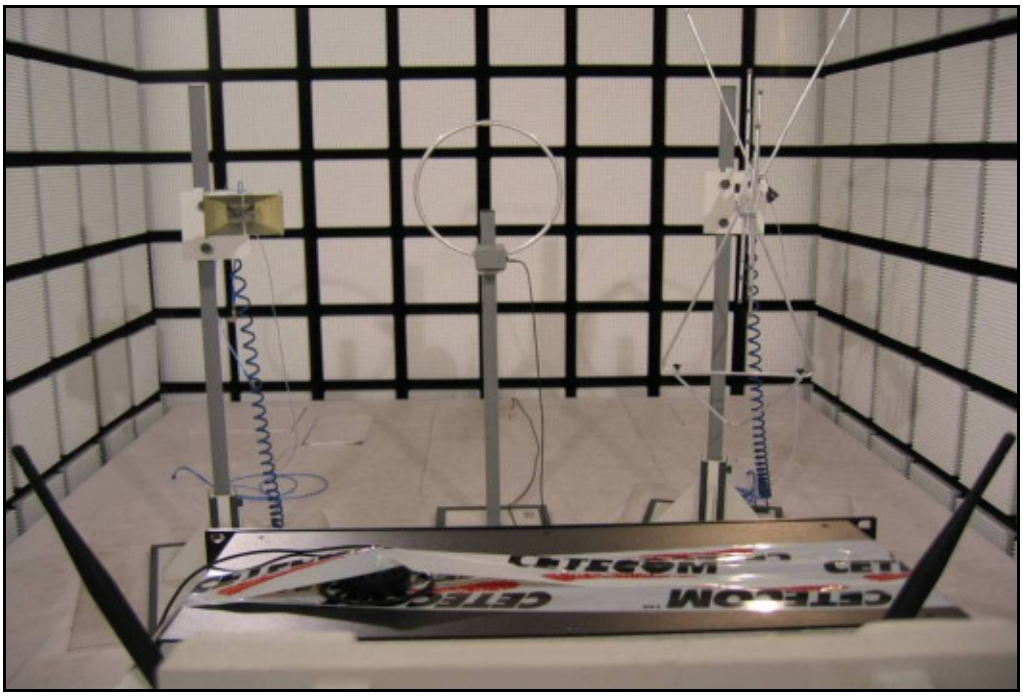


Photo 6:

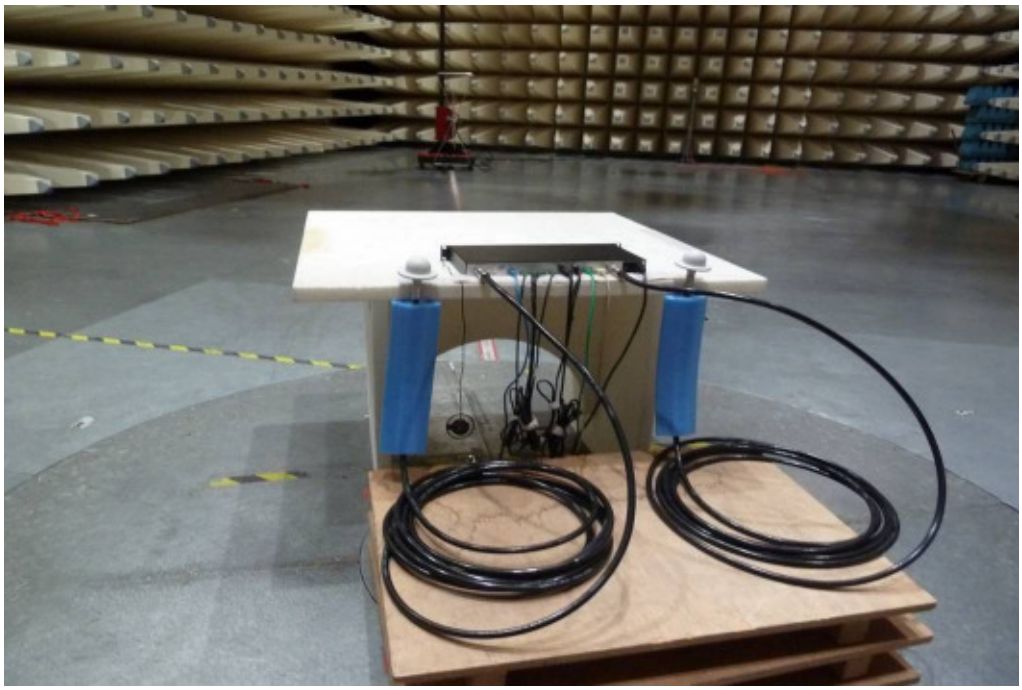


Photo 7:

Photo 8:

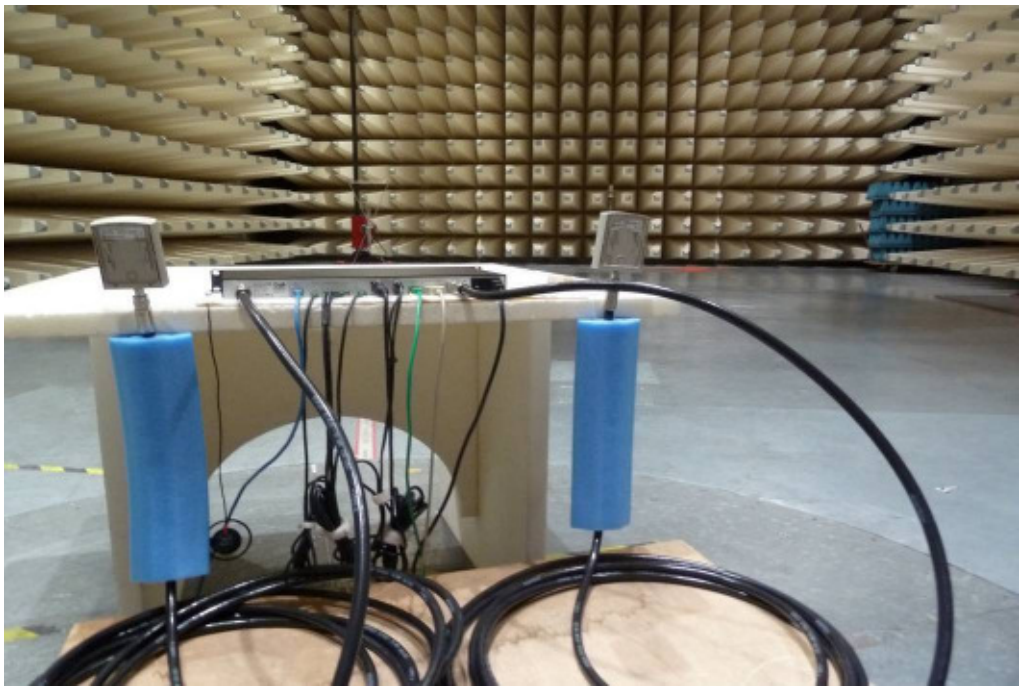
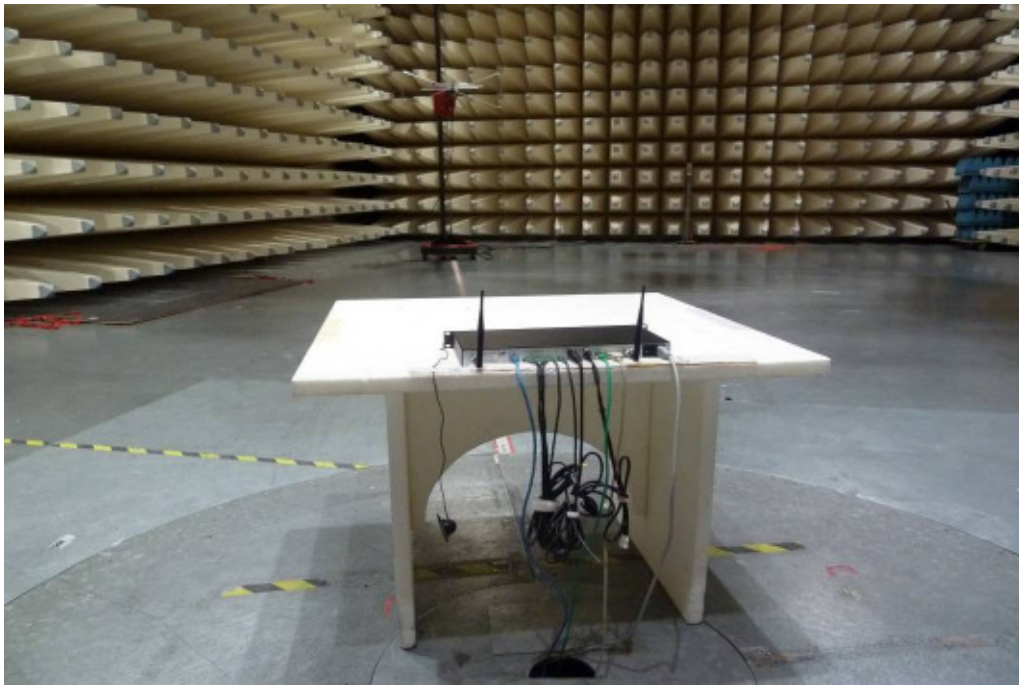


Photo 9:



Annex B External photographs of the EUT

Photo documentation

Photo 10:

Photo 11:

Photo 12:

Photo 13:

Photo 14:

Annex C Internal photographs of the EUT

Photo documentation

Photo 15:

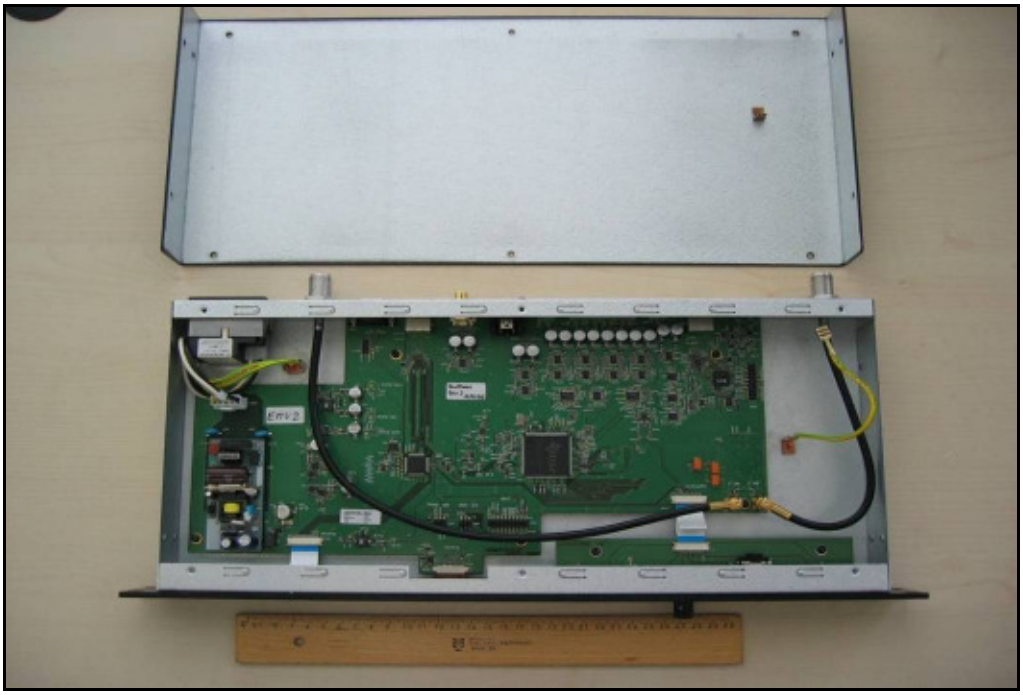
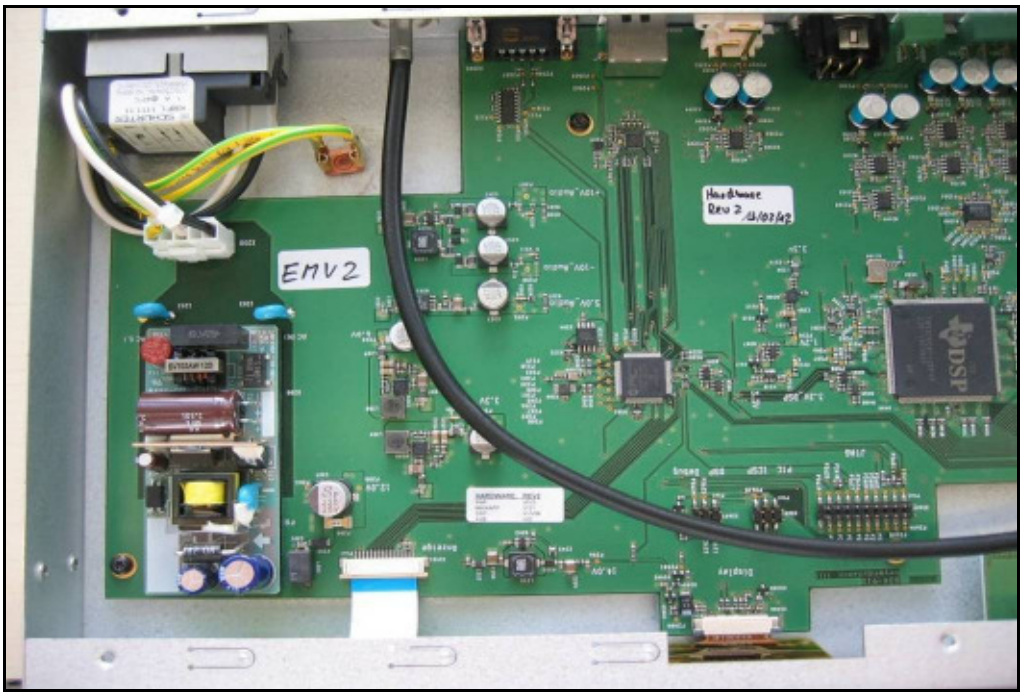


Photo 16:



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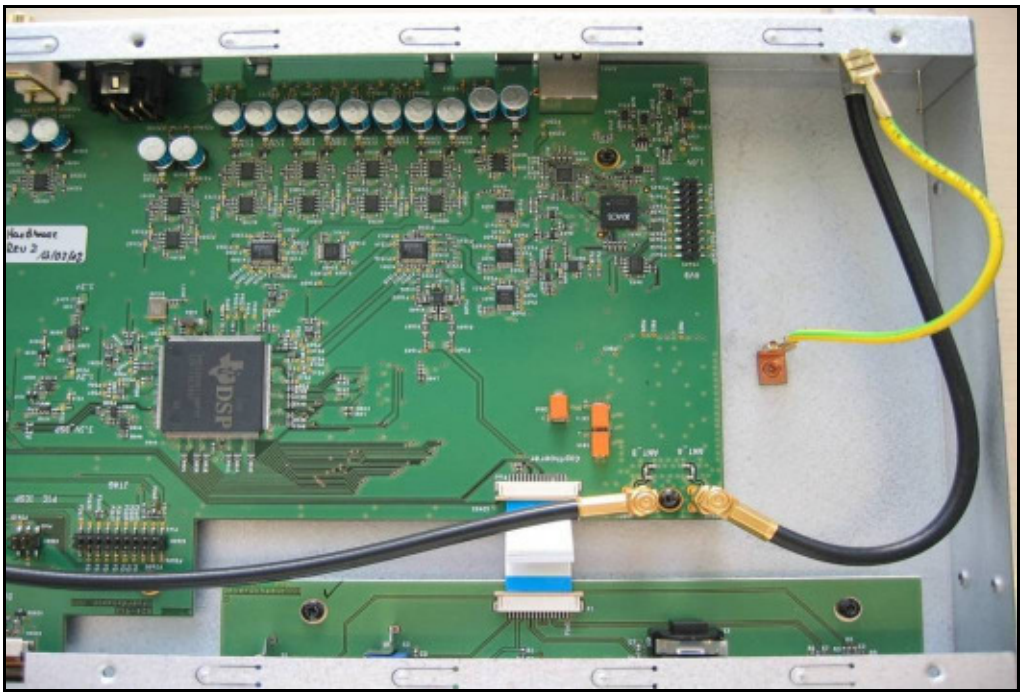

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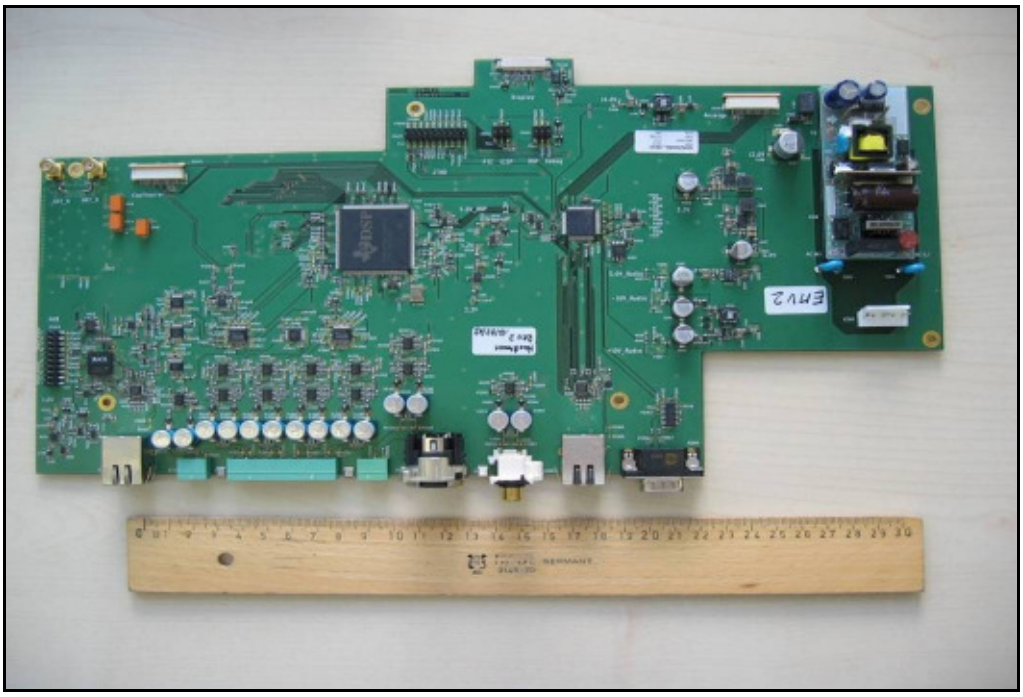

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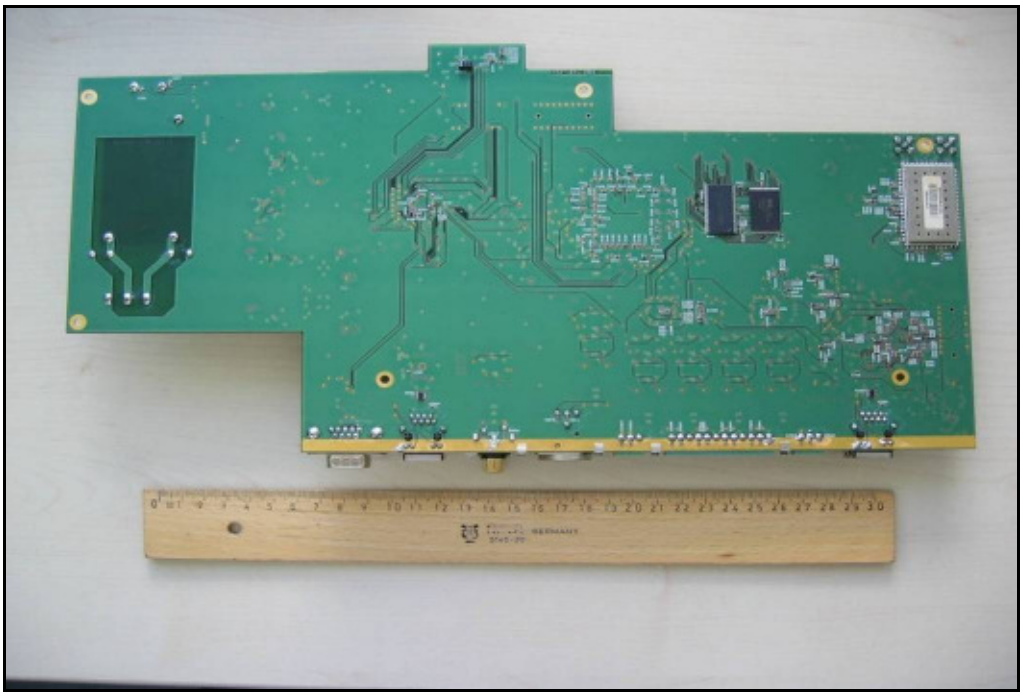

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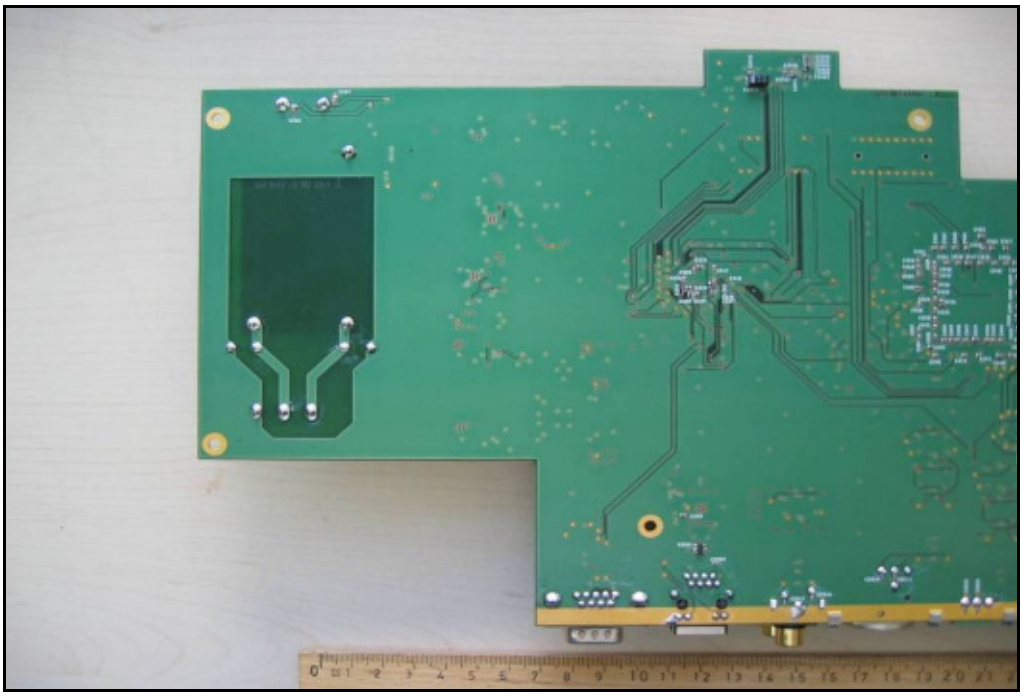

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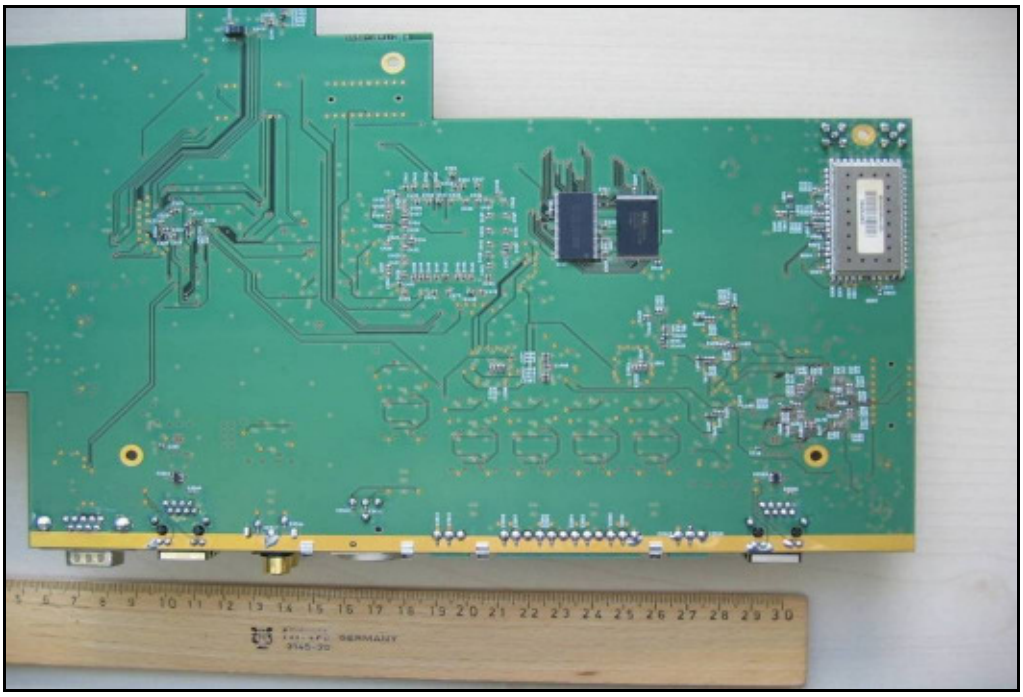

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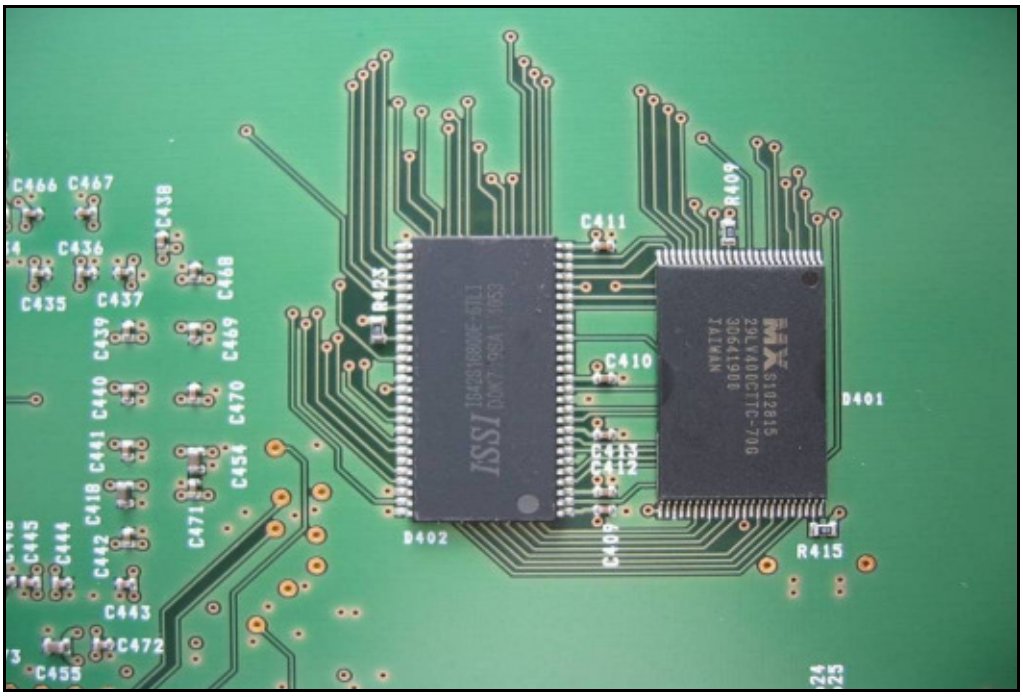

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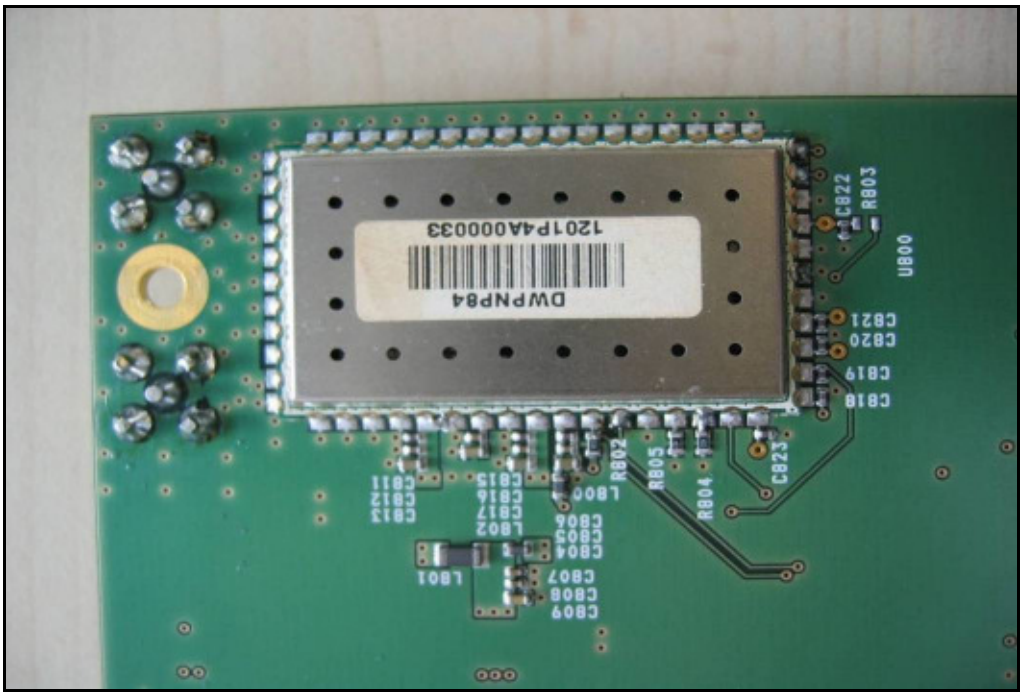

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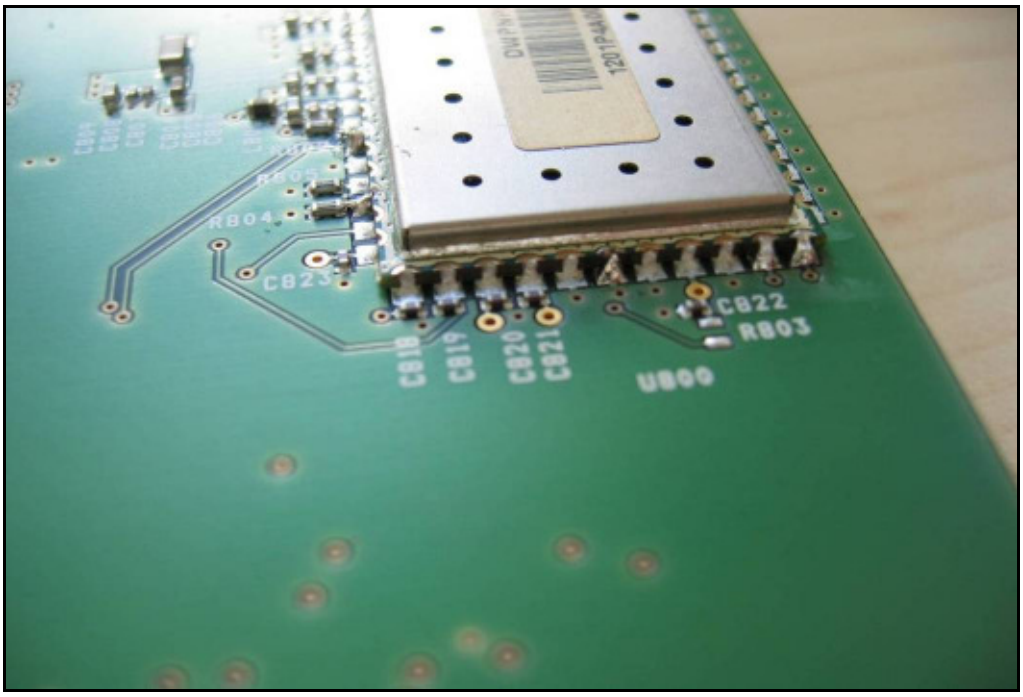

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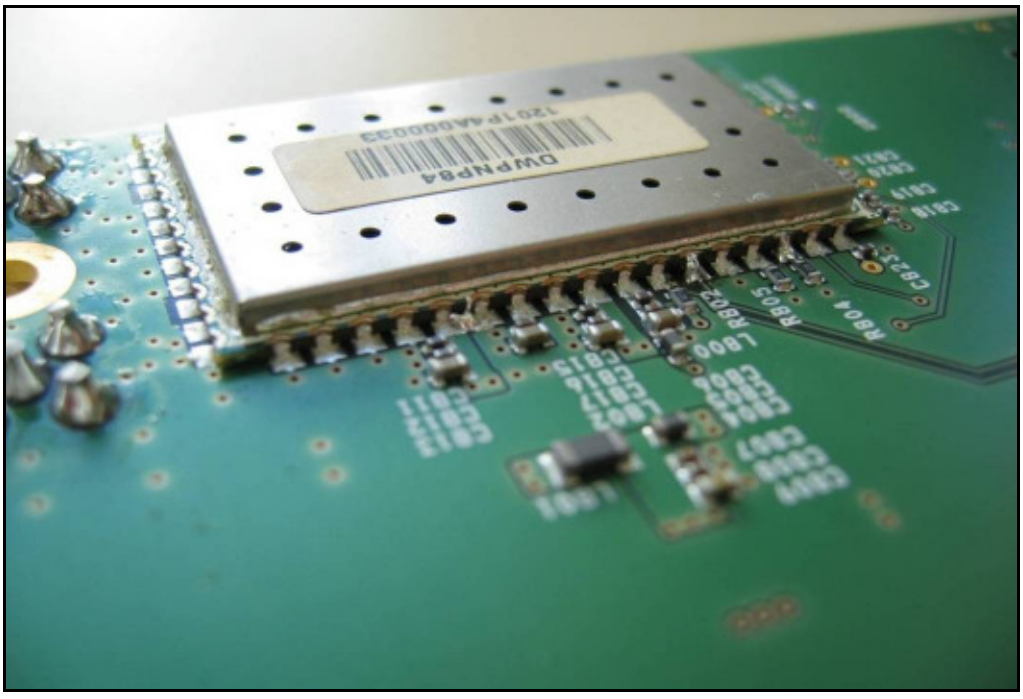

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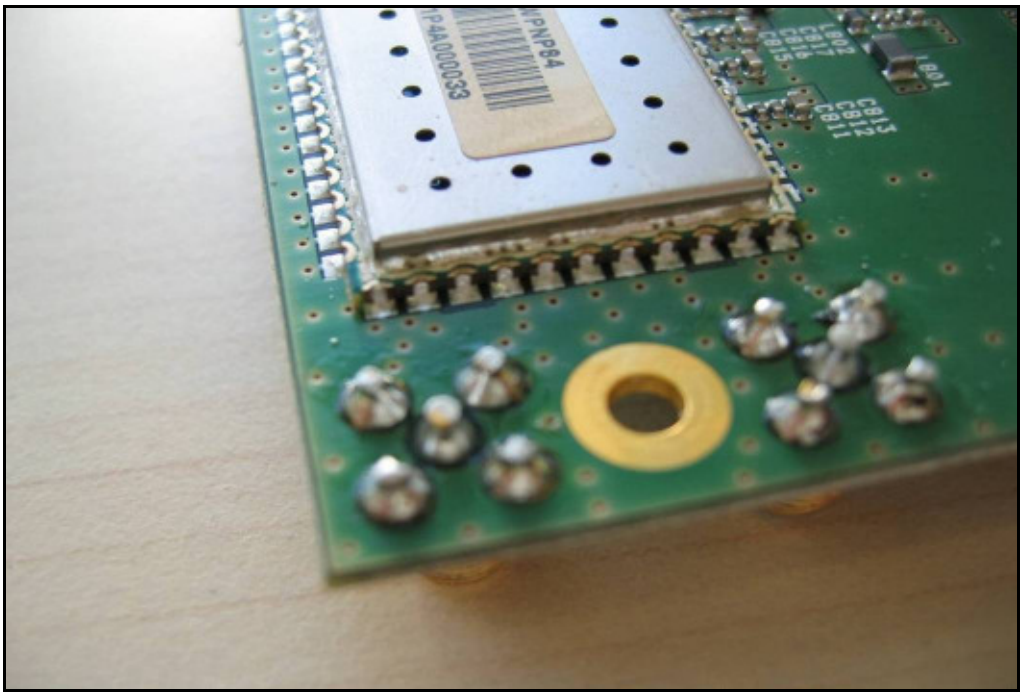

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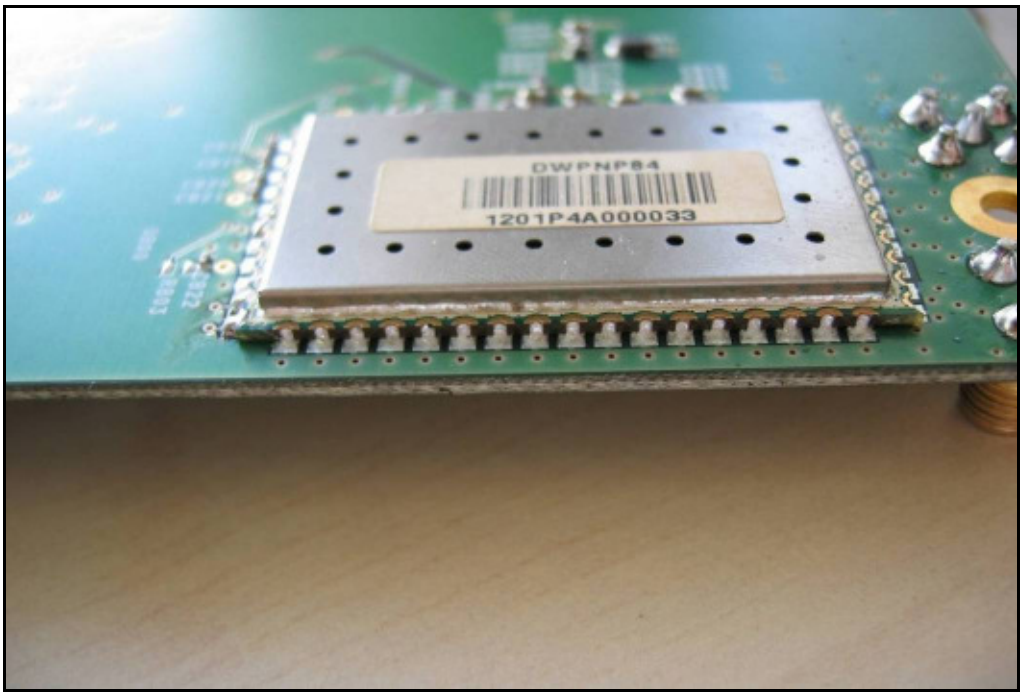

Annex D Antennas & Cable

Photo documentation

Photo 28: Rod antenna (CA Q11)

Photo 29: Planar antenna (CA Q13)

Photo 30: Planar antenna (CA Q13)

Photo 31: Omnidirectional antenna (CA Q14)

Photo 32: Omnidirectional antenna (CA Q14)

Photo 33: 10m cable (Ecoflex 15Plus) (CA Q31)

Annex E Document history

Version	Applied changes	Date of release
1.0	Initial release	2012-04-19

Annex F Further information

Glossary

AVG - Average
DUT - Device under test
EMC - Electromagnetic Compatibility
EN - European Standard
EUT - Equipment under test
ETSI - European Telecommunications Standard Institute
FCC - Federal Communication Commission
FCC ID - Company Identifier at FCC
HW - Hardware
IC - Industry Canada
Inv. No. - Inventory number
N/A - Not applicable
PP - Positive peak
QP - Quasi peak
S/N - Serial number
SW - Software

Annex G Accreditation Certificate

DAkkS Deutsche Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH
German Accreditation Body

Entrusted according to Section 8 subsection1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV
Signatory to the Multilateral Agreements of
EA, ILAC and IAF for Mutual Recognition

Accreditation

The Deutsche Akkreditierungsstelle GmbH (German Accreditation Body) attests that the testing laboratory

CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10
66117 Saarbrücken

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:

Wired communications and DECT
Acoustic
Radio
Short Range Devices (SRD)
RFID
WiMax and Richtfunk
Mobile radio (GSM / DCS), Over the Air (OTA) Performance
Electromagnetic Compatibility (EMC) incl. Automotive
Product safety
SAR and Hearing Aid Compatibility (HAC)
Environmental simulation
Smart Card Terminals
Bluetooth
Wi-Fi-Services

The accreditation certificate shall only apply in connection with the notice of accreditation of 13.04.2011 with the accreditation number D-PL-12076-01 and is valid until 03.09.2014. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 82 pages.

Registration number of the certificate: **D-PL-12076-01-01**

Frankfurt am Main, 13.04.2011

This document is a translation. The definitive version is the original German accreditation certificate.

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Office Frankfurt am Main
Office Braunschweig

The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkkS). Exempted is the unchanged form of separate dissemination of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkkS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkkS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Front side of certificate

Back side of certificate

Note:
The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

http://www.cetecom.com/fileadmin/de/CETECOM_D_Saarbruecken/accreditations_Jan_2010/DAKKS_AkkrediUrk_EN17025-En_incl_Annex.pdf