

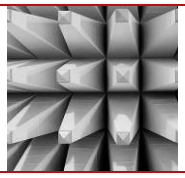

CETECOM™
CETECOM ICT Services
consulting - testing - certification

TEST REPORT

DAkkS Deutsche Akkreditierungsstelle D-PL-12076-01-01

Test report no.: 1-2628-01-02/10

Testing laboratory

CETECOM ICT Services GmbH
Untertuerkheimer Strasse 6 – 10
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Accredited test laboratory:
The test laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025
DAkkS registration number: D-PL-12076-01-01

Area of Testing: Radio/Satellite Communications

Applicant

Broadcast Microwave Services Europe GmbH

Schwalbacherstrasse 12
65321 Heidenrod-Kemel / GERMANY
Phone:
Fax: +49 6124 7239-29
Contact: Christian Rothe
e-mail: crothe@bms-inc.com
Phone: +49 6124 7239-27

Manufacturer

Broadcast Microwave Services Europe GmbH

Schwalbacherstrasse 12
65321 Heidenrod-Kemel / GERMANY

Test standard/s

47 CFR Part 15	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices

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

Test item

Kind of test item:	**CAMERA-BACK TRANSMITTER**
Model name:	**NT5723SD-HD**
FCC ID:	**VFB-NT5723SDHD5G8**
Frequency [MHz]:	**5725 MHz – 5850 MHz** **(lowest channel 5728 MHz, highest channel 5847 MHz)**
Power supply:	**12 V DC**
Temperature range:	**-/- °C to -/- °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 performed:

cn=Andreas Keller, o=Cetecom ICT Services GmbH, ou=KLL-100830, email=Andreas.Keller@cetecom.com, c=DE
2011.09.01 14:06:42 +02'00'

Andreas Keller

Test report authorised:

cn=Stefan Boes, o=Cetecom ICT Services GmbH, ou=BOE-100817, email=Stefan.Boes@cetecom.com, c=DE
2011.09.01 14:20:26 +02'00'

Stefan Bös

1 Table of contents

2 General information

2.1 Notes

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

2.2 Application details

Date of receipt of order:	2010-09-15
Date of receipt of test item:	2011-02-17
Start of test:	2011-02-17
End of test:	2011-08-11
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Version	Test standard description
47 CFR Part 15	2009-10	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices

4 Test environment

Temperature:	T_{nom}	+24 °C during room temperature tests
	T_{max}	-/- °C
	T_{min}	-/- °C
Relative humidity content:		42 %
Air pressure:		not relevant for this kind of testing
Power supply:	V_{nom}	12 V DC
	V_{max}	18 V DC
	V_{min}	10 V DC

5 Test item

Kind of test item	:	**CAMERA-BACK TRANSMITTER**
Type identification	:	**NT5723SD-HD**
S/N serial number	:	**Radiated / Conducted: 100 9001 (PN 11.2531.000). See photo 6 in annex B**
HW hardware status	:	**No information provided**
SW software status	:	**No information provided**
Frequency band [MHz]	:	**5725 MHz – 5850 MHz**
Type of modulation	:	**QPSK, 16-QAM, 64 QAM** **Each with 3 switchable bandwidths of 6MHz, 7MHz, 8MHz**
Number of channels	:	**No information provided**
Antenna	:	**Rod antenna. See photo 4 in annex B**
Power supply	:	**12 V DC**
Temperature range	:	**No information provided**

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	Passed	2011-09-01	-/-

Test specification clause	Test case	Temperature conditions	Power source voltages	Mode	Pass	Fail	NA	NP	Results (max.)
§15.247(b)(4)	Antenna gain	Nominal	Nominal	QPSK 16-QAM	☒	☐	☐	☐	complies
§15.247(e)	Power spectral density	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.247(a)(2)	Spectrum bandwidth of a FHSS system 6dB bandwidth	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.247(a)(2)	Spectrum bandwidth of a FHSS system 20dB bandwidth	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.247(b)(3)	Maximum output power	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.247(d)	Band edge compliance conducted	Nominal	Nominal	QPSK 16-QAM	☐ ☐	☐ ☐	☒ ☒	☐ ☐	
§15.205	Band edge compliance radiated	Nominal	Nominal	QPSK 16-QAM	☐ ☐	☐ ☐	☒ ☒	☐ ☐	
§15.247(d)	TX spurious emissions conducted	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.247(d)	TX spurious emissions radiated	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.109	RX spurious emissions radiated	Nominal	Nominal	QPSK 16-QAM	☒	☐	☐	☐	complies
§15.209(a)	TX spurious emissions radiated < 30 MHz	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies
§15.107(a)	Conducted emissions < 30 MHz	Nominal	Nominal	QPSK 16-QAM	☒ ☒	☐ ☐	☐ ☐	☐ ☐	complies

Note: NA = Not Applicable; NP = Not Performed

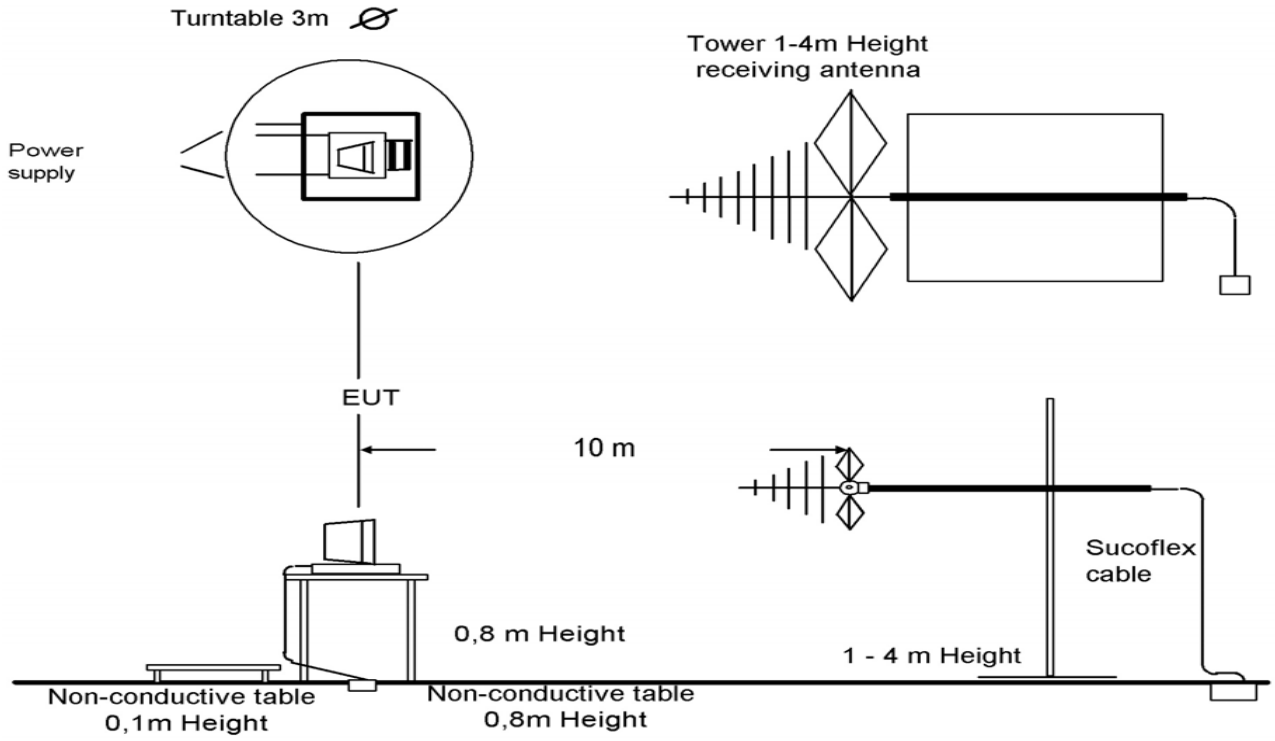
8 RF measurements

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



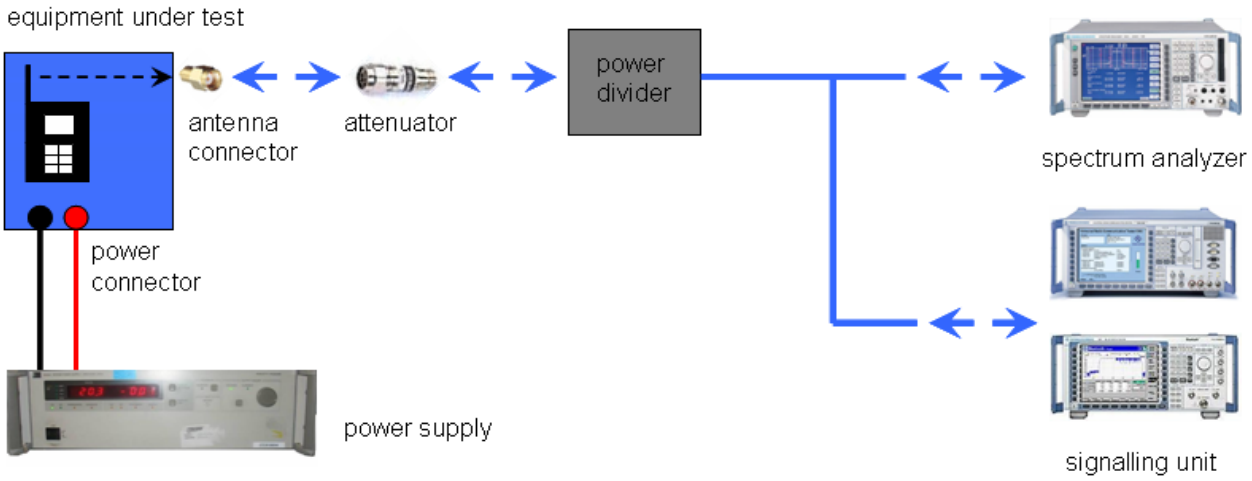
Picture 1: Diagram radiated measurements

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

Reference documents: None

Special test descriptions:

Configuration descriptions: System restricted for professional installation

Test mode: ☐ No test mode available.

☒ Special software is used.
EUT is transmitting pseudo random data by itself

9 Measurement results

9.1 Maximum output power (conducted)

Description:

Measurement of the maximum output power conducted. This measurement is performed only at the middle channel in all modulations and all switchable bandwidths to determine the mode which results in the highest output power. This mode will be selected for all further measurements.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	10 MHz
Resolution bandwidth:	10 MHz
Span:	Zero
Trace-Mode:	Max Hold

Results:

6MHz (low power)	Maximum Output Power Conducted [dBm]		
Switchable bandwidth	QPSK	16QAM	64QAM
5787 MHz	23.0	22.4	21.7
Measurement uncertainty	± 0.5 dB		

7MHz (low power)	Maximum Output Power Conducted [dBm]		
Switchable bandwidth	QPSK	16QAM	64QAM
5787 MHz	23.2	22.7	21.6
Measurement uncertainty	± 0.5 dB		

8MHz (low power)	Maximum Output Power Conducted [dBm]		
Switchable bandwidth	QPSK	16QAM	64QAM
5787 MHz	22.7	22.3	21.4
Measurement uncertainty	± 0.5 dB		

6MHz (high power)	Maximum Output Power Conducted [dBm]		
Switchable bandwidth	QPSK	16QAM	64QAM
5787 MHz	28.77	**28.79**	28.68
Measurement uncertainty	± 0.5 dB		

7MHz (high power)	Maximum Output Power Conducted [dBm]		
Switchable bandwidth	QPSK	16QAM	64QAM
5787 MHz	**28.71**	28.60	28.63
Measurement uncertainty	± 0.5 dB		

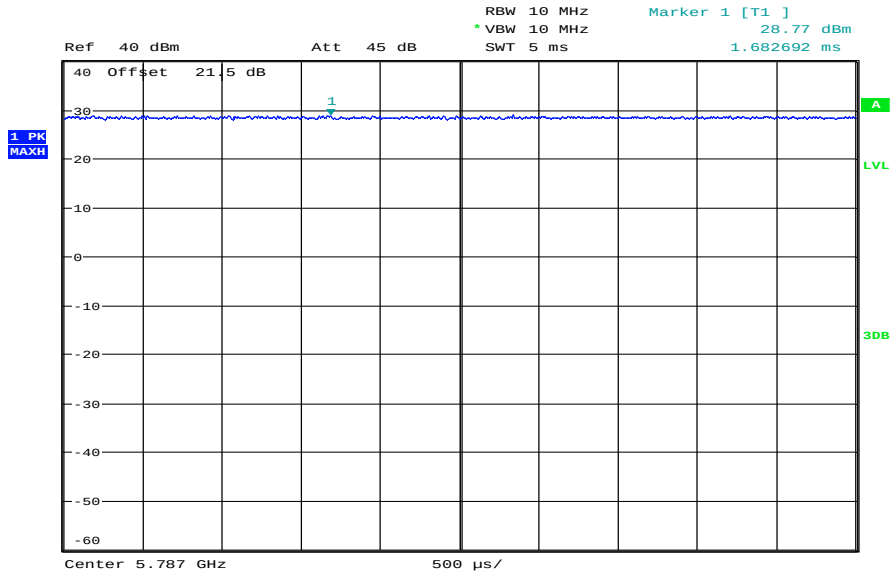
8MHz (high power)	Maximum Output Power Conducted [dBm]		
Switchable bandwidth	QPSK	16QAM	64QAM
5787 MHz	**28.58**	28.43	28.56
Measurement uncertainty	± 0.5 dB		

Result: **Selected modes for all measurements:**

6MHz (high power): 16QAM
7MHz (high power): QPSK
8MHz (high power): QPSK

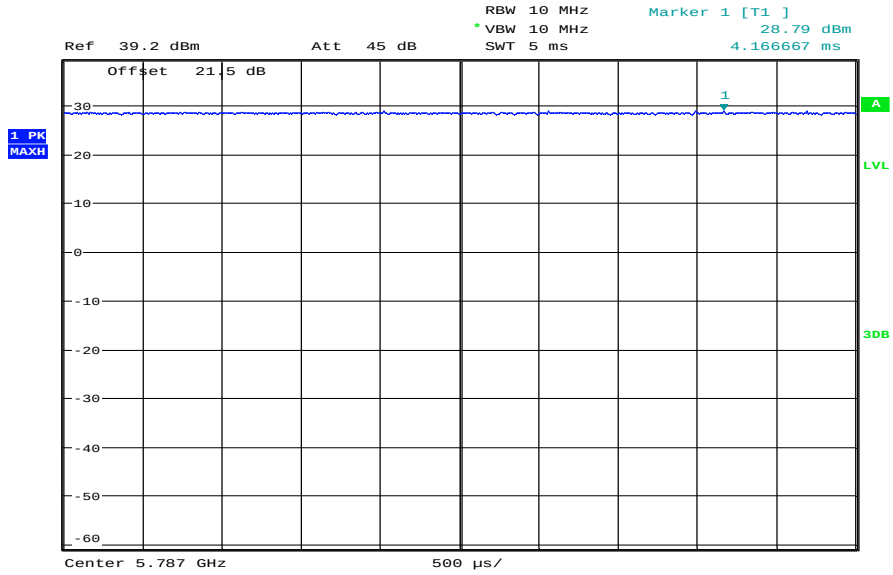
Plots: 6MHz (high power)

Plot 1: TX mode, QPSK



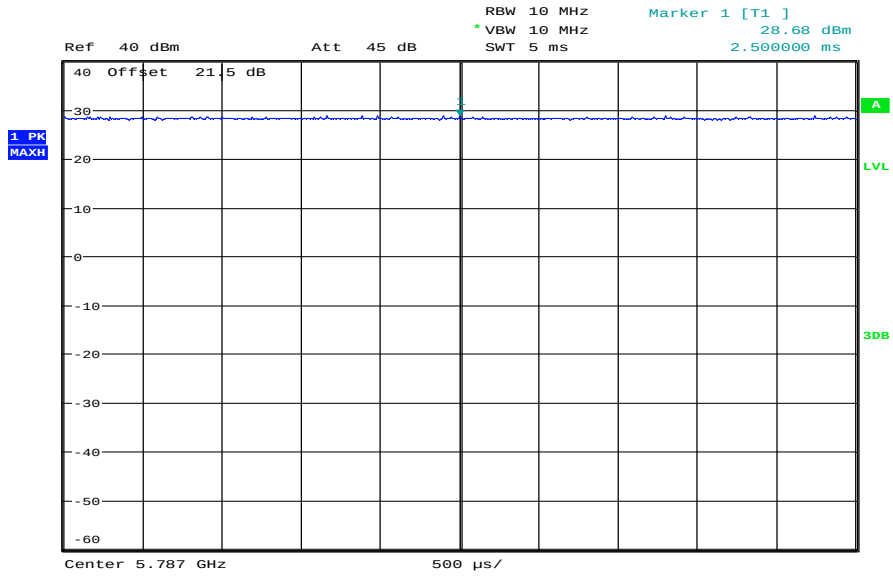
Date: 11.AUG.2011 17:42:31

Plot 2: TX mode, 16QAM



Date: 11.AUG.2011 15:29:19

Plot 3: TX mode, 64QAM



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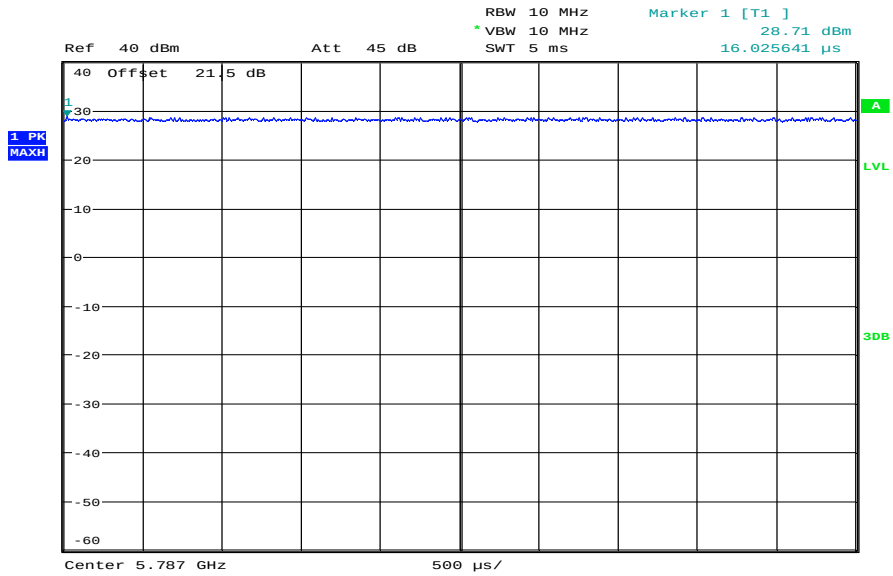
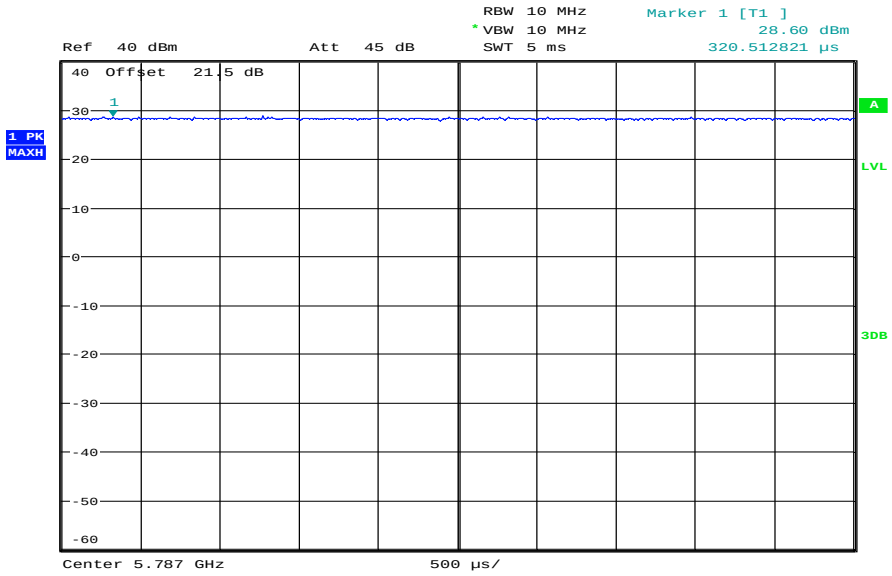
Plots: 7MHz (high power)

Plot 4: TX mode, QPSK



Date: 11.AUG.2011 15:33:39

Plot 5: TX mode, 16QAM



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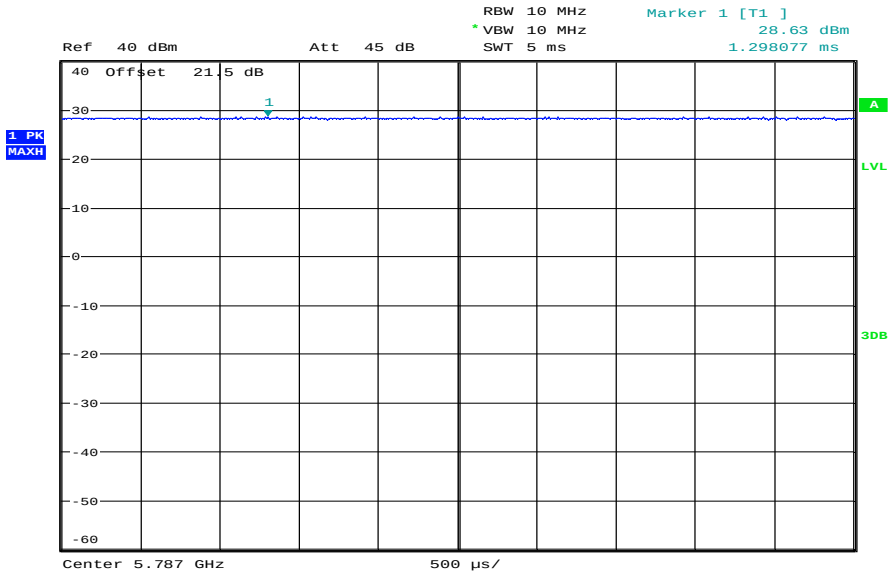
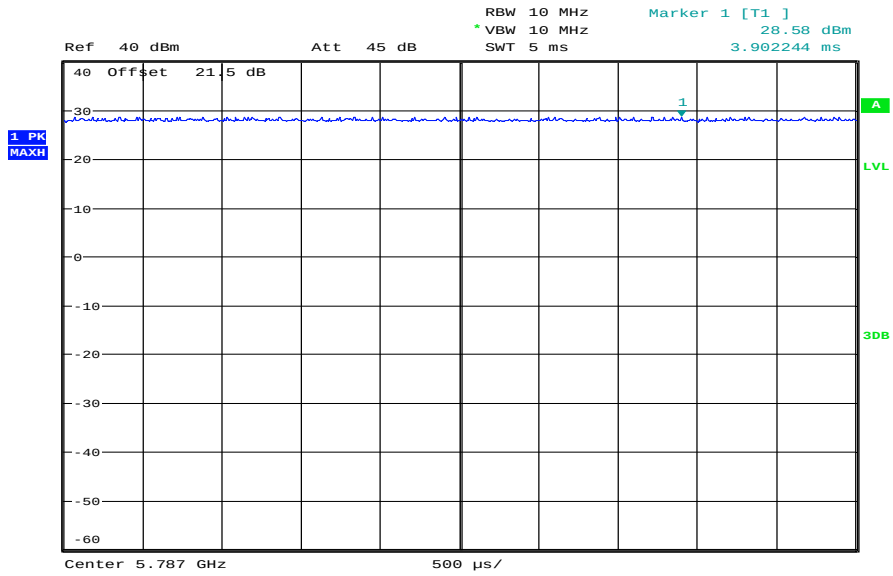
Plot 6: TX mode, 64QAM



Date: 11.AUG.2011 17:46:14

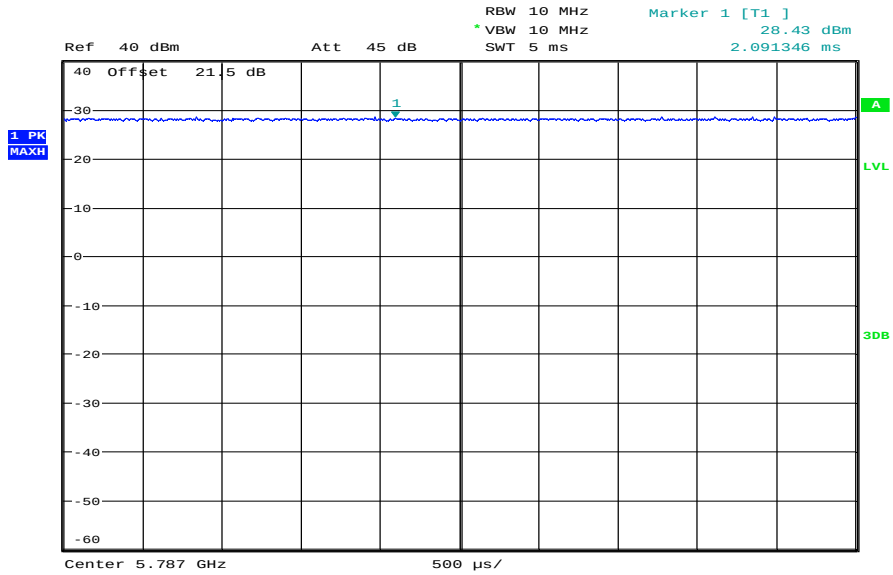
Plots: 8MHz (high power)

Plot 7: TX mode, QPSK



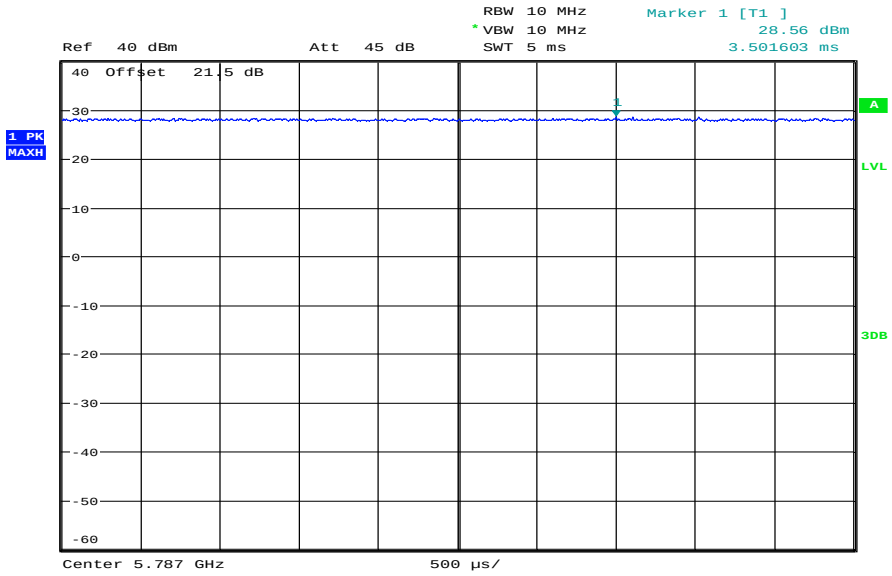
Date: 11.AUG.2011 15:36:21

Plot 8: TX mode, 16QAM



Date: 11.AUG.2011 17:47:02

Plot 9: TX mode, 64QAM



9.2 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.

Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	10 MHz
Resolution bandwidth:	10 MHz
Span:	Zero
Trace-Mode:	Max hold

Limits:

FCC	IC
CFR Part 15.247 (b)(4)	-/-
Antenna Gain	
6 dBi	

Results:

T_{nom}	V_{nom}	lowest channel 5729 MHz	middle channel 5787 MHz	highest channel 5846 MHz
Conducted power [dBm] Measured with 8MHz/QPSK-high power		28.53	28.60	28.50
Radiated power [dBm] Measured with 8MHz/QPSK-high power		26.75	27.04	26.60
Gain [dBi] Calculated		-1.78	-1.56	-1.90

Result: **The result of the measurement is passed.**

9.3 Power spectral density

Description:

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

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	340 s
Video bandwidth:	10 kHz
Resolution bandwidth:	3 kHz
Span:	1.0 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (e)	-/-
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:

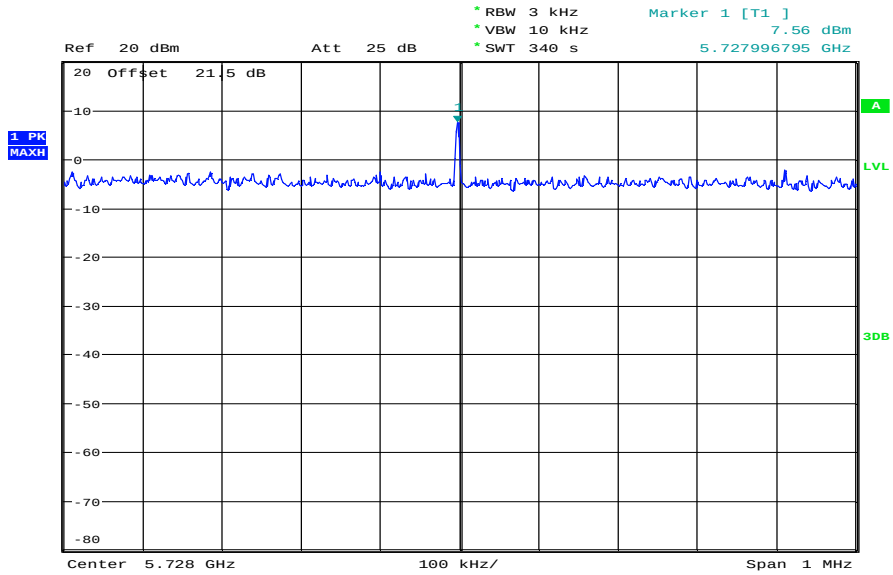
Frequency	Power Spectral density [dBm/3kHz]		
	5728 MHz	5787 MHz	5847 MHz
6 MHz/16QAM	7.56	4.79	2.12
Measurement uncertainty	± 1.5 dB		

Modulation / Frequency	Power Spectral density [dBm/3kHz]		
	5729 MHz	5787 MHz	5846 MHz
7MHz/QPSK	7.09	4.22	0.80
8MHz/QPSK	6.92	4.28	0.77
Measurement uncertainty	± 1.5 dB		

Result: **The result of the measurement is passed.**

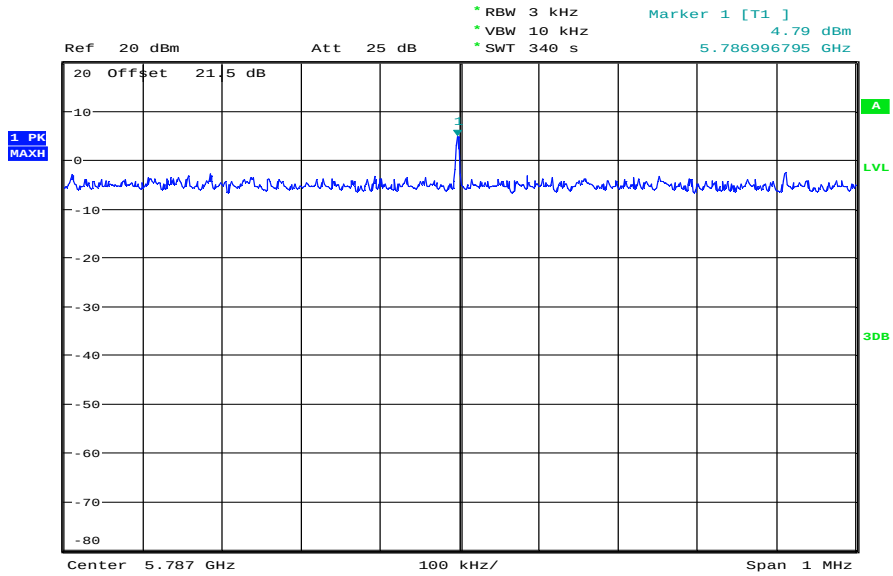
Plots: 6MHz/16QAM

Plot 1: TX mode, lowest channel



Date: 11.AUG.2011 16:19:03

Plot 2: TX mode, middle channel



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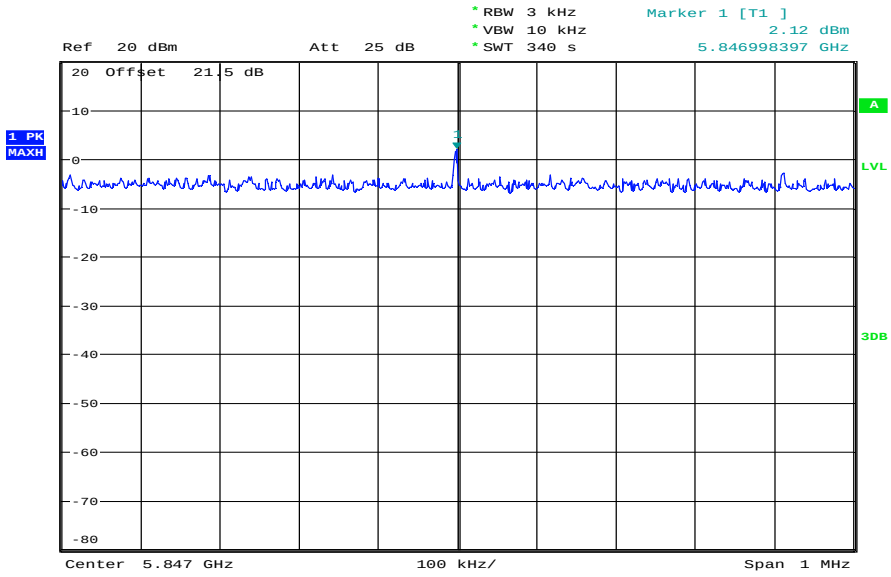
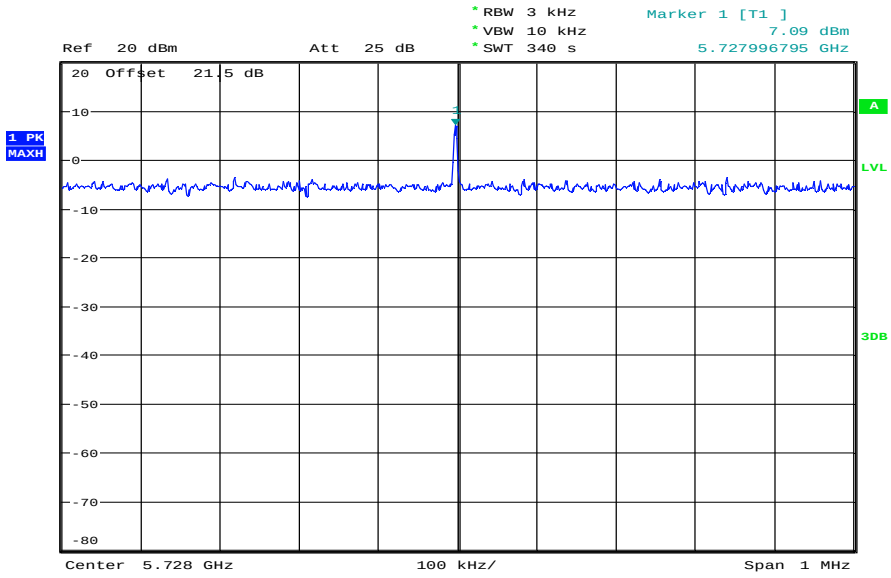
Plot 3: TX mode, highest channel



Date: 11.AUG.2011 16:33:03

Plots: 7MHz/QPSK

Plot 4: TX mode, lowest channel



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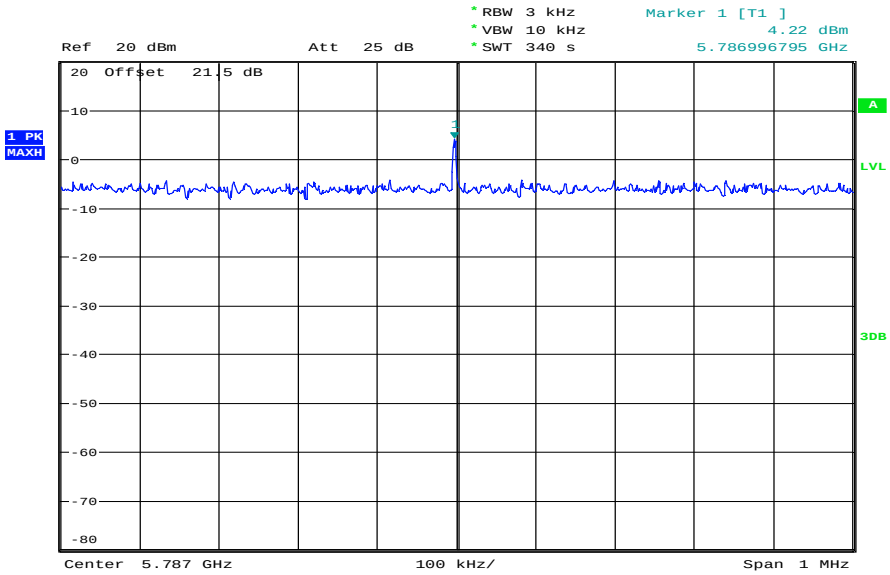
Plot 5: TX mode, middle channel



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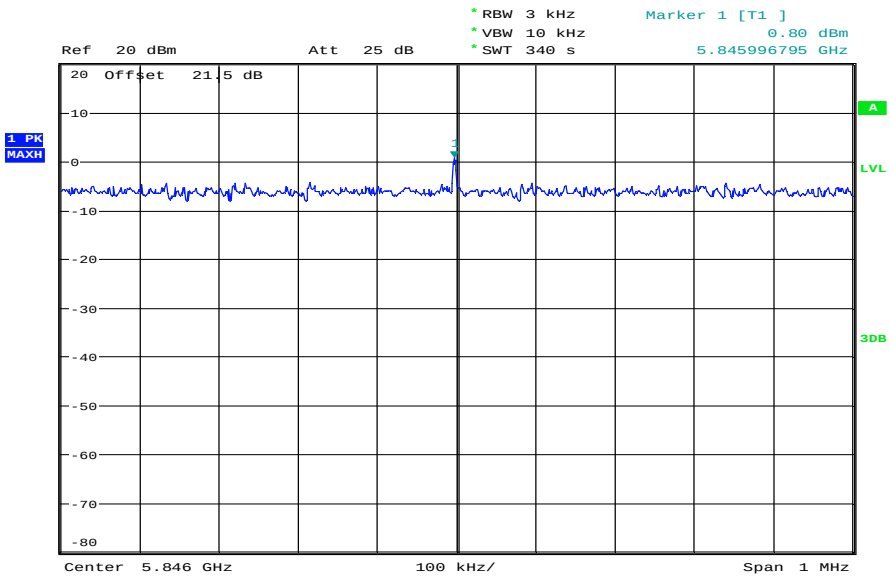
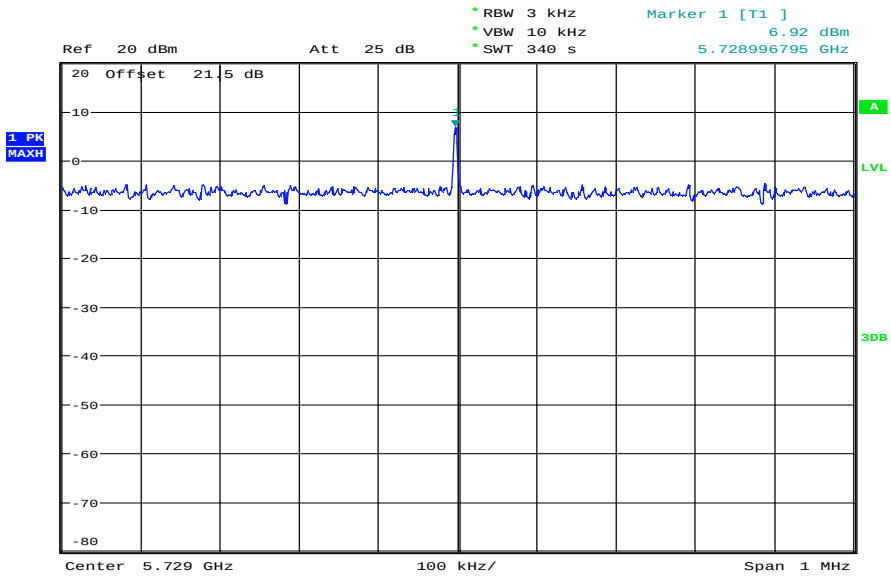
Plot 6: TX mode, highest channel



Date: 11.AUG.2011 17:02:20

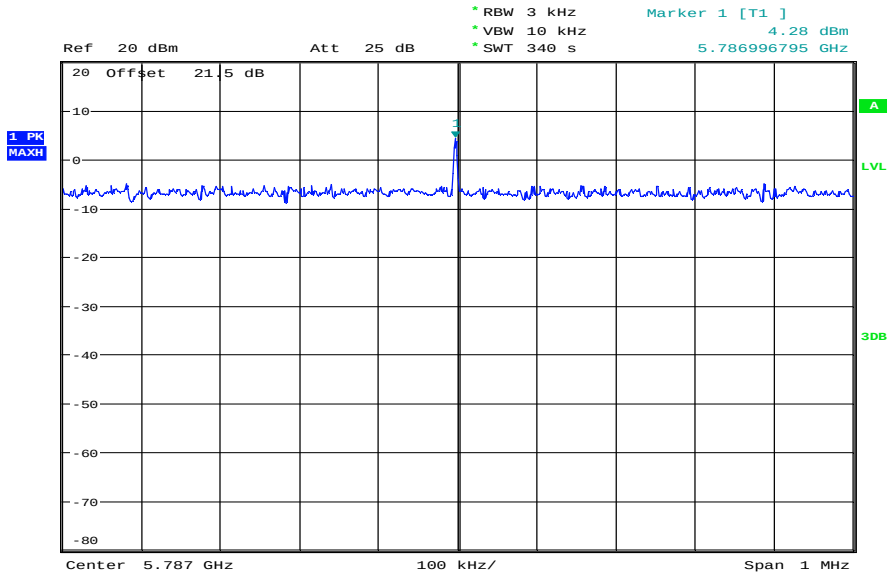
Plots: 8MHz/QPSK

Plot 7: TX mode, lowest channel



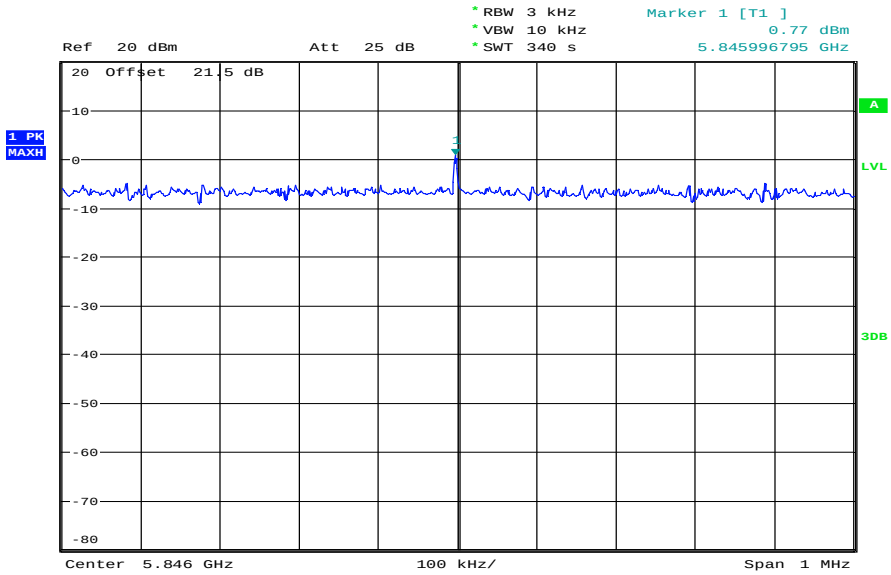
Date: 11.AUG.2011 17:14:03

Plot 8: TX mode, middle channel



Date: 11.AUG.2011 17:23:24

Plot 9: 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
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (a)(2)	-/-
Spectrum Bandwidth – 6 dB Bandwidth	
Systems using digital modulation techniques may operate in the 5725–5850 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.	

Results:

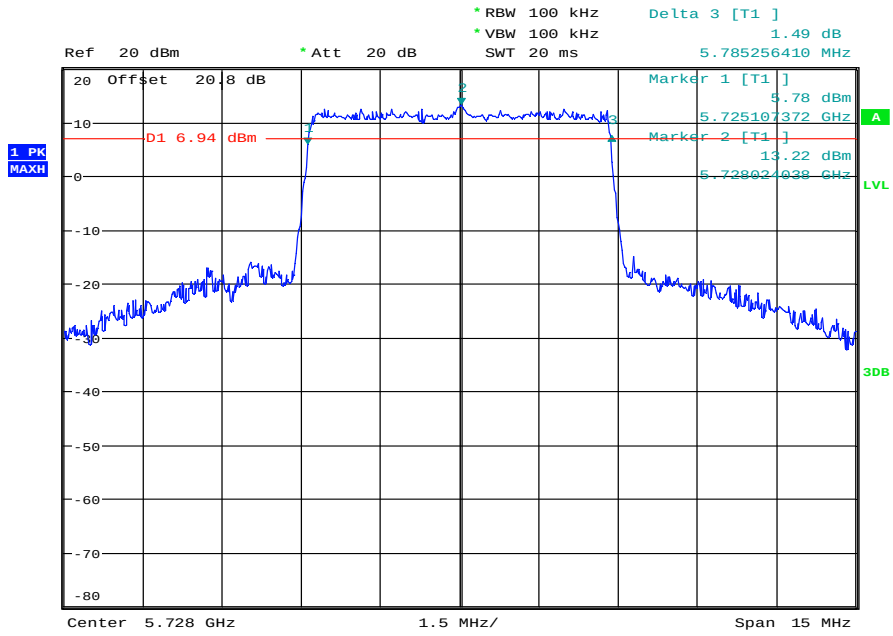
Frequency	6 dB BANDWIDTH [MHz]		
	5728 MHz	5787 MHz	5847 MHz
6 MHz/16QAM	5.79	5.72	5.77
Measurement uncertainty	± 100 kHz		

Modulation / Frequency	6 dB BANDWIDTH [MHz]		
	5729 MHz	5787 MHz	5846 MHz
7MHz/QPSK	6.70	6.74	6.71
8MHz/QPSK	7.63	7.67	7.64
Measurement uncertainty	± 100 kHz		

Result: **The result of the measurement is passed.**

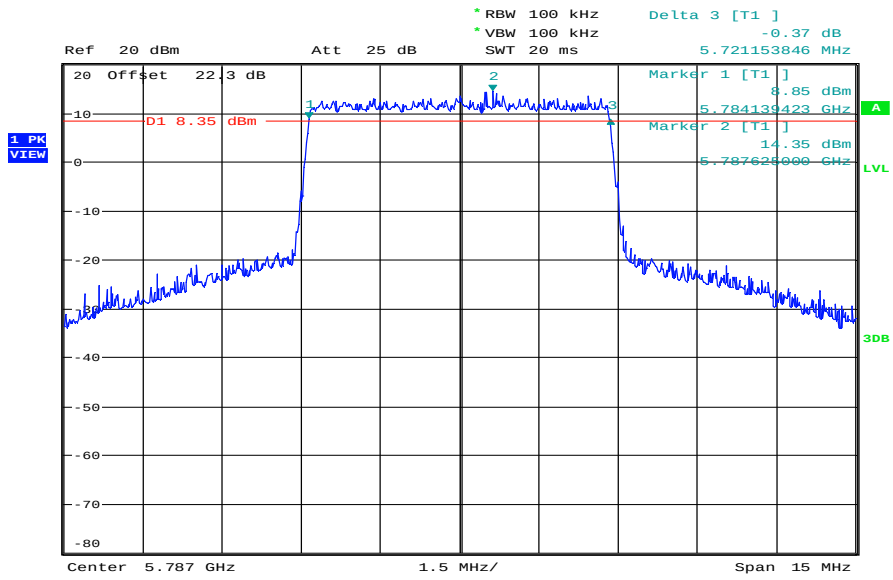
Plots: 6MHz/16QAM

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



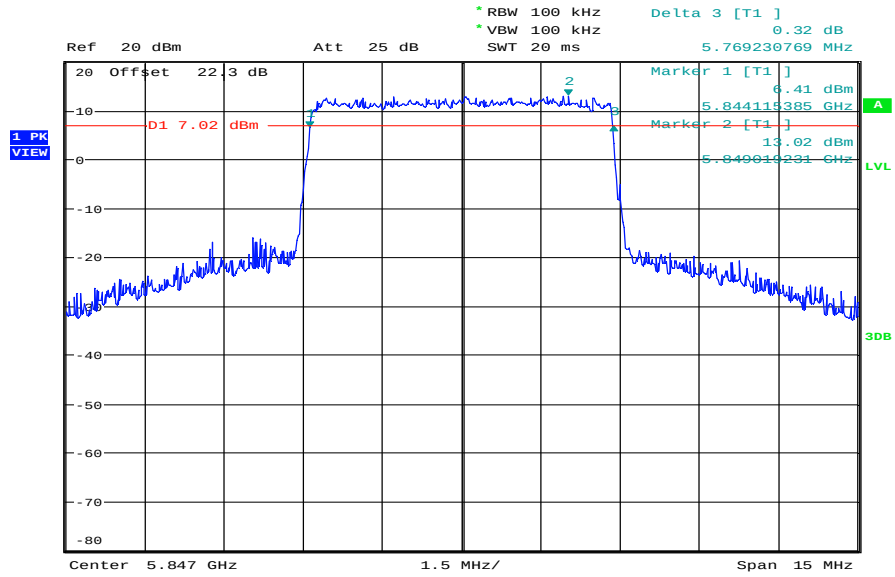
Date: 8.AUG.2011 16:16:53

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



Date: 11.AUG.2011 15:05:37

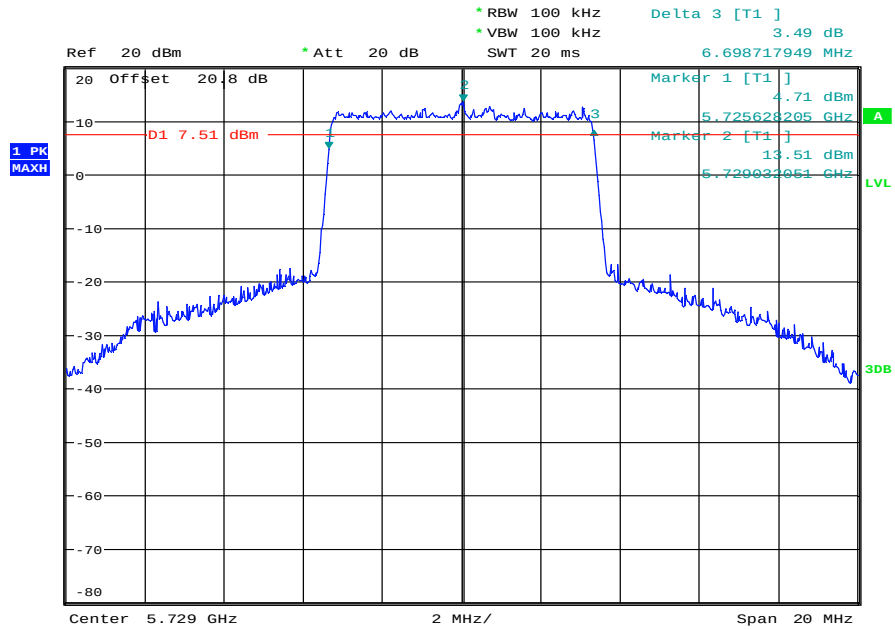
Plot 3: TX mode, highest channel, 6 dB bandwidth



Date: 11.AUG.2011 15:14:42

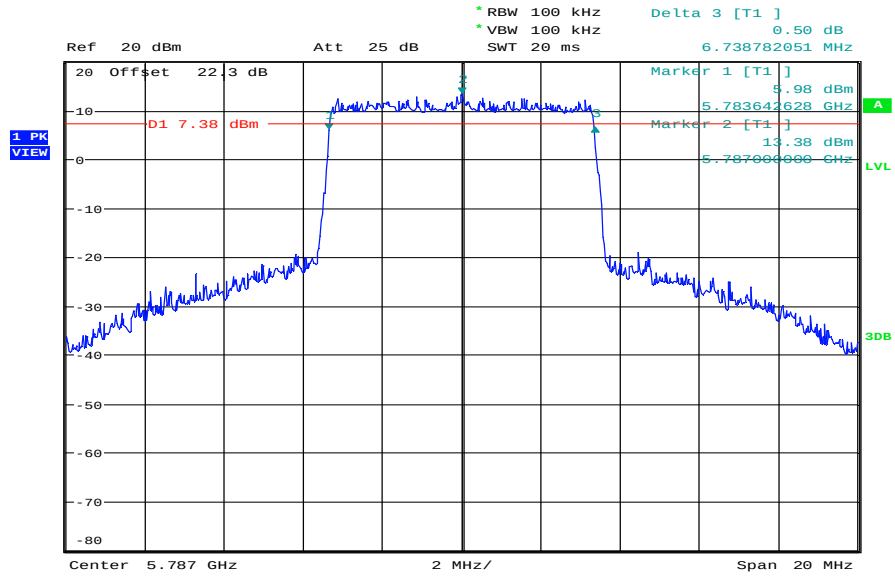
Plots: 7MHz/QPSK

Plot 4: TX mode, lowest channel, 6 dB bandwidth



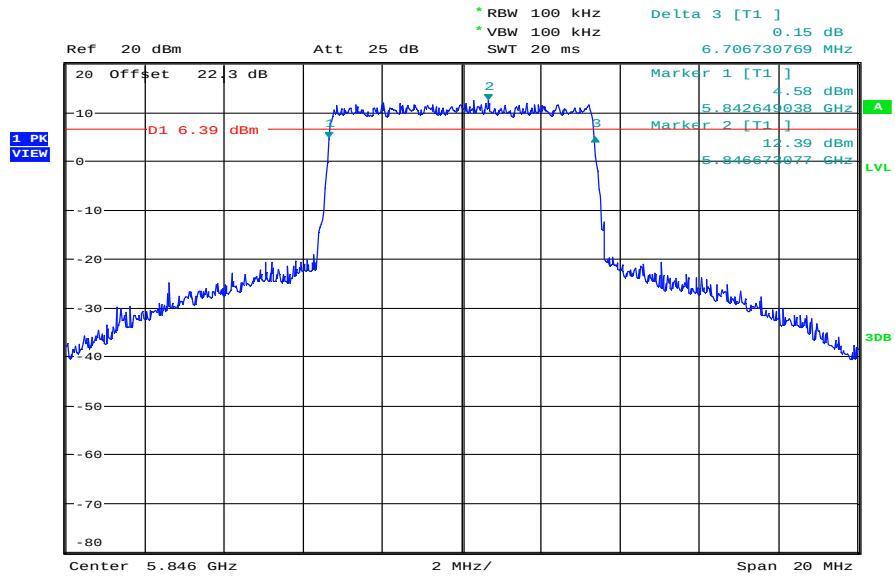
Date: 8.AUG.2011 16:03:45

Plot 5: TX mode, middle channel, 6 dB bandwidth



Date: 11.AUG.2011 15:08:11

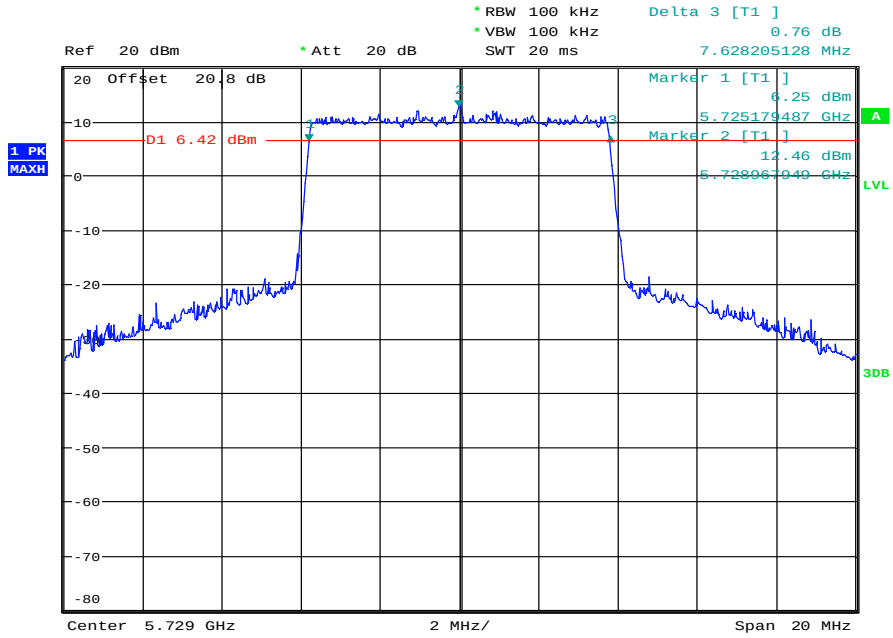
Plot 6: TX mode, highest channel, 6 dB bandwidth



Date: 11.AUG.2011 15:18:18

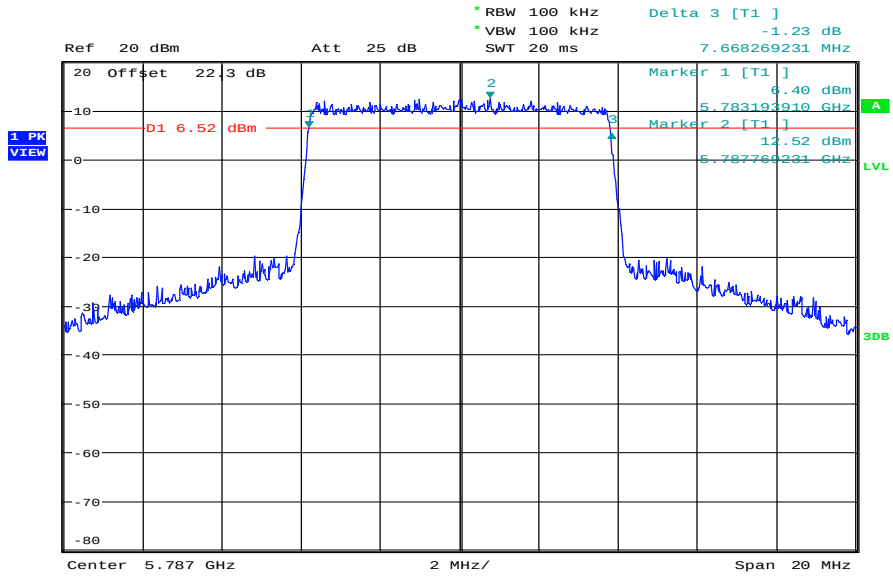
Plots: 8MHz/QPSK

Plot 7: TX mode, lowest channel, 6 dB bandwidth



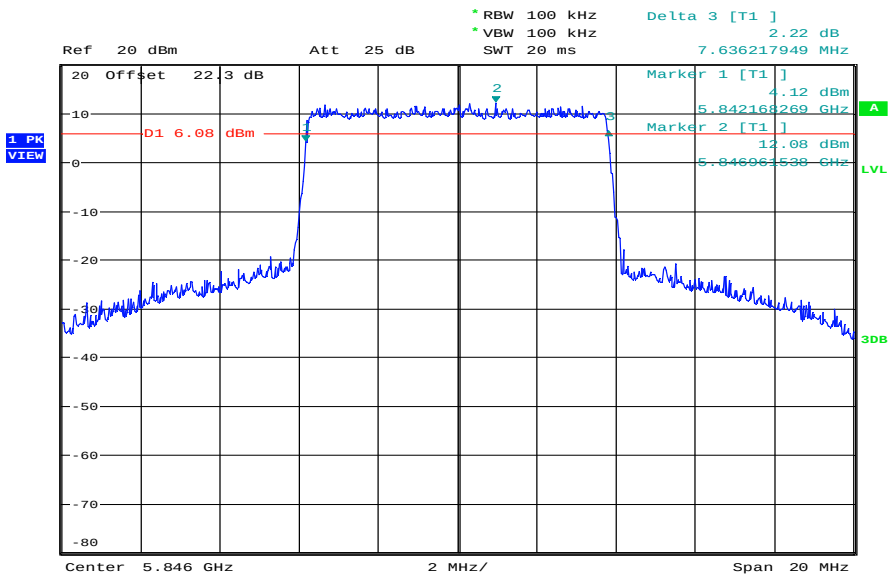
Date: 8.AUG.2011 16:06:21

Plot 8: TX mode, middle channel, 6 dB bandwidth



Date: 11.AUG.2011 15:11:02

Plot 9: 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
Trace-Mode:	Max Hold

Limits:

FCC	IC
-/-	RSS 210, Issue 8, A 8.2(a)
Spectrum Bandwidth – 20 dB Bandwidth	

Results:

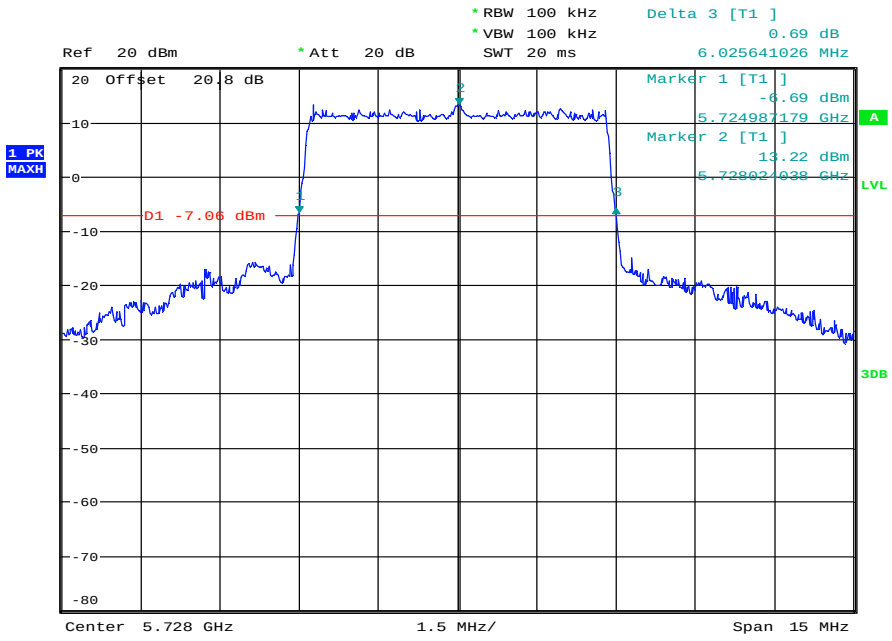
Frequency	20 dB BANDWIDTH [MHz]		
	5728 MHz	5787 MHz	5847 MHz
6 MHz/16QAM	6.03	6.03	6.03
Measurement uncertainty	± 100 kHz		

Modulation / Frequency	20 dB BANDWIDTH [MHz]		
	5729 MHz	5787 MHz	5846 MHz
7 MHz/QPSK	7.02	7.03	7.00
8 MHz/QPSK	8.01	8.00	7.96
Measurement uncertainty	± 100 kHz		

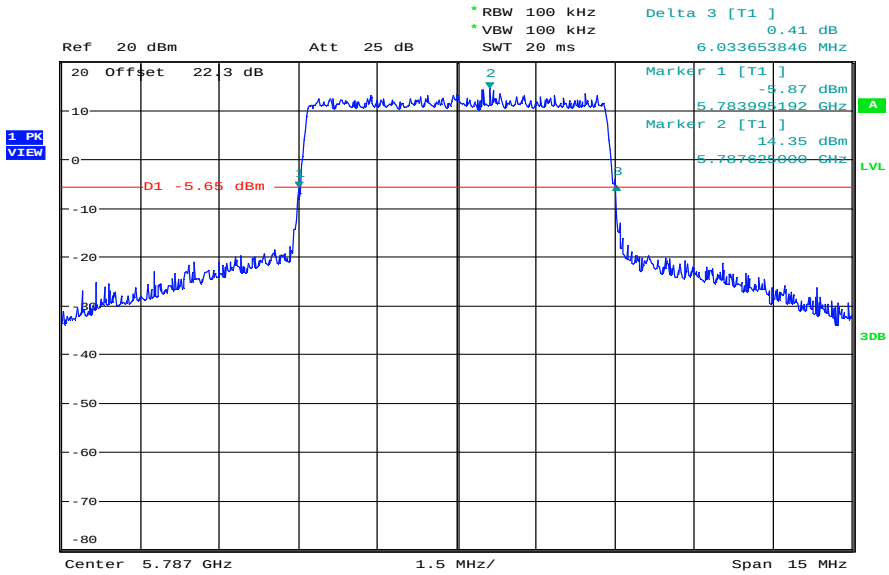
Result: **The result of the measurement is passed.**

Plots: 6MHz/16QAM

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

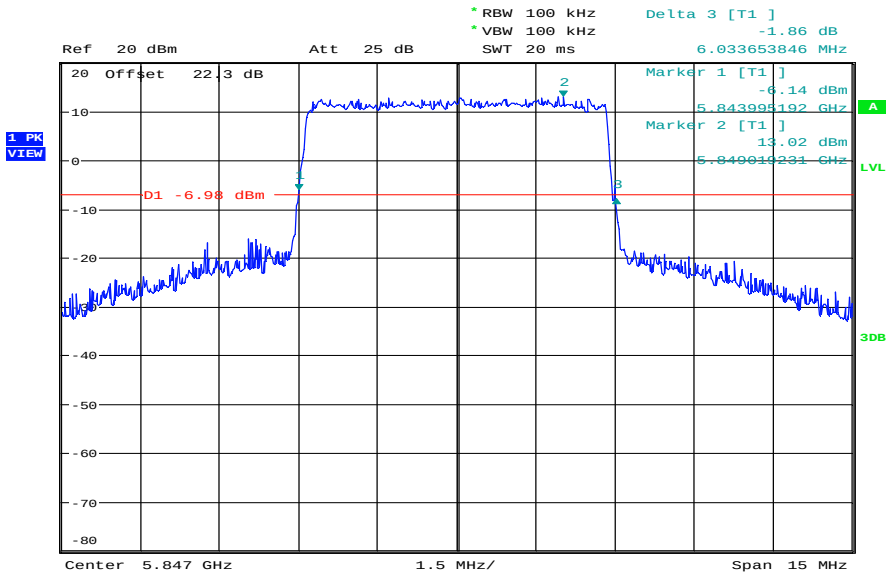


Plot 2: TX mode, middle channel, 20 dB bandwidth



Date: 11.AUG.2011 15:06:16

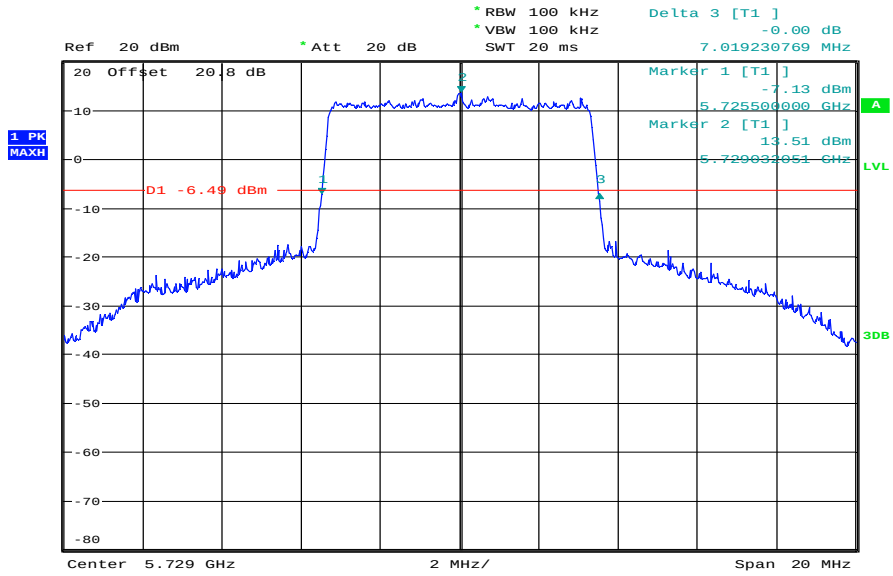
Plot 3: TX mode, highest channel, 20 dB bandwidth



Date: 11.AUG.2011 15:15:23

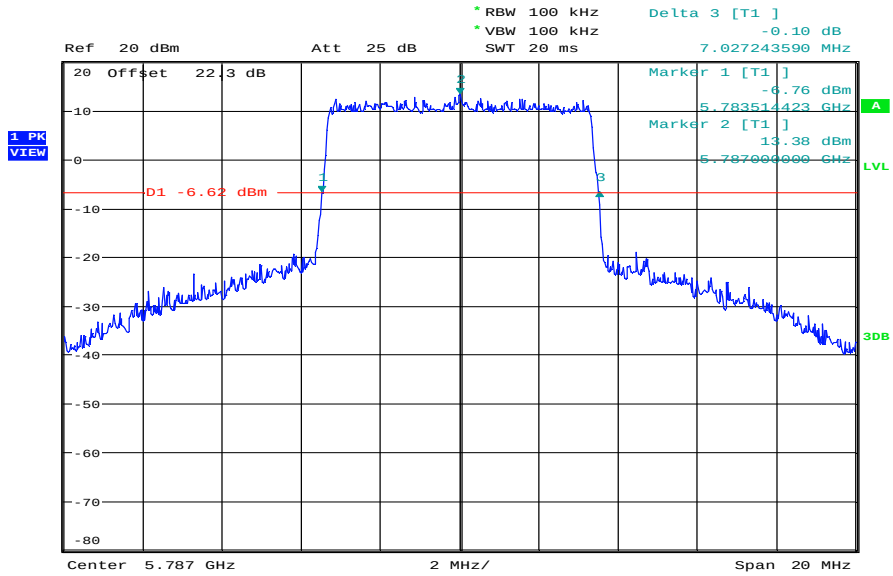
Plots: 7MHz/QPSK

Plot 4: TX mode, lowest channel, 20 dB bandwidth



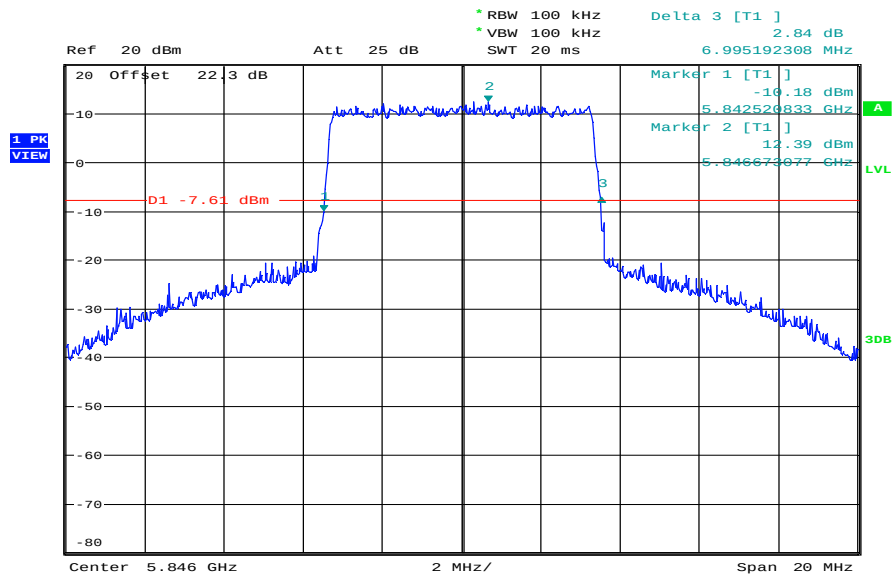
Date: 8.AUG.2011 16:04:19

Plot 5: TX mode, middle channel, 20 dB bandwidth



Date: 11.AUG.2011 15:08:42

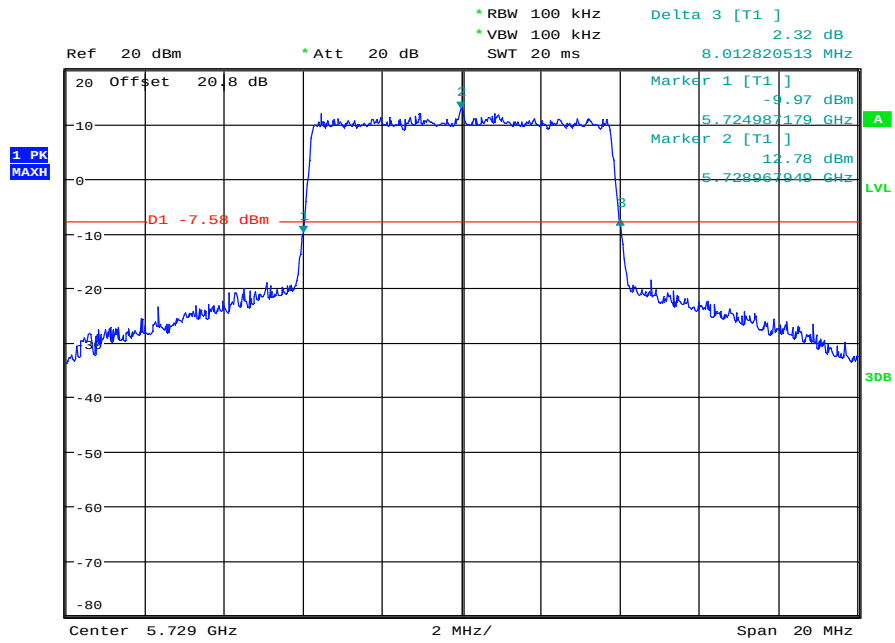
Plot 6: TX mode, highest channel, 20 dB bandwidth



Date: 11.AUG.2011 15:19:08

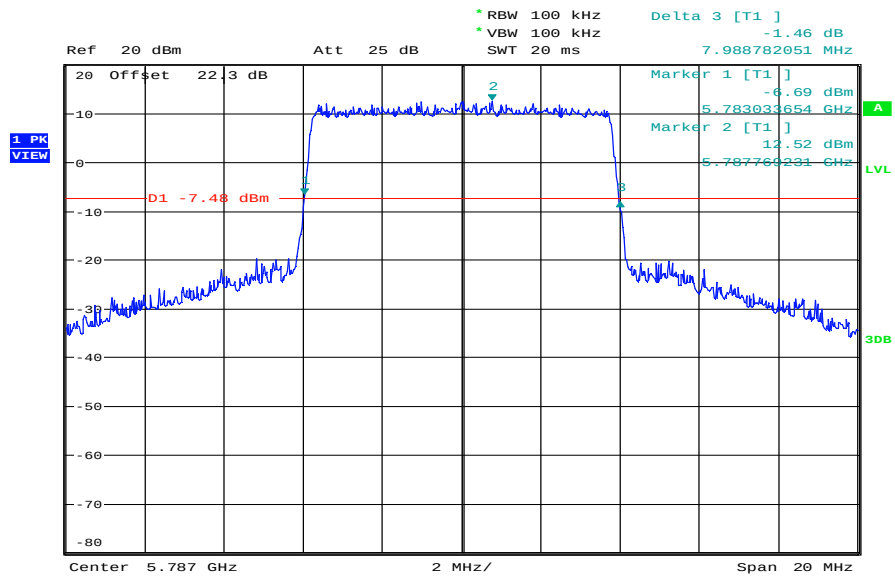
Plots: 8MHz/QPSK

Plot 7: TX mode, lowest channel, 20 dB bandwidth



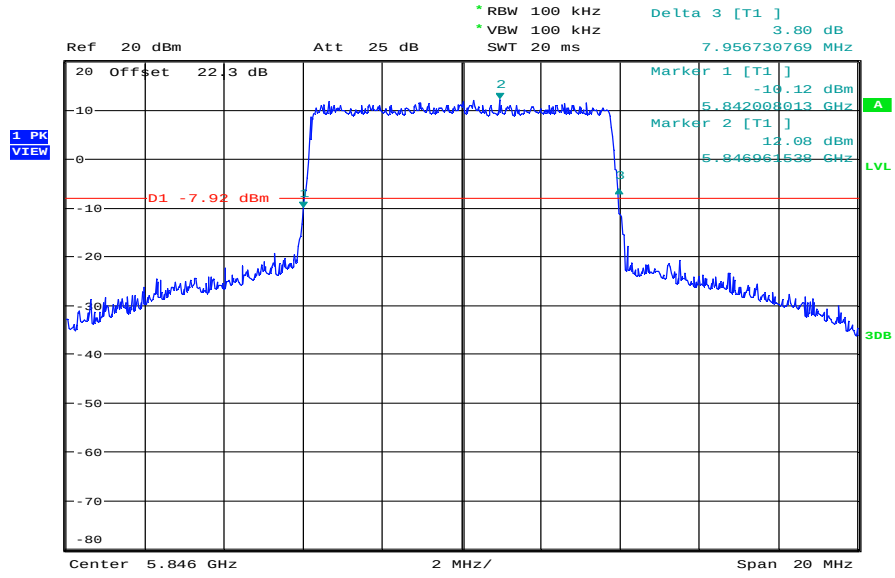
Date: 8.AUG.2011 16:07:07

Plot 8: TX mode, middle channel, 20 dB bandwidth



Date: 11.AUG.2011 15:12:03

Plot 9: TX mode, highest channel, 20 dB bandwidth



Date: 11.AUG.2011 15:21:22

9.6 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:	10 MHz
Resolution bandwidth:	10 MHz
Span:	ZERO
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247 (b)(3)	-/-
Maximum Output Power	
Conducted: 1.0 W – Antenna Gain max. 6 dBi	

Results:

6 MHz/16QAM	**Maximum Output Power [dBm]**		
Frequency	5728 MHz	5787 MHz	5847 MHz
Peak Output Power Conducted	28.70	28.79	28.44
Output Power Radiated - EIRP	26.92	27.24	26.54
Measurement uncertainty	± 0.5 dB (cond.) / ± 2 dB (rad.)		

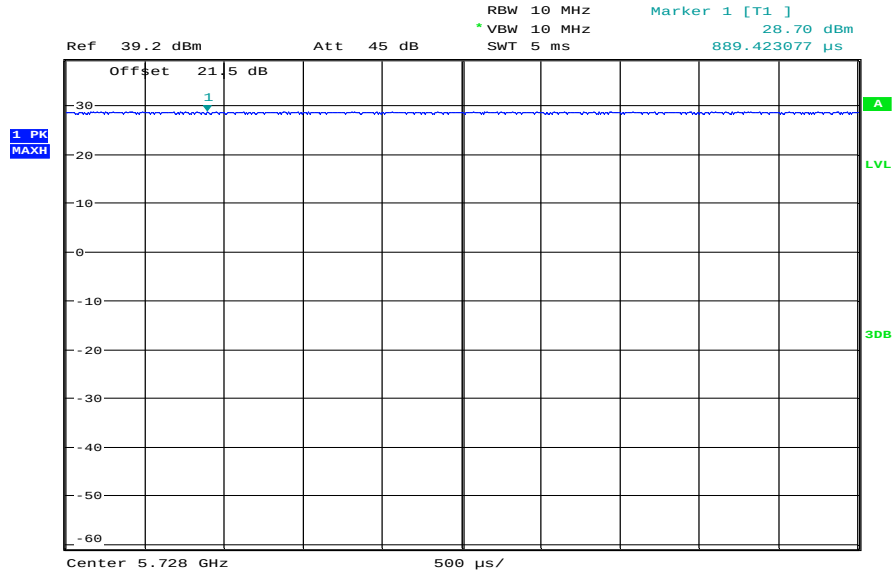
7MHz/QPSK	**Maximum Output Power [dBm]**		
Frequency	5729 MHz	5787 MHz	5846 MHz
Peak Output Power Conducted	28.70	28.71	28.60
Output Power Radiated - EIRP	26.92	27.15	26.70
Measurement uncertainty	± 0.5 dB (cond.) / ± 2 dB (rad.)		

8MHz/QPSK	**Maximum Output Power [dBm]**		
Frequency	5729 MHz	5787 MHz	5846 MHz
Peak Output Power Conducted	28.53	28.58	28.50
Output Power Radiated - EIRP	26.75	27.04	26.60
Measurement uncertainty	± 0.5 dB (cond.) / ± 2 dB (rad.)		

Result: **The result of the measurement is passed.**

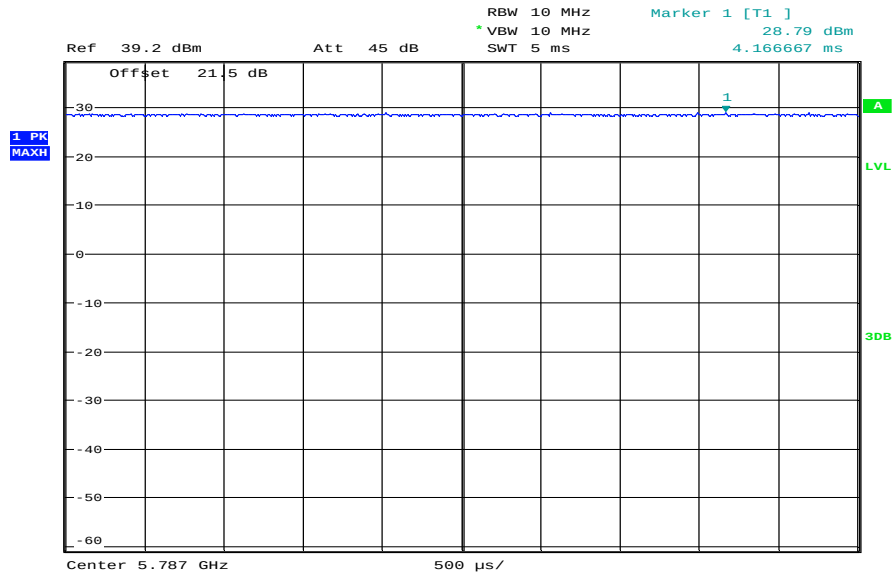
Plots: 6MHz/16QAM (conducted measurements)

Plot 1: TX mode, lowest channel



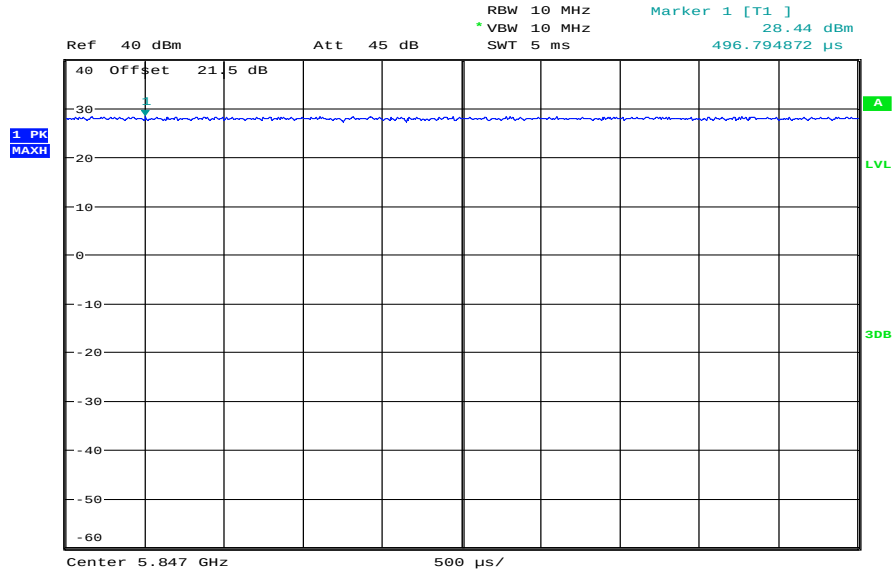
Date: 11.AUG.2011 15:27:36

Plot 2: TX mode, middle channel



Date: 11.AUG.2011 15:29:19

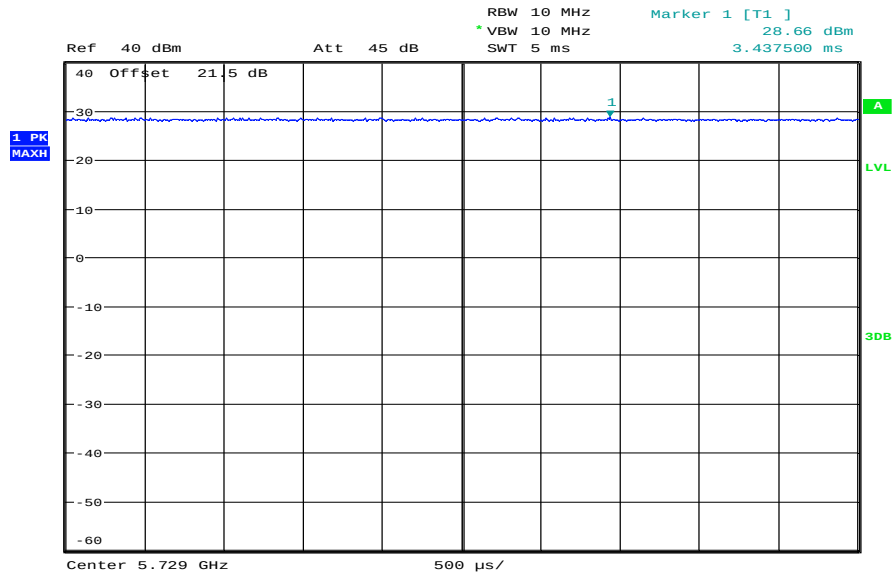
Plot 3: TX mode, highest channel



Date: 11.AUG.2011 15:30:49

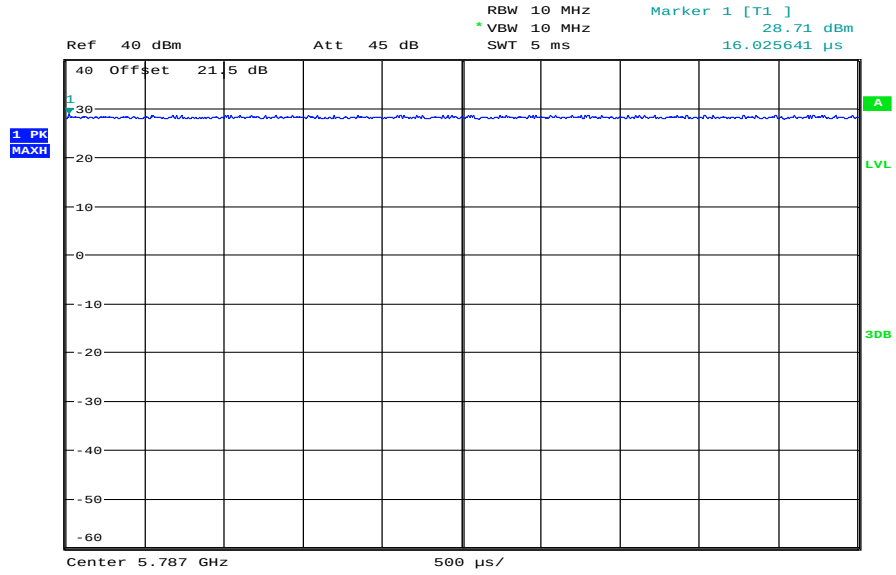
Plots: 7MHz/QPSK (conducted measurements)

Plot 1: TX mode, lowest channel



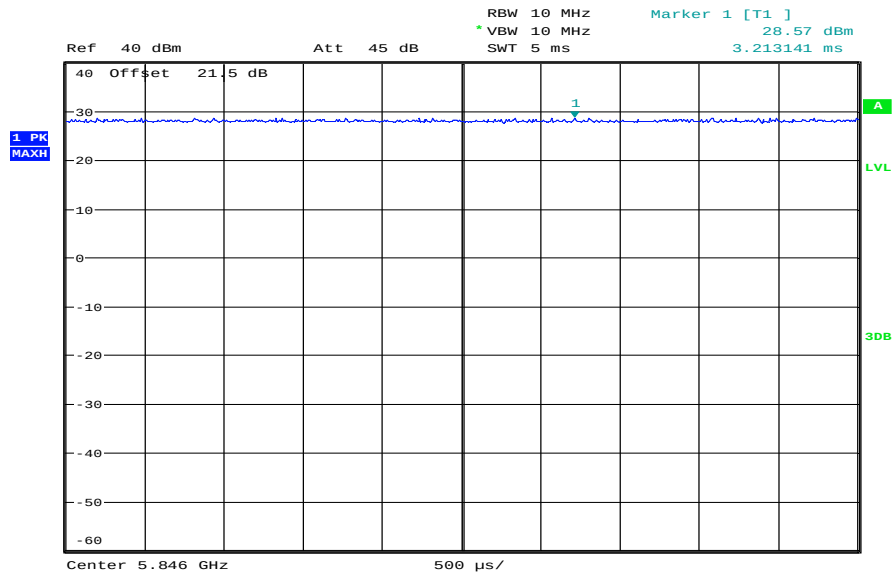
Date: 11.AUG.2011 15:32:25

Plot 2: TX mode, middle channel



Date: 11.AUG.2011 15:33:39

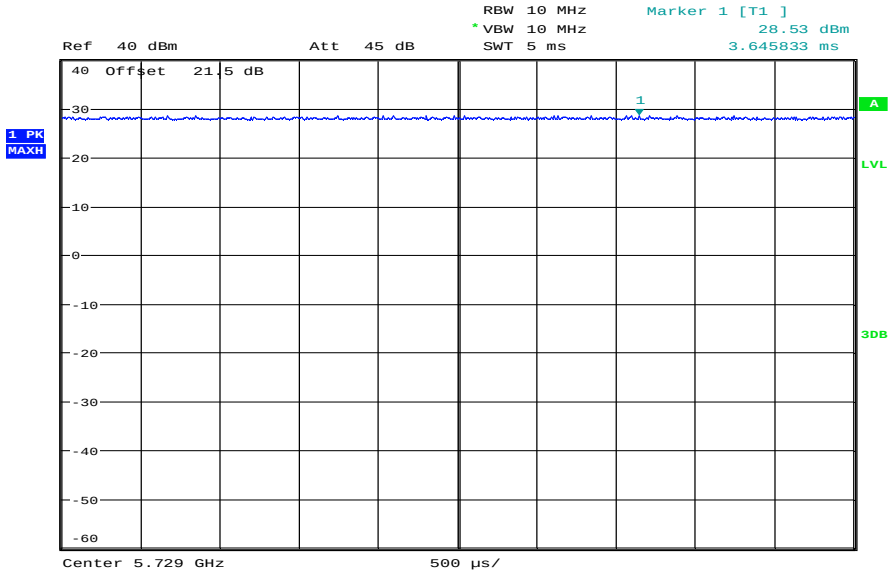
Plot 3: TX mode, highest channel



Date: 11.AUG.2011 15:34:35

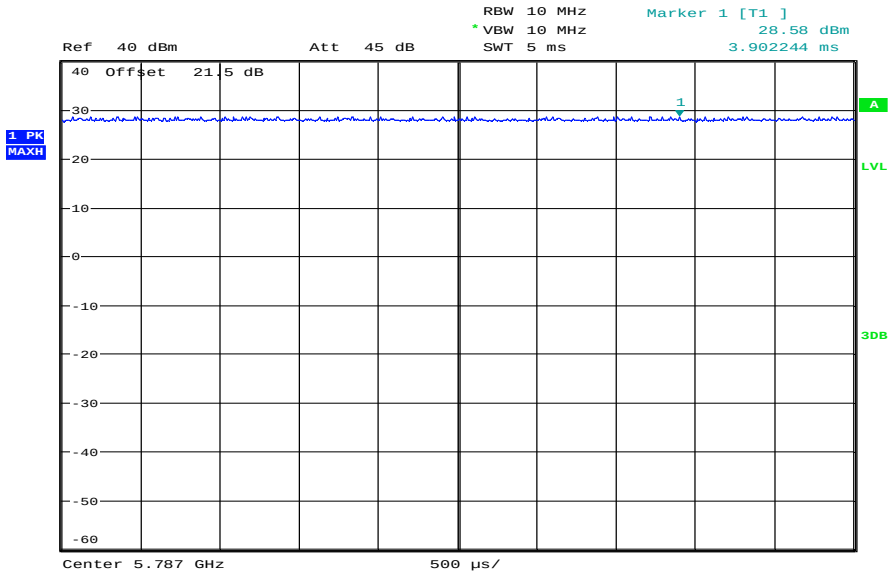
Plots: 8MHz/QPSK (conducted measurements)

Plot 1: TX mode, lowest channel



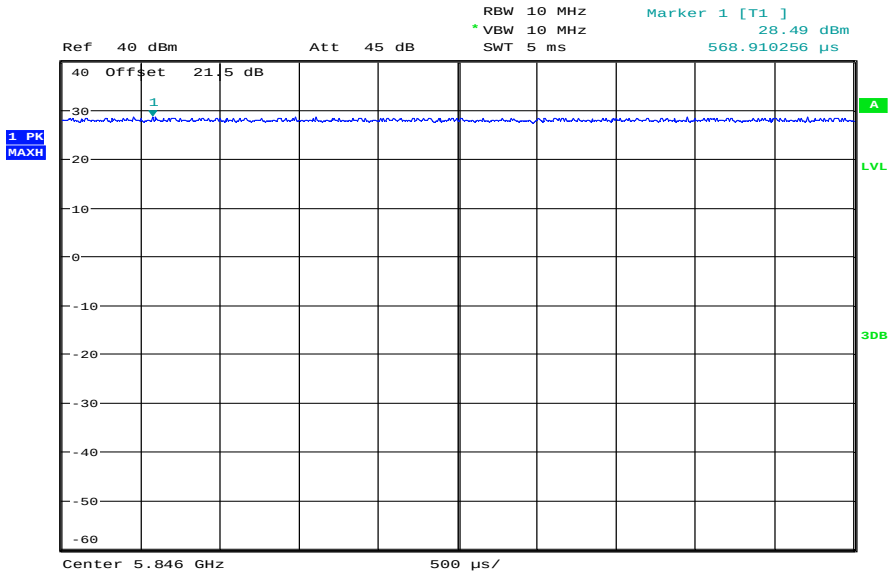
Date: 11.AUG.2011 15:37:25

Plot 2: TX mode, middle channel



Date: 11.AUG.2011 15:36:21

Plot 3: TX mode, highest channel



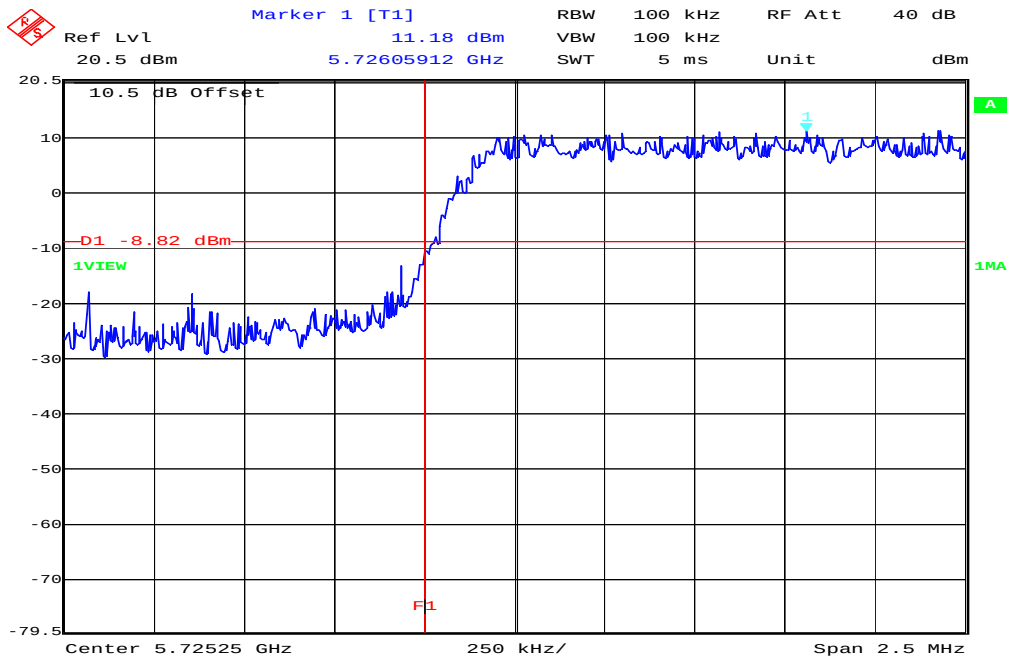
9.7 Band edge compliance conducted

Description:

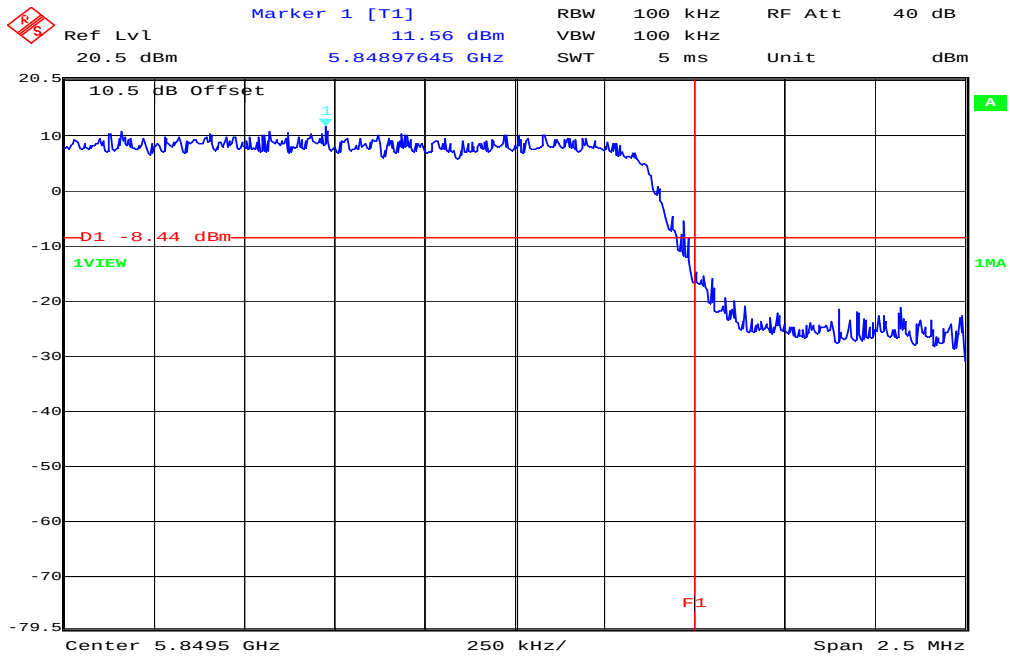
Measurement of the conducted band edge compliance. EUT is measured at the lower and upper band edge in each modes.

Plots: 6MHz/16QAM (conducted measurements)

Plot 1: TX mode, lowest channel

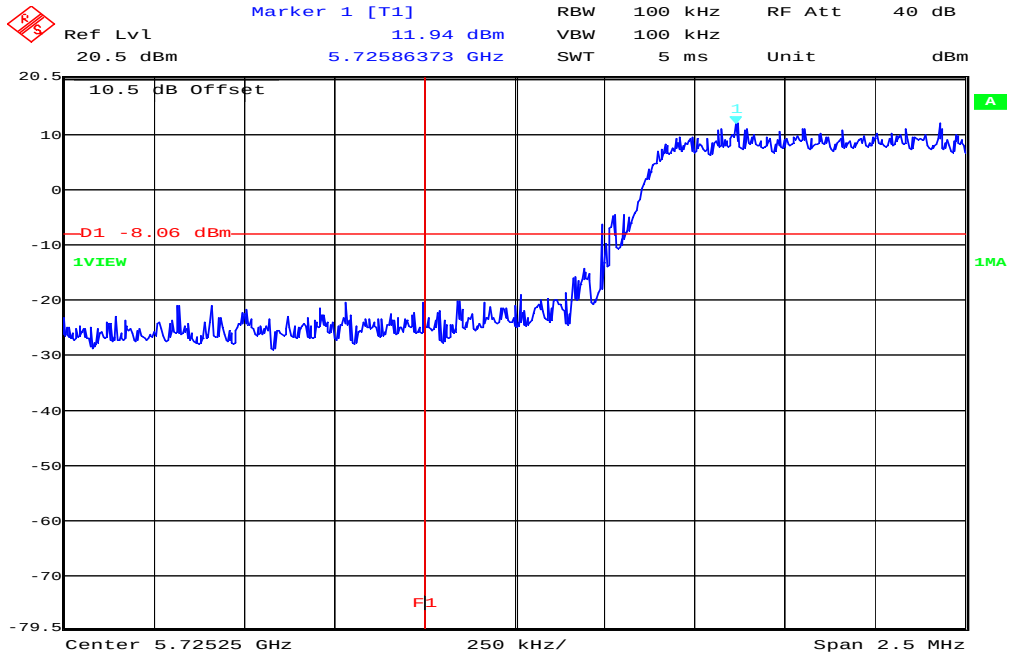


Plot 2: TX mode, highest channel

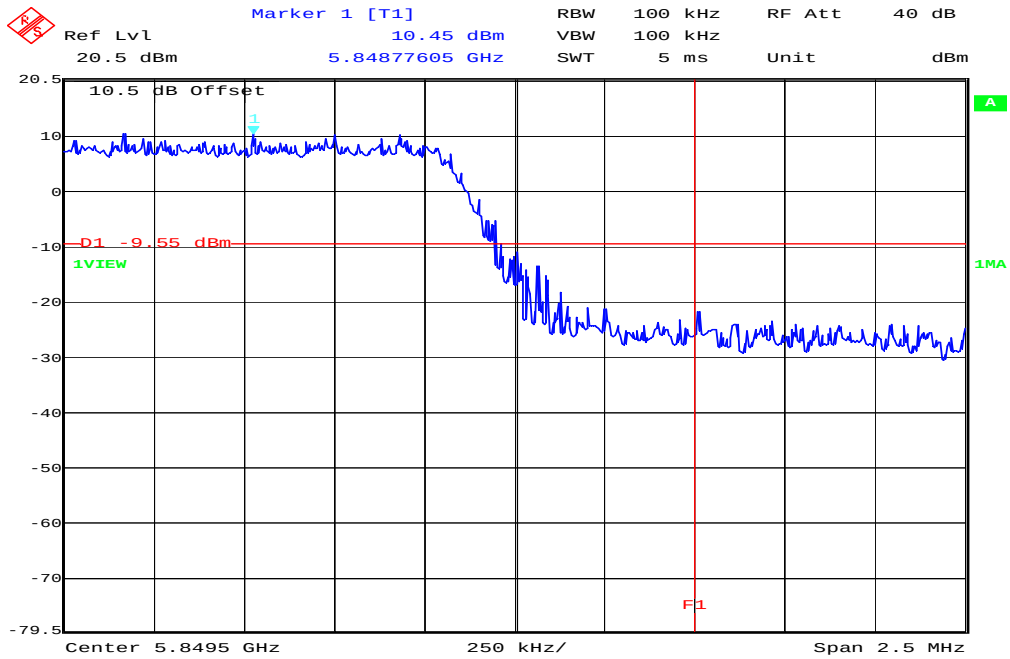


Plots: 7MHz/QPSK (conducted measurements)

Plot 1: TX mode, lowest channel

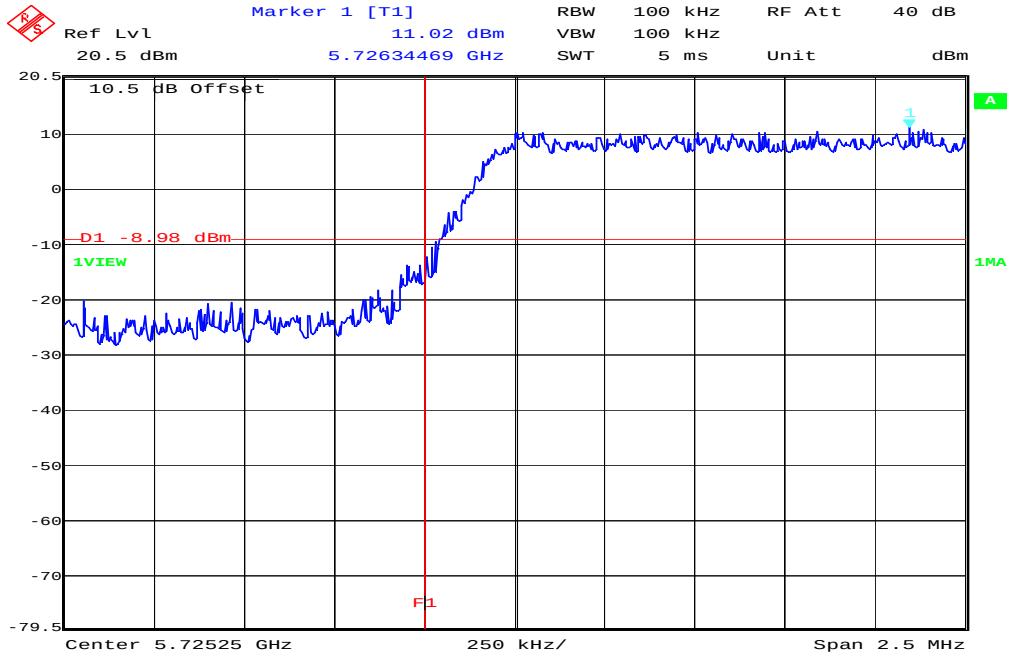


Plot 2: TX mode, highest channel

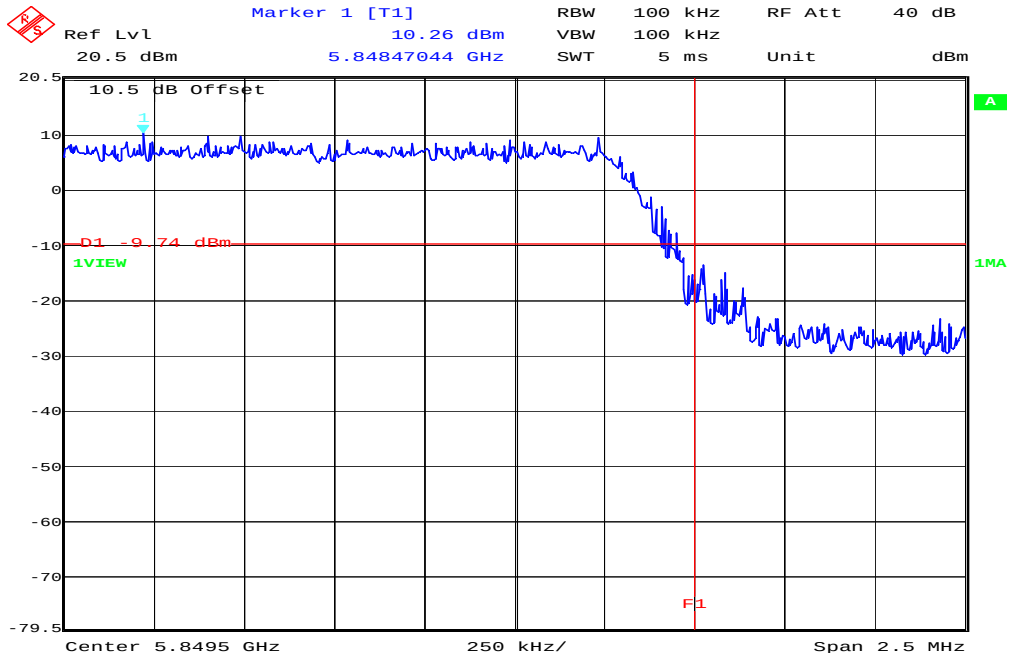


Plots: 8MHz/QPSK (conducted measurements)

Plot 1: TX mode, lowest channel



Plot 2: TX mode, highest channel



Limits:

FCC	IC
CFR Part 15.247 (d)	-/-
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.	

9.8 Band edge compliance radiated

Not applicable

No band edge compliance measurements needed, because the next restricted bands (5.35 GHz – 5.46 GHz and 7.25 GHz – 7.75 GHz) are far away from the used ISM band.

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.

Limits:

FCC	IC
CFR Part 15.205	-/-
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	

CFR Part 15.205, restricted bands:

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
[1]0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	[2]
13.36–13.41.			

[1] Until February 1, 1999, this restricted band shall be 0.490–0.510 MHz.
[2] Above 38.6

9.9 TX spurious emissions conducted

Description:

Measurement of the conducted spurious emissions in transmit mode. The measurement is performed at channel frequencies 5728 MHz, 5787 MHz and 5847 MHz for the 6 MHz bandwidth and 5729 MHz, 5787 MHz and 5846 MHz for the 7/8 MHz bandwidths. The measurement is repeated for the modulations retained as the worst case in term of output power.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	1s/GHz
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 40 GHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
CFR Part 15.247(d)	-/-
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	

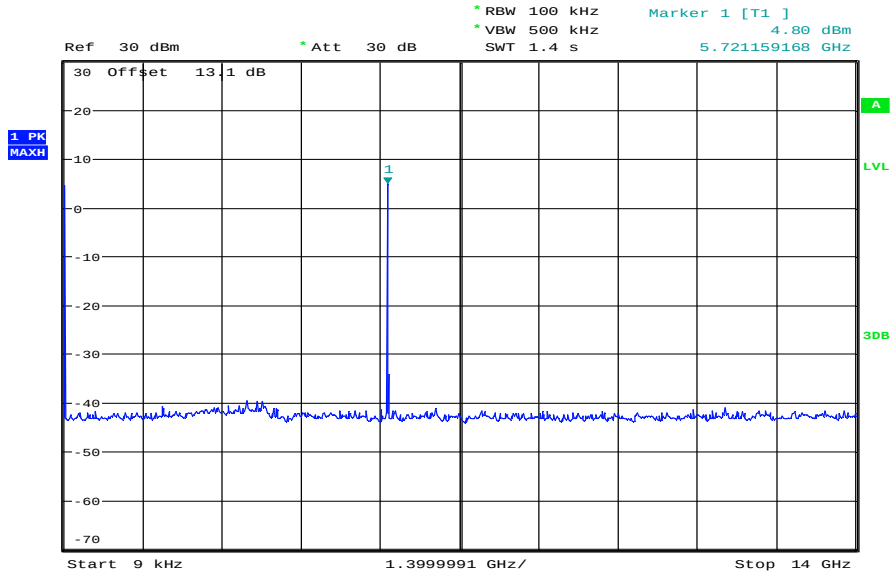
Results: 6 MHz/ 16 QAM

TX Spurious Emissions Conducted					
OFDM - mode					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
5728			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
5787			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
5847			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
Measurement uncertainty		± 3 dB			

Result: **The result of the measurement is passed.**

Plots: 6MHz/16QAM

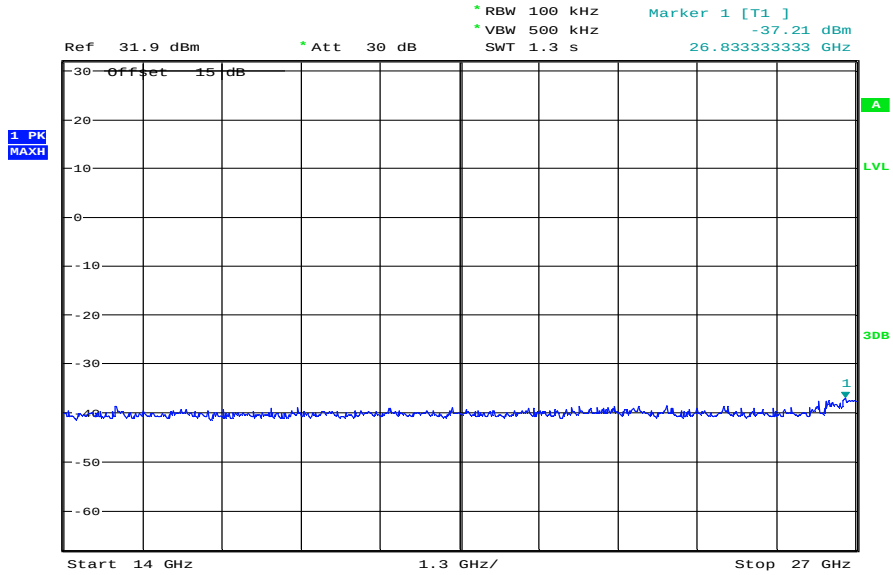
Plot 1: TX mode, lowest channel, up to 14 GHz



Date: 11.AUG.2011 15:45:00

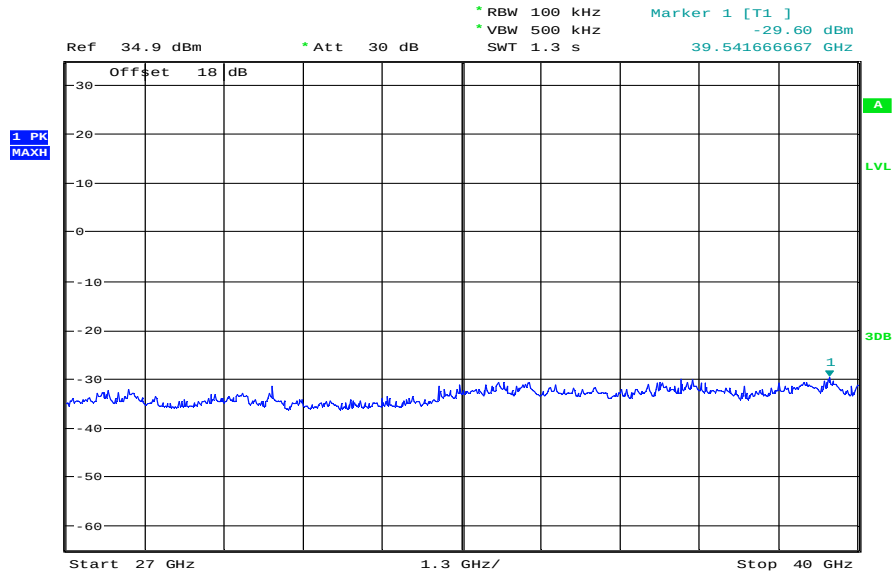
The peak at the beginning of the plot is the LO from the SA.

Plot 2: TX mode, lowest channel, 14 GHz to 27 GHz

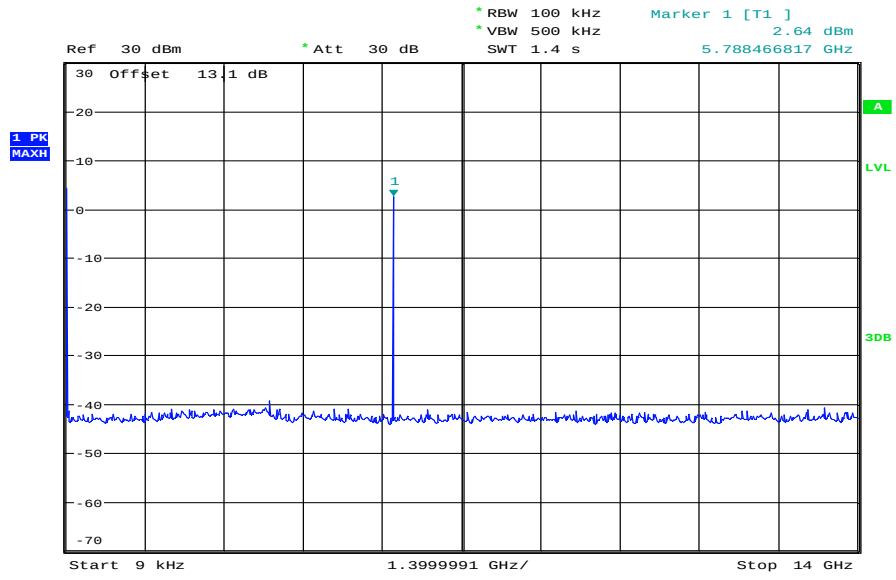


Date: 11.AUG.2011 15:54:12

Plot 3: TX mode, lowest channel, 27 GHz to 40 GHz

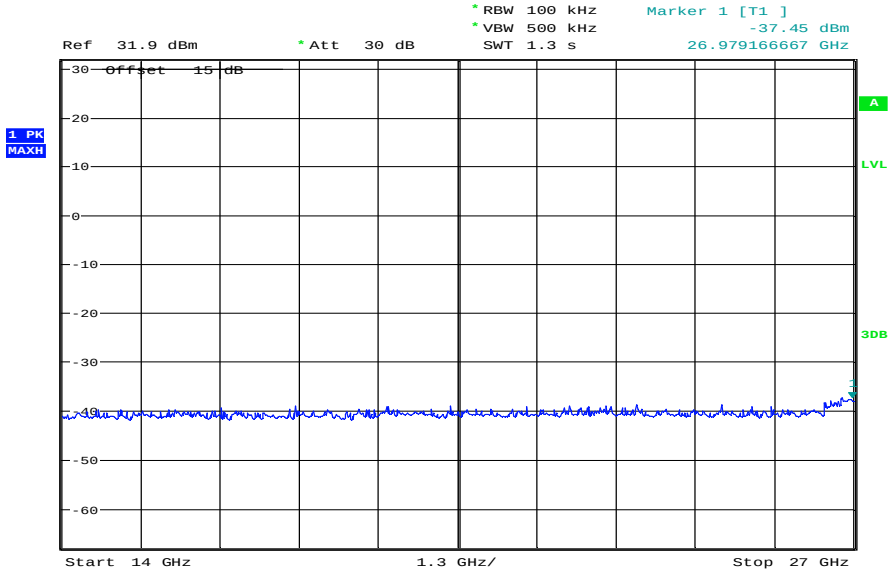


Plot 4: TX mode, middle channel, up to 14 GHz



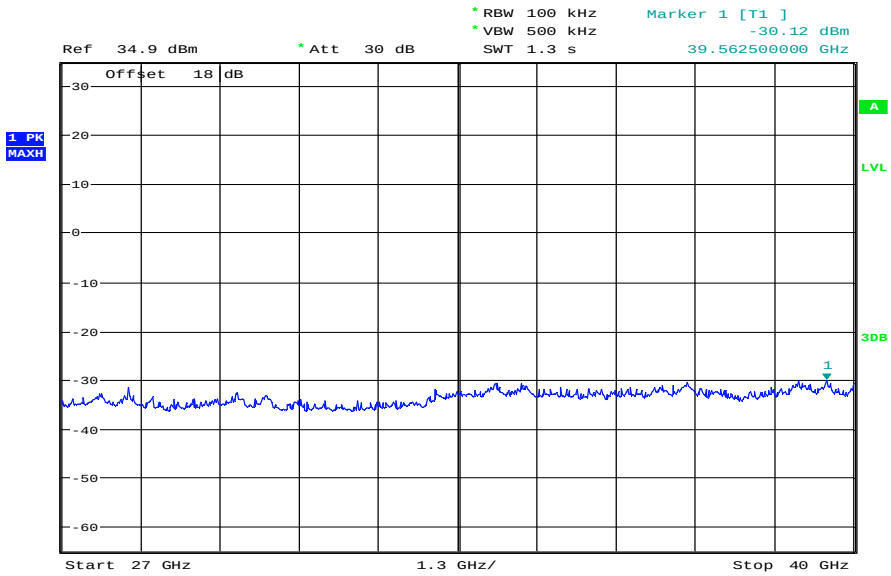
The peak at the beginning of the plot is the LO from the SA.

Plot 5: TX mode, middle channel, 14 GHz to 27 GHz



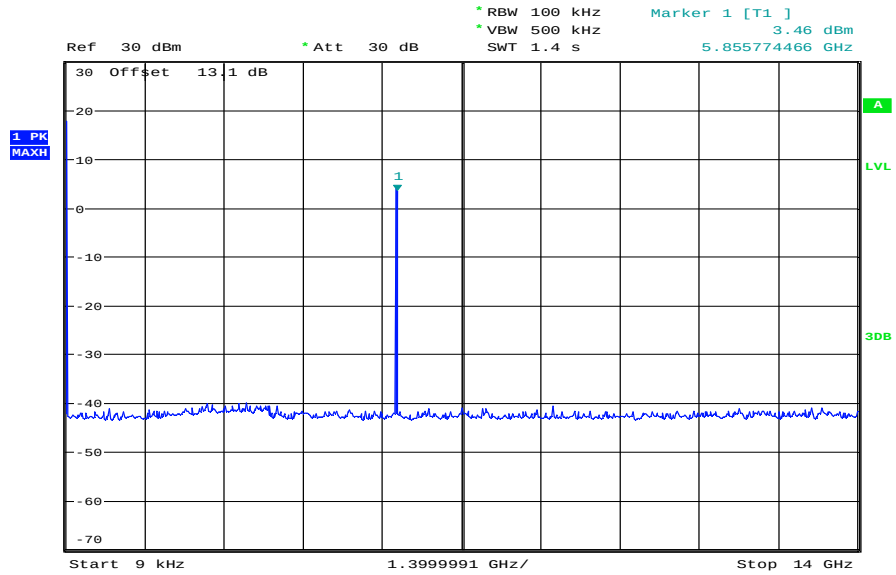
Date: 11.AUG.2011 15:52:42

Plot 6: TX mode, middle channel, 27 GHz to 40 GHz



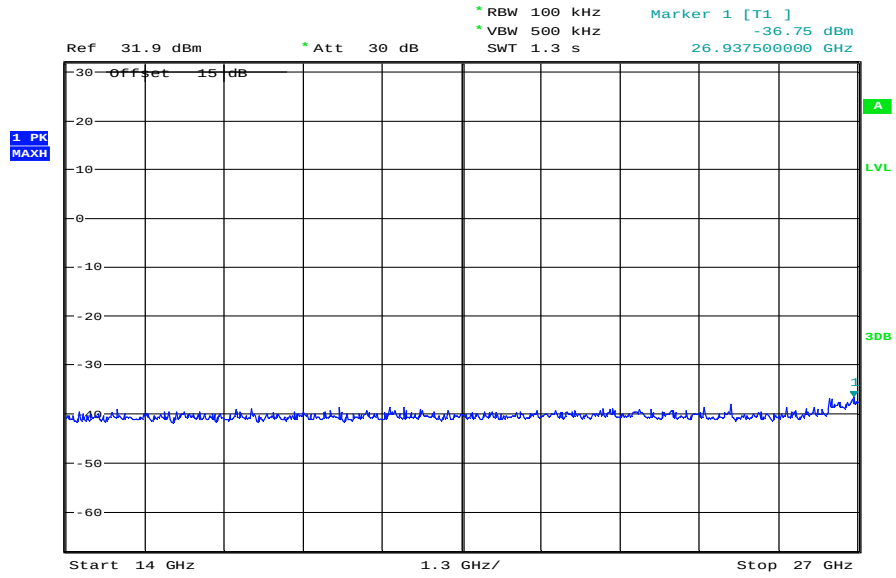
Date: 11.AUG.2011 15:57:35

Plot 7: TX mode, highest channel, up to 14 GHz

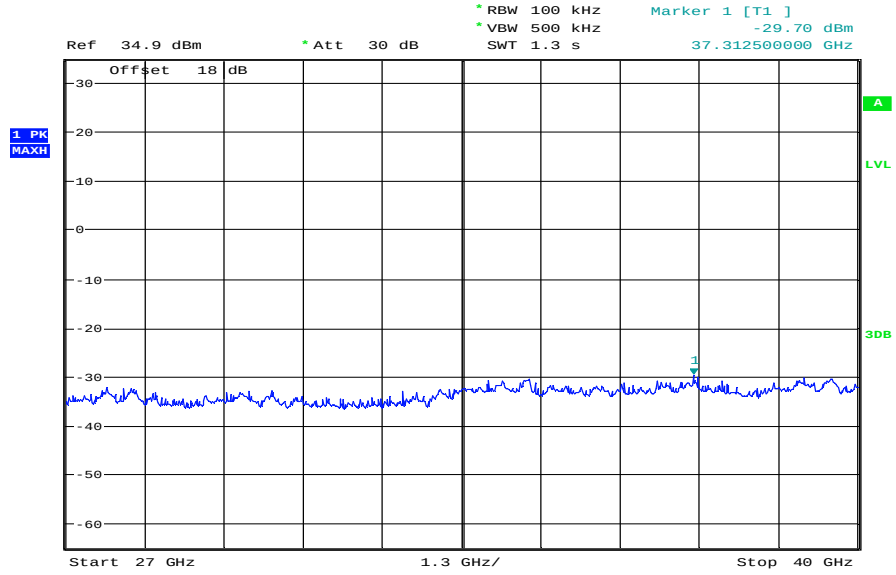


The peak at the beginning of the plot is the LO from the SA.

Plot 8: TX mode, highest channel, 14 GHz to 27 GHz



Plot 9: TX mode, highest channel, 27 GHz to 40 GHz



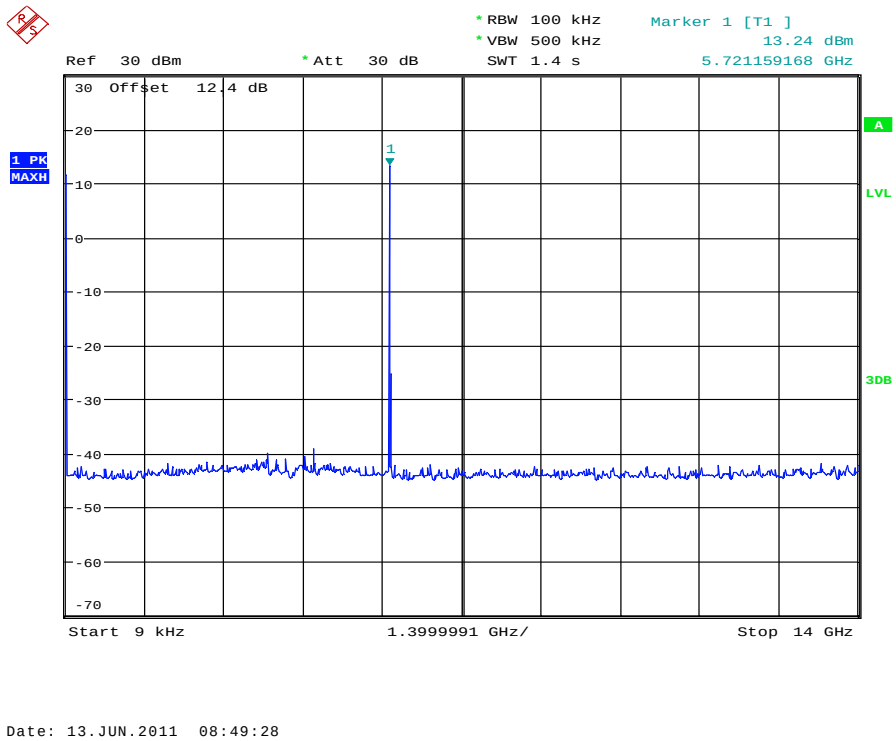
Results: 7 MHz/ QPSK

TX Spurious Emissions Conducted					
OFDM - mode					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
5729			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
5787			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
5846			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
Measurement uncertainty		± 3 dB			

Result: **The result of the measurement is passed.**

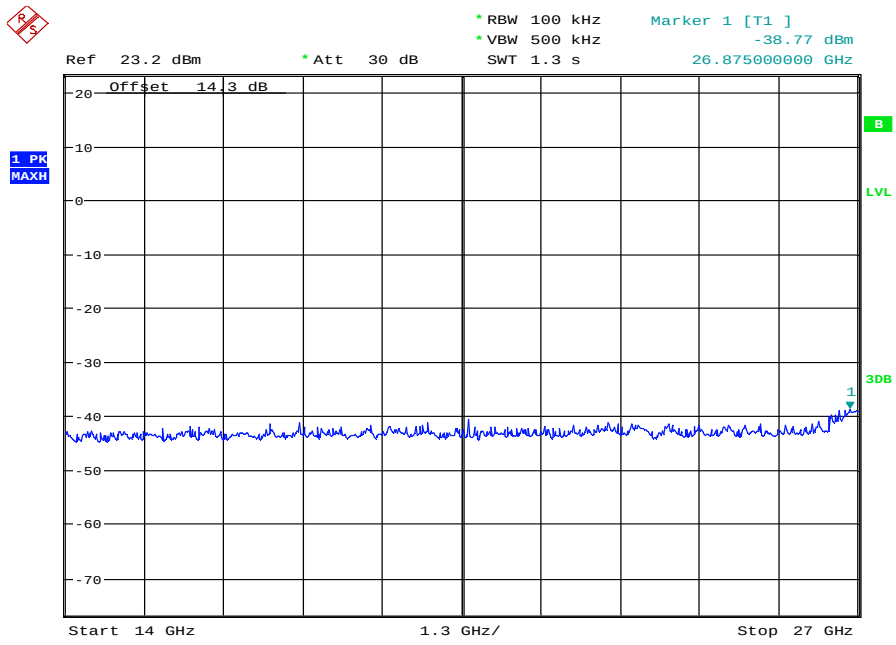
Plots: 7MHz/QPSK

Plot 10: TX mode, lowest channel, up to 14 GHz



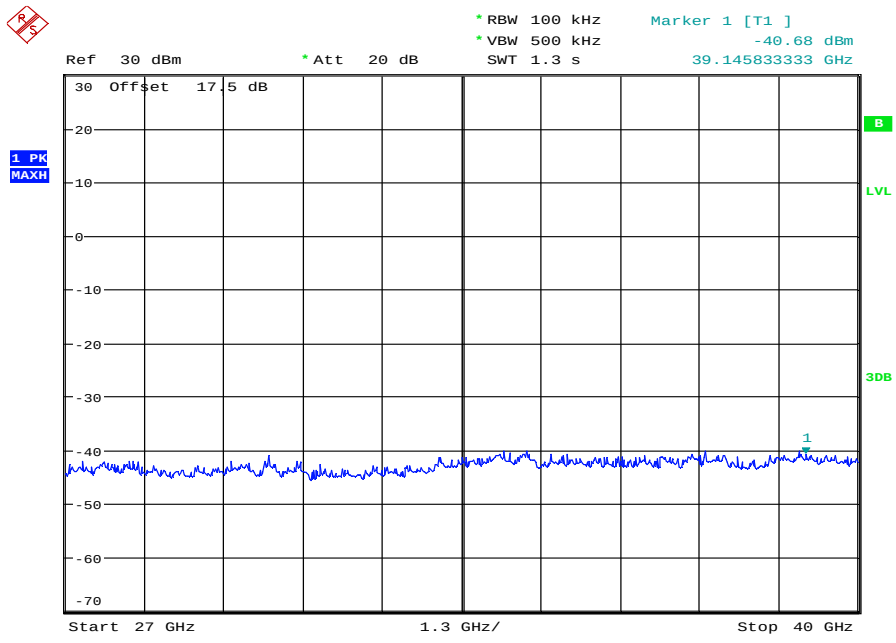
The peak at the beginning of the plot is the LO from the SA.

Plot 11: TX mode, lowest channel, 14 GHz to 27 GHz



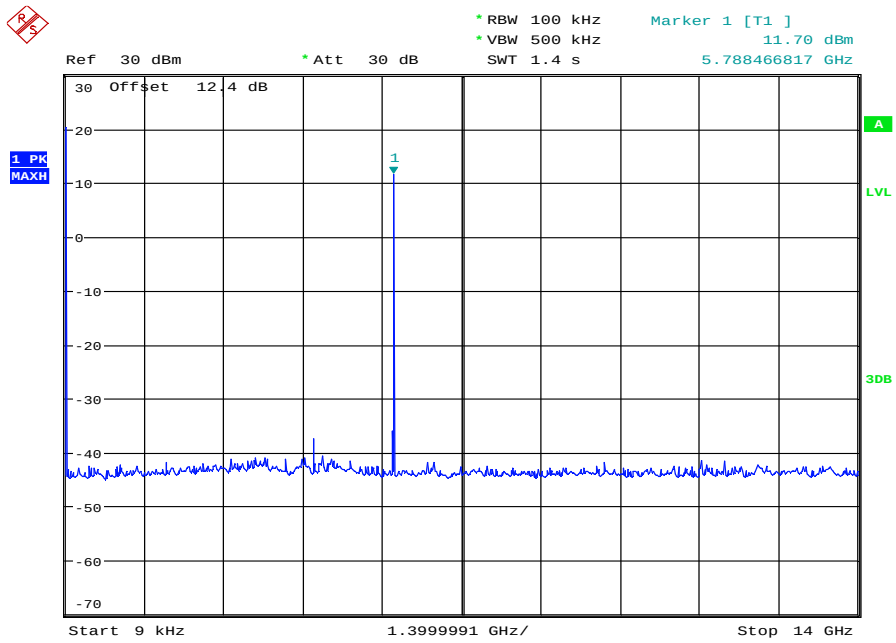
Date: 13.JUN.2011 08:48:48

Plot 12: TX mode, lowest channel, 27 GHz to 40 GHz



Date: 13.JUN.2011 08:50:59

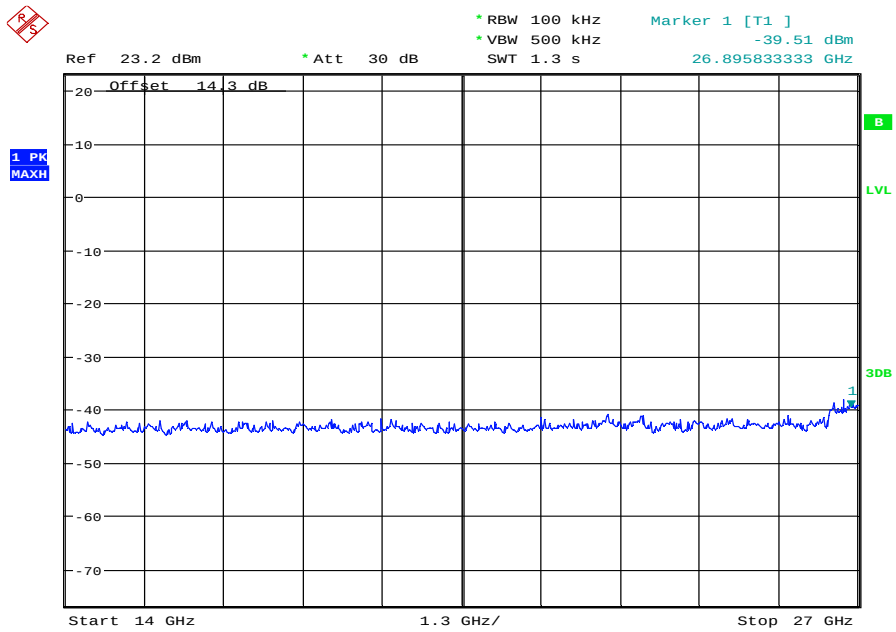
Plot 13: TX mode, middle channel, up to 14 GHz



Date: 13.JUN.2011 08:46:23

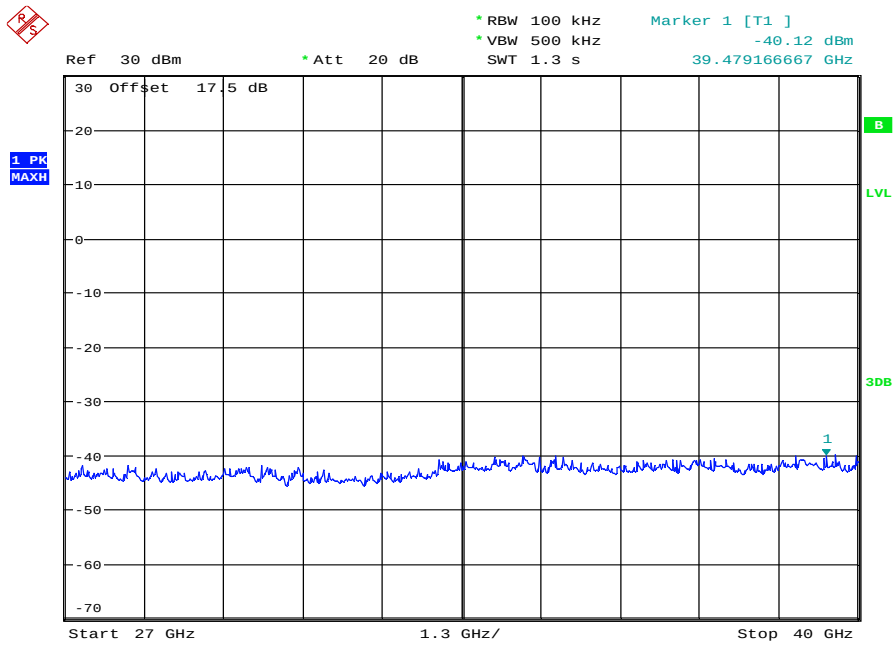
The peak at the beginning of the plot is the LO from the SA.

Plot 14: TX mode, middle channel, 14 GHz to 27 GHz



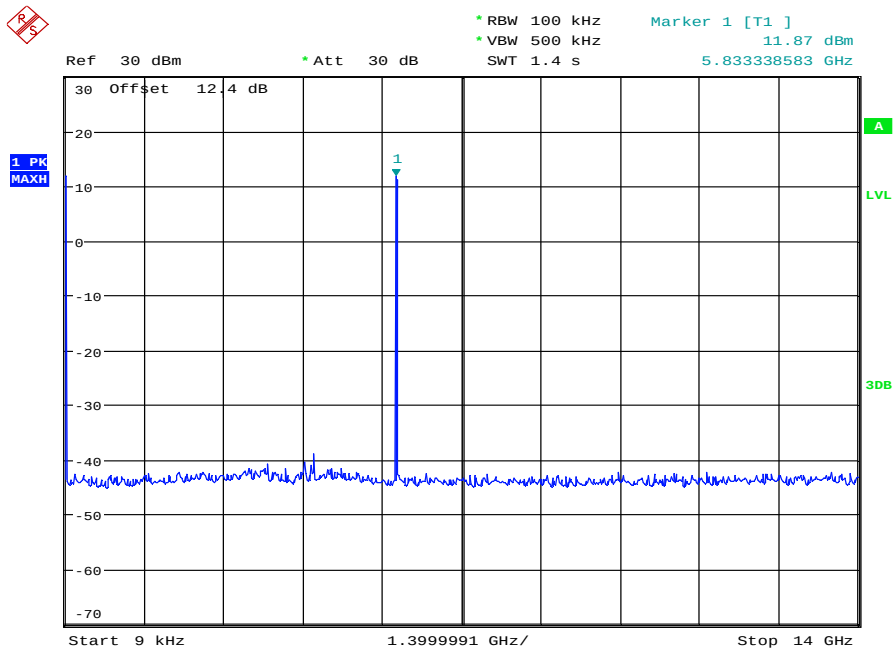
Date: 13.JUN.2011 08:47:12

Plot 15: TX mode, middle channel, 27 GHz to 40 GHz



Date: 13.JUN.2011 08:52:37

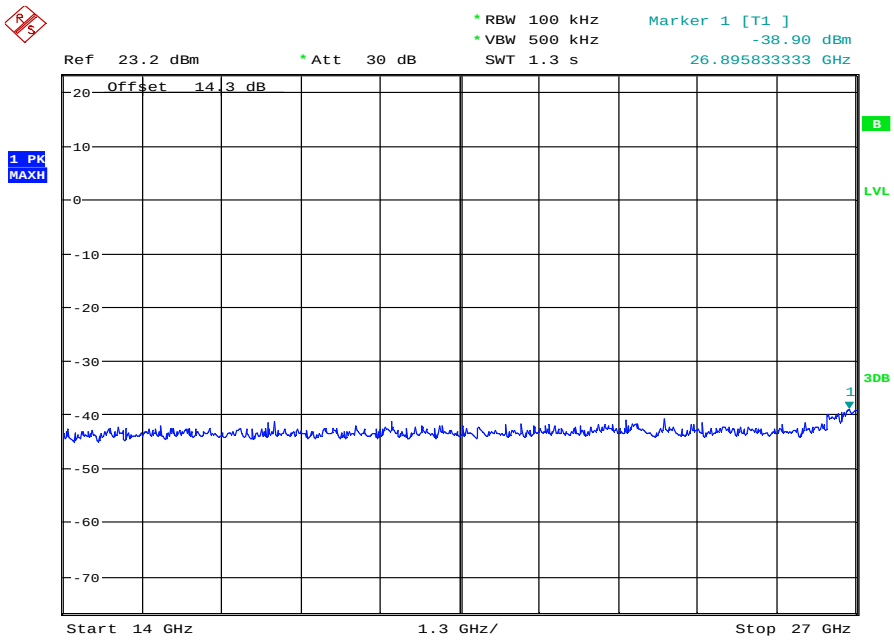
Plot 16: TX mode, highest channel, up to 14 GHz



Date: 13.JUN.2011 08:44:56

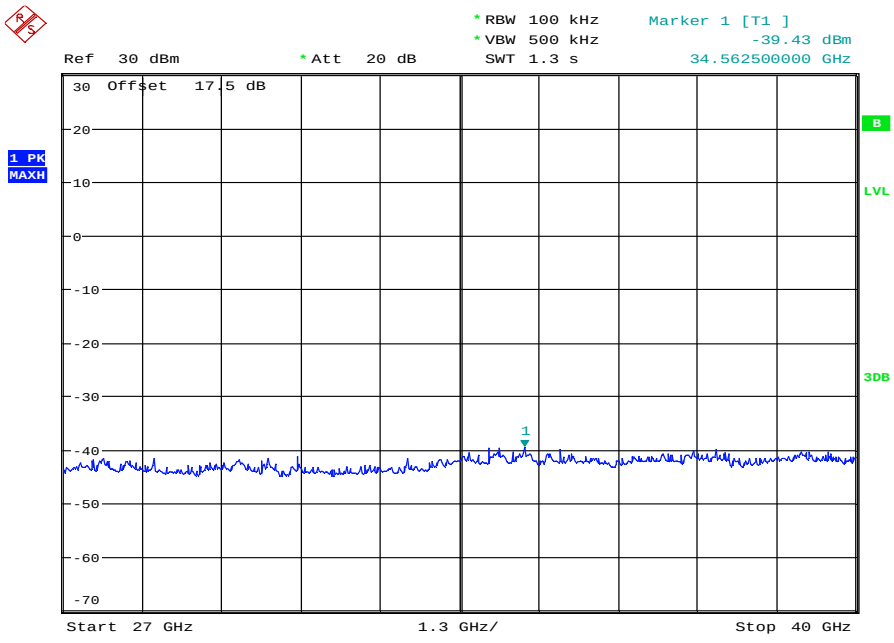
The peak at the beginning of the plot is the LO from the SA.

Plot 17: TX mode, highest channel, 14 GHz to 27 GHz



Date: 13.JUN.2011 08:44:16

Plot 18: TX mode, highest channel, 27 GHz to 40 GHz



Date: 13.JUN.2011 08:56:39

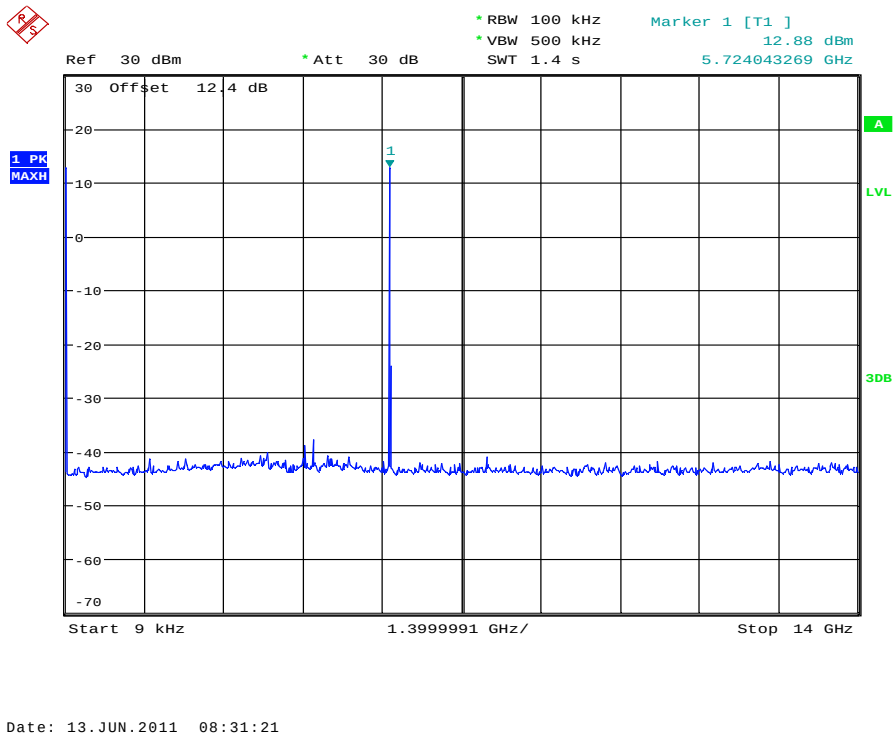
Results: 8 MHz/ QPSK

TX Spurious Emissions Conducted					
OFDM - mode					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
5729			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
5787			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
5846			30 dBm		Operating frequency
No critical peaks found			-20 dBc		complies
Measurement uncertainty		± 3 dB			

Result: **The result of the measurement is passed.**

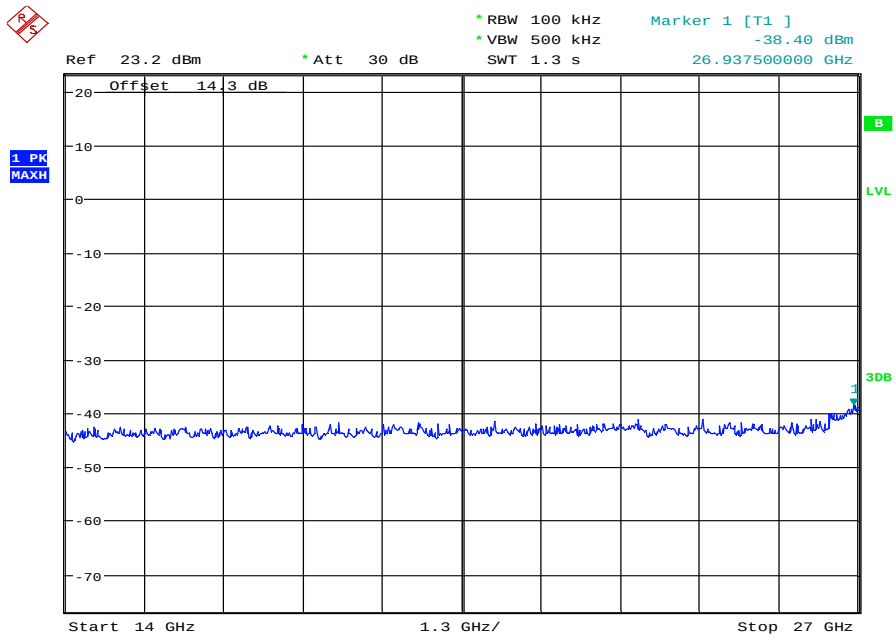
Plots: 8MHz/QPSK

Plot 19: TX mode, lowest channel, up to 14 GHz



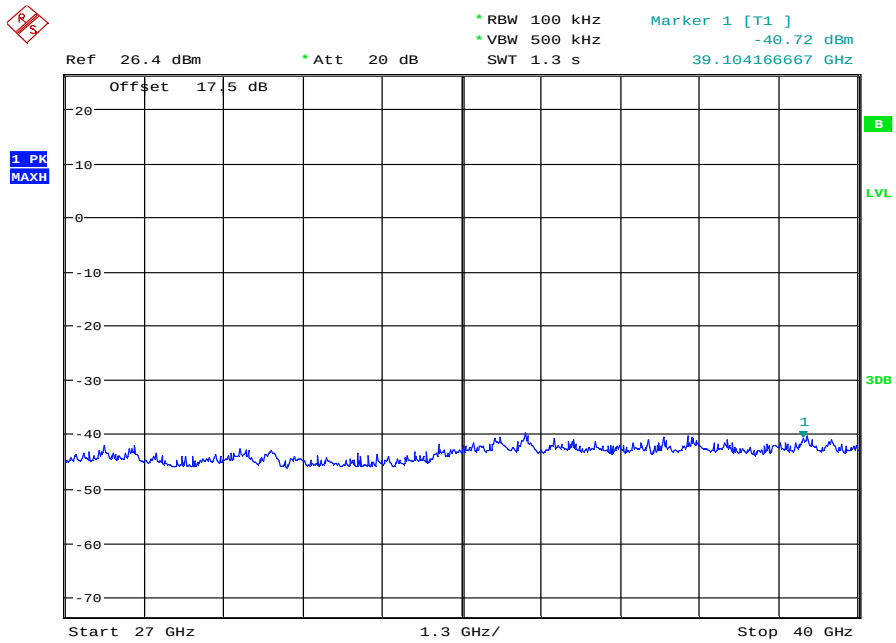
The peak at the beginning of the plot is the LO from the SA.

Plot 20: TX mode, lowest channel, 14 GHz to 27 GHz



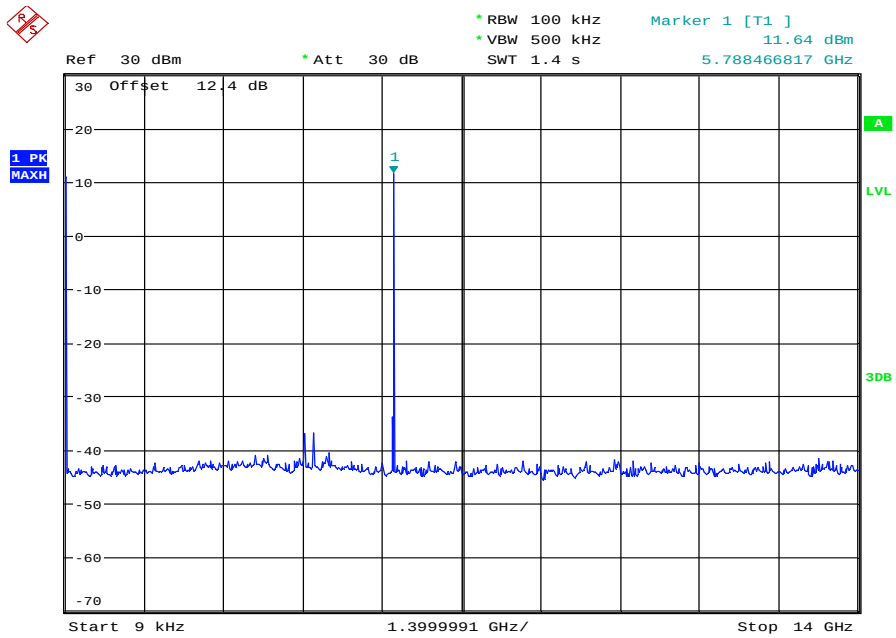
Date: 13.JUN.2011 08:33:11

Plot 21: TX mode, lowest channel, 27 GHz to 40 GHz



Date: 13.JUN.2011 08:39:01

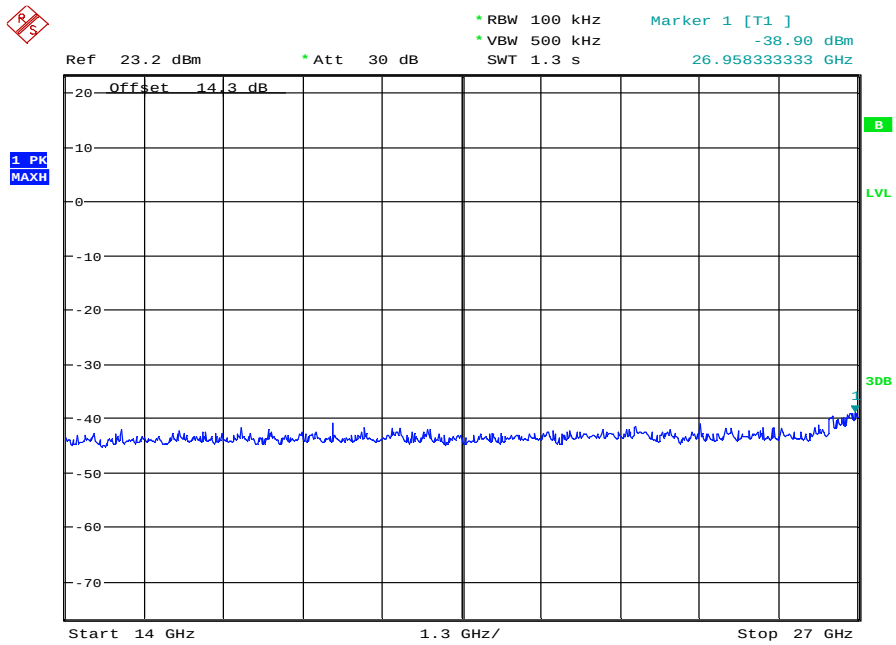
Plot 22: TX mode, middle channel, up to 14 GHz



Date: 13.JUN.2011 08:40:35

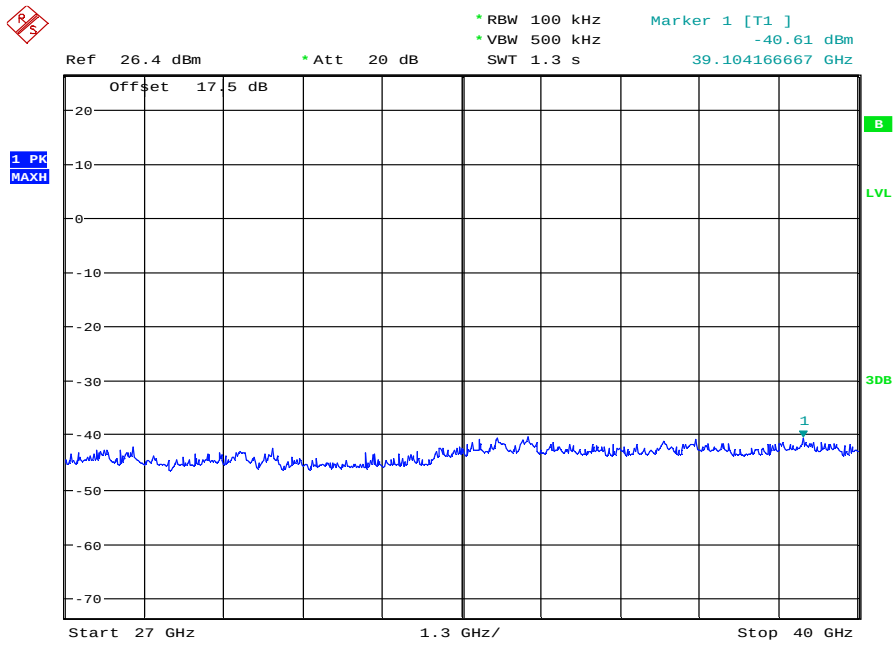
The peak at the beginning of the plot is the LO from the SA.

Plot 23: TX mode, middle channel, 14 GHz to 27 GHz

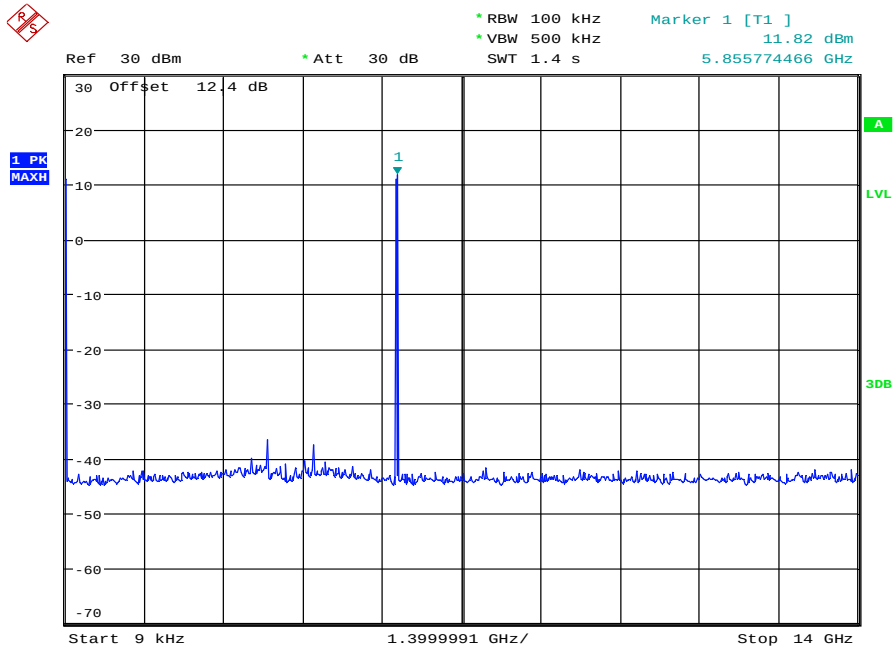


Date: 13.JUN.2011 08:40:02

Plot 24: TX mode, middle channel, 27 GHz to 40 GHz

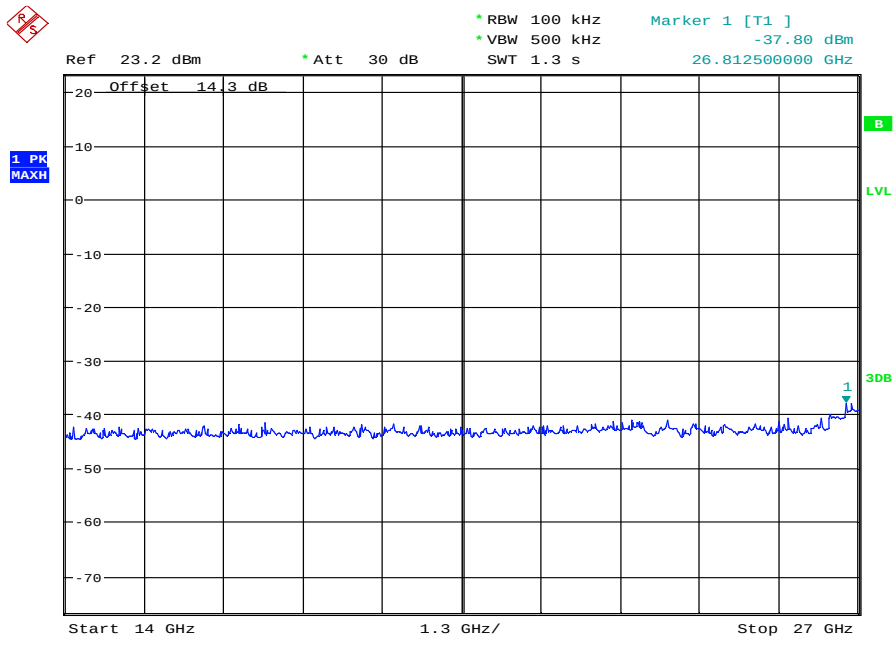


Plot 25: TX mode, highest channel, up to 14 GHz



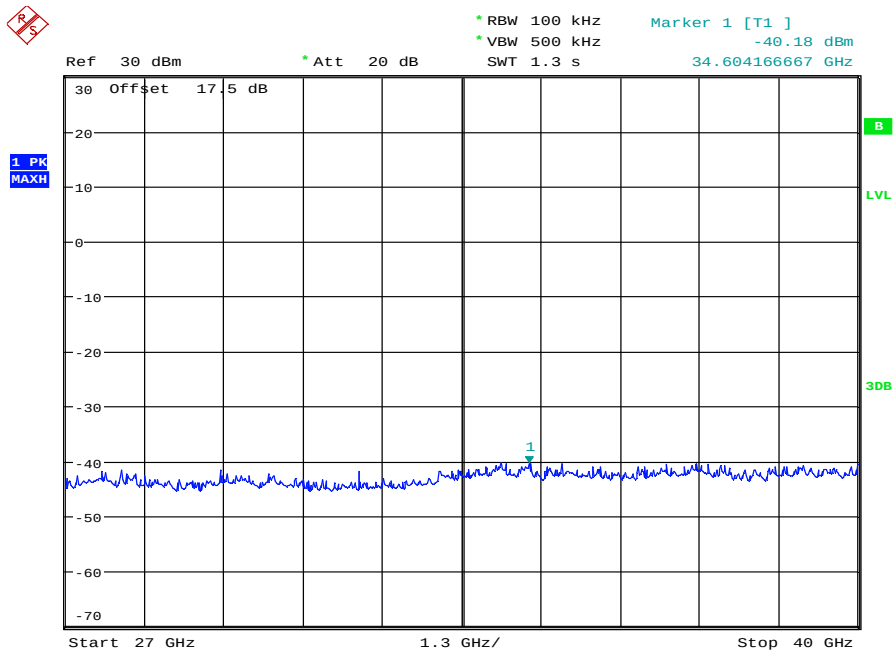
The peak at the beginning of the plot is the LO from the SA.

Plot 26: TX mode, highest channel, 14 GHz to 27 GHz



Date: 13.JUN.2011 08:43:11

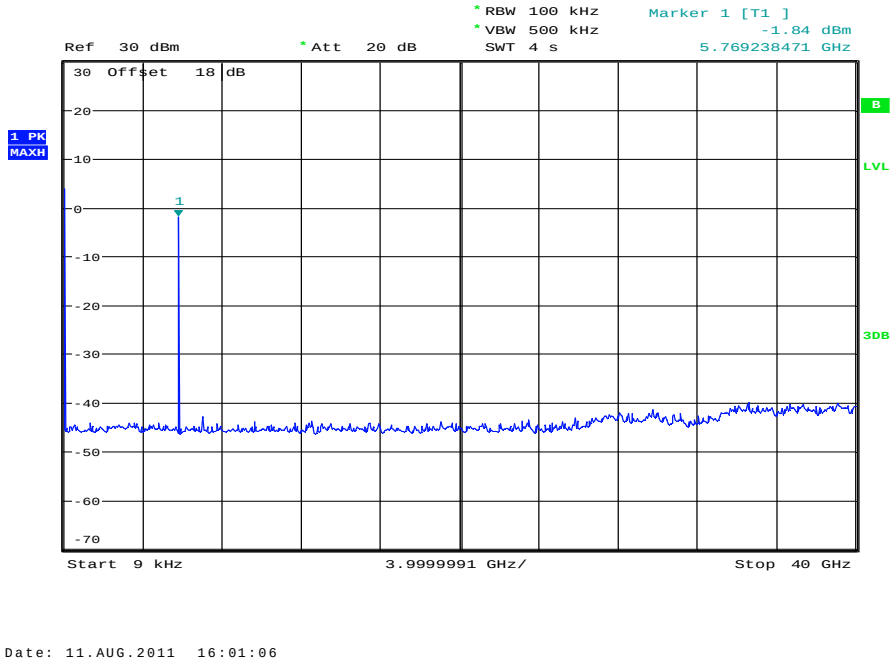
Plot 27: TX mode, highest channel, 27 GHz to 40 GHz



Date: 13.JUN.2011 08:58:24

Plot: 6MHz/16QAM (low power)

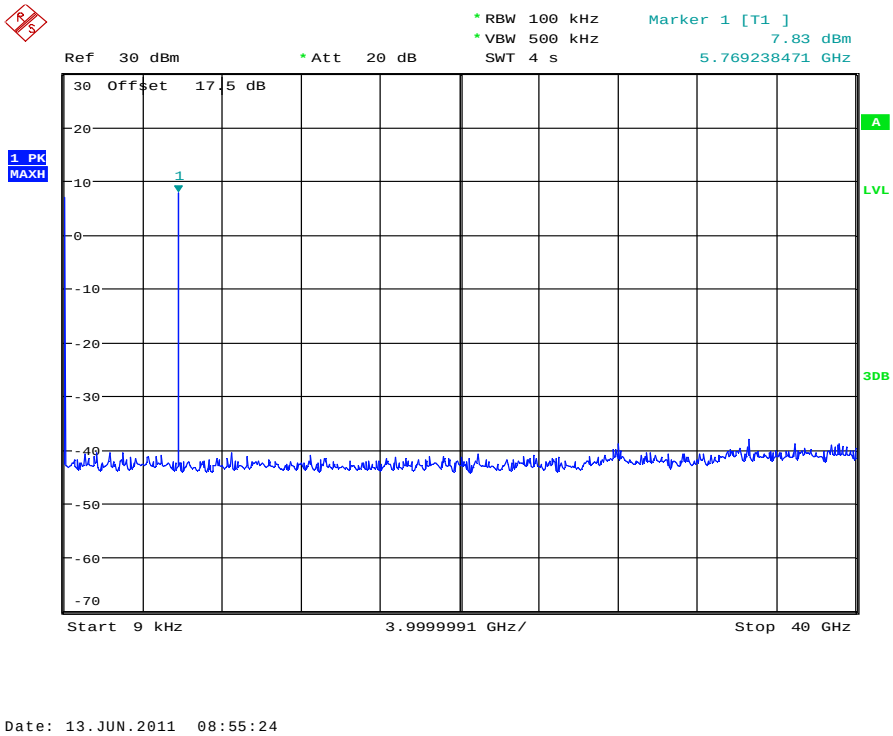
Plot 28: TX mode, middle channel



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

Plot: 7MHz/QPSK (low power)

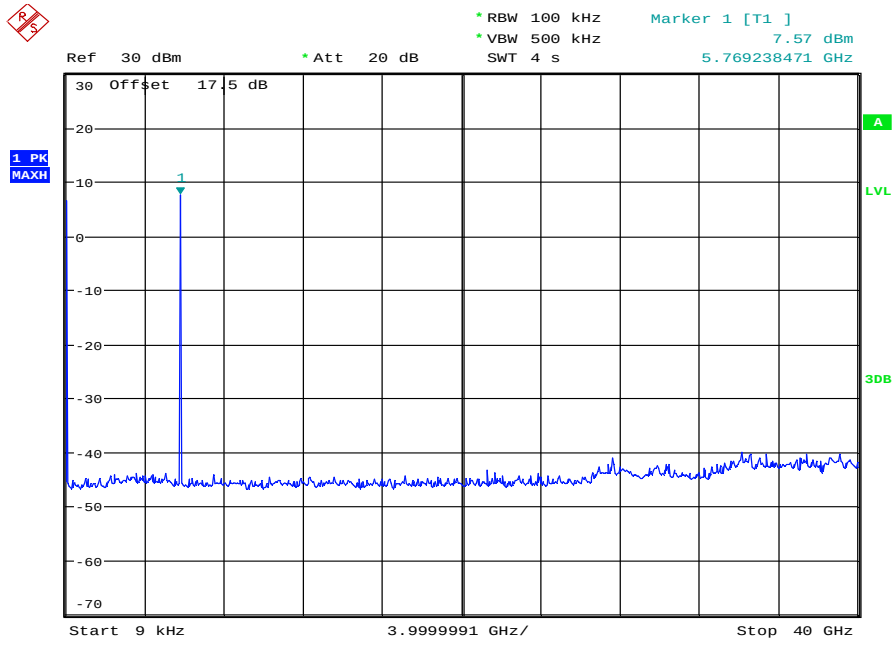
Plot 29: TX mode, middle channel



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

Plot: 8MHz/QPSK (low power)

Plot 30: TX mode, middle channel



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

9.10 TX spurious emissions radiated

Description:

TX spurious radiated is performed at channel frequencies 5728 MHz, 5787 MHz and 5847 MHz for the 6 MHz bandwidth and at channel frequencies 5729 MHz, 5787 MHz and 5846 MHz for the 7/8 MHz bandwidths. The measurement is repeated for the each modulation retained as worst case in term of output power, respectively 16 QAM for 6 MHz Bandwidth and QPSK 7/8 MHz.

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 25 GHz
Trace-Mode:	Max Hold
Measured Modulation	☒ QPSK ☒ 16QAM

The modulation with the highest output power was used to perform the transmitter spurious emissions. If spurious were detected a re-measurement was performed on the detected frequency with each modulation.

Limits:

FCC	IC	
CFR Part 15.247(d)	-/-	
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: 6 MHz/16-QAM, 7MHz QPSK and 8 MHz QPSK

TX Spurious Emissions Radiated [dBµV/m]								
Spurious emissions detected for 6 MHz bandwidth mode/16QAM								
5728 MHz			5787 MHz			5847 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
3564	PK	49.85	3564	PK	49.96	3564	PK	50.12
4211	PK	49.44	4211	PK	**52.15**	4211	PK	50.80
4374	PK	**52.12**	4374	PK	**52.91**	4374	PK	**52.96**
4860	PK	51.59	4860	PK	47.98	4860	PK	49.26
4941	PK	50.63	4941	PK	49.66	4941	PK	50.89
5022	PK	49.06	5022	PK	50.39	5022	PK	48.42
Also see plots								
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m]								
Spurious emissions detected for 7 MHz bandwidth mode/QPSK								
5729 MHz			5787 MHz			5846 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
3564	PK	48.49	3564	PK	49.62	3564	PK	49.65
4211	PK	50.81	4211	PK	50.62	4211	PK	50.40
4374	PK	**53.85**	4374	PK	51.59	4374	PK	51.57
4860	PK	49.94	4860	PK	48.51	4860	PK	50.50
4941	PK	49.47	4941	PK	49.50	4941	PK	51.11
5022	PK	48.65	5022	PK	49.42	5022	PK	49.70
Also see plots								
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBµV/m]								
Spurious emissions detected for 8 MHz bandwidth mode/QPSK								
5729 MHz			5787 MHz			5846 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
3564	PK	50.00	3564	PK	49.80	3564	PK	49.48
4211	PK	50.88	4211	PK	50.20	4211	PK	**52.92**
4374	PK	**53.51**	4374	PK	**52.90**	4374	PK	**53.39**
4860	PK	**52.67**	4860	PK	49.24	4860	PK	50.89
4941	PK	50.18	4941	PK	50.54	4941	PK	50.41
5022	PK	47.87	5022	PK	49.53	5022	PK	48.77
Also see plots								
Measurement uncertainty			± 3 dB					

Result: The result of the measurement is passed.

Plots: 6MHz/16QAM

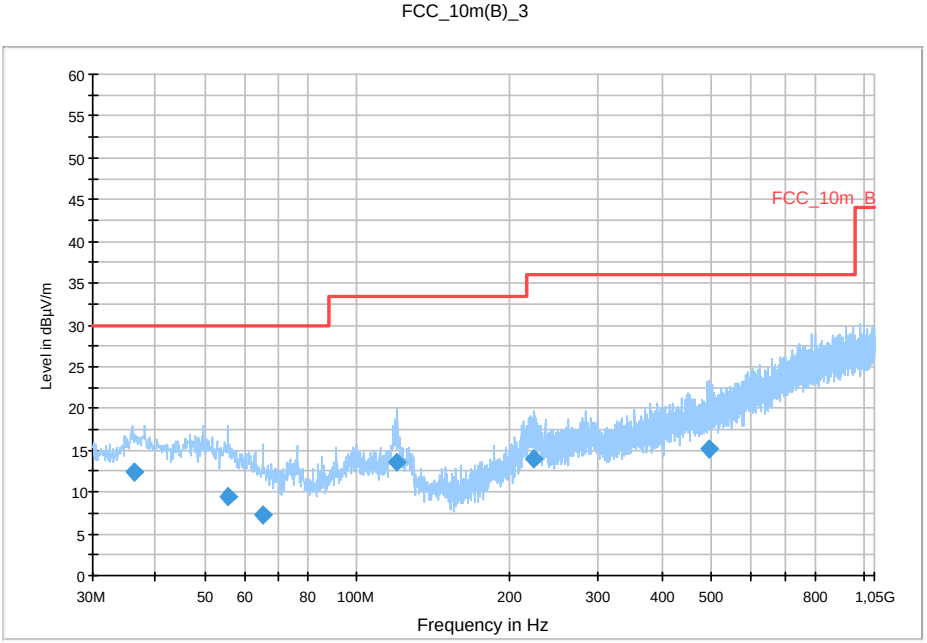
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	16QAM, BW 6MHz, TX 5728 MHz; CH 1; 1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



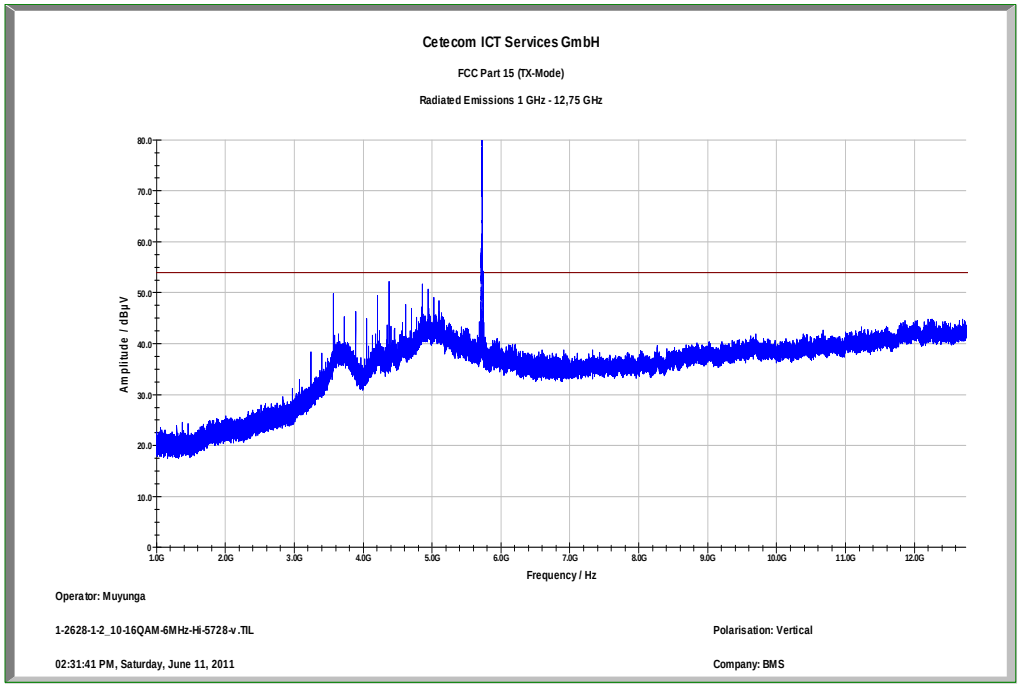
Frequency MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
36.268650	12.5	1000.0	120.000	124.0	V	283.0	13.1	17.5	30.0
55.642950	9.5	1000.0	120.000	170.0	H	260.0	12.7	20.5	30.0
65.146800	7.3	1000.0	120.000	170.0	V	82.0	10.4	22.7	30.0
119.723100	13.6	1000.0	120.000	170.0	V	-7.0	10.3	19.9	33.5
223.501650	14.0	1000.0	120.000	170.0	V	8.0	12.5	22.0	36.0
493.875450	15.1	1000.0	120.000	98.0	H	172.0	18.6	20.9	36.0

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

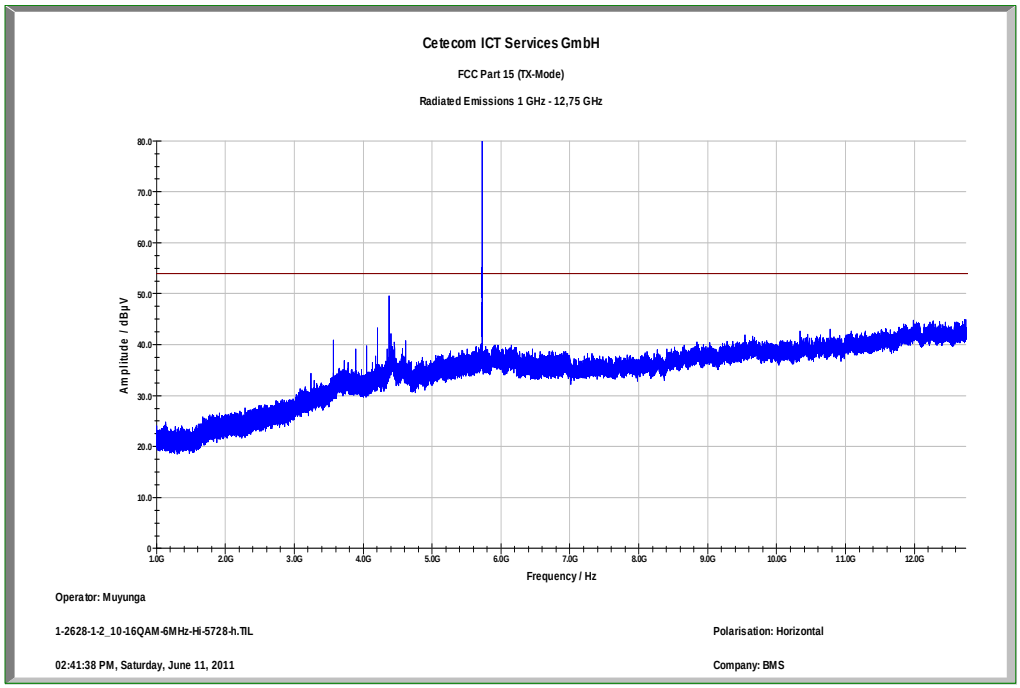
	Subrange 1
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

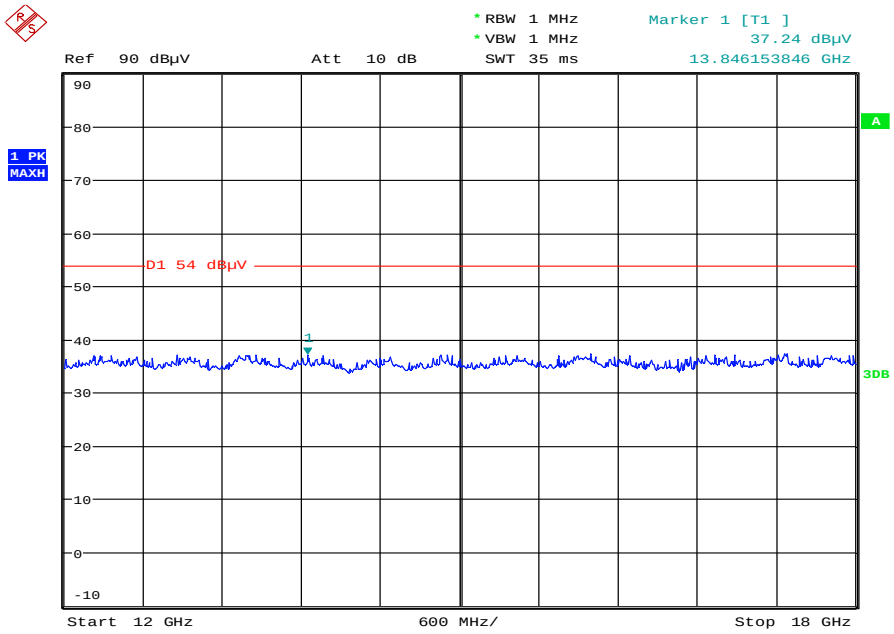
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization



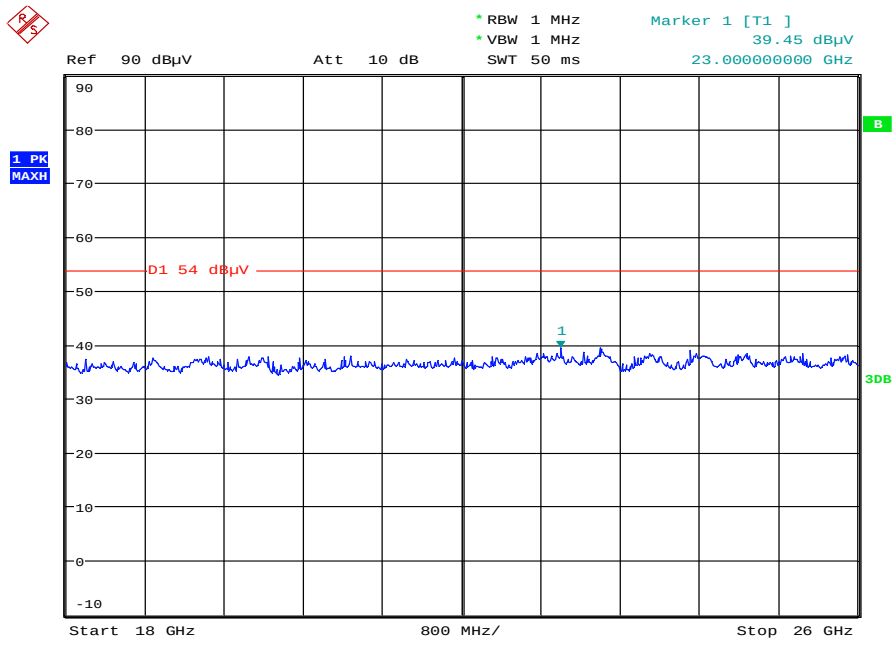
Plot 3: Lowest channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 4: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

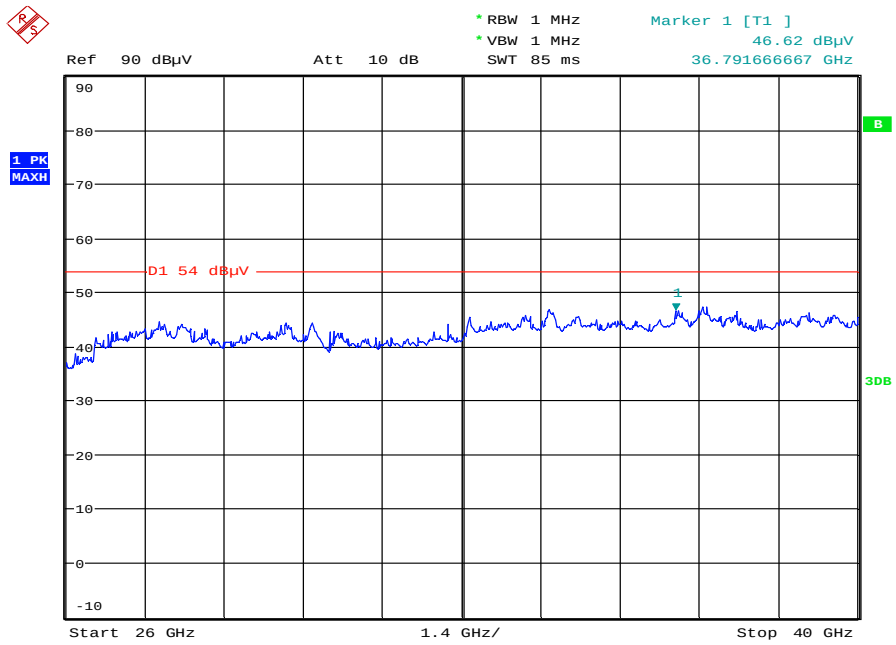


Plot 5: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 13.JUN.2011 09:39:46

Plot 6: Lowest channel, 26 GHz to 40 GHz, vertical & horizontal polarization, valid for all channels



Date: 13.JUN.2011 09:11:25

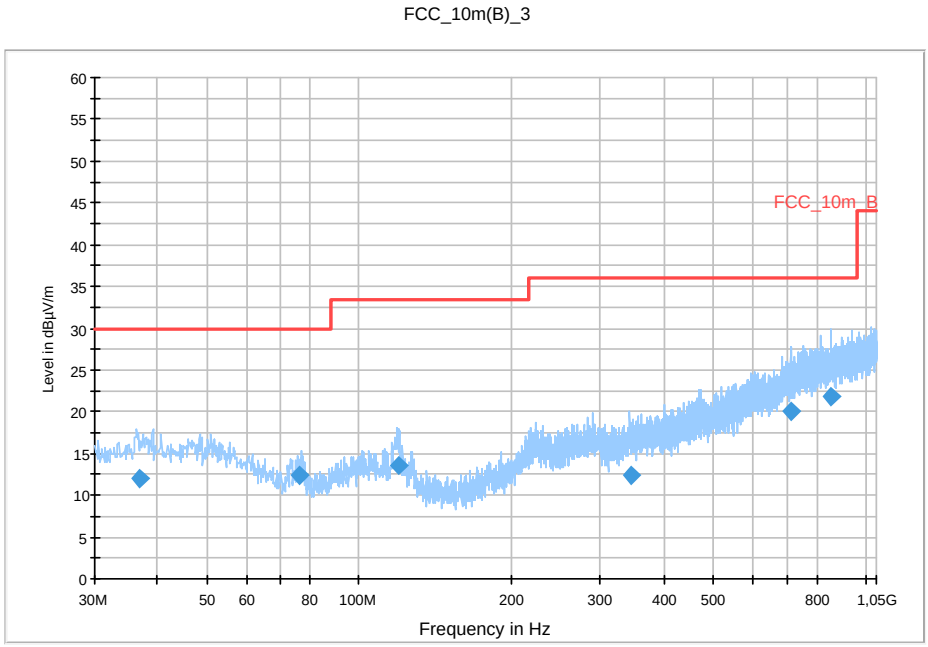
Plot 7: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	16QAM, BW 6MHz, TX 5787 MHz; CH 1; 1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

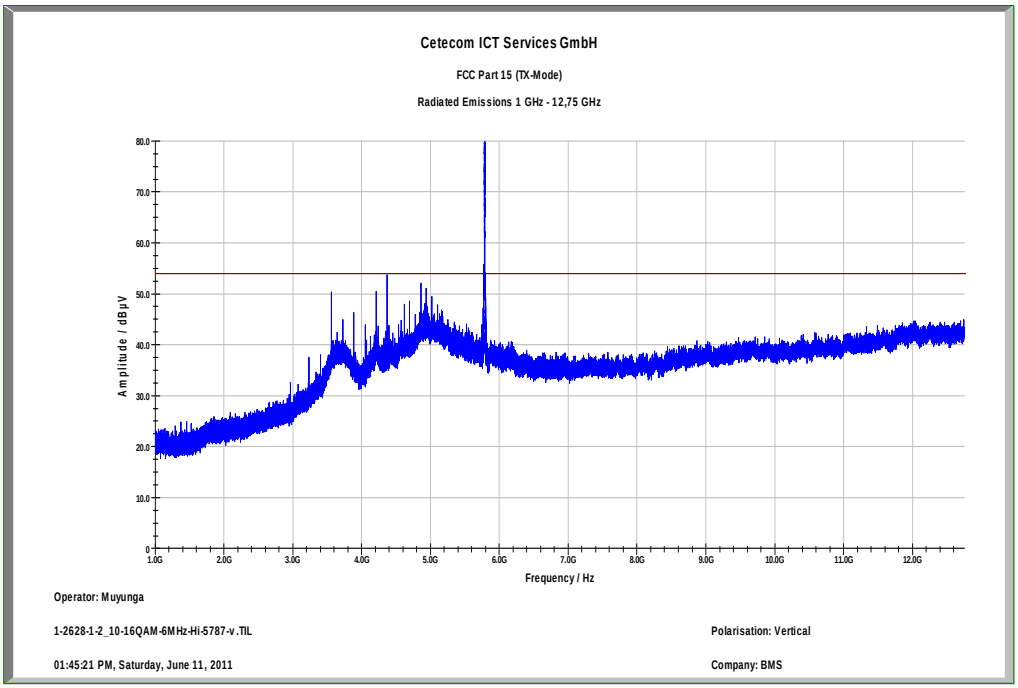
Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



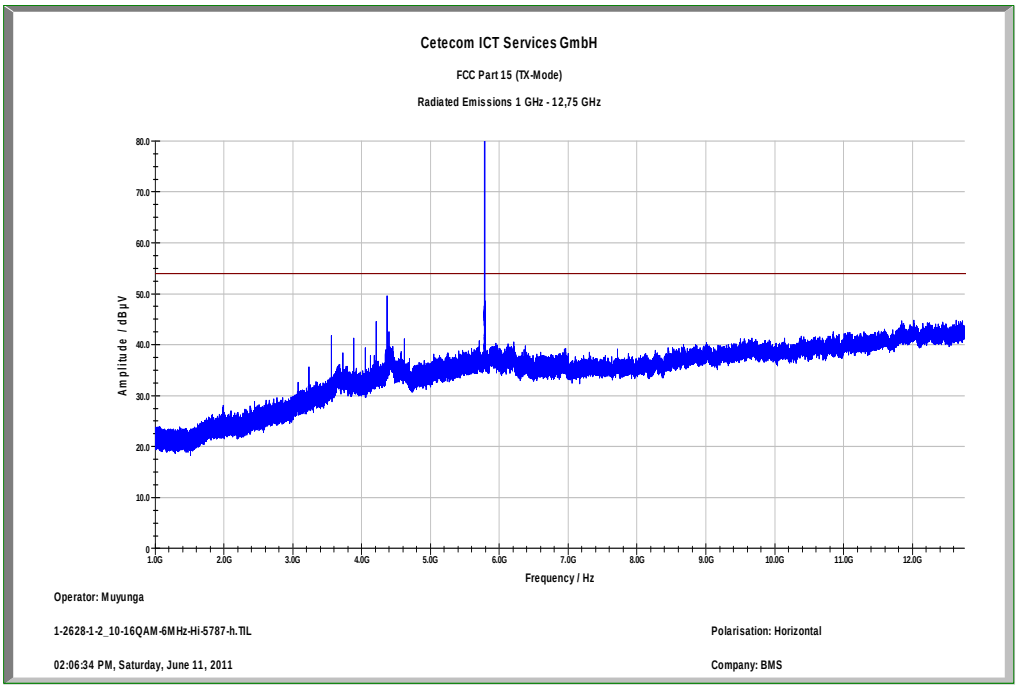
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
36.889950	12.0	1000.0	120.000	153.0	V	8.0	13.2	18.0	30.0
76.019850	12.3	1000.0	120.000	174.0	V	8.0	9.2	17.7	30.0
119.232300	13.7	1000.0	120.000	98.0	V	82.0	10.3	19.8	33.5
343.602450	12.5	1000.0	120.000	98.0	H	8.0	15.9	23.5	36.0
715.367700	20.1	1000.0	120.000	174.0	H	106.0	22.9	15.9	36.0
856.887150	21.9	1000.0	120.000	174.0	H	106.0	24.6	14.1	36.0

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

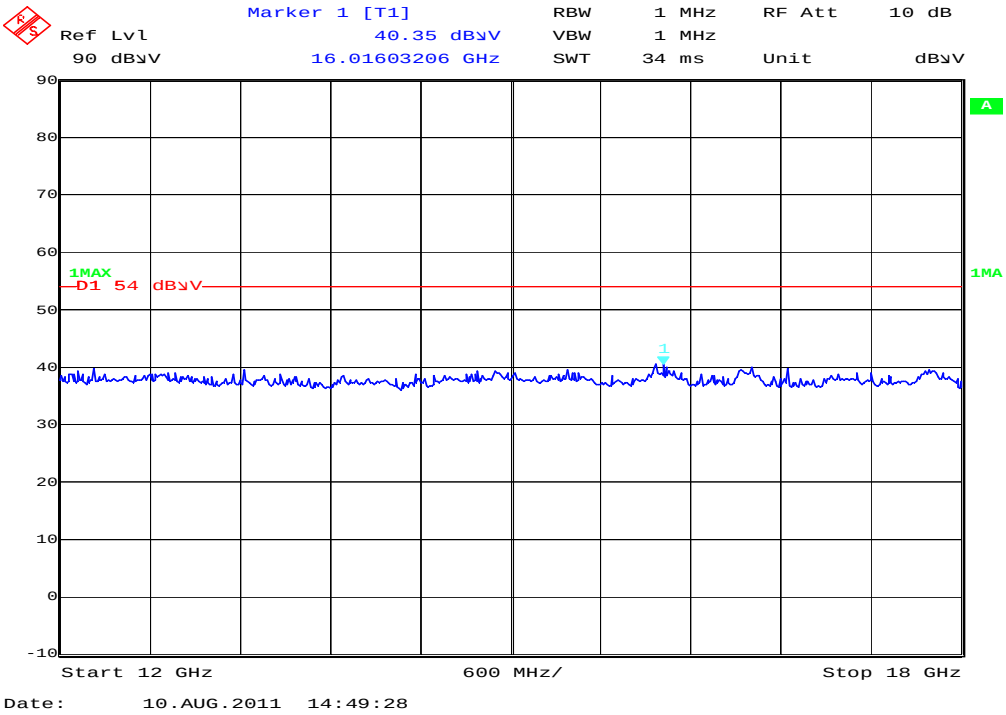
Plot 8: Middle channel, 1 GHz to 12.75 GHz, vertical polarization



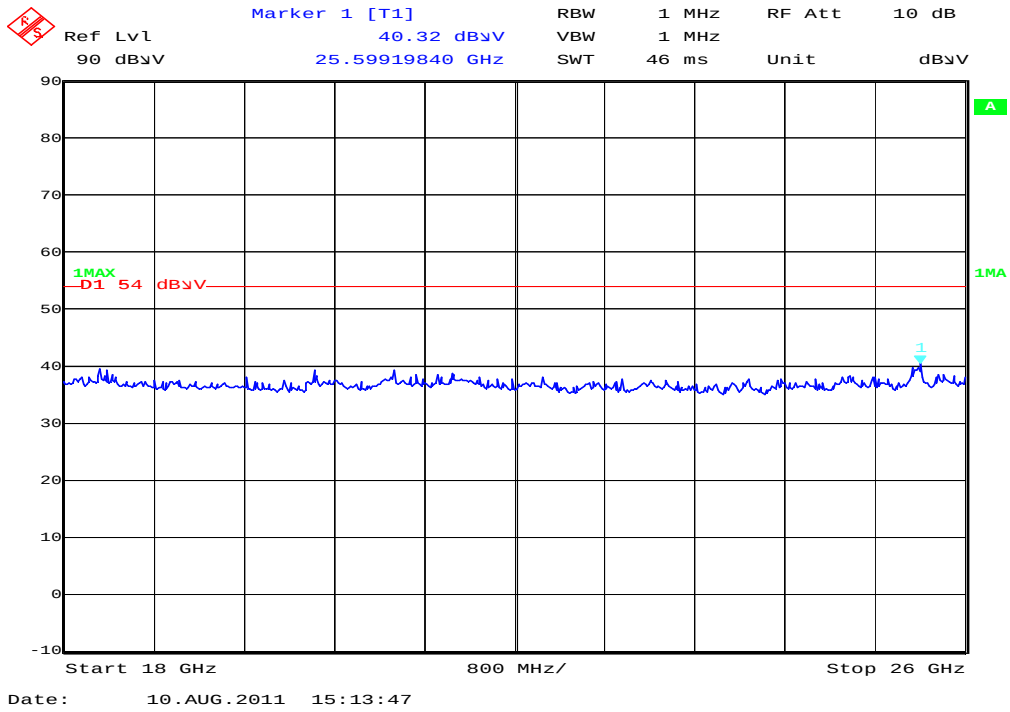
Plot 9: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 10: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 11: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



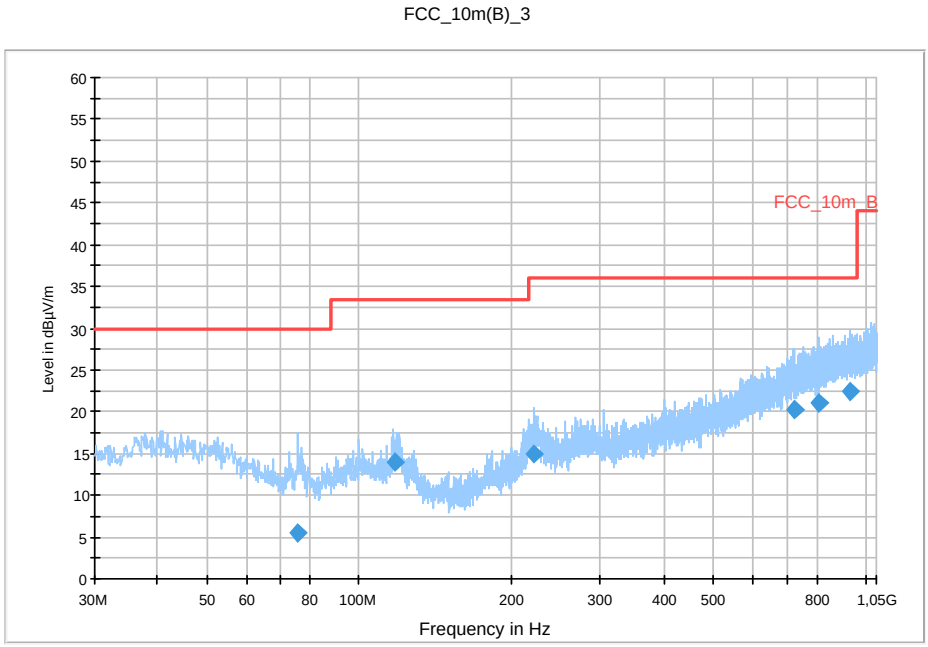
Plot 12: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	16QAM, BW 6MHz, TX 5874 MHz; CH 1; 1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

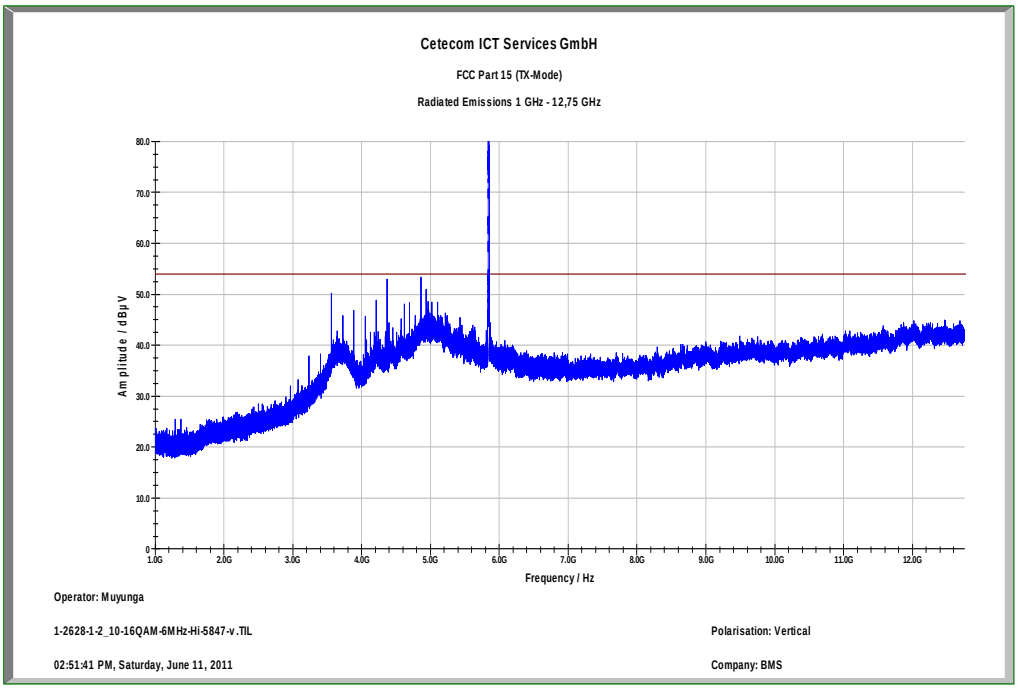
Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



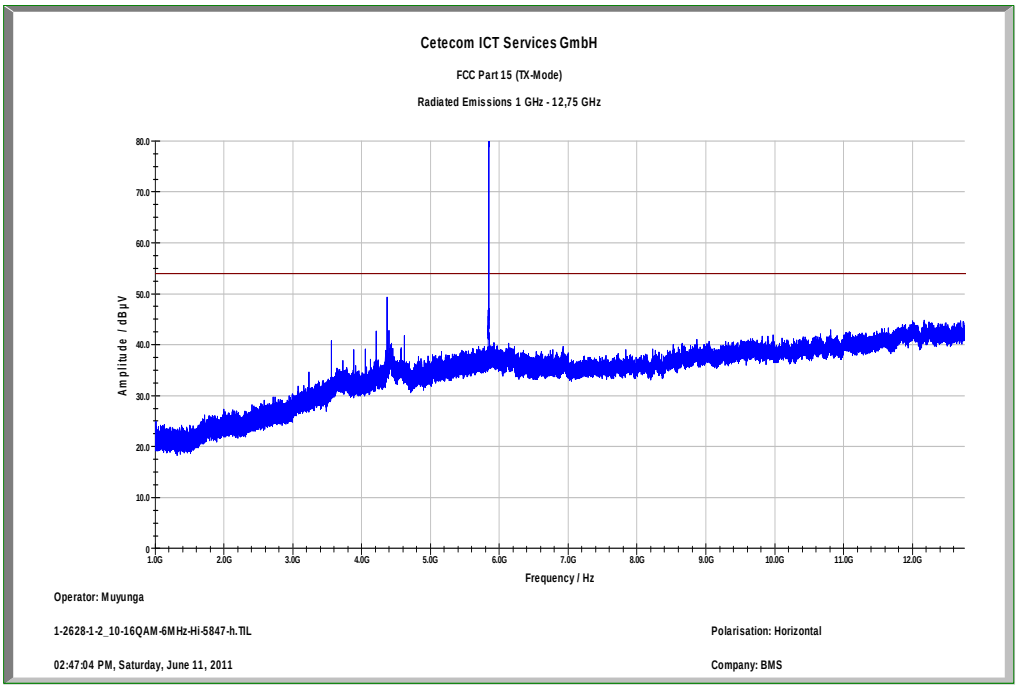
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
75.358200	5.6	1000.0	120.000	124.0	H	82.0	9.2	24.4	30.0
117.765900	13.9	1000.0	120.000	170.0	V	106.0	10.4	19.6	33.5
221.600250	15.0	1000.0	120.000	98.0	V	-4.0	12.4	21.0	36.0
723.919350	20.2	1000.0	120.000	112.0	V	106.0	23.1	15.8	36.0
808.131300	21.0	1000.0	120.000	170.0	H	170.0	23.9	15.0	36.0
931.320600	22.3	1000.0	120.000	124.0	V	274.0	25.3	13.7	36.0

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

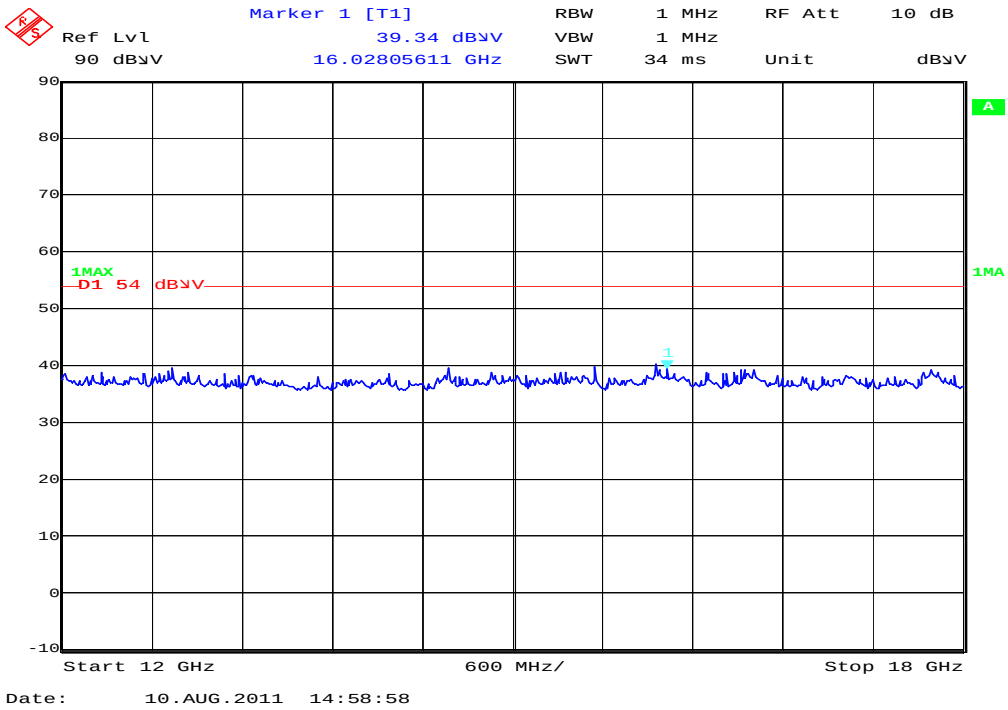
Plot 13: Highest channel, 1 GHz to 12.75 GHz, vertical polarization



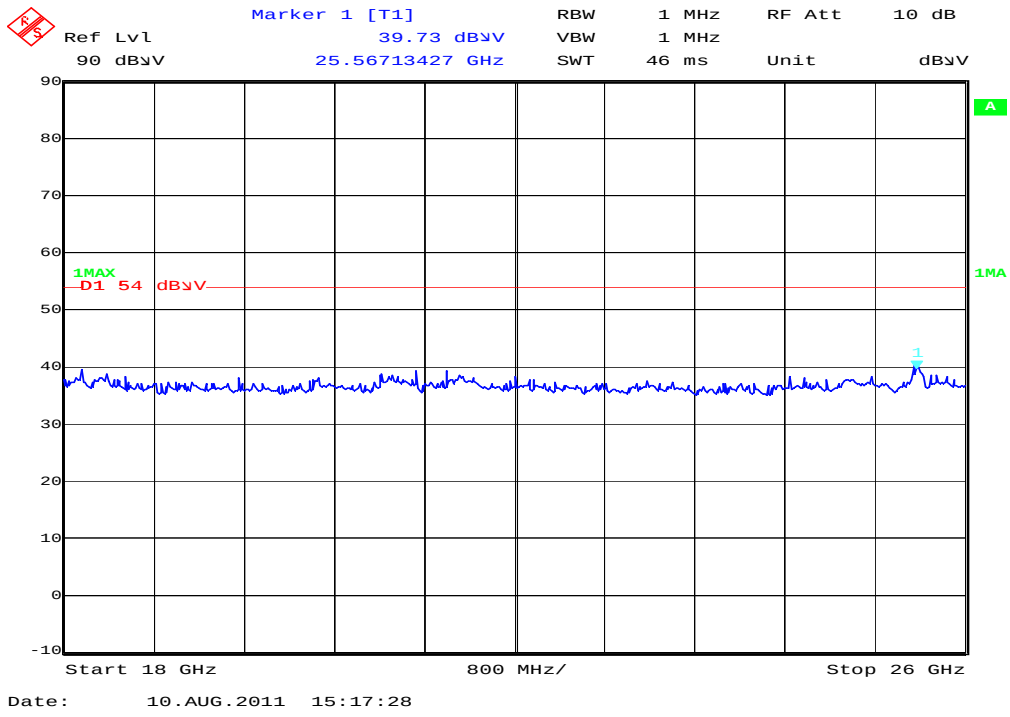
Plot 14: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 15: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 16: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plots: 7MHz/QPSK

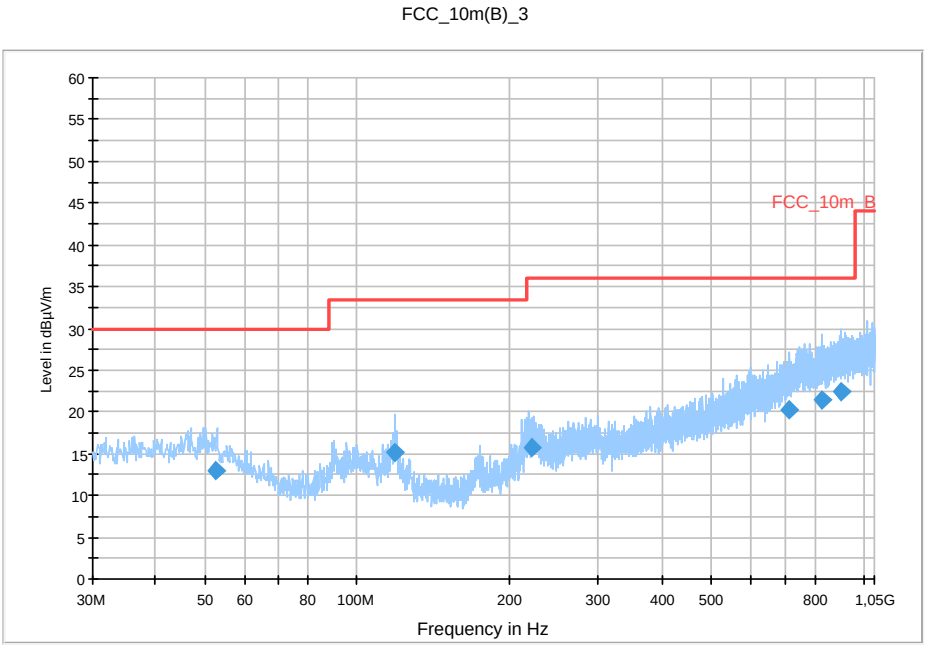
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	QPSK, BW 7MHz, TX 5729 MHz; CH 1; 1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

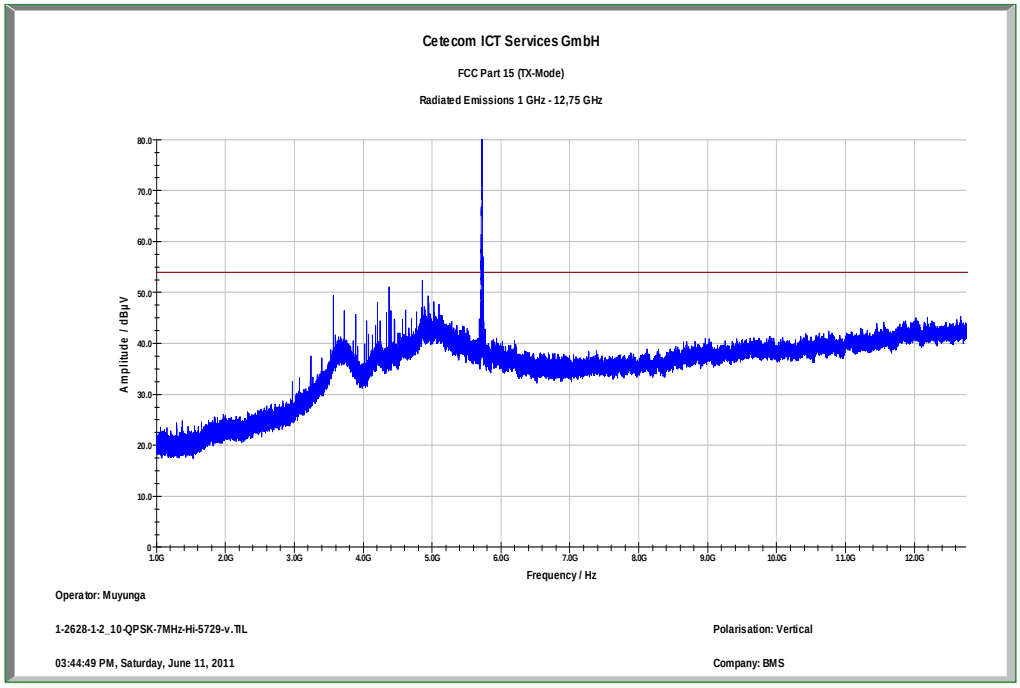
Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



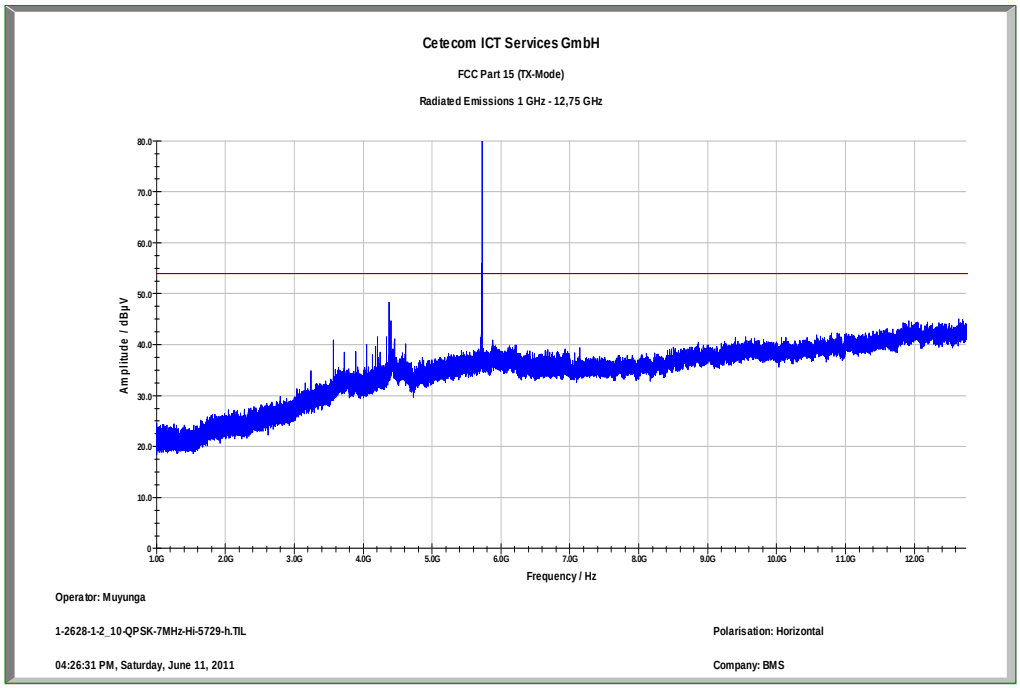
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
52.380450	12.9	1000.0	120.000	98.0	V	-6.0	13.1	17.1	30.0
118.746000	15.1	1000.0	120.000	152.0	V	196.0	10.3	18.4	33.5
220.827600	15.6	1000.0	120.000	174.0	V	-6.0	12.4	20.4	36.0
714.642750	20.2	1000.0	120.000	174.0	H	270.0	22.8	15.8	36.0
828.306450	21.5	1000.0	120.000	98.0	H	273.0	24.2	14.5	36.0
900.955800	22.5	1000.0	120.000	142.0	V	-6.0	25.2	13.5	36.0

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

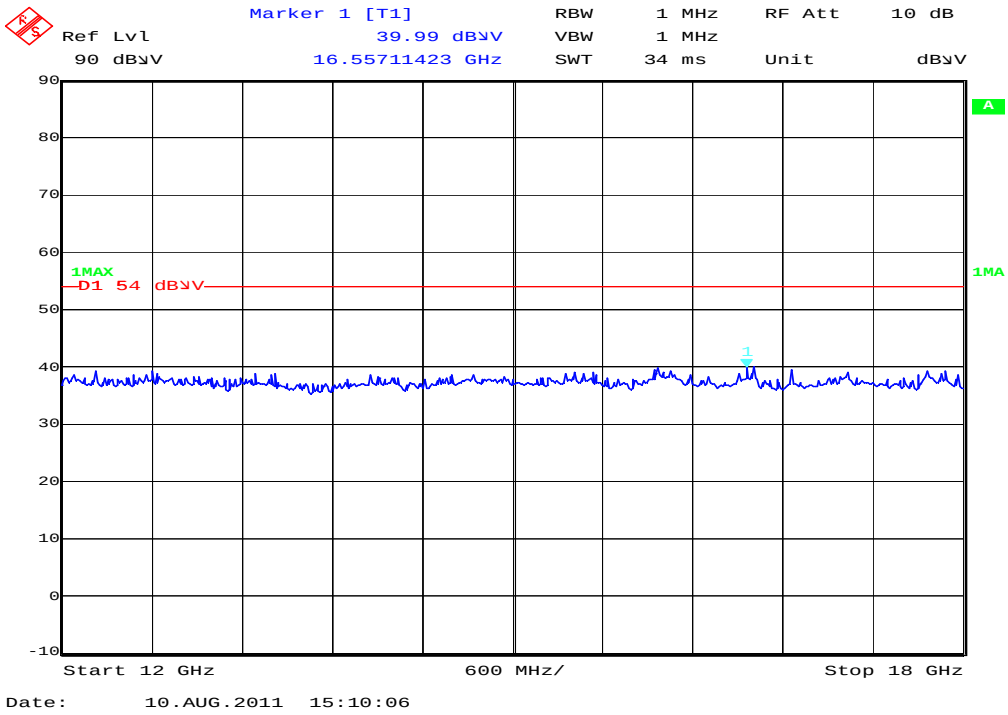
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization



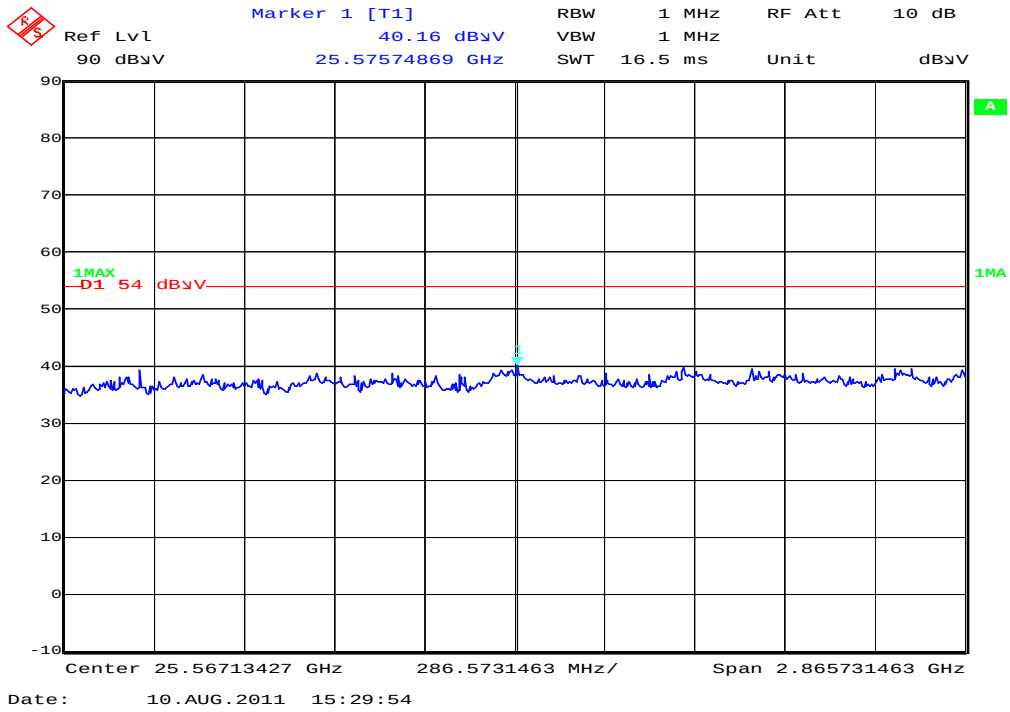
Plot 3: Lowest channel, 1 GHz to 12.75 GHz, horizontal polarization



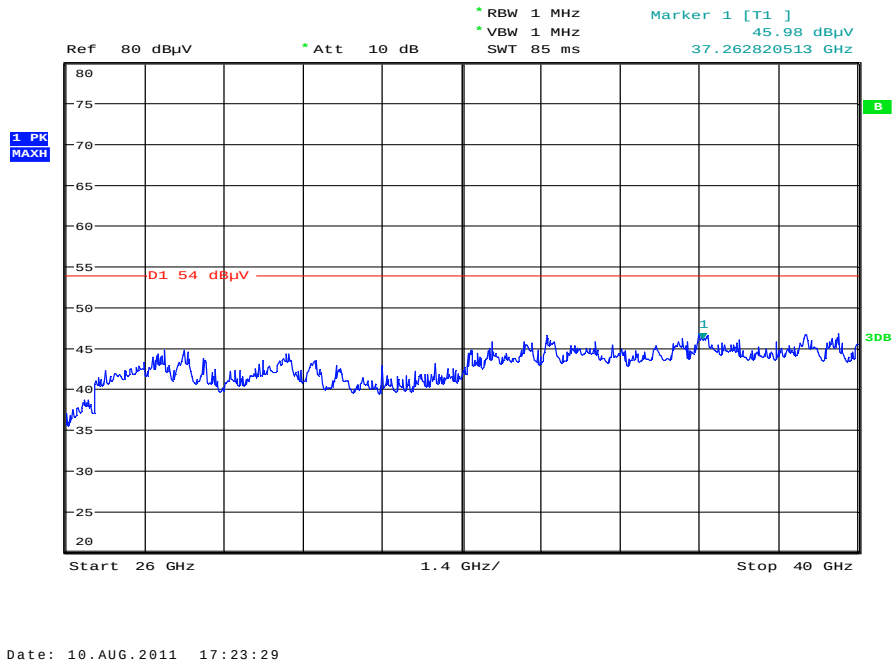
Plot 4: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 5: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 6: Lowest channel, 26 GHz to 40 GHz, vertical & horizontal polarization, valid for all channels



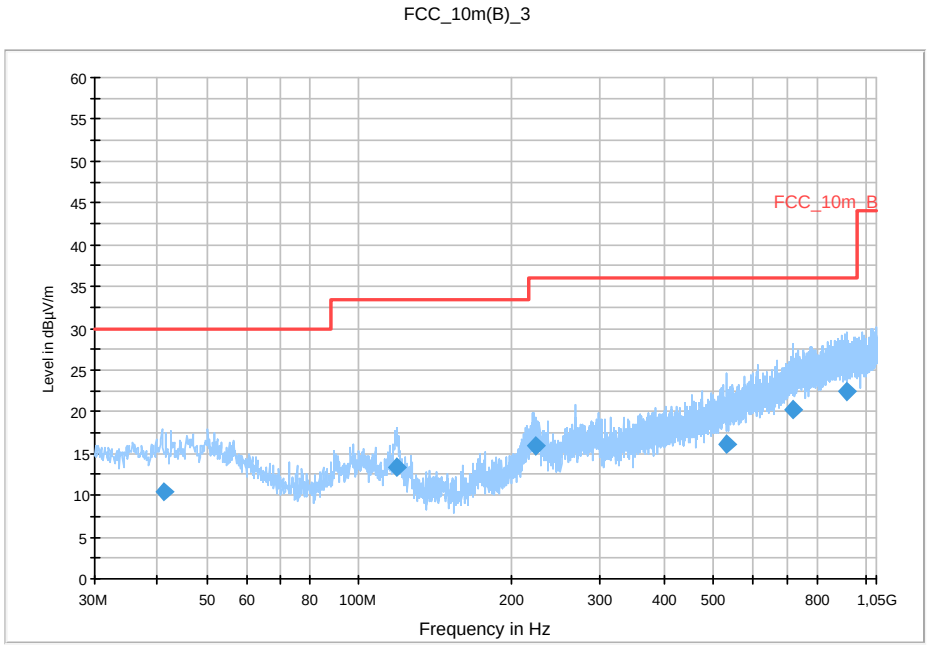
Plot 7: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	QPSK BW 7MHz, TX 5787 MHz; CH 1; 1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

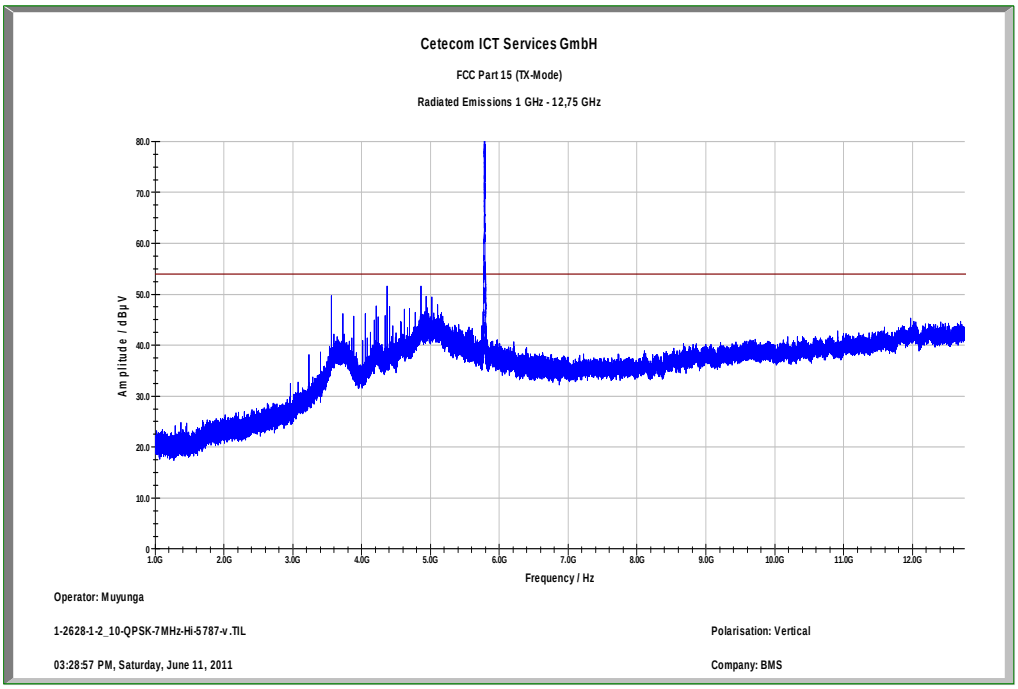
Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



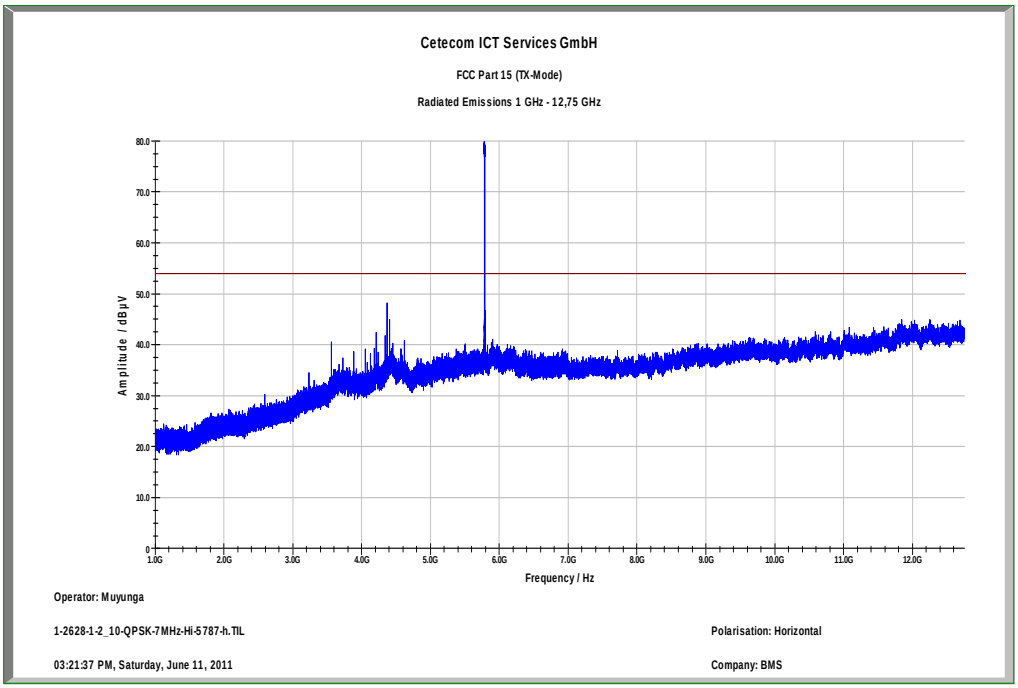
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
41.158200	10.3	1000.0	120.000	170.0	V	8.0	13.4	19.7	30.0
118.871700	13.3	1000.0	120.000	98.0	V	196.0	10.3	20.2	33.5
223.317900	16.0	1000.0	120.000	120.0	V	-2.0	12.5	20.0	36.0
531.295200	16.1	1000.0	120.000	98.0	V	196.0	19.1	19.9	36.0
721.102950	20.3	1000.0	120.000	98.0	H	196.0	23.0	15.7	36.0
916.564950	22.3	1000.0	120.000	170.0	V	284.0	25.3	13.7	36.0

Subrange 1	
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

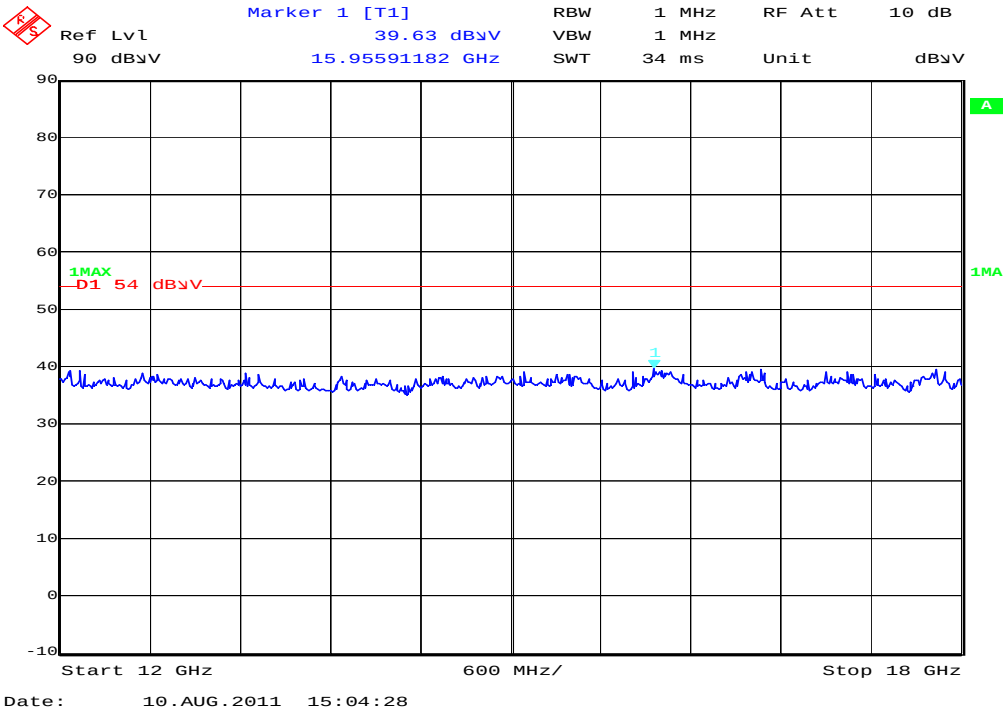
Plot 8: Middle channel, 1 GHz to 12.75 GHz, vertical polarization



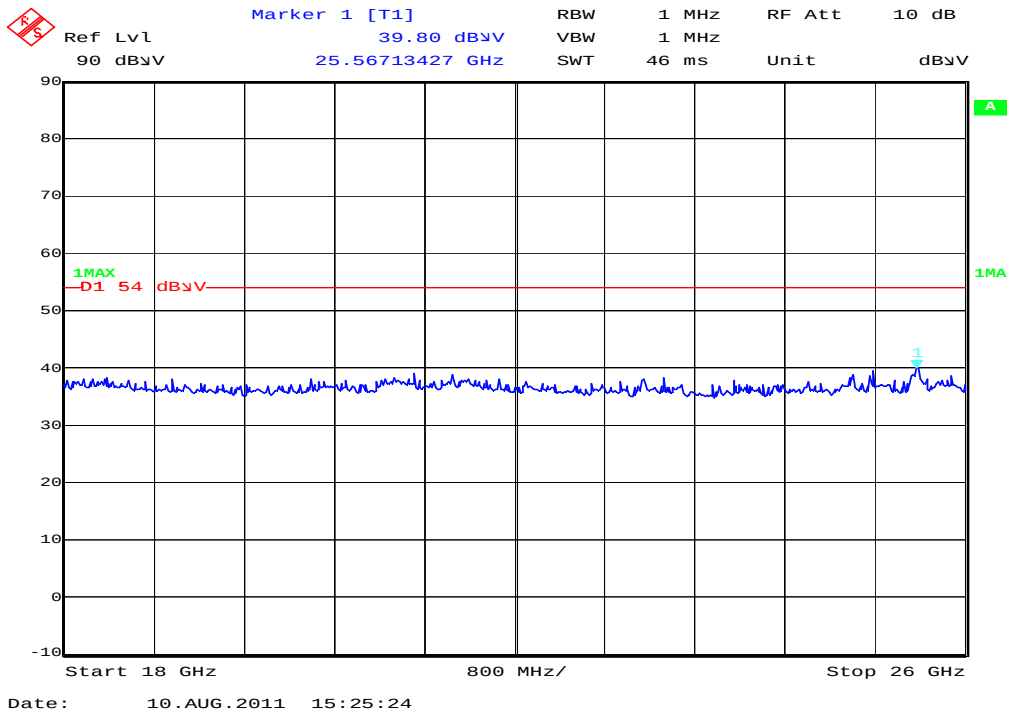
Plot 9: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 10: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 11: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



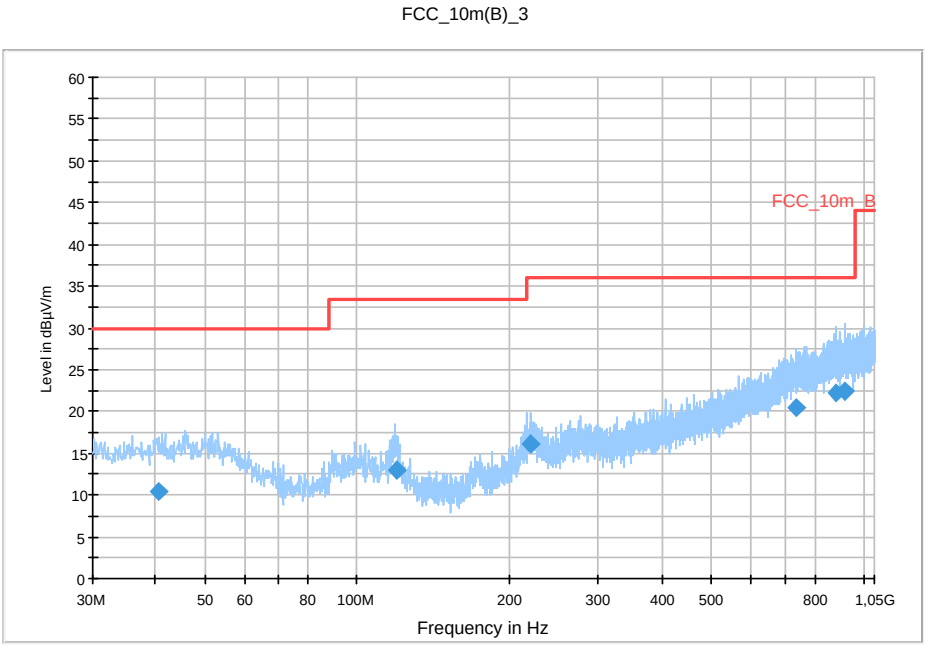
Plot 12: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	QPSK, BW 7MHz, TX 5846 MHz; CH 1; 1920x1080p
Operator Name:	LANGER
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

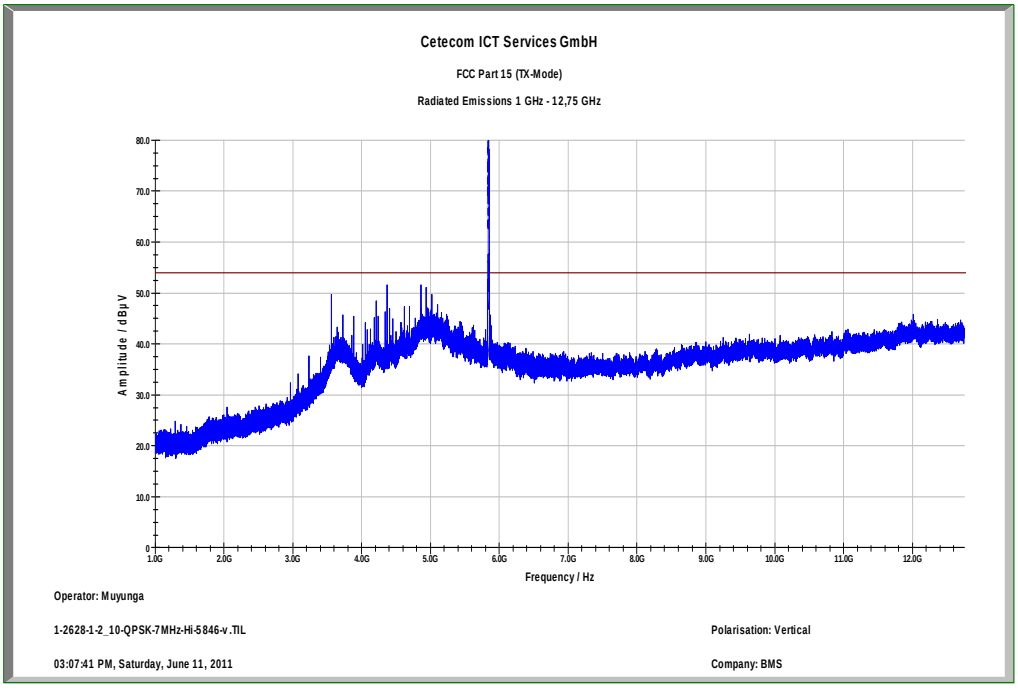
Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



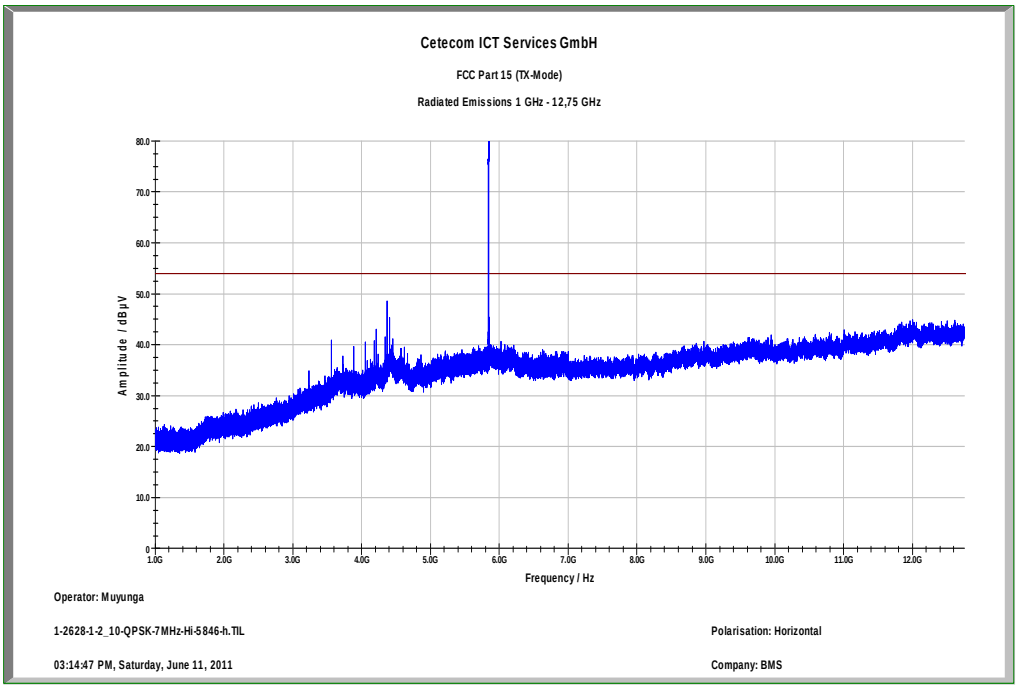
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
40.639350	10.5	1000.0	120.000	170.0	V	182.0	13.4	19.5	30.0
119.331300	13.1	1000.0	120.000	170.0	V	283.0	10.3	20.4	33.5
219.932100	16.1	1000.0	120.000	113.0	V	-6.0	12.4	19.9	36.0
734.250300	20.5	1000.0	120.000	170.0	H	8.0	23.3	15.5	36.0
885.417750	22.3	1000.0	120.000	170.0	H	185.0	25.0	13.7	36.0
917.699400	22.4	1000.0	120.000	170.0	H	82.0	25.3	13.6	36.0

	Subrange 1
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

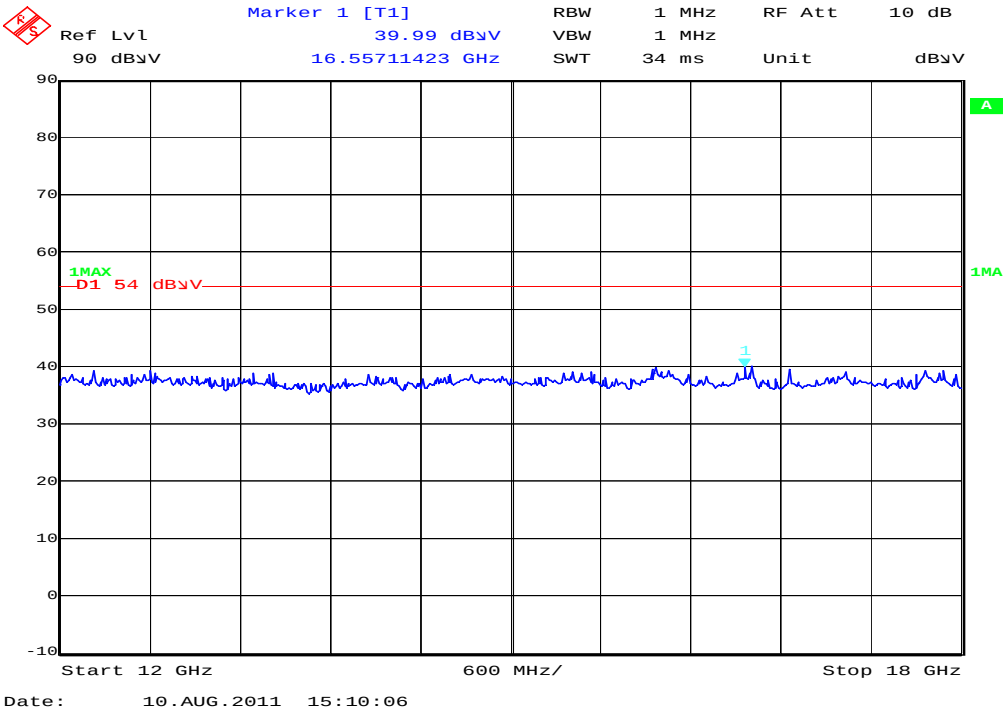
Plot 13: Highest channel, 1 GHz to 12.75 GHz, vertical polarization



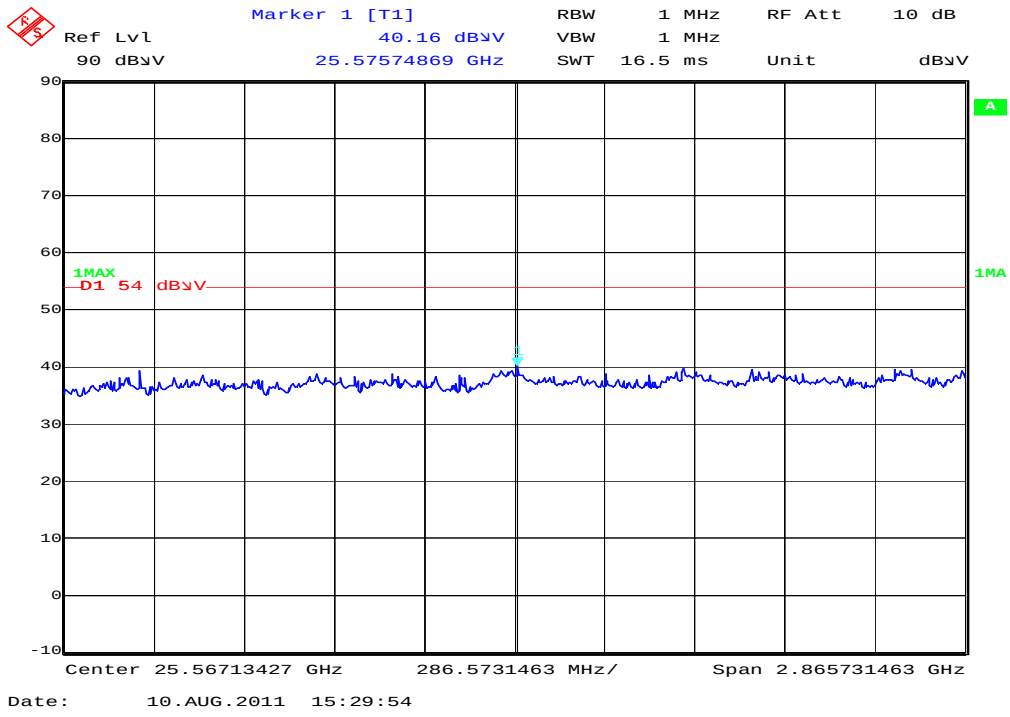
Plot 14: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 15: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 16: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plots: 8MHz/QPSK

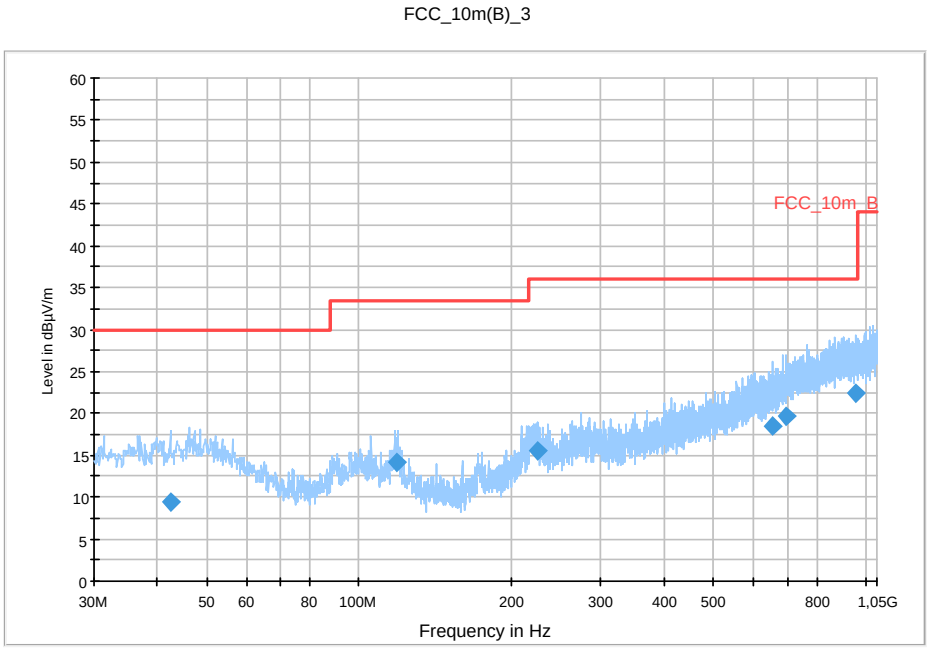
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	QPSK, BW 8MHz, TX 5729 MHz; CH1;1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
42.478350	9.5	1000.0	120.000	105.0	V	12.0	13.3	20.5	30.0
119.001300	14.2	1000.0	120.000	98.0	V	176.0	10.3	19.3	33.5
224.455650	15.5	1000.0	120.000	98.0	V	12.0	12.5	20.5	36.0
652.525650	18.5	1000.0	120.000	170.0	H	196.0	21.2	17.5	36.0
695.588250	19.7	1000.0	120.000	98.0	V	184.0	22.4	16.3	36.0
955.786200	22.4	1000.0	120.000	170.0	H	196.0	25.4	13.6	36.0

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

	Subrange 1
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

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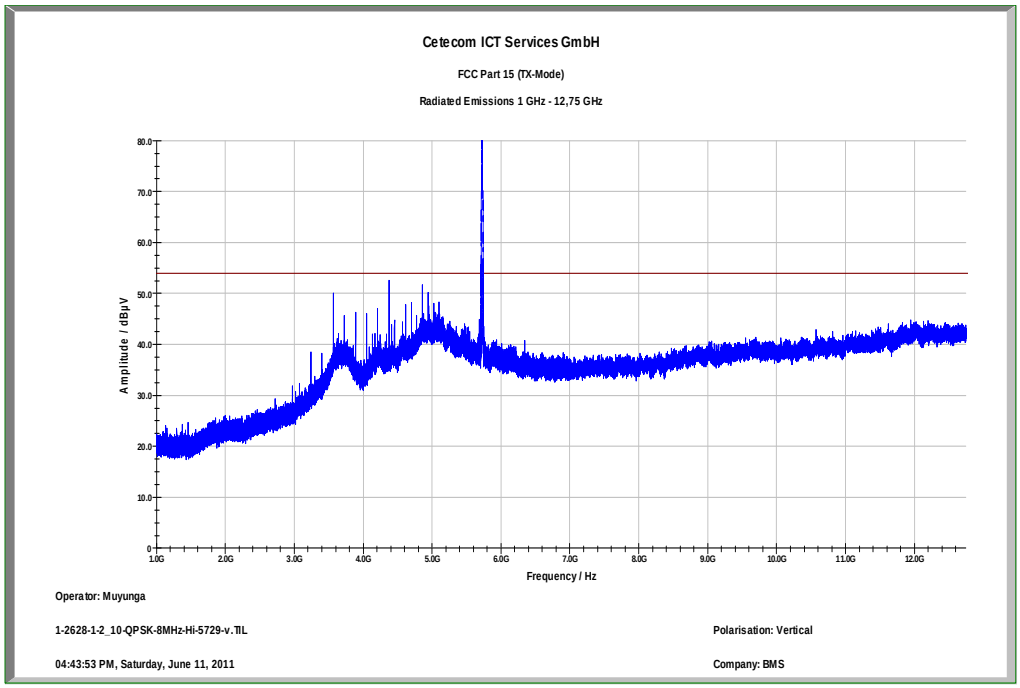
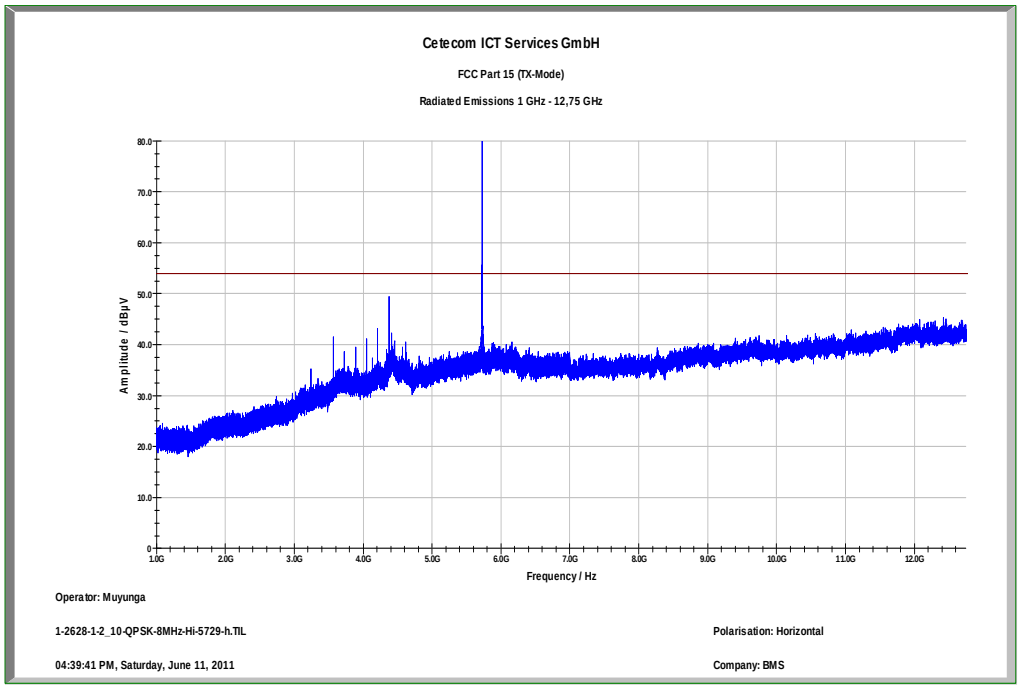
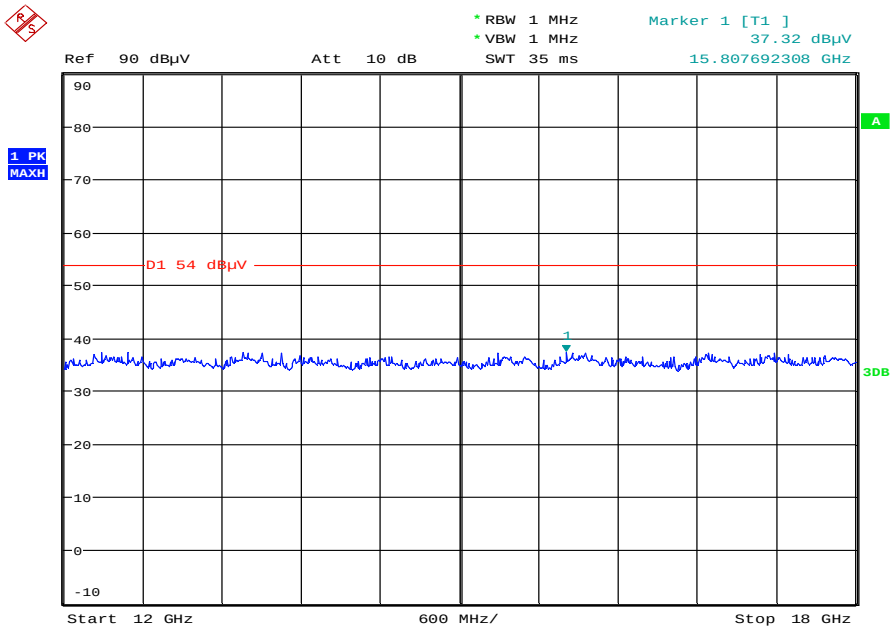
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical polarization



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

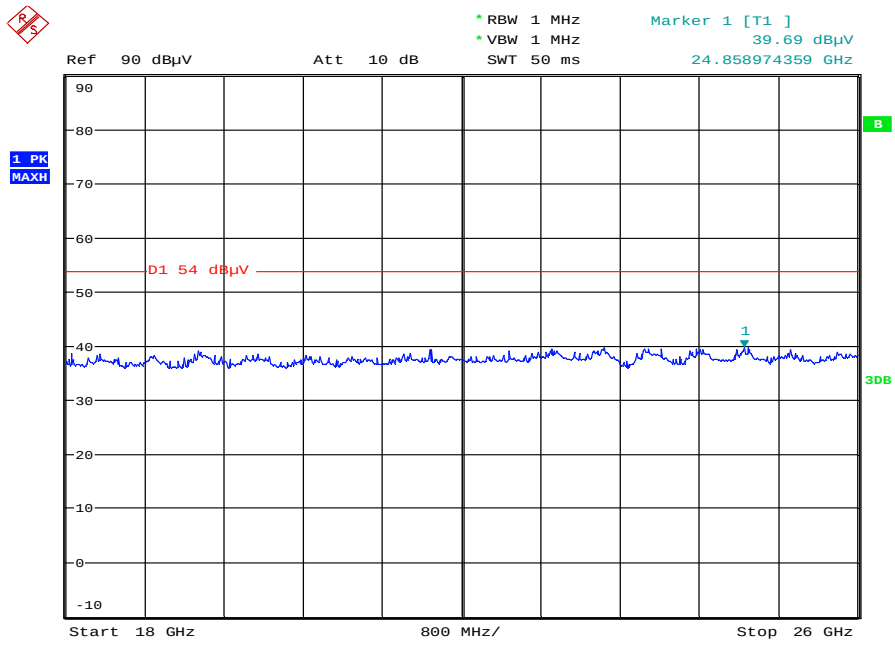


Plot 4: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



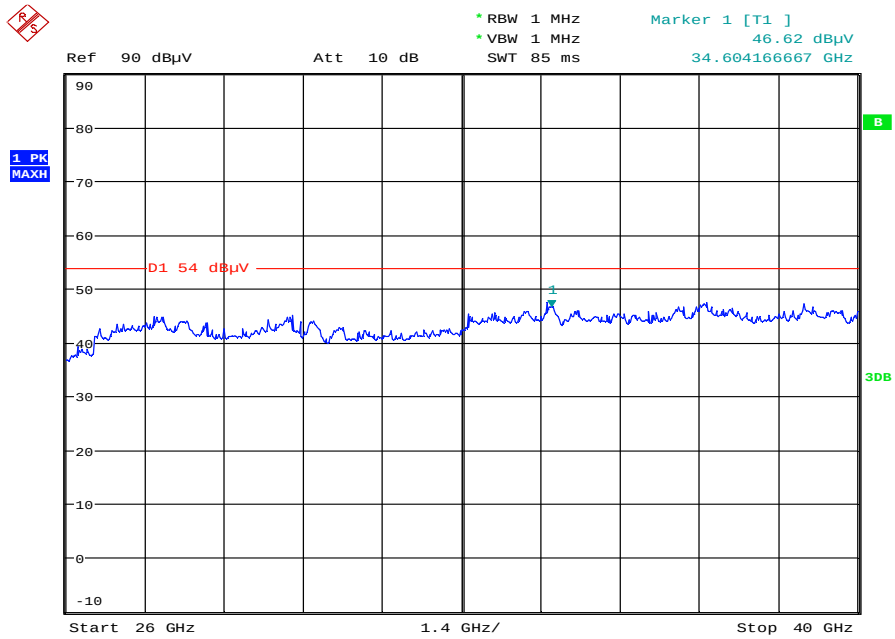
Date: 13.JUN.2011 09:22:58

Plot 5: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 13.JUN.2011 09:22:23

Plot 6: Lowest channel, 26 GHz to 40 GHz, vertical & horizontal polarization, valid for all channels



Date: 13.JUN.2011 09:08:37

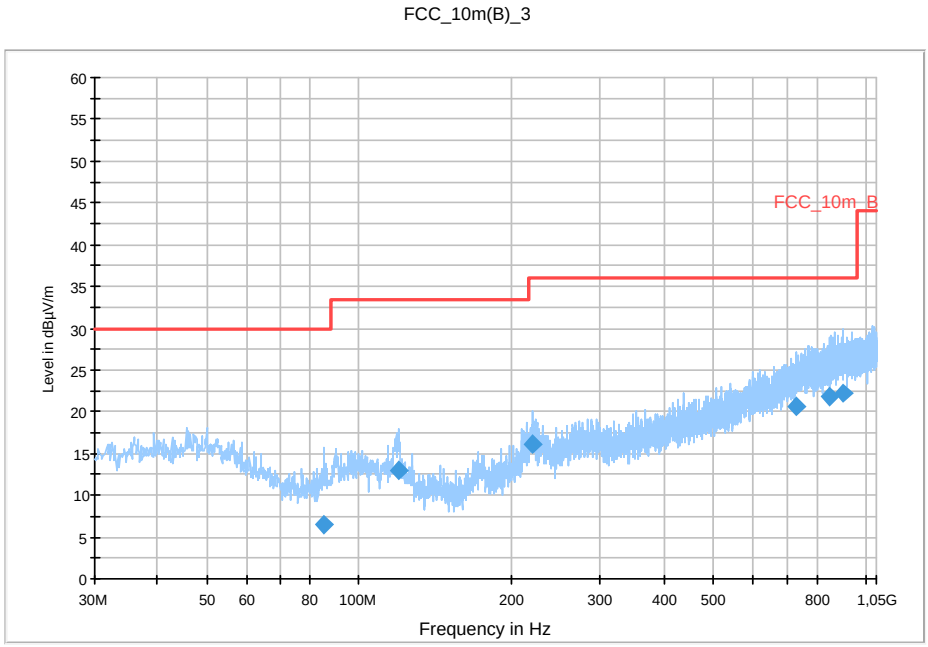
Plot 7: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	QPSK, BW 8MHz, TX 5787 MHz; CH1;1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
85.045050	6.5	1000.0	120.000	98.0	H	106.0	9.8	23.5	30.0
119.512800	13.0	1000.0	120.000	156.0	V	283.0	10.3	20.5	33.5
219.361200	16.1	1000.0	120.000	98.0	V	12.0	12.4	19.9	36.0
732.664950	20.6	1000.0	120.000	143.0	H	196.0	23.3	15.4	36.0
845.276100	21.8	1000.0	120.000	170.0	V	268.0	24.5	14.2	36.0
903.801000	22.3	1000.0	120.000	170.0	H	196.0	25.2	13.7	36.0

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

	Subrange 1
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

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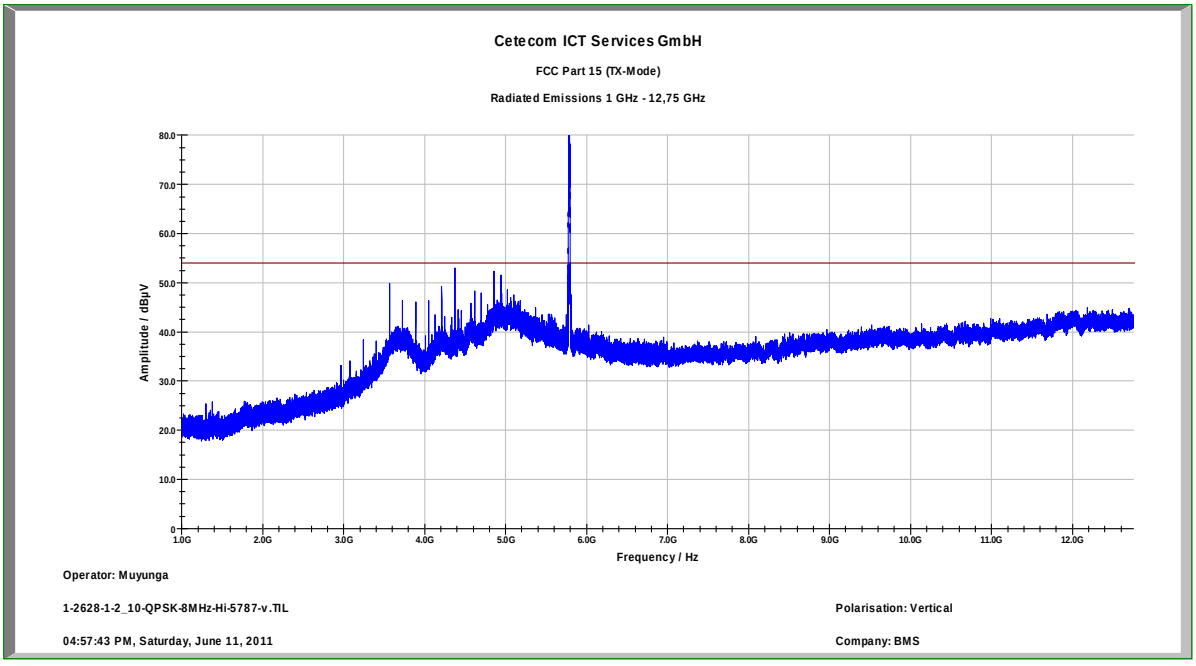
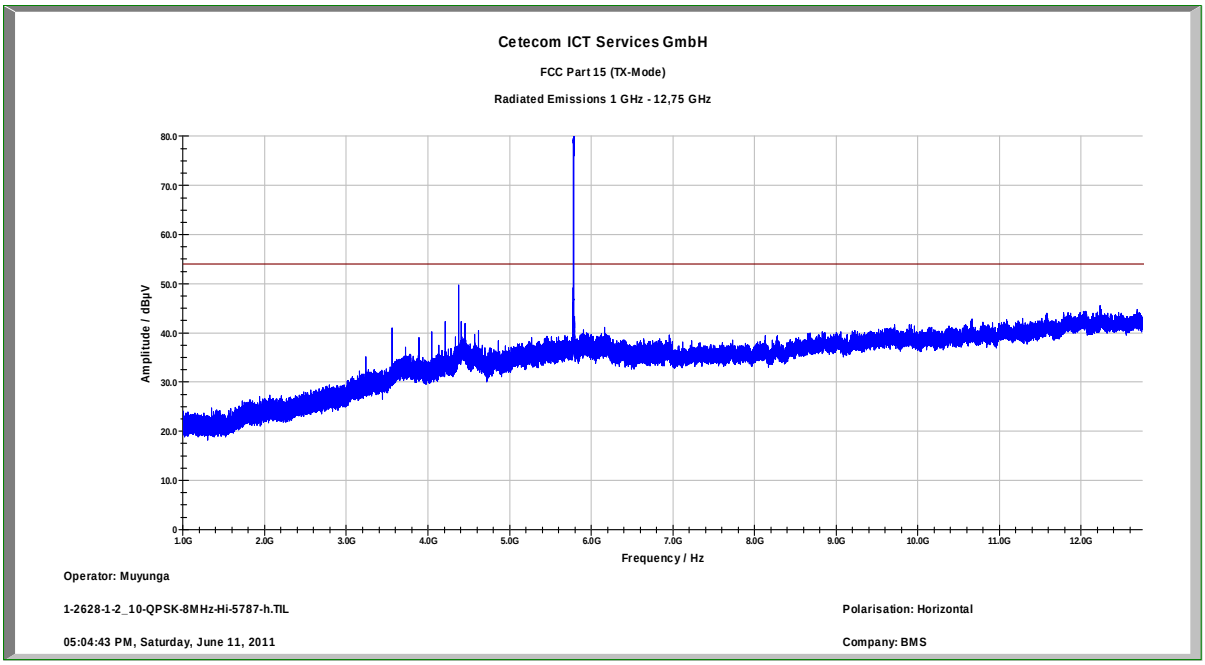
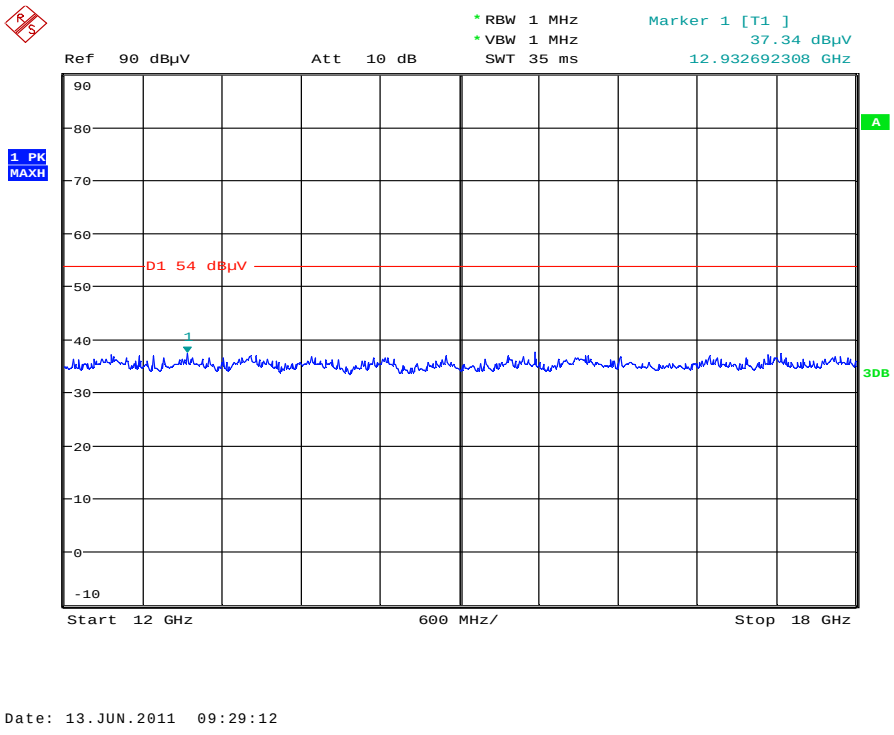
Plot 8: Middle channel, 1 GHz to 12.75 GHz, vertical polarization



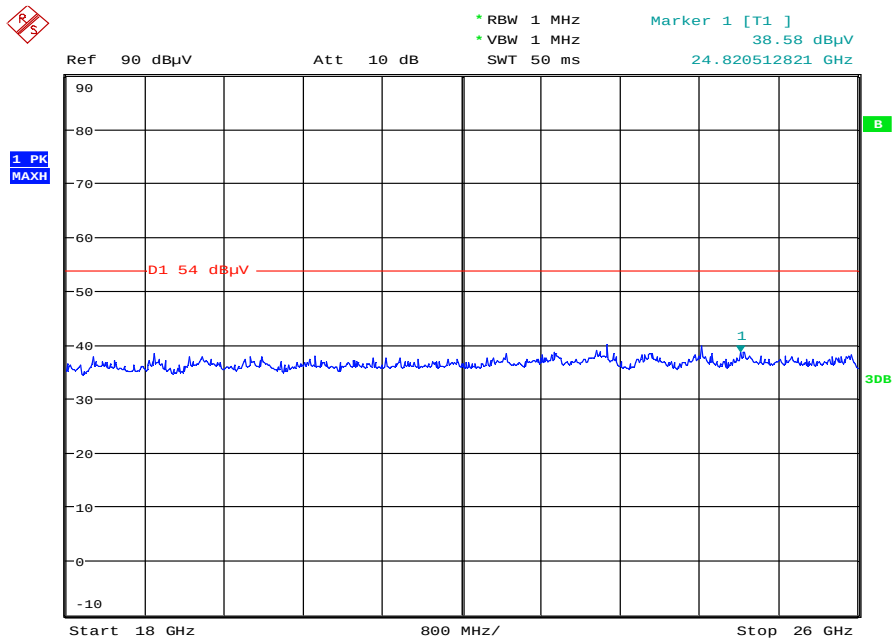
Plot 9: Middle channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 10: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 11: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 13.JUN.2011 09:29:53

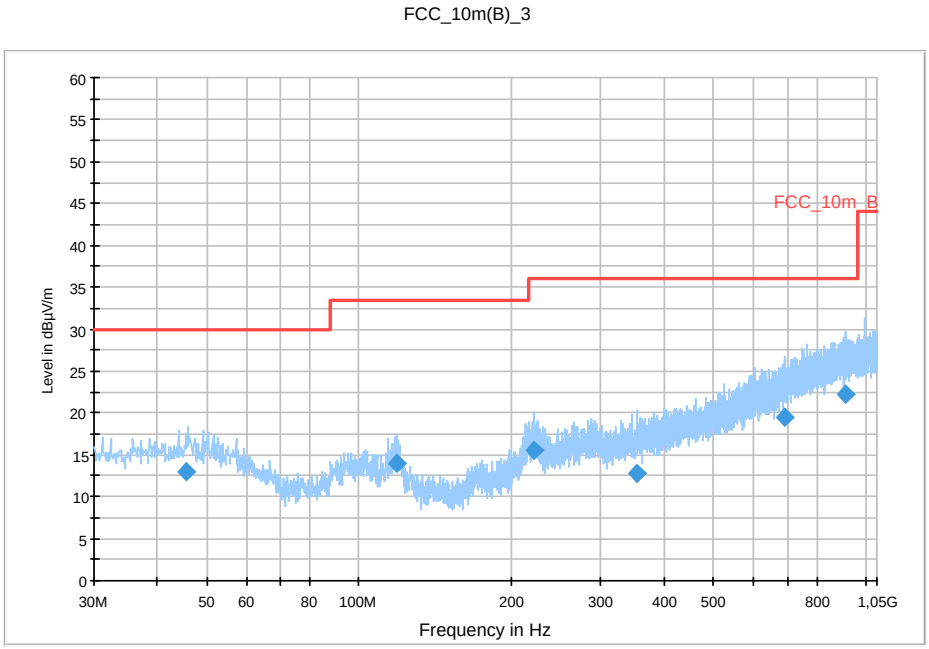
Plot 12: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

EUT:	NT5723 SD-HD
Serial Number:	
Test Description:	FCC Part 15 C < 1 GHz @ 10m
Operating Conditions:	QPSK, BW 8MHz, TX 5846 MHz; CH1;1920x1080p
Operator Name:	WLD
Comment:	DC 12 V

Scan Setup: STAN_Fin [EMI radiated]

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

Subrange	Detectors	IF Bandwidth	Meas. Time	Receiver
30 MHz - 2 GHz	QuasiPeak	120 kHz	15 s	Receiver



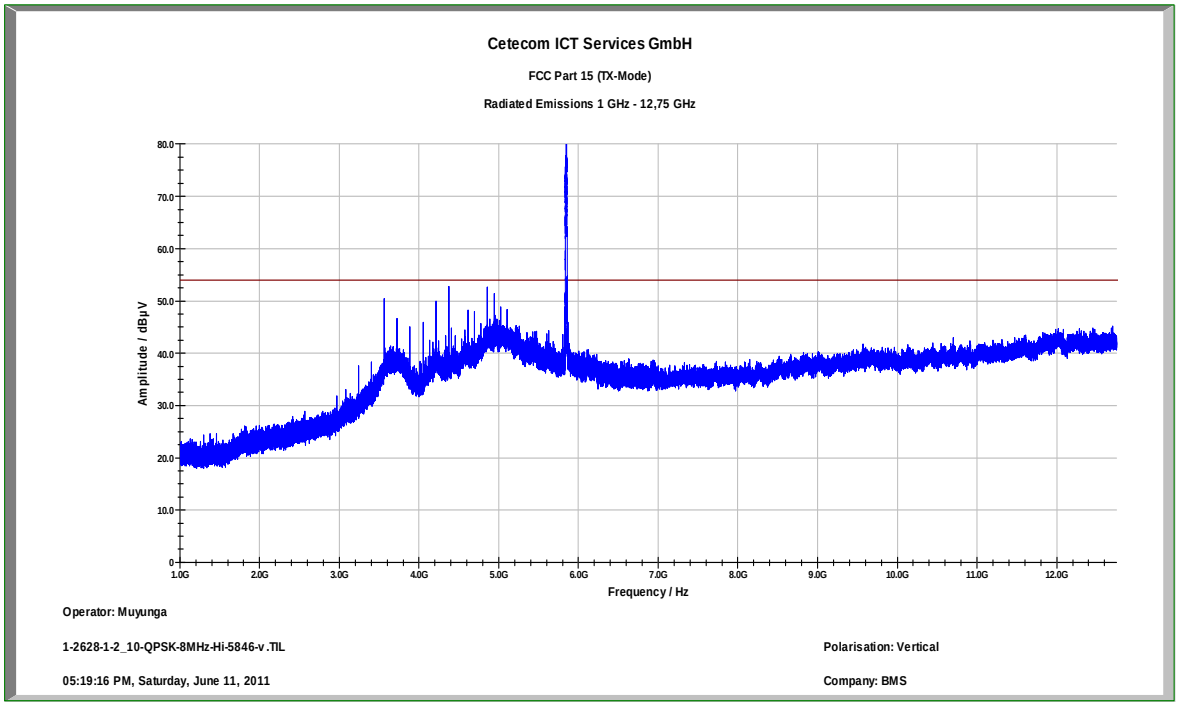
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
45.619950	13.1	1000.0	120.000	98.0	V	106.0	13.3	17.0	30.0
118.459050	14.0	1000.0	120.000	170.0	V	-2.0	10.4	19.5	33.5
221.697300	15.4	1000.0	120.000	170.0	V	-4.0	12.4	20.6	36.0
352.112700	12.8	1000.0	120.000	98.0	V	12.0	16.1	23.2	36.0
689.243400	19.4	1000.0	120.000	170.0	V	285.0	22.2	16.6	36.0
913.957050	22.3	1000.0	120.000	170.0	V	95.0	25.2	13.7	36.0

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

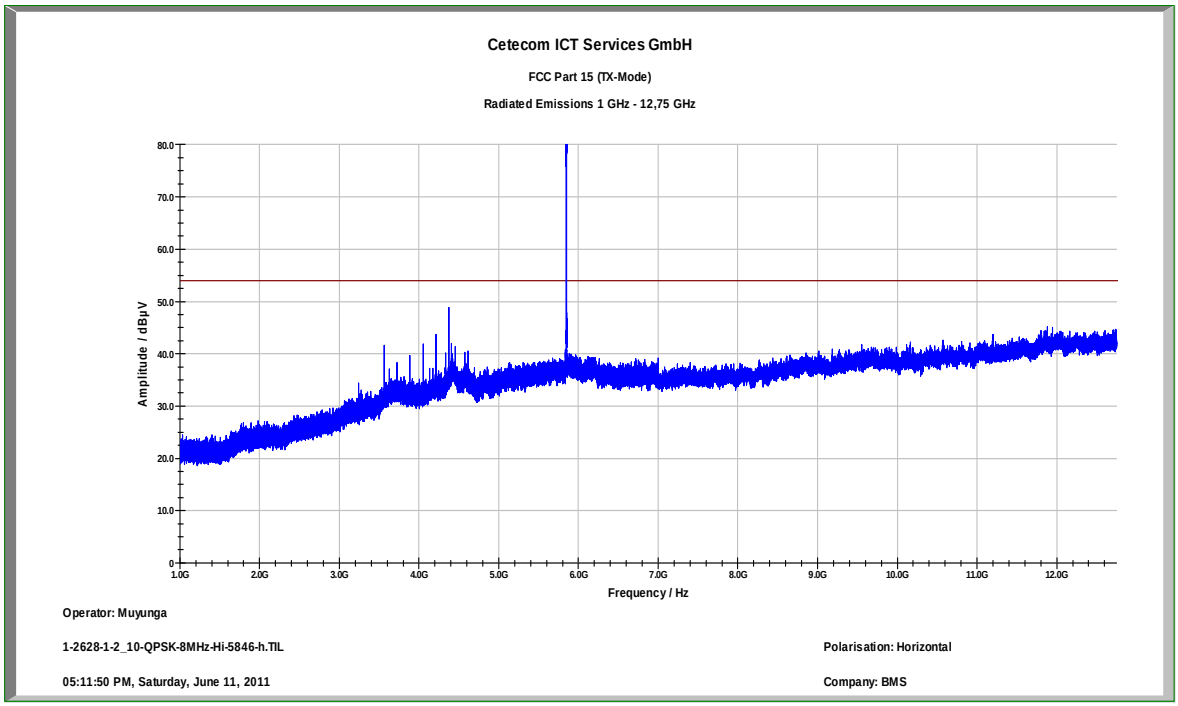
	Subrange 1
Frequency Range:	30 MHz - 2 GHz
Receiver:	Receiver [ESCI 3] @ GPIB0 (ADR 20), SN 100083/003, FW 4.32
Signal Path:	without Notch FW 1.0
Antenna:	VULB 9163 SN 9163-295, FW --- Correction Table (vertical): VULP6113 Correction Table (horizontal): VULP6113 Correction Table: Cable_EN_1GHz (1005)
Antenna Tower:	Tower [EMCO 2090 Antenna Tower] @ GPIB0 (ADR 8), FW REV 3.12
Turntable:	Turntable [EMCO Turntable] @ GPIB0 (ADR 9), FW REV 3.12

EMC 32 Version 8.10.00

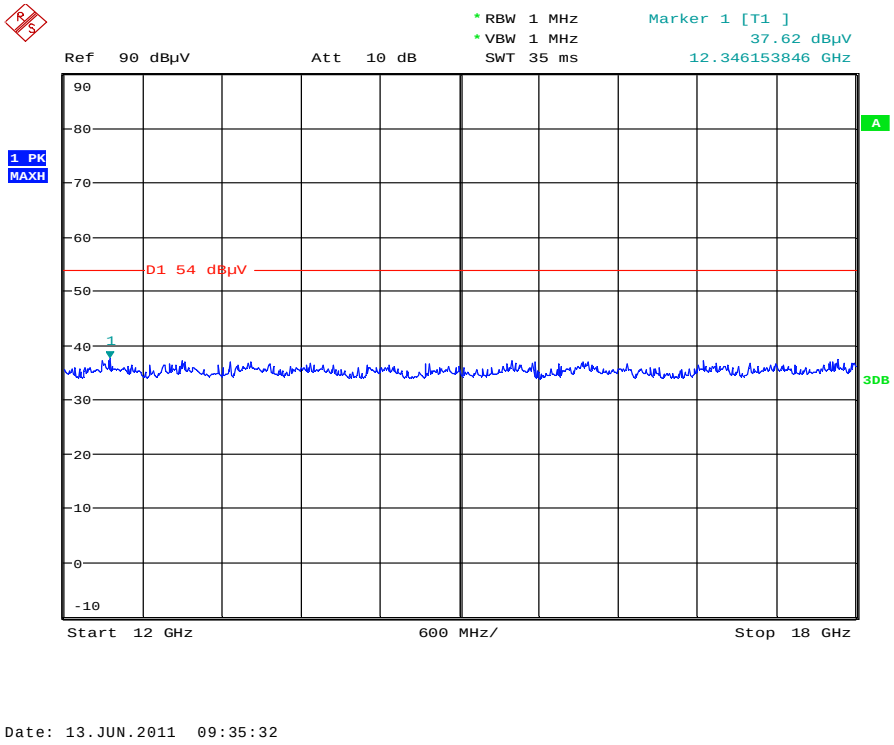
Plot 13: Highest channel, 1 GHz to 12.75 GHz, vertical polarization



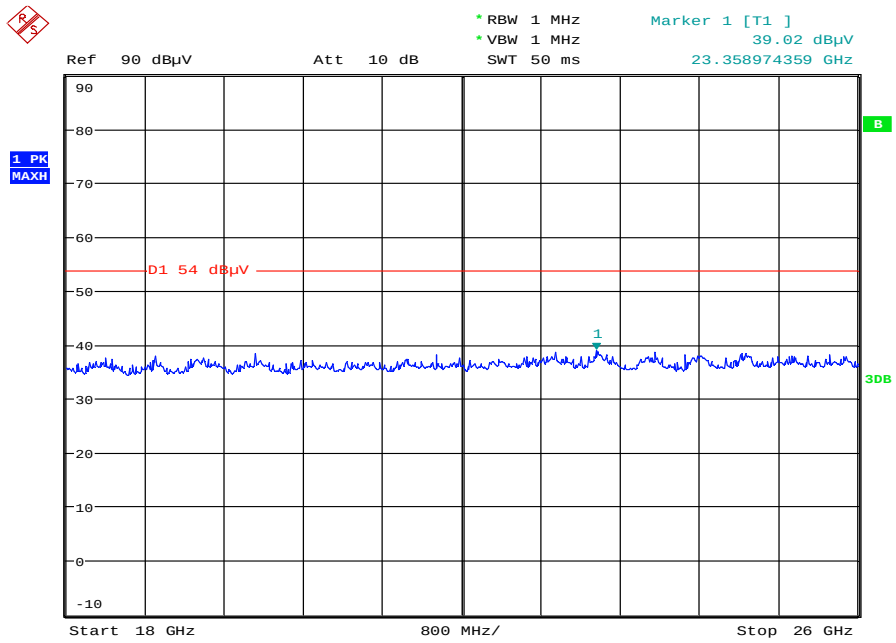
Plot 14: Highest channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 15: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 16: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 13.JUN.2011 09:35:08

9.11 RX spurious emissions radiated

No receiver or idle mode is available for the EUT. Please refer to the manufacturer's certification statement.

Description:

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

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 25 GHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
CFR Part 15.109		-/-
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

Result: **The result of the measurement is passed.**

9.12 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)		-/-
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

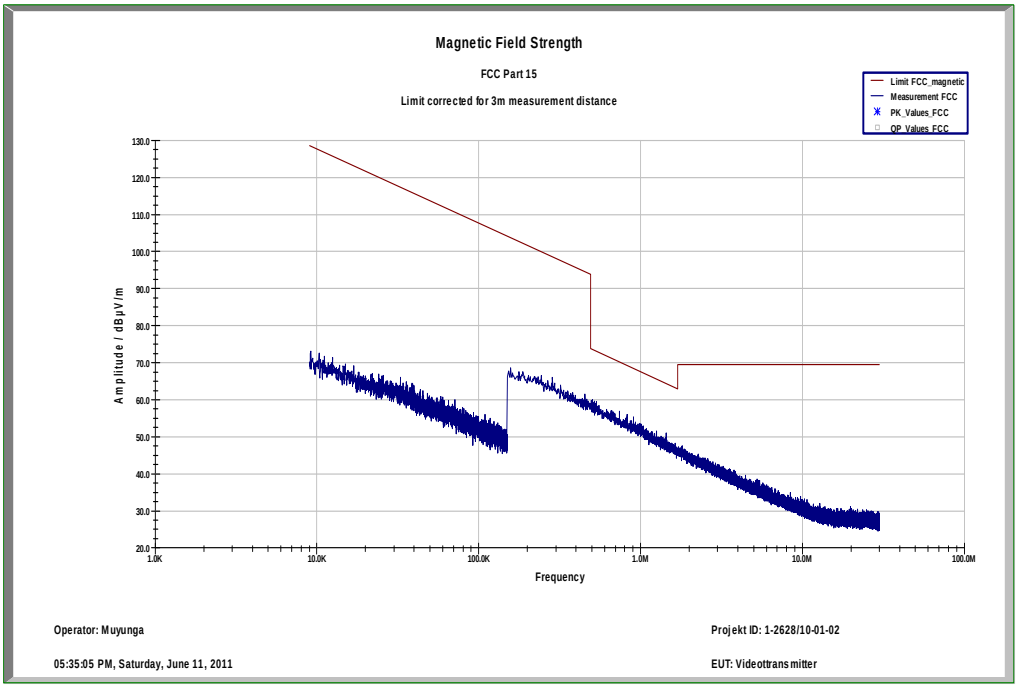
Results:

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

Result: **The result of the measurement is passed.**

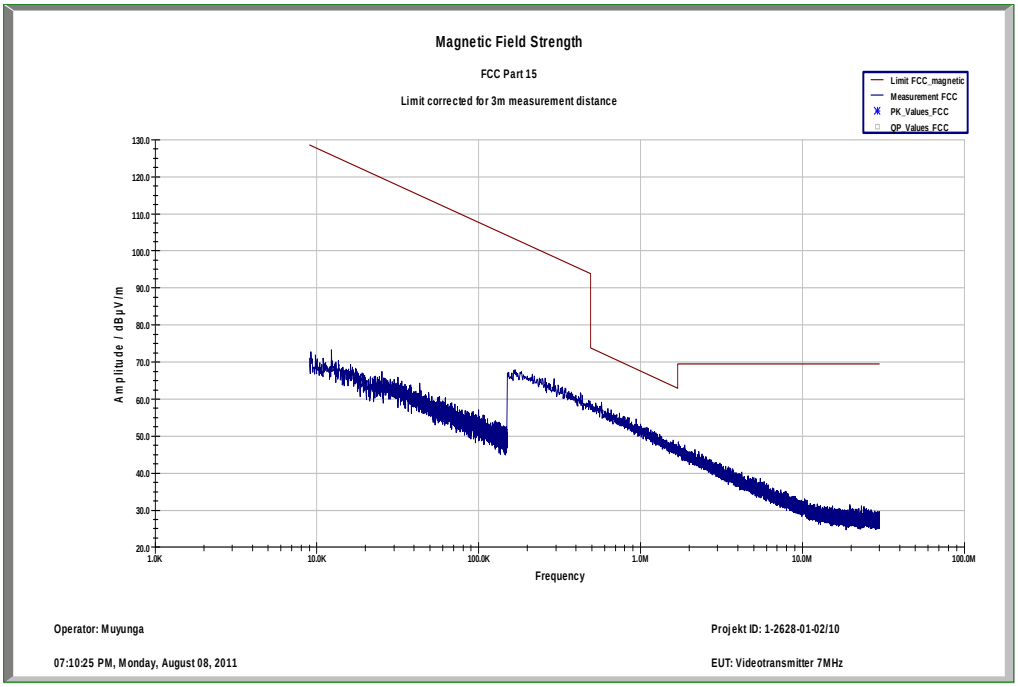
Plots: 6MHz/16QAM (Transmit mode)

Plot 1: 9 kHz to 30 MHz



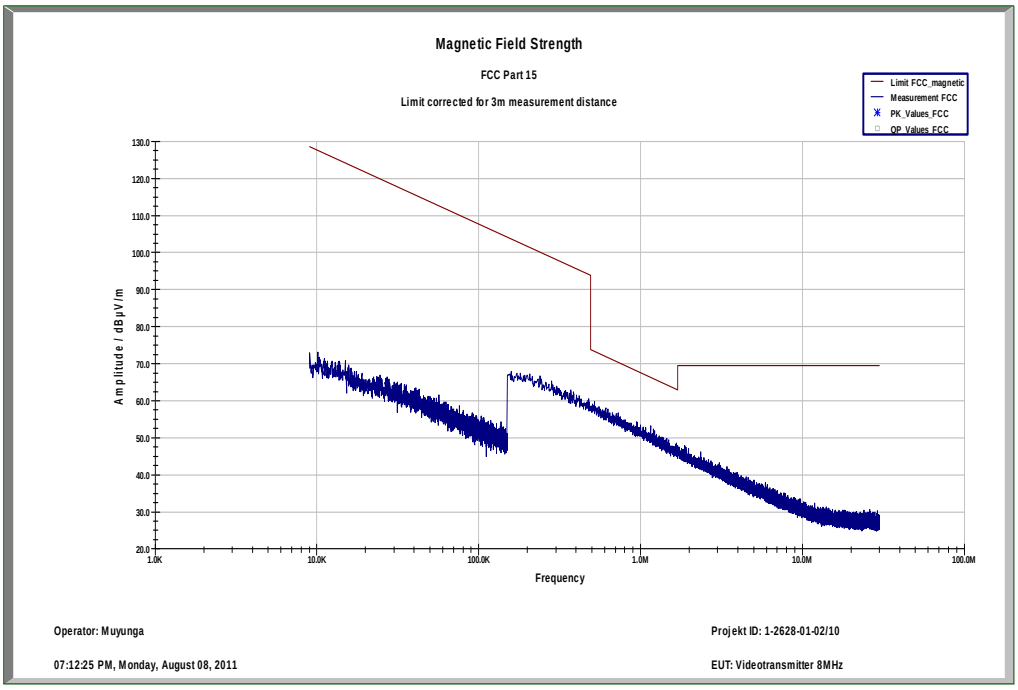
Plots: 7MHz/QPSK (Transmit mode)

Plot 2: 9 kHz to 30 MHz



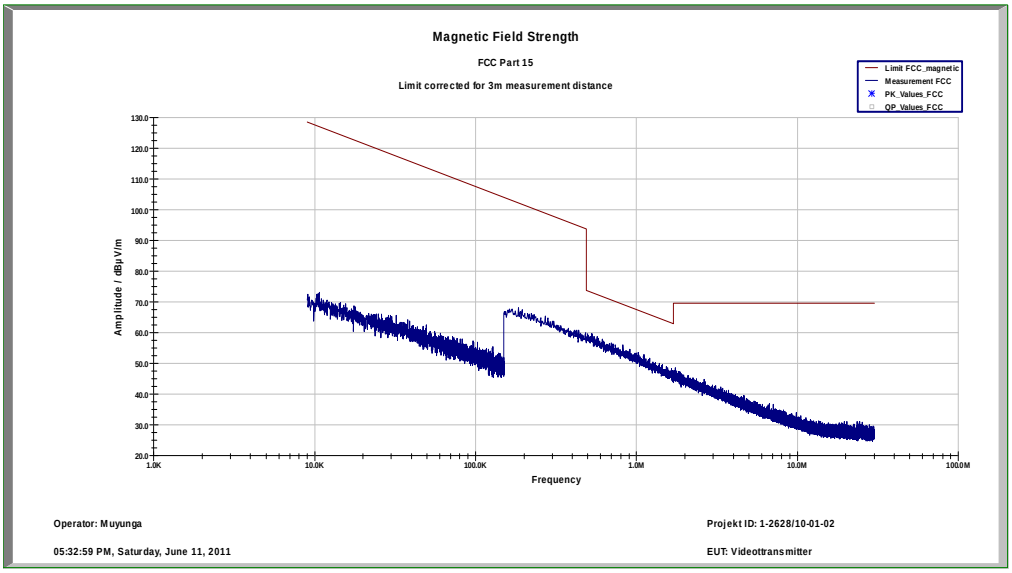
Plots: 8MHz/QPSK (Transmit mode)

Plot 3: 9 kHz to 30 MHz



Plots: RX / Idle – mode

Plot 2: 9 kHz to 30 MHz



9.13 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)		-/-
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

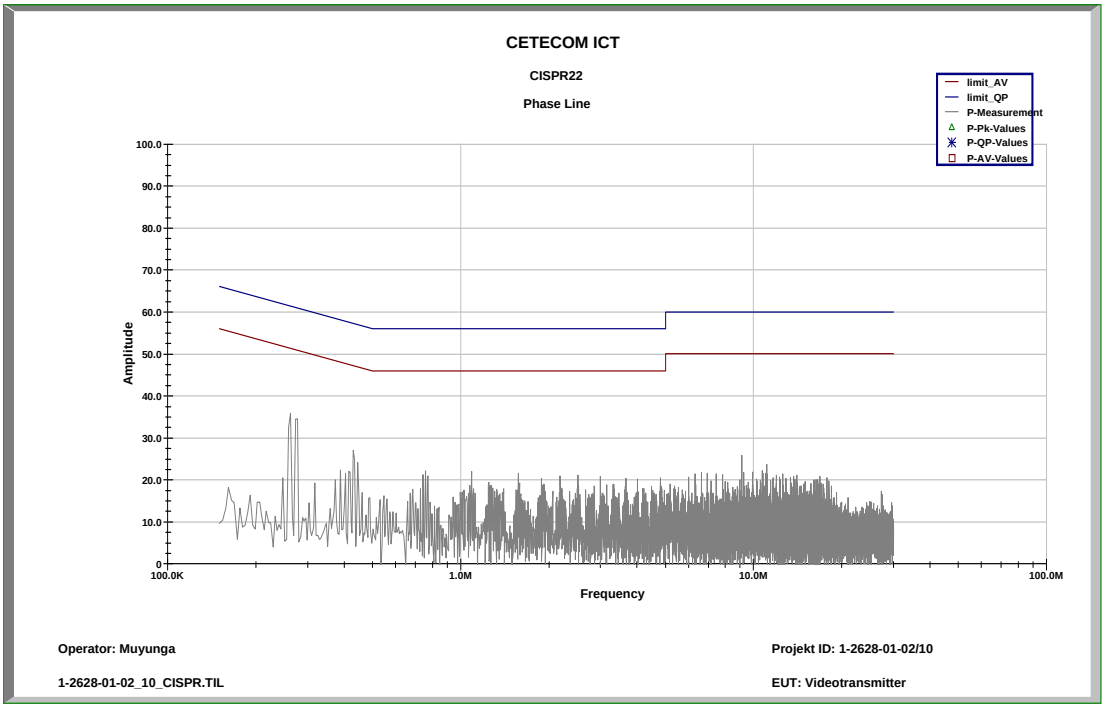
Results:

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

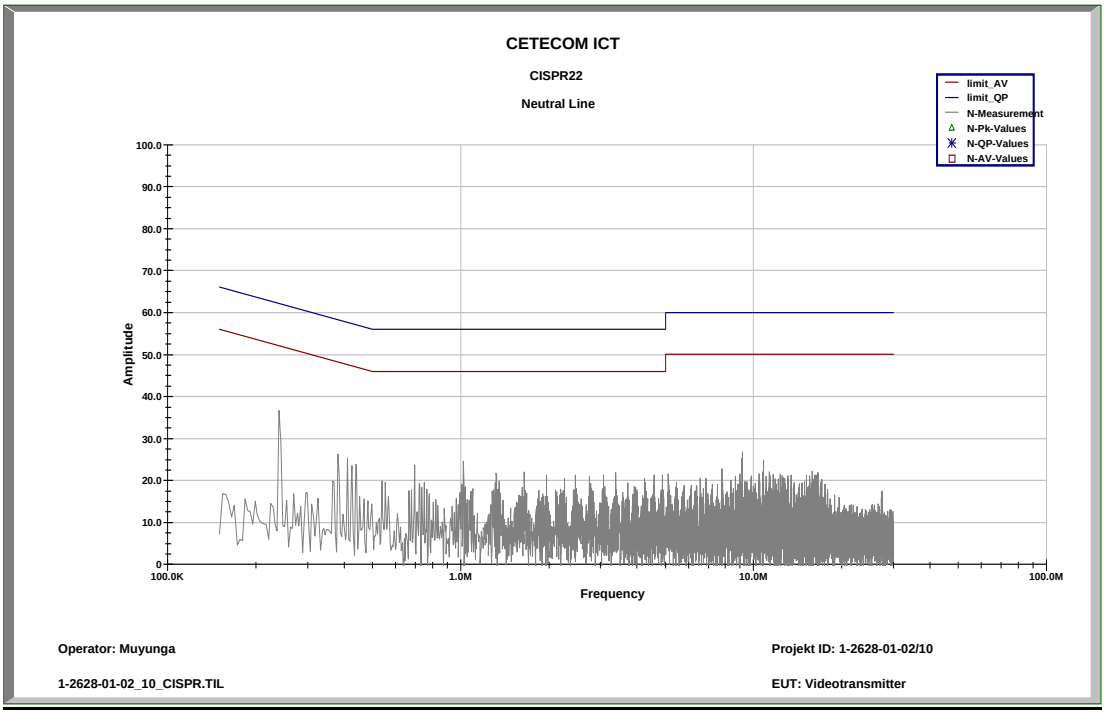
Result: **The result of the measurement is passed.**

Plots: Transmit mode

Plot 1: 9 kHz to 30 MHz, phase line



Plot 2: kHz to 30 MHz, neutral line



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	n. a.	Isolating Transformer	RT5A	Grundig	8041	300001626	g		
2	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	08.01.2009	08.01.2012
3	n. a.	Coaxial Attenuator 30dB/500W	8325	Bird	1530	300001595	ev		
4	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vIKI!	05.03.2009	05.09.2011
5	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
6	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996		23.03.2009	
7	Spec.A. 2_2e	System rack for EMI measurement solution	85900	HP I.V.	*	300000222	ne		
8	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	06.01.2010	06.01.2012
9	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
10	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
11	n. a.	Isolating Transformer	RT5A	Grundig	9242	300001263	ne		
12	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
13	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
14	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
15	n. a.	Band Reject filter	WRCG1855/1910-1835/1925-40/8SS	Wainwright	7	300003350	ev		
16	19	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	9107-3697	300001605	Ve	19.10.2010	19.10.2012
17	n. a.	Isolating Transformer	913501	Erfi		300001205	ne		
19	9	Signal Generator 0.1-4320 MHz, AM/FM/PHIM/Puls Mod.	SMHU	R&S	894055/005	300001190	Ve	05.01.2010	05.01.2013
20	10	Signal Generator 0.1-2000 MHz	SMH	R&S	864219/033	300001410	Ve	18.08.2010	18.08.2013
21	n. a.	DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383	Ve	23.06.2010	23.06.2013
22	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04590	300001041	Ve	08.01.2009	08.01.2012
24	n. a.	Audio Analyzer 2Hz - 300 kHz	UPD	R&S	841074/009	300001236	k	08.01.2010	08.01.2012
25	n. a.	Signal Analyzer 20Hz-26,5GHz-150 to + 30 DBM	FSiQ26	R&S	835111/0004	300002678	Ve	04.11.2010	04.11.2012
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-	EMCO	none	300003451	ne		

			ICS/FULL						
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!	17.12.2008	17.12.2011

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

Annex A Photographs of the test setup

Photo documentation

Photo 1:

Photo 2:

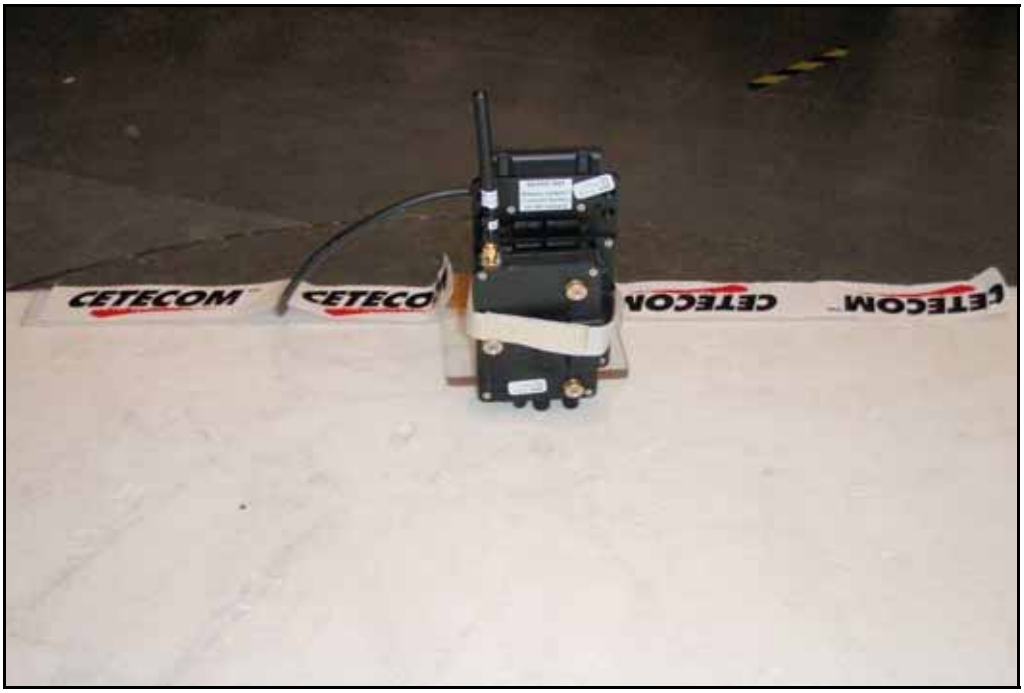


Photo 3:

Annex B External photographs of the EUT

Photo documentation:

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo 9:

Photo 10:

Annex C Internal photographs of the EUT

Photo documentation:

Photo 1:

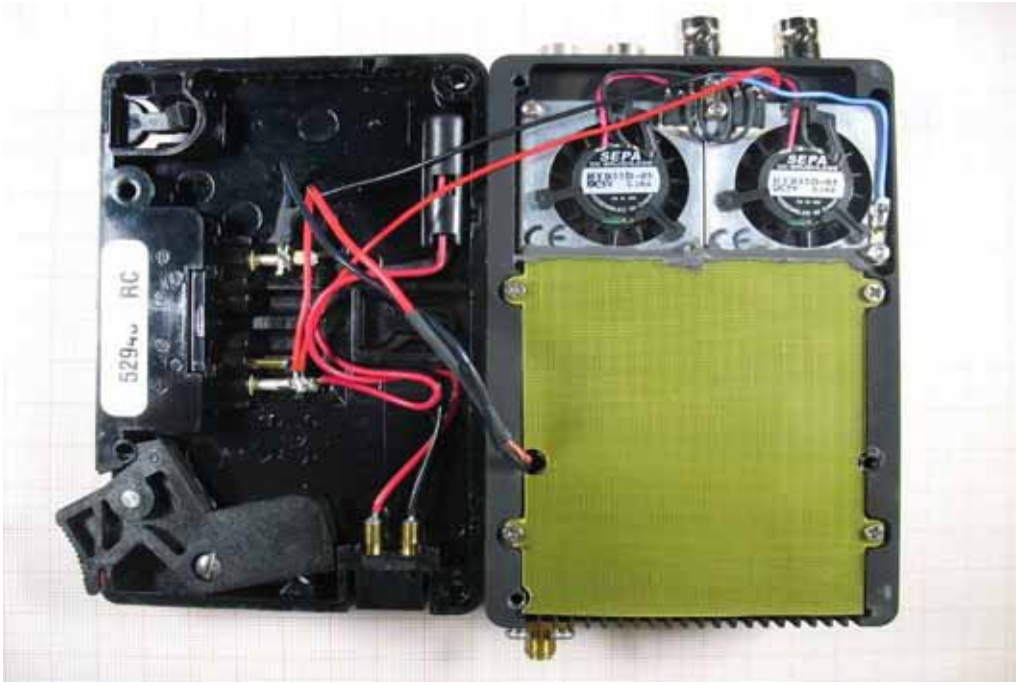


Photo 2:

Photo 3:

Photo 4:

Photo 5:

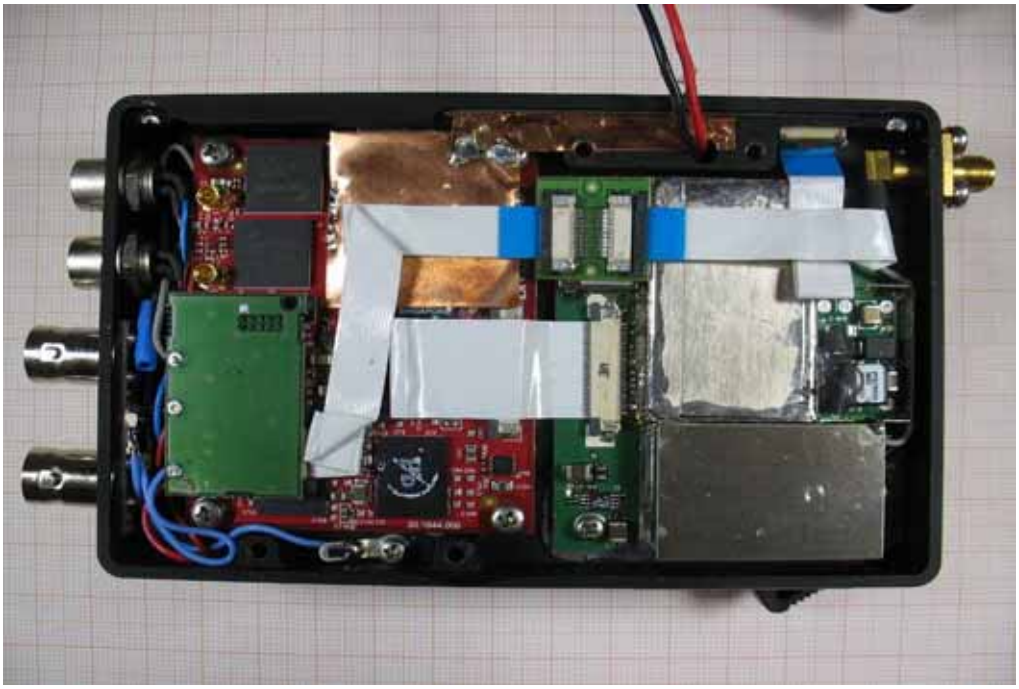


Photo 6:

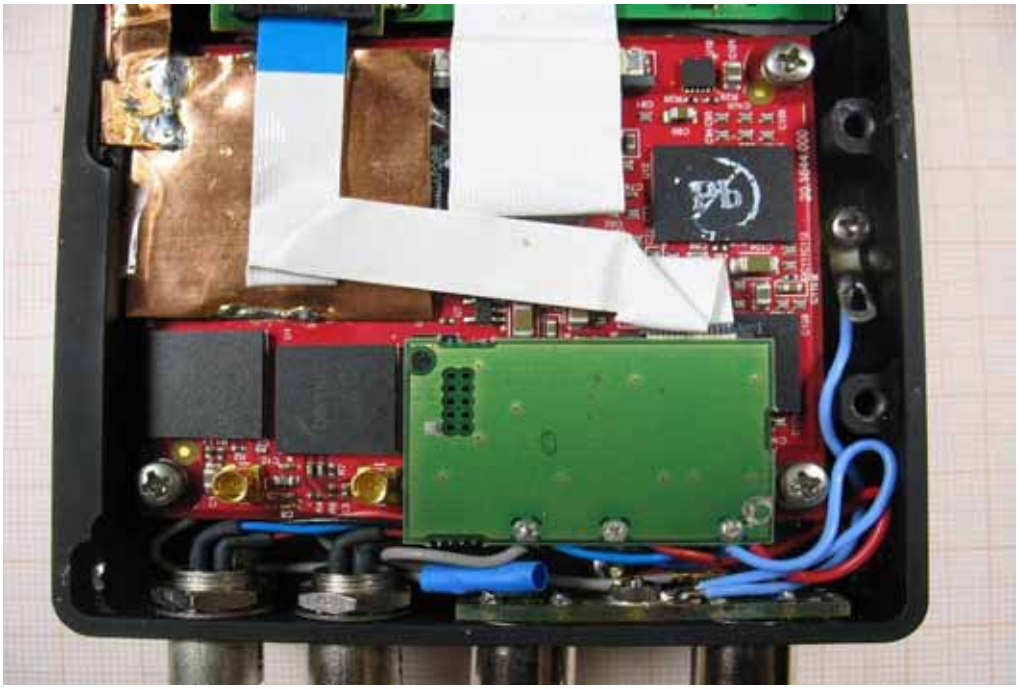


Photo 7:

Photo 8:

Photo 9:

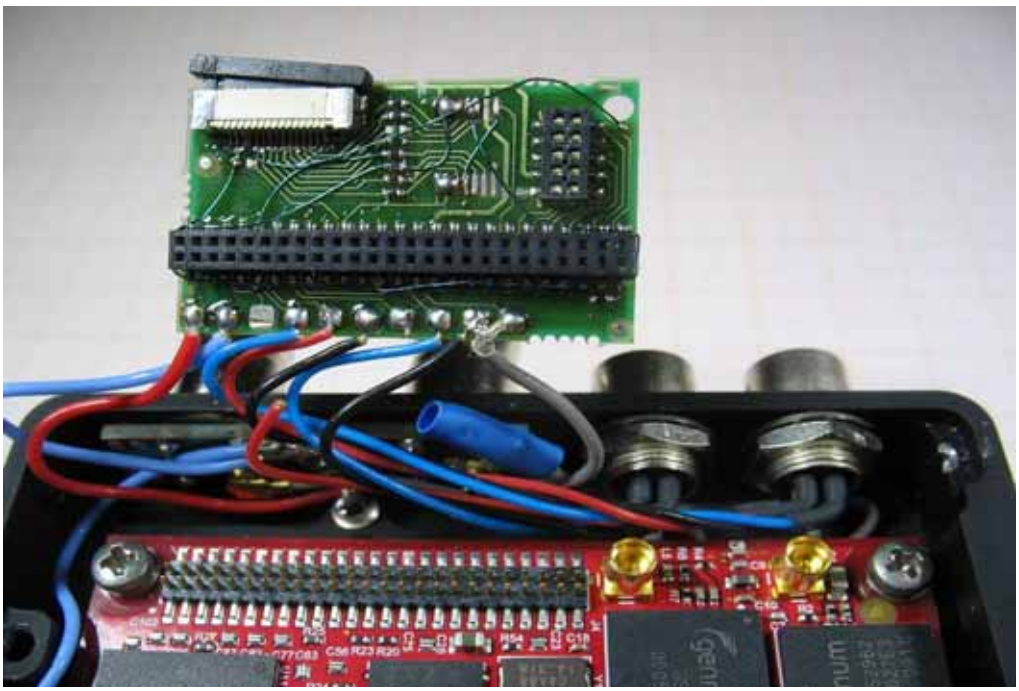


Photo 10:

Photo 11:

Photo 12:

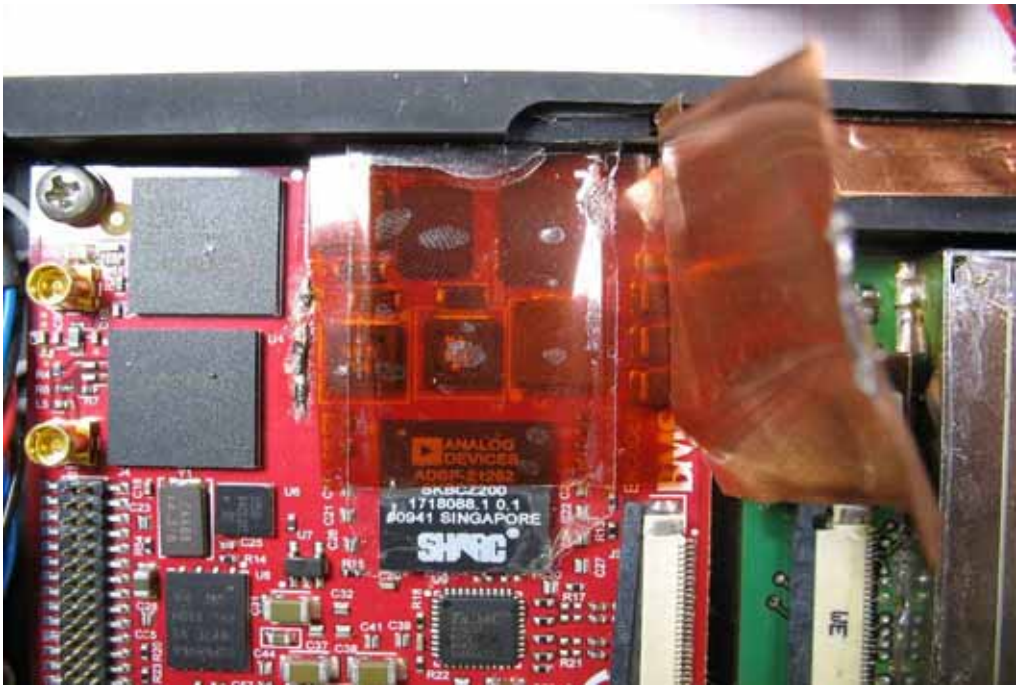


Photo 13:

Photo 14:

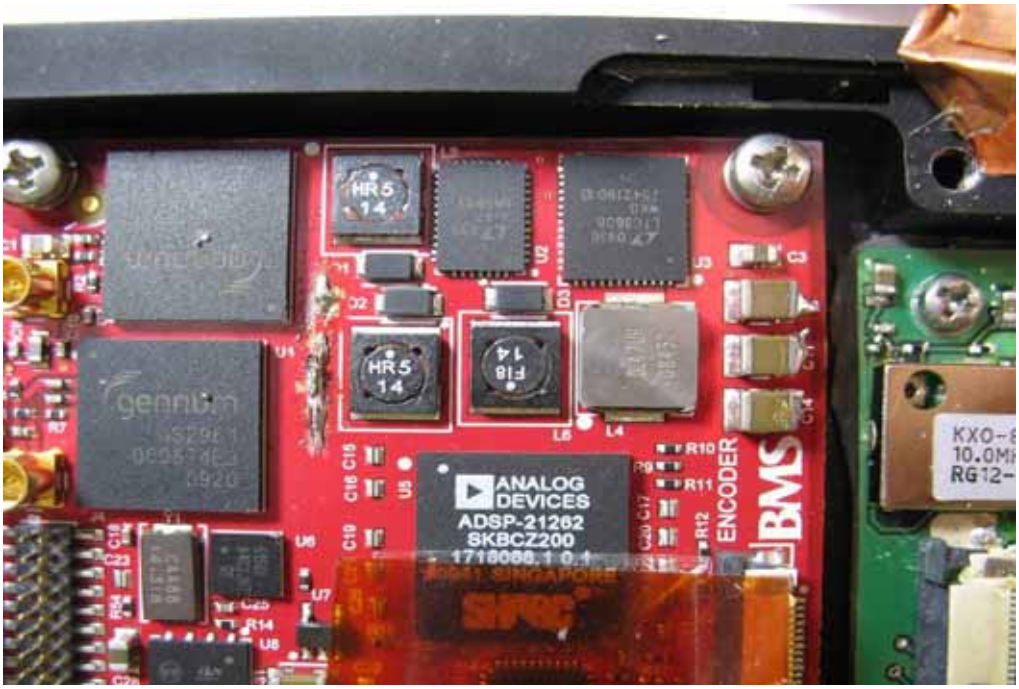


Photo 15:

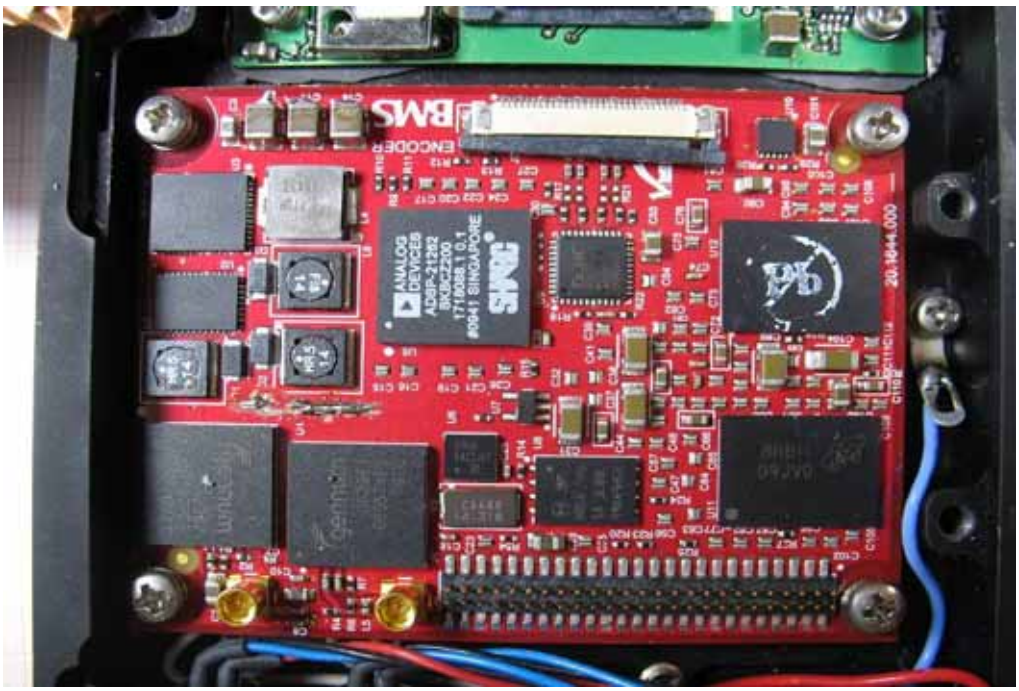


Photo 16:

Photo 17:

Photo 18:

Photo 19:

Photo 20:

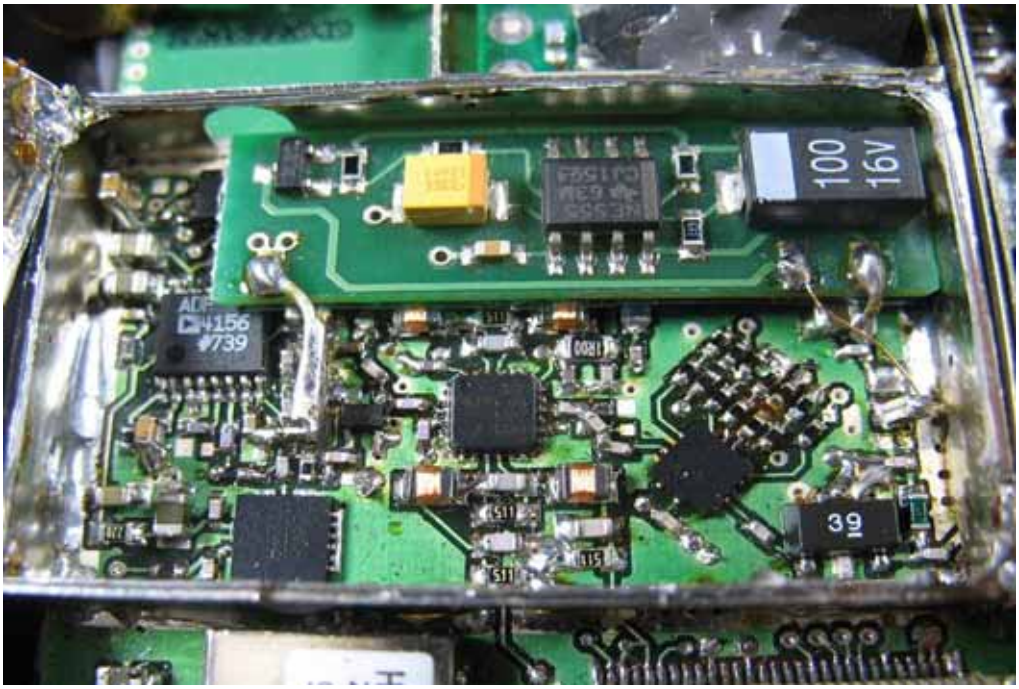
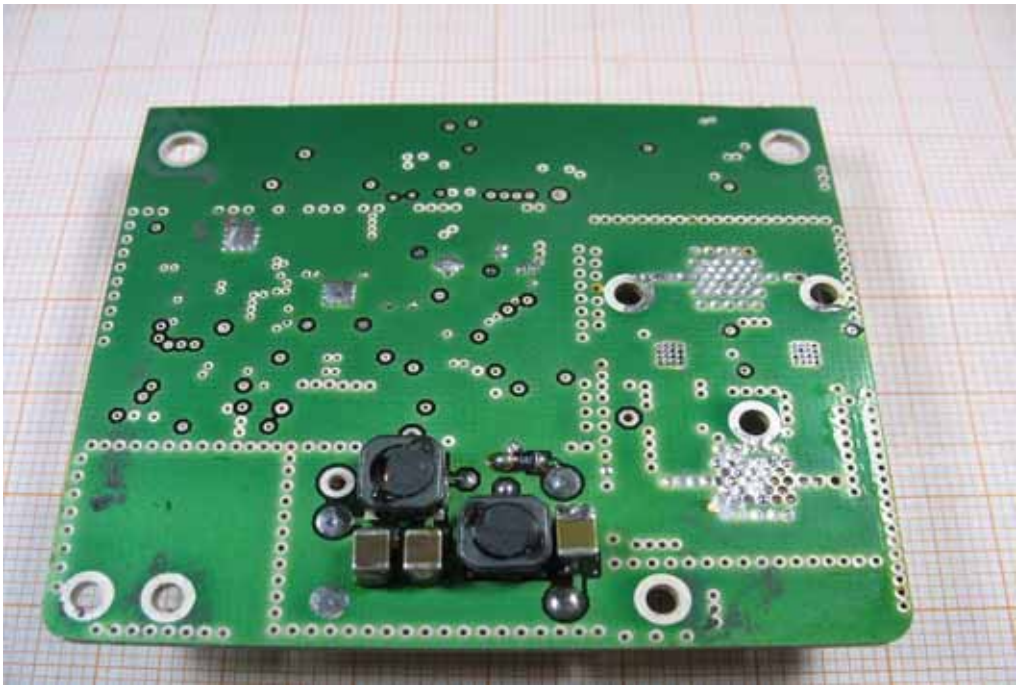


Photo 21:

Photo 22:



Annex D Document history

Version	Applied changes	Date of release
1.0	Initial release	2011-08-31

Annex E Further information

Glossary

DUT - Device under Test
EMC - Electromagnetic Compatibility
EUT - Equipment under Test
FCC - Federal Communication Commission
FCC ID - Company Identifier at FCC
HW - Hardware
IC - Industry Canada
Inv. No. - Inventory number
N/A - not applicable
S/N - Serial Number
SW - Software