**CETECOM**TM**CETECOM ICT Services**
consulting - testing - certification >>>

TEST REPORT

Test report no.: 1-4254/12-61-09-A

Deutsche
Akkreditierungsstelle
D-PL-12076-01-01

Testing laboratory

CETECOM ICT Services GmbH

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Internet: <http://www.cetecom.com>e-mail: ict@cetecom.com**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

Sony Mobile Communications AB

Nya Vattentornet

22188 Lund / SWEDEN

Phone: +46 46 19 30 00

Fax: +46 46 19 32 95

Contact: Håkan Sjöberg

e-mail: hakan.sjoberg@sonymobile.com

Phone: +46 46 19 35 59

Manufacturer

Sony Mobile Communications AB

Nya Vattentornet

22188 Lund / SWEDEN

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:

GSM Mobile Phone GPRS/EGPRS 850/900/1800/1900; UMTS HSPA FDDI/V/VIII; LTE FDD
1/3/5/7/8/20; WLAN a/b/g/n; BT 3.1; BT LE; RFID; FM Rx; A-GPS

Model name:

PM-0240-BV

FCC ID:

PY7PM-0240

IC:

4170B-PM0240

Frequency:

ISM band 5150 MHz to 5250 MHz

ISM band 5250 MHz to 5350 MHz

ISM band 5470 MHz to 5725 MHz

Technology tested:

WLAN (OFDM a, n HT20 & n HT40)

Antenna:

Integrated antenna

Power Supply:

3.7 V DC by Li - polymer battery

Temperature Range:

-20°C to +55 °C

Test report authorised:

2013-01-11 Stefan Bös
Senior Testing Manager

Test performed:

2013-01-11 Marco Bertolino
Testing Manager

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2 General information

2.1 Notes and disclaimer

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 generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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In no case this test report can be considered as a Letter of Approval.

2.2 Application details

Date of receipt of order:	2012-11-02
Date of receipt of test item:	2012-11-12
Start of test:	2012-11-28
End of test:	2012-11-30
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

3.1 Measurement guidance

UNII: KDB 789033	2011-10	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E
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4 Test environment

Temperature:	T_{nom}	+22 °C during room temperature tests
	T_{max}	+55 °C during high temperature tests
	T_{min}	-20 °C during low temperature tests
Relative humidity content:		43 %
Barometric pressure:		not relevant for this kind of testing
Power supply:	V_{nom}	3.7 V DC by Li - polymer battery
	V_{max}	4.1 V
	V_{min}	3.3 V

5 Test item

Kind of test item	:	GSM Mobile Phone GPRS/EGPRS 850/900/1800/1900; UMTS HSPA FDDI/V/VIII; LTE FDD 1/3/5/7/8/20; WLAN a/b/g/n; BT 3.1; BT LE; RFID; FM Rx; A-GPS
Type identification	:	PM-0240-BV
S/N serial number	:	Rad. CB5121SWF0, CB5121SWEK Cond. CB5121SWLW, CB5121SWNW
HW hardware status	:	SP1.2
SW software status	:	10.1.A.0.194, 10.1.A.1.17
Frequency band [MHz]	:	ISM bands: - 5150 MHz to 5250 MHz - 5250 MHz to 5350 MHz - 5470 MHz to 5725 MHz
Type of radio transmission	:	OFDM
Use of frequency spectrum	:	
Channel access method	:	FDMA
Type of modulation	:	QPSK, 16 – QAM & 64 – QAM
Number of channels	:	19
Antenna	:	Integrated antenna
Power supply	:	3.7 V DC by Li - polymer battery
Temperature range	:	-20°C to +55 °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 9	Passed	2013-01-11	-/-

Test specification clause	Test case	Temperature conditions	Power source voltages	Pass	Fail	NA	NP	Results (max.)
-/-	Output power verification (conducted)	Nominal	Nominal	☐	☐	☐	☐	No passed / fail criteria!
-/-	Gain	Nominal	Nominal	☐	☐	☐	☐	No passed / fail criteria!
U-NII Part 15	Duty cycle	Nominal	Nominal	☐	☐	☐	☐	No passed / fail criteria!
§15.407(a) RSS-210	Maximum output power (conducted & radiated)	Nominal	Nominal	☒	☐	☐	☐	complies
§15.407(a) RSS-210	Power spectral density	Nominal	Nominal	☒	☐	☐	☐	complies
§15.407(a) RSS-210	Spectrum bandwidth 26dB bandwidth	Nominal	Nominal	☒	☐	☐	☐	complies
§15.407(a) RSS-210	Peak excursion measurements	Nominal	Nominal	☒	☐	☐	☐	complies
§15.205 RSS-210	Band edge compliance radiated	Nominal	Nominal	☒	☐	☐	☐	complies
§15.407(b) RSS-210	TX spurious emissions radiated	Nominal	Nominal	☒	☐	☐	☐	complies
§15.109 RSS-Gen	RX spurious emissions radiated	Nominal	Nominal	☒	☐	☐	☐	complies
§15.209(a) RSS-Gen	Spurious emissions radiated < 30 MHz	Nominal	Nominal	☒	☐	☐	☐	complies
§15.107(a)	Spurious emissions conducted emissions < 30 MHz	Nominal	Nominal	☒	☐	☐	☐	complies

Note: NA = Not Applicable; NP = Not Performed

8 RF measurements

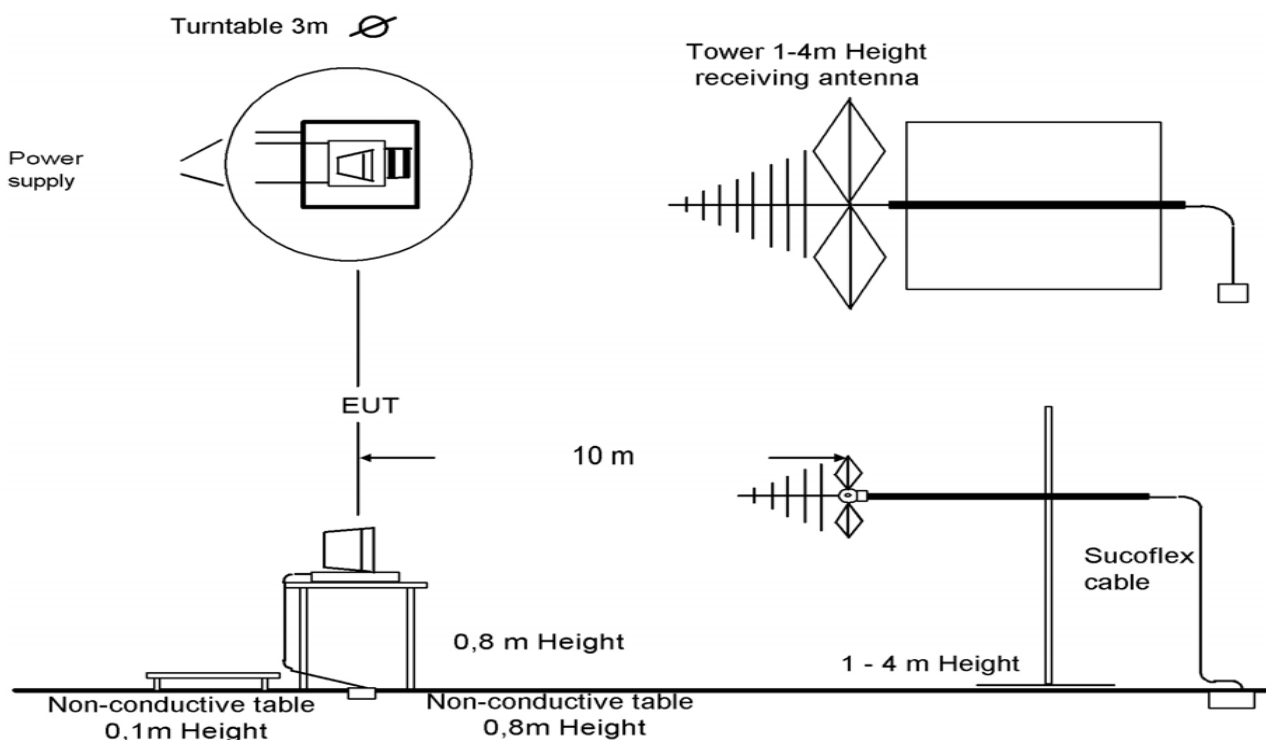
8.1 Description of test setup

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



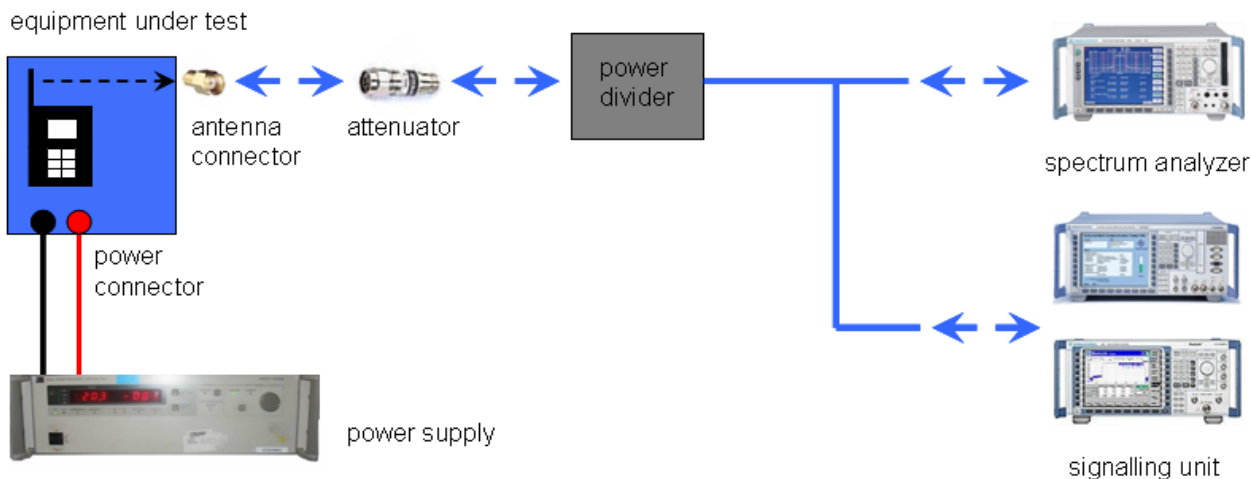
Picture 1: Diagram radiated measurements

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

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: WLAN Odin Gina SAR request and power data (SAR power verification)

a – mode: wbtX=channel,rate,2,1000,200,0,15,0,1

n HT 20 – mode: wbtX=channel,rate,3,1000,200,0,14,0,1

n HT 40 – mode: wbtX=channel,rate,3,2000,200,0,14,1,1

Special test descriptions: None

Configuration descriptions: None

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	:	1-4254/12-61-09-A
Equipment model number	:	PM-0240-BV
Certification number	:	4170B-PM0240
Manufacturer (complete address)	:	Sony Mobile Communications AB Nya Vattentorget 22188 Lund / SWEDEN
Tested to radio standards specification no.	:	RSS 210, Issue 8, Annex 9
Open area test site IC No.	:	IC 3462C-1
Frequency range	:	ISM band 5150 MHz to 5250 MHz ISM band 5250 MHz to 5350 MHz ISM band 5470 MHz to 5725 MHz
RF-power [mW] (max.)	:	<u>Conducted values:</u> OFDM / a – mode: 22.39 OFDM / n – mode HT20: 19.28 OFDM / n – mode HT40: 20.04 <u>Radiated values:</u> OFDM / a – mode: 15.81 OFDM / n – mode HT20: 14.26 OFDM / n – mode HT40: 15.21
Occupied bandwidth (99%-BW) [MHz]	:	OFDM / a – mode: 17.50 OFDM / n – mode HT20: 18.40 OFDM / n – mode HT40: 36.12
Type of modulation	:	QPSK, 16 – QAM, 64 – QAM
Emission designator (TRC-43)	:	OFDM / a – mode: 17M5G7D OFDM / n – mode HT20: 18M4G7D OFDM / n – mode HT40: 36M1G7D
Antenna information	:	Integrated PCB antenna
Transmitter spurious (worst case) [dBμV/m @ 3m]:		48 @ 12.5 GHz (noise floor / peak)
Receiver spurious (worst case) [dBμV/m @ 3m]:		48 @ 12.5 GHz (noise floor / peak)

ATTESTATION:

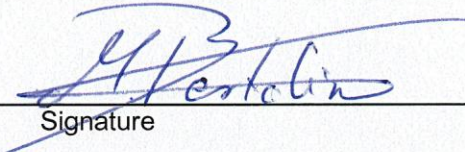
DECLARATION OF COMPLIANCE:

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:

2013-01-11
Date

Marco Bertolino
Name


Signature

9 Measurement results

9.1 Gain

Description:

Measurement of the maximum output power conducted and radiated

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	5s
Resolution bandwidth:	3 MHz
Video bandwidth:	8 MHz / 10 MHz
Span:	See complete signal!
Trace-Mode:	Max Hold

Limits:

Antenna Gain
Maximum 6 dBi

Result:

OFDM Band 5150 MHz to 5250 MHz Channel	Gain		
	Lowest 5180 MHz	-/-	Highest 5240 MHz
Radiated power for gain calculation	17.46	-/-	18.14
Conducted power for gain calculation	16.91	-/-	16.31
Gain	-0.55	-/-	-1.83
Measurement uncertainty	± 3 dB		

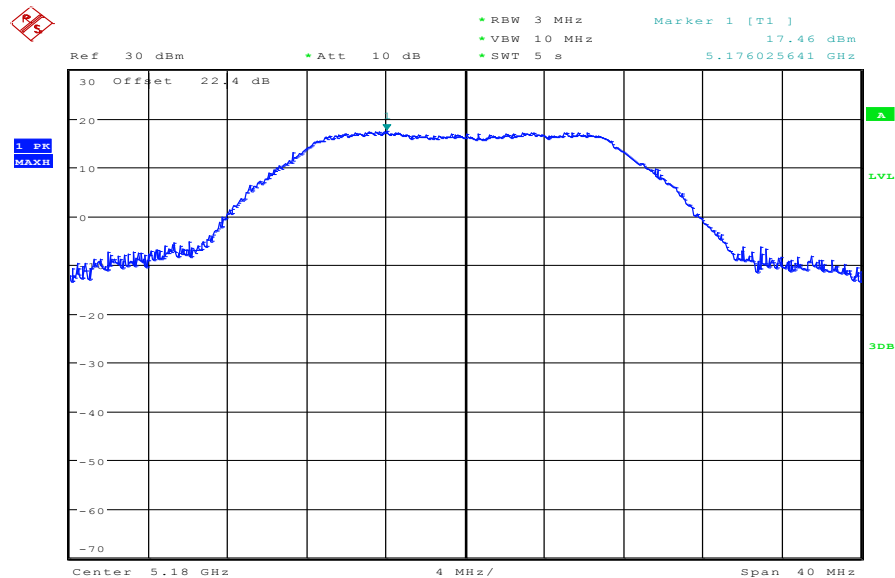
OFDM Band 5250 MHz to 5350 MHz Channel	Gain		
	Lowest 5260 MHz	-/-	Highest 5320 MHz
Radiated power for gain calculation	18.33	-/-	17.11
Conducted power for gain calculation	15.93	-/-	15.45
Gain	-2.40	-/-	-1.66
Measurement uncertainty	± 3 dB		

OFDM Band 5470 MHz to 5725 MHz Channel	Gain		
	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz
Radiated power for gain calculation	17.83	17.27	17.37
Conducted power for gain calculation	16.48	17.10	17.50
Gain	-1.35	-0.17	0.13
Measurement uncertainty	± 3 dB		

Result: Passed

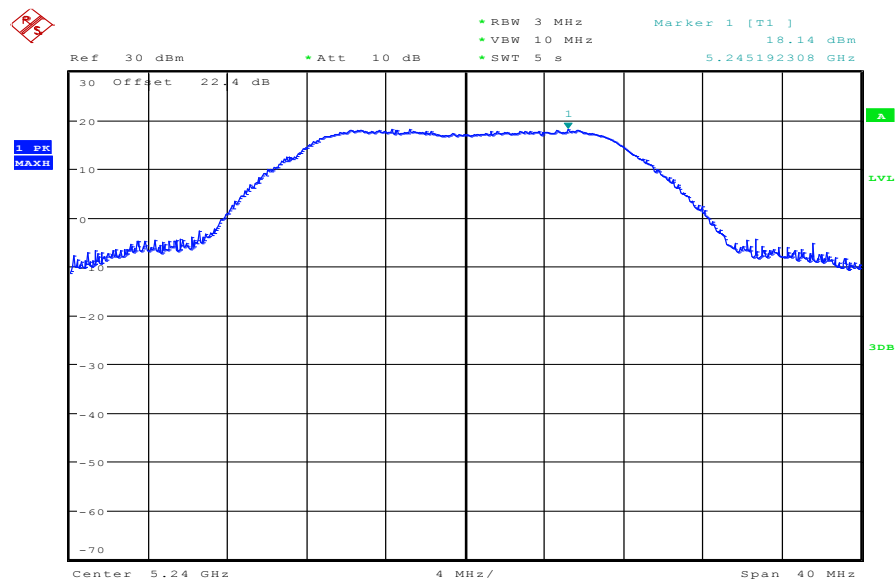
Plots: conducted power for gain calculation

Plot 1: OFDM / a – mode, 5180 MHz



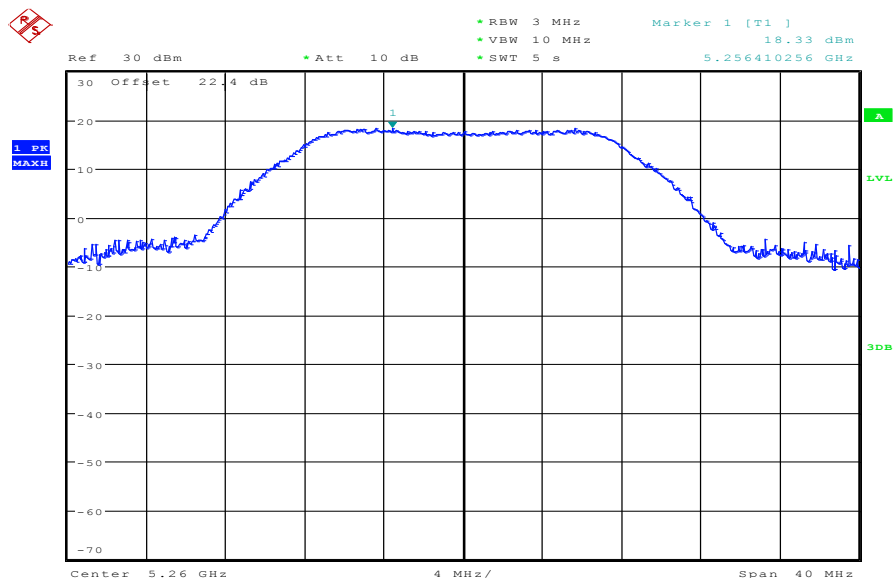
Date: 30.NOV.2012 07:42:08

Plot 2: OFDM / a – mode, 5240 MHz



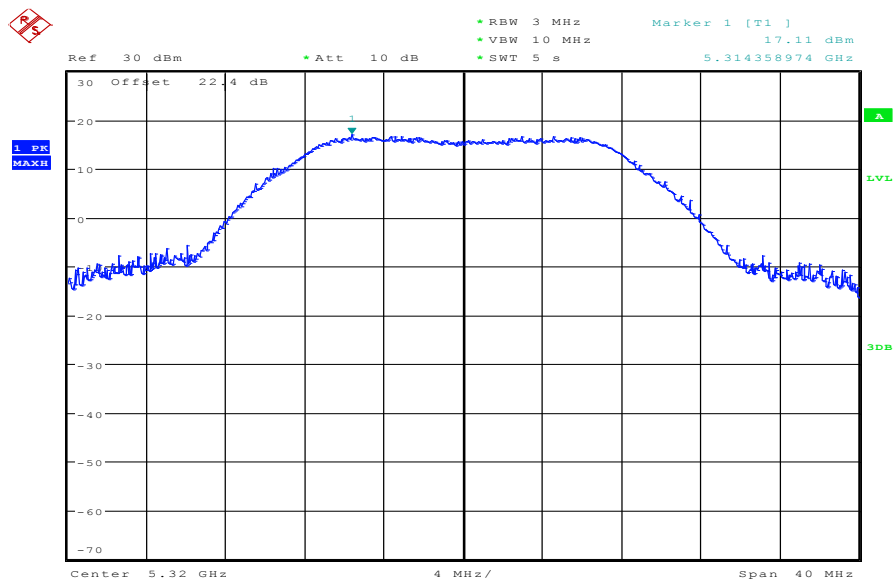
Date: 30.NOV.2012 08:01:06

Plot 3: OFDM / a – mode, 5260 MHz



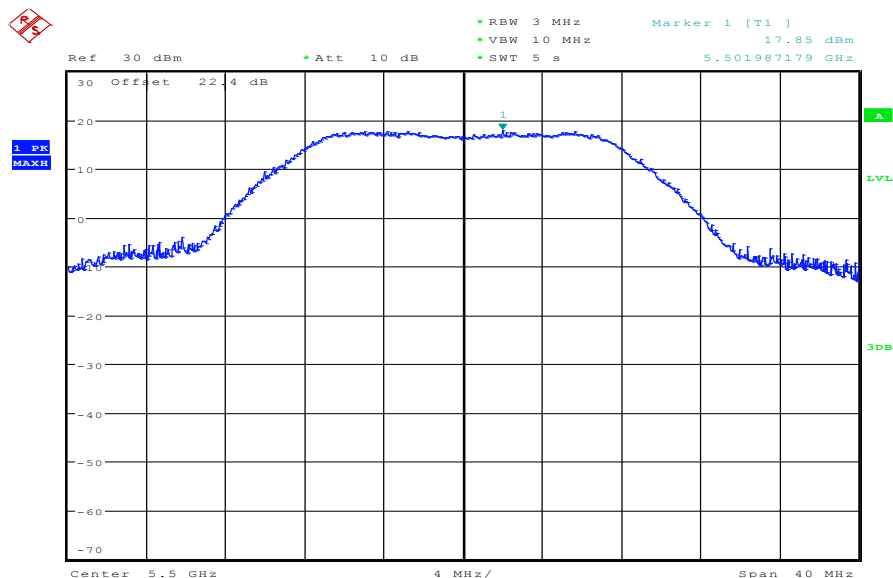
Date: 30.NOV.2012 08:05:03

Plot 4: OFDM / a – mode, 5320 MHz



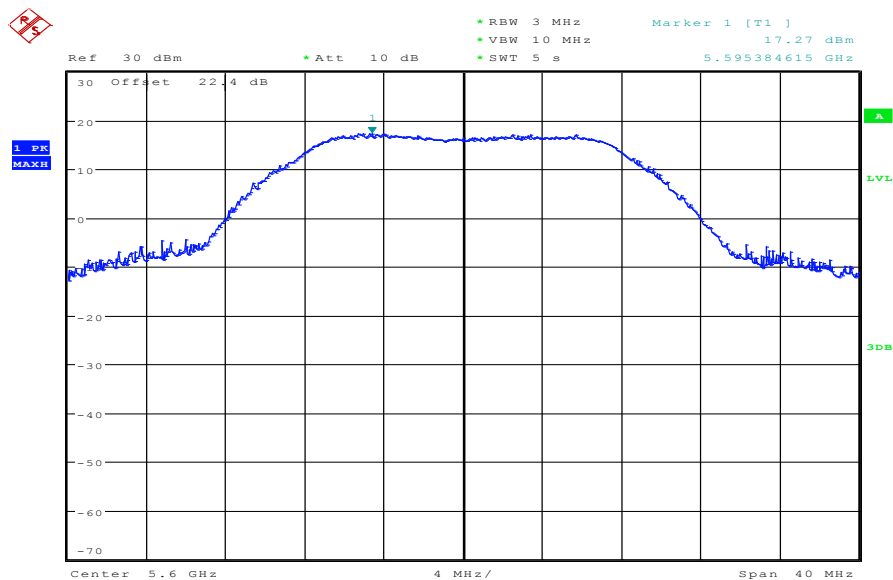
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Plot 5: OFDM / a – mode, 5500 MHz



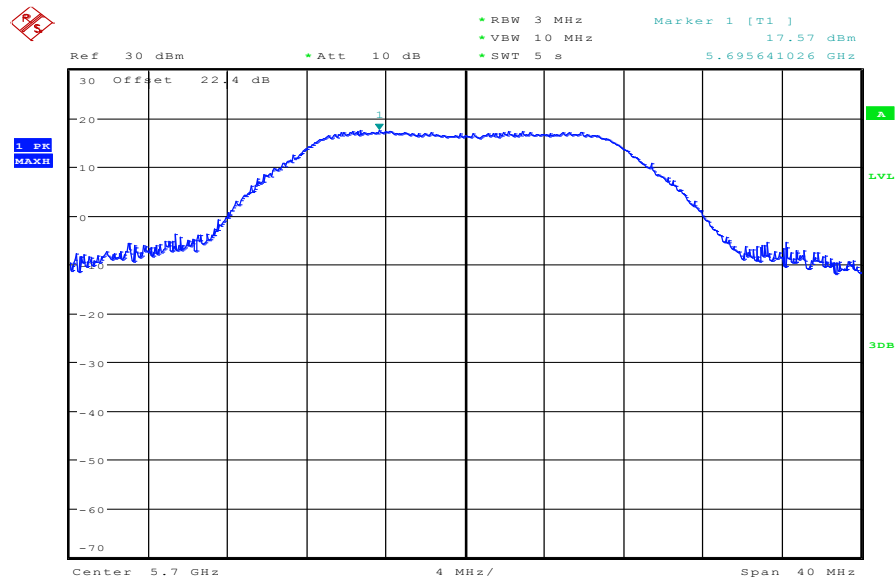
Date: 30.NOV.2012 08:09:49

Plot 6: OFDM / a – mode, 5600 MHz



Date: 30.NOV.2012 08:16:53

Plot 7: OFDM / a – mode, 5700 MHz



Date: 30.NOV.2012 08:20:09

9.2 Duty cycle

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	10 MHz
Video bandwidth:	10 MHz
Span:	Zero
Trace-Mode:	Video trigger / view / single sweep

Results:

Duty cycle and correction factor:

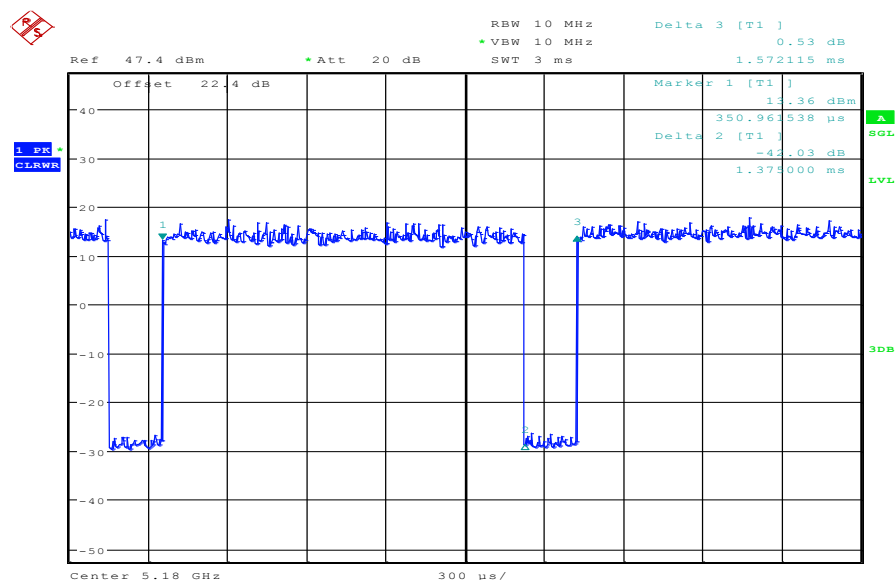
OFDM / a – mode: 87.5 % duty cycle => 0.58 dB

OFDM / n – mode HT20: 86.7 % duty cycle => 0.62 dB

OFDM / n – mode HT40: 93.0 % duty cycle => 0.32 dB

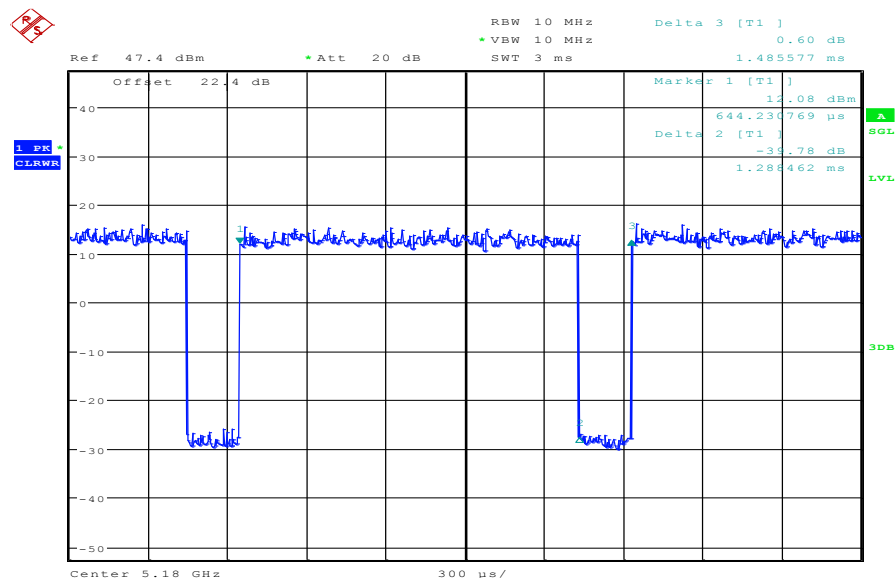
Plots:

Plot 1: duty cycle of the transmitter – OFDM / a – mode



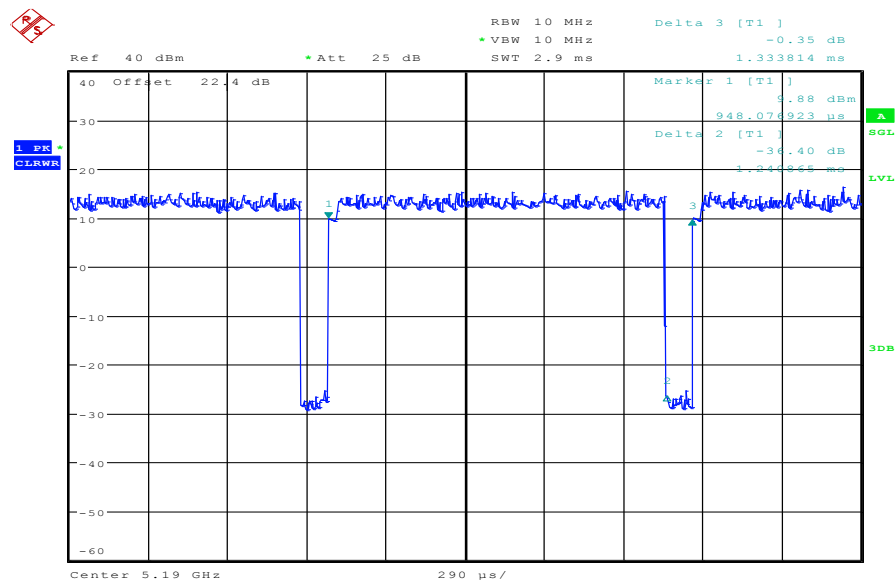
Date: 30.NOV.2012 08:30:08

Plot 2: duty cycle of the transmitter – OFDM / n – mode HT20



Date: 30.NOV.2012 08:31:51

Plot 3: duty cycle of the transmitter – OFDM / n – mode HT40



Date: 28.NOV.2012 15:22:35

9.3 Maximum output power conducted and radiated

Description:

Measurement of the maximum output power conducted and radiated

Measurement:

Measurement parameter	
Detector:	RMS
Sweep time:	60s
Resolution bandwidth:	1 MHz
Video bandwidth:	≥ 3 MHz
Span:	> EBW
Trace-Mode:	Max hold
Analyzer function	Band power / channel power Interval > 26 dB EBW

Limits:

Radiated output power	Conducted output power
Conducted power + 6dBi antenna gain	The lesser one of 50mW or 4 dBm + 10 log Bandwidth 5.15-5.25 GHz 250mW or 11 dBm + 10 log Bandwidth 5.25-5.35 GHz 250mW or 11 dBm + 10 log Bandwidth 5.47-5.725 GHz 1W or 17 dBm + 10 log Bandwidth 5.47-5.725 GHz (where Bandwidth is the 26dB Bandwidth)

Result: OFDM / a – mode

OFDM / a – mode Channel	Maximum output power conducted [dBm]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
+0.58 dB duty cycle correction	12.42	12.60	13.50	12.30
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
+0.58 dB duty cycle correction	12.19	12.16	11.56	-/-
Measurement uncertainty	± 1 dB			

Result: Passed

OFDM / a – mode Channel	Maximum output power radiated - EIRP [dBm]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
+0.58 dB duty cycle correction	11.87	10.77	11.10	10.64
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
+0.58 dB duty cycle correction	10.84	11.99	11.69	-/-
Measurement uncertainty	± 3 dB			

Result: Passed

Result: OFDM / n – mode HT20

OFDM / n – mode HT20 Channel	Maximum output power conducted [dBm]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
+0.62 dB duty cycle correction	12.09	12.33	12.85	10.70
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
+0.62 dB duty cycle correction	11.98	10.82	10.85	-/-
Measurement uncertainty	± 1 dB			

Result: Passed

OFDM / n – mode HT20 Channel	Maximum output power radiated - EIRP [dBm]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
+0.62 dB duty cycle correction	11.54	10.50	10.45	9.04
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
+0.62 dB duty cycle correction	10.63	10.65	10.98	-/-
Measurement uncertainty	± 3 dB			

Result: Passed

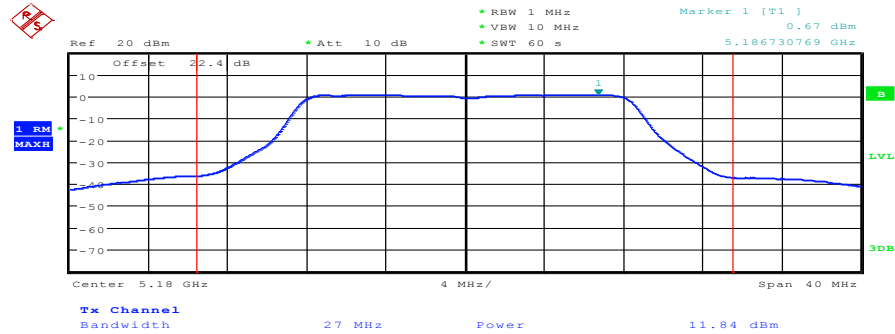
Result: OFDM / n – mode HT40

OFDM / n – mode HT40 Channel	Maximum output power conducted [dBm]			
	Lowest 5190 MHz	Highest 5230 MHz	Lowest 5270 MHz	Highest 5310 MHz
+0.32 dB duty cycle correction	12.05	11.90	13.02	11.15
Channel	Lowest 5510 MHz	Middle 5590 MHz	Highest 5670 MHz	-/-
+0.32 dB duty cycle correction	10.94	11.99	11.52	-/-
Measurement uncertainty	± 1 dB			

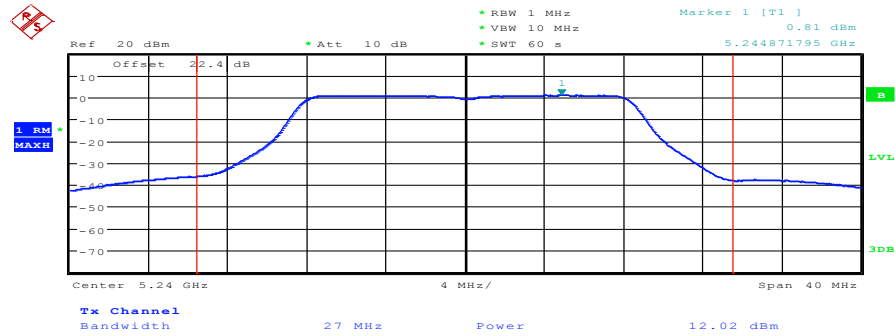
Result: Passed

OFDM / n – mode HT40 Channel	Maximum output power radiated - EIRP [dBm]			
	Lowest 5190 MHz	Highest 5230 MHz	Lowest 5270 MHz	Highest 5310 MHz
+0.32 dB duty cycle correction	11.50	10.07	10.62	9.49
Channel	Lowest 5510 MHz	Middle 5590 MHz	Highest 5670 MHz	-/-
+0.32 dB duty cycle correction	9.59	11.82	11.65	-/-
Measurement uncertainty	± 3 dB			

Result: Passed

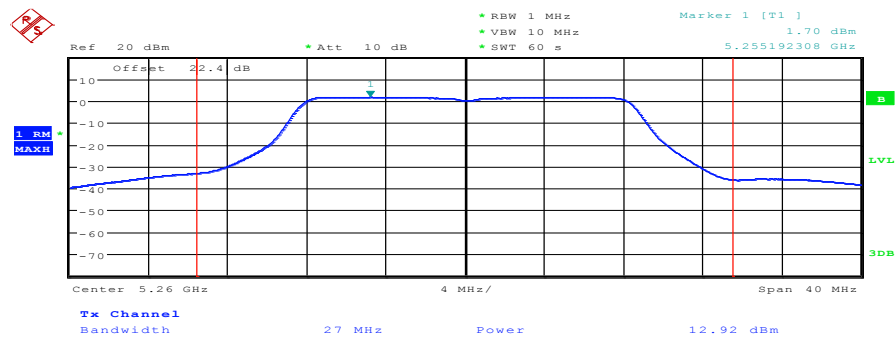
Plots: OFDM / a – mode**Plot 1: 5180 MHz**

Date: 30.NOV.2012 11:26:14

Plot 2: 5240 MHz

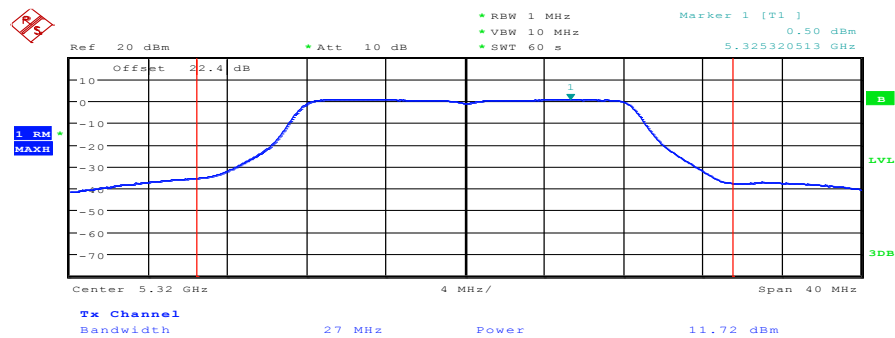
Date: 30.NOV.2012 11:27:40

Plot 3: 5260 MHz



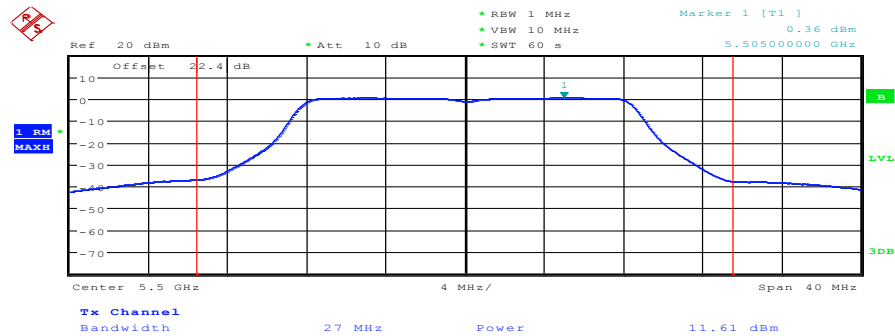
Date: 30.NOV.2012 11:29:21

Plot 4: 5320 MHz



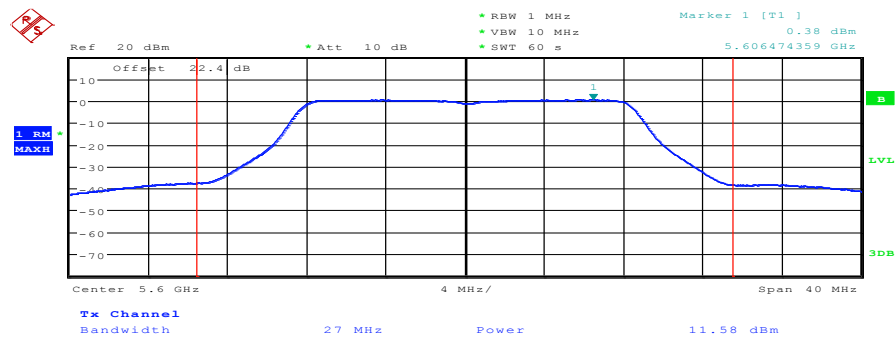
Date: 30.NOV.2012 11:31:12

Plot 5: 5500 MHz



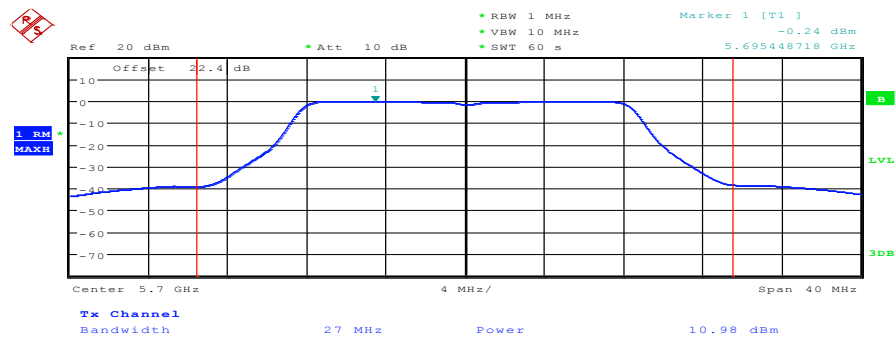
Date: 30.NOV.2012 11:32:46

Plot 6: 5600 MHz



Date: 30.NOV.2012 11:34:39

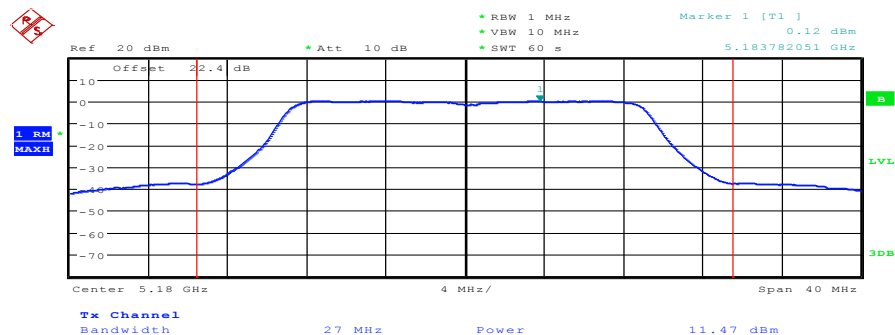
Plot 7: 5700 MHz



Date: 30.NOV.2012 11:36:16

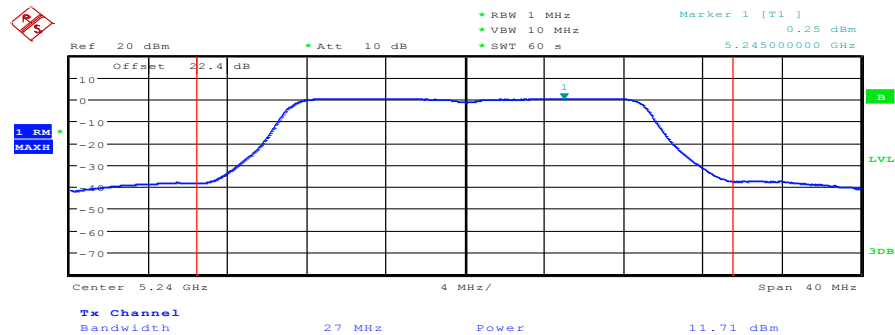
Plots: OFDM / n – mode HT20

Plot 1: 5180 MHz



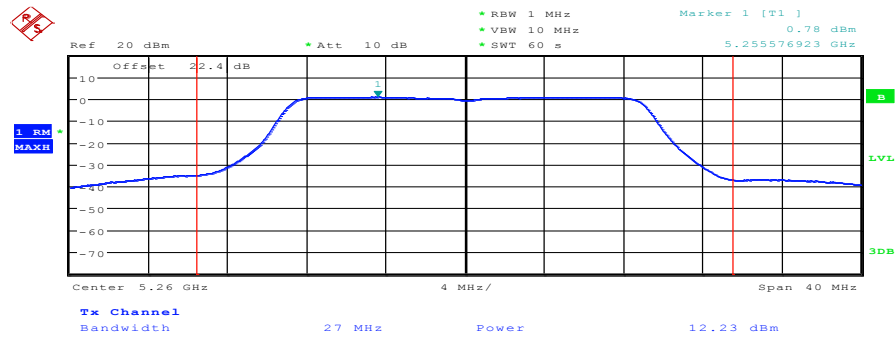
Date: 30.NOV.2012 11:50:03

Plot 2: 5240 MHz



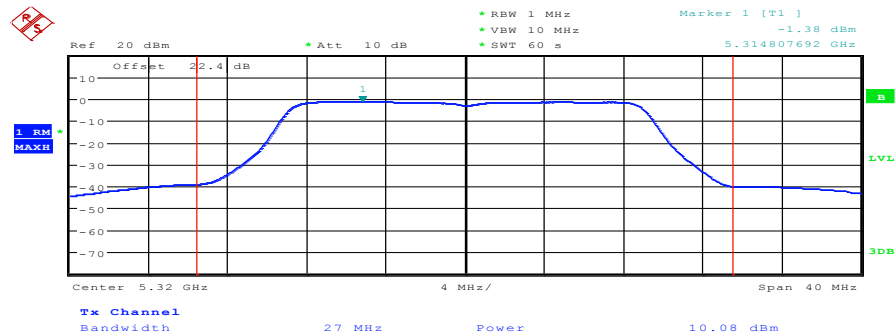
Date: 30.NOV.2012 11:47:57

Plot 3: 5260 MHz

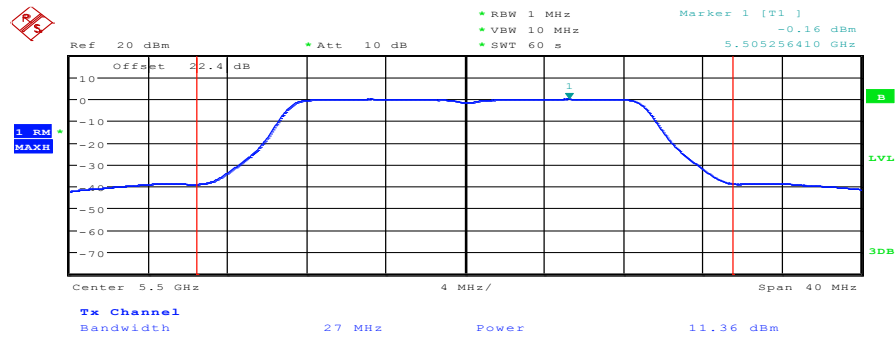


Date: 30.NOV.2012 11:46:29

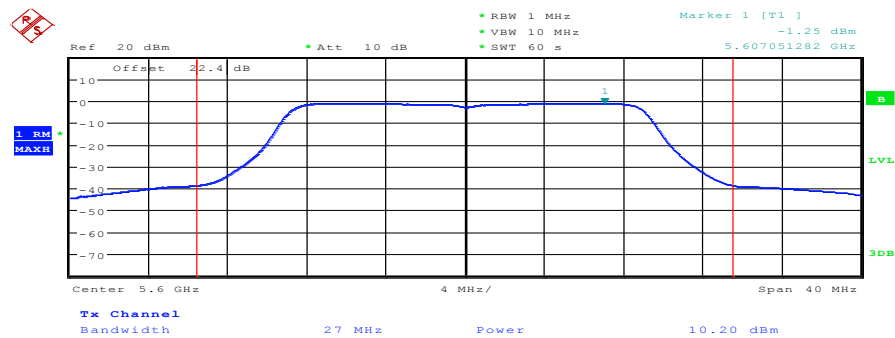
Plot 4: 5320 MHz



Date: 30.NOV.2012 11:44:47

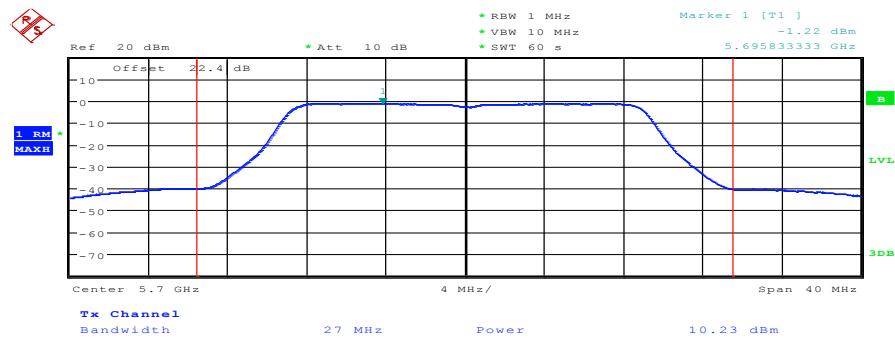
Plot 5: 5500 MHz

Date: 30.NOV.2012 11:43:07

Plot 6: 5600 MHz

Date: 30.NOV.2012 11:41:42

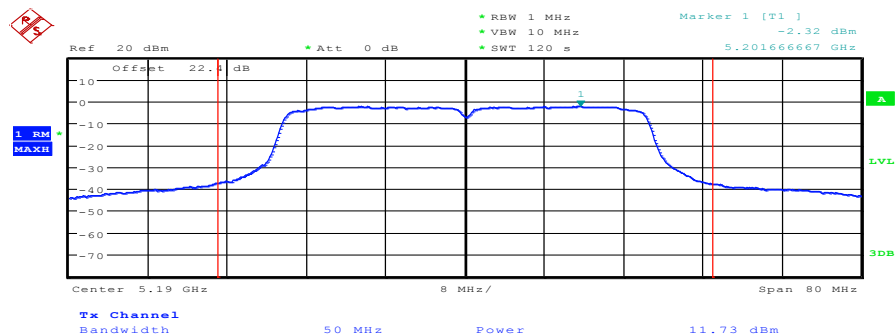
Plot 7: 5700 MHz



Date: 30.NOV.2012 11:39:50

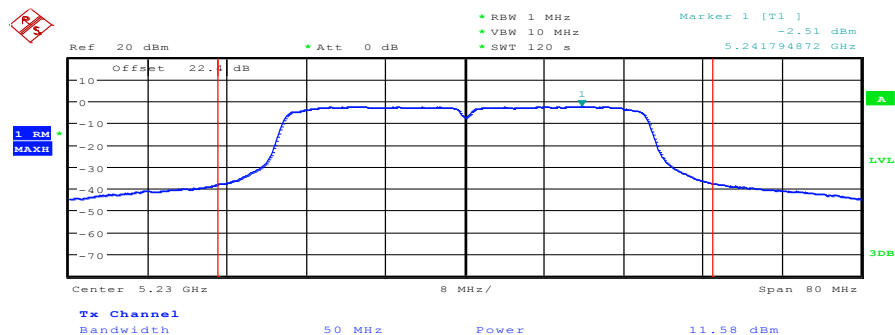
Plots: OFDM / n – mode HT40

Plot 1: 5190 MHz



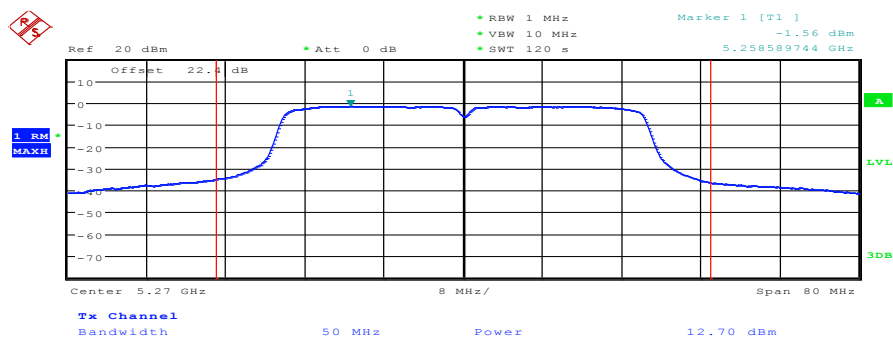
Date: 28.NOV.2012 16:42:20

Plot 2: 5230 MHz



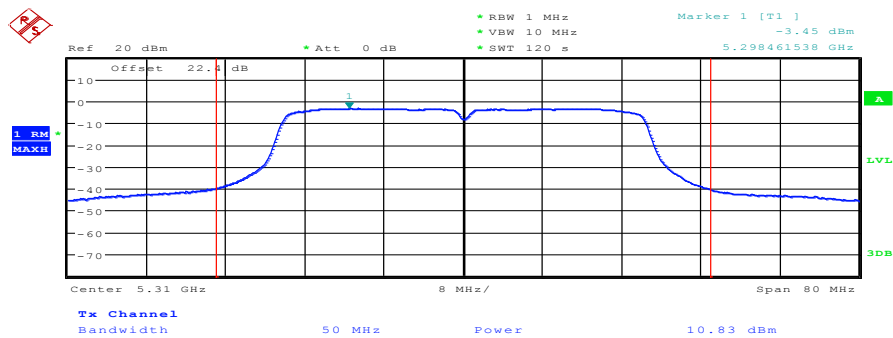
Date: 28.NOV.2012 16:44:55

Plot 3: 5270 MHz



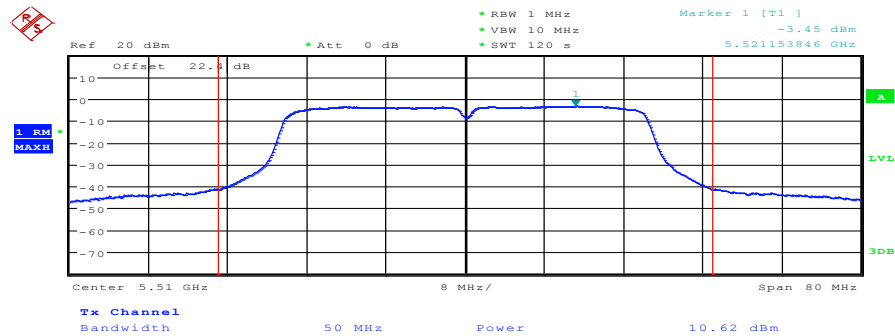
Date: 28.NOV.2012 16:50:16

Plot 4: 5310 MHz



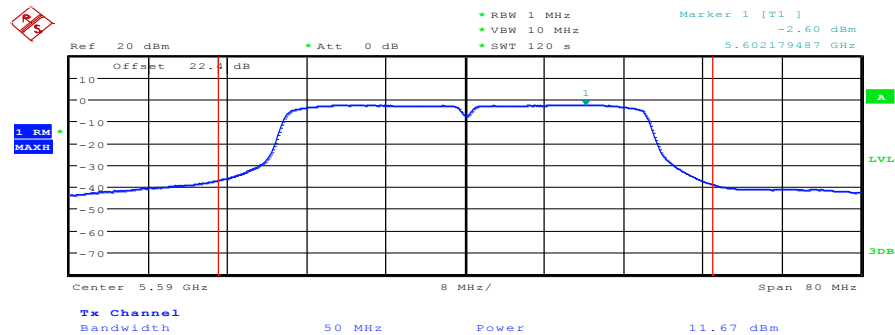
Date: 28.NOV.2012 16:53:09

Plot 5: 5510 MHz



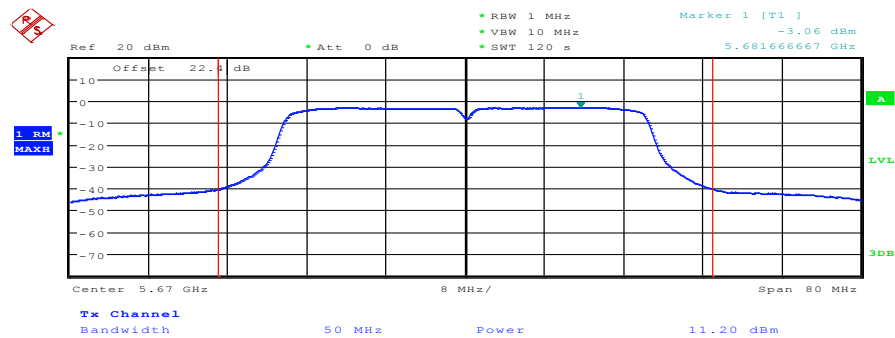
Date: 28.NOV.2012 16:55:43

Plot 6: 5590 MHz



Date: 28.NOV.2012 16:58:20

Plot 7: 5670 MHz



Date: 28.NOV.2012 17:01:50

9.4 Power spectral density

Description:

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

Measurement:

Measurement parameter	
Detector:	RMS
Sweep time:	60 s / 120 s
Resolution bandwidth:	1 MHz
Video bandwidth:	≥ 3 MHz
Span:	> EBW
Trace-Mode:	Max hold

Limits:

Power Spectral Density
power spectral density conducted ≤ 4 dBm in any 1 MHz band (band 5150 – 5250 MHz) power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5250 – 5350 MHz) power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5470 – 5725 MHz)

Result: OFDM / a – mode

OFDM / a – mode Channel	Power Spectral density [dBm/MHz]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
+0.58 dB duty cycle correction	0.53	0.91	1.17	0.49
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
+0.58 dB duty cycle correction	1.73	0.72	0.27	-/-
Measurement uncertainty	± 1 dB			

Result: Passed**Result: OFDM / n – mode HT20**

OFDM / n – mode HT20 Channel	Power Spectral density [dBm/MHz]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
+0.62 dB duty cycle correction	-0.55	0.06	0.38	-0.45
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
+0.62 dB duty cycle correction	-0.78	-0.71	-0.78	-/-
Measurement uncertainty	± 1 dB			

Result: Passed

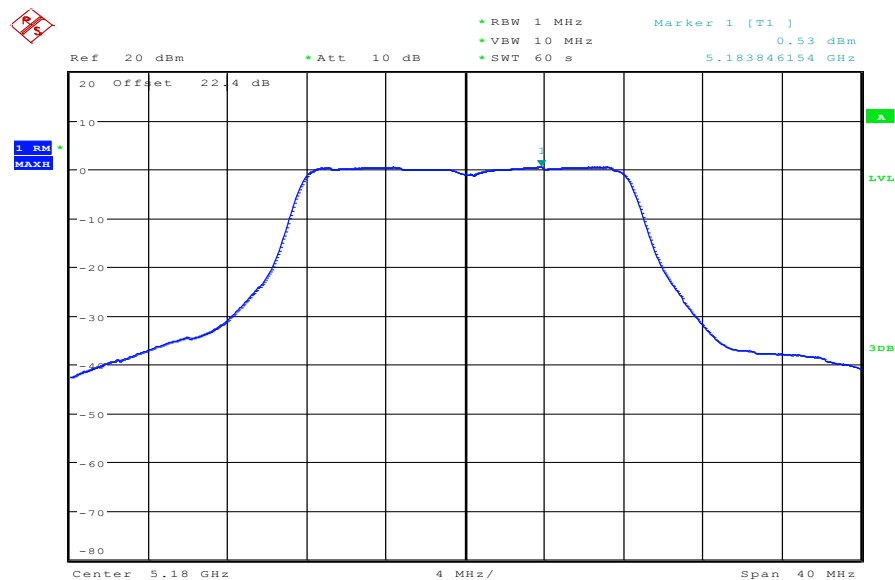
Result: OFDM / n – mode HT40

OFDM / n – mode HT40 Channel	Power Spectral density [dBm/MHz]			
	Lowest 5190 MHz	Highest 5230 MHz	Lowest 5270 MHz	Highest 5310 MHz
+0.32 dB duty cycle correction	-0.38	-2.32	-1.06	-2.49
Channel	Lowest 5510 MHz	Middle 5590 MHz	Highest 5670 MHz	-/-
+0.32 dB duty cycle correction	-2.17	-2.52	-3.01	-/-
Measurement uncertainty	± 1 dB			

Result: Passed

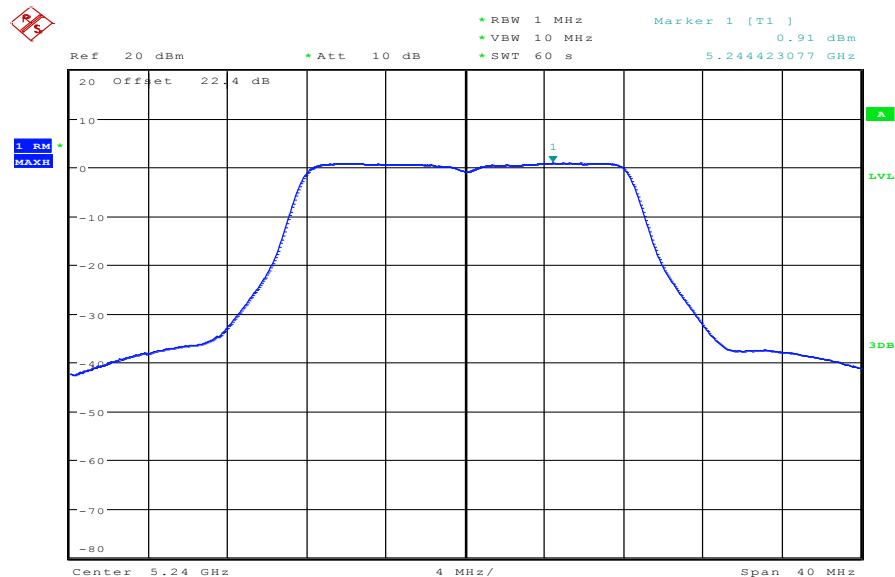
Plots: OFDM / a – mode

Plot 1: 5180 MHz



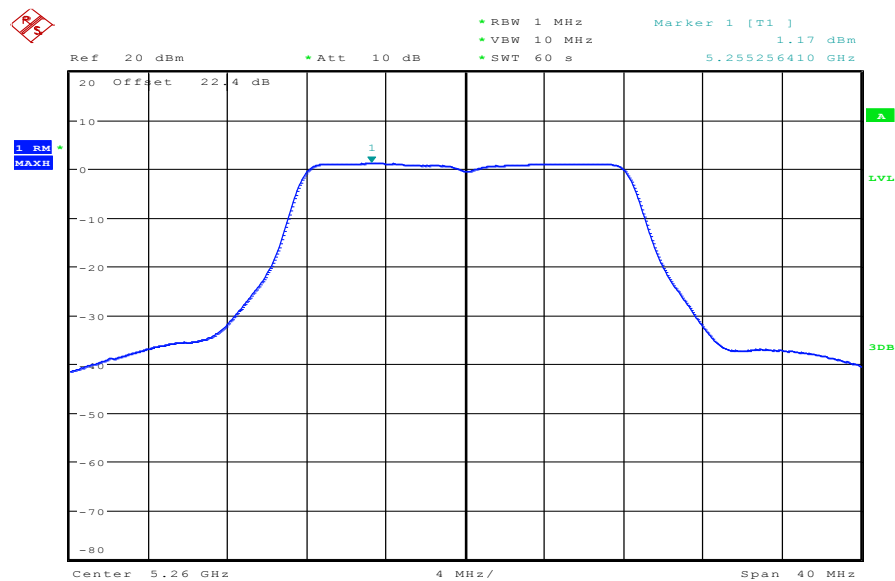
Date: 30.NOV.2012 08:40:35

Plot 2: 5240 MHz



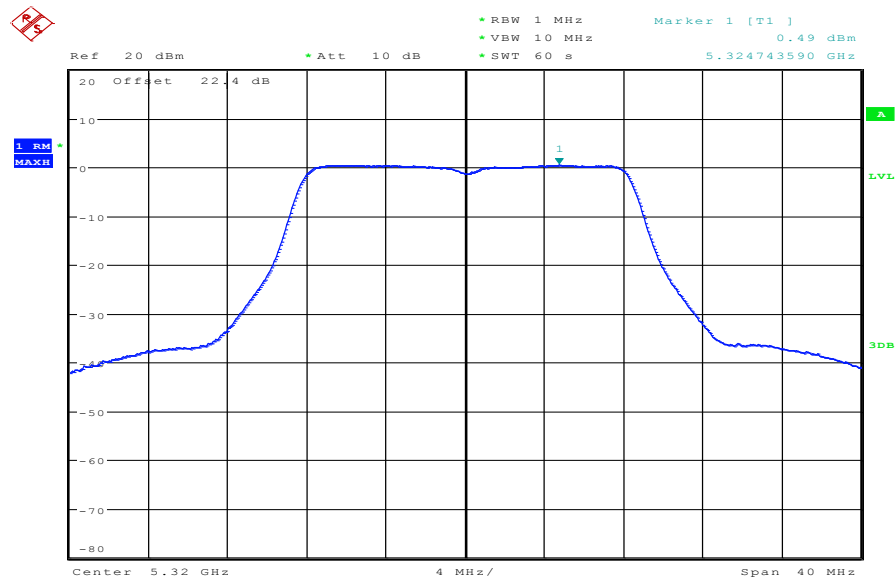
Date: 30.NOV.2012 08:42:26

Plot 3: 5260 MHz



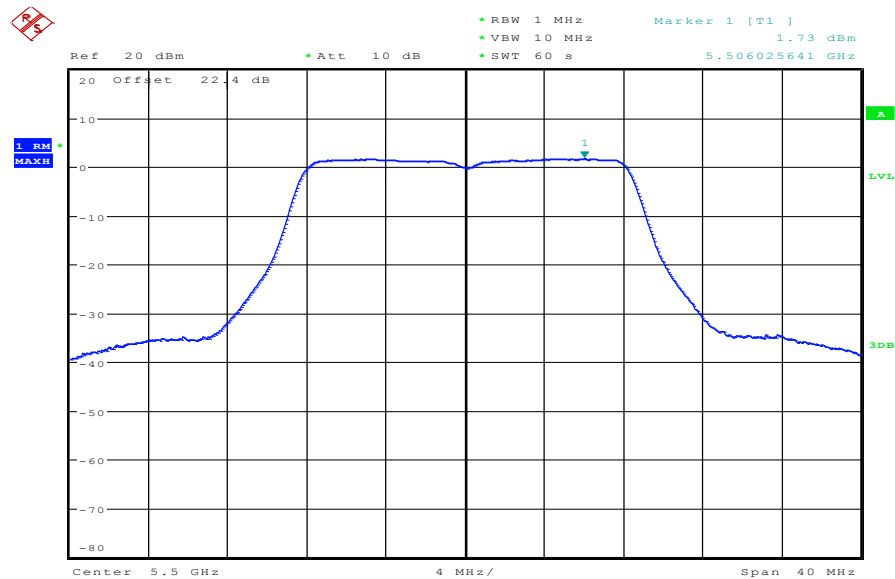
Date: 30.NOV.2012 08:44:13

Plot 4: 5320 MHz



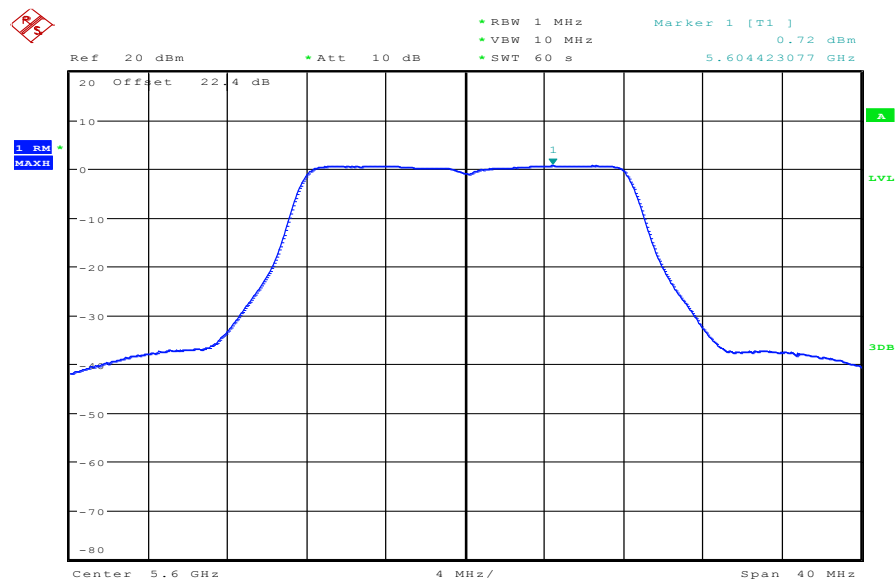
Date: 30.NOV.2012 08:47:27

Plot 5: 5500 MHz



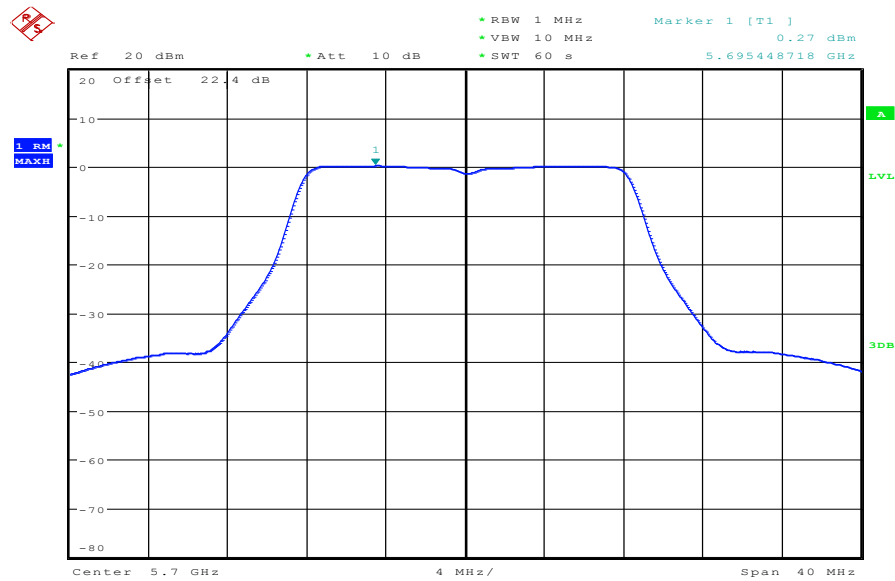
Date: 30.NOV.2012 08:49:20

Plot 6: 5600 MHz



Date: 30.NOV.2012 08:52:25

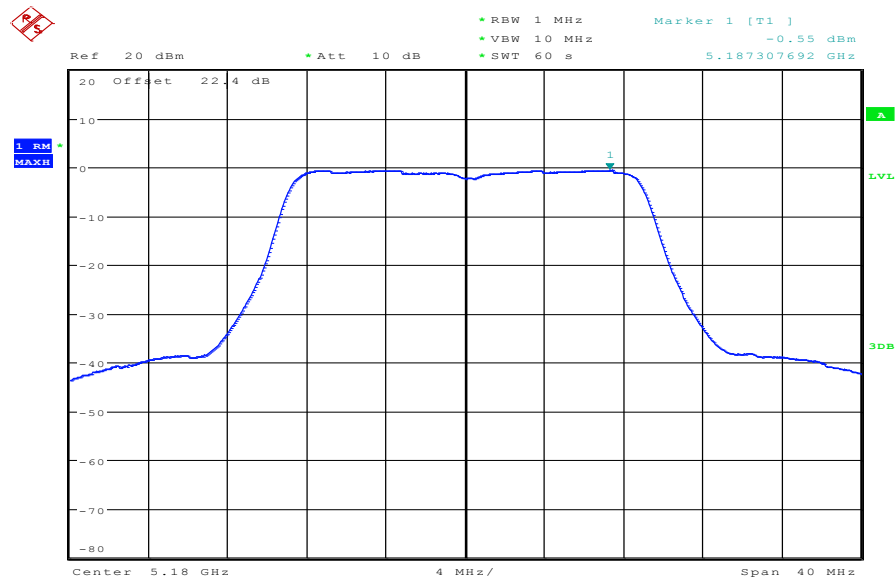
Plot 7: 5700 MHz



Date: 30.NOV.2012 08:54:54

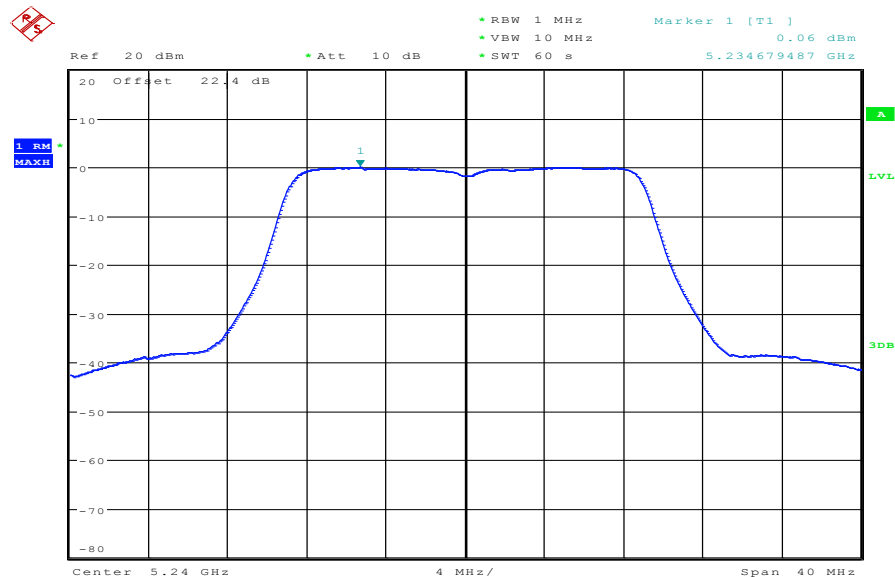
Plots: OFDM / n – mode HT20

Plot 1: 5180 MHz



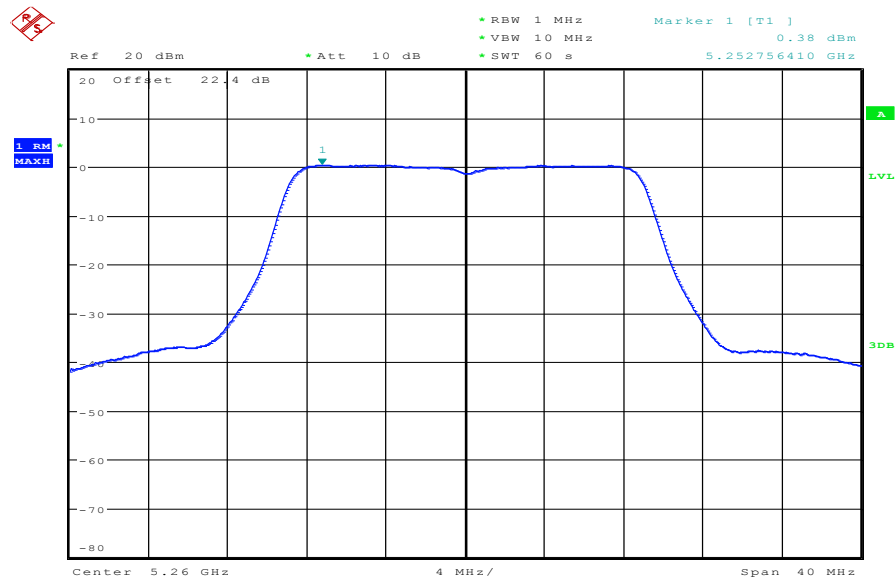
Date: 30.NOV.2012 09:15:52

Plot 2: 5240 MHz



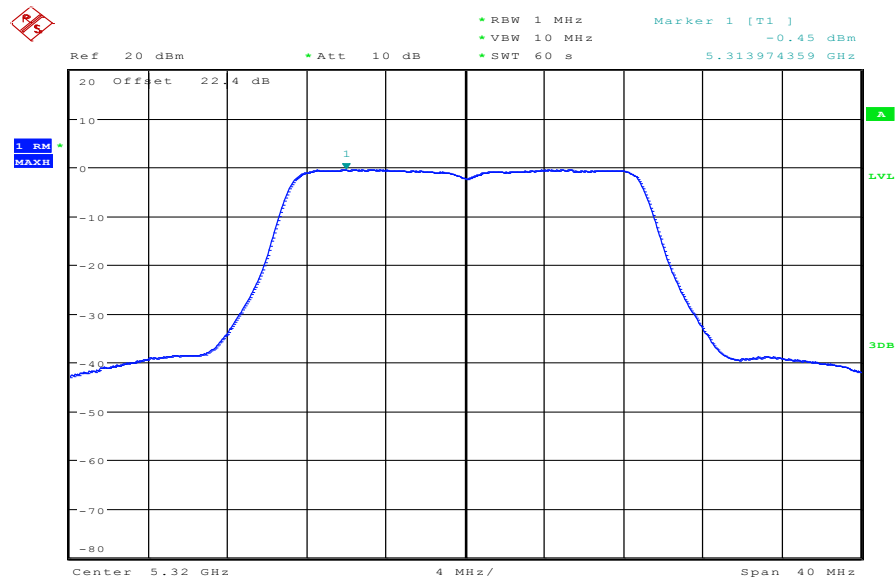
Date: 30.NOV.2012 09:11:33

Plot 3: 5260 MHz



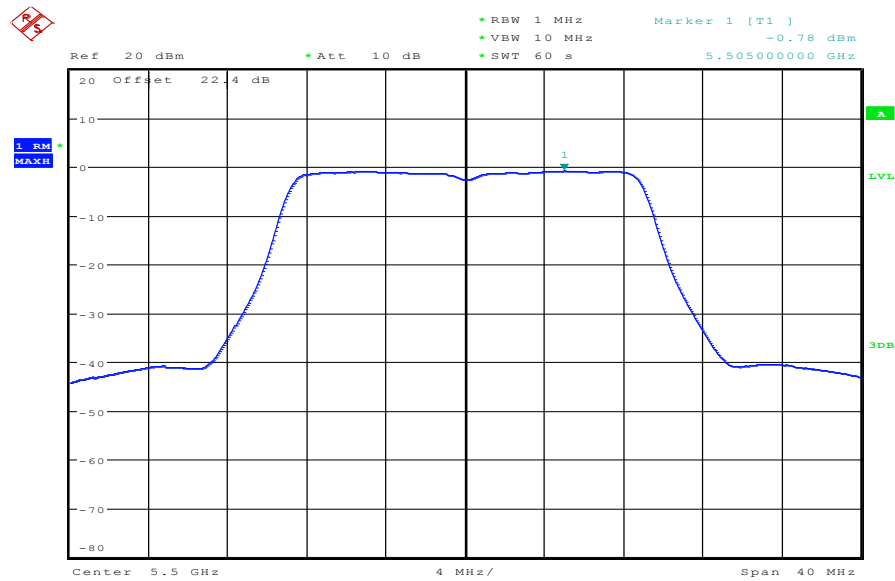
Date: 30.NOV.2012 09:08:37

Plot 4: 5320 MHz



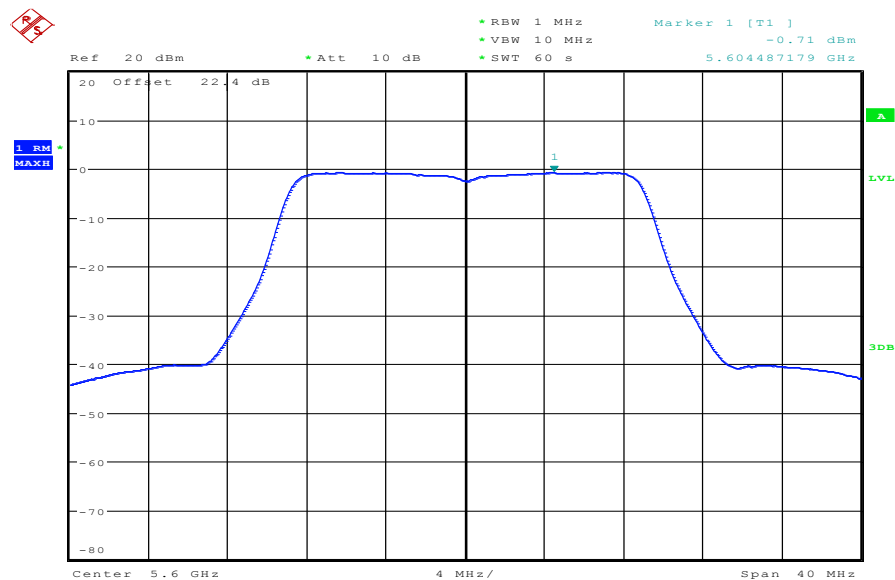
Date: 30.NOV.2012 09:07:02

Plot 5: 5500 MHz



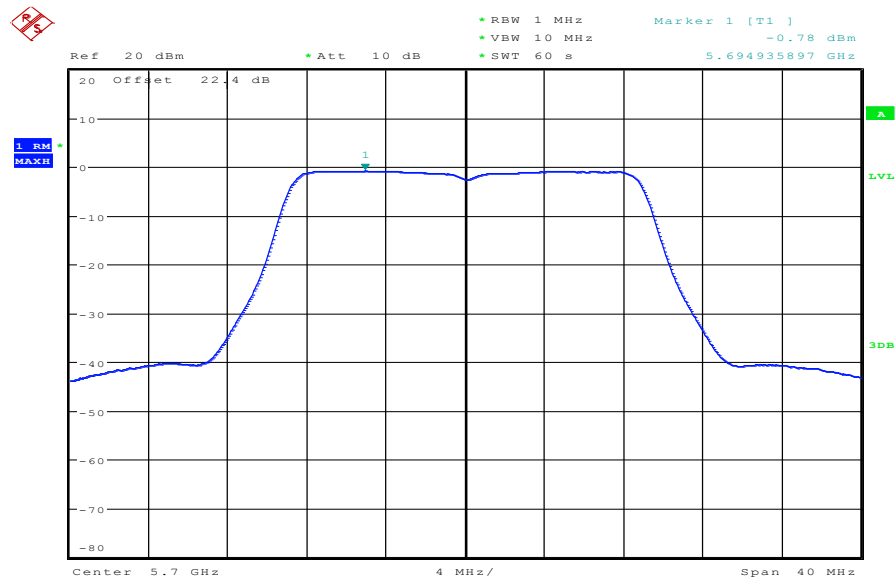
Date: 30.NOV.2012 09:05:07

Plot 6: 5600 MHz



Date: 30.NOV.2012 09:02:46

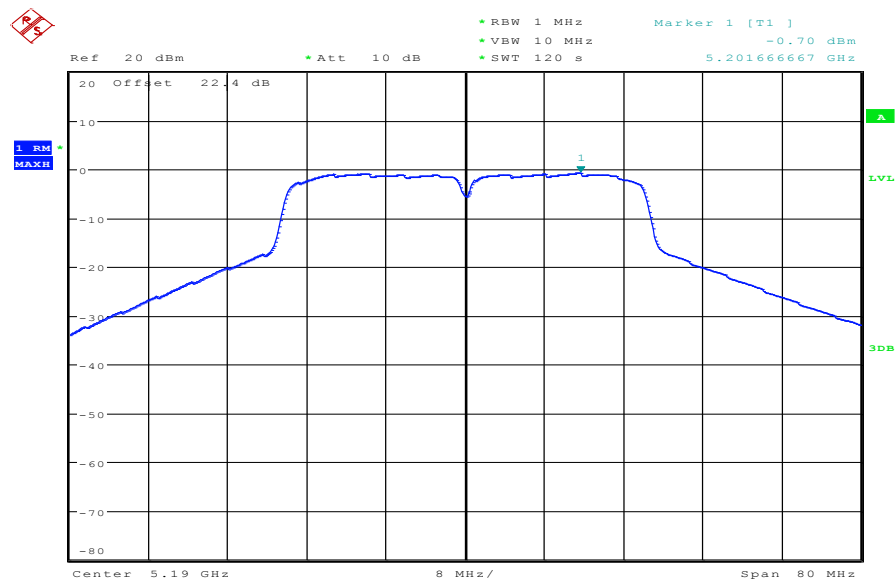
Plot 7: 5700 MHz



Date: 30.NOV.2012 09:00:41

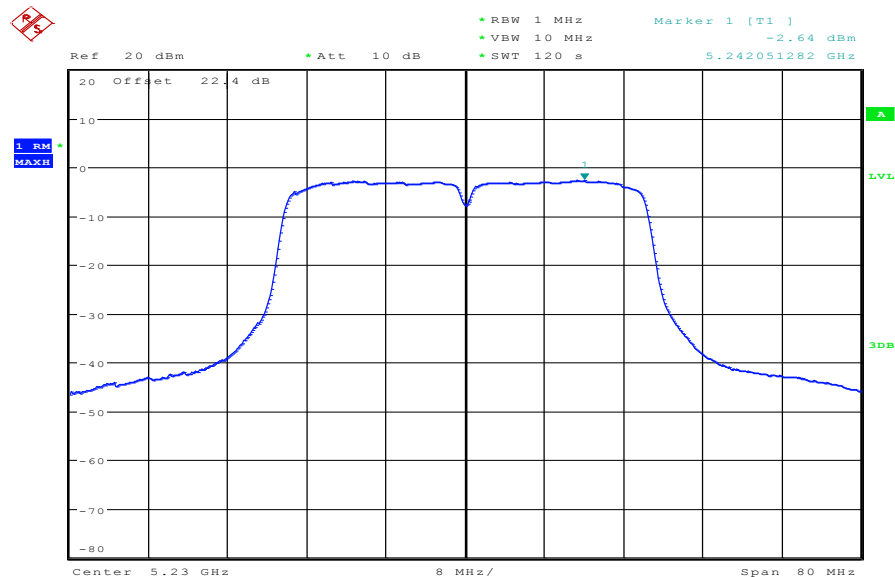
Plots: OFDM / n – mode HT40

Plot 1: 5190 MHz



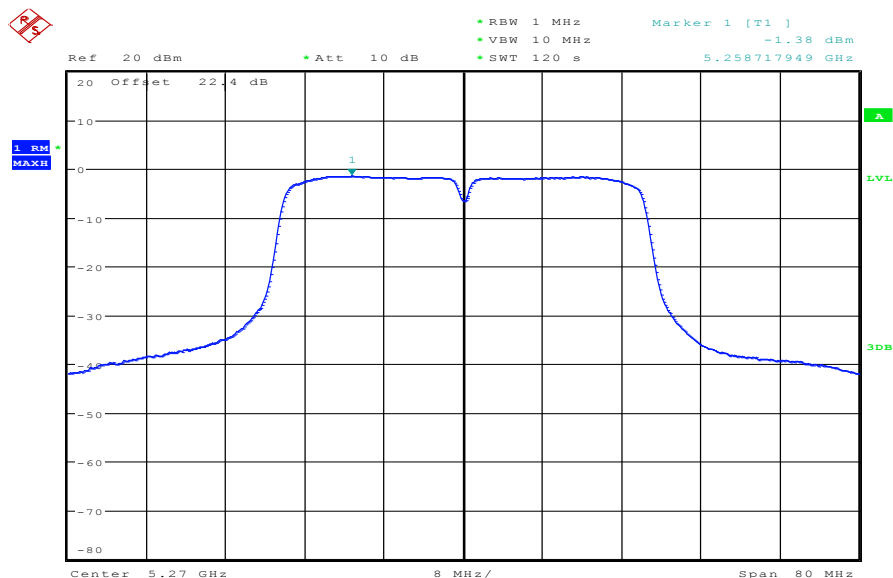
Date: 28.NOV.2012 15:27:38

Plot 2: 5230 MHz



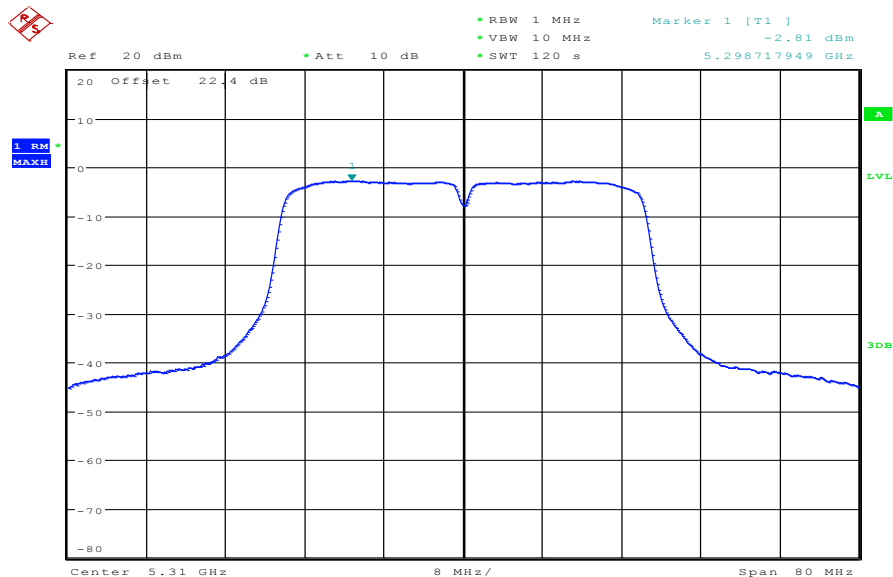
Date: 28.NOV.2012 15:36:17

Plot 3: 5270 MHz



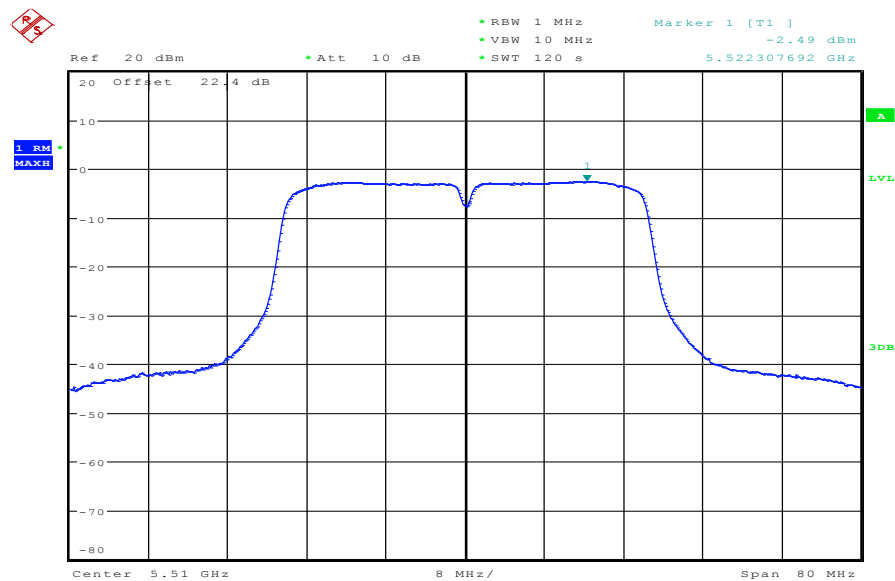
Date: 28.NOV.2012 15:39:01

Plot 4: 5310 MHz



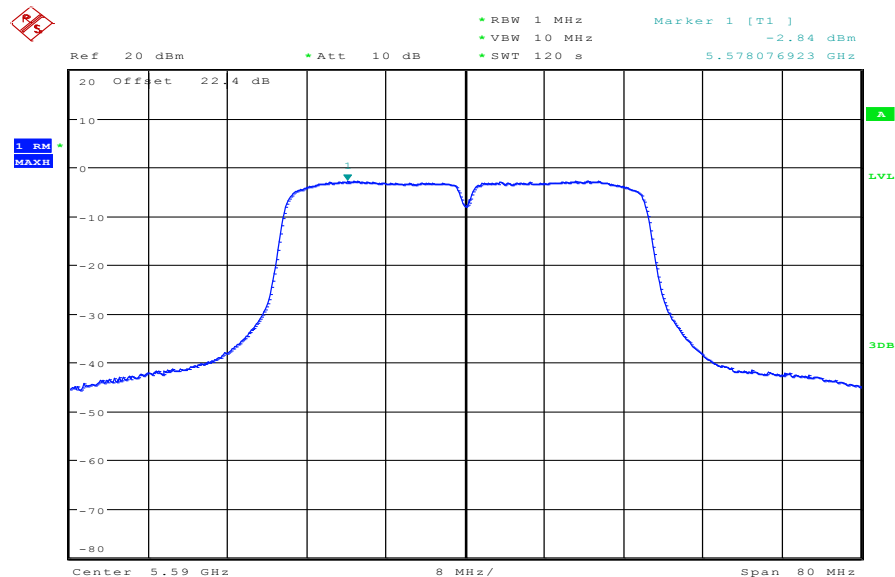
Date: 28.NOV.2012 15:47:39

Plot 5: 5510 MHz



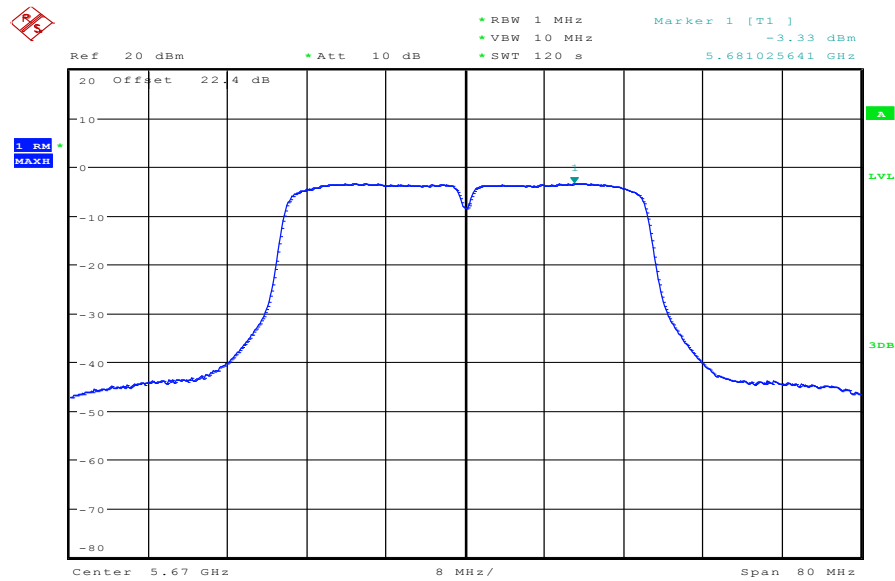
Date: 28.NOV.2012 15:50:28

Plot 6: 5590 MHz



Date: 28.NOV.2012 15:59:14

Plot 7: 5670 MHz



Date: 28.NOV.2012 16:01:46

9.5 Spectrum bandwidth – 26 dB bandwidth

Description:

Measurement of the 26 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1% EBW
Video bandwidth:	≥ RBW
Span:	> complete signal!
Trace-Mode:	Max hold

Limits:

Spectrum Bandwidth – 26 dB Bandwidth
-/-

Result: OFDM / a – mode

OFDM / a – mode Channel	26 dB BANDWIDTH [MHz]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
	24.04	25.13	24.62	24.68
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
	24.29	23.27	23.01	-/-
Measurement uncertainty	± 1 dB			

Result: Passed**Result: OFDM / n – mode HT20**

OFDM / n – mode HT20 Channel	26 dB BANDWIDTH [MHz]			
	Lowest 5180 MHz	Highest 5240 MHz	Lowest 5260 MHz	Highest 5320 MHz
	22.88	23.14	23.33	23.14
Channel	Lowest 5500 MHz	Middle 5600 MHz	Highest 5700 MHz	-/-
	23.01	23.27	23.65	-/-
Measurement uncertainty	± 1 dB			

Result: Passed

Result: OFDM / n – mode HT40

OFDM / n – mode HT40 Channel	26 dB BANDWIDTH [MHz]			
	Lowest 5190 MHz	Highest 5230 MHz	Lowest 5270 MHz	Highest 5310 MHz
	44.74	48.97	48.72	51.15
Channel	Lowest 5510 MHz	Middle 5590 MHz	Highest 5670 MHz	-/-
	47.18	43.72	45.77	-/-
Measurement uncertainty	± 1 dB			

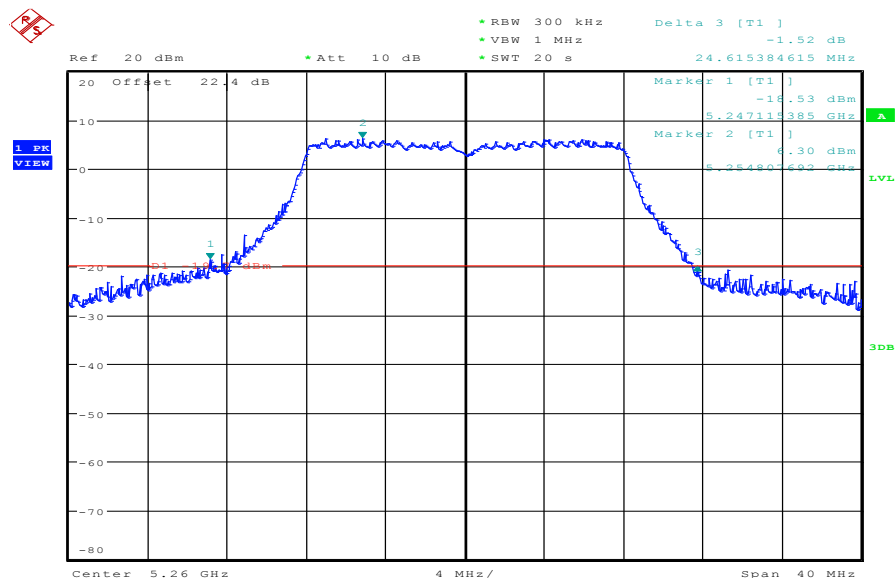
Result: Passed

Plot 1: 5180 MHz



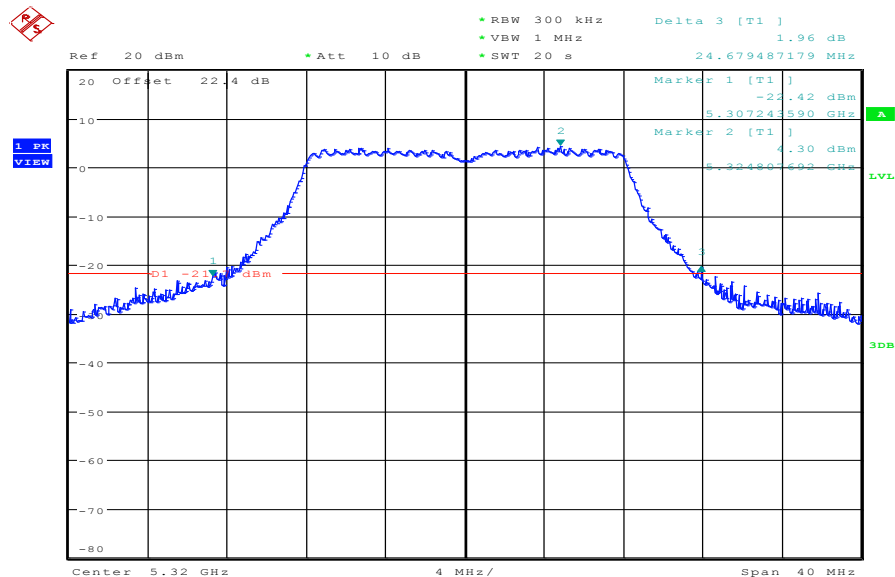
Date: 30.NOV.2012 11:21:18

Plot 3: 5260 MHz



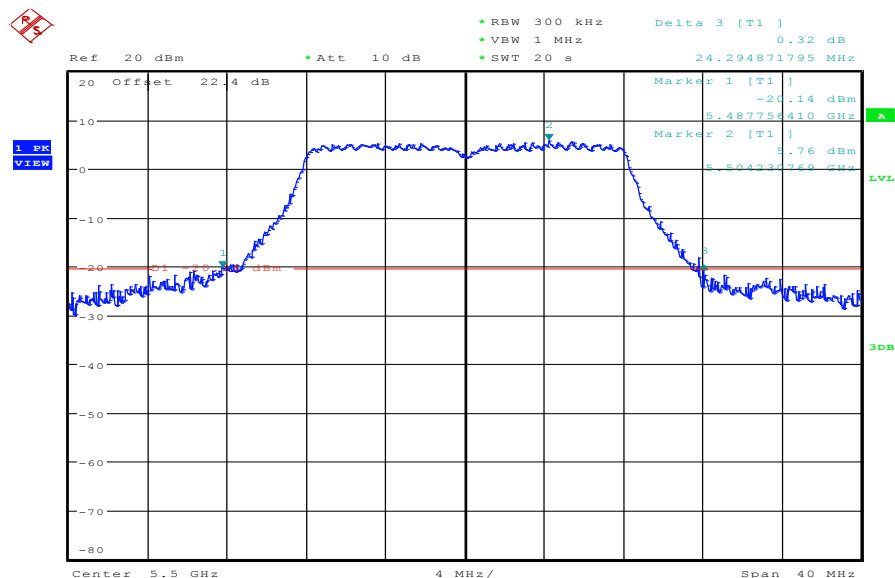
Date: 30.NOV.2012 11:20:00

Plot 4: 5320 MHz



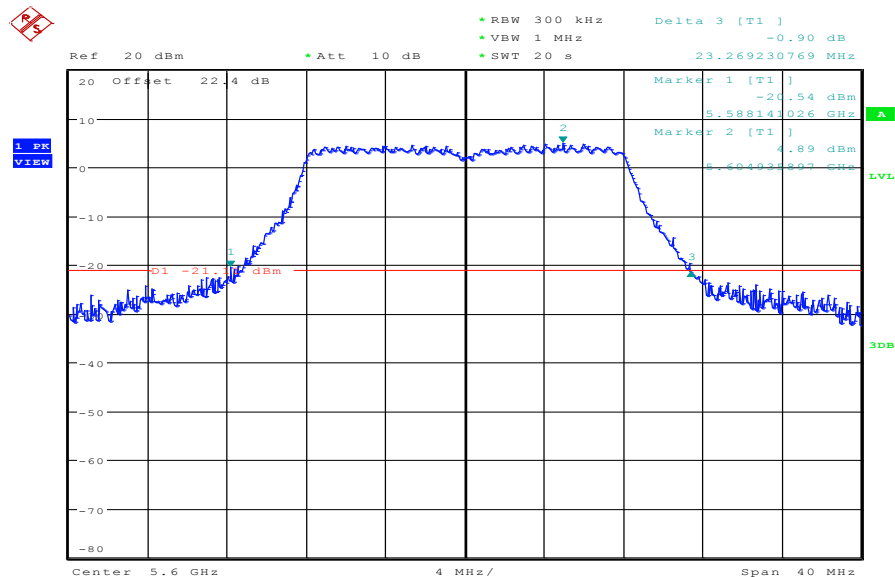
Date: 30.NOV.2012 11:17:56

Plot 5: 5500 MHz



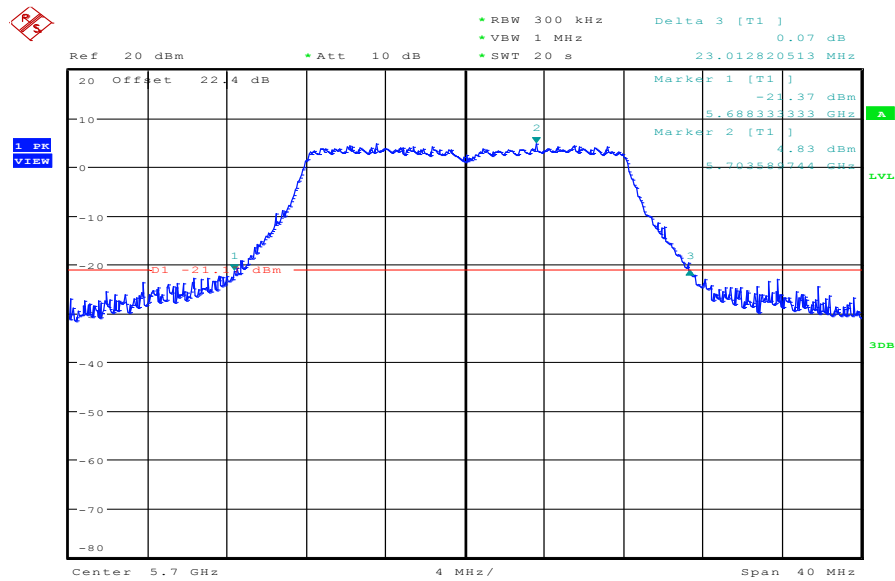
Date: 30.NOV.2012 11:15:36

Plot 6: 5600 MHz



Date: 30.NOV.2012 11:13:16

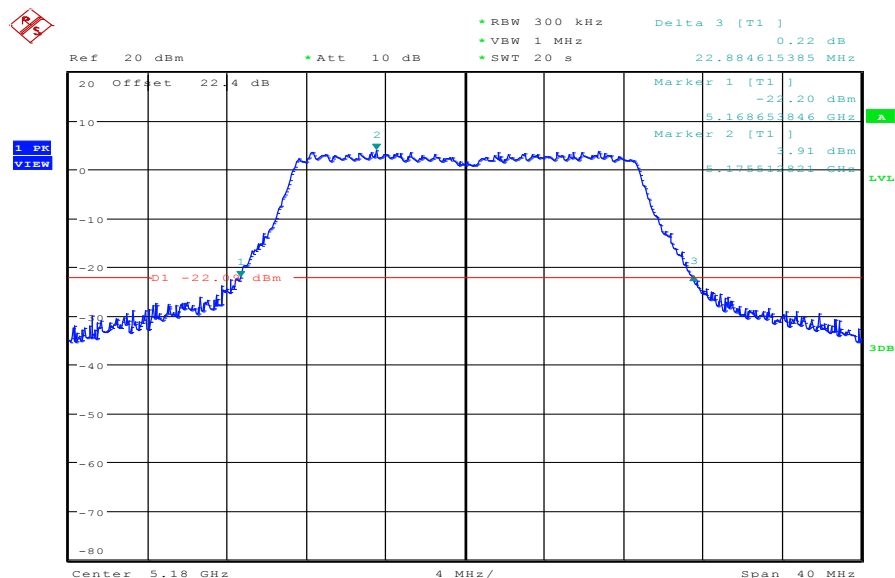
Plot 7: 5700 MHz



Date: 30.NOV.2012 11:10:40

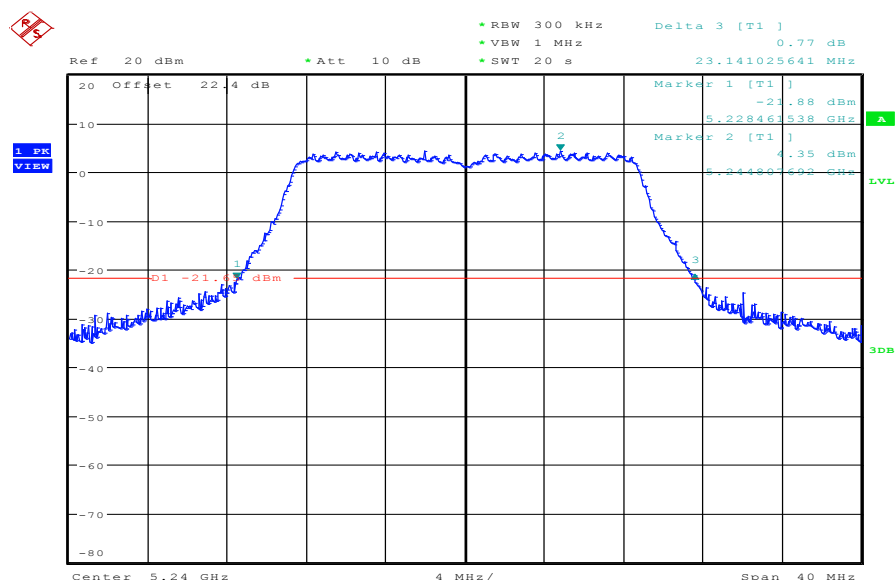
Plots: OFDM / n – mode HT20

Plot 1: 5180 MHz



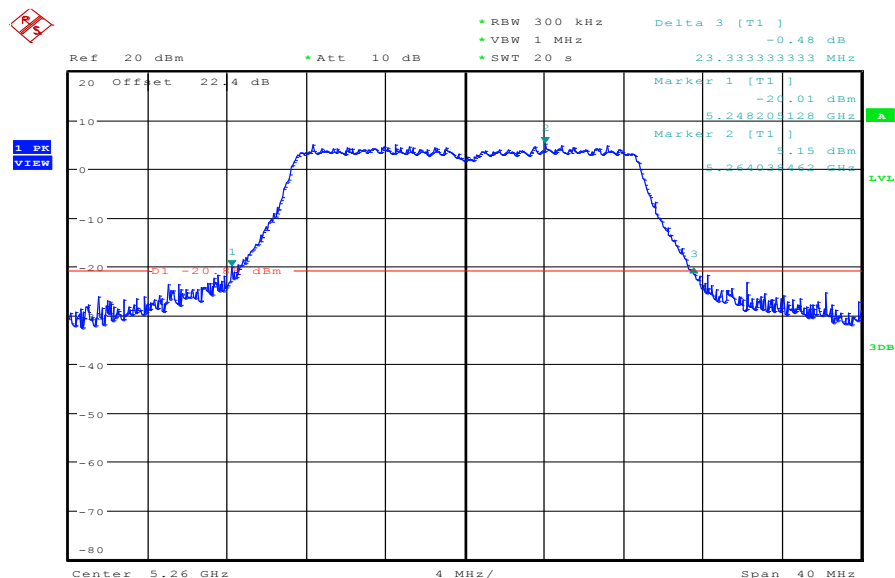
Date: 30.NOV.2012 10:56:34

Plot 2: 5240 MHz



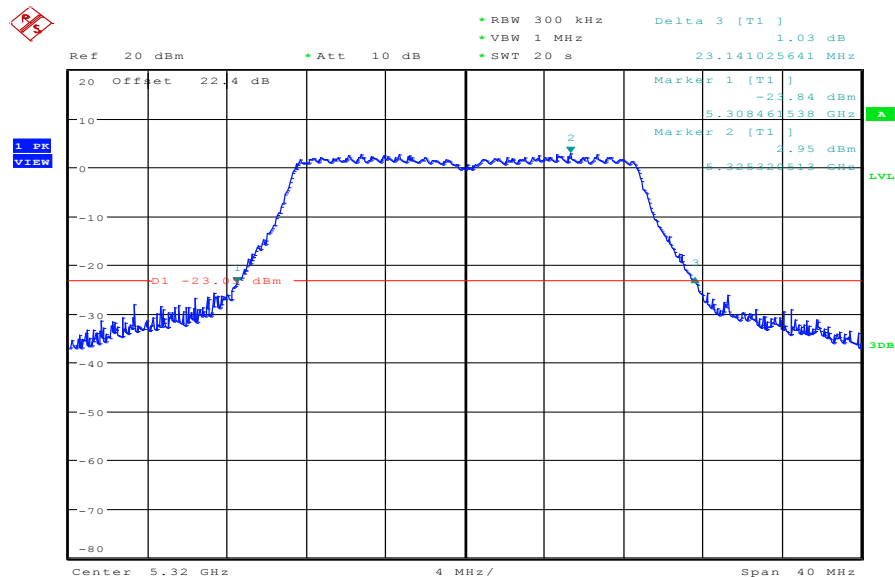
Date: 30.NOV.2012 10:58:57

Plot 3: 5260 MHz



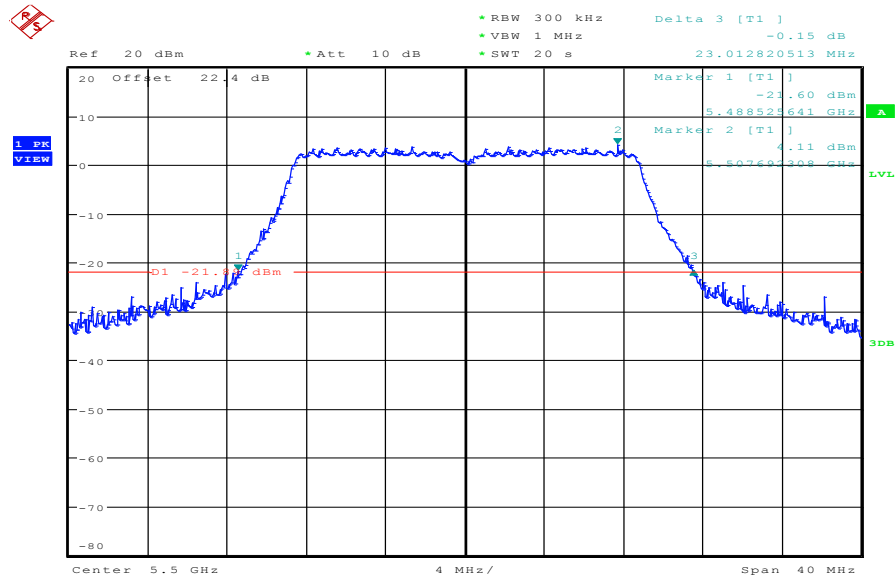
Date: 30.NOV.2012 11:00:27

Plot 4: 5320 MHz



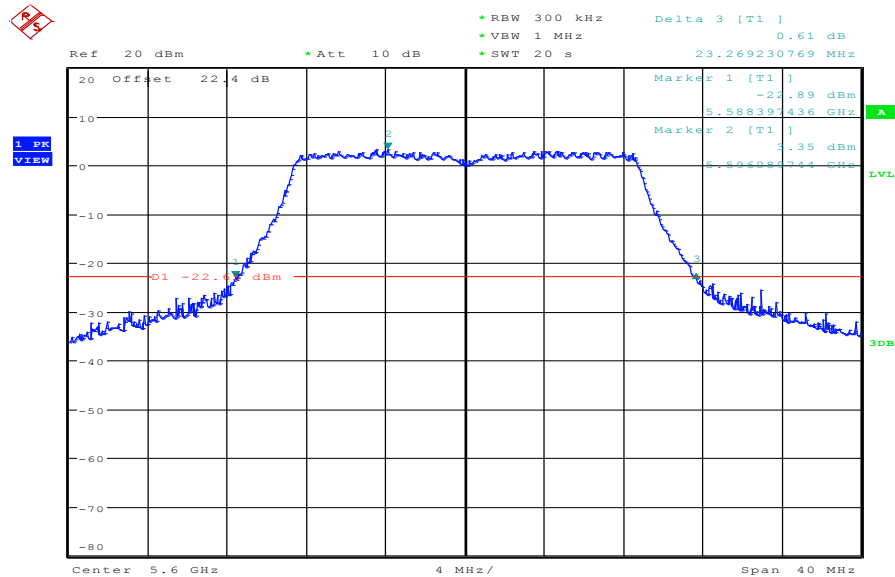
Date: 30.NOV.2012 11:02:05

Plot 5: 5500 MHz



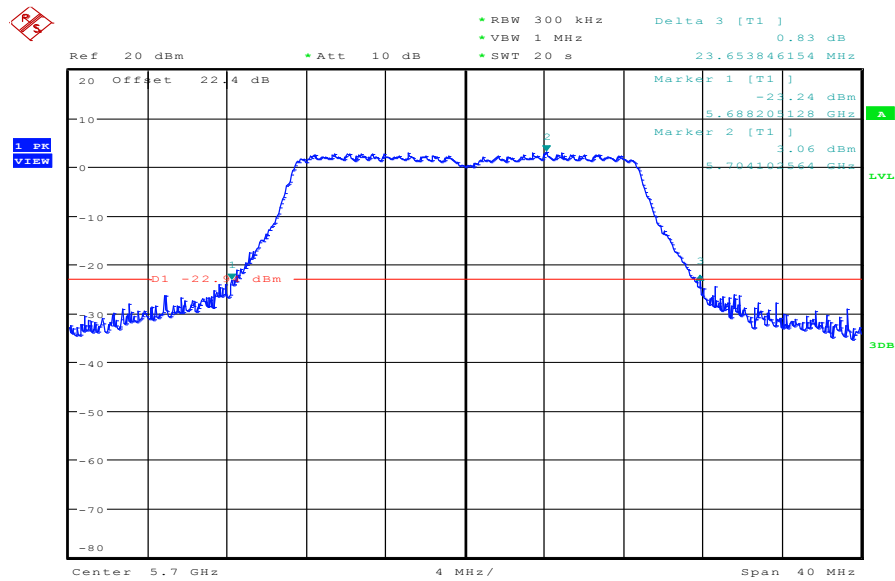
Date: 30.NOV.2012 11:03:48

Plot 6: 5600 MHz



Date: 30.NOV.2012 11:05:27

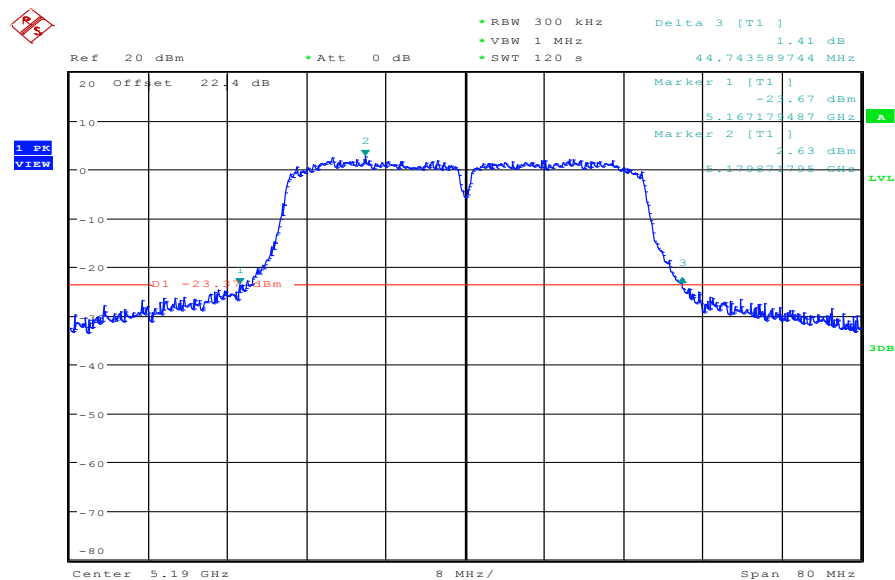
Plot 7: 5700 MHz



Date: 30.NOV.2012 11:07:14

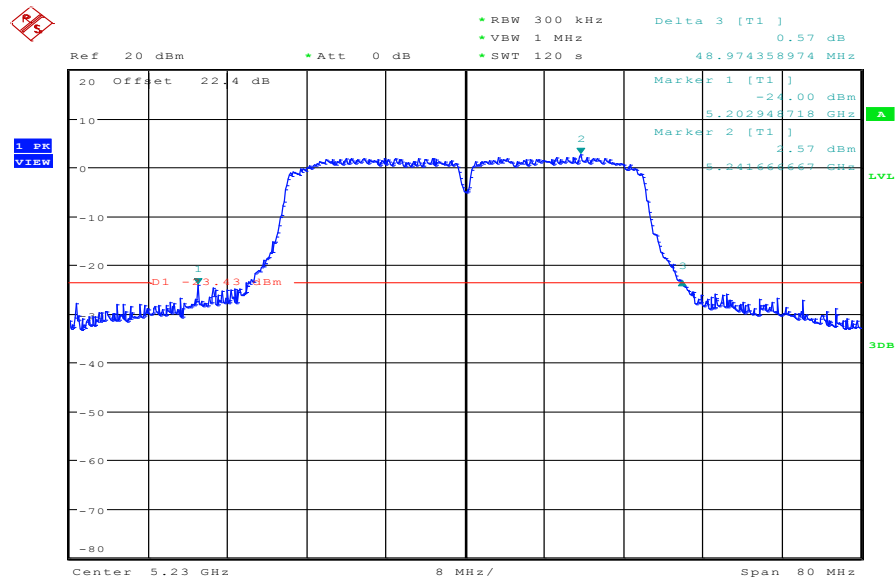
Plots: OFDM / n – mode HT40

Plot 1: 5190 MHz



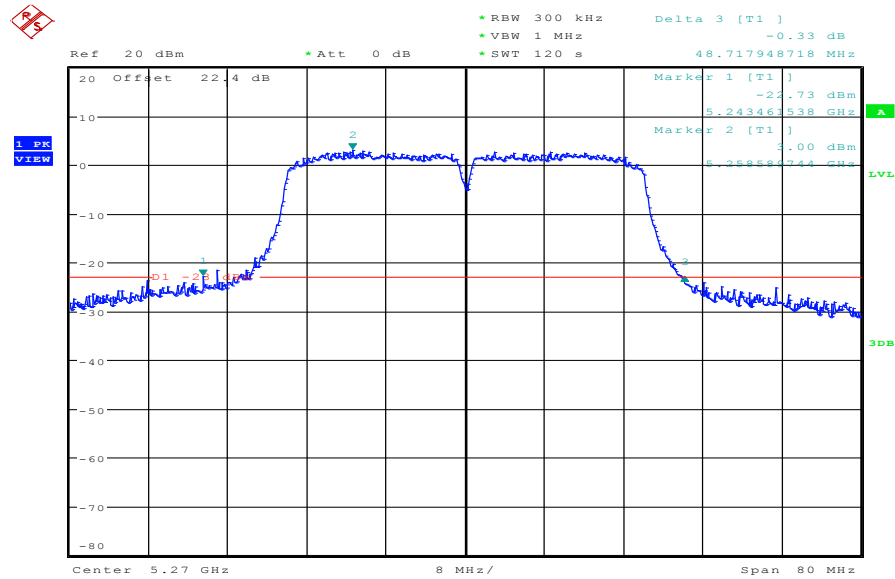
Date: 28.NOV.2012 16:37:33

Plot 2: 5230 MHz



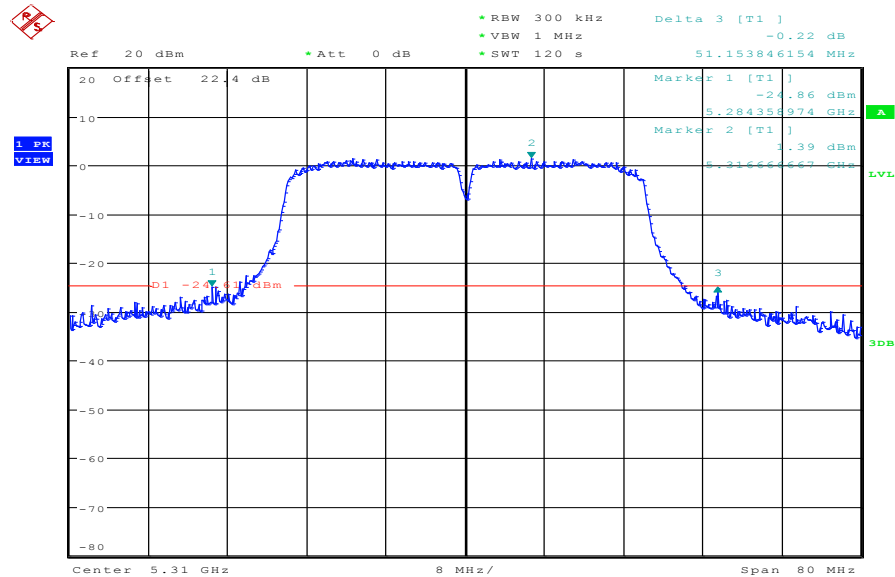
Date: 28.NOV.2012 16:33:44

Plot 3: 5270 MHz



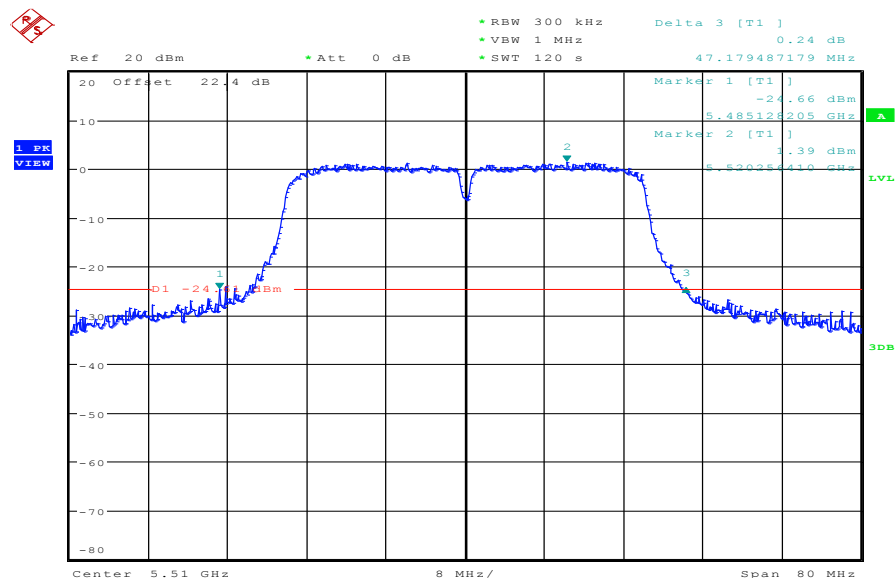
Date: 28.NOV.2012 16:30:31

Plot 4: 5310 MHz



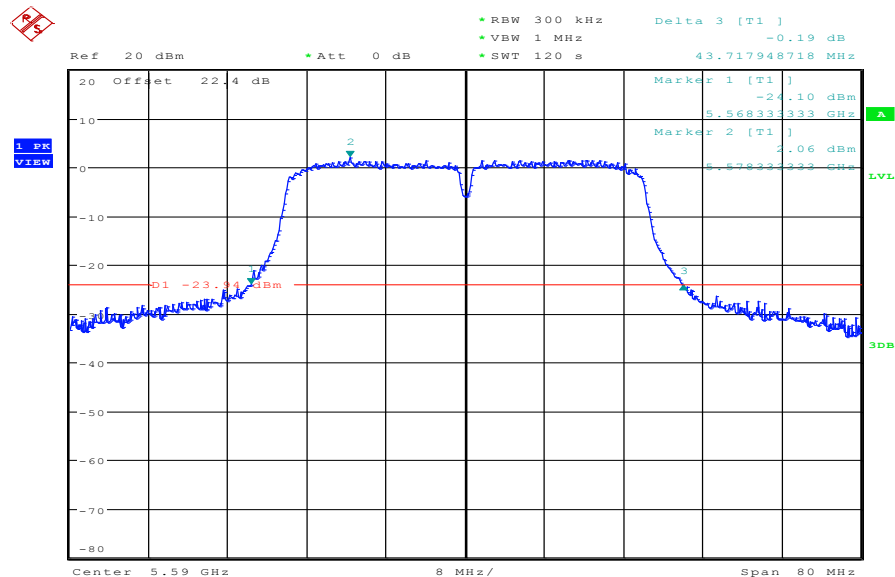
Date: 28.NOV.2012 16:24:50

Plot 5: 5510 MHz



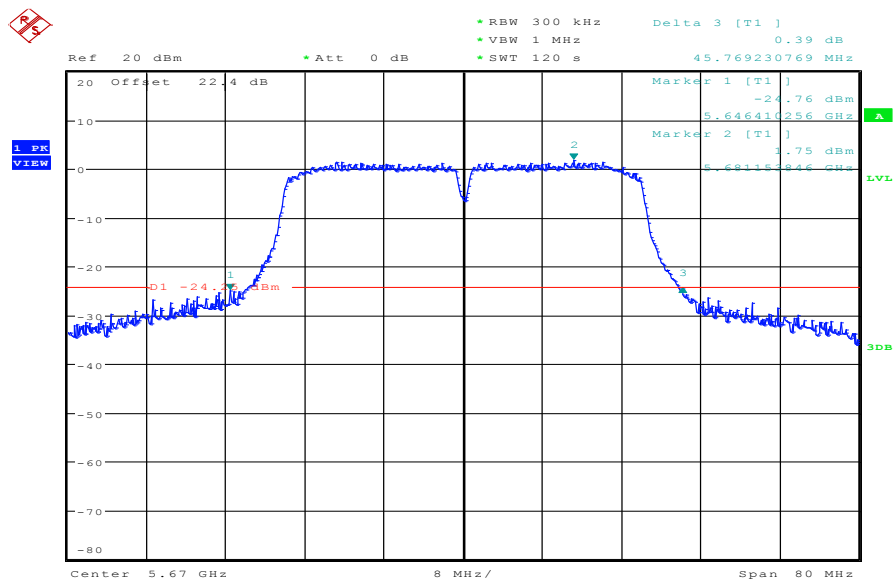
Date: 28.NOV.2012 16:21:38

Plot 6: 5590 MHz



Date: 28.NOV.2012 16:17:37

Plot 7: 5670 MHz



Date: 28.NOV.2012 16:13:21

9.6 Peak excursion measurements

Description:

Peak to average value.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	60 s / 120 s
Resolution bandwidth:	1 MHz
Video bandwidth:	≥ 3 MHz
Span:	> Complete signal
Trace-Mode:	Max hold

Limits:

Peak excursion value
Does not exceed 13 dB.

Results:

Modulation OFDM / a – mode	Peak excursion value		
	Channel	5180 MHz	5240 MHz
RMS		0.53	0.91
Peak		11.84	11.89
Peak excursion value		11.31	10.98
Channel		5260 MHz	5320 MHz
RMS		1.17	0.49
Peak		12.96	11.60
Peak excursion value		11.79	11.11
Channel		5500 MHz	5700 MHz
RMS		1.73	0.27
Peak		12.53	11.63
Peak excursion value		10.80	11.36
Measurement uncertainty		± 1 dB	

Result: Passed**Results:**

Modulation OFDM / n – mode HT20	Peak excursion value		
	Channel	5180 MHz	5240 MHz
RMS		-0.55	0.06
Peak		10.27	11.01
Peak excursion value		10.82	10.95
Channel		5260 MHz	5320 MHz
RMS		0.38	-0.45
Peak		11.28	9.23
Peak excursion value		10.90	9.68
Channel		5500 MHz	5700 MHz
RMS		-0.78	-0.78
Peak		11.62	10.25
Peak excursion value		12.40	11.03
Measurement uncertainty		± 1 dB	

Result: Passed

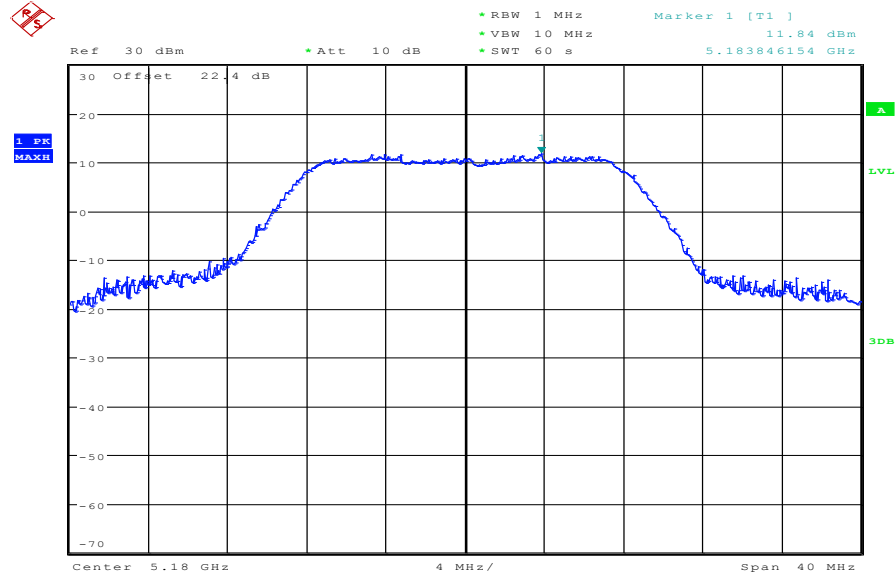
Results:

Modulation OFDM / n – mode HT40	Peak excursion value		
	5190 MHz	5230 MHz	5270 MHz
Channel			
RMS	-0.38	-2.32	-1.06
Peak	10.33	8.73	9.80
Peak excursion value	10.71	11.05	10.86
Channel	5310 MHz	5510 MHz	5590 MHz
RMS	-2.49	-2.17	-2.52
Peak	8.14	8.34	8.51
Peak excursion value	10.63	10.51	11.03
Channel	5670 MHz	-/-	-/-
RMS	-3.01	-/-	-/-
Peak	7.86	-/-	-/-
Peak excursion value	10.87	-/-	-/-
Measurement uncertainty	± 1 dB		

Result: Passed

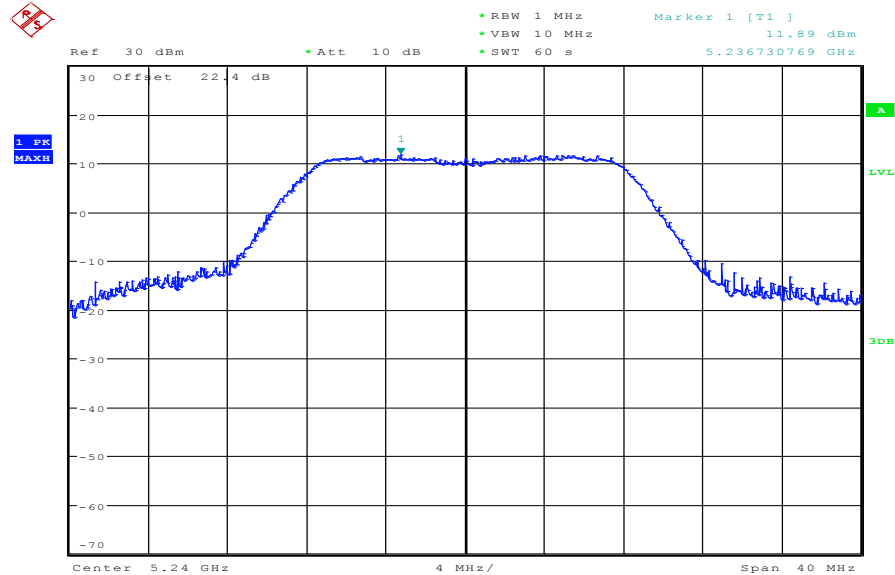
Plots: OFDM / a – mode

Plot 1: 5180 MHz



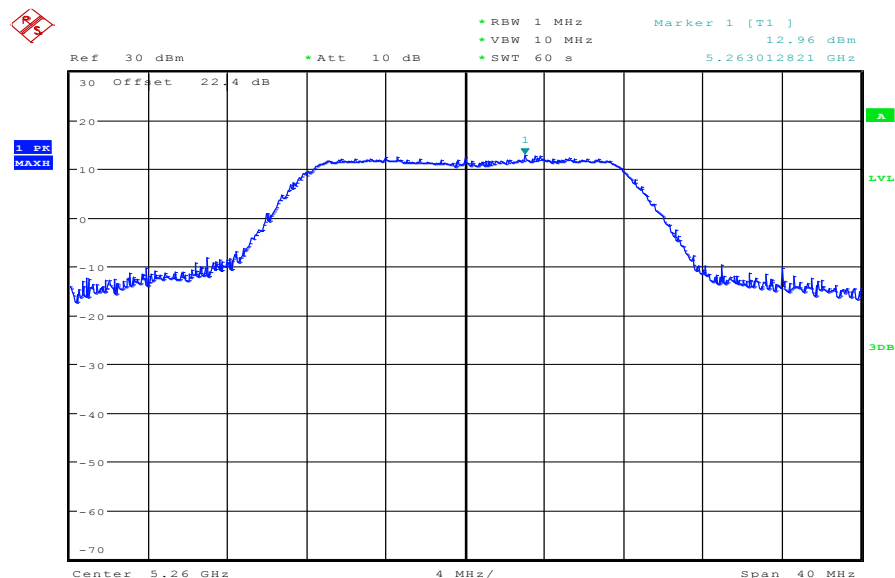
Date: 30.NOV.2012 09:25:23

Plot 2: 5240 MHz



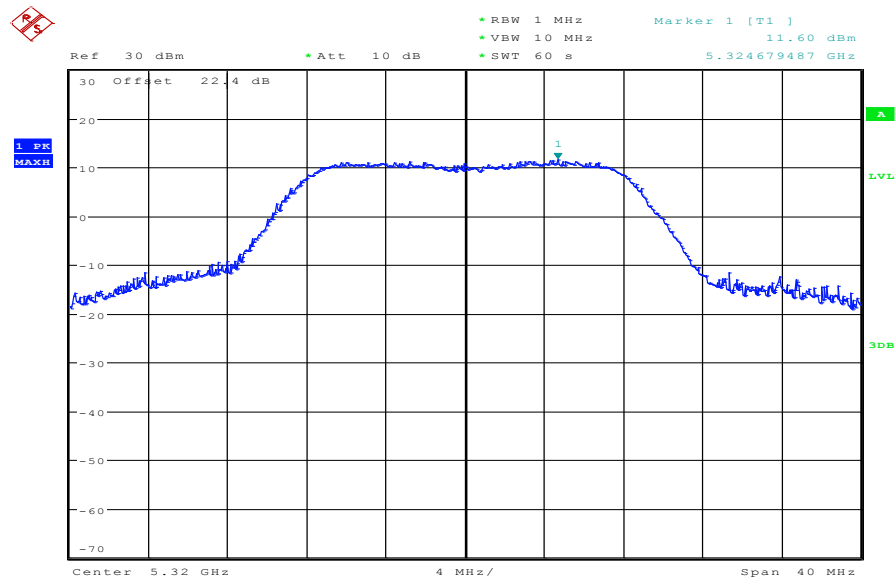
Date: 30.NOV.2012 09:27:56

Plot 3: 5260 MHz



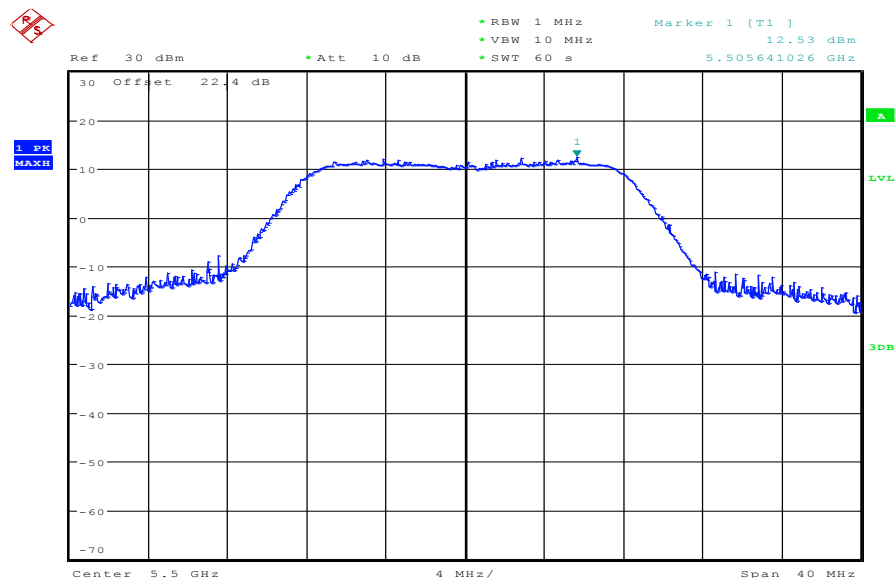
Date: 30.NOV.2012 09:30:32

Plot 4: 5320 MHz



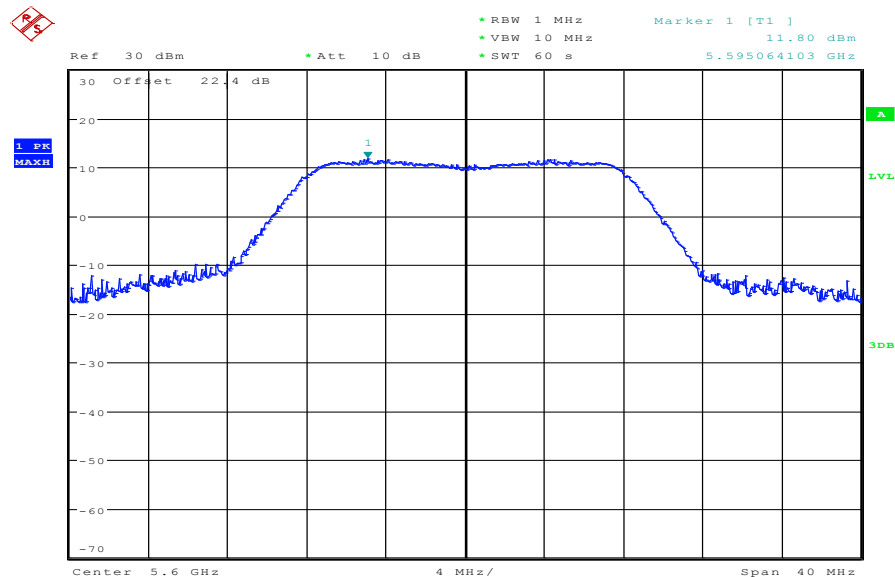
Date: 30.NOV.2012 09:38:13

Plot 5: 5500 MHz



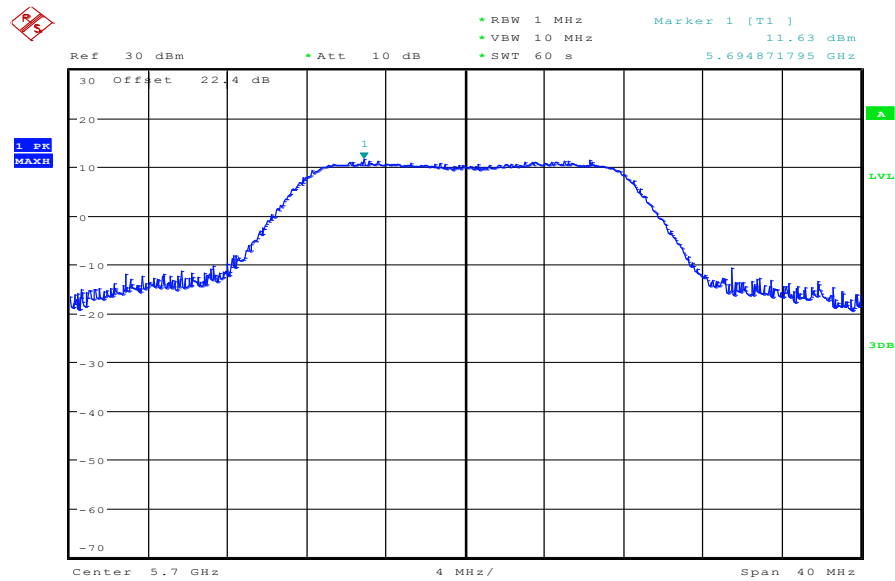
Date: 30.NOV.2012 09:40:42

Plot 6: 5600 MHz



Date: 30.NOV.2012 09:42:33

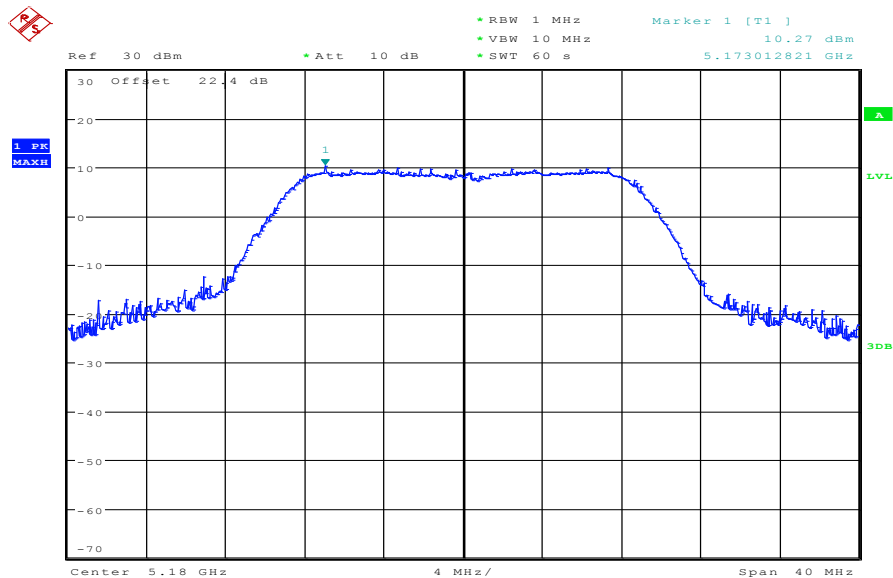
Plot 7: 5700 MHz



Date: 30.NOV.2012 09:45:06

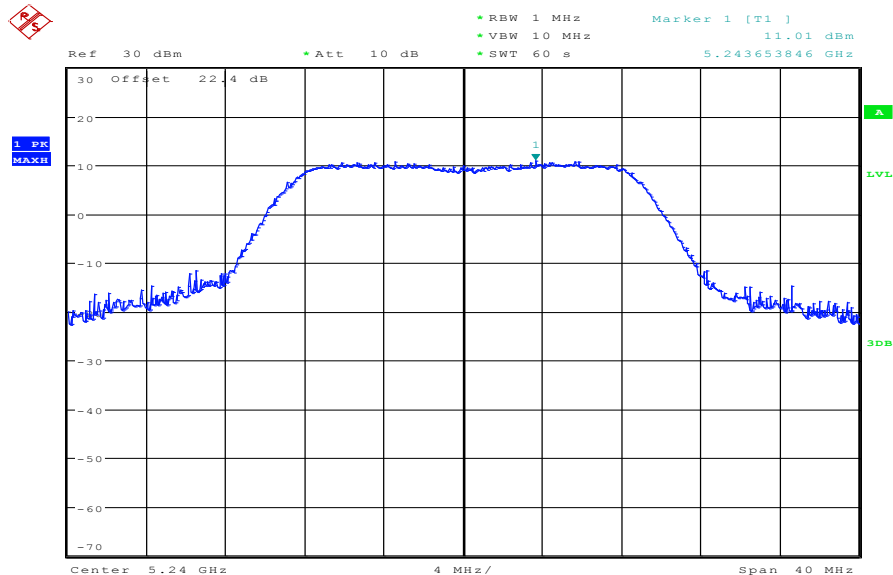
Plots: OFDM / n – mode HT20

Plot 1: 5180 MHz



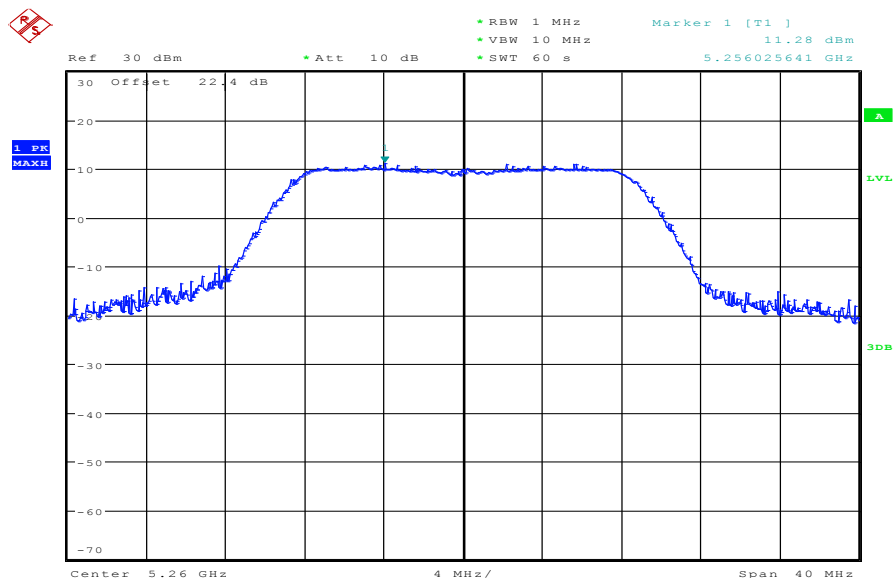
Date: 30.NOV.2012 10:25:19

Plot 2: 5240 MHz



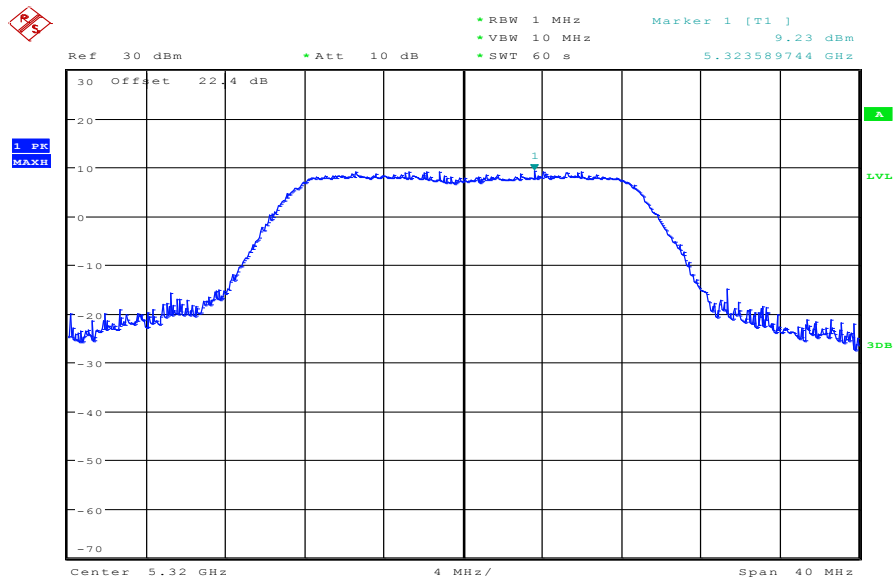
Date: 30.NOV.2012 10:23:42

Plot 3: 5260 MHz



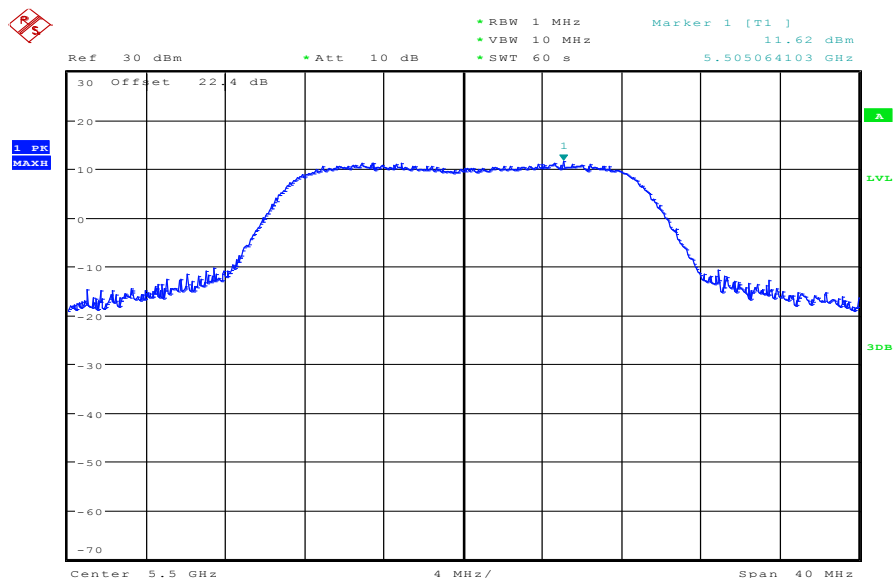
Date: 30.NOV.2012 10:20:02

Plot 4: 5320 MHz



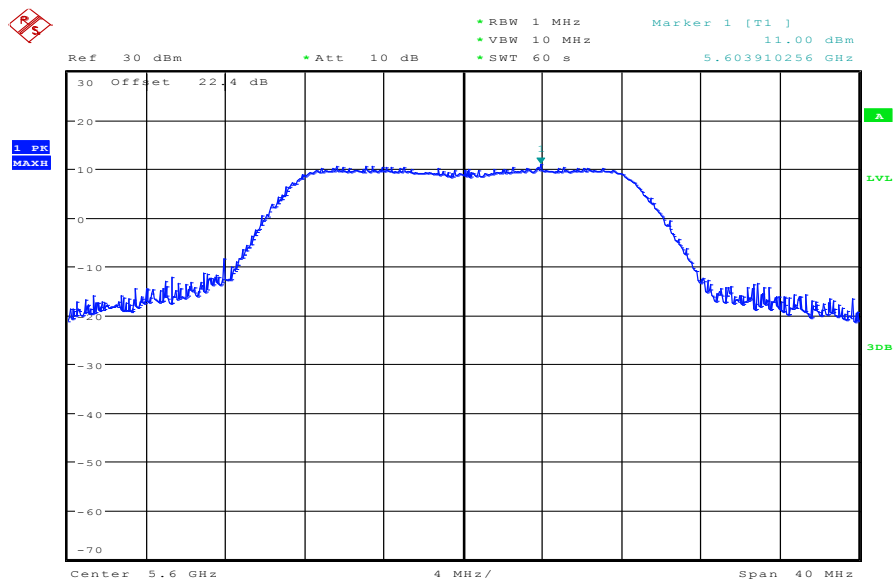
Date: 30.NOV.2012 10:18:32

Plot 5: 5500 MHz



Date: 30.NOV.2012 10:15:03

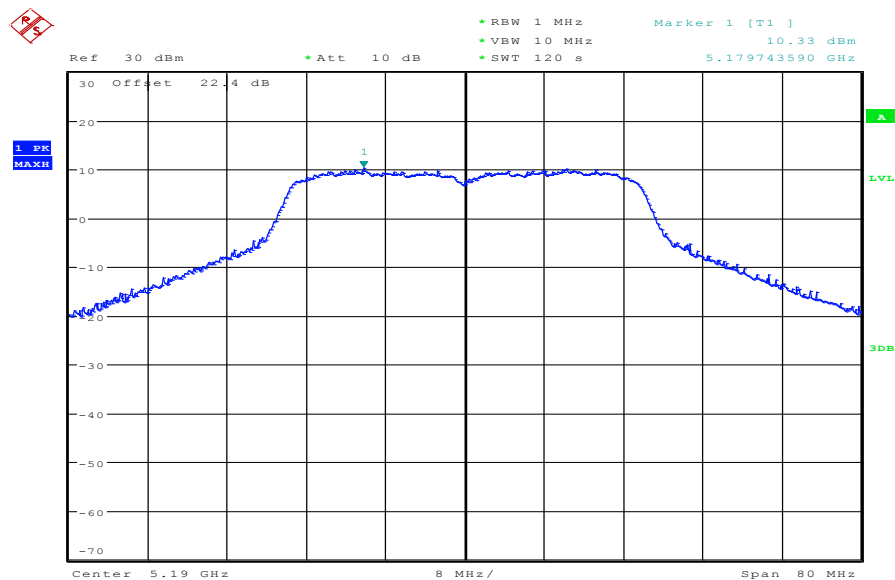
Plot 6: 5600 MHz



Date: 30.NOV.2012 09:52:37

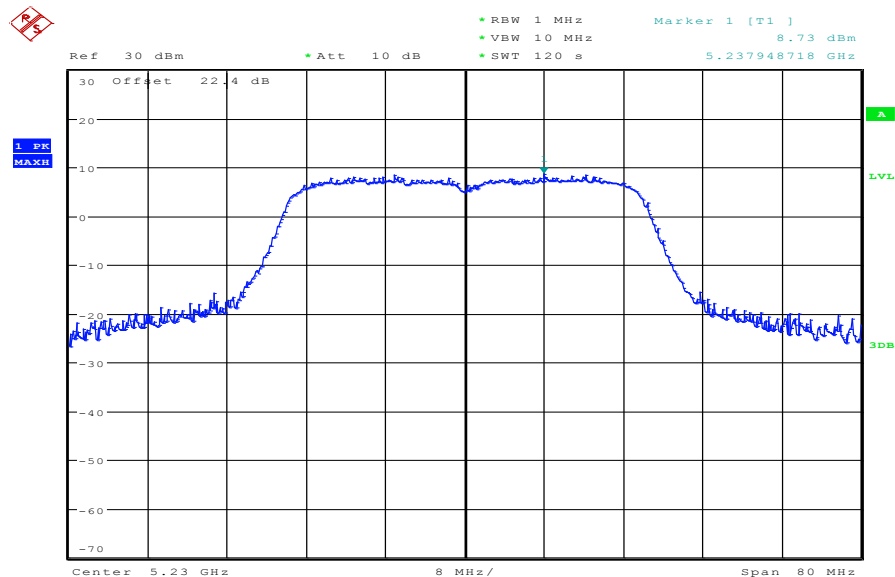
Plots: OFDM / n – mode HT40

Plot 1: 5190 MHz



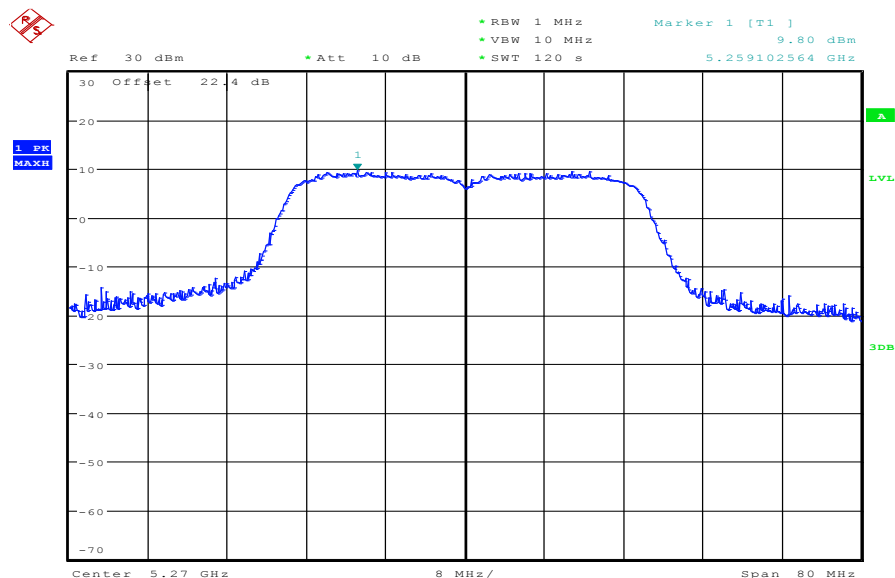
Date: 28.NOV.2012 15:30:43

Plot 2: 5230 MHz



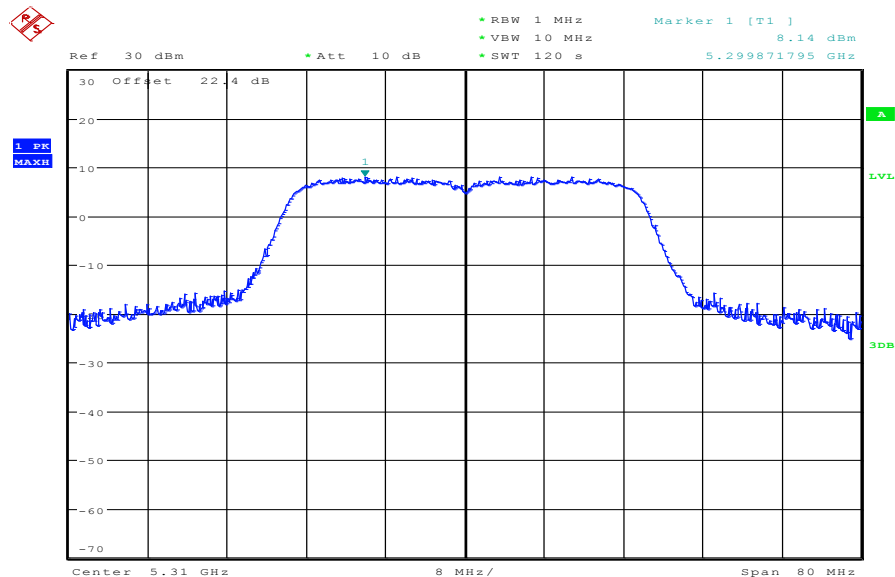
Date: 28.NOV.2012 15:33:40

Plot 3: 5270 MHz



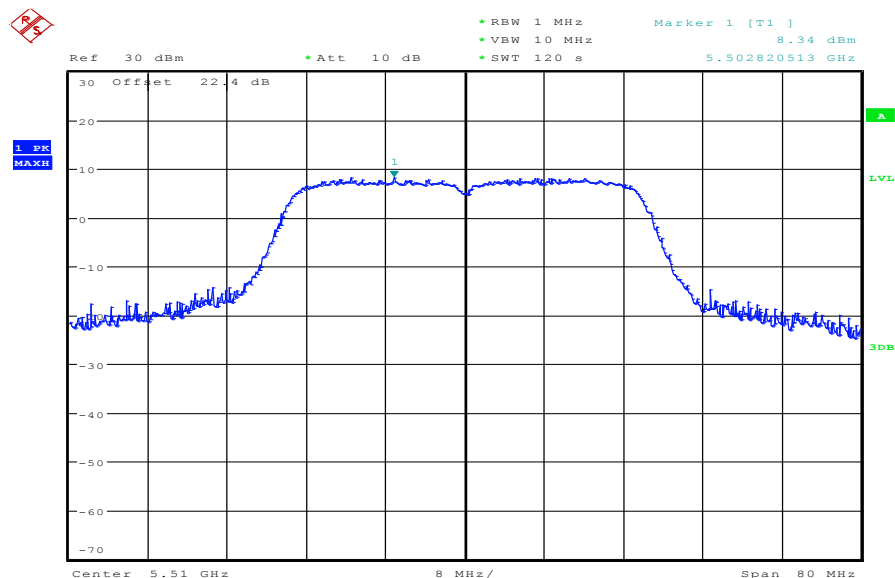
Date: 28.NOV.2012 15:42:01

Plot 4: 5310 MHz



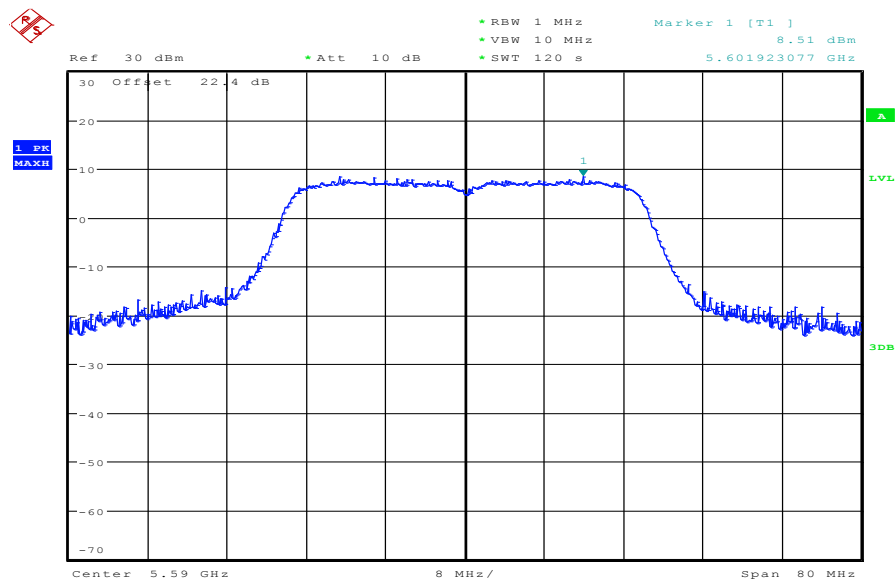
Date: 28.NOV.2012 15:44:51

Plot 5: 5510 MHz



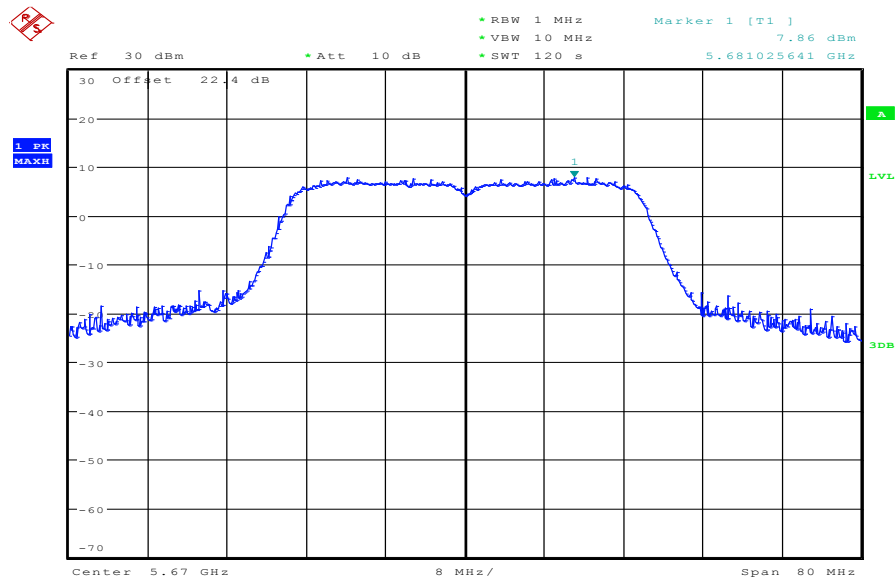
Date: 28.NOV.2012 15:53:09

Plot 6: 5590 MHz



Date: 28.NOV.2012 15:56:15

Plot 7: 5670 MHz



Date: 28.NOV.2012 16:04:19

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 the lowest channel for the lower restricted band and to the highest channel for the upper restricted band. Measurement distance is 3m.

Measurement:

Measurement parameter	
Detector:	Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	10 Hz / 1 MHz
Span:	See plots!
Trace-Mode:	Max Hold

Limits:

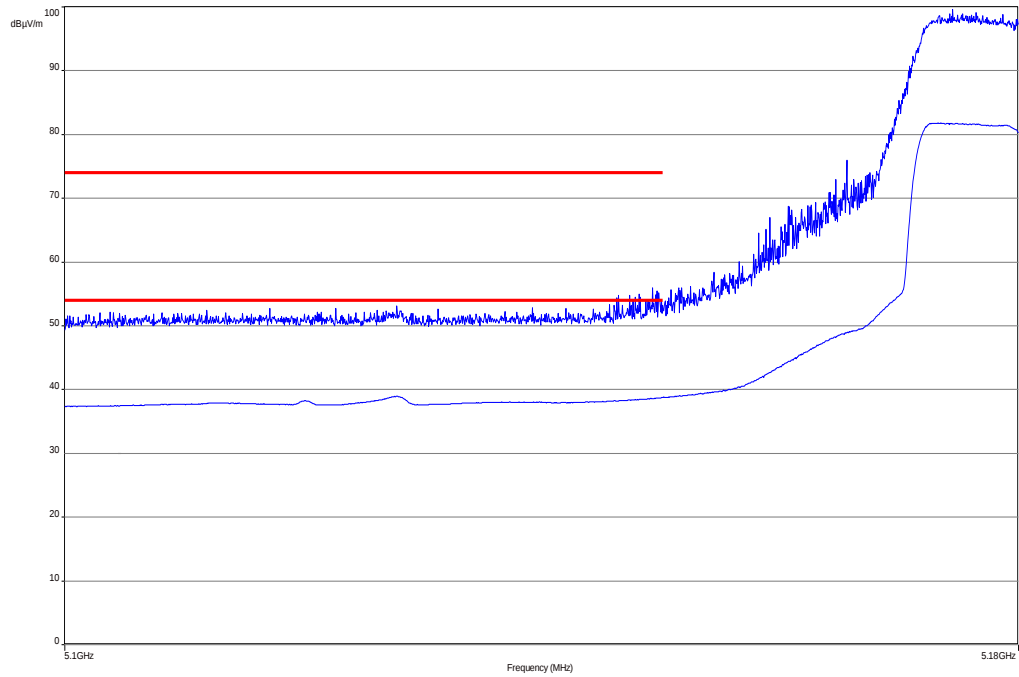
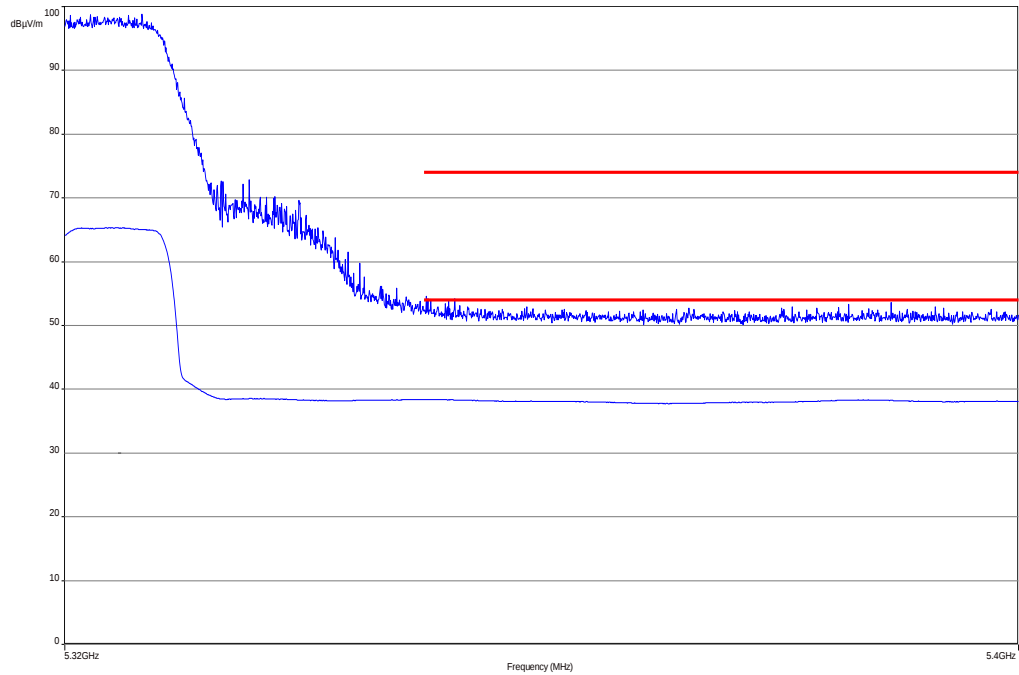
Band Edge Compliance Radiated
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within 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)).
74 dB μ V/m PEAK 54 dB μ V/m AVG

Result:

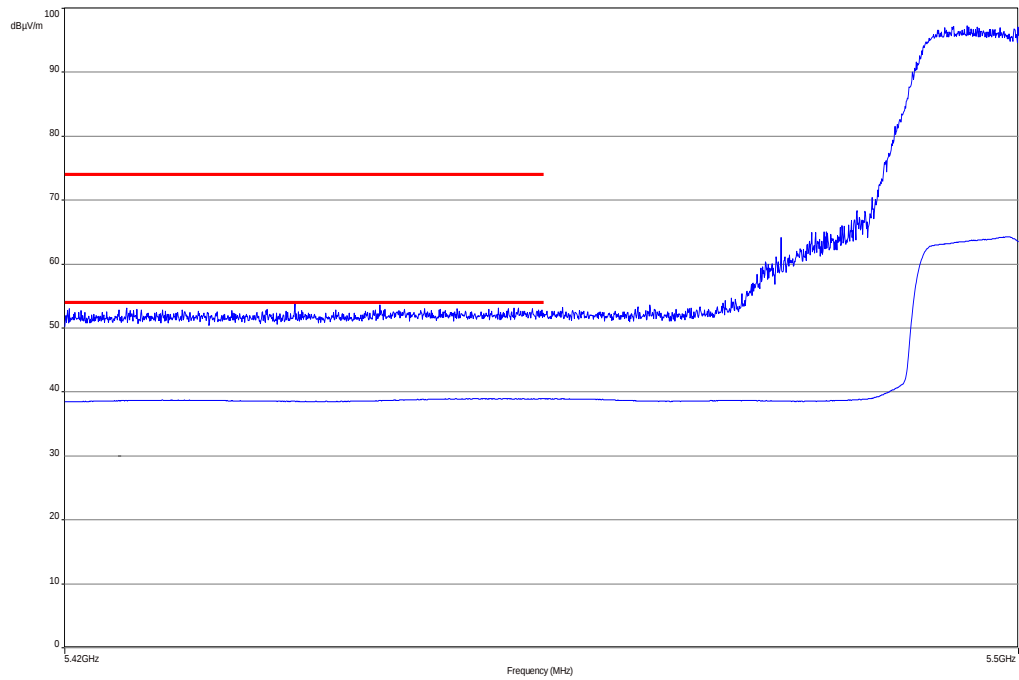
Scenario	Band Edge Compliance Radiated [dB μ V/m]
band edge	< 74 dB μ V/m (AVG) < 54 dB μ V/m (PEAK)
Measurement uncertainty	± 3 dB

Note:

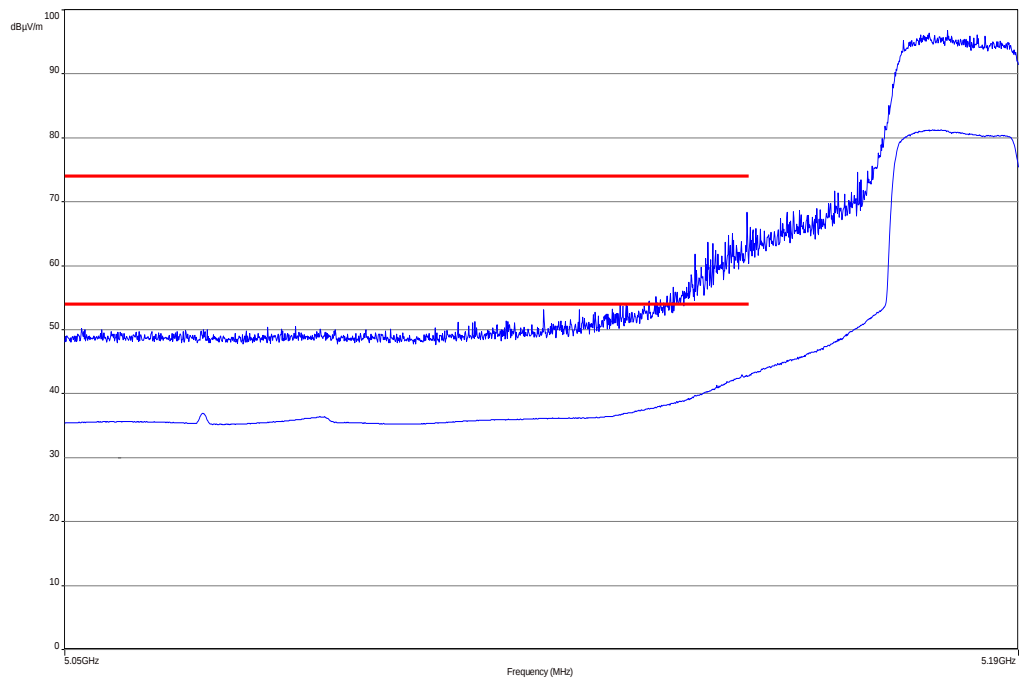
Results of the OFDM / n – mode HT20 and HT40 are added to show the behaviour of the EUT.

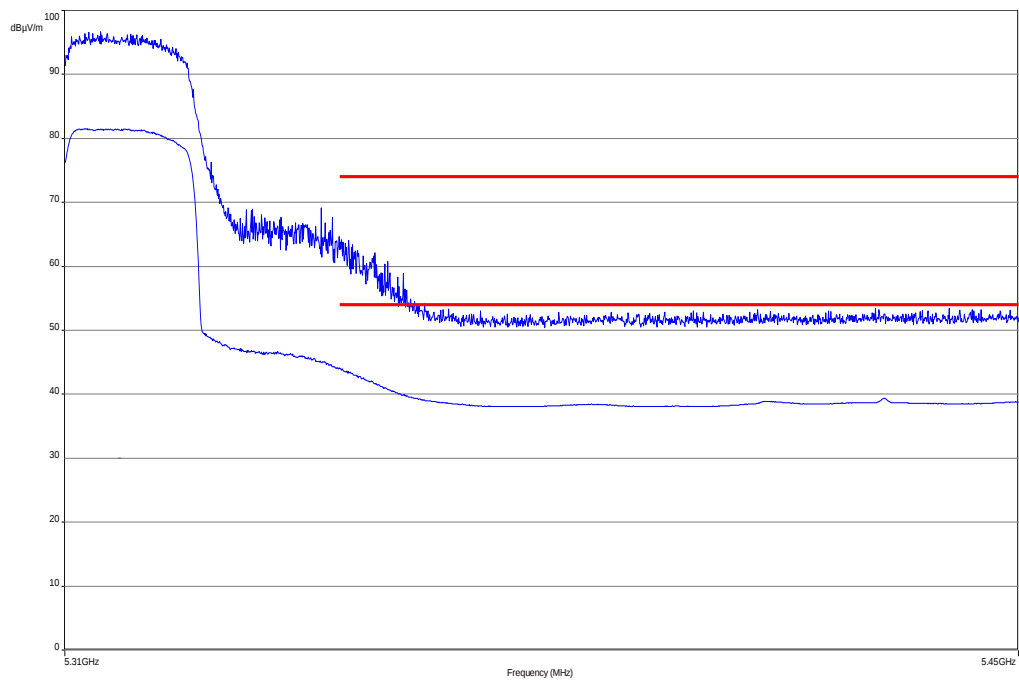
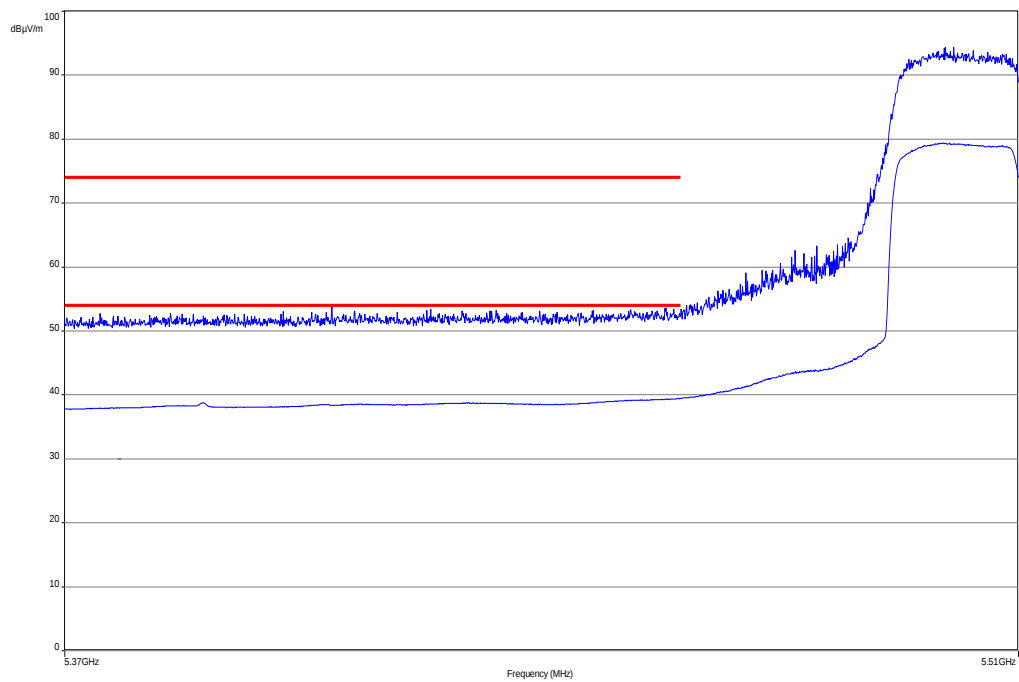
Plots:**Plot 1:** lower band edge, vertical & horizontal polarization (n HT 20 mode), channel 36**Plot 2:** upper band edge, vertical & horizontal polarization (n HT 20 mode), channel 64

Plot 3: lower band edge, vertical & horizontal polarization (n HT 20 mode), channel 100



Plot 4: lower band edge, vertical & horizontal polarization (n HT 40 mode), channel 38



Plot 5: upper band edge, vertical & horizontal polarization (n HT 40 mode), channel 62**Plot 6:** lower band edge, vertical & horizontal polarization (n HT 40 mode), channel 102**Result:** Passed

9.8 TX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in transmit mode. The measurement is performed at lowest, middle and highest channel.

Measurement:

Measurement parameter	
Detector:	Quasi Peak below 1 GHz (alternative Peak) Peak above 1 GHz / RMS
Sweep time:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Video bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: ≥ 3 MHz / 10 Hz
Span:	30 MHz to 40 GHz
Trace-Mode:	Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 %

Limits:

TX Spurious Emissions Radiated		
§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
§15.407		
Outside the restricted bands!	-27 dBm / MHz	

Note:

Results of the OFDM / n – mode HT20 and HT40 are added to show the behaviour of the EUT.

Results: OFDM / a – mode

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM a – mode								
Lowest 5180 MHz			-/-			Highest 5240 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
No emissions detected.			-/-			No emissions detected.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM a – mode								
Lowest 5260 MHz			-/-			Highest 5320 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
No emissions detected.			-/-			No emissions detected.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM a – mode								
Lowest 5500 MHz			Middle 5600 MHz			Highest 5700 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
No emissions detected.			No emissions detected.			No emissions detected.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT20

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM n – mode HT20								
Lowest 5180 MHz			-/-			Highest 5240 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No emissions detected above 1 GHz.						No emissions detected above 1 GHz.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM n – mode HT20								
Lowest 5260 MHz			-/-			Highest 5320 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No emissions detected above 1 GHz.						No emissions detected above 1 GHz.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM n – mode HT20								
Lowest 5500 MHz			Middle 5600 MHz			Highest 5700 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No emissions detected above 1 GHz.			No emissions detected above 1 GHz.			No emissions detected above 1 GHz.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT40

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM n – mode HT40								
Lowest 5190 MHz			Middle 5230 MHz			Highest 5270 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No emissions detected above 1 GHz.			No emissions detected above 1 GHz.			No emissions detected above 1 GHz.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM n – mode HT40								
Lowest 5310 MHz			Middle 5510 MHz			Highest 5590 MHz		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No emissions detected above 1 GHz.			No emissions detected above 1 GHz.			No emissions detected above 1 GHz.		
Measurement uncertainty			± 3 dB					

TX Spurious Emissions Radiated [dBμV/m] / dBm								
OFDM n – mode HT40								
Lowest 5670 MHz			-/-			-/-		
F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]	F [MHz]	Detector	Level [dBμV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			-/-			-/-		
No emissions detected above 1 GHz.								
Measurement uncertainty			± 3 dB					

Result: Passed

Plots: OFDM / n – mode HT20

Plot 1: 30 MHz to 1 GHz, 5180 MHz, vertical & horizontal polarization

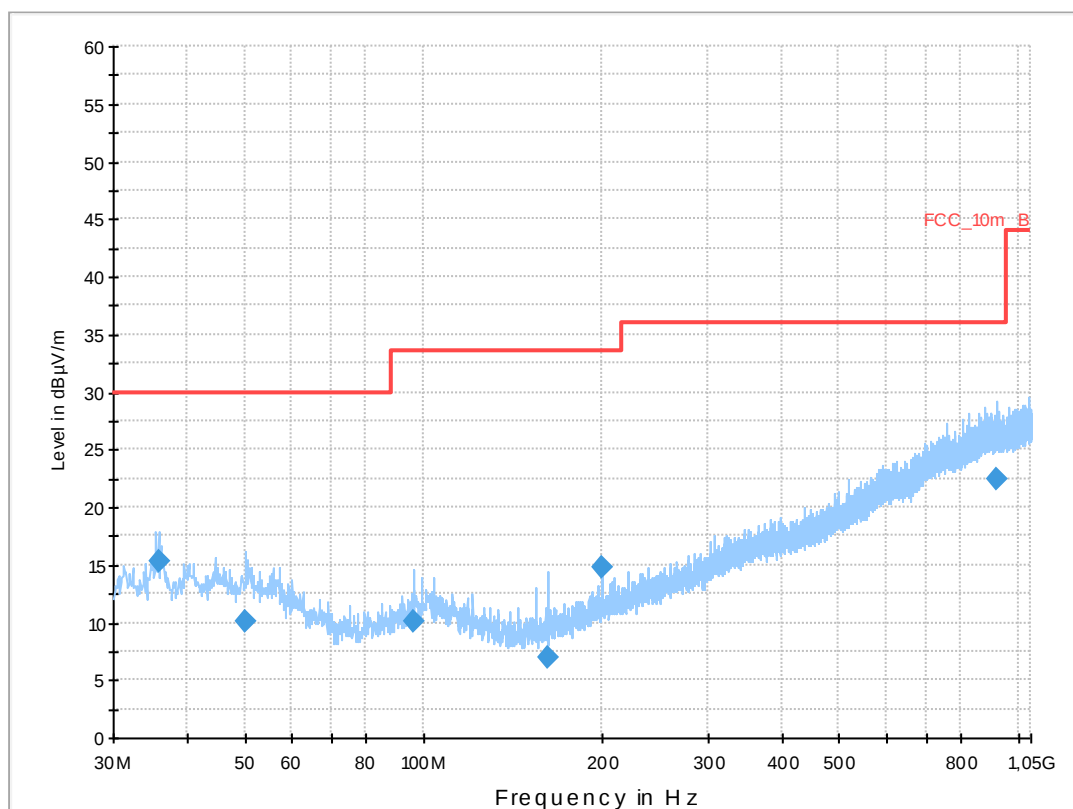
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWEK
 Test Description: FCC part 15 C class B @ 10 m
 Operating Conditions: W-Lan n-mode HT20, mcs0, CH 36 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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

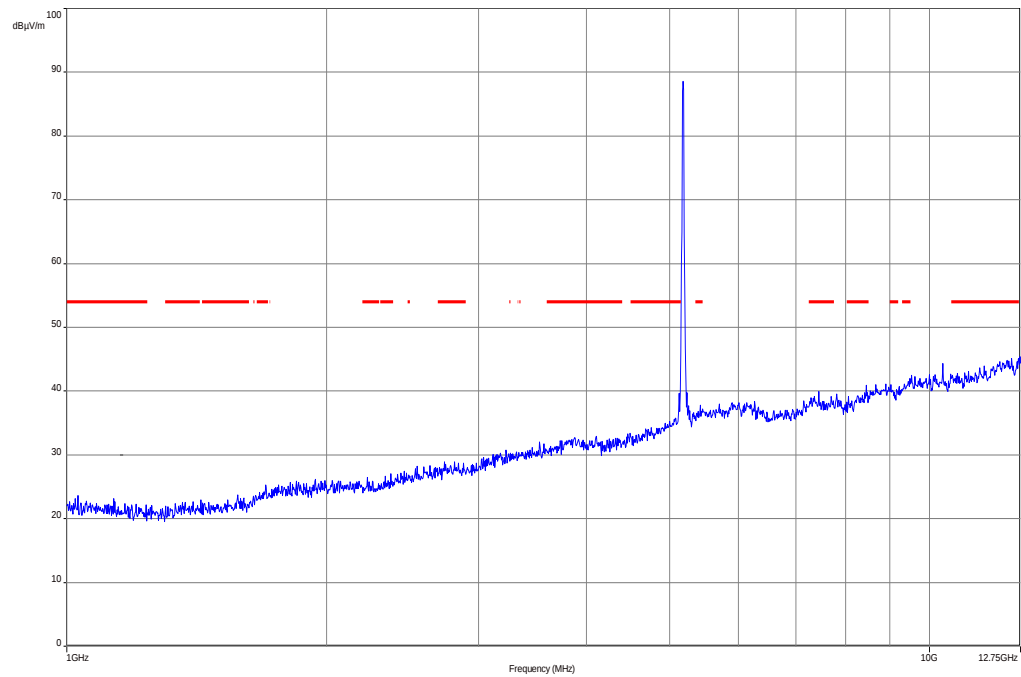
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



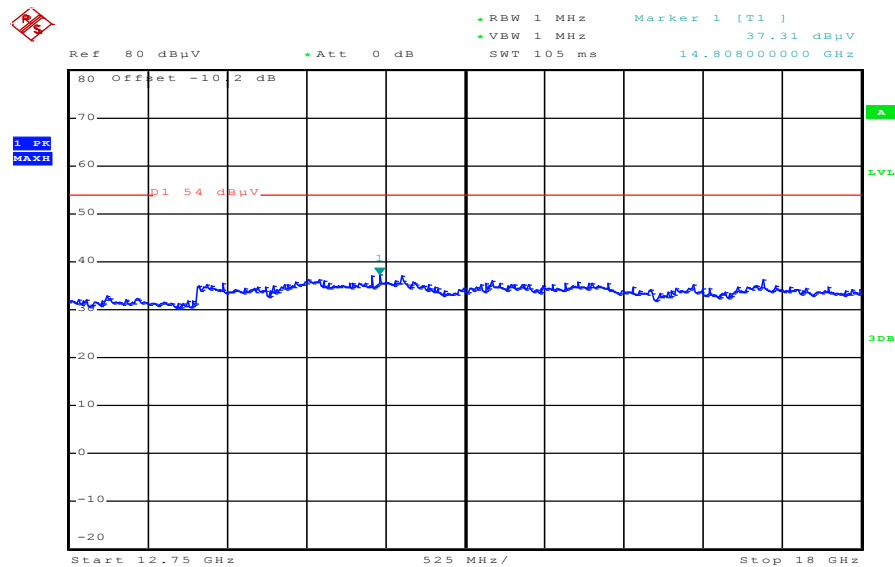
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.760000	15.4	1000.0	120.000	208.0	V	198.0	13.1	14.6	30.0	
50.040000	10.0	1000.0	120.000	270.0	H	176.0	13.4	20.0	30.0	
96.000000	10.1	1000.0	120.000	145.0	V	0.0	11.4	23.4	33.5	
162.000000	6.9	1000.0	120.000	270.0	V	81.0	9.3	26.6	33.5	
200.040000	14.8	1000.0	120.000	120.0	V	0.0	11.7	18.7	33.5	
917.160000	22.4	1000.0	120.000	270.0	H	0.0	25.3	13.6	36.0	

Plot 2: 1 GHz to 12.75 GHz, 5180 MHz, vertical & horizontal polarization

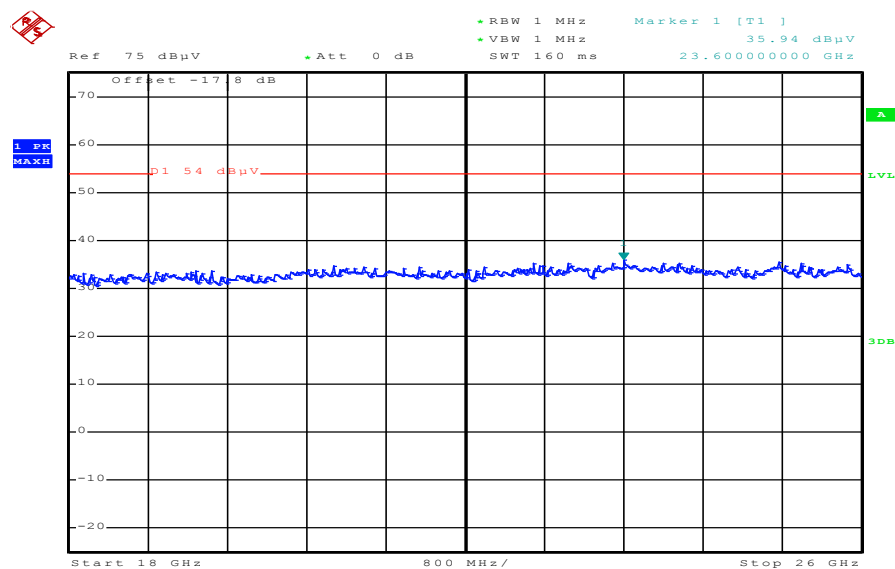


Plot 3: 12.75 GHz to 18 GHz, 5180 MHz, vertical & horizontal polarization



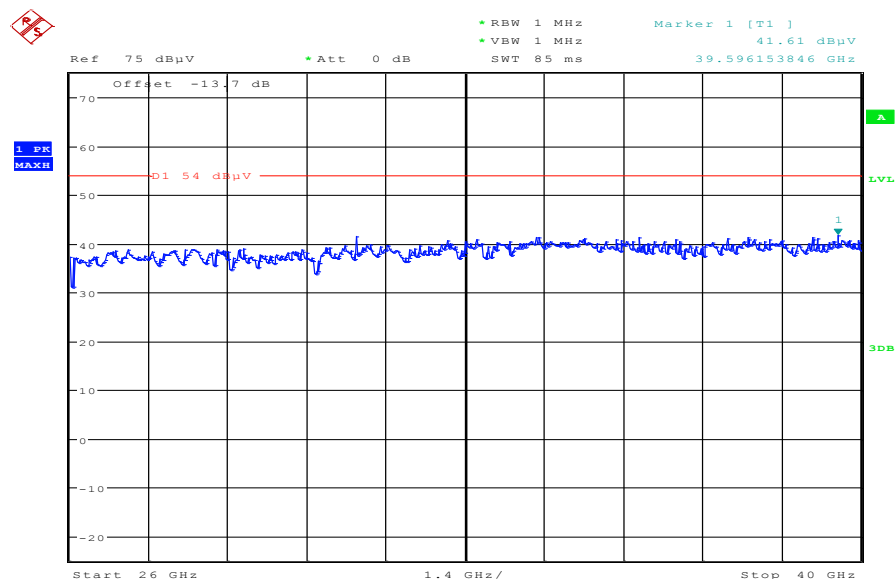
Date: 29.NOV.2012 12:59:10

Plot 4: 18 GHz to 26 GHz, 5180 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:43:45

Plot 5: 26 GHz to 40 GHz, 5180 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:16:56

Plot 6: 30 MHz to 1 GHz, 5240 MHz, vertical & horizontal polarization

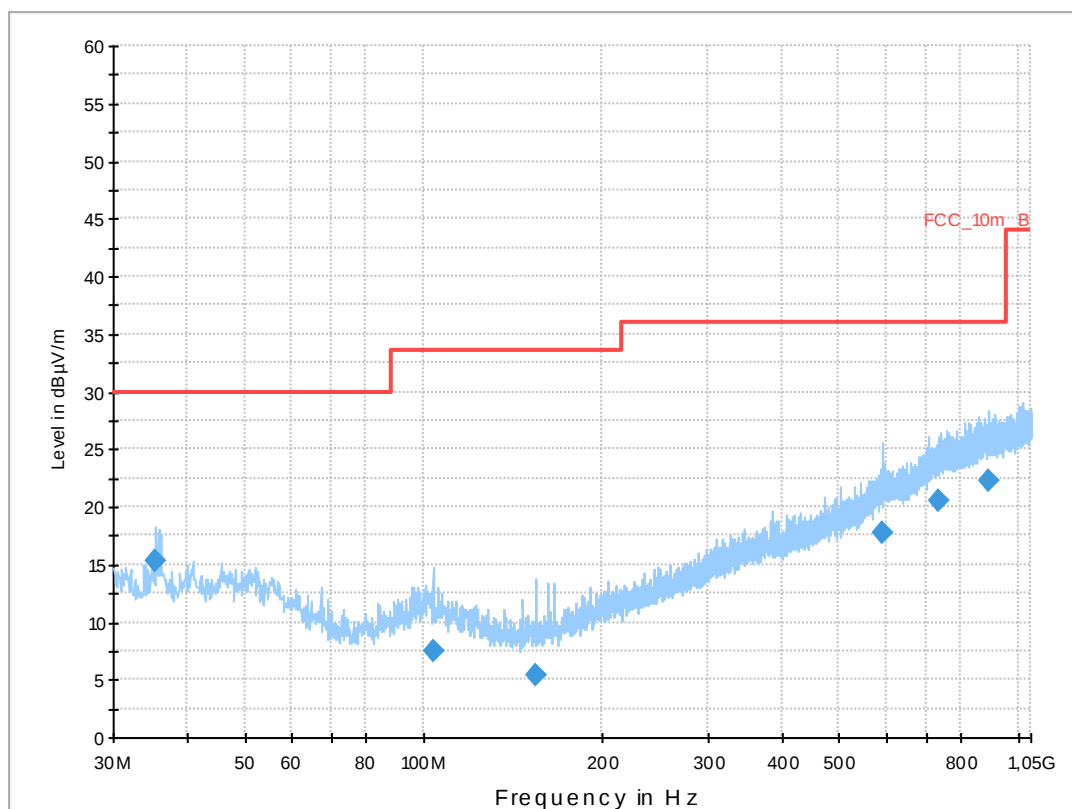
Common Information

EUT:	PM-0240-BV
Serial Number:	CB5121SWEK
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	W-Lan n-mode HT20, mcs0, CH 48 + charging
Operator Name:	Medrow
Comment:	AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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

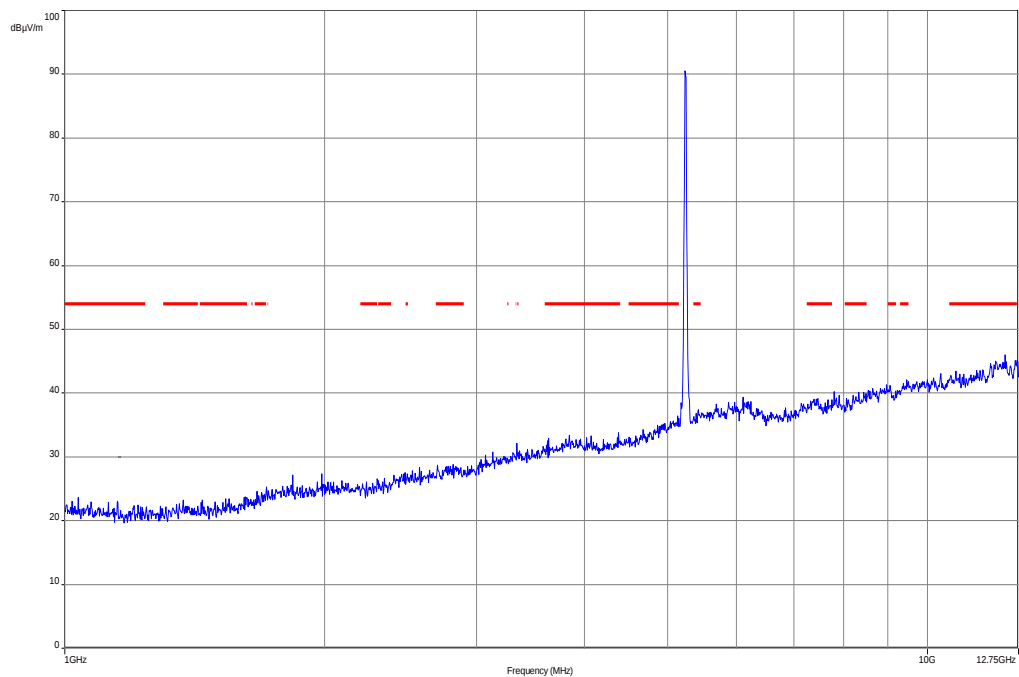
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



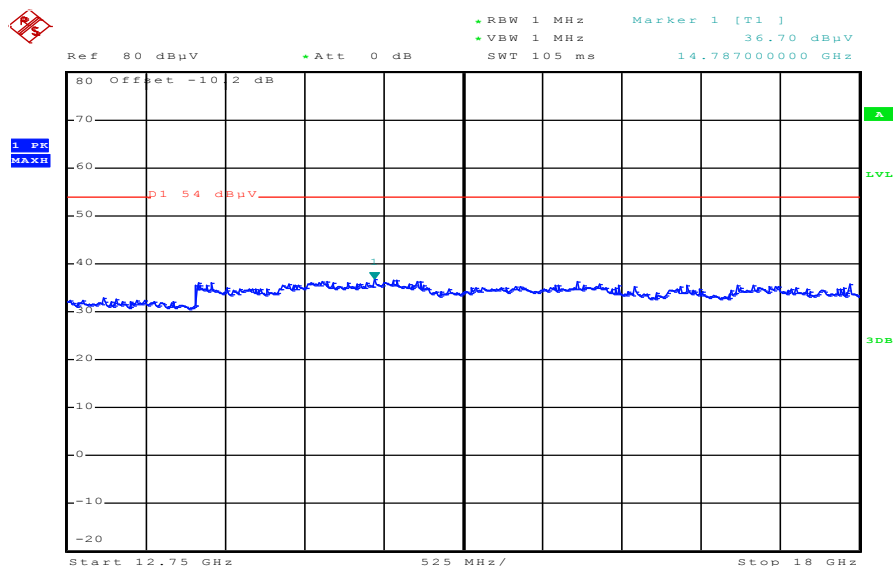
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.400000	15.3	1000.0	120.000	222.0	V	308.0	13.1	14.7	30.0	
103.560000	7.4	1000.0	120.000	270.0	V	135.0	11.6	26.1	33.5	
154.080000	5.3	1000.0	120.000	185.0	V	282.0	9.0	28.2	33.5	
592.440000	17.8	1000.0	120.000	270.0	H	0.0	20.6	18.2	36.0	
734.880000	20.5	1000.0	120.000	161.0	V	146.0	23.3	15.5	36.0	
891.840000	22.2	1000.0	120.000	270.0	H	268.0	25.1	13.8	36.0	

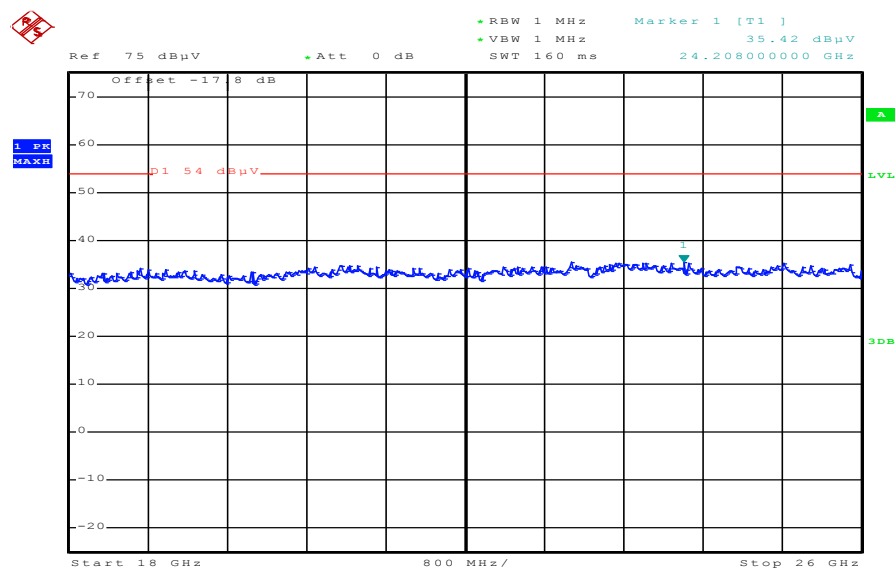
Plot 7: 1 GHz to 12.75 GHz, 5240 MHz, vertical & horizontal polarization



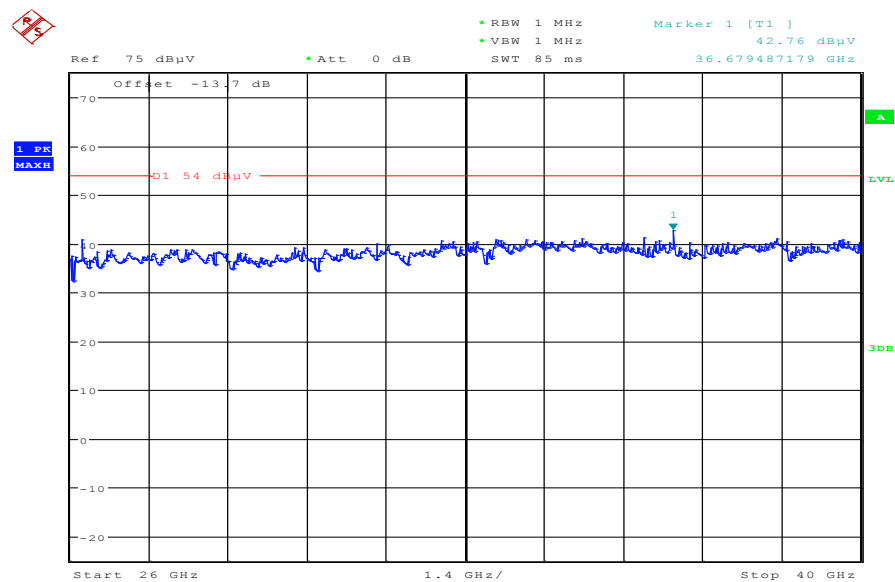
Plot 8: 12.75 GHz to 18 GHz, 5240 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:01:50

Plot 9: 18 GHz to 26 GHz, 5240 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:45:05

Plot 10: 26 GHz to 40 GHz, 5240 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:17:56

Plot 11: 30 MHz to 1 GHz, 5260 MHz, vertical & horizontal polarization

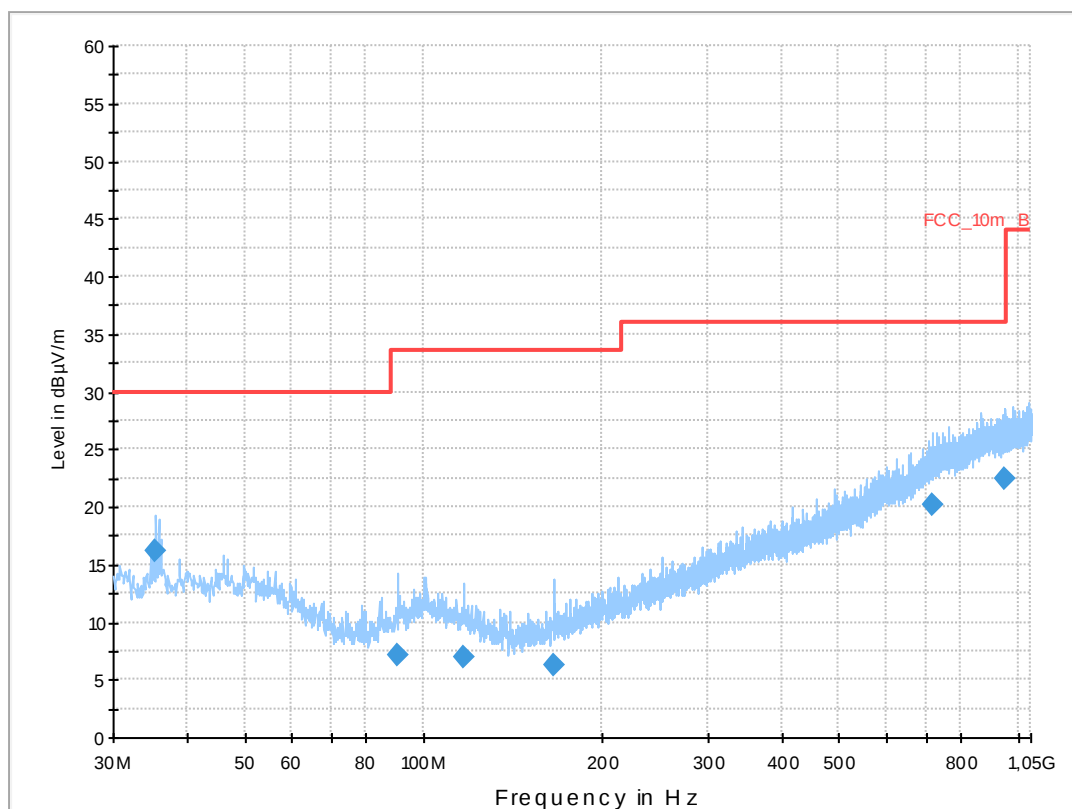
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWEK
 Test Description: FCC part 15 C class B @ 10 m
 Operating Conditions: W-Lan n-mode HT20, mcs0, CH 52
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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

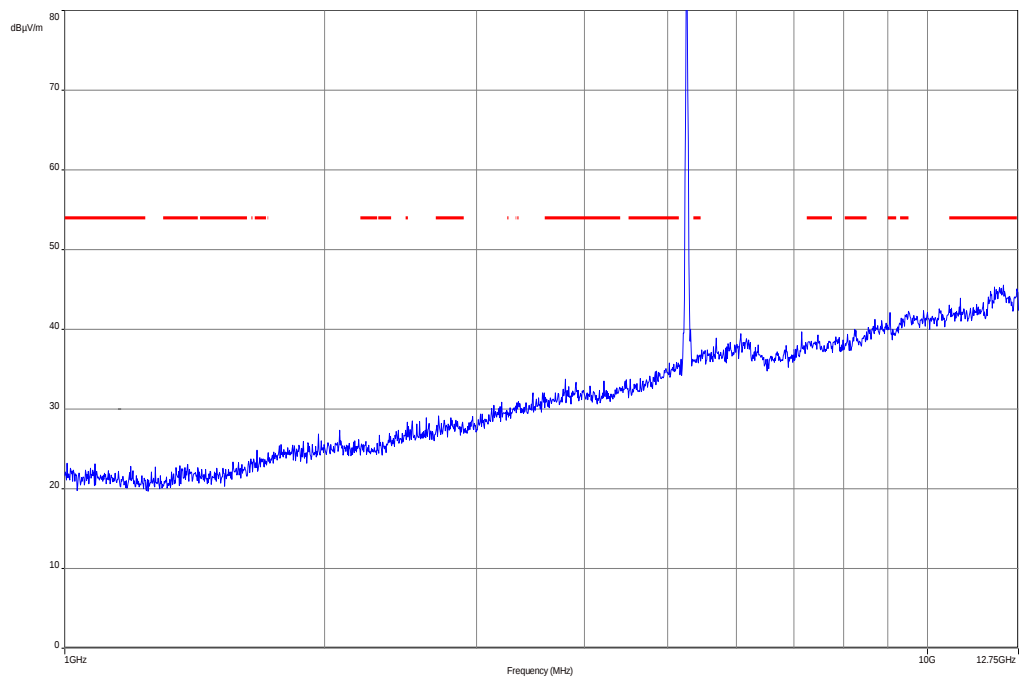
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



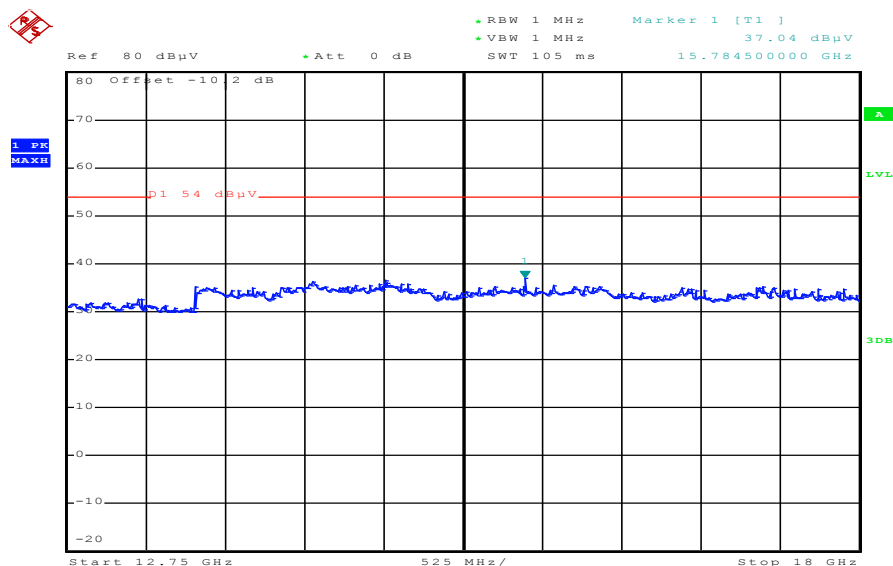
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.400000	16.3	1000.0	120.000	200.0	V	301.0	13.1	13.8	30.0	
90.480000	7.1	1000.0	120.000	189.0	H	180.0	10.6	26.4	33.5	
116.640000	6.9	1000.0	120.000	202.0	V	93.0	10.5	26.6	33.5	
166.600000	6.2	1000.0	120.000	198.0	V	173.0	9.5	27.3	33.5	
715.560000	20.1	1000.0	120.000	111.0	V	93.0	22.9	15.9	36.0	
949.800000	22.4	1000.0	120.000	270.0	H	121.0	25.4	13.6	36.0	

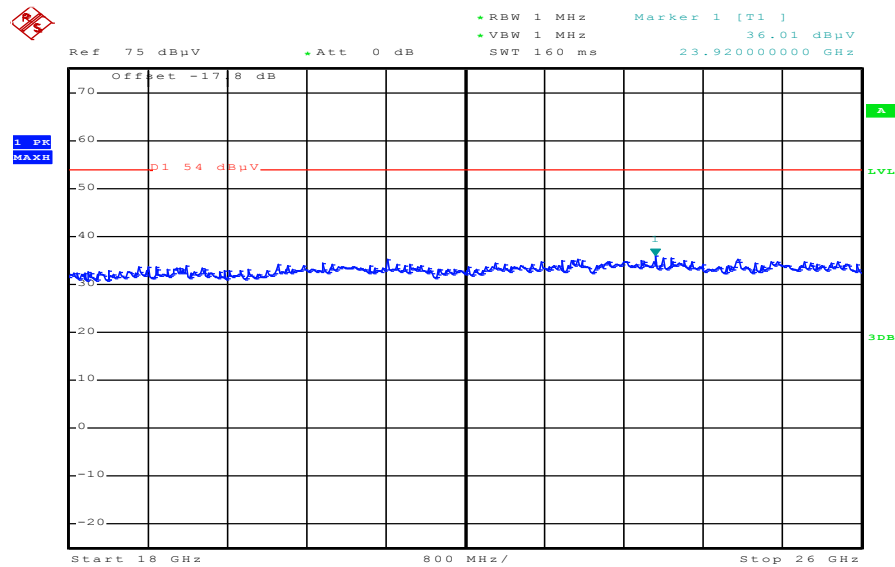
Plot 12: 1 GHz to 12.75 GHz, 5260 MHz, vertical & horizontal polarization



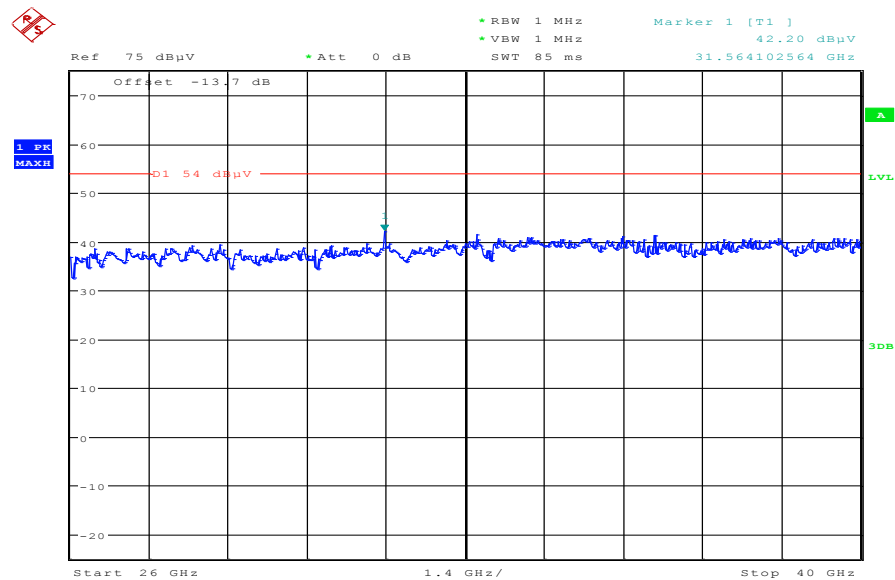
Plot 13: 12.75 GHz to 18 GHz, 5260 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:02:43

Plot 14: 18 GHz to 26 GHz, 5260 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:46:11

Plot 15: 26 GHz to 40 GHz, 5260 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:18:57

Plot 16: 30 MHz to 1 GHz, 5320 MHz, vertical & horizontal polarization

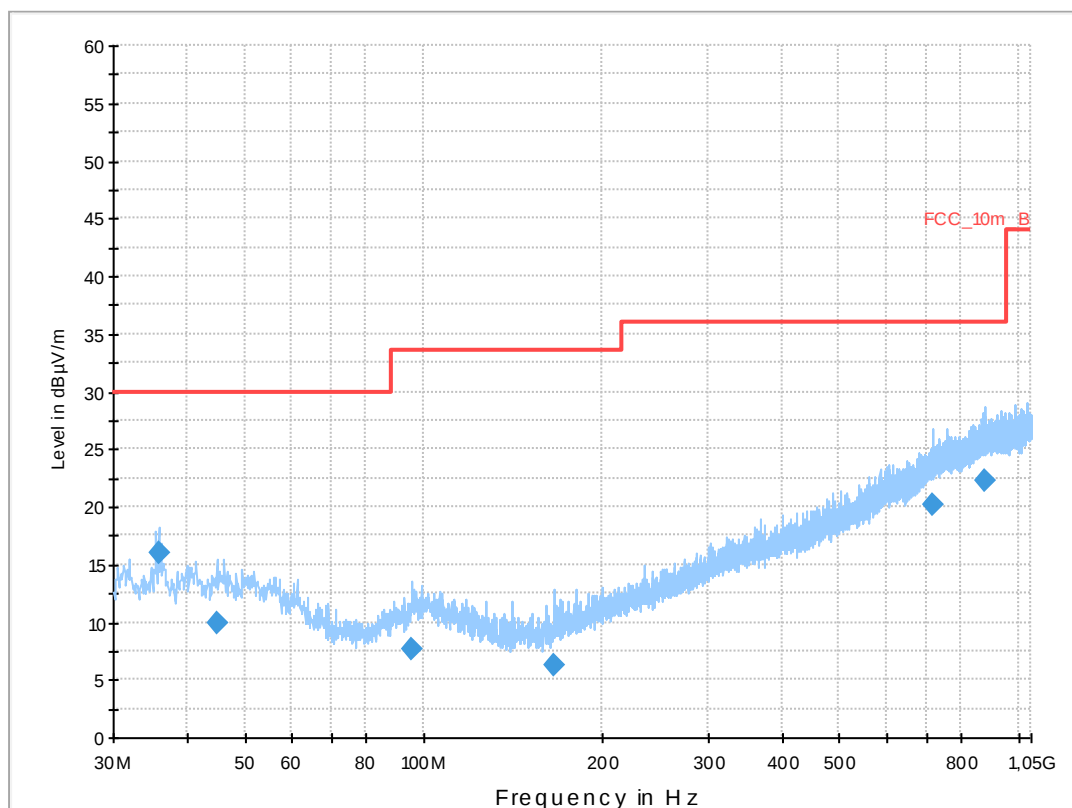
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWEK
 Test Description: FCC part 15 C class B @ 10 m
 Operating Conditions: W-Lan n-mode HT20, mcs0, CH 64 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

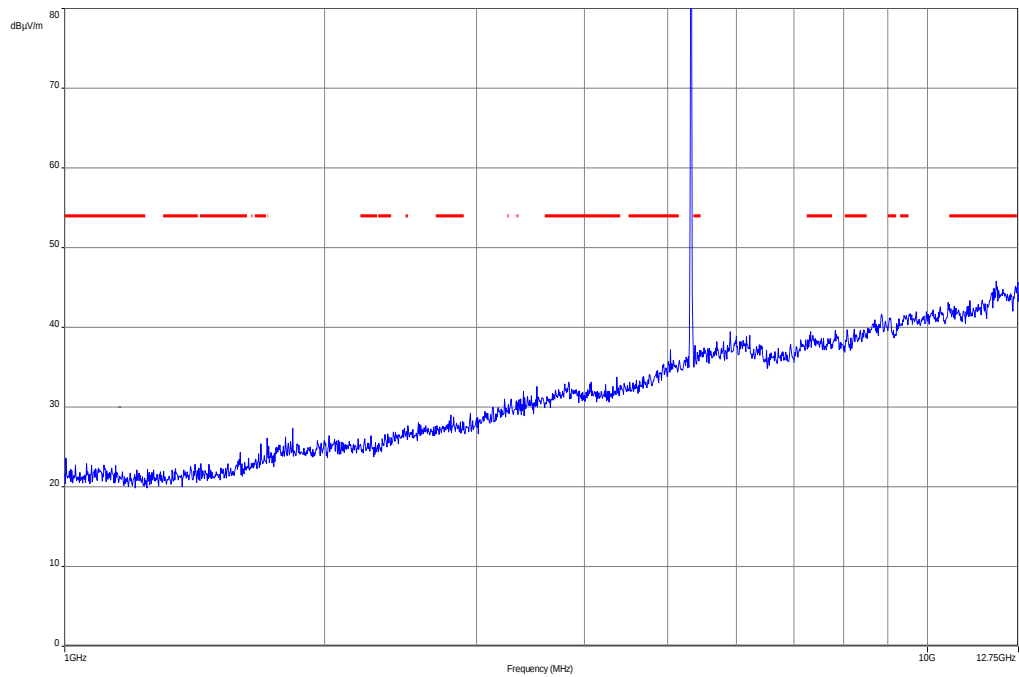
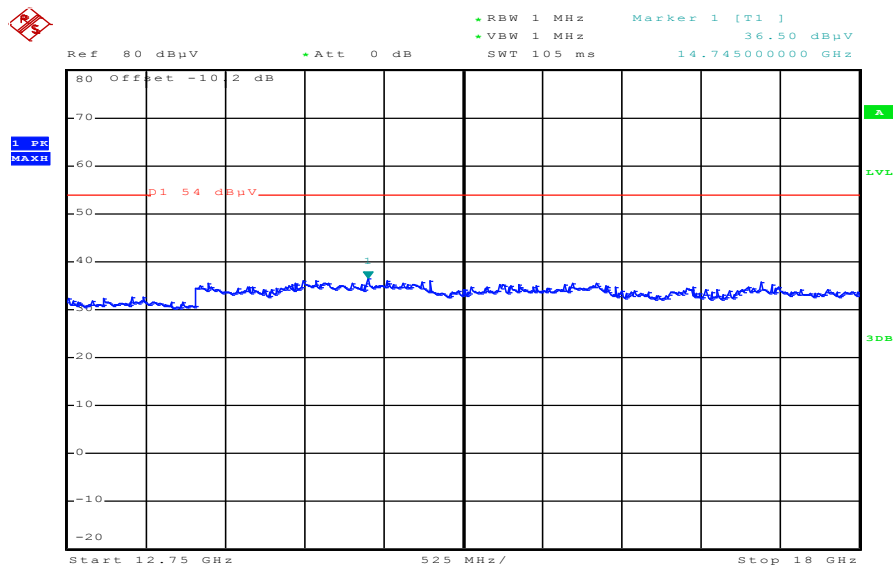
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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

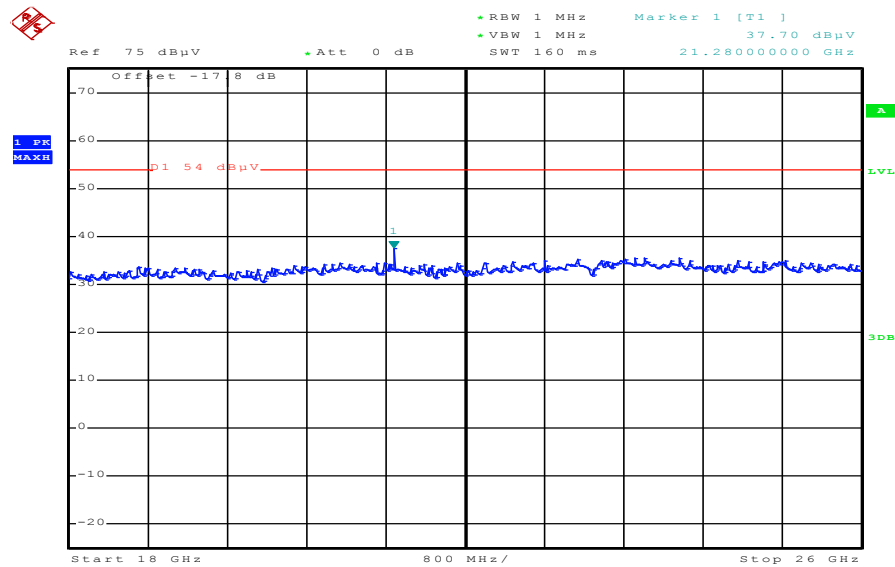


Final Result 1

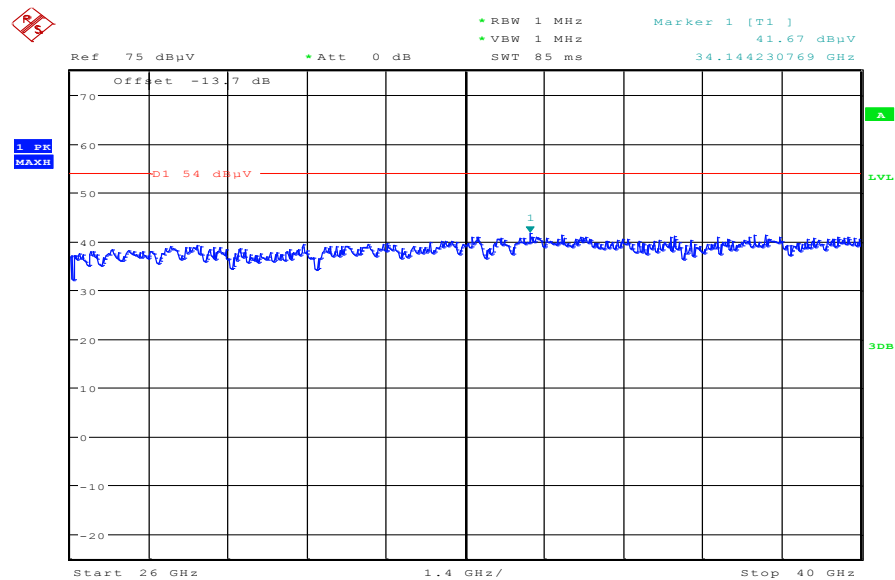
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.760000	16.1	1000.0	120.000	188.0	V	192.0	13.1	13.9	30.0	
44.760000	9.9	1000.0	120.000	174.0	H	106.0	13.3	20.1	30.0	
95.280000	7.6	1000.0	120.000	146.0	H	237.0	11.3	25.9	33.5	
165.600000	6.2	1000.0	120.000	187.0	V	56.0	9.5	27.3	33.5	
717.000000	20.1	1000.0	120.000	270.0	V	0.0	22.9	15.9	36.0	
878.040000	22.2	1000.0	120.000	227.0	H	237.0	24.9	13.8	36.0	

Plot 17: 1 GHz to 12.75 GHz, 5320 MHz, vertical & horizontal polarization**Plot 18:** 12.75 GHz to 18 GHz, 5320 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:03:42

Plot 19: 18 GHz to 26 GHz, 5320 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:47:37

Plot 20: 26 GHz to 40 GHz, 5320 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:20:45

Plot 21: 30 MHz to 1 GHz, 5500 MHz, vertical & horizontal polarization

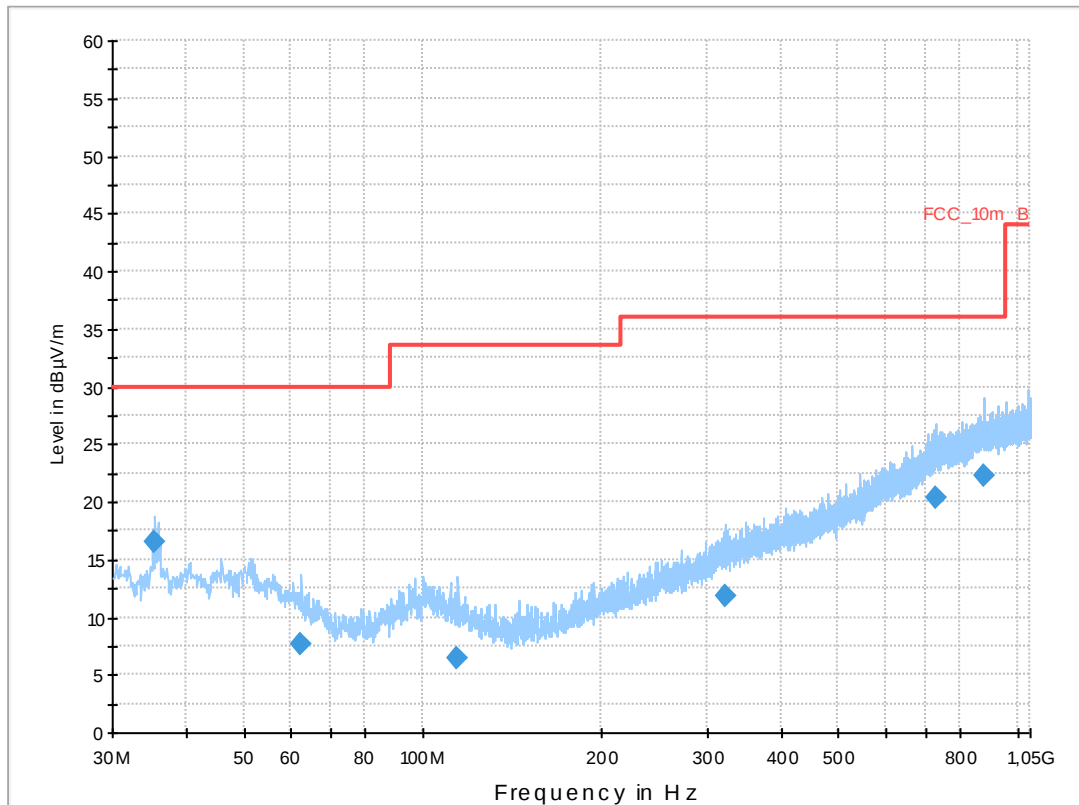
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWEK
 Test Description: FCC part 15 C class B @ 10 m
 Operating Conditions: W-Lan n-mode HT20, mcs0, CH 100 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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

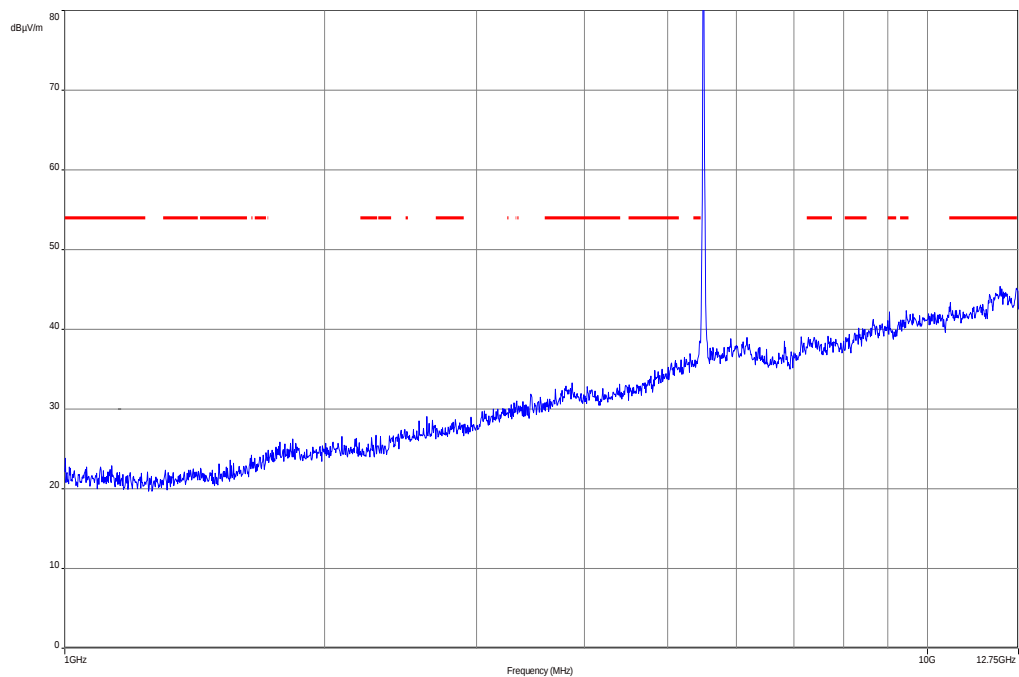
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



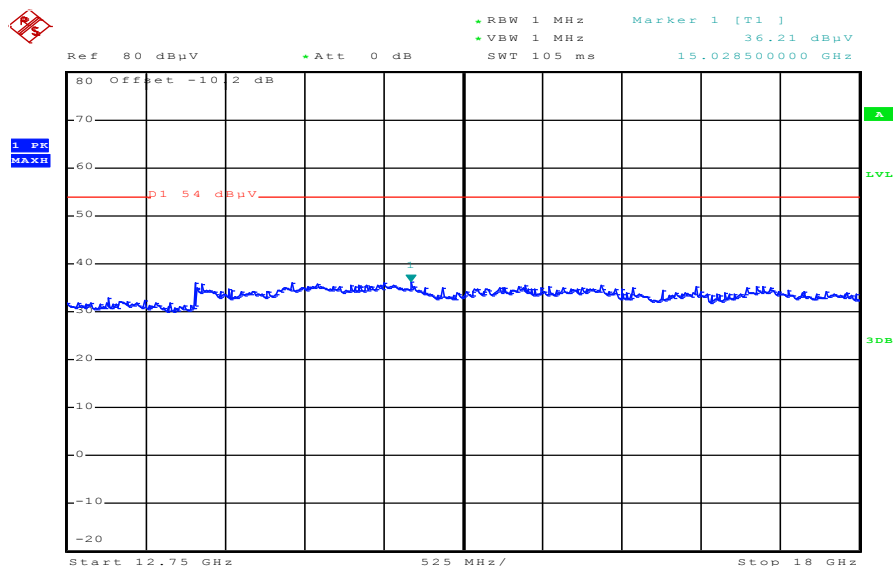
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.400000	16.5	1000.0	120.000	155.0	V	35.0	13.1	13.5	30.0	
62.400000	7.7	1000.0	120.000	248.0	V	112.0	11.0	22.3	30.0	
114.360000	6.4	1000.0	120.000	270.0	V	145.0	10.7	27.1	33.5	
321.480000	11.8	1000.0	120.000	259.0	V	43.0	15.2	24.2	36.0	
726.960000	20.3	1000.0	120.000	250.0	H	212.0	23.1	15.7	36.0	
877.080000	22.2	1000.0	120.000	162.0	H	87.0	24.9	13.8	36.0	

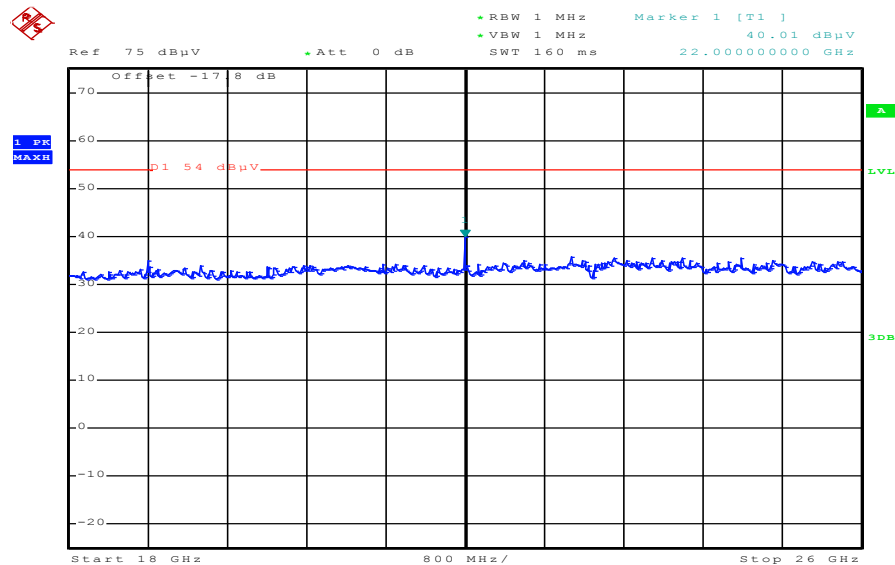
Plot 22: 1 GHz to 12.75 GHz, 5500 MHz, vertical & horizontal polarization



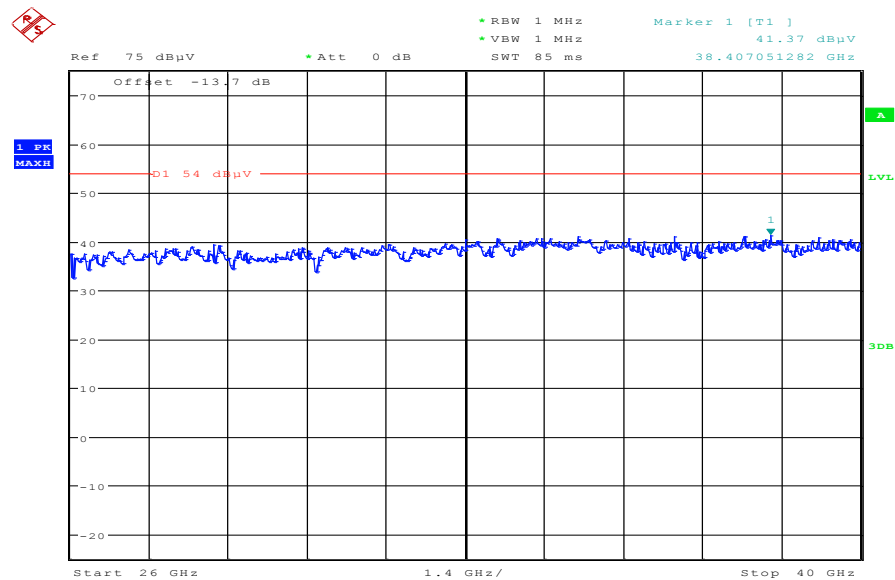
Plot 23: 12.75 GHz to 18 GHz, 5500 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:04:37

Plot 24: 18 GHz to 26 GHz, 5500 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:48:46

Plot 25: 26 GHz to 40 GHz, 5500 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:22:00

Plot 26: 30 MHz to 1 GHz, 5600 MHz, vertical & horizontal polarization

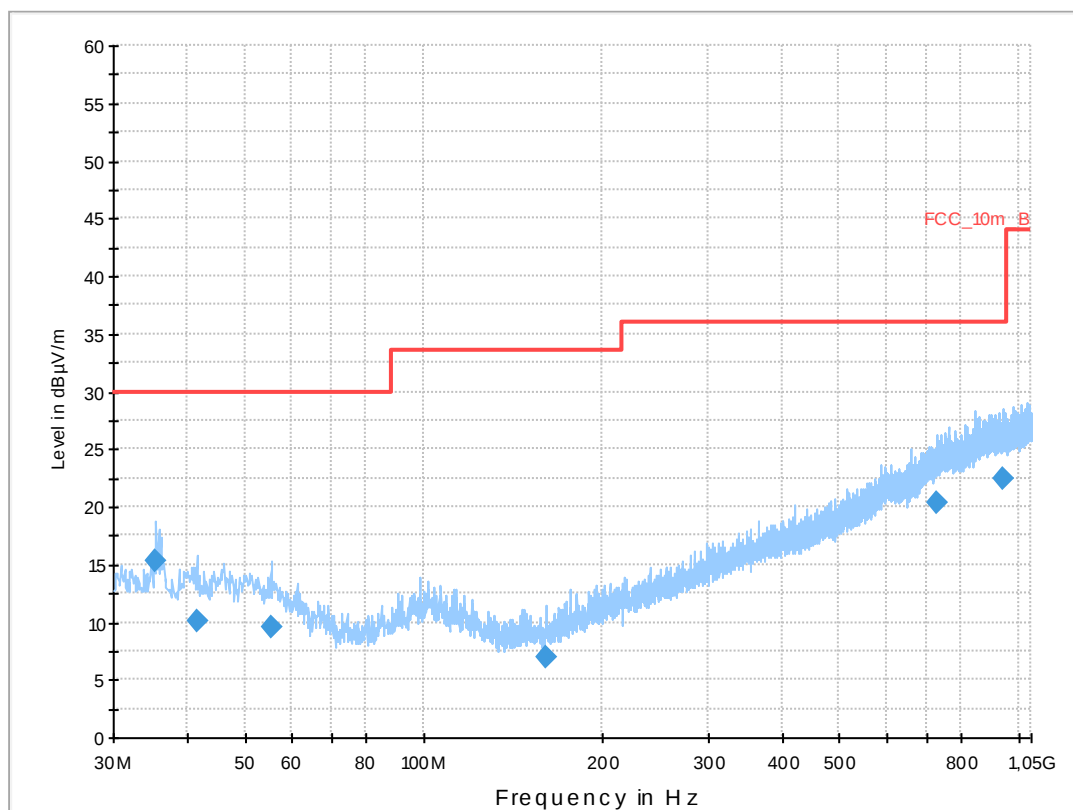
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWEK
 Test Description: FCC part 15 C class B @ 10 m
 Operating Conditions: W-Lan n-mode HT20, mcs0, CH 120 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

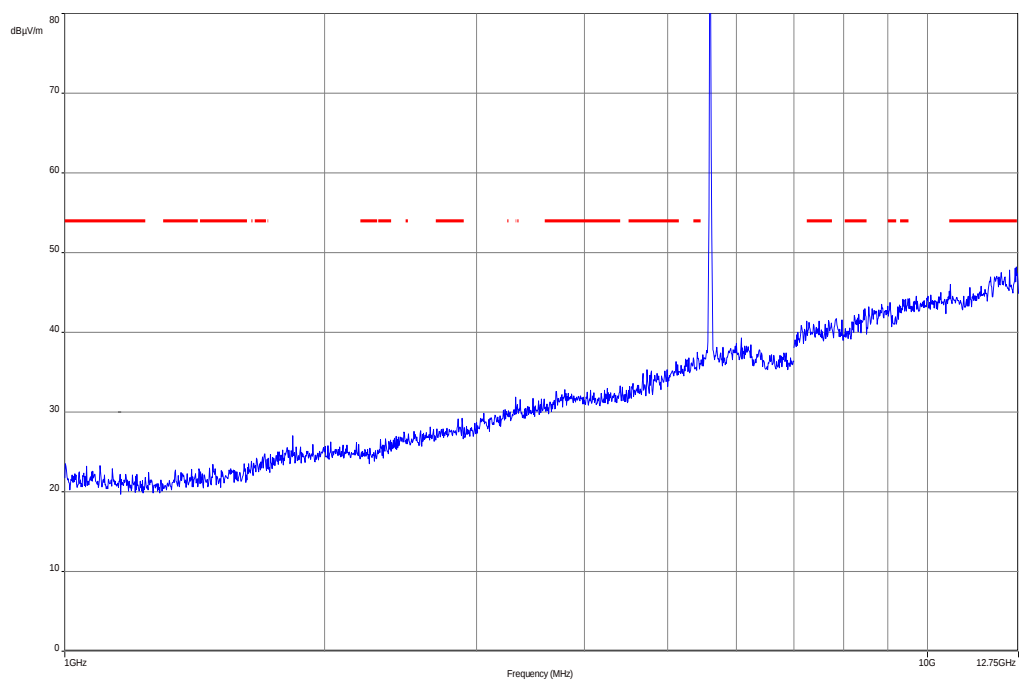
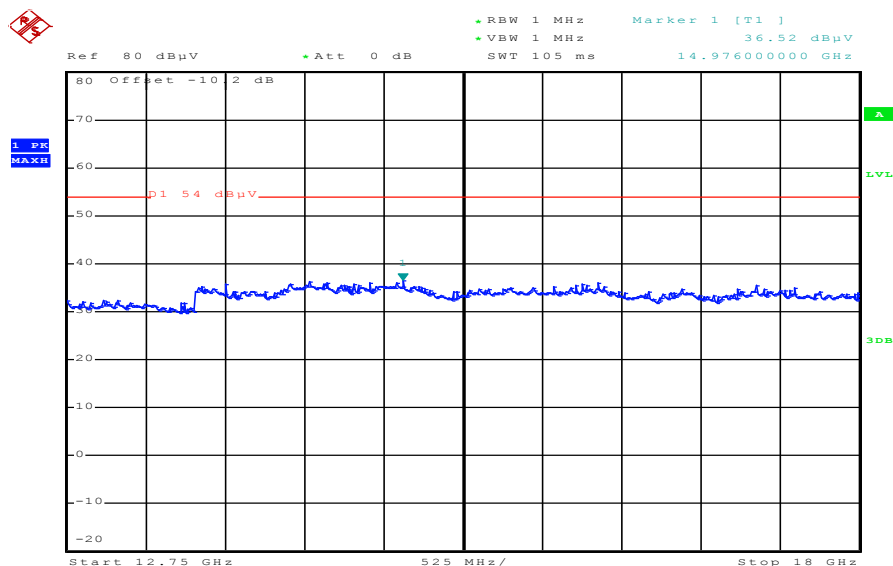
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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



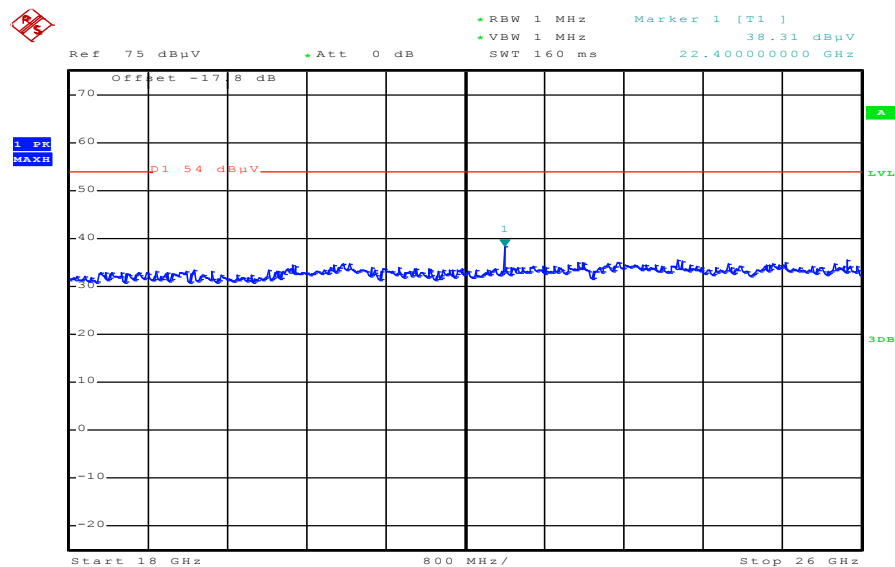
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.400000	15.3	1000.0	120.000	250.0	V	0.0	13.1	14.7	30.0	
41.520000	10.1	1000.0	120.000	257.0	V	136.0	13.4	19.9	30.0	
55.200000	9.6	1000.0	120.000	223.0	V	103.0	12.8	20.4	30.0	
159.960000	7.0	1000.0	120.000	270.0	V	352.0	9.2	26.5	33.5	
729.120000	20.4	1000.0	120.000	270.0	V	304.0	23.2	15.6	36.0	
939.240000	22.4	1000.0	120.000	270.0	H	11.0	25.3	13.6	36.0	

Plot 27: 1 GHz to 12.75 GHz, 5600 MHz, vertical & horizontal polarization**Plot 28:** 12.75 GHz to 18 GHz, 5600 MHz, vertical & horizontal polarization

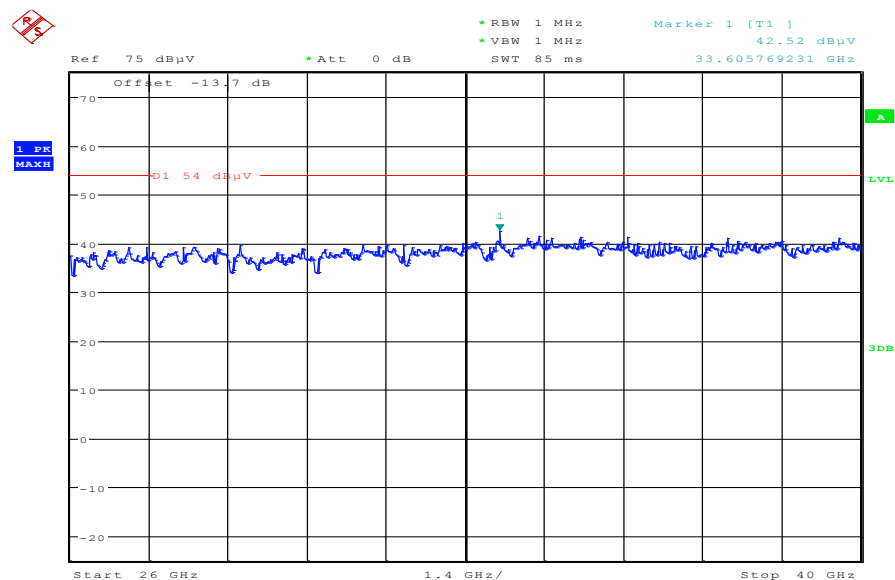
Date: 29.NOV.2012 13:05:25

Plot 29: 18 GHz to 26 GHz, 5600 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:49:32

Plot 30: 26 GHz to 40 GHz, 5600 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:23:12

Plot 31: 30 MHz to 1 GHz, 5700 MHz, vertical & horizontal polarization

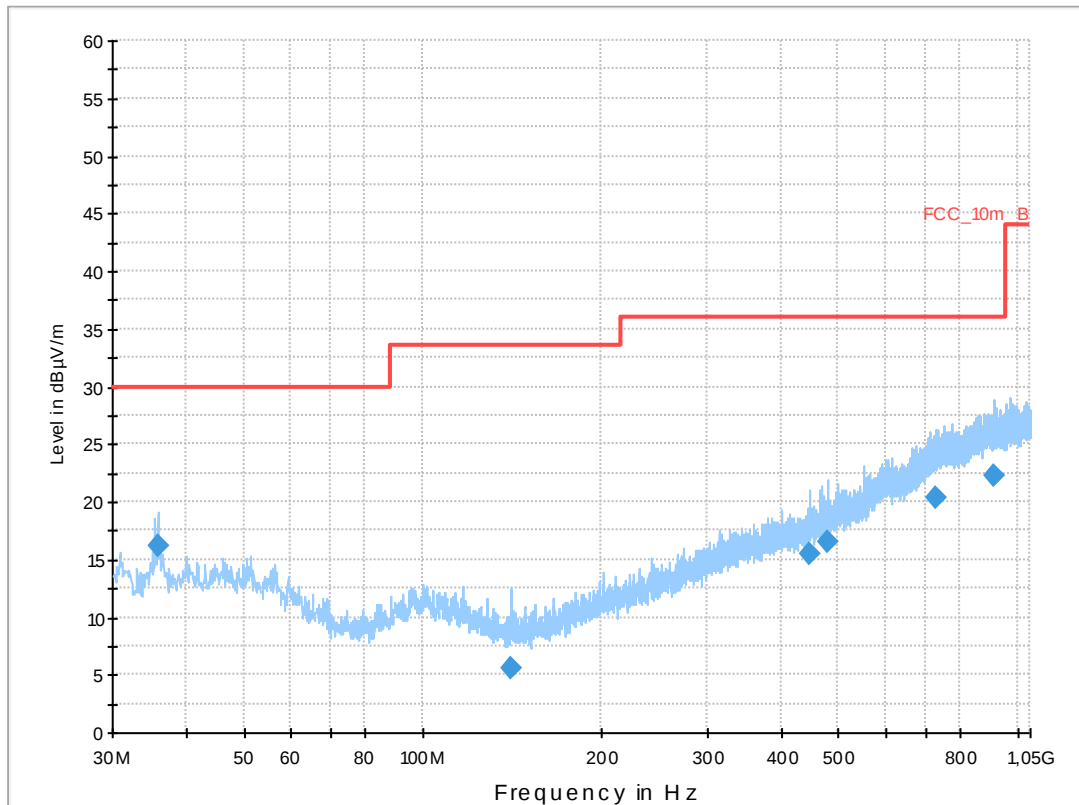
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWEK
 Test Description: FCC part 15 C class B @ 10 m
 Operating Conditions: W-Lan n-mode HT20, mcs0, CH 140 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

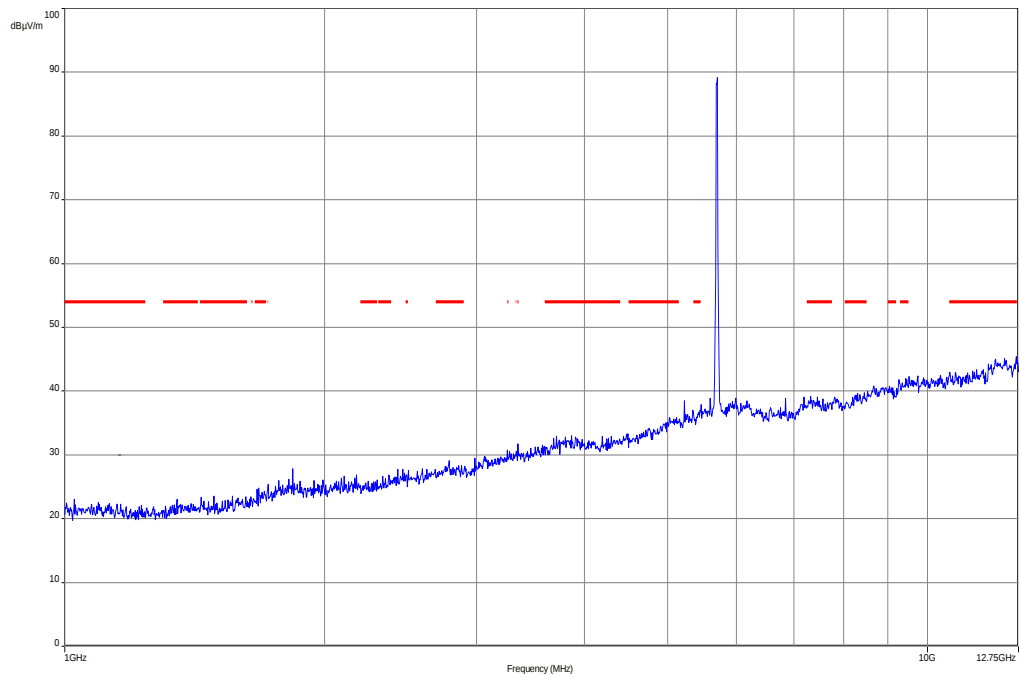
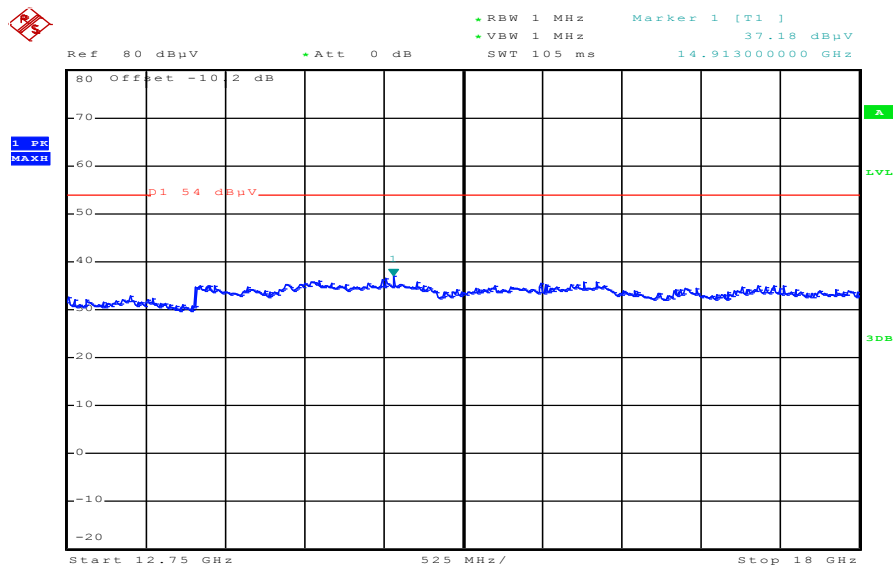
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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



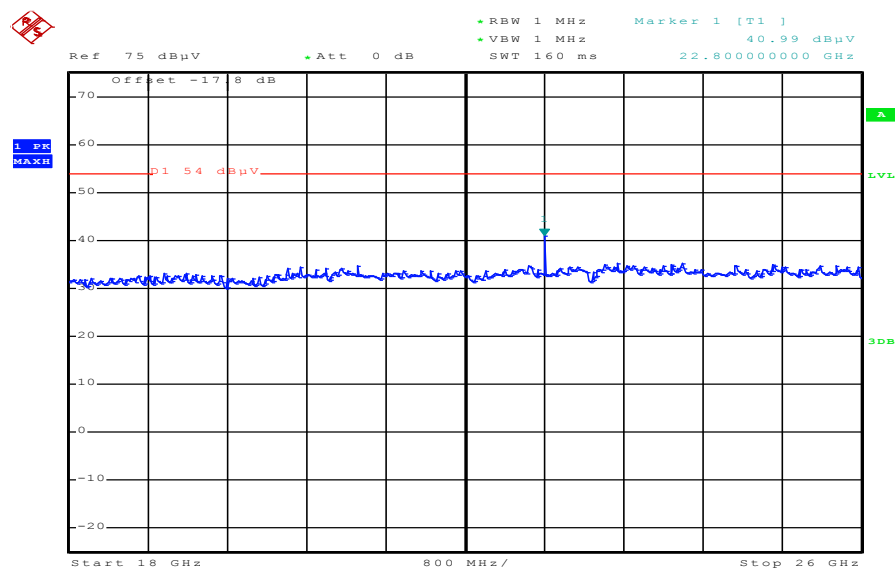
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.760000	16.2	1000.0	120.000	199.0	V	345.0	13.1	13.8	30.0	
140.400000	5.6	1000.0	120.000	231.0	V	0.0	8.7	27.9	33.5	
447.960000	15.4	1000.0	120.000	183.0	V	235.0	17.6	20.6	36.0	
480.000000	16.6	1000.0	120.000	270.0	V	86.0	18.3	19.4	36.0	
726.600000	20.4	1000.0	120.000	270.0	H	19.0	23.1	15.6	36.0	
912.840000	22.3	1000.0	120.000	270.0	H	216.0	25.2	13.7	36.0	

Plot 32: 1 GHz to 12.75 GHz, 5700 MHz, vertical & horizontal polarization**Plot 33:** 12.75 GHz to 18 GHz, 5700 MHz, vertical & horizontal polarization

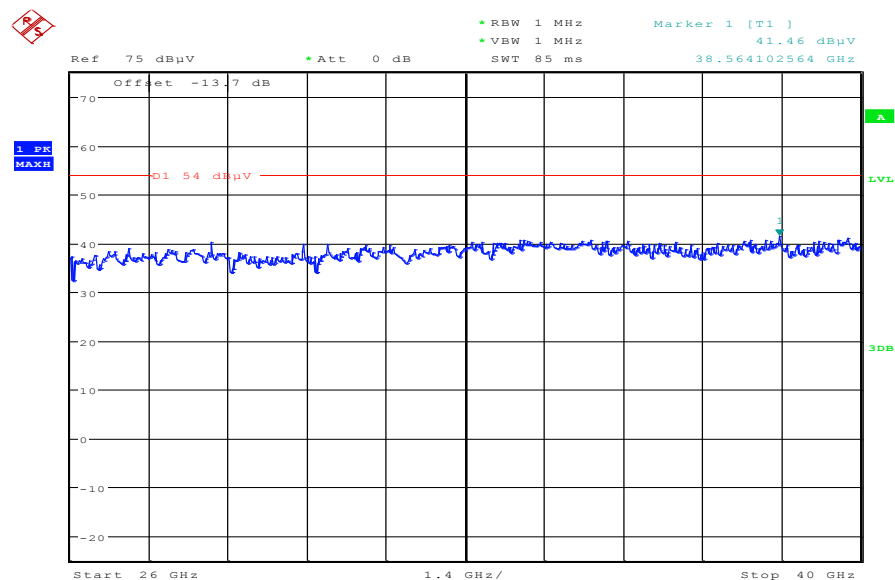
Date: 29.NOV.2012 13:06:19

Plot 34: 18 GHz to 26 GHz, 5700 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:50:36

Plot 35: 26 GHz to 40 GHz, 5700 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:24:36

Plots: OFDM / n – mode HT40

Plot 1: 30 MHz to 1 GHz, 5190 MHz, vertical & horizontal polarization

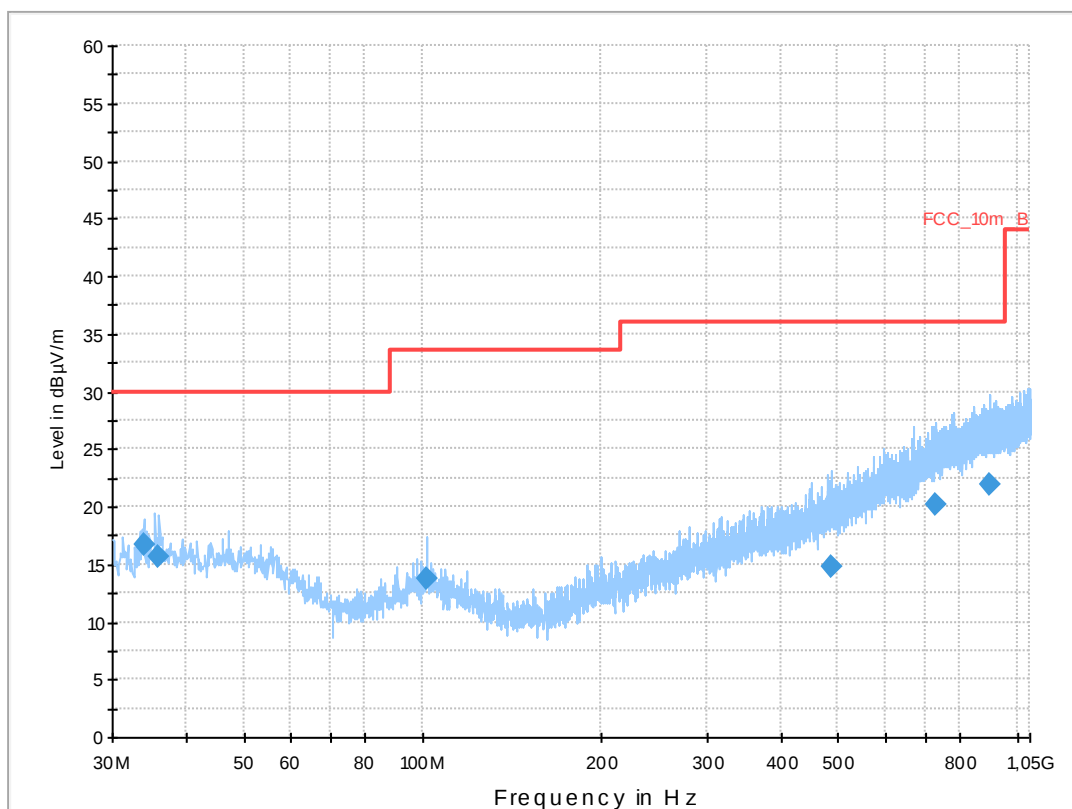
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 36
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

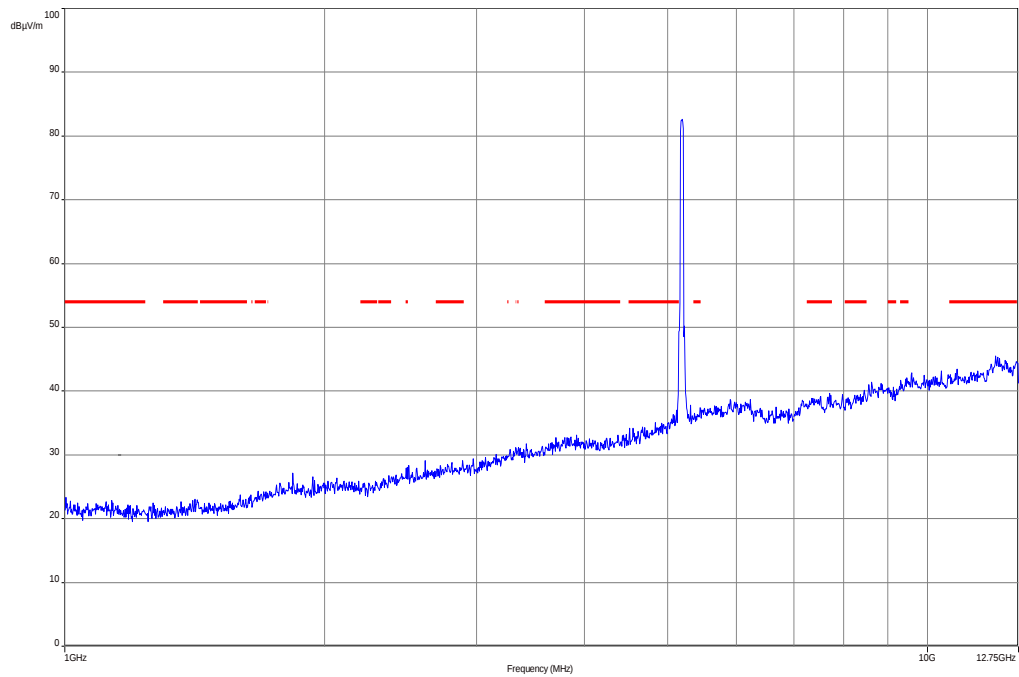
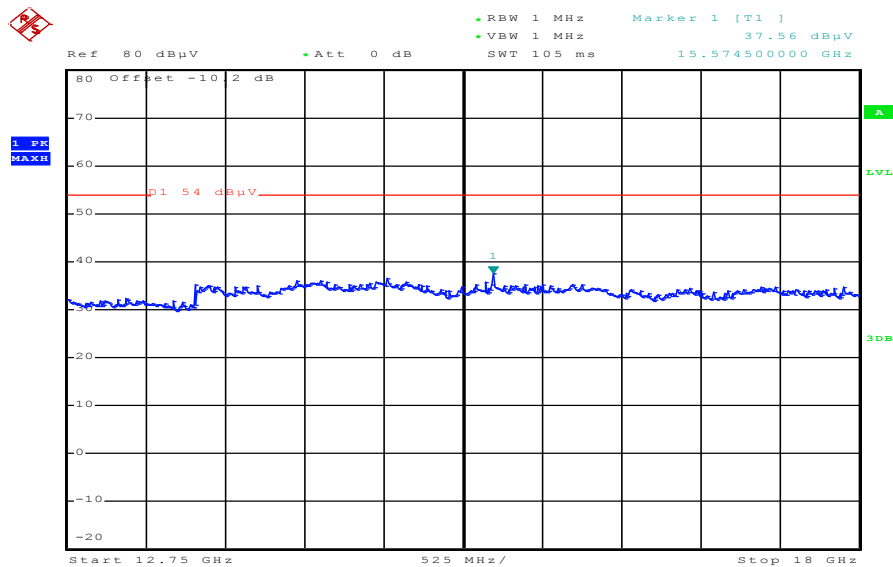
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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

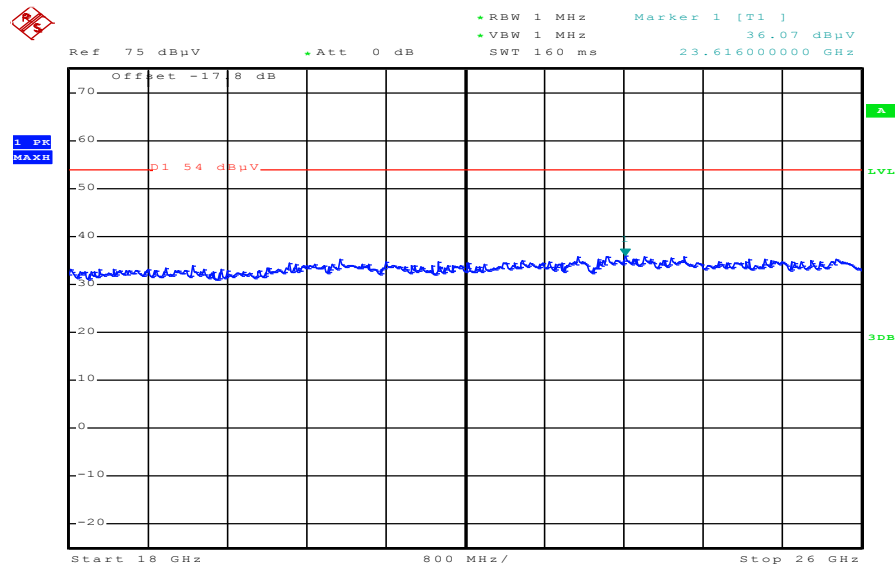


Final Result 1

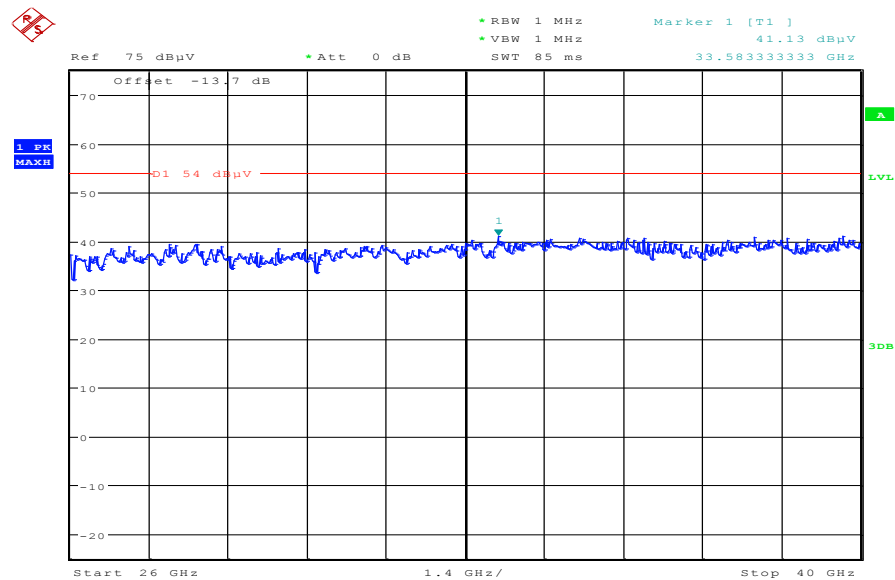
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
34.036350	16.7	1000.0	120.000	131.0	V	190.0	12.9	13.3	30.0	
35.750550	15.7	1000.0	120.000	122.0	V	100.0	13.1	14.3	30.0	
101.714700	13.8	1000.0	120.000	98.0	V	-10.0	11.7	19.7	33.5	
486.506100	14.7	1000.0	120.000	98.0	V	182.0	18.4	21.3	36.0	
729.251250	20.1	1000.0	120.000	170.0	V	268.0	23.2	15.9	36.0	
897.683550	22.0	1000.0	120.000	170.0	H	93.0	25.2	14.0	36.0	

Plot 2: 1 GHz to 12.75 GHz, 5190 MHz, vertical & horizontal polarization**Plot 3:** 12.75 GHz to 18 GHz, 5190 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:16:33

Plot 4: 18 GHz to 26 GHz, 5190 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:24:15

Plot 5: 26 GHz to 40 GHz, 5190 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:35:27

Plot 6: 30 MHz to 1 GHz, 5230 MHz, vertical & horizontal polarization

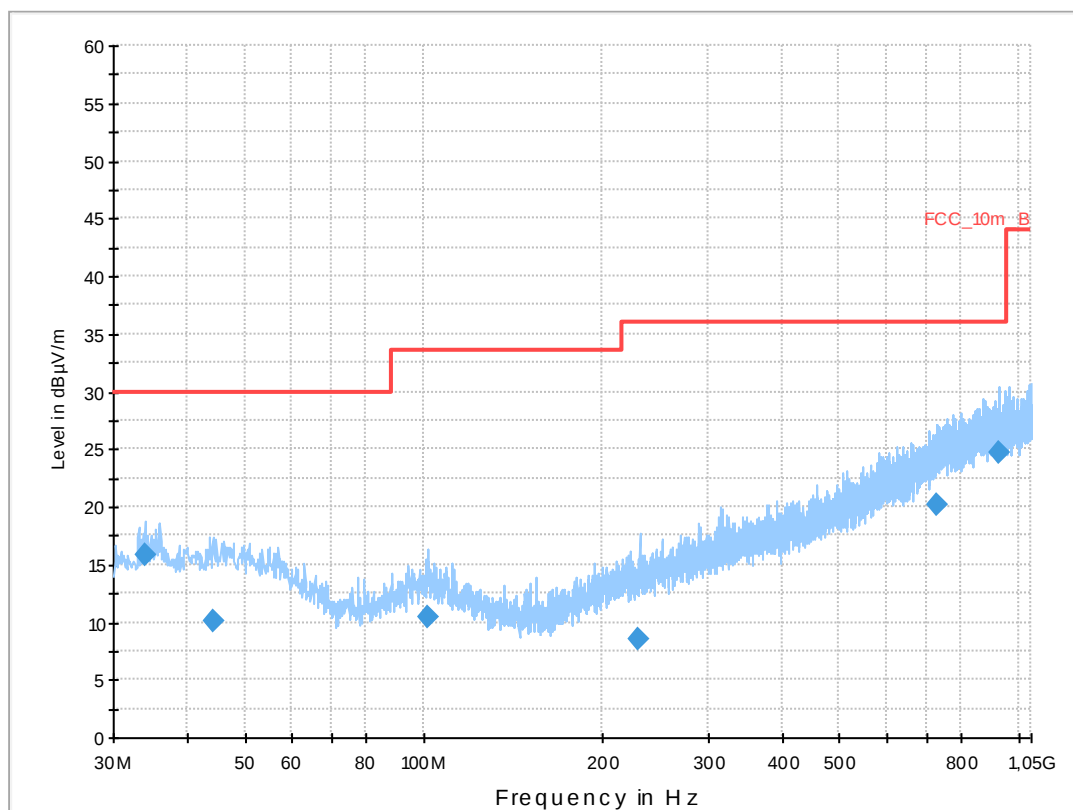
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 46
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

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

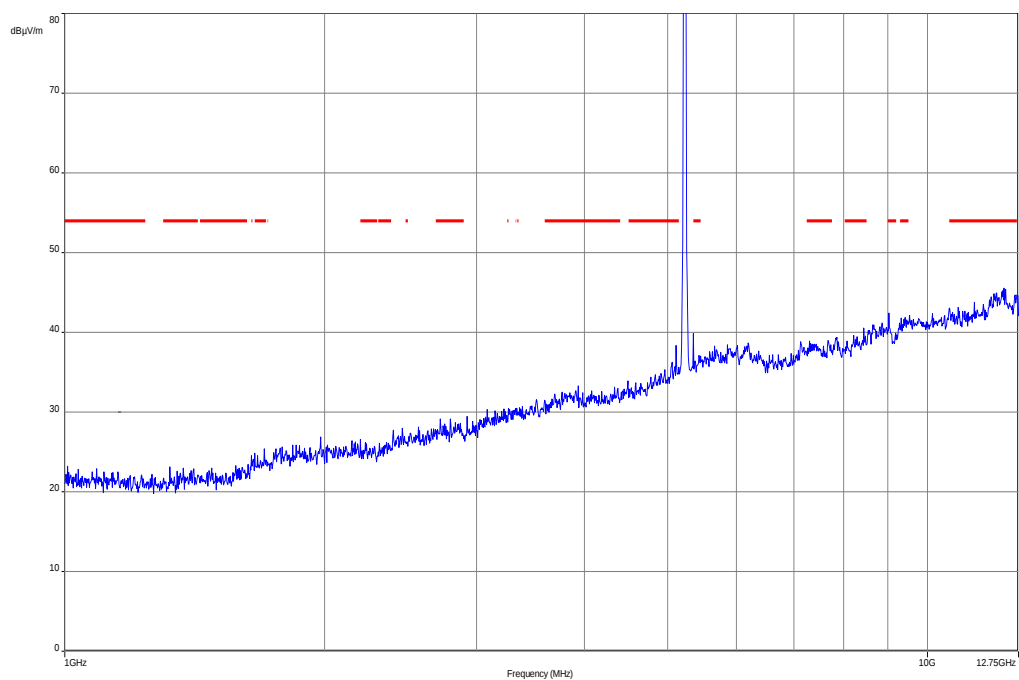
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



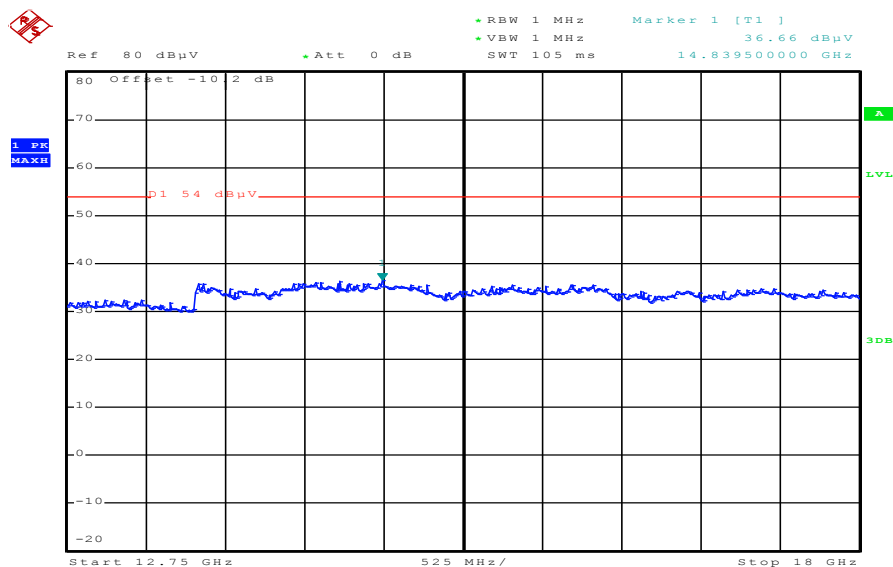
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
34.047150	15.8	1000.0	120.000	112.0	V	10.0	12.9	14.2	30.0	
44.373750	10.0	1000.0	120.000	121.0	V	190.0	13.3	20.0	30.0	
101.645400	10.4	1000.0	120.000	98.0	V	100.0	11.8	23.1	33.5	
229.937100	8.5	1000.0	120.000	122.0	V	100.0	12.7	27.5	36.0	
729.807900	20.1	1000.0	120.000	132.0	V	-9.0	23.2	15.9	36.0	
927.329400	24.8	1000.0	120.000	134.0	V	178.0	25.3	11.2	36.0	

Plot 7: 1 GHz to 12.75 GHz, 5230 MHz, vertical & horizontal polarization

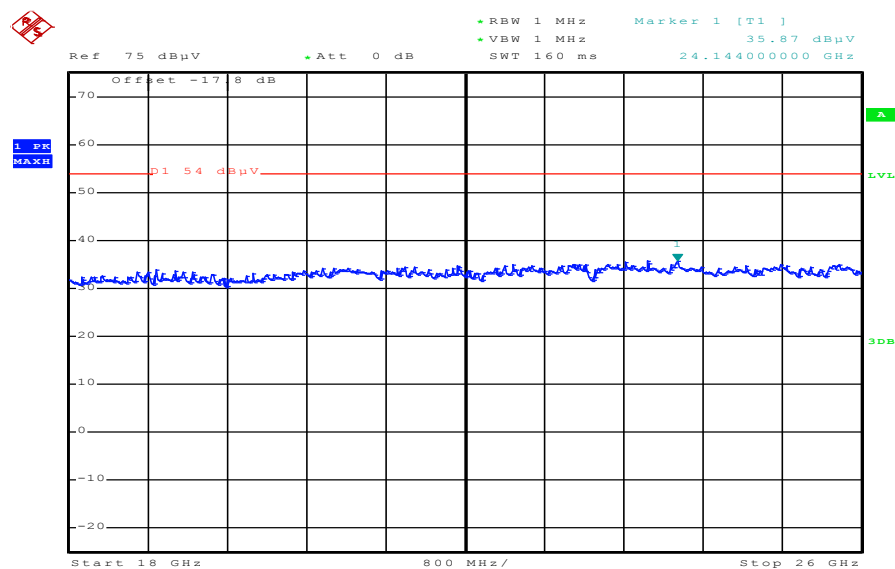


Plot 8: 12.75 GHz to 18 GHz, 5230 MHz, vertical & horizontal polarization



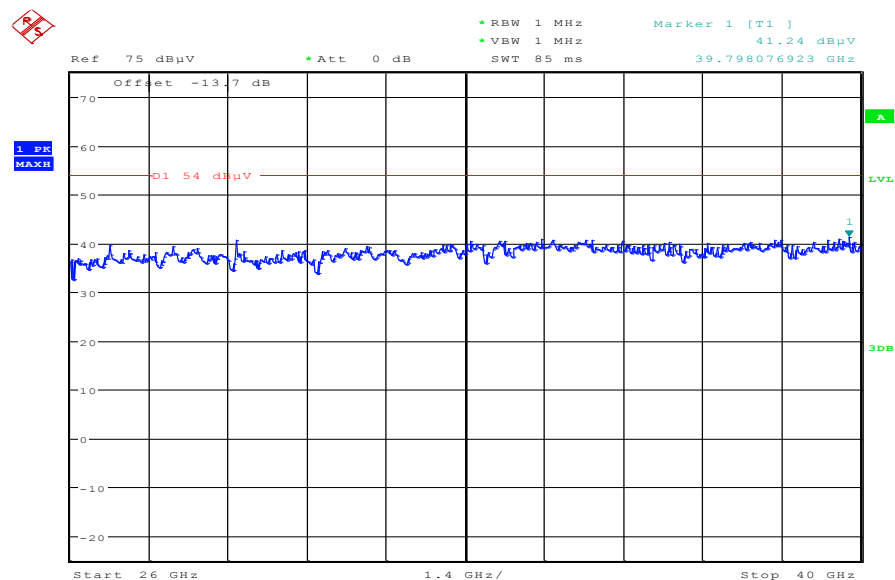
Date: 29.NOV.2012 13:15:42

Plot 9: 18 GHz to 26 GHz, 5230 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:26:04

Plot 10: 26 GHz to 40 GHz, 5230 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:34:31

Plot 11: 30 MHz to 1 GHz, 5270 MHz, vertical & horizontal polarization

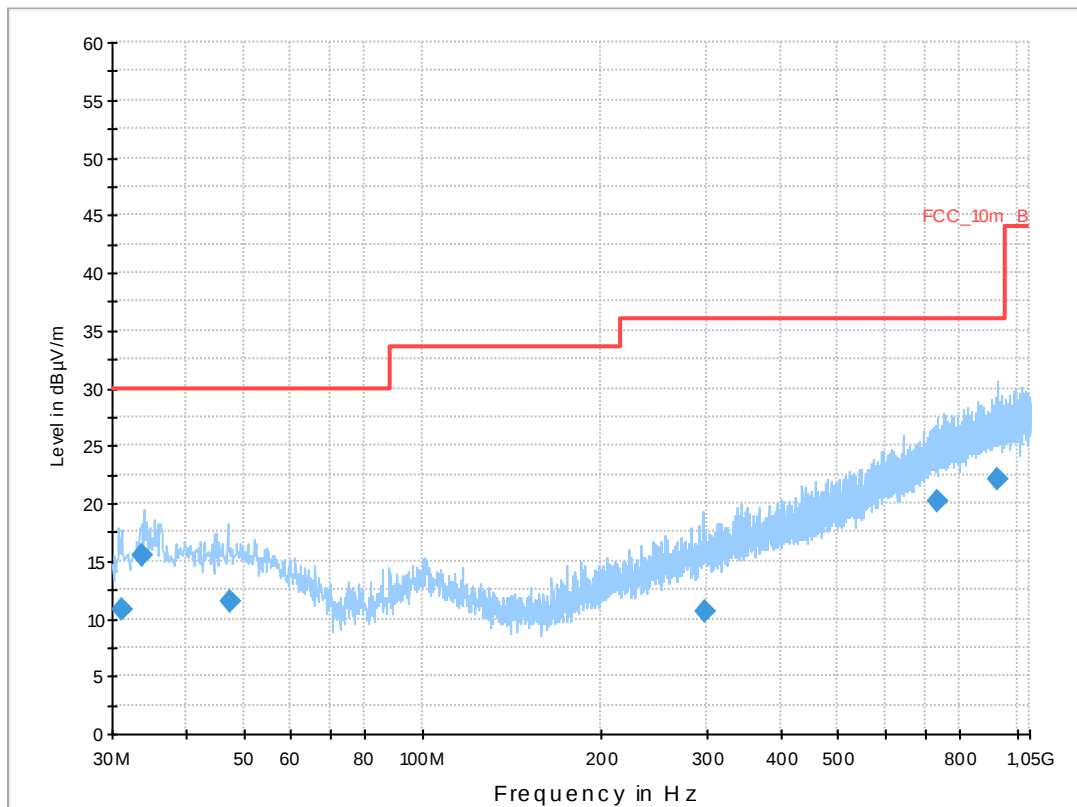
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 54
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

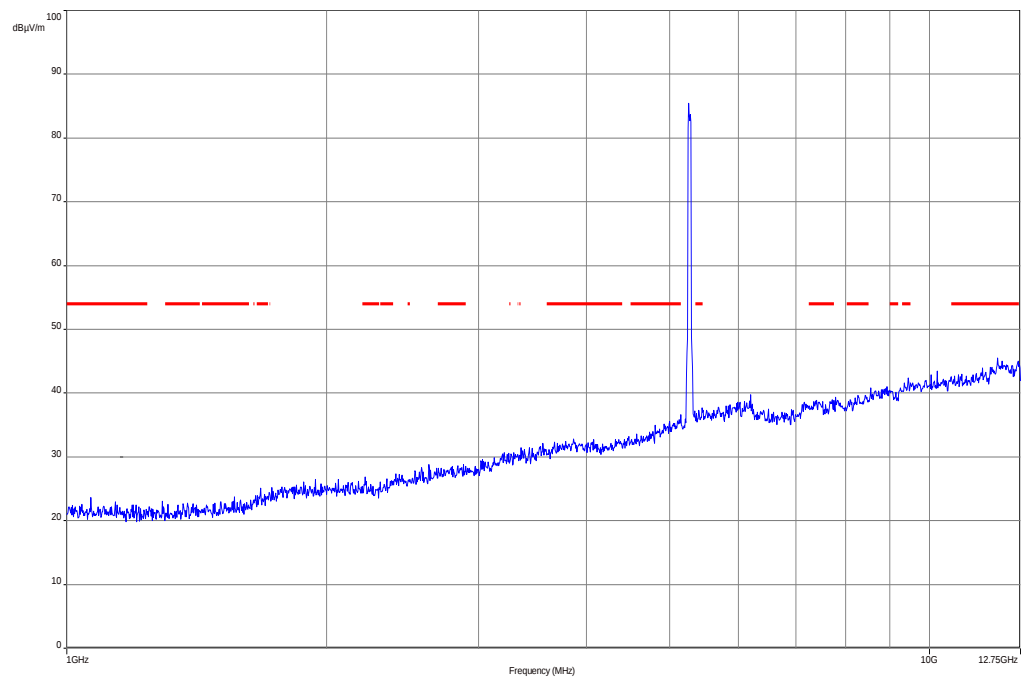
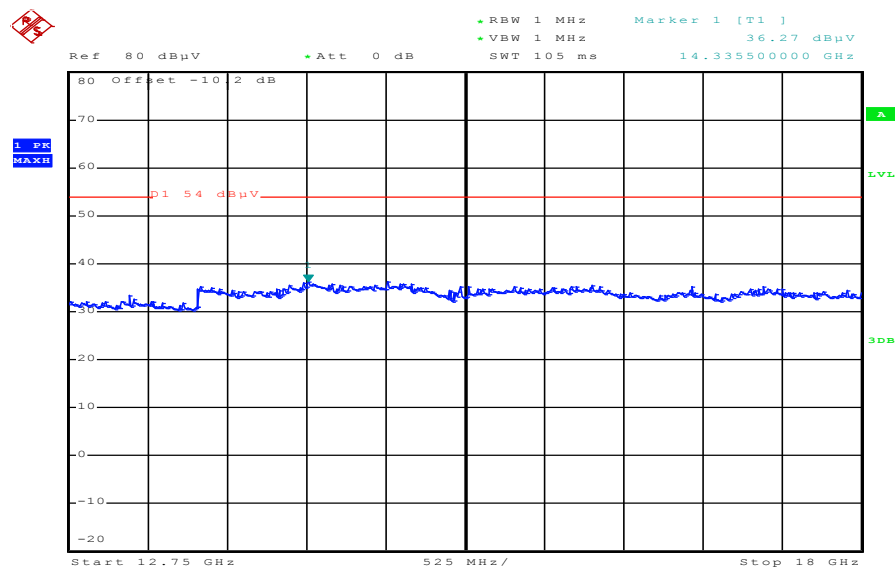
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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



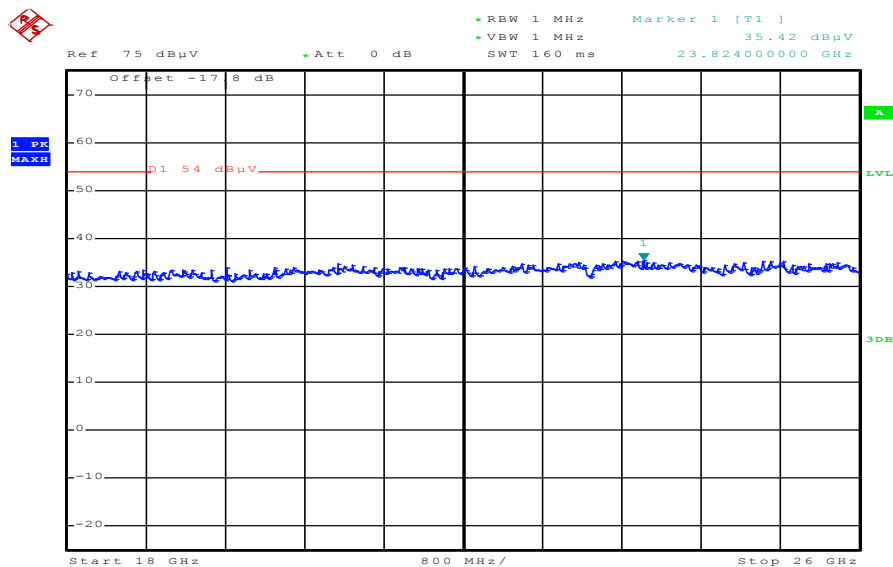
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
31.189500	10.7	1000.0	120.000	170.0	V	170.0	12.6	19.3	30.0	
33.698100	15.5	1000.0	120.000	115.0	V	-10.0	12.9	14.5	30.0	
47.283750	11.5	1000.0	120.000	98.0	V	170.0	13.3	18.5	30.0	
297.437550	10.6	1000.0	120.000	170.0	H	100.0	14.4	25.4	36.0	
734.787300	20.2	1000.0	120.000	111.0	H	88.0	23.3	15.8	36.0	
930.283800	22.1	1000.0	120.000	121.0	H	100.0	25.3	13.9	36.0	

Plot 12: 1 GHz to 12.75 GHz, 5270 MHz, vertical & horizontal polarization**Plot 13:** 12.75 GHz to 18 GHz, 5270 MHz, vertical & horizontal polarization

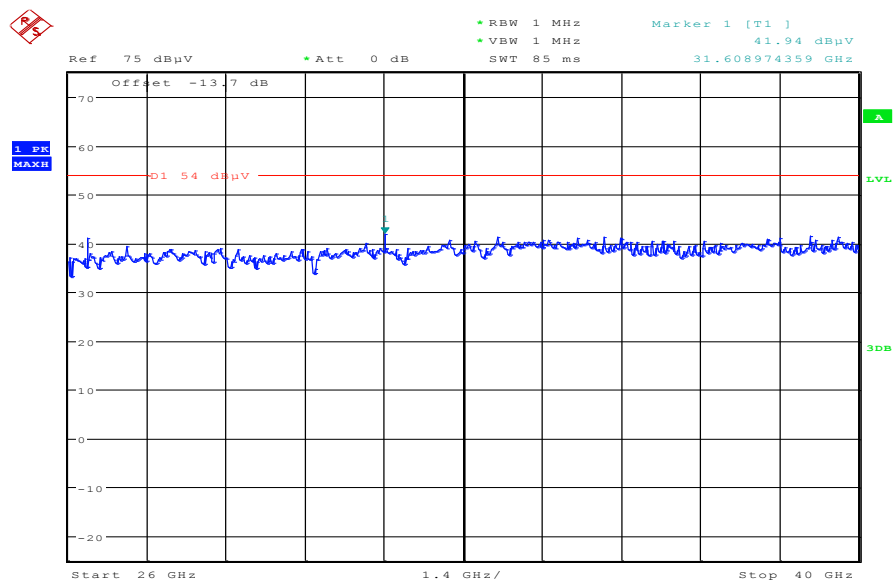
Date: 29.NOV.2012 13:14:42

Plot 14: 18 GHz to 26 GHz, 5270 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:27:04

Plot 15: 26 GHz to 40 GHz, 5270 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:33:08

Plot 16: 30 MHz to 1 GHz, 5310 MHz, vertical & horizontal polarization

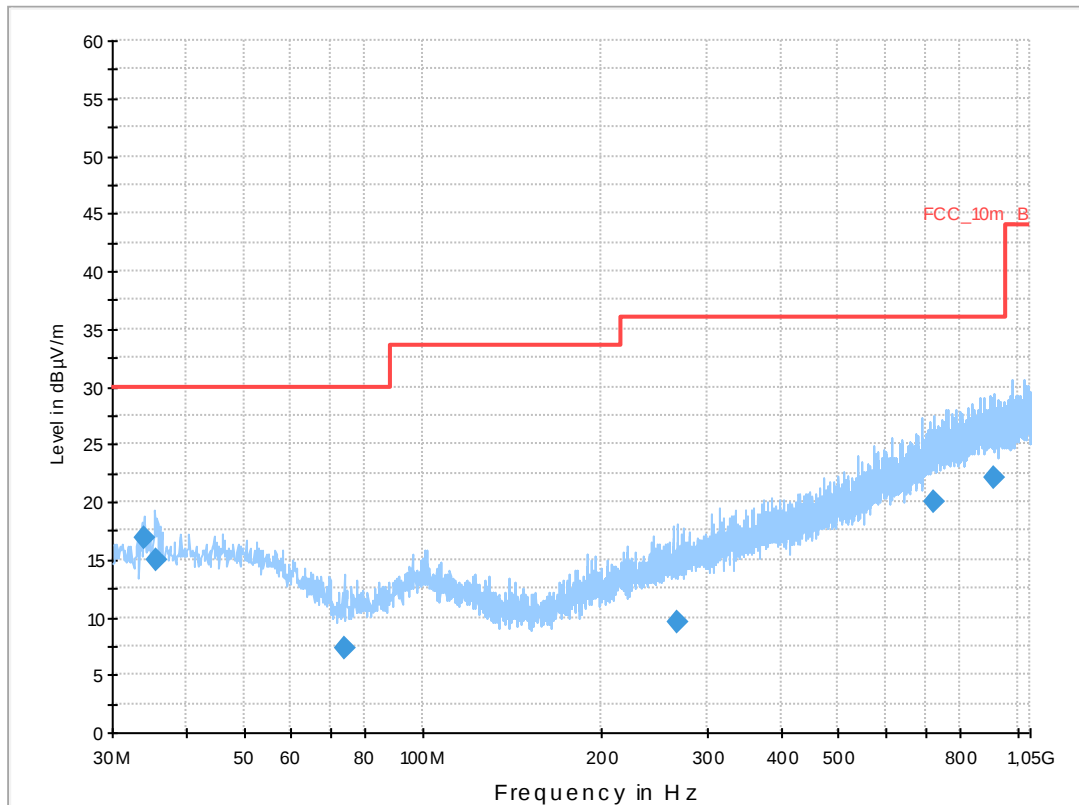
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 62
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

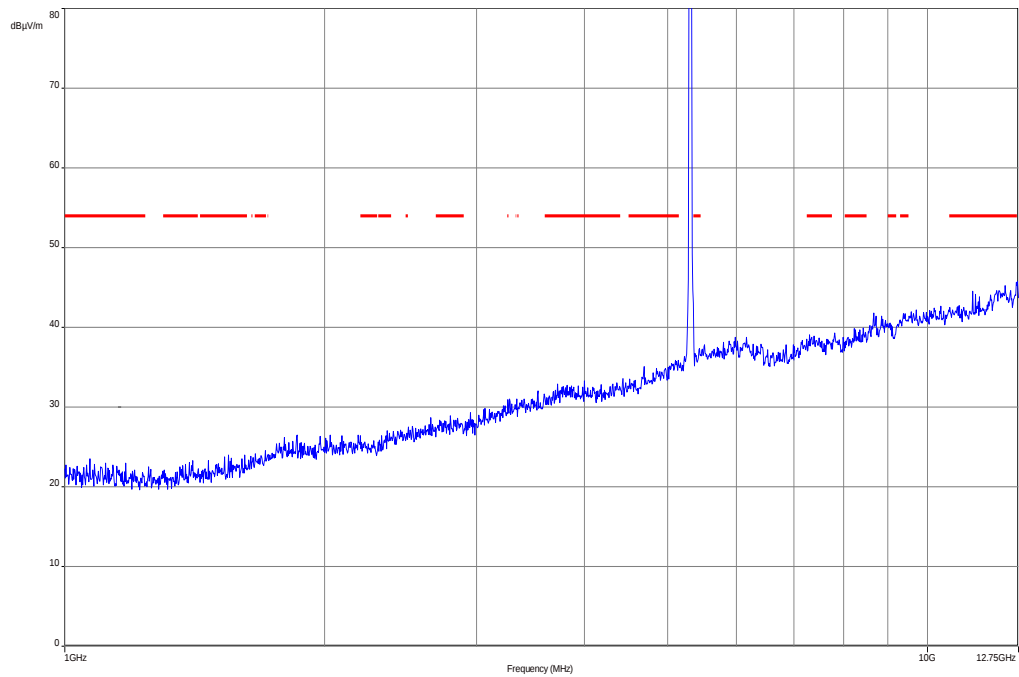
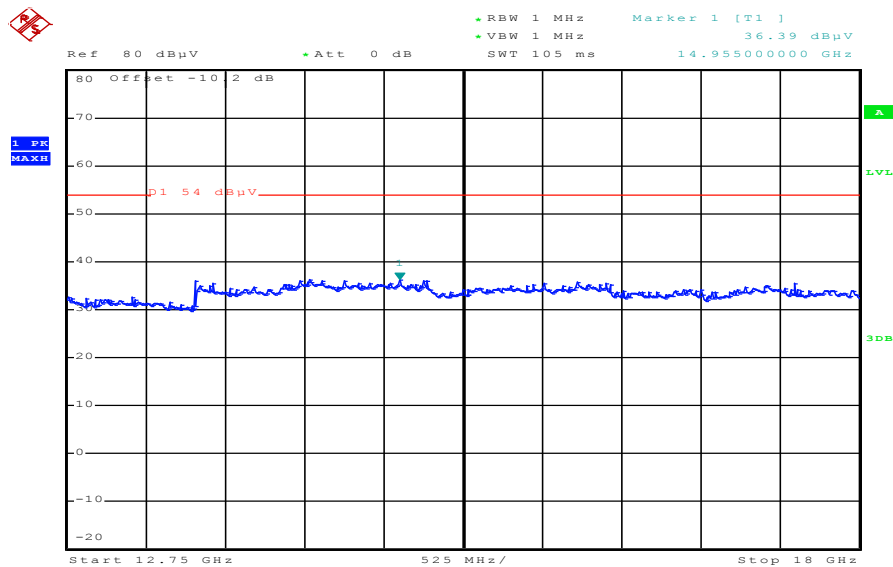
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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



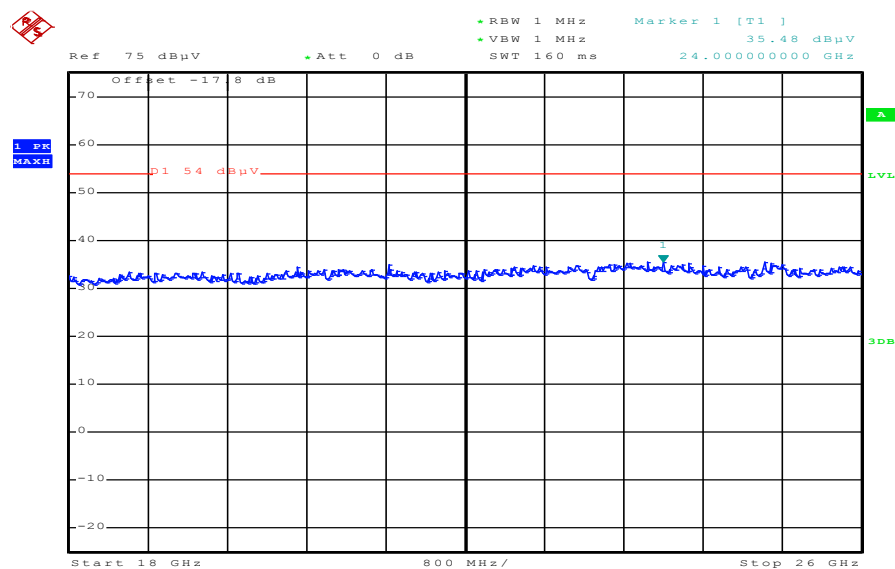
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
34.028850	16.9	1000.0	120.000	120.0	V	171.0	12.9	13.1	30.0	
35.702850	14.9	1000.0	120.000	143.0	V	180.0	13.1	15.1	30.0	
73.672200	7.3	1000.0	120.000	155.0	V	280.0	9.2	22.7	30.0	
268.081050	9.6	1000.0	120.000	170.0	V	100.0	13.8	26.4	36.0	
725.936550	20.1	1000.0	120.000	170.0	H	100.0	23.1	15.9	36.0	
913.228500	22.0	1000.0	120.000	170.0	V	175.0	25.2	14.0	36.0	

Plot 17: 1 GHz to 12.75 GHz, 5310 MHz, vertical & horizontal polarization**Plot 18:** 12.75 GHz to 18 GHz, 5310 MHz, vertical & horizontal polarization

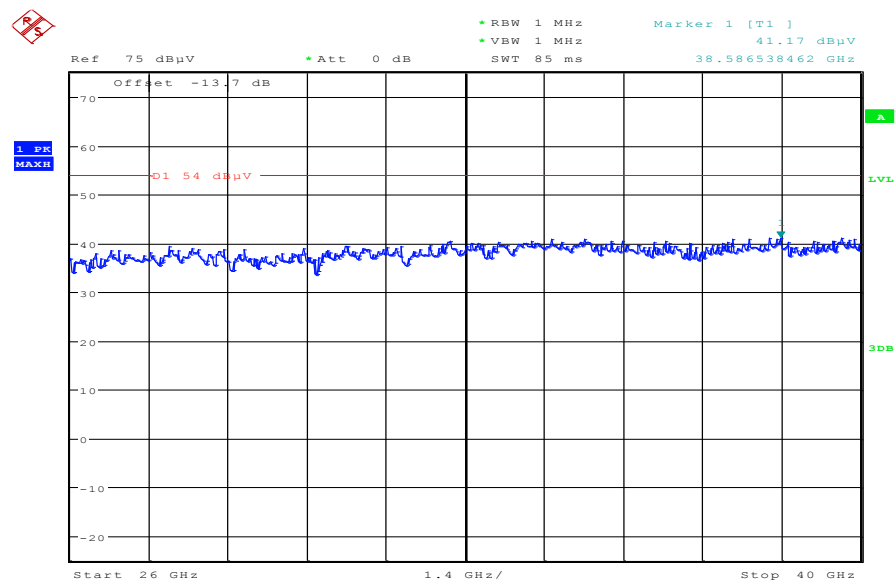
Date: 29.NOV.2012 13:13:39

Plot 19: 18 GHz to 26 GHz, 5310 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:27:56

Plot 20: 26 GHz to 40 GHz, 5310 MHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:31:12

Plot 21: 30 MHz to 1 GHz, 5510 MHz, vertical & horizontal polarization

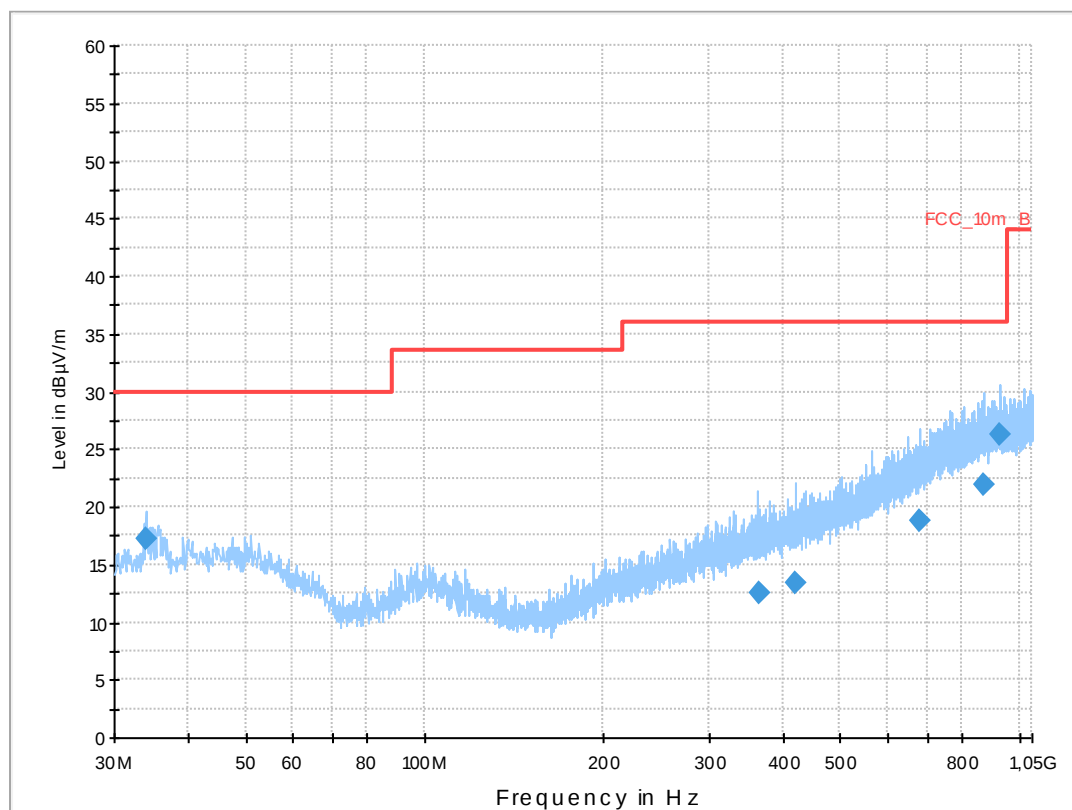
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 102 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

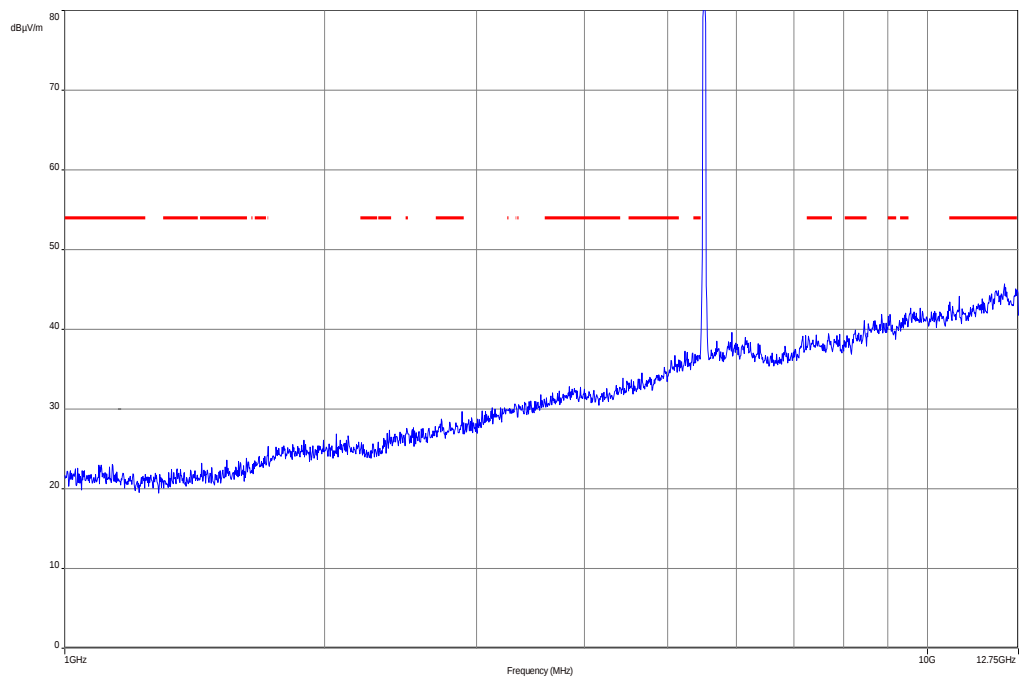
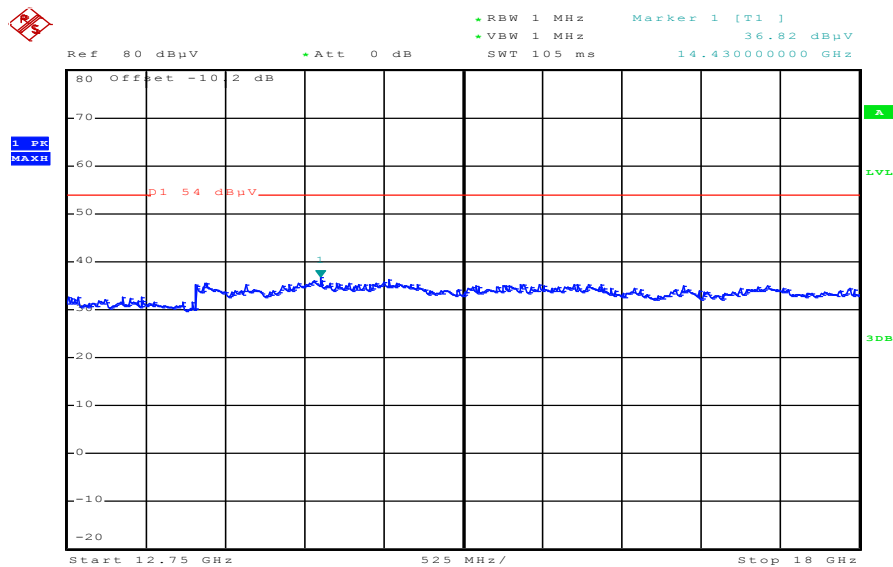
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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

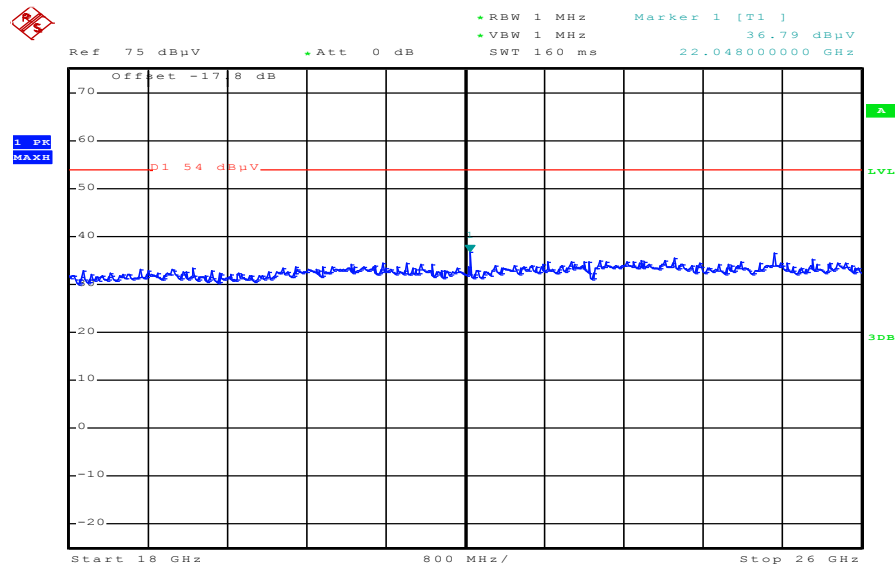


Final Result 1

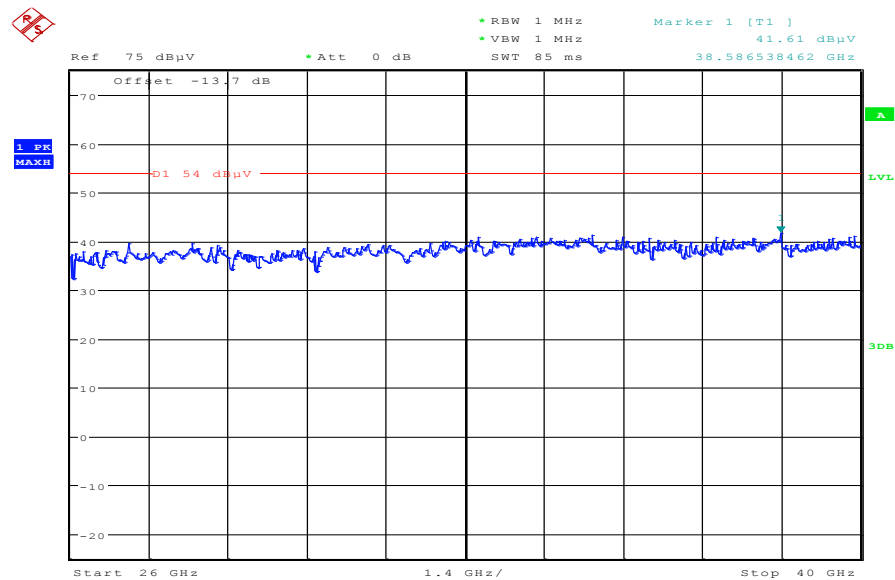
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)	Comment
34.065000	17.2	1000.0	120.000	119.0	V	-9.0	12.9	12.8	30.0	
364.094250	12.6	1000.0	120.000	163.0	V	183.0	16.3	23.4	36.0	
419.151750	13.3	1000.0	120.000	153.0	H	81.0	17.2	22.7	36.0	
681.214650	18.8	1000.0	120.000	98.0	H	178.0	22.0	17.2	36.0	
871.284300	21.9	1000.0	120.000	146.0	H	0.0	24.8	14.1	36.0	
927.438300	26.3	1000.0	120.000	170.0	V	190.0	25.3	9.7	36.0	

Plot 22: 1 GHz to 12.75 GHz, 5510 MHz, vertical & horizontal polarization**Plot 23:** 12.75 GHz to 18 GHz, 5510 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:11:03

Plot 24: 18 GHz to 26 GHz, 5510 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:28:54

Plot 25: 26 GHz to 40 GHz, 5510 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:29:40

Plot 26: 30 MHz to 1 GHz, 5590 MHz, vertical & horizontal polarization

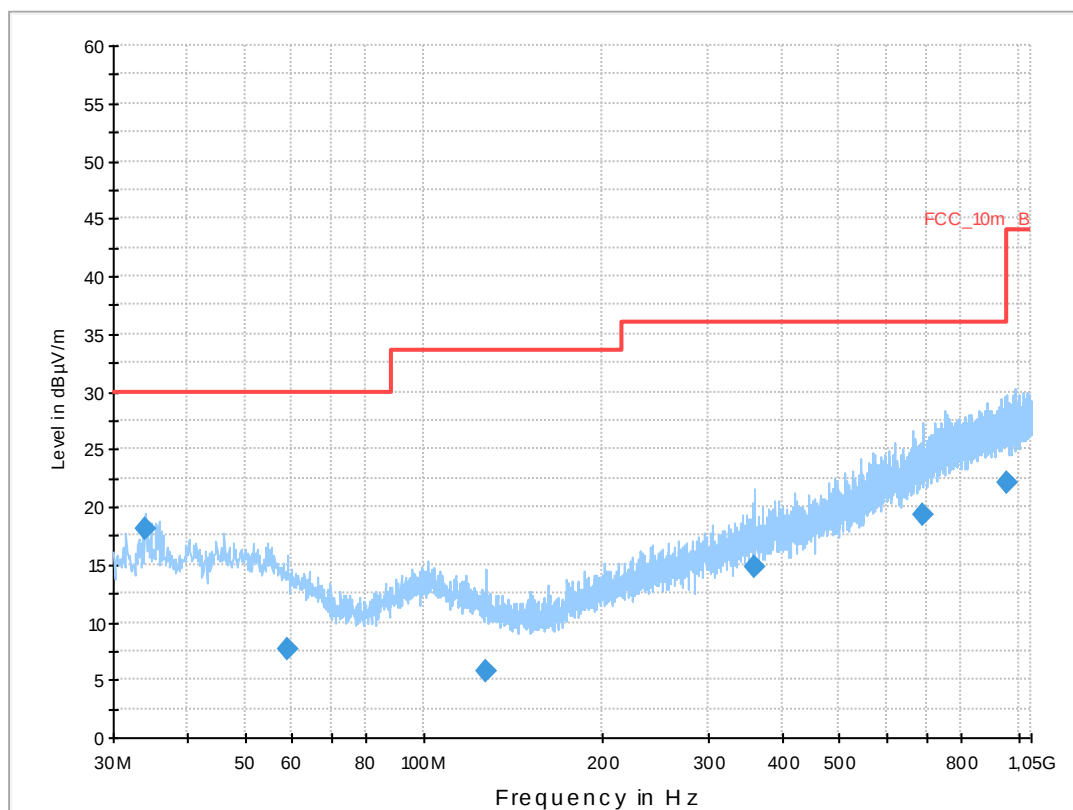
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 118 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

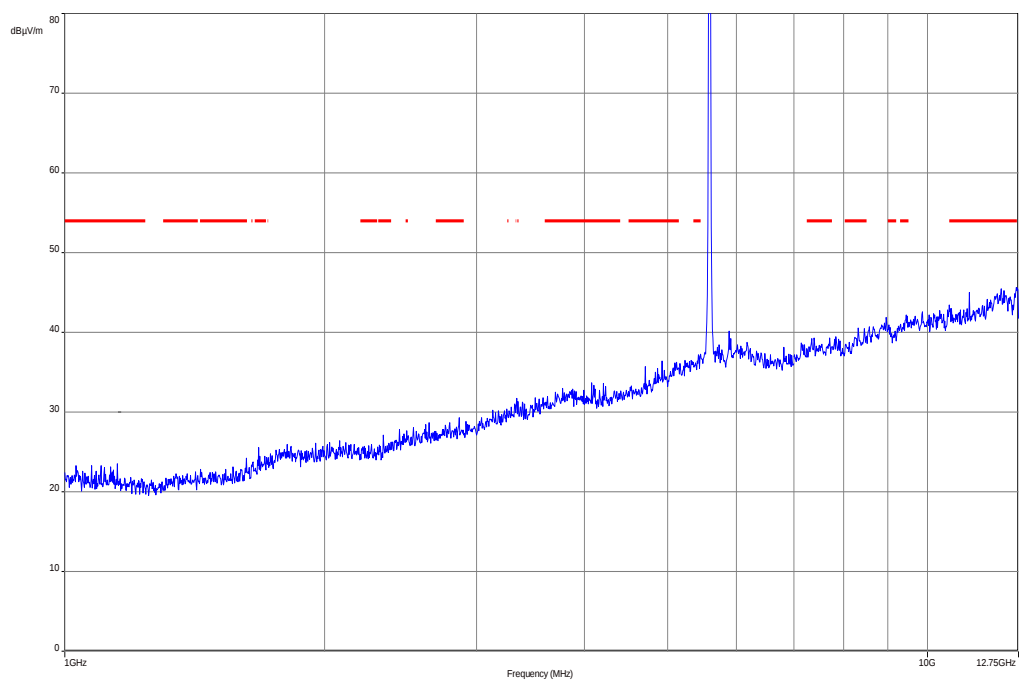
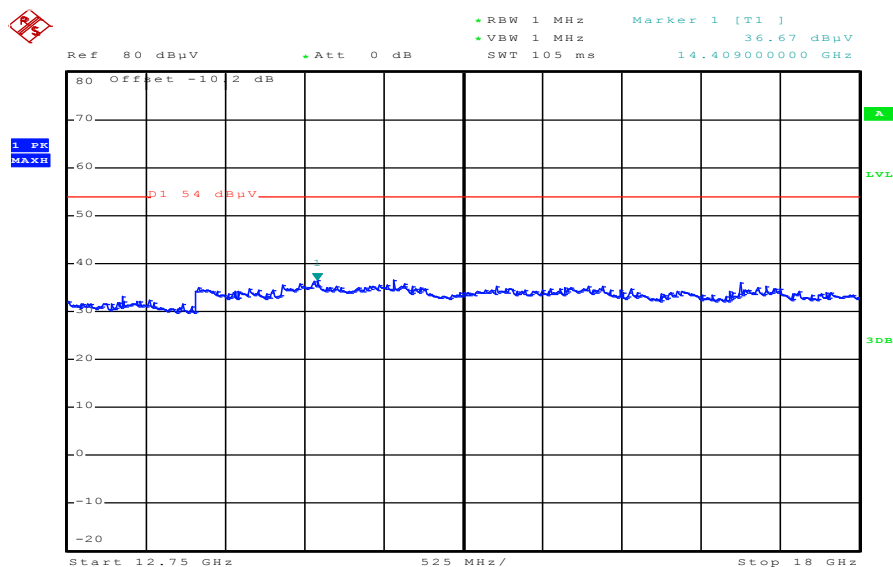
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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

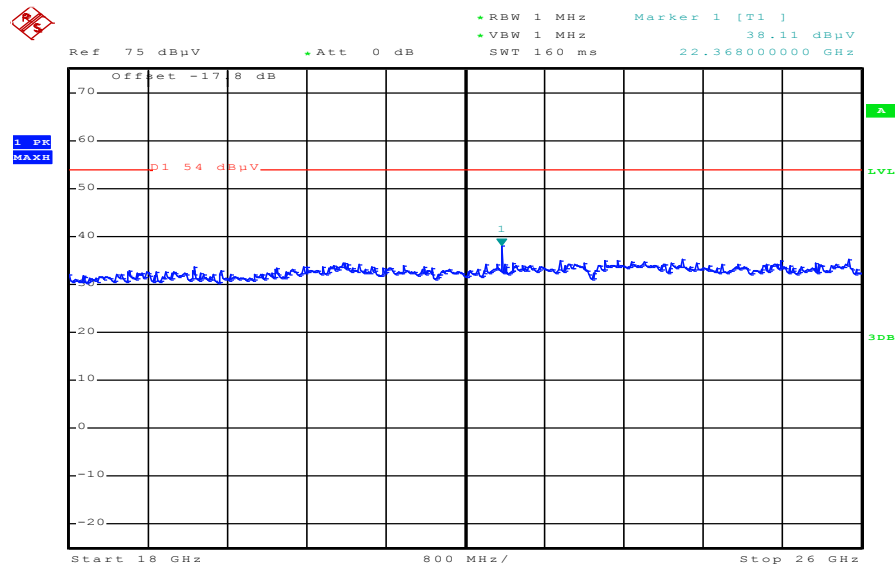


Final Result 1

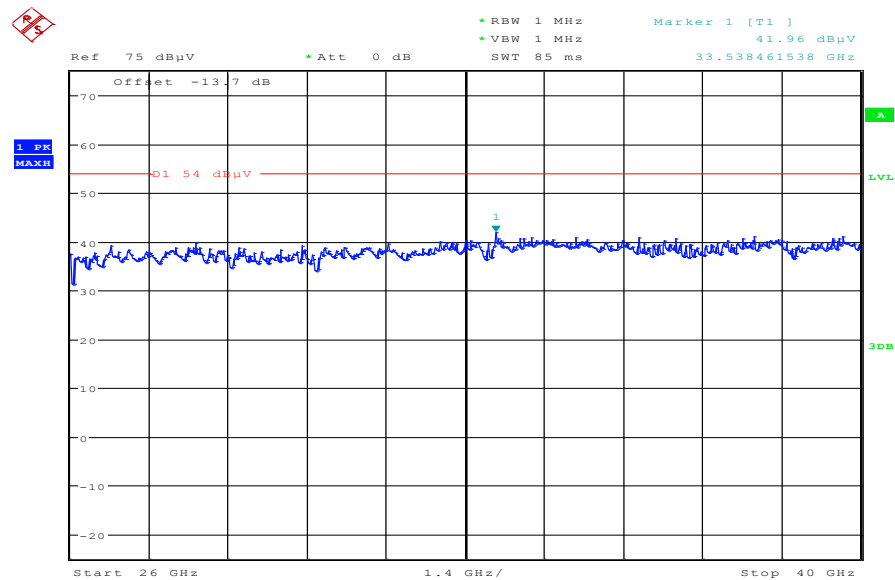
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)	Comment
34.083900	18.0	1000.0	120.000	105.0	V	267.0	12.9	12.0	30.0	
58.823100	7.7	1000.0	120.000	170.0	H	-2.0	11.9	22.3	30.0	
126.856650	5.7	1000.0	120.000	120.0	H	85.0	9.7	27.8	33.5	
359.966700	14.8	1000.0	120.000	153.0	V	178.0	16.2	21.2	36.0	
692.657700	19.2	1000.0	120.000	153.0	H	268.0	22.3	16.8	36.0	
953.351400	22.1	1000.0	120.000	98.0	V	100.0	25.4	13.9	36.0	

Plot 27: 1 GHz to 12.75 GHz, 5590 MHz, vertical & horizontal polarization**Plot 28:** 12.75 GHz to 18 GHz, 5590 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:10:09

Plot 29: 18 GHz to 26 GHz, 5590 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:30:17

Plot 30: 26 GHz to 40 GHz, 5590 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:28:18

Plot 31: 30 MHz to 1 GHz, 5670 MHz, vertical & horizontal polarization

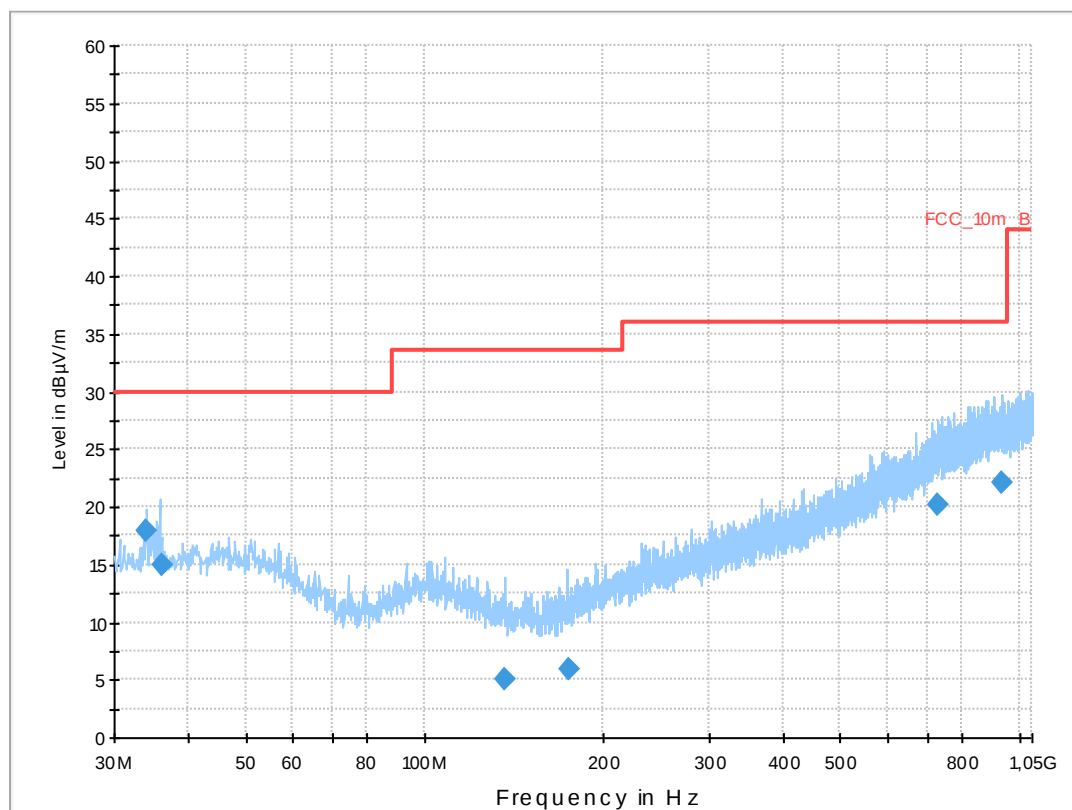
Common Information

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan n-mode HT40, mcs0, CH 134 + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

Scan Setup: STAN_Fin [EMI radiated]

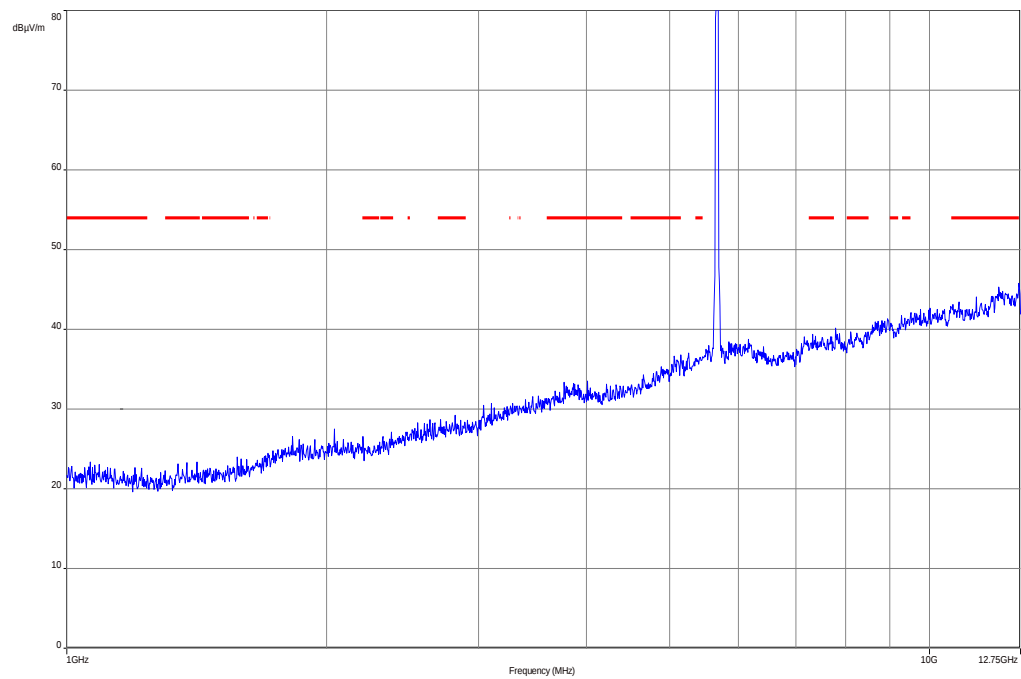
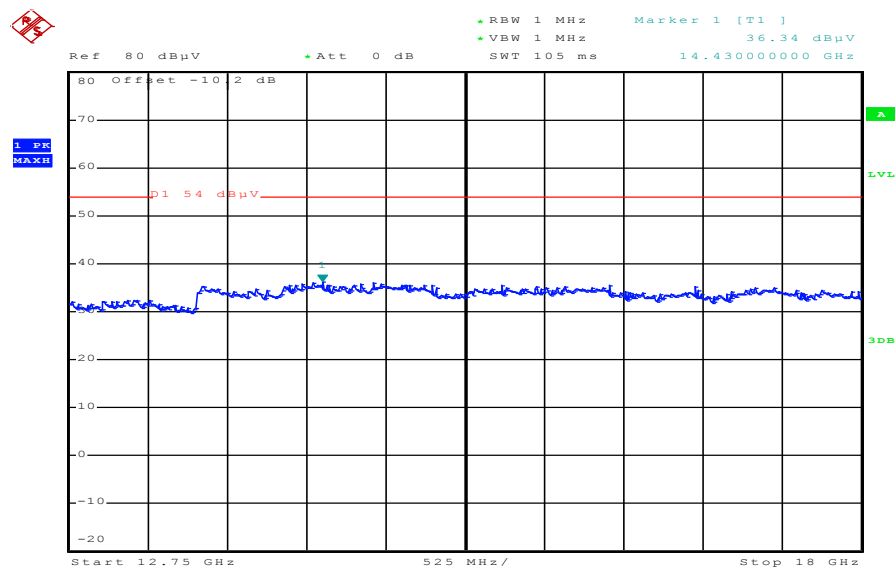
Hardware Setup: Electric Field (NOS)
 Receiver: [ESCI 3]
 Level Unit: dB μ V/m

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

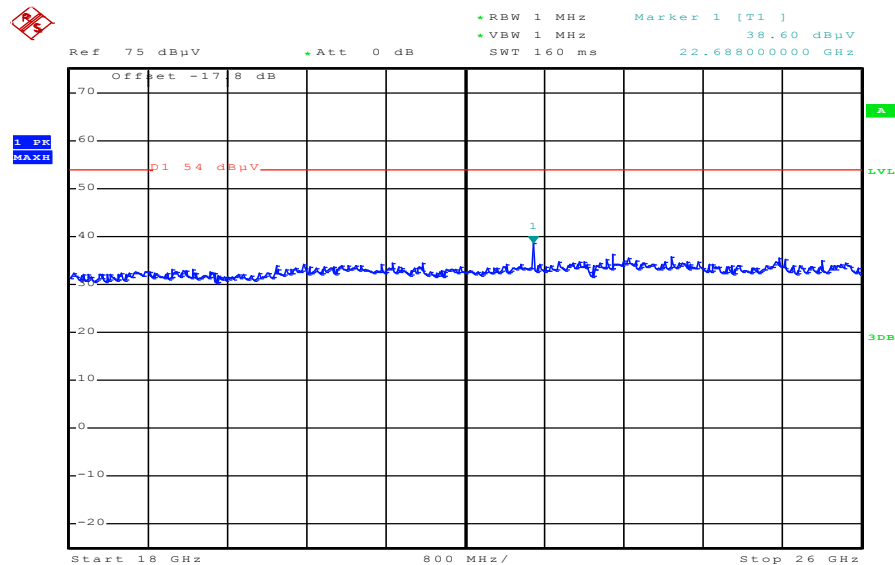


Final Result 1

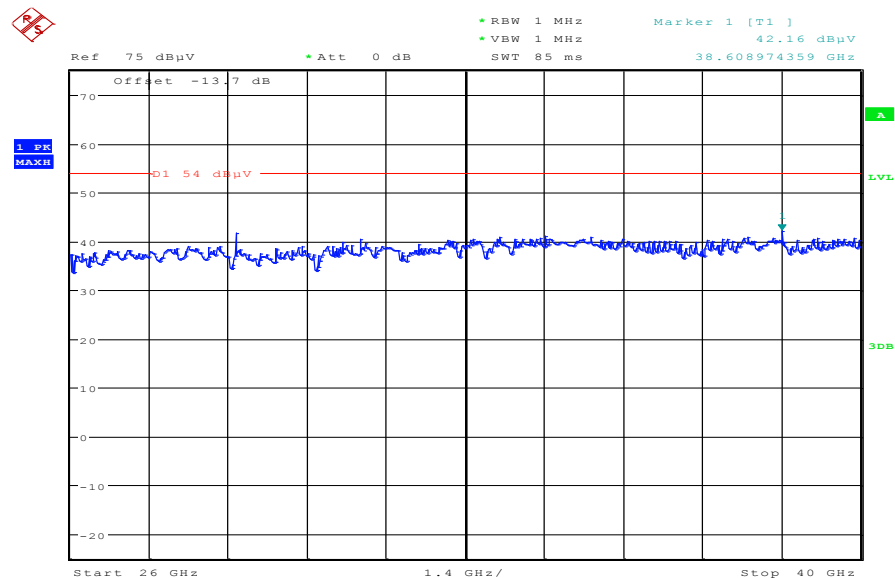
Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)	Comment
34.056150	17.8	1000.0	120.000	104.0	V	-2.0	12.9	12.2	30.0	
36.125400	14.9	1000.0	120.000	111.0	V	280.0	13.1	15.1	30.0	
136.317900	5.0	1000.0	120.000	134.0	H	80.0	8.9	28.5	33.5	
174.157500	5.9	1000.0	120.000	170.0	H	10.0	10.1	27.6	33.5	
730.410000	20.1	1000.0	120.000	170.0	V	10.0	23.2	15.9	36.0	
934.515900	22.1	1000.0	120.000	170.0	H	-2.0	25.3	13.9	36.0	

Plot 32: 1 GHz to 12.75 GHz, 5670 MHz, vertical & horizontal polarization**Plot 33:** 12.75 GHz to 18 GHz, 5670 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:08:35

Plot 34: 18 GHz to 26 GHz, 5670 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 13:31:16

Plot 35: 26 GHz to 40 GHz, 5670 MHz, vertical & horizontal polarization

Date: 29.NOV.2012 16:26:26

9.9 RX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in idle/receive mode.

Measurement:

Measurement parameter	
Detector:	Quasi Peak below 1 GHz (alternative Peak) Peak above 1 GHz / RMS
Sweep time:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Video bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: ≥ 3 MHz / 10 Hz
Span:	30 MHz to 40 GHz
Trace-Mode:	Max Hold / Average with 100 counts + 20 log (1 / X) for duty cycle lower than 100 %

Limits:

RX Spurious Emissions Radiated		
Frequency (MHz)	Field Strength (dB μ V/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 [dB μ V/m]		
F [MHz]	Detector	Level [dB μ V/m]
No critical peaks found		
Measurement uncertainty	± 3 dB	

Result: Passed

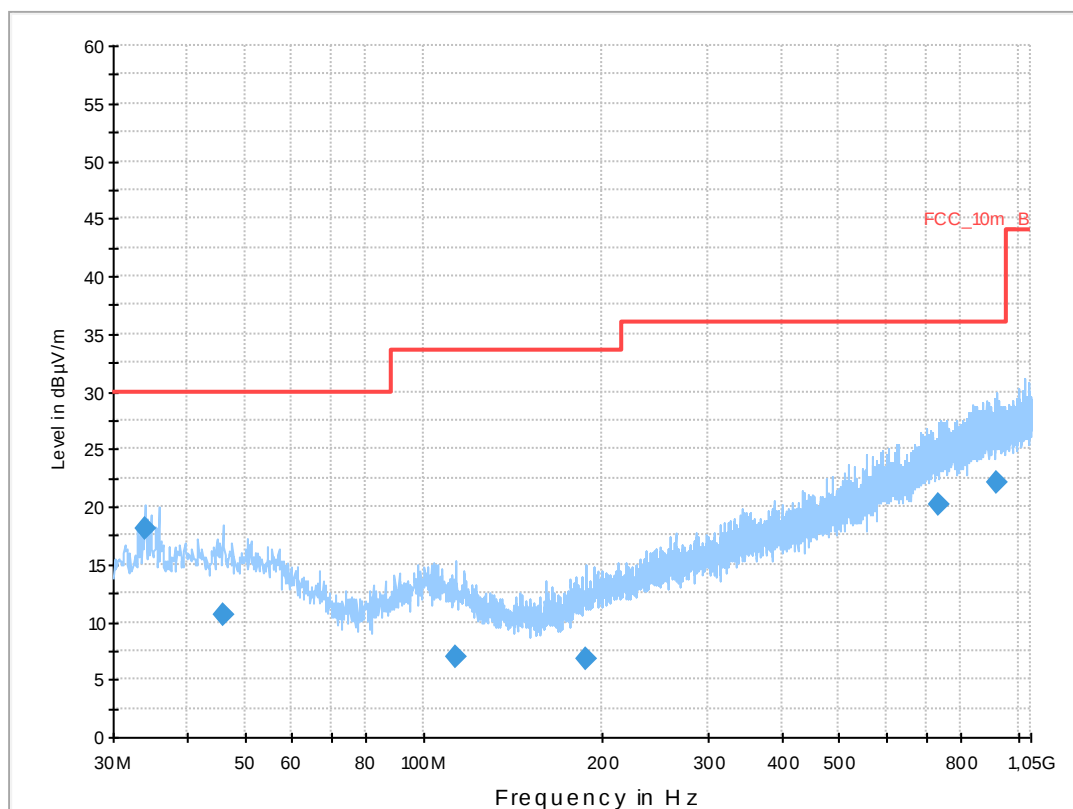
Plots: RX / Idle – mode**Plot 1:** 30 MHz to 1 GHz, vertical & horizontal polarization**Common Information**

EUT: PM-0240-BV
 Serial Number: CB5121SWDK
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: W-Lan, IDLE + charging
 Operator Name: Medrow
 Comment: AC: 115 V / 60 Hz

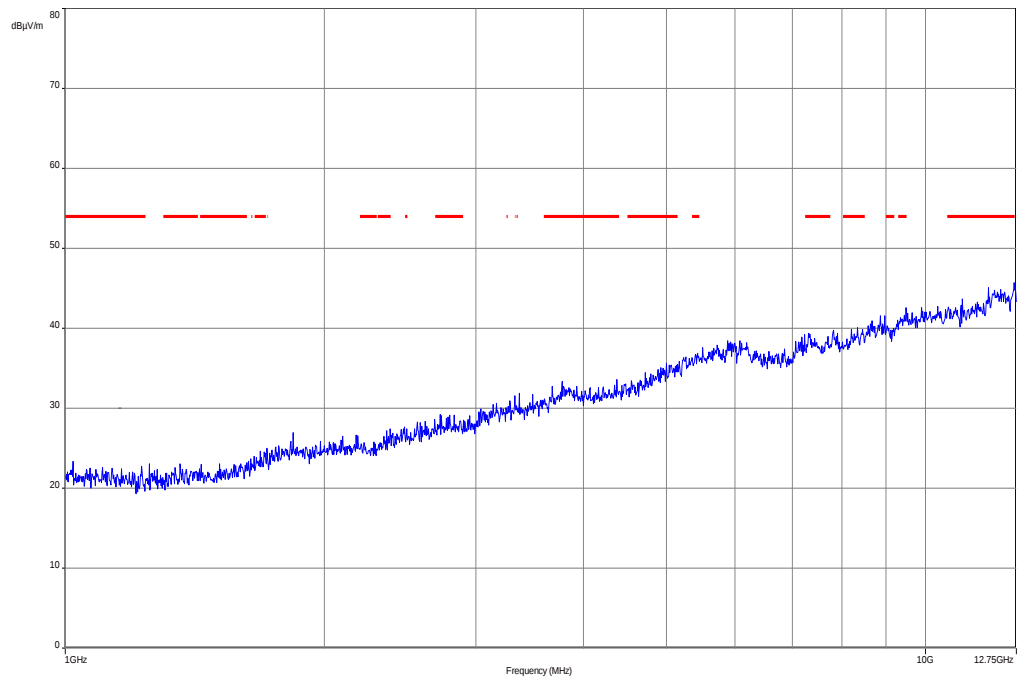
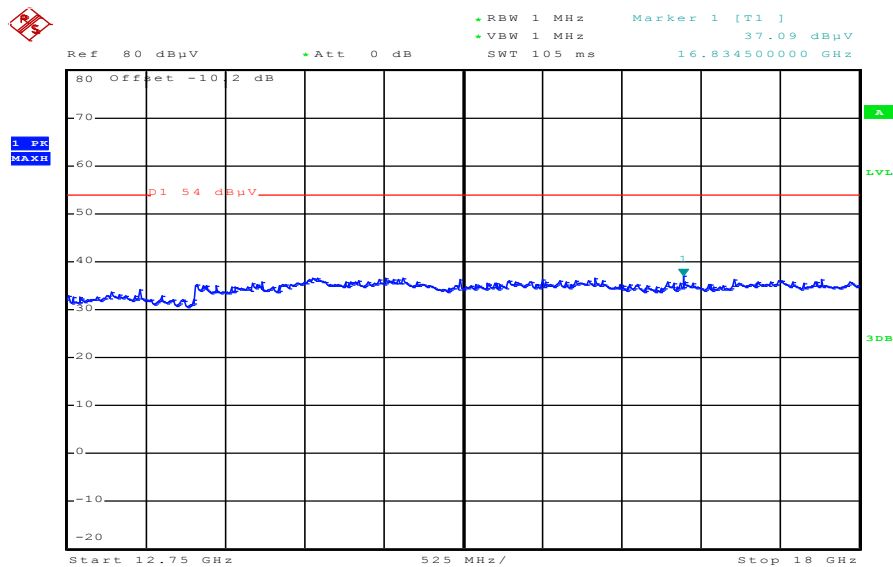
Scan Setup: STAN_Fin [EMI radiated]

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

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

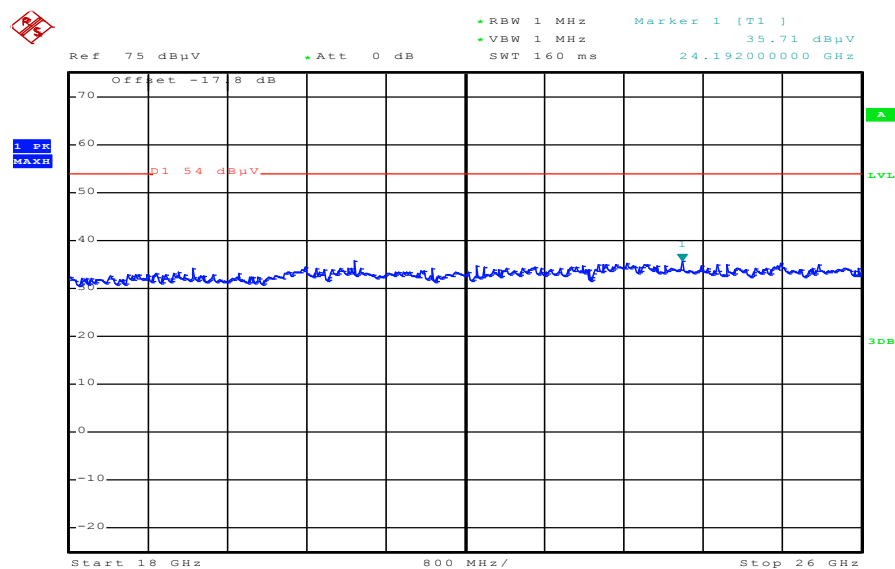
**Final Result 1**

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dB μ V/m)	Comment
34.062300	18.1	1000.0	120.000	104.0	V	261.0	12.9	11.9	30.0	
45.956400	10.6	1000.0	120.000	152.0	V	-10.0	13.3	19.4	30.0	
112.859400	7.0	1000.0	120.000	105.0	V	3.0	10.8	26.5	33.5	
187.250700	6.8	1000.0	120.000	105.0	V	90.0	10.9	26.7	33.5	
732.457350	20.2	1000.0	120.000	98.0	V	190.0	23.3	15.8	36.0	
918.365550	22.1	1000.0	120.000	98.0	H	0.0	25.3	13.9	36.0	

Plot 2: 1 GHz to 12.75 GHz, vertical & horizontal polarization**Plot 3:** 12.75 GHz to 18 GHz, vertical & horizontal polarization

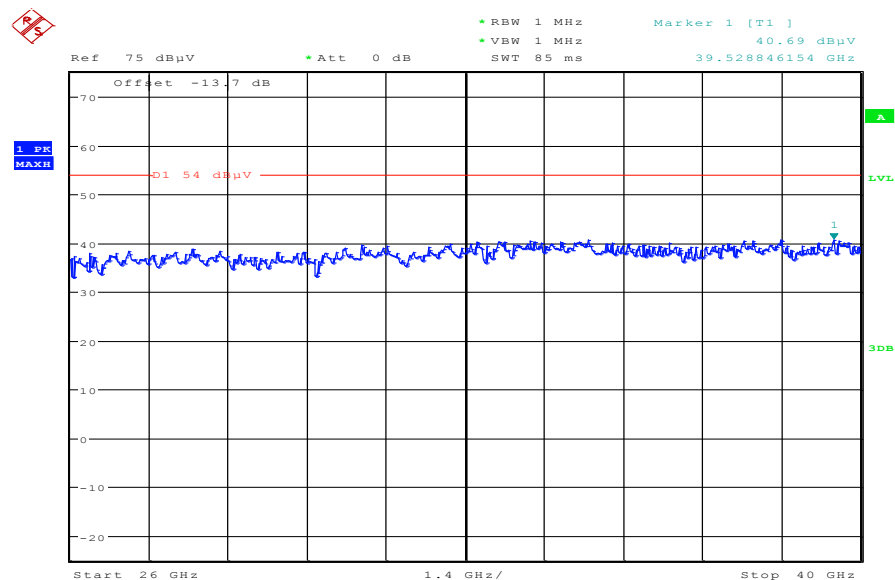
Date: 29.NOV.2012 13:19:25

Plot 4: 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 29.NOV.2012 13:23:14

Plot 5: 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 29.NOV.2012 16:35:59

9.10 Spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode and receive mode below 30 MHz. The EUT is set first to middle channel. This measurement is representative for all channels and modes. If critical peaks are found the lowest channel and the highest channel will be measured too. Then the EUT is set to receive or idle mode. 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

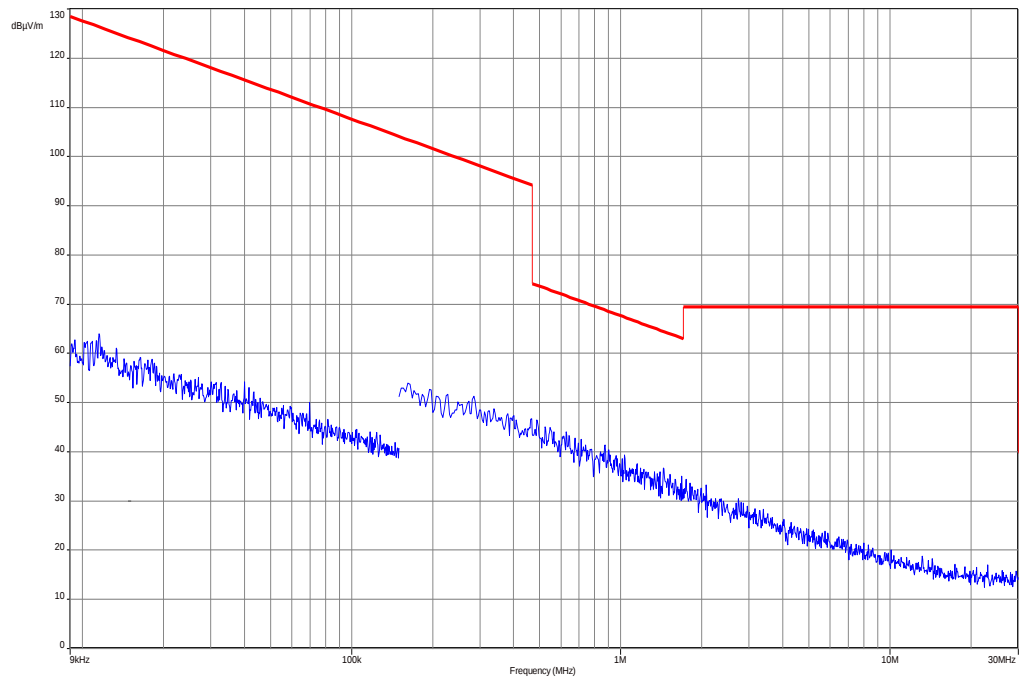
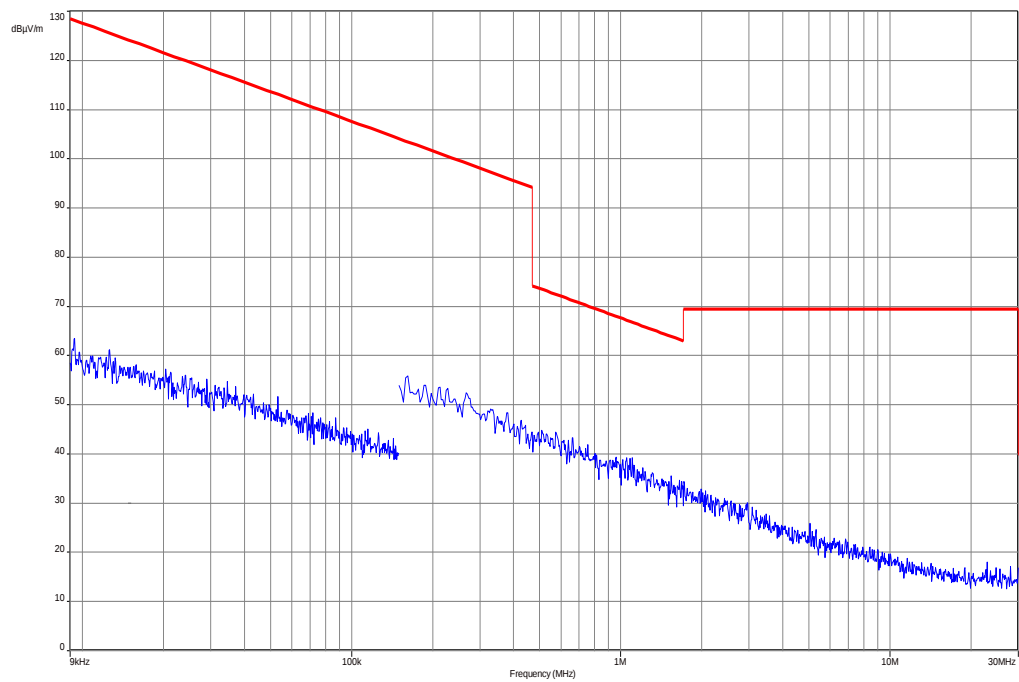
Limits:

Spurious Emissions Radiated < 30 MHz		
Frequency (MHz)	Field Strength (dB μ V/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:

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

Result: Passed

Plots:**Plot 1: 9 kHz to 30 MHz, TX mode****Plot 2: 9 kHz to 30 MHz, RX mode**

9.11 Spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to middle channel. If critical peaks are found the lowest channel and the highest channel will be measured too. 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: 9 kHz
Resolution bandwidth:	F > 150 kHz: 100 kHz
Span:	150 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dB μ V/m)	Average (dB μ V/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

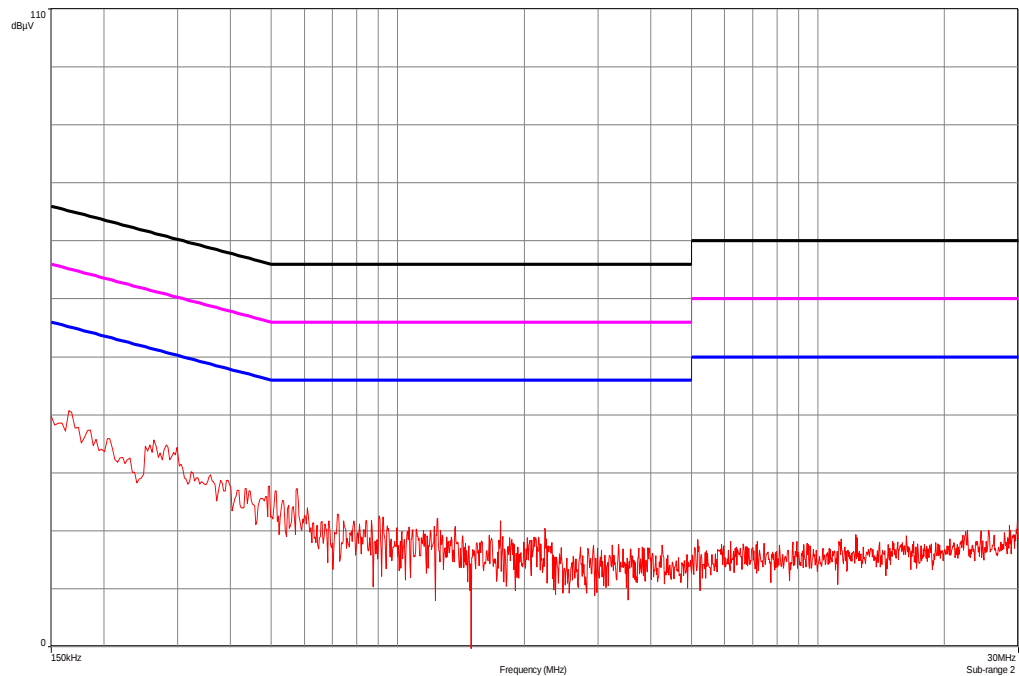
Results:

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

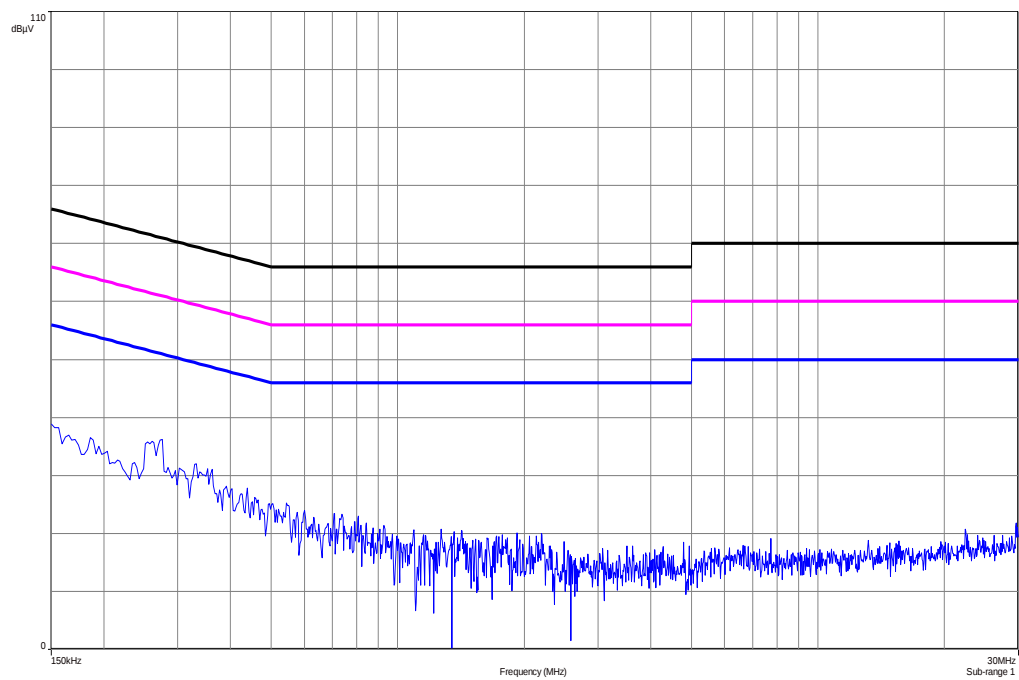
Result: Passed

Plots:

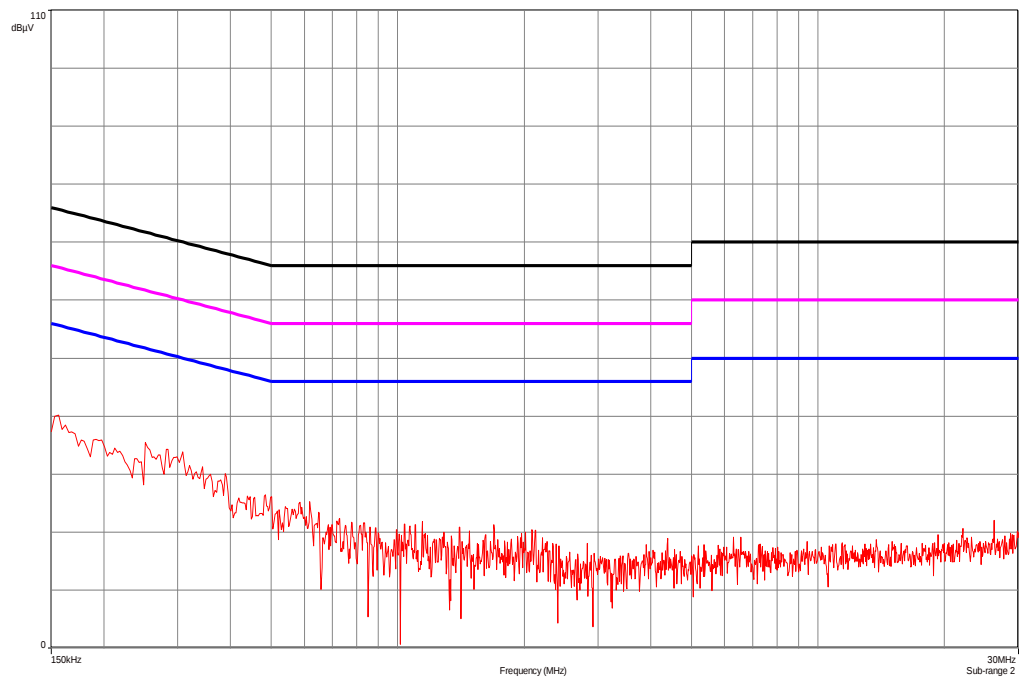
Plot 1: 150 kHz to 30 MHz / phase Line, TX mode



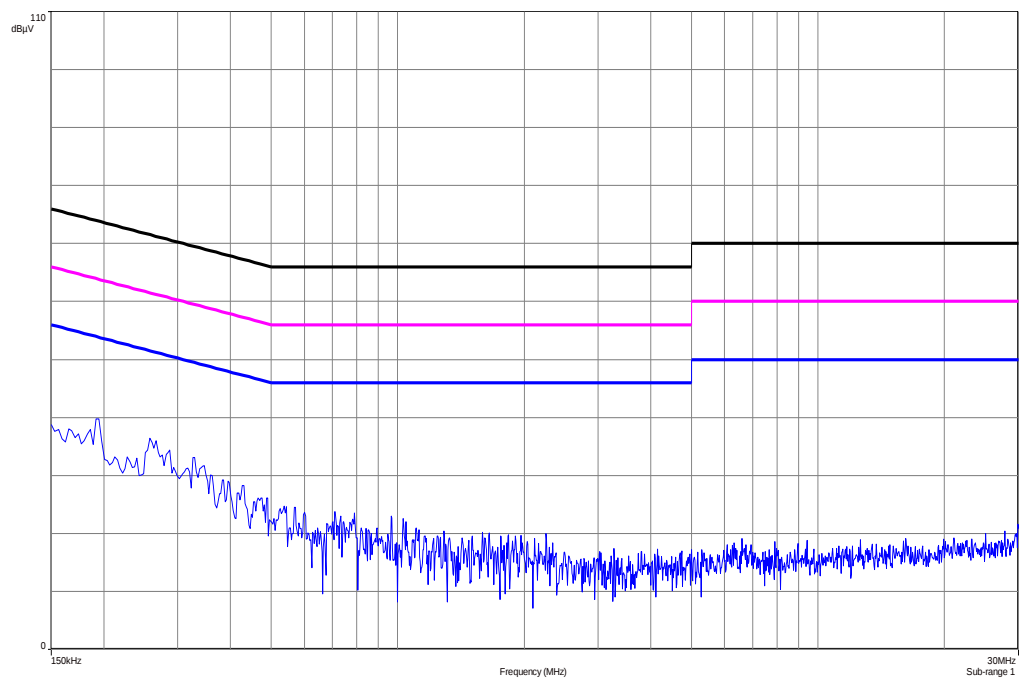
Plot 2: 150 kHz to 30 MHz / neutral Line, TX mode



Plot 3: 150 kHz to 30 MHz / phase Line, RX mode



Plot 4: 150 kHz to 30 MHz / neutral Line, RX mode



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	04.01.2012	04.01.2013
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	12.04.2012	12.04.2014
11	n. a.	Spectrum- Analyzer	FSU26	R&S	200809	300003874	k	06.01.2012	06.01.2014
12	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	12.01.2012	12.01.2015
13	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vIKI!	11.05.2011	11.05.2013
14	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
15	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
16	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
17	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156	ne		
18	9	Isolating Transformer	MPL IEC625 Bus Regeltrennt ravo	Erfi	91350	300001155	ne		
19	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
20	n. a.	Amplifier	js42- 00502650- 28-5a	Parzich GMBH	928979	300003143	ne		
21	n. a.	Band Reject filter	WRCG240 0/2483- 2375/2505- 50/10SS	Wainwright	11	300003351	ev		
22	n. a.	Highpass Filter	WHKX7.0/1 8G-8SS	Wainwright	18	300003789	ne		

23	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vkI!	14.10.2011	14.10.2014
24	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405	k	19.12.2011	19.12.2012
25	n. a.	DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383	Ve	23.06.2010	23.06.2013
26	CR 79	Std. Gain Horn Antenna 26.5-40.0 GHz	V637	Narda	7911	300001751	ne		
27	11b	Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268	ev		
28	A025	Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda		300000786	ne		
29	A027	Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda		300000486	ne		
30	n. a.	Broadband Low Noise Amplifier 18-50 GHz	CBL18503 070-XX	CERNEX	19338	300004273	ne		

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
vkI!	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.