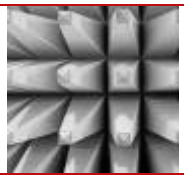




CETECOM™
CETECOM ICT Services
consulting - testing - certification

TEST REPORT

Test report no.: 1-5842/13-01-15

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

Testing laboratory

CETECOM ICT Services GmbH
Untertuerkheimer Strasse 6 – 10
66117 Saarbruecken / Germany
Phone: + 49 681 5 98 - 0
Fax: + 49 681 5 98 - 9075
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

Philips Medizin Systeme Böblingen GmbH
Hewlett-Packard-Strasse 2
71034 Böblingen / GERMANY
Fax: +49 7031 463-2442
Contact: Markus Stacha
e-mail: markus.stacha@philips.com
Phone: +49 7031 463-2840

Manufacturer

Philips Medizin Systeme Böblingen GmbH
Hewlett-Packard-Strasse 2
71034 Böblingen / GERMANY

Test standard/s

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

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

Test Item

Kind of test item:	**WLAN Module IEEE 802.11 a/b/g/n**
Model name:	**WLANBV2-A**
FCC ID:	**PQC-WLANBV2**
IC:	**3549C-WLANBV2**
Frequency:	ISM band 5725 MHz to 5850 MHz (lowest channel 149 – 5745 MHz, highest channel 165 – 5825 MHz)
Technology tested:	WLAN (OFDM / a– & n HT20 – mode; OFDM / n HT 40 – mode)
Antenna:	4 different external antennas
Power Supply:	3.3 V DC
Temperature Range:	-10°C to 70°C

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

Test report authorised:

p.o.
Stefan Bös
Senior Testing Manager

Test performed:

cn=Christoph Schneider, o=CETECOM ICT Services GmbH, ou=SND-120402, email=christoph.schneider@cetecom.com, c=DE
2013.08.08 11:13:53 +02'00'

Christoph Schneider
Expert

1 Table of contents

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.
The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM ICT Services GmbH.
The testing service provided by CETECOM ICT Services GmbH has been rendered under the current "General Terms and Conditions for CETECOM ICT Services GmbH".
CETECOM ICT Services GmbH will not be liable for any loss or damage resulting from false, inaccurate, inappropriate or incomplete product information provided by the customer.
Under no circumstances does the CETECOM ICT Services GmbH test report include any endorsement or warranty regarding the functionality, quality or performance of any other product or service provided.
Under no circumstances does the CETECOM ICT Services GmbH test report include or imply any product or service warranties from CETECOM ICT Services GmbH, including, without limitation, any implied warranties of merchantability, fitness for purpose, or non-infringement, all of which are expressly disclaimed by CETECOM ICT Services GmbH.
All rights and remedies regarding vendor's products and services for which CETECOM ICT Services GmbH has prepared this test report shall be provided by the party offering such products or services and not by CETECOM ICT Services GmbH.
In no case this test report can be considered as a Letter of Approval.

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

2.2 Application details

Date of receipt of order:	2013-02-01
Date of receipt of test item:	2013-02-04
Start of test:	2013-04-22
End of test:	2013-07-25
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	01.10.2012	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices
RSS - 210 Issue 8	01.12.2010	Spectrum Management and Telecommunications - Radio Standards Specification Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

4 Test environment

Temperature:	T_{nom}	+22 °C during room temperature tests
	T_{max}	+55 °C during high temperature tests
	T_{min}	-20 °C during low temperature tests
Relative humidity content:		52 %
Barometric pressure:		not relevant for this kind of testing
Power supply:	V_{nom}	3.3 V DC
	V_{max}	5.5 V
	V_{min}	4.5 V

5 Test item

Kind of test item	**:**	**WLAN Module IEEE 802.11 a/b/g/n**
Type identification	**:**	**WLANBV2-A**
S/N serial number	**:**	**Radiated sample: FT 243000023** **Conducted sample: FT 243000037**
HW hardware status	**:**	**PW100120BA**
SW software status	**:**	**3.2.0.137 api 3**
Frequency band [MHz]	**:**	**ISM band 5725 MHz to 5850 MHz** **(lowest channel 149 – 5745 MHz; highest channel 165 – 5825 MHz)**
Type of radio transmission **Use of frequency spectrum**	**:** **:**	**OFDM**
Type of modulation	**:**	**QPSK, 16 – QAM, 64 – QAM**
Number of channels	**:**	**5**
Antenna	**:**	**4 different external antennas:** **Ant M3002-66494** **Ant 453564154611** **Ant 453564175981** **Ant 453564271931**
Power supply	**:**	**3.3 V DC**
Temperature range	**:**	**-10°C to 70°C**

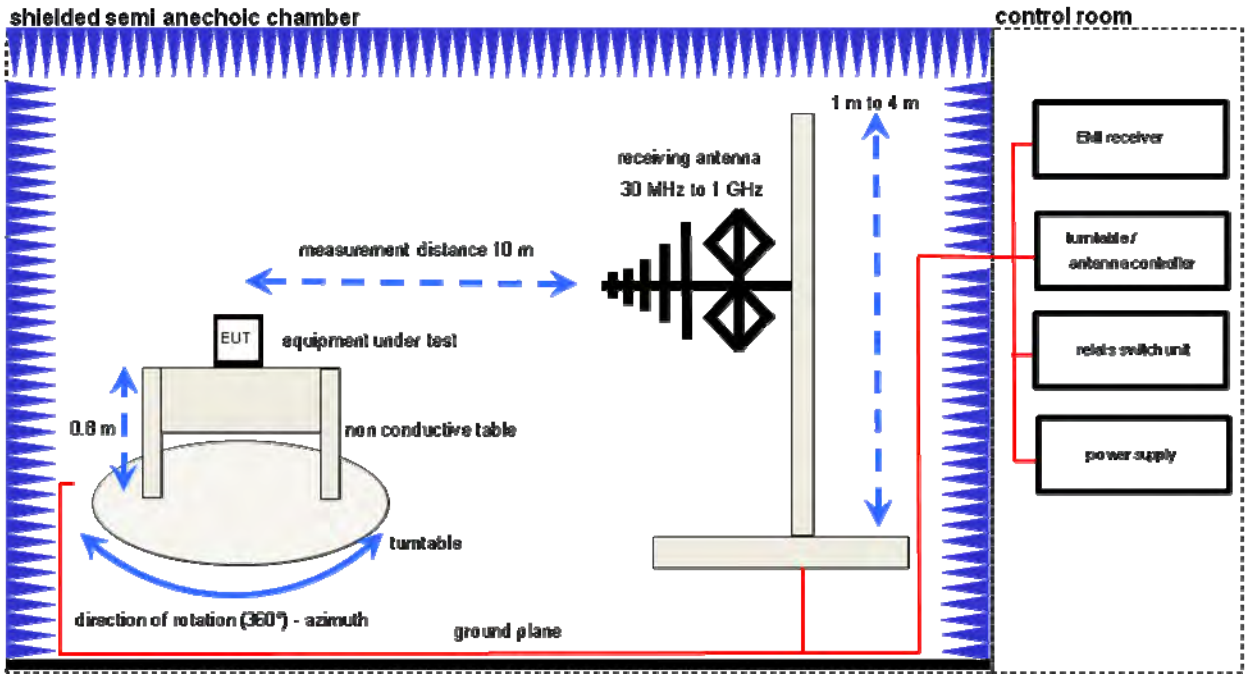
6 Test laboratories sub-contracted

None

7 Description of the test setup

7.1 Radiated measurements chamber F

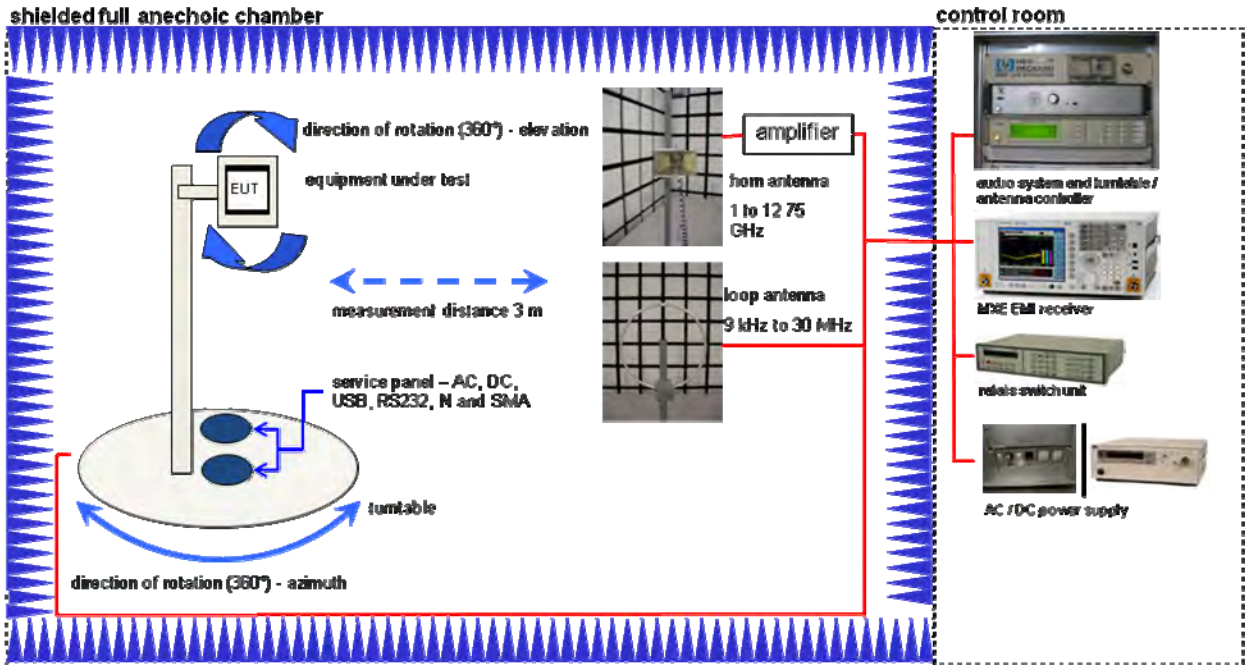
The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are confirmed with specifications ANSI C63. 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.



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368
DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580
EMI Test Receiver	ESCI 3	R&S	100083	300003312
Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379
Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745
Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746
Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747
TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787

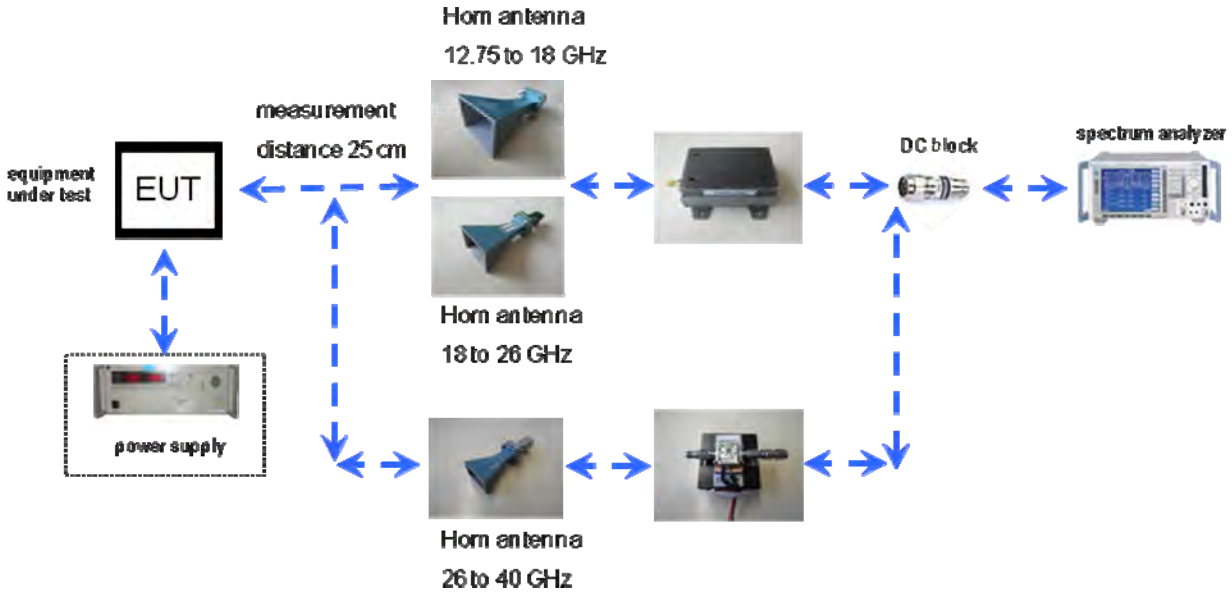
7.2 Radiated measurements chamber C



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789
Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032
Active Loop Antenna	6502	EMCO	2210	300001015
Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997
Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143

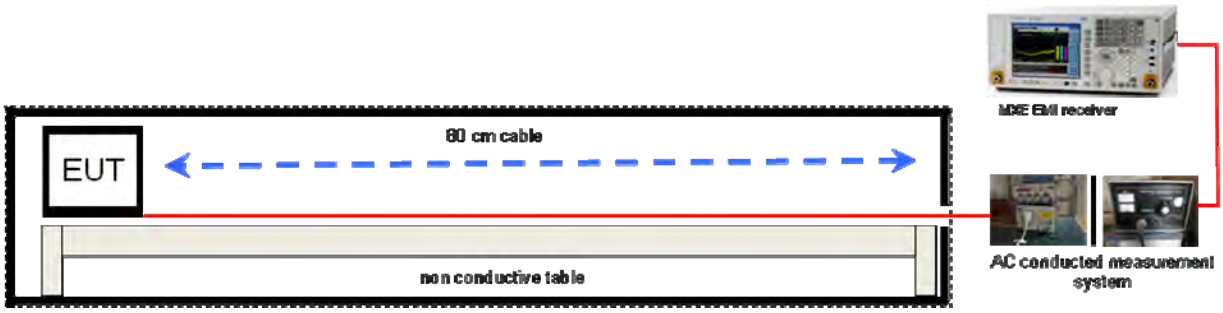
7.3 Radiated measurements 12.75 GHz to 40 GHz



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda		300000786
Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda		300000486
Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268
Std. Gain Horn Antenna 26.5-40.0 GHz	V637	Narda	7911	300001751
Broadband Low Noise Amplifier 18-50 GHz	CBL18503070-XX	CERNEX	19338	300004273
Spectrum Analyzer 20 Hz - 50 GHz	FSU50	R&S	200012	300003443
Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517

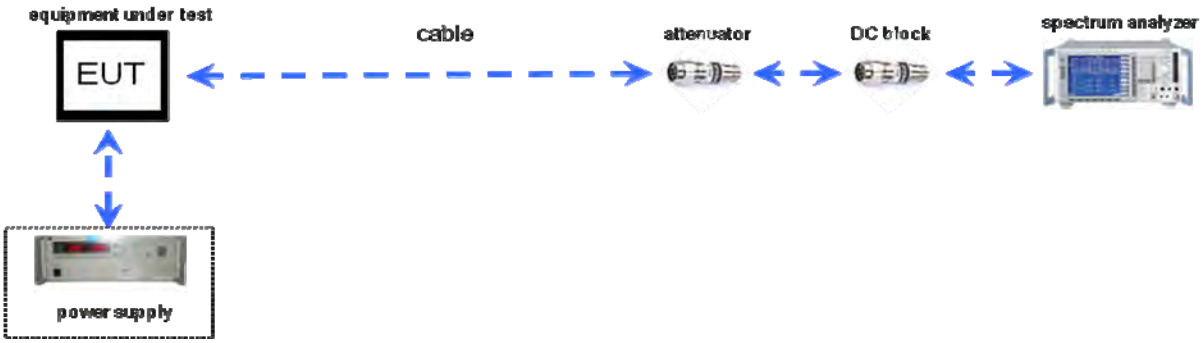
7.4 AC conducted



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001168
Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210

7.5 Conducted measurements



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517

8 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	Passed	2013-08-08	-/-

Test specification clause	Test case	Temperature conditions	Power source voltages	Mode	Pass	Fail	NA	NP	Remark
§15.247(b)(4) RSS 210 / A8.4(2)	Antenna gain	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(e) RSS 210 / A8.2(b)	Power spectral density DTS clause 10.2	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth - 6dB bandwidth DTS clause 8.2	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth - 20dB bandwidth	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(b)(3) RSS-210 / A8.4(4)	Maximum output power DTS clause 9.1.2	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	Band edge compliance conducted DTS clause 13.2.1	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.205 RSS-210 / A8.5	Band edge compliance radiated	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions conducted DTS clause 11.1 & 2	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions radiated	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.109 RSS-Gen	RX spurious emissions radiated	Nominal	Nominal	-/-	☒	☐	☐	☐	complies
§15.209(a) RSS-Gen	TX spurious emissions radiated < 30 MHz	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies
§15.107(a)	Conducted emissions < 30 MHz	Nominal	Nominal	OFDM	☒	☐	☐	☐	complies

Note: NA = Not Applicable; NP = Not Performed

9 Additional comments

Reference documents: None

Special test descriptions: Four different antennas used. See Annex B for details.
The device was configured for Testmode and the individual power settings with the following commands:

A-Mode:
athtestcmd -iwlan0 --tx tx100 --txfreq 5745 --txrate 4 --txpwr 13
athtestcmd -iwlan0 --tx tx100 --txfreq 5785 --txrate 4 --txpwr 13
athtestcmd -iwlan0 --tx tx100 --txfreq 5825 --txrate 4 --txpwr 13

HT20-Mode:
athtestcmd -iwlan0 --tx tx100 --txfreq 5745 --txrate 4 --txpwr 13
athtestcmd -iwlan0 --tx tx100 --txfreq 5785 --txrate 4 --txpwr 13
athtestcmd -iwlan0 --tx tx100 --txfreq 5825 --txrate 4 --txpwr 13

HT40-Mode:
athtestcmd -iwlan0 --tx tx100 --txfreq 5745 --mode ht40plus --txrate 20 --txpwr 13
athtestcmd -iwlan0 --tx tx100 --txfreq 5785 --mode ht40plus --txrate 20 --txpwr 13

Configuration descriptions: None

Test mode:

☐ No test mode available.
Iperf was used to ping another device with the largest support packet size

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

10 RSP100 test report cover sheet / performance test data

Test report number :	**1-5842/13-01-15**			
Equipment model number:	**WLANBV2-A**			
Certification number :	**3549C-WLANBV2**			
Manufacturer (complete address) :	**Philips Medizin Systeme Böblingen GmbH Hewlett-Packard-Strasse 2 71034 Böblingen / GERMANY**			
Tested to radio standards specification no. :	**RSS 210, Issue 8**			
Open area test site IC No. :	**IC 3462C-1**			
Frequency range :	**ISM band 5725 MHz to 5850 MHz**			
RF-power (max.) :	**Conducted values:**			
	Band	**a – mode**	**n HT20 – mode**	**n HT40 – mode**
	5745 – 5825 MHz	**63.24 mW**	**63.53 mW**	
	5755 – 5835 MHz			**63.83 mW**
	Radiated values: Antenna M3002-66494			
	5745 – 5825 MHz	**41.59 mW**	**41.78 mW**	
	5755 – 5835 MHz			**41.11 mW**
	Radiated values: Antenna 453564175981			
	5745 – 5825 MHz	**126.77 mW**	**124.17 mW**	
	5755 – 5835 MHz			**134.90 mW**
	Radiated values: Antenna 453564154611			
	5745 – 5825 MHz	**28.77 mW**	**28.91 mW**	
	5755 – 5835 MHz			**28.44 mW**
	Radiated values: Antenna 453564271931			
	5745 – 5825 MHz	**58.75 mW**	**59.02 mW**	
	5755 – 5835 MHz			**58.08 mW**
Occupied bandwidth (99%-BW) :	**Band**	**a – mode**	**n HT20 – mode**	**n HT40 – mode**
	5745 – 5825 MHz	**17.35 MHz**	**18.35 MHz**	
	5755 – 5835 MHz			**37.33 MHz**
Necessary bandwidth (calculated) :	**Band**	**a – mode**	**n HT20 – mode**	**n HT40 – mode**
	5745 – 5825 MHz	**16.88 MHz**	**16.88 MHz**	
	5755 – 5835 MHz			**33.75 MHz**
Emission classification :	**(according TRC-43)**	**G7D**		
Type of modulation :	**QPSK, 16 – QAM, 64 – QAM**			
Antenna information :	**4 different external antennas: Ant M3002-66494 Ant 453564154611 Ant 453564175981 Ant 453564271931**			
Transmitter spurious [dBµV/m @ 10m] :	**32.0 @ 225.17 MHz (Quasi-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:

2013-08-08	**Christoph Schneider**	 cn=Christoph Schneider, o=CETECOM ICT Services GmbH, ou=SND-120402, email=christoph.schneider@cetecom.com, c=DE 2013.08.08 11:14:34 +02'00'
Date	Name	Signature

11 Measurement results

11.1 Antenna gain

Measurement:

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal WLAN devices, the DSSS mode is used.

Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	5 s
Resolution bandwidth:	3 MHz
Video bandwidth:	10 MHz
Trace-Mode:	Max hold

Limits:

FCC	IC
Antenna Gain	
6 dBi	

Results Antenna 1 - M3002-66494:

T_{nom}	V_{nom}	5745 MHz	5825 MHz
Conducted power [dBm]		14.82	14.32
Radiated power [dBm]		13.0	11.5
Gain [dBi] Calculated		-1.82	-2.82
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)	

Result: **Passed**

Results Antenna 2 - 453564154611:

T_{nom}	V_{nom}	5745 MHz	5825 MHz
Conducted power [dBm]		14.82	14.32
Radiated power [dBm]		11.4	10.1
Gain [dBi] Calculated		-3.42	-4.22
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)	

Result: **Passed**

Results Antenna 3 - 453564175981:

T_{nom}	V_{nom}	5745 MHz	5825 MHz
Conducted power [dBm]		14.82	14.32
Radiated power [dBm]		17.7	17.6
Gain [dBi] Calculated		2.88	3.28
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)	

Result: **Passed**

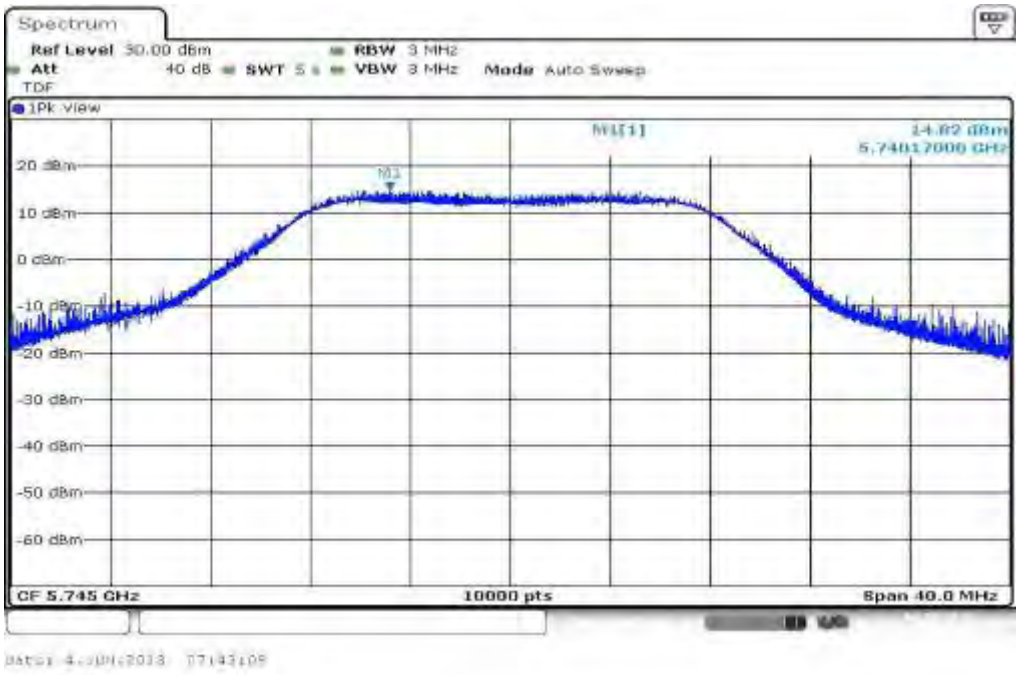
Results Antenna 4 - 453564271931:

T_{nom}	V_{nom}	5745 MHz	5825 MHz
Conducted power [dBm]		14.82	14.32
Radiated power [dBm]		14.5	11.9
Gain [dBi] Calculated		-0.32	-2.42
Measurement uncertainty		± 1.5 dB (cond.) / ± 3 dB (rad.)	

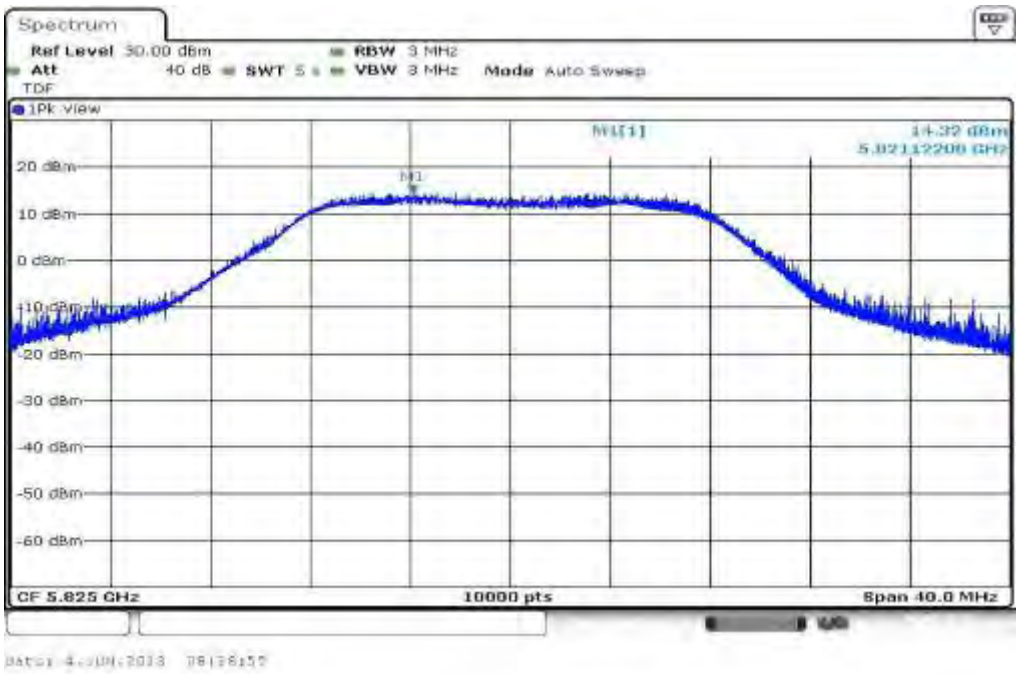
Result: **Passed**

Plots: conducted power for gain calculation

Plot 1: 5745 MHz



Plot 2: 5825 MHz



11.2 Maximum output power

Description:

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

Measurement:

Measurement parameter	
According to:	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	3 MHz
Span:	40 MHz
Integration bandwidth:	75 % power - bandwidth (DTS BW)
Trace-Mode:	Max hold (allow trace to fully stabilize)

Limits:

FCC	IC
Maximum Output Power	
Conducted: 1.0 W – Antenna Gain max. 6 dBi	

Results: OFDM / a – mode

OFDM / a – mode Frequency	Maximum Output Power [dBm]	
	5745 MHz	5825 MHz
Peak output power conducted 6 MBit/s	18.01	17.75
Output Power Radiated – EIRP*) Antenna: M3002-66494	16.19	14.93
Output Power Radiated – EIRP*) Antenna: 453564154611	14.59	13.53
Output Power Radiated – EIRP*) Antenna: 453564175981	20.89	21.03
Output Power Radiated – EIRP*) Antenna: 453564271931	17.69	15.33
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)	

*) calculated with Antenna gain

Result: **Passed**

Results: OFDM / n – mode HT20

OFDM / n – mode Frequency	Maximum Output Power [dBm]	
	5745 MHz	5825 MHz
Peak output power conducted MCS0	18.03	17.66
Output Power Radiated – EIRP*) Antenna: M3002-66494	16.21	14.84
Output Power Radiated – EIRP*) Antenna: 453564154611	14.61	13.44
Output Power Radiated – EIRP*) Antenna: 453564175981	20.91	20.94
Output Power Radiated – EIRP*) Antenna: 453564271931	17.71	15.24
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)	

*) calculated with Antenna gain

Result: **Passed**

Results: OFDM / n – mode HT40

OFDM / n – mode HT40 Frequency	Maximum Output Power [dBm]	
	5755 MHz	5795 MHz
Peak output power conducted MCS0	17.96	18.05
Output Power Radiated – EIRP*) Antenna: M3002-66494	16.14	15.23
Output Power Radiated – EIRP*) Antenna: 453564154611	14.54	13.83
Output Power Radiated – EIRP*) Antenna: 453564175981	20.84	21.30
Output Power Radiated – EIRP*) Antenna: 453564271931	17.64	15.63
Measurement uncertainty	± 1.5 dB (cond.) / ± 3 dB (rad.)	

*) calculated with Antenna gain

Result: **Passed**

11.3 Power spectral density

Description:

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

Measurement:

Measurement parameter	
According to: DTS clause 10.2	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 kHz
Video bandwidth:	10 kHz
Span:	40 MHz / 80 MHz
Trace-Mode:	Max hold (allow trace to fully stabilize)

Limits:

FCC	IC
Power Spectral Density	
8 dBm (conducted)	

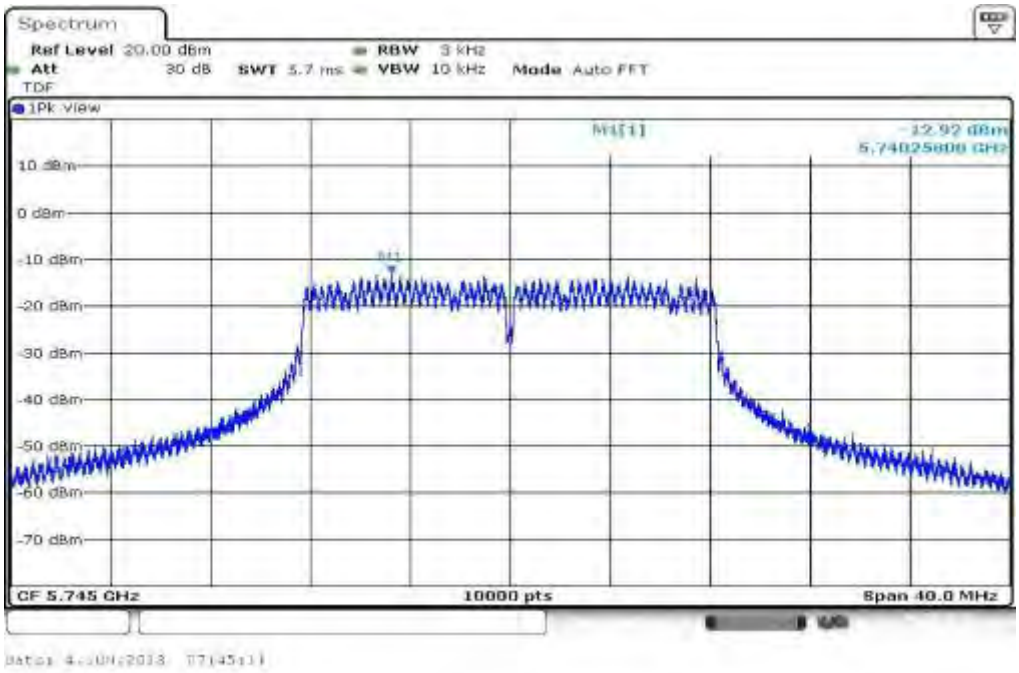
Results:

Modulation	Power Spectral density [dBm]		
Frequency	5745 MHz	5785 MHz	5825 MHz
OFDM / a – mode	-12.92	-11.79	-13.12
OFDM / n – mode HT20	-10.89	-11.85	-13.64
Frequency	5755 MHz	5795 MHz	-/-
OFDM / n – mode HT40	-16.71	-16.07	-/-
Measurement uncertainty	± 1.5 dB		

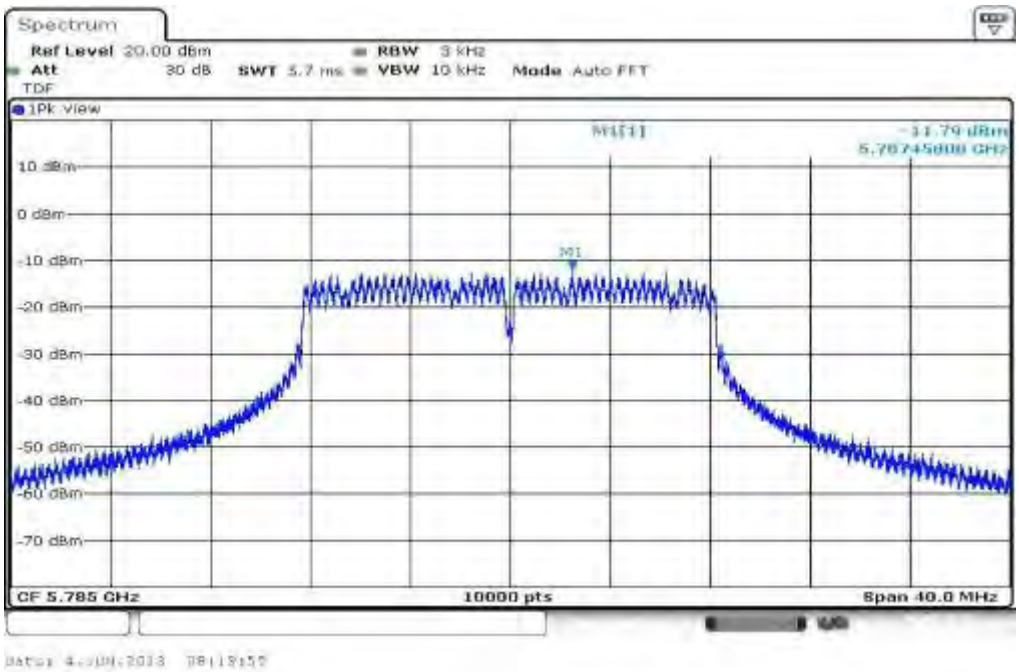
Result: Passed

Plots: OFDM / a – mode

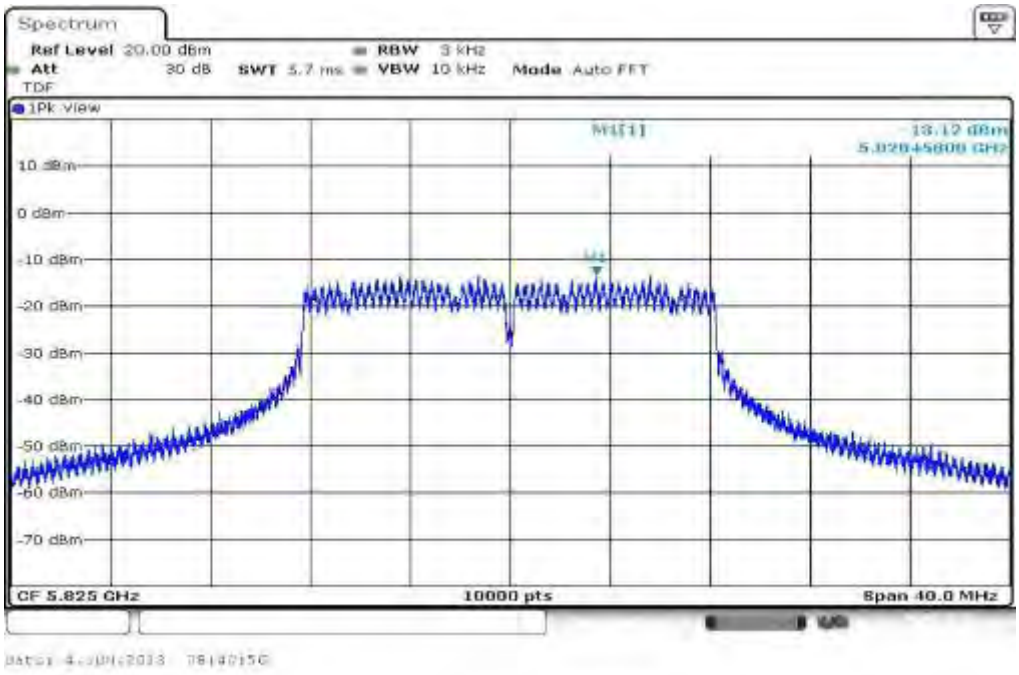
Plot 1: TX mode, lowest channel



Plot 2: TX mode, middle channel

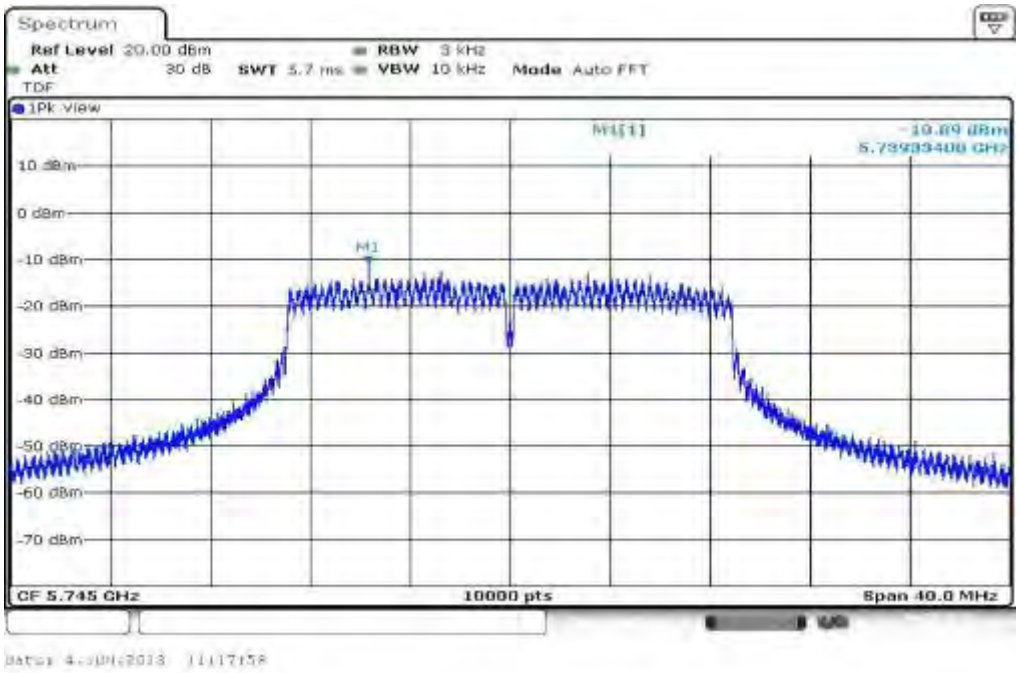


Plot 3: TX mode, highest channel

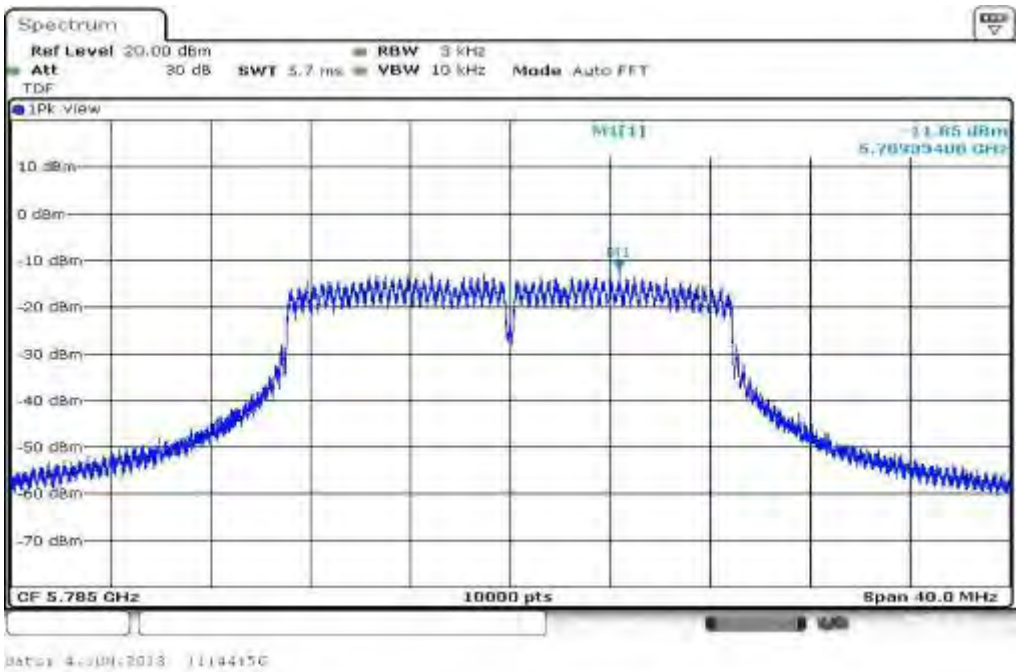


Plots: OFDM / n – mode HT20

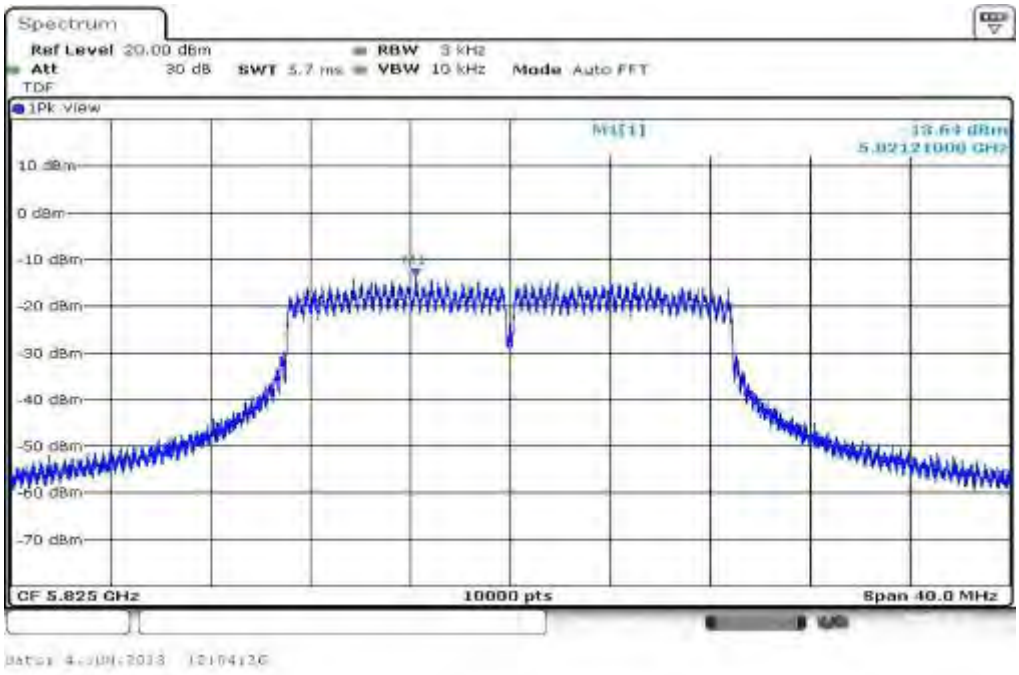
Plot 1: TX mode, lowest channel



Plot 2: TX mode, middle channel

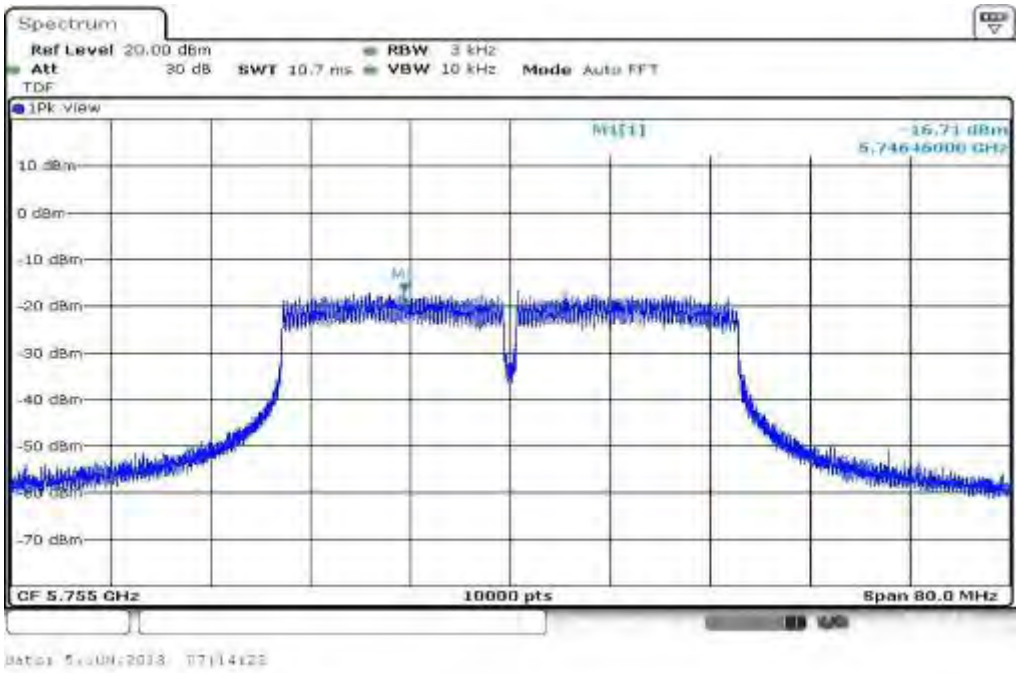


Plot 3: TX mode, highest channel

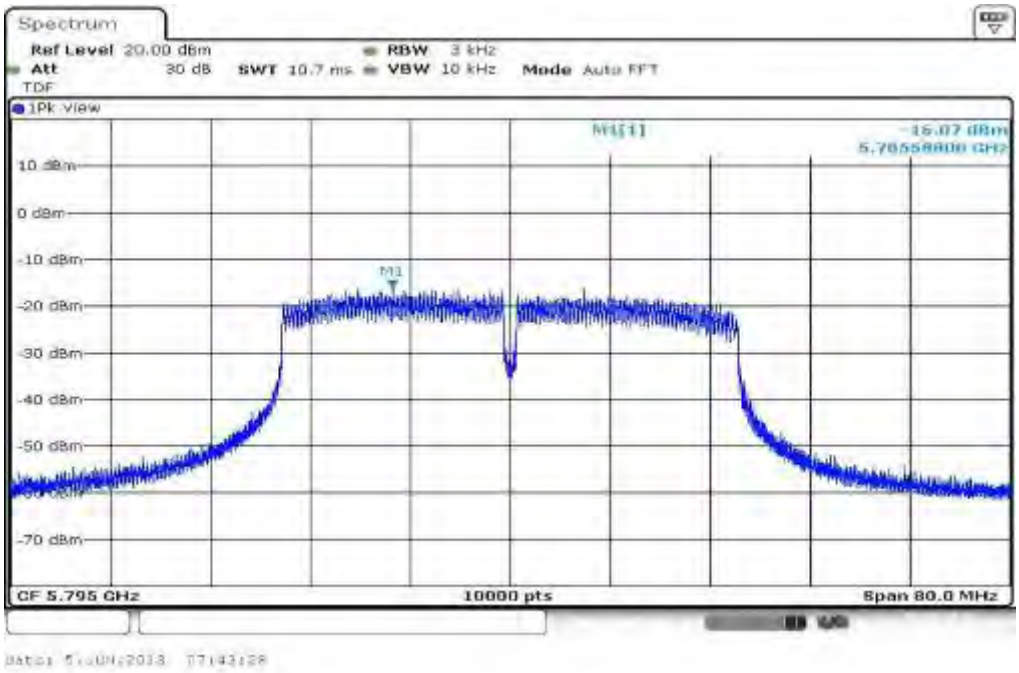


Plots: OFDM / n – mode HT40

Plot 1: TX mode, lowest channel



Plot 2: TX mode, highest channel



11.4 Spectrum bandwidth – 6 dB

Description:

Measurement of the 6 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
According to: DTS clause 8.2	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Span:	40 MHz
Measurement procedure:	Measurement of the 75% bandwidth using the integration function of the analyzer
Trace-Mode:	Max hold (allow trace to stabilize)

Limits:

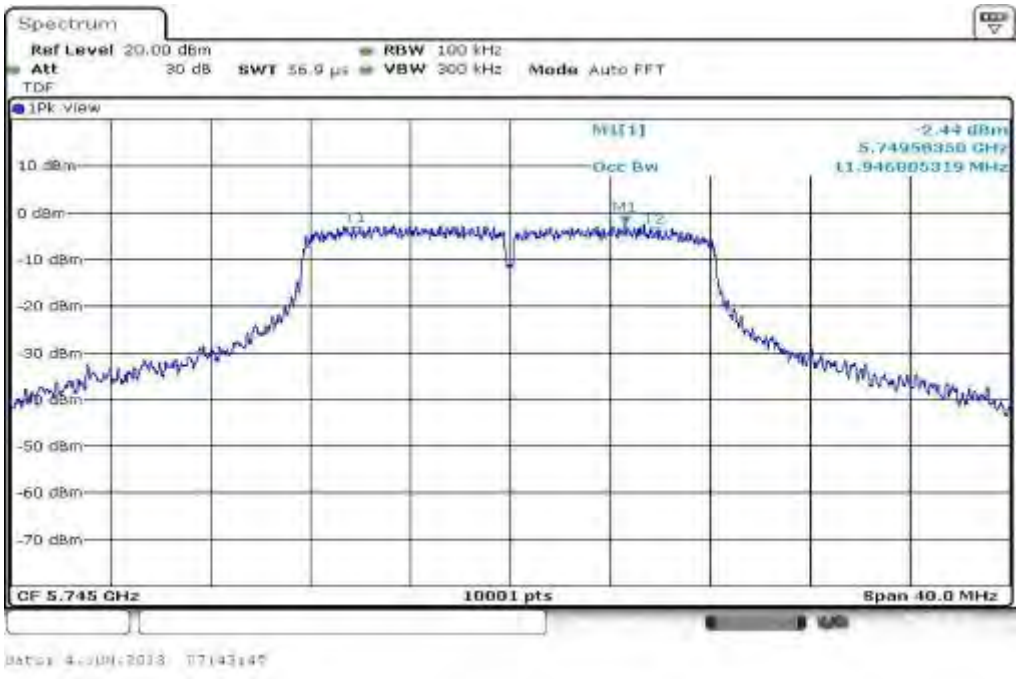
FCC	IC
Spectrum Bandwidth – 6 dB	
Systems using digital modulation techniques may operate in the 2400–2483.5 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.	

Results: OFDM / a – mode

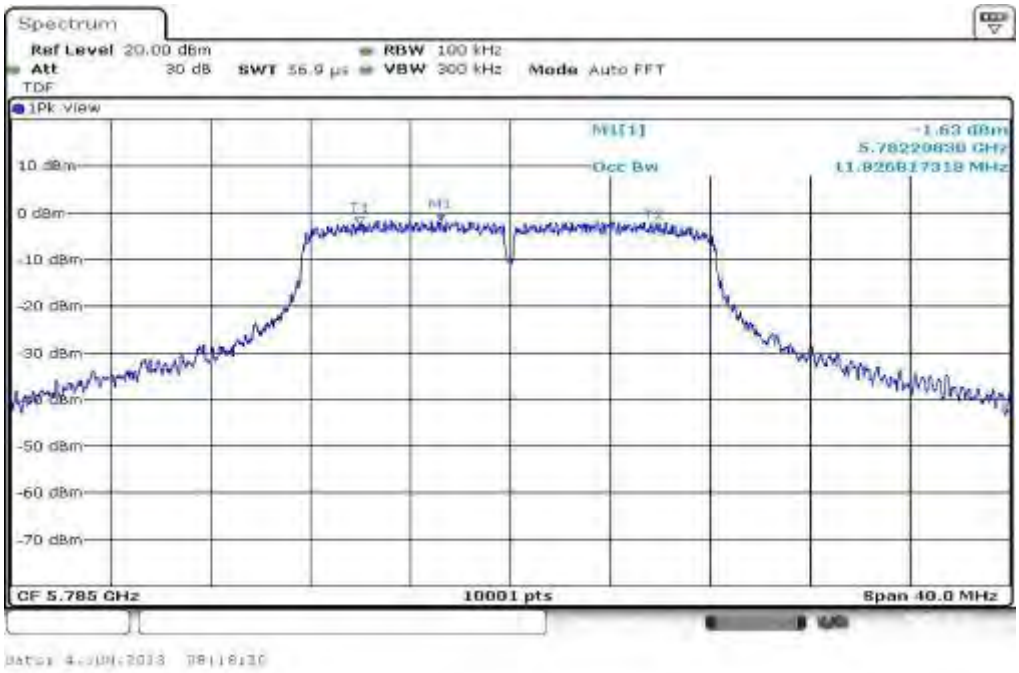
Modulation	6 dB bandwidth [MHz]		
Frequency	5745 MHz	5785 MHz	5825 MHz
OFDM / a – mode 6 Mbit/s	11.95	11.83	11.92
Measurement uncertainty	± RBW		

Result: **Passed**

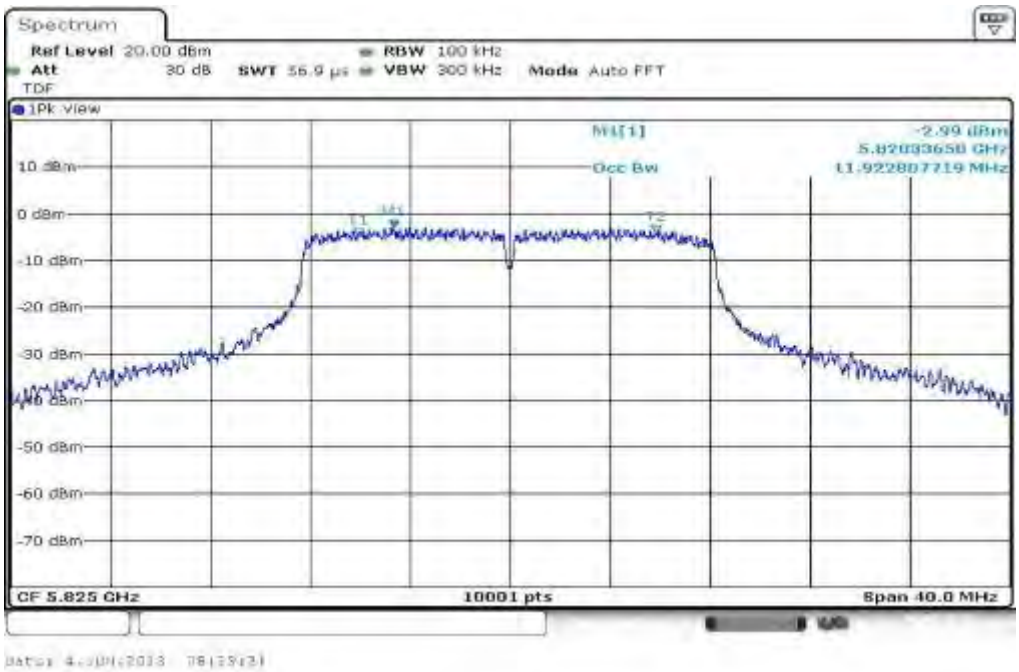
Plot 1: a-mode, lowest channel



Plot 2: a-mode, middle channel



Plot 3: a-mode, high channel

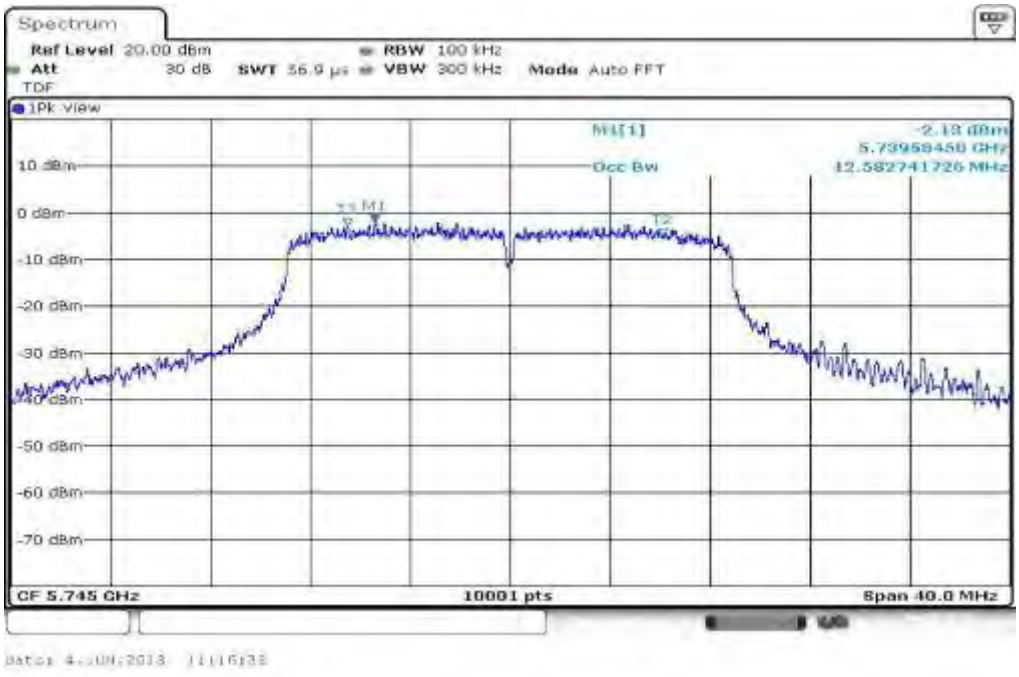


Results: OFDM / n – mode HT20

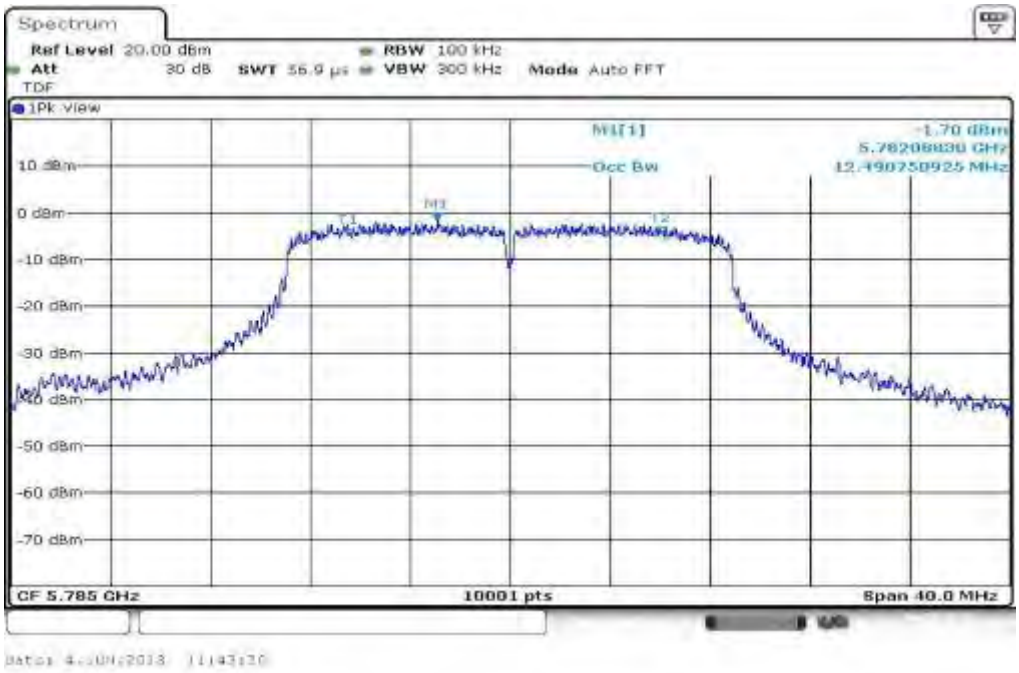
Modulation	6 dB bandwidth [MHz]		
Frequency	5745 MHz	5785 MHz	5825 MHz
OFDM / n – mode HT20 MCS0	12.58	12.49	12.56
Measurement uncertainty	± RBW		

Result: **Passed**

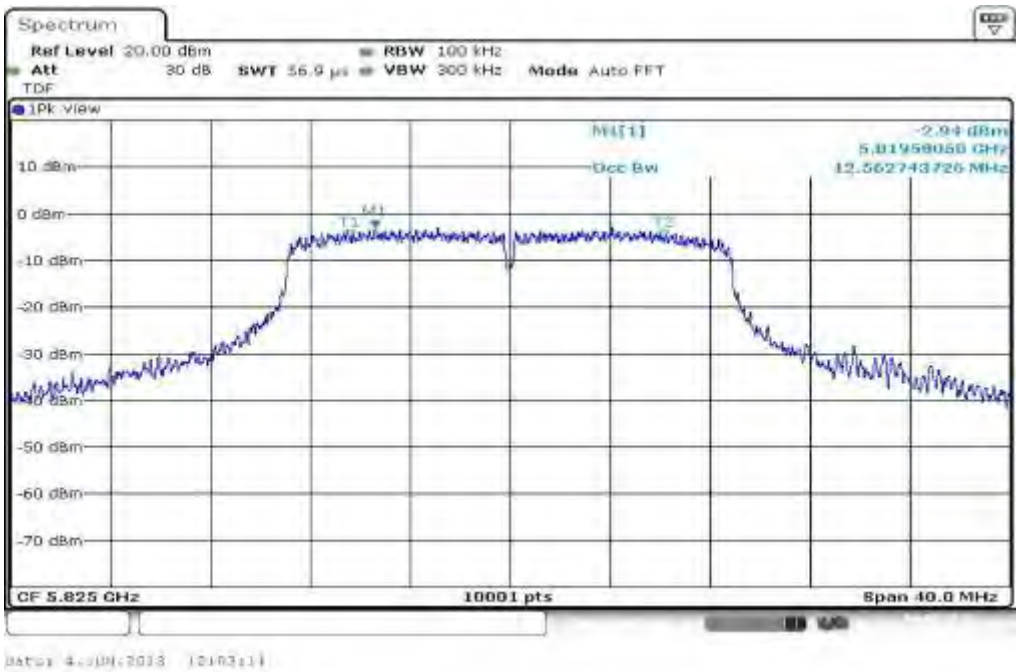
Plot 1: n-mode HT20, lowest channel



Plot 2: n-mode HT20, middle channel



Plot 3: n-mode HT20, high channel



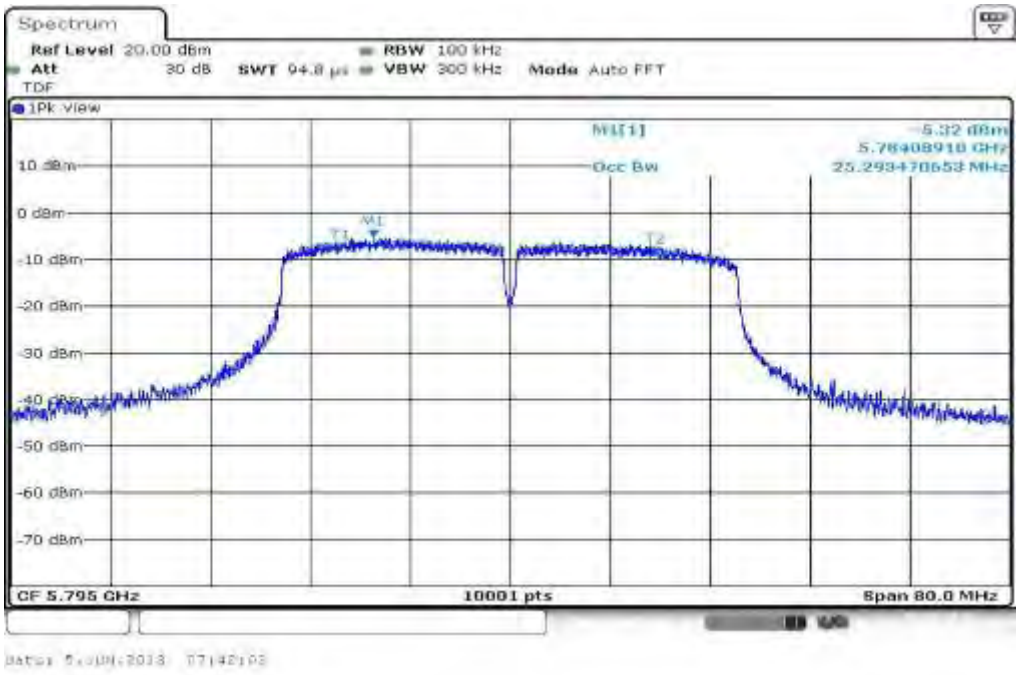
Results: OFDM / n – mode HT40

Modulation	6 dB bandwidth [MHz]		
Frequency	5755 MHz	5795 MHz	-/-
OFDM / n – mode HT40 MCS0	26.44	25.29	-/-
Measurement uncertainty	± RBW		

Result: **Passed**

Plot 1: n-mode HT40, lowest channel

Plot 2: n-mode HT40, highest channel



11.5 Spectrum bandwidth – 20 dB

Description:

Measurement of the 20 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1 - 5% of the DTS BW but not exceed 100 kHz
Video bandwidth:	≥ 3 x RBW
Span:	Complete signal
Measurement procedure:	Measurement of the 99% bandwidth using the integration function of the analyzer
Trace-Mode:	Max hold (allow trace to stabilize)

Limits:

-/-	IC
Spectrum Bandwidth – 20 dB	
Systems using digital modulation techniques may operate in the 2400–2483.5 MHz band. The minimum 6 dB bandwidth shall be at least 500 kHz.	

Results:

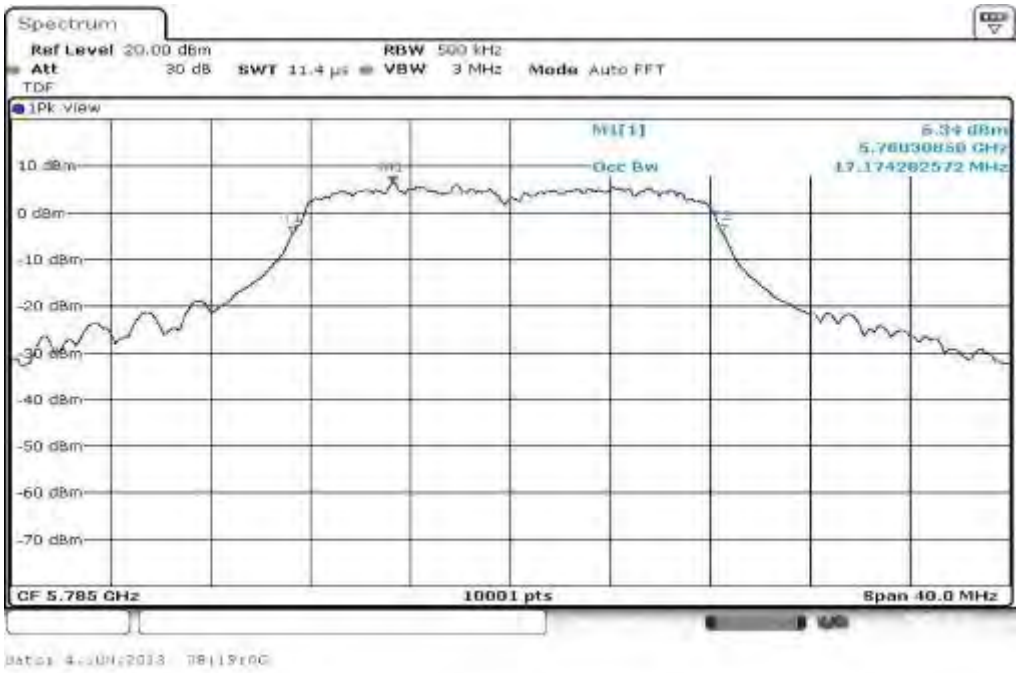
Modulation	20 dB bandwidth [MHz]		
Frequency	Lowest channel	Middle channel	Highest channel
OFDM / a – mode	17.33	17.17	17.35
OFDM / n – mode HT20	18.31	18.17	18.35
OFDM / n – mode HT40	37.33	-/-	36.84
Measurement uncertainty	± RBW		

Result: Passed

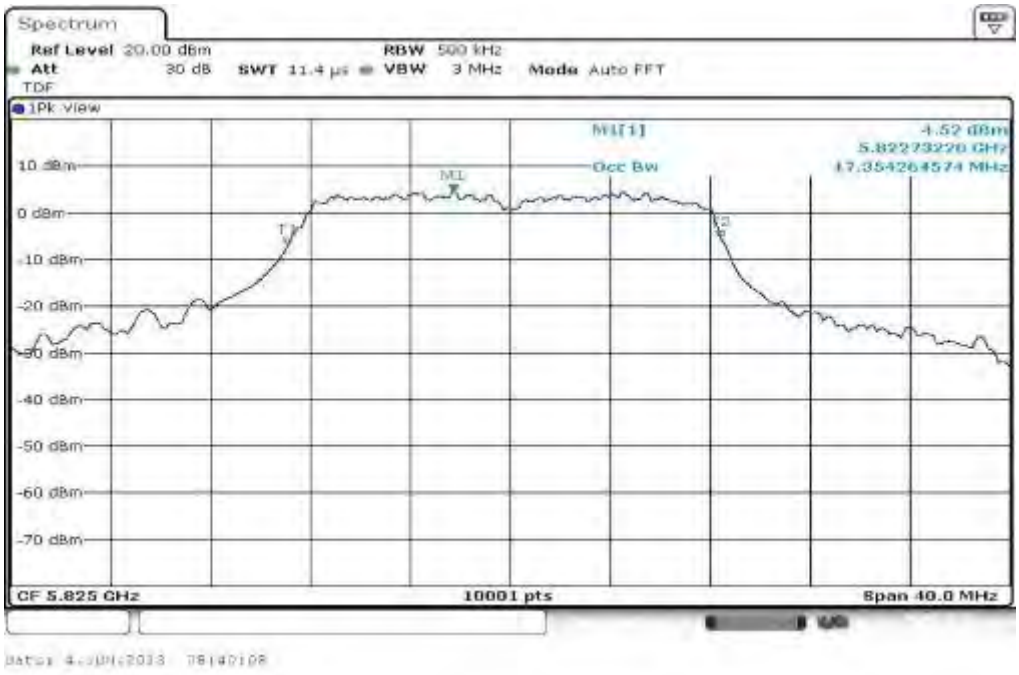
Plots: OFDM / a – mode

Plot 1: TX mode, lowest channel

Plot 2: TX mode, middle channel

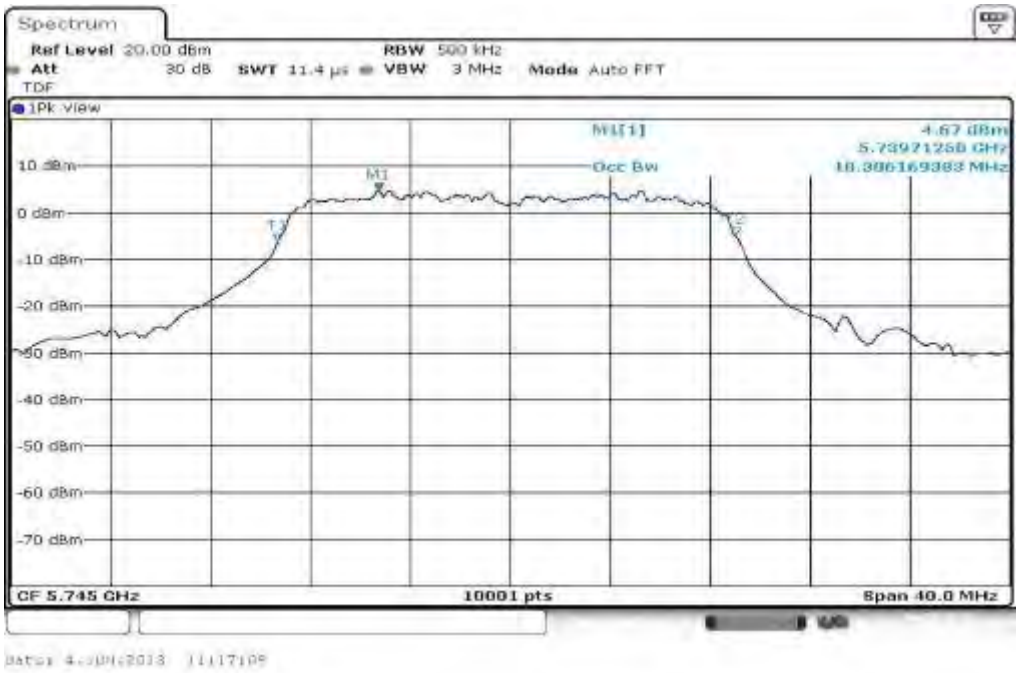


Plot 3: TX mode, highest channel



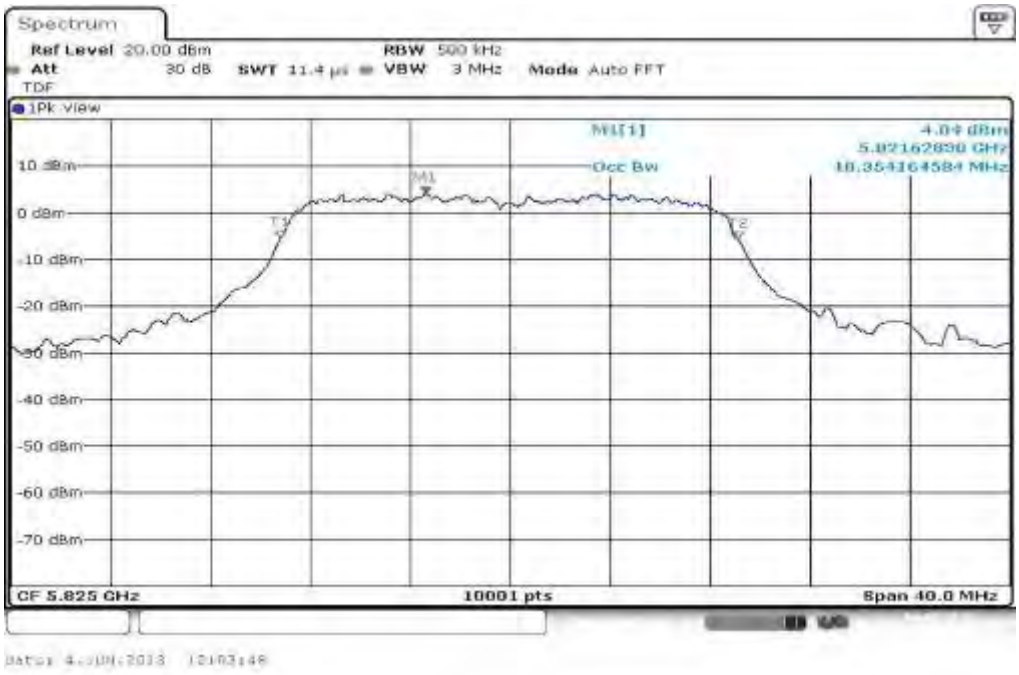
Plots: OFDM / n – mode HT20

Plot 1: TX mode, lowest channel



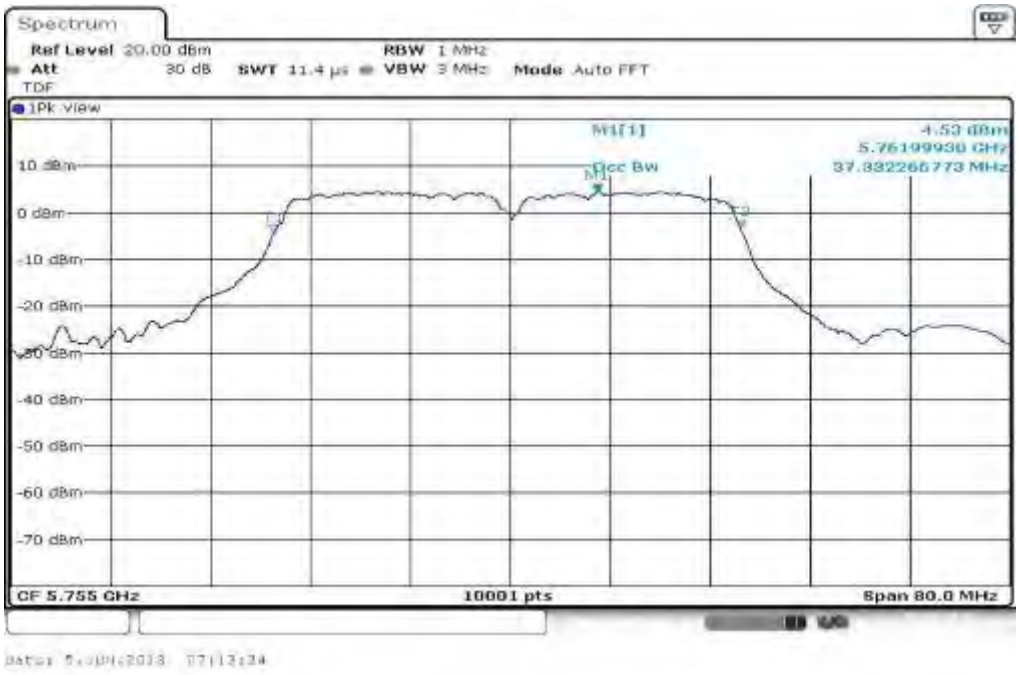
Plot 2: TX mode, middle channel

Plot 3: TX mode, highest channel

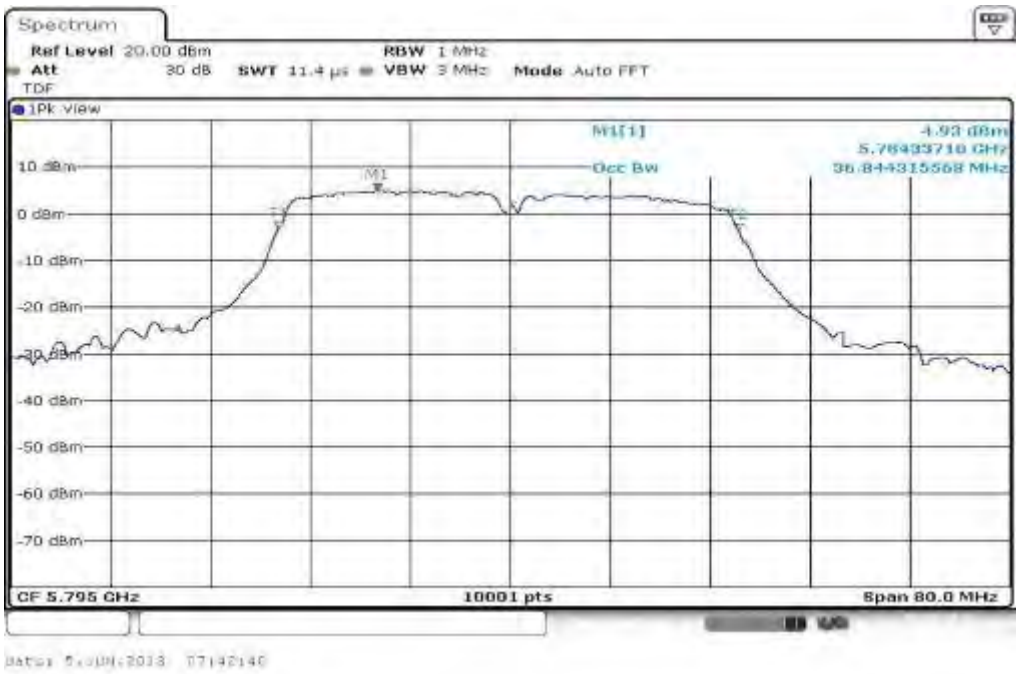


Plots: OFDM / n – mode HT40

Plot 1: TX mode, lowest channel



Plot 2: TX mode, highest channel



11.6 Band edge compliance conducted

Description:

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

Measurement:

Measurement parameter	
According to: DTS clause 13.2.1	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	500 kHz
Span:	Lower Band Edge: 5625 – 5725 MHz Upper Band Edge: 5850 – 5950 MHz
Trace-Mode:	Max hold

Limits:

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

Results:

Scenario Modulation	Band Edge Compliance Conducted [dB]		
	OFDM / a – mode	OFDM / n – mode HT20	OFDM / n – mode HT40
Lower Band Edge – Channel 149	> 20 dBc	> 20 dBc	> 20 dBc
Upper Band Edge – Channel 165	> 20 dBc	> 20 dBc	> 20 dBc
Measurement uncertainty	± 1.5 dB		

Result: **Passed**

11.7 Band edge compliance radiated

Not applicable! No restricted band close to used frequency band!

11.8 TX spurious emissions conducted

Description:

Measurement of the conducted spurious emissions in transmit mode The measurement is performed at the lowest, middle and highest channel. The measurement is repeated for all modulations.

Measurement:

Measurement parameter	
According to: DTS clause 11.1 & 11.2	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	500 kHz
Span:	9 kHz to 25 GHz
Trace-Mode:	Max Hold

Limits:

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

Results: OFDM / a – mode

TX Spurious Emissions Conducted					
OFDM / a – mode					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
5745			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
5785			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
5825			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
Measurement uncertainty			± 3 dB		

Result: **Passed**

Results: OFDM / n – mode HT20

TX Spurious Emissions Conducted					
OFDM / n – mode HT20					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
5745			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
5785			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
5825			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
Measurement uncertainty			± 3 dB		

Result: **Passed**

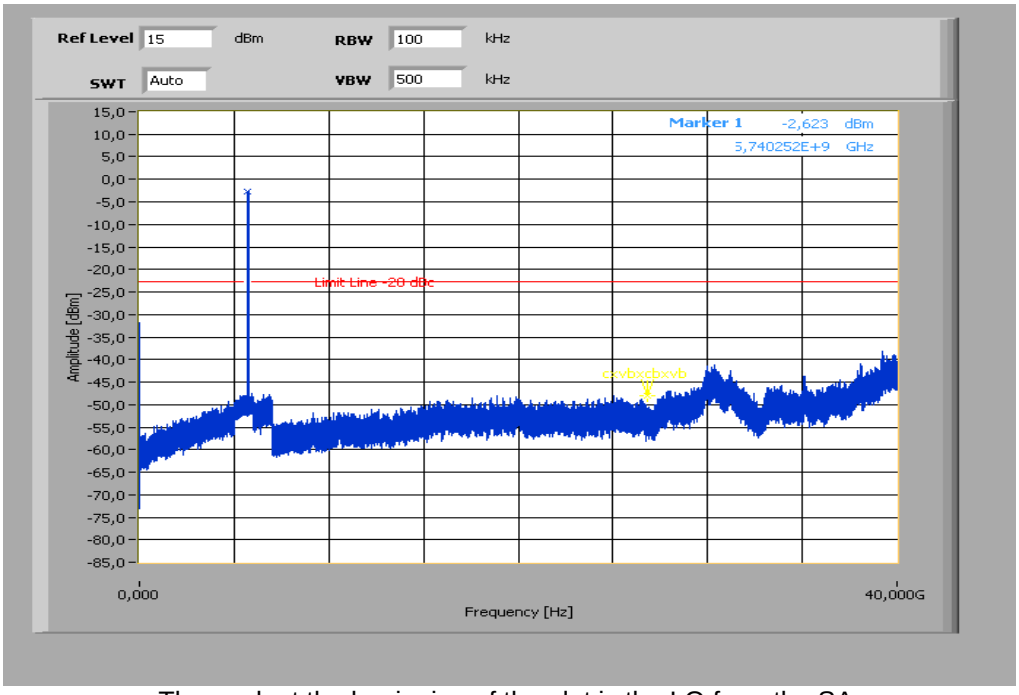
Results: OFDM / n – mode HT40

TX Spurious Emissions Conducted OFDM / n – mode HT40					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
5755			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
5795			30 dBm		Operating frequency
No peaks detected. All detected emissions are below the -20 dBc criteria.			-20 dBc (peak) -30 dBc (average)		complies
			30 dBm		Operating frequency
-/-			-20 dBc (peak) -30 dBc (average)		-/-
Measurement uncertainty			± 3 dB		

Result: **Passed**

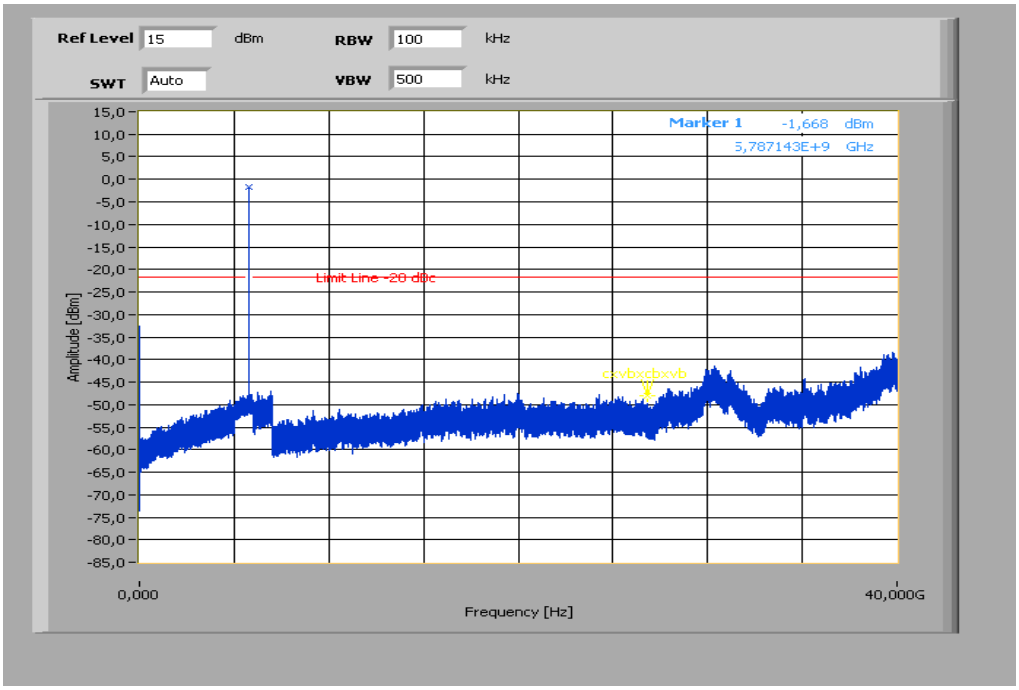
Plots: OFDM / a – mode

Plot 1: TX mode, lowest channel, up to 40 GHz



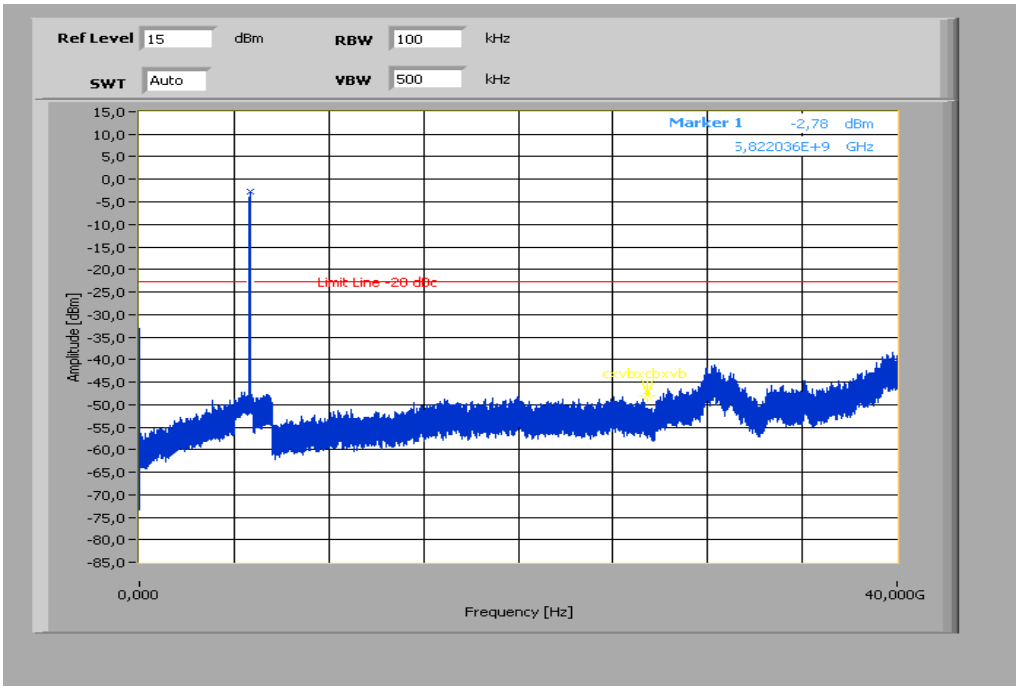
The peak at the beginning of the plot is the LO from the SA.

Plot 2: TX mode, middle channel, up to 40 GHz



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

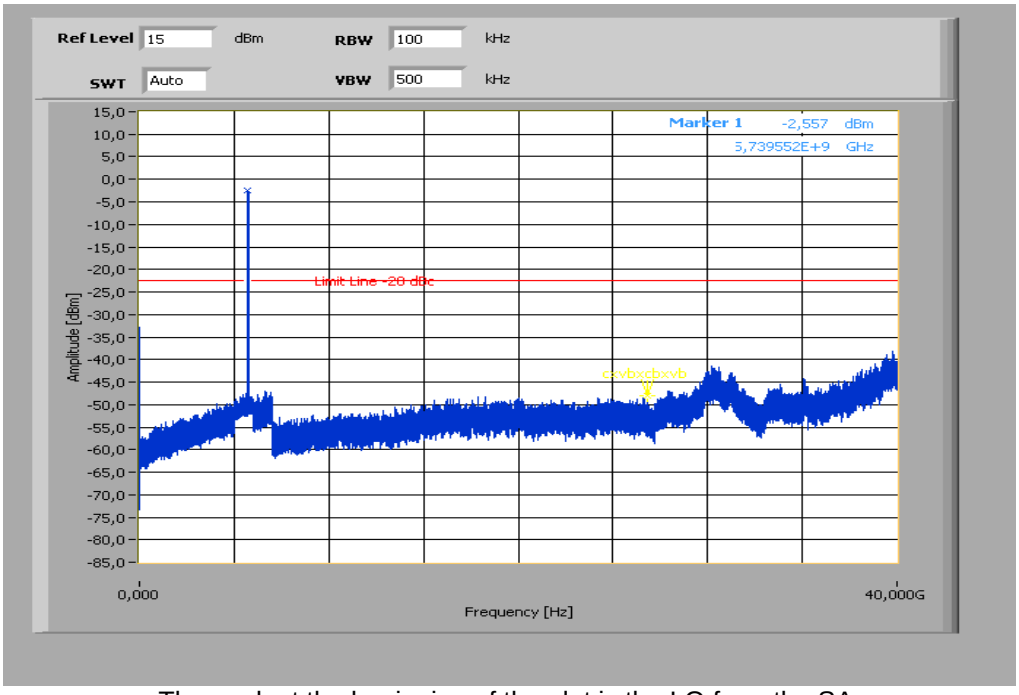
Plot 3: TX mode, highest channel, up to 40 GHz



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

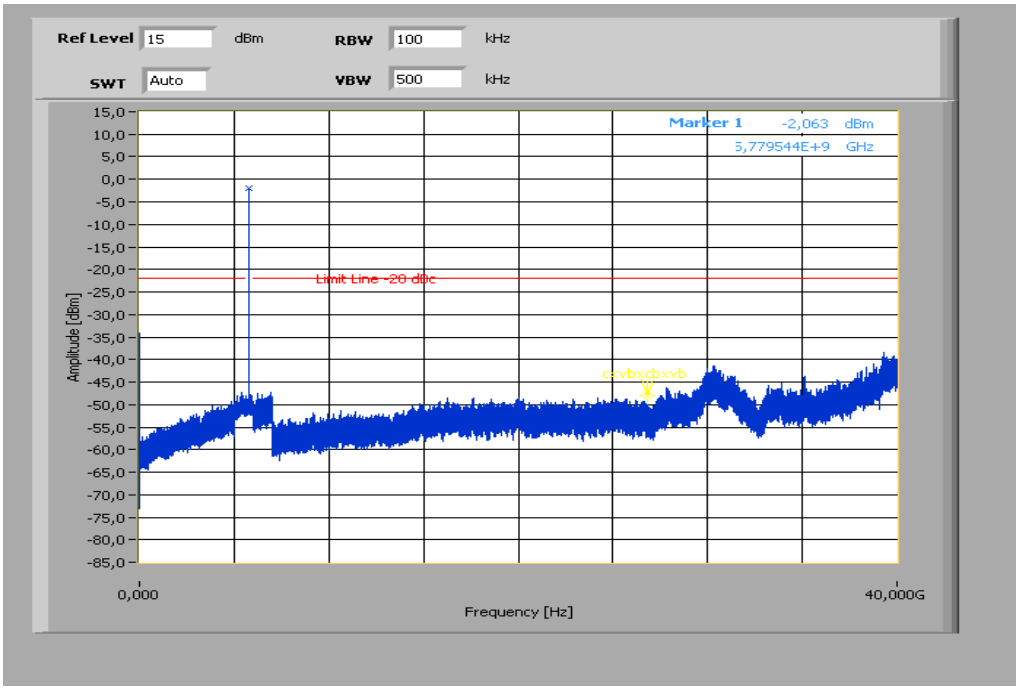
Plots: OFDM / n – mode HT20

Plot 1: TX mode, lowest channel, up to 40 GHz



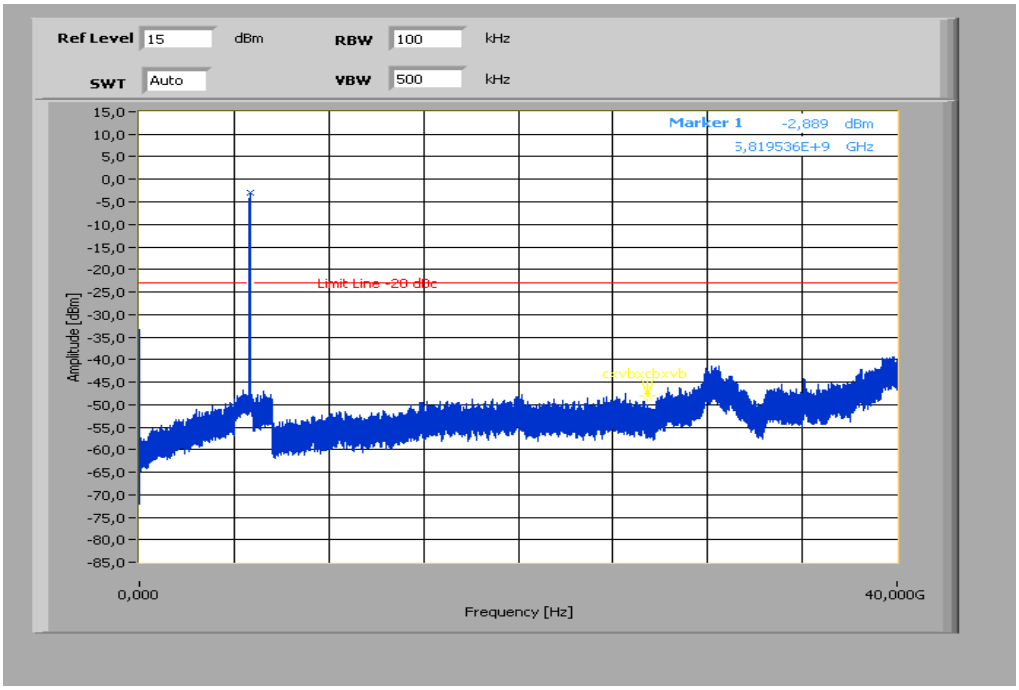
The peak at the beginning of the plot is the LO from the SA.

Plot 2: TX mode, middle channel, up to 40 GHz



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

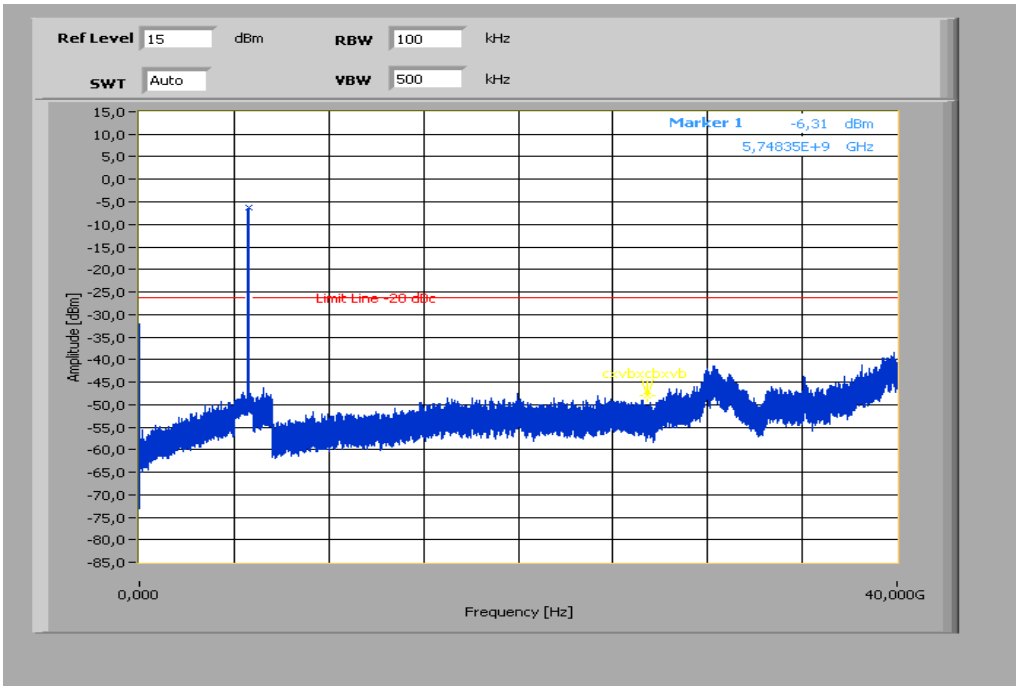
Plot 3: TX mode, highest channel, up to 40 GHz



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

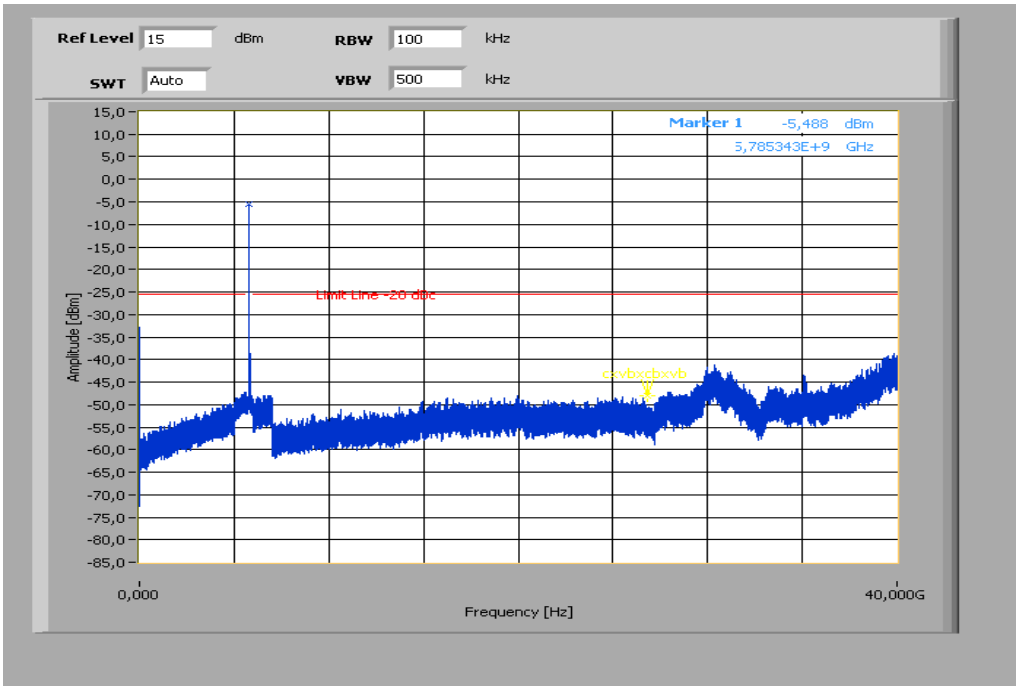
Plots: OFDM / n – mode HT40

Plot 1: TX mode, lowest channel, up to 40 GHz



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

Plot 2: TX mode, highest channel, up to 40 GHz



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

11.9 TX spurious emissions radiated

Description:

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

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	F > 1 GHz: 1 MHz F < 1 GHz: 100 kHz
Video bandwidth:	Sweep: 100 kHz Remeasurement: 10 Hz / 3 MHz
Span:	30 MHz to 25 GHz
Trace-Mode:	Max Hold
Measured Modulation	☒ OFDM a – mode ☒ OFDM n – mode HT20 ☒ OFDM n – mode HT40

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

Limits:

FCC	IC	
TX Spurious Emissions Radiated		
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).		
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

Antenna M3002-66494:

Results: OFDM / a – mode

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / a – mode								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: OFDM / n – mode HT20

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT20								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Results: OFDM / n – mode HT40

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT40								
5755 MHz			5795 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.			-/-		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Note: Results of OFDM n – mode are added to show the compliance with the standard.

Plots: OFDM / a – mode

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

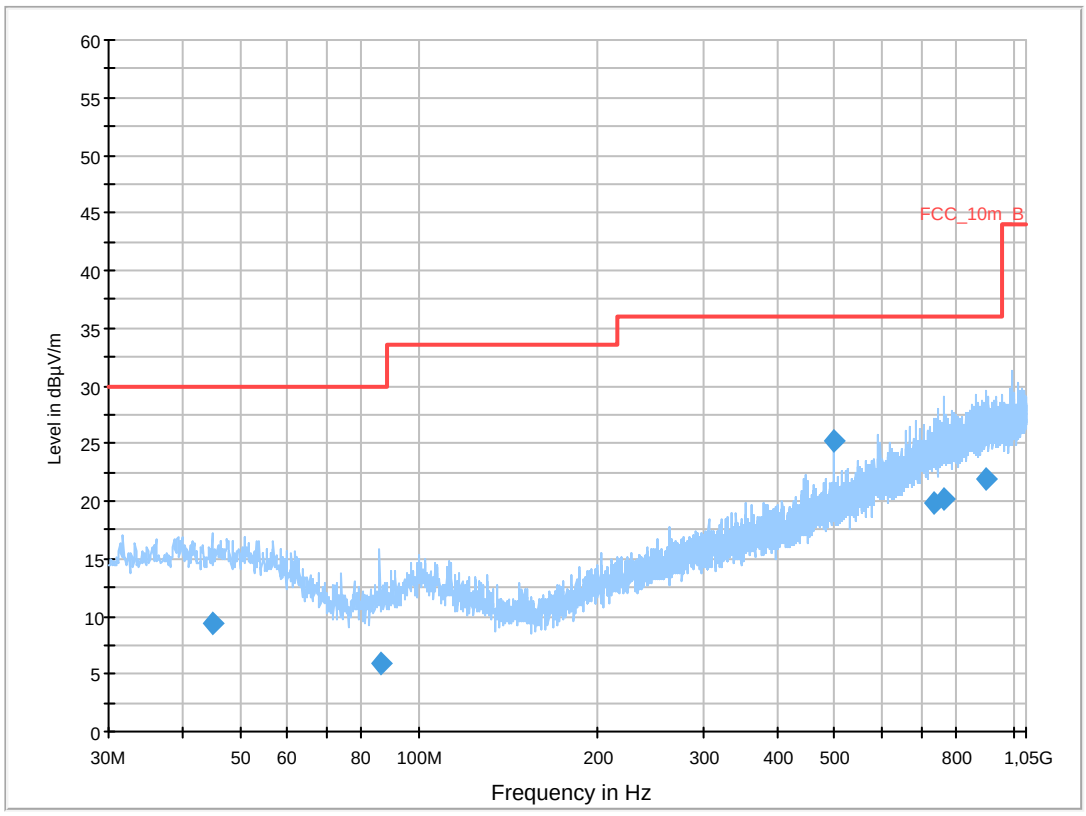
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5745MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

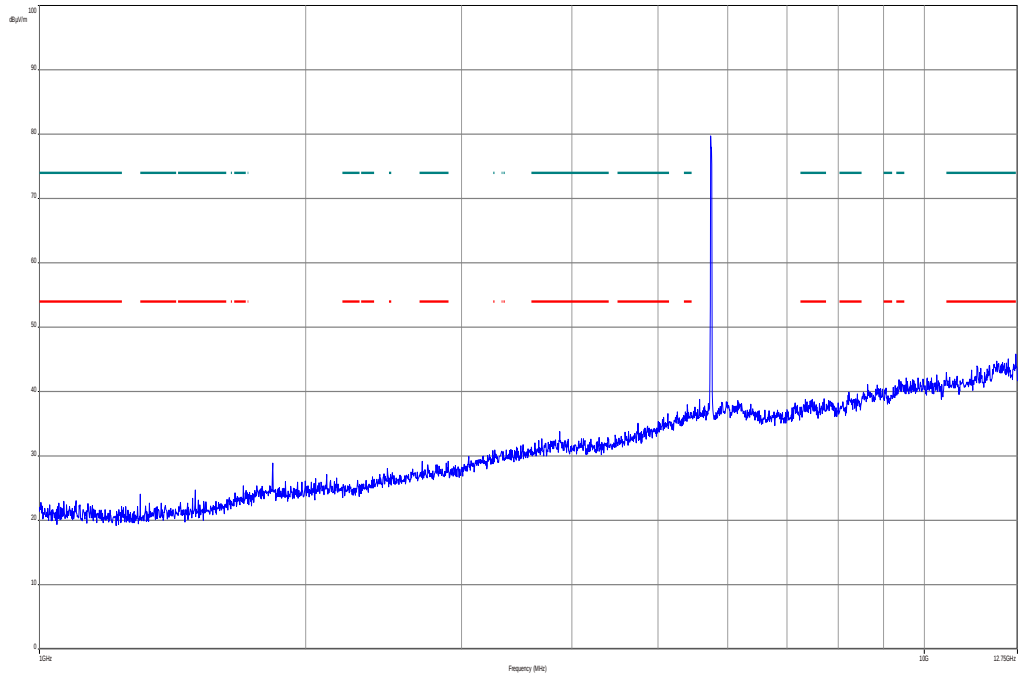
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



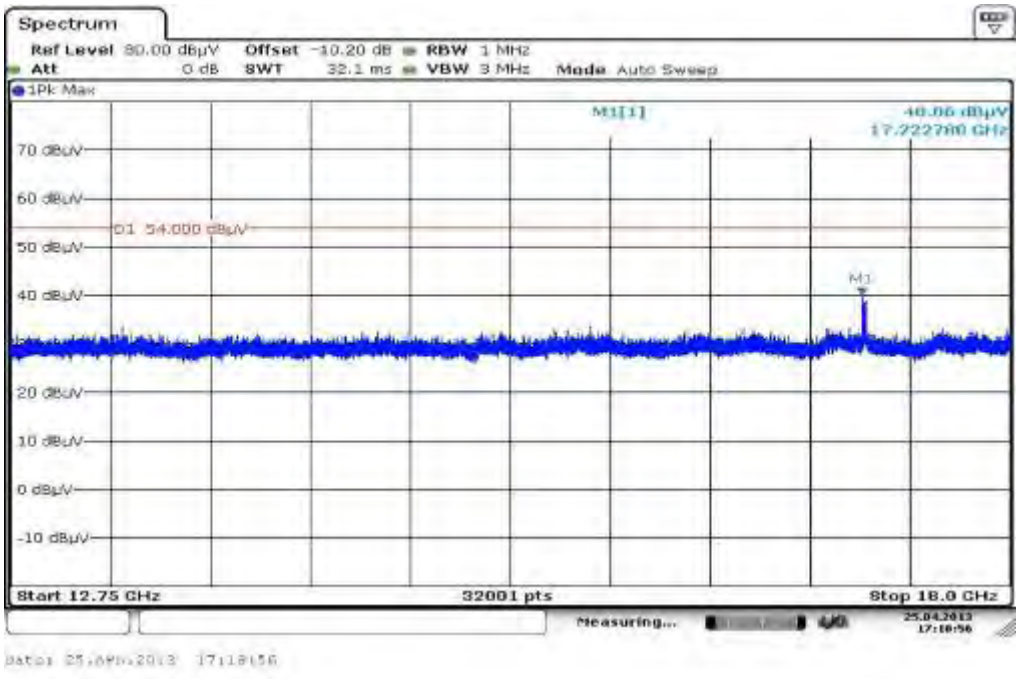
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
44.776800	9.3	1000.0	120.000	131.0	V	10.0	13.3	20.7	30.0	
86.040150	6.0	1000.0	120.000	132.0	V	10.0	10.0	24.0	30.0	
500.011950	25.2	1000.0	120.000	98.0	V	260.0	18.7	10.8	36.0	
733.422000	19.9	1000.0	120.000	134.0	V	261.0	23.3	16.1	36.0	
764.982150	20.2	1000.0	120.000	170.0	H	280.0	23.7	15.8	36.0	
901.818000	21.9	1000.0	120.000	170.0	V	170.0	25.2	14.1	36.0	

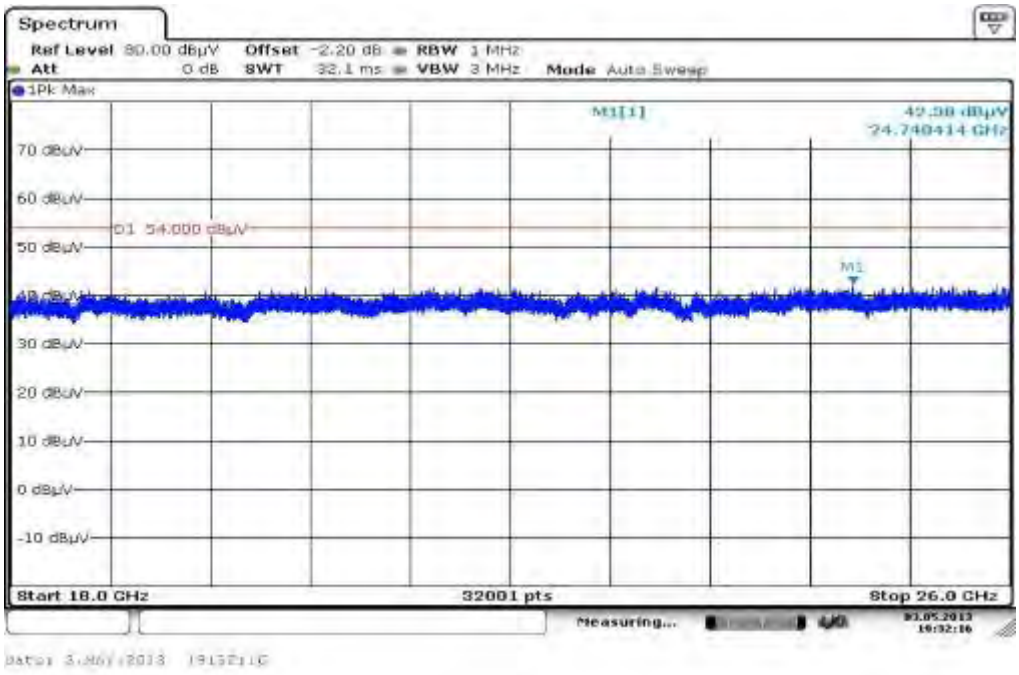
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



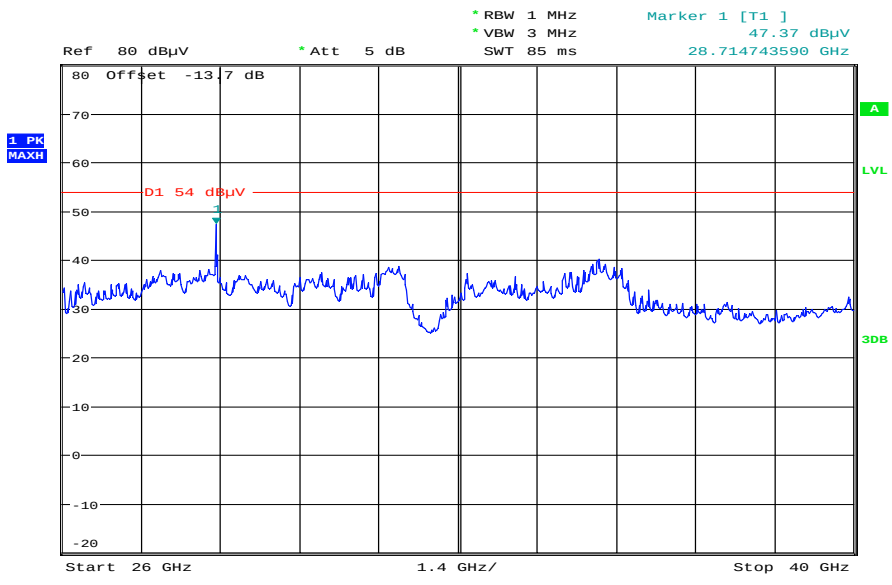
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



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

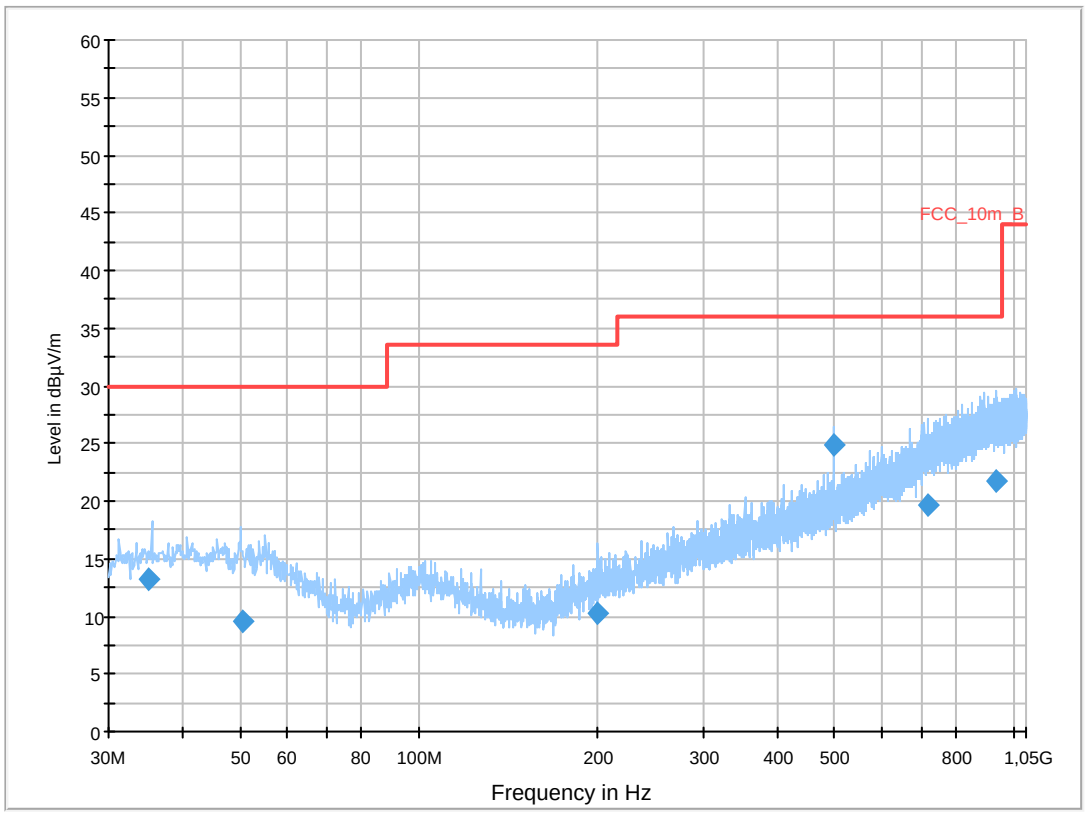
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5785MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

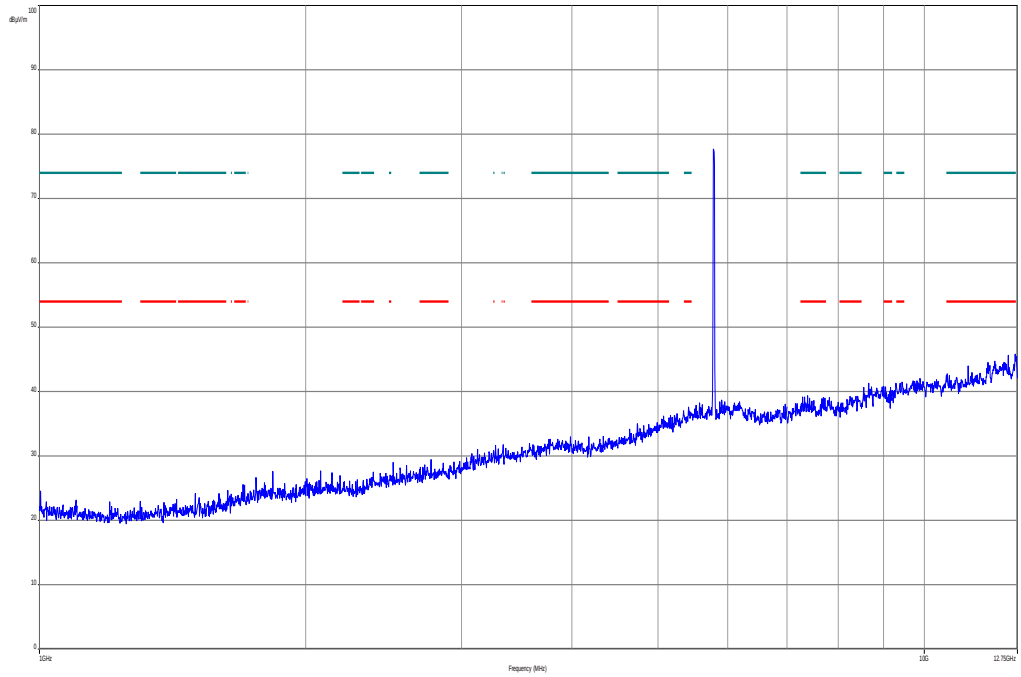
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



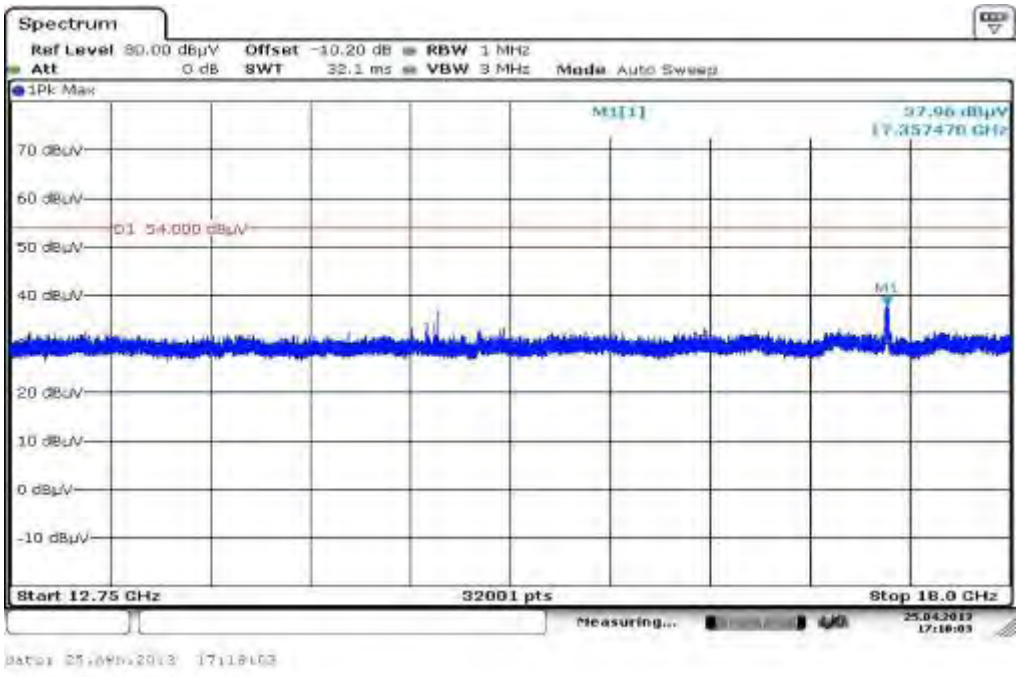
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.010000	13.1	1000.0	120.000	98.0	V	182.0	13.0	16.9	30.0	
50.277150	9.6	1000.0	120.000	160.0	V	10.0	13.3	20.4	30.0	
199.969500	10.2	1000.0	120.000	170.0	V	182.0	11.7	23.3	33.5	
500.018100	24.9	1000.0	120.000	98.0	V	265.0	18.7	11.1	36.0	
717.376350	19.6	1000.0	120.000	170.0	H	-9.0	22.9	16.4	36.0	
935.063400	21.8	1000.0	120.000	170.0	V	92.0	25.3	14.2	36.0	

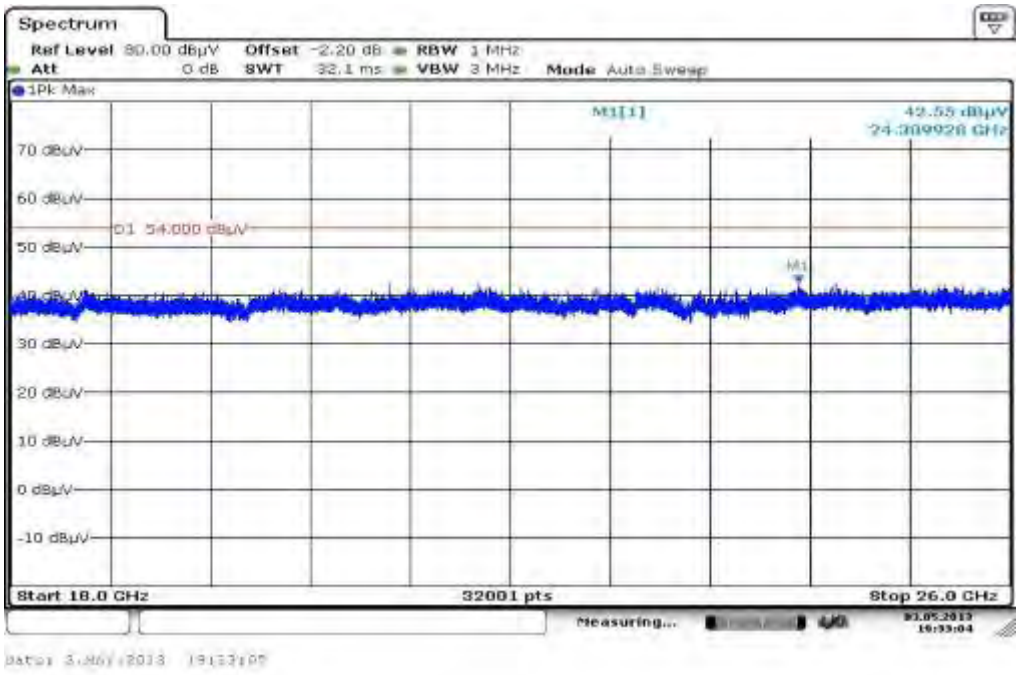
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



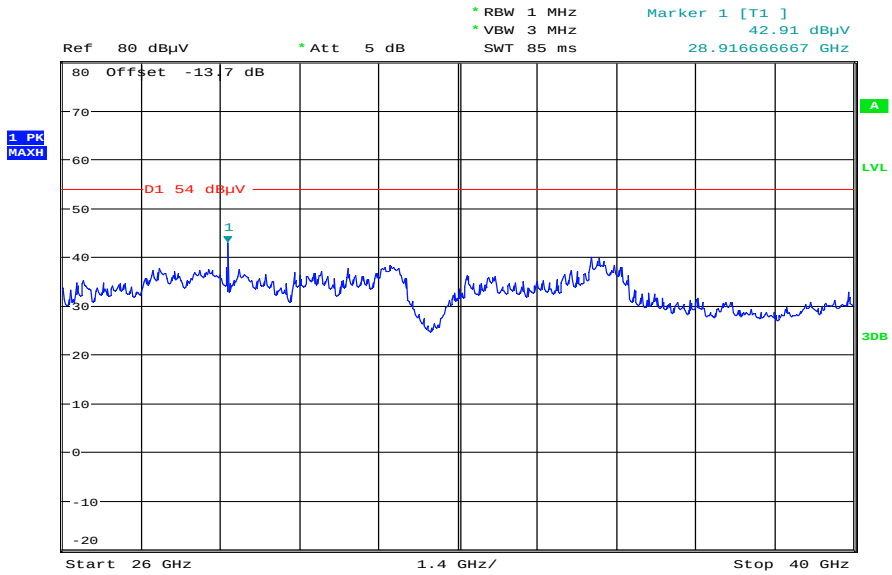
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:10:09

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

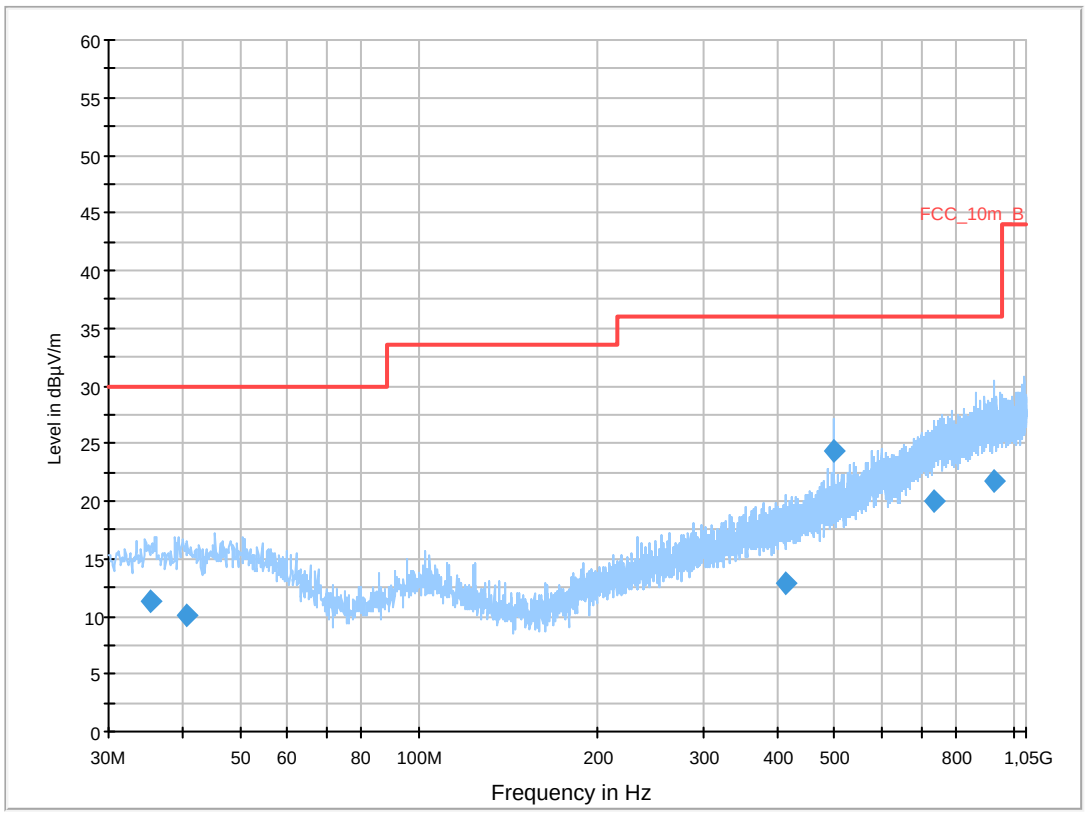
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5825MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

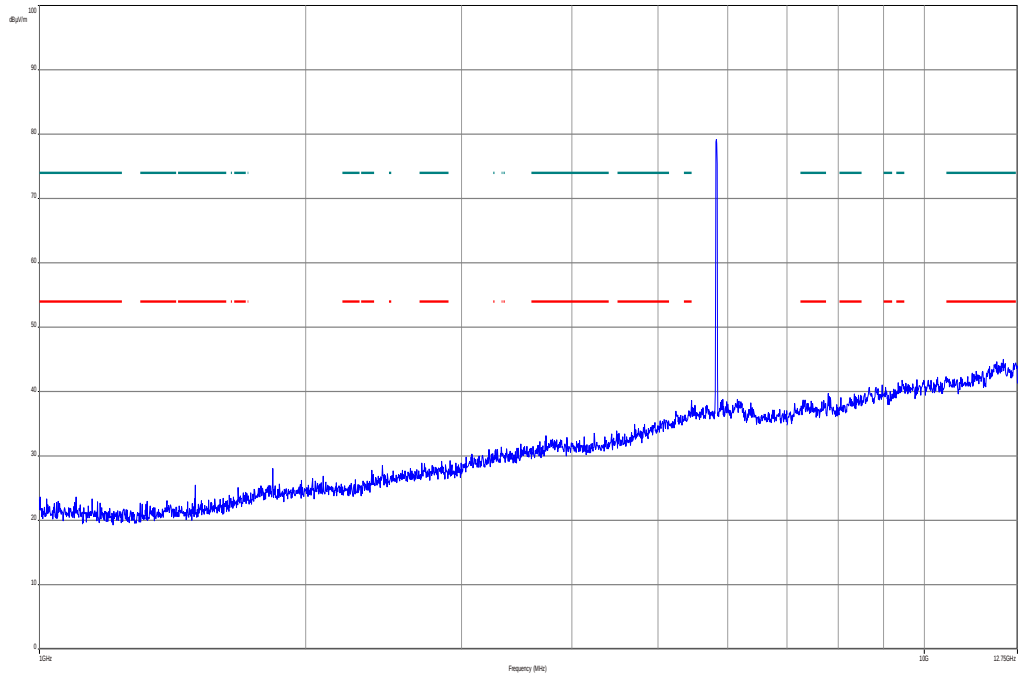
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



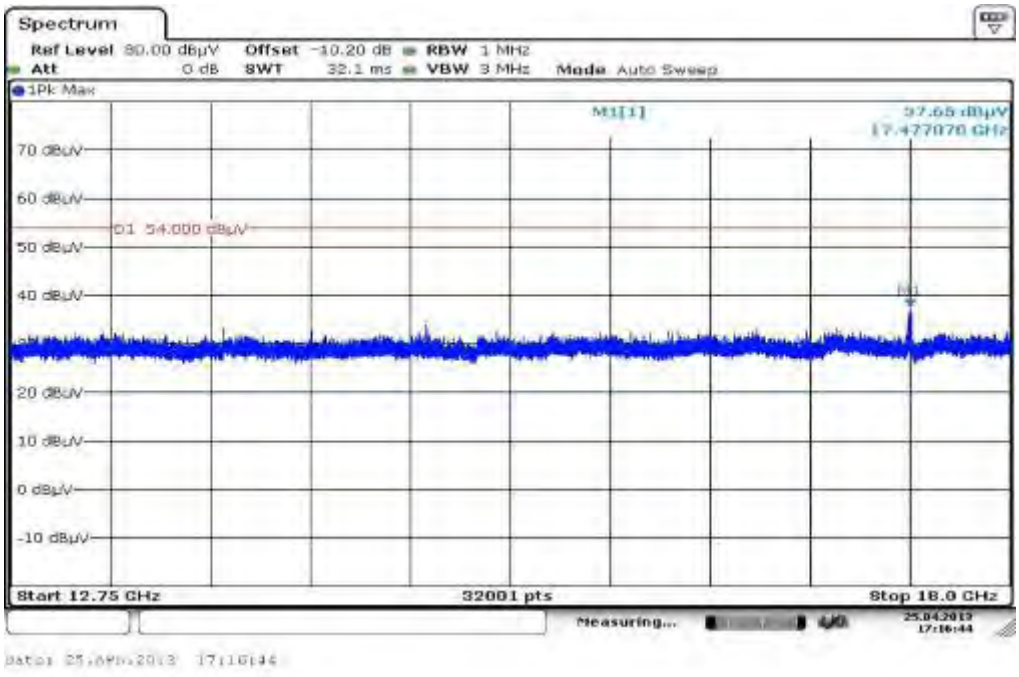
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.442900	11.3	1000.0	120.000	170.0	V	100.0	13.1	18.7	30.0	
40.579650	10.1	1000.0	120.000	98.0	V	85.0	13.4	19.9	30.0	
414.807600	12.9	1000.0	120.000	121.0	V	100.0	17.1	23.1	36.0	
499.986450	24.4	1000.0	120.000	98.0	V	190.0	18.7	11.6	36.0	
733.418700	20.0	1000.0	120.000	170.0	V	190.0	23.3	16.0	36.0	
924.121200	21.8	1000.0	120.000	170.0	H	-9.0	25.3	14.2	36.0	

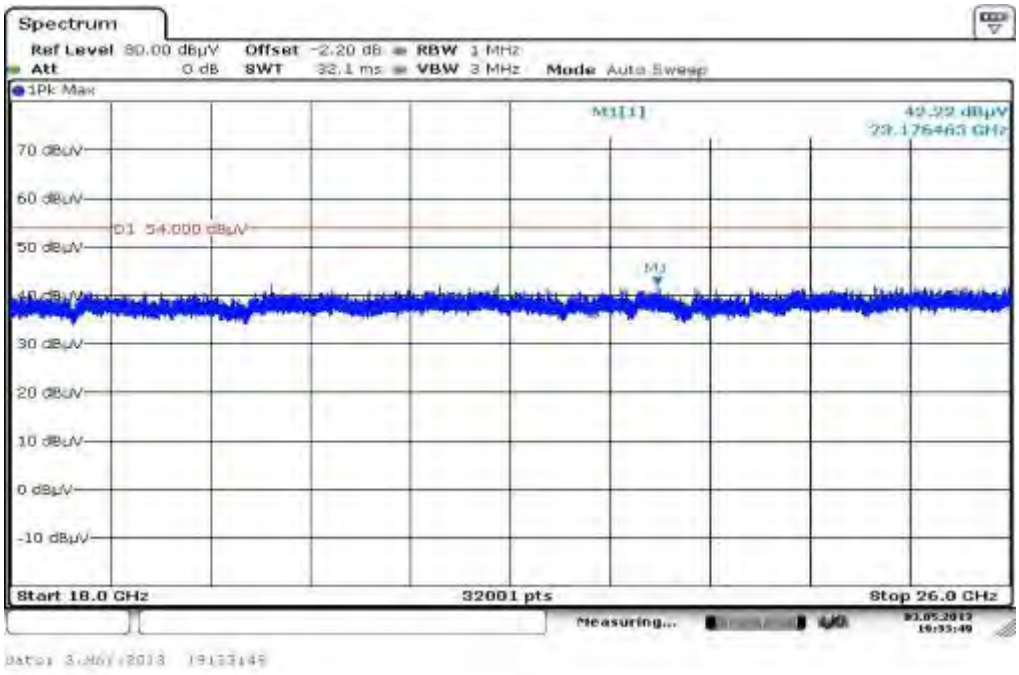
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



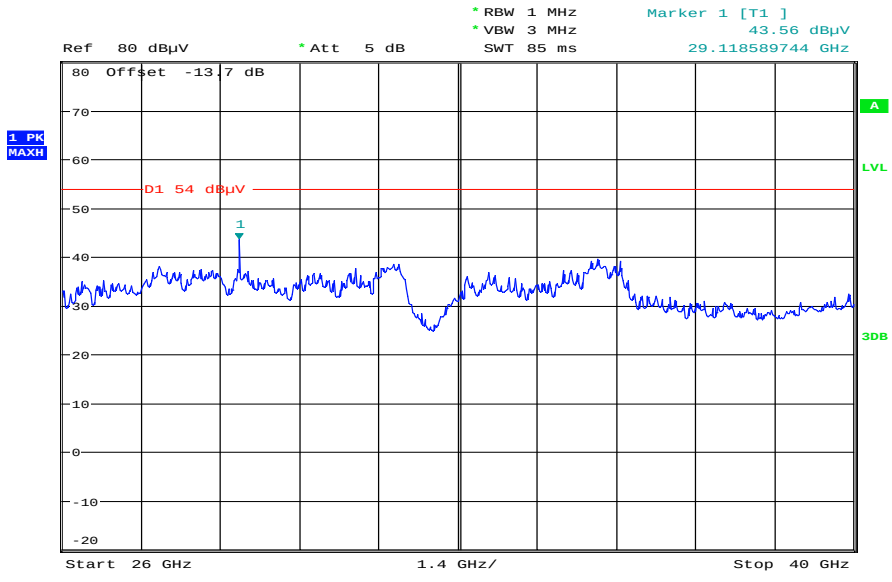
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:11:17

Plots: OFDM / n – mode HT20

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

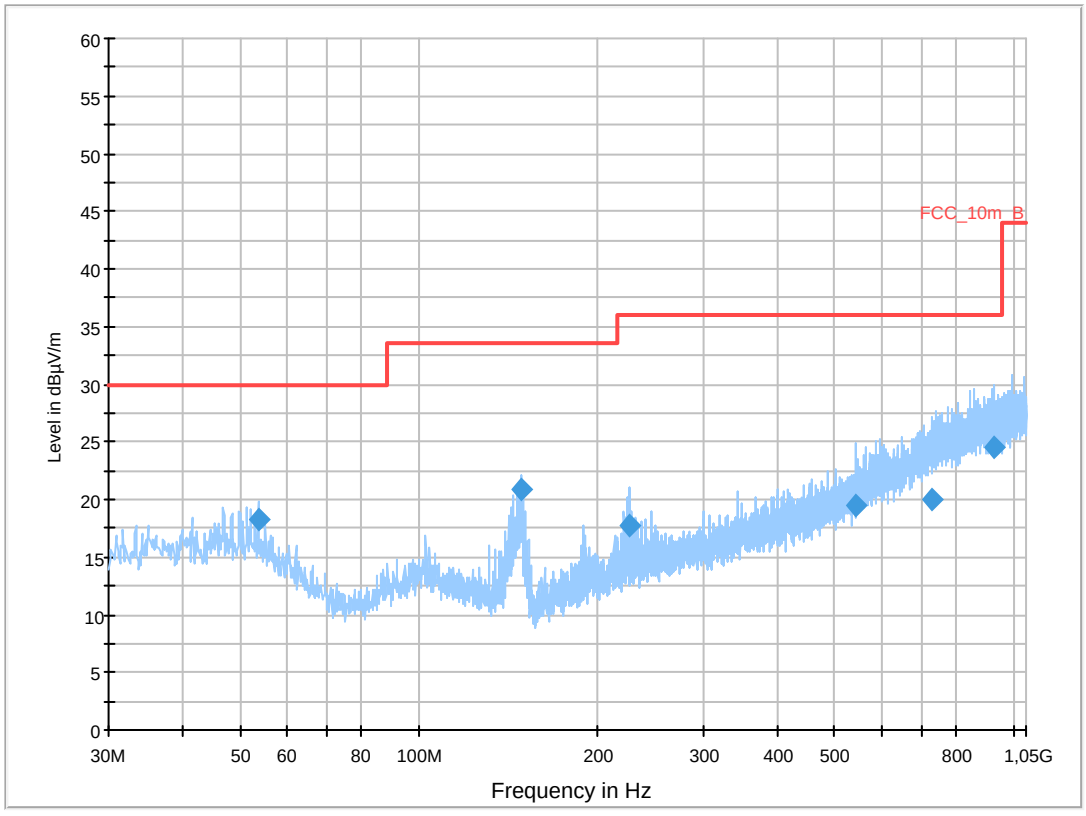
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode HT20 ch149
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

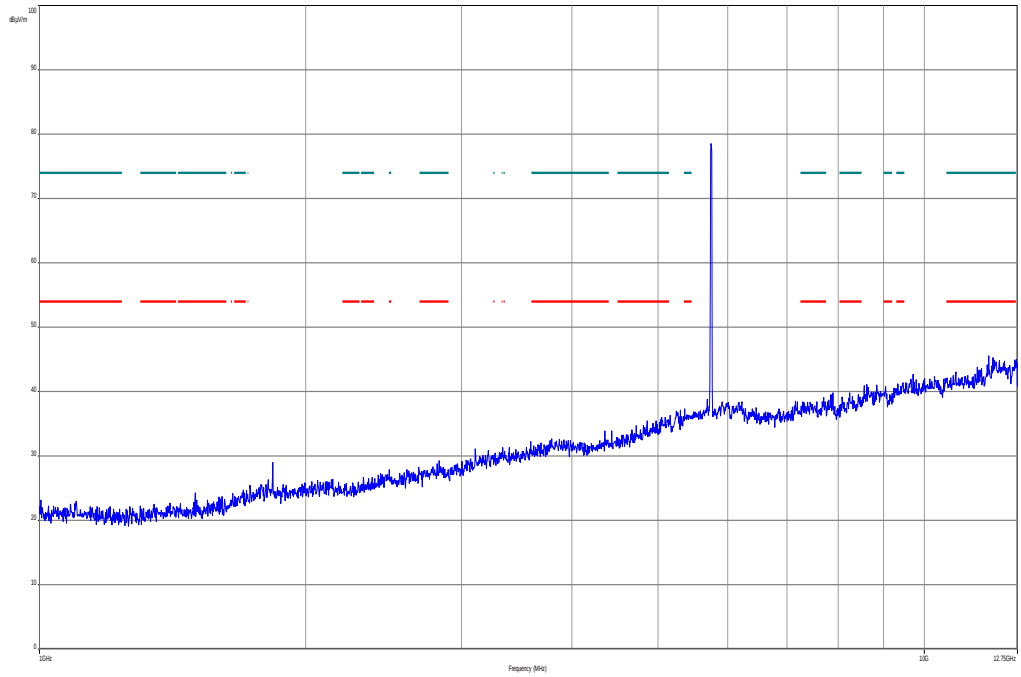
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



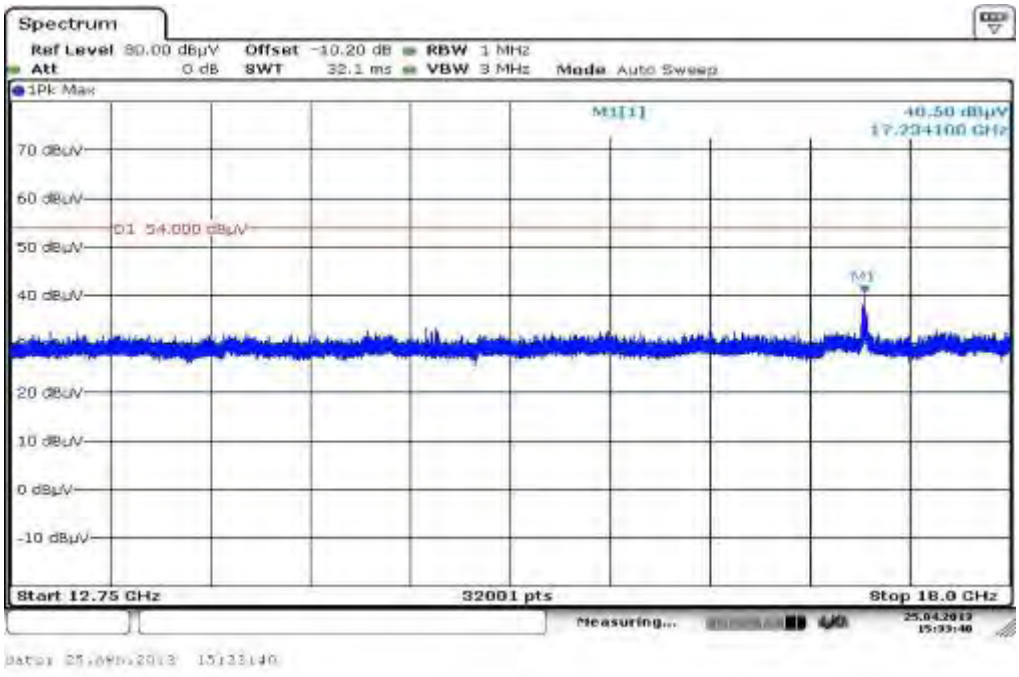
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
53.618400	18.2	1000.0	120.000	111.0	V	180.0	13.0	11.8	30.0	
148.053450	20.9	1000.0	120.000	98.0	V	92.0	8.9	12.6	33.5	
225.087150	17.8	1000.0	120.000	120.0	V	270.0	12.6	18.2	36.0	
544.041600	19.5	1000.0	120.000	143.0	V	171.0	19.3	16.5	36.0	
728.557200	20.0	1000.0	120.000	120.0	H	280.0	23.2	16.0	36.0	
927.418200	24.5	1000.0	120.000	170.0	V	81.0	25.3	11.5	36.0	

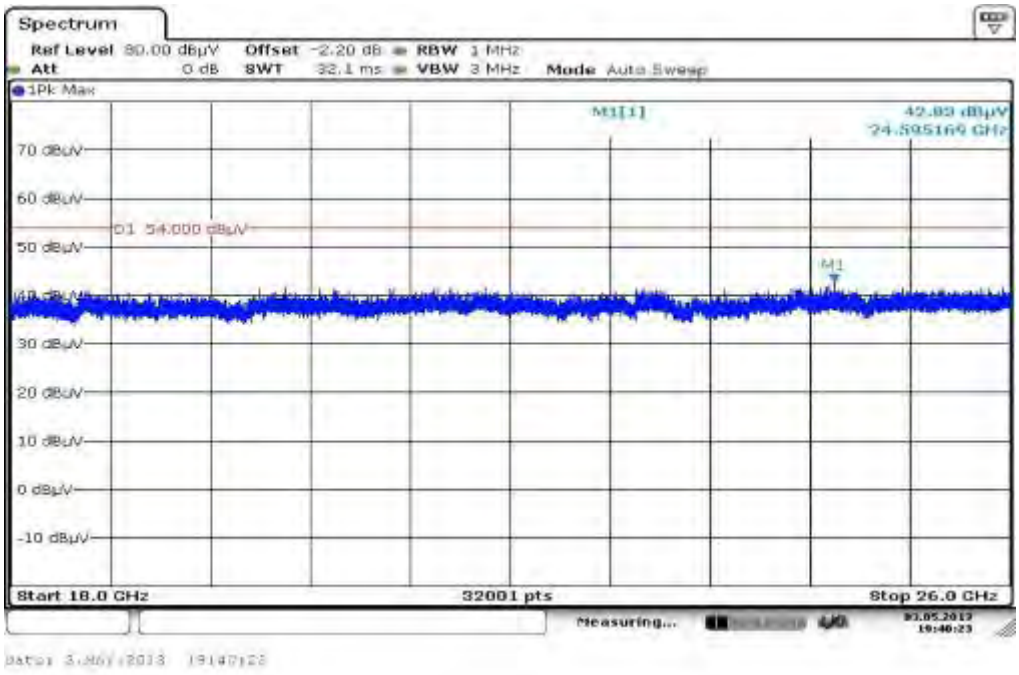
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



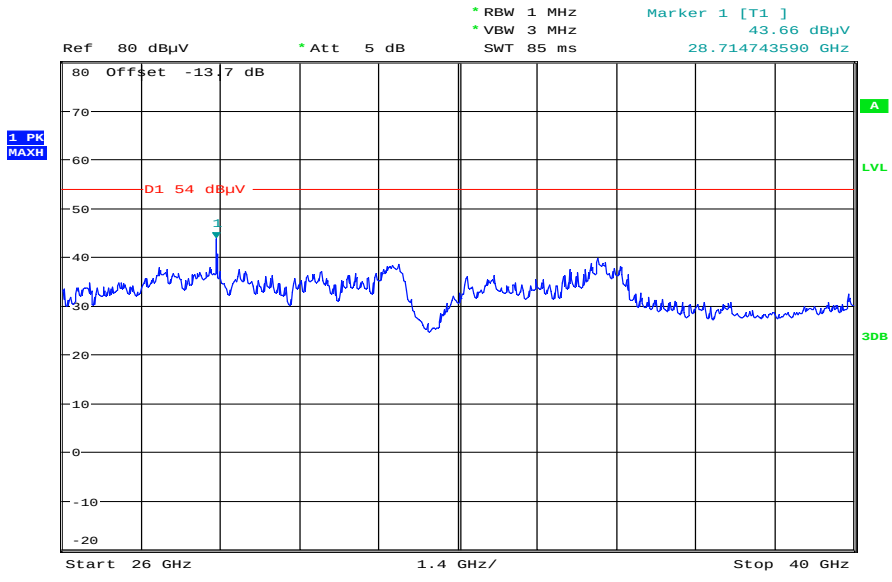
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



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

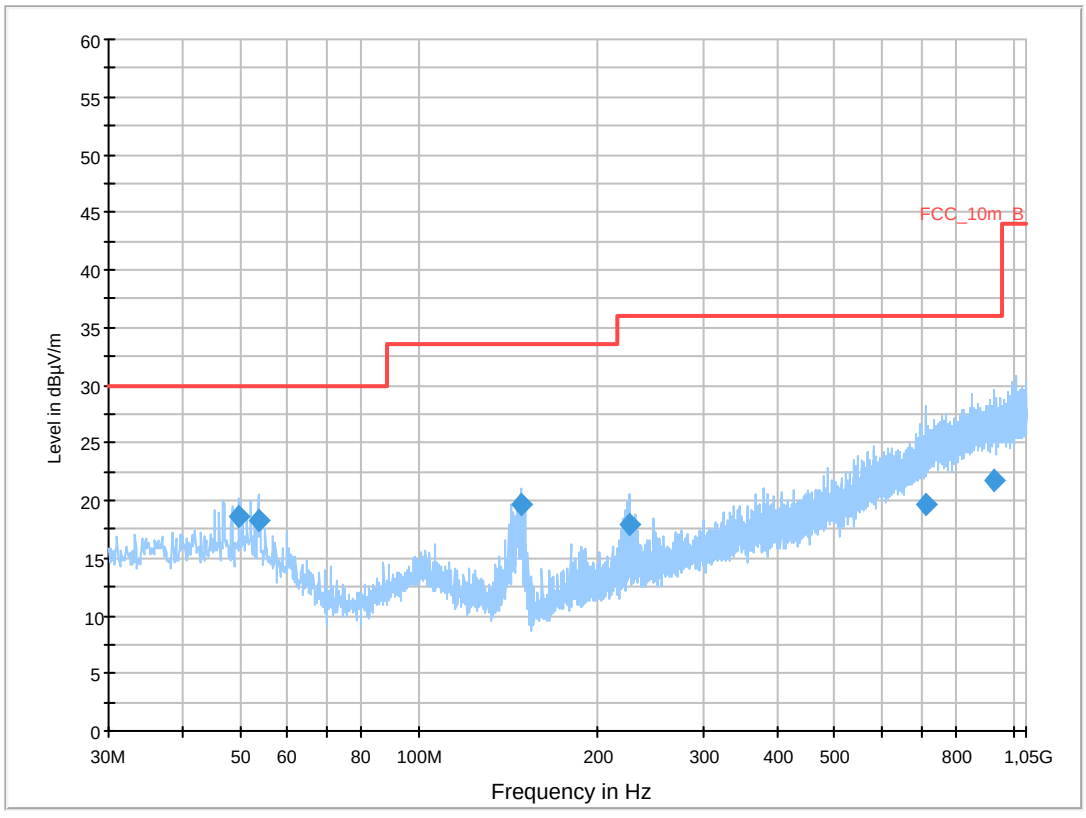
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode HT20 ch157
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

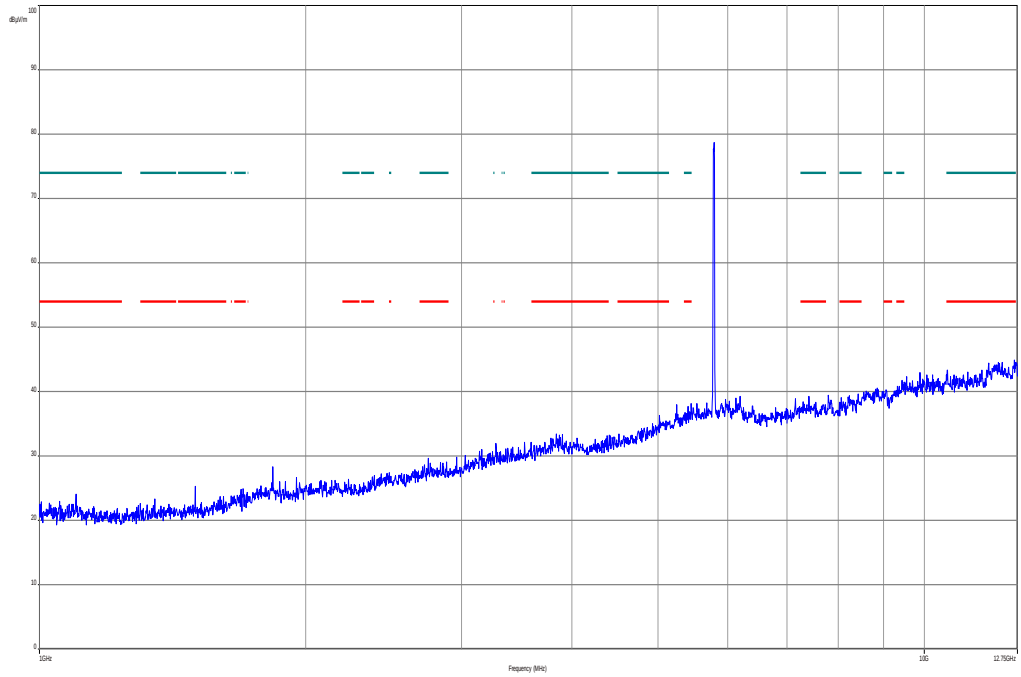
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



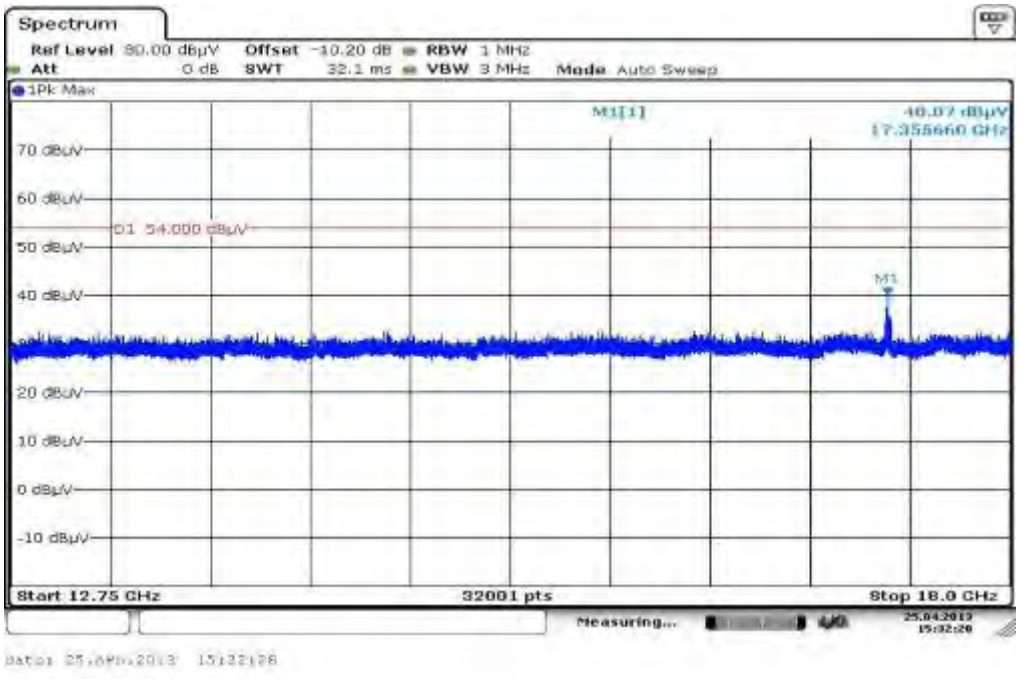
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
49.834050	18.5	1000.0	120.000	98.0	V	261.0	13.4	11.5	30.0	
53.621100	18.2	1000.0	120.000	170.0	V	100.0	13.0	11.8	30.0	
148.012650	19.7	1000.0	120.000	98.0	V	183.0	8.9	13.8	33.5	
225.018150	17.9	1000.0	120.000	98.0	V	85.0	12.6	18.1	36.0	
713.346900	19.6	1000.0	120.000	121.0	V	94.0	22.8	16.4	36.0	
928.967550	21.8	1000.0	120.000	98.0	H	177.0	25.3	14.2	36.0	

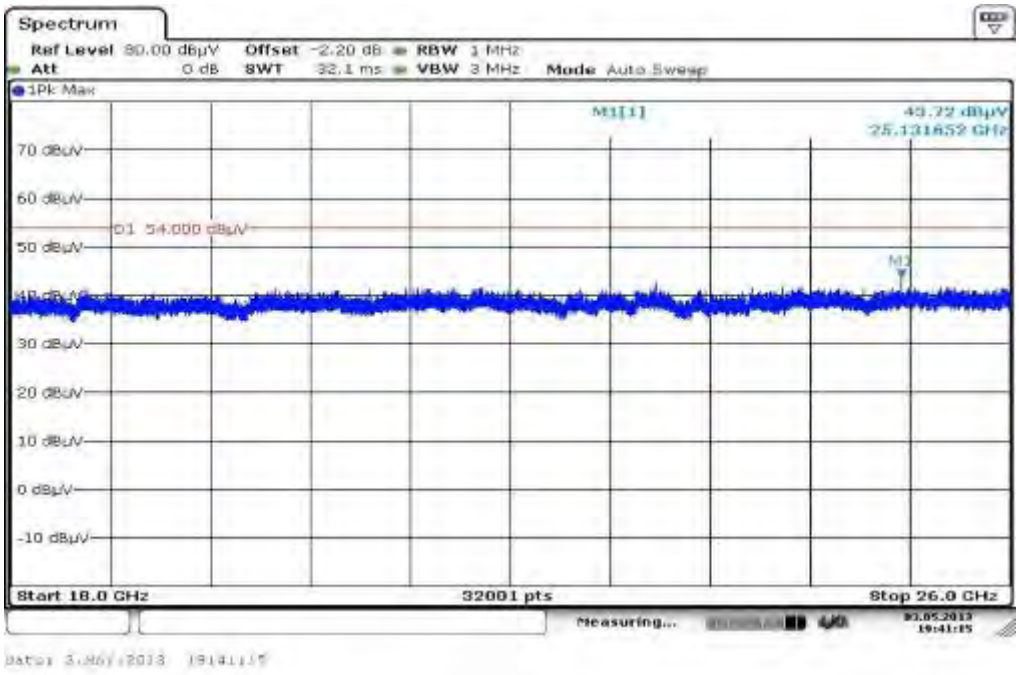
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



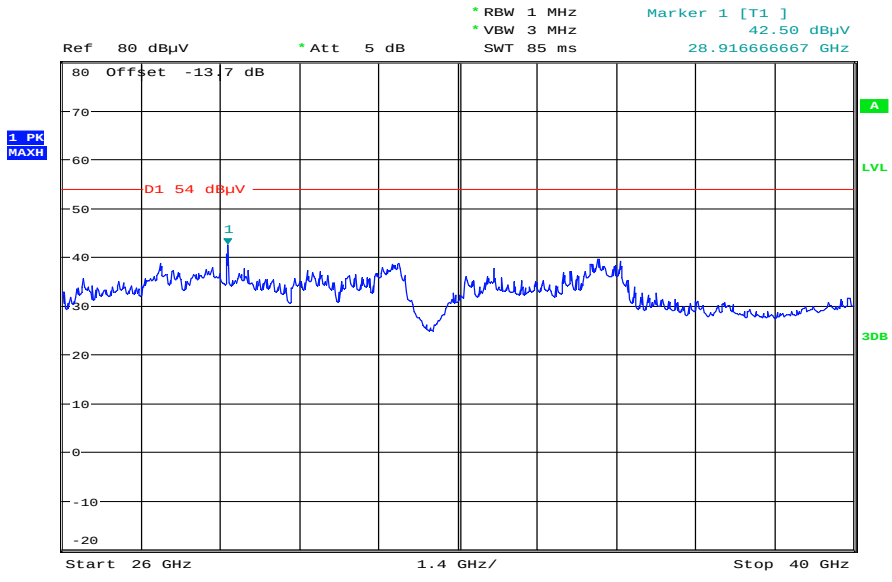
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:23:28

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

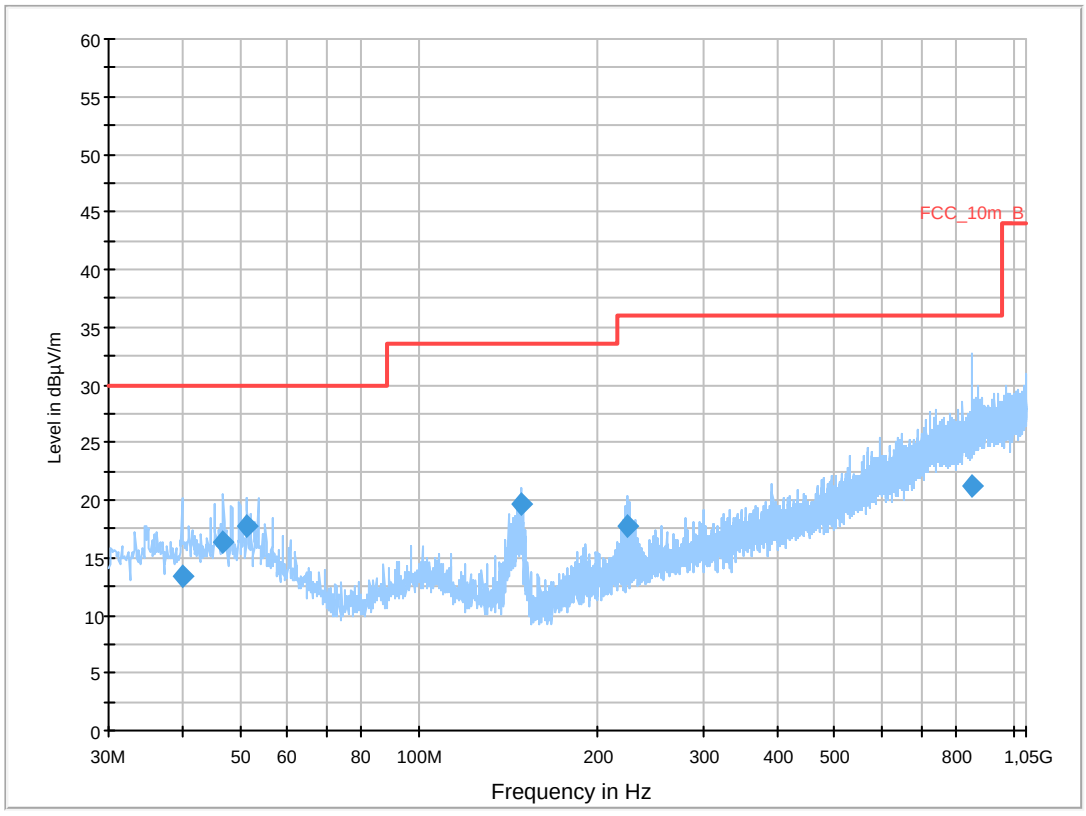
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode HT20 ch165
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

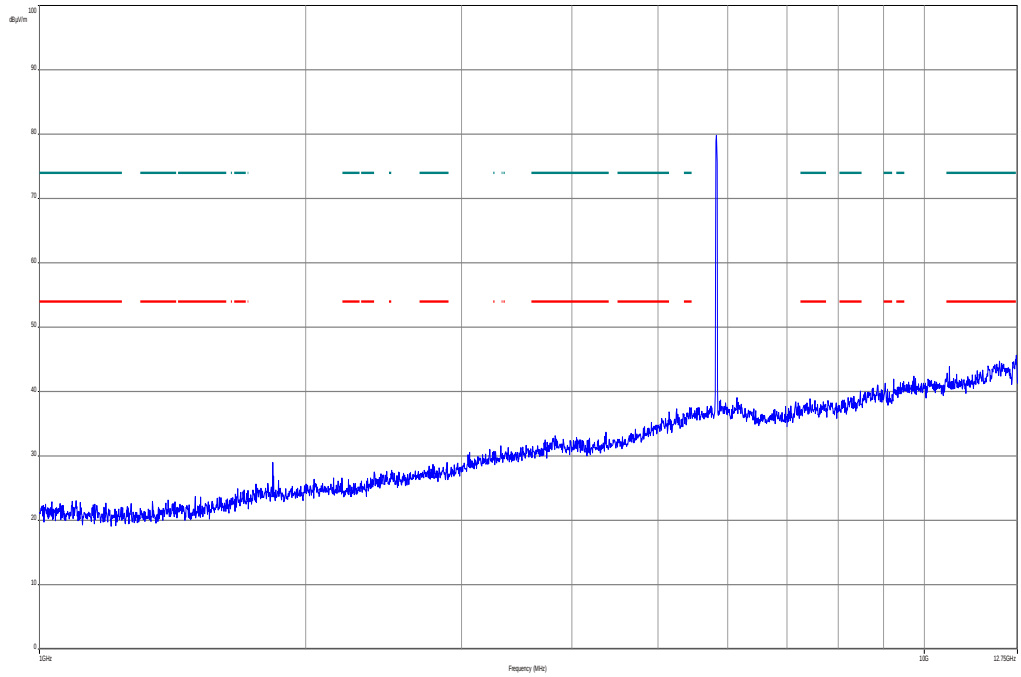
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



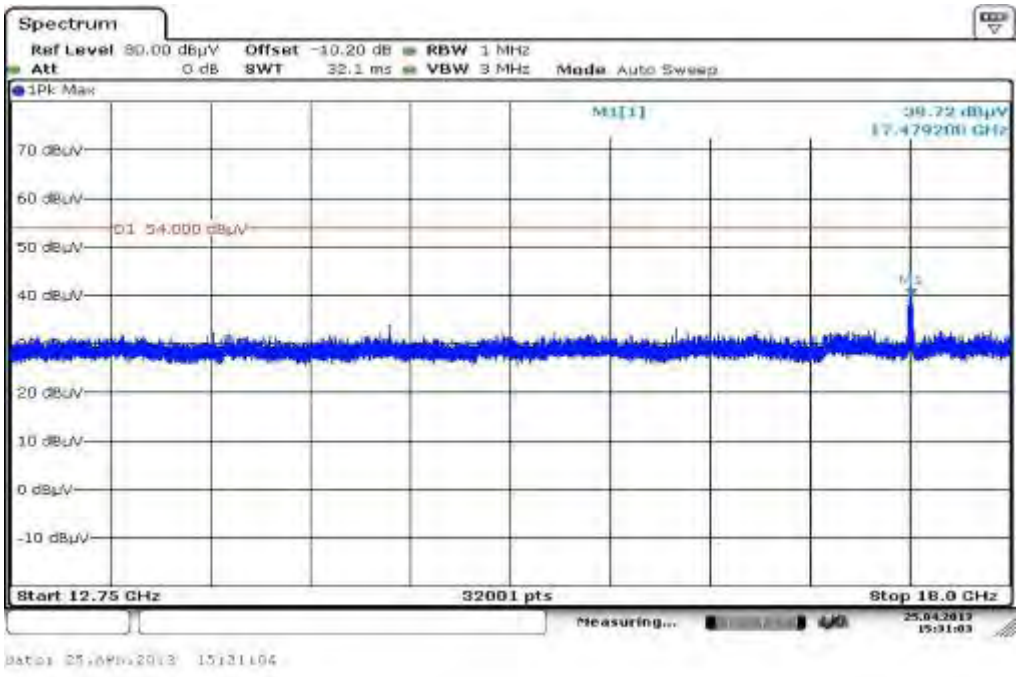
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
39.995850	13.4	1000.0	120.000	111.0	V	272.0	13.4	16.6	30.0	
46.855950	16.4	1000.0	120.000	105.0	V	260.0	13.3	13.6	30.0	
51.336600	17.7	1000.0	120.000	98.0	V	190.0	13.2	12.3	30.0	
148.017900	19.7	1000.0	120.000	132.0	V	92.0	8.9	13.8	33.5	
223.494750	17.7	1000.0	120.000	111.0	V	80.0	12.5	18.3	36.0	
849.413400	21.3	1000.0	120.000	170.0	V	100.0	24.5	14.7	36.0	

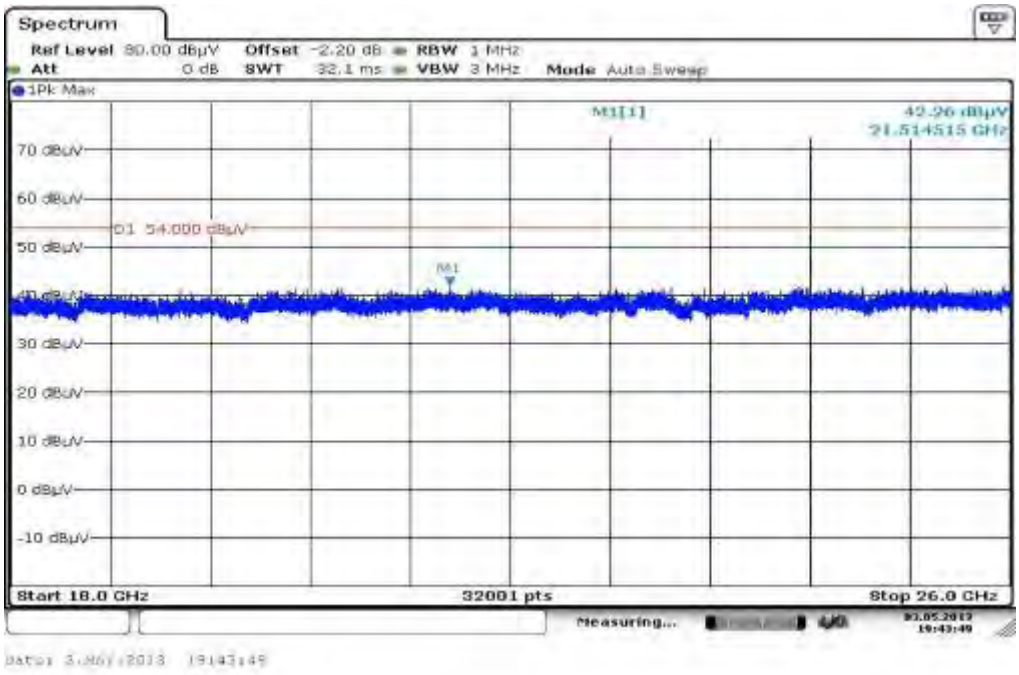
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



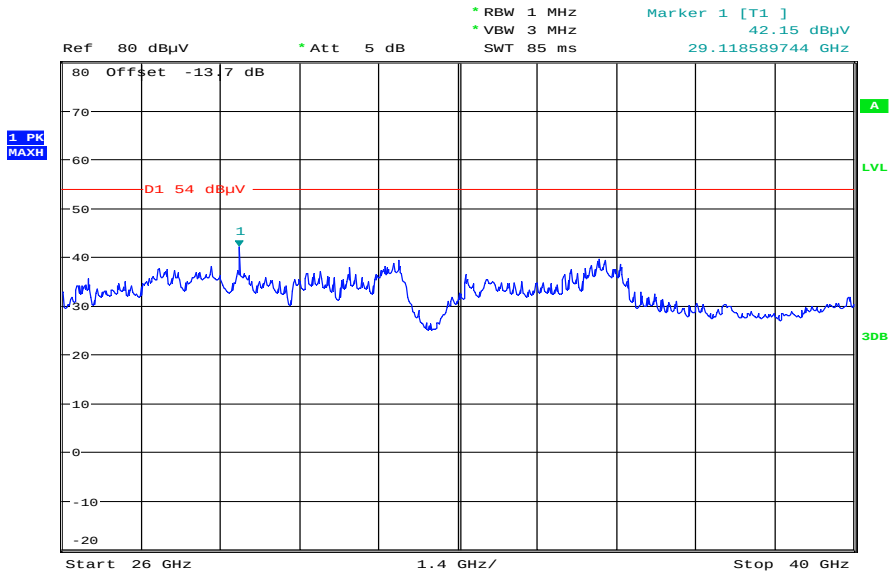
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:24:41

Plots: OFDM / n – mode HT40

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

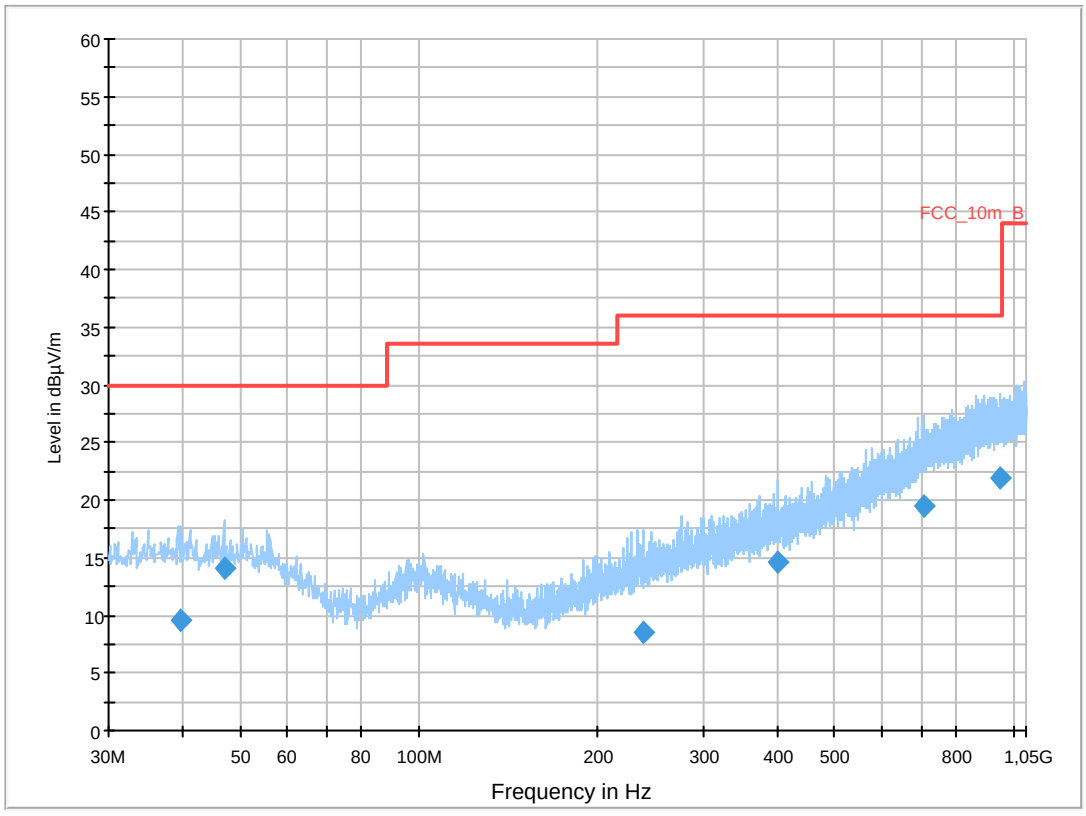
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT 40 tx @5755MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

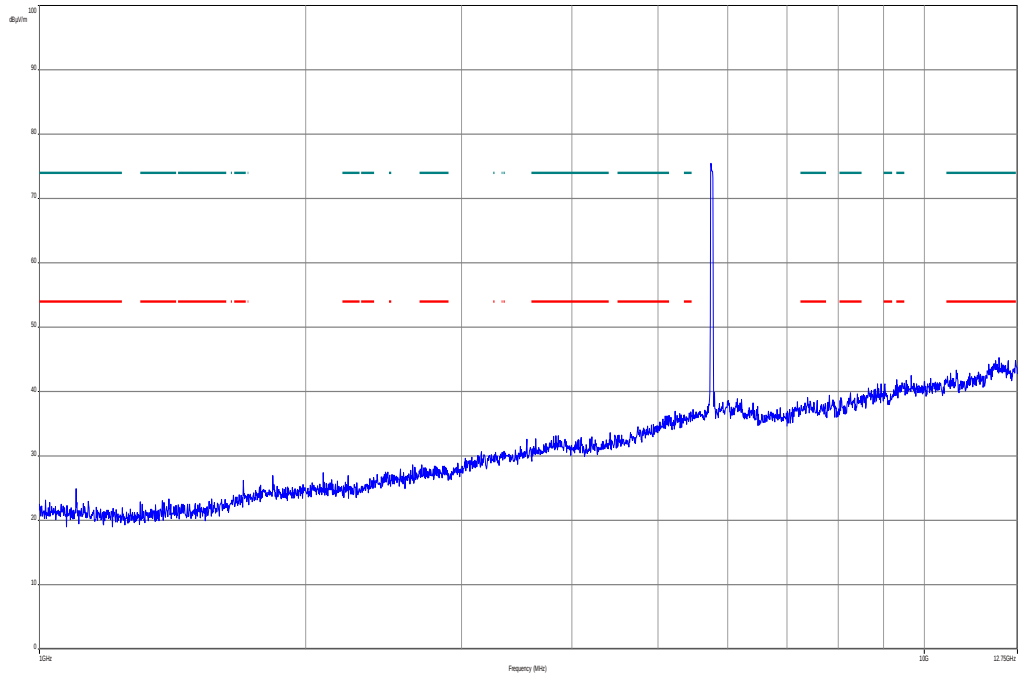
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



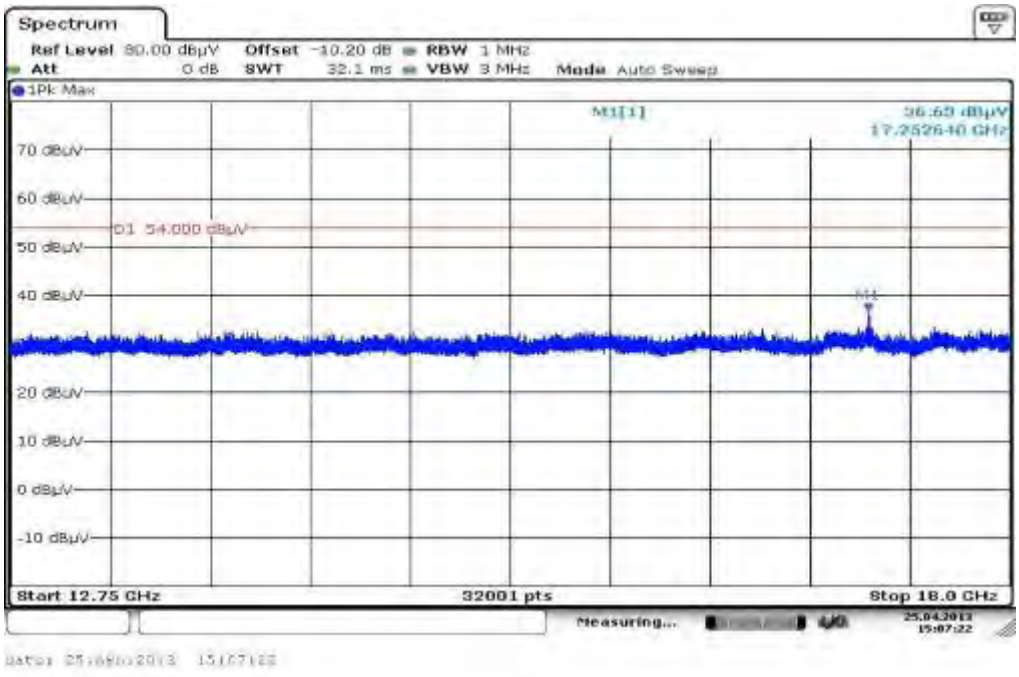
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
39.624600	9.6	1000.0	120.000	170.0	V	280.0	13.4	20.4	30.0	
46.998150	14.0	1000.0	120.000	98.0	V	280.0	13.3	16.0	30.0	
239.121750	8.5	1000.0	120.000	132.0	V	10.0	13.0	27.5	36.0	
399.990150	14.6	1000.0	120.000	170.0	V	171.0	16.9	21.4	36.0	
708.172350	19.5	1000.0	120.000	170.0	V	280.0	22.7	16.5	36.0	
951.505050	21.9	1000.0	120.000	161.0	V	171.0	25.4	14.1	36.0	

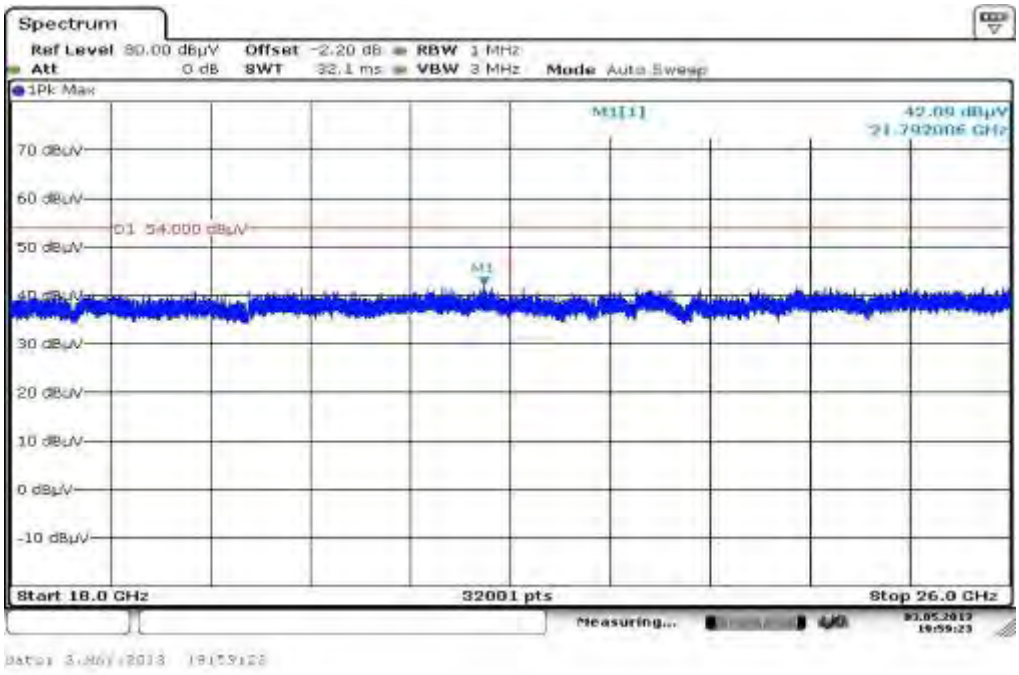
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



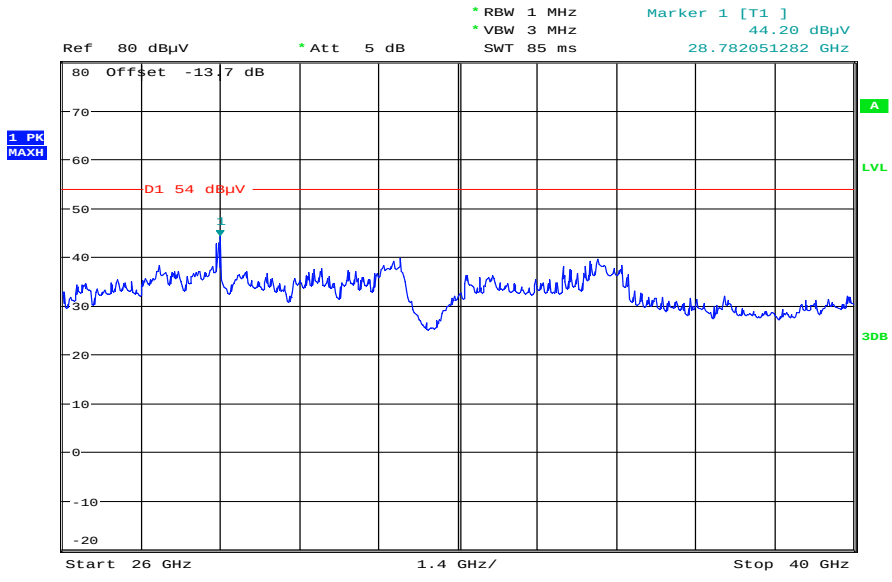
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 10:33:57

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

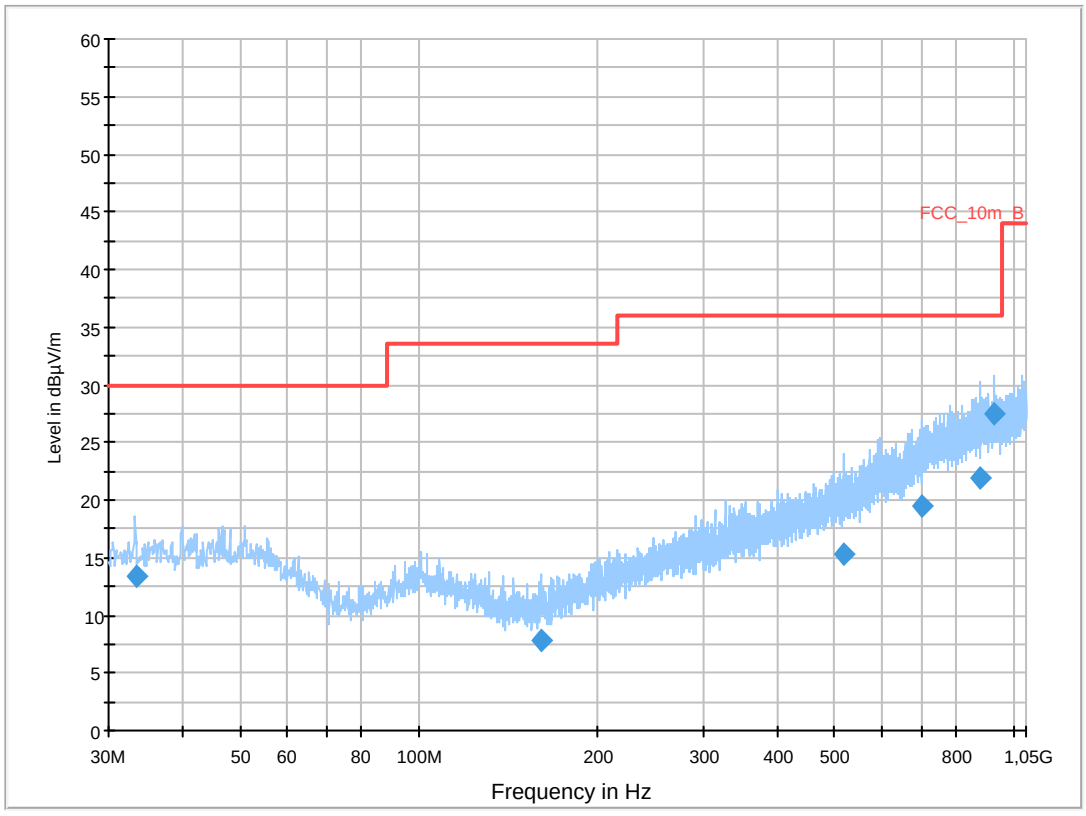
Common Information

EUT:	WLANBV2-A + antenna M3002-66494
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT 40 tx @5795MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

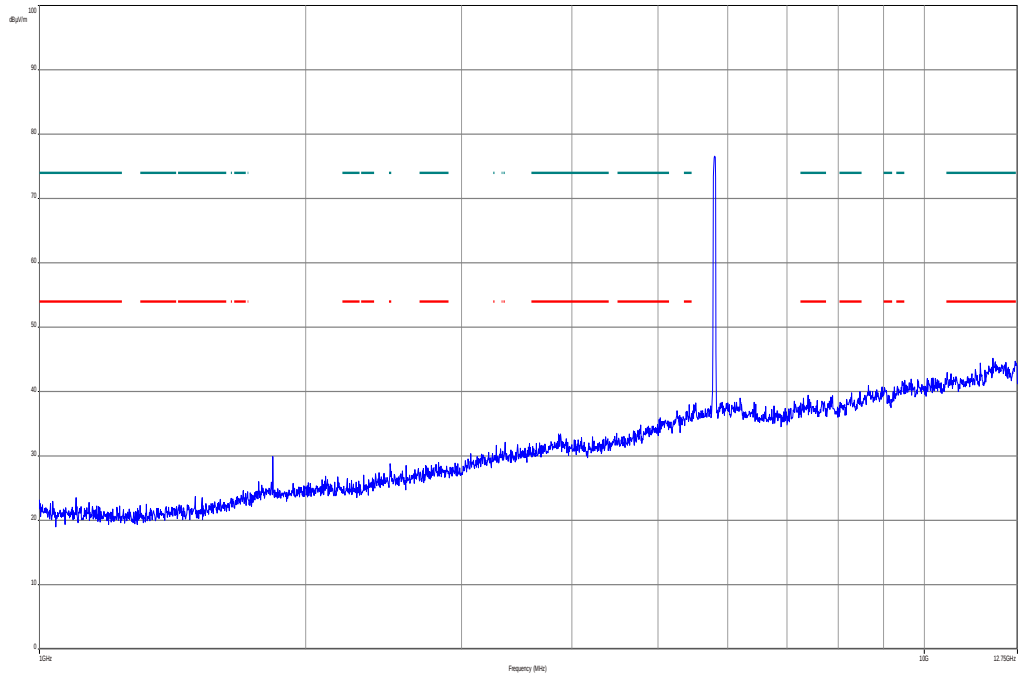
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



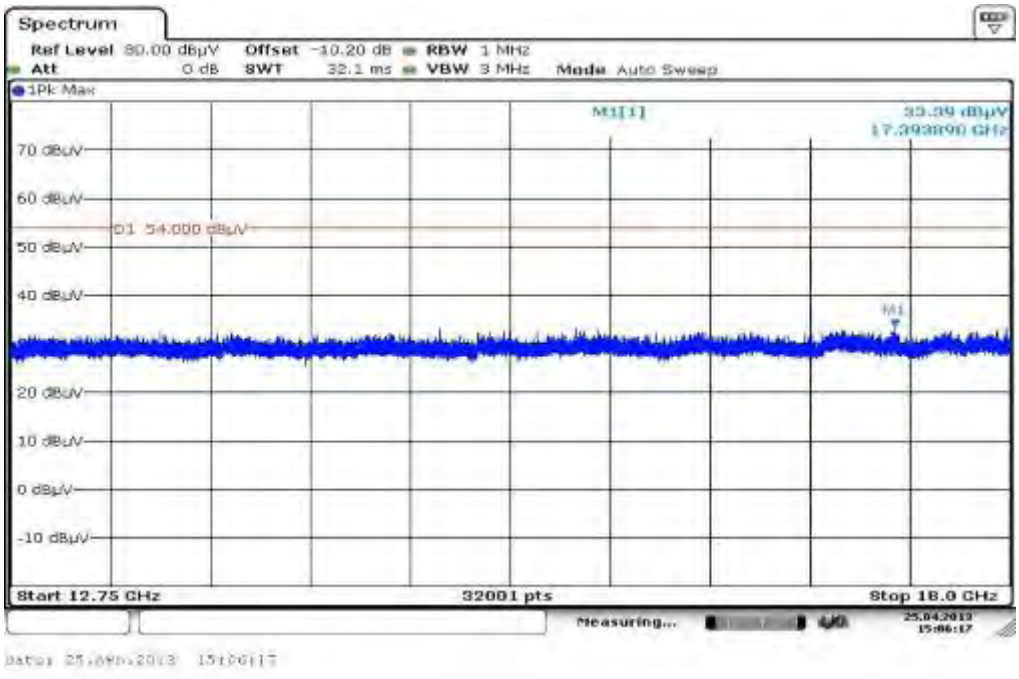
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
33.350850	13.3	1000.0	120.000	98.0	V	280.0	12.9	16.7	30.0	
160.018050	7.8	1000.0	120.000	134.0	V	190.0	9.2	25.7	33.5	
517.063500	15.2	1000.0	120.000	170.0	H	100.0	18.9	20.8	36.0	
699.070800	19.5	1000.0	120.000	154.0	H	-10.0	22.5	16.5	36.0	
876.474600	21.9	1000.0	120.000	170.0	H	183.0	24.9	14.1	36.0	
927.457350	27.5	1000.0	120.000	170.0	V	260.0	25.3	8.5	36.0	

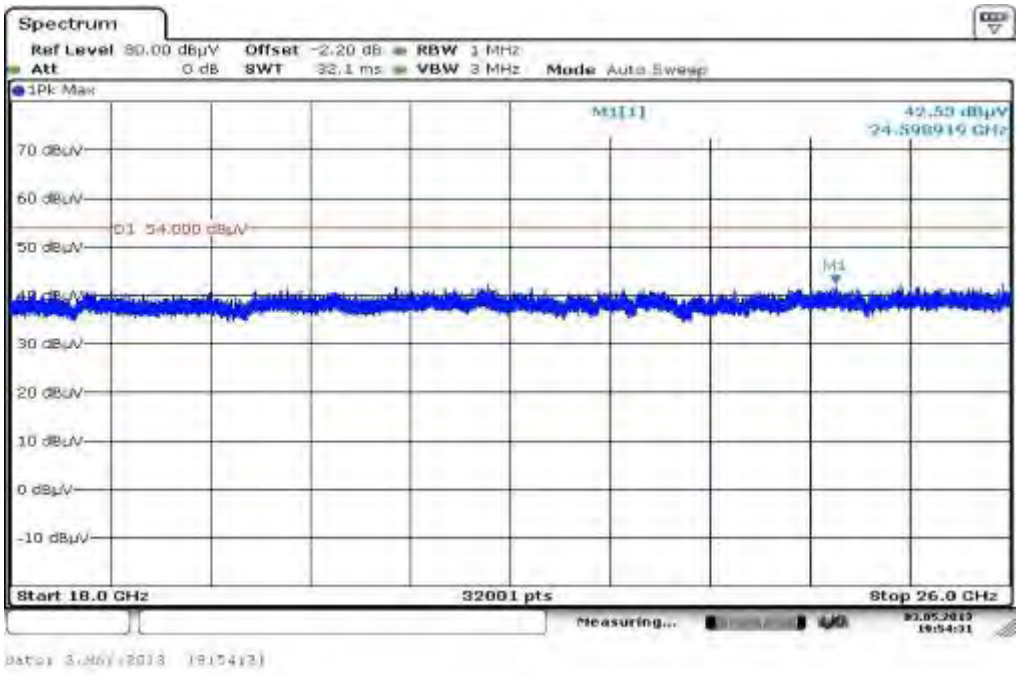
Plot 7: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



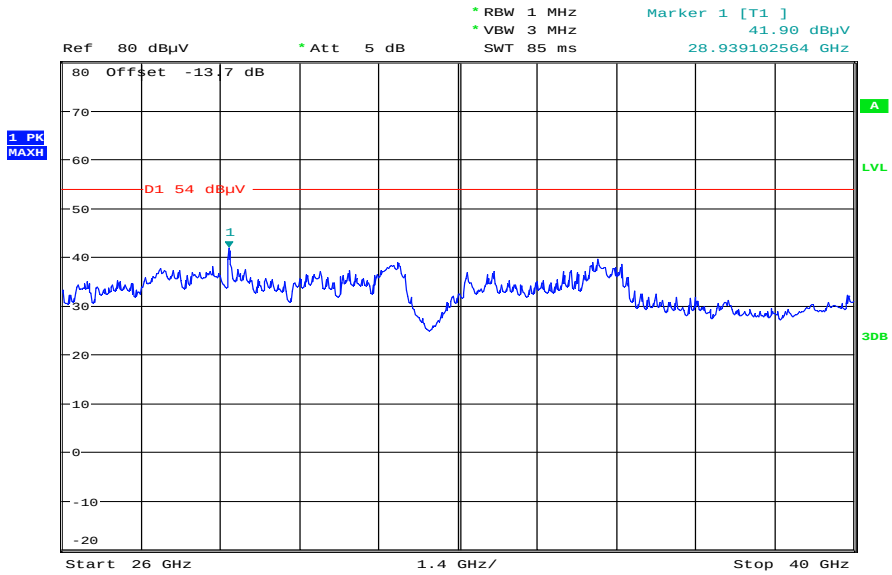
Plot 8: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:35:11

Antenna 453564175981:

Results: OFDM / a – mode

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / a – mode								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT20

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT20								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT40

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT40								
5755 MHz			5795 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.			-/-		
Measurement uncertainty			± 3 dB					

Result: Passed

Note: Results of OFDM n – mode are added to show the compliance with the standard.

Plots: OFDM / a – mode

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

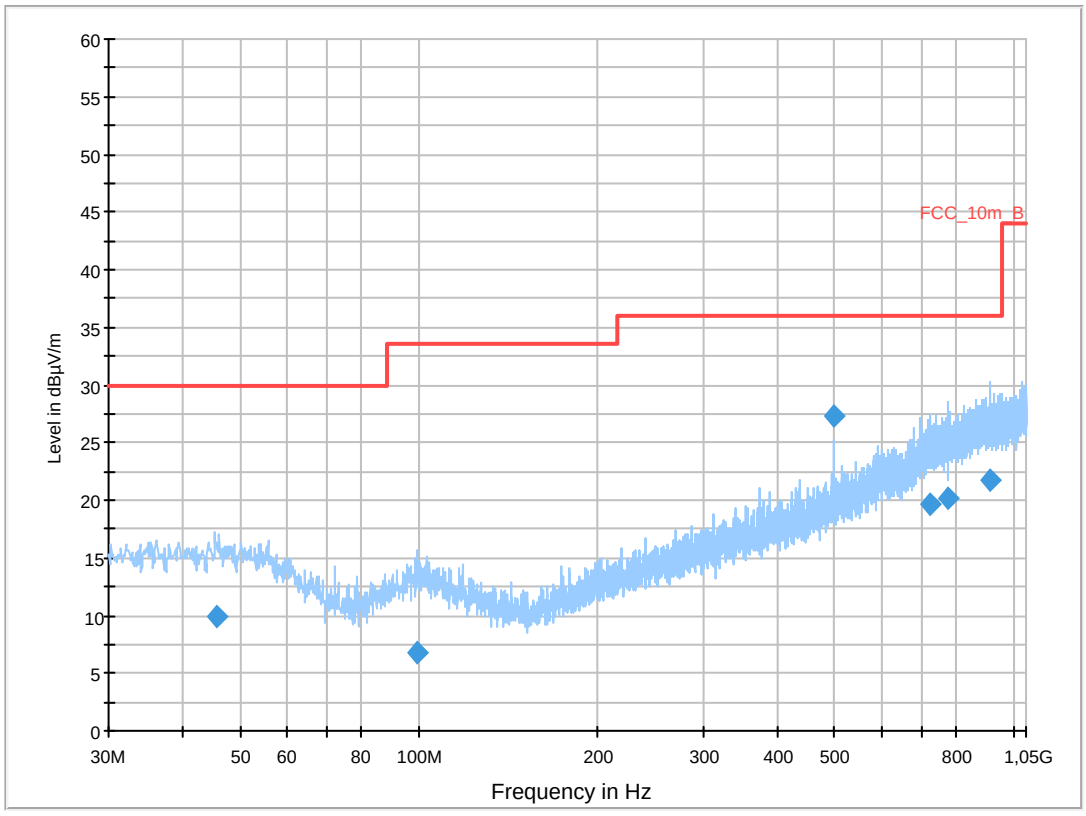
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5745 MHz
Operator Name:	Hennemann
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

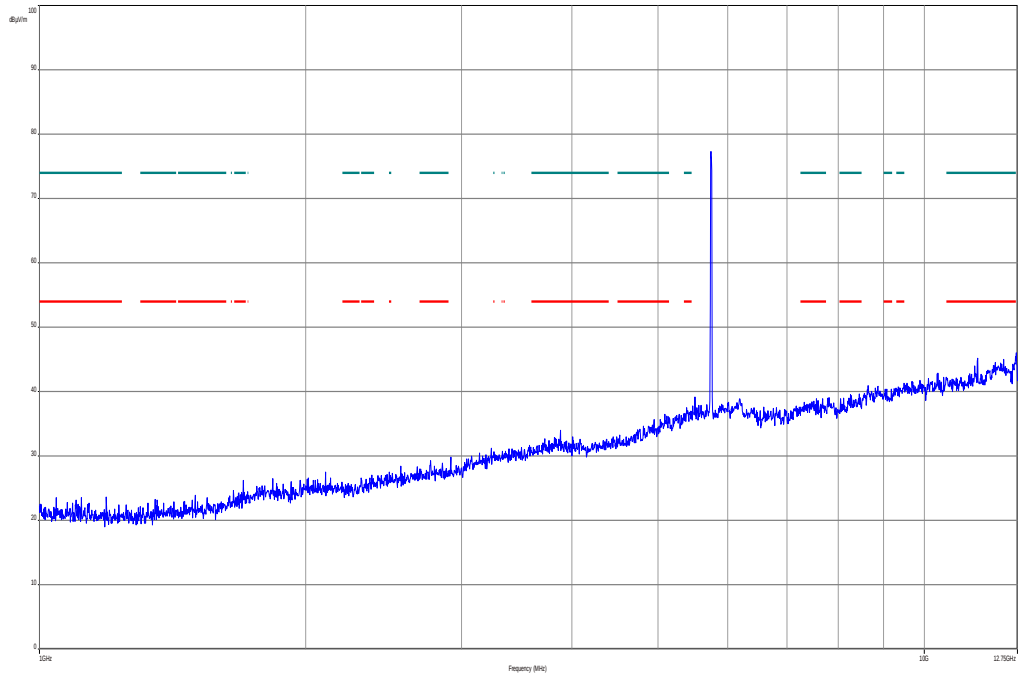
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



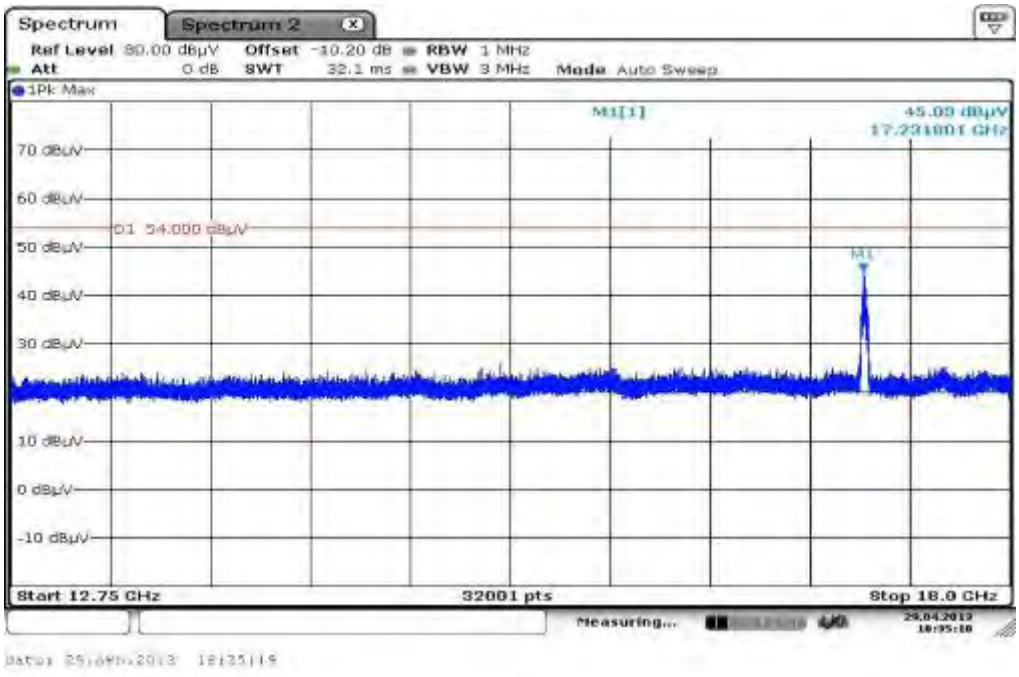
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
45.617850	9.9	1000.0	120.000	98.0	V	-3.0	13.3	20.1	30.0	
99.370650	6.9	1000.0	120.000	143.0	V	190.0	11.8	26.6	33.5	
500.002050	27.2	1000.0	120.000	161.0	H	170.0	18.7	8.8	36.0	
725.950500	19.6	1000.0	120.000	110.0	H	182.0	23.1	16.4	36.0	
772.723650	20.2	1000.0	120.000	170.0	V	182.0	23.7	15.8	36.0	
909.808650	21.7	1000.0	120.000	152.0	V	100.0	25.2	14.3	36.0	

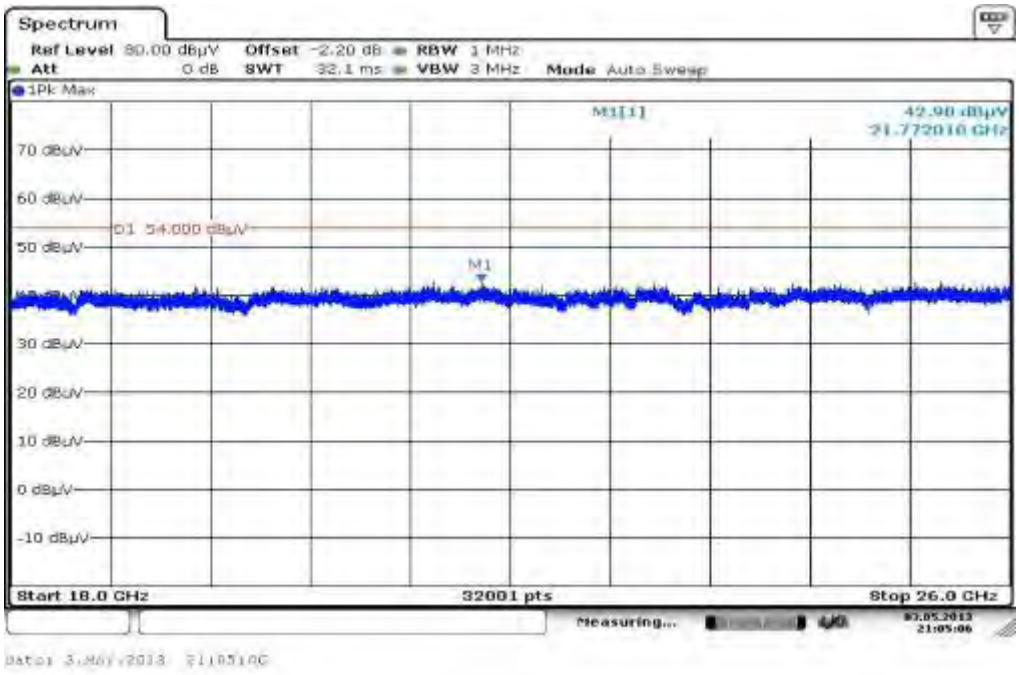
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



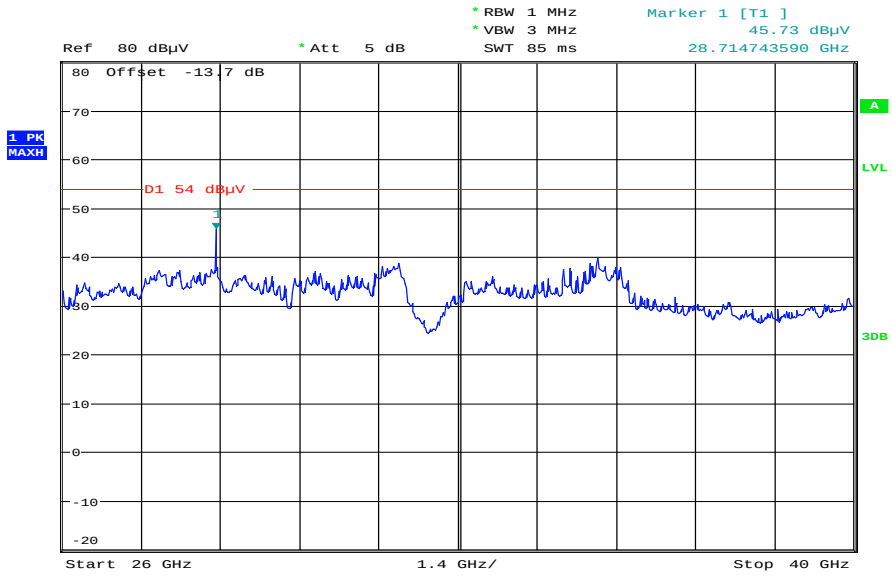
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 11:50:52

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

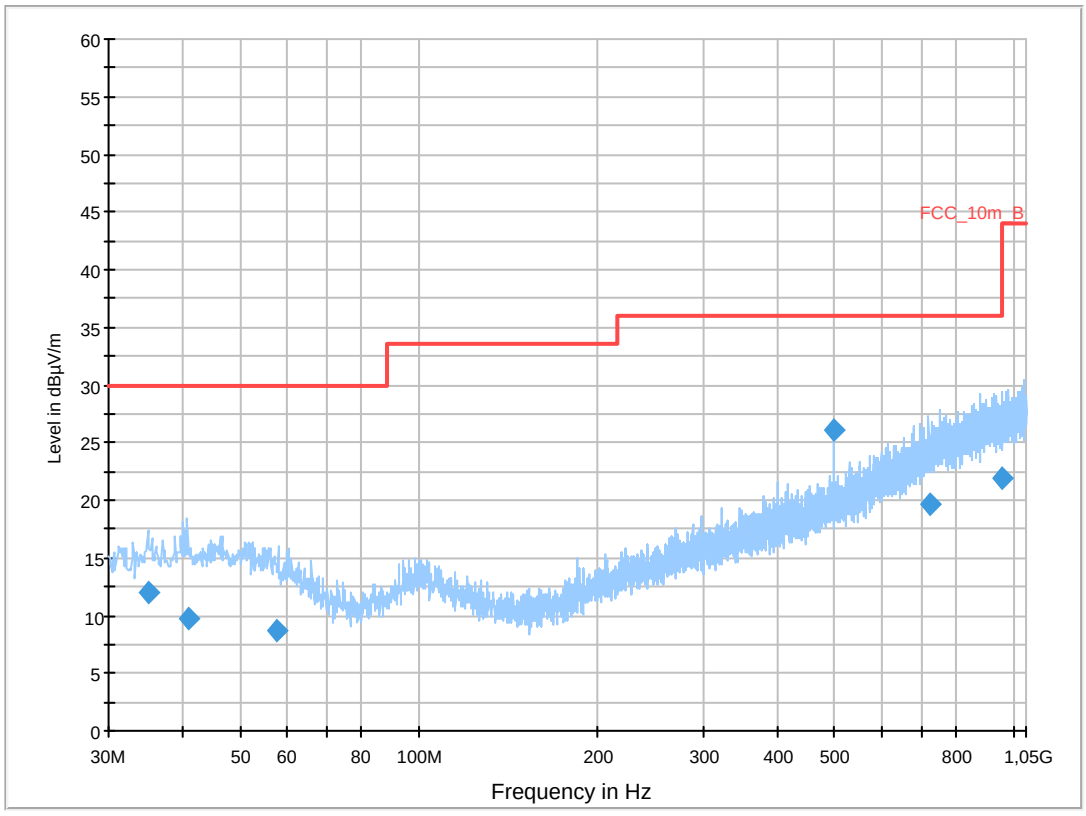
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5785 MHz
Operator Name:	Hennemann
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

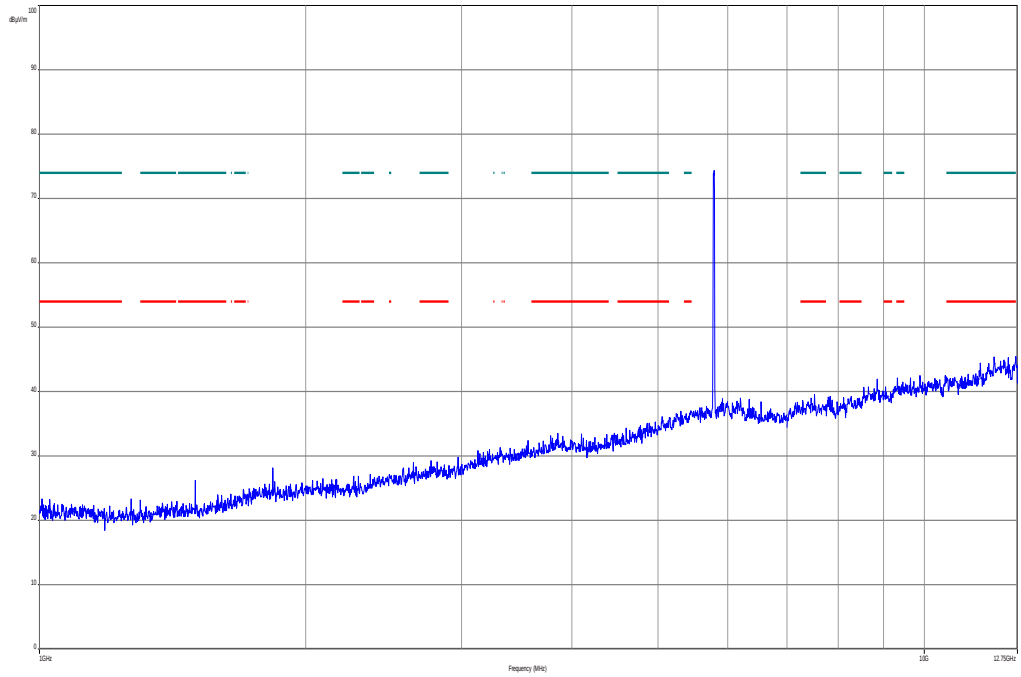
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



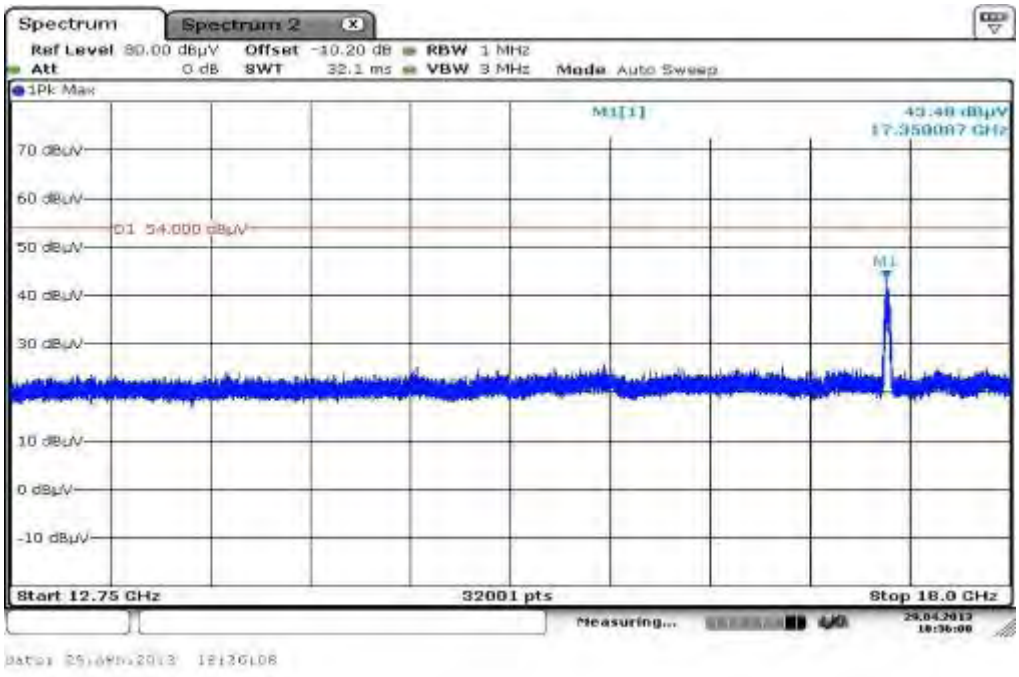
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.041500	12.0	1000.0	120.000	170.0	V	171.0	13.0	18.0	30.0	
41.069850	9.7	1000.0	120.000	170.0	H	2.0	13.4	20.3	30.0	
57.571500	8.6	1000.0	120.000	170.0	V	190.0	12.2	21.4	30.0	
500.020650	26.1	1000.0	120.000	170.0	H	178.0	18.7	9.9	36.0	
720.668550	19.6	1000.0	120.000	170.0	H	10.0	23.0	16.4	36.0	
954.642000	21.9	1000.0	120.000	170.0	V	171.0	25.4	14.1	36.0	

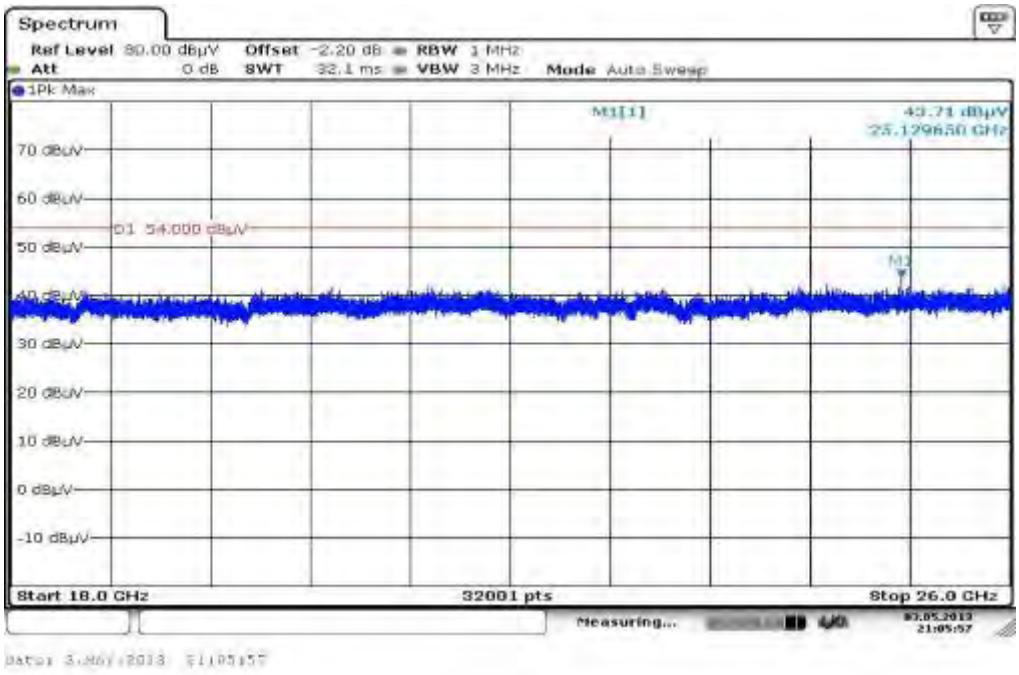
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



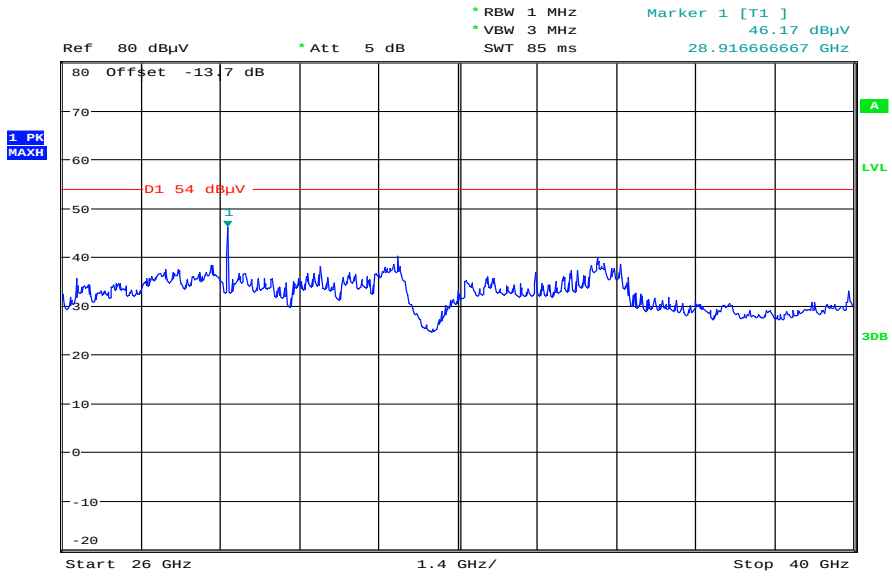
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 11:51:53

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

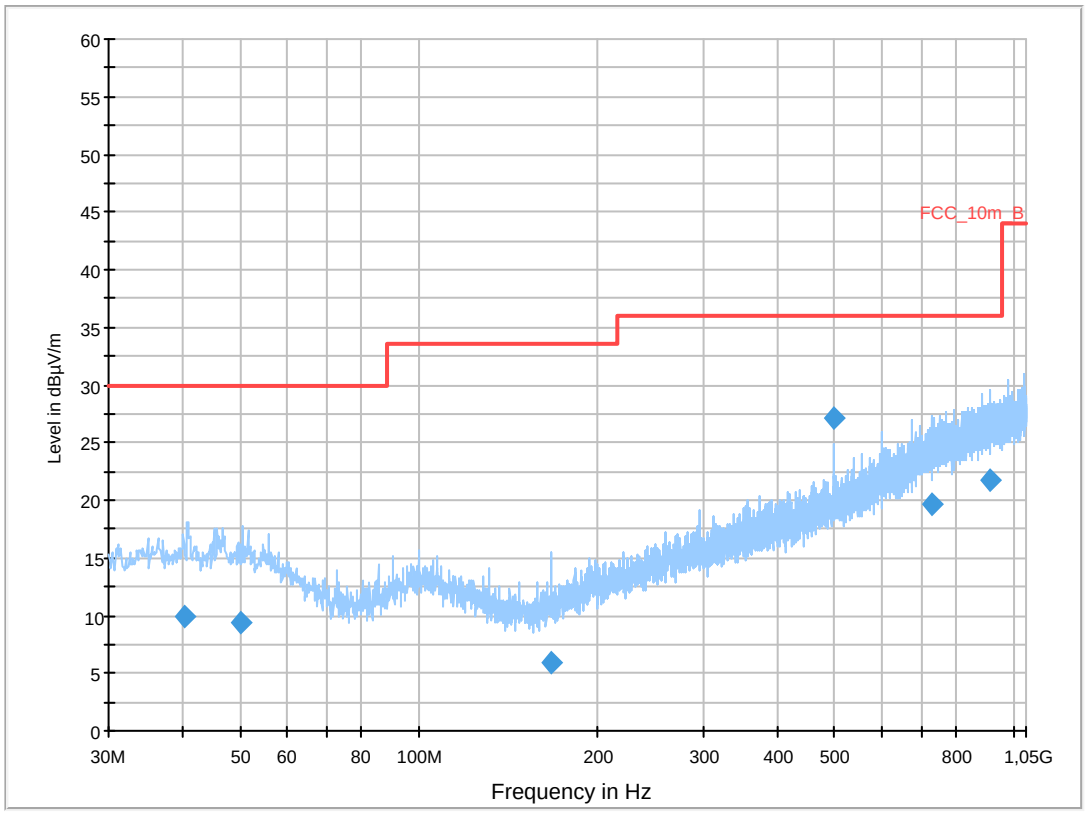
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5825 MHz
Operator Name:	Hennemann
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

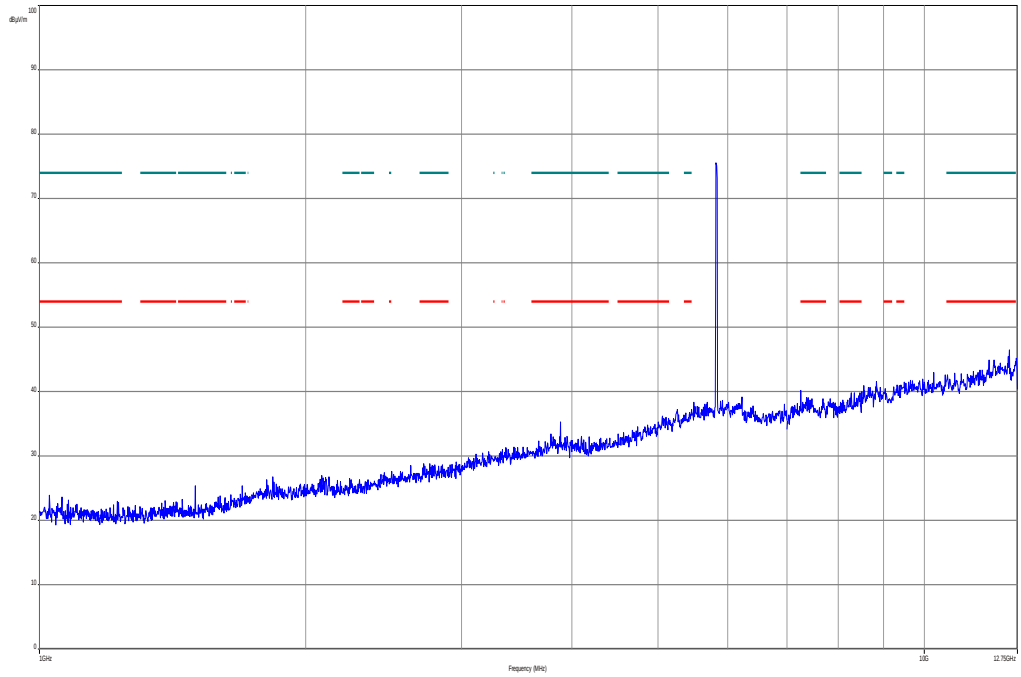
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



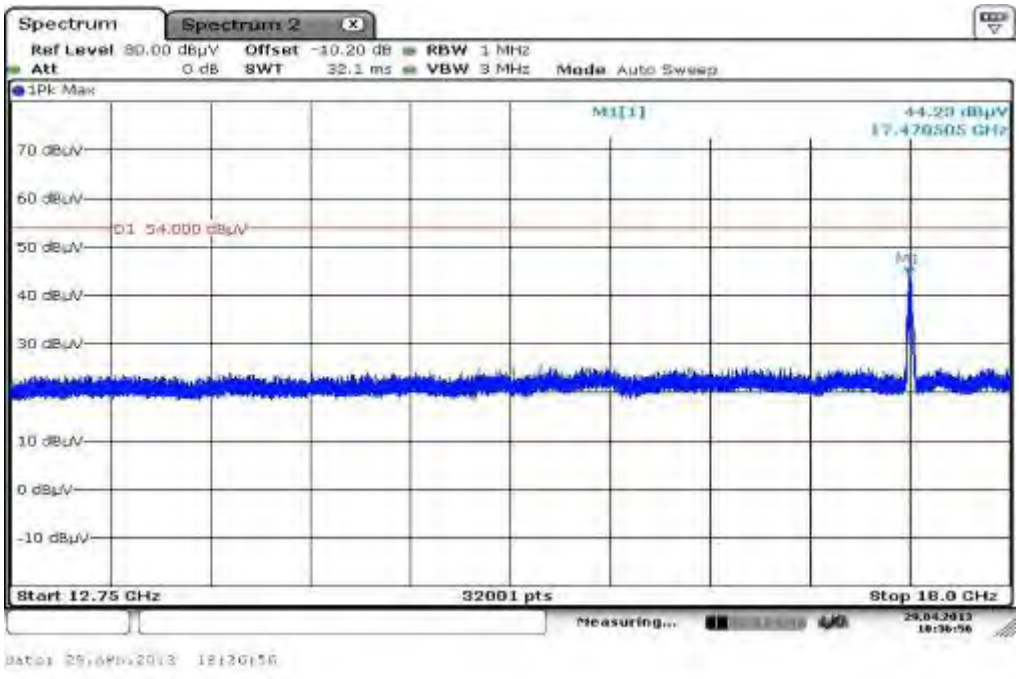
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
40.308450	9.9	1000.0	120.000	111.0	H	280.0	13.4	20.1	30.0	
49.999200	9.4	1000.0	120.000	98.0	H	2.0	13.4	20.6	30.0	
166.818900	5.9	1000.0	120.000	133.0	V	-10.0	9.6	27.6	33.5	
500.010450	27.1	1000.0	120.000	170.0	H	170.0	18.7	8.9	36.0	
730.673100	19.7	1000.0	120.000	131.0	V	171.0	23.2	16.3	36.0	
910.427850	21.7	1000.0	120.000	170.0	H	171.0	25.2	14.3	36.0	

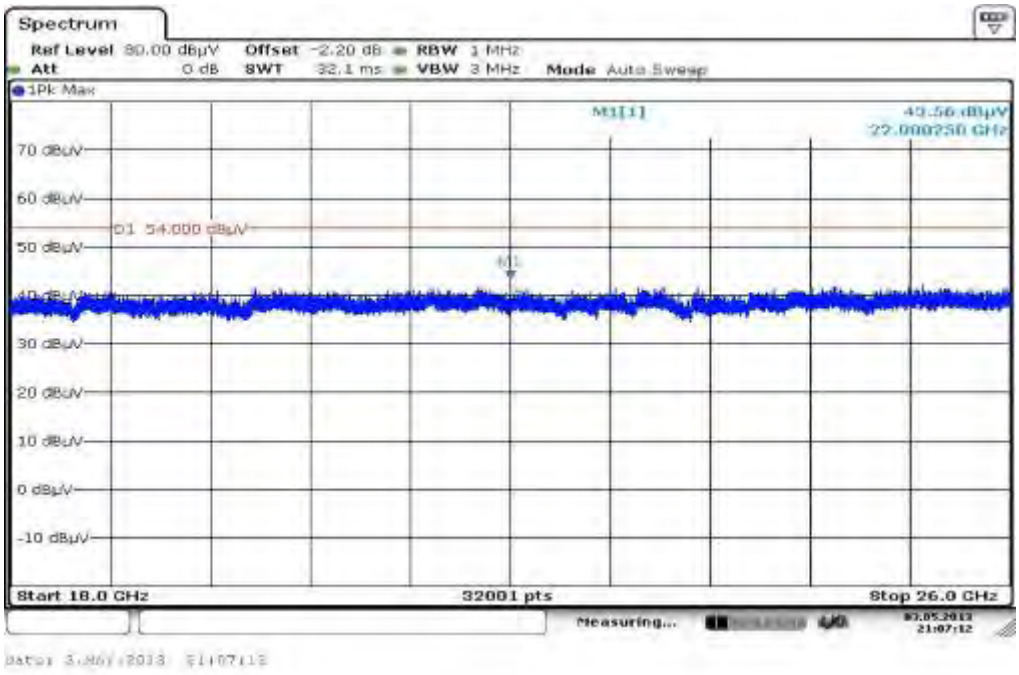
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



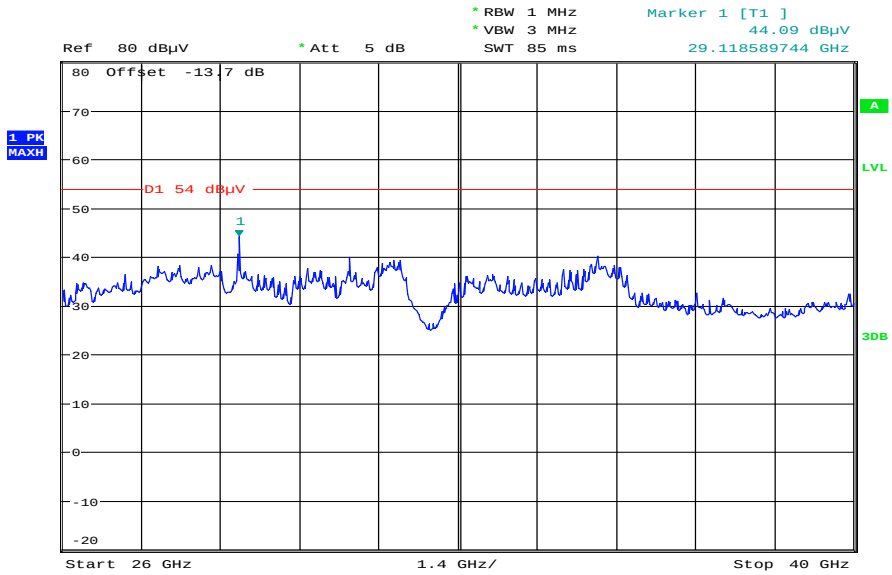
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 11:53:07

Plots: OFDM / n – mode HT20

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

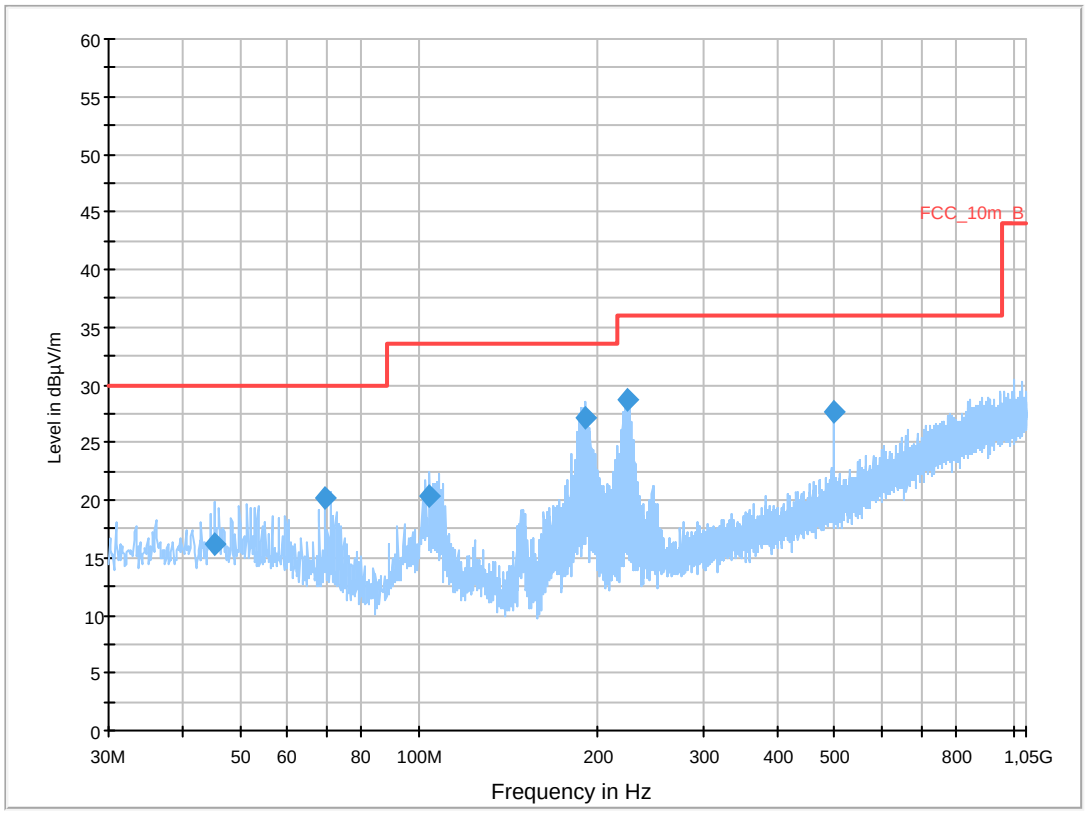
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT20 ch149
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

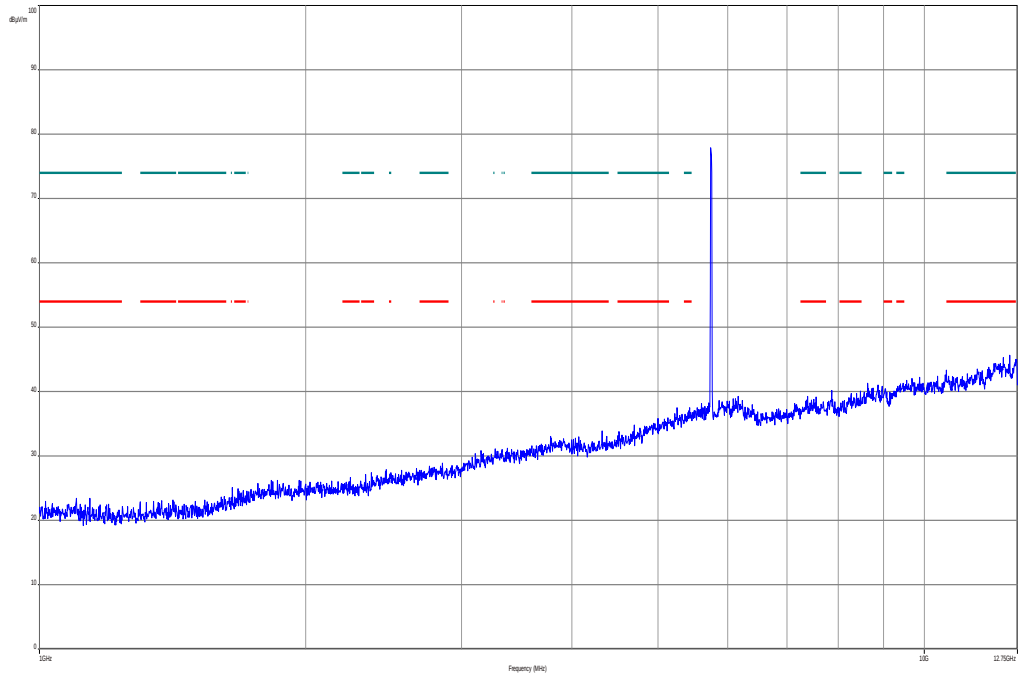
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



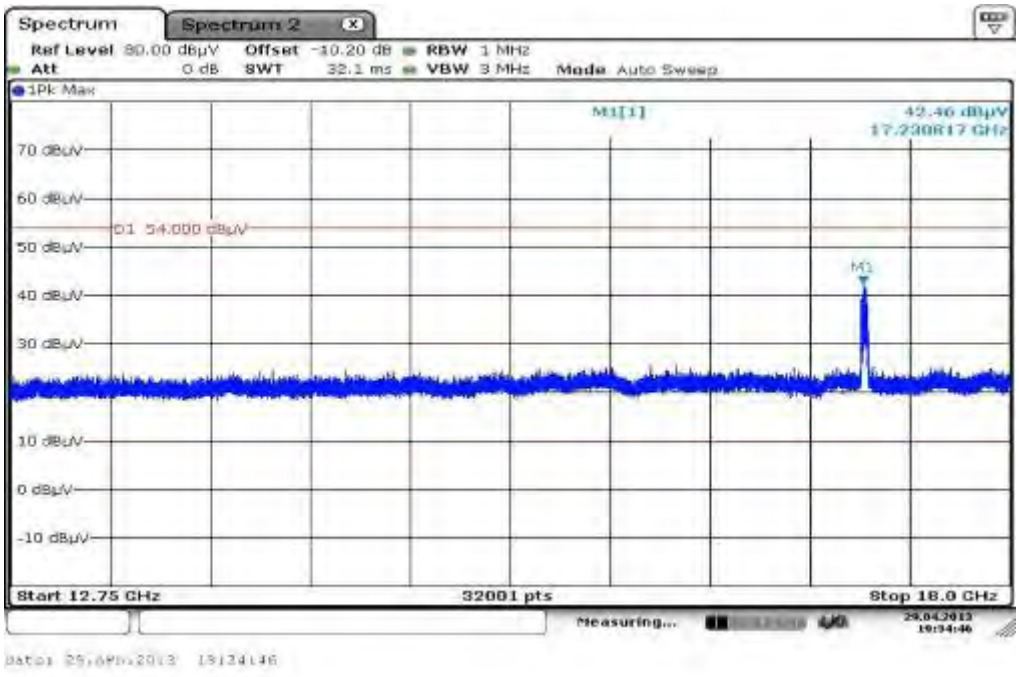
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
45.280200	16.2	1000.0	120.000	98.0	V	10.0	13.3	13.8	30.0	
69.450150	20.1	1000.0	120.000	170.0	V	100.0	9.4	9.9	30.0	
104.163600	20.4	1000.0	120.000	120.0	V	260.0	11.5	13.1	33.5	
191.004900	27.1	1000.0	120.000	104.0	V	265.0	11.1	6.4	33.5	
223.441800	28.7	1000.0	120.000	98.0	V	280.0	12.5	7.3	36.0	
499.996050	27.7	1000.0	120.000	170.0	H	176.0	18.7	8.3	36.0	

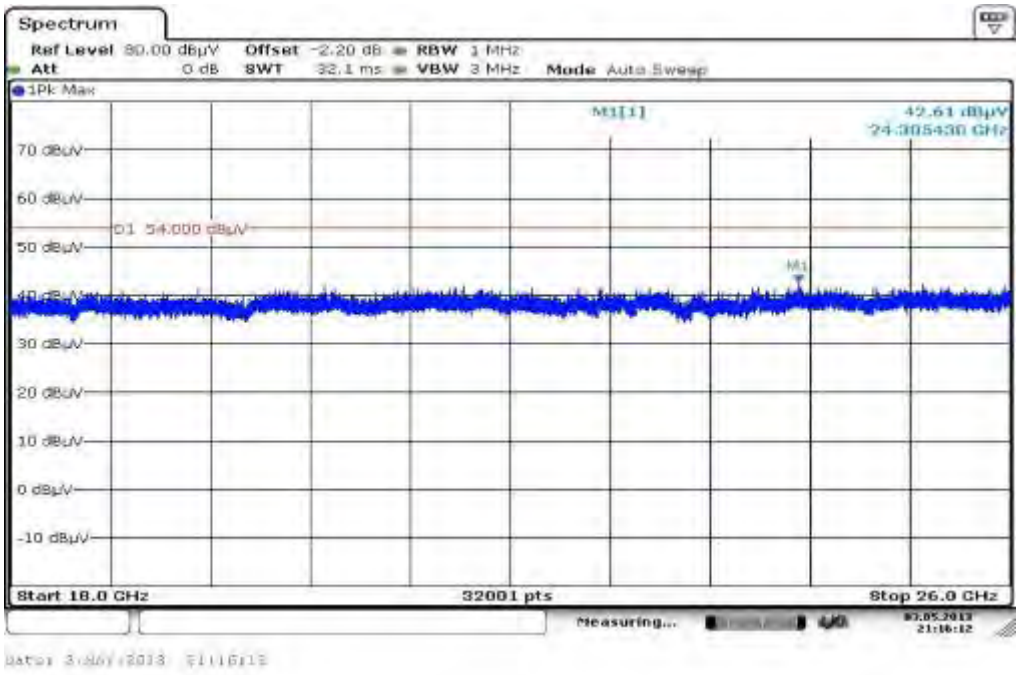
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



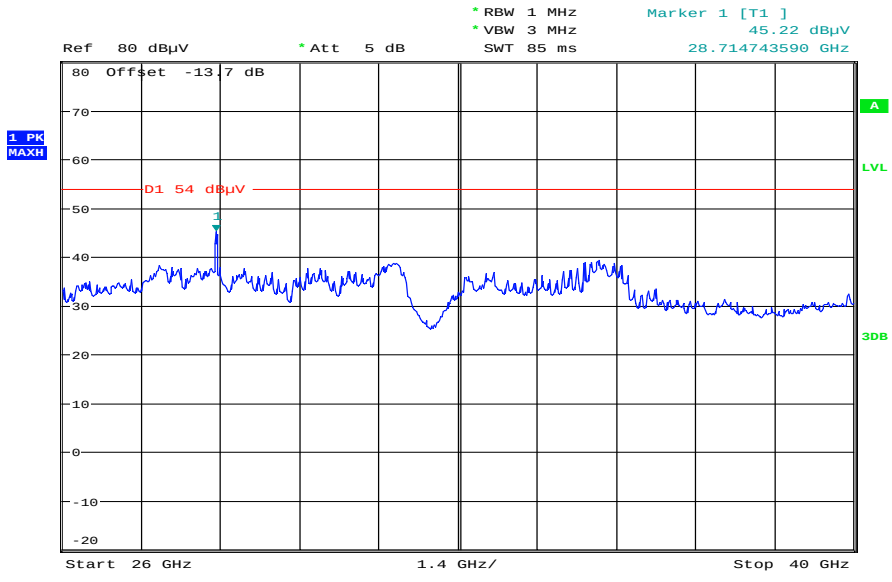
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 13:14:59

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

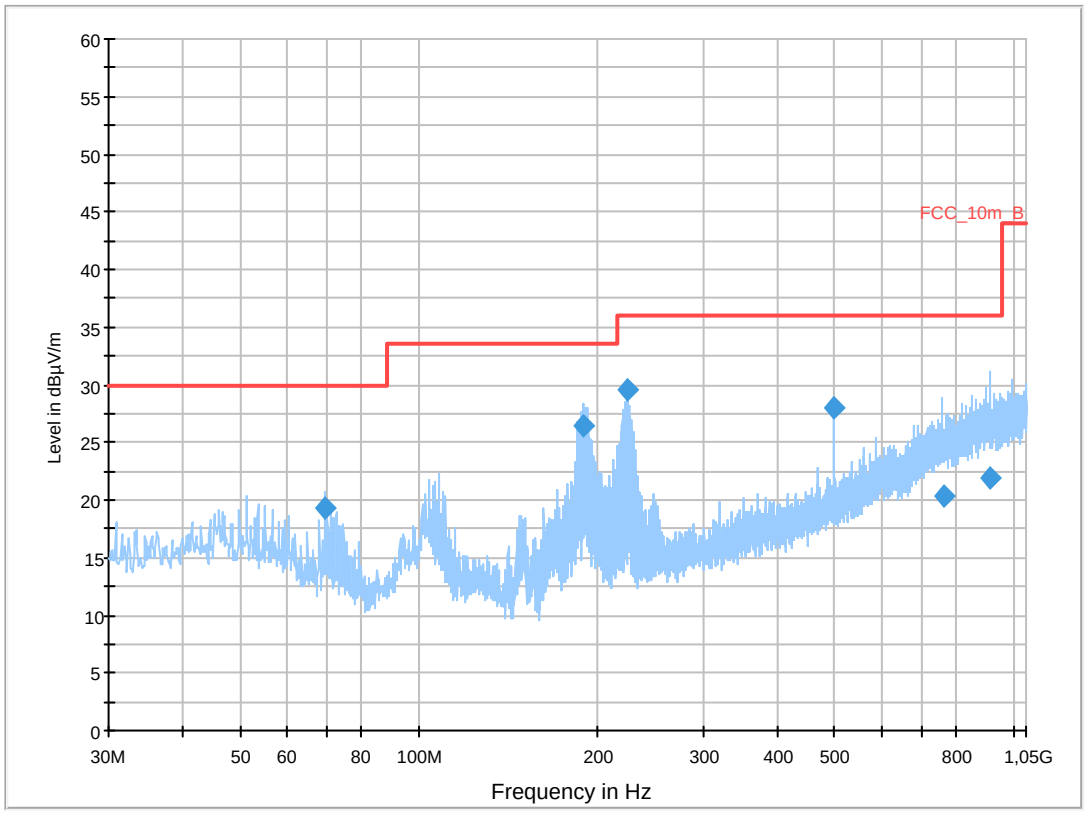
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT20 ch157
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

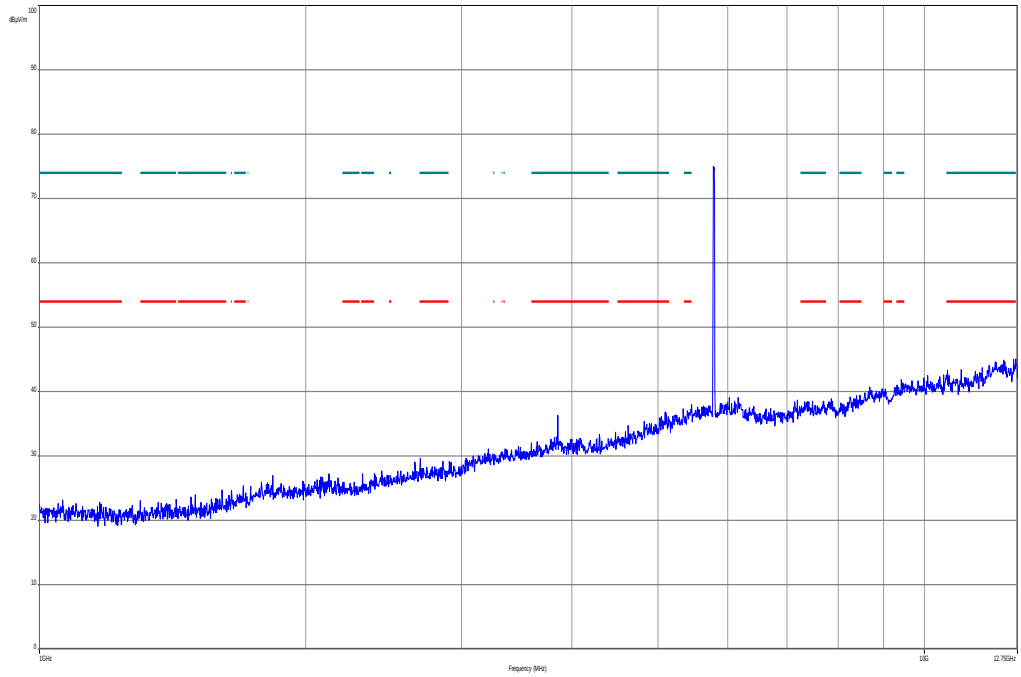
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



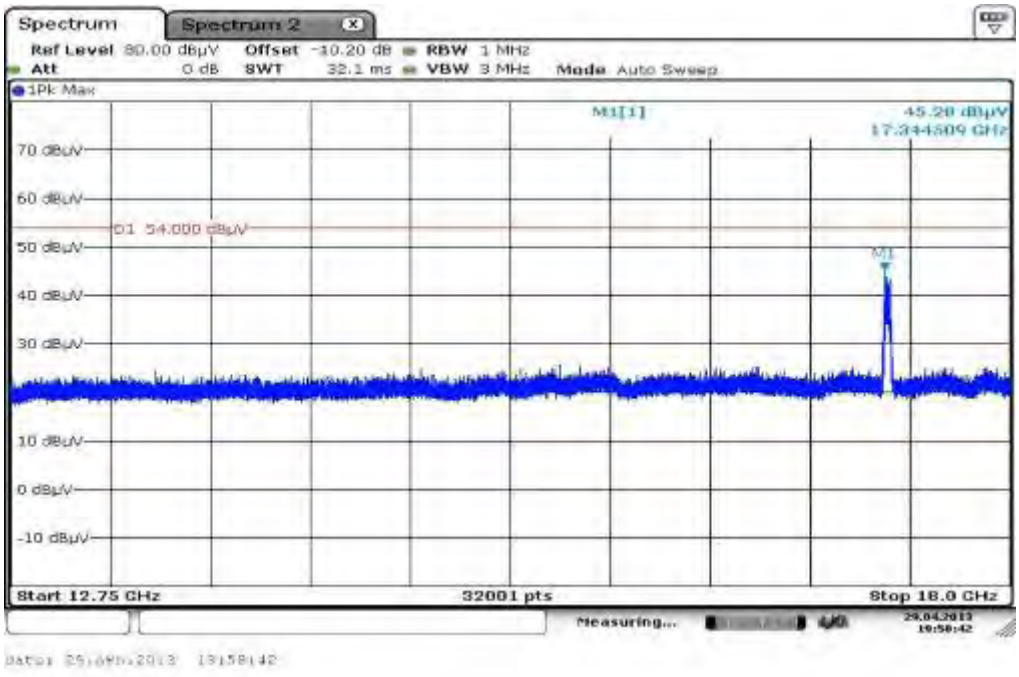
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
69.417000	19.3	1000.0	120.000	170.0	V	100.0	9.4	10.7	30.0	
188.664600	26.4	1000.0	120.000	98.0	V	280.0	11.0	7.1	33.5	
224.160900	29.5	1000.0	120.000	98.0	V	280.0	12.5	6.5	36.0	
499.988700	27.9	1000.0	120.000	170.0	H	-5.0	18.7	8.1	36.0	
760.895100	20.3	1000.0	120.000	170.0	V	280.0	23.7	15.7	36.0	
913.080300	21.9	1000.0	120.000	104.0	V	92.0	25.2	14.1	36.0	

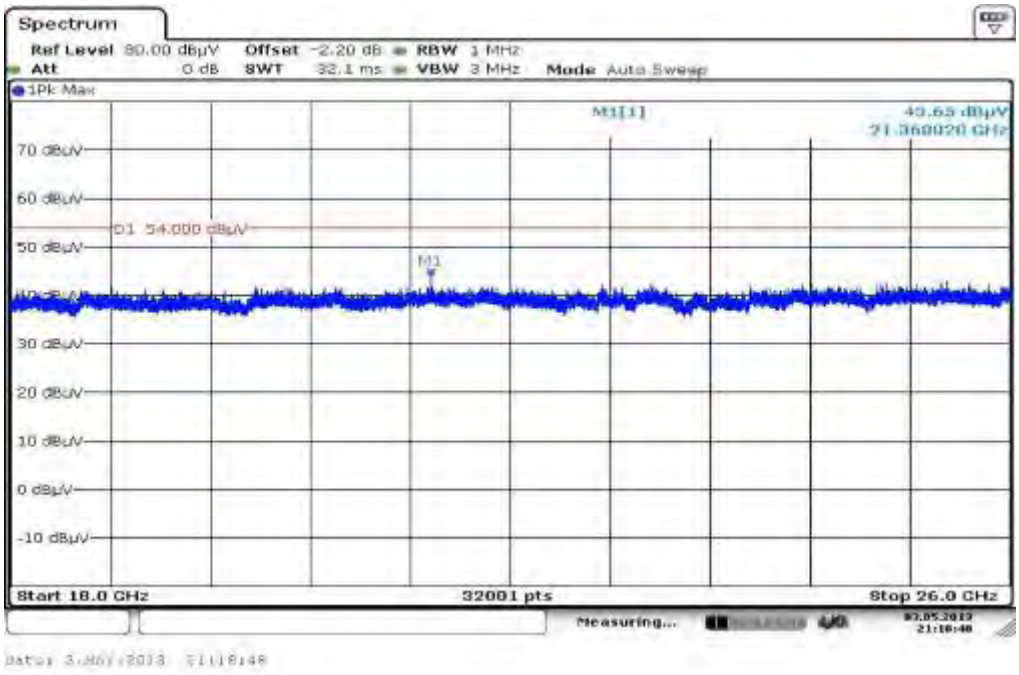
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



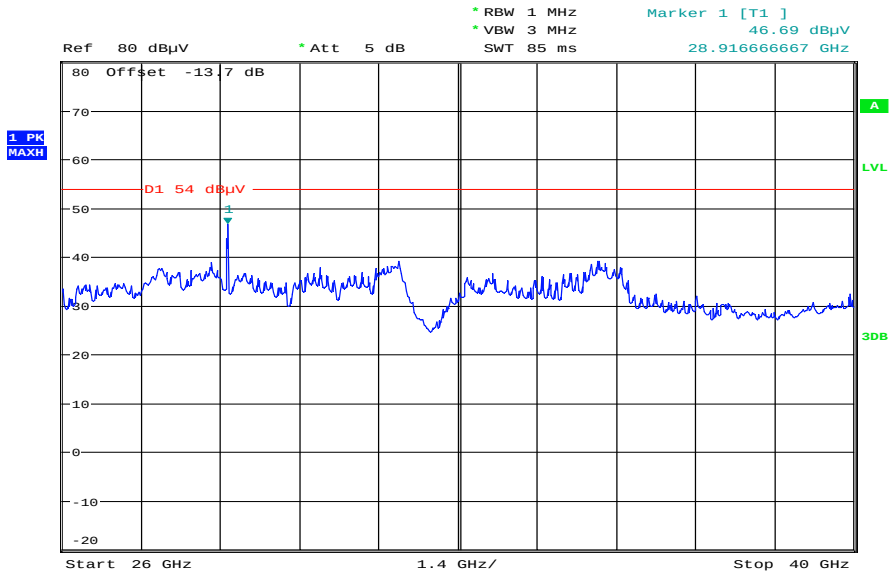
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 13:16:42

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

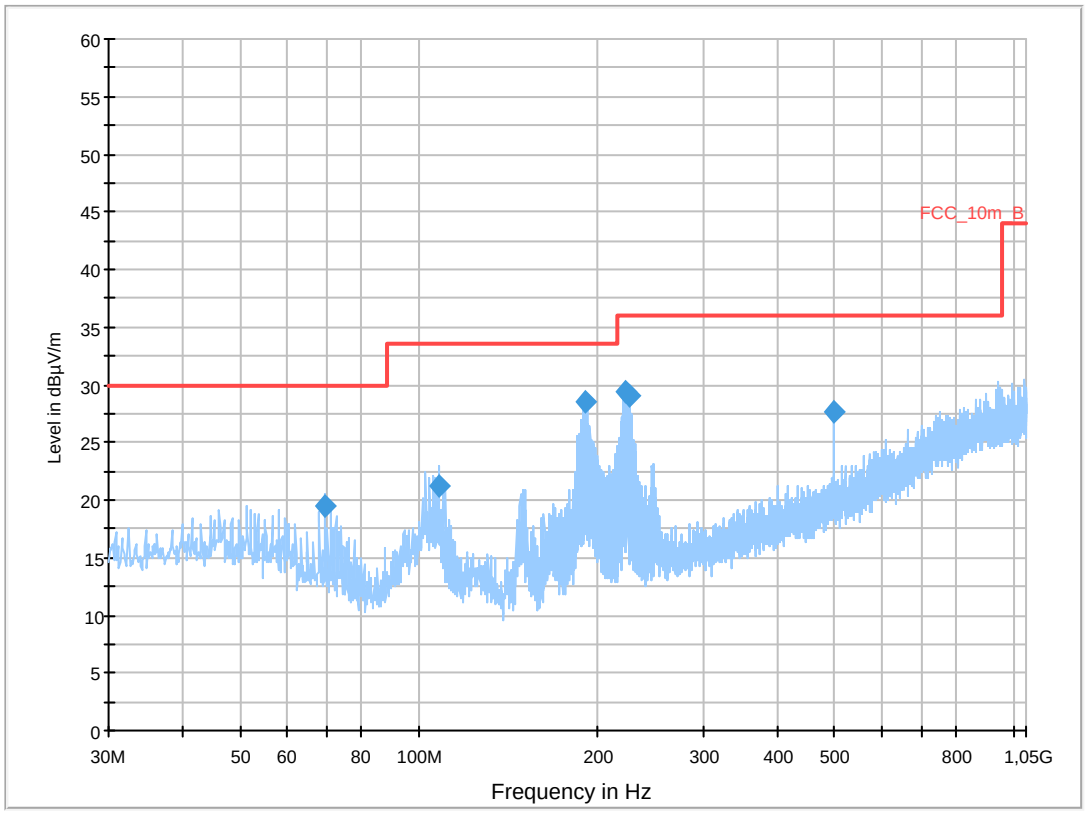
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT20 ch165
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

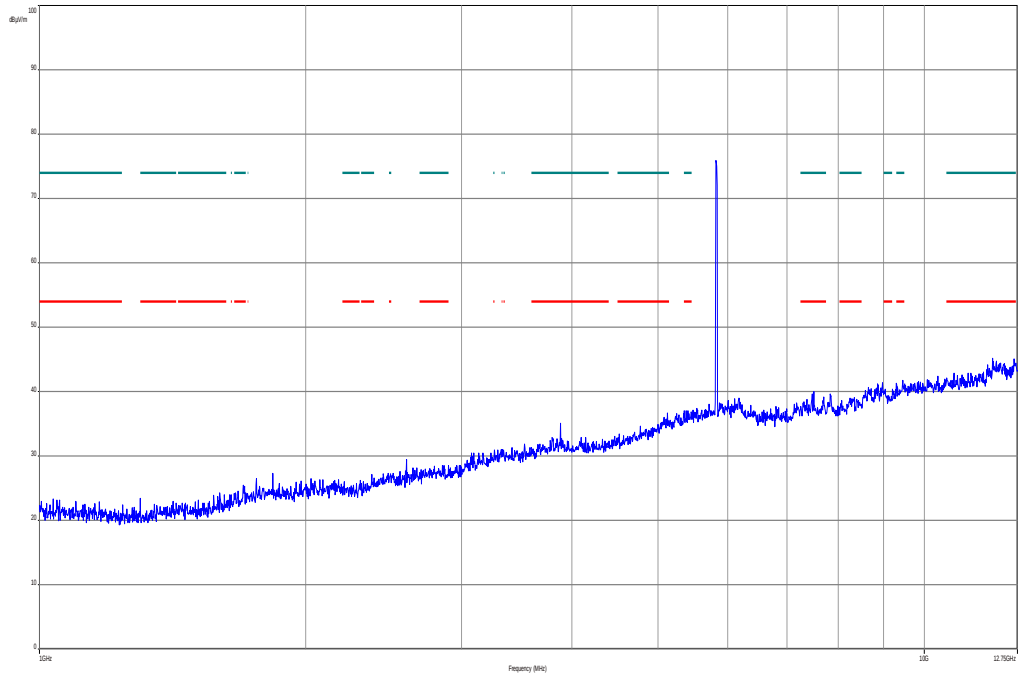
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



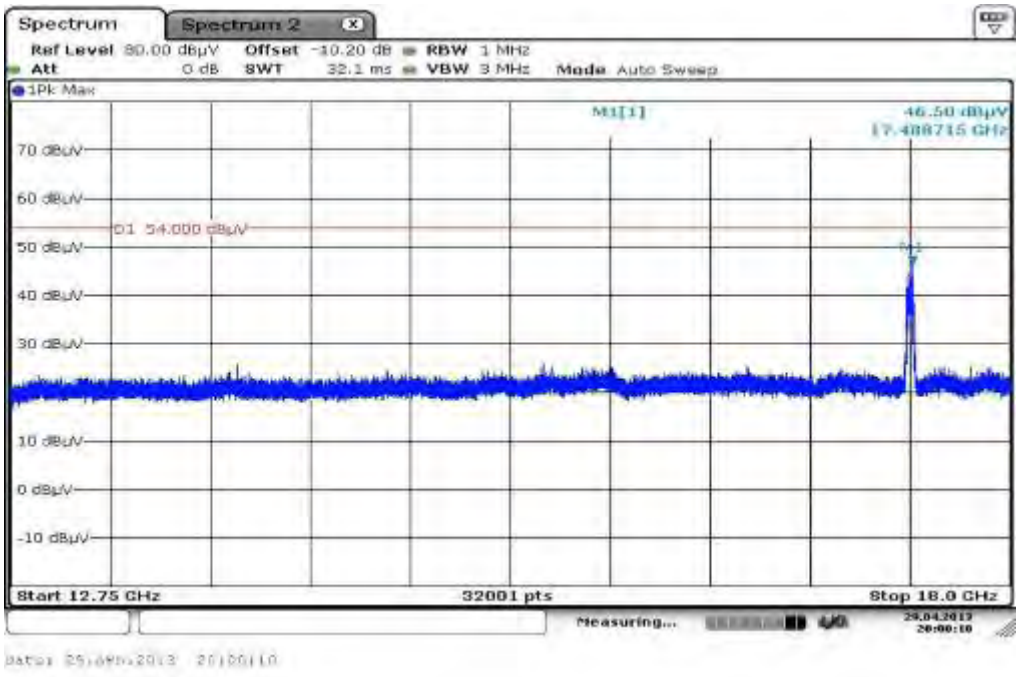
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
69.449700	19.4	1000.0	120.000	170.0	V	175.0	9.4	10.6	30.0	
107.918250	21.3	1000.0	120.000	170.0	V	92.0	11.2	12.2	33.5	
190.202550	28.5	1000.0	120.000	98.0	V	-5.0	11.1	5.0	33.5	
222.631350	29.5	1000.0	120.000	98.0	V	280.0	12.5	6.5	36.0	
224.928150	29.0	1000.0	120.000	143.0	V	280.0	12.5	7.0	36.0	
500.017200	27.6	1000.0	120.000	170.0	H	10.0	18.7	8.4	36.0	

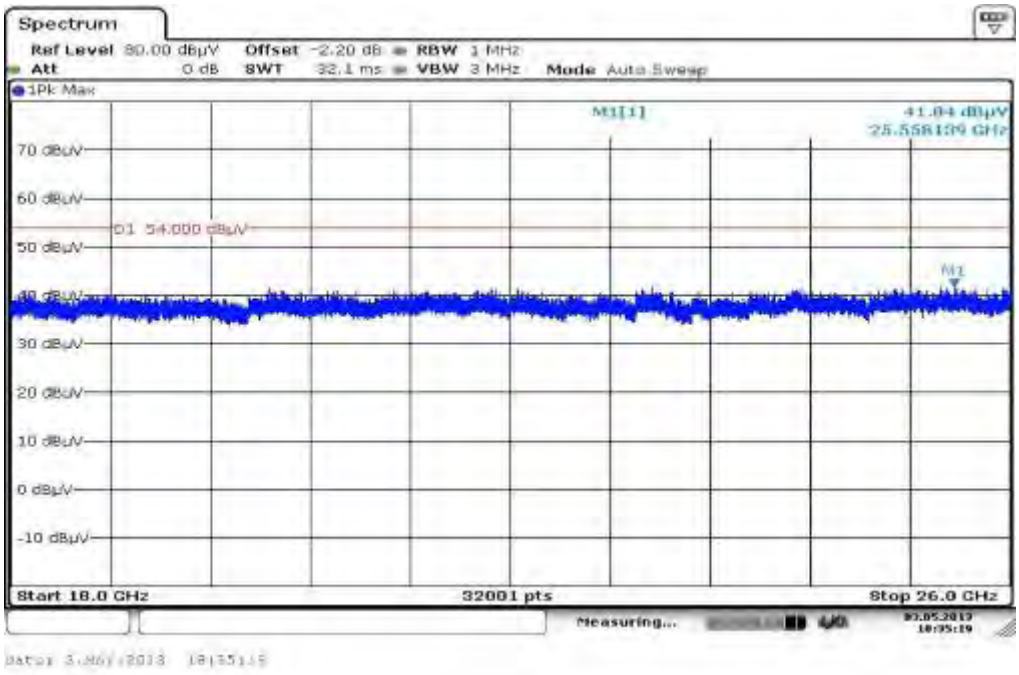
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



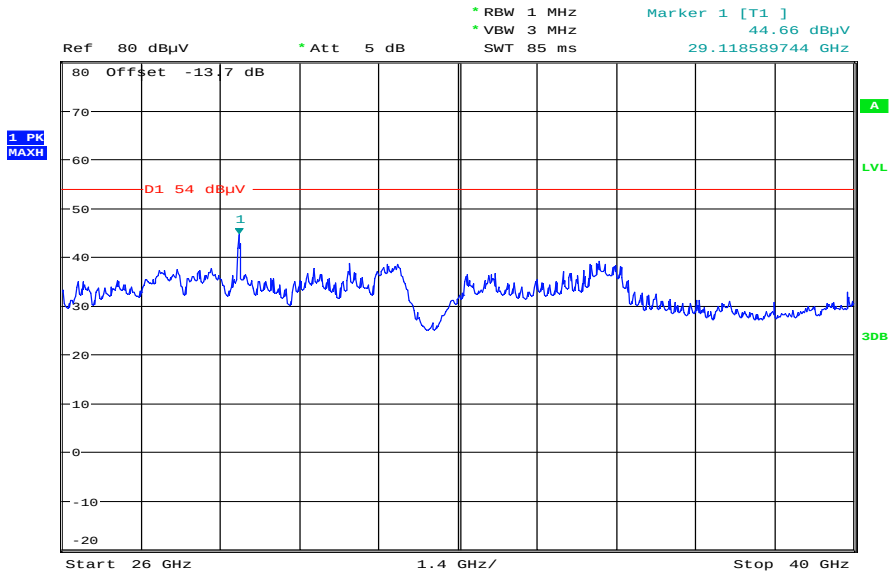
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 13:17:52

Plots: OFDM / n – mode HT40

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

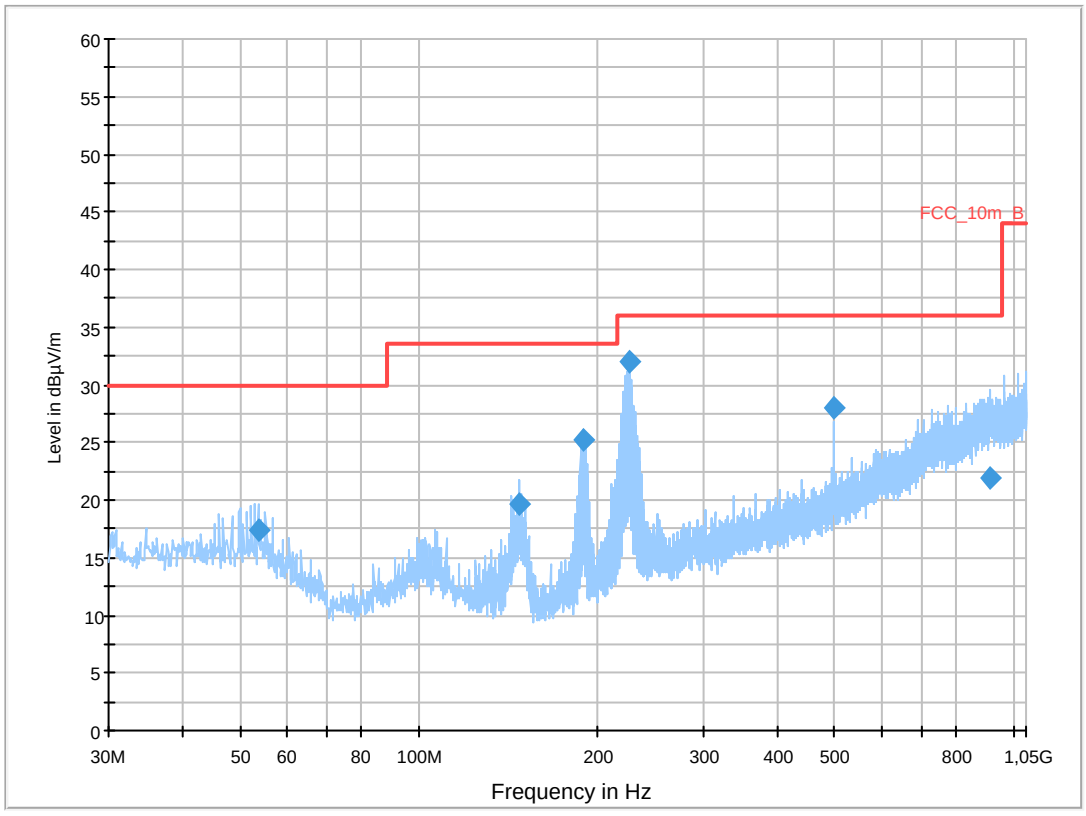
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT40 tx @ 5745MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

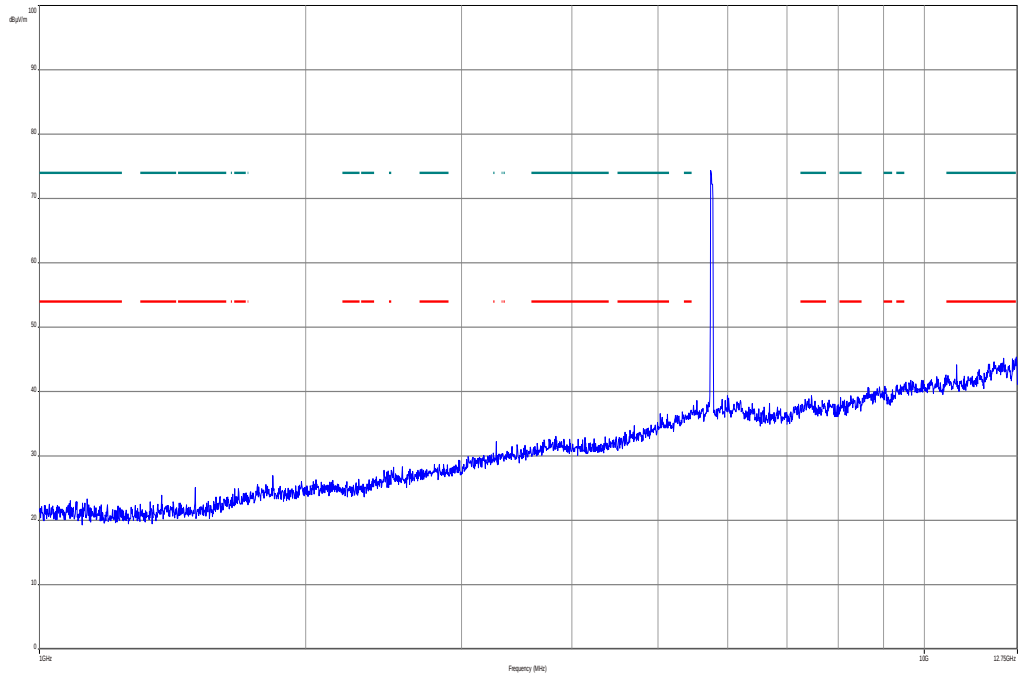
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



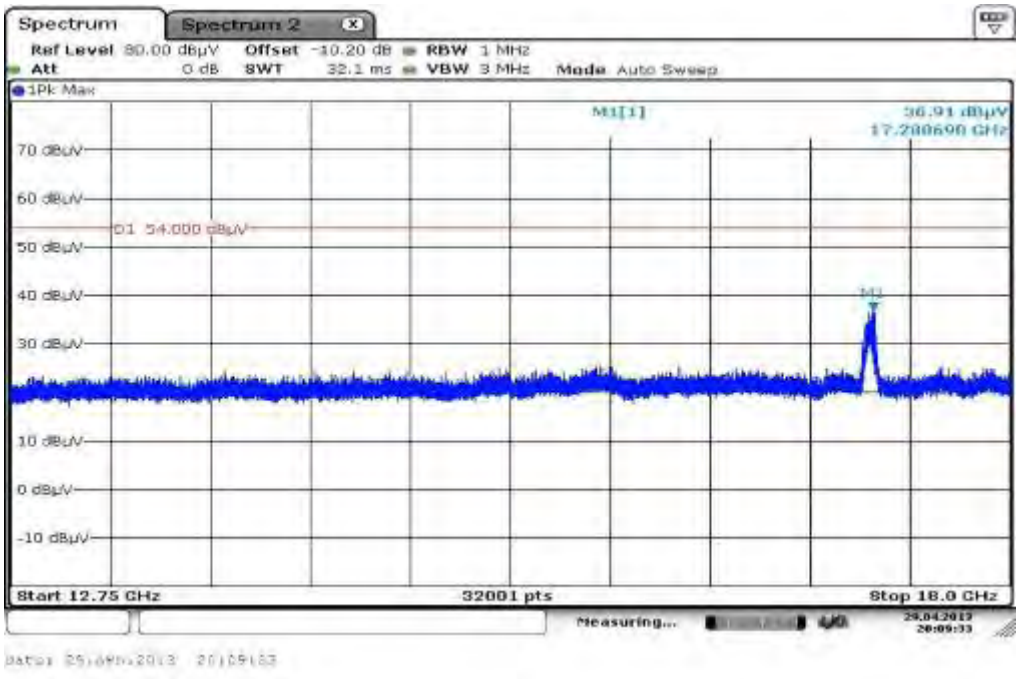
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
53.641350	17.3	1000.0	120.000	170.0	V	180.0	13.0	12.7	30.0	
147.369300	19.7	1000.0	120.000	121.0	V	268.0	8.9	13.8	33.5	
188.903250	25.3	1000.0	120.000	105.0	V	0.0	11.0	8.2	33.5	
225.169950	32.0	1000.0	120.000	170.0	V	80.0	12.6	4.0	36.0	
499.993800	28.1	1000.0	120.000	170.0	H	10.0	18.7	7.9	36.0	
914.814900	21.9	1000.0	120.000	111.0	V	2.0	25.2	14.1	36.0	

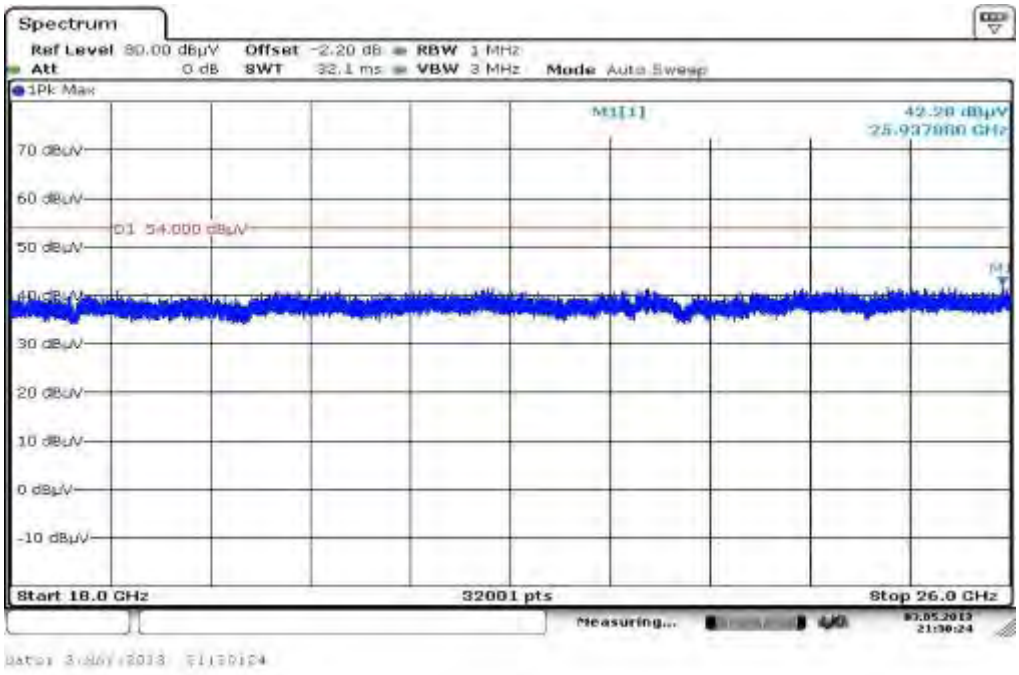
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



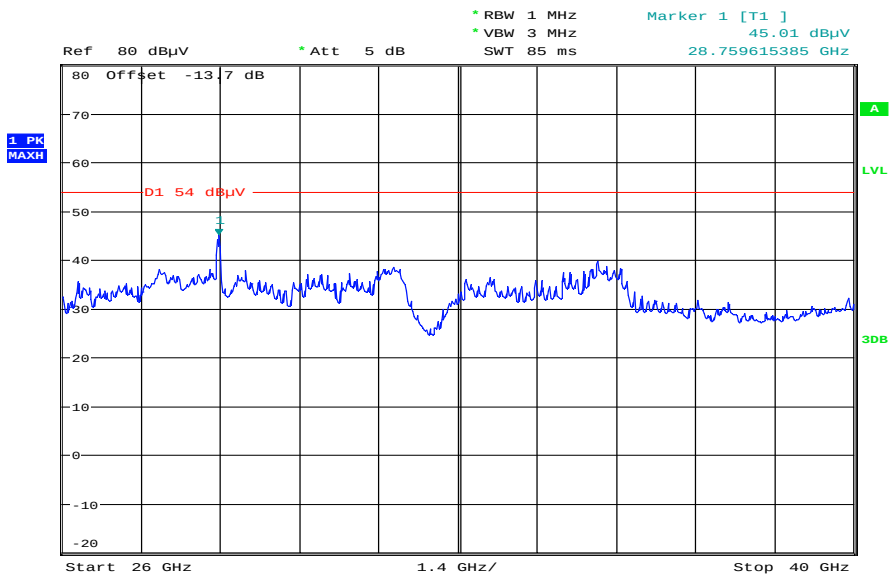
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



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

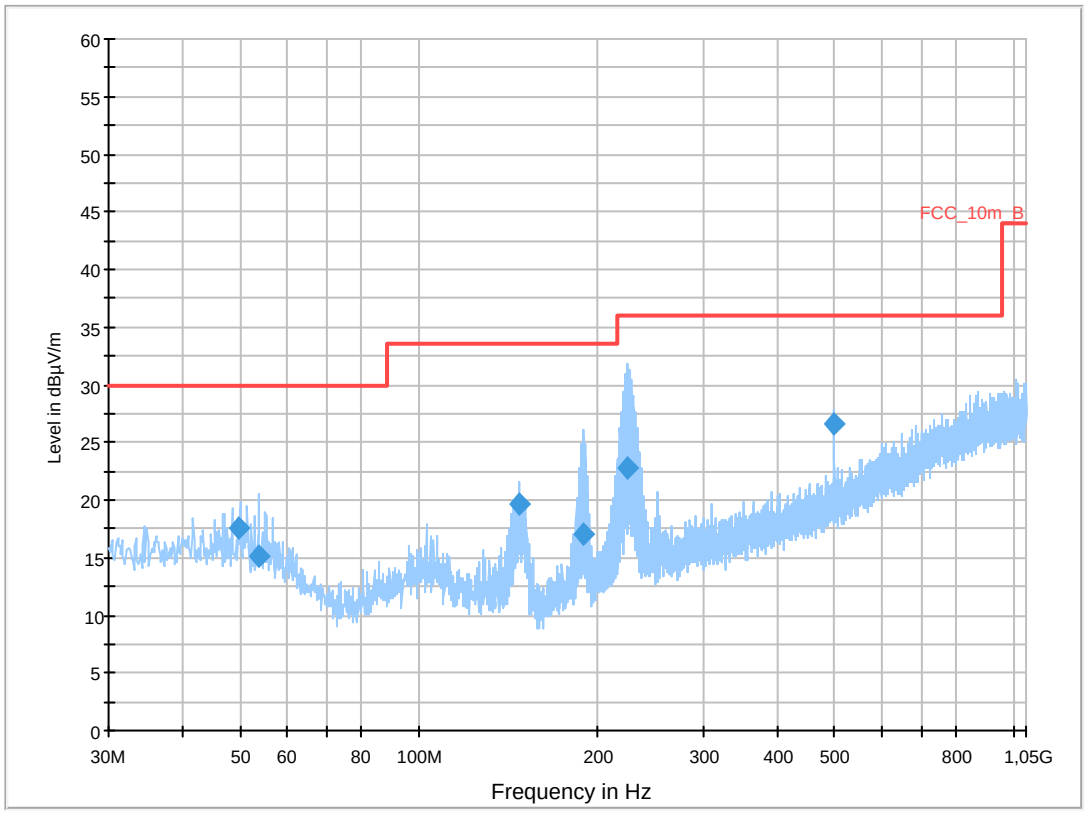
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT40 tx @ 5795MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

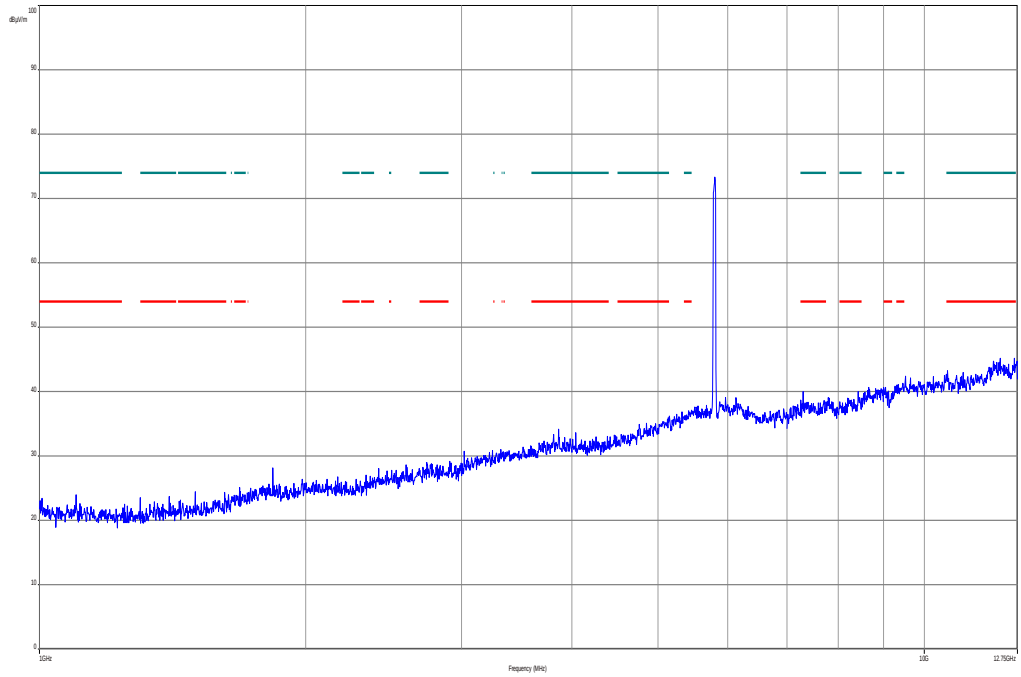
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



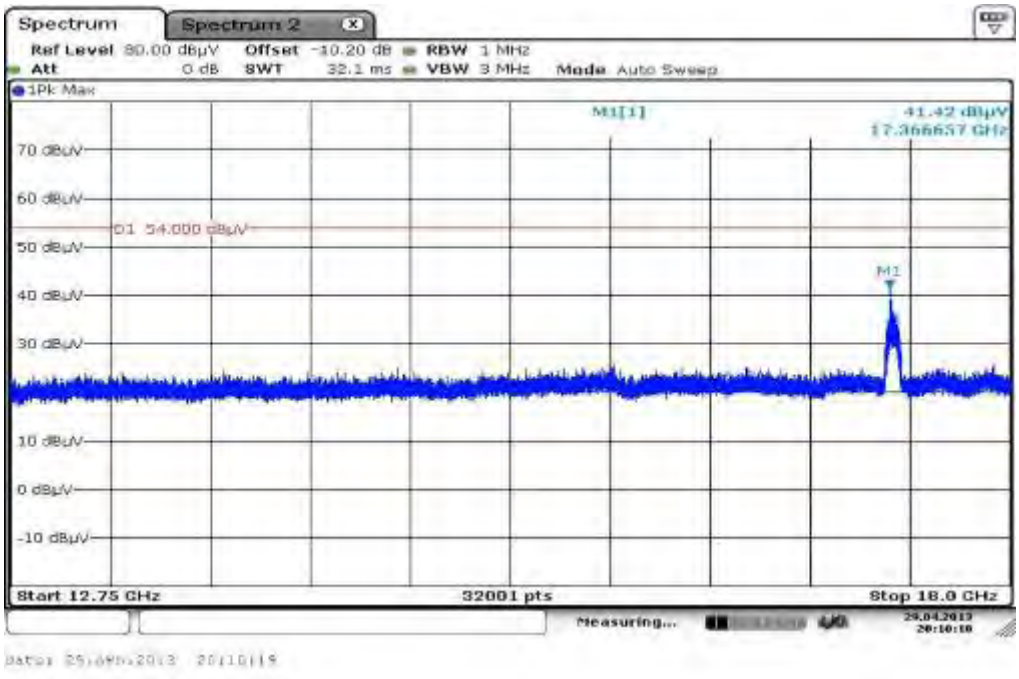
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
49.867350	17.6	1000.0	120.000	98.0	V	-3.0	13.4	12.4	30.0	
53.691150	15.2	1000.0	120.000	98.0	V	190.0	13.0	14.8	30.0	
147.352200	19.7	1000.0	120.000	143.0	V	280.0	8.9	13.8	33.5	
189.016350	17.1	1000.0	120.000	170.0	V	-5.0	11.0	16.4	33.5	
224.557800	22.8	1000.0	120.000	170.0	V	100.0	12.5	13.2	36.0	
499.999950	26.6	1000.0	120.000	170.0	H	190.0	18.7	9.4	36.0	

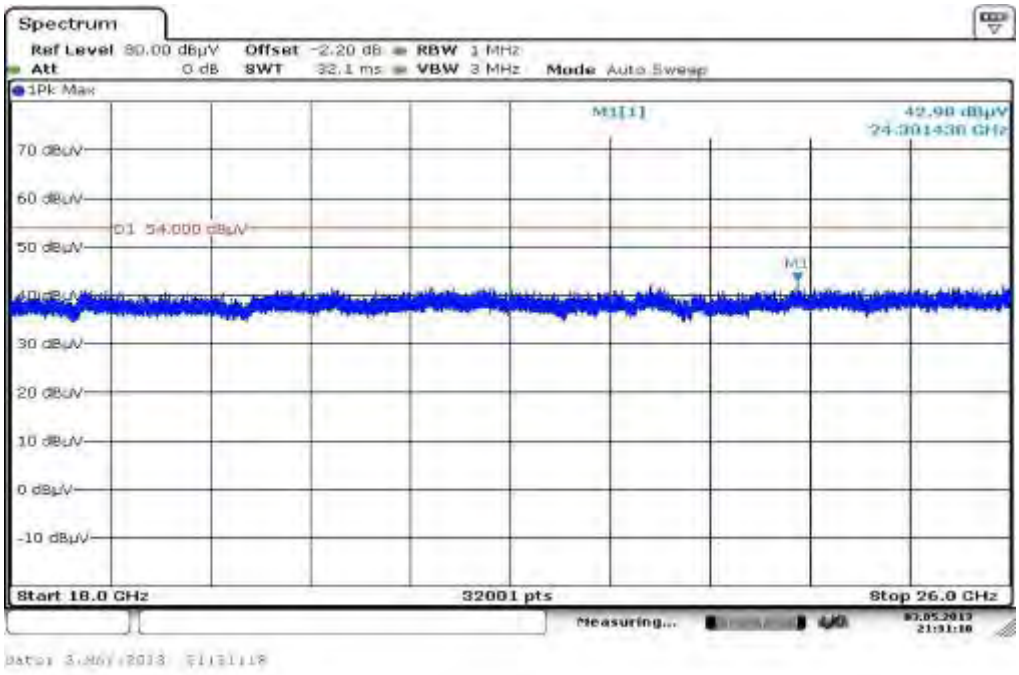
Plot 7: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



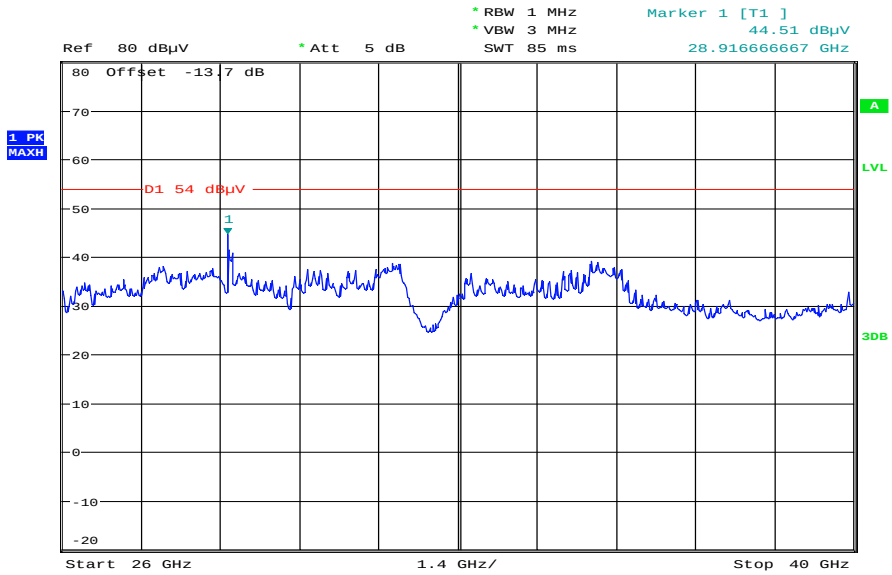
Plot 8: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 15:06:30

Antenna 453564154611:

Results: OFDM / a – mode

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / a – mode								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT20

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT20								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT40

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT40								
5755 MHz			5795 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.			-/-		
Measurement uncertainty			± 3 dB					

Result: Passed

Note: Results of OFDM n – mode are added to show the compliance with the standard.

Plots: OFDM / a – mode

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

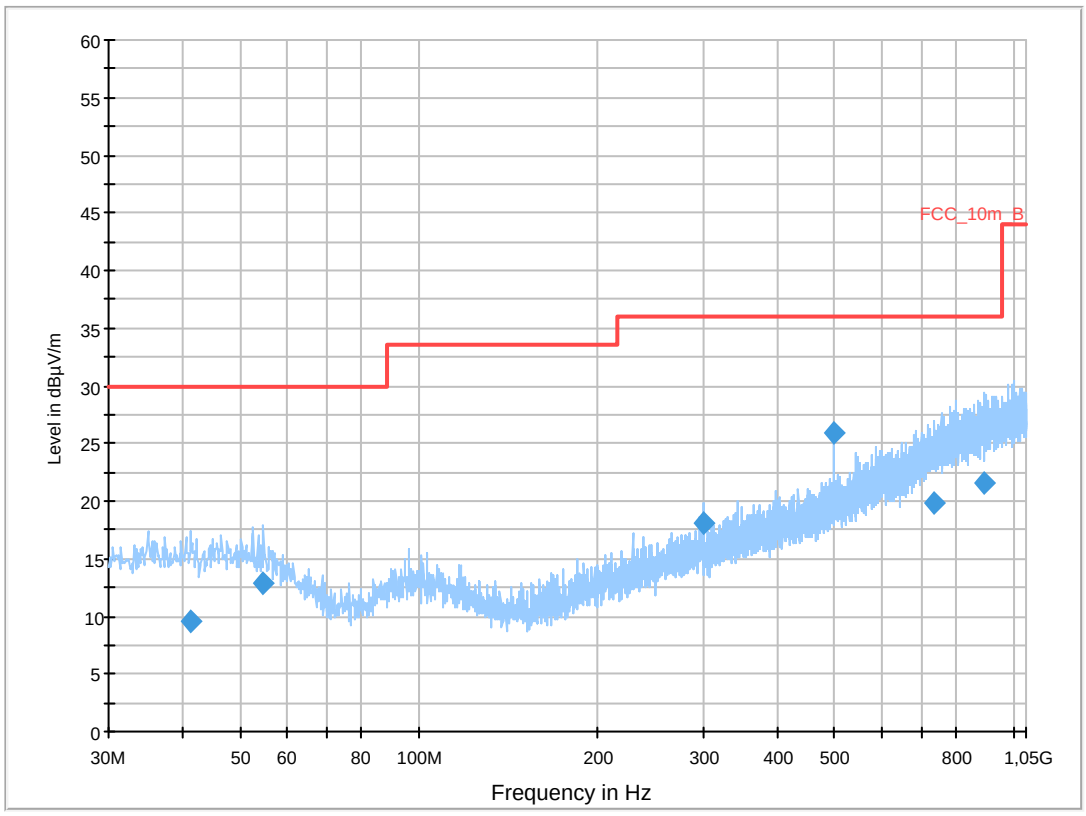
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5745MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

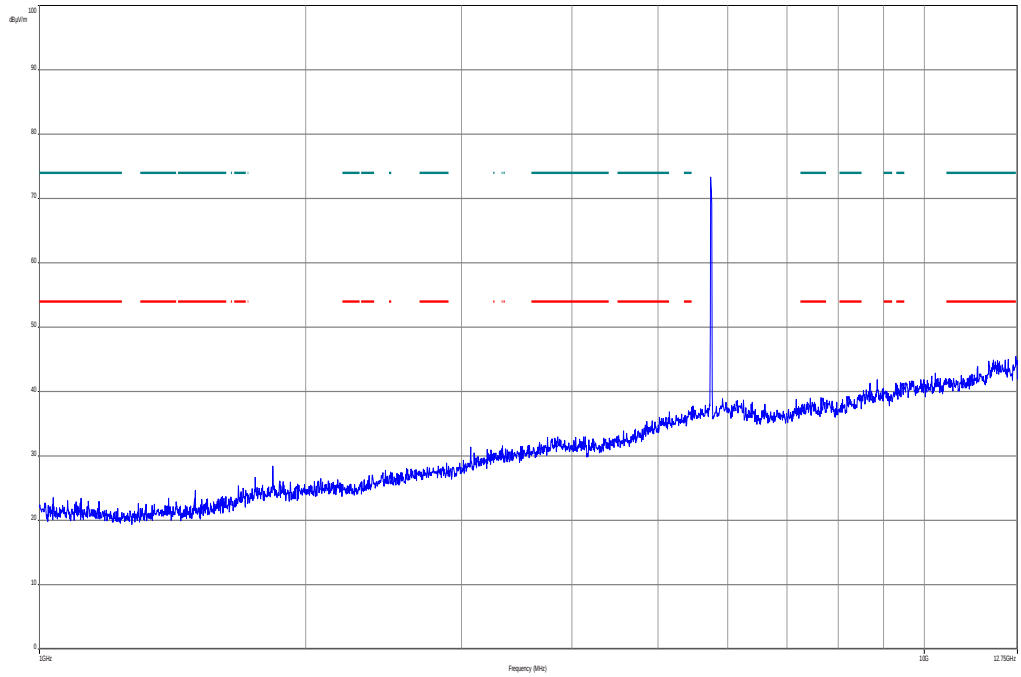
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



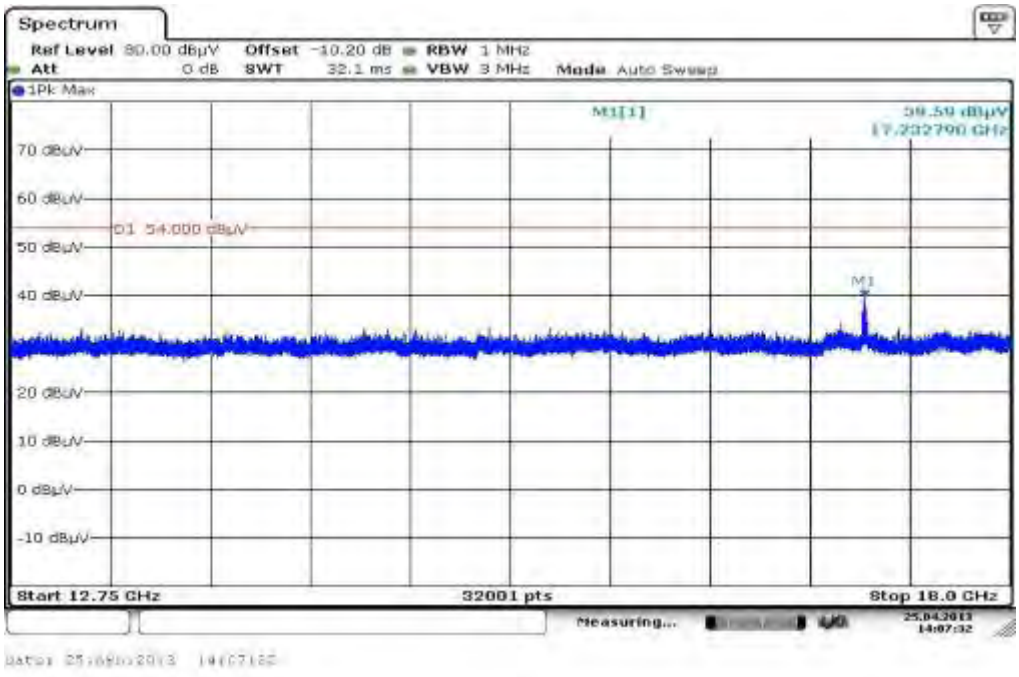
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
41.295150	9.5	1000.0	120.000	170.0	V	265.0	13.4	20.5	30.0	
54.708750	12.9	1000.0	120.000	170.0	V	280.0	12.9	17.1	30.0	
300.005850	18.1	1000.0	120.000	104.0	V	100.0	14.5	17.9	36.0	
500.034150	25.9	1000.0	120.000	98.0	V	261.0	18.7	10.1	36.0	
736.310550	19.9	1000.0	120.000	162.0	V	2.0	23.3	16.1	36.0	
893.682750	21.6	1000.0	120.000	170.0	V	10.0	25.1	14.4	36.0	

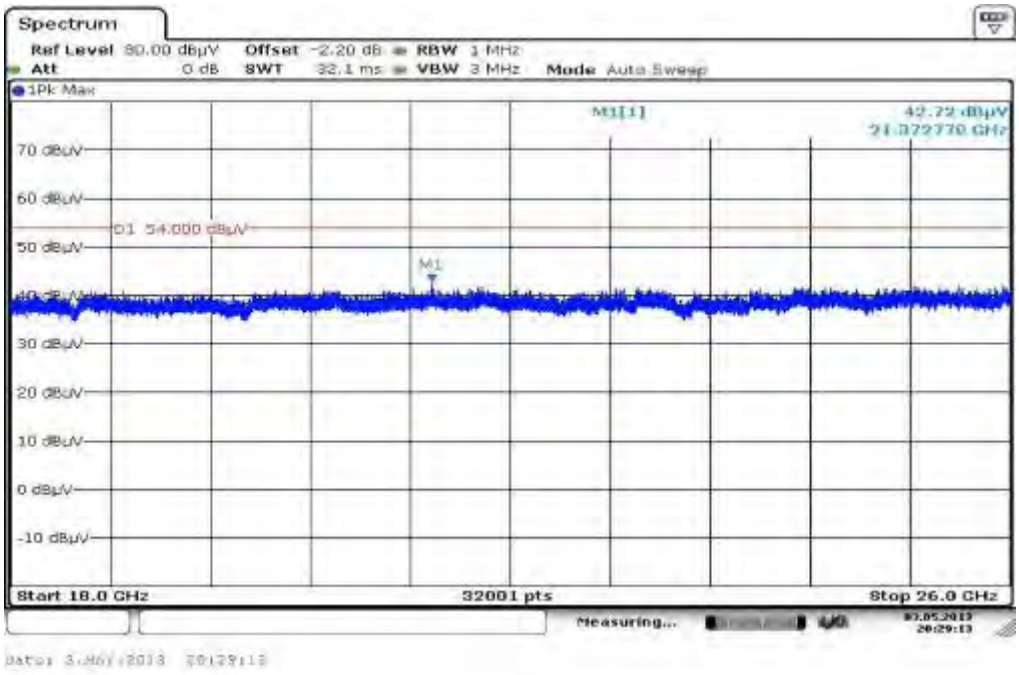
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



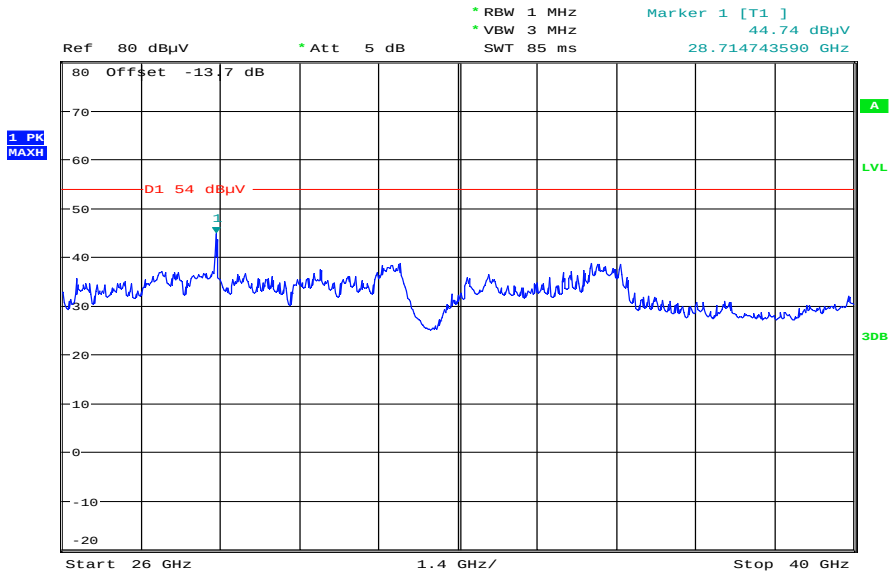
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 10:48:56

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

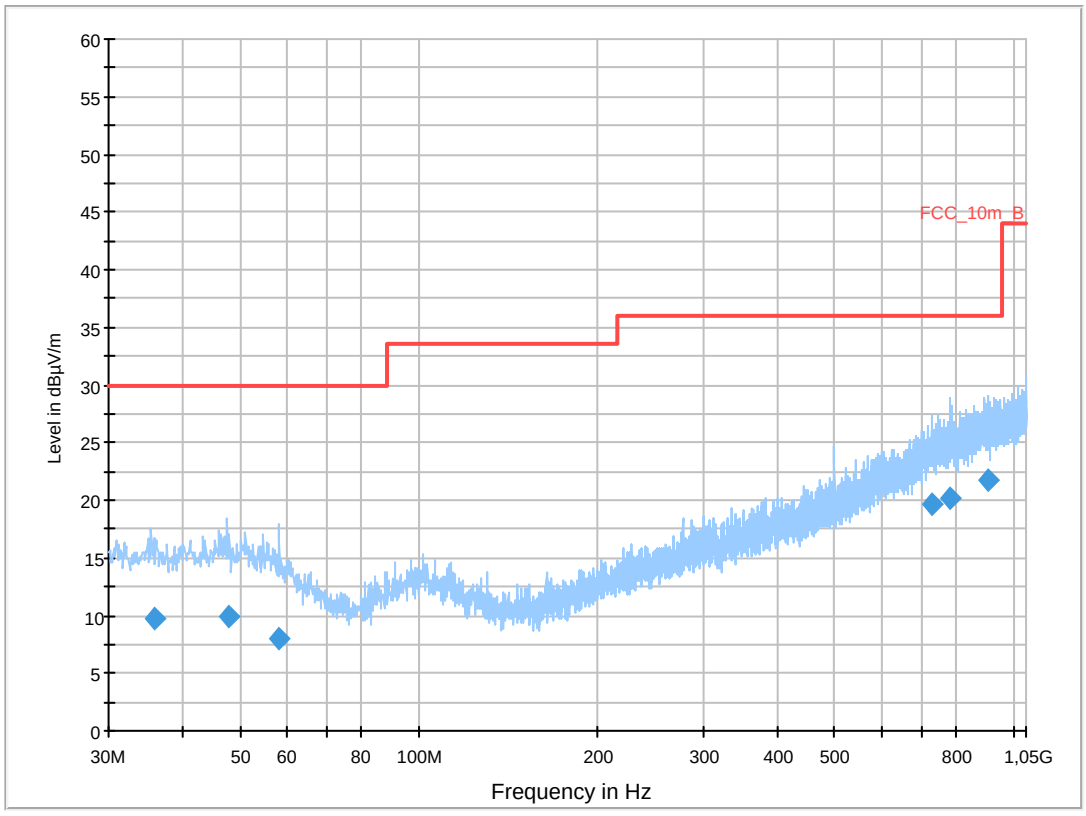
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5785MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

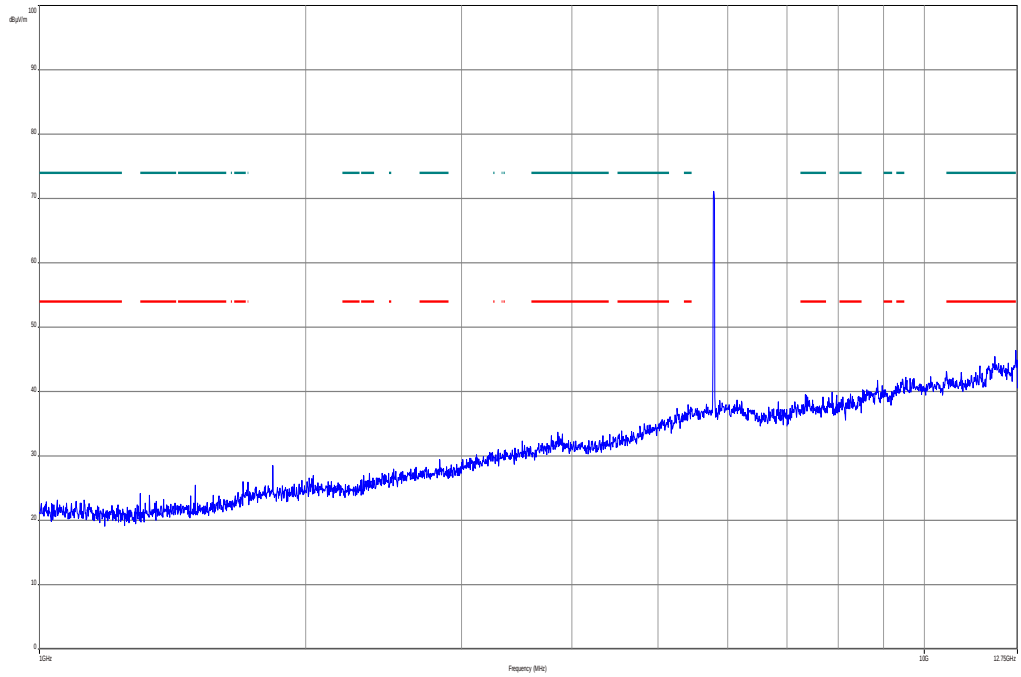
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



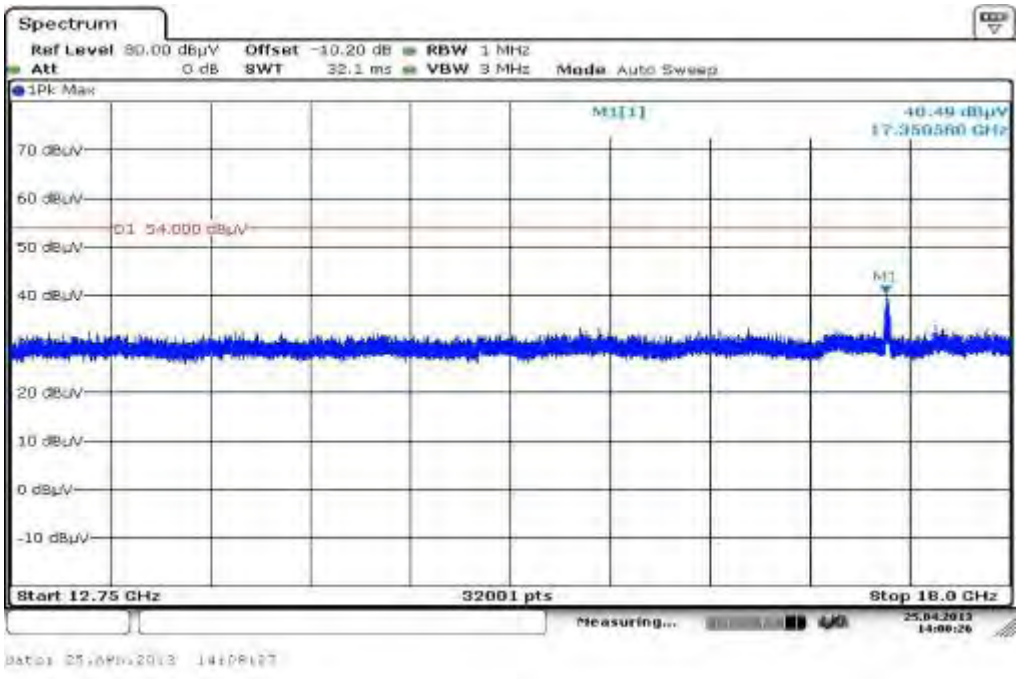
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.920950	9.8	1000.0	120.000	170.0	V	10.0	13.1	20.2	30.0	
47.833350	10.0	1000.0	120.000	170.0	V	-5.0	13.3	20.0	30.0	
58.091100	8.0	1000.0	120.000	119.0	V	-5.0	12.1	22.0	30.0	
729.769950	19.7	1000.0	120.000	170.0	H	265.0	23.2	16.3	36.0	
782.180250	20.1	1000.0	120.000	170.0	V	171.0	23.7	15.9	36.0	
907.996350	21.7	1000.0	120.000	170.0	V	171.0	25.2	14.3	36.0	

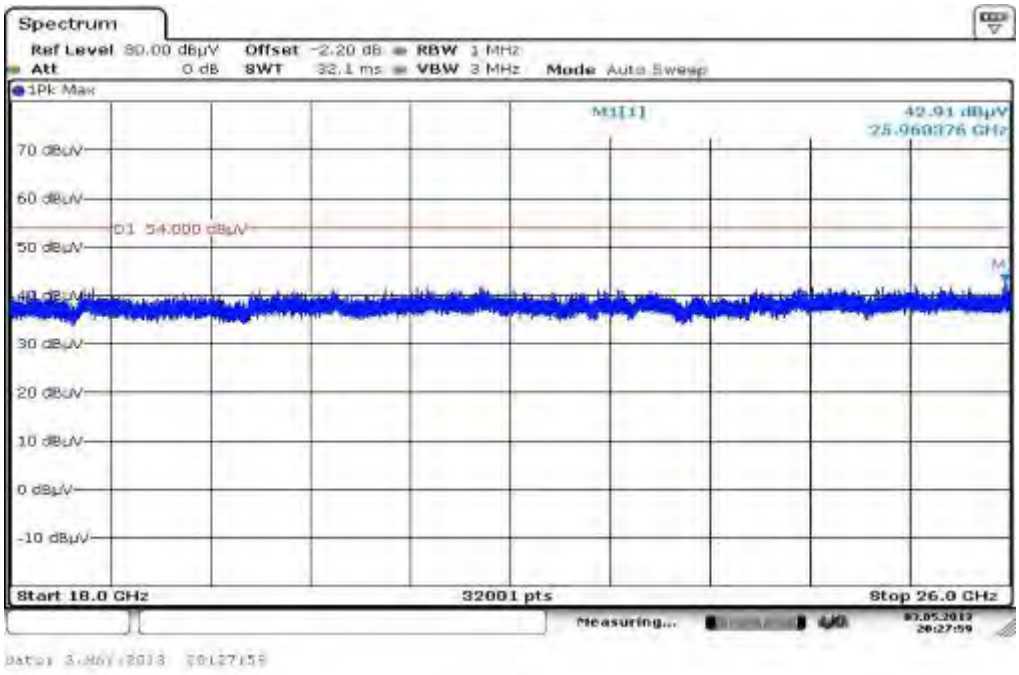
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



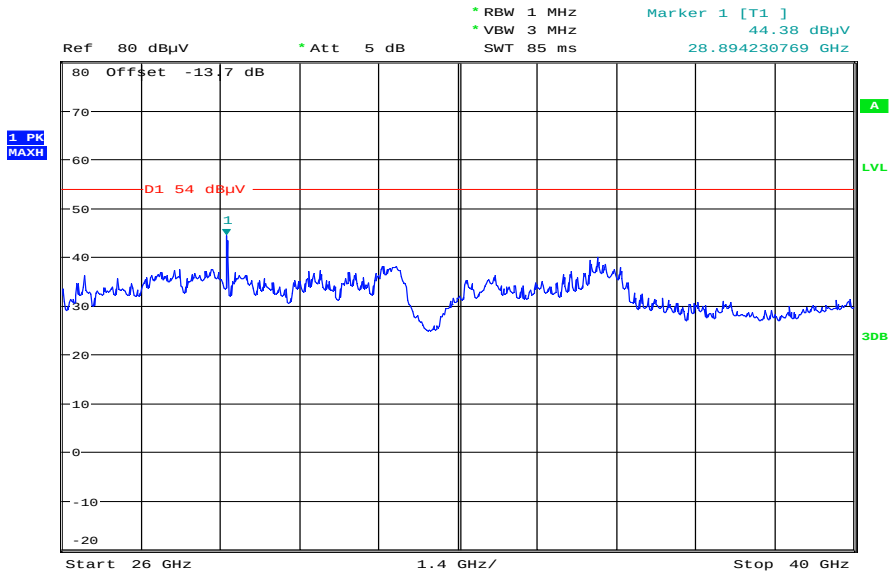
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:49:59

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

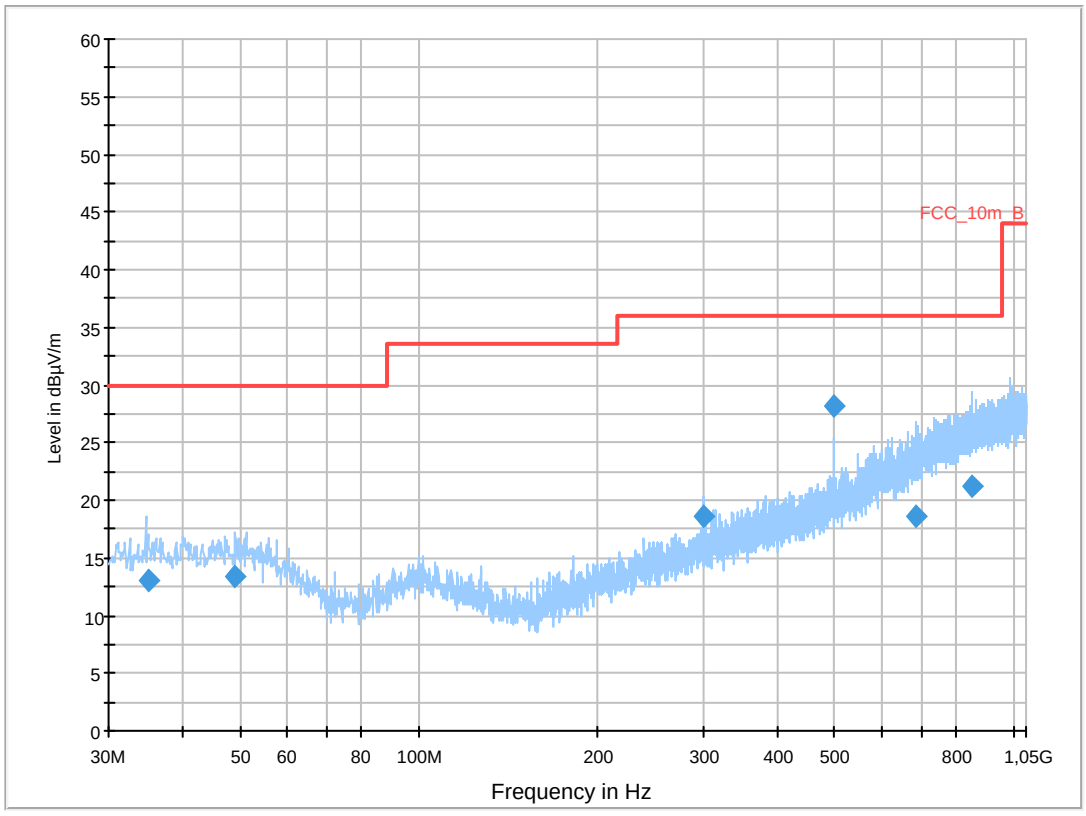
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	WLAN a mode tx @ 5825MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

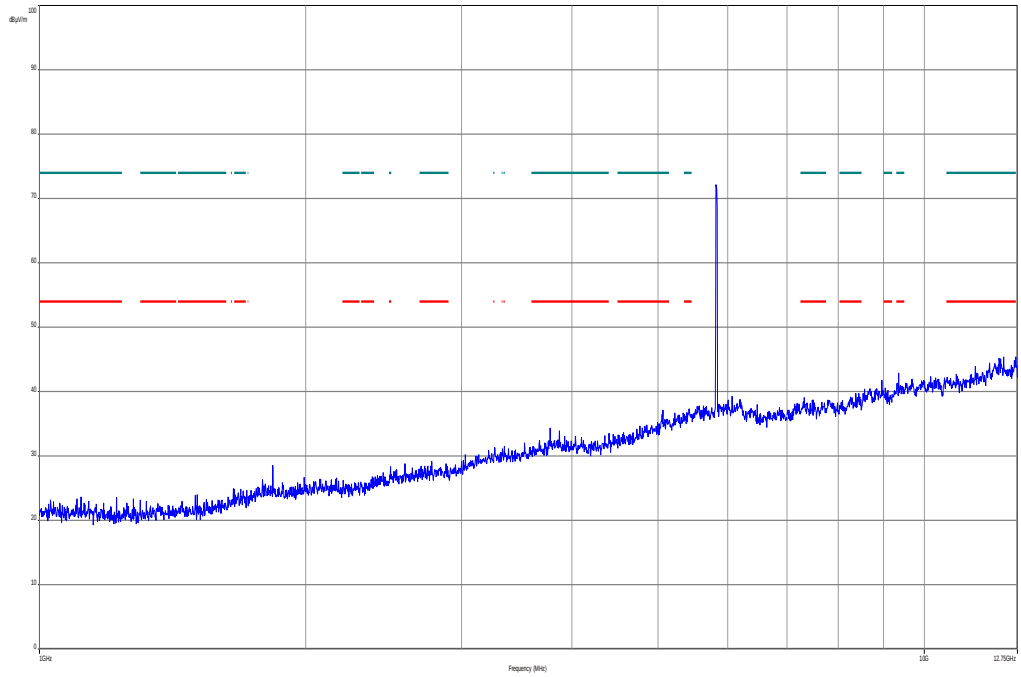
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



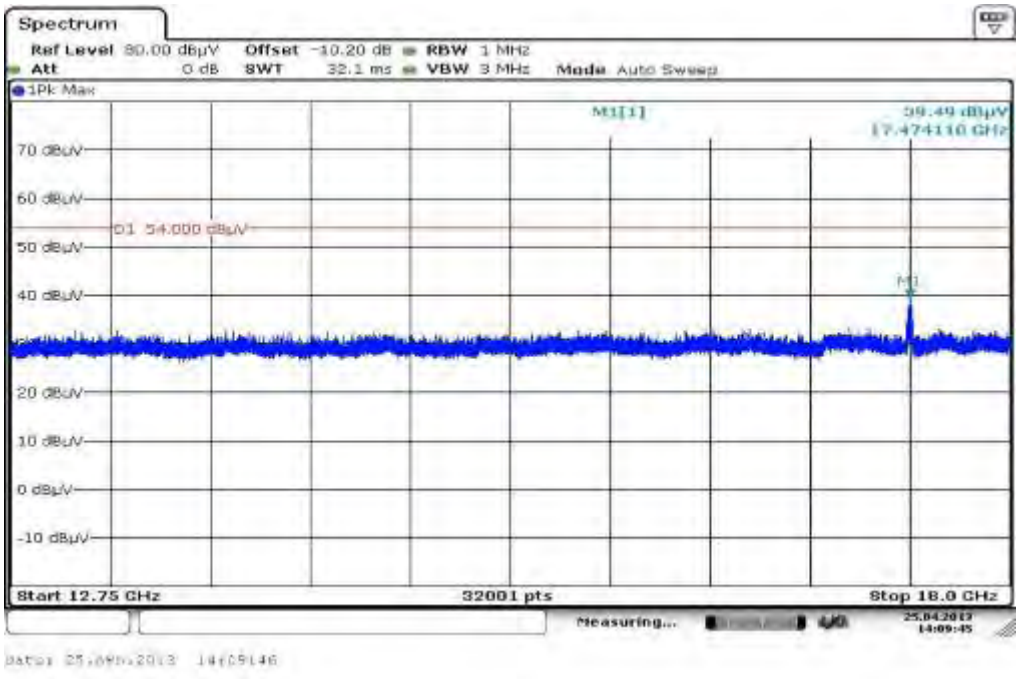
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.029950	13.0	1000.0	120.000	111.0	V	178.0	13.0	17.0	30.0	
49.071000	13.5	1000.0	120.000	166.0	V	190.0	13.4	16.5	30.0	
300.007500	18.6	1000.0	120.000	113.0	V	80.0	14.5	17.4	36.0	
500.010600	28.2	1000.0	120.000	98.0	V	10.0	18.7	7.8	36.0	
682.696050	18.6	1000.0	120.000	166.0	H	190.0	22.0	17.4	36.0	
848.921400	21.2	1000.0	120.000	166.0	V	10.0	24.5	14.8	36.0	

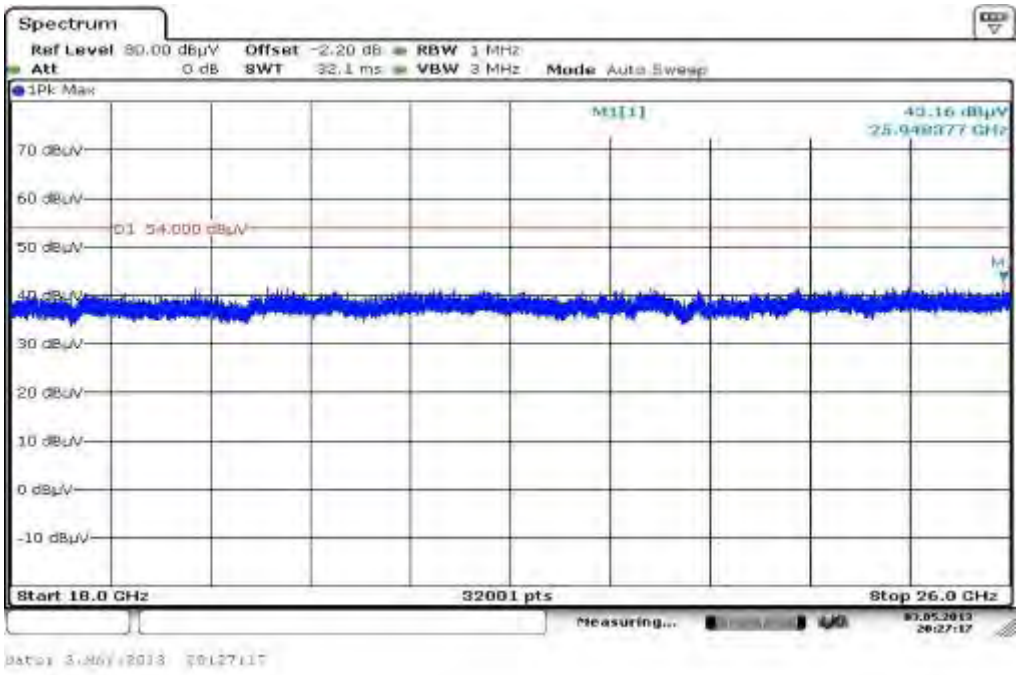
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



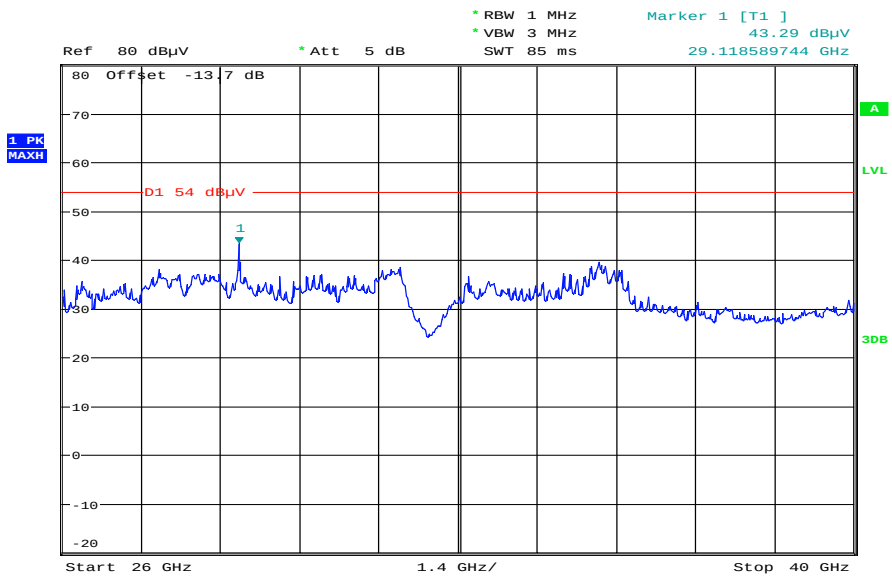
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 10:50:59

Plots: OFDM / n – mode HT20

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

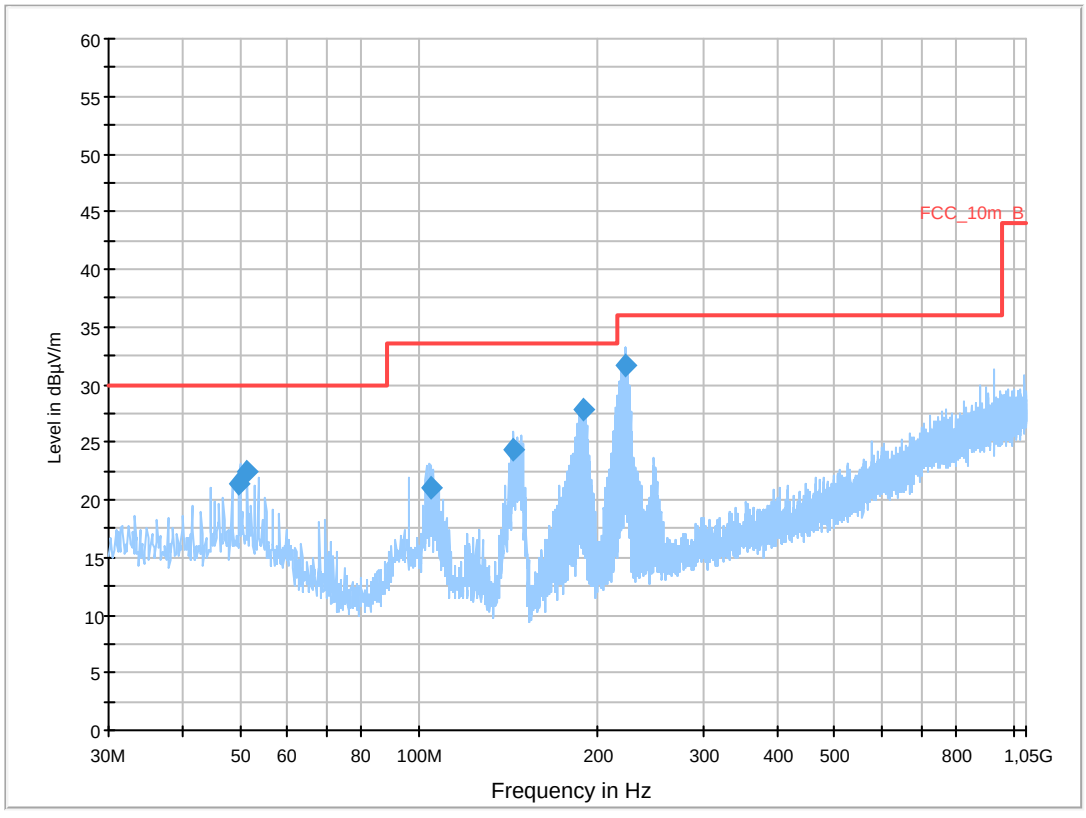
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT20 ch147
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

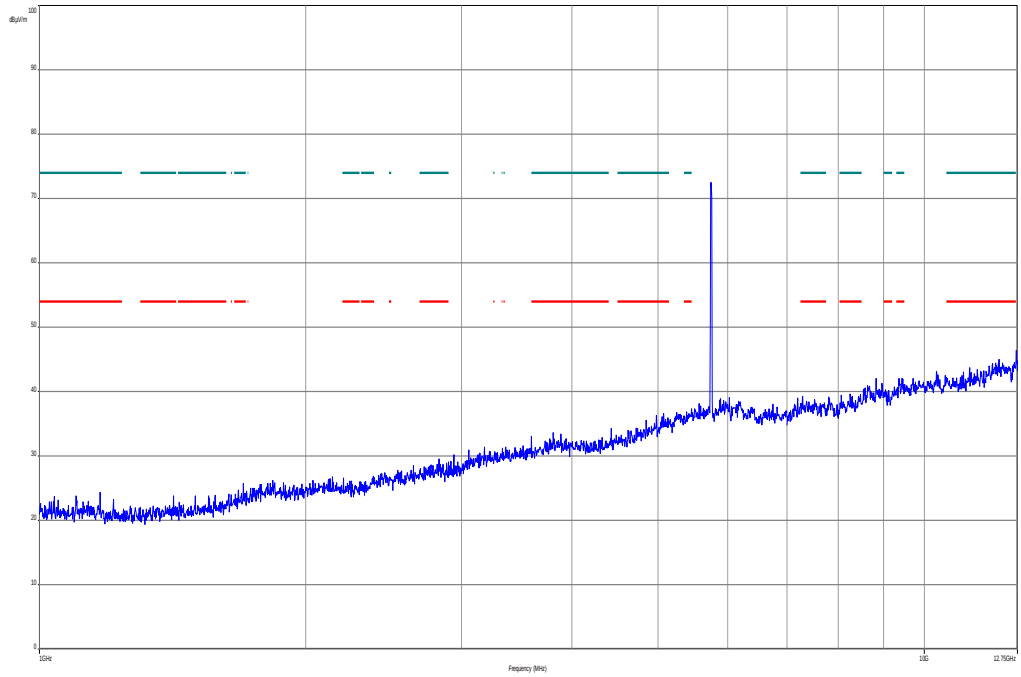
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



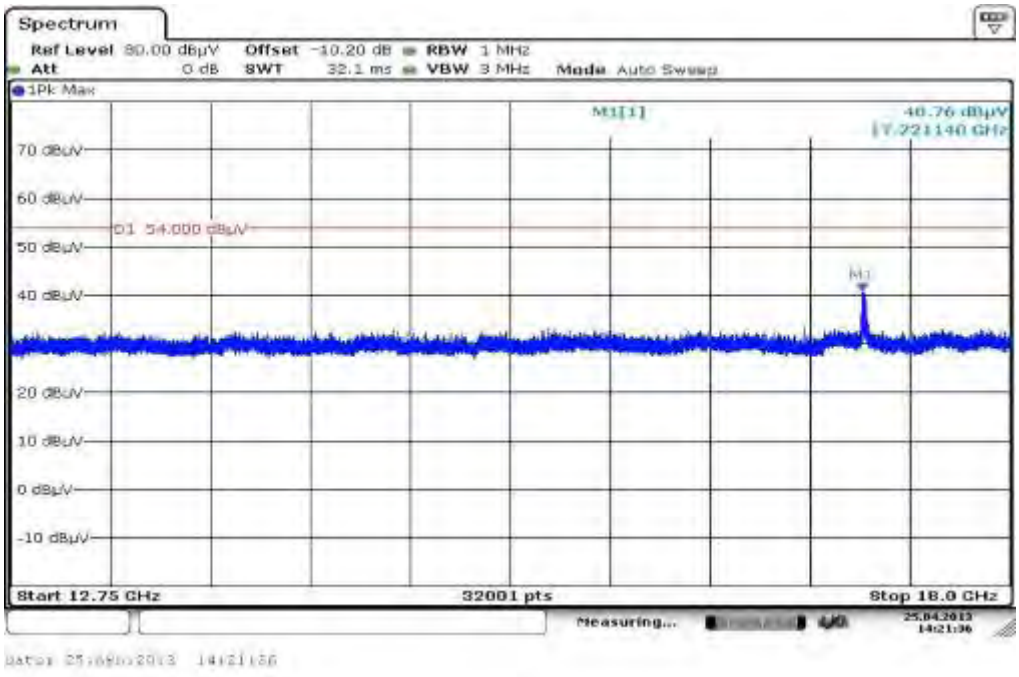
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
49.875600	21.4	1000.0	120.000	98.0	V	180.0	13.4	8.6	30.0	
51.374250	22.5	1000.0	120.000	98.0	V	100.0	13.2	7.5	30.0	
104.284650	21.1	1000.0	120.000	132.0	V	272.0	11.5	12.4	33.5	
144.312600	24.4	1000.0	120.000	98.0	V	-10.0	8.8	9.1	33.5	
188.157150	27.8	1000.0	120.000	98.0	V	80.0	11.0	5.7	33.5	
222.152100	31.6	1000.0	120.000	105.0	V	0.0	12.5	4.4	36.0	

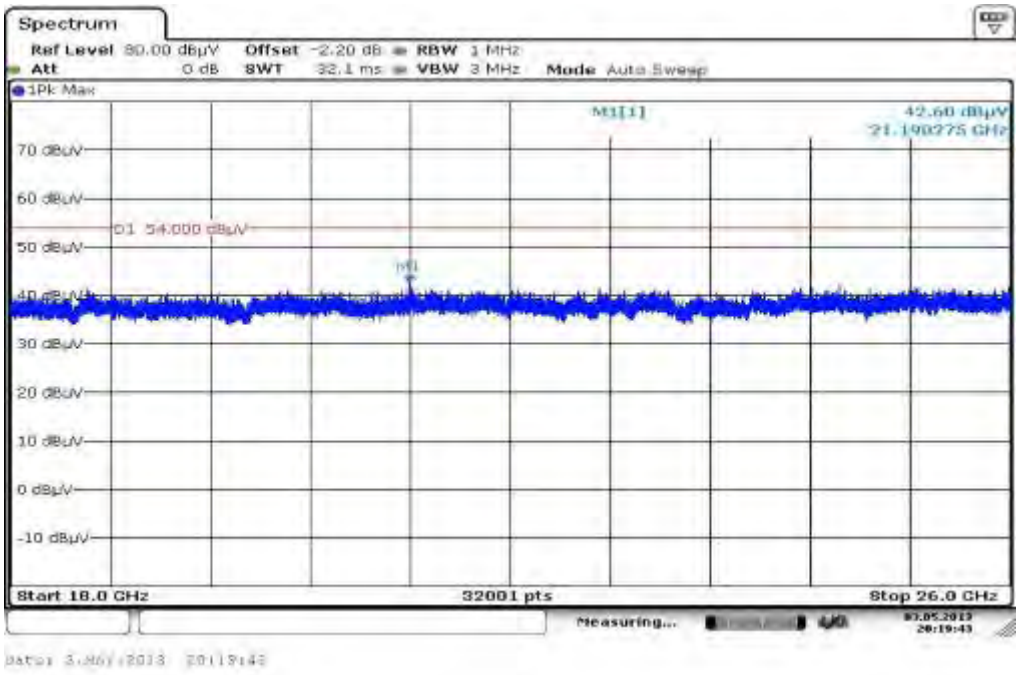
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



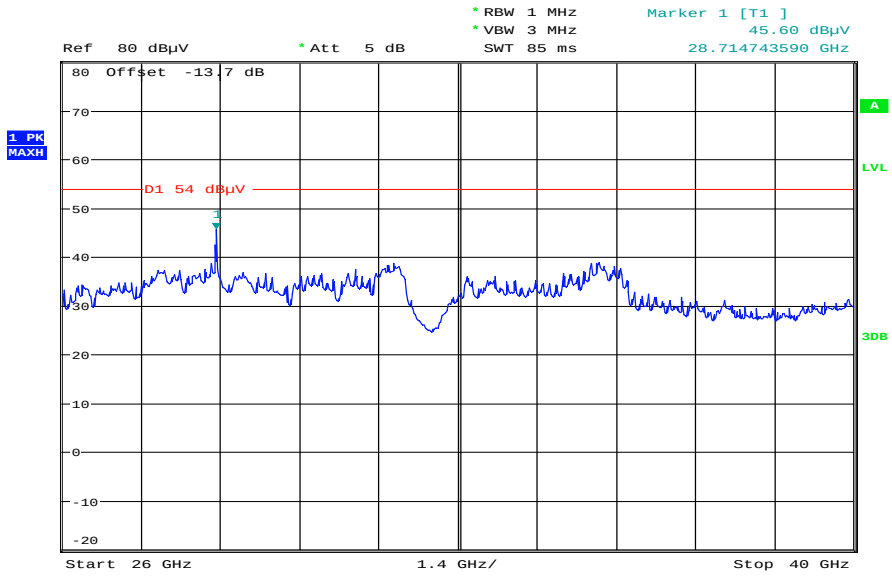
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 11:02:20

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

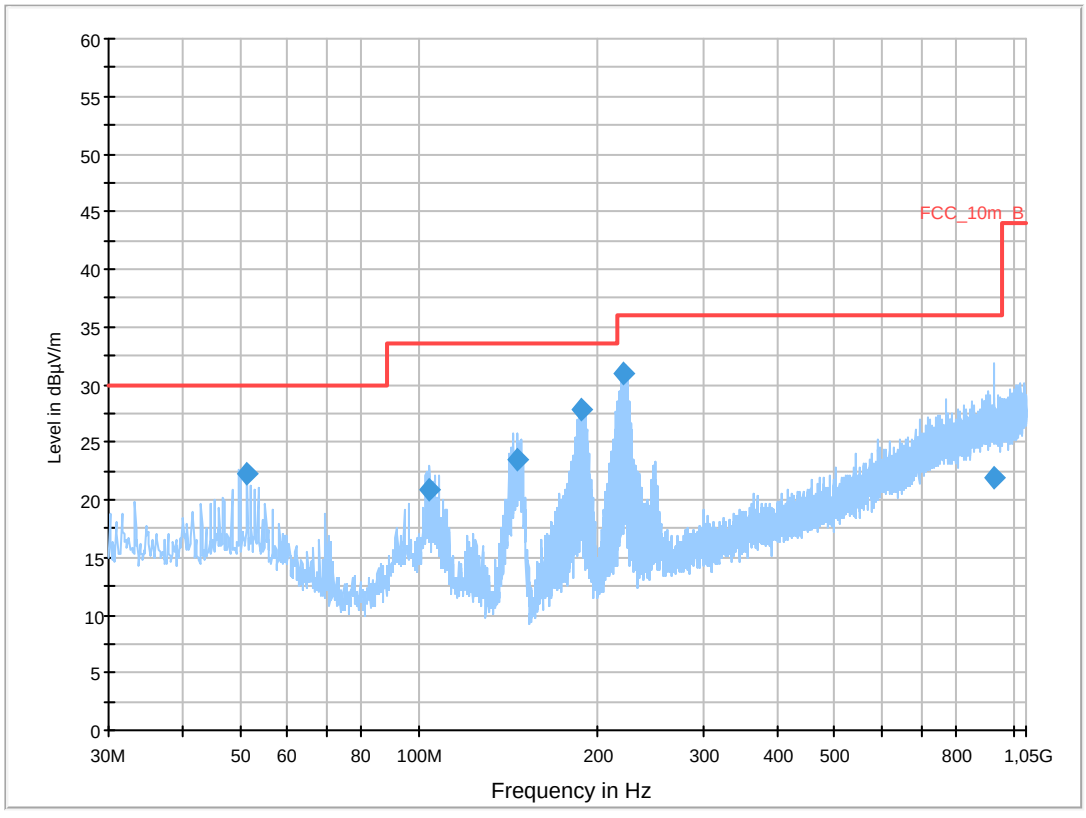
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT20 ch157
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

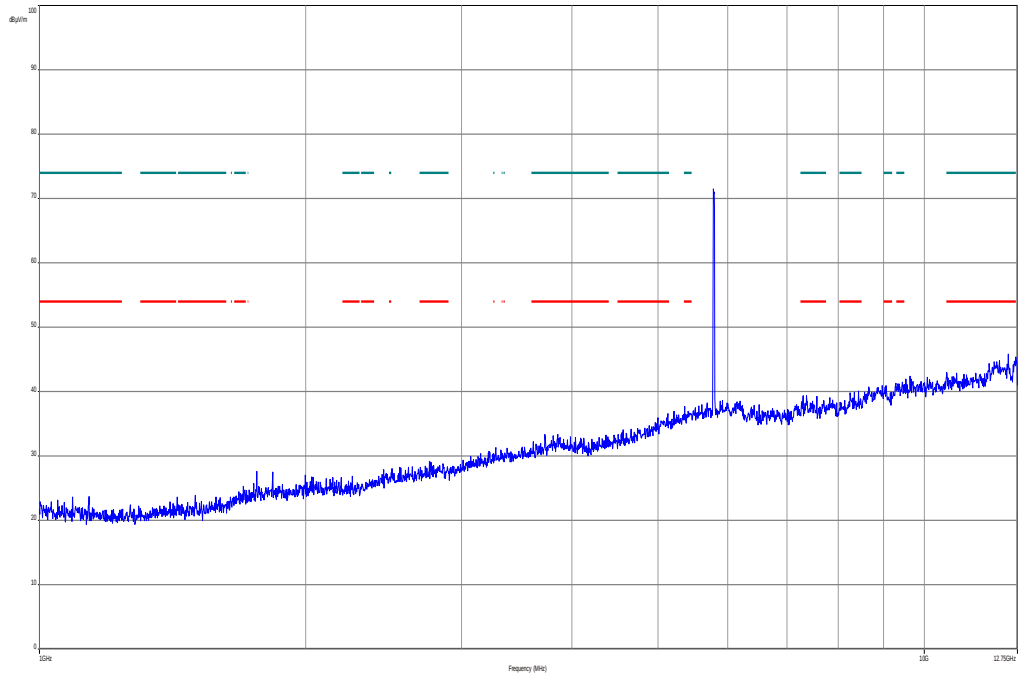
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



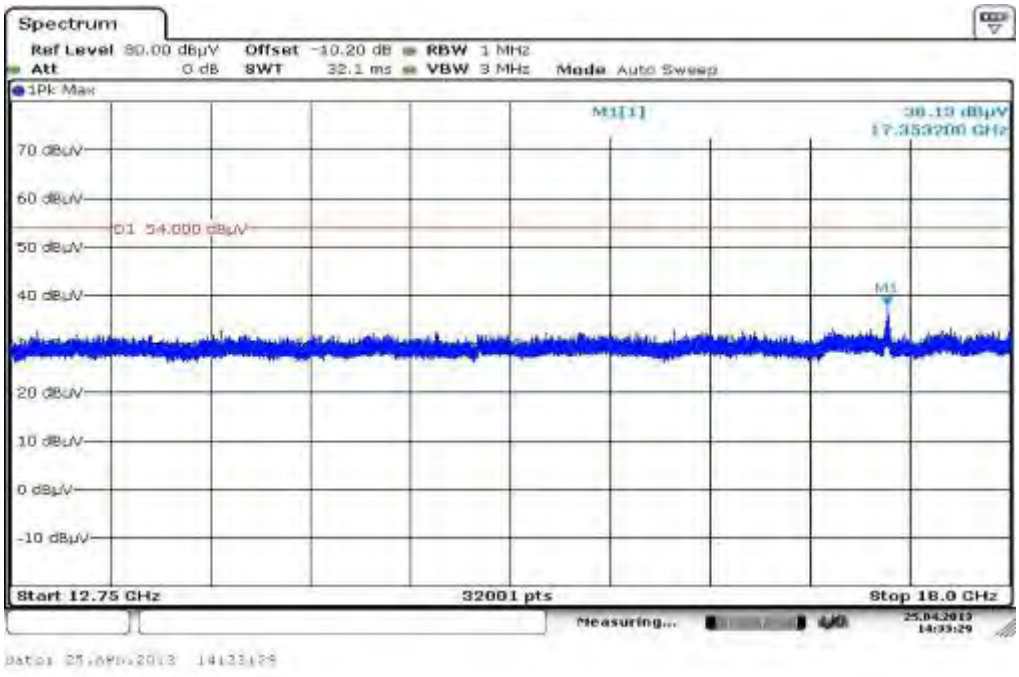
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
51.364800	22.3	1000.0	120.000	98.0	V	80.0	13.2	7.7	30.0	
104.250450	20.9	1000.0	120.000	132.0	V	272.0	11.5	12.6	33.5	
145.793400	23.5	1000.0	120.000	98.0	V	80.0	8.8	10.0	33.5	
187.350600	27.8	1000.0	120.000	98.0	V	92.0	10.9	5.7	33.5	
221.394450	30.9	1000.0	120.000	121.0	V	10.0	12.4	5.1	36.0	
927.207450	21.9	1000.0	120.000	170.0	V	261.0	25.3	14.1	36.0	

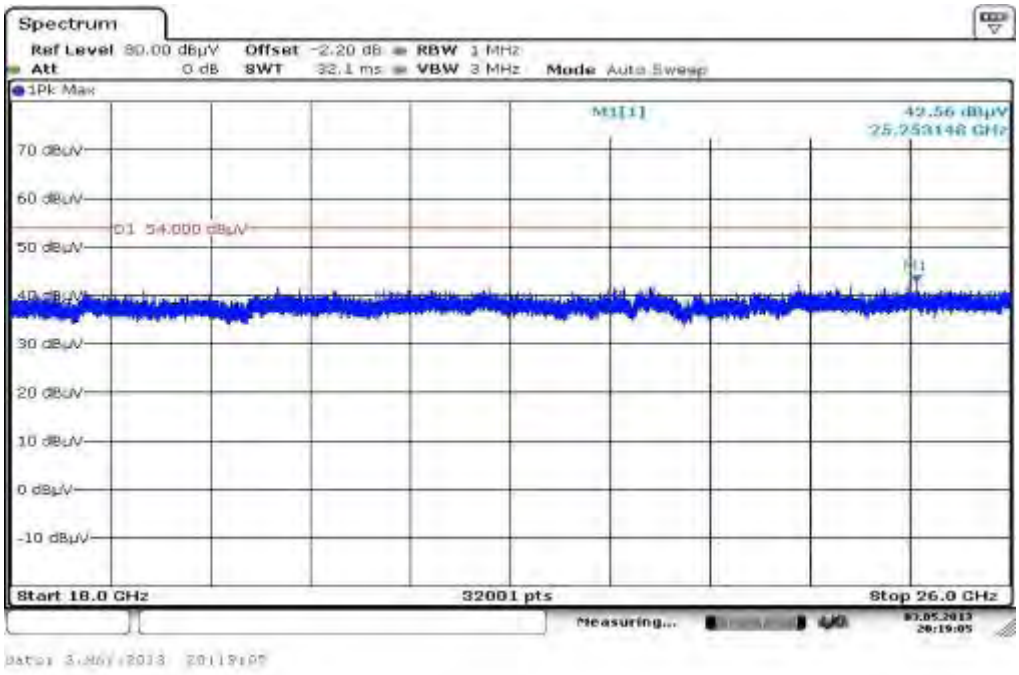
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



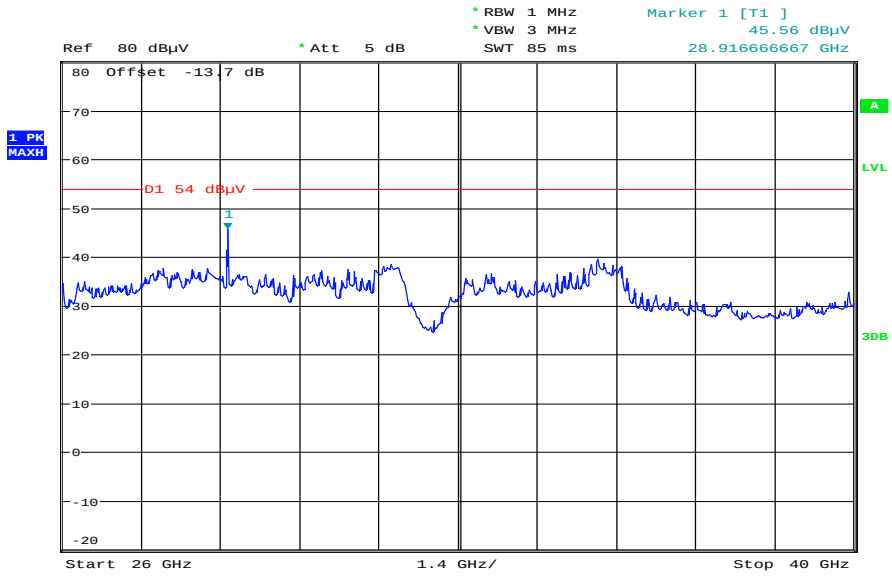
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 11:03:34

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

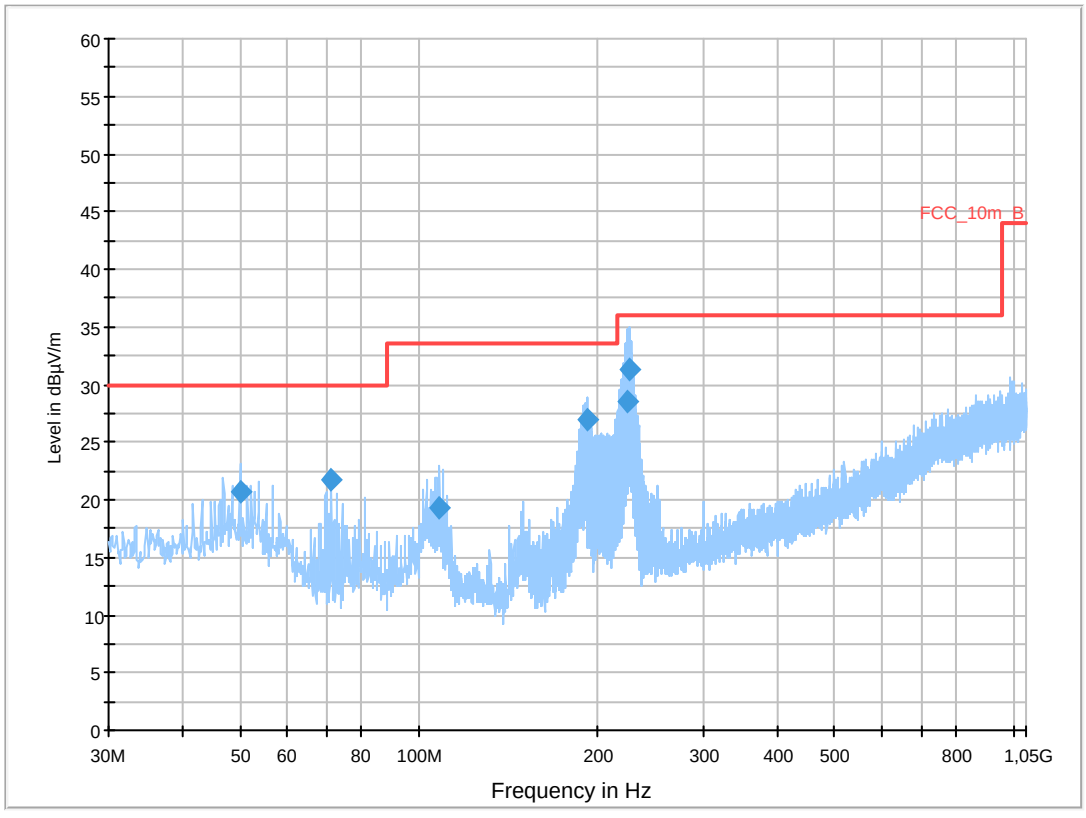
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT20 ch165
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

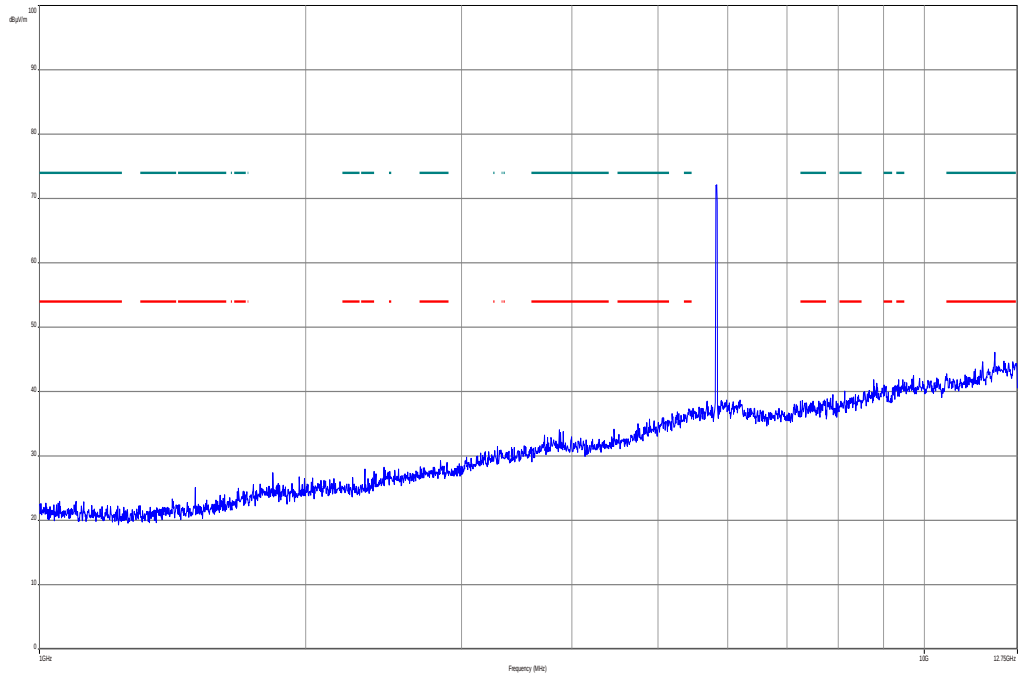
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



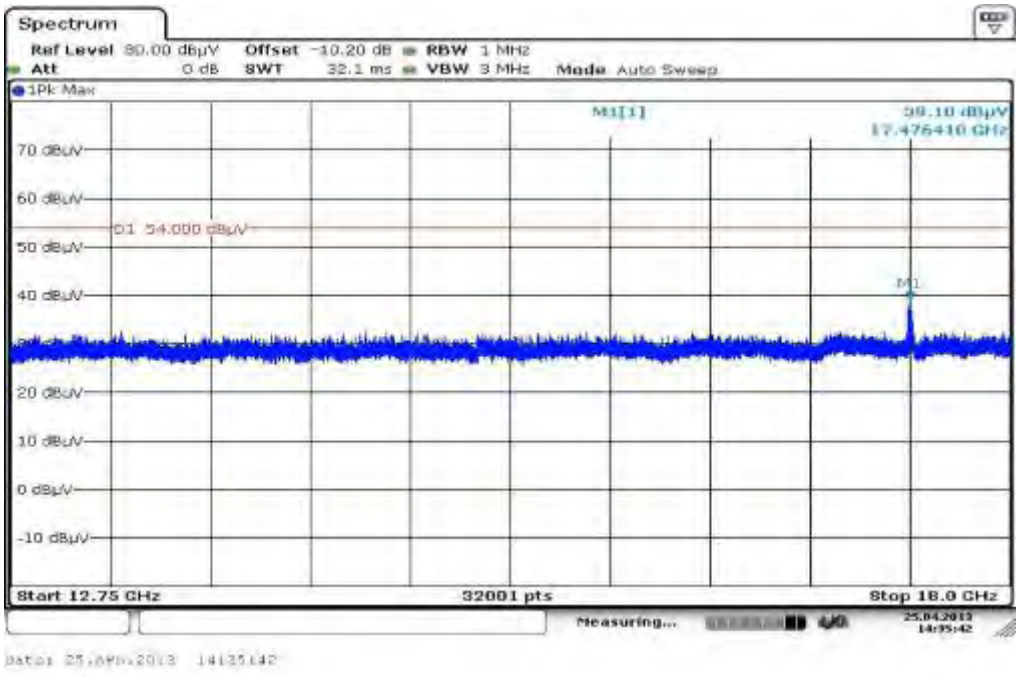
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
49.909650	20.7	1000.0	120.000	98.0	V	265.0	13.4	9.3	30.0	
71.071650	21.8	1000.0	120.000	170.0	V	80.0	9.3	8.2	30.0	
108.164100	19.4	1000.0	120.000	133.0	V	0.0	11.2	14.1	33.5	
191.319900	27.0	1000.0	120.000	98.0	V	-10.0	11.2	6.5	33.5	
223.851750	28.5	1000.0	120.000	98.0	V	273.0	12.5	7.5	36.0	
226.096350	31.3	1000.0	120.000	120.0	V	280.0	12.6	4.7	36.0	

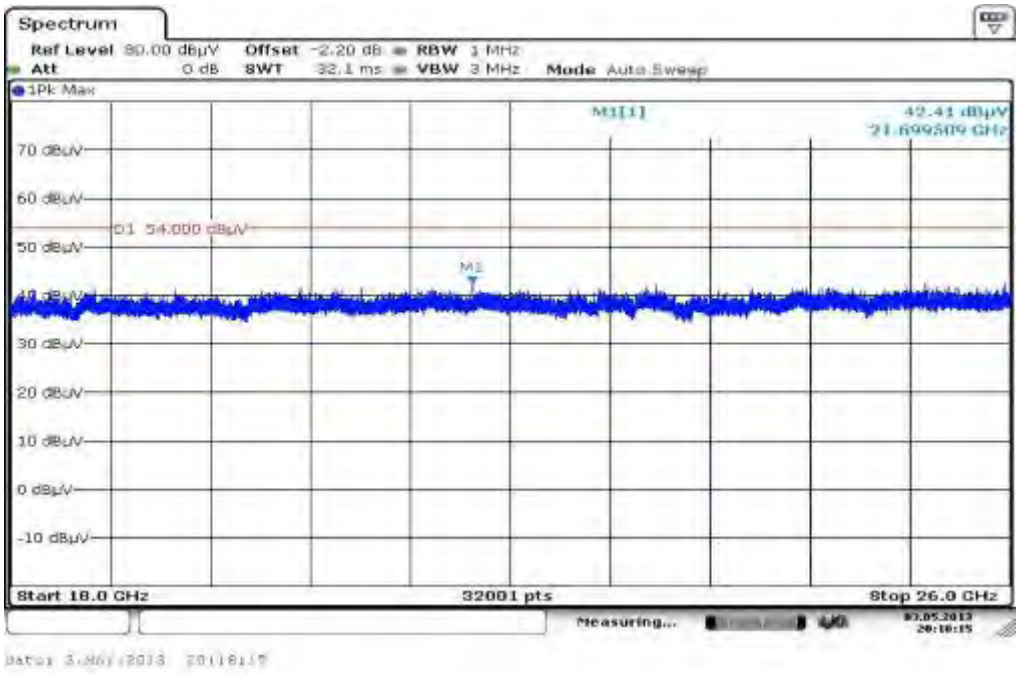
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



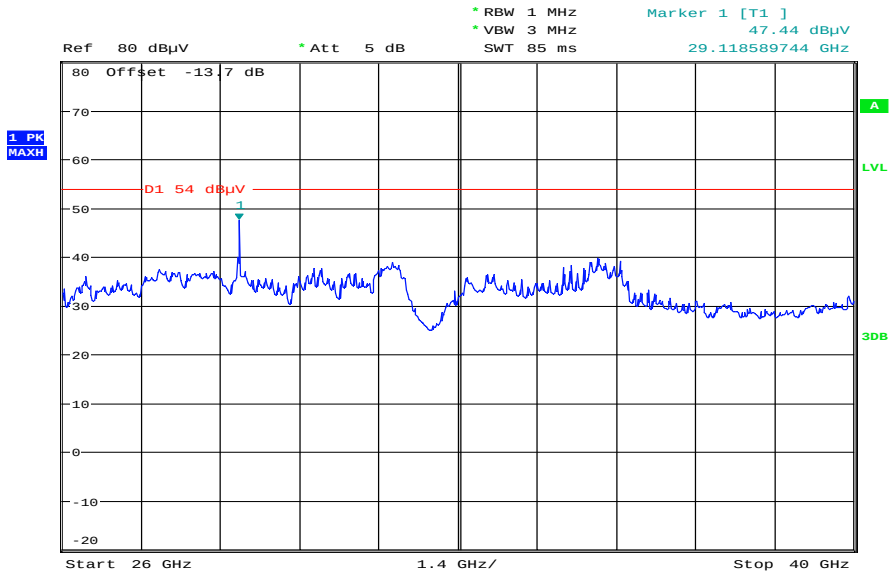
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 11:04:40

Plots: OFDM / n – mode HT40

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

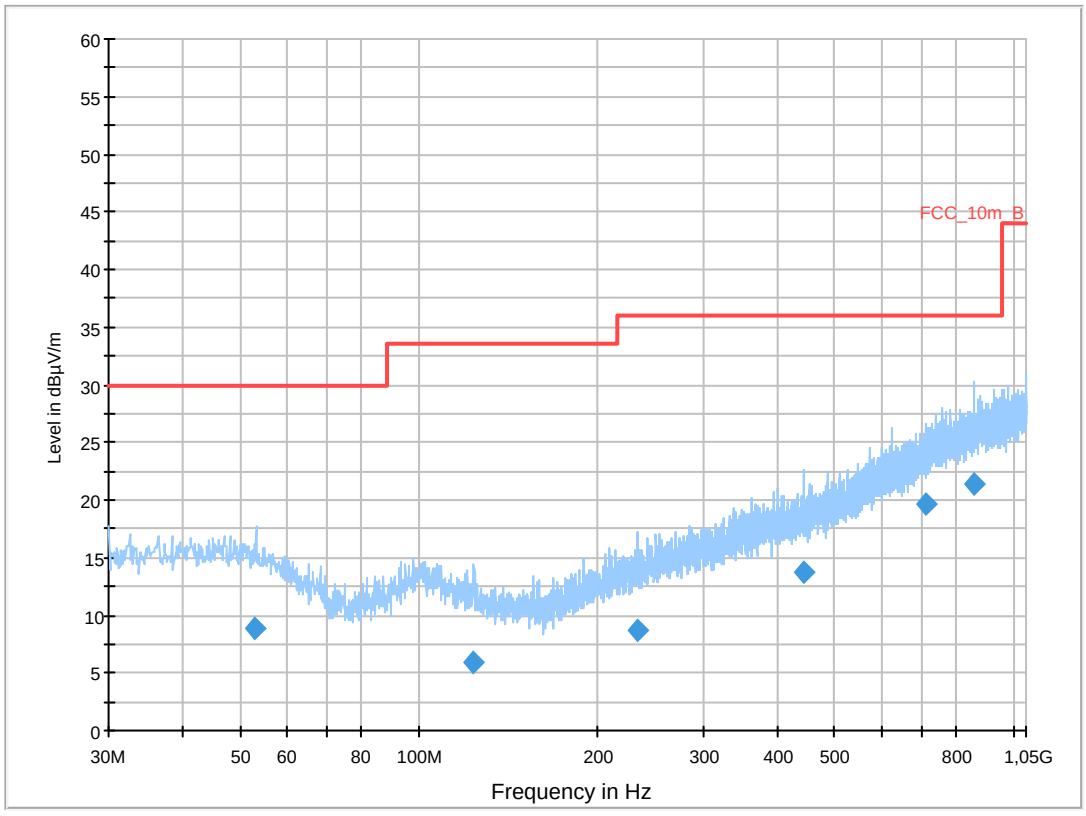
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT 40 tx @5745MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

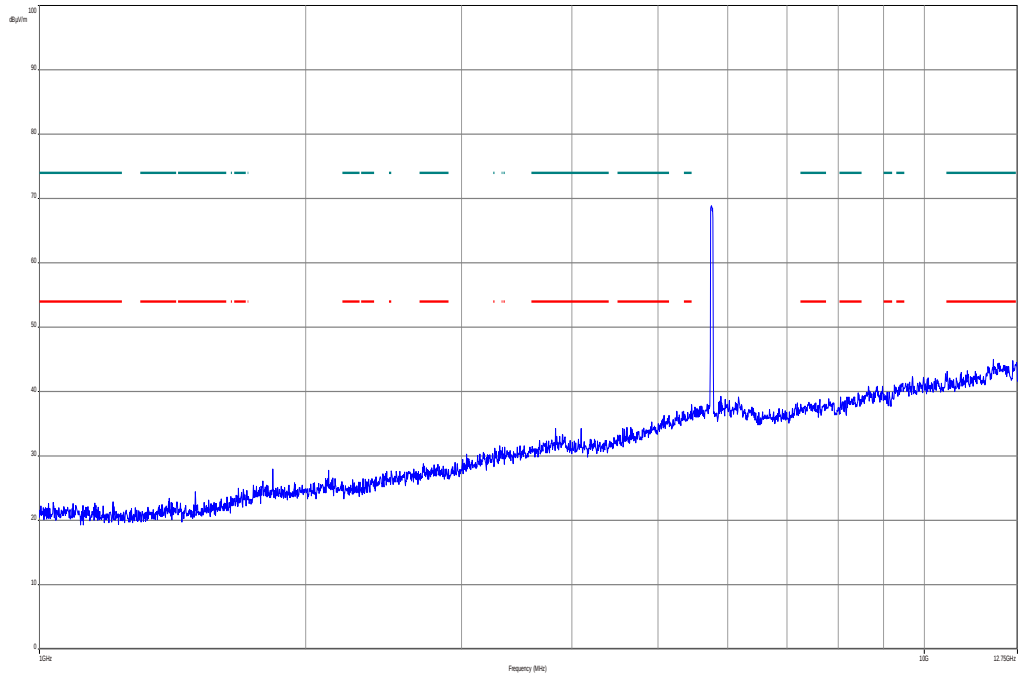
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



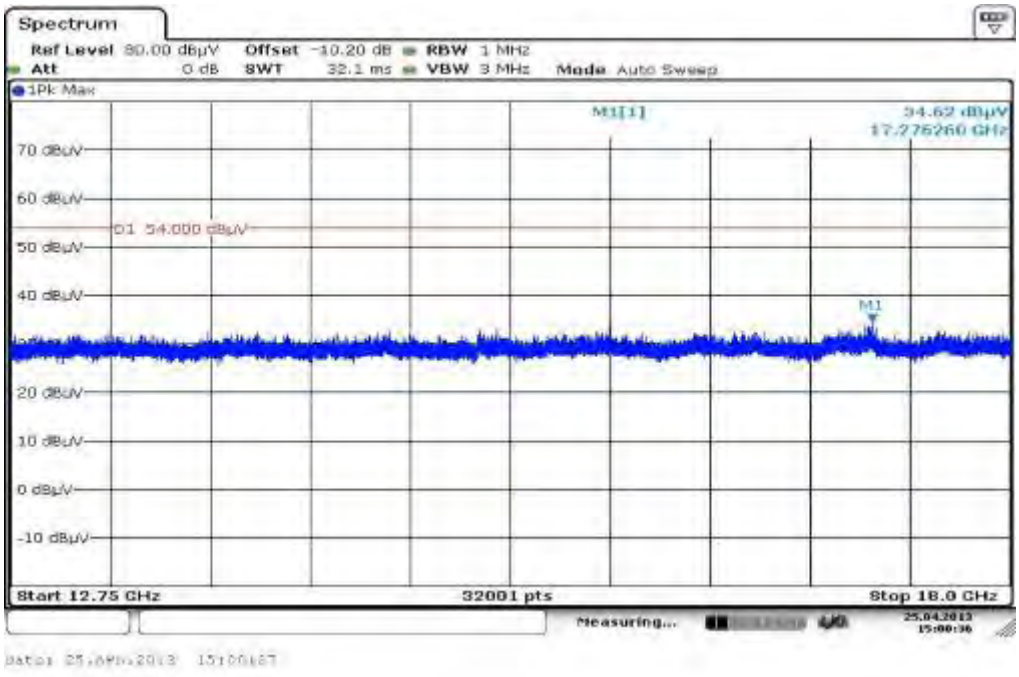
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
52.762050	8.8	1000.0	120.000	170.0	H	-10.0	13.1	21.2	30.0	
123.055650	6.0	1000.0	120.000	170.0	H	273.0	10.0	27.5	33.5	
232.642500	8.7	1000.0	120.000	134.0	V	268.0	12.8	27.3	36.0	
444.073800	13.7	1000.0	120.000	98.0	V	176.0	17.6	22.3	36.0	
711.347850	19.6	1000.0	120.000	170.0	V	171.0	22.8	16.4	36.0	
856.431000	21.4	1000.0	120.000	170.0	V	190.0	24.6	14.6	36.0	

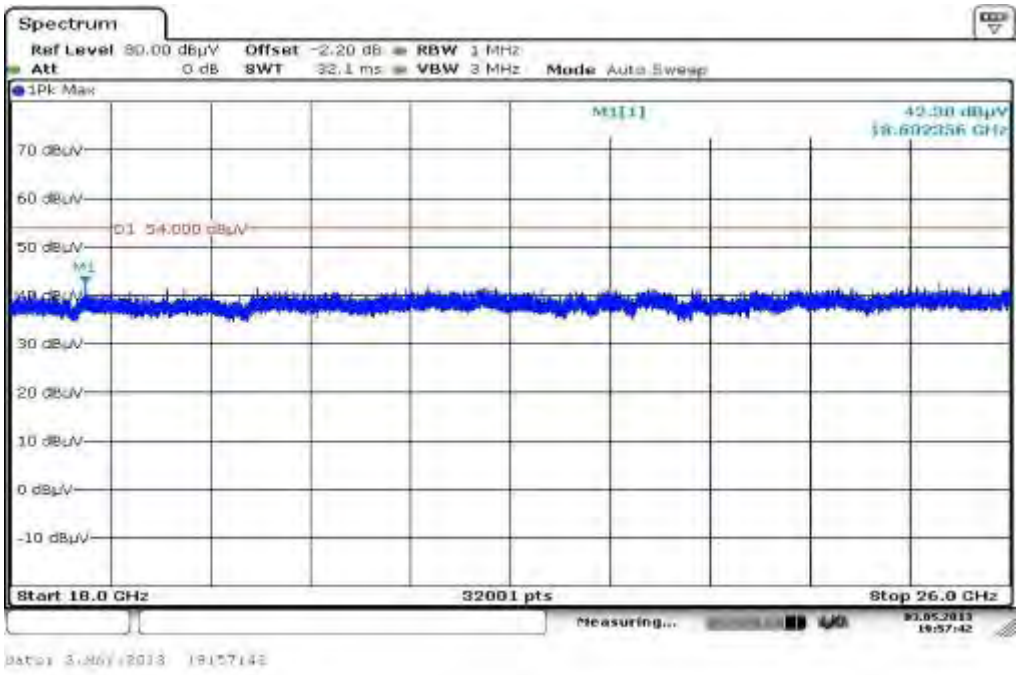
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



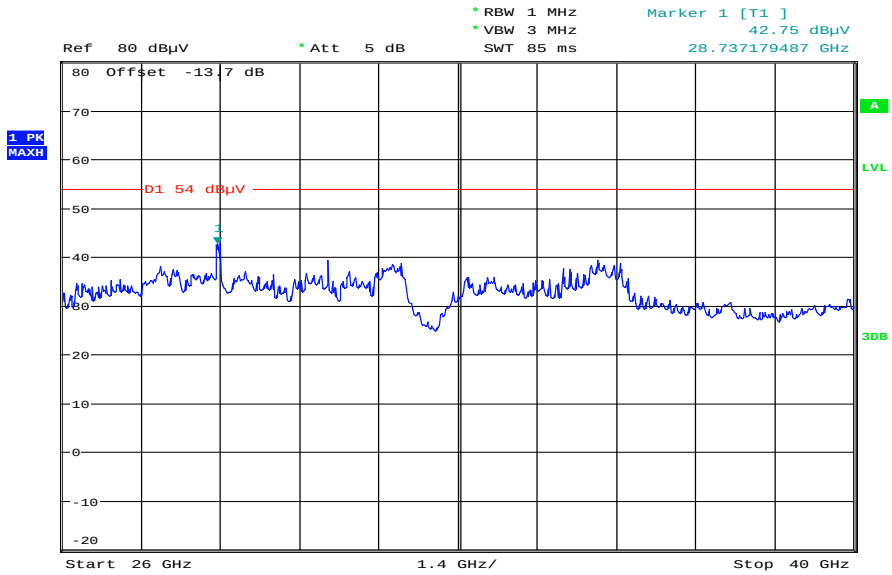
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 11:13:04

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

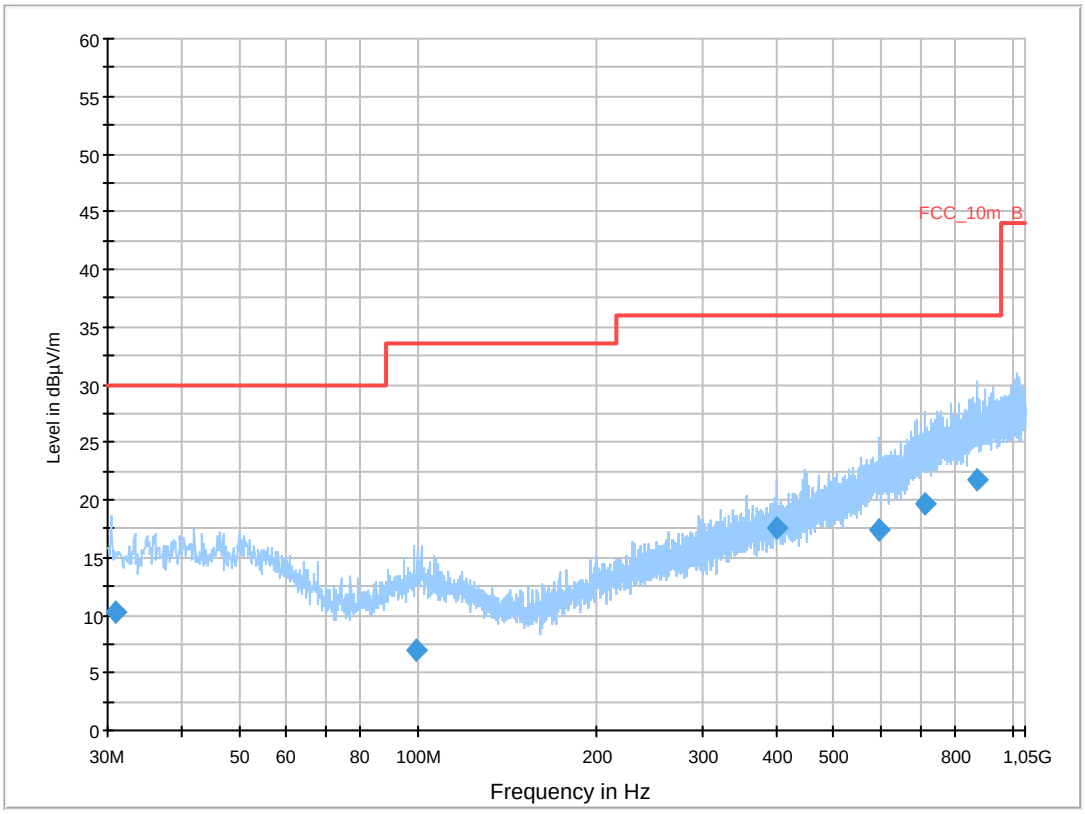
Common Information

EUT:	WLANBV2-A + antenna 453564154611
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan n-mode HT 40 tx @5795MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

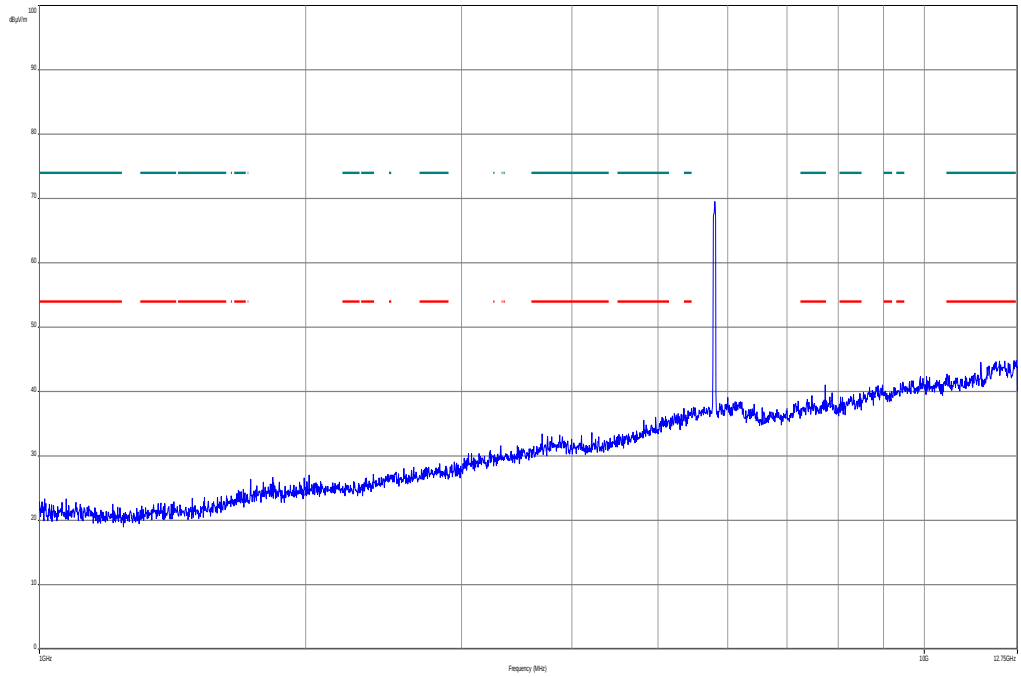
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



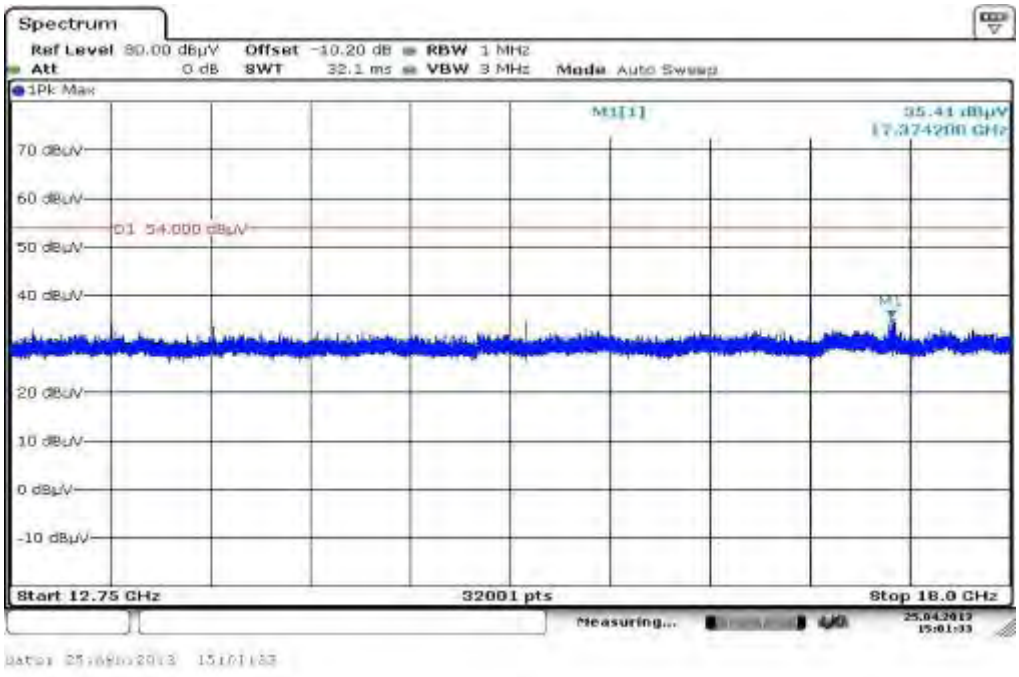
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
30.971201	10.2	1000.0	120.000	162.0	V	-9.0	12.6	19.8	30.0	
98.914950	6.9	1000.0	120.000	170.0	H	280.0	11.8	26.6	33.5	
399.990450	17.5	1000.0	120.000	170.0	V	268.0	16.9	18.5	36.0	
593.881650	17.4	1000.0	120.000	170.0	V	10.0	20.6	18.6	36.0	
712.192800	19.7	1000.0	120.000	170.0	V	100.0	22.8	16.3	36.0	
868.794150	21.7	1000.0	120.000	105.0	V	100.0	24.8	14.3	36.0	

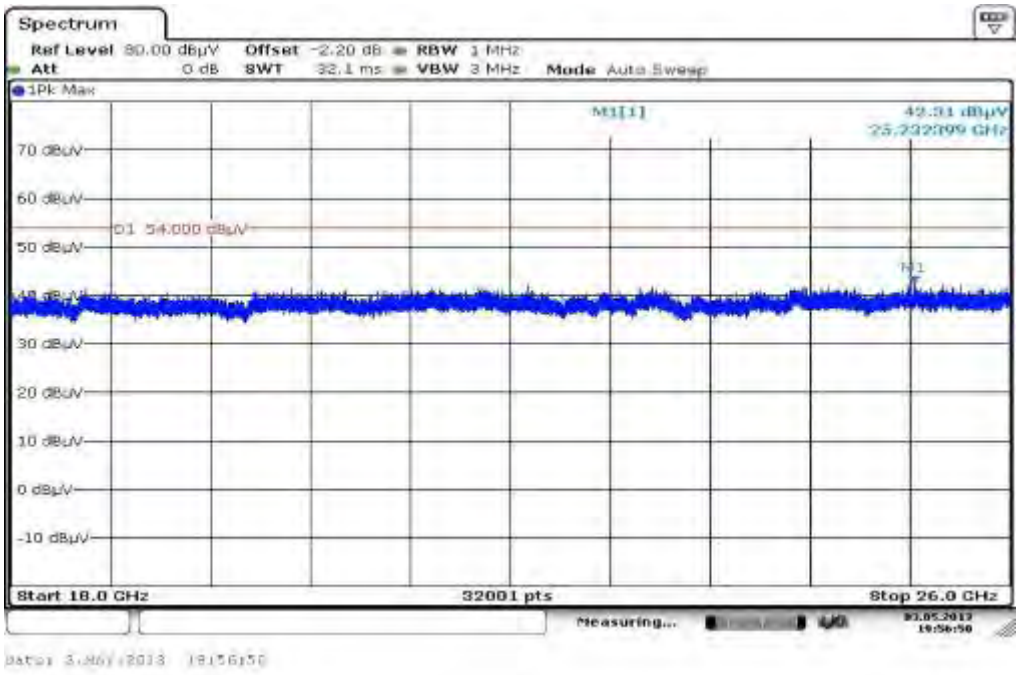
Plot 7: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



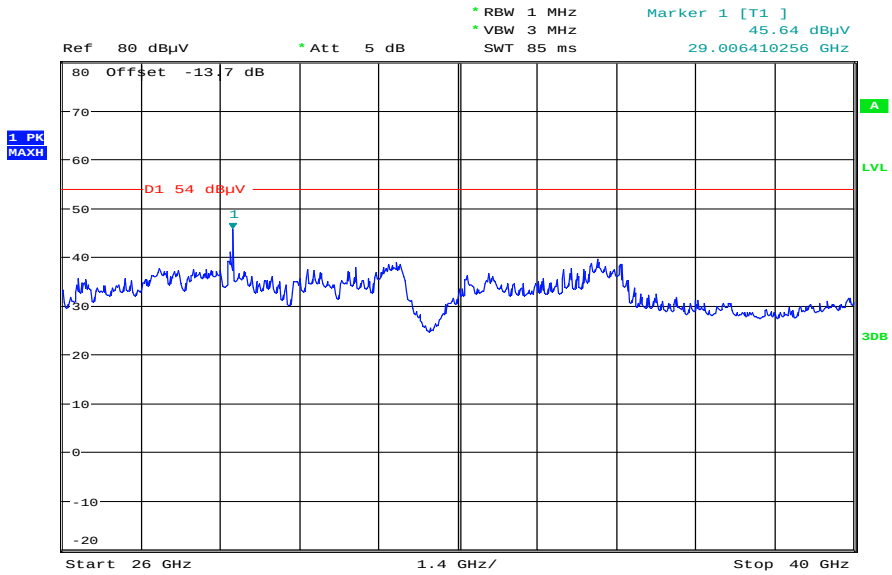
Plot 8: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 11:14:04

Antenna 453564271931:

Results: OFDM / a – mode

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / a – mode								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT20

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT20								
5745 MHz			5785 MHz			5825 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.		
Measurement uncertainty			± 3 dB					

Result: Passed

Results: OFDM / n – mode HT40

TX Spurious Emissions Radiated [dBµV/m]								
OFDM / n – mode HT40								
5755 MHz			5795 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.			-/-		
Measurement uncertainty			± 3 dB					

Result: Passed

Note: Results of OFDM n – mode are added to show the compliance with the standard.

Plots: OFDM / a – mode

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

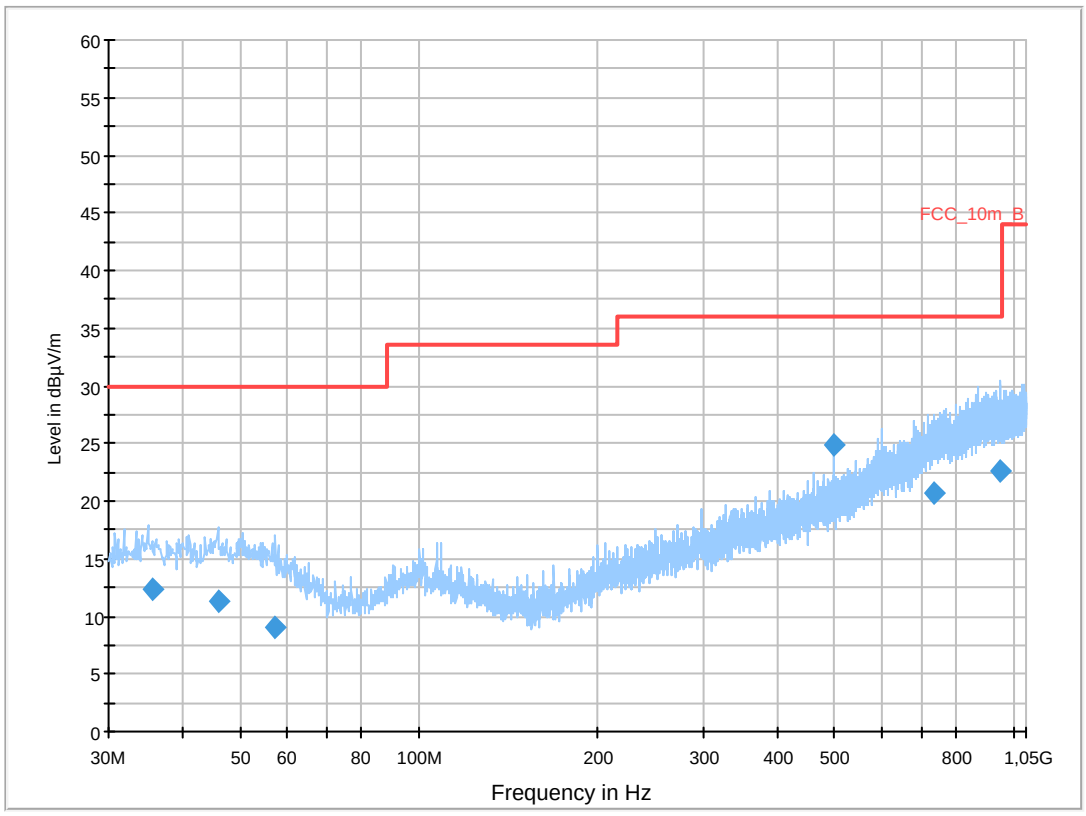
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	008092
Test Description:	FCC part 15 C class B
Operating Conditions:	WLAN a mode tx @ 5745 MHz
Operator Name:	Hennemann
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

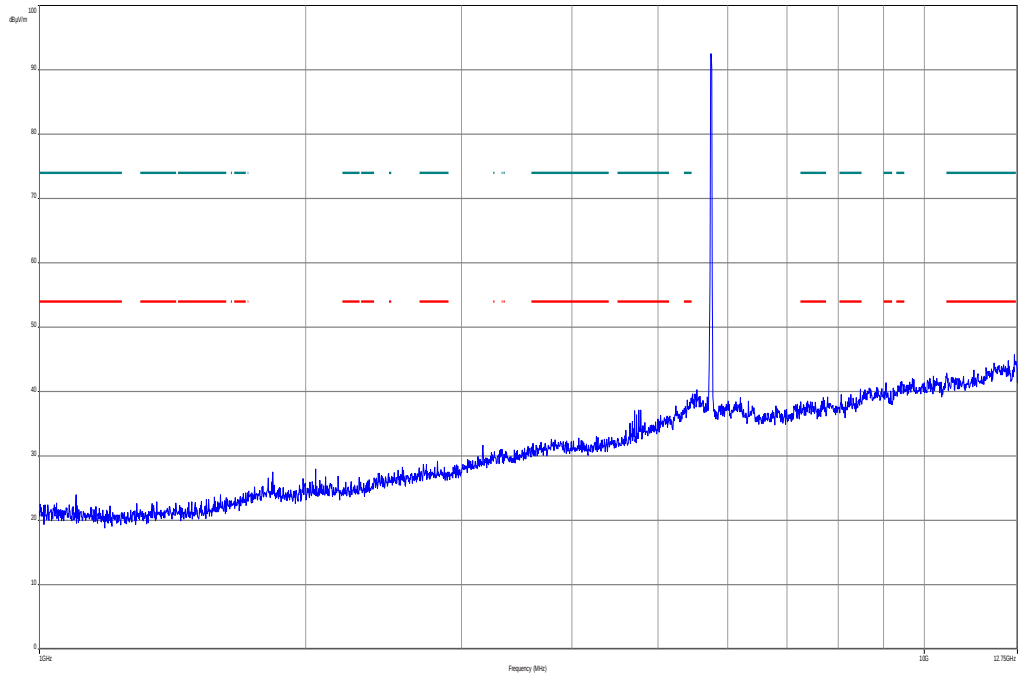
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



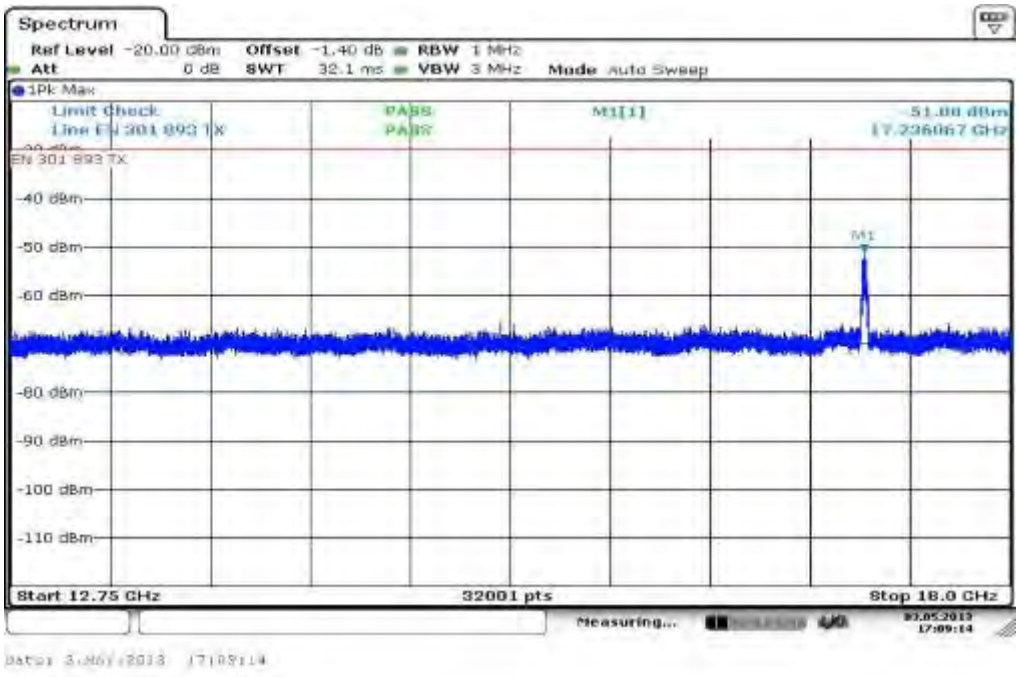
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
35.494650	12.4	1000.0	120.000	170.0	V	90.0	13.1	17.6	30.0	
46.029150	11.3	1000.0	120.000	122.0	V	80.0	13.3	18.7	30.0	
57.193500	9.1	1000.0	120.000	122.0	H	171.0	12.3	20.9	30.0	
499.998600	24.8	1000.0	120.000	98.0	V	-2.0	18.7	11.2	36.0	
733.282200	20.7	1000.0	120.000	112.0	V	100.0	23.3	15.4	36.0	
945.837300	22.5	1000.0	120.000	121.0	H	80.0	25.3	13.5	36.0	

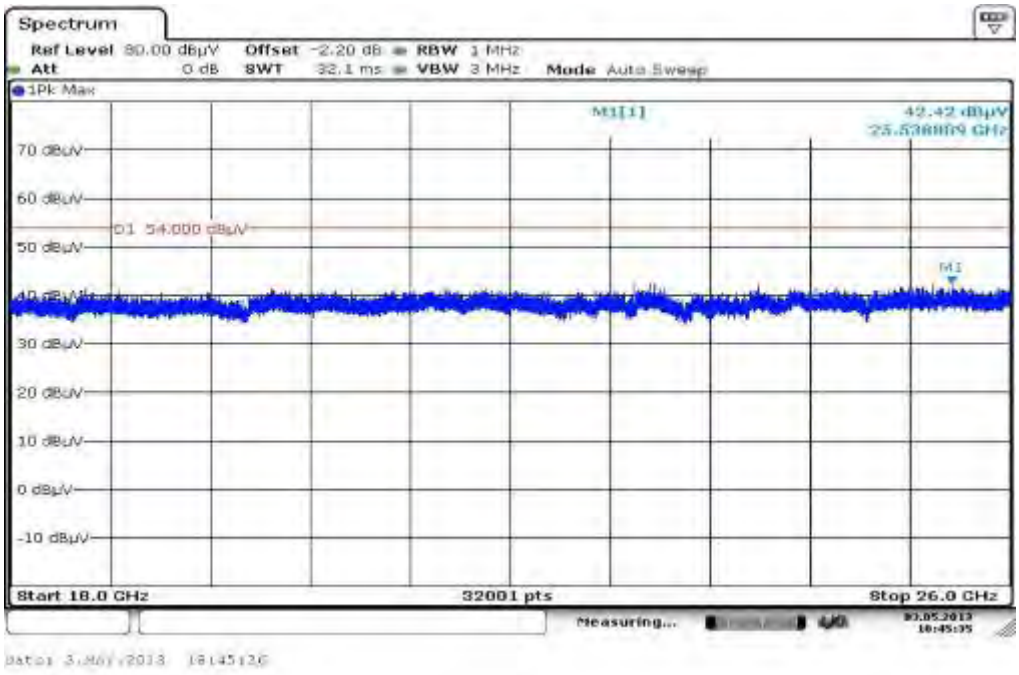
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



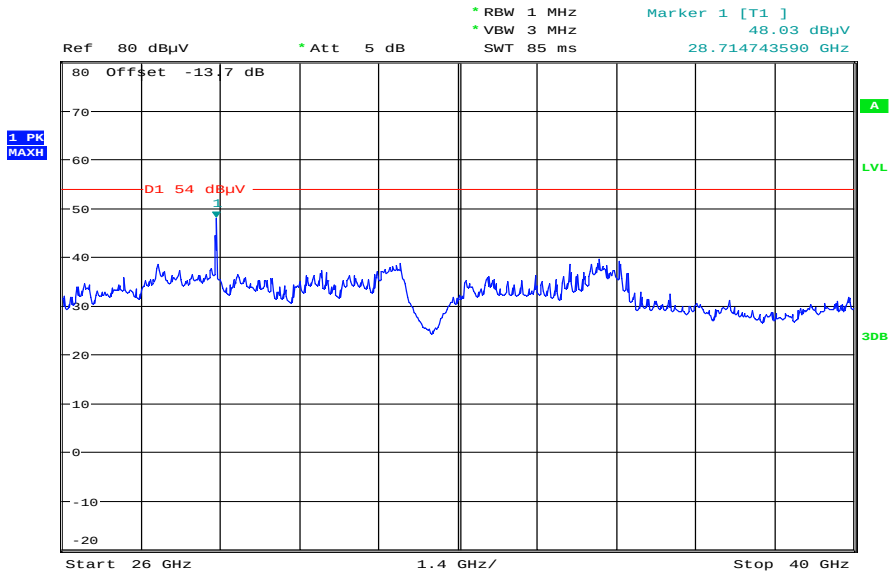
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



Date: 14.MAY.2013 15:18:29

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

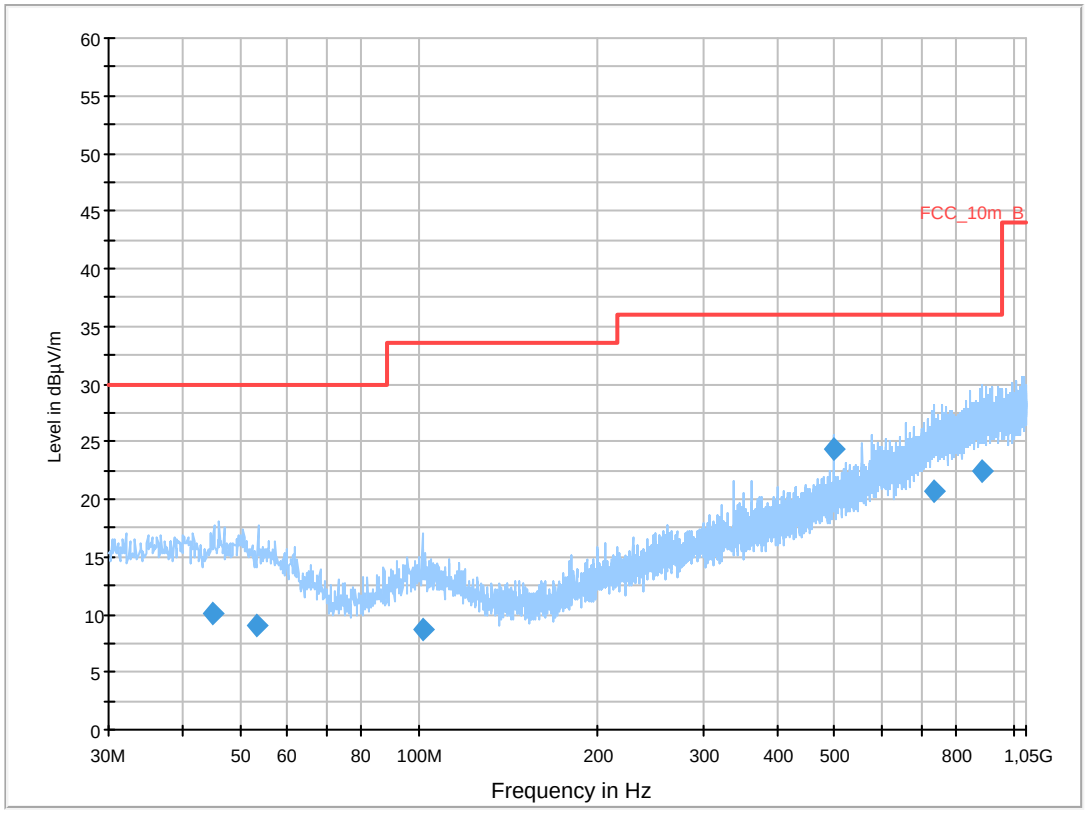
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	008092
Test Description:	FCC part 15 C class B
Operating Conditions:	WLAN a mode tx @ 5785 MHz
Operator Name:	Hennemann
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

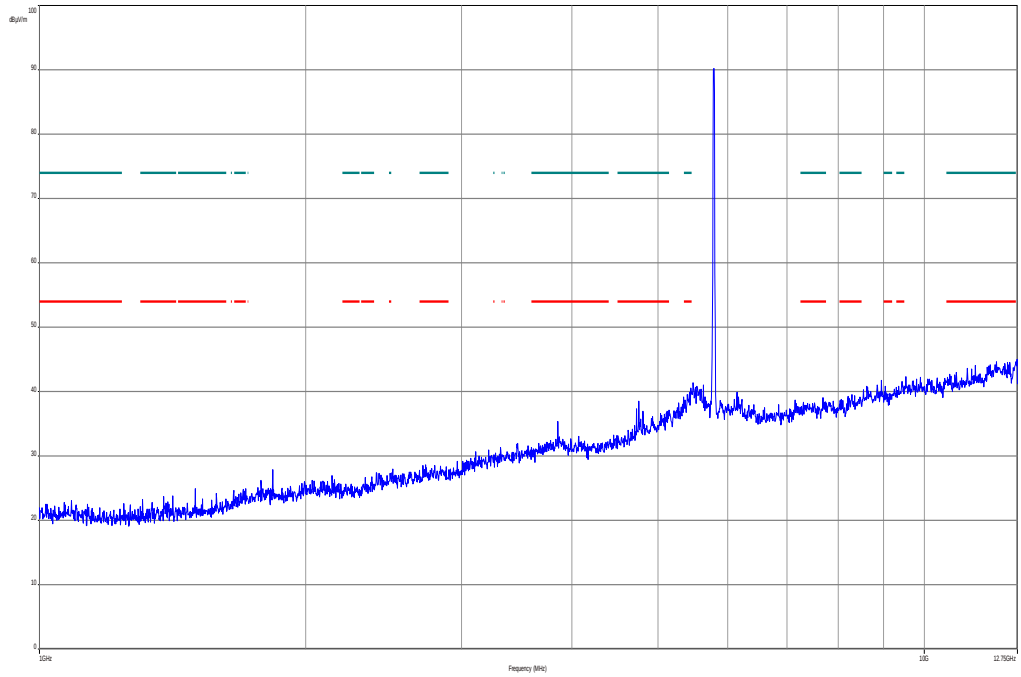
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



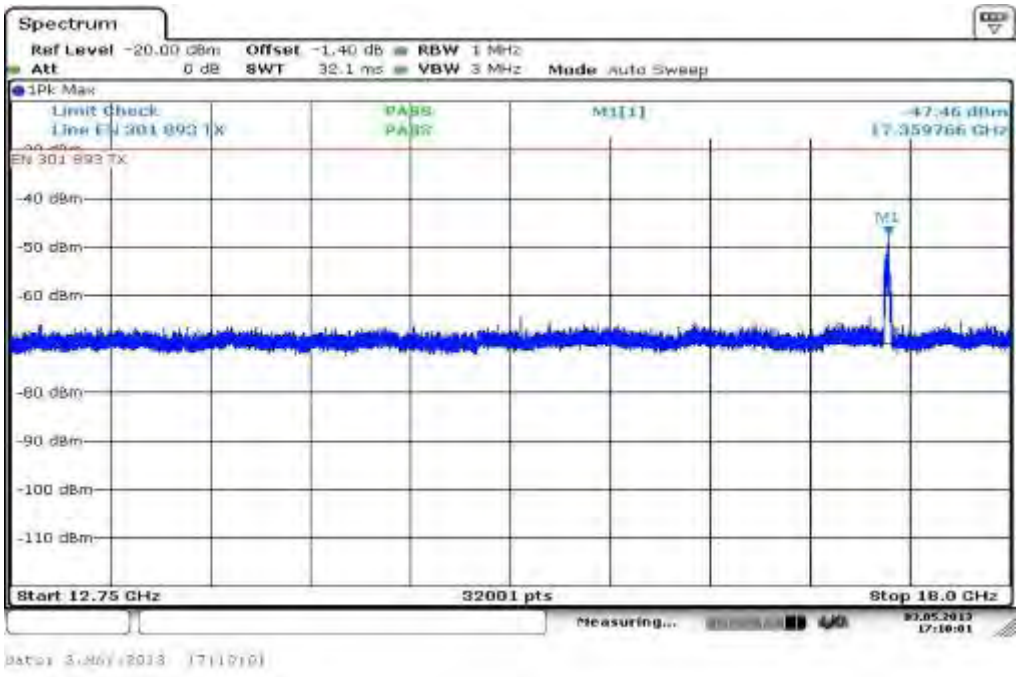
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
44.794950	10.1	1000.0	120.000	111.0	V	171.0	13.3	19.9	30.0	
53.304300	9.1	1000.0	120.000	170.0	H	178.0	13.0	20.9	30.0	
101.719650	8.6	1000.0	120.000	170.0	H	100.0	11.7	24.9	33.5	
500.023950	24.4	1000.0	120.000	98.0	V	2.0	18.7	11.6	36.0	
732.878100	20.7	1000.0	120.000	170.0	H	88.0	23.3	15.3	36.0	
884.497350	22.5	1000.0	120.000	98.0	V	10.0	25.0	13.5	36.0	

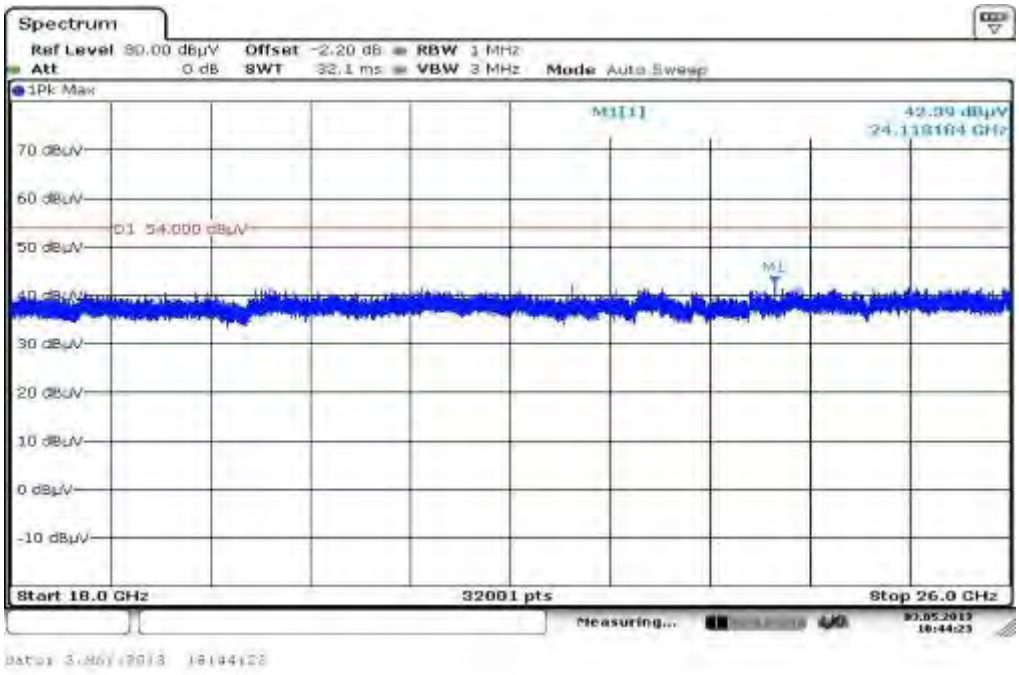
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



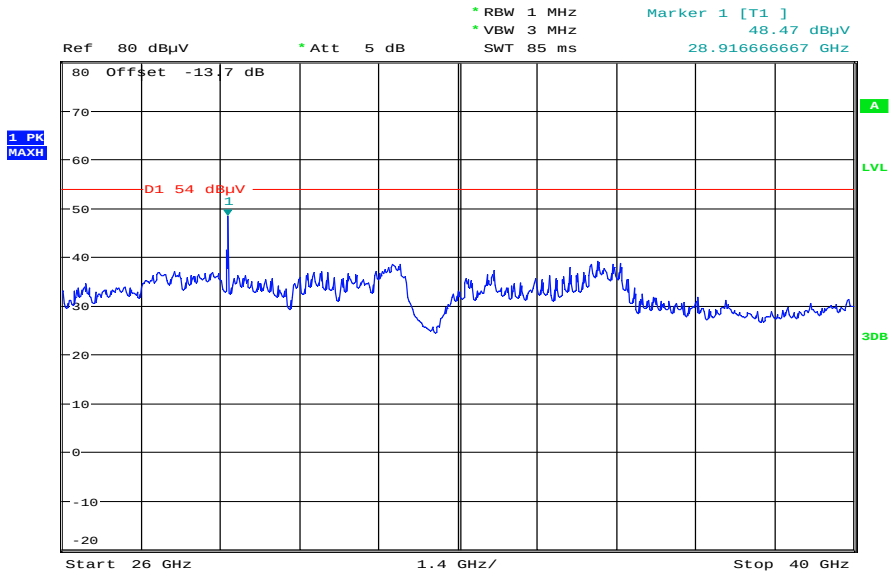
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 15:19:35

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

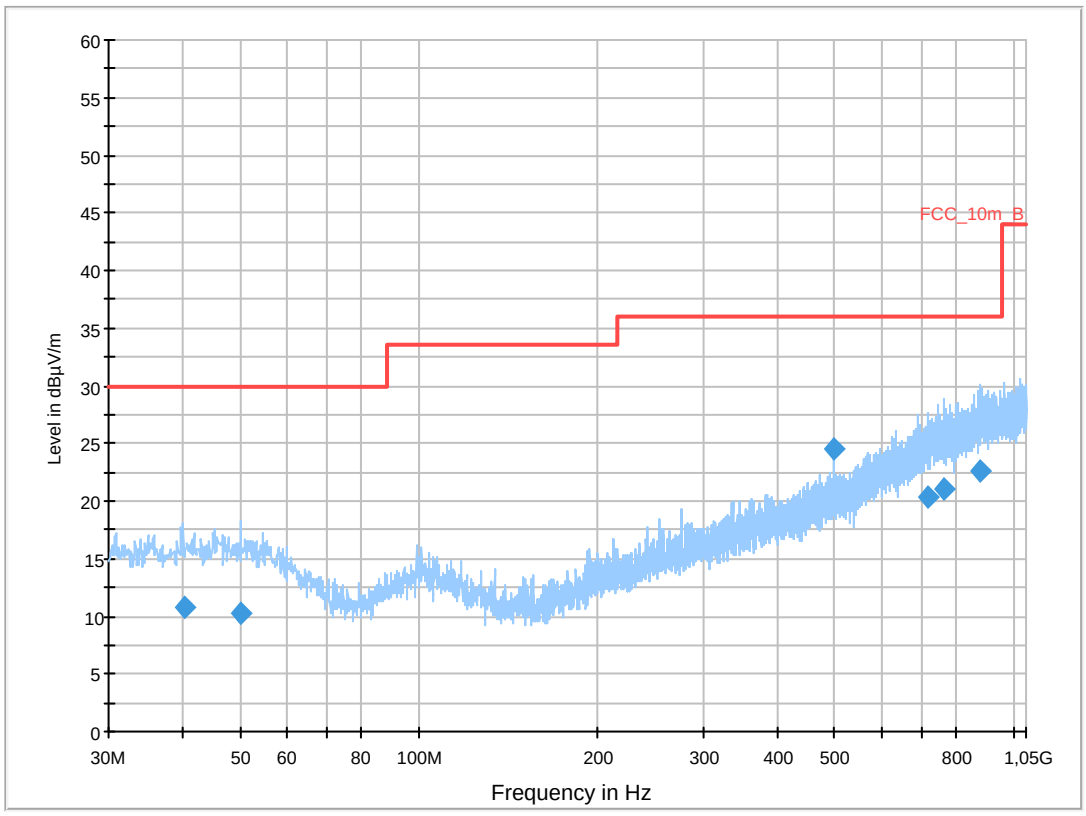
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	008092
Test Description:	FCC part 15 C class B
Operating Conditions:	WLAN a mode tx @ 5825 MHz
Operator Name:	Hennemann
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

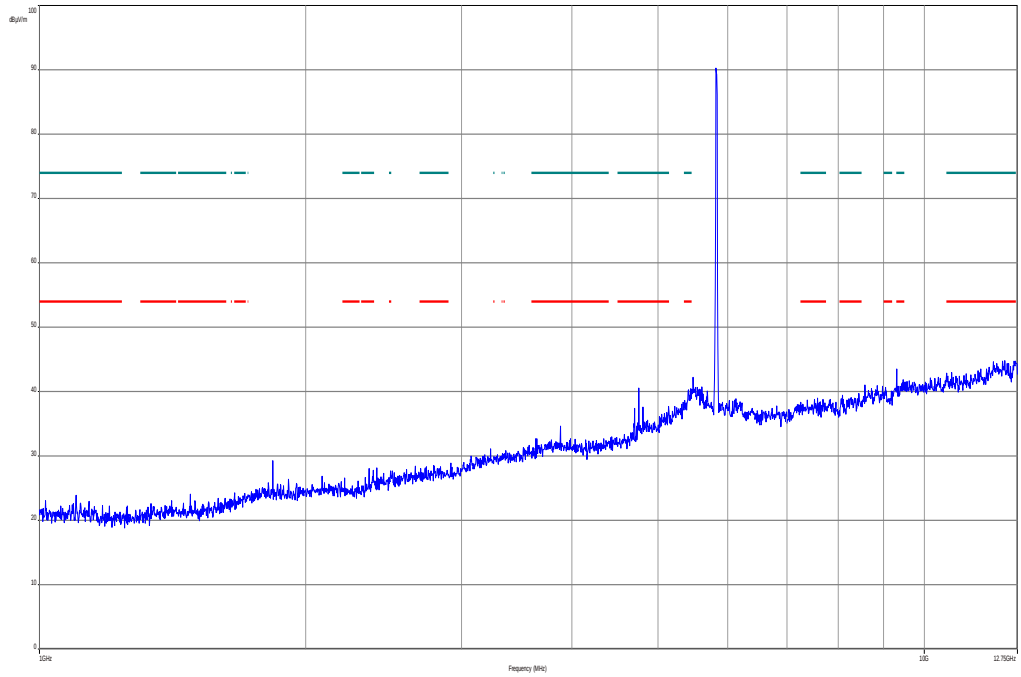
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



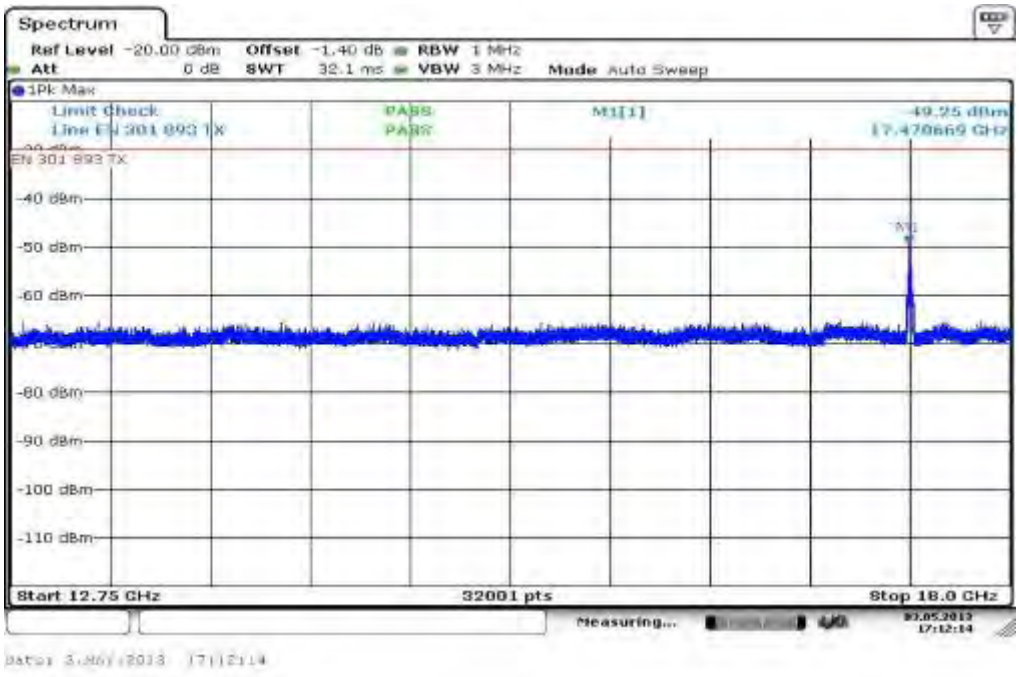
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
40.385700	10.8	1000.0	120.000	170.0	V	87.0	13.4	19.2	30.0	
49.966800	10.3	1000.0	120.000	170.0	V	267.0	13.4	19.7	30.0	
499.989600	24.5	1000.0	120.000	98.0	V	-3.0	18.7	11.5	36.0	
715.995300	20.3	1000.0	120.000	98.0	H	2.0	22.9	15.7	36.0	
762.988650	21.0	1000.0	120.000	98.0	V	171.0	23.7	15.0	36.0	
880.143900	22.6	1000.0	120.000	170.0	H	280.0	24.9	13.4	36.0	

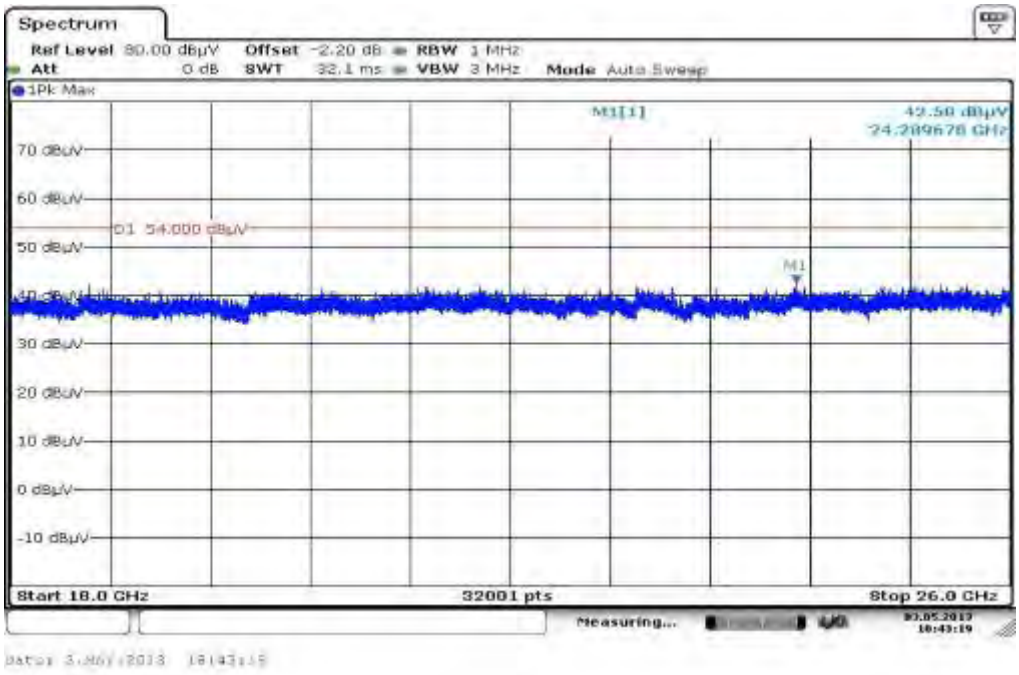
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



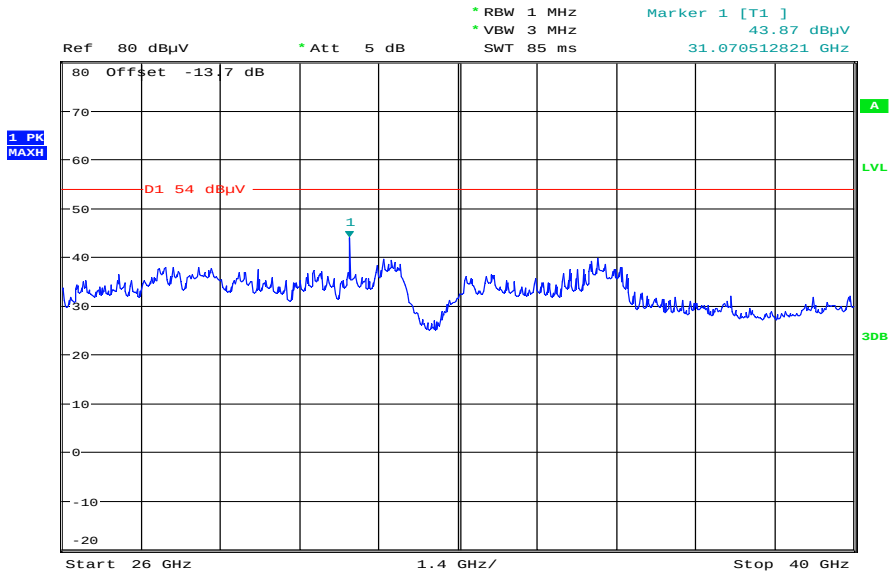
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 14.MAY.2013 15:20:39

Plots: OFDM / n – mode HT20

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

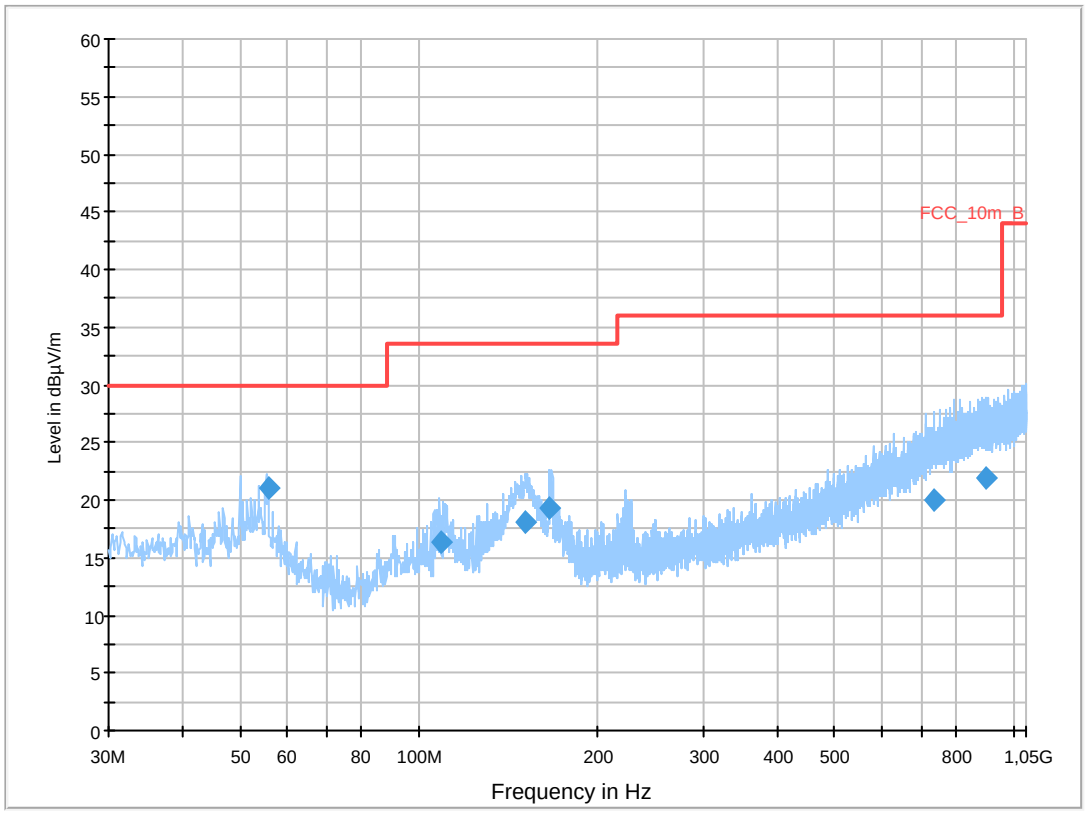
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode ch149
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

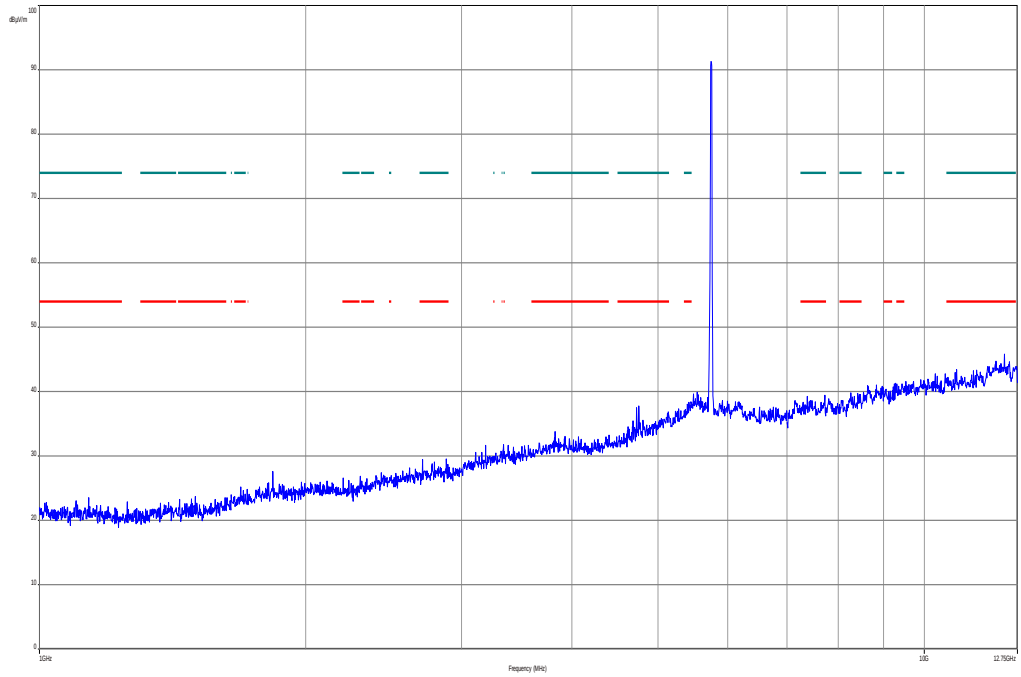
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



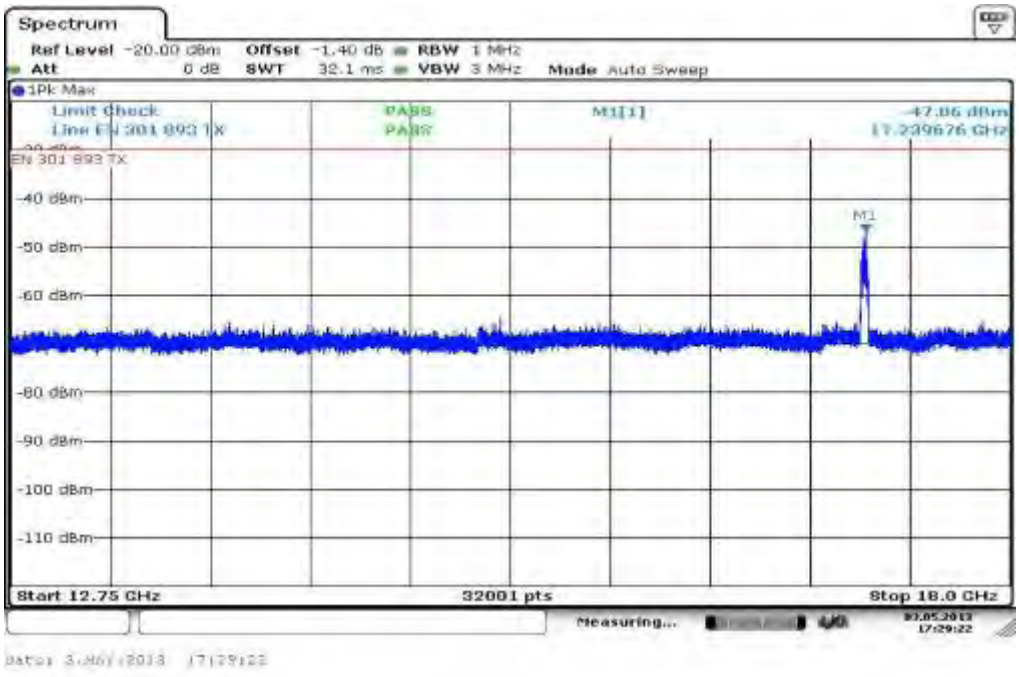
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
55.737450	21.1	1000.0	120.000	170.0	V	90.0	12.7	8.9	30.0	
108.826800	16.3	1000.0	120.000	170.0	V	2.0	11.1	17.2	33.5	
150.605400	18.1	1000.0	120.000	98.0	V	100.0	8.9	15.4	33.5	
165.603750	19.3	1000.0	120.000	98.0	V	-5.0	9.5	14.2	33.5	
732.485400	20.0	1000.0	120.000	170.0	H	190.0	23.3	16.0	36.0	
901.910250	21.9	1000.0	120.000	170.0	V	87.0	25.2	14.1	36.0	

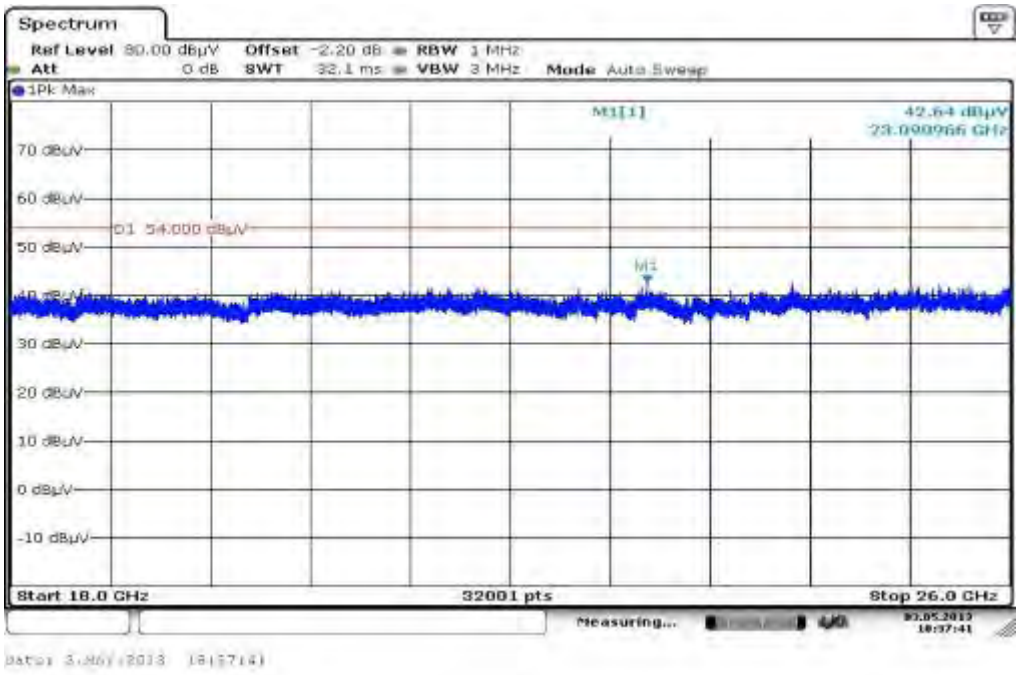
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



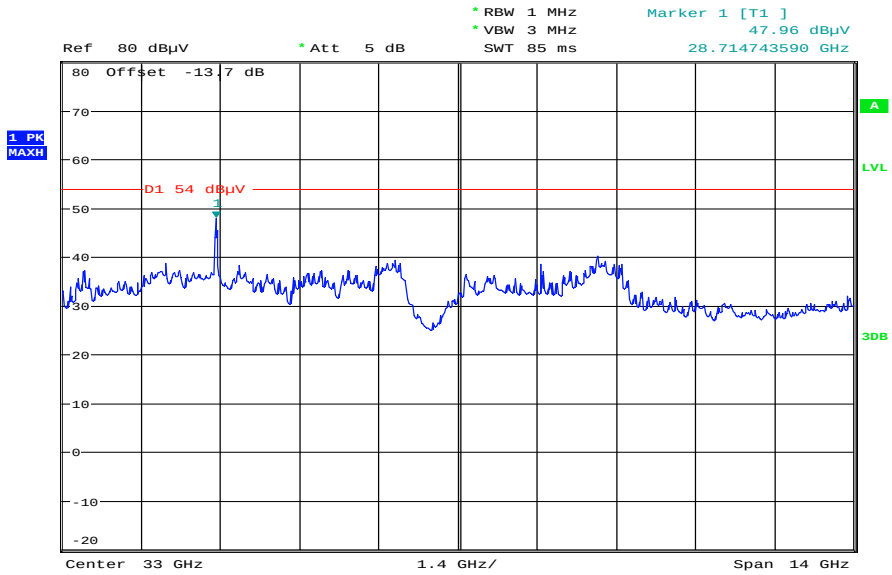
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



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

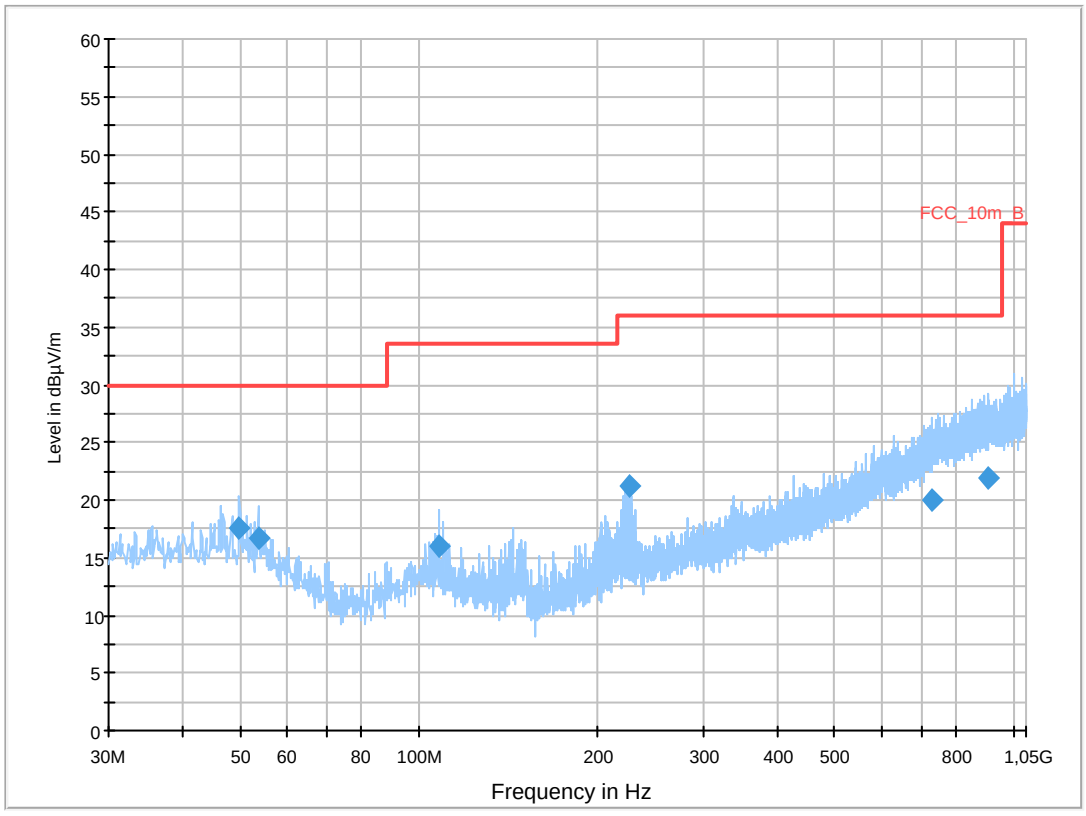
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode ch157
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

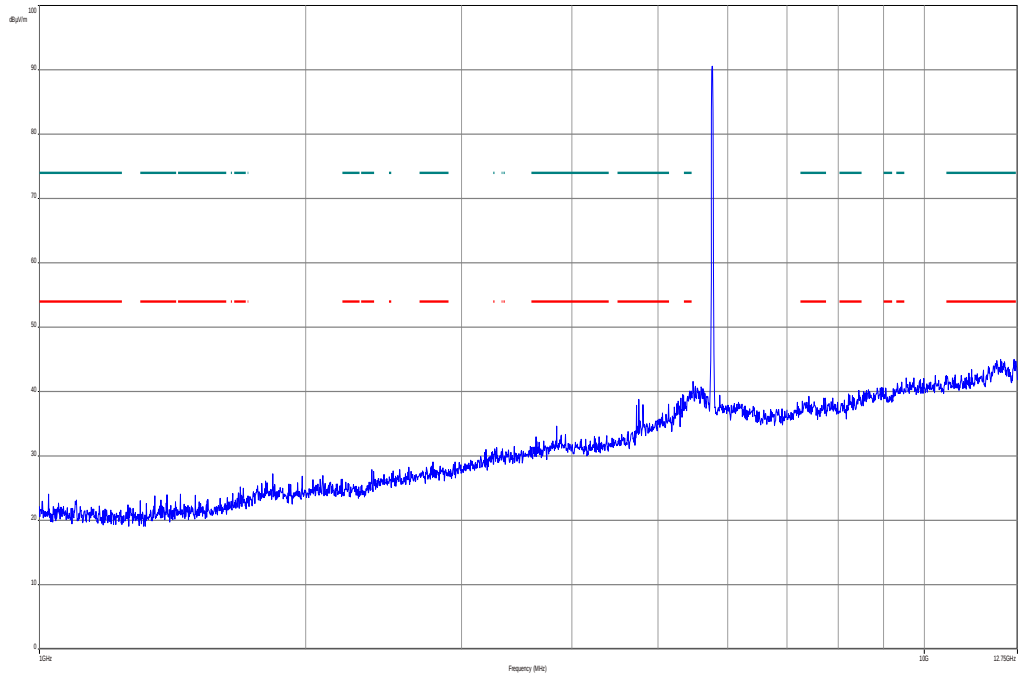
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



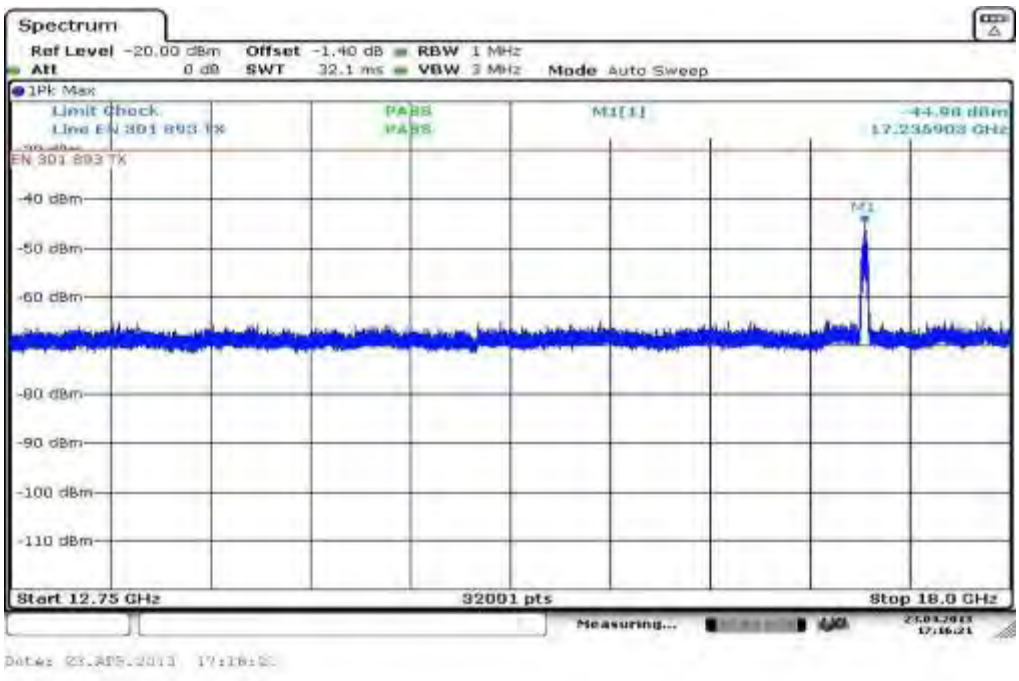
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
49.852350	17.5	1000.0	120.000	112.0	V	100.0	13.4	12.5	30.0	
53.620350	16.7	1000.0	120.000	111.0	V	-5.0	13.0	13.3	30.0	
108.041250	15.9	1000.0	120.000	111.0	V	0.0	11.2	17.6	33.5	
225.136500	21.2	1000.0	120.000	170.0	H	-10.0	12.6	14.8	36.0	
730.621800	20.0	1000.0	120.000	170.0	V	10.0	23.2	16.0	36.0	
903.850800	22.0	1000.0	120.000	170.0	H	260.0	25.2	14.0	36.0	

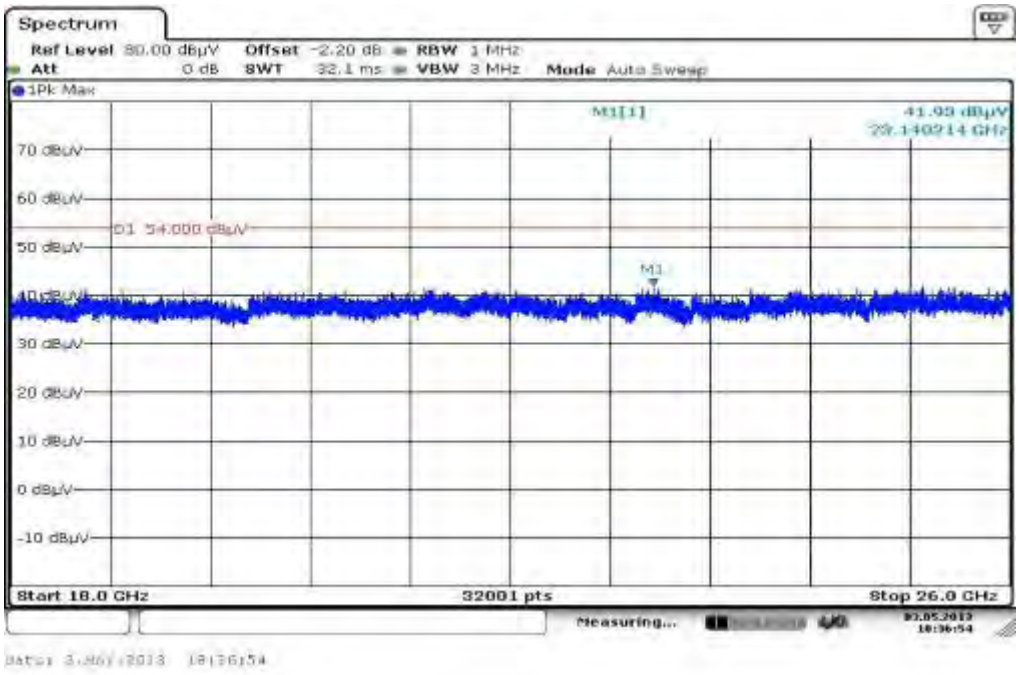
Plot 7: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



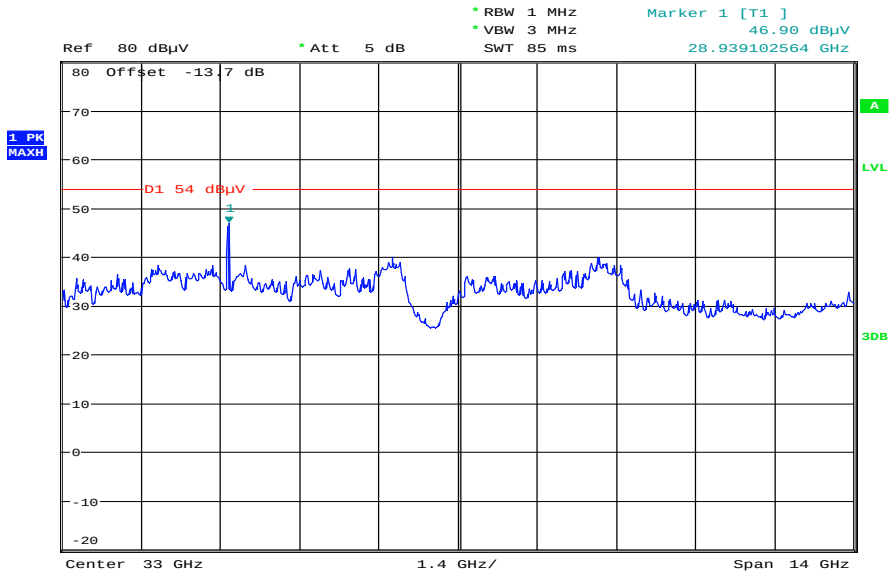
Plot 8: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Middle channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 15.MAY.2013 07:23:11

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

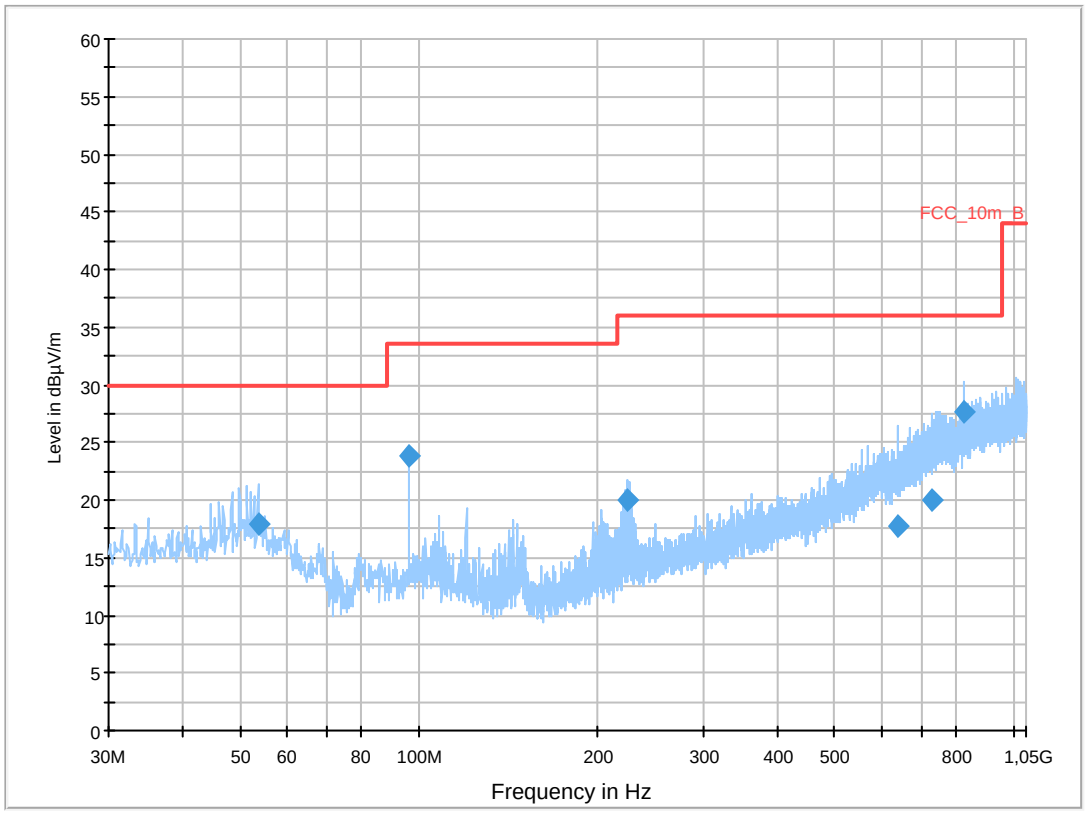
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode HT20 ch165
Operator Name:	Wolsdorfer
Comment:	DC 12V

Scan Setup: STAN_Fin [EMI radiated]

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

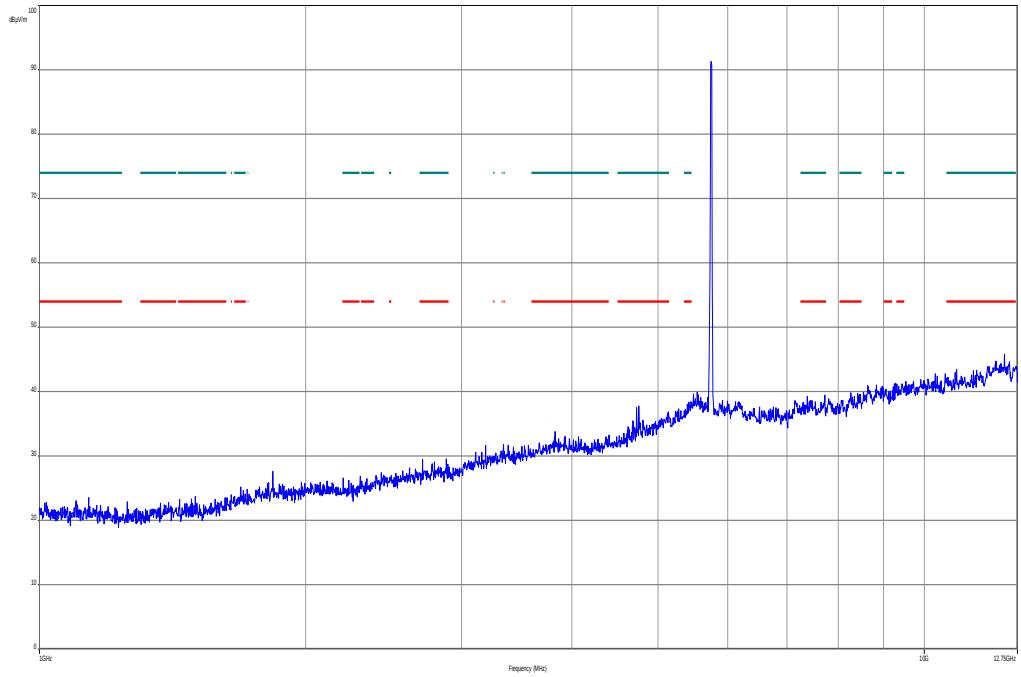
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



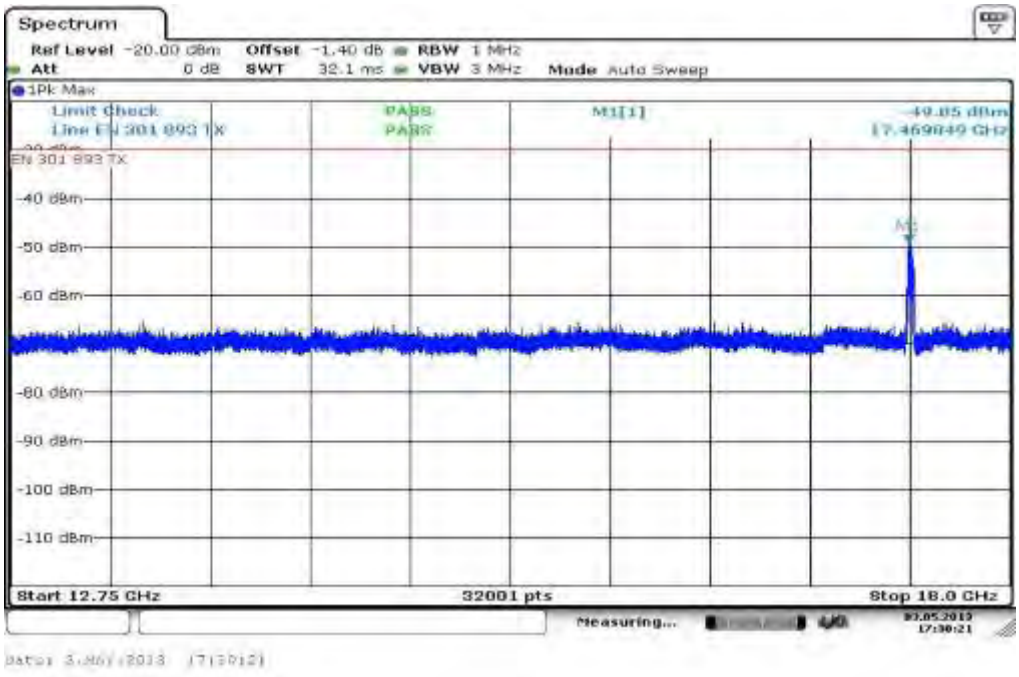
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
53.635500	17.9	1000.0	120.000	111.0	V	261.0	13.0	12.1	30.0	
96.041250	23.9	1000.0	120.000	120.0	V	90.0	11.4	9.6	33.5	
224.368500	19.9	1000.0	120.000	170.0	V	-5.0	12.5	16.1	36.0	
638.182200	17.7	1000.0	120.000	111.0	H	190.0	21.0	18.3	36.0	
728.233050	19.9	1000.0	120.000	132.0	H	280.0	23.2	16.1	36.0	
824.182050	27.7	1000.0	120.000	120.0	V	190.0	24.2	8.3	36.0	

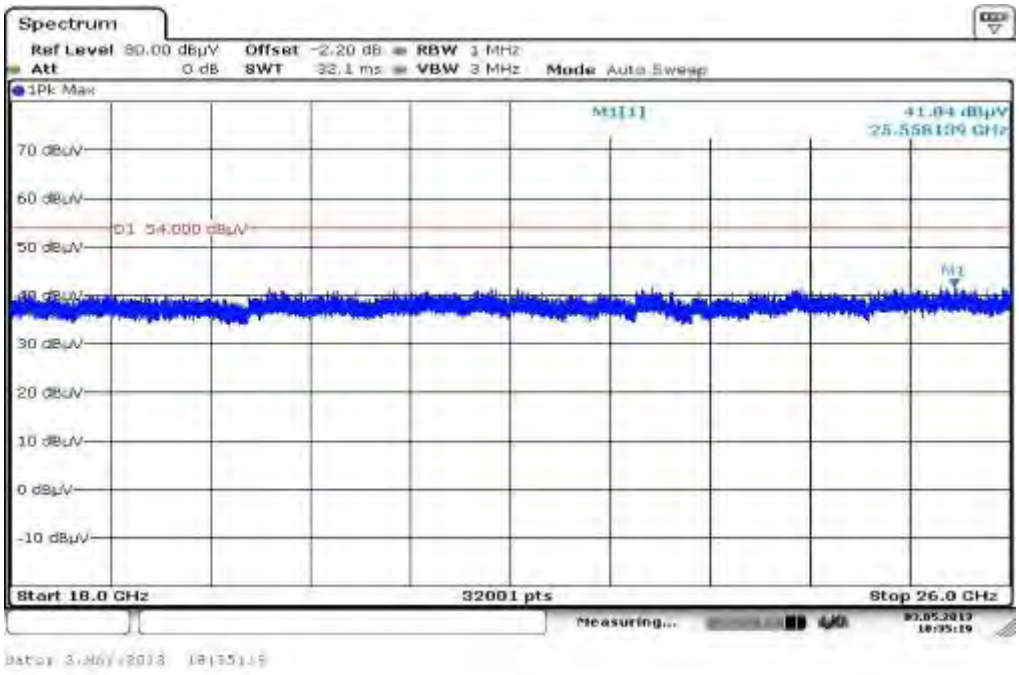
Plot 12: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



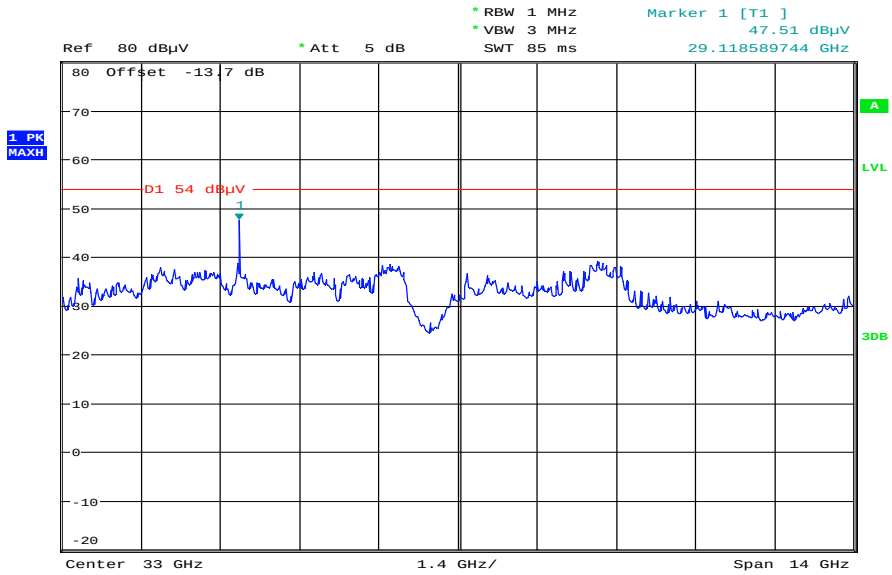
Plot 13: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 14: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 15: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



Date: 15.MAY.2013 07:24:36

Plots: OFDM / n – mode HT40

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

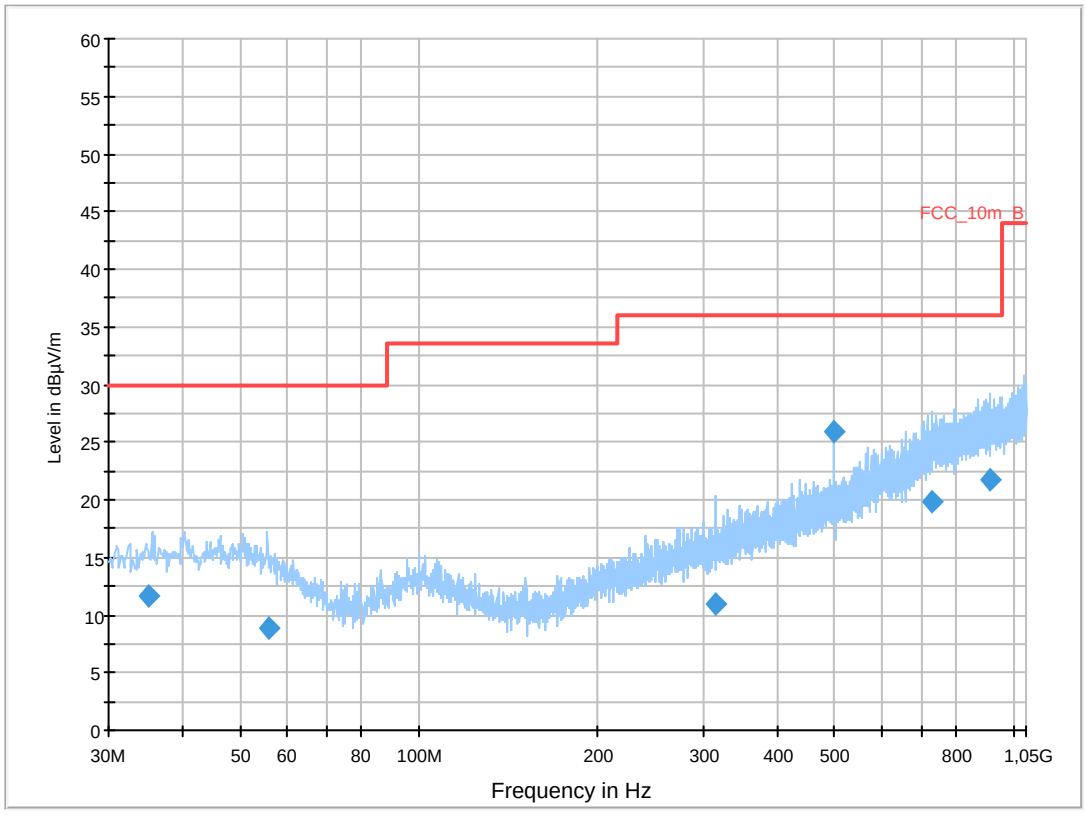
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode HT40 @5745MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

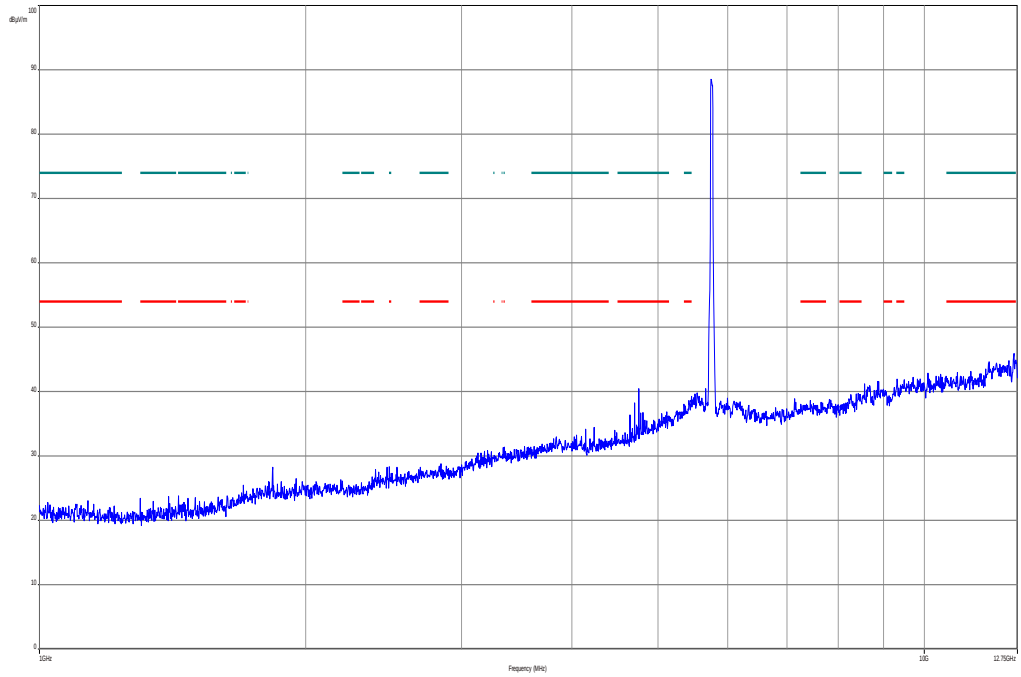
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



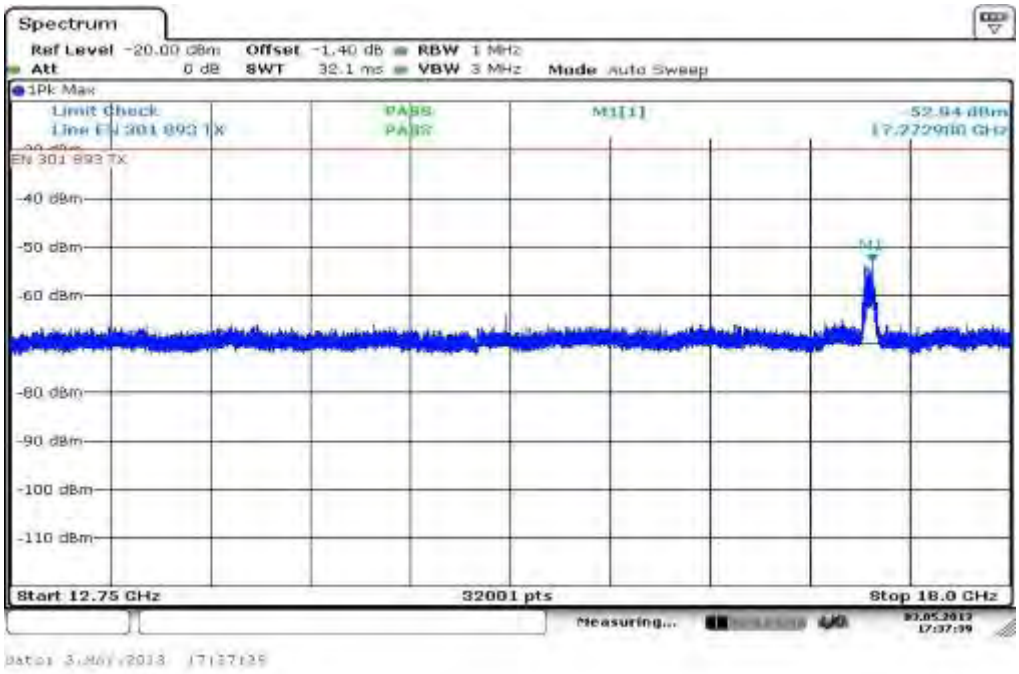
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
34.990800	11.7	1000.0	120.000	111.0	V	88.0	13.0	18.3	30.0	
55.971750	8.9	1000.0	120.000	111.0	H	80.0	12.6	21.1	30.0	
316.045050	11.0	1000.0	120.000	170.0	H	171.0	15.0	25.0	36.0	
500.001750	25.9	1000.0	120.000	170.0	H	-9.0	18.7	10.1	36.0	
730.313250	19.8	1000.0	120.000	130.0	V	-10.0	23.2	16.2	36.0	
913.364550	21.8	1000.0	120.000	111.0	H	177.0	25.2	14.2	36.0	

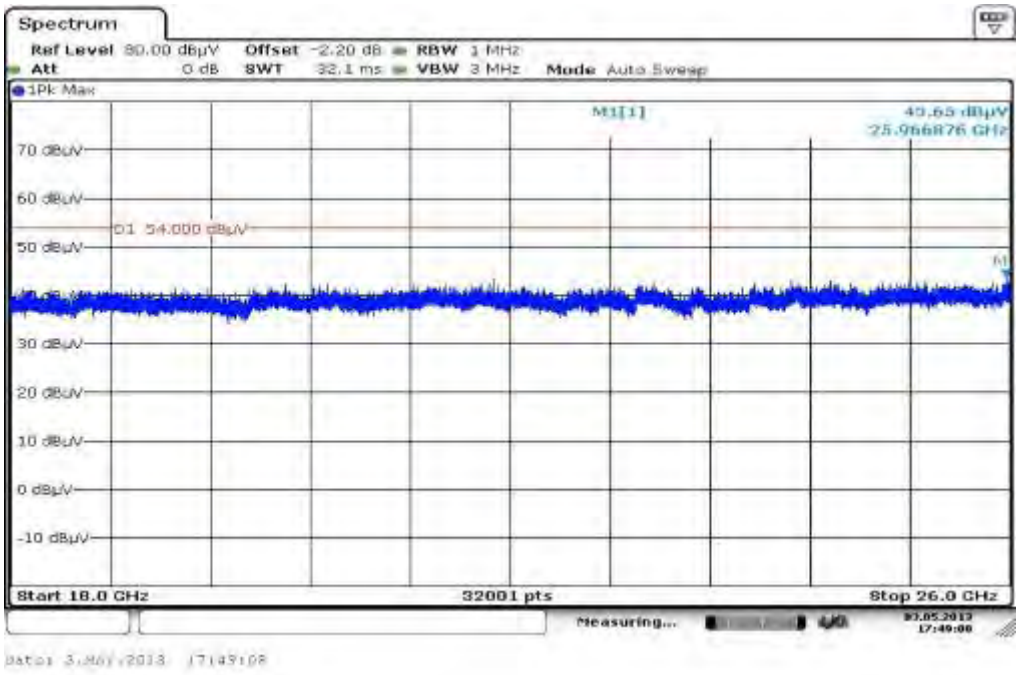
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



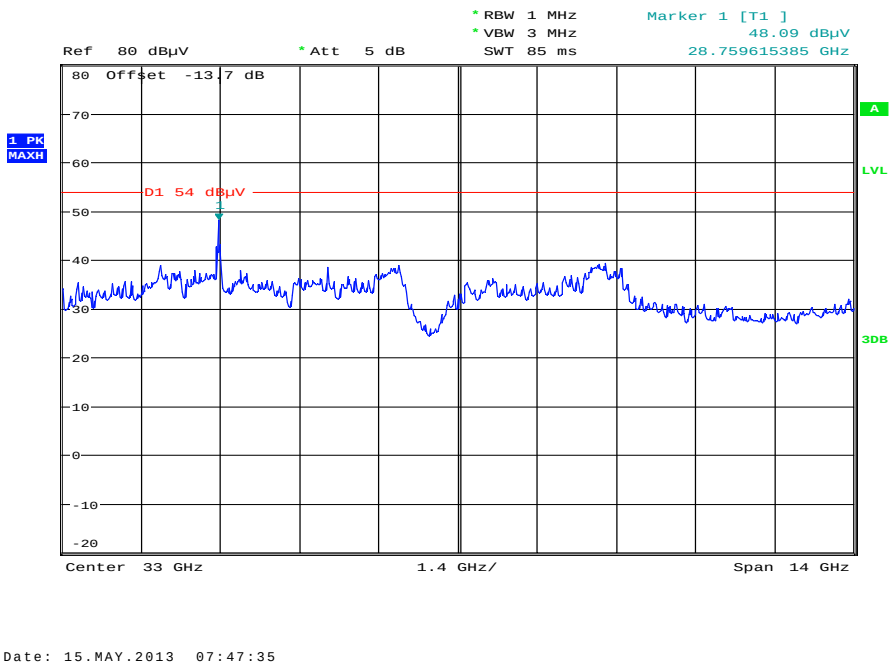
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



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

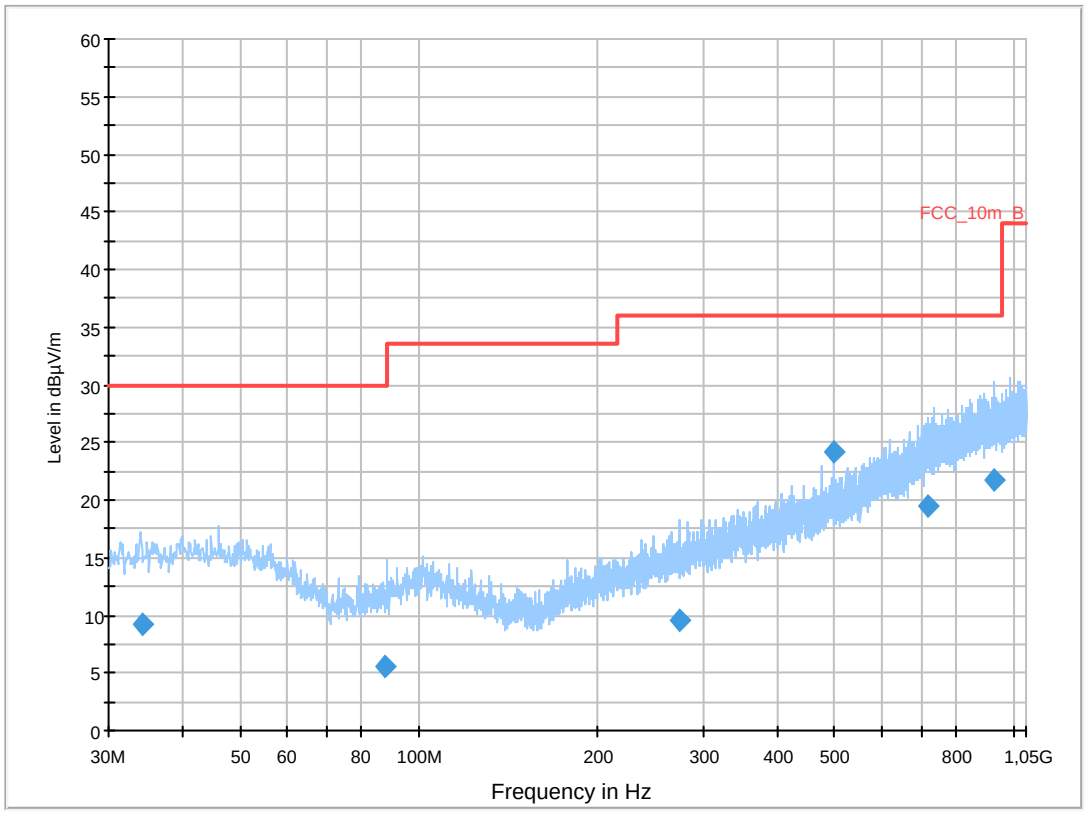
Common Information

EUT:	WLANBV2-A + antenna 453564271931
Serial Number:	eval
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan tx n-mode HT40 @5795MHz
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

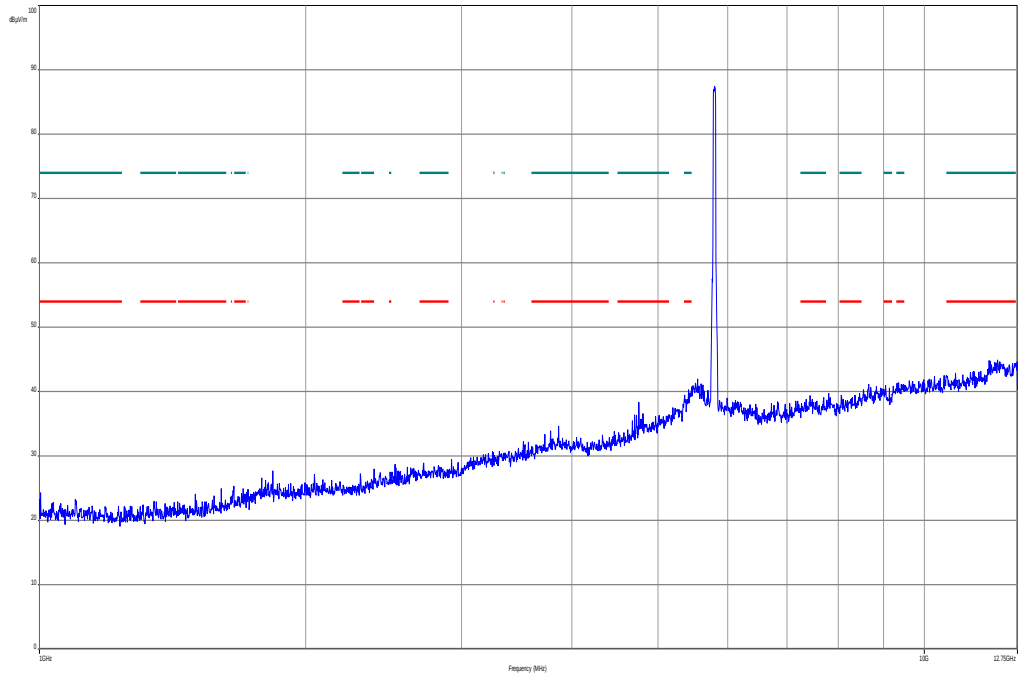
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



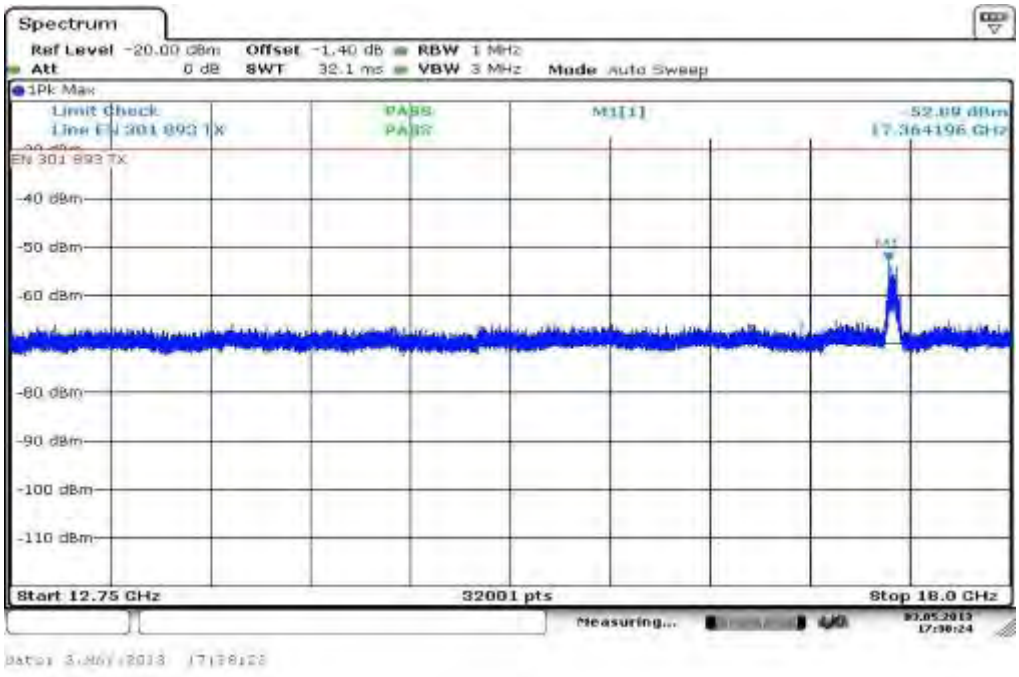
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
34.219200	9.2	1000.0	120.000	98.0	V	260.0	12.9	20.8	30.0	
87.841650	5.5	1000.0	120.000	170.0	H	268.0	10.2	24.5	30.0	
274.005000	9.6	1000.0	120.000	132.0	H	0.0	13.9	26.4	36.0	
500.020500	24.2	1000.0	120.000	170.0	H	171.0	18.7	11.8	36.0	
719.106450	19.6	1000.0	120.000	143.0	H	81.0	22.9	16.4	36.0	
924.378600	21.7	1000.0	120.000	121.0	H	100.0	25.3	14.3	36.0	

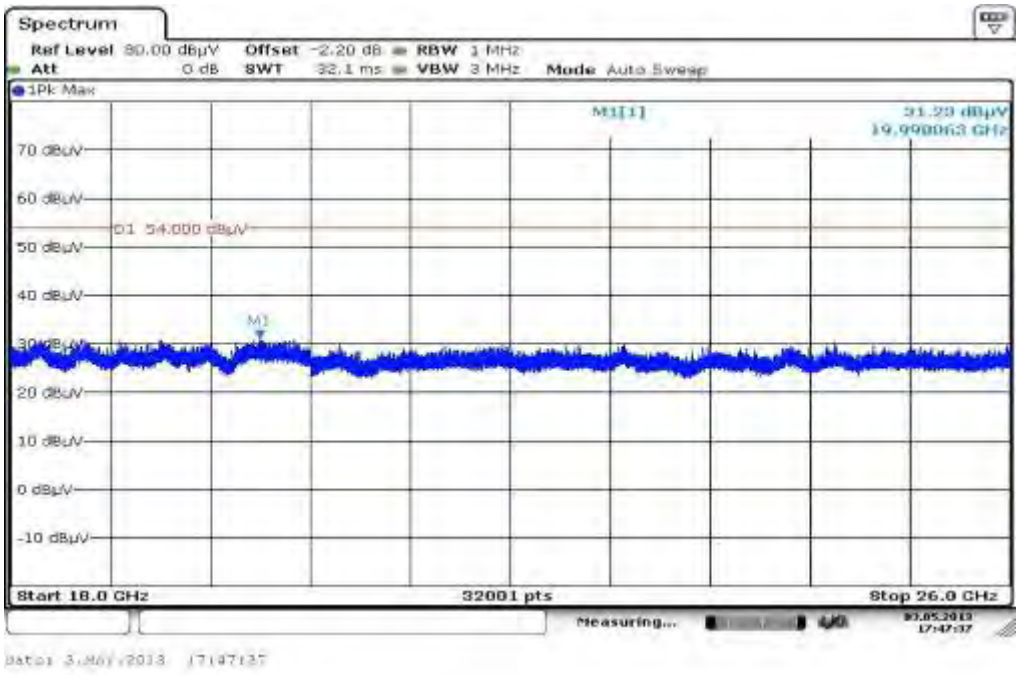
Plot 7: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



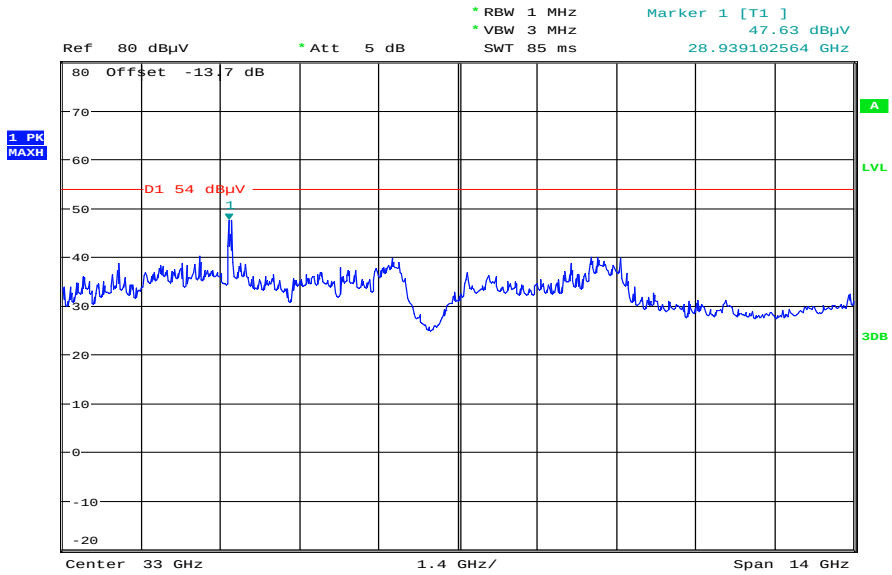
Plot 8: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization



Plot 9: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Plot 10: Highest channel, 26 GHz to 40 GHz, vertical & horizontal polarization



11.10 RX spurious emissions radiated

Description:

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

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak / RMS
Sweep time:	Auto
Resolution bandwidth:	F > 1 GHz: 1 MHz F < 1 GHz: 100 kHz
Video bandwidth:	Sweep: 100 kHz Remeasurement: 10 Hz / 3 MHz
Span:	30 MHz to 25 GHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
RX Spurious Emissions Radiated		
Frequency (MHz)	Field Strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Results:

RX Spurious Emissions Radiated [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
Measurement uncertainty	± 3 dB	

Result: **Passed.**

Plots: RX / Idle – mode Antenna 3 453564175981 (worst case, valid for all antennas)

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

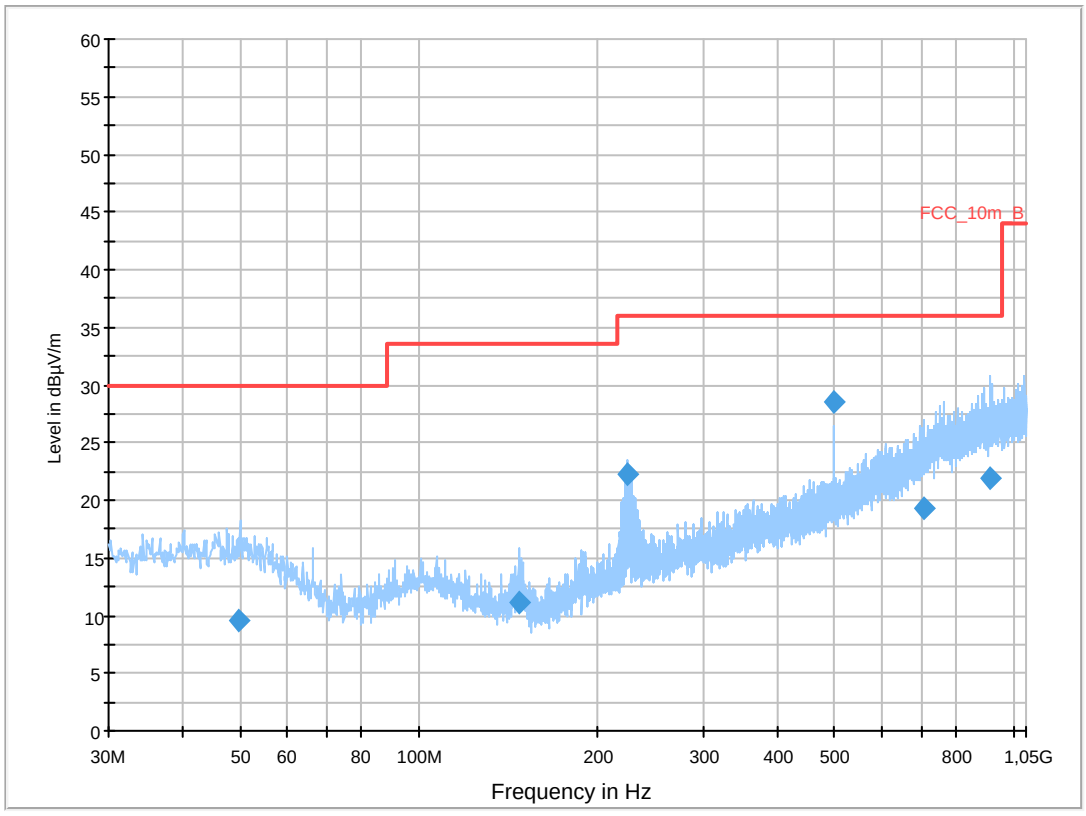
Common Information

EUT:	WLANBV2-A + antenna 453564175981
Serial Number:	eval 2
Test Description:	FCC part 15 C class B @ 10 m
Operating Conditions:	wlan rx
Operator Name:	Wolsdorfer
Comment:	DC 5V

Scan Setup: STAN_Fin [EMI radiated]

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

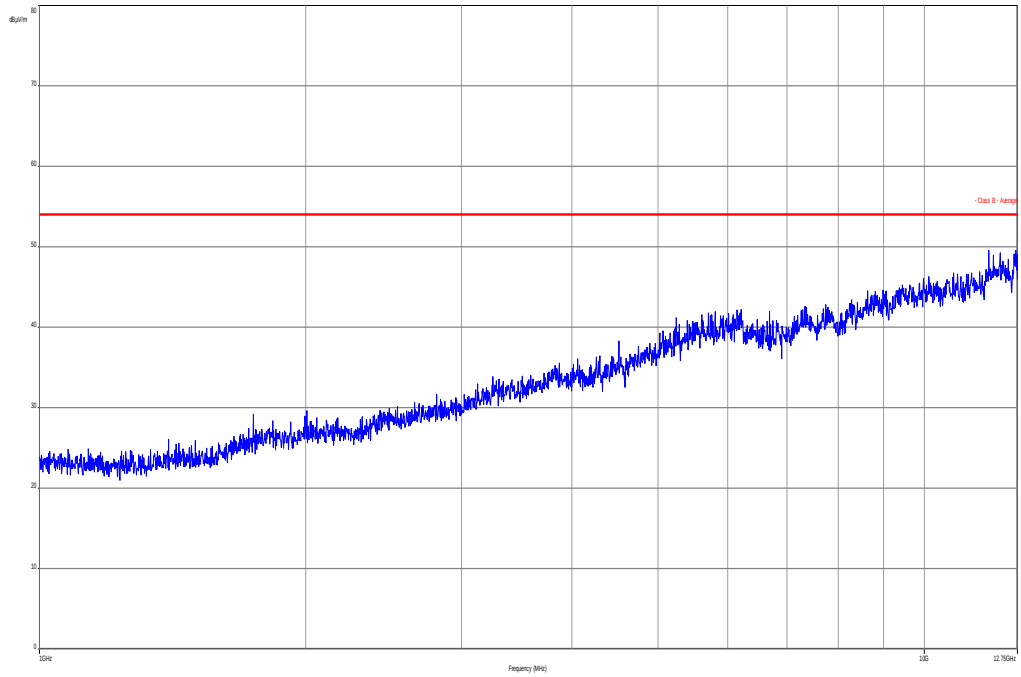
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



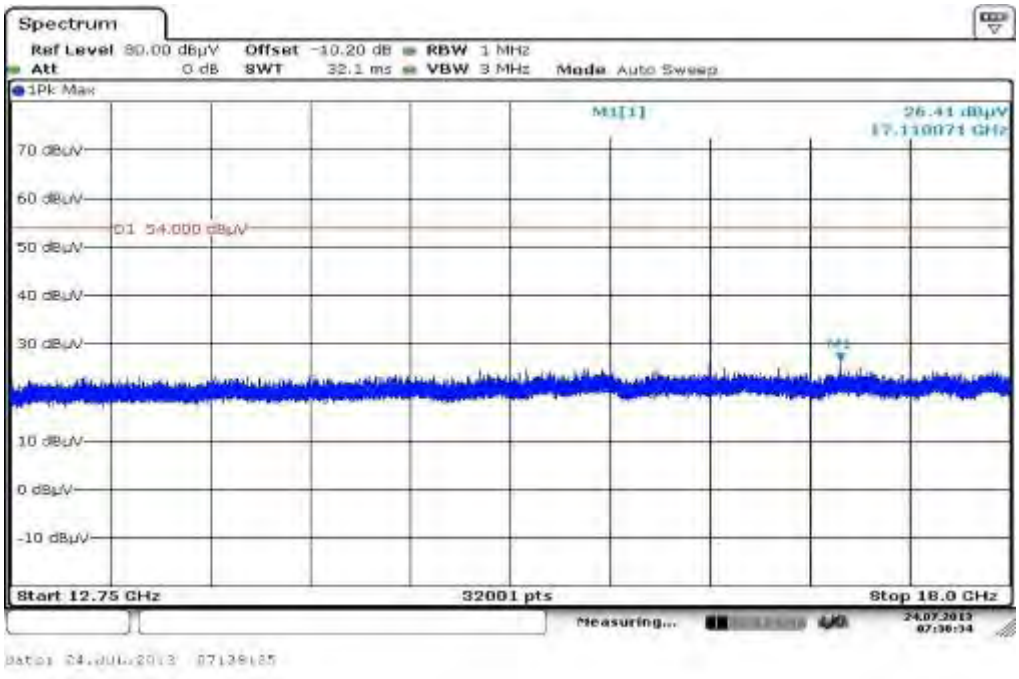
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
49.872750	9.6	1000.0	120.000	170.0	V	3.0	13.4	20.4	30.0	
147.683850	11.0	1000.0	120.000	154.0	V	272.0	8.9	22.5	33.5	
223.424400	22.3	1000.0	120.000	170.0	V	171.0	12.5	13.7	36.0	
500.001600	28.4	1000.0	120.000	170.0	H	10.0	18.7	7.6	36.0	
704.979750	19.4	1000.0	120.000	170.0	V	90.0	22.6	16.6	36.0	
913.588350	21.9	1000.0	120.000	98.0	H	3.0	25.2	14.1	36.0	

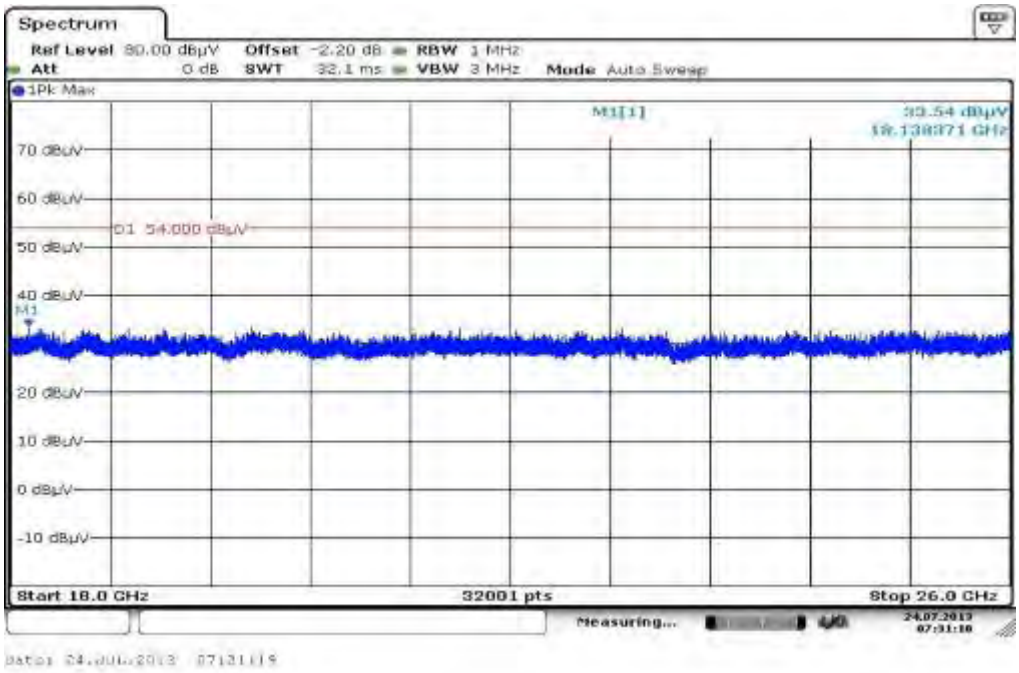
Plot 2: 1 GHz to 12.75 GHz, vertical & horizontal polarization



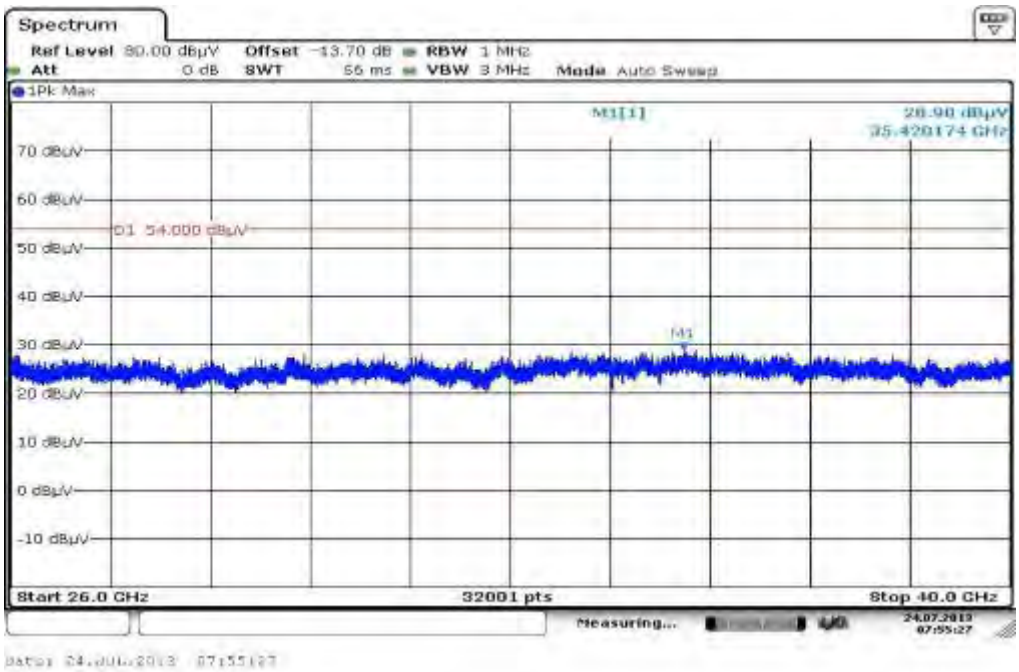
Plot 3: 12.75 GHz to 18 GHz, vertical & horizontal polarization



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



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



11.11 Spurious emissions radiated < 30 MHz

Description:

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

Measurement:

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

Limits:

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

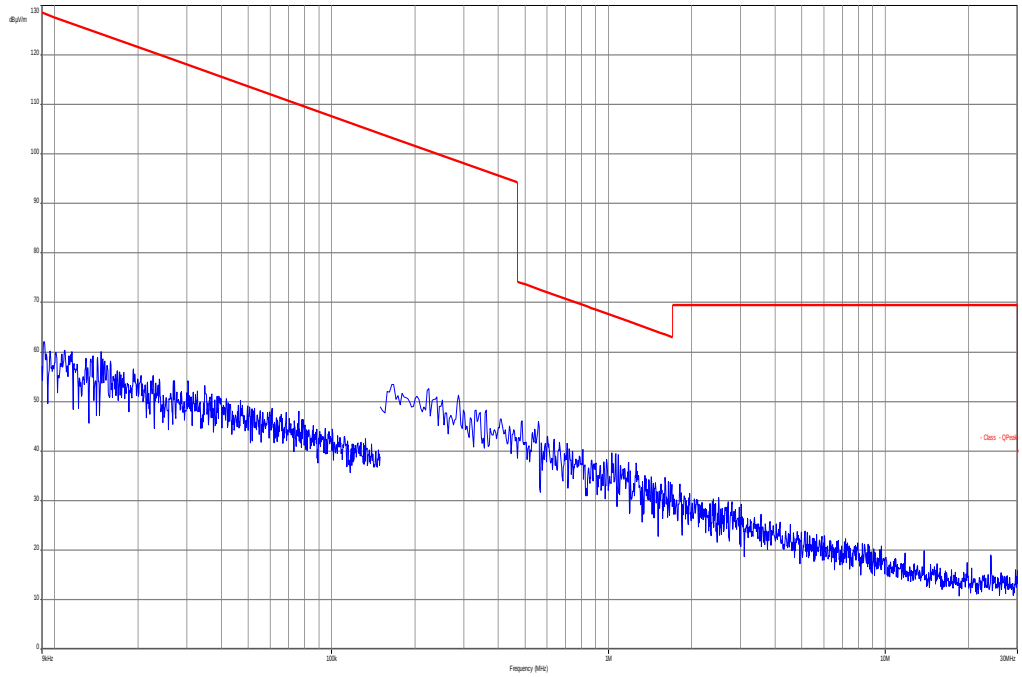
Results:

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

Result: Passed

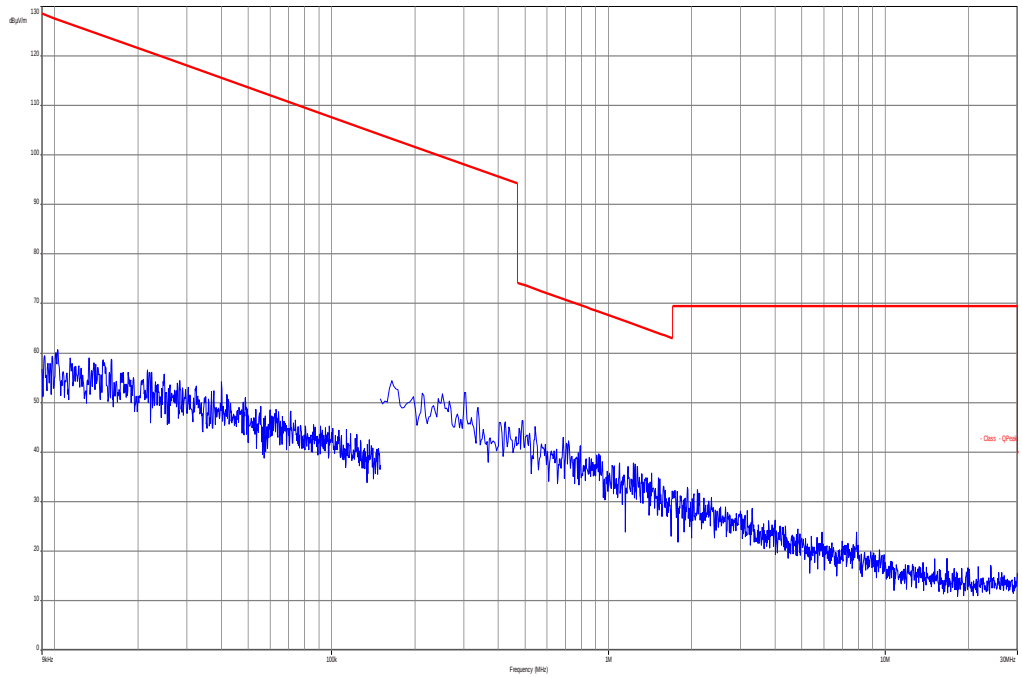
Plots: TX mode (ANT M3002-66494)

Plot 1: 9 kHz to 30 MHz



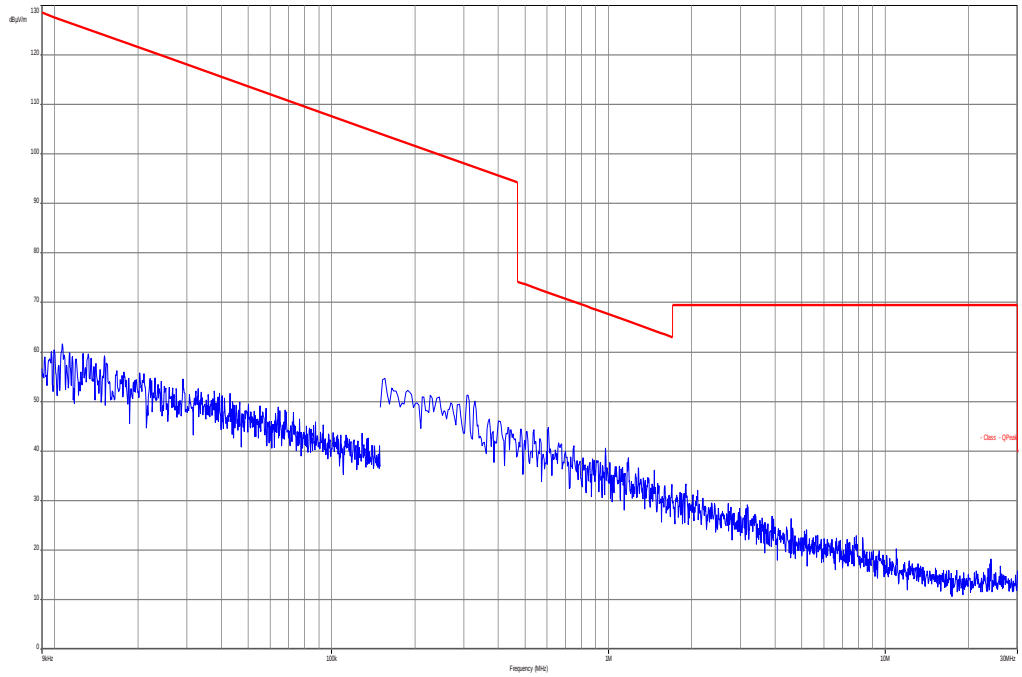
Plots: RX / Idle – mode (ANT M3002-66494)

Plot 1: 9 kHz to 30 MHz



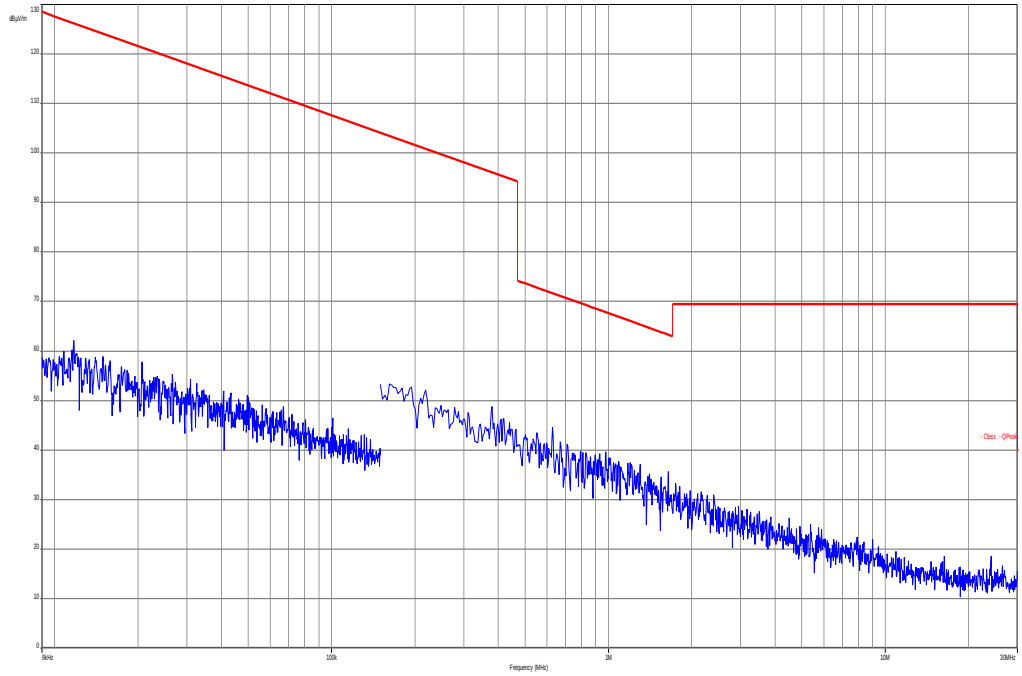
Plots: TX mode (ANT 453564154611)

Plot 1: 9 kHz to 30 MHz



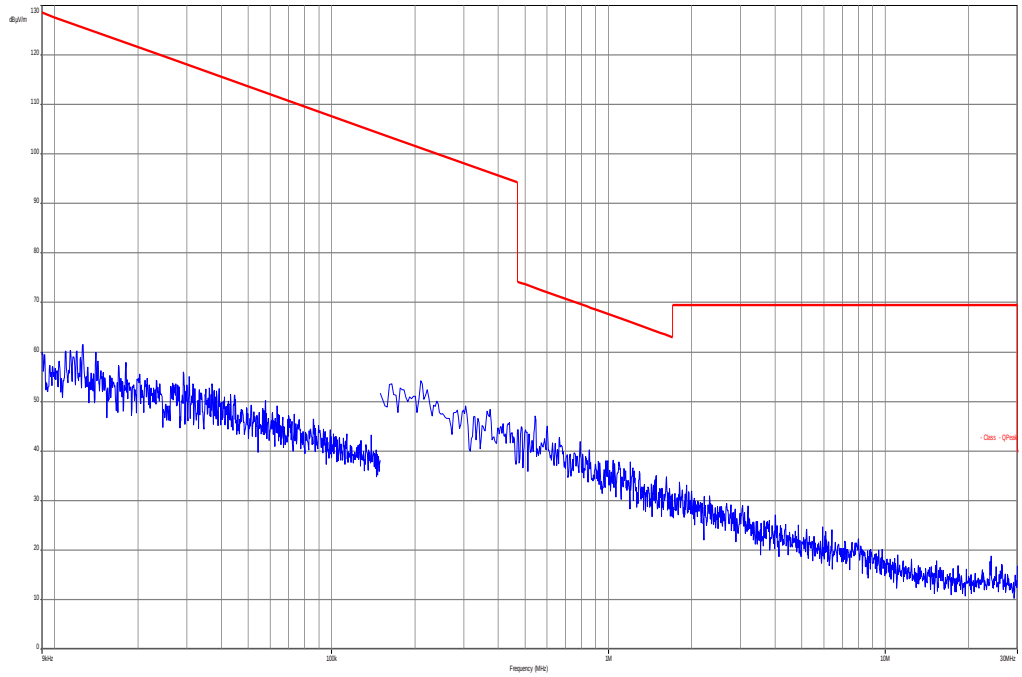
Plots: RX / Idle – mode (ANT 453564154611)

Plot 1: 9 kHz to 30 MHz



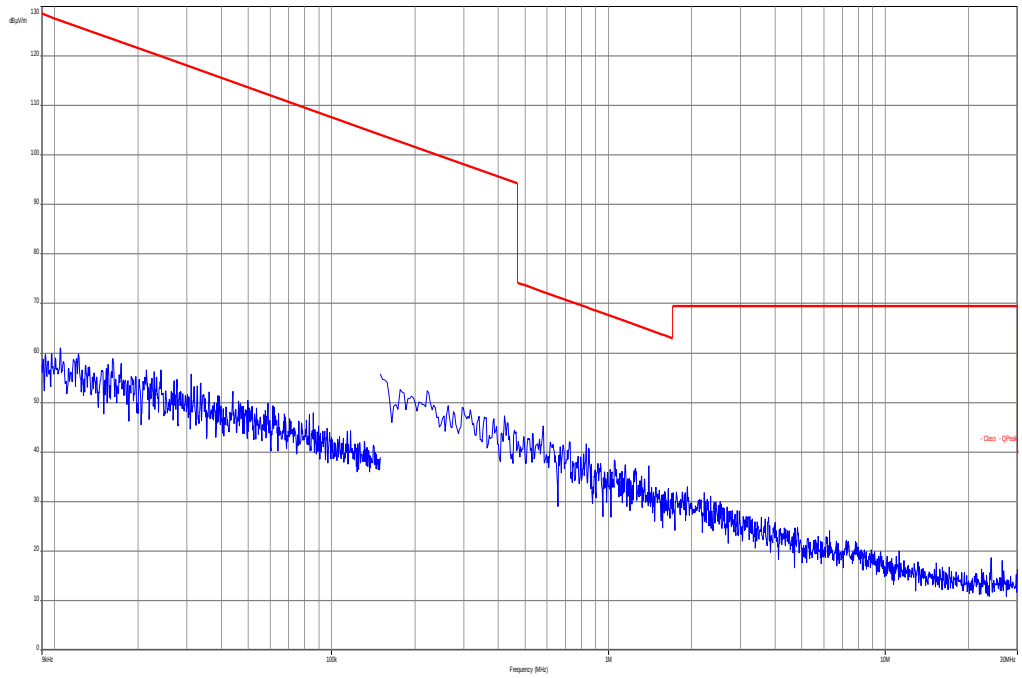
Plots: TX mode (ANT 453564175981)

Plot 1: 9 kHz to 30 MHz



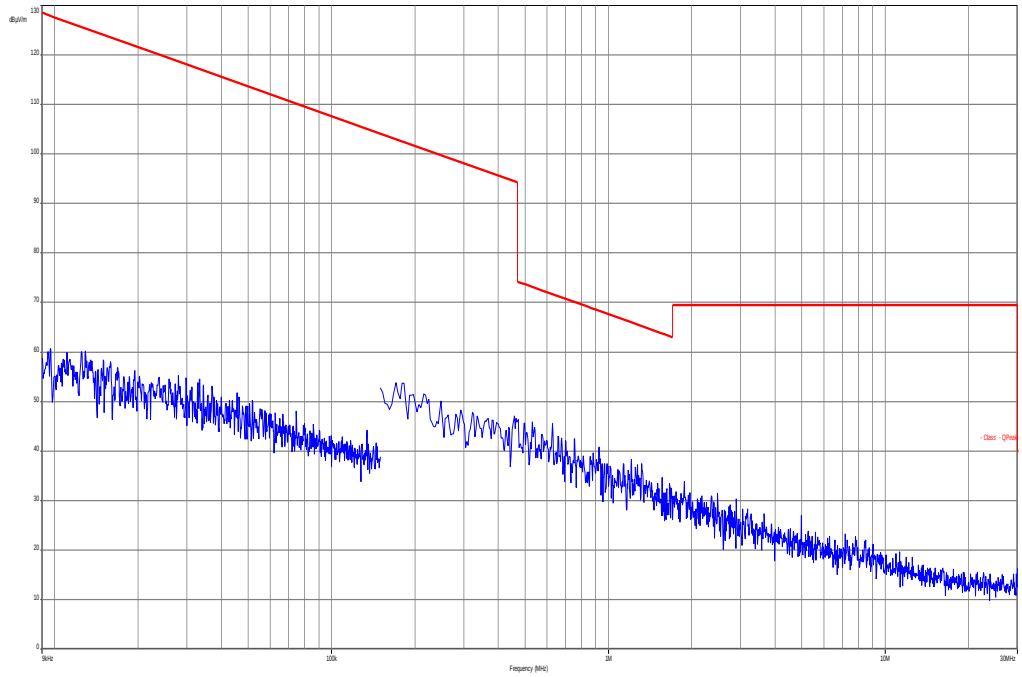
Plots: RX / Idle – mode (ANT 453564175981)

Plot 1: 9 kHz to 30 MHz



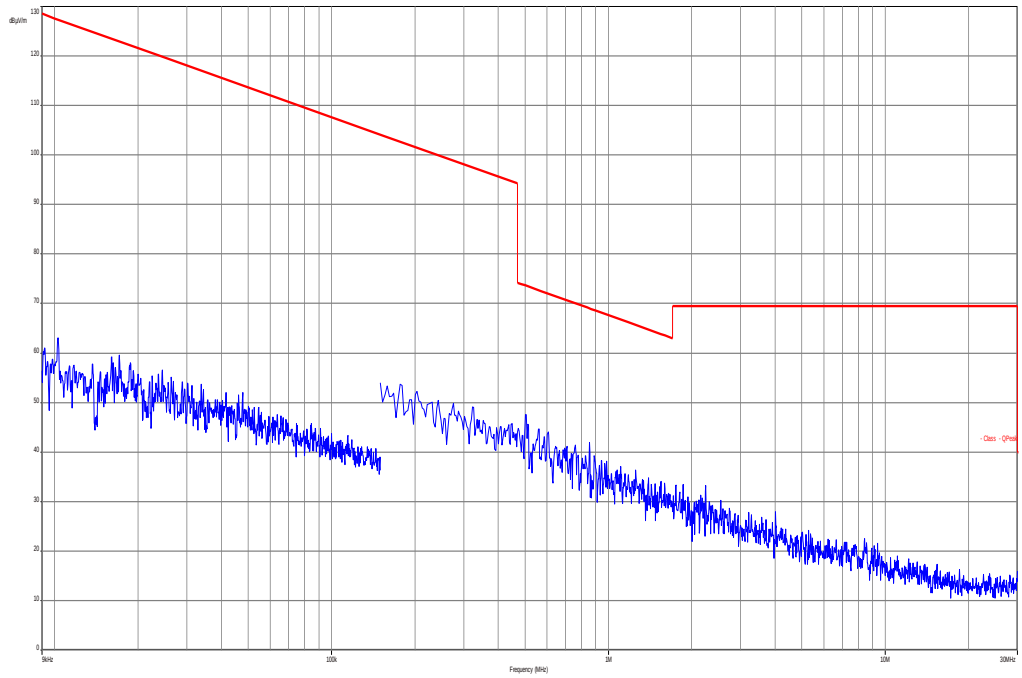
Plots: TX mode (ANT 453564271931)

Plot 1: 9 kHz to 30 MHz



Plots: RX / Idle – mode (ANT 453564271931)

Plot 1: 9 kHz to 30 MHz



11.12 Spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to mid channel. If peaks are found the lowest channel and the highest channel will be measured too. The measurement is performed with the data rate producing the highest output power. Both power lines, phase and neutral line, are measured. Found peaks are re-measured with average and quasi peak detection to show compliance to the limits.

Measurement:

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

Limits:

FCC		IC
TX Spurious Emissions Conducted < 30 MHz		
Frequency (MHz)	Quasi-Peak (dBµV/m)	Average (dBµV/m)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30.0	60	50

*Decreases with the logarithm of the frequency

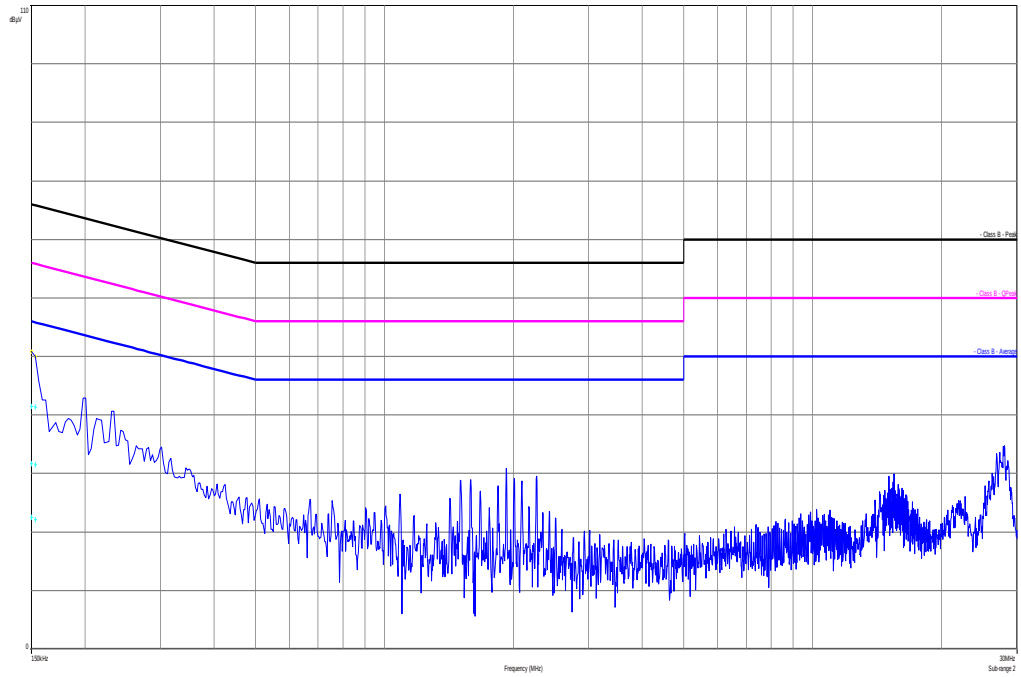
Results:

TX Spurious Emissions Conducted < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No peaks detected. All detected peak values are below the average limits.		
Measurement uncertainty	± 3 dB	

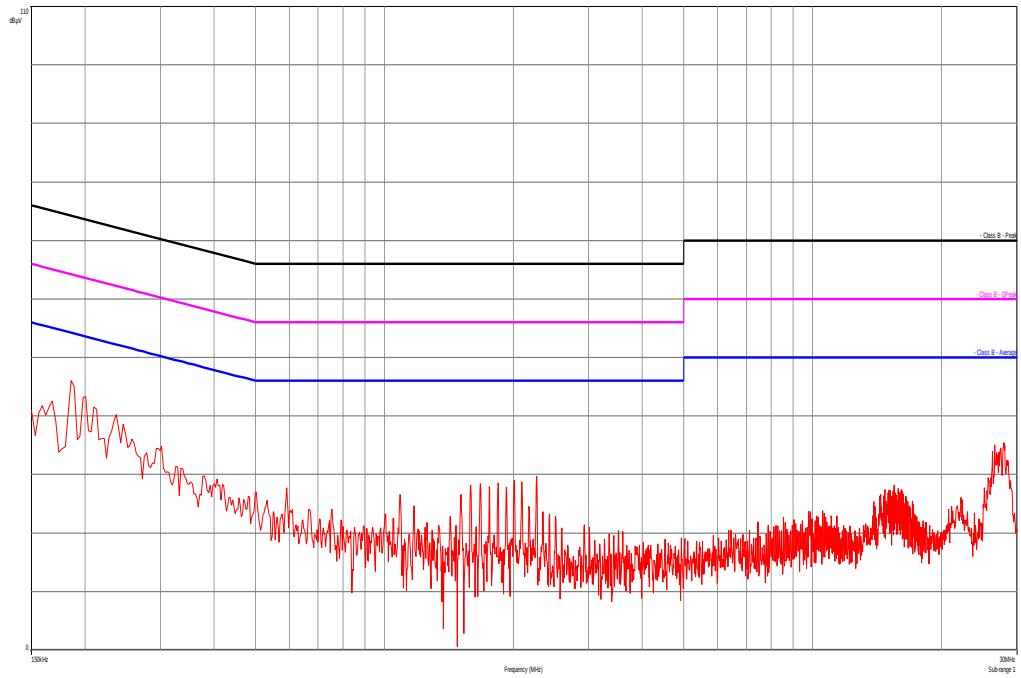
Result: **Passed**

Plots:

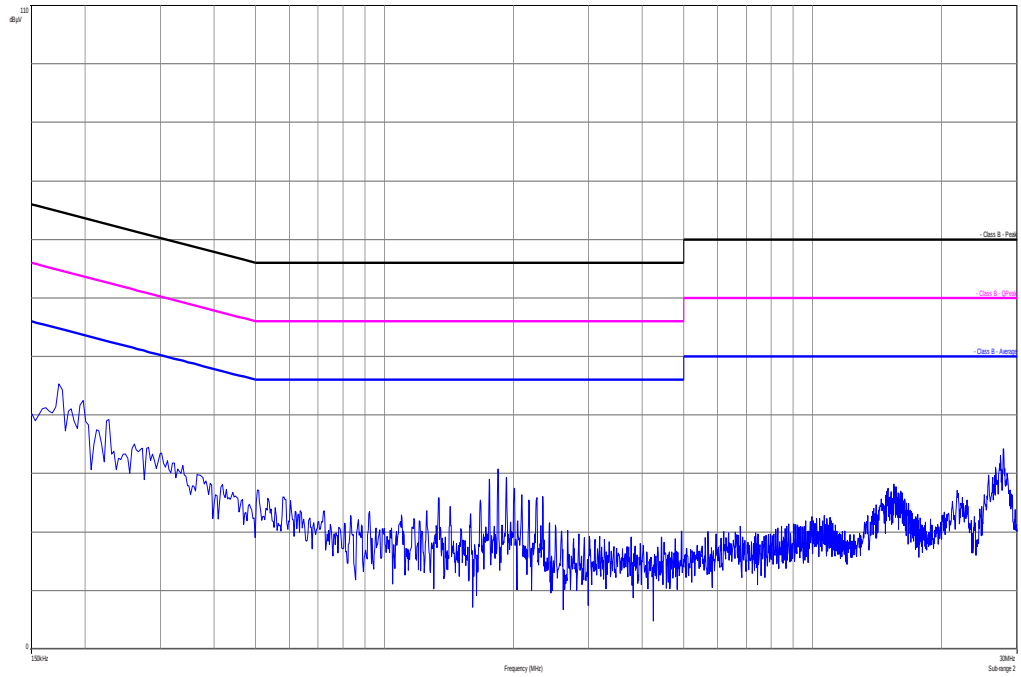
Plot 1: 150 kHz to 30 MHz / phase Line, TX mode



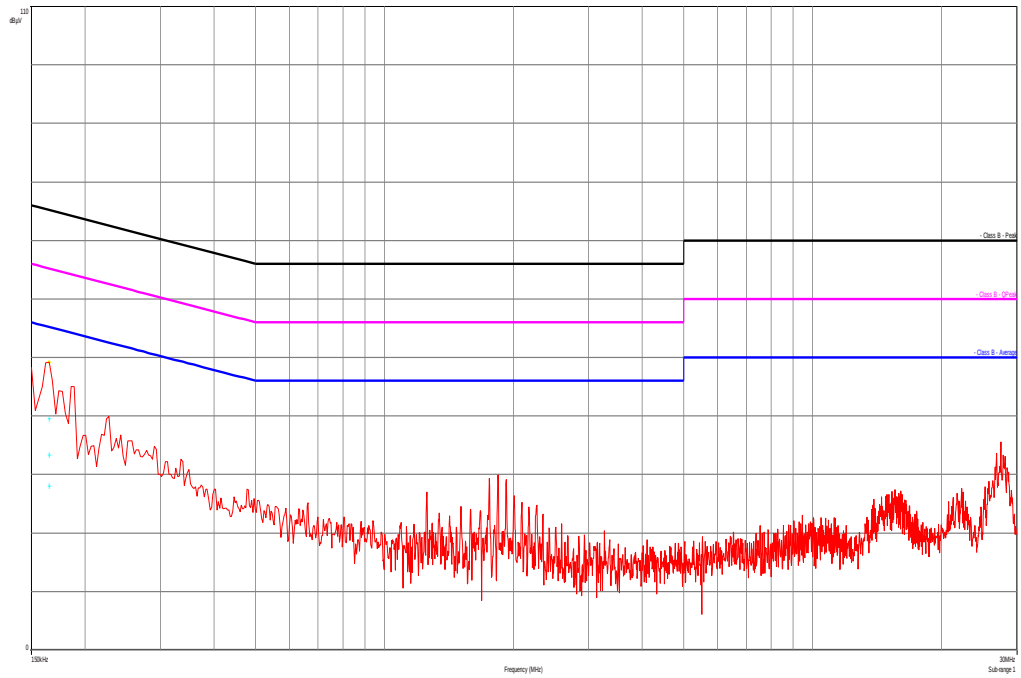
Plot 2: 150 kHz to 30 MHz / neutral Line, TX mode



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



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



12 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
11	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	12.01.2012	12.01.2015
2	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKl!	08.05.2013	08.05.2015
3	n. a.	Active Loop Antenna 10 kHz to 30 MHz	6502	EMCO	2210	300001015	ne		
4	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
5	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
6	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156	ne		
7	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
8	n. a.	Band Reject filter	WRCG1855/1910-1835/1925-40/8SS	Wainwright	7	300003350	ev		
9	n. a.	Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351	ev		
10	n. a.	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789	ne		
11	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vlKl!	14.10.2011	14.10.2014
12	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405	k	21.02.2013	21.02.2014
13	n. a.	Temperaturprüfschrank	T-40/50	CTS GmbH		300003592	ne		
14	n. a.	Netzgerät	E3634A	Agilent Technologies	MY40011505	300003742	k	10.02.2012	10.02.2014
15	n. a.	Spectrumanalyzer	FSV30	R&S	100763	300003950	k	10.08.2012	10.08.2013
16	n. a.	NRP Power meter Display and control unit AC sup	NRP + NRP-Z81	R&S	100212 + 100010	300003780	vlKl!	06.02.2012	06.02.2014
17	n. a.	Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517	k	22.10.2012	22.10.2013

Agenda: Kind of Calibration

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

13 Observations

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

Annex A Photographs of the test setup

Photo 1: Ant M3002-66494 (Chamber F)

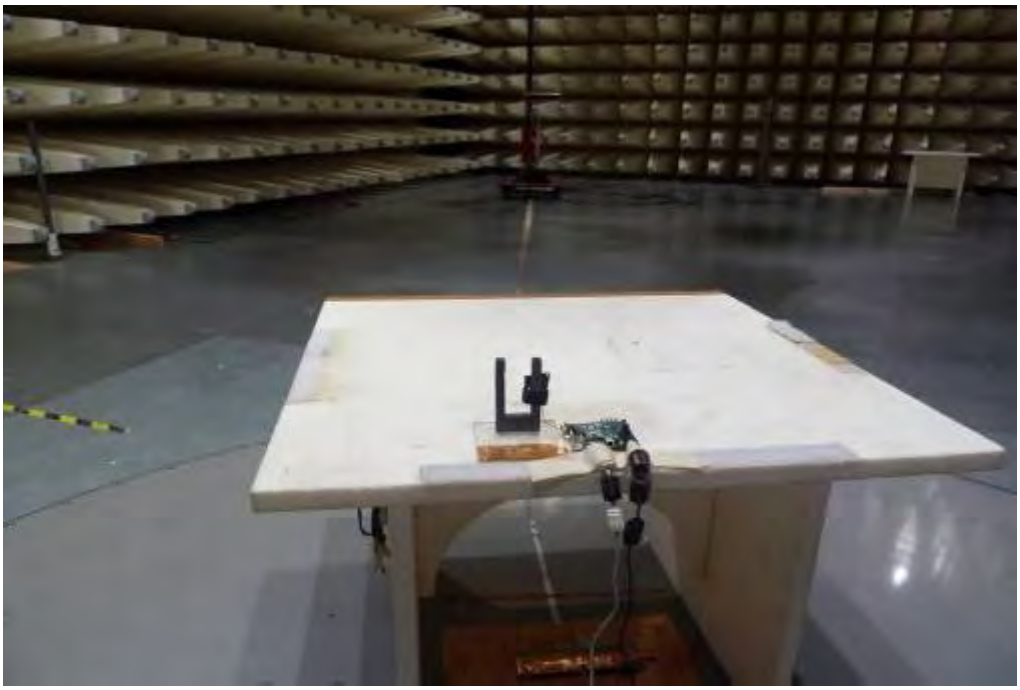


Photo 2: Ant M3002-66494 (Chamber F)

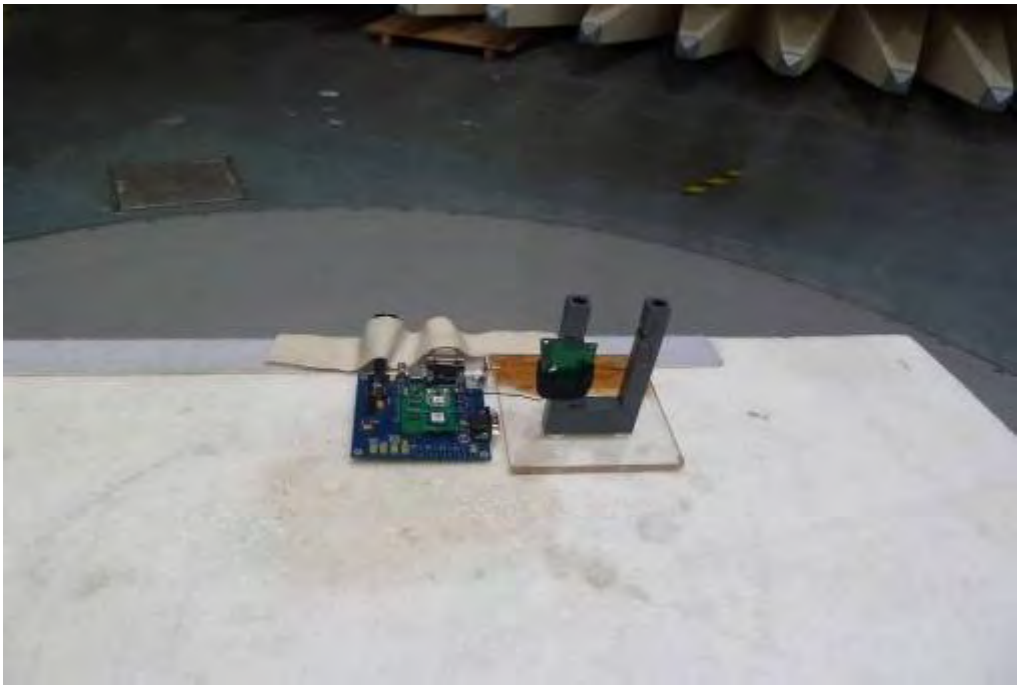


Photo 3: Ant 453564154611 (Chamber F)

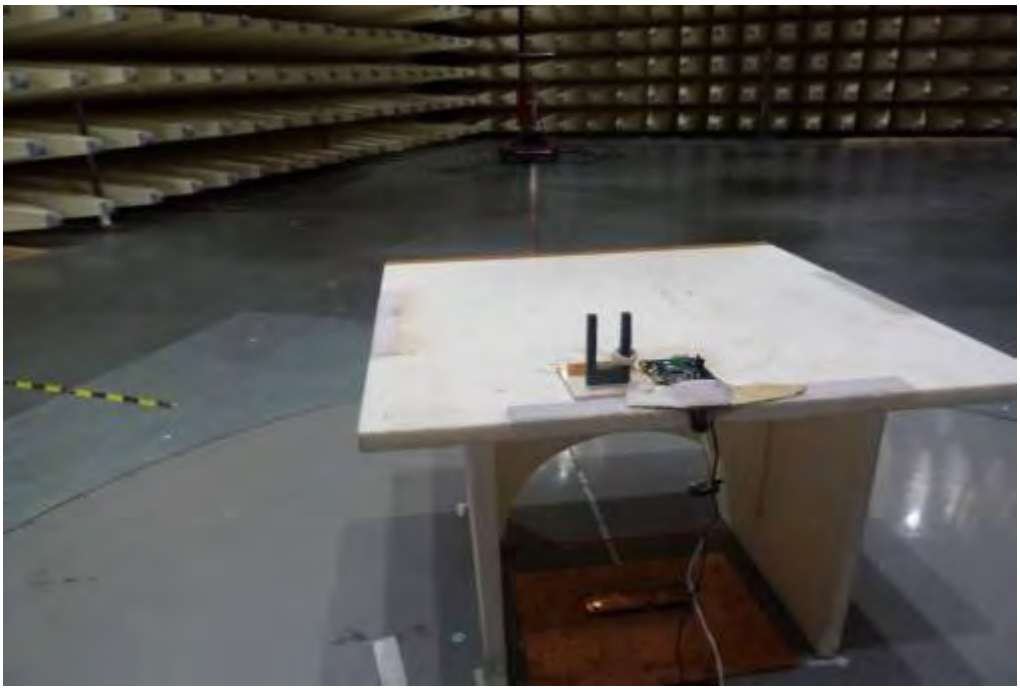


Photo 4: Ant 453564154611 (Chamber F)

Photo 5: Ant 453564175981 (Chamber F)

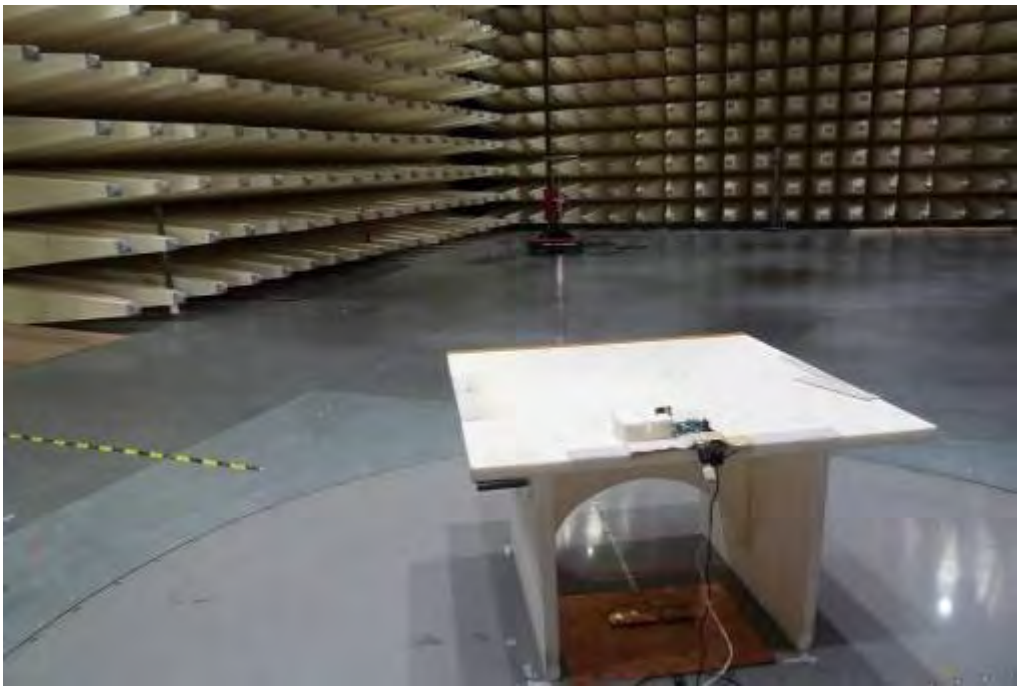


Photo 6: Ant 453564175981 (Chamber F)

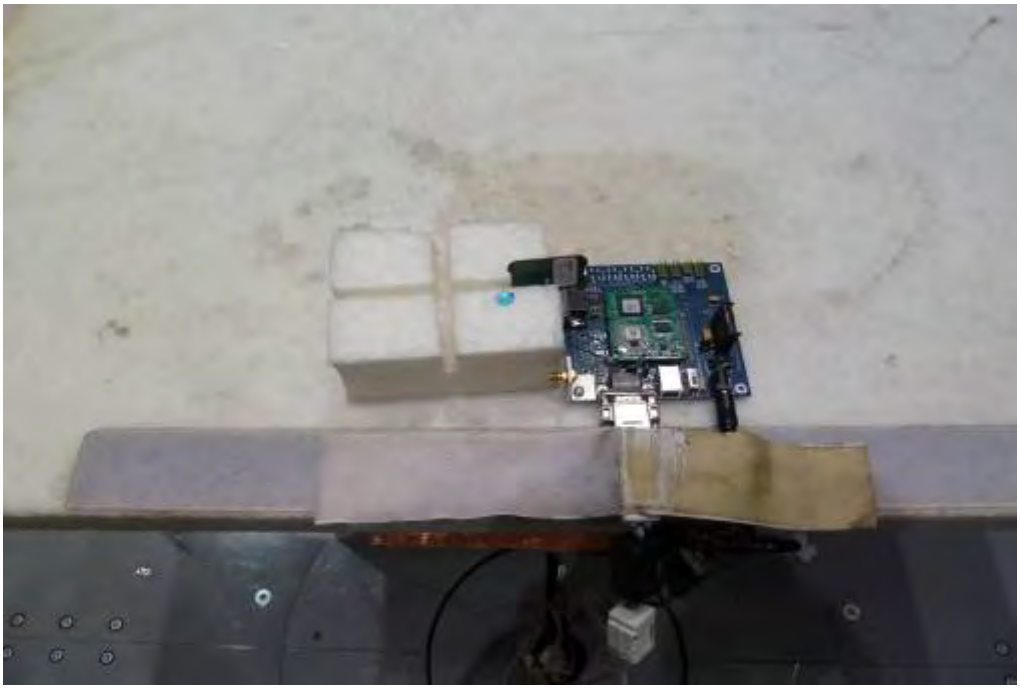


Photo 7: Ant 453564271931 (Chamber F)

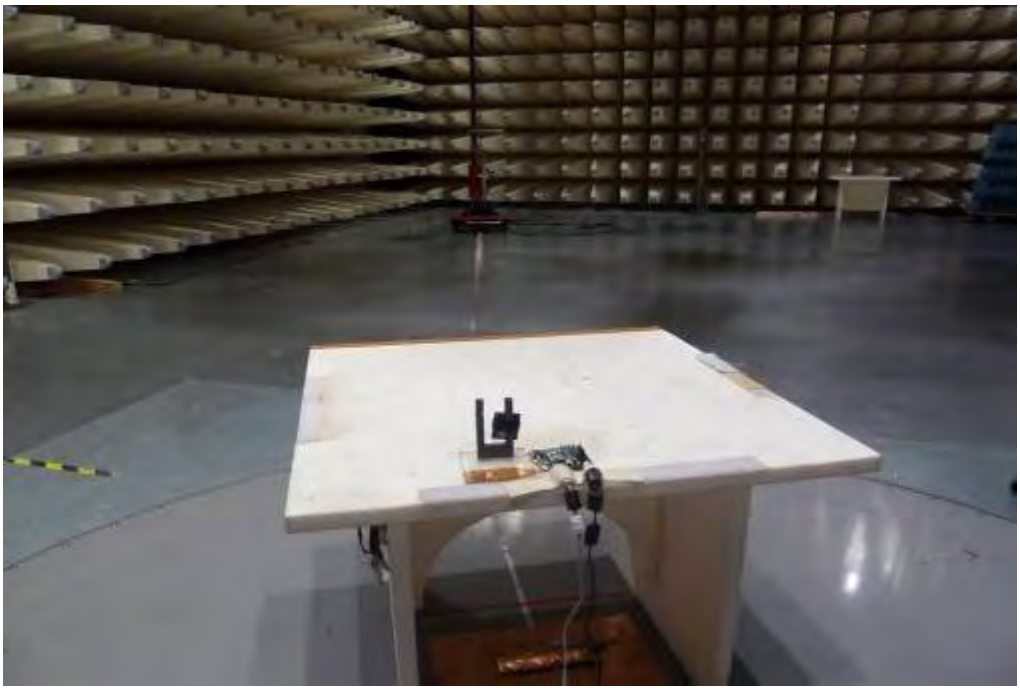


Photo 8: Ant 453564271931 (Chamber F)

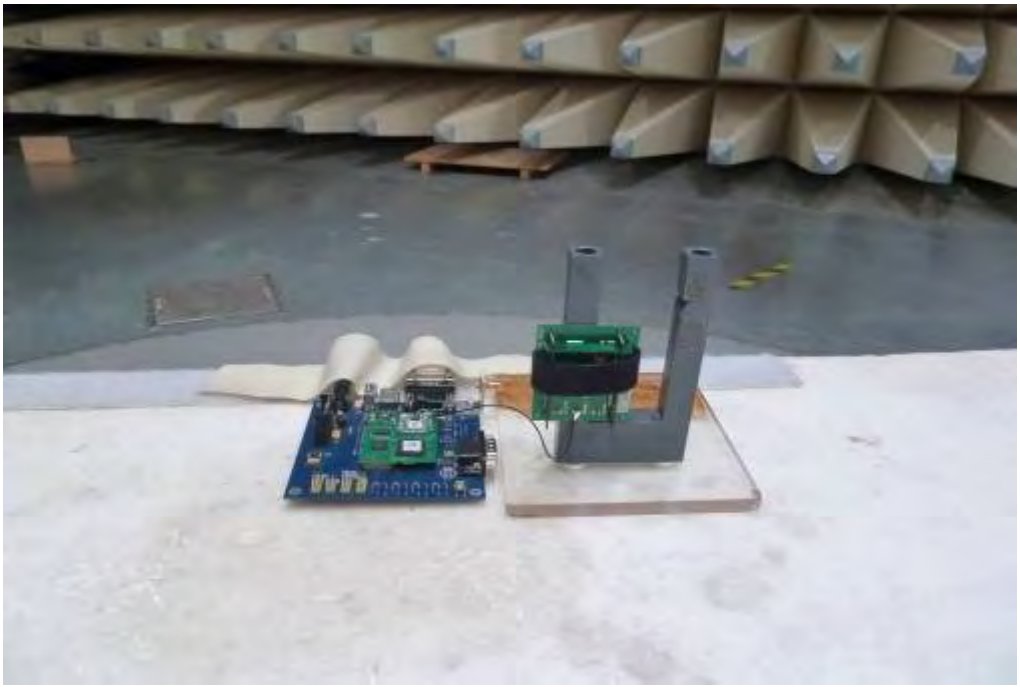


Photo 9: Ant M3002-66494 (Chamber C)

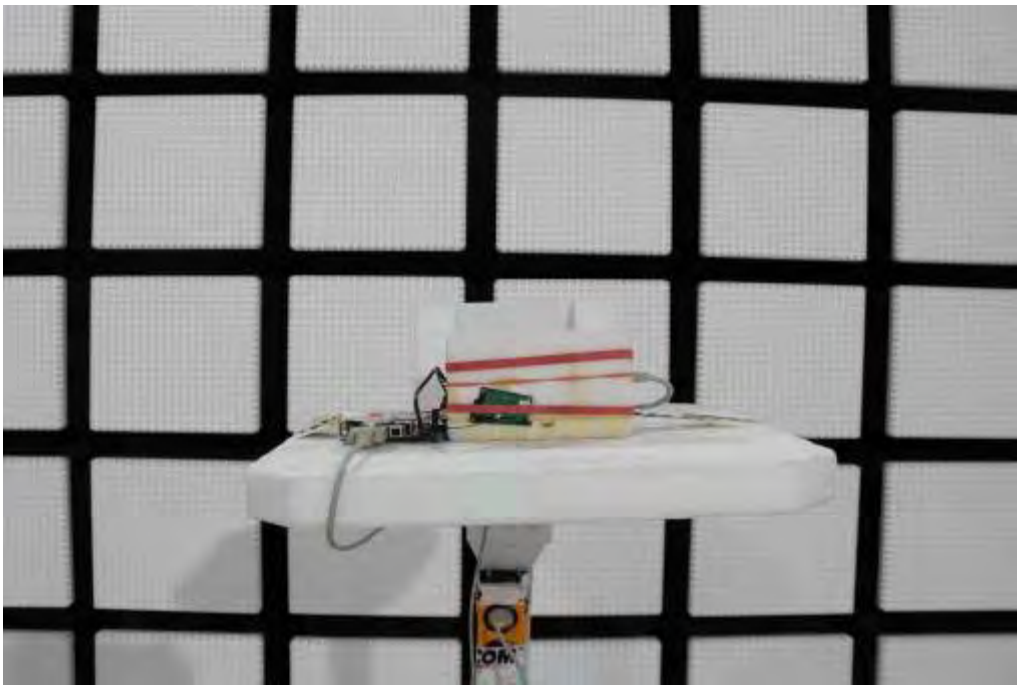


Photo 10: Ant 453564154611 (Chamber C)

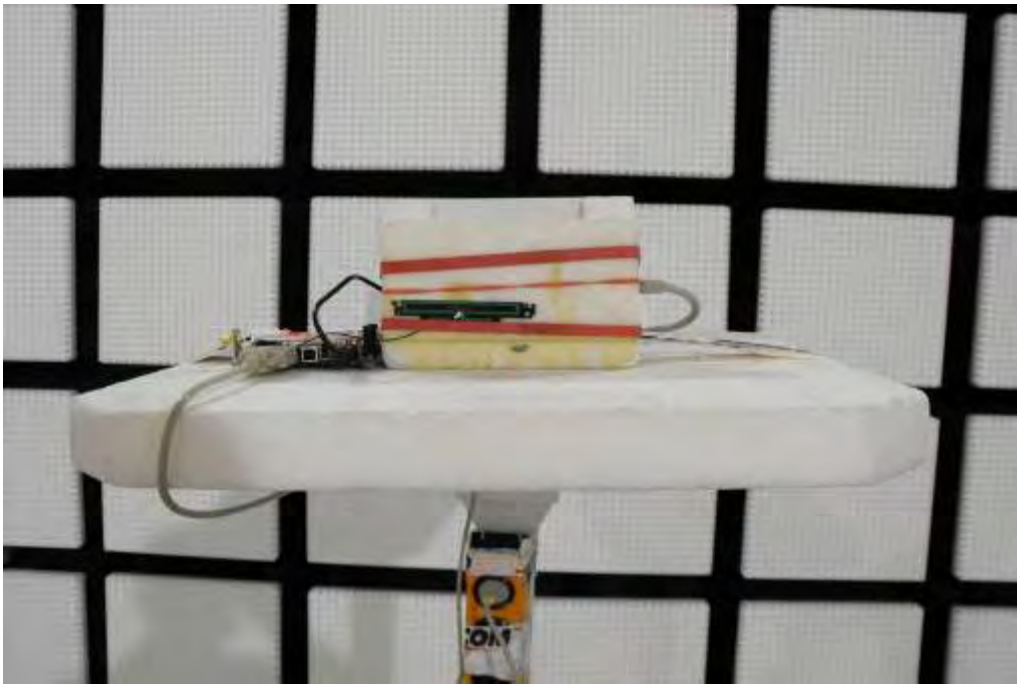


Photo 11: Ant 453564175981 (Chamber C)

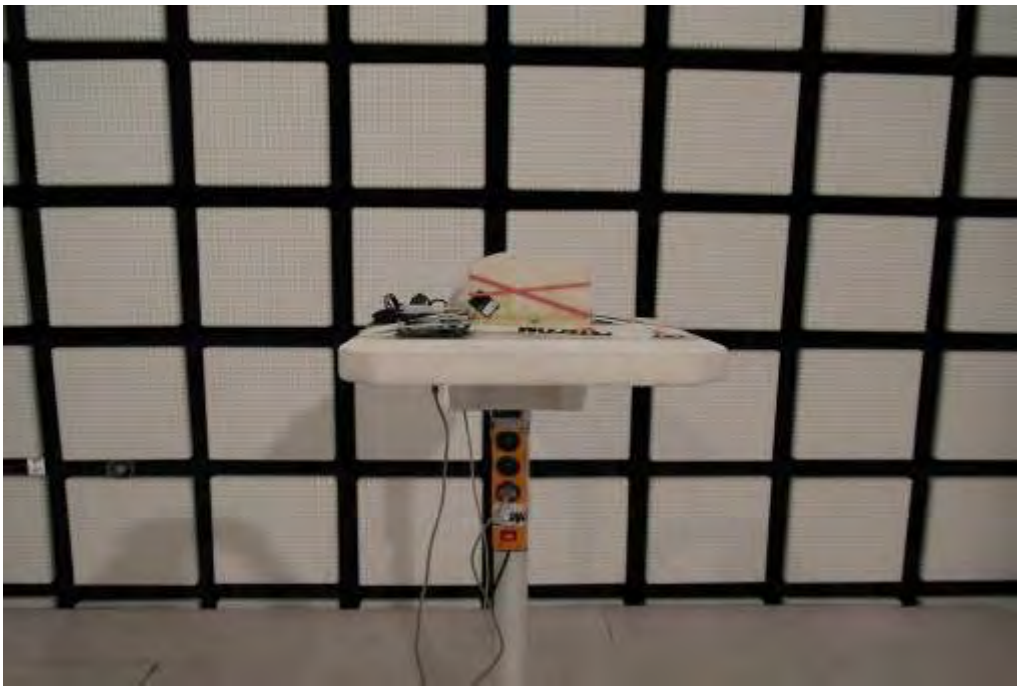


Photo 12: Ant 453564271931 (Chamber C)

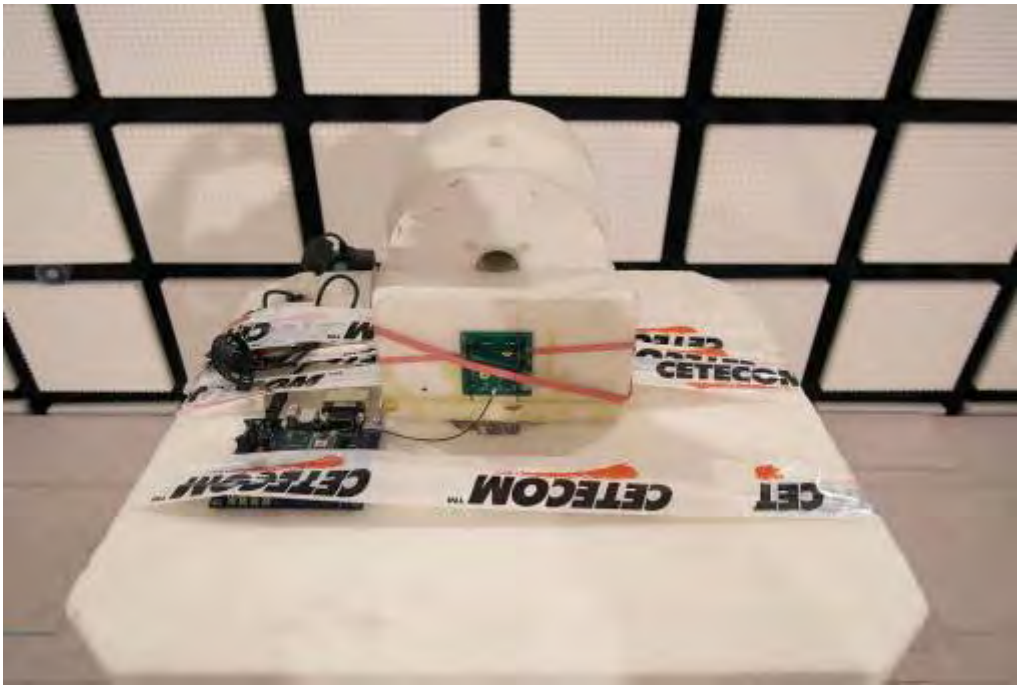


Photo 13: valid for all antenna types (Chamber C)

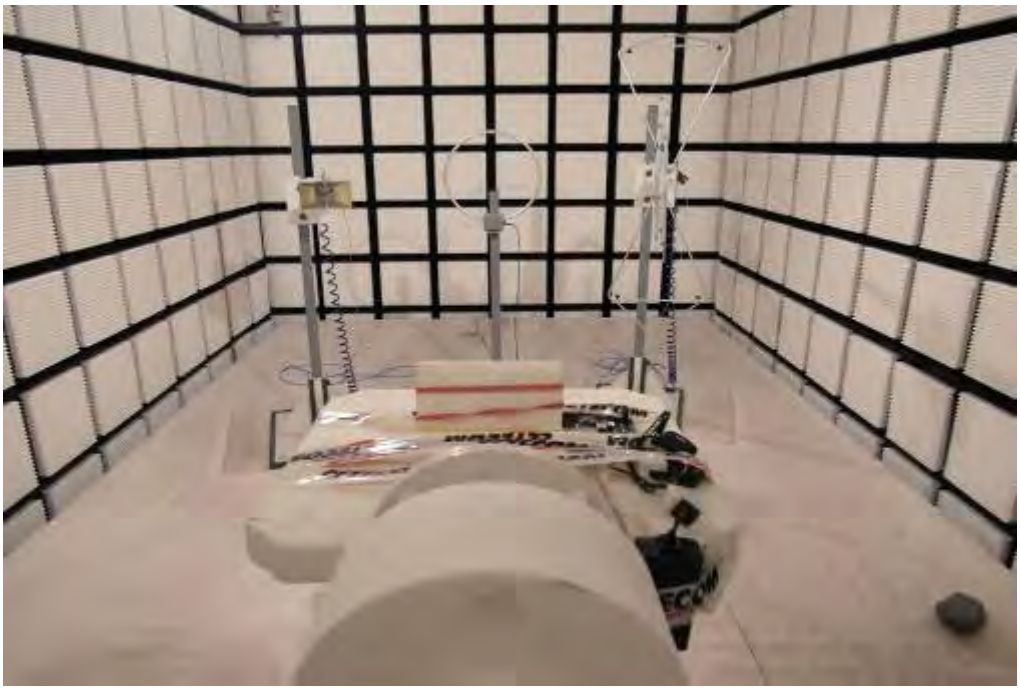
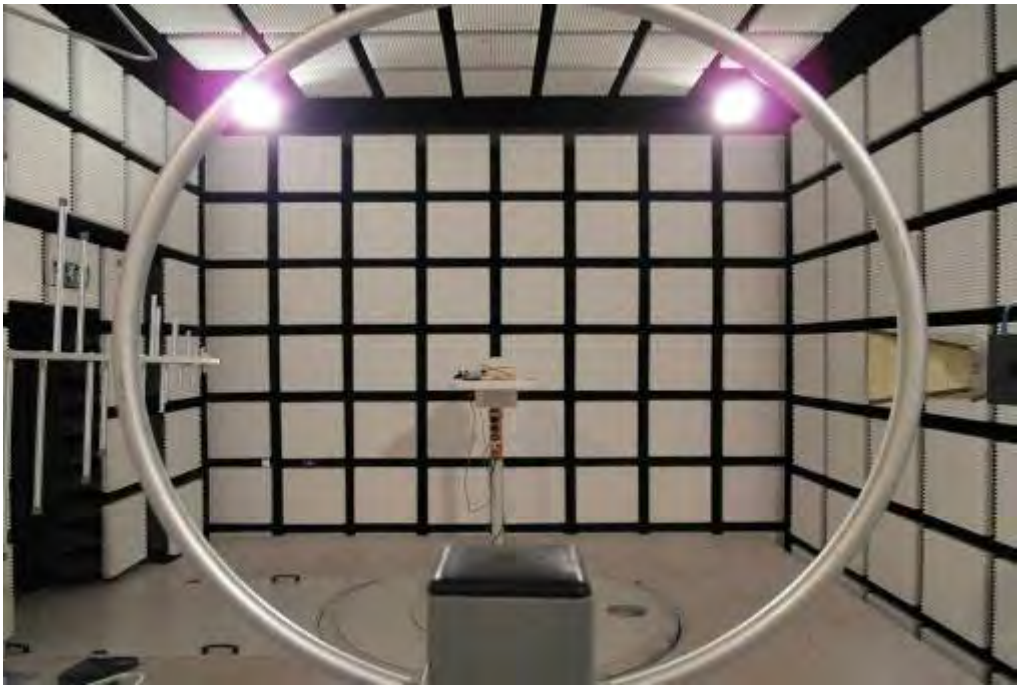


Photo 14: valid for all antenna types (Chamber C)



Annex B Photographs of the EUT

Photo documentation:

Photo 1: Interface board with test board and EUT

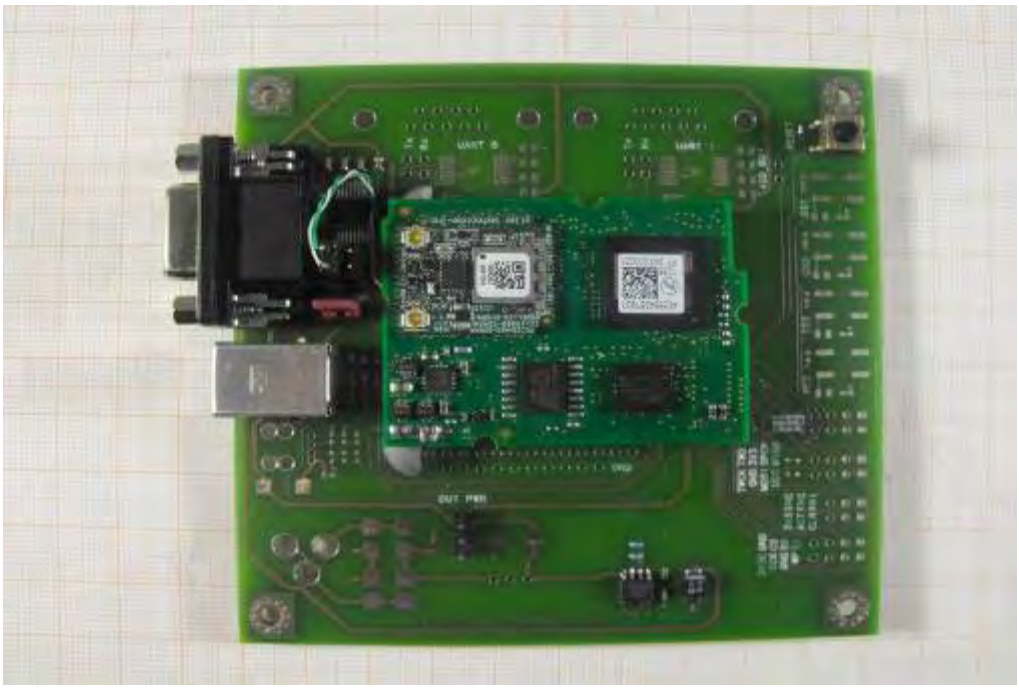


Photo 2: Interface board

Photo 3: Interface board

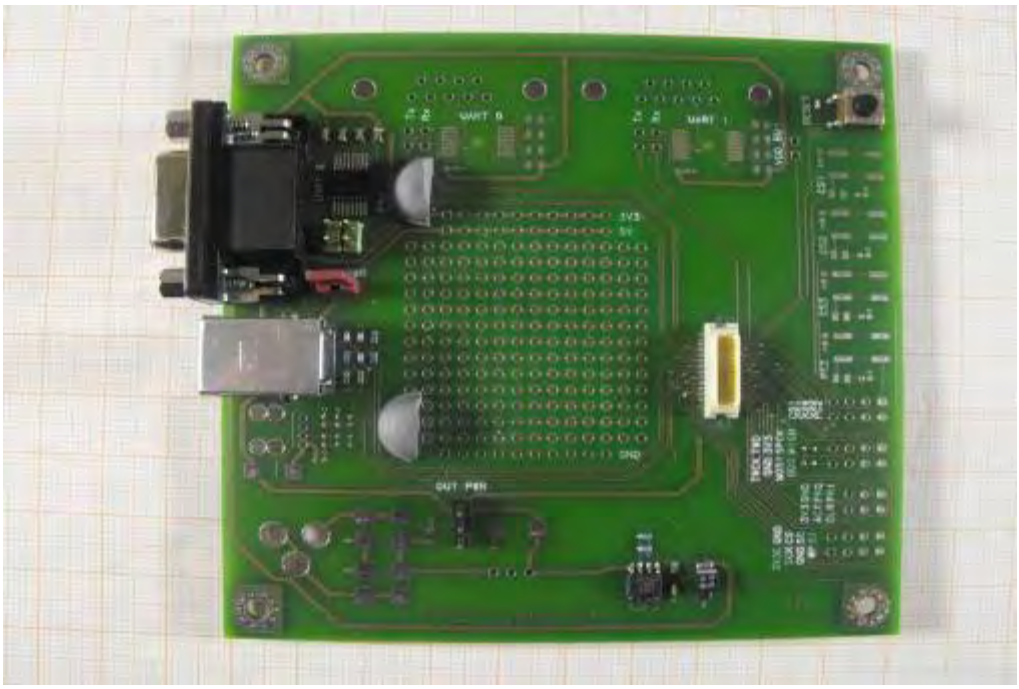


Photo 4: Testboard top view

Photo 5: Testboard bottom view

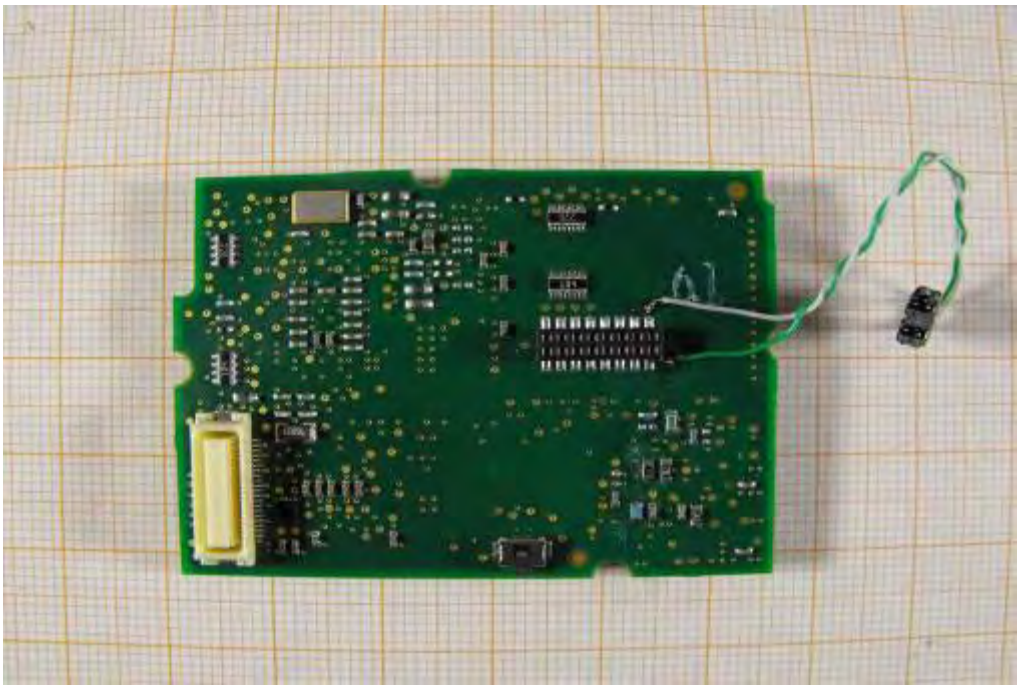


Photo 6: EUT

Photo 7: EUT with Ant M3002-66494

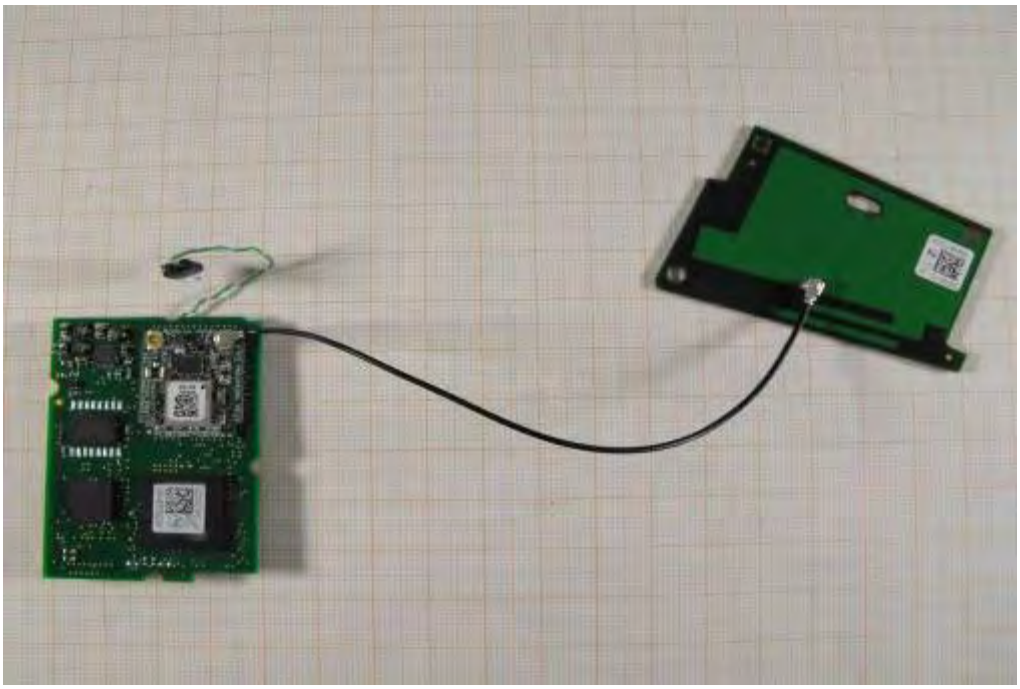


Photo 8: Ant M3002-66494

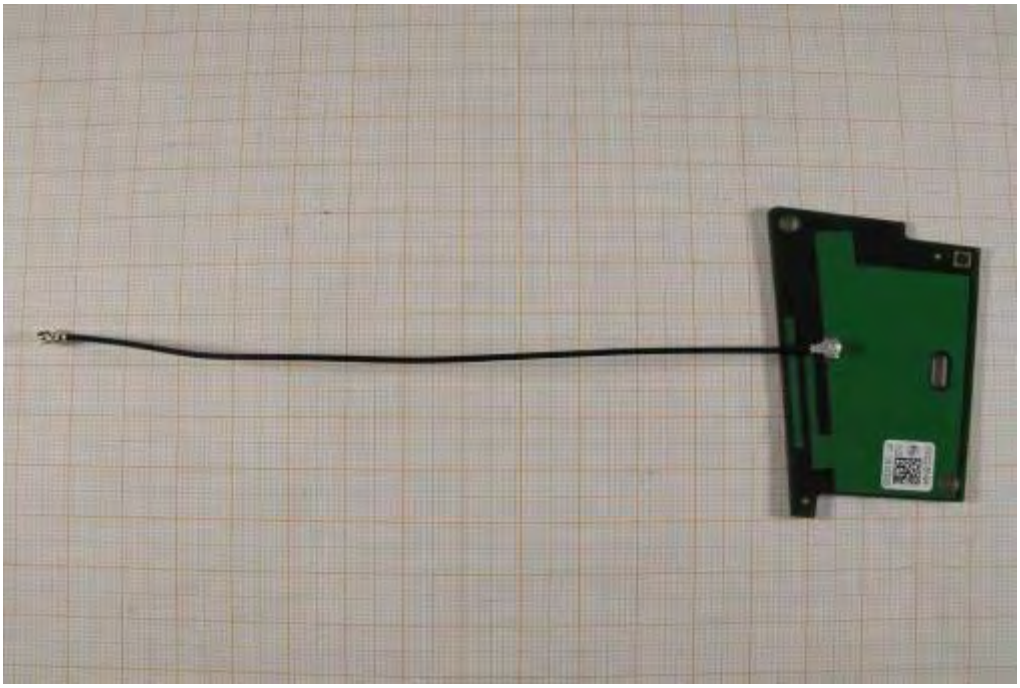


Photo 9: Ant M3002-66494

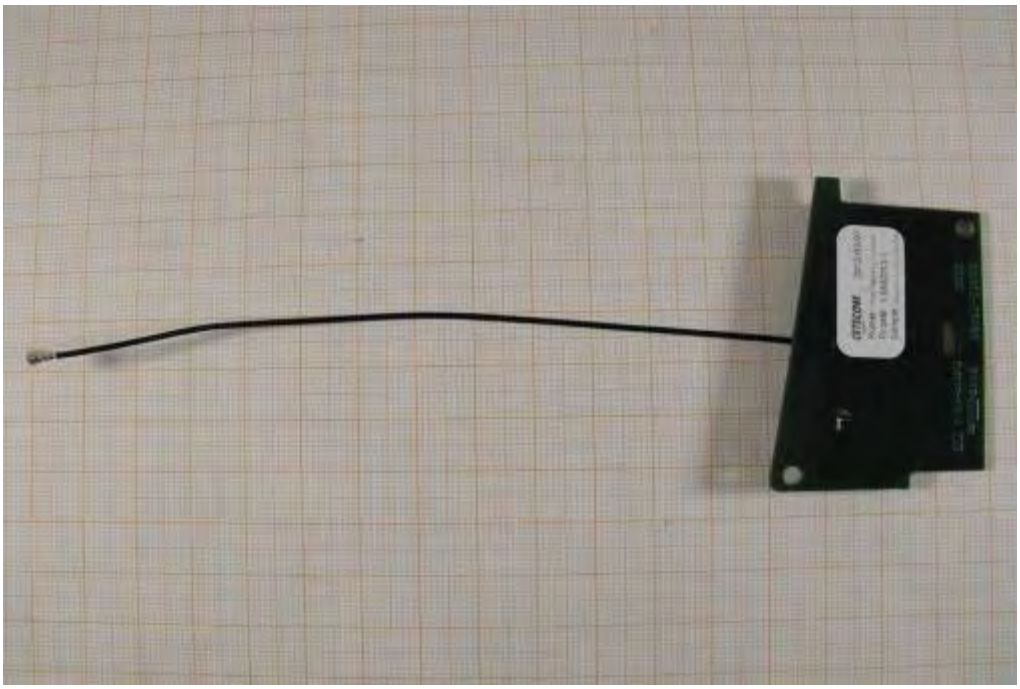


Photo 10: Ant M3002-66494

Photo 11: Ant M3002-66494

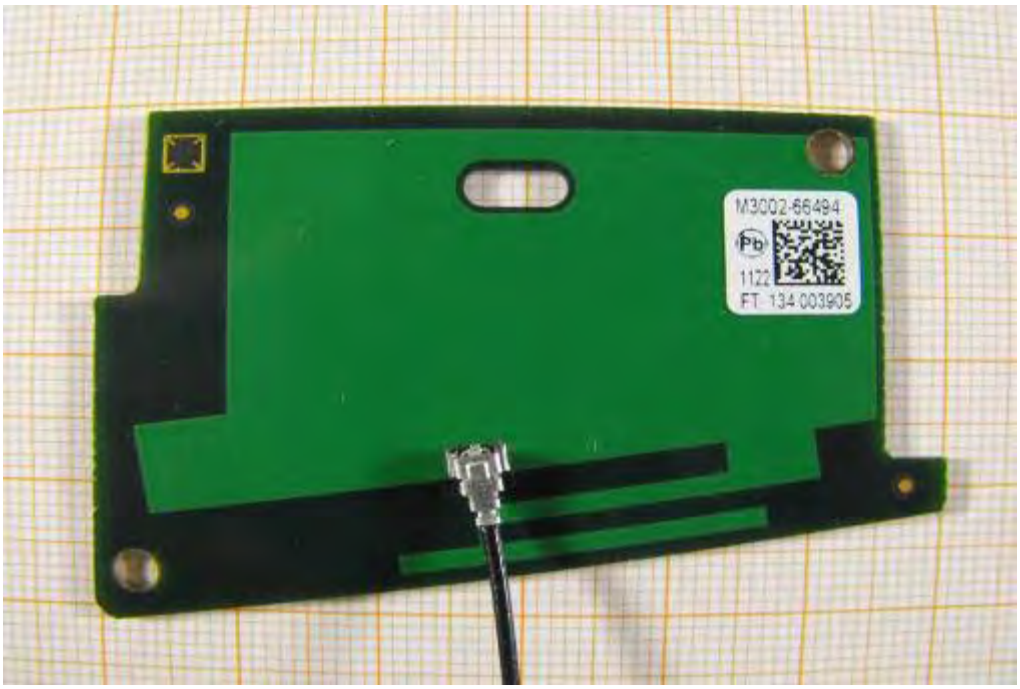


Photo 12: Ant 453564154611

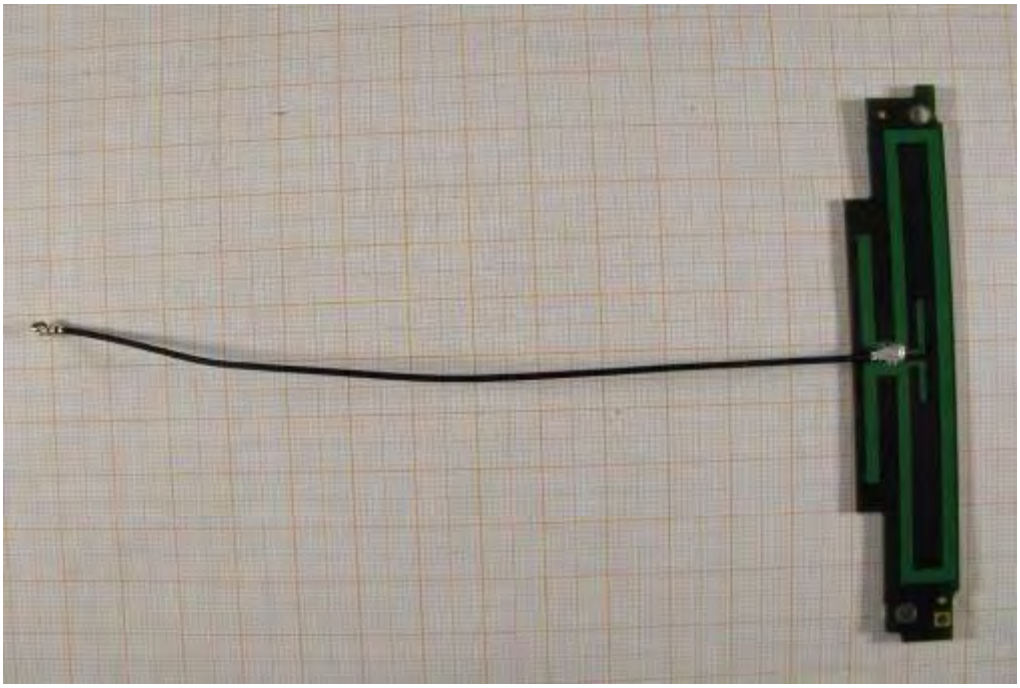


Photo 13: Ant 453564154611

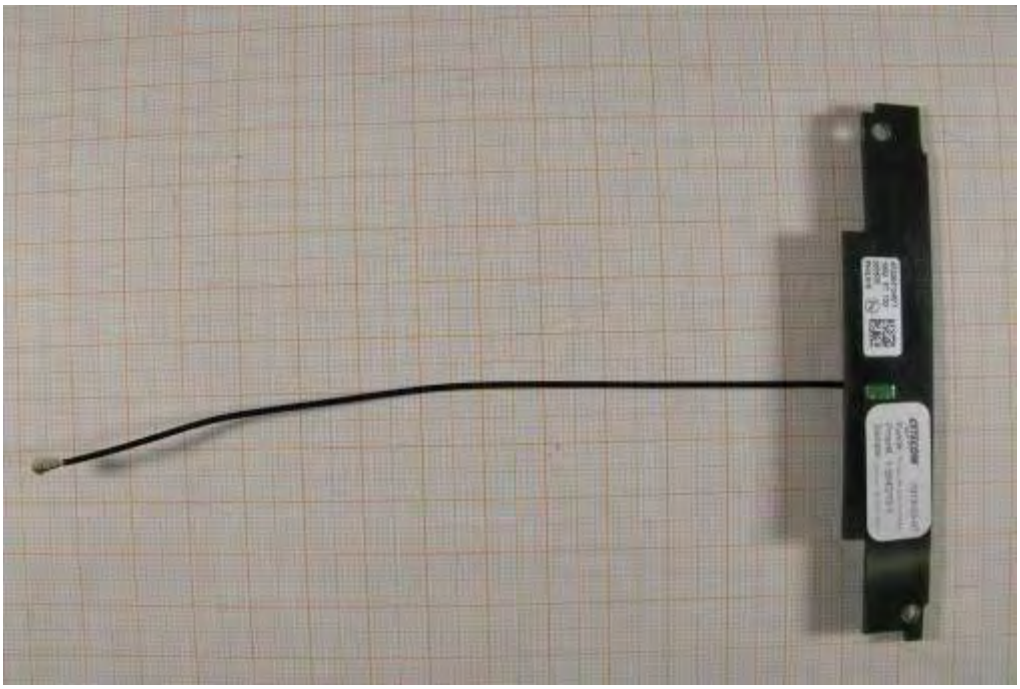


Photo 14: Ant 453564154611

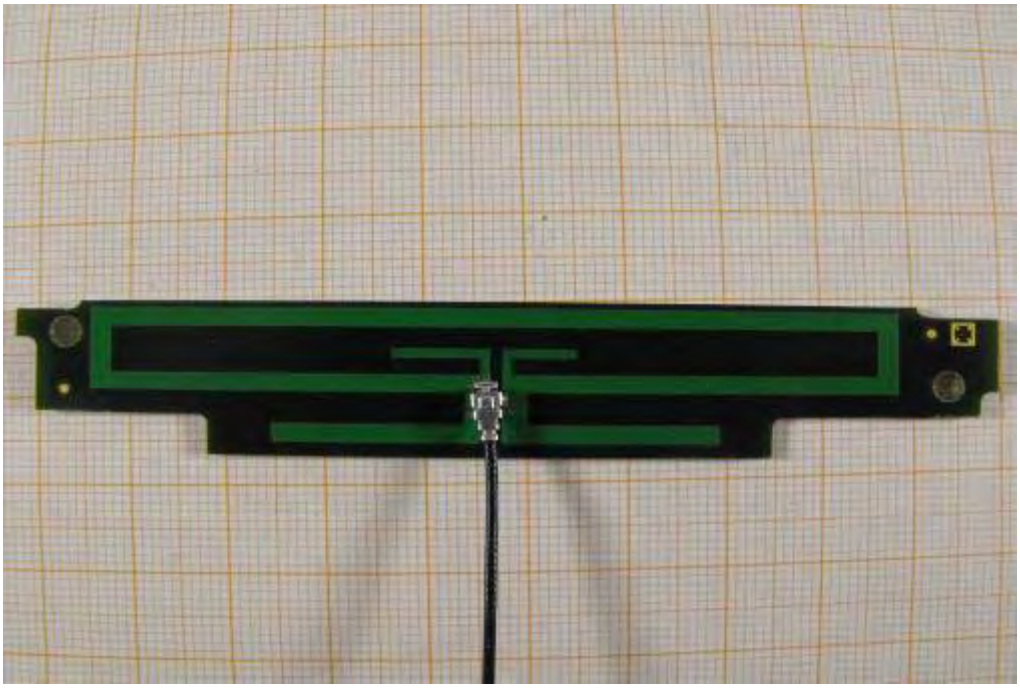


Photo 15: Ant 453564154611

Photo 16: Ant 453564175981

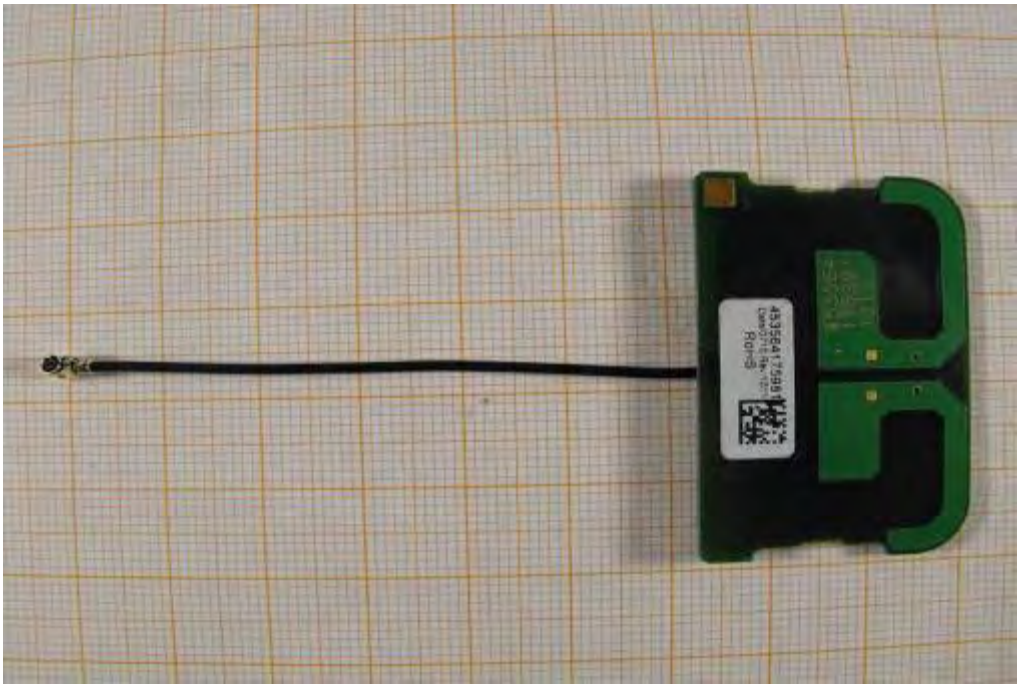


Photo 17: Ant 453564175981

Photo 18: Ant 453564175981

Photo 19: Ant 453564175981

Photo 20: Ant 453564271931

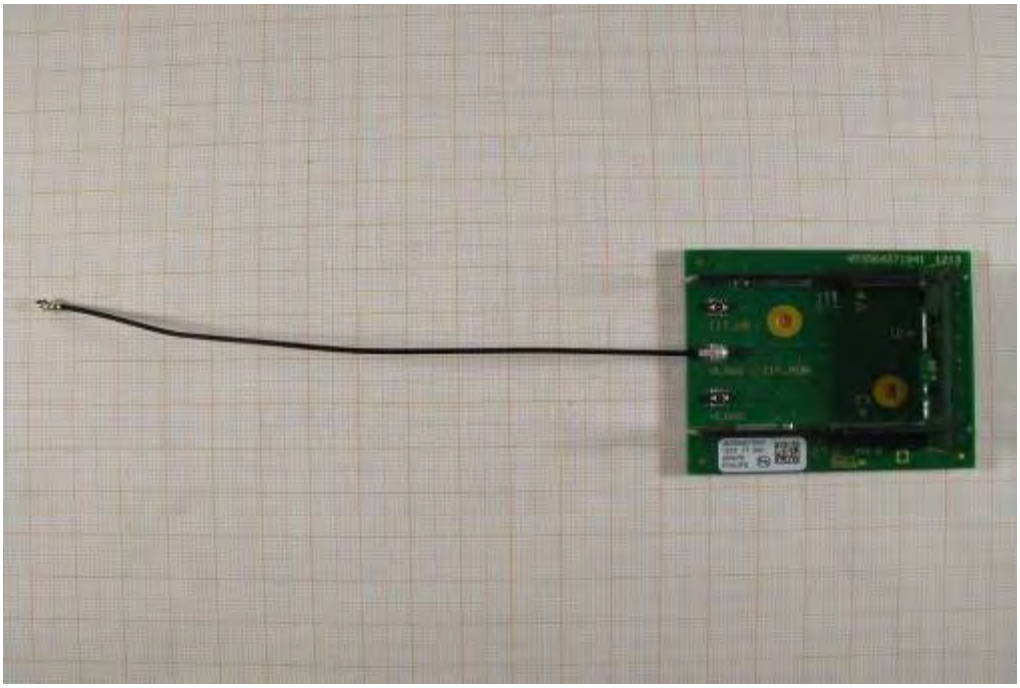


Photo 21: Ant 453564271931

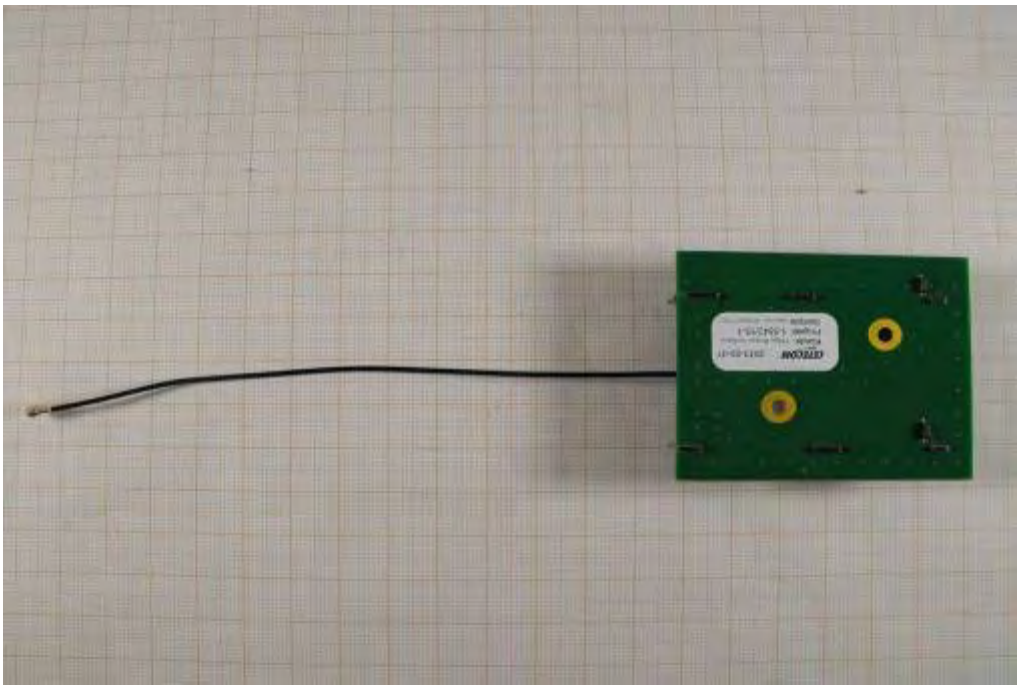


Photo 22: Ant 453564271931

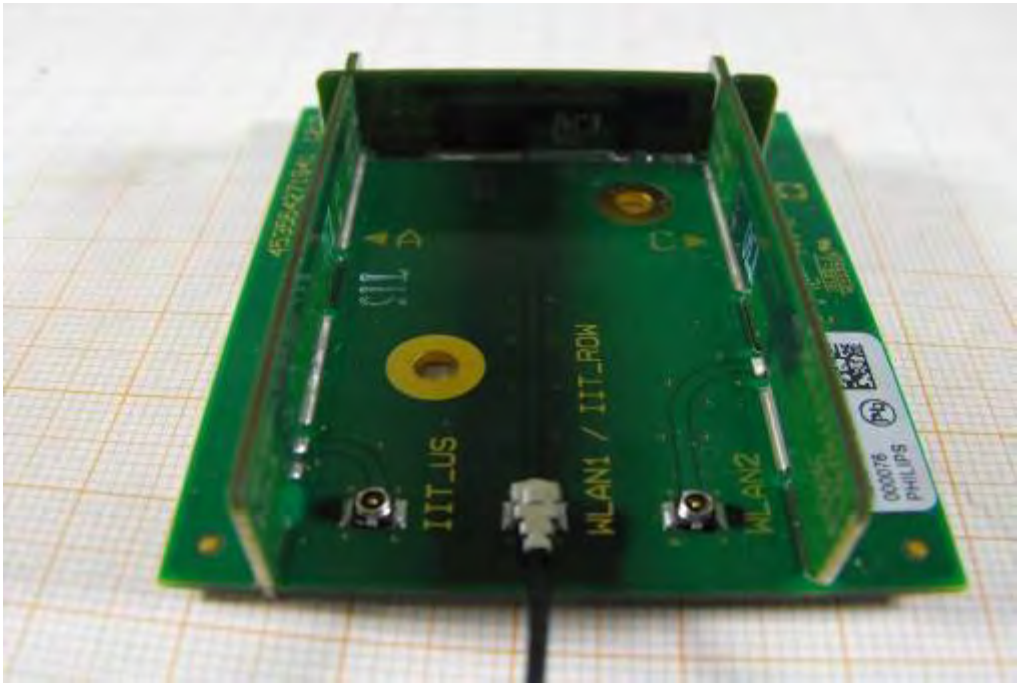


Photo 23: Ant 453564271931

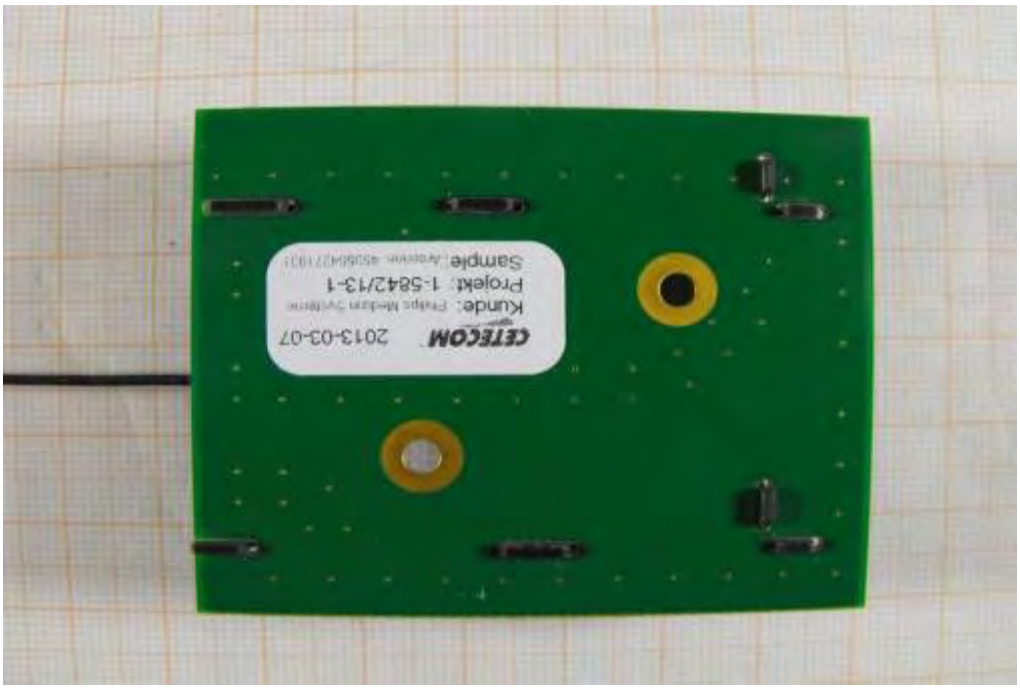
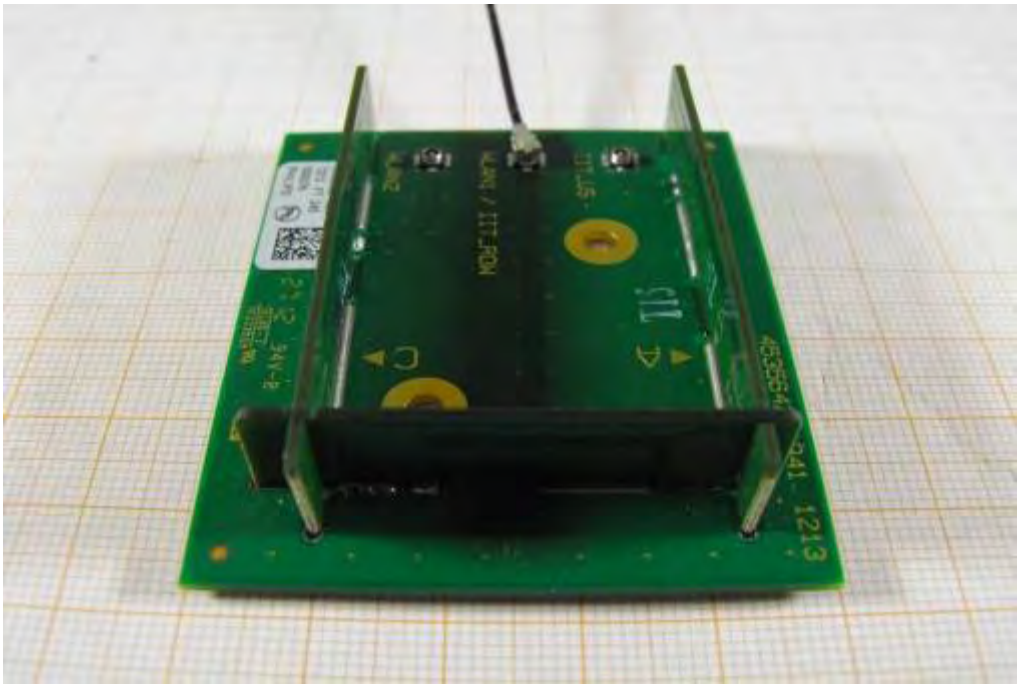


Photo 24: Ant 453564271931



Annex C Document history

Version	Applied changes	Date of release
1.0	Initial release	2013-08-06

Annex D Further information

Glossary

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

Annex E Accreditation Certificate

Front side of certificate

Deutsche Akkreditierungsstelle GmbH

Akkreditierung

CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10, 66117 Saarbrücken

Drahtgebundene Kommunikation einschließlich xDSL
VoIP und DECT
Akustik
Funk einschließlich WLAN
Short Range Devices (SRD)
RFID
WiMax and Richtfunk
Mobilfunk (GSM / GCS, Over the Air (OTA) Performance)
Elektromagnetische Verträglichkeit (EMV) einschließlich Automotive
Produktsicherheit
SAR and Hearing Aid Compatibility (HAC)
Umweltsimulation
Smart Card Terminals
Bluetooth
Wi Fi - Services

Back side of certificate

Deutsche Akkreditierungsstelle GmbH

Note:

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

http://www.cetecom.com/eu/de/cetecom-group/europa/deutschland-saarbruecken/akkreditierungen.html