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

TEST REPORT

Test report no.: 1-6160/13-01-23

Deutsche
Akkreditierungsstelle
D-PL-12076-01-00

Testing laboratory

CETECOM ICT Services GmbH

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

The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)

The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12076-01-00

Applicant

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Manufacturer

Pegatron Corporation

5F, No. 76, Ligong Street Beitou District

11261 Taipei City / TAIWAN

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 - Licence-exempt Radio Apparatus (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: Car Media System**Model name:** SDIS1**FCC ID:** VUISDIS1**IC:** 7582A-SDIS1

Frequency: ISM-band 2400 MHz to 2483.5 MHz

Lowest channel 2412 MHz – Highest channel 2462 MHz

Technology tested: WLAN

Antenna: Integrated antenna

Power supply: 12.0 V DC

Temperature range: -20°C to +55°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:

Marco Bertolino
Specialist
Radio Communications & EMC

Test performed:

Stefan Bös
Professional
Radio Communications & EMC

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

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2.2 Application details

Date of receipt of order:	2013-08-21
Date of receipt of test item:	2014-10-01
Start of test:	2014-10-01
End of test:	2014-10-30
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15		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 - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

3.1 Measurement guidance

DTS : KDB 558074	2014-06	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
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4 Test environment

Temperature:	T_{nom}	+22 °C during room temperature tests
	T_{max}	+55 °C during high temperature tests
	T_{min}	-20 °C during low temperature tests
Relative humidity content:		54 %
Barometric pressure:		not relevant for this kind of testing
Power supply:	V_{nom}	12.0 V DC
	V_{max}	-/- V
	V_{min}	-/- V

5 Test item

Kind of test item	:	Car Media System
Type identification	:	SDIS1
S/N serial number	:	Rad. Prototype #2
	:	Cond. Prototype #1
HW hardware status	:	C101
SW software status	:	SDIS1R_0.344_dev_AU_ER_sdis1_er-userdebug
Frequency band [MHz]	:	ISM-band 2400 MHz to 2483.5 MHz Lowest channel 2412 MHz – Highest channel 2462 MHz
Type of radio transmission	:	DSSS, OFDM
Use of frequency spectrum	:	
Type of modulation	:	CCK, BPSK, QPSK, 16QAM, 64QAM
Number of channels	:	11
Antenna	:	Integrated antenna
Power supply	:	12.0 V DC
Temperature range	:	-20°C to +55 °C

5.1 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup- and EUT-photos are included in test report: 1-6160/13-01-01_AnnexA
1-6160/13-01-01_AnnexB
1-6160/13-01-01_AnnexD

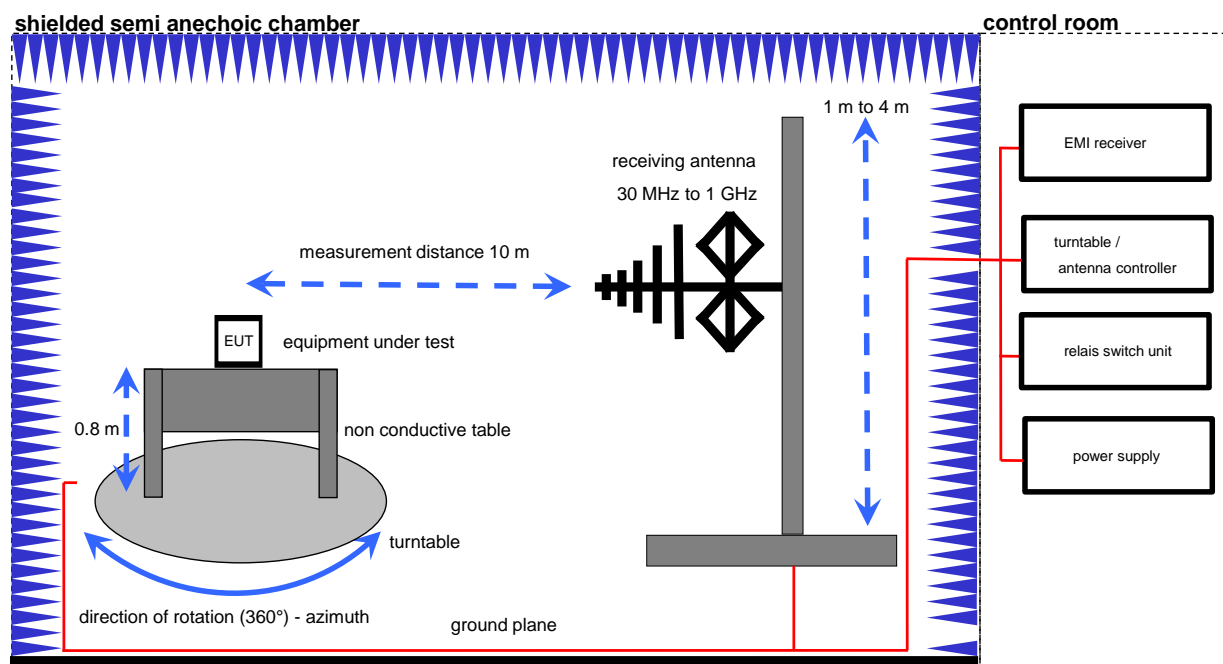
6 Test laboratories sub-contracted

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.

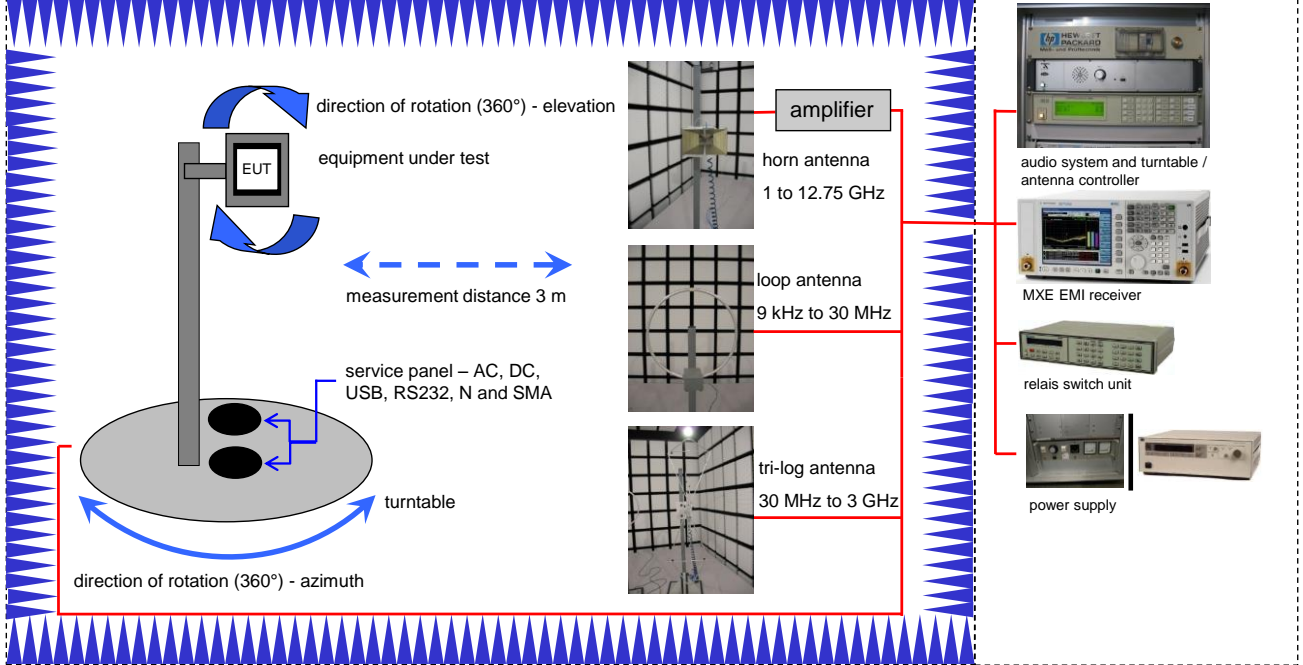


Equipment table:

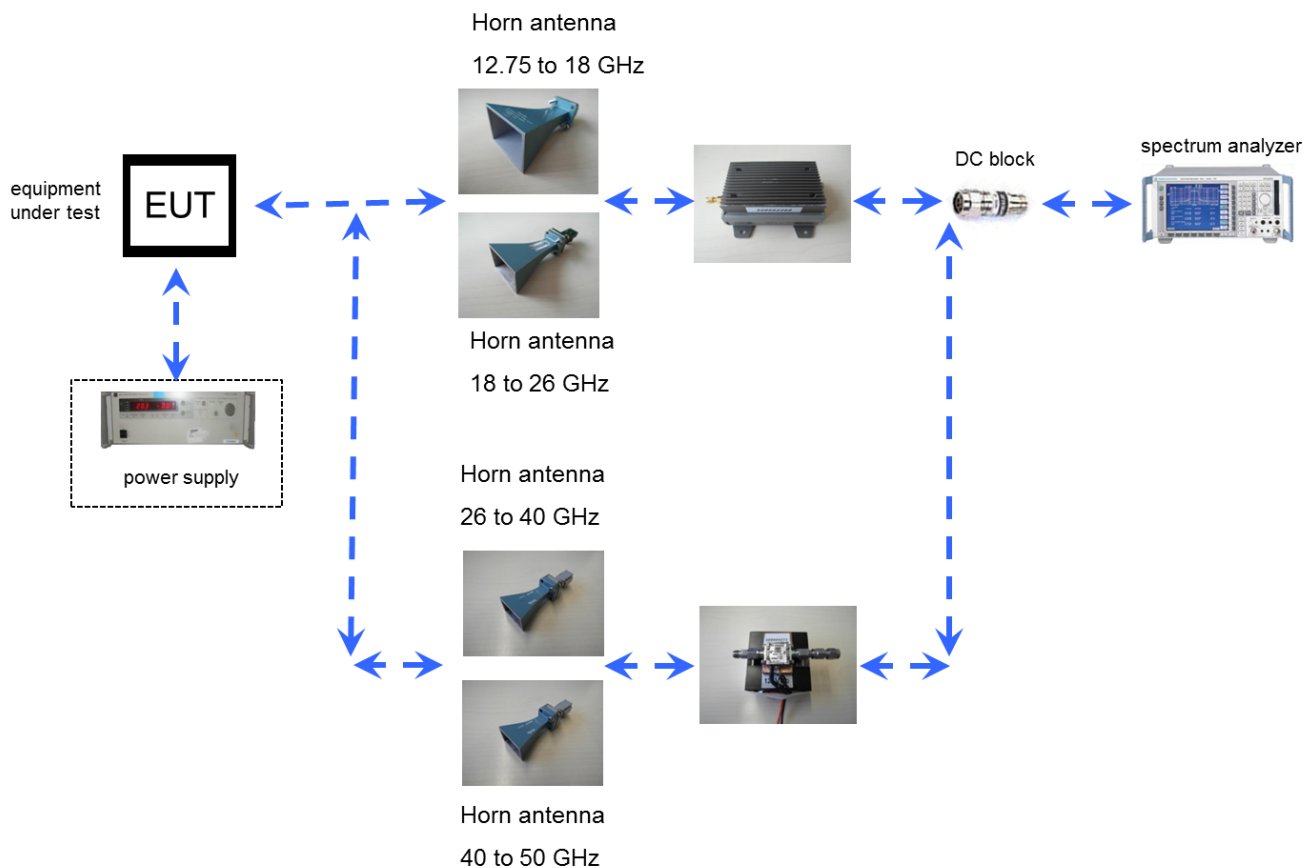
Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Software	EMC32 V. 9.12.05	R&S	-/-	-/-
Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368
DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580
EMI Test Receiver	ESCI 3	R&S	100083	300003312
Amplifier	JS42-00502650-28-5A	MITEQ	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

shielded full anechoic chamber

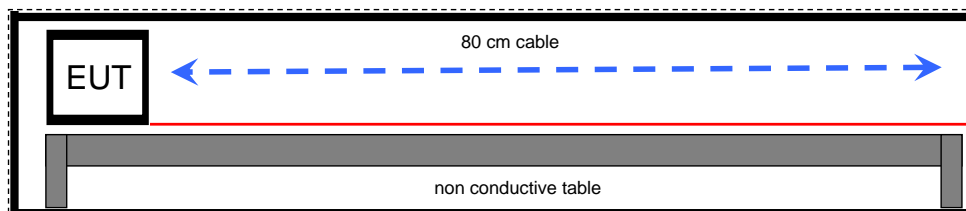

Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854
Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351
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	8905-2342	300000256
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 50 GHz**Equipment table:**

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787
Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442
Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268
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	Erft	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

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	2014-11-05	Reduced tests according to customer test plan

Test specification clause	Test case	Guideline	Temperature conditions	Power source voltages	Mode	Pass	Fail	NA	NP	Remark
§15.247(b)(4) RSS 210 / A8.4(2)	Antenna gain	-/-	Nominal	Nominal	DSSS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	-/-
§15.247(e) RSS 210 / A8.2(b)	Power spectral density	KDB 558074 DTS clause: 10.6	Nominal	Nominal	DSSS OFDM g & n	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	-/-
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth – 6 dB bandwidth	KDB 558074 DTS clause: 8.1	Nominal	Nominal	DSSS OFDM g & n	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	-/-
RSS Gen clause 4.6.1	Occupied bandwidth	-/-	Nominal	Nominal	DSSS OFDM g & n	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	-/-
§15.247(b)(3) RSS-210 / A8.4(4)	Maximum output power	KDB 558074 DTS clause: 9.2.2.5	Nominal	Nominal	DSSS OFDM g & n	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	Only radiated measurements complies
§15.247(d) RSS-210 / A8.5	Detailed spurious emissions @ the band edge - conducted	-/-	Nominal	Nominal	DSSS OFDM g & n	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	-/-
§15.205 RSS-210 / A8.5	Band edge compliance radiated	KDB 558074 DTS clause: 13.3.2	Nominal	Nominal	DSSS OFDM g & n	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions conducted	KDB 558074 DTS clause: 11.1 & 11.2 11.3	Nominal	Nominal	DSSS OFDM g & n	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	-/-
§15.247(d) RSS-210 / A8.5	TX spurious emissions radiated	-/-	Nominal	Nominal	DSSS OFDM g & n	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	complies
§15.109 RSS-Gen	RX spurious emissions radiated	-/-	Nominal	Nominal	-/-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	complies
§15.209(a) RSS-Gen	TX spurious emissions radiated < 30 MHz	-/-	Nominal	Nominal	DSSS OFDM g & n	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	-/-
§15.107(a) §15.207	Conducted emissions < 30 MHz	-/-	Nominal	Nominal	DSSS OFDM g & n	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	complies

Note: NA = Not Applicable; NP = Not Performed

9 Additional comments

Reference documents: None

Special test descriptions: None

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 Measurement results

10.1 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.

Measurement:

Measurement parameter	
According to DTS clause: 9.2.2.5	
Detector:	RMS
Sweep time:	See Plots.
Resolution bandwidth:	500 kHz
Video bandwidth:	3 MHz
Span:	40 MHz
Integration bandwidth:	99% power - bandwidth (OBW)
Trace-Mode:	Max hold (allow trace to fully stabilize)
Measurement function:	Channel power with OBW

Limits:

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

Results:

DSSS / b – mode Frequency	Maximum Output Power [dBm]		
	2412 MHz	2437 MHz	2462 MHz
Output power radiated Worst case data rate	8.4	10.4	9.5
OFDM / g – mode Frequency	Maximum Output Power [dBm]		
	2412 MHz	2437 MHz	2462 MHz
Output power radiated Worst case data rate	2.4	4.2	3.7
OFDM / n HT20 – mode Frequency	Maximum Output Power [dBm]		
	2412 MHz	2437 MHz	2462 MHz
Output power radiated Worst case data rate	2.3	4.2	3.7
OFDM / n HT40 – mode Frequency	Maximum Output Power [dBm]		
	2422 MHz	2437 MHz	2452 MHz
Output power radiated Worst case data rate	3.2	4.8	4.3
Measurement uncertainty	± 1.5 dB (cond.)		

Result: Passed

Description:

Measurement of the maximum output power conducted and radiated according the **Canadian requirements**. The measurements are performed using the data rate producing the highest conducted output power.

Measurement:

Measurement parameter	
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)
Measurement function:	Channel power with DTS BW

Limits:

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

Results:

DSSS / b – mode	Maximum Output Power [dBm]		
	2412 MHz	2437 MHz	2462 MHz
Frequency			
Output power radiated Worst case data rate	10.6	12.6	11.9
OFDM / g – mode	Maximum Output Power [dBm]		
	2412 MHz	2437 MHz	2462 MHz
Frequency			
Output power radiated Worst case data rate	8.7	10.5	10.0
OFDM / n HT20 – mode	Maximum Output Power [dBm]		
	2412 MHz	2437 MHz	2462 MHz
Frequency			
Output power radiated Worst case data rate	8.8	10.7	10.2
OFDM / n HT40 – mode	Maximum Output Power [dBm]		
	2422 MHz	2437 MHz	2452 MHz
Frequency			
Output power radiated Worst case data rate	9.5	11.1	10.6
Measurement uncertainty	± 1.5 dB (cond.)		

Result: **Passed**

10.2 Band edge compliance radiated

Description:

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

Measurement:

Measurement parameter for peak measurements	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	1 MHz
Span:	See plot!
Trace-Mode:	Max Hold

Measurement parameter for average measurements	
According to DTS clause: 13.3.2	
Detector:	RMS
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz
Span:	2 MHz
Trace-Mode:	RMS Average over 101 sweeps

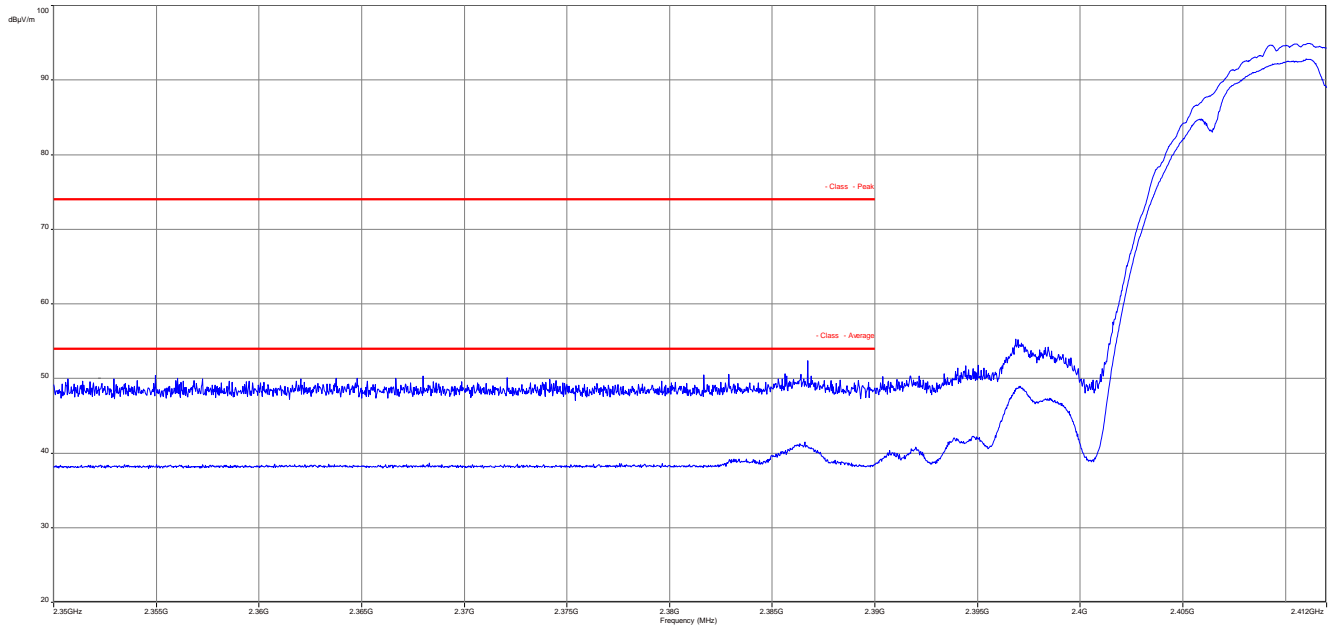
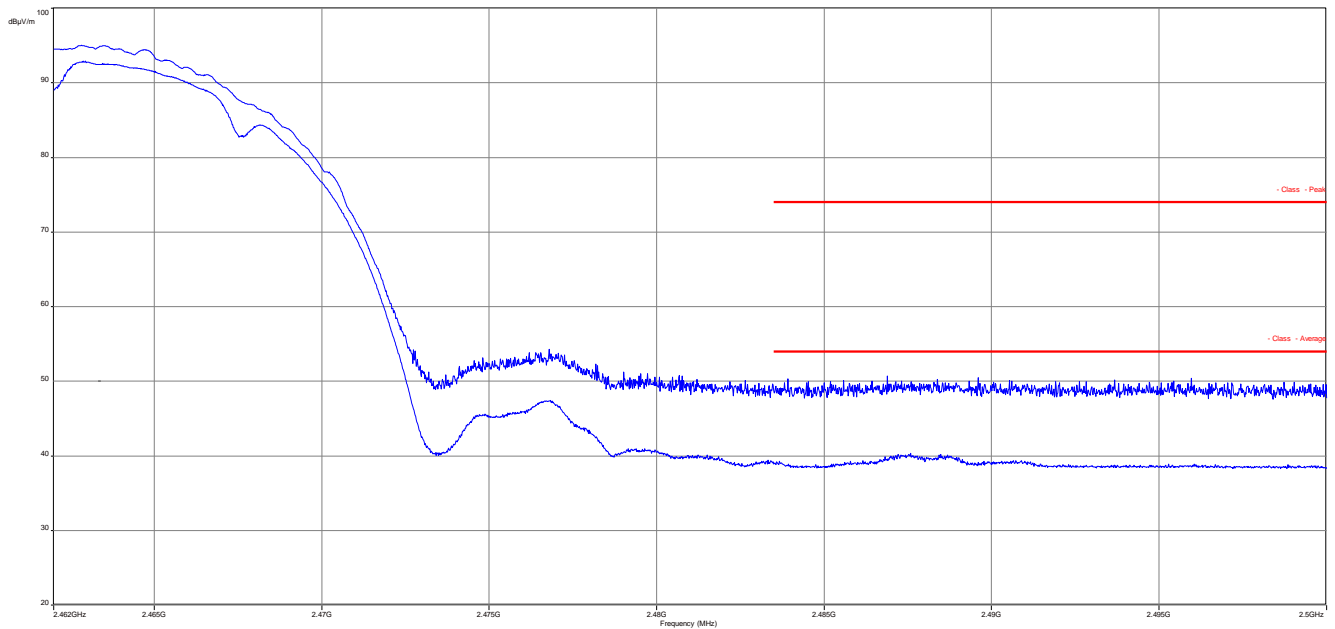
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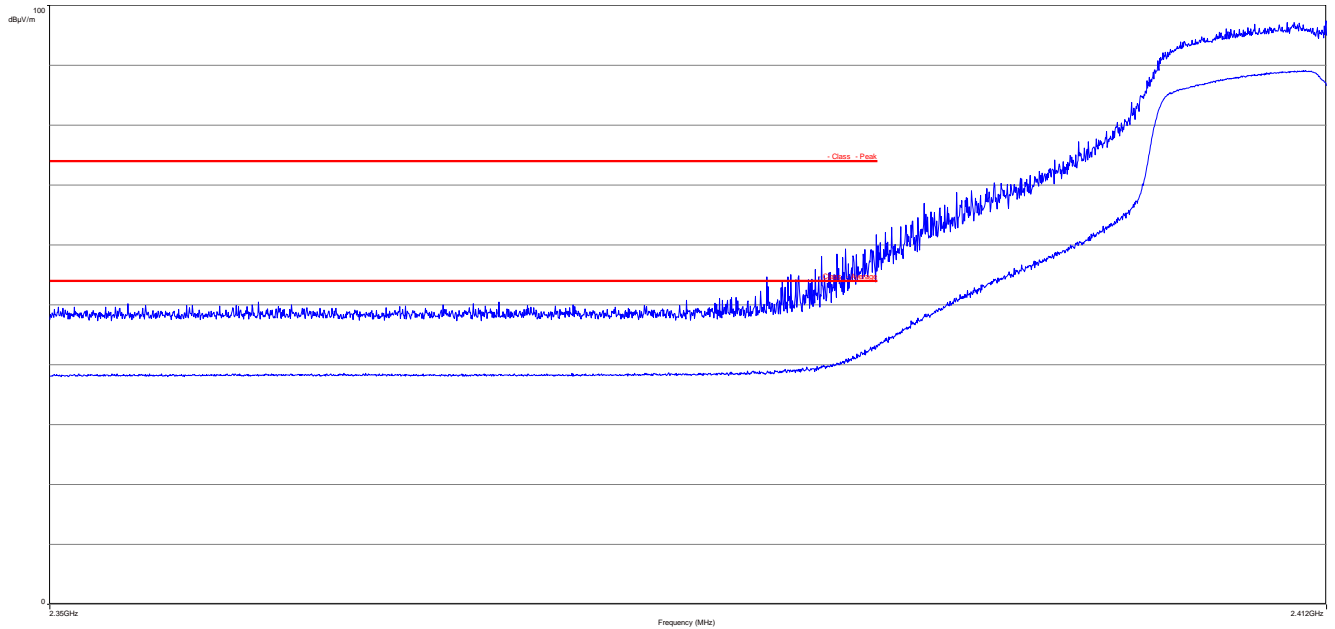
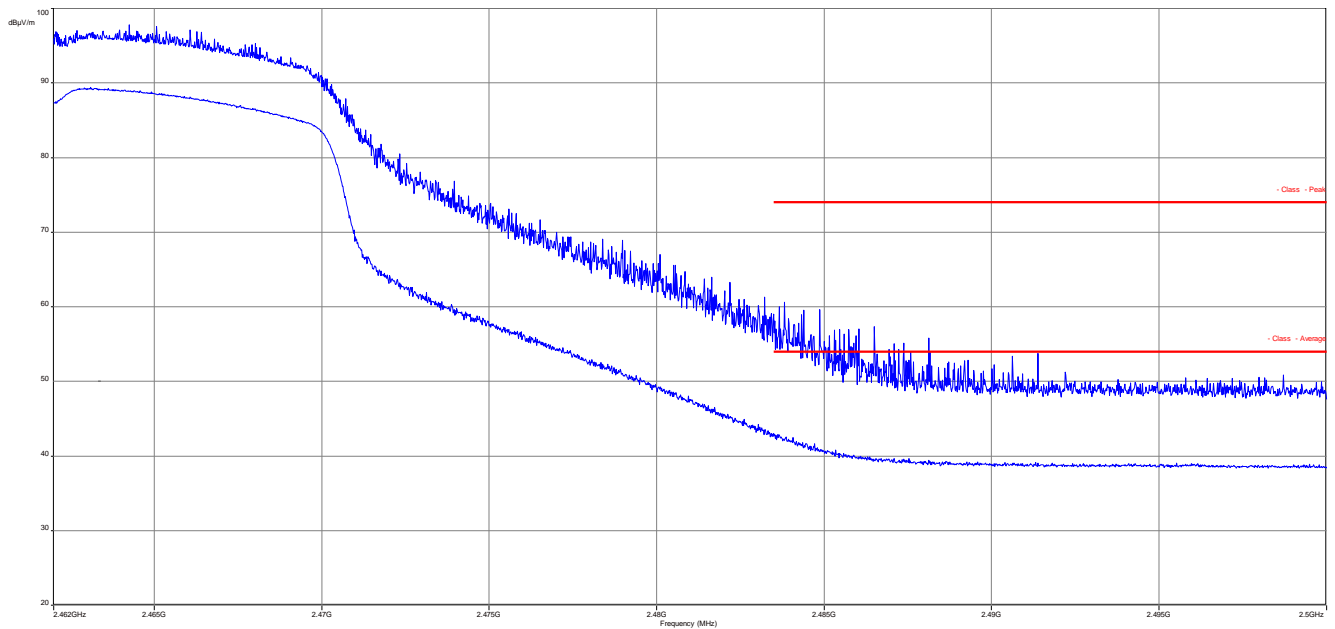
FCC	IC
Band Edge Compliance Radiated	
<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).</p>	
<p>74 dBμV/m Peak 54 dBμV/m AVG</p>	

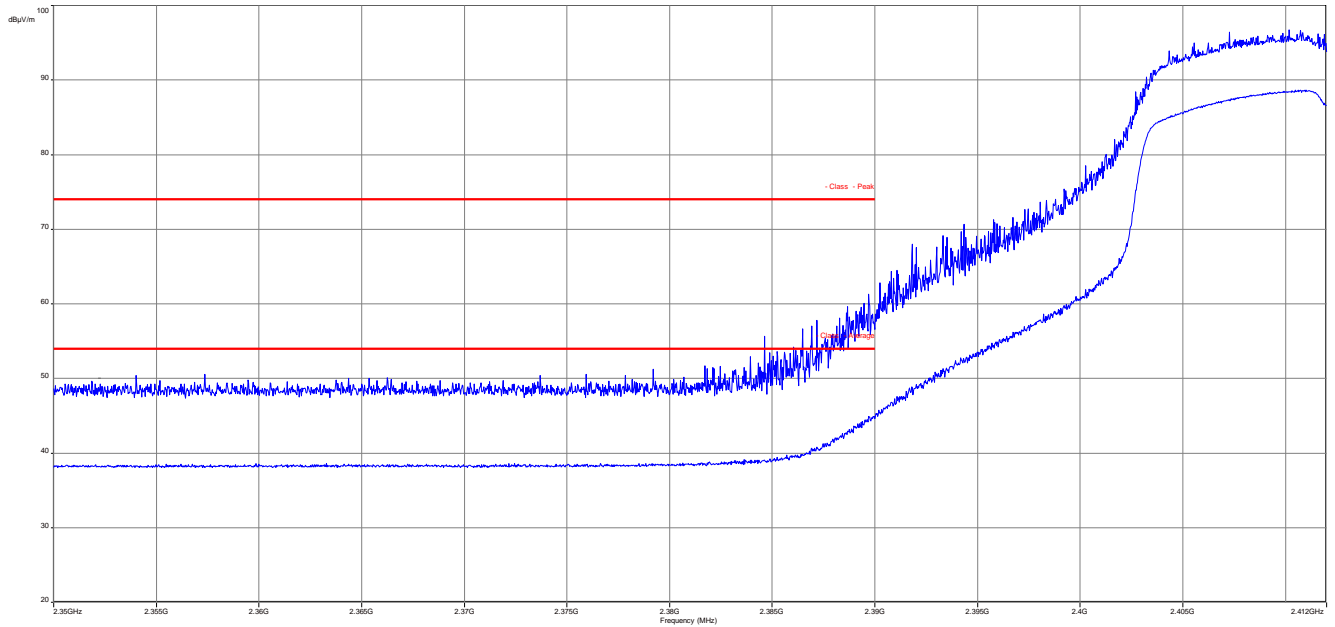
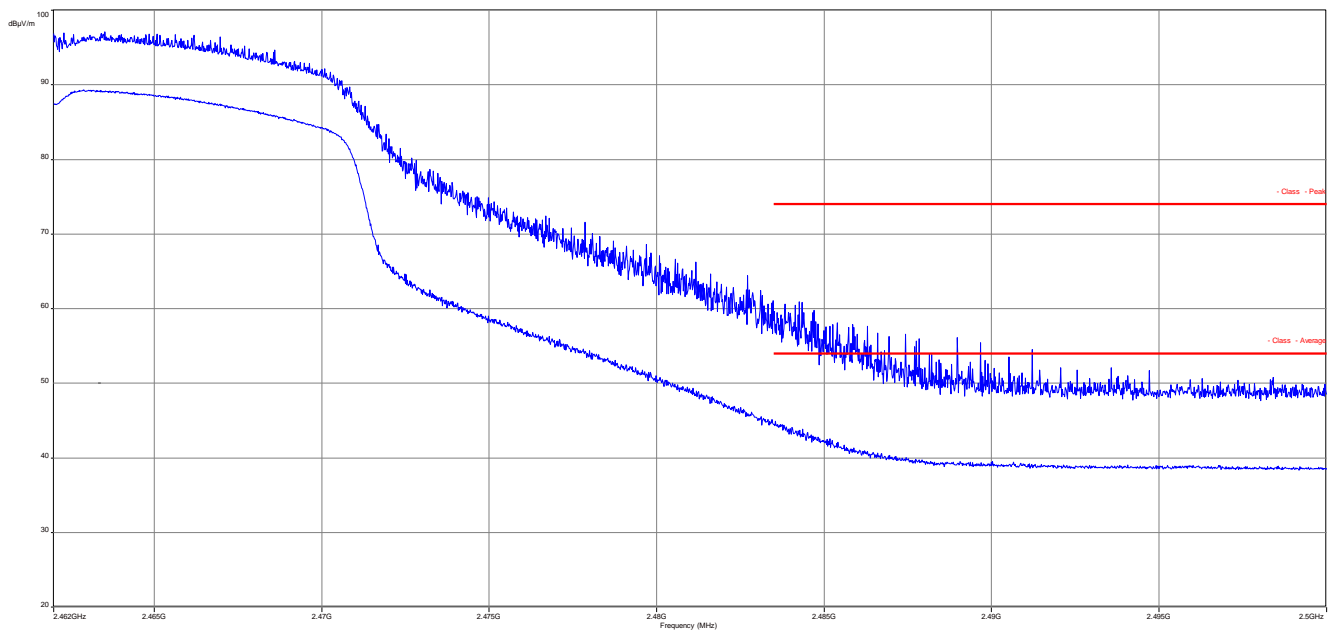
Results:

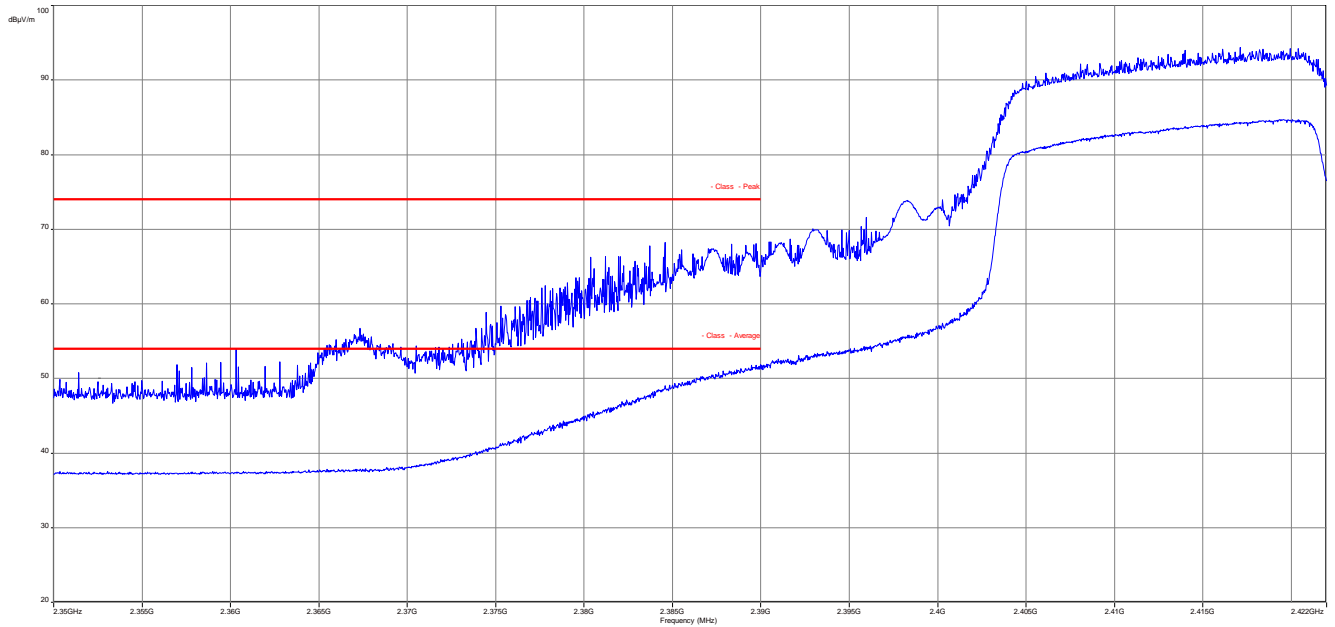
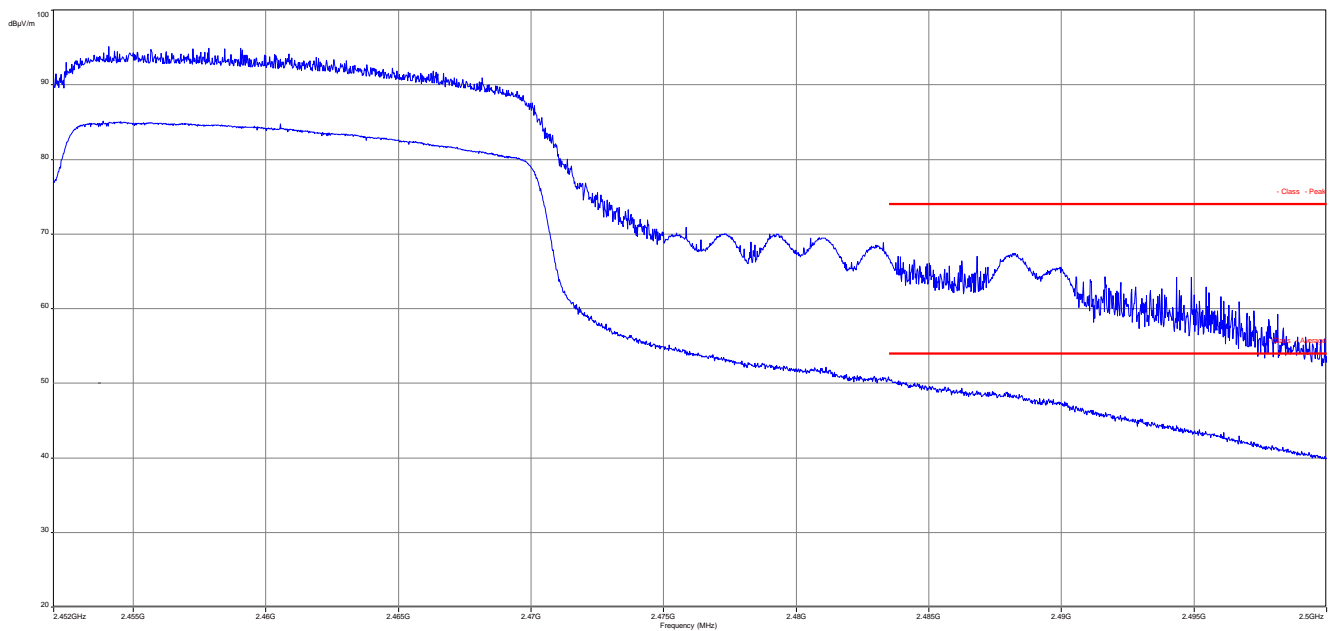
Scenario	Band Edge Compliance Radiated [dB]			
Modulation	DSSS / b – mode	OFDM / g – mode	OFDM / n HT20 – mode	OFDM / n HT40 – mode
Lower Band Edge – Channel 1	> 20 dB (Peak) > 10 dB (AVG)	> 10 dB (Peak) > 8 dB (AVG)	> 10 dB (Peak) > 8 dB (AVG)	> 6 dB (Peak) > 3 dB (AVG)
Upper Band Edge – Channel 11	> 20 dB (Peak) > 10 dB (AVG)	> 10 dB (Peak) > 8 dB (AVG)	> 10 dB (Peak) > 8 dB (AVG)	> 6 dB (Peak) > 3 dB (AVG)
Measurement uncertainty	± 3 dB			

Result: **Passed**

Plots: DSSS/ b – mode peak / average**Plot 1: TX mode, lower band edge, vertical & horizontal polarization****Plot 2: TX mode, upper band edge, vertical & horizontal polarization**

Plots: OFDM / g – mode peak / average**Plot 1: TX mode, lower band edge, vertical & horizontal polarization****Plot 2: TX mode, upper band edge, vertical & horizontal polarization**

Plots: OFDM / n HT20 – mode peak / average**Plot 1: TX mode, lower band edge, vertical & horizontal polarization****Plot 2: TX mode, upper band edge, vertical & horizontal polarization**

Plots: OFDM / n HT40 – mode peak / average**Plot 1: TX mode, lower band edge, vertical & horizontal polarization****Plot 2: TX mode, upper band edge, vertical & horizontal polarization**

10.3 TX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in transmit mode. The measurement is performed at channel 1, 6 and 11. 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:	3 x RBW Remeasurement: 10 Hz / 3 MHz
Span:	30 MHz to 26 GHz
Trace-Mode:	Max Hold
Measured Modulation	<input checked="" type="checkbox"/> DSSS b – mode <input checked="" type="checkbox"/> OFDM g – mode <input checked="" type="checkbox"/> OFDM n – mode HT20 <input checked="" type="checkbox"/> 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

Results: DSSS / b – mode

TX Spurious Emissions Radiated [dB μ V/m]								
DSSS / b – mode								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.		
Measurement uncertainty			± 3 dB					

Result: Passed**Results: OFDM / g – mode**

TX Spurious Emissions Radiated [dB μ V/m]								
DSSS / g – mode								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.		
Measurement uncertainty			± 3 dB					

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

TX Spurious Emissions Radiated [dB μ V/m]								
DSSS / n – mode								
2412 MHz			2437 MHz			2462 MHz		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.		
Measurement uncertainty			± 3 dB					

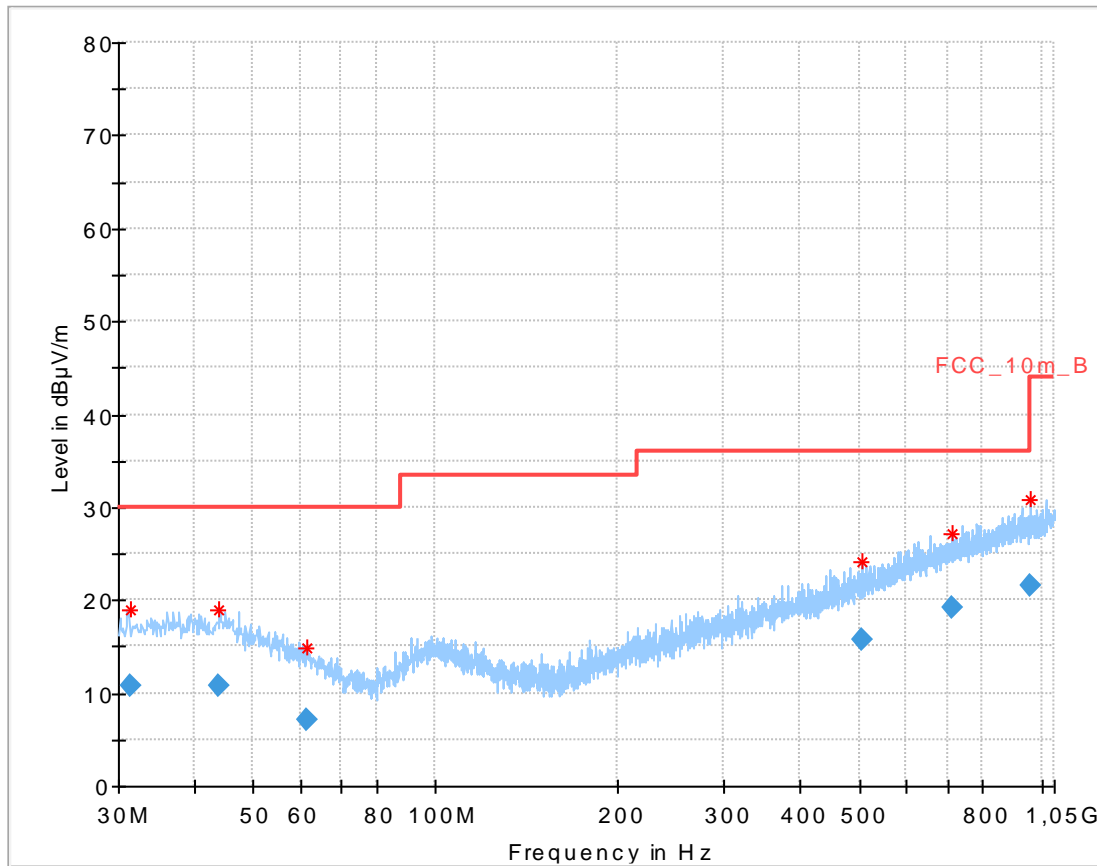
Result: Passed

Results: OFDM / n HT40 – mode

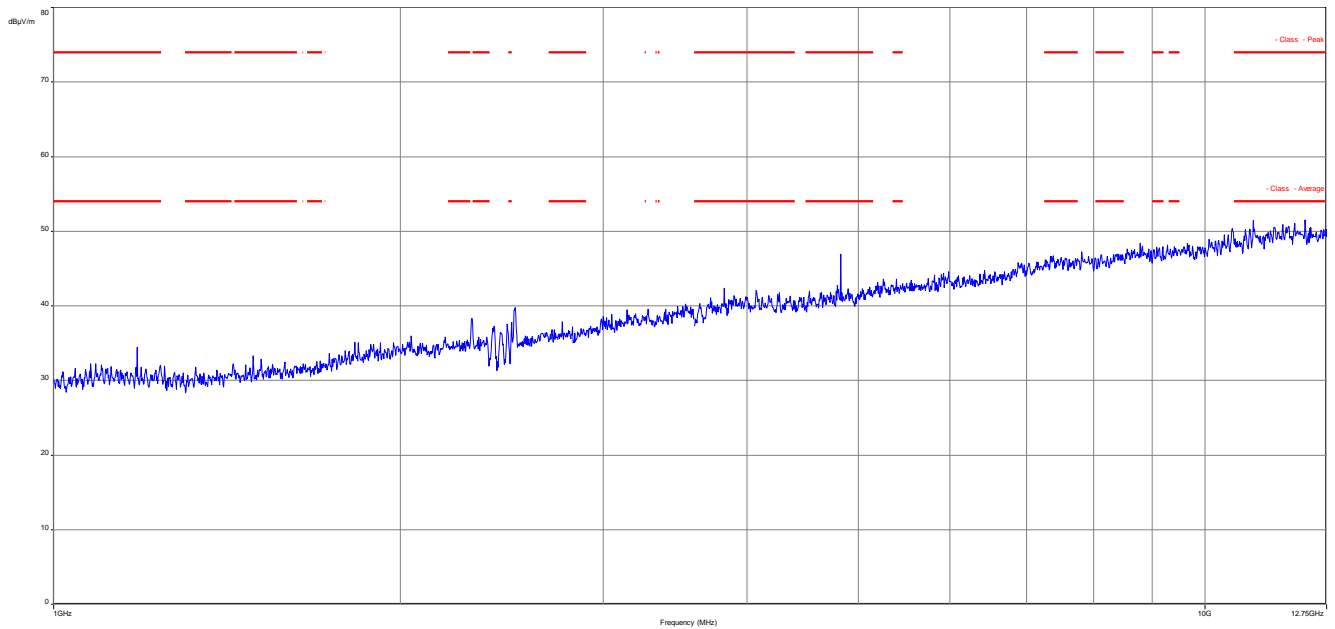
TX Spurious Emissions Radiated [dB μ V/m]								
DSSS / n – mode								
2422 MHz			2437 MHz			2452 MHz		
F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]	F [MHz]	Detector	Level [dB μ V/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.			For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.			No spurious emissions above 1 GHz detected.		
Measurement uncertainty			± 3 dB					

Result: Passed

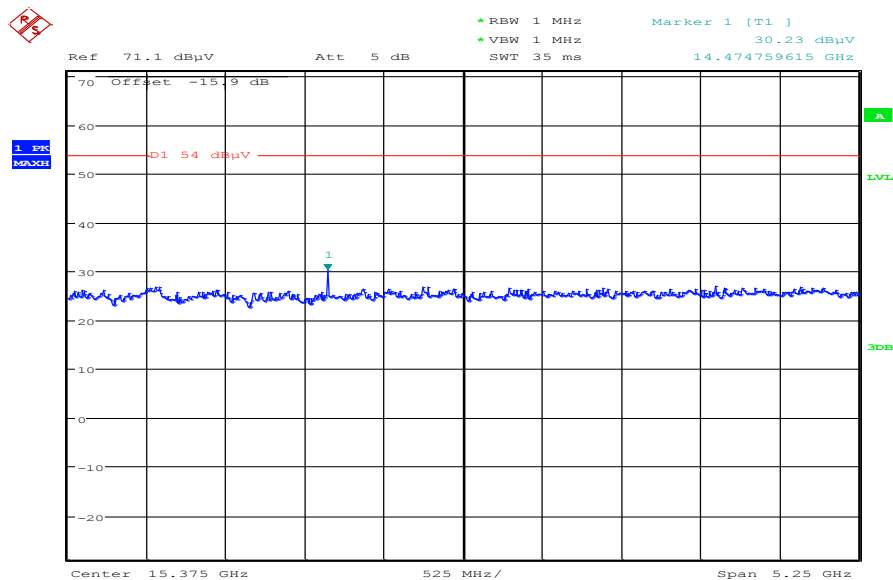
Note: The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

Plots: DSSS / b – mode
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.502100	10.83	30.00	19.17	1000.0	120.000	100.0	V	295	13.5
43.857300	10.84	30.00	19.16	1000.0	120.000	170.0	V	0	13.9
61.462200	7.18	30.00	22.82	1000.0	120.000	101.0	V	295	10.2
507.014400	15.69	36.00	20.31	1000.0	120.000	170.0	H	179	18.8
711.270150	19.21	36.00	16.79	1000.0	120.000	101.0	V	180	21.8
955.870500	21.55	36.00	14.45	1000.0	120.000	170.0	V	25	24.3

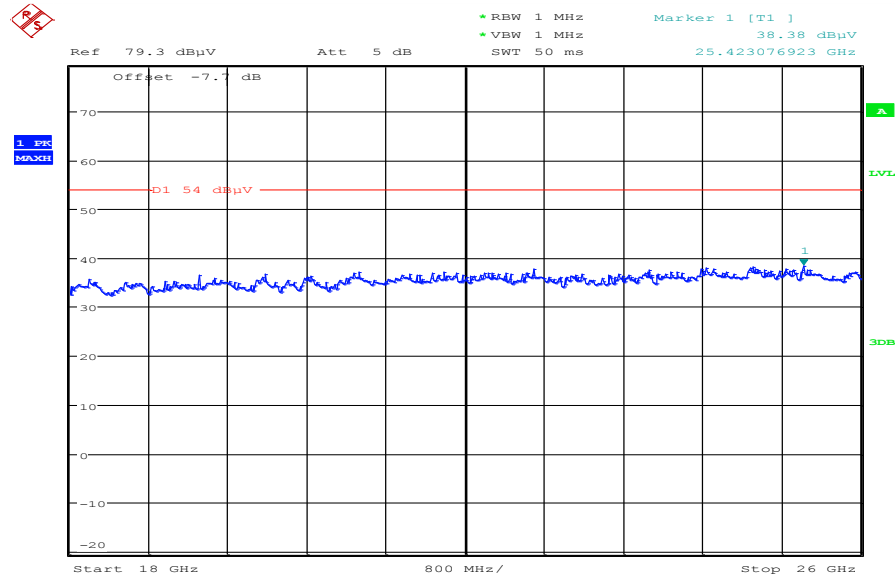
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

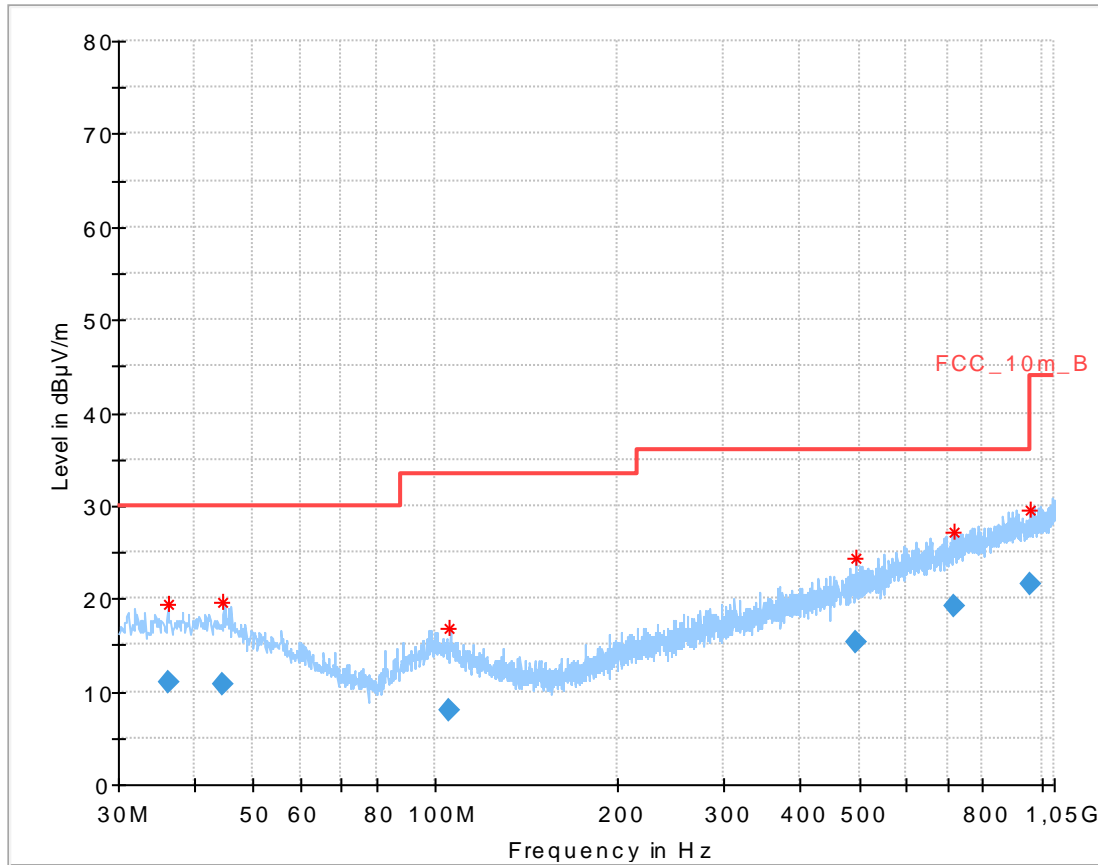
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:51:58

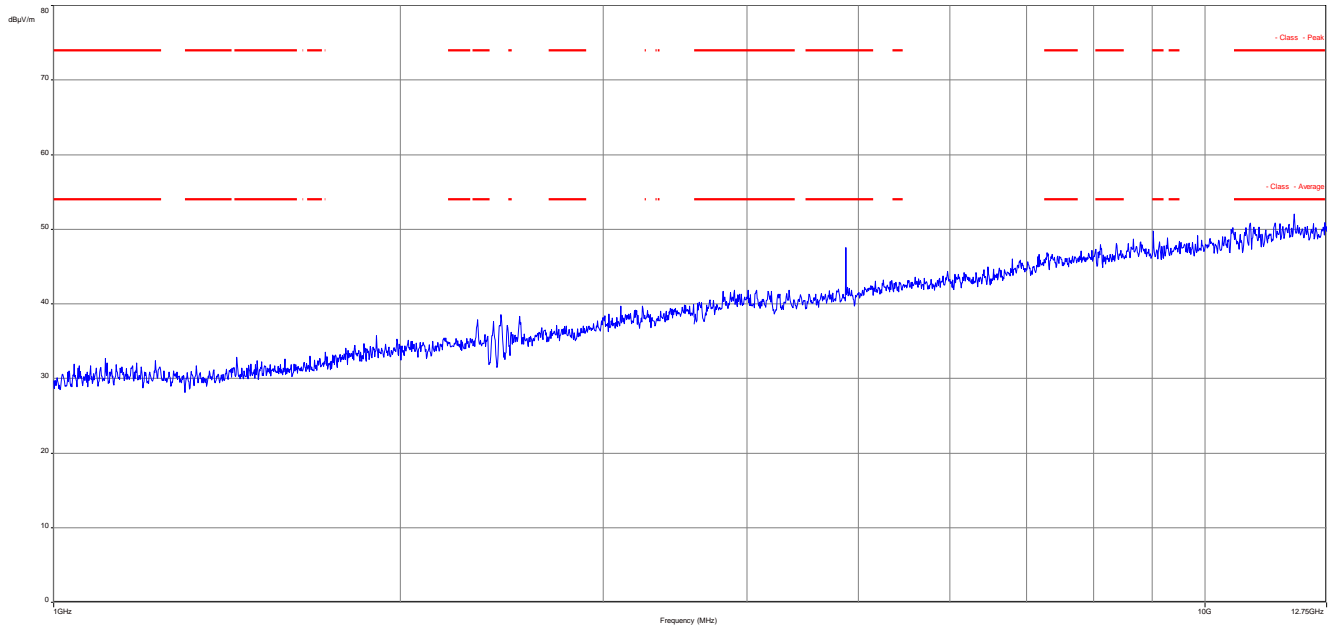
Plot 4: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



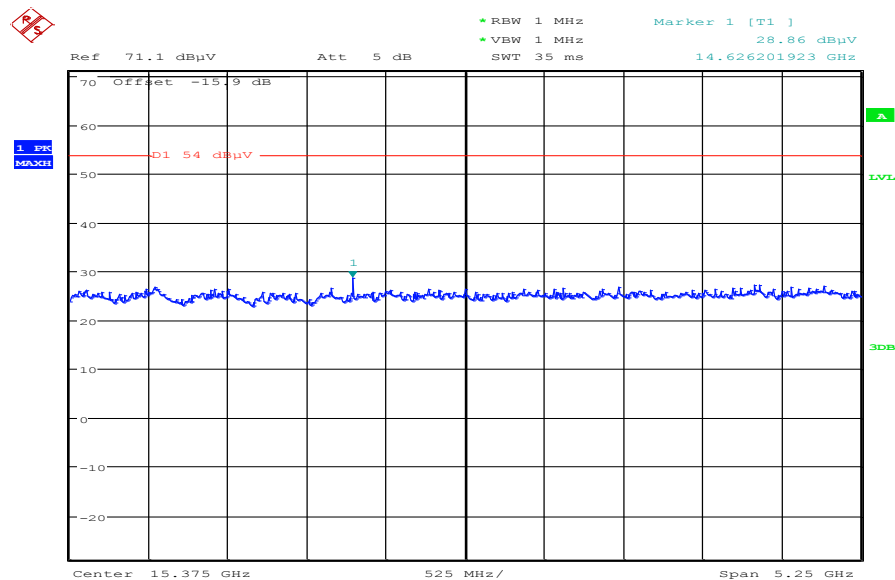
Date: 24.OCT.2014 12:07:12

Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization**Final_Result**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
36.389850	10.91	30.00	19.09	1000.0	120.000	170.0	V	0	13.9
44.464050	10.85	30.00	19.15	1000.0	120.000	170.0	V	-24	13.9
105.338550	8.03	33.50	25.47	1000.0	120.000	98.0	H	25	11.6
494.609700	15.39	36.00	20.61	1000.0	120.000	170.0	V	90	18.6
715.457550	19.26	36.00	16.74	1000.0	120.000	98.0	V	25	21.9
955.823850	21.54	36.00	14.46	1000.0	120.000	101.0	V	0	24.3

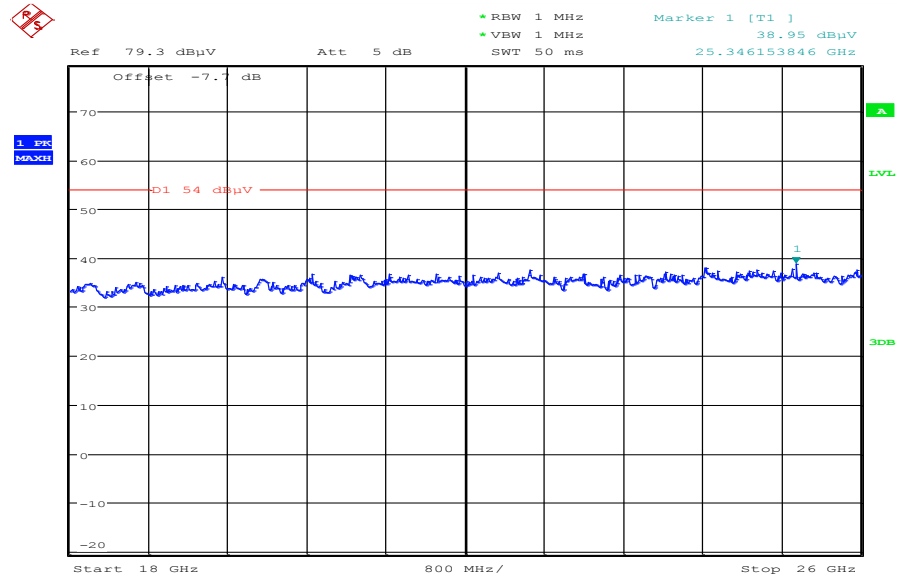
Plot 6: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

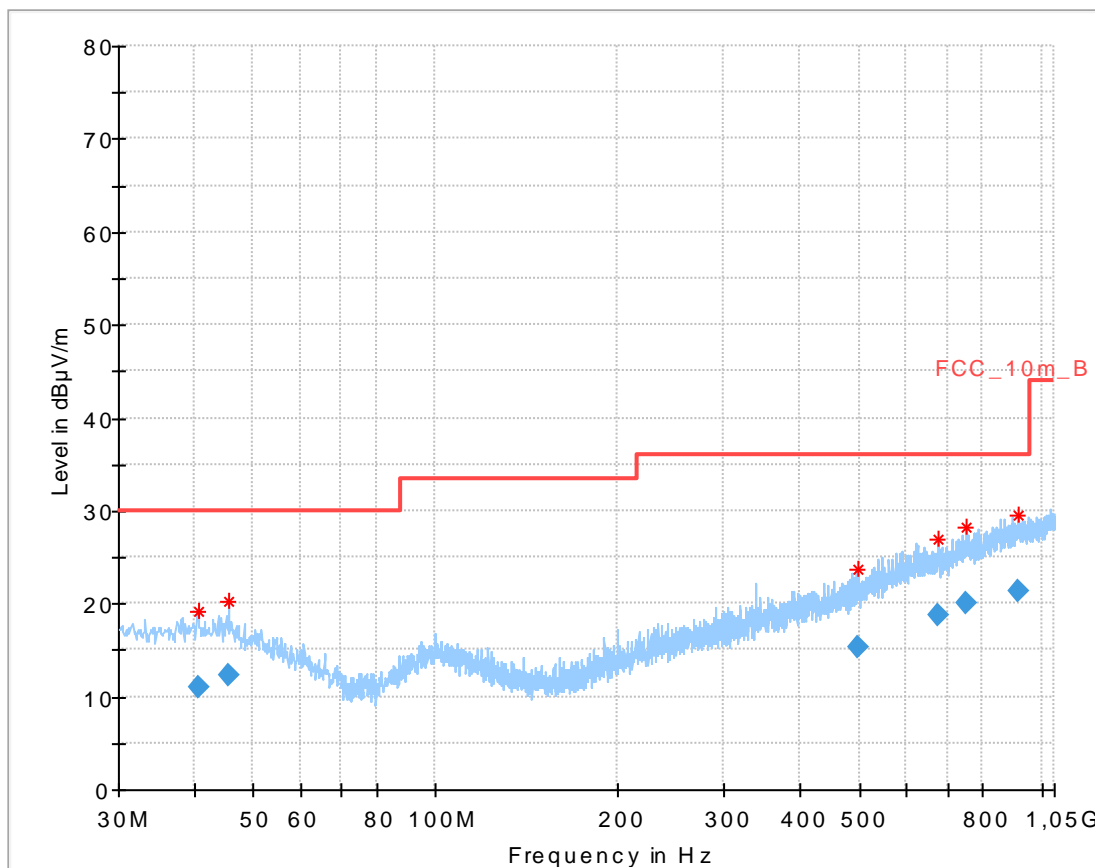
Plot 7: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:53:00

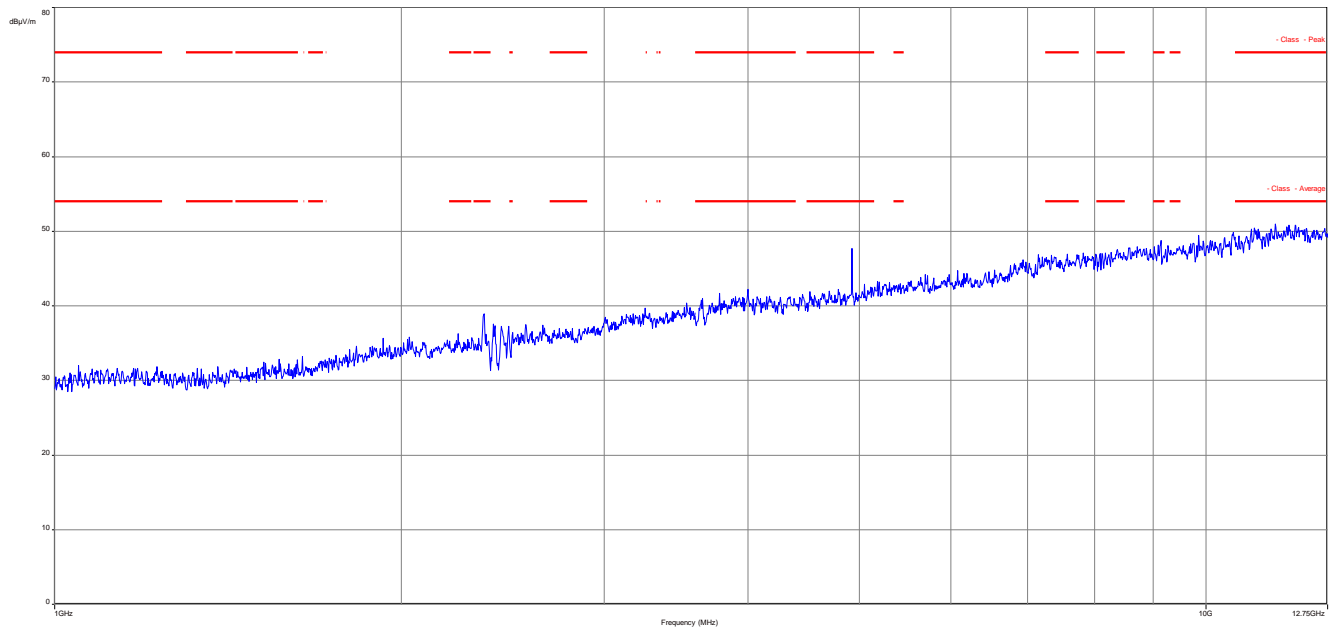
Plot 8: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



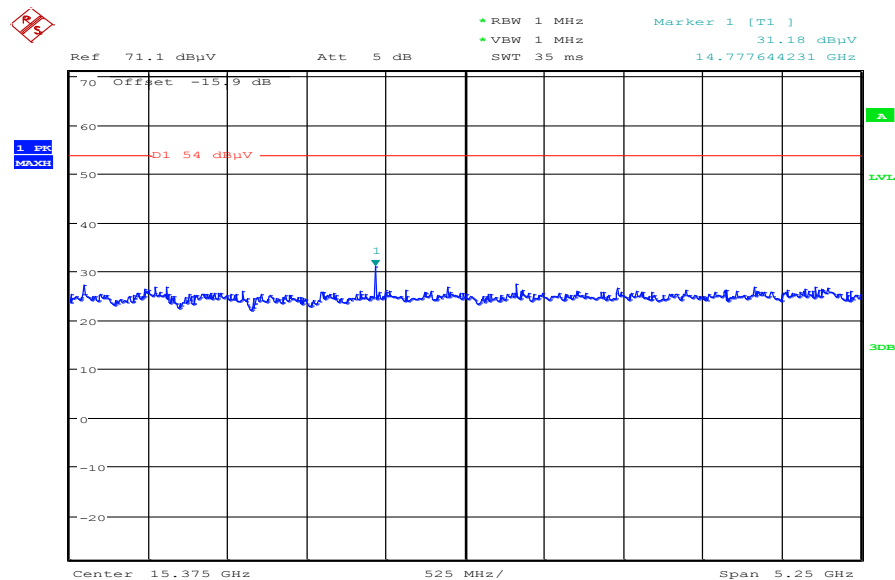
Date: 24.OCT.2014 12:07:59

Plot 9: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization**Final_Result**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
40.555200	11.00	30.00	19.00	1000.0	120.000	170.0	H	115	14.0
45.692400	12.29	30.00	17.71	1000.0	120.000	101.0	V	89	13.7
496.409700	15.37	36.00	20.63	1000.0	120.000	98.0	V	25	18.6
675.309150	18.70	36.00	17.30	1000.0	120.000	101.0	V	90	21.3
751.067400	20.07	36.00	15.93	1000.0	120.000	170.0	V	205	22.7
917.858850	21.37	36.00	14.63	1000.0	120.000	101.0	H	115	24.2

Plot 10: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

Plot 11: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:53:41

Ref 79.3 dBμV Att 5 dB

Offset -7.7 dB

Start 18 GHz Stop 26 GHz

Marker 1 [T1]

38.80 dBμV

24.423076923 GHz

RBW 1 MHz

VBW 1 MHz

SWT 50 ms

01 54 dBμV

1

1 PR MAG

70

60

50

40

30

20

10

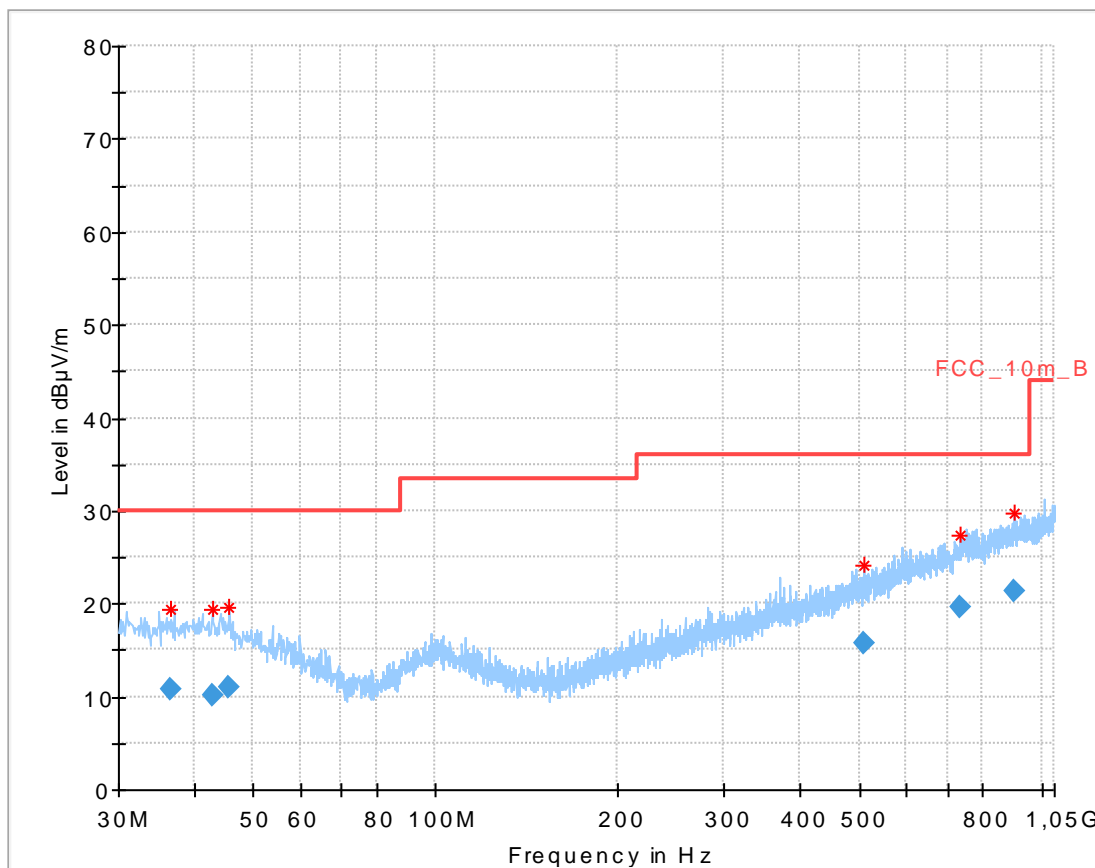
0

-10

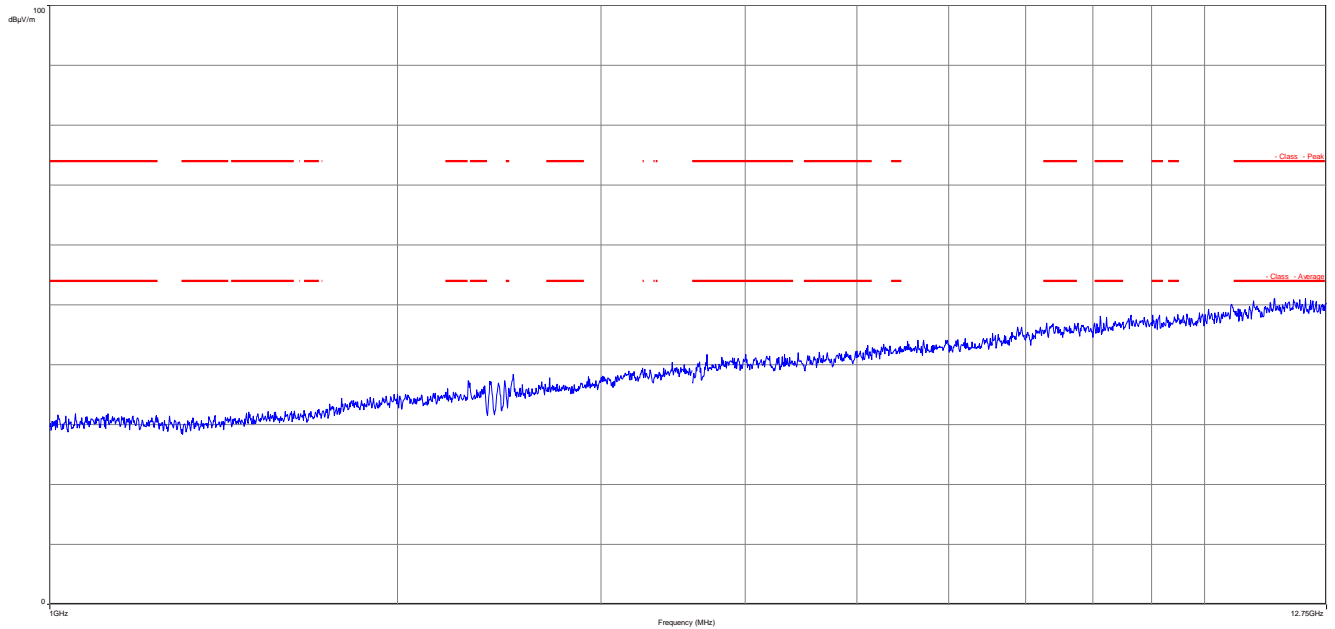
-20

800 MHz/

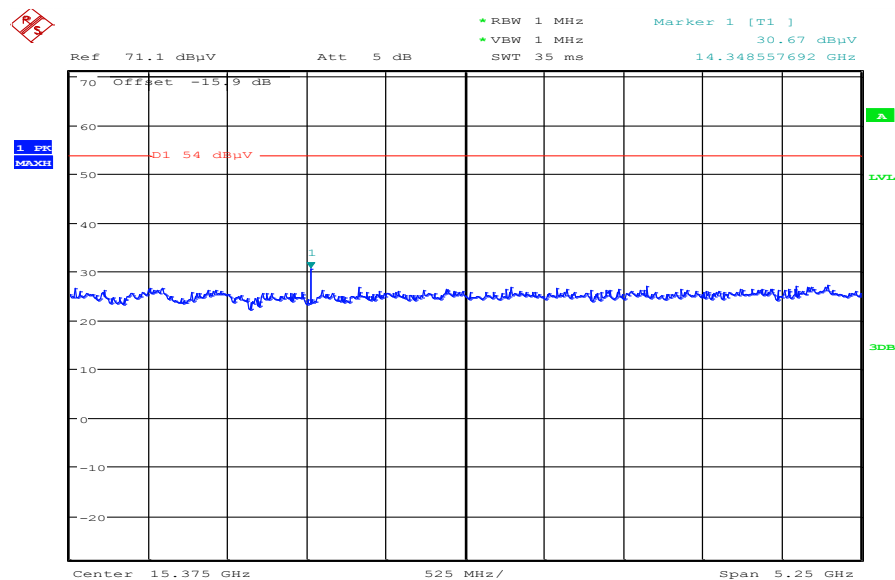
Date: 24.OCT.2014 12:08:42

Plots: OFDM / g – mode
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
36.539250	10.78	30.00	19.22	1000.0	120.000	101.0	H	25	13.9
43.042500	10.17	30.00	19.83	1000.0	120.000	170.0	H	-25	13.9
45.638850	10.92	30.00	19.08	1000.0	120.000	170.0	V	25	13.7
510.219900	15.64	36.00	20.36	1000.0	120.000	170.0	H	90	18.8
731.443050	19.59	36.00	16.41	1000.0	120.000	98.0	V	155	22.3
899.071800	21.43	36.00	14.57	1000.0	120.000	170.0	H	115	24.1

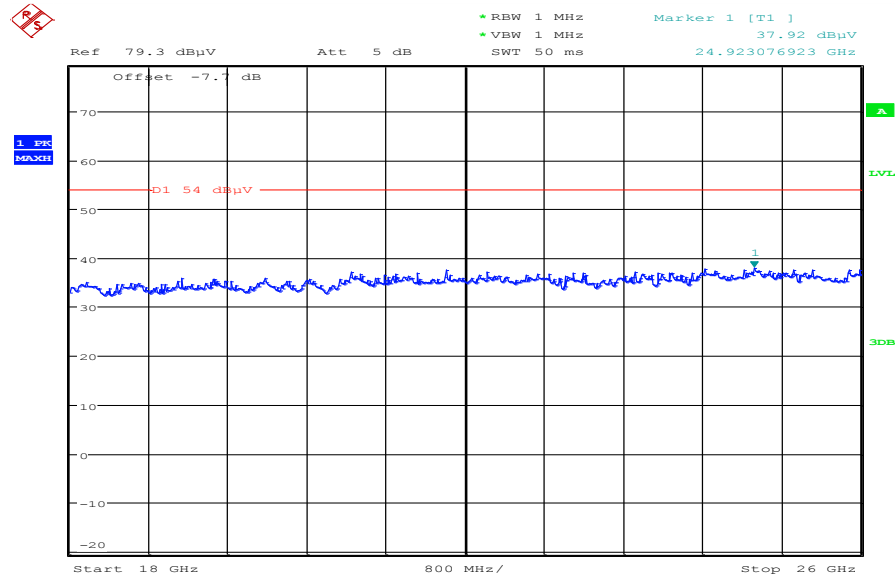
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

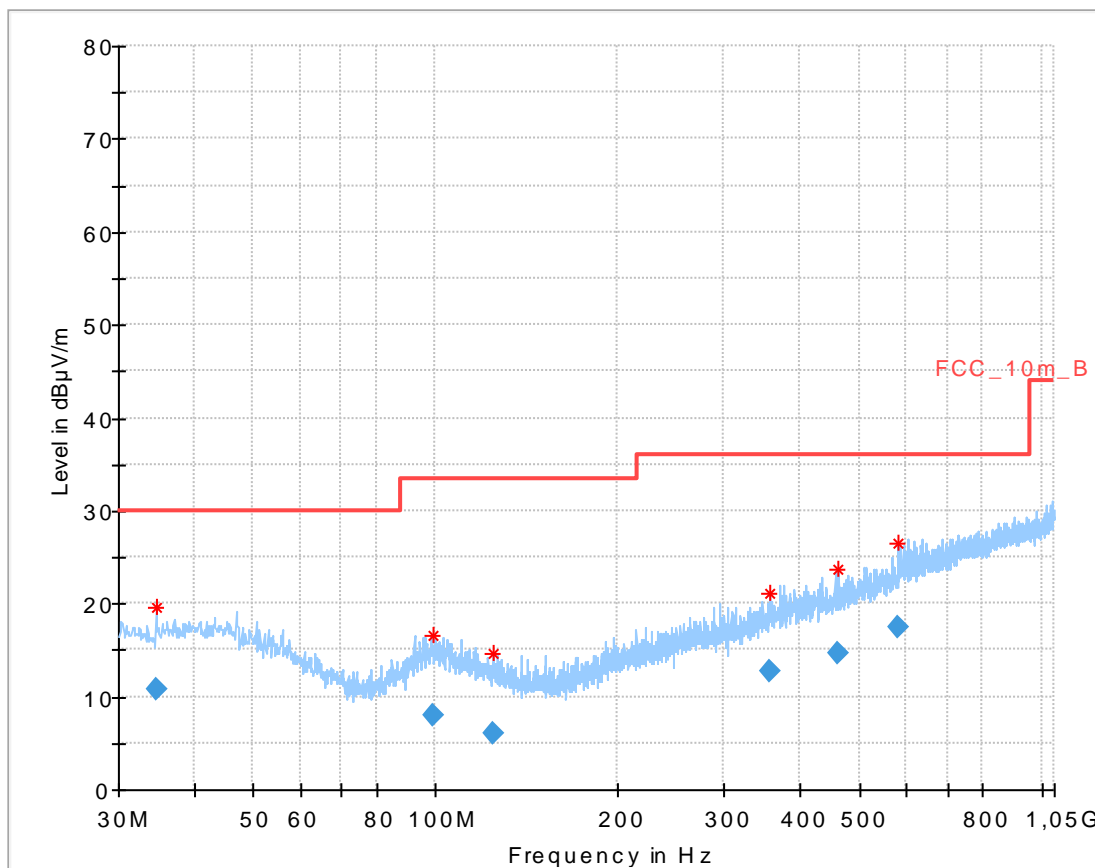
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:55:16

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

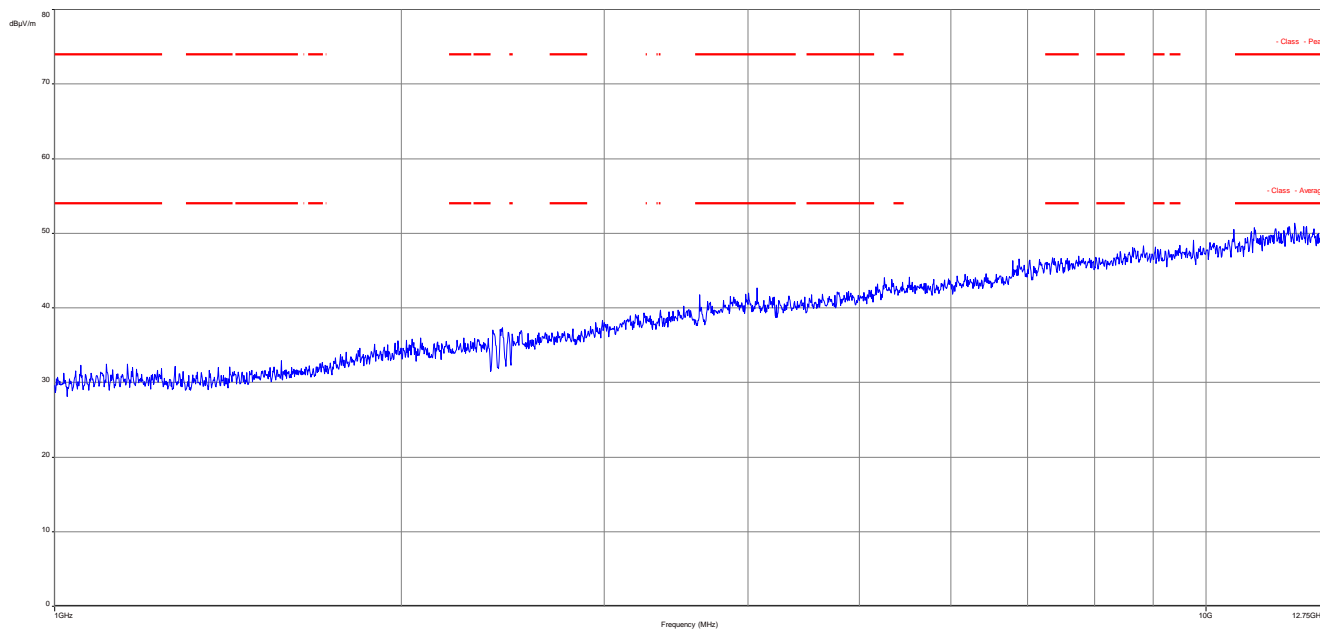


Date: 24.OCT.2014 12:10:00

Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization**Final_Result**

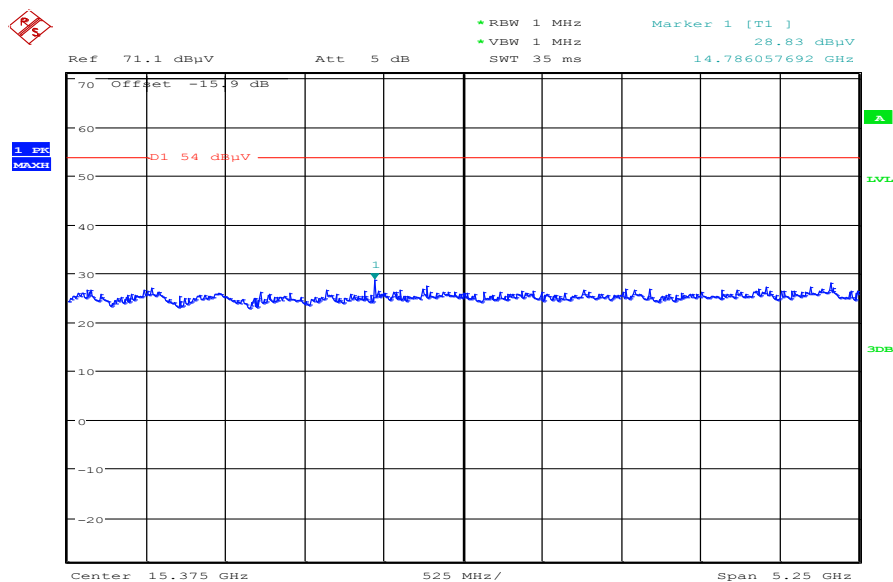
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
34.734600	10.71	30.00	19.29	1000.0	120.000	170.0	H	-24	13.8
98.824950	8.03	33.50	25.47	1000.0	120.000	101.0	V	270	12.0
124.598250	6.02	33.50	27.48	1000.0	120.000	101.0	H	-25	9.8
357.078750	12.81	36.00	23.19	1000.0	120.000	170.0	H	-1	16.1
462.268500	14.59	36.00	21.41	1000.0	120.000	101.0	V	115	17.9
580.438950	17.52	36.00	18.48	1000.0	120.000	101.0	V	181	20.2

Plot 6: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization



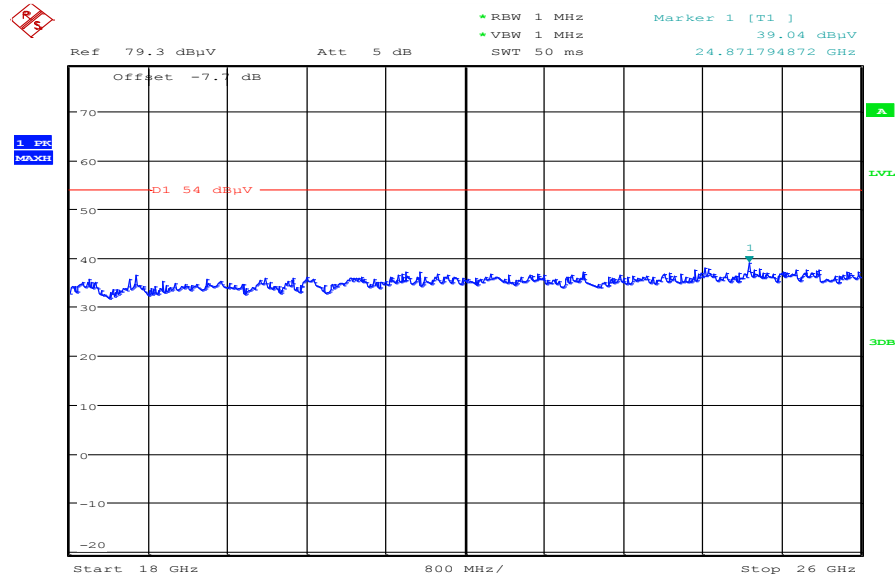
The carrier signal is notched with a 2.4 GHz band rejection filter.

Plot 7: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

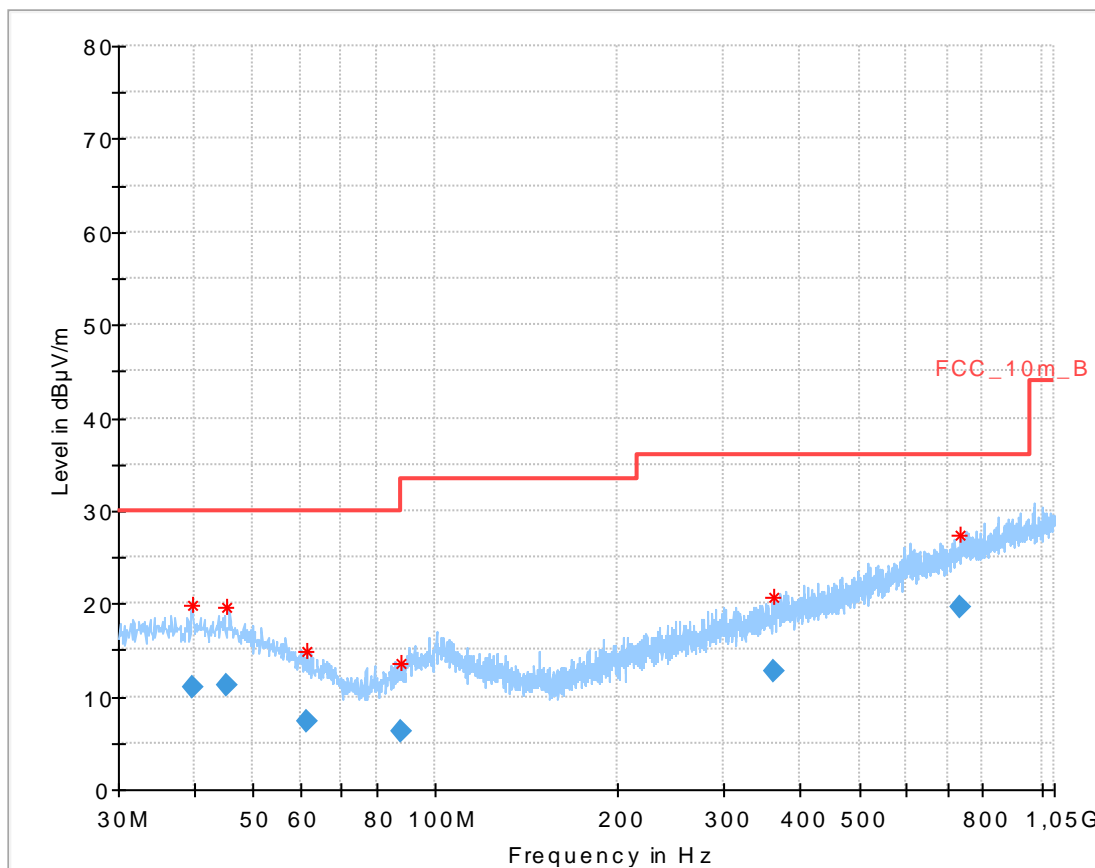


Date: 24.OCT.2014 11:56:26

Plot 8: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization

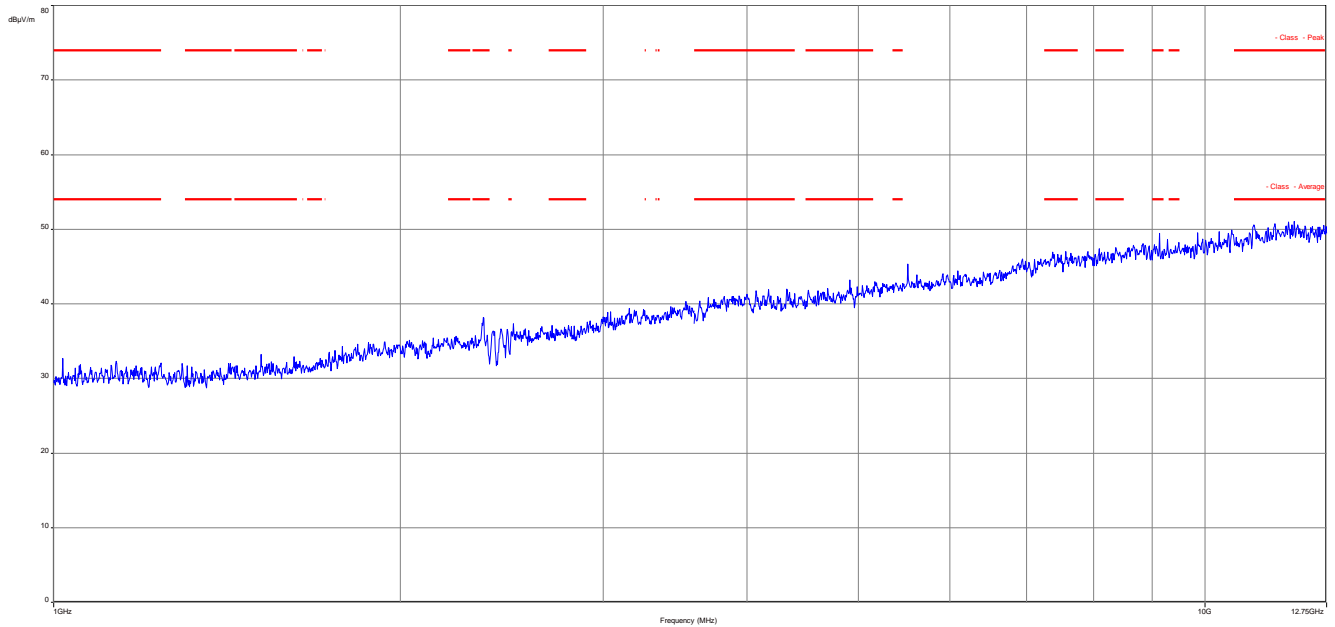


Date: 24.OCT.2014 12:10:49

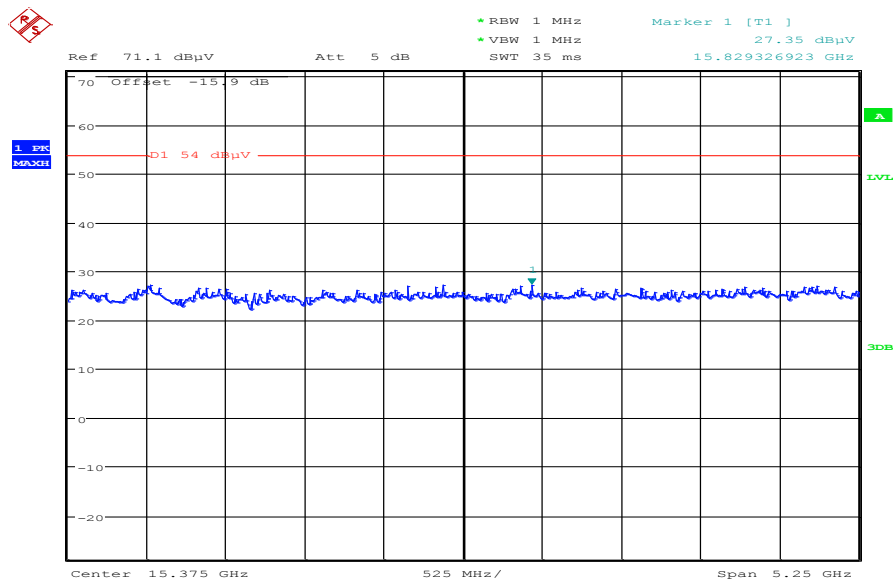
Plot 9: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization


Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
39.628200	10.92	30.00	19.08	1000.0	120.000	98.0	V	25	14.0
45.357300	11.21	30.00	18.79	1000.0	120.000	98.0	V	245	13.8
61.162050	7.42	30.00	22.58	1000.0	120.000	170.0	V	90	10.3
87.939900	6.24	30.00	23.76	1000.0	120.000	101.0	V	-25	10.0
360.884250	12.78	36.00	23.22	1000.0	120.000	98.0	H	25	16.2
733.639350	19.69	36.00	16.31	1000.0	120.000	170.0	H	25	22.3

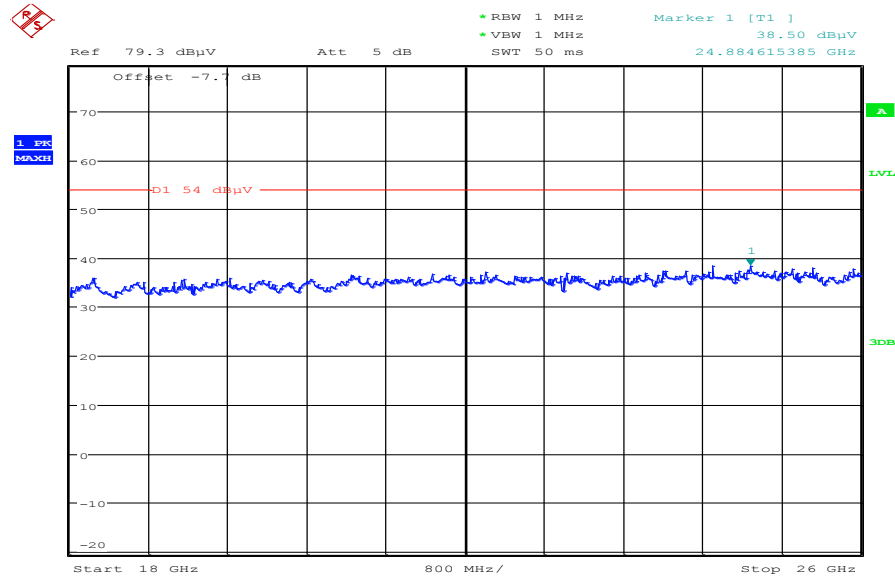
Plot 10: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

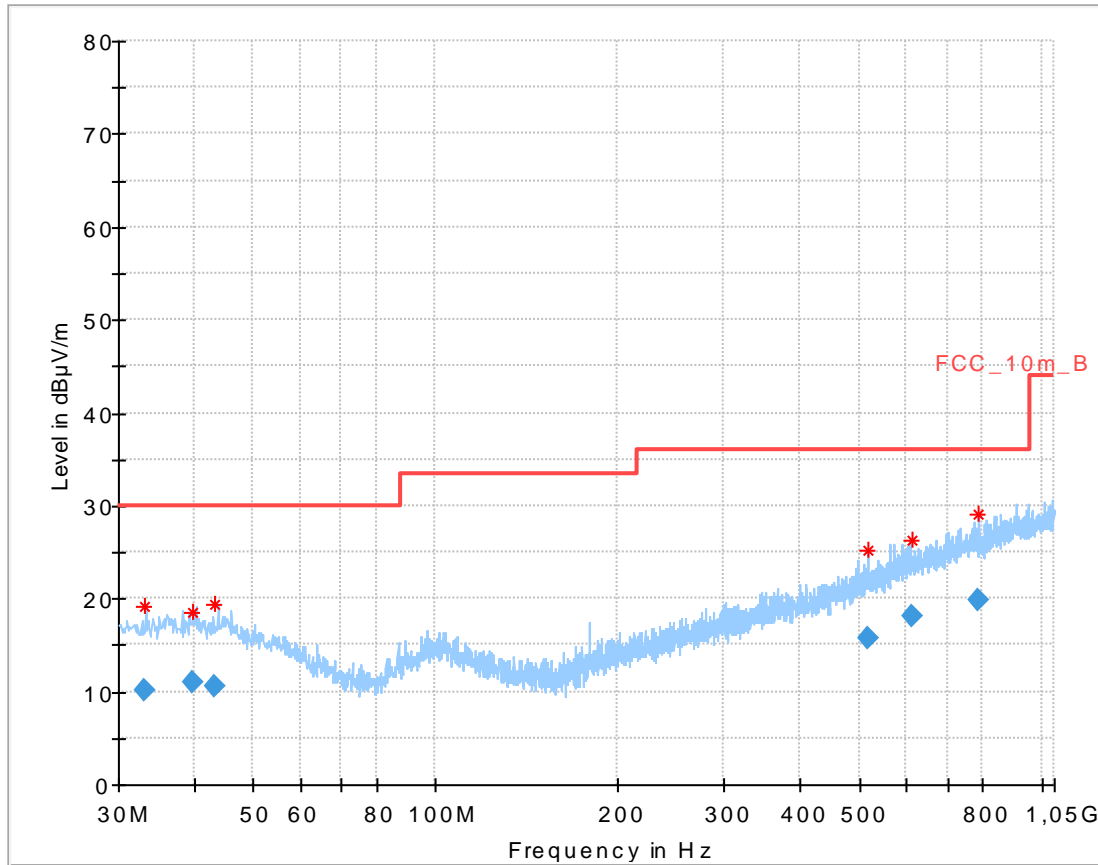
Plot 11: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:57:24

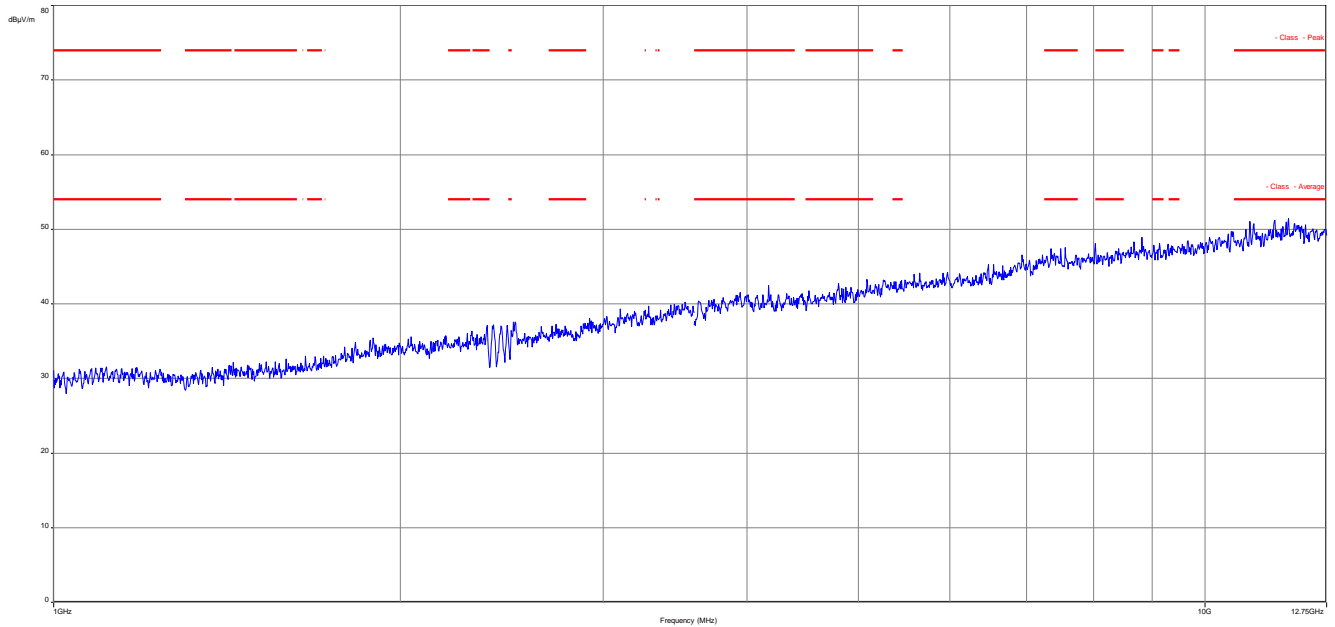
Plot 12: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



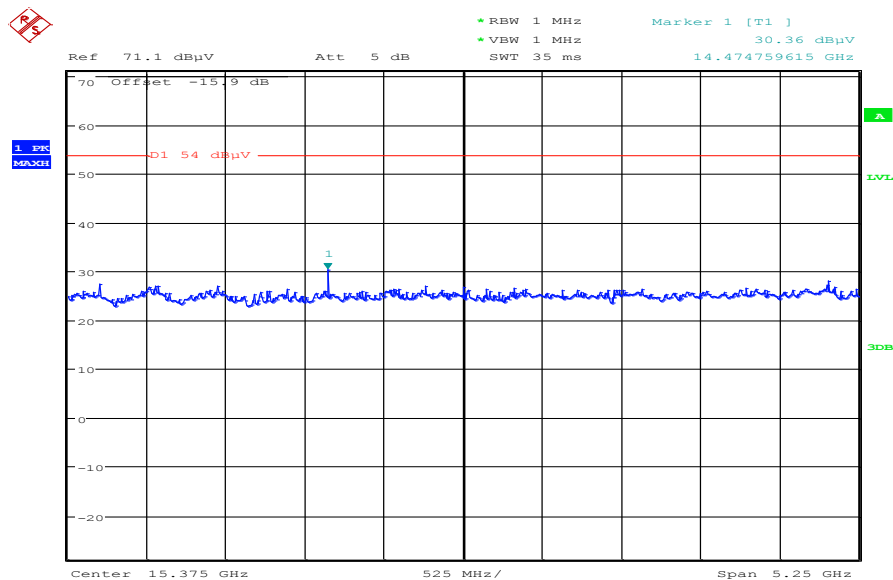
Date: 24.OCT.2014 12:11:40

Plots: OFDM / n – mode HT20
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
33.122100	10.21	30.00	19.79	1000.0	120.000	101.0	H	-25	13.6
39.834300	10.94	30.00	19.06	1000.0	120.000	170.0	V	245	14.0
43.333500	10.52	30.00	19.48	1000.0	120.000	100.0	V	270	13.9
516.343500	15.79	36.00	20.21	1000.0	120.000	170.0	V	90	18.9
609.416250	18.14	36.00	17.86	1000.0	120.000	98.0	H	25	20.8
787.906500	19.90	36.00	16.10	1000.0	120.000	170.0	V	0	22.7

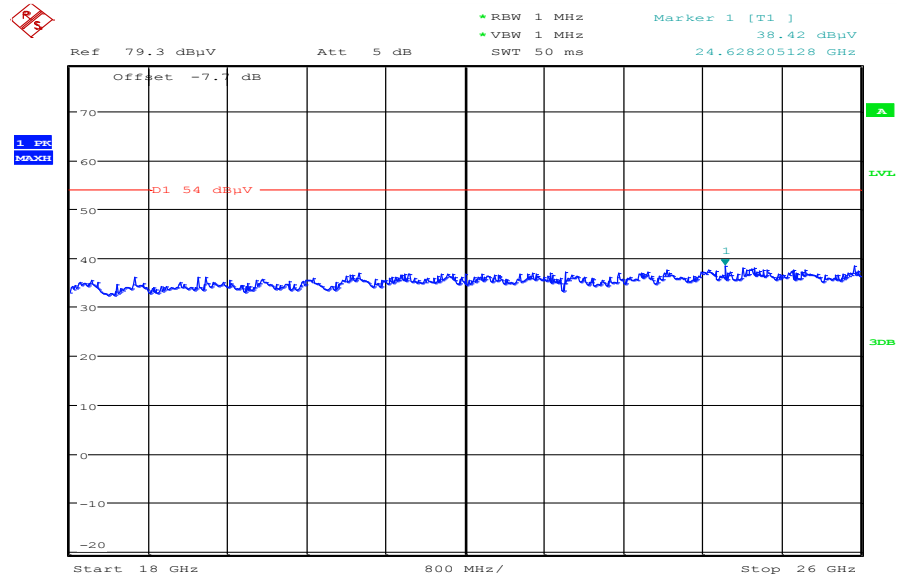
Plot 2: Lowest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

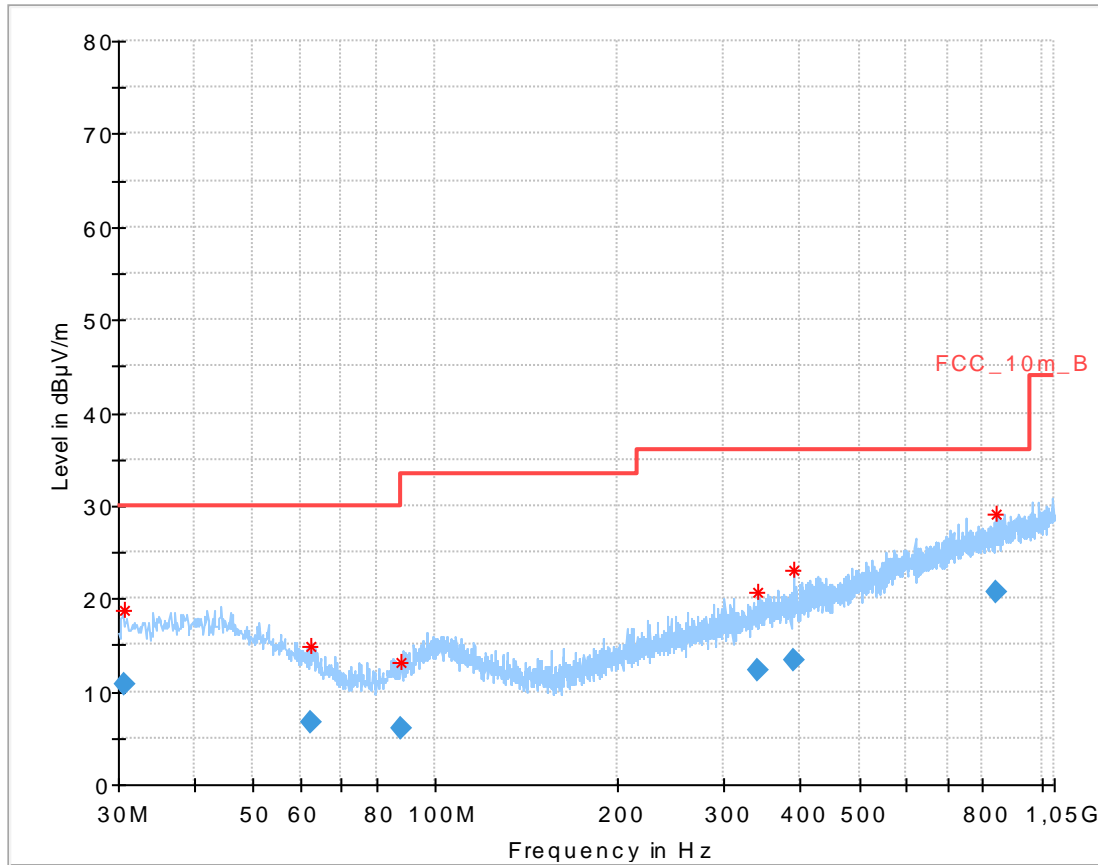
Plot 3: Lowest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:58:57

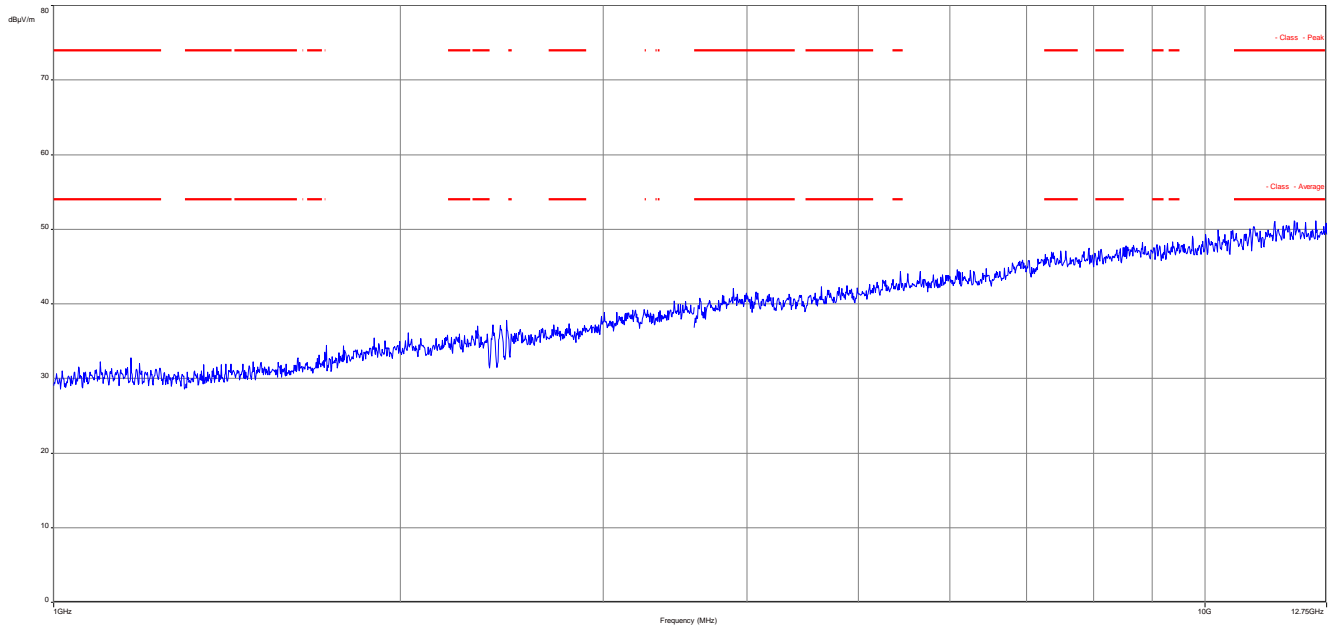
Plot 4: Lowest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



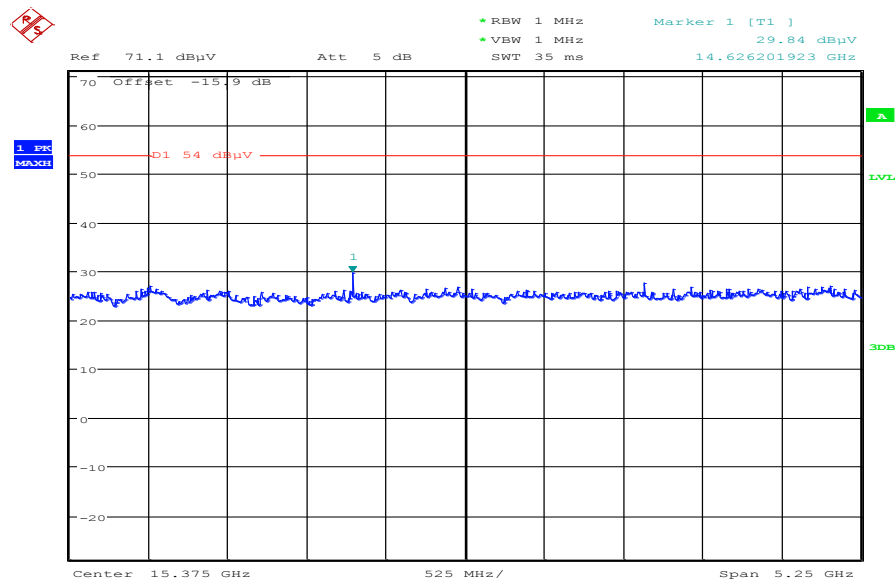
Date: 24.OCT.2014 12:12:53

Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization**Final_Result**

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.617438	10.88	30.00	19.12	1000.0	120.000	101.0	V	205	13.4
62.519400	6.72	30.00	23.28	1000.0	120.000	170.0	H	25	10.0
87.454350	6.13	30.00	23.87	1000.0	120.000	170.0	H	0	9.9
339.163350	12.36	36.00	23.64	1000.0	120.000	170.0	H	156	15.7
389.870250	13.30	36.00	22.70	1000.0	120.000	170.0	H	155	16.7
844.872750	20.79	36.00	15.21	1000.0	120.000	170.0	V	90	23.4

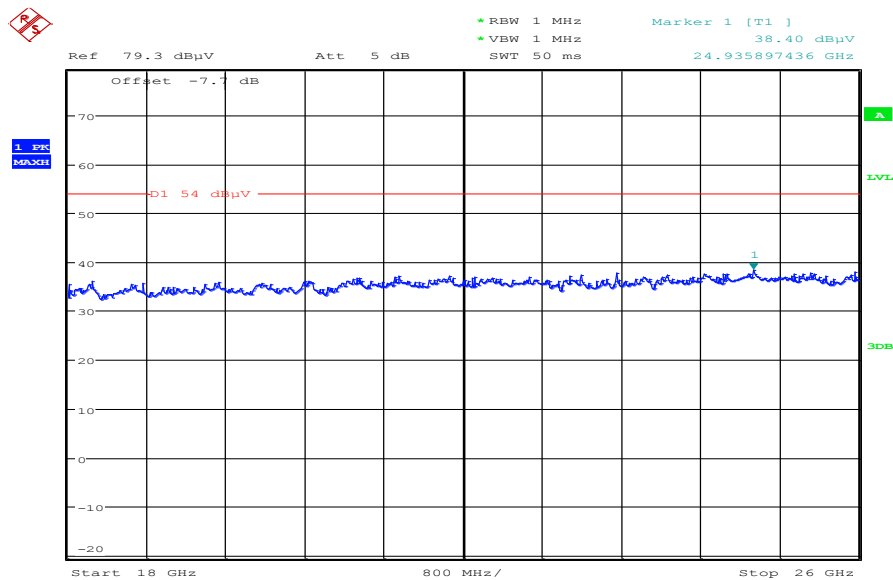
Plot 6: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

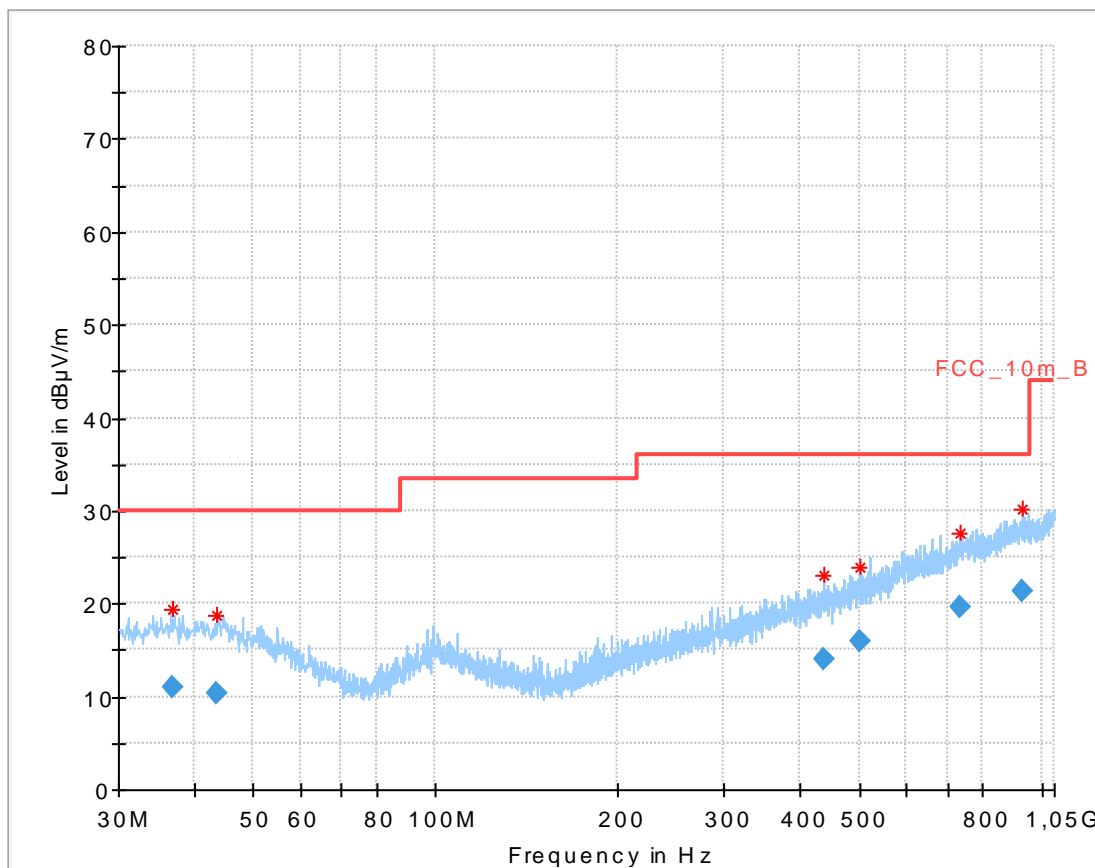
Plot 7: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 11:59:48

Plot 8: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 24.OCT.2014 12:13:49

Plot 9: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization


Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
36.748950	11.01	30.00	18.99	1000.0	120.000	100.0	H	25	13.9
43.717200	10.29	30.00	19.71	1000.0	120.000	101.0	H	-25	13.9
438.802500	14.09	36.00	21.91	1000.0	120.000	170.0	H	205	17.4
501.108000	16.03	36.00	19.97	1000.0	120.000	170.0	H	270	18.7
734.685000	19.68	36.00	16.32	1000.0	120.000	170.0	V	245	22.3
928.126800	21.44	36.00	14.56	1000.0	120.000	170.0	H	245	24.2

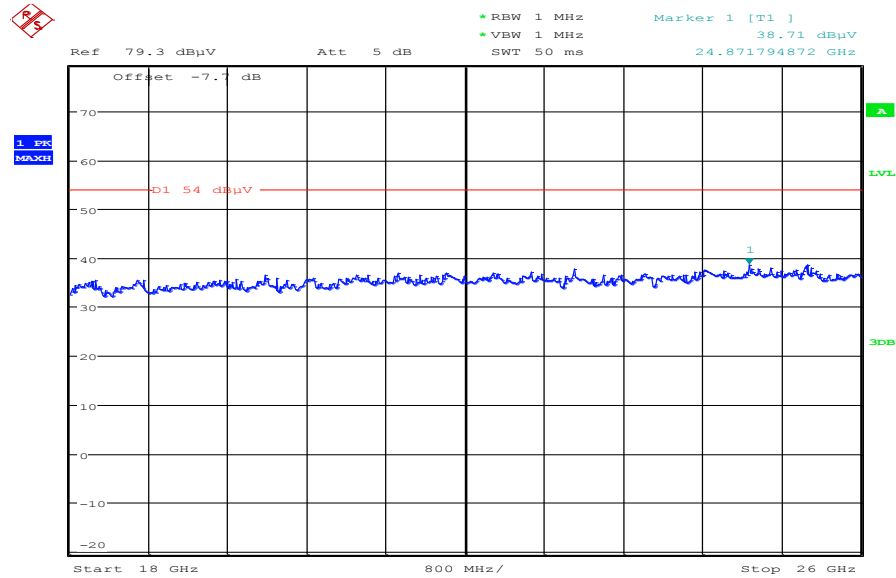
The plot displays the measured signal (blue line) and the Class-A Peak (red dashed line) and Class-A Average (red dashed line) limits. The measured signal starts at approximately 30 dBuV/m at 1 GHz and rises to about 50 dBuV/m at 12.75 GHz, remaining below the Class-A limits.

The screenshot shows a spectrum analyzer interface with the following details:

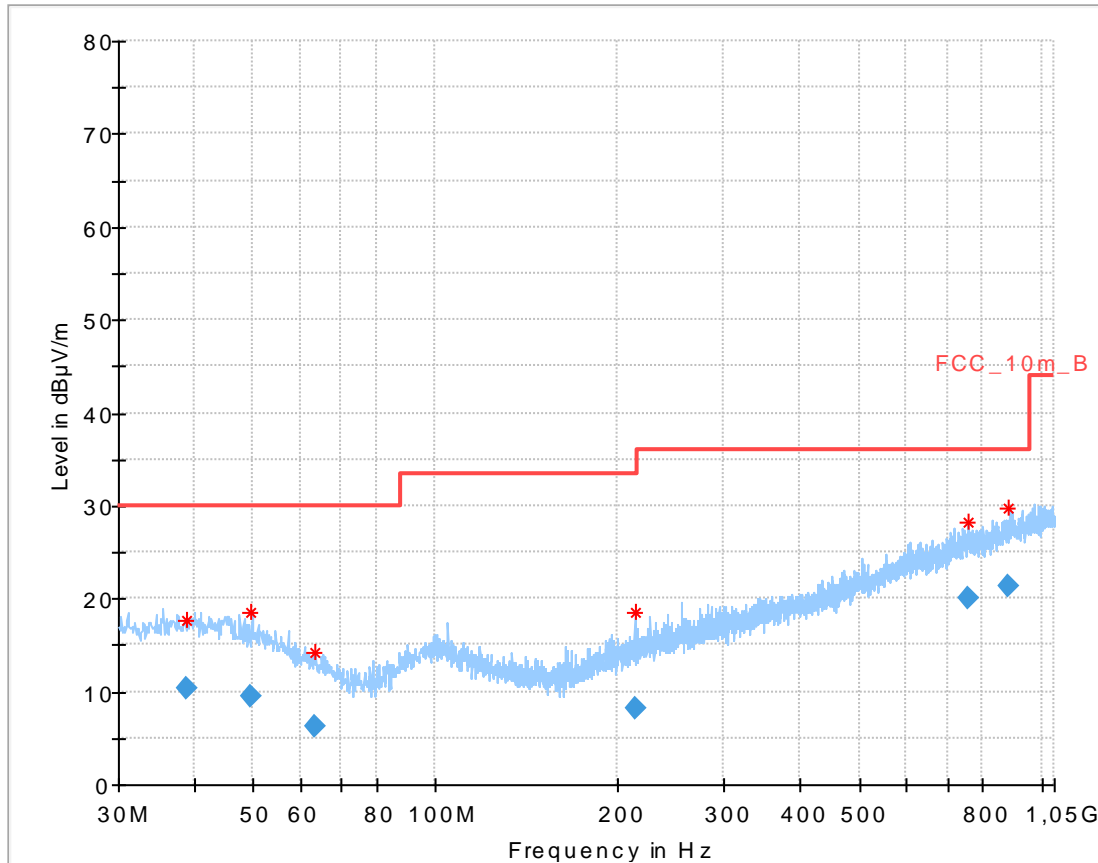
- Top Left:** A red diamond icon with a white 'A' and 'S' inside.
- Top Center:** "Ref 71.1 dBμV" and "Att 5 dB".
- Top Right:** "Marker 1 [T1]", "29.31 dBμV", "525.00000000000000 MHz", "SWT 35 ms", and "14.777644231 GHz".
- Left Side:** A vertical scale from -20 to 70 dBμV. A red horizontal line is at 54 dBμV, labeled "D1 54 dBμV". A blue trace shows a noise floor around -25 dBμV with a small peak at 525 MHz.
- Right Side:** A vertical scale from -20 to 70 dBμV. A green horizontal line is at 29.31 dBμV, labeled "Marker 1 [T1]".
- Bottom:** "Center 15.375 GHz", "525 MHz/", and "Span 5.25 GHz".
- Bottom Left:** A small blue box with "1 STC" and "MAG".
- Bottom Right:** A small green box with "A" and "1V".

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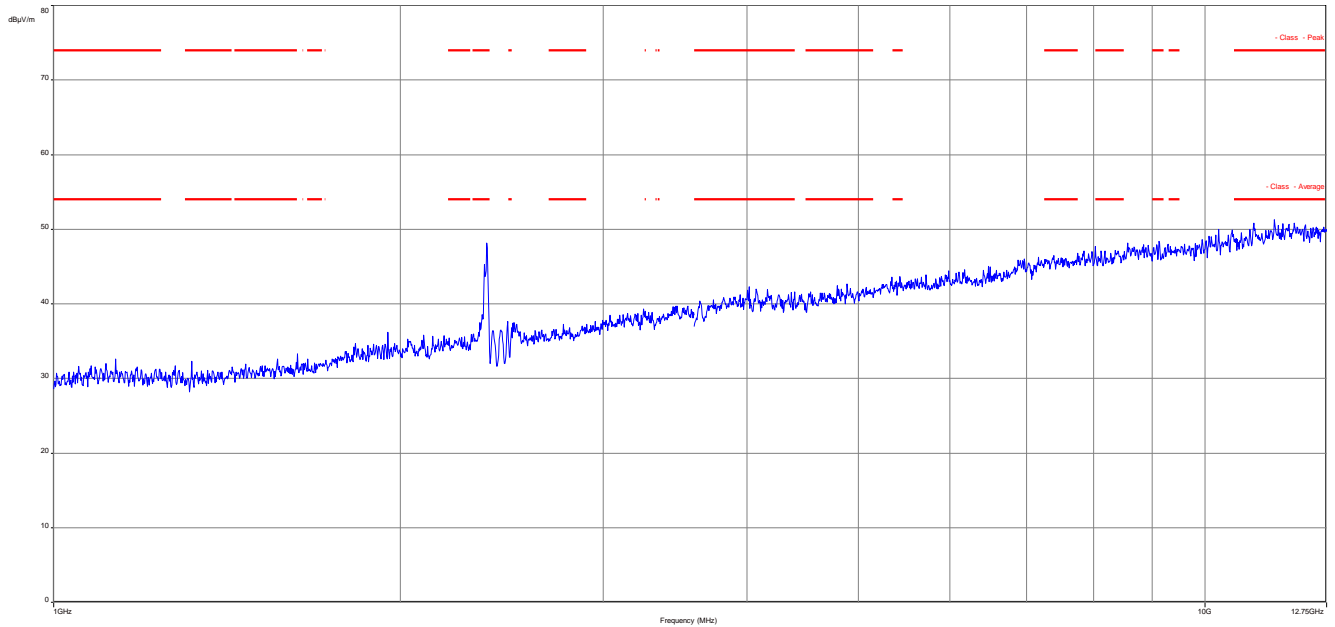
Plot 12: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



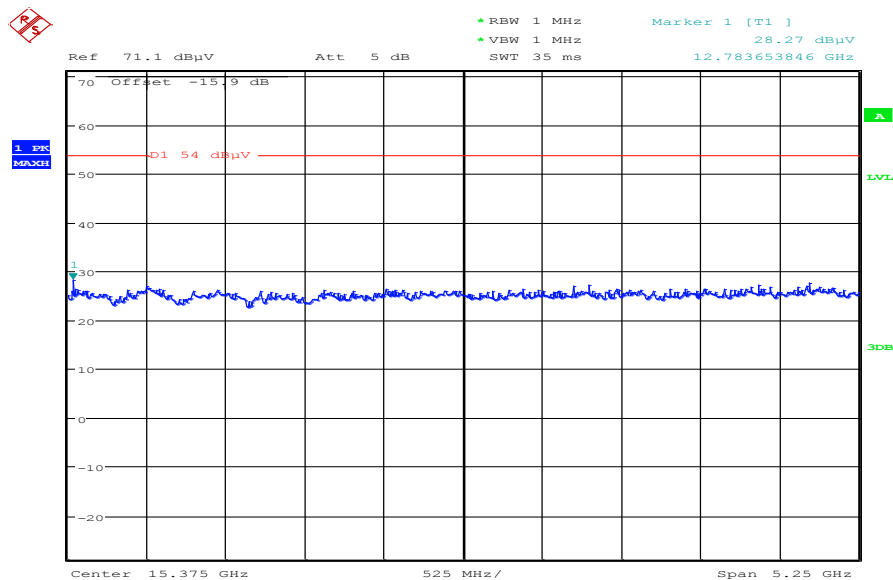
Date: 24.OCT.2014 12:14:59

Plots: OFDM / n – mode HT40
Plot 1: Lowest channel, 30 MHz to 1 GHz, vertical & horizontal polarization

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
38.814300	10.45	30.00	19.55	1000.0	120.000	170.0	H	-25	14.0
49.532850	9.41	30.00	20.59	1000.0	120.000	170.0	H	246	12.8
63.338700	6.33	30.00	23.67	1000.0	120.000	101.0	H	205	9.8
213.453900	8.21	33.50	25.29	1000.0	120.000	98.0	H	181	12.2
758.813250	20.02	36.00	15.98	1000.0	120.000	98.0	V	115	22.7
884.587050	21.35	36.00	14.65	1000.0	120.000	170.0	V	269	23.9

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

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

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

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Ref 79.3 dBμV Att 5 dB

Offset -7.7 dB

RBW 1 MHz VBW 1 MHz SWT 50 ms

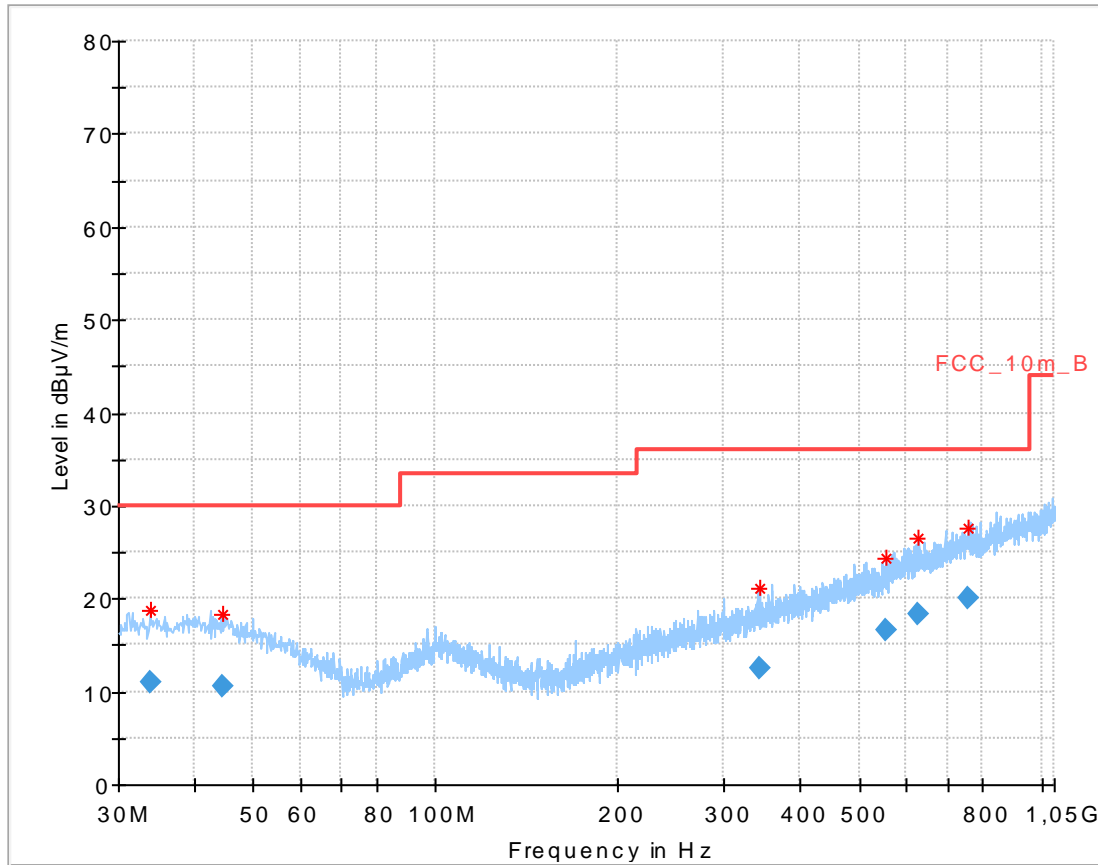
Marker 1 [T1] 38.12 dBμV

25.884615385 GHz

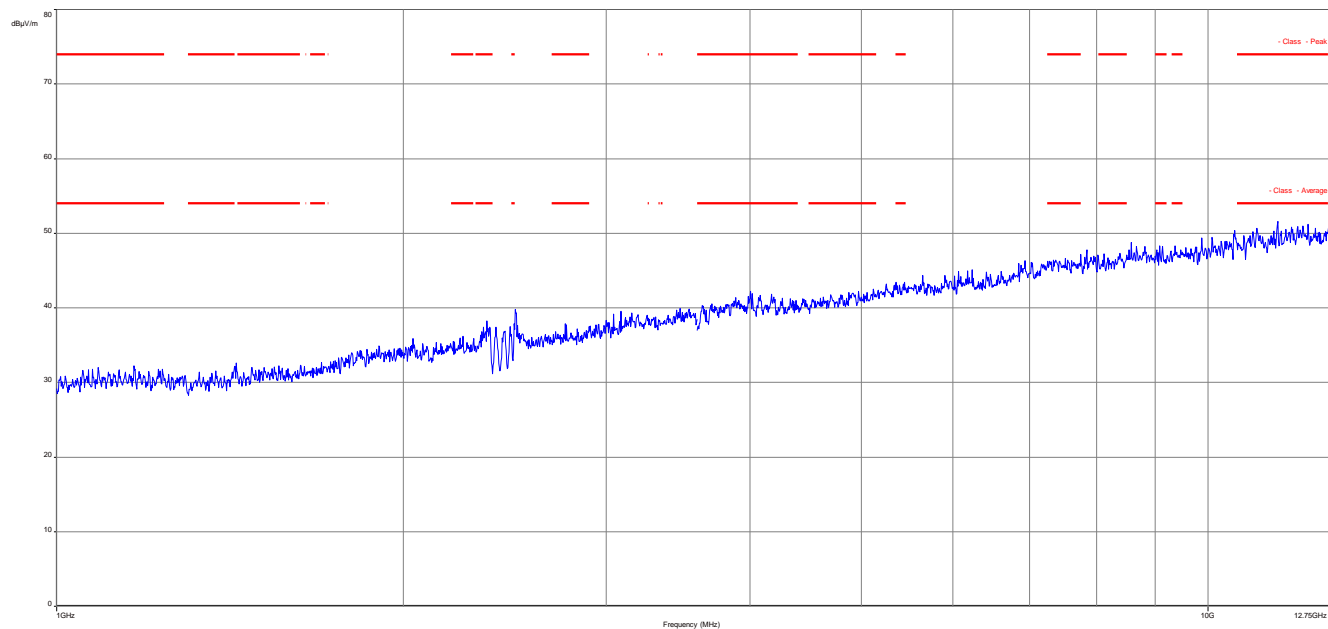
1 54 dBμV

Start 18 GHz 800 MHz/ Stop 26 GHz

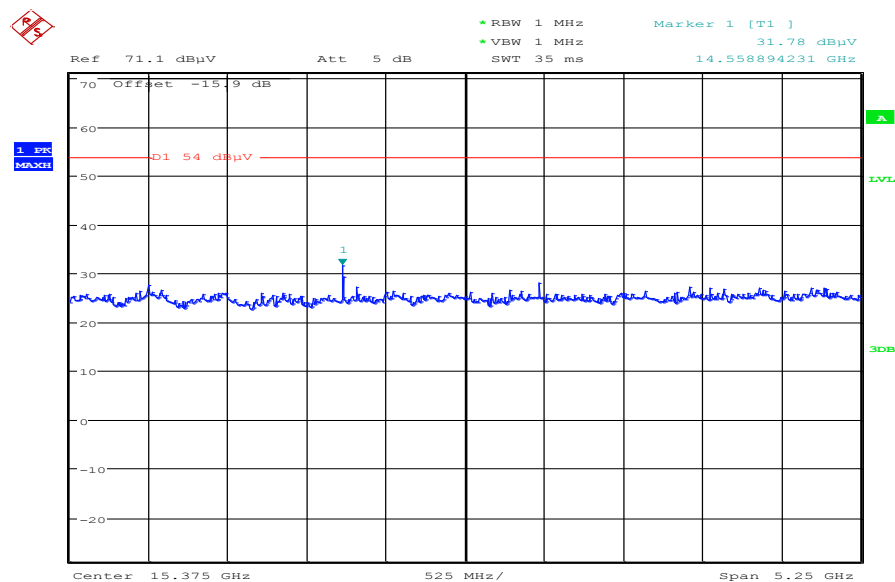
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Plot 5: Middle channel, 30 MHz to 1 GHz, vertical & horizontal polarization**Final_Result**

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
33.988650	10.95	30.00	19.05	1000.0	120.000	170.0	V	115	13.7
44.473050	10.67	30.00	19.33	1000.0	120.000	170.0	V	65	13.9
342.111900	12.40	36.00	23.60	1000.0	120.000	170.0	H	115	15.8
553.200750	16.51	36.00	19.49	1000.0	120.000	170.0	V	245	19.4
627.902250	18.24	36.00	17.76	1000.0	120.000	170.0	V	25	20.9
757.057650	20.03	36.00	15.97	1000.0	120.000	170.0	H	270	22.7

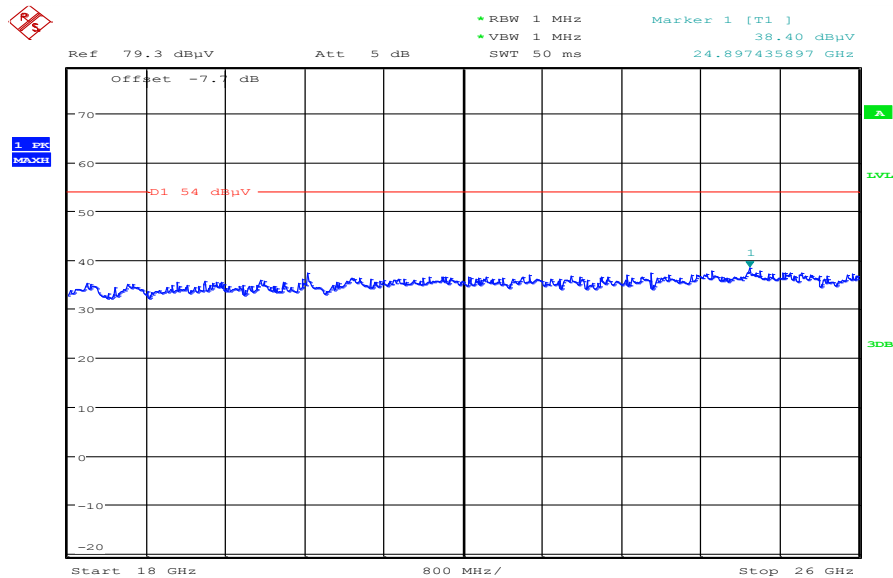
Plot 6: Middle channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization


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

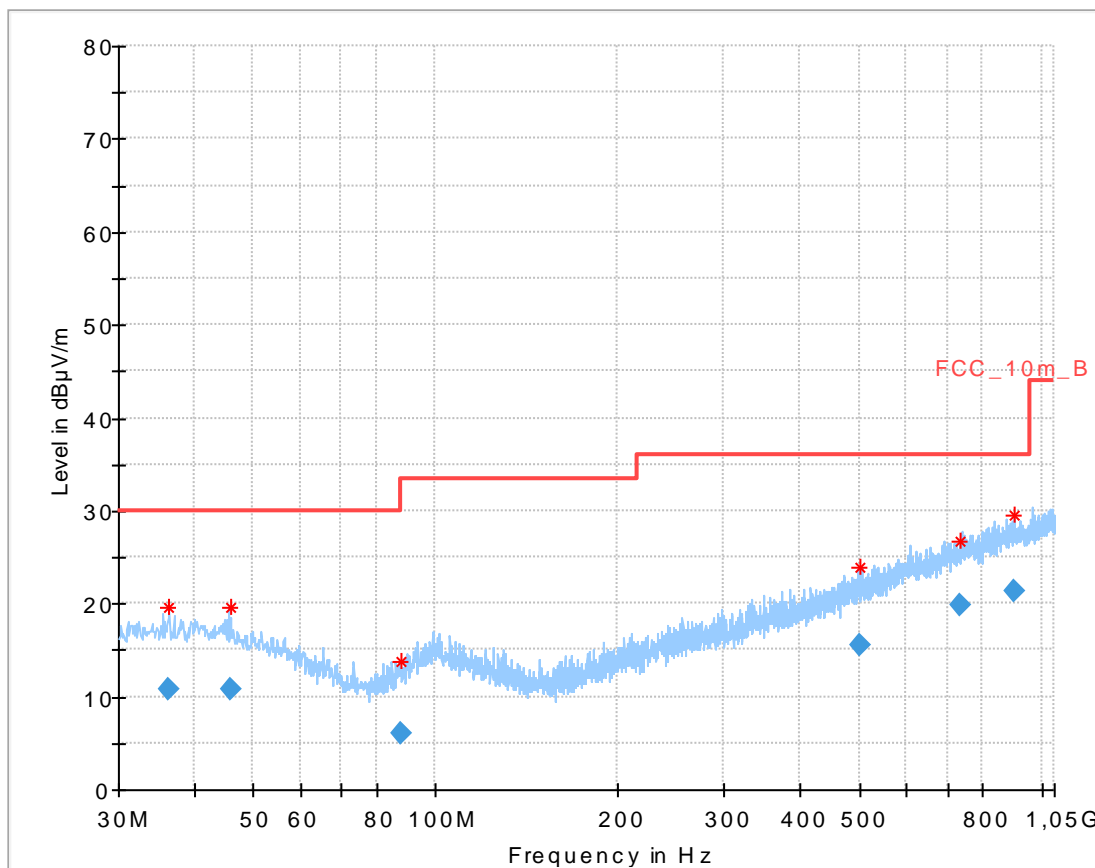
Plot 7: Middle channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization


Date: 24.OCT.2014 12:02:36

Plot 8: Middle channel, 18 GHz to 26 GHz, vertical & horizontal polarization

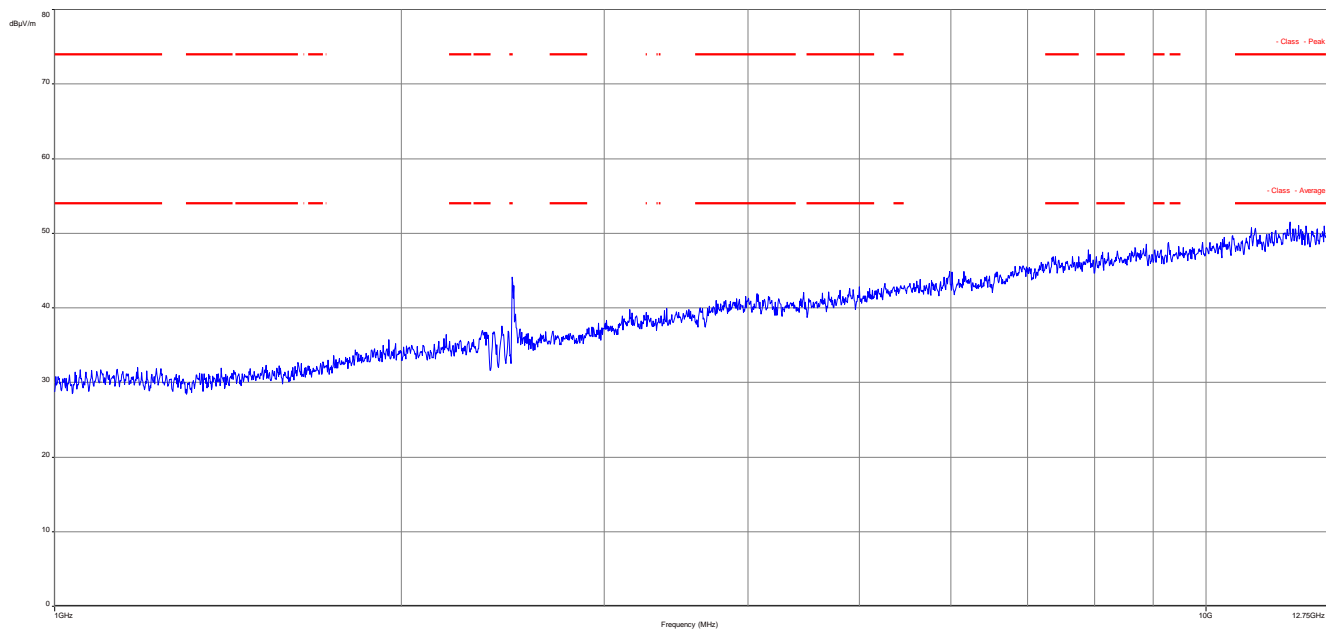


Date: 24.OCT.2014 12:17:13

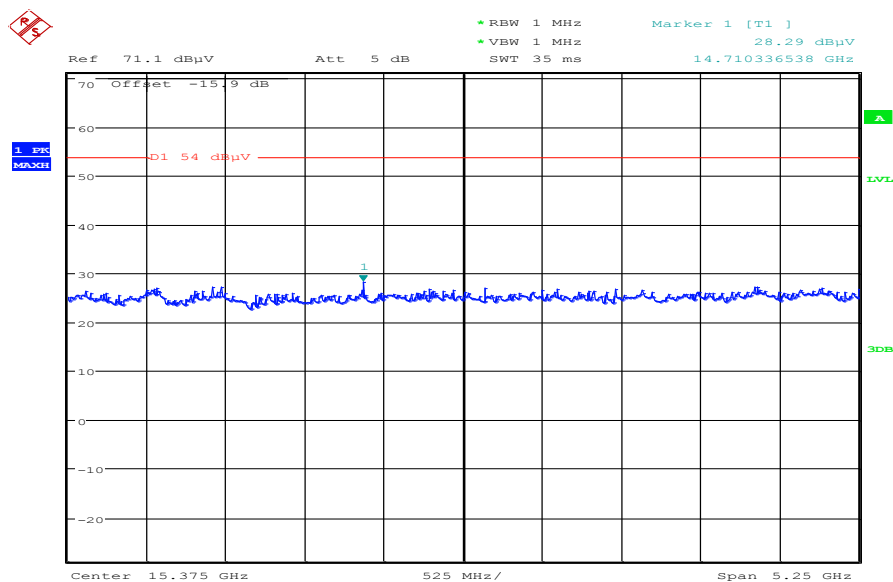
Plot 9: Highest channel, 30 MHz to 1 GHz, vertical & horizontal polarization


Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
36.216000	10.86	30.00	19.14	1000.0	120.000	101.0	H	115	13.9
45.964950	10.74	30.00	19.26	1000.0	120.000	170.0	V	295	13.6
87.792600	6.14	30.00	23.86	1000.0	120.000	170.0	V	25	9.9
503.620500	15.42	36.00	20.58	1000.0	120.000	170.0	H	205	18.8
735.107550	19.74	36.00	16.26	1000.0	120.000	98.0	V	155	22.4
904.038150	21.41	36.00	14.59	1000.0	120.000	170.0	H	115	24.1

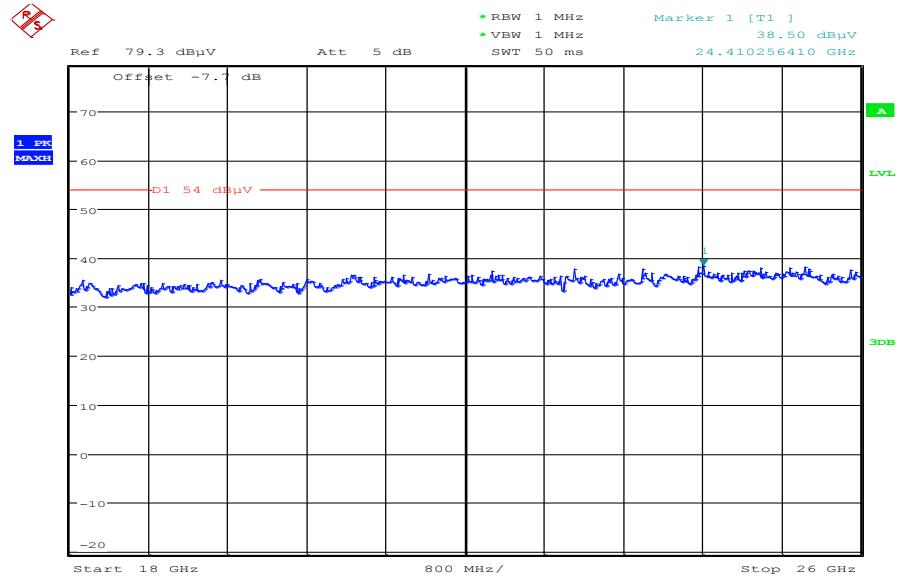
Plot 10: Highest channel, 1 GHz to 12.75 GHz, vertical & horizontal polarization

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

Plot 11: Highest channel, 12.75 GHz to 18 GHz, vertical & horizontal polarization

Date: 24.OCT.2014 12:04:30

Plot 12: Highest channel, 18 GHz to 26 GHz, vertical & horizontal polarization



Date: 24.OCT.2014 12:17:39

10.4 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:	3 x RBW Remeasurement: 10 Hz / 3 MHz
Span:	30 MHz to 26 GHz
Trace-Mode:	Max Hold

Limits:

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

Results:

RX Spurious Emissions Radiated [dB μ V/m]		
F [MHz]	Detector	Level [dB μ V/m]
For emissions below 1 GHz, please take a look at the table below the 1 GHz plot.		
No spurious emissions above 1 GHz detected.		
Measurement uncertainty	± 3 dB	

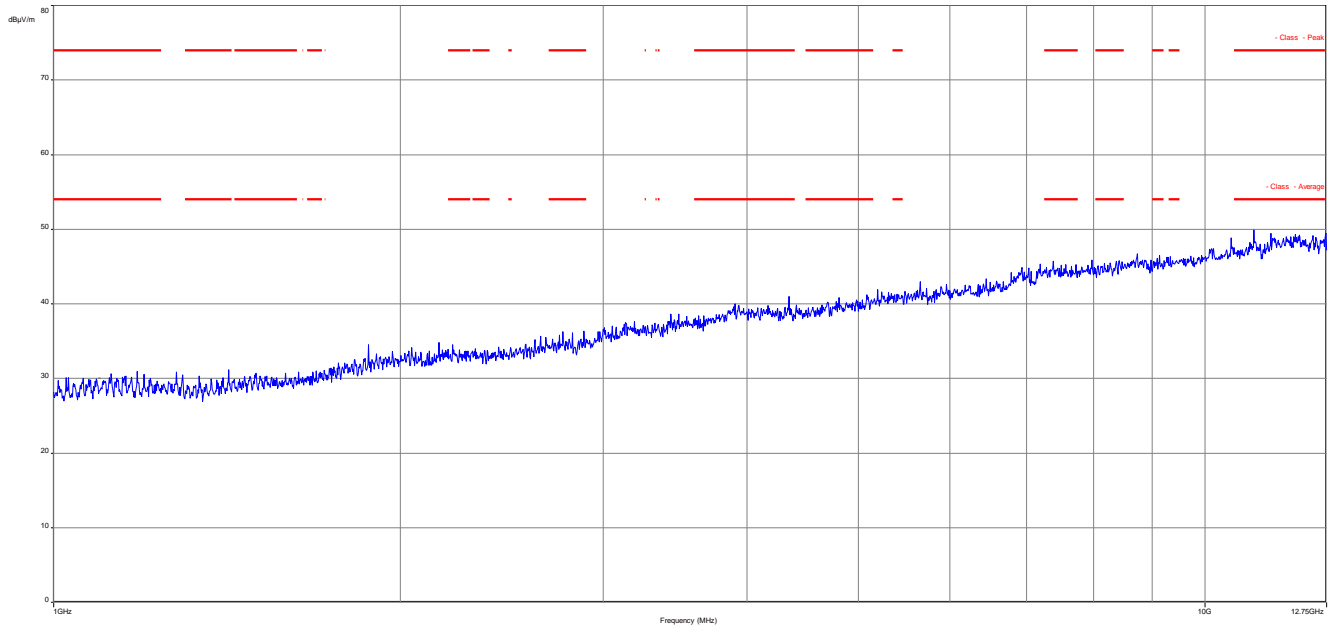
Result: **Passed.**

Note: The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

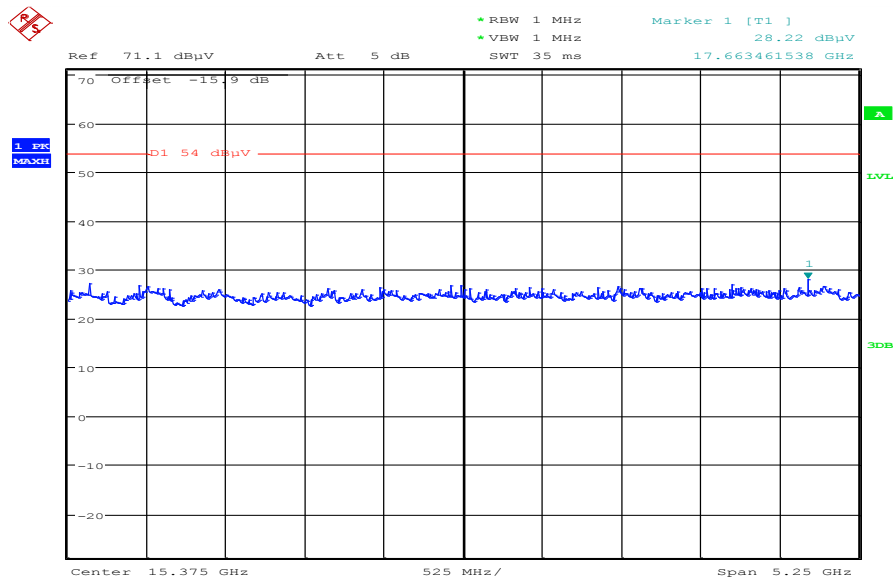
Plots: RX / Idle – mode

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

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

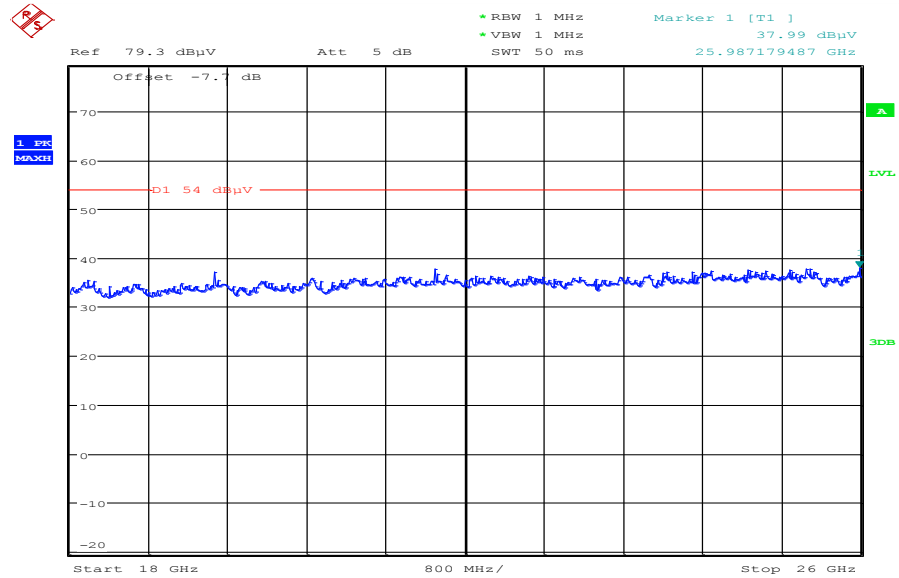


Plot 3: 12.75 GHz to 18 GHz, vertical & horizontal polarization



Date: 24.OCT.2014 12:04:58

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



Date: 24.OCT.2014 12:17:57

10.5 Spurious emissions radiated < 30 MHz

Description:

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

Measurement:

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

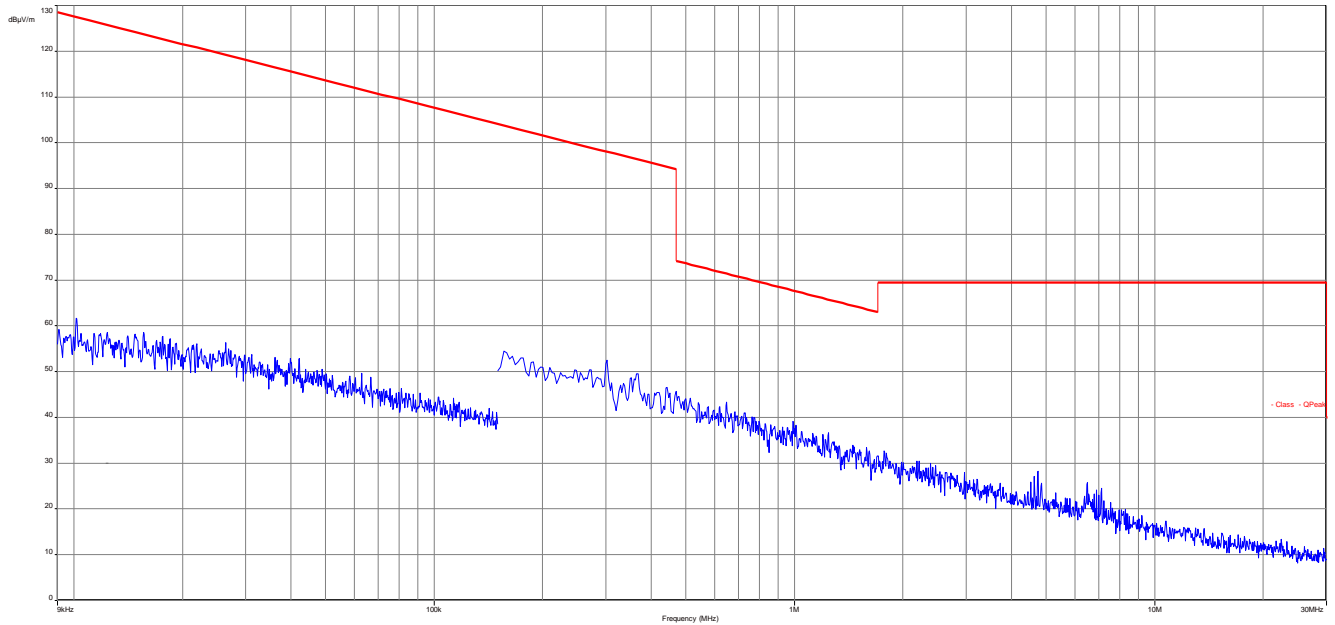
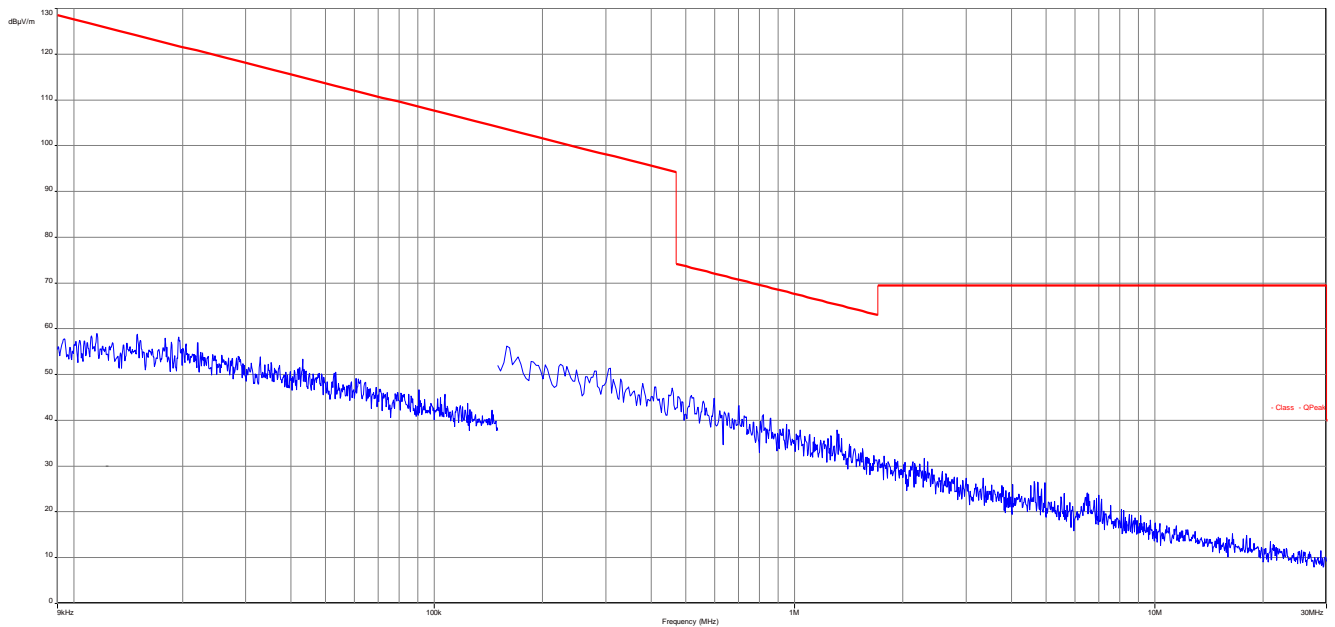
Limits:

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

Results:

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

Result: Passed

Plots: TX mode**Plot 1: 9 kHz to 30 MHz****Plots: RX / Idle – mode****Plot 1: 9 kHz to 30 MHz**

1 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 (Lab/Item).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Netzgerät 0-20V	6632A	HP Meßtechnik	2851A01814	300000924	ne	09.11.2005	
2	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO Elektronik	9709-5290	300000212	k	23.07.2013	23.07.2015
3	n. a.	Highpass Filter	WHK1.1/15G-10SS	Wainwright	37	400000148	ne		
4	n. a.	Band Reject Filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	26	300003792	ne		
5	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	318	300003696	k	22.04.2014	22.04.2017
6	n. a.	Spectrum-Analyzer	FSU26	R&S	200809	300003874	k	22.01.2014	22.01.2015
7	n. a.	Broadband Amplifier 0.5-18 GHz	CBLU5184540	CERNEX	22050	300004482	ev		
8	n. a.	Broadband Amplifier	CBLU5135235	CERNEX	22011	300004492	ev		
9	n. a.	4U RF Switch Platform	L4491A	Agilent Technologies	MY50000032	300004510	ne		
10	n. a.	Messrechner und Monitor	Intel Core i3 3220/3,3 GHz, Prozessor		2V2403033A54 21	300004591	ne		
11	n. a.	NEXIO EMV-Software	BAT EMC	EMCO		300004682	ne		

Agenda: Kind of Calibration

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

2 Observations

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

Annex A Document history

Version	Applied changes	Date of release
	Initial release	2014-11-05

Annex B 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 C Accreditation Certificate

Front side of certificate



Deutsche Akkreditierungsstelle GmbH

Befähigung gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
 Unterzeichnerin der Multilateralen Abkommen
 von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung



Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

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

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

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

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 07.03.2014 mit der
 Akkreditierungsnummer D-PL-12676-01 und ist gültig bis 31.03.2018. Sie besteht aus diesem Deckblatt, der
 Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 77 Seiten.

Registrierungsnummer der Urkunde: D-PL-12676-01-00

Frankfurt am Main, 07.03.2014

Date/Zeichen auf der Urkunde

In Auftrag: D-PL-12676-01, 07.03.2014
 Akkreditierungsstelle

Back side of certificate

Deutsche Akkreditierungsstelle GmbH

Standort Berlin
 Spittelmarkt 10
 10117 Berlin

Standort Frankfurt am Main
 Gartenstraße 6
 60594 Frankfurt am Main

Standort Braunschweig
 Bundesallee 100
 38116 Braunschweig

Die auszugsweise Veröffentlichung der Akkreditierungsurkunde bedarf der vorherigen schriftlichen
 Zustimmung der Deutschen Akkreditierungsstelle GmbH (DAkkS). Ausgenommen davon ist die separate
 Weiterverbreitung des Deckblattes durch die umseitig genannte Konformitätsbewertungsstelle in
 unveränderter Form.

Es darf nicht der Anschein erweckt werden, dass sich die Akkreditierung auch auf Bereiche erstreckt,
 die über den durch die DAkkS bestätigten Akkreditierungsbereich hinausgehen.

Die Akkreditierung erfolgte gemäß des Gesetzes über die Akkreditierungsstelle (AkkStelleG) vom
 31. Juli 2009 (BGBl. I S. 2625) sowie der Verordnung (EG) Nr. 765/2008 des Europäischen Parlaments
 und des Rates vom 9. Juli 2008 über die Vorschriften für die Akkreditierung und Marktüberwachung
 im Zusammenhang mit der Vermarktung von Produkten (ABl. L 218 vom 9. Juli 2008, S. 30).
 Die DAkkS ist Unterzeichnerin der Multilateralen Abkommen zur gegenseitigen Anerkennung der
 Funktionen von Organisationen für Akkreditierung (EA), der International Accreditation Forum (IAF) und
 der International Laboratory Accreditation Cooperation (ILAC). Die Unterzeichner dieser Abkommen
 erkennen ihre Akkreditierungen gegenseitig an.

Der aktuelle Stand der Mitgliedschaft kann folgenden Webseiten entnommen werden:
 EA: www.european-accr-edition.org
 ILAC: www.ilac.org
 IAF: www.iaf.eu

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>