eurofins | Product Service

EMC TEST REPORT

FCC 47 CFR Part 15B
Industry Canada RSS-Gen

Electromagnetic compatibility - Unintentional radiators

Report Reference No. ..... :	G0M-1112-1618-EF01-V01
Testing Laboratory ..... :	Eurofins Product Service GmbH
Address ..... :	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation ..... :	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A
Applicant's name ..... :	Orderman GmbH
Address ..... :	Bachstrasse 59 5023 Salzburg AUSTRIA
Test specification:	
Standard..... :	47 CFR Part 15 Subpart B RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
Equipment under test (EUT):	
Product description	Base Station2
Model No.	OMB2 09024
Hardware version	V4.x
Firmware / Software version	None
	FCC-ID: A9COMB2-09024 IC: 10102A-OMB209024
Test result	**Passed**

Possible test case verdicts:	
- not applicable to test object ..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)

Testing:

Date of receipt of test item ..... :	2011-12-15
Date (s) of performance of tests ..... :	2011-12-16
Compiled by ..... :	Antje Bartusch
Tested by (+ signature)..... :	Marcus Klein
Approved by (+ signature) ..... :	Jens Zimmermann
Date of issue ..... :	2012-02-22
Total number of pages ..... :	19

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Additional comments:

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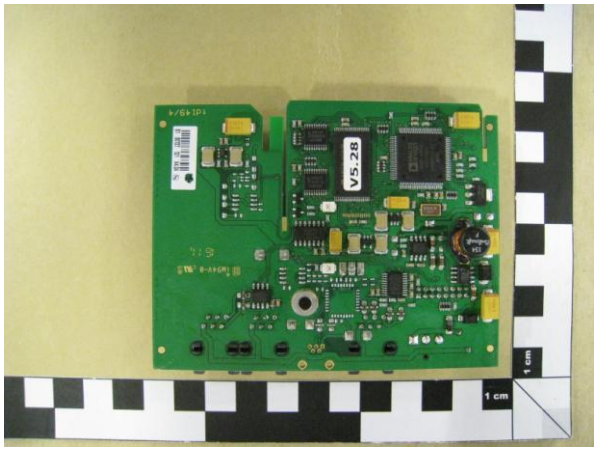
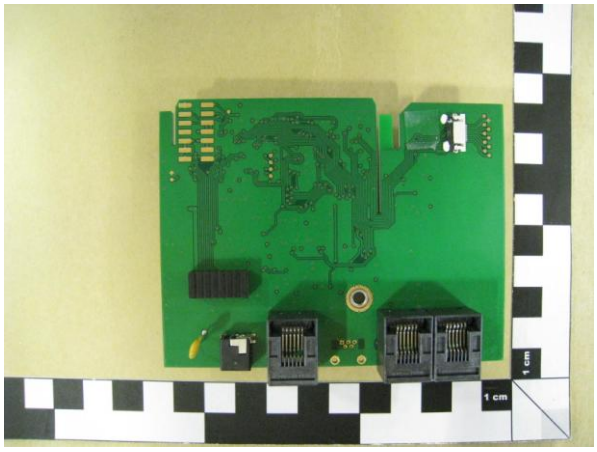
1 Equipment (Test item) Description

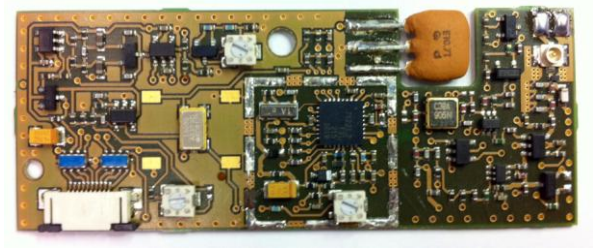
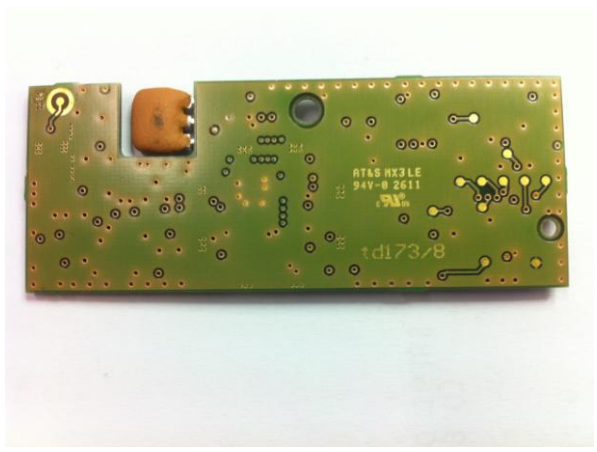
Description	Base Station2
Model	OMB2 09024
Serial number	None
Hardware version	V4.x
Software / Firmware version	None
FCC-ID	A9COMB2-09024
IC	10102A-OMB209024
Power supply	15VDC 120V AC/DC Adapter
AC/DC-Adaptor	Direct Plug-In Transformer Unit Model : FW7333/15 Input : 100-240VAC / 50-60Hz Output : 15VDC / 530mA
Manufacturer	Orderman GmbH Bachstrasse 59 5023 Salzburg AUSTRIA
Highest emission frequency	35.2512MHz
Device classification	Class B
Equipment type	Tabletop
Number of tested samples	1

1.1 Photos – Equipment external

EUT TOP	EUT BOTTOM
	

1.2 Photos – Equipment internal

PCB TOP	PCB BOTTOM
	

MODULE TOP	MODULE BOTTOM
	

1.3 Photos – Test setup

RADIATED EMISSIONS


CONDUCTED EMISSIONS


1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
AE	Power Supply	FRIWO	FW7333/15	

***Note:** Use the following abbreviations:

AE : Auxiliary/Associated Equipment, or

SIM : Simulator (Not Subjected to Test)

CABL : Connecting cables

1.5 Operating Modes

Mode #	Description
1	Normal operation mode TX 902.45MHz

1.6 Test Equipment Used During Testing

Radiated emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Biconical Antenna	R&S	HK 116	Inv. No. 0012	Jan 10	Jan 13
LPD-Antenne	R&S	HL 223	Inv. No. 0295	Feb 11	Feb 13
LPD-Antenna	R&S	HL 025	Inv. No. 0512	Feb 10	Feb 13
EMI Test Receiver	R&S	ESU8	Inv. No. 0567	Dec 11	Dec 12
EMI Test Receiver	R&S	ESCS30	Inv. No. 0474	Jun 11	Jun 12

Conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	Inv. No. 0288	Sep 10	Sep 12
AMN	R&S	ESH3-Z5	Inv. No. 0040	Nov 10	Nov 12
EMI Test Receiver	R&S	ESCS 30	Inv. No. 0474	Jun 11	Jun 12

2 Result Summary

FCC 47 CFR Part 15B, Industry Canada RSS-Gen				
Product Specific Standard	**Requirement – Test**	**Reference Method**	**Result**	**Remarks**
47 CFR 15.109 RSS-Gen 4.9 & 4.10	Radiated emissions	ANSI C 63.4	PASS	
47 CFR 15.107 RSS-Gen 7.2.4	AC power line conducted emissions	ANSI C63.4	PASS	
Remarks:				

3 Test Conditions and Results

3.1 Test Conditions and Results – Radiated emissions

Radiated emissions acc. FCC 47 CFR 15.109 / IC RSS-Gen						**Verdict: PASS**
Laboratory Parameters:	Required prior to the test		During the test			
Ambient Temperature	15 to 35°C		23°C			
Relative Humidity	30 to 60%		33%			
Test according referenced standards	Reference Method					
	ANSI C63.4					
Sample is tested with respect to the requirements of the equipment class	Equipment class					
	Class B					
Test frequency range determined from highest emission frequency	Highest emission frequency					
	35.2512MHz					
Fully configured sample scanned over the following frequency range	Frequency range					
	30MHz to 1GHz					
Operating mode	1					
Limits and results Class B						
Frequency [MHz]	Quasi-Peak [dBµV/m]	Result	Average [dBµV/m]	Result	Peak [dBµV/m]	Result
30 – 88	40	PASS	-		-	-
88 – 216	43.5	PASS	-		-	-
216 – 960	46	PASS	-		-	-
960 – 1000	54	PASS	-		-	-
Comments:						

Spurious emissions under normal conditions according to FCC 15B

Project number: G0M-1112-1861

Manufacturer:	Orderman GmbH
EUT Name:	Base Station 2
Model:	OMB2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	normal operation
Test Date:	16.12.2011
Note:	

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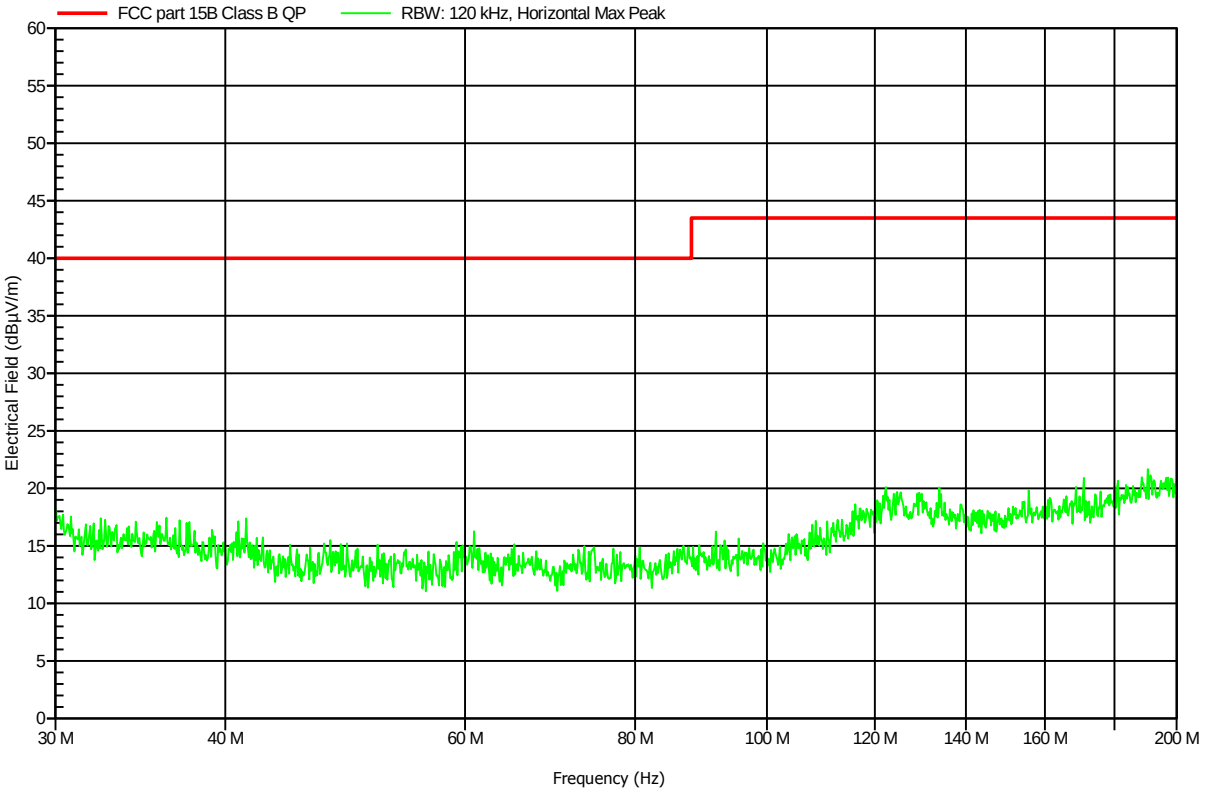

Spurious emissions under normal conditions according to FCC 15B

Project number: G0M-1112-1861

Manufacturer:	Orderman GmbH
EUT Name:	Base Station 2
Model:	OMB2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	normal operation, TX/RX
Test Date:	16.12.2011
Note:	

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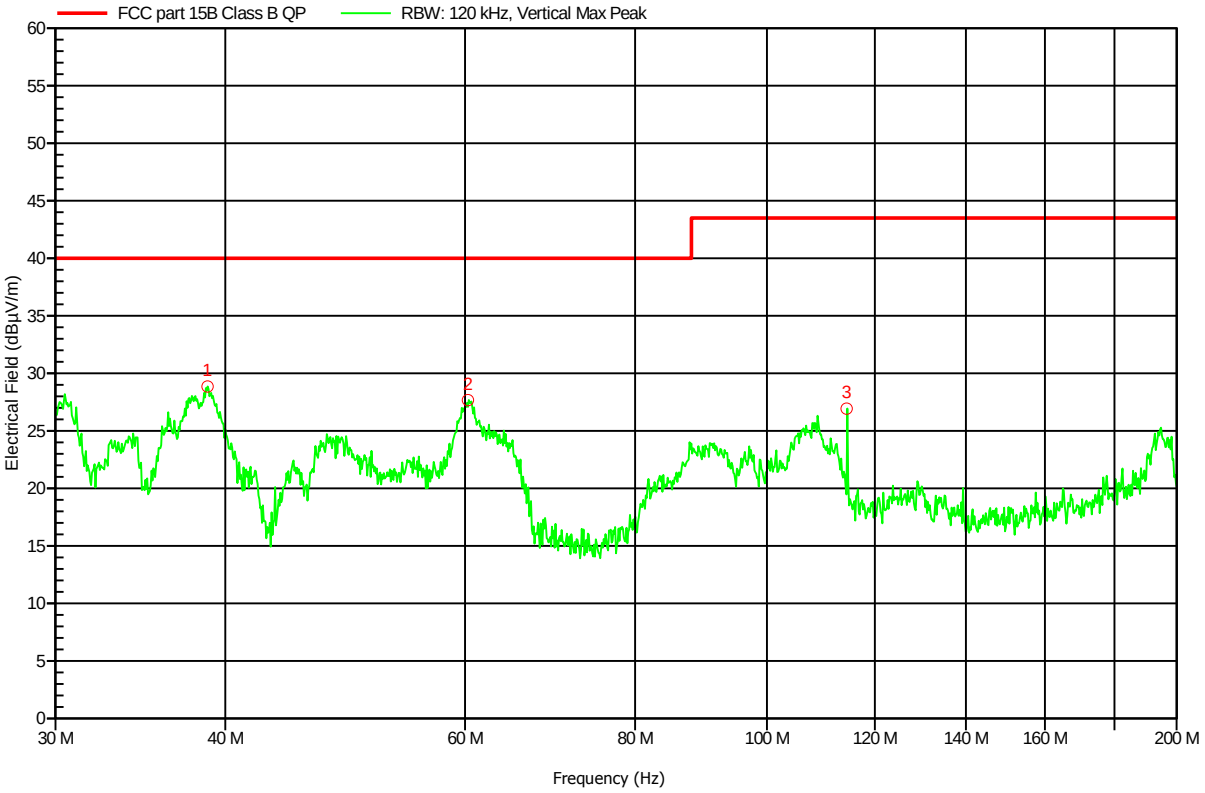

Frequency
38.82 MHz
60.3 MHz
114.42 MHz

Spurious emissions under normal conditions according to FCC 15B

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Manufacturer:	Orderman GmbH
EUT Name:	Base Station 2
Model:	OMB2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	normal operation
Test Date:	16.12.2011
Note:	

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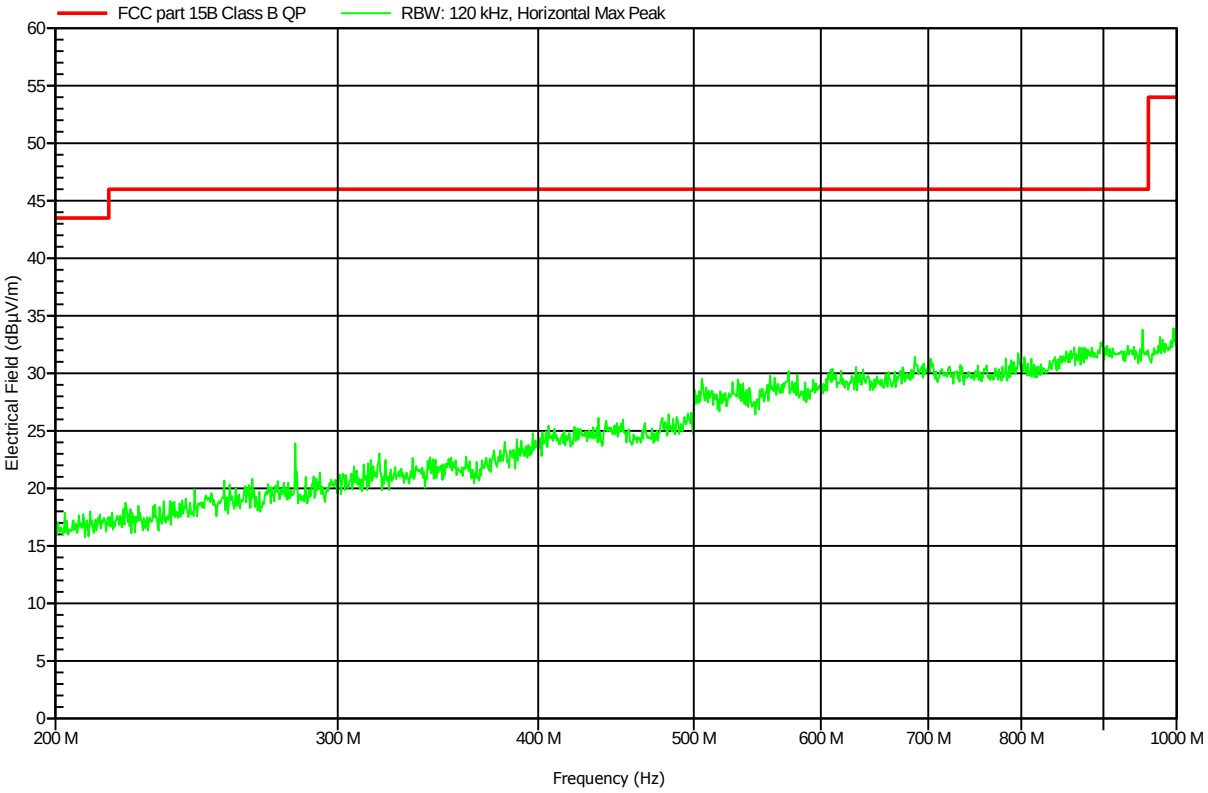

Spurious emissions under normal conditions according to FCC 15B

Project number: G0M-1112-1861

Manufacturer:	Orderman GmbH
EUT Name:	Base Station 2
Model:	OMB2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	normal operation
Test Date:	16.12.2011
Note:	

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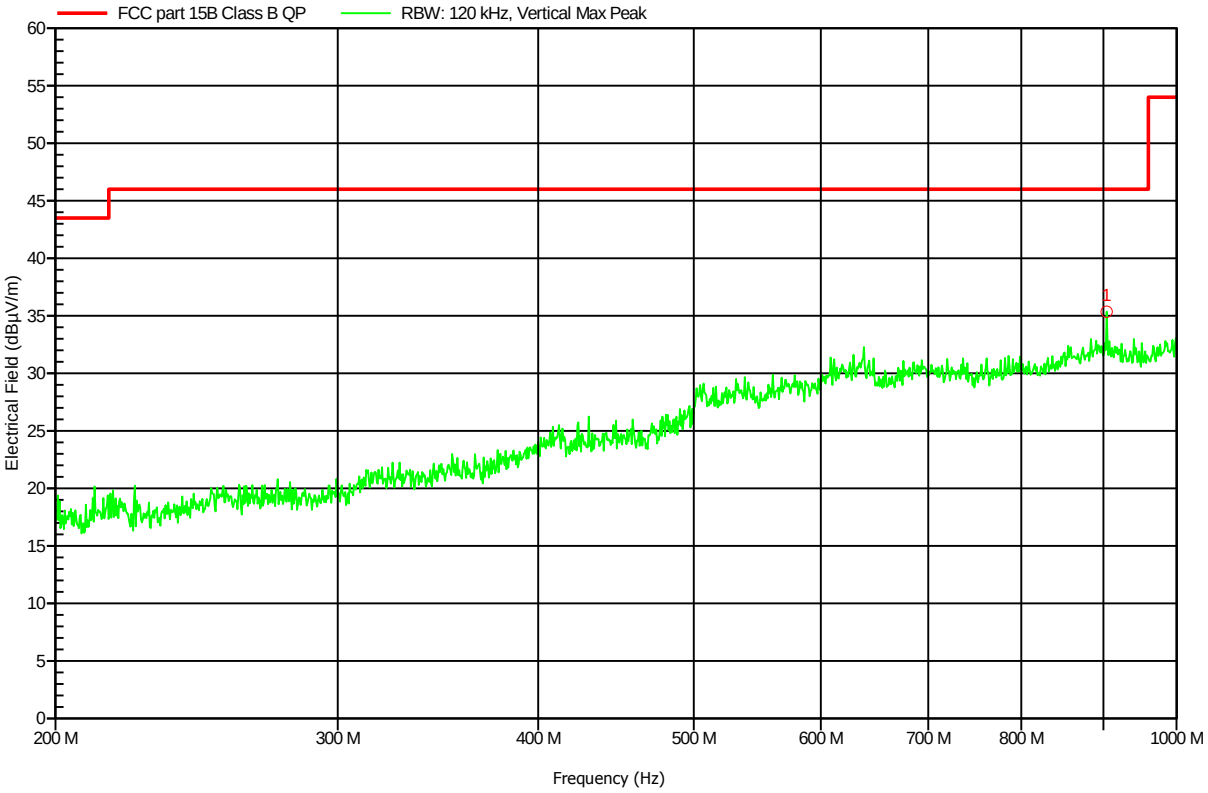


Frequency
904.28 MHz

3.2 Test Conditions and Results – AC power line conducted emissions

Conducted emissions acc. FCC 47 CFR 15.107 / IC RSS-Gen		**Verdict: PASS**
Laboratory Parameters:	Required prior to the test	During the test
Ambient Temperature	15 to 35°C	23°C
Relative Humidity	30 to 60%	33%
Test according referenced standards	Reference Method	
	ANSI C63.4	
Fully configured sample scanned over the following frequency range	Frequency range	
	0.15MHz to 30MHz	
Sample is tested with respect to the requirements of the equipment class	Equipment class	
	Class B	
Points of Application	Application Interface	
AC Mains	LISN	
Operating mode	1	

Limits and results Class B

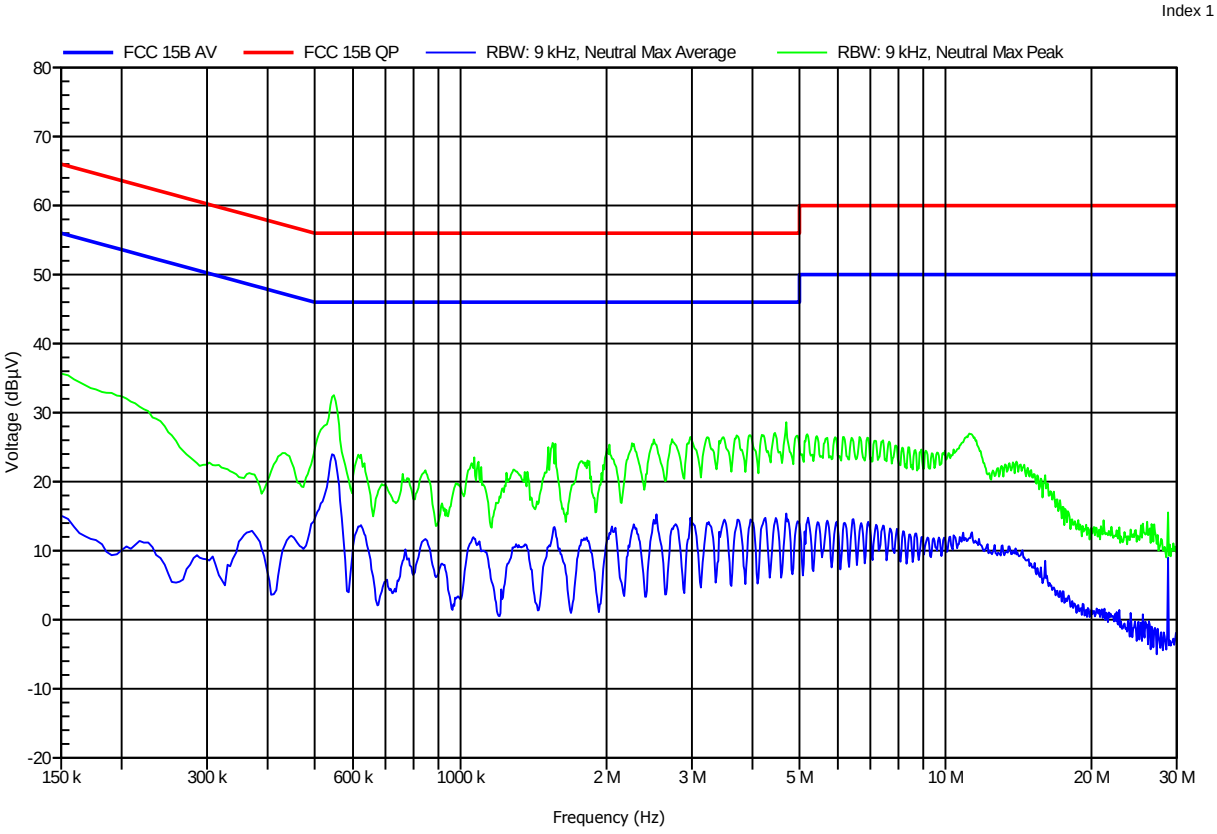
Frequency [MHz]	Quasi-Peak [dBµV]	Result	Average [dBµV]	Result
0.15 to 5	66 to 56*	PASS	56 to 46*	PASS
0.5 to 5	56	PASS	46	PASS
5 to 30	60	PASS	50	PASS

Comments:
* Limit decreases linearly with the logarithm of the frequency.

EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1112-1861

Manufacturer:	Orderman GmbH
EUT Name:	Base Station 2
Model:	OMB2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC
LISN:	ESH2-Z5 N
Mode:	normal operation
Test Date:	16.12.2011
Note:	



EMI voltage test in the ac-mains according to FCC 15B

Project number: G0M-1112-1861

Manufacturer:	Orderman GmbH
EUT Name:	Base Station 2
Model:	OMB2
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC
LISN:	ESH2-Z5 L
Mode:	normal operation
Test Date:	16.12.2011
Note: