EMC TEST REPORT

FCC 47 CFR Part 15B
Industry Canada RSS-Gen

Electromagnetic compatibility - Unintentional radiators

Report Reference No. ..... :	G0M-1406-3933-EF0115B-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 ..... :	Kamstrup A/S
Address ..... :	Industrivej 28 8660 Skanderborg DENMARK
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	READy Converter for the US market
Model No.	READy Converter
Additional Models	None
Hardware version	5535 1377 A1
Firmware / Software version	50981119 B1, Eeprom config : 55141211 B1
	FCC-ID: OUY-READYAMR1 IC: N/A
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	:	2014-09-08
Date (s) of performance of tests	:	2014-09-08 – 2014-09-09
Compiled by	:	Jens Marquardt
Tested by (+ signature)	:	Andreas Pflug
Approved by (+ signature)	:	Marcus Klein
Date of issue	:	2014-10-22
Total number of pages	:	57

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:

Measurements are done with different variants of external antenna:

external antenna 1: whip antenna RP SMA / Laird technology / Nearson / S161AM-915

external antenna 2: roof top antenna / smarteq / 6699467+ 6699466

external antenna 2: roof top antenna / smarteq / 6699467+ 6699466 with low loss cable

Version History

Version	Issue Date	Remarks	Revised by
V01		Initial Release	

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

REPORT INDEX

1 Equipment (Test item) Description

Description	READy Converter for the US market	
Model	READy Converter	
Additional Models	None	
Serial number	None	
Hardware version	5535 1377 A1	
Software / Firmware version	50981119 B1, Eeprom config : 55141211 B1	
FCC-ID	OUY-READYAMR1	
IC	N/A	
Power supply	5 VDC	
AC/DC-Adaptor	Model : dch5-050us Manufacturer : Emerson Input : 110 V / 50-60Hz Output : 5VDC / 1.0A	
DC/DC-Adaptor	Model : CC-DUAL01 Manufacturer : E-link Technology Input : 12 – 18 V DC Output : 5VDC / 1.0A	
Radio module	Type	Bluetooth module
	Model	PAN1322
	Manufacturer	Panasonic
	HW Version	02
	SW Version	3.1
	FCC-ID	T7VEBMU
	IC	216QEBMU
Manufacturer	Kamstrup A/S Industrivej 28 8660 Skanderborg DENMARK	
Highest emission frequency	Fmax [MHz] = 2500	
Device classification	Class B	
Equipment type	Tabletop	
Number of tested samples	1	

1.1 Photos – Equipment external

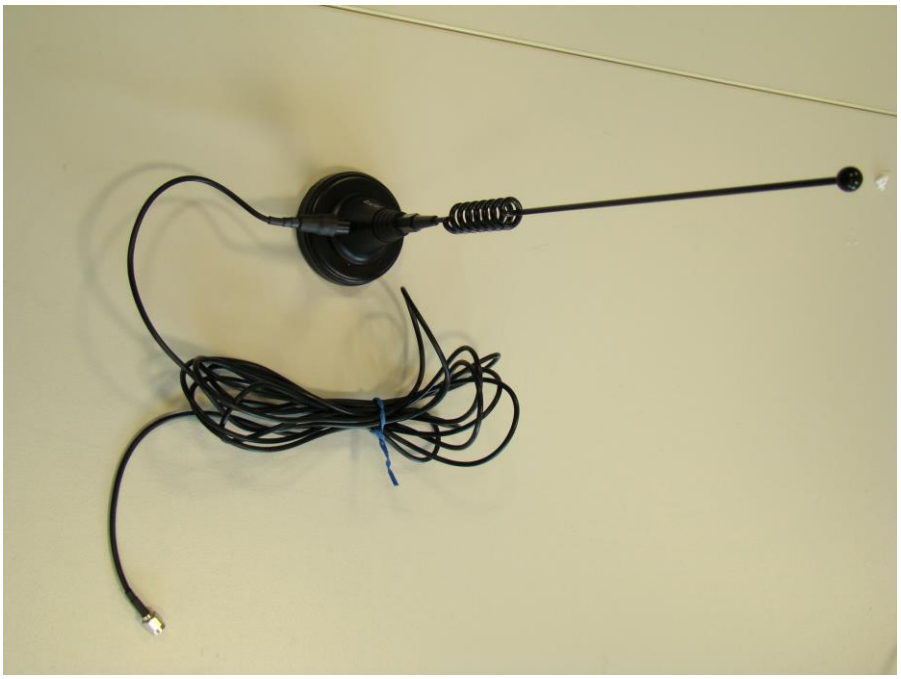
EUT Front


EUT Bottom


EUT Antenna Connector


EUT Charging Connector


external antenna 1


external antenna 2


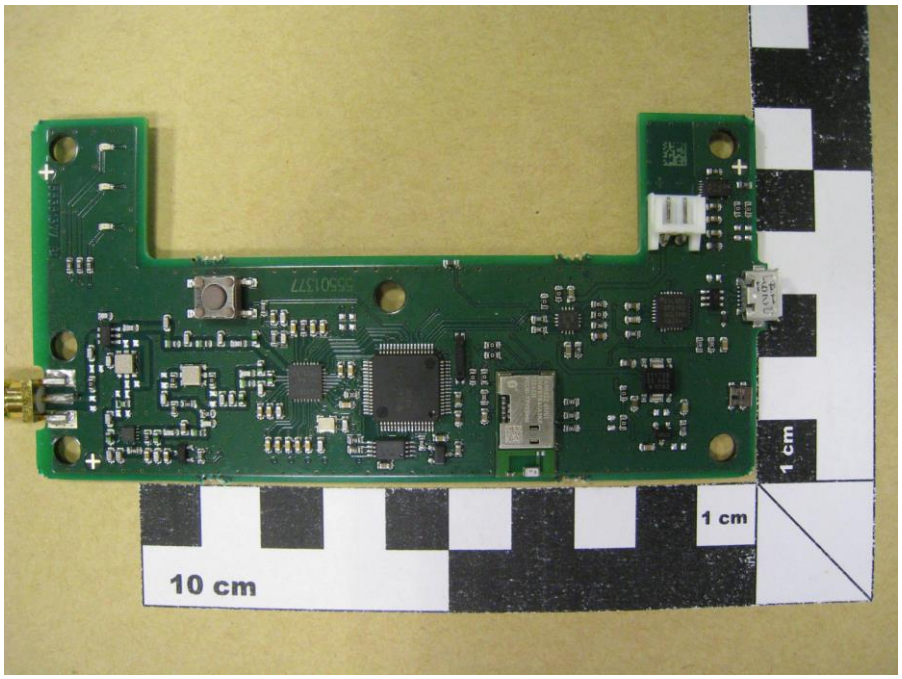
external antenna 3


DC/DC Adapter

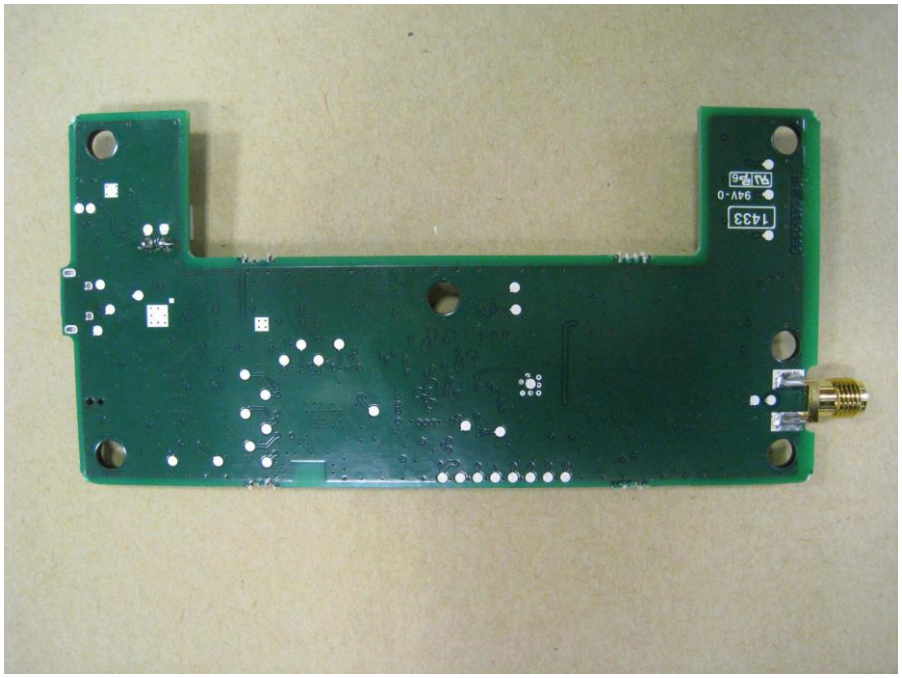

AC/DC Adapter


1.2 Photos – Equipment internal

EUT PCB Top

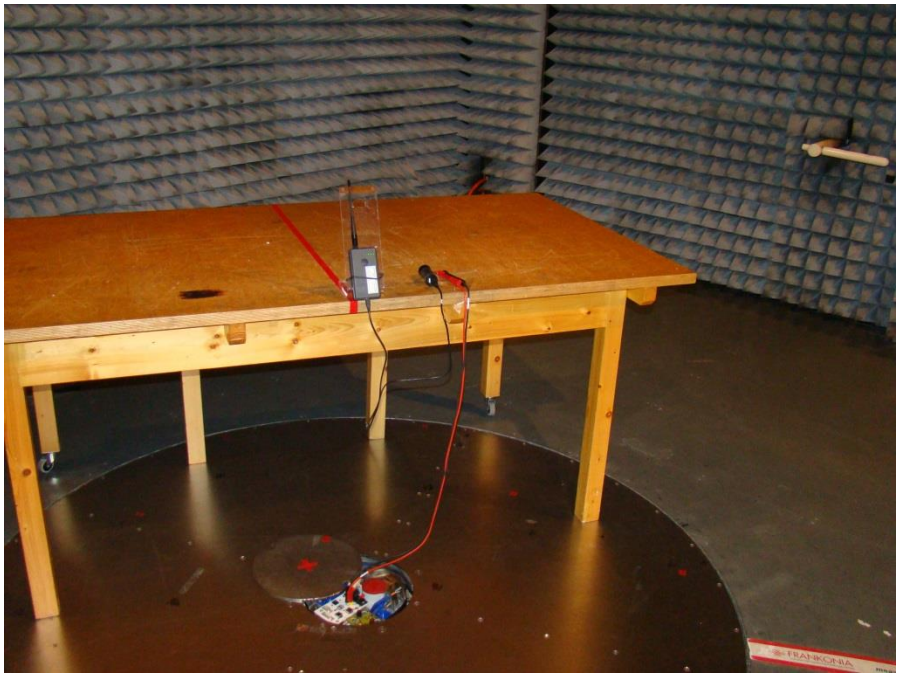


EUT PCB Bottom



1.3 Photos – Test setup

Test Setup : Radiated Emissions



Test Setup : Conducted Emissions

1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
AE	usb cable	Assmann	kamstrup part number 1652069	
AE	wall plug charger dch5-050us	Emerson	kamstrup part number 6699003	
AE	12VDC Car charger CC-DUAL01	E-link Technology	kamstrup part number 6696002	
None				

***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	EUT powered with 12V via car charger, BT link to BT-Tester and SRD in RX mode
2	EUT powered with 120 VAC via Wall plug charger, BT link to BT-Tester and SRD in RX mode

1.6 Test Equipment Used During Testing

Measurement Software			
Description	Manufacturer	Name	Version
EMC Test Software	Dare Instruments	Radimation	2014.1.15

Radiated emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Biconical Antenna	R&S	HK 116	EF00012	2013-02	2016-02
LPD-Antenne	R&S	HL 223	EF00187	2014-03	2017-03
LPD-Antenna	R&S	HL 025	EF00327	2013-02	2016-02
EMI Test Receiver	R&S	ESU8	EF00379	2014-03	2015-03
EMI Test Receiver	R&S	ESCS30	EF00295	2013-10	2014-10

Conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	EF00182	2012-10	2014-10
AMN	R&S	ESH3-Z5	EF00036	2012-11	2014-11
EMI Test Receiver	R&S	ESCS 30	EF00295	2013-10	2014-10

1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dBµV. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on Analyzer (dBµV) + A.F. (dB) = Net field strength (dBµV/m)

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

Limit (dBµV/m) = 20*log (µV/m)

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

Reading	+	AF	=	Net Reading	:	Net reading - FCC limit	= Margin
21.5 dBµV	+	26 dB	=	47.5 dBµV/m	:	47.5 dBµV/m - 57.0 dBµV/m	= -9.5 dB

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 %	41 %
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	
	Fmax [MHz] = 2500	
Fully configured sample scanned over the following frequency range	Frequency range	
	30 MHz to 19 GHz	
Operating mode	1 + 2	

Limits and results Class B

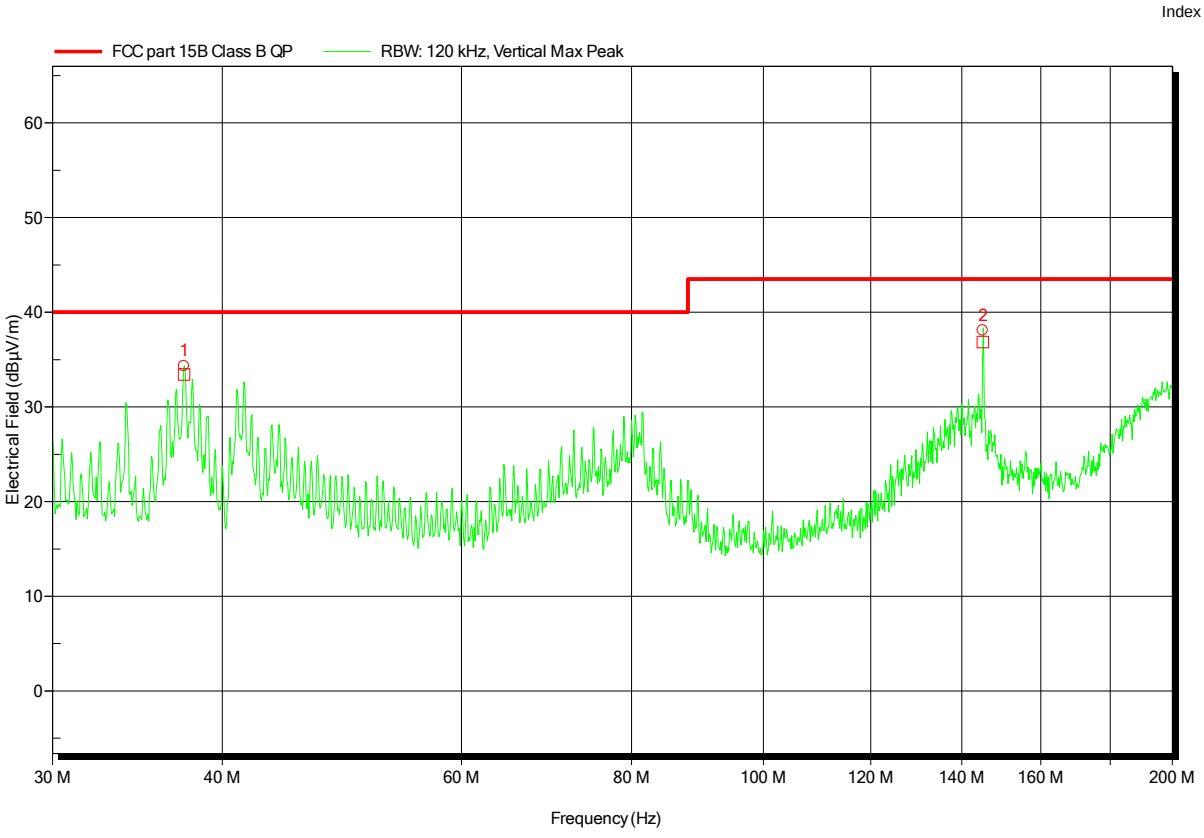
Frequency [MHz]	Quasi-Peak [dBµV/m]	Result	Average [dBµV/m]	Result	Peak [dBµV/m]	Result
30 – 88	40	PASS	-		-	-
88 – 216	43.5	PASS	-		-	-
216 – 960	46	PASS	-		-	-
960 – 1000	54	PASS	-		-	-
> 1000	-	-	54	PASS	74	PASS

Comments:
Measurements with car charger were performed 3 times with 3 different antennas (see remark on page 2). The worst case antenna configuration was used to measure up to 19 GHz and additional with the wall plug charger.

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 1
Test Date:	2014-09-08
Note:	

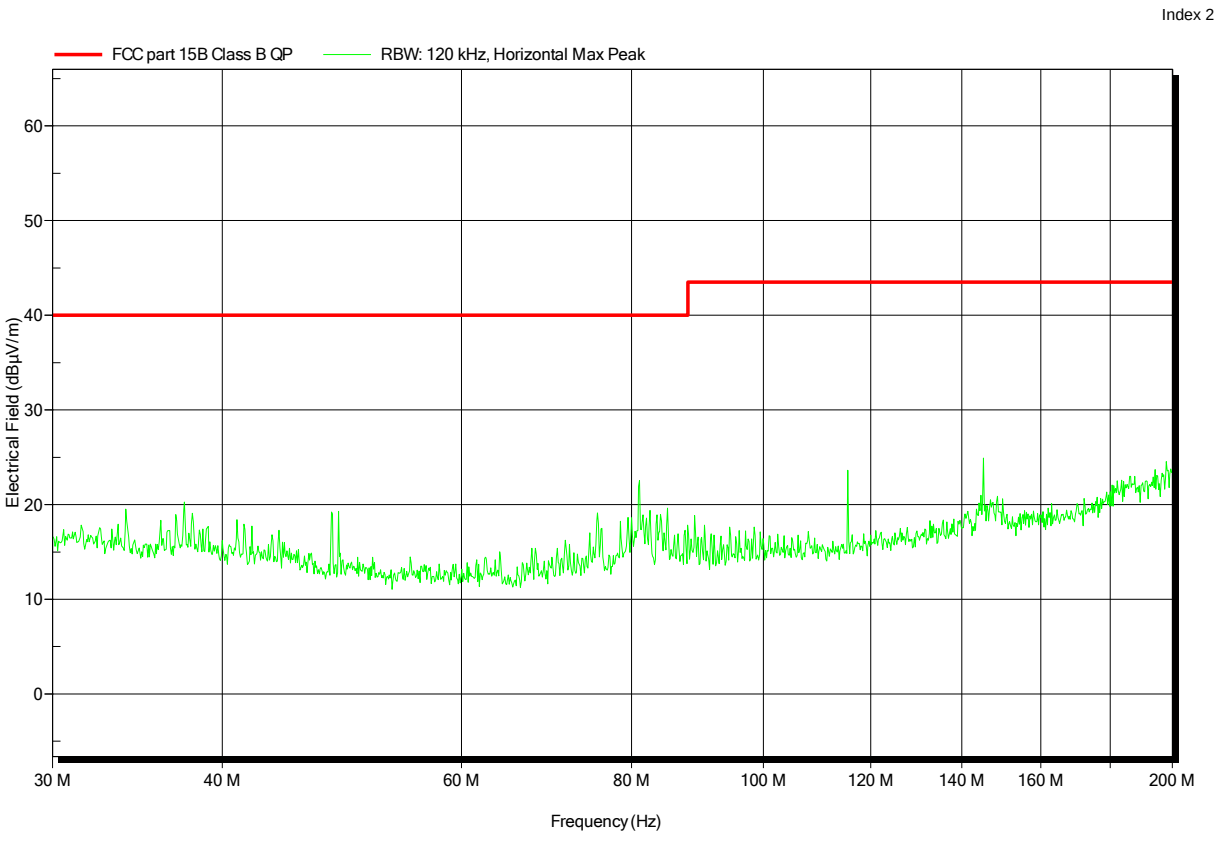


Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
37.488 MHz	33.44 dBµV/m	40 dBµV/m	-6.56 dB	Pass
145.06 MHz	36.87 dBµV/m	43.5 dBµV/m	-6.63 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 1
Test Date:	2014-09-08
Note:	

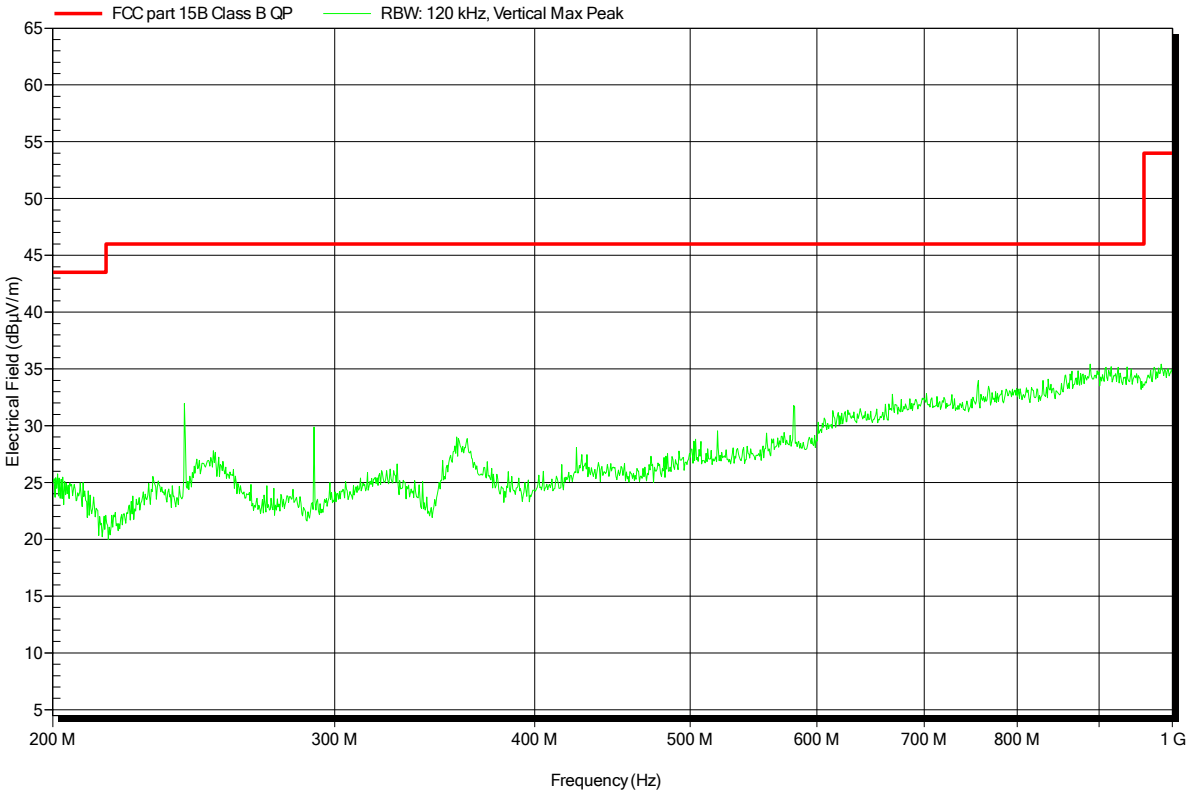


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 1
Test Date:	2014-09-08
Note:	

Index 20

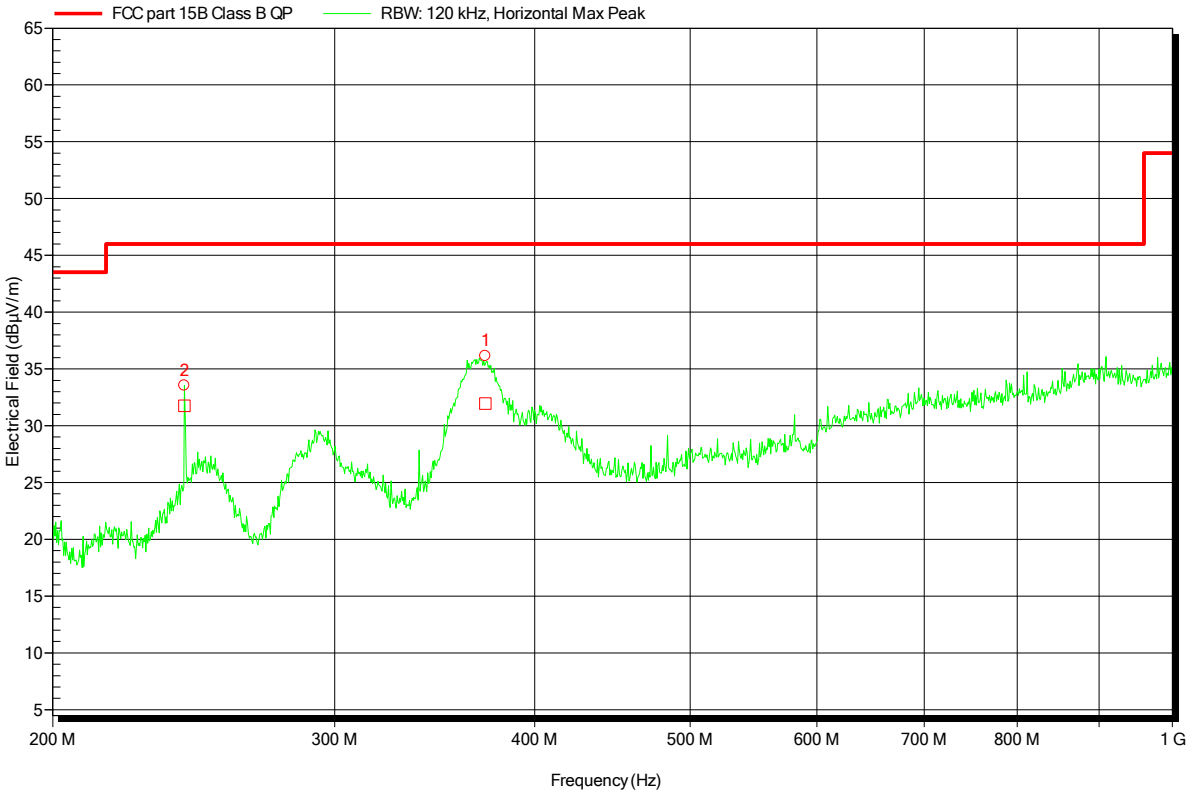


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 1
Test Date:	2014-09-08
Note:	

Index 19



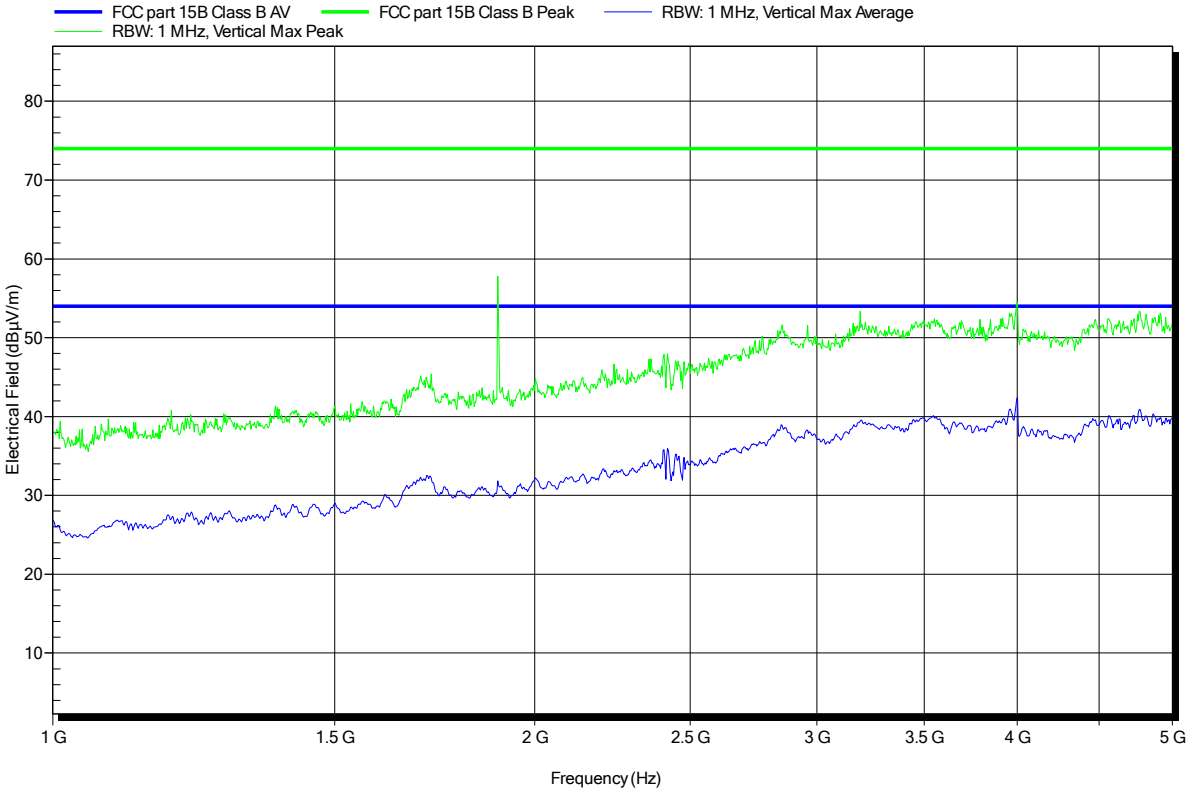
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
241.76 MHz	31.75 dBµV/m	46 dBµV/m	-14.25 dB	Pass
372.62 MHz	31.94 dBµV/m	46 dBµV/m	-14.06 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 1
Test Date:	2014-09-08
Note:	

Index 25

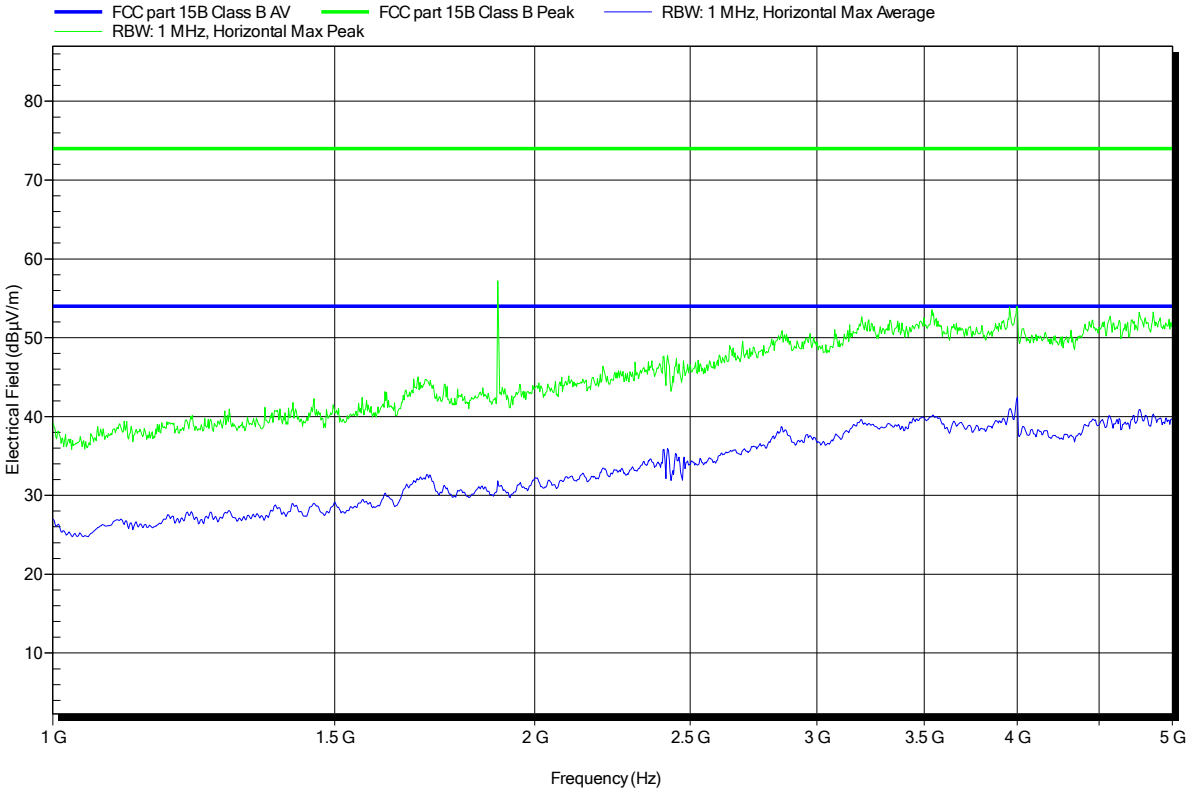


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 1
Test Date:	2014-09-08
Note:	

Index 23

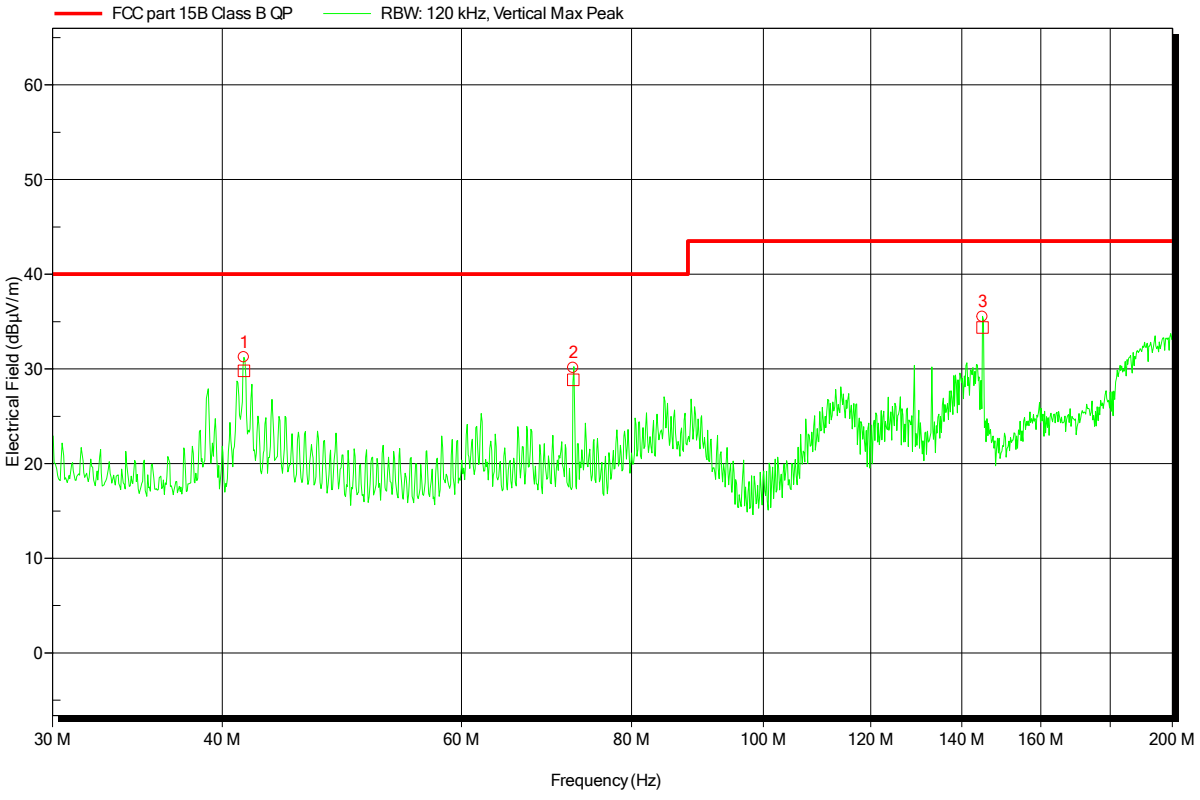


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 2
Test Date:	2014-09-08
Note:	

Index 6



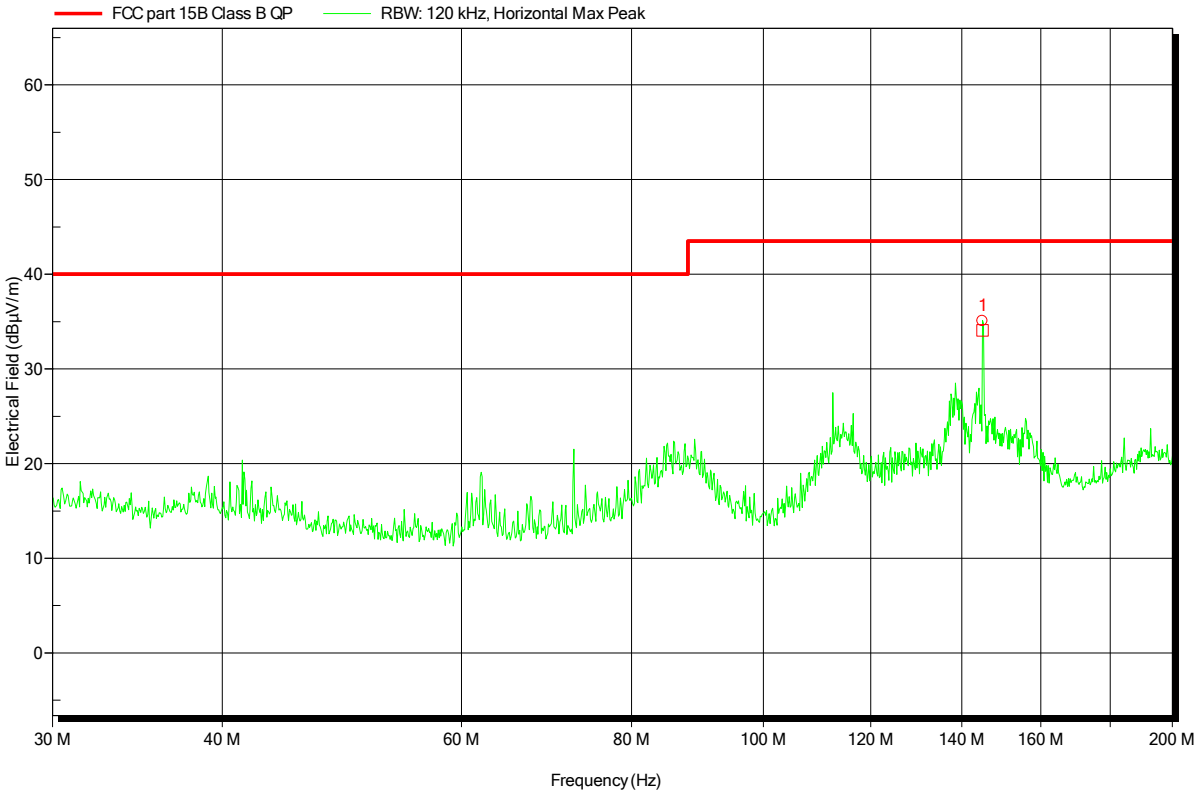
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
41.49 MHz	29.79 dBµV/m	40 dBµV/m	-10.21 dB	Pass
72.492 MHz	28.85 dBµV/m	40 dBµV/m	-11.15 dB	Pass
144.978 MHz	34.37 dBµV/m	43.5 dBµV/m	-9.13 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 2
Test Date:	2014-09-08
Note:	

Index 7



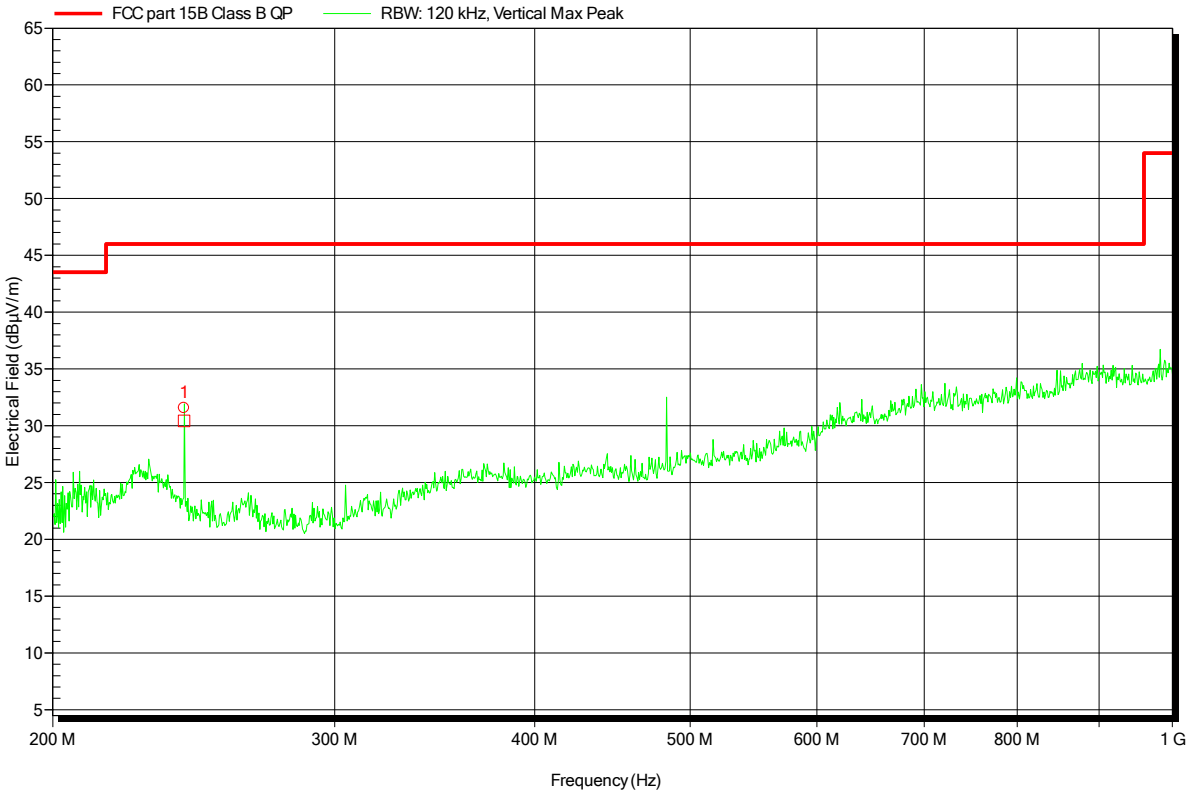
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
144.978 MHz	34.09 dBµV/m	43.5 dBµV/m	-9.41 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 2
Test Date:	2014-09-08
Note:	

Index 13



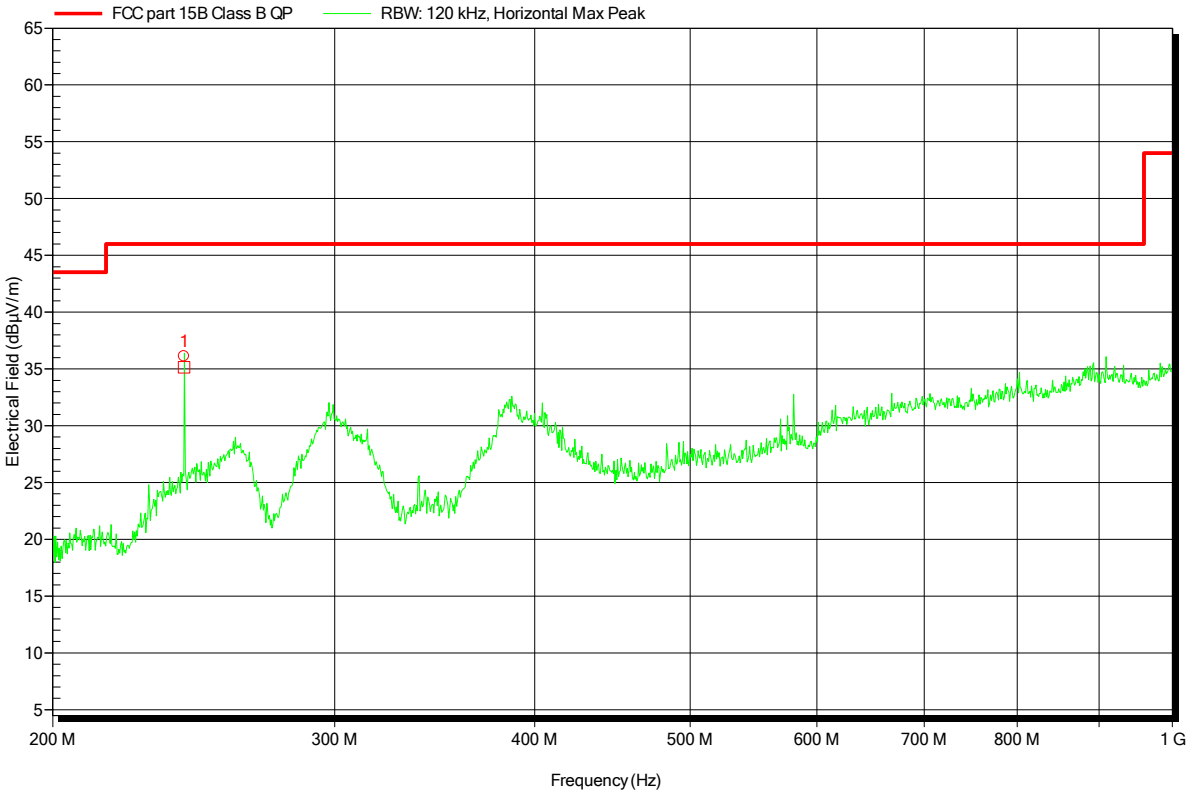
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
241.64 MHz	30.42 dBµV/m	46 dBµV/m	-15.58 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 2
Test Date:	2014-09-08
Note:	

Index 15



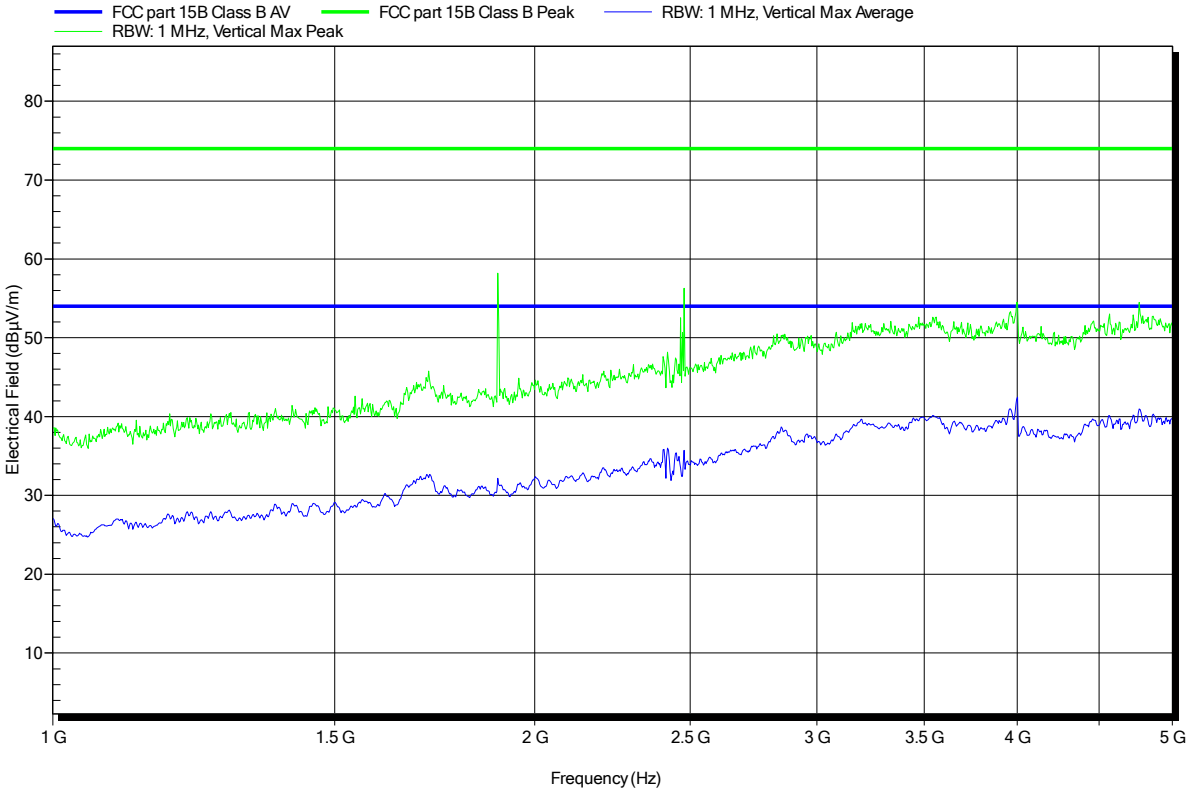
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
241.628 MHz	35.15 dBµV/m	46 dBµV/m	-10.85 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 2
Test Date:	2014-09-08
Note:	

Index 22

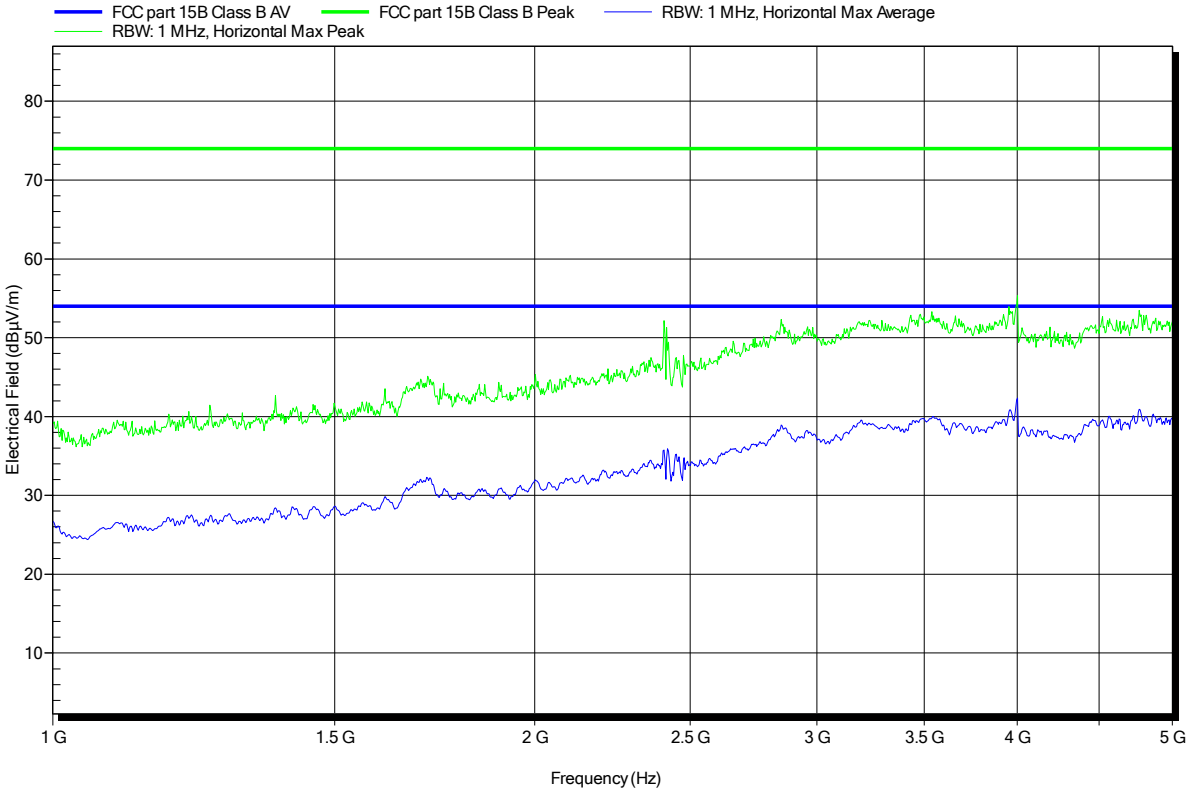


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 2
Test Date:	2014-09-08
Note:	

Index 31

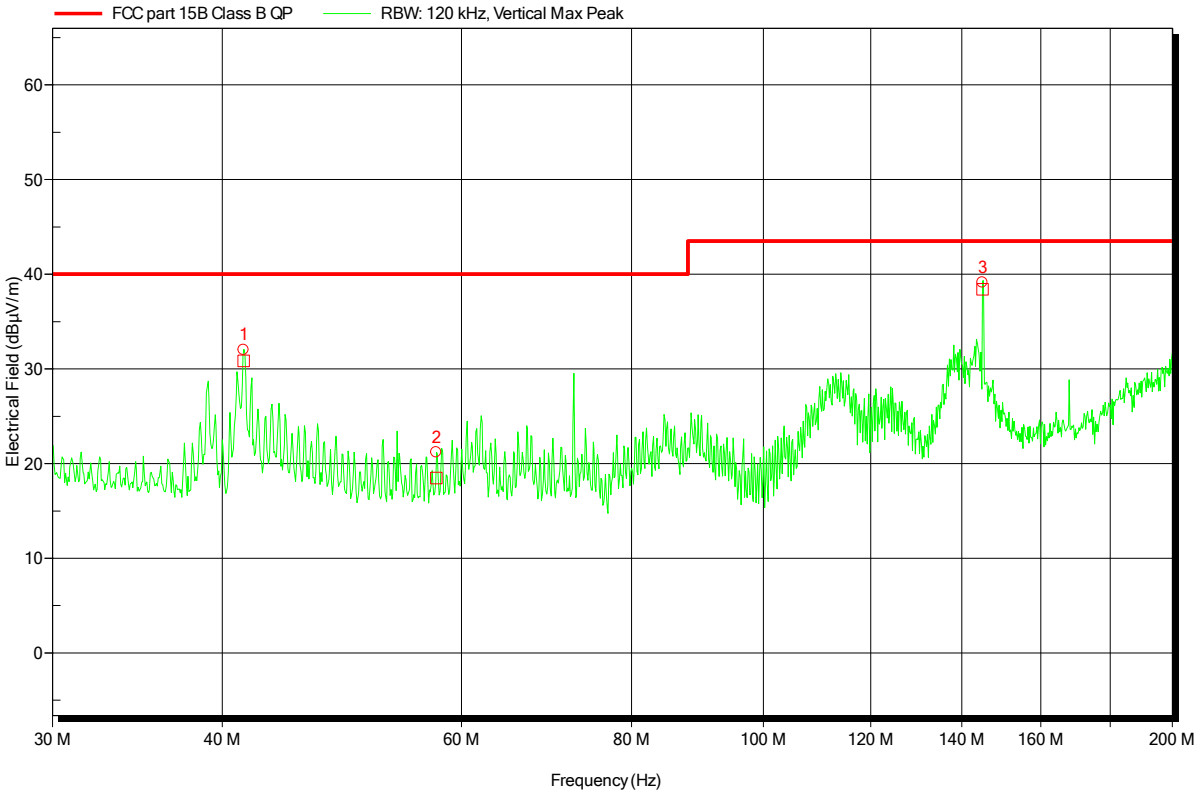


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 3
Test Date:	2014-09-08
Note:	

Index 5



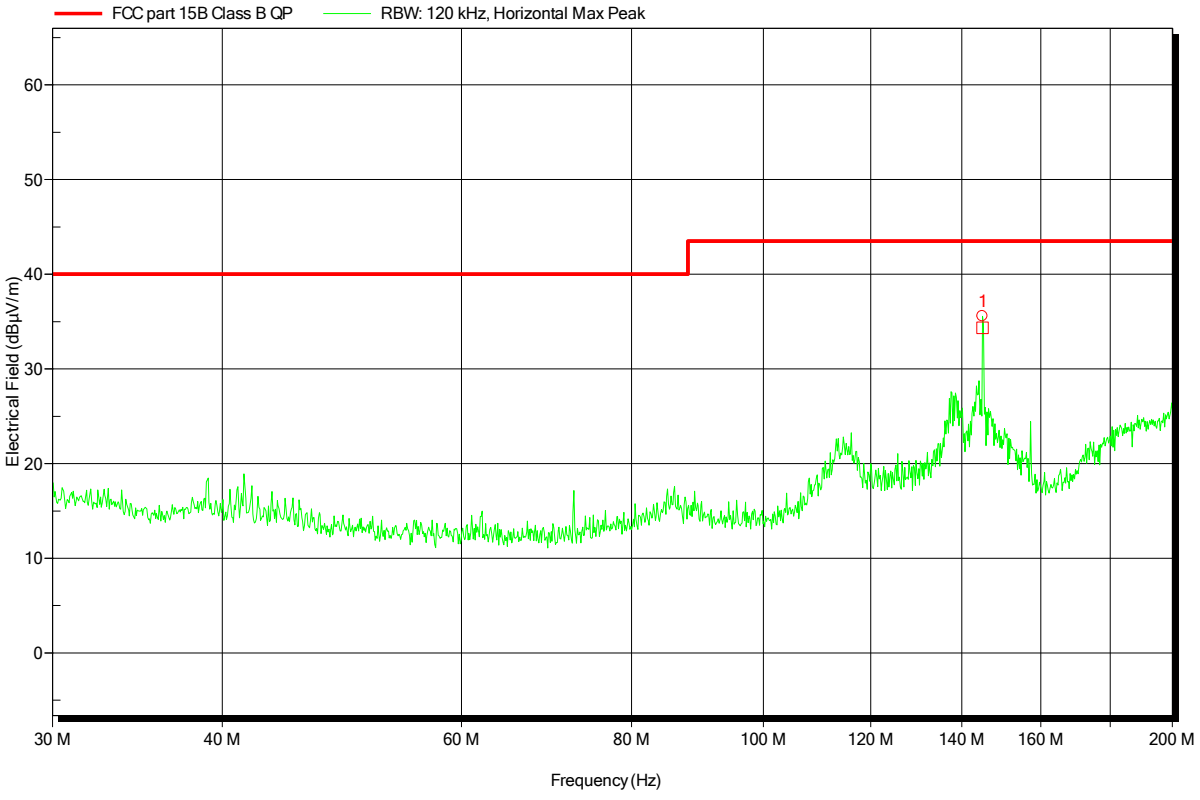
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
41.472 MHz	30.86 dBµV/m	40 dBµV/m	-9.14 dB	Pass
57.486 MHz	18.48 dBµV/m	40 dBµV/m	-21.52 dB	Pass
144.996 MHz	38.43 dBµV/m	43.5 dBµV/m	-5.07 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 3
Test Date:	2014-09-08
Note:	

Index 8



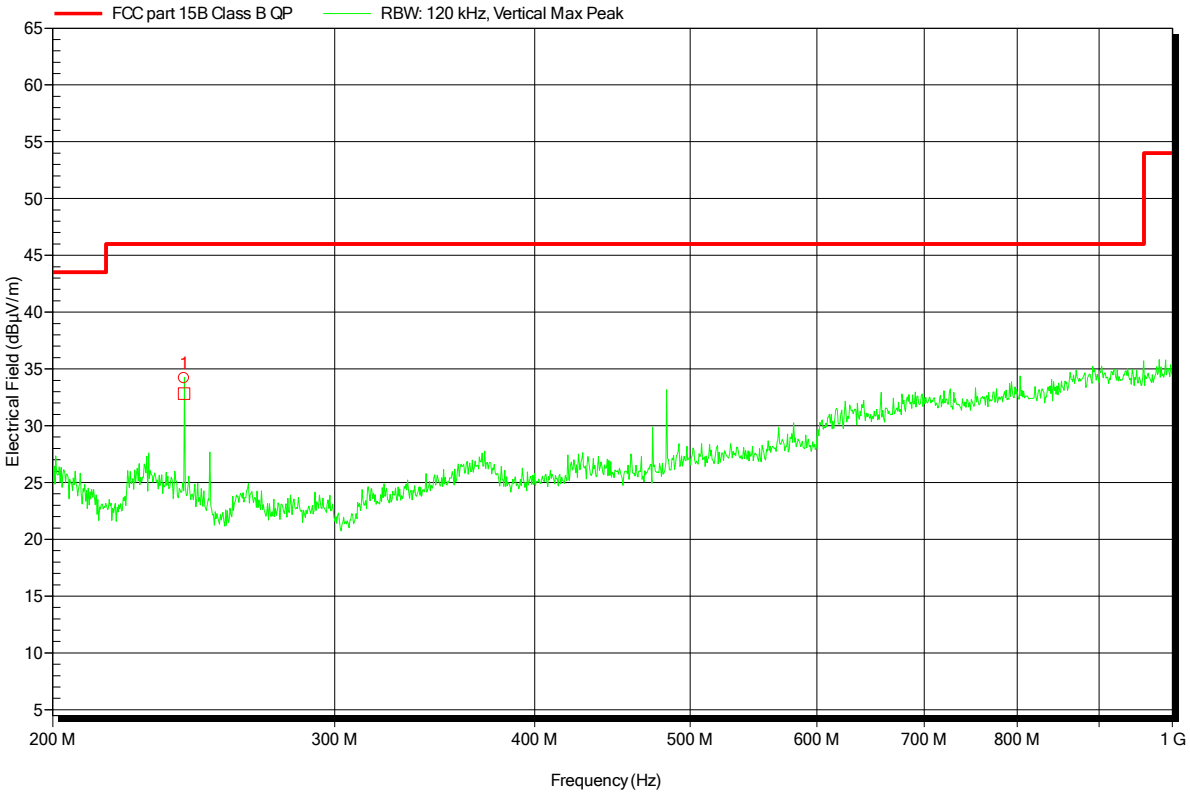
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
144.972 MHz	34.36 dBµV/m	43.5 dBµV/m	-9.14 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 3
Test Date:	2014-09-08
Note:	

Index 16



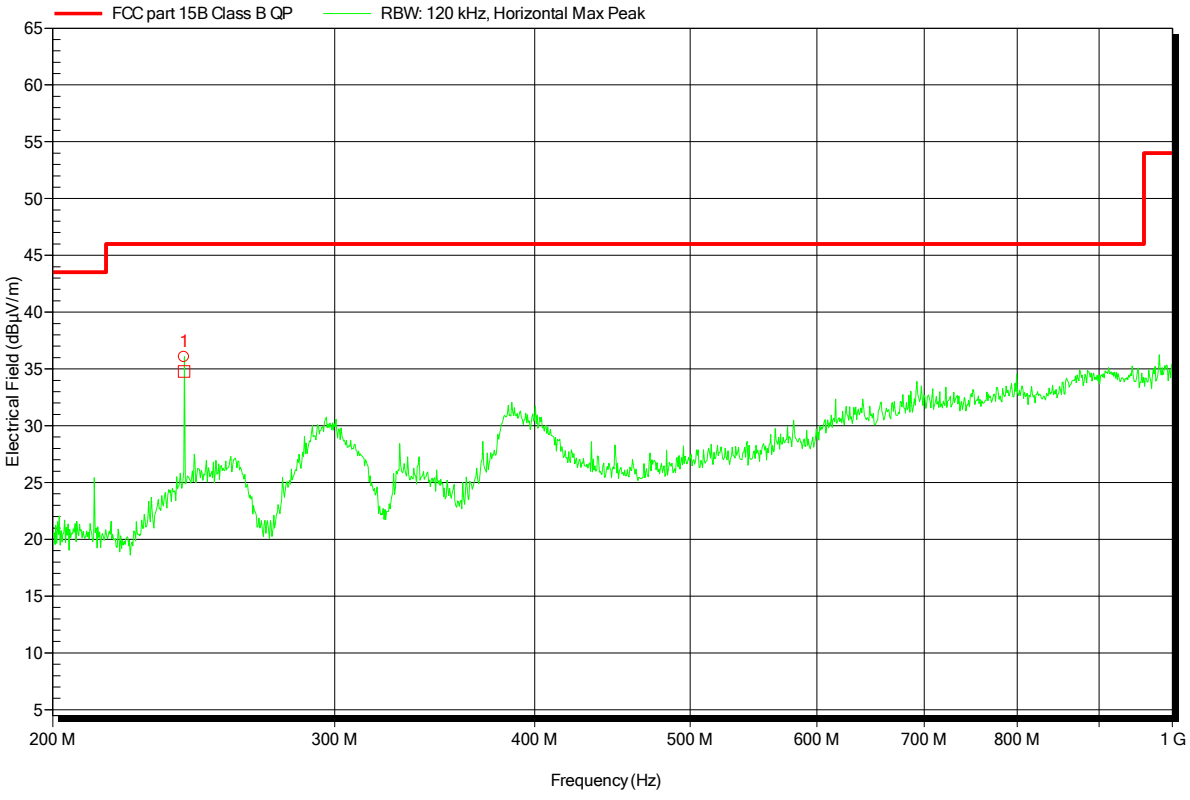
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
241.628 MHz	32.84 dBµV/m	46 dBµV/m	-13.16 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 3
Test Date:	2014-09-08
Note:	

Index 14



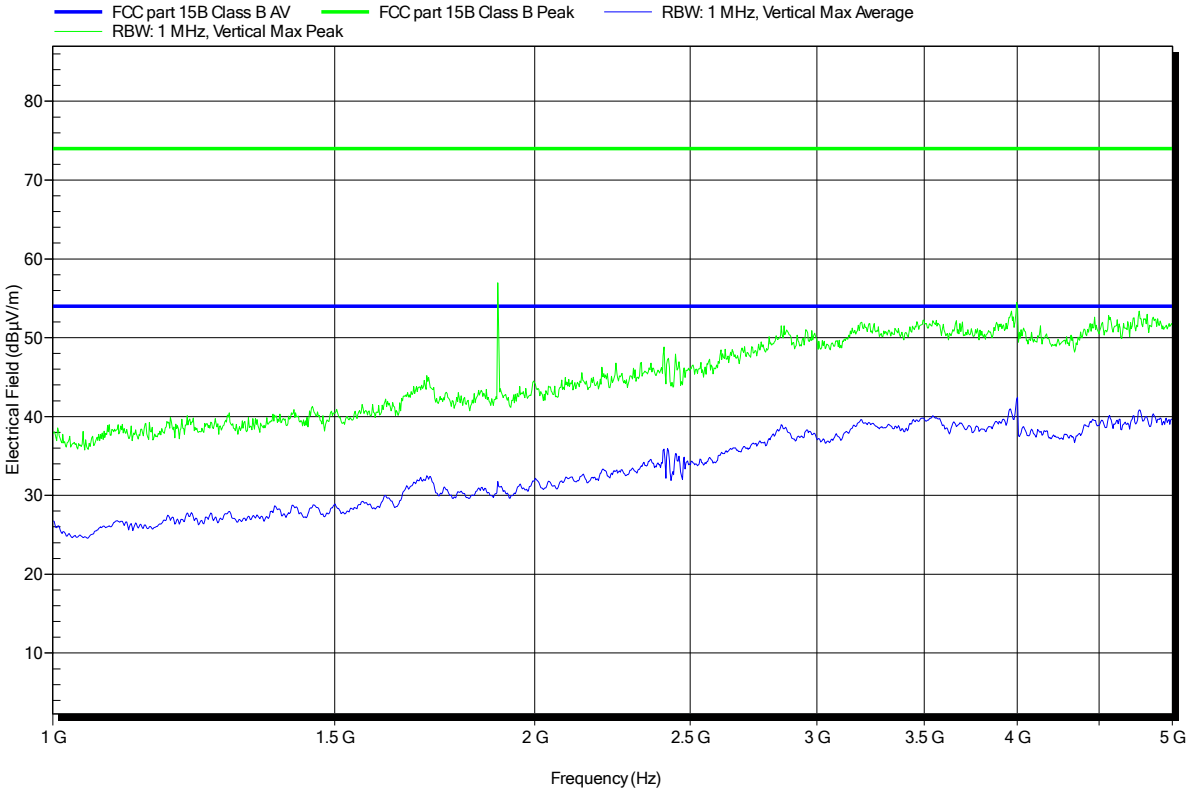
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
241.628 MHz	34.77 dBµV/m	46 dBµV/m	-11.23 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 3
Test Date:	2014-09-08
Note:	

Index 26

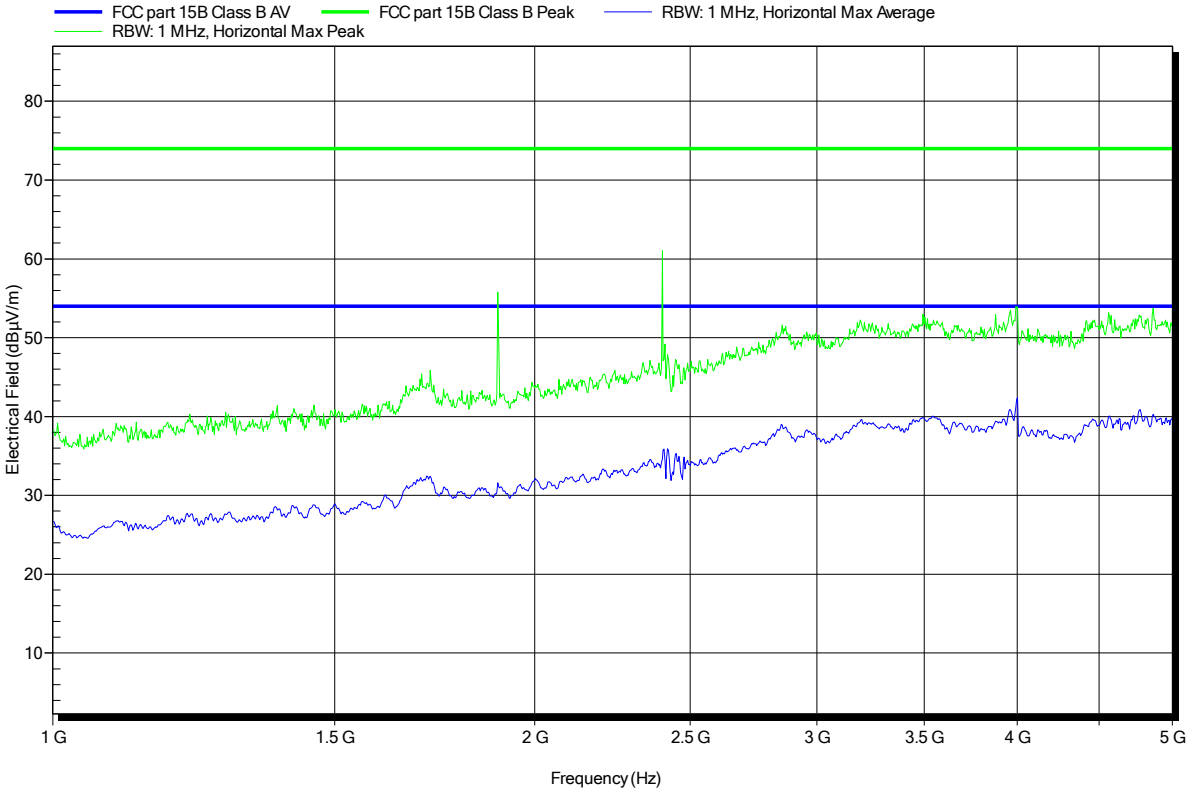


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 3
Test Date:	2014-09-08
Note:	

Index 27

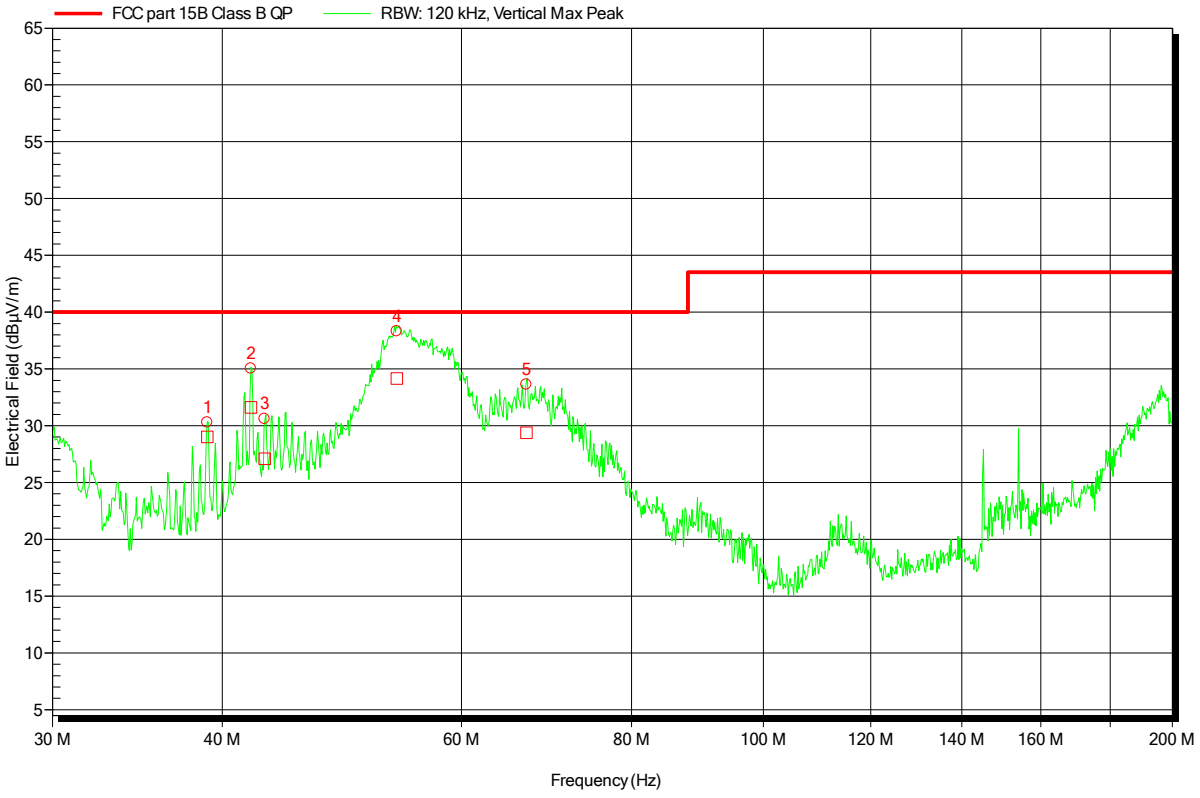


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 10



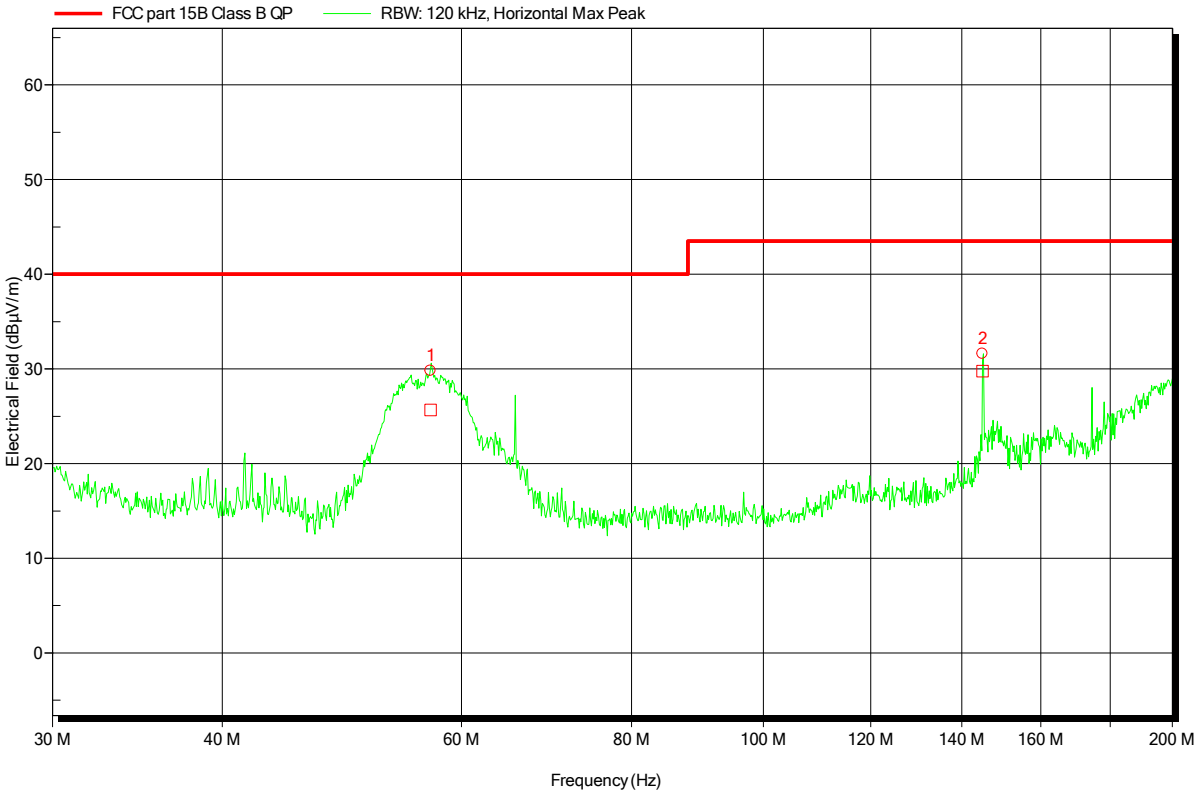
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
38.994 MHz	29 dBµV/m	40 dBµV/m	-11 dB	Pass
41.988 MHz	31.63 dBµV/m	40 dBµV/m	-8.37 dB	Pass
42.978 MHz	27.09 dBµV/m	40 dBµV/m	-12.91 dB	Pass
53.76 MHz	34.17 dBµV/m	40 dBµV/m	-5.83 dB	Pass
66.96 MHz	29.38 dBµV/m	40 dBµV/m	-10.62 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 9



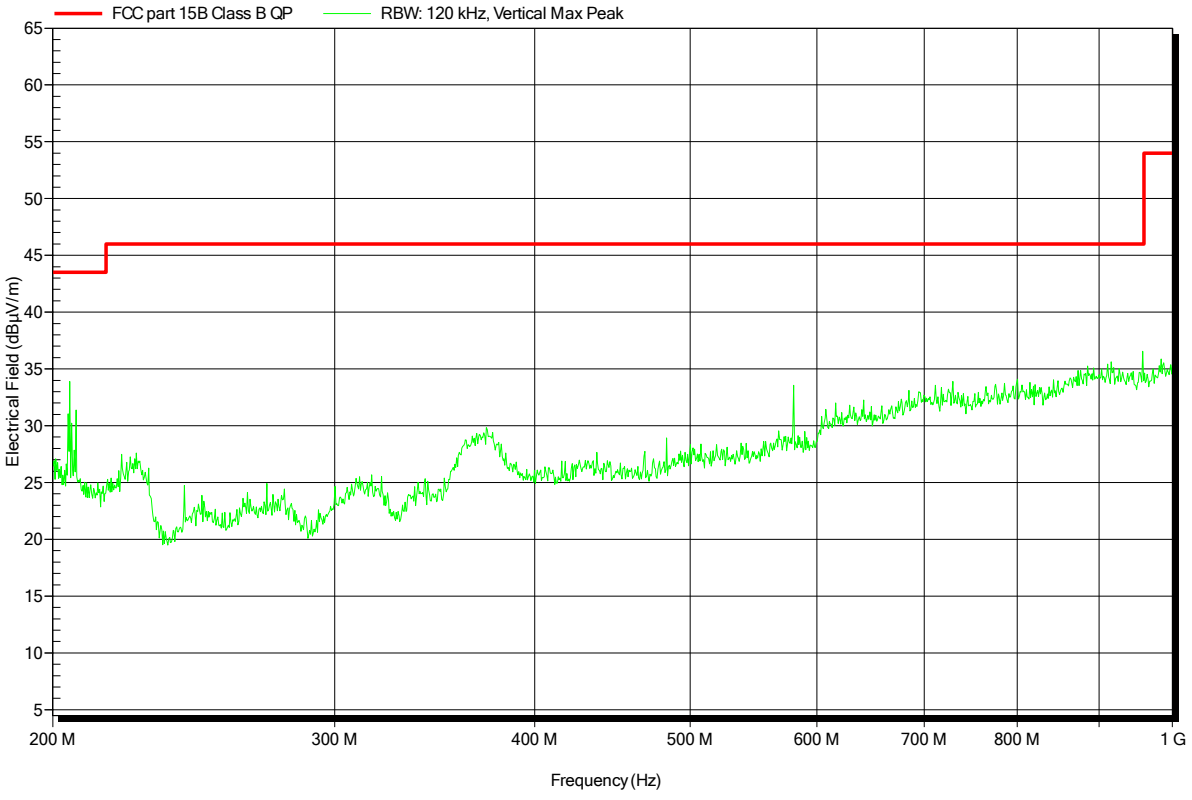
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
56.94 MHz	25.67 dBµV/m	40 dBµV/m	-14.33 dB	Pass
145.008 MHz	29.75 dBµV/m	43.5 dBµV/m	-13.75 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 17

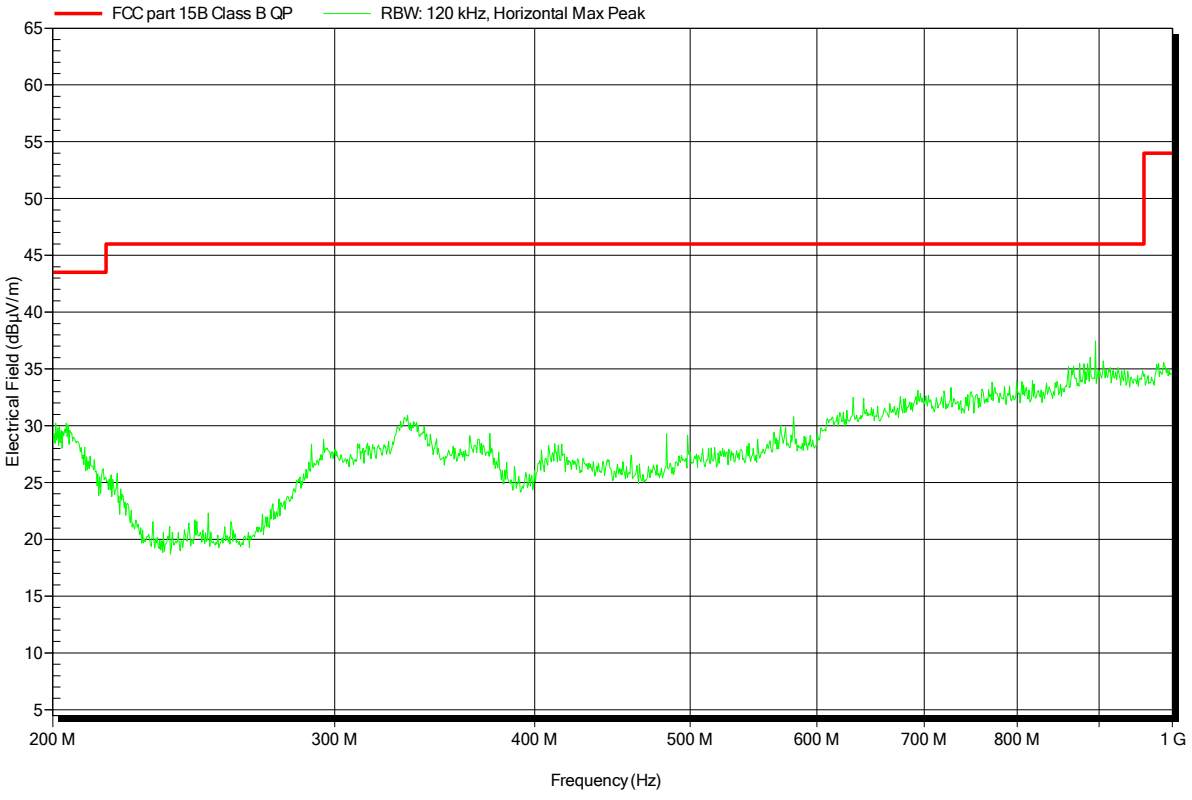


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 11

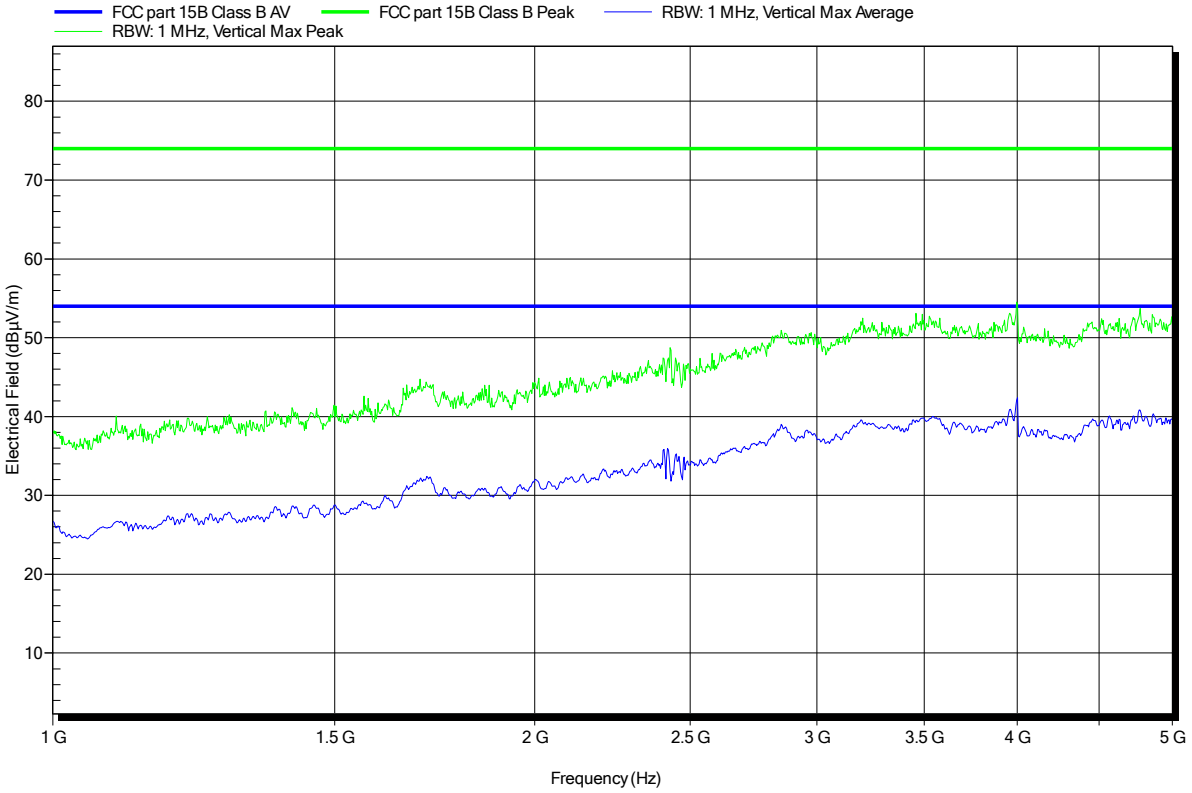


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 32

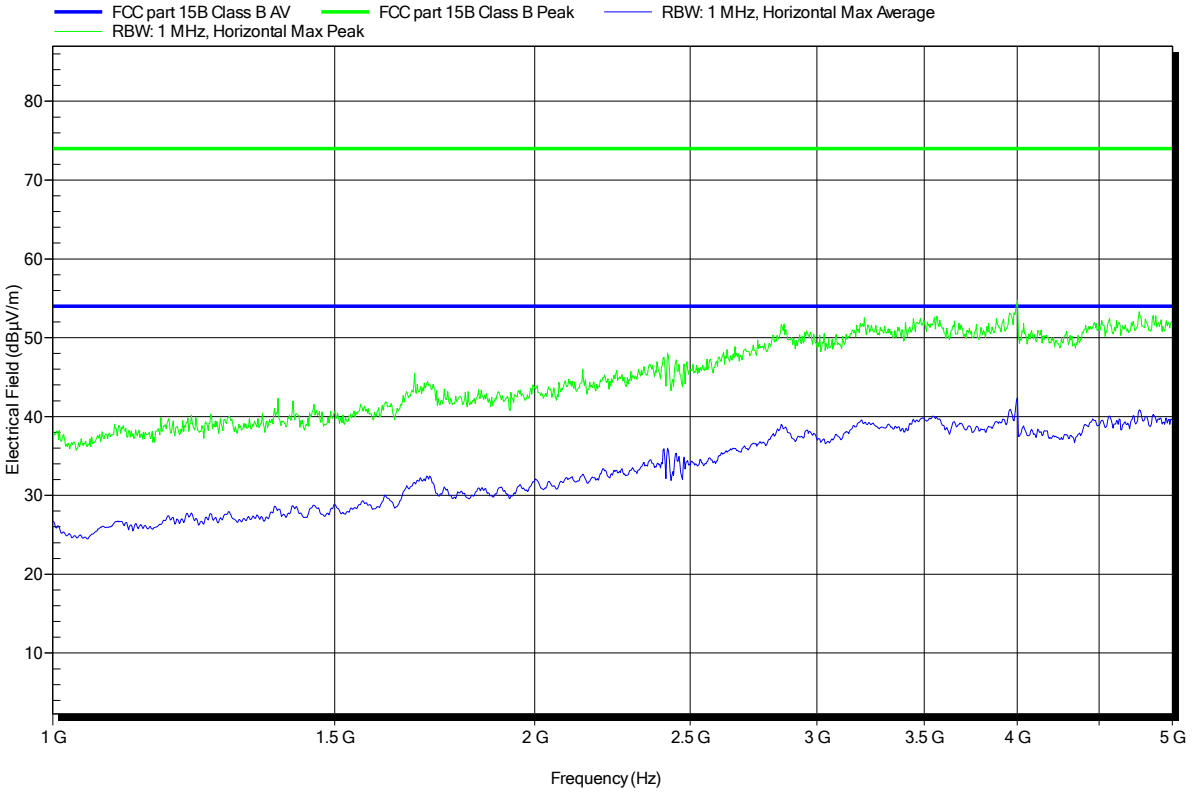


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 30

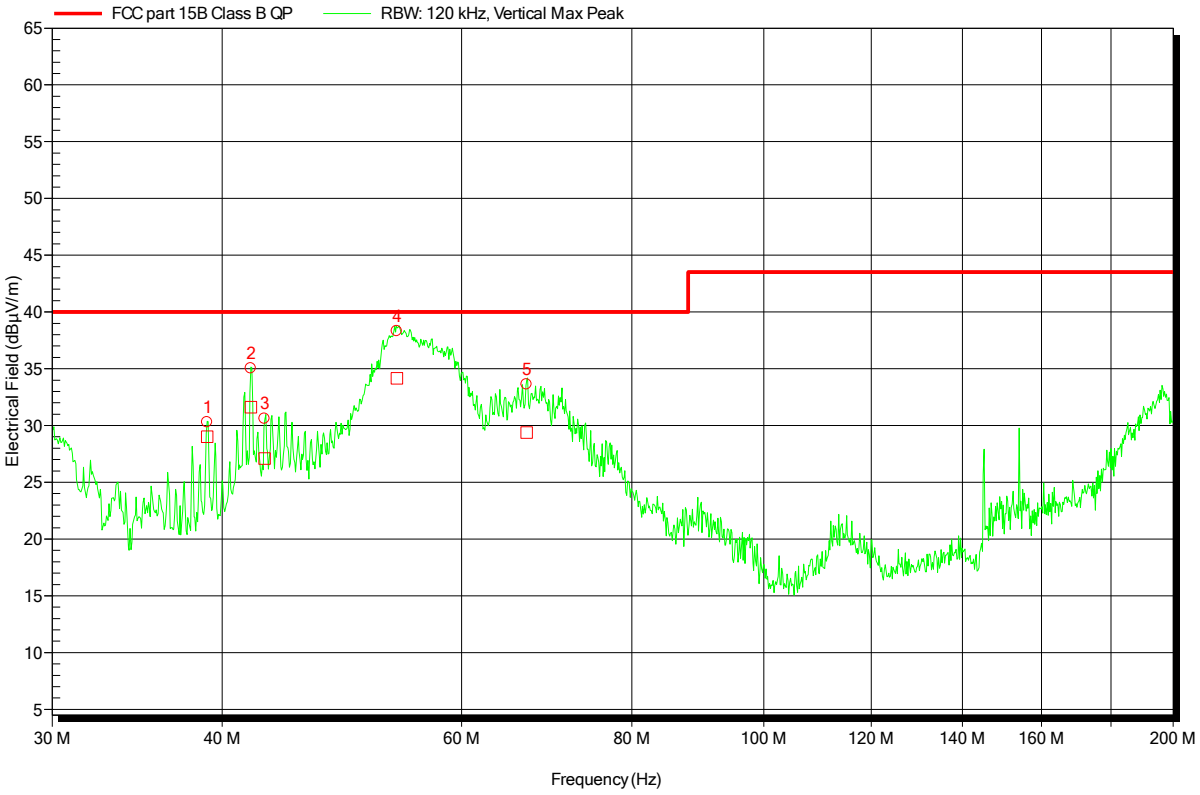


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 10



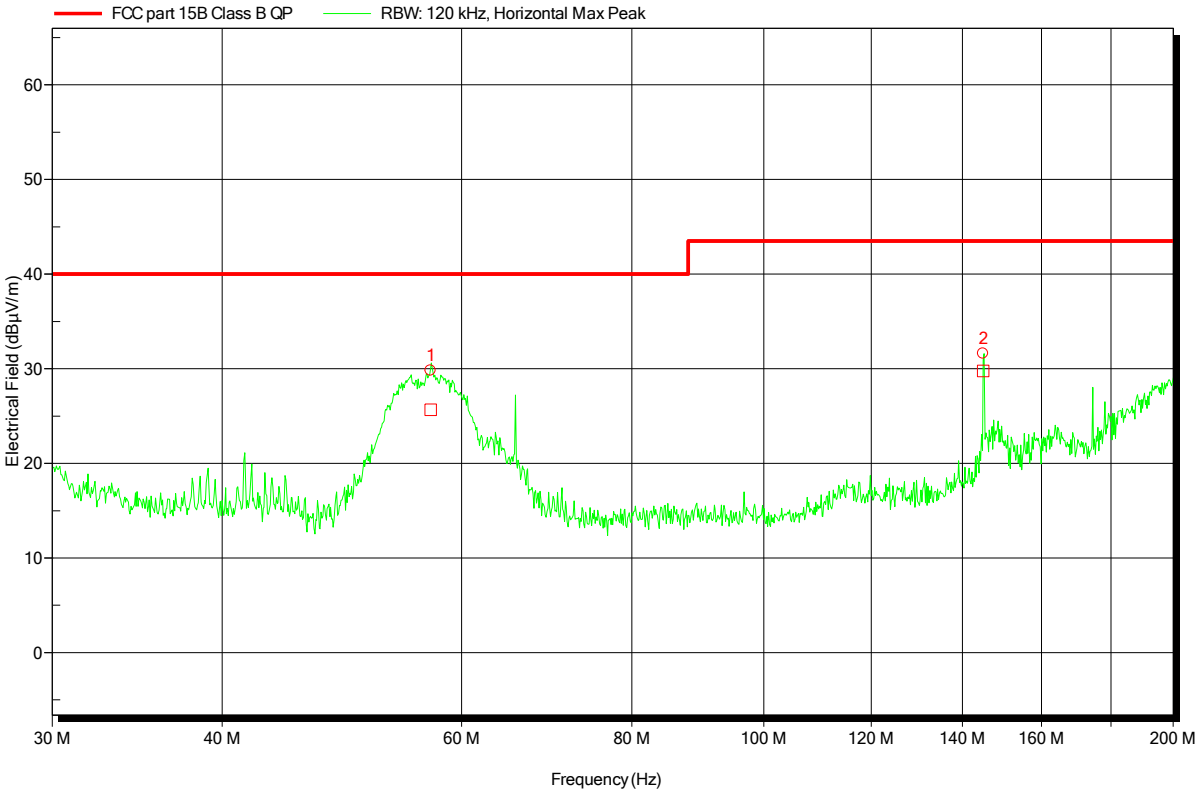
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
38.994 MHz	29 dBµV/m	40 dBµV/m	-11 dB	Pass
41.988 MHz	31.63 dBµV/m	40 dBµV/m	-8.37 dB	Pass
42.978 MHz	27.09 dBµV/m	40 dBµV/m	-12.91 dB	Pass
53.76 MHz	34.17 dBµV/m	40 dBµV/m	-5.83 dB	Pass
66.96 MHz	29.38 dBµV/m	40 dBµV/m	-10.62 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 9



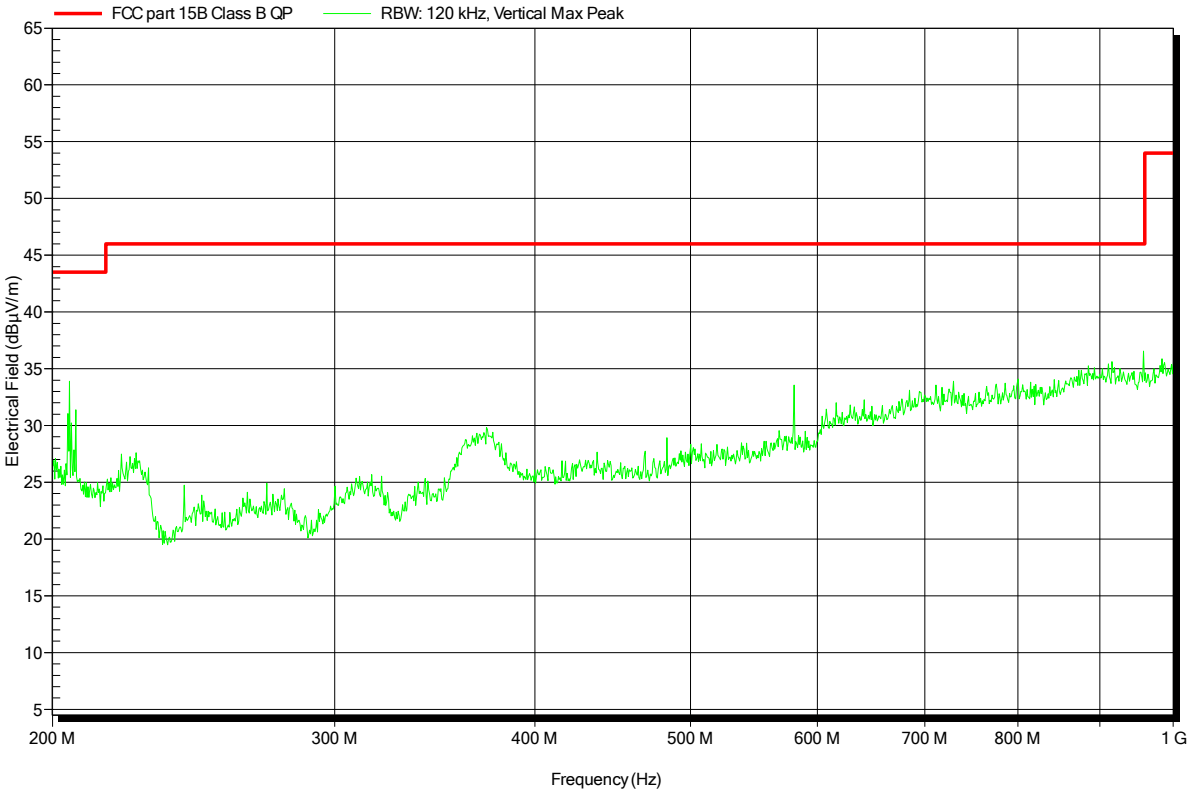
Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
56.94 MHz	25.67 dBµV/m	40 dBµV/m	-14.33 dB	Pass
145.008 MHz	29.75 dBµV/m	43.5 dBµV/m	-13.75 dB	Pass

Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 17

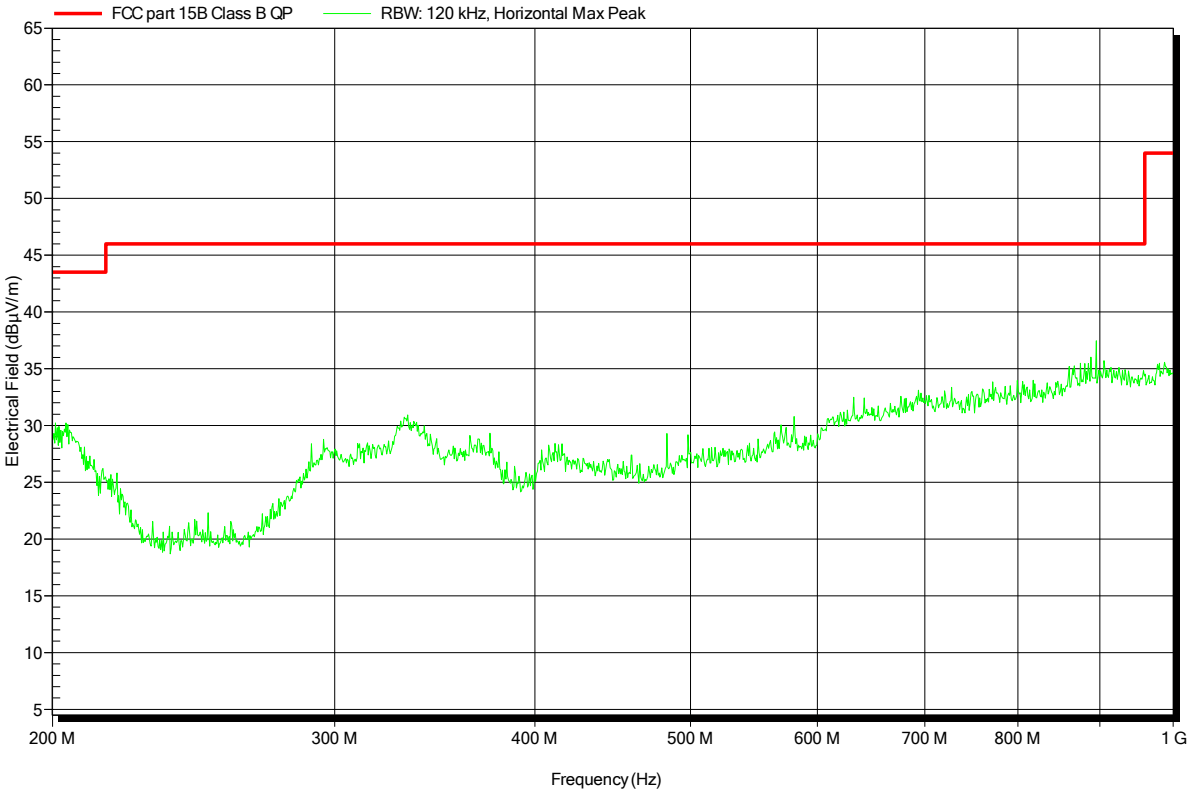


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 11

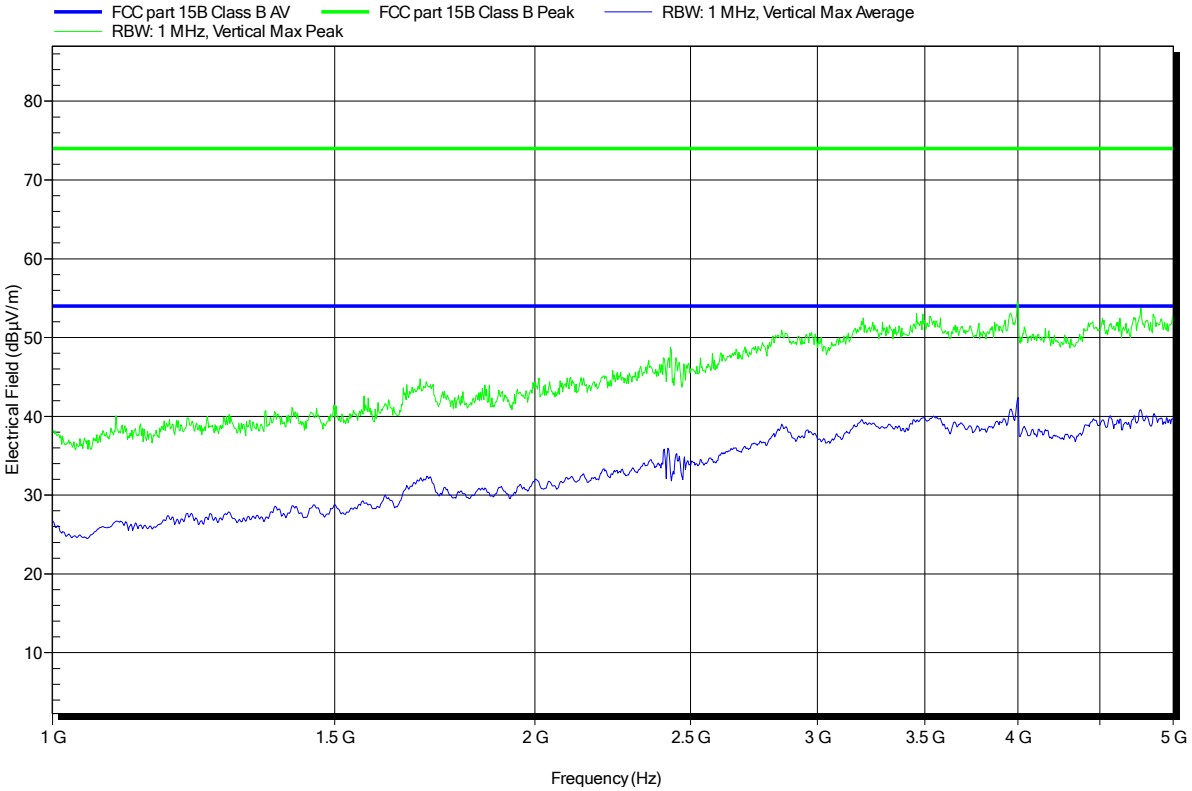


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 32

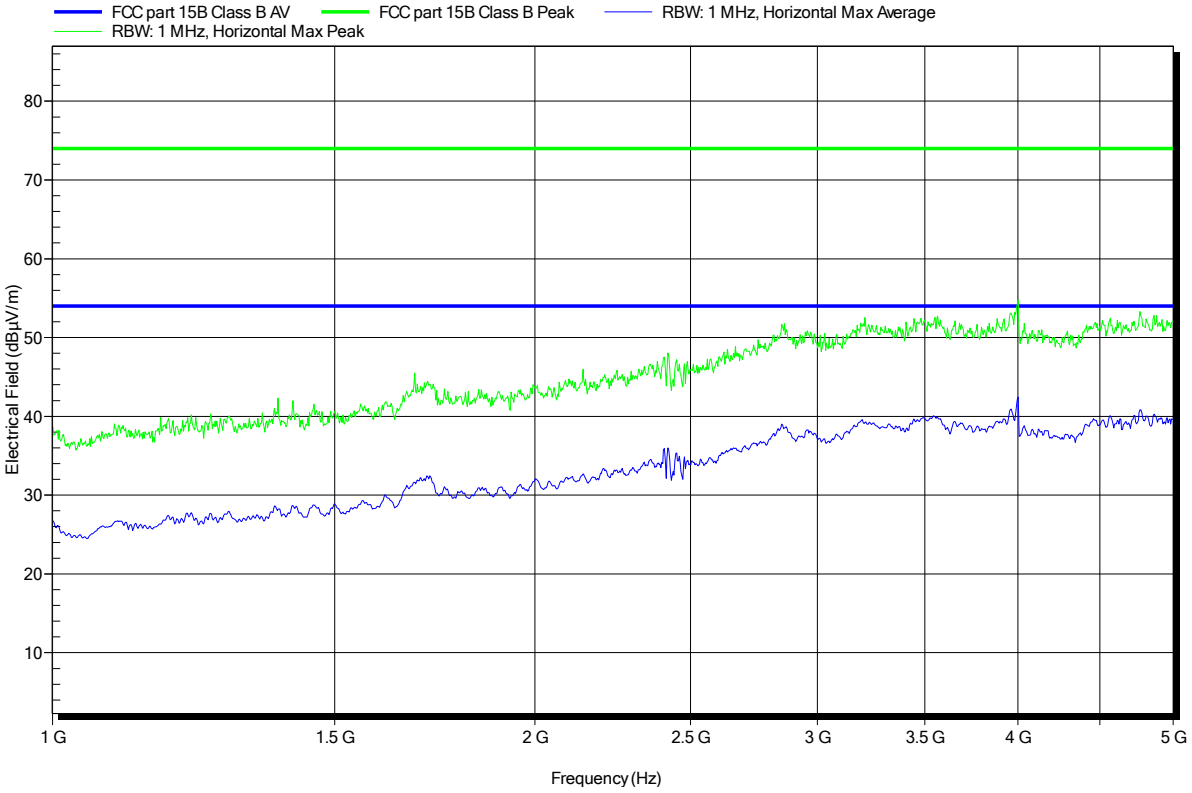


Spurious emissions under normal conditions according to FCC Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC(AC/DC-adapter)
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	3m
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 30

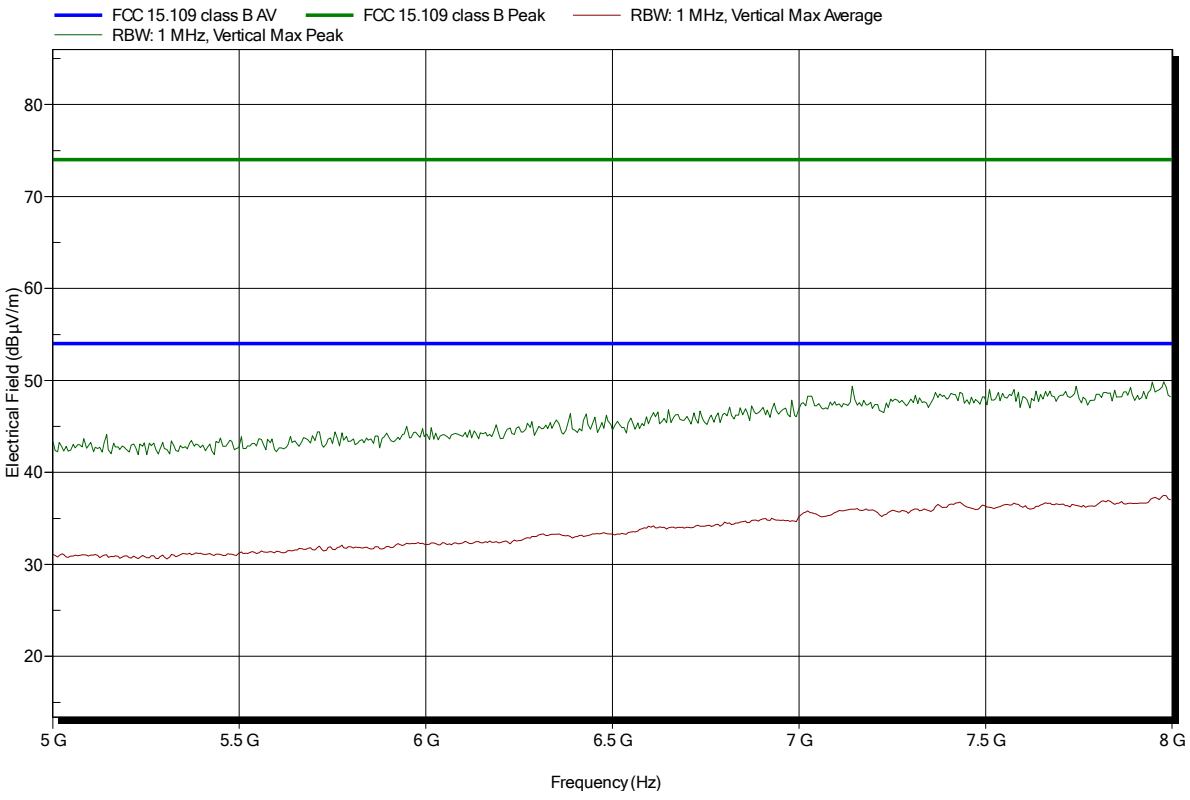


Spurious emissions according to FCC Part 15b

Project number: G0M-1406-3933

Applicant:	Kamstrup A/S
EUT Name:	READy US (walk-by-configuration)
Model:	xyz
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 23°C, Vnom: 13.5VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	3 m
Mode:	RX; charging + link + RX-mode
Test Date:	2014-09-08
Note:	

Index 36

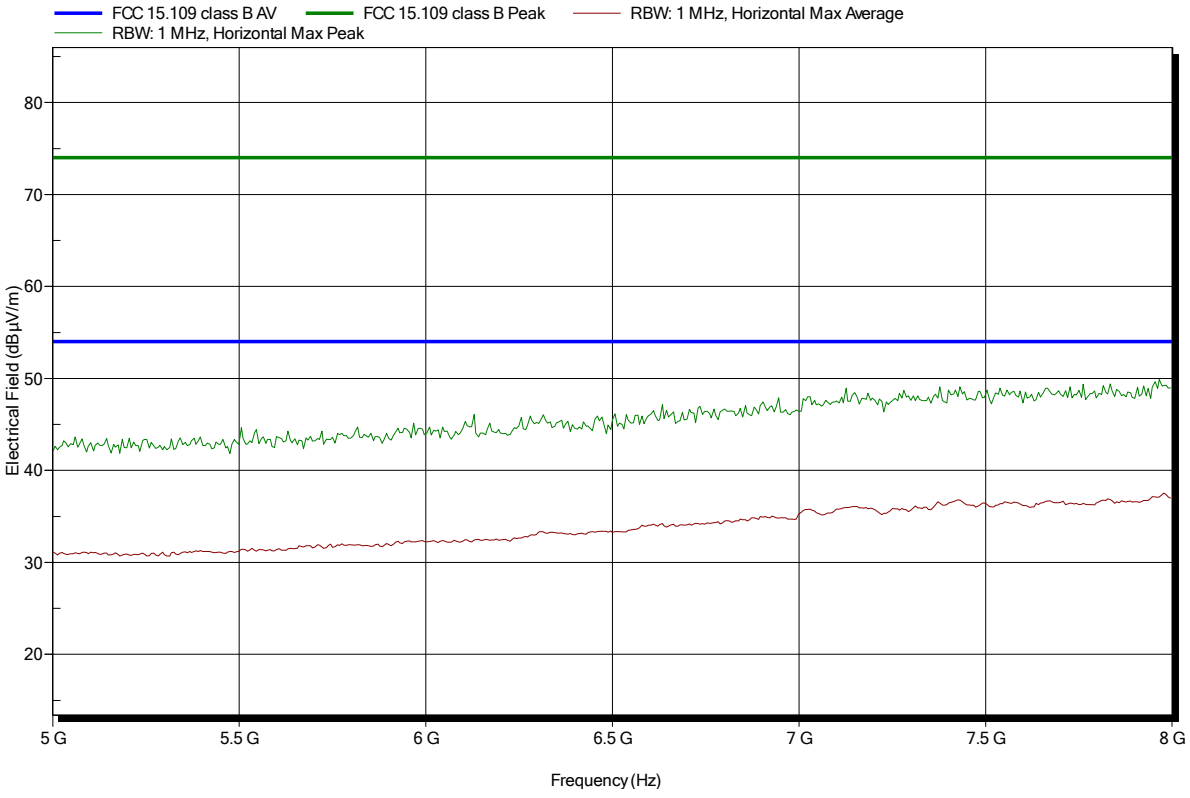


Spurious emissions according to FCC Part 15b

Project number: G0M-1406-3933

Applicant:	Kamstrup A/S
EUT Name:	READy US (walk-by-configuration)
Model:	xyz
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 23°C, Vnom: 13.5VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	3 m
Mode:	RX; charging + link + RX-mode
Test Date:	2014-09-08
Note:	

Index 35

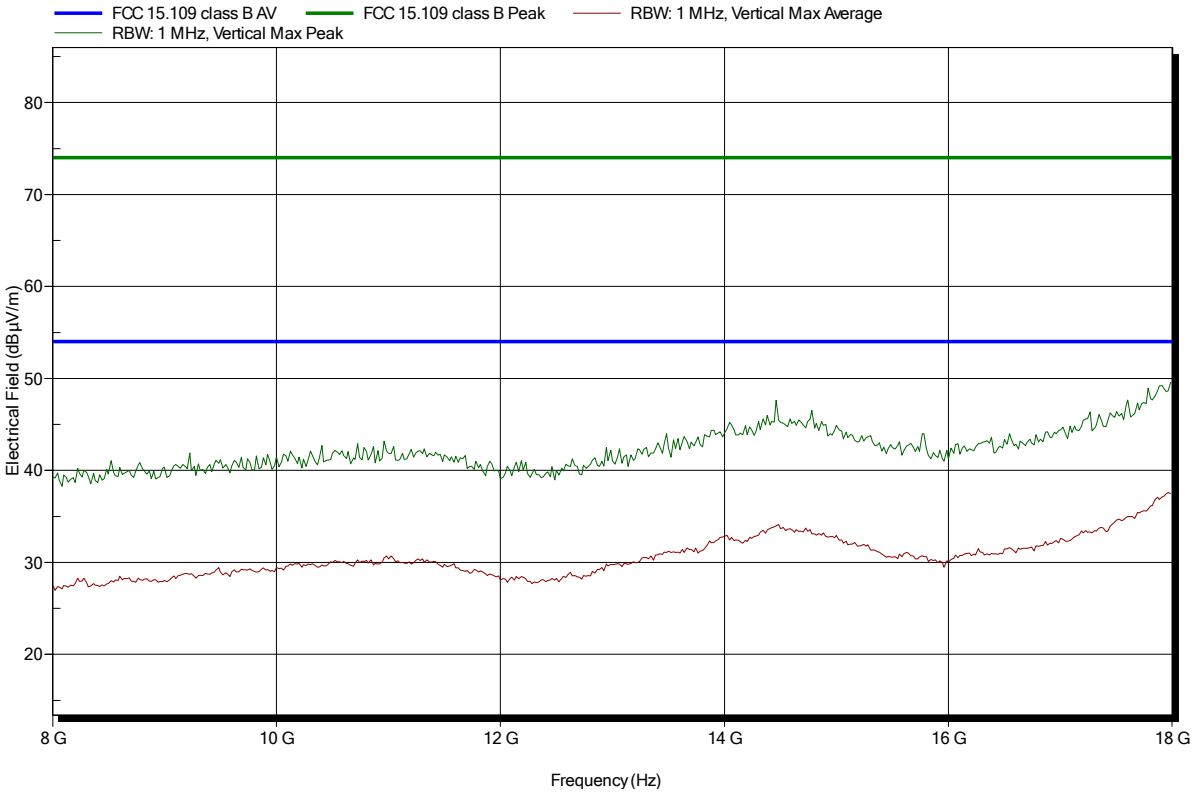


Spurious emissions according to FCC Part 15b

Project number: G0M-1406-3933

Applicant:	Kamstrup A/S
EUT Name:	READy US (walk-by-configuration)
Model:	xyz
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 23°C, Vnom: 13.5VDC
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; charging + link + RX-mode
Test Date:	2014-09-08
Note:	

Index 38

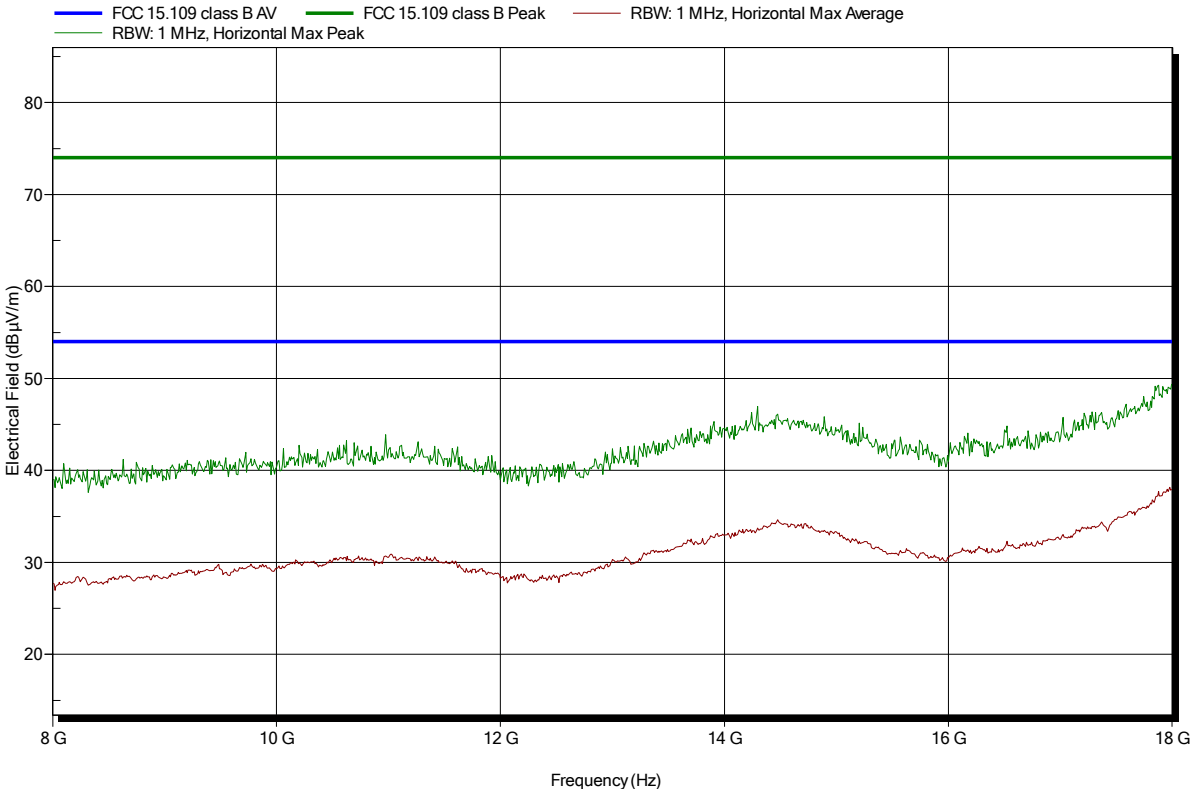


Spurious emissions according to FCC Part 15b

Project number: G0M-1406-3933

Applicant:	Kamstrup A/S
EUT Name:	READy US (walk-by-configuration)
Model:	xyz
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 23°C, Vnom: 13.5VDC
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; charging + link + RX-mode
Test Date:	2014-09-08
Note:	

Index 37

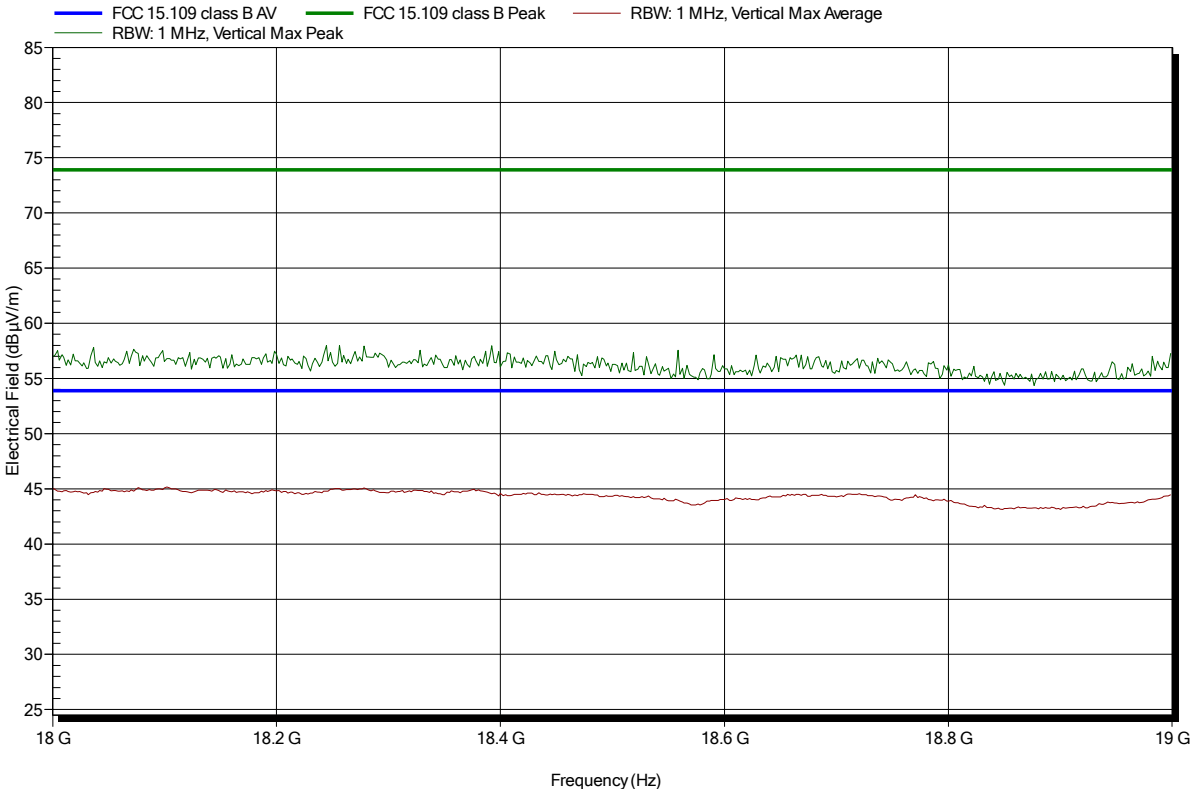


Spurious emissions according to FCC Part 15b

Project number: G0M-1406-3933

Applicant:	Kamstrup A/S
EUT Name:	READy US (walk-by-configuration)
Model:	xyz
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 23°C, Vnom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Vertical
Measurement distance:	1 m converted to 3m
Mode:	RX; charging + link + RX-mode
Test Date:	2014-09-08
Note:	

Index 40

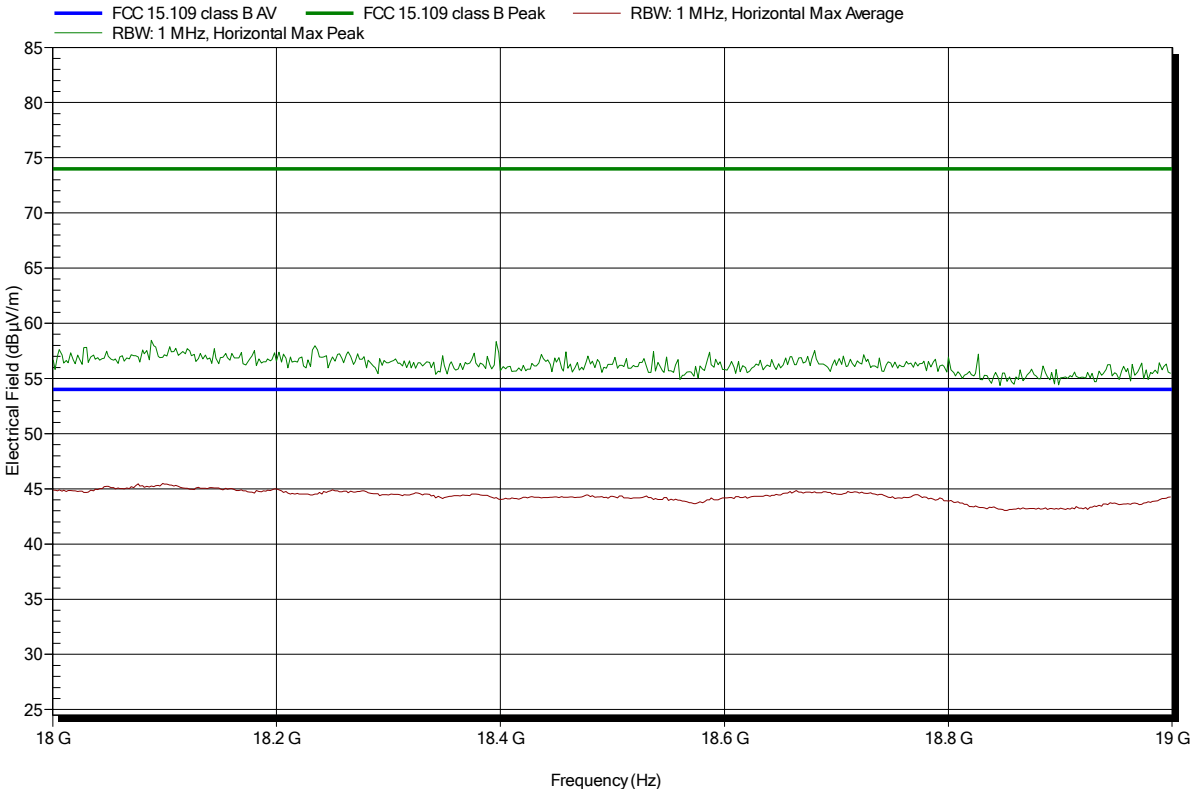


Spurious emissions according to FCC Part 15b

Project number: G0M-1406-3933

Applicant:	Kamstrup A/S
EUT Name:	READy US (walk-by-configuration)
Model:	xyz
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Test Conditions:	Tnom: 23°C, Vnom: 13.5VDC
Antenna:	Rohde & Schwarz HL 025, Horizontal
Measurement distance:	1 m converted to 3m
Mode:	RX; charging + link + RX-mode
Test Date:	2014-09-08
Note:	

Index 39



3.2 Test Conditions and Results – AC power line conducted emissions

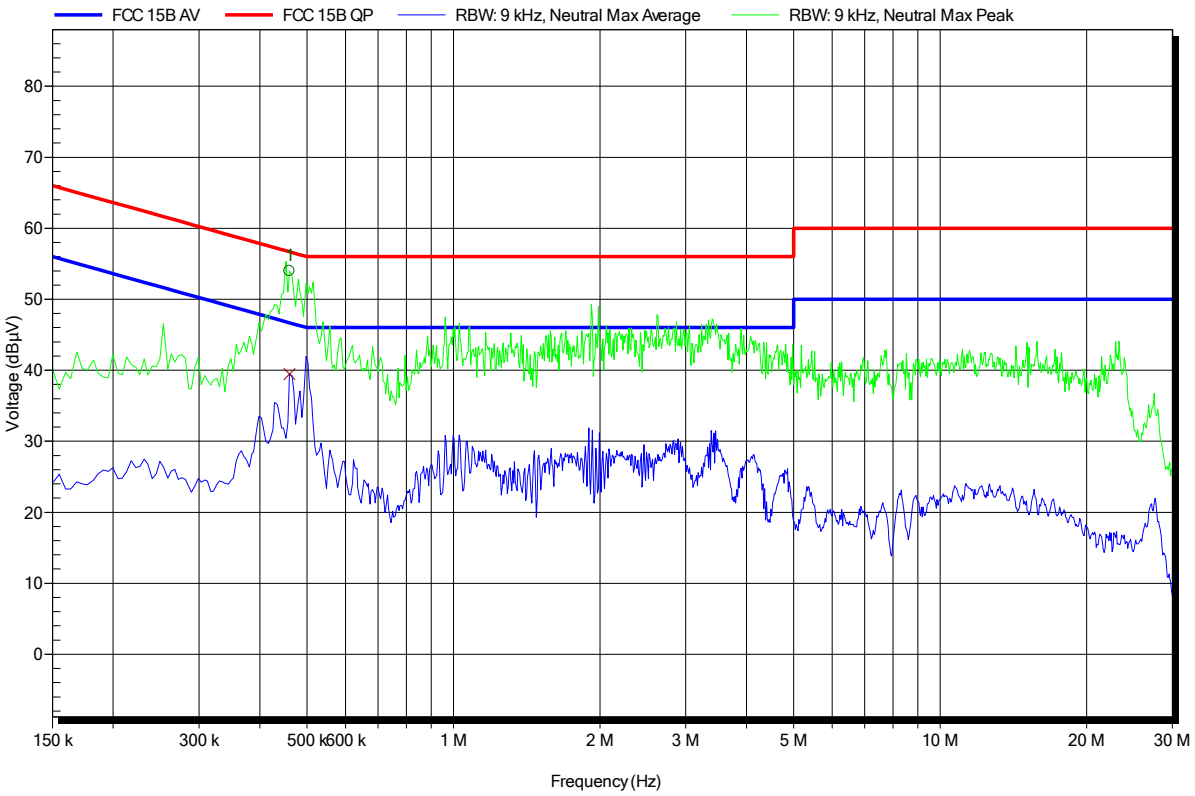
Conducted emissions acc. FCC 47 CFR 15.107 / IC RSS-Gen				**Verdict: PASS**
Laboratory Parameters:	Required prior to the test	During the test		
Ambient Temperature	15 to 35 °C	23 °C		
Relative Humidity	30 to 60 %	41 %		
Test according referenced standards	Reference Method			
	ANSI C63.4			
Fully configured sample scanned over the following frequency range	Frequency range			
	0.15 MHz to 30 MHz			
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	2			
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 Part 15b

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC
LISN:	ESH2-Z5 N
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 33



Frequency
460.5 kHz

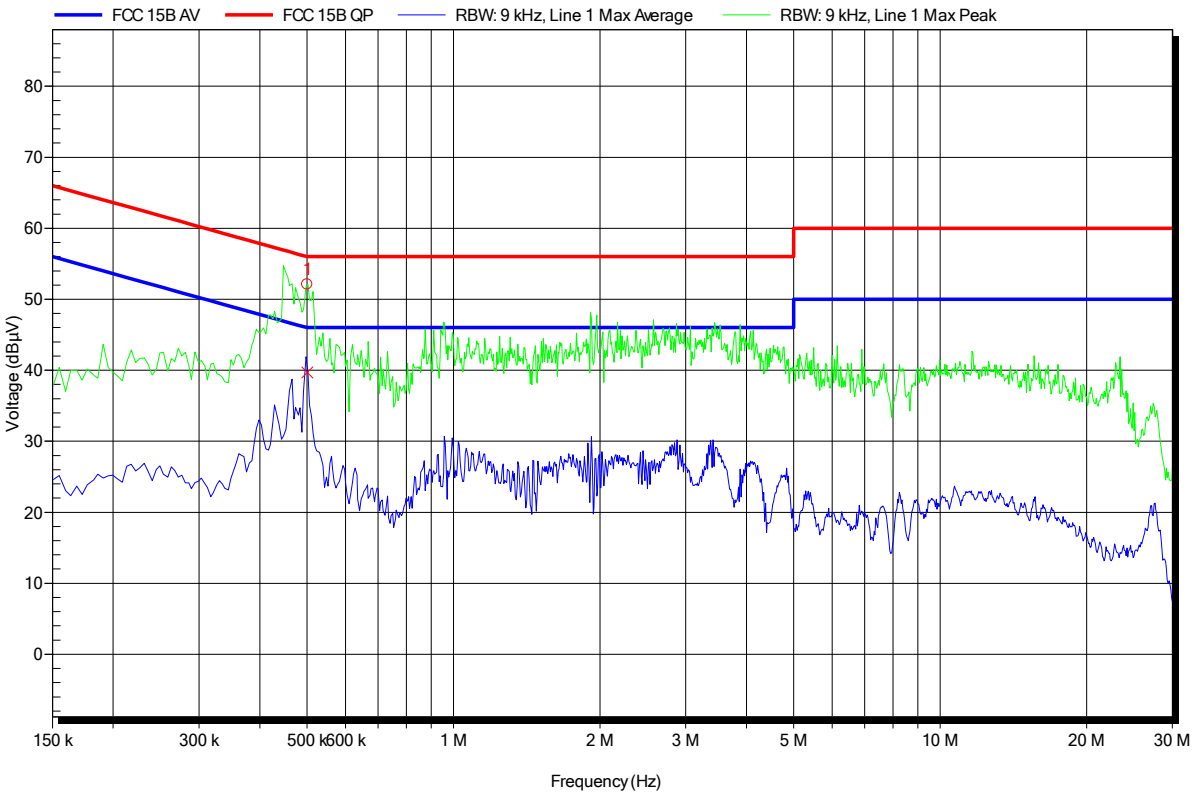
Frequency	Average	Average Limit	Average Difference	Average Status
460.5 kHz	39.46 dBµV	46.68 dBµV	-7.23 dB	Pass

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

Project number: G0M-1406-3933

Manufacturer:	Kamstrup A/S
EUT Name:	READy Converter
Model:	READy US (walk-by-configuration)
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Pflug
Test Conditions:	Tnom: 23°C, Unom: 120 VAC
LISN:	ESH2-Z5 L
Mode:	charging + link + RX-mode var. 4
Test Date:	2014-09-08
Note:	

Index 34



Frequency
501 kHz

Frequency	Average	Average Limit	Average Difference	Average Status
501 kHz	39.67 dBµV	46 dBµV	-6.33 dB	Pass