





EMC TEST REPORT FCC 47 CFR Part 15B, ISED ICES-003 Issue 7	
Report Reference No	G0M-2105-9817-EF0115B-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	    <p> A2LA - Registration number: 1983.01 (ISED) ISED wireless device testing laboratory: CN 3470A FCC Filed Test Laboratory, Reg.-No.: 96970 DAkkS - Registration number : D-PL-12092-01-02 </p>
Applicant	Leica Geosystems AG
Address	Heinrich-Wild-Strasse 9435 Heerbrugg SWITZERLAND
Test Specification Standard(s)	47 CFR Part 15 Subpart B ISED ICES-003 Issue 7 ANSI C63.4:2014+A1:2017
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	KIWI Module
Model(s)	BLK ARC
Additional Model(s)	None
Brand Name(s)	Leica
Hardware Version(s)	3.0
Software Version(s)	2.01
FCC-ID	RFD-BLKARC
IC	3177A-BLKARC
Test Result	PASSED

Possible test case verdicts:		
required by standard but not tested	N/T	
not required by standard	N/R	
required by standard but not appl. 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	2021-06-01	
Report:		
Compiled by	Stephan Liebich	
Tested by (+ signature) (Responsible for Test)	Stephan Liebich	
Approved by (+ signature) (Test Lab Technician)	Matthias Handrik	
Date of Issue	2021-11-09	
Total number of pages	117	
General Remarks:		
<p>The test results presented in this report relate only to the object tested.</p> <p>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.</p> <p>This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.</p>		
Additional Comments:		
None		

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
T _{NOM}	Nominal operating temperature
V _{NOM}	Nominal supply voltage

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2021-11-09	Initial Release	--

REPORT INDEX

1	Equipment (Test Item) Under Test.....	6
1.1	Equipment Ports.....	7
1.2	Equipment Photos - Internal.....	8
1.3	Equipment Photos - External.....	15
1.4	Support Equipment.....	21
1.5	Operational Modes.....	21
1.6	EUT Configuration.....	21
1.7	Sample emission level calculation.....	22
2	Result Summary.....	23
2.1	Test Conditions and Results - Radiated emissions acc. to ANSI C63.4.....	24
2.2	Test Conditions and Results - Conducted emissions acc. to ANSI C63.4.....	101
3	Measurement Uncertainty	117

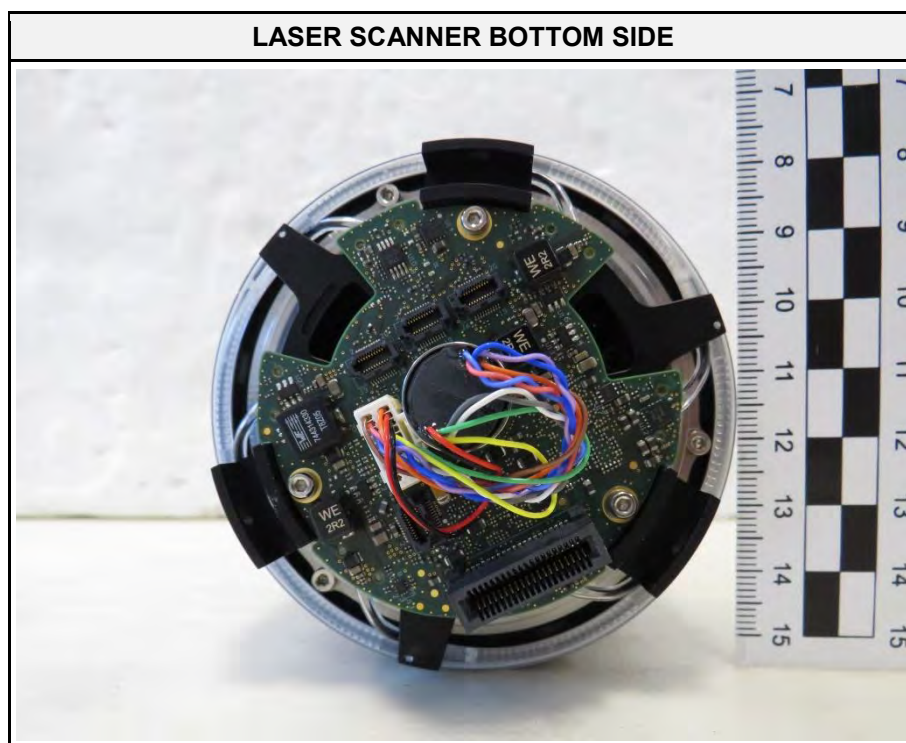
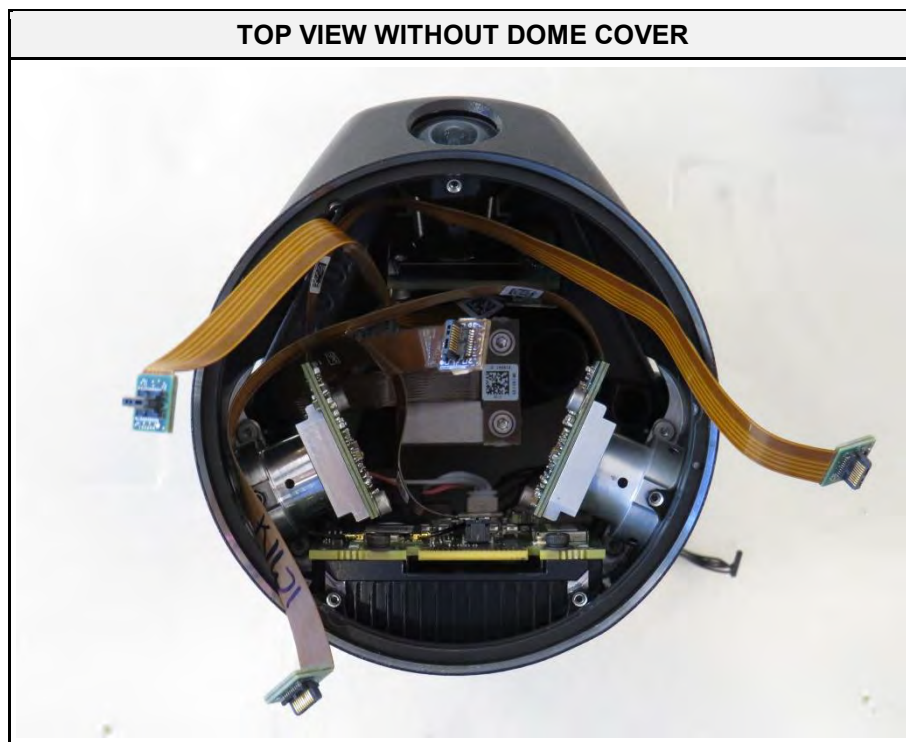
1 Equipment (Test Item) Under Test

Description	KIWI Module The Leica BLK ARC is an autonomous laser scanning module for robots. It is designed to be integrated with robotic carriers to enable autonomous mobile laser scanning with minimal or no human intervention. Users can simply plan a scan path and set BLK ARC off on its own to scan autonomously.	
Model	BLK ARC	
Additional Model(s)	None	
Brand Name(s)	Leica	
Serial Number(s)	3630028	
Sample-ID	34987	
Hardware Version(s)	3.0	
Software Version(s)	2.01	
EUT Dimensions [cm]	18.4 x 8.0	
FCC-ID	RFD-BLKARC	
IC	3177A-BLKARC	
Class	Class B	
Equipment type	Table top	
Highest internal frequency [MHz]	5825 (WiFi 5.0 GHz) 500 (Clock frequency)	
Radio Module 1	Type	Bluetooth Basic Rate (BR) / Bluetooth Low Energy (LE) / WiFi 2.4 GHz / WiFi 5.0 GHz
	Model	NFA324A-12H32
	Manufacturer	Foxconn
	FCC-ID	PPD-QCNFA324
	IC	4104A-QCNFA324
Supply Voltage	V _{NOM}	12 V DC by external power supply 15 V DC via dedicated AC/DC-Adaptor
AC/DC-Adaptor	Model	GEV276 (AEL40US15 –XE0557)
	Vendor	XP Power
	Input	100 V – 240 V AC
	Output	15 V DC
Manufacturer	Leica Geosystems AG Heinrich-Wild-Strasse 9435 Heerbrugg SWITZERLAND	

1.1 Equipment Ports

Name	Type	Attributes	Comment
AC Mains	AC	Count: 1 Direction: In Max. cable length [m]: 3 Connected to outdoor: No Shielded: No Service only: No	Port of dedicated AC/DC-Adaptor
DC Mains	DC	Count: 1 Direction: In Max. cable length [m]: 2 Connected to outdoor: No Shielded: No Service only: No	Port of EUT
USB	IO	Count: 1 Direction: IO Max. cable length [m]: 0.77 Connected to outdoor: No Shielded: Yes Service only: No	Data transmission to Tablet or PC, Cable shield was connected on both sides
Description:			
AC	AC mains power input/output port		
DC	DC power input/output port		
IO	Input/Output port		
WNP	Wired network port		
NE	Non-electrical port		

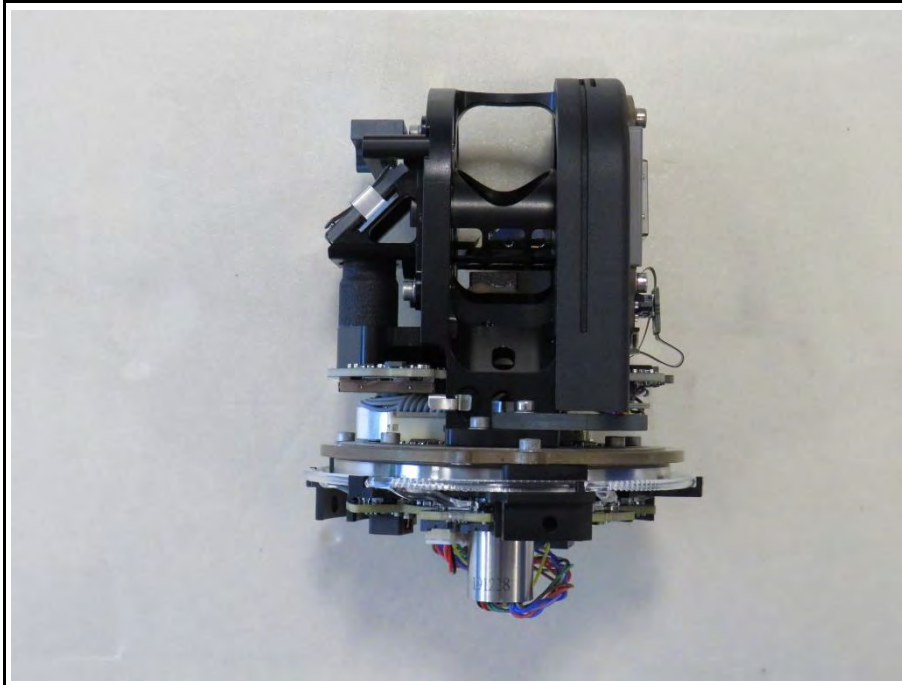
1.2 Equipment Photos - Internal



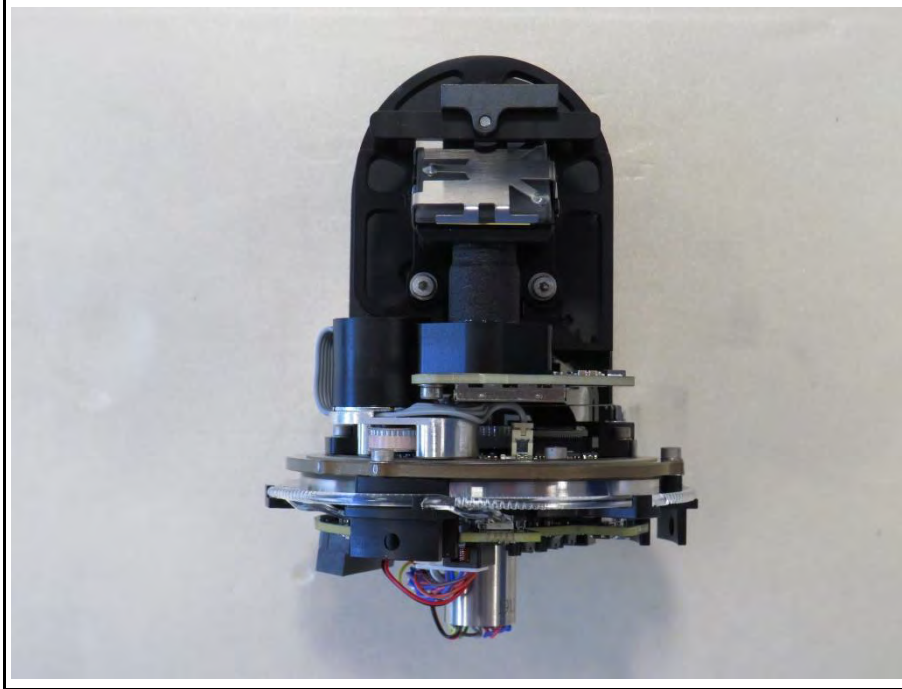
LASER SCANNER FRONT SIDE



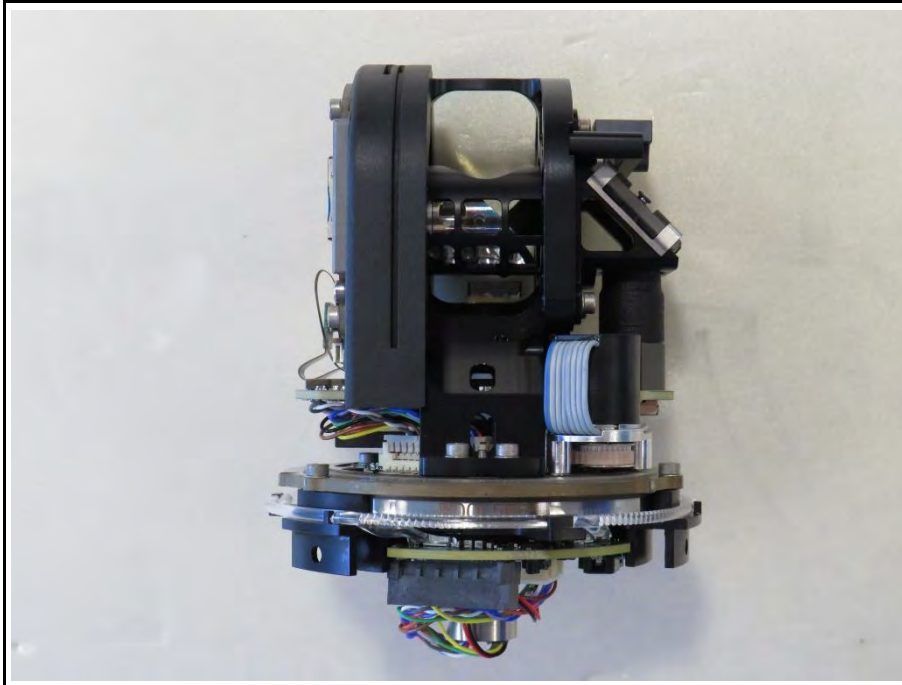
LASER SCANNER LEFT SIDE



LASER SCANNER REAR SIDE



LASER SCANNER RIGHT SIDE



LASER SCANNER TOP SIDE



CONNECTIONBOARD TOP SIDE



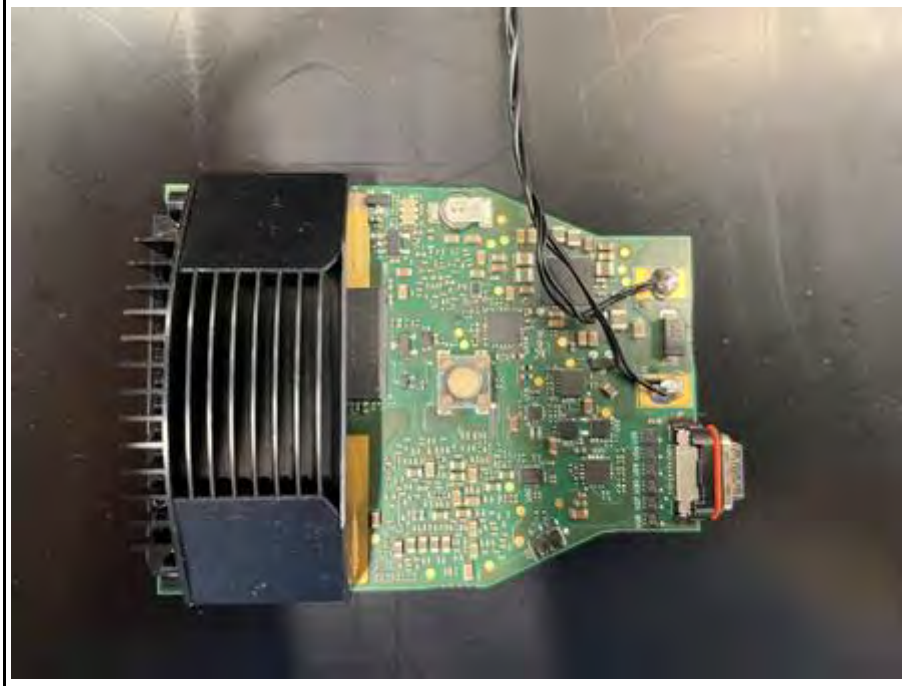
CONNECTIONBOARD BOTTOM SIDE



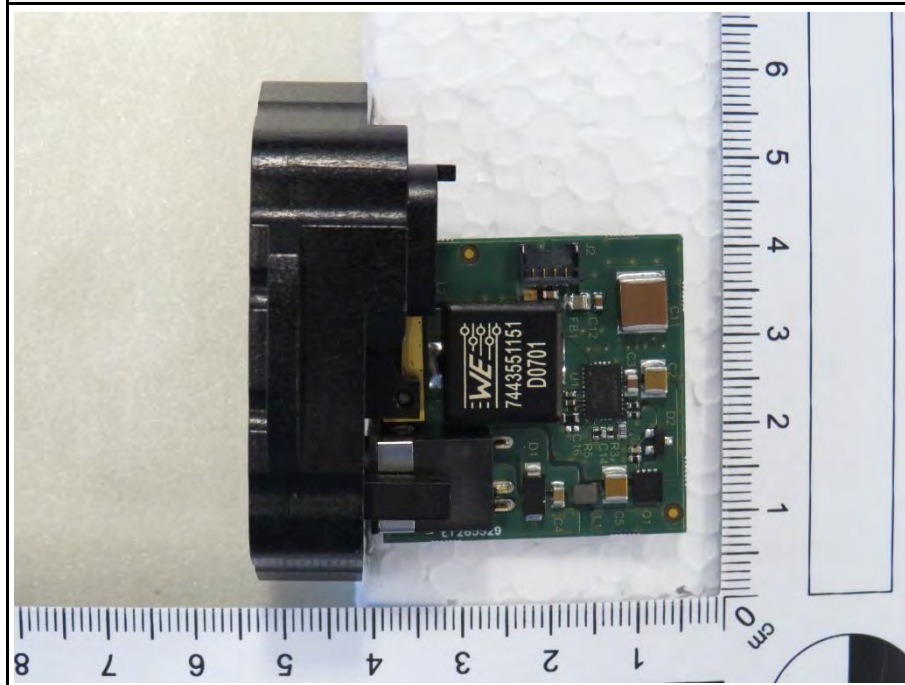
PROCESSORBOARD TOP SIDE



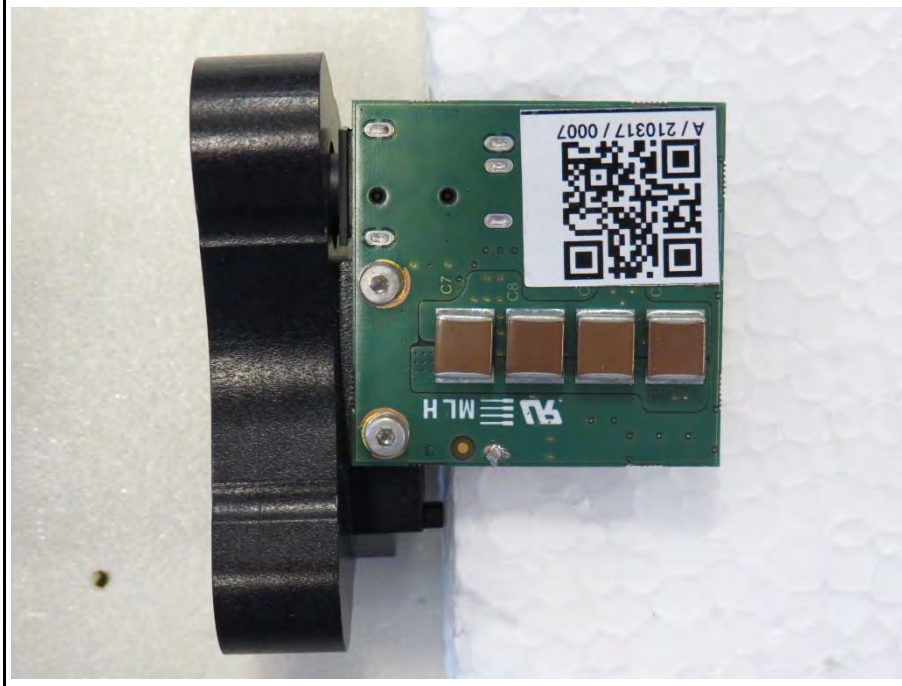
PROCESSORBOARD BOTTOM SIDE



POWERBOARD TOP SIDE



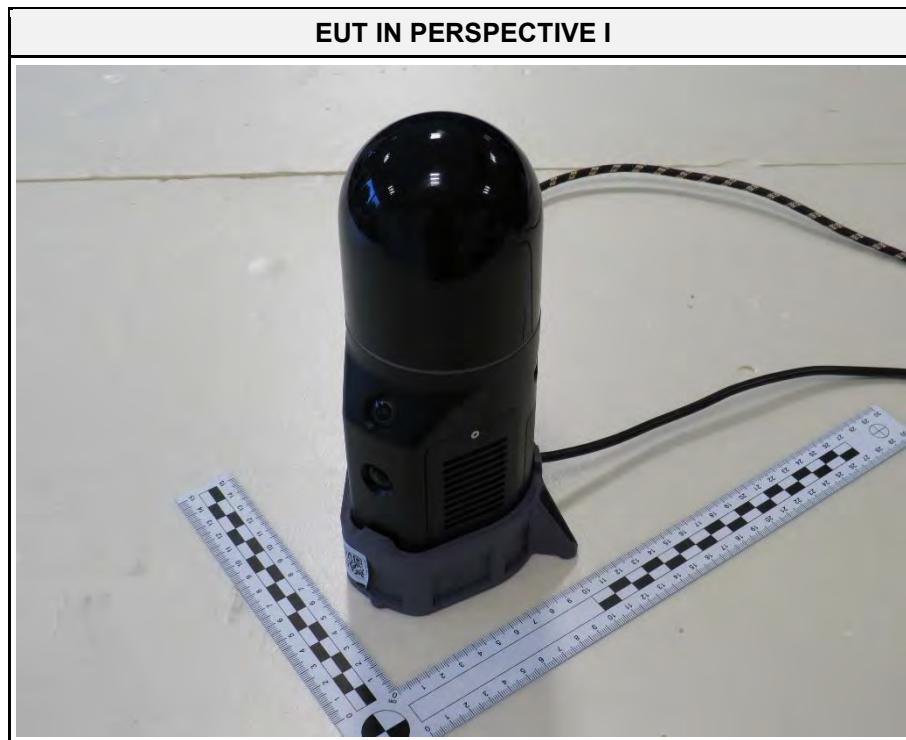
POWERBOARD BOTTOM SIDE

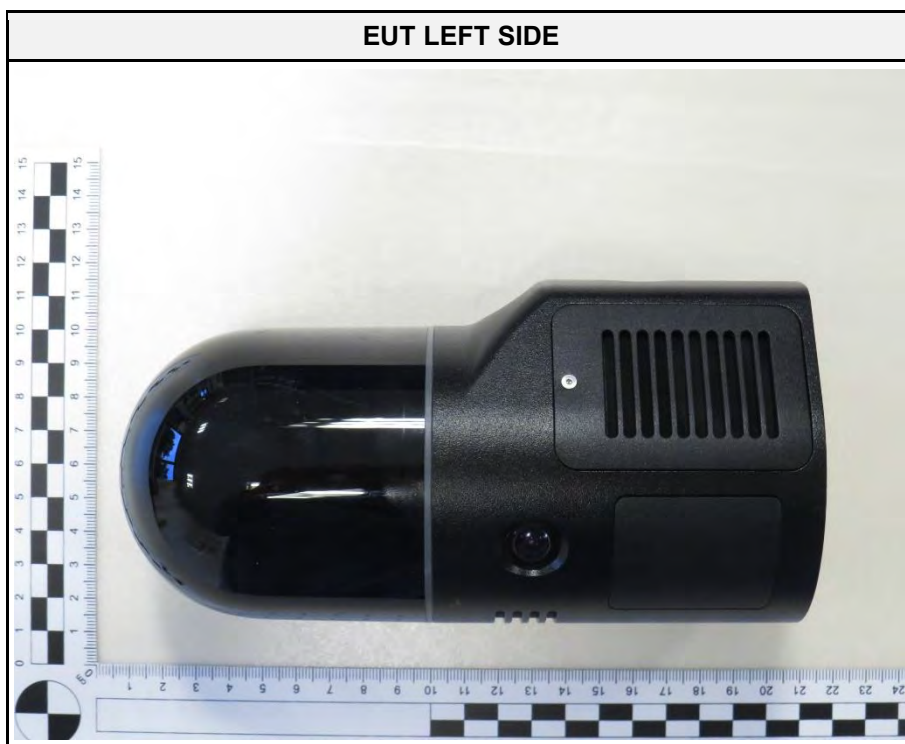
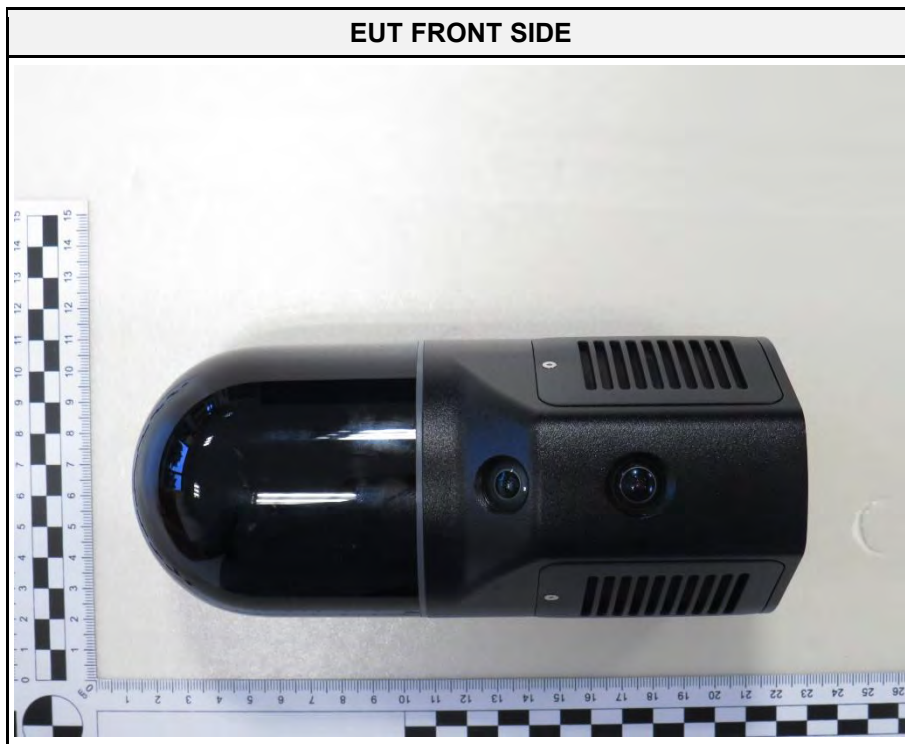


WiFi ANTENNA

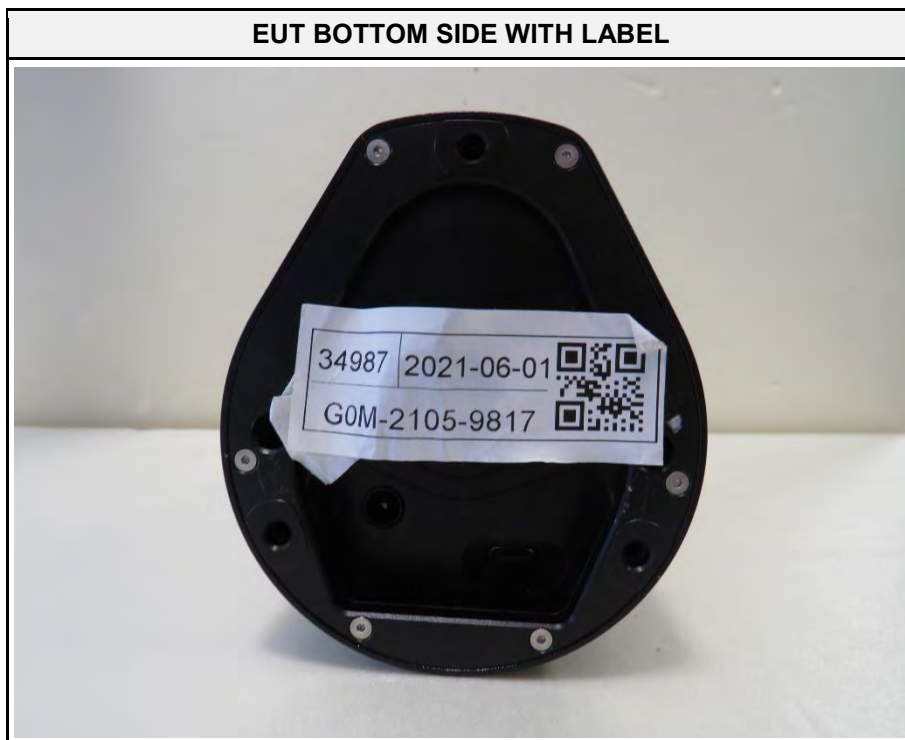
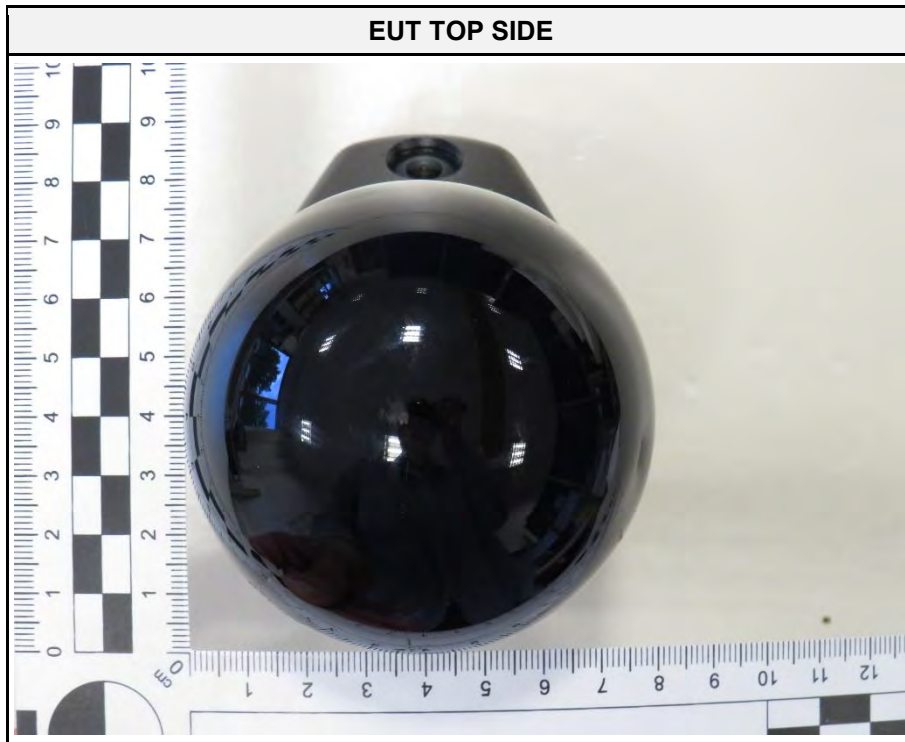


1.3 Equipment Photos - External









EUT BOTTOM SIDE



EUT WITH SUPPORT EQUIPMENT I



1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE/MON	Laptop	acer	Spin 1	Customer Support Equipment
SW	Testsoftware	Leica Geosystems	20210621_remote_scanner.exe	Customer Support Equipment
CBL	USB Cable	Leica Geosystems	unspecified	Customer Support Equipment; USB-A to USB-C90° cable; length = 0.77 m
CBL	Power Cable	Leica Geosystems	unspecified	Customer Support Equipment; Power Cable with DC female plugs and 90° connector
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
MON	Monitoring Equipment			
CBL	Connecting Cable			
SW	Software			
Comment: --				

1.5 Operational Modes

Mode #	Description
1	Scanning activated + cameras on + data streaming via USB connection + WiFi-2.4 GHz Access Point connection + Bluetooth on but not connected
2	Data streaming via WiFi-5 GHz connection + Bluetooth on but not connected
3	Scanning on + cameras on + data streaming via USB connection
Comment: --	

1.6 EUT Configuration

Configuration #	Description
1	EUT is powered by external laboratory power supply unit. EUT is connected with Laptop via USB und WiFi connection.
2	EUT is powered by external laboratory power supply unit. EUT is connected with Laptop via WiFi connection.
3	EUT is powered by external laboratory power supply unit. EUT is connected with Laptop via USB connection.
4	EUT is powered by dedicated AC/DC-Adaptor. Dedicated AC/DC-Adaptor is powered by external laboratory power supply unit. EUT is connected with Laptop via USB und WiFi connection.
5	EUT is powered by dedicated AC/DC-Adaptor. Dedicated AC/DC-Adaptor is powered by external laboratory power supply unit. EUT is connected with Laptop via WiFi connection.
6	EUT is powered by dedicated AC/DC-Adaptor. Dedicated AC/DC-Adaptor is powered by external laboratory power supply unit. EUT is connected with Laptop via USB connection.
Comment: --	

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 analyser in dBµV. Any external preamplifiers used are taken into account through internal analyser 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 analyser. 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:

$$\text{Reading on Analyser (dB}\mu\text{V)} + \text{A.F. (dB/m)} = \text{Net field strength (dB}\mu\text{V/m)}$$

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:

$$\text{Limit (dB}\mu\text{V/m)} = 20 \cdot \log(\mu\text{V/m})$$

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/m	= 47.5 dBµV/m	:	47.5 dBµV/m - 57.0 dBµV/m	= -9.5 dB

2 Result Summary

FCC 47 CFR Part 15B, ISED ICES-003 Issue 7				
Reference	Requirement	Reference Method	Result	Remarks
Emission				
FCC 15.109 ICES-003, 3.2.2	Radiated emissions	ANSI C63.4:2014 +A1:2017	PASS	--
FCC 15.107 ICES-003, 3.2.1	AC power line conducted emissions	ANSI C63.4:2014 +A1:2017	PASS	--
Comment:				

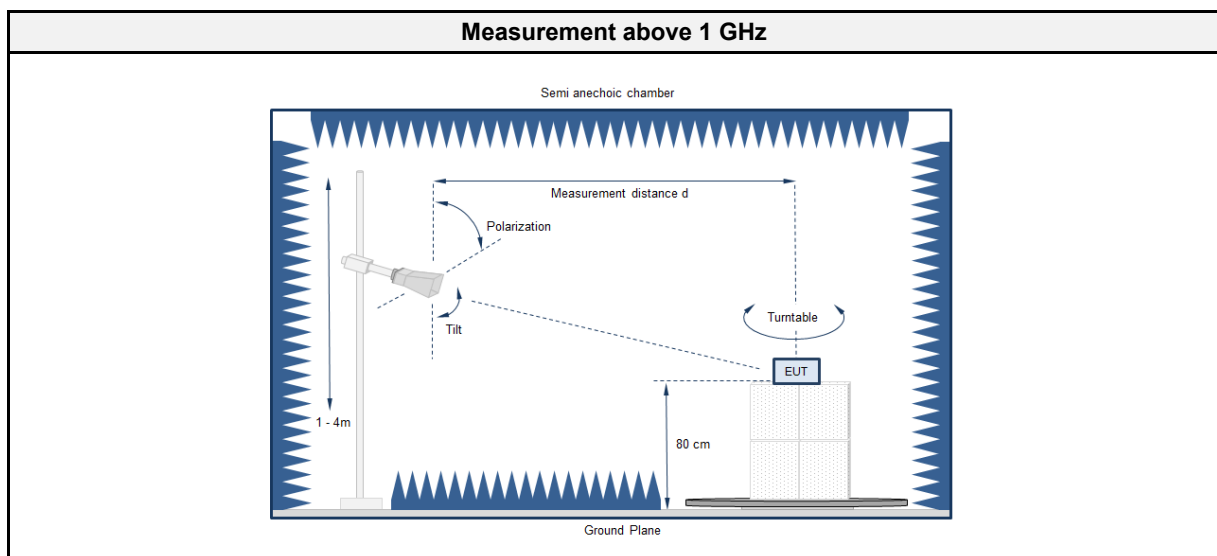
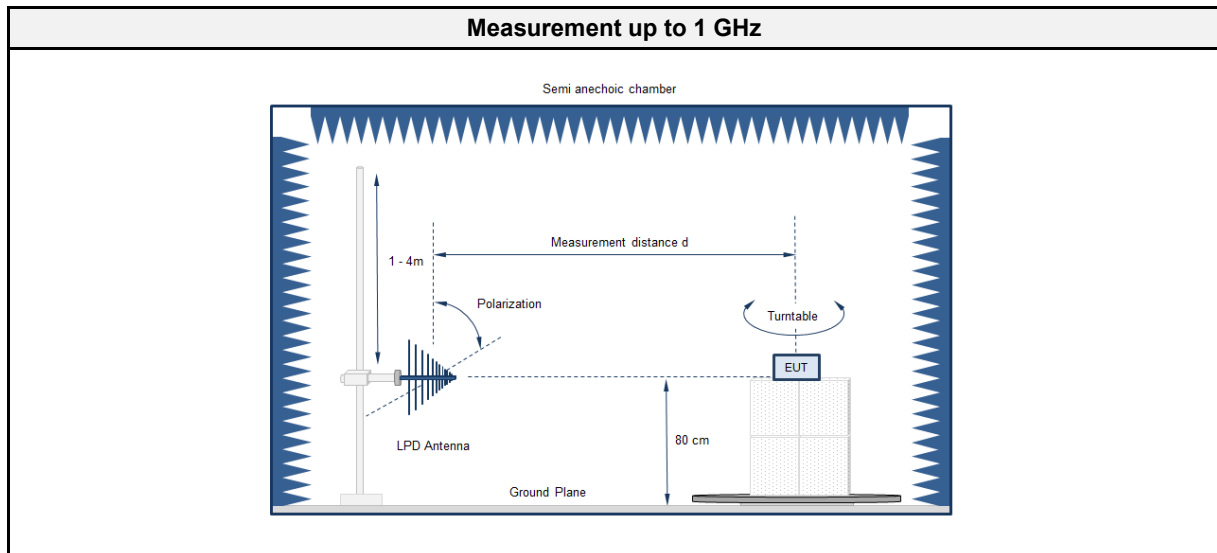
Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

2.1 Test Conditions and Results - Radiated emissions acc. to ANSI C63.4

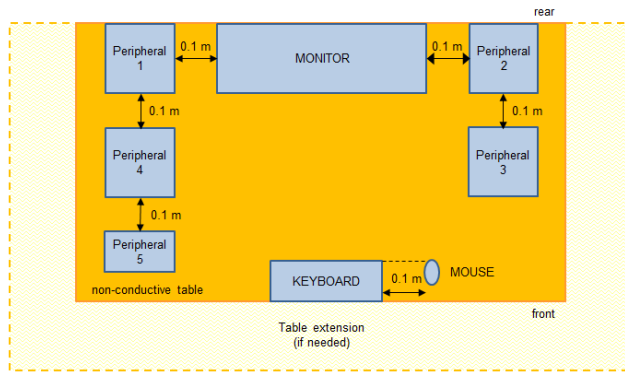
2.1.1 Information

Test Information	
Reference	FCC 15.109, ICES-003, 3.2.2
Reference method	ANSI C63.4:2014+A1:2017 Section 8
Equipment class	Class B
Equipment type	Table top
Highest internal frequency [MHz]	5825
Measurement range	30 MHz to 35000 MHz
Temperature [°C]	20 – 24
Humidity [%]	44 – 53
Operator	Stephan Liebich
Date	2021-08-13 to 2021-08-19

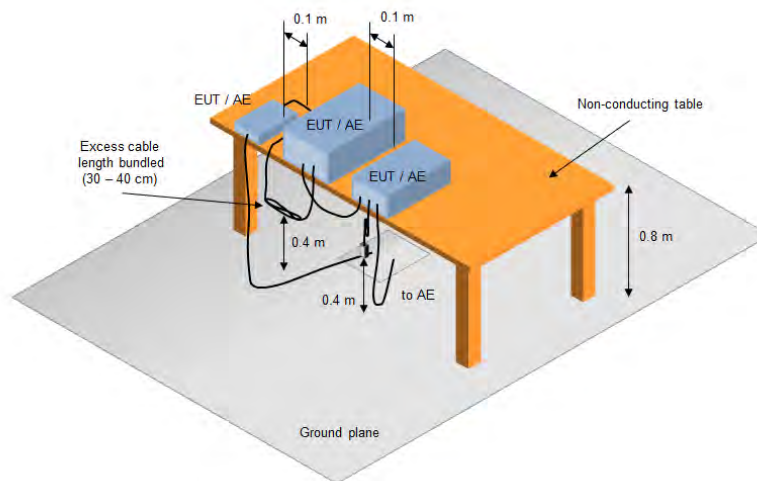
2.1.2 Setup



Equipment placement - Table top



Test Setup



2.1.3 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	Radimation	2020.1.8

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic chamber	Frankonia	AC1	EF00062	2021-02	2024-02
EMI Test Receiver	Keysight	N9038A-526/WXP	EF01070	2021-07	2022-07
Biconical Antenna	R&S	HK 116	EF00030	2021-05	2024-05
LPD Antenna	R&S	HL 223	EF00187	2019-05	2022-05
Horn Antenna	Schwarzbeck	BBHA9120D	EF00018	2019-10	2022-10
40GHz Standard Standard Gain Horn Antenna with Amplifier	Flann Microwave Ltd	22240-25 Amp. CBL26402075	EF00301	2019-12	2022-12
40GHz High Gain Antenna	Amplifier Research	AT4560	EF00302	2021-06	2023-06
True RMS Multimeter	Fluke	Fluke-117	EF00877	2020-08	2021-08
Programmable AC Source	Chroma ATE Inc.	61604	EF01068	2021-07	2022-07
Climatic Sensor	Embedded Data Systems, LLC.	2800100000254 17E	EF01054	2021-03	2022-03

2.1.4 Procedure

Exploratory measurement
<ol style="list-style-type: none"> The EUT was placed on a non-conductive table at a height of 0.8m. The EUT and support equipment, if needed, were set up to simulate typical usage. Cables, of type and length specified by the manufacturer, were connected to at least one port of each type and were terminated by a device or simulating load of actual usage. The antenna was placed at a distance of 3 or 10 m. The received signal was monitored at the measurement receiver. This procedure has to be performed in both antenna polarizations, horizontal and vertical. The arrangement of the equipment with the maximum emission level is shown on the setup picture at item 2.1.2

Final measurement
<ol style="list-style-type: none"> The EUT was placed on a 0.8 m non-conductive table at a 3 m distance from the receive antenna. The antenna output was connected to the measurement receiver. A biconical antenna was used for the frequency range 30 – 200 MHz, a logarithmic periodical antenna was used for the frequency range from 200 – 1000 MHz. Above one 1 GHz a Double Ridged Broadband Horn antenna was used. The antenna was placed on an adjustable height antenna mast. The EUT and cable arrangement were based on the exploratory measurement results. Emissions were maximized at each frequency by rotating the EUT and adjusting the receive antenna height and polarization. The maximum values were recorded. The test data of the worst-case conditions were recorded and shown on the next pages.

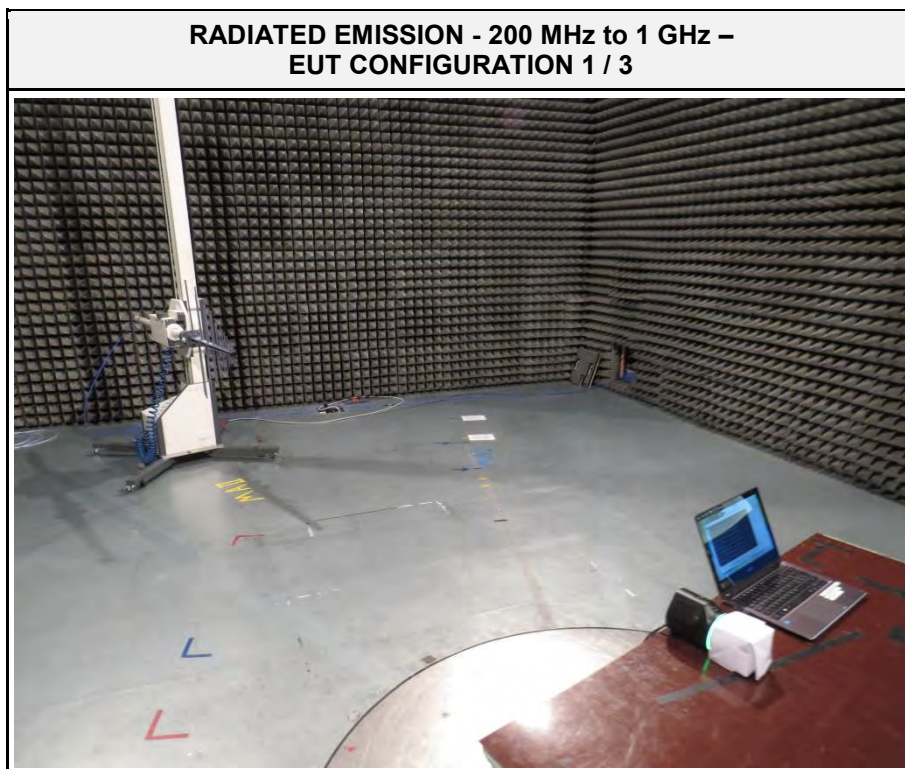
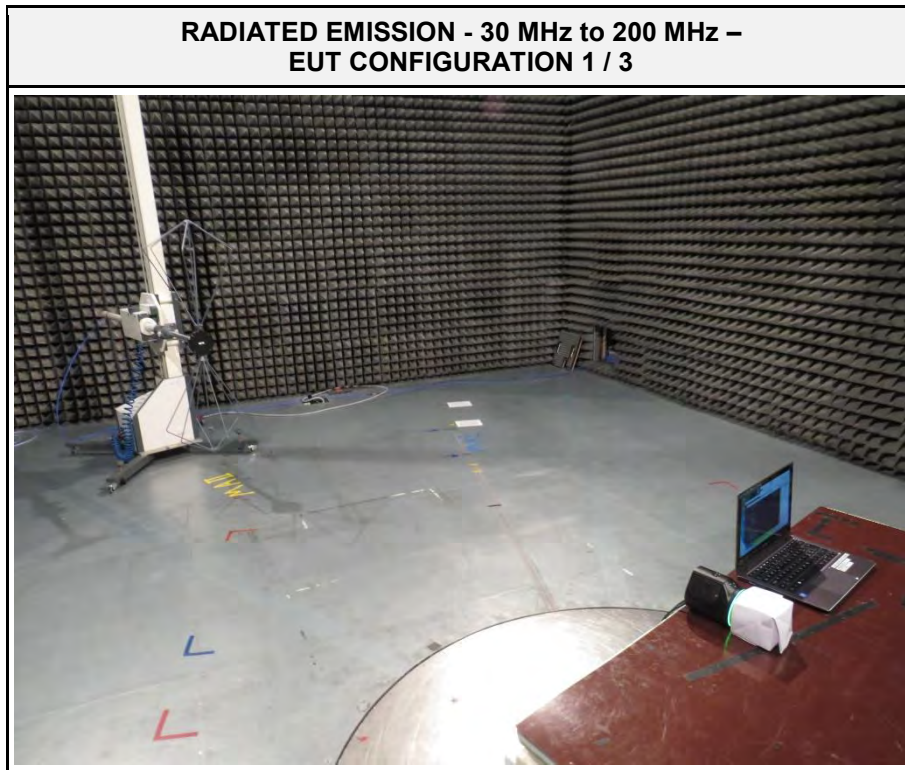
2.1.5 Limits

Class B @ 3 m		
Frequency [MHz]	Detector	Limit [dB μ V/m]
30 - 88	Quasi-peak	40
88 - 216	Quasi-peak	43.5
216 - 960	Quasi-peak	46
960 - 1000	Quasi-peak	54
> 1000	Peak	74
	Average	54

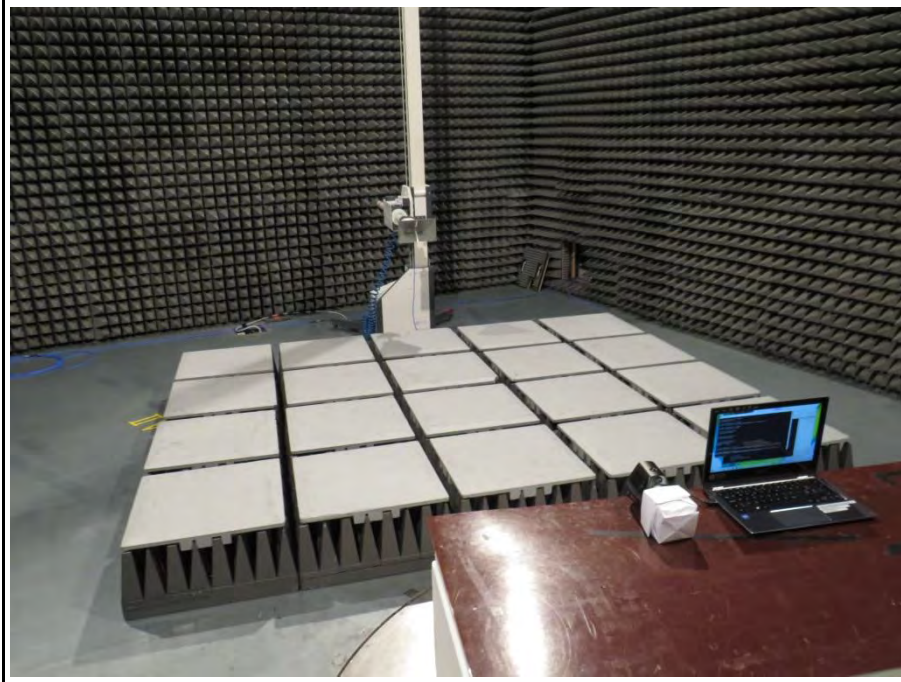
2.1.6 Results

Test Results			
Operational mode	EUT Configuration	Verdict	Remark
1	1	PASS	12 V DC
2	2	PASS	12 V DC
3	3	PASS	12 V DC
1	4	PASS	120 Hz / 60 Hz
2	5	PASS	120 Hz / 60 Hz
3	6	PASS	120 Hz / 60 Hz

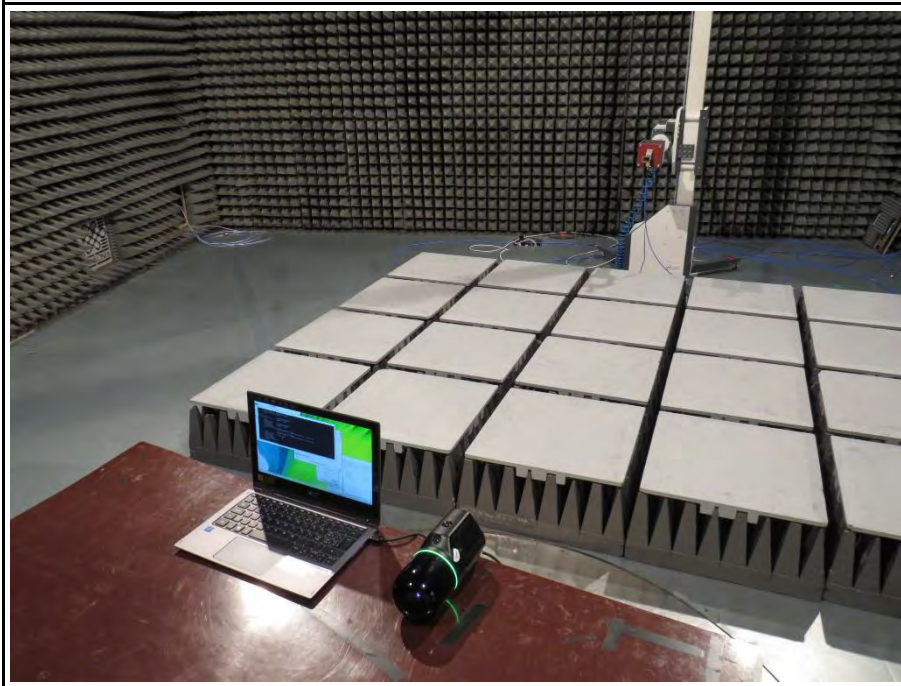
2.1.7 Setup Photos



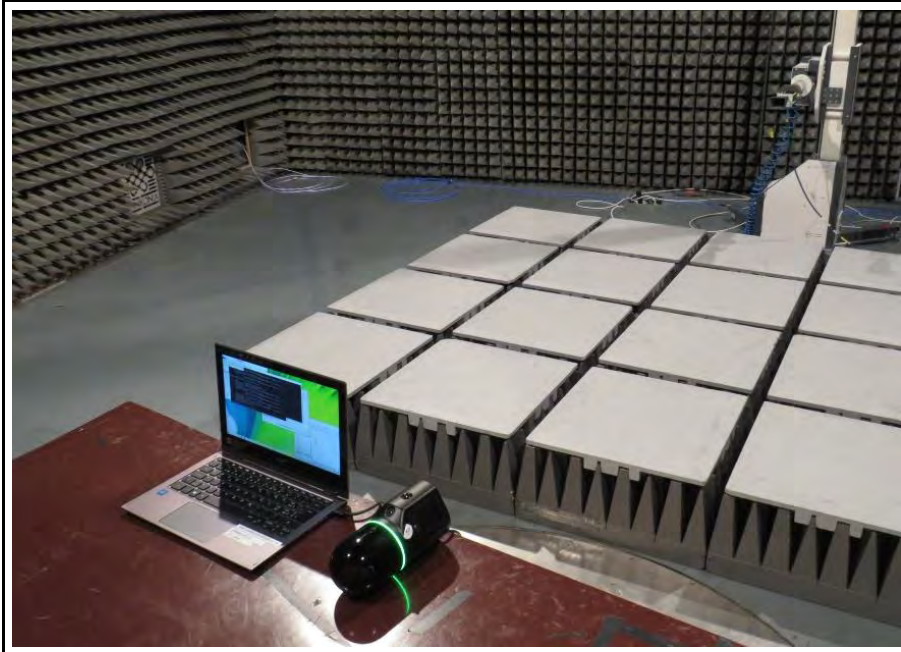
**RADIATED EMISSION - 1 GHz to 17 GHz –
EUT CONFIGURATION 1 / 3**



**RADIATED EMISSION - 17 GHz to 26.5 GHz –
EUT CONFIGURATION 1 / 3**



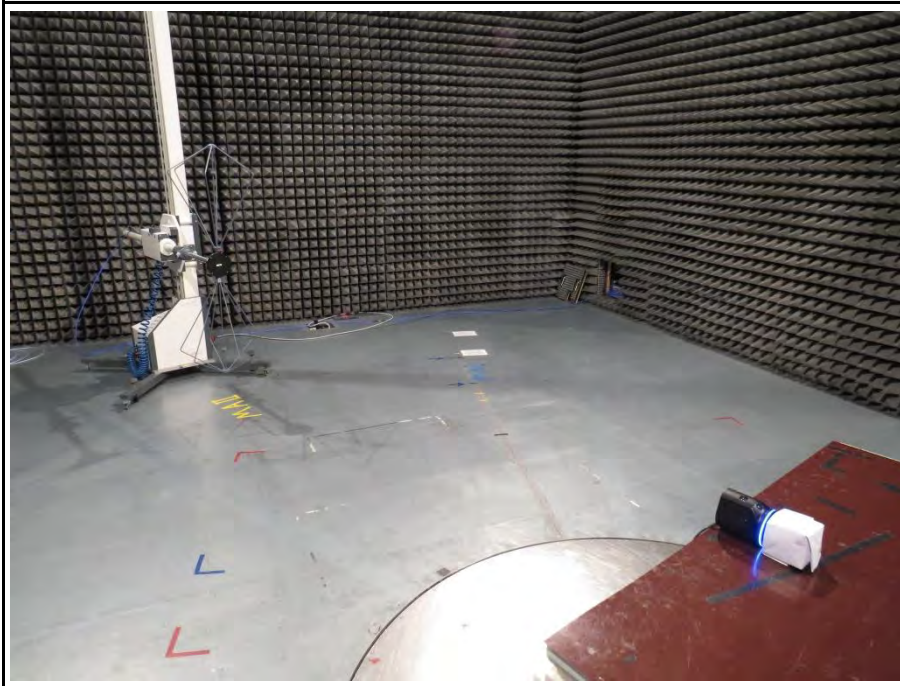
**RADIATED EMISSION - 26.5 GHz to 35 GHz –
EUT CONFIGURATION 1 / 3**



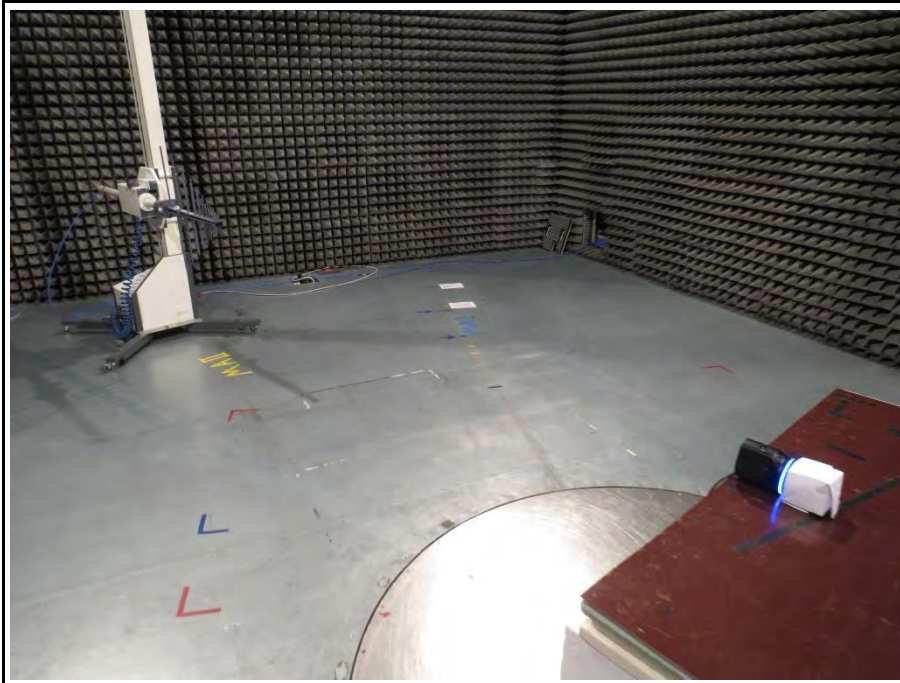
RADIATED EMISSION - FOCUS – EUT CONFIGURATION 1 / 3



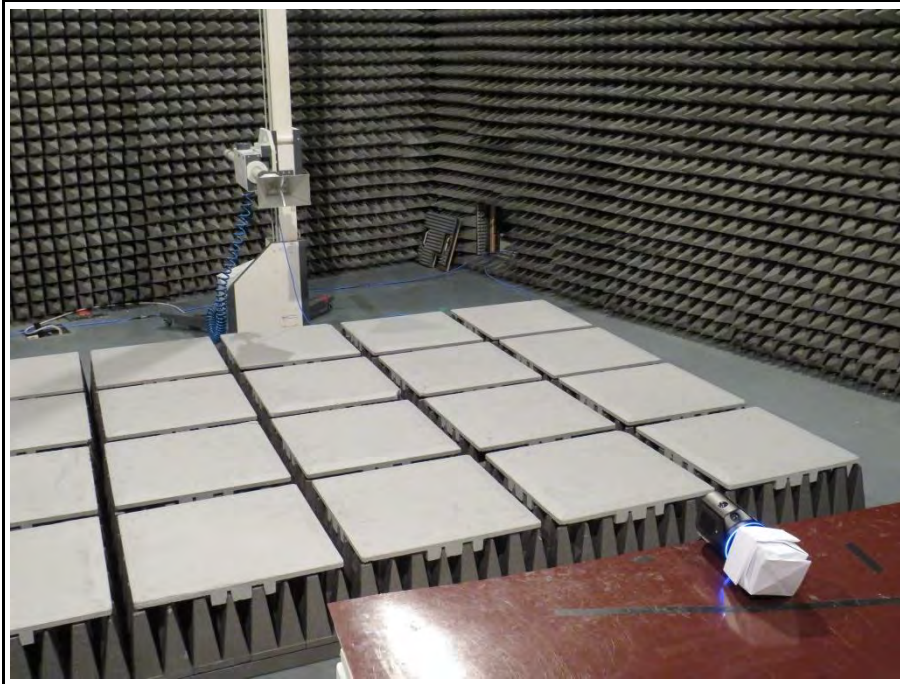
RADIATED EMISSION - 30 MHz to 200 MHz - EUT CONFIGURATION 2



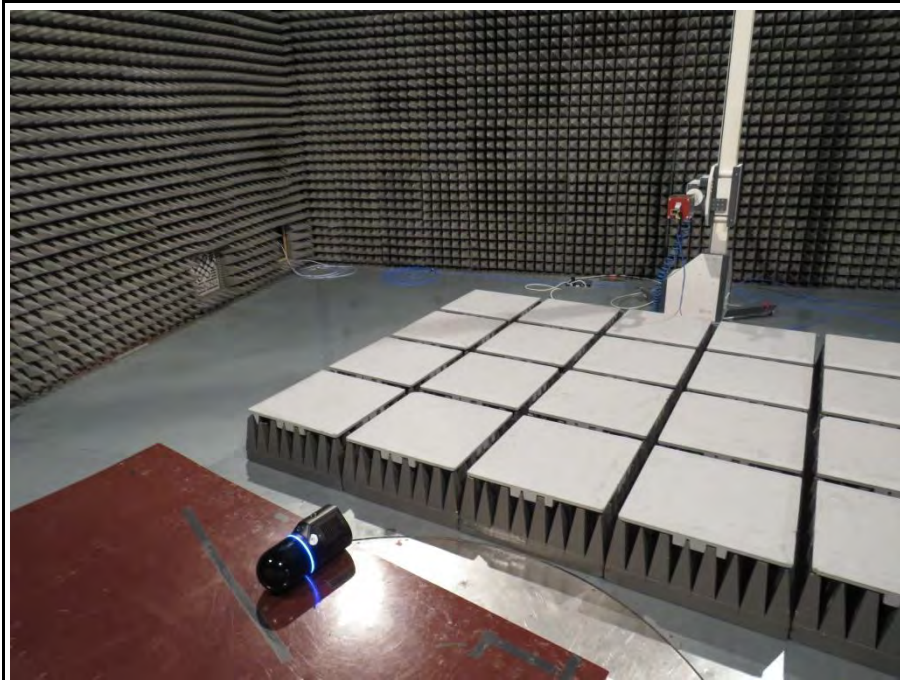
RADIATED EMISSION - 200 MHz to 1 GHz - EUT CONFIGURATION 2



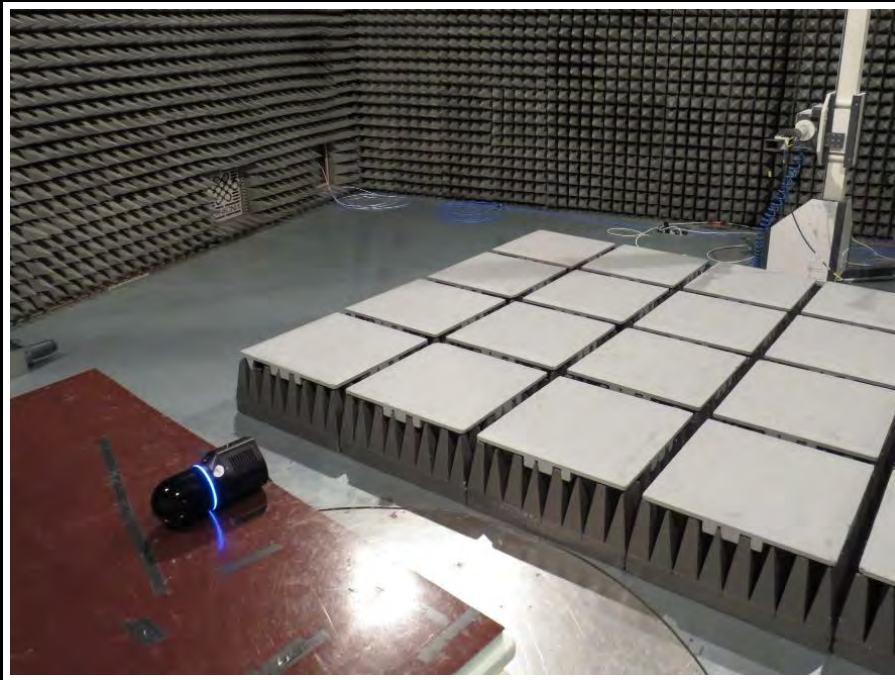
RADIATED EMISSION - 1 GHz to 17 GHz - EUT CONFIGURATION 2



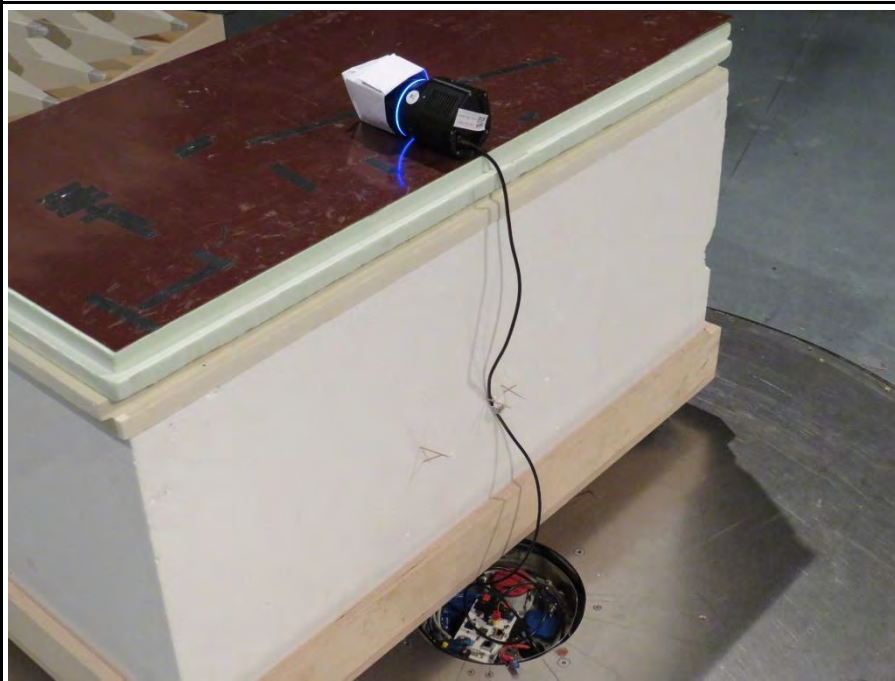
RADIATED EMISSION - 17 GHz to 26.5 GHz - EUT CONFIGURATION 2



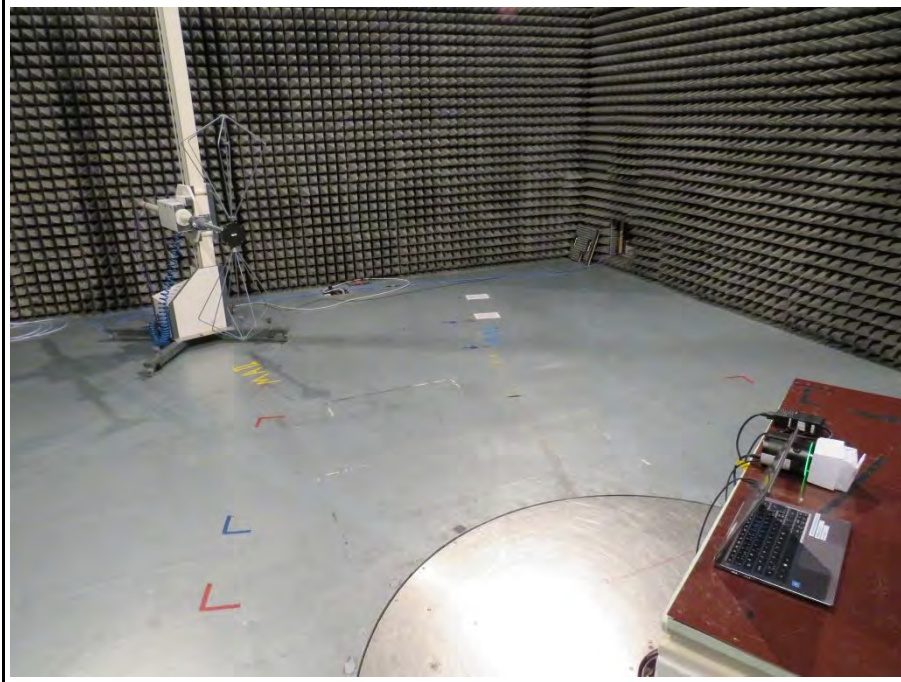
RADIATED EMISSION - 26.5 GHz to 35 GHz - EUT CONFIGURATION 2



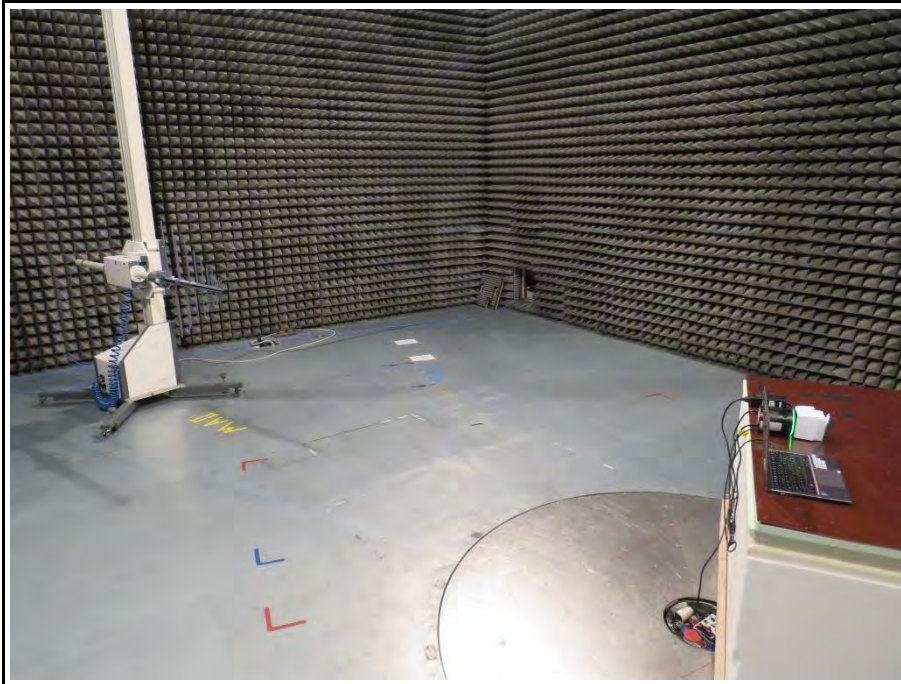
RADIATED EMISSION - FOCUS - EUT CONFIGURATION 2



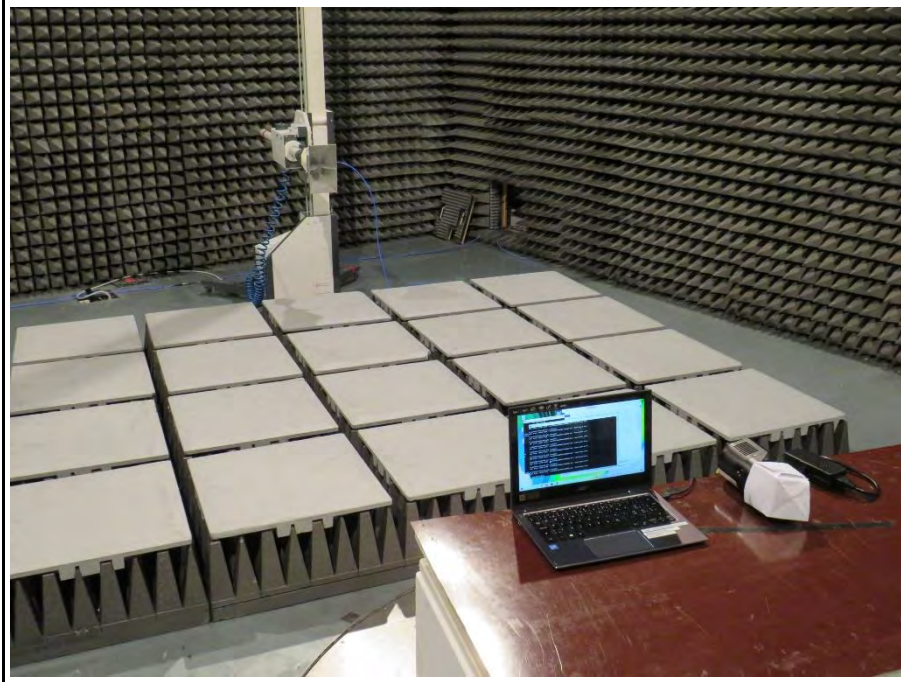
**RADIATED EMISSION - 30 MHz to 200 MHz –
EUT CONFIGURATION 4 / 6**



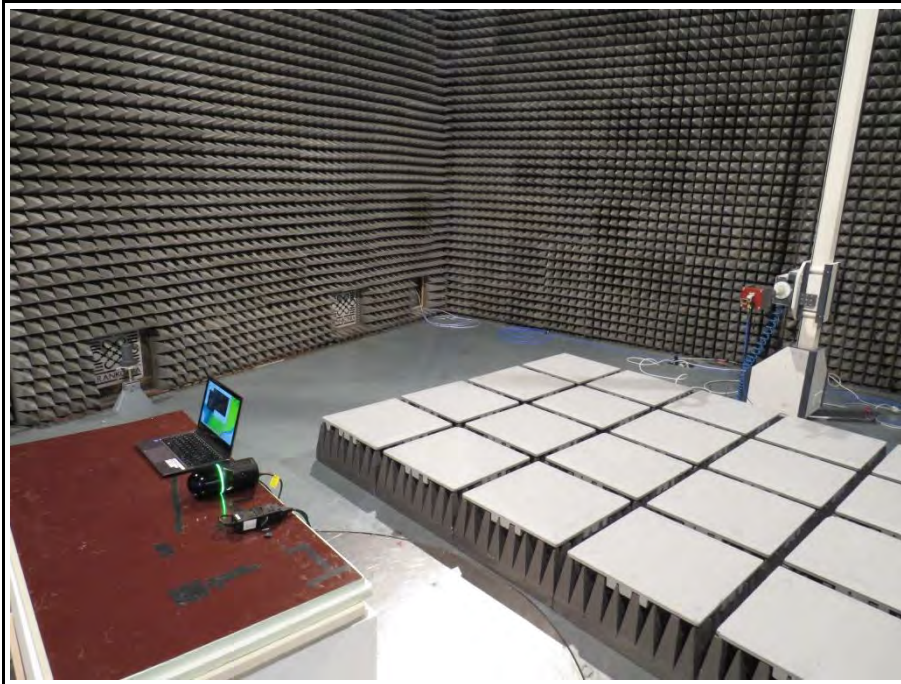
**RADIATED EMISSION - 200 MHz to 1 GHz –
EUT CONFIGURATION 4 / 6**



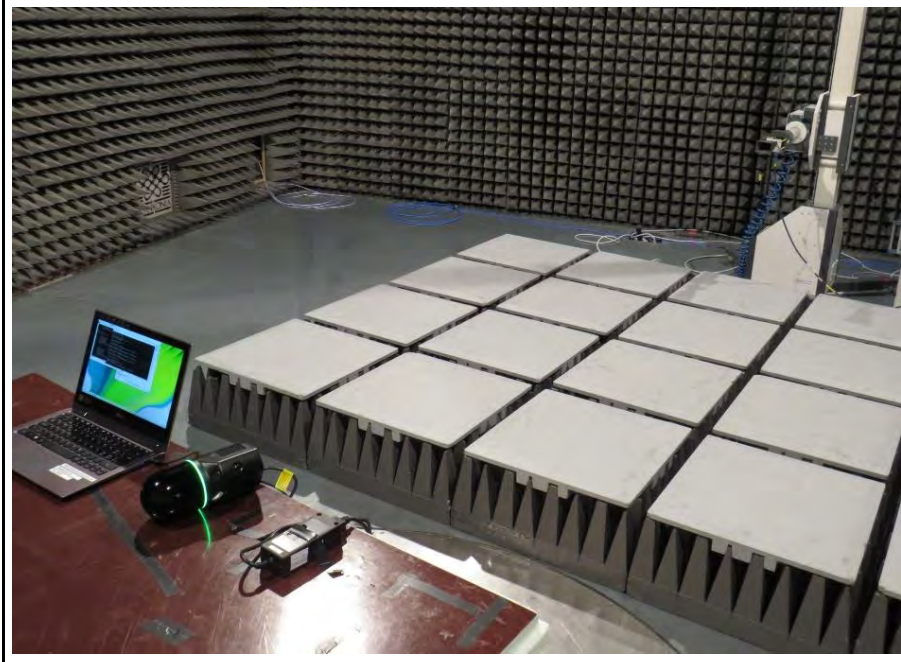
**RADIATED EMISSION - 1 GHz to 17 GHz –
EUT CONFIGURATION 4 / 6**



**RADIATED EMISSION - 17 GHz to 26.5 GHz –
EUT CONFIGURATION 4 / 6**



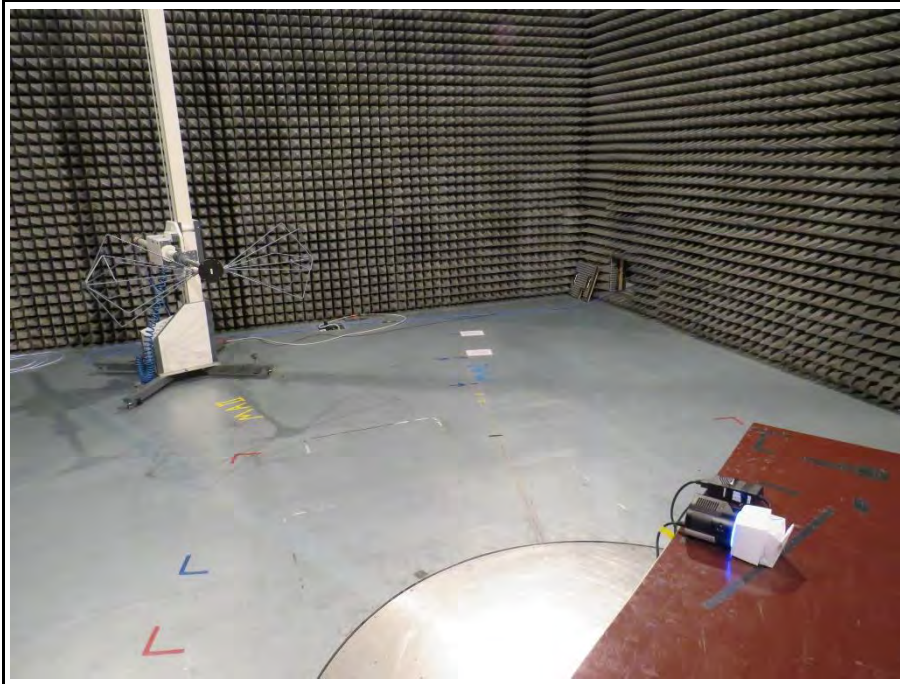
**RADIATED EMISSION - 26.5 GHz to 35 GHz –
EUT CONFIGURATION 4 / 6**



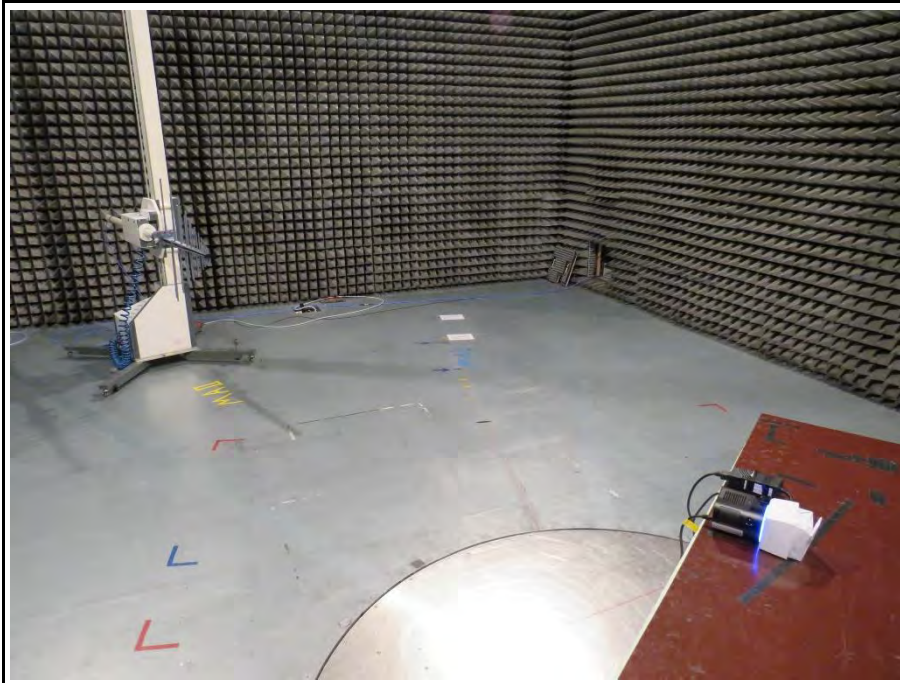
RADIATED EMISSION - FOCUS - EUT CONFIGURATION 4 / 6



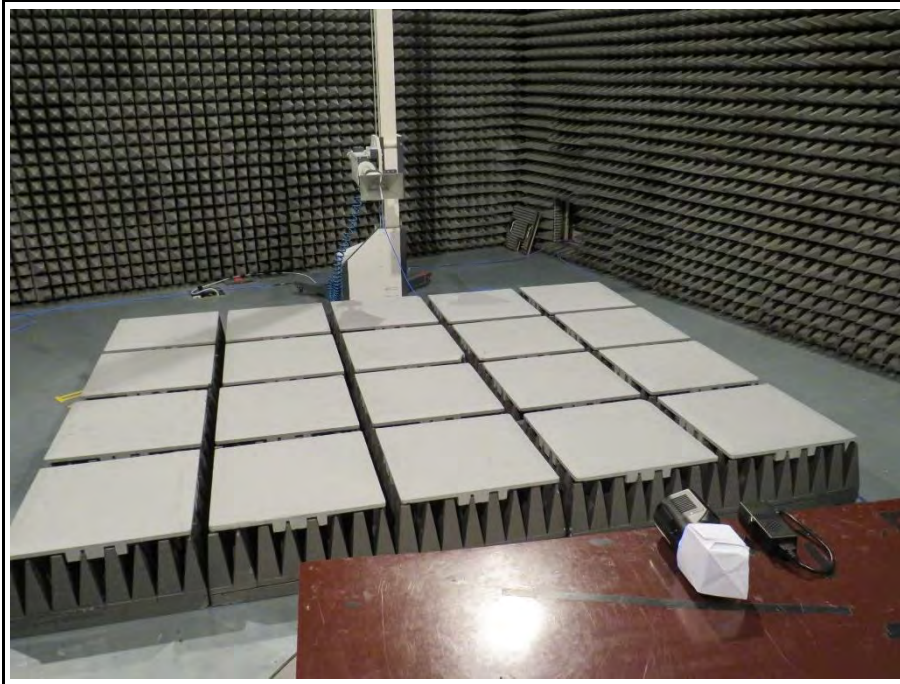
RADIATED EMISSION - 30 MHz to 200 MHz - EUT CONFIGURATION 5



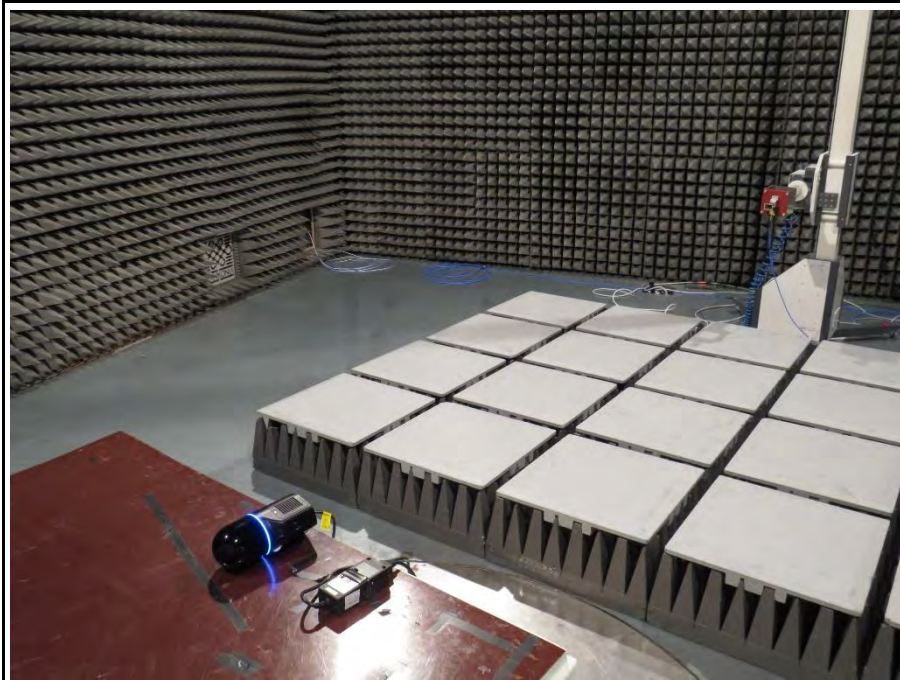
RADIATED EMISSION - 200 MHz to 1 GHz - EUT CONFIGURATION 5



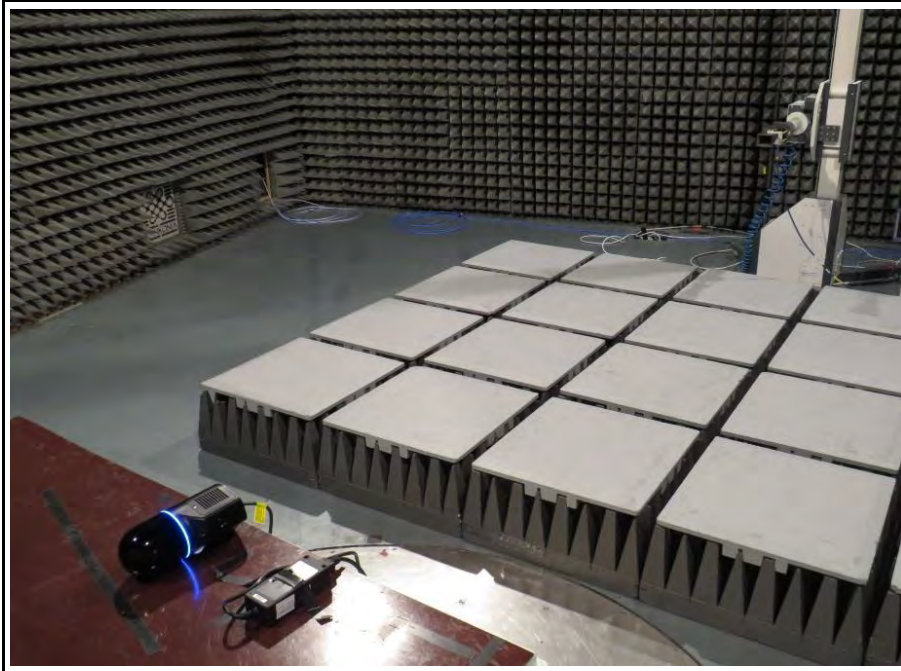
RADIATED EMISSION - 1 GHz to 17 GHz - EUT CONFIGURATION 5



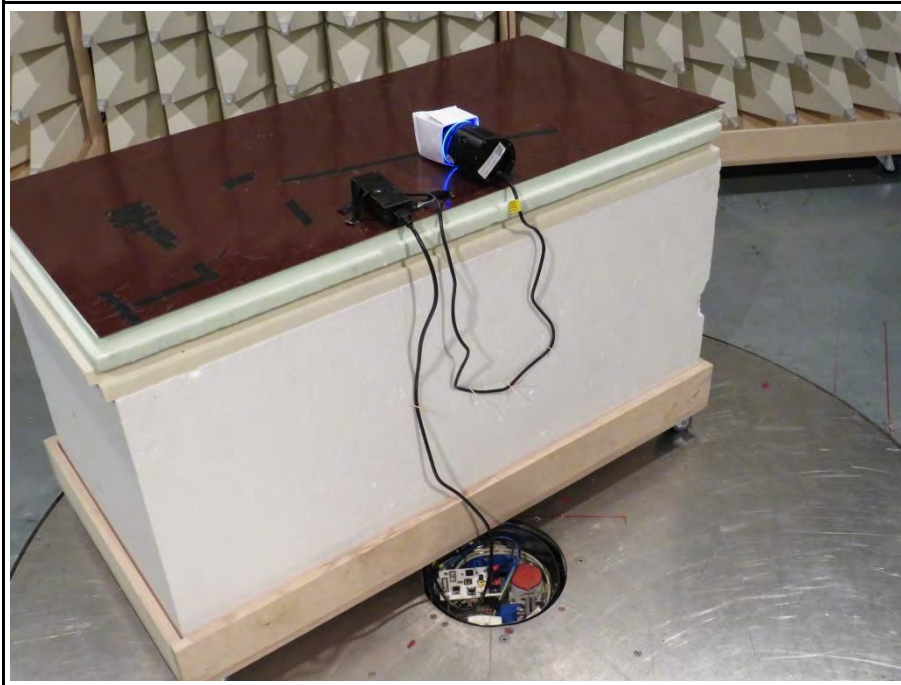
RADIATED EMISSION - 17 GHz to 26.5 GHz - EUT CONFIGURATION 5



RADIATED EMISSION - 26.5 GHz to 35 GHz - EUT CONFIGURATION 5



RADIATED EMISSION - FOCUS - EUT CONFIGURATION 5



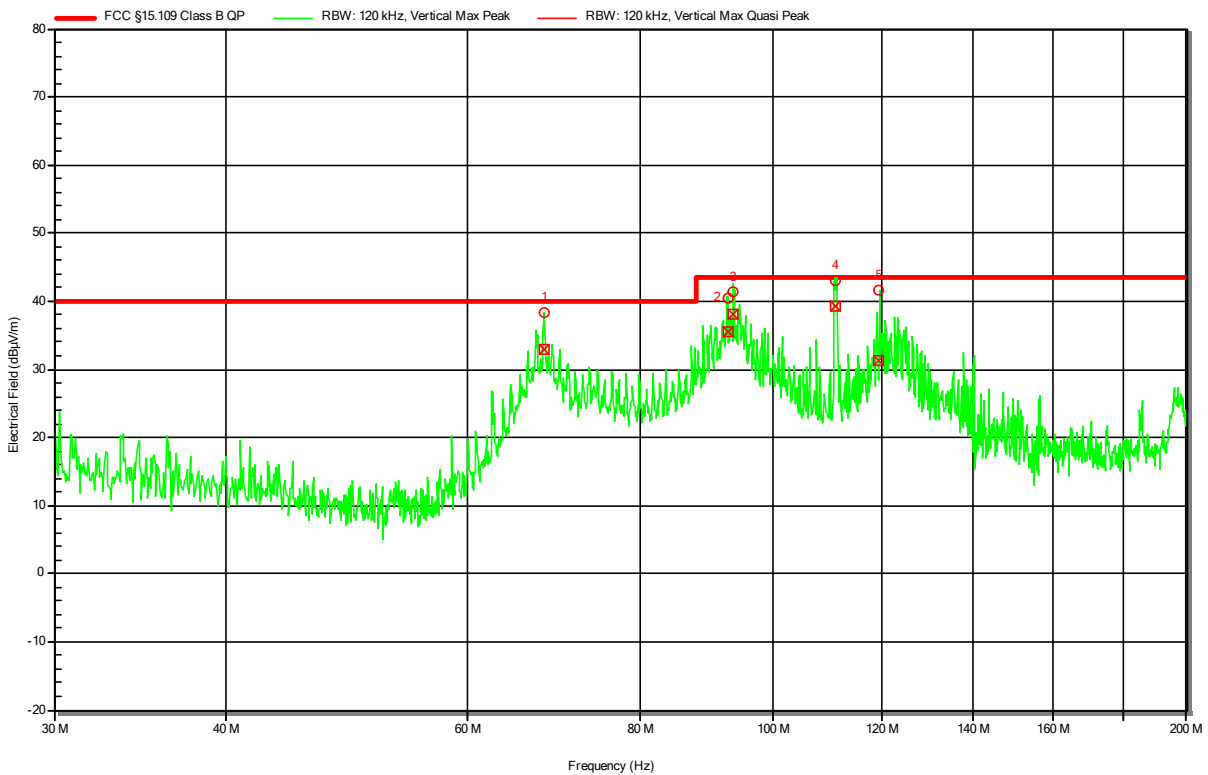
2.1.8 Records

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 1
 Note 1: --

Index 106

RadiMation



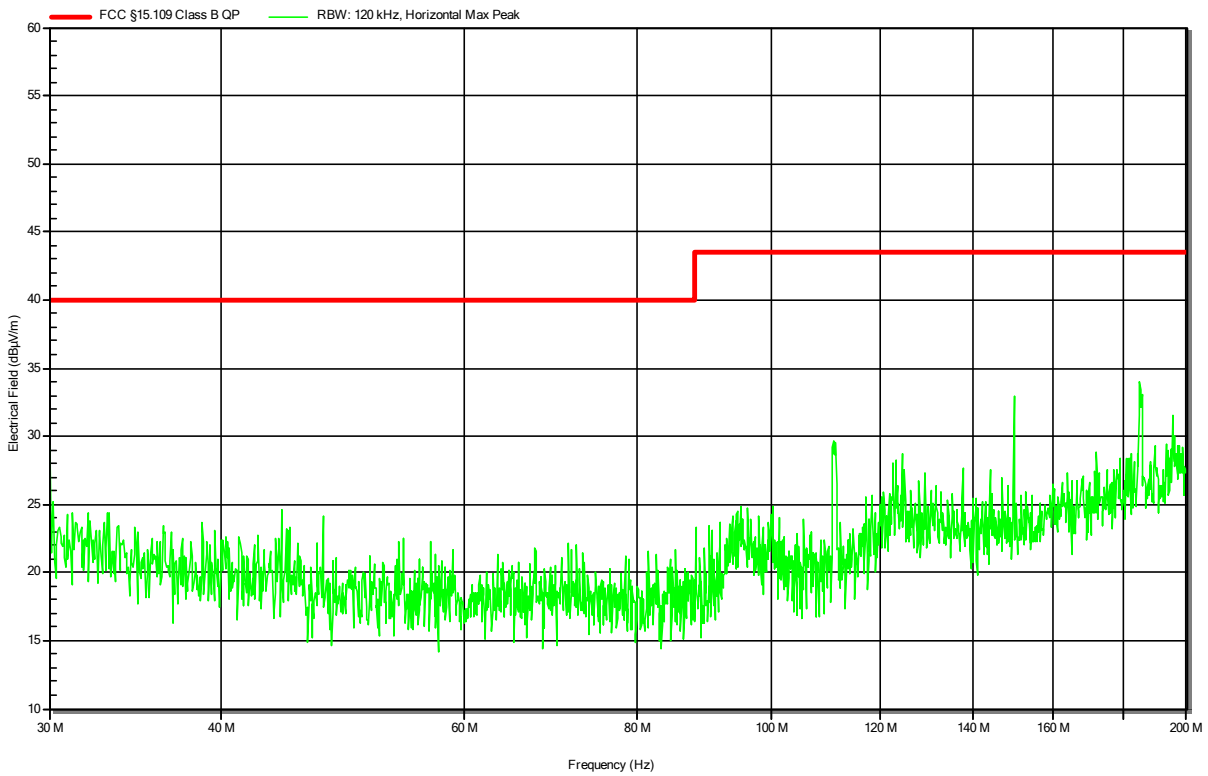
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	68.194 MHz	32.87 dBµV/m	40 dBµV/m	-7.13 dB	Pass	0 degrees	1 m
2	92.717 MHz	35.59 dBµV/m	43.52 dBµV/m	-7.93 dB	Pass	0 degrees	1 m
3	93.547 MHz	38.18 dBµV/m	43.52 dBµV/m	-5.34 dB	Pass	0 degrees	1 m
4	111.148 MHz	39.23 dBµV/m	43.52 dBµV/m	-4.29 dB	Pass	0 degrees	1 m
5	119.543 MHz	31.25 dBµV/m	43.52 dBµV/m	-12.28 dB	Pass	0 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 1
 Note 1: --°

Index 109

RadiMation

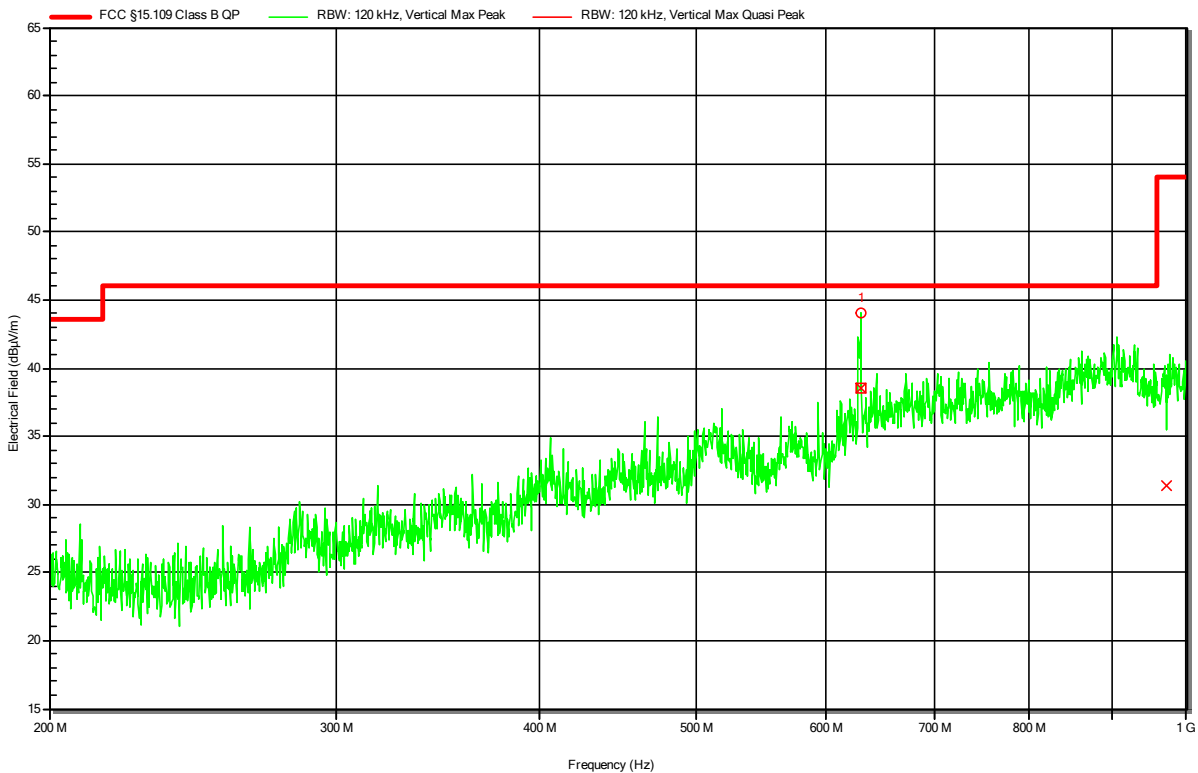


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 1
 Note 1: --

Index 112

RadiMation



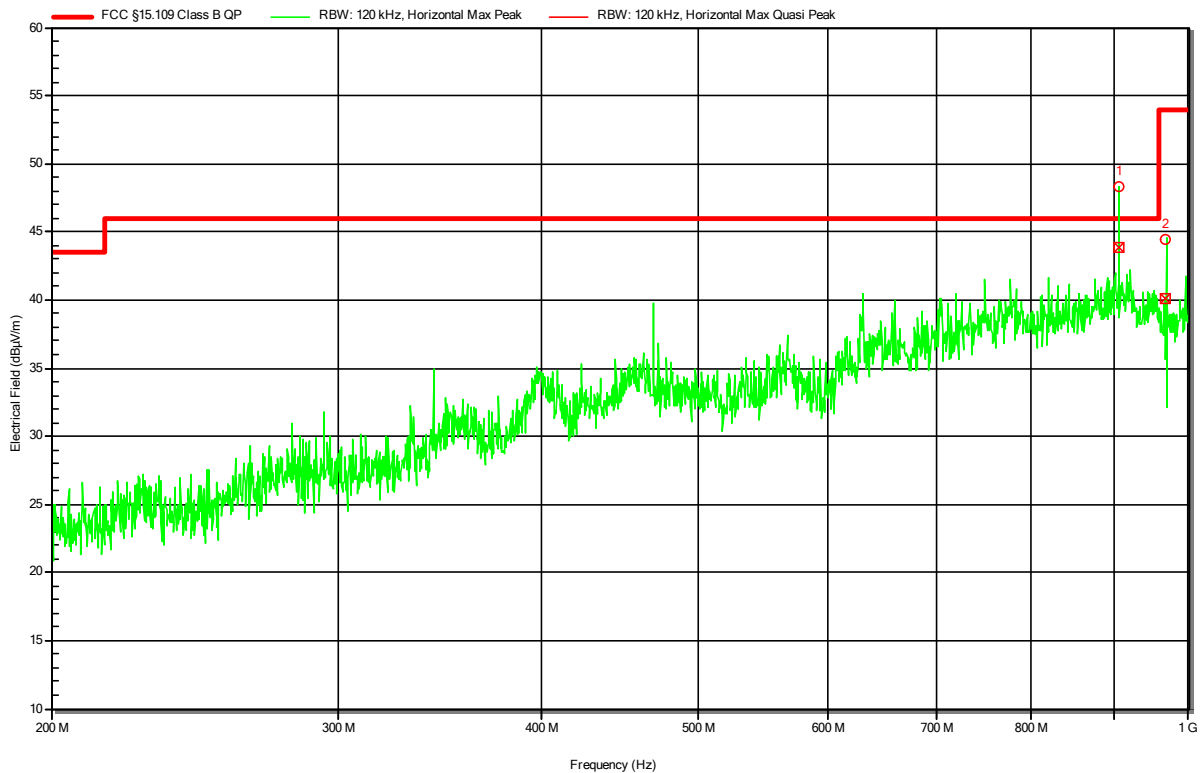
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	631.084 MHz	38.58 dBµV/m	46.02 dBµV/m	-7.44 dB	Pass	180 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 1
 Note 1: --

Index 115

Radiation



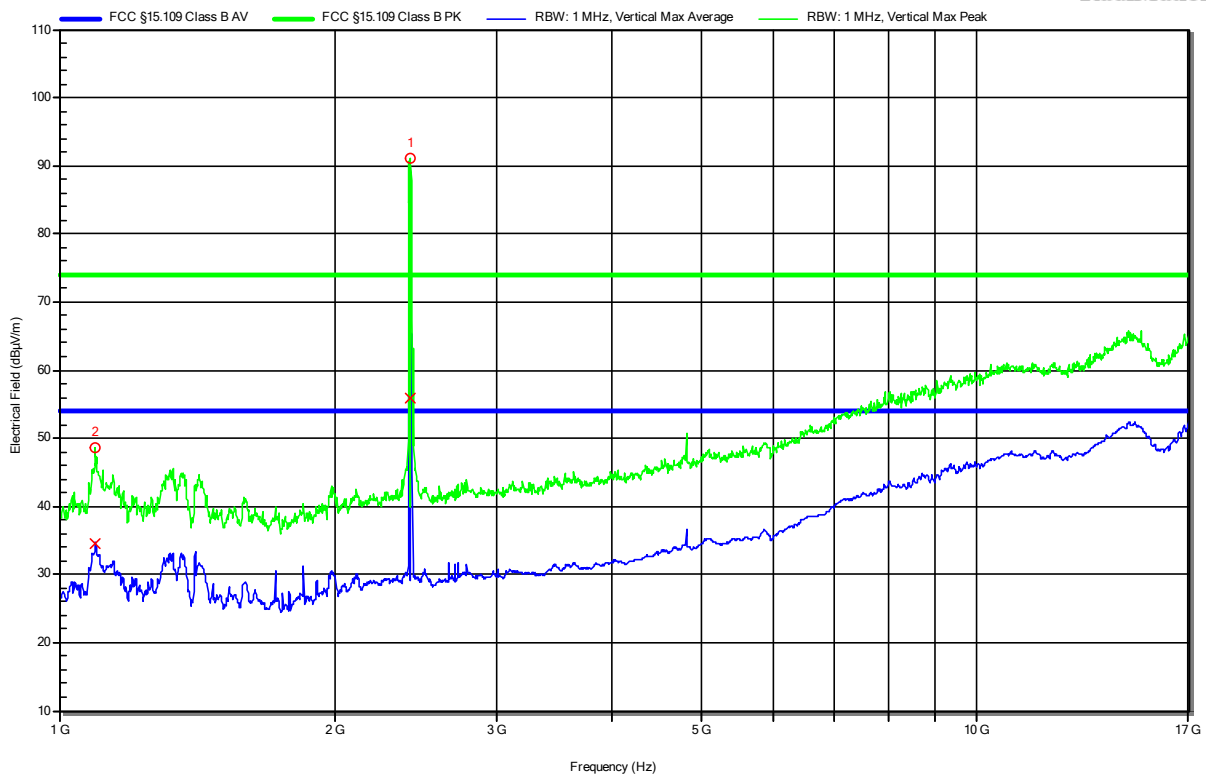
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	906.25 MHz	43.83 dBµV/m	46.02 dBµV/m	-2.19 dB	Pass	60 degrees	1 m
2	968.748 MHz	40.07 dBµV/m	54 dBµV/m	-13.93 dB	Pass	60 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 1
 Note 1: --

Index 97

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	2.409 GHz	WLAN-Carrier					
2	1.095 GHz	48.53 dBµV/m	73.98 dBµV/m	-25.45 dB	Pass	90 degrees	1.2 m

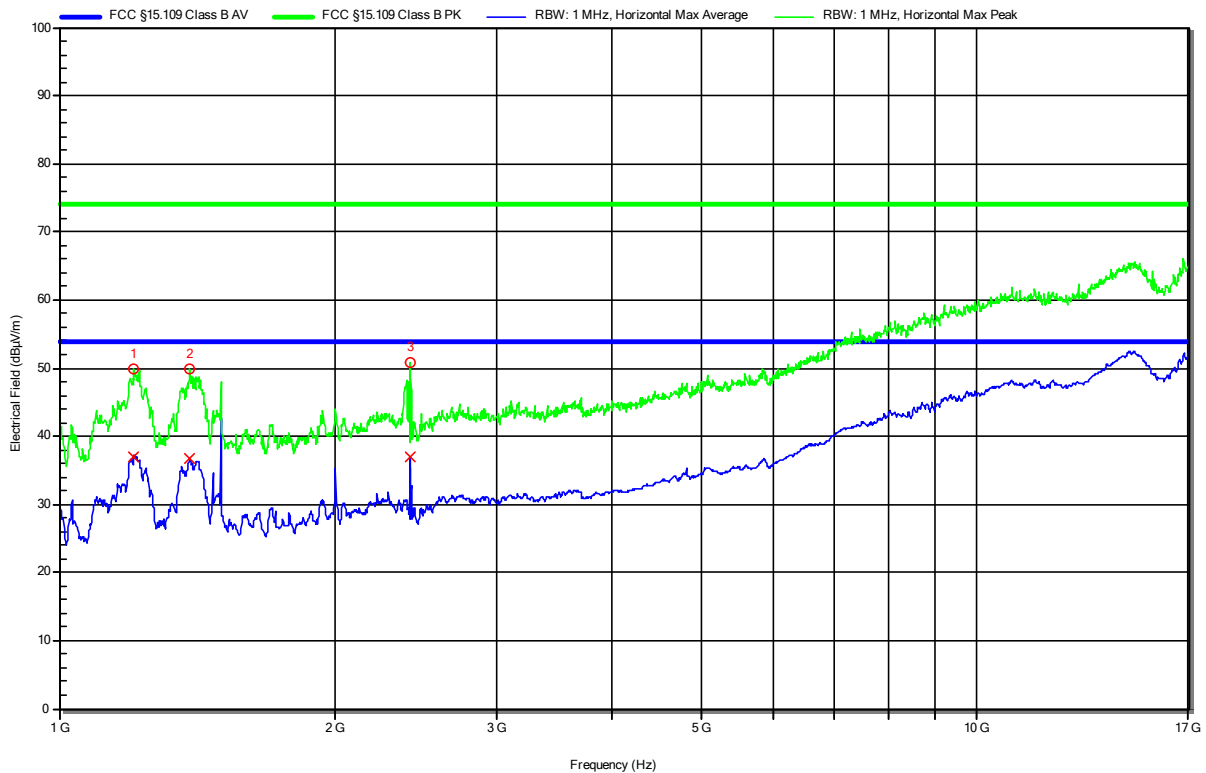
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	2.409 GHz	WLAN-Carrier					
2	1.095 GHz	34.59 dBµV/m	53.98 dBµV/m	-19.39 dB	Pass	90 degrees	1.2 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 1
 Note 1: --

Index 99

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.207 GHz	49.9 dBµV/m	73.98 dBµV/m	-24.08 dB	Pass	90 degrees	1.2 m
2	1.389 GHz	49.79 dBµV/m	73.98 dBµV/m	-24.19 dB	Pass	90 degrees	1.2 m
3	2.416 GHz	50.8 dBµV/m	73.98 dBµV/m	-23.18 dB	Pass	90 degrees	1.2 m

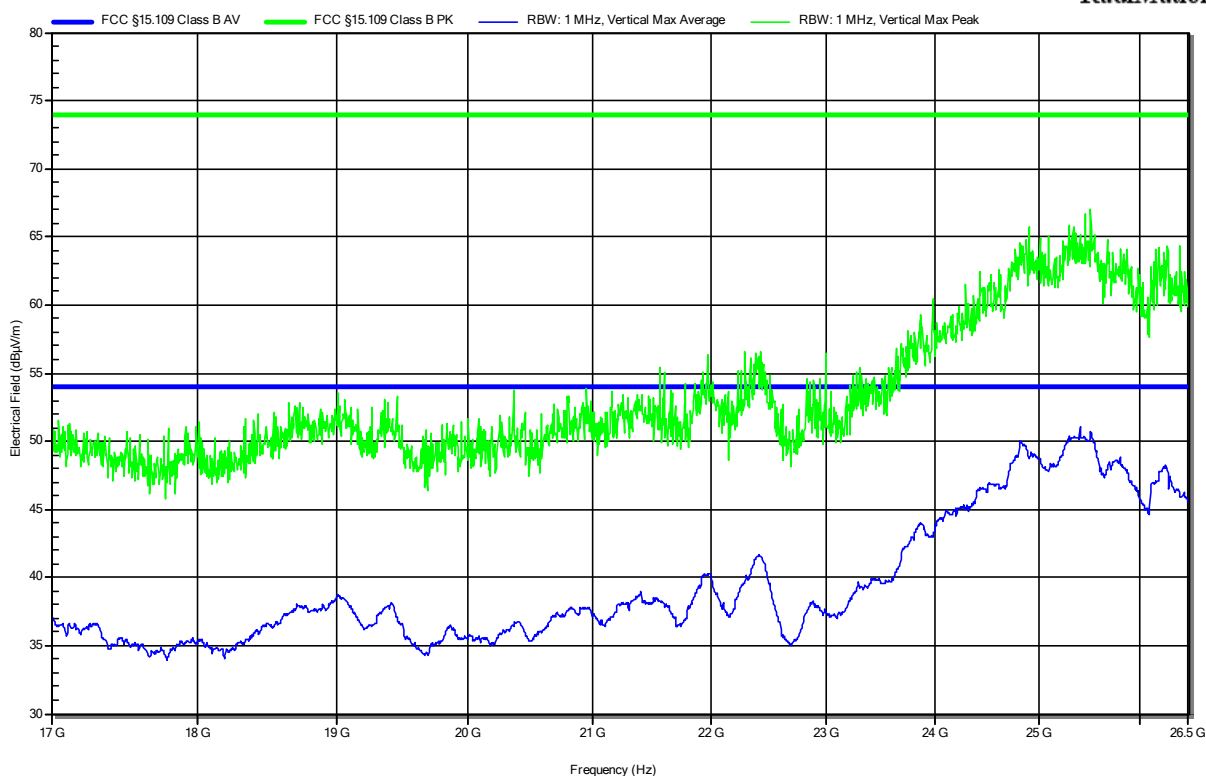
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.207 GHz	37.07 dBµV/m	53.98 dBµV/m	-16.91 dB	Pass	90 degrees	1.2 m
2	1.389 GHz	36.67 dBµV/m	53.98 dBµV/m	-17.31 dB	Pass	90 degrees	1.2 m
3	2.416 GHz	37.03 dBµV/m	53.98 dBµV/m	-16.95 dB	Pass	90 degrees	1.2 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: 22240-25 Amp. CBL26402075, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 1
 Note 1: --

Index 175

RadiMation

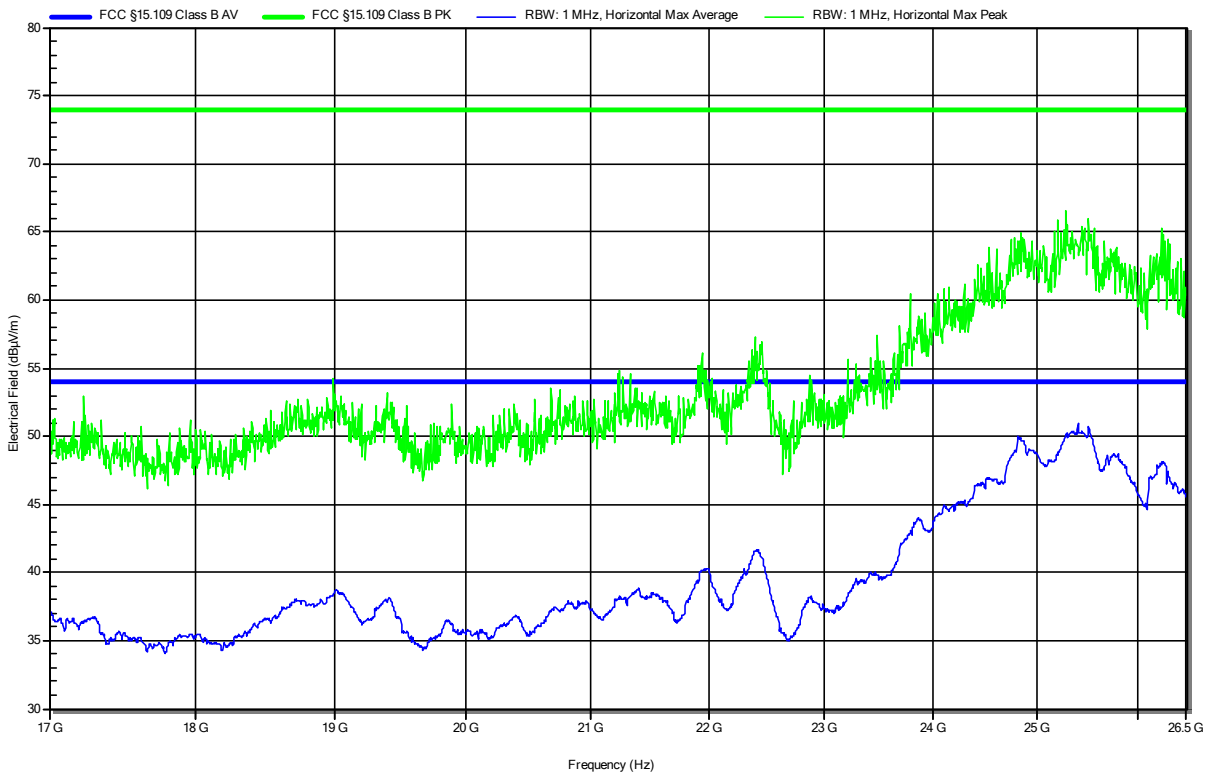


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: 22240-25 Amp. CBL26402075, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 1
 Note 1: --

Index 176

RadiMation

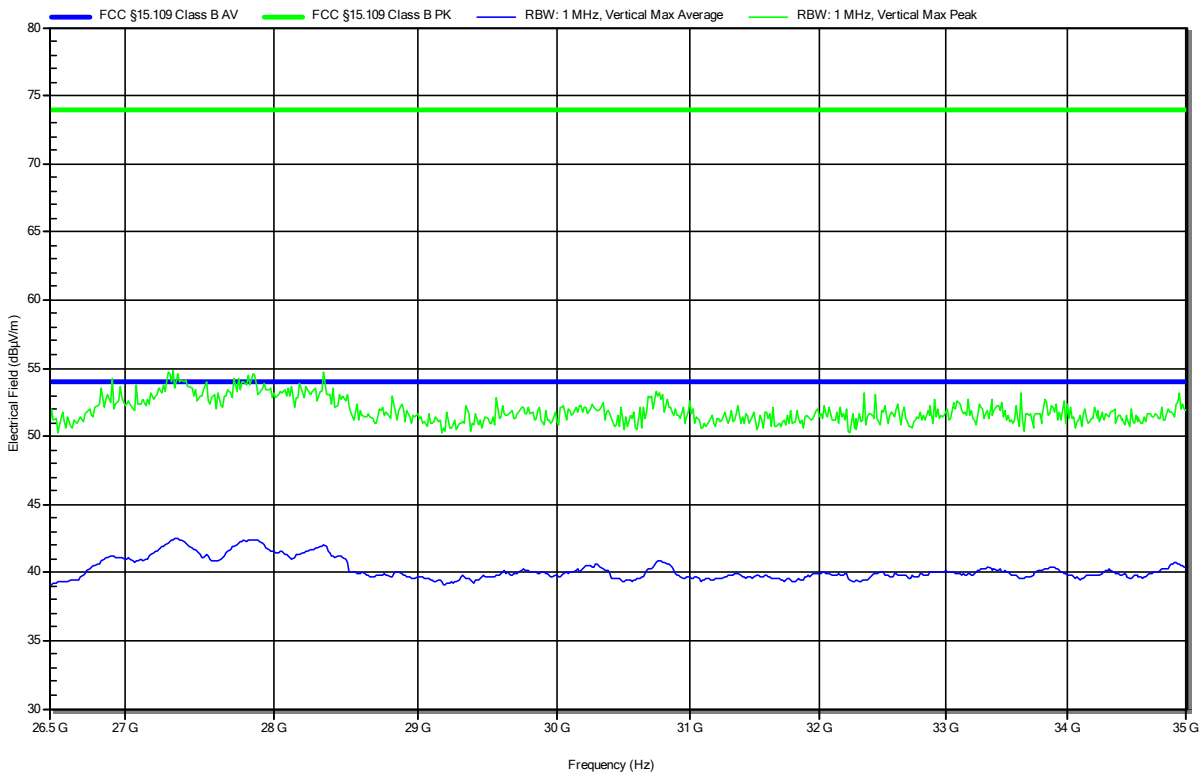


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: AT4560, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 1
 Note 1: --

Index 165

RadiMation

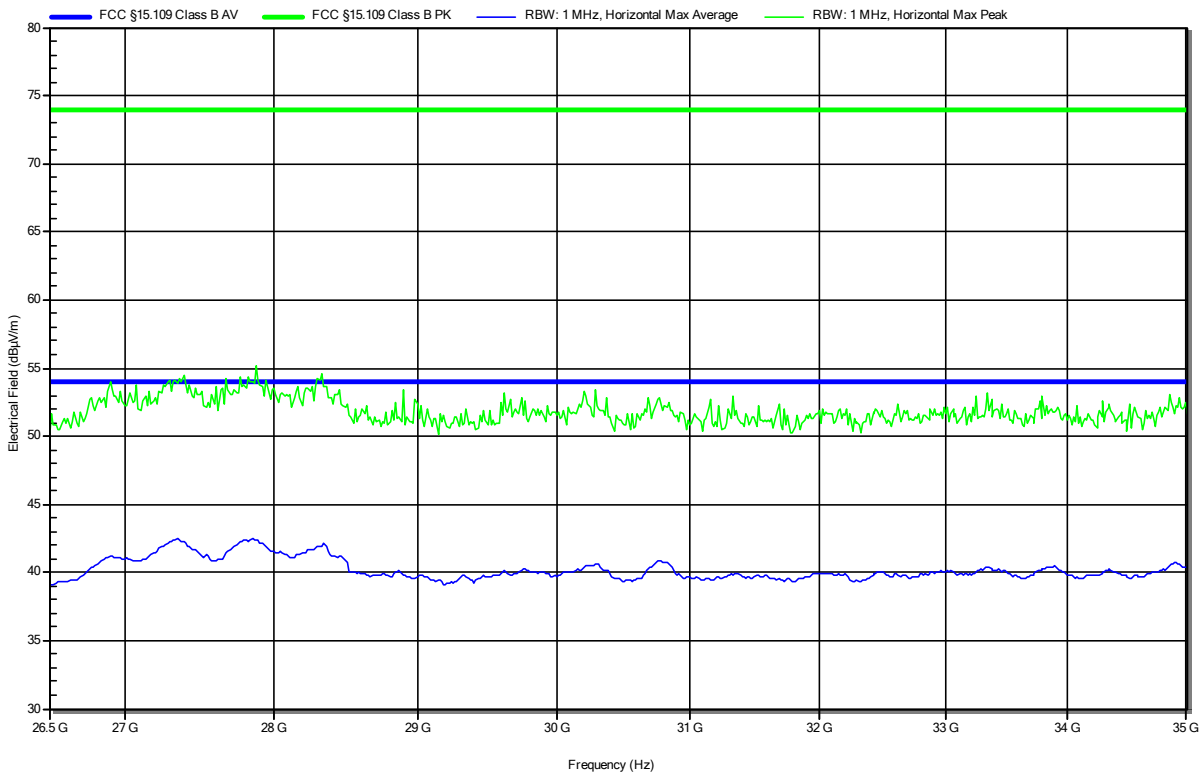


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: AT4560, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 1
 Note 1: --

Index 164

Radiation

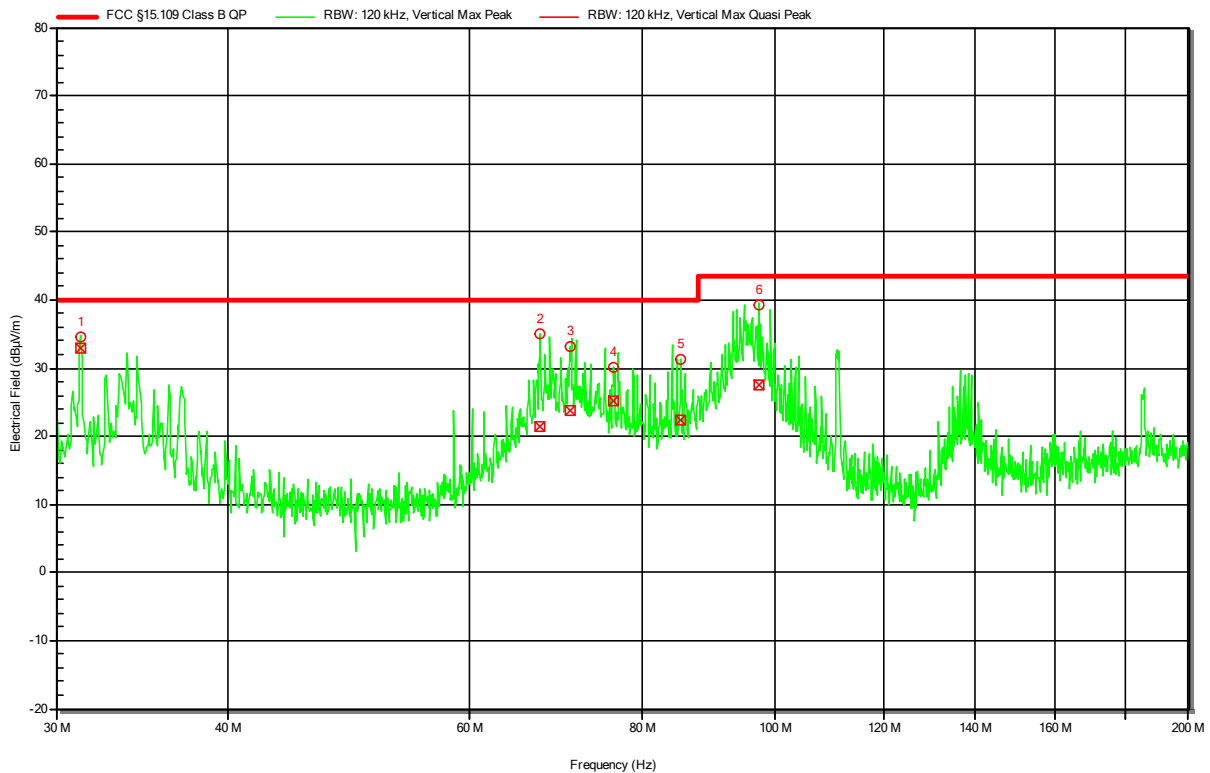


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 129

RadiMation



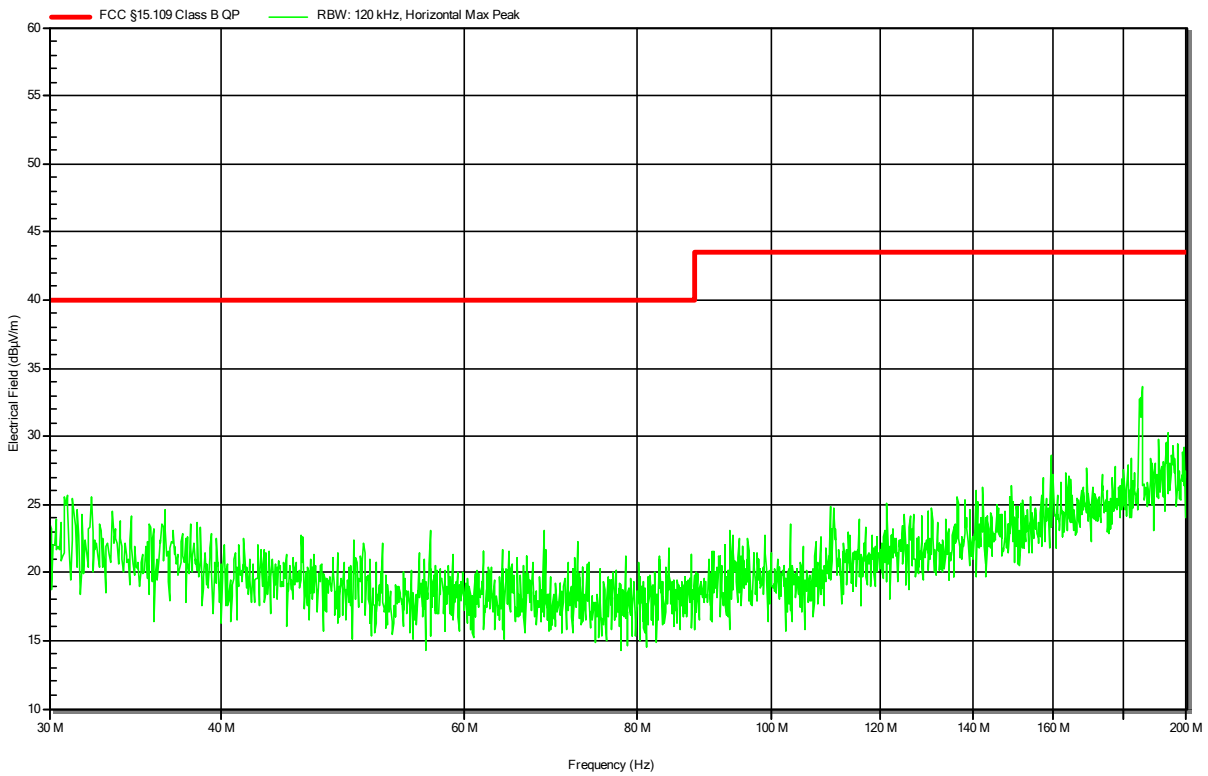
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	31.243 MHz	32.98 dBµV/m	40 dBµV/m	-7.02 dB	Pass	150 degrees	1.2 m
2	67.531 MHz	21.5 dBµV/m	40 dBµV/m	-18.5 dB	Pass	150 degrees	1.2 m
3	70.942 MHz	23.75 dBµV/m	40 dBµV/m	-16.25 dB	Pass	150 degrees	1.2 m
4	76.256 MHz	25.21 dBµV/m	40 dBµV/m	-14.79 dB	Pass	150 degrees	1.2 m
5	85.318 MHz	22.34 dBµV/m	40 dBµV/m	-17.66 dB	Pass	150 degrees	1.2 m
6	97.333 MHz	27.48 dBµV/m	43.52 dBµV/m	-16.04 dB	Pass	150 degrees	1.2 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 130

RadiMation

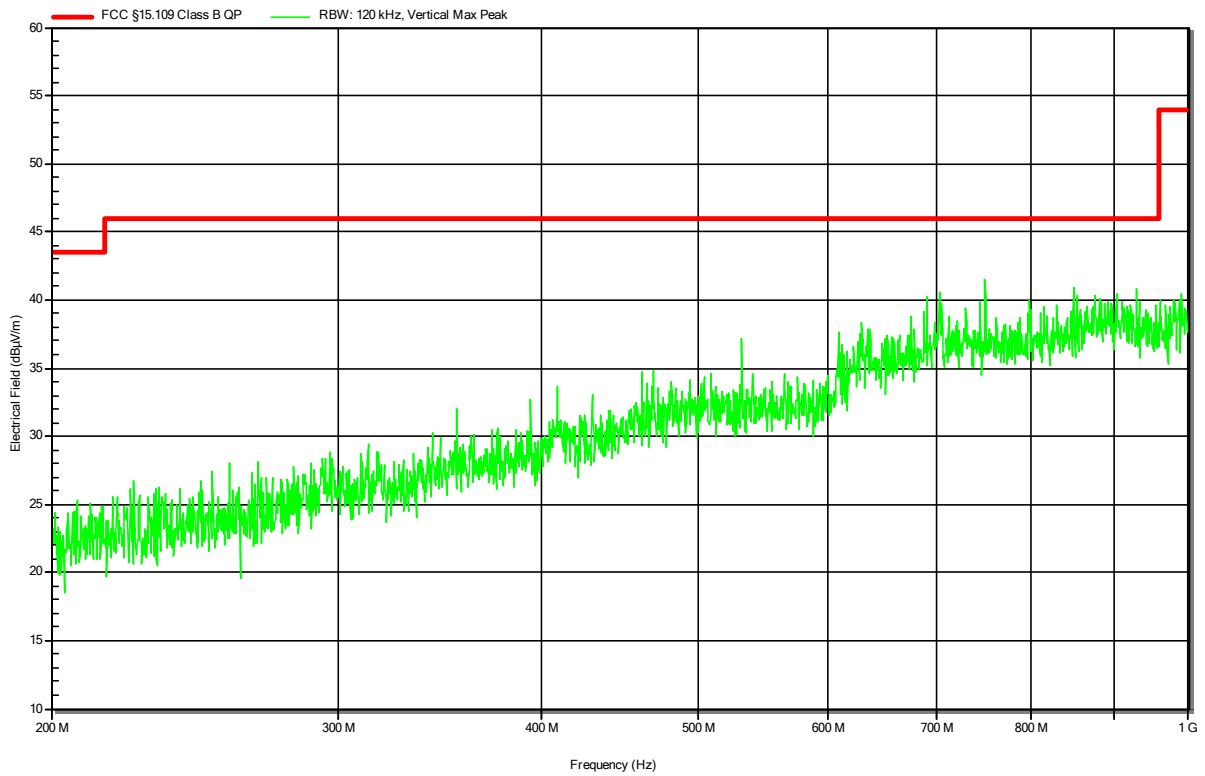


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 135

RadiMation

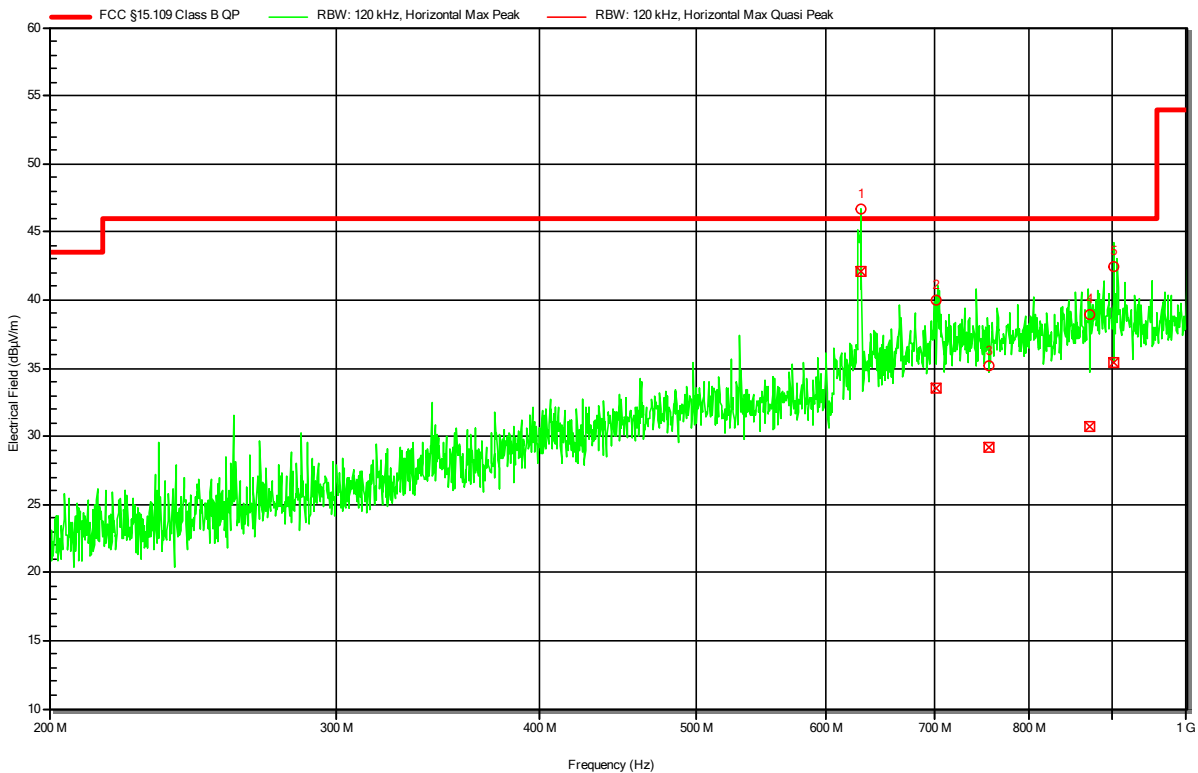


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2 Configuration 2
 Note 1: --

Index 142

Radiation



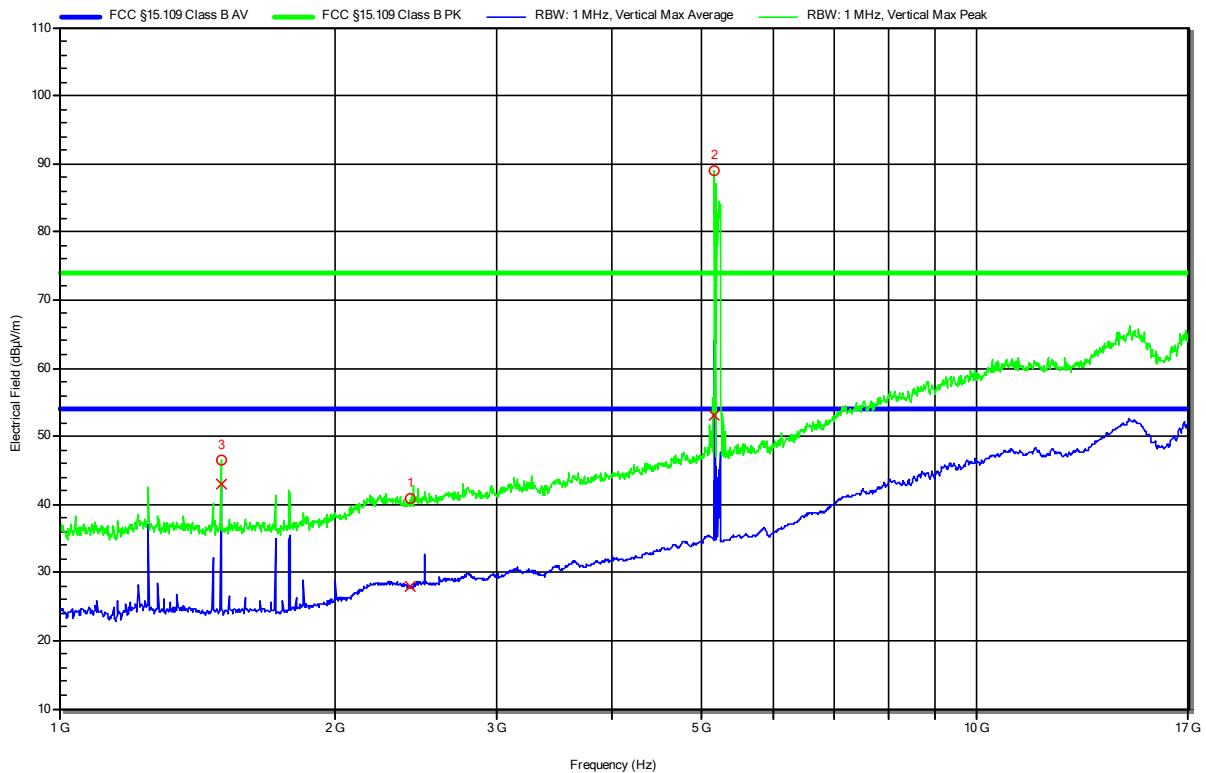
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	631.084 MHz	42.14 dBµV/m	46.02 dBµV/m	-3.88 dB	Pass	110 degrees	1.4 m
2	702.053 MHz	33.55 dBµV/m	46.02 dBµV/m	-12.47 dB	Pass	110 degrees	1.4 m
3	756.187 MHz	29.23 dBµV/m	46.02 dBµV/m	-16.79 dB	Pass	110 degrees	1.4 m
4	871.288 MHz	30.72 dBµV/m	46.02 dBµV/m	-15.3 dB	Pass	110 degrees	1.4 m
5	902.456 MHz	35.45 dBµV/m	46.02 dBµV/m	-10.57 dB	Pass	110 degrees	1.4 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 102

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	2.416 GHz	40.97 dBµV/m	73.98 dBµV/m	-33.01 dB	Pass	0 degrees	1 m
2	5.182 GHz	WLAN-Carrier	73.98 dBµV/m	-26.03 dB	Pass	0 degrees	1 m
3	1.5 GHz	46.52 dBµV/m	73.98 dBµV/m	-27.46 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	2.416 GHz	27.95 dBµV/m	53.98 dBµV/m	-26.03 dB	Pass	0 degrees	1 m
2	5.182 GHz	WLAN-Carrier	53.98 dBµV/m	-10.92 dB	Pass	0 degrees	1 m
3	1.5 GHz	43.06 dBµV/m	53.98 dBµV/m	-10.92 dB	Pass	0 degrees	1 m

Test Report No.: G0M-2105-9817-EF0115B-V01

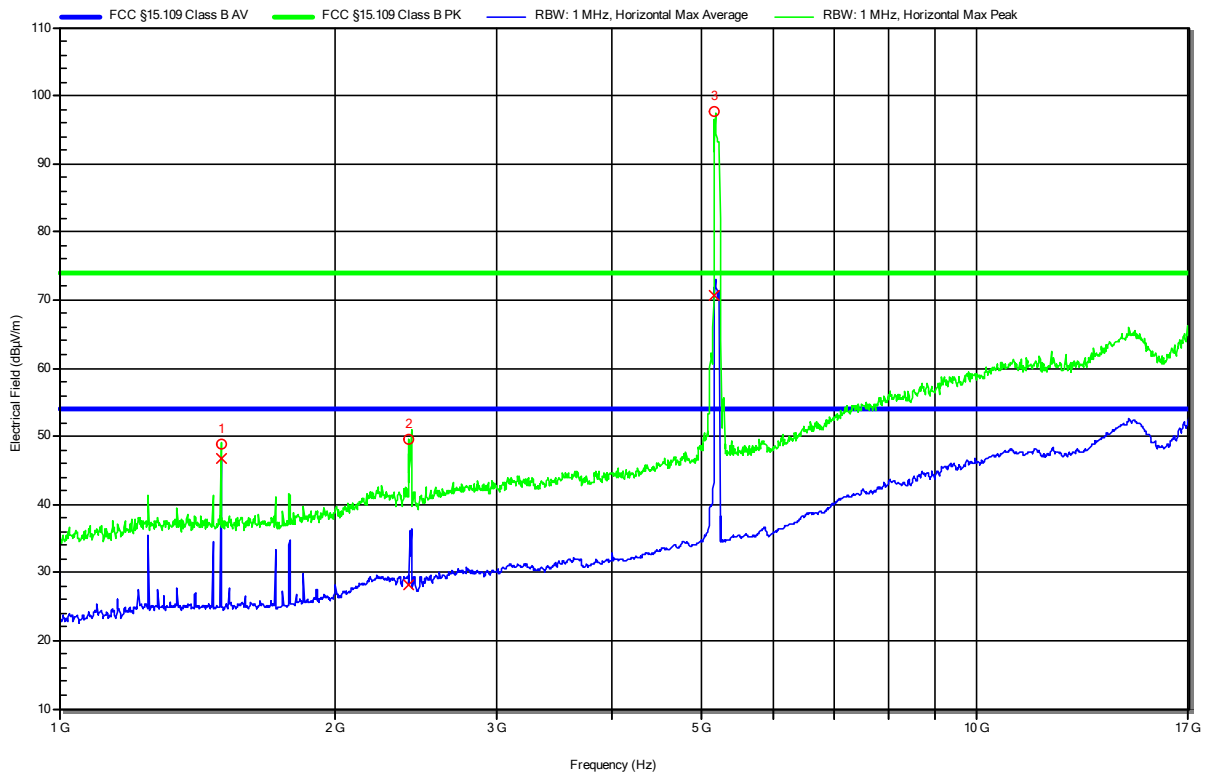
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 103

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	48.95 dBµV/m	73.98 dBµV/m	-25.03 dB	Pass	0 degrees	1 m
2	2.405 GHz	49.48 dBµV/m	73.98 dBµV/m	-24.5 dB	Pass	0 degrees	1 m
3	5.176 GHz	WLAN-Carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	46.83 dBµV/m	53.98 dBµV/m	-7.15 dB	Pass	0 degrees	1 m
2	2.405 GHz	28.26 dBµV/m	53.98 dBµV/m	-25.72 dB	Pass	0 degrees	1 m
3	5.176 GHz	WLAN-Carrier					

Test Report No.: G0M-2105-9817-EF0115B-V01

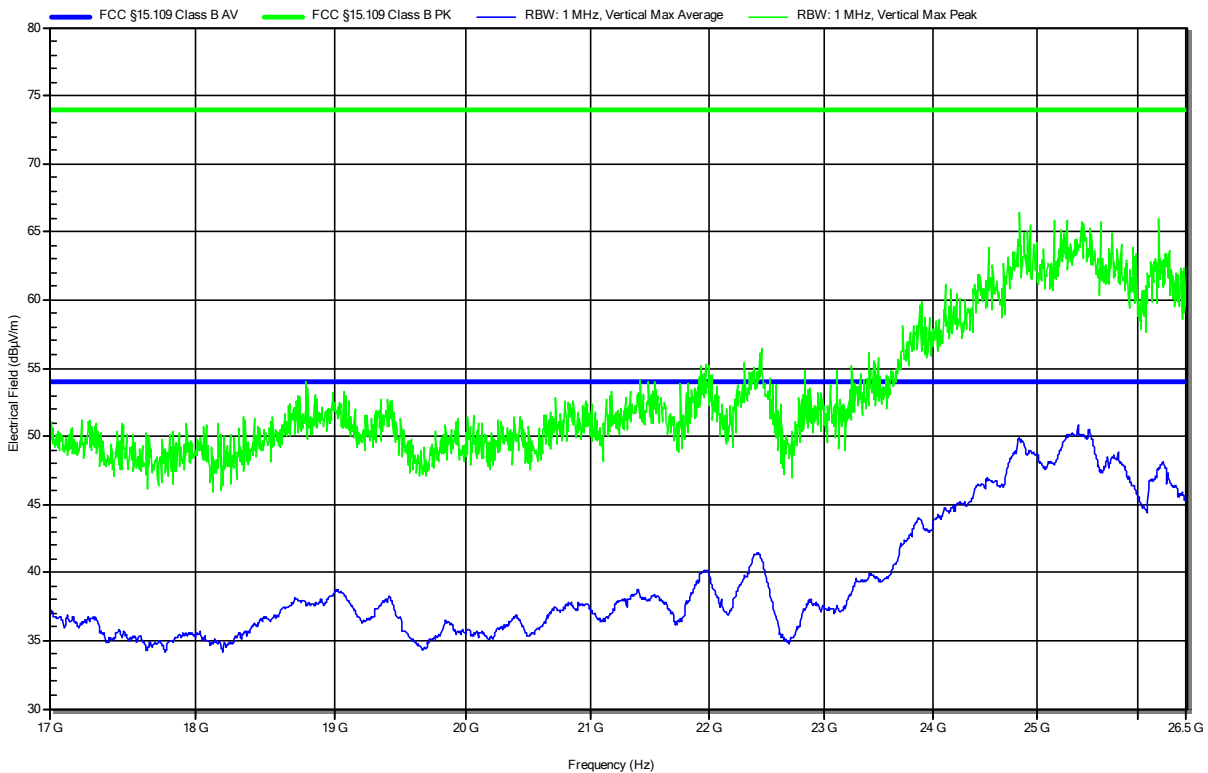
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: 22240-25 Amp. CBL26402075, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2 Configuration 2
 Note 1: --

Index 170

RadiMation

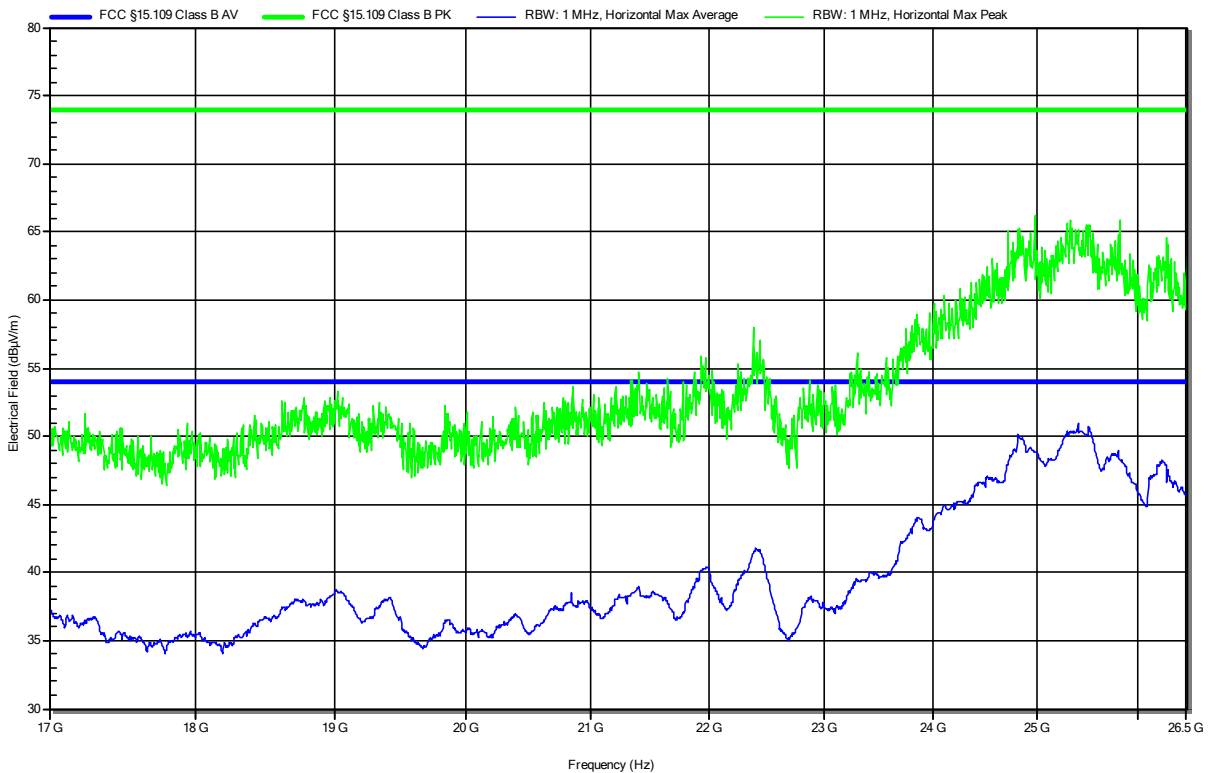


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: 22240-25 Amp. CBL26402075, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 172

Radiation

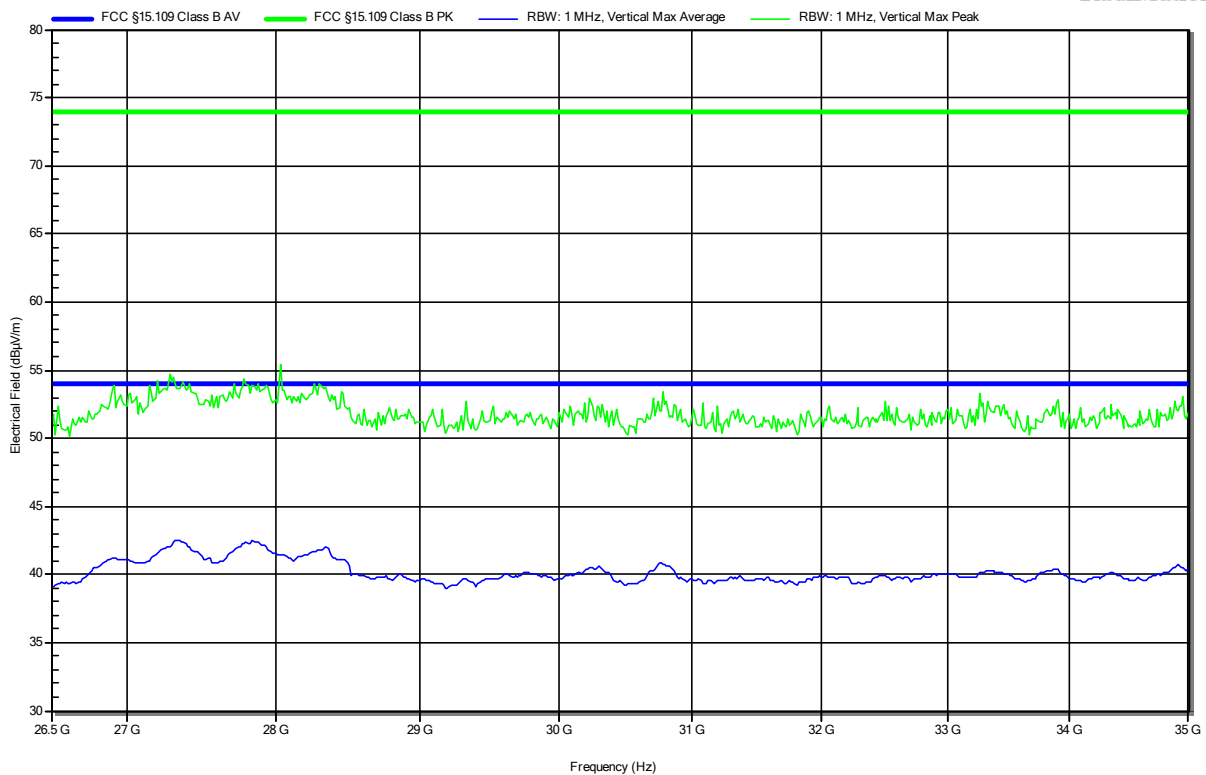


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: AT4560, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 169

RadiMation

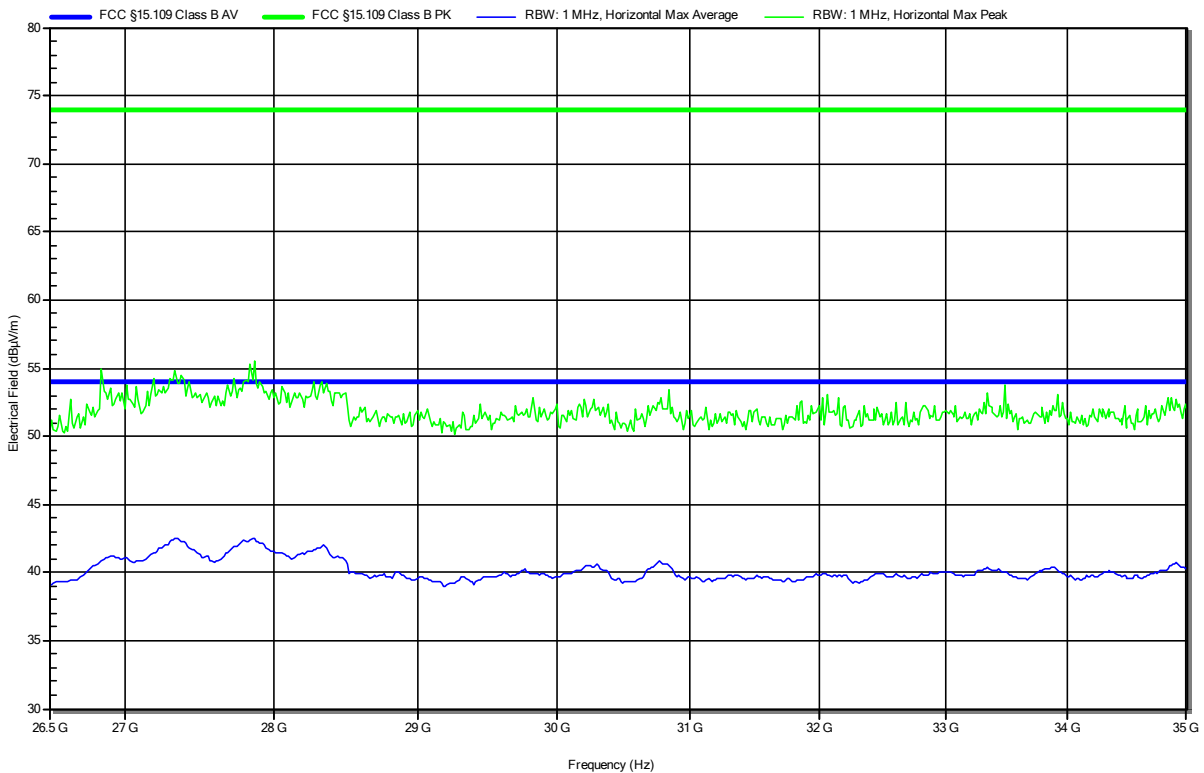


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: AT4560, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 2
 Note 1: --

Index 168

Radiation

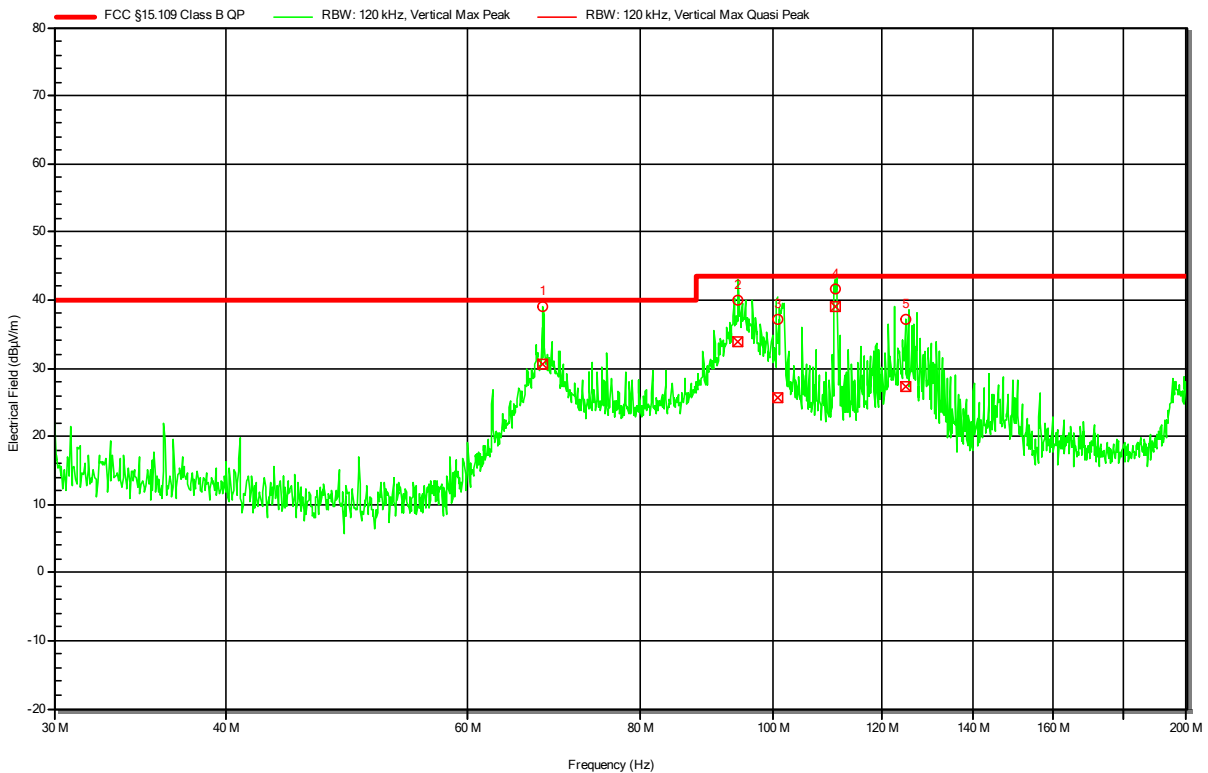


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 148

RadiMation



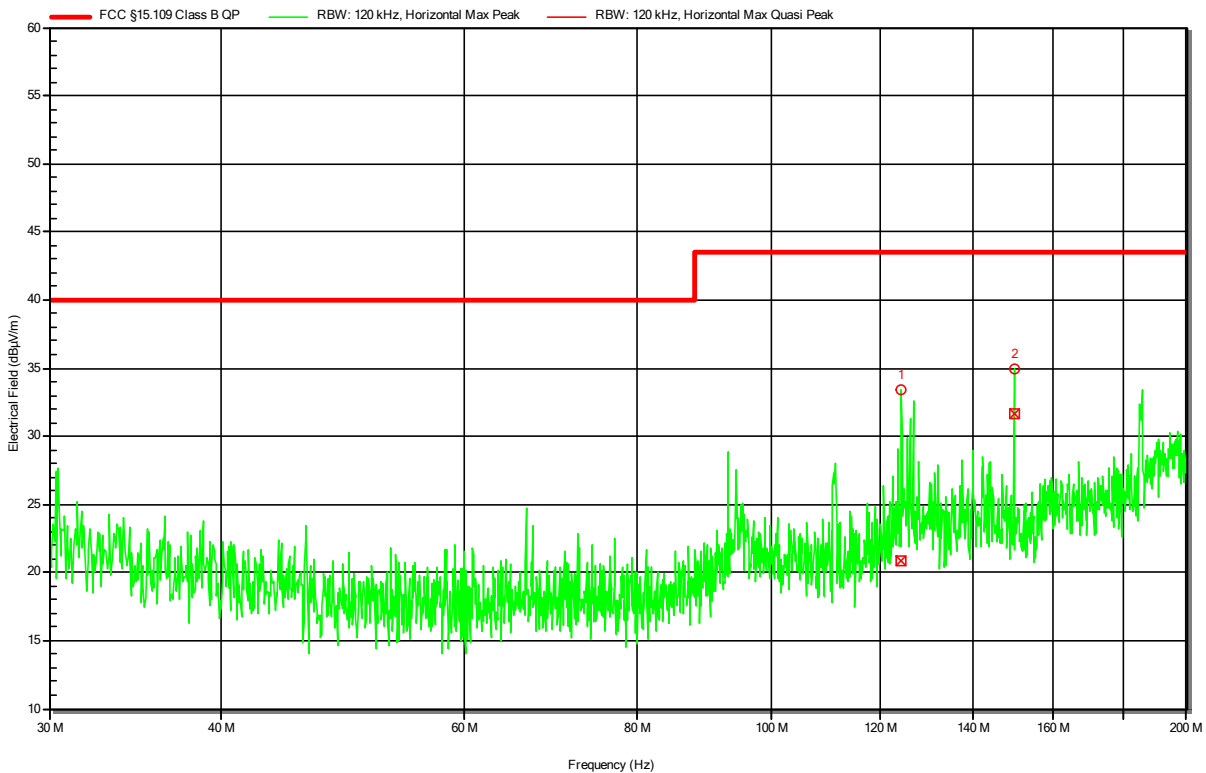
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	68.077 MHz	30.51 dBµV/m	40 dBµV/m	-9.49 dB	Pass	50 degrees	1.1 m
2	94.355 MHz	33.84 dBµV/m	43.52 dBµV/m	-9.68 dB	Pass	50 degrees	1.1 m
3	100.978 MHz	25.64 dBµV/m	43.52 dBµV/m	-17.88 dB	Pass	50 degrees	1.1 m
4	111.127 MHz	39.12 dBµV/m	43.52 dBµV/m	-4.41 dB	Pass	50 degrees	1.1 m
5	124.89 MHz	27.36 dBµV/m	43.52 dBµV/m	-16.16 dB	Pass	50 degrees	1.1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 149

RadiMation



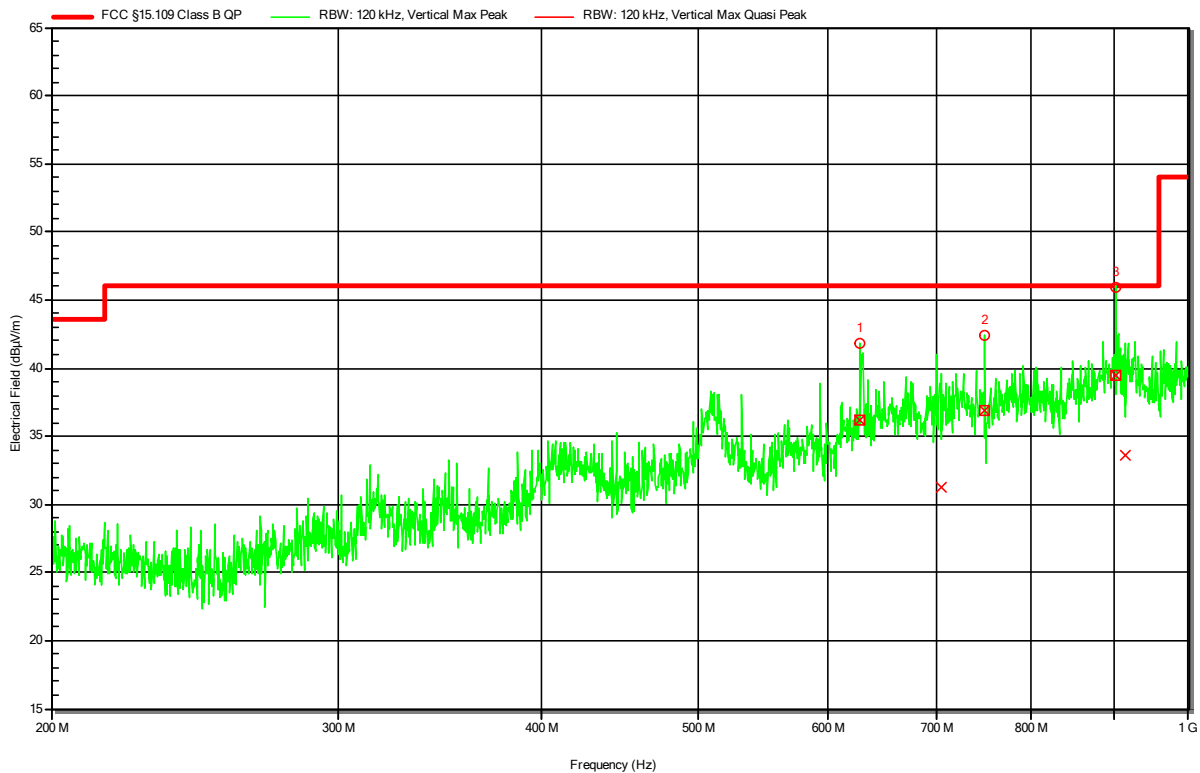
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	124.308 MHz	20.84 dBµV/m	43.52 dBµV/m	-22.68 dB	Pass	120 degrees	1.2 m
2	150.007 MHz	31.64 dBµV/m	43.52 dBµV/m	-11.89 dB	Pass	120 degrees	1.2 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 144

RadiMation



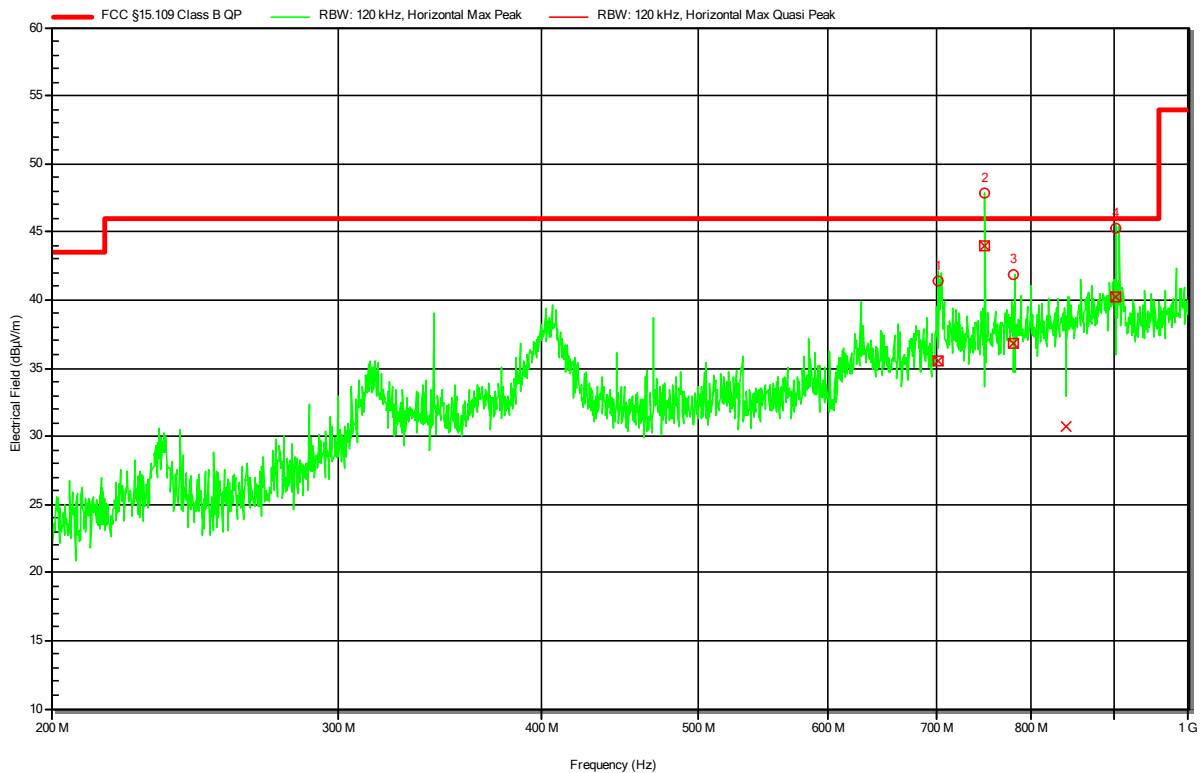
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	628.172 MHz	36.18 dBµV/m	46.02 dBµV/m	-9.84 dB	Pass	180 degrees	1 m
2	750.003 MHz	36.93 dBµV/m	46.02 dBµV/m	-9.09 dB	Pass	180 degrees	1 m
3	902.378 MHz	39.47 dBµV/m	46.02 dBµV/m	-6.55 dB	Pass	180 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-18
 Operating Conditions: ambient temperature: 20 °Celsius
 power input: 12 V DC
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 145

RadiMation



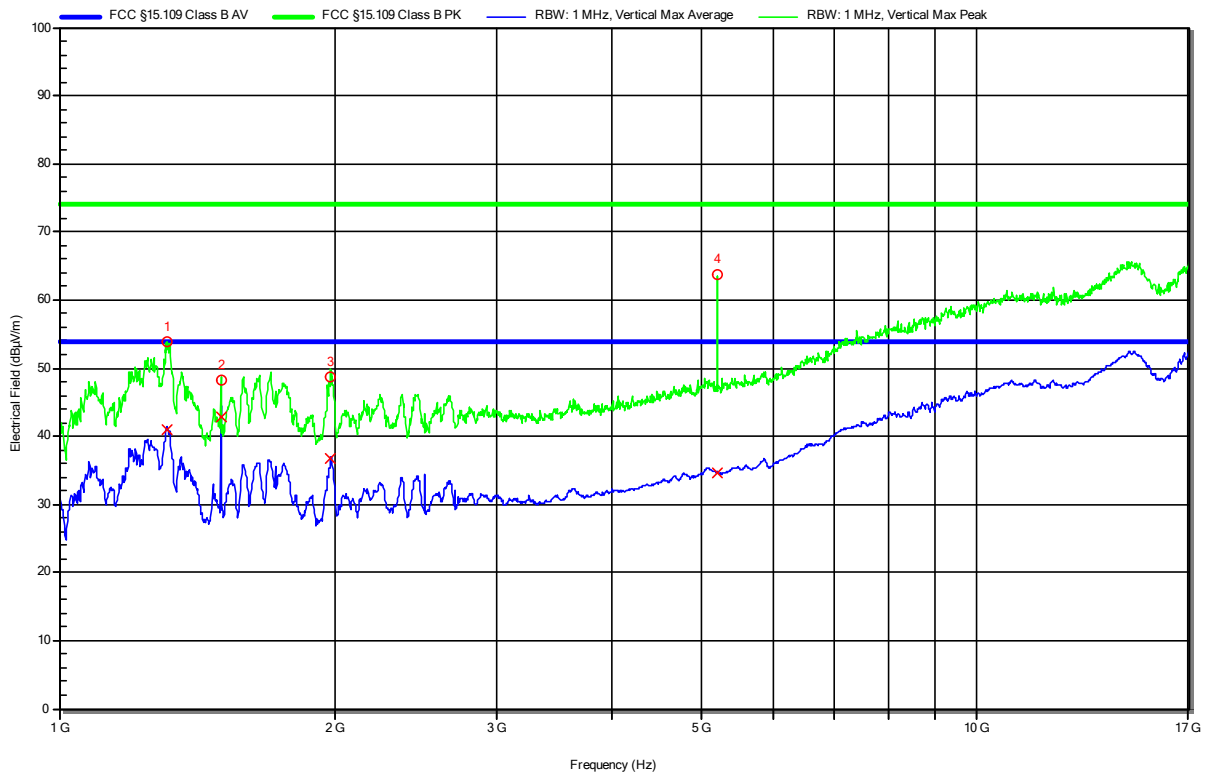
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	702.048 MHz	35.53 dBµV/m	46.02 dBµV/m	-10.49 dB	Pass	90 degrees	1 m
2	750.003 MHz	44 dBµV/m	46.02 dBµV/m	-2.02 dB	Pass	90 degrees	1 m
3	781.255 MHz	36.85 dBµV/m	46.02 dBµV/m	-9.17 dB	Pass	90 degrees	1 m
4	902.39 MHz	40.23 dBµV/m	46.02 dBµV/m	-5.8 dB	Pass	90 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 104

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.309 GHz	53.77 dBµV/m	73.98 dBµV/m	-20.21 dB	Pass	0 degrees	1.5 m
2	1.5 GHz	48.25 dBµV/m	73.98 dBµV/m	-25.73 dB	Pass	0 degrees	1.5 m
3	1.978 GHz	48.74 dBµV/m	73.98 dBµV/m	-25.24 dB	Pass	0 degrees	1.5 m
4	5.221 GHz	63.62 dBµV/m	73.98 dBµV/m	-10.36 dB	Pass	0 degrees	1.5 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.309 GHz	40.88 dBµV/m	53.98 dBµV/m	-13.1 dB	Pass	0 degrees	1.5 m
2	1.5 GHz	42.87 dBµV/m	53.98 dBµV/m	-11.11 dB	Pass	0 degrees	1.5 m
3	1.978 GHz	36.68 dBµV/m	53.98 dBµV/m	-17.3 dB	Pass	0 degrees	1.5 m
4	5.221 GHz	34.67 dBµV/m	53.98 dBµV/m	-19.31 dB	Pass	0 degrees	1.5 m

Test Report No.: G0M-2105-9817-EF0115B-V01

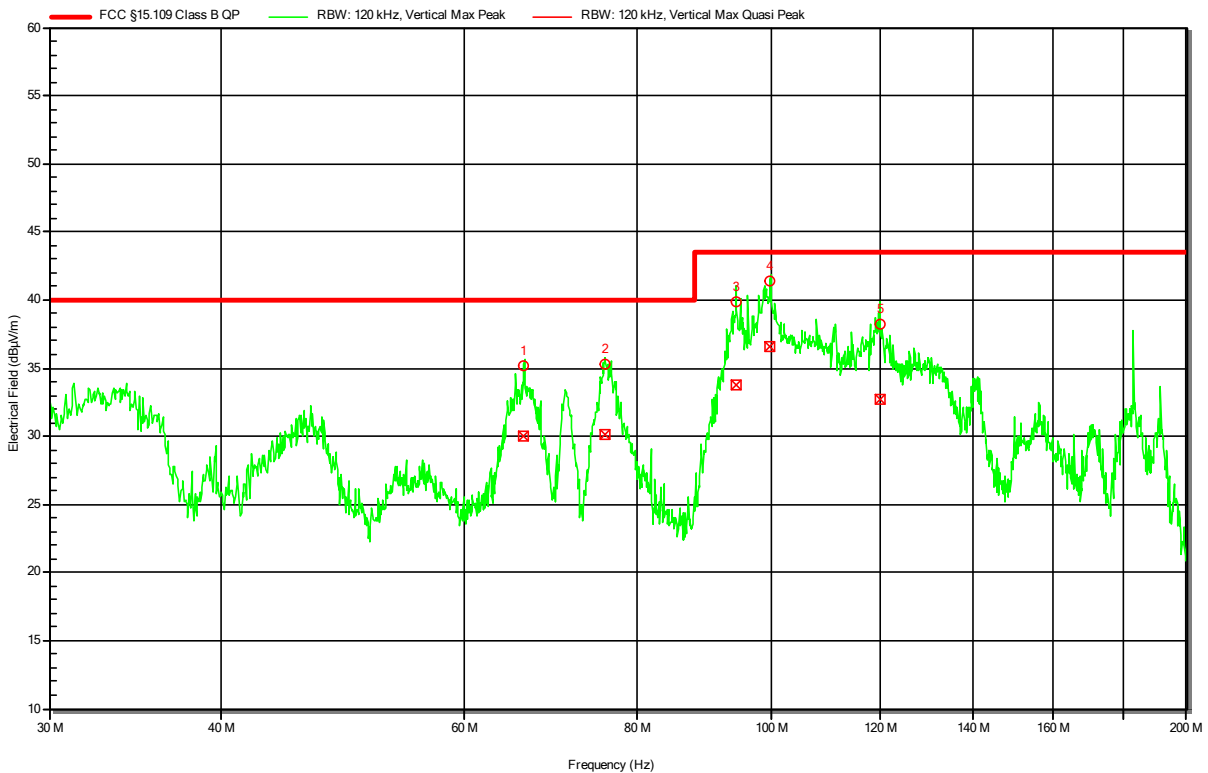
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-13
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 4
 Note 1: --

Index 1

RadiMation



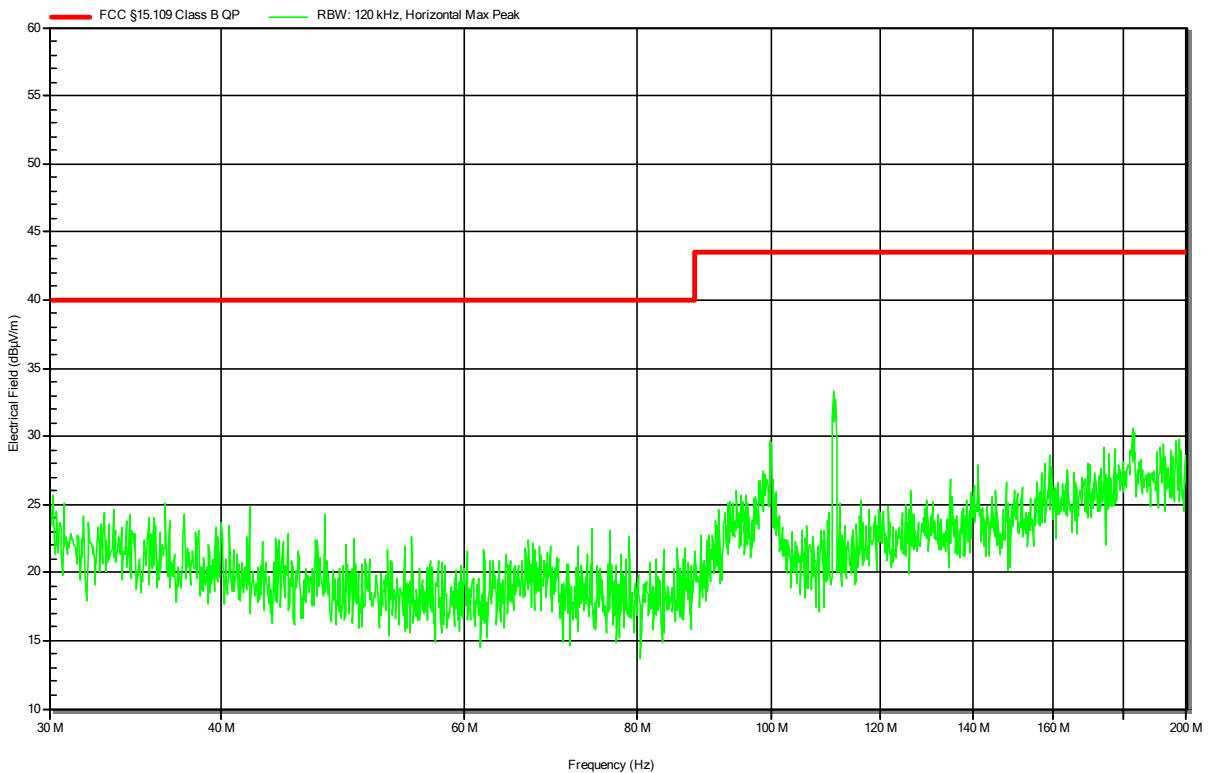
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	66.21 MHz	30.05 dBµV/m	40 dBµV/m	-9.95 dB	Pass	120 degrees	1 m
2	75.854 MHz	30.12 dBµV/m	40 dBµV/m	-9.88 dB	Pass	120 degrees	1 m
3	94.313 MHz	33.73 dBµV/m	43.52 dBµV/m	-9.79 dB	Pass	120 degrees	1 m
4	99.838 MHz	36.6 dBµV/m	43.52 dBµV/m	-6.92 dB	Pass	120 degrees	1 m
5	119.894 MHz	32.7 dBµV/m	43.52 dBµV/m	-10.82 dB	Pass	120 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-13
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 4
 Note 1: --

Index 11

RadiMation

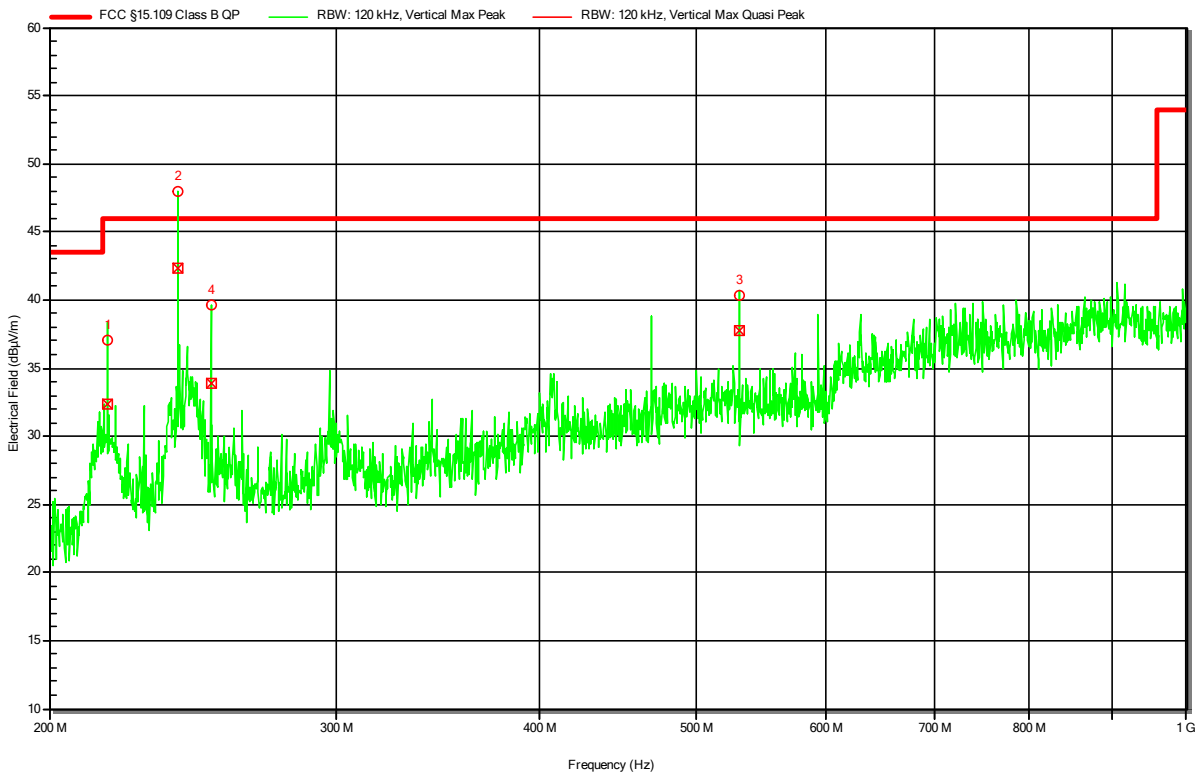


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-13
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 4
 Note 1: --

Index 22

Radiation



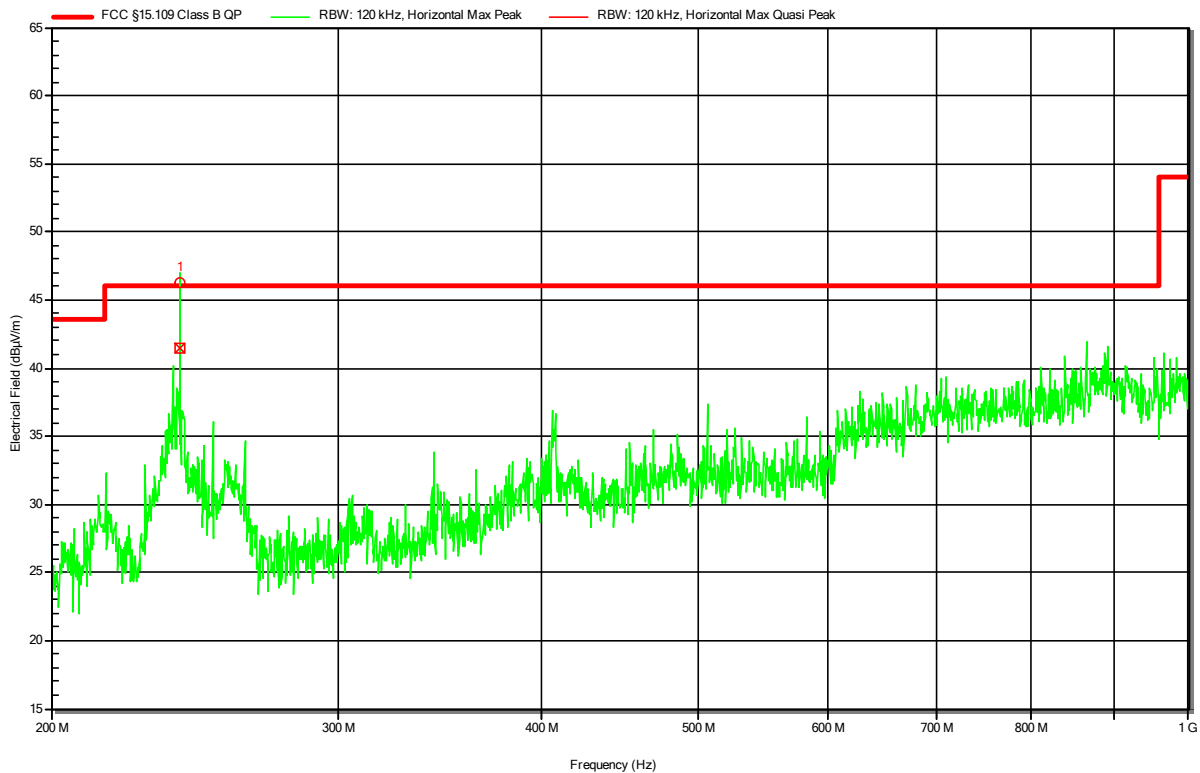
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	217.178 MHz	32.34 dBµV/m	46.02 dBµV/m	-13.68 dB	Pass	0 degrees	1 m
2	239.994 MHz	42.3 dBµV/m	46.02 dBµV/m	-3.72 dB	Pass	0 degrees	1 m
3	531.252 MHz	37.77 dBµV/m	46.02 dBµV/m	-8.25 dB	Pass	0 degrees	1 m
4	251.438 MHz	33.88 dBµV/m	46.02 dBµV/m	-12.14 dB	Pass	0 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-13
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 4
 Note 1: --

Index 29

Radiation



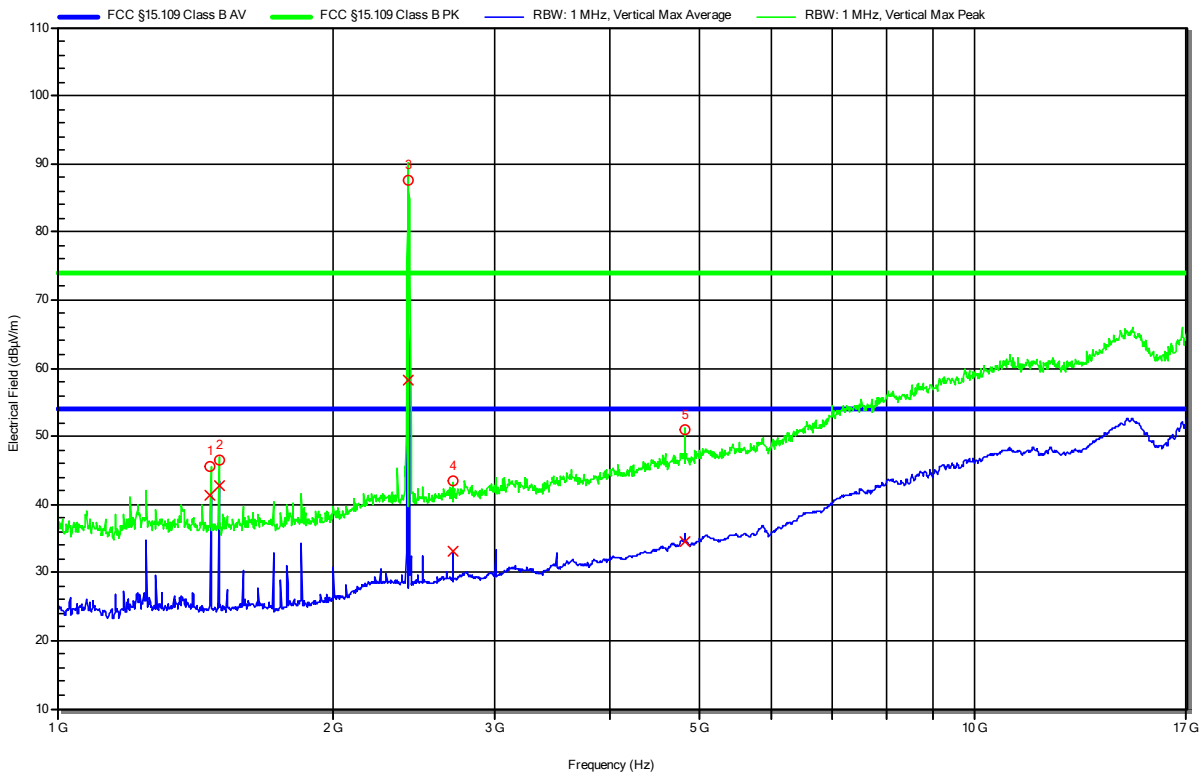
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	239.994 MHz	41.47 dBµV/m	46.02 dBµV/m	-4.55 dB	Pass	160 degrees	1.9 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 4
 Note 1: --°

Index 76

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.469 GHz	45.51 dB μ V/m	73.98 dB μ V/m	-28.47 dB	Pass	160 degrees	1 m
2	1.5 GHz	46.49 dB μ V/m	73.98 dB μ V/m	-27.49 dB	Pass	160 degrees	1 m
3	2.411 GHz	WLAN-Carrier					
4	2.7 GHz	43.34 dB μ V/m	73.98 dB μ V/m	-30.64 dB	Pass	160 degrees	1 m
5	4.824 GHz	51.06 dB μ V/m	73.98 dB μ V/m	-22.92 dB	Pass	160 degrees	1 m

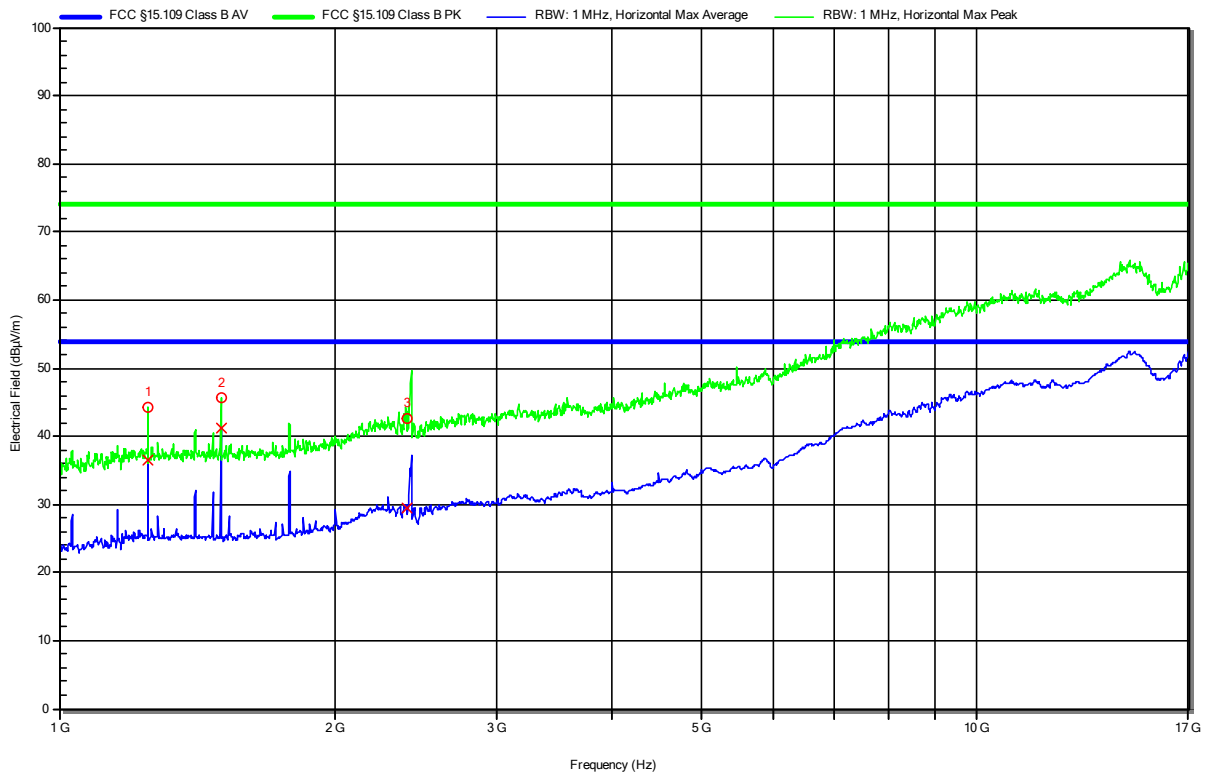
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.469 GHz	41.22 dB μ V/m	53.98 dB μ V/m	-12.76 dB	Pass	160 degrees	1 m
2	1.5 GHz	42.82 dB μ V/m	53.98 dB μ V/m	-11.16 dB	Pass	160 degrees	1 m
3	2.411 GHz	WLAN-Carrier					
4	2.7 GHz	33.06 dB μ V/m	53.98 dB μ V/m	-20.92 dB	Pass	160 degrees	1 m
5	4.824 GHz	34.59 dB μ V/m	53.98 dB μ V/m	-19.39 dB	Pass	160 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 4
 Note 1: --

Index 78

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.25 GHz	44.15 dBµV/m	73.98 dBµV/m	-29.83 dB	Pass	180 degrees	1.2 m
2	1.5 GHz	45.75 dBµV/m	73.98 dBµV/m	-28.23 dB	Pass	180 degrees	1.2 m
3	2.393 GHz	42.69 dBµV/m	73.98 dBµV/m	-31.29 dB	Pass	180 degrees	1.2 m

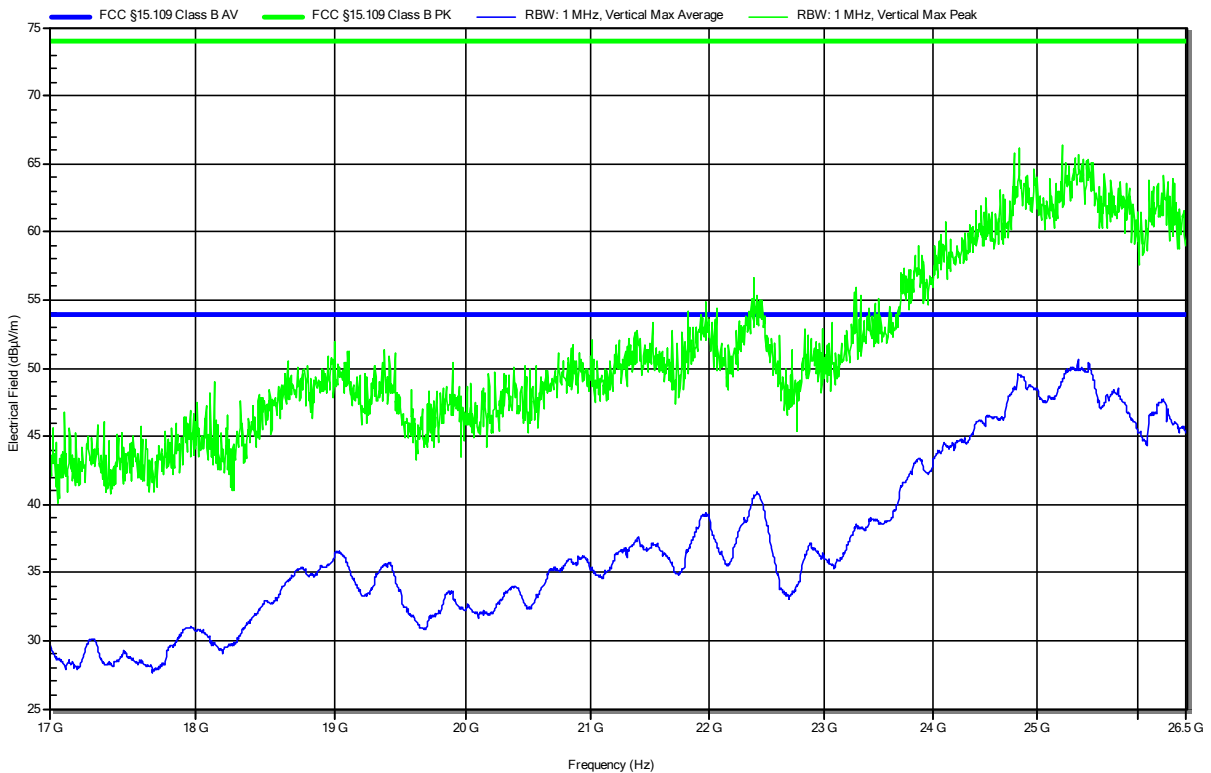
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.25 GHz	36.61 dBµV/m	53.98 dBµV/m	-17.37 dB	Pass	180 degrees	1.2 m
2	1.5 GHz	41.27 dBµV/m	53.98 dBµV/m	-12.71 dB	Pass	180 degrees	1.2 m
3	2.393 GHz	29.36 dBµV/m	53.98 dBµV/m	-24.62 dB	Pass	180 degrees	1.2 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: 22240-25 Amp. CBL26402075, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 4
 Note 1: --

Index 151

Radiation

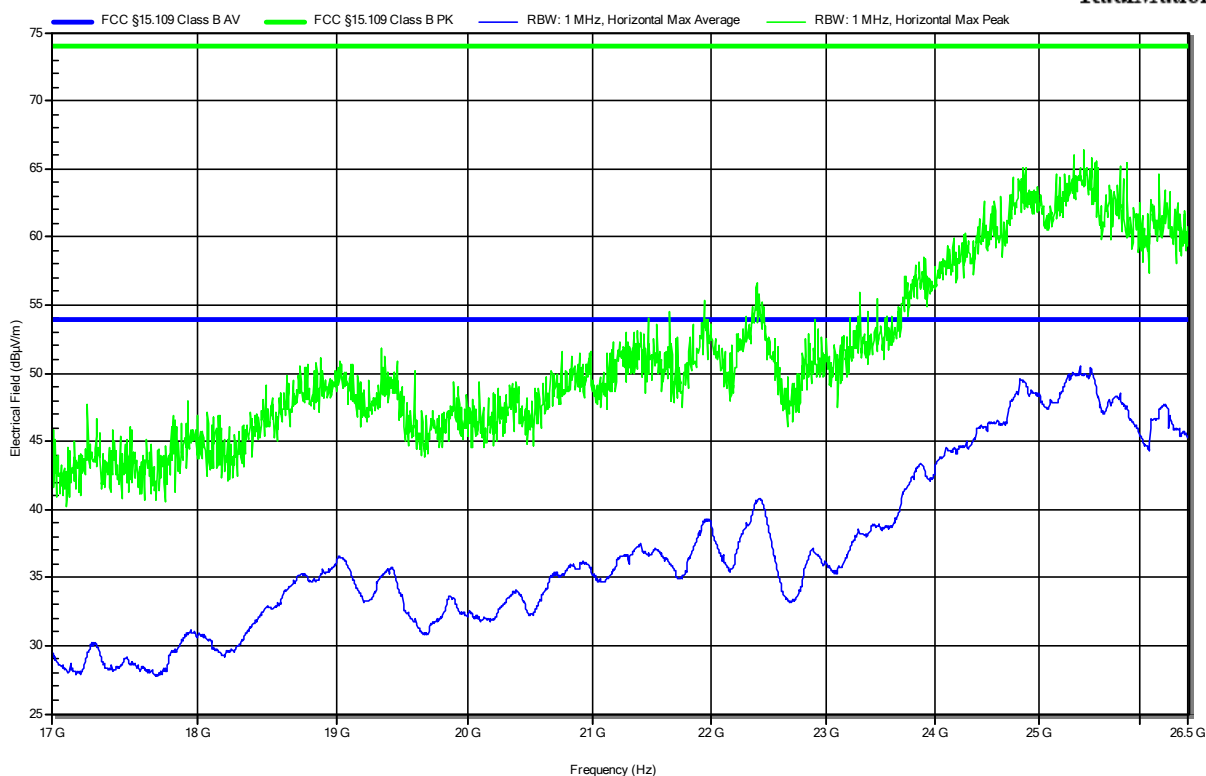


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: 22240-25 Amp. CBL26402075, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 4
 Note 1: --

Index 152

Radiation

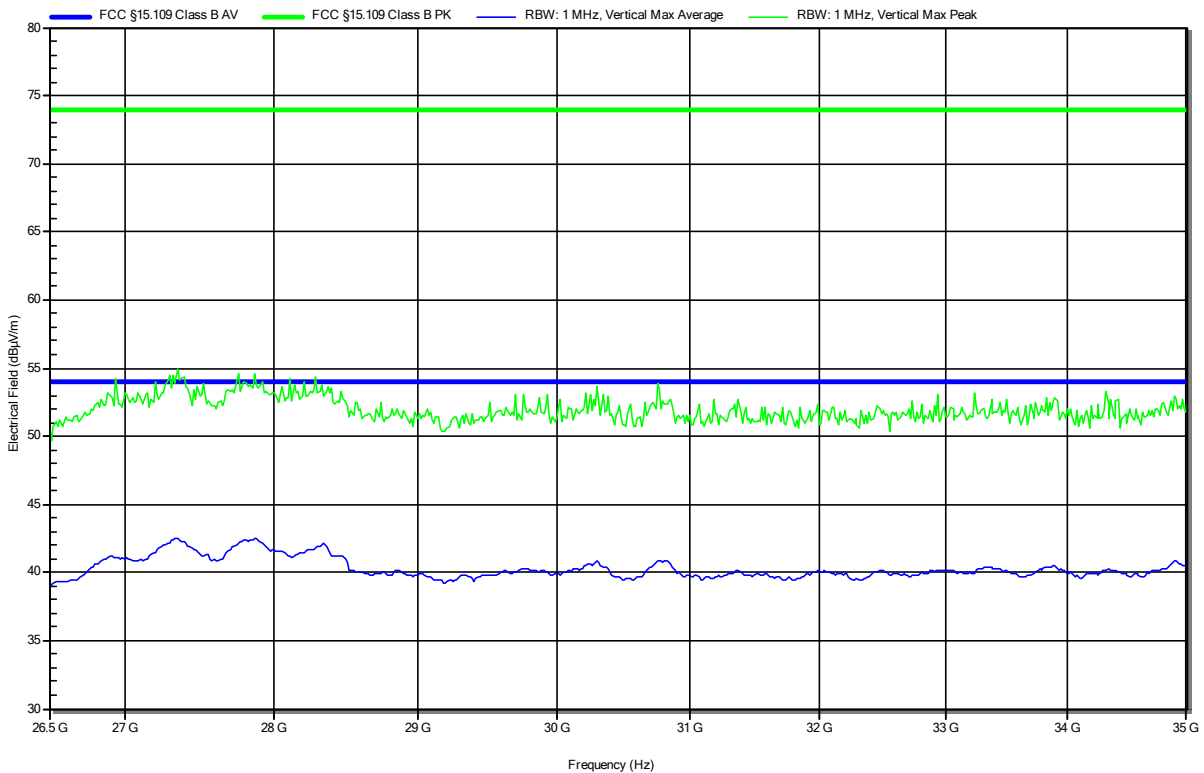


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: AT4560, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1 Configuration 4
 Note 1: --

Index 162

Radiation

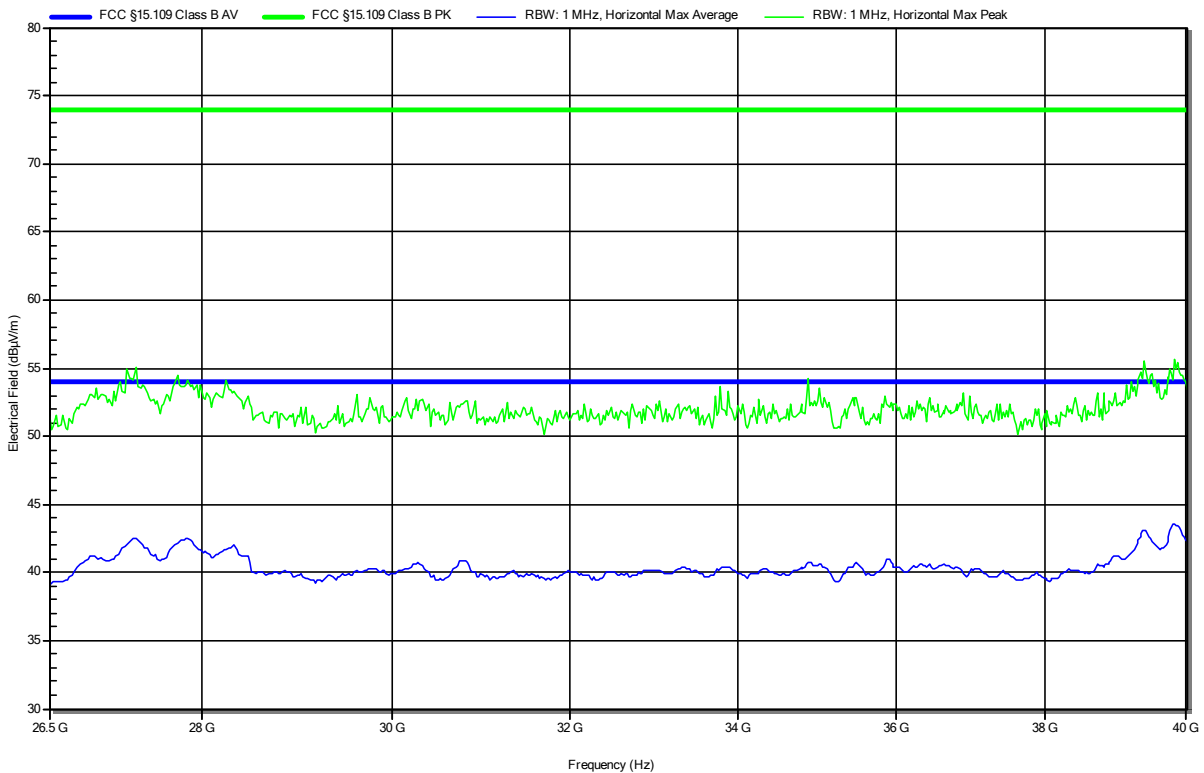


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: AT4560, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 1
 Configuration 4
 Note 1: --

Index 163

RadiMation

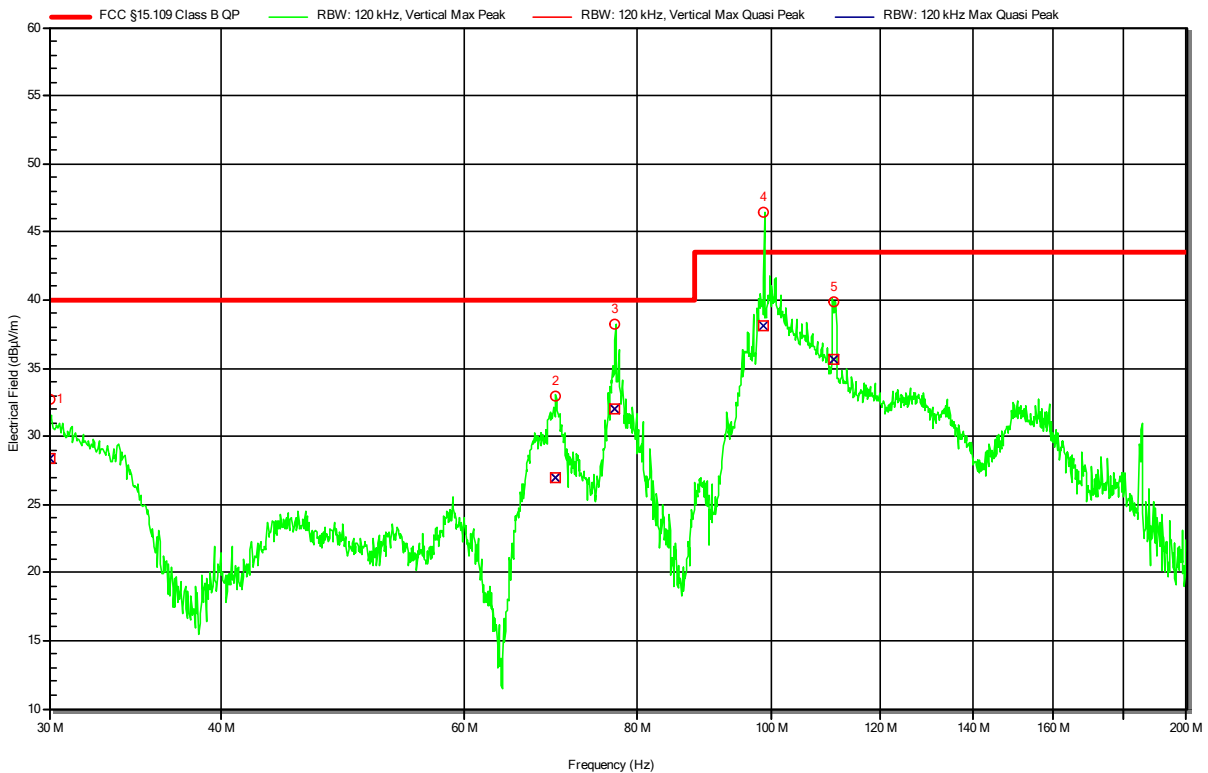


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 23 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --°

Index 45

RadiMation



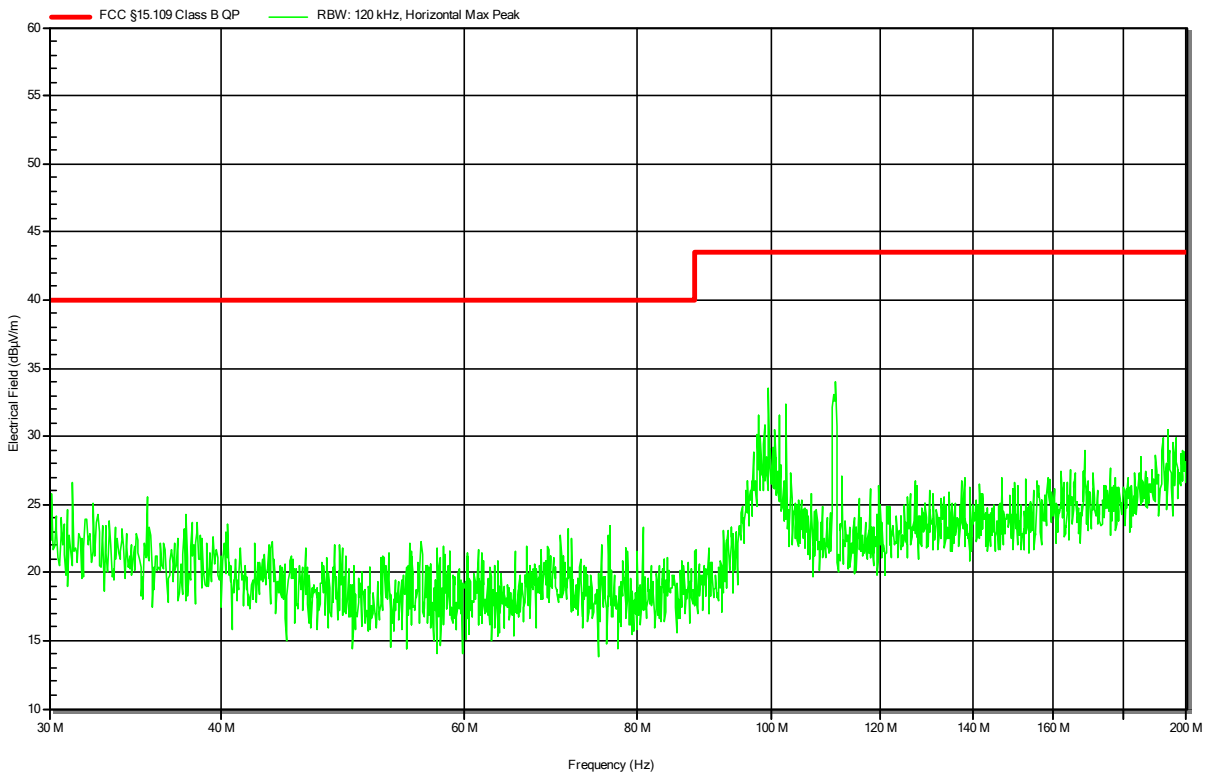
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	30 MHz	28.33 dBµV/m	40 dBµV/m	-11.67 dB	Pass	120 degrees	1 m
2	69.789 MHz	26.96 dBµV/m	40 dBµV/m	-13.04 dB	Pass	120 degrees	1 m
3	77.127 MHz	31.95 dBµV/m	40 dBµV/m	-8.05 dB	Pass	120 degrees	1 m
4	98.859 MHz	38.14 dBµV/m	43.52 dBµV/m	-5.38 dB	Pass	120 degrees	1 m
5	111.031 MHz	35.61 dBµV/m	43.52 dBµV/m	-7.91 dB	Pass	120 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 23 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 50

RadiMation

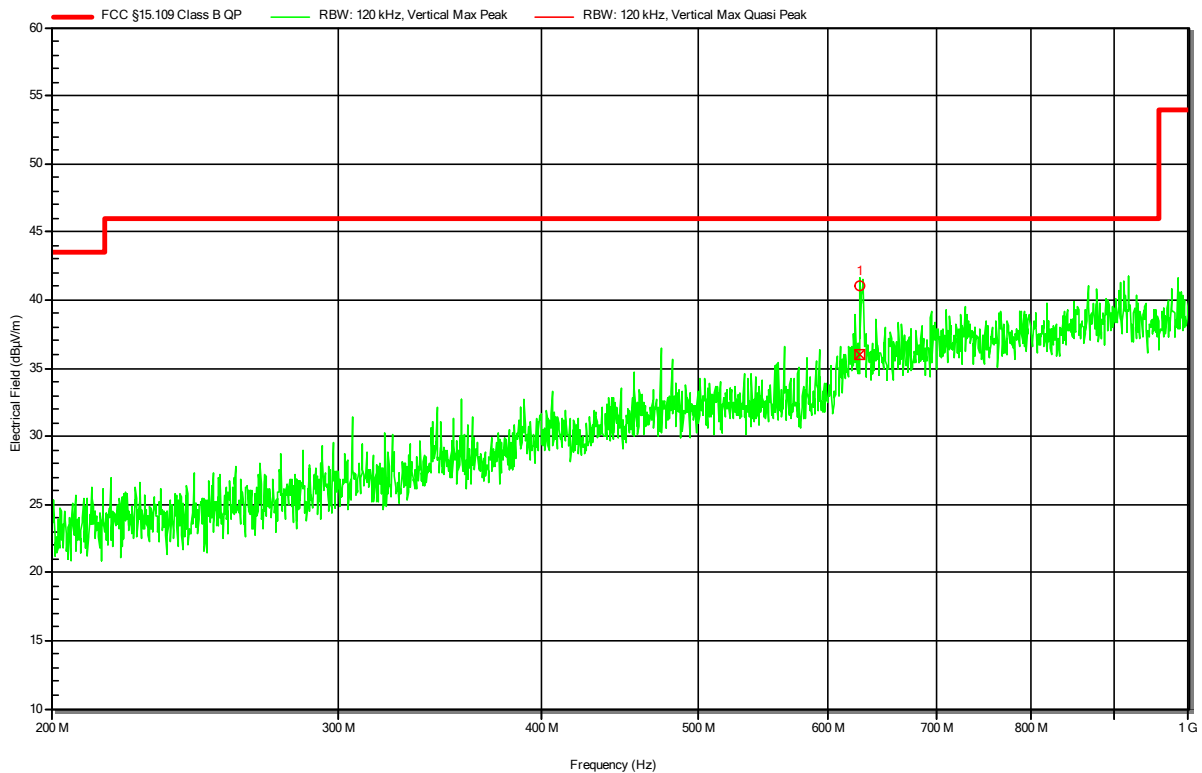


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 23 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 51

Radiation



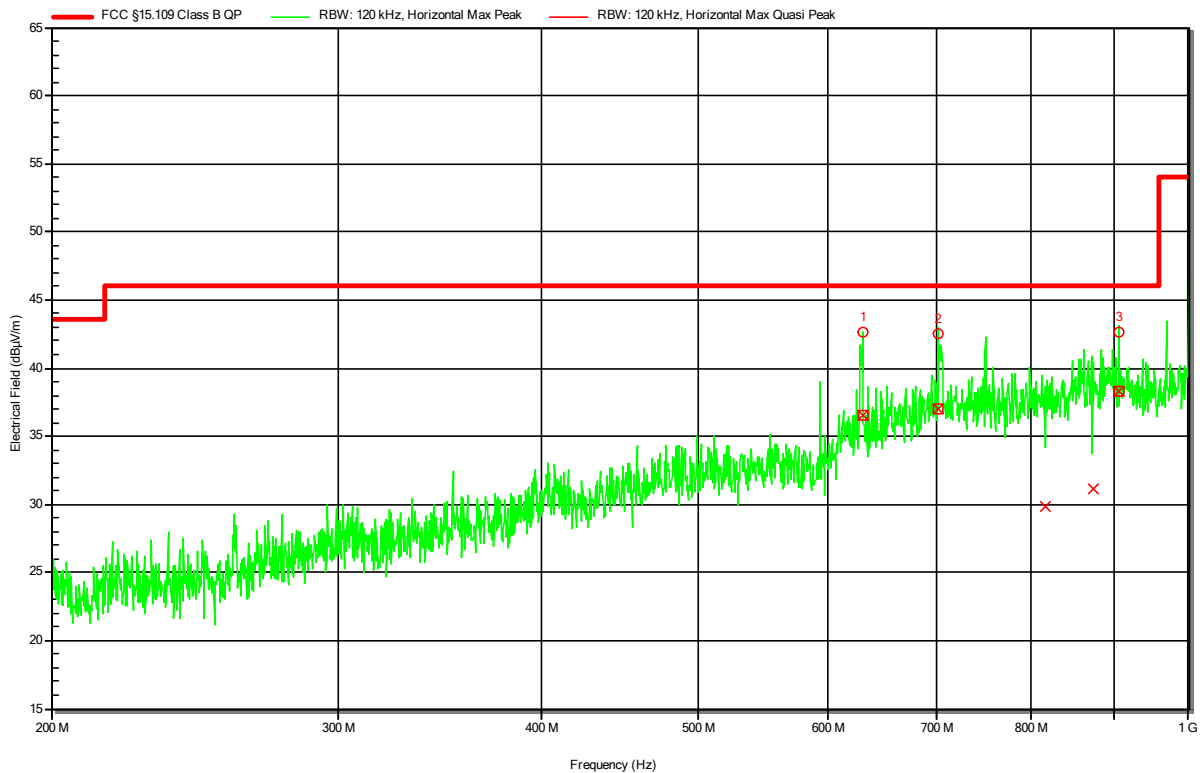
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	628.154 MHz	35.98 dBµV/m	46.02 dBµV/m	-10.04 dB	Pass	170 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 23 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 56

RadiMation



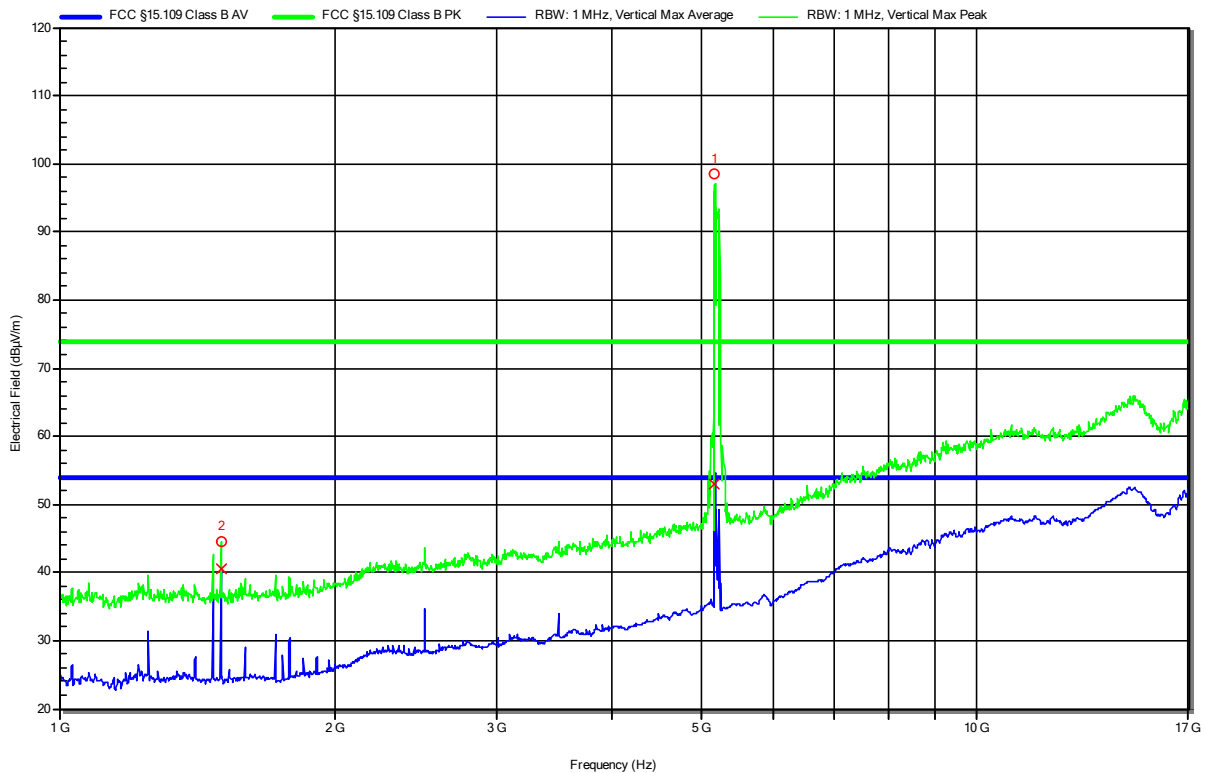
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	631.102 MHz	36.53 dBµV/m	46.02 dBµV/m	-9.49 dB	Pass	90 degrees	1.4 m
2	702.047 MHz	36.95 dBµV/m	46.02 dBµV/m	-9.07 dB	Pass	90 degrees	1.4 m
3	906.232 MHz	38.35 dBµV/m	46.02 dBµV/m	-7.67 dB	Pass	90 degrees	1.4 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 84

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	5.174 GHz	WLAN-Carrier					
2	1.5 GHz	44.42 dBµV/m	73.98 dBµV/m	-29.56 dB	Pass	180 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	5.174 GHz	WLAN-Carrier					
2	1.5 GHz	40.53 dBµV/m	53.98 dBµV/m	-13.45 dB	Pass	180 degrees	1 m

Test Report No.: G0M-2105-9817-EF0115B-V01

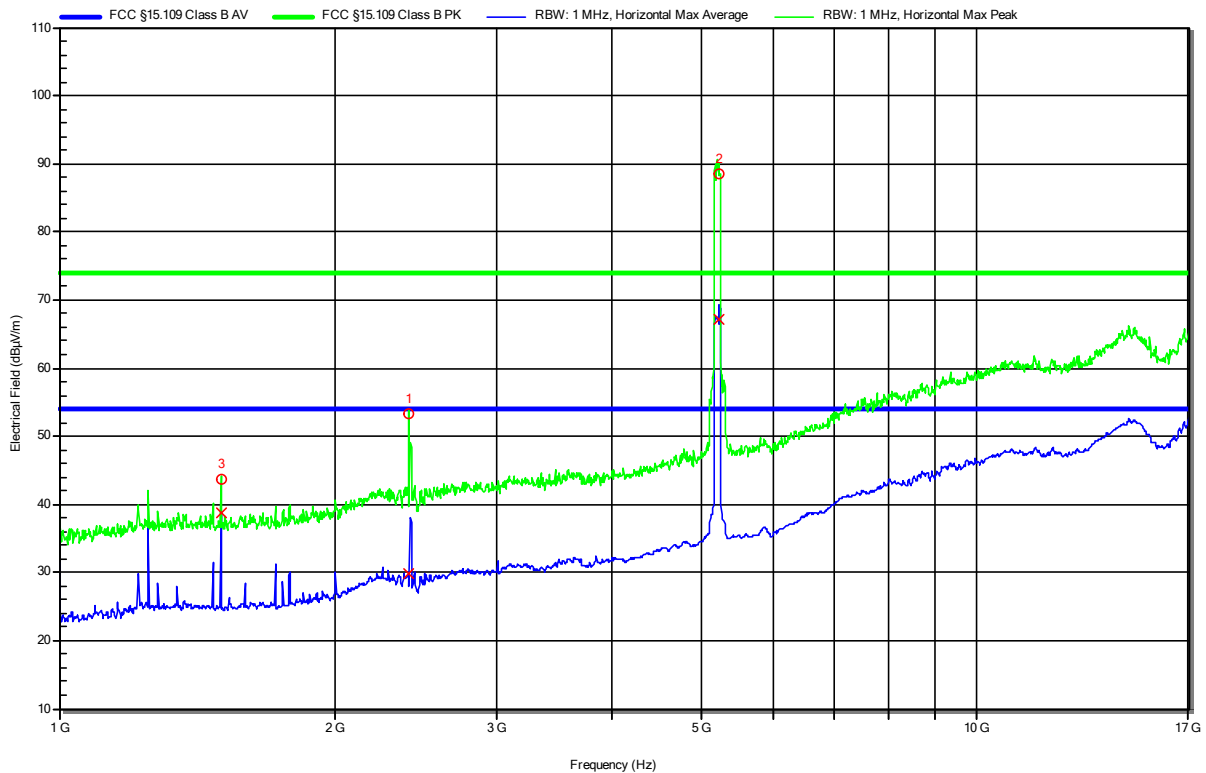
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 87

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	2.402 GHz	53.39 dBµV/m	73.98 dBµV/m	-20.59 dB	Pass	180 degrees	1 m
2	5.24 GHz	WLAN-Carrier	73.98 dBµV/m	-30.35 dB	Pass	180 degrees	1 m
3	1.5 GHz	43.63 dBµV/m	73.98 dBµV/m	-30.35 dB	Pass	180 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	2.402 GHz	29.75 dBµV/m	53.98 dBµV/m	-24.23 dB	Pass	180 degrees	1 m
2	5.24 GHz	WLAN-Carrier	53.98 dBµV/m	-24.23 dB	Pass	180 degrees	1 m
3	1.5 GHz	38.74 dBµV/m	53.98 dBµV/m	-15.24 dB	Pass	180 degrees	1 m

Test Report No.: G0M-2105-9817-EF0115B-V01

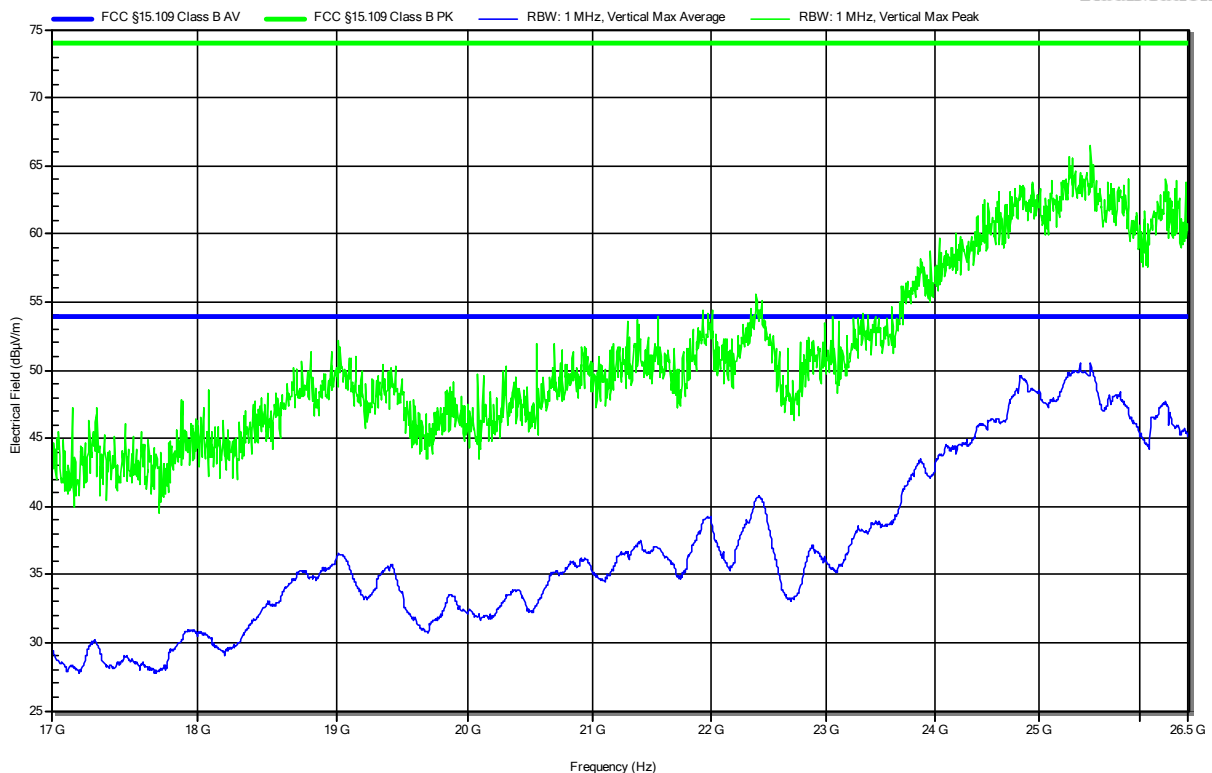
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: 22240-25 Amp. CBL26402075, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 155

Radiation

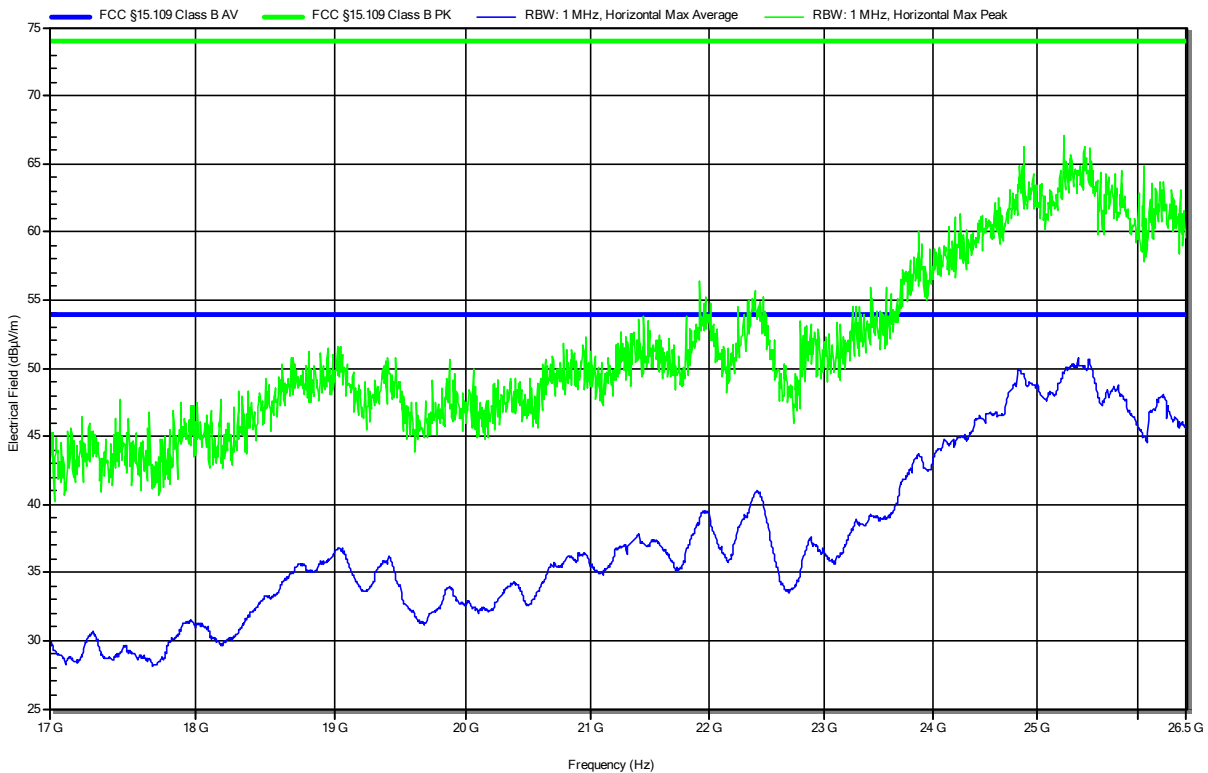


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: 22240-25 Amp. CBL26402075, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 156

Radiation

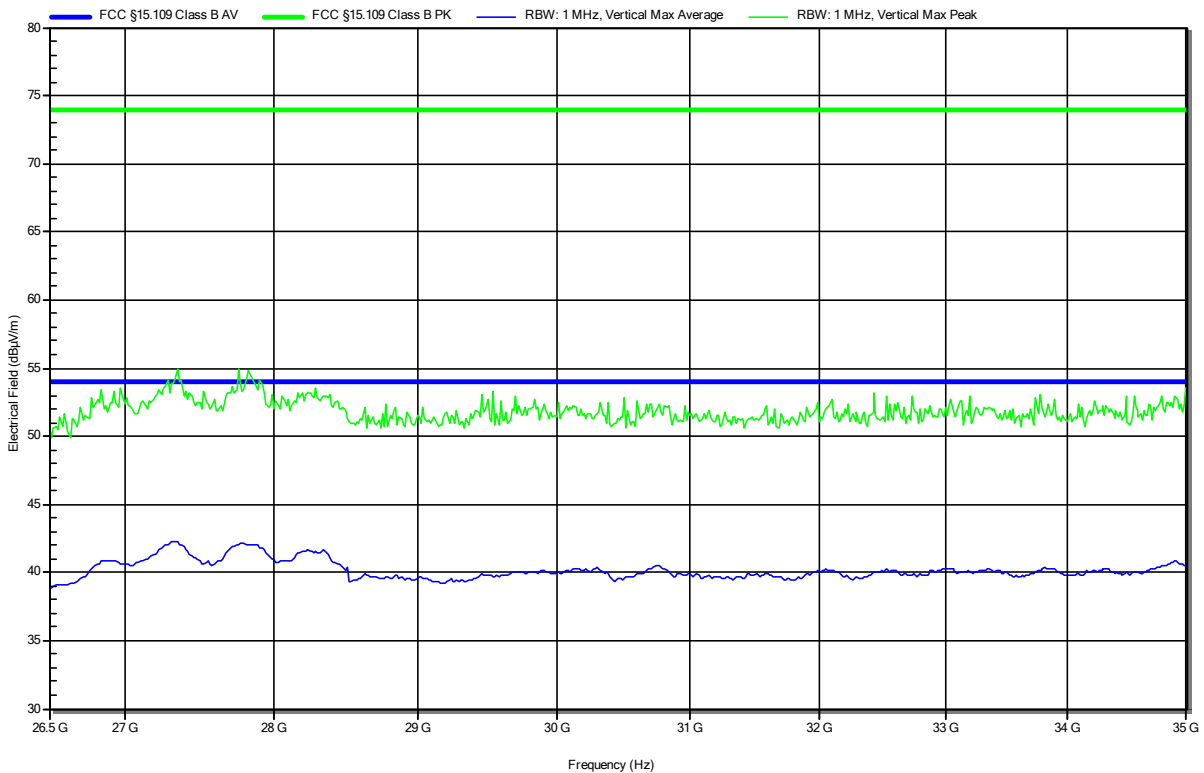


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: AT4560, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 157

RadiMation

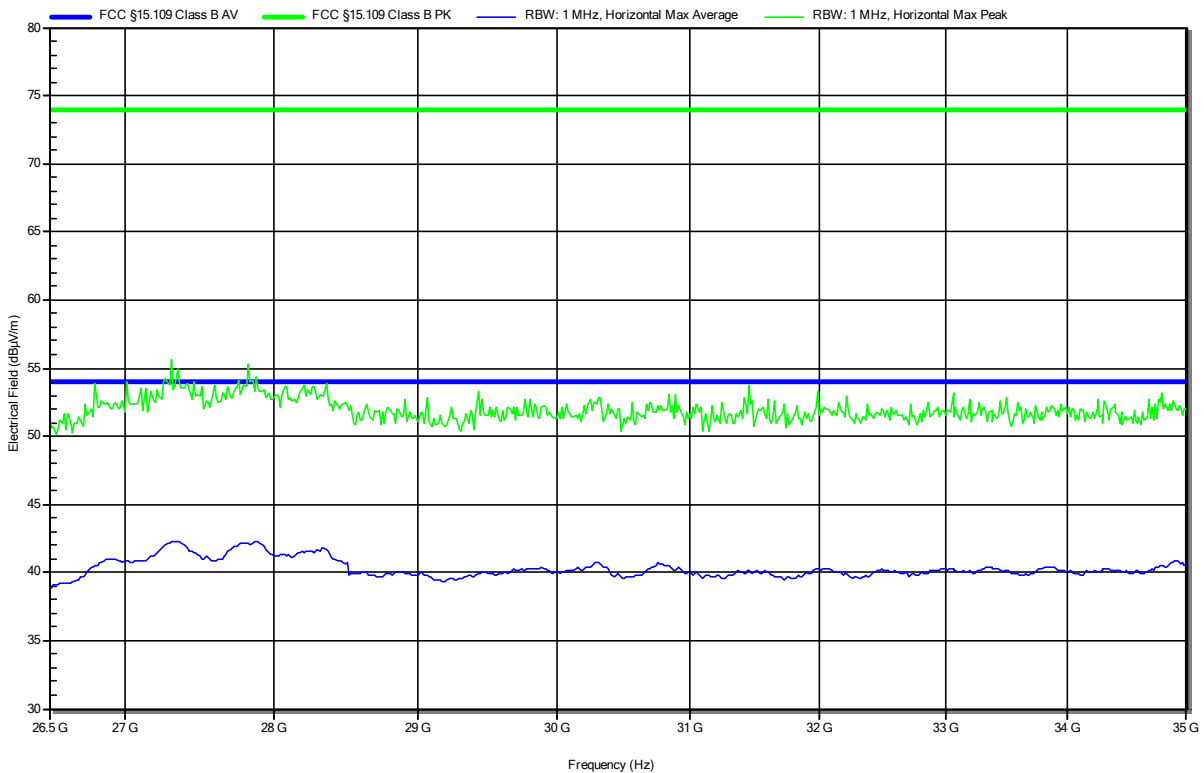


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: AT4560, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Note 1: --

Index 158

RadiMation

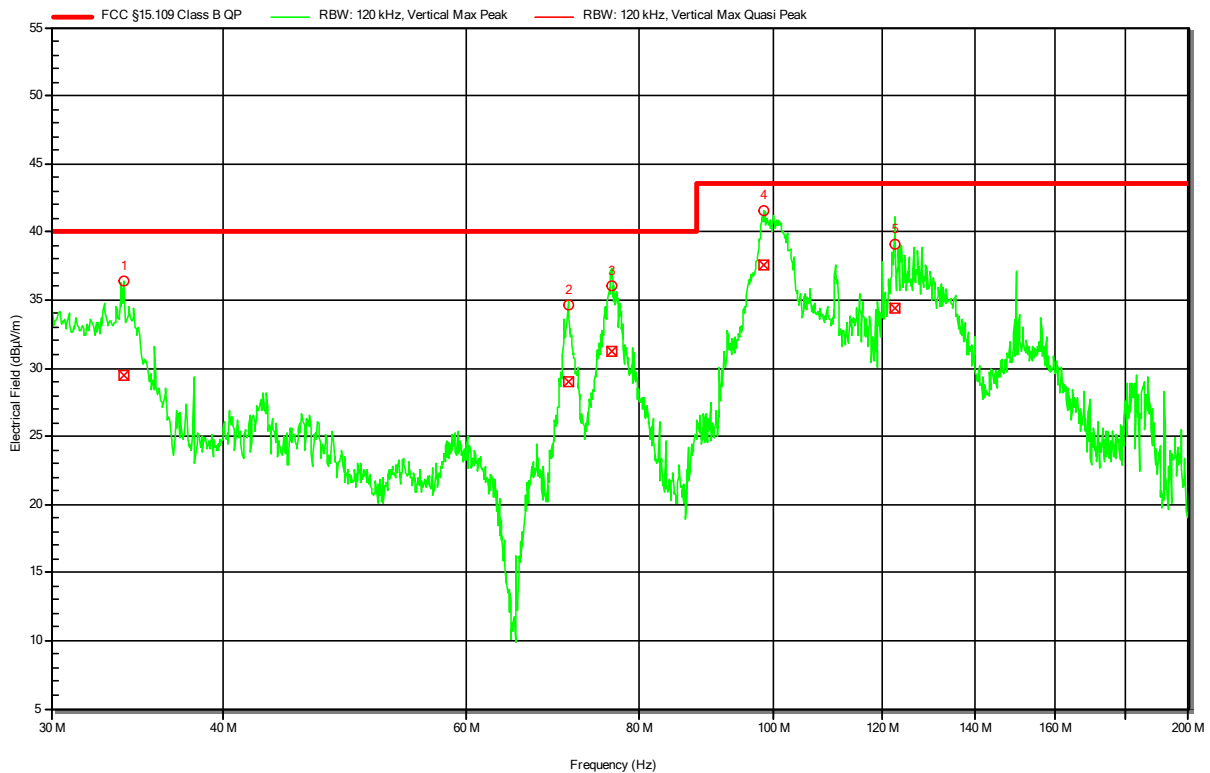


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3 Configuration 6
 Note 1: --

Index 62

RadiMation



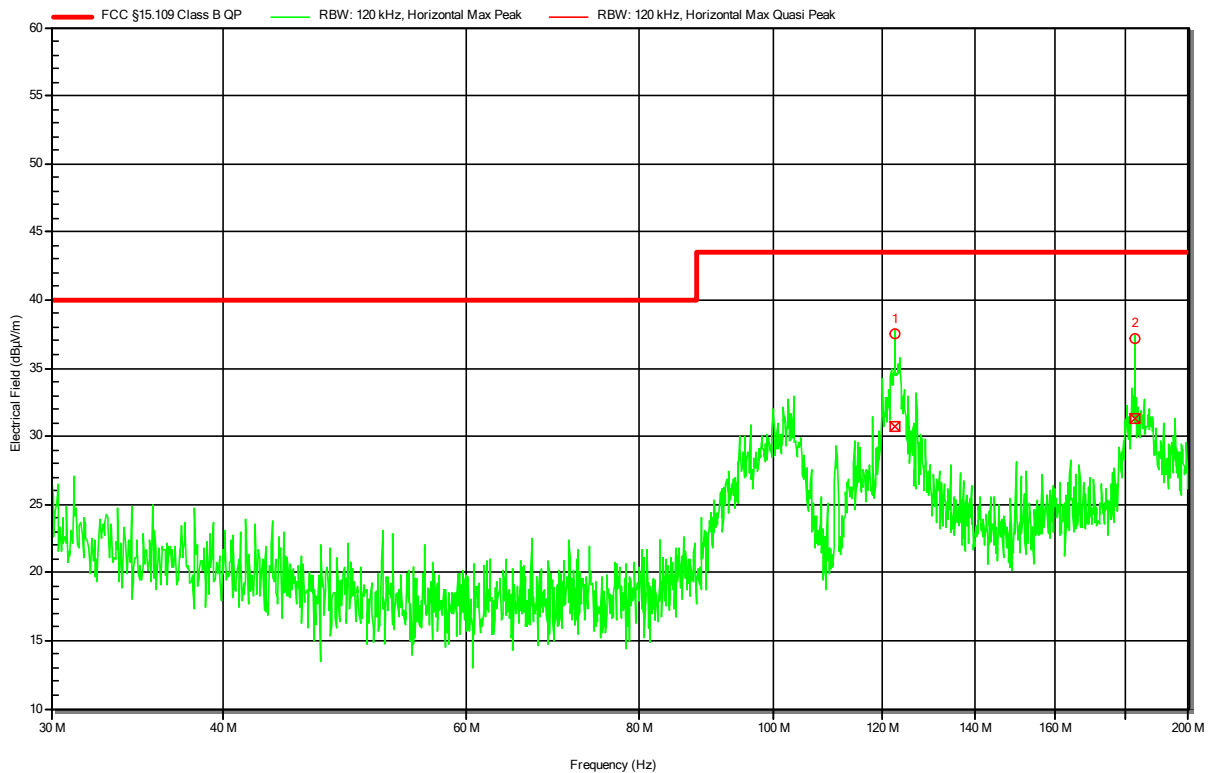
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	33.837 MHz	29.44 dBµV/m	40 dBµV/m	-10.56 dB	Pass	120 degrees	1 m
2	71.086 MHz	29.02 dBµV/m	40 dBµV/m	-10.98 dB	Pass	120 degrees	1 m
3	76.418 MHz	31.22 dBµV/m	40 dBµV/m	-8.78 dB	Pass	120 degrees	1 m
4	98.54 MHz	37.52 dBµV/m	43.52 dBµV/m	-6.01 dB	Pass	120 degrees	1 m
5	122.476 MHz	34.36 dBµV/m	43.52 dBµV/m	-9.16 dB	Pass	120 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 6
 Note 1: --

Index 65

RadiMation



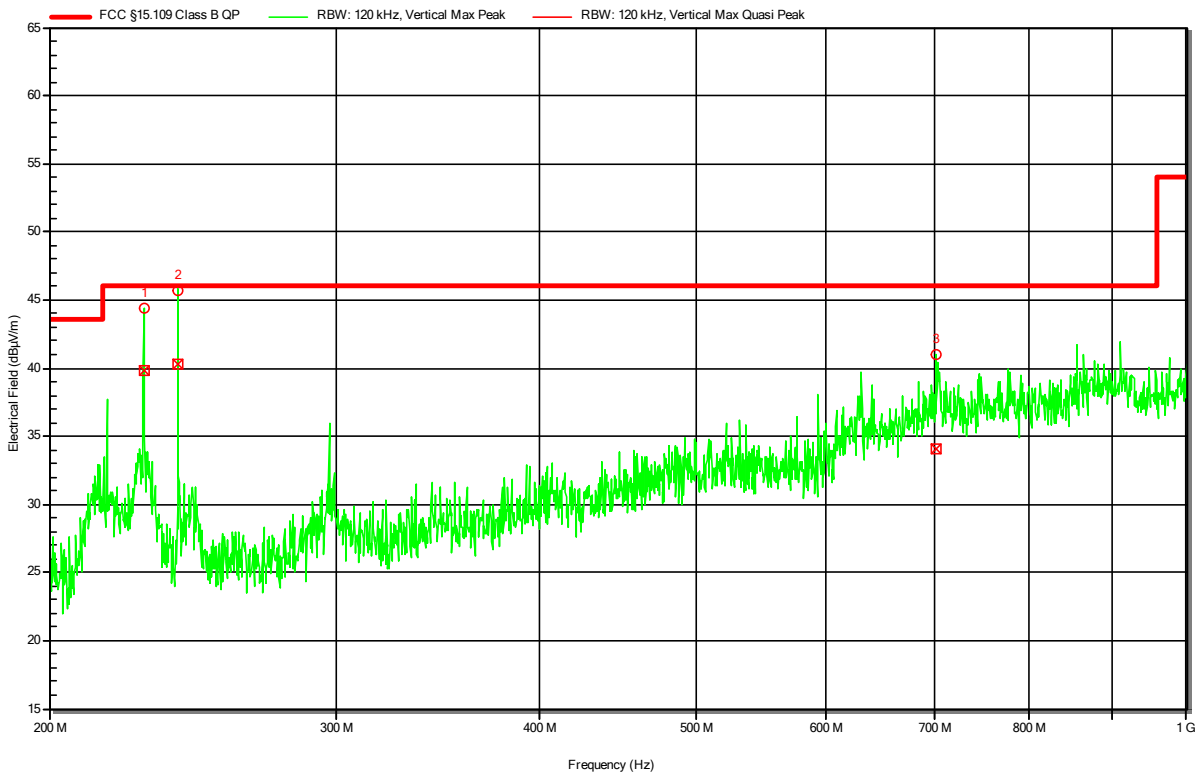
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	122.5 MHz	30.66 dBµV/m	43.52 dBµV/m	-12.86 dB	Pass	60 degrees	1.6 m
2	182.85 MHz	31.29 dBµV/m	43.52 dBµV/m	-12.23 dB	Pass	60 degrees	1.6 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3 Configuration 6
 Note 1: --

Index 57

RadiMation



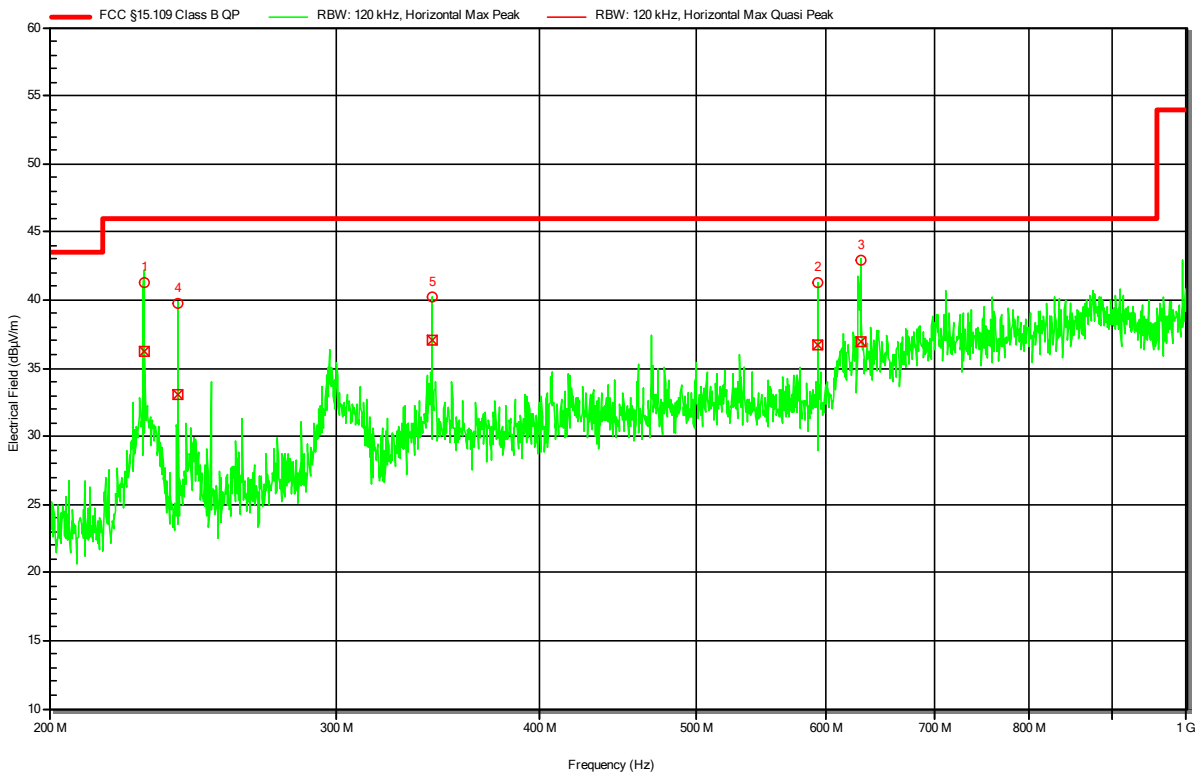
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	228.58 MHz	39.81 dBµV/m	46.02 dBµV/m	-6.21 dB	Pass	62 degrees	1.1 m
2	239.994 MHz	40.27 dBµV/m	46.02 dBµV/m	-5.75 dB	Pass	62 degrees	1.1 m
3	702.005 MHz	34.06 dBµV/m	46.02 dBµV/m	-11.96 dB	Pass	62 degrees	1.1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3 Configuration 6
 Note 1: --

Index 61

RadiMation



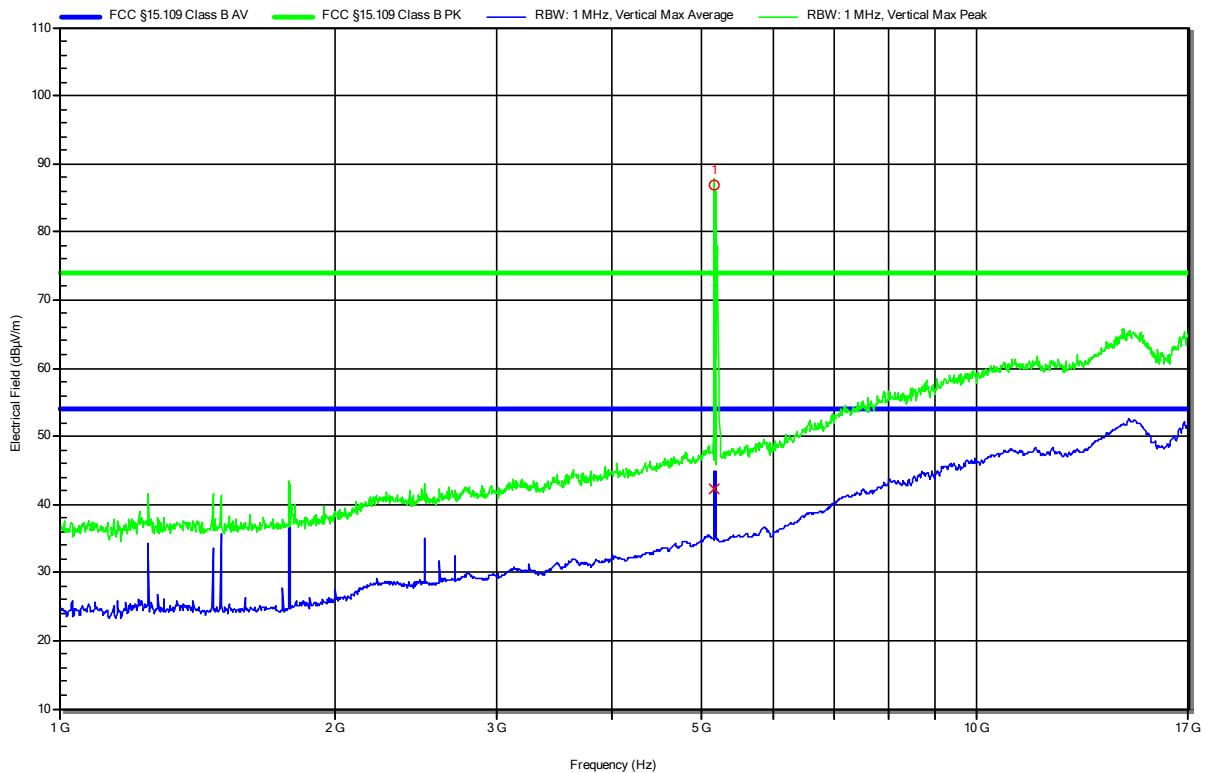
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	228.61 MHz	36.17 dBµV/m	46.02 dBµV/m	-9.85 dB	Pass	160 degrees	1 m
2	593.738 MHz	36.69 dBµV/m	46.02 dBµV/m	-9.33 dB	Pass	160 degrees	1 m
3	631.078 MHz	36.95 dBµV/m	46.02 dBµV/m	-9.07 dB	Pass	160 degrees	1 m
4	239.982 MHz	33.07 dBµV/m	46.02 dBµV/m	-12.95 dB	Pass	160 degrees	1 m
5	343.747 MHz	37.06 dBµV/m	46.02 dBµV/m	-8.96 dB	Pass	160 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 6
 Note 1: --

Index 82

RadiMation



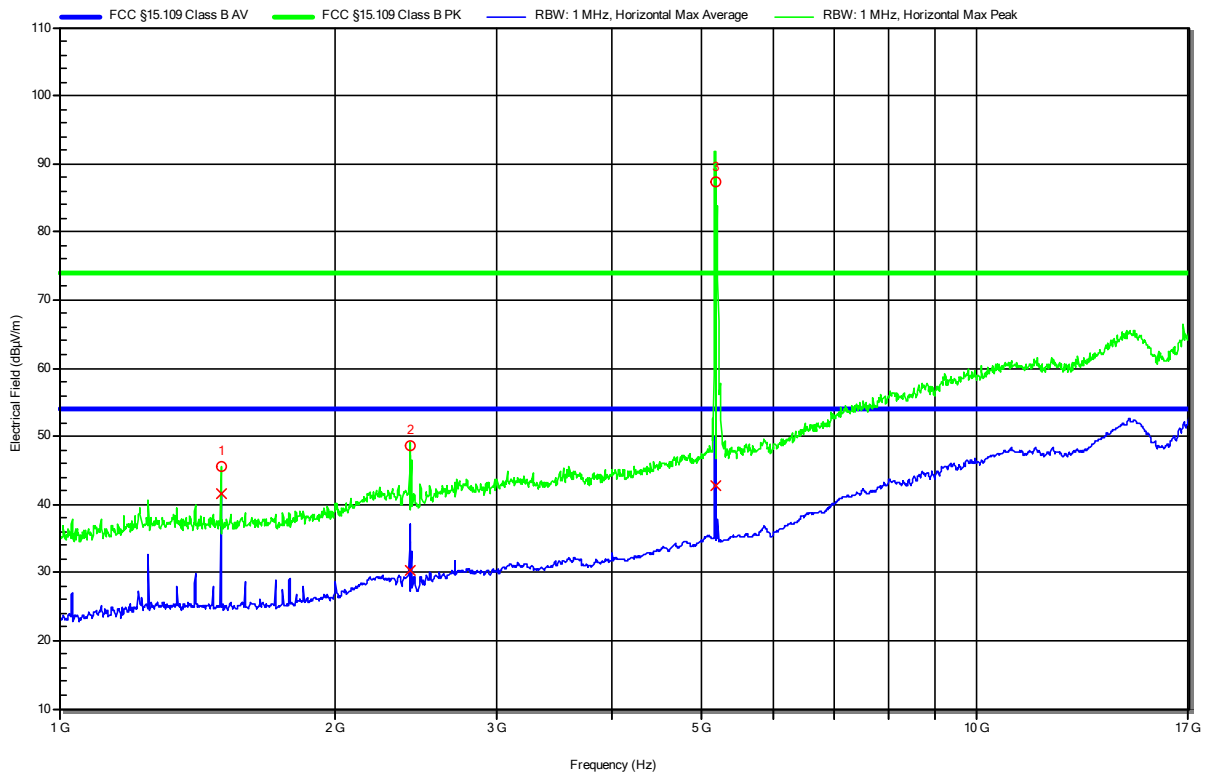
Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	5.182 GHz	WLAN-Carrier					
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	5.182 GHz	WLAN-Carrier					

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 6
 Note 1: --

Index 83

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	45.45 dBµV/m	73.98 dBµV/m	-28.53 dB	Pass	0 degrees	1 m
2	2.414 GHz	48.56 dBµV/m	73.98 dBµV/m	-25.42 dB	Pass	0 degrees	1 m
3	5.184 GHz	WLAN-Carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	41.53 dBµV/m	53.98 dBµV/m	-12.45 dB	Pass	0 degrees	1 m
2	2.414 GHz	30.28 dBµV/m	53.98 dBµV/m	-23.7 dB	Pass	0 degrees	1 m
3	5.184 GHz	WLAN-Carrier					

Test Report No.: G0M-2105-9817-EF0115B-V01

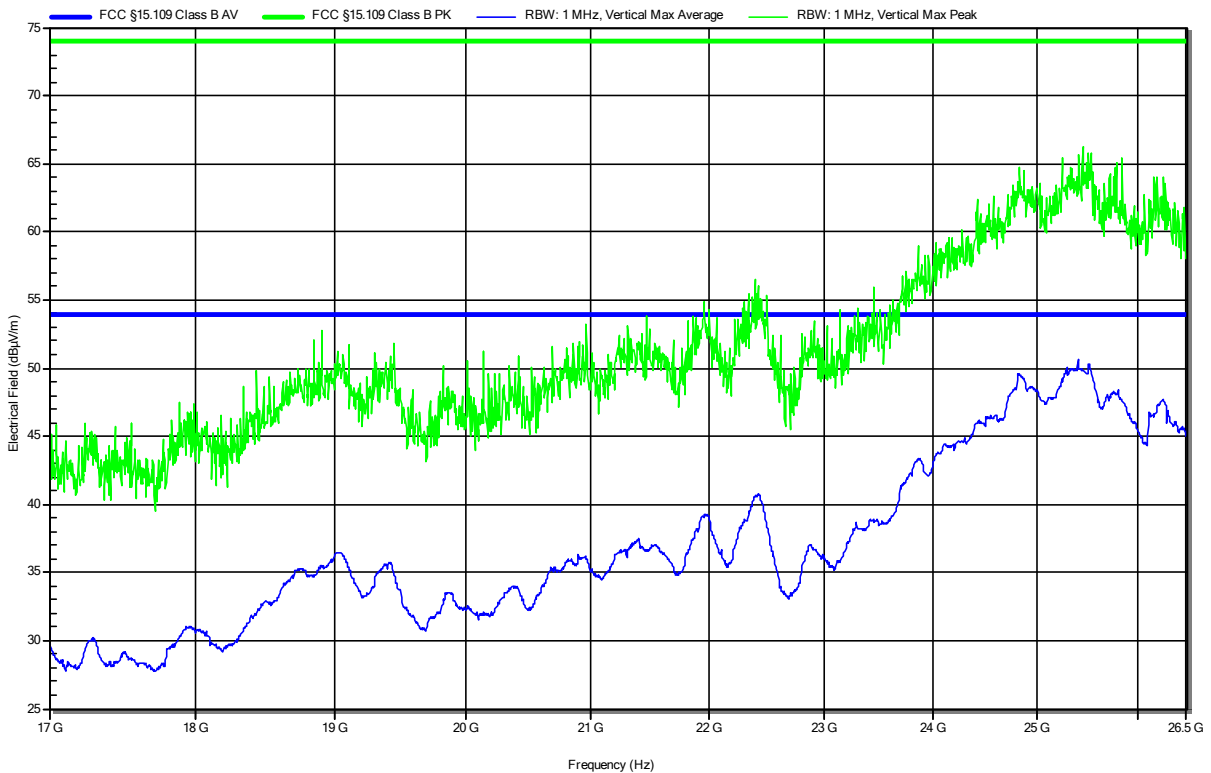
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: 22240-25 Amp. CBL26402075, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3 Configuration 6
 Note 1: --

Index 154

Radiation

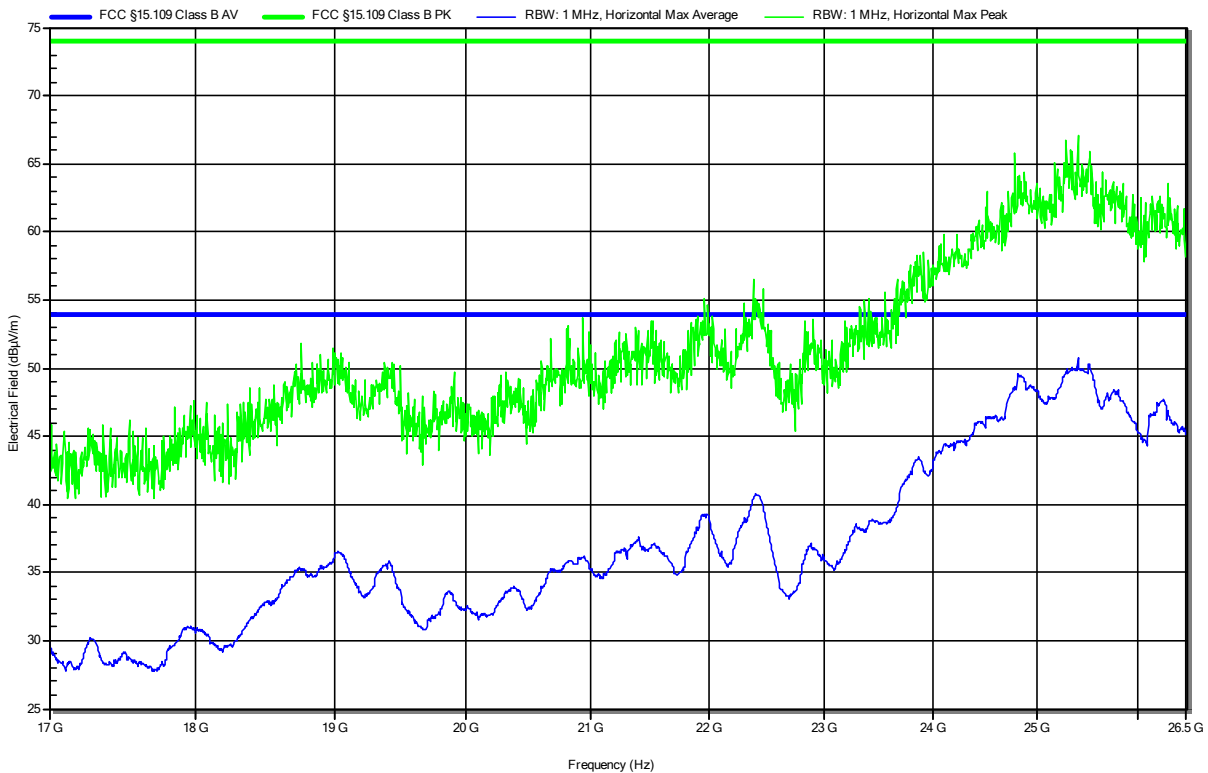


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: 22240-25 Amp. CBL26402075, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3 Configuration 6
 Note 1: --

Index 153

Radiation

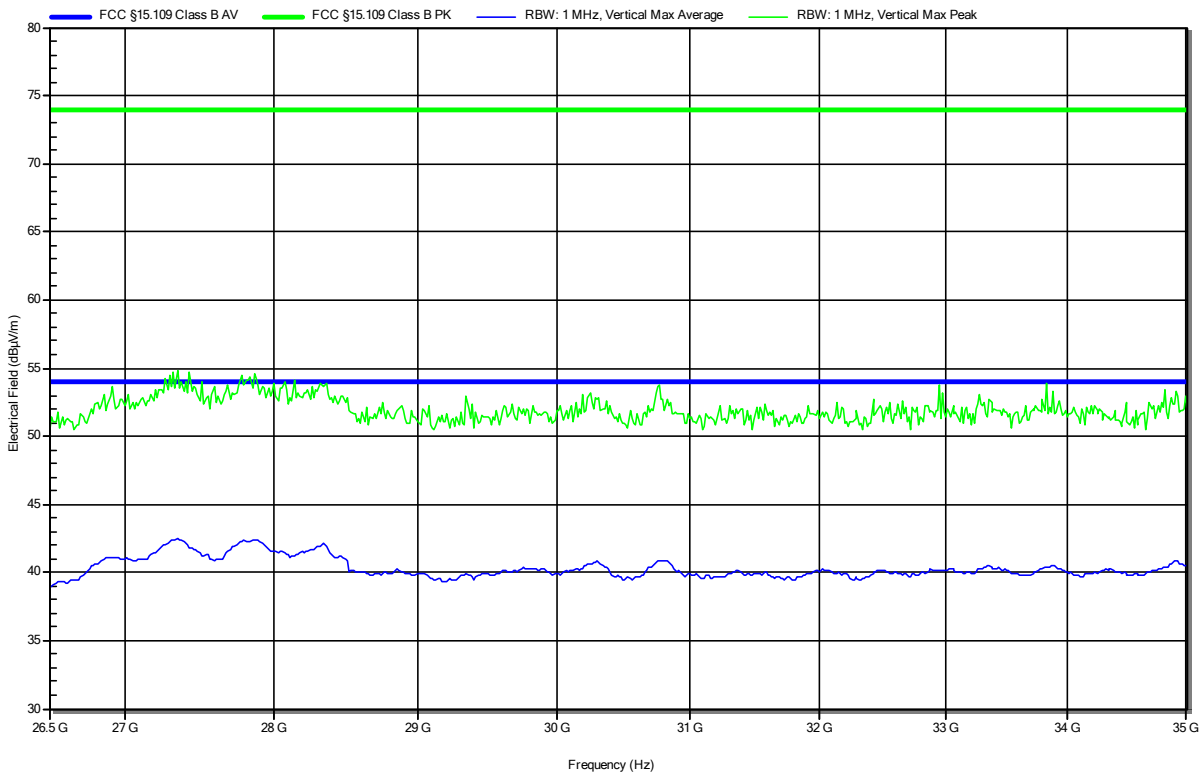


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: AT4560, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 6
 Note 1: --

Index 161

RadiMation

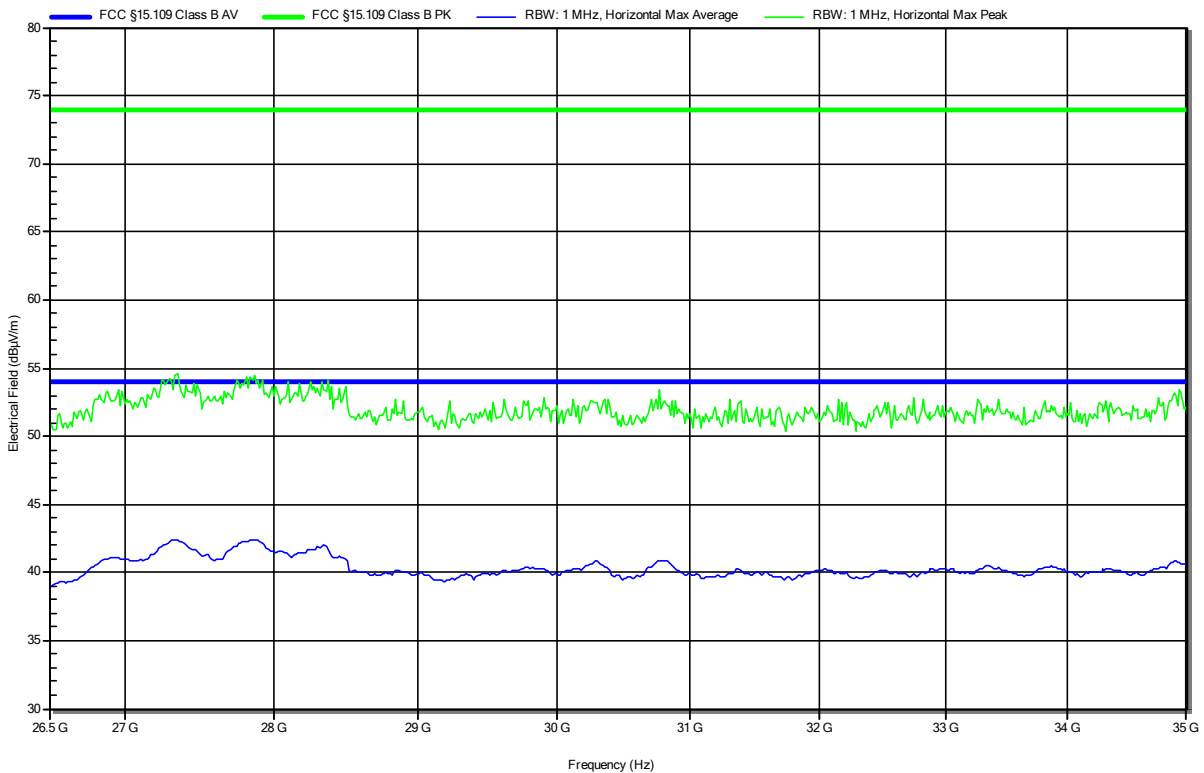


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 Antenna: AT4560, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3 Configuration 6
 Note 1: --

Index 160

RadiMation

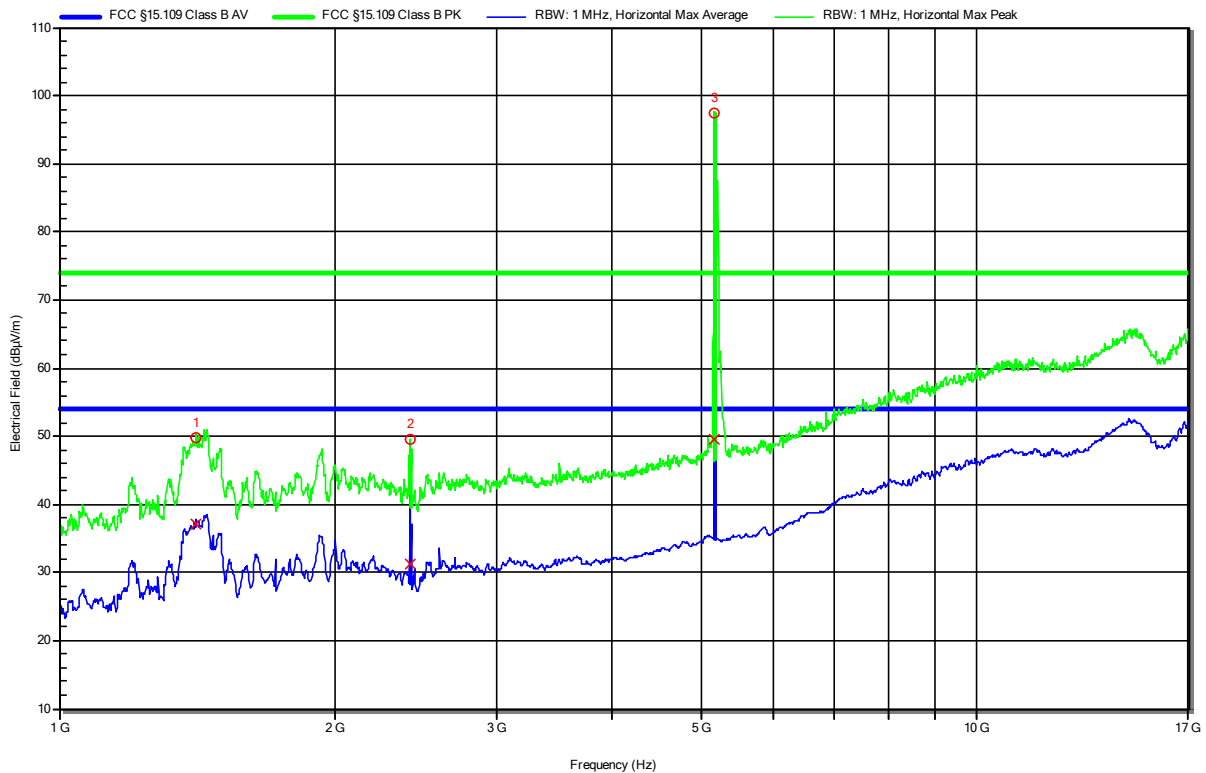


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-17
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --°

Index 105

Radiation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.411 GHz	49.83 dBµV/m	73.98 dBµV/m	-24.15 dB	Pass	20 degrees	1 m
2	2.415 GHz	49.46 dBµV/m	73.98 dBµV/m	-24.52 dB	Pass	20 degrees	1 m
3	5.183 GHz	WLAN-Carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.411 GHz	37.14 dBµV/m	53.98 dBµV/m	-16.84 dB	Pass	20 degrees	1 m
2	2.415 GHz	31.21 dBµV/m	53.98 dBµV/m	-22.77 dB	Pass	20 degrees	1 m
3	5.183 GHz	WLAN-Carrier					

Test Report No.: G0M-2105-9817-EF0115B-V01

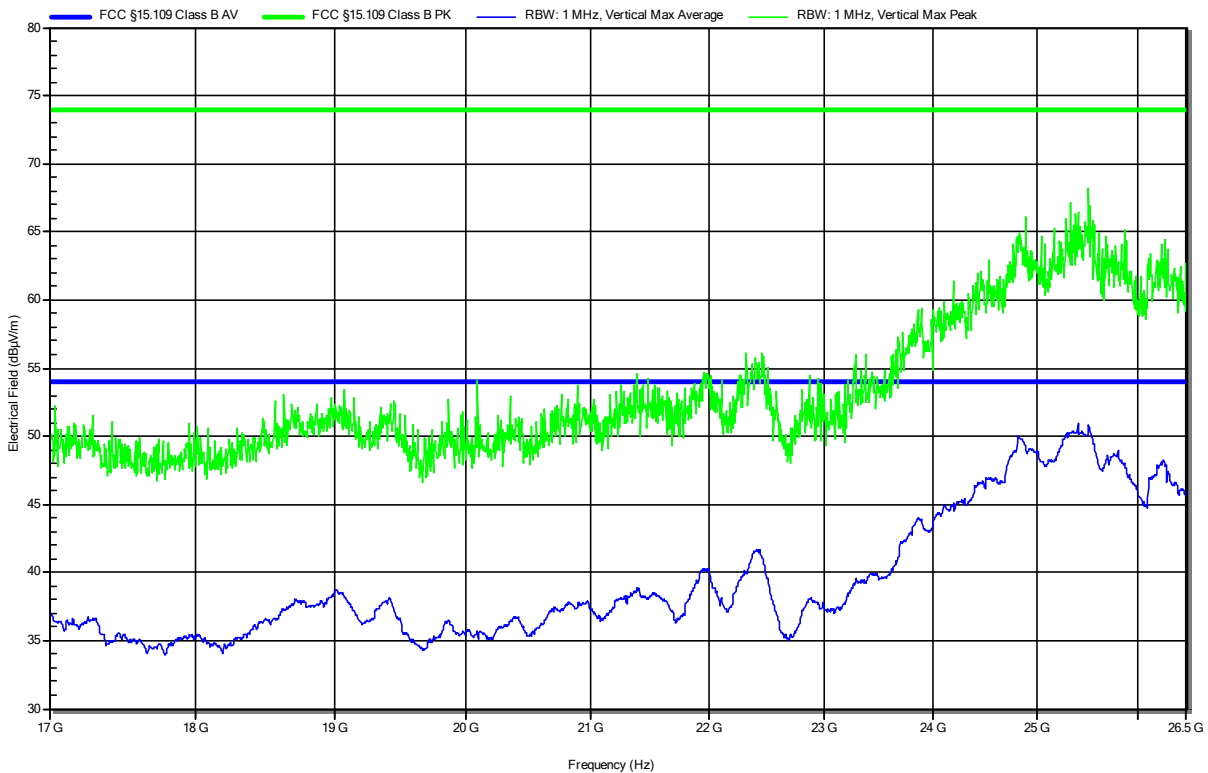
Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: 22240-25 Amp. CBL26402075, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 174

RadiMation

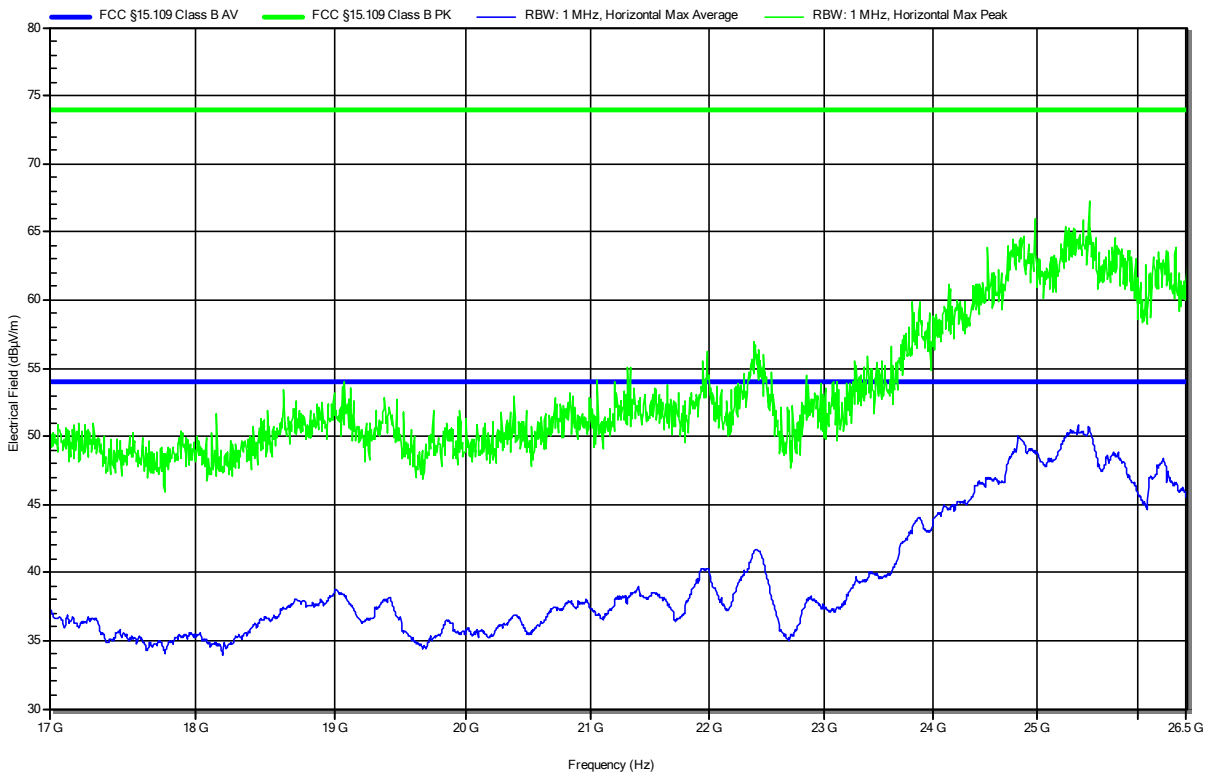


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 22 °Celsius
 power input: 12 V DC
 Antenna: 22240-25 Amp. CBL26402075, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 173

RadiMation

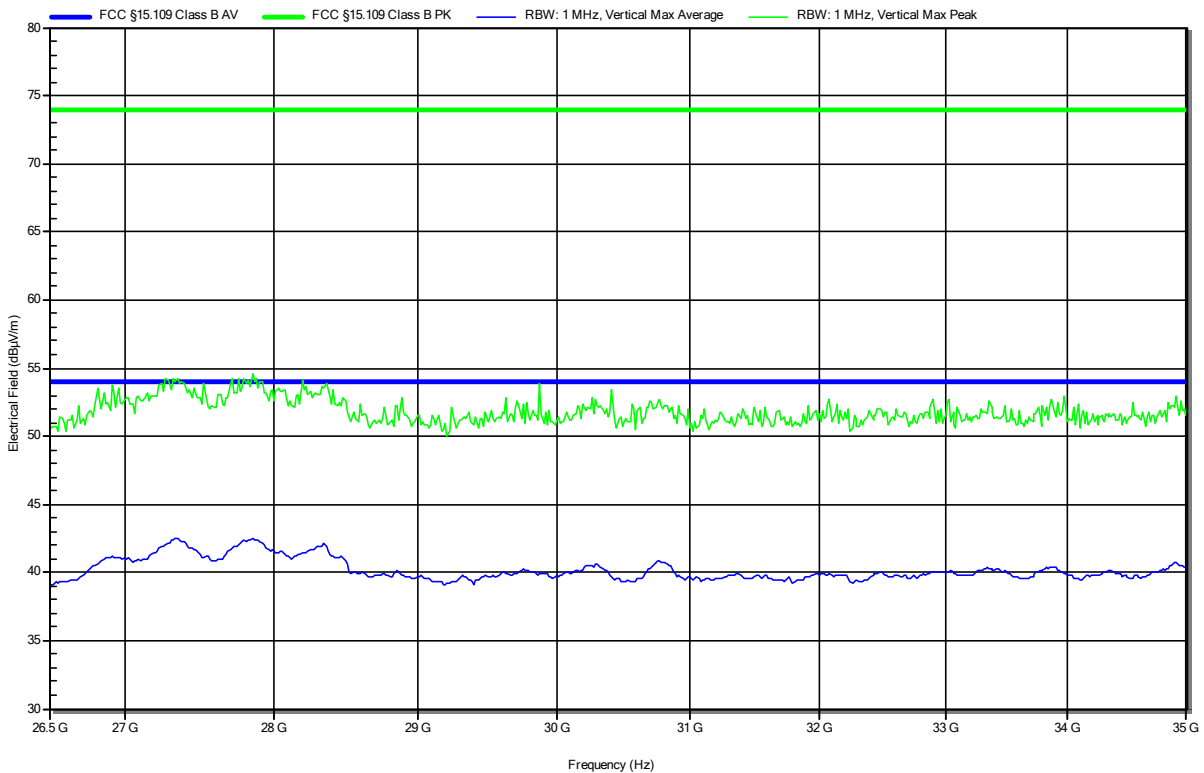


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: AT4560, Vertical
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 166

Radiation

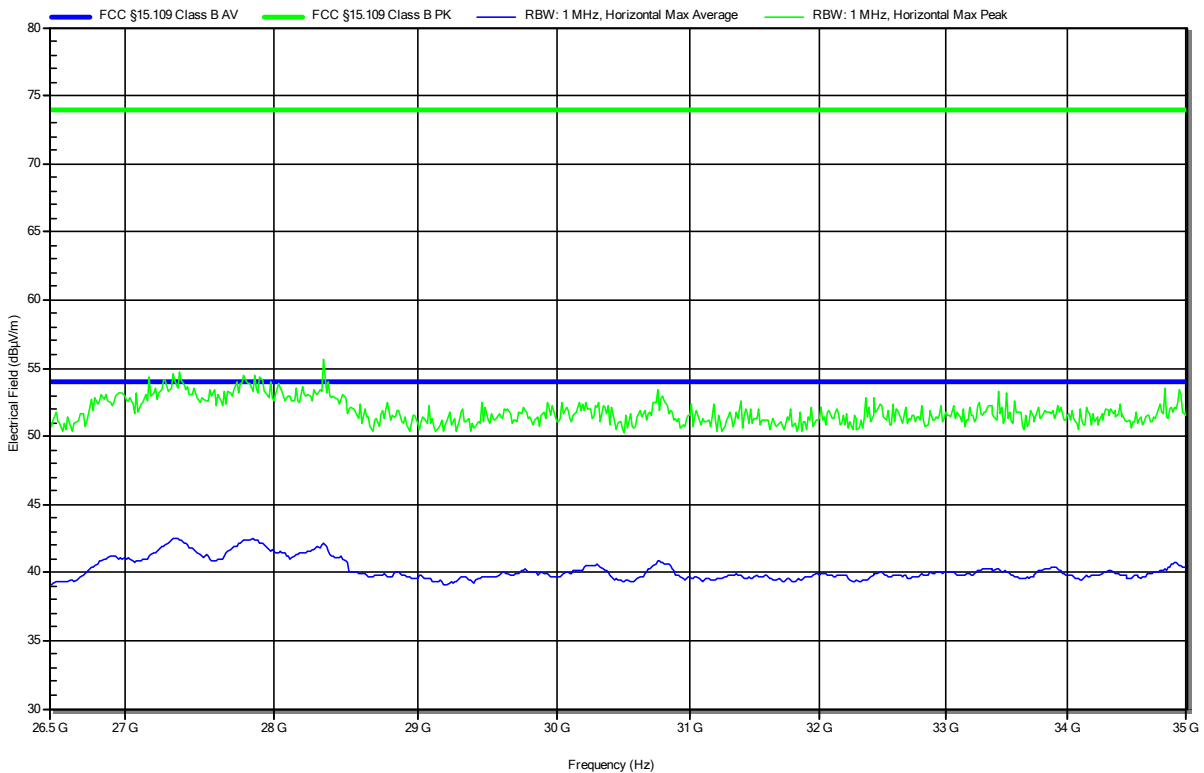


Radiated emissions according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-19
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 12 V DC
 Antenna: AT4560, Horizontal
 Measurement Distance: 3m
 Operational Mode & EUT Configuration: Mode 3
 Configuration 3
 Note 1: --

Index 167

Radiation

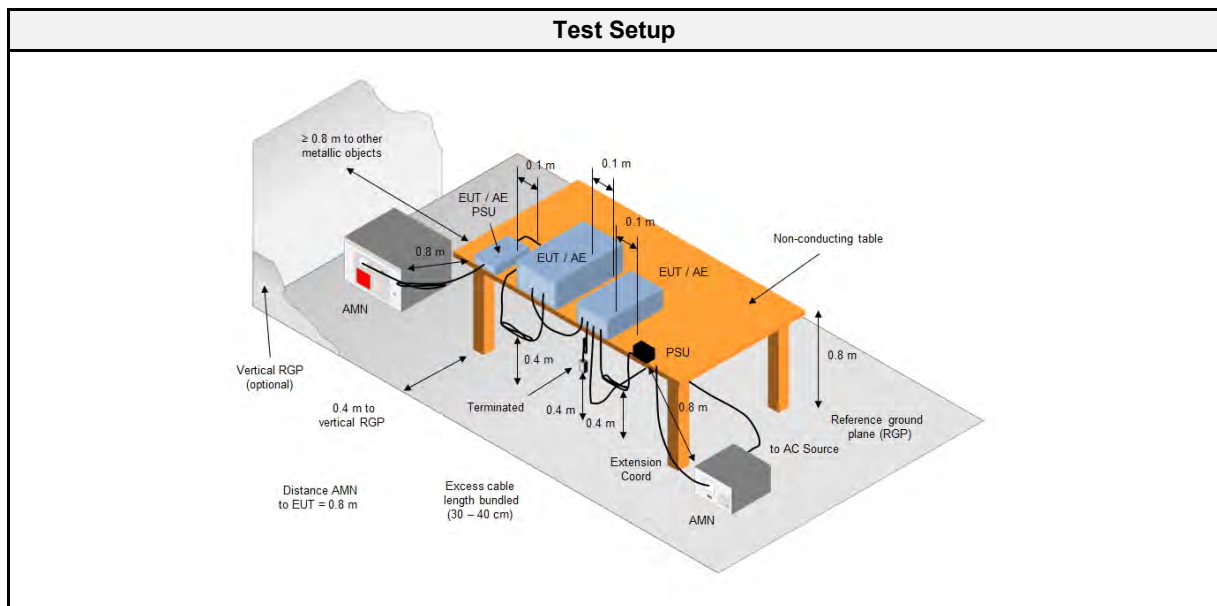
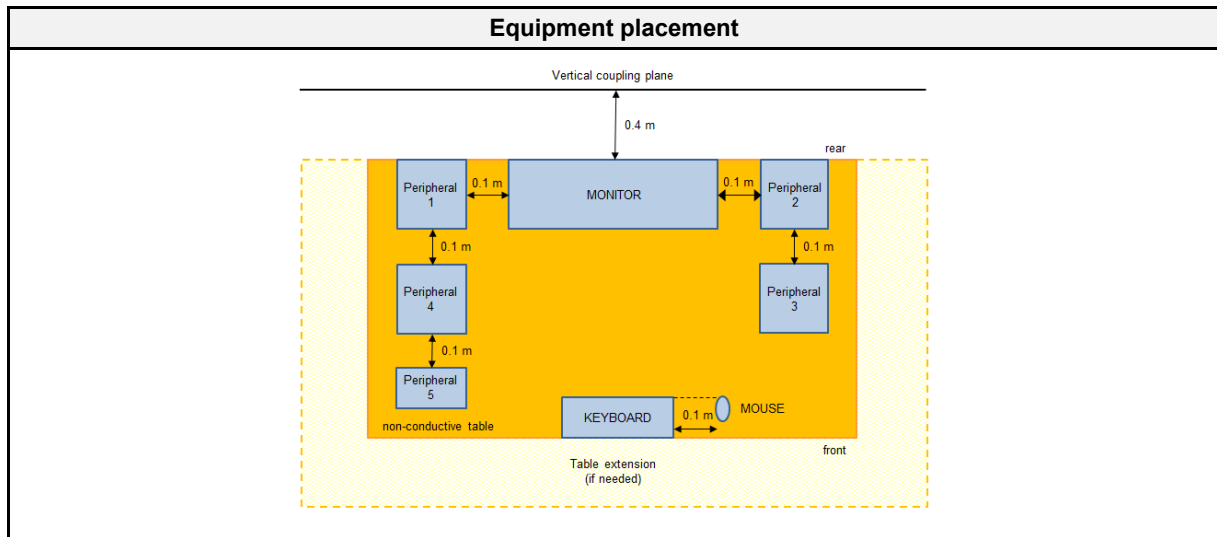


2.2 Test Conditions and Results - Conducted emissions acc. to ANSI C63.4

2.2.1 Information

Test Information	
Reference	FCC 15.107, ICES-003, 3.2.1
Reference method	ANSI C63.4:2014+A1:2017 Section 12
Measurement range	150 kHz to 30 MHz
Equipment class	Class B
Equipment type	Table top
Temperature [°C]	20 – 23
Humidity [%]	47 – 50
Operator	Stephan Liebich
Date	2021-08-16

2.2.2 Setup



2.2.3 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	Radimation	2020.1.8

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	Schwarzbeck	NSLK 8127	EF01592	2021-07	2022-07
AMN	R&S	ESH3-Z5	EF00036	2021-08	2023-08
Pulse Limiter	R&S	ESH3-Z2	EF01063	2021-07	2022-07
AC & DC Power Supply	Chroma ATE Inc.	61604	EF01380	2021-07	2022-07
EMI Test Receiver	R&S	ESR 7	EF00943	2021-08	2022-08
Signal Generator	Rohde & Schwarz Vertriebs GmbH	SMC 100A	EF01524	2021-07	2022-07
Climatic Sensor	Embedded Data Systems, LLC.	2800100000254 17E	EF01054	2021-03	2022-03

2.2.4 Procedure

Exploratory measurement
<ol style="list-style-type: none"> The EUT was placed on a non conductive table 0.8 m above the reference ground plane and 0.4 m away from the vertical conducting plane (ANSI C63.4: 2014 item 7.3.1) The power cord that is normally supplied or recommended by the manufacturer was connected to the LISN. The distance between the outer edge of the EUT and the LISN shall be set to 0.8 m. A longer power cord shall be bundled to this length (bundling shall not exceed 40 cm in length). The LISN measurement port was connected to a measurement receiver I/O cables were bundled not longer than 0.4 m Measurement was performed in the frequency range 0.15 – 30MHz on each current-carrying conductor To maximize the emissions the cable positions were manipulated The worst configuration of EUT and cables is shown on a test setup picture at item 2.2.2

Final measurement
<ol style="list-style-type: none"> The EUT was placed on a non conductive table 0.8 m above the reference ground plane and 0.4 m away from the vertical conducting plane (ANSI C63.4: 2014 item 7.3.1) The power cord that is normally supplied or recommended by the manufacturer was connected to the LISN. The distance between the outer edge of the EUT and the LISN shall be set to 0.8 m. A longer power cord shall be bundled to this length (bundling shall not exceed 40 cm in length). The LISN measurement port was connected to a measurement receiver The EUT and cable arrangement were based on the exploratory measurement results The test data of the worst-case conditions were recorded and shown on the next pages

2.2.5 Limits

Class B		
Frequency [MHz]	Quasi-peak Limit [dB μ V]	Average Limit [dB μ V]
0.15 - 0.5	66 - 56 *	56 - 46 *
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency

2.2.6 Results

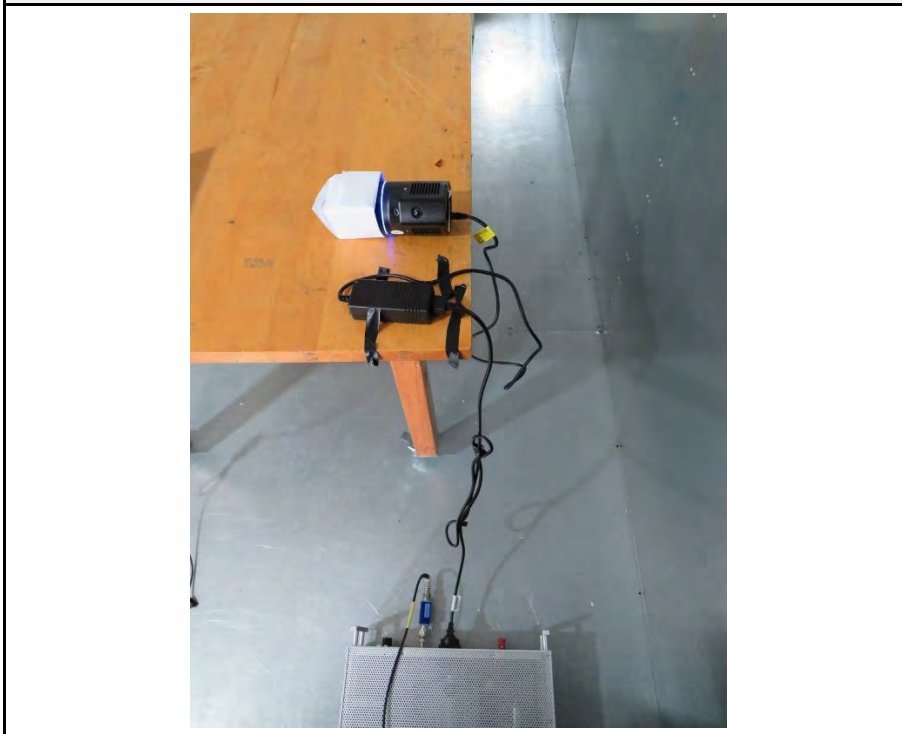
AC power line conducted emissions					
Port	Coupling	Operational mode	EUT Configuration	Verdict	Remark
AC Mains	AMN	1	4	PASS	120 V / 60 Hz
AC Mains	AMN	2	5	PASS	120 V / 60 Hz
AC Mains	AMN	3	6	PASS	120 V / 60 Hz

2.2.7 Setup Photos

**CONDUCTED EMISSION ON PORT AC Mains - EUT CONFIGURATION
4 / 6**



**CONDUCTED EMISSION ON PORT AC Mains - EUT CONFIGURATION
5**



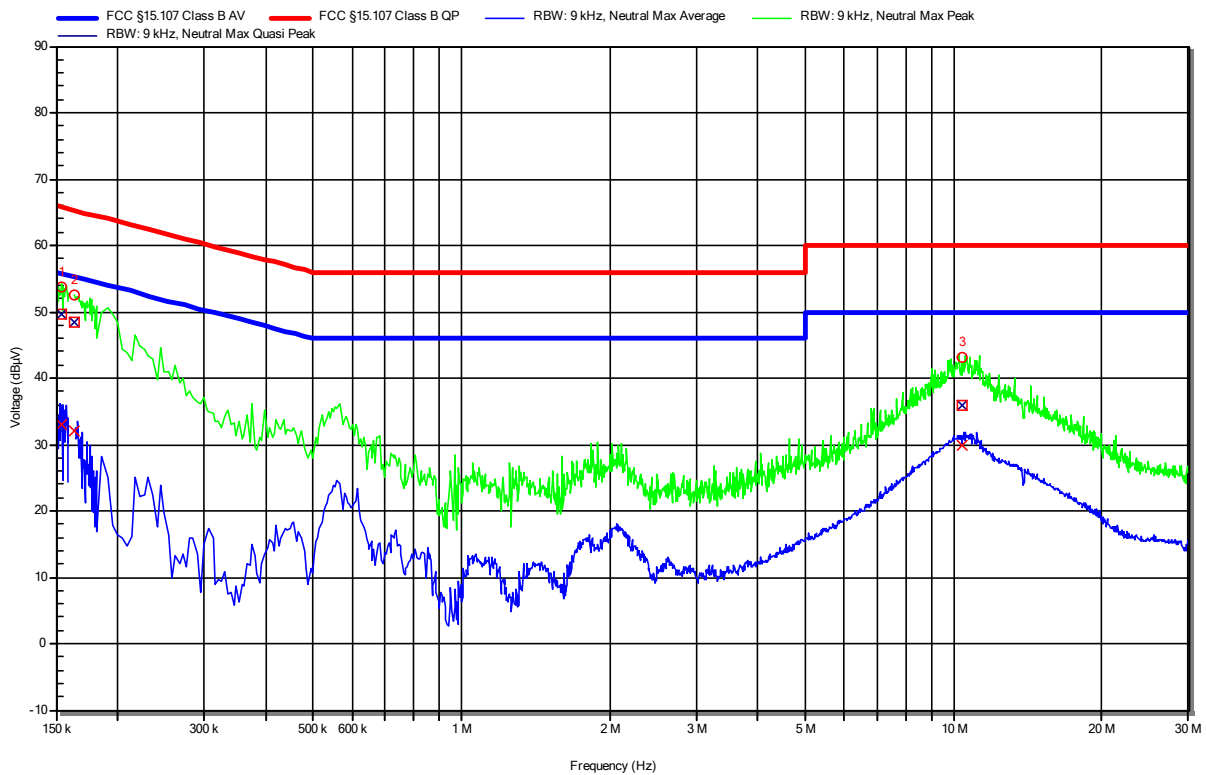
2.2.8 Records

Conducted emissions at the mains power port according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 LISN: Schwarzbeck NSLK 8127 RC N
 Operational Mode & EUT Configuration: Mode 1
 Configuration 4
 Applied to Port: AC Mains
 Note 1: --

Index 68

RadiMation

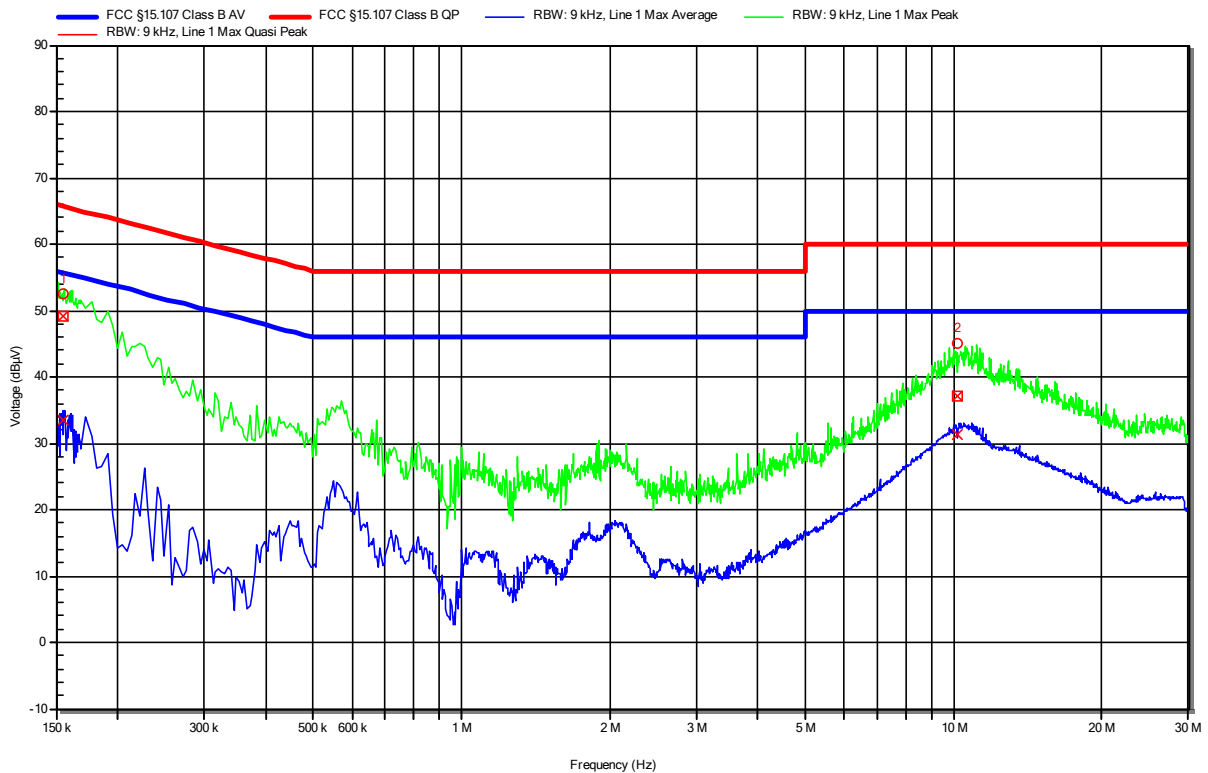


Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	153.6 kHz	49.67 dB μ V	65.8 dB μ V	-16.13 dB	Pass	Neutral
2	163.5 kHz	48.52 dB μ V	65.28 dB μ V	-16.76 dB	Pass	Neutral
3	10.388 MHz	35.99 dB μ V	60 dB μ V	-24.01 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	153.6 kHz	33.03 dB μ V	55.8 dB μ V	-22.77 dB	Pass	Neutral
2	163.5 kHz	31.98 dB μ V	55.28 dB μ V	-23.3 dB	Pass	Neutral
3	10.388 MHz	29.92 dB μ V	50 dB μ V	-20.08 dB	Pass	Neutral

Conducted emissions at the mains power port according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 LISN: Schwarzbeck NSLK 8127 RC L
 Operational Mode & EUT Configuration: Mode 1
 Configuration 4
 Applied to Port: AC Mains
 Note 1: --

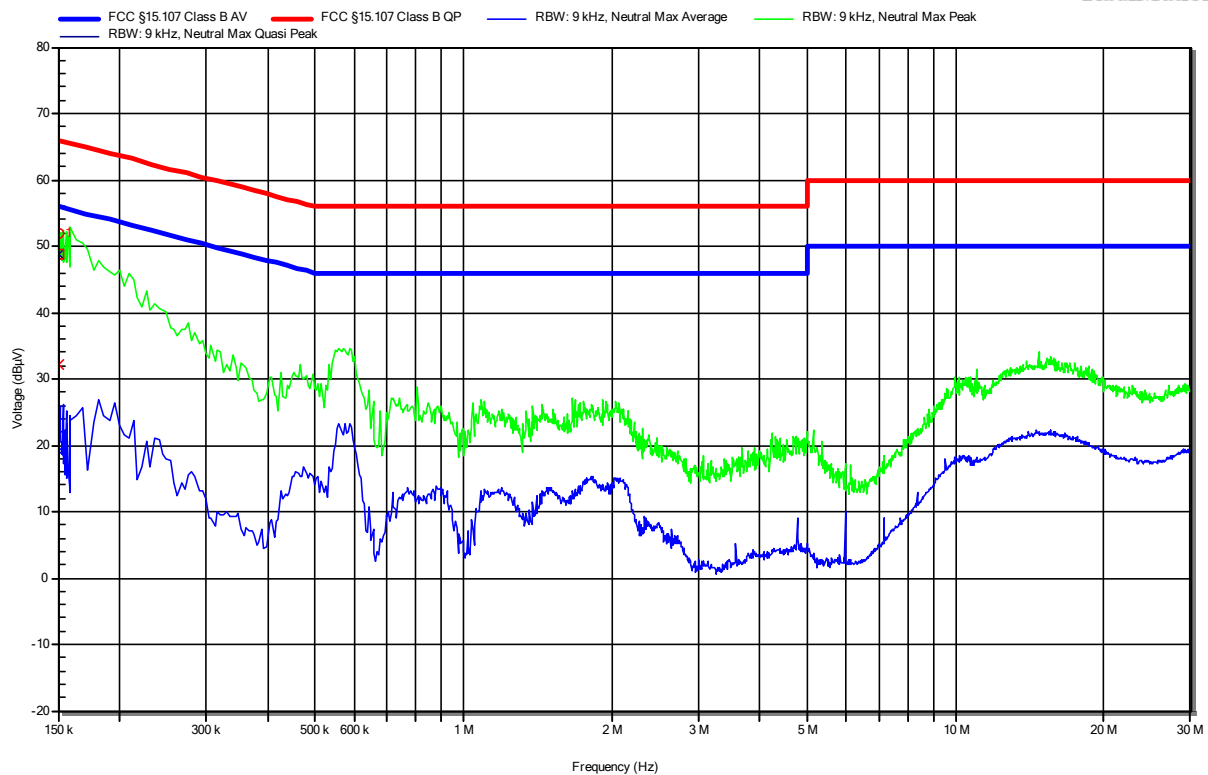


Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	155.4 kHz	49.13 dB μ V	65.71 dB μ V	-16.58 dB	Pass	Line 1
2	10.169 MHz	37.22 dB μ V	60 dB μ V	-22.78 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	155.4 kHz	33.56 dB μ V	55.71 dB μ V	-22.14 dB	Pass	Line 1
2	10.169 MHz	31.21 dB μ V	50 dB μ V	-18.79 dB	Pass	Line 1

Conducted emissions at the mains power port according to FCC part 15B

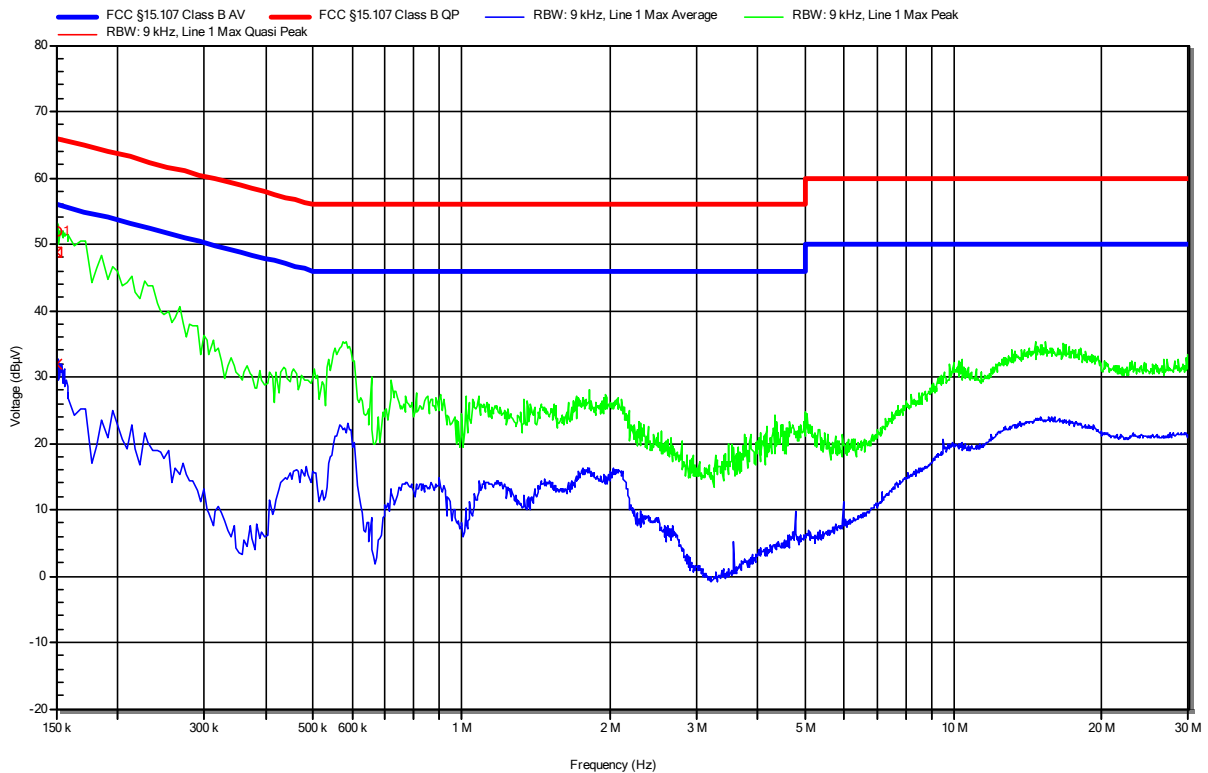
Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 LISN: Schwarzbeck NSLK 8127 RC N
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Applied to Port: AC Mains
 Note 1: --



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150.45 kHz	48.81 dB μ V	65.98 dB μ V	-17.16 dB	Pass	Neutral
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150.45 kHz	32.11 dB μ V	55.98 dB μ V	-23.86 dB	Pass	Neutral

Conducted emissions at the mains power port according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 LISN: Schwarzbeck NSLK 8127 RC L
 Operational Mode & EUT Configuration: Mode 2
 Configuration 5
 Applied to Port: AC Mains
 Note 1: --

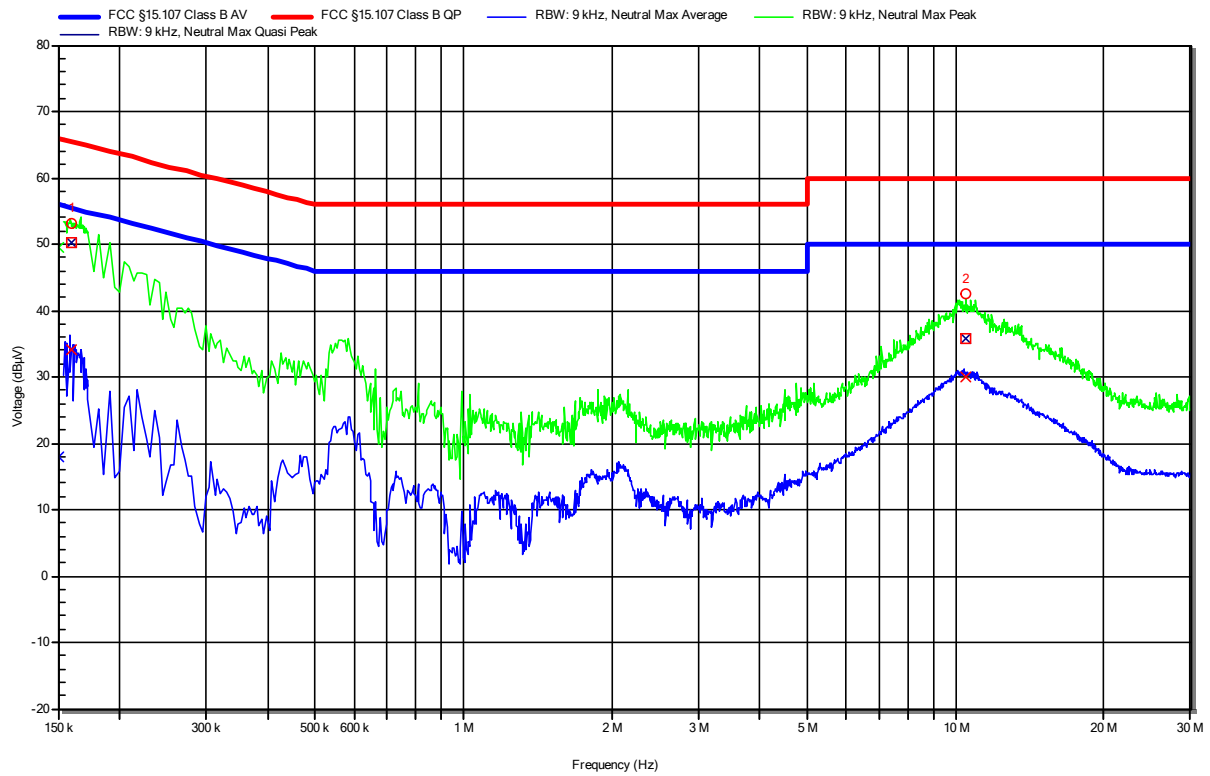


Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150 kHz	48.71 dB μ V	66 dB μ V	-17.29 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150 kHz	31.98 dB μ V	56 dB μ V	-24.02 dB	Pass	Line 1

Conducted emissions at the mains power port according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 LISN: Schwarzbeck NSLK 8127 RC N
 Operational Mode & EUT Configuration: Mode 3
 Configuration 6
 Applied to Port: AC Mains
 Note 1: --

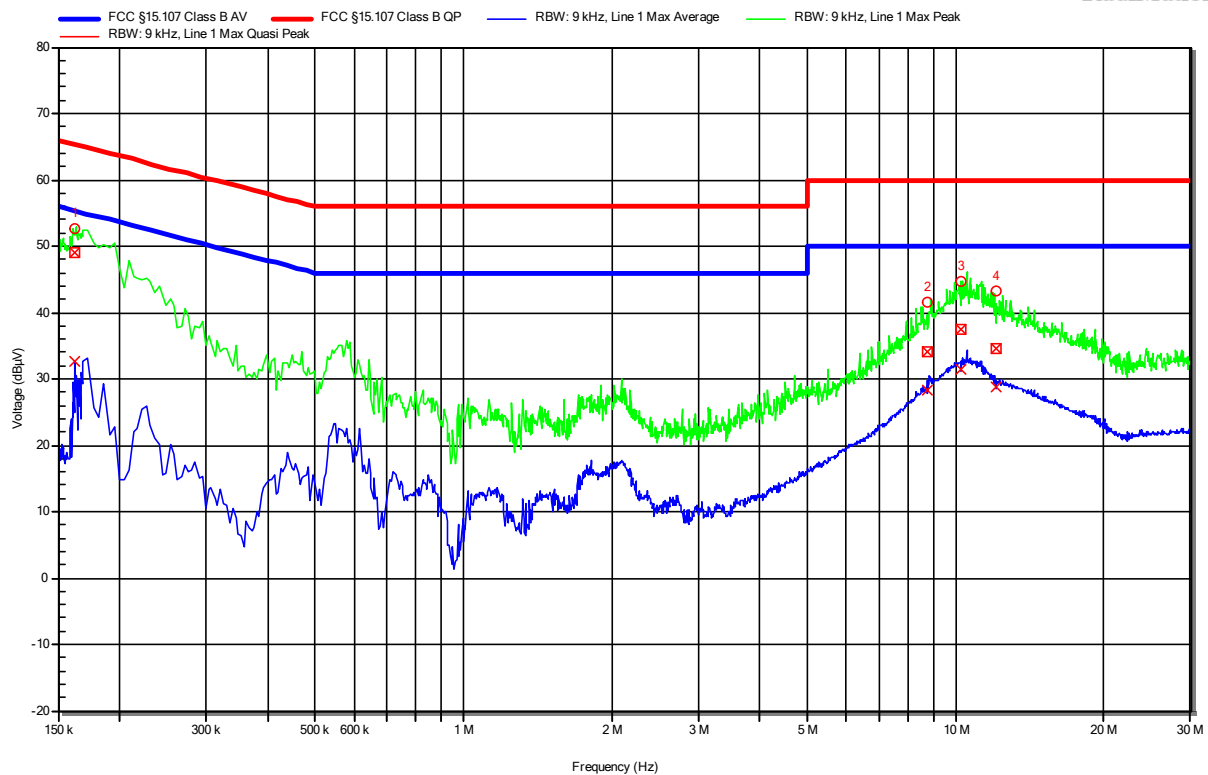


Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	159.45 kHz	50.34 dB μ V	65.49 dB μ V	-15.15 dB	Pass	Neutral
2	10.489 MHz	35.86 dB μ V	60 dB μ V	-24.14 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	159.45 kHz	34.19 dB μ V	55.49 dB μ V	-21.31 dB	Pass	Neutral
2	10.489 MHz	30 dB μ V	50 dB μ V	-20 dB	Pass	Neutral

Conducted emissions at the mains power port according to FCC part 15B

Project Number: G0M-2105-9817
 Applicant: Leica Geosystems AG
 Model Description: KIWI Module
 Model: BLK ARC
 Test Sample ID: 34987
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Liebich
 Test Date: 2021-08-16
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120 V / 60 Hz
 LISN: Schwarzbeck NSLK 8127 RC L
 Operational Mode & EUT Configuration: Mode 3
 Configuration 6
 Applied to Port: AC Mains
 Note 1: --



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	162.6 kHz	48.96 dB μ V	65.33 dB μ V	-16.37 dB	Pass	Line 1
2	8.777 MHz	34.07 dB μ V	60 dB μ V	-25.93 dB	Pass	Line 1
3	10.262 MHz	37.44 dB μ V	60 dB μ V	-22.56 dB	Pass	Line 1
4	12.08 MHz	34.6 dB μ V	60 dB μ V	-25.4 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	162.6 kHz	32.67 dB μ V	55.33 dB μ V	-22.66 dB	Pass	Line 1
2	8.777 MHz	28.28 dB μ V	50 dB μ V	-21.72 dB	Pass	Line 1
3	10.262 MHz	31.39 dB μ V	50 dB μ V	-18.61 dB	Pass	Line 1
4	12.08 MHz	28.7 dB μ V	50 dB μ V	-21.3 dB	Pass	Line 1

3 Measurement Uncertainty

All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95%, with a coverage factor of 2.

Test Name	Measurement Uncertainty
Conducted emissions at the mains power port	150kHz to 30MHz, 3.35dB
Radiated Emission	30MHz to 200MHz @ 3m, 5.1dB 200MHz to 1GHz @ 3m, 5.3dB >1GHz to 6GHz @3m, 5.95dB