EMC TEST REPORT

Title 47 CFR Part 15B, ISED ICES-003 Issue 7

Report Reference No	G0M-2108-9972-EF0115B-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	A2LA - Registration number: 1983.01 (ISED) ISED wireless device testing laboratory: CN 3470A DAkkS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	Leica Geosystems AG
Address	Heinrich-Wild-Strasse 9435 Heerbrugg SWITZERLAND
Test Specification Standard(s)	Title 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	Imaging Laser Scanner
Model(s)	BLK360 G2
Additional Model(s)	None
Brand Name(s)	Leica
Hardware Version(s)	918900_B BLK360 G2 Scanner
Software Version(s)	0.1.7-cert
FCC-ID	RFD-BLK360G2
IC	3177A–BLK360G2
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	2021-10-04	
Report:		
Compiled by	Matthias Handrik	
Tested by (+ signature) (Responsible for Test)	Matthias Handrik	.....
Approved by (+ signature) (Test Technician)	Andreas Pflug	.....
Date of Issue	2021-11-12	
Total number of pages	89	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		

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	2021-11-12	Initial Release	

REPORT INDEX

1 Equipment (Test Item) Under Test

Description	Imaging Laser Scanner	
Intended use	The BLK360 G2 captures with 4 cameras high-resolution 360° panoramic images in LDR or HDR quality. Tracks the movement of the scanner relative to the previous setup in real-time by using visual inertial system (VIS). The RGB and 3D information are stored on the integrated storage device. A class 1 laser is deflected by a fast-rotating mirror which sits on a slow rotating base to create 3d information with Lidar (distance) and encoders (angles). The 3D information is stored on the integrated storage device.	
Model	BLK360 G2	
Additional Model(s)	None	
Brand Name(s)	Leica	
Serial Number(s)	EUT 1: 2060095 EUT 2: 2060093	
Sample-ID	EUT 1: 36459 EUT 2: 36463	
Hardware Version(s)	918900_B BLK360 G2 Scanner	
Software Version(s)	0.1.7-cert	
EUT Dimensions [cm]	15.5 x diameter 8.0	
FCC-ID	RFD-BLK360G2	
IC	3177A–BLK360G2	
Class	Class B	
Equipment type	Table top	
Highest internal frequency [MHz]	5850	
Radio Module I	Type	IEEE 802.11 b, g, n / a, ac, n module
	Model	QCNFA324
	Manufacturer	Qualcomm Atheros, Inc.
	Hardware Version(s)	V02
	Software Version(s)	BSP 3.2
	FCC-ID	PPD-QCNFA324
	IC	4104A-QCNFA324
Radio Module II	Type	Bluetooth module
	Model	QCNFA324
	Manufacturer	Qualcomm Atheros, Inc.
	Hardware Version(s)	V02
	Software Version(s)	BSP 3.2
	FCC-ID	PPD-QCNFA324
	IC	4104A-QCNFA324
Supply Voltage	V_{NOM}	7.2 VDC (Rechargeable Lithium battery) 5V DC via USB 3.0
AC/DC-Adaptor	None	
Manufacturer	Leica Geosystems AG Heinrich-Wild-Strasse 9435 Heerbrugg SWITZERLAND	

1.1 Equipment Ports

Name	Type	Attributes	Comment
USB C	DC I/O	Count: 1 Direction: IO Max. cable length [m]: 1m Shielded: Yes Service only: No	Shield connected on both sites

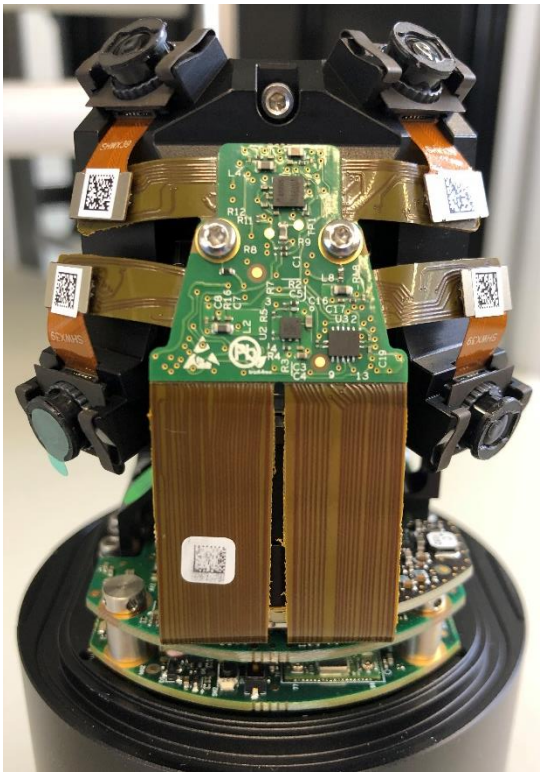
Description:	
AC	AC mains power input/output port
DC	DC power input/output port
BAT	DC power input port connected to external battery
IO	Input/Output port
TP	Telecommunication port
NE	Non-electrical port

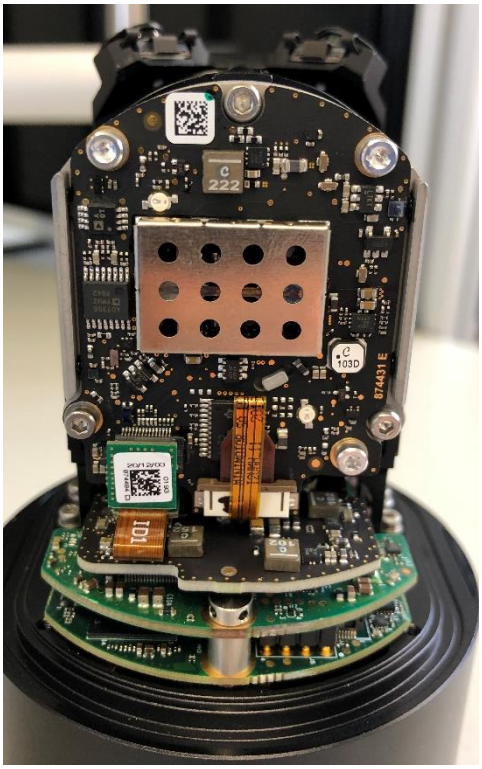
1.2 Equipment Photos – Internal (provide by customer)

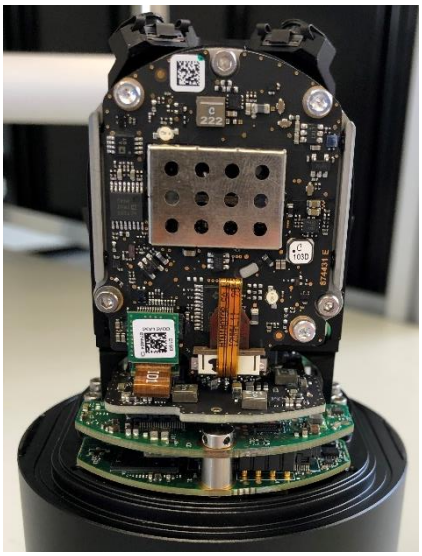
BatteryCompartment_BatteryBoard_BaseCarrier

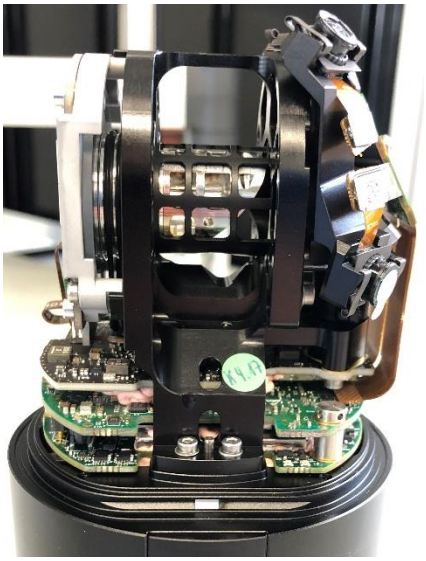

BottomPlate_SlowAxis_MechanicalPart

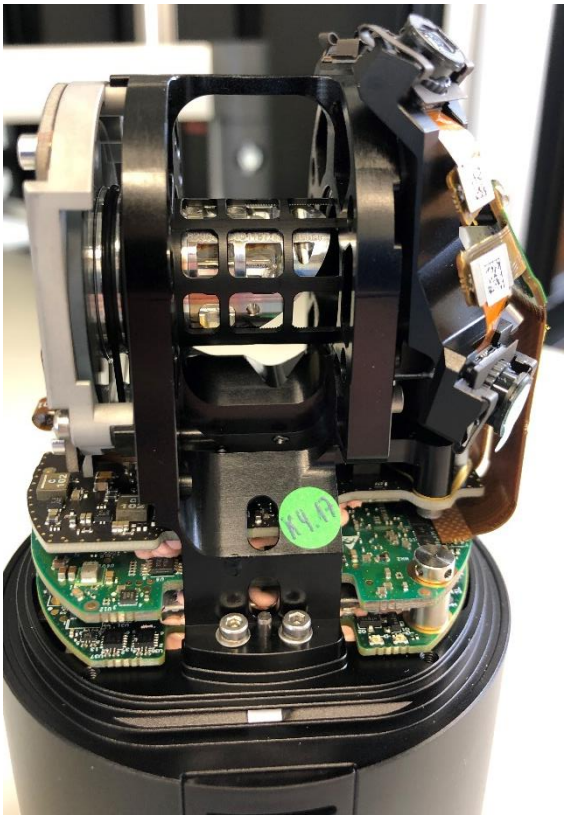

Heatsink_InterfaceBetweenBaseCarrierAndDome

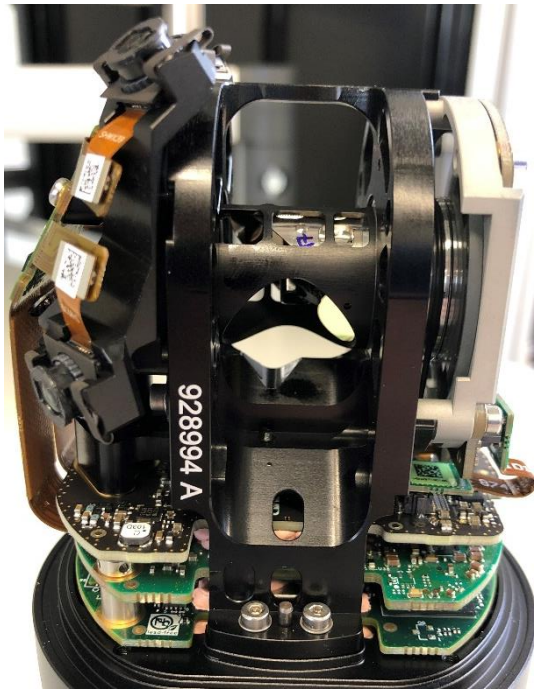

Subassembly-Lidar_CameraConnectorPCBA


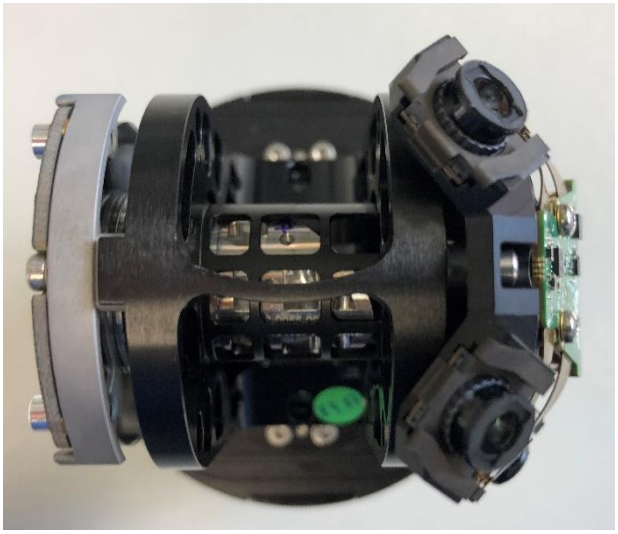
Subassembly-Lidar_EDMPCBA_Tx


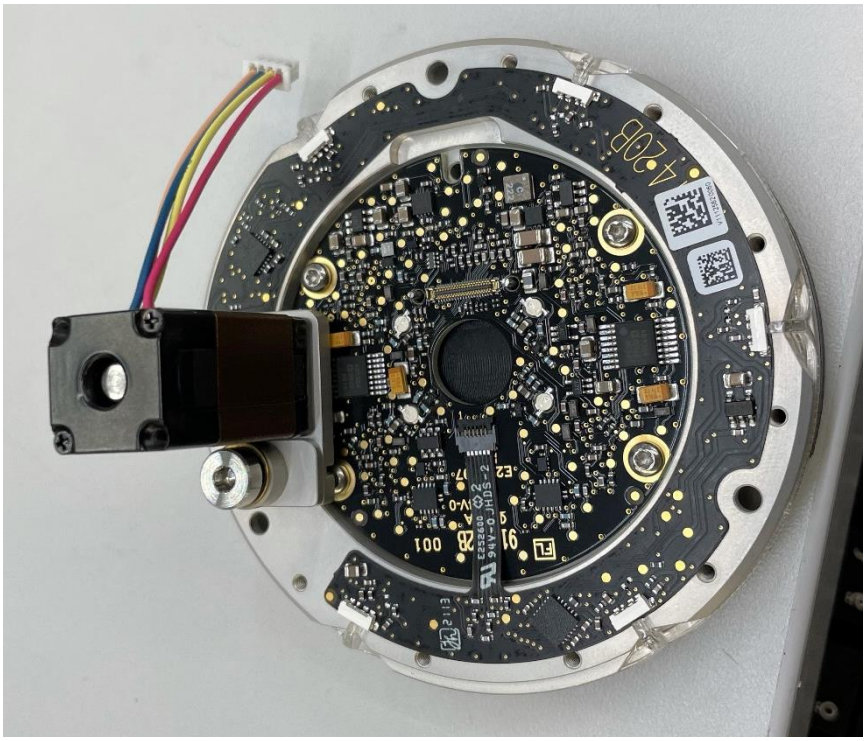
Subassembly-Lidar_EDMPCBA_Tx_Rx_ConnectorPCBA


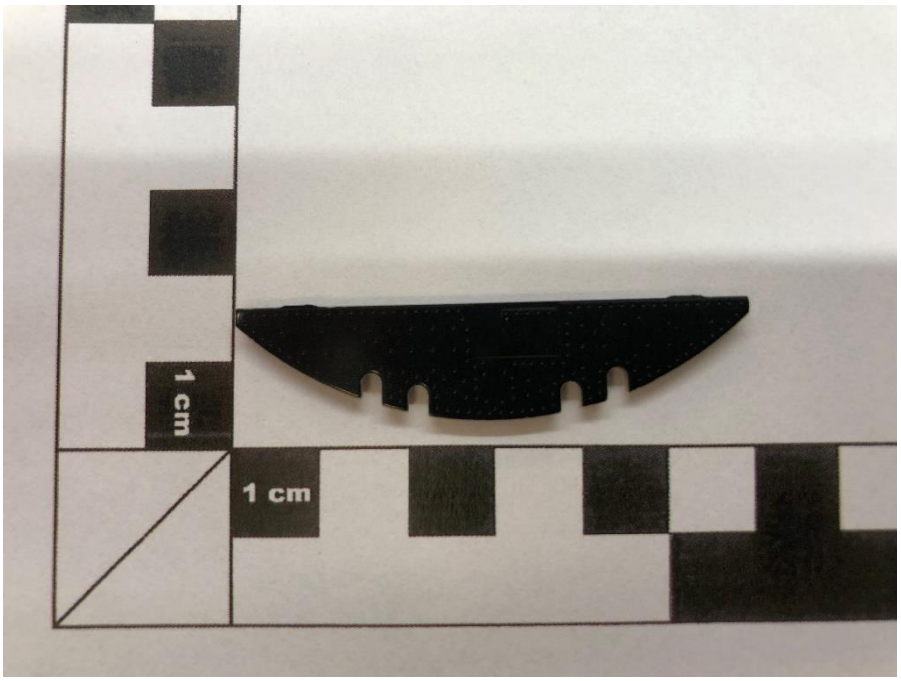
Subassembly-Lidar_FrontView_StackupPCBAs


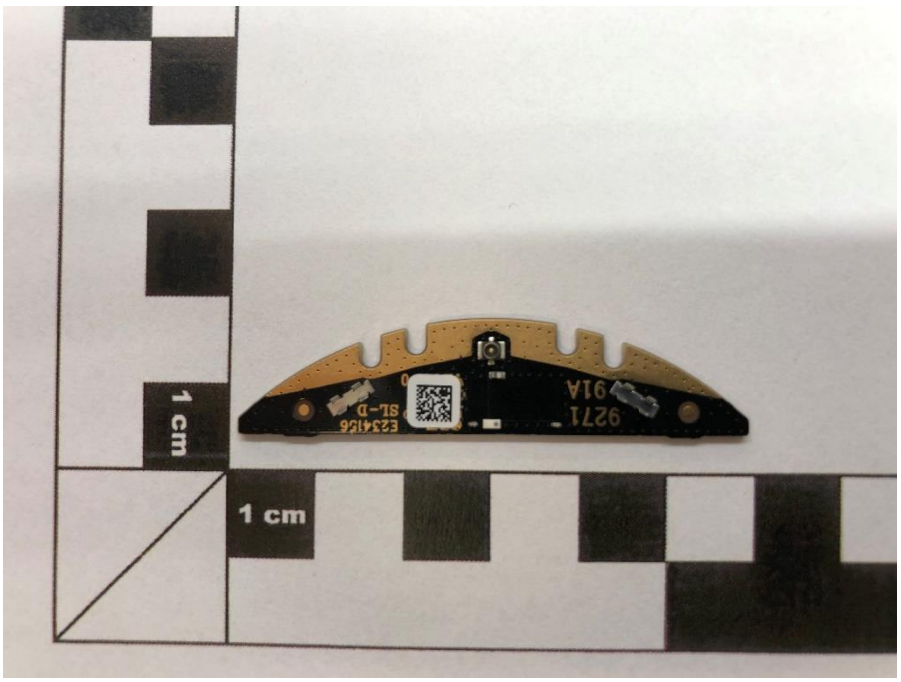
Subassembly-Lidar_FrontView2_Mirror


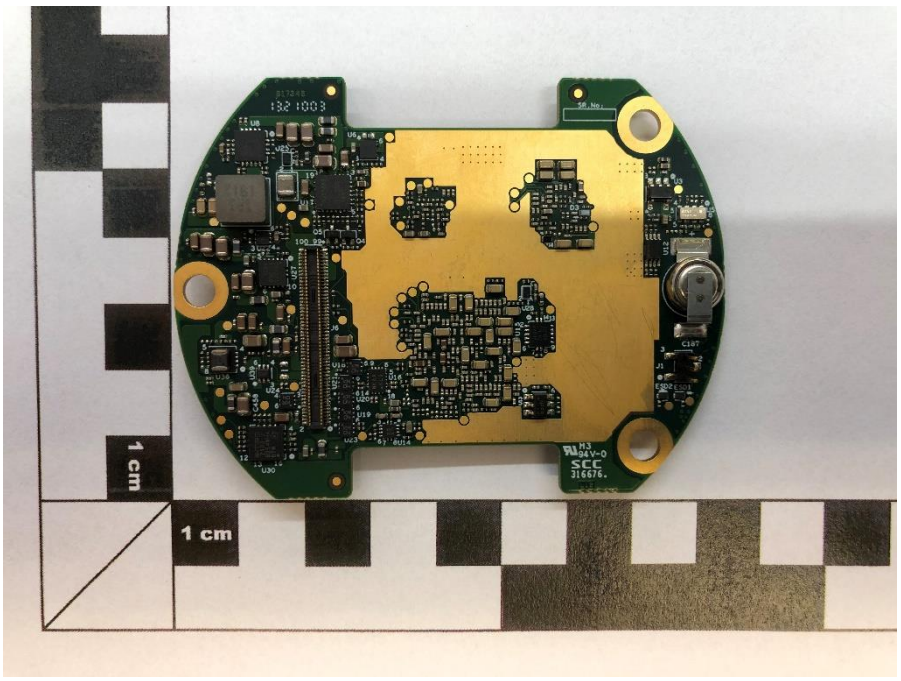
Subassembly-Lidar_FronView_Mirror


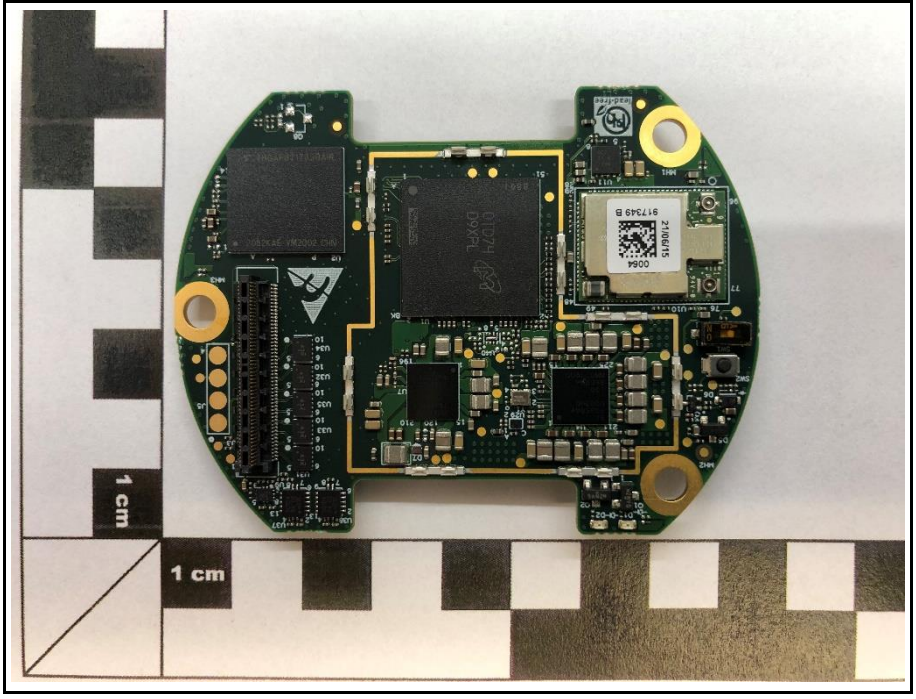
Subassembly-Lidar_TopView


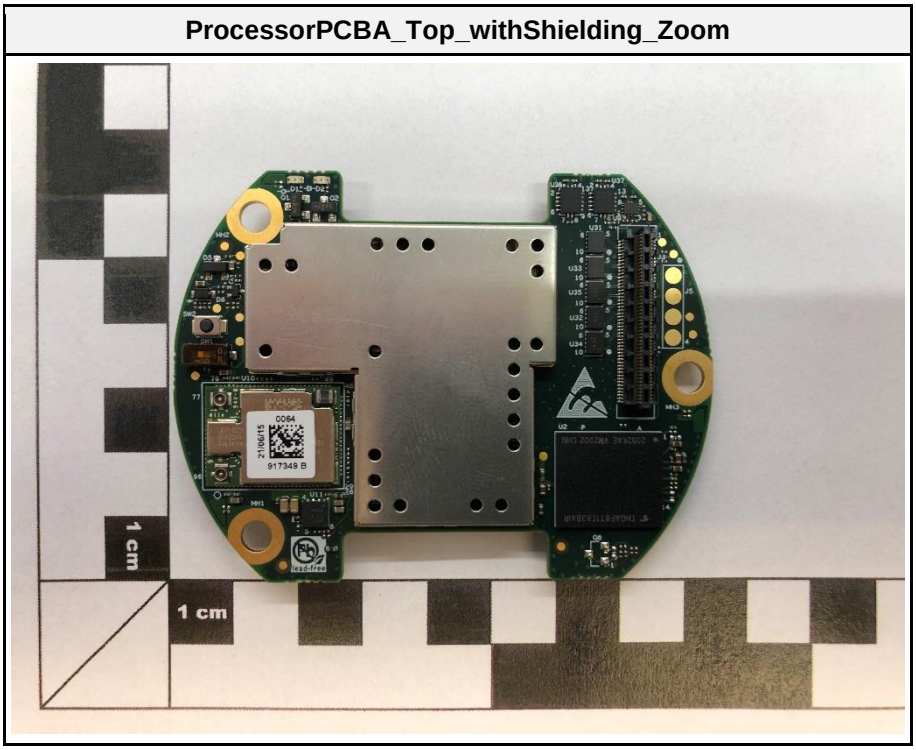
Subassembly-SlowAxis_Motor_SlowAnglePCBA_LEDRingPCBA


AntennaPCBA_Bottom_Zoom


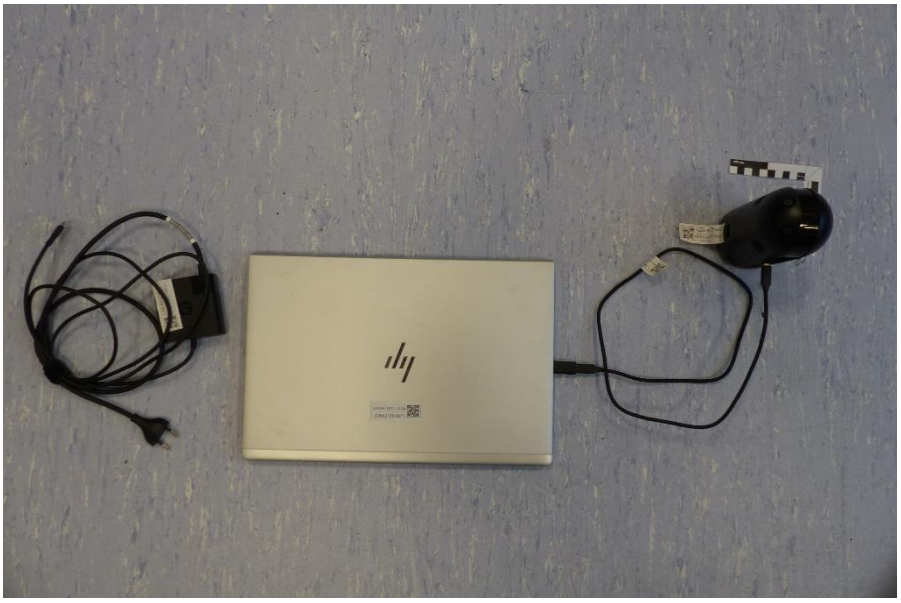
AntennaPCBA_Top_Zoom


ProcessorPCBA_Bottom_Zoom


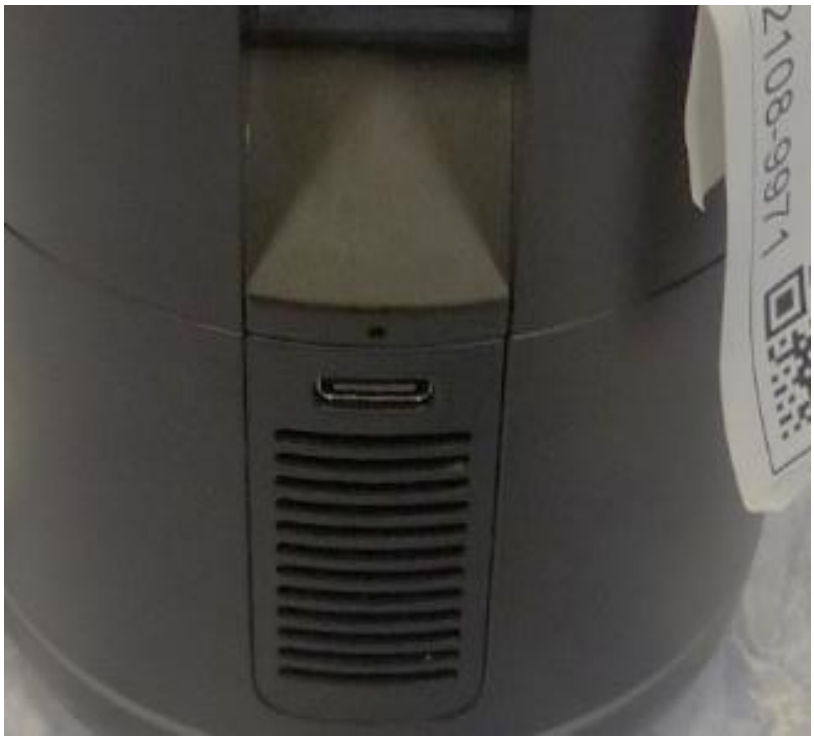
ProcessorPCBA_Top_withoutShielding_Zoom


ProcessorPCBA_Top_withShielding_Zoom


1.3 Equipment Photos – External

EUT + Auxillary Equipment


EUT LEFT

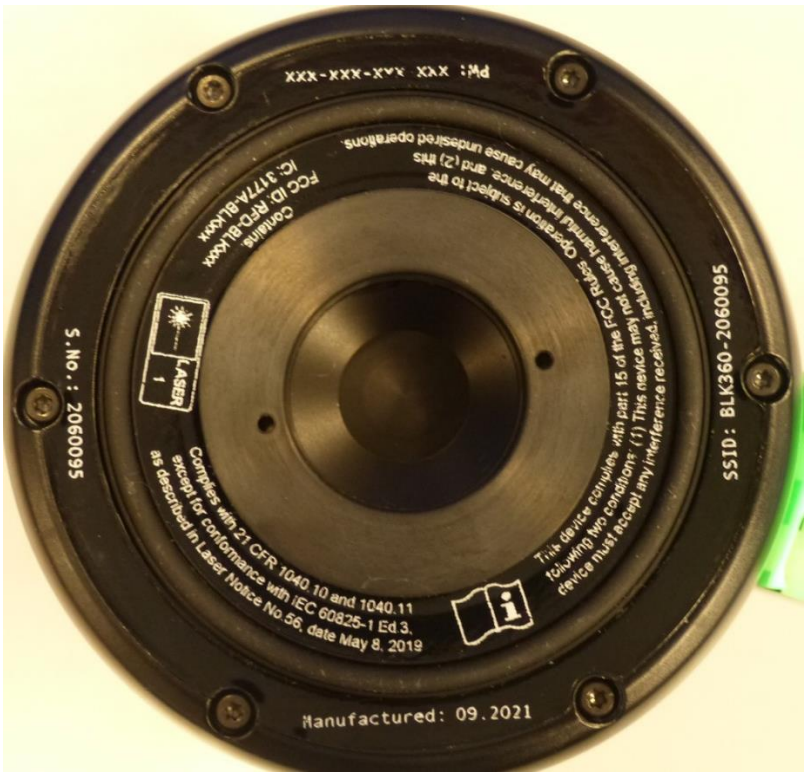

EUT LEFT USB-Port


EUT FRONT


EUT BACK


EUT RIGHT


EUT TOP


EUT 1 BOTTOM


EUT 2 BOTTOM

EUT Battery compartment

EUT USB wire


EUT Battery


1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Laptop	HP	EliteBook SN# 5CG846OF98	Customer Support Equipment
AE	Laptop AC/DC adaptor	HP	TPN-CA06	Customer Support Equipment
AE	Li-Ion Battery GEB825	Leica-Geosystems AG	925081	Customer Support Equipment
CBL	USB wire GEV278	Leica-Geosystems AG	879634	Customer Support Equipment
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
MON	Monitoring Equipment			
CBL	Connecting Cable			
Comment:				

1.5 Operational Modes

Mode #	Description
1	EUT 1: With Matlab scipt running on Laptop: Laser scan with one turn of 360° and distance measurement. Every camera takes one picture. Via 2.4GHz WLAN connection were visualised this data on Laptop. Bluetooth classic connection to Laptop. Laptop starts inquires can and EUT answer on inquiries.
2	EUT 2: With Matlab scipt running on Laptop: Laser scan with one turn of 360° and distance measurement. Every camera takes one picture. Via 5GHz WLAN connection were visualised this data on Laptop. Bluetooth classic connection to Laptop. Laptop starts inquires can and EUT answer on inquiries.
3	EUT 1: 2.4GHz WLAN connection to Laptop (Ping). USB charging + USB data transfer (USB connection with USB–iperf and VIS functionality Record four videos). Bluetooth classic connection to Laptop. Laptop starts inquires can and EUT answer on inquiries.
4	EUT 2: 5GHz WLAN connection to Laptop (Ping). USB charging + USB data transfer (USB connection with USB–iperf and VIS functionality Record four videos). Bluetooth classic connection to Laptop. Laptop starts inquires can and EUT answer on inquiries.
Comment:	

1.6 EUT Configuration

Configuration #	Description
1	EUT powered via internal Battery. Laptop is placed inside the measurement chamber.
2	EUT assembled with Battery and USB-C wire. USB-C wire connection to Laptop. Laptop is placed inside the measurement chamber.
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:

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

Net:

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

Limit:

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

Limit (dBµV/m) = 20*log (µV/m)

Margin:

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

Example only:

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

2 Result Summary

Title 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

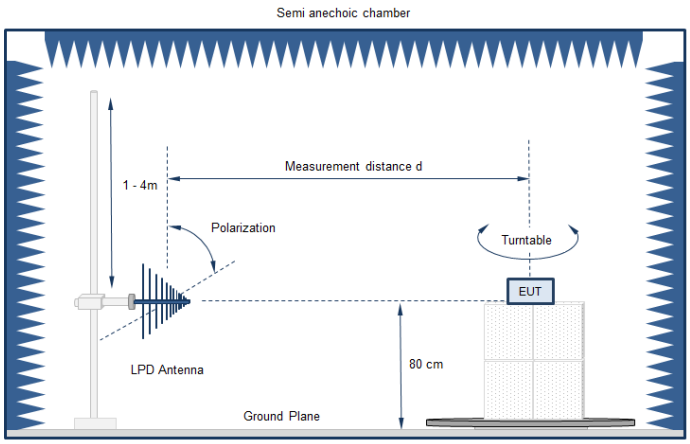
2.1 Test Conditions and Results - Radiated emissions acc. to ANSI C63.4

2.1.1 Information

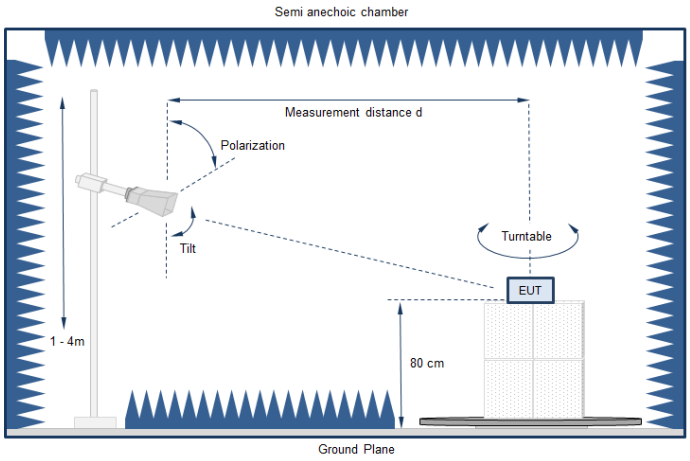
Test Information	
Reference	FCC 15.109, ICES-003, 3.2.2
Reference method	ANSI C63.4:2014+A1:2017 Section 8
Equipment class	Class B
Equipment type	Table top
Highest internal frequency [MHz]	5850
Measurement range	30 MHz to 6000 MHz
Temperature [°C]	21 ±3
Humidity [%]	45 ±3
Operator	Matthias Handrik
Date	2021-10-22 – 2021-10-28

2.1.2 Setup

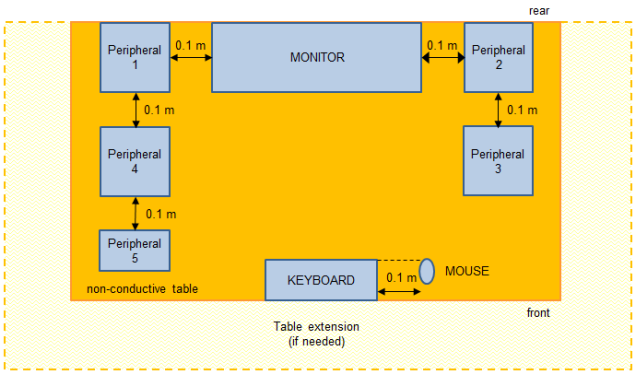
Measurement up to 1 GHz



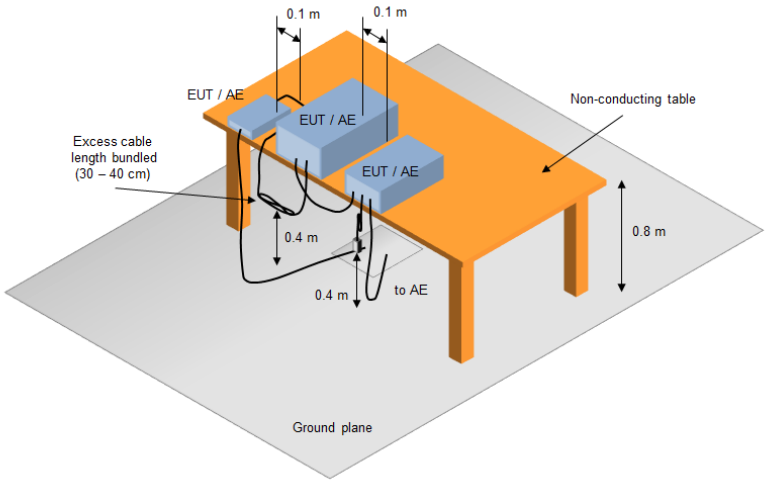
Measurement above 1 GHz



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 (NSA)	Frankonia	AC1	EF00062	2021-02	2024-02
Anechoic chamber (SVSWR)	Frankonia	AC 1	EF01011	2019-06	2022-06
Programmable AC Source	Chroma ATE Inc.	61604	EF01068	2021-07	2022-07
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
Spectrum analyzer	Rohde & Schwarz GmbH & Co. KG	FSU43	EF01631	2021-07	2022-07
Climatic Sensor	Embedded Data Systems, LLC.	2800100000254 17E	EF01054	2021-03	2022-03

2.1.4 Procedure

Exploratory measurement
1. The EUT was placed on a non-conductive table at a height of 0.8m.
2. The EUT and support equipment, if needed, were set up to simulate typical usage.
3. 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.
4. The antenna was placed at a distance of 3 or 10 m.
5. The received signal was monitored at the measurement receiver.
6. This procedure has to be performed in both antenna polarizations, horizontal and vertical.
7. The arrangement of the equipment with the maximum emission level is shown on the setup picture at item 2.1.2

Final measurement
1. 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.
2. 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.
3. The EUT and cable arrangement were based on the exploratory measurement results.
4. Emissions were maximized at each frequency by rotating the EUT and adjusting the receive antenna height and polarization. The maximum values were recorded.
5. The test data of the worst-case conditions were recorded and shown on the next pages.

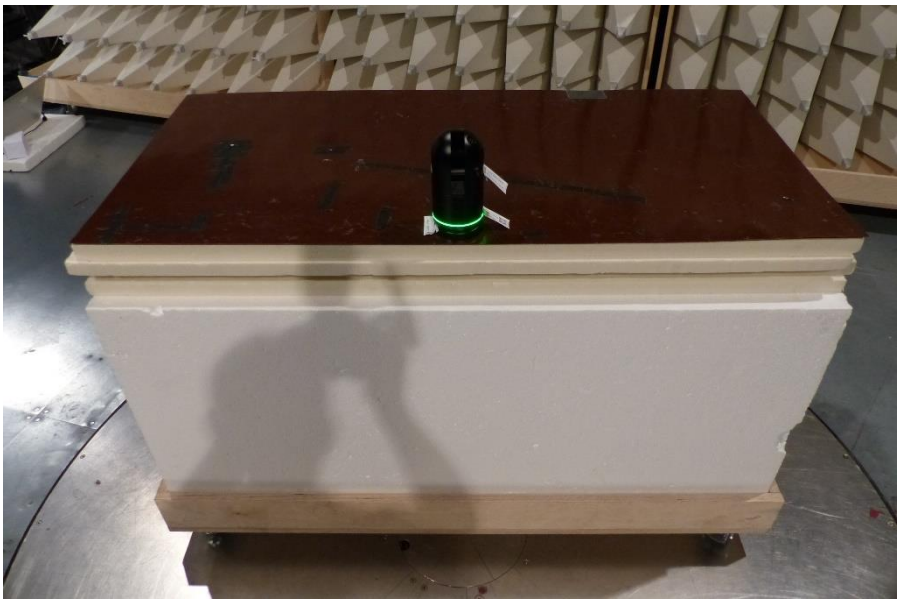
2.1.5 Limits

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

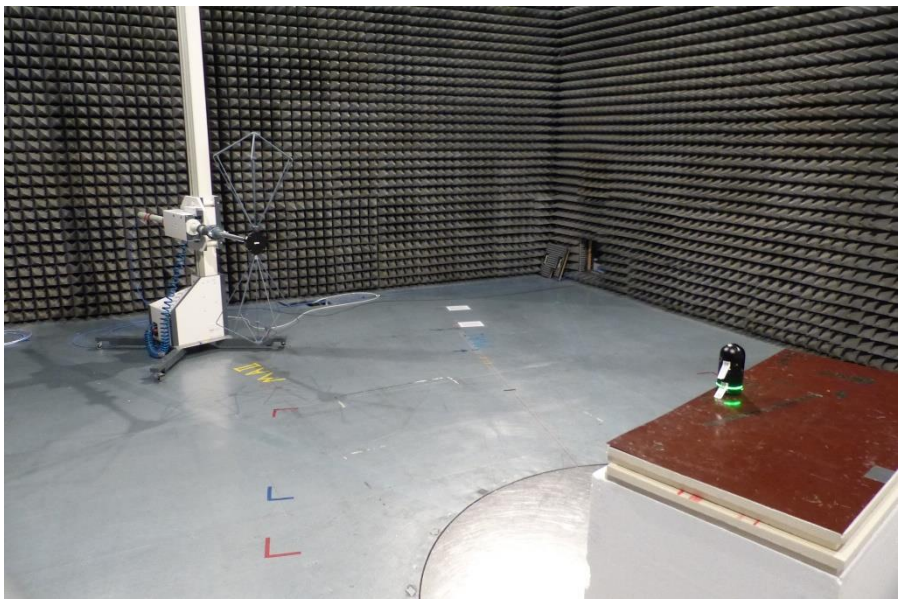
2.1.6 Results

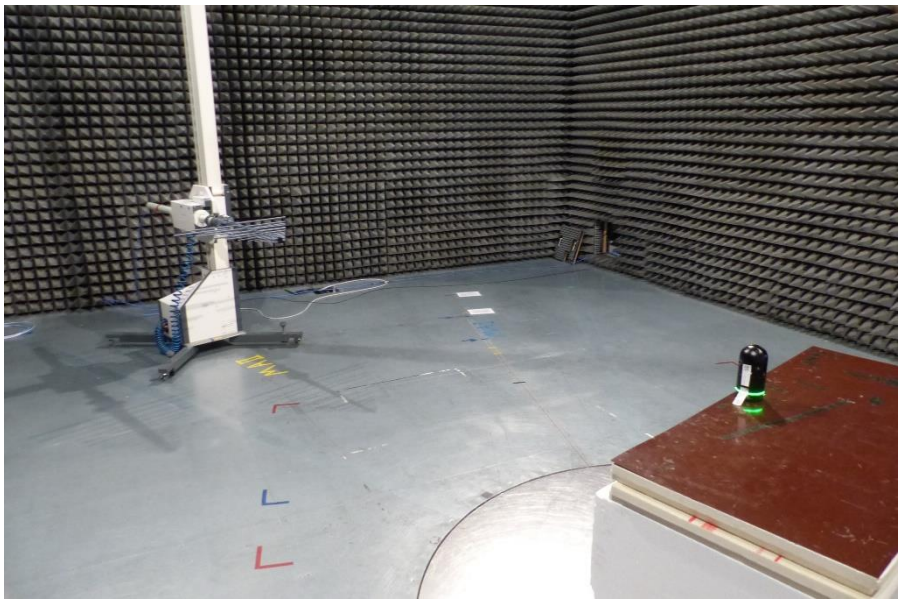
Test Results			
Operational mode	EUT Configuration	Verdict	Remark
1	1	PASS	-
2	1	PASS	-
3	2	PASS	-
4	2	PASS	-

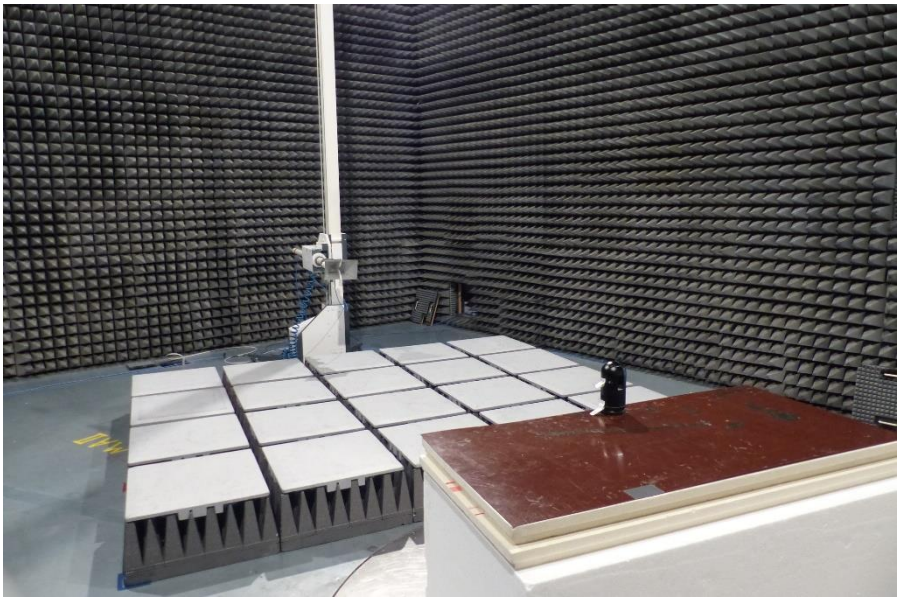
2.1.7 Setup Photos

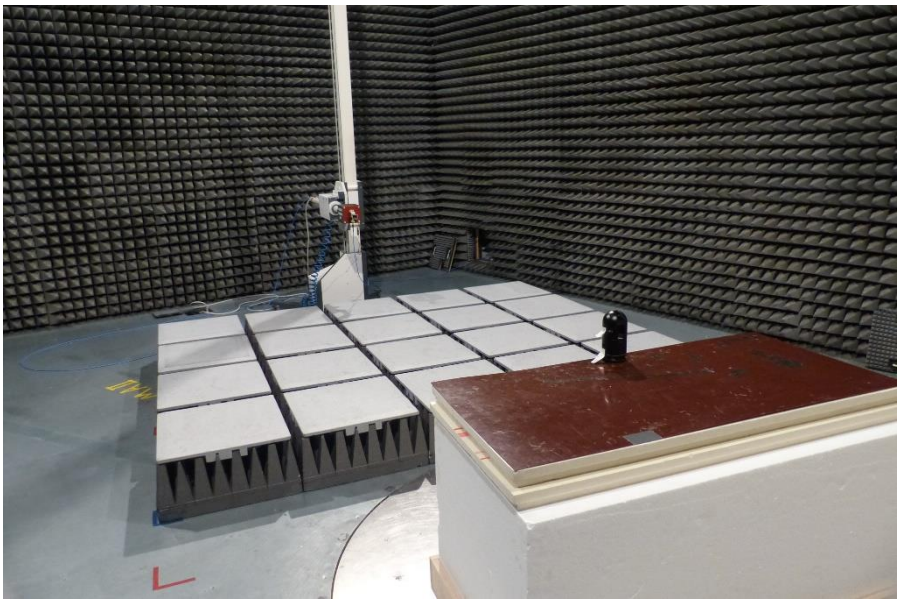
Test setup EUT Configuration I


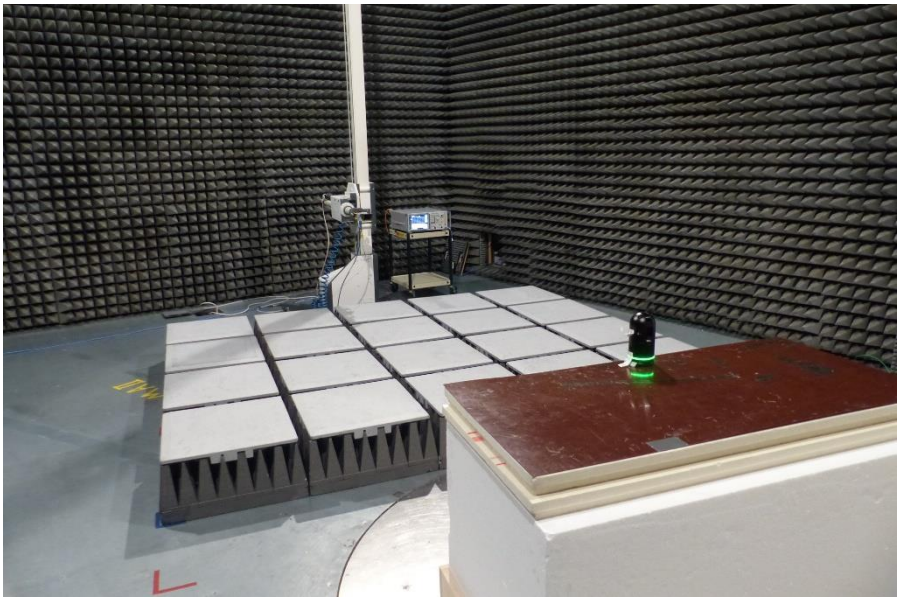
Test setup EUT Configuration I


Test setup EUT Configuration I: 30-200MHz


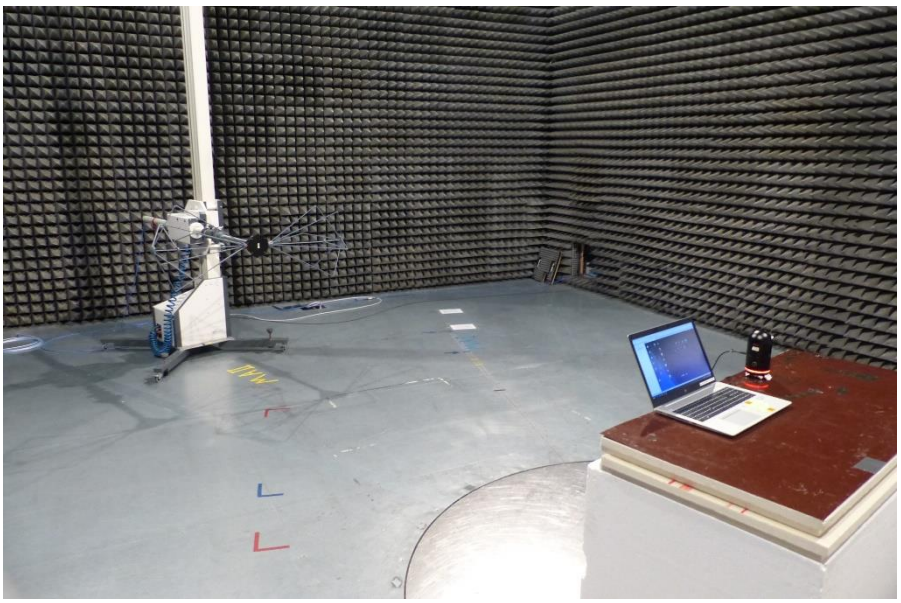
Test setup EUT Configuration I: 200-1000MHz


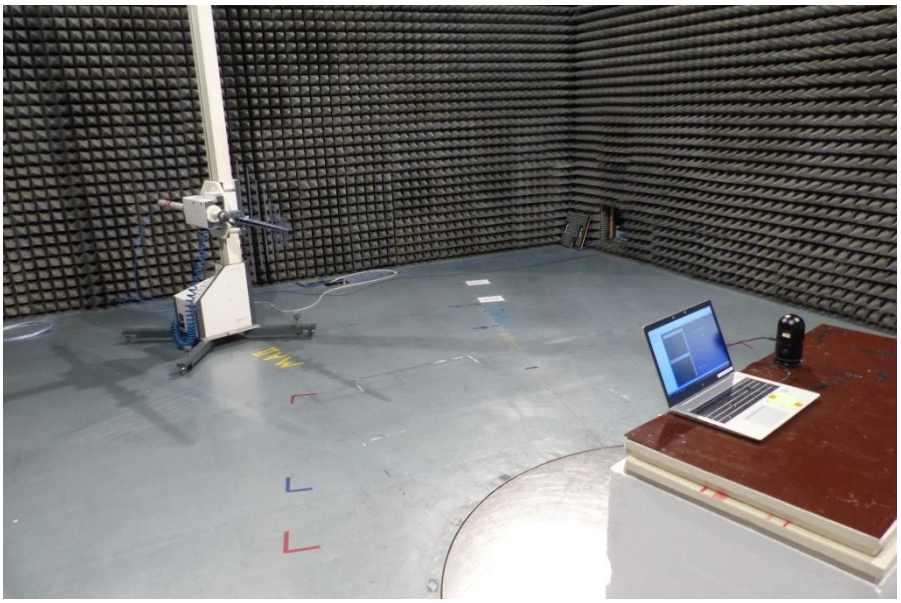
Test setup EUT Configuration I: 1000-17000MHz


Test setup EUT Configuration I: 17000-26500MHz


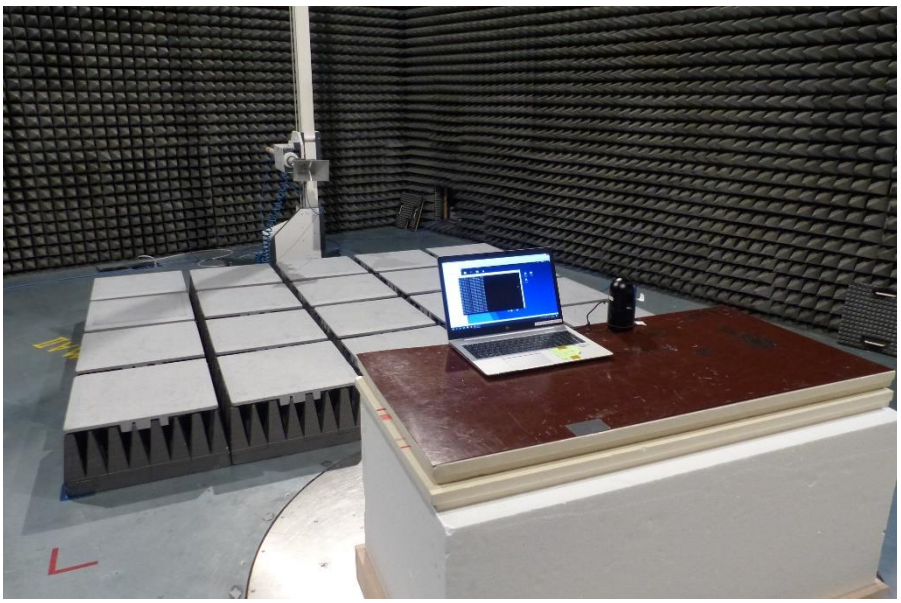
Test setup EUT Configuration I: 26500-30000MHz


Test setup EUT Configuration II

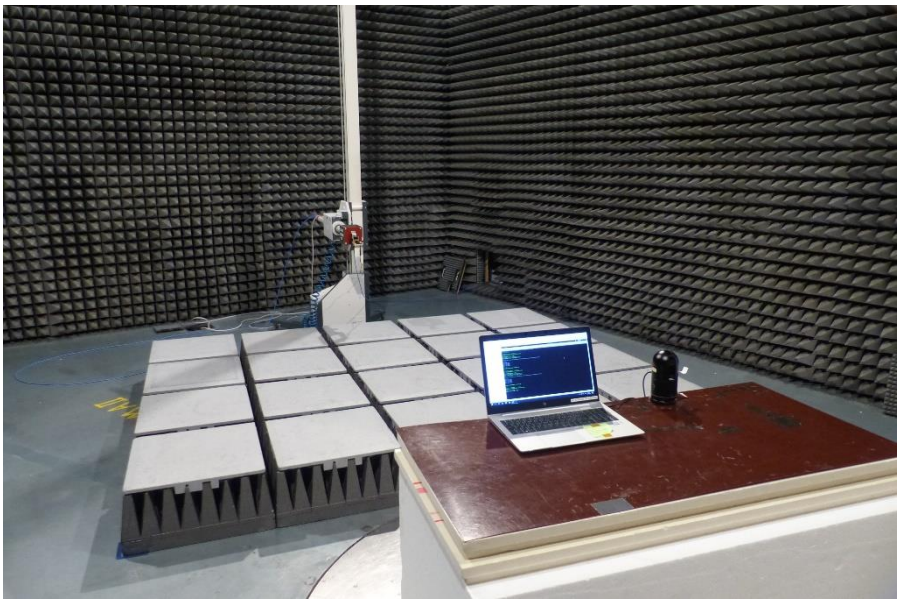

Test setup EUT Configuration II: 30-200MHz


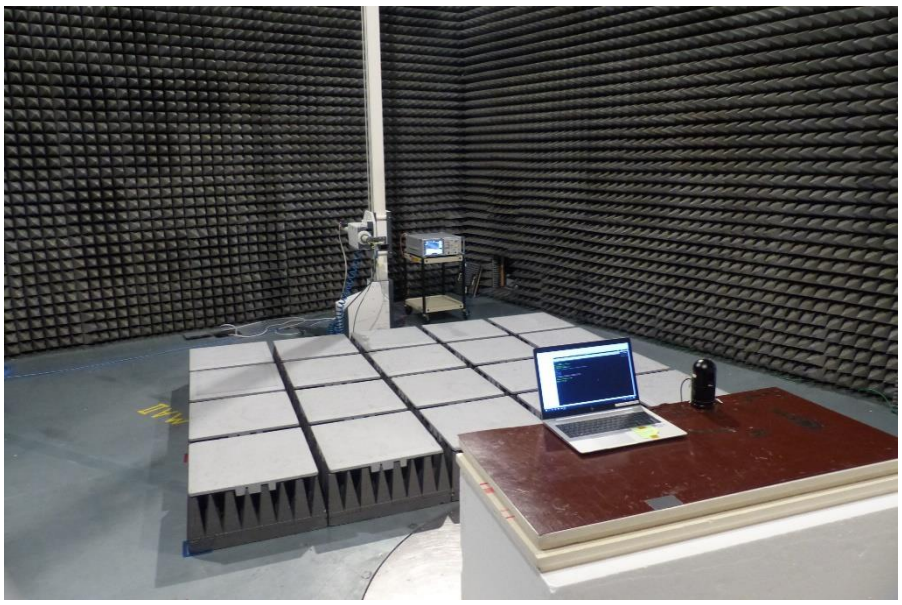
Test setup EUT Configuration II: 200-1000MHz


Test setup EUT Configuration II: 1000-17000MHz



Test setup EUT Configuration II: 17000-26500MHz

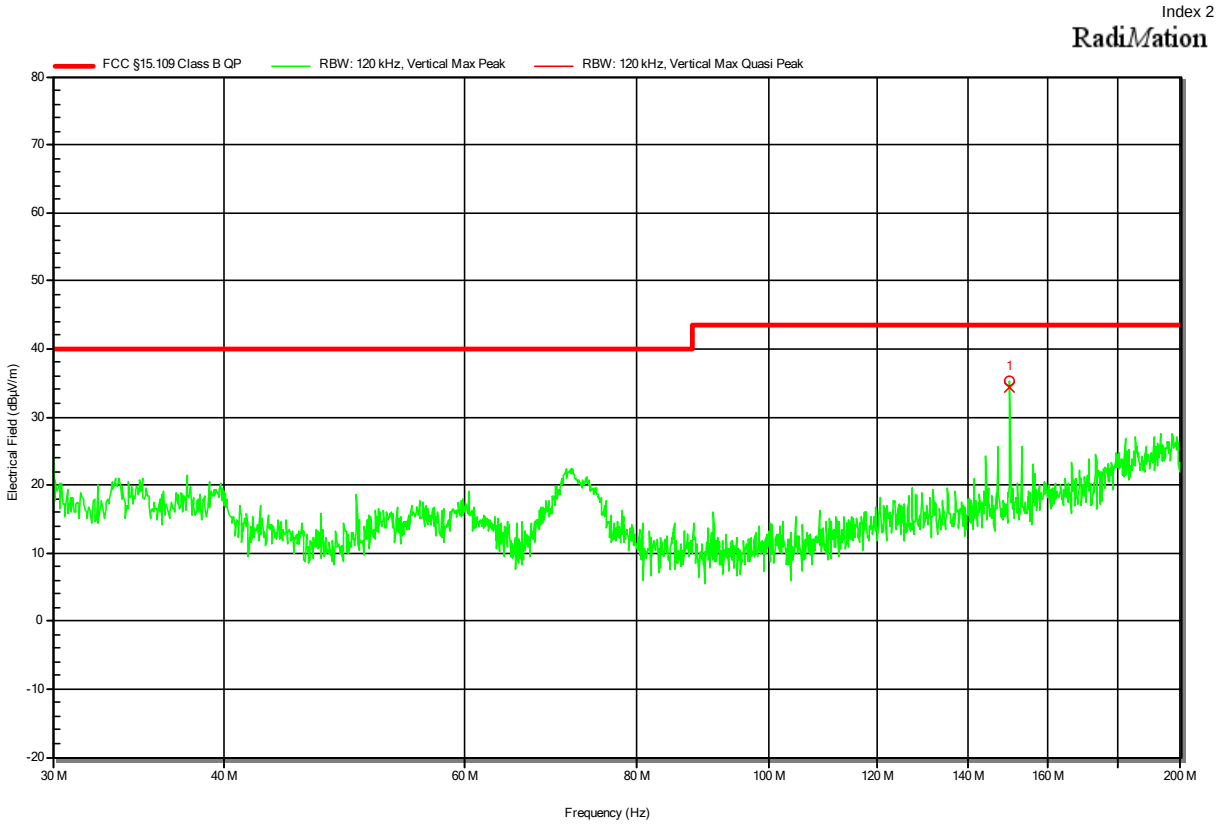


Test setup EUT Configuration II: 26500-30000MHz


2.1.8 Records

Radiated emissions
according to FCC part 15B

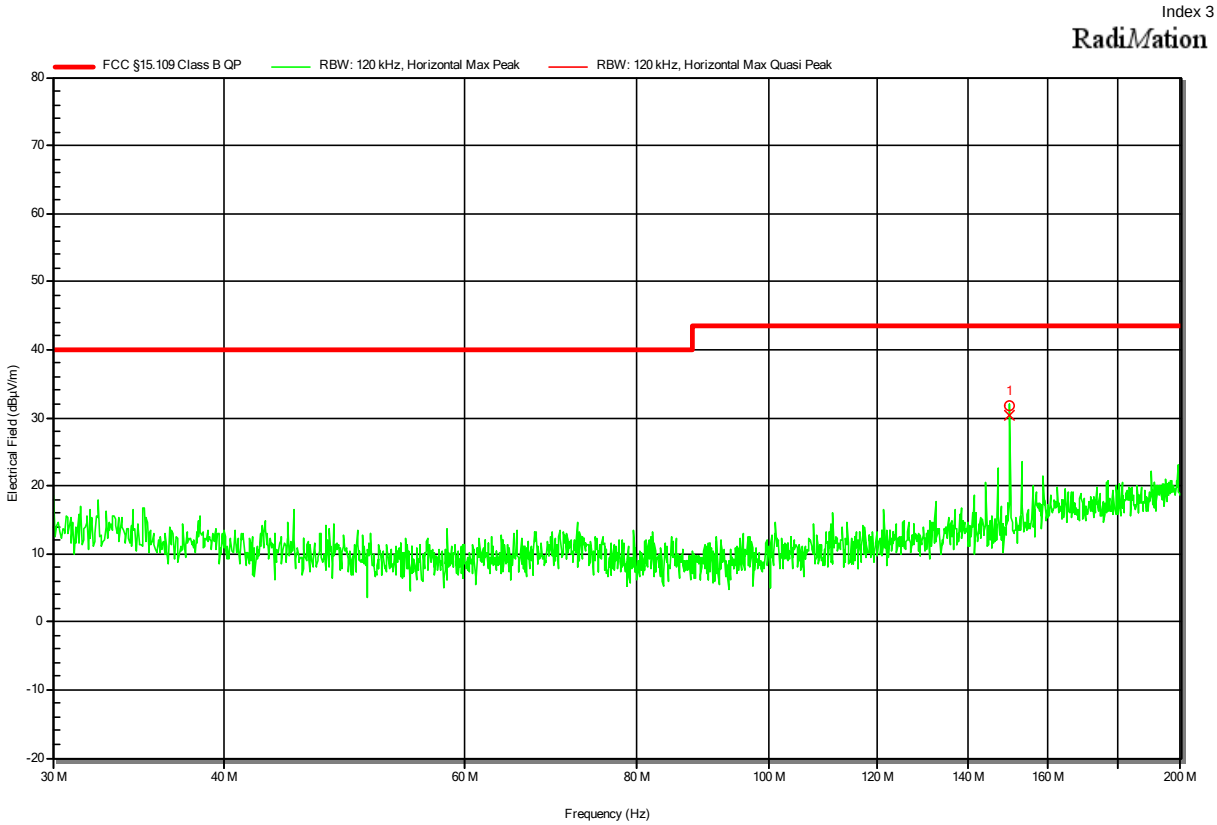
Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-22
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	149.997 MHz	34.31 dBµV/m	43.52 dBµV/m	-9.22 dB	Pass	-100 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-22
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	149.997 MHz	30.35 dBµV/m	43.52 dBµV/m	-13.17 dB	Pass	180 degrees	3.27 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-22
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	

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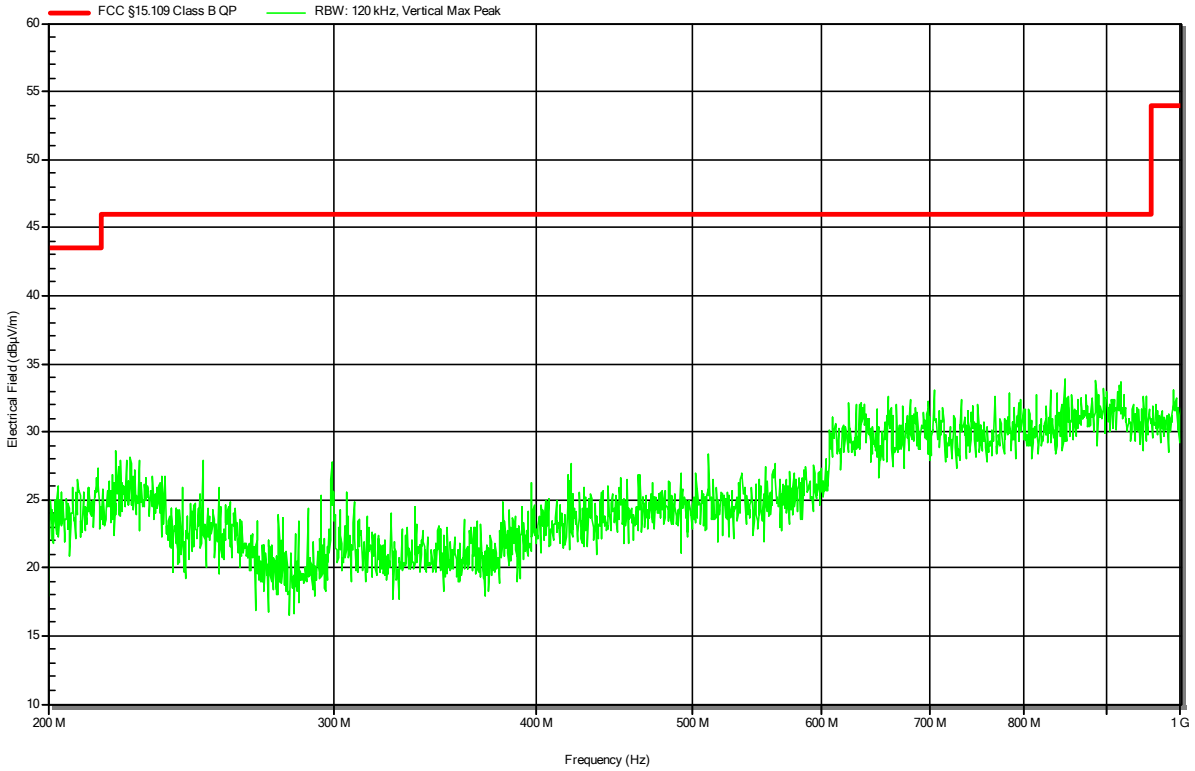
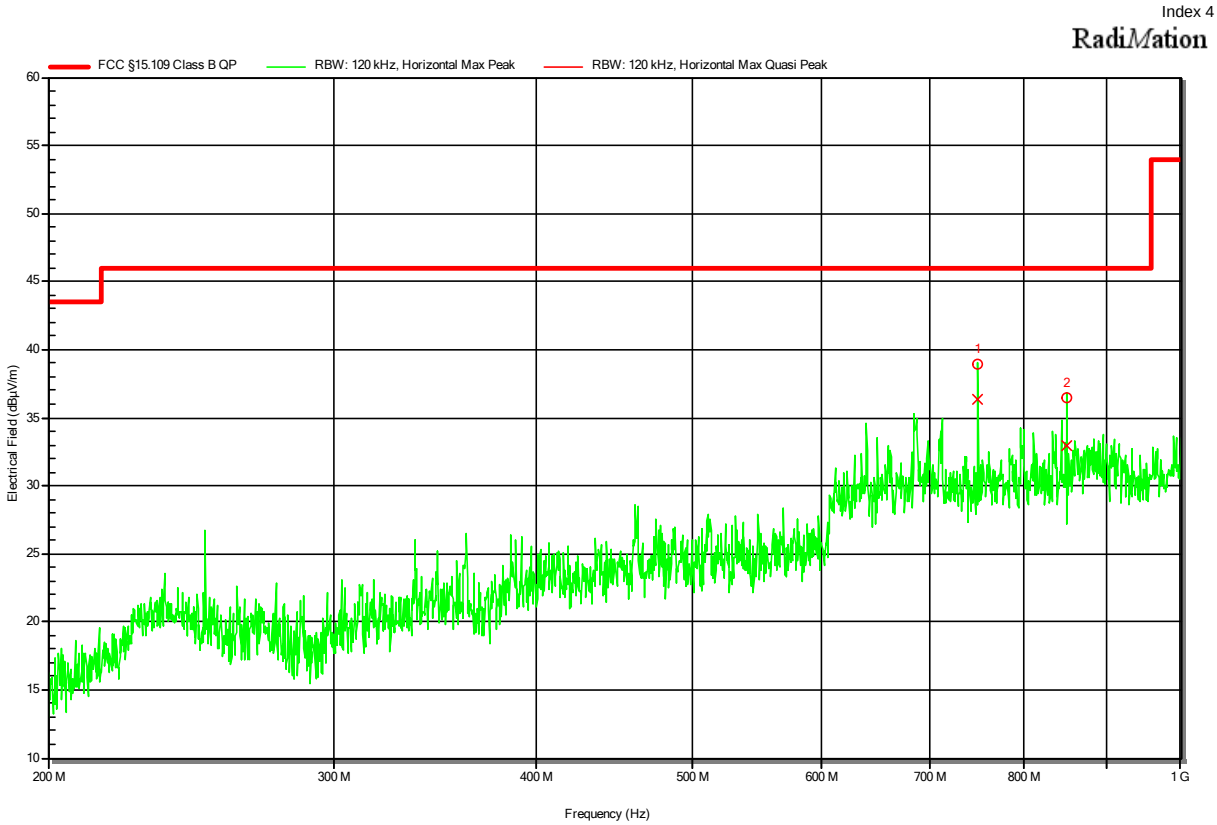
RadiMation



Radiated emissions
according to FCC part 15B

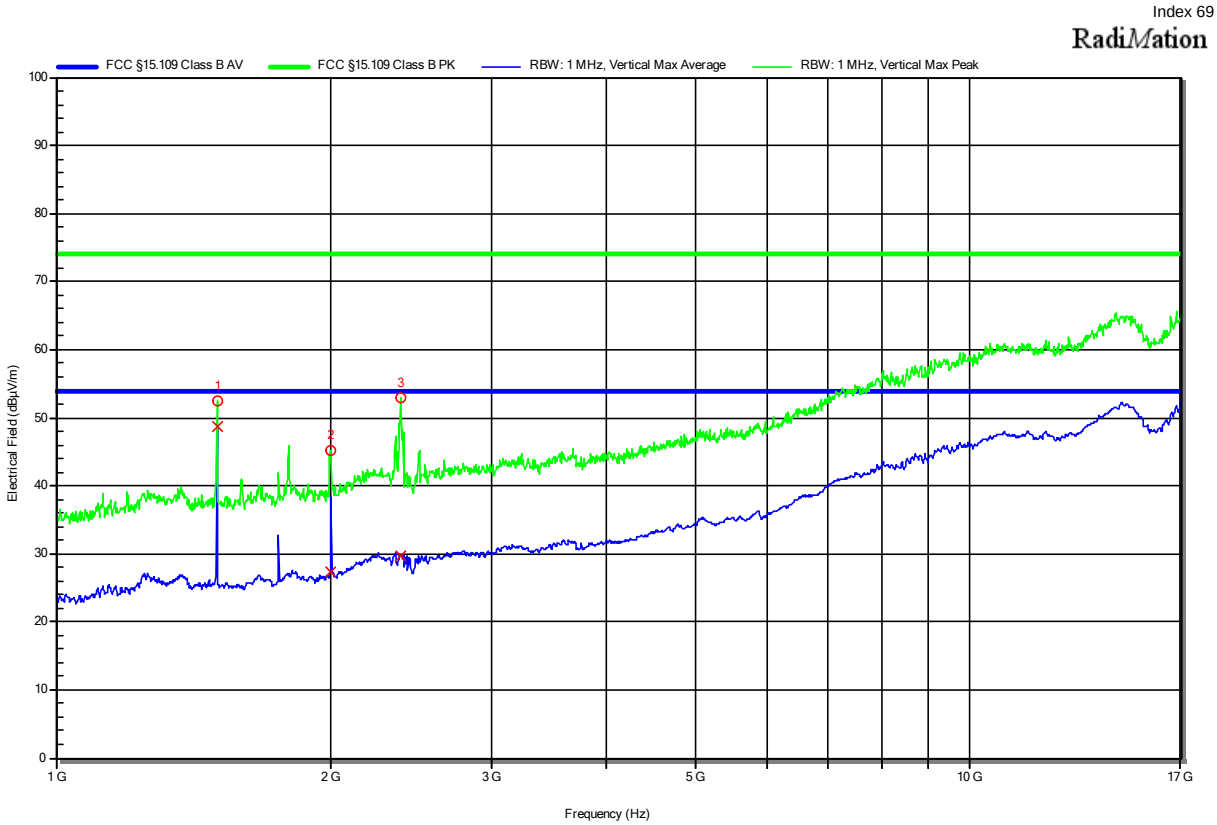
Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-22
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	749.997 MHz	36.35 dBµV/m	46.02 dBµV/m	-9.67 dB	Pass	-30 degrees	1 m
2	850.003 MHz	32.96 dBµV/m	46.02 dBµV/m	-13.06 dB	Pass	-30 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	2.4GHz Notchfilter



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	52.43 dBµV/m	73.98 dBµV/m	-21.55 dB	Pass	150 degrees	1.3 m
2	1.996 GHz	45.22 dBµV/m	73.98 dBµV/m	-28.76 dB	Pass	150 degrees	1.3 m
3	2.382 GHz	Bluetooth / WLAN carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	48.61 dBµV/m	53.98 dBµV/m	-5.37 dB	Pass	150 degrees	1.3 m
2	1.996 GHz	27.42 dBµV/m	53.98 dBµV/m	-26.56 dB	Pass	150 degrees	1.3 m
3	2.382 GHz	Bluetooth / WLAN carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	2.4GHz Notchfilter

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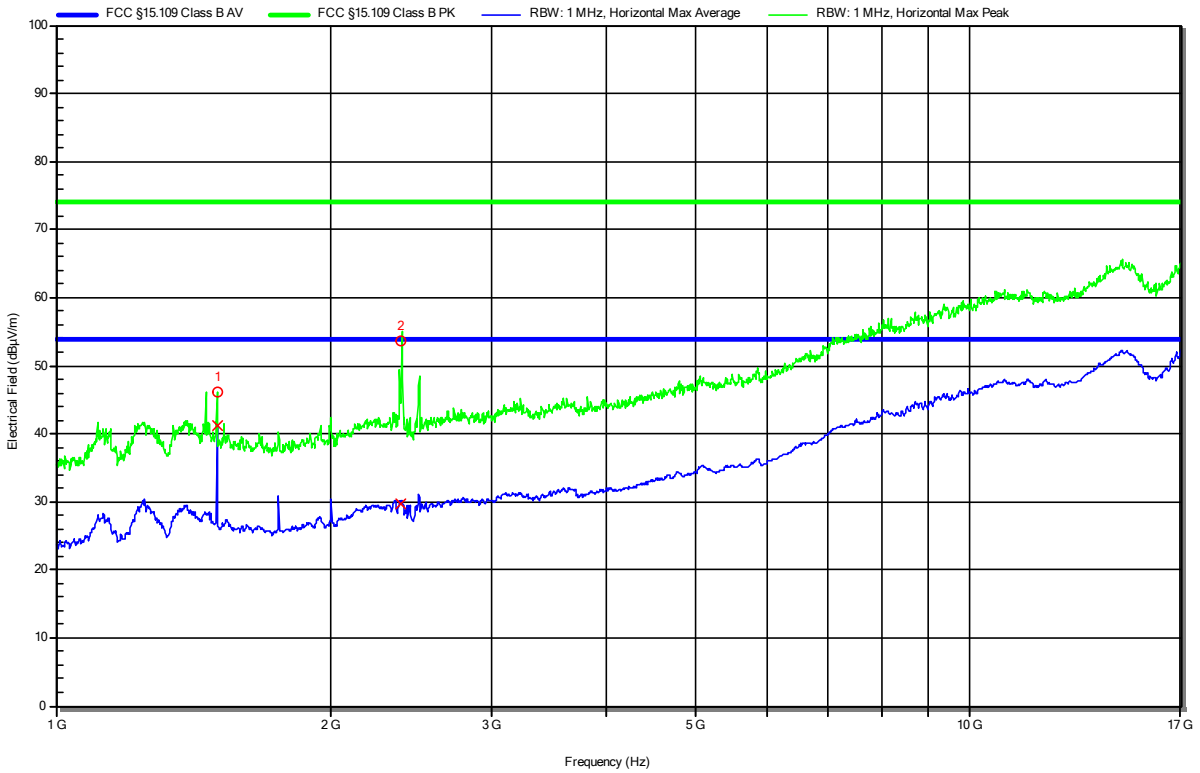
RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	46.11 dBµV/m	73.98 dBµV/m	-27.87 dB	Pass	0 degrees	1.1 m
2	2.387 GHz	Bluetooth / WLAN carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	41.29 dBµV/m	53.98 dBµV/m	-12.69 dB	Pass	0 degrees	1.1 m
2	2.387 GHz	Bluetooth / WLAN carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	

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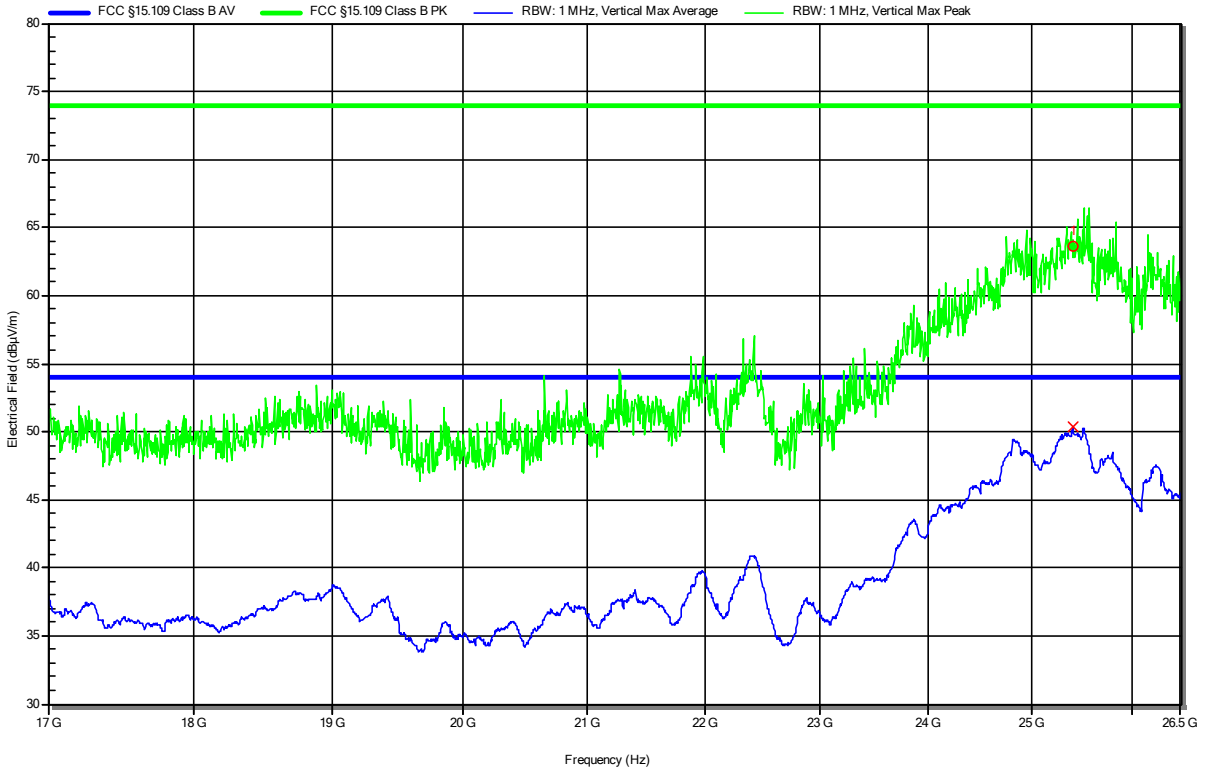
RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.4 GHz	63.6 dBµV/m	73.98 dBµV/m	-10.38 dB	Pass	0 degrees	1.1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.4 GHz	50.34 dBµV/m	53.98 dBµV/m	-3.64 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	

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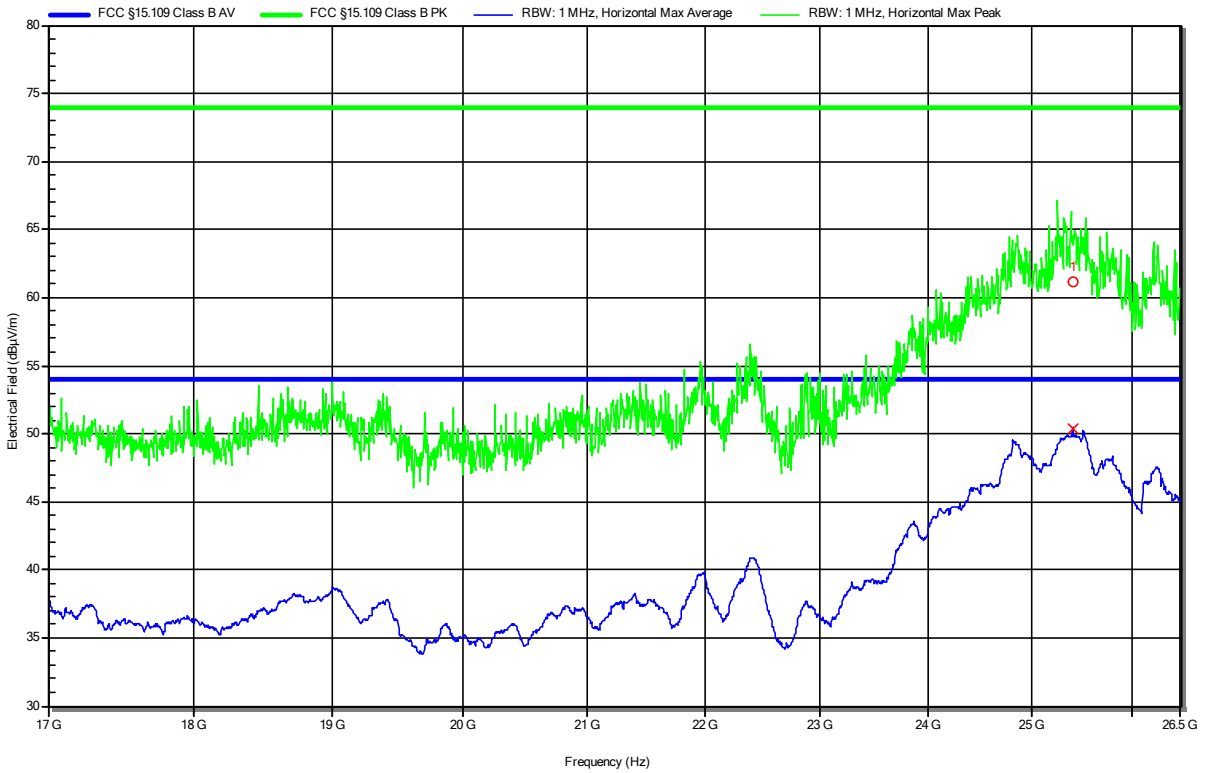
RadiMation

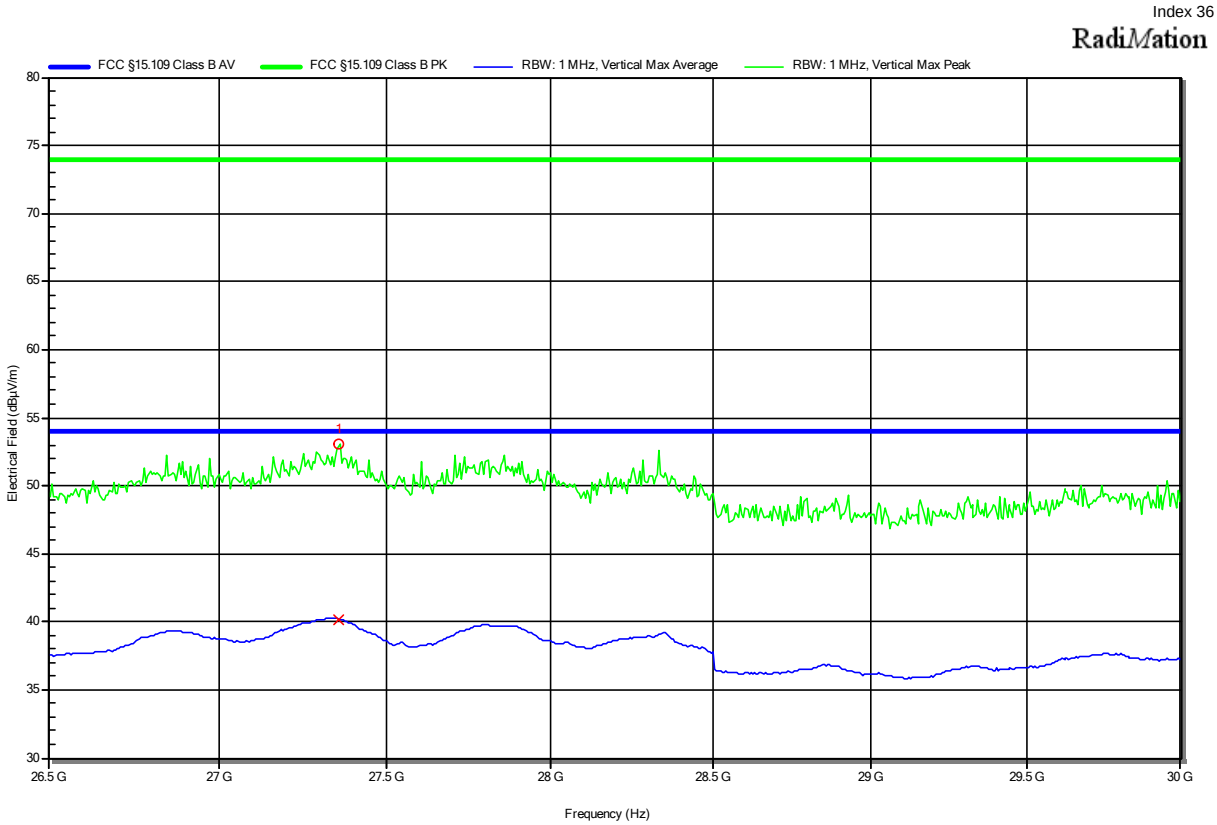


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.405 GHz	61.21 dBµV/m	73.98 dBµV/m	-12.77 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.405 GHz	50.4 dBµV/m	53.98 dBµV/m	-3.58 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	22240-28Amp. CBL26402075, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.358 GHz	53.02 dBµV/m	73.98 dBµV/m	-20.96 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.358 GHz	40.16 dBµV/m	53.98 dBµV/m	-13.82 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	22240-28Amp. CBL26402075, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	1 1
Note 1:	

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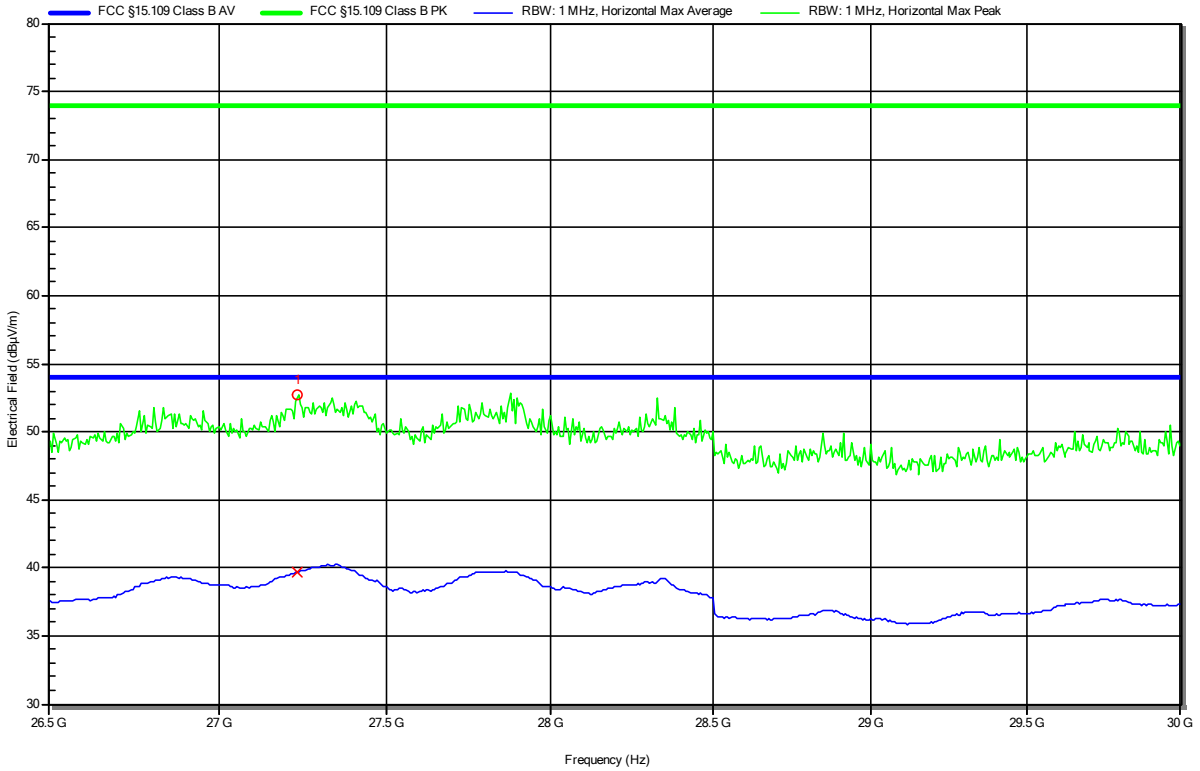
RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.235 GHz	52.74 dBµV/m	73.98 dBµV/m	-21.24 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.235 GHz	39.71 dBµV/m	53.98 dBµV/m	-14.26 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	

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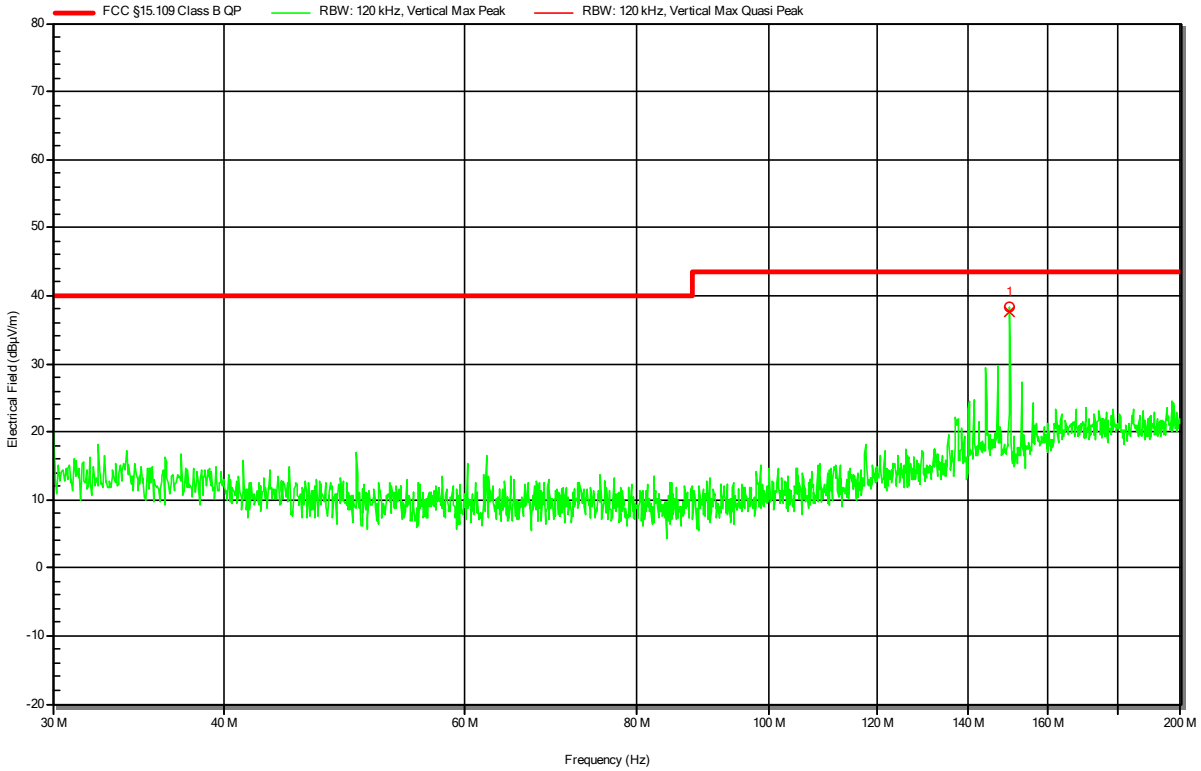
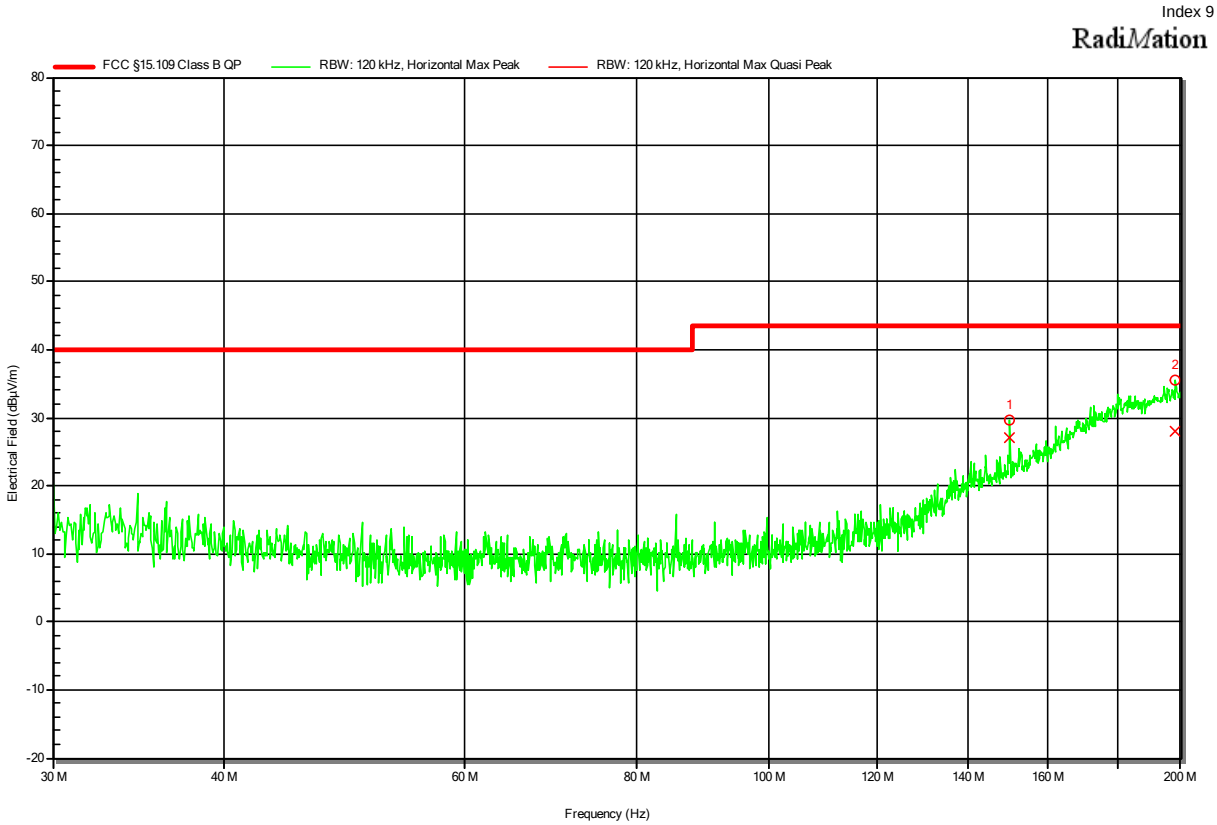
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	149.997 MHz	37.61 dBµV/m	43.52 dBµV/m	-5.91 dB	Pass	-123 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	150.003 MHz	26.99 dBµV/m	43.52 dBµV/m	-16.53 dB	Pass	100 degrees	1 m
2	198.319 MHz	28.08 dBµV/m	43.52 dBµV/m	-15.45 dB	Pass	100 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	

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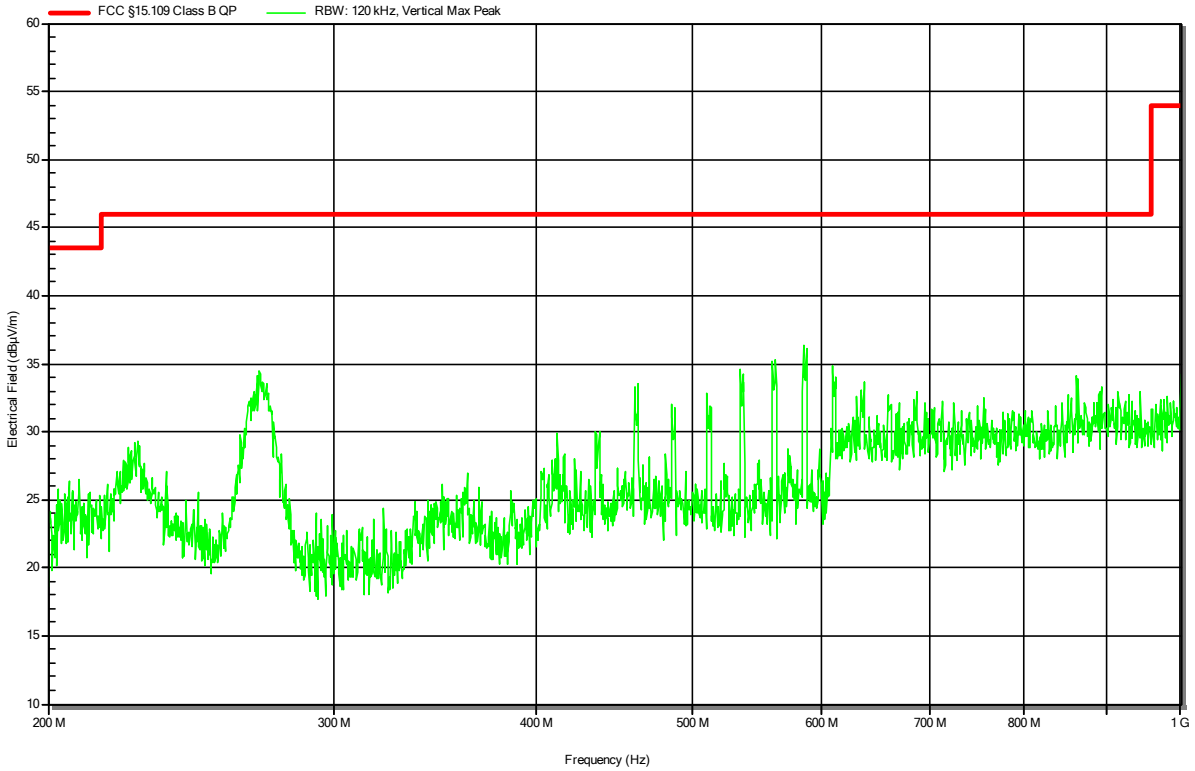
RadiMation



Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	

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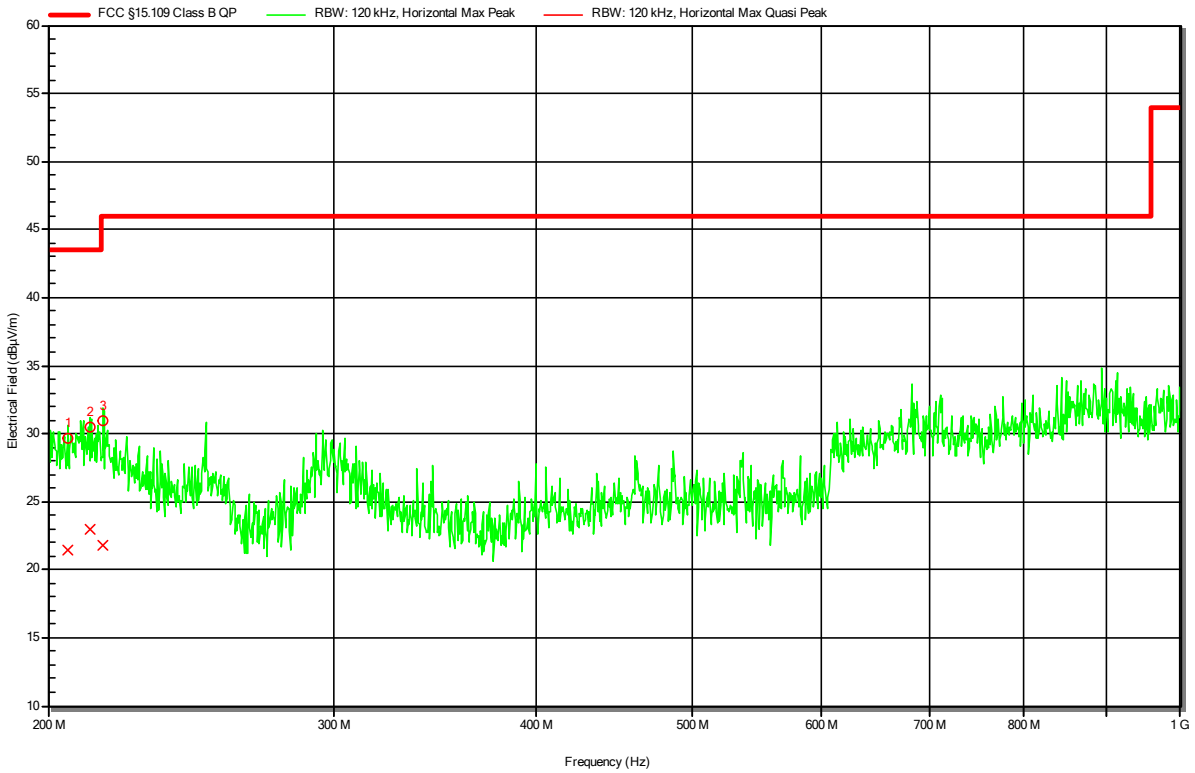

Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	205.866 MH	21.45 dBµV/m	43.52 dBµV/m	-22.07 dB	Pass	-25 degrees	1 m
2	212.525 MHz	22.92 dBµV/	43.52 dBµV/m	-20.61 dB	Pass	-25 degrees	1 m
3	216.391 MHz	21.79 dBµV/m	43.52 dBµV/m	-24.23 dB	Pass	-25 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	2.4GHz Notchfilter

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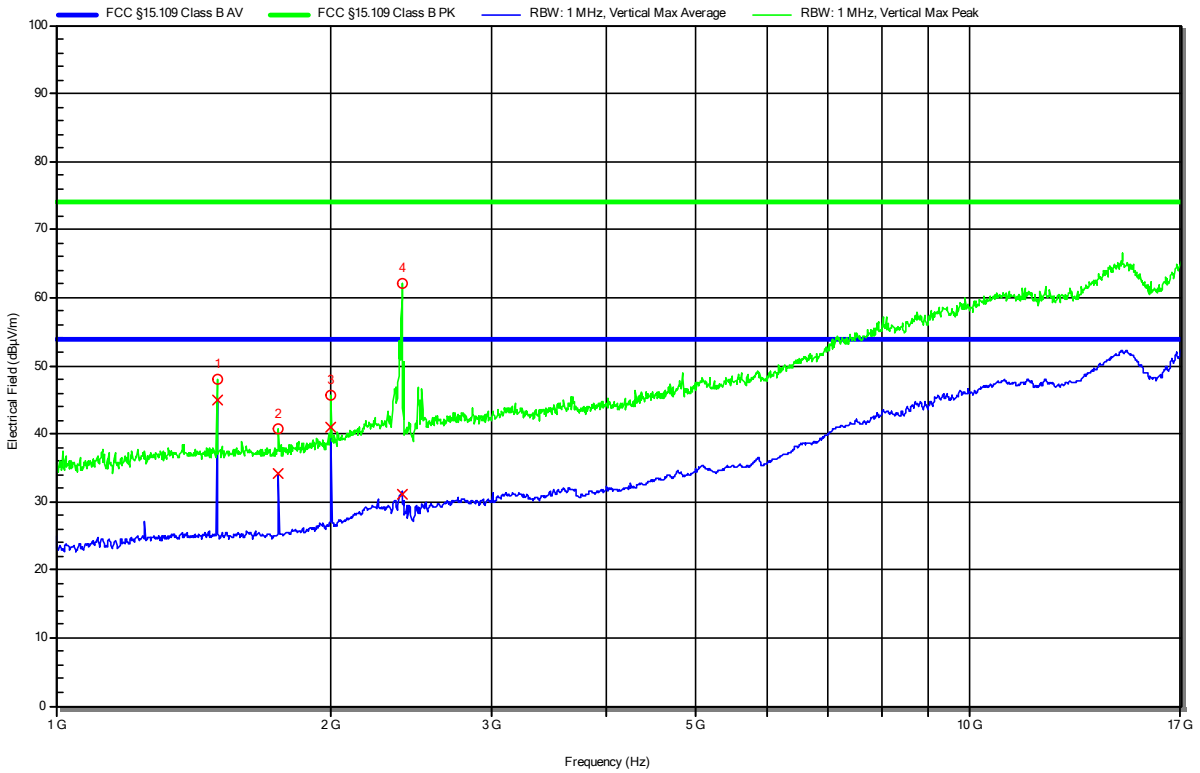
RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	48.12 dBµV/m	73.98 dBµV/m	-25.86 dB	Pass	135 degrees	1.52 m
2	1.75 GHz	40.82 dBµV/m	73.98 dBµV/m	-33.16 dB	Pass	135 degrees	1.52 m
3	2 GHz	45.71 dBµV/m	73.98 dBµV/m	-28.27 dB	Pass	135 degrees	1.52 m
4	2.39 GHz	Bluetooth / WLAN carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	45.07 dBµV/m	53.98 dBµV/m	-8.91 dB	Pass	135 degrees	1.52 m
2	1.75 GHz	34.13 dBµV/m	53.98 dBµV/m	-19.85 dB	Pass	135 degrees	1.52 m
3	2 GHz	41.03 dBµV/m	53.98 dBµV/m	-12.95 dB	Pass	135 degrees	1.52 m
4	2.39 GHz	Bluetooth / WLAN carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	2.4GHz Notchfilter

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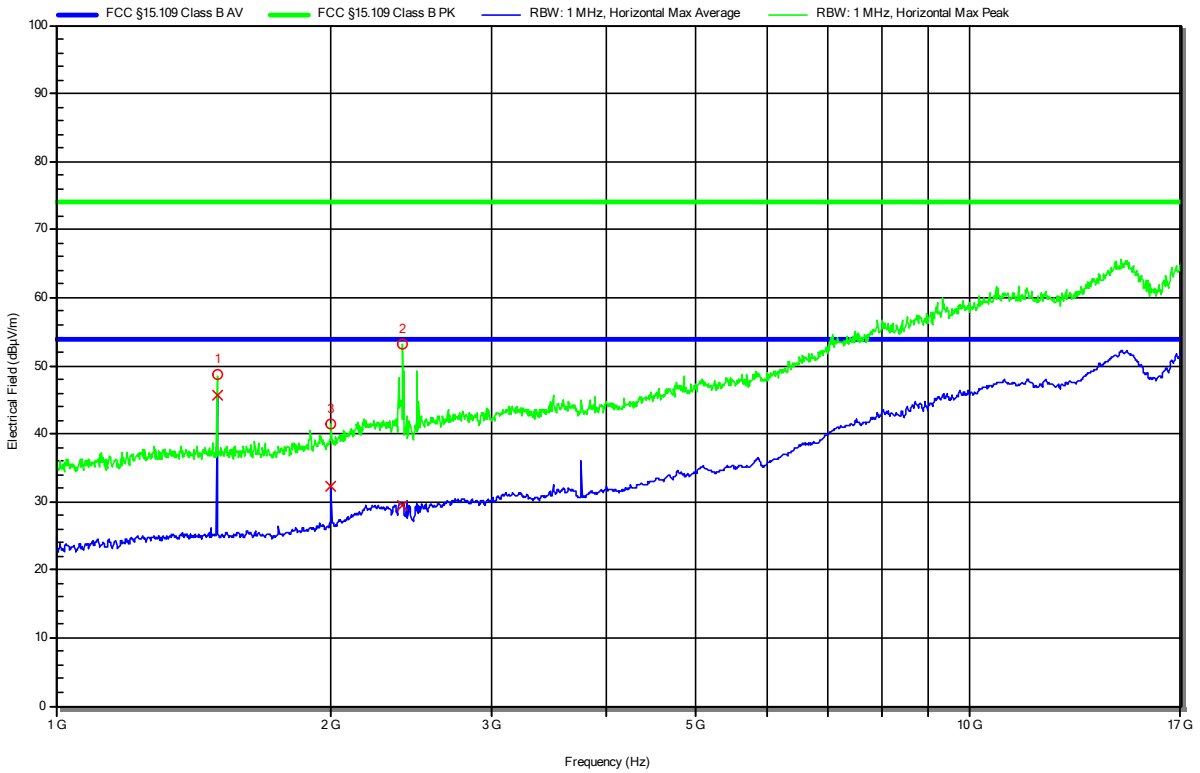
RadiMation

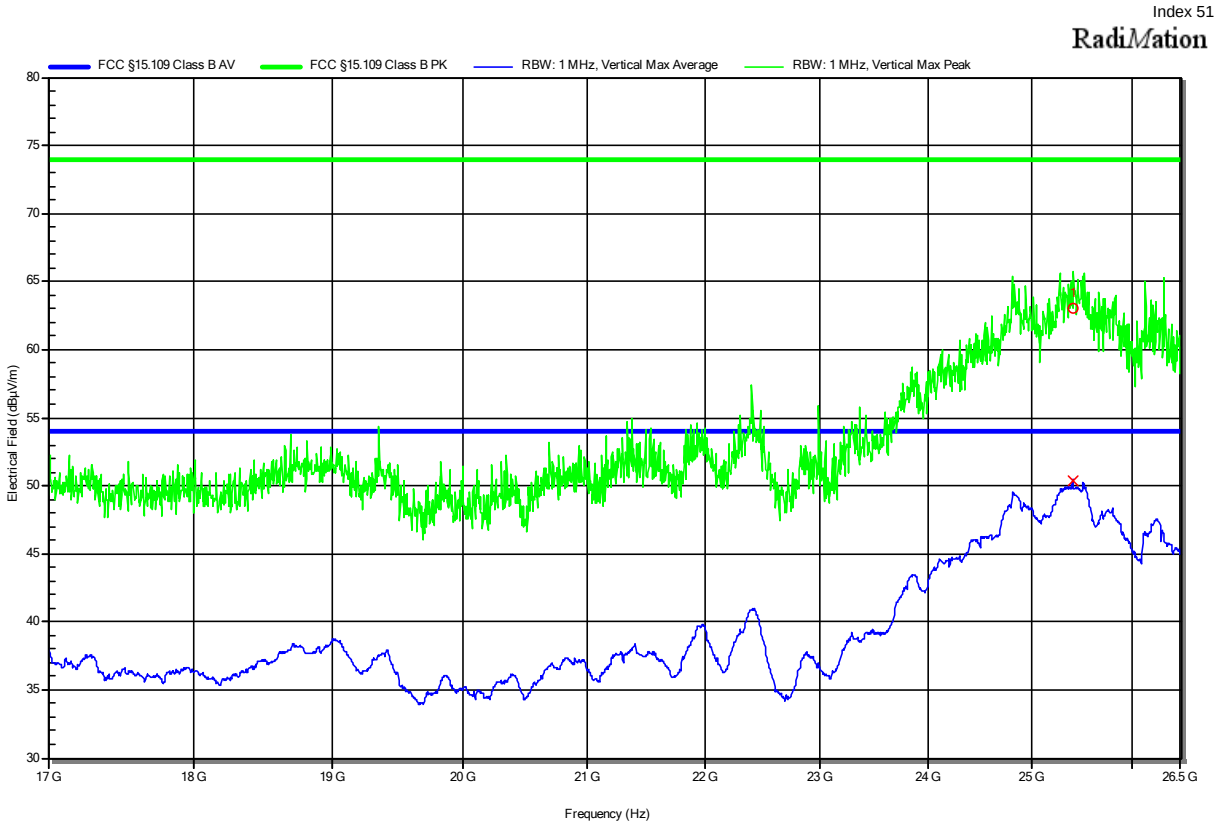


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	48.61 dBµV/m	73.98 dBµV/m	-25.37 dB	Pass	0 degrees	1 m
2	2.394 GHz	Bluetooth / WLAN carrier					
3	2 GHz	41.36 dBµV/m	73.98 dBµV/m	-32.62 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	45.73 dBµV/m	53.98 dBµV/m	-8.25 dB	Pass	0 degrees	1 m
2	2.394 GHz	Bluetooth / WLAN carrier					
3	2 GHz	32.33 dBµV/m	53.98 dBµV/m	-21.65 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	

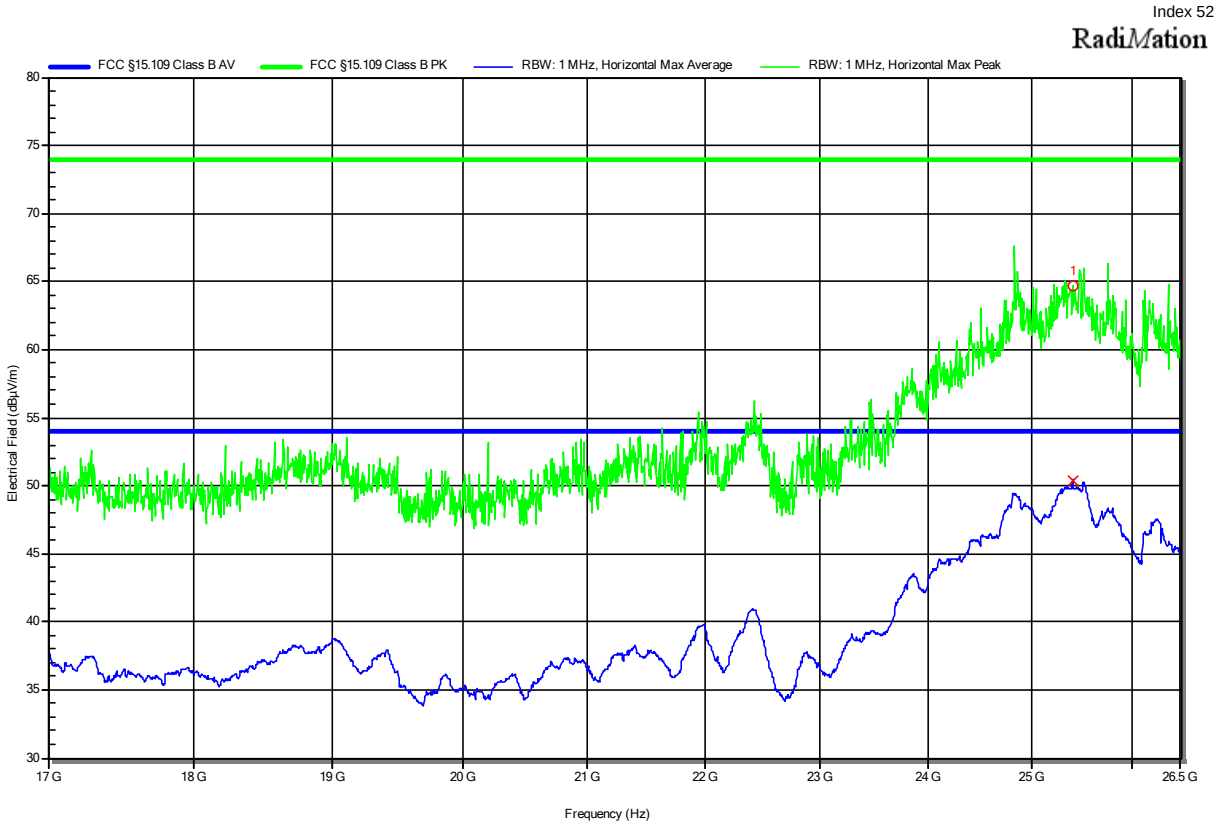


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.402 GHz	63.03 dBµV/m	73.98 dBµV/m	-10.95 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.402 GHz	50.41 dBµV/m	53.98 dBµV/m	-3.57 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	

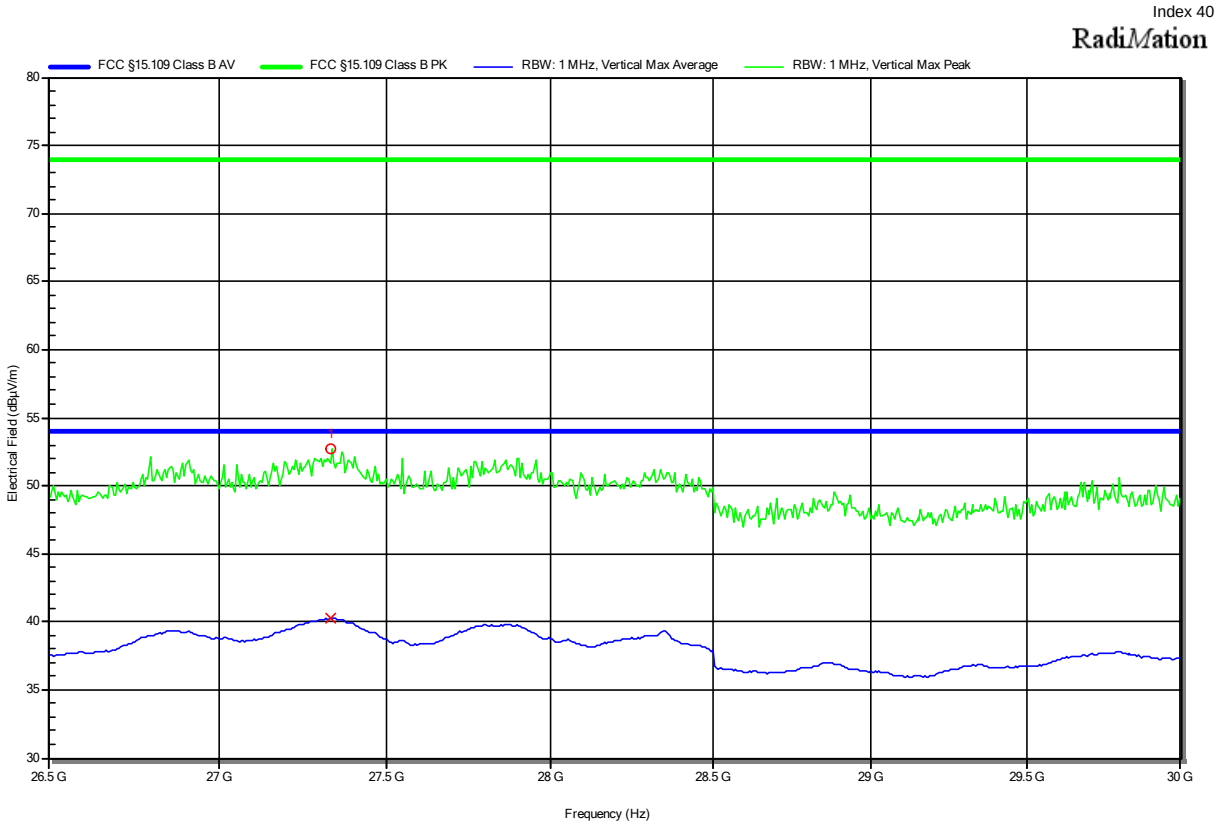


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.402 GHz	64.66 dBµV/m	73.98 dBµV/m	-9.32 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.4 GHz	50.34 dBµV/m	53.98 dBµV/m	-3.64 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	22240-25 Amp. CBL26402075, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.336 GHz	52.77 dBµV/m	73.98 dBµV/m	-21.21 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.336 GHz	40.28 dBµV/m	53.98 dBµV/m	-13.7 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	22240-25 Amp. CBL26402075, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	3 2
Note 1:	

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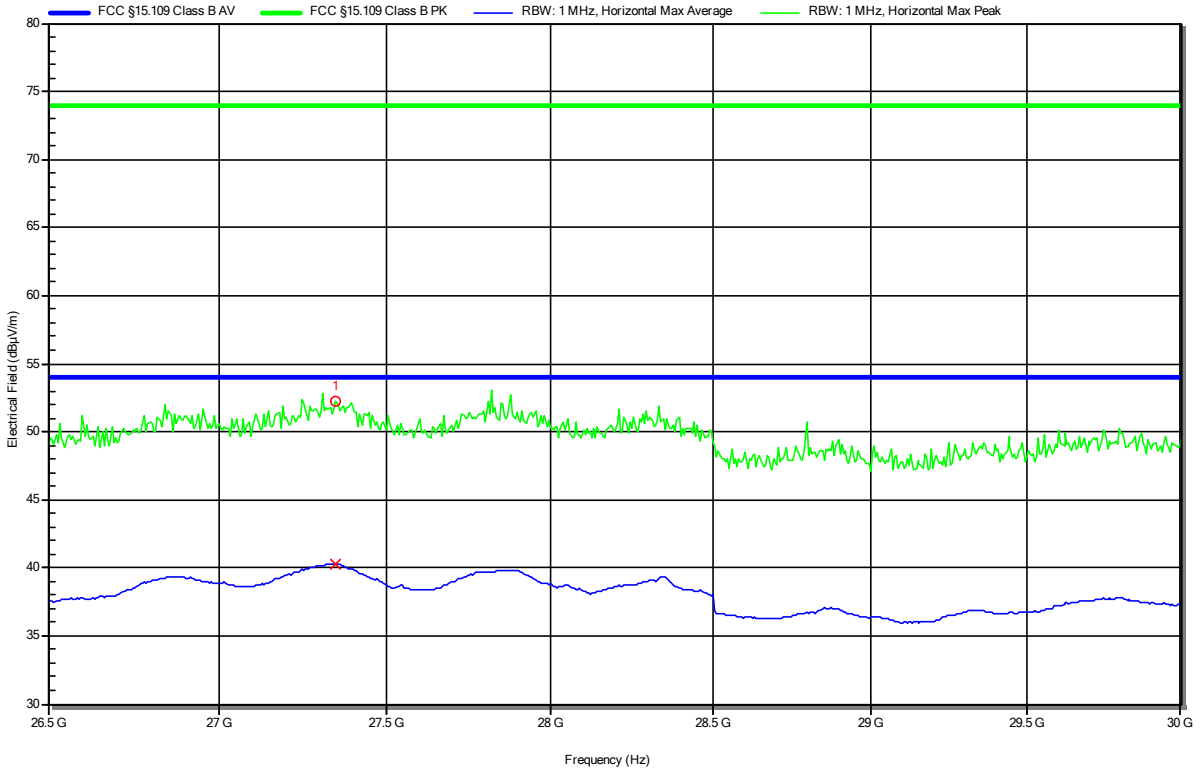
RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.347 GHz	52.25 dBµV/m	73.98 dBµV/m	-21.21 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.347 GHz	40.27 dBµV/m	53.98 dBµV/m	-13.71 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	

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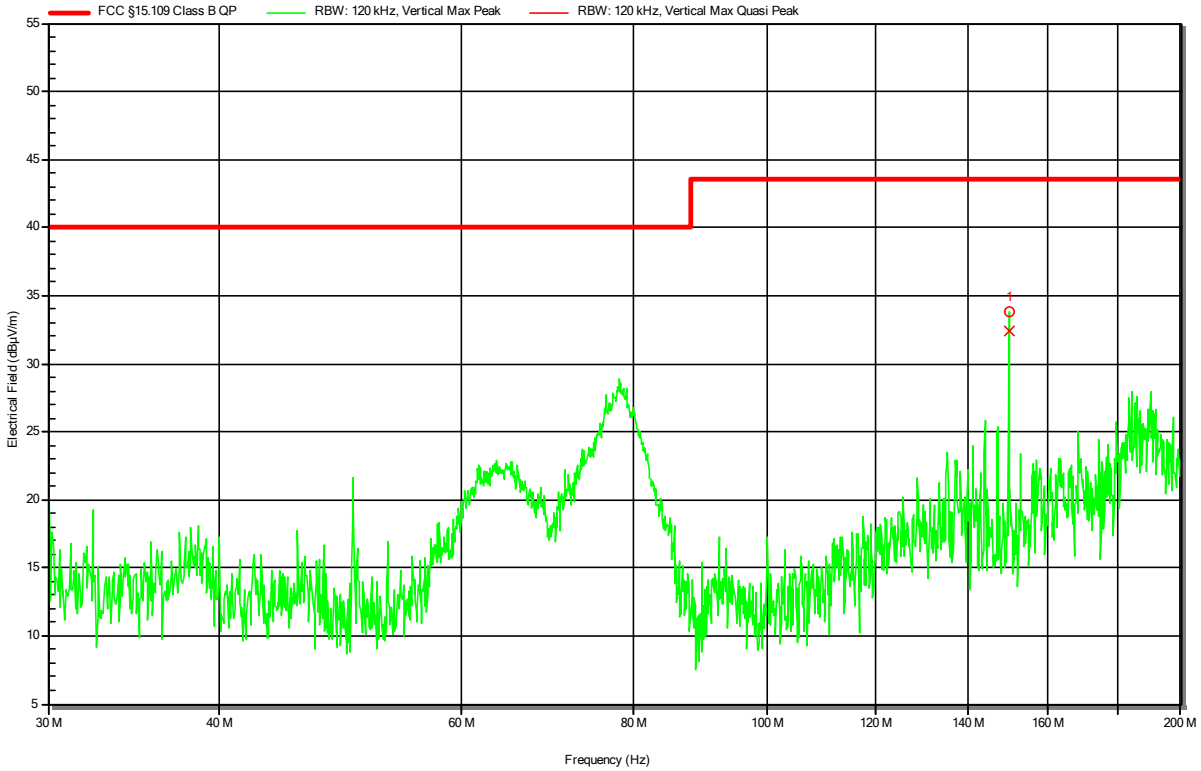
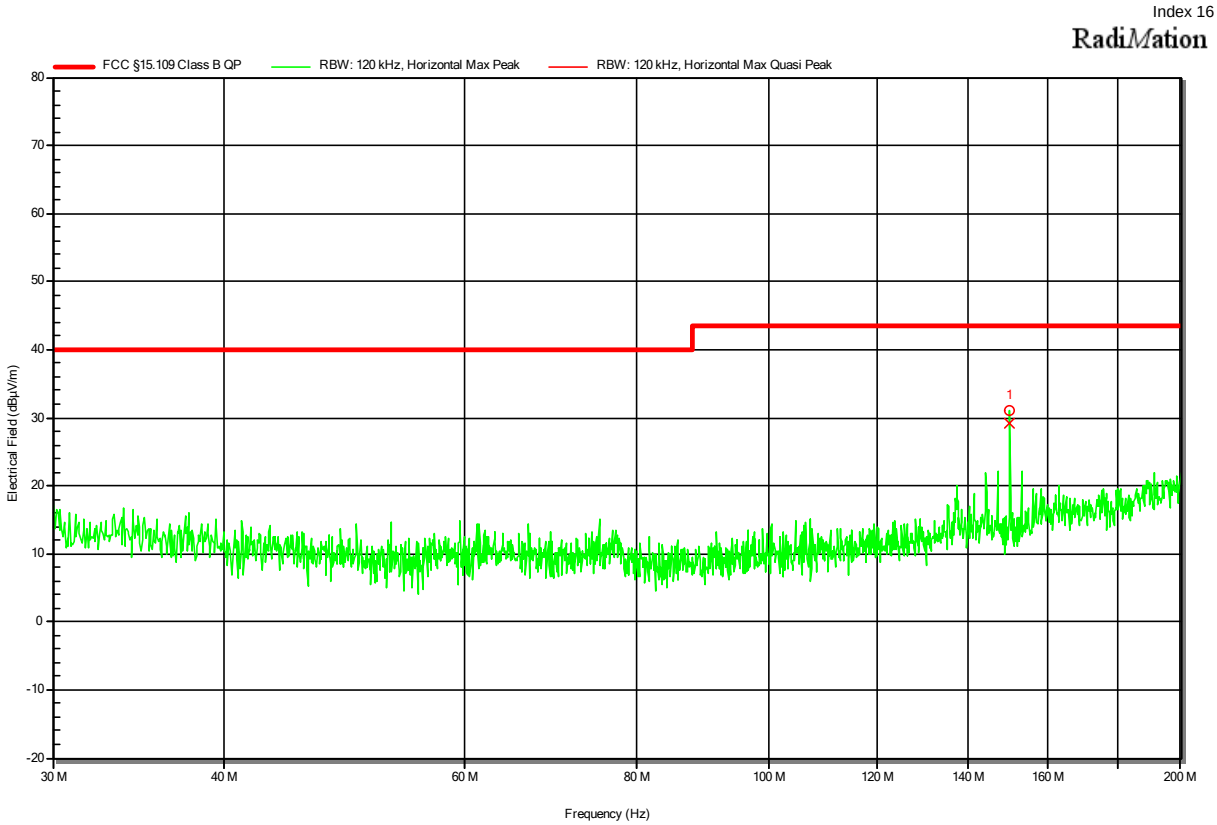
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	149.997 MHz	32.37 dBµV/m	43.52 dBµV/m	-11.15 dB	Pass	-110 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	150.003 MHz	29.09 dBµV/m	43.52 dBµV/m	-14.44 dB	Pass	180 degrees	3.18 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	

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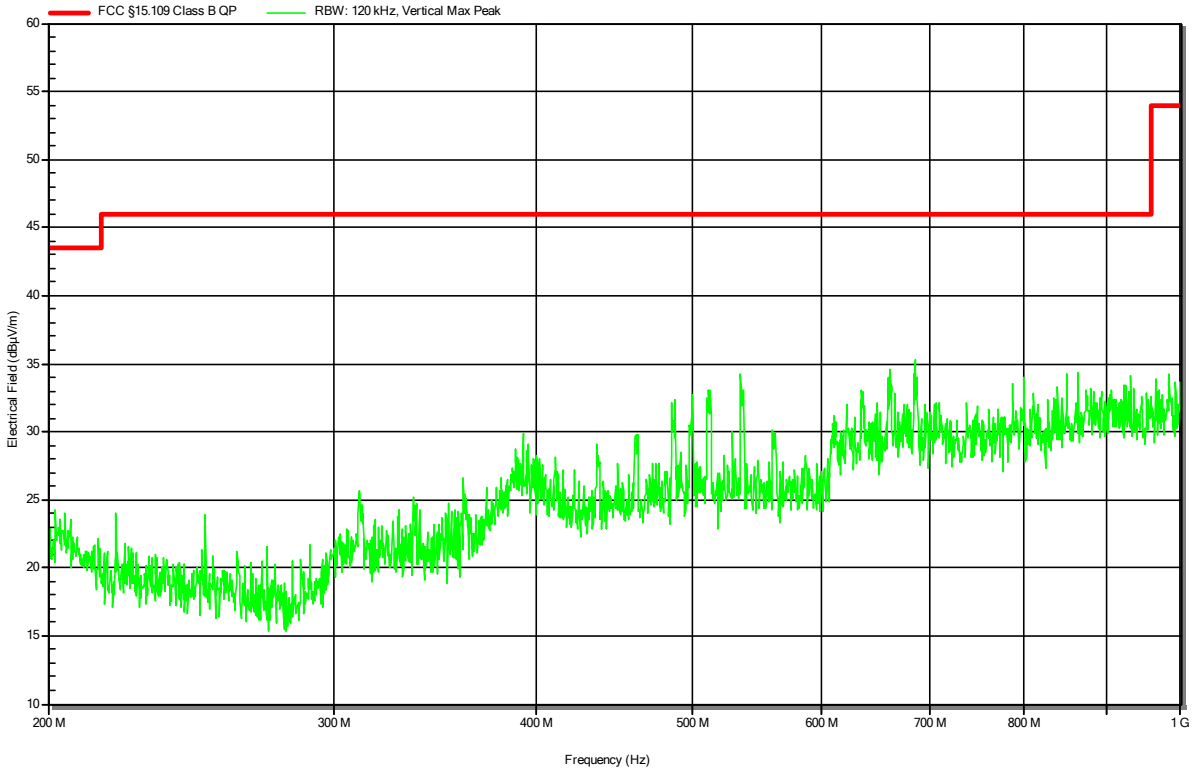
RadiMation



Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	

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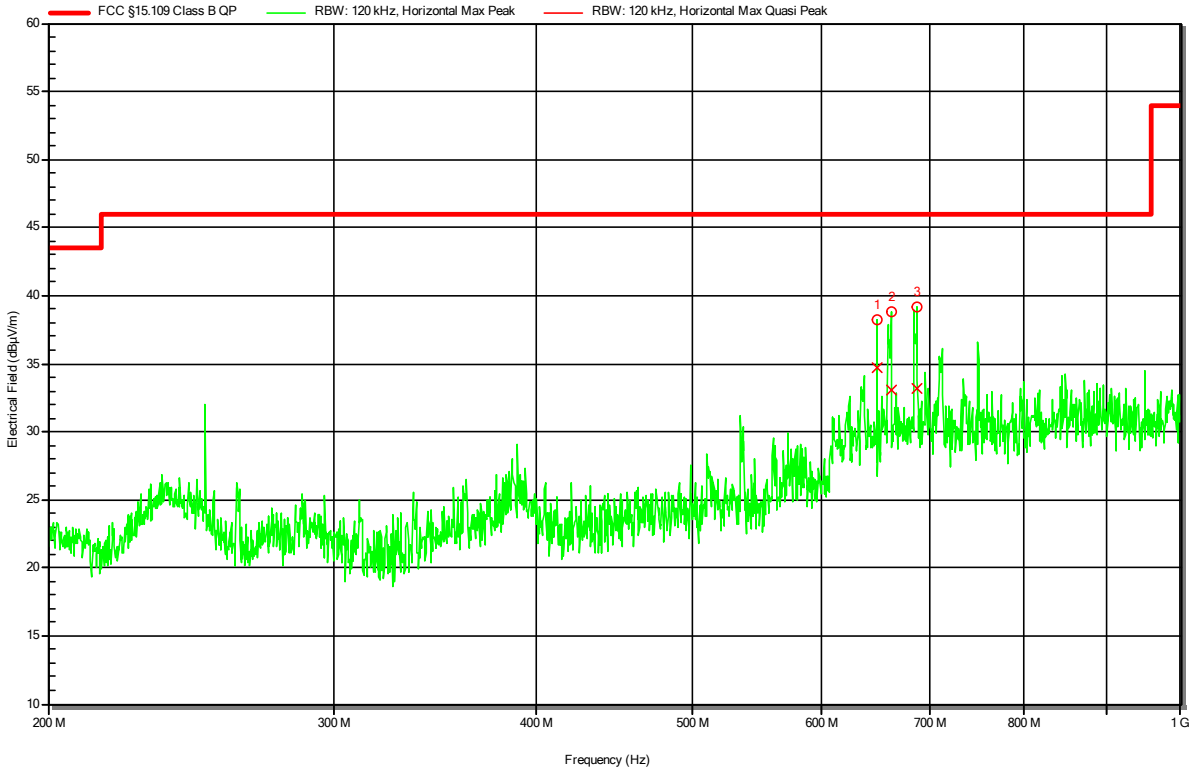
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	650.003 MHz	34.74 dBµV/m	46.02 dBµV/m	-11.28 dB	Pass	-170 degrees	1.2 m
2	662.372 MHz	33.02 dBµV/m	46.02 dBµV/m	-13 dB	Pass	-170 degrees	1.2 m
3	687.409 MHz	33.15 dBµV/m	46.02 dBµV/m	-12.87 dB	Pass	-170 degrees	1.2 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	2.4GHz Notchfilter

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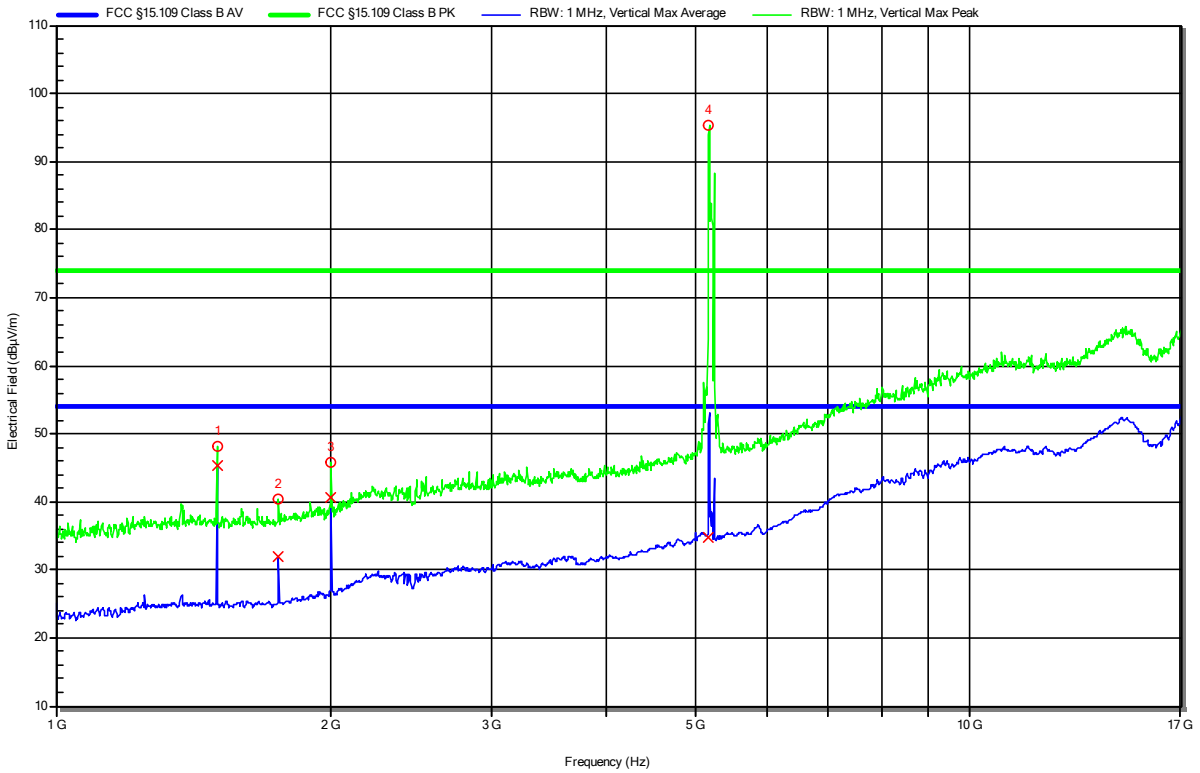
RadiMation

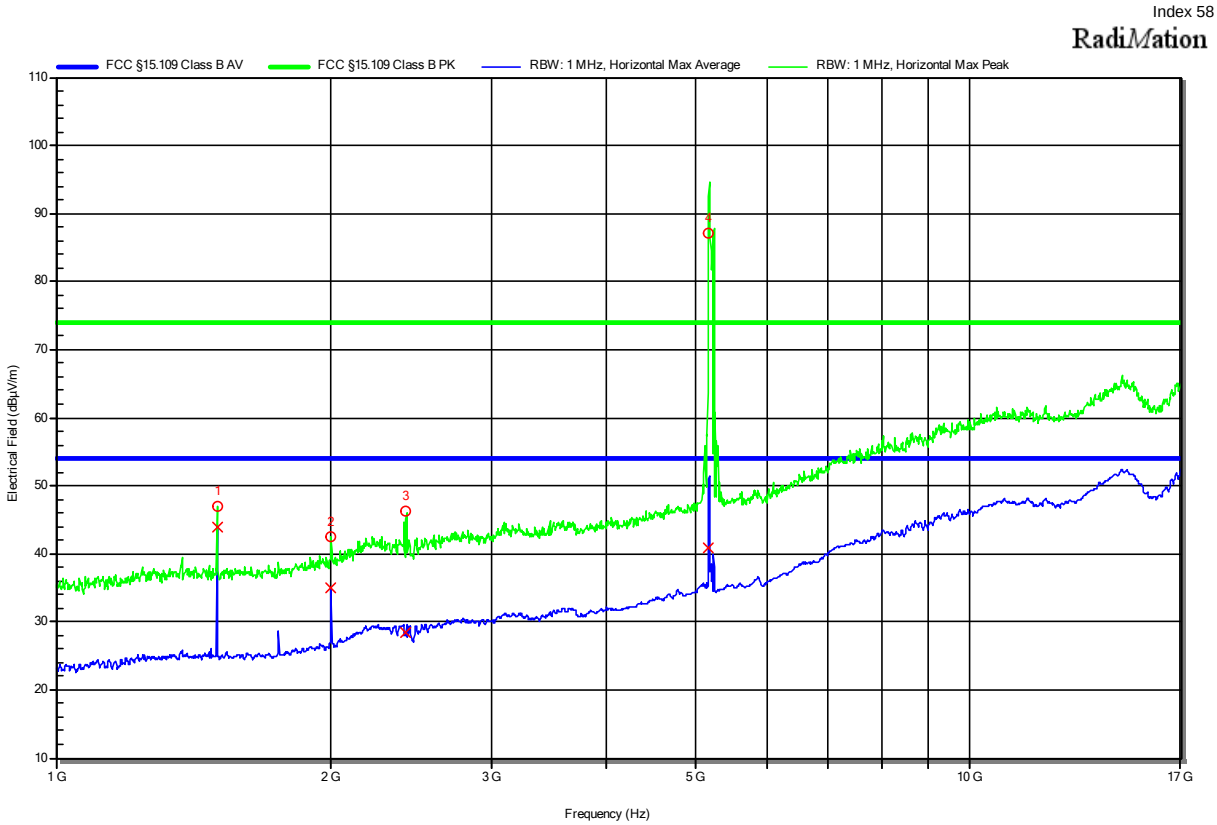


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	48.07 dBµV/m	73.98 dBµV/m	-25.91 dB	Pass	135 degrees	1.38 m
2	1.75 GHz	40.31 dBµV/m	73.98 dBµV/m	-33.67 dB	Pass	135 degrees	1.38 m
3	2 GHz	45.81 dBµV/m	73.98 dBµV/m	-28.17 dB	Pass	135 degrees	1.38 m
4	5.182 GHz	5GHz WLAN carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	45.38 dBµV/m	53.98 dBµV/m	-8.6 dB	Pass	135 degrees	1.38 m
2	1.75 GHz	31.9 dBµV/m	53.98 dBµV/m	-22.08 dB	Pass	135 degrees	1.38 m
3	2 GHz	40.74 dBµV/m	53.98 dBµV/m	-13.24 dB	Pass	135 degrees	1.38 m
4	5.182 GHz	5GHz WLAN carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	2.4GHz Notchfilter

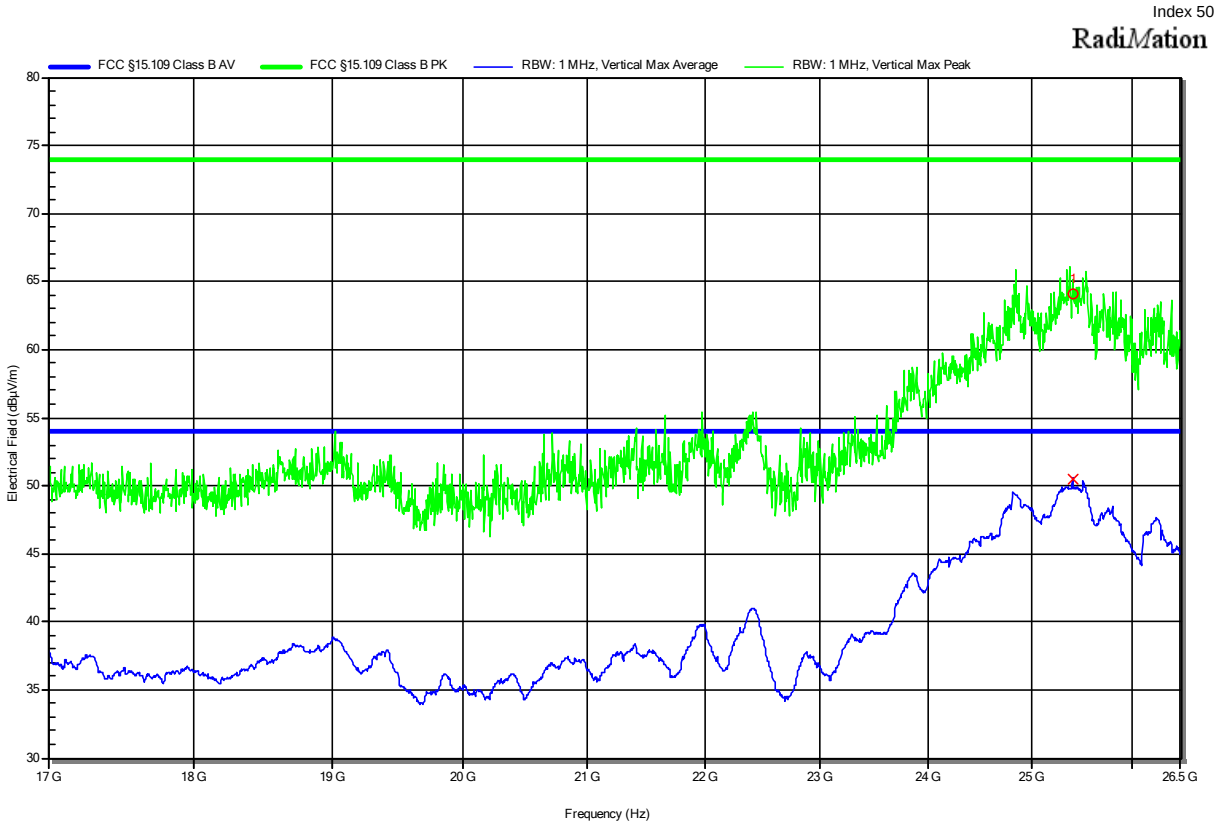


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	46.93 dBµV/m	73.98 dBµV/m	-27.05 dB	Pass	0 degrees	1 m
2	2 GHz	42.4 dBµV/m	73.98 dBµV/m	-31.58 dB	Pass	0 degrees	1 m
3	2.416 GHz	Bluetooth carrier					
4	5.176 GHz	5GHz WLAN carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	43.99 dBµV/m	53.98 dBµV/m	-9.99 dB	Pass	0 degrees	1 m
2	2 GHz	34.96 dBµV/m	53.98 dBµV/m	-19.02 dB	Pass	0 degrees	1 m
3	2.416 GHz	Bluetooth carrier					
4	5.176 GHz	5GHz WLAN carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.401 GHz	64.13 dBµV/m	73.98 dBµV/m	-9.85 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.401 GHz	50.44 dBµV/m	53.98 dBµV/m	-3.54 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	

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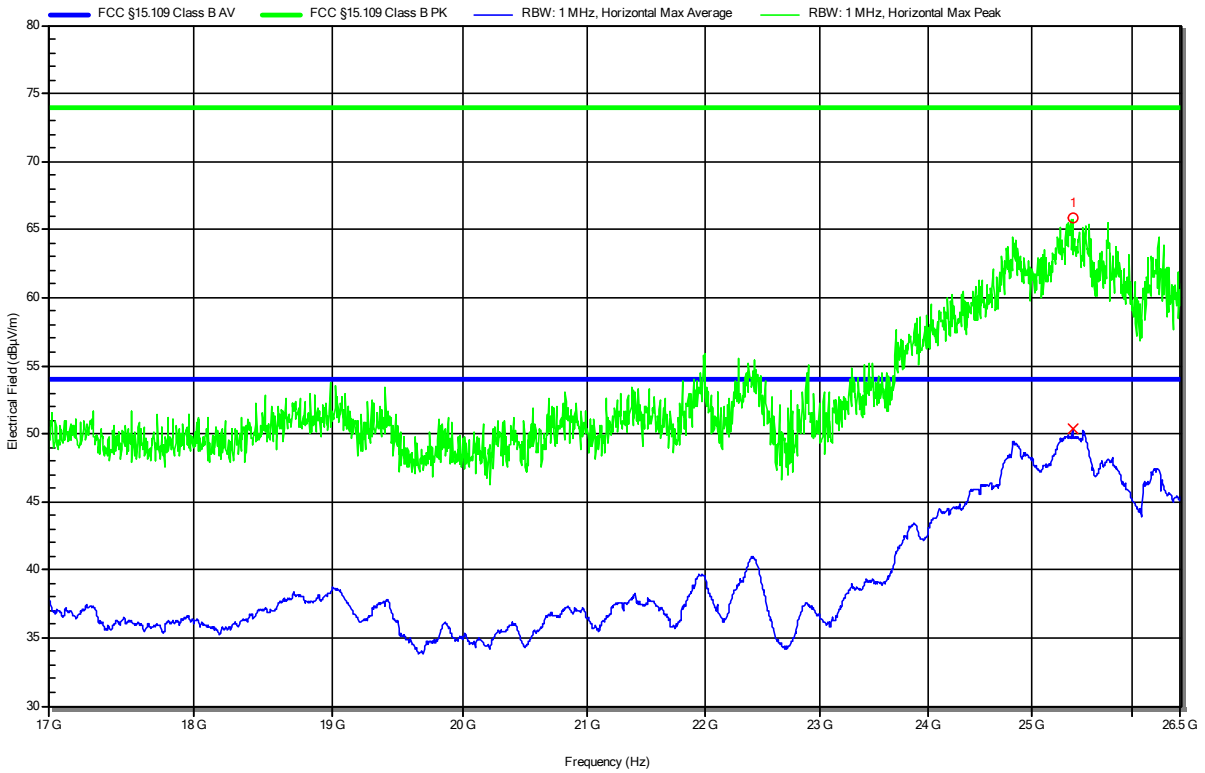
RadiMation

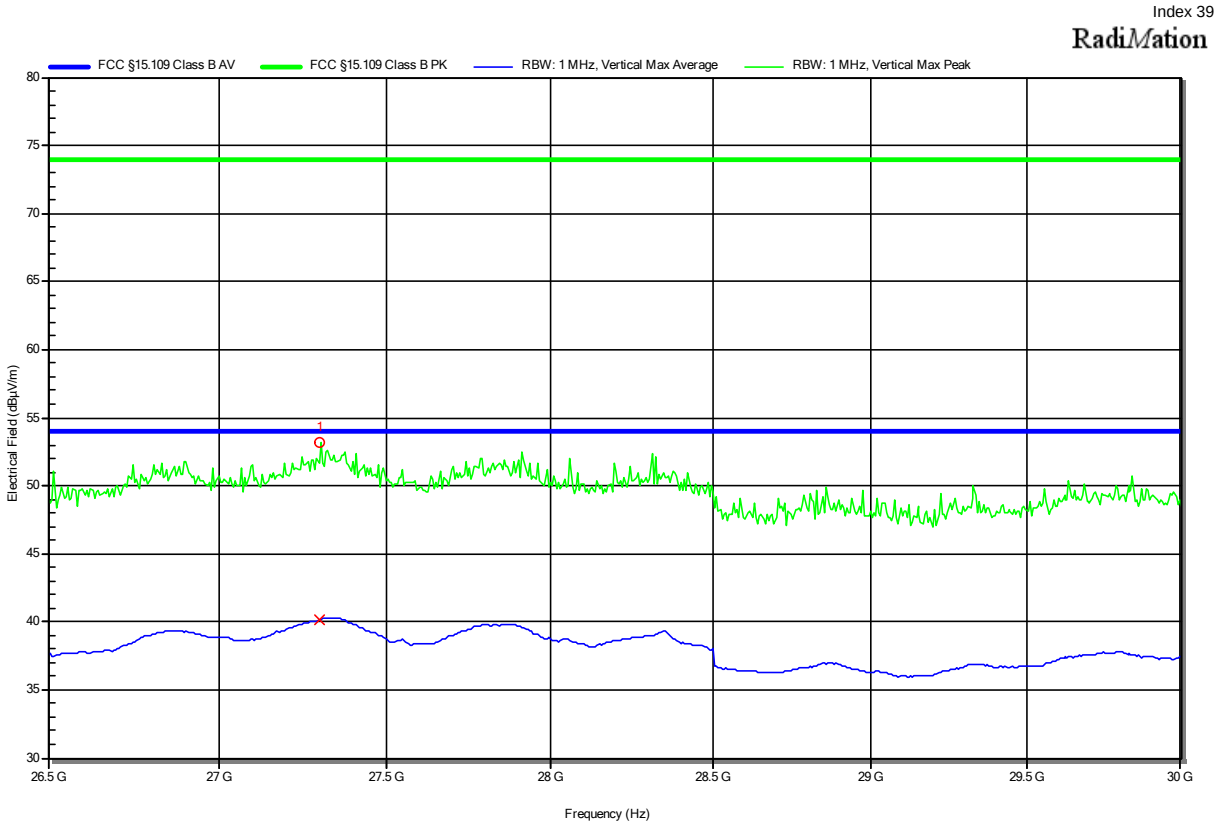


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.4 GHz	65.84 dBµV/m	73.98 dBµV/m	-8.14 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.4 GHz	50.38 dBµV/m	53.98 dBµV/m	-3.6 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	22240-25 Amp. CBL26402075, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.302 GHz	53.16 dBµV/m	73.98 dBµV/m	-20.82 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.302 GHz	40.17 dBµV/m	53.98 dBµV/m	-13.81 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: 7.2V DC Li-ion rechargeable battery
Antenna:	22240-25 Amp. CBL26402075, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	2 1
Note 1:	

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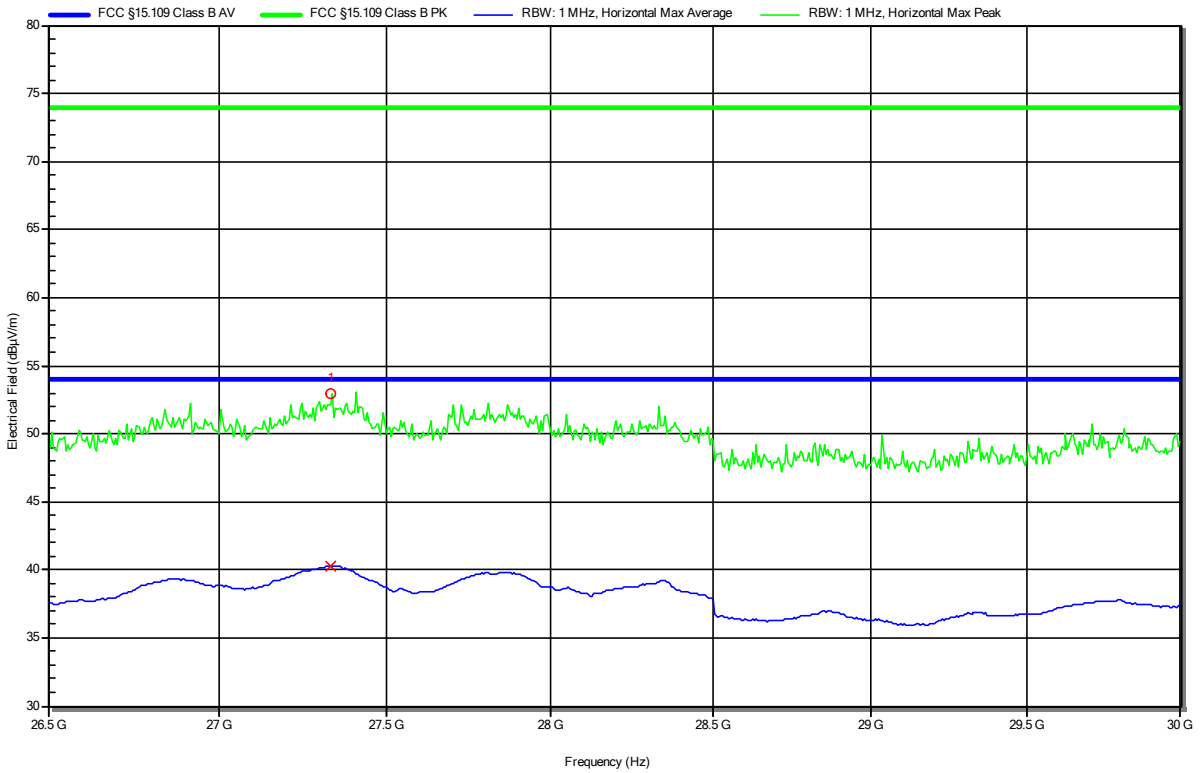

Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.336 GHz	52.96 dBµV/m	73.98 dBµV/m	-21.02 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.336 GHz	40.23 dBµV/m	53.98 dBµV/m	-13.75 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	

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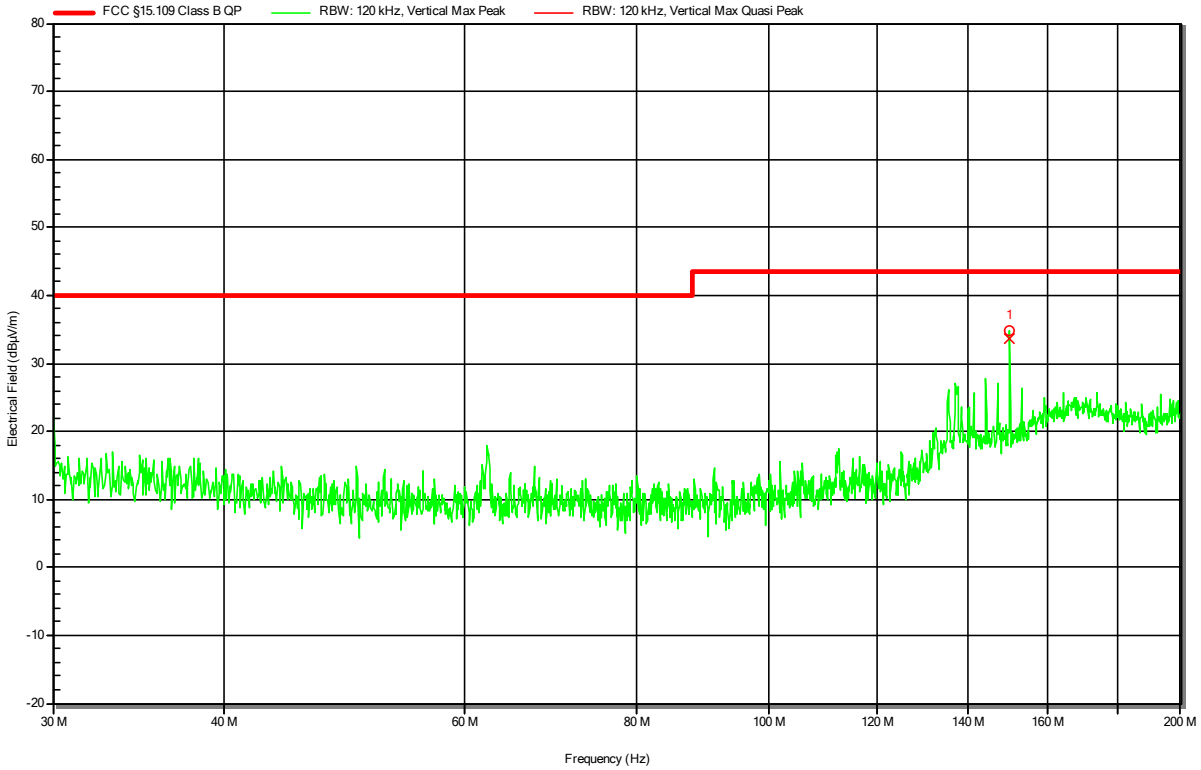
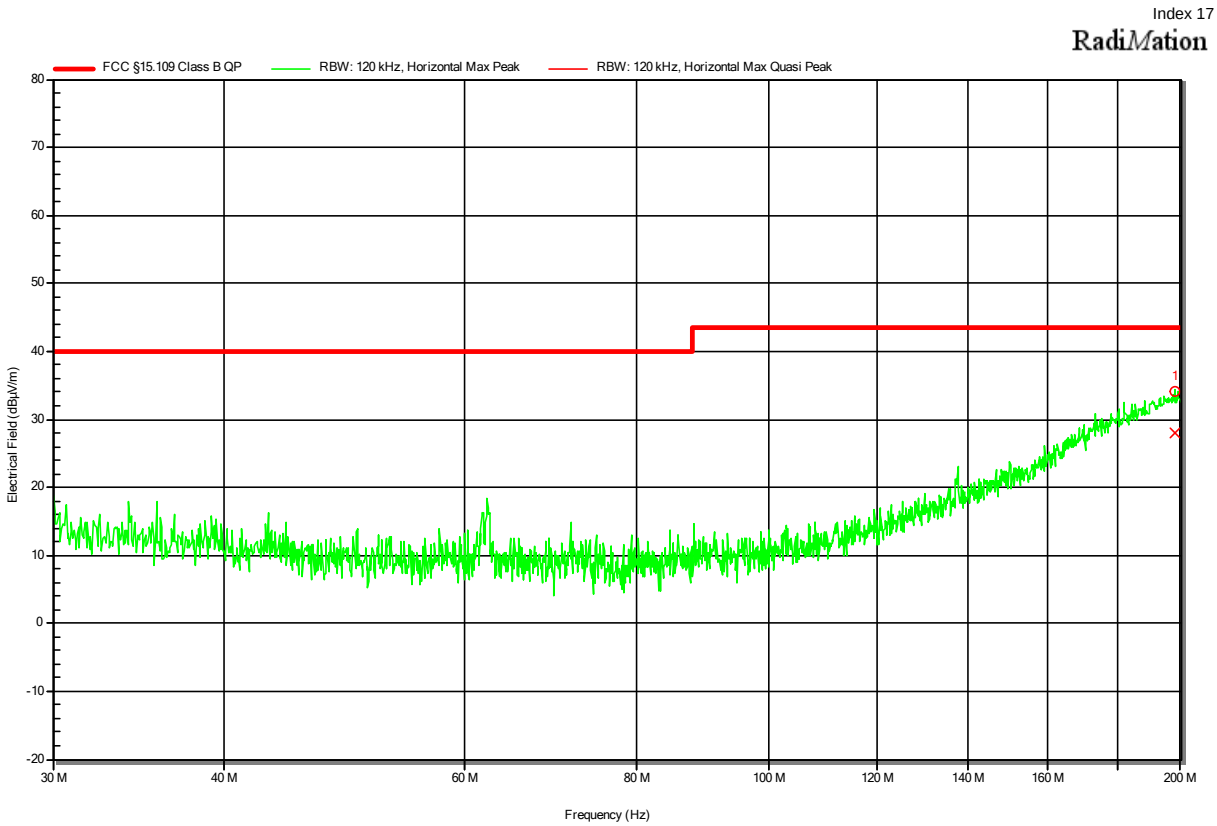
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	149.997 MHz	33.56 dBµV/m	43.52 dBµV/m	-9.96 dB	Pass	-100 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HK 116, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	198.138 MHz	28.01 dBµV/m	43.52 dBµV/m	-15.51 dB	Pass	105 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	

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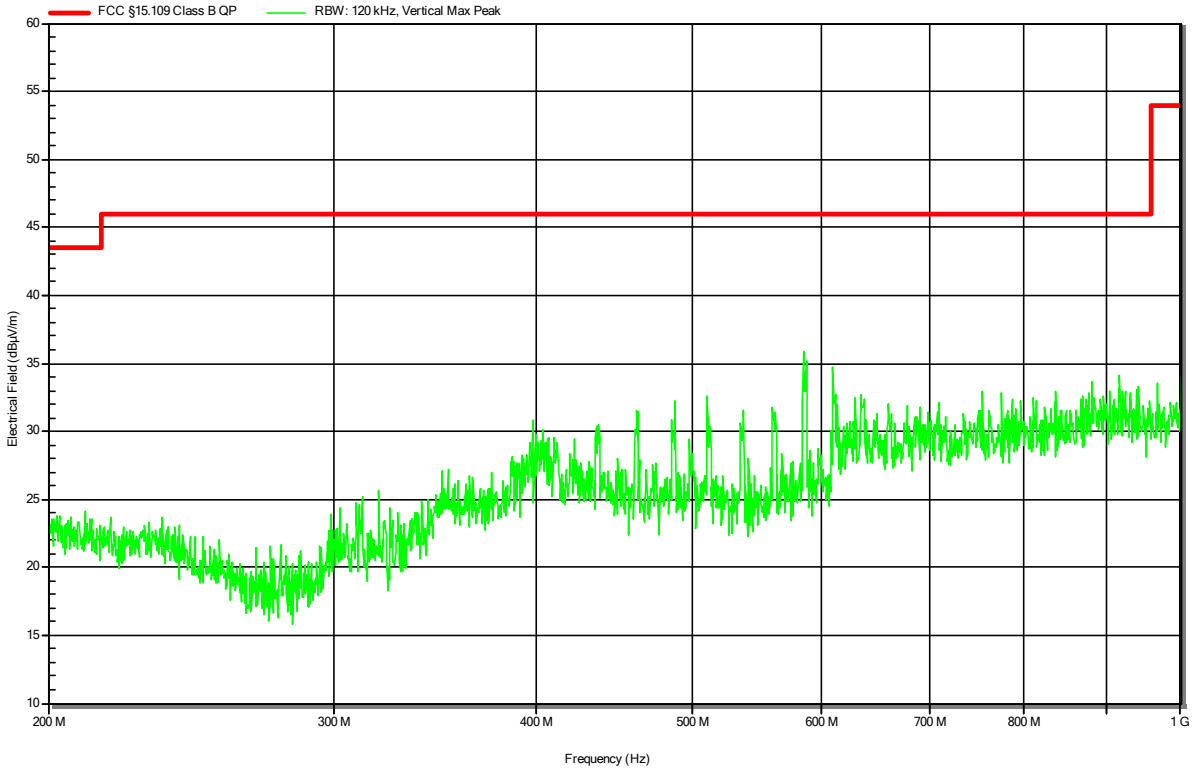
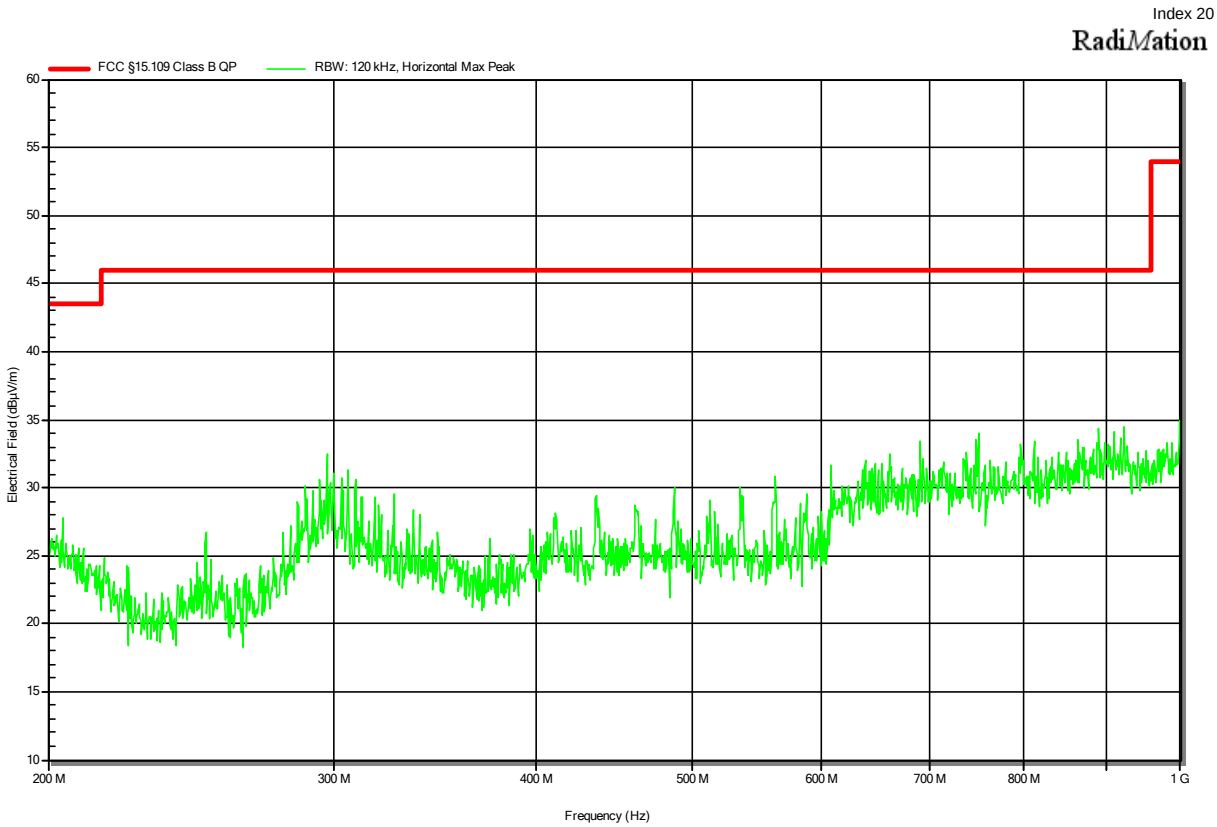
RadiMation



Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Rohde & Schwarz HL 223, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	



Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	2.4GHz Notchfilter

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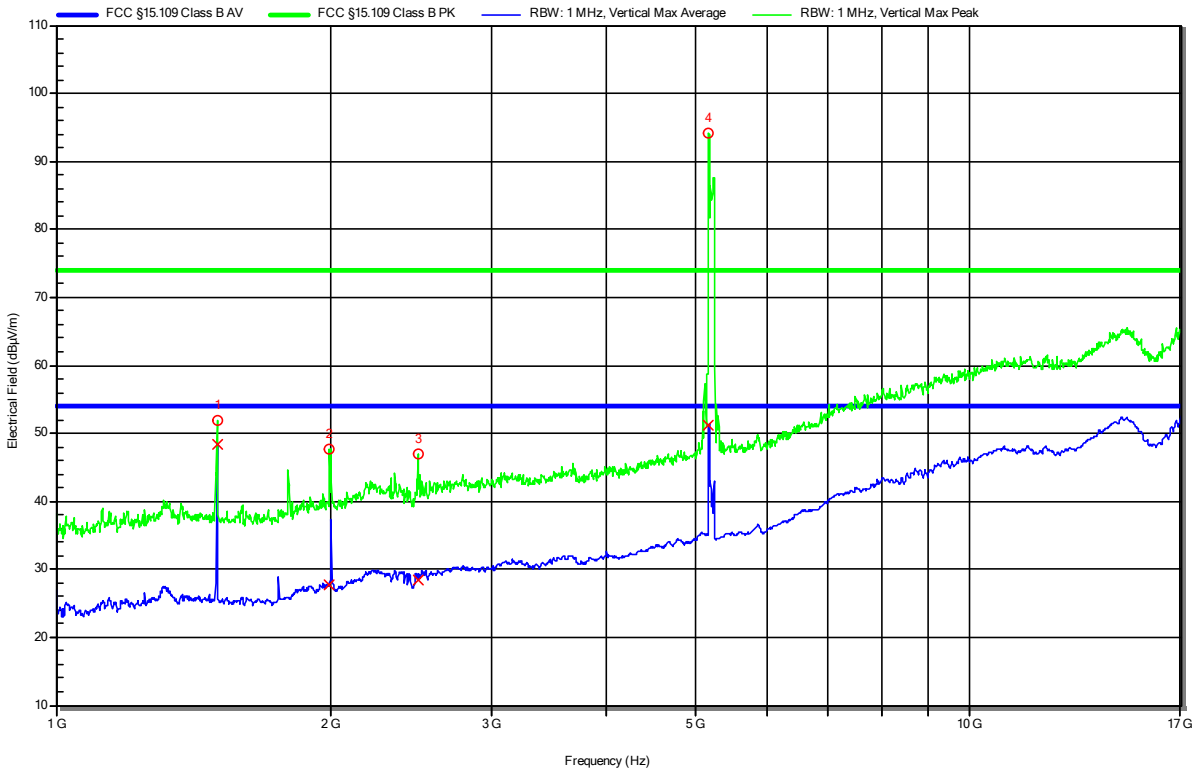
RadiMation

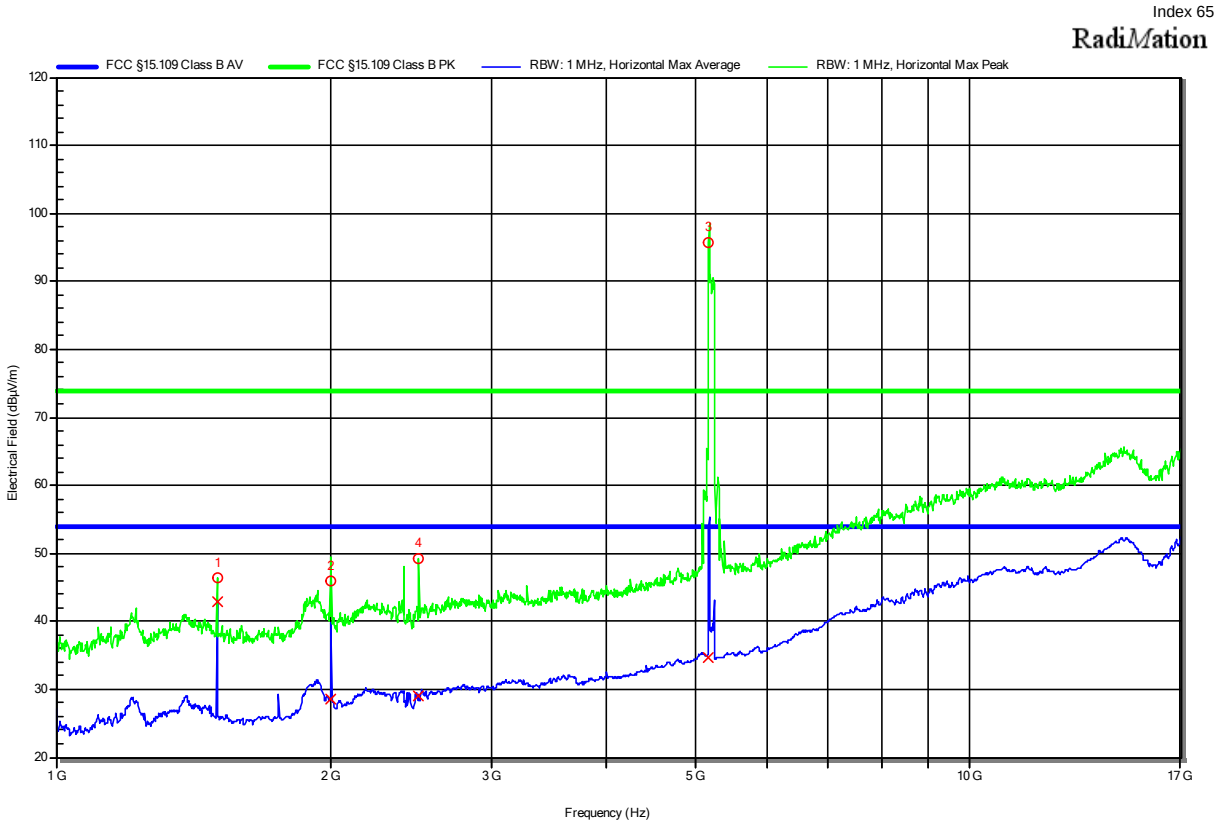


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	51.83 dBµV/m	73.98 dBµV/m	-22.15 dB	Pass	150 degrees	1.4 m
2	1.992 GHz	47.72 dBµV/m	73.98 dBµV/m	-26.26 dB	Pass	150 degrees	1.4 m
3	2.49 GHz	Bluetooth carrier					
4	5.179 GHz	5GHz WLAN carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	48.35 dBµV/m	53.98 dBµV/m	-5.63 dB	Pass	150 degrees	1.4 m
2	1.992 GHz	27.8 dBµV/m	53.98 dBµV/m	-26.18 dB	Pass	150 degrees	1.4 m
3	2.49 GHz	Bluetooth carrier					
4	5.179 GHz	5GHz WLAN carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Schwarzbeck BBHA 9120D, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	2.4GHz Notchfilter



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.5 GHz	46.39 dBµV/m	73.98 dBµV/m	-27.59 dB	Pass	0 degrees	1.2 m
2	1.996 GHz	46.05 dBµV/m	73.98 dBµV/m	-27.93 dB	Pass	0 degrees	1.2 m
3	5.174 GHz	5GHZ WLAN carrier					
4	2.494 GHz	Bluetooth carrier					

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.5 GHz	42.82 dBµV/m	53.98 dBµV/m	-11.16 dB	Pass	0 degrees	1.2 m
2	1.996 GHz	28.68 dBµV/m	53.98 dBµV/m	-25.3 dB	Pass	0 degrees	1.2 m
3	5.174 GHz	5GHZ WLAN carrier					
4	2.494 GHz	Bluetooth carrier					

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	

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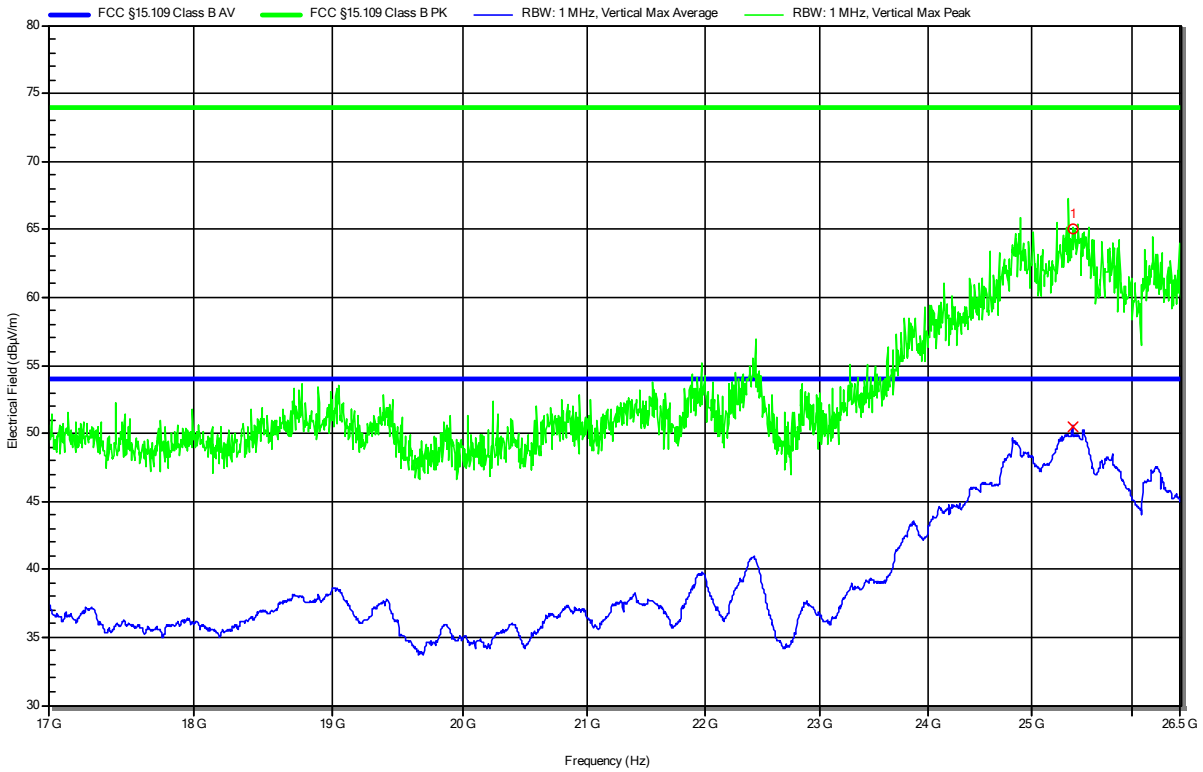
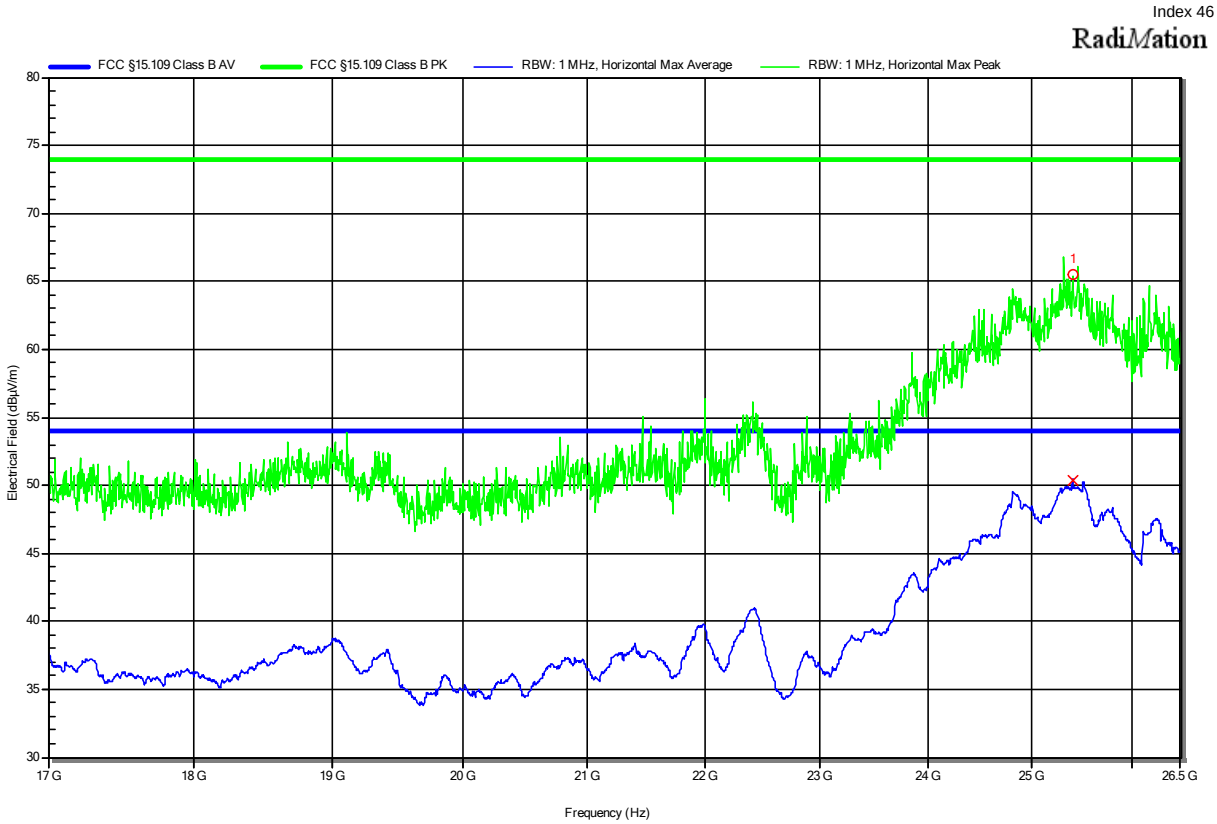


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.399 GHz	65.05 dBµV/m	73.98 dBµV/m	-8.93 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.399 GHz	50.53 dBµV/m	53.98 dBµV/m	-3.45 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	Amplifier Research AT4560, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	

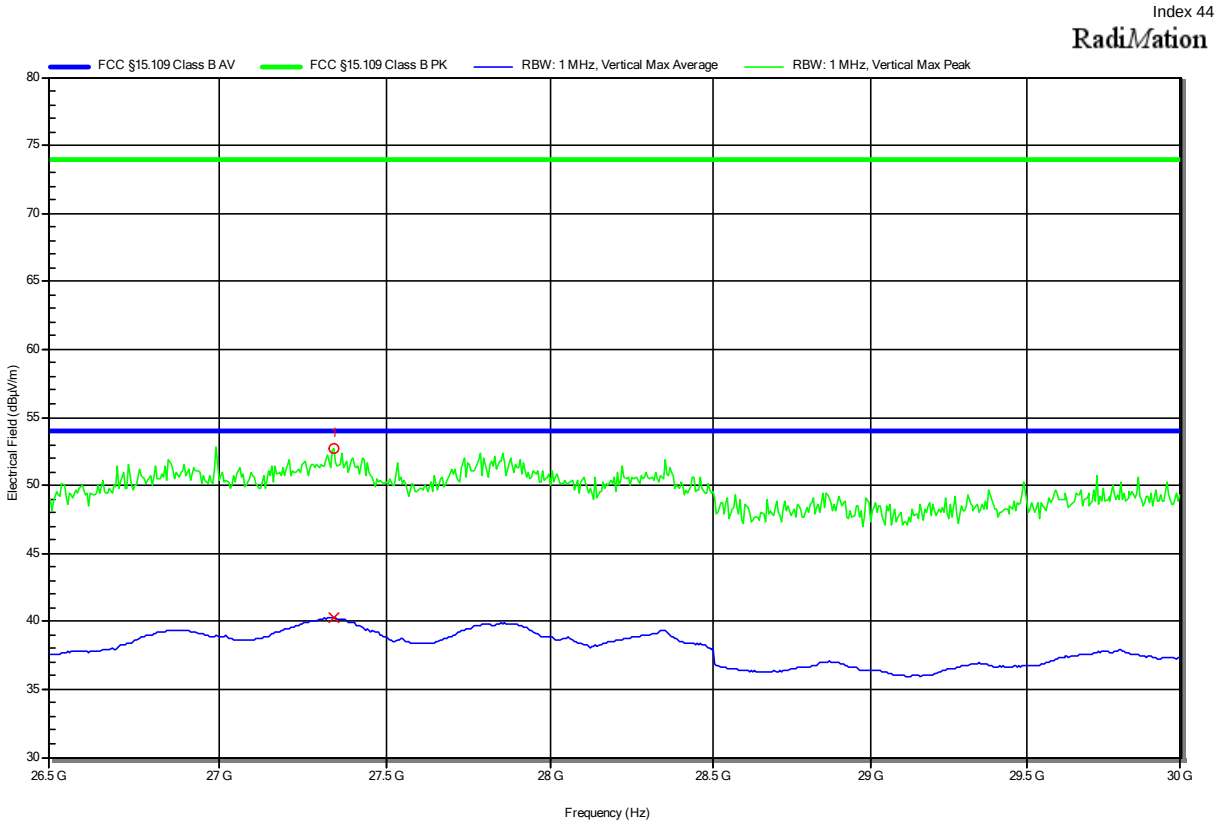


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	25.4 GHz	65.48 dBµV/m	73.98 dBµV/m	-8.5 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	25.4 GHz	50.38 dBµV/m	53.98 dBµV/m	-3.6 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	22240-25 Amp. CBL26402075, Vertical
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.341 GHz	52.74 dBµV/m	73.98 dBµV/m	-8.5 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.341 GHz	40.28 dBµV/m	53.98 dBµV/m	-13.7 dB	Pass	0 degrees	1 m

Radiated emissions
according to FCC part 15B

Project Number:	G0M-2108-9972
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-28
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
Antenna:	22240-25 Amp. CBL26402075, Horizontal
Measurement Distance:	3m
Operational Mode & EUT Configuration:	4 2
Note 1:	

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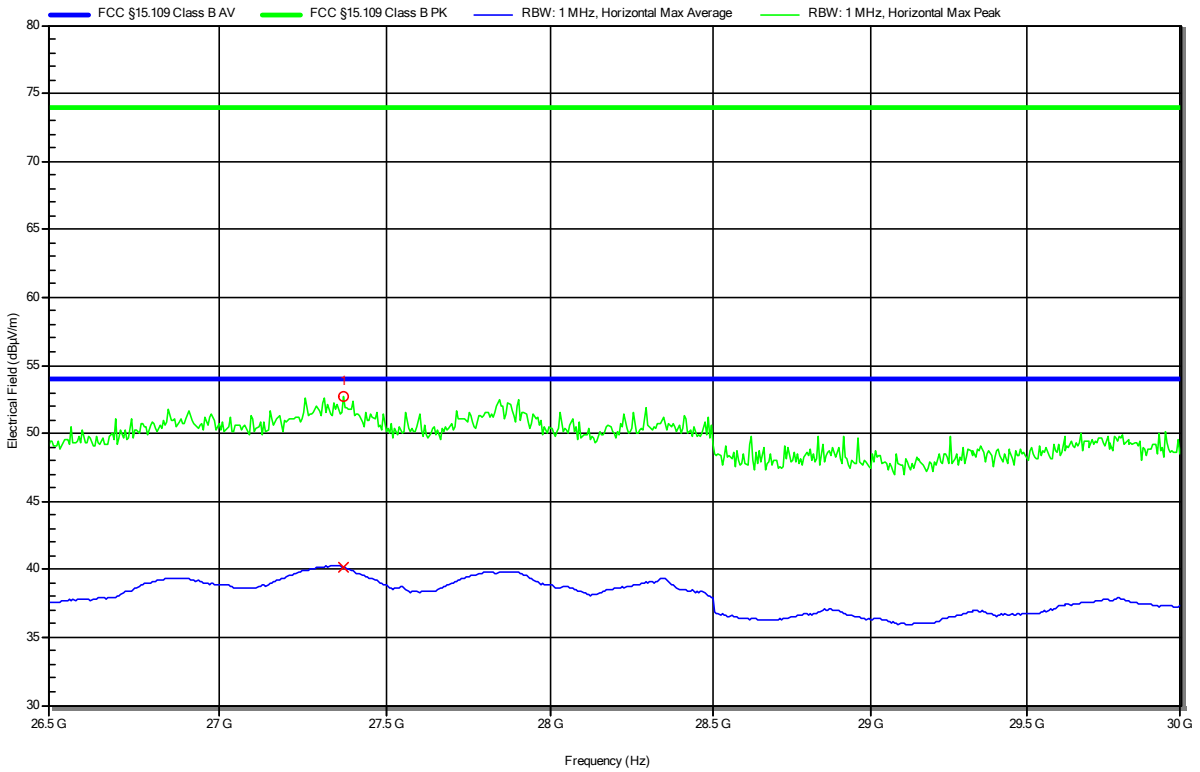


Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	27.369 GHz	52.71 dBµV/m	73.98 dBµV/m	-31.27 dB	Pass	0 degrees	1 m

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	27.369 GHz	40.16 dBµV/m	53.98 dBµV/m	-13.82 dB	Pass	0 degrees	1 m

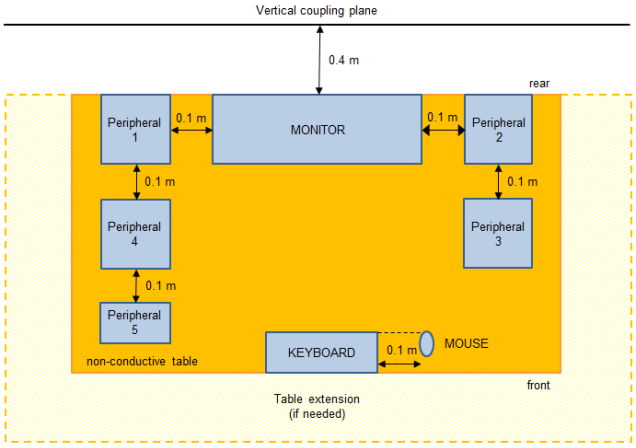
2.2 Test Conditions and Results - Conducted emissions acc. to ANSI C63.4

2.2.1 Information

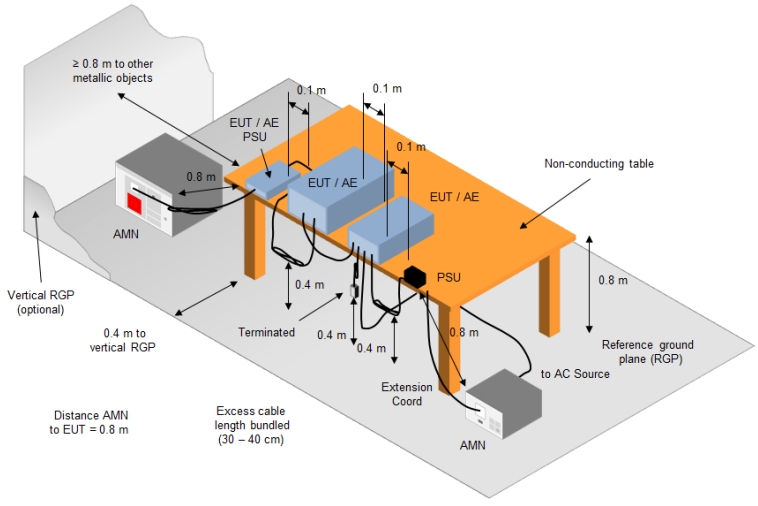
Test Information	
Reference	FCC 15.107, ICES-003, 3.2.1
Reference method	ANSI C63.4:2014+A1:2017 Section 12
Measurement range	150 kHz to 30 MHz
Equipment class	Class B
Equipment type	Table top
Temperature [°C]	21 ±3
Humidity [%]	38 ±3
Operator	Matthias Handrik
Date	2021-10-25

2.2.2 Setup

Equipment placement



Test 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
Pulse Limiter	R&S	ESH3-Z2	EF01063	2021-07	2022-07
EMI Test Receiver	R&S	ESR 7	EF00943	2021-08	2022-08
Climatic Sensor	Embedded Data Systems, LLC.	2800100000254 17E	EF01054	2021-03	2022-03

2.2.4 Procedure

Exploratory measurement
1. 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)
2. The power cord that is normally supplied or recommended by the manufacturer was connected to the LISN.
3. 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).
4. The LISN measurement port was connected to a measurement receiver
5. I/O cables were bundled not longer than 0.4 m
6. Measurement was performed in the frequency range 0.15 – 30MHz on each current-carrying conductor
7. To maximize the emissions the cable positions were manipulated
8. The worst configuration of EUT and cables is shown on a test setup picture at item 2.2.2

Final measurement
1. 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)
2. The power cord that is normally supplied or recommended by the manufacturer was connected to the LISN.
3. 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).
4. The LISN measurement port was connected to a measurement receiver
5. The EUT and cable arrangement were based on the exploratory measurement results
6. The test data of the worst-case conditions were recorded and shown on the next pages

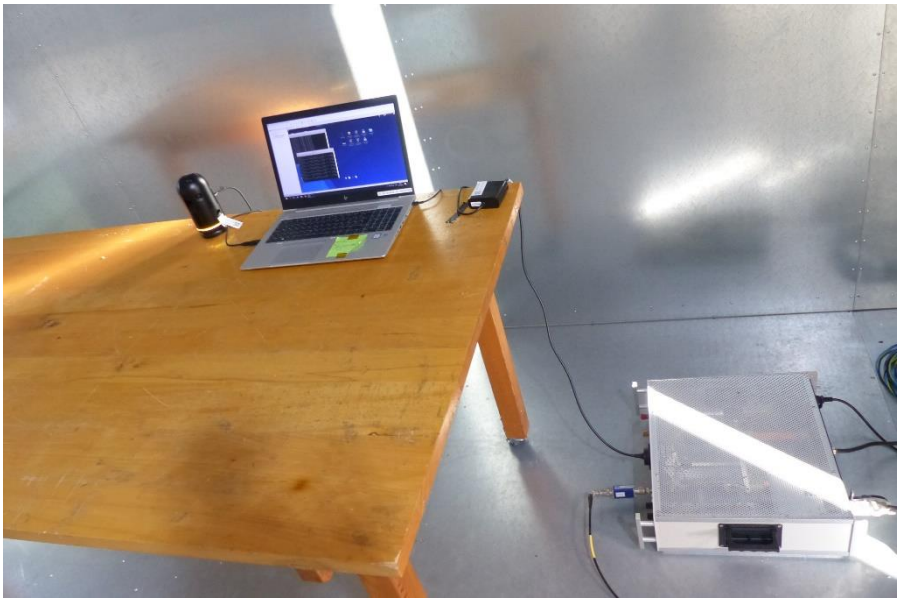
2.2.5 Limits

Class B		
Frequency [MHz]	Quasi-peak Limit [dBµV]	Average Limit [dBµV]
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
Power	AMN	3	2	PASS	-
Power	AMN	4	2	PASS	-

2.2.7 Setup Photos

Test setup


2.2.8 Records

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

Project Number:	G0M-2108-9971
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
LISN:	Schwarzbeck NSLK 8127 RC N
Operational Mode & EUT Configuration:	3 2
Applied to Port:	AC-Mains
Note 1:	

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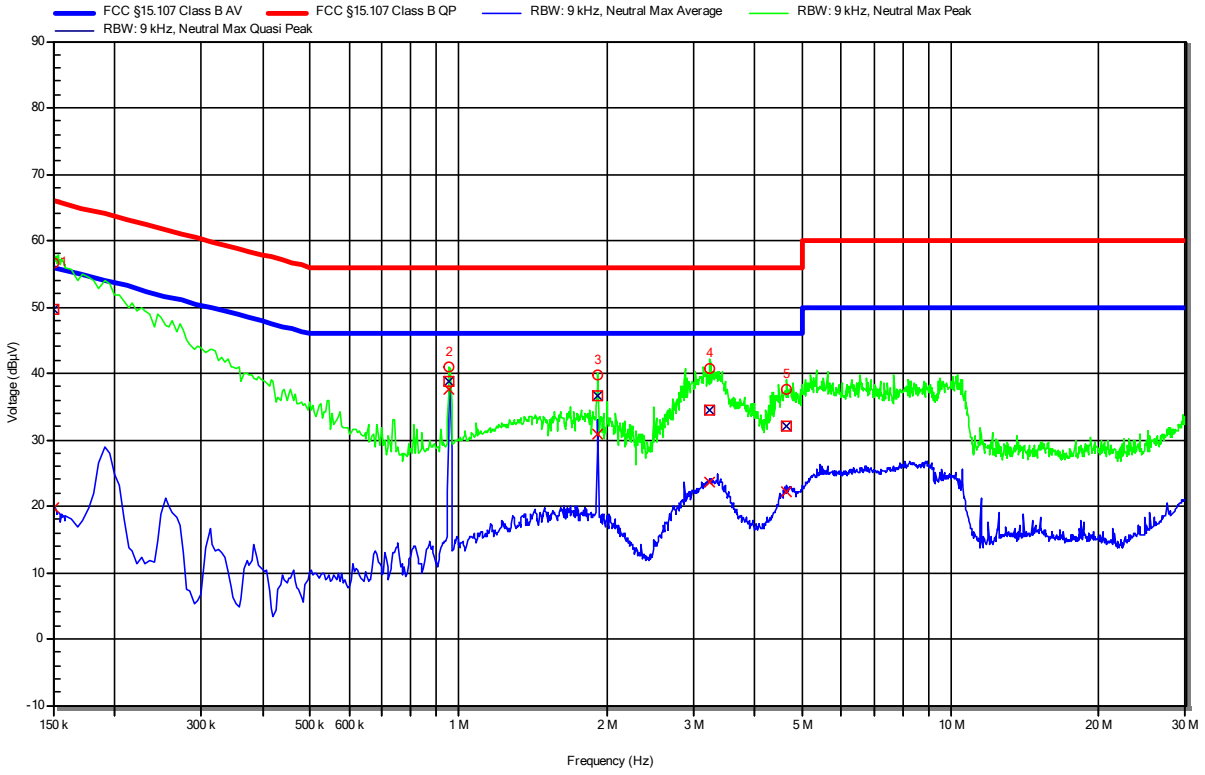

Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150 kHz	49.65 dBµV	66 dBµV	-16.35 dB	Pass	Neutral
2	958.65 kHz	38.75 dBµV	56 dBµV	-17.25 dB	Pass	Neutral
3	1.916 MHz	36.52 dBµV	56 dBµV	-19.48 dB	Pass	Neutral
4	3.246 MHz	34.53 dBµV	56 dBµV	-21.47 dB	Pass	Neutral
5	4.641 MHz	32 dBµV	56 dBµV	-24 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150 kHz	19.68 dBµV	56 dBµV	-36.32 dB	Pass	Neutral
2	958.65 kHz	37.59 dBµV	46 dBµV	-8.41 dB	Pass	Neutral
3	1.916 MHz	30.85 dBµV	46 dBµV	-15.15 dB	Pass	Neutral
4	3.246 MHz	23.55 dBµV	46 dBµV	-22.45 dB	Pass	Neutral
5	4.641 MHz	22.26 dBµV	46 dBµV	-23.74 dB	Pass	Neutral

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

Project Number:	G0M-2108-9971
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37018
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
LISN:	Schwarzbeck NSLK 8127 RC L
Operational Mode & EUT Configuration:	3 2
Applied to Port:	AC-Mains
Note 1:	

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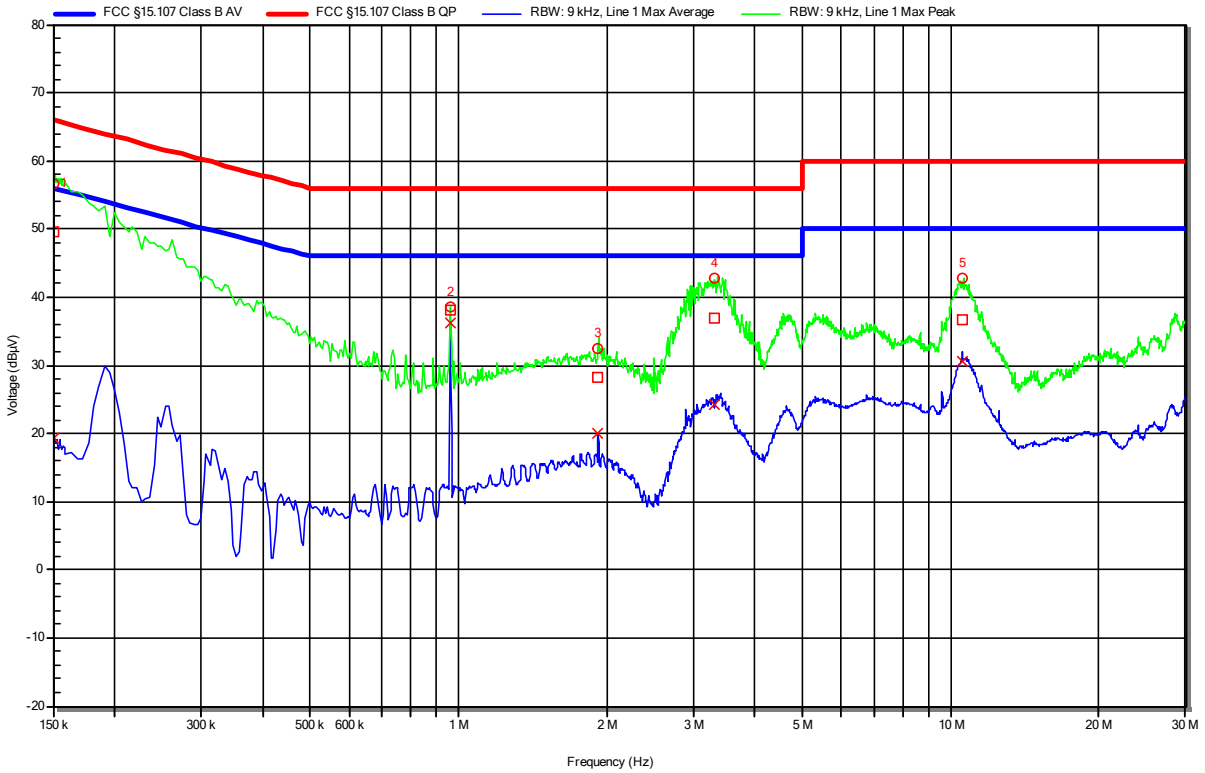
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150 kHz	49.49 dBµV	66 dBµV	-16.51 dB	Pass	Line 1
2	960 kHz	38.14 dBµV	56 dBµV	-17.86 dB	Pass	Line 1
3	1.923 MHz	28.27 dBµV	56 dBµV	-27.73 dB	Pass	Line 1
4	3.314 MHz	37 dBµV	56 dBµV	-19 dB	Pass	Line 1
5	10.599 MHz	36.62 dBµV	60 dBµV	-23.38 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150 kHz	19.25 dBµV	56 dBµV	-36.75 dB	Pass	Line 1
2	960 kHz	36.27 dBµV	46 dBµV	-9.73 dB	Pass	Line 1
3	1.923 MHz	19.94 dBµV	46 dBµV	-26.06 dB	Pass	Line 1
4	3.314 MHz	24.18 dBµV	46 dBµV	-21.82 dB	Pass	Line 1
5	10.599 MHz	30.66 dBµV	50 dBµV	-19.34 dB	Pass	Line 1

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

Project Number:	G0M-2108-9971
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
LISN:	Schwarzbeck NSLK 8127 RC N
Operational Mode & EUT Configuration:	4 2
Applied to Port:	AC-Mains
Note 1:	

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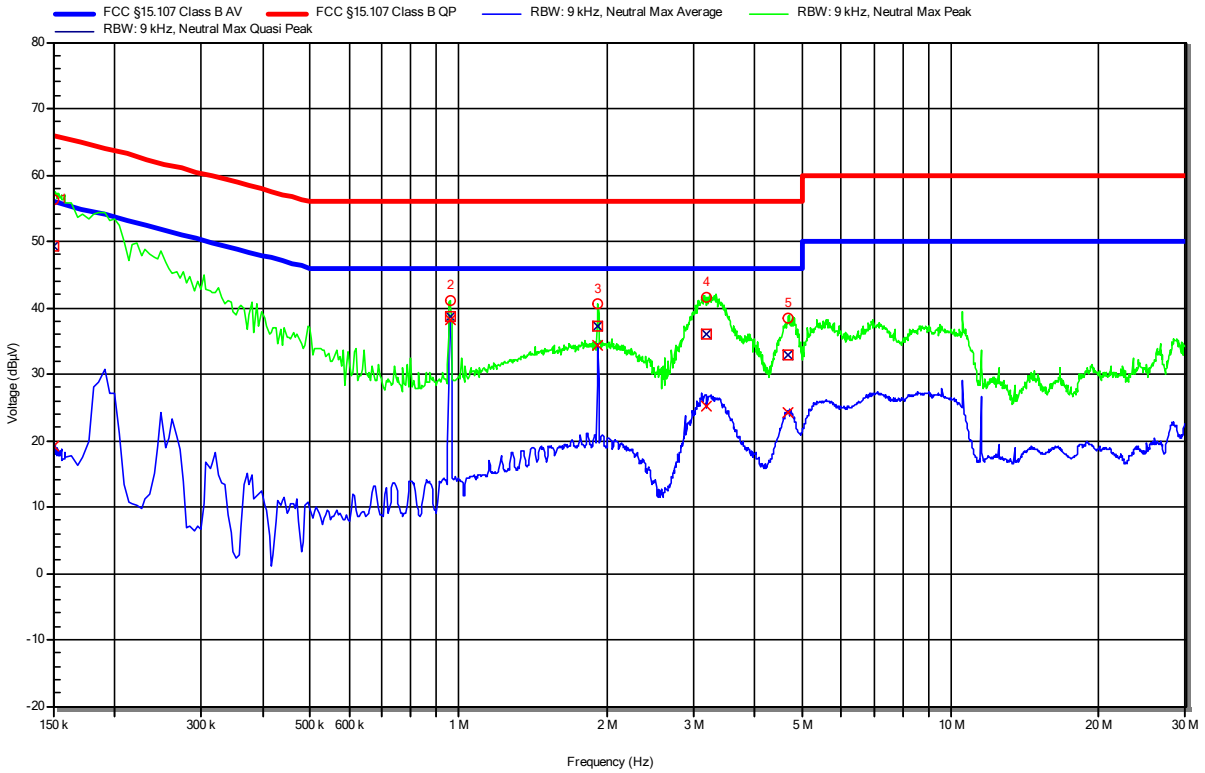
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150 kHz	49.27 dBµV	66 dBµV	-16.73 dB	Pass	Neutral
2	960 kHz	38.79 dBµV	56 dBµV	-17.21 dB	Pass	Neutral
3	1.919 MHz	37.19 dBµV	56 dBµV	-18.81 dB	Pass	Neutral
4	3.192 MHz	36.05 dBµV	56 dBµV	-19.95 dB	Pass	Neutral
5	4.686 MHz	32.95 dBµV	56 dBµV	-23.05 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150 kHz	19.13 dBµV	56 dBµV	-36.87 dB	Pass	Neutral
2	960 kHz	38.2 dBµV	46 dBµV	-7.8 dB	Pass	Neutral
3	1.919 MHz	34.38 dBµV	46 dBµV	-11.62 dB	Pass	Neutral
4	3.192 MHz	25.26 dBµV	46 dBµV	-20.74 dB	Pass	Neutral
5	4.686 MHz	24.31 dBµV	46 dBµV	-21.69 dB	Pass	Neutral

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

Project Number:	G0M-2108-9971
Applicant:	Leica Geosystems AG
Model Description:	Imaging Laser Scanner
Model:	BLK360 G2
Test Sample ID:	37019
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Handrik
Test Date:	2021-10-25
Operating Conditions:	ambient temperature: 21 °Celsius power input: USB + 7.2V DC Li-ion rechargeable battery
LISN:	Schwarzbeck NSLK 8127 RC L
Operational Mode & EUT Configuration:	4 2
Applied to Port:	AC-Mains
Note 1:	

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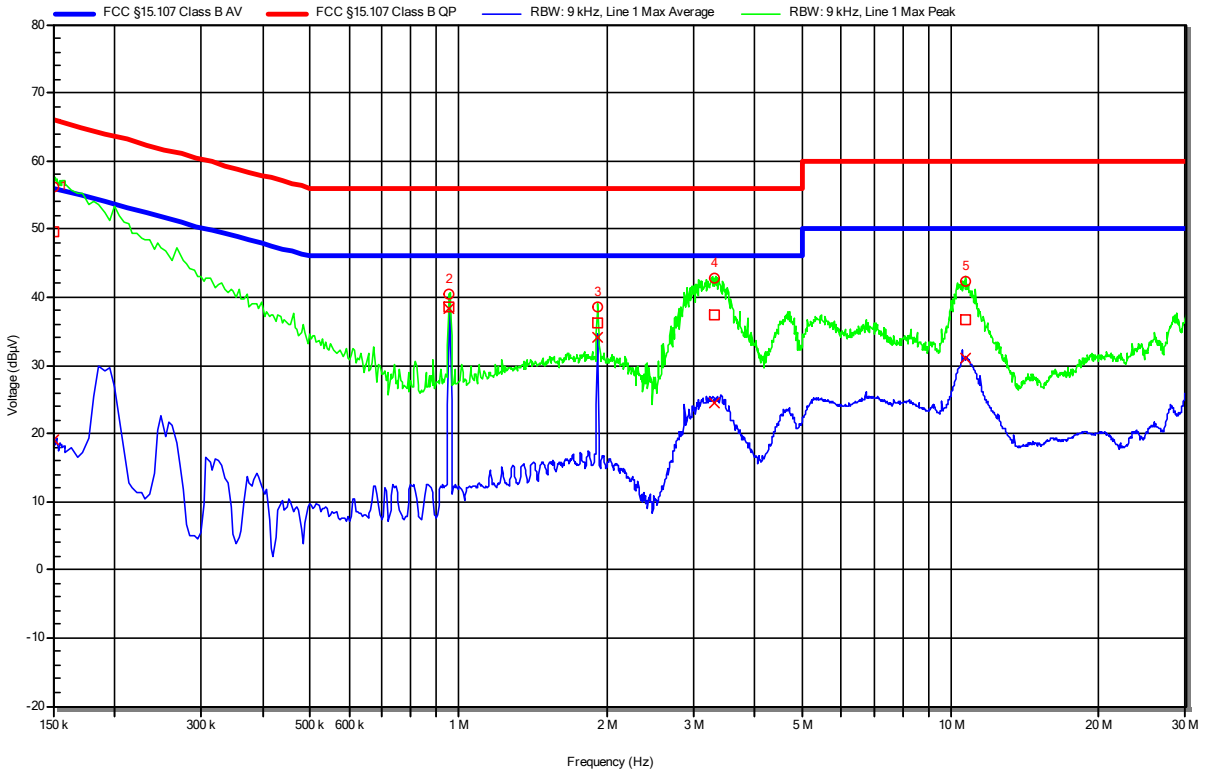
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	150 kHz	49.52 dBµV	66 dBµV	-16.48 dB	Pass	Line 1
2	957.75 kHz	38.67 dBµV	56 dBµV	-17.33 dB	Pass	Line 1
3	1.915 MHz	36.14 dBµV	56 dBµV	-19.86 dB	Pass	Line 1
4	3.318 MHz	37.28 dBµV	56 dBµV	-18.72 dB	Pass	Line 1
5	10.716 MHz	36.79 dBµV	60 dBµV	-23.21 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	150 kHz	19.19 dBµV	56 dBµV	-36.81 dB	Pass	Line 1
2	957.75 kHz	38.24 dBµV	46 dBµV	-7.76 dB	Pass	Line 1
3	1.915 MHz	34.15 dBµV	46 dBµV	-11.85 dB	Pass	Line 1
4	3.318 MHz	24.47 dBµV	46 dBµV	-21.53 dB	Pass	Line 1
5	10.716 MHz	30.94 dBµV	50 dBµV	-19.06 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