







EMC TEST REPORT Title 47 CFR Part 15B, ISED ICES-003 Issue 7	
Report Reference No	G0M-2202-1315-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 DAkKS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970 </p>
Applicant	Vaisala Oy
Address	Vanha Nurmijärventie 21 01670 Vantaa Finland
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	Gateway for Vaisala Beacon Weather Station BWS500.
Model(s)	EGW501
Additional Model(s)	None
Brand Name(s)	VAISALA
Hardware Version(s)	D
Software Version(s)	1.7.0
FCC-ID	2AO39-EGW501
IC	23830-EGW501
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	2022-02-10	
Report:		
Compiled by	Matthias Handrik	
Tested by (+ signature) (Responsible for Test)	Matthias Handrik	
Approved by (+ signature) (Deputy Head of Lab)	Jens Marquardt	
Date of Issue	2022-03-28	
Total number of pages	40	
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:		

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	2022-03-28	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.....	12
1.4	Support Equipment.....	16
1.5	Operational Modes.....	17
1.6	EUT Configuration.....	17
1.7	Sample emission level calculation.....	18
2	Result Summary.....	19
2.1	Test Conditions and Results - Radiated emissions acc. to ANSI C63.4.....	20
2.2	Test Conditions and Results - Conducted emissions acc. to ANSI C63.4.....	32
3	Measurement Uncertainty	40

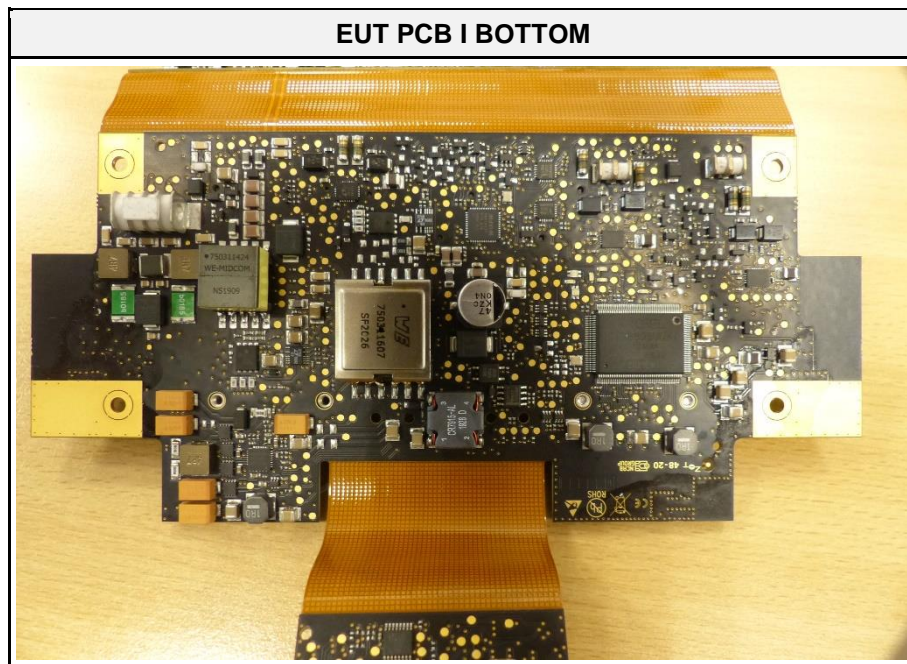
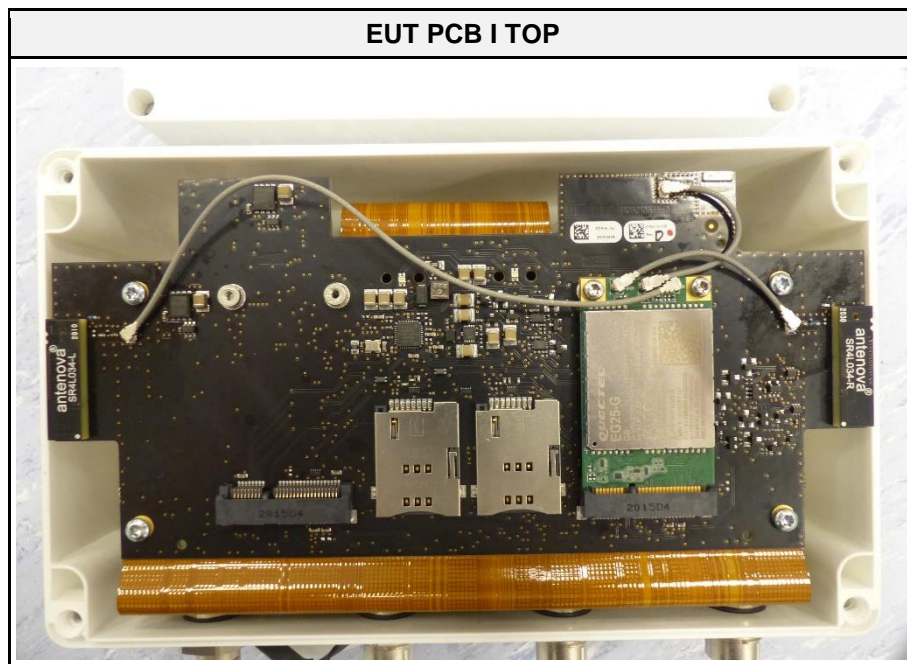
1 Equipment (Test Item) Under Test

Description	Gateway for Vaisala Beacon Weather Station BWS500.	
Intended Use	EUT is a part of Vaisala Beacon Weather Station BWS500, it handles data transfer between sensors and Vaisala cloud.	
Model	EGW501	
Additional Model(s)	None	
Brand Name(s)	VAISALA	
Serial Number(s)	S5053426	
Sample ID	38383	
Hardware Version(s)	D	
Software Version(s)	1.7.0	
EUT Dimensions [cm]	20 x 12 x 10	
FCC-ID	2AO39-EGW501	
IC	23830-EGW501	
Class	Class B	
Equipment type	Table top	
Highest internal frequency [MHz]	792 (clock frequency); 2600	
Protective Earth	Yes	
Radio Module I	Type	Mobile communication module
	Model	Unspecified
	Manufacturer	Unspecified
	FCC-ID	Unspecified
	IC	Unspecified
Radio Module II	Type	GNSS module
	Model	Unspecified
	Manufacturer	Unspecified
	FCC-ID	Unspecified
	IC	Unspecified
Supply Voltage	V _{NOM}	24VDC
AC/DC-Adaptor	Model	PSU501
	Vendor	Vaisala
	Input	100-240V AC / 50/60 Hz
	Output	24V DC
Manufacturer	Vaisala Oy Vanha Nurmijärventie 21 01670 Vantaa Finland	

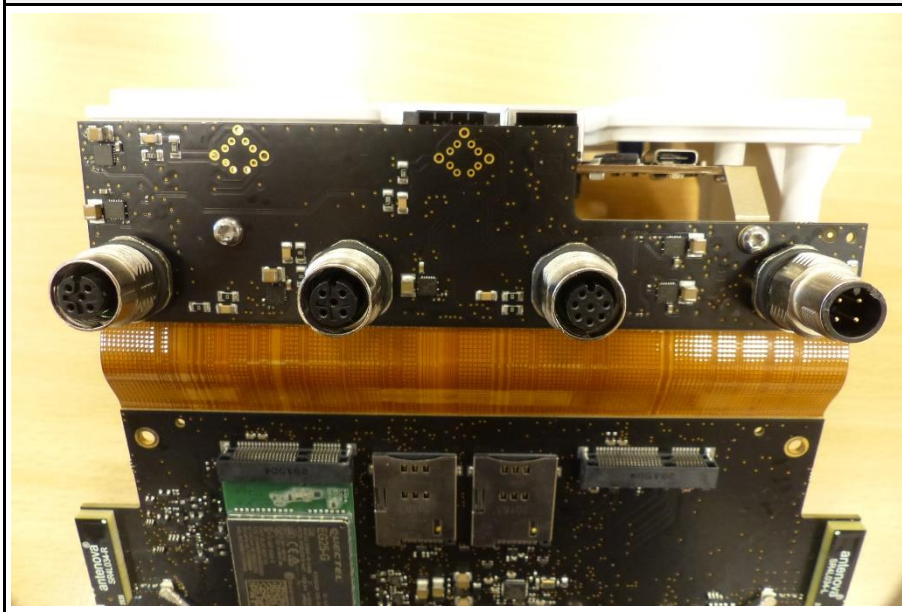
1.1 Equipment Ports

Name	Type	Attributes	Comment
Power	DC	Count: 1 Cable length [m]: 1 Direction: IN Service only: No Shielded: No	1536081 1.0 PUR 4x0.34 03/21
RS485	IO	Count: 1 Cable length [m]: 10 Direction: IO Service only: No Shielded: Yes	WXT536 1523007 10.0 PUR 8x0.25 21/20 (shield connected on both sides)
RS485	IO	Count: 2 Cable length [m]: 2 Direction: IO Service only: No Shielded: No	measurement device, auxiliary load 1536120 1.0 PUR 5x0.34 31/19
USB	IO	Count: 1 Cable length [m]: 1 Direction: IO Service only: Yes Shielded: Yes	USB2.0 C male to USB A male (shield connected on both sides)
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		

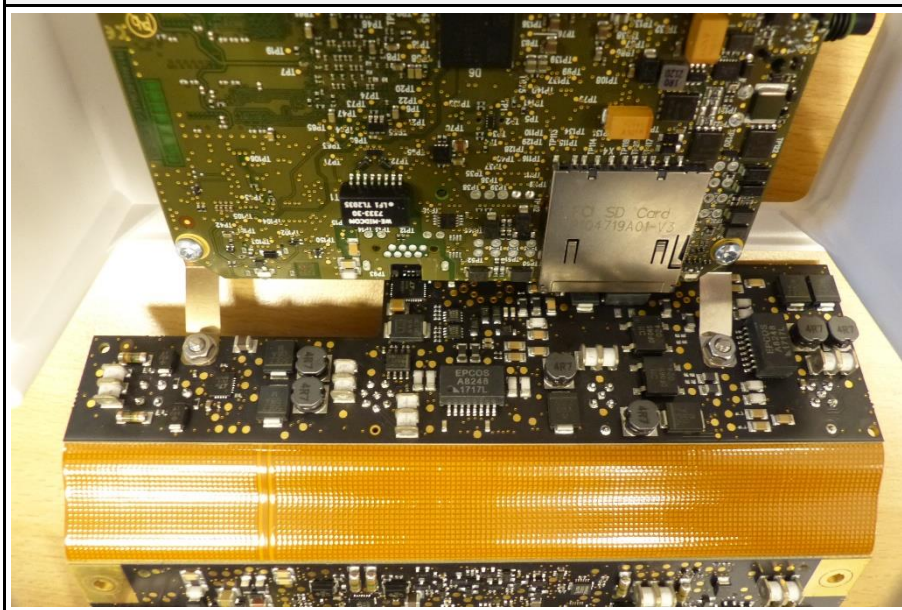
1.2 Equipment Photos – Internal



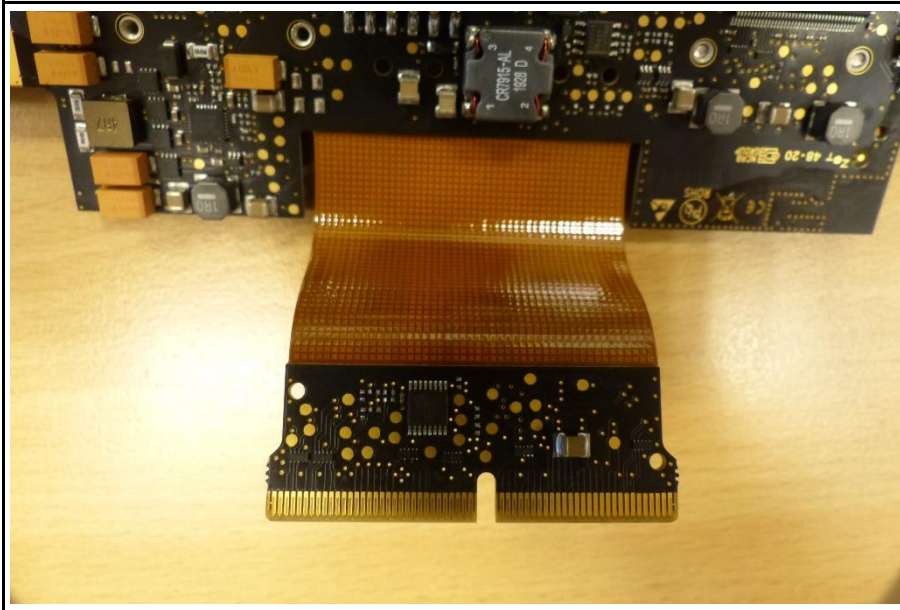
EUT PCB II TOP



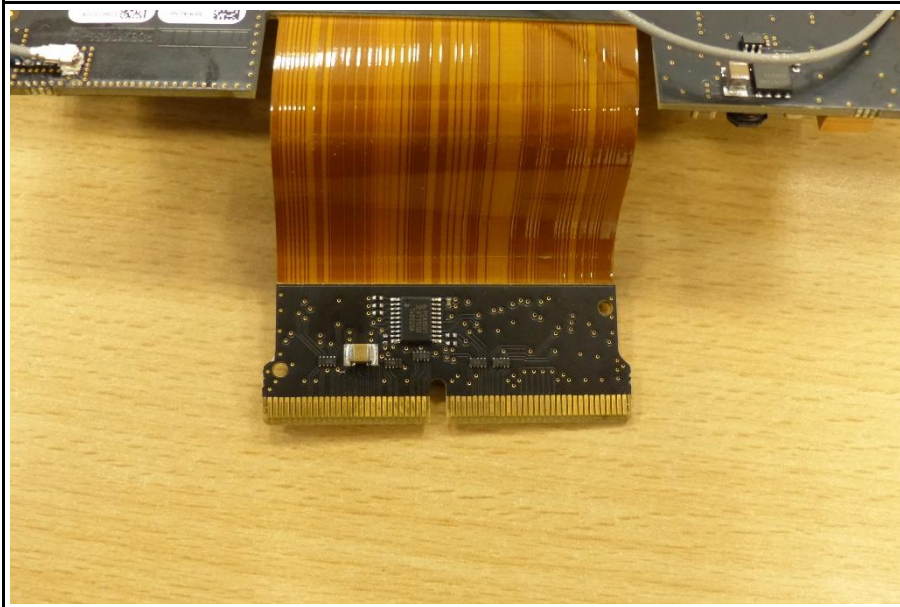
EUT PCB II BOTTOM



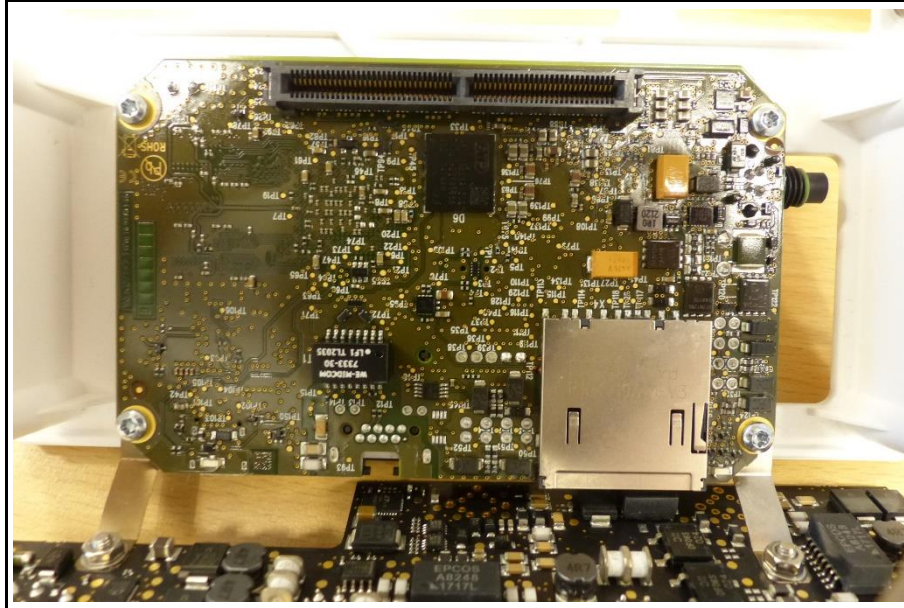
EUT PCB III TOP



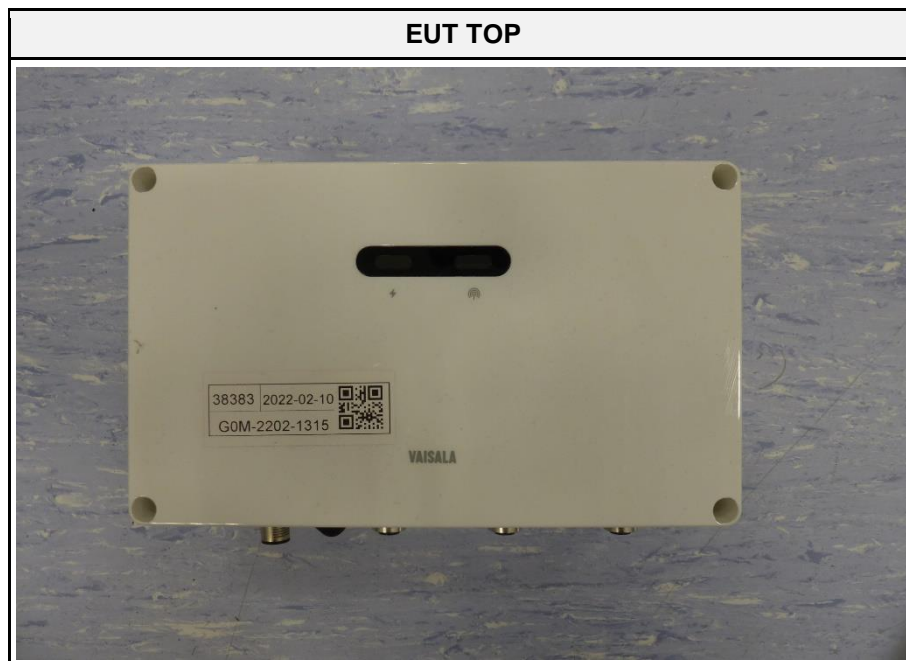
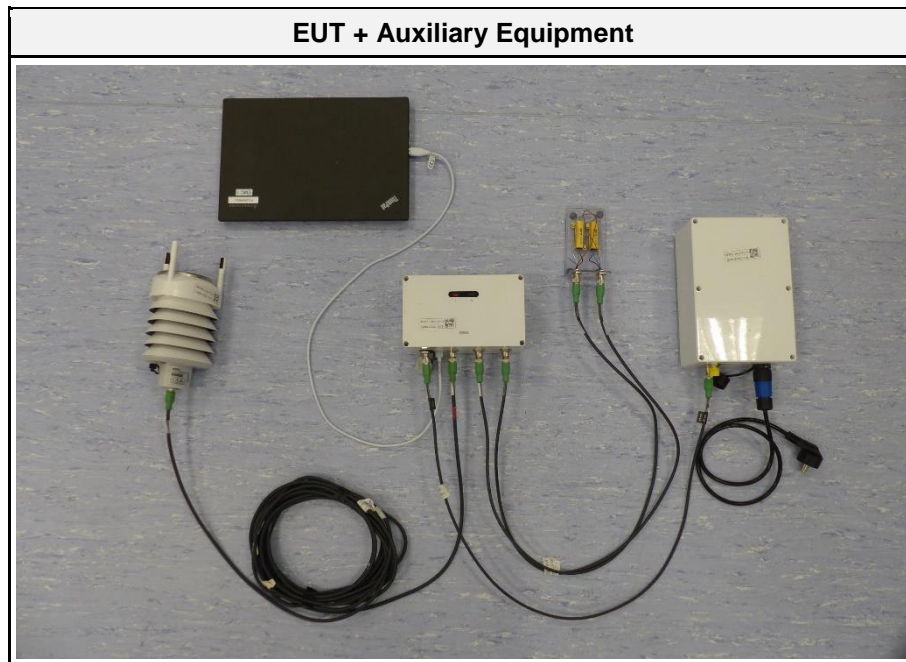
EUT PCB III BOTTOM

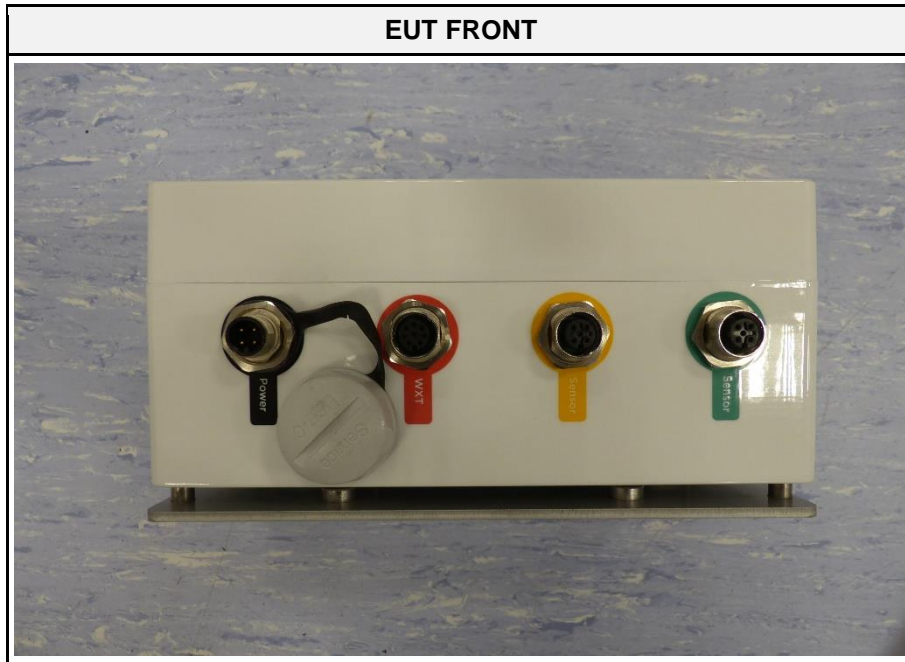


P1090199



1.3 Equipment Photos - External

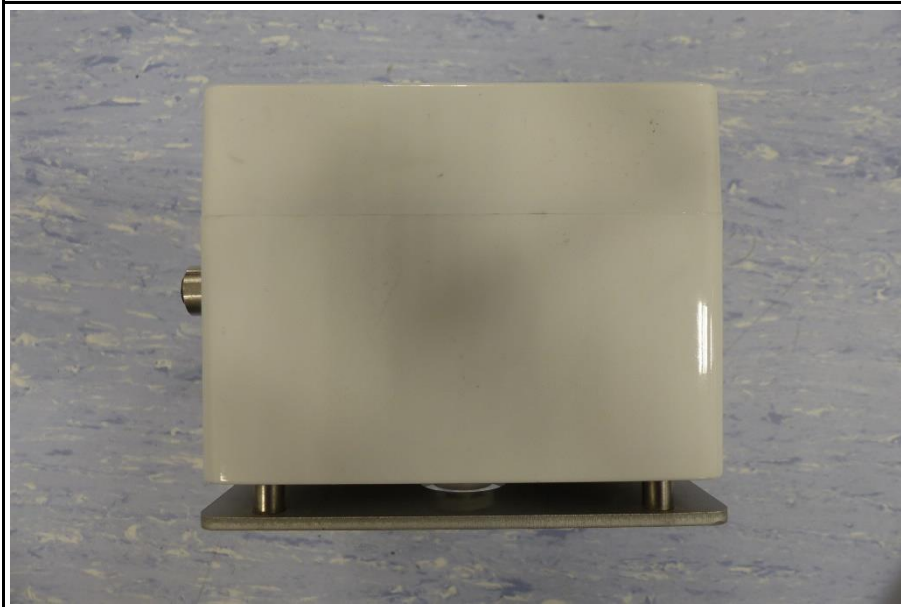




EUT LEFT



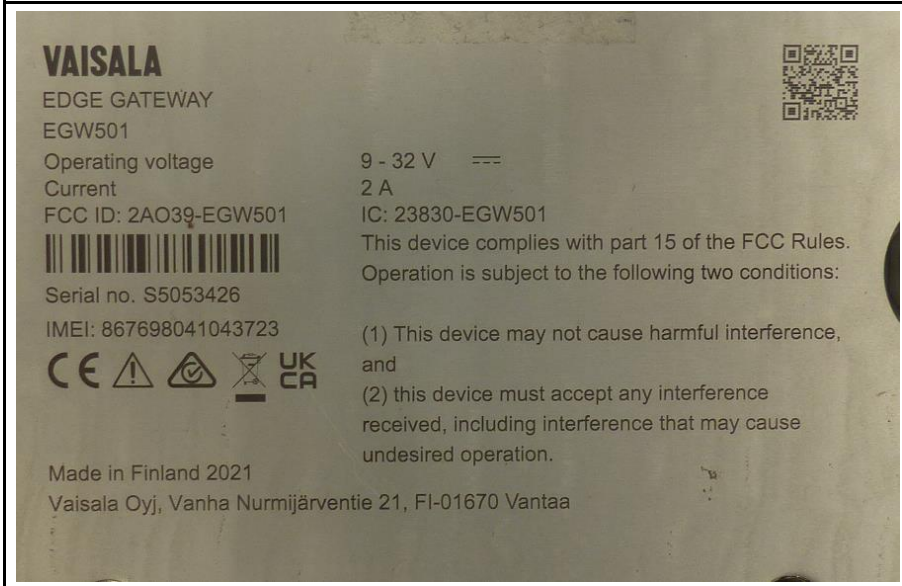
EUT RIGHT



EUT BACK



EUT Label



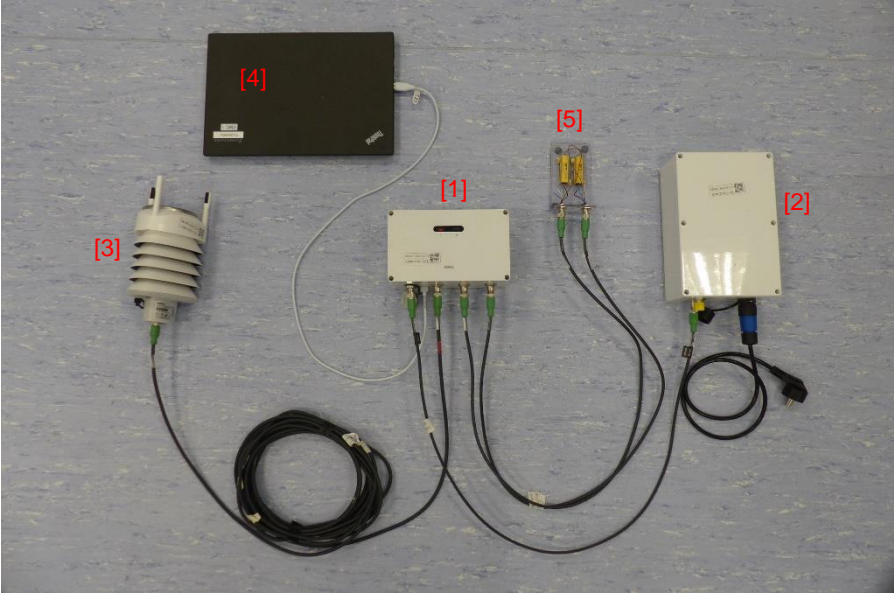
1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	WXT530	Vaisala	WXT536	Customer Support Equipment
AE	PSU501	Vaisala	PSU501	Customer Support Equipment
AE	auxiliary load	-	2x 50Ohm	Customer Support Equipment
AE	Laptop	Lenovo	X250	-
AE	Mobile communication tester	R&S	CMW 290	EF01367
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
MON	Monitoring Equipment			
CBL	Connecting Cable			
Comment:				

1.5 Operational Modes

Mode #	Description
1	LTE FDD 7 connection to CMW 290. LTE FDD 7; Ch.: 21100, Cell Bandwidth 10MHz; TPC: max power Collect Data from WXT530.
Comment:	

1.6 EUT Configuration

Configuration #	Description
	
1	<p>EUT [1] fully wired assembled. EUT powered via PSU501 [2]. PSU501 include rechargeable battery, measurement was performed with fully charge battery. Laptop [4] controls the EUT via USB connection.</p> <p>WXT536 [3] connected to EUT, WXT536 is a small and lightweight transmitter that offers 6 weather parameters in one compact package. WXT536 measures pressure, temperature, humidity, precipitation, wind, speed and wind direction.</p> <p>Measurement device, auxiliary load [5] connected on each port with 50 Ohm</p>
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

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:				

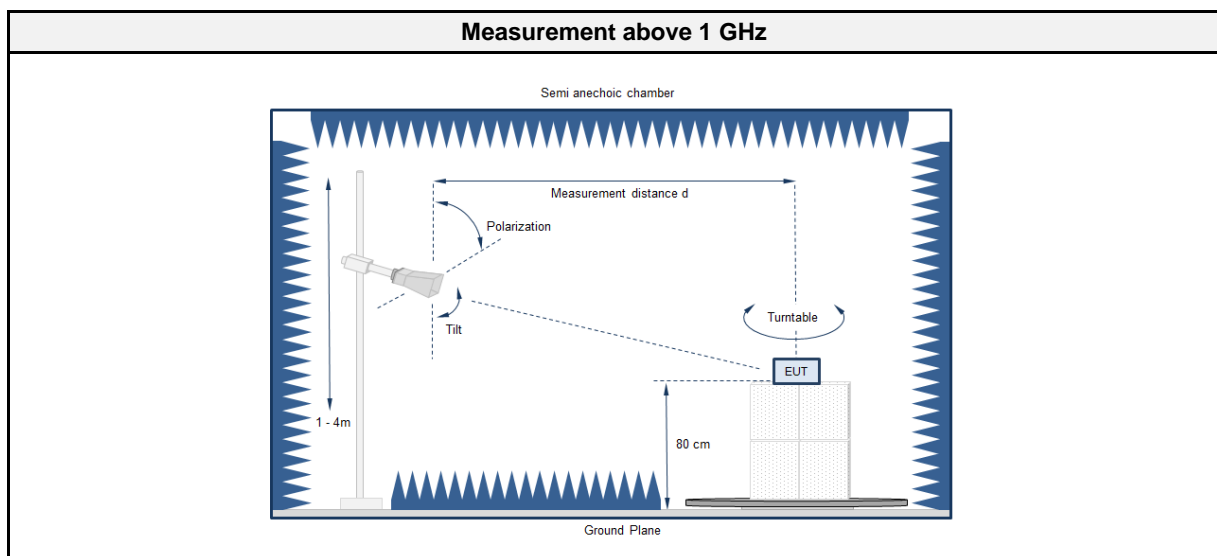
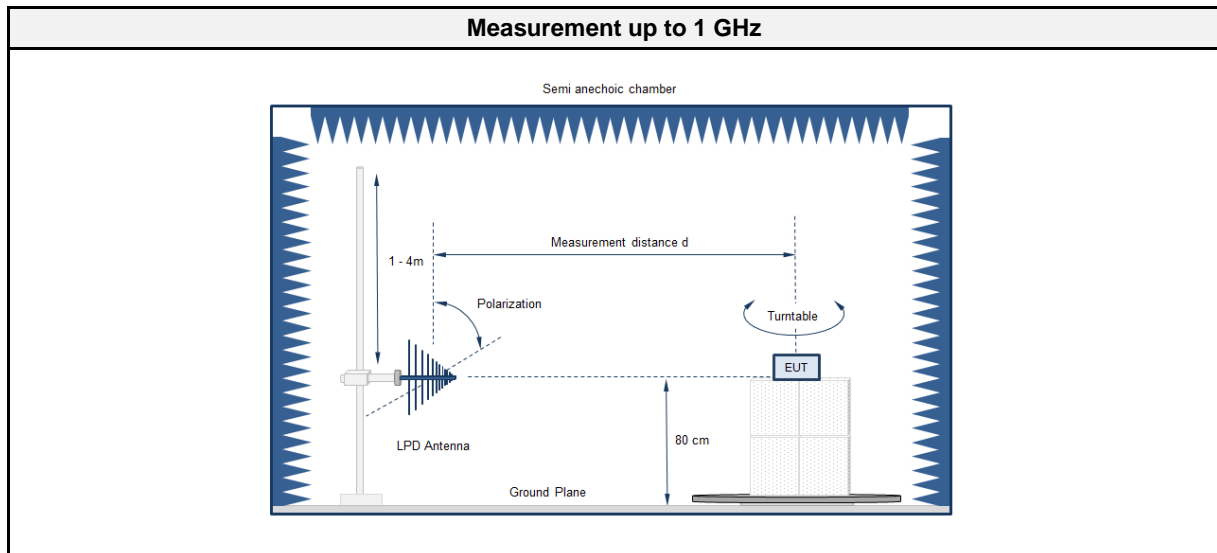
Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

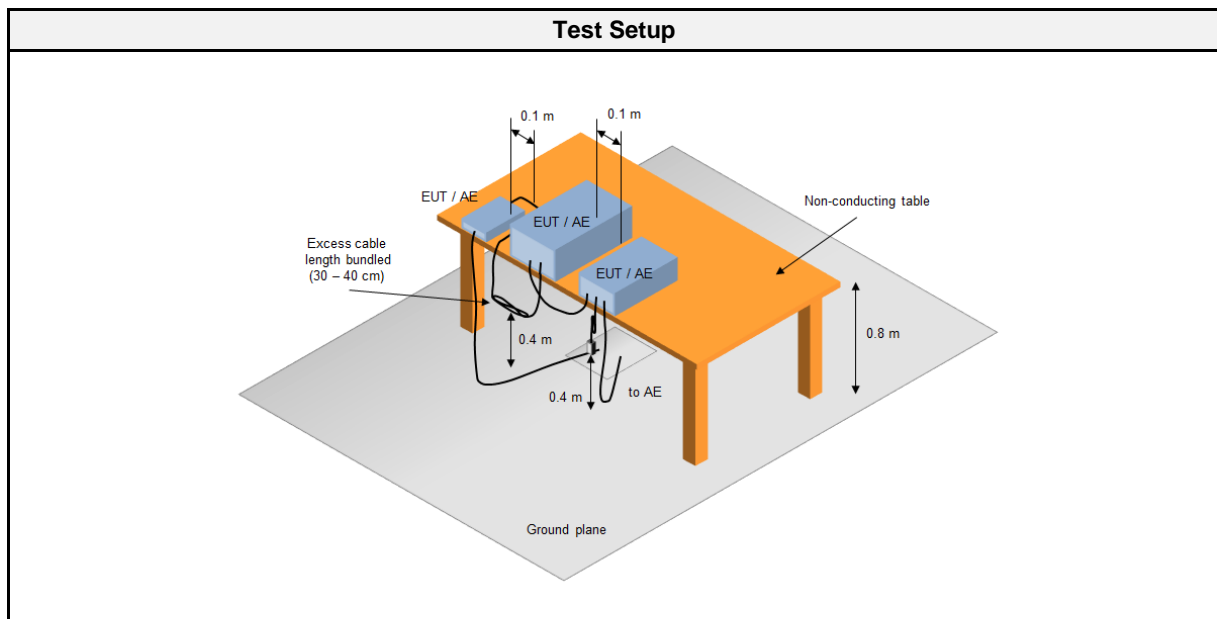
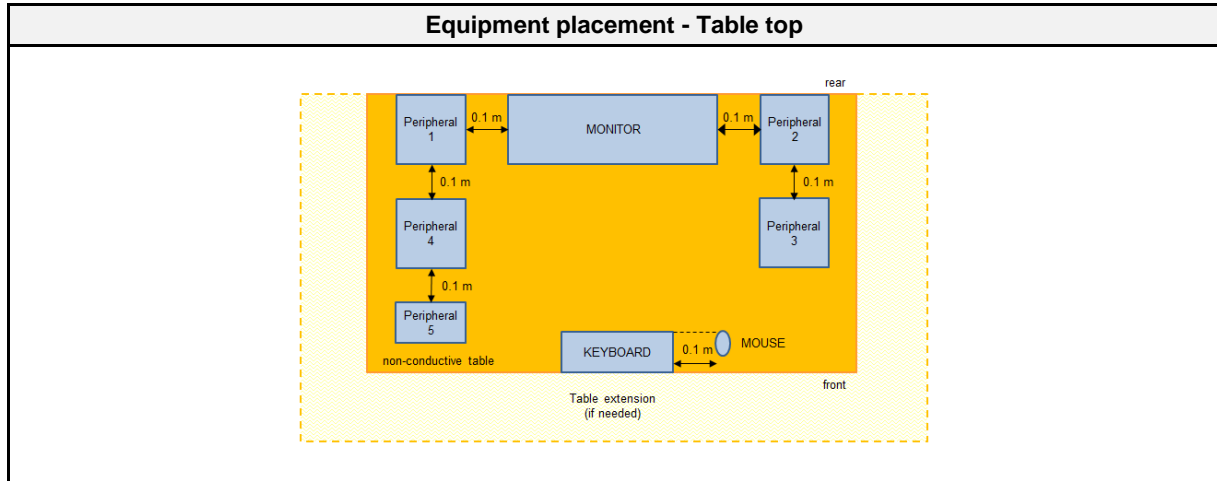
2.1 Test Conditions and Results - Radiated emissions acc. to ANSI C63.4

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]	2600
Measurement range	30 MHz to 14000 MHz
Temperature [°C]	22 ±3
Humidity [%]	26 ±3
Operator	Matthias Handrik
Date	2022-03-03

2.1.2 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
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.

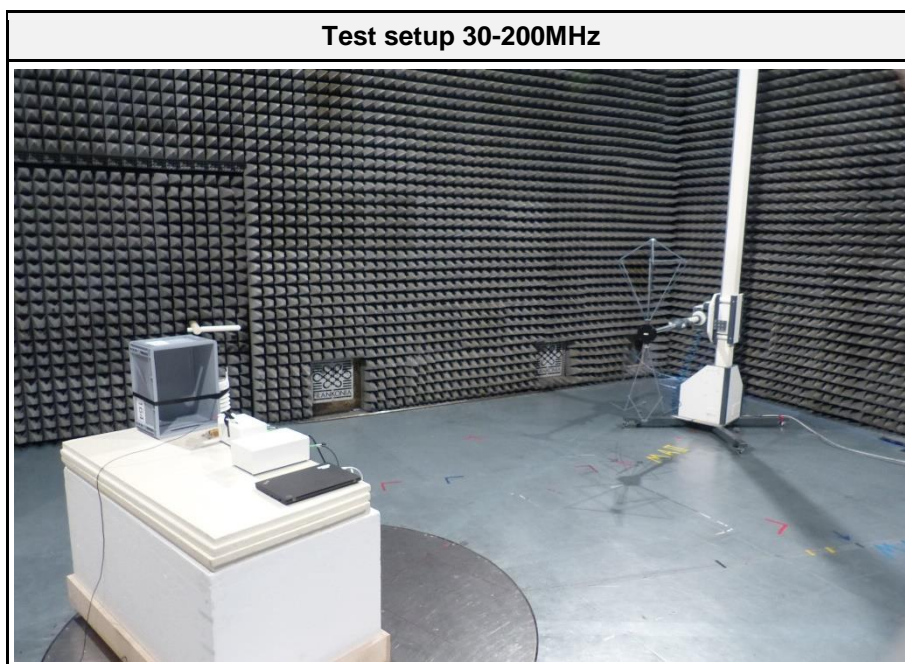
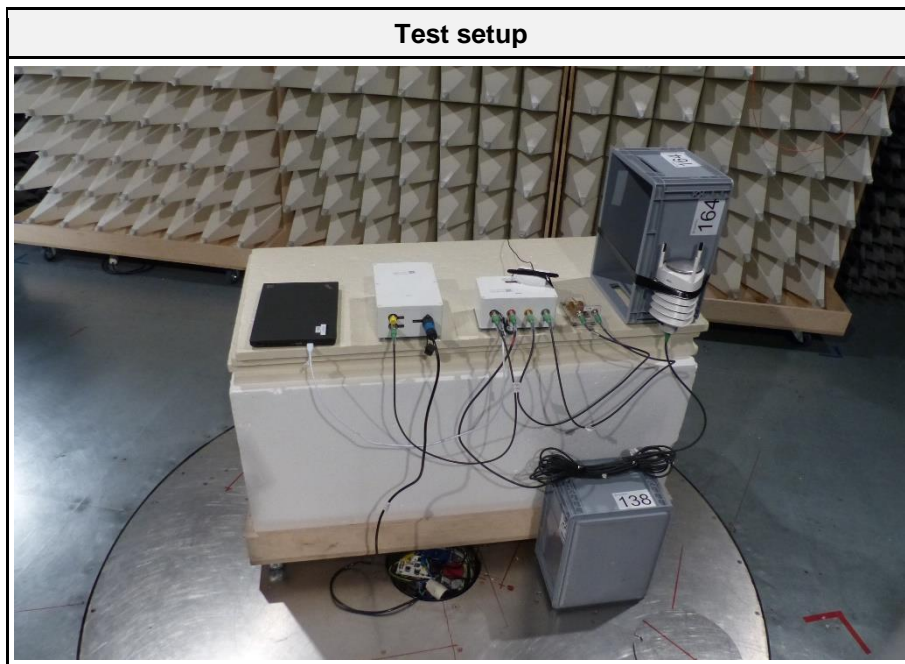
2.1.5 Limits

Class B @ 3 m		
Frequency [MHz]	Detector	Limit [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 Average	74 54

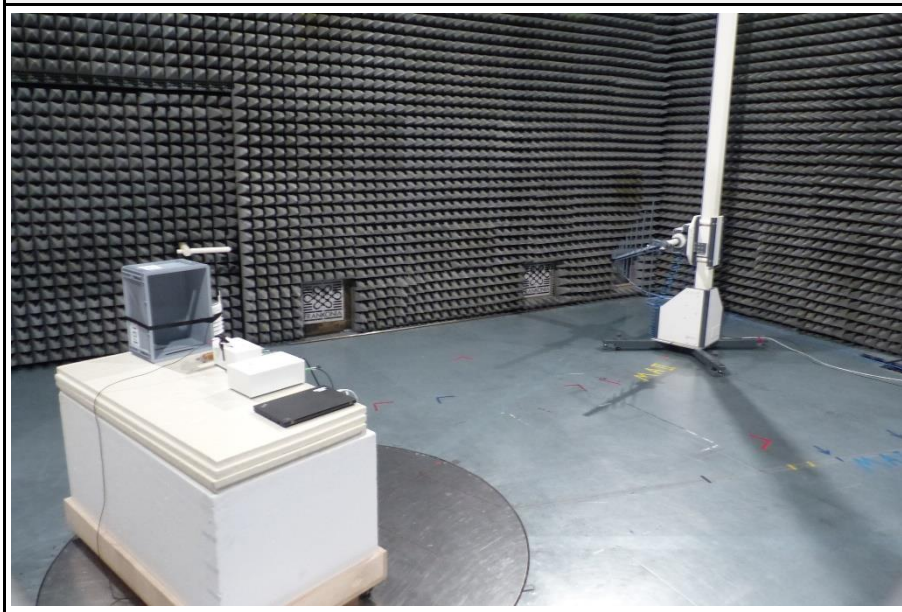
2.1.6 Results

Test Results			
Operational mode	EUT Configuration	Verdict	Remark
1	1	PASS	-

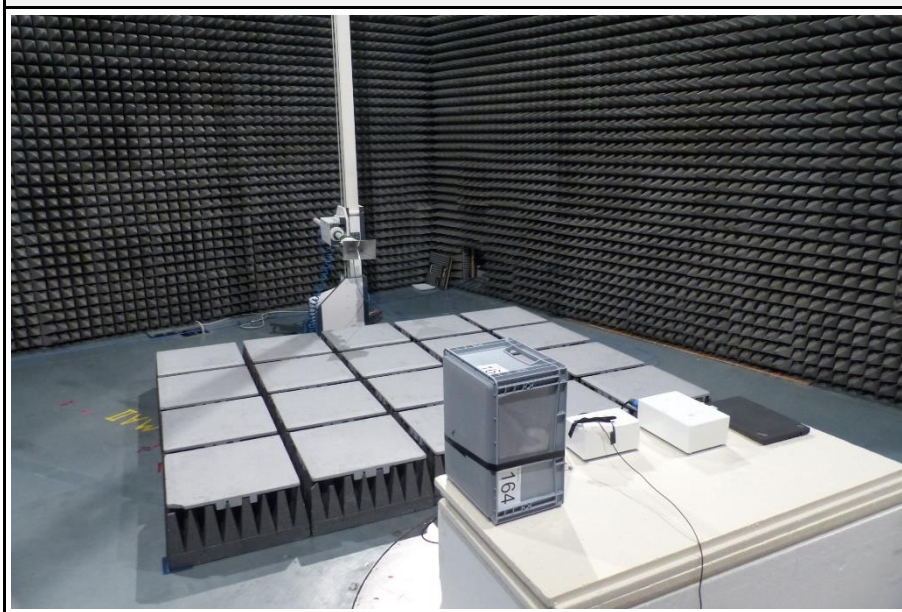
2.1.7 Setup Photos



Test setup 200-1000MHz



Test setup 1000-14000MHz



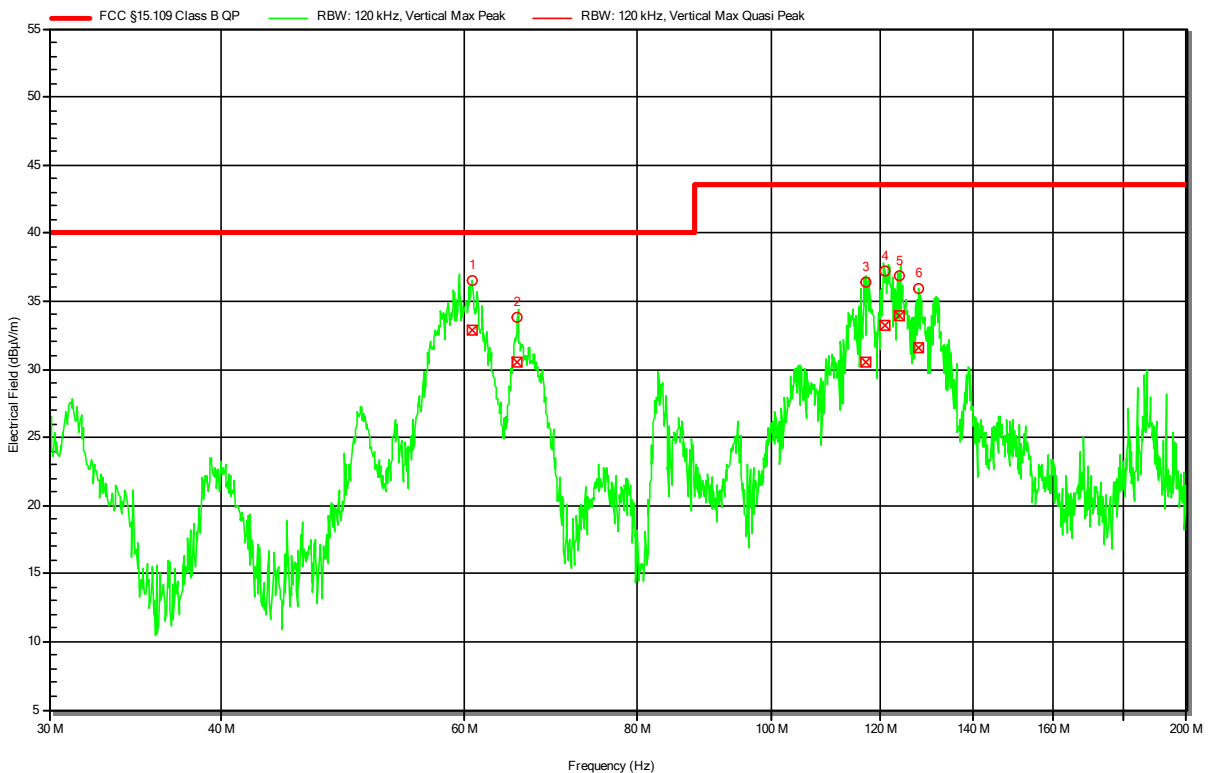
2.1.8 Records

Radiated emissions according to FCC part 15B

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-03
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC /50 Hz
 Antenna: Rohde & Schwarz HK 116, Vertical
 Measurement Distance: 3m
 Operational Mode: 1
 EUT Configuration: 1
 Note 1:

Index 1

RadiMation



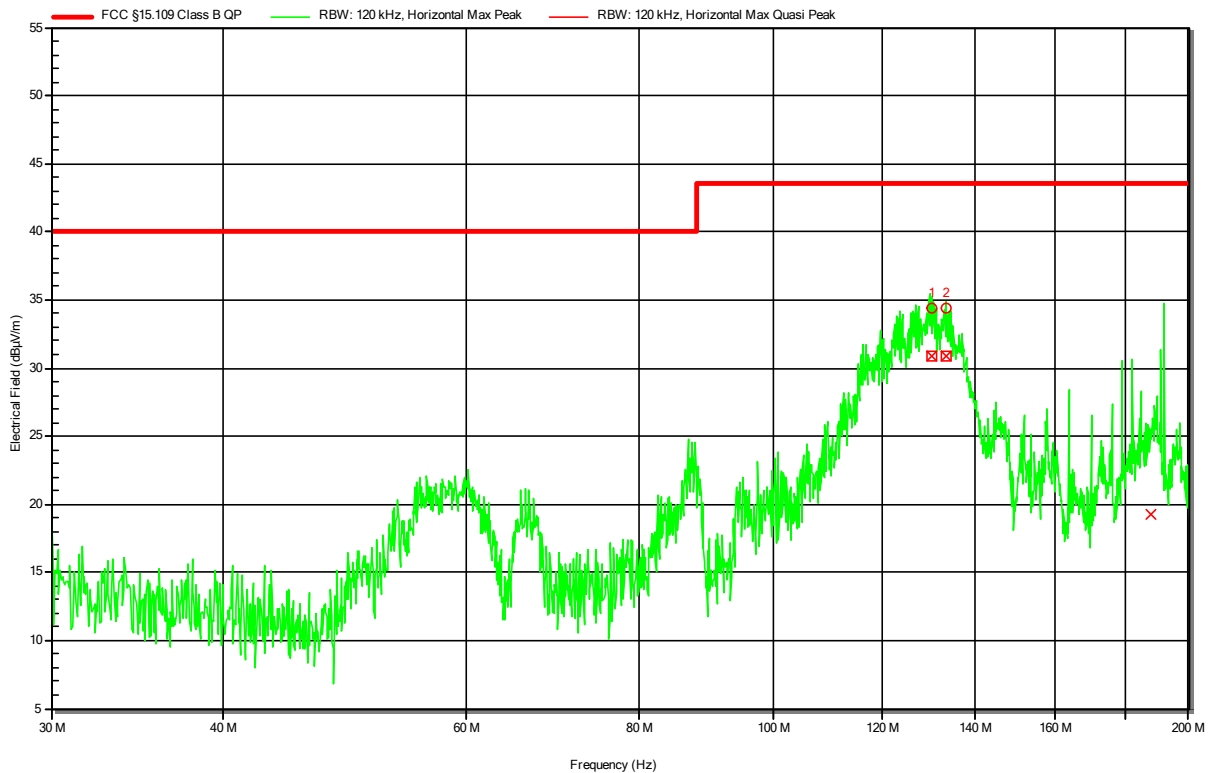
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	60.736 MHz	32.85 dBµV/m	40 dBµV/m	-7.15 dB	Pass	-130 degrees	1 m
2	65.56 MHz	30.58 dBµV/m	40 dBµV/m	-9.42 dB	Pass	-130 degrees	1 m
3	117.256 MHz	30.54 dBµV/m	43.52 dBµV/m	-12.98 dB	Pass	-130 degrees	1 m
4	121.091 MHz	33.24 dBµV/m	43.52 dBµV/m	-10.28 dB	Pass	-130 degrees	1 m
5	123.977 MHz	33.89 dBµV/m	43.52 dBµV/m	-9.63 dB	Pass	-130 degrees	1 m
6	127.866 MHz	31.6 dBµV/m	43.52 dBµV/m	-11.92 dB	Pass	-130 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-03
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC /50 Hz
 Antenna: Rohde & Schwarz HK 116, Horizontal
 Measurement Distance: 3m
 Operational Mode: 1
 EUT Configuration: 1
 Note 1:

Index 2

RadiMation

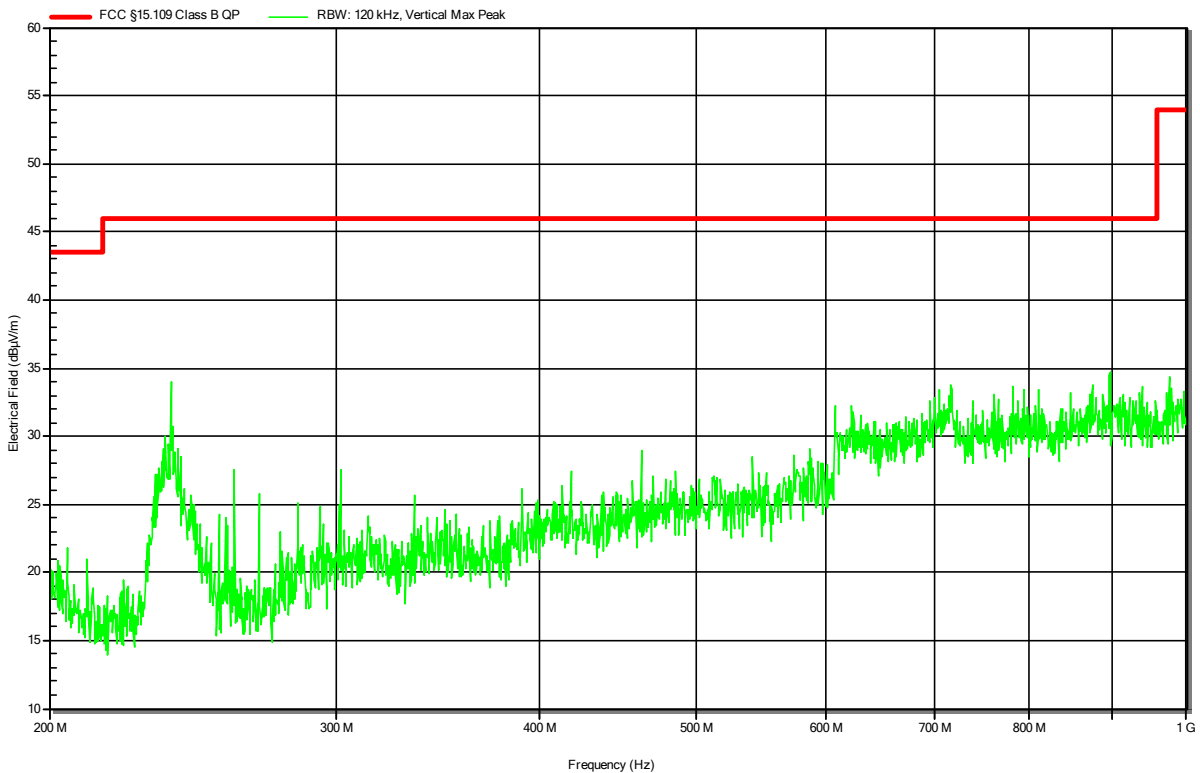


Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	130.182 MHz	30.85 dBµV/m	43.52 dBµV/m	-12.68 dB	Pass	-100 degrees	2 m
2	133.584 MHz	30.84 dBµV/m	43.52 dBµV/m	-12.69 dB	Pass	-100 degrees	2 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-03
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC /50 Hz
 Antenna: Rohde & Schwarz HL 223, Vertical
 Measurement Distance: 3m
 Operational Mode: 1
 EUT Configuration: 1
 Note 1:

Index 3
RadiMation

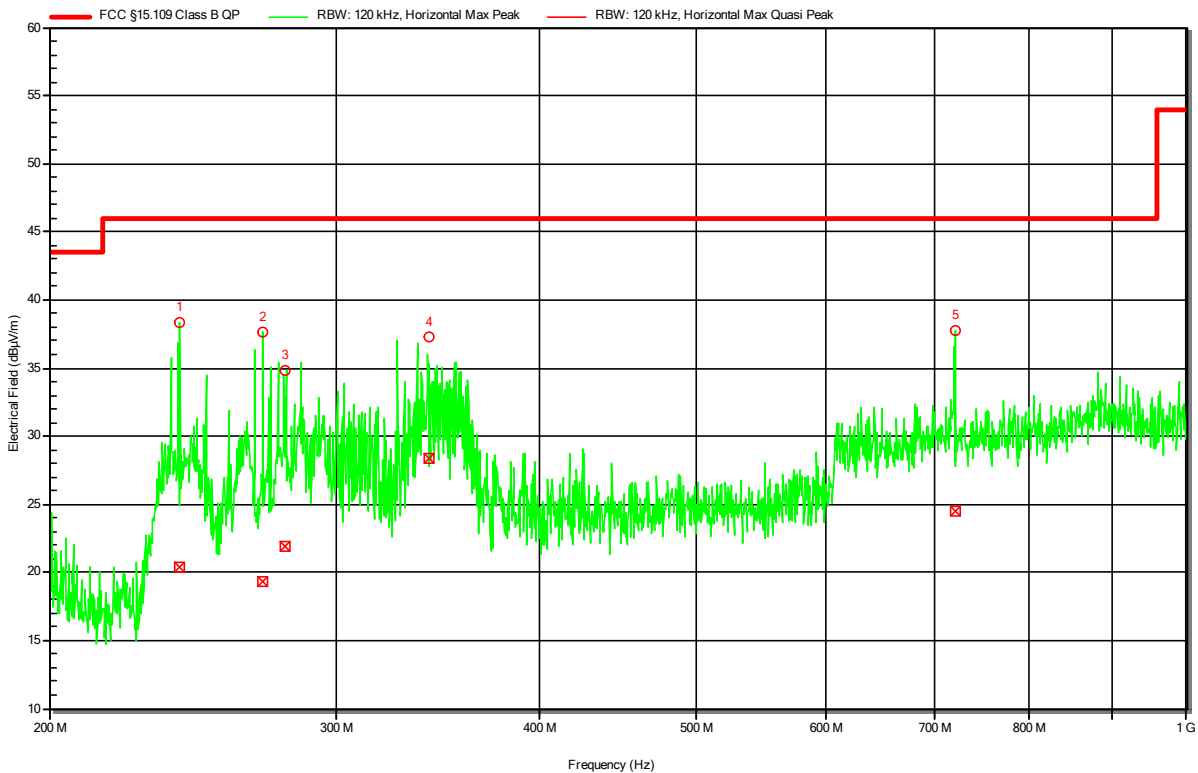


Radiated emissions according to FCC part 15B

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-03
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC /50 Hz
 Antenna: Rohde & Schwarz HL 223, Horizontal
 Measurement Distance: 3m
 Operational Mode: 1
 EUT Configuration: 1
 Note 1:

Index 4

RadiMation



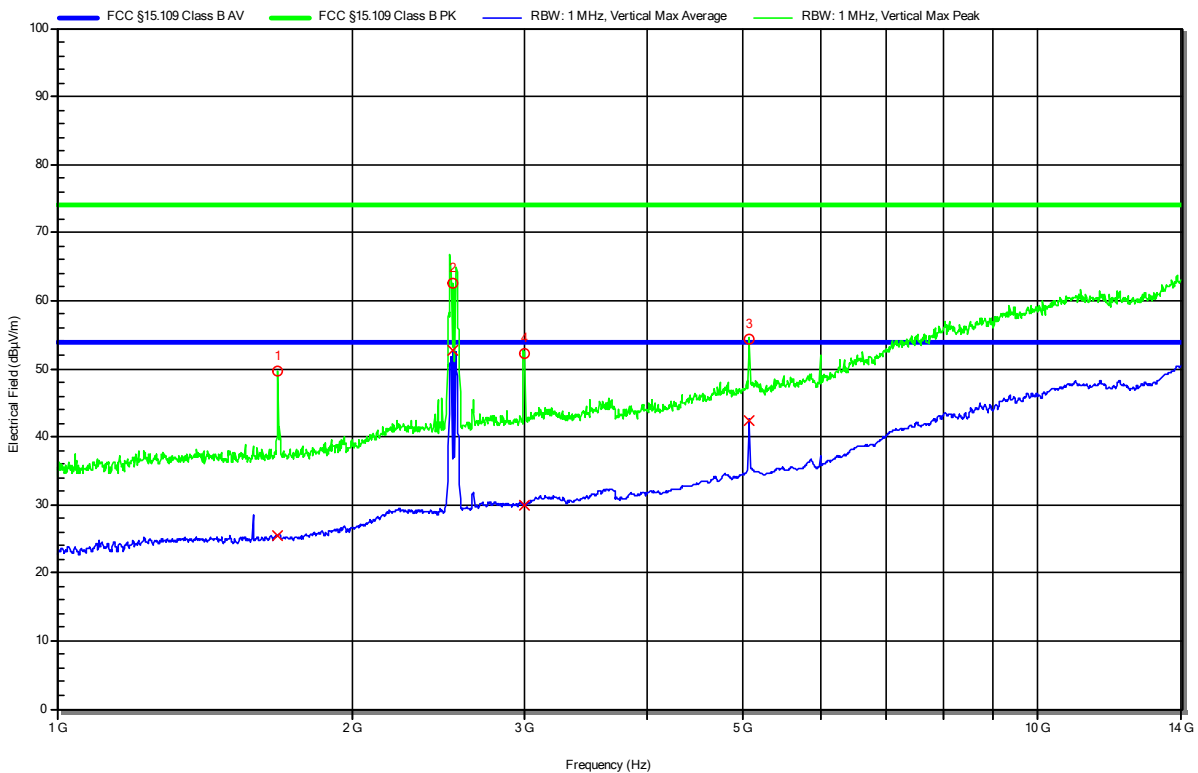
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Angle	Height
1	240.579 MHz	20.4 dBµV/m	46.02 dBµV/m	-25.62 dB	Pass	-97 degrees	1 m
2	270.55 MHz	19.36 dBµV/m	46.02 dBµV/m	-26.66 dB	Pass	-97 degrees	1 m
3	279.592 MHz	21.86 dBµV/m	46.02 dBµV/m	-24.16 dB	Pass	-97 degrees	1 m
4	342.324 MHz	28.34 dBµV/m	46.02 dBµV/m	-17.68 dB	Pass	-97 degrees	1 m
5	720.573 MHz	24.52 dBµV/m	46.02 dBµV/m	-21.5 dB	Pass	-97 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-03
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Vertical
 Measurement Distance: 3m
 Operational Mode: 1
 EUT Configuration: 1
 Note 1:

Index 12

RadiMation



Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	1.679 GHz	49.56 dB μ V/m	73.98 dB μ V/m	-24.42 dB	Pass	0 degrees	1 m
2	2.533 GHz	LTE FDD 7 carrier					
3	5.07 GHz	54.4 dB μ V/m	73.98 dB μ V/m	-19.58 dB	Pass	0 degrees	1 m
4	2.994 GHz	52.23 dB μ V/m	73.98 dB μ V/m	-21.75 dB	Pass	0 degrees	1 m

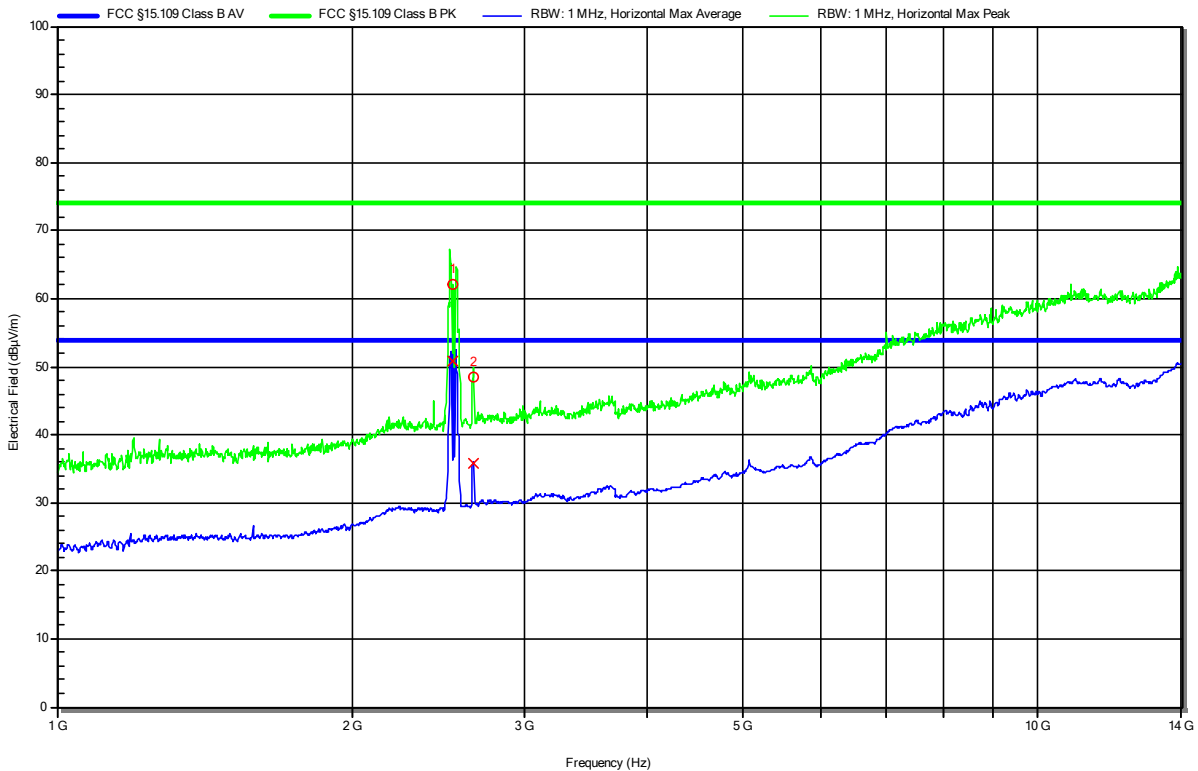
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	Angle	Height
1	1.679 GHz	25.44 dB μ V/m	53.98 dB μ V/m	-28.54 dB	Pass	0 degrees	1 m
2	2.533 GHz	LTE FDD 7 carrier					
3	5.07 GHz	42.42 dB μ V/m	53.98 dB μ V/m	-11.56 dB	Pass	0 degrees	1 m
4	2.994 GHz	29.87 dB μ V/m	53.98 dB μ V/m	-24.11 dB	Pass	0 degrees	1 m

Radiated emissions according to FCC part 15B

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-03
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC / 60 Hz
 Antenna: Schwarzbeck BBHA 9120D, Horizontal
 Measurement Distance: 3m
 Operational Mode: 1
 EUT Configuration: 1
 Note 1:

Index 11

RadiMation



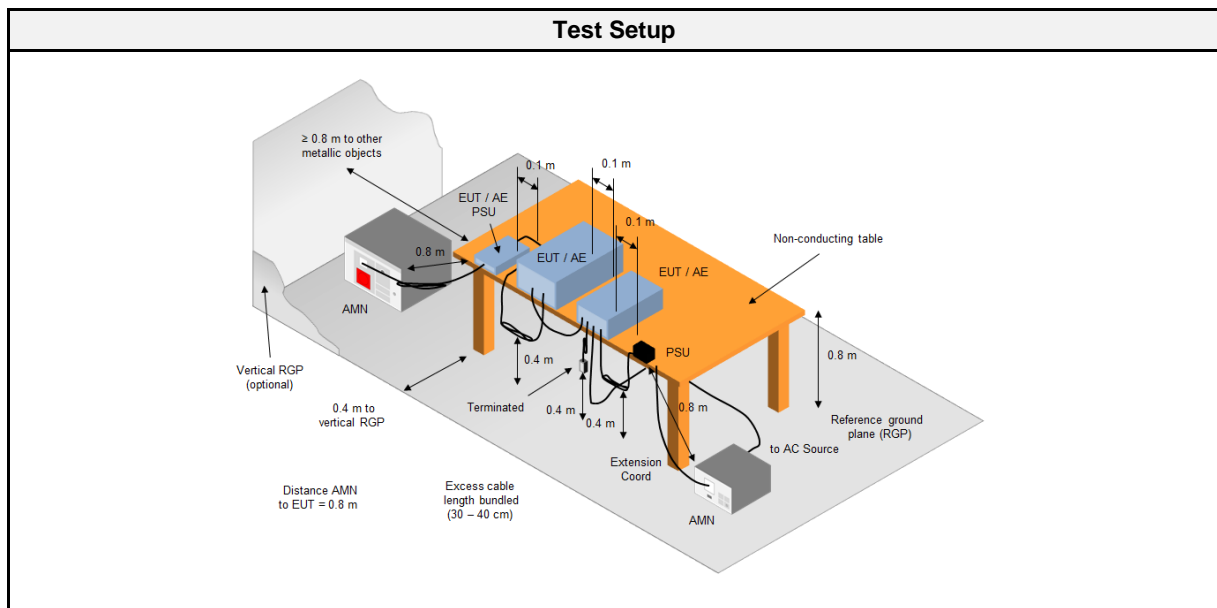
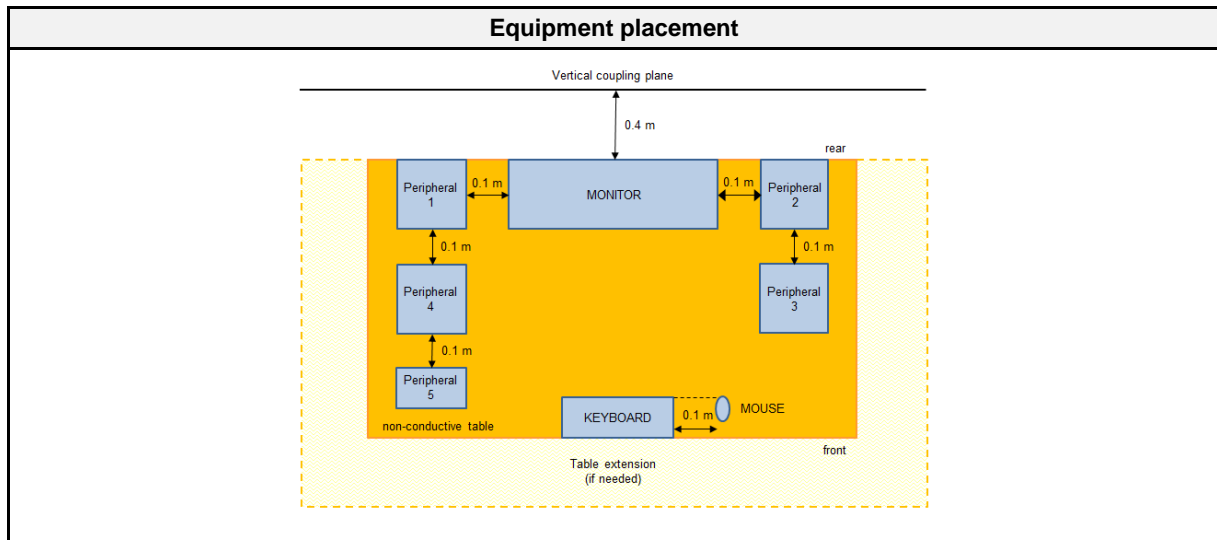
Peak Number	Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Angle	Height
1	2.534 GHz	LTE FDD 7 uplink carrier					
2	2.655 GHz	LTE FDD 7 downlink carrier					

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 [%]	25 ±3
Operator	Matthias Handrik
Date	2022-03-04

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
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
<ol style="list-style-type: none"> 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
<ol style="list-style-type: none"> 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 [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
Power	AMN	1	1	PASS	-

2.2.7 Setup Photos

Test setup AMN view



Test setup EUT view



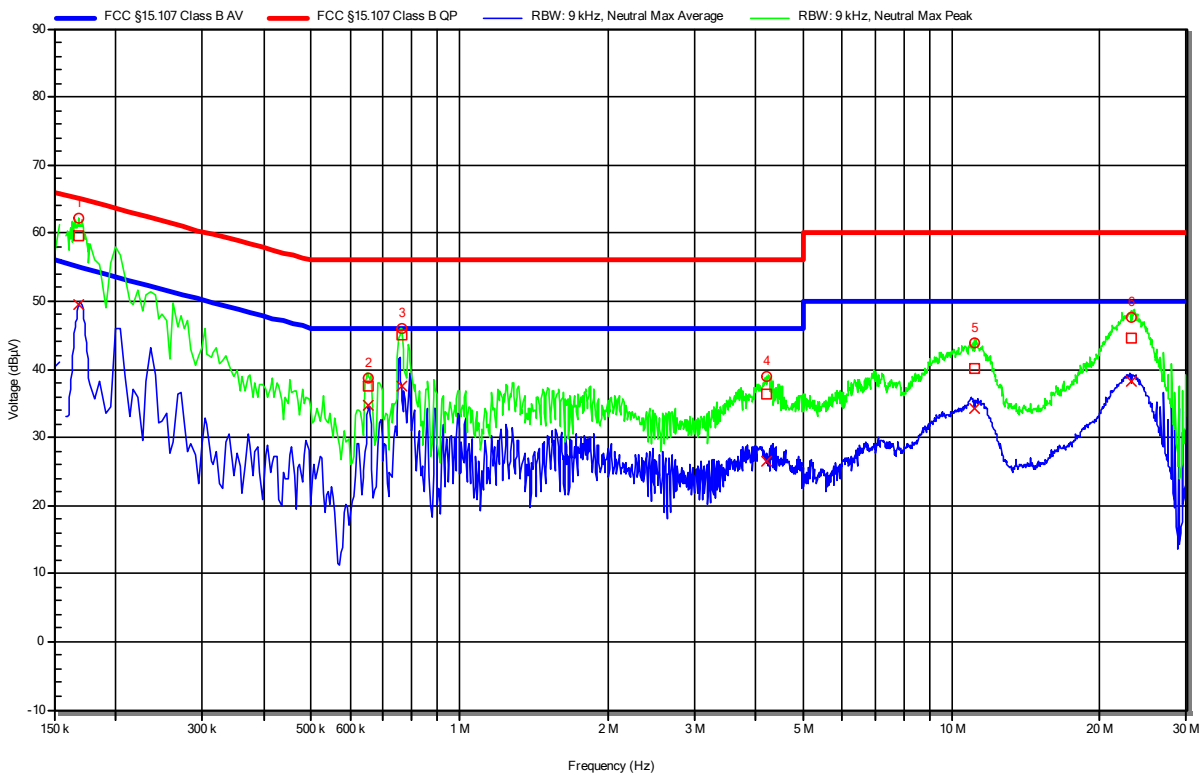
2.2.8 Records

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

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-04
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC /50 Hz
 LISN: Schwarzbeck NSLK 8127 RC N
 Operational Mode: 1
 EUT Configuration: 1
 Applied to Port: AC-Mains
 Note 1:

Index 13

RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	168 kHz	59.51 dB μ V	65.06 dB μ V	-5.55 dB	Pass	Neutral
2	653.55 kHz	37.64 dB μ V	56 dB μ V	-18.36 dB	Pass	Neutral
3	761.1 kHz	44.96 dB μ V	56 dB μ V	-11.04 dB	Pass	Neutral
4	4.201 MHz	36.47 dB μ V	56 dB μ V	-19.53 dB	Pass	Neutral
5	11.121 MHz	40.11 dB μ V	60 dB μ V	-19.89 dB	Pass	Neutral
6	23.199 MHz	44.66 dB μ V	60 dB μ V	-15.34 dB	Pass	Neutral

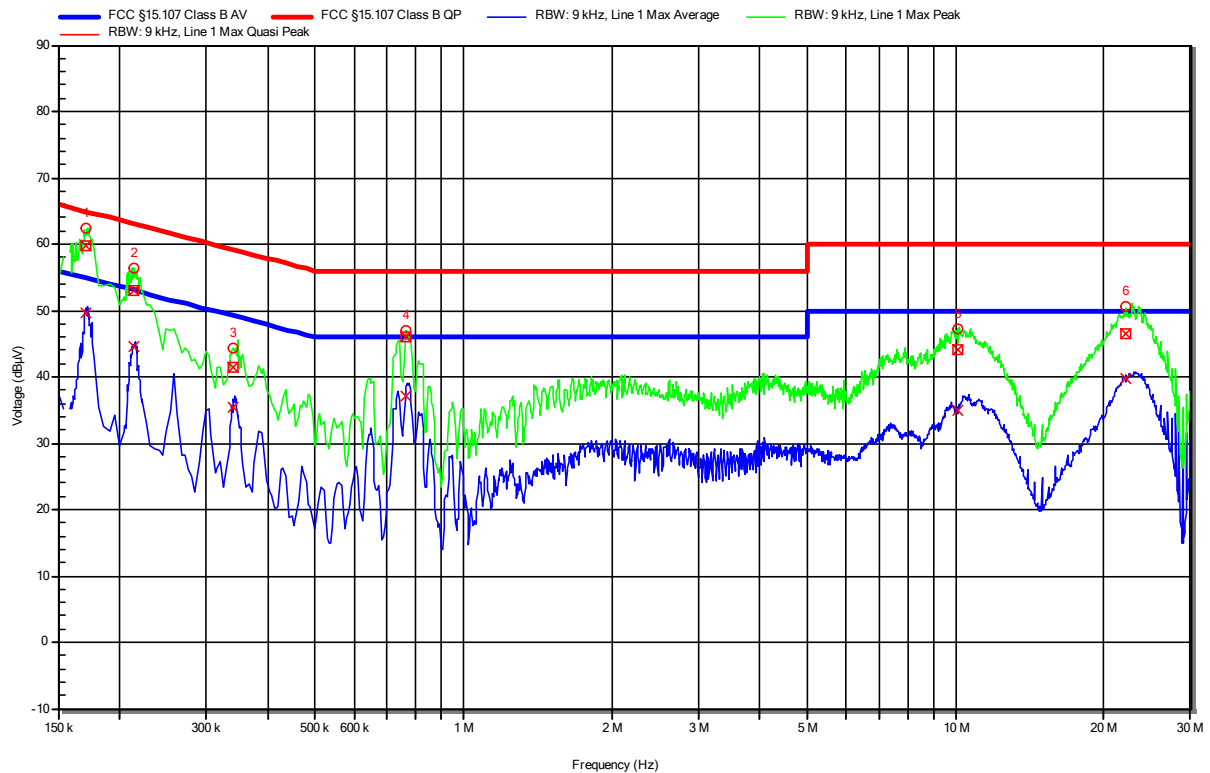
Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	168 kHz	49.5 dB μ V	55.06 dB μ V	-5.55 dB	Pass	Neutral
2	653.55 kHz	34.6 dB μ V	46 dB μ V	-11.4 dB	Pass	Neutral
3	761.1 kHz	37.48 dB μ V	46 dB μ V	-8.52 dB	Pass	Neutral
4	4.201 MHz	26.61 dB μ V	46 dB μ V	-19.39 dB	Pass	Neutral
5	11.121 MHz	34.28 dB μ V	50 dB μ V	-15.72 dB	Pass	Neutral
6	23.199 MHz	38.35 dB μ V	50 dB μ V	-11.65 dB	Pass	Neutral

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

Project Number: G0M-2202-1315
 Applicant: Vaisala Oy
 Model Description: Gateway for Vaisala Beacon Weather Station BWS500
 Model: EGW501
 Test Sample ID: 38383
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Handrik
 Test Date: 2022-03-04
 Operating Conditions: ambient temperature: 21 °Celsius
 power input: 120V AC /50 Hz
 LISN: Schwarzbeck NSLK 8127 RC L
 Operational Mode: 1
 EUT Configuration: 1
 Applied to Port: AC-Mains
 Note 1:

Index 14

Radiation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	171.6 kHz	59.76 dB μ V	64.88 dB μ V	-5.12 dB	Pass	Line 1
2	213.9 kHz	53.09 dB μ V	63.05 dB μ V	-9.97 dB	Pass	Line 1
3	339.45 kHz	41.56 dB μ V	59.22 dB μ V	-17.66 dB	Pass	Line 1
4	762 kHz	46.04 dB μ V	56 dB μ V	-9.96 dB	Pass	Line 1
5	10.091 MHz	44 dB μ V	60 dB μ V	-16 dB	Pass	Line 1
6	22.164 MHz	46.48 dB μ V	60 dB μ V	-13.52 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	171.6 kHz	49.65 dB μ V	54.88 dB μ V	-5.23 dB	Pass	Line 1
2	213.9 kHz	44.64 dB μ V	53.05 dB μ V	-8.42 dB	Pass	Line 1
3	339.45 kHz	35.31 dB μ V	49.22 dB μ V	-13.91 dB	Pass	Line 1
4	762 kHz	37.16 dB μ V	46 dB μ V	-8.84 dB	Pass	Line 1
5	10.091 MHz	34.95 dB μ V	50 dB μ V	-15.05 dB	Pass	Line 1
6	22.164 MHz	39.74 dB μ V	50 dB μ V	-10.26 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 18GHz @3m, 5.95dB