EMC TEST REPORT

No. 2025116STO-106

Electromagnetic disturbances

EQUIPMENT UNDER TEST

Equipment:	Floor standing luminaire with LED
Type/Model:	G2015 Pilskott
Manufacturer:	Producer AB
Tested by request of:	IKEA of Sweden AB

SUMMARY

Referring to the emission limits, and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards:

FCC 47 CFR Part 15: Radio frequency devices, Subpart B: Unintentional radiators. Class B equipment.

ICES-005 Issue 5: Lighting Equipment, Class B. (2018)

For details, see clause 2 – 4.

Date of issue: March 15, 2021

Tested by: Per Granberg

Approved by: Anders Lindström

Revision History

Test report no.	Release no.	Date of issue	Description
2025116STO-106	1	March 15, 2021	

Terms, definition and abbreviations

The following terms, definitions and abbreviations may be used throughout the report.

Term/definition/abbreviation	Meaning
AAN	Asymmetrical Artificial Network
AC	Alternating Current
AE	Associated Equipment
AM	Amplitude Modulation
AMN	Artificial Mains Network
AV	Average
BW	Bandwidth
CAV	CISPR Average
CDN	Coupling/Decoupling Network
CM	Common Mode
CMAD	Common Mode Absorption Device
DC	Direct Current
DM	Differential Mode
EM	Electromagnetic
EMC	Electromagnetic Compatibility
ESD	Electrostatic Discharge
EUT	Equipment Under Test
F	Fail
FM	Frequency Modulation
FAR	Fully Anechoic Room
F_X	Highest fundamental frequency generated or used within the EUT, or highest frequency at which it operates
H	Horizontal
HCP	Horizontal Coupling Plane
I_{ref}	Reference Current
ISN	Impedance Stabilizing Network
MU	Measurement Uncertainty
N/A	Not Applicable
P	Pass
PE	Protective Earth
PK	Peak
Pol.	Polarisation
PWHC	Partial Weighted Harmonic Current
QP / QPK	Quasi-Peak
RF	Radio Frequency
RGP	Reference Ground Plane
RH	Relative Humidity
RMS	Root Mean Square
Rx	Receiver / Receiving
SAC	Semi-Anechoic Chamber
THC	Total Harmonic Current
Tx	Transmitter / Transmitting
V	Vertical
VCP	Vertical Coupling Plane

CONTENTS

1. CLIENT INFORMATION

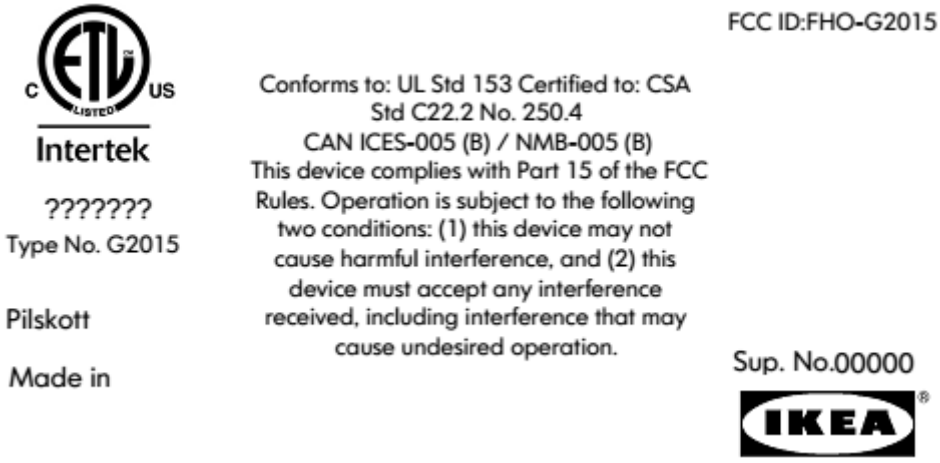
The EUT has been tested by request of

Company	IKEA of Sweden AB Box 702 SE-343 81 Älmhult Sweden
Name of contact	Adina Zugrav
Client observer	-

2. EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment:	Floor standing luminaire with LED								
Type/Model:	G2015 Pilskott								
Brand name:	IKEA								
S/N:	-								
Manufacturer:	IKEA of Sweden AB Box 702 SE-343 81 Älmhult Sweden								
Installation class:	☐ I ☒ II ☐ III ☐ N/A								
Highest clock frequency, F_X:	2.4 MHz								
Software version:	-								
Hardware version:	-								
Mounting position: (during normal use)	☐ Table-top ☒ Floor-standing ☐ Wall/ceiling ☐ Hand-held ☐ Other:								
Supplementary information:	FCC ID: FHO-G2015								
Input ratings	**Voltage [V]**	**Freq. [Hz]**	**Current [A]**	**Power [W]**	**Coupling**				
☒ AC	120	60		14.5	**L1** ☒	**L2** ☐	**L3** ☐	**N** ☒	**PE** ☐
☐ DC					**V+** ☐	**V-** ☐			**PE** ☐
☐ Battery					**V+** ☐	**V-** ☐			**PE** ☐
☐ Other:									



Photo/copy of marking/rating plate(s)

Test set up and EUT photos are enclosed in 2025116STO-107 Annex 1.

2.2 Additional information about the EUT

The EUT is a dimmable floor standing luminaire provided with a radio remote control

The EUT consists of the following units:

Unit	S/N	Description
Luminaire	-	G2015 Pilskott
Remote control	-	Trådfri remote, type E1524

The EUT has the following noted components:

Noted component	Type
Built-in LED-driver	ICPSLC24-30-IL44-1

The EUT has the following ports:

Port type	Port name	Shielded
AC I/O		
☒ AC power input	-	☐
☐ AC power output		☐
DC I/O		
☐ DC power input		☐
☐ DC power output		☐
Signal/control I/O		
☐ Telecom/network		☐
☐ Signal/control		☐
Supplementary information:		

3. TEST SPECIFICATIONS

3.1 Additions, deviations and exclusions from standards and accreditation

No additions, deviations or exclusions have been made from standards and accreditation.

3.2 Test site

Measurements were performed at:

Intertek Semko AB.
Torshamnsgatan 43,
P.O. Box 1103
SE-164 22 Kista

Intertek Semko AB is a FCC listed test site with site registration number 90913
Intertek Semko AB is a FCC accredited conformity assessment body with designation number SE0002
Intertek Semko AB is an Industry Canada listed test facility with IC assigned code 2042G

Measurement chambers

Measurement Chamber	Type of chamber	IC Site filing #
☒ STORA HALLEN	Semi-anechoic 10 m and 3 m	2042G-2
☐ BJÖRKHALLEN	Semi-anechoic 3 m	2042G-1
☐ 5 m CHAMBER	Semi-anechoic 5 m	2042G-3

3.3 Mode of operation during the test

Mode no.	Supply	Description
1	120 V, 60 Hz	Dimming set to max luminous intensity
2	120 V, 60 Hz	Dimming set to min luminous intensity
3	120 V, 60 Hz	Dimming set to approx. 50% luminous intensity

Test	Mode of operation
Conducted continuous emission	1,2
Radiated emission of EM fields	1,3

4. TEST SUMMARY

The test has been carried out at the Intertek Semko AB premises in Kista, Sweden.
The results in this report apply only to sample tested.
Result: P – F – N/A

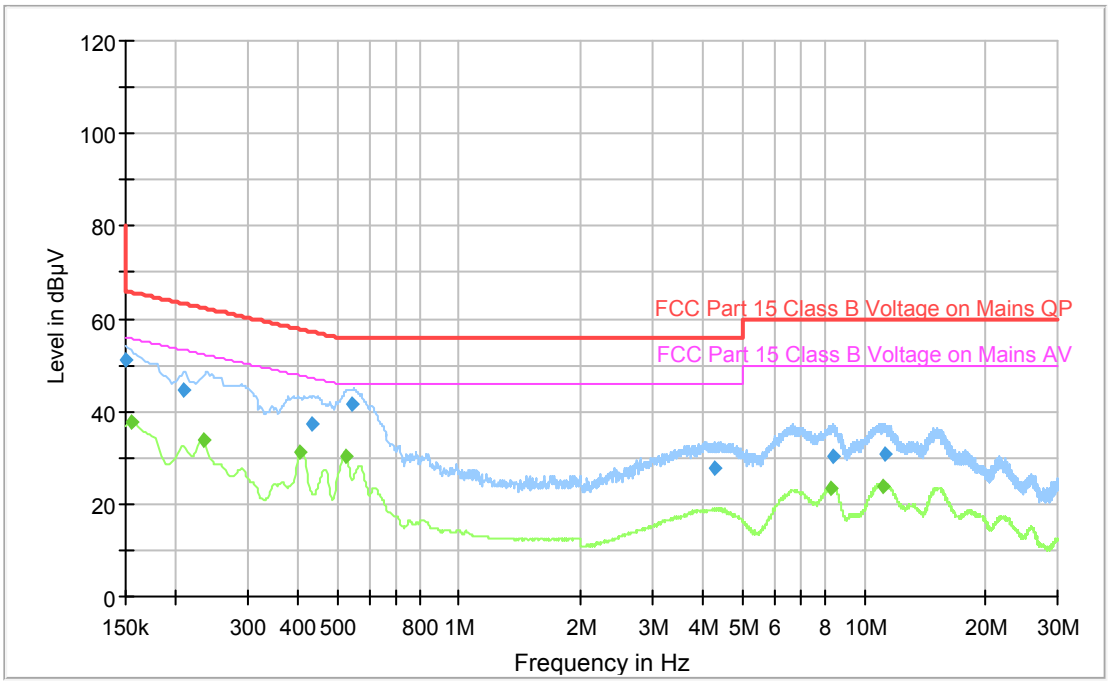
EMISSION TESTS					
Chapter	**Standard(s)**	**Description**	**Port type(s)**	**Note(s)**	**Verdict**
5	FCC Part 15 subpart B	Conducted continuous emission	AC input	-	P
5	ICES-005	Conducted continuous emission	AC input	-	P
6	FCC Part 15 subpart B	Radiated emission of EM fields	Enclosure	-	P
6	ICES-005	Radiated emission of EM fields	Enclosure	-	P
Supplementary information:					

5. CONDUCTED CONTINUOUS DISTURBANCES in the frequency-range 0.15 – 30 MHz

Date of test	Temp. [°C]	Humidity [%RH]	Tested by
November 12, 2020	21	25	THK

Test setup and procedure:	EUT was placed 0.8 m from the AMN /ISN. Overview sweeps were performed for each lead of the cable(s). AE requiring mains power to operate was/were connected to AMN /ISN terminated with 50 Ω, when applicable.		
EUT position:	☒ Table-top (EUT 0.4 m from the RGP) ☐ Floor-standing (EUT 12 mm from the RGP) ☐ Other:		
Tested port type(s):	**Coupling device**	**Measurement uncertainty**	
		Frequency range	**Value**
☒ AC power	☒ AMN	0.15 – 30 MHz	± 3.3 dB
Supplementary information: Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011. The measurement uncertainty is given with a confidence of 95 %.			

5.1 Test results, AC Power input port, Class B, operation mode 1



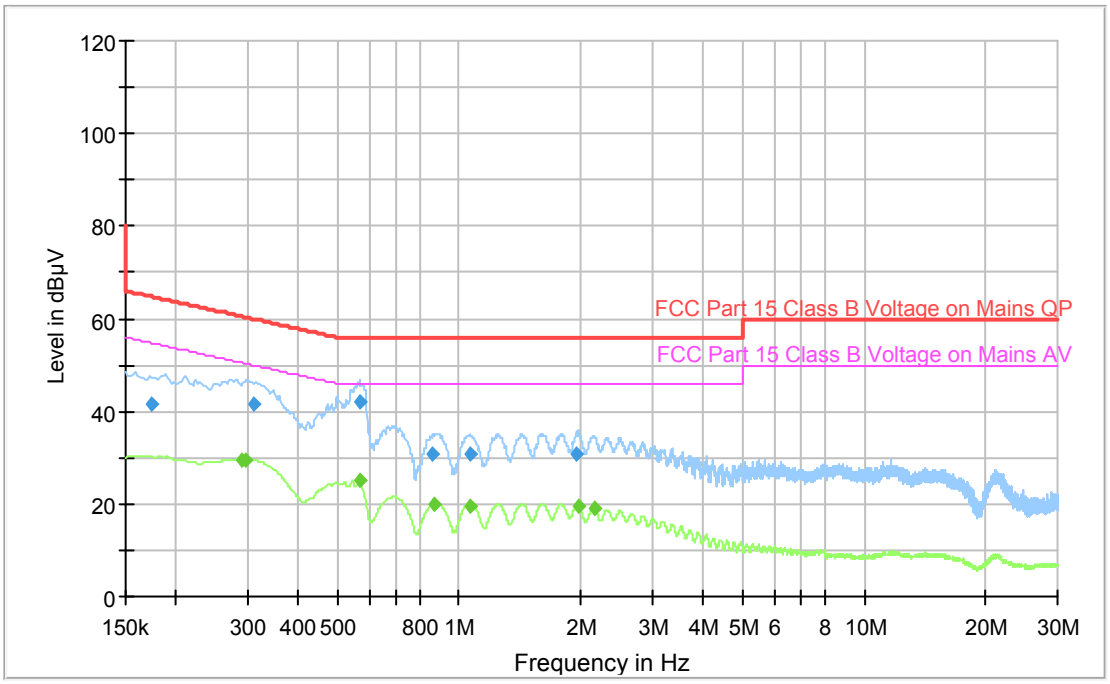
Diagram, Peak and AV overview sweep

Measurement results, Quasi-peak and Average

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)
0.150000	51.33	---	66.00	14.67	1000.0	9.000
0.154500	---	37.78	55.75	17.97	1000.0	9.000
0.208500	44.75	---	63.27	18.51	1000.0	9.000
0.233250	---	33.66	52.33	18.67	1000.0	9.000
0.406500	---	31.19	47.72	16.53	1000.0	9.000
0.431250	37.30	---	57.23	19.93	1000.0	9.000
0.523500	---	30.33	46.00	15.67	1000.0	9.000
0.543750	41.69	---	56.00	14.31	1000.0	9.000
4.265250	27.54	---	56.00	28.46	1000.0	9.000
8.286000	---	23.28	50.00	26.72	1000.0	9.000
8.391750	30.25	---	60.00	29.75	1000.0	9.000
11.118750	---	23.90	50.00	26.10	1000.0	9.000
11.197500	30.74	---	60.00	29.26	1000.0	9.000

Result [dBµV] = Analyser reading [dBµV] + cable loss [dB] + LISN insertion loss [dB]

5.2 Test results, AC Power input port, Class B, operation mode 2



Diagram, Peak and AV overview sweep

Measurement results, Quasi-peak and Average

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)
0.174750	41.53	---	64.73	23.20	1000.0	9.000
0.289500	---	29.54	50.54	21.00	1000.0	9.000
0.296250	---	29.48	50.35	20.87	1000.0	9.000
0.312000	41.40	---	59.92	18.52	1000.0	9.000
0.566250	---	25.07	46.00	20.93	1000.0	9.000
0.570750	41.98	---	56.00	14.02	1000.0	9.000
0.858750	30.56	---	56.00	25.44	1000.0	9.000
0.870000	---	19.78	46.00	26.22	1000.0	9.000
1.059000	30.67	---	56.00	25.33	1000.0	9.000
1.063500	---	19.48	46.00	26.52	1000.0	9.000
1.950000	30.88	---	56.00	25.12	1000.0	9.000
1.968000	---	19.31	46.00	26.69	1000.0	9.000
2.145750	---	18.92	46.00	27.08	1000.0	9.000

Result [dBµV] = Analyser reading [dBµV] + cable loss [dB] + LISN insertion loss [dB]

5.3 Test equipment

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Measurement software	Rohde & Schwarz	EMC32 - V10.50.40	--	--	--
Receiver	Rohde & Schwarz	ESU 8	12866	2020-07-27	1 year
AMN / LISN	Rohde & Schwarz	ESH3-Z5	2728	2020-07-08	1 year
Pulse limiter	Rohde & Schwarz	ESH3-Z5	4623	2020-05-13	1 year

6. RADIATED RF EMISSION IN THE FREQUENCY-RANGE 30 MHZ – 13 GHZ

Date of test	Temp. [°C]	Humidity [%RH]	Tested by
February 14, 2021	21	16	PEG
March 5, 2021	22	15	PEG

Test setup and procedure:	The EUT was placed on a non-conductive support on the RGP. Overview sweeps were performed with the measurement receiver in max hold mode and the peak detector activated in the frequency range 30 – 1000 MHz. Above 1 GHz, both the peak and average detectors were activated, when applicable. During height scan above 1 GHz the EUT was kept in antennas cone of radiation.
EUT position:	☐ Table-top (EUT 0.8 m from the RGP) ☒ Floor-standing (EUT 12 mm from the RGP) ☐ Other:
Highest measured frequency:	☐ F_X 108 MHz: 1 GHz ☐ 108 MHz < F_X ≤ 500 MHz: 2 GHz ☐ 500 Mhz < F_X ≤ 1 GHz: 5 GHz ☒ F_X > 1 GHz: 5 x F_X up to a max. of 40 GHz ☐ F_X is unknown: 40 GHz

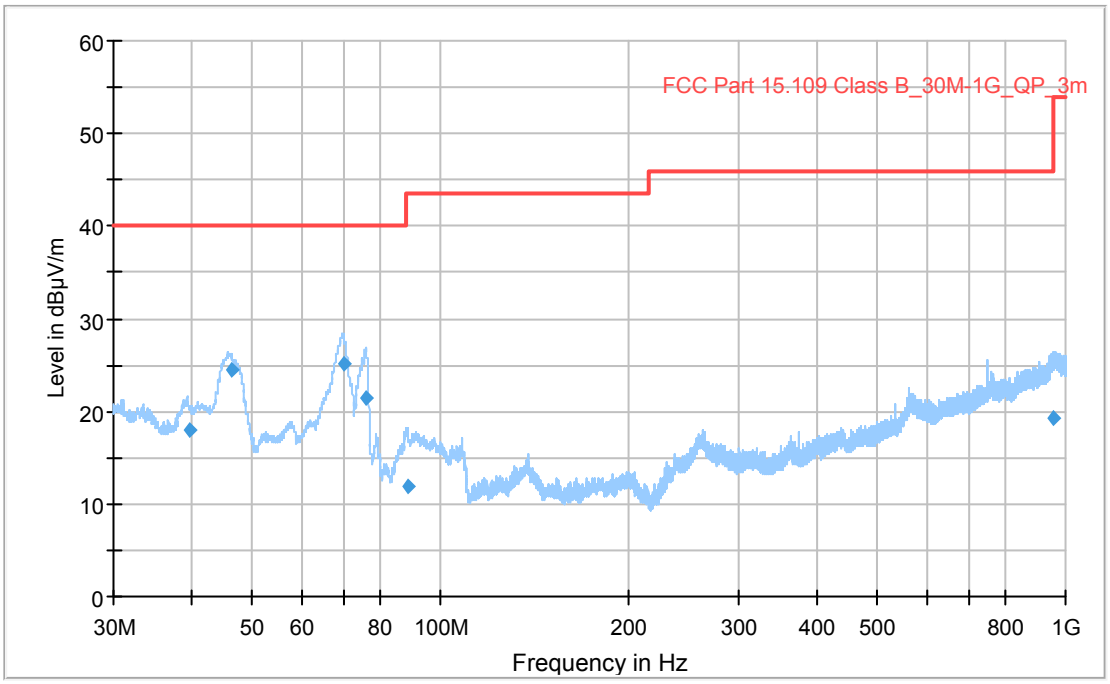
Frequency range:	Measuring distance	Measurement uncertainty
☒ 30 to 1000 MHz	3 m	± 5.1 dB
☐ 30 to 1000 MHz	10 m	± 5.0 dB
☒ 1.0 to 18 GHz	3 m	± 4.5 dB
☐ 18 to 26 GHz	3 m	± 4.8 dB
☐ 26 to 40 GHz	3 m	± 5.7 dB

Supplementary information: Measurement uncertainty is calculated in accordance with CISPR 16-4-2:2011. The measurement uncertainty is given with a confidence of 95 %.

Test	Freq. [MHz]	Meas. angle [°]	Antenna			RBW [kHz]			VBW [kHz]
			Type	Height	Pol.	QP	PK	AV	PK
Preview	30 – 1000	0 – 359	Bilog	1 – 4 m	V and H	-	120	-	1000
Final						120	-	-	-
Preview	1000 – 40000	0 – 359	Horn	1 – 4 m		-	1000	-	3000
Final						-	1000	1000	-

Measurement distance [m]	Frequency [MHz]	Limits [dBµV/m]		
		QP	PK	AV
Limits, FCC, Class A				
☐ 3 / ☐ 10	30 – 88	49.6 / 39.1	-	-
	88 – 216	54.0 / 43.5	-	-
	216 – 960	56.9 / 46.4	-	-
	960 – 1000	60.0 / 49.5	-	-
☐ 3 / ☐ 10	Above 1000	-	80.0 / 69.5	60.0 / 49.5
Limits, FCC, Class B				
☒ 3 / ☐ 10	30 – 88	40.0 / 29.5	-	-
	88 – 216	43.5 / 33.1	-	-
	216 – 960	46.0 / 35.6	-	-
	960 – 1000	54.0 / 43.5	-	-
☒ 3 / ☐ 10	Above 1000	-	74.0 / 63.5	54.0 / 43.5
Limits, ICES-005 Class A				
☐ 3 / ☐ 10	30 – 88	49.5 / 39.1	-	-
	88 – 216	54.0 / 43.5		
	230 – 1000	56.9 / 46.4	-	-
Limits, ICES-005, Class B				
☒ 3 / ☐ 10	30 – 88	40.0 / 29.5	-	-
	88 – 216	43.5 / 33.1	-	-
	230 – 1000	46.0 / 35.6	-	-

6.1 Test results, 30 – 1000 MHz, FCC Class B and ICES-005 Class B, operation mode 1



Diagram, Peak overview sweep

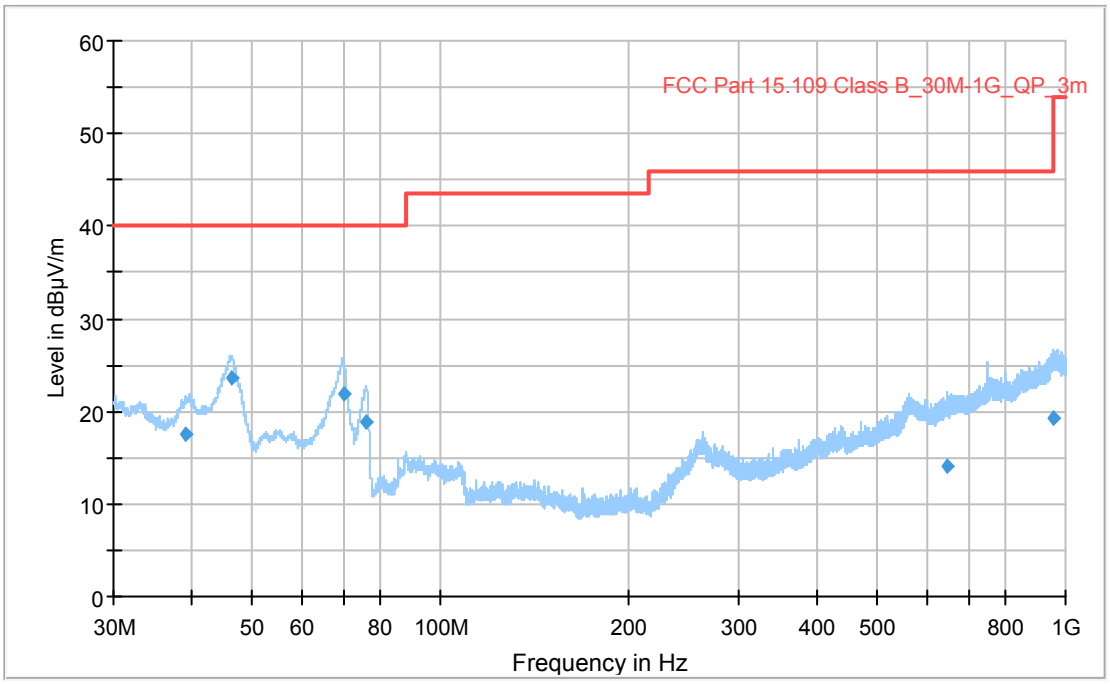
Measurement results, Quasi-peak

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
39.660	17.98	40.00	22.02	1000.0	120.0	100.0	V	83.0
46.350	24.50	40.00	15.50	1000.0	120.0	104.0	V	147.0
69.960	25.20	40.00	14.80	1000.0	120.0	131.0	V	13.0
76.230	21.41	40.00	18.59	1000.0	120.0	100.0	V	-4.0
88.560	11.89	43.52	31.63	1000.0	120.0	104.0	V	15.0
957.390	19.20	46.02	26.82	1000.0	120.0	344.0	V	-1.0

The EUT also fulfil the class B limit for ICES-005, see limit table on previous page.

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

6.2 Test results, 30 – 1000 MHz, FCC Class B and ICES-005 Class B, operation mode 3



Diagram, Peak overview sweep

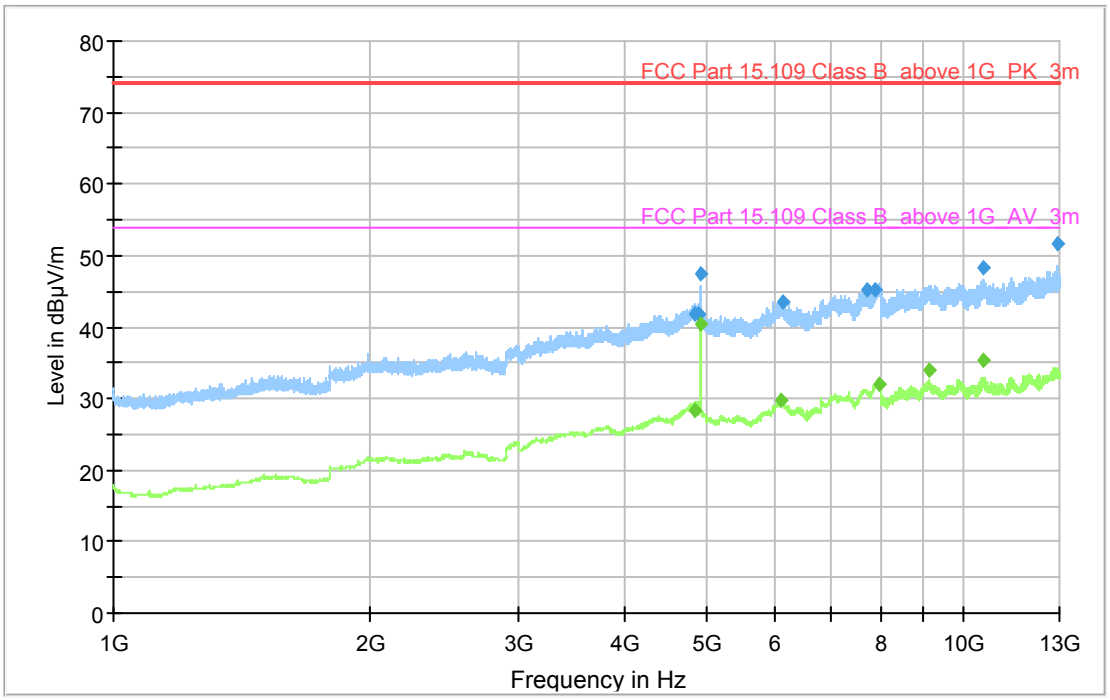
Measurement results, Quasi-peak

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
39.240	17.47	40.00	22.53	1000.0	120.0	120.0	V	31.0
46.410	23.64	40.00	16.36	1000.0	120.0	100.0	V	141.0
69.990	21.81	40.00	18.19	1000.0	120.0	124.0	V	0.0
75.990	18.86	40.00	21.14	1000.0	120.0	100.0	V	-8.0
645.570	14.06	46.02	31.96	1000.0	120.0	200.0	H	147.0
958.290	19.25	46.02	26.77	1000.0	120.0	301.0	V	323.0

The EUT also fulfil the class B limit for ICES-005, see limit table on previous page.

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

6.3 Test results, 1 – 13 GHz, FCC, Class B, operation mode 1



Diagram, Peak and Average overview sweep

Measurement results, Peak and Average

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol
4843.250	41.79	---	74.00	32.21	1000.0	1000.0	100.0	H
4844.500	---	28.22	54.00	25.78	1000.0	1000.0	325.0	V
4890.250	41.77	---	74.00	32.23	1000.0	1000.0	124.0	H
4902.750	---	40.46	54.00	13.54	1000.0	1000.0	139.0	H
4902.750	47.41	---	74.00	26.59	1000.0	1000.0	122.0	H
6100.500	---	29.74	54.00	24.26	1000.0	1000.0	325.0	V
6126.750	43.63	---	74.00	30.37	1000.0	1000.0	233.0	V
7705.500	45.07	---	74.00	28.93	1000.0	1000.0	288.0	H
7870.750	45.19	---	74.00	28.81	1000.0	1000.0	174.0	V
7964.000	---	31.90	54.00	22.10	1000.0	1000.0	172.0	H
9112.750	---	33.83	54.00	20.17	1000.0	1000.0	113.0	H
10563.000	---	35.23	54.00	18.77	1000.0	1000.0	323.0	V
10591.750	48.31	---	74.00	25.69	1000.0	1000.0	157.0	V
12897.000	51.62	---	74.00	22.38	1000.0	1000.0	100.0	H

Result [dBµV/m] = Analyser reading [dBµV] + Antenna factor [1/m] - Amplifier gain [dB] + Cable loss [dB]

6.4 Test equipment

Equipment type	Manufacturer	Model	Inv. No.	Last Cal. date	Cal. interval
Measurement software	Rohde & Schwarz	EMC32 - V10.50.40	--	--	--
Measurement Receiver	Rohde & Schwarz	ESW44	33890	2020-07-08	1 year
Antenna	Chase	CBL 6111A	34200	2020-03-18	3 years
Pre-amplifier	SEMKO	AM1331	7992	2020-06-15	1 year
Horn antenna	Rohde & Schwarz	HF907	31245	2020-01-17	3 years
Pre-amplifier	Bonn	BLMA 0118-M	31246	2020-06-17	1 year
Measurement cable	Huber & Suhner	Sucoflex 106	39122	2020-04-16	1 year
Measurement cable	Rosenberger	LA5-S003-7000	39148	2020-04-01	1 year
Measurement cable	Rosenberger	LA5-S003-7000	39163	2021-02-04	1 year