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File Number **24/36403479M1**

TEST REPORT
Radiofrequency

Petitioner's Reference:	Verisure Sàrl		
Company Address:	Chemin Jean-Baptiste Vandelle 3, Versoix, Geneva, Switzerland		
Represented by:	James Barnett		
PMN:	Wi-Fi Extender		
Brand:	Verisure	HMN:	GWL-WXTND 489937
Sample #2:	3N75 UKDZ	Applus Id:	25556-0002
Result:	**complies**		

It has been tested and complies with the applicable standard. See test result summary section.

Applicable Standard:	
EMC standard/s:	**FCC 47 CFR Part 15 Subpart C** [1] **FCC 47 CFR Part 15 Subpart E** [1] **ANSI C63.10 (2013)**

[v1] *The latest modifications of the standard, published at the date of the tests reported in this document, have been considered.*

Dates and Test Site:	Applus Barcelona, Bellaterra
Equipment Reception Date	December 12, 2023
Test Initial Date:	February 9, 2024
Test Final Date:	February 26, 2024
Modification Description:	M1

This report replaces and supersedes the report 24/36403479 dated on October 2, 2024.
Modifications performed: File number from section 3.3 is updated. Page 8.
Modifications performed: Version of ANSI C63.10:2013 is specified in applicable standard. Page 1.
It is responsibility of the petitioner to replace the previous version with this one.

Test Manager: Javier Miguel Nadales Lisbona
Date of issue: Bellaterra, October 20, 2024

JORGE GEIS ESTRADA
Firmado digitalmente por JORGE GEIS ESTRADA
Fecha: 2024.10.22 14:51:34 +02'00'

EMC & Wireless Technical Manager
Electrical and Electronics
LGAI Technological Center S.A.

ENAC
ENSAYO
ISO 17025
Nº9 / LE894

1 TEST RESULTS SUMMARY

Test Description	Sample #	DUT Test Modes	Results	Criteria Note
ANTENNA REQUIEREMENTS FCC Part 15.203	#1	Mode 1	PASS	CN4
RADIOFREQUENCY RADIATED EMISSIONS FCC Part 15.247 (d)	#1	Mode 1	PASS	CN4

Table 1: Test description

The test results are shown in detail on the following pages.

The criteria to give conformity in those cases where it is not implicit in the standard or specification will be, for EMC emissions tests, a non-simple binary decision rule will be followed with a safety zone equal to the value of the uncertainty (w = U).

In this case, the upper limit of the value of the probability of false acceptance, according to ILAC G8, is 2.5 % and the criteria notes are:

CN1: The measured results are above the upper limit, even considering the uncertainty interval.
CN2: The measured results are above the specified limits, but within the uncertainty interval. It is therefore not possible to state compliance based on the 95% level of confidence. However, the results indicate that non-compliance is more probable than compliance.
CN3: The measured results are below the specified limits, but within the uncertainty interval. It is therefore not possible to state compliance based on the 95% level of confidence. However, the results indicate that compliance is more probable than non-compliance.
CN4: The measured results are within the limits, including the uncertainty interval.

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3 GENERAL DESCRIPTION OF TEST ITEMS

3.1 EQUIPMENT DESCRIPTION

This information has been provided by the customer and it is not covered by the accreditation. LGAI does not assume any responsibility from it.

EQUIPMENT DESCRIPTION			
Description	Wi-Fi Extender which can also be controlled and monitored over our proprietary radio protocol over Sub-GHz ISM (SRD).		
EUT Version	**FVIN**	**HVIN**	
	1.0.6	A1	
Power supply	1 PH + N	120 V	60 Hz
Equipment Size	**Length**	**Width**	**Height**
	17.5 cm	10.5 cm	2 cm

Table 2: Equipment description

Technology #1	ISM
Modulation	GFSK
Operating Frequency Band	902 – 928 MHz
Maximum RF Output Power [dBm]	14
Operating Channel(s) Width(s) [MHz]	1
Equipment Type	DTS
Number of Hopping Channels	N/A
Emission Designator	--
FCC ID	2A93W-GWL-WXTND

Table 3: Technology #1 description

Technology #2	WiFi2G4
Modulation	B, G & N20
Operating Frequency Band	2400 MHz – 2483.5 MHz
Maximum RF Output Power [dBm]	30
Operating Channel(s) Width(s) [MHz]	20
Equipment Type	DTS
Number of Hopping Channels	N/A
Emission Designator	--
FCC ID	2A93W-GWL-WXTND

Table 4: Technology #2 description

Technology #3	WiFi5G
Modulation	A, N & AC
Operating Frequency Band U-NII-1	5150 MHz – 5250 MHz
Operating Frequency Band U-NII-2A	5250MHz – 5350 MHz
Operating Frequency Band U-NII-2C	5470 MHz – 7250 MHz
Operating Frequency Band U-NII-3	5725 MHz – 5850 MHz
Maximum RF Output Power [dBm]	30
Operating Channel(s) Width(s) [MHz]	20, 40 & 80
Equipment Type	DTS
Number of Hopping Channels	N/A
Emission Designator	--
FCC ID	2A93W-GWL-WXTND

Table 5: Technology #3 description

RF FEATURES					
Description	**Communication Technology**	**Radio Chipset**	**Brand**	**Module Model**	**Antenna Gain [dBi]**
	ISM	Si4463-C2A-GM	Silicon Labs	N/A	-1
	WiFi 2G4	SYN4375B4XKFFBG/ BCM4375B4XKFFBG[2]	Synaptics / Broadcom[2]	N/A	+2.57[1]
	WiFi 5G	SYN4375B4XKFFBG/ BCM4375B4XKFFBG[2]	Synaptics / Broadcom[2]	N/A	+2.72[1]

Table 6: RF Features

Note1[1]: For MIMO transmission mode, antenna gain calculations are based on KDB 662911 D01 Multiple Transmitter Output v02r01. Considering that the customer has declared Cyclic Delay Diversity mode.

Note2: This is not dual source, just that Synaptics purchased this business line from Broadcom and the PN is renamed, some documentation may refer to those 2 PN

3.2 TEST CONFIGURATION

<table>
<tr><th colspan="4">DUT Operation Modes</th></tr>
<tr><th>Mode #</th><th colspan="3">Description</th></tr>
<tr><td rowspan="2">1</td><td colspan="3">The customer provides test guidance. Equipment under test is connected to a Rpi. Use the Rpi to set up continuous modulated transmission on individual channels on the EUT.</td></tr>
<tr><td colspan="3"><table>
<tr><th>Modulation</th><th>Frequency [MHz]</th><th>Script</th></tr>
<tr><td>GFSK</td><td>925.5</td><td>:rf:channel: 5; // :rf:carrier:modulated;</td></tr>
<tr><td>Mode G</td><td>2462</td><td>python wltx.py -- Ch 11 -- Rate 6 -- Bw 20</td></tr>
<tr><td>Mode A20</td><td>5180</td><td>python wltx.py -- Ch 36 – Rate 54 -- Bw 20 --DualTx</td></tr>
</table></td></tr>
<tr><td rowspan="2">2</td><td colspan="3">The customer provides test guidance. Equipment under test is connected to a Rpi. Use the Rpi to set up continuous modulated transmission on individual channels on the EUT.</td></tr>
<tr><td colspan="3"><table>
<tr><th>Modulation</th><th>Frequency [MHz]</th><th>Script</th></tr>
<tr><td>GFSK</td><td>925.5</td><td>:rf:channel: 5; // :rf:carrier:modulated;</td></tr>
<tr><td>Mode G</td><td>2462</td><td>python wltx.py -- Ch 11 -- Rate 6 -- Bw 20</td></tr>
<tr><td>Mode A20</td><td>5745</td><td>python wltx.py -- Ch 149 – Rate 54 -- Bw 20 --DualTx</td></tr>
</table></td></tr>
</table>

Table 7: Test Configuration

3.3 PHOTOGRAPHS

Photographs identifying the equipment under test and its auxiliaries, as well as assembly photographs for radiated and conducted tests, can be found in the document with ID: 24/36403478M2

3.4 TEST FACILITIES ID

TEST FACILITIES ID	
FCC Test Firm Registration Number:	507478
ISED Assigned Code:	5766A
CABID	ES0001

Table 8: Test facilities ID

3.5 COMPETENCES AND GUARANTEES

LGAI Technological Center, S.A. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 9/LE894.
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4 TEST RESULTS

4.1 ANTENNA REQUIREMENT

4.1.1 Requirements

For intentional device, according to FCC 47 CFR, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to RSS-Gen, the applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

4.1.2 Summary Test Results

The laboratory checks that the sample has an internal antenna, so that no hardware modifications are possible. Complying with the requirements of this section.

4.2 RADIO-FREQUENCY RADIATED EMISSIONS

4.2.1 Test Setup Required

4.2.1.1 Tabletop equipment

Fig. 1: Radio-frequency radiated emissions setup of table top equipment.

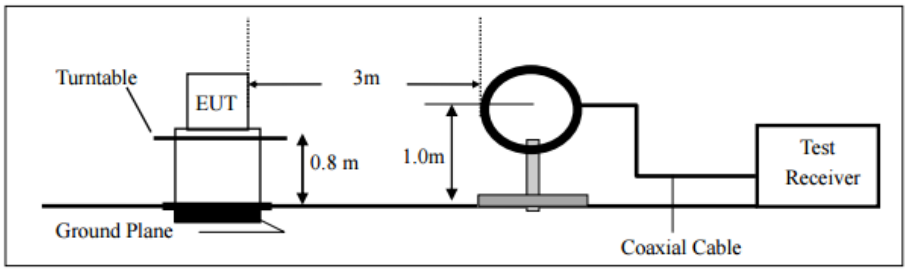


Fig. 2: Radio-frequency radiated emissions of table top equipment from 9 kHz to 30 MHz

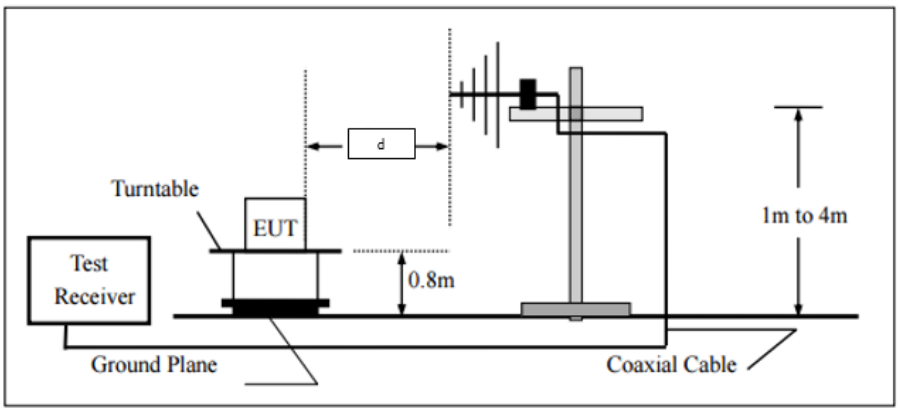


Fig. 3: Radio-frequency radiated emissions of table top equipment from 30 MHz to 1000 MHz

Distance "d" depends on test chamber.

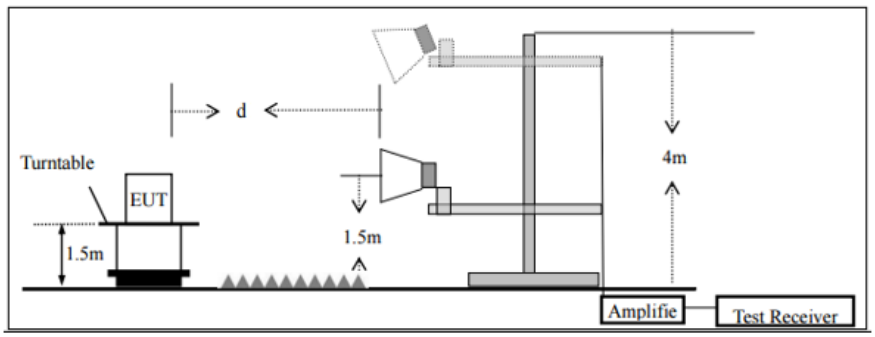


Fig. 4: Radio-frequency radiated emissions setup of table top equipment above 1 GHz

Distance "d" depends on test chamber.

4.2.2 Requirements

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in § 15.207.

The provisions of § 15.205 apply to intentional radiators operating under this section.

Only spurious emissions are permitted in any of the frequency bands listed below:

Frequency [MHz]	Frequency [MHz]	Frequency [MHz]	Frequency [GHz)]
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
(1)0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	(2)
13.36–13.41			

Table 9. Restricted bands of operation

Note 1: Until February 1, 1999, this restricted band shall be 0.490–0.510 MHz.
Note 2: Above 38.6

According to § 15.209(a) and RSS-Gen section 8.9, the radiated emission limits for restricted bands are:

Frequency Range [MHz]	Quasi-peak detector (QP) [dBµV/m]	Peak detector (PK) [dBµV/m]		Average detector (AVG) [dBµV/m]	
	3 m measuring distance	3 m measuring distance	1 m measuring distance[1]	3 m measuring distance	1 m measuring distance[1]
0.009 – 0.490	20log(2400/F[kHz]) + 80	N/A	N/A	N/A	N/A
0.490 – 1.705	20log(24000/F[kHz]) + 40	N/A	N/A	N/A	N/A
1.705 - 30	20log(24000/F[kHz]) + 40	N/A	N/A	N/A	N/A
30 – 88	40.0	N/A	N/A	N/A	N/A
88 – 216	43.5	N/A	N/A	N/A	N/A
216 – 960	46.0	N/A	N/A	N/A	N/A
960 – 1000	54.0	N/A	N/A	N/A	N/A
1000 – 18000	N/A	74	N/A	54	N/A
18000 - 40000	N/A	N/A	83.54	N/A	63.54

Table 10: Radio-frequency radiated emissions requirements

Note 1: The limits has been modified according to the applicable standard applying the formula: $L_2 = L_1 - 20log\,(d_2/d_1)$*, where:*
L_2: New Limit.
L_1: Limit at 3 meters.
d_1: 3 meters (standard distance).
d_2: 1 meter (new measurement distance).

According to FCC Part 15 Subpart C FCC 15.247, the limits for unrestricted bands are:

Frequency Range [MHz]	Test Mode	Field strength [µV/m]	Measurement distance [m]
30 – 88	QPK	-20 dBc / -30 dBc	3
88 – 216			
216 – 960			
Above 960	Peak power / RMS averaging		

Table 11. Radiated Emission limits. Unrestricted bands

4.2.2.1 Receiver Parameters

According to standard ANSI C63.4:2014:

Frequency Range [MHz]	Detector	Resolution Bandwidth [MHz]	Video Bandwidth [MHz]
0.009 – 0.15	Quasi-peak (QP)	$200 \cdot 10^{-6}$	$1 \cdot 10^{-3}$
0.15 – 30	Quasi-peak (QP)	$9 \cdot 10^{-3}$	$30 \cdot 10^{-3}$
30 – 1000	Quasi-peak (QP)	0.12	0.30
Above 1000	Peak (PK)	1	3
	Average (AVG)	1	10

Table 12: Receiver parameters – Radio-frequency radiated emissions

4.2.3 Test Environmental Conditions

Test Date	Technician	Supervisor	Temperature [ºC]	Humidity [%]	Atm. Pressure [mbar]
09/02/2024	J.M LLauradó	--	20.9	47.2	1011
23/02/2024	J.M LLauradó	--	21.7	49.1	1019
25/02/2024	J.M LLauradó	--	19.5	51.4	1014
26/02/2024	J.M LLauradó	--	18.1	52.1	1019

Table 13: Test environmental conditions – Radio-frequency radiated emissions

4.2.4 Summary Test Results

Frequency Range [MHz]	Test Area	Distance [m]	Emissions	Results
9 kHz – 30 MHz	SAC 1	3 m	QP < Limit - I	PASS
30 MHz – 1 GHz	SAC 1	3 m	Limit - I <= QP < Limit	PASS
1 GHz – 3.5 GHz	SAC 1	3 m	PK < Limit - I AVG < Limit - I	PASS
3.5 GHz – 8 GHz	SAC 1	3 m	PK < Limit - I AVG < Limit - I	PASS
8 GHz – 18 GHz	SAC 1	3 m	PK < Limit - I AVG < Limit - I	PASS
18 GHz – 26 GHz	SAC 1	1 m	PK < Limit - I AVG < Limit - I	PASS
18 GHz – 40 GHz	SAC 1	1 m	PK < Limit - I AVG < Limit - I	PASS

Table 14: Summary test results – Radio-frequency radiated emissions

4.2.5 Test Results

4.2.5.1 Ambient Levels.Frequency range: 9 kHz – 30 MHz

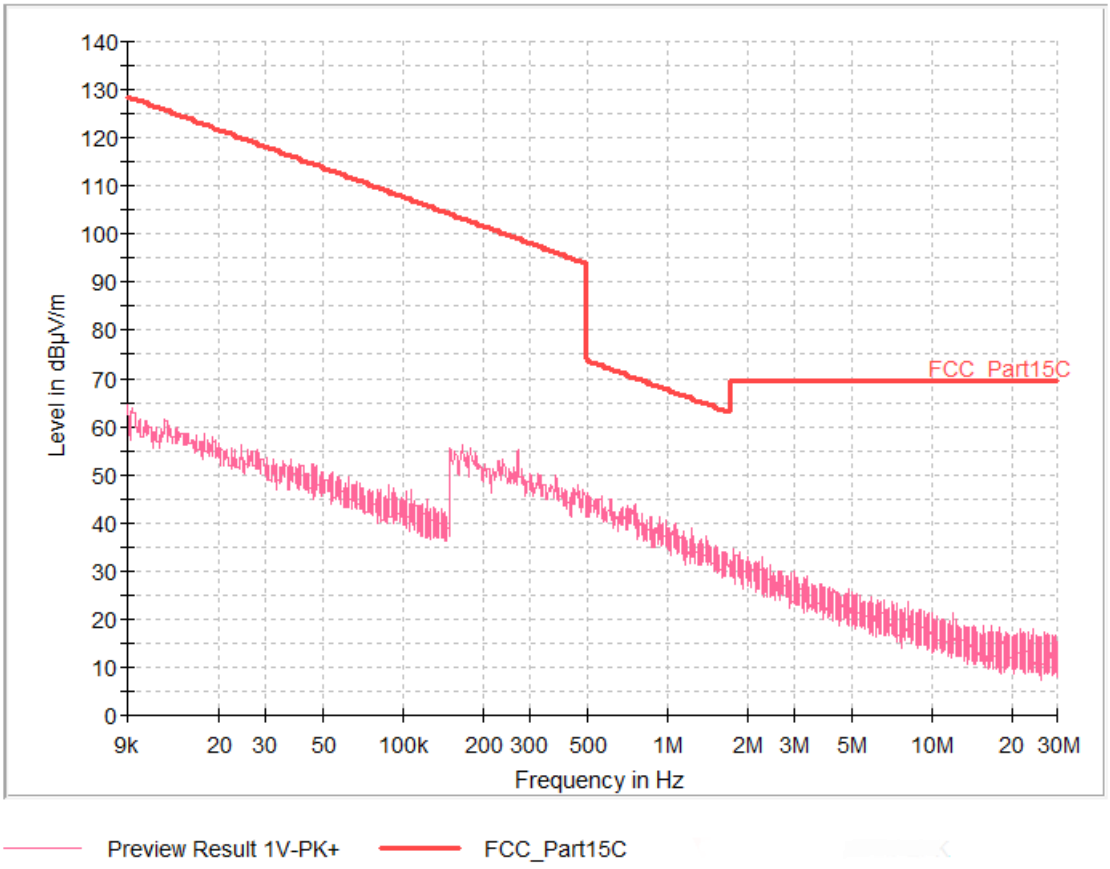


Fig. 5: Ambient level. All Mode. Frequency range: 9 kHz – 30 MHz - Axis X

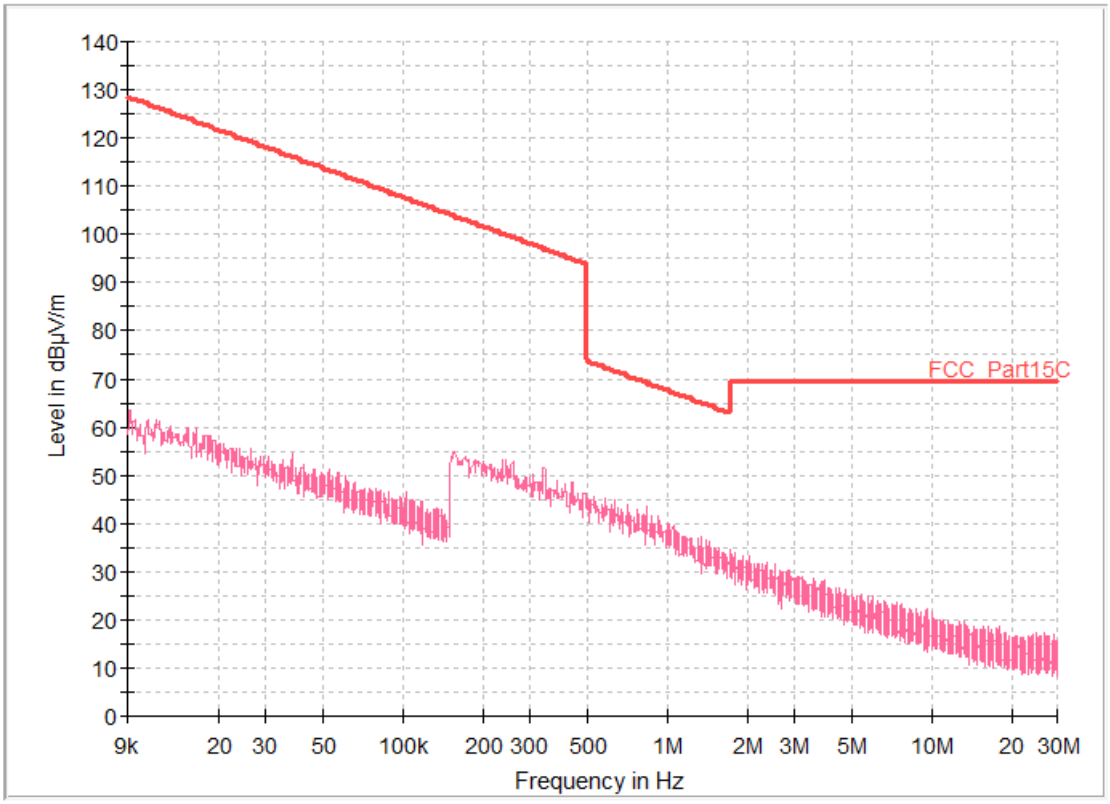


Fig. 6: Ambient level. All Mode. Frequency range: 9 kHz – 30 MHz - Axis Y

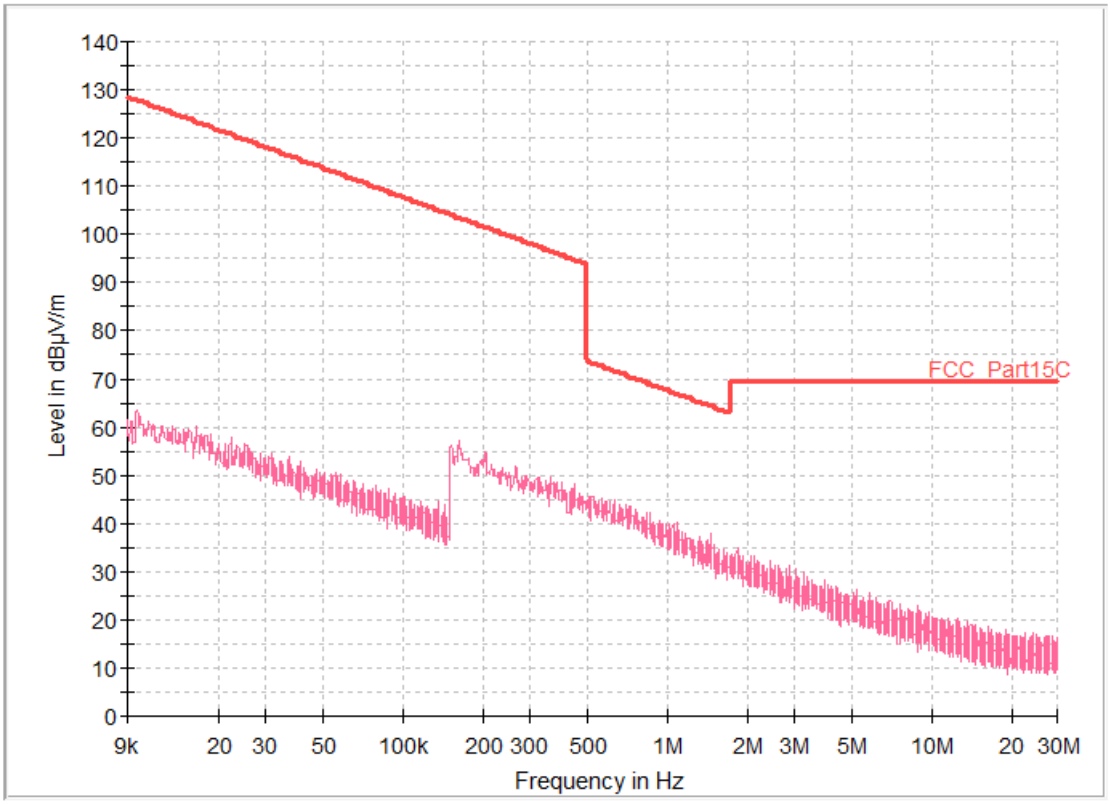


Fig. 7: Ambient level. All Mode. Frequency range: 9 kHz – 30 MHz - Axis Z

4.2.5.2 Ambient Levels. Frequency range: 30 MHz – 1 GHz

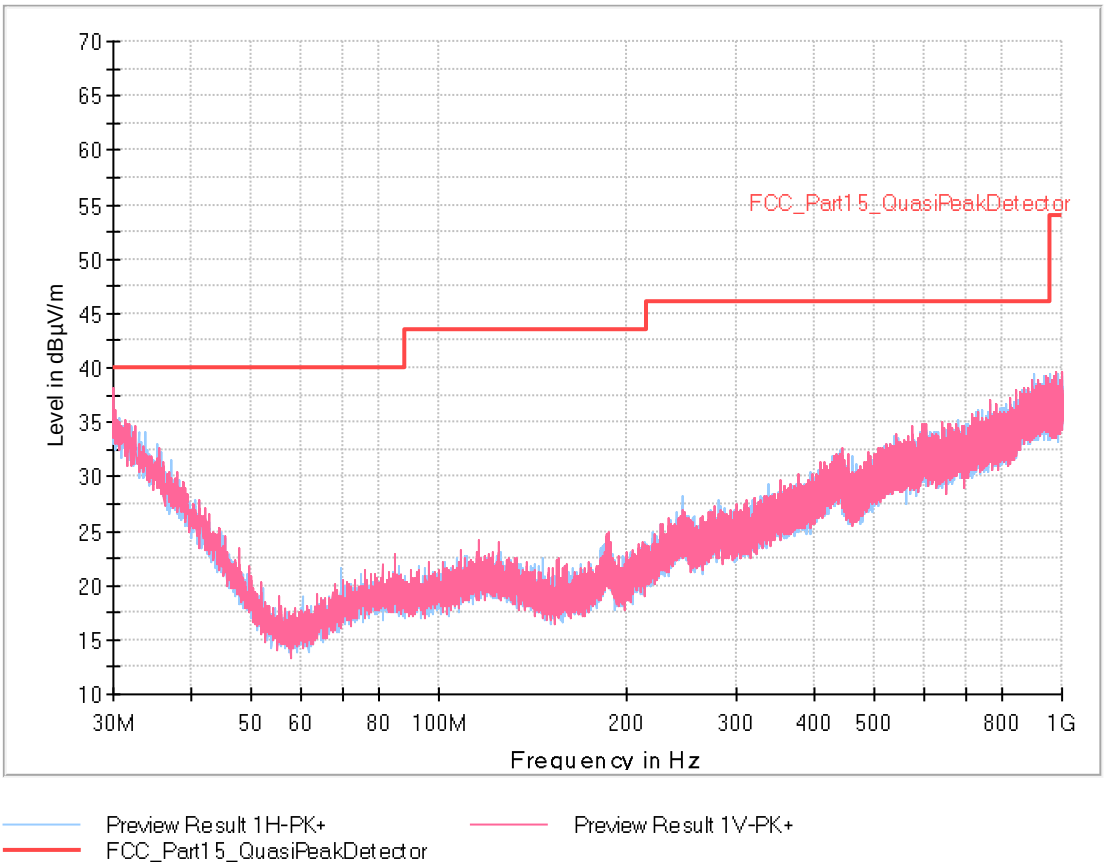


Fig. 8: Ambient level. All Mode. Frequency range: 30 MHz – 1 GHz

4.2.5.3 Ambient Levels. Frequency range: 1 GHz – 3.5 GHz

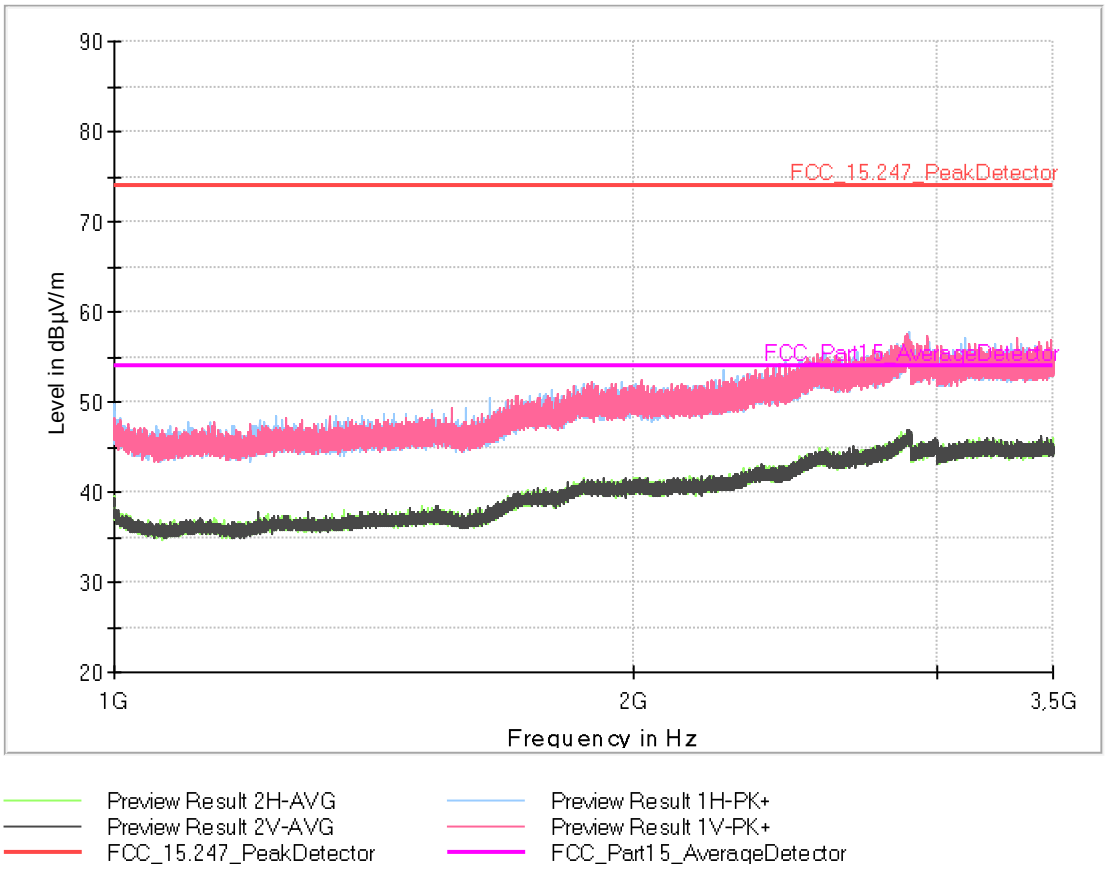
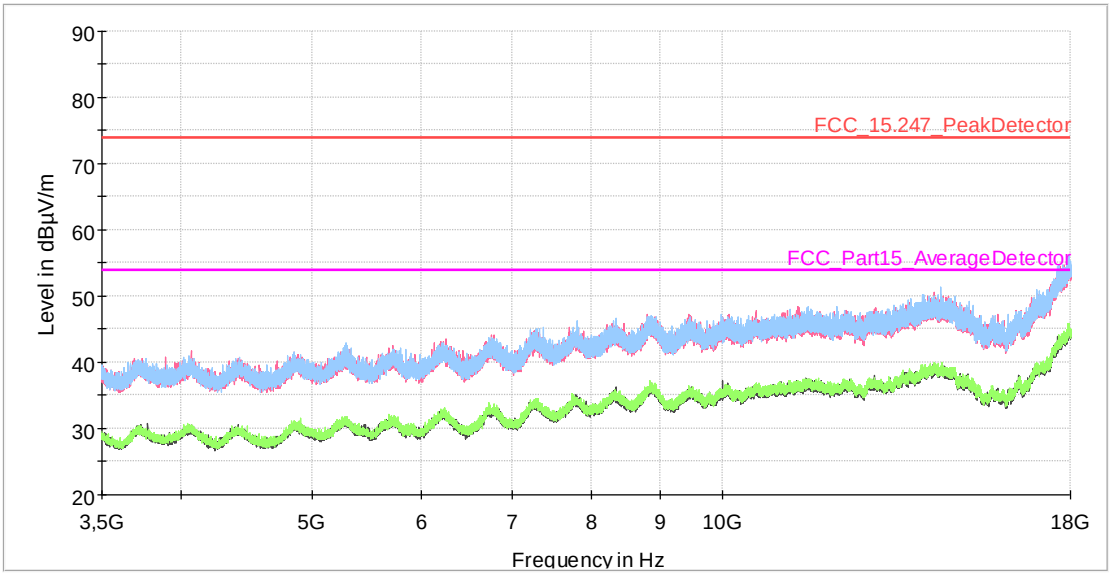


Fig. 9: Ambient level. All Mode. Frequency range: 1 GHz – 3.5 GHz

4.2.5.4 Ambient Levels.Frequency range: 3.5 GHz – 8 GHz



Preview Result 2V-AVG
Preview Result 2H-AVG
FCC_15.247_PeakDetector
Preview Result 1V-PK+
Preview Result 1H-PK+
FCC_Part15_AverageDetector

Fig. 10: Ambient level. All Mode. Frequency range: 3.5 GHz – 8 GHz

4.2.5.5 Ambient Levels. Frequency range: 8 GHz – 18 GHz

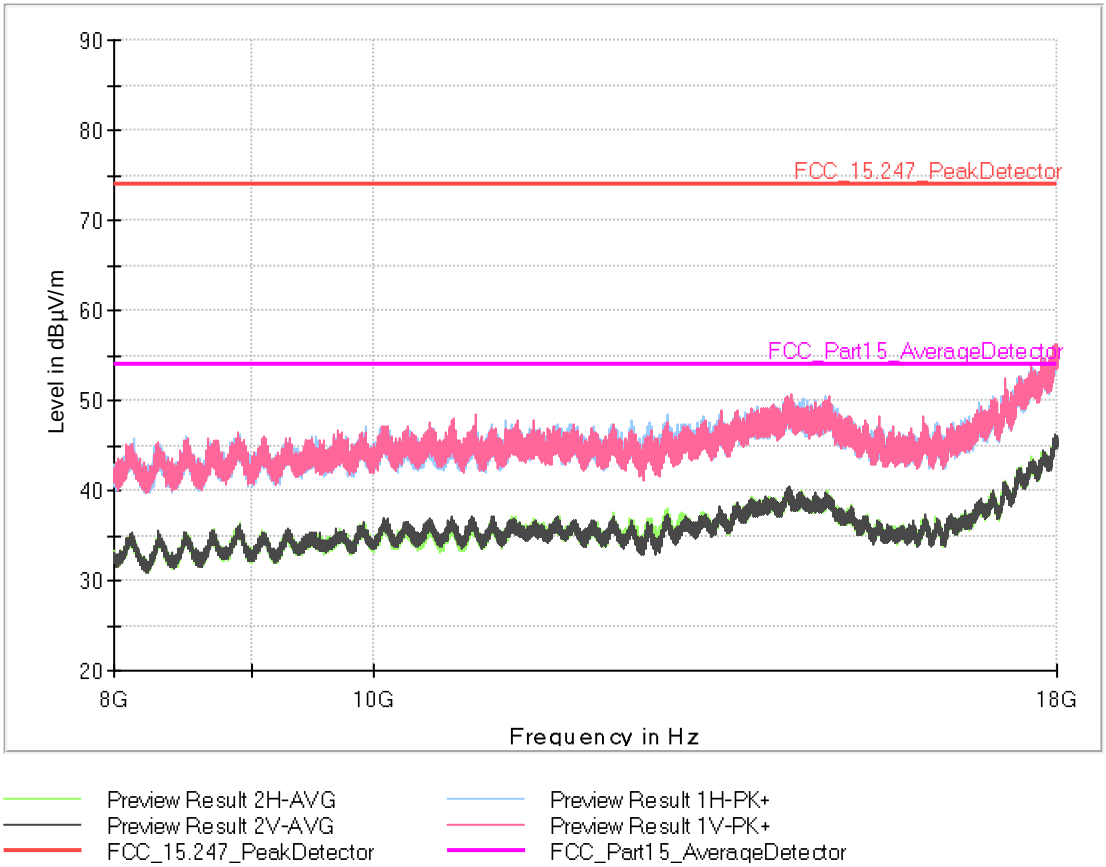


Fig. 11: Ambient level. Mode 2. Frequency range: 8 GHz – 18 GHz

4.2.5.6 Ambient Levels. Frequency range: 18 GHz – 26 GHz

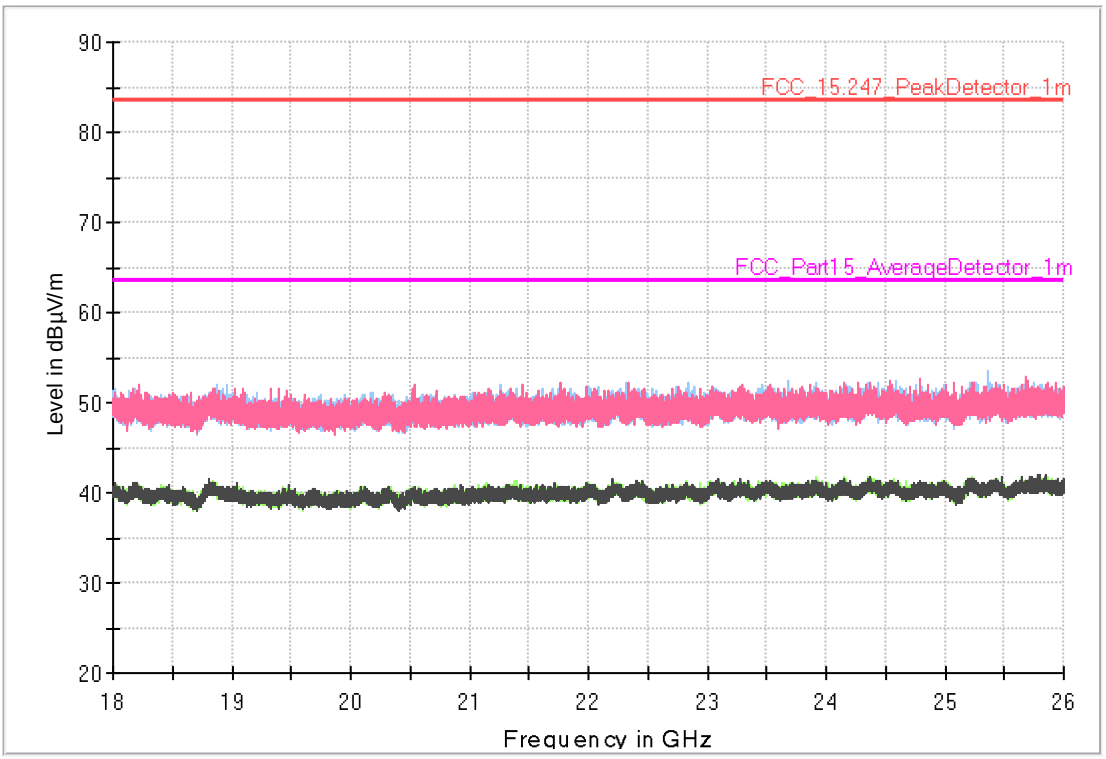


Fig. 12: Ambient level. All Mode. Frequency range: 18 GHz – 26 GHz

4.2.5.7 Ambient Levels. Frequency range: 26 GHz – 40 GHz

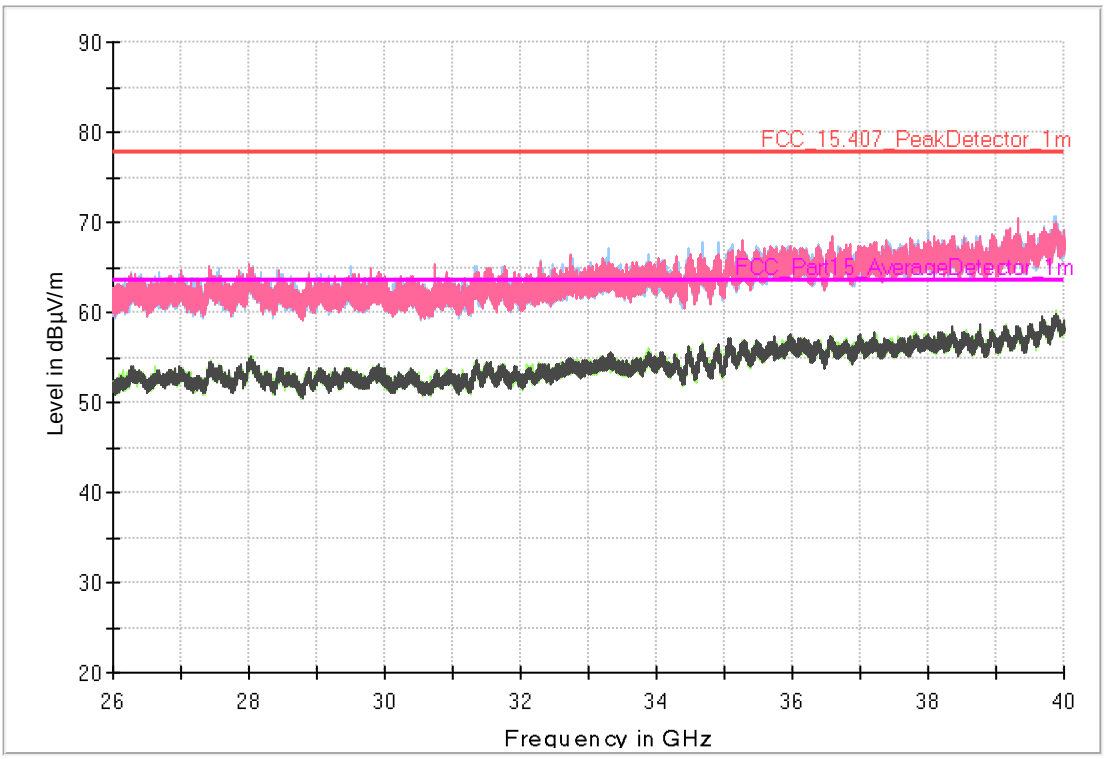


Fig. 13: Ambient level. Mode 1. Frequency range: 26 GHz – 40 GHz

4.2.5.8 Sample #1. All mode[1]. Frequency range: 9 kHz – 30 MHz

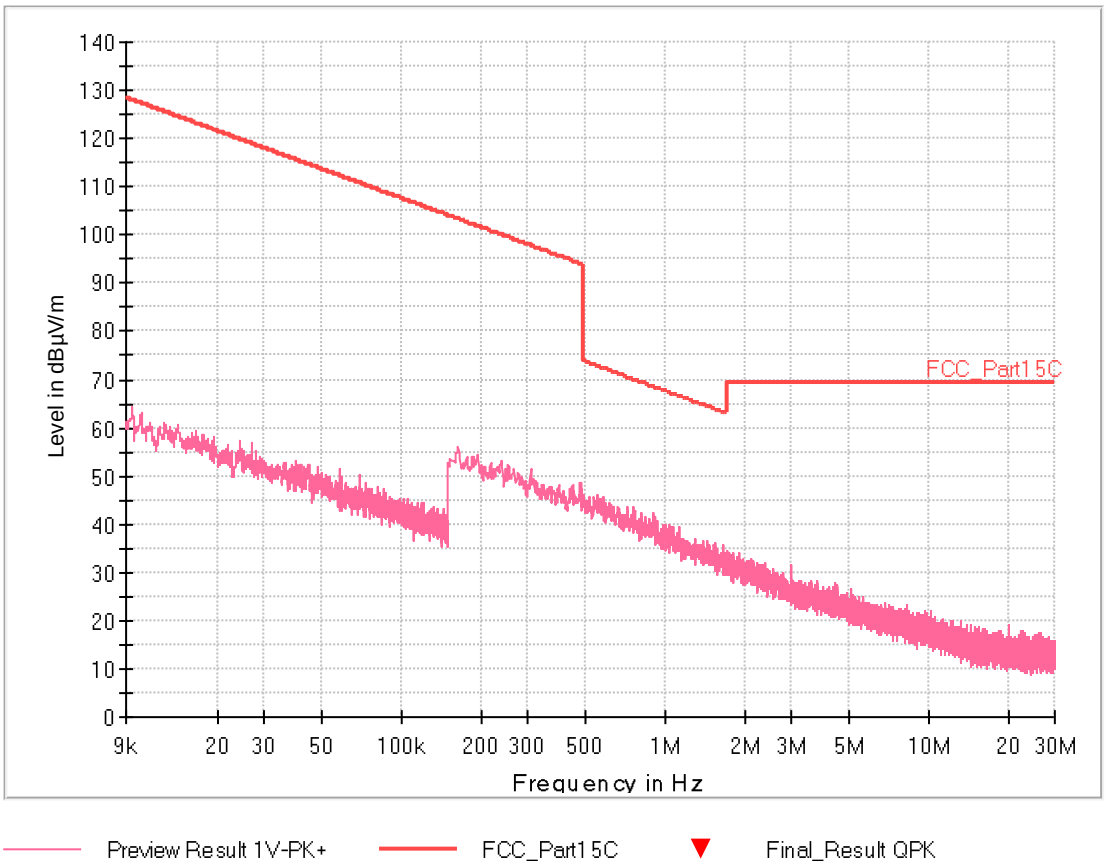


Fig. 14: All Mode – All Channel. Frequency range: 9 kHz – 30 MHz – Axis X

FINAL MEASUREMENTS

No spurious detected. All emissions are below of the QPK limit

Note [1]: This frequency range has been measured for mode 1 and mode 2 and the results obtained are very similar between them. Therefore, the radiated emissions in this frequency range do not depend on the operation mode what the EUT is configured. The above graph is taken as the most representative result.

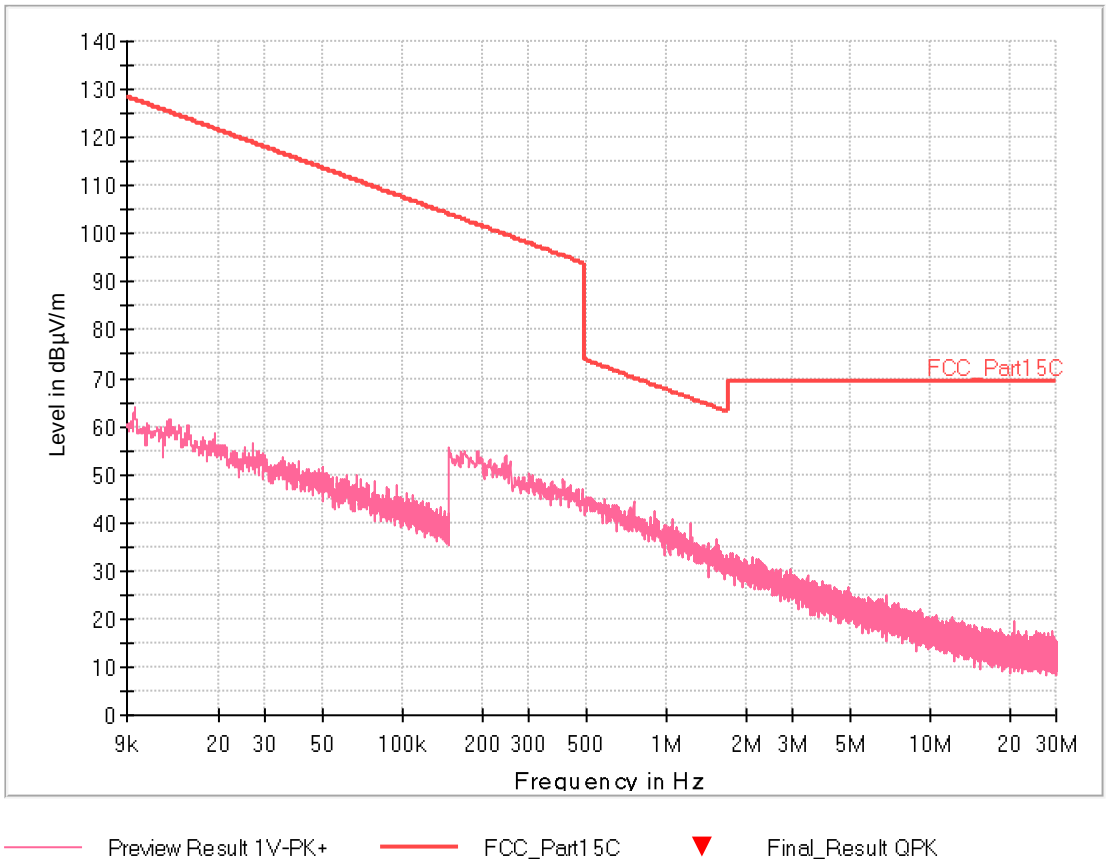


Fig. 15: All Mode. Frequency range: 9 kHz – 30 MHz – Axis Y

FINAL MEASUREMENTS

No spurious detected. All emissions are below of the QPK limit

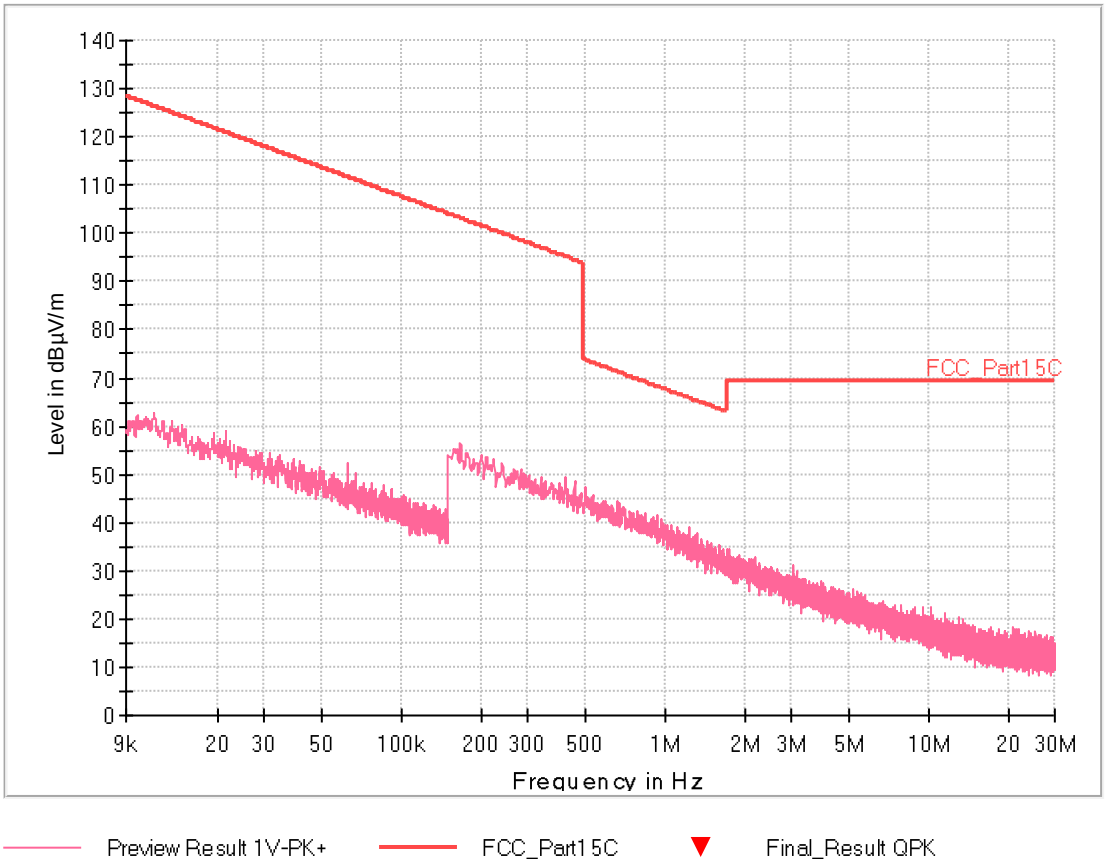


Fig. 16: All Mode. Frequency range: 9 kHz – 30 MHz – Axis Z

FINAL MEASUREMENTS

No spurious detected. All emissions are below of the QPK limit

4.2.5.9 Sample #1. Mode 1. Frequency range: 30 MHz – 1 GHz

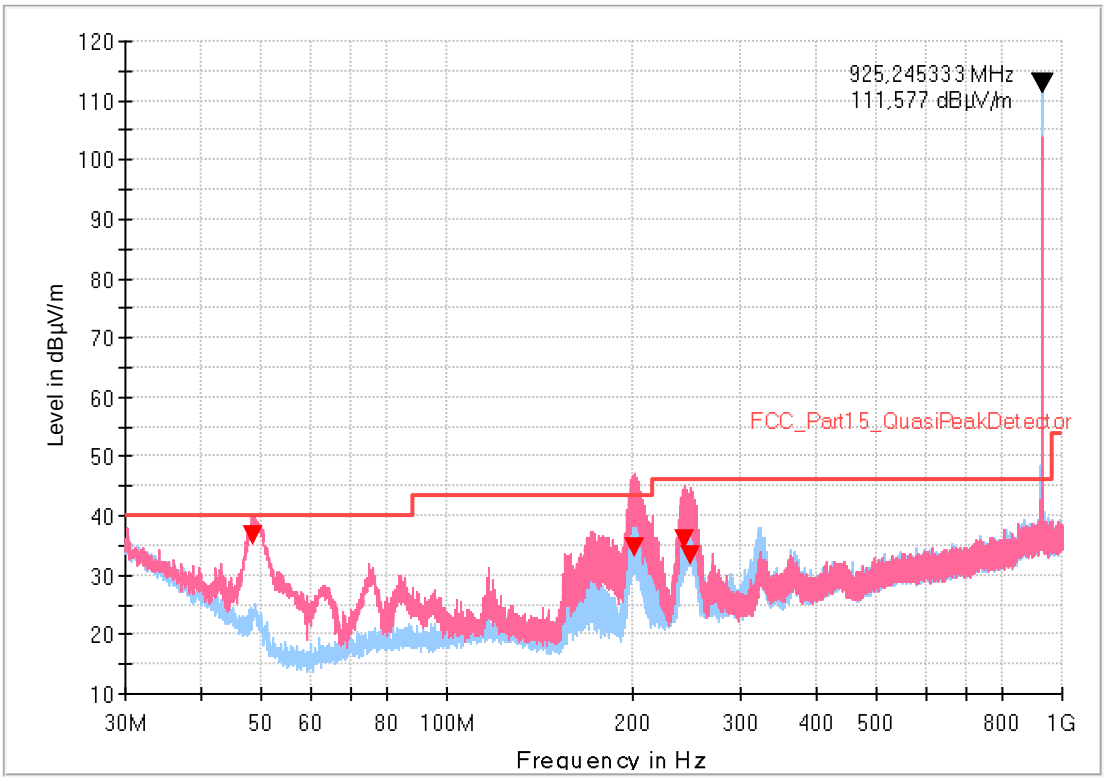


Fig. 17: Mode 1. Frequency range: 30 MHz – 1GHz

FINAL MEASUREMENTS

Frequency [MHz]	QuasiPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
48.370	36.6	40.0	3.4	100.0	V	0.0	13.1
201.950	34.6	43.5	8.9	105.0	V	11.0	14.9
242.920	36.0	46.0	10.0	103.0	V	280.0	18.5
249.060	33.3	46.0	12.7	162.0	V	312.0	18.6

Table 15: Mode 1. Frequency range: 30 MHz – 1 GHz

4.2.5.10 Sample #1. Mode 1. Frequency range: 1 GHz – 3.5 GHz

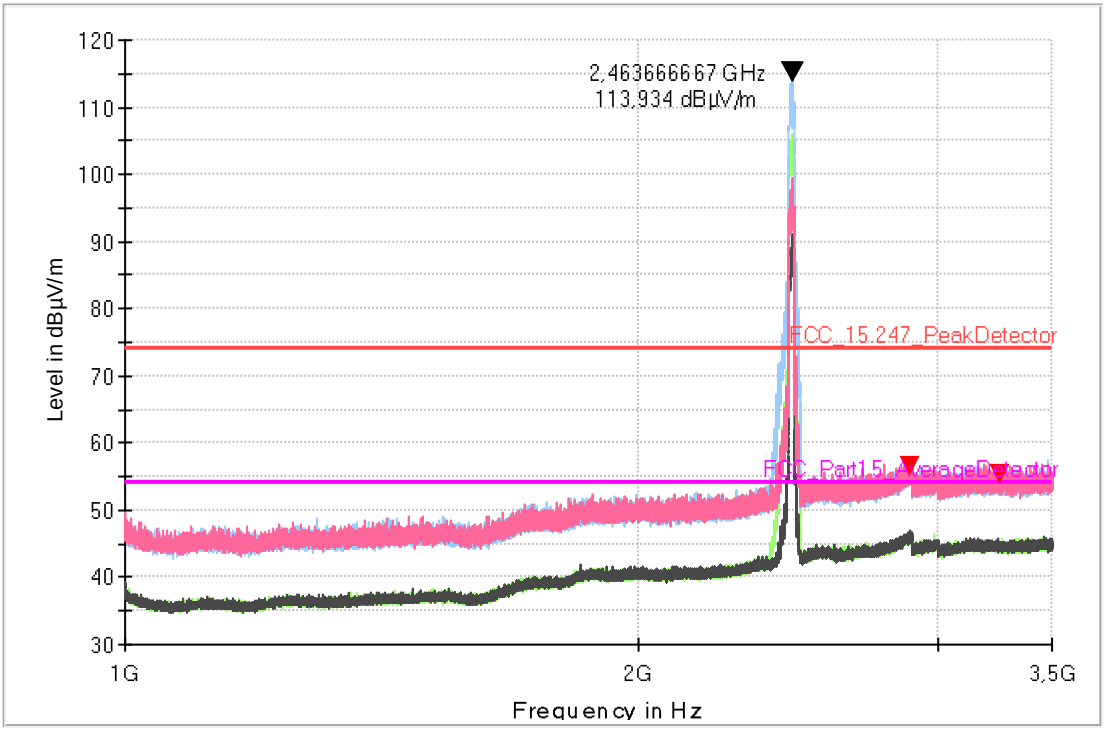


Fig. 18: Mode 1. Frequency range: 1 GHz – 3.5 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
2892.420[1]	56.4	74.0	17.6	221.0	H	35.0	35.5
3262.830[1]	55.4	74.0	18.6	151.0	V	351.0	35.2

Table 16: Mode 1. Frequency range: 1 GHz – 3.5 GHz

Note [1]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.5.11 Sample #1. Mode 1. Frequency range: 3.5 GHz – 8 GHz

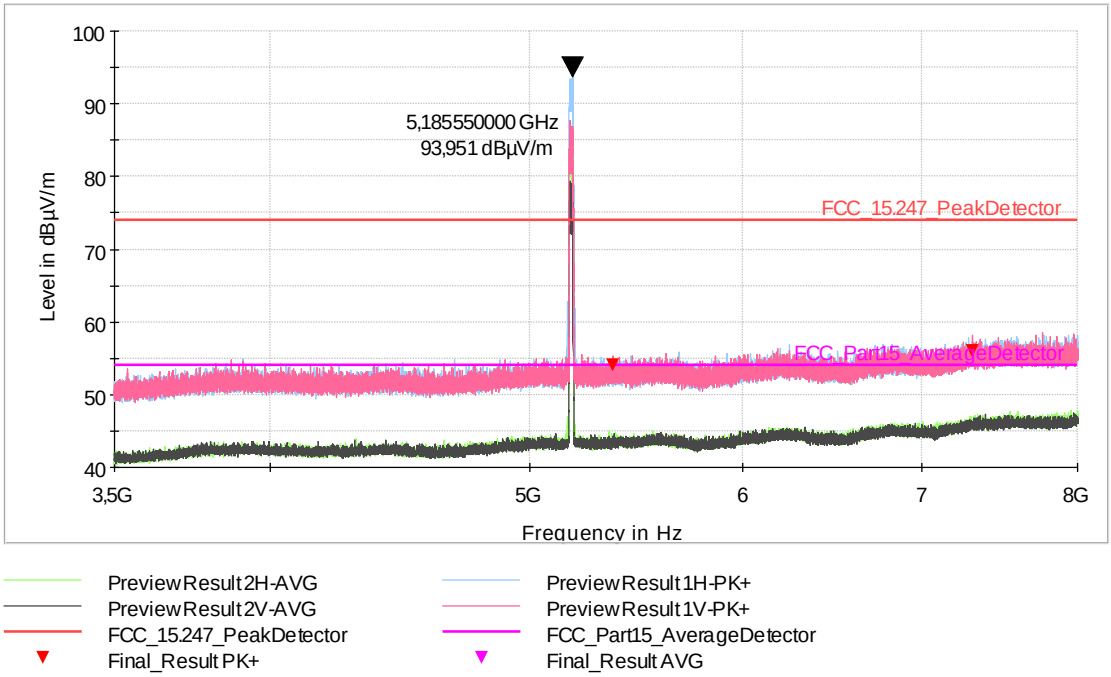


Fig. 19: Mode 1. Frequency range:3.5 GHz – 8 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
5368.400[1]	54.1	74.0	19.9	330.0	V	0.0	6.7
7310.300[1]	56.1	74.0	17.9	350.0	V	178.0	10.1

Table 17: Mode 1. Frequency range:3.5 GHz – 8 GHz

Note [1]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.5.12 Sample #1. Mode 1. Frequency range: 8 GHz – 18 GHz

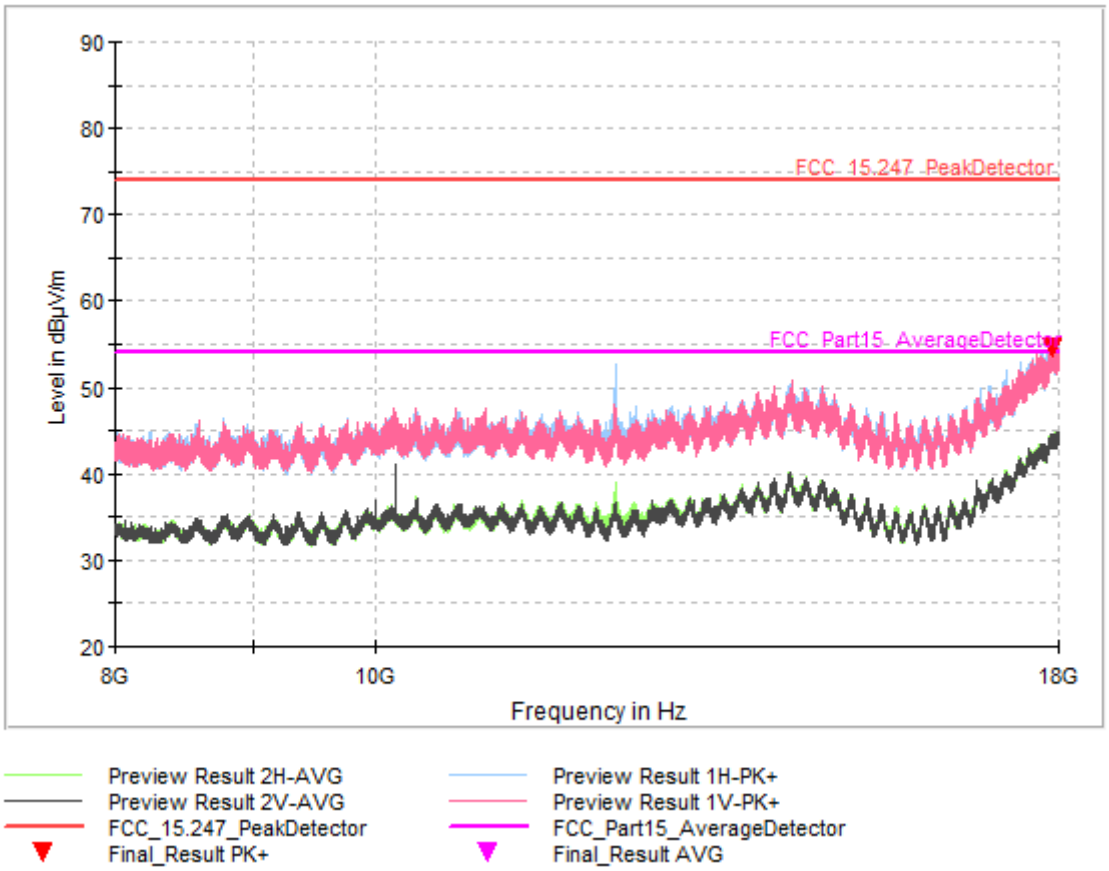


Fig. 20: Mode 1. Frequency range: 8 GHz – 18 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
17900.670[1]	54.5	74.0	19.5	330.0	H	23	6.7

Table 18: Mode 1. Frequency range: 8 GHz – 18 GHz

Note [1]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.5.13 Sample #1. Mode 2. Frequency range: 30 MHz – 1 GHz

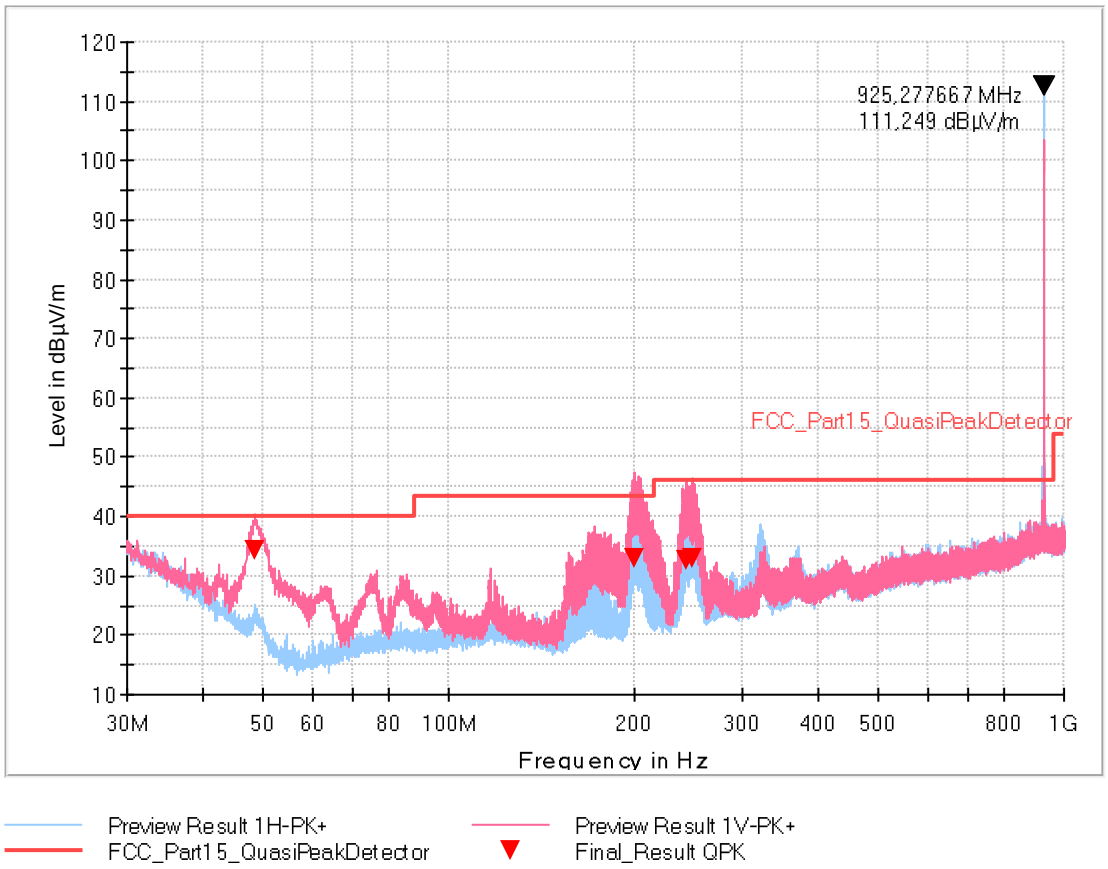


Fig. 21: Mode 2. Frequency range: 30 MHz – 1GHz

FINAL MEASUREMENTS

Frequency [MHz]	QuasiPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
48.400	34.2	40.0	5.8	102.0	V	46.0	13.1
200.780	33.1	43.5	10.4	105.0	V	0.0	14.7
242.500	32.5	46.0	13.5	112.0	V	0.0	18.5
248.960	33.0	46.0	13.0	105.0	V	288.0	18.6

Table 19: Mode 2. Frequency range: 30 MHz – 1 GHz

4.2.5.14 Sample #1. Mode 2. Frequency range: 1 GHz – 3.5 GHz

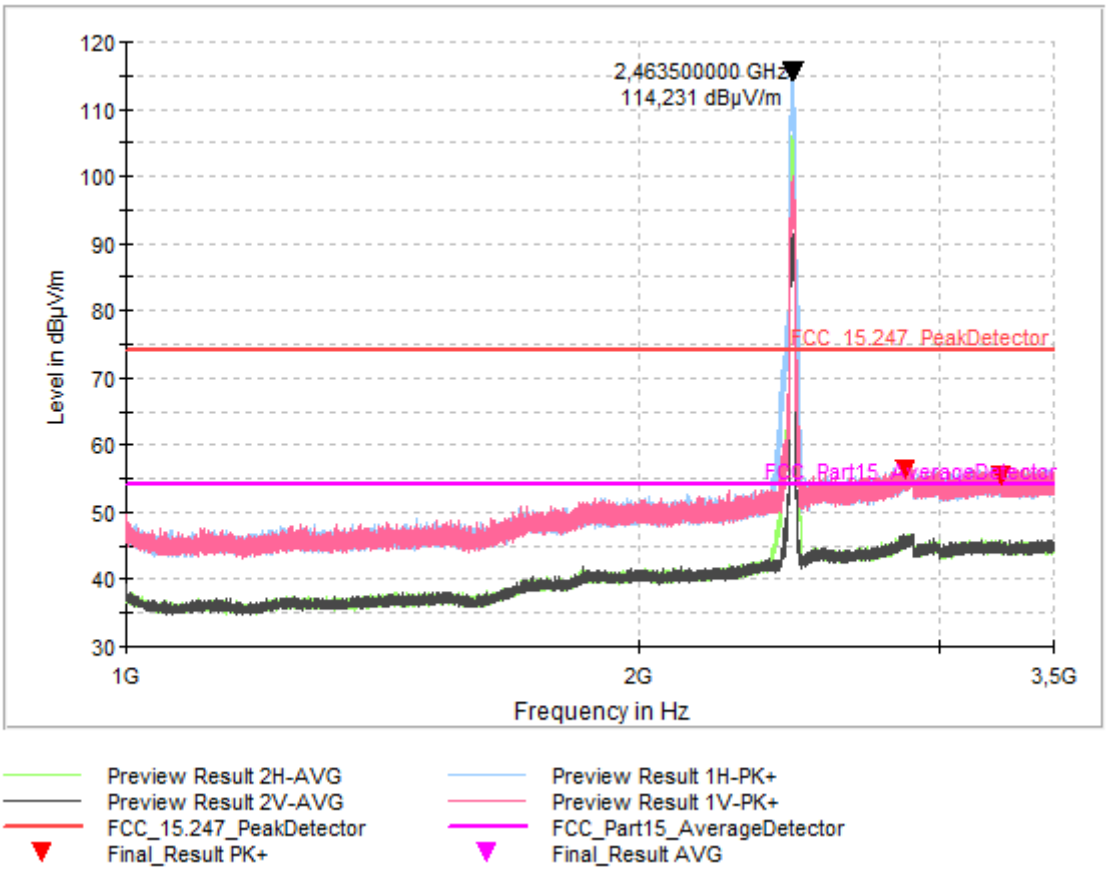


Fig. 22: Mode 2. Frequency range: 1 GHz – 3.5 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
2865.080[1]	56.2	74.0	17.8	329.0	V	321.0	33.4
3261.250[1]	55.4	74.0	18.6	210.0	V	0.0	35.2

Table 20: Mode 2. Frequency range: 1 GHz – 3.5 GHz

Note [1]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.5.15 Sample #1. Mode 2. Frequency range: 3.5 GHz – 8 GHz

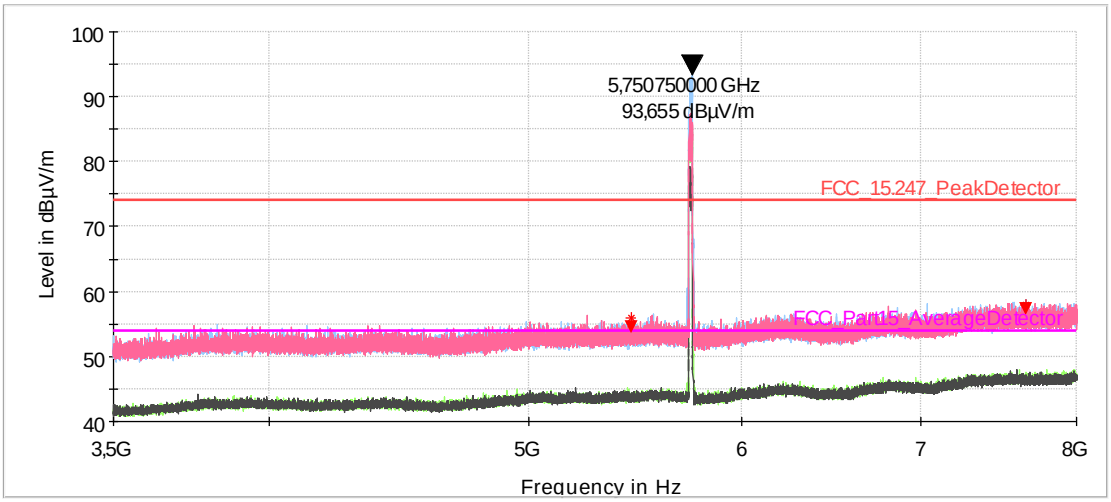


Fig. 23: Mode 2. Frequency range:3.5 GHz – 8 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
5458.550[1]	54.5	74.0	19.5	329.0	H	47.0	6.7
7660.550[1]	57.4	74.0	16.6	284.0	H	153.0	10.3

Table 21: Mode 2. Frequency range:3.5 GHz – 8 GHz

Note [1]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.5.16 Sample #1. Mode 2. Frequency range: 8 GHz – 18 GHz

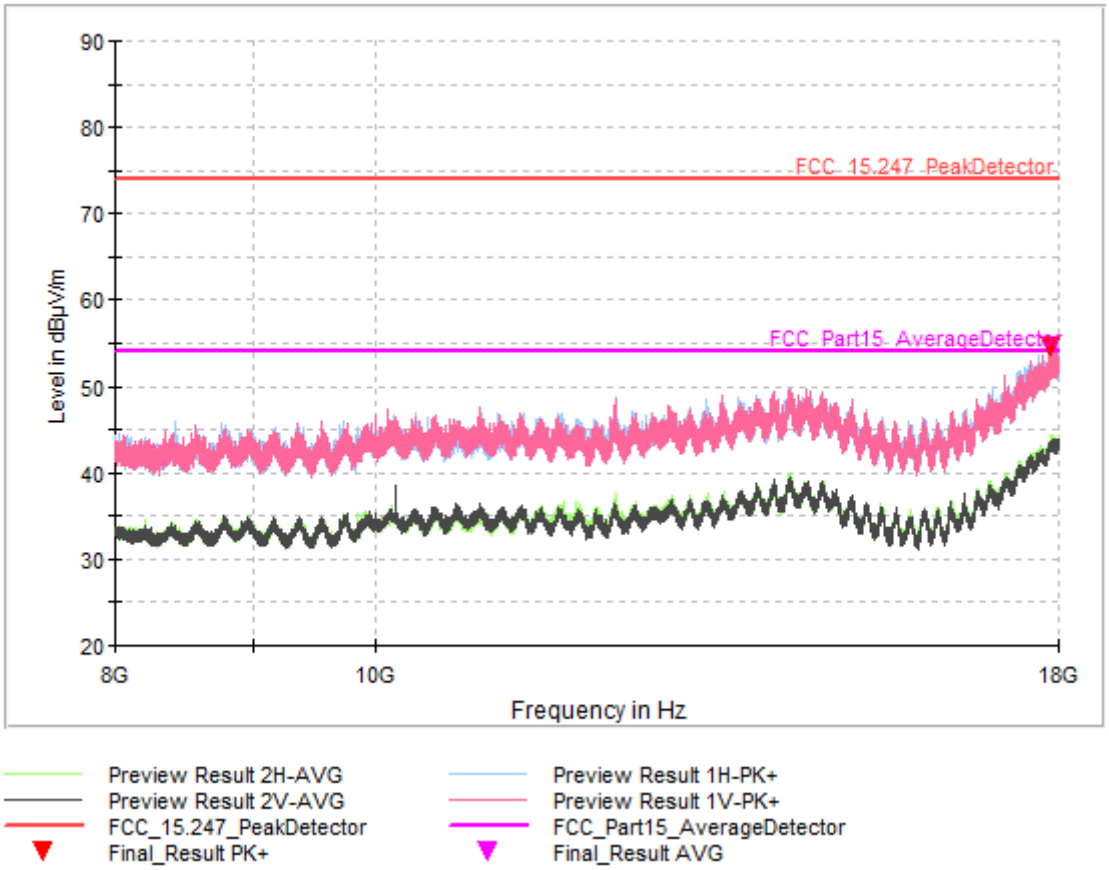


Fig. 24: Mode 2. Frequency range: 8 GHz – 18 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
17872.670[1]	54.5	74.0	19.5	123.0	H	83.0	6.5

Table 22: Mode 2. Frequency range: 8 GHz – 18 GHz

Note [1]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.5.17 Sample #1. All mode[1]. Frequency range: 18 GHz – 26 GHz

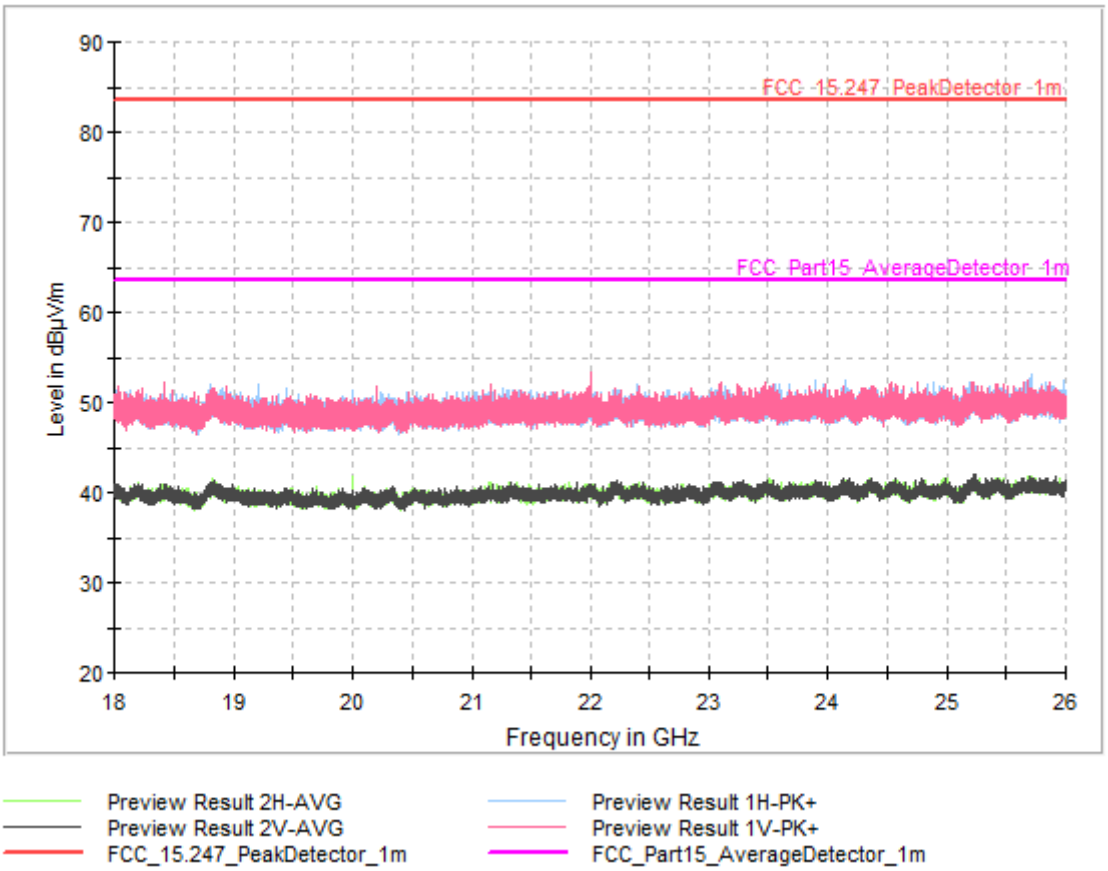


Fig. 25: All mode. Frequency range: 18 GHz – 26 GHz

FINAL MEASUREMENTS

No spurious detected. All emissions are below of the AVG limit

Note [1]: This frequency range has been measured for mode 1 and mode 2 and the results obtained are very similar between them. Therefore, the radiated emissions in this frequency range do not depend on the operation mode what the EUT is configured. The above graph is taken as the most representative result.

4.2.5.18 Sample #1. All mode[1]. Frequency range: 26 GHz – 40 GHz

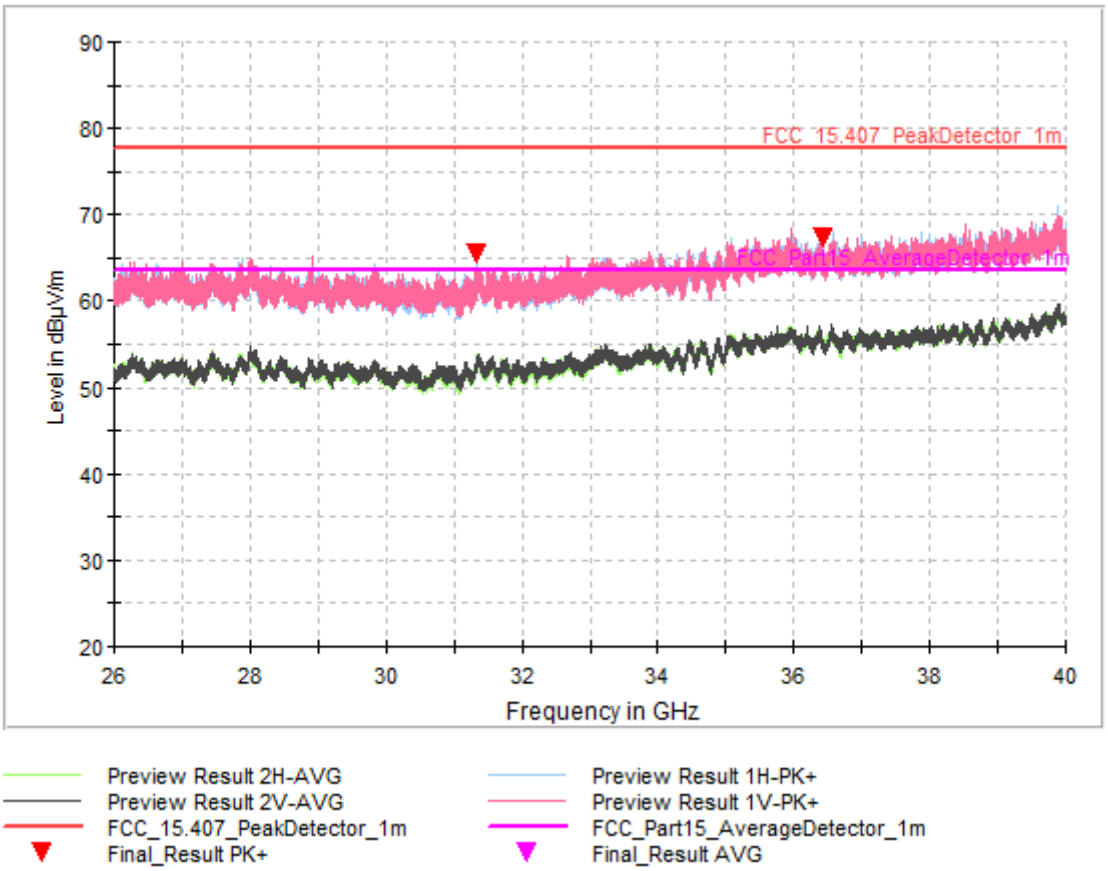


Fig. 26: All mode. Frequency range: 26 GHz – 40 GHz

FINAL MEASUREMENTS

Frequency [MHz]	MaxPeak [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Pol	Azimuth [deg]	Corr. [dB/m]
31316.730[2]	65.4	77.77	12.34	150.0	H	168.0	47.4
36441.200[2]	67.3	77.77	10.50	150.0	H	39.0	47.7

Table 23: All mode. Frequency range: 26 GHz – 40 GHz

Note [1]: This frequency range has been measured for mode 1 and mode 2 and the results obtained are very similar between them. Therefore, the radiated emissions in this frequency range do not depend on the operation mode what the EUT is configured. The above graph is taken as the most representative result.

Note [2]: The final frequency measurements within the restricted band correspond to the ambient level as can be seen in the graphs above. Therefore, a maximization with peak detector as worst case is performed.

4.2.6 Test Equipment Used

Equipment	Brand	Model	Applus Ref.	Last Calibration	Next Calibration
ACTIVE LOOP ANTENNA	EMCO	6502	05-ER-019	04/10/2023	04/10/2024
BILOG ANTENNA	SCHWARZBECK	VULB 9162	1042740	08/11/2023	08/11/2024
HORN ANTENNA	EMCO	3115	05-ER-017	06/12/2023	06/12/2024
HORN ANTENNA	MVG	EH 1840	1042685	14/04/2022	14/04/2024
RF CABLE	HUBER+SUHNER	SF126E	1042728	21/08/2023	21/08/2024
3 DB ATTENUATOR	HUBER+SUHNER	6803.17.B	1042021	25/05/2023	25/05/2024
RF CABLE	RHODE & SCHWARZ	NA	1041502	09/10/2023	09/10/2024
RF CABLE	HUBER+SUHNER	SF104	1041964	22/06/2023	22/06/2024
HIGHPASS FILTER	WAINWRIGHT INSTRUMENTS	WHNX6-2765-3500-26500-40CC	1042511	12/05/2023	12/05/2024
RF CABLE	HUBER+SUHNER	SF104/11N/11N	1042585	12/05/2023	12/05/2024
RF AMPLIFIER	BONN ELEKTRONIK	BLMA 0118-M	1041733	12/05/2023	12/05/2024
RF CABLE	HUBER+SUHNER	SF102	1042546	18/05/2023	18/05/2024
RF CABLE	ASTROLAB	32026-29094-29094-24TC	1041565	16/05/2023	16/05/2024
EMI RECEIVER	R&S	ESW 26	1041791	14/11/2023	14/11/2024
EMI RECEIVER	R&S	ESU 40	1041155	04/08/2023	04/08/2025
THERMOHIGROMETER	PCE IBERICA	THB 40	1042022	07/11/2023	07/11/2024
TEST SOFTWARE	ROHDE & SCHWARZ	EMC32 v.10.50.00	104624	--	--
MAST-TABLE CONTROLLER	MATURO	NCD	1042758	--	--

Table 24: Test Instruments – Radio-frequency radiated emissions

4.2.7 Uncertainty

Test Type	Test Description	Uncertainty
Emissions	RADIO-FREQUENCY RADIATED EMISSIONS 9 kHz – 30 MHz	± 3.9 dB
Emissions	RADIO-FREQUENCY RADIATED EMISSIONS 30 MHz – 1 GHz	± 5.3 dB
Emissions	RADIO-FREQUENCY RADIATED EMISSIONS 1 GHz – 6 GHz	± 5.3 dB
Emissions	RADIO-FREQUENCY RADIATED EMISSIONS 6 GHz – 18 GHz	± 5.5 dB
Emissions	RADIO-FREQUENCY RADIATED EMISSIONS 18 GHz – 26 GHz	± 5.1 dB
Emissions	RADIO-FREQUENCY RADIATED EMISSIONS 26 GHz – 40 GHz	± 5.6 dB

Table 25: Radio-frequency radiated emissions measuring Uncertainties

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by a coverage factor k=2, which for normal distribution corresponds to a coverage probability of approximately 95%.