
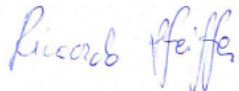


## TEST REPORT

<b>APPLICANT:</b>	B810 SRL VIA E. LAZZARETTI 2/1 - ZONA IND. MANCASALE Tel. 0522-510252; 335-7425594	
<b>APPLICANT REFEREE:</b>	MR. SCAGLIOSO	
<b>EUT DESCRIPTION</b>	Smart Tag with BT Module	
<b>EUT MODEL</b>	P106STAG	
<b>EUT TRADEMARK</b>	B810	
<b>MANUFACTURER</b>	B810 SRL	
<b>REFERENCE STANDARDS</b>	47 CFR FCC part 15.247	
<b>TEST REPORT NUMBER</b>	FCCTR_170683-1	
<b>TEST REPORT ISSUE DATE</b>	10/01/2019	
<b>TESTING LABORATORY</b>	PRSLAB, Via Campagna 92 - ITALY - 22020 Faloppio CO FCC test registration number: 177269	
<b>TESTING LOCATION</b>	As Above	
<b>DATE OF TEST SAMPLE RECEIPT</b>	March 2018	
<b>DATE OF TEST</b>	April 2018	
<b>TESTED BY</b>	Daniele AOSANI Tecnico Laboratorio EMC & RADIO / EMC & RADIO Laboratory Technician	
<b>APPROVED BY</b>	Riccardo PFEIFFER Responsabile Laboratorio EMC & RADIO / EMC & RADIO Laboratory Manager	

The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.  
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## 0. CONTENTS

	<b>Page</b>
0. CONTENTS.....	2
1. Release Control Record .....	2
2. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT).....	3
2.1 Identification .....	3
2.2 Technical data .....	4
2.3 Ports identification .....	5
2.4 Auxiliary equipment .....	5
3. OPERATING TEST MODES AND CONDITIONS .....	6
4. REFERENCE STANDARD / DOCUMENT FOR PERFORMED TESTS .....	7
5. Summary of test results .....	8
6. TEST RESULTS.....	9
7. LIST OF EQUIPMENT USED.....	51

## 1. RELEASE CONTROL RECORD

TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
FCCTR_170683-0	Original release	19/04/2018
FCCTR_170683-1	Editorial change	10/01/2019

## 2. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

### 2.1 Identification

Trademark:	B810
Manufacturer:	B810 SRL
Type of Equipment :	Smart Tag with BT Module
Model name:	P106STAG
Serial number :	prototype
Country of manufacturer:	ITALY

## 2.2 Technical data

<b>Product type:</b>	Radio Equipment
<b>Radio type:</b>	Intentional radiators
<b>Product description / application</b>	BLE
<b>Power supply requirements :</b>	3Vdc
<b>Operating Frequency range</b>	2400-2483,5MHz
<b>Operating Frequency:</b>	From 2402MHz to 2480MHz
<b>Channel bandwidth</b>	2MHz
<b>Channel spacing</b>	2MHz
<b>Number of Channel</b>	40 (from 0 to 39)
<b>Type of modulation :</b>	GFSK
<b>Antenna Type</b>	Integral PCB Printed antenna

Note: FCC classifies Bluetooth LE as a system using digital modulation techniques.

### 2.3 Ports identification

This section contains descriptions of all signal ports and AC/DC power input/output ports, the length and the type of the cable provided by manufacturer needed for the tests. Moreover it is specified if the ports are ever or optionally connected.

<b>Port</b>		<b>Description</b>	<b>Connection</b>
<b>1</b>	<b>Enclosure</b>	Plastic	---
<b>2</b>	<b>AC Power Supply</b>	Not present	---
<b>3</b>	<b>DC power supply</b>	3Vdc	Internal Battery
<b>4</b>	<b>Signal lines</b>	Not present	---
<b>5</b>	<b>Telecomm. Lines</b>	Not present	---
<b>6</b>	<b>Antenna port</b>	Not present	---

*Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.*

### 2.4 Auxiliary equipment

- Smartphone to set channels

### 3. OPERATING TEST MODES AND CONDITIONS

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item "Operating condition of the equipment under test"

<i>Operating condition</i>	<i>Description</i>
<b>#1</b>	<i>Continuous transmission, modulated carrier,</i>
<b>#2</b>	<i>Standard operating</i>

**Special Test Software:** Special software and hardware by the Applicant to operate the EUT at each channel frequency continuously. For example, the transmitter has been set to operate at each of the lowest, middle and highest frequencies individually continuously during testing.

**Special Hardware Used:** The RF Module has been tested by an APP on a smartphone.

**Transmitter Test Antenna:** The EUT has been tested with the antenna fitted in a manner typical of normal intended use as integral antenna equipment as described with the test results.

#### 4. REFERENCE STANDARD / DOCUMENT FOR PERFORMED TESTS

<b>Title 47 Part 15 Subpart B</b>	Radio frequency devices - General
<b>Title 47 Part 15 Subpart B § 15.107</b>	Radio frequency devices – Unintentional Radiators Conducted Limits
<b>Title 47 Part 15 Subpart B § 15.109</b>	Radio frequency devices – Unintentional Radiators Radiated Emissions Limits
<b>Cfr 47 part 15 subpart C par. 15.247</b>	Radio Frequency Devices – Intentional Radiators Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz
<b>KDB 558074 D01</b>	Guidance for performing Compliance measurements on Digital Transmission Systems (DTS) Operating under §15.247
<b>ANSI C63.10:2013</b>	American National Standard for Testing Unlicensed Wireless Devices

## 5. SUMMARY OF TEST RESULTS

Port	Phenomena	Basic standard	Operating condition <sup>1</sup>	Result
Enclosure	Antenna requirement	FCC Part 15 §15.203	---	Compliant
	Maximum Peak Output Power	FCC Part 15 §15.247 (b) (3)	#1 #2	Within the limit
	6 dB Bandwidth	FCC Part 15 §15.247 (a) (2)	#1 #2	Within the limit
	Power Spectral Density	FCC Part 15 §15.247 (e)	#1 #2	Within the limit
	Band-Edge	FCC Part 15 § 15.247 (d)	#1 #2	Within the limit
	RF <b>radiated</b> Spurious Emissions at the Transmitter Antenna Terminal	FCC Part 15 § 15.247 (d)	#1 #2	Within the limit
	Radiated Emissions	Title 47 Part 15 Subpart B § 15.109	#2	Within the limit



## 6. TEST RESULTS

ANTENNA REQUIREMENTS.....	10
MAXIMUM PEAK OUTPUT POWER.....	11
6dB CHANNEL BANDWIDTH.....	14
Band-Edge.....	17
Power Spectral Density.....	20
RADIATED EMISSION 9kHz ÷ 10 <sup>th</sup> Harmonic.....	23
RADIATED EMISSIONS.....	46

**TEST**  
**1.**

**ANTENNA REQUIREMENTS**

**REFERENCE DOCUMENT**

According to §15.203 / 15.204

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. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sec. 15.211, Sec. 15.213, Sec. 15.217, Sec. 15.219, or Sec. 15.221. 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, in accordance with Sec. 15.31(d), 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

<b>Antenna requirement</b>
The EUT has an integrated PCB Printed antenna
<b>RESULT: COMPLIANT</b>

**TEST  
2.**
**MAXIMUM PEAK OUTPUT POWER**
**REFERENCE  
DOCUMENT**

**According to §15.247(b) (3)**, For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Semi Anechoic Chamber / Radio test Area
<b>TEST METHOD</b>	KDB 558074 D01 par. 9.1.1 Maximum peak conducted output power
<b>TYPE OF MEASUREMENT</b>	RADIATED
<b>TEST EQUIPMENT</b>	Emi Receiver / Spectrum Analyzer Rohde&Schwarz mod. ESU40
<b>TEST PERFORMED BY</b>	Daniele Aosani
<b>TESTING DATE</b>	April 2018

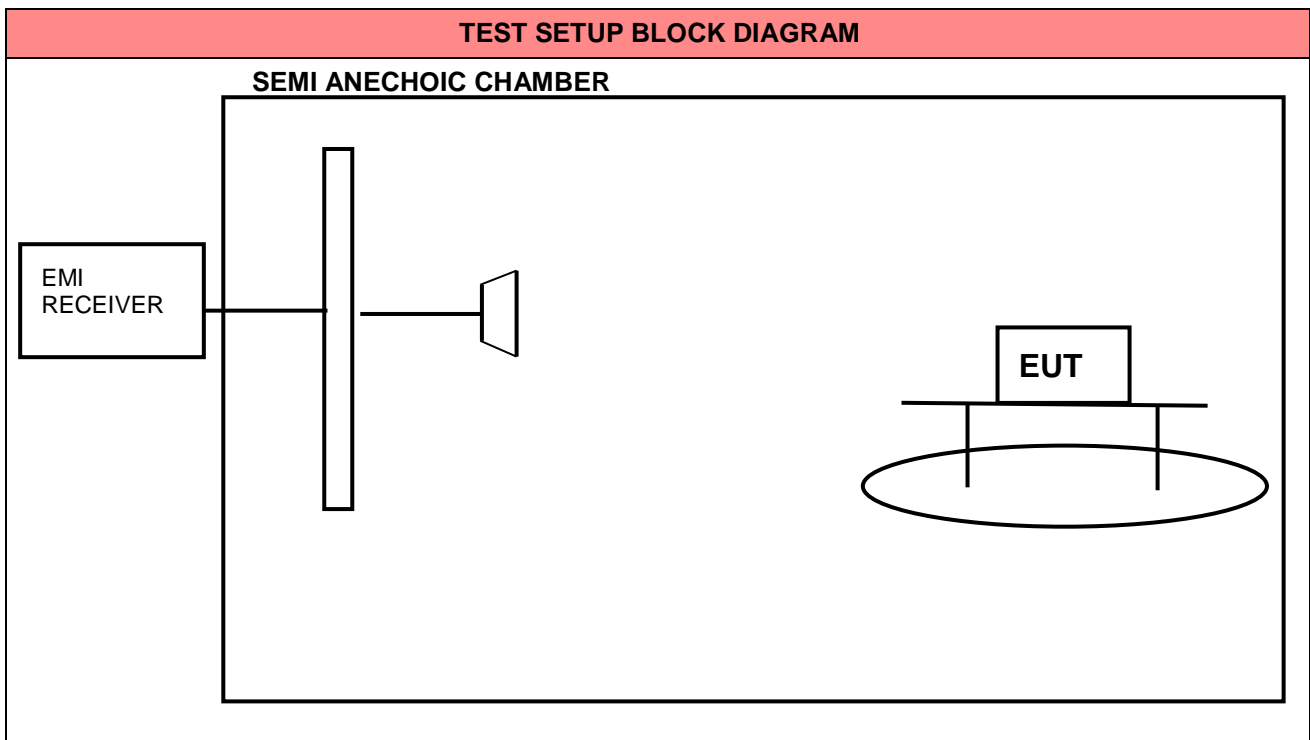
<b>TEST CONDITIONS:</b>	<b>MEASURED</b>
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 – 75 %rH	45%
Pressure : 85 – 106 kPa (860 mbar – 1060 mbar)	960mbar

<b>OPERATING CONDITION</b>	#1, DUTY CYCLE 100%
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<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
--------------------	--------------------------

MEASUREMENT PARAMETER	
Resolution bandwidth:	RBW $\geq$ DTS bandwidth
Video bandwidth:	VBW $\geq$ 3 x RBW
Span:	span $\geq$ 3 x RBW
Sweep time	Auto couple
Detector:	Peak
Trace-Mode:	Max. hold

TEST DESCRIPTION
<p>Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously - rotating, remotely - controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table.</p> <p>For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m</p> <p>Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m~4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3m.</p> <p>This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.</p>



Channel	Frequency (MHz)	EIRP (dBm)	Antenna Gain	Max Conducted Output power	Limit (dBm)	Result
0	2402	-1.9	-0.1	-1.8	30	<b>WITHIN THE LIMITS</b>
19	2440	-1.5	-0.1	-1.4		
39	2480	-1.7	-0.1	-1.6		
Incertezza di misura / Measurement Uncertainty : $\pm 3$ dB						
Note: none						

**TEST  
3.**
**6dB CHANNEL BANDWIDTH**
**REFERENCE  
DOCUMENT**

According to §15,247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483,5 MHz, and 5725-5850 MHz bands, The minimum 6 dB bandwidth shall be at least 500 kHz,

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TEST METHOD</b>	KDB 558074 D01 par. 8.2 DTS Bandwidth Option 2
<b>TYPE OF MEASUREMENT</b>	RADIATED
<b>TEST EQUIPMENT</b>	Spectrum Analyzer Rohde&Schwarz mod. FSP40 SYSTEM DC POWER SUPPLY HP mod. 6623A
<b>TEST PERFORMED BY</b>	Daniele Aosani
<b>TESTING DATE</b>	April 2018

<b>TEST CONDITIONS:</b>	<b>MEASURED</b>
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

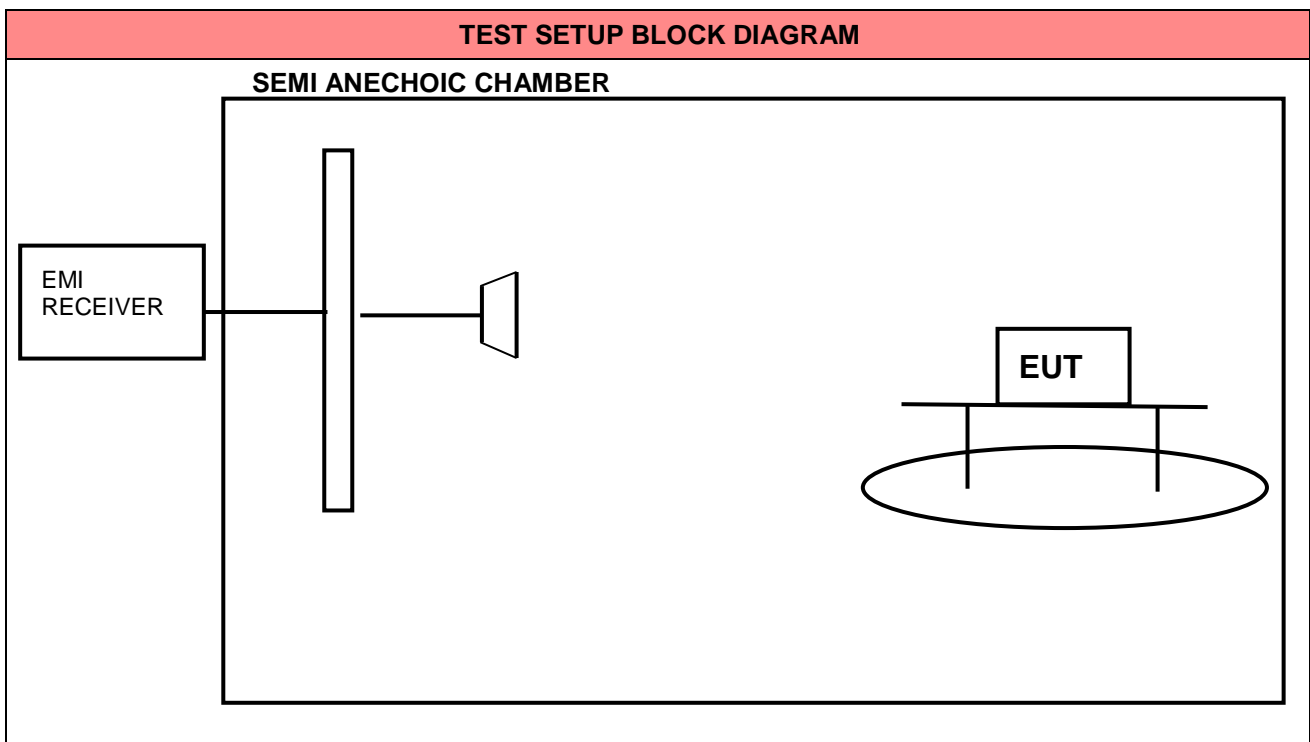
<b>OPERATING CONDITION</b>	#1, DUTY CYCLE 100%
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<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
--------------------	--------------------------

MEASUREMENT PARAMETER	
Resolution bandwidth:	100kHz
Video bandwidth:	300kHz
Span:	10MHz
Sweep time	Auto couple
Detector:	Peak
Trace-Mode:	Max. hold

**TEST DESCRIPTION**

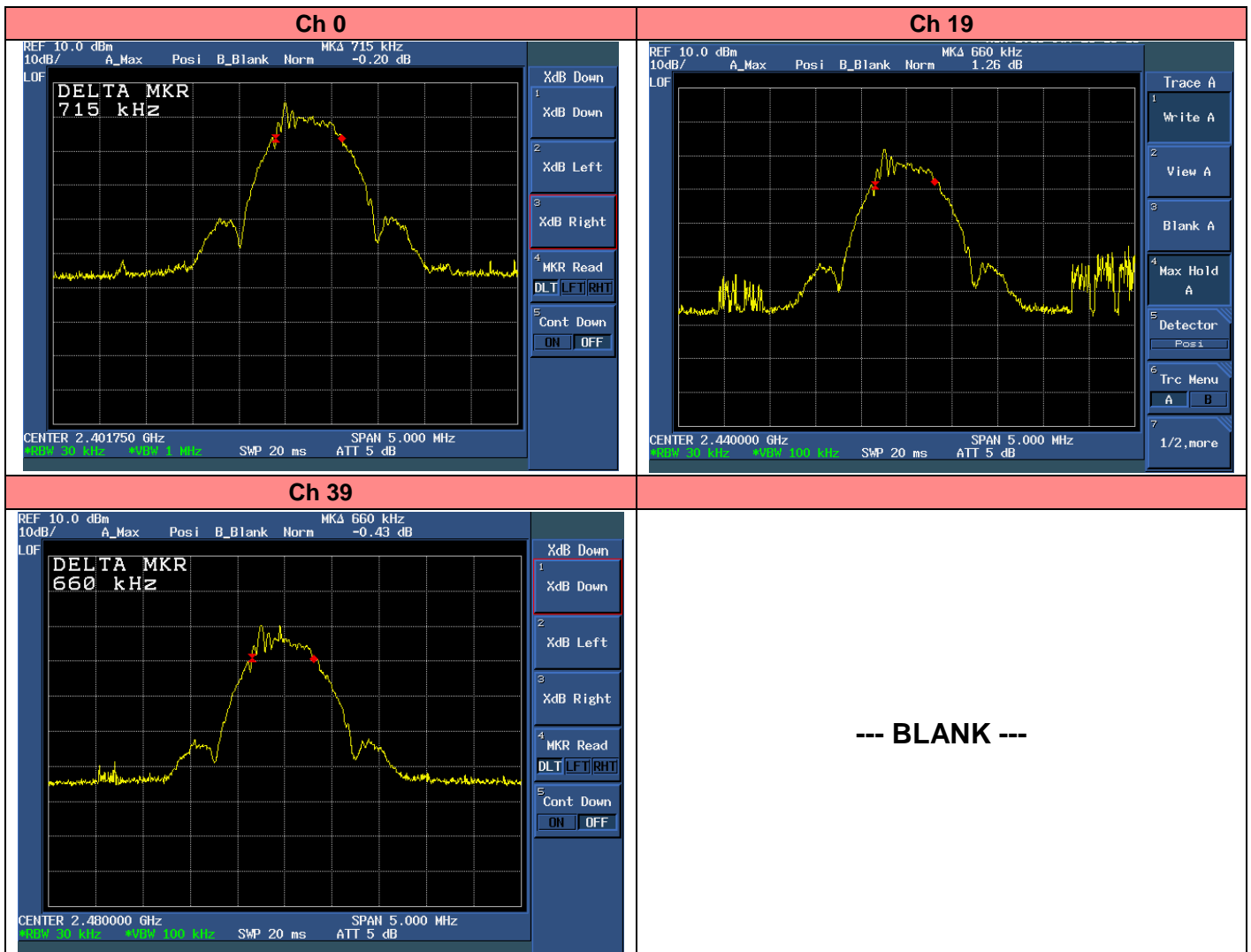
Allow the trace to stabilize.  
 Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission



**Measurement Result**

Mode	Channel	Frequency (MHz)	6dB Channel Bandwidth (kHz)	Limit (kHz)	Result
BT	0	2402	715	>500	<b>WITHIN THE LIMITS</b>
	19	2440	660		
	39	2480	660		

Incertezza di misura / Measurement Uncertainty :  $\pm 1$  KHz





**TEST  
4.**
**Band-Edge**
**REFERENCE  
DOCUMENT**

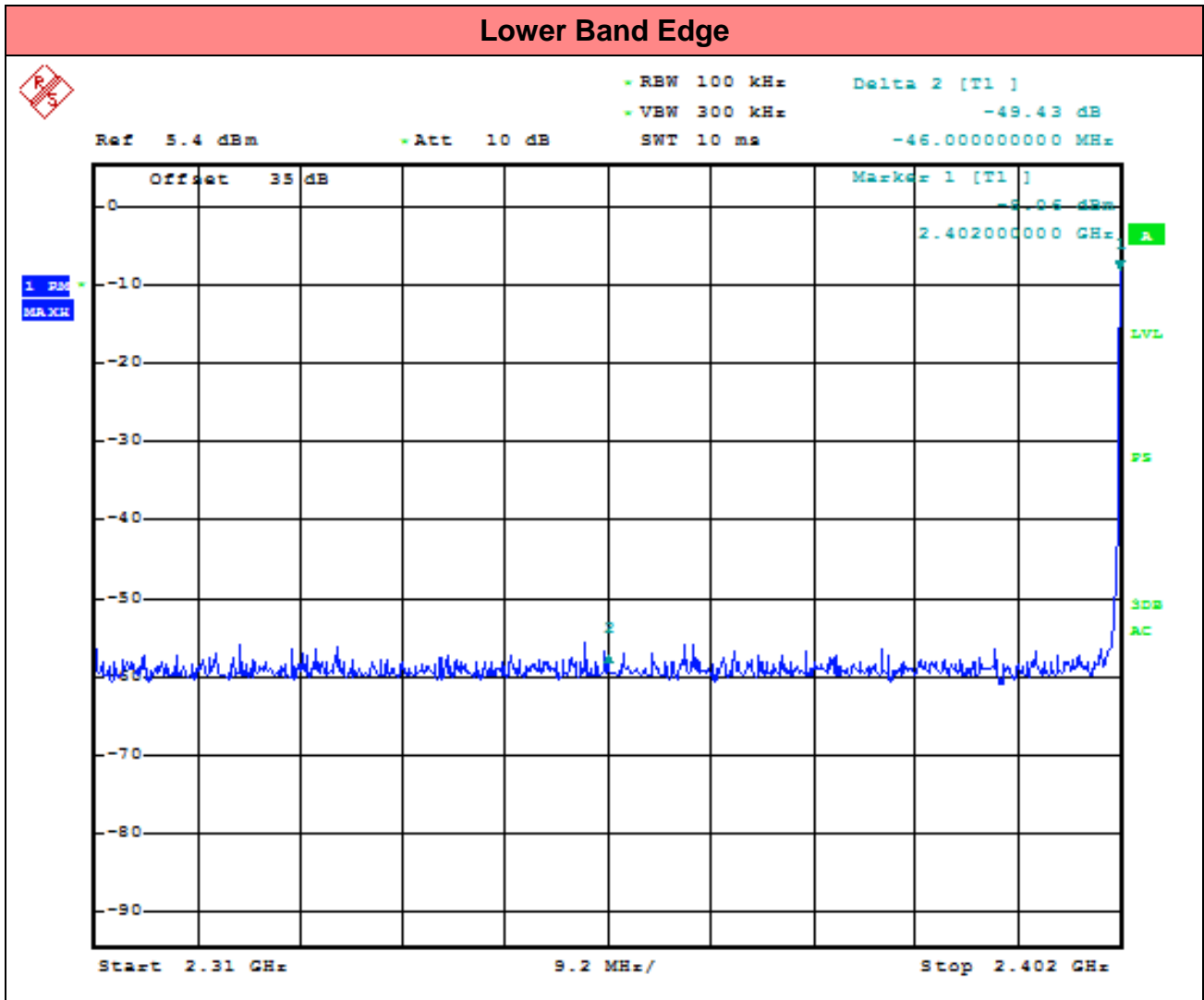
According to §15,247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits, If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB, Attenuation below the general limits specified in Sec, 15,209(a) is not required, In addition, radiated emissions which fall in the restricted bands, as defined in Sec, 15,205(a), must also comply with the radiated emission limits specified in Sec, 15,209(a) (see Sec, 15,205(c)),

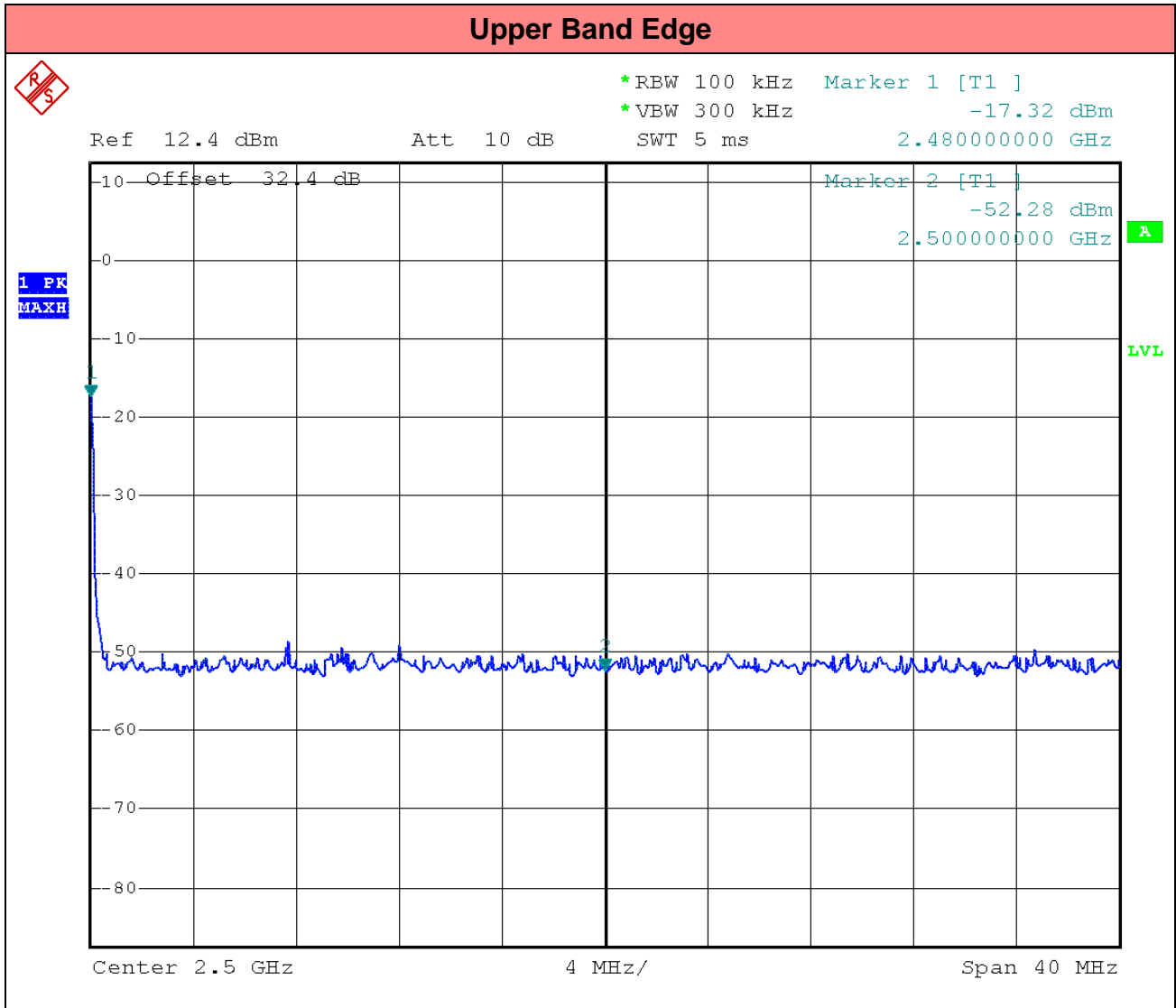
<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TYPE OF MEASUREMENT</b>	RADIATED
<b>TEST EQUIPMENT</b>	Spectrum Analyzer Rohde&Schwarz mod. FSP40 SYSTEM DC POWER SUPPLY HP mod. 6623A
<b>TEST PERFORMED BY</b>	Daniele Aosani
<b>TESTING DATE</b>	April 2018

<b>TEST CONDITIONS:</b>	<b>MEASURED</b>
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

<b>OPERATING CONDITION</b>	#1, DUTY CYCLE 100%
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<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
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**TEST  
5.**
**POWER SPECTRAL DENSITY**


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**REFERENCE  
DOCUMENT**

According to §15,247) (e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission, This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section, The same method of determining the conducted output power shall be used to determine the power spectral density,

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Radio test area
<b>TYPE OF MEASUREMENT</b>	RADIATED
	KDB 558074 D01 par. 10.2 Method PKPSD (peak PSD)
<b>TEST EQUIPMENT</b>	Spectrum Analyzer Rohde&Schwarz mod. FSP40 SYSTEM DC POWER SUPPLY HP mod. 6623A
<b>TEST PERFORMED BY</b>	Daniele Aosani
<b>TESTING DATE</b>	April 2018

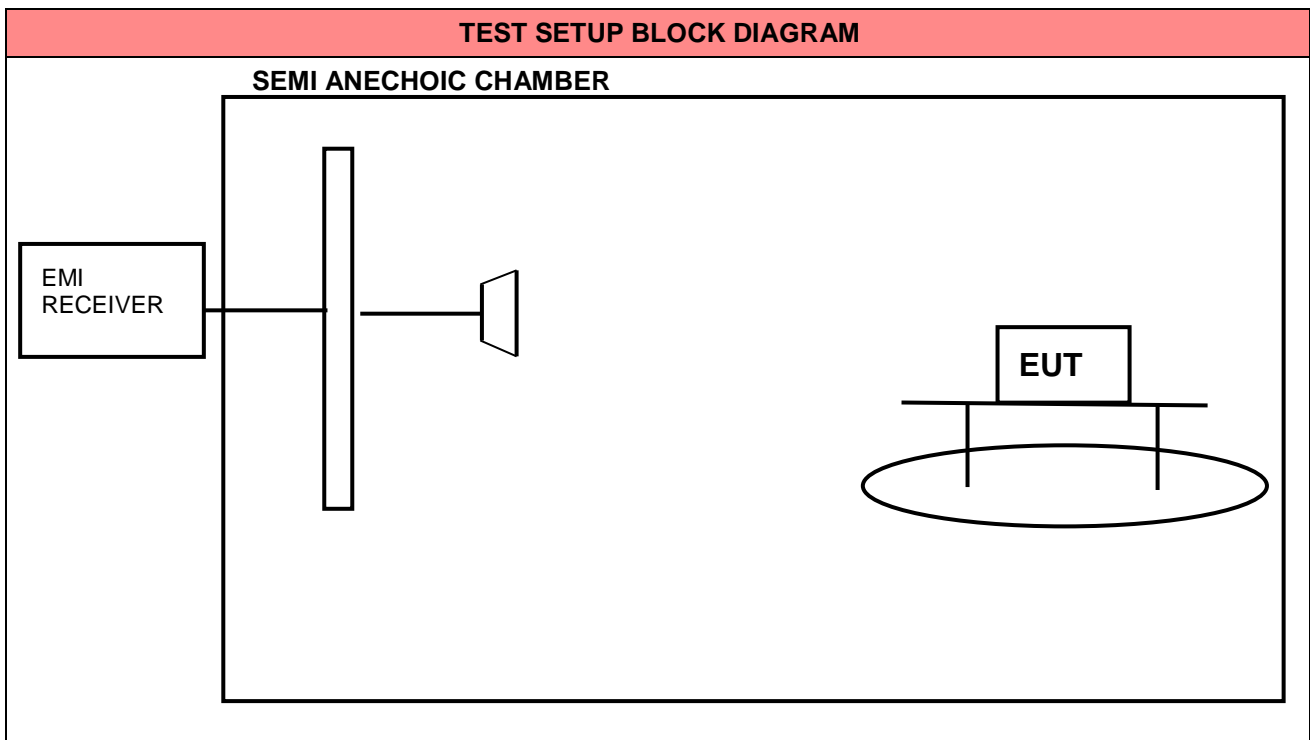
<b>TEST CONDITIONS:</b>	<b>MEASURED</b>
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

<b>OPERATING CONDITION</b>	#1, DUTY CYCLE 100%
----------------------------	---------------------

<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
--------------------	--------------------------

MEASUREMENT PARAMETER	
Resolution bandwidth:	100kHz
Video bandwidth:	300kHz
Span:	1MHz
Sweep time	Auto couple
Detector:	Peak
Trace-Mode:	Max. hold

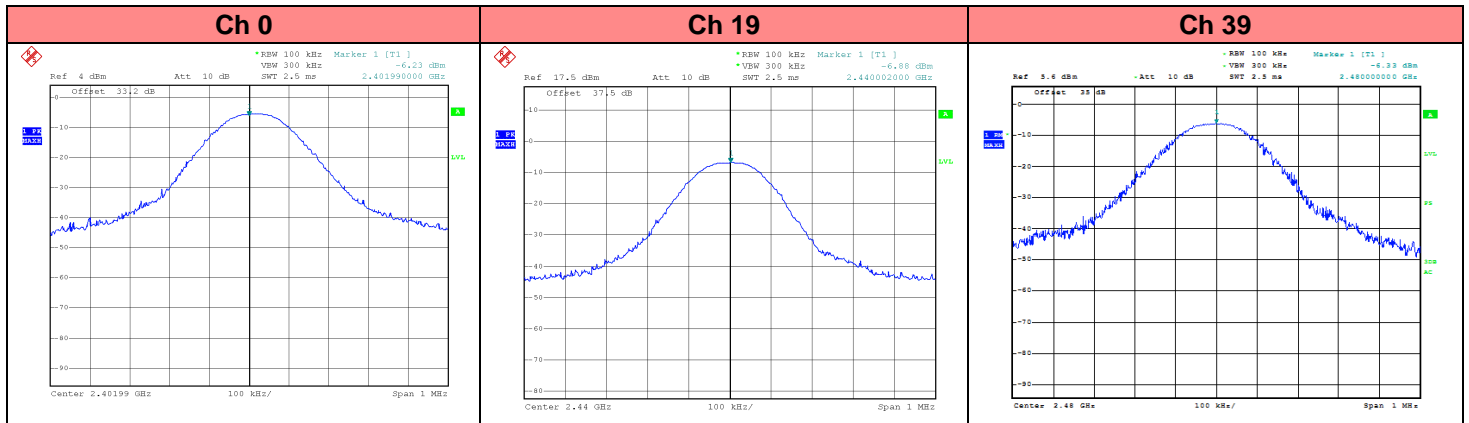
TEST DESCRIPTION
<p>Allow trace to fully stabilize.            Use the peak marker function to determine the maximum amplitude level within the RBW.            If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat</p>



**Measurement Result**

Mode	Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)	Result
BT	0	2402	-6,23	8	14.23	<b>WITHIN THE LIMITS</b>
	19	2440	-6,88		14.88	
	39	2480	-6,33		14.33	

Incertezza di misura / Measurement Uncertainty :  $\pm 1$ dB



**TEST  
6.**
**RADIATED EMISSION 9KHZ ÷10<sup>TH</sup> HARMONIC**
**REFERENCE  
DOCUMENT**

According to §15,247) d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 Db below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 Db instead of 20 Db. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

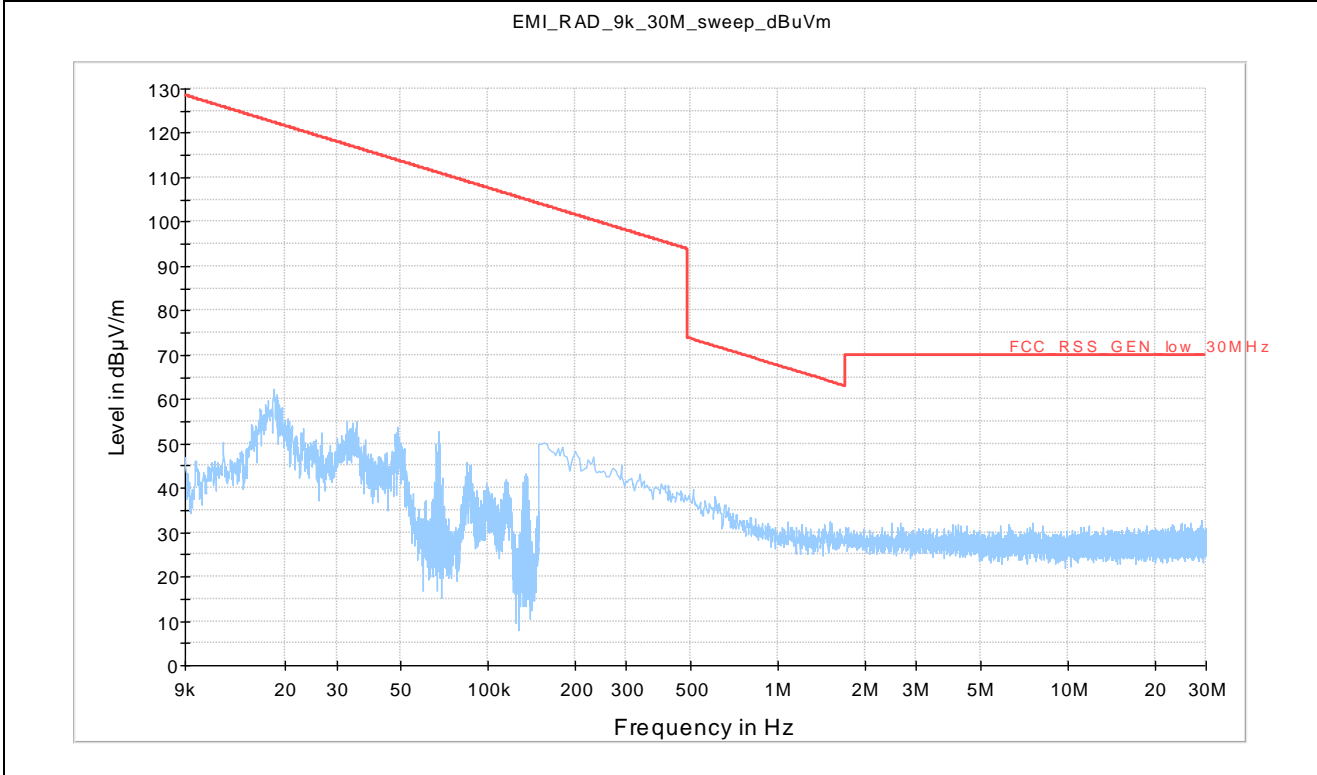
<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Semi Anechoic Chamber
<b>TYPE OF MEASUREMENT</b>	RADIATED
	KDB 558074 D01 par. 11.0
<b>TEST EQUIPMENT</b>	EMI receiver Rohde & Schwarz Mod, ESU 40 Chase Antenna Mod, CBL 6111 C Antenna Rohde & Schwarz mod, HL050 Tunable notch filter Wainwright mod, WRCT2200/2500-5/40-10SK High pass filter Wainwright WHNX 2,8/18G-10SS
<b>TEST PERFORMED BY</b>	Daniele Aosani
<b>TESTING DATE</b>	Aprli 2018
<b>UNCERTAINTY OF MEASURE:</b>	Combined uncertainty = ± 1,75 dB Total uncertainty = (k=2) ± 3,5 dB

<b>TEST CONDITIONS:</b>	<b>MEASURED</b>
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

<b>OPERATING CONDITION</b>	#1, DUTY CYCLE 100%
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<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
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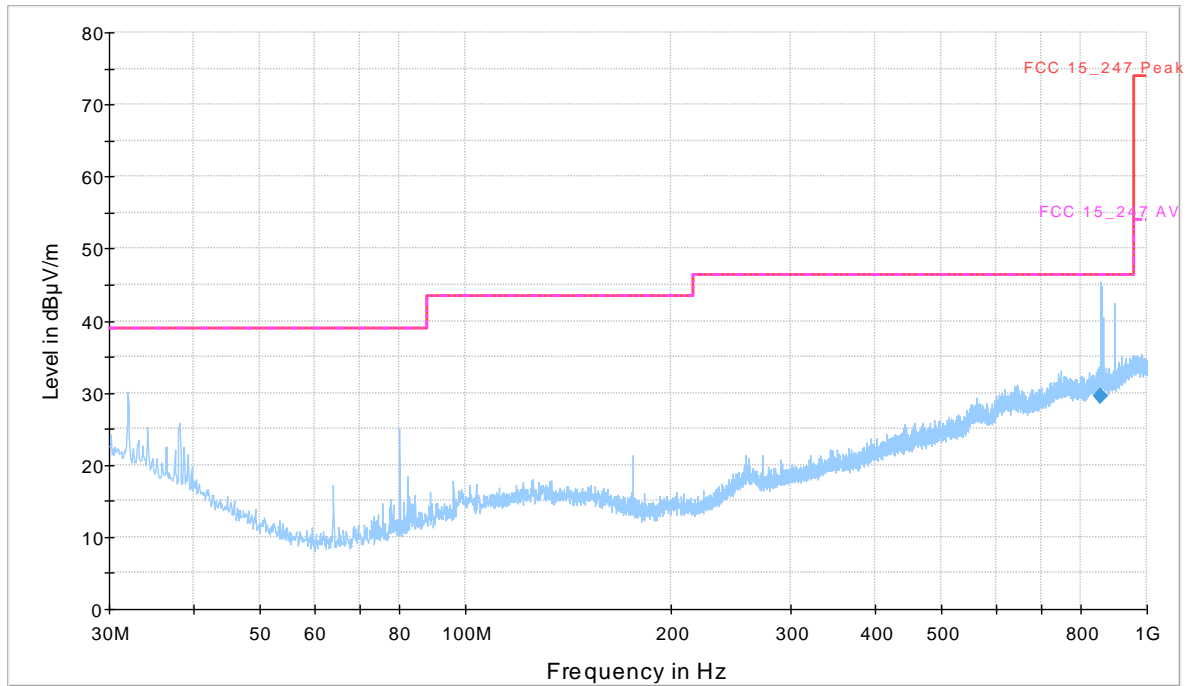
<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	9kHz - 30MHz
<b>POLARIZATION</b>	VERTICAL





<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	30MHz – 1GHz
<b>POLARIZATION</b>	VERTICAL

FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL



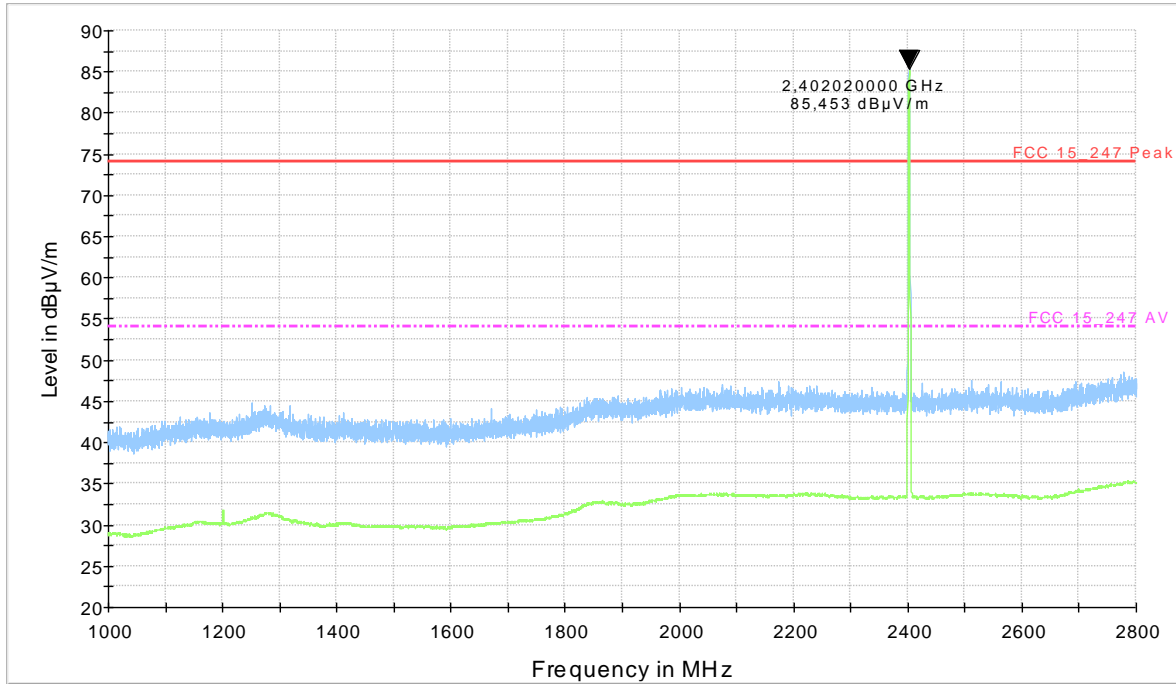
Blue trace Peak detector, Blue Marker Quasi-Peak detector

### Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
855.761000	29.5	259.0	V	91.0	27.4	16.90	46.40

<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	1-2.8GHz
<b>POLARIZATION</b>	VERTICAL

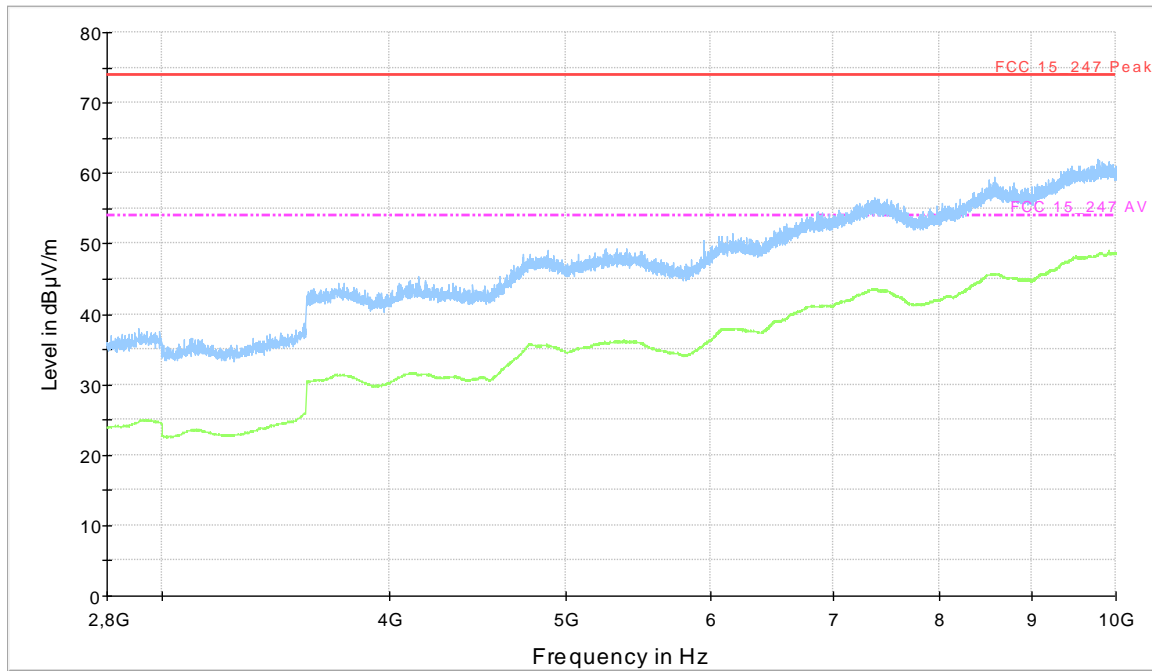
FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	2.8-10GHz
<b>POLARIZATION</b>	VERTICAL

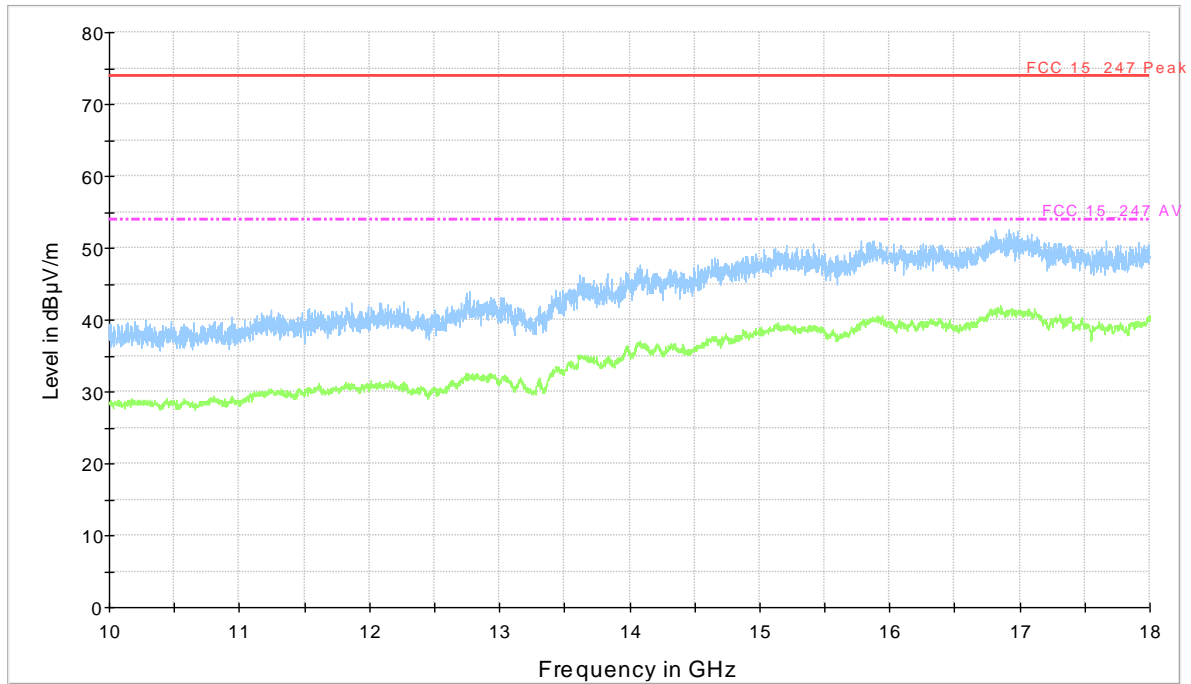
FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL



Blue trace Peak detector, Green trace average detector

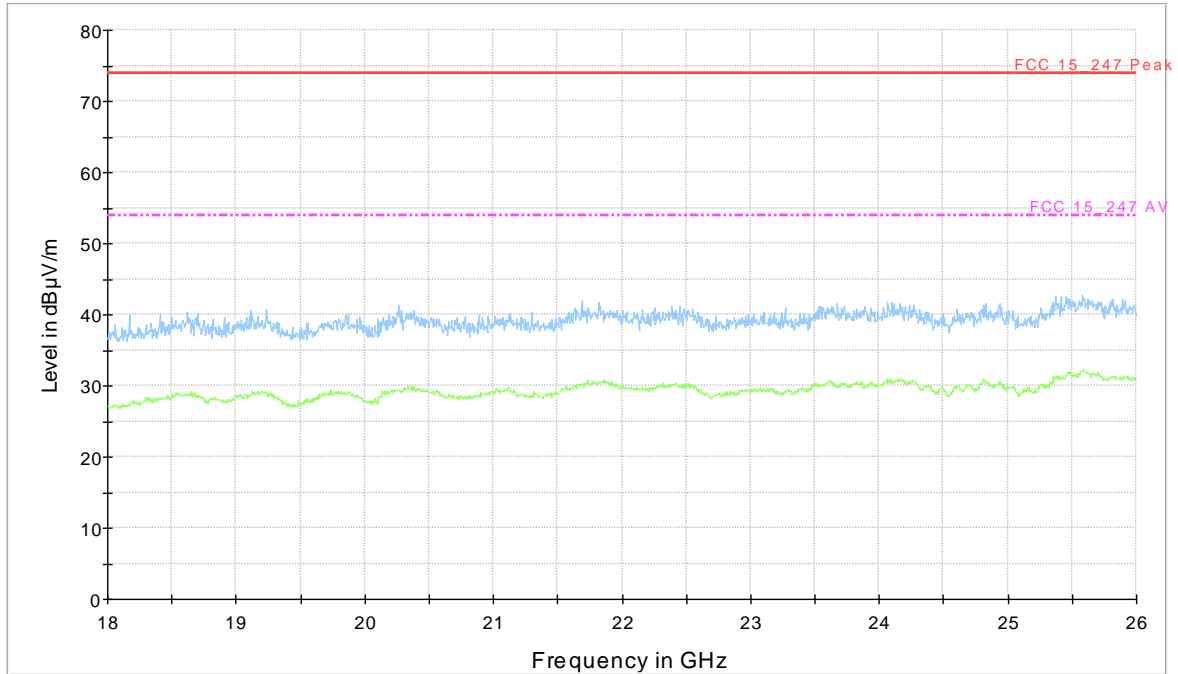
<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	10-18GHz
<b>POLARIZATION</b>	VERTICAL

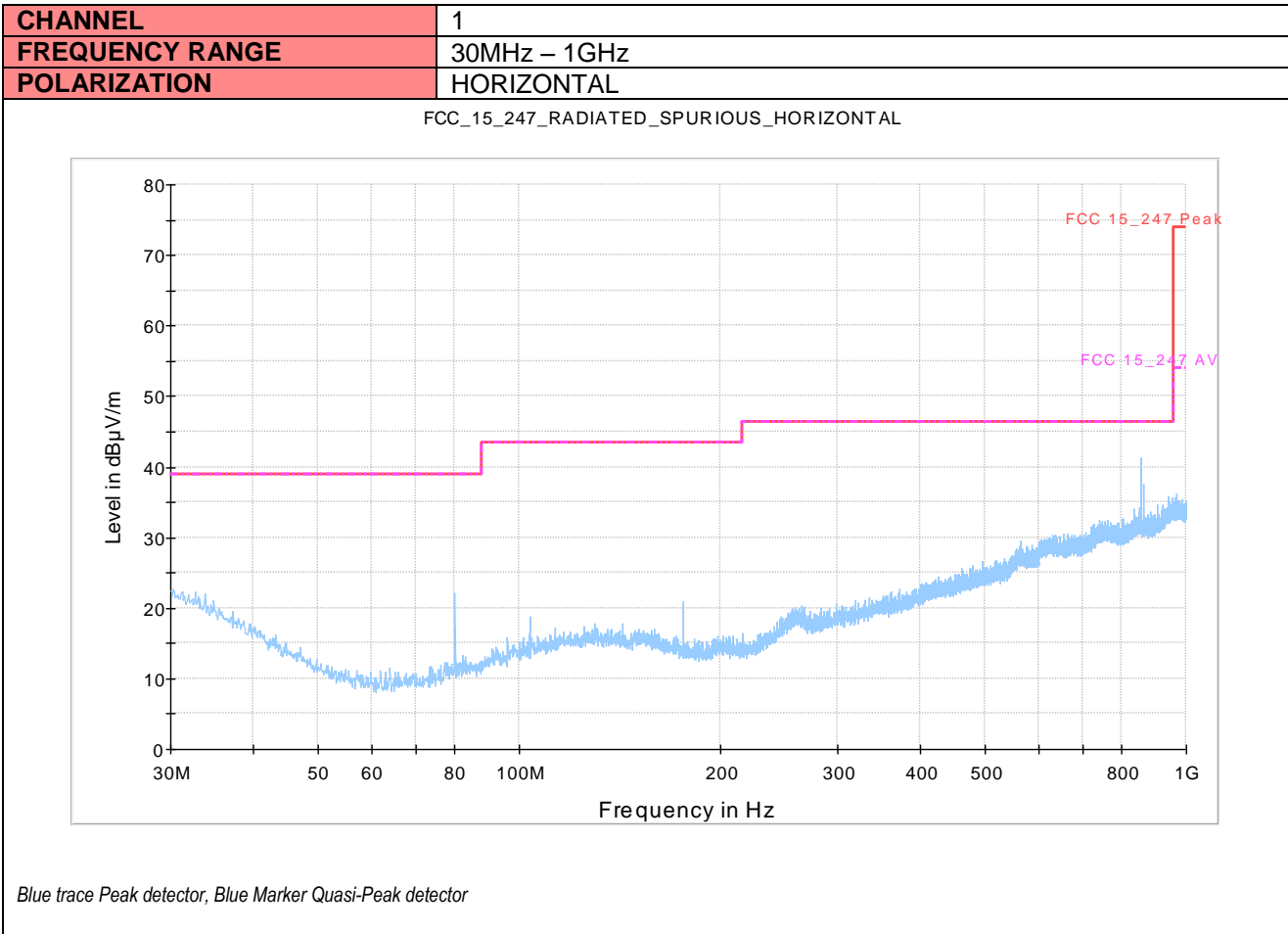
FCC\_15\_247\_SPURIOUS\_TX\_SWEEP\_FSP



Blue trace Peak detector, Green trace average detector

<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	18-26GHz
<b>POLARIZATION</b>	VERTICAL

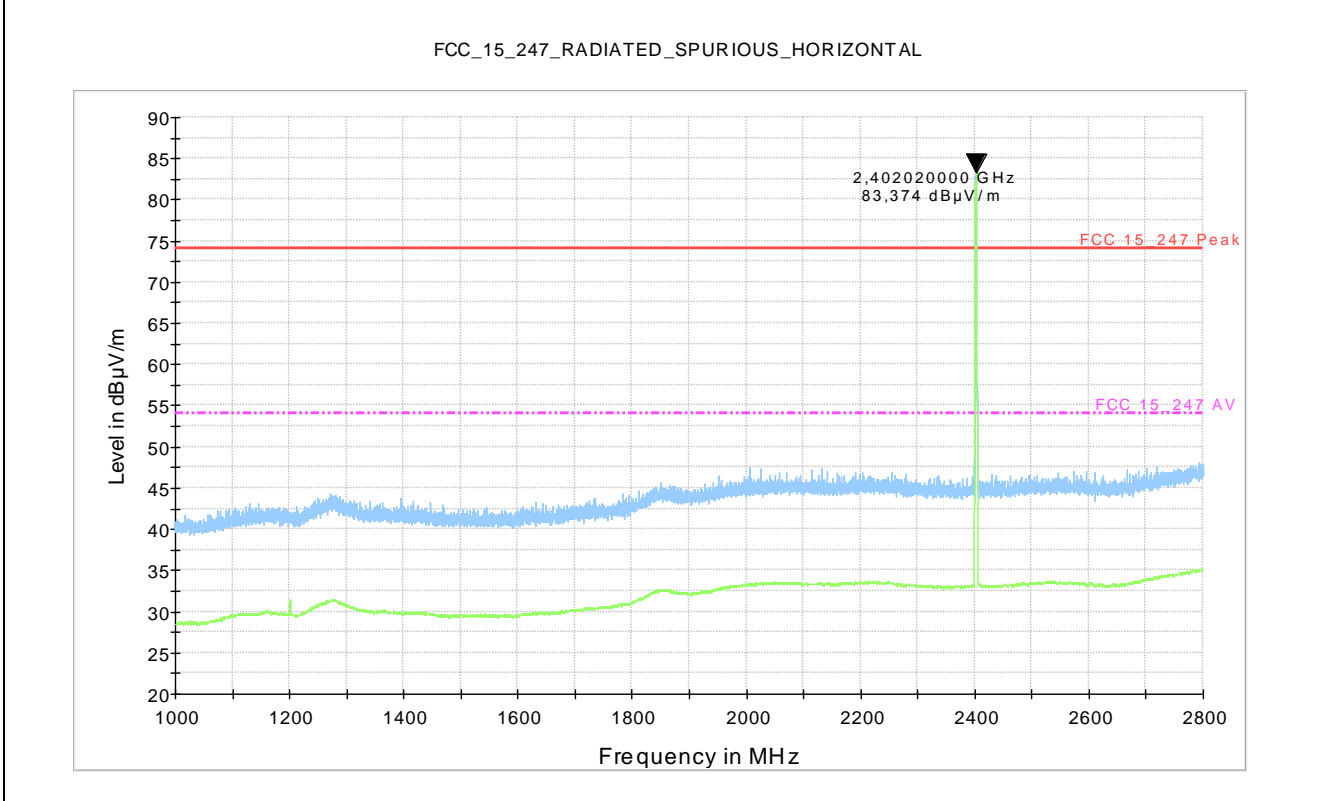




## Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
---	---	---	---	---	---	---

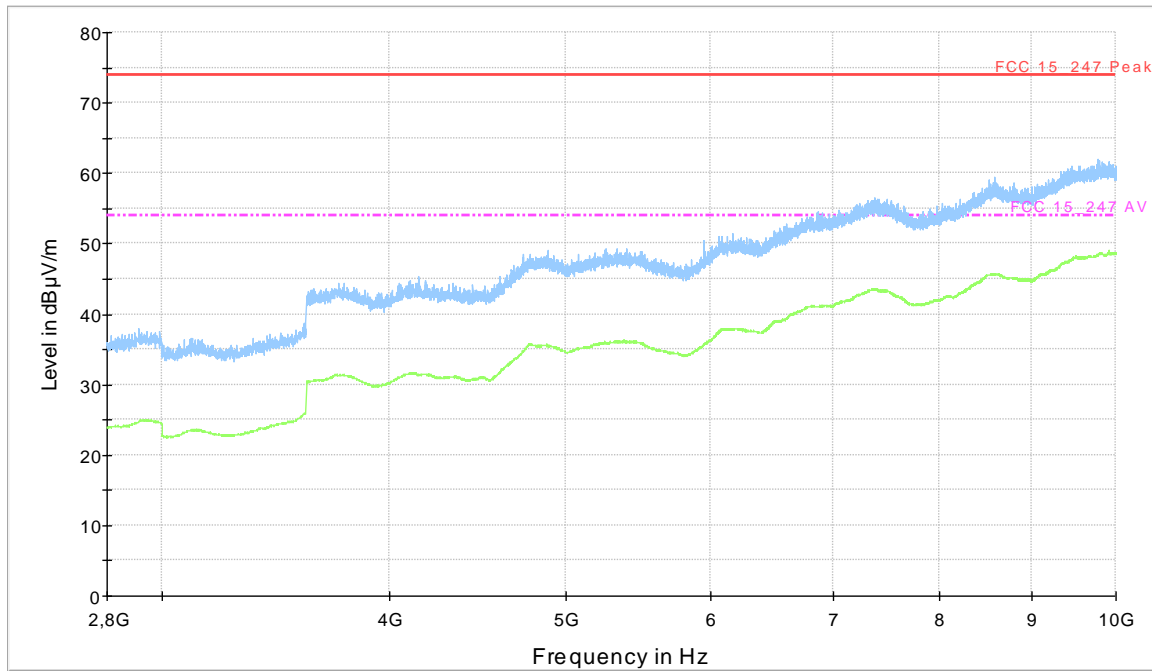
<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	1-2.8GHz
<b>POLARIZATION</b>	HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	2.8-10GHz
<b>POLARIZATION</b>	HORIZONTAL

FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL

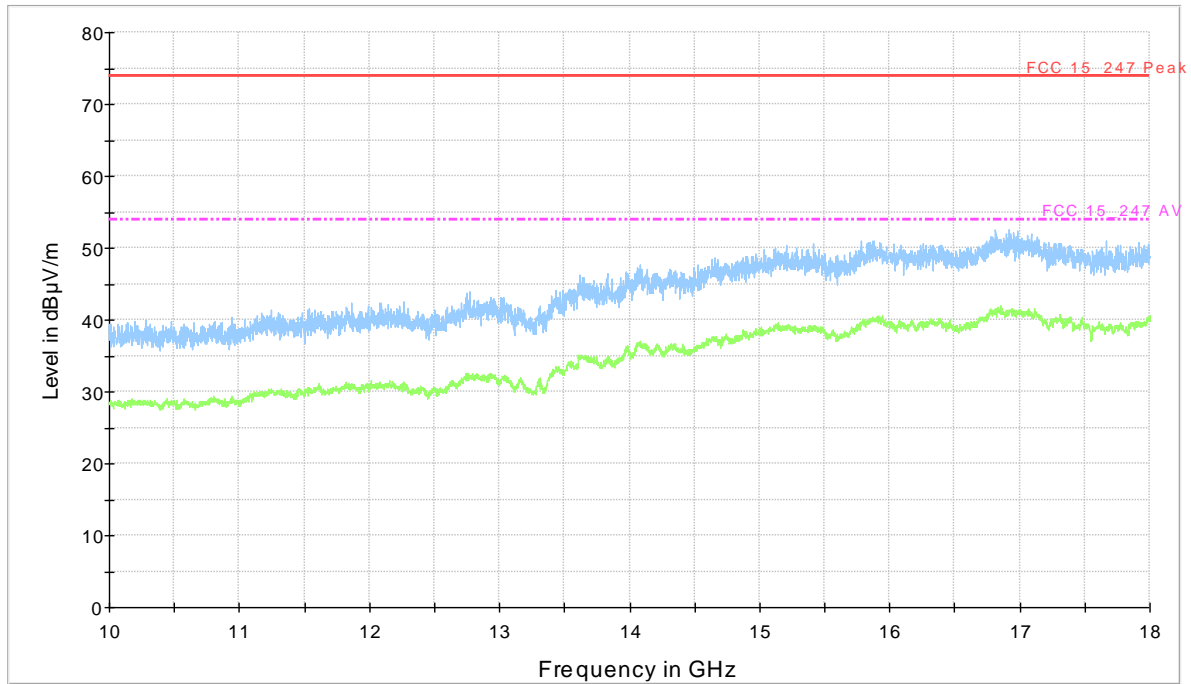


Blue trace Peak detector, Green trace average detector



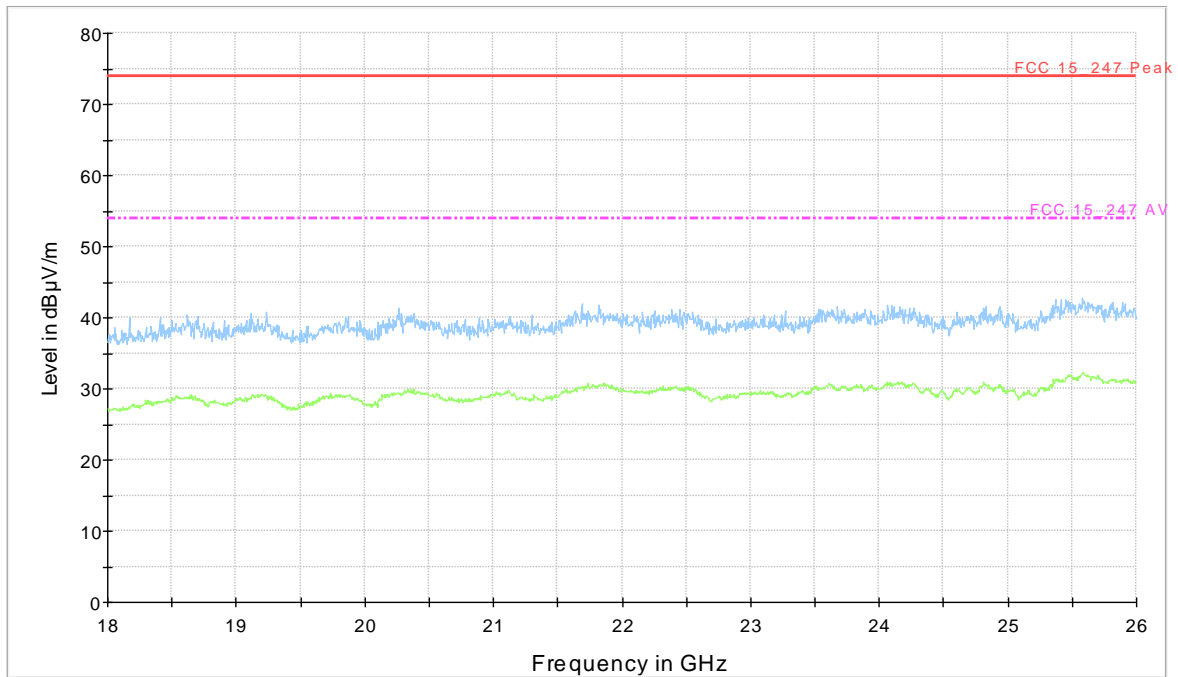
<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	10-18GHz
<b>POLARIZATION</b>	HORIZONTAL

FCC\_15\_247\_SPURIOUS\_TX\_SWEEP\_FSP

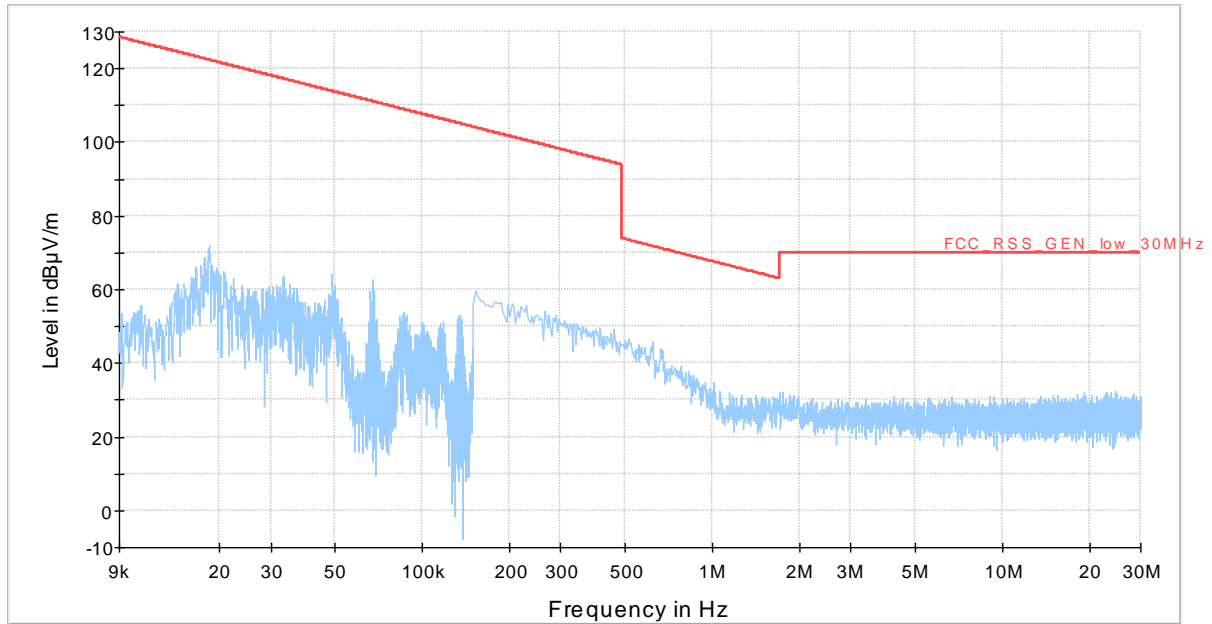


Blue trace Peak detector, Green trace average detector

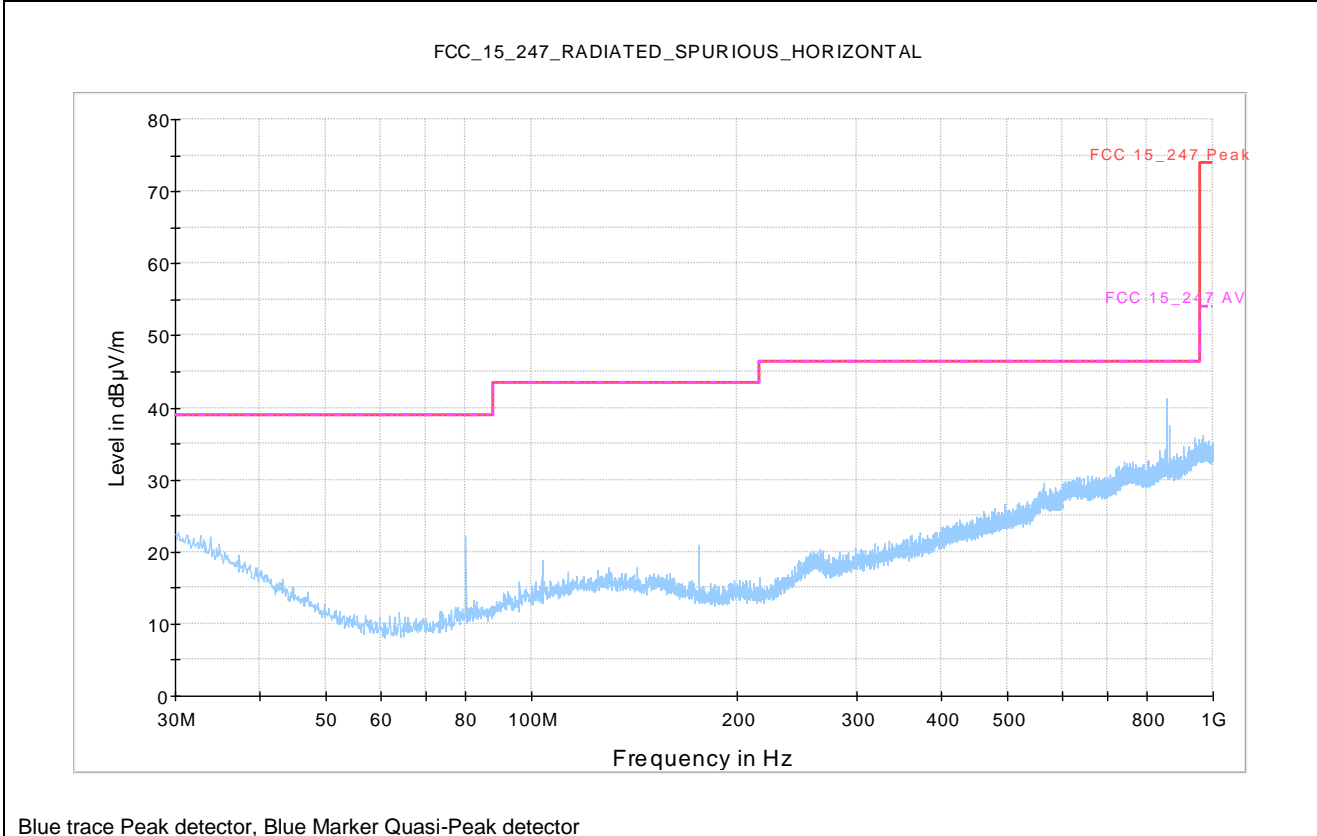
<b>CHANNEL</b>	1
<b>FREQUENCY RANGE</b>	18-26GHz
<b>POLARIZATION</b>	HORIZONTAL



<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	9kHz - 30MHz
<b>POLARIZATION</b>	VERTICAL



<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	30MHz – 1GHz
<b>POLARIZATION</b>	VERTICAL

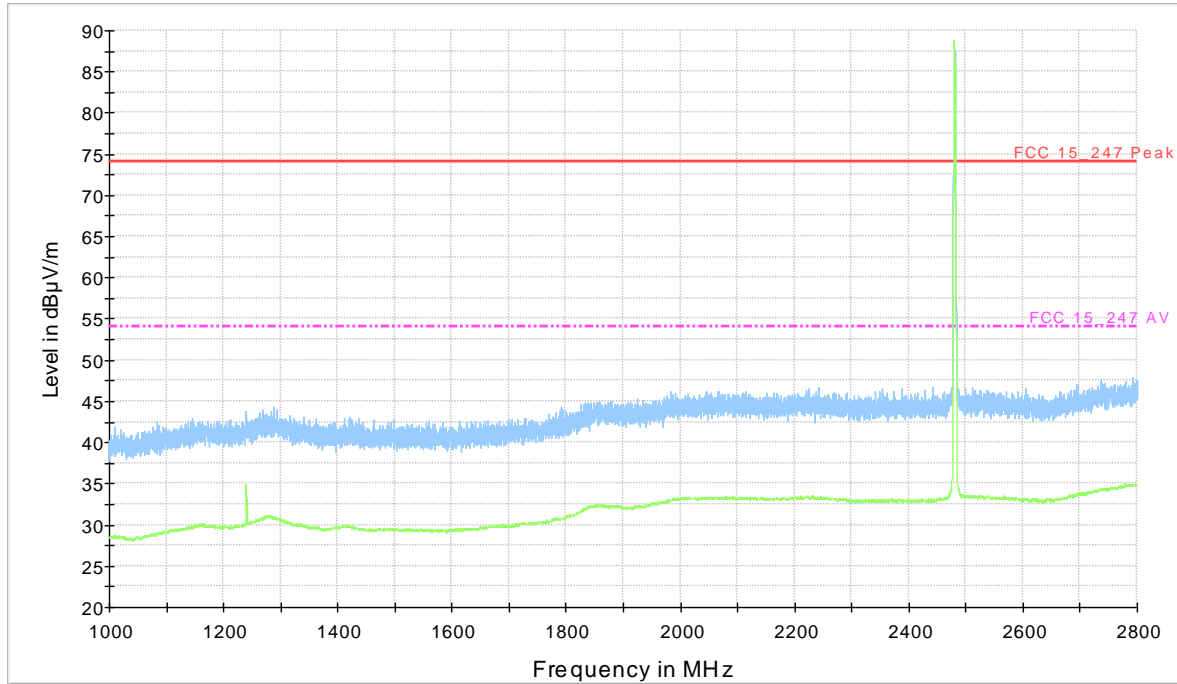


## Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
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<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	1-2.8GHz
<b>POLARIZATION</b>	VERTICAL

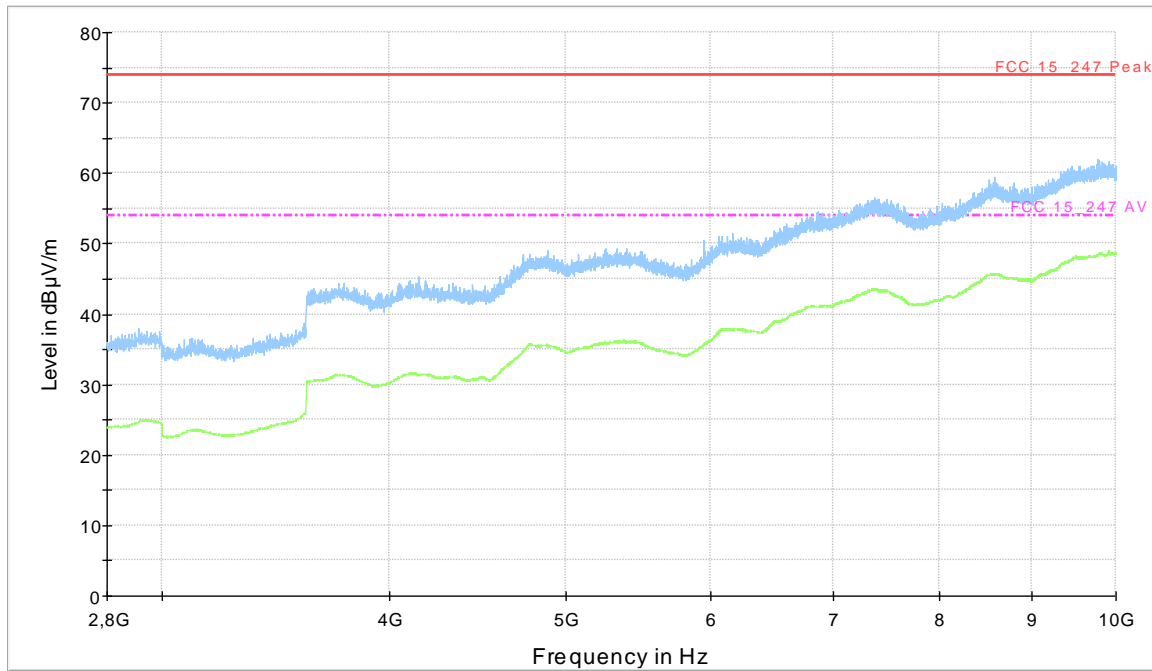
FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	2.8-10GHz
<b>POLARIZATION</b>	VERTICAL

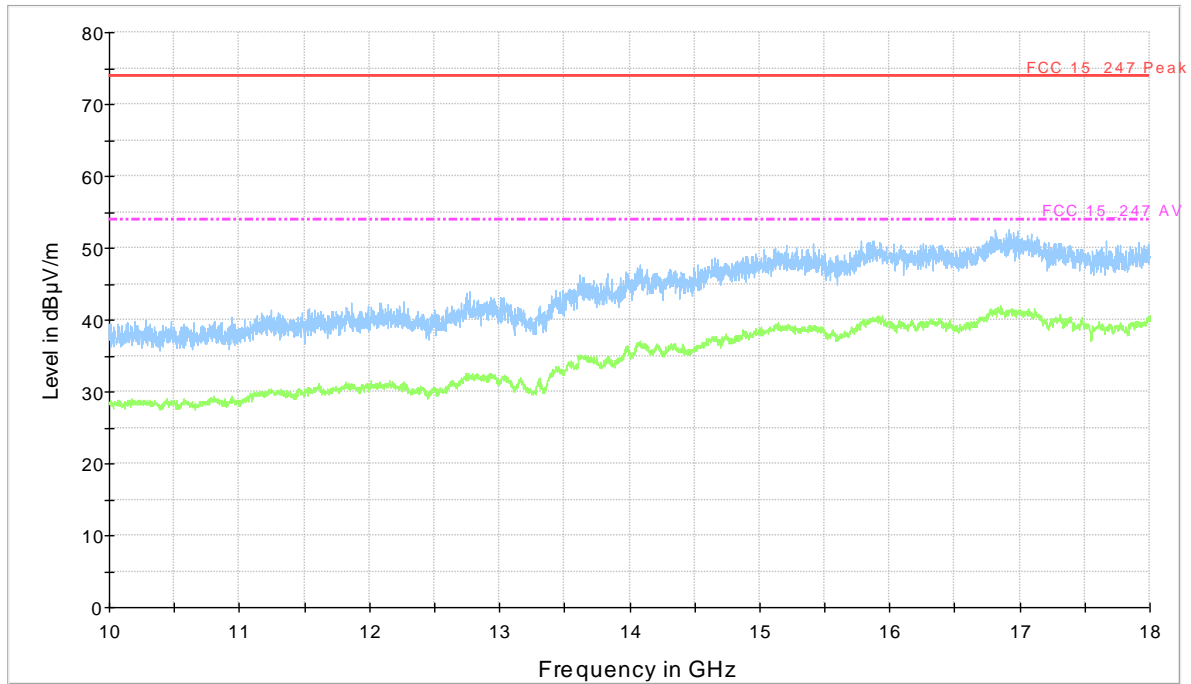
FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL



Blue trace Peak detector, Green trace average detector

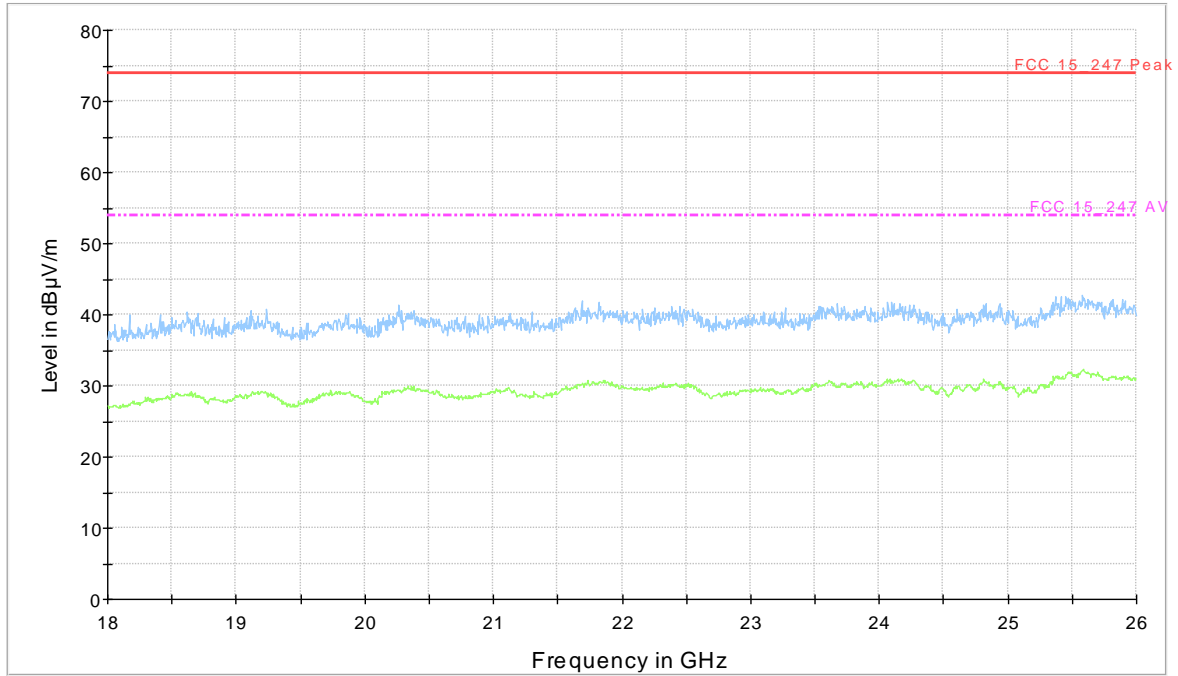
<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	10-18GHz
<b>POLARIZATION</b>	VERTICAL

FCC\_15\_247\_SPURIOUS\_TX\_SWEEP\_FSP



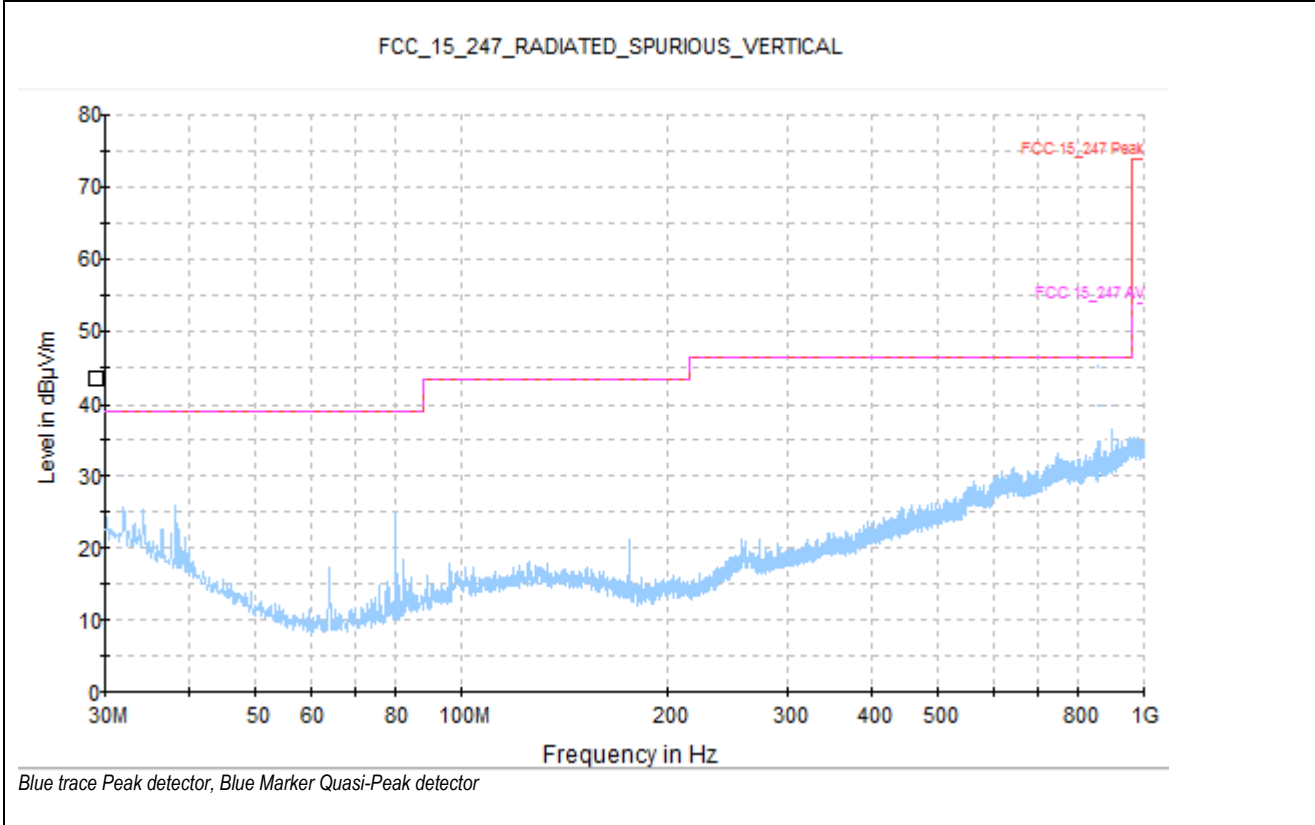
Blue trace Peak detector, Green trace average detector

<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	18-26GHz
<b>POLARIZATION</b>	VERTICAL





<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	30MHz – 1GHz
<b>POLARIZATION</b>	HORIZONTAL

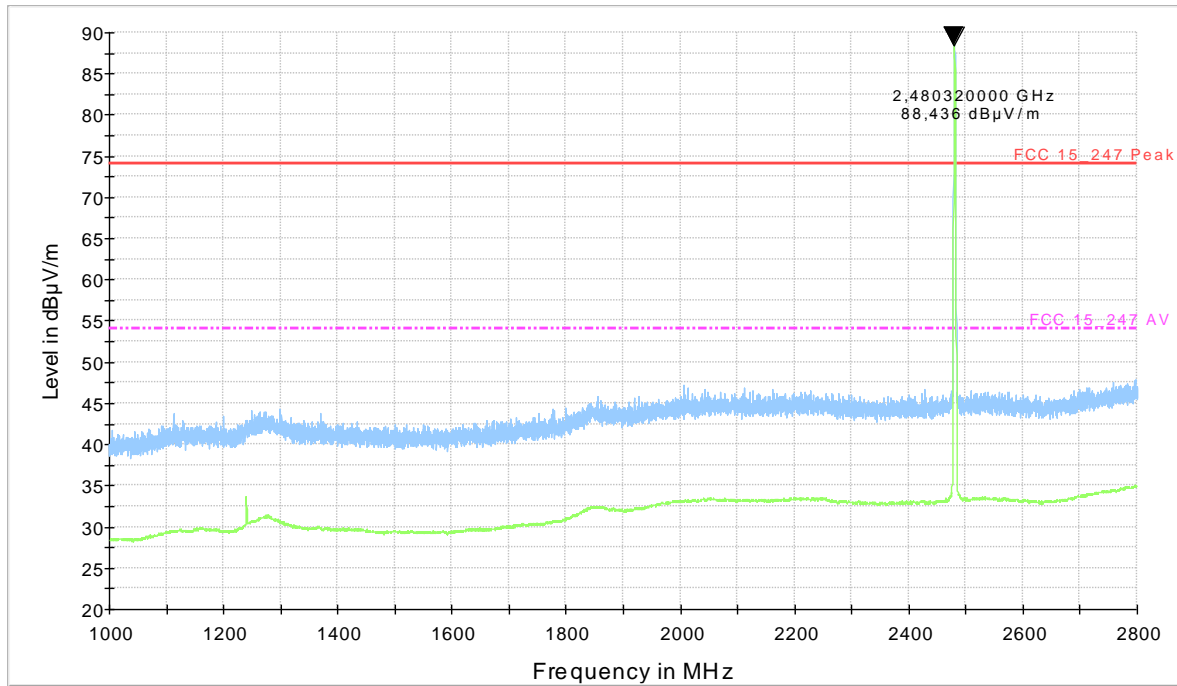


## Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
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<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	1-2.8GHz
<b>POLARIZATION</b>	HORIZONTAL

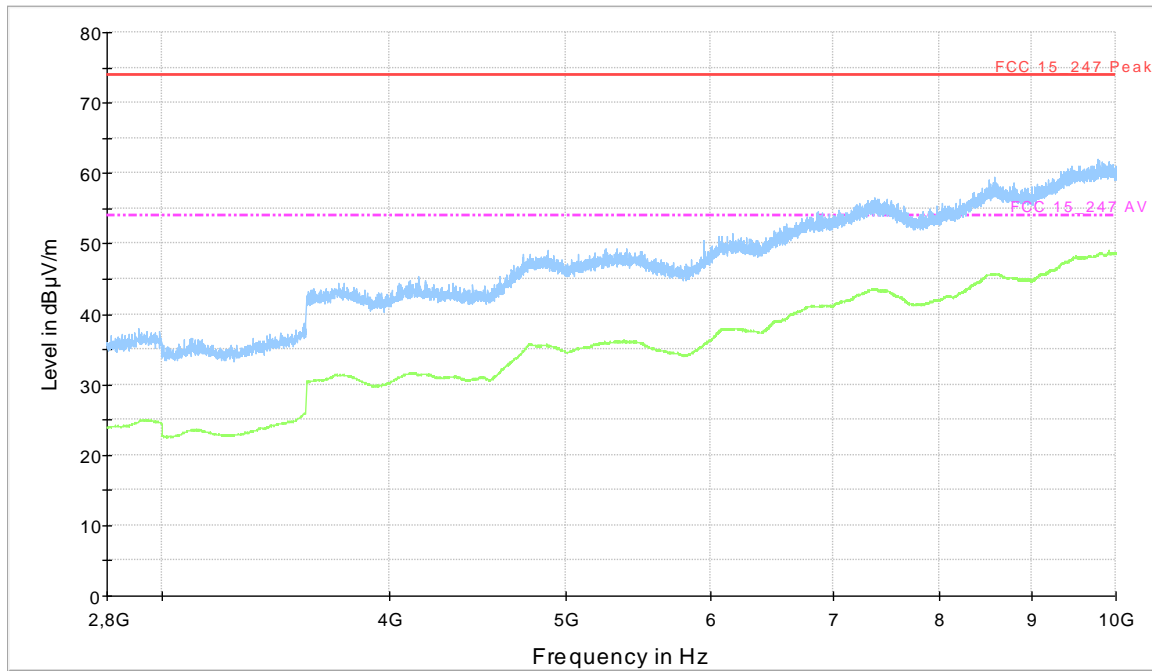
FCC\_15\_247\_RADIATED\_SPURIOUS\_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	2.8-10GHz
<b>POLARIZATION</b>	HORIZONTAL

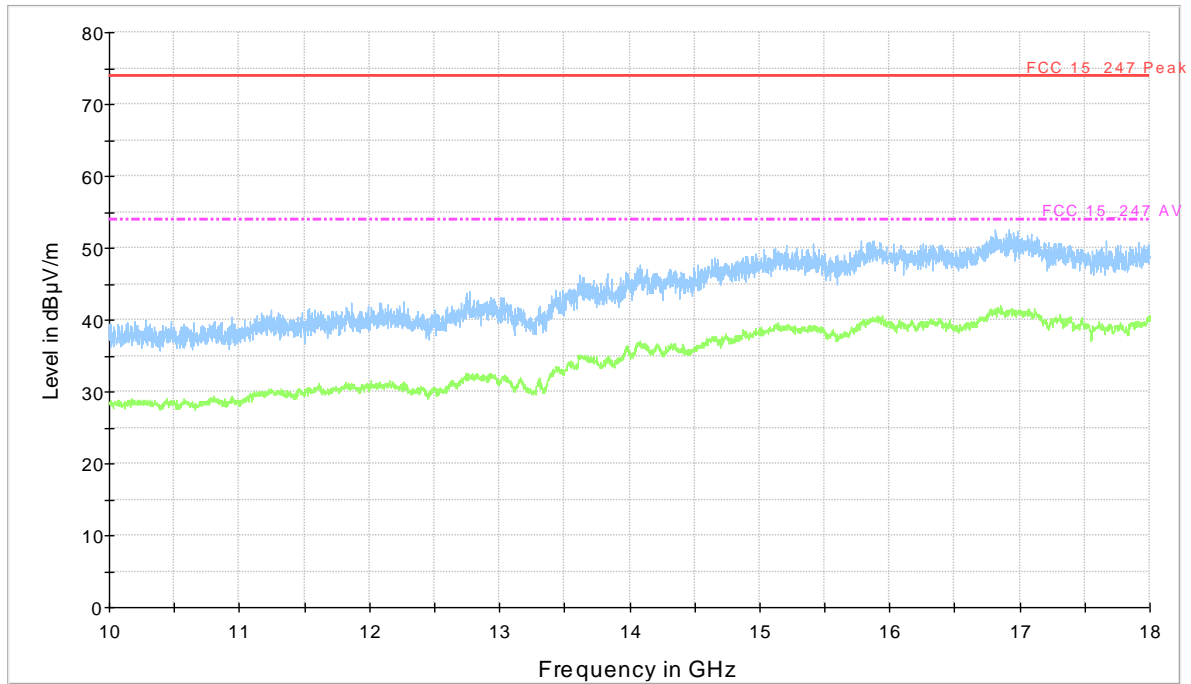
FCC\_15\_247\_RADIATED\_SPURIOUS\_VERTICAL



Blue trace Peak detector, Green trace average detector

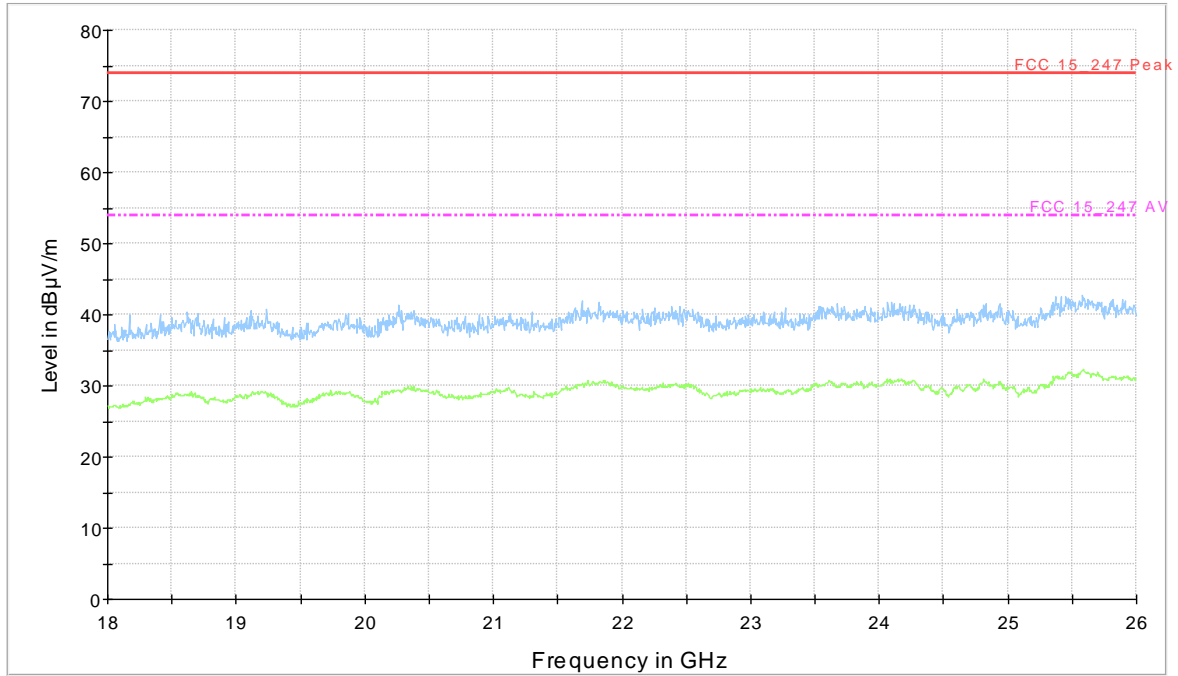
<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	10-18GHz
<b>POLARIZATION</b>	HORIZONTAL

FCC\_15\_247\_SPURIOUS\_TX\_SWEEP\_FSP



Blue trace Peak detector, Green trace average detector

<b>CHANNEL</b>	39
<b>FREQUENCY RANGE</b>	18-26GHz
<b>POLARIZATION</b>	HORIZONTAL



**TEST  
7.**
**RADIATED EMISSIONS**
**REFERENCE  
DOCUMENT**

FCC Cfr 47 part 15 - Subpart B - §15.109

<b>TEST SETUP</b>	In according to ref std
<b>TEST LOCATION</b>	Semi Anechoic Chamber
<b>TYPE OF MEASUREMENT</b>	RADIATED
<b>TEST EQUIPMENT</b>	EMI receiver Rohde & Schwarz Mod, ESU 40 Chase Antenna Mod, CBL 6111 C Antenna Rohde & Schwarz mod, HL050 Tunable notch filter Wainwright mod, WRCT2200/2500-5/40-10SK High pass filter Wainwright WHNX 2,8/18G-10SS
<b>TEST PERFORMED BY</b>	Daniele Aosani
<b>TESTING DATE</b>	Aprli 2018
<b>UNCERTAINTY OF MEASURE:</b>	Combined uncertainty = $\pm 1,75$ dB Total uncertainty = (k=2) $\pm 3,5$ dB

<b>TEST CONDITIONS:</b>	<b>MEASURED</b>
Ambient temperature : 23°C $\pm$ 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

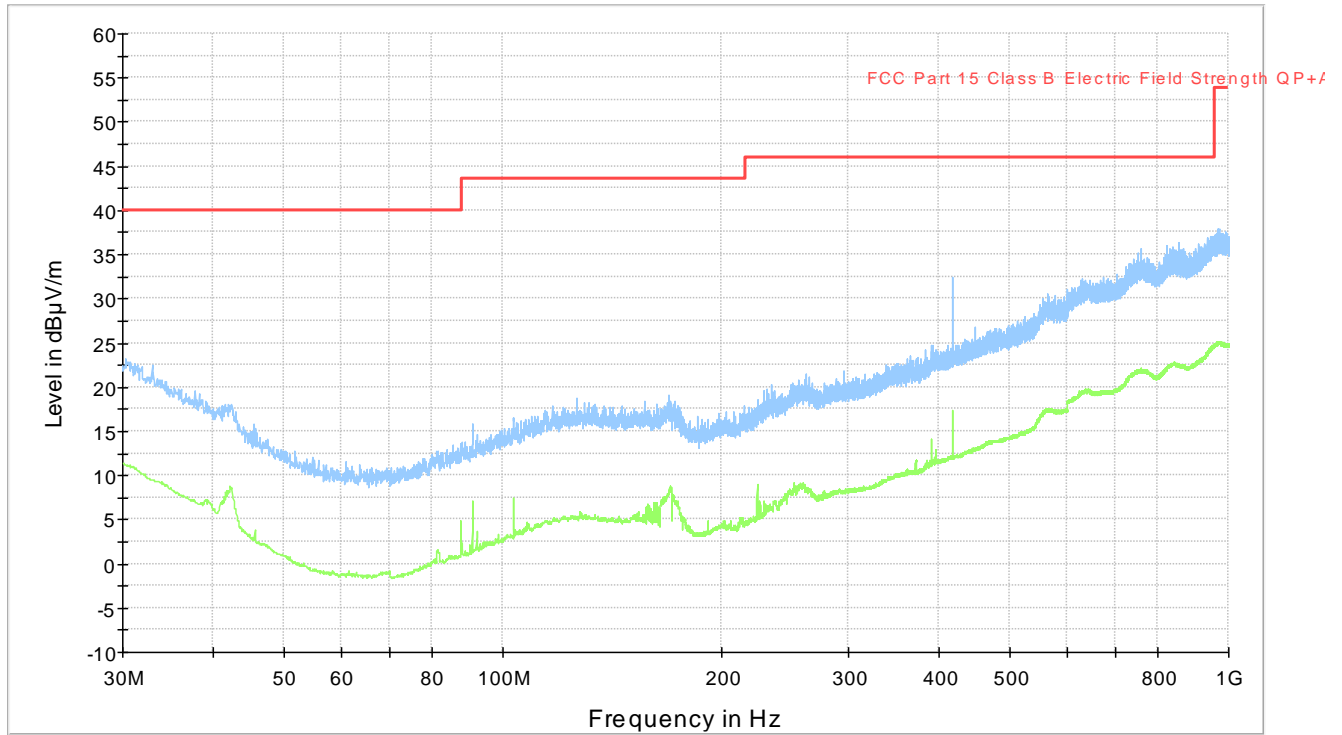
<b>OPERATING CONDITION</b>	#2
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<b>TEST RESULT</b>	<b>WITHIN THE LIMITS</b>
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**VERTICAL POLARIZATION**

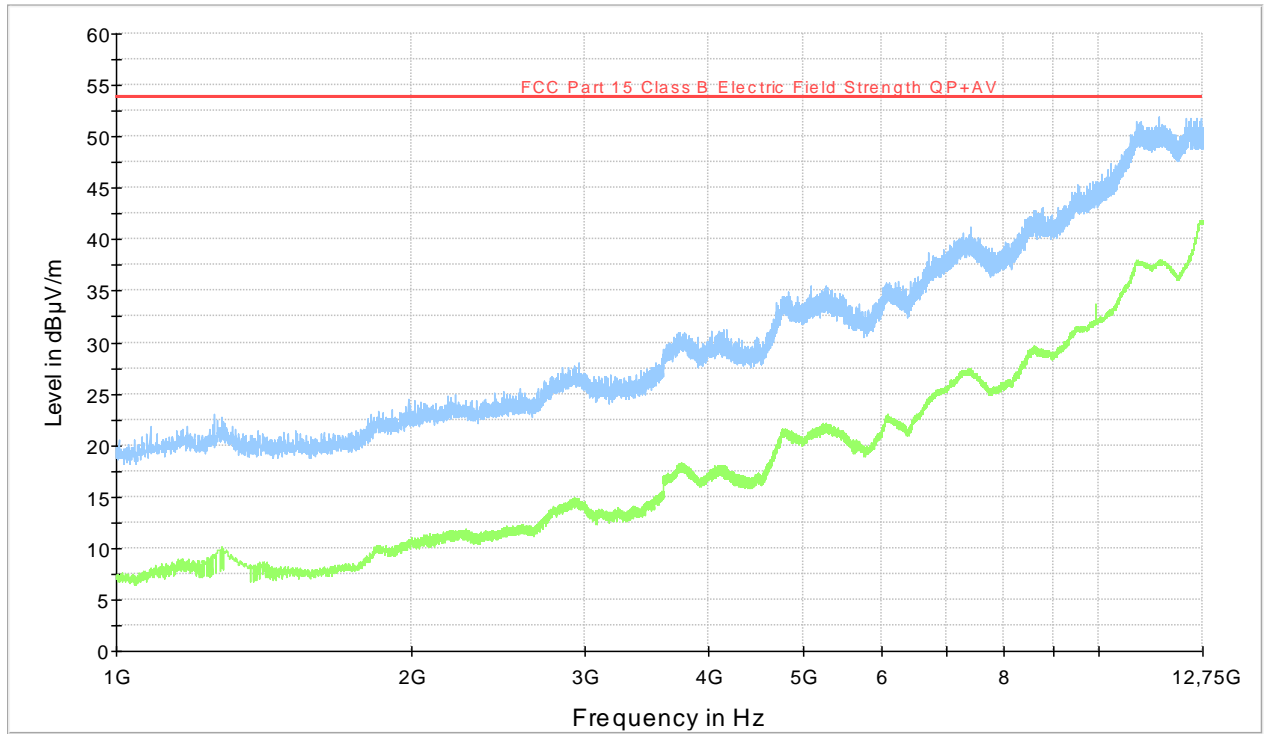
**Frequency Range: 30 MHz – 1 GHz**

FCC\_15\_109\_RADIATED\_EMISSIONS\_VERTICAL



**Frequency Range: 1- 12.75 GHz**

FCC\_15\_109\_RADIATED\_EMISSIONS\_VERTICAL

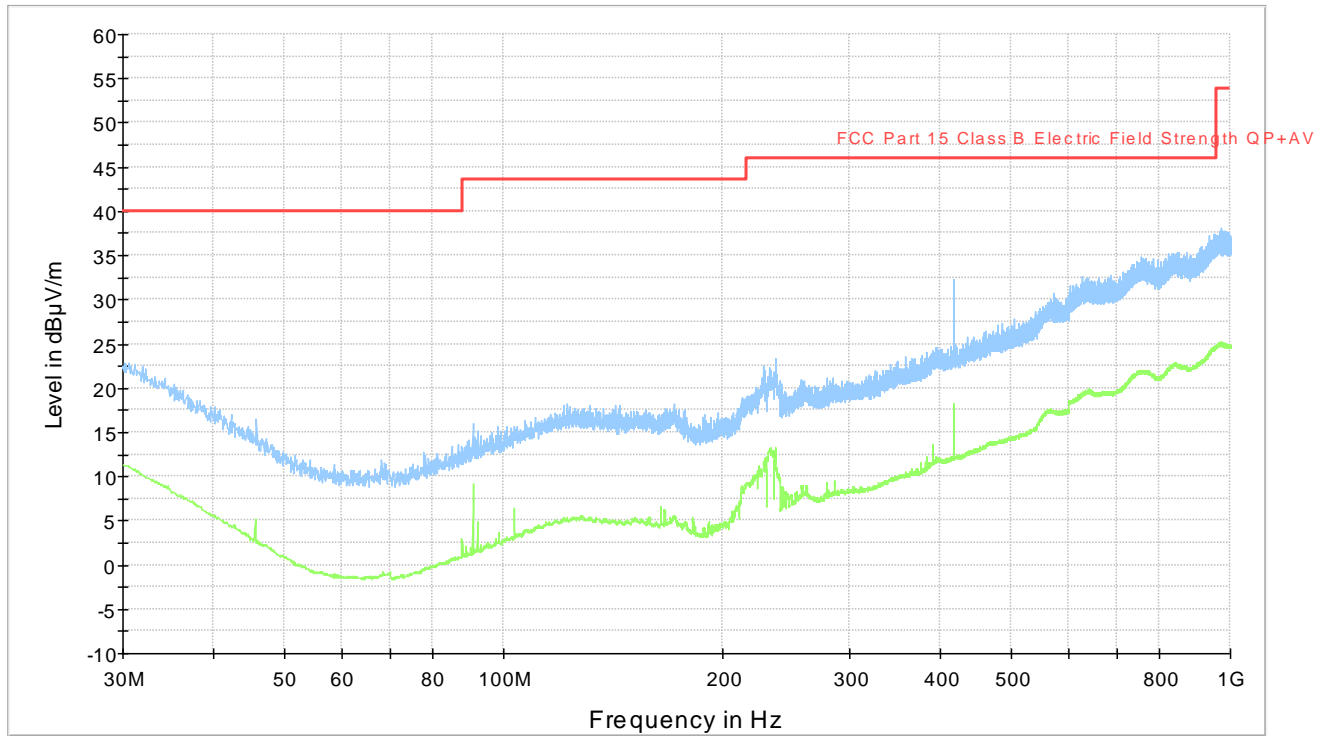




**HORIZONTAL POLARIZATION**

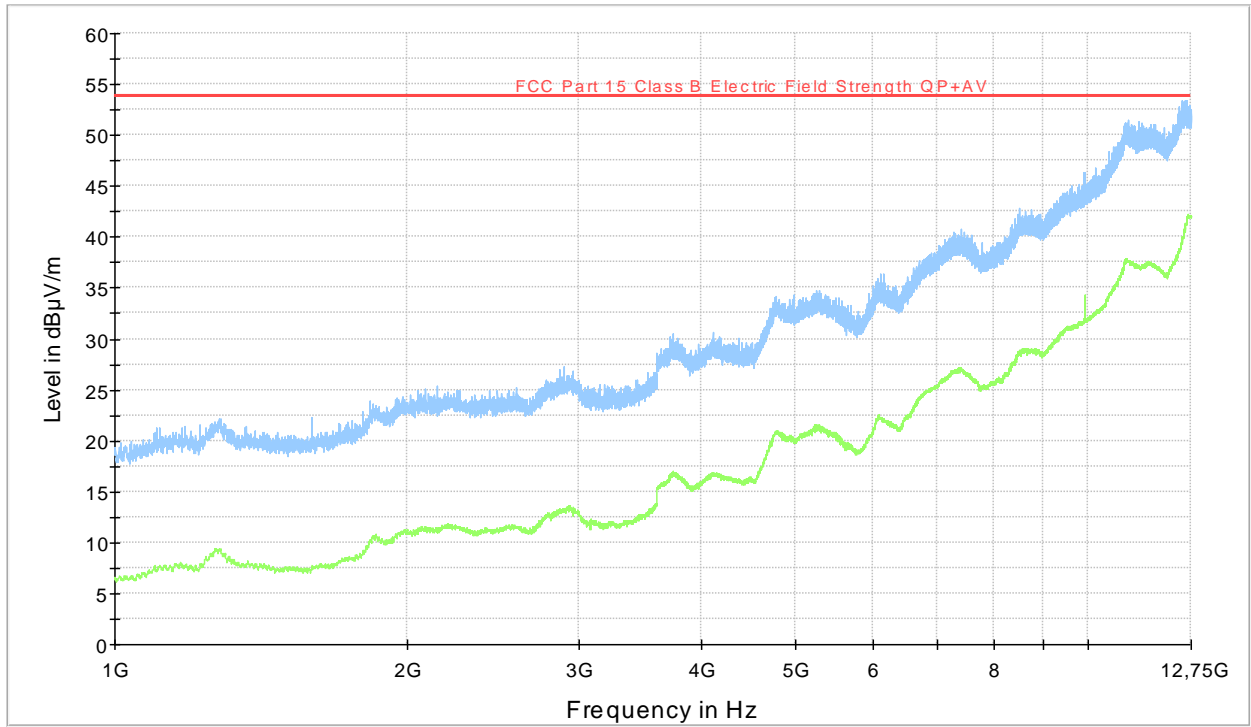
**Frequency Range: 30 MHz – 1 GHz**

FCC\_15\_109\_RADIATED\_EMISSIONS\_HORIZONTAL



**Frequency Range: 1- 12.75 GHz**

FCC\_15\_109\_RADIATED\_EMISSIONS\_HORIZONTAL



## 7. LIST OF EQUIPMENT USED

EQUIPMENT	MANUFACTURER	MODEL	SERIAL Nr.	CAL. DUE
EMI TEST RECEIVER	Rohde & Schwarz	ESU40	100111	Mar. 2019
RF SEMI-ANECHOIC CHAMBER (CSSA)	Siemens	B83117-D6019- T232	003-005- 134/94C	Jan 2019
BILOG ANTENNA	Chase	CBL6111C	2717	Mar. 2019
HORN ANTENNA 1-18GHz	Electrometrics	EN-6961	100437	Apr. 2020
HORN ANTENNA 18-26GHz	SCHWARZBECK MESS- ELEKTRONIK	BBHA 9170	9170-688	Apr. 2020
SPECTRUM ANALYZER	Rohde & Schwarz	FSP40	100038	Feb. 2019
SYSTEM DC POWER SUPPLY	HP	6623A	3448A04501	Jan. 2019
TUNABLE NOTCH FILTER	Wainwright	WRCT2200/2500- 5/40-10SK	5	Nov 2018
HIGH PASS FILTER	Wainwright	WHNX 2,8/18G- 10SS	1	Nov 2018