

Test report No:  
 NIE: 67678RRF.002

## Test report

USA FCC Part 15.249, 15.209

CANADA RSS-210, RSS-Gen

Radio Frequency Devices. Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz.

(*) Identification of item tested	Hearing Aid
(*) Trademark	Phonak
(*) Model and /or type reference	Phonak Virto P 90-312
(*) Derived model not tested	Phonak Virto P 70-312; Phonak Virto P 50-312; Phonak Virto P 30-312; Phonak Brio 5 I-312, ampli-mini I 5 P 312 WL; ampli-mini I 4 P 312 WL; ampli-mini I 3 P 312 WL; ampli-mini I 2 P 312 WL
Other identification of the product	HW version: 063-0004-01 SW version: 068-1430 FCC ID: KWC-VTP IC: 2262A-VTP
(*) Features	Bluetooth, Bluetooth LE, DM, Flora
Applicant	SONOVA AG Laubisrütistrasse 28 8712, Stäfa, Switzerland
Test method requested, standard	USA FCC Part 15.249 (10-1-20 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, 5725 - 5875 MHz, and 24.0 – 24.25 GHz. USA FCC Part 15.209 (10-1-20 Edition): Radiated emission limits; general requirements. CANADA RSS-210 Issue 10 (December 2019). CANADA RSS-Gen Issue 5 Amendment 2 (February 2021). ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager  2022.02.11 10:43:34 +01'00'
Date of issue	2022-02-11
Report template No	FDT08_23 (*) "Data provided by the client"

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## Competences and guarantees

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The results presented in this Test Report apply only to the particular item under test established in this document.

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## General Conditions

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1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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## Uncertainty

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Uncertainty (factor  $k=2$ ) was calculated according to the DEKRA Testing and Certification S.A.U. internal document PODT000.

## Data provided by the client

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The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The sample of the model Phonak Virto P 90 312 is a hearing aid.  
In-the-ear Hearing instrument powered by a zinc air battery (312). Integrated wireless connectivity over BLE, BT and a proprietary modulation. Supports the hands free profile.
3. Derived model not tested. These models have been declared by the supplier of the sample as being the same as the model under test

To whom it may concern

Stäfa (Switzerland), December 2021 / Glenn Borrett, Senior Manager Regulatory Affairs

## Product Equality Declaration

We, Sonova AG, hereby declare under our own responsibility that the products listed below as "Hardware Equivalent Products" are in all relevant parts and hardware construction identical to the corresponding product identified as "Products with basis Hardware". The following standards and/or technical regulations and corresponding test reports fully apply accordingly:

Standards
ACOUSTIC: EN 60118-0-1-2-6, NSH 7th edition, NHS 7.0 Annex A, ANSI C63.19 EMC: IEC/EN 60118-13 Europe: Health and Safety: IEC/EN 60601-1, IEC/EN 60601-2-66, IEC/EN 62304, IEC/EN 62479; EMC: IEC/EN 60601-1-2; EN 301489-1,-3,-17; REACH; RoHS III SPECTRUM: EN 300 328; EN 300 422-4  USA: 47 CFR Part 15(B), Part 15(C): 15.249, Part 2: 2.1091, 2.1093; Canada: RSS-Gen, ICES-003, RSS-210, RSS-102; Japan: ARIB 166, Ordinance regulating Radio Equipment (2005-08) Ar12 item 19

The only difference between the listed equivalent and corresponding basis models is the model name, a different set of audiological features per performance level and new corresponding fitting software due to marketing purposes.

Products with basis Hardware (tested representative model)	Hardware Equivalent Products
Phonak Virto P90-Titanium (Receiver: M / P / SP) HW version: 063-0001-01 FW version: 068-1408 SW version: Target 7	Phonak Virto P70-Titanium (Receiver: M / P / SP) HW version: 063-0005-01 FW version: 068-1409 SW version: Target 7
	ampli-mini I 5 P Ti NWL (Receiver: M / P / SP) HW version: 063-0524-01 FW version: 068-1408 SW version: Target 7
	ampli-mini I 4 P Ti NWL (Receiver: M / P / SP) HW version: 063-0525-01 FW version: 068-1409 SW version: Target 7
Phonak Virto P90-10 NW O (Receiver: M / P / SP) HW version: 063-0002-01 FW version: 068-1404 SW version: Target 7	Phonak Virto P70-10 NW O (Receiver: M / P / SP) HW version: 063-0006-01 FW version: 068-1405 SW version: Target 7

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Filename: POL-6548\_2\_DoE CTC Mozart ITE\_17.12.2021.docx  
 TBM: 000.000.029.011/2019-05-08/vh/11/vshcherba

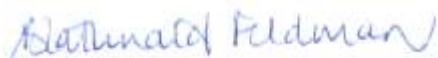
1/3

	Phonak Virto P50-10 NW O (Receiver: M / P / SP) HW version: 063-0508-01 FW version: 068-1406 SW version: Target 7
	Phonak Virto P30-10 NW O (Receiver: M / P / SP) HW version: 063-0511-01 FW version: 068-1407 SW version: Target 7
	Phonak Brio 5 I-10 NW O (Receiver: M / P / SP) HW version: 063-0514-01 FW version: 068-1404 SW version: Target 7
	ampli-mini I 5 P 10 NWL (Receiver: M / P / SP) HW version: 063-0516-01 FW version: 068-1404 SW version: Target 7
	ampli-mini I 4 P 10 NWL (Receiver: M / P / SP) HW version: 063-0517-01 FW version: 068-1405 SW version: Target 7
	ampli-mini I 3 P 10 NWL (Receiver: M / P / SP) HW version: 063-0518-01 FW version: 068-1406 SW version: Target 7
	ampli-mini I 2 P 10 NWL (Receiver: M / P / SP) HW version: 063-0519-01 FW version: 068-1407 SW version: Target 7
Phonak Virto P90-312 NW O (Receiver: M / P / SP) HW version: 063-0003-01 FW version: 068-1400 SW version: Target 7	Phonak Virto P70-312 NW O (Receiver: M / P / SP) HW version: 063-0007-01 FW version: 068-1401 SW version: Target 7
	Phonak Virto P50-312 NW O (Receiver: M / P / SP) HW version: 063-0509-01 FW version: 068-1402 SW version: Target 7
	Phonak Virto P30-312 NW O (Receiver: M / P / SP) HW version: 063-0512-01 FW version: 068-1403 SW version: Target 7
Phonak Virto P90-312 (Receiver: M / P / SP / UP) HW version: 063-0004-01 FW version: 068-1430 SW version: Target 7	Phonak Virto P70-312 (Receiver: M / P / SP / UP) HW version: 063-0008-01 FW version: 068-1431 SW version: Target 7
	Phonak Virto P50-312 (Receiver: M / P / SP / UP) HW version: 063-0510-01 FW version: 068-1432 SW version: Target 7

	Phonak Virto P30-312 (Receiver: M / P / SP / UP) HW version: 063-0513-01 FW version: 068-1433 SW version: Target 7
	Phonak Brio 5 I-312 (Receiver: M / P / SP / UP) HW version: 063-0515-01 FW version: 068-1430 SW version: Target 7
	ampli-mini I 5 P 312 WL (Receiver: M / P / SP / UP) HW version: 063-0520-01 FW version: 068-1430 SW version: Target 7
	ampli-mini I 4 P 312 WL (Receiver: M / P / SP / UP) HW version: 063-0521-01 FW version: 068-1431 SW version: Target 7
	ampli-mini I 3 P 312 WL (Receiver: M / P / SP / UP) HW version: 063-0522-01 FW version: 068-1432 SW version: Target 7
	ampli-mini I 2 P 312 WL (Receiver: M / P / SP / UP) HW version: 063-0523-01 FW version: 068-1433 SW version: Target 7

Staefa, 17.12.2021

Staefa,



B. Feldman  
Senior Director Global Quality Management

Staefa,



G. Borrett  
Senior Manager Regulatory Affairs

## Usage of samples

Samples undergoing test have been selected by: The client.

- Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
67678E/007	Hearing aid	Phonak Virto P 90-312	---	2021/07/02

Sample S/01 has undergone the following test(s): All the Radiated tests indicated in Appendixes A, B, C, D.

- Sample S/02 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
67678E/005	Hearing aid	Phonak Virto P 90-312	---	2021/07/02
67678E/013	AA battery socket	---	---	2021/07/02

Auxiliary elements used with the Sample S/02:

Control N°	Description	Model	Serial N°	Date of reception
56788E/001	Copain Tischmodell	G13005	8004751	2018/10/12
67678E/014	Programming cable	---	---	2021/07/02

Sample S/02 has undergone the following test(s): All the Radiated tests indicated in Appendixes A, B, C, D.



## Test sample description

Ports.....:	Port name and description	Cable				
		Specified max length [m]	Attached during test	Shielded	Coupled to patient <sup>(3)</sup>	
	N/A		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Supplementary information to the ports.....:	--					
Rated power supply .....	Voltage and Frequency		Reference poles			
			L1	L2	L3	N
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	DC: 1.4V coin battery					
Rated Power .....	--					
Clock frequencies .....	--					
Other parameters.....:	--					
Software version .....	068-1430					
Hardware version.....:	063-0004-01					
Dimensions in cm (W x H x D)....:	--					
Mounting position.....:	<input type="checkbox"/>	Table top equipment				
	<input type="checkbox"/>	Wall/Ceiling mounted equipment				
	<input type="checkbox"/>	Floor standing equipment				
	<input type="checkbox"/>	Hand-held equipment				
	<input checked="" type="checkbox"/>	Other: Hearing aid				
Modules/parts .....	Module/parts of test item		Type		Manufacturer	
	--					
Accessories (not part of the test item).....:	Description		Type		Manufacturer	
	--					
Documents as provided by the applicant.....:	Description		File name		Issue date	
	--					

<sup>(3)</sup> Only for Medical Equipment



## Identification of the client

SONOVA AG  
Laubisrütistrasse 28  
8712 Stäfa, Switzerland

## Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2021-07-07
Date (finish)	2021-08-05

## Document history

Report number	Date	Description
67678RRF.002	2022-02-11	First release

## Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 75 %

## Remarks and comments

The tests have been performed by the technical personnel: Jaime Barranquero, Victoria Olmedo and Javier Miguel Nadales.

Used instrumentation:

### Conducted Measurements:

		Last Calibration	Due Calibration
1.	Shielded Room ETS LINDGREN S101	N/A	N/A
2.	Signal and Spectrum Analyzer 10Hz-40GHz Rohde and Schwarz FSV40	2021/02	2023/02

### Radiated Measurements:

		Last Calibration	Due Calibration
1.	Semianechoic Absorber Lined Chamber ALBATROSS P29419	N/A	N/A
2.	Shielded Room ALBATROSS P29419	N/A	N/A
3.	Ultralog Antenna 30MHz-6GHz ROHDE AND SCHWARZ HL562E_UPG	2019/10	2022/10
4.	EMI Test Receiver 2Hz – 44GHz ROHDE AND SCHWARZ ESW44	2019/10	2021/10
5.	Horn Antenna 1-18 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9120D	2019/11	2022/11
6.	RF pre-amplifier, 30dB, 500 MHz-18 GHz SCHWARZBECK BBV 9718 C	2021/02	2022/02
7.	Horn Antenna 18-40GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9170	2021/03	2024/03
8.	RF pre-amplifier G>30dB, 18-40GHz, BONN ELEKTRONIK BLMA 1840-3G	2019/11	2021/11

## Testing verdicts

Not applicable:	N/A
Pass:	P
Fail:	F
Not measured:	N/M

## Summary

### 1. Bluetooth Low Energy

FCC PART 15 PARAGRAPH / RSS-210			
Requirement – Test case		Verdict	Remark
15.249 (a) / RSS-210 B.10 (a)	Field strength of fundamental and harmonic emissions	P	
15.249 (d) / RSS-210 B.10 (b)	Emissions radiated outside of the specific frequency bands	P	
<u>Supplementary information and remarks:</u> None.			

### 2. Bluetooth Basic Rate

FCC PART 15 PARAGRAPH / RSS-210			
Requirement – Test case		Verdict	Remark
15.249 (a) / RSS-210 B.10 (a)	Field strength of fundamental and harmonic emissions	P	
15.249 (d) / RSS-210 B.10 (b)	Emissions radiated outside of the specific frequency bands	P	
<u>Supplementary information and remarks:</u> None.			

### 3. Proprietary protocol DM 2.4 GHz

FCC PART 15 PARAGRAPH / RSS-210			
Requirement – Test case		Verdict	Remark
15.249 (a) / RSS-210 B.10 (a)	Field strength of fundamental and harmonic emissions	P	
15.249 (d) / RSS-210 B.10 (b)	Emissions radiated outside of the specific frequency bands	P	
<u>Supplementary information and remarks:</u> None.			

### 4. Proprietary protocol Flora 2.4 GHz

FCC PART 15 PARAGRAPH / RSS-210			
Requirement – Test case		Verdict	Remark
15.249 (a) / RSS-210 B.10 (a)	Field strength of fundamental and harmonic emissions	P	
15.249 (d) / RSS-210 B.10 (b)	Emissions radiated outside of the specific frequency bands	P	
<u>Supplementary information and remarks:</u> None.			

## Appendix A: Test results. Bluetooth Low Energy

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## TEST CONDITIONS

### POWER SUPPLY (V) and ANTENNA:

V nominal:	1.4 Vdc
Type of Power Supply:	Battery.
Type of Antenna:	Integral
Declared Antenna Gain:	-7 dBi

### TEST FREQUENCIES:

Low Channel:	2402 MHz
Middle Channel:	2440 MHz
High Channel:	2480 MHz

### CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is connected to the spectrum analyser using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



The DC supply voltage is applied using an external battery.

### RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (bilog antenna for the range between 30 MHz to 1000 MHz and 1 GHz-17 GHz double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1 m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

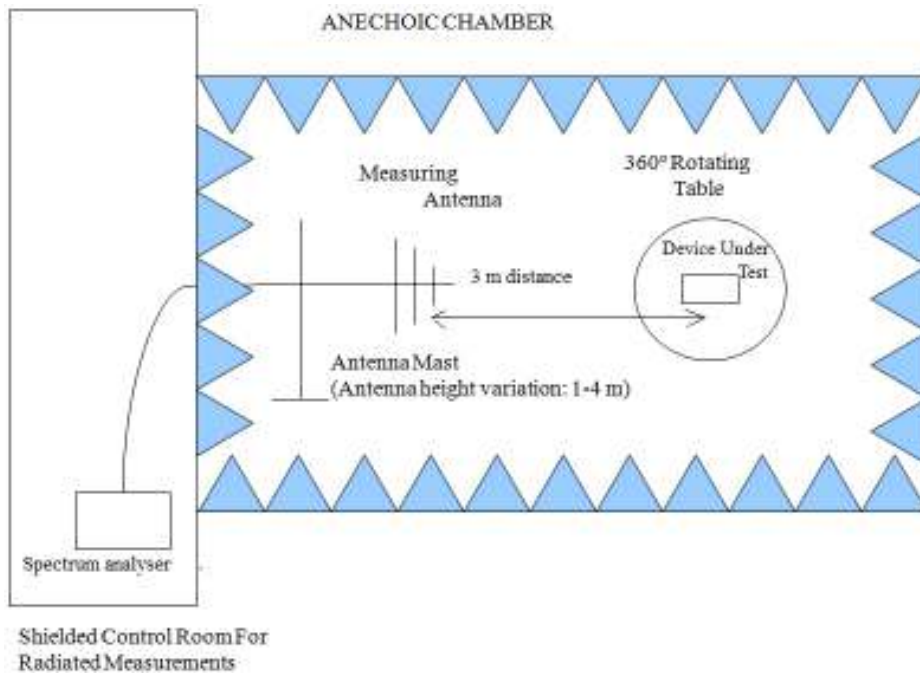
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

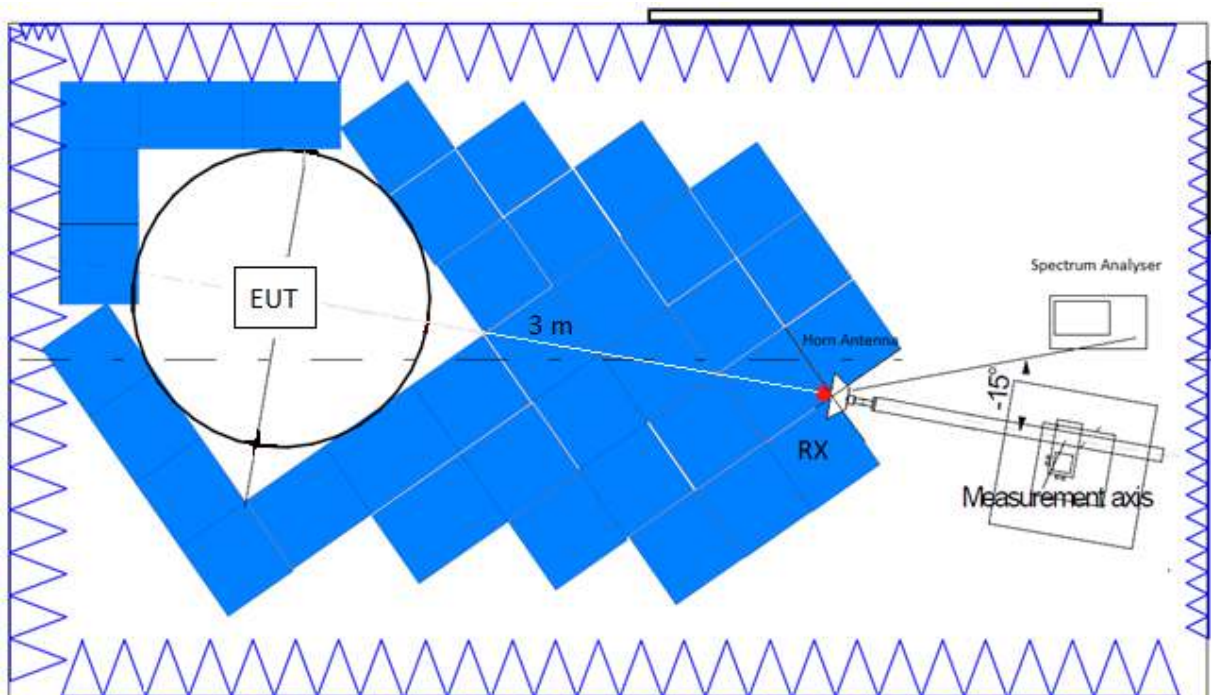
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth/video bandwidth of 100 kHz/300 kHz was used for frequencies below 1 GHz and 1MHz/3MHz for frequencies above 1 GHz.

Radiated measurements setup  $f < 1$  GHz:

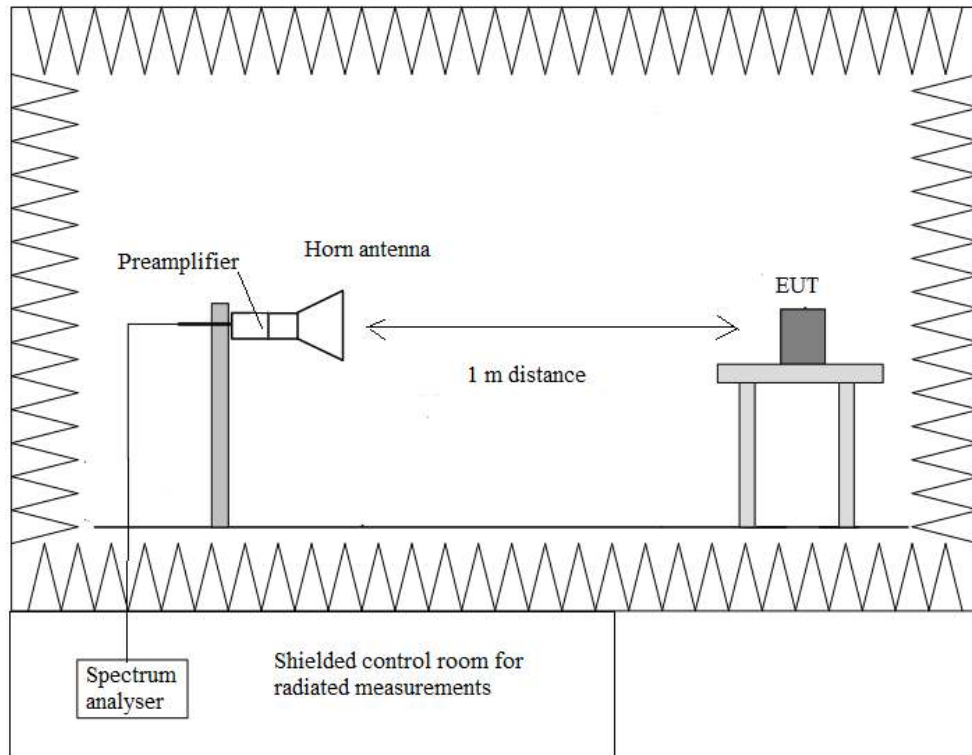


Radiated measurements setup from 1 GHz to 17 GHz:





Radiated measurements setup  $f > 17$  GHz:



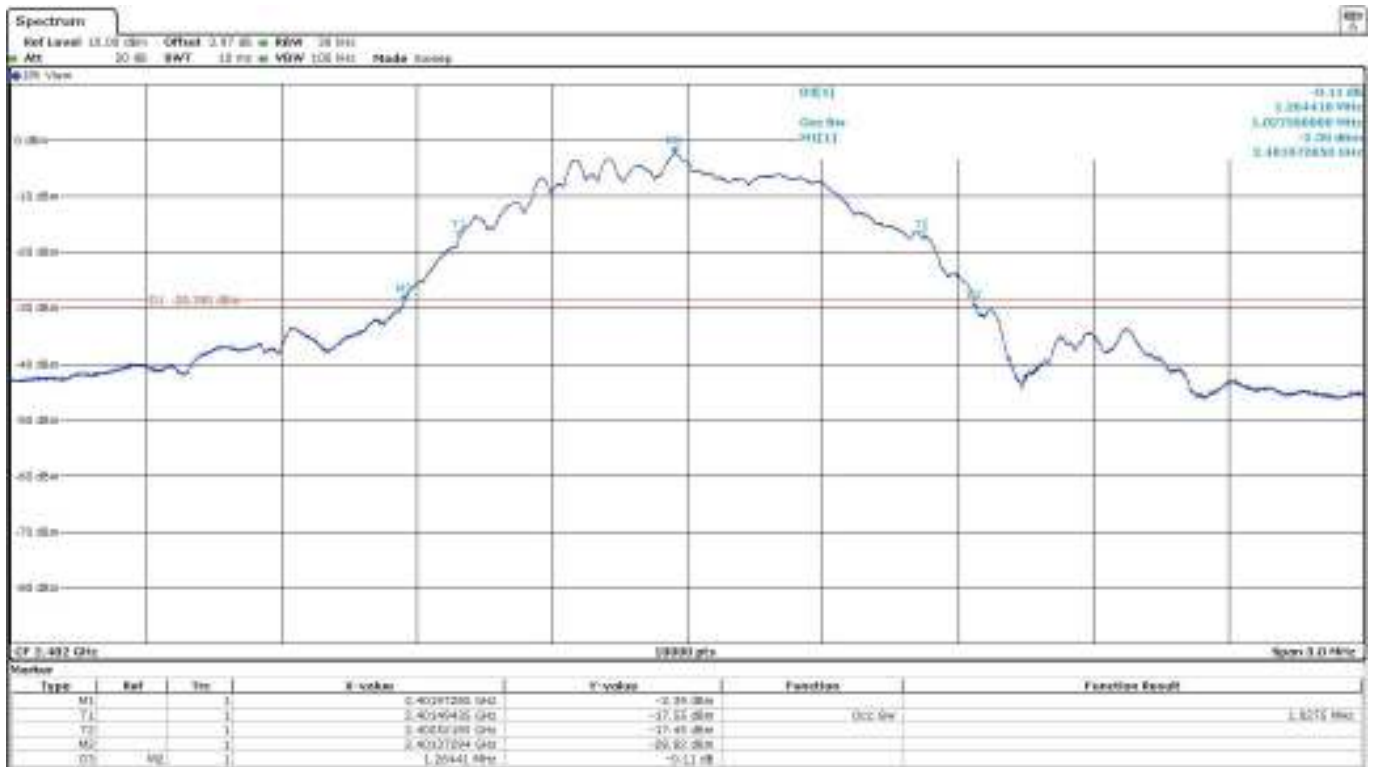
## Occupied Bandwidth

**RESULTS:**

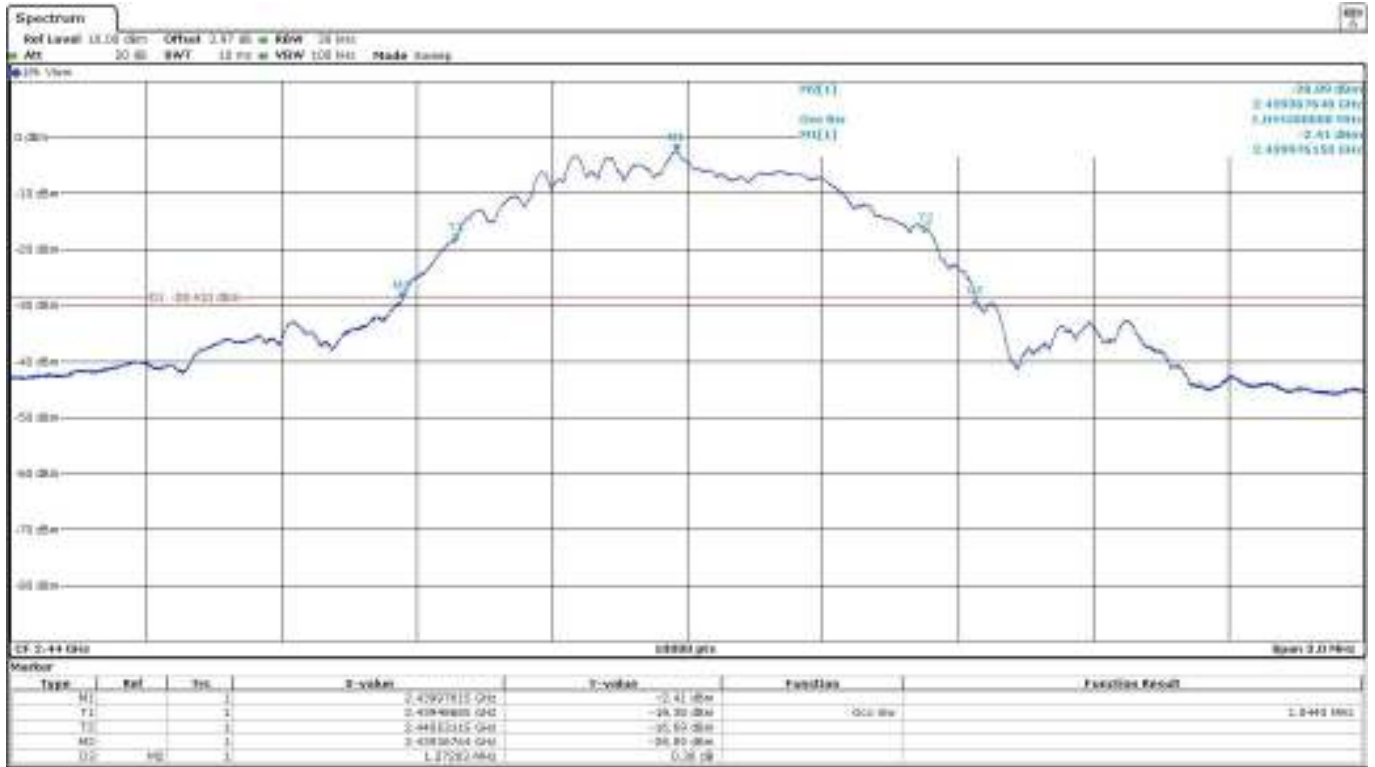
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
99% Bandwidth (MHz)	1.0275	1.0443	1.0623
Measurement Uncertainty (kHz)	<±3.64		

Verdict: PASS

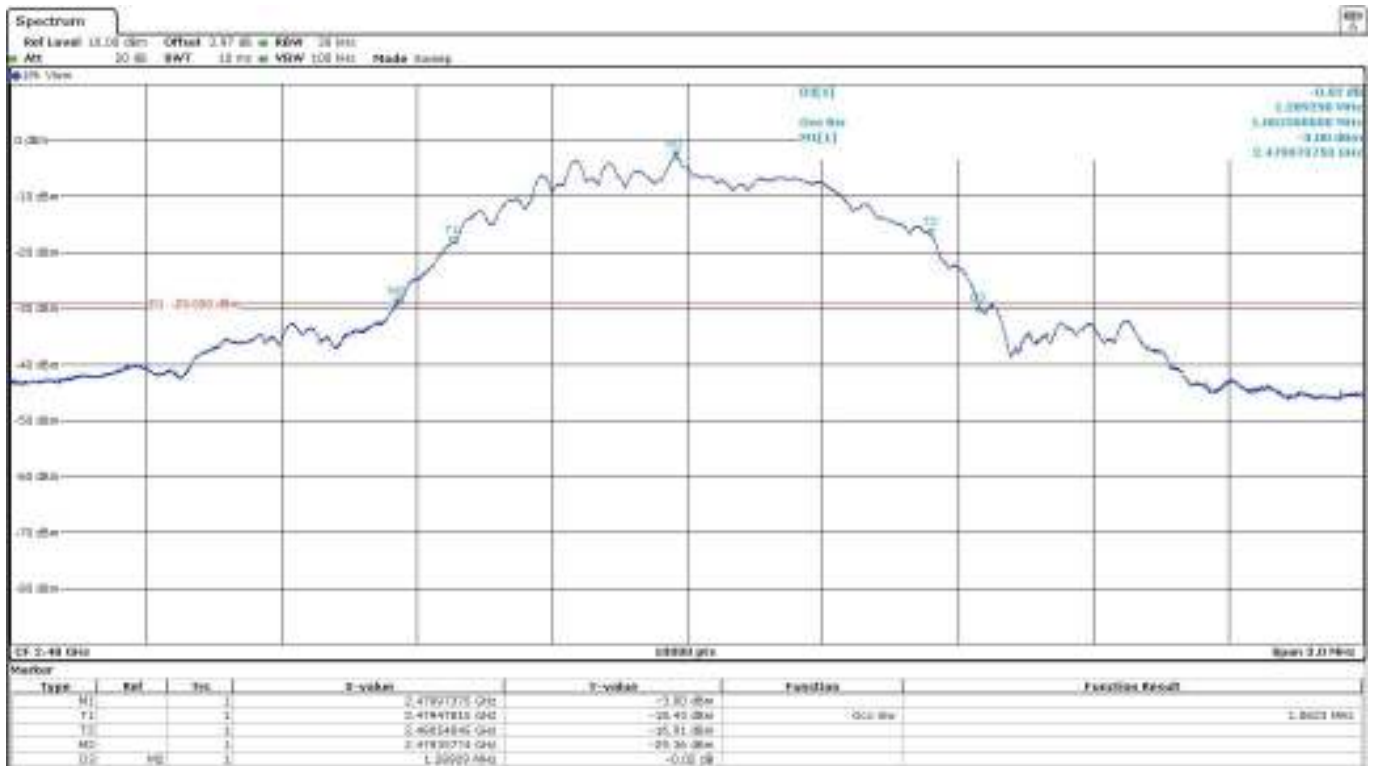
- Low Channel:



- Middle Channel:



- High Channel:



## 15.249 (a) / RSS-210 B.10 (a) Field strength of fundamental and harmonics emissions

### SPECIFICATION:

The field strength of emissions from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of fundamental (mV/m)	Field strength (dBµV/m)	Measurement distance (m)
902 - 928	50	93.98	3
2400 – 2483.5	50	93.98	3
5725 - 5875	50	93.98	3
24000-24250	250	107.96	3

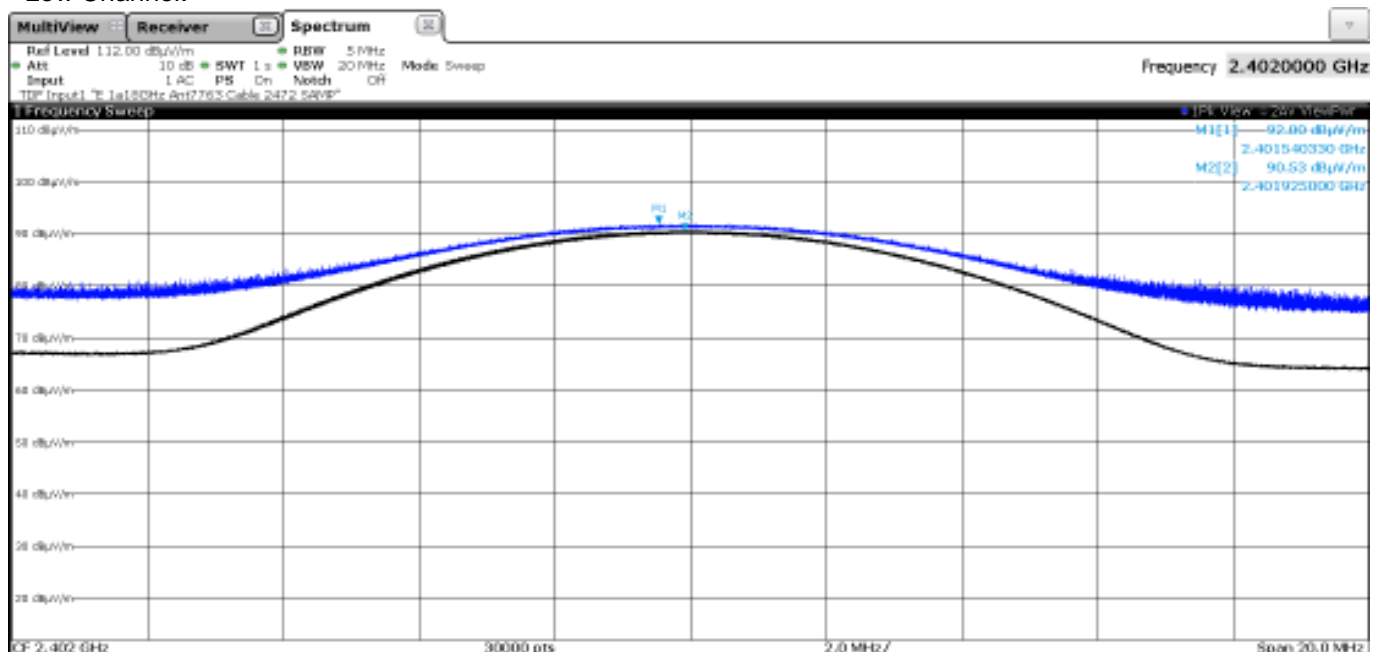
For frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### RESULTS:

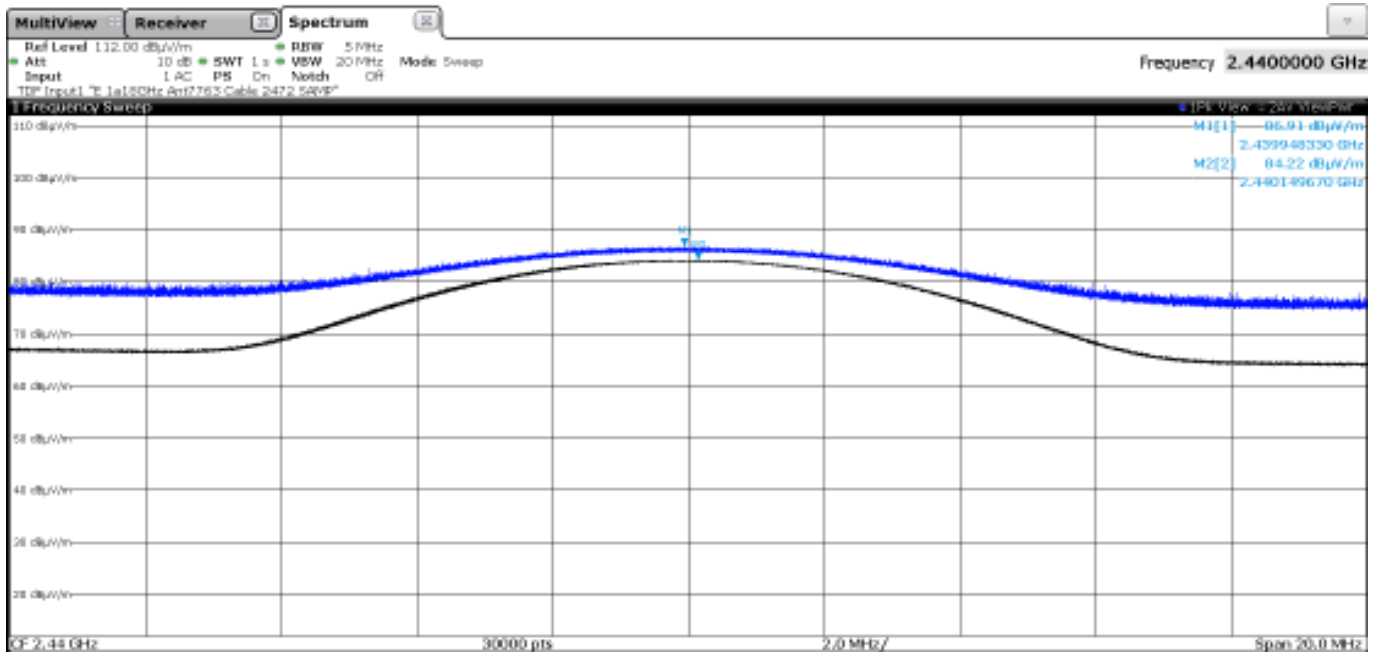
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Average Field Strength (dBµV/m)	90.53	84.22	89.29
Peak Field Strength (dBµV/m)	92.00	86.91	91.16
Measurement Uncertainty (dB)	<±4.01		

Verdict: PASS

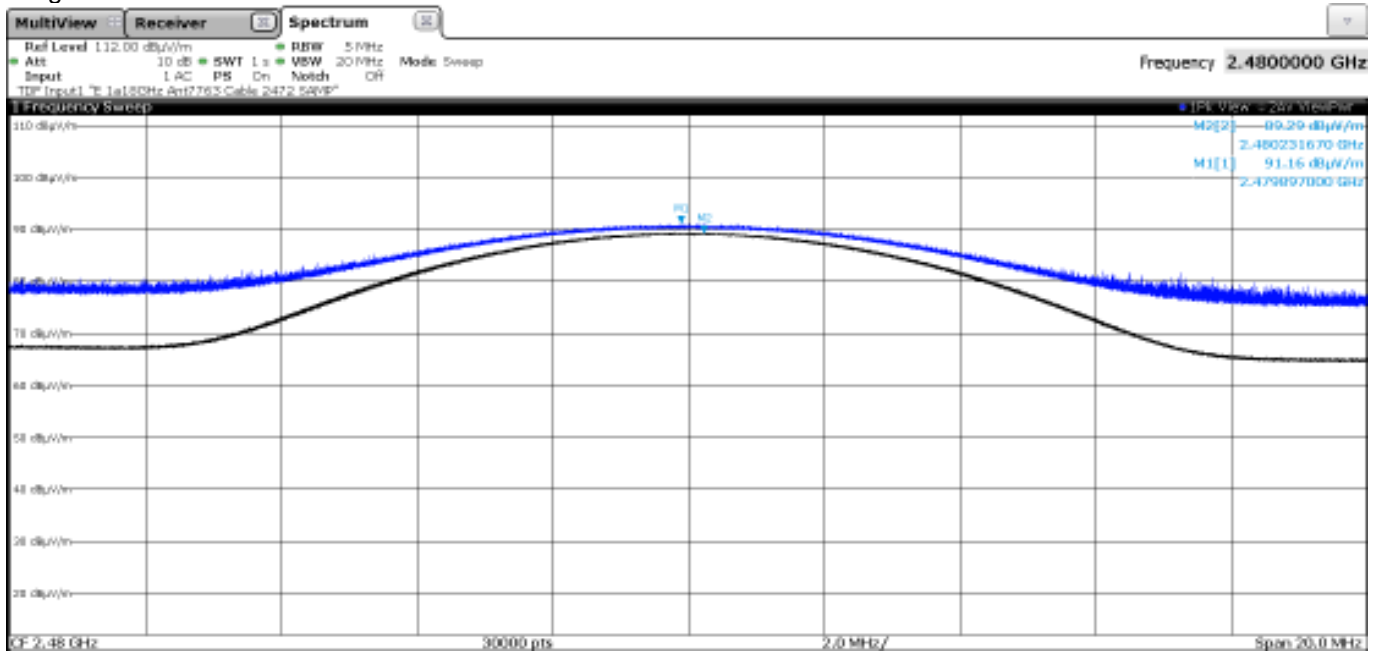
- Low Channel:



- Middle Channel:



- High Channel:



## 15.249 (d) / RSS-210 B.10 (b) Emissions radiated outside of the specific frequency bands

**SPECIFICATION:**

The field strength of harmonics from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of harmonics (µV/m)	Field strength of harmonics (dBµV/m)	Measurement distance (m)
902 - 928	500	54	3
2400 – 2483.5	500	54	3
5725 - 5875	500	54	3
24000-24250	2500	67.96	3

Emissions radiated outside of the specific frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emission limits specified in section 15.209:

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 25000	500	54	3

Whichever is the lesser attenuation.

**RESULTS:**

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-17 GHz and at distance of 1m for the frequency range 17 GHz-26 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

**Frequency range 30 MHz - 1 GHz:**

The spurious signals detected do not depend on the operating channel.

No spurious frequencies detected at less than 20 dB below the limit.

Measurement Uncertainty  $<\pm 5.15$  dB

**Frequency range 1 - 26 GHz:**

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

Spurious signals with peak levels above the average limit (54 dB $\mu$ V/m at 3 m) are measured with average detector for checking compliance with the average limit.

- Low Channel (2402 MHz):

Spurious frequency (GHz)	Emission Level (dB $\mu$ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3891	58.60	V	Peak	$<\pm 4.94$
	43.18		Average	
2.4948	53.37	H	Peak	$<\pm 4.94$
4.8045	50.61	H	Peak	$<\pm 4.28$
21.6200	43.35	V	Peak	$<\pm 4.89$

- Middle Channel (2440 MHz):

Spurious frequency (GHz)	Emission Level (dB $\mu$ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3549	53.71	V	Peak	$<\pm 4.94$
2.4885	53.39	H	Peak	$<\pm 4.94$
4.8790	48.48	H	Peak	$<\pm 4.28$
7.3205	49.03	H	Peak	$<\pm 4.28$
21.9580	43.39	V	Peak	$<\pm 4.89$

- High Channel (2480 MHz):

Spurious frequency (GHz)	Emission Level (dB $\mu$ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3885	53.55	H	Peak	$<\pm 4.94$
2.4839	65.87	V	Peak	$<\pm 4.94$
	45.50		Average	
4.9595	50.29	H	Peak	$<\pm 4.28$
7.4395	50.66	V	Peak	$<\pm 4.28$
22.3180	44.63	V	Peak	$<\pm 4.89$

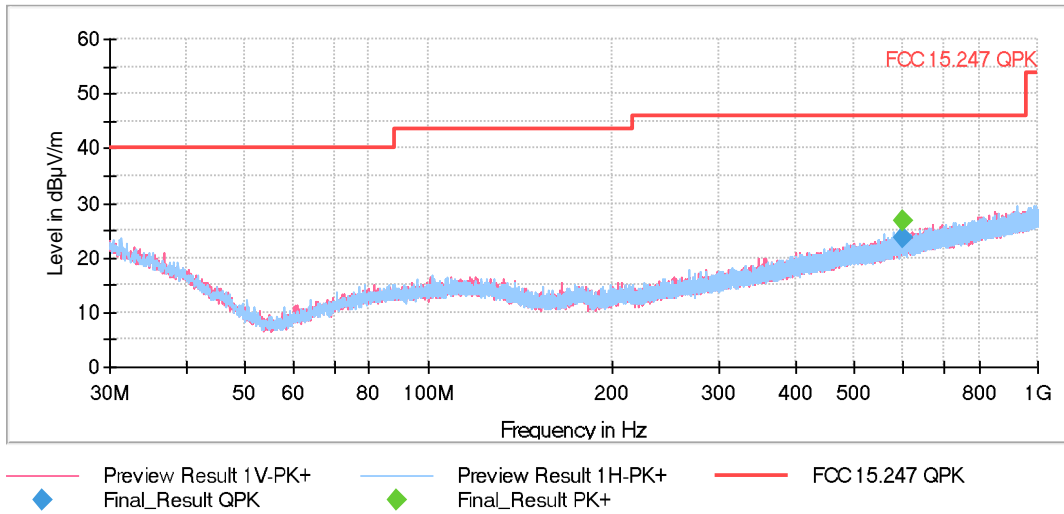
Measurement Uncertainty: 1-3 GHz  $<\pm 4.94$  dB  
 3-17 GHz  $<\pm 4.28$  dB  
 17-26 GHz  $<\pm 4.89$  dB

Verdict: PASS



### FREQUENCY RANGE 30 MHz - 1 GHz

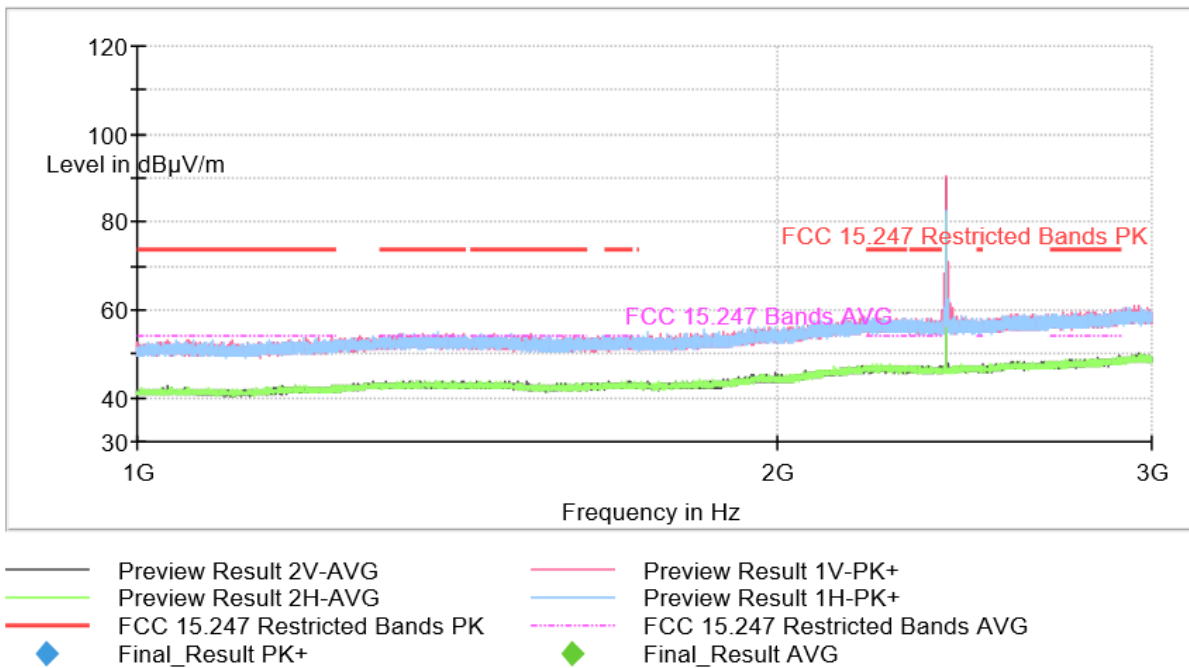
The spurious frequencies detected do not depend on the operating channel.



This plot is valid for the Low, Middle and High Channels.

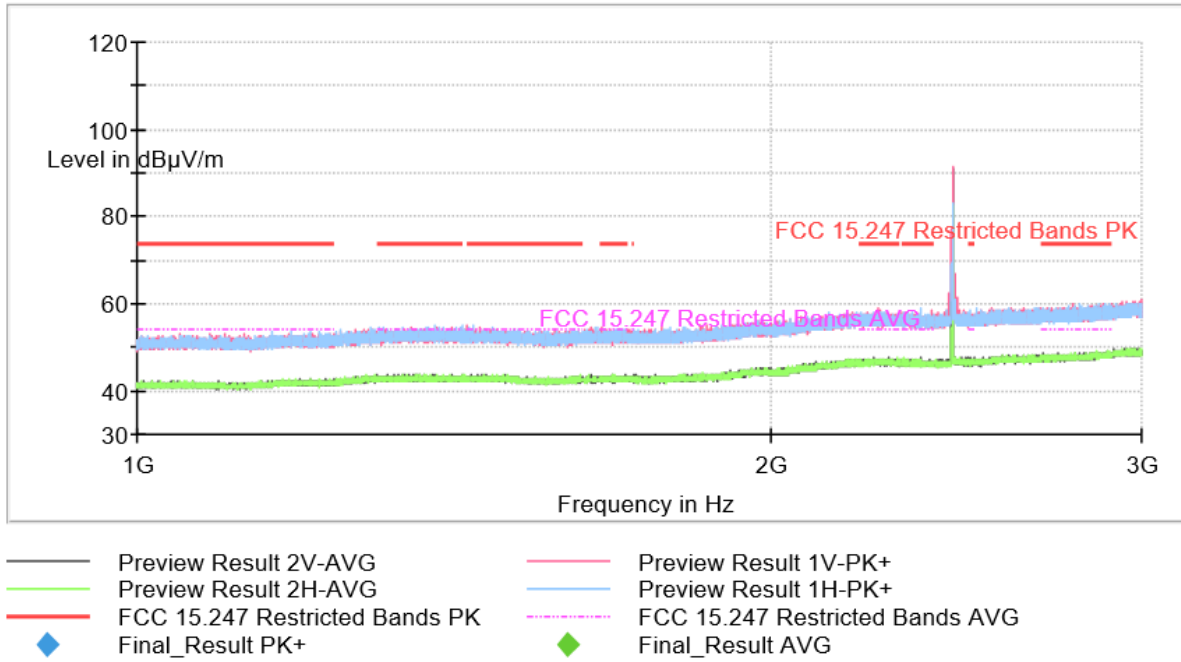
### FREQUENCY RANGE 1 - 3 GHz

- Low Channel:



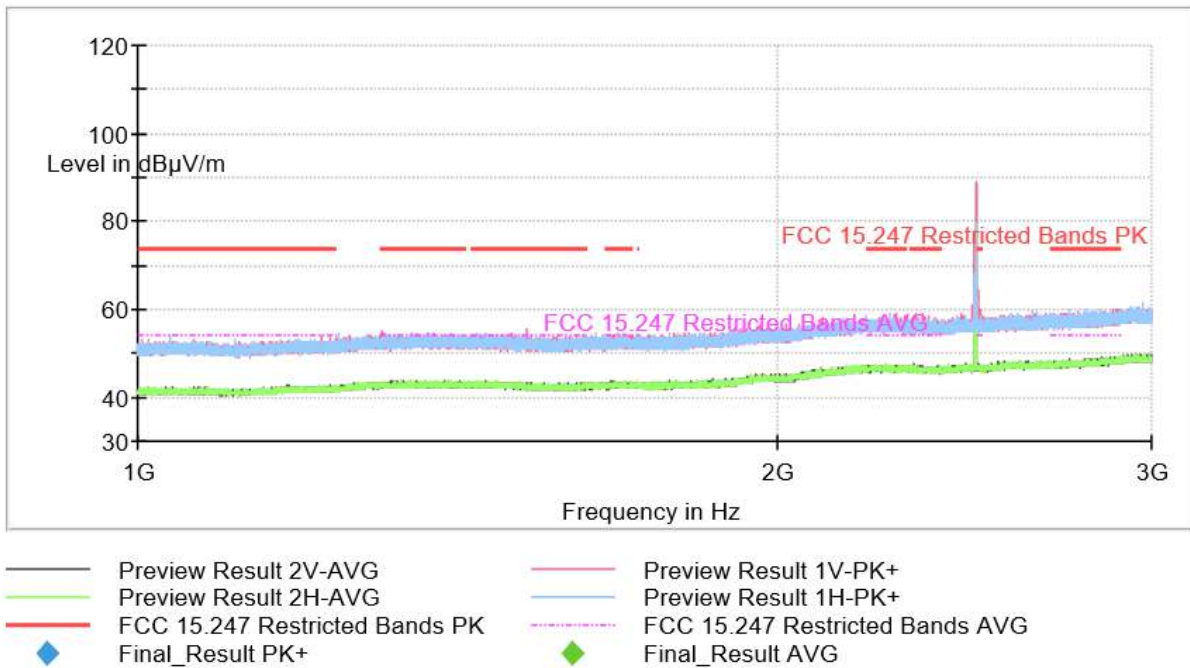
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

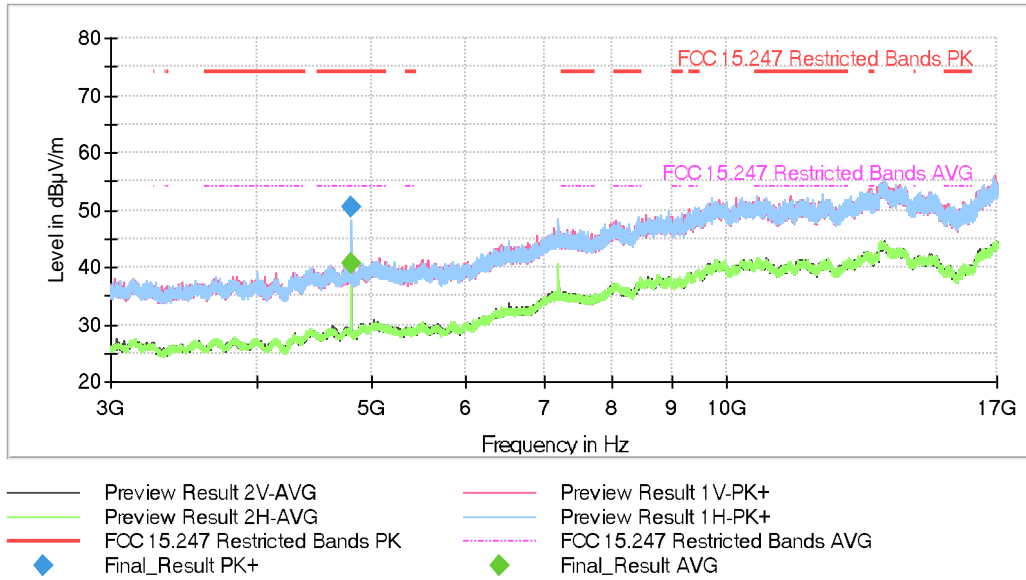
- High Channel:



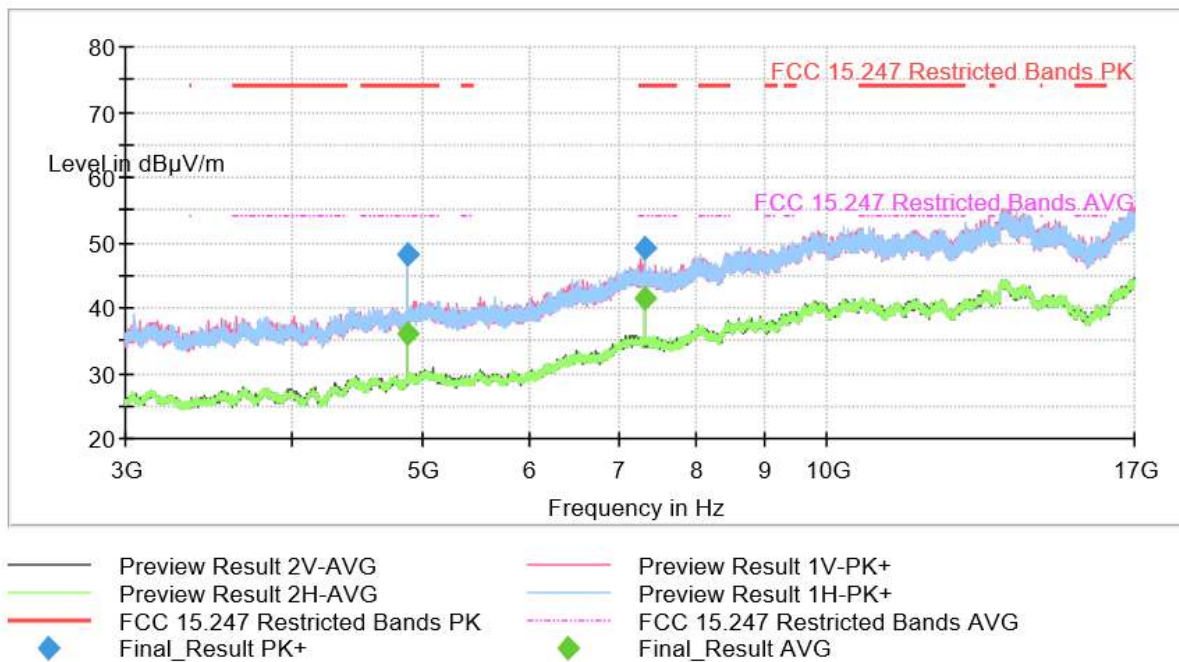
The peak above the limit is the carrier frequency.

### FREQUENCY RANGE 3 - 17 GHz

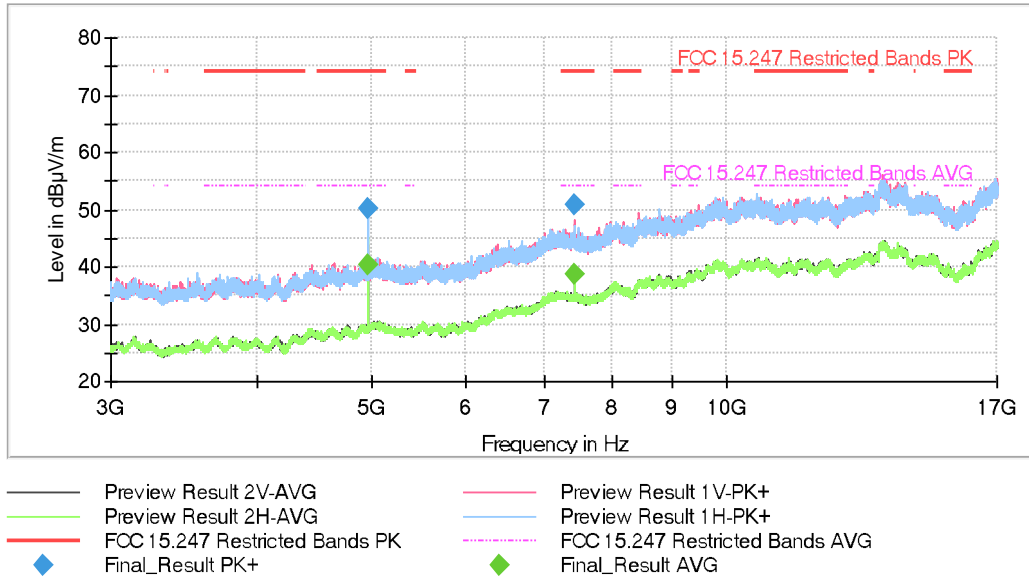
- Low Channel:



- Middle Channel:

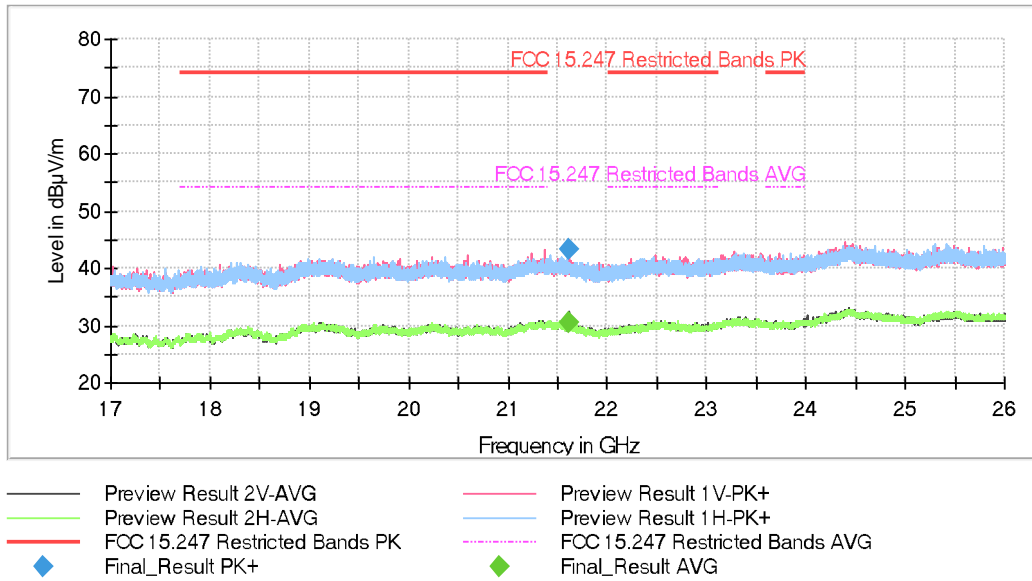


- High Channel:

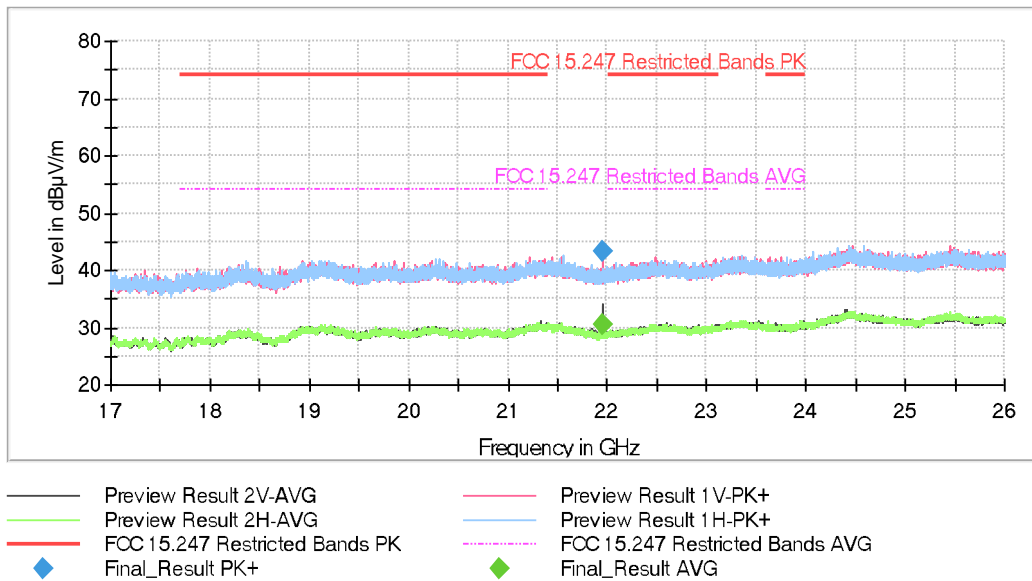


**FREQUENCY RANGE 17 - 26 GHz**

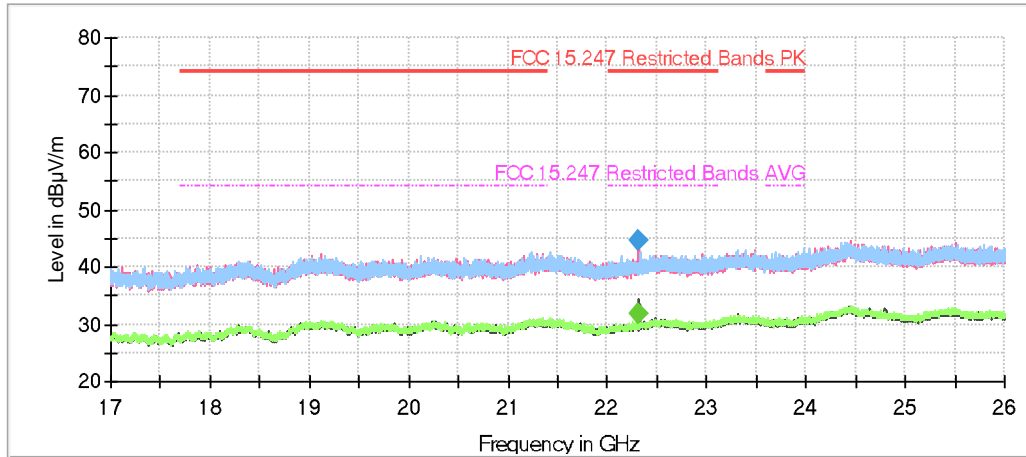
- Low Channel:



- Middle Channel:



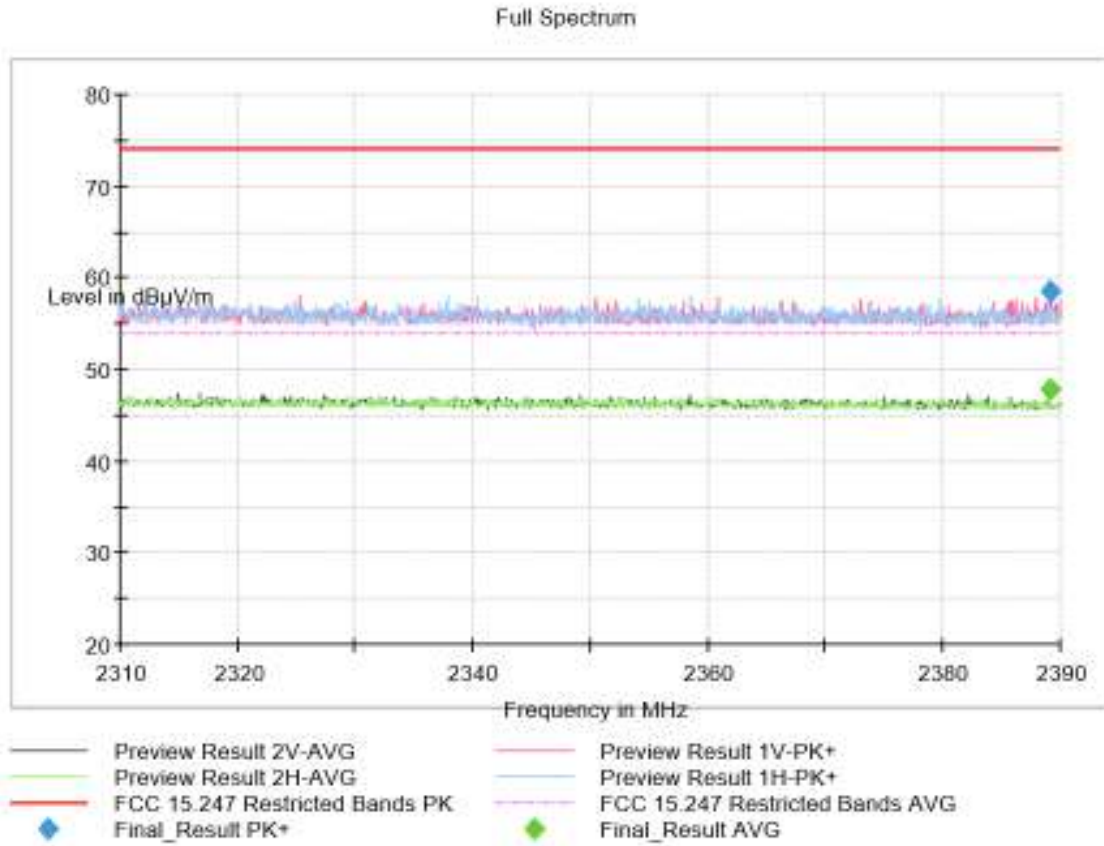
- High Channel:



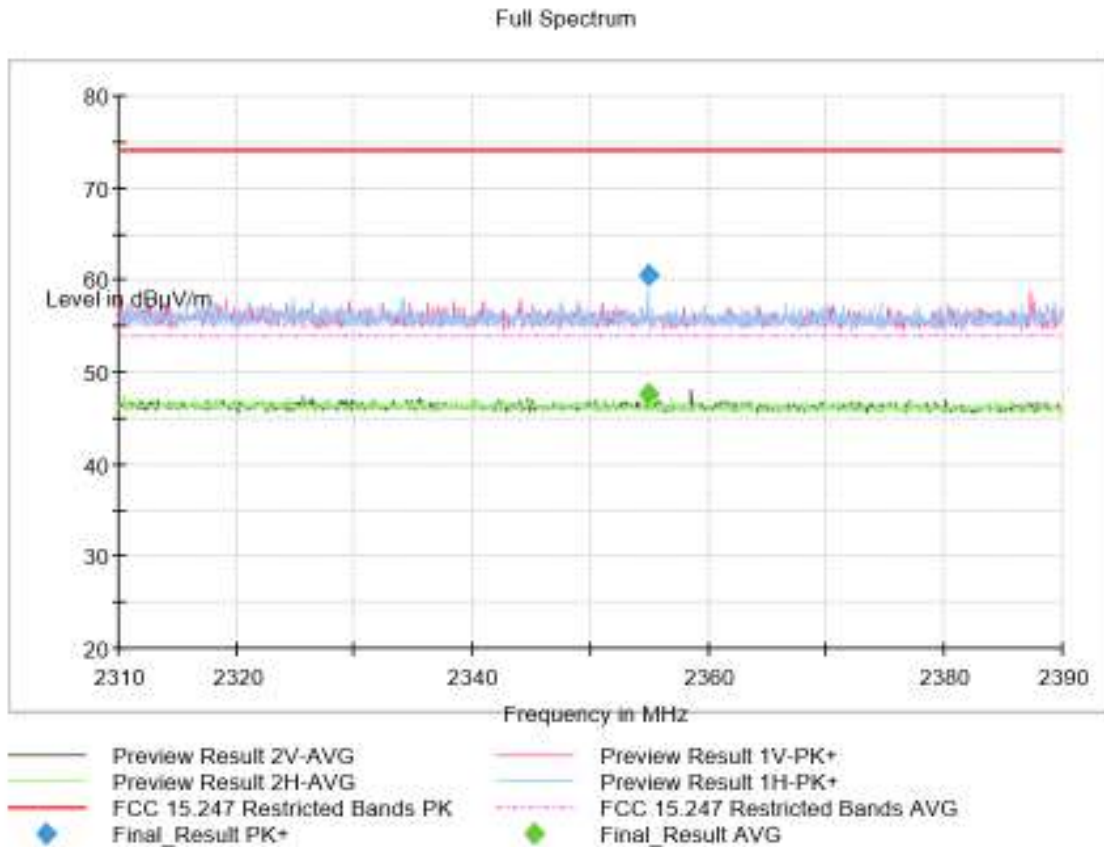
- |   |                                |   |                                 |
|---|--------------------------------|---|---------------------------------|
| — | Preview Result 2V-AVG          | — | Preview Result 1V-PK+           |
| — | Preview Result 2H-AVG          | — | Preview Result 1H-PK+           |
| — | FCC 15.247 Restricted Bands PK | — | FCC 15.247 Restricted Bands AVG |
| ◆ | Final_Result PK+               | ◆ | Final_Result AVG                |

**FREQUENCY RANGE 2.31-2.39 GHz**

- Low Channel:

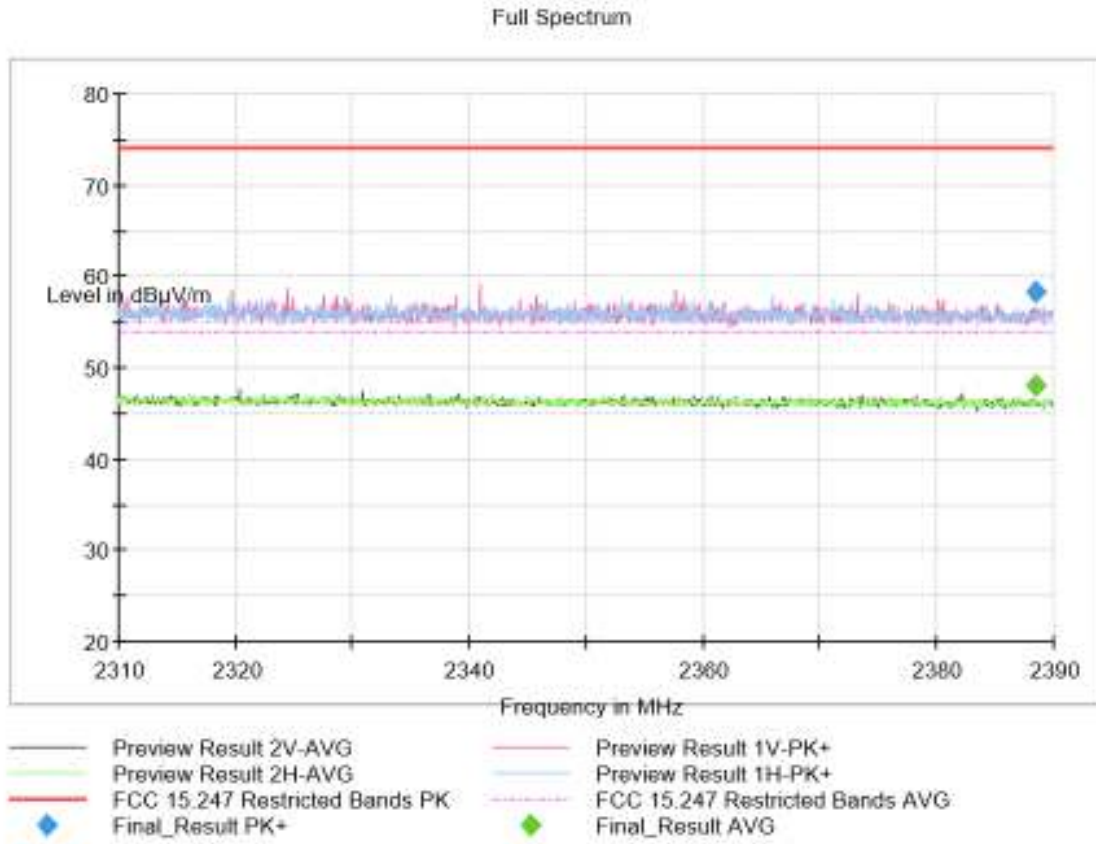


- Middle Channel:



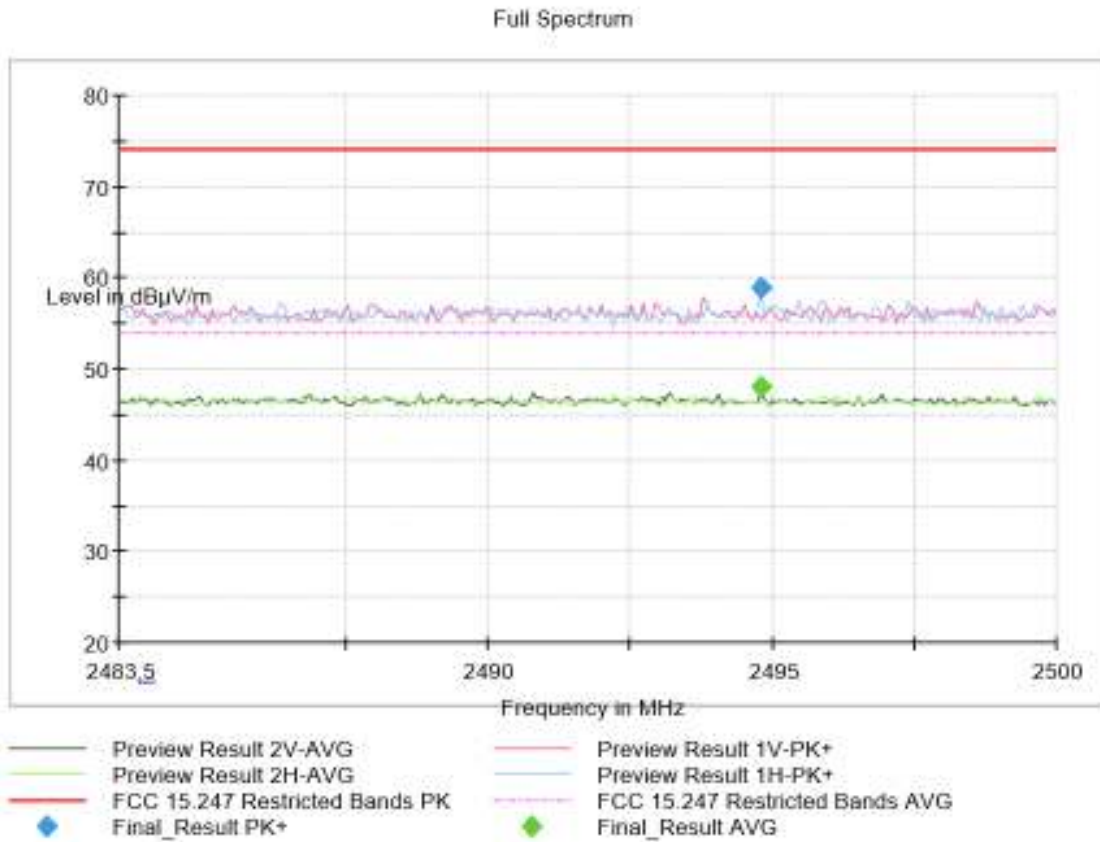


- High Channel:

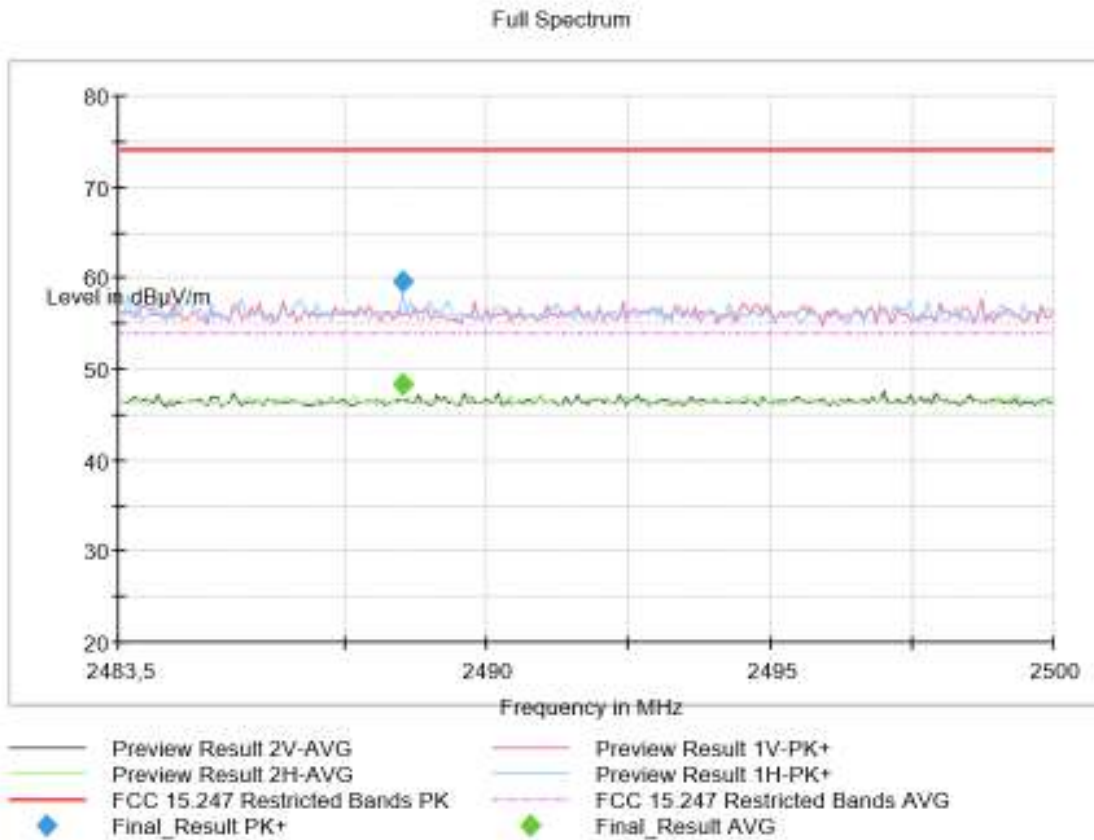


**FREQUENCY RANGE 2.4835-2.5 GHz**

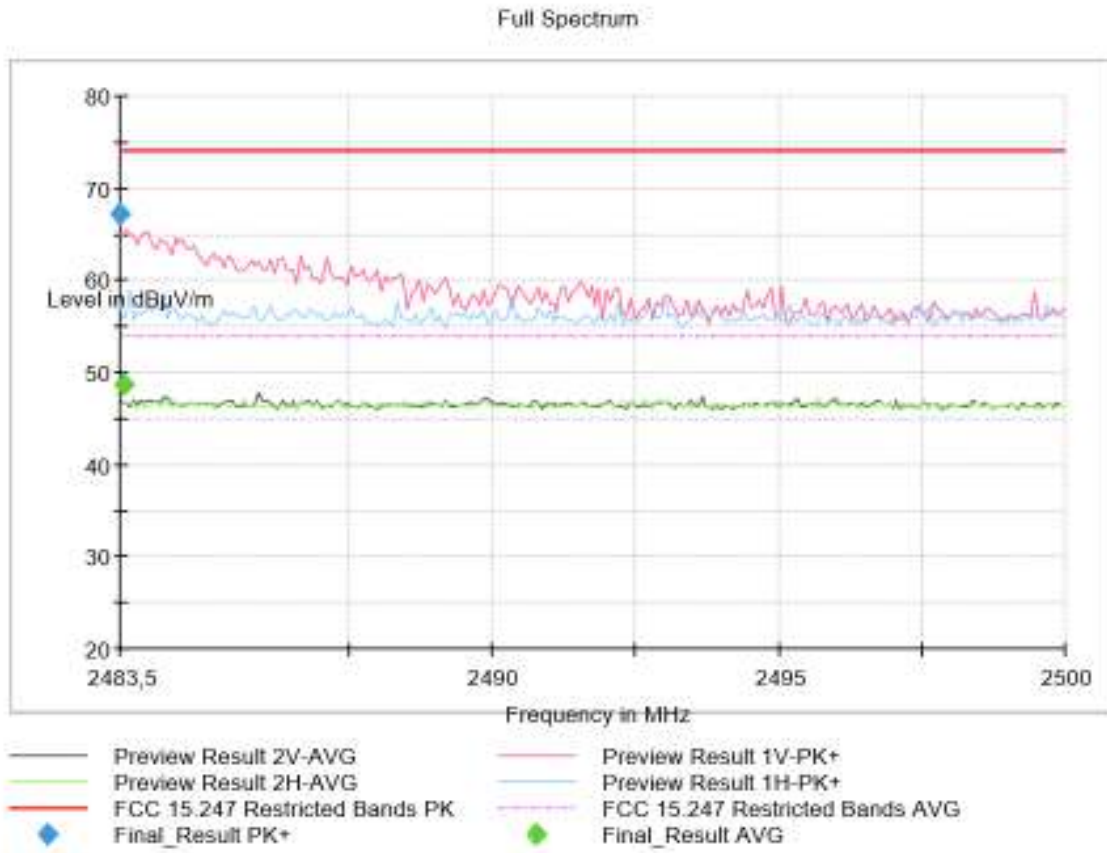
- Low Channel:



- Middle Channel:



- High Channel:



## Appendix B: Test results. Bluetooth Basic Rate

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## TEST CONDITIONS

### POWER SUPPLY (V) and ANTENNA:

V nominal:	1.4 Vdc
Type of Power Supply:	Battery.
Type of Antenna:	Integral.
Declared Antenna Gain:	-7 dBi

### TEST FREQUENCIES:

Low Channel:	2402 MHz
Middle Channel:	2441 MHz
High Channel:	2480 MHz

### CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is connected to the spectrum analyser using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



The DC supply voltage is applied using an external battery.

### RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (bilog antenna for the range between 30 MHz to 1000 MHz and 1 GHz-17 GHz double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1 m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

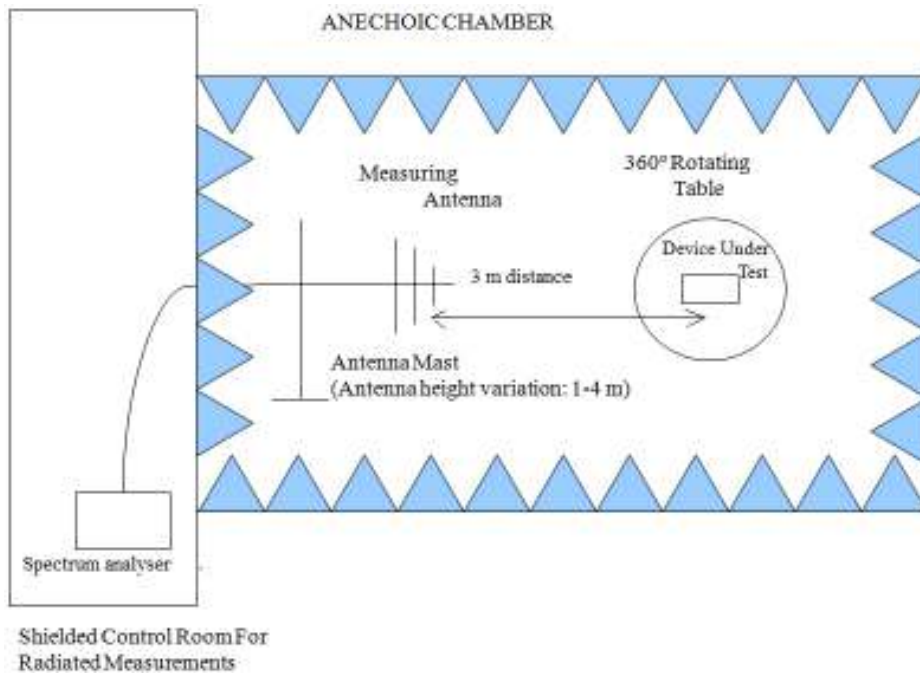
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

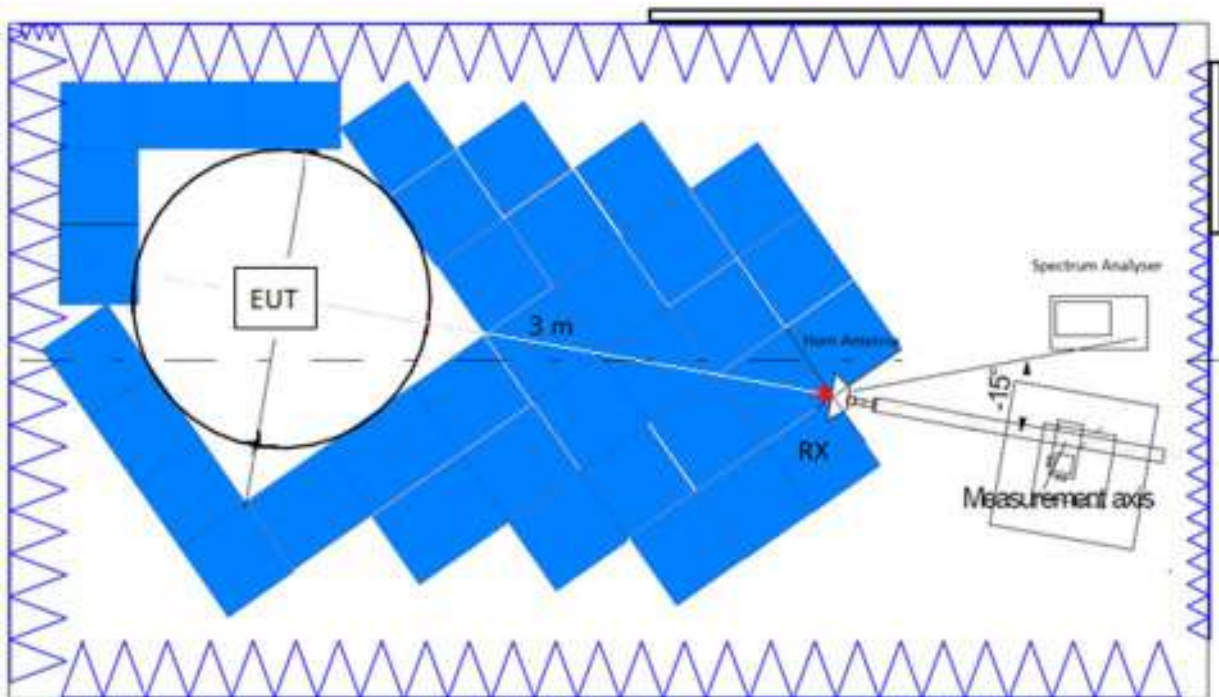
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth/video bandwidth of 100 kHz/300 kHz was used for frequencies below 1 GHz and 1MHz/3MHz for frequencies above 1 GHz.

Radiated measurements setup  $f < 1$  GHz:

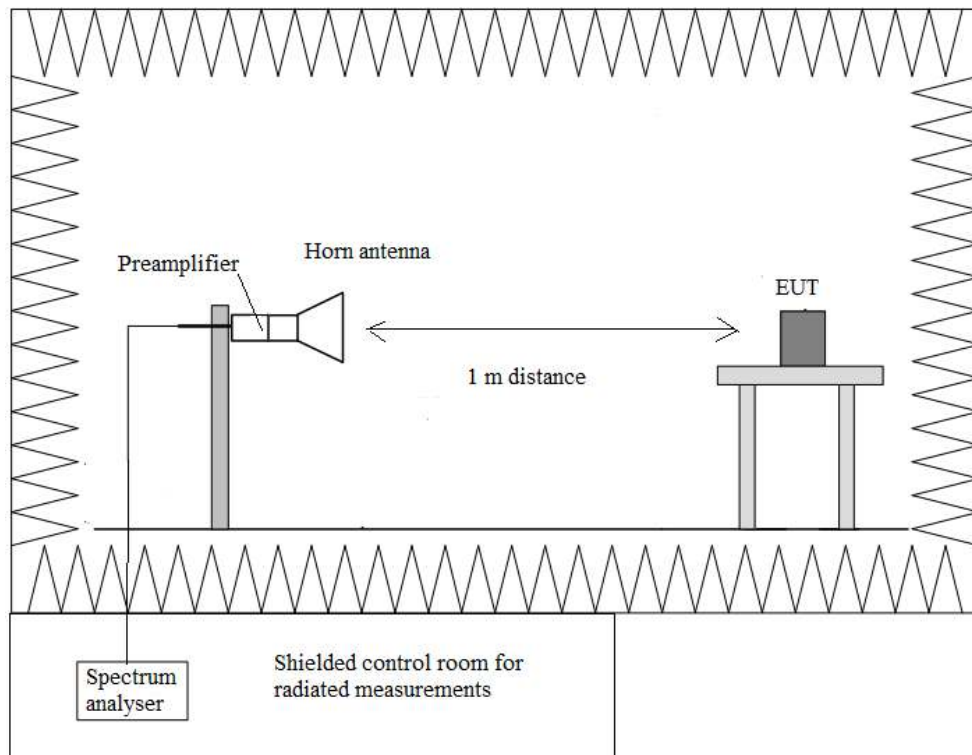


Radiated measurements setup from 1 GHz to 17 GHz:





Radiated measurements setup  $f > 17$  GHz:



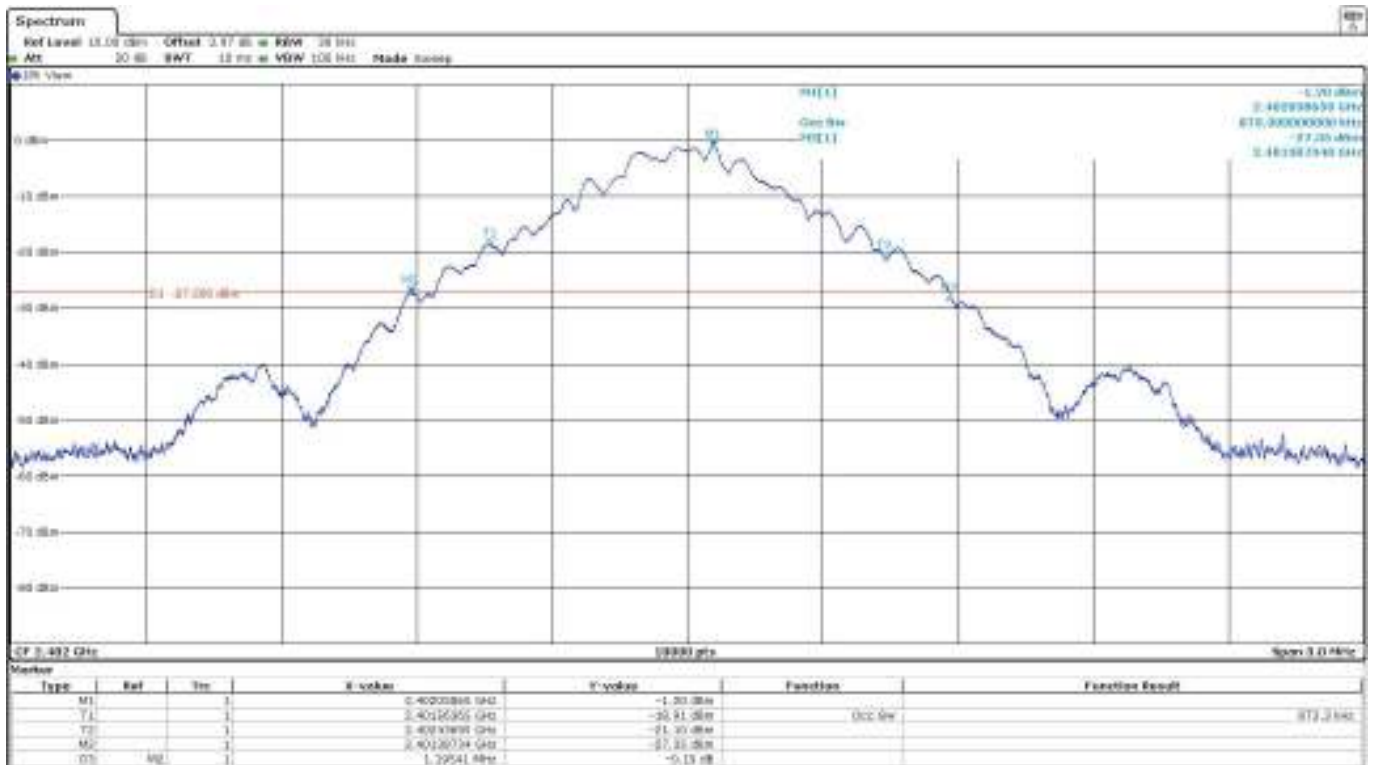
## Occupied Bandwidth

**RESULTS:**

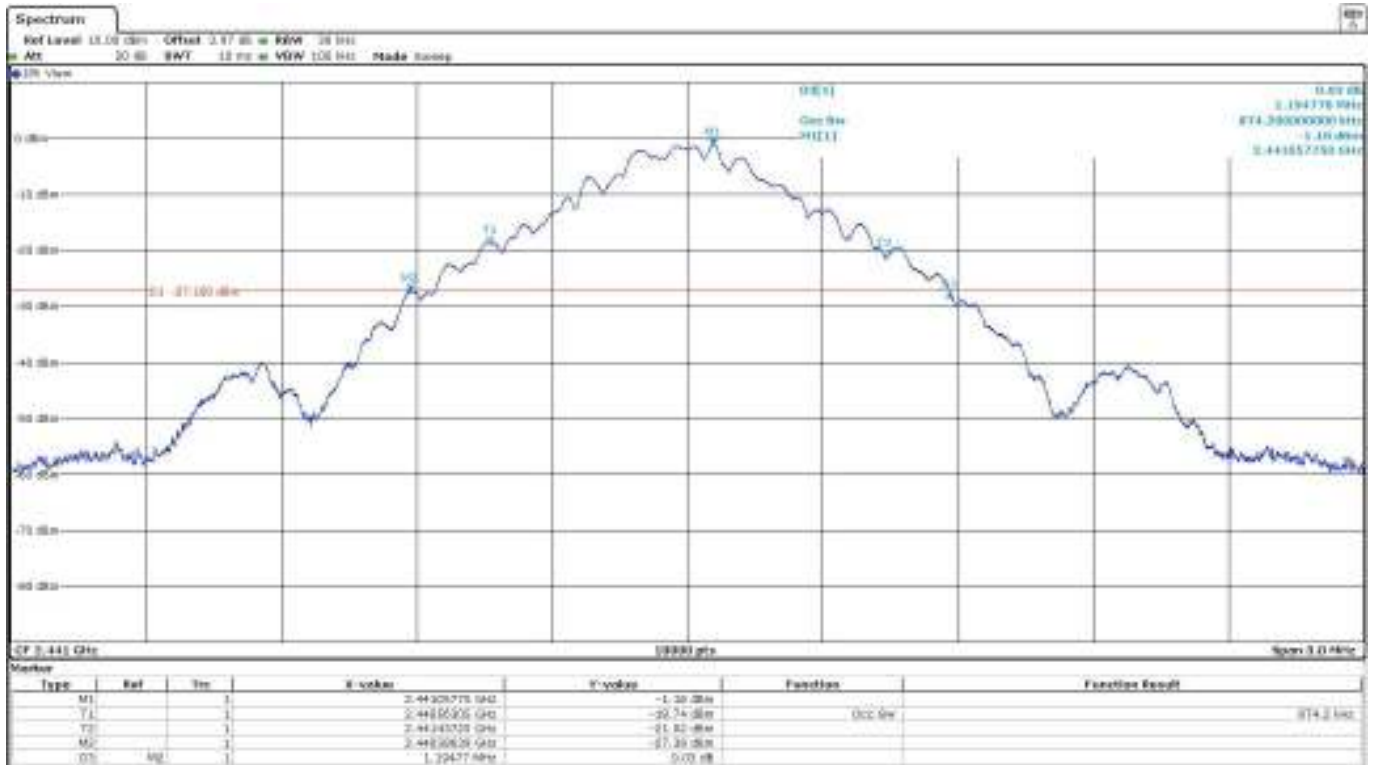
	Low Channel 2402 MHz	Middle Channel 2441 MHz	High Channel 2480 MHz
99% Bandwidth (MHz)	0.8733	0.8742	0.8733
Measurement Uncertainty (kHz)	<±3.64		

Verdict: PASS

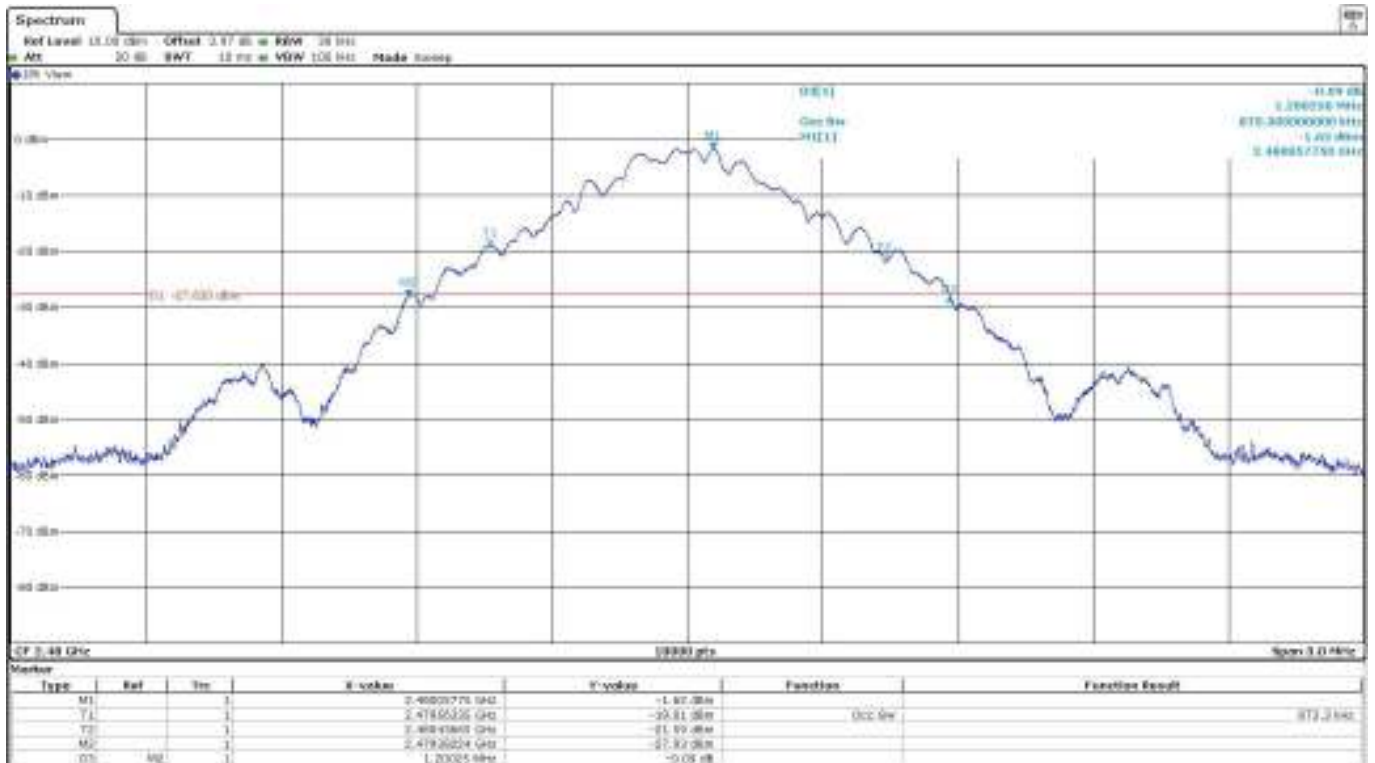
- Low Channel:



- Middle Channel:



- High Channel:



## 15.249 (a) / RSS-210 B.10 (a) Field strength of fundamental and harmonics emissions

### SPECIFICATION:

The field strength of emissions from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of fundamental (mV/m)	Field strength (dBµV/m)	Measurement distance (m)
902 - 928	50	93.98	3
2400 – 2483.5	50	93.98	3
5725 - 5875	50	93.98	3
24000-24250	250	107.96	3

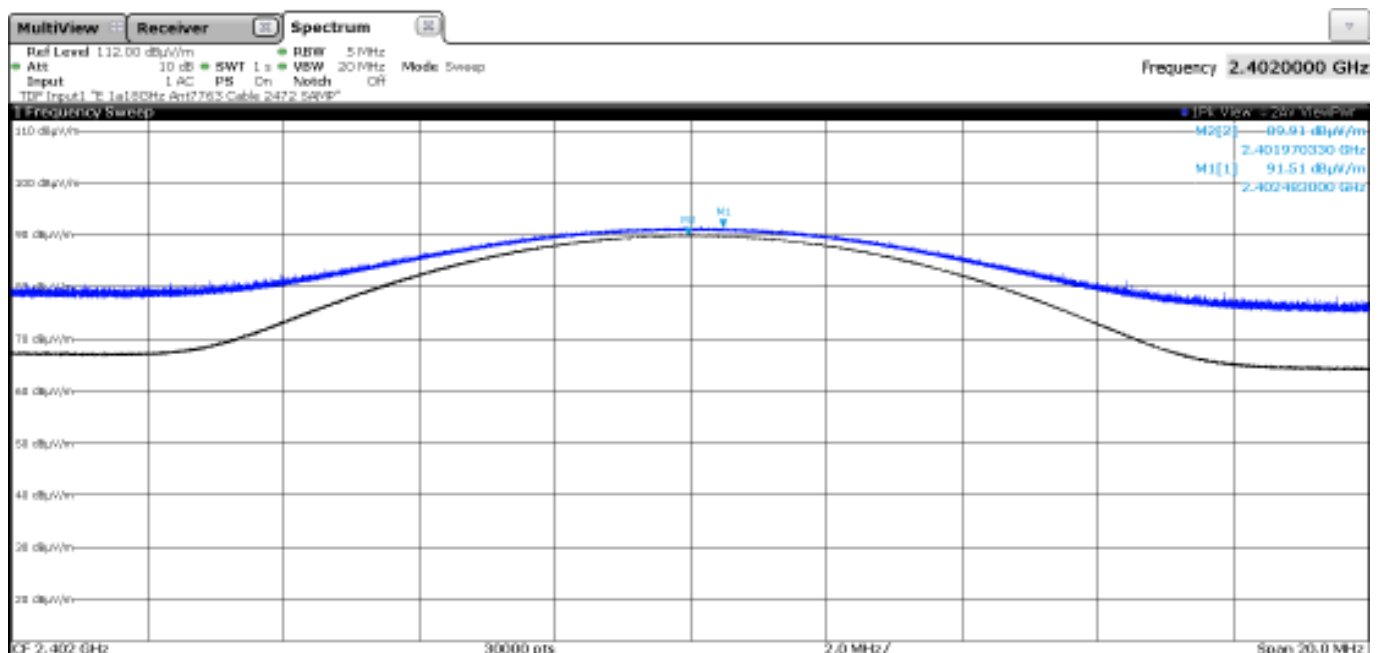
For frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### RESULTS:

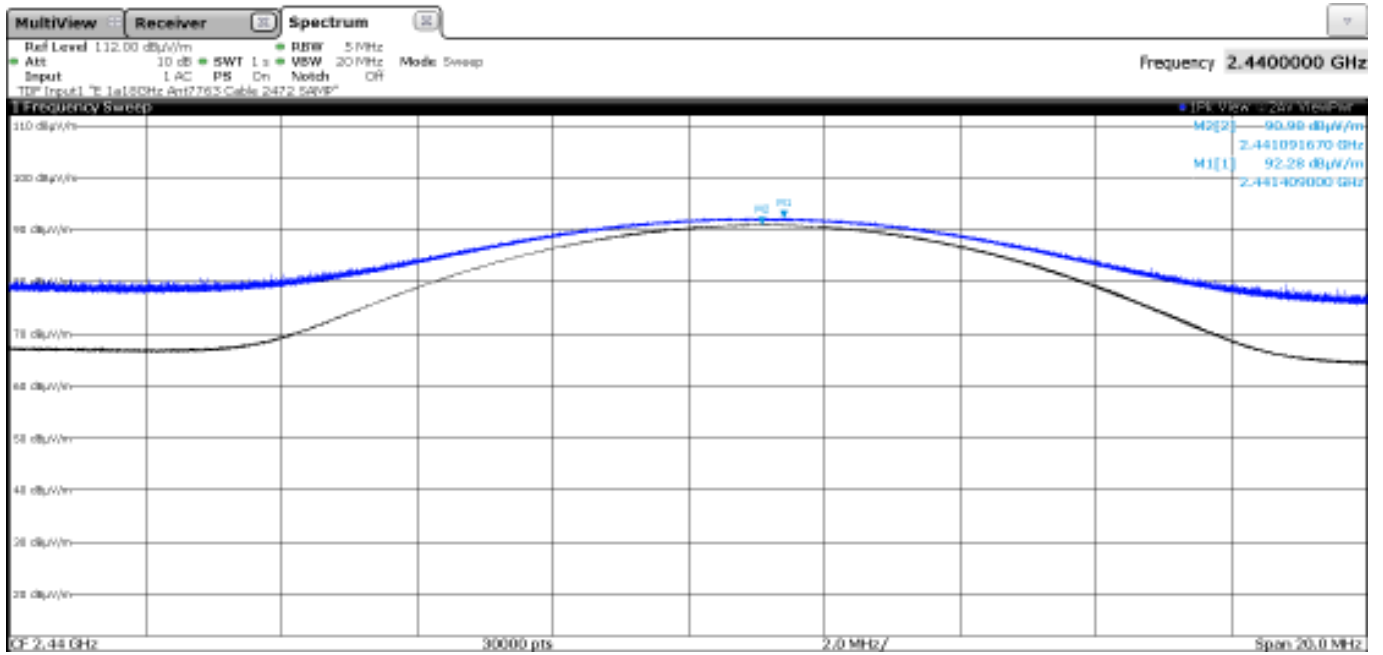
	Low Channel 2402 MHz	Middle Channel 2441 MHz	High Channel 2480 MHz
Average Field Strength (dBµV/m)	89.91	90.98	88.49
Peak Field Strength (dBµV/m)	91.51	92.28	90.43
Measurement Uncertainty (dB)	<±4.01		

Verdict: PASS

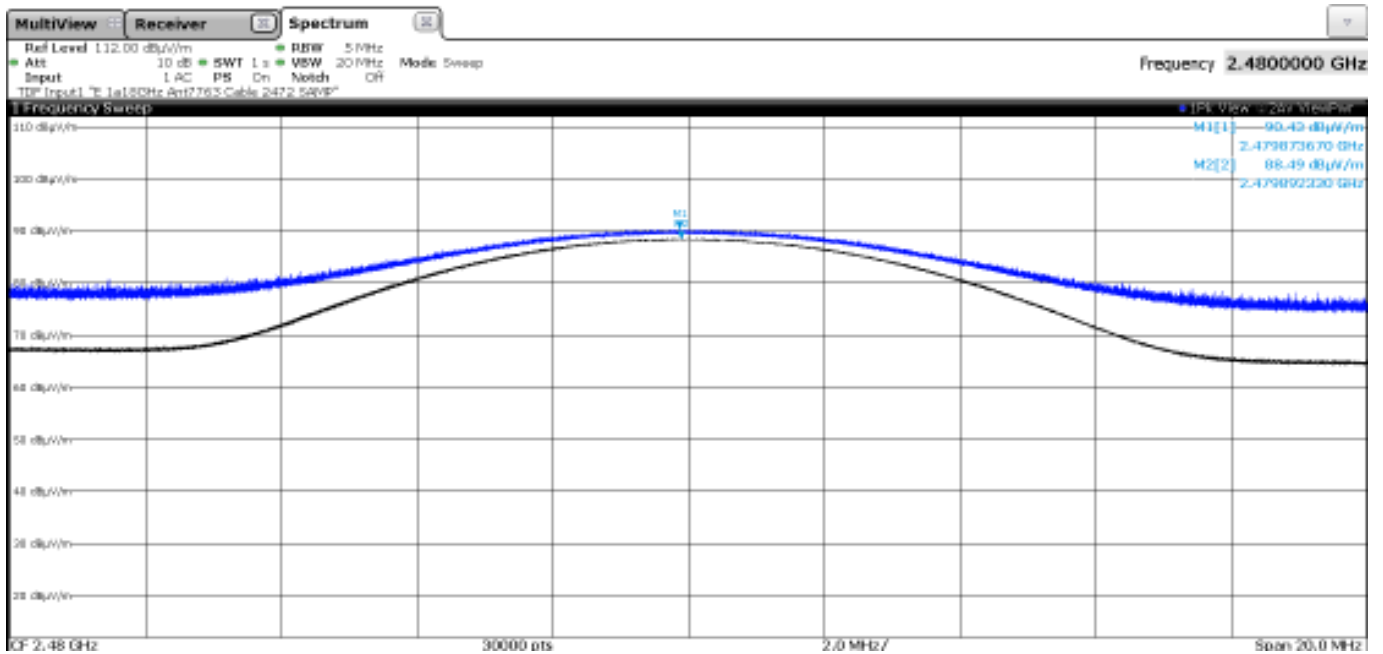
- Low Channel:



- Middle Channel:



- High Channel:



## 15.249 (d) / RSS-210 B.10 (b) Emissions radiated outside of the specific frequency bands

**SPECIFICATION:**

The field strength of harmonics from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of harmonics (µV/m)	Field strength of harmonics (dBµV/m)	Measurement distance (m)
902 - 928	500	54	3
2400 – 2483.5	500	54	3
5725 - 5875	500	54	3
24000-24250	2500	67.96	3

Emissions radiated outside of the specific frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emission limits specified in section 15.209:

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 25000	500	54	3

Whichever is the lesser attenuation.

**RESULTS:**

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-17 GHz and at distance of 1 m for the frequency range 17 GHz-26 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

**Frequency range 30 MHz - 1 GHz:**

The spurious signals detected do not depend on the operating channel.

No spurious frequencies detected at less than 20 dB below the limit.

Measurement Uncertainty  $<\pm 5.15$  dB

**Frequency range 1 - 26 GHz:**

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

Spurious signals with peak levels above the average limit (54 dB $\mu$ V/m at 3 m) are measured with average detector for checking compliance with the average limit.

- Low Channel (2402 MHz):

Spurious frequency (GHz)	Emission Level (dB $\mu$ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3876	53.87	V	Peak	$<\pm 4.94$
2.4847	54.02	H	Peak	$<\pm 4.94$
	43.35		Average	
4.8040	48.01	H	Peak	$<\pm 4.28$
21.6490	44.62	V	Peak	$<\pm 4.89$
24.0185	44.22	V	Peak	$<\pm 4.89$

- Middle Channel (2441 MHz):

Spurious frequency (GHz)	Emission Level (dB $\mu$ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3613	52.98	H	Peak	$<\pm 4.94$
2.4895	57.61	H	Peak	$<\pm 4.94$
	44.36		Average	
4.8820	49.56	H	Peak	$<\pm 4.28$
7.3230	50.92	V	Peak	$<\pm 4.28$
21.9675	42.76	V	Peak	$<\pm 4.89$
24.4115	45.49	H	Peak	$<\pm 4.89$

- High Channel (2480 MHz):

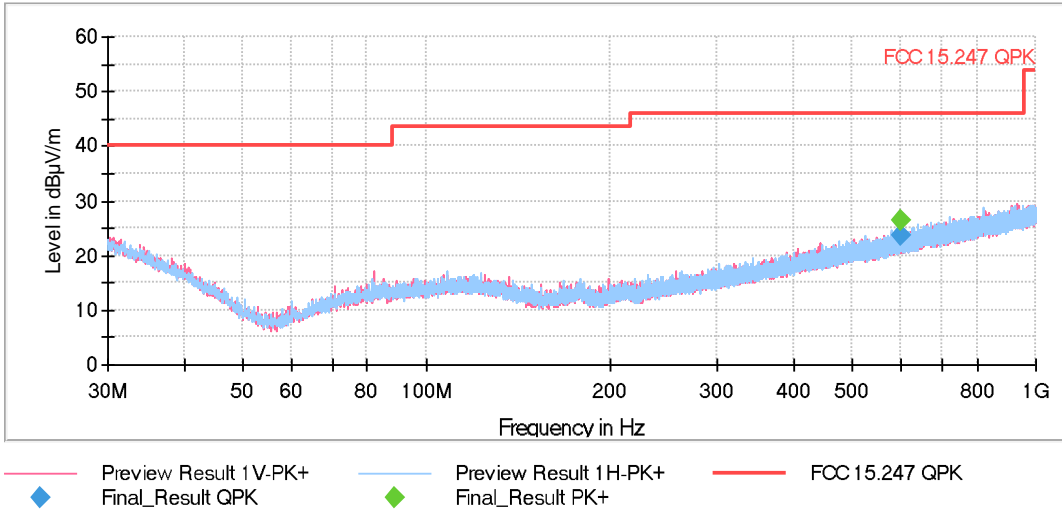
Spurious frequency (GHz)	Emission Level (dB $\mu$ V/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3895	53.83	V	Peak	$<\pm 4.94$
2.4841	53.41	V	Peak	$<\pm 4.94$
4.9600	50.86	H	Peak	$<\pm 4.28$
7.4400	49.75	V	Peak	$<\pm 4.28$
22.3215	45.81	V	Peak	$<\pm 4.89$
24.7990	43.37	V	Peak	$<\pm 4.89$

Measurement Uncertainty: 1-3 GHz  $<\pm 4.94$  dB  
 3-17 GHz  $<\pm 4.28$  dB  
 17-26 GHz  $<\pm 4.89$  dB

Verdict: PASS

### FREQUENCY RANGE 30 MHz - 1 GHz

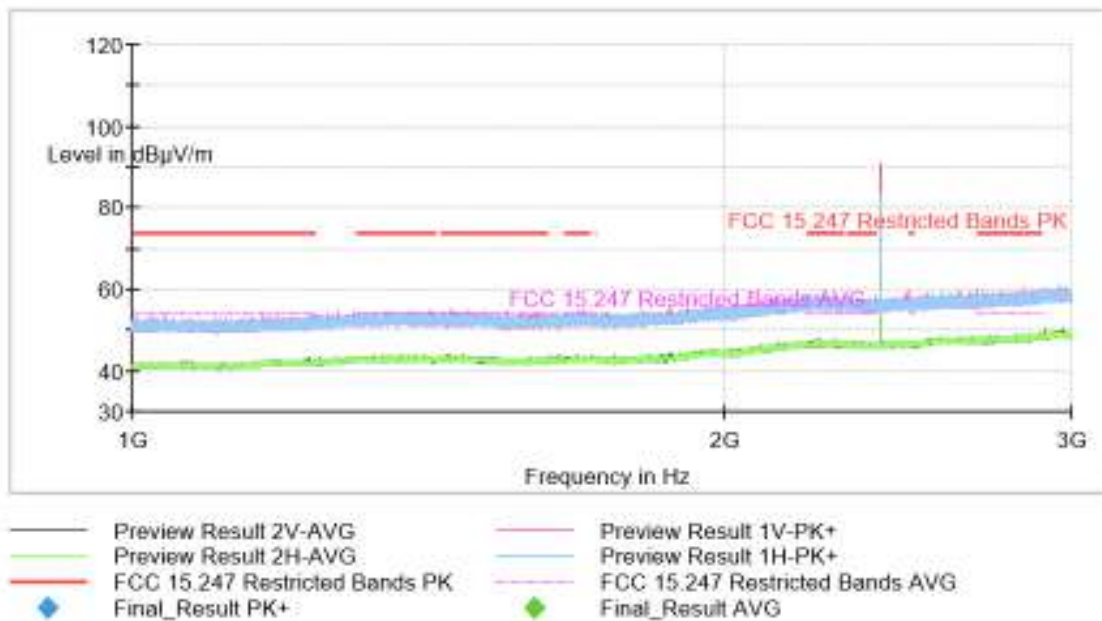
The spurious frequencies detected do not depend on the operating channel.



This plot is valid for the Low, Middle and High Channels.

### FREQUENCY RANGE 1 - 3 GHz

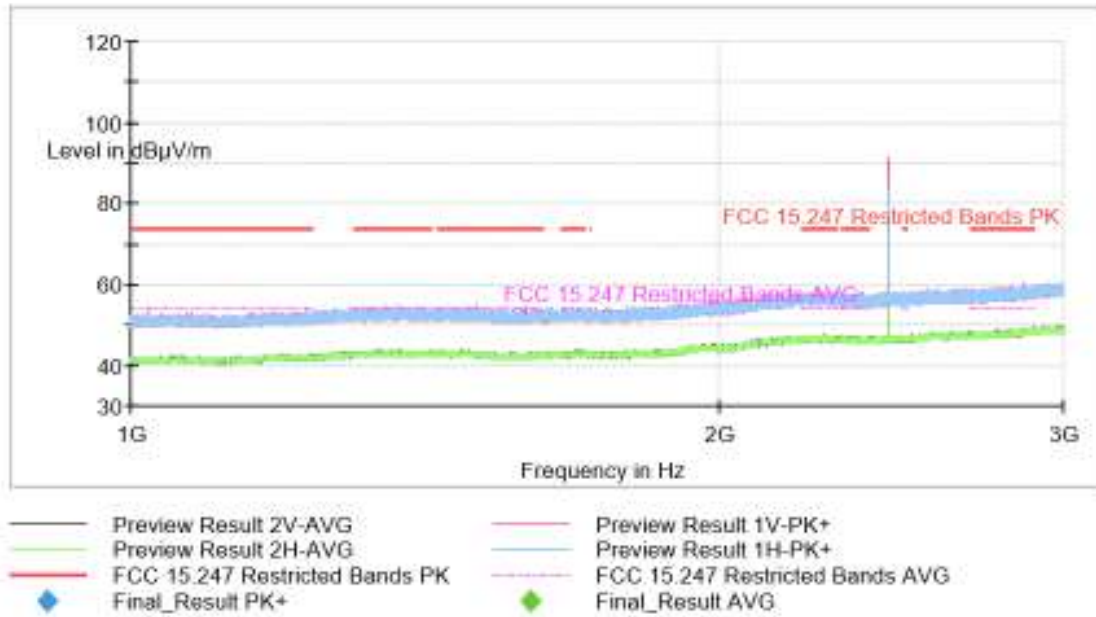
- Low Channel:



The peak above the limit is the carrier frequency.

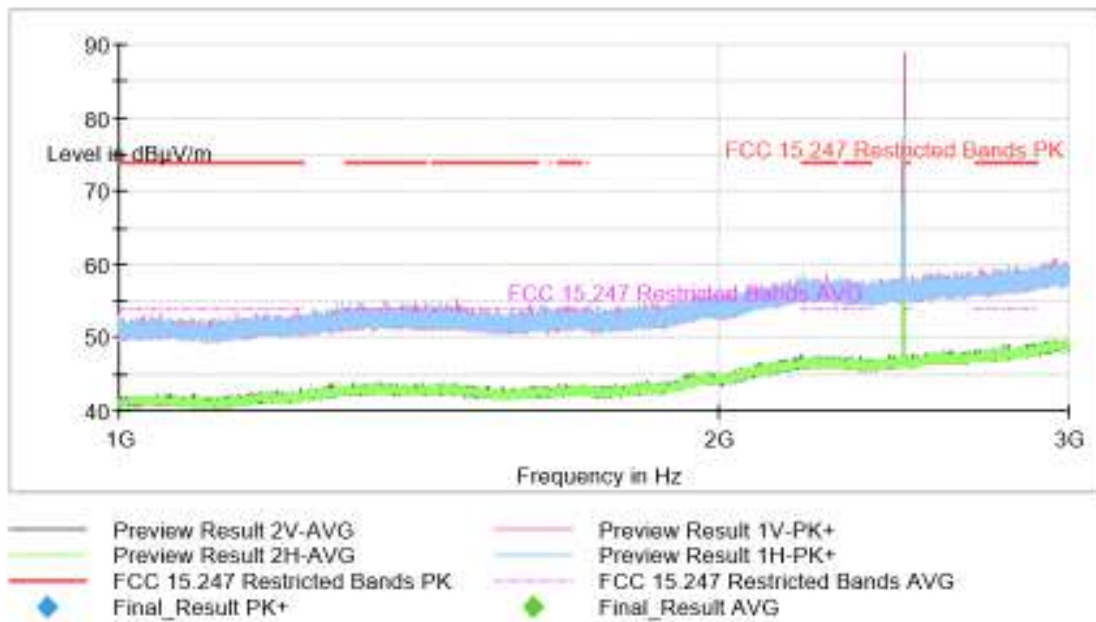


- Middle Channel:



The peak above the limit is the carrier frequency.

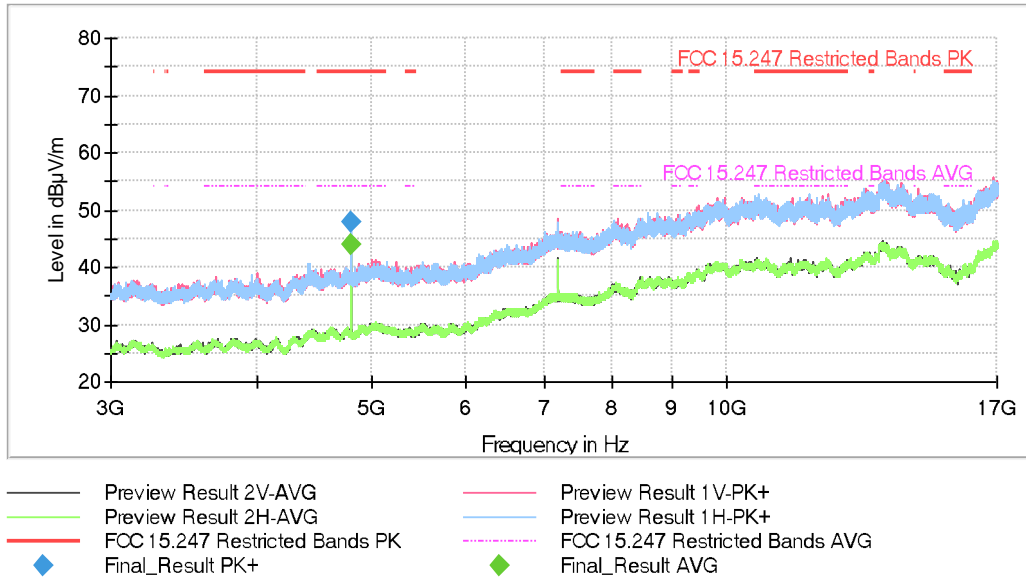
- High Channel:



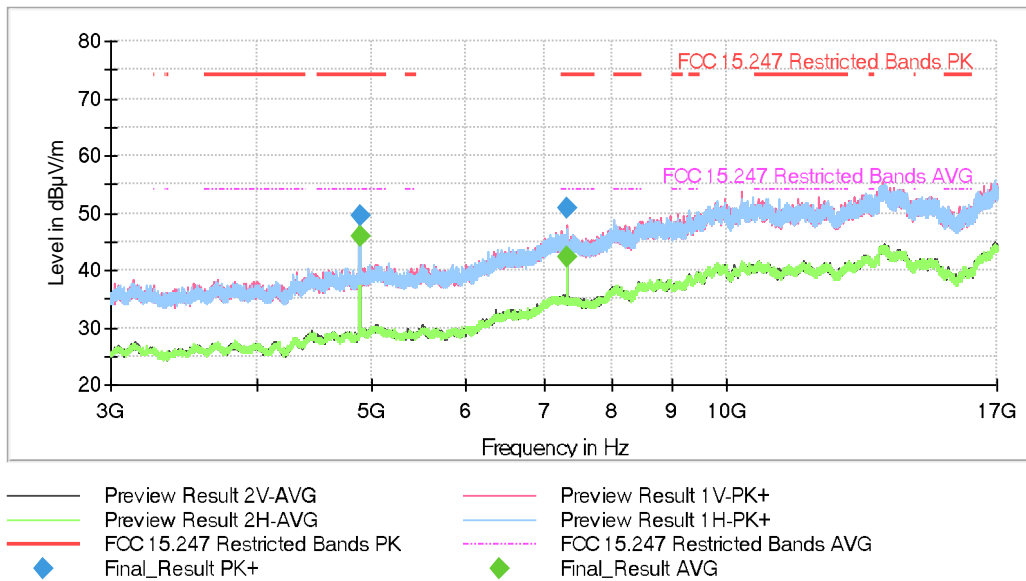
The peak above the limit is the carrier frequency.

### FREQUENCY RANGE 3 - 17 GHz

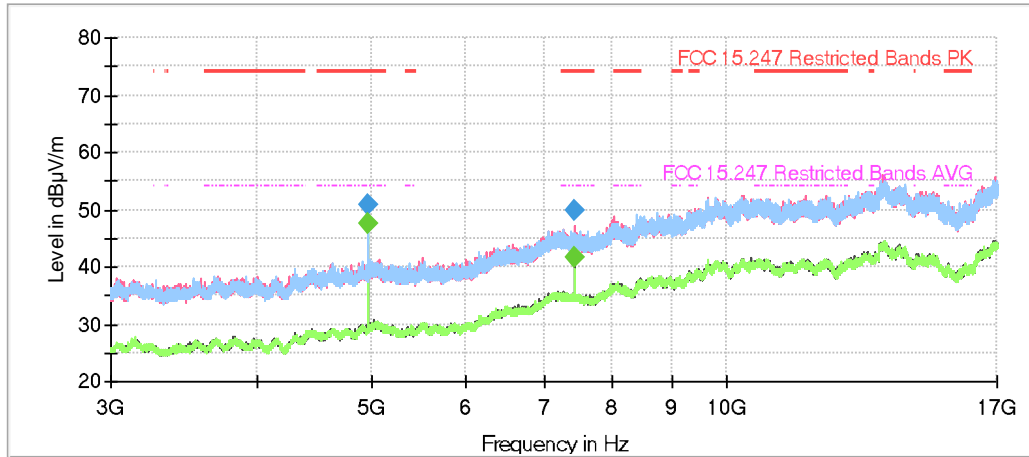
- Low Channel:



- Middle Channel:



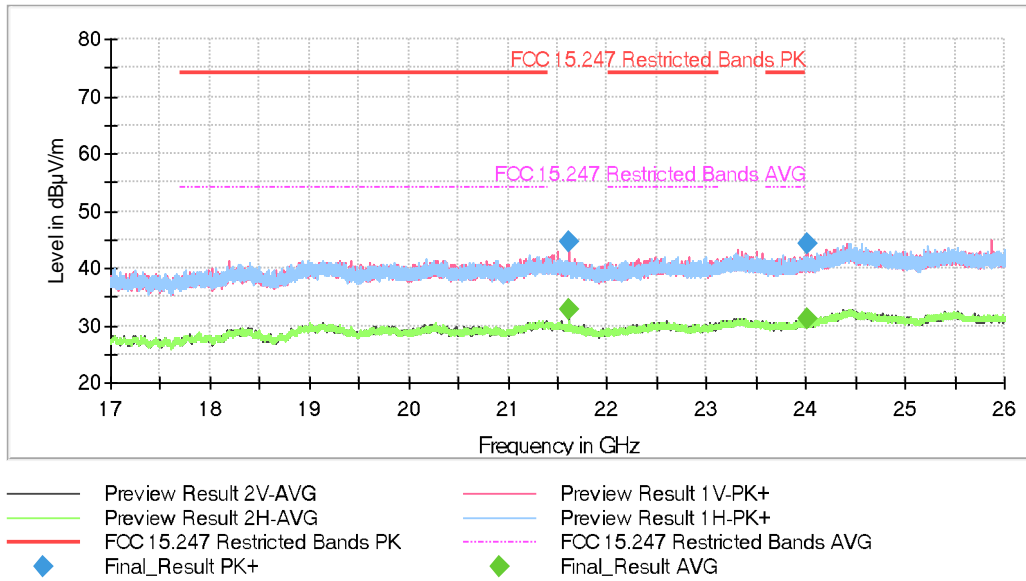
- High Channel:



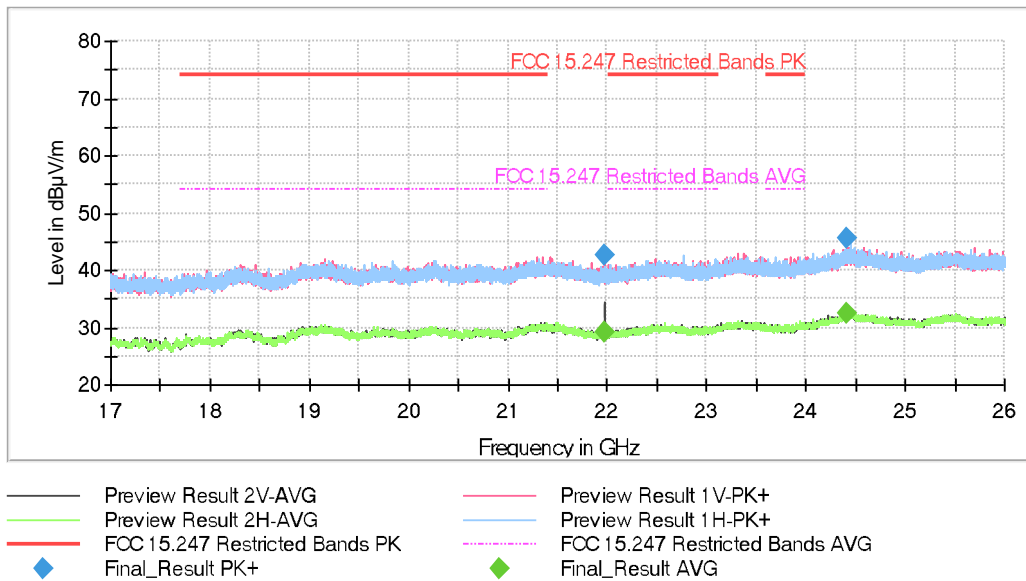
- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result PK+
- ◆ Final\_Result AVG

**FREQUENCY RANGE 17 - 26 GHz**

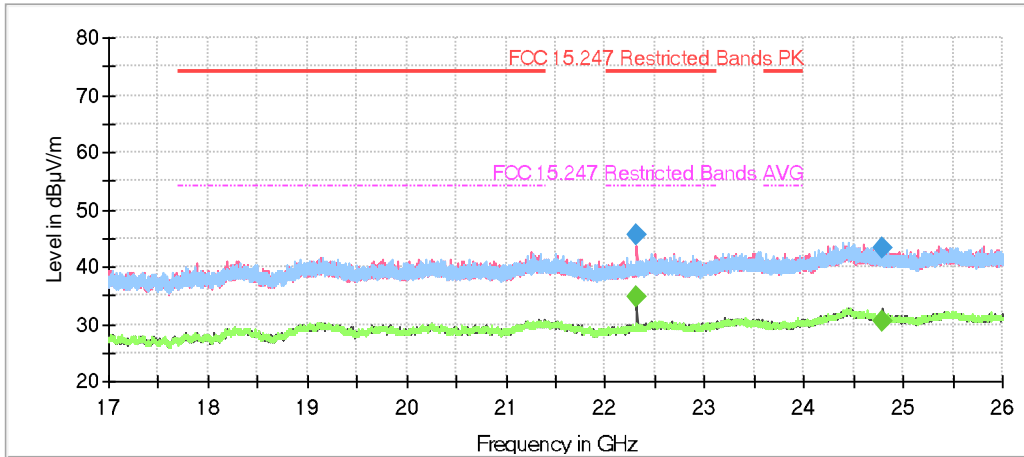
- Low Channel:



- Middle Channel:

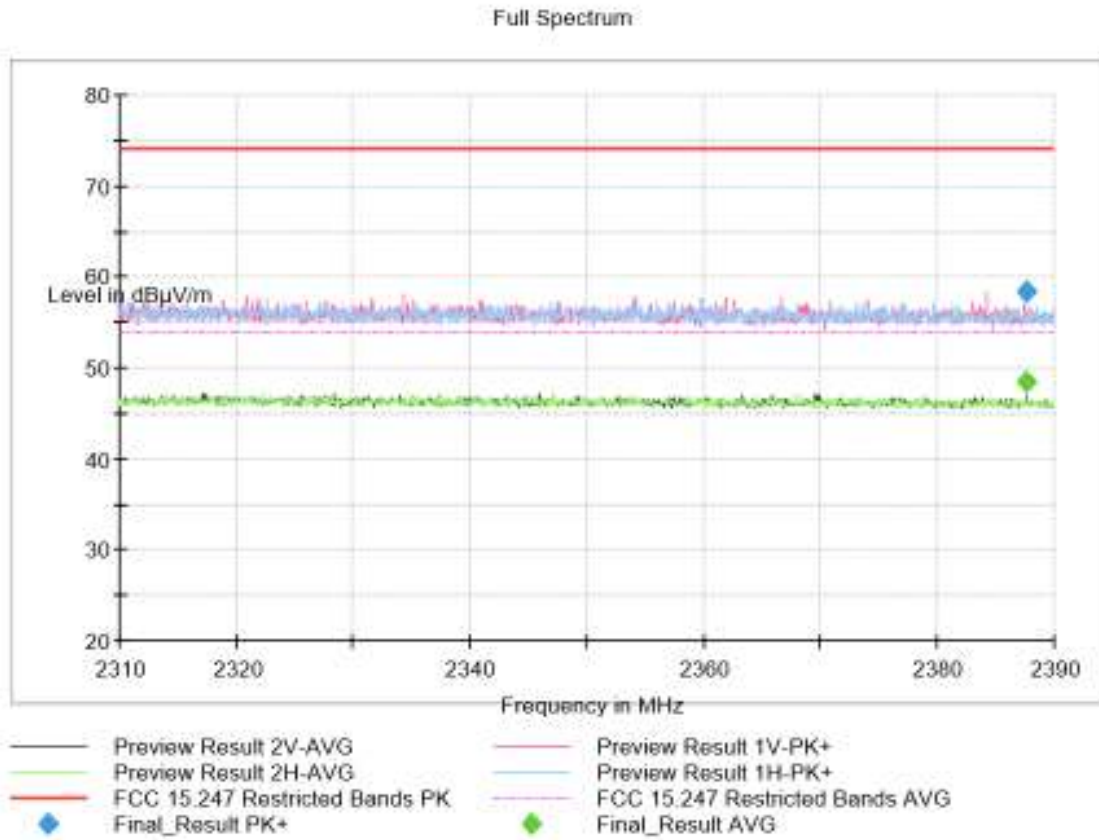


- High Channel:

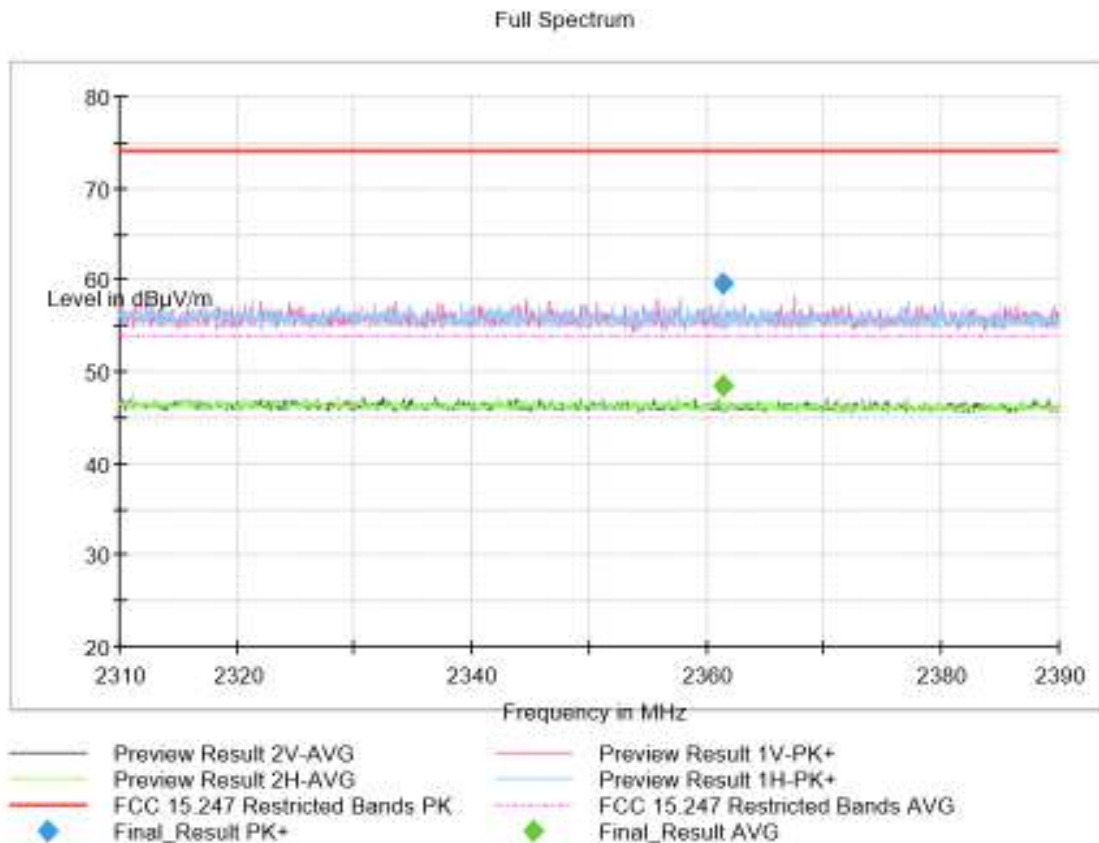


**FREQUENCY RANGE 2.31-2.39 GHz**

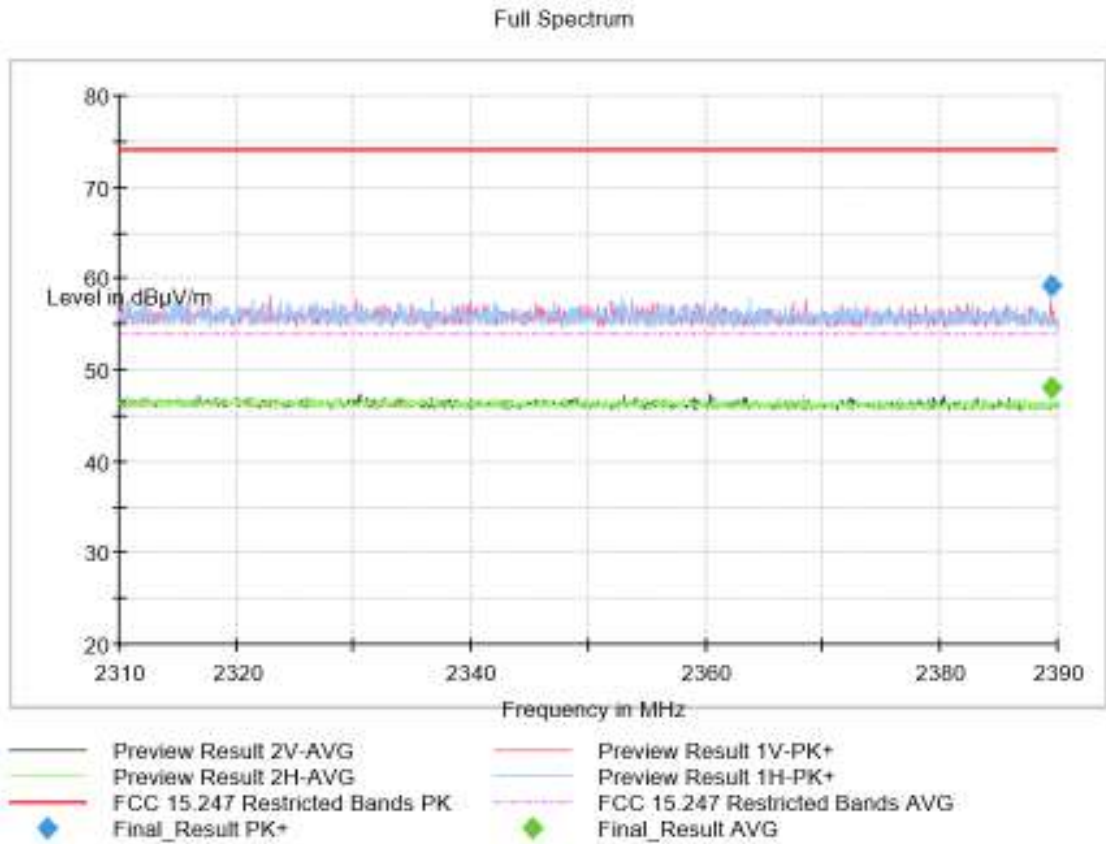
- Low Channel:



- Middle Channel:

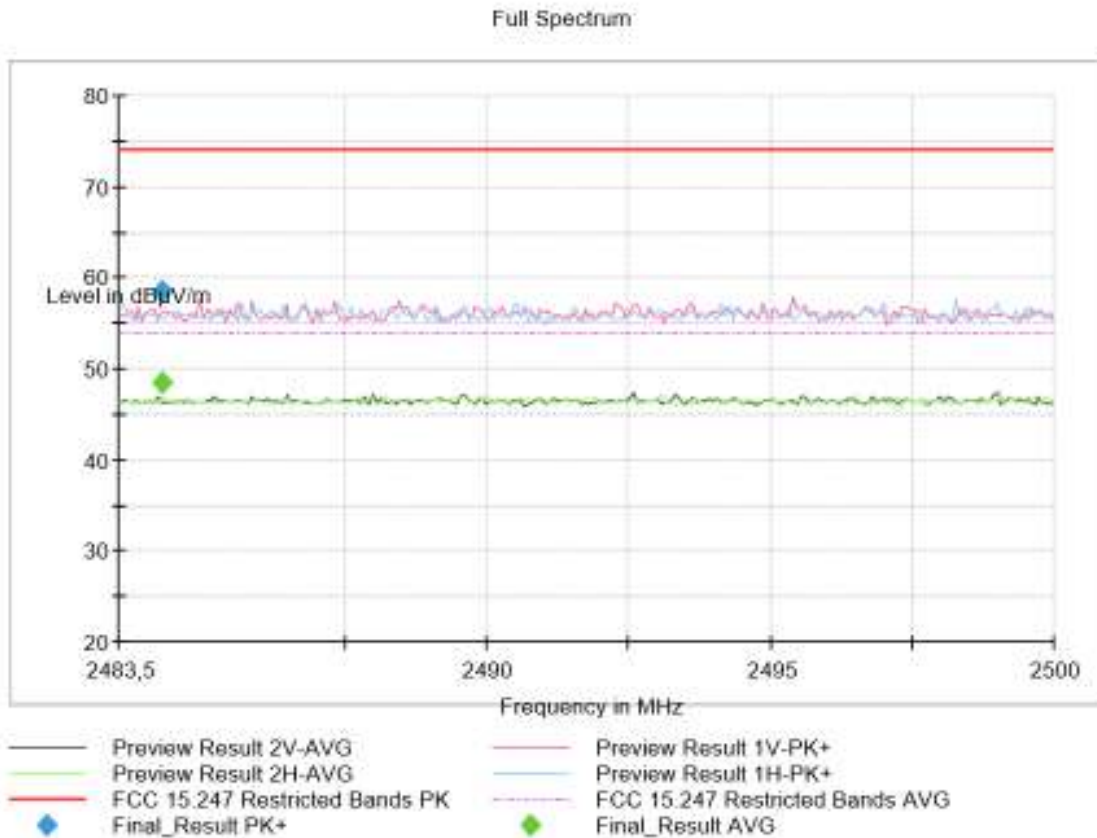


- High Channel:



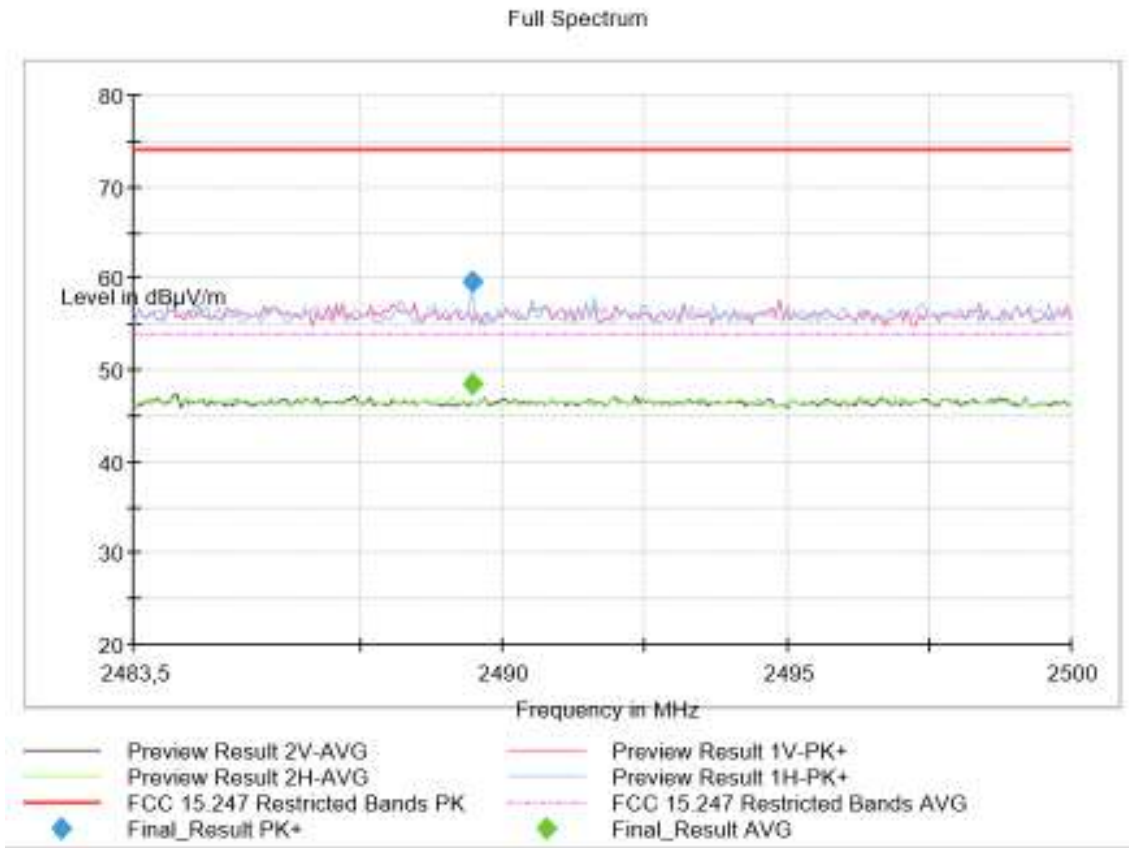
**FREQUENCY RANGE 2.4835-2.5 GHz**

- Low Channel:

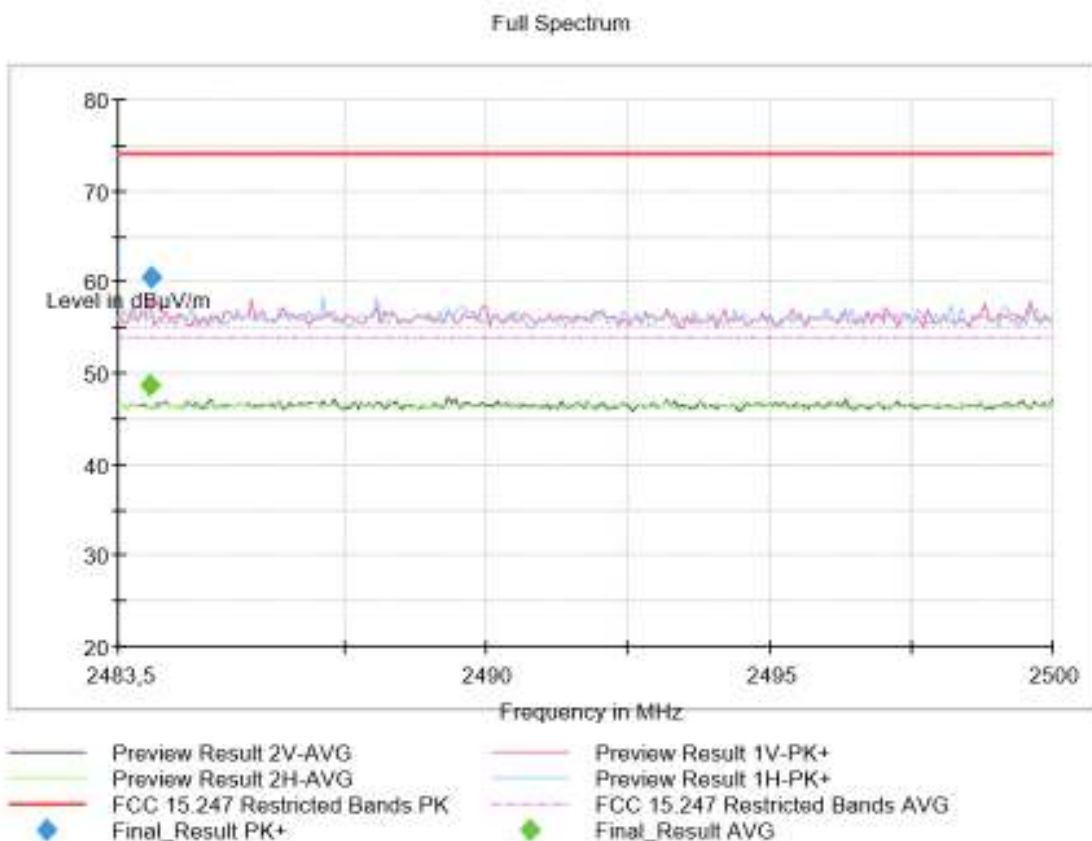




- Middle Channel:



- High Channel:





## **Appendix C: Test results. Proprietary protocol DM 2.4 GHz**

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## TEST CONDITIONS

### POWER SUPPLY (V) and ANTENNA:

V nominal:	1.4 Vdc
Type of Power Supply:	Battery.
Type of Antenna:	Integral.
Declared Antenna Gain:	-7 dBi

### TEST FREQUENCIES:

Low Channel:	2402 MHz
Middle Channel:	2440 MHz
High Channel:	2480 MHz

### CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is connected to the spectrum analyser using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



The DC supply voltage is applied using an external battery.

### RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (bilog antenna for the range between 30 MHz to 1000 MHz and 1 GHz-17 GHz double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1 m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

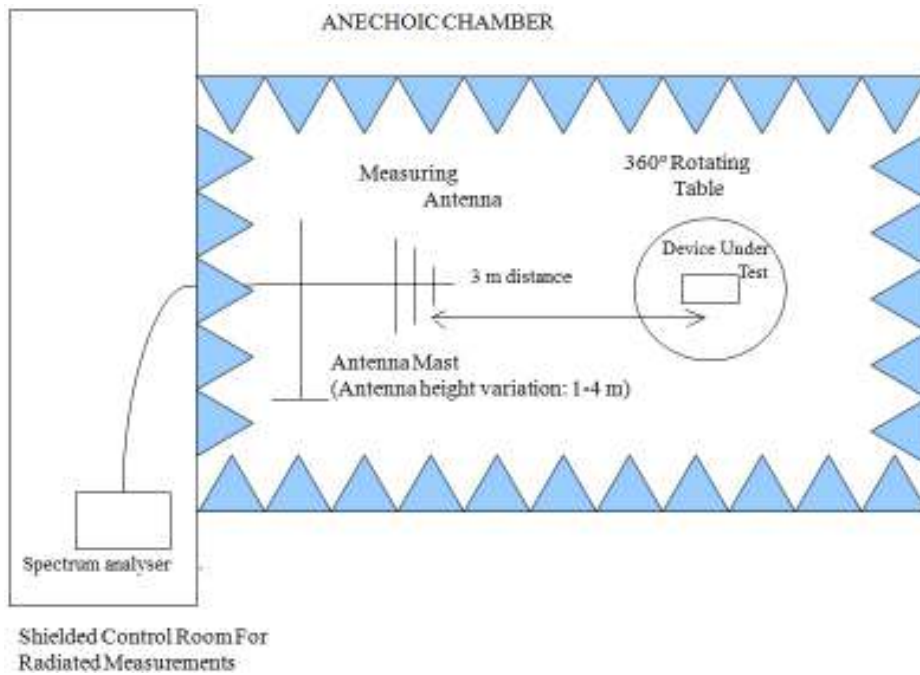
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

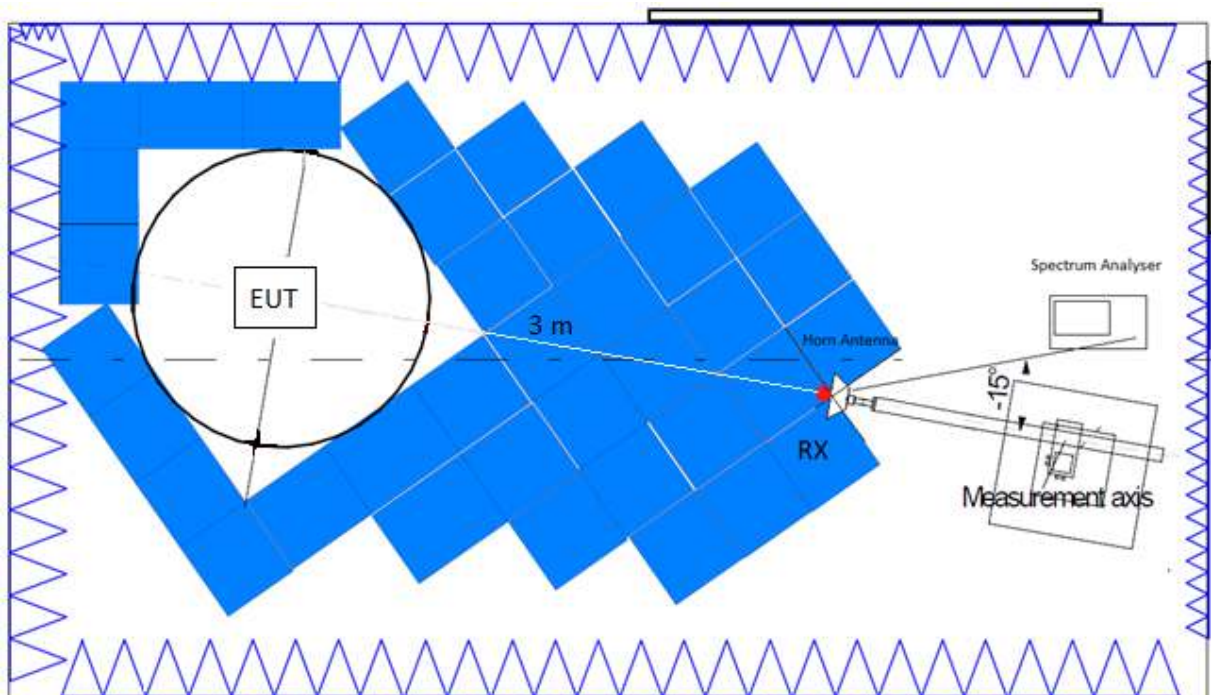
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth/video bandwidth of 100 kHz/300 kHz was used for frequencies below 1 GHz and 1MHz/3MHz for frequencies above 1 GHz.

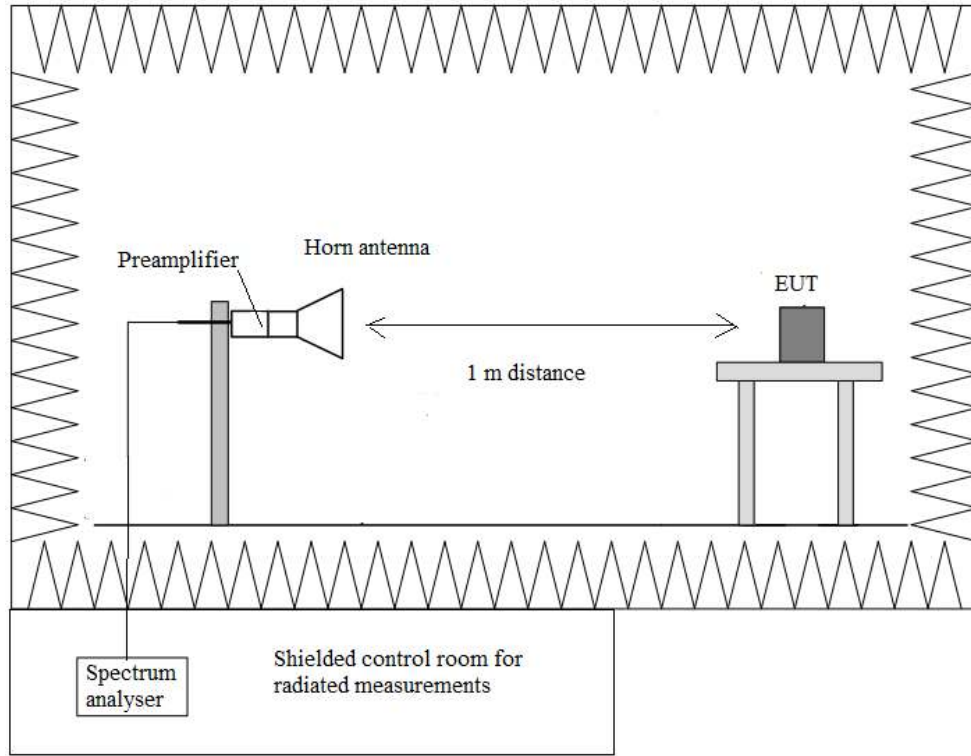
Radiated measurements setup  $f < 1$  GHz:



Radiated measurements setup from 1 GHz to 17 GHz:

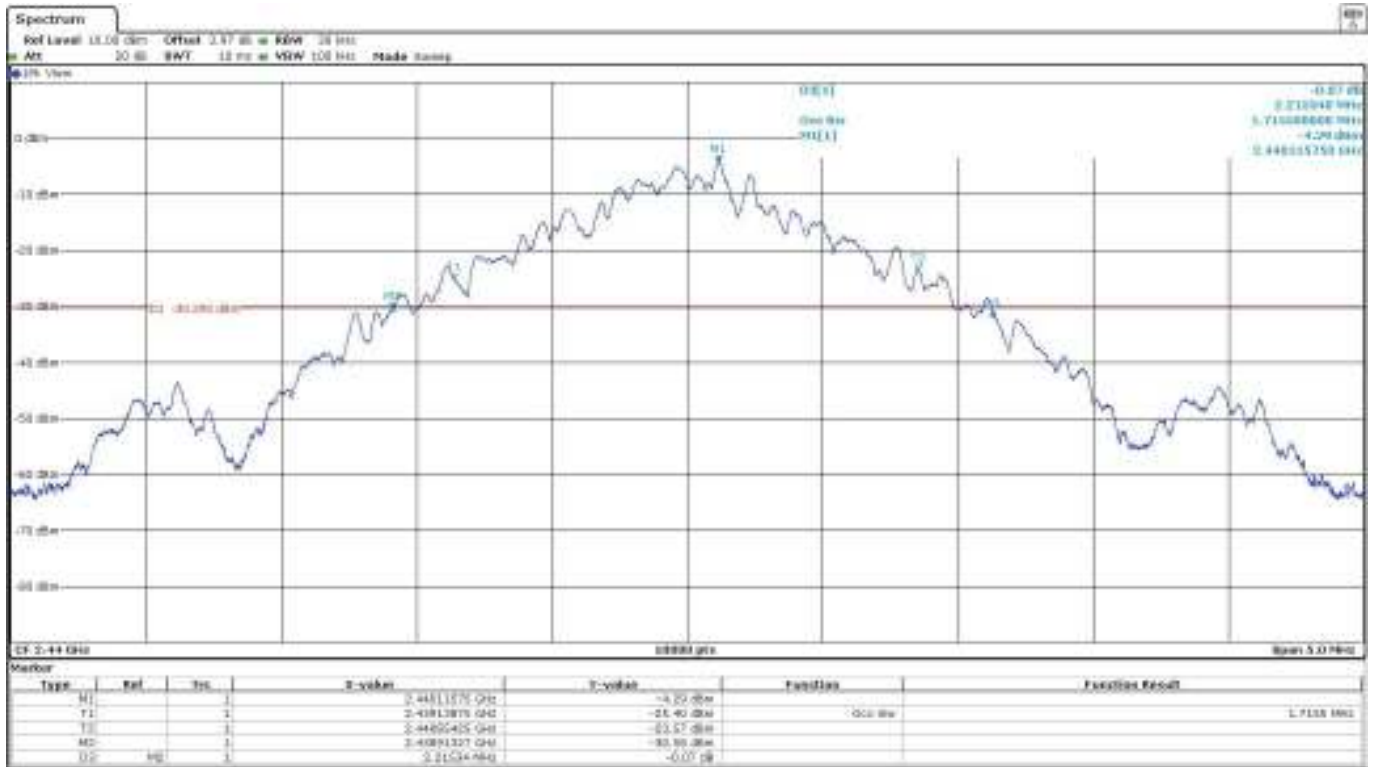


Radiated measurements setup  $f > 17$  GHz:

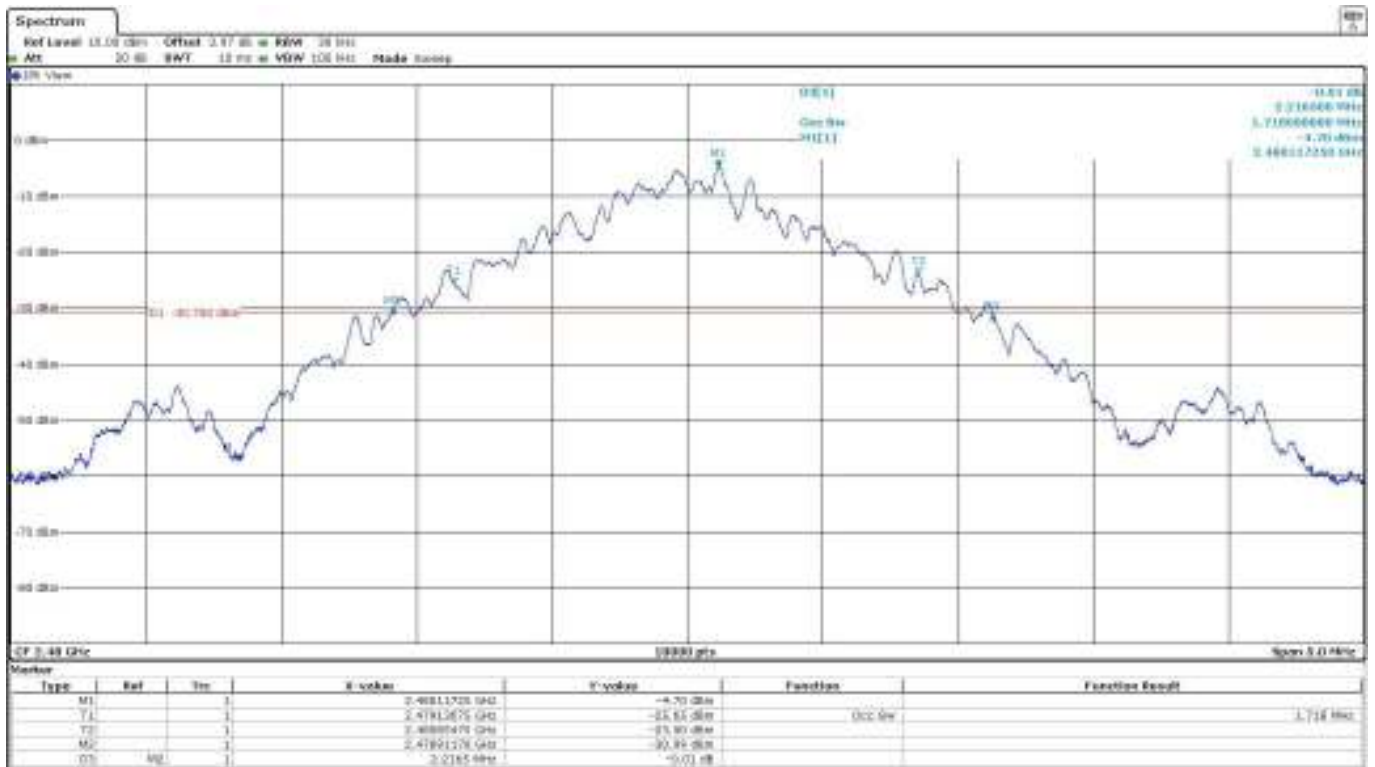




- Middle Channel:



- High Channel:



## 15.249 (a) / RSS-210 B.10 (a) Field strength of fundamental and harmonics emissions

### SPECIFICATION:

The field strength of emissions from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of fundamental (mV/m)	Field strength (dBµV/m)	Measurement distance (m)
902 - 928	50	93.98	3
2400 – 2483.5	50	93.98	3
5725 - 5875	50	93.98	3
24000-24250	250	107.96	3

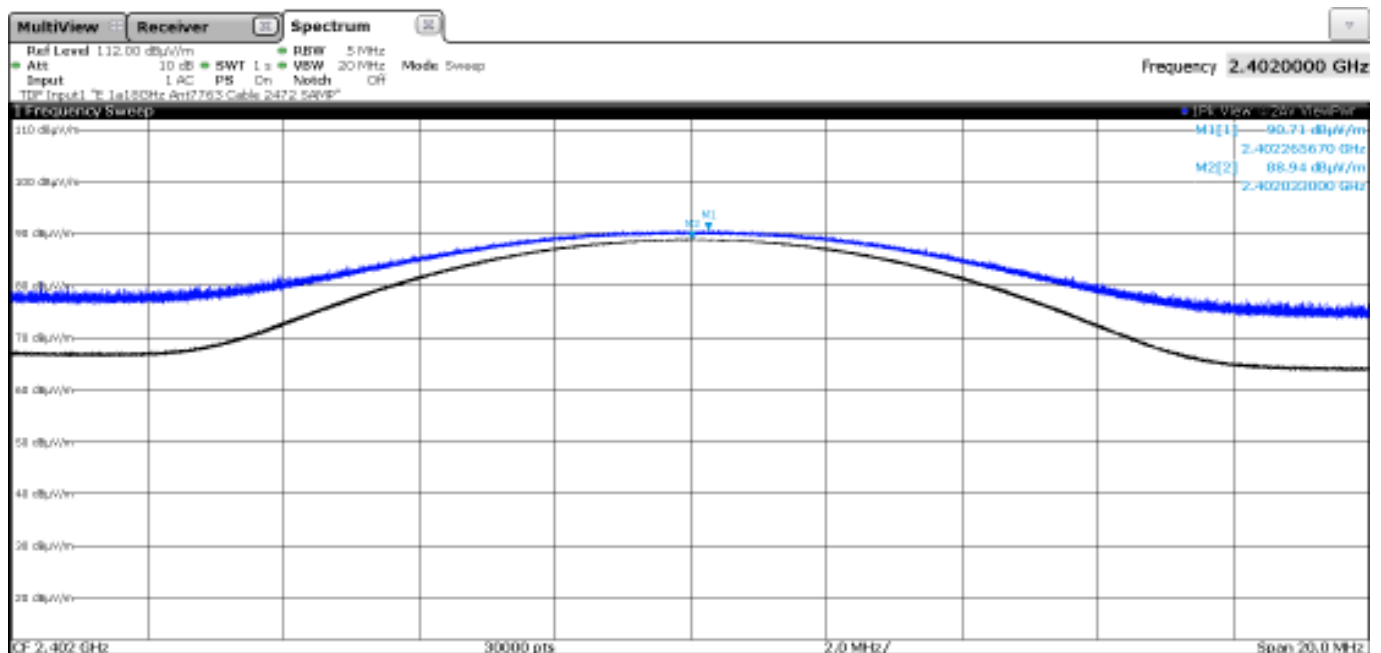
For frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### RESULTS:

	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Average Field Strength (dBµV/m)	88.94	89.43	86.56
Peak Field Strength (dBµV/m)	90.71	91.09	88.86
Measurement Uncertainty (dB)	<±4.01		

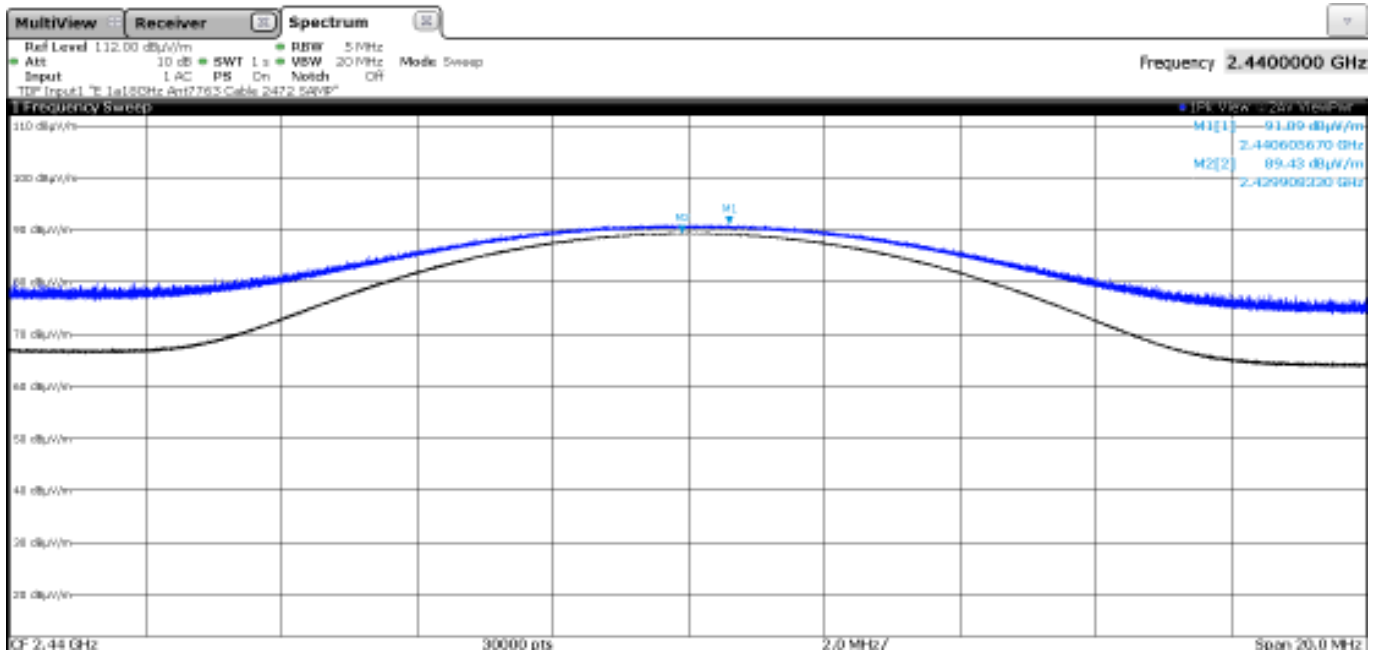
Verdict: PASS

- Low Channel:

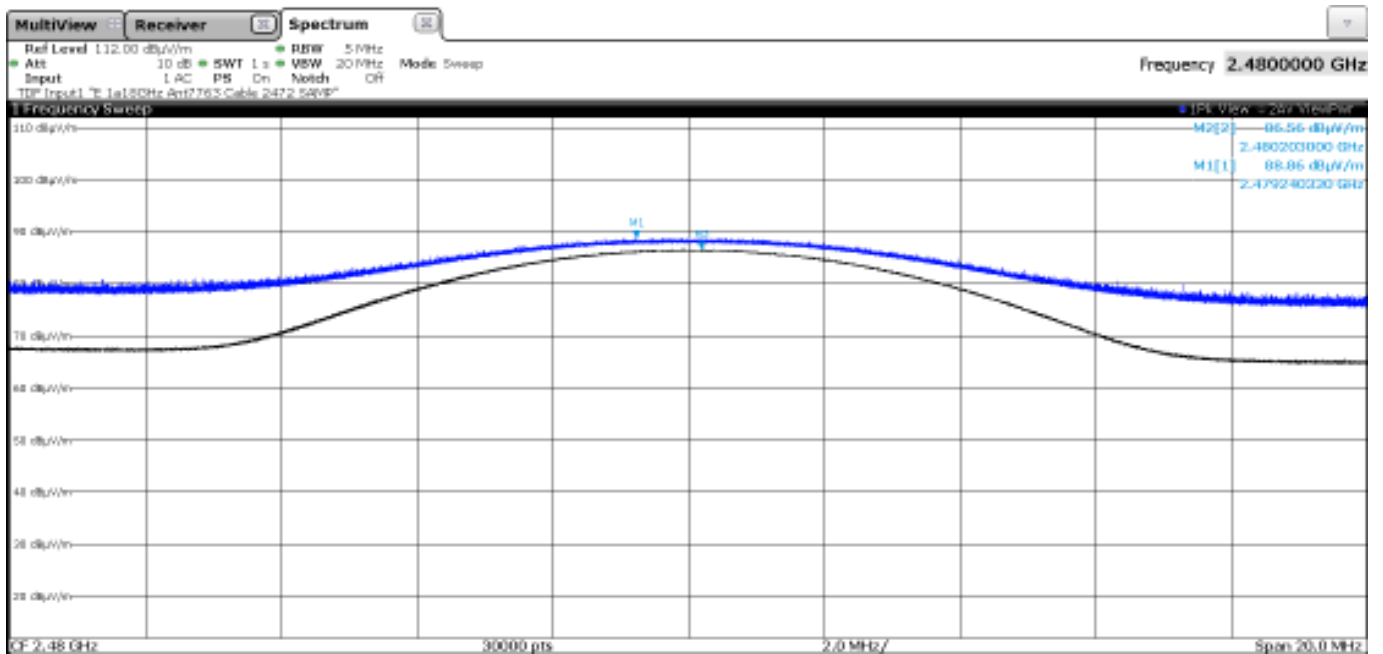




- Middle Channel:



- High Channel:



## 15.249 (d) / RSS-210 B.10 (b) Emissions radiated outside of the specific frequency bands

### SPECIFICATION:

The field strength of harmonics from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of harmonics ( $\mu\text{V/m}$ )	Field strength of harmonics ( $\text{dB}\mu\text{V/m}$ )	Measurement distance (m)
902 - 928	500	54	3
2400 – 2483.5	500	54	3
5725 - 5875	500	54	3
24000-24250	2500	67.96	3

Emissions radiated outside of the specific frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emission limits specified in section 15.209:

Frequency Range (MHz)	Field strength ( $\mu\text{V/m}$ )	Field strength ( $\text{dB}\mu\text{V/m}$ )	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 25000	500	54	3

Whichever is the lesser attenuation.

### RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-17 GHz and at distance of 1 m for the frequency range 17 GHz-26 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

**Frequency range 30 MHz - 1 GHz:**

The spurious signals detected do not depend on the operating channel.

No spurious frequencies detected at less than 20 dB below the limit.

Measurement Uncertainty (dB) <±5.15

**Frequency range 1 - 26 GHz:**

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

Spurious signals with peak levels above the average limit (54 dBµV/m at 3 m) are measured with average detector for checking compliance with the average limit.

- Low Channel (2402 MHz):

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3832	54.59	H	Peak	<±4.94
	43.15		Average	
2.4880	56.36	V	Peak	<±4.94
	43.39		Average	
4.8030	45.16	H	Peak	<±4.28
7.2065	50.01	H	Peak	<±4.28
21.6155	44.00	V	Peak	<±4.89

- Middle Channel (2440 MHz):

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3690	57.10	V	Peak	<±4.94
	43.25		Average	
2.4840	56.54	V	Peak	<±4.94
	43.36		Average	
4.8790	47.32	H	Peak	<±4.28
7.3185	48.03	H	Peak	<±4.28
21.9575	44.20	V	Peak	<±4.89

- High Channel (2480 MHz):

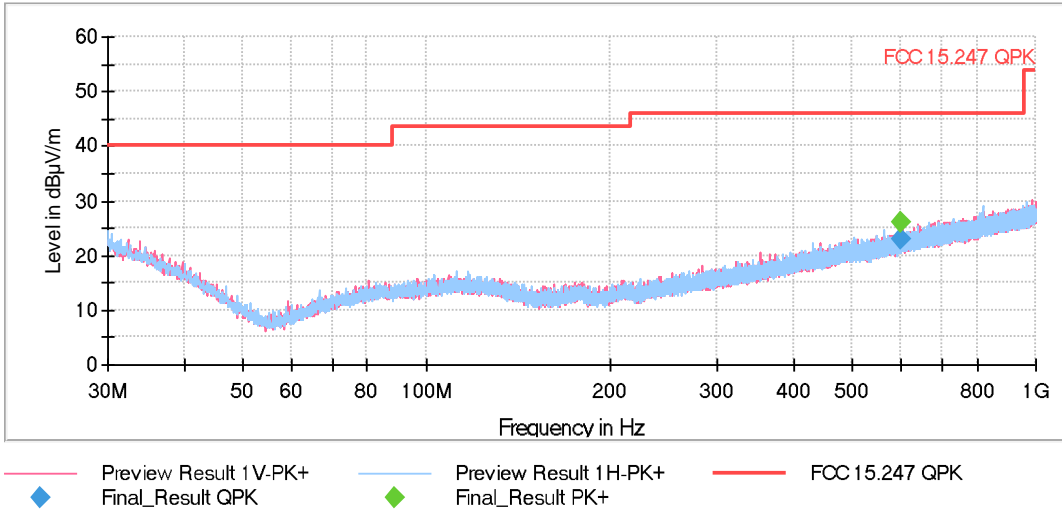
Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3740	56.55	V	Peak	<±4.94
	43.24		Average	
2.4901	54.01	H	Peak	<±4.94
	40.46		Average	
4.9605	51.95	H	Peak	<±4.28
7.4410	49.99	H	Peak	<±4.28
22.3225	44.51	V	Peak	<±4.89

Measurement Uncertainty: 1-3 GHz <±4.94 dB  
 3-17 GHz <±4.28 dB  
 17-26 GHz <±4.89 dB

Verdict: PASS

### FREQUENCY RANGE 30 MHz - 1 GHz

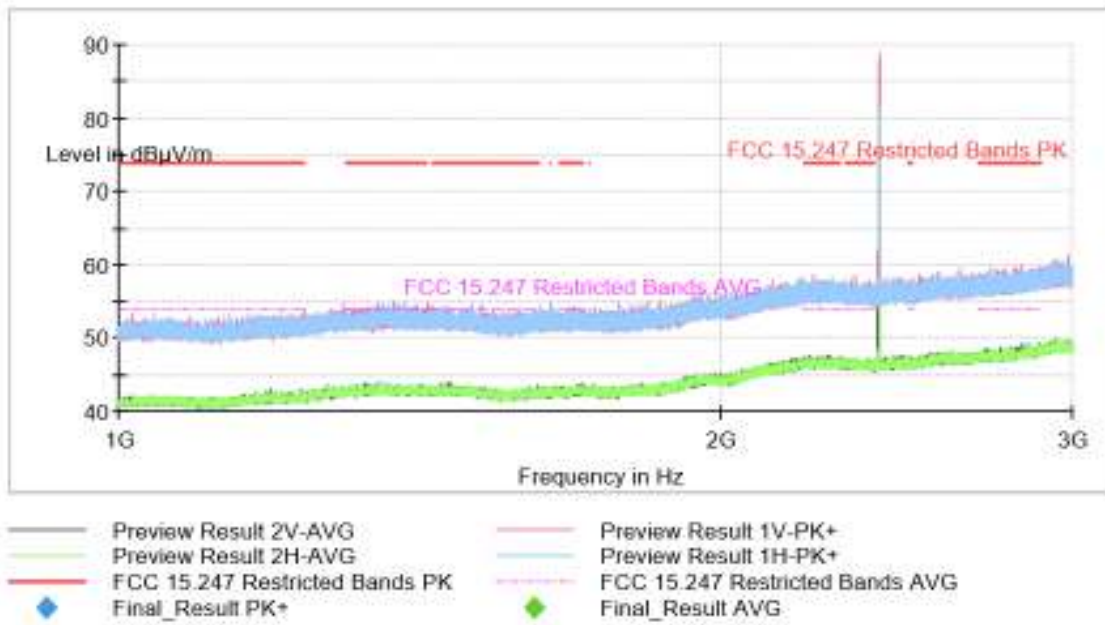
The spurious frequencies detected do not depend on the operating channel.



This plot is valid for the Low, Middle and High Channels.

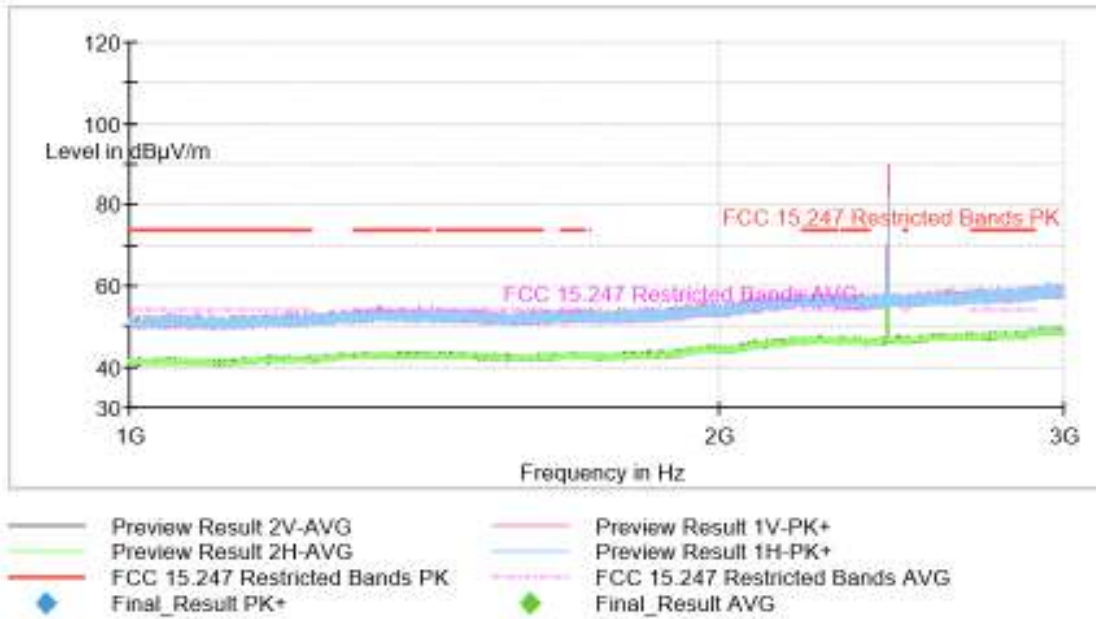
### FREQUENCY RANGE 1 - 3 GHz

- Low Channel:



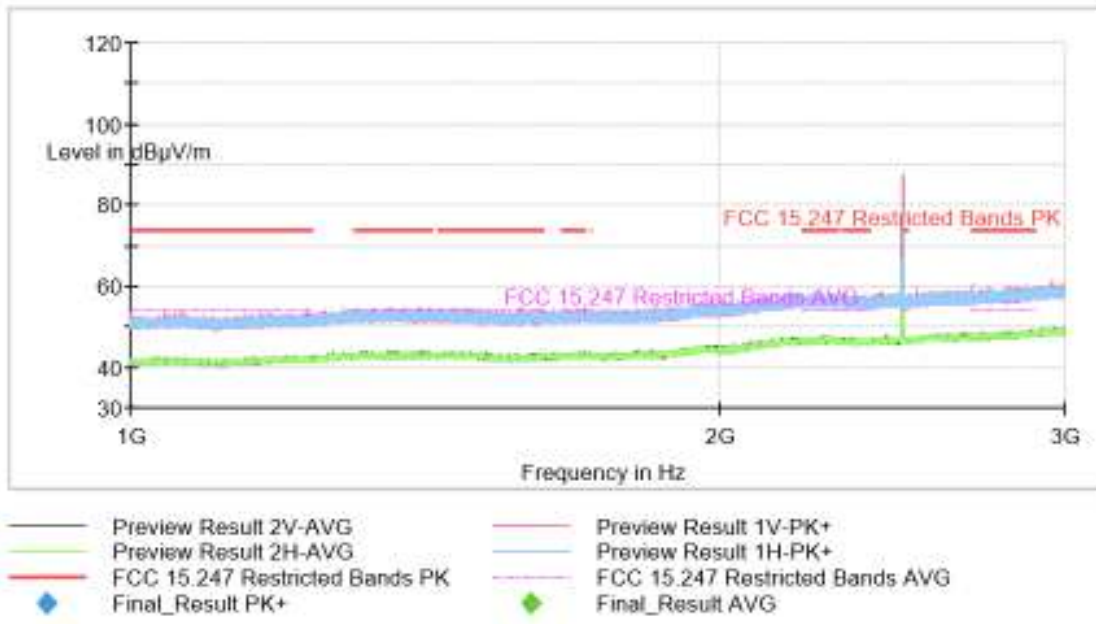
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

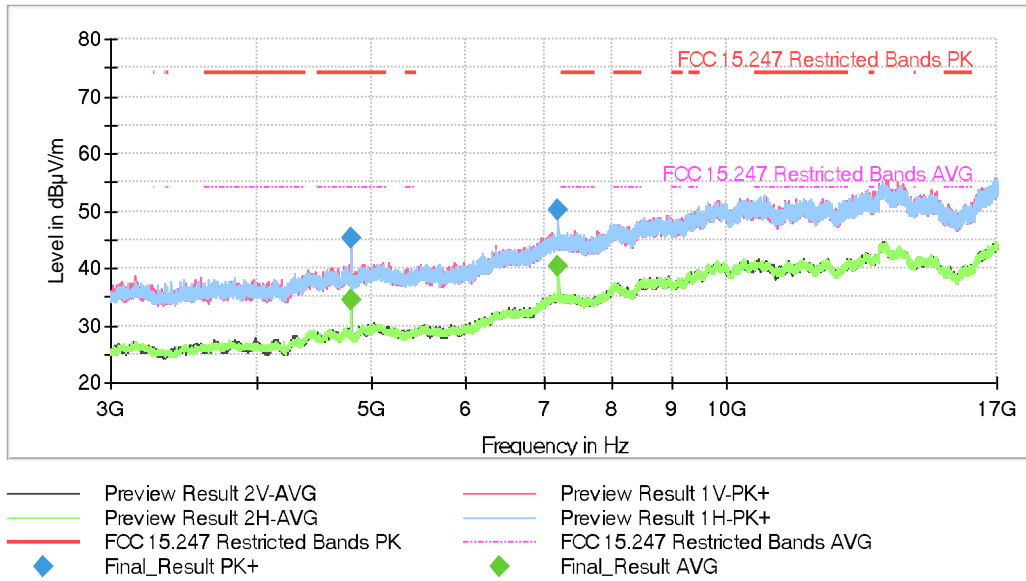
- High Channel:



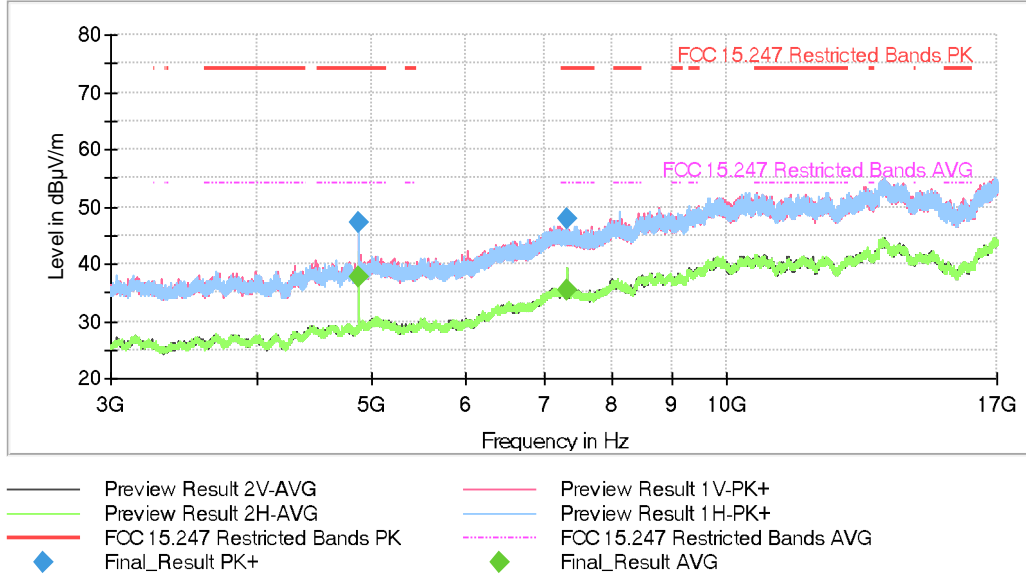
The peak above the limit is the carrier frequency.

### FREQUENCY RANGE 3 - 17 GHz

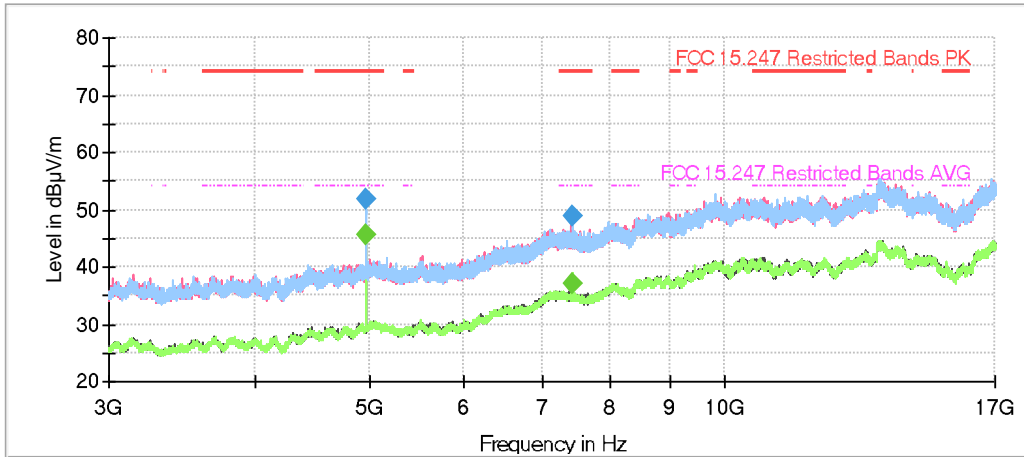
- Low Channel:



- Middle Channel:



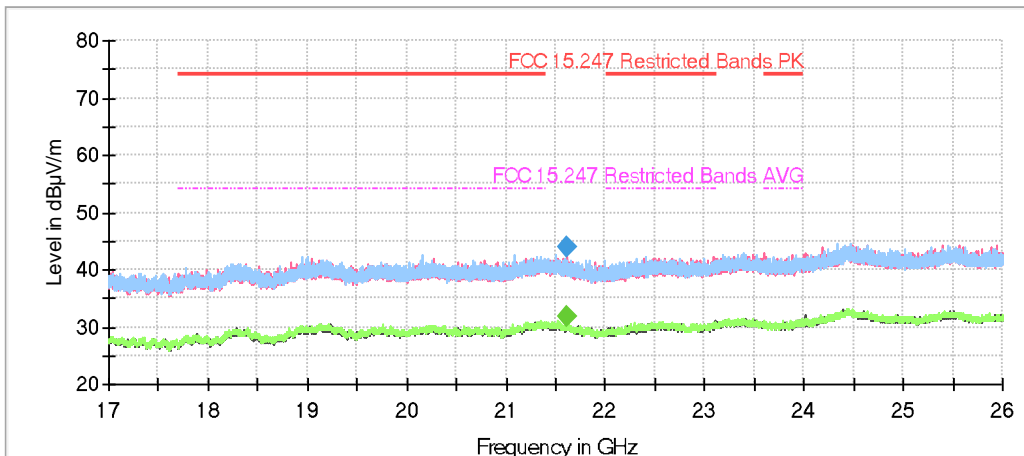
- High Channel:



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result PK+
- ◆ Final\_Result AVG

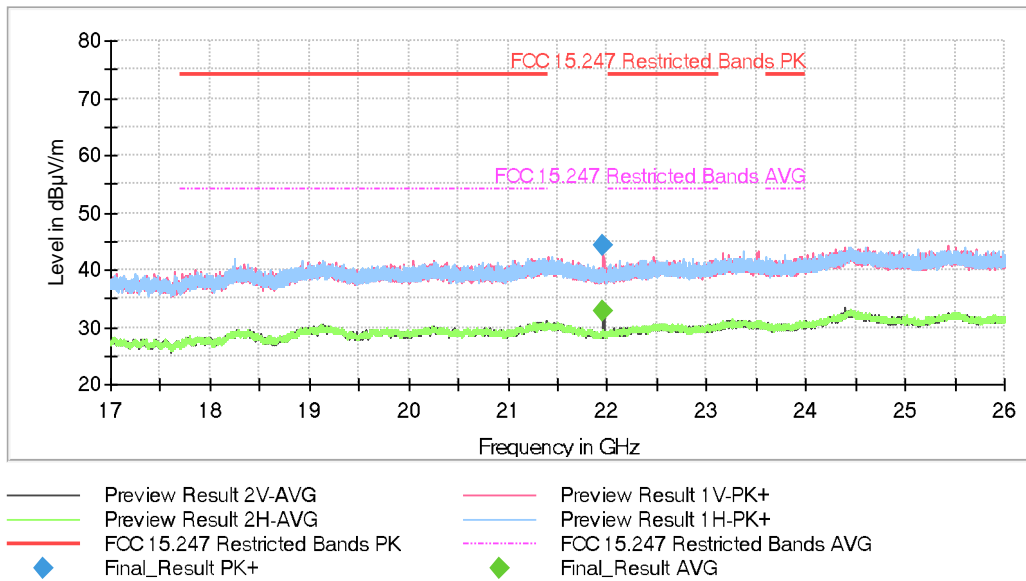
**FREQUENCY RANGE 17 - 26 GHz**

- Low Channel:

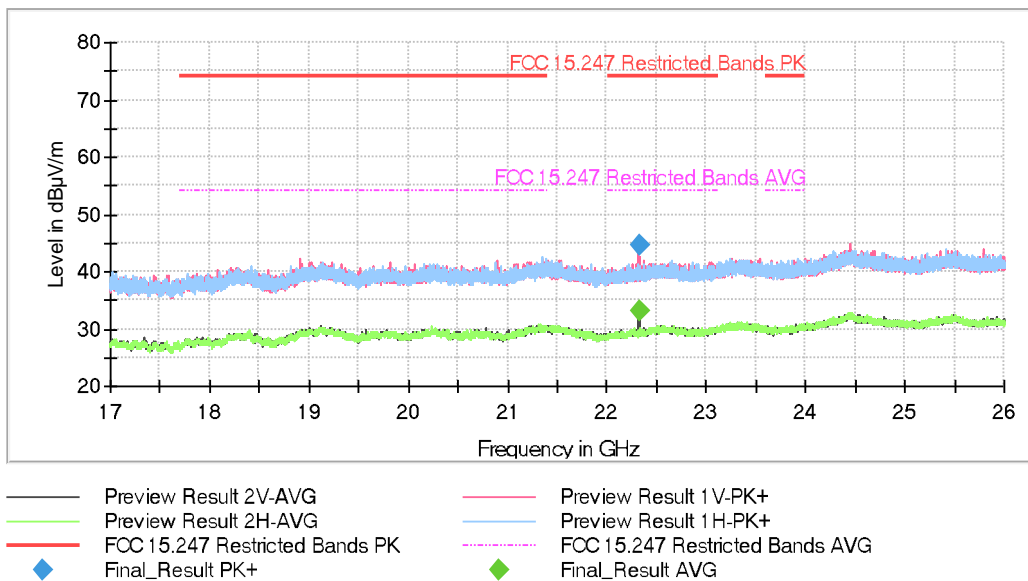


- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result PK+
- ◆ Final\_Result AVG

- Middle Channel:



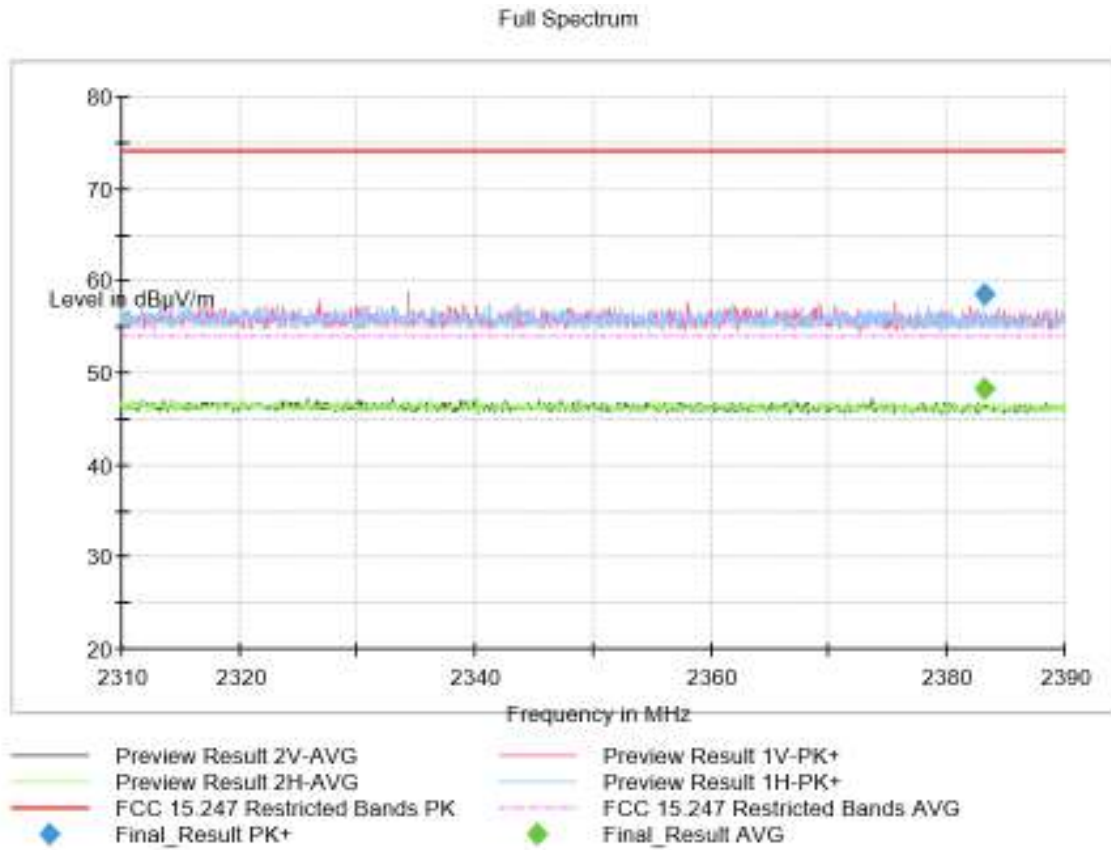
- High Channel:



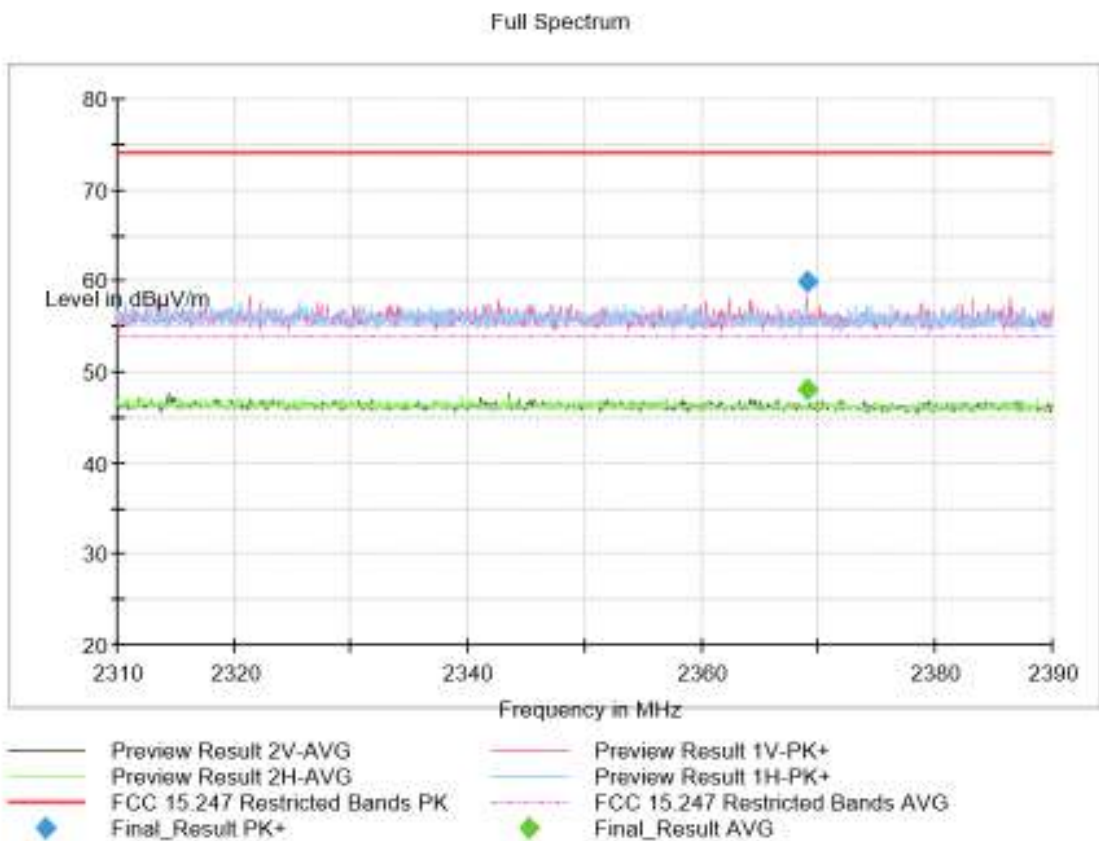


### FREQUENCY RANGE 2.31-2.39 GHz

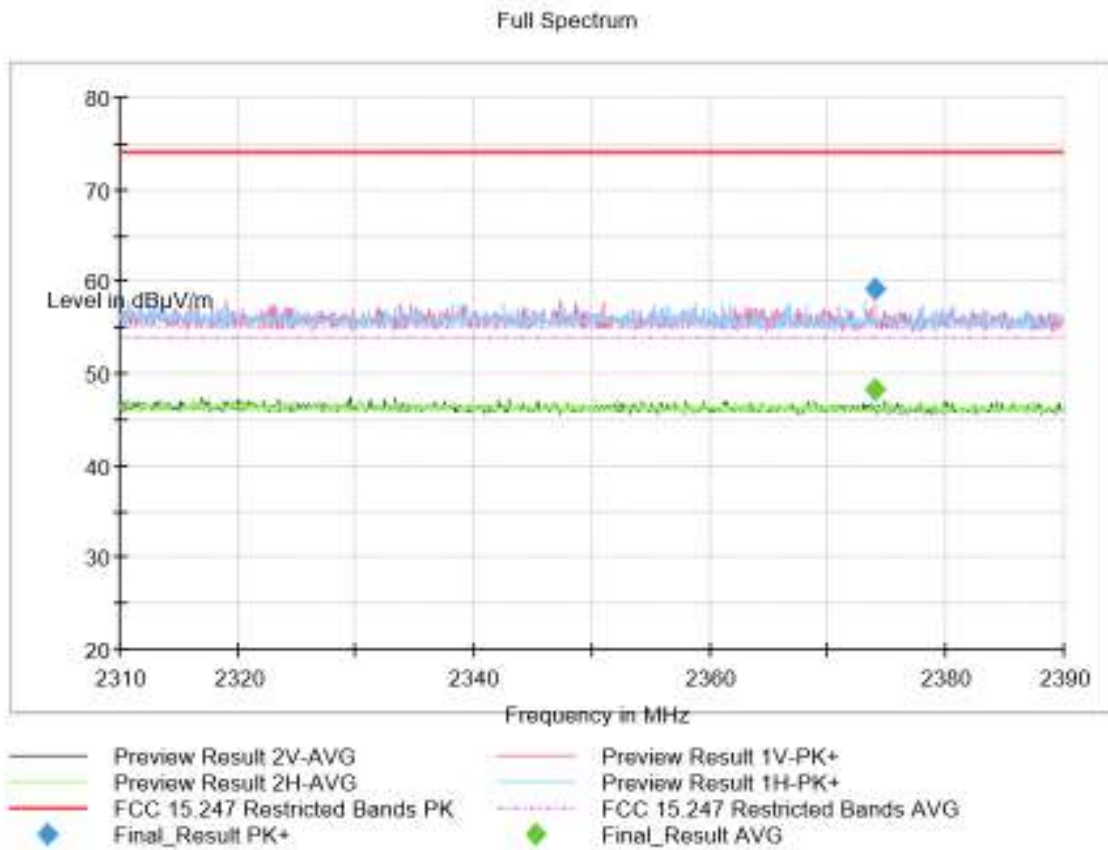
- Low Channel:



- Middle Channel:



- High Channel:

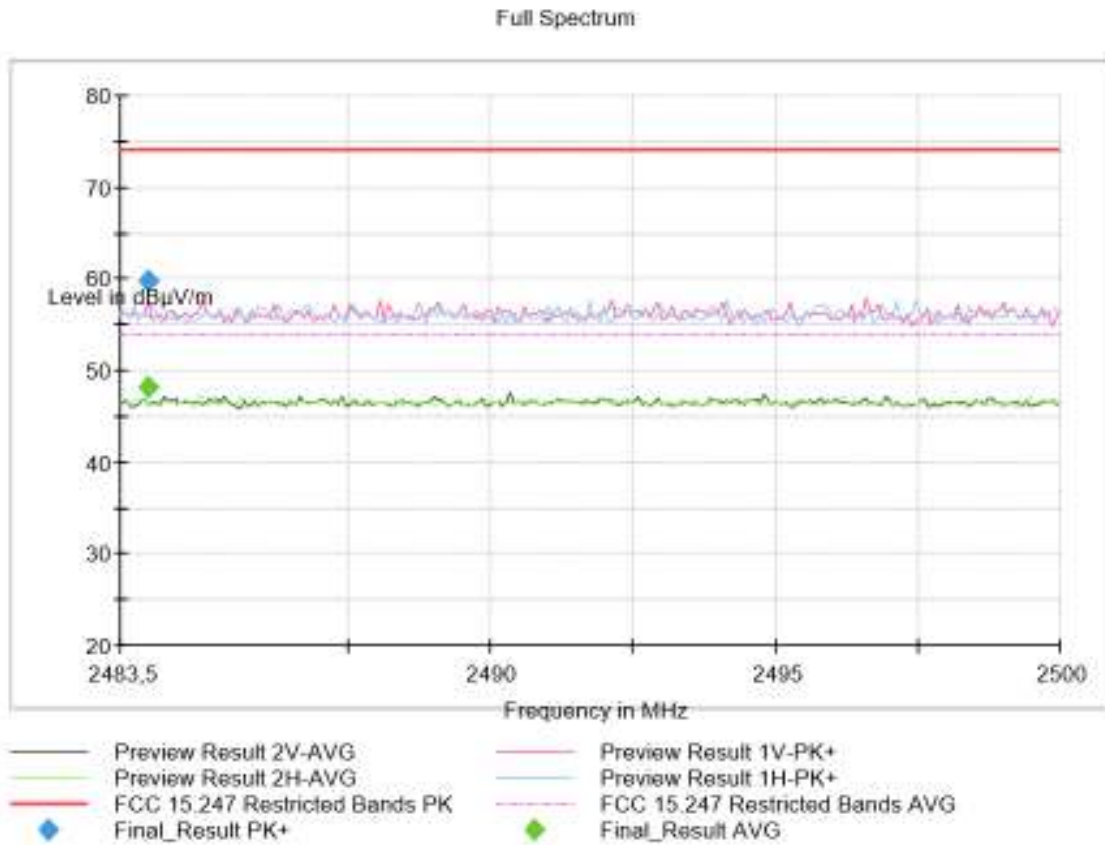


**FREQUENCY RANGE 2.4835-2.5 GHz**

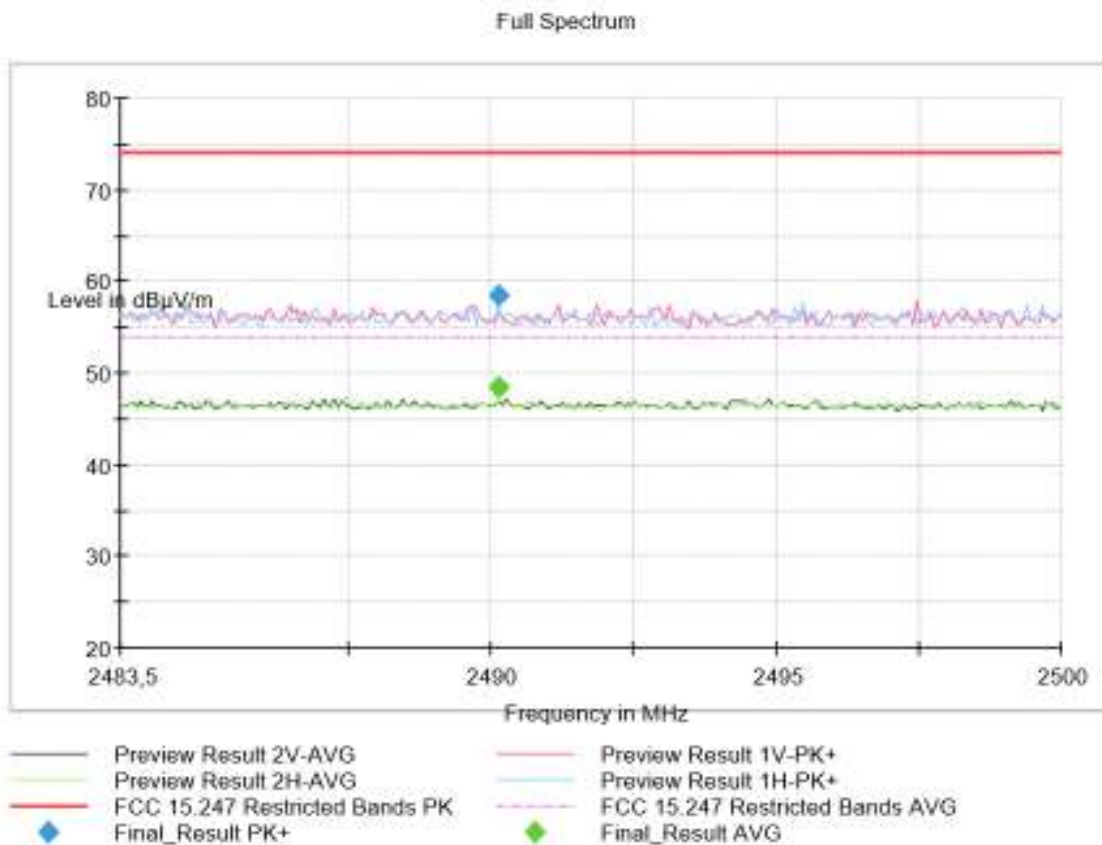
- Low Channel:



- Middle Channel:



- High Channel:



## **Appendix D: Test results.** **Proprietary protocol Flora 2.4 GHz**

## INDEX

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## TEST CONDITIONS

### POWER SUPPLY (V) and ANTENNA:

V nominal:	1.4 Vdc
Type of Power Supply:	Battery.
Type of Antenna:	Integral.
Declared Antenna Gain:	-7 dBi

### TEST FREQUENCIES:

Low Channel:	2402 MHz
Middle Channel:	2440 MHz
High Channel:	2480 MHz

### CONDUCTED MEASUREMENTS

The equipment under test was set up in a shielded room and it is connected to the spectrum analyser using a low loss RF cable. The reading of the spectrum analyser is corrected taking into account the cable loss.



The DC supply voltage is applied using an external battery.

### RADIATED MEASUREMENTS

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (bilog antenna for the range between 30 MHz to 1000 MHz and 1 GHz-17 GHz double ridge horn antenna) is situated at a distance of 3 m and at a distance of 1 m for the frequency range 17 GHz-26 GHz (17 GHz-40 GHz horn antenna).

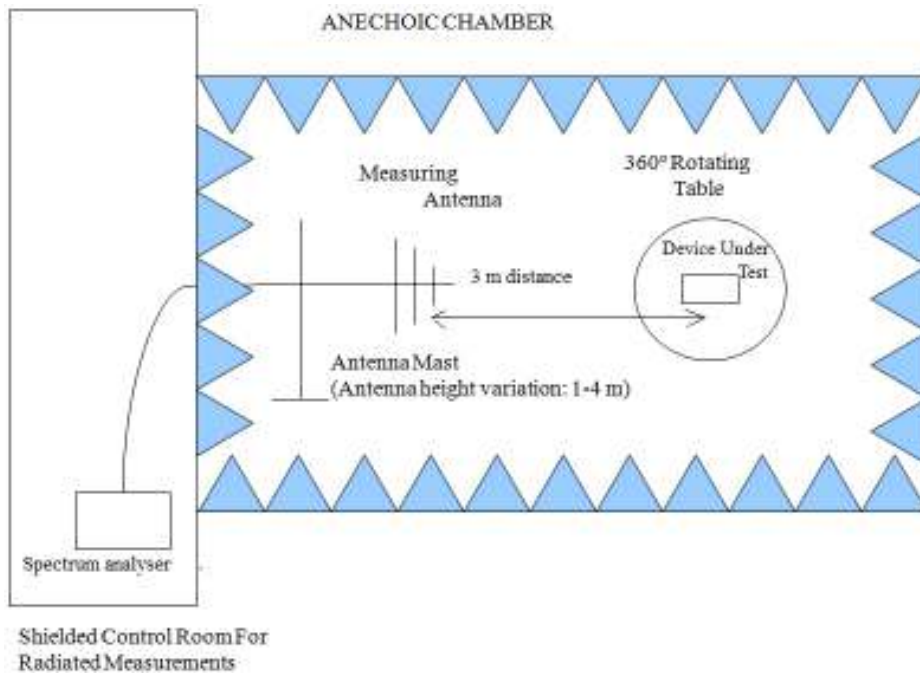
For radiated emissions in the range 17 GHz-26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

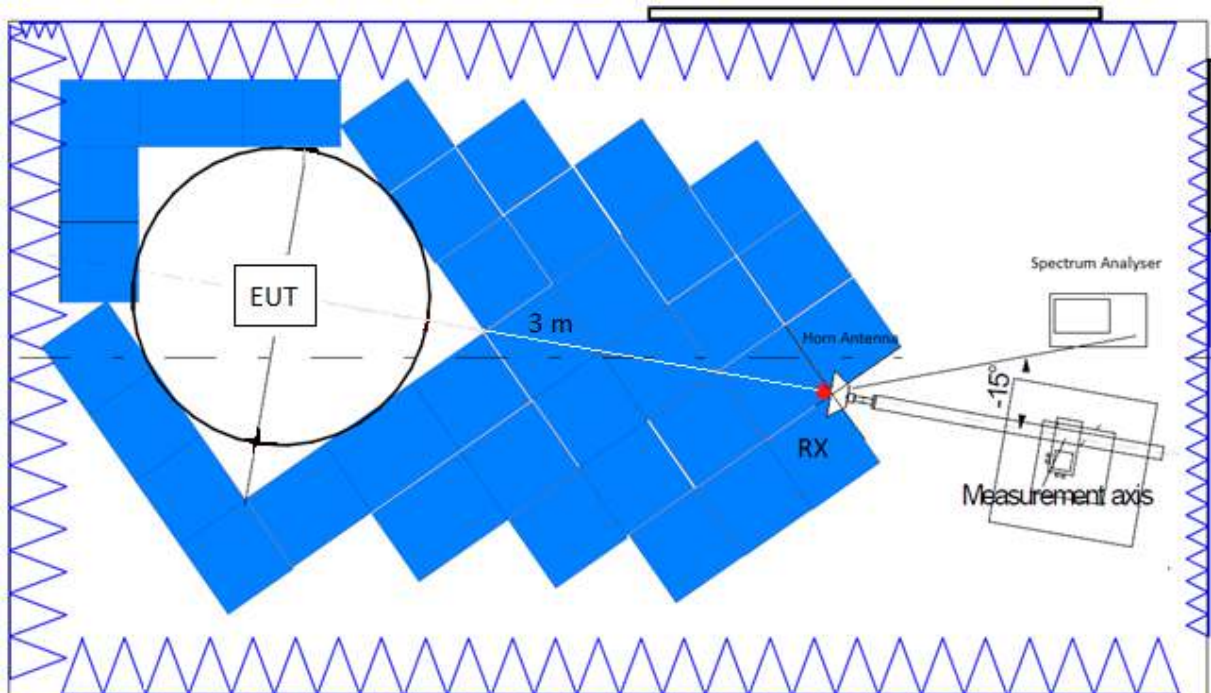
Measurements were made in both horizontal and vertical planes of polarization.

A resolution bandwidth/video bandwidth of 100 kHz/300 kHz was used for frequencies below 1 GHz and 1MHz/3MHz for frequencies above 1 GHz.

Radiated measurements setup  $f < 1$  GHz:

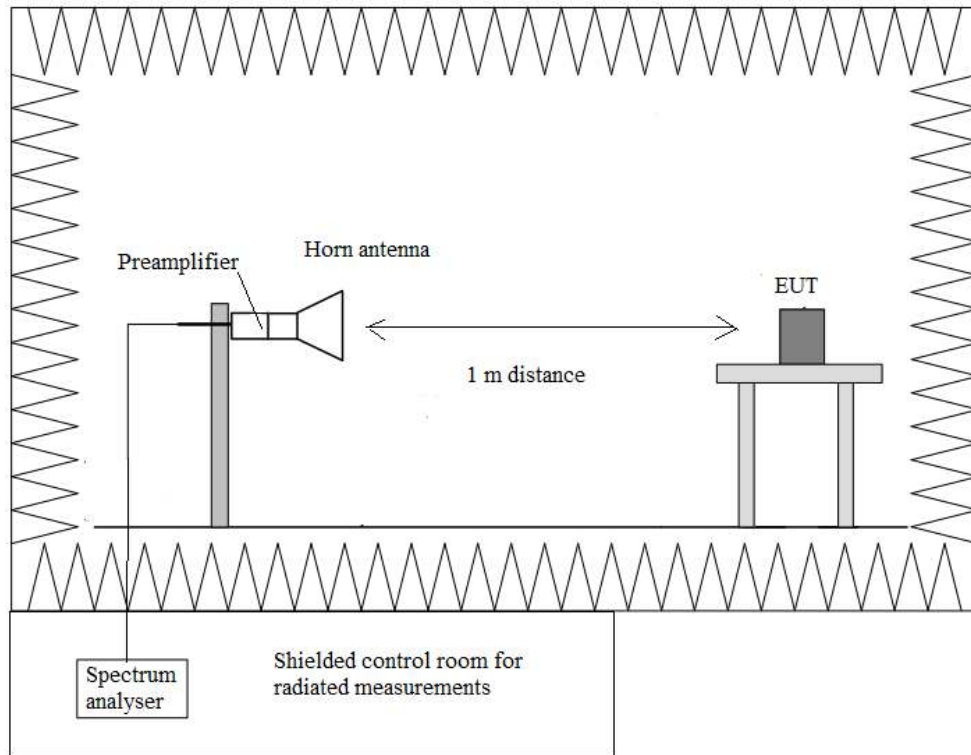


Radiated measurements setup from 1 GHz to 17 GHz:





Radiated measurements setup  $f > 17$  GHz:





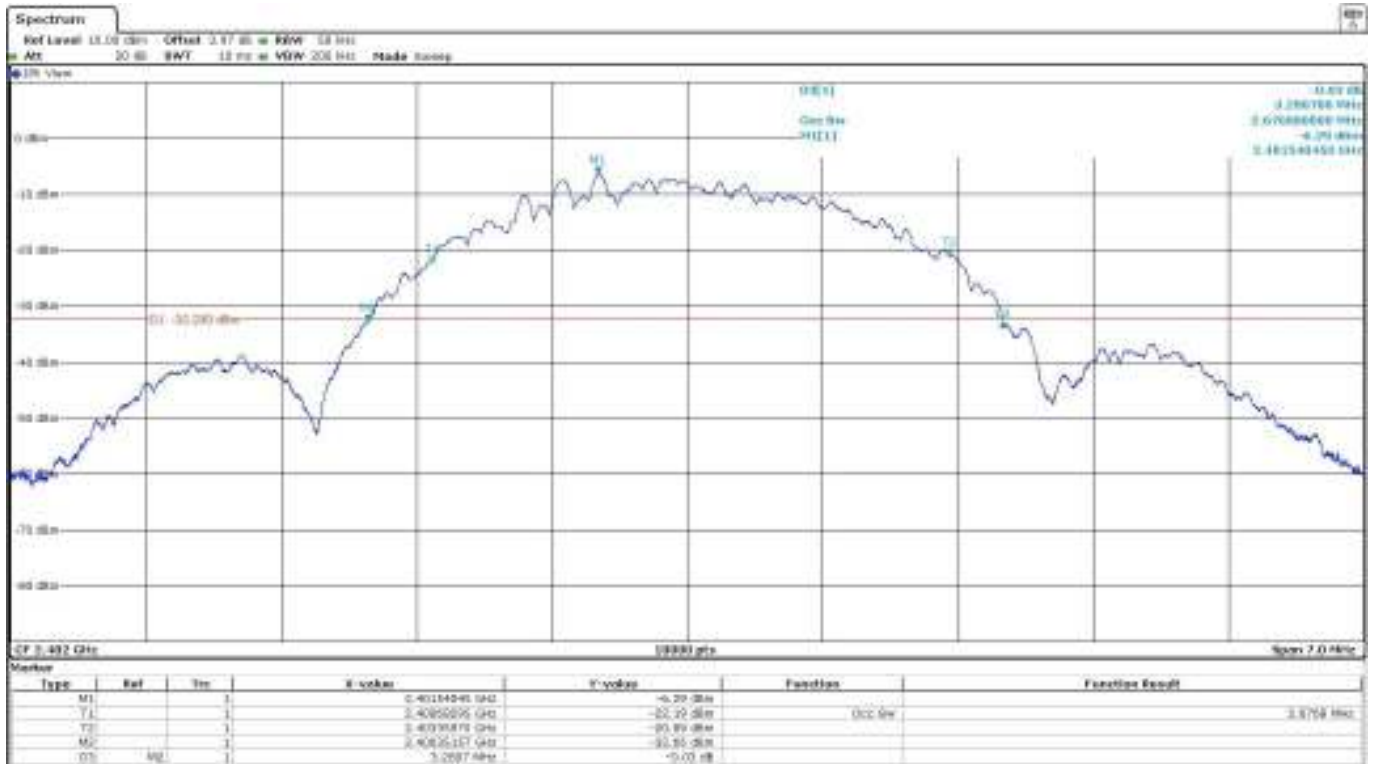
## Occupied Bandwidth

**RESULTS:**

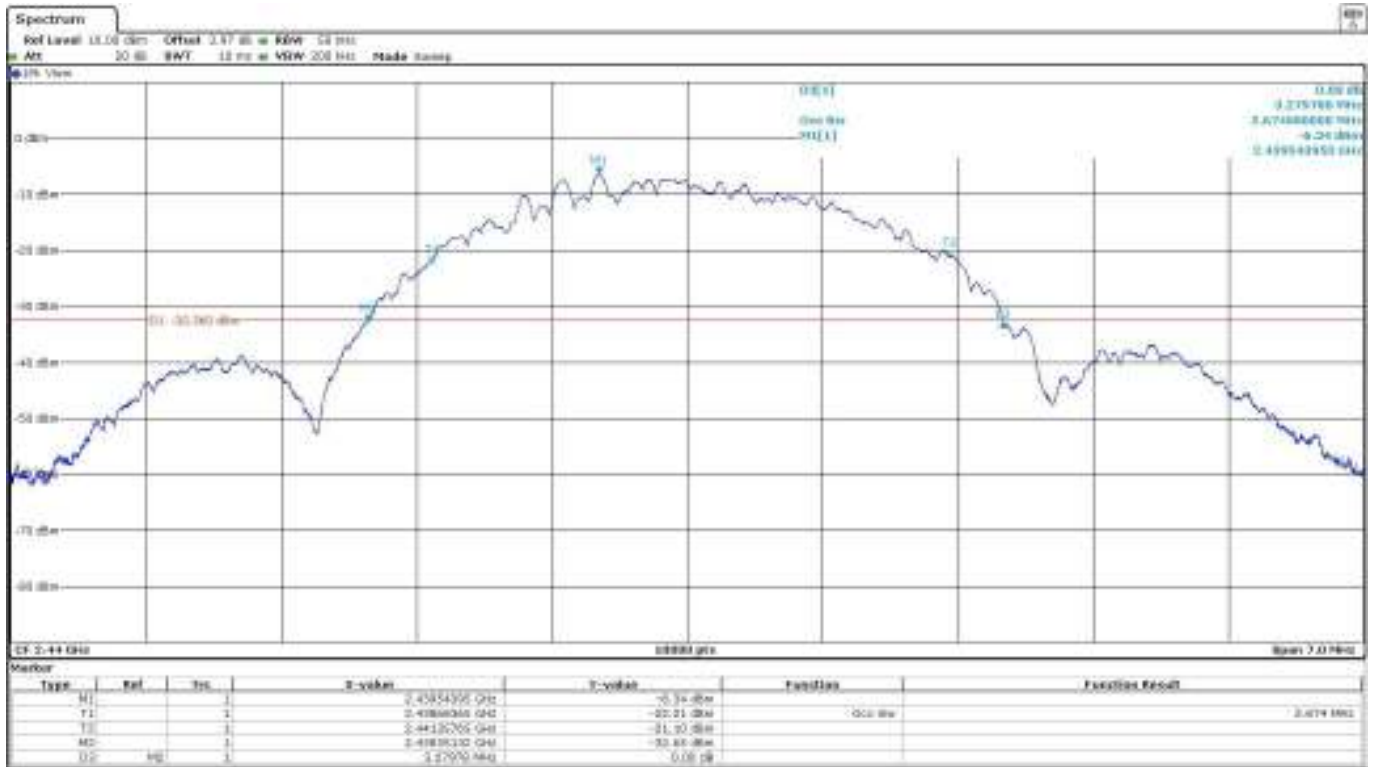
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
99% Bandwidth (MHz)	2.6768	2.6740	2.6782
Measurement Uncertainty (kHz)	<±6.18		

Verdict: PASS

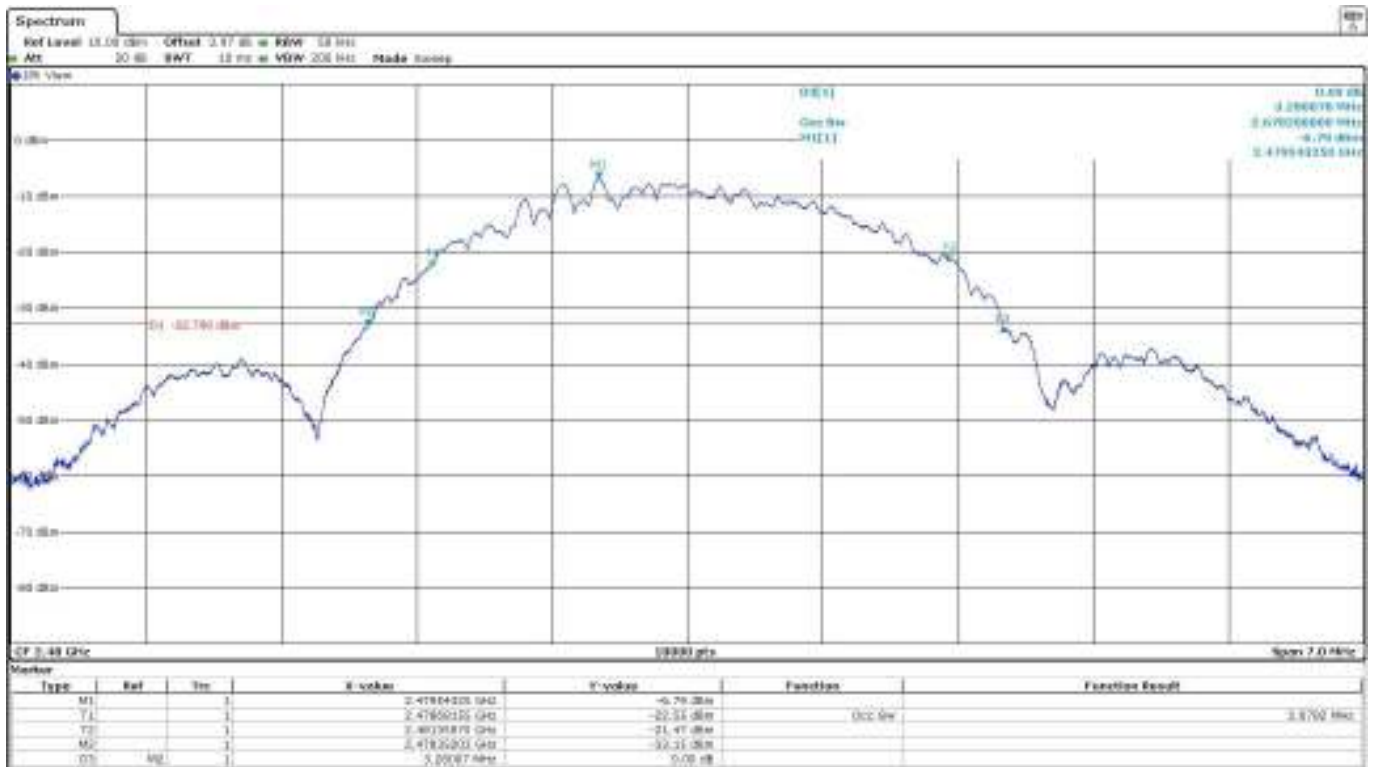
- Low Channel:



- Middle Channel:



- High Channel:



## 15.249 (a) / RSS-210 B.10 (a) Field strength of fundamental and harmonics emissions

### SPECIFICATION:

The field strength of emissions from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of fundamental (mV/m)	Field strength (dB $\mu$ V/m)	Measurement distance (m)
902 - 928	50	93.98	3
2400 – 2483.5	50	93.98	3
5725 - 5875	50	93.98	3
24000-24250	250	107.96	3

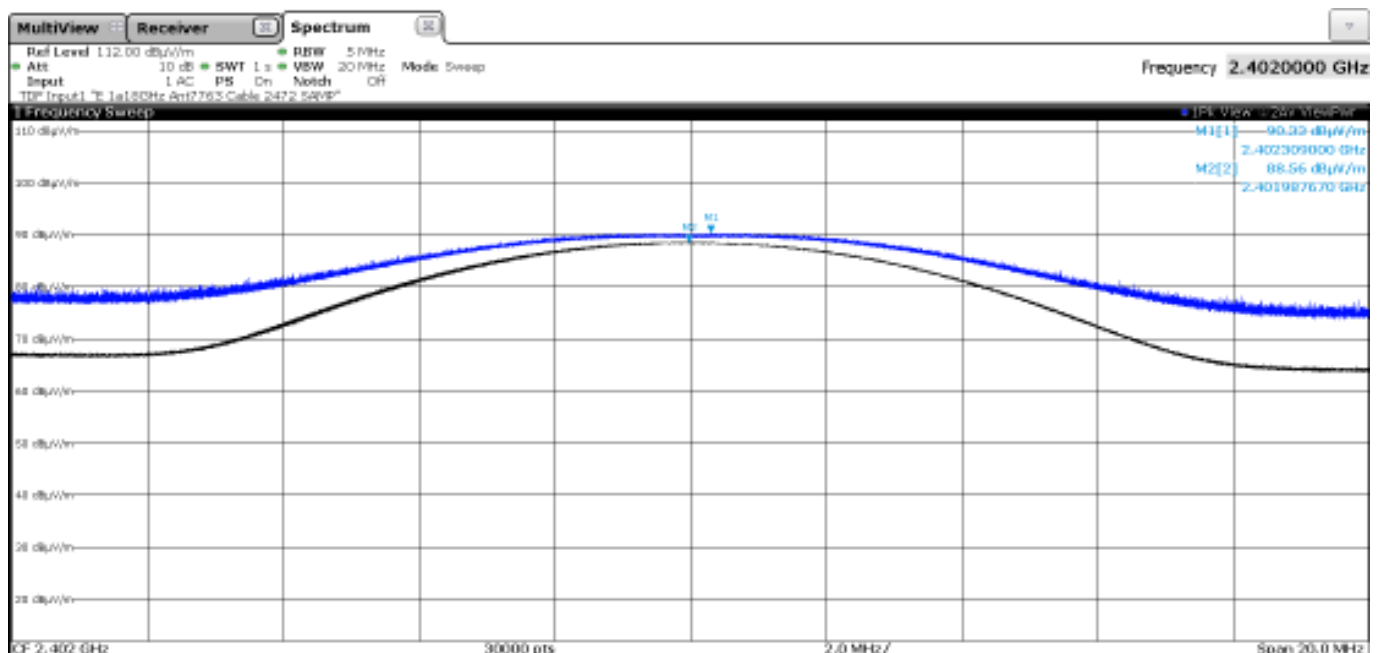
For frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### RESULTS:

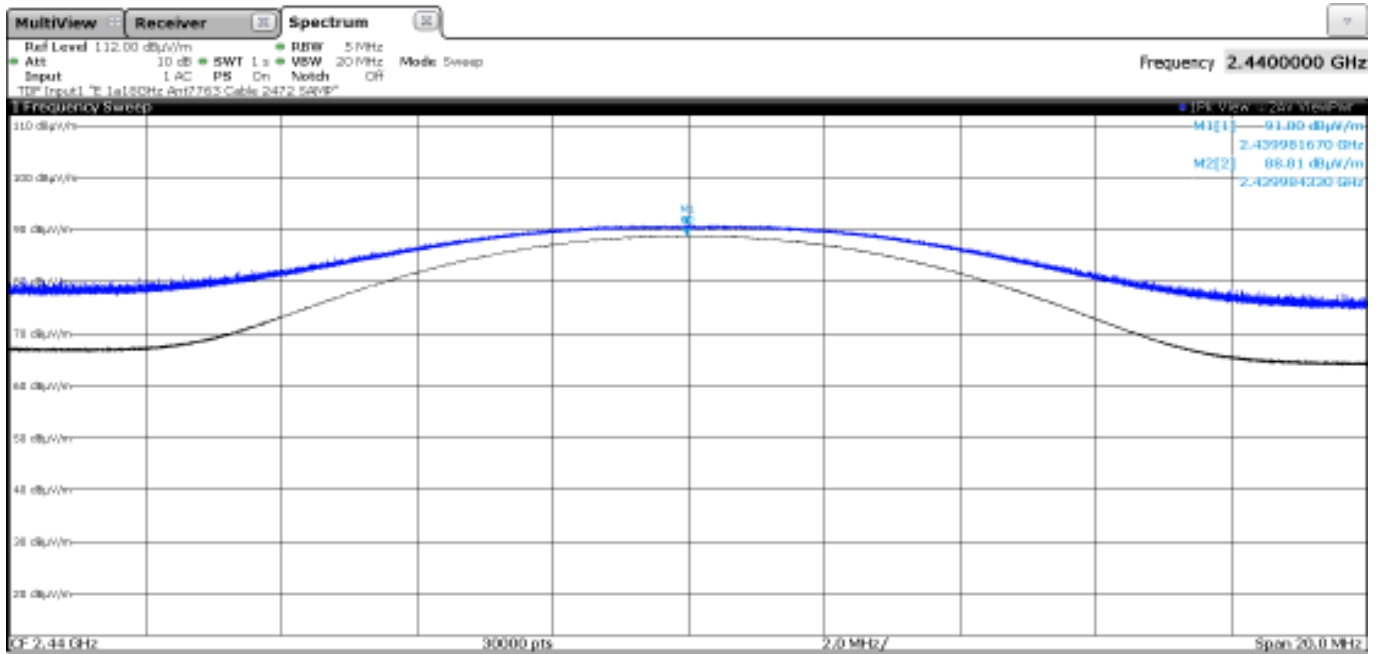
	Low Channel 2402 MHz	Middle Channel 2440 MHz	High Channel 2480 MHz
Average Field Strength (dB $\mu$ V/m)	88.56	88.81	86.99
Peak Field Strength (dB $\mu$ V/m)	90.33	91.00	89.56
Measurement Uncertainty (dB)	< $\pm$ 3.98		

Verdict: PASS

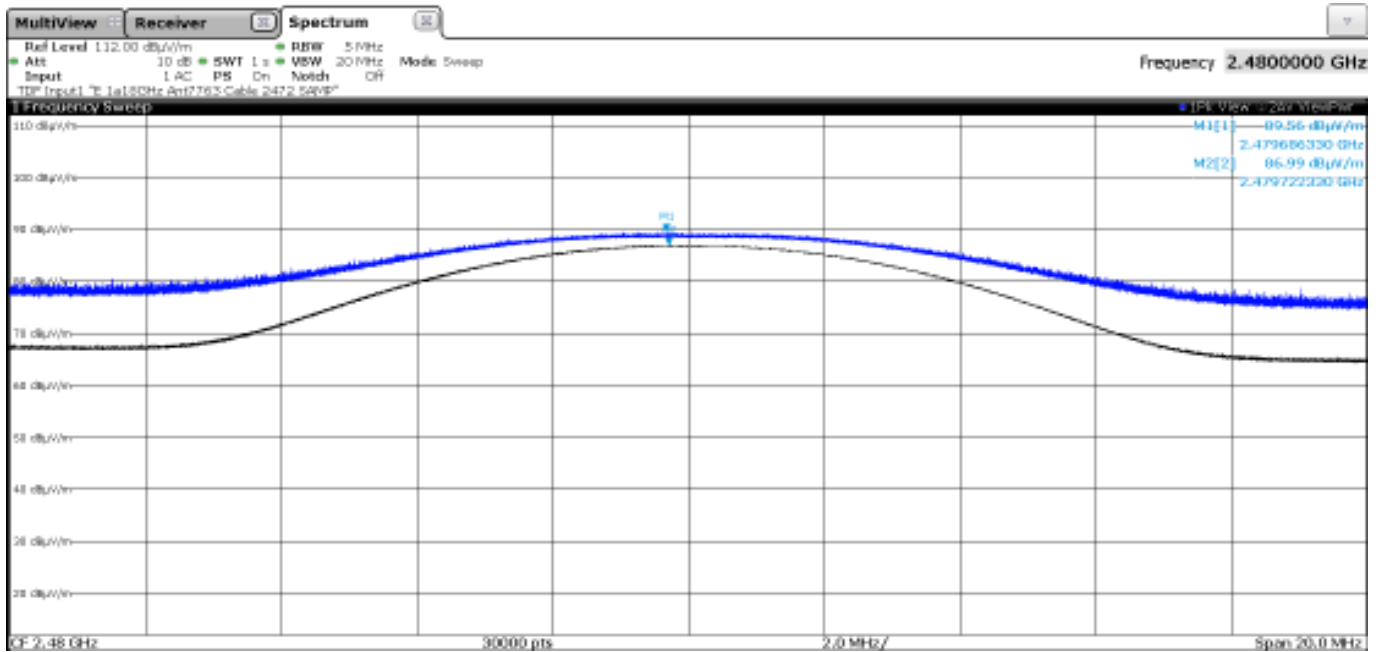
- Low Channel:



- Middle Channel:



- High Channel:



## 15.249 (d) / RSS-210 B.10 (b) Emissions radiated outside of the specific frequency bands

**SPECIFICATION:**

The field strength of harmonics from intentional radiators shall comply with the following

Fundamental frequency (MHz)	Field strength of harmonics (µV/m)	Field strength of harmonics (dBµV/m)	Measurement distance (m)
902 - 928	500	54	3
2400 – 2483.5	500	54	3
5725 - 5875	500	54	3
24000-24250	2500	67.96	3

Emissions radiated outside of the specific frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emission limits specified in section 15.209:

Frequency Range (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 25000	500	54	3

Whichever is the lesser attenuation.

**RESULTS:**

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

All tests were performed in a semi-anechoic chamber at a distance of 3 m for the frequency range 30 MHz-17 GHz and at distance of 1 m for the frequency range 17 GHz-26 GHz.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

**Frequency range 30 MHz - 1 GHz:**

The spurious signals detected do not depend on the operating channel.

No spurious frequencies detected at less than 20 dB below the limit.

Measurement Uncertainty (dB) <±5.15

**Frequency range 1 - 26 GHz:**

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

Spurious signals with peak levels above the average limit (54 dBµV/m at 3 m) are measured with average detector for checking compliance with the average limit.

- Low Channel (2402 MHz):

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
3.6955	38.12	V	Peak	<±4.28
4.8050	46.91	H	Peak	<±4.28
7.2040	50.78	H	Peak	<±4.28
21.6125	43.01	V	Peak	<±4.89
24.0145	43.10	V	Peak	<±4.89

- Middle Channel (2440 MHz):

Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3671	57.17	H	Peak	<±4.94
	42.21		Average	
2.4853	56.95	H	Peak	<±4.94
	42.35		Average	
4.8785	46.81	V	Peak	<±4.28
7.3180	37.78	V	Peak	<±4.28
9.2885	49.94	V	Peak	<±4.28
21.9545	44.42	V	Peak	<±4.89

- High Channel (2480 MHz):

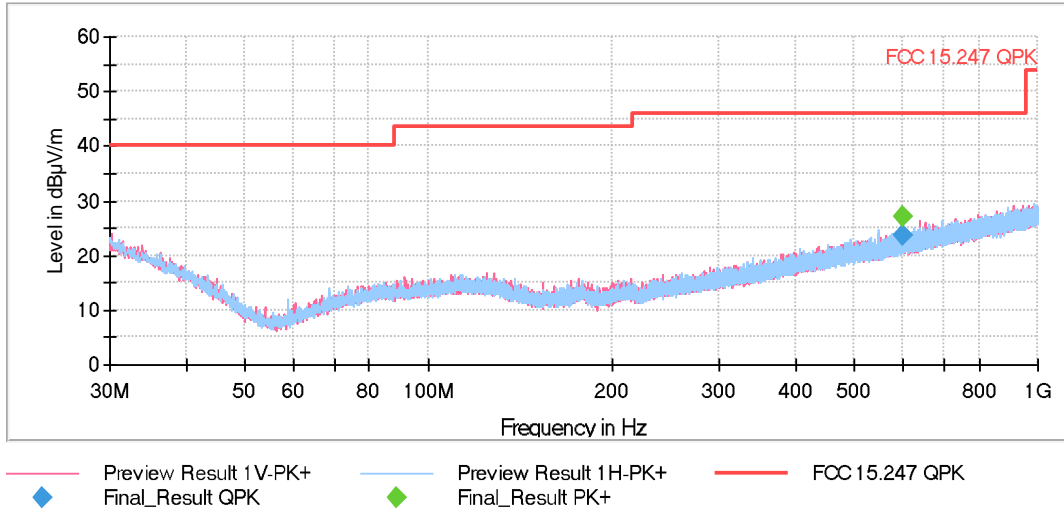
Spurious frequency (GHz)	Emission Level (dBµV/m)	Polarization	Detector	Measurement Uncertainty (dB)
2.3786	54.98	H	Peak	<±4.94
	42.45		Average	
2.4903	55.30	V	Peak	<±4.94
	42.45		Average	
2.6235	53.83	H	Peak	<±4.94
4.9610	51.07	H	Peak	<±4.28
7.4385	46.47	V	Peak	<±4.28
22.3145	44.48	V	Peak	<±4.89
22.3260	44.38	V	Peak	<±4.89

Measurement Uncertainty: 1-3 GHz <±4.94 dB  
 3-17 GHz <±4.28 dB  
 17-26 GHz <±4.89 dB

Verdict: PASS

### FREQUENCY RANGE 30 MHz - 1 GHz

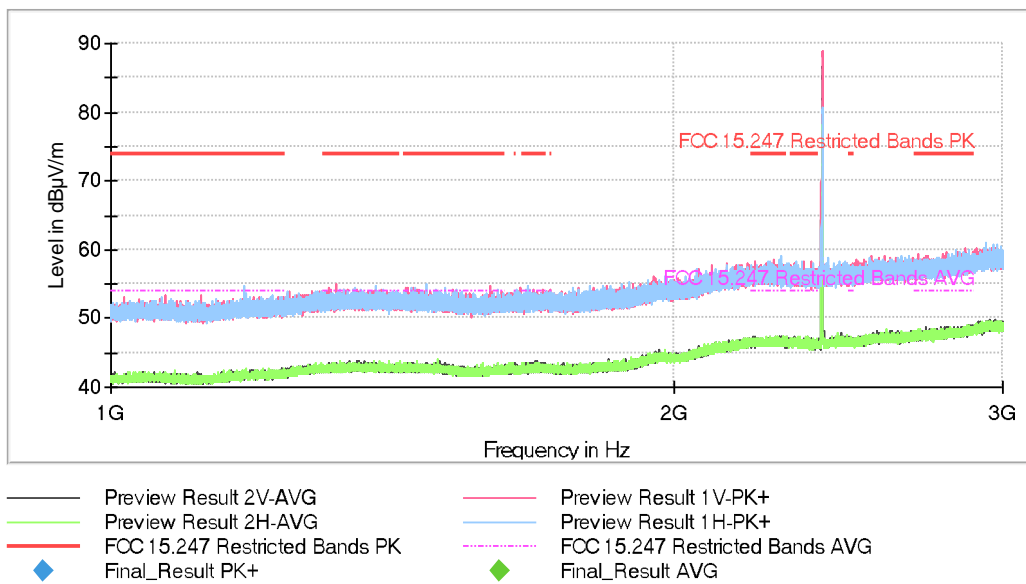
The spurious frequencies detected do not depend on the operating channel.



This plot is valid for the Low, Middle and High Channels.

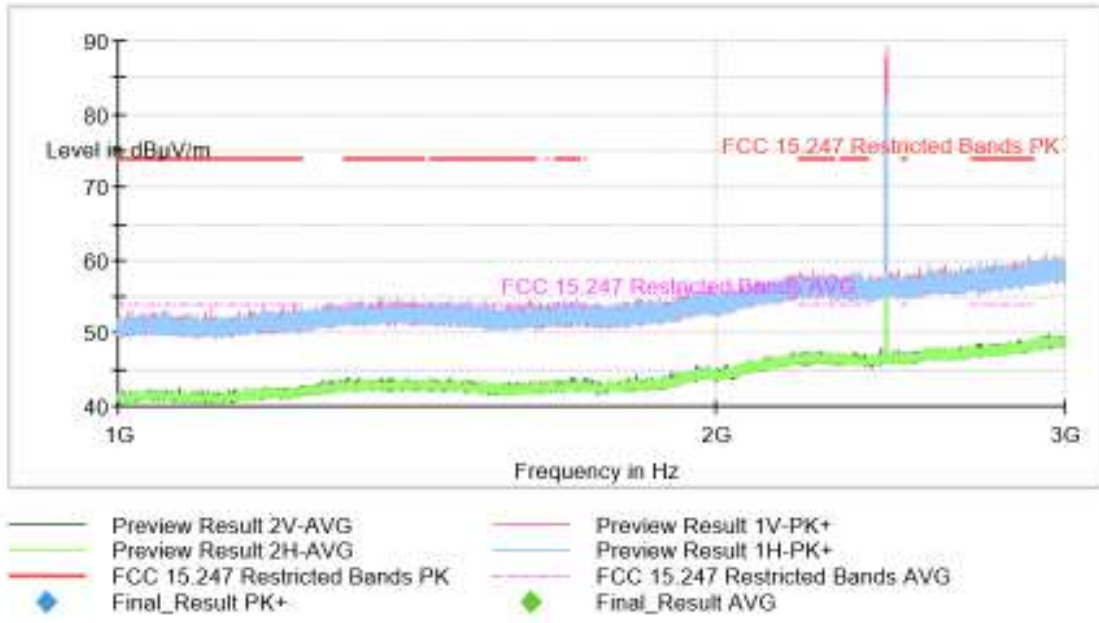
### FREQUENCY RANGE 1 - 3 GHz

- Low Channel:



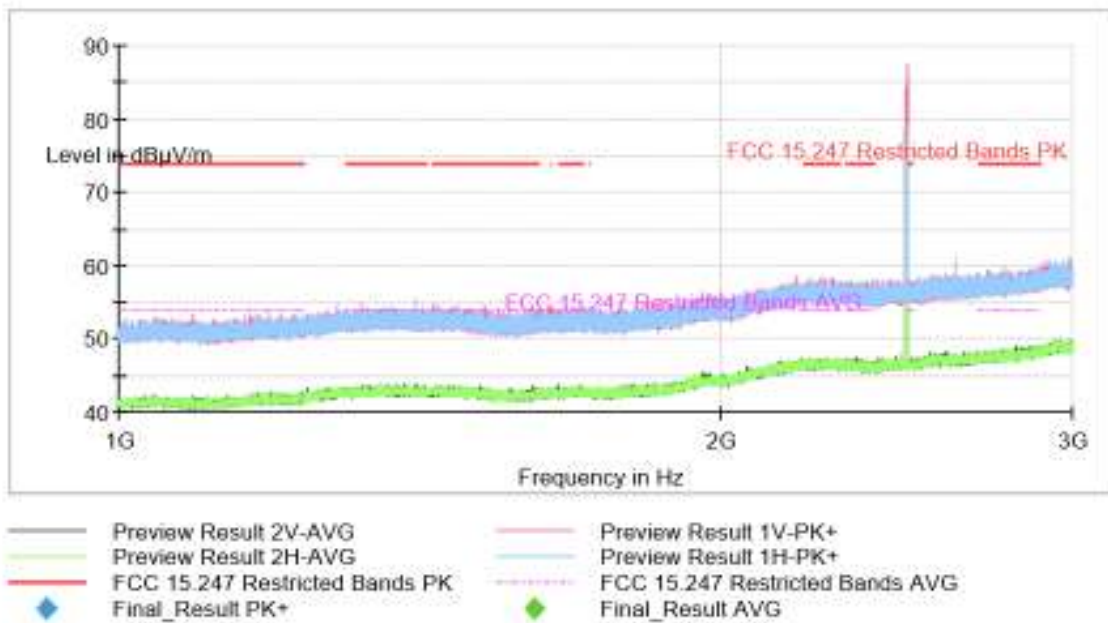
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

- High Channel:

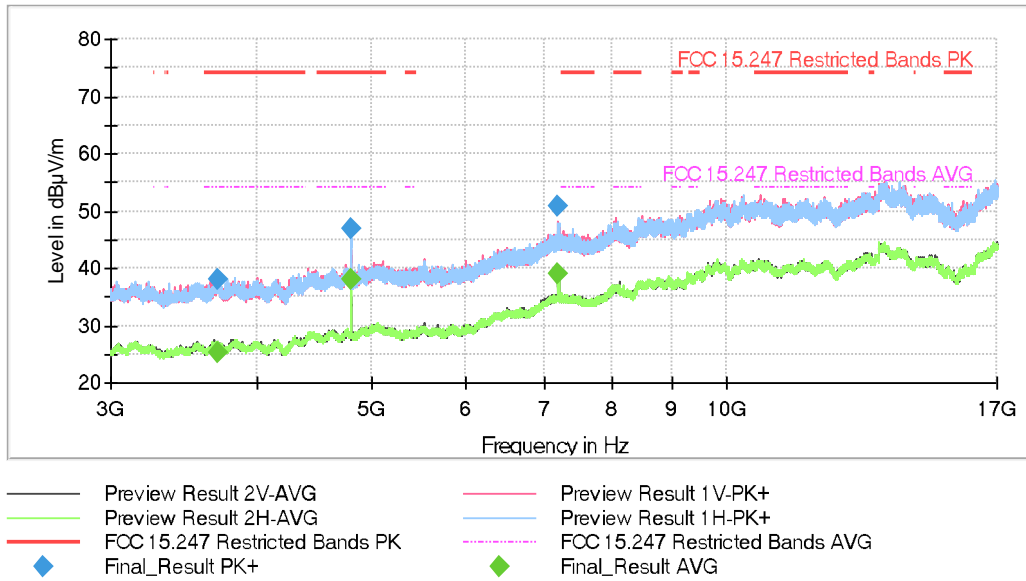


The peak above the limit is the carrier frequency.

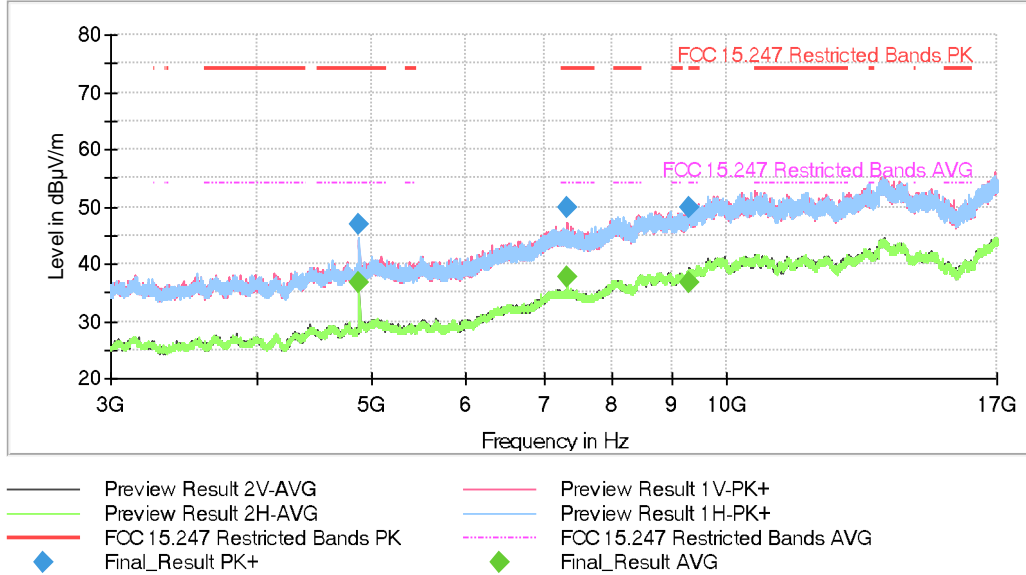


### FREQUENCY RANGE 3 - 17 GHz

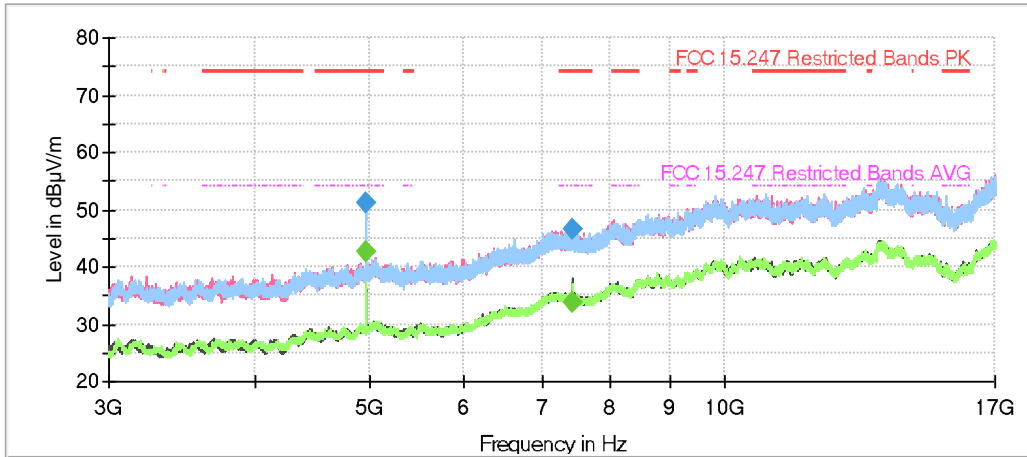
- Low Channel:



- Middle Channel:



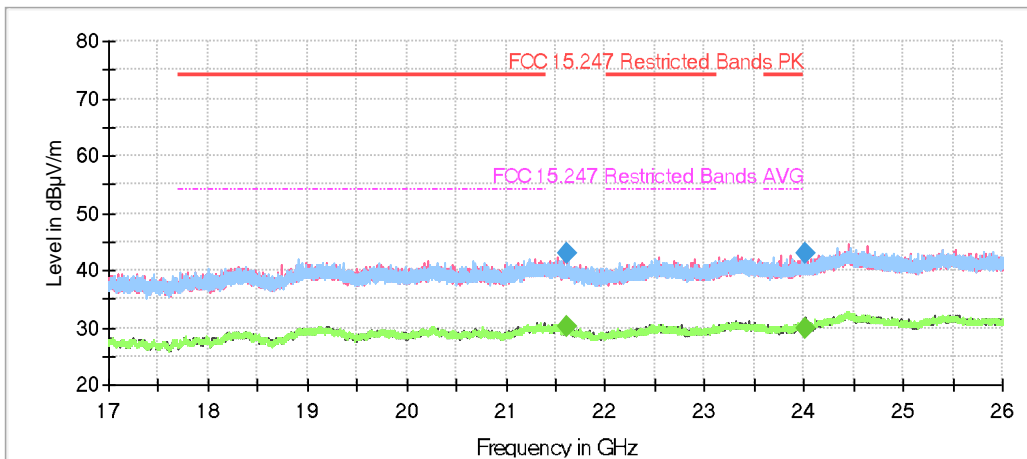
- High Channel:



- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result PK+
- ◆ Final\_Result AVG

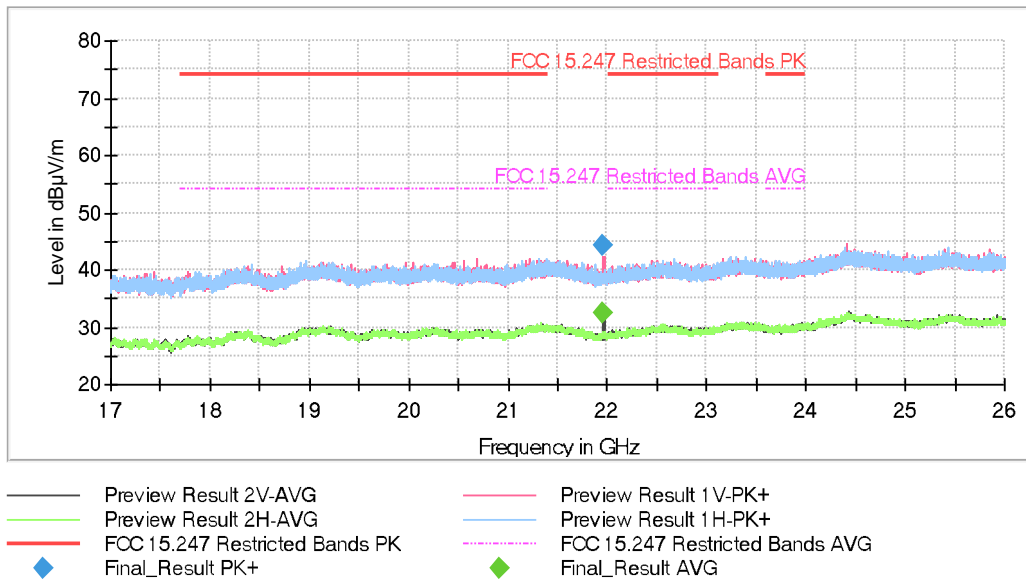
**FREQUENCY RANGE 17 - 26 GHz**

- Low Channel:

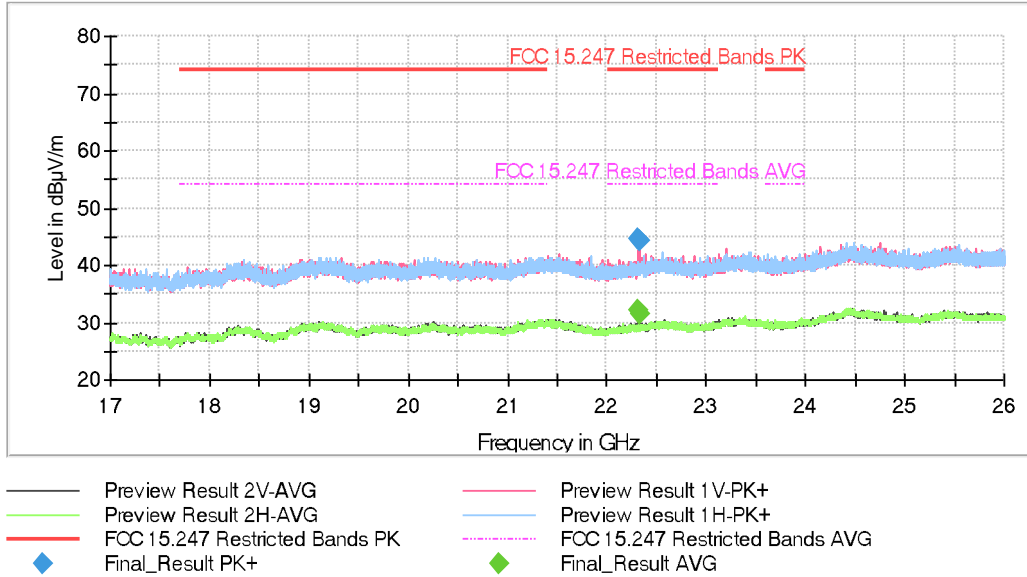


- Preview Result 2V-AVG
- Preview Result 2H-AVG
- Preview Result 1V-PK+
- Preview Result 1H-PK+
- FCC 15.247 Restricted Bands PK
- FCC 15.247 Restricted Bands AVG
- ◆ Final\_Result PK+
- ◆ Final\_Result AVG

- Middle Channel:

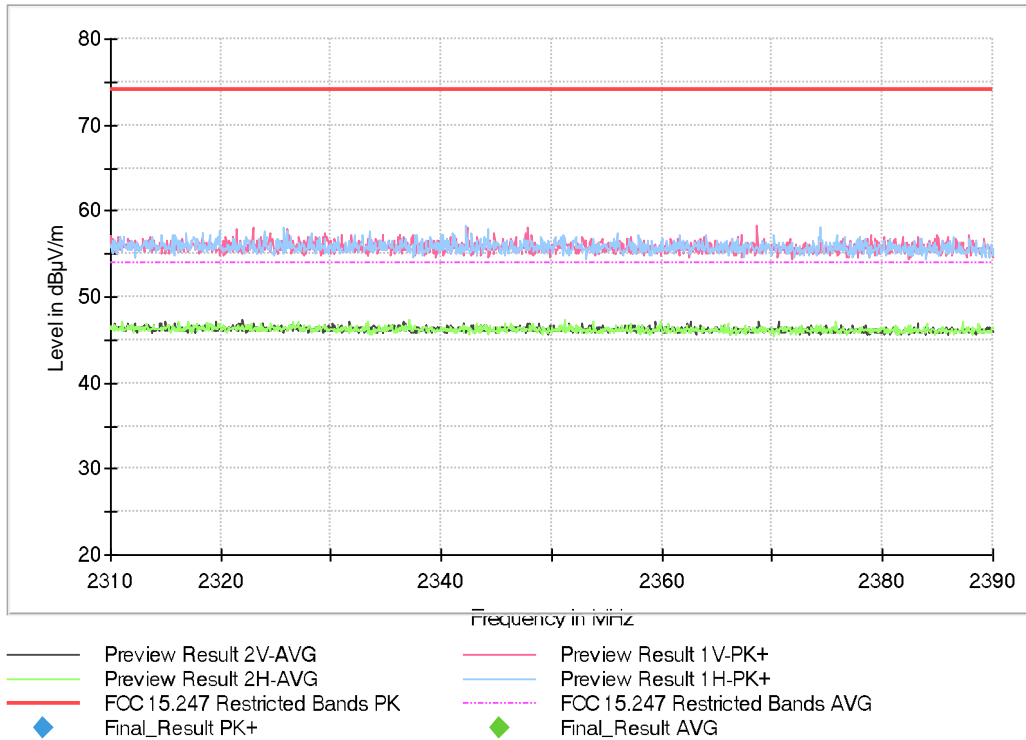


- High Channel:

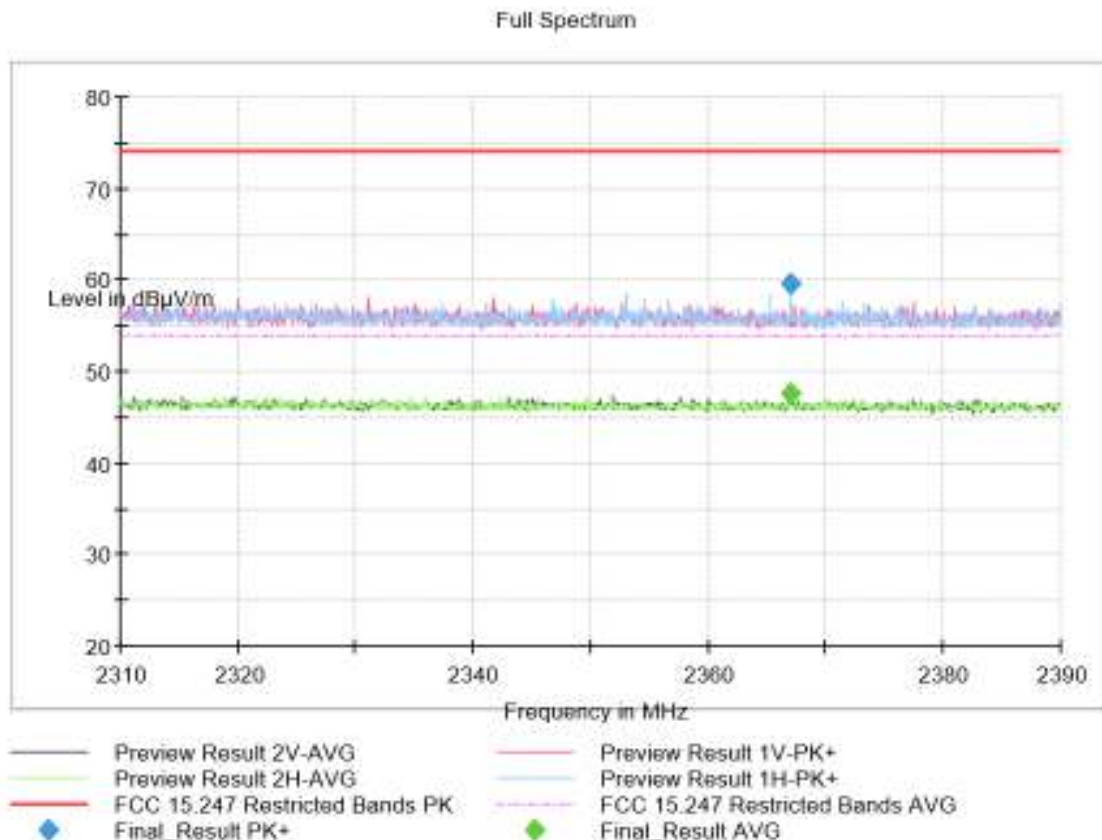


### FREQUENCY RANGE 2.31-2.39 GHz

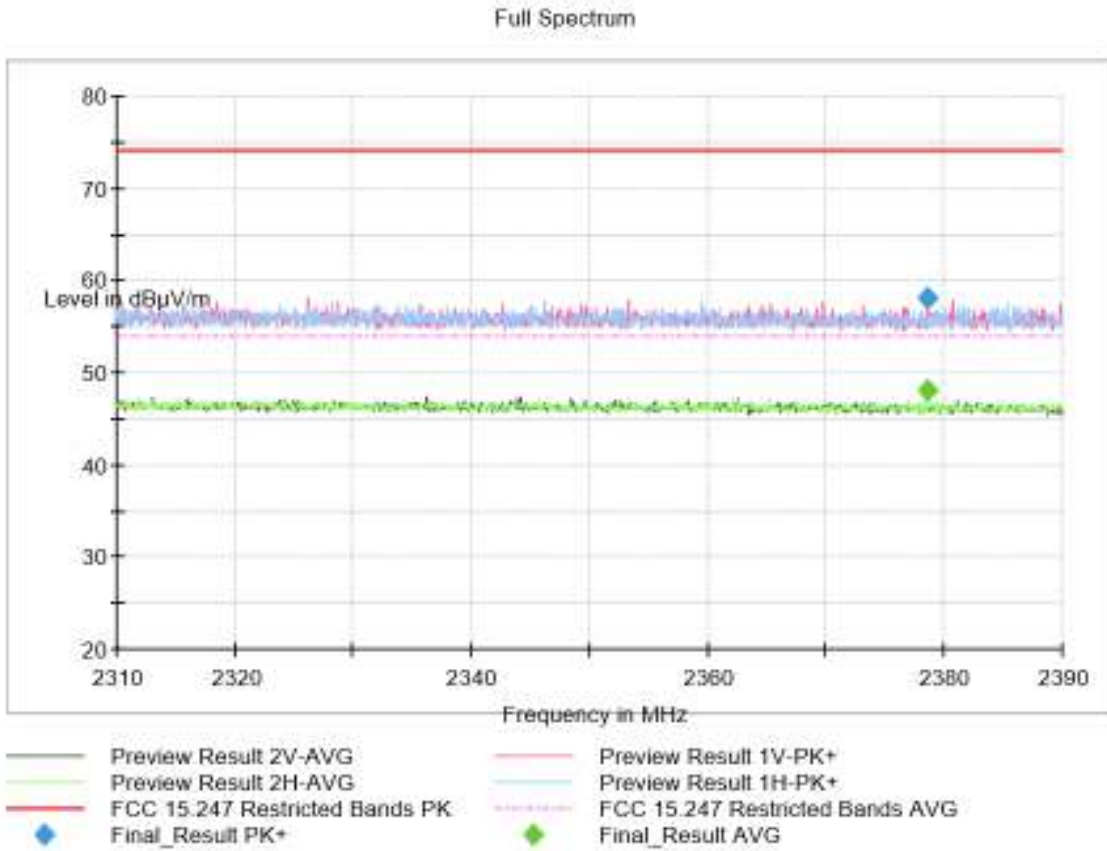
- Low Channel:



- Middle Channel:

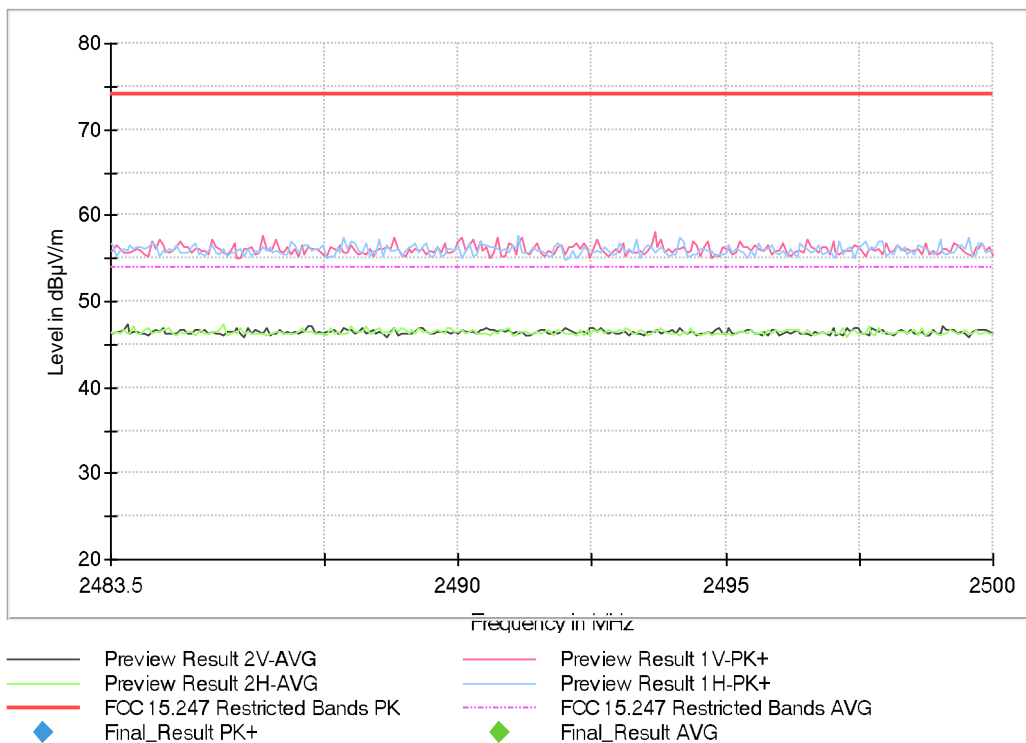


- High Channel:

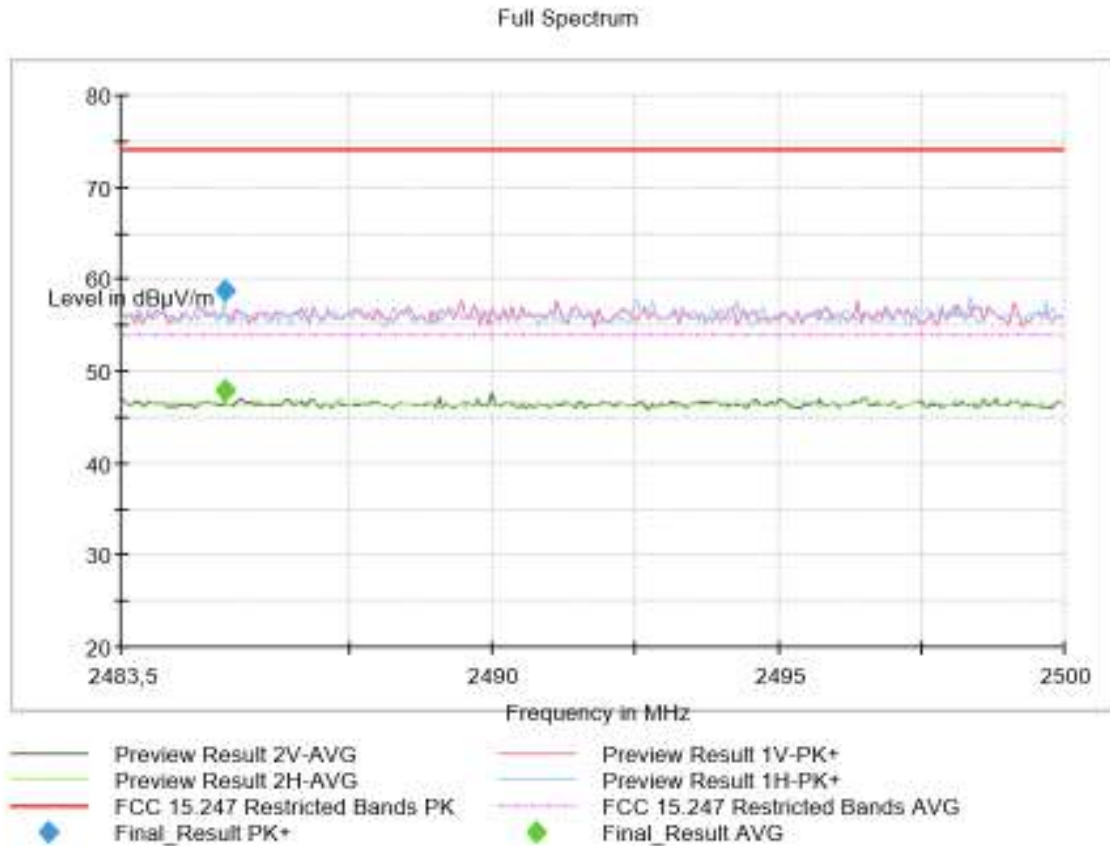


**FREQUENCY RANGE 2.4835-2.5 GHz**

- Low Channel:



- Middle Channel:



- High Channel:

