DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
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C.I.F. A29507456

ISED CABid: ES1909
Lab. Company Number: 4621A

Test report No:
74915RRF.007

Partial Test Report
USA FCC Part 15.407, 15.209
CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Automotive infotainment System
(*) Trademark	Mercedes-Benz
(*) Model and /or type reference	NTG7Q PREMIUMPLUS
Other identification of the product	FCC ID: T8GNTG7QPREPLU IC: 6434A-NTG7QPREPLU
(*) Features	FM/AM/DAB/DVBT, USB, Bluetooth, WLAN, GNSS. HW version: D15 SW version: E444.201
Applicant	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY
Test method requested, standard	USA FCC Part 15.407 (10-1-21) Edition: Unlicensed National Information Infrastructure (U-NII) Devices. General technical requirements. USA FCC Part 15.209 (10-1-21) Edition: Radiated emission limits; general requirements. CANADA RSS-247 Issue 2 (February 2017). CANADA RSS-Gen Issue 5 amendment 2 (February 2021). Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017. ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Approved by (name / position & signature)	José Manuel Gómez Galván EMC Consumer & RF Lab. Manager  Firmado digitalmente por 53680346W JOSE MANUEL GOMEZ (C:A29507456)
Date of issue	2023-05-30
Report template No	FDT08_24 (*) “Data provided by the client”

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Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification S.A.U. is an FCC-recognized accredited testing laboratory with appropriate scope of accreditation that covers the performed tests in this report.

DEKRA Testing and Certification S.A.U. is an ISED-recognized accredited testing laboratory, CABid: ES1909, Company Number: 4621A, with the appropriate scope of accreditation that covers the performed tests in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification S.A.U. at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

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

General conditions

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.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Testing and Certification.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification and the Accreditation Bodies.

Uncertainty

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

The total uncertainty of the measurement system for the radiated emissions of EUT from 30 MHz to 1 GHz is:
Measurement uncertainty ≤ ±5.01 dB (with factor k = 2).

The total uncertainty of the measurement system for the radiated emissions of EUT from 1 GHz to 17 GHz is:
Measurement uncertainty ≤ ±4.22 dB (with factor k = 2).

The total uncertainty of the measurement system for the radiated emissions of EUT from 17 GHz to 26.5 GHz is:
Measurement uncertainty ≤ ±4.71 dB (with factor k = 2).

The total uncertainty of the measurement system for the radiated emissions of EUT from 26.5 GHz to 40 GHz is:
Measurement uncertainty ≤ ±4.92 dB (with factor k = 2).

Data provided by the client

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 NTG7Q PREMIUMPLUS is an Automotive head unit to be installed in cars with the following features: FM/AM/DAB/DVBT, USB, Bluetooth, WLAN and GNSS.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of result.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial Nº	Date of Reception	Application
S/01	74915_5.1	Module	NTG7Q PREMIUMPLUS	HBM620P4552004	2023-03-07	Element Under Test
S/01	74915_11.1	Harness	--	--	2023-03-07	Element Under Test
S/01	74915_32.1	4 way SMA cable-Fakra connector	--	--	2023-03-07	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Radiated tests.

Test sample description

Ports…… :	Port name and description	Cable			
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)
	Car Connector A	>3m	[X]	[ ]	[ ]
	Car Connector B	>3m	[X]	[ ]	[ ]
	Display Connector CID/PIP / RVC	>3m	[X]	[X]	[ ]
	USB Connector	<3m	[X]	[X]	[ ]
	Eth Connector	1,82 m	[X]	[ ]	[ ]

	BT/WLAN-Antenna	>3m	[X]	[X]	[ ]
Supplementary information to the ports…… :	GNSS Antenna >3m				

Rated power supply .....:	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[X]	DC:					
	[ ]	DC: 12V car battery /attenuator (9,5-15,5v normal operation)					

Rated Power .....:	12V	
Clock frequencies.....:	.....	
Other parameters .....:	.....	
Software version .....:	E444.201	
Hardware version .....:	D15	
Dimensions in cm (W x H x D) ....:	.....	
Mounting position .....:	[ ]	Table top equipment
	[ ]	Wall/Ceiling mounted equipment
	[ ]	Floor standing equipment
	[ ]	Hand-held equipment
	[X]	Other: automotive

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	.....	.....	.....
	.....	.....	.....

Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	HARMANeco (with Display or headless)	HARMANeco	HARMAN
	Cable harness	harness	HARMAN
	Display	different suppliers	different versions

	BT/WLAN-Antenna	OEM-Antenna	HIRSCHMANN
	.....	.....	.....
	.....	.....	.....
Documents as provided by the applicant.....:	Description	File name	Issue date
	Technical description	Technical Description NTG7_A18 200717 SOP2 AllVariant.pdf	A18
	Testing Guide	NTG7-TestsetupScript_191209 HU+RSU_v2.0.pdf	v2.0
	.....	.....	.....
	.....	.....	.....

(3) Only for Medical Equipment

Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH

BECKER-GOERING-STR. 16, 76307 KARLSBAD, GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2023-03-24
Date (finish)	2023-03-31

Document history

Report number	Date	Description
74915RRF.007	2023-05-30	First release

Environmental conditions

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

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

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

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

Remarks and comments

The tests have been performed by the technical personnel: Pablo Redondo, Álvaro Gutiérrez.

Used instrumentation:

Radiated Measurements

		Last Calibration	Due Calibration
1.	Semianechoic Absorber Lined Chamber ETS LINDGREN FACT 3 200 STP	N/A	N/A
2.	Shielded Room ETS LINDGREN S101	N/A	N/A
3.	Biconical/Log Antenna 30 MHz - 6 GHz ETS LINDGREN 3142E	2020-04	2023-04
4.	RF Preamplifier, G>38dB 30MHz-6GHz BONN ELEKTRONIK BLNA 0360-01N	2022-06	2023-06
5.	EMI Test Receiver 7 GHz ROHDE AND SCHWARZ ESR7	2021-11	2023-11
6.	Two-channel power supply, 32V, 10/5A, 188W ROHDE AND SCHWARZ HMP2020	N/A	N/A
7.	Digital Multimeter FLUKE 175	2022-11	2023-11
8.	Horn Antenna 1-18 GHz SCHWARZBECK MESS-ELEKTRONIK BBHA 9120 D	2023-01	2026-01
9.	RF Preamplifier, 40 dB, 1-18 GHz BONN ELEKTRONIK BLMA 0118-1M	2022-07	2023-07
10.	Spectrum Analyzer ROHDE AND SCHWARZ FSW50	2022-08	2024-08
11.	EMC/RF Testing SW ROHDE AND SCHWARZ EMC32	N/A	N/A

Testing verdicts

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

Summary

A. U-NII-1 Band: 5.15 - 5.25 GHz

FCC PART 15 PARAGRAPH / RSS-247			
Requirement – Test case		**Verdict**	**Remark**
FCC 15.407 (a)(1)(iv)	Transmitter Maximum conducted Output Power	N/M	(1)
RSS-247 6.2.1.1	Transmitter Maximum Equivalent Isotropically Radiated Power EIRP	N/M	(1)
FCC 15.407 (a)(1)(iv)	Transmitter Maximum Power Spectral Density	N/M	(1)
RSS-247 6.2.1.1	Transmitter EIRP Spectral Density	N/M	(1)
FCC 15.407 (b)(1)(6) / RSS-247 6.2.1.2	Transmitter Out of Band Radiated Emissions	P	
FCC 15.407 (b)(1) / RSS-247 6.2.1.2	Transmitter Band Edge Radiated Emissions	P	
Supplementary information and remarks: (1) Test not requested.			

B. U-NII-3 Band: 5.725 - 5.85 GHz

FCC PART 15 PARAGRAPH / RSS-247			
Requirement – Test case		**Verdict**	**Remark**
FCC 15.407 (a)(3) / RSS-247 6.2.4.1	Transmitter Maximum conducted Output Power	N/M	(1)
FCC 15.407 (e) / RSS-247 6.2.4.1	6 dB bandwidth.	N/M	(1)
FCC 15.407 (a)(3) / RSS-247 6.2.4.1	Transmitter Maximum Power Spectral Density	N/M	(1)
FCC 15.407 (b)(4) / RSS-247 6.2.4.2	Transmitter Band Edge Radiated Emissions	P	
FCC 15.407 (b)(4)(6) / RSS-247 6.2.4.2	Transmitter Out of Band Radiated Emissions	P	
Supplementary information and remarks: g (1) Test not requested.			

Appendix A: Tests results for the U-NII-1 Band 5.15 - 5.25 GHz

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TEST CONDITIONS

POWER SUPPLY (V):

V nonimal: 13.2 Vdc.

Type of Power Supply: DC External (Vehicle Battery).

ANTENNA:

Type of Antenna: External.

Maximum Declared Antenna Gain: 0 dBi

TEST FREQUENCIES:

Technology Tested:	WLAN (IEEE 802.11 a,n,ac) / U-NII-1	
Modes:	802.11 a20: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps	
	802.11 n HT20: MCS0 to MCS7	
	802.11 n HT40: MCS0 to MCS7	
	802.11 ac VHT20: MCS0 to MCS9	
	802.11 ac VHT40: MCS0 to MCS9	
	802.11 ac VHT80: MCS0 to MCS9	
Setting of cores / ports:	One port.	
Beamforming:	No.	
Frequency Range:	5150 MHz to 5250 MHz	
Channel Spacing:	20 MHz	
Transmit Channels	Channel	Channel Frequency (MHz)
	Low: 36	5180
	Middle: 40	5200
	High: 48	5240
Channel Spacing:	40 MHz	
Transmit Channels	Channel	Channel Frequency (MHz)
	Low: 38	5190
	High: 46	5230
Channel Spacing:	80 MHz	
Transmit Channels	Middle: 42	5210

The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode:

- Continuously transmitting with a modulated carrier at maximum power in all required channels using the supported data rates/modulations types.

The field strength at the band edges was evaluated for each mode on the lowest and highest channels at the rated power for the channel under test.

For all modes, the EUT was configured in test mode using a software application. The application was used to enable a continuous transmission and to select the test channels as required. The client supplied instructions to configure the EUT. The customer supplied a document containing the setup instructions.

The worst cases for testing were identified for output power and spurious levels at the band edges which were selected based on preliminary testing that correspond to next data rates:

- 802.11 a20: 6 Mbps
- 802.11 n HT20: MCS0
- 802.11 n HT40: MCS0
- 802.11 ac VHT20: MCS0
- 802.11 ac VHT40: MCS0
- 802.11 ac VHT80: MCS0

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-18 GHz Double ridge horn antenna) is situated at a distance of 3 m and a distance of 1.5m for the frequency range 17 GHz-40 GHz (horn antenna).

For radiated emissions in the range 17 GHz-40 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.

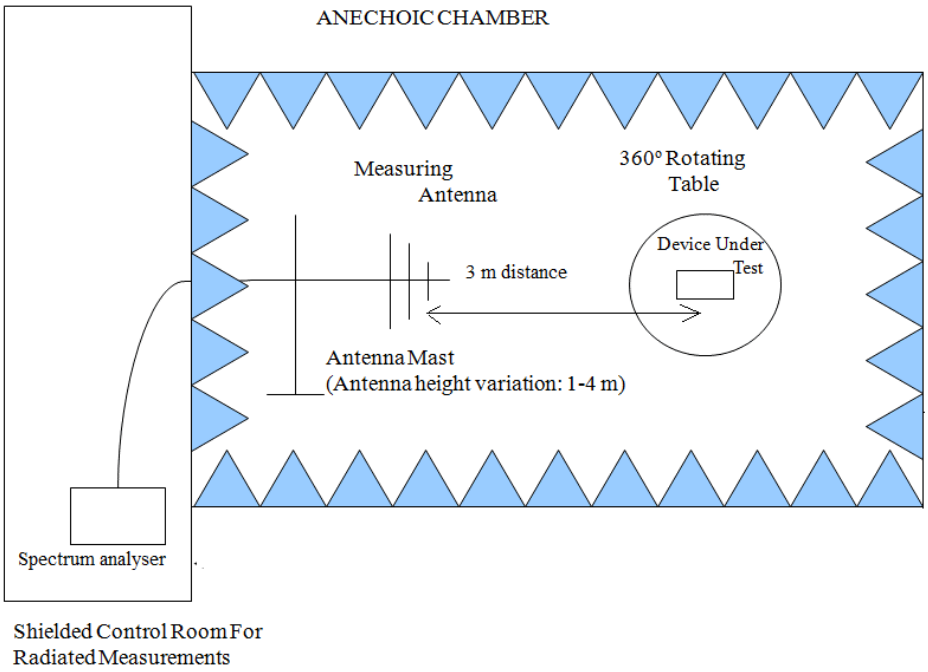
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height (Bilog antenna and Double ridge horn antenna) was varied from 1 to 4 meters to find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

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

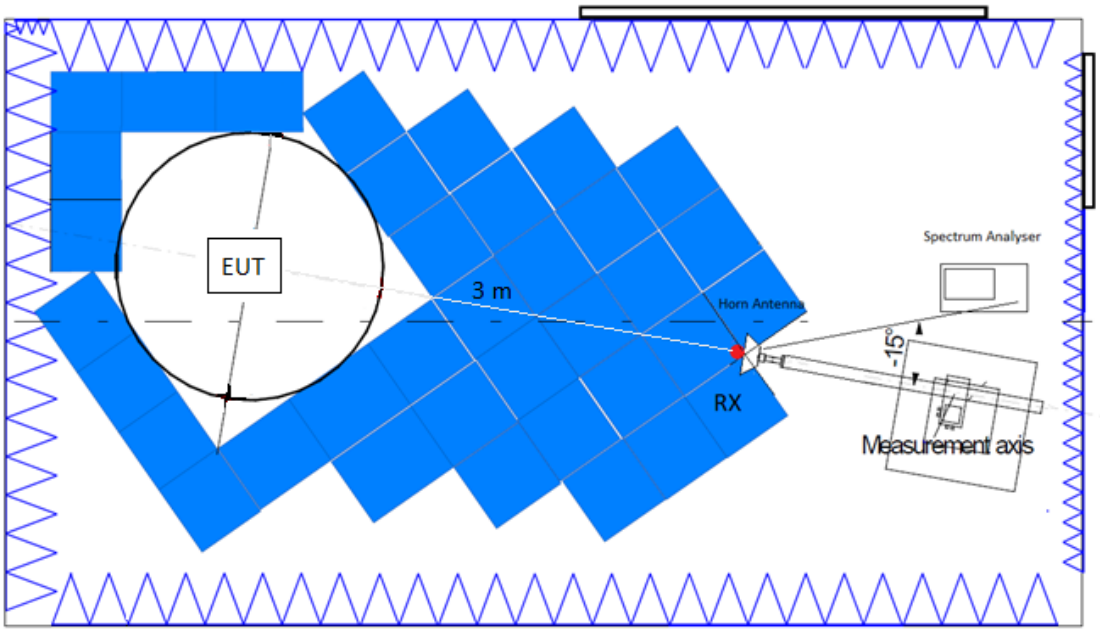
The final measured value, for the given emission, in the tables below incorporates the calibrated antenna factor and cable loss.

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

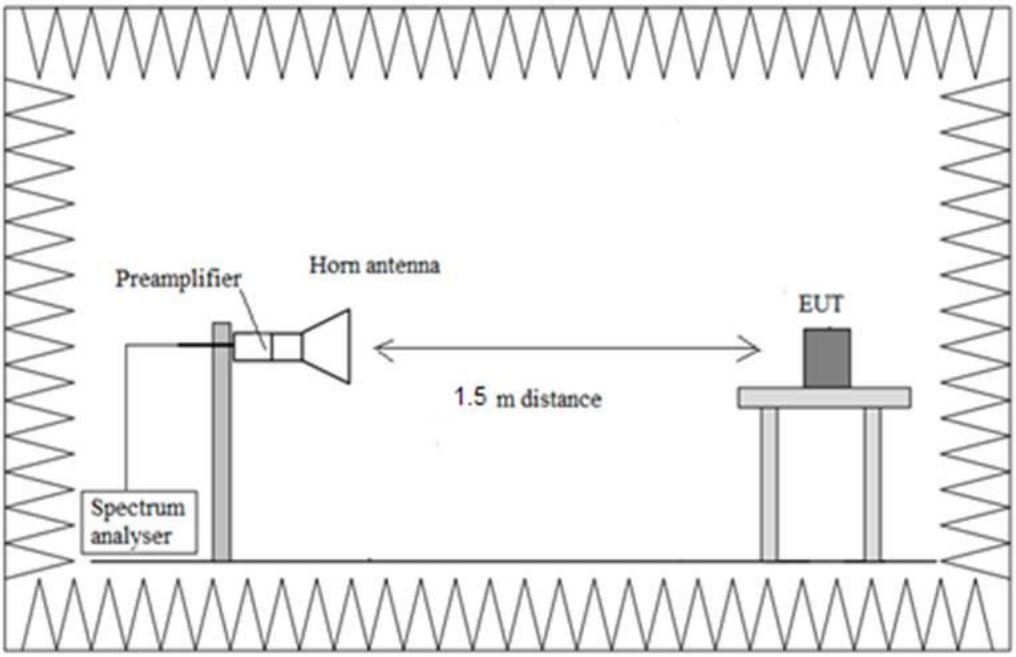
Radiated measurements setup from 30 MHz to 1 GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup f > 17 GHz:



FCC 15.407 (b)(1)(6) / RSS-247 6.2.1.2. Transmitter Out of Band Radiated Emissions

SPECIFICATION:

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz (68.23 dBµV/m at 3 m distance).

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)):

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)	-	300
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 40000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RESULTS:

The situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º 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.

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.

OUT OF BAND EMISSIONS:
For spurious emissions outside of the U-NII-1 band edge Restricted Bands 4.50-5.15 GHz and 5.35-5.46 GHz, the OFDM worst mode case was determined after preliminary measurements of the E.I.R.P. density (radiated). The Low, Middle and High Channels were tested.

- **Worst case:** **802.11 ac20** (index MCS0)**.**

Frequency range 30 MHz - 1 GHz (worst case):

The spurious emissions below 1 GHz do not depend on either the operating channel or the modulation mode selected in the EUT.

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

Frequency range 1 - 40 GHz (worst case):

The results in the next tables show the maximum measured levels in the 1 - 40 GHz frequency range.

The Low, Middle and High Channels were measured for out-of-band emissions for the worst mode.

Spurious frequencies in the restricted bands with peak levels above the average limit (54 dBµV/m at 3 m) are measured with an average detector for checking compliance with the average limit.

- LOW CHANNEL. No spurious frequencies at less than 20 dB below the limit.

- MIDDLE CHANNEL. No spurious frequencies at less than 20 dB below the limit.

- HIGH CHANNEL. No spurious frequencies at less than 20 dB below the limit.

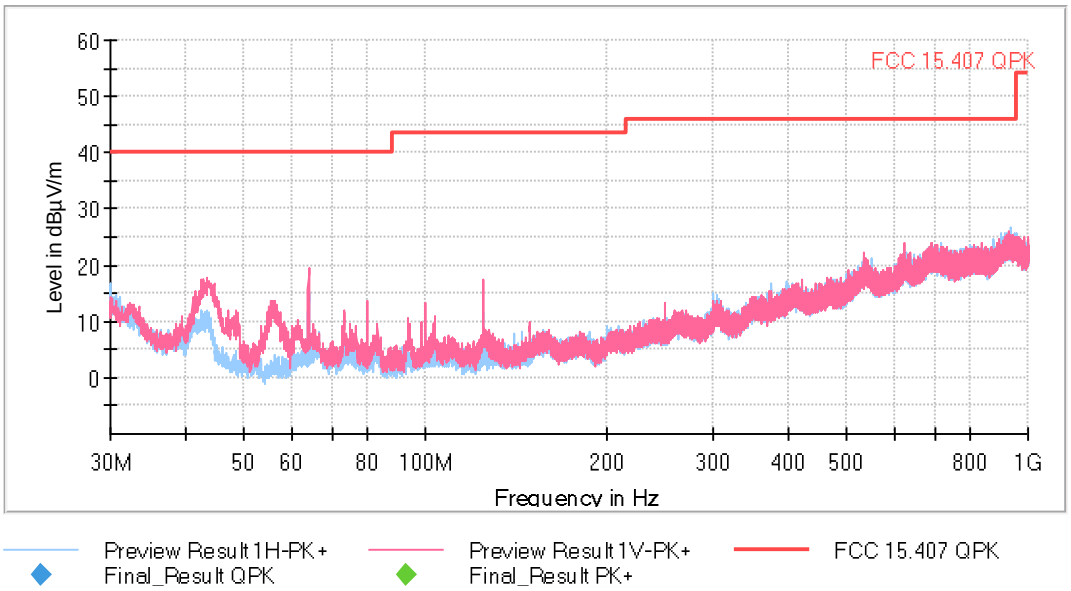
Verdict: PASS

The measurement settings for each range of frequency is as follows:

Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
1 GHz - 6,5 GHz	100 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
6,5 GHz - 17 GHz	105 kHz	PK+ ; AVG	1 MHz	1 s	30 dB
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
17 GHz - 40 GHz	766,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

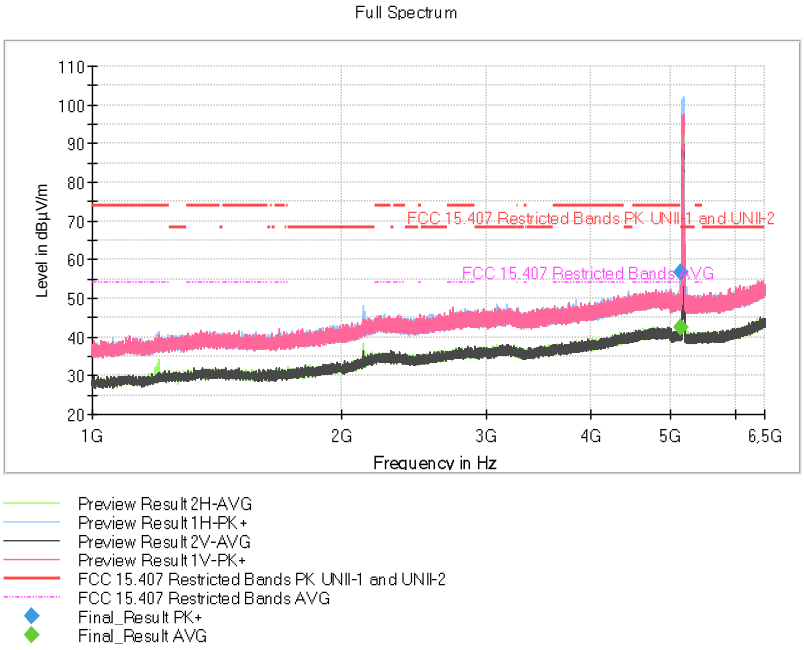
FREQUENCY RANGE 30 MHz - 1 GHz (worst case):

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



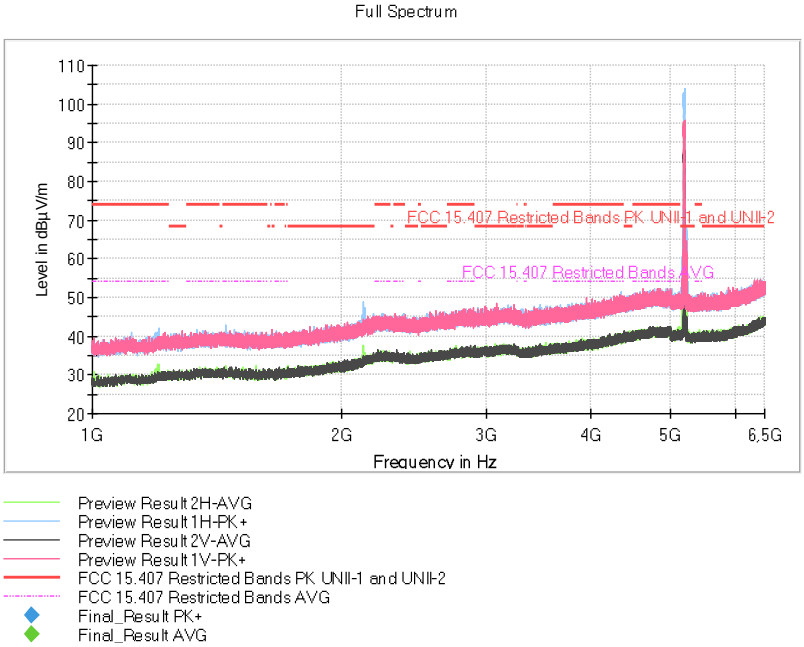
FREQUENCY RANGE 1 - 6.5 GHz (worst mode):

- Low Channel:



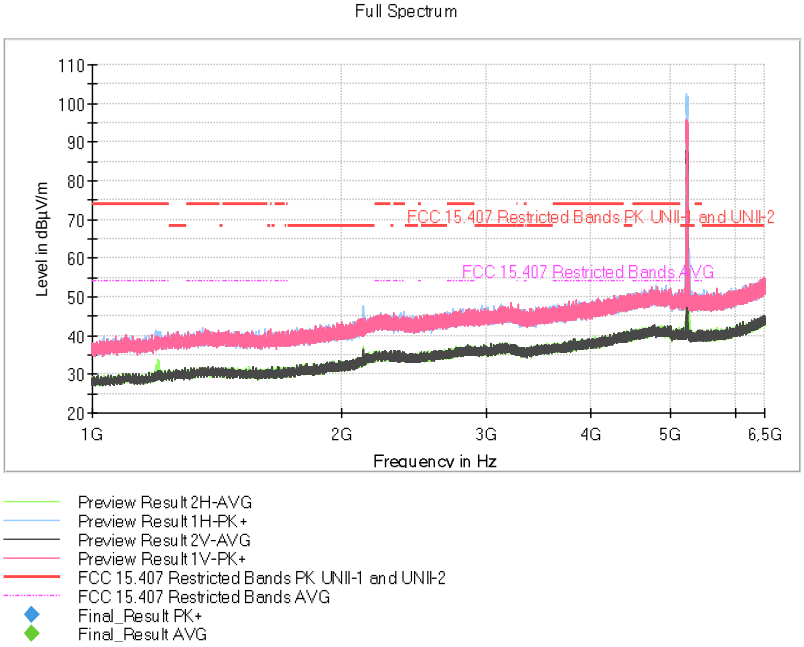
The peak above the limit is the carrier frequency.

- Middle Channel:



The peak above the limit is the carrier frequency.

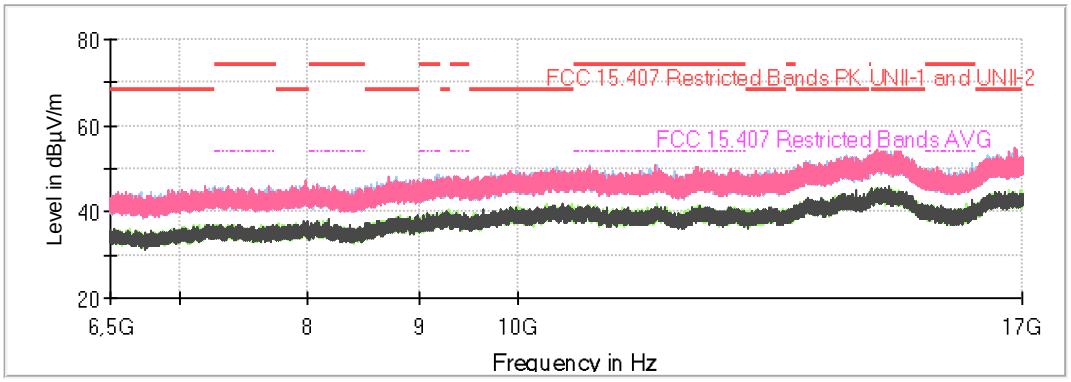
- High Channel:



The peak above the limit is the carrier frequency.

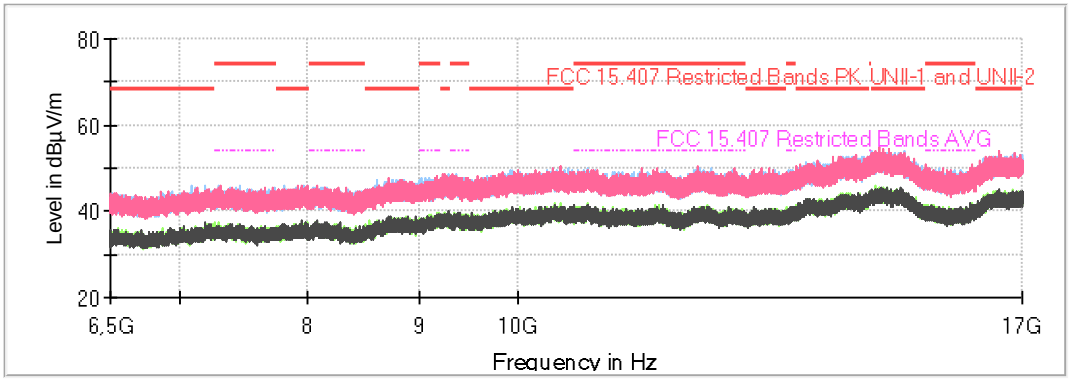
FREQUENCY RANGE 6.5 - 17 GHz (worst mode):

- Low Channel:



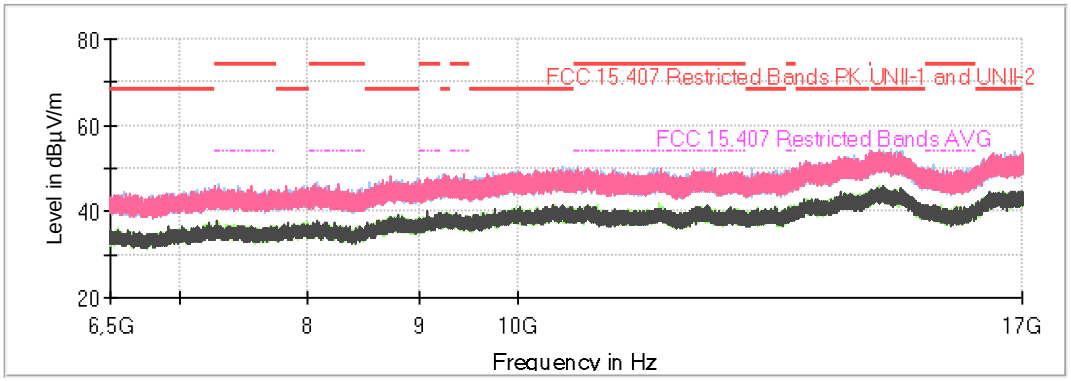
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

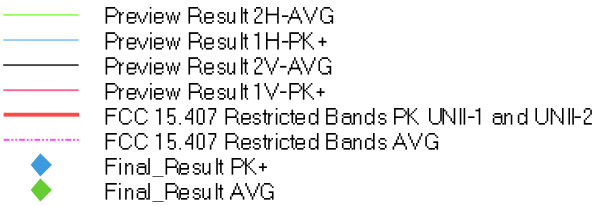
- Middle Channel:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

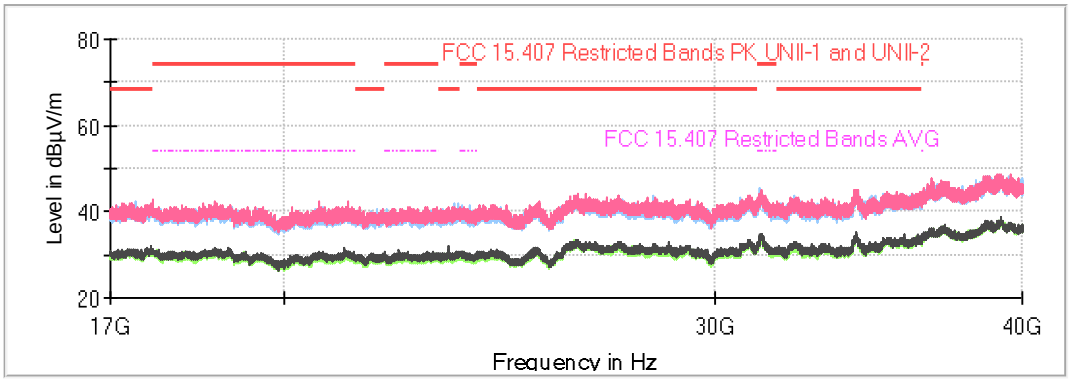
- High Channel:

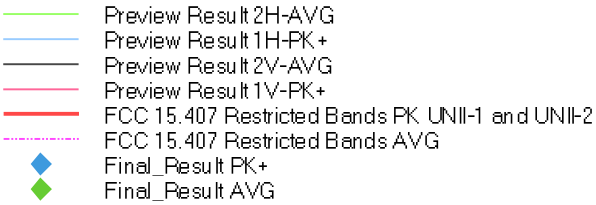




FREQUENCY RANGE 17 - 40 GHz:

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





FCC 15.407 (b)(1) / RSS-247 6.2.1.2. Transmitter Band Edge Radiated Emissions

SPECIFICATION:

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz (68.23 dBµV/m at 3 m distance).

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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)	-	300
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 40000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RESULTS:

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.

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

All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27dBm/MHz. There are restricted bands of operation below band edge at 4.50-5.15 GHz also above the upper band edge at 5.35-5.46 GHz therefore the provision of FCC Part 15.205 apply.

Field strength measurements using peak and average detector performed in the restricted bands below 5.15 GHz and above 5.35 GHz.

Test performed on the following worst cases modes in all relevant tests channels:

- 802.11a: 6 Mbit/s.
- 802.11n HT20: MCS0.
- 802.11ac VHT20: MCS0.
- 802.11n HT40: MCS0.
- 802.11ac VHT40: MCS0.
- 802.11ac VHT80: MCS0.

BAND EDGE EMISSIONS:

- **802.11 a20:**

- Lower Band Edge Channel 36 (5180 MHz). Inside the Restricted Band 4.50-5.15 GHz:

Spurious frequencies at less than 20 dB below the limit:

Spurious frequency (MHz)	Emission Level (dBµV/m)	Corrected Level with Duty Cycle (dBµV/m)	Polarization	Detector
5135.80	52.13	52.13	H	Peak
	41.21	41.35		Average

- Upper Band Edge Channel 48 (5240 MHz). Inside the Restricted Band 5.35-5.46 GHz:

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

- **802.11 n20:**

- Lower Band Edge Channel 36 (5180 MHz). Inside the Restricted Band 4.50-5.15 GHz:

Spurious frequencies at less than 20 dB below the limit:

Spurious frequency (MHz)	Emission Level (dBµV/m)	Corrected Level with Duty Cycle (dBµV/m)	Polarization	Detector
5143.30	56.21	56.21	H	Peak
	42.40	42.54		Average

- Upper Band Edge Channel 48 (5240 MHz). Inside the Restricted Band 5.35-5.46 GHz:

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

- **802.11 ac20:**

- Lower Band Edge Channel 36 (5180 MHz). Inside the Restricted Band 4.50-5.15 GHz:

Spurious frequencies at less than 20 dB below the limit:

Spurious frequency (MHz)	Emission Level (dBµV/m)	Corrected Level with Duty Cycle (dBµV/m)	Polarization	Detector
5149.80	56.65	56.65	H	Peak
	42.54	42.67		Average

- Upper Band Edge Channel 48 (5240 MHz). Inside the Restricted Band 5.35-5.46 GHz:

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

- **802.11 n40:**

- Lower Band Edge Channel 38 (5190 MHz). Inside the Restricted Band 4.50-5.15 GHz:

Spurious frequencies at less than 20 dB below the limit:

Spurious frequency (MHz)	Emission Level (dBµV/m)	Corrected Level with Duty Cycle (dBµV/m)	Polarization	Detector
5148.50	69.12	69.12	H	Peak
	48.68	48.92		Average

- Upper Band Edge Channel 46 (5230 MHz). Inside the Restricted Band 5.35-5.46 GHz:

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

- **802.11 ac40:**

- Lower Band Edge Channel 38 (5190 MHz). Inside the Restricted Band 4.50-5.15 GHz:

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

- Upper Band Edge Channel 46 (5230 MHz). Inside the Restricted Band 5.35-5.46 GHz:

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

- **802.11 ac80:**

- Lower Band Edge Channel 42 (5210 MHz). Inside the Restricted Band 4.50-5.15 GHz:

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

- Upper Band Edge Channel 42 (5210 MHz). Inside the Restricted Band 5.35-5.46 GHz:

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

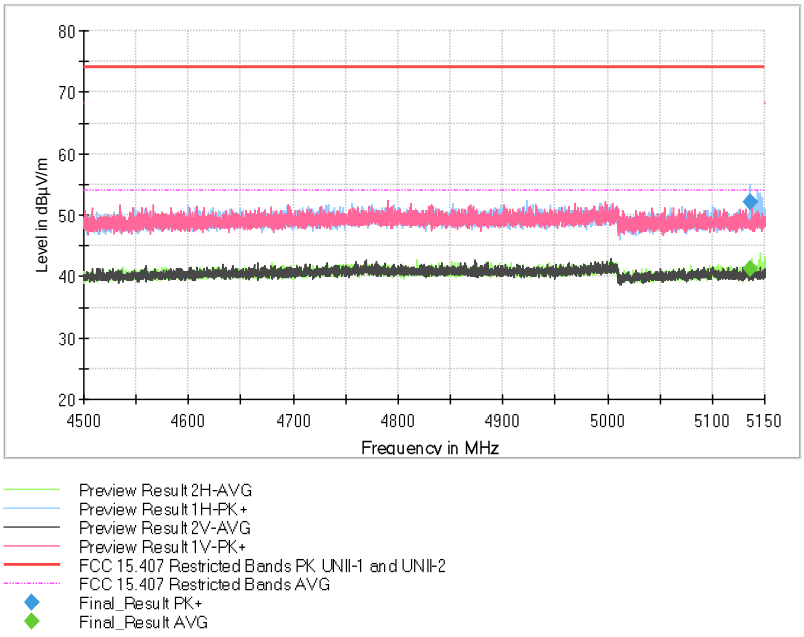
Verdict: PASS

The measurement settings for band edge measurements is as follows:

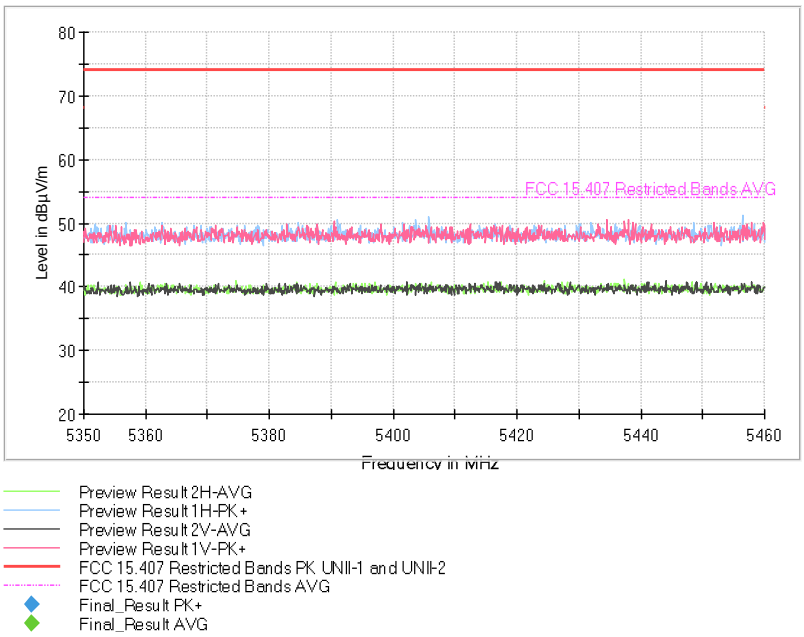
Subrange	**Step Size**	**Detectors**	**Bandwidth**	**Sweep Time**	**Preamp**
Receiver: [FSW 50]					
1 GHz - 6,5 GHz	100 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

- **802.11 a20:**

- Lower Band Edge Channel 36 (Restricted Band 4.50-5.15 GHz)

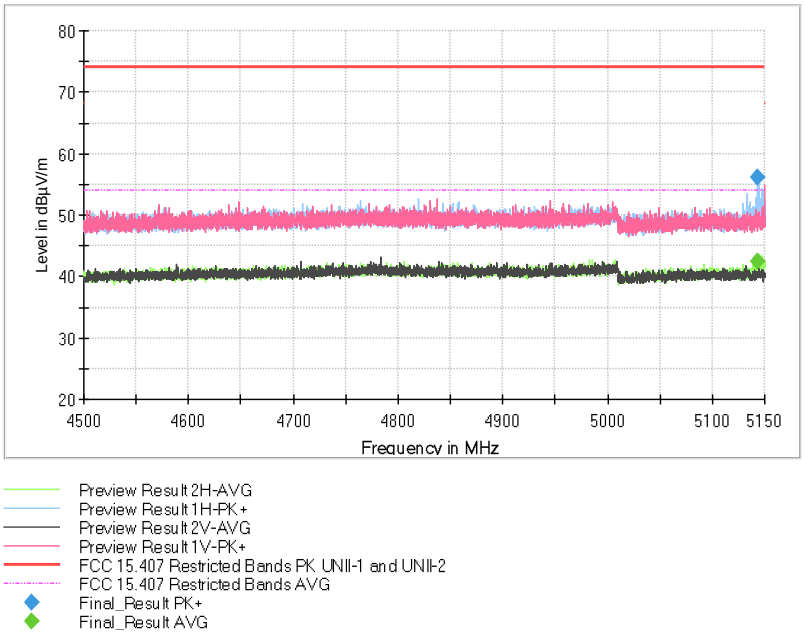


- Upper Band Edge Channel 48 (Restricted Band 5.35-5.46 GHz)

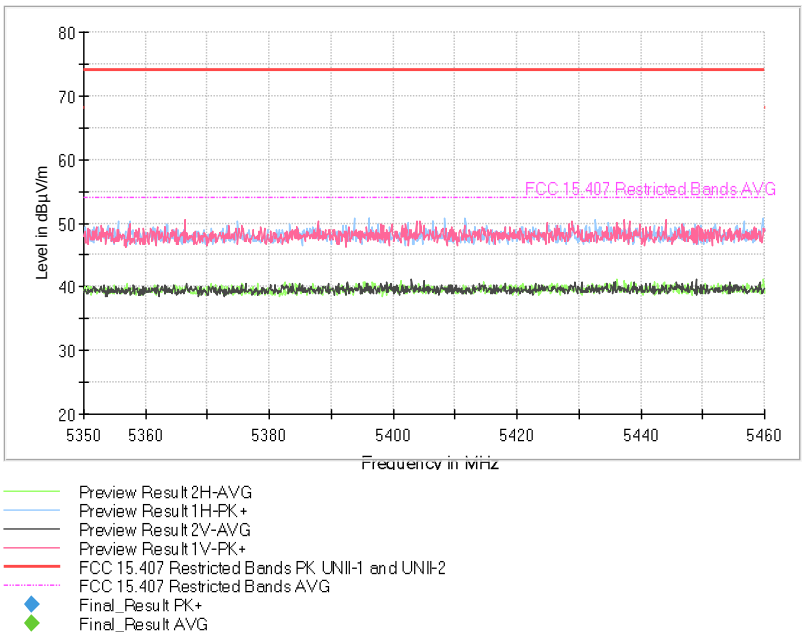


- **802.11 n20:**

- Lower Band Edge Channel 36 (Restricted Band 4.50-5.15 GHz)

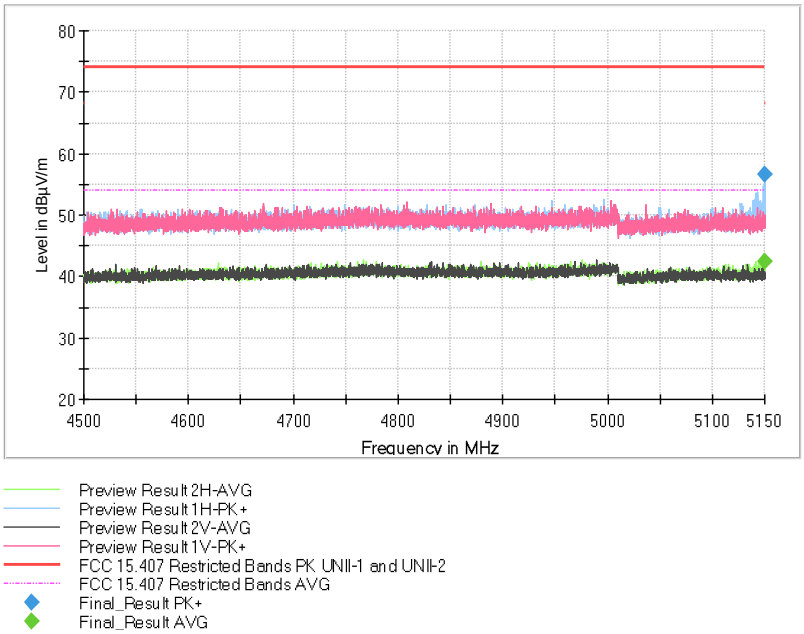


- Upper Band Edge Channel 48 (Restricted Band 5.35-5.46 GHz)

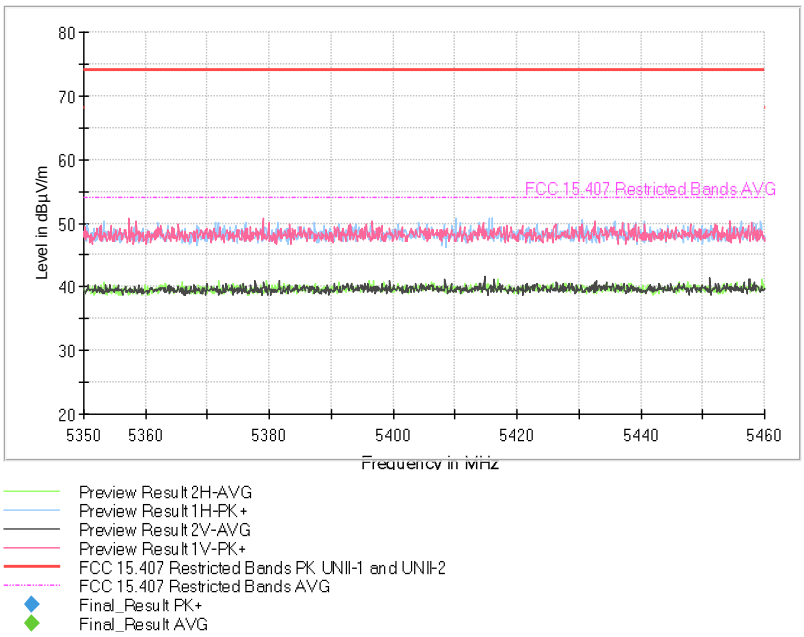


- **802.11 ac20:**

- Lower Band Edge Channel 36 (Restricted Band 4.50-5.15 GHz)

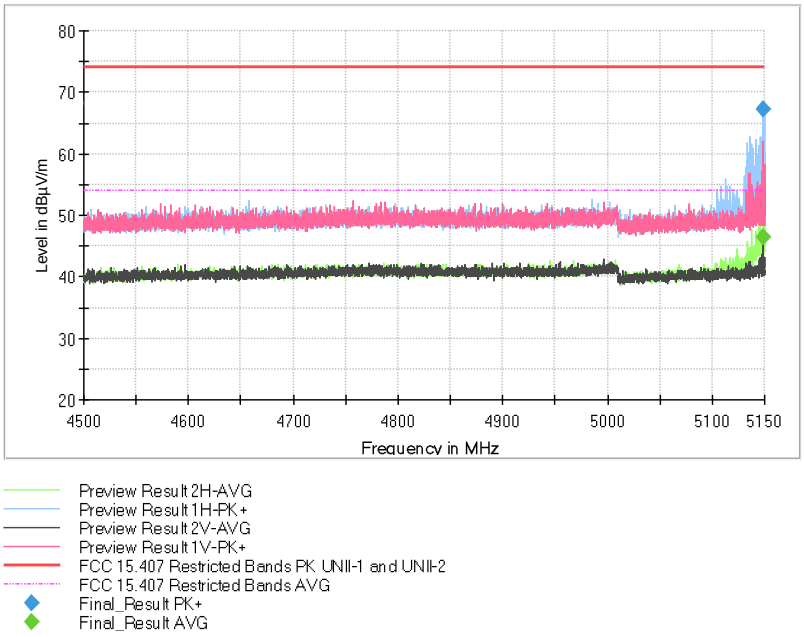


- Upper Band Edge Channel 48 (Restricted Band 5.35-5.46 GHz)

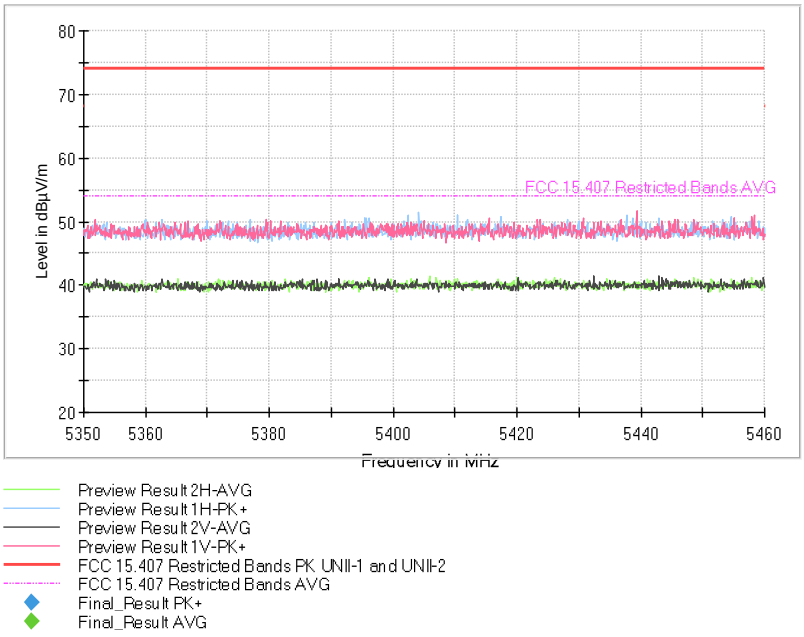


- **802.11 n40:**

- Lower Band Edge Channel 38 (Restricted Band 4.50-5.15 GHz)

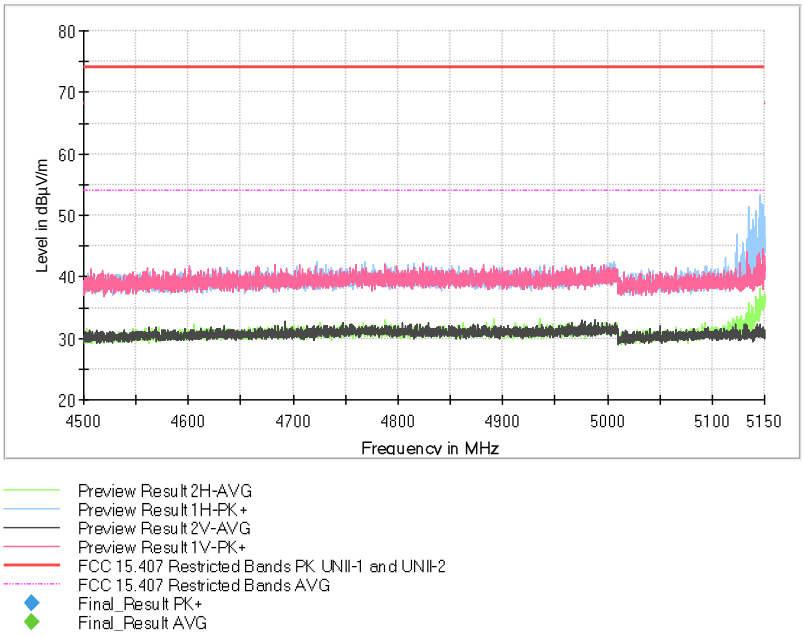


- Upper Band Edge Channel 46 (Restricted Band 5.35-5.46 GHz)

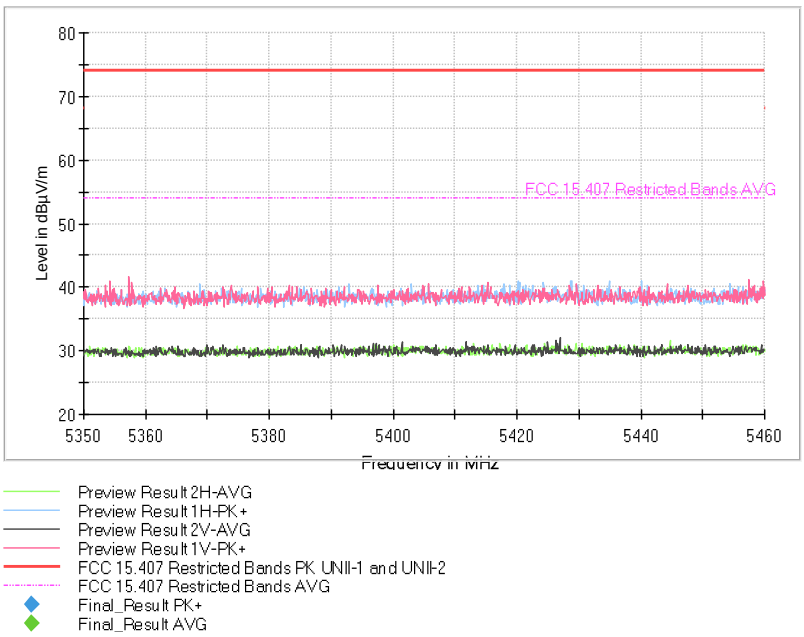


- **802.11 ac40:**

- Lower Band Edge Channel 38 (Restricted Band 4.50-5.15 GHz)

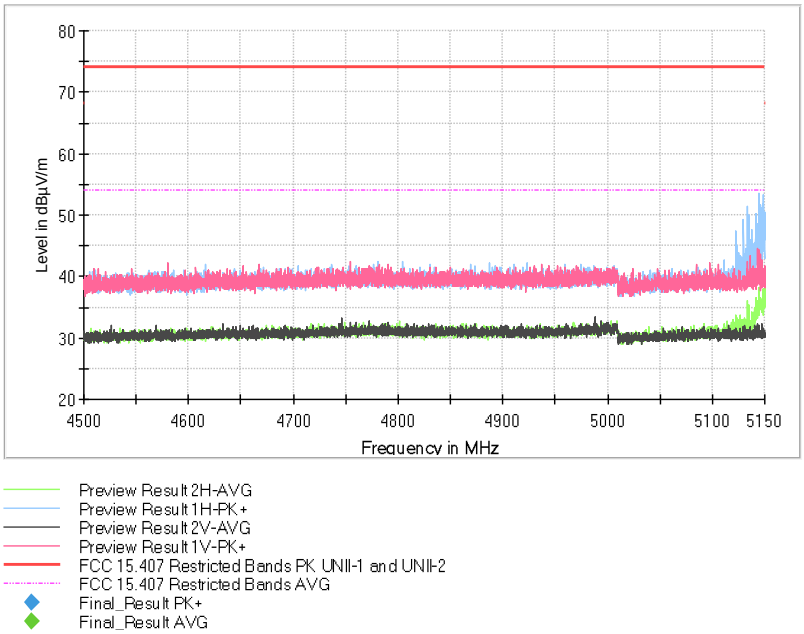


- Upper Band Edge Channel 46 (Restricted Band 5.35-5.46 GHz)

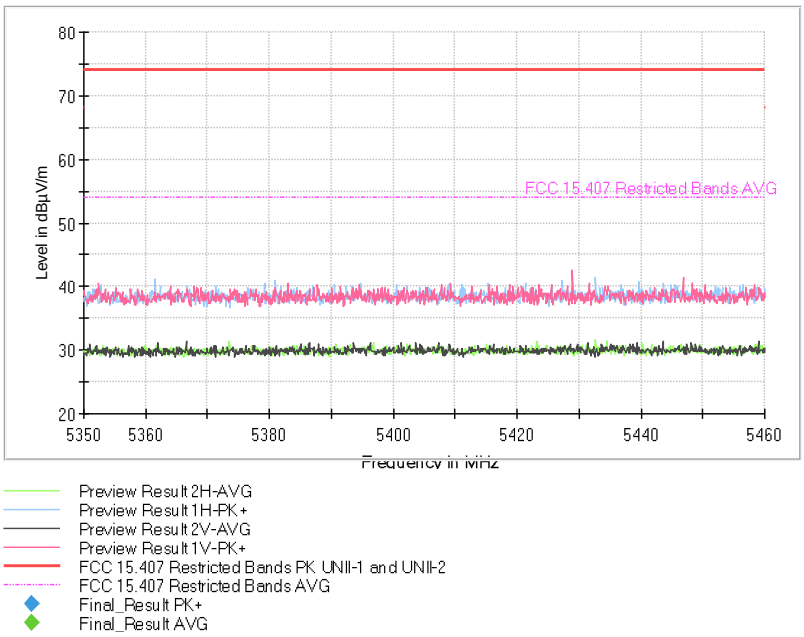


- **802.11 ac80:**

- Lower Band Edge Channel 42 (Restricted Band 4.50-5.15 GHz)



- Upper Band Edge Channel 42 (Restricted Band 5.35-5.46 GHz)



Appendix B: Test results for the U-NII-3 Band 5.725 - 5.85 GHz