

ISED CABid: ES1909
Lab. Company Number: 4621A

Test Report No:
79405RRF.009

Partial Test Report

USA FCC 15.31(h), 15.209, 15.247, 15.407
CANADA RSS-247, RSS-Gen

(*) Identification of item tested	Automotive infotainment System IDC
(*) Trademark	BMW
(*) Model and /or type reference	IDCEVO-CDE
Other identification of the product	FCC ID: T8GIDCEVOEES25 IC: 6434A-IDCEVOEES25
(*) Features	WLAN, Bluetooth HW version: 1.1.8 SW version: 25W39_2_1
Applicant	Harman Becker Automotive Systems GMBH Becker-Goering-STR. 16, 76307 Karlsbad, Germany
Test method requested, standard	USA FCC Part 15.31(h) (10-1-23 Edition): Measurement standard. USA FCC Part 15.209 (10-1-23 Edition): Radiated emission limits; general requirements. USA FCC Part 15.247 (10-1-23 Edition): Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.407 (10-1-23 Edition): Unlicensed National Information Infrastructure (U-NII) Devices. General technical requirements. Band U-NII-3 (5725 MHz – 5850 MHz). CANADA RSS-247 Issue 4, Jul. 2025. CANADA RSS-Gen Issue 5, Amendment 2, Feb. 2021. - Emission limitations radiated with simultaneous transmissions. Guidance for Performing Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum: System, and Hybrid Systems Devices Operating Under Section 15.247 of the FCC Rules. 558074 D01 Meas Guidance v05r02 dated April 2, 2019. 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. Measurement Guidance for Certification of Licensed Digital Transmitters. 971168 D01 Power Meas License Digital Systems v03r01 dated April 9, 2018.

	ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024: American National Standard for Testing Unlicensed Wireless Devices. ANSI C63.26-2015 IEEE/ANSI Standard for Testing of Transmitters Used in Licensed Radio Services.	
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	2026-03-02	
Report template No.	FDT08_25 (*) "Data provided by the client"	

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Competences and guarantees

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

DEKRA Testing and Certification 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 has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification 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 at the time of performance of the test.

DEKRA Testing and Certification 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.

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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 S.A.U.
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 S.A.U. and the Accreditation Bodies.

Uncertainty

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

The total uncertainty of the measurement system for the radiated emissions of the EUT from 30 MHz to 1 GHz is: Measurement uncertainty $\leq \pm 5.35$ dB (with factor $k=2$).

The total uncertainty of the measurement system for the radiated emissions of the EUT from 1 to 17 GHz is: Measurement uncertainty $\leq \pm 4.32$ dB (with factor $k=2$).

The total uncertainty of the measurement system for the radiated emissions of the EUT from 17 to 40 GHz is: Measurement uncertainty $\leq \pm 5.51$ 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 model IDCEVO-CDE (Infotainment Domain Controller EVO) is a Co-driver entertainment with several interfaces to the vehicle and Bluetooth / WLAN. The Co-driver entertainment provides different interfaces: USB, FPD, 100 Base -T.

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 results. The laboratory is not responsible for such information and it is not covered by accreditation.

Usage of samples

Samples undergoing test have been selected by: The client.

Id	Control Number	Description	Model	Serial N°	Date of Reception	Application
S/01	79405_351.1	Automotive infotainment System IDC	IDCEVO-CDE	HBB541S95G8NG7	2025-09-29	Element Under Test
S/01	79405_14.1	Fakra - 4 Sma Male Cable	-	-	2025-01-21	Auxiliary Element
S/01	79405_28.1	Module Circuit Board	-	-	2025-01-21	Auxiliary Element
S/01	79405_29.1	Fakra cable	-	-	2025-01-21	Auxiliary Element
S/01	79405_30.1	Main Harness 800mm	-	-	2025-01-21	Auxiliary Element
S/01	79405_32.1	Ethernet cable	-	-	2025-01-21	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Radiated tests.

Test sample description

Ports..... :	Port name and description Mini quad FAKRA (BT/WLAN)(Black) HSD 4 pol (USB)(Blue) Main 16 pol. (Car Connector) (Black) Nano MQS 10 pol. (100 BASE-T)(White) Ethernet BroadR-Reach, 100 BASE-T1 (White)	Cable					
		Specified max length [m]	Attached during test		Shielded		
		-	X		X		
		-	-		X		
		-	X		-		
		-	X		-		
Supplementary information to the ports..... :	-						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
		AC:					
	X	DC: 13.2 V					
Rated Power..... :	-						
Clock frequencies..... :	-						
Other parameters	-						
Software version..... :	25W39_2_1						
Hardware version	1.1.8						
Dimensions in cm (W x H x D) ... :	200x45x147,5						
Mounting position		Table top equipment					
		Wall/Ceiling mounted equipment					
		Floor standing equipment					
		Hand-held equipment					
	X	Other: automotive dashboard					
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		
	-		-		-		

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. Margarita Salas Boulevard, 26, 29590, Málaga, Spain
Date (start)	2025-10-27
Date (finish)	2025-10-28

Document history

Report number	Date	Description
79405RRF.009	2026-03-02	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 semi-anechoic chamber, 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: Aitana Díaz, Pablo Redondo.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
04825	SEMIANECHOIC ABSORBER LINED CHAMBER II	FACT 3 200 STP	ETS LINDGREN	N/A
04826	SHIELDED ROOM	S101	ETS LINDGREN	N/A
07547	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2026-04-22
07548	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2026-04-22
07817	EMI TEST RECEIVER 2 Hz - 44 GHz	ESW44	ROHDE AND SCHWARZ	2026-07-01
06142	PRE-AMPLIFIER, $G > 38$ dB, 30MHz-6GHz	BLNA 0360-01N	BONN ELEKTRONIK	2026-07-30
06143	HYBRID BILOG ANTENNA 30 MHz - 6 GHz	3142E	ETS LINDGREN	2027-01-22
06021	ATTENUATOR 3 dB, 2 W, DC - 6 GHz	50HN-03	JFW	2026-02-07
03783	PRE-AMPLIFIER $G > 30$ dB, 1-18 GHz	BLMA 0118-3A	BONN ELEKTRONIK	2026-03-15
06496	HORN ANTENNA 1-18 GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2026-12-01
08856	PRE-AMPLIFIER $G > 30$ dB, 17-40 GHz	BLMA 1840-4A	BONN ELEKTRONIK	2026-02-27
04657	HORN ANTENNA 18-40 GHz	BBHA 9170	SCHWARZBECK MESS-ELEKTRONIK	2026-06-12
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	N/A

Sample Calculation

For radiated measurements:

Values measures by the test receiver / analyzer are converted to field strength, in dBuV/m, at the regulatory distance using the following calculation:

$$\text{Unwanted Lvl (dBuV/m)} = \text{Raw Rec (dBuV)} + \text{Preamp (dB)} + \text{Trd Corre. (dB/m)} + \text{SigPath (dB)}$$

Where,

Raw Rec (dBuV): Measured voltage in the receiver / spectrum analyzer in dBuV

Preamp (dB): Path losses due to preamplifier

Trd Corr. (dB/m): Antenna factor in dB/m

SigPath (dB) = Cable loss (dB) – External Gain amplifier (dB) – Distance factor (dB)

Cable loss (dB): Cable loss

External Gain amplifier (dB): Gain from external amplifier (when used)

Distance factor (dB): Distance factor in dB. When measurement distance is different to limit distance

The field strength, calculated by this way is compared with the regulatory limit.

Testing verdicts

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

Summary

FCC 15 / CANADA RSS-247, RSS-Gen PARAGRAPH		
Requirement – Test case	Verdict	Remark
FCC 15.31 (h), 15.209 (a), 15.247 (d), 15.407 (b) / RSS-247 5.5, 6.2.1.2 and 6.2.2.2, RSS-Gen 8.9	P	(1)
Supplementary information and remarks:		
(1) Only simultaneous transmission radiated spurious emission test was requested.		

Appendix A: Test results

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FCC 15.31 (h), 15.209 (a), 15.247 (d), 15.407 (b) / RSS-247 5.5, 6.2.1.2 and 6.2.2.2, RSS-Gen 8.9

Emission limitations radiated (Transmitter).....16

TEST CONDITIONS

(*): Data provided by the Applicant.

POWER SUPPLY (*):

Vnominal: 13.2 Vdc
Type of Power Supply: Vehicle Battery

ANTENNA (*):

Type of Antenna: External
Antenna Gain:
Port 2: -1.25 dBi
Port 4: -2.42 dBi

TEST FREQUENCIES:

Frequency range	Technologies	Modulations	Worst case
2.4 GHz	Bluetooth EDR	Bluetooth EDR (GFSK, Pi/4-DQPSK, 8DPSK)	Bluetooth EDR (Low Channel, GFSK)
	WLAN 2.4 GHz	WLAN 2.4 GHz (802.11 bgn20)	WLAN 2.4 GHz (Low Channel, 802.11 n20)
f > 5 GHz	WLAN 5 GHz U-NII-1	WLAN 5 GHz U-NII-1 (a, ac, n, ax)	WLAN 5 GHz U-NII-1. ax20, Low Channel
	WLAN 5 GHz U-NII-3	WLAN 5 GHz U-NII-3 (a, ac, n, ax)	WLAN 5 GHz U-NII-3. ax20, High Channel

The test set-up was made according to the general provisions of FCC 558074 D01 15.247 Meas Guidance v05r02 dated April 2, 2019.

The EUT was tested in the following operating mode during the transmitter tests:

For cellular technologies, the EUT was controlled by a communication tester to transmit at maximum power on the test channels and modes as required.

TEST FREQUENCIES FOR SIMULTANEOUS TRANSMISSION MODE RADIATED TESTS:

The EUT was configured to simultaneously transmit the following signals at maximum output power:

1. Simultaneous transmission mode Bluetooth EDR, WLAN 2.4 GHz, WLAN 5 GHz U-NII-3:

Bluetooth EDR:	Low Channel (2402 MHz). GFSK (DH5).
WLAN 2.4 GHz MIMO 2x2:	High Channel (2462 MHz). 802.11 ax HE20 (OFDMA MCS0).
WLAN 5 GHz U-NII-3 MIMO 2x2:	High Channel (5825 MHz). 802.11 ax HE20 (OFDMA MCS0).

2. Simultaneous transmission mode Bluetooth EDR, WLAN 5 GHz U-NII-1, WLAN 5 GHz U-NII-3:

Bluetooth EDR:	Low Channel (2402 MHz). GFSK (DH5).
WLAN 5 GHz U-NII-1 MIMO 2x2:	Low Channel (5180 MHz). 802.11 ax HE20 (OFDMA MCS0).
WLAN 5 GHz U-NII-3 MIMO 2x2:	High Channel (5825 MHz). 802.11 ax HE20 (OFDMA MCS0).

FCC 15.31 (h), 15.209 (a), 15.247 (d), 15.407 (b), 22.917 (a), 24.238 (a), 27.53 (m) (4)
RSS-132 5.5, RSS-133 6.5, RSS-199 5.6, RSS-247 5.5, 6.2.1.2 and 6.2.2.2, RSS-Gen 8.9
Emission limitations radiated (Transmitter)

Limits:

Bluetooth EDR, WLAN 2.4 GHz, WLAN 5 GHz:

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) / RSS-Gen):

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

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 specified when measuring with peak detector function corresponding to 20 dB above the indicated values in the table above.

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz (68.23 dBµV/m at 3 m distance) at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

RSS-247. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Method:

The measurement was performed with the EUT inside a semi-anechoic chamber.

The spectrum was scanned from 30 MHz to at least the 10th harmonic of the highest frequency of the co-located radios up to 40 GHz.

The EUT was placed on a non-conductive stand at a 3-meter distance from the measuring antenna for measurements up to 17 GHz and at 1.5-meter distance for measurements above 17 GHz.

Detected emissions were maximized at each frequency by rotating the EUT and adjusting the measuring antenna height and polarization. The maximum meter reading was recorded. Measurements were made in both horizontal and vertical planes of polarization.

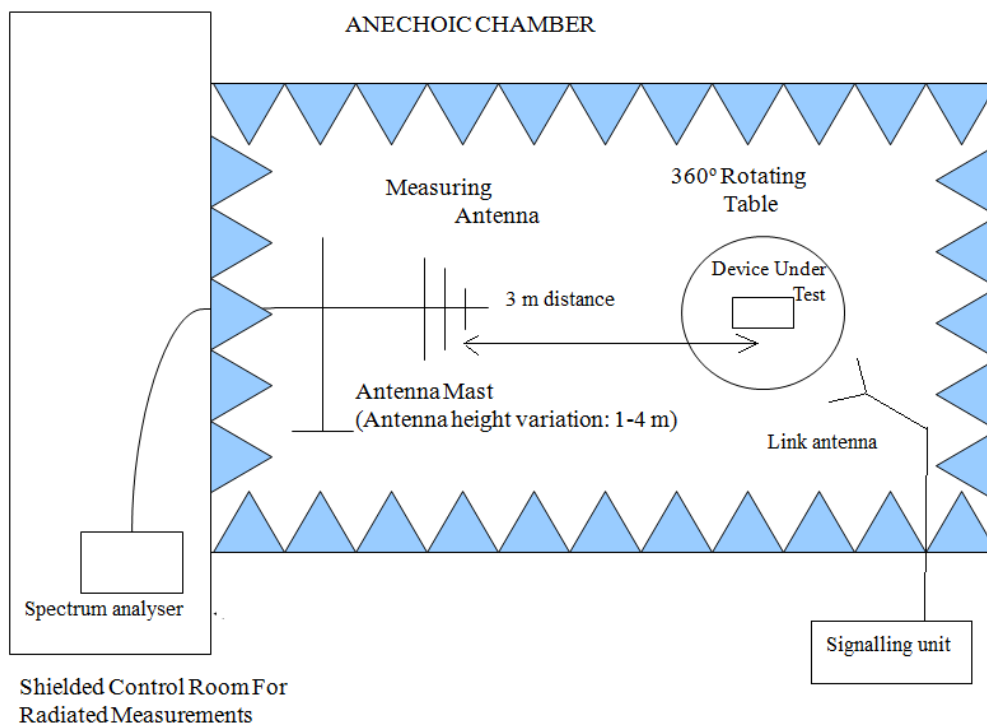
The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

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

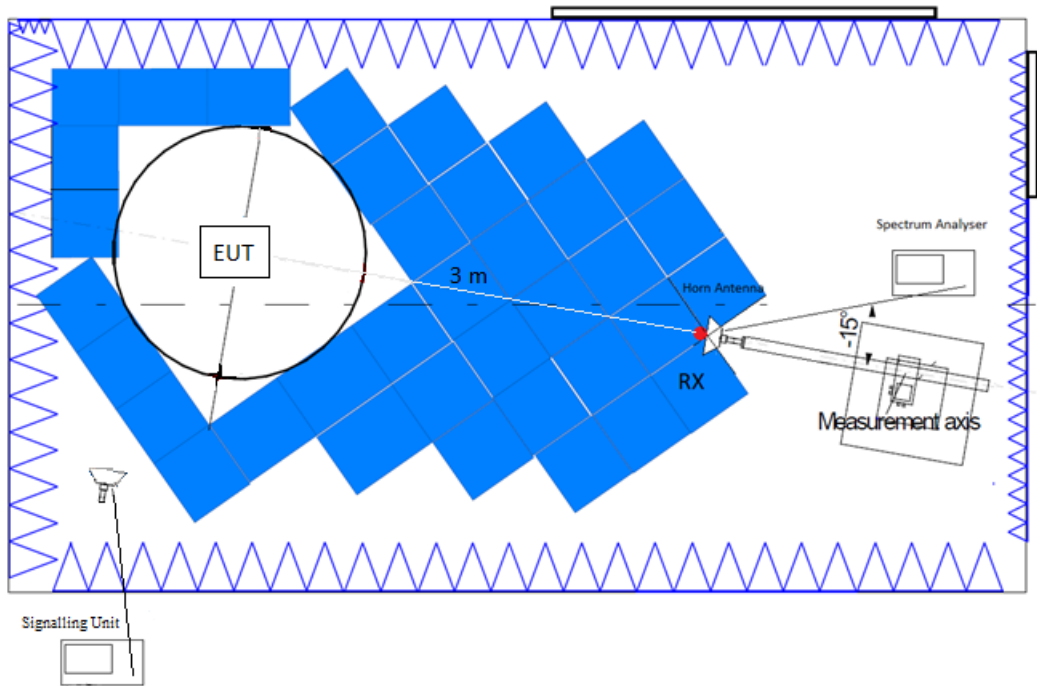
These measurements have been performed in order to check the impact of the Co-Location of all radio interfaces (that can transmit simultaneously).

Test setup:

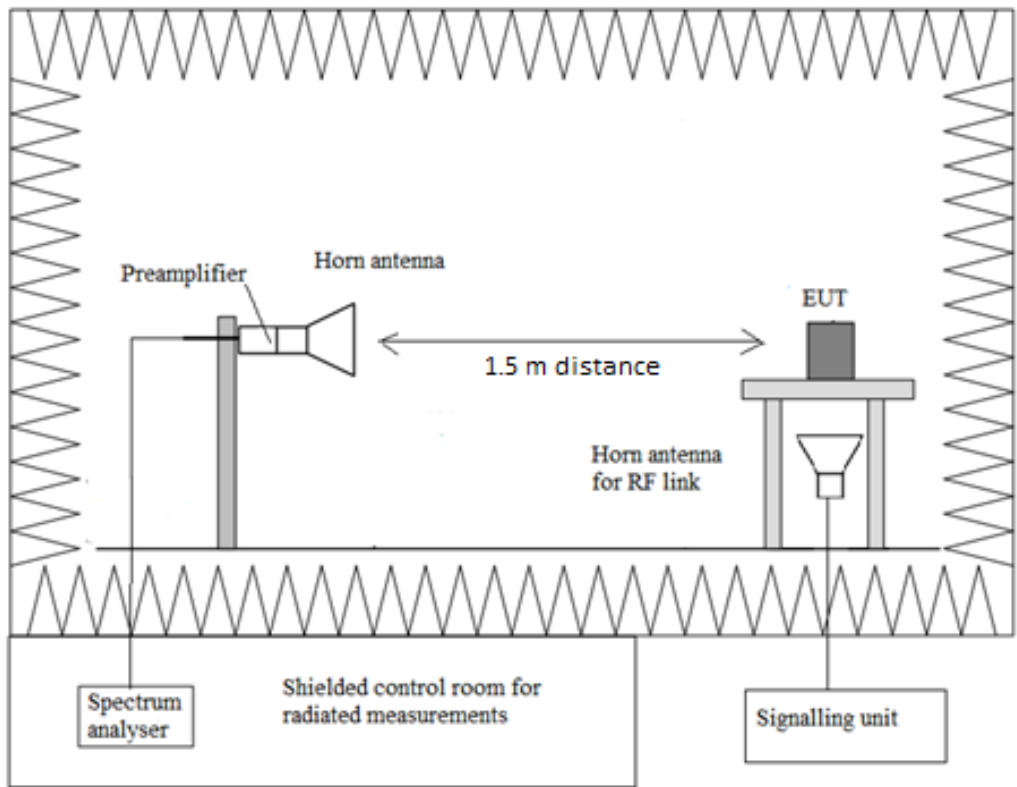
Radiated measurements below 1 GHz.



Radiated measurements between 1 GHz and 17 GHz.



Radiated measurements above 17 GHz.



Results:

1. Simultaneous transmission mode Bluetooth EDR, WLAN 2.4 GHz, WLAN 5 GHz U-NII-3:

Bluetooth EDR:	Low Channel (2402 MHz). GFSK (DH5).
WLAN 2.4 GHz MIMO 2x2:	High Channel (2462 MHz), 802.11 ax HE20 (OFDMA MCS0).
WLAN 5 GHz U-NII-3 MIMO 2x2:	High Channel (5825 MHz). 802.11 ax HE20 (OFDMA MCS0).

Frequency range 30 MHz - 1 GHz:

Spurious frequencies at less than 20 dB below the limit:

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol
31.067000	25.43	---	40.00	14.57	V
31.067000	---	31.50	---	---	V
78.742500	13.63	---	40.00	26.37	V
78.742500	---	18.76	---	---	V
81.167500	---	20.12	---	---	V
81.167500	15.00	---	40.00	25.00	V
948.056500	---	31.08	---	---	H
948.056500	25.57	---	46.00	20.43	H

Frequency range 1 - 26 GHz:

Spurious frequencies at less than 20 dB below the limit:

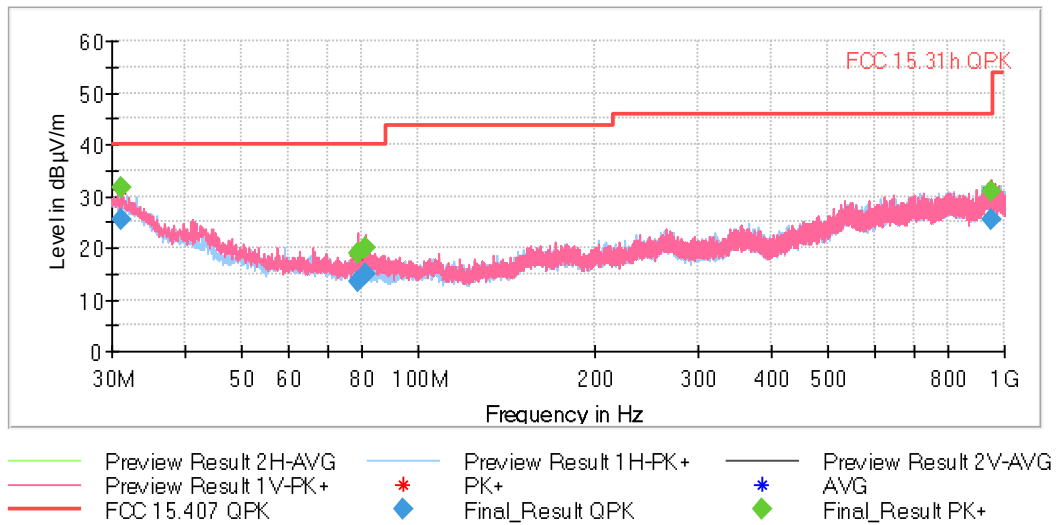
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol
4872.000000	---	45.73	54.00	8.27	H
4872.000000	59.66	---	74.00	14.34	H
4940.750000	---	47.01	54.00	6.99	H
4940.750000	64.58	---	74.00	9.42	H
7410.875000	---	41.94	54.00	12.06	V
7410.875000	65.45	---	74.00	8.55	V

Verdict

Pass

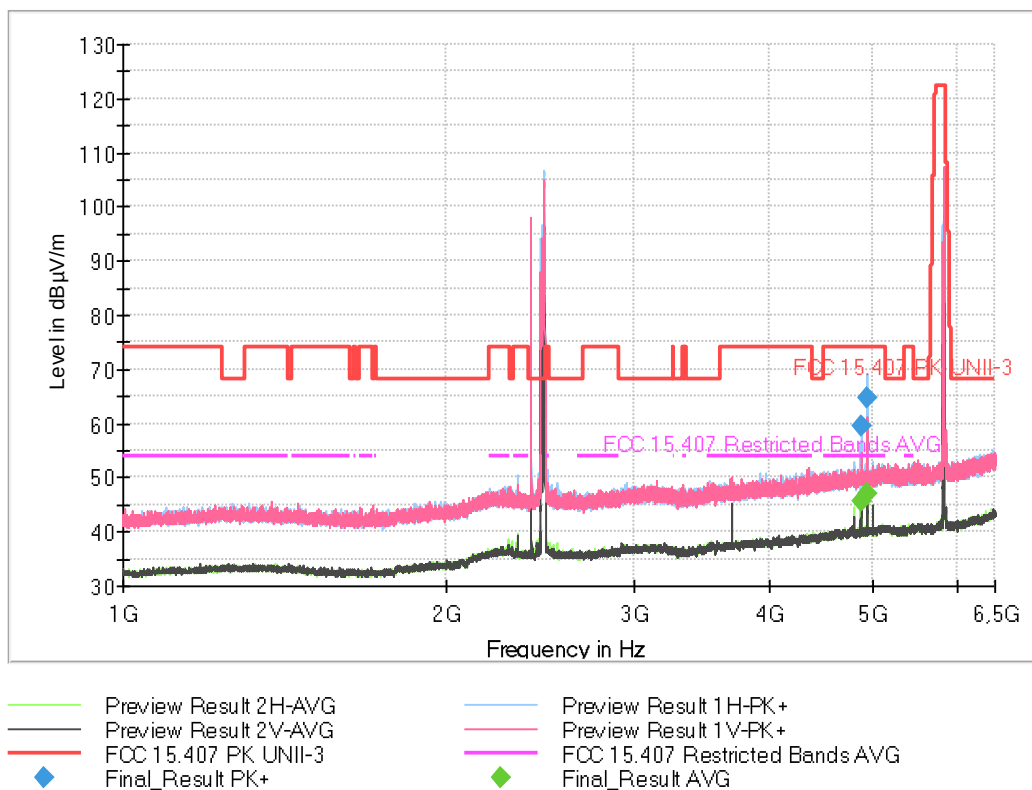
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	4.85 kHz	PK+	100 kHz	1 s	30 dB
1 GHz - 7 GHz	200 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
7 GHz - 17 GHz	333.333 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
17 GHz - 40 GHz	766.667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

FREQUENCY RANGE 30 MHz - 1 GHz:

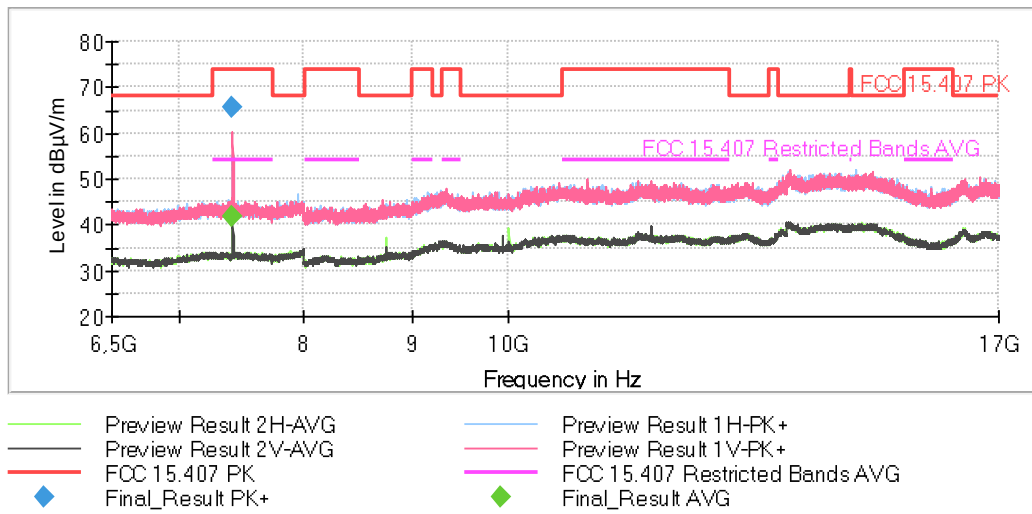


FREQUENCY RANGE 1 - 26 GHz:

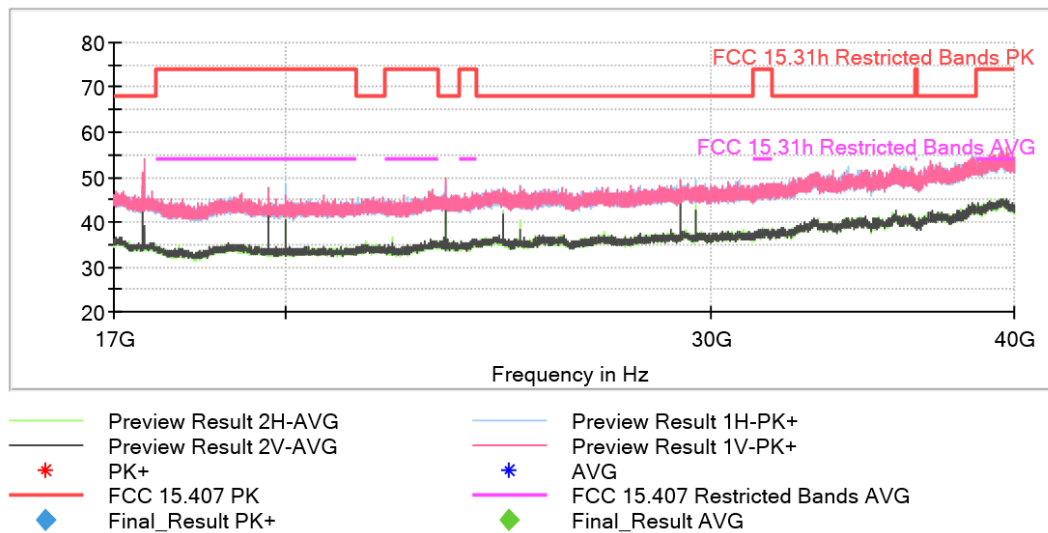
Full Spectrum



The peaks above the limit are the Bluetooth EDR carrier frequency (2402 MHz) and are the WLAN 2.4 GHz carrier frequency (2462 MHz).



The highest peak near the limit is the WLAN 5 GHz U-NII-3 carrier frequency (5825 MHz).



2. Simultaneous transmission mode Bluetooth EDR, WLAN 5 GHz U-NII-1, WLAN 5 GHz U-NII-3:

Bluetooth EDR:	Low Channel (2402 MHz). GFSK (DH5).
WLAN 5 GHz U-NII-1 MIMO 2x2:	Low Channel (5180 MHz). 802.11 ax HE20 (OFDMA MCS0).
WLAN 5 GHz U-NII-3 MIMO 2x2:	High Channel (5825 MHz). 802.11 ax HE20 (OFDMA MCS0).

Frequency range 30 MHz - 1 GHz:

Spurious frequencies at less than 20 dB below the limit:

Frequency (MHz)	QuasiPeak (dBμV/m)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol
30.388000	25.45	---	40.00	14.55	H
30.388000	---	30.73	---	---	H
66.278000	14.07	---	40.00	25.93	H
66.278000	---	19.07	---	---	H
904.843000	24.05	---	46.00	21.95	H
904.843000	---	29.91	---	---	H

Frequency range 1 - 26 GHz:

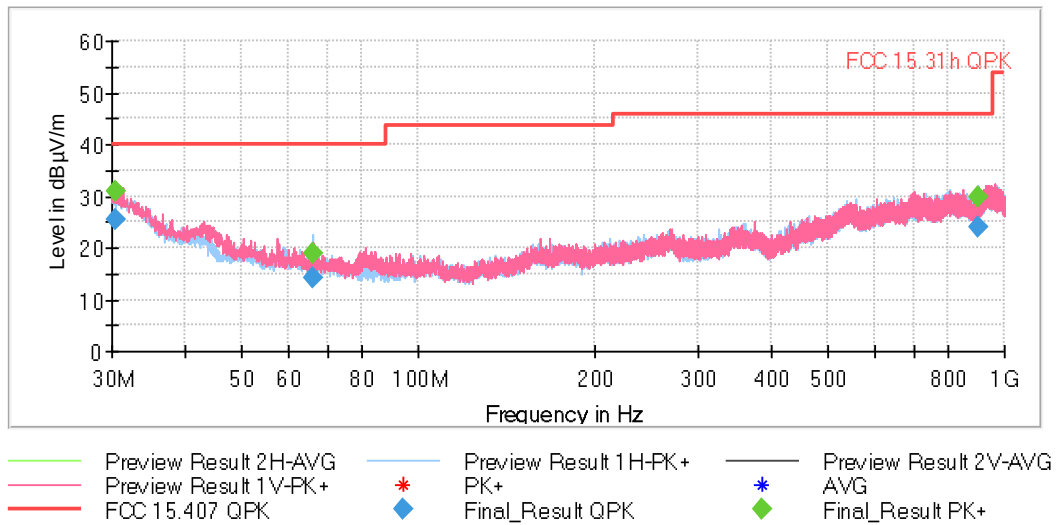
No spurious frequencies at less than 20 dB below the limit.

Verdict

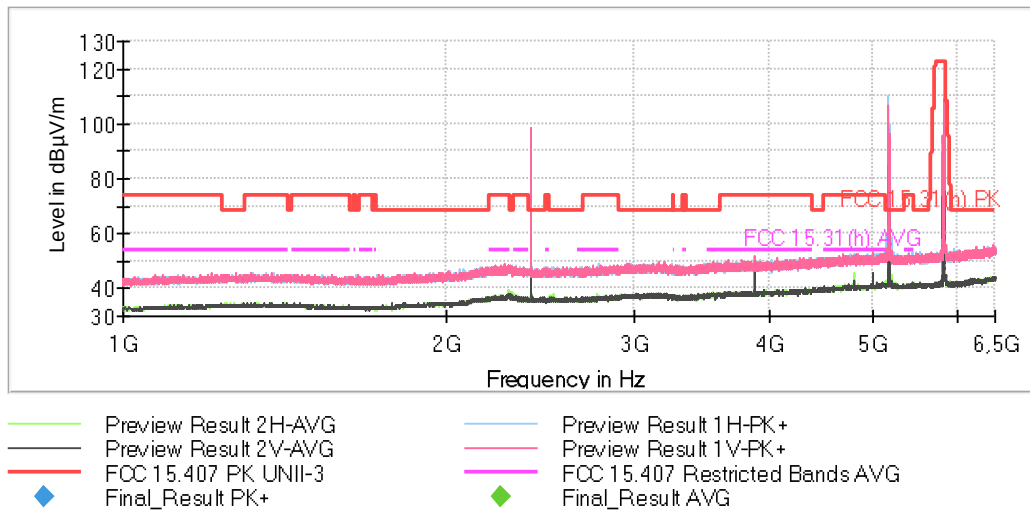
Pass

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	4.85 kHz	PK+	100 kHz	1 s	30 dB
1 GHz - 7 GHz	200 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
7 GHz - 17 GHz	333.333 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
17 GHz - 40 GHz	766.667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

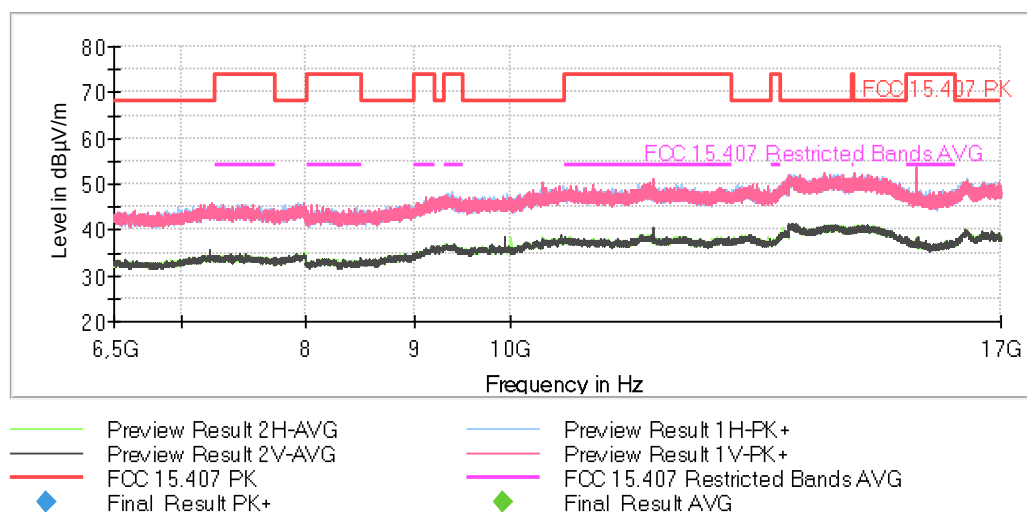
FREQUENCY RANGE 30 MHz - 1 GHz:



FREQUENCY RANGE 1 - 26 GHz:



The peak above the limit is the Bluetooth EDR carrier frequency (2402 MHz).



The peaks above the limit are the WLAN 5 GHz U-NII-1 MIMO 2x2 carrier frequency (5180 MHz) and the WLAN 5 GHz U-NII-3 MIMO 2x2 carrier frequency (5825 MHz).

