ISED CABid: ES1909
Lab. Company Number: 4621A

Test Report No:
76930RRF.009

Partial Test Report

FCC 15.31 (h), 15.209, 15.247, Part 27, Part 90 / RSS-139, RSS-140, RSS-199, RSS-247, RSS-Gen

(*) Identification of item tested	Telematic Control Unit, used in automotive industry
(*) Trademark	VOLVO
(*) Model and /or type reference	TCAM3
Other identification of the product	Version: ROW FCC ID: T8GTCAM3 Contains FCC ID: YZP-GN3000 IC: 6434A-TCAM3 Contains IC: 7414C-GN3000
(*) Features	LTE, 5G, BLE, GNSS, TPMS, SDARS HW version: C3 SW version: 2024-10-25-master-TCAM3-E
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 27 (10-1-23 Edition): Miscellaneous Wireless Communications Services. 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. CANADA RSS-139 Issue 1, Sep. 2022. CANADA RSS-140 Issue 4, Apr. 2018. CANADA RSS-199 Issue 4, Jul. 2023. CANADA RSS-247 Issue 3, Aug. 2023. 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. Measurement Guidance for Certification of Licensed Digital Transmitters. 971168 D01 Power Meas License Digital Systems v03r01 dated April 9, 2018.

	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	2025-04-22
Report template No.	FDT08_24 (*) “Data provided by the client”

Index

Competences and guarantees 4
General conditions 4
Uncertainty 4
Data provided by the client 5
Usage of samples 6
Test sample description 6
Identification of the client 9
Testing period and place 9
Document history 9
Environmental conditions 9
Remarks and comments 10
Testing verdicts 11
Summary 11
Appendix A: Test results 12

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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Testing and Certification.

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 ≤ ±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 ≤ ±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 ≤ ±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 consists of a Telematic Control Unit, used in automotive industry. The device is a Telematics Control Unit with eCall technologies, used in automotive, equipped with eCall modem. The project name TCAM3 has the meaning “Telematic Connectivity Antenna Module” and thus describes the key features of this device as Communication and Data Interface. This unit was designed for automotive usage and contains the following features: GSM/WCDMA/LTE/5G, BTLE and TPMS receiver.

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 Nº	Date of Reception	Application
S/01	79390_19.1	Telematic Control Unit	TCAM3 (Version: ROW)	--	2024-12-11	Element Under Test
	79390_65.1	Harness EMC 2m	--	--	2025-03-26	Auxiliary Element
	79390_66.1	OABR (+PS cable)	--	--	2025-03-26	Auxiliary Element
	79390_67.1	Yellow box (+USB cable)	--	--	2025-03-26	Auxiliary Element
	79390_68.1	OHC	--	--	2025-03-26	Auxiliary Element
	79390_69.1	Speaker	--	--	2025-03-26	Auxiliary Element
	79390_71.1	Li-ion Battery	--	--	2025-03-26	Auxiliary Element
	79390_72.1	Biastee	--	--	2025-03-26	Auxiliary Element

Notes referenced to samples during the project:

Id	Type
S/01	Samples used for radiated tests.

Test sample description

Ports……. :	Port name and description	Cable			
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)
	.....	.....	[ ]	[ ]	[ ]
	.....	.....	[ ]	[ ]	[ ]
	.....	.....	[ ]	[ ]	[ ]
	.....	.....	[ ]	[ ]	[ ]
	.....	.....	[ ]	[ ]	[ ]
	.....	.....	[ ]	[ ]	[ ]
Supplementary information to the ports……. :	.....				

Rated power supply .....:	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[ ]	DC:					
	[X]	DC: 12V car battery / alternator (4,5 V ≤ UB ≤ 18 V; UB typical: 12V)					

Rated Power .....:		
Clock frequencies.....:	See technical description	
Other parameters .....:	See Technical description	
Software version .....:	2024-10-25-master-TCAM3-E	
Hardware version .....:	C3	
Dimensions in cm (W x H x D) ....:	162 mm(W) X 31 mm(H) X 251 mm(L)	
Mounting position .....:	[ ]	Table top equipment
	[x]	Wall/Ceiling mounted equipment
	[ ]	Floor standing equipment
	[ ]	Hand-held equipment
	[ ]	Other: automotive telematics control unit

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	Cable Harness	.....	.....
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....
Documents as provided by the applicant.....:	Description	File name	Issue date
	Technical description manual	.....	.....
	.....	.....	.....
	.....	.....	.....
	.....	.....	.....

(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)	2025-01-14
Date (finish)	2025-03-27

Document history

Report number	Date	Description
79390RRF.009	2025-04-22	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 semi-anechoic 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: Sergio Carrasco and Pablo Redondo.

Used instrumentation:

Control No.	Equipment	Model	Manufacturer	Next Calibration
10304	EMI TEST RECEIVER 2Hz-44GHz	ESW44	ROHDE AND SCHWARZ	2026-10-01
06495	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2027-07-11
07862	PRE-AMPLIFIER G>30dB 17-40GHz	BLMA 1840-3G	BONN ELEKTRONIK	2025-04-02
07763	HORN ANTENNA 1-18GHz	BBHA 9120D	SCHWARZBECK MESS- ELEKTRONIK	2026-01-16
09968	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2026-09-22
07769	PREAMPLIFIER 30dB 500MHz-18GHz	BBV 9718 C	SCHWARZBECK	2026-03-17
08130	SEMIANECHOIC ABSORBER LINED CHAMBER	P29419	ALBATROSS	--
08134	SHIELDED ROOM	P29419	ALBATROSS PROJECTS GMBH	--
08661	SHIELDED ROOM	-	SIEPEL	--
04848	SOFTWARE FOR EMC/RF TESTING	EMC32	ROHDE AND SCHWARZ	--
07549	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-24
07550	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-24
07552	TEMPERATURE AND HUMIDITY PROBE	HWg-STE	HW GROUP	2025-04-24

Testing verdicts

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

Summary

FCC 15, 27, 90 / CANADA RSS-139, RSS-140, RSS-199, RSS-247, RSS-Gen			
Requirement – Test case		**Verdict**	**Remark**
FCC 15.31 (h), 15.209 (a), 15.247 (d), 27.53 (m) (4), 27.53 (h), 90.543 (e) (2) (3) & (f) / RSS-139 5.6, RSS-140 4.4, RSS-199 5.6, RSS-247 5.5, RSS-Gen 8.9	Emission limitations radiated (Transmitter)	P	(1)
Supplementary information and remarks: (1) Only simultaneous transmission radiated spurious emission test was requested.			

Appendix A: Test results

INDEX

TEST CONDITIONS 14

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) 16

TEST CONDITIONS

(*): Data provided by the Applicant.

POWER SUPPLY (*):

Vnonimal: 12 Vdc.

Type of Power Supply: External power supply / Battery

ANTENNA (*):

Technologies	Antenna Gain	Type of Antenna
BLE	+4.13 dBi	Internal
Celullar LTE	+6.95 dBi	Internal

TEST FREQUENCIES:

Frequency range	Technologies	Modulations	Worst case
f < 1 GHz	2G 850	GPRS	Channel Mid: 190 (836.5 MHz)
1 GHz < f < 2 GHz	LTE Band 66	LTE	1745 MHz
f > 2 GHz	LTE Band 7 Bluetooth LE	LTE Bluetooth LE (1Mbps)	2535 MHz Bluetooth LE (Low Channel, GFSK 1Mbps)

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:

- **Operation Mode 1**

Simultaneous transmission mode BLE, GSM 850MHz:

BLE:	Low Channel (2402 MHz). GFSK 1Mbps.
GSM 850MHz:	Middle Channel (836.5 MHz). GPRS.

- **Operation Mode 2**

Simultaneous transmission mode BLE, LTE Band 66:

BLE:	Low Channel (2402 MHz). GFSK 1Mbps.
LTE Band 66:	Low Channel (1745 MHz). QPSK. BW 20 MHz. RB Size: 1. RB Offset: 0.

- **Operation Mode 3**

Simultaneous transmission mode BLE, LTE Band 7:

BLE:	Low Channel (2402 MHz). GFSK 1Mbps.
LTE Band 7:	Low Channel (2535 MHz). QPSK. BW 20 MHz. RB Size: 1. RB Offset: 0.

FCC 15.31 (h), 15.209 (a), 15.247 (d), 27.53 (m) (4), 27.53 (h), 90.543 (e) (2) (3) & (f) / RSS-139 5.6, RSS-140 4.4, RSS-199 5.6, RSS-247 5.5, RSS-Gen 8.9

Emission limitations radiated (Transmitter)

Limits:

BLE:

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.

LTE 7. §27.53 (m) (4) / RSS-199 5.6:

FCC §27.53 (m) (4):

> (4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

RSS-199 5.6:

> Unwanted emissions shall be measured in terms of average values when the transmitter is operating at the manufacturer's rated power and modulated as specified in RSS-Gen.
>
> Equipment shall meet the unwanted emission limits, specified below, outside each frequency block group. For each channel bandwidth supported by the equipment under test, the unwanted emissions shall be

measured and reported for two channel frequencies: one located as close as possible to the low end and one located as close as possible to the high end of the equipment's operating frequency range.

For the unwanted emission limits, in the 1 MHz band immediately outside and adjacent to the frequency block group, the power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for fixed stations, base stations, and fixed subscriber equipment, and 2% for subscriber equipment other than fixed subscriber equipment. Beyond this 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors), where applicable, of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in the tables below.

Table 5: Unwanted emission limits for subscriber equipment other than fixed subscriber equipment	
Offset from the edge of the frequency block or frequency block group (MHz)	**Unwanted emission limits**
0-1	-10 dBm/(2% of OB*)
1-5	-10 dBm/MHz
5-X**	-13 dBm/MHz
≥ X	-25 dBm/MHz

2G 850. FCC §2.1053 & §22.917 (a) / RSS-132 5.5:

FCC §22.917 (a):

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

RSS-132 5.5:

Equipment shall meet the unwanted emission limits specified below:

i. In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).

ii. After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

p is the output power specified in watts.

Measurement Limit:

According to the specification the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. P in Watts.
At Po transmitting power the specified minimum attenuation becomes 43+10log (Po) and the level in dBm relative Po becomes:

Po (dBm) - [43 + 10 log (Po in mWatts) - 30] = - 13 dBm

.

LTE 66. FCC §27.53 (d) / RSS-139 5.6.

FCC §27.53 (h):

> AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

RSS-139 5.6:

> Unwanted emissions shall be measured in terms of average values.
>
> For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Table 6: Unwanted emission limits	
Offset from the edge of the frequency block or frequency block group	**Unwanted emission limits**
1 MHz	-13 dBm/(1% of OB*)
>1 MHz	-13 dBm/MHz

*OB is the occupied bandwidth.

> In addition to complying with the above limits, equipment operating in the band 2180-2200 MHz may require additional filtering (see SRSP-519).

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.

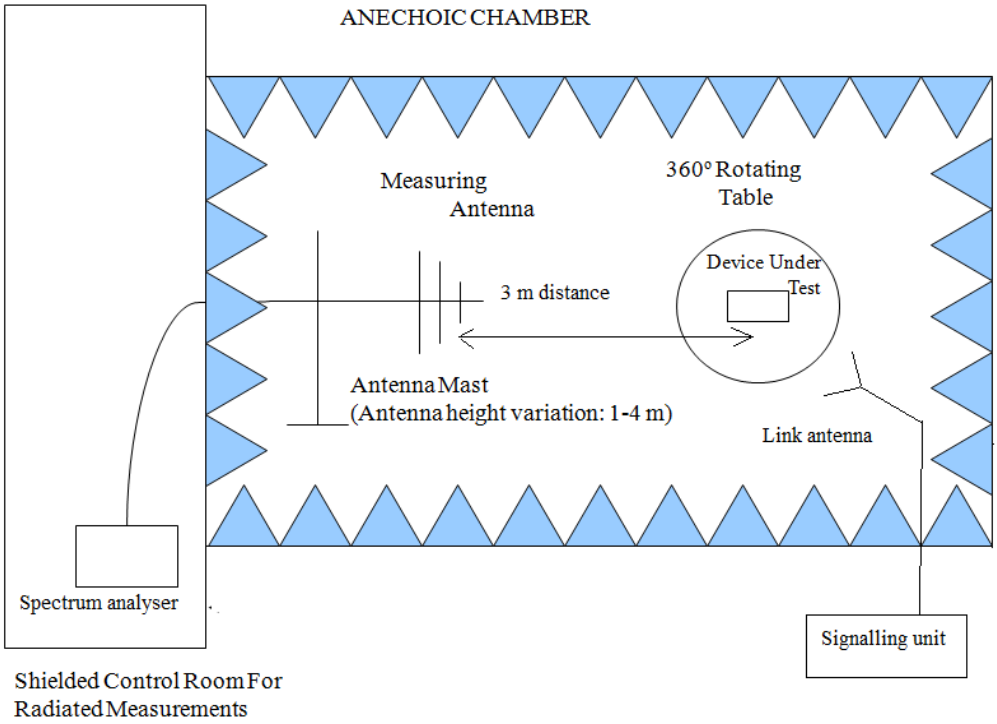
The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

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.

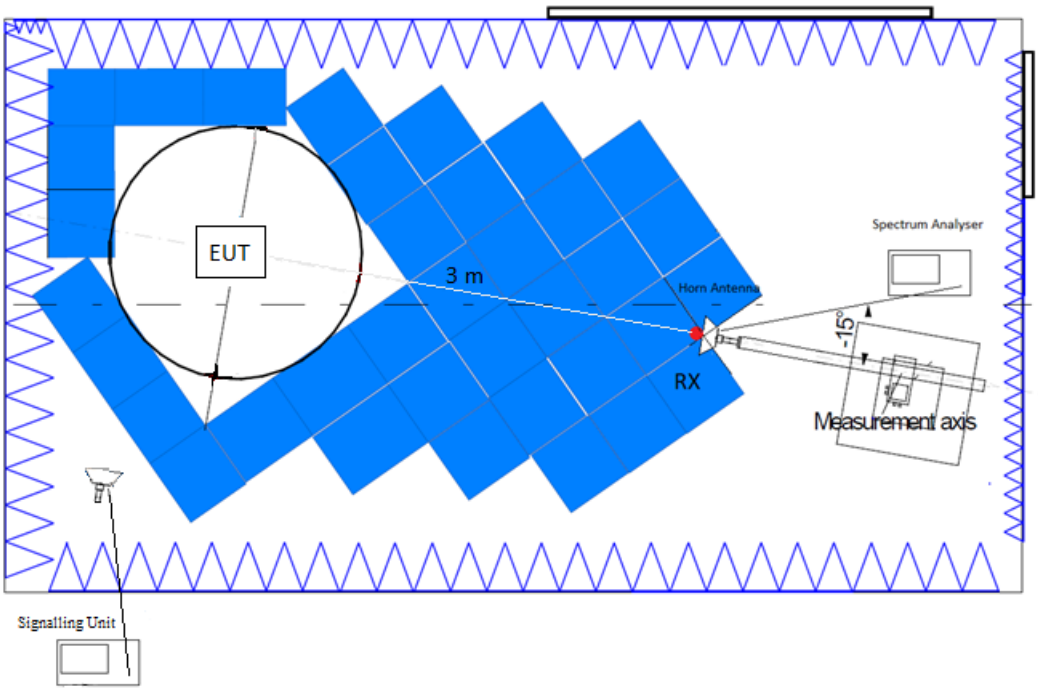
These measurements have been performed in order to check the impact of the Co-Location of all radio interfaces (that can transmit simultaneously).

Test setup:

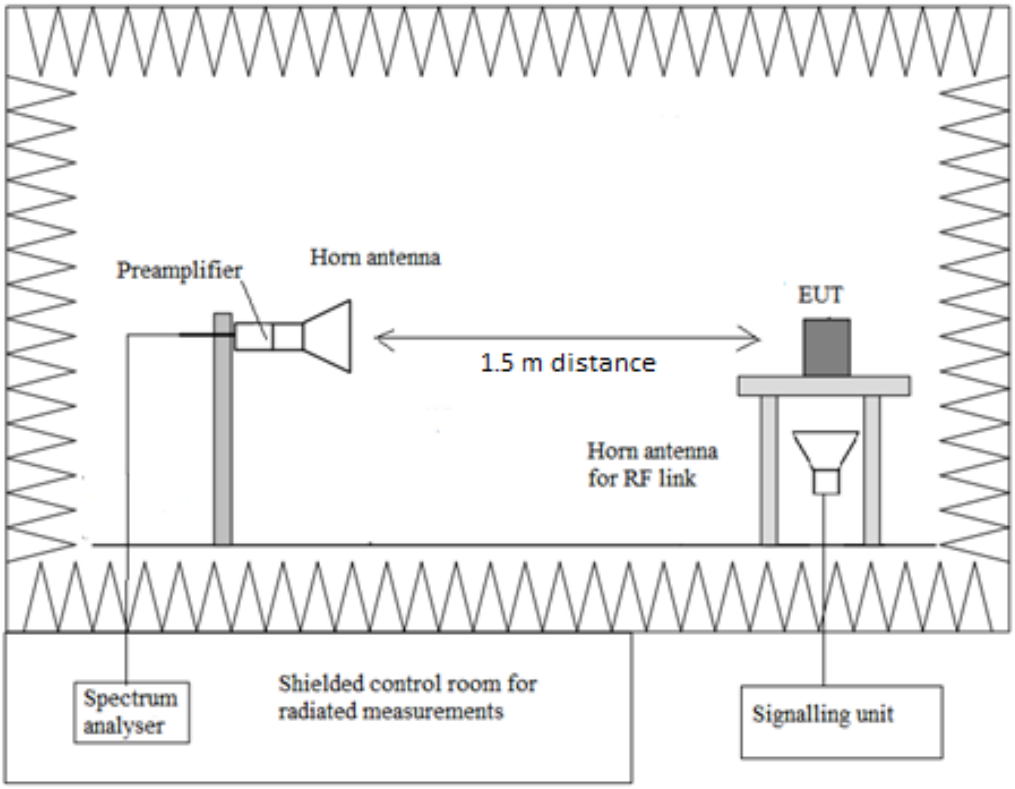
Radiated measurements below 1 GHz.



Radiated measurements between 1 GHz and 17 GHz.



Radiated measurements above 17 GHz.



Results:

- **Operation Mode 1**

Frequency range 30 MHz - 1 GHz

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

Frequency range 1 - 40 GHz

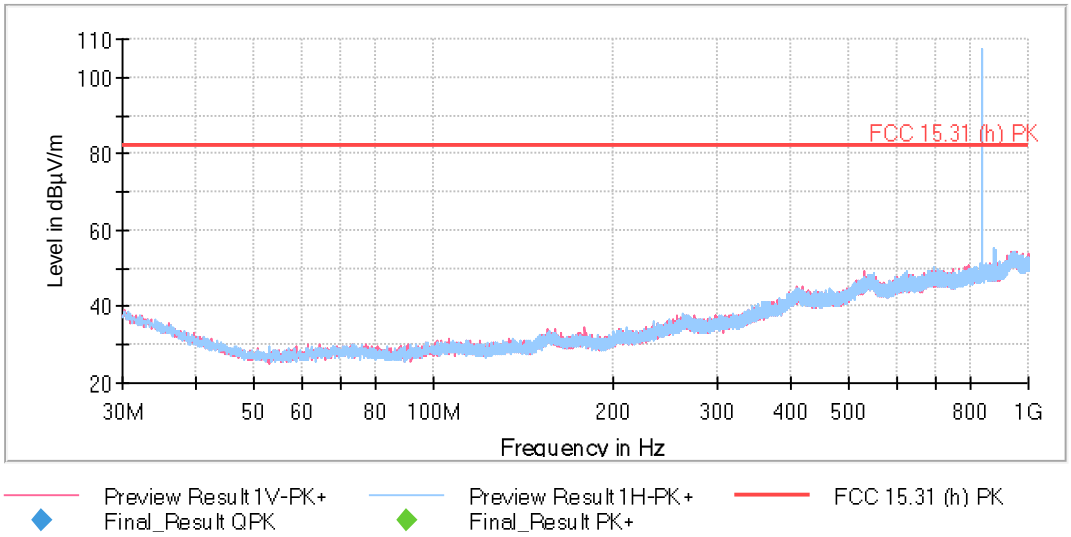
Spurious frequencies at less than 20 dB below the limit:

Verdict

Pass

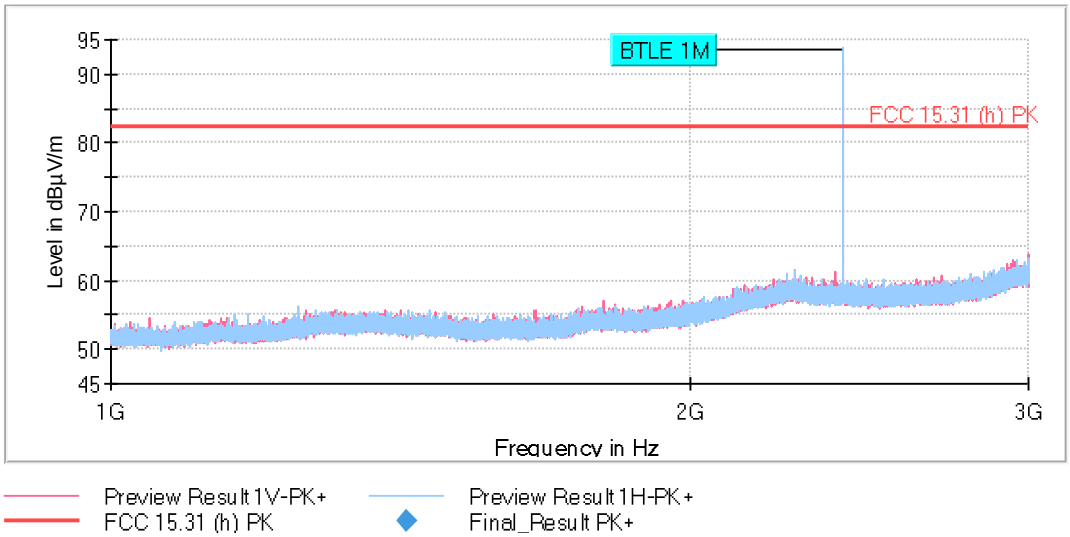
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB
17 GHz - 26 GHz	300 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
26 GHz - 40 GHz	766,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

FREQUENCY RANGE 30 MHz - 1 GHz



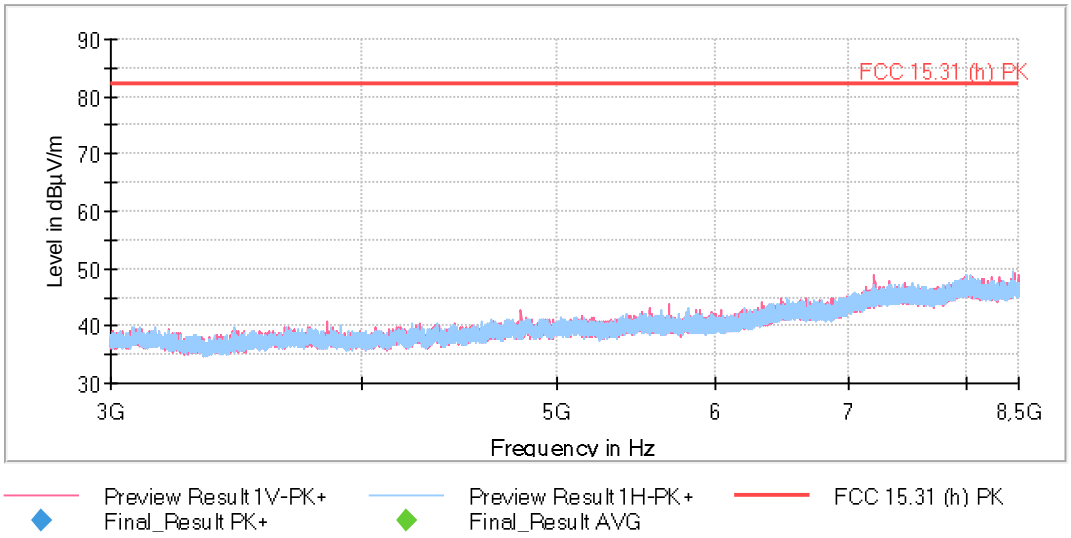
The peak above the limit is the GSM850Mhz carrier frequency

FREQUENCY RANGE 1 - 3 GHz

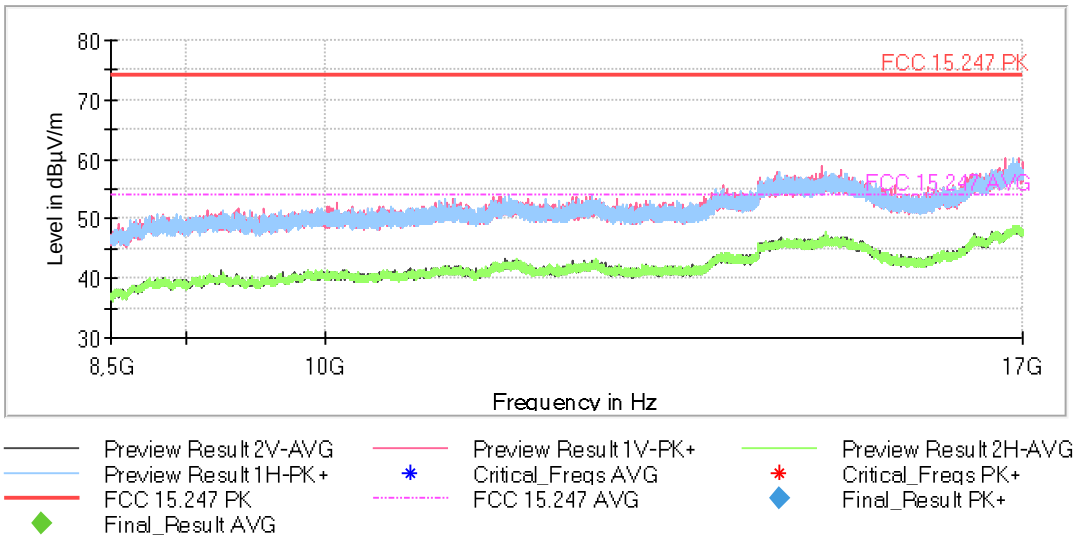


The peak above the limit is the BLE 1M carrier frequency (2402 MHz).

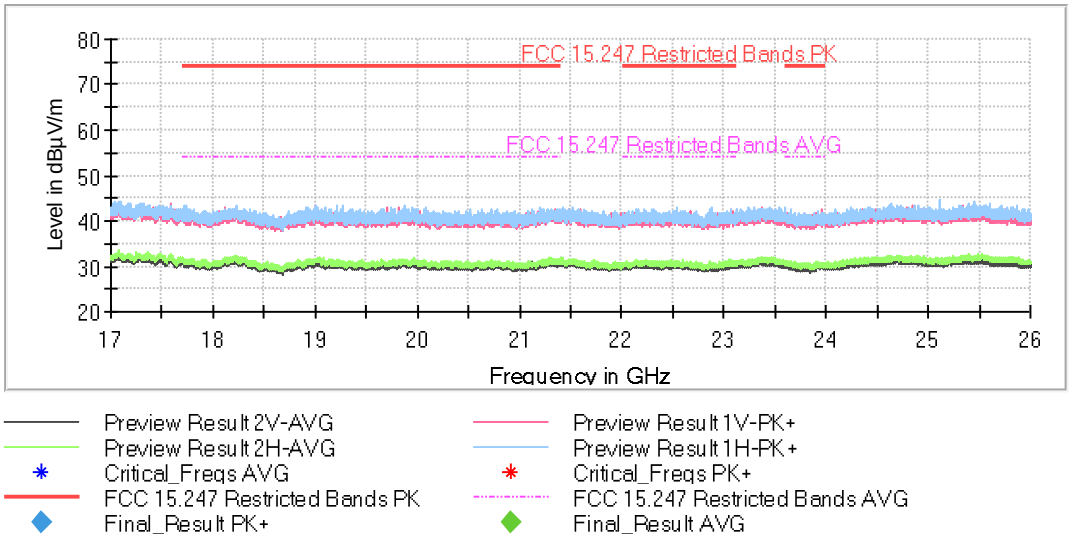
FREQUENCY RANGE 3 – 8,5 GHz



FREQUENCY RANGE 8,5 - 17 GHz



FREQUENCY RANGE 17 - 26 GHz



- **Operation Mode 2**

Frequency range 30 MHz - 1 GHz:

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

Frequency range 1 - 40 GHz:

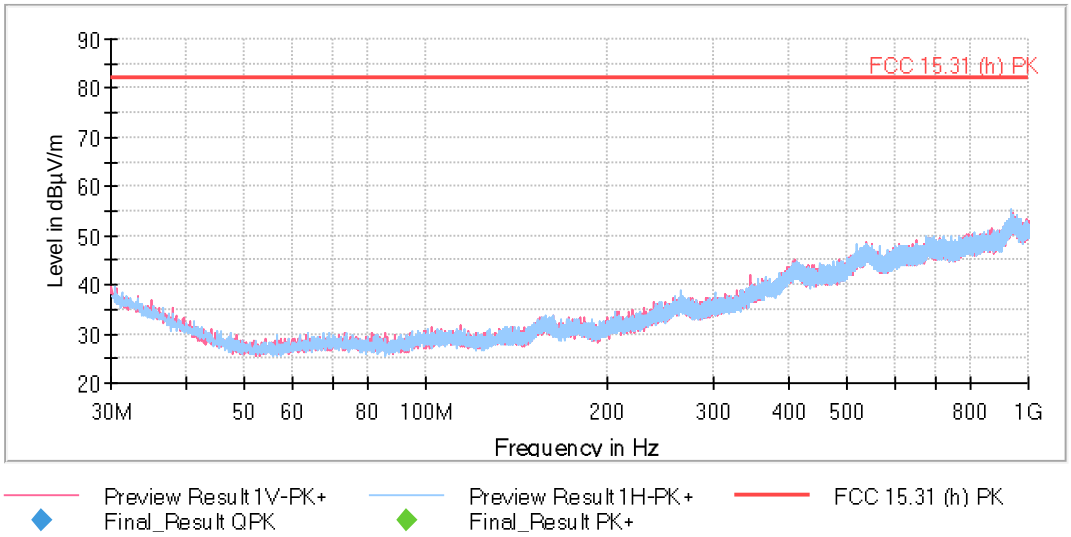
No spurious frequencies at less than 20 dB below the limit.

Verdict

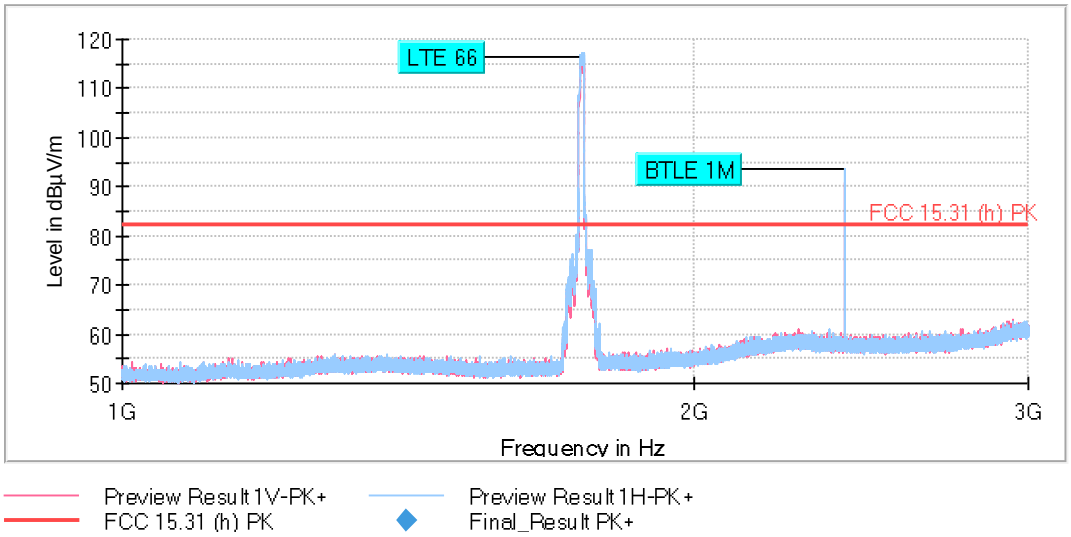
Pass

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB
17 GHz - 26 GHz	300 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
26 GHz - 40 GHz	766,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

FREQUENCY RANGE 30 MHz - 1 GHz



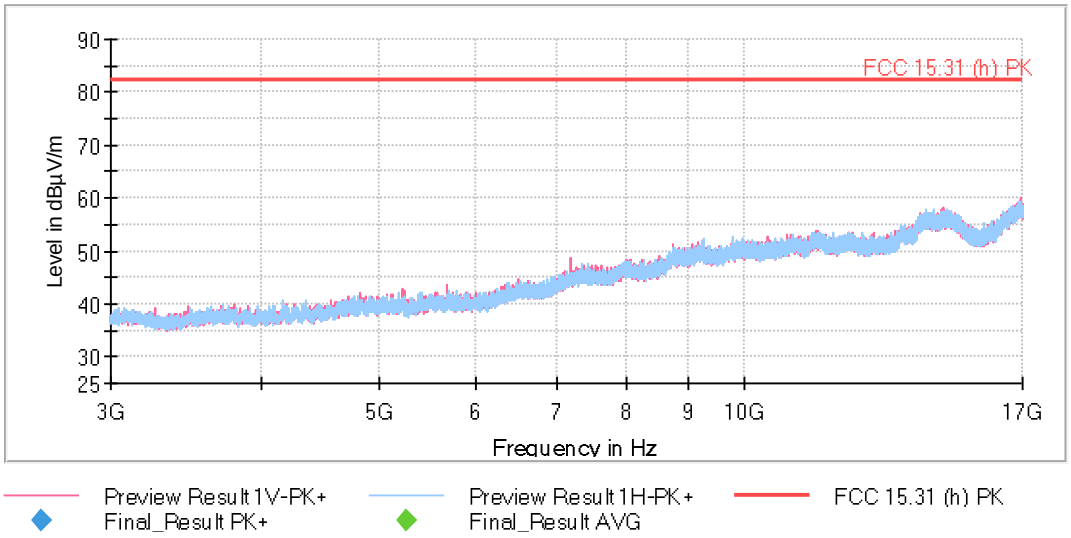
FREQUENCY RANGE 1 - 3 GHz



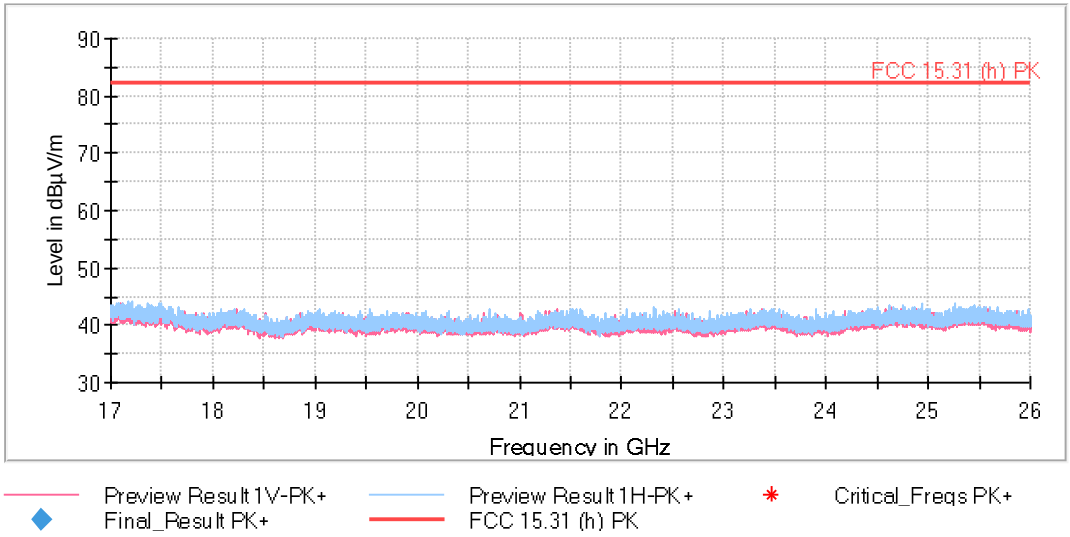
The peak above the limit on the left is the LTE Band 66 carrier frequency (1745 MHz).

The peak above the limit on the right is the BLE 1M carrier frequency (2402 MHz).

FREQUENCY RANGE 3 -17 GHz



FREQUENCY RANGE 17 -26 GHz



- **Operation Mode 3**

Frequency range 30 MHz - 1 GHz:

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

Frequency range 1 GHz - 40 GHz:

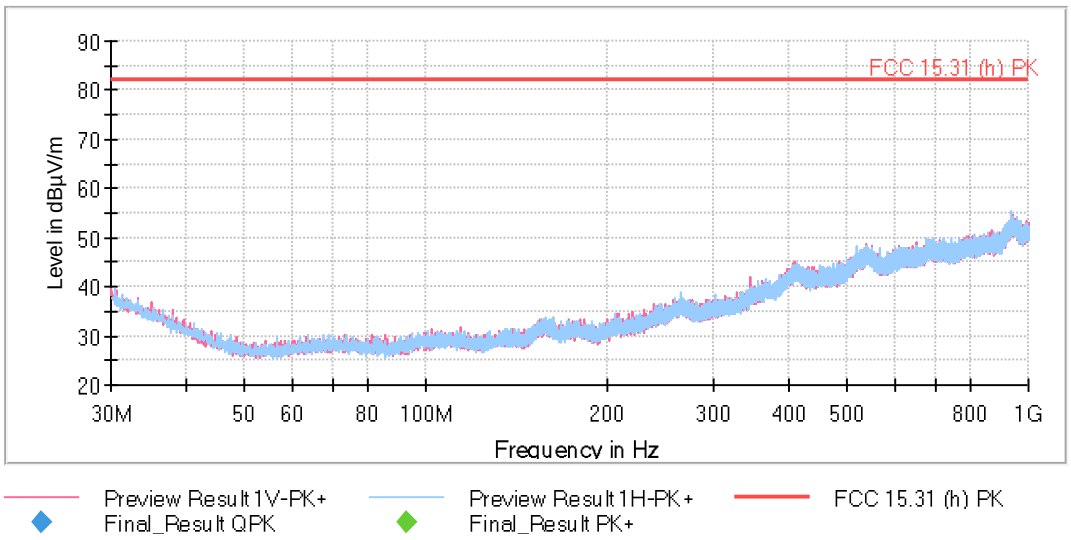
No spurious frequencies at less than 20 dB below the limit.

Verdict

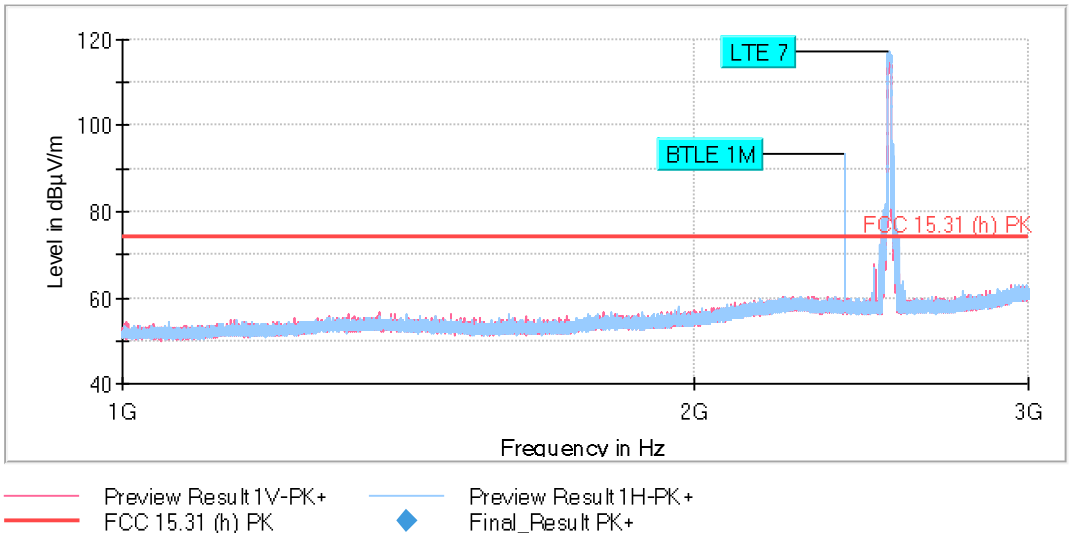
Pass

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
30 MHz - 1 GHz	30,312 kHz	PK+	100 kHz	1 s	0 dB
1 GHz - 3 GHz	30,769 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
3 GHz - 17 GHz	140 kHz	PK+ ; AVG	1 MHz	1 s	30 dB
17 GHz - 40 GHz	766,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

FREQUENCY RANGE 30 MHz - 1 GHz:



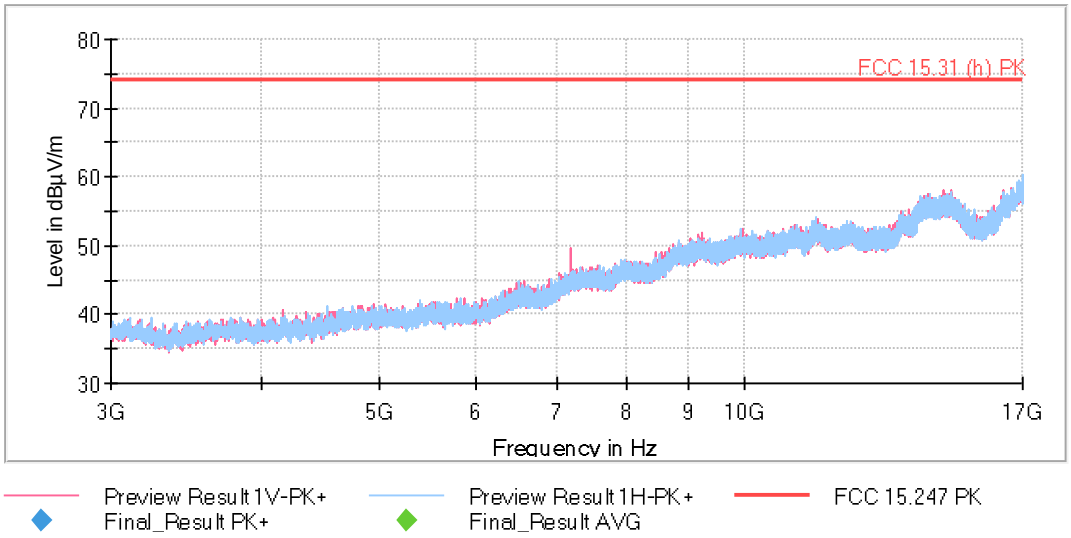
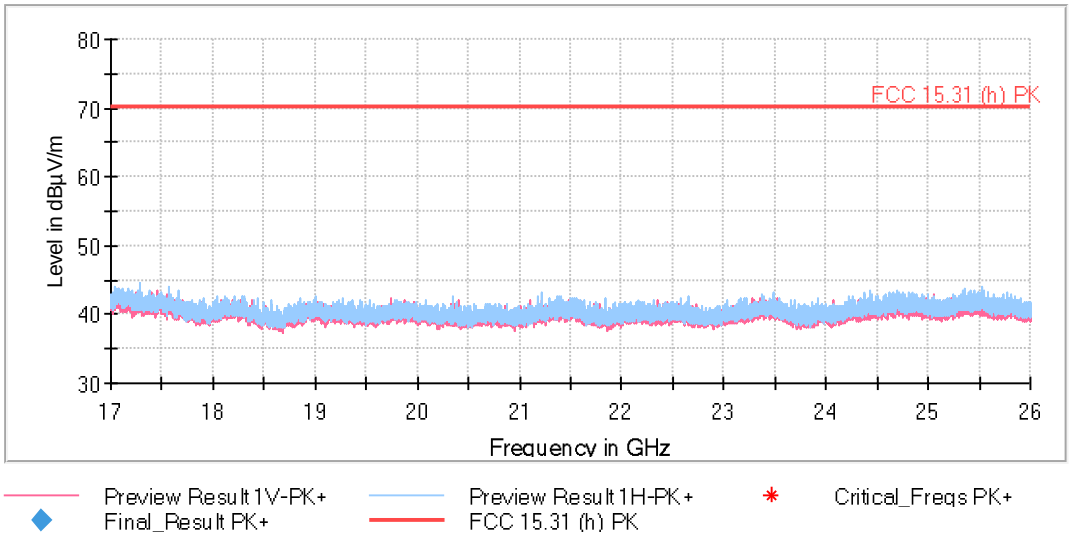
FREQUENCY RANGE 1 - 3 GHz



The peak above the limit on the left is the BLE 1M carrier frequency (2402 MHz).

The peak above the limit on the right is the LTE Band 7 carrier frequency (2535 MHz).

FREQUENCY RANGE 3 - 17 GHz



FREQUENCY RANGE 17 -26 GHz