



Solutions

TEST REPORT

Test Report No.: UL-RPT-RP-14642160-7416-FCC

Applicant * : Visteon Electronics Germany GmbH
Model No. * : DDU
FCC ID * : 2AA98-DDU
Technology * : Intermodulation:
BT & WLAN 2.4 GHz (802.11 b, g, n)
BT & WLAN 5 GHz (802.11 a, n, ac)
Test Standard(s) : **FCC Parts 15.209(a), 15.247 & 15.407**
For details of applied tests refer to test result summary

1. This test report shall not be reproduced in full or partial, without the written approval of UL International Germany GmbH.
2. The results in this report apply only to the sample tested.
3. The test results in this report are traceable to the national or international standards.
4. **Test Report Version 1.1 supersede Version 1.0 with immediate effect**
Test Report No. UL-RPT-RP-14642160-7416-FCC Version 1.1, Issue Date 13 NOVEMBER 2023 replaces
Test Report No. UL-RPT-RP-14642160-7416-FCC Version 1.0, Issue Date 29 SEPTEMBER 2023, which is no longer valid.
5. Result of the tested sample: **Pass**
6. All information marked with a (*) were provided by customer / applicant or authorized representative

Prepared by: Muhammad Faiq Khan
Title: Project Engineer
Date: 13 November 2023

Approved by: Rachid, Acharkaoui
Title: Operations Manager
Date: 13 November 2023



Deutsche
Akkreditierungsstelle
D-PL-19381-02-00

This laboratory is accredited by DAkkS.
The tests reported herein have been performed in
accordance with its' terms of accreditation.

UL INTERNATIONAL GERMANY GMBH

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1. Customer Information *

1.1. Applicant Information

Company Name:	Visteon Electronics Germany GmbH
Company Address:	Amalienbadstr.41a 76227, Karlsruhe Germany
Contact Person:	Nikhil Patil
Contact E-Mail Address:	+49-162-1332246
Contact Phone No.:	nikhil.patil@visteon.com

1.2. Manufacturer Information

Company Name:	Visteon Electronics Germany GmbH
Company Address:	Amalienbadstr.41a 76227, Karlsruhe Germany
Contact Person:	Nikhil Patil
Contact E-Mail Address:	+49-162-1332246
Contact Phone No.:	nikhil.patil@visteon.com

2. Summary of Testing

2.1. General Information

Applied Standards

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Sections 15.209
Specification Reference:	47CFR15.407
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart E (Unlicensed National Information Infrastructure Devices) – Sections 15.407

Location

Location of Testing:	UL International Germany GmbH Hedelfinger Strasse. 61, 70327 Stuttgart, GERMANY
Registration Number:	399704

Date Information

Order Date:	05 January 2023
EUT Arrived:	19 June 2023
Test Dates:	12 September 2023 to 14 September 2023
EUT Returned:	-/-

2.2. Summary of Test Results

DIGITAL TRANSMISSION SYSTEMS (DTS): 2400-2483.5 MHz					
FCC Part 15 Clause	Compliance Test Description	Test Result			
		C	N.C.	N.P.	N.A.
15.247(d) & 15.209(a) 15.407(b)/15.209(a)	Transmitter Radiated Emissions & Transmitter Out of Band Radiated Emissions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C: COMPLIED N.C.: NOT COMPLIED N.P.: NOT PERFORMED N.A.: NOT APPLICABLE					
<p>Decision rule: If the decision rule is not included in the applied customer specification or testing standard, the binary statement for simple acceptance, as defined in ILAC G8: 2019 Section 4.2.1, is applied as the decision rule for a pass/ fail statement. If the measured value is on the limit, the result is defined as a pass. In this case the risk of a false positive is 50%. For further information regarding risk assessment refer to ILAC G8: 2019.</p>					

Note(s):

1. The EUT is vehicular equipment and will be powered by the battery of the vehicle, therefore no AC conducted emission tests are required.
2. According to customer request Intermodulation only Radiated emissions were done on the worst-case modes for the BT BR/EDR, WLAN 2.4 GHz and WLAN 5GHz technologies.

2.3. Methods and Procedures

Reference:	ANSI C63.10-2013
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Reference:	FCC KDB 558074 D01 DTS Meas. Guidance v05r02 April 2, 2019
Title:	Guidance for compliance measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under Section 15.247 of the FCC rules
Reference:	FCC KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 December 14, 2017
Title:	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT) *

Brand Name:	VISTEON
Model Name or Number:	DDU
Test Sample Serial Number:	DDU-ADV, ADV200008 (Radiated Test Sample)
Hardware Version Number:	000C
Firmware Version Number:	n/a
FCC ID:	2AA98-DDU

3.2. Description of EUT *

The equipment under test was an In-Vehicle-Infotainment, contains Model Name: DDU supporting Bluetooth BR/EDR, WLAN 2.4 GHz and WLAN 5GHz operations.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing *

Category of Equipment:	WLAN 2.4 GHz (IEEE 802.11b, g, n)		
Type of Radio Device:	Transceiver		
Power Supply Requirement(s):	Nominal	28V DC via external power supply	
Tested Data rate:	802.11g	54 Mbps	
Modulation Type:	DSSS, OFDM		
Nominal Channel Bandwidth:	20 MHz,		
Declared Antenna Gain:	0 dBi		
Antenna Type:	External Antenna		
Antenna Details:	Impedance 50 Ohms		
Transmit Frequency Range:	2412 MHz to 2462 MHz		
Transmit Channels Tested: BW 20MHz	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	1 (Note 1)	2412
Technology Tested:	WLAN (IEEE 802.11a,n,ac) / Digital Transmission System		
Type of Unit:	Transceiver		
Supported Modulation Types:	OFDM		
Tested Data rates:	802.11a	48 Mbit/s	
Declared Antenna Gain:	0 dBi		
Antenna Type:	External Antenna		
Antenna Details:	Impedance 50 Ohms		
Transceiver Frequency Band:	5150 MHz to 5250 MHz [U-NII-1 Band]		
Nominal Channel Bandwidth	20 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Middle	44 (Note 1)	5220
Technology Tested:	Bluetooth – BR/EDR (FHSS)		
Mode(s):	Basic Rate (BR)	Enhanced Data Rate (EDR)	
Modulation(s):	GFSK	$\pi/4$ -DQPSK	8DQPSK
Packet Type (s):	DH1 (1 Mbit/s)		
Declared Antenna Gain:	0 dBi		
Antenna Type:	External Antenna		
Antenna Details:	Impedance 50 Ohms		
Operating Frequency Range:	2402 MHz to 2480 MHz		
Channel Spacing:	1 MHz		
Transmit Channels Tested:	Channel ID	RF Channel	Frequency (MHz)
	Middle	38 (Note 1)	2440
(Note 1) Only the worst-case data rates were tested according to the original filing.			

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

A. Support Equipment (In-house)

Item	Description	Brand Name	Model Name or Number	Serial Number
1	Laptop with Qualcomm Radio Control Tool QRCT Ver 4.0.211.0	HP	Probook 650 G1	5CG6143YWB

B. Support Equipment (Manufacturer supplied) *

Item	Description	Brand Name	Model Name or Number	Serial Number
1	Driver Truck Display With Antenna	Visteon	Scania 2886824	-/-

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

Transmitter / Modulated Carrier Continuous Transmissions Mode:

- BT-BR Mode / Packet Type: 1DH1 / Hopping OFF/ MAX PWR 9 / Middle Channel + WLAN 2.4GHz - 802.11g | 20 MHz | No-HT | 54 Mbps | Bottom Channel | Power 16 |
- BT-BR Mode / Packet Type: 1DH1 / Hopping OFF/ MAX PWR 9 / Middle Channel + WLAN 5 GHz - 802.11a-Mode | 48 Mbps | Power Level 13 |

4.2. Configuration and Peripherals

- The customer supplied document containing the setup instructions "Procedure_for_running_RF_test_using_QRCT_Scania.pdf" was used for configuration.

EUT Power Supply:

- The EUT was powered with 28V DC via an external AC/DC power supply

Test Mode Activation:

- The EUT can be connected with the Test laptop via USB cables supplied by the customer.
- The test modes were activated by Qualcomm Radio Control Tool.

Radiated Measurements:

- Radiated measurements were performed with the radiated test sample with the external antenna.
- The EUT with its external antenna was evaluated for the worst-case position w.r.t to maximum radiated power measured and following position of the EUT and antenna was found out to be the worst case. Therefore, this report includes relevant results.
 - Worst-case: EUT laying and the external antenna in standing position
- Radiated measurements below 30 MHz were performed with the EUT positioned on the turn table and rotating 360 degrees while the loop antenna height was set at 100 cm.
- Radiated measurements above 30 MHz were performed with the EUT positioned on the turn table and rotating 360° while the antenna height varies from 1 to 4 m over the measurement frequency range.
- R&S® EMC32 V11.30 Software was used for the Radiated spurious emission measurements.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to Section 6 *Measurement Uncertainty* for details.

In accordance with DAkkS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

5.2. Test Results

5.2.1. Transmitter Radiated Emissions

Test Summary:

Test Engineer:	Muhammad Faiq Khan	Test Date:	14 September 2023
Test Sample Serial Number:	DDU-ADV, ADV200008 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

FCC Reference:	Parts 15.247(d), 15.407(b)(1),(9) & 15.209(a)
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4. & FCC KDB 558074 Sections 8.5 & 8.6 referencing ANSI C63.10 Sections 11.11 and 11.12 ANSI C63.10:2013 Sections 6.3 and 6.4
Frequency Range	9 kHz to 30 MHz

Environmental Conditions:

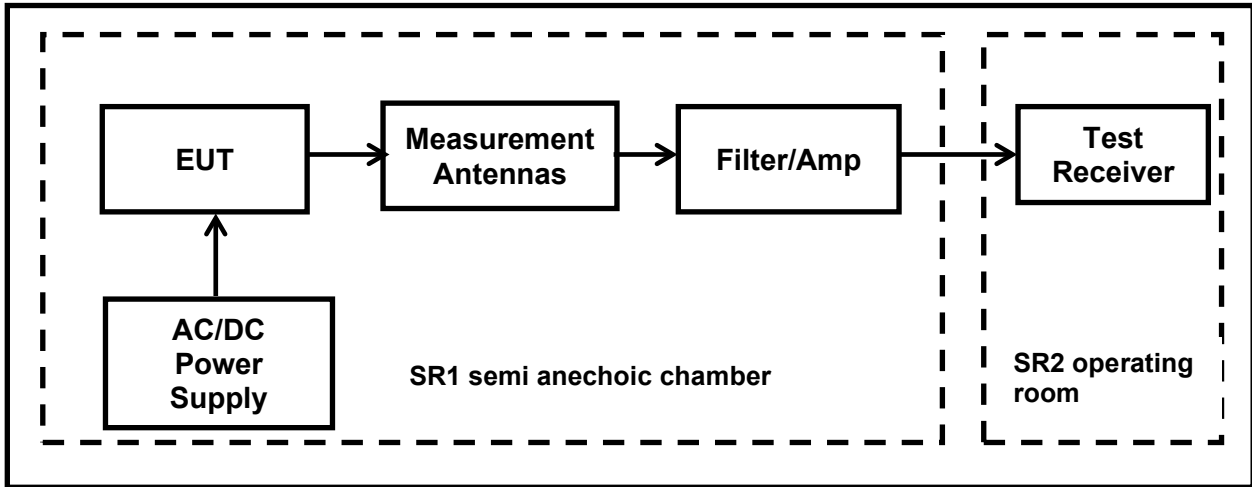
Temperature (°C):	25.8
Relative Humidity (%):	51.1

Notes:

- In accordance with FCC KDB 414788 D01 Radiated Test Site & ANSI C63.10 clause 5.2 an alternative test site that can demonstrate equivalence to an open area test site may be used. Therefore, the measurement was performed in a Semi Anechoic Chamber. (The OATS / SAC comparison data is available upon request).
- The limits are specified at a test distances of 30 and 300 metres. However, as specified in FCC Section 15.31 (f)(2) & ANSI C63.10 clause 6.4.3, measurements may be performed at a closer distance and the measured level extrapolated to the specified measurement distance using the method described in clauses 6.4.4, specifically sub-clause 6.4.4.1 which specifies that the measured level shall be extrapolated to the specified distance by conservatively presuming that the field strength decays at 40 dB/decade.
Therefore, measurements were performed at a measurement distance of 3 m.
- Therefore, the limit values are extrapolated to a measurement distance of 3 m.
 - 9 kHz- 490 kHz: limits extrapolated from 300 m to 3 m by adding 80 dB at 40 dB /decade.
 - 490 kHz-1705 kHz: limits extrapolated from 30 m to 3 m by adding 40 dB at 40 dB /decade.
- Measurements below 30 MHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) at a distance of 3 m. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. The measurement loop antenna height was 100 cm.
- The radiated emissions measurements were performed with EUT set to the following worst-case mode.
 - BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel
 - BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel
- The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
- Pre-scans were performed, and markers placed on highest measured levels. Test receiver was set to:
 - Frequency range: 9 kHz-150 kHz: RBW: 1 kHz /VBW: 3 kHz
 - Frequency range: 150 kHz – 30 MHz: RBW: 10 kHz /VBW: 30 kHz
 - Detector: Max-Peak detector
 - Trace Mode: Max Hold

Transmitter Radiated Emissions (continued)

Test Setup:



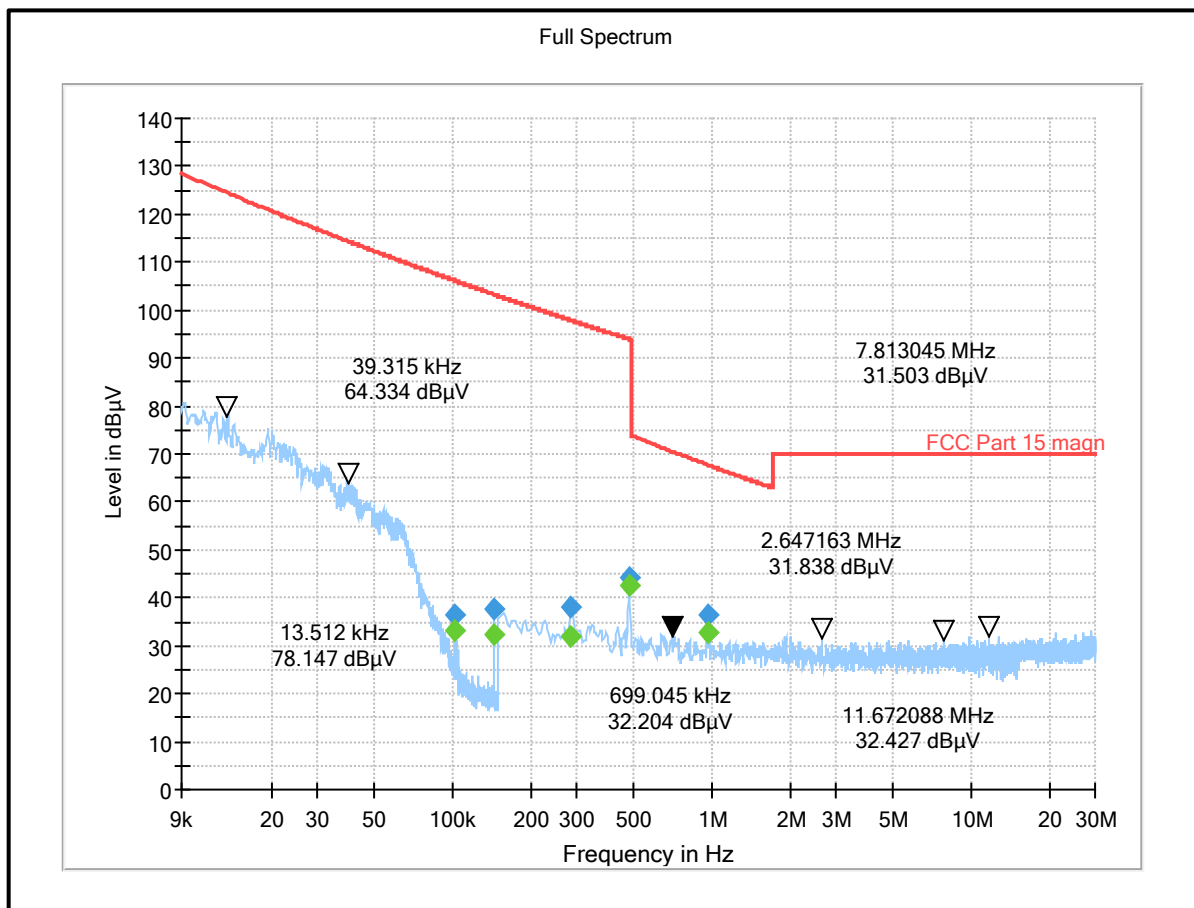
Transmitter Radiated Emissions (continued)

Results:

**BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel +
WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel**

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
0.101778	90° to the EUT	36.61	106.16	69.55	Complied
0.144783	0° to the EUT	37.83	103.25	65.42	Complied
0.285608	0° to the EUT	38.00	97.87	59.87	Complied
0.480750	0° to the EUT	44.36	93.94	49.58	Complied
0.960338	0° to the EUT	36.46	67.74	31.28	Complied

Plot: 9 kHz – 30 MHz



Result: Pass

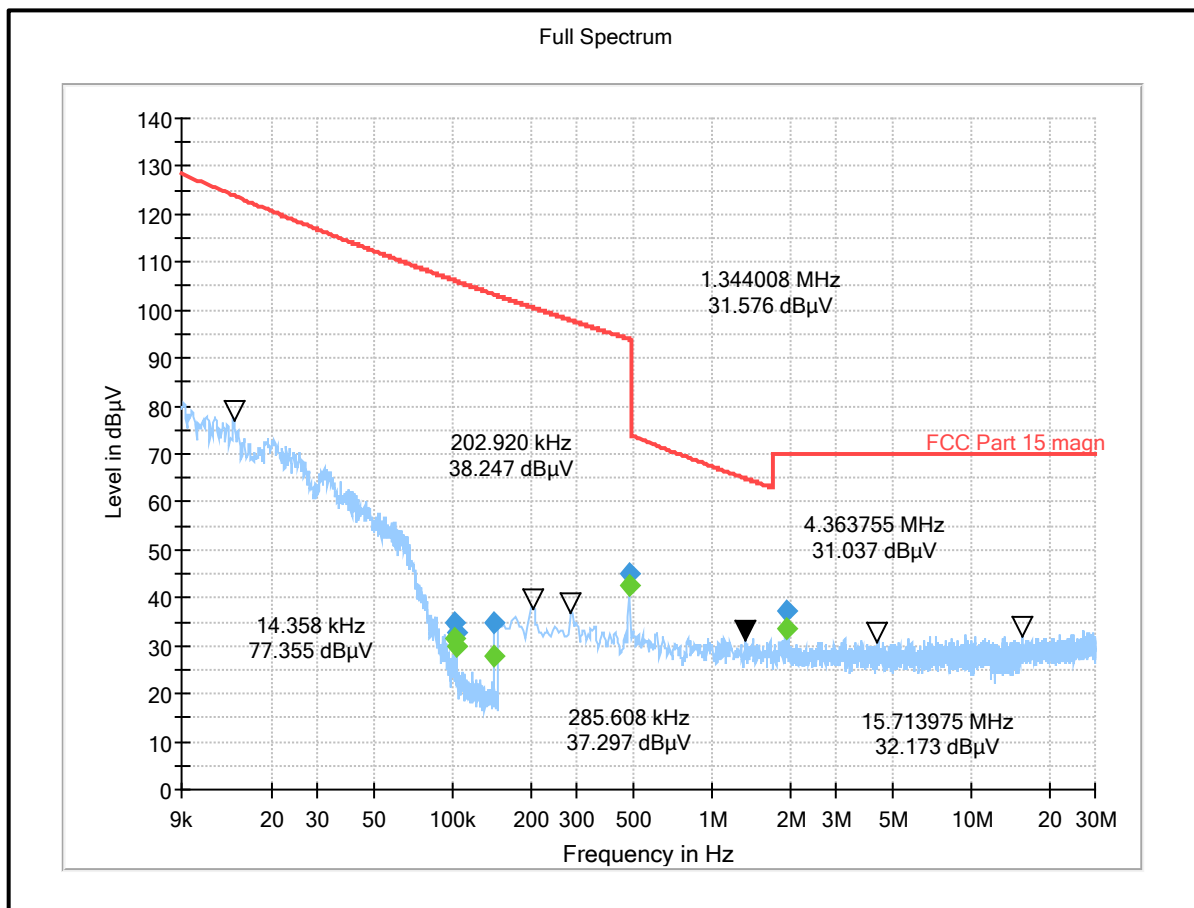
Transmitter Radiated Emissions (continued)

Results:

**BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel +
WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel**

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
0.101778	90° to the EUT	34.95	106.16	71.21	Complied
0.103823	0° to the EUT	32.80	105.99	73.19	Complied
0.144854	0° to the EUT	34.89	103.25	68.36	Complied
0.480750	0° to the EUT	44.93	93.94	49.01	Complied
1.922820	0° to the EUT	37.43	70.00	32.57	Complied

Plot: 9 kHz – 30 MHz



Result: **Pass**

Transmitter Radiated Emissions (continued)

Test Summary:

Test Engineer:	Muhammad Faiq Khan	Test Date:	14 September 2023
Test Sample Serial Number:	DDU-ADV, ADVC200008 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

FCC Reference:	Parts 15.247(d), 15.407(b)(1),(9) & 15.209(a)
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3 & II .G.4 & FCC KDB 558074 Sections 8.5 & 8.6 referencing ANSI C63.10 Sections 11.11 and 11.12 ANSI C63.10:2013 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

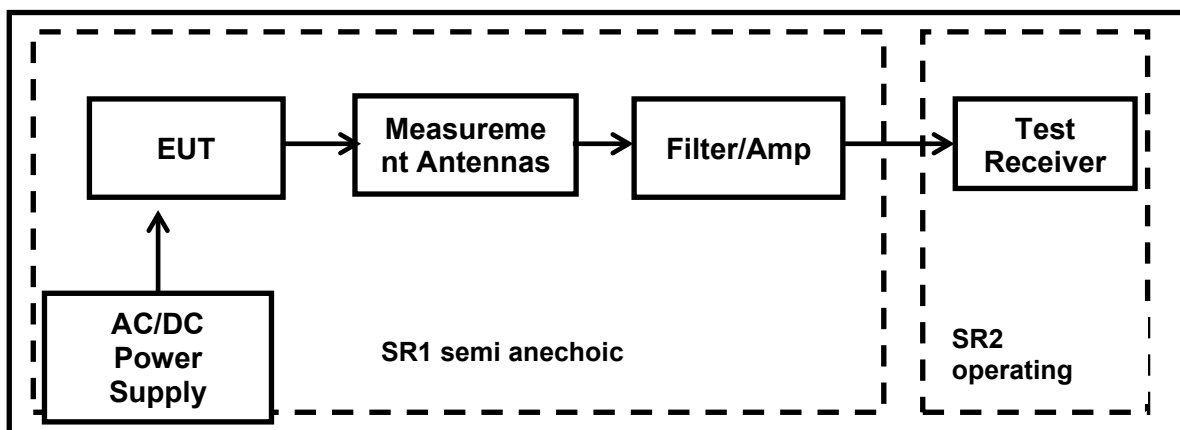
Environmental Conditions:

Temperature (°C):	25.8
Relative Humidity (%):	51.1

Note(s):

- Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
- The radiated emissions measurements were performed with EUT set to the following worst-case mode.
 - BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel
 - BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel
- Pre-scans were performed, and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
- The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
- All other emissions shown on the pre-scan plot were investigated and found to be below the measurement system noise floor.

Test Setup:

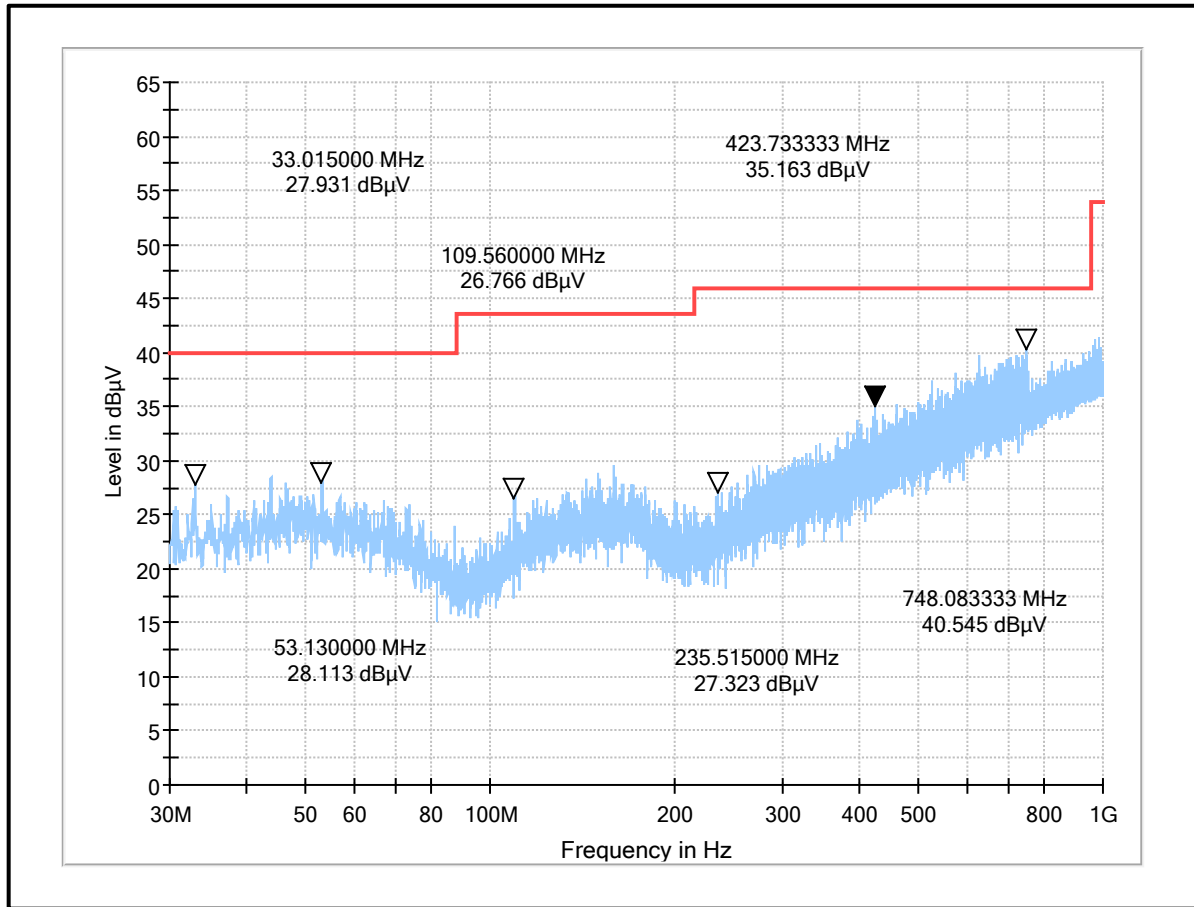


Transmitter Radiated Emissions (continued)

Results: BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel

Frequency (MHz)	Antenna Polarization	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
All emissions were below the level of the measurement system noise floor.					

Plot: 30 MHz – 1GHz



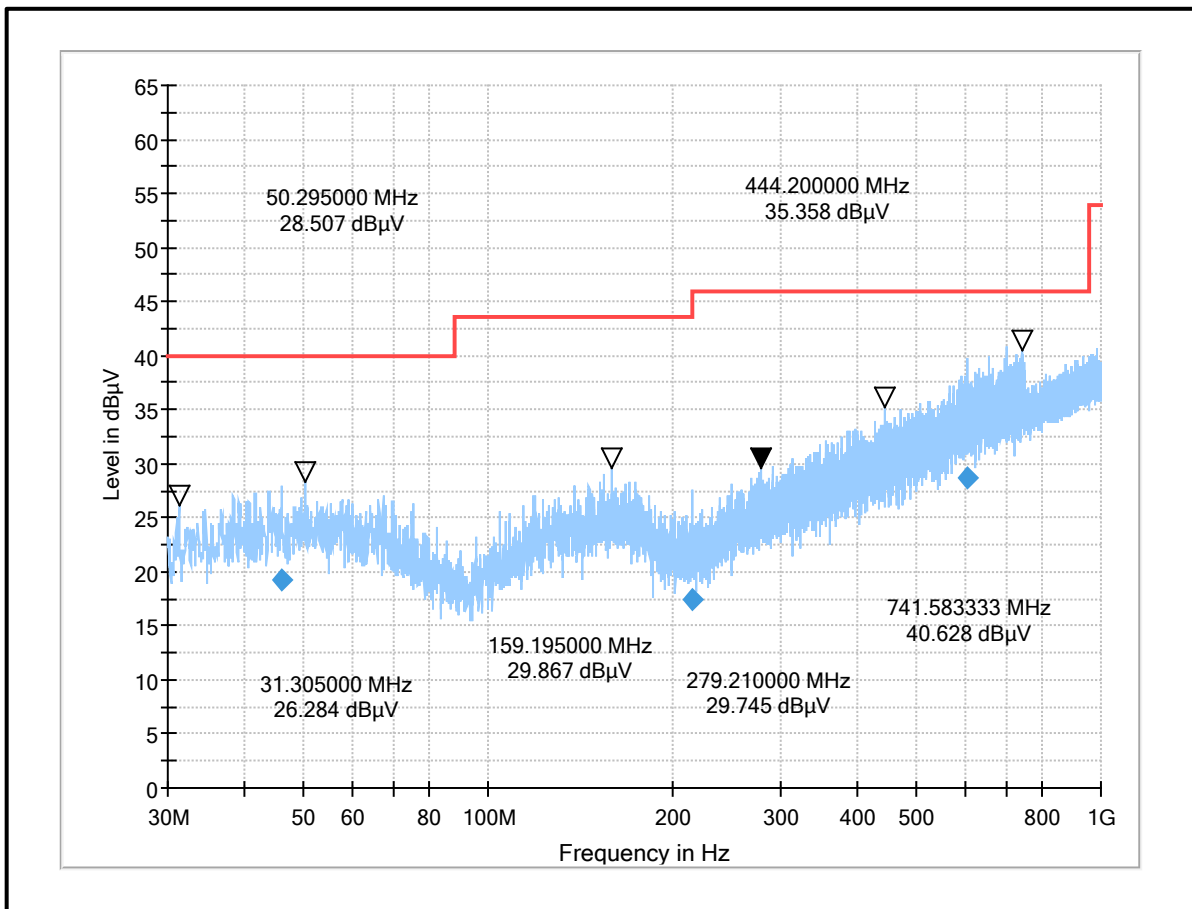
Result: Pass

Transmitter Radiated Emissions (continued)

Results: BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
46.110000	Horizontal	19.29	40.00	20.71	Complied
215.355000	Vertical	17.34	43.50	26.16	Complied
605.541667	Vertical	28.73	46.00	17.27	Complied

Plot: 30 MHz – 1GHz



Result: Pass

Transmitter Radiated Emissions (continued)**Test Summary:**

Test Engineer:	Muhammad Faiq Khan	Test Date:	12 September 2023
Test Sample Serial Number:	DDU-ADV, ADV200008 (Radiated Test Sample)		
Test Site Identification	SR 1/2		

FCC Reference:	Parts 15.247(d), 15.407(b)(1),(8) & 15.209(a)
Test Method Used:	FCC KDB 789033 II .G.1, II .G.2, II .G.3, II .G.5 &, II .G.6 & FCC KDB 558074 Sections 8.5 & 8.6 referencing ANSI C63.10 Sections 11.11 and 11.12 ANSI C63.10:2013 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 26.5/40 GHz

Environmental Conditions:

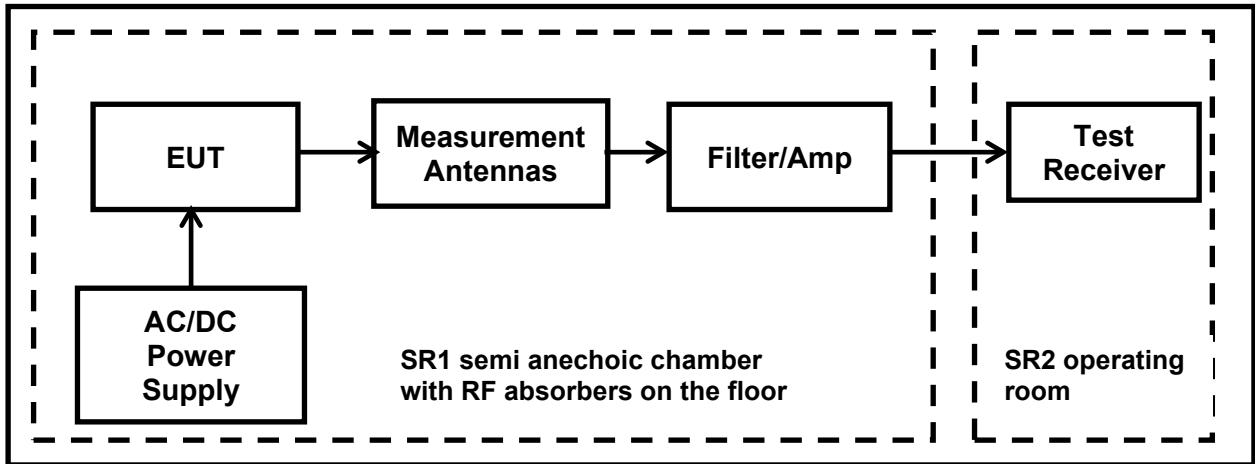
Temperature (°C):	26.1
Relative Humidity (%):	53.5

Notes:

- Pre-scans above 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) with RF absorbers on the floor at a distance of 3 m. The EUT was placed at a height of 1.5 m above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 m above the test chamber floor, in line with the EUT. Final measurements above 1 GHz were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) with absorber on the floor at a distance of 3 m. The EUT was placed at a height of 1.5 m above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 m to 4 m.
- The radiated emissions measurements were performed with EUT set to the following worst-case mode.
 - BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel
 - BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel
- Pre-scans were performed, and a marker placed on the highest measured level of the appropriate plot. The test receiver resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz the sweep time was set to auto.
- The emissions shown at frequencies approximately 2.4 GHz to 2.4835 GHz and 5150 MHz – 5350 MHz on the 1 GHz to 18 GHz plots are the EUT fundamental for the tested channel.
- The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
- In accordance with ANSI C63.10-2013 Section 5.3.3 & 6.5.3 measurements above 18 GHz were performed at closer distance (1 m); because at specified measurement distance (3m) for compliance the instrumentation noise floor was typically close to the radiated emission limit.
- For frequency range between 18 GHz and 40 GHz, no critical emissions were found. All emissions shown on the pre-scans were investigated and found to be below the noise floor of the measurement system

Transmitter Radiated Emissions (continued)

Test Setup:

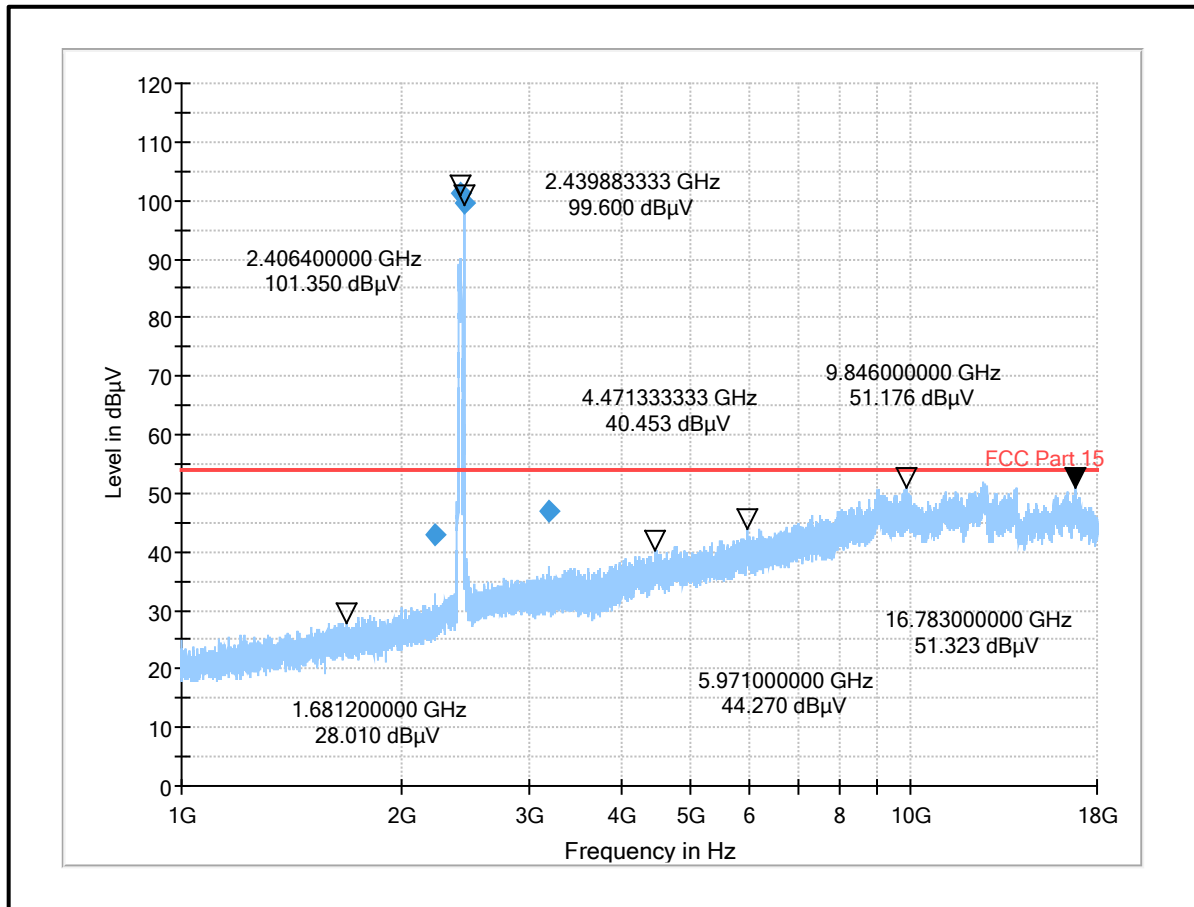


Transmitter Radiated Emissions (continued)

Results: BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel

Frequency (MHz)	Antenna Polarization	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
2229.800000	Horizontal	42.81	54.00	11.19	Complied
3180.833333	Horizontal	47.05	54.00	6.95	Complied

Plot: 1 GHz – 18 GHz



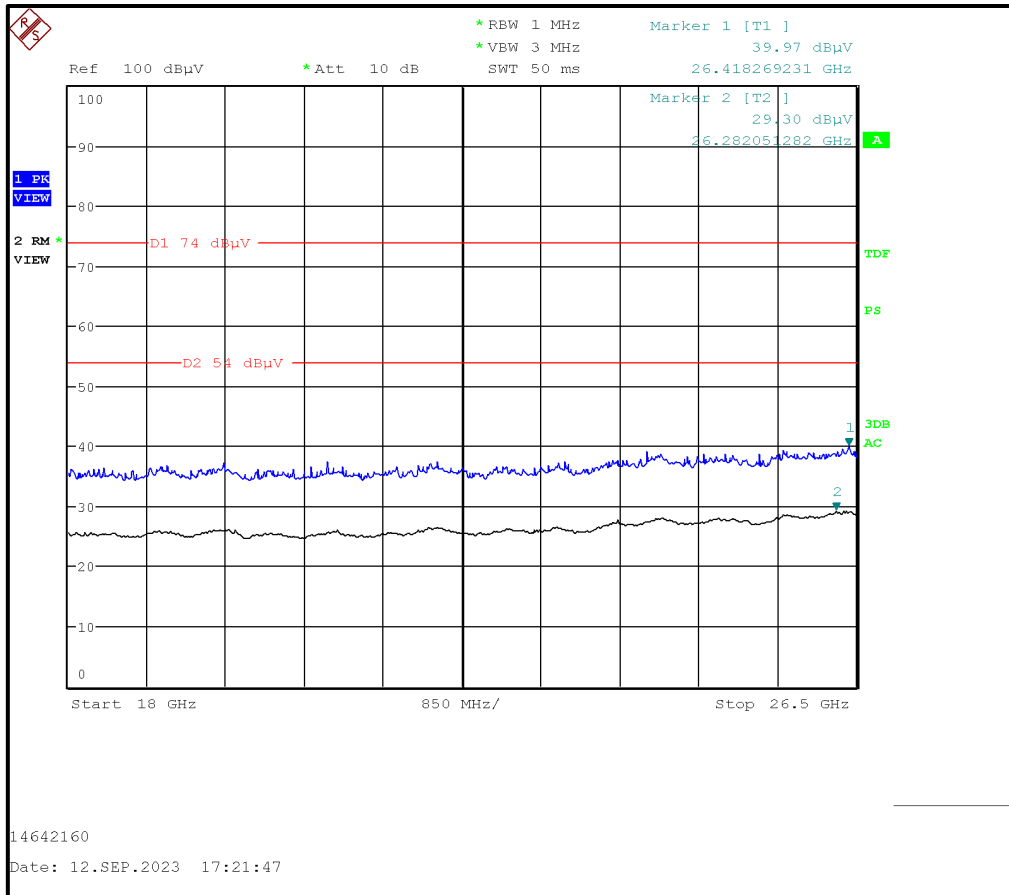
Result: Pass

Transmitter Radiated Emissions (continued)

Results: BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 2.4 GHz | g-Mode | 20 MHz | 54 Mbps | Bottom channel

Frequency (MHz)	Antenna Polarization	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
All emissions were below the level of the measurement system noise floor.					

Plot: 18 GHz – 26.5 GHz



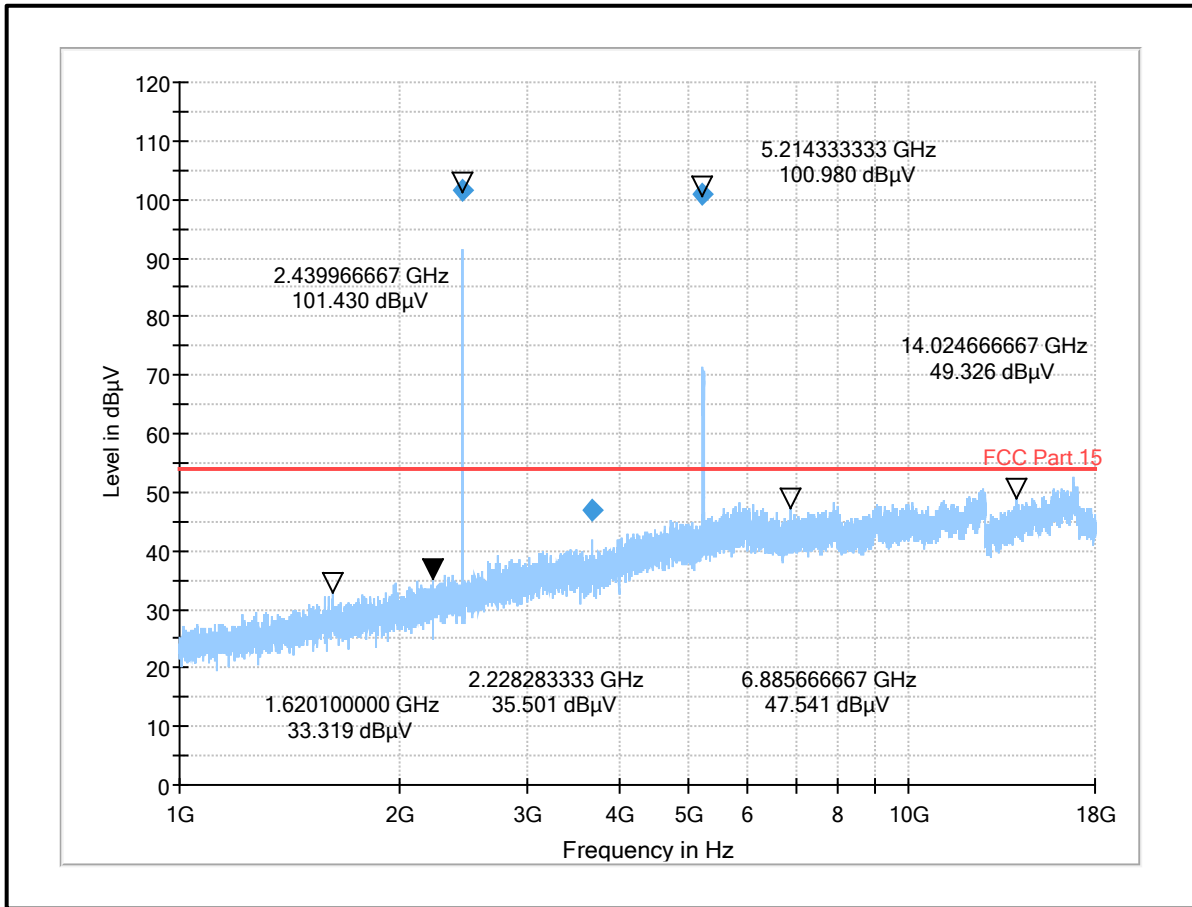
Result: Pass

Transmitter Radiated Emissions (continued)

Results: BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel

Frequency (MHz)	Antenna Polarization	Peak Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
3682.950000	Horizontal	46.83	54.00	7.17	Complied

Plot: 1 GHz – 18 GHz



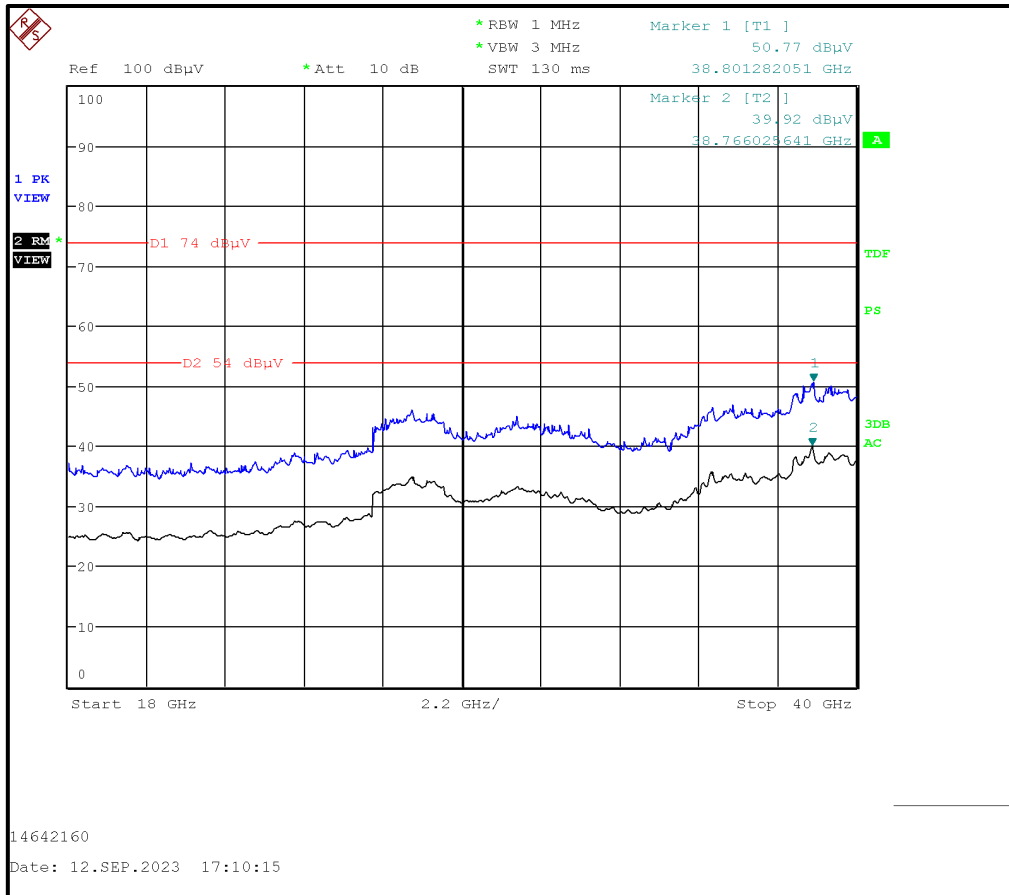
Result: Pass

Transmitter Radiated Emissions (continued)

Results: BT-EDR Mode | Packet Type: 1DH1 | Hopping OFF | MAX PWR 9 | Middle Channel + WLAN 5 GHz | a-Mode | 20 MHz | 48 Mbps | Middle channel

Frequency (MHz)	Antenna Polarization	Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
All emissions were below the level of the measurement system noise floor.					

Plot: 18 GHz – 40 GHz



Result: Pass

6. Measurement Uncertainty

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Confidence Level (%)	Calculated Uncertainty
Radiated Spurious Emissions	95%	±3.10 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

7. Used equipment

Test site: SR 1/2

ID	Manufacturer	Type	Model	Serial	Calibration Date	Cal. Cycle (months)
1	Rohde & Schwarz	Antenna, Loop	HFH2-Z2	831247/012	18/07/2023	36
377	BONN Elektronik	Amplifier, Low Noise Pre	BLMA 0118-1A	025294B	18/07/2023	12
423	Bonn Elektronik	Amplifier, Low Noise Pre	BLMA 1840-1A	55929	18/07/2023	12
460	Deisel	Turntable	DT 4250 S	n/a	n/a	n/a
465	Schwarzbeck	Antenna, Trilog Broadband	VULB 9168	9168-240	02/09/2020	42
495	Rohde & Schwarz	Antenna, log. - periodical	HL050	100296	06/08/2021	36
496	Rohde & Schwarz	Antenna, log. - periodical	HL050	100297	22/08/2022	24
588	Maturo	Controller	NCD	029/7180311	n/a	n/a
591	Rohde & Schwarz	Receiver	ESU 40	100244/040	13/07/2023	12
669	Rohde & Schwarz	EMI Test Receiver	ESW 44	103087	13/07/2023	18
607	Schwarzbeck	Antenna broadband horn antenna	BBHA 9170	9170-561	15/10/2019	48
608	Rohde & Schwarz	Switch Matrix	OSP 120	101227	lab verification	n/a
628	Maturo	Antenna mast	CAM 4.0-P	224/19590716	n/a	n/a
629	Maturo	Kippeinrichtung	KE 2.5-R-M	MAT002	n/a	n/a
-/-	Testo	Thermo-Hygrometer	608-H1	01	lab verification	n/a
328	SPS	AC/DC power distribution system	PAS 5000	A2464 00/2 0200	lab verification	n/a
1603665	Siemens Matsushita Components	semi-anechoic chamber SR1/ 2	-/-	B83117-A1421-T161	n/a	n/a
681	Maturo	Antenna mast, tilting	BAM4.5-P	402/0718.1	n/a	n/a

8. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	29	-	Initial Version
Test Report Version 1.1 supersede Version 1.0 with immediate effect Test Report No. UL-RPT-RP-14642160-7416-FCC Version 1.1, Issue Date 13 NOVEMBER 2023 replaces Test Report No. UL-RPT-RP-14642160-7416-FCC Version 1.0, Issue Date 29 SEPTEMBER 2023, which is no longer valid.			
1.1	as below	as below	Current Version
	6	2.2	Notes updated
	7	3.2	Description of EUT updated
	8	3.5	Support equipment (Manufacturer supplied) updated
	10	4.2	Radiated measurements notes updated

APPENDIX A: UNTESTED VARIANTS

The tested EUT corresponds to the sample DDU-ADV (with part number VPPFEF-20B337-**) which was declared to be the worst-case scenario by customer. The other possible samples associated to model DDU are as follows:

Sample reference	Visteon Part No
DDU-MID	VPPFEF-20B337-**
DDU-BSC	VPPFEF-20B337-**

--- END OF REPORT ---