



Solutions

TEST REPORT

Test Report No.: UL-RPT-RP-13935019-516-3-FCC/ISED

Applicant * : EVBox North America Inc

Model No. * : L24871NAC00


HMN: * : G5PL


FCC ID / ISED IC: * : WLAN / BT-LE -Contains FCC ID: 2A3C7-WIFIG5P
Contains IC: 27924-WIFIG5P
NFC-Contains FCC ID: 2A3C7-HMIGP5
Contains IC: 27924-HMIG5P
Cellular-Contains FCC ID: N7NHL78
Contains IC: 2417C-HL78

Technology * : Mode 1: WLAN 2.4 GHz + NFC + Cellular (LTE Band 4 & 12)
Mode 2: WLAN 5 GHz + NFC + Cellular (LTE Band 13)
Mode 3: BLE + NFC + Cellular (LTE Band 4 & 12)

Test Standard(s) : **FCC Parts 15.207, 15.209(a), 15.247, 15.225 & 27.53**
Innovation, Science and Economic Development Canada
RSS-247 Issue 2 February 2017
RSS-Gen Issue 5 April 2018
RSS-130 – Issue 2 February 2019
RSS-132 – Issue 3 January 2013
RSS-133 Issue 6 January 2018
RSS-139 – Issue 4 September 2022 &
RSS-210 Issue 10 December 2019
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-13935019-516-3 Version 1.1, Issue Date 08 April 2023 replaces
Test Report No. UL-RPT-RP-13935019-516-3 Version 1.0, Issue Date 01 September 2022, which is no longer valid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: 08 April 2023


Approved by: Rachid Acharkaoui
Title: Operations Manager
Date: 08 April 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.

This page has been left intentionally blank.

Table of Contents

1. Customer Information *	4
1.1. Applicant Information	4
1.2. Manufacturer Information	4
2. Summary of Testing	5
2.1. General Information	5
Location	6
Date information	6
2.2. Summary of Test Results	7
2.3. Methods and Procedures	8
2.4. Deviations from the Test Specification	8
3. Equipment Under Test (EUT)	9
3.1. Identification of Equipment Under Test (EUT) *	9
3.2. Description of EUT *	9
3.3. Modifications Incorporated in the EUT	9
3.4. Additional Information Related to Testing *	10
3.5. Support Equipment	12
A. Support Equipment (In-house)	12
B. Support Equipment (Manufacturer supplied)	12
4. Operation and Monitoring of the EUT during Testing	13
4.1. Operating Modes	13
4.2. Configuration and Peripherals	14
5. Measurements, Examinations and Derived Results	15
5.1. General Comments	15
5.2. Test Results	16
5.2.1. Transmitter AC Conducted Spurious Emissions	16
5.2.2. Transmitter Radiated Emissions / Transmitter out of band Radiated Emission	20
6. Measurement Uncertainty	39
7. Used equipment	40
8. Report Revision History	41

1. Customer Information *

1.1.Applicant Information

Company Name:	EVBox North America Inc
Company Address:	1930 Innovation Way, Suite 200, Illinois, Libertyville, USA
Contact Person:	Susan Eckman
Contact E-Mail Address:	susan.eckman@evbox.com
Contact Phone No.:	+1 630 209 9060

1.2.Manufacturer Information

Company Name:	EVBox BV
Company Address:	Kabelweg 47 1014 BA Amsterdam The Netherlands
Contact Person:	Marco Farina
Contact E-Mail Address:	marco.farina@evbox.com
Contact Phone No.:	+31620549130

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.407
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart E (Unlicensed National Information Infrastructure Devices) – Section 15.407
Specification Reference:	47CFR15.207 and 47CFR15.209
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Sections 15.207 and 15.209
Specification Reference:	47CFR27.53
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 27 Subpart Subpart C - Technical Standards - Sections 27.53
Specification Reference:	47CFR15.225
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Radio Frequency Devices) - Section 15.225
Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.247
Specification Reference:	RSS-130 Issue 2
Specification Title:	Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz
Specification Reference:	RSS-132 – Issue 3 January 2013
Specification Title:	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869- 894 MHz
Specification Reference:	RSS-133 – Issue 6
Specification Title:	2 GHz Personal Communications Services
Specification Reference:	Rss-139 - Issue 4
Specification Title:	Advanced Wireless Services Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz
Specification Reference:	RSS-210 Issue 10 December 2019, Amendment (April 2020)
Specification Title:	Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment Annex B-Devices operating in frequency bands for any application B.6 Band 13.110-14.010 MHz
Specification Reference:	RSS-247 Issue 2, February 2017
Specification Title:	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
Specification Reference:	RSS-Gen – Issue 5 April 2018
Specification Title:	General Requirements for Compliance of Radio Apparatus

Location

Location of Testing:	UL International Germany GmbH Hedelfinger Str. 61 70327 Stuttgart Germany
Test Firm Registration:	399704
Company Number.	22511
CABID:	DE0008

Date information

Order Date:	22 July 2021
EUT Arrived:	19 April 2022
Test Dates:	21 July 2022 to 22 July 2022
EUT Returned:	-/-

2.2. Summary of Test Results

Measurement	FCC Reference (47CFR)	ISED Reference (RSS-)	Complied	Did not comply	Not performed	Not applicable
Transmitter AC Conducted Emissions	Part 15.207	RSS-Gen 8.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transmitter Band Edge Radiated Emissions / Transmitter Out of Band Radiated Emission ⁽¹⁾	Part 2.1053 Part 27.53(a) Part 15.407(b) Part 15.209(a) Part 15.225(d) Part 15.247(d)	RSS-Gen 6.5,6.6,6.13,8.9 & 8.10 / RSS 130 § 4.7 RSS 132 § 5.5 RSS 133 § 6.5, RSS 139 § 6.6 RSS-210 B.6(a)(iv) RSS-247 5.5 & 6.2.1.2, 6.2.2.2, 6.2.3.2 & 6.2.4.2 & 6.13 & 8.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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.						

Note(s):

- As per applicant's declaration, the EUT is a host product integrating pre-certified radio module. Therefore, only partial intermodulation of different technologies testing is performed. For further details refer to following filings.
 Cellular (FCC ID: N7NHL78 | IC: 2417C-HL78)
 WLAN / BT-LE (FCC ID: 2A3C7-WIFIG5P | IC: 27924-WIFIG5P)
 NFC (FCC ID: 2A3C7-HMIG5P | IC: 27924-HMIG5P)

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 971168 D01 v03r01, April 9 2018
Title:	Measurement Guidance for Certification of Licensed Digital Transmitters
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
Title:	FCC KDB 996369 D04 Module Integration Guide v02 October 13, 2020
Reference:	Modular Transmitter Integration Guide Guidance for Host Product Manufacturers
Reference:	ANSI C63.26-2015
Title:	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.
Reference:	FCC KDB 971168 D01 v03r01, April 9 2018
Title:	Measurement Guidance for Certification of Licensed Digital Transmitters
Reference:	KDB 414788 D01 Radiated Test Site v01r01
Title:	TEST SITES FOR RADIATED EMISSION MEASUREMENTS

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) *

FCC:

Brand Name:	EVBox
Model Name or Number:	L24871NAC00
Test Sample Serial Number:	FCC / AT&T Sample 1
Hardware Version Number:	Com board Rev. G, US Power board Rev. F, HMI board Rev. E
Firmware Version Number:	Com board diagnostic image FW V5.0.1, HMI V1.1.0, Power v1.4.0, Safety 1.1.3
FCC ID:	WLAN / BT-LE-Contains FCC ID: 2A3C7-WIFIG5P NFC-Contains FCC ID: 2A3C7-HMIGP5 Cellular-Contains FCC ID: N7NHL78

ISED:

Brand Name:	EVBox
PMN:	WIFIG5P
Test Sample Serial Number:	FCC / AT&T Sample 1
HVIN:	WIFIG5P /
HMN:	G5PL
FVIN:	N/A
ISED ID:	WLAN / BT-LE-Contains IC: 27924-WIFIG5P NFC-Contains IC: 27924-HMIG5P Cellular-Contains IC: 2417C-HL78

3.2. Description of EUT *

The equipment under test was a stationary Level 2 Electric Vehicle Supply Equipment with Model Number: L24871NAC00, supporting NFC 13.56 MHz, Bluetooth, Bluetooth LE, WLAN 2.4 GHz, WLAN 5 GHz and Cellular technologies.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing *

Technology Tested:	Cellular LTE CAT-M1 (Band 4)		
Type of Unit:	Transceiver		
Maximum Conducted Output Power:	23.54 dBm (Note 2)		
Transmit Frequency Range:	2110 MHz – 2155 MHz (Downlink) 1710 MHz – 1755 MHz (Uplink)		
Transmit Channels Tested: LTE Band 4	Channel ID	Channel Number	Frequency (MHz)
	Bottom	20050 (Note 1) (Note 2)	1720
Antenna Type:	Printed board antenna		
Antenna Details:	Custom printed board antenna, not removable		
Declared Antenna Gain:	B4 <5.5 dBi		
Technology Tested:	Cellular LTE CAT-M1 (Band 12)		
Type of Unit:	Transceiver		
Maximum Conducted Output Power:	23.32 dBm (Note 2)		
Transmit Frequency Range:	729 MHz – 746 MHz (Downlink) 699 MHz – 716 MHz (Uplink)		
Transmit Channels Tested: LTE Band 12	Channel ID	Channel Number	Frequency (MHz)
	Bottom	23035 (Note 1) (Note 2)	701.5
Antenna Type:	Printed board antenna		
Antenna Details:	Custom printed board antenna, not removable		
Declared Antenna Gain:	B12 <2.7 dBi		
Technology Tested:	Cellular LTE CAT-M1 (Band 13)		
Type of Unit:	Transceiver		
Maximum Conducted Output Power:	23.32 dBm (Note 2)		
Transmit Frequency Range:	746 MHz – 756 MHz (Downlink) 777 MHz – 787 MHz (Uplink)		
Transmit Channels Tested: LTE Band 13	Channel ID	Channel Number	Frequency (MHz)
	Single	23230 (Note 1) (Note 2)	782
Antenna Type:	Printed board antenna		
Antenna Details:	Custom printed board antenna, not removable		
Declared Antenna Gain:	B13 <0 dBi		

Technology Tested:	WLAN 2.4 GHz (IEEE 802.11b, g, n)			
Type of Unit:	Transceiver			
Worst Case Data Rate(s): (Note 1) (Note 2)	802.11g	6 Mbps (SISO)	BPSK	
Antenna Type:	Printed board antenna			
Antenna Details:	Custom printed board antenna, not removable			
Declared Antenna Gain:	<6.1 dBi			
Maximum Conducted Power:	23.93 dBm (Note 2)			
Channel Spacing:	20 MHz			
Transmit Frequency Band:	2412 MHz to 2462 MHz			
Transmit Channels Tested:	Data rate	Bandwidth (MHz)	Channel Number	Frequency (MHz)
	802.11g	20	6	2437
Tested Technology:	NFC 13.56 MHz			
Category of Equipment:	Transceiver			
Channel Spacing:	Single channel device			
Transmit Frequency Range:	13.56 MHz			
Modulation:	ASK			
Supported Data Rates	Signal Type		Bit Rate (kb/s)	
	NFC-A		212	
Technology Tested:	Bluetooth Low Energy 4.0 / Digital Transmission System			
Type of Unit:	Transceiver			
Channel Spacing:	2 MHz			
Data Rate and Modulation:	1 Mbps		GFSK	
Measured Maximum Conducted Output Power:	5.11 dBm			
Antenna Type:	Printed board antenna			
Antenna Details:	Custom printed board antenna, not removable			
Declared Antenna Gain:	<6.1 dBi			
Transmit Frequency Range:	2402 MHz to 2480 MHz			
Transmit Channels Tested:	Channel ID	RF Channel		Frequency (MHz)
	Bottom	37		2402

Technology Tested:	WLAN (IEEE 802.11a / ac) / U-NII – 1 / 2A / 2C / 3			
Type of Unit:	Transceiver			
Modulation:	BPSK, QPSK, 16QAM & 64QAM			
Data rates:	802.11a	6 Mbps (Note 1)		
	802.11n	MCS0 (Note 1)		
Declared Antenna Gain:	Printed board antenna			
Antenna Type:	Custom printed board antenna, not removable			
Antenna Details:	<2.0 dBi			
Maximum Conducted Power:	19.96 dBm (Note 1)			
Channel Spacing:	20 MHz			
Transmit Frequency Band:	5735 MHz to 5835 MHz [U-NII-3]			
Transmit Channels Tested:	Data rate	Bandwidth (MHz)	Channel Number	Frequency (MHz)
	802.11n	20	157	5785
(Note 1) The Host Product testing has been performed on unwanted (spurious) radiated emissions on the worst-case modulation and channel per frequency range as shown in original filing.				
(Note 2) As per applicant’s declaration, the EUT is a host product integrating pre-certified radio module. Therefore, only partial testing is performed.				

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	-/-	-/-	-/-	-/-

B. Support Equipment (Manufacturer supplied)

Item	Description	Brand Name	Model Name or Number	Serial Number
1	Raspberry PI	N/A	N/A	W65
2	Ethernet Switch	D-Link	EES105E C2E	QS3P111000361
3	EVBox Certification team Windows Laptop	Dell	N/A	EVb17001260

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- ☒ Continuous Transmitting Fixed Channel Frequency Mode with Modulated Carrier
 - 802.11g | 20 MHz | 6 Mbps | Bottom Channel | PWR 12 (Note 1) (Note 2) +
 - LTE CAT-M1 Band 4 | 20 MHz | RB1 | Bottom channel | QPSK | +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |
- ☒ Continuous Transmitting Fixed Channel Frequency Mode with Modulated Carrier
 - 802.11g | 20 MHz | 6 Mbps | Bottom Channel | PWR 12 (Note 1) (Note 2) +
 - LTE CAT-M1 Band 12 | 5 MHz | RB1 | Bottom channel | QPSK | +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |
- ☒ Continuous Transmitting Fixed Channel Frequency Mode with Modulated Carrier
 - 802.11n | MCS0: | UNII-3 | 20 MHz | Power Level 12 | +
 - LTE CAT-M1 Band 13 | 10 MHz | RB1 | Bottom channel | QPSK | +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |
- ☒ Continuous Transmitting Fixed Channel Frequency Mode with Modulated Carrier
 - Bluetooth Low Energy (BLE) | PRBS9 | 1 Mbps | Maximum Power Settings +
 - LTE CAT-M1 Band 4 | 20 MHz | RB1 | Bottom channel | QPSK | +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |
- ☒ Continuous Transmitting Fixed Channel Frequency Mode with Modulated Carrier
 - Bluetooth Low Energy (BLE) | PRBS9 | 1 Mbps | Maximum Power Settings +
 - LTE CAT-M1 Band 12 | 5 MHz | RB1 | Bottom channel | QPSK | +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |

4.2.Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The applicant or manufacturer supplied test setup instructions
“DUT and testing - Board configuration and setting Quickguide Rev1.pdf” issued on 30/06/2022 was used to configure the EUT.

EUT Power Supply:

- The EUT was powered with 240V AC / 60 Hz split phase.

Test Mode Activation:

- The EUT can be connected with the Test laptop via Ethernet switch and ethernet cables supplied by the customer. The cable was used only for configuration and was removed during the measurement.
- The test modes for NFC and WLAN were activated by the terminal software “radio_cert_v12”. The commands to setup the respective modes and power were defined by the customer in the setup instructions.
- For LTE a direct communication link was setup with the Communication tester R&S CMW 500.

Radiated Measurements:

- The EUT needs to use in standing position as a used case. Therefore, this report includes relevant results.
- The position of the Antenna was 90° vertical in the z-axis from the EUT.
- 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 AC Conducted Spurious Emissions

Test Summary:

Test Engineer:	Tobias Koch	Test Date:	22 July 2022
Test Sample Serial Number:	FCC / AT&T Sample 1		
Test Site Identification	SR 7/8		

FCC Reference:	Part 15.207
Test Method Used:	ANSI C63.10 Section 6.2 / FCC KDB 174176 and notes below

Environmental Conditions:

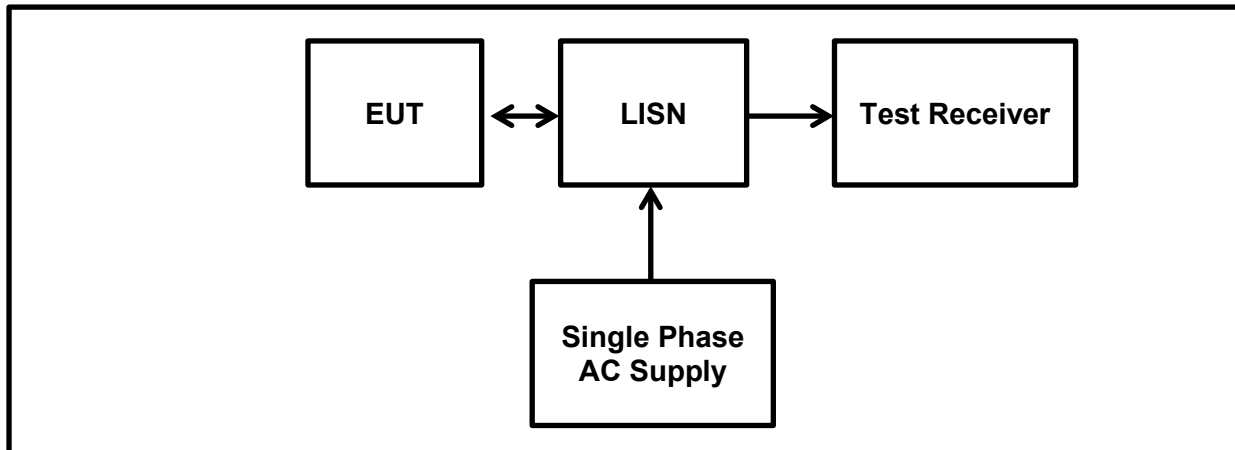
Temperature (°C):	20
Relative Humidity (%):	33

Settings of the Instrument

Detector	Quasi Peak/ Average
----------	---------------------

Note(s):

1. The EUT was powered via AC/DC power supply which was connected with the LISN during the measurement.
2. The radiated emissions measurements were performed with the EUT set to the worst-case mode.
3. Pre-scans were performed, and markers placed on the highest L1 and L2 measured levels. Final measurements were performed on the marker frequencies and the results entered into the tables below.
4. The final measured value, for the given emission, in the table below incorporates the cable loss.
5. All other emissions shown on the pre-scan plot were investigated. Only the highest 6 emissions have been reported in the tables below in accordance with ANSI C63.10 section 6.2.5.
6. The radiated emissions measurements were performed with the EUT set to the following worst-case mode simultaneously.
 - BT-EDR Mode | Packet Type: 3DH5 | Hopping On | MAX PWR 7
 - LTE B4 / B7 / B12 / B13 Test mode: a communication link with Base station (CMW 500) +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |
7. Measurements were performed in shielded room (SR7/ 8 Asset Number 1603671). The EUT was placed at a height of 80 cm above the reference ground plane and in a distance of 40 cm from the vertical ground plane at the edge of the table.
8. Measurement software used: Toyo EMI Software; CE measurement software EP5/CE Ver 4.0.1.

Transmitter AC Conducted Spurious Emissions (continued)**Test setup:**

Transmitter AC Conducted Spurious Emissions (continued)**Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s****Results: L1 / Quasi Peak / 240 VAC 60 Hz**

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.154440	L1	51.30	65.80	14.50	Complied
0.171500	L1	48.20	64.90	16.70	Complied
0.215690	L1	40.60	63.00	22.40	Complied
4.030330	L1	32.10	56.00	23.90	Complied
4.932270	L1	32.50	56.00	23.50	Complied
13.560170	L1	43.90	60.00	16.10	Complied
23.128700	L1	45.70	60.00	14.30	Complied

Results: L1 / Average / 240 VAC 60 Hz

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.154440	L1	26.10	55.80	29.70	Complied
0.171500	L1	24.00	54.90	30.90	Complied
0.215690	L1	19.80	53.00	33.20	Complied
4.030330	L1	27.70	46.00	18.30	Complied
4.932270	L1	27.90	46.00	18.10	Complied
13.560170	L1	43.50	50.00	6.50	Complied
23.128700	L1	43.00	50.00	7.00	Complied

Results: L2 / Quasi Peak / 240 VAC 60 Hz

Frequency (MHz)	Line	Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.151000	L2	52.10	65.90	13.80	Complied
0.170930	L2	48.10	64.90	16.80	Complied
0.201280	L2	42.90	63.60	20.70	Complied
0.259660	L2	34.80	61.40	26.60	Complied
3.171480	L2	31.90	56.00	24.10	Complied
5.705850	L2	34.10	60.00	25.90	Complied
7.397840	L2	34.00	60.00	26.00	Complied
10.060080	L2	37.40	60.00	22.60	Complied
23.130110	L2	44.50	60.00	15.50	Complied

Transmitter AC Conducted Spurious Emissions (continued)

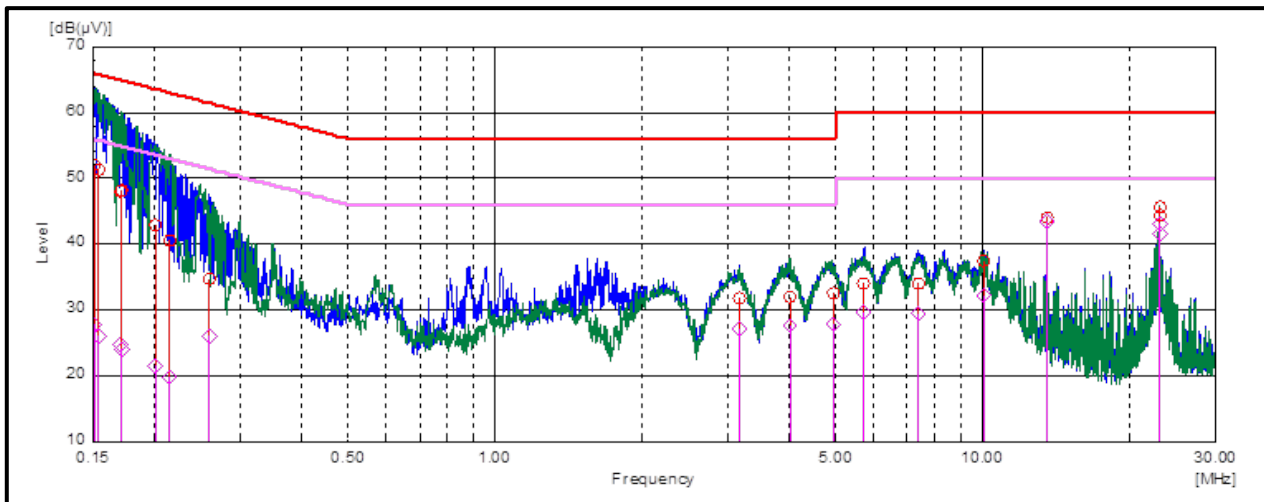
Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Results: L2 / Average / 240 VAC 60 Hz

Frequency (MHz)	Line	Level (dB μ V)	Limit (dB μ V)	Margin (dB)	Result
0.151000	L2	27.80	55.90	28.10	Complied
0.170930	L2	24.60	54.90	30.30	Complied
0.201280	L2	21.50	53.60	32.10	Complied
0.259660	L2	25.90	51.40	25.50	Complied
3.171480	L2	27.10	46.00	18.90	Complied
5.705850	L2	29.60	50.00	20.40	Complied
7.397840	L2	29.50	50.00	20.50	Complied
10.060080	L2	32.10	50.00	17.90	Complied
23.130110	L2	41.50	50.00	8.50	Complied

Result: Pass

Plot: L1 and L2 Line / 240 VAC 60 Hz



Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

5.2.2. Transmitter Radiated Emissions / Transmitter out of band Radiated Emission**Test Summary:**

Test Engineer:	Sercan Usta	Test Date:	21 & 22 July 2022
Test Sample Serial Number:	FCC / AT&T Sample 1		
Test Site Identification	SR 1/2		

FCC Reference:	Part 2.1053 & 27.53(a) & 15.407(b) & 15.209(a) & 15.225(d) & 15.247(d)
ISED Reference:	RSS-Gen 6.5,6.6,6.13,8.9 & 8.10 & RSS 130 § 4.7 & RSS 132 § 5.5 RSS 133 § 6.5 & RSS 139 § 6.6 & RSS-210 B.6(a)(iv) RSS-247 5.5 & 6.2.1.2, 6.2.2.2, 6.2.3.2 & 6.2.4.2 & 6.13 & 8.9
Test Method Used:	ANSI C63.10:2013 Sections 6.3 and 6.4
Frequency Range	9 kHz to 30 MHz

Environmental Conditions:

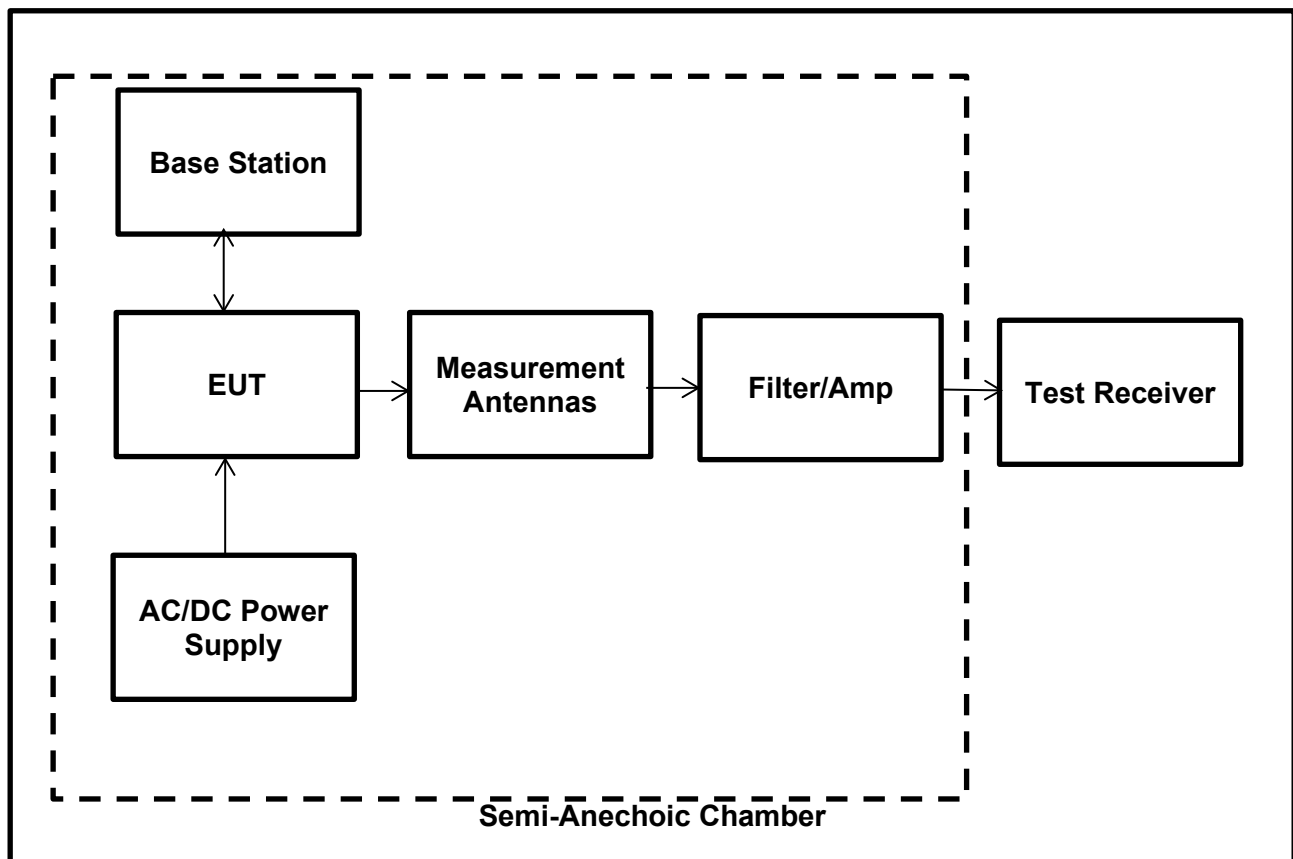
Temperature (°C):	24.0 & 24.4
Relative Humidity (%):	42.0 & 44.1

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 a 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 distance 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 FCC rule part 15.209(a) specifies limits at 300 m / 30 m in $\mu\text{V/m}$ but RSS GEN specifies limits at 300 m / 30 m in $\mu\text{A/m}$. The relevant limits are the same after accounting for E-field to H-field correction.
The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω .
For example, the measurement frequency X KHz resulted in a level of Y $\text{dB}\mu\text{V/m}$, which is equivalent to $Y - 51.5 = Z \text{ dB}\mu\text{A/m}$, which has the same margin, W dB, to the corresponding RSS-GEN Section 8.9, Table 6 limit as it has to the 15.209(a) limit.
- The radiated emissions measurements were performed with the EUT set to the following worst-case mode.
 - BT-EDR Mode | Packet Type: 3DH5 | Hopping On | MAX PWR 7
 - LTE B4 / B7 / B12 / B41 Test mode: a communication link with Base station (CMW 500) +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |

Transmitter out of Band Radiated Spurious Emission (continued)**Notes:**

7. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
8. All other emissions shown on the pre-scan plot were investigated and found to be below the measurement system noise floor.
9. Pre-scans were performed, and markers placed on the highest measured levels. The 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
 - Tracer Mode: Max Hold

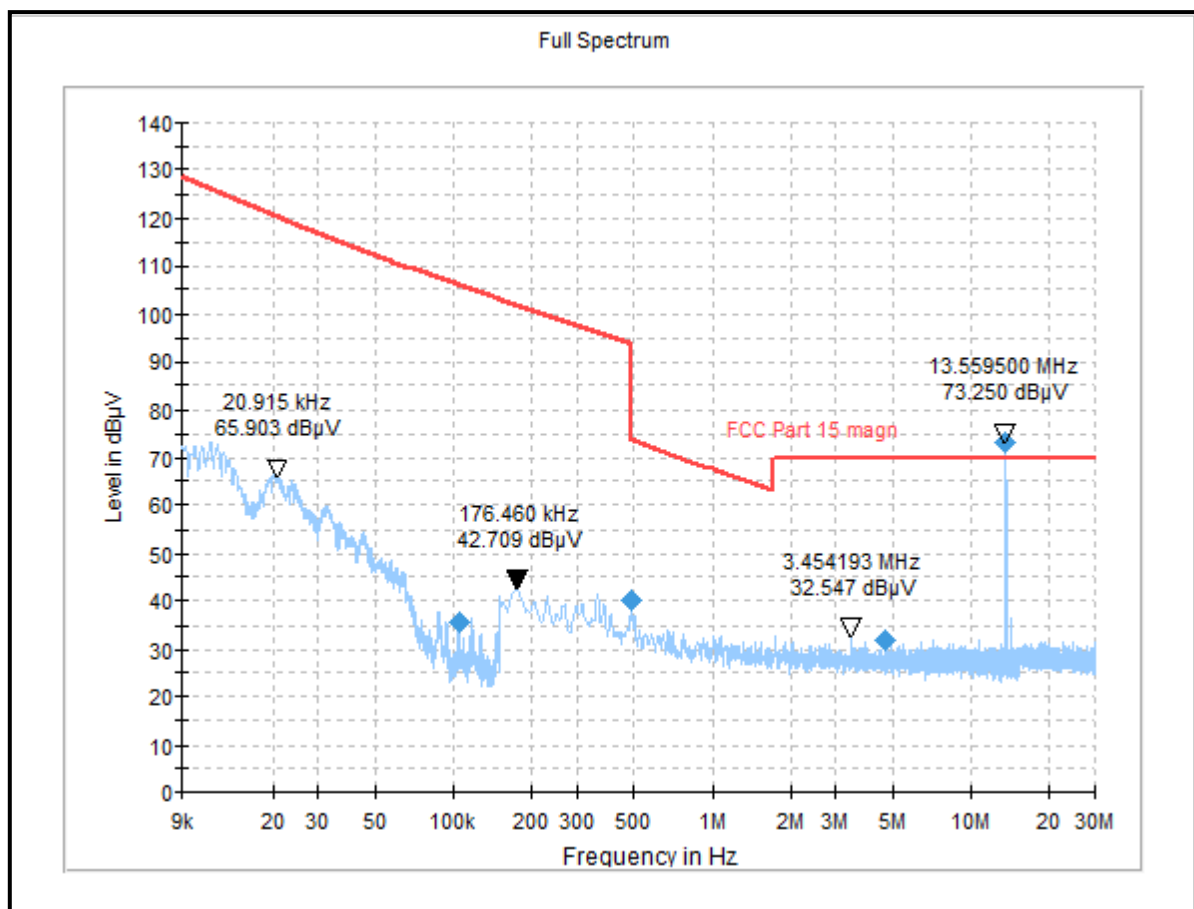
Test Setup:

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
0.105	0° to the EUT	35.59	105.94	70.34	Complied
0.487	0° to the EUT	40.25	93.84	53.59	Complied
4.658	90° to the EUT	31.81	70.00	38.19	Complied

Plot: 9 kHz – 30 MHz: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The emission at 13.56 MHz is from NFC and we cannot de-activate it during the measurement.

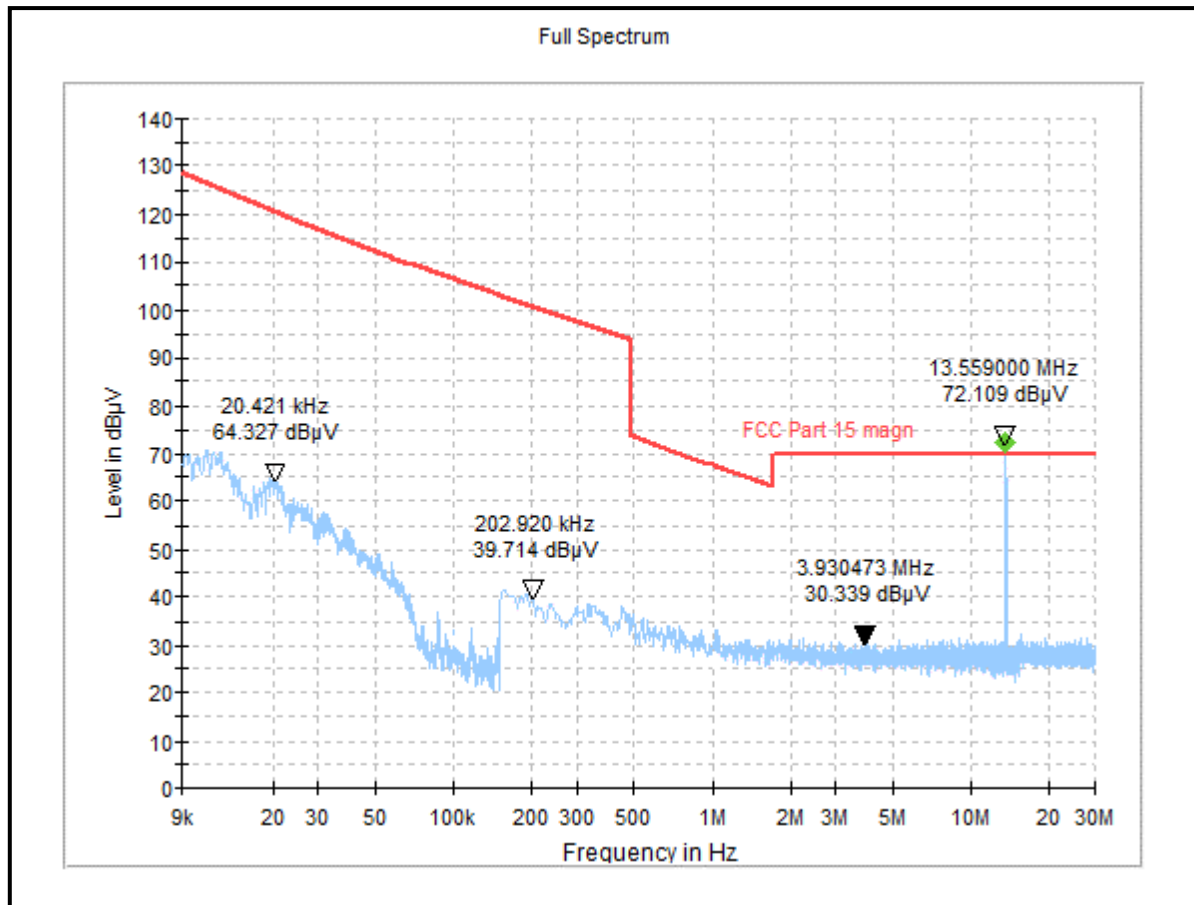
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emissions were found					

Plot: 9 kHz – 30 MHz: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The emission at 13.56 MHz is from NFC and we cannot de-activate it during the measurement.

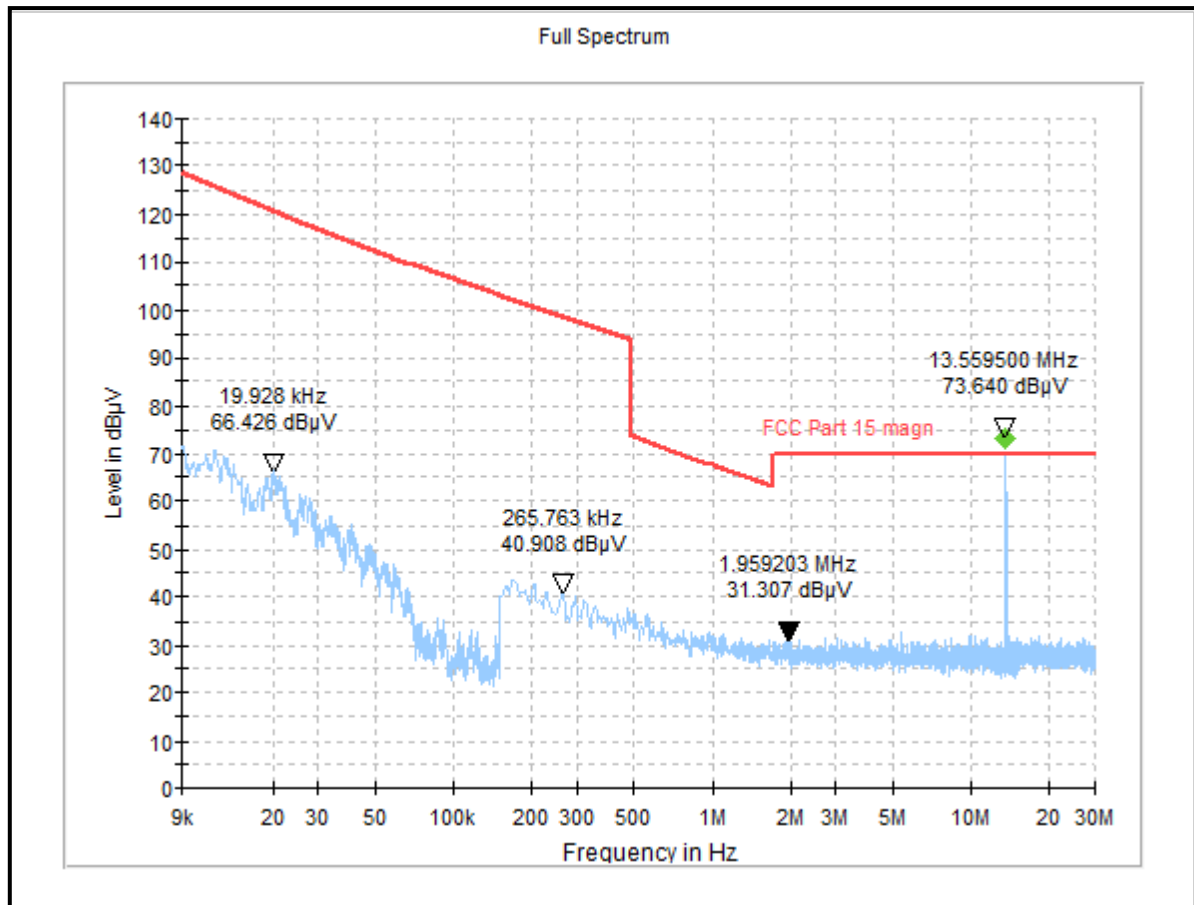
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 5 GHz / UNII-3 / 802.11n / 20 MHz / PWR 12 / Middle Channel / MCS0/ + LTE Band 13 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emissions were found					

Plot: 9 kHz – 30 MHz: WLAN 5 GHz / UNII-3 / 802.11n / 20 MHz / PWR 12 / Middle Channel / MCS0/ + LTE Band 13 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The emission at 13.56 MHz is from NFC and we cannot de-activate it during the measurement.

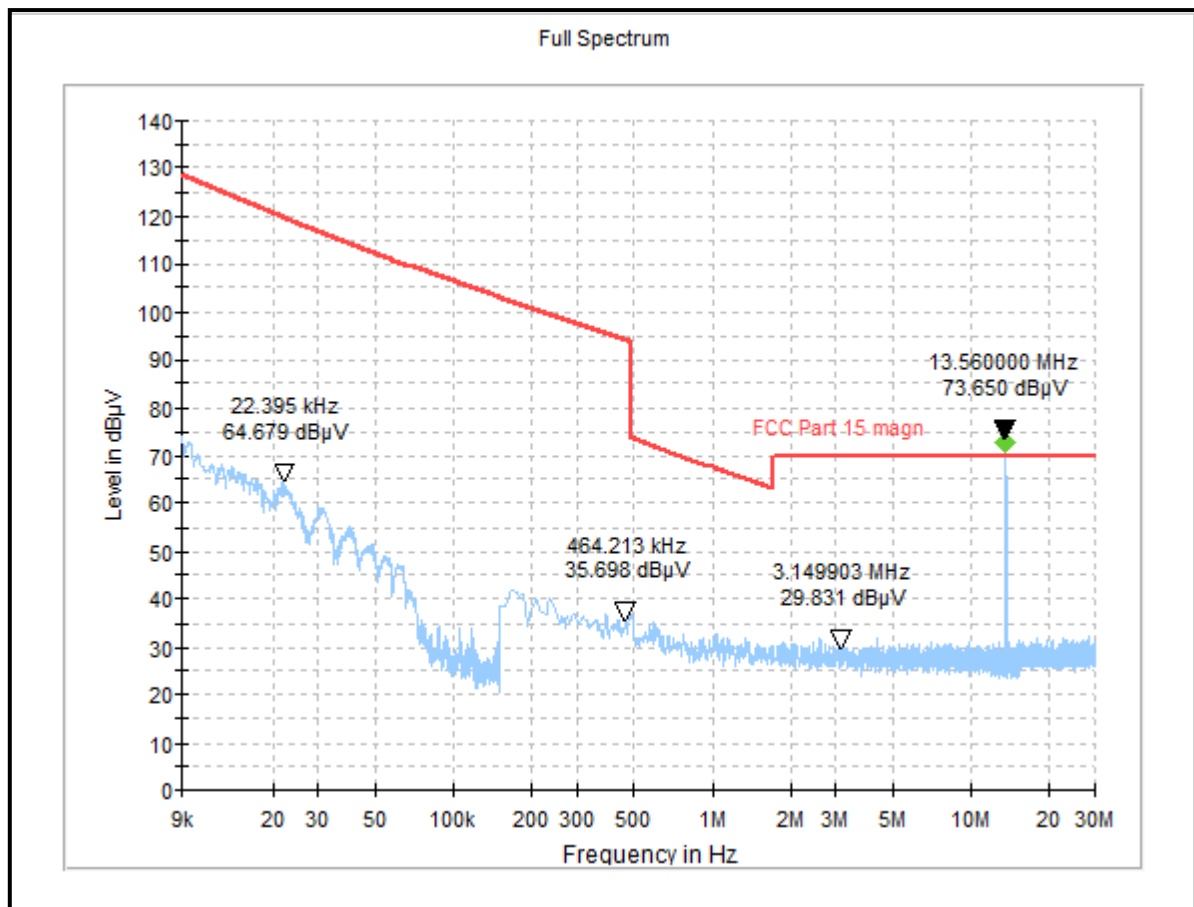
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emissions were found					

Plot: 9 kHz – 30 MHz: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The emission at 13.56 MHz is from NFC and we cannot de-activate it during the measurement.

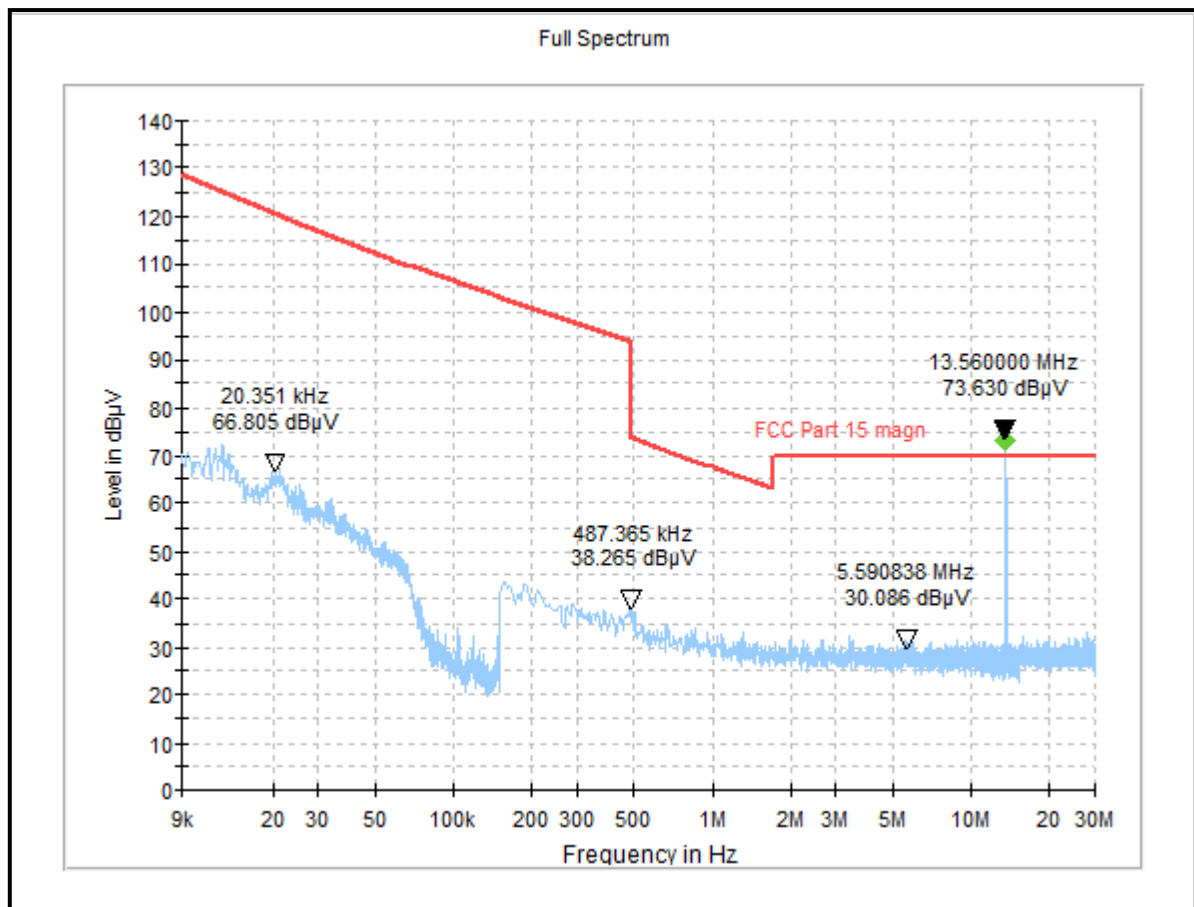
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Loop Antenna Orientation	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emissions were found					

Plot: 9 kHz – 30 MHz: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The emission at 13.56 MHz is from NFC and we cannot de-activate it during the measurement.

Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)**Test Summary:**

Test Engineer:	Sercan Usta	Test Date:	21 & 22 July 2022
Test Sample Serial Number:	FCC / AT&T Sample 1		
Test Site Identification	SR 1/2		

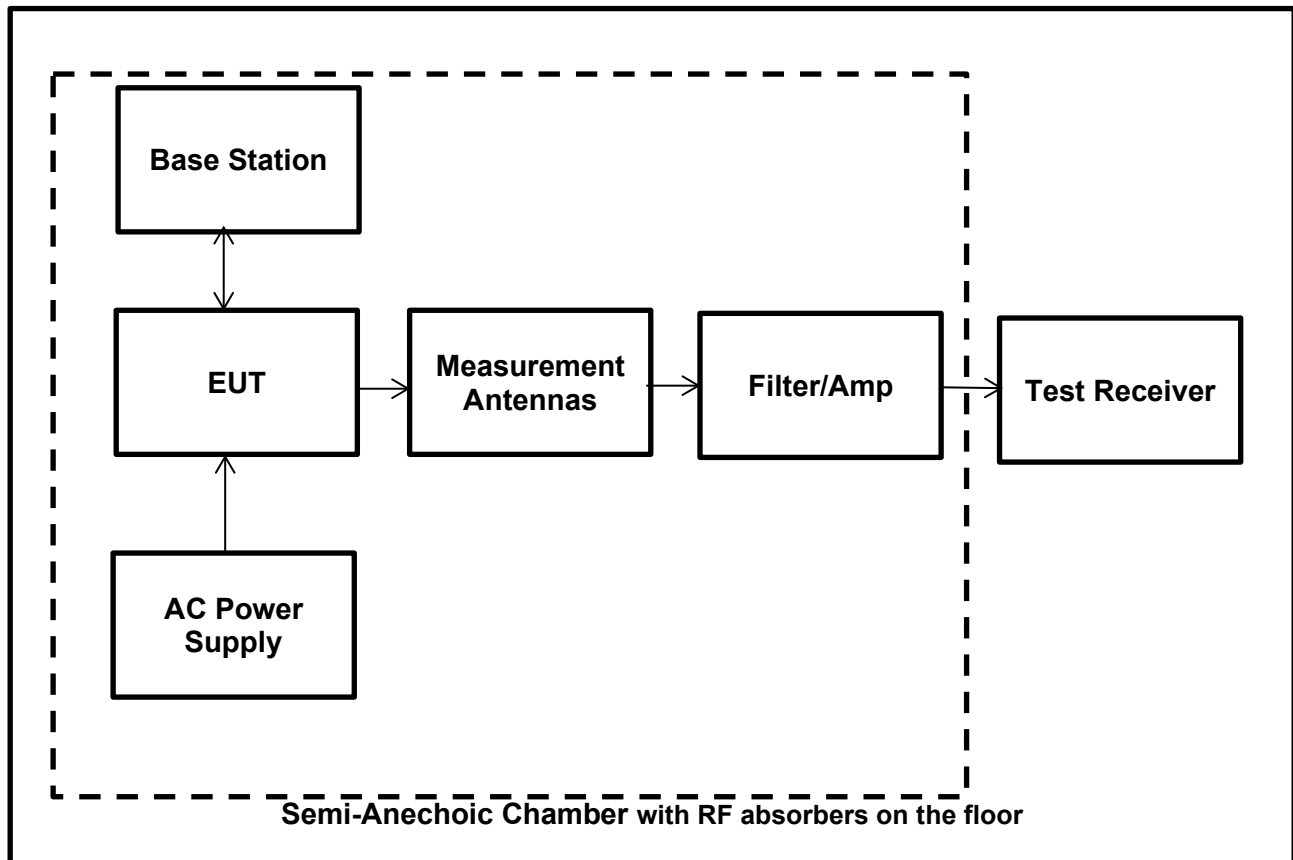
FCC Reference:	Part 2.1053 & 27.53(a) & 15.407(b) & 15.209(a) & 15.225(d) & 15.247(d)
ISED Reference:	RSS-Gen 6.5,6.6,6.13,8.9 & 8.10 & RSS 130 § 4.7 & RSS 132 § 5.5 RSS 133 § 6.5 & RSS 139 § 6.6 & RSS-210 B.6(a)(iv) RSS-247 5.5 & 6.2.1.2, 6.2.2.2, 6.2.3.2 & 6.2.4.2 & 6.13 & 8.9
Test Method Used:	ANSI C63.10:2013 Sections 6.3 and 6.5 KDB 971168 Section 6.1 referencing ANSI C63.26:2015 section 5.7
Frequency Range	30 MHz to 40 GHz

Environmental Conditions:

Temperature (°C):	24.0 & 24.4
Relative Humidity (%):	42.0 & 44.1

Note(s):

- Pre-scans were performed in a semi-anechoic chamber SR1/ 2 (Asset Number 1603665) with absorber on the floor at a distance of 3 meters. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT.
- Pre-scans above performed, and a marker placed on the highest measured level of the appropriate plot.
- The minimum permissible attenuation level of any spurious emissions is $43 + 10 \log (P)$ dB where transmitting power (P) in Watts.
- The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.
- For each out of band emissions measurement:
 - Set RBW & VBW to 100 kHz & 300 kHz for the measurement below 1 GHz, and 1 MHz and 3MHz for the measurement above 1 GHz.
- The radiated emissions measurements were performed with the EUT set to the following worst-case mode.
 - BT-EDR Mode | Packet Type: 3DH5 | Hopping On | MAX PWR 7
 - LTE B4 / B7 / B12 / B41 Test mode: a communication link with Base station (CMW 500) +
 - NFC-A | 212 kb/s | ASK at maximum power in NFC-13.56 MHz test mode |
- 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.

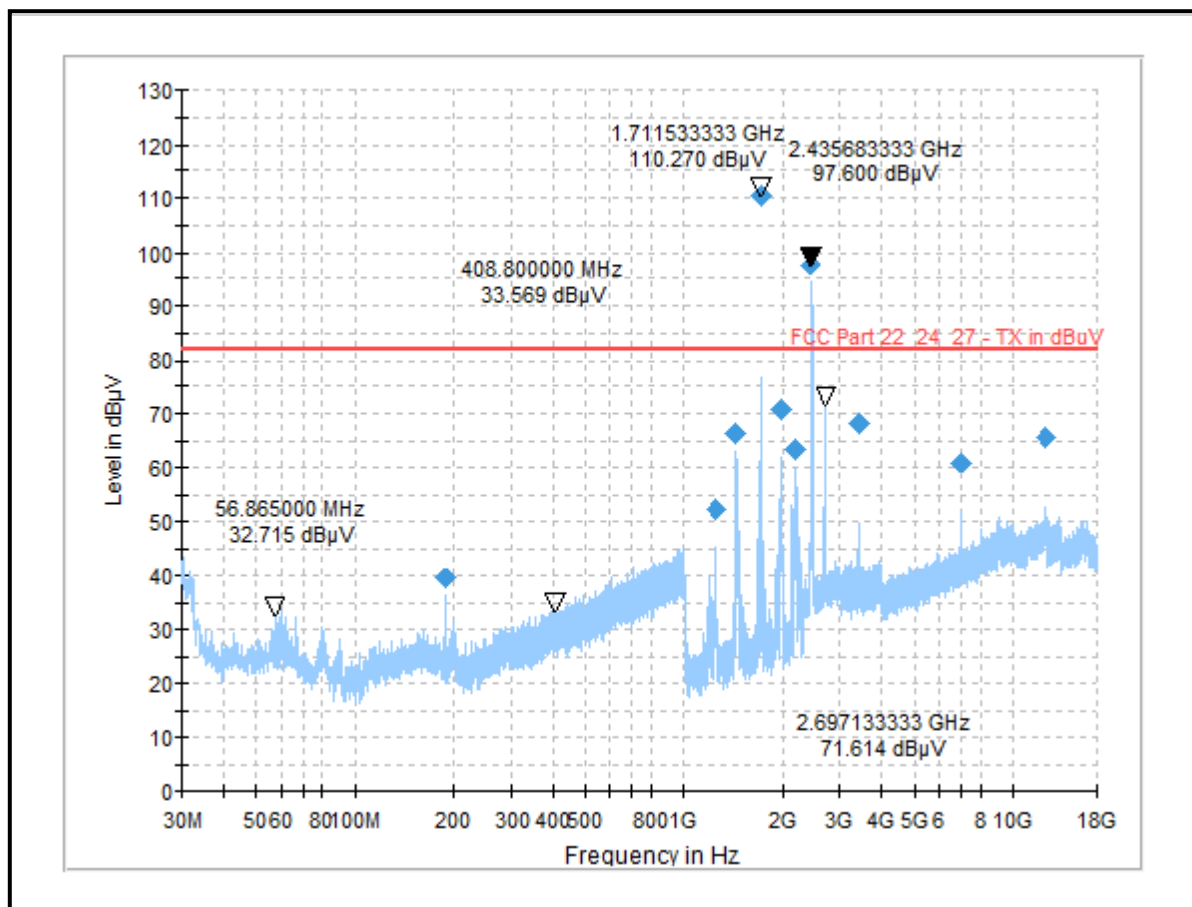
Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)**Test Setup:**

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
189.84	Horizontal	39.63	82.20	42.57	Complied
1249.38	Horizontal	52.36	82.20	29.84	Complied
1447.85	Horizontal	66.50	82.20	15.70	Complied
1973.05	Vertical	70.90	82.20	11.30	Complied
2171.95	Horizontal	63.46	82.20	18.74	Complied
3422.67	Vertical	68.15	82.20	14.05	Complied
7000.00	Vertical	60.85	82.20	21.35	Complied
12618.45	Vertical	65.71	82.20	16.49	Complied

Plot: 30 MHz – 18 GHz: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The peak at 1711.53 MHz is the uplink frequency of the respective cellular band tested.

Note: The peak at 2435.68 MHz is the frequency of the WIFI band tested.

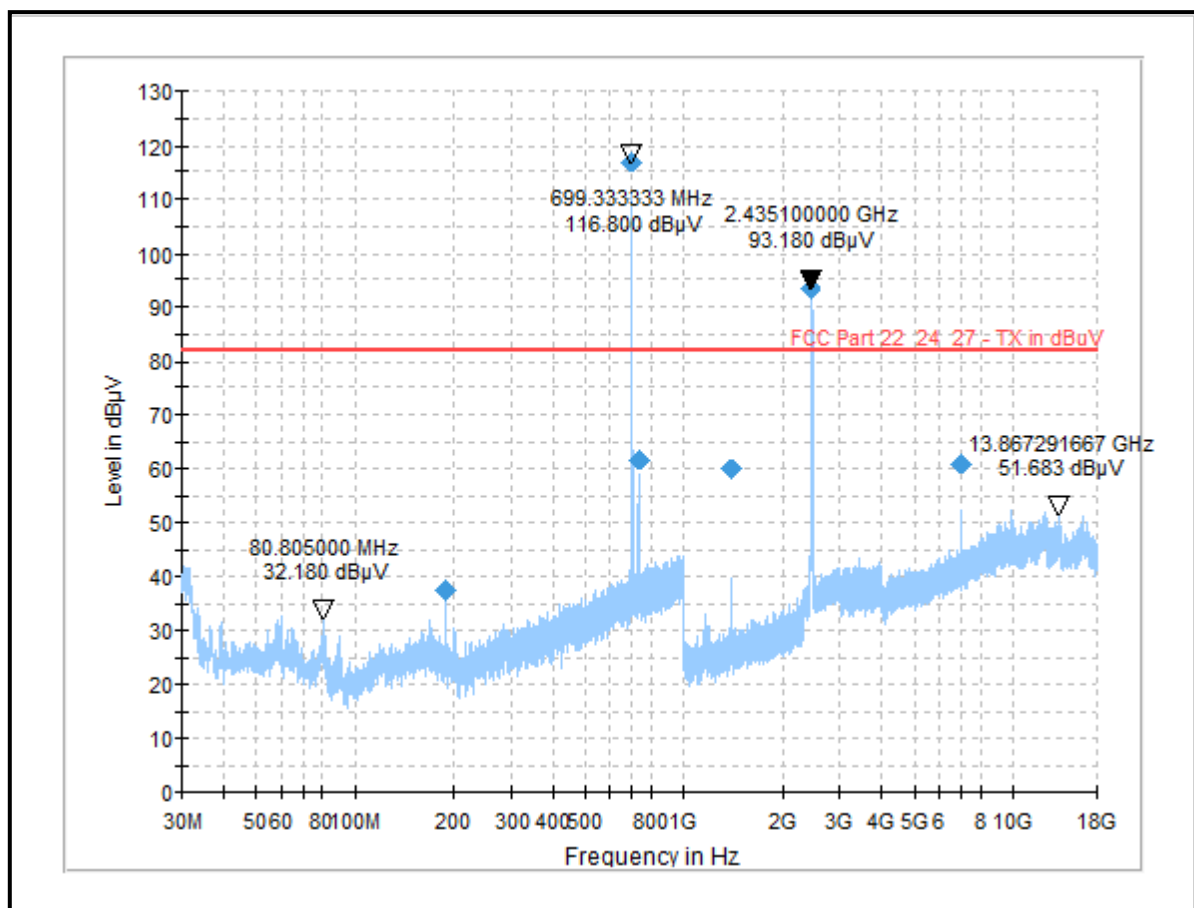
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
189.84	Horizontal	37.38	82.20	44.82	Complied
733.63	Vertical	61.83	82.20	20.37	Complied
1398.67	Horizontal	59.91	82.20	22.29	Complied
7000.00	Vertical	61.11	82.20	21.09	Complied

Plot: 30 MHz – 18 GHz: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The peak at 699.33 MHz is the uplink frequency of the respective cellular band tested.

Note: The peak at 2435.10 MHz is the frequency of the WIFI band tested.

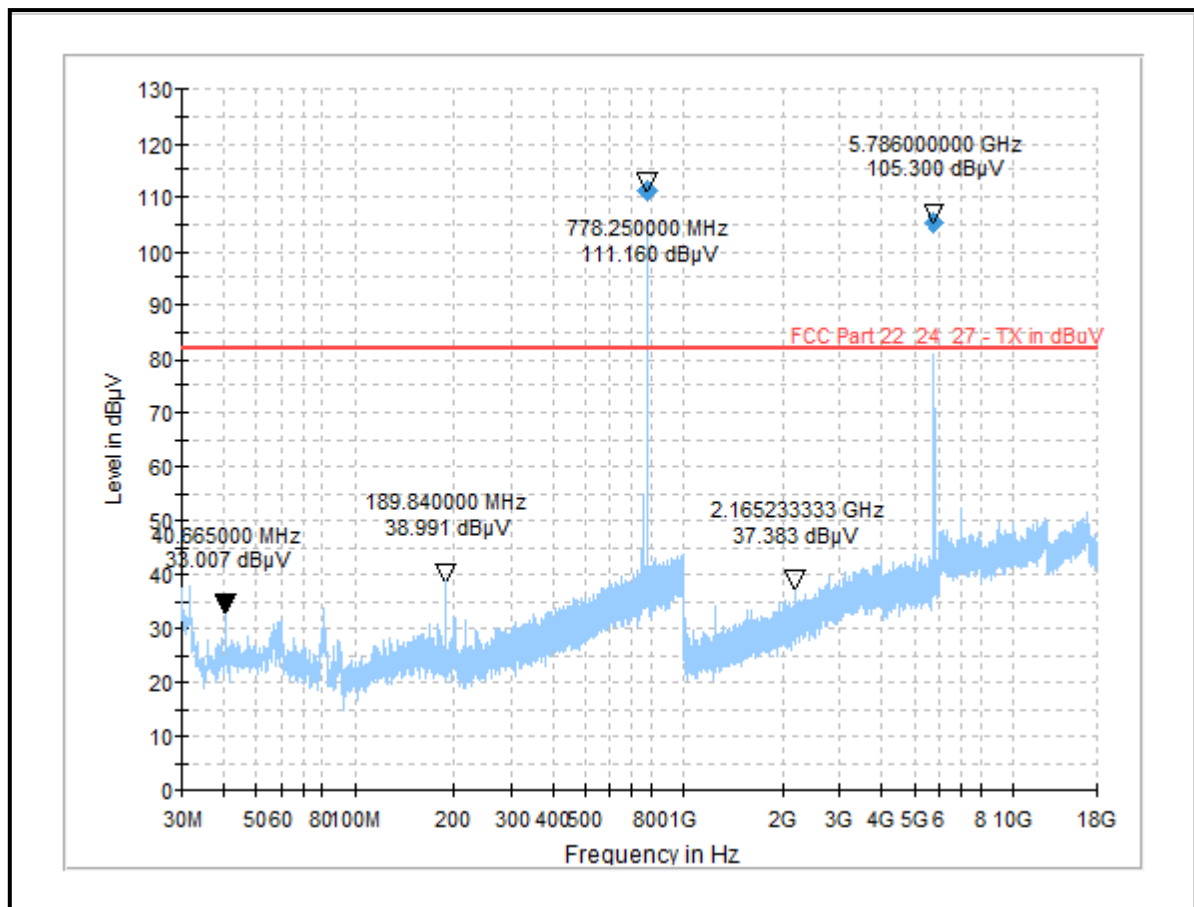
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 5 GHz / UNII-3 / 802.11n / 20 MHz / PWR 12 / Middle Channel / MCS0/ + LTE Band 13 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

Plot: 30 MHz – 18 GHz: WLAN 5 GHz / UNII-3 / 802.11n / 20 MHz / PWR 12 / Middle Channel / MCS0/ + LTE Band 13 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The peak at 778.25 MHz is the uplink frequency of the respective cellular band tested.

Note: The peak at 5786.00 MHz is the frequency of the WIFI band tested.

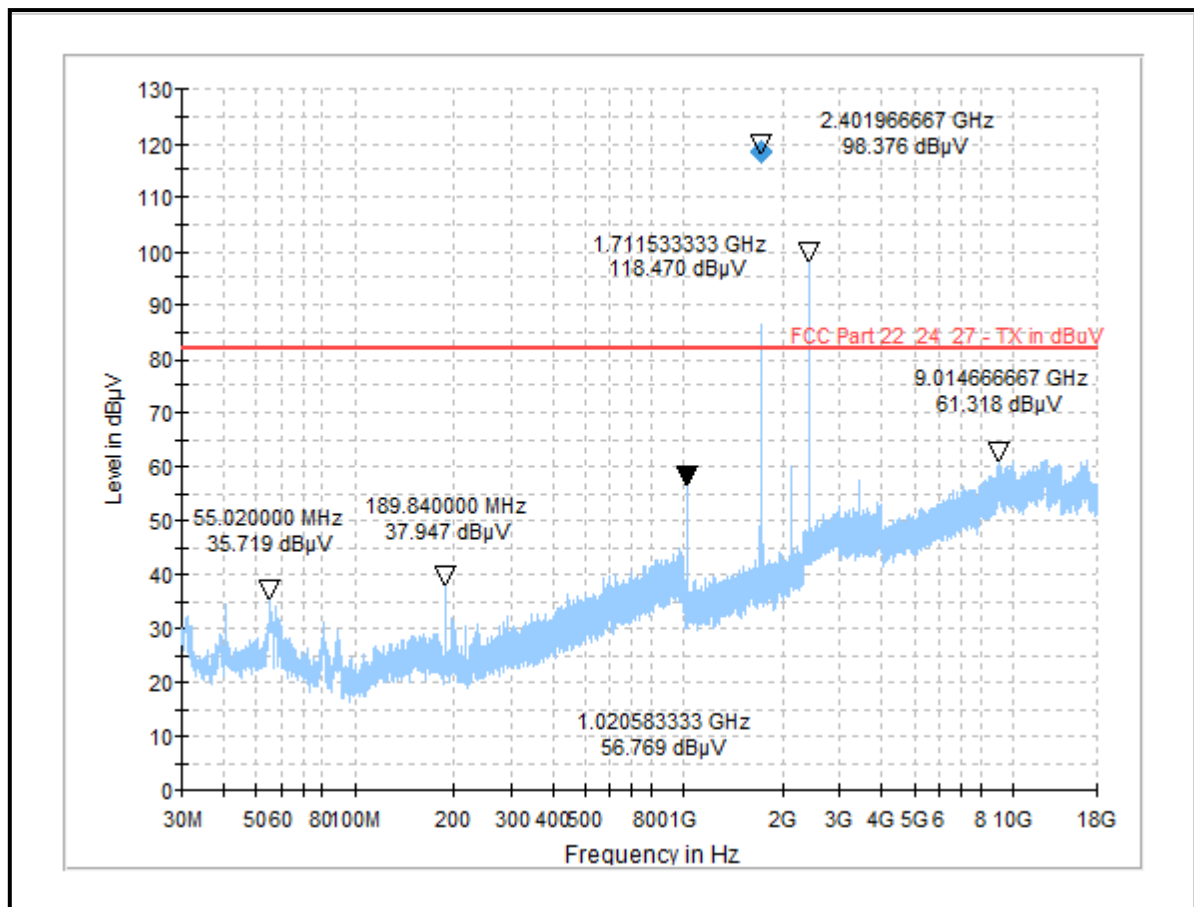
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

Plot: 30 MHz – 18 GHz: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Note: The peak at 1711.53 MHz is the uplink frequency of the respective cellular band tested.

Note: The peak at 2401.97 MHz is the frequency of the WIFI band tested.

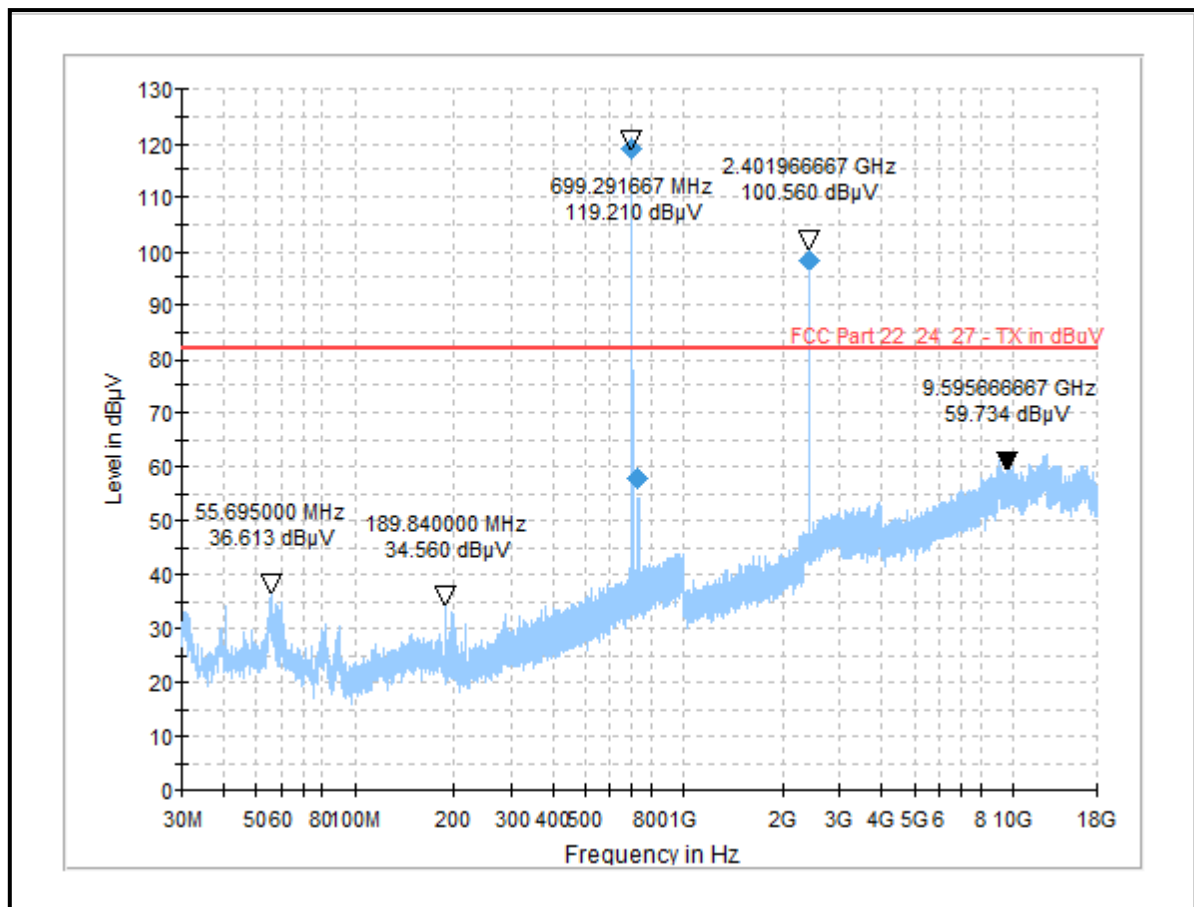
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
729.79	Vertical	57.90	82.20	24.30	Complied

Plot: 30 MHz – 18 GHz: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



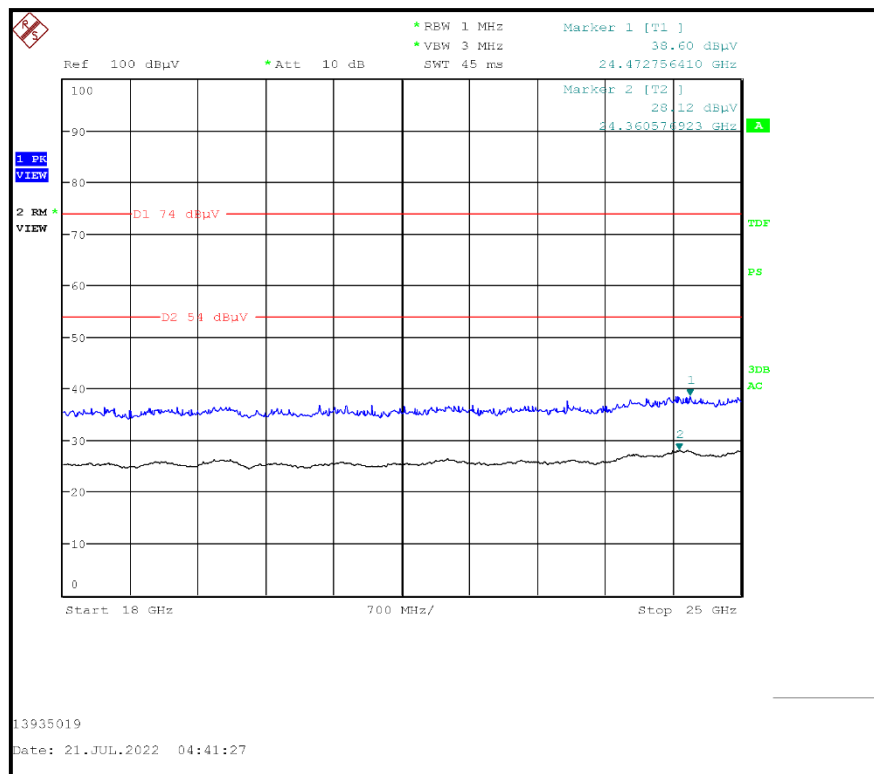
Note: The peak at 699.29 MHz is the uplink frequency of the respective cellular band tested.

Note: The peak at 2401.97 MHz is the frequency of the WIFI band tested.

Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)**Results: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s**

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

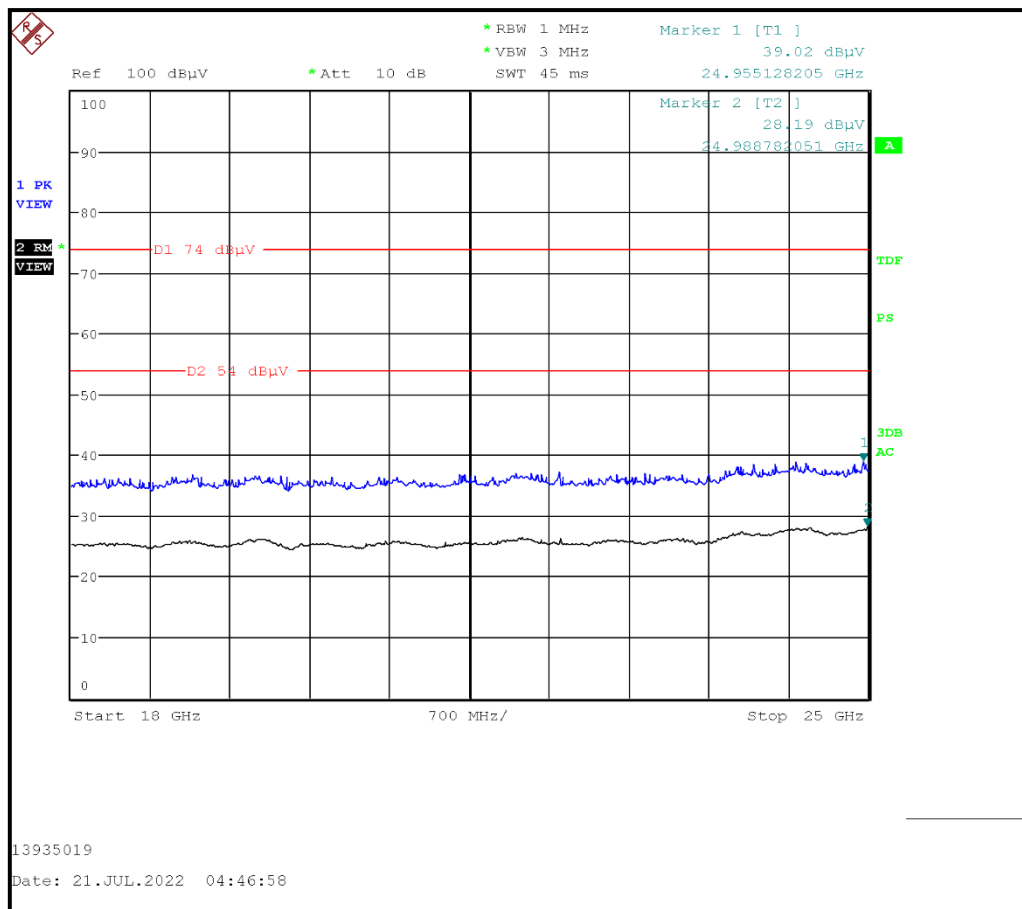
Plot: 18 GHz – 25 GHz: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s**Result: Pass**

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

Plot: 18 GHz – 25 GHz: WLAN 2.4 GHz / 802.11g / 20 MHz / 6 Mbps / PWR 12 / Middle Channel / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



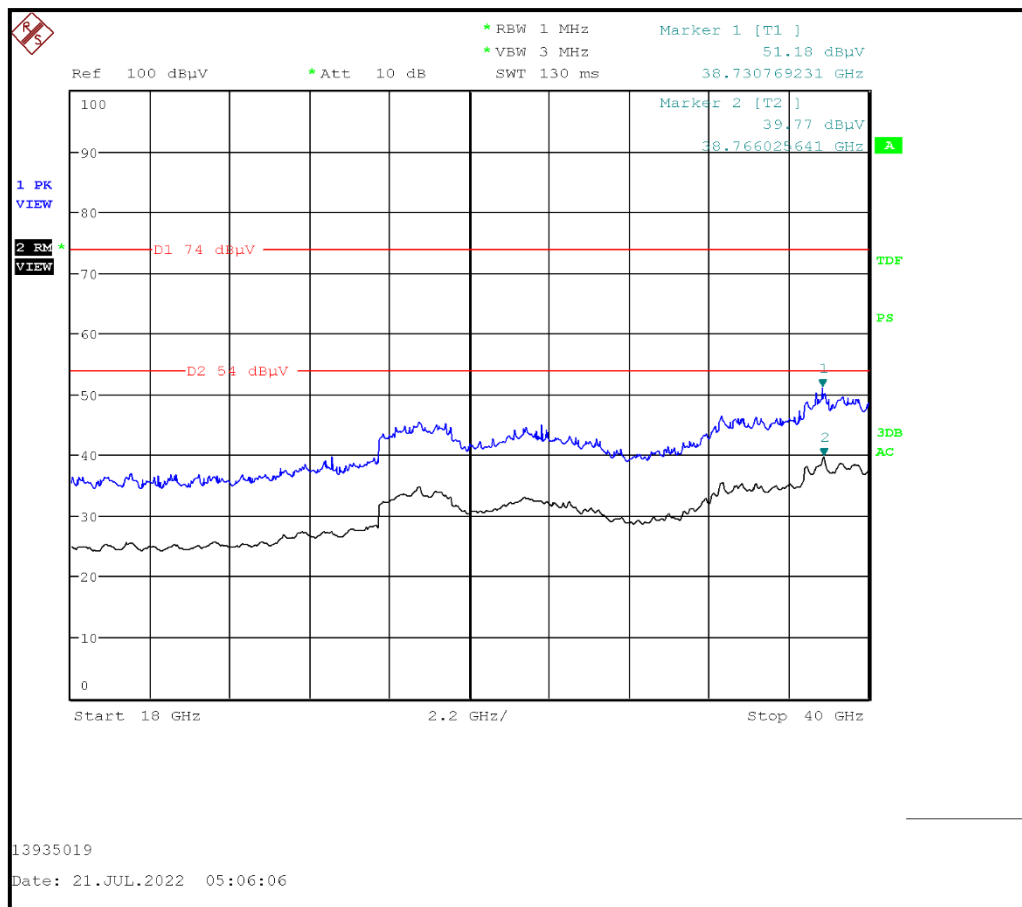
Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: WLAN 5 GHz / UNII-3 / 802.11n / 20 MHz / PWR 12 / Middle Channel / MCS0/ + LTE Band 13 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

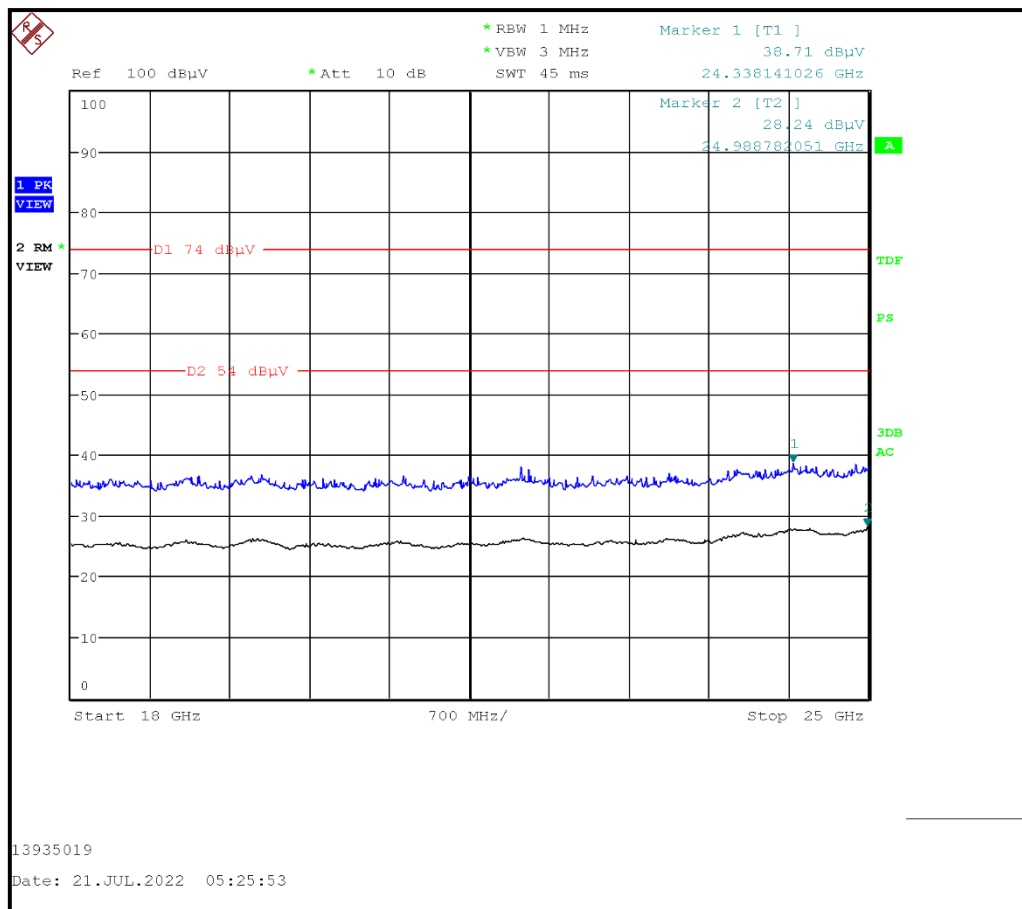
Plot: 18 GHz – 40 GHz: WLAN 5 GHz / UNII-3 / 802.11n / 20 MHz / PWR 12 / Middle Channel / MCS0/ + LTE Band 13 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



Result: Pass

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)**Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s**

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

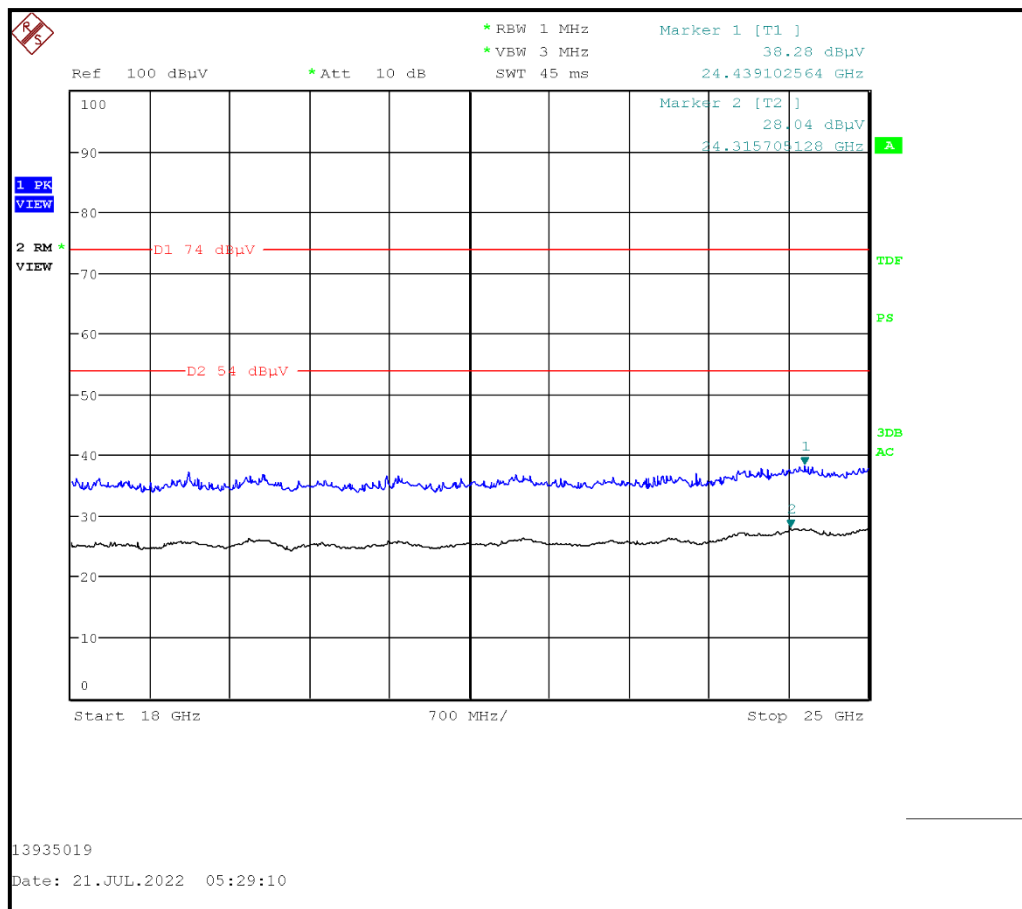
Plot: 18 GHz – 25 GHz: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 4 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s**Result: Pass**

Transmitter Radiated Emissions / Transmitter out of band Radiated Emission (continued)

Results: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s

Frequency (MHz)	Antenna Polarization	MaxPeak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
No critical emission were found					

Plot: 18 GHz – 25 GHz: BT-LE Mode / 1 Mbps/ Bottom Channel / MAX PWR / + LTE Band 12 / Bottom channel / RB1 / QPSK + NFC 13.56 MHz / NFC-A 212 kb/s



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
AC Conducted Spurious Emissions	95%	±2.49 dB
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	10/07/2020	36
377	BONN Elektronik	Amplifier, Low Noise Pre	BLMA 0118-1A	025294B	13/07/2022	12
423	Bonn Elektronik	Amplifier, Low Noise Pre	BLMA 1840-1A	55929	13/07/2022	12
460	Deisel	Turntable	DT 4250 S	n/a	n/a	n/a
452	Schwarzbeck	Antenna, Trilog Broadband	VULB 9168	9168-240	02/09/2020	36
495	Rohde & Schwarz	Antenna, log. - periodical	HL050	100296	06/08/2021	24
496	Rohde & Schwarz	Antenna, log. - periodical	HL050	100297	22/08/2022	24
587	Maturo	antenna mast, tilting	TAM 4.0-E	011/7180311	n/a	n/a
588	Maturo	Controller	NCD	029/7180311	n/a	n/a
591	Rohde & Schwarz	Receiver	ESU 40	100244/040	13/07/2022	12
669	Rohde & Schwarz	EMI Test Receiver	ESW 44	103087	03/02/2022	18
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

Test site: SR 7/8

ID	Manufacturer	Type	Model	Serial	Calibration Date	Cal. Cycle (months)
23	Rohde & Schwarz	Artificial Mains	ESH3-Z5	831767/013	11/07/2022	12
28	Rohde & Schwarz	Passive Probe	ESH2-Z3	none	12/07/2022	36
349	Rohde & Schwarz	Receiver, EMI Test	ESIB7	836697/009	12/07/2022	12
351	Rohde & Schwarz	network, Artificial Mains	ESH3-Z5	862770/018	11/07/2022	12
564	Teseq	Impedance stabilisation network (ISN)	ISN T800	26076	14/07/2021	24
616	Rohde & Schwarz	ISN	ENY81-CA6	101656	07/07/2020	36
-/-	Testo	Thermo-Hygrometer	608-H1	08	lab verification	n/a
327	SPS	AC/DC power distribution system	PAS 5000	A2464 00/1 0200	lab verification	n/a

8. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	42	-	Initial Version
Test Report Version 1.1 supersede Version 1.0 with immediate effect Test Report No. UL-RPT-RP-13935019-516-3 Version 1.1, Issue Date 08 April 2023 replaces Test Report No. UL-RPT-RP-13935019-516-3 Version 1.0, Issue Date 01 September 2022, which is no longer valid			
1.1	as below	as below	Current Version
	-	-	Report template updated
	1	-	Model name, Standards, FCC ID and IC updated
	4	1.2	Manufacturer name updated
	5	2.1	Standards updated
	7	2.2	Notes updated
	8	2.3	Methods and procedures updated
	9	3.1	Identification of EUT updated
	9	3.2	Description of EUT updated
	12	3.4	Notes updated
	12	3.5	Support equipment table updated
	18 & 19	5.2.1	Tables updated
	20	5.2.2	Tables updated
	40	7	Used equipment list updated

--- END OF REPORT ---