

TEST REPORT

Test Report No. : UL-RPT-RP15196320-216A

Customer* : Lifescan Europe GmbH

Model No. / HVIN* : ZK

PMN* : OneTouch Verio Flex

FCC ID* : 2ACT5-Z03

ISED Certification No.* : 12202A-Z03

Technology : *Bluetooth* – Low Energy

Test Standard(s) : FCC Parts 15.209(a) & 15.247
Innovation, Science and Economic Development Canada
RSS-247 Issue 3 August 2023
RSS-Gen Issue 5 February 2021

Test Laboratory : UL International (UK) Ltd, Basingstoke, Hampshire, RG24 8AH,
United Kingdom

1. This test report shall not be reproduced except in full, without the written approval of UL International (UK) Ltd.
2. The results in this report apply only to the sample(s) tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. All information marked with (*) was provided by the Customer, Applicant or Authorised representative
6. Version 1.0.

Date of Issue: 03 March 2025

Checked by:

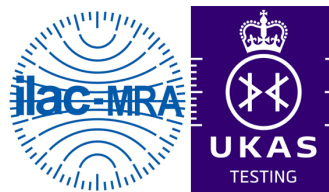


Ben Mercer
Lead Project Engineer, Radio Laboratory

Company Signatory:



Sarah Williams
Staff Engineer, Radio Laboratory



5772

The *Bluetooth*® word mark and logos are owned by the *Bluetooth* SIG, Inc. and any use of such marks by UL International (UK) Ltd is under licence. Other trademarks and trade names are those of their respective owners.

UL International (UK) LTD

Unit 1-4 Horizon, Kingsland Business Park, Wade Road, Basingstoke, Hampshire, RG24 8AH, UK
Telephone: +44 (0)1256 312000

Customer Information

Company Name*:	Lifescan Europe GmbH
Address*:	Gubelstrasse 34 6300 Zug Switzerland

Report Revision History

Version Number	Issue Date	Revision Details	Revised By
1.0	03/03/2025	Initial Version	Ben Mercer

Table of Contents

Customer Information.....	2
Report Revision History	2
Table of Contents.....	3
1 Attestation of Test Results.....	4
1.1 Description of EUT	4
1.2 General Information	4
1.3 Summary of Test Results	5
1.4 Deviations from the Test Specification	5
2 Summary of Testing.....	6
2.1 Facilities and Accreditation	6
2.2 Methods and Procedures	6
2.3 Calibration and Uncertainty	7
2.4 Test and Measurement Equipment	8
3 Equipment Under Test (EUT)	10
3.1 Identification of Equipment Under Test (EUT)	10
3.2 Modifications Incorporated in the EUT	10
3.3 Additional Information Related to Testing	11
3.4 Description of Available Antennas	11
3.5 Description of Test Setup	12
4 Antenna Port Test Results	16
4.1 Transmitter 99% Occupied Bandwidth	16
4.2 Transmitter Minimum 6 dB Bandwidth	18
4.3 Transmitter Maximum Peak Output Power	20
5 Radiated Test Results.....	21
5.1 Transmitter Radiated Emissions <1 GHz	21
5.2 Transmitter Radiated Emissions >1 GHz	24
5.3 Transmitter Band Edge Radiated Emissions	26

1 Attestation of Test Results

1.1 Description of EUT

The equipment under test (EUT) was a Blood Glucose Meter, which incorporated a *Bluetooth* Low Energy module.*

1.2 General Information

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) – Section 15.209
Specification Reference:	RSS-Gen Issue 5 February 2021
Specification Title:	General Requirements for Compliance of Radio Apparatus
Specification Reference:	RSS-247 Issue 3 August 2023
Specification Title:	Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
Site Registration:	FCC: 685609, ISEDC: 20903
FCC Lab. Designation No.:	UK2011
ISEDC CABID:	UK0001
Location of Testing:	Units 3 & 4 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Dates:	28 January 2025 to 18 February 2025

1.3 Summary of Test Results

FCC Reference (47CFR)	ISED Canada Reference	Measurement	Result
N/A	RSS-Gen 6.7	Transmitter 99% Occupied Bandwidth	
Part 15.247(a)(2)	RSS-247 5.2(a) / RSS-Gen 6.7	Transmitter Minimum 6 dB Bandwidth	
Part 15.247(b)(3)	RSS-247 5.4(d) / RSS-Gen 6.12	Transmitter Maximum Peak Output Power	
Part 15.247(e)	RSS-247 5.2(b)	Transmitter Power Spectral Density	Note 1
Part 15.247(d) & 15.209(a)	RSS-247 5.5 / RSS-Gen 6.13	Transmitter Radiated Emissions	
Part 15.247(d) & 15.209(a)	RSS-247 5.5 / RSS-Gen 6.13	Transmitter Band Edge Radiated Emissions	
Key to Results  = Complied  = Did not comply			

Note(s):

1. In accordance with ANSI C63.10 Section 11.10.1, PSD measurements are not required if the maximum conducted output power is less than the PSD limit of 8 dBm / 3 kHz. The PSD level is therefore deemed be equal to the measured output power.

1.4 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.

2 Summary of Testing

2.1 Facilities and Accreditation

The test site and measurement facilities used to collect data are located at Units 3 & 4 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom. The following table identifies which facilities were utilised for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

Site 1	X
Site 2	-
Site 17	-
Site 32	-
Site 33	-

UL International (UK) Ltd is accredited by the United Kingdom Accreditation Service (UKAS). UKAS is one of the signatories to the International Laboratory Accreditation Co-operation (ILAC) Arrangement for the mutual recognition of test reports. The tests reported herein have been performed in accordance with its terms of accreditation.

2.2 Methods and Procedures

Reference:	ANSI C63.10-2013
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Reference:	KDB 558074 D01 15.247 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

2.3 Calibration and Uncertainty

Measuring Instrument Calibration

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

Measurement Uncertainty & Decision Rule

Overview

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

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

Decision Rule

Measurement system instrumentation shall be used with an accuracy specification meeting the accuracy specification limits according to IEC/IECEE OD-5014.

As applicable, unless specified otherwise in this quotation, the compliance "Decision Rule" is based on Simple Acceptance. 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 G8:09/2019.

Measurement Uncertainty

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	Range	Confidence Level (%)	Calculated Uncertainty
99% Occupied Bandwidth	2.4 GHz to 2.4835 GHz	95%	±2.41 %
Minimum 6 dB Bandwidth	2.4 GHz to 2.4835 GHz	95%	±3.27 %
Conducted Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±0.61 dB
Radiated Spurious Emissions	9 kHz to 30 MHz	95%	±5.44 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±2.98 dB
Radiated Spurious Emissions	1 GHz to 25 GHz	95%	±3.64 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.

2.4 Test and Measurement Equipment

Test Equipment Used for Transmitter Conducted Tests

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2004	Thermohygrometer	Testo	608-H1	45046425	23 Dec 2025	12
M231906	Signal Analyser	Keysight	N9020B	MY63430177	23 Oct 2025	12
A220131	Attenuator	Pasternack	PE7013-10	#5	Calibrated before use	-
M215598	Power Sensor	Boonton	RTP5008	11821	25 Jun 2025	12
A231990	Switching Unit	Mini-Circuits	ZT-400	122110200009	Calibrated before use	-
M241601	Network Analyser	Keysight	P5007B	MY61100200	30 Sep 2025	24

Test Measurement Software/Firmware Used for Transmitter Conducted Tests

Name	Version	Release Date
Phoenix	2.29	28 January 2025

Test and Measurement Equipment (continued)**Test Equipment Used for Transmitter Radiated Emissions Tests**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2040	Thermohygrometer	Testo	608-H1	45124934	23 Dec 2025	12
K0001	3m RSE Chamber	MVG Industries	N/A	N/A	11 Sep 2025	12
M236226	Test Receiver	Rohde & Schwarz	ESW26	103134	06 May 2025	12
A3154	Pre-Amplifier	Com-Power	PAM-103	18020012	28 Aug 2025	12
A211112	Pre-Amplifier	Atlantic Microwave	A-LNAKX-380116-S5S5	210865001	27 Feb 2025	12
A3179	Pre-Amplifier	Hewlett Packard	8449B	3008A00934	30 Aug 2025	12
A2896	Pre- Amplifier	Schwarzbeck	BBV 9721	9721 - 023	27 Feb 2025	12
A553	Antenna	Chase	CBL6111A	1593	27 Aug 2025	12
A3138	Antenna	Schwarzbeck	BBHA 9120 B	00702	06 Sep 2025	12
A2895	Antenna	Schwarzbeck	BBHA 9170	9170-728	04 Mar 2025	12
A3139	Antenna	Schwarzbeck	HWRD750	00027	06 Sep 2025	12
A3112	Attenuator	AtlanTecRF	AN18-06	219706#2	27 Aug 2025	12
A221643	Attenuator	Atlantic Microwave	ATT06KXP-483034-N4N5	#3	16 Sep 2025	12
A3085	Low Pass Filter	AtlanTecRF	AFL-02000	18051600014	16 Sep 2025	12
A3093	High Pass Filter	AtlanTecRF	AFH-03000	18051800077	16 Sep 2025	12
A212041	High Pass Filter	Micro-Tronics	HPS20723	001	16 Sep 2025	12
A3198	Mag Loop Antenna	ETS-Lindgren	6502	00221887	05 Nov 2025	12

Test Equipment Used for Transmitter Band Edge Radiated Emissions Tests

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2040	Thermohygrometer	Testo	608-H1	45124934	23 Dec 2025	12
K0001	3m RSE Chamber	MVG Industries	N/A	N/A	11 Sep 2025	12
M236226	Test Receiver	Rohde & Schwarz	ESW26	103134	06 May 2025	12
A3138	Antenna	Schwarzbeck	BBHA 9120 B	00702	06 Sep 2025	12
A3179	Pre-Amplifier	Hewlett Packard	8449B	3008A00934	30 Aug 2025	12

3 Equipment Under Test (EUT)

3.1 Identification of Equipment Under Test (EUT)

Brand Name*:	OneTouch
Model Name or Number / HVIN*:	ZK
PMN*:	OneTouch Verio Flex
Test Sample Serial Number*:	Z2SWXV89 <i>(Conducted sample)</i>
Hardware Version*:	DV2
Software Version*:	02.00.00
FCC ID*:	2ACT5-Z03
ISED Canada Certification Number*:	12202A-Z03
Date of Receipt:	27 January 2025

Brand Name*:	OneTouch
Model Name or Number / HVIN*:	ZK
PMN*:	OneTouch Verio Flex
Test Sample Serial Number*:	Z2SWXV7X <i>(Radiated sample)</i>
Hardware Version*:	DV2
Software Version*:	02.00.00
FCC ID*:	2ACT5-Z03
ISED Canada Certification Number*:	12202A-Z03
Date of Receipt:	27 January 2025

3.2 Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.3 Additional Information Related to Testing

Technology Tested:	Bluetooth Low Energy (Digital Transmission System)		
Type of Unit:	Transceiver		
Channel Spacing:	2 MHz		
Modulation:	GFSK		
Data Rate*:	1 Mbps		
Power Supply Requirement(s)*:	3.0 VDC		
Maximum Conducted Output Power:	-2.11 dBm		
Transmit Frequency Range:	2402 MHz to 2480 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	37	2402
	Middle	17	2440
	Top	39	2480

3.4 Description of Available Antennas

The radio utilizes an integrated antenna, with the following maximum gain:

Frequency Range (MHz)	Antenna Gain (dBi)*
2400-2480	1.03

3.5 Description of Test Setup

Support Equipment

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

Customer Supplied*:

Description	Brand Name	Model Name or Number	Serial Number
USB to UART Debugger Board	TI LaunchPad	LP-XDS1100ET	E337862
USB to USB-C Cable	Not marked or stated	Not marked or stated	Not marked or stated
Laptop	Lenovo	Thinkpad T480	PF1L1WPP

Laboratory Supplied:

Description	Brand Name	Model Name or Number	Serial Number
USB Extension Cable. Length 2m	Not marked or stated	Not marked or stated	Not marked or stated
Laptop	Lenovo	ThinkPad L480	PF1EJ3BY

Operating Modes

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

- Transmitting at maximum power in *Bluetooth* LE mode with modulation, maximum possible data length available and Pseudorandom Bit Sequence 9.

Configuration and Peripherals

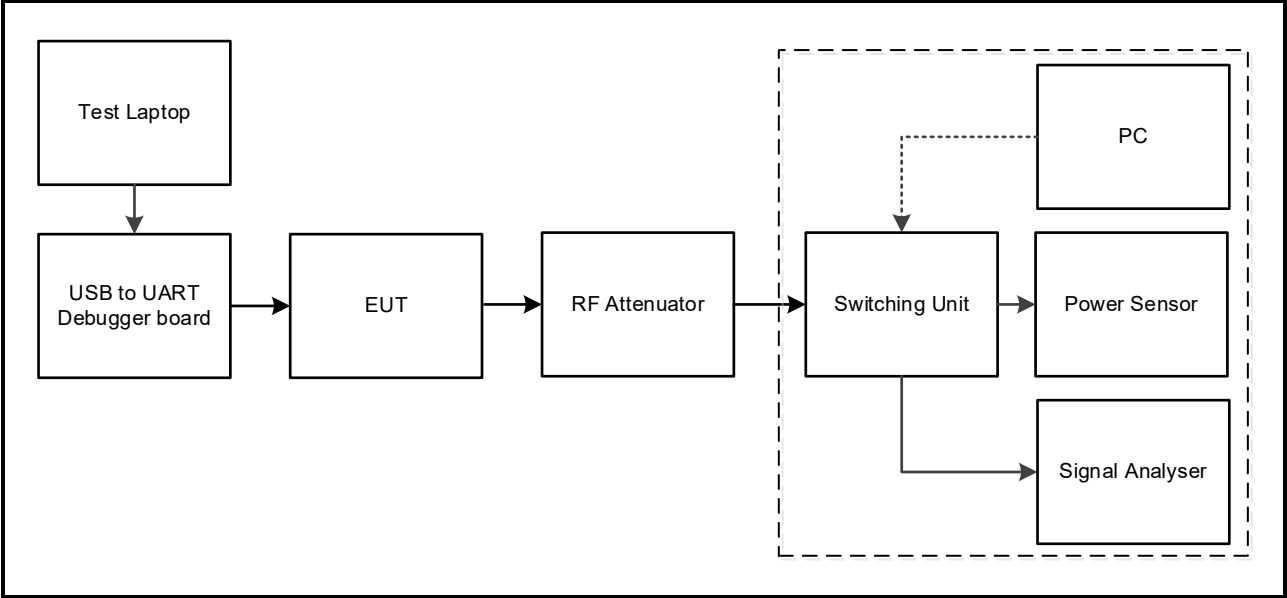
The EUT was tested in the following configuration(s):

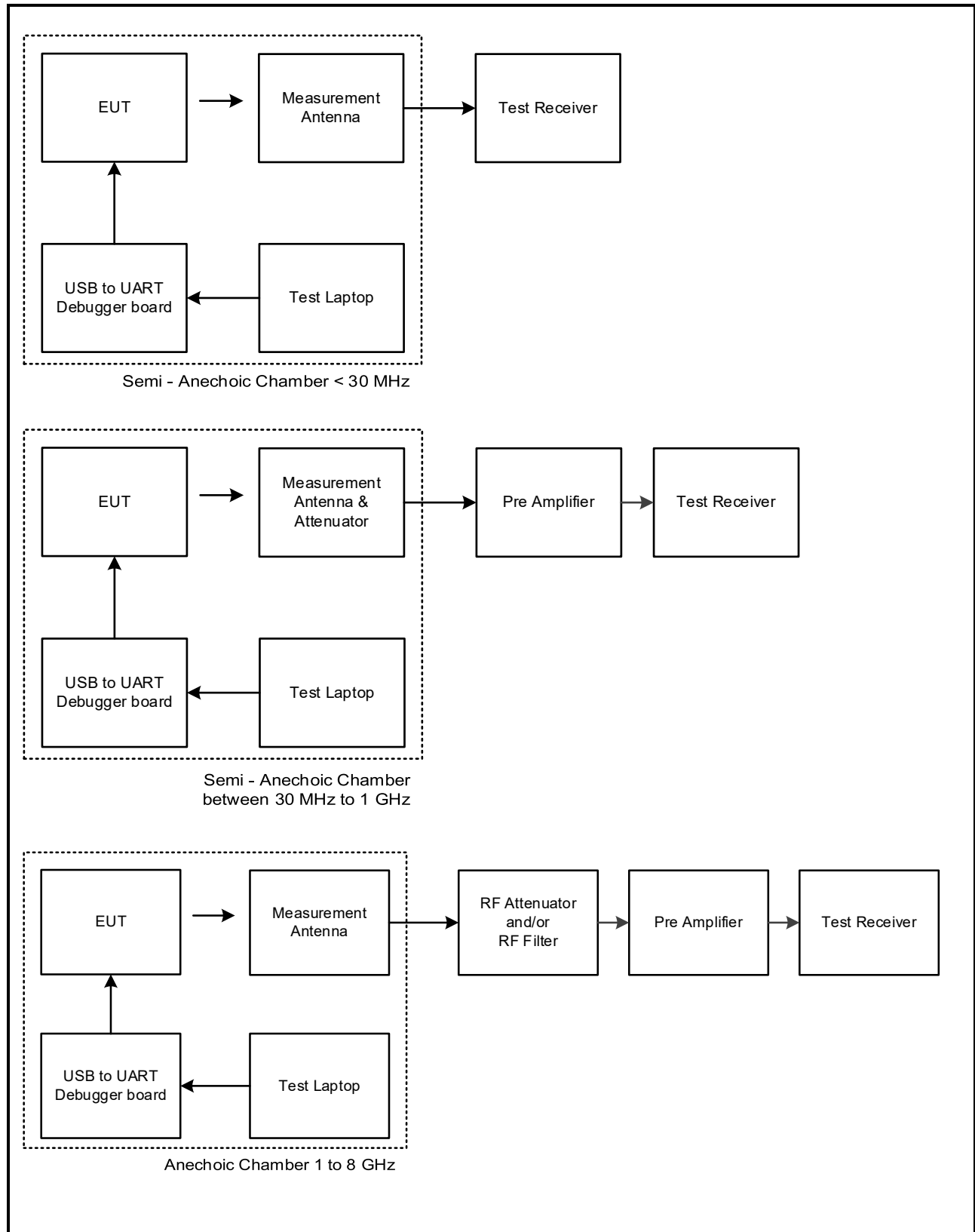
- A test laptop with a third party test application was used to place the EUT into *Bluetooth* LE test mode via a USB cable connected to a debugger board. The application was used to enable continuous transmission, set transmit power setting and to select the test channels as required.
- The EUT was powered via the internal battery whilst being connected to the test laptop via the USB cable and debugger board.
- Transmitter radiated spurious emissions tests were performed with the EUT in the worst-case position. There were no active ports to terminate.

Test Setup Diagrams

Conducted Tests:

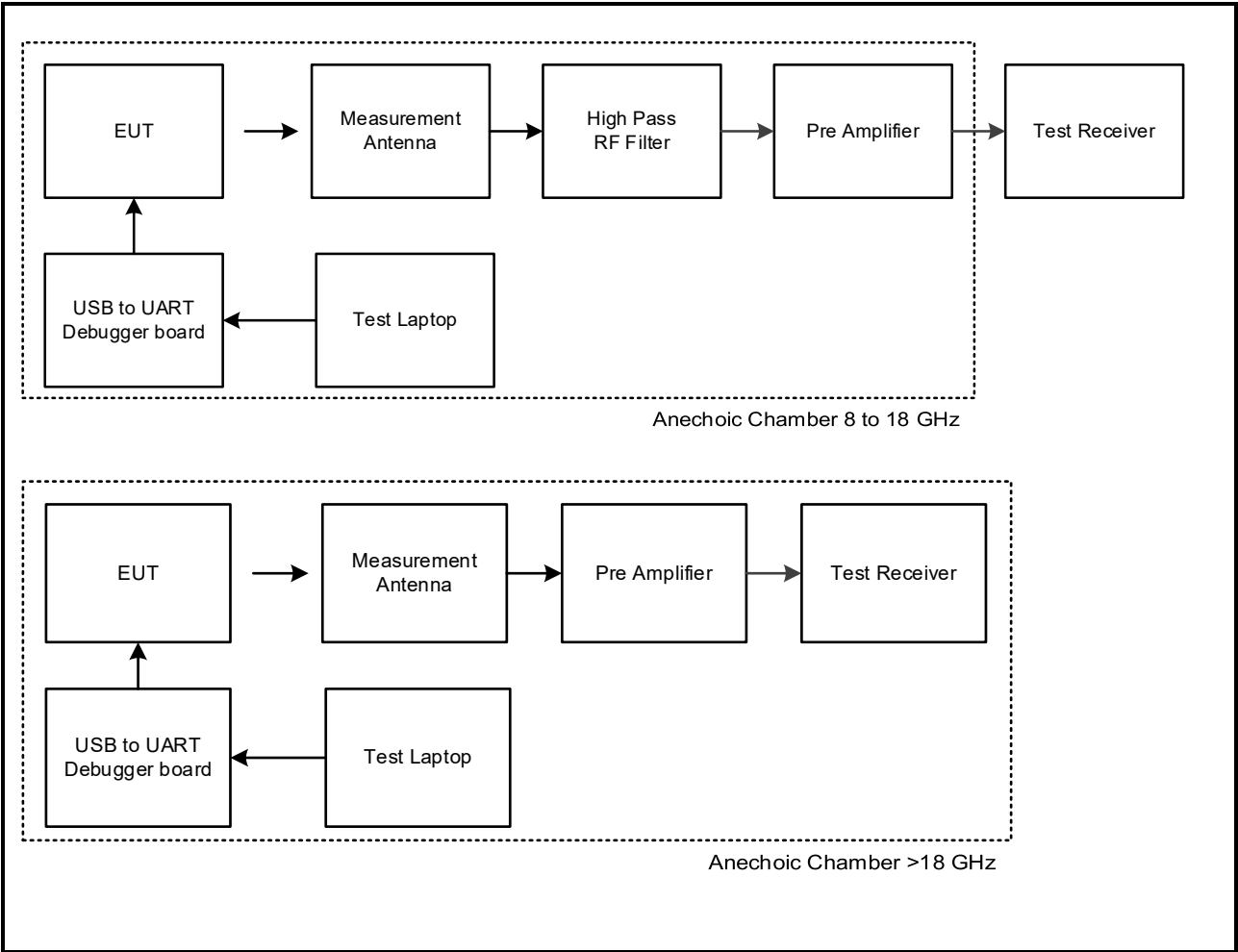
Test Setup for Transmitter Conducted Tests



Test Setup Diagrams (continued)**Radiated Tests:****Test Setup for Transmitter Radiated Emissions**

Test Setup Diagrams (continued)

Test Setup for Transmitter Radiated Emissions (continued)



4 Antenna Port Test Results

4.1 Transmitter 99% Occupied Bandwidth

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	30 January 2025
Test Sample Serial Number:	Z2SWXV89		

Environmental Conditions:

Temperature (°C):	20
Relative Humidity (%):	36

Note(s):

1. The 99% emission bandwidth was calculated by the test system using the raw trace data from the signal analyser. The resolution bandwidth was set in the range of 1% to 5% of the occupied bandwidth and the video bandwidth set to approximately 3 times the resolution bandwidth. The span was set to capture all products of the modulation process including emission skirts.
2. An example plot for the middle channel can be seen below to show setting parameters comply with testing procedure. All other plots are archived on the UL IT server and are available for inspection upon request.

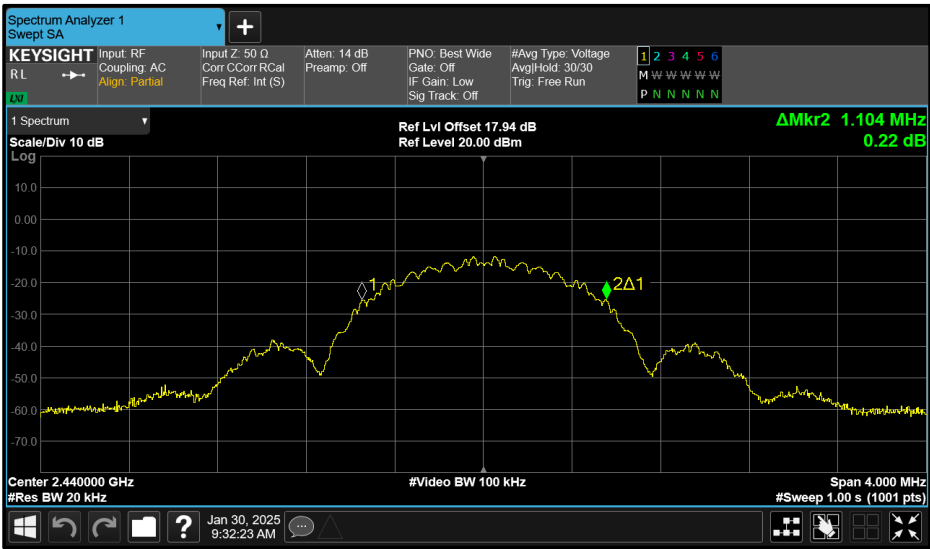
Transmitter 99% Occupied Bandwidth (continued)

Results:

Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause:	RSS-Gen 6.7	Test Method:	RSS-Gen 6.7 / ANSI C63.10 6.9.3

Antenna Configuration:	SISO	Mode:	LE
Test Port:	1	Rate/Modulation:	LE 1M (GFSK)

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2402	1.104	-	-	-	-
2440	1.104	-	-	-	-
2480	1.108	-	-	-	-



Channel 17

4.2 Transmitter Minimum 6 dB Bandwidth

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	30 January 2025
Test Sample Serial Number:	Z2SWXV89		

Environmental Conditions:

Temperature (°C):	20
Relative Humidity (%):	36

Note(s):

1. 6 dB DTS bandwidth tests were performed using a signal analyser in accordance with ANSI C63.10 Section 11.8.1 Option 1 measurement procedure. The signal analyser resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The DTS bandwidth was measured at 6 dB down from the peak of the signal.
2. An example plot for the middle channel can be seen below to show setting parameters comply with testing procedure. All other plots are archived on the UL IT server and are available for inspection upon request.

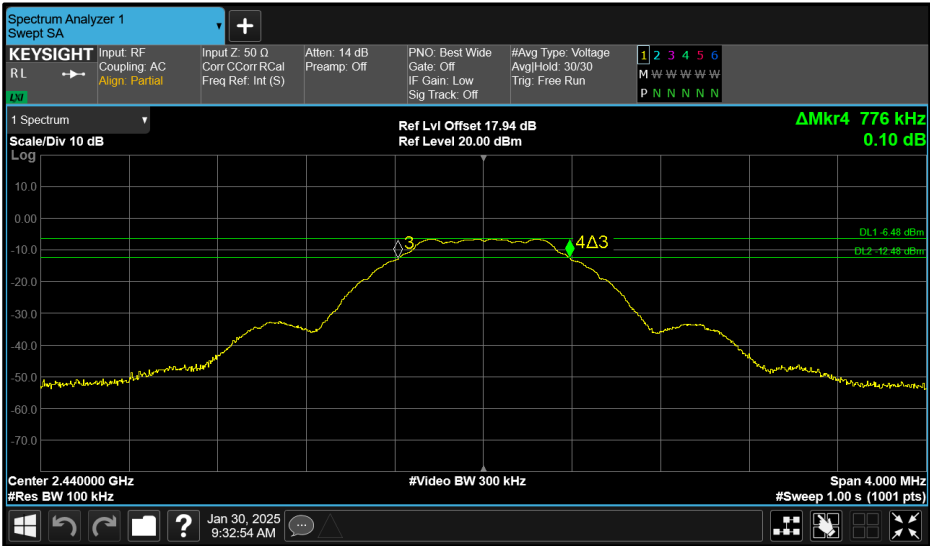
Transmitter Minimum 6 dB Bandwidth (continued)

Results:

Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause:	15.247 (a)(2) RSS-247 5.2 a)	Test Method:	ANSI C63.10 11.8.1

Antenna Configuration:	SISO	Mode:	LE
Test Port:	1	Rate/Modulation:	LE 1M (GFSK)

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2402	0.780	-	-	-	≥500
2440	0.776	-	-	-	≥500
2480	0.776	-	-	-	≥500



Channel 17

4.3 Transmitter Maximum Peak Output Power

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	28 January 2025
Test Sample Serial Number:	Z2SWXV89		

Environmental Conditions:

Temperature (°C):	20
Relative Humidity (%):	43

Note(s):

- Conducted power tests were performed using a peak power in accordance with ANSI C63.10 Section 11.9.1.3 with PKPM1 peak power meter method.
- The conducted power was added to the declared antenna gain to obtain the EIRP.

Results:

Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause:	15.247 (b)(3) RSS-247 5.4 d)	Test Method:	ANSI C63.10 Section 11.9.1.3

Antenna Configuration:	SISO	Mode:	LE
Test Port:	1	Rate/Modulation:	LE 1M (GFSK)

Burst Tx	Stability: < ±2%	Duty Cycle (%): 100.00	Period (ms): -	Width (ms): -
----------	------------------	------------------------	----------------	---------------

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	1	2	3	4	Σ						
2402	-2.11	-	-	-	-	30.00	32.11	1.03	-1.08	36.00	37.08
2440	-2.40	-	-	-	-	30.00	32.40	1.03	-1.37	36.00	37.37
2480	-3.20	-	-	-	-	30.00	33.20	1.03	-2.17	36.00	38.17

5 Radiated Test Results

5.1 Transmitter Radiated Emissions <1 GHz

Test Summary:

Test Engineers:	Shamraiz Ashiq & Lenny Hantz	Test Dates:	28 January 2025 & 30 January 2025
Test Sample Serial Number:	Z2SWXV7X		

FCC Reference:	Parts 15.247(d) & 15.209(a)
ISED Canada Reference:	RSS-247 5.5 / RSS-Gen 6.13 & 8.9
Test Method Used:	ANSI C63.10 Sections 6.3, 6.4 and 6.5
Frequency Range	9 kHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	20 to 21
Relative Humidity (%):	40 to 41

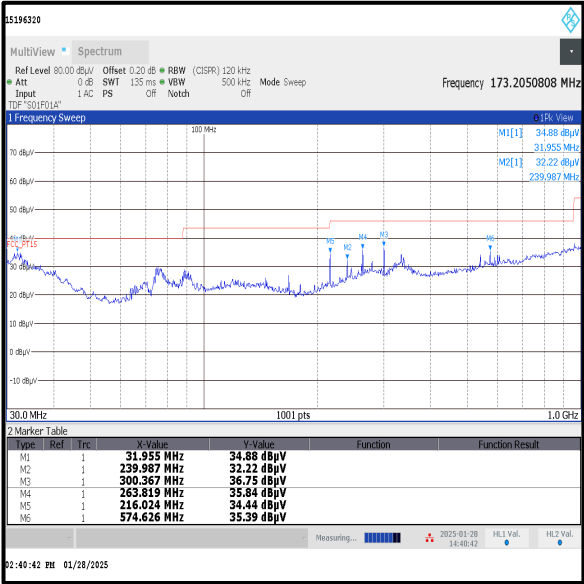
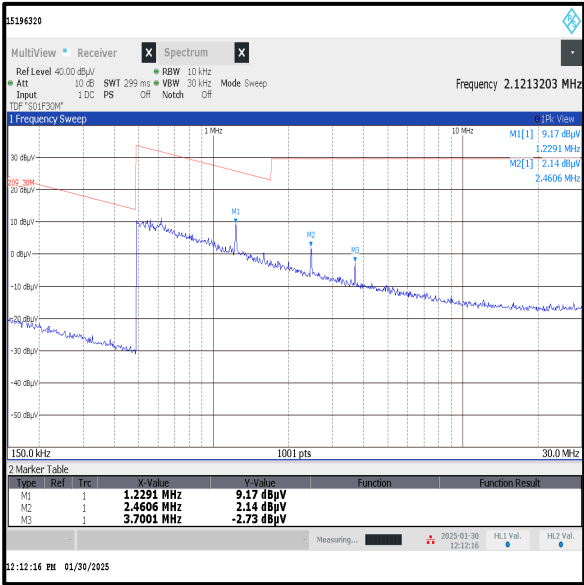
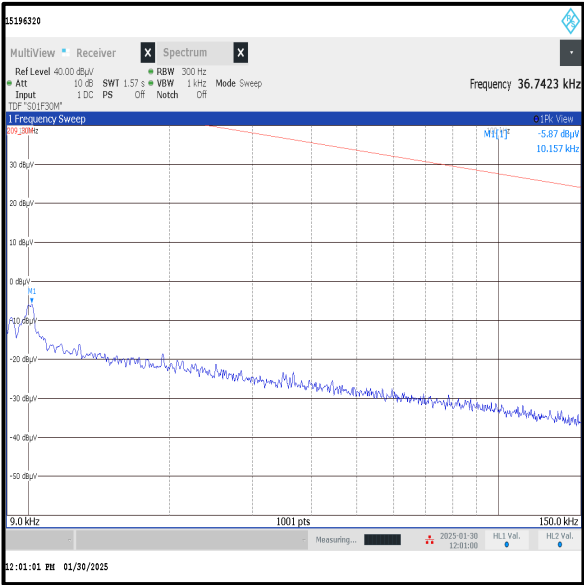
Transmitter Radiated Emissions (continued)**Note(s):**

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the middle channel only.
3. All other emissions shown on the pre-scans were investigated and found to be ambient, or > 20 dB below the appropriate limit or below the noise floor of the measurement system.
4. Measurements below 30 MHz were performed in a semi-anechoic chamber (Asset Number K0001) at 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. The limit was extrapolated to 3 metres in accordance with ANSI C63.10 clause 6.4.3 using the method described in clause 6.4.4.2. ANSI C63.10 clause 5.2 states an alternative test site that can demonstrate equivalence to an open area test site may be used for measurements below 30 MHz. Therefore, measurements were performed in a semi-anechoic chamber. The correlation data between semi-anechoic chamber and an open field test site is available upon request.
5. The measured values at 3 metres were extrapolated to the required measurement distances of 300 metres and 30 metres and compared to the specified limits at those distances:
 - 9 kHz to 490 kHz: measured value extrapolated from 3 metres to 300 metres by subtracting 80 dB at 40 dB / decade
 - 490 kHz to 30 MHz: measured value extrapolated from 3 metres to 30 metres by subtracting 40 dB at 40 dB / decade
6. 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 dBuV/m, which is equivalent to $Y - 51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to the 15.209(a) limit.
7. Measurements from 30 MHz to 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.
8. Pre-scans were performed and markers placed on the highest measured levels. The test receiver was configured as follows: For 9 kHz to 150 kHz, the resolution bandwidth was set to 300 Hz and video bandwidth 1 kHz. A peak detector was used and trace mode was Max Hold. For 150 kHz to 30 MHz, the resolution bandwidth was set to 10 kHz and video bandwidth 30 kHz, trace mode was Max Hold. For 30 MHz to 1 GHz, the resolution bandwidth was set to 120 kHz and video bandwidth 500 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
9. Final measurements were performed on the marker frequencies and the results entered into the table below. The test receiver resolution bandwidth was set to 120 kHz, using a CISPR quasi-peak detector and measurement time set to 15 seconds.

Transmitter Radiated Emissions (continued)

Results: Quasi-Peak / Middle Channel

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
239.987	Horizontal	29.4	46.0	16.6	Complied
263.819	Horizontal	33.7	46.0	12.3	Complied



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

5.2 Transmitter Radiated Emissions >1 GHz

Test Summary:

Test Engineers:	Shamraiz Ashiq & Lenny Hantz	Test Dates:	29 January 2025 to 18 February 2025
Test Sample Serial Number:	Z2SWXV7X		

FCC Reference:	Parts 15.247(d) & 15.209(a)
ISED Canada Reference:	RSS-247 5.5 / RSS-Gen 6.13 & 8.9
Test Method Used:	FCC KDB 558074 Sections 8.1 c)3), 8.5 & 8.6 referencing ANSI C63.10 Sections 6.3, 6.6, 11.11 & 11.12
Frequency Range	1 GHz to 25 GHz

Environmental Conditions:

Temperature (°C):	19 to 20
Relative Humidity (%):	34 to 41

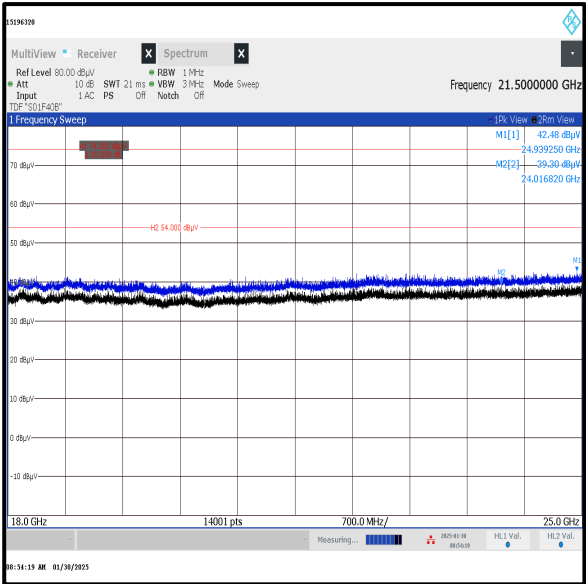
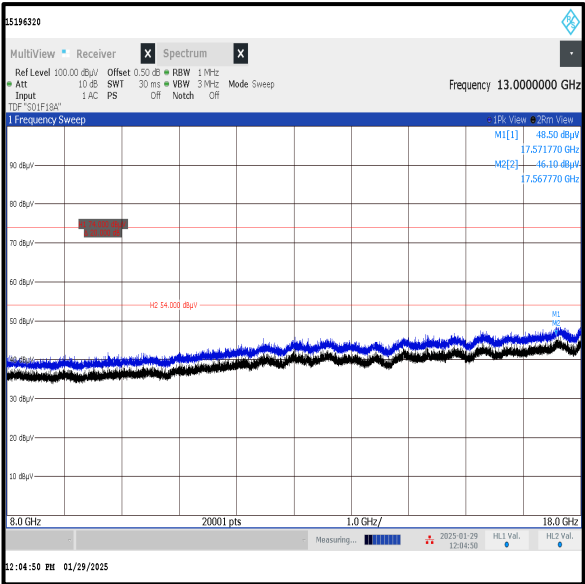
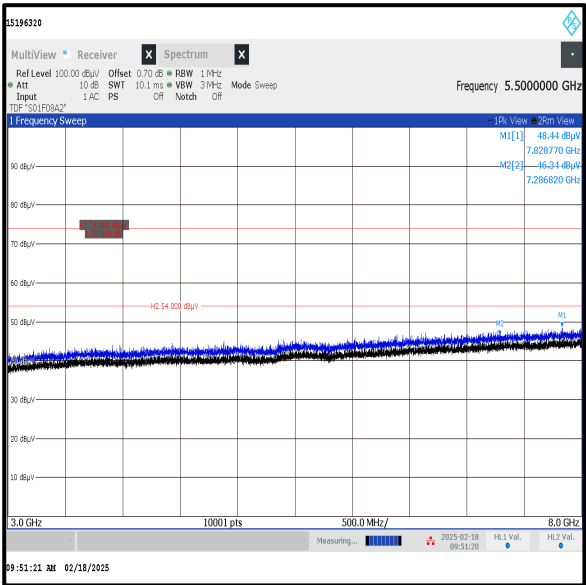
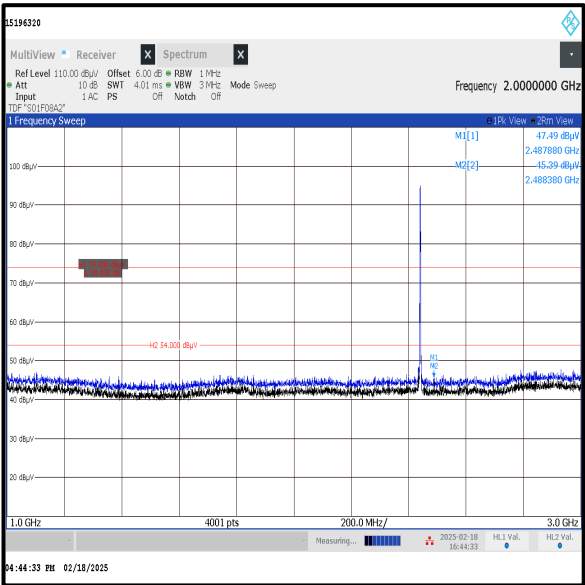
Note(s):

1. All emissions shown on the pre-scans were investigated and found to be ambient, > 20 dB below the appropriate limit or below the noise floor of the measurement system. Therefore, the highest noise floor reading of the measurement system has been recorded in the table below.
2. The emission shown on the 1 GHz to 3 GHz plot is the EUT fundamental.
3. In accordance with ANSI C63.10 Section 6.6.4.3, Note 1, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.
4. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0001) at a distance of 3 metres. 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.
5. Final measurements above 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 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 metre to 4 metres.
6. 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. Peak and average measurements were performed with their own appropriate detectors during the pre-scan measurements.

Transmitter Radiated Emissions (continued)

Results:

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
17571.770	Horizontal	48.5	54.0	5.5	Complied



5.3 Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineers:	Shamraiz Ashiq & Lenny Hantz	Test Date:	29 January 2025
Test Sample Serial Number:	Z2SWXV7X		

FCC Reference:	Parts 15.247(d) & 15.209(a)
ISED Canada Reference:	RSS-247 5.5 / RSS-Gen 6.13
Test Method Used:	KDB 558074 Section 8.7 referencing ANSI C63.10 Sections 11.11, 11.12 & 11.13

Environmental Conditions:

Temperature (°C):	20
Relative Humidity (%):	41

Note(s):

1. The final measured value(s) in the table below incorporates the calibrated antenna factor and cable loss.
2. As the lower band edge is adjacent to a non-restricted band, only peak measurements are required. In accordance with ANSI C63.10 Section 11.11.1, the test method in Section 11.11.3 was followed: 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 test receiver was left to sweep for a sufficient length of time in order to maximise the carrier level and out-of-band emissions. A marker and corresponding reference level line were placed on the peak of the carrier. As the maximum peak conducted output power was measured using an peak detector in accordance with ANSI C63.10 Section 11.9.1.1 an out-of-band limit line was placed 20 dB (ANSI C63.10 Section 11.11.1(a)) below the peak level. A marker was placed on the band edge spot frequencies. Marker frequency and levels were recorded.
3. As the upper band edge is adjacent to a restricted band, both peak and average measurements were recorded by placing a marker at the edge of the band. For peak measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. For average measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. An RMS detector was used, sweep time was set to auto and trace mode was trace averaging over 300 sweeps. A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission level in the adjacent restricted band of operation (where a higher level emission was present). Marker frequencies and levels were recorded.
4. There is a restricted band 10 MHz below the lower band edge. The test receiver was set up as follows: the RBW set to 1 MHz, the VBW set to 3 MHz, with the sweep time set to auto couple. Peak and average measurements were performed with peak and RMS detectors respectively. Markers were placed on the highest point on each trace.
5. # -20 dBc limit.

Transmitter Band Edge Radiated Emissions (continued)**Results: Peak**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2395.840	Horizontal	41.6	74.9 [#]	33.3	Complied
2400.0	Horizontal	46.2	74.9 [#]	28.7	Complied
2483.5	Horizontal	48.7	74.0	25.3	Complied
2483.660	Horizontal	49.5	74.0	24.5	Complied

Results: Average

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	37.4	54.0	16.6	Complied

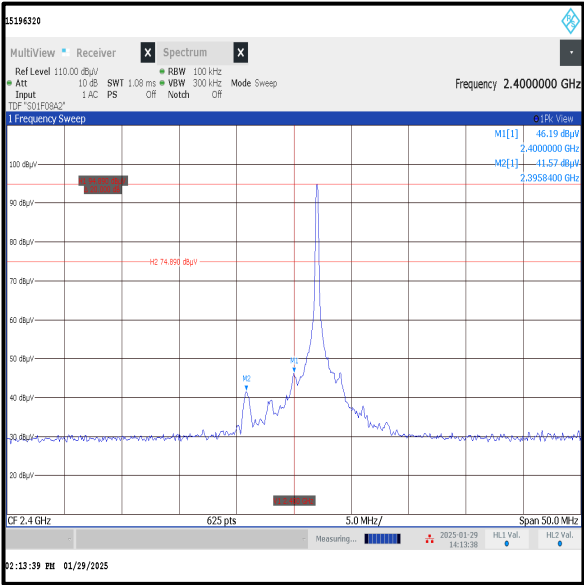
Results: 2310 MHz to 2390 MHz Restricted Band / Peak

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2354.220	Horizontal	45.4	74.0	28.6	Complied

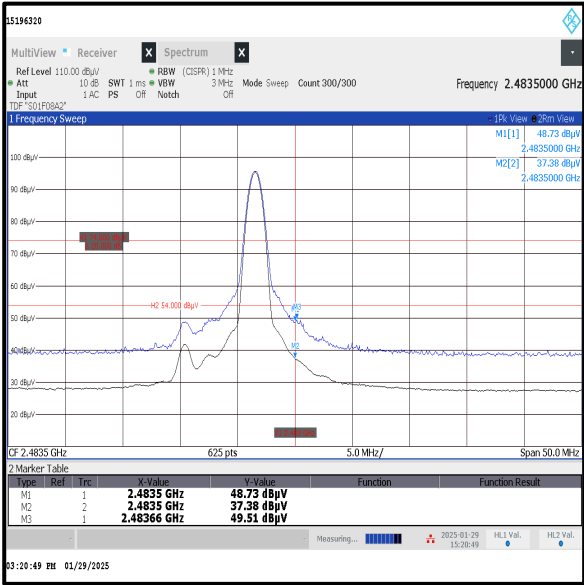
Results: 2310 MHz to 2390 MHz Restricted Band / Average

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2354.100	Horizontal	38.6	54.0	15.4	Complied

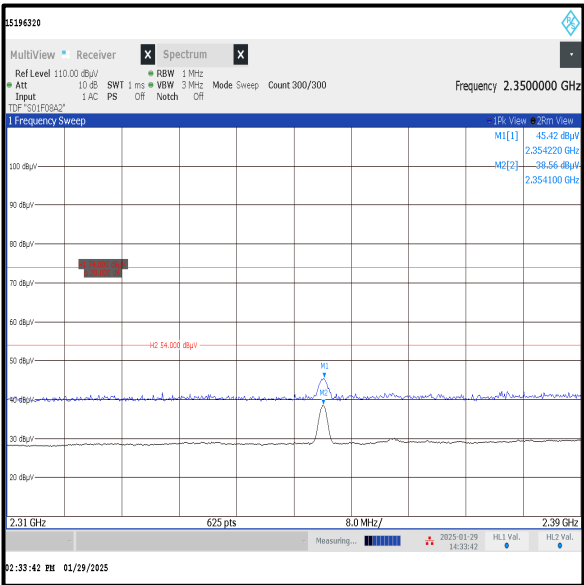
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

--- END OF REPORT ---