

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

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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.

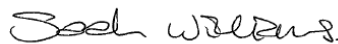
Date of Issue: 03 March 2025

Checked by:



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Lead Project Engineer, Radio Laboratory

Company Signatory:



Sarah Williams
Staff Engineer, Radio Laboratory



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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 |

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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

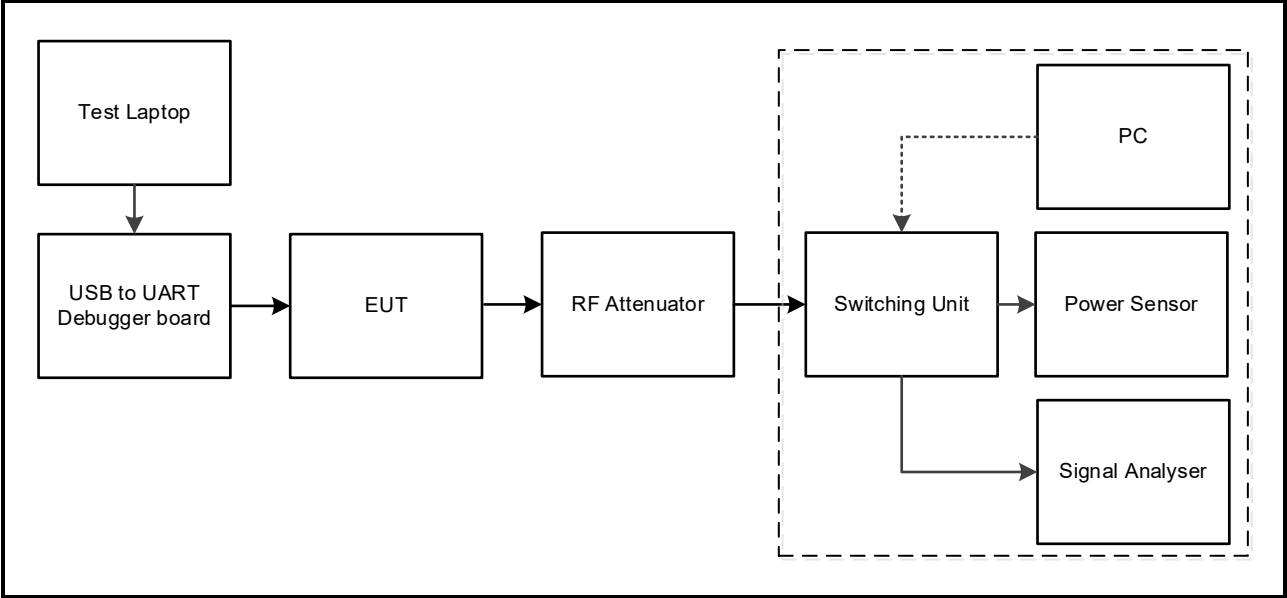
The EUT was tested in the following configuration(s):

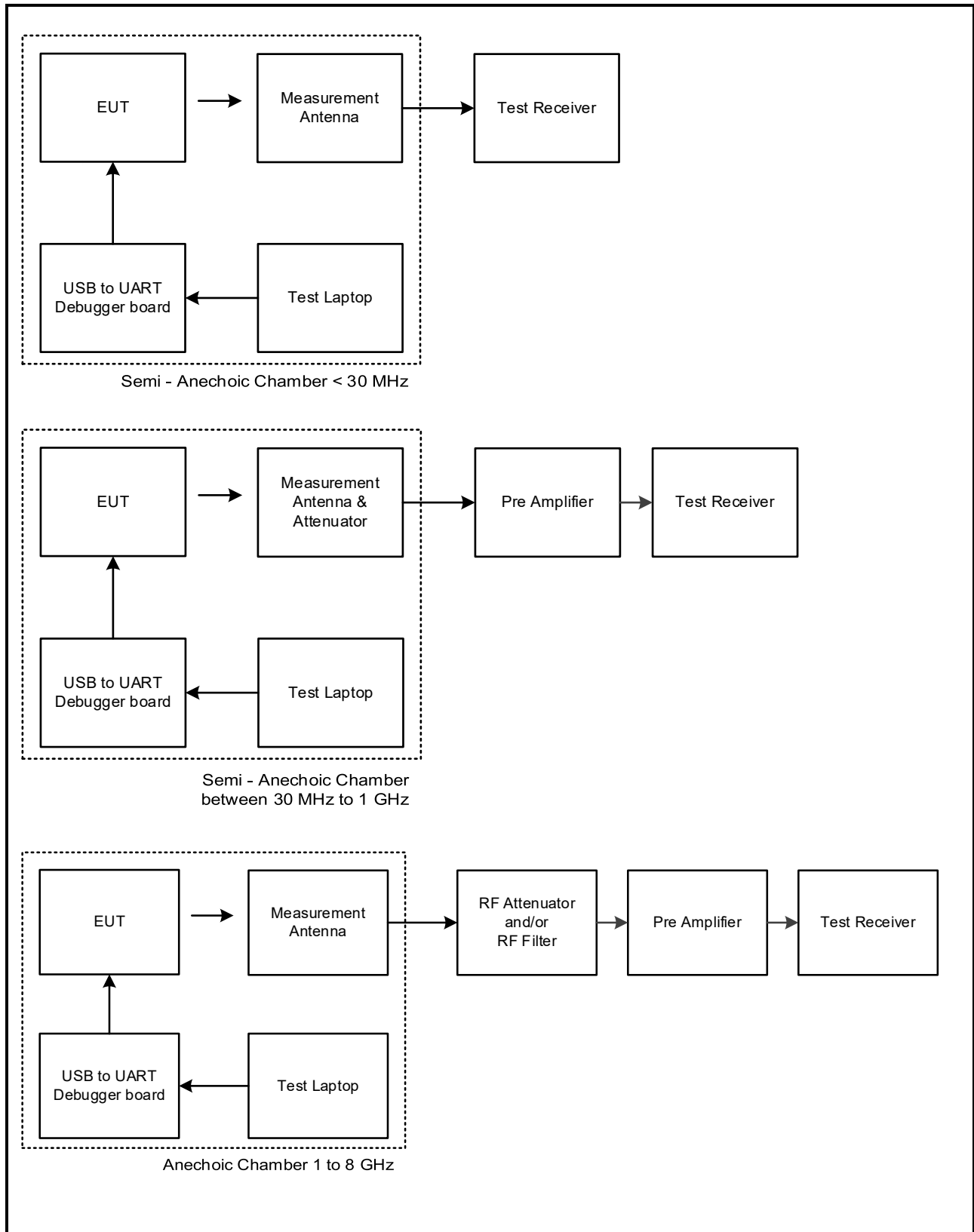
- A test laptop with a third party test application was used to place the EUT into *Bluetooth* LE test mode via a USB cable connected to a debugger board. The application was used to enable continuous transmission, set transmit power setting and to select the test channels as required.
- The EUT was 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:

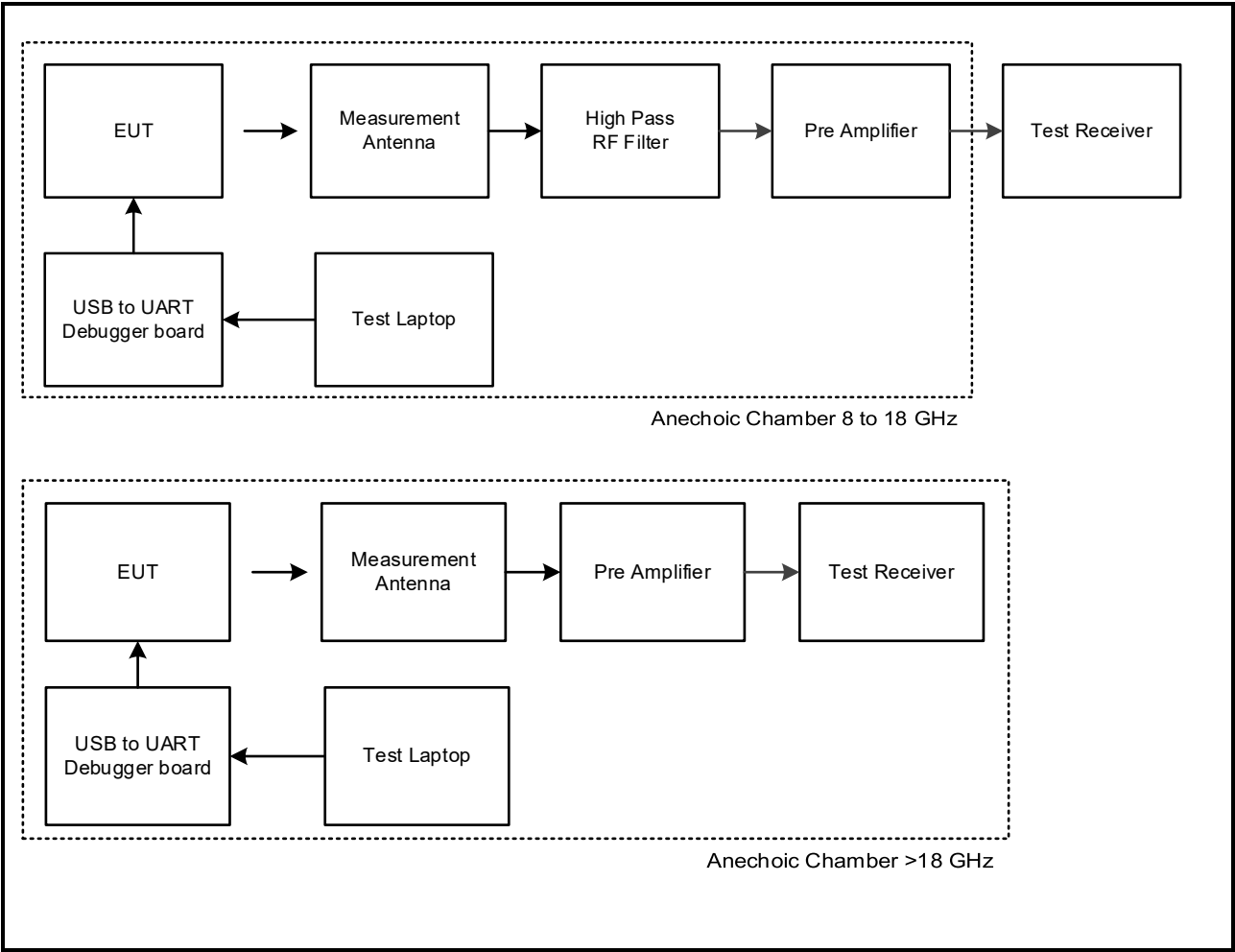
Test Setup for Transmitter Conducted Tests



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.

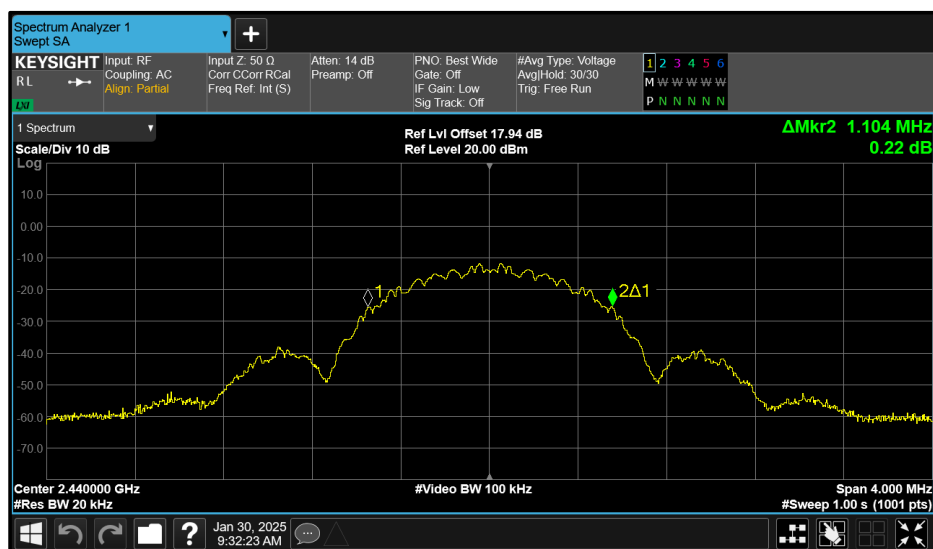
Transmitter 99% Occupied Bandwidth (continued)

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.

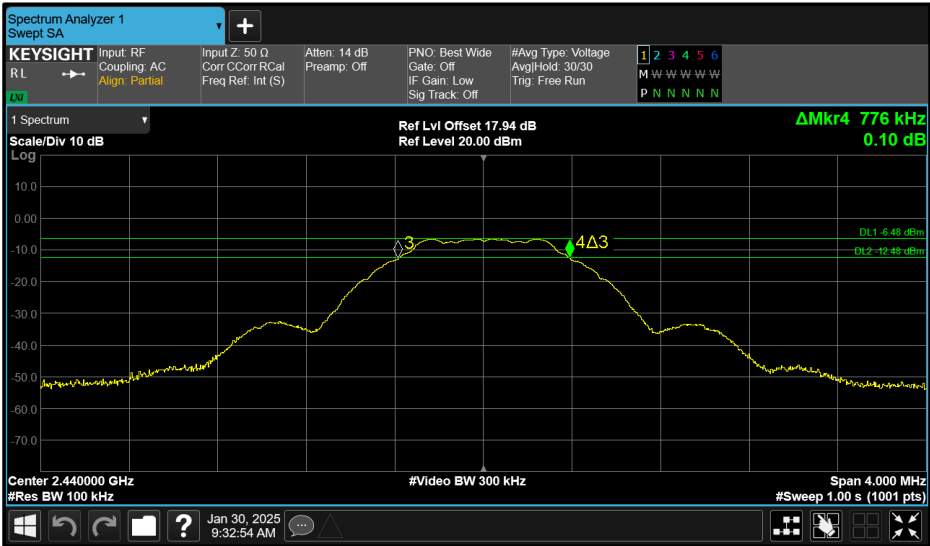
Transmitter Minimum 6 dB Bandwidth (continued)

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 |

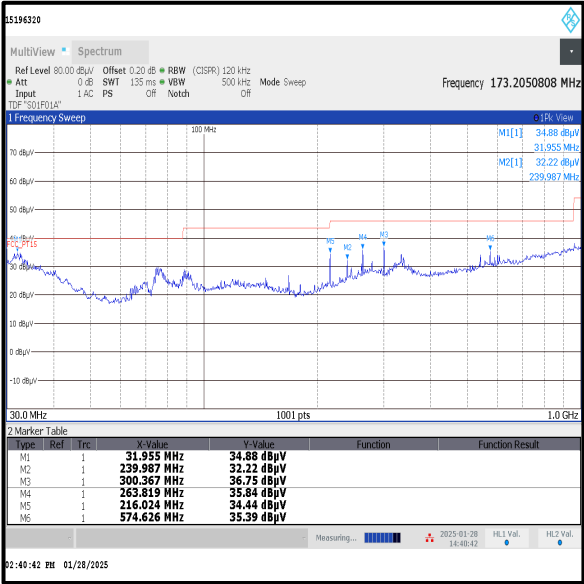
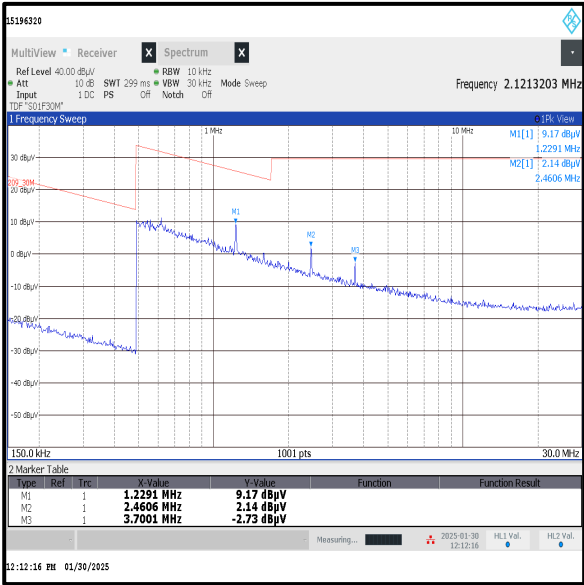
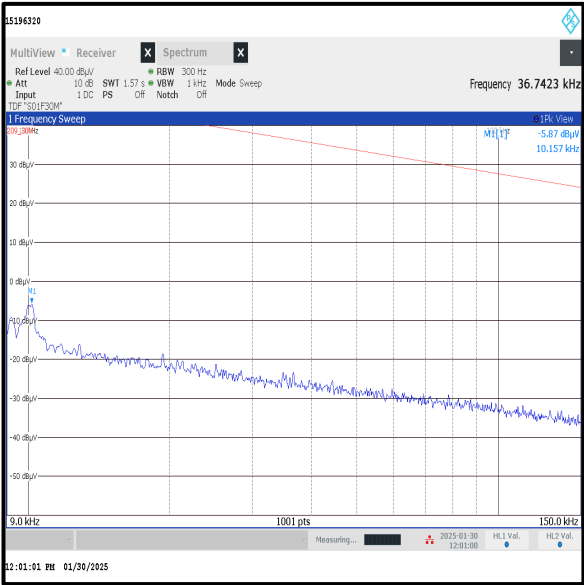
Transmitter Radiated Emissions (continued)**Note(s):**

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 |

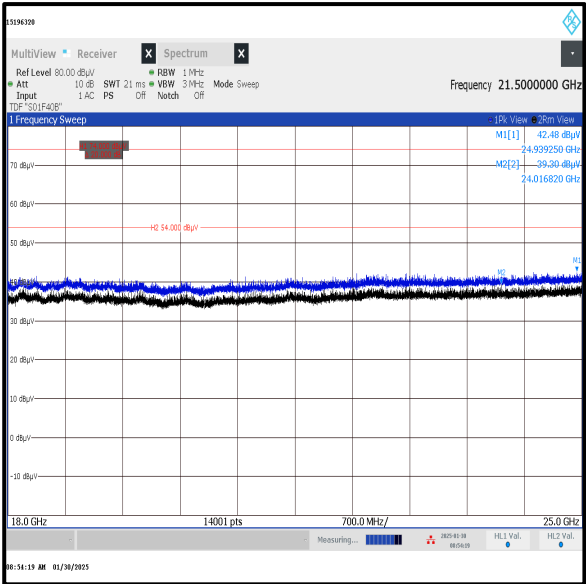
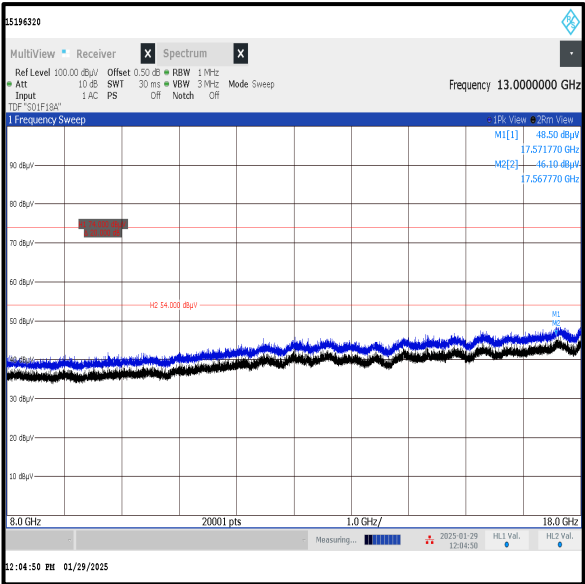
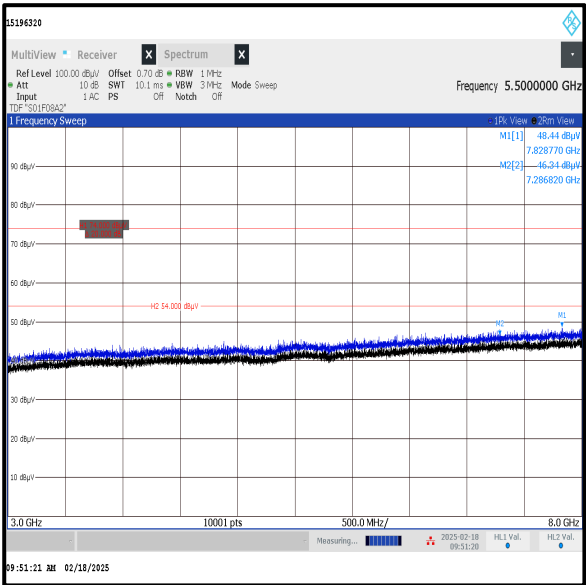
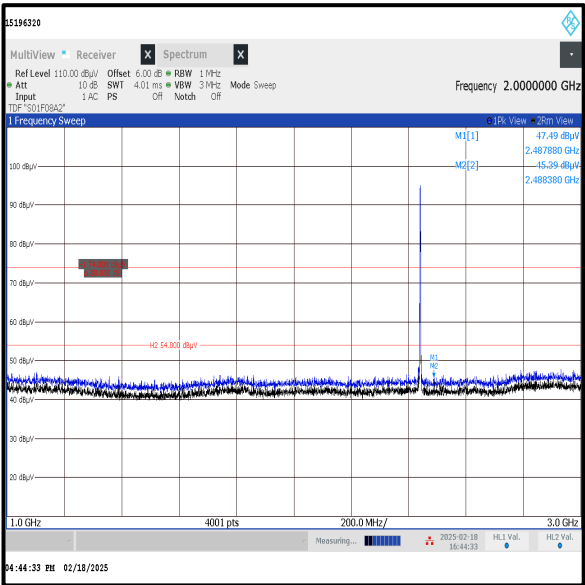
Note(s):

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 |

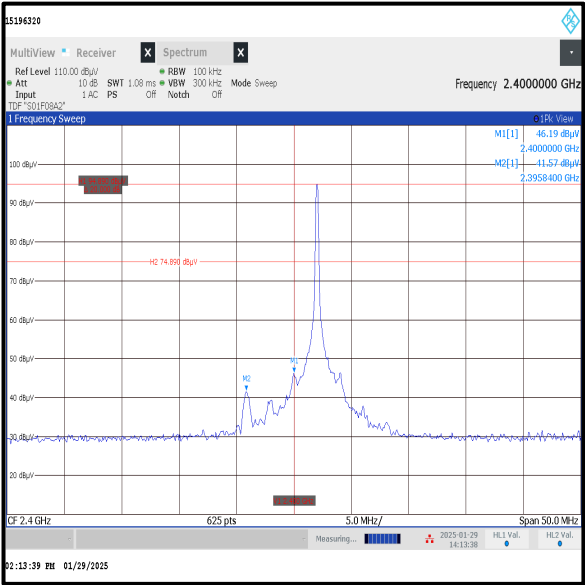
Results: 2310 MHz to 2390 MHz Restricted Band / Peak

| 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 |

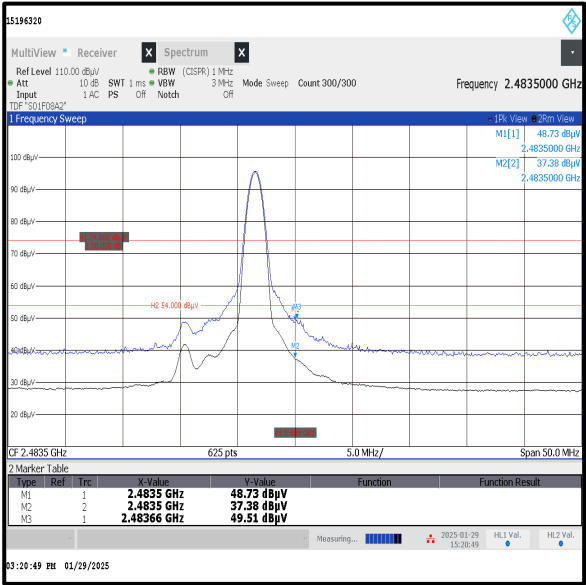
Results: 2310 MHz to 2390 MHz Restricted Band / Average

| 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 |

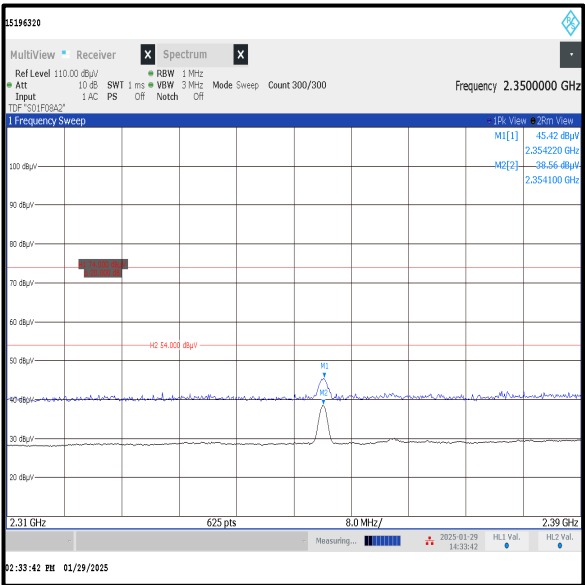
Transmitter Band Edge Radiated Emissions (continued)



Lower Band Edge



Upper Band Edge



2310 MHz to 2390 MHz Restricted Band

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