



TEST REPORT

Test Report No. : UL-RPT-RP16171218JD02H

Applicant* : Apple Inc.

Model No. / HVIN* : A3534

FCC ID* : BCGA3534 **IC*** : 579C-A3534

Technology : IEEE 802.15.4

Test Standard(s) : FCC Parts 15.35(c), 15.209(a) & 15.247
Innovation, Science and Economic Development Canada
RSS-247 Issue 4 July 2025,
RSS-Gen Issue 5 February 2021

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

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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 2.0 supersedes all previous versions.

Date of Issue: 10 August 2026

Checked by:

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Applicant Information

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Report Revision History

Version Number	Issue Date	Revision Details	Revised By
1.0	09/07/2026	Initial Version	Sarah Williams
2.0	10/08/2026	Address TCB feedback	Sarah Williams

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1 Attestation of Test Results

1.1 Description of EUT

The equipment under test (EUT) was a desktop computer.*

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-247 Issue 4 July 2025
Specification Title:	Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands
Specification Reference:	RSS-Gen Issue 5 February 2021
Specification Title:	General Requirements for Compliance of Radio Apparatus
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:	17 April 2026 to 08 June 2026

1.3 Summary of Test Results

FCC Clause (47CFR)	ISED Clause	Transmitter Measurement	Result
Part 15.35(c)	RSS-Gen 8.2	Duty Cycle	Note 1
N/A	RSS-Gen 6.7	99% Occupied Bandwidth	Note 1
Part 15.247(a)(2)	RSS-247 6.3.1(a) / RSS-Gen 6.7	Minimum 6 dB Bandwidth	Complied
Part 15.247(b)(3)	RSS-247 6.3.2 / RSS-Gen 6.12	Maximum Peak Output Power	Complied
Part 15.247(e)	RSS-247 6.3.1(b)	Power Spectral Density	Complied
Part 15.247(d) & 15.209(a)	RSS-247 6.6 / RSS-Gen 6.13 & 8.9	Radiated Emissions	Complied
Part 15.247(d) & 15.209(a)	RSS-247 6.6 / RSS-Gen 6.13 & 8.10	Band Edge Radiated Emissions	Complied

Note(s):

1. Reporting purposes only.

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	-
Site 17	-
Site 32	X
Site 33	X

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 C63.10-2020
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Reference:	#ANSI C63.10-2020/Cor1-2023
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices – Corrigendum 1
Reference:	#ANSI C63.10-2020+C63.10a-2024
Title:	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices – Amendment 1
Reference:	#ANSI C63.10-2020+Errata to C63.10a-2024
Title:	Errata to American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices – Amendment 1

#The use of ANSI C63.10-2020/Cor1-2023 and C63.10a-2024 does not deviate from the testing procedures of ANSI C63.10-2020

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. 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
Duty Cycle	2.4 GHz to 2.4835 GHz	95%	±1.14 %
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 %
Spectral Power Density	2.4 GHz to 2.4835 GHz	95%	±1.25 dB
Conducted Maximum Peak Output Power	2.4 GHz to 2.4835 GHz	95%	±0.61 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±4.66 dB
Radiated Spurious Emissions	1 GHz to 25 GHz	95%	±5.06 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 Sample Calculation

Where relevant, the following calculations were used:

Radiated Emissions

- The recorded emission level was calculated from the level indicated by the measuring receiver, adjusted by a transducer factor (TDF in dB), using the formula:

$$\text{TDF (dB)} = C_{\text{Att}} (\text{dB}) + \text{AF (dB/m)} - P_{\text{Gain}} (\text{dB}) + D_{\text{Cor}} (\text{dB})$$

Where:

C_{Att} : conducted path attenuation (cables + attenuators)

AF: antenna factor

P_{Gain} : external preamplifier gain

D_{Cor} : distance correction factor (where applicable)

2.5 Test and Measurement Equipment

Test Equipment Used for Conducted Tests

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2042	Thermohygrometer	Testo	608-H1	45124926	18 Dec 2026	12
M231909	Signal Analyser	Keysight	N9020B	MY63430168	01 Oct 2026	12
A237327	Attenuator	Pasternack	PE7013-10	#18	Calibrated before use	-
A237328	Attenuator	Pasternack	PE7013-10	#19	Calibrated before use	-
A237329	Attenuator	Pasternack	PE7013-10	#20	Calibrated before use	-
M215600	Power Sensor	Boonton	RTP5008	11837	15 Sep 2026	12
M225503	Power Sensor	Boonton	RTP5008	12324	24 Mar 2027	12
M216297	Power Sensor	Boonton	RTP5008	11827	27 Mar 2027	12
A231993	Switching Unit	Mini-Circuits	ZT-400	12211020014	Calibrated before use	-
M241601	Network Analyser	Keysight	P5007B	MY61100200	02 Oct 2026	12

Test Measurement Software/Firmware Used for Conducted Tests

Name	Version	Release Date
Phoenix Core	5.0.17	27 April 2026

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

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M226553	Thermohygrometer	Testo	608-H1	83800731	17 Dec 2026	12
K226202	3m RSE Chamber	Albatross Projects	N/A	N/A	07 Jul 2026	12
M227312	Test Receiver	Rohde & Schwarz	ESW44	103203	10 Dec 2026	12
A230567	Pre-Amplifier	Atlantic Microwave	A-HPAKX-380143-K5K5	VJ3601001	07 Jul 2026	12
A255973	Signal Conditioning Unit	Link Microtek	AMUNIT-SCB-UL1	16814	14 Apr 2027	12
A231043	Antenna	Schwarzbeck	BBHA 9120 B	00834	07 Jul 2026	12
A231046	Antenna	Schwarzbeck	HWRD 750	00065	07 Jul 2026	12
A231050	Antenna	Schwarzbeck	BBHA 9170	01280	07 Jul 2026	12
C227000	RF Cable	Huber + Suhner	SF126EA/11N/11N/6000	520904	07 Jul 2026	12
C226917	RF Cable	Huber + Suhner	SF126EA/11N/11N/4000	520385	07 Jul 2026	12
C226954	RF Cable	Huber + Suhner	SF126EA/11N/11N/2000	520364	07 Jul 2026	12
C226940	RF Cable	Huber + Suhner	SF126EA/11N/11N/800	520362	07 Jul 2026	12
C267019	RF Cable	Huber + Suhner	SF526EA/11N/11N/7000	3458770004	26 Aug 2026	12
C226956	RF Cable	Huber + Suhner	SF126EA/11N/11N/2000	520365	07 Jul 2026	12
C256200	RF Cable	Link Microtek	B10-07-07-0.5M-001	#8	26 Aug 2026	12
C223506	RF Cable	Schwarzbeck	AK 9540-2.0	00035	07 Jul 2026	12
C223502	RF Cable	Schwarzbeck	AK 9540-0.6	00029	07 Jul 2026	12
M274016	Test Receiver	Rohde & Schwarz	ESW44	103584	17 Dec 2026	12
A231567	Pre-Amplifier	RF Bay	LNA-1070	2	07 Jul 2026	12
A3161	Antenna	Teseq	CBL6111D	50859	21 Aug 2026	12
A3113	Attenuator	AltanTecRF	AN18-06	219706#3	21 Aug 2026	12
A227145	Low Pass Filter	AtlanTecRF	Micro-Tronics	LPM21015	07 Jul 2026	12
C227002	RF Cable	Huber + Suhner	SF126EA/11N/11N/6000mm	520901	07 Jul 2026	12
C226916	RF Cable	Huber + Suhner	SF126EA/11N/11N/4000mm	520384	07 Jul 2026	12
C226955	RF Cable	Huber + Suhner	SF126EA/11N/11N/2000	520363/126E A	07 Jul 2026	12
C226942	RF Cable	Huber + Suhner	SF126EA/11N/11N/800	520358/126E A	07 Jul 2026	12

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

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M226556	Thermohygrometer	Testo	608-H1	83800306	17 Dec 2026	12
K226203	3m RSE Chamber	Albatross Projects	N/A	N/A	07 Jul 2026	12
M274016	Test Receiver	Rohde & Schwarz	ESW44	103584	17 Dec 2026	12
A266802	Signal Conditioning Unit	Link Microtek	AMUNIT-SCB-UL1	16817	16 Jul 2026	12
A231044	Antenna	Schwarzbeck	BBHA 9120 B	00835	07 Jul 2026	12
C267843	RF Cable	Huber + Suhner	SF526EA/11N/11 N/7000	3458770001	06 Nov 2026	12
C226957	RF Cable	Huber + Suhner	SF126EA/11N/11 N/2000	520366	06 Nov 2026	12
C256193	RF Cable	Link Microtek	B10-07-07-0.5M-001	#7	04 Nov 2026	12

Test Measurement Software/Firmware Used for Radiated Tests

Name	Version	Release Date
Phoenix Core	5.0.12	16 April 2026
Phoenix Radiated	5.1.3	10 April 2026

3 Equipment Under Test (EUT)

3.1 Identification of Equipment Under Test (EUT)

Brand Name*:	Apple
Model Name or Number / HVIN*:	A3534
FCC ID*:	BCGA3534
ISED Canada Certification Number*:	579C-A3534

Test Sample Serial Number*:	Hardware Version*:	Software Version*:	Date of Receipt:
KQH4V6G739 (<i>Conducted</i>)	REV 1.0	26A259	16 April 2026
G14HWWN6X4 (<i>Radiated</i>)	REV 1.0	26A259	23 March 2026

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:	802.15.4 (Digital Transmission System)		
Type of Unit:	Transceiver		
Modulation:	O-QPSK		
Data Rate*:	250 kbps		
Power Supply Requirement(s)*:	12 VDC via 120 VAC 60 Hz AC/DC supply		
Maximum Conducted Output Power:	21.66 dBm		
Transmit Frequency Range:	2405 MHz to 2475 MHz		
Transmit Channels Tested:	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	11	2405
	Middle	18	2440
	Top	25	2475

3.4 Description of Available Antennas

The radio utilizes three integrated antennas, with the following maximum gains:

Frequency (MHz)	Antenna Port	Antenna Gain (dBi)*
2402	Core 0	1.3
2440	Core 0	0.8
2480	Core 0	1.4
2402	Core 1	1.2
2440	Core 1	1.0
2480	Core 1	1.3
2402	Core 2	0.2
2440	Core 2	-0.4
2480	Core 2	0.7

The EUT complies with FCC Part 15.203 requirements by using permanently attached antennas with no option for external connections.

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
Test Laptop	Apple	MacBook Pro	DM66H33Y9M
USB Diagnostic Cable	Apple	Chimp	439181
Test Laptop	Apple	MacBook Pro	CFQL62C43K
USB Diagnostic Cable	Apple	Chimp	902BD2
Test Laptop	Apple	MacBook Pro	K5J73GH9RH
USB Diagnostic Cable	Apple	Chimp	902CC8

Laboratory Supplied:

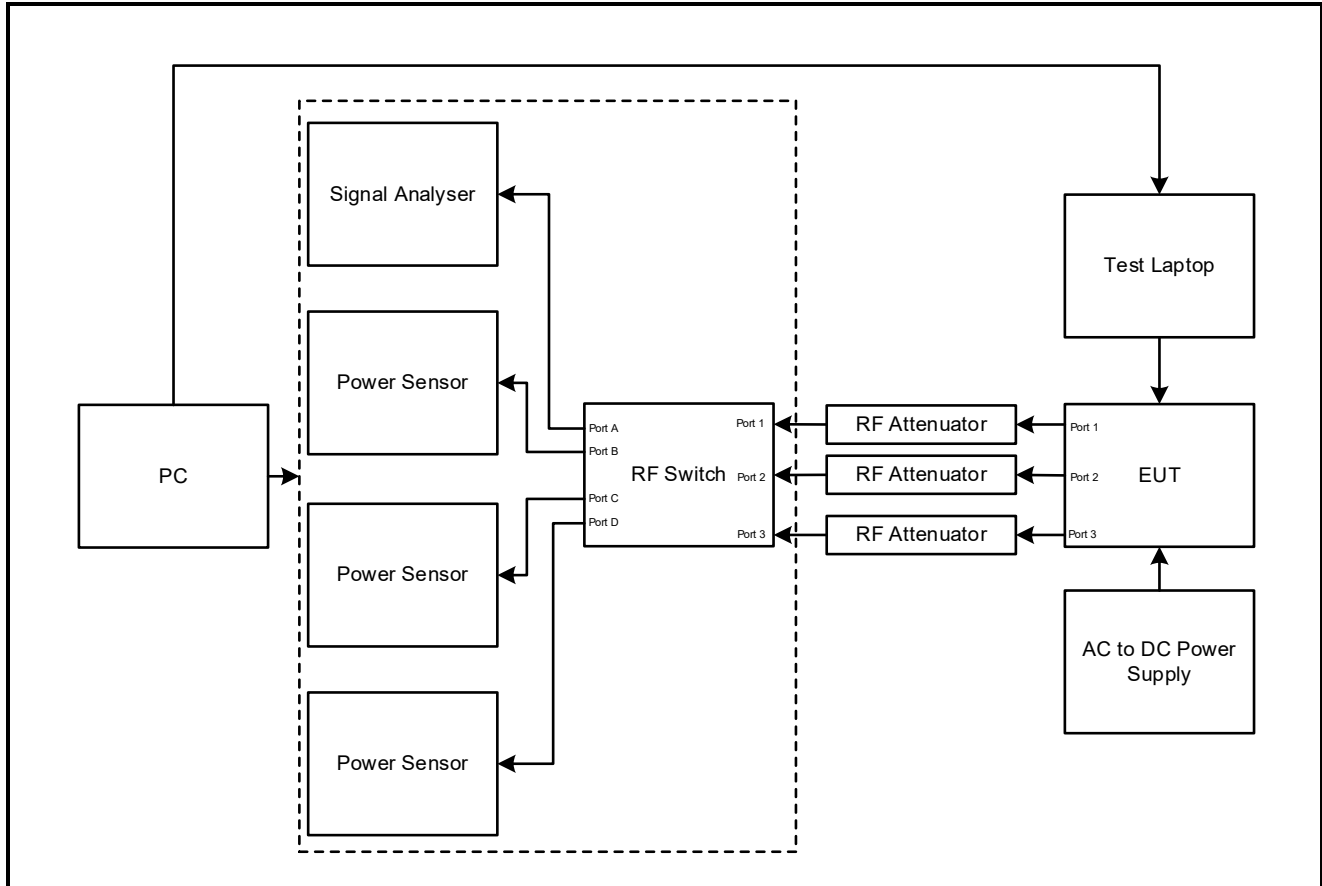
Description	Brand Name	Model Name or Number	Serial Number
USB-C Docking Station. Quantity 2	Lenovo	LDA-KP LDC-G2	ZVR03H0D ZKW05W5E
Ethernet Cable. Length 5m	Not marked or stated	Not marked or stated	Not marked or stated
HDMI Cable. Length 5m	Not marked or stated	Not marked or stated	Not marked or stated
USB-A Cable. Quantity 8. Length 3m	Not marked or stated	Not marked or stated	Not marked or stated
USB C-A Adapter. Quantity 8.	Not marked or stated	Not marked or stated	Not marked or stated
Personal Hands Free (PHF)	Not marked or stated	Not marked or stated	Not marked or stated

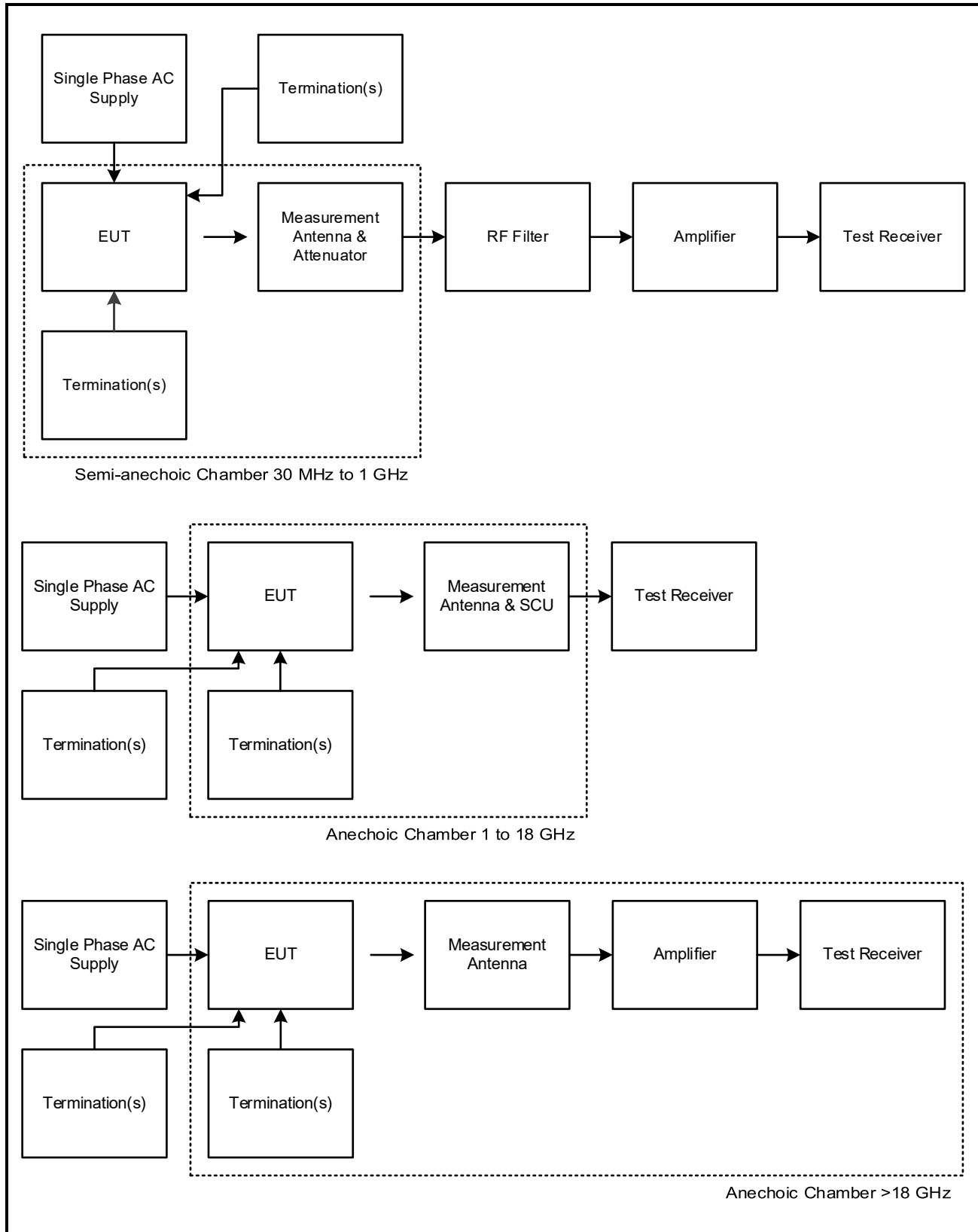
Operating Modes, Configuration and Peripherals

- Continuously transmitting at maximum power on the bottom, middle and top channels as required.
- Controlled in test mode using a set of commands entered into a terminal application on the test laptop supplied by the customer. The commands were used to enable a continuous transmission and to select the test channels as required.
- The EUT was powered from an AC to DC Power Supply. The input was connected to a 120 VAC 60 Hz single phase mains supply.
- The customer supplied RF test cable connections to the internal EUT antenna ports in order to perform conducted measurements. The respective path losses were added to the measurements along with the automated test system path losses.
- Radiated emissions below 1 GHz and above 18 GHz were performed with the EUT set to transmit at the channel with the highest output power as worst-case scenario. Between 1 GHz and 18 GHz, tests were performed with the EUT set to transmit at the highest power on bottom, middle and top channels.
- Radiated emissions tests were performed with the EUT transmitting in the following modes.
 - Core 0 / ePA
 - Core 1 / ePA
 - Core 0 / iPA
 - Core 1 / iPA
 - Core 2 / iPA

Sections 5.1 & 5.2 only have Core 1 / ePA reported. All the other modes are archived on the UL IT server and available for inspection if required.

- Radiated emissions and band edge tests were performed with the EUT in its worst-case orientation with respect to emissions.
- All active ports were terminated using the appropriate terminations during radiated emissions testing.

Test Setup Diagrams**Conducted Tests:****Test Setup for Conducted Tests**

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

4 Antenna Port Test Results

4.1 Duty Cycle

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	04 June 2026
Test Sample Serial Number:	KQH4V6G739		

FCC Clause:	Part 15.35(c)
ISED Canada Clause:	RSS-Gen 8.2
Test Method Used:	ANSI C63.10 Section 11.6

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	54

Note(s):

1. In order to assist with the determination of the average level of spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter.
2. The duty cycle was measured using a calibrated power sensor. The power sensor used has a sufficiently short response time to accurately capture the ON and OFF periods of the transmitted signal.

Results:

Antenna Configuration:	SISO	Mode:	-
Test Port:	1 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	Burst Type	Stability	Duty Cycle (%)	Period (ms)	Width (ms)
2405	Burst Tx	< ±2%	100.00	-	-
2440	Burst Tx	< ±2%	100.00	-	-
2475	Burst Tx	< ±2%	100.00	-	-

4.2 Minimum 6 dB & 99% Bandwidth

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	04 June 2026
Test Sample Serial Number:	KQH4V6G739		

99% OBW:

FCC Clause:	N/A
ISED Canada Clause:	RSS-Gen 6.7
Test Method Used:	ANSI C63.10 Section 6.9.3

6 dB BW:

FCC Clause:	15.247 (a)(2)
ISED Canada Clause:	RSS-247 6.3.1(a) / RSS-Gen 6.7
Test Method Used:	ANSI C63.10 Section 11.8.1

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	54

Note(s):

1. OBW: The transmitter output is connected to a signal analyser. The RBW is set in the range of 1% to 5% of the 99% OBW. The VBW is set to $\geq 3 \times \text{RBW}$. The sweep time is coupled. The 99% emission bandwidth was calculated by the test system using the raw trace data from the signal analyser.
2. 6 dB BW: The transmitter output is connected to a signal analyser. The RBW was set to 100 kHz and VBW 300 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The bandwidth was measured at 6 dB down from the peak of the signal.
3. Example plots of the worst-case channel, for one antenna configuration, can be seen below to show setting parameters comply with testing method/procedure. All other plots are archived on the UL IT server and available for inspection if required.

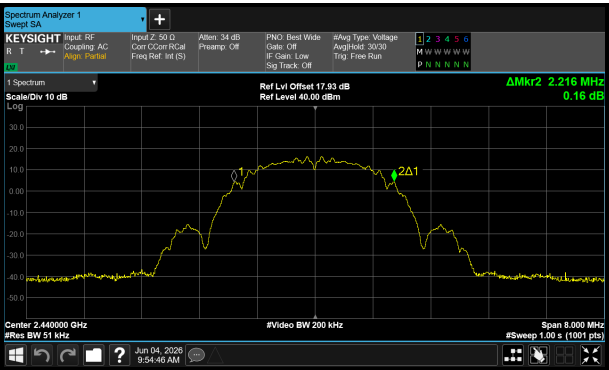
Minimum 6 dB & 99% Bandwidth (continued)

Results: ePA

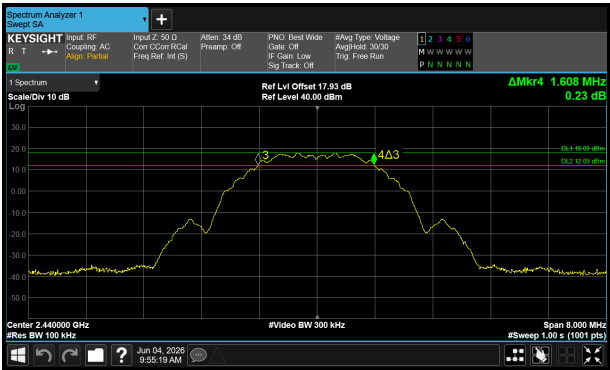
Antenna Configuration:	SISO	Mode:	-
Test Port:	2 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	2.216	-	-	-
2440	-	2.216	-	-	-
2475	-	2.216	-	-	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	1.608	-	-	≥500
2440	-	1.608	-	-	≥500
2475	-	1.608	-	-	≥500



99%



6 dB

Minimum 6 dB & 99% Bandwidth (continued)

Antenna Configuration:	SISO	Mode:	-
Test Port:	3 (Core 1)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	-	2.216	-	-
2440	-	-	2.216	-	-
2475	-	-	2.216	-	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	-	1.616	-	≥500
2440	-	-	1.616	-	≥500
2475	-	-	1.608	-	≥500

Results: iPA

Antenna Configuration:	SISO	Mode:	-
Test Port:	2 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	2.248	-	-	-
2440	-	2.256	-	-	-
2475	-	2.256	-	-	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	1.640	-	-	≥500
2440	-	1.640	-	-	≥500
2475	-	1.632	-	-	≥500

Minimum 6 dB & 99% Bandwidth (continued)

Antenna Configuration:	SISO	Mode:	-
Test Port:	3 (Core 1)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	-	2.256	-	-
2440	-	-	2.256	-	-
2475	-	-	2.248	-	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	-	1.640	-	≥500
2440	-	-	1.640	-	≥500
2475	-	-	1.640	-	≥500

Antenna Configuration:	SISO	Mode:	-
Test Port:	4 (Core 2)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	-	-	2.248	-
2440	-	-	-	2.248	-
2475	-	-	-	2.248	-

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	1	2	3	4	
2405	-	-	-	1.640	≥500
2440	-	-	-	1.648	≥500
2475	-	-	-	1.640	≥500

4.3 Maximum Peak Output Power

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	04 June 2026
Test Sample Serial Number:	KQH4V6G739		

FCC Clause:	15.247 (b)(3)
ISED Canada Clause:	RSS-247 6.3.2
Test Method Used:	ANSI C63.10 Section 11.9.1.2

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	54

Note(s):

1. Measurements were performed with a wideband peak power sensor.
2. The declared antenna gain was added to the conducted peak power to obtain the EIRP.
3. The maximum antenna gain is less than 6 dBi.

Maximum Peak Output Power (continued)**Results: ePA**

Antenna Configuration:	SISO	Mode:	-
Test Port:	2 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

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						
2405	-	21.44	-	-	-	30.00	8.56	1.30	22.74	36.00	13.26
2440	-	21.66	-	-	-	30.00	8.34	0.80	22.46	36.00	13.54
2475	-	21.54	-	-	-	30.00	8.46	1.40	22.94	36.00	13.06

Antenna Configuration:	SISO	Mode:	-
Test Port:	3 (Core 1)	Rate/Modulation:	250 kbit/s (OQPSK)

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						
2405	-	-	21.34	-	-	30.00	8.66	1.20	22.54	36.00	13.46
2440	-	-	21.38	-	-	30.00	8.62	1.00	22.38	36.00	13.62
2475	-	-	21.25	-	-	30.00	8.75	1.30	22.55	36.00	13.45

Maximum Peak Output Power (continued)**Results: iPA**

Antenna Configuration:	SISO	Mode:	-
Test Port:	2 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

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						
2405	-	9.53	-	-	-	30.00	20.47	1.30	10.83	36.00	25.17
2440	-	9.42	-	-	-	30.00	20.58	0.80	10.22	36.00	25.78
2475	-	9.86	-	-	-	30.00	20.14	1.40	11.26	36.00	24.74

Antenna Configuration:	SISO	Mode:	-
Test Port:	3 (Core 1)	Rate/Modulation:	250 kbit/s (OQPSK)

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						
2405	-	-	9.42	-	-	30.00	20.58	1.20	10.62	36.00	25.38
2440	-	-	9.61	-	-	30.00	20.39	1.00	10.61	36.00	25.39
2475	-	-	9.71	-	-	30.00	20.29	1.30	11.01	36.00	24.99

Antenna Configuration:	SISO	Mode:	-
Test Port:	4 (Core 2)	Rate/Modulation:	250 kbit/s (OQPSK)

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						
2405	-	-	-	12.63	-	30.00	17.37	0.20	12.83	36.00	23.17
2440	-	-	-	12.66	-	30.00	17.34	-0.40	12.26	36.00	23.74
2475	-	-	-	12.39	-	30.00	17.61	0.70	13.09	36.00	22.91

4.4 Power Spectral Density

Test Summary:

Test Engineer:	Jerome Moyo	Test Date:	04 June 2026
Test Sample Serial Number:	KQH4V6G739		

FCC Clause:	15.247 (e)
ISED Canada Clause:	RSS-247 6.3.1(b)
Test Method Used:	ANSI C63.10 Section 11.10.2

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	54

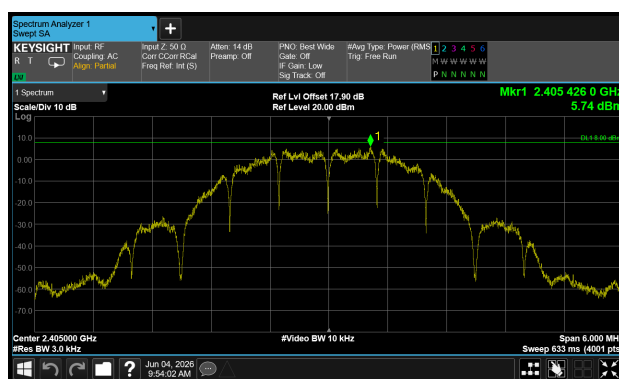
Note(s):

1. The test system signal analyser resolution bandwidth was set to 3 kHz and video bandwidth 10 kHz. A Peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to greater than 1.5 times the measured DTS bandwidth. A marker was placed at the peak of the signal and the results recorded in the table below.
2. Example plots of the worst-case channel, for one antenna configuration, can be seen below to show setting parameters comply with testing method/procedure. All other plots are archived on the UL IT server and available for inspection if required.

Power Spectral Density (continued)**Results: ePA**

Antenna Configuration:	SISO	Mode:	-
Test Port:	2 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	PSD (dBm/3 kHz)					Limit (dBm/3 kHz)	Margin (dB)
	1	2	3	4	Σ		
2405	-	5.74	-	-	-	8.00	2.26
2440	-	5.24	-	-	-	8.00	2.76
2475	-	5.70	-	-	-	8.00	2.30



Antenna Configuration:	SISO	Mode:	-
Test Port:	3 (Core 1)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	PSD (dBm/3 kHz)					Limit (dBm/3 kHz)	Margin (dB)
	1	2	3	4	Σ		
2405	-	-	5.54	-	-	8.00	2.46
2440	-	-	5.36	-	-	8.00	2.64
2475	-	-	5.37	-	-	8.00	2.63

Power Spectral Density (continued)**Results: iPA**

Antenna Configuration:	SISO	Mode:	-
Test Port:	2 (Core 0)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	PSD (dBm/3 kHz)					Limit (dBm/3 kHz)	Margin (dB)
	1	2	3	4	Σ		
2405	-	-6.77	-	-	-	8.00	14.77
2440	-	-6.82	-	-	-	8.00	14.82
2475	-	-6.41	-	-	-	8.00	14.41

Antenna Configuration:	SISO	Mode:	-
Test Port:	3 (Core 1)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	PSD (dBm/3 kHz)					Limit (dBm/3 kHz)	Margin (dB)
	1	2	3	4	Σ		
2405	-	-	-6.43	-	-	8.00	14.43
2440	-	-	-6.49	-	-	8.00	14.49
2475	-	-	-6.77	-	-	8.00	14.77

Antenna Configuration:	SISO	Mode:	-
Test Port:	4 (Core 2)	Rate/Modulation:	250 kbit/s (OQPSK)

Test Frequency (MHz)	PSD (dBm/3 kHz)					Limit (dBm/3 kHz)	Margin (dB)
	1	2	3	4	Σ		
2405	-	-	-	-3.32	-	8.00	11.32
2440	-	-	-	-3.86	-	8.00	11.86
2475	-	-	-	-3.48	-	8.00	11.48

5 Radiated Test Results

5.1 Radiated Emissions <1 GHz

Test Summary:

Test Engineer:	Andrew Harding	Test Date:	08 June 2026
Test Sample Serial Number:	G14HWWN6X4		

FCC Clause:	Parts 15.247(d) & 15.209(a)
ISED Canada Clause:	RSS-247 6.6 / RSS-Gen 6.13 & 8.9
Test Method Used:	ANSI C63.10 Sections 6.3 and 6.5
Frequency Range	30 MHz to 1000 MHz

Environmental Conditions:

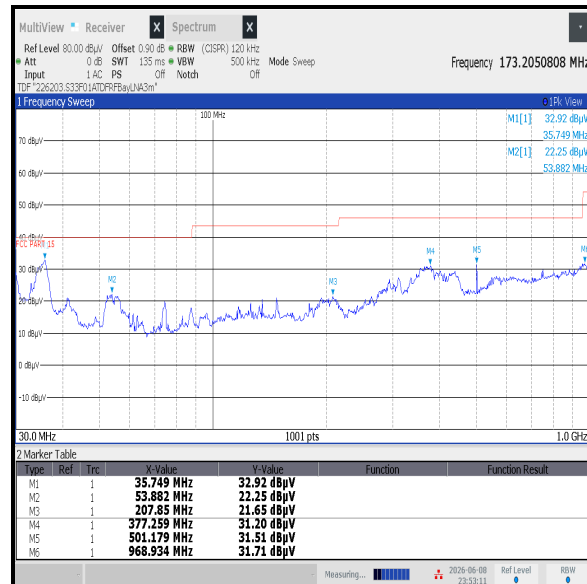
Temperature (°C):	21
Relative Humidity (%):	44

Note(s):

1. 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.
2. All 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. Therefore, the highest peak noise floor reading of the measuring receiver was recorded in the table below.
3. Measurements from 30 MHz to 1 GHz were performed in a semi-anechoic chamber (Asset Number K226203) 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.

Radiated Emissions (continued)**Results: Middle Channel / Quasi-Peak / Core 1 / ePA**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
968.934	31.71	54.00	22.29	Vertical



5.2 Radiated Emissions >1 GHz

Test Summary:

Test Engineers:	Robert English, Faissal Merzaki, Dale Hills & Jose Bayona	Test Dates:	03 May 2026 to 08 May 2026
Test Sample Serial Number:	G14HWWN6X4		

FCC Clause:	Parts 15.247(d) & 15.209(a)
ISED Canada Clause:	RSS-247 6.6 / RSS-Gen 6.13 & 8.9
Test Method Used:	ANSI C63.10 Sections 6.3, 6.6, 11.11 & 11.12
Frequency Range	1 GHz to 26 GHz

Environmental Conditions:

Temperature (°C):	21 to 22
Relative Humidity (%):	38 to 44

Note(s):

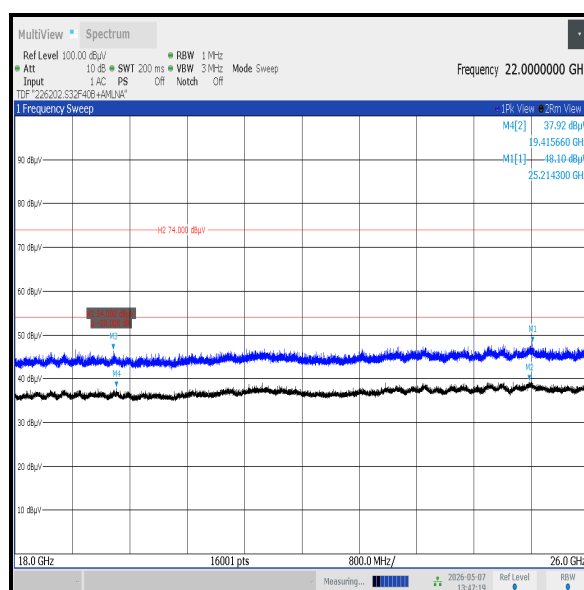
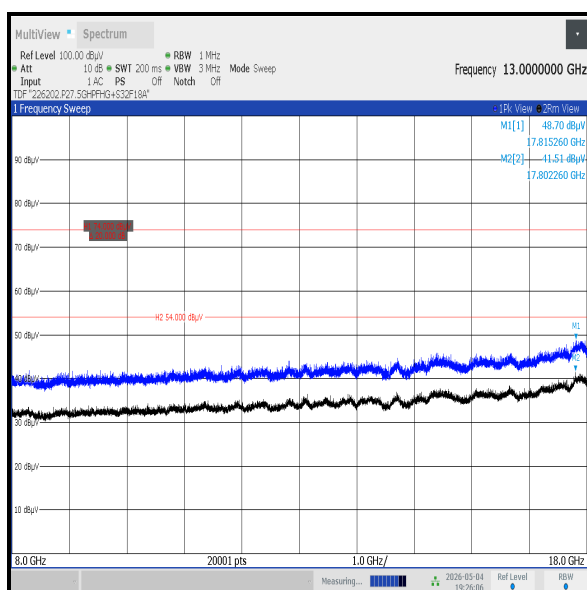
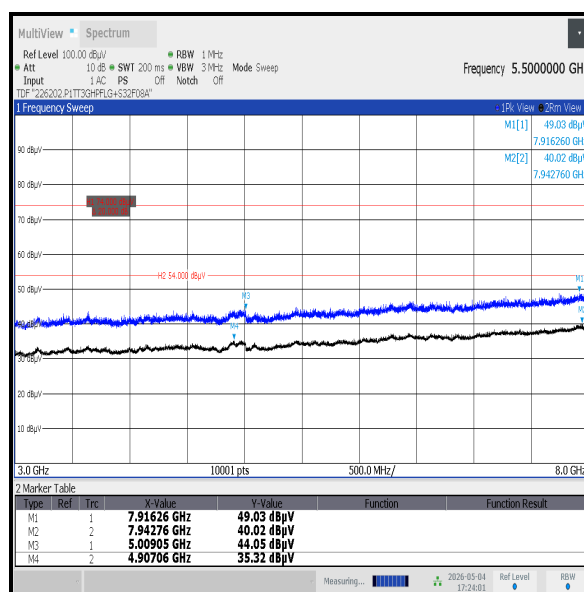
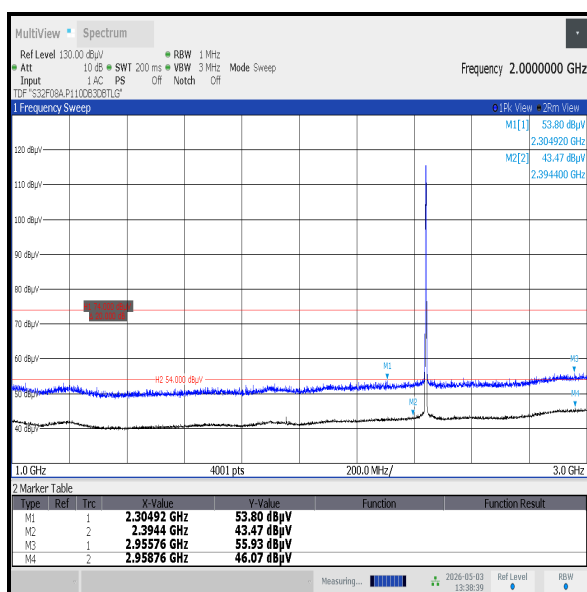
1. No spurious emissions were detected above the noise floor of the measuring receiver for all channels tested therefore the highest peak and average noise floor readings of the measuring receiver for the middle channel were recorded as shown in the tables below.
2. The emission shown on the 1 GHz to 3 GHz plot is the EUT fundamental.
3. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K226202) 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.

Radiated Emissions (continued)**Results: Core 1 / ePA****Results: Middle Channel / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2955.760	55.93	74.00	18.07	Horizontal

Results: Middle Channel / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2958.760	46.07	54.00	7.93	Horizontal



5.3 Band Edge Radiated Emissions

Test Summary:

Test Engineers:	Max Passell & Jose Bayona	Test Date:	17 April 2026
Test Sample Serial Number:	G14HWWN6X4		

FCC Clause:	Parts 15.247(d) & 15.209(a)
ISED Canada Clause:	RSS-247 6.6 / RSS-Gen 6.13
Test Method Used:	ANSI C63.10 Sections 11.6, 11.11 & 11.12

Environmental Conditions:

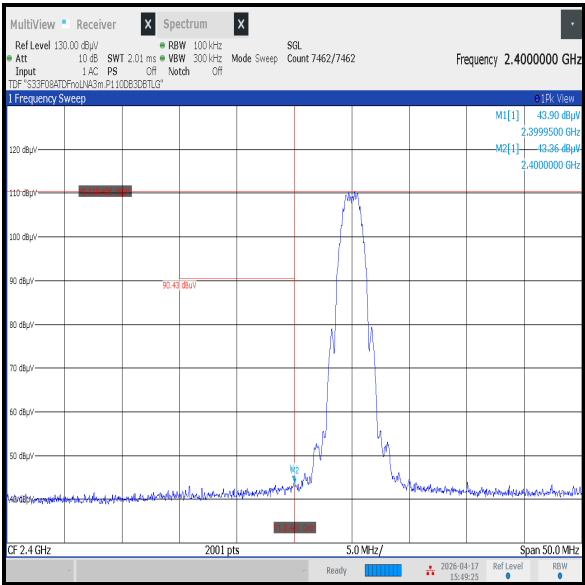
Temperature (°C):	23
Relative Humidity (%):	43

Note(s):

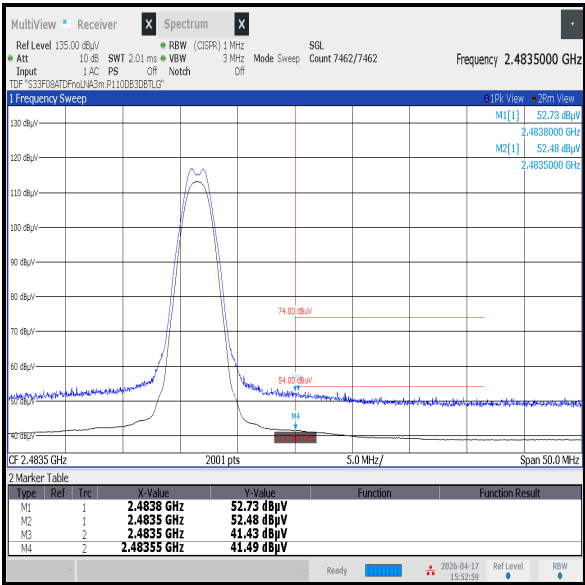
1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. Example plots of the worst-case, for one configuration, can be seen below to show setting parameters comply with testing method/procedure. All other plots are archived on the UL IT server and available for inspection if required.

Band Edge Radiated Emissions (continued)

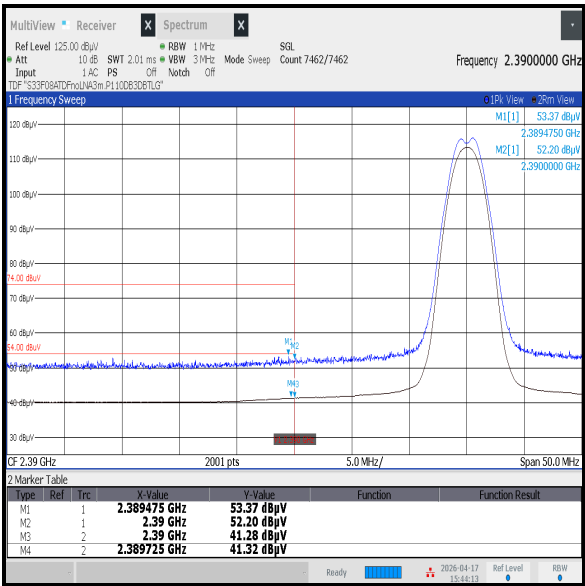
Example Plots / Core 1 / ePA



Lower Band Edge – Non Restricted Band



Upper Band Edge – Restricted Band



Lower Band Edge – Restricted Band

Band Edge Radiated Emissions (continued)**Results: Core 0 / ePA****Results: Non-Restricted Band / Peak**

Frequency (MHz)	Level (dB μ V/m)	-20 dBc Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2400.0	44.41	90.50	46.09	Horizontal

Results: Restricted Band / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2389.350	53.00	74.00	21.00	Horizontal
2483.825	52.80	74.00	21.20	Vertical

Results: Restricted Band / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2390.0	41.30	54.00	12.70	Horizontal
2483.750	41.60	54.00	12.40	Vertical

Results: Core 1 / ePA**Results: Non-Restricted Band / Peak**

Frequency (MHz)	Level (dB μ V/m)	-20 dBc Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2399.950	43.90	90.43	46.53	Horizontal

Results: Restricted Band / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2389.475	53.37	74.00	20.63	Horizontal
2483.800	52.73	74.00	21.27	Horizontal

Results: Restricted Band / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2389.725	41.32	54.00	12.68	Horizontal
2483.550	41.49	54.00	12.51	Horizontal

Band Edge Radiated Emissions (continued)**Results: Core 0 / iPA****Results: Non-Restricted Band / Peak**

Frequency (MHz)	Level (dB μ V/m)	-20 dBc Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2390.725	41.55	80.08	38.53	Horizontal

Results: Restricted Band / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2380.075	52.56	74.00	21.44	Horizontal
2489.350	47.65	74.00	26.35	Horizontal

Results: Restricted Band / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2378.825	39.67	54.00	14.33	Horizontal
2486.125	35.83	54.00	18.17	Horizontal

Results: Core 1 / iPA**Results: Non-Restricted Band / Peak**

Frequency (MHz)	Level (dB μ V/m)	-20 dBc Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2394.375	41.71	76.96	35.25	Horizontal

Results: Restricted Band / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2381.025	52.14	74.00	21.86	Horizontal
2488.975	51.45	74.00	22.55	Horizontal

Results: Restricted Band / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2382.325	39.66	54.00	14.34	Horizontal
2486.100	38.82	54.00	15.18	Horizontal

Band Edge Radiated Emissions (continued)**Results: Core 2 / iPA****Results: Non-Restricted Band / Peak**

Frequency (MHz)	Level (dB μ V/m)	-20 dBc Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2400.0	44.57	84.43	39.86	Vertical

Results: Restricted Band / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2369.150	51.88	74.00	22.12	Vertical
2484.325	51.04	74.00	22.96	Vertical

Results: Restricted Band / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Antenna Polarity
2389.900	39.69	54.00	14.31	Vertical
2483.5	38.92	54.00	15.08	Vertical

--- END OF REPORT ---