

FCC and ISED Test Report

Apple Inc
Model: A3429



In accordance with FCC 47 CFR Part 15C and
ISED RSS-247 and ISED RSS-GEN

Prepared for: Apple Inc
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Document 75963993-36 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Andrew Lawson	Chief Engineer, EMC	Authorised Signatory	19 January 2026

Signatures in this approval box have checked this document in line with the requirements of TUV SUD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C and ISED RSS-247 and ISED RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Sreemon Jayachandran Nair	19 January 2026	
	Connor Lee	19 January 2026	

FCC Accreditation

492497/UK2010 Octagon House, Fareham Test Laboratory

ISED Accreditation

12669A/UK0003 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN: 2024, Issue 4 (2025-07) and Issue 5 (2018-04) + A2 (2021-02) for the tests detailed in section 1.3.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	19-Jan-2026

Table 1

1.2 Introduction

Applicant	Apple Inc
Manufacturer	Apple Inc
EUT/Sample Identification	Refer to section 1.6
Test Specification/Issue/Date	FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN: 2024, Issue 4 (2025-07) and Issue 5 (2018-04) + A2 (2021-02)
Start of Test	31-October-2025
Finish of Test	11-December-2025
Name of Engineer(s)	Sreemon Jayachandran Nair and Connor Lee
Related Document(s)	ANSI C63.10-2020 +Cor.1-2023+C63.10a-2024



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C and ISED RSS-247 and ISED RSS-GEN is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: AC Powered - 2.4 GHz Bluetooth				
2.1	15.207, 2.2 and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2020)
Configuration and Mode: AC Powered - 2.4 GHz WLAN				
2.1	15.207, 2.2 and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2020)
Configuration and Mode: AC Powered - 5 GHz WLAN				
2.1	15.207, 2.2 and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2020)
Configuration and Mode: AC Powered - 6 GHz WLAN				
2.1	15.207, 2.2 and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2020)
Configuration and Mode: AC Powered - Narrowband				
2.1	15.207, 2.2 and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2020)

Table 2

1.4 Product Information

1.4.1 Technical Description

The equipment under test (EUT) was a portable laptop computer.

1.4.2 EUT Port/Cable Identification

Port	Max Cable Length specified	Usage	Type	Screened
Configuration and Mode: AC Powered - Transmitters Idle				
AC Power Port	2 m	Main Power	AC to DC Power Adapter with USB-C output.	No
USB Port 1	1.5 m	Power/Data	USB Type-C	Yes
USB Port 2	1.5 m	Power/Data	USB Type-C	Yes
USB Port 3	1.5 m	Power/Data	USB Type-C	Yes
HDMI Port	1.5 m	Display out.	HDMI	No
Audio Jack Port	1 m	Analogue Audio Output	3.5 mm Jack	No

Table 3

1.4.3 Test Configuration

Configuration	Description
AC Powered	The EUT was powered from a 115 V 60 Hz AC supply using an AC to DC adapter with USB-C output and MagSafe cable. PSU Model: A2452 The EUT had the following connections made: • A keyboard was used to terminate USB Port 1. • USB Port 2 was unterminated. • USB Port 3 was unterminated. • A set of headphones were used to terminate the Audio Jack Port. • A monitor was used to terminate the HDMI port.

Table 4



1.4.4 Modes of Operation

Mode	Description
2.4 GHz Bluetooth	The EUT was powered with a connection established with a CMW 500 test set.
2.4 GHz WLAN	The EUT was powered with a network link established with an access point.
5 GHz WLAN	The EUT was powered with a network link established with an access point.
6 GHz WLAN	The EUT was powered with a network link established with an access point.
Narrowband	The EUT was powered with a wireless link established with a slave device.

Table 5

1.5 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.6 Identification of the EUT

The table below details identification of the EUT(s) that have been used to carry out the testing within this report.

Serial Number	Hardware Version	Software Version
CQQNJLKQ71	REV1.0	25D77a

Table 6

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: A3429, Serial Number: CQQNJLKQ71			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 7



1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: AC Powered - 2.4 GHz Bluetooth		
AC Power Line Conducted Emissions	Sreemon Jayachandran Nair	UKAS
Configuration and Mode: AC Powered - 2.4 GHz WLAN		
AC Power Line Conducted Emissions	Sreemon Jayachandran Nair	UKAS
Configuration and Mode: AC Powered - 5 GHz WLAN		
AC Power Line Conducted Emissions	Sreemon Jayachandran Nair	UKAS
Configuration and Mode: AC Powered - 6 GHz WLAN		
AC Power Line Conducted Emissions	Sreemon Jayachandran Nair	UKAS
Configuration and Mode: AC Powered - Narrowband		
AC Power Line Conducted Emissions	Connor Lee	UKAS

Table 8

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
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2 Test Details

2.1 AC Power Line Conducted Emissions

2.1.1 Specification Reference

FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN, Clause 15.207, 2.2 and 8.8

2.1.2 Equipment Under Test and Modification State

A3429, S/N: CQQNJLKQ71 - Modification State 0

2.1.3 Date of Test

31-October-2025 to 11-December-2025

2.1.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.2.

The EUT was placed on a non-conductive table 0.8m above a reference ground plane and 0.4m away from a vertical coupling plane

All power was connected to the EUT through an Artificial Mains Network (AMN).

Conducted disturbance voltage measurements on mains lines were made at the output of the AMN.

2.1.5 Example Calculation

Quasi-Peak level (dBμV) = Receiver level (dBμV) + Correction Factor (dB)
Margin (dB) = Quasi-Peak level (dBμV) - Limit (dBμV)

CISPR Average level (dBμV) = Receiver level (dBμV) + Correction Factor (dB)
Margin (dB) = CISPR Average level (dBμV) - Limit (dBμV)

2.1.6 Example Test Setup Diagram

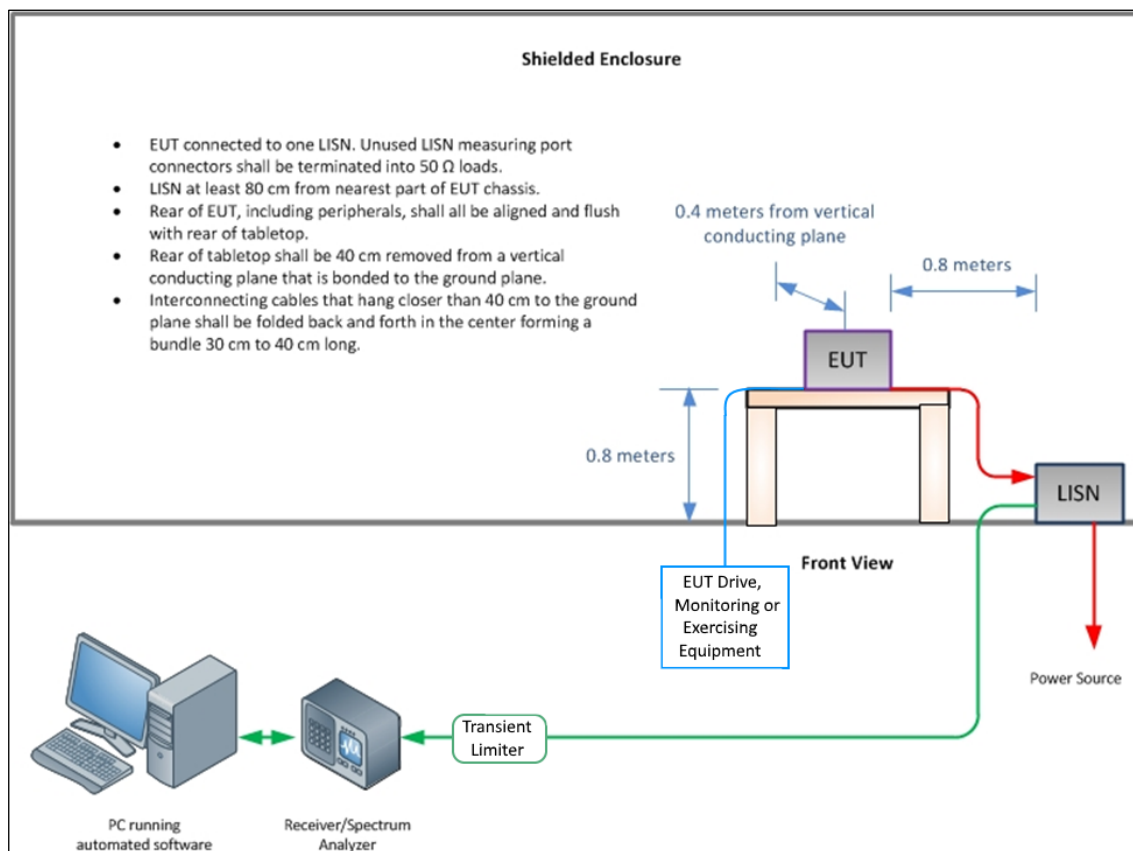


Figure 1 - Conducted Emissions Example Test Setup

2.1.7 Environmental Conditions

Ambient Temperature 20.3 - 22.1 °C
Relative Humidity 52.0 - 55.5 %

2.1.8 Specification Limits

Required Specification Limits - Class B			
Line Under Test	Frequency Range (MHz)	Quasi-Peak Test Limit (dB μ V)	CISPR Average Test Limit (dB μ V)
AC Power Port	0.15 to 0.5	66 to 56 ⁽¹⁾	56 to 46 ⁽¹⁾
	0.5 to 5	56	46
	5 to 30	60	50
Supplementary information: Note 1. Decreases with the logarithm of the frequency.			

Table 9

Results for Configuration and Mode: AC Powered – 2.4 GHz Bluetooth.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

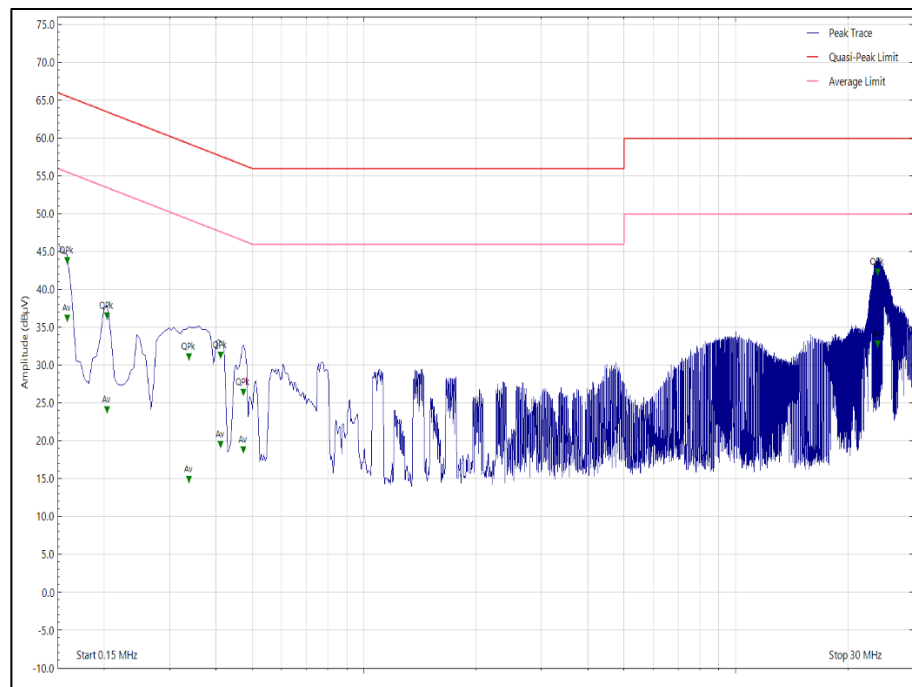


Figure 2 - Graphical Results - AC Power Port Live

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	43.11	65.50	-22.39	Q-Peak
0.159	35.49	55.50	-20.01	CISPR Avg
0.204	35.82	63.40	-27.58	Q-Peak
0.204	23.42	53.40	-29.98	CISPR Avg
0.339	30.45	59.20	-28.75	Q-Peak
0.339	14.26	49.20	-34.94	CISPR Avg
0.411	30.62	57.60	-26.98	Q-Peak
0.411	18.82	47.60	-28.78	CISPR Avg
0.474	25.75	56.40	-30.65	Q-Peak
0.474	18.11	46.40	-28.29	CISPR Avg
24.054	41.57	60.00	-18.43	Q-Peak
24.054	32.13	50.00	-17.87	CISPR Avg

Table 10

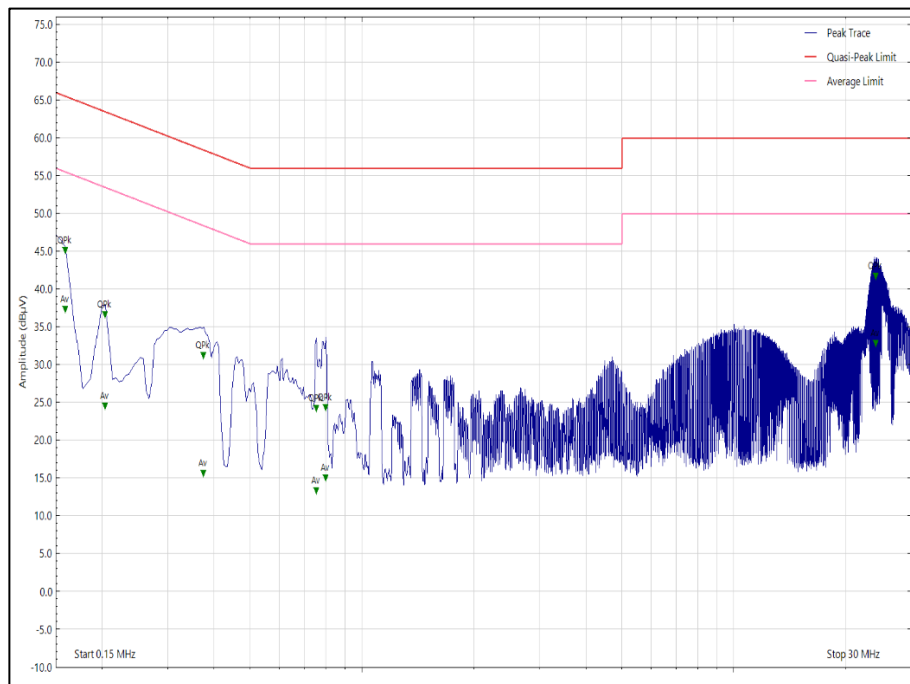


Figure 3 - Graphical Results - AC Power Port Neutral

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	44.41	65.50	-21.09	Q-Peak
0.159	36.57	55.50	-18.93	CISPR Avg
0.204	35.93	63.40	-27.47	Q-Peak
0.204	23.77	53.40	-29.63	CISPR Avg
0.375	30.51	58.40	-27.89	Q-Peak
0.375	14.95	48.40	-33.45	CISPR Avg
0.753	23.56	56.00	-32.44	Q-Peak
0.753	12.61	46.00	-33.39	CISPR Avg
0.798	23.60	56.00	-32.40	Q-Peak
0.798	14.28	46.00	-31.72	CISPR Avg
24.057	40.97	60.00	-19.03	Q-Peak
24.057	32.15	50.00	-17.85	CISPR Avg

Table 11

Results for Configuration and Mode: AC Powered – 2.4 GHz WLAN.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

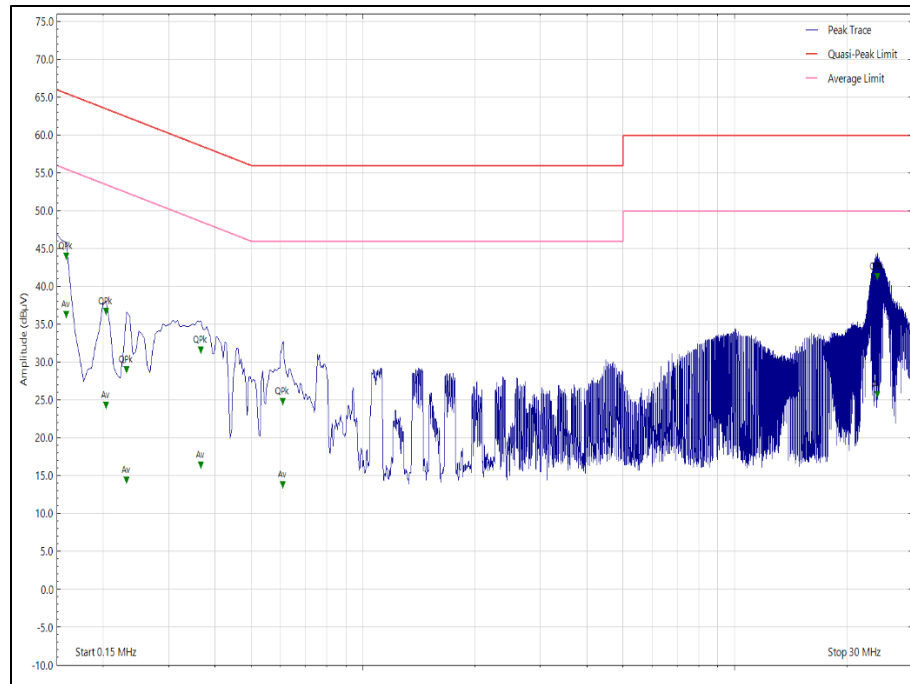


Figure 4 - Graphical Results - AC Power Port Live

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	43.31	65.50	-22.19	Q-Peak
0.159	35.63	55.50	-19.87	CISPR Avg
0.204	35.97	63.40	-27.43	Q-Peak
0.204	23.64	53.40	-29.76	CISPR Avg
0.231	28.26	62.40	-34.14	Q-Peak
0.231	13.75	52.40	-38.65	CISPR Avg
0.366	30.91	58.60	-27.69	Q-Peak
0.366	15.77	48.60	-32.83	CISPR Avg
0.609	24.08	56.00	-31.92	Q-Peak
0.609	13.16	46.00	-32.84	CISPR Avg
24.199	40.61	60.00	-19.39	Q-Peak
24.199	24.97	50.00	-25.03	CISPR Avg

Table 12

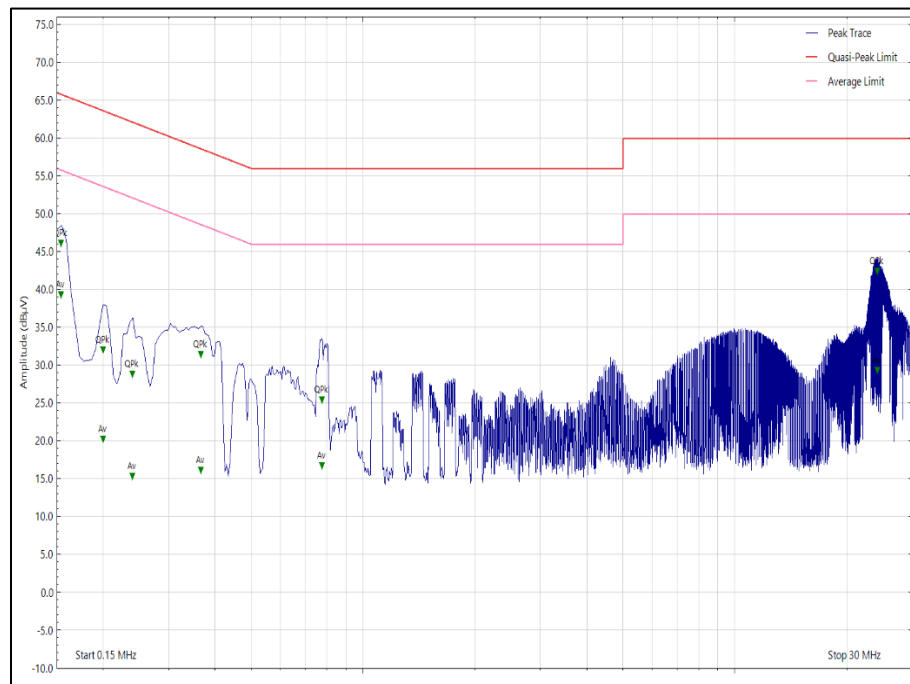


Figure 5 - Graphical Results - AC Power Port Neutral

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.154	45.34	65.80	-20.46	Q-Peak
0.154	38.63	55.80	-17.17	CISPR Avg
0.200	31.35	63.60	-32.25	Q-Peak
0.200	19.56	53.60	-34.04	CISPR Avg
0.240	28.06	62.10	-34.04	Q-Peak
0.240	14.62	52.10	-37.48	CISPR Avg
0.366	30.66	58.60	-27.94	Q-Peak
0.366	15.40	48.60	-33.20	CISPR Avg
0.776	24.69	56.00	-31.31	Q-Peak
0.776	15.97	46.00	-30.03	CISPR Avg
24.200	41.72	60.00	-18.28	Q-Peak
24.200	28.61	50.00	-21.39	CISPR Avg

Table 13

Results for Configuration and Mode: AC Powered – 5 GHz WLAN.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

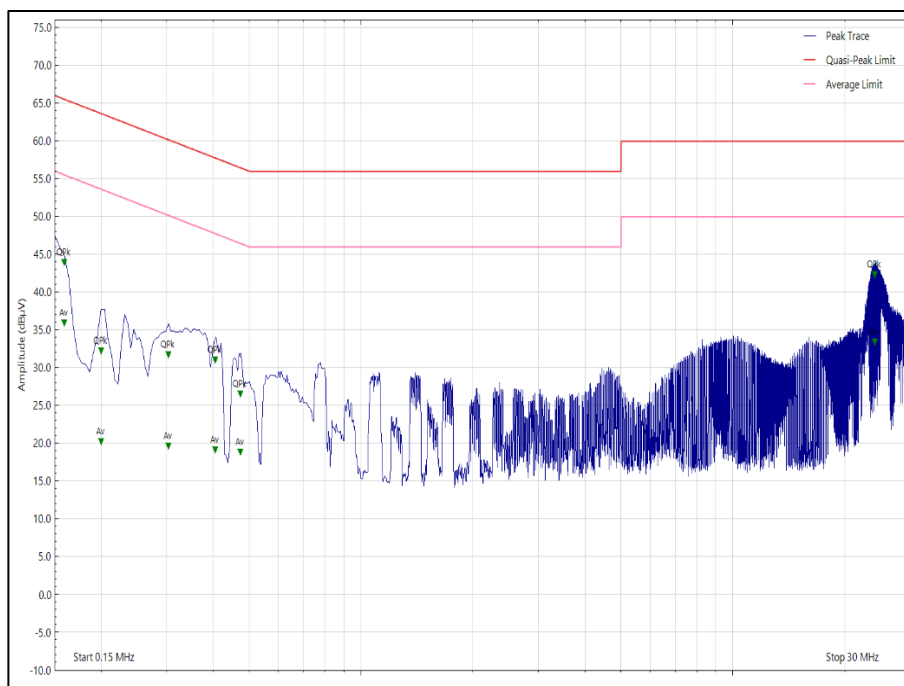


Figure 6 - Graphical Results - AC Power Port Live

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	43.16	65.50	-22.34	Q-Peak
0.159	35.23	55.50	-20.27	CISPR Avg
0.200	31.49	63.60	-32.11	Q-Peak
0.200	19.50	53.60	-34.10	CISPR Avg
0.303	31.05	60.10	-29.05	Q-Peak
0.303	18.91	50.10	-31.19	CISPR Avg
0.406	30.29	57.70	-27.41	Q-Peak
0.406	18.39	47.70	-29.31	CISPR Avg
0.474	25.77	56.40	-30.63	Q-Peak
0.474	18.14	46.40	-28.26	CISPR Avg
24.054	41.58	60.00	-18.42	Q-Peak
24.054	32.66	50.00	-17.34	CISPR Avg

Table 14

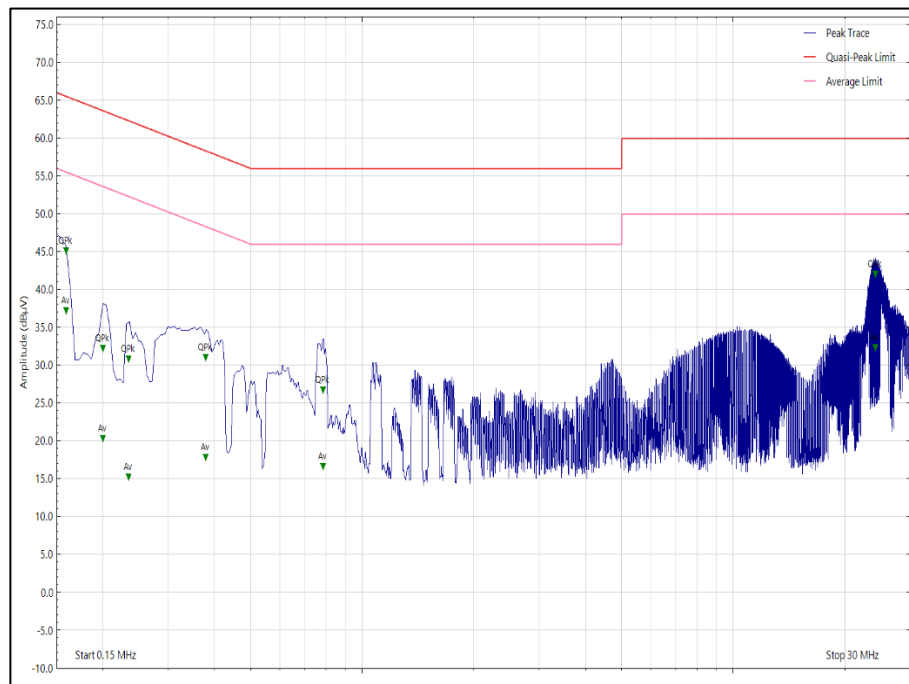


Figure 7 - Graphical Results - AC Power Port Neutral

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	44.40	65.50	-21.10	Q-Peak
0.159	36.45	55.50	-19.05	CISPR Avg
0.200	31.49	63.60	-32.11	Q-Peak
0.200	19.61	53.60	-33.99	CISPR Avg
0.235	30.13	62.30	-32.17	Q-Peak
0.235	14.55	52.30	-37.75	CISPR Avg
0.379	30.31	58.30	-27.99	Q-Peak
0.379	17.09	48.30	-31.21	CISPR Avg
0.784	25.99	56.00	-30.01	Q-Peak
0.784	15.90	46.00	-30.10	CISPR Avg
24.200	41.34	60.00	-18.66	Q-Peak
24.200	31.57	50.00	-18.43	CISPR Avg

Table 15

Results for Configuration and Mode: AC Powered – 6 GHz WLAN.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

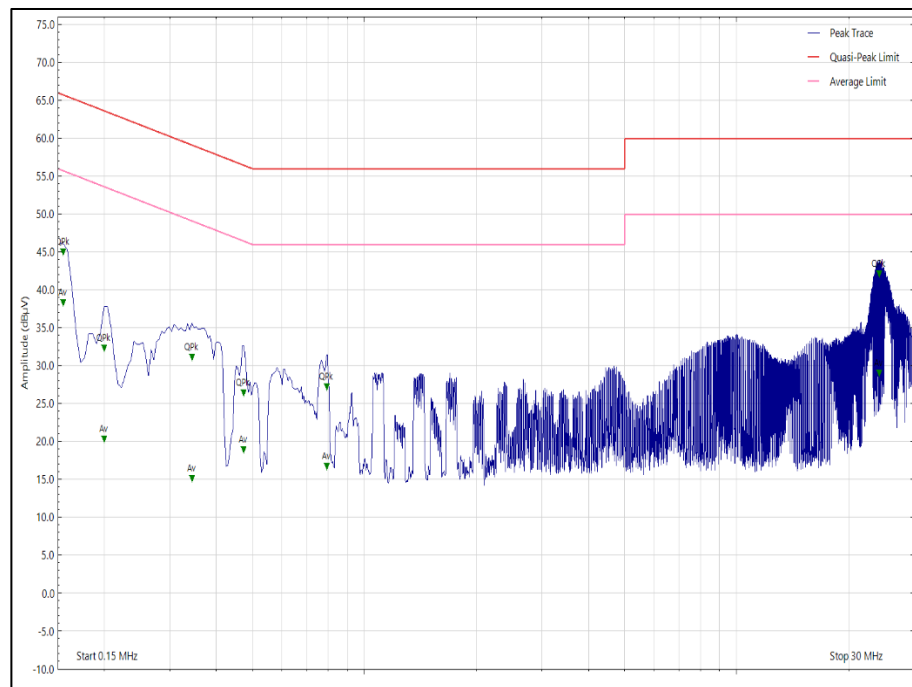


Figure 8 - Graphical Results - AC Power Port Live

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.155	44.28	65.70	-21.42	Q-Peak
0.155	37.59	55.70	-18.11	CISPR Avg
0.200	31.58	63.60	-32.02	Q-Peak
0.200	19.58	53.60	-34.02	CISPR Avg
0.344	30.45	59.10	-28.65	Q-Peak
0.344	14.45	49.10	-34.65	CISPR Avg
0.474	25.68	56.40	-30.72	Q-Peak
0.474	18.20	46.40	-28.20	CISPR Avg
0.793	26.50	56.00	-29.50	Q-Peak
0.793	16.01	46.00	-29.99	CISPR Avg
24.196	41.38	60.00	-18.62	Q-Peak
24.196	28.33	50.00	-21.67	CISPR Avg

Table 16

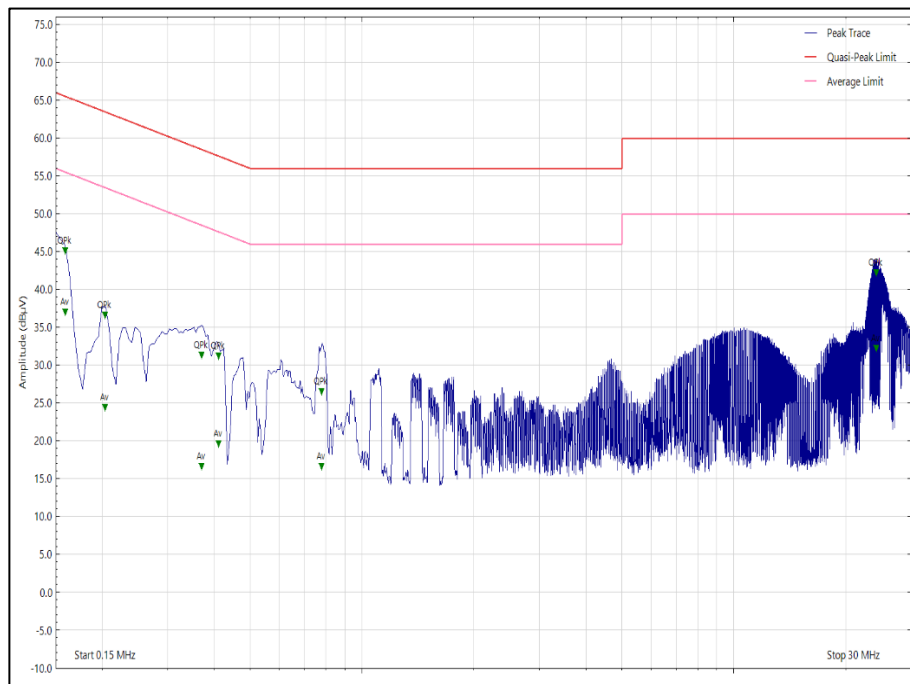


Figure 9 - Graphical Results - AC Power Port Neutral

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	44.38	65.50	-21.12	Q-Peak
0.159	36.25	55.50	-19.25	CISPR Avg
0.204	35.85	63.50	-27.65	Q-Peak
0.204	23.70	53.50	-29.80	CISPR Avg
0.370	30.56	58.50	-27.94	Q-Peak
0.370	15.90	48.50	-32.60	CISPR Avg
0.411	30.53	57.60	-27.07	Q-Peak
0.411	18.89	47.60	-28.71	CISPR Avg
0.780	25.80	56.00	-30.20	Q-Peak
0.780	15.92	46.00	-30.08	CISPR Avg
24.198	41.49	60.00	-18.51	Q-Peak
24.198	31.55	50.00	-18.45	CISPR Avg

Table 17

Results for Configuration and Mode: AC Powered – Narrowband.

This test was performed to the requirements of the Class B limits.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

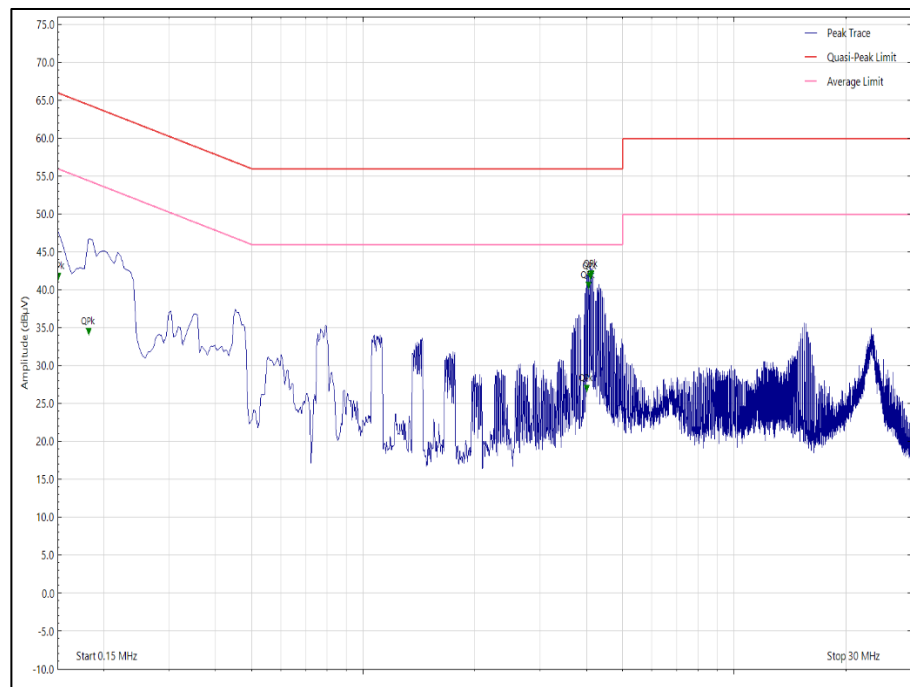


Figure 10 - Graphical Results - AC Power Port Live

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.151	41.06	65.90	-24.84	Q-Peak
0.151	33.26	55.90	-22.64	CISPR Avg
0.182	33.83	64.40	-30.57	Q-Peak
0.182	12.17	54.40	-42.23	CISPR Avg
4.002	26.30	56.00	-29.70	Q-Peak
4.002	17.47	46.00	-28.53	CISPR Avg
4.047	39.86	56.00	-16.14	Q-Peak
4.047	26.16	46.00	-19.84	CISPR Avg
4.089	41.05	56.00	-14.95	Q-Peak
4.089	27.34	46.00	-18.66	CISPR Avg
4.127	41.39	56.00	-14.61	Q-Peak
4.127	27.83	46.00	-18.17	CISPR Avg

Table 18

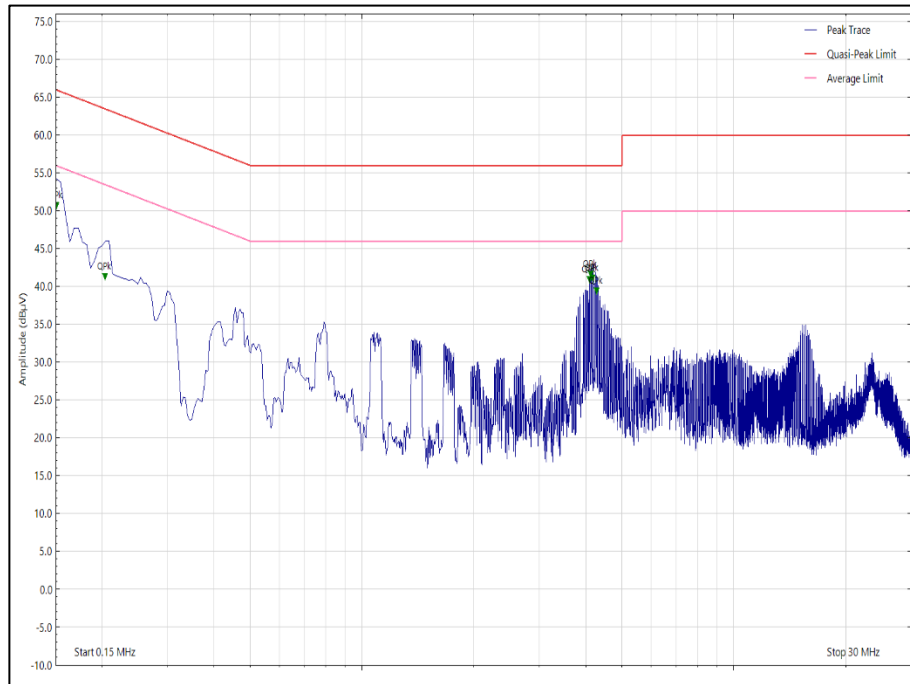


Figure 11 - Graphical Results - AC Power Port Neutral

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.151	49.97	65.90	-15.93	Q-Peak
0.151	35.13	55.90	-20.77	CISPR Avg
0.204	40.60	63.40	-22.80	Q-Peak
0.204	21.89	53.40	-31.51	CISPR Avg
4.090	40.19	56.00	-15.81	Q-Peak
4.090	27.41	46.00	-18.59	CISPR Avg
4.129	40.89	56.00	-15.11	Q-Peak
4.129	28.00	46.00	-18.00	CISPR Avg
4.171	40.37	56.00	-15.63	Q-Peak
4.171	23.79	46.00	-22.21	CISPR Avg
4.276	38.65	56.00	-17.35	Q-Peak
4.276	24.76	46.00	-21.24	CISPR Avg

Table 19



2.1.9 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 12.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
3m Semi-Anechoic Chamber	MVG	EMC Chamber 12	5621	36	07-Aug-2026
Emissions Software	TUV SUD	EmX V3.5.5	5125	-	Software
Test Receiver	Rohde & Schwarz	ESW44	5382	12	09-Oct-2026
Transient Limiter	Hewlett Packard	11947A	1032	12	16-Jan-2026
Cable (N-Type to N-Type, 2 m)	Teledyne	269-0078-2000	3325	12	12-Sep-2026
Cable (N-Type to N-Type, 8 m)	Junkosha	MWX221-08000NMSNMS/B	7054	12	01-Jun-2026
LISN (CISPR 16, Single Phase)	Rohde & Schwarz	ESH3-Z5	1390	12	04-Feb-2026
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5471	12	14-May-2026

Table 20



3 Test Equipment Information

3.1 General Test Equipment Used

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Multimeter	Fluke	79 Series III	498	12	26-Feb-2026
Milliohm Meter	VICI	2682132	7012	12	21-May-2026

Table 21



4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
AC Power Line Conducted Emissions	150 kHz to 30 MHz, LISN ± 3.3 dB

Table 22

Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.