

FCC and ISED Test Report

Apple Inc
Model: A3590



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

Prepared for: Apple Inc
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USA

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(UK) LIMITED

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Document 75967128-12 Issue 01

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Andrew Lawson	Chief Engineer, EMC	Authorised Signatory	10 June 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	Matthew Dawkins	10 June 2026	
	Connor Lee	10 June 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	10 June 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: 2024 ISED RSS-247: Issue 4 (2025-07) ISED RSS-GEN: Issue 5 (2018-04) + A2 (2021-02)
Start of Test	30-May-2026
Finish of Test	02-June-2026
Name of Engineer(s)	Matthew Dawkins 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, 2.4 and 8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10 (2020)

Table 2

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

Table 3

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

Table 4

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

Table 5



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

Table 6



1.4 Product Information

1.4.1 Technical Description

The equipment under test (EUT) was a desktop 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	3 m	Power	AC to DC Power adapter with MagSafe Connector output	No
USB Port 1	1 m	Power/Data	USB Type-C	No
USB Port 2	1 m	Power/Data	USB Type-C	No
USB Port 3	Unterminated	Power/Data	USB Type-C	No
USB Port 4	Unterminated	Power/Data	USB Type-C	No
Audio Jack Port	1 m	Analogue Audio Output	3.5 mm Jack	No
Ethernet Port	3 m	LAN / Data	RJ45 socket on Power Supply.	No

Table 7

1.4.3 Test Configuration

Configuration	Description
AC Powered	The EUT was powered from a 120 V 60 Hz AC supply using an AC to DC Power adapter with MagSafe Connector output. PSU Model: A2290. The EUT had the following connections made: • A mouse was used to terminate USB Port 1. • A Keyboard was used to terminate USB Port 2. • USB Port 3 and 4 were unterminated. • A set of headphones was used to terminate the Audio Jack Port. • An ethernet switch was used to terminate the Ethernet Port.

Table 8

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 and placed in a link with another customer provided slave device.

Table 9



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.

Model: A3590		
Serial Number	Hardware Version	Software Version
HHQHJWTOJX	REV1.0	26A332
M1424XK431	REV1.0	26A285

Table 10

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: A3590, Serial Number: HHQHJWTOJX			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: A3590, Serial Number: M1424XK431			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 11



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	Abarajitha Karunakaran	UKAS
Configuration and Mode: AC Powered - 2.4 GHz WLAN		
AC Power Line Conducted Emissions	Abarajitha Karunakaran	UKAS
Configuration and Mode: AC Powered - 5 GHz WLAN		
AC Power Line Conducted Emissions	Abarajitha Karunakaran	UKAS
Configuration and Mode: AC Powered - 6 GHz WLAN		
AC Power Line Conducted Emissions	Abarajitha Karunakaran	UKAS
Configuration and Mode: AC Powered - Narrowband		
AC Power Line Conducted Emissions	Connor Lee	UKAS

Table 12

Office Address:

TÜV SÜD
Octagon House, Concorde Way
Fareham, Hampshire
PO15 5RL, United Kingdom

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, 2.4 and 8.8

2.1.2 Equipment Under Test and Modification State

A3590, S/N: HHQHJWTOJX - Modification State 0
A3590, S/N: M1424XK431 - Modification State 0

2.1.3 Date of Test

30-May-2026 to 02-June-2026

2.1.4 Test Method

The EUT was setup according to ANSI C63.4, clause 5.2.

The EUT was placed on a non-conductive table 0.8 m above a reference ground plane. A vertical coupling plane was placed 0.4 m from the EUT boundary.

A Line Impedance Stabilisation Network (LISN) was directly bonded to the ground-plane. The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN was 0.8 m.

Interconnecting cables that hanged closer than 0.4 m to the ground plane were folded back and forth in the centre forming a bundle 0.3 m to 0.4 m long.

Input and output cables were terminated with equipment or loads representative of real usage conditions.

The EUT was configured to give the highest level of emissions within reason of a typical installation as described by the manufacturer.

A Peak detector pre-scan of the EUT emissions profile was measured across the appropriate frequency range.

Where all pre-scan peak emissions measured were greater than 20 dB below the CISPR Average test limit, no final measurements were made in accordance with ANSI C63.4.

Where any pre-scan peak emissions were within 20 dB of the CISPR Average test limit, the six highest pre-scan emissions seen across the frequency range were measured for at least 15 seconds using a Peak, Quasi-Peak or CISPR Average detector as appropriate to the test limit being measured against.

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

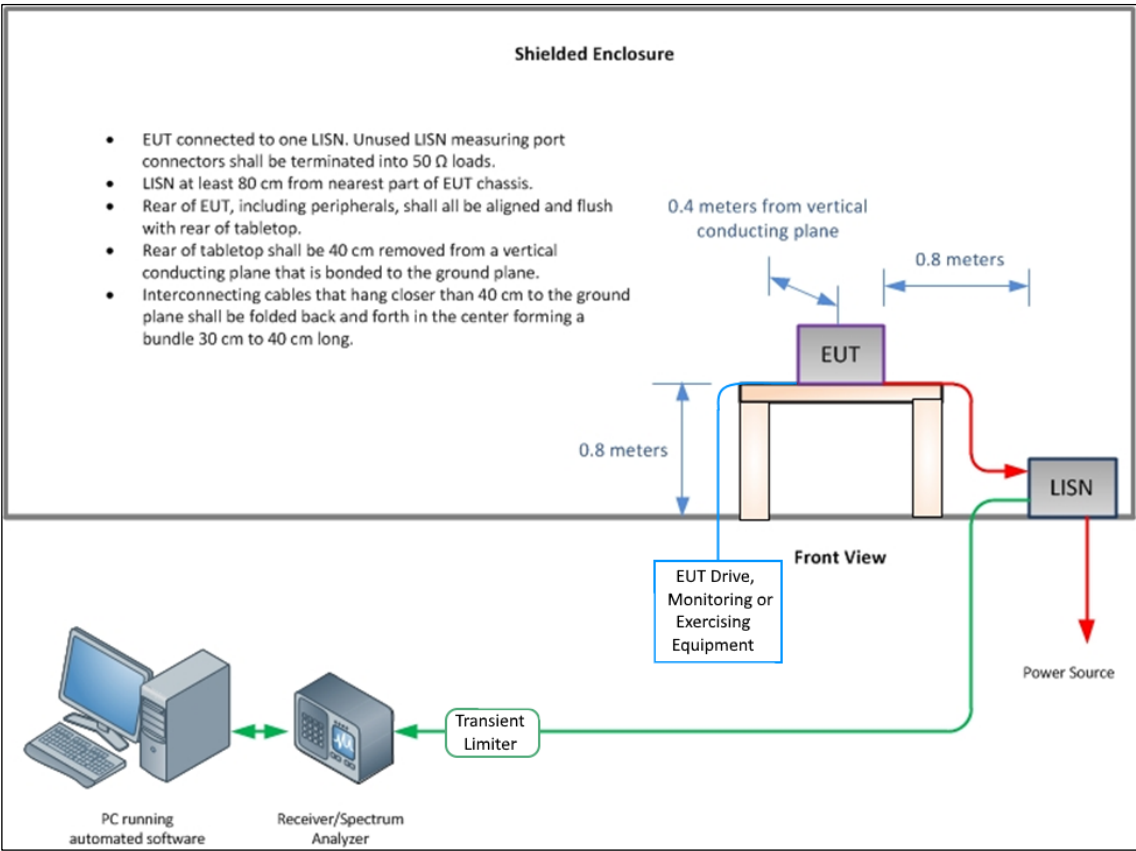


Figure 1 - Conducted Emissions Example Test Setup

2.1.7 Environmental Conditions

Ambient Temperature 19.1 - 22.0 $^{\circ}\text{C}$
Relative Humidity 38.4 - 49.3 %

2.1.8 Specification Limits

Required Specification Limits			
Line Under Test	Frequency Range (MHz)	Quasi-Peak Test Limit (dB μV)	CISPR Average Test Limit (dB μV)
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 13

*Decreases with the logarithm of the frequency.

2.1.9 Test Results

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

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

Detailed results are shown below.

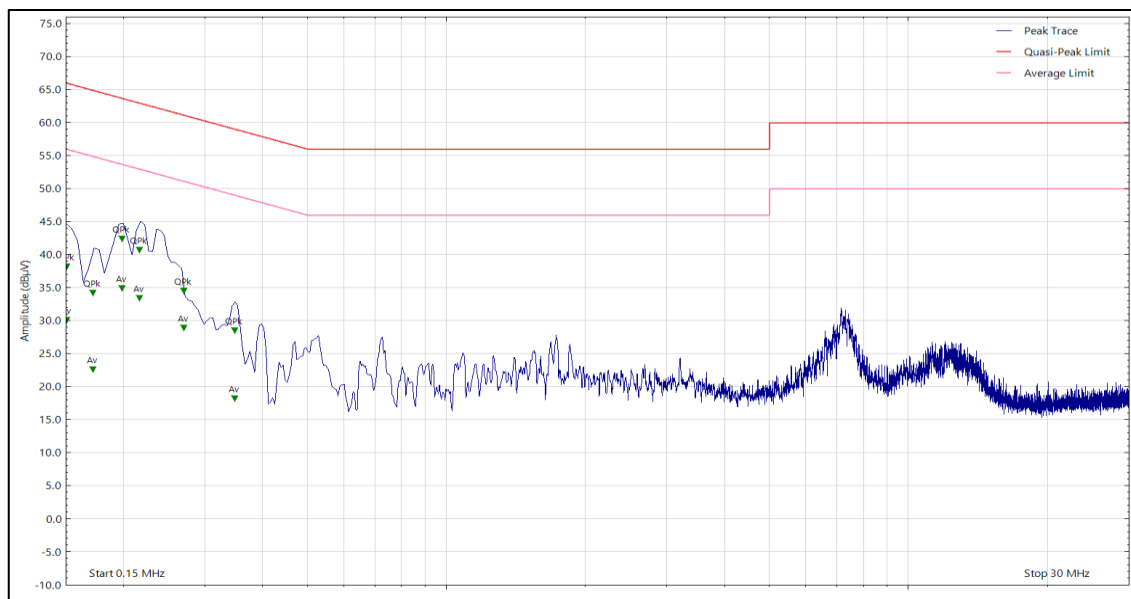


Figure 2 - Live Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.151	37.47	66.00	-28.53	Q-Peak
0.151	29.40	56.00	-26.60	CISPR Avg
0.172	33.47	64.80	-31.33	Q-Peak
0.172	21.89	54.80	-32.91	CISPR Avg
0.199	41.71	63.60	-21.89	Q-Peak
0.199	34.18	53.60	-19.42	CISPR Avg
0.217	40.01	62.90	-22.89	Q-Peak
0.217	32.73	52.90	-20.17	CISPR Avg
0.270	33.75	61.10	-27.35	Q-Peak
0.270	28.19	51.10	-22.91	CISPR Avg
0.348	27.81	59.00	-31.19	Q-Peak
0.348	17.52	49.00	-31.48	CISPR Avg

Table 14

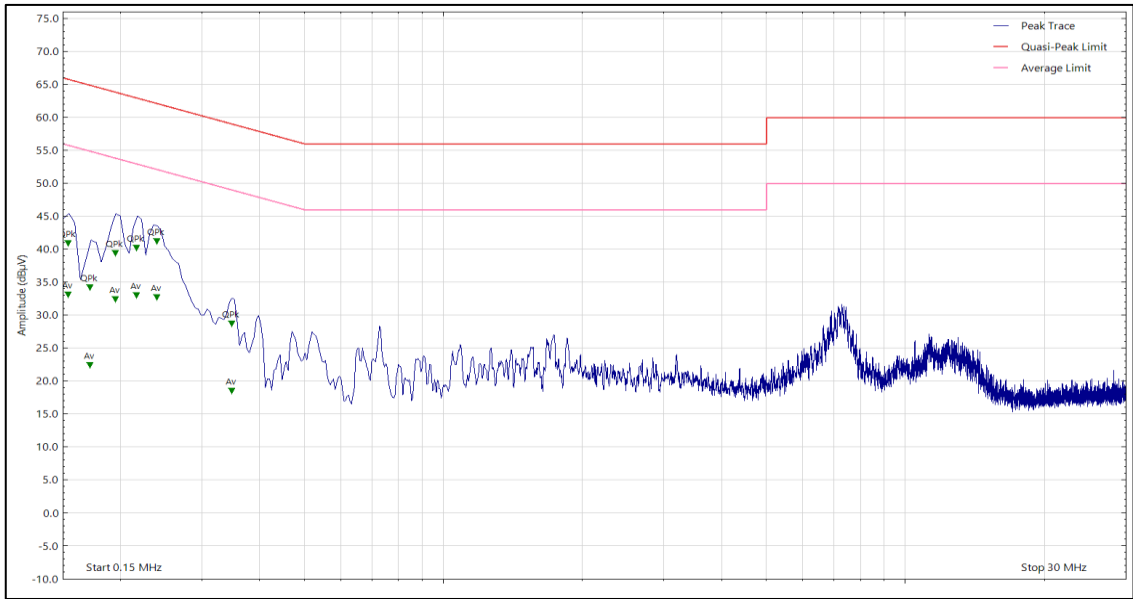


Figure 3 - Neutral Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.154	40.18	65.80	-25.62	Q-Peak
0.154	32.42	55.80	-23.38	CISPR Avg
0.172	33.53	64.90	-31.37	Q-Peak
0.172	21.74	54.90	-33.16	CISPR Avg
0.195	38.66	63.80	-25.14	Q-Peak
0.195	31.69	53.80	-22.11	CISPR Avg
0.217	39.50	62.90	-23.40	Q-Peak
0.217	32.28	52.90	-20.62	CISPR Avg
0.240	40.52	62.10	-21.58	Q-Peak
0.240	32.03	52.10	-20.07	CISPR Avg
0.348	27.97	59.00	-31.03	Q-Peak
0.348	17.85	49.00	-31.15	CISPR Avg

Table 15



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

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

Detailed results are shown below.

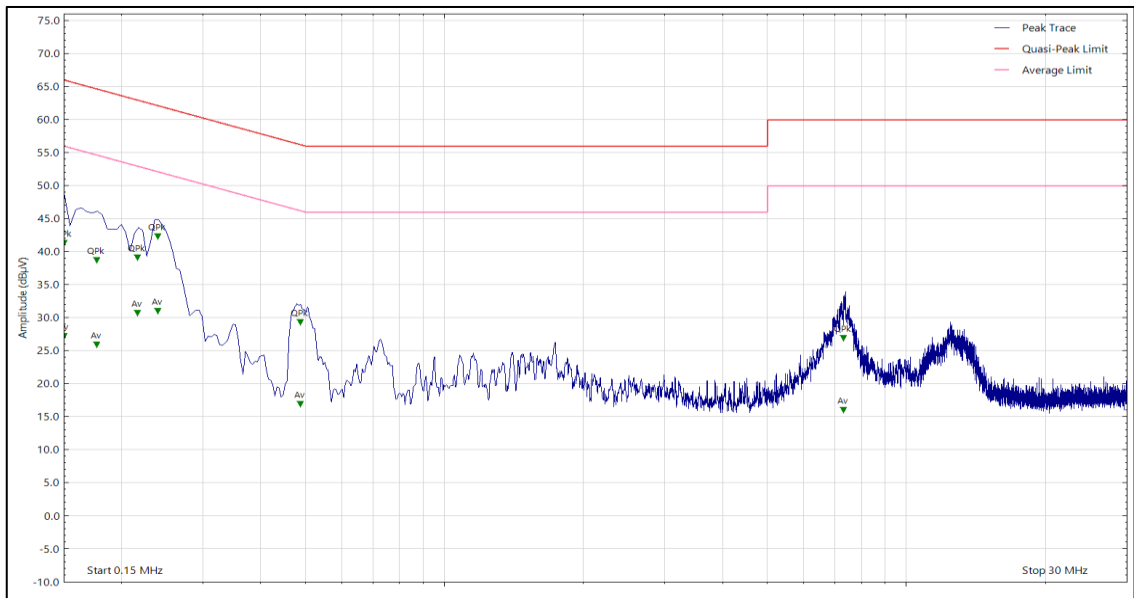


Figure 4 - Live Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.150	40.55	66.00	-25.45	Q-Peak
0.150	26.46	56.00	-29.54	CISPR Avg
0.177	38.00	64.60	-26.60	Q-Peak
0.177	25.18	54.60	-29.42	CISPR Avg
0.217	38.43	62.90	-24.47	Q-Peak
0.217	29.98	52.90	-22.92	CISPR Avg
0.240	41.57	62.10	-20.53	Q-Peak
0.240	30.32	52.10	-21.78	CISPR Avg
0.488	28.58	56.20	-27.62	Q-Peak
0.488	16.25	46.20	-29.95	CISPR Avg
7.315	26.22	60.00	-33.78	Q-Peak
7.315	15.36	50.00	-34.64	CISPR Avg

Table 16

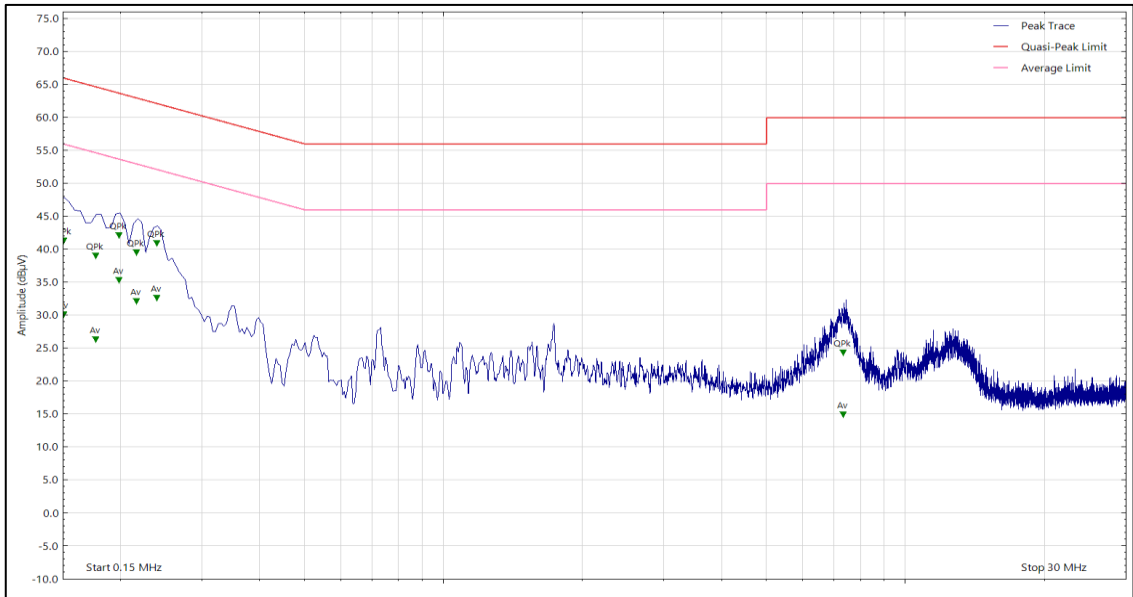


Figure 5 - Neutral Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.151	40.55	66.00	-25.45	Q-Peak
0.151	29.42	56.00	-26.58	CISPR Avg
0.177	38.29	64.60	-26.31	Q-Peak
0.177	25.60	54.60	-29.00	CISPR Avg
0.199	41.35	63.60	-22.25	Q-Peak
0.199	34.55	53.60	-19.05	CISPR Avg
0.217	38.75	62.90	-24.15	Q-Peak
0.217	31.43	52.90	-21.47	CISPR Avg
0.240	40.23	62.10	-21.87	Q-Peak
0.240	31.92	52.10	-20.18	CISPR Avg
7.348	23.63	60.00	-36.37	Q-Peak
7.348	14.19	50.00	-35.81	CISPR Avg

Table 17

Detailed results are shown below.

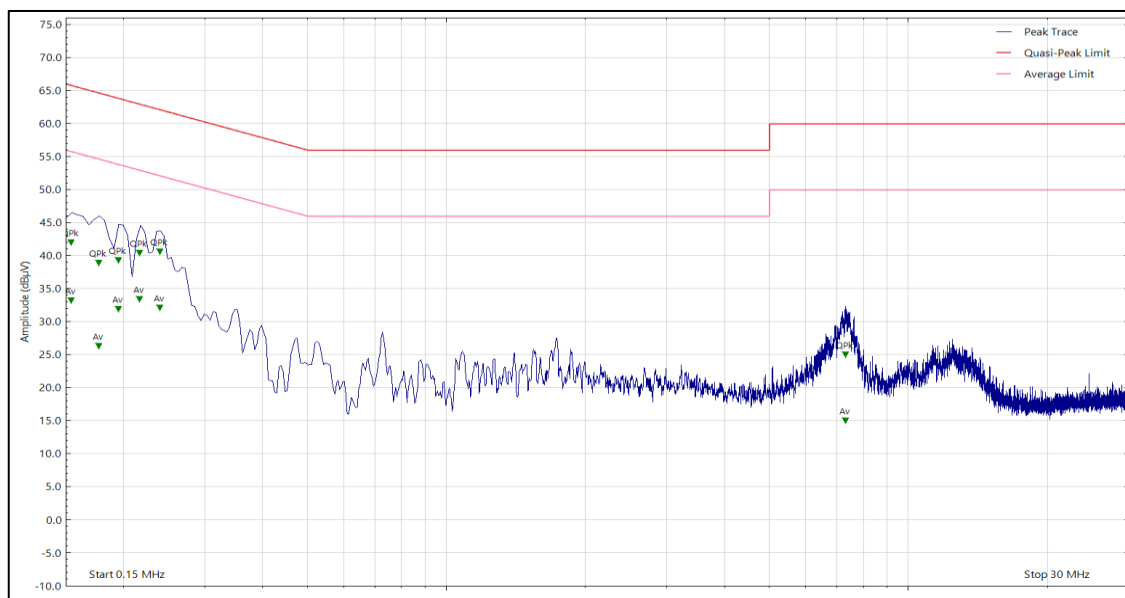


Figure 6 - Live Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.154	41.29	65.80	-24.51	Q-Peak
0.154	32.50	55.80	-23.30	CISPR Avg
0.177	38.22	64.60	-26.38	Q-Peak
0.177	25.64	54.60	-28.96	CISPR Avg
0.195	38.59	63.80	-25.21	Q-Peak
0.195	31.16	53.80	-22.64	CISPR Avg
0.217	39.67	62.90	-23.23	Q-Peak
0.217	32.68	52.90	-20.22	CISPR Avg
0.240	39.91	62.10	-22.19	Q-Peak
0.240	31.37	52.10	-20.73	CISPR Avg
7.305	24.30	60.00	-35.70	Q-Peak
7.305	14.37	50.00	-35.63	CISPR Avg

Table 18

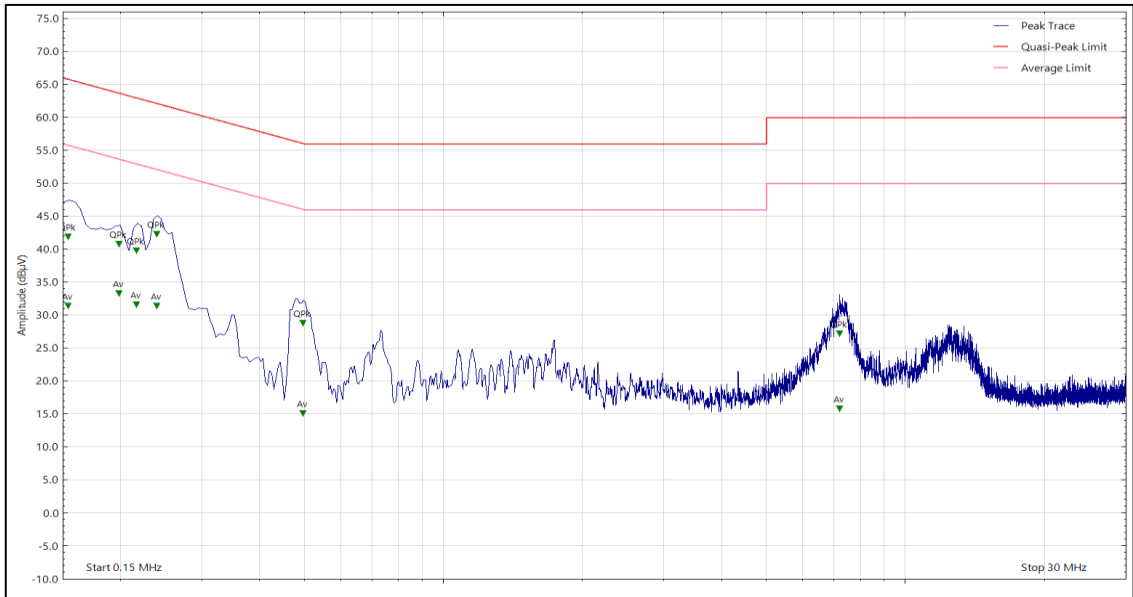


Figure 7 - Neutral Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.154	41.24	65.80	-24.56	Q-Peak
0.154	30.72	55.80	-25.08	CISPR Avg
0.199	40.07	63.60	-23.53	Q-Peak
0.199	32.62	53.60	-20.98	CISPR Avg
0.217	39.05	62.90	-23.85	Q-Peak
0.217	30.86	52.90	-22.04	CISPR Avg
0.240	41.60	62.10	-20.50	Q-Peak
0.240	30.70	52.10	-21.40	CISPR Avg
0.496	28.10	56.10	-28.00	Q-Peak
0.496	14.38	46.10	-31.72	CISPR Avg
7.198	26.46	60.00	-33.54	Q-Peak
7.198	15.11	50.00	-34.89	CISPR Avg

Table 19

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

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

Detailed results are shown below.

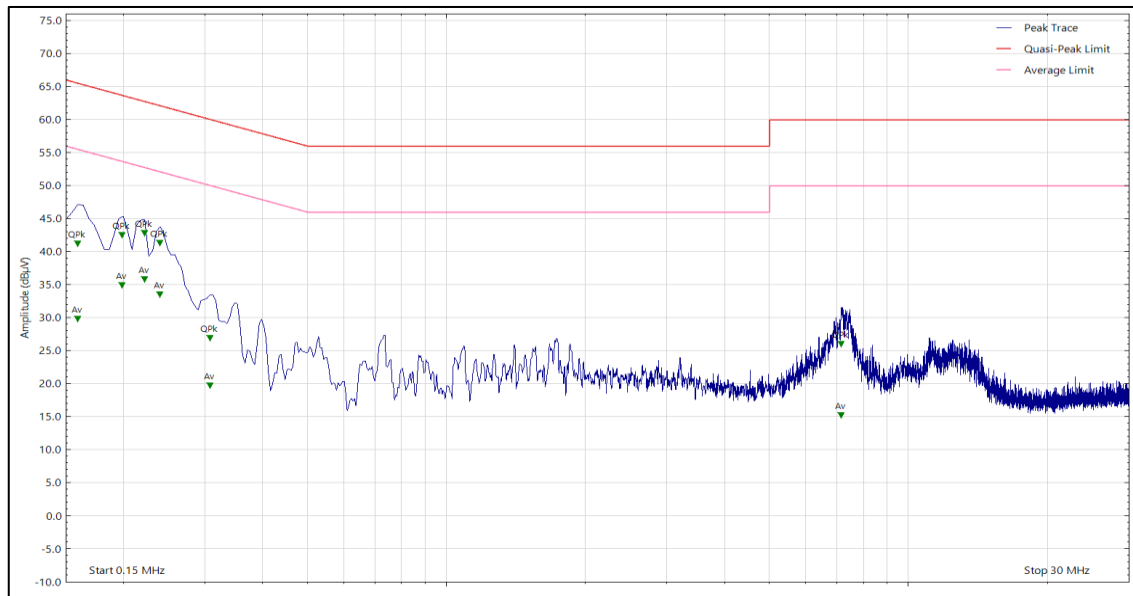


Figure 8 - Live Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.159	40.48	65.50	-25.02	Q-Peak
0.159	29.15	55.50	-26.35	CISPR Avg
0.199	41.77	63.60	-21.83	Q-Peak
0.199	34.19	53.60	-19.41	CISPR Avg
0.222	42.13	62.70	-20.57	Q-Peak
0.222	35.10	52.70	-17.60	CISPR Avg
0.240	40.56	62.10	-21.54	Q-Peak
0.240	32.81	52.10	-19.29	CISPR Avg
0.308	26.22	60.00	-33.78	Q-Peak
0.308	19.04	50.00	-30.96	CISPR Avg
7.161	25.35	60.00	-34.65	Q-Peak
7.161	14.55	50.00	-35.45	CISPR Avg

Table 20

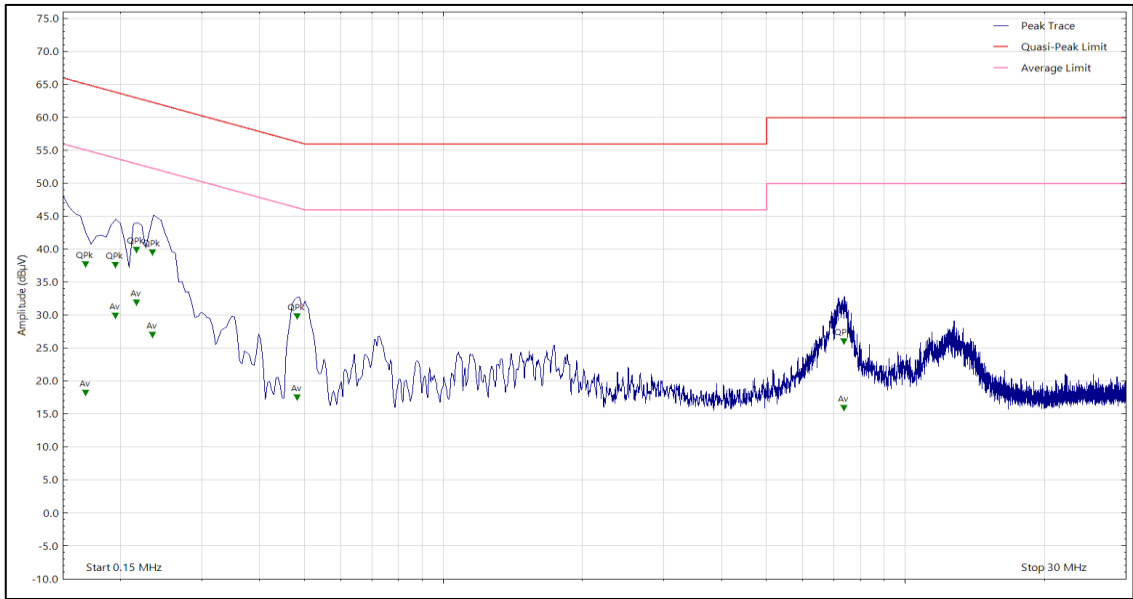


Figure 9 - Neutral Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.168	36.98	65.10	-28.12	Q-Peak
0.168	17.50	55.10	-37.60	CISPR Avg
0.195	36.86	63.80	-26.94	Q-Peak
0.195	29.18	53.80	-24.62	CISPR Avg
0.217	39.17	62.90	-23.73	Q-Peak
0.217	31.16	52.90	-21.74	CISPR Avg
0.235	38.78	62.30	-23.52	Q-Peak
0.235	26.29	52.30	-26.01	CISPR Avg
0.483	29.09	56.30	-27.21	Q-Peak
0.483	16.79	46.30	-29.51	CISPR Avg
7.368	25.32	60.00	-34.68	Q-Peak
7.368	15.22	50.00	-34.78	CISPR Avg

Table 21

Results for Configuration and Mode: AC Powered - Narrowband.

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

Detailed results are shown below.

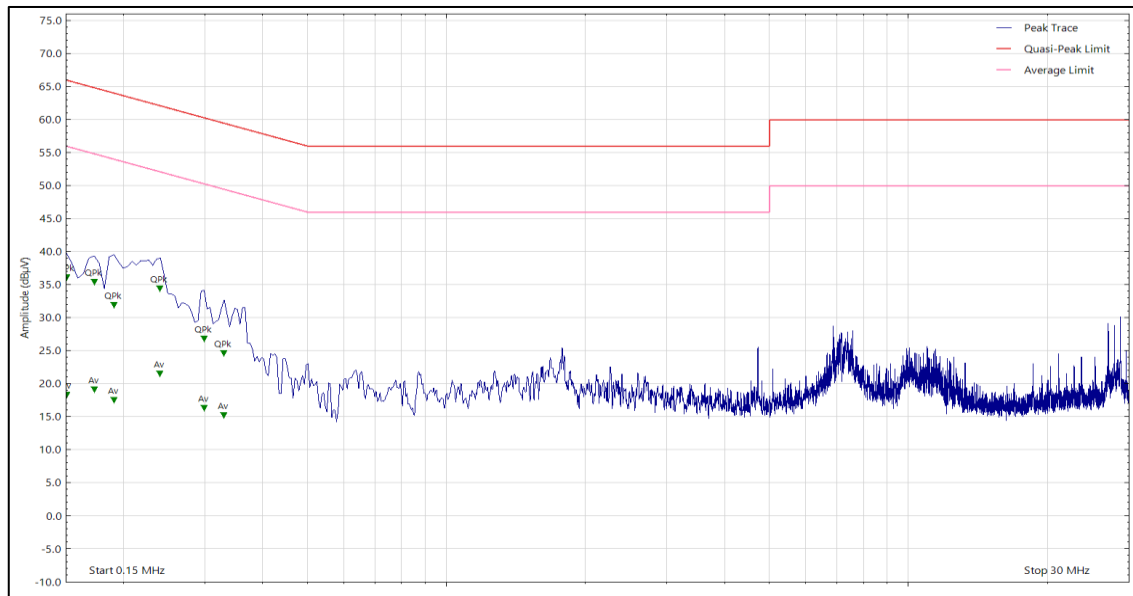


Figure 10 - Live Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.151	35.40	65.90	-30.50	Q-Peak
0.151	17.59	55.90	-38.31	CISPR Avg
0.173	34.65	64.80	-30.15	Q-Peak
0.173	18.39	54.80	-36.41	CISPR Avg
0.191	31.24	64.00	-32.76	Q-Peak
0.191	16.83	54.00	-37.17	CISPR Avg
0.240	33.73	62.10	-28.37	Q-Peak
0.240	20.78	52.10	-31.32	CISPR Avg
0.299	26.13	60.30	-34.17	Q-Peak
0.299	15.60	50.30	-34.70	CISPR Avg
0.330	23.89	59.50	-35.61	Q-Peak
0.330	14.53	49.50	-34.97	CISPR Avg

Table 22

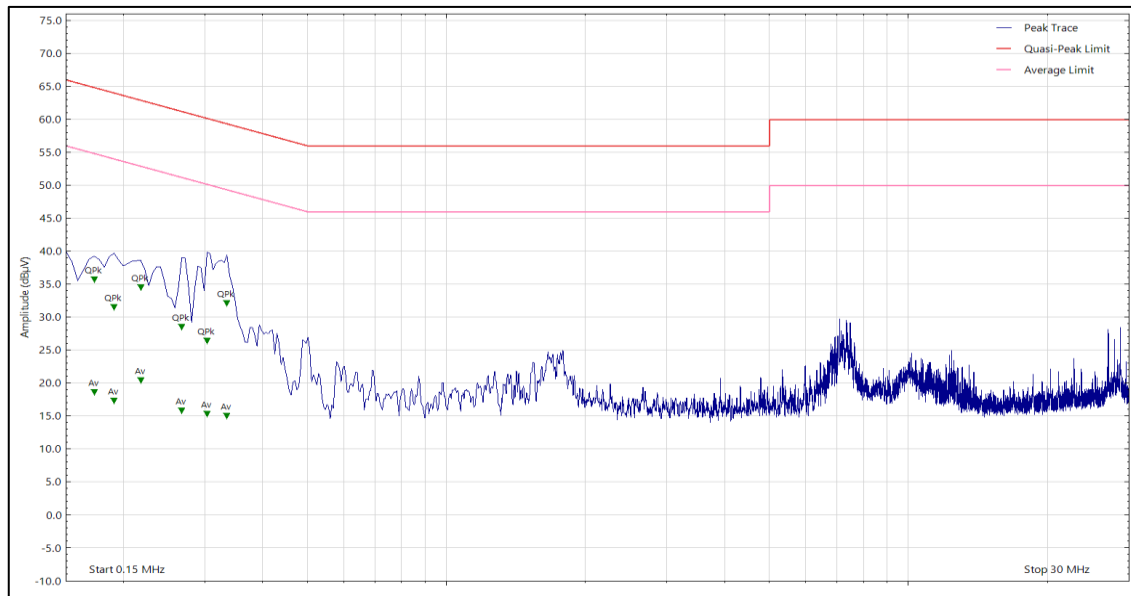


Figure 11 - Neutral Line - 150 kHz to 30 MHz

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.173	34.96	64.80	-29.84	Q-Peak
0.173	17.88	54.80	-36.92	CISPR Avg
0.191	30.81	64.00	-33.19	Q-Peak
0.191	16.66	54.00	-37.34	CISPR Avg
0.218	33.81	62.90	-29.09	Q-Peak
0.218	19.68	52.90	-33.22	CISPR Avg
0.267	27.78	61.20	-33.42	Q-Peak
0.267	15.16	51.20	-36.04	CISPR Avg
0.303	25.66	60.20	-34.54	Q-Peak
0.303	14.67	50.20	-35.53	CISPR Avg
0.335	31.36	59.30	-27.94	Q-Peak
0.335	14.35	49.30	-34.95	CISPR Avg

Table 23



2.1.10 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 2.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Emissions Software	TUV SUD	EmX V3.6.1	5125	-	Software
Test Receiver	Rohde & Schwarz	ESW44	5802	12	05-Nov-2026
Transient Limiter	Hewlett Packard	11947A	15	12	06-Nov-2026
Cable (N-Type to N-Type, 7 m)	Scott Cables	9918-NMNM-7000	4617	12	08-May-2027
Cable Assy 8m (N to N) 18GHz	Junkosha	MWX221-08000NMSNMS/B	7051	12	01-July-2026
LISN (CISPR 16, Single Phase)	Rohde & Schwarz	ESH3-Z5	1390	12	05-Feb-2027
Thermo Hygro Barometer	R.S Components	1160	7247	12	13-Mar-2027

Table 24



3 Test Equipment Information

3.1 General Test Equipment Used

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Milliohm Meter	VICI	2682132	7012	12	21-May-2026

Table 25



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 26

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.