

FCC and ISED Test Report

Apple Inc
Model: A3434



In accordance with FCC 47 CFR Part 15B,
ICES-003 and ISED RSS-GEN

Prepared for: Apple Inc
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Document 75963494-11 Issue 02

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Andrew Lawson	Chief Engineer, EMC	Authorised Signatory	29 July 2025

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 15B and ICES-003 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	Christopher Thompson	29 July 2025	

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 15B, ICES-003 and ISED RSS-GEN: 2023, Issue 7: 2020 and Issue 5 and A2 (2021-02) for the tests detailed in section 1.3.



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ACCREDITATION

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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-March-2025
2	To add Blockchain verification logo	29-July-2025

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 15B, ICES-003 and ISED RSS-GEN: 2023, Issue 7: 2020 and Issue 5 and A2 (2021-02)
Start of Test	19-February-2025
Finish of Test	06-March-2025
Name of Engineer(s)	Christopher Thompson and Nathan Harrison
Related Document(s)	ANSI C63.4: 2014



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15B, ICES-003 and ISED RSS-GEN is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration and Mode: AC Powered - Transmitters Idle				
2.1	15.109, 3.2.2 and 4.4	Radiated Disturbance	Pass	ANSI C63.4: 2014
2.2	15.107, 3.2.1 and 4.4	Conducted Disturbance at Mains Terminals	Pass	ANSI C63.4: 2014

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	Power	AC to DC Power Adapter with MagSafe cable	No
USB Port 1	2 m	Data	USB Type-C	No
USB Port 2	2 m	Data	USB Type-C	No
USB Port 3	Unterminated	Data	USB Type-C	No
HDMI Port	2 m	Video output	HDMI	No
Audio Jack Port	1 m	Audio Output	3.5 mm Jack	No

Table 3

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 cable: PSU (70W) model: A2743. A pair of headphones were used to terminate the EUTs 3.5 mm audio jack port. A mouse was used to terminate USB Port 1. A keyboard was used to terminate USB Port 2. A monitor was used to terminate the HDMI Port. A video was played on loopback to load the CPU. The EUTs display was set to maximum brightness. The EUTs audio output was set to maximum volume. USB Port 3 was unterminated.

Table 4

1.4.4 Modes of Operation

Mode	Description
Transmitters Idle	The EUT was powered with all internal transmitters disabled.

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.

Model: A3434		
Serial Number	Hardware Version	Software Version
HW573TLHH0	REV1.0	24F11a

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: A3434, Serial Number: HW573TLHH0			
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 - Transmitters Idle		
Radiated Disturbance	Christopher Thompson and Nathan Harrison	UKAS
Conducted Disturbance at Mains Terminals	Christopher Thompson	UKAS

Table 8

Office Address:

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

2 Test Details

2.1 Radiated Disturbance

2.1.1 Specification Reference

FCC 47 CFR Part 15B, ICES-003 and ISSED RSS-GEN, Clause 15.109, 3.2.2 and 4.4

2.1.2 Equipment Under Test and Modification State

A3434, S/N: HW573TLHH0 - Modification State 0

2.1.3 Date of Test

19-February-2025 to 06-March-2025

2.1.4 Test Method

The EUT was set up in a semi-anechoic chamber in the centre of a remotely controlled turntable and placed on a non-conductive table 0.8 m above a reference ground plane.

A Peak detector pre-scan of the EUT emissions profile was measured across the appropriate frequency range while varying the antenna-to-EUT azimuth and polarisation. Measurements were made using a 3 m distance between the declared antenna measurement point and the EUT.

Where all pre-scan peak emissions measured were greater than 20 dB below the 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 test limit, the six highest pre-scan peak emissions seen across the frequency range were maximised by adjusting antenna height, polarisation and angle and then 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

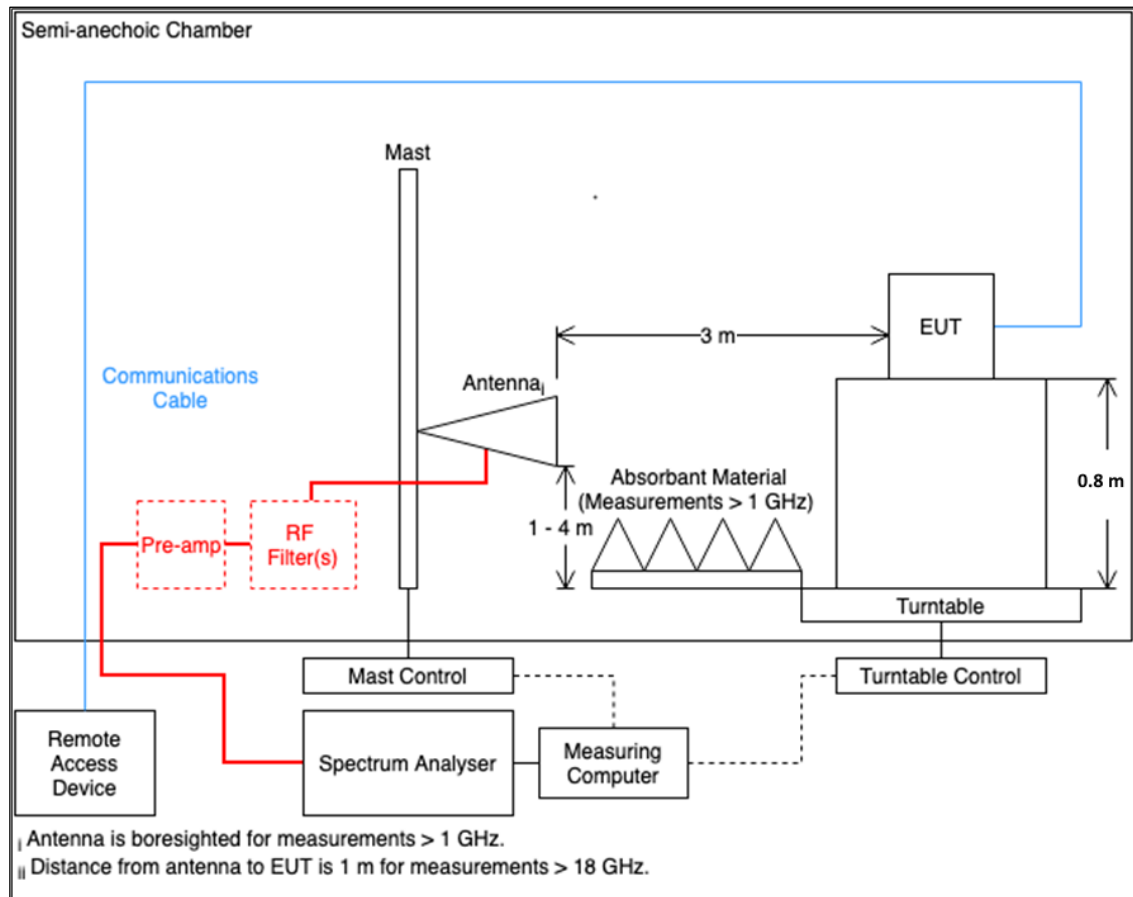
Below 1 GHz:

$$\begin{aligned}\text{Quasi-Peak level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{Quasi-Peak level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}\end{aligned}$$

Above 1 GHz:

$$\begin{aligned}\text{CISPR Average level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{CISPR Average level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}\end{aligned}$$

$$\begin{aligned}\text{Peak level (dB}\mu\text{V/m)} &= \text{Receiver level (dB}\mu\text{V)} + \text{Correction Factor (dB/m)} \\ \text{Margin (dB)} &= \text{Peak level (dB}\mu\text{V/m)} - \text{Limit (dB}\mu\text{V/m)}\end{aligned}$$



Required Specification Limits, Field Strength - Class B Test Limit at a 3 m Measurement Distance		
Frequency Range (MHz)	Test Limit (μV/m)	Test Limit (dBμV/m)
30 to 88	100	40.0
88 to 216	150	43.5
216 to 960	200	46.0
Above 960	500	54.0

Supplementary information:
Note 1. A Quasi-peak detector is to be used for measurements below 1 GHz.
Note 2. A CISPR Average detector is to be used for measurements above 1 GHz.
Note 3. The Peak test limit above 1 GHz is 20 dB higher than the CISPR Average test limit.



2.1.9 Test Results

Results for Configuration and Mode: AC Powered - Transmitters Idle.

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.

Highest frequency generated or used within the EUT: 7.125 GHz
Which necessitates an upper frequency test limit of: 35.625 GHz (Tested to 40 GHz)

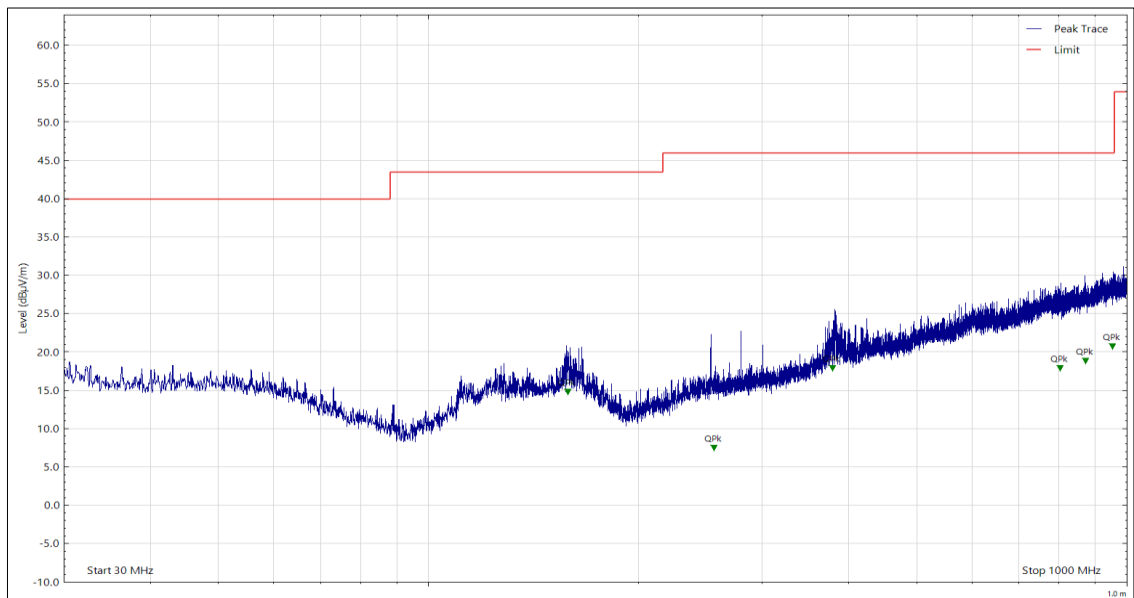


Figure 2 - 30 MHz to 1 GHz, Quasi-Peak, Horizontal

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
158.267	14.18	43.50	-29.32	Q-Peak	350	237	Horizontal
256.349	6.91	46.00	-39.09	Q-Peak	297	106	Horizontal
379.341	17.29	46.00	-28.71	Q-Peak	73	101	Horizontal
802.843	17.28	46.00	-28.72	Q-Peak	98	229	Horizontal
873.348	18.21	46.00	-27.79	Q-Peak	209	274	Horizontal
954.896	20.16	46.00	-25.84	Q-Peak	164	100	Horizontal

Table 10

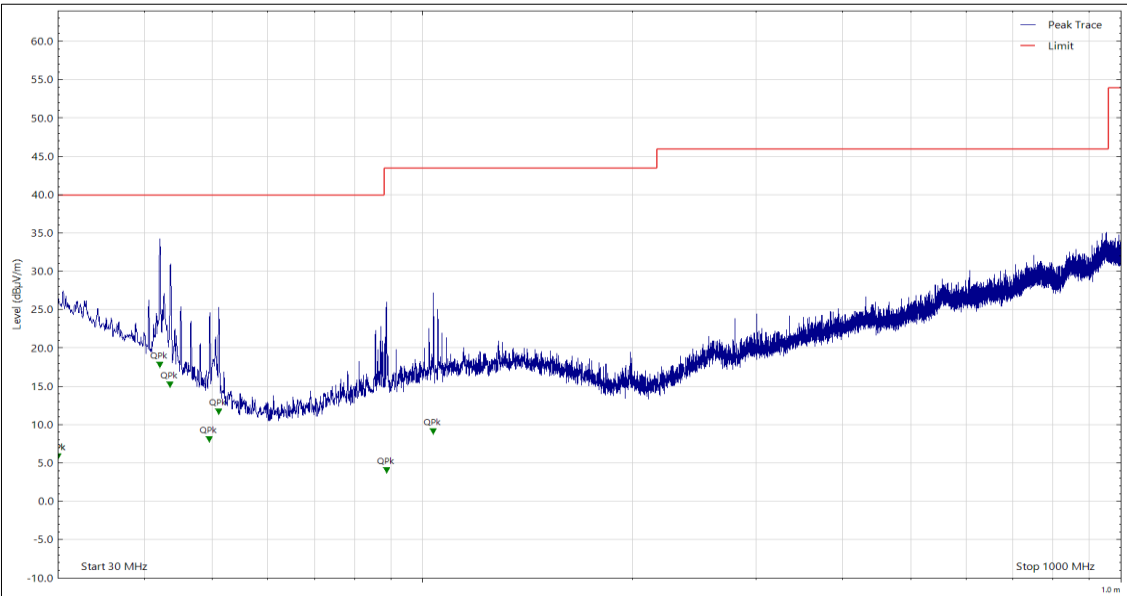


Figure 3 - 30 MHz to 1 GHz, Quasi-Peak, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
71.279	3.38	40.00	-36.62	Q-Peak	26	108	Vertical
157.077	22.80	43.50	-20.70	Q-Peak	271	100	Vertical
209.696	5.06	43.50	-38.44	Q-Peak	266	100	Vertical
241.496	35.23	46.00	-10.77	Q-Peak	58	107	Vertical
483.002	33.46	46.00	-12.54	Q-Peak	312	174	Vertical
965.261	21.94	54.00	-32.06	Q-Peak	65	180	Vertical

Table 11

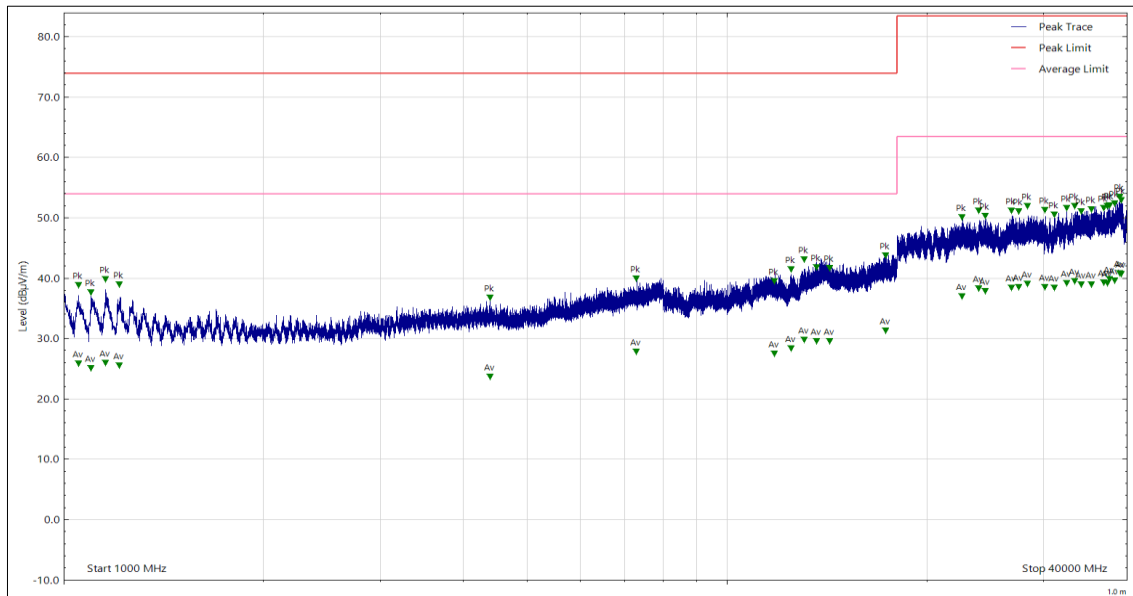


Figure 4 - 1 GHz to 40 GHz, Peak and CISPR Average, Horizontal

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
1052.510	25.10	54.00	-28.90	CISPR Avg	62	105	Horizontal
1052.510	38.05	74.00	-35.95	Peak	62	105	Horizontal
1098.517	24.32	54.00	-29.68	CISPR Avg	14	125	Horizontal
1098.517	36.88	74.00	-37.12	Peak	14	125	Horizontal
1155.546	25.25	54.00	-28.75	CISPR Avg	291	110	Horizontal
1155.546	39.06	74.00	-34.94	Peak	291	110	Horizontal
1213.011	24.82	54.00	-29.18	CISPR Avg	142	400	Horizontal
1213.011	38.20	74.00	-35.80	Peak	142	400	Horizontal
4389.482	35.99	74.00	-38.01	Peak	316	391	Horizontal
4389.482	22.94	54.00	-31.06	CISPR Avg	316	391	Horizontal
7296.955	39.14	74.00	-34.86	Peak	338	124	Horizontal
7296.955	27.11	54.00	-26.89	CISPR Avg	338	124	Horizontal
11782.000	26.69	54.00	-27.31	CISPR Avg	350	100	Horizontal
11782.000	38.75	74.00	-35.25	Peak	350	100	Horizontal
12470.000	40.71	74.00	-33.29	Peak	360	158	Horizontal
12470.000	27.56	54.00	-26.44	CISPR Avg	360	158	Horizontal
13064.000	29.00	54.00	-25.00	CISPR Avg	284	100	Horizontal
13064.000	42.30	74.00	-31.70	Peak	284	100	Horizontal
13634.500	28.81	54.00	-25.19	CISPR Avg	343	110	Horizontal
13634.500	40.99	74.00	-33.01	Peak	343	110	Horizontal
14267.000	40.98	74.00	-33.02	Peak	360	245	Horizontal
14267.000	28.84	54.00	-25.16	CISPR Avg	360	245	Horizontal
17340.500	42.99	74.00	-31.01	Peak	350	103	Horizontal
17340.500	30.51	54.00	-23.49	CISPR Avg	350	103	Horizontal
22602.500	36.23	63.50	-27.27	CISPR Avg	6	100	Horizontal



Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
22602.500	49.29	83.50	-34.21	Peak	6	100	Horizontal
23954.000	37.56	63.50	-25.94	CISPR Avg	7	100	Horizontal
23954.000	50.42	83.50	-33.08	Peak	7	100	Horizontal
24516.500	37.09	63.50	-26.41	CISPR Avg	203	100	Horizontal
24516.500	49.54	83.50	-33.96	Peak	203	100	Horizontal
26839.500	50.44	83.50	-33.06	Peak	350	100	Horizontal
26839.500	37.67	63.50	-25.83	CISPR Avg	350	100	Horizontal
27503.500	50.32	83.50	-33.18	Peak	0	100	Horizontal
27503.500	37.74	63.50	-25.76	CISPR Avg	0	100	Horizontal
28375.500	51.24	83.50	-32.26	Peak	79	100	Horizontal
28375.500	38.36	63.50	-25.14	CISPR Avg	79	100	Horizontal
30134.500	50.56	83.50	-32.94	Peak	10	100	Horizontal
30134.500	37.73	63.50	-25.77	CISPR Avg	10	100	Horizontal
31112.500	37.68	63.50	-25.82	CISPR Avg	110	100	Horizontal
31112.500	49.82	83.50	-33.68	Peak	110	100	Horizontal
32453.000	38.42	63.50	-25.08	CISPR Avg	255	100	Horizontal
32453.000	50.90	83.50	-32.60	Peak	255	100	Horizontal
33417.500	38.72	63.50	-24.78	CISPR Avg	281	100	Horizontal
33417.500	51.14	83.50	-32.36	Peak	281	100	Horizontal
34207.000	50.29	83.50	-33.21	Peak	51	100	Horizontal
34207.000	38.19	63.50	-25.31	CISPR Avg	51	100	Horizontal
35351.000	50.69	83.50	-32.81	Peak	355	100	Horizontal
35351.000	38.16	63.50	-25.34	CISPR Avg	355	100	Horizontal
36971.000	38.52	63.50	-24.98	CISPR Avg	239	100	Horizontal
36971.000	50.88	83.50	-32.62	Peak	239	100	Horizontal
37429.500	38.40	63.50	-25.10	CISPR Avg	10	100	Horizontal
37429.500	51.24	83.50	-32.26	Peak	10	100	Horizontal
37671.000	51.25	83.50	-32.25	Peak	199	100	Horizontal
37671.000	39.02	63.50	-24.48	CISPR Avg	199	100	Horizontal
38409.500	51.63	83.50	-31.87	Peak	182	100	Horizontal
38409.500	38.90	63.50	-24.60	CISPR Avg	182	100	Horizontal
39021.500	52.70	83.50	-30.80	Peak	358	100	Horizontal
39021.500	40.07	63.50	-23.43	CISPR Avg	358	100	Horizontal
39216.000	52.16	83.50	-31.34	Peak	222	100	Horizontal
39216.000	39.91	63.50	-23.59	CISPR Avg	222	100	Horizontal

Table 12

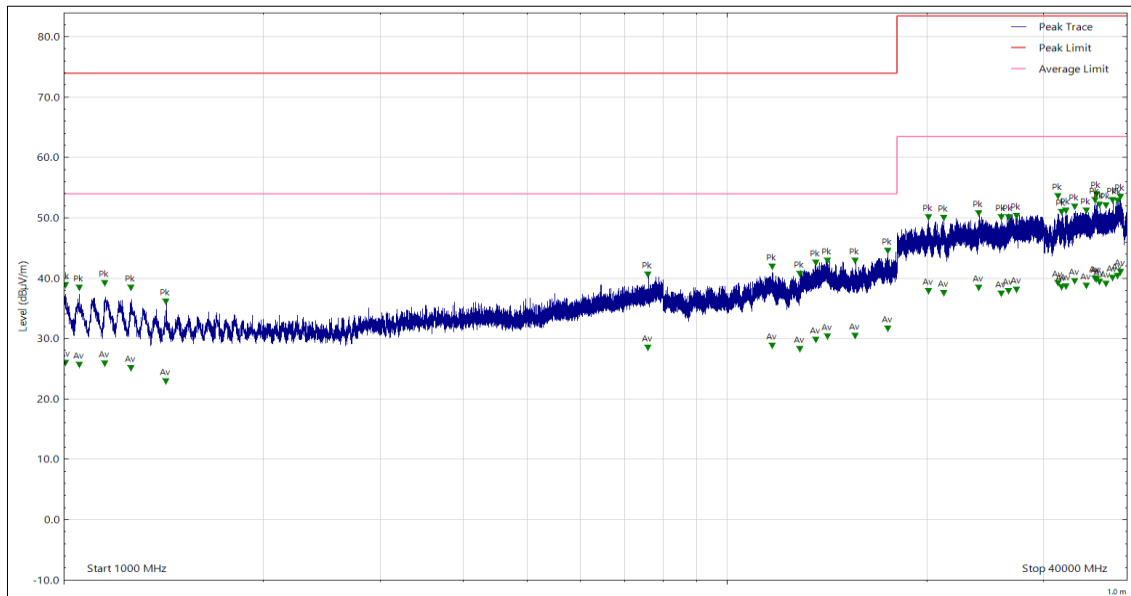


Figure 5 - 1 GHz to 40 GHz, Peak and CISPR Average, Vertical

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
1005.993	38.10	74.00	-35.90	Peak	115	100	Vertical
1005.993	25.19	54.00	-28.81	CISPR Avg	115	100	Vertical
1054.532	24.91	54.00	-29.09	CISPR Avg	120	291	Vertical
1054.532	37.67	74.00	-36.33	Peak	120	291	Vertical
1154.546	38.45	74.00	-35.55	Peak	190	251	Vertical
1154.546	25.14	54.00	-28.86	CISPR Avg	190	251	Vertical
1264.042	24.38	54.00	-29.62	CISPR Avg	228	119	Vertical
1264.042	37.67	74.00	-36.33	Peak	228	119	Vertical
1425.962	22.15	54.00	-31.85	CISPR Avg	351	106	Vertical
1425.962	35.33	74.00	-38.67	Peak	351	106	Vertical
7595.023	39.84	74.00	-34.16	Peak	187	109	Vertical
7595.023	27.75	54.00	-26.25	CISPR Avg	187	109	Vertical
11691.000	28.04	54.00	-25.96	CISPR Avg	206	110	Vertical
11691.000	41.11	74.00	-32.89	Peak	206	110	Vertical
12880.500	39.94	74.00	-34.06	Peak	360	391	Vertical
12880.500	27.51	54.00	-26.49	CISPR Avg	360	391	Vertical
13589.500	41.81	74.00	-32.19	Peak	358	278	Vertical
13589.500	28.98	54.00	-25.02	CISPR Avg	358	278	Vertical
14151.500	29.61	54.00	-24.39	CISPR Avg	132	110	Vertical
14151.500	42.17	74.00	-31.83	Peak	132	110	Vertical
15591.000	29.72	54.00	-24.28	CISPR Avg	9	123	Vertical
15591.000	42.12	74.00	-31.88	Peak	9	123	Vertical
17455.000	43.77	74.00	-30.23	Peak	230	328	Vertical
17455.000	30.88	54.00	-23.12	CISPR Avg	230	328	Vertical
20098.500	49.31	83.50	-34.19	Peak	100	100	Vertical



Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
20098.500	37.14	63.50	-26.36	CISPR Avg	100	100	Vertical
21185.500	49.28	83.50	-34.22	Peak	20	100	Vertical
21185.500	36.73	63.50	-26.77	CISPR Avg	20	100	Vertical
23957.500	37.62	63.50	-25.88	CISPR Avg	199	100	Vertical
23957.500	50.01	83.50	-33.49	Peak	199	100	Vertical
25860.000	36.63	63.50	-26.87	CISPR Avg	321	100	Vertical
25860.000	49.37	83.50	-34.13	Peak	321	100	Vertical
26529.000	37.08	63.50	-26.42	CISPR Avg	44	100	Vertical
26529.000	49.37	83.50	-34.13	Peak	44	100	Vertical
27273.500	49.55	83.50	-33.95	Peak	159	100	Vertical
27273.500	37.33	63.50	-26.17	CISPR Avg	159	100	Vertical
31477.500	52.81	83.50	-30.69	Peak	206	100	Vertical
31477.500	38.41	63.50	-25.09	CISPR Avg	206	100	Vertical
31933.500	50.21	83.50	-33.29	Peak	7	100	Vertical
31933.500	37.79	63.50	-25.71	CISPR Avg	7	100	Vertical
32377.000	50.45	83.50	-33.05	Peak	23	100	Vertical
32377.000	37.88	63.50	-25.62	CISPR Avg	23	100	Vertical
33376.000	51.08	83.50	-32.42	Peak	337	100	Vertical
33376.000	38.77	63.50	-24.73	CISPR Avg	337	100	Vertical
34743.000	38.03	63.50	-25.47	CISPR Avg	266	100	Vertical
34743.000	50.38	83.50	-33.12	Peak	266	100	Vertical
35825.000	52.13	83.50	-31.37	Peak	10	100	Vertical
35825.000	39.22	63.50	-24.28	CISPR Avg	10	100	Vertical
36034.500	39.05	63.50	-24.45	CISPR Avg	120	100	Vertical
36034.500	53.19	83.50	-30.31	Peak	120	100	Vertical
36410.500	51.45	83.50	-32.05	Peak	170	100	Vertical
36410.500	38.65	63.50	-24.85	CISPR Avg	170	100	Vertical
37190.000	51.27	83.50	-32.23	Peak	69	100	Vertical
37190.000	38.27	63.50	-25.23	CISPR Avg	69	100	Vertical
38085.000	39.26	63.50	-24.24	CISPR Avg	355	100	Vertical
38085.000	52.14	83.50	-31.36	Peak	355	100	Vertical
38730.000	39.66	63.50	-23.84	CISPR Avg	337	100	Vertical
38730.000	52.06	83.50	-31.44	Peak	337	100	Vertical
39130.000	52.76	83.50	-30.74	Peak	276	100	Vertical
39130.000	40.26	63.50	-23.24	CISPR Avg	276	100	Vertical

Table 13



2.1.10 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11 and 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
3m Semi-Anechoic Chamber	Rainford	RF Chamber 11	5136	36	14-Nov-2027
Emissions Software	TUV SUD	EmX V3.4.2	5125	-	Software
Tilt Antenna Mast	Maturo	TAM 4.0-P	5158	-	TU
Tilt Antenna Mast	Maturo Gmbh	TAM 4.0-P	5613	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable & Mast Controller	Maturo Gmbh	NCD/498/2799.01	5612	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Test Receiver	Rohde & Schwarz	ESW44	5382	12	9-Sep-2025
Test Receiver	Rohde & Schwarz	ESW44	5802	12	25-Oct-2025
Cable (SMA to SMA 1m)	Junkosha	MWX221/B	5998	12	23-Oct-2025
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/A	6017	12	12-Sep-2025
8m Cable	Scott Cables	SCB800-A-NMNM-08.00M	6715	6	1-Aug-2025
2m N-type Cable	Junkosha	MWX221-02000NMSNMS/B	6924	12	08-Dec-2025
Cable (2.92 mm(f)-N(m), 2 m)	Junkosha	MWX241-02000KFSNMS/B	6332	12	27-Sep-2025
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5511	12	06-Jun-2025
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5512	12	23-May-2025
Pre-Amplifier (1 GHz to 18 GHz)	Schwarzbeck	BBV 9718 C	5350	12	16-Dec-2025
Pre-Amplifier (8 GHz to 18 GHz)	Wright Technologies	APS06-0061	5596	12	28-Oct-2025
Pre-Amplifier (18 GHz to 40 GHz)	Phase One	PSO4-0087	1534	12	16-Aug-2025
Antenna (Bi-Log, 30 MHz to 1 GHz)	Teseq	CBL6111D	5615	24	15-Mar-2025
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	6635	24	13-Jun-2025
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	4848	12	14-Jul-2025
Antenna (DRG, 7.5 GHz to 18 GHz)	Schwarzbeck	HWRD750	5348	12	13-Oct-2025
Antenna (DRG, 18 GHz to 40 GHz)	Link Microtek Ltd	AM180HA-K-TU2	230	24	08-Oct-2026

Table 14

TU - Traceability Unscheduled



2.2 Conducted Disturbance at Mains Terminals

2.2.1 Specification Reference

FCC 47 CFR Part 15B, ICES-003 and ISED RSS-GEN, Clause 15.107, 3.2.1 and 4.4

2.2.2 Equipment Under Test and Modification State

A3434, S/N: HW573TLHH0 - Modification State 0

2.2.3 Date of Test

20-February-2025 to 21-February-2025

2.2.4 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.

2.2.5 Example Calculation

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

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

2.2.6 Example Test Setup Diagram

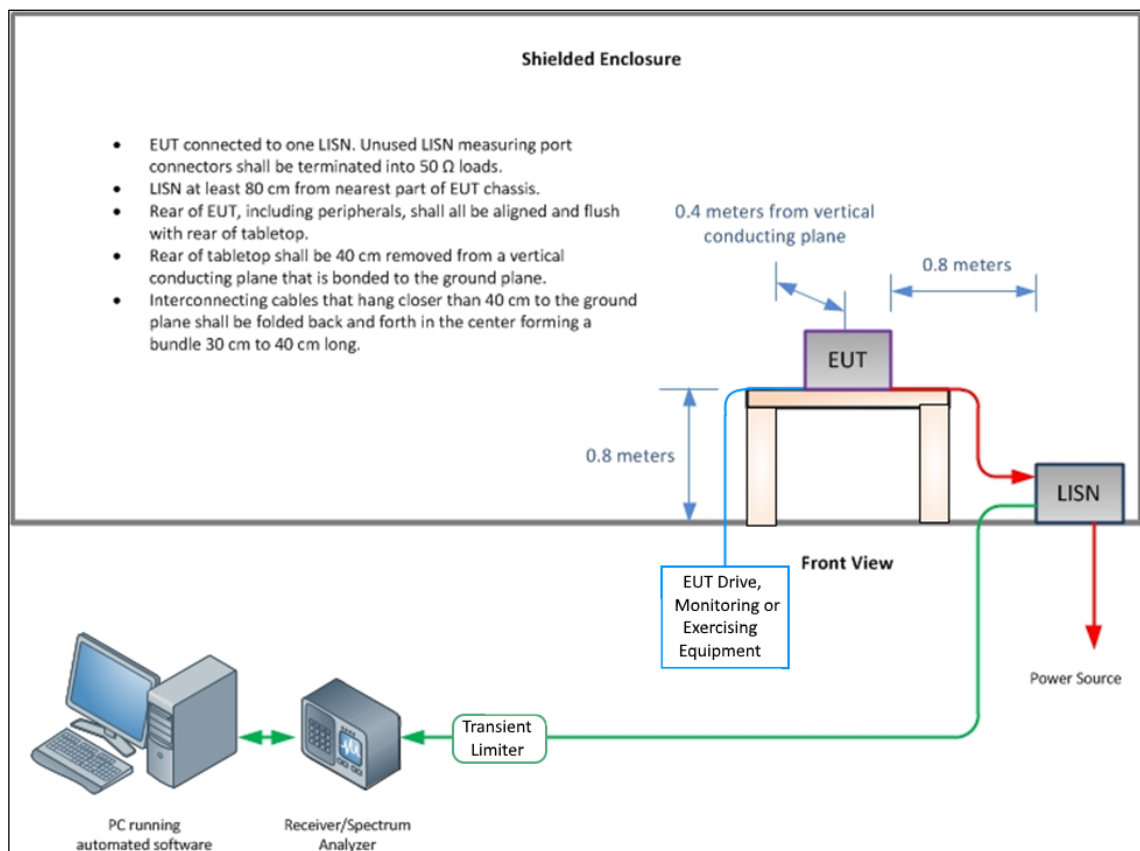


Figure 6 - Conducted Disturbance

2.2.7 Environmental Conditions

Ambient Temperature 18.6 °C
Relative Humidity 46.3 %
Atmospheric Pressure 1006.0 mbar

2.2.8 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 15

2.2.9 Test Results

Results for Configuration and Mode: AC Powered - Transmitters Idle.

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.

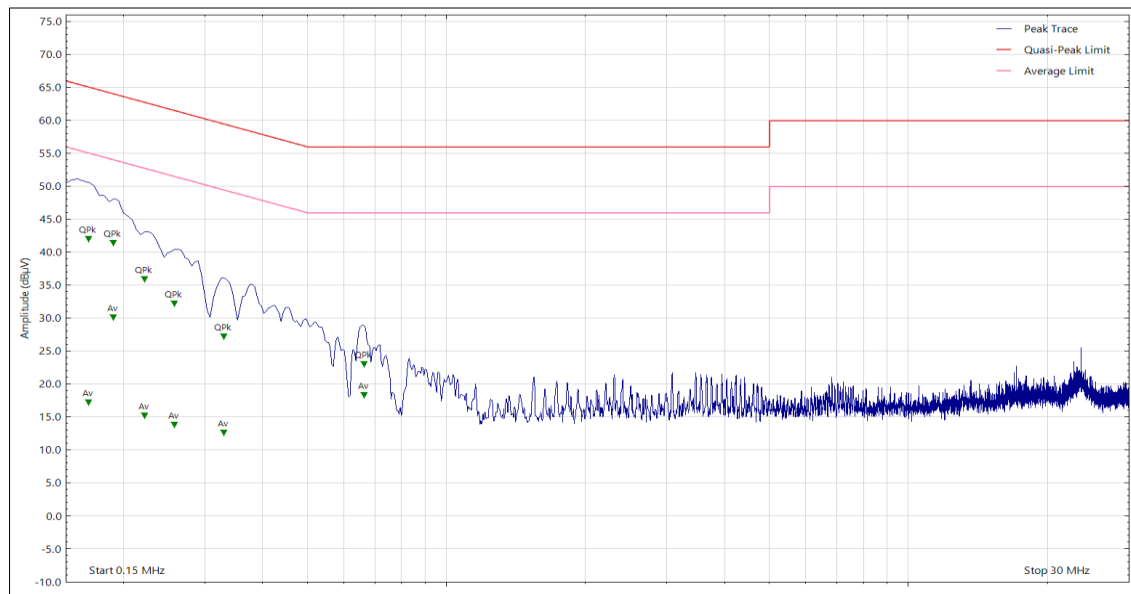


Figure 7 - Graphical Results - AC Power Live Line

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.168	41.29	65.10	-23.81	Q-Peak
0.168	16.47	55.10	-38.63	CISPR Avg
0.190	40.67	64.00	-23.33	Q-Peak
0.190	29.40	54.00	-24.60	CISPR Avg
0.222	35.23	62.70	-27.47	Q-Peak
0.222	14.57	52.70	-38.13	CISPR Avg
0.258	31.52	61.50	-29.98	Q-Peak
0.258	13.14	51.50	-38.36	CISPR Avg
0.330	26.54	59.50	-32.96	Q-Peak
0.330	11.93	49.50	-37.57	CISPR Avg
0.663	22.27	56.00	-33.73	Q-Peak
0.663	17.58	46.00	-28.42	CISPR Avg

Table 16

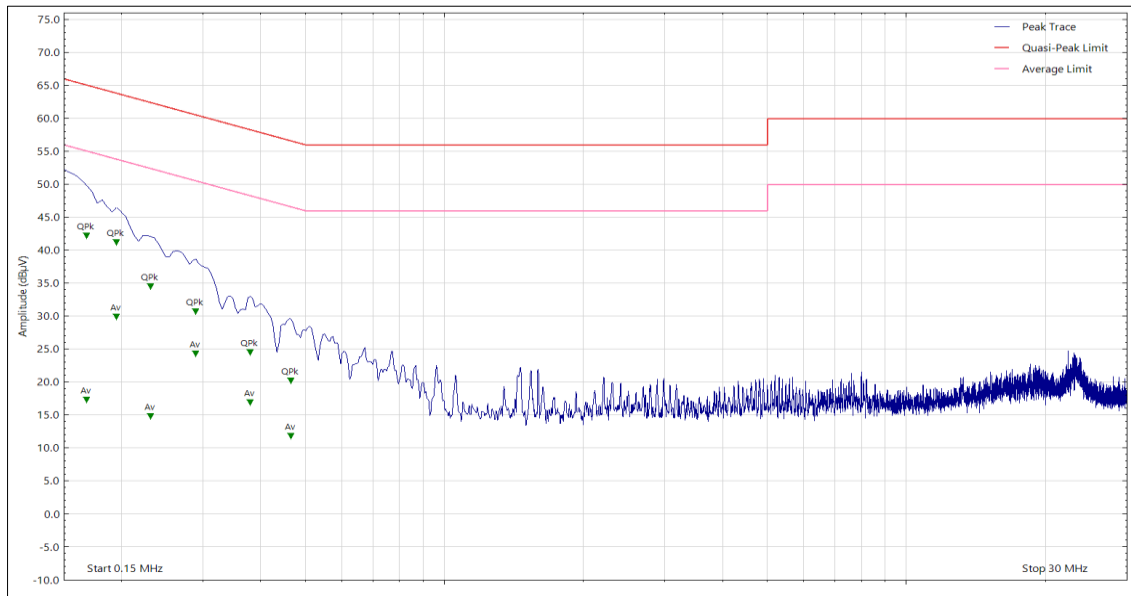


Figure 8 - Graphical Results - AC Power Neutral Line

Frequency (MHz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
0.168	41.48	65.00	-23.52	Q-Peak
0.168	16.58	55.00	-38.42	CISPR Avg
0.195	29.18	53.80	-24.62	CISPR Avg
0.195	40.51	63.80	-23.29	Q-Peak
0.231	14.14	52.40	-38.26	CISPR Avg
0.231	33.80	62.40	-28.60	Q-Peak
0.290	23.64	50.50	-26.86	CISPR Avg
0.290	30.03	60.50	-30.47	Q-Peak
0.380	16.18	48.30	-32.12	CISPR Avg
0.380	23.83	58.30	-34.47	Q-Peak
0.465	11.12	46.60	-35.48	CISPR Avg
0.465	19.49	56.60	-37.11	Q-Peak

Table 17



2.2.10 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 V3.4.2	5125	-	Software
Test Receiver	Rohde & Schwarz	ESW44	5802	12	25-Oct-2025
Transient Limiter	Hewlett Packard	11947A	15	12	28-Oct-2025
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/A	6017	12	12-Sep-2025
2m N-type Cable	Junkosha	MWX221-02000NMSNMS/B	6924	12	08-Dec-2025
LISN (CISPR 16, Single Phase)	Rohde & Schwarz	ESH3-Z5	1390	12	04-Feb-2026

Table 18



3 Test Equipment Information

3.1 General Test Equipment Used

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Milliohm-meter	Hewlett Packard	4338B	2095	12	11-Jul-2025
Thermo-Hygro-Barometer	PCE Instruments	OCE-THB-40	5470	12	07-May-2025

Table 19



4 Incident Reports

No incidents reports were raised.



5 Measurement Uncertainty

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

Test Name	Measurement Uncertainty
Radiated Disturbance	30 MHz to 1 GHz, Bilog Antenna, SAC, ± 5.2 dB 1 GHz to 6 GHz, Horn Antenna, SAC, ± 5.1 dB 6 GHz to 18 GHz, Horn Antenna, SAC, ± 4.9 dB 18 GHz to 40 GHz, Horn Antenna, SAC, ± 6.3 dB
Conducted Disturbance at Mains Terminals	150 kHz to 30 MHz, LISN, ± 3.7 dB

Table 20

Worst case error for both Time and Frequency measurement 12 parts in 10^6 .

Measurement Uncertainty Decision Rule

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.