

Prüfbericht-Nr.: Test report no.:	CN25Z40K 003	Auftrags-Nr.: Order no.:	168557264	Seite 1 von 13 Page 1 of 13
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2025-06-03	
Auftraggeber: Client:	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: Test item:	TOFSMYGGA plug			
Bezeichnung / Typ-Nr.: Identification / Type no.:	E2435-NA (Trademark: IKEA)			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	CFR Title 47 FCC Part 15, Subpart B ICES-003 Issue 7 October 2020			
Wareneingangsdatum: Date of sample receipt:	2025-06-03			
Prüfmuster-Nr.: Test sample no.:	A004009545-007~008			
Prüfzeitraum: Testing period:	2025-06-14 - 2025-06-17			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	<u>X</u> <i>Hardy</i> ↗ Hardy Suo		genehmigt von: authorized by:	<u>X</u> <i>Bell Hu</i> Bell Hu
Datum: Date:	2026-03-13		Ausstellungsdatum: Issue date:	2026-03-16
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / Other:	FCC ID: FHO-E2435			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

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Test Summary

5.1.1 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

5.1.2 RADIATED EMISSIONS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of FCC 15B & ICES-003

Appendix B: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, China

A2LA Certificate Number: 5162.01

FCC Accreditation Designation No.: CN1260

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Conducted Emission				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR3	102428	2026-07-18
Artificial Mains Network	R&S	ENV432	101546	2026-02-09
EMC32 Test Software	R&S	EMC32(Ver.10.50.00)	N/A	N/A
Radiated Emission (3m chamber)				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
3m SAC	ETS-Lindgren	SAC3	CT001632-Q1362	2027-09-11
Spectrum Analyzer	R&S	FSV40-N	102030	2025-11-13
Horn Antenna	R&S	HF907	102706	2027-07-31
SHF-EHF Horn	Schwarzbeck	BBHA 9170	01384	2025-11-25
Preamplifier(1-18GHz)	Schwarzbeck	BBV 9721	00140	2025-11-13
Shield Cable #1(9KHz-18GHz)	N/A	N/A	N/A	2025-12-14
EMC32 Test Software	R&S	EMC32(Ver.10.60.20)	N/A	N/A
Radiated Emission (10m chamber)				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
10m SAC	ETS-Lindgren	SAC10	CT001632-Q1399	2027-10-22
EMI Test Receiver 1	R&S	ESR7	102022	2026-07-18
EMI Test Receiver 2	R&S	ESR7	102023	2026-07-18
Bilog Antenna 1	TESEQ	CBL6112D	51321	2026-07-08
Bilog Antenna 2	TESEQ	CBL6112D	51322	2026-07-29
Preamplifier 1 (30-1000MHz)	Schwarzbeck	BBV9745	00256	2026-07-17
Preamplifier 1 (30-1000MHz)	Schwarzbeck	BBV9745	115	2026-07-17
Shield Cable #1(9KHz-6GHz)	N/A	N/A	N/A	2025-12-20

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (10m SAC), 30MHz to 1000MHz	± 4.53 dB
Radiated Emission (3m SAC), 1GHz to 6GHz	± 4.44 dB
Radiated Emission (3m SAC), 6GHz to 40GHz	± 4.53 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.24 dB / ± 3.24 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at 2-3F, 101 & 102, No.2, Nuclear Power Industrial Park, Fuming Community, Fucheng Street, Longhua District, Shenzhen 518000, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The product is a smart plug which works with the IKEA Home smart system. It is designed to operate in BLE and Zigbee/Thread protocol in 2.4GHz ISM band.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	TOFSMYGGA plug
Type Designation:	E2435-NA
Trademark:	IKEA
Operating Voltage:	AC 120V 50/60Hz
Max output power:	1800 W / 15 A Resistive load/ Max 300 W motor load
Testing Voltage:	AC 120V 60Hz
Operating Temperature Range:	-10 °C ~ +40 °C

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Normal working
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- User Manual
- Operation Description
- FCC/IC Label and Location Info

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.4: 2014.

According to clause 3.1, all tests were performed on model *E2435-NA* in this report.

4.3 Special Accessories and Auxiliary Equipment

N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

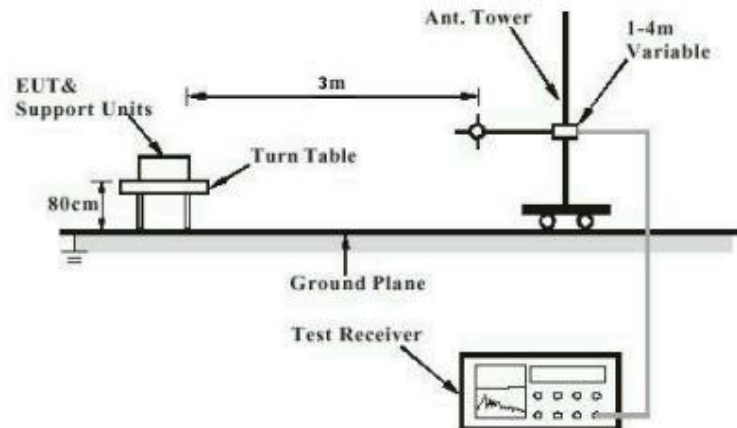


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

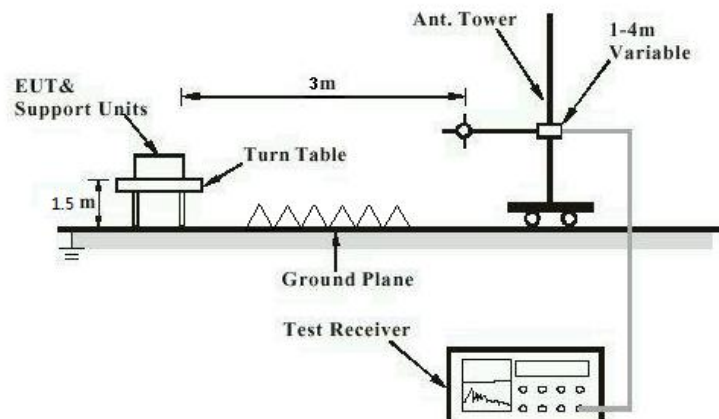
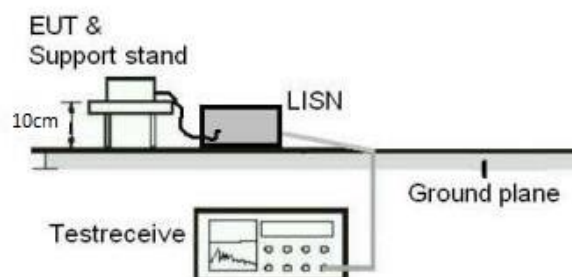


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1.1 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15, Subpart B ICES-003
Basic standard	: ANSI C63.4:2014
Frequency range	: 0.15 – 30MHz
Classification	: Class B
Limits	: FCC Part 15.107(a) ICES-003 Table 1
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2025-06-14
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Earthing	: Not connected
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix A.

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5.1.2 Radiated Emissions

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15, Subpart B ICES-003
Basic standard	: ANSI C63.4:2014
Frequency range	: 30MHz to 30GHz
Classification	: Class B
Limits	: FCC Part 15.109(a) ICES-003 Table 2 & 4
Kind of test site	: 3m Semi-Anechoic Chamber

Test Setup

Date of testing	: 2025-06-17
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Earthing	: Not connected
Ambient temperature	: Refer to test result
Relative humidity	: Refer to test result
Atmospheric pressure	: 101 kPa

This testing was carried out on all operation modes, but only the worst case was presented in this report.

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

7 List of Tables

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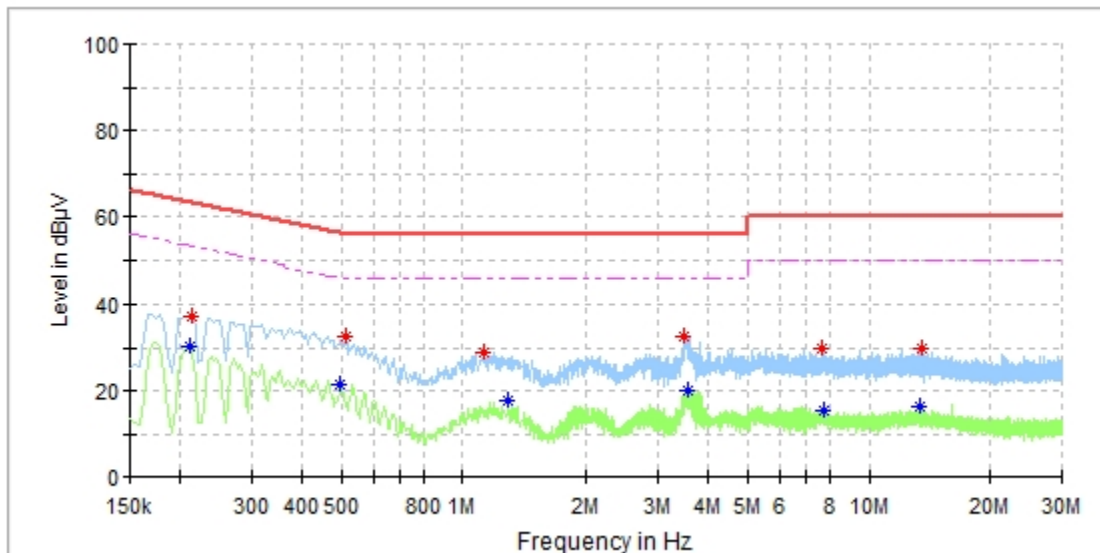
Appendix A: Test Results of FCC 15B & ICES-003

APPENDIX A: TEST RESULTS OF FCC 15B & ICES-003.....	1
APPENDIX A.1: TEST PLOTS OF CONDUCTED EMISSION ON AC MAINS.....	2
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Appendix A.1: Test Plots of Conducted Emission on AC Mains

EUT Information

EUT Name:	TOFSMYGGA plug
Order Number:	168557264(P01979800)
Model:	E2435-NA
Test Mode:	On, Normal operation (Full Load)
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Dawn Shen/Murphy Chen
Tem./Hum./Pressure:	24.9°C/50.4%/101kPa
Remark:	SR 2

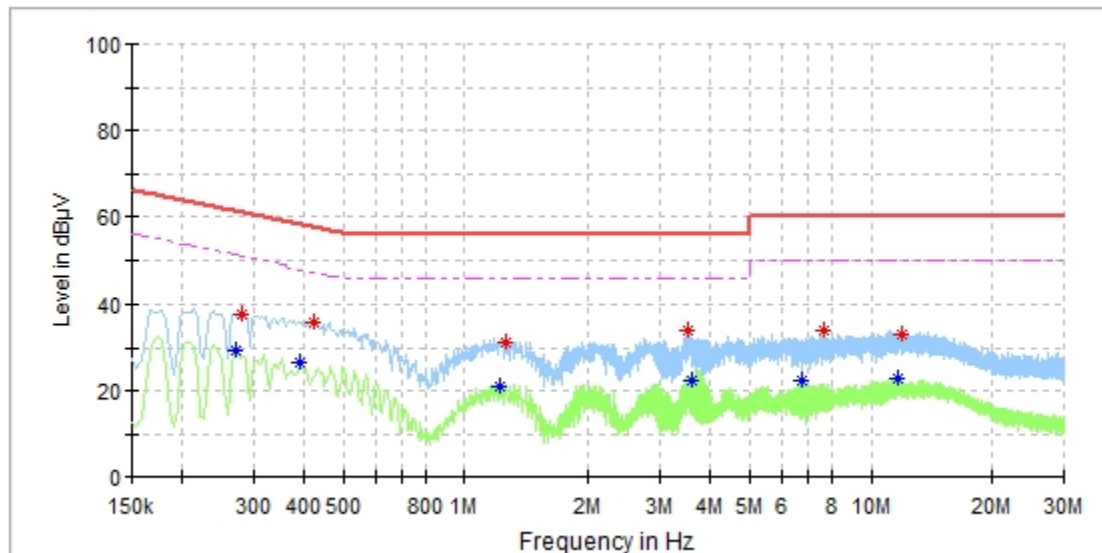


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.210000	---	30.12	53.21	23.08	L1	9.8
0.214000	36.99	---	63.05	26.06	L1	9.8
0.498000	---	21.55	46.03	24.49	L1	9.9
0.514000	32.64	---	56.00	23.36	L1	9.9
1.130000	28.81	---	56.00	27.19	L1	10.0
1.290000	---	17.58	46.00	28.42	L1	10.0
3.494000	32.66	---	56.00	23.34	L1	10.1
3.550000	---	19.88	46.00	26.12	L1	10.1
7.666000	29.68	---	60.00	30.32	L1	10.2
7.754000	---	15.36	50.00	34.64	L1	10.2
13.414000	---	16.09	50.00	33.91	L1	10.2
13.474000	29.80	---	60.00	30.20	L1	10.2

EUT Information

EUT Name: TOFSMYGGA plug
Order Number: 168557264(P01979800)
Model: E2435-NA
Test Mode: On, Normal operation (Full Load)
Test Voltage: AC 120V/60Hz
Test Standard: FCC Part 15B
Test By./Review By: Dawn Shen/Murphy Chen
Tem./Hum./Pressure: 24.9°C/50.4%/101kPa
Remark: SR 2



Critical Freqs

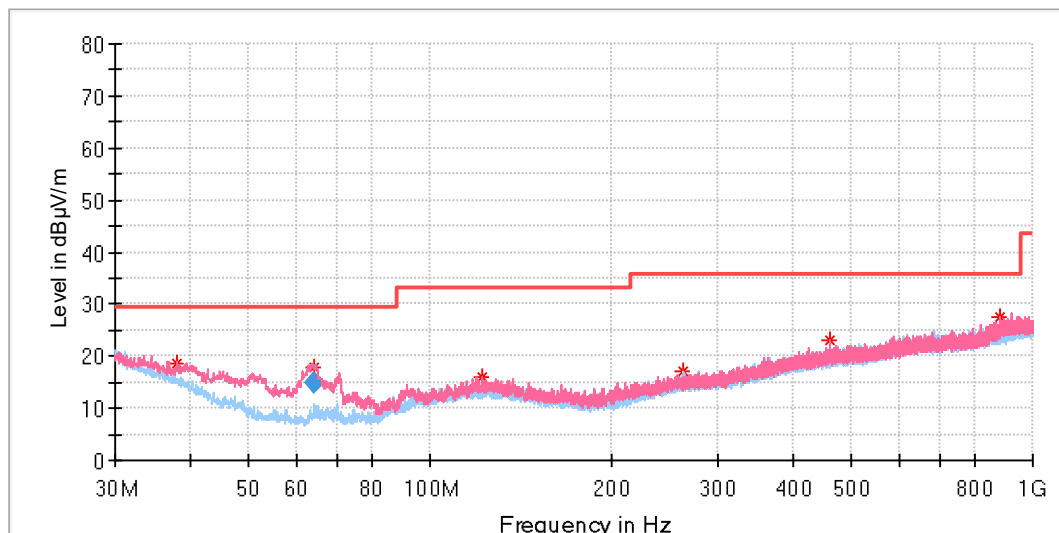
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.270000	---	29.37	51.12	21.75	N	9.7
0.282000	37.56	---	60.76	23.19	N	9.7
0.390000	---	26.56	48.06	21.50	N	9.7
0.422000	35.85	---	57.41	21.56	N	9.7
1.222000	---	20.98	46.00	25.02	N	9.8
1.258000	31.25	---	56.00	24.75	N	9.8
3.534000	33.93	---	56.00	22.07	N	9.8
3.594000	---	22.39	46.00	23.61	N	9.8
6.762000	---	22.56	50.00	27.44	N	9.8
7.642000	33.74	---	60.00	26.26	N	9.9
11.594000	---	22.63	50.00	27.37	N	9.9
11.978000	33.24	---	60.00	26.76	N	9.9

Appendix A.2: Test Plots of Radiated Emission

Note: The following illustration shows the limit that meet the FCC requirements, and these measured value also comply with IC requirements. Testing was carried out within frequency range 30MHz to the 5th harmonics (30MHz to 30GHz). The measurement results above 6GHz were greater than 20dB below the limit, so only record the test result within the 30MHz to 6GHz.

EUT Information

EUT Name:	TOFSMYGGA plug
Order Number:	168557264(P01979800)
Model:	E2435-NA
Test Mode:	On, Normal operation (Full Load)
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15
Test By:/Review By:	Dawn Shen/Murphy Chen
Tem./Hum./Pressure:	23.7°C/50.3%/101kPa
Remark:	10m SAC



Critical Freqs

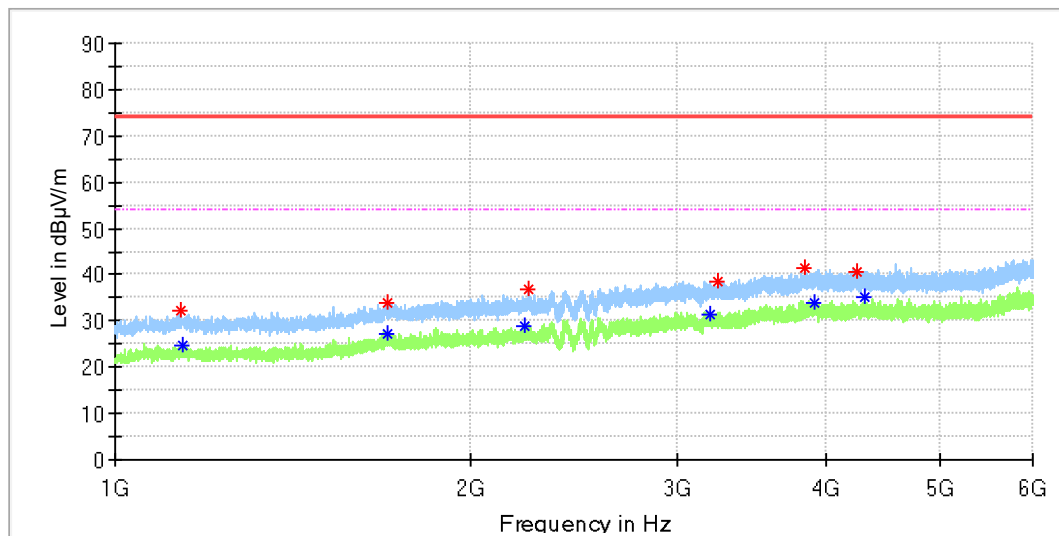
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
38.083333	18.69	29.50	10.81	100.0	V	0.0	-8.4
64.057622	17.82	29.50	11.68	200.0	V	62.0	-15.7
122.150000	15.98	33.10	17.12	200.0	V	141.0	-9.5
263.770000	17.07	35.60	18.53	100.0	H	94.0	-10.1
460.464444	22.94	35.60	12.66	100.0	V	167.0	-3.1
882.630000	27.65	35.60	7.95	100.0	V	94.0	2.9

Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
64.057622	14.92	29.50	14.58	1000.0	120.000	200.0	V	62.0	-15.7

EUT Information

EUT Name	TOFSMYGGA plug
Order Number:	168557264(P01979800)
Model:	E2435-NA
Test Mode:	On, Normal operation (Full Load)
Test Voltage:	AC 120V/ 60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Dawn Shen/Murphy Chen
Tem./Hum./Pressure:	23.5°C/52.3%/101kPa
Remark:	3m chamber

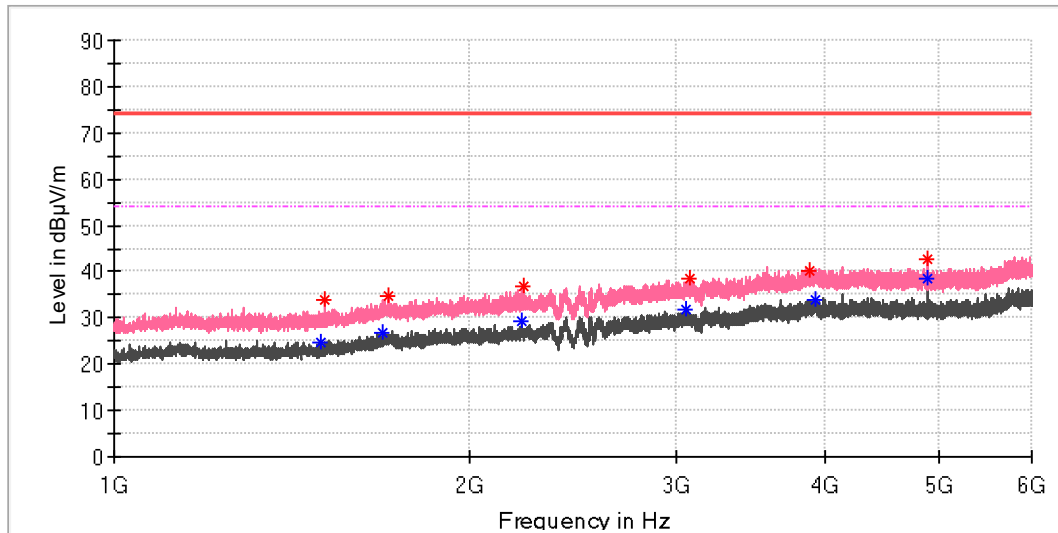


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1138.13	32.26	---	74.00	41.74	100.0	H	81.00	-11.20
1139.69	---	24.70	54.00	29.30	100.0	H	231.00	-11.19
1702.19	---	27.36	54.00	26.64	100.0	H	66.00	-8.78
1702.81	33.82	---	74.00	40.18	100.0	H	120.00	-8.77
2228.44	---	28.95	54.00	25.05	100.0	H	170.00	-7.18
2240.63	36.78	---	74.00	37.22	100.0	H	16.00	-7.15
3190.00	---	31.49	54.00	22.51	100.0	H	336.00	-2.94
3248.44	38.63	---	74.00	35.37	100.0	H	245.00	-2.89
3848.13	41.47	---	74.00	32.53	100.0	H	268.00	-0.07
3920.00	---	33.99	54.00	20.01	100.0	H	57.00	0.66
4256.56	40.64	---	74.00	33.36	100.0	H	231.00	0.59
4315.31	---	35.06	54.00	18.94	100.0	H	314.00	0.70

EUT Information

EUT Name	TOFSMYGGA plug
Order Number:	168557264(P01979800)
Model:	E2435-NA
Test Mode:	On, Normal operation (Full Load)
Test Voltage:	AC 120V/ 60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Dawn Shen/Murphy Chen
Tem./Hum./Pressure:	23.5°C/52.3%/101kPa
Remark:	3m chamber



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1496.56	---	24.67	54.00	29.33	100.0	V	31.00	-10.74
1506.56	33.80	---	74.00	40.20	100.0	V	45.00	-10.69
1689.38	---	26.71	54.00	27.29	100.0	V	23.00	-8.94
1708.75	34.59	---	74.00	39.41	100.0	V	0.00	-8.70
2220.00	---	29.20	54.00	24.80	100.0	V	168.00	-7.21
2223.75	36.73	---	74.00	37.27	100.0	V	45.00	-7.20
3054.38	---	31.64	54.00	22.36	100.0	V	75.00	-2.95
3082.50	38.39	---	74.00	35.61	100.0	V	139.00	-2.88
3881.88	40.10	---	74.00	33.90	100.0	V	1.00	0.27
3939.06	---	33.89	54.00	20.11	100.0	V	131.00	0.65
4886.88	42.56	---	74.00	31.44	100.0	V	297.00	1.63
4887.19	---	38.68	54.00	15.32	100.0	V	313.00	1.63