Prüfbericht-Nr.: *Test report no.*:	**CN23M3U2 001**	**Auftrags-Nr.:** *Order no.*:	**168450508**
Kunden-Referenz-Nr.: *Client reference no.*:	N/A	**Auftragsdatu** *Order date:*	2023-10-30
Auftraggeber: *Client*:	**Kohler Co.** 444 Highland Drive Kohler, WI 53044 United States		
Prüfgegenstand: *Test item*:	Kohler Amplifier		
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	K-30319-NA, K-30319IN-NA (Trademark: KOHLER)		
Auftrags-Inhalt: *Order content*:	Test Report		
Prüfgrundlage: *Test specification*:	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209		RSS-247 Issue 3 August 2023 RSS-Gen Issue 5 February 2021

Wareneingangsdatum: *Date of sample receipt*:	2023-11-02
Prüfmuster-Nr.: *Test sample no:*	A003592999
Prüfzeitraum: *Testing period*:	2023-10-31 - 2023-11-24
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass

Please refer to Photo Document

geprüft von: tested by:	X Signed by: Harry W. C. Wu	**genehmigt von:** *authorized by*:	X Signed by: Alex Lan
Datum: *Date:* 2024-03-18		**Ausstellungsdatum:** *Issue date:* 2024-03-18	
Stellung / Position:	Project Manager	**Stellung** / Position:	Reviewer

Sonstiges / *Other*: FCC ID: N82-KOHLER054
IC: 4554A-KOHLER054, HVIN: K-30319-NA, K-30319IN-NA

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *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*

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. *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.*
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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. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, 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 bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. 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 115:2021, 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.

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.3 99% BANDWIDTH
RESULT: Pass

5.1.4 20DB BANDWIDTH
RESULT: Pass

5.1.5 CARRIER FREQUENCY SEPARATION
RESULT: Pass

5.1.6 NUMBER OF HOPPING FREQUENCY
RESULT: Pass

5.1.7 TIME OF OCCUPANCY
RESULT: Pass

5.1.8 FREQUENCY STABILITY
RESULT: Pass

5.1.9 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.10 RADIATED SPURIOUS EMISSION
RESULT: Pass

5.1.11 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

Contents

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 Bluetooth BR/EDR mode

Appendix B: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	21.09.2024
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	21.09.2024
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	21.09.2024
DC Power Supply	Keysight	E3642A	MY61276100	21.09.2024
Wireless Connectivity Tester	R&S	CMW270	102505	21.09.2024
Power Control Unit	Tonscend	JS0806-4ADC	N/A	21.09.2024
Automation Control Unit	Tonscend	JS0806-2	21C8060396	21.09.2024
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Unwanted Emission Testing (TS9975)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EMI Test Receiver	R&S	ESR 7	102021	25.07.2024
Signal Analyzer	R&S	FSV 40	101439	25.07.2024
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	25.07.2024
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	25.07.2024
Amplifier	R&S	SCU-18F	180070	25.07.2024
Amplifier	R&S	SCU40A	100475	25.07.2024
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	06.08.2024
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	06.08.2024
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	27.08.2024
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	06.08.2024
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	22.06.2024

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 basics 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 (k=2)
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	±4.17 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 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 No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, 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 EUT is an amplifier, which supports Bluetooth wireless technology.
The two models are identical and different model number for different market purpose.
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
Product Name:	Kohler Amplifier
Model No.:	K-30319-NA, K-30319IN-NA
Trademark:	KOHLER
FCC ID:	N82-KOHLER054
IC:	4554A-KOHLER054
HVIN:	30319-NA, 30319T-NA
Operating Voltage:	DC 24V via external AC/DC Adapter
AC/DC Adapter:	Model: DYS890-240400W Rated input: AC 100-240V, 56/60Hz, 1.5A MAX Rated output: DC 24V, 4A, 96W
Technical Specification of Bluetooth	
Operating Frequency:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK, π/4-DQPSK, 8DPSK
Channel Number:	79 channels
Channel Separation:	1MHz,
Data Rate:	BR & EDR mode:(1Mbps, 2Mbps, 3Mbps)
Antenna Type:	Integral Antenna
Antenna Gain:	3.69 dBi Max (As detailed in Antenna spec)

Table 4: RF Channel and Frequency of Bluetooth BR/EDR

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**2402.00**	20	2422.00	40	2442.00	60	2462.00
1	2403.00	21	2423.00	41	2443.00	61	2463.00
2	2404.00	22	2424.00	42	2444.00	62	2464.00
3	2405.00	23	2425.00	43	2445.00	63	2465.00
4	2406.00	24	2426.00	44	2446.00	64	2466.00
5	2407.00	25	2427.00	45	2447.00	65	2467.00
6	2408.00	26	2428.00	46	2448.00	66	2468.00
7	2409.00	27	2429.00	47	2449.00	67	2469.00
8	2410.00	28	2430.00	48	2450.00	68	2470.00
9	2411.00	29	2431.00	49	2451.00	69	2471.00
10	2412.00	30	2432.00	50	2452.00	70	2472.00
11	2413.00	31	2433.00	51	2453.00	71	2473.00
12	2414.00	32	2434.00	52	2454.00	72	2474.00
13	2415.00	33	2435.00	53	2455.00	73	2475.00
14	2416.00	34	2436.00	54	2456.00	74	2476.00
15	2417.00	35	2437.00	55	2457.00	75	2477.00
16	2418.00	36	2438.00	56	2458.00	76	2478.00
17	2419.00	37	2439.00	57	2459.00	77	2479.00
18	2420.00	38	2440.00	58	2460.00	78	**2480.00**
19	2421.00	39	**2441.00**	59	2461.00		

Test frequencies are lowest channel: 2402 MHz, middle channel: 2441 MHz and highest channel: 2480 MHz for Bluetooth BR/EDR

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth transmitting mode (BR & EDR mode)
    1) Low Channel
    2) Middle Channel
    3) High Channel

B. On, Transmitting on Hopping channel

C. On, Normal operation

D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- ID Label and Location Info
- Schematics
- Operation Description
- Block Diagram
- PCB Layout

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

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 C63.10: 2013.

According to clause 3.1, all tests were performed on model K-30319-NA in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 5: Auxiliary Equipment Used During Test

Description	Manufacturer	Model	S/N
Portable Laptop	Lenovo	ThinkPad T480	10Q67059
Mobile phone	Redmi	K50	/
RJ45 to USB serial port	Kohler	/	/
SD card	Sandisk	/	/
Speaker	Kohler	/	/

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)

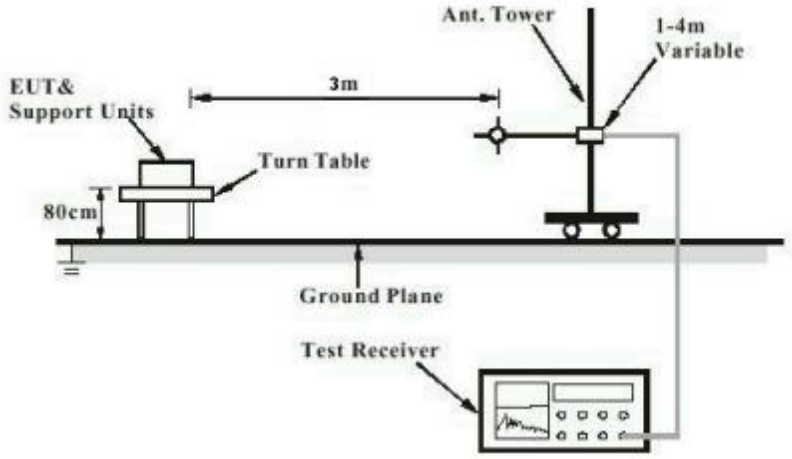


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

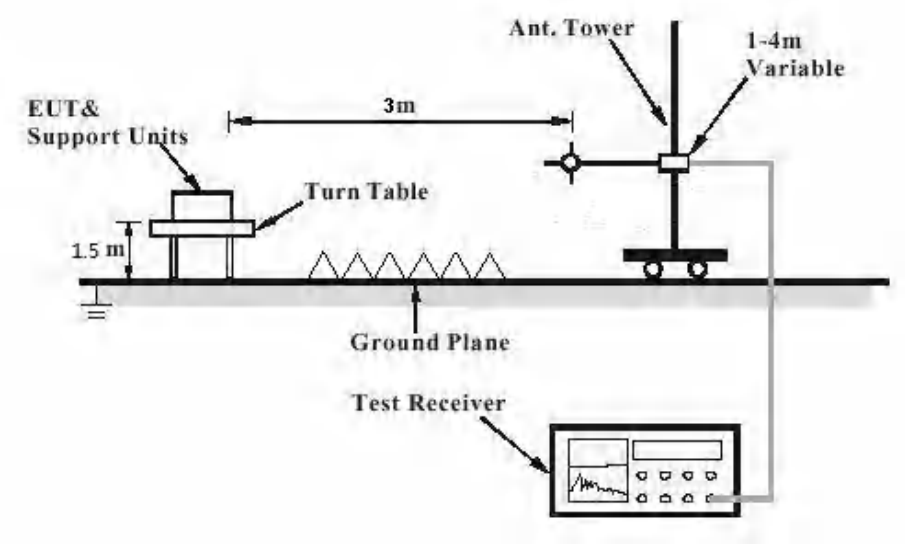


Diagram of Measurement Configuration for Mains Conduction Measurement

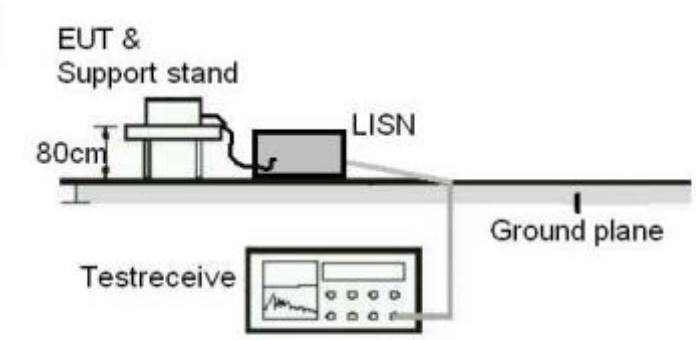
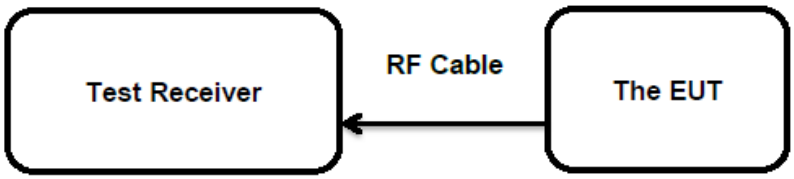


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification
Test standard : FCC Part 15.247(b)(4) and Part 15.203

The EUT has an Integral Antenna, the directional gain of antenna is 3.69 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(1)&(3)
Basic standard	:	ANSI C63.10: 2013
Limits	:	FHSS < 0.125 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 6: Test Result of Maximum Peak Conducted Output Power, BR & EDR

Test Mode	Test Channel (MHz)	Measured Peak Power		Limit (W)
		(dBm)	(W)	
GFSK (BR)	2402	9.82	0.0096	< 0.125
	2441	9.56	0.0090	
	2480	9.24	0.0084	
Maximum Measured Value		**9.82**	**0.0096**	
Test Mode	**Test Channel (MHz)**	**Measured Peak Power**		**Limit (W)**
		(dBm)	**(W)**	
8DPSK (EDR)	2402	10.41	0.0110	< 0.125
	2441	10.10	0.0102	
	2480	9.88	0.0010	
Maximum Measured Value		**10.41**	**0.0110**	

Note:
1) The cable loss is taken into account in results.
2) Antenna gain(G) of Bluetooth: 3.69 dBi
e.i.r.p.=$P_{(Peak\ power)}$+ G, which is far below the 4 W

5.1.3 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 7: Test Result of 99% Bandwidth

Test Mode	Channel Frequency (MHz)	Measured 99% Bandwidth (MHz)	Limit
BR	2402	0.87983	/
	2441	0.86327	
	2480	0.89332	
EDR	2402	1.1558	/
	2441	1.1517	
	2480	1.1668	

Note: The fundamental emissions stay within the allocated band 2400-2483.5MHz.

5.1.4 20dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 8: Test Result of -20dB Bandwidth

Test Mode	Channel Frequency (MHz)	20dB Bandwidth (kHz)	2/3 of 20dB Bandwidth (kHz)	Limit (MHz)
BR	2402	1023	682.000	/
	2441	948	632.000	
	2480	1023	682.000	
EDR	2402	1155	770.000	/
	2441	1179	786.000	
	2480	1164	776.000	

5.1.5 Carrier Frequency Separation

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(1)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 9: Test Result of Carrier Frequency Separation

Test Mode	Channel	Result[MHz]	Limit[MHz]	Verdict
BR-DH5	Hop	1.128	≥1.023	PASS
EDR-3DH5	Hop	1.146	≥0.786	PASS

Note:

The limit is maximum 2/3 of the 20 dB bandwidth: 786KHz.

5.1.6 Number of Hopping Frequency

RESULT: **Pass**

Test Specification

Test standard	:	FCC part 15.247(a)(1)(iii)
Basic standard	:	ANSI C63.10: 2013
Limits	:	≥ 15 non-overlapping channels
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	C
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

Table 10: Test Result of Number of Hopping Frequency

Frequency Range	Measured Quantity of Hopping Channel	Limit	Result
2402 to 2480 MHz	79	≥15	Pass

5.1.7 Time of Occupancy

RESULT: **Pass**

Test Specification

Test standard	:	FCC part 15.247(a)(1)(iii)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 0.4s
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.8 Frequency stability

RESULT: **Pass**

Test Specification

Test standard	:	RSS-247 Clause 8.11
Basic standard	:	ANSI C63.10: 2013
Limits	:	within at least the central 80% of its permitted operating frequency band (2400-2483.5MHz)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	DC 3.7V
Operation mode	:	B
Ambient temperature	:	25.2 ℃
Relative humidity	:	53 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.9 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A.

5.1.10 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Section 8.9 & 8.10
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2023-10-31 to 2023-11-17
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A, B
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A.

5.1.11 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a) RSS-Gen Clause 8.8
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a) RSS-Gen Table 4
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-10-31 to 2023-11-24
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B
Earthing	:	Not connected
Ambient temperature	:	24.0 ℃
Relative humidity	:	53.3 %
Atmospheric pressure	:	101 kPa

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

Appendix A: Test Results of Bluetooth BR/EDR mode

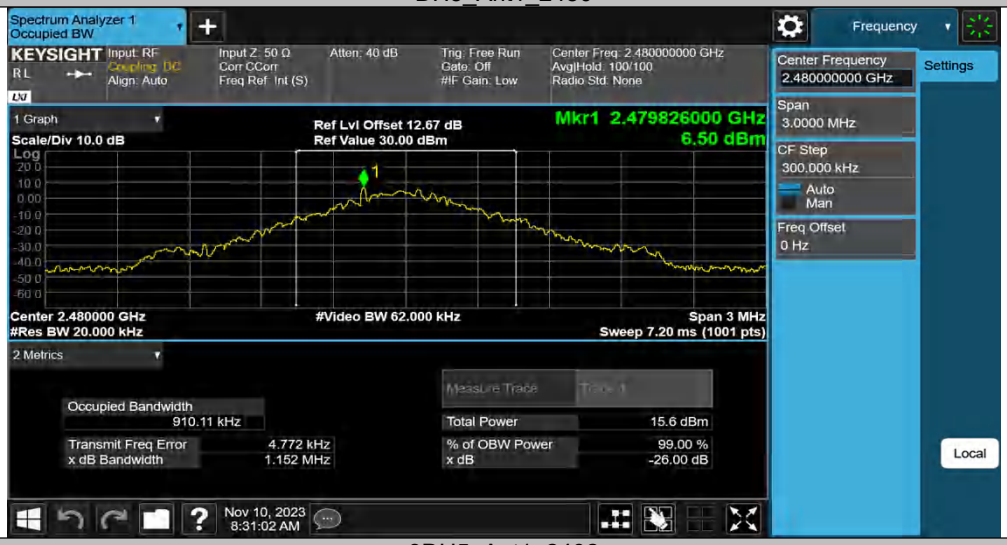
Appendix A.1: Test Results of 99% Bandwidth

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.93472	2401.5340	2402.4687	---	---
		2441	0.93164	2440.5407	2441.4723	---	---
		2480	0.91011	2479.5497	2480.4598	---	---
3DH5	Ant1	2402	1.1963	2401.3939	2402.5902	---	---
		2441	1.2206	2440.3798	2441.6004	---	---
		2480	1.2199	2479.3788	2480.5987	---	---

DH5_Ant1_2402

DH5_Ant1_2441

DH5_Ant1_2480



3DH5_Ant1_2402

3DH5_Ant1_2441

3DH5_Ant1_2480

Appendix A.2: Test Results of 20dB Bandwidth

TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.972	2401.532	2402.504	---	---
		2441	0.960	2440.538	2441.498	---	---
		2480	0.966	2479.535	2480.501	---	---
3DH5	Ant1	2402	1.314	2401.343	2402.657	---	---
		2441	1.263	2440.352	2441.615	---	---
		2480	1.260	2479.352	2480.612	---	---

DH5_Ant1_2402

DH5_Ant1_2441

DH5_Ant1_2480

3DH5_Ant1_2402

3DH5_Ant1_2441

3DH5_Ant1_2480

Appendix A.3: Test Results of Carrier Frequency Separation

TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.178	≥0.972	PASS
3DH5	Ant1	Hop	1.014	≥0.876	PASS

DH5_Ant1_Hop

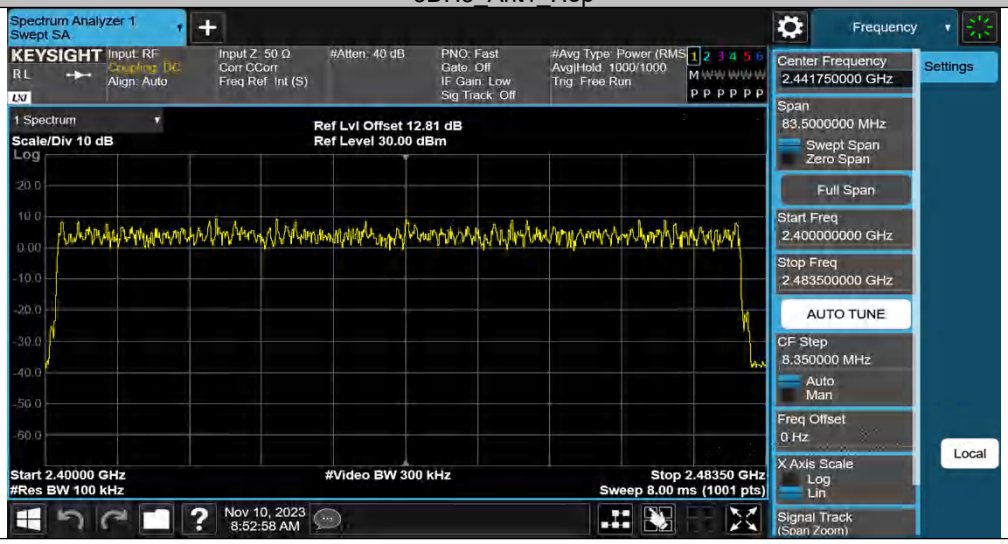
3DH5_Ant1_Hop

Appendix A.4: Test Results of Number of Hopping Frequency

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

DH5_Ant1_Hop

3DH5_Ant1_Hop



Appendix A.5: Test Results of Time of Occupancy

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.371	319	0.118	≤0.4	PASS
DH3	Ant1	Hop	1.620	160	0.259	≤0.4	PASS
DH5	Ant1	Hop	2.866	107	0.307	≤0.4	PASS
3DH1	Ant1	Hop	0.380	319	0.121	≤0.4	PASS
3DH3	Ant1	Hop	1.629	160	0.261	≤0.4	PASS
3DH5	Ant1	Hop	2.880	107	0.308	≤0.4	PASS

DH1_Ant1_Hop

DH3_Ant1_Hop

DH5_Ant1_Hop

3DH1_Ant1_Hop

3DH3_Ant1_Hop

3DH5_Ant1_Hop


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 40 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
#Avg Type: Power (RMS)
Trig: Video
Trig Delay: 0.000 s
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 12.60 dB
Ref Level 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Center 2.441000000 GHz
Res BW 510 kHz
#Video BW 3.0 MHz
Span 0 Hz
Sweep 31.6 s (30000 pts)
Nov 10, 2023
8:53:54 AM
Frequency
Center Frequency
2.441000000 GHz
Span
0.00000000 Hz
Swept Span
Zero Span
Full Span
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
AUTO TUNE
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Settings
Local

Appendix A.6: Test Results of Frequency stability

Test Channel (MHz)	2402

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
AC 108V, 60Hz	2402.0013	1.3	0.54	10
AC 120V, 60Hz	2402.0014	1.4	0.58	
AC 132V, 60Hz	2402.0015	1.5	0.62	

Test result of frequency tolerance of temperature variation

Temperature (℃)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2402.0017	1.7	0.71	10
-20	2402.0015	1.5	0.62	
-10	2402.0015	1.5	0.62	
0	2402.0012	1.2	0.50	
10	2402.0012	1.2	0.50	
20	2402.0012	1.2	0.50	
30	2402.0014	1.4	0.58	
40	2402.0016	1.6	0.67	
50	2402.0016	1.6	0.67	
55	2402.0017	1.7	0.71	

Test Channel (MHz)	2441

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
AC 108V, 60Hz	2441.0060	6	2.46	10
AC 120V, 60Hz	2441.0065	6.5	2.66	
AC 132V, 60Hz	2441.0067	6.7	2.74	

Test result of frequency tolerance of temperature variation

Temperature (℃)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2441.0070	7	2.87	10
-20	2441.0069	6.9	2.83	
-10	2441.0068	6.8	2.79	
0	2441.0068	6.8	2.79	
10	2441.0065	6.5	2.66	
20	2441.0066	6.6	2.70	
30	2441.0065	6.5	2.66	
40	2441.0067	6.7	2.74	
50	2441.0068	6.8	2.79	
55	2441.0071	7.1	2.91	

Test Channel (MHz)	2480

Test result of frequency tolerance of voltage variation

Voltage	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
AC 108V, 60Hz	2,480.0052	5.2	2.10	10
AC 120V, 60Hz	2,480.0048	4.8	1.94	
AC 132V, 60Hz	2,480.0049	4.9	1.98	

Test result of frequency tolerance of temperature variation

Temperature (℃)	Test result (MHz)	Deviation Frequency (KHz)	Test result (ppm)	Limit (ppm)
-30	2,480.0053	5.3	2.14	10
-20	2,480.0052	5.2	2.10	
-10	2,480.0051	5.1	2.06	
0	2,480.0048	4.8	1.94	
10	2,480.0049	4.9	1.98	
20	2,480.0049	4.9	1.98	
30	2,480.0050	5	2.02	
40	2,480.0050	5	2.02	
50	2,480.0051	5.1	2.06	
55	2,480.0052	5.2	2.10	

Appendix A.7: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

Band Edge

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	9.27	-42.82	≤-10.73	PASS
		High	2480	8.458	-48.08	≤-11.54	PASS
3DH5	Ant1	Low	2402	9.057	-40.51	≤-10.94	PASS
		High	2480	7.473	-46.75	≤-12.53	PASS
DH5	Ant1	Hopping	2402	9.089	-47.51	≤-10.91	PASS
		Hopping	2480	7.662	-48.83	≤-12.34	PASS
3DH5	Ant1	Hopping	2402	5.874	-47.6	≤-14.13	PASS
		Hopping	2480	4.658	-49.62	≤-15.34	PASS

DH5_Ant1_Low_2402

DH5_Ant1_High_2480

3DH5_Ant1_Low_2402

3DH5_Ant1_High_2480

DH5_Ant1_Hopping_2402

DH5_Ant1_Hopping_2480

3DH5_Ant1_Hopping_2402

3DH5_Ant1_Hopping_2480

Conducted Spurious Emission

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	9.03	9.03	---	PASS
			30~1000	9.03	-47.5	≤-10.97	PASS
			1000~26500	9.03	-37.98	≤-10.97	PASS
		2441	Reference	8.39	8.39	---	PASS
			30~1000	8.39	-47.56	≤-11.61	PASS
			1000~26500	8.39	-38.29	≤-11.61	PASS
		2480	Reference	8.17	8.17	---	PASS
			30~1000	8.17	-47.46	≤-11.83	PASS
			1000~26500	8.17	-37.9	≤-11.83	PASS
3DH5	Ant1	2402	Reference	6.13	6.13	---	PASS
			30~1000	6.13	-47.21	≤-13.87	PASS
			1000~26500	6.13	-38.58	≤-13.87	PASS
		2441	Reference	8.65	8.65	---	PASS
			30~1000	8.65	-47.64	≤-11.35	PASS
			1000~26500	8.65	-38.56	≤-11.35	PASS
		2480	Reference	5.39	5.39	---	PASS
			30~1000	5.39	-47.36	≤-14.61	PASS
			1000~26500	5.39	-38.16	≤-14.61	PASS

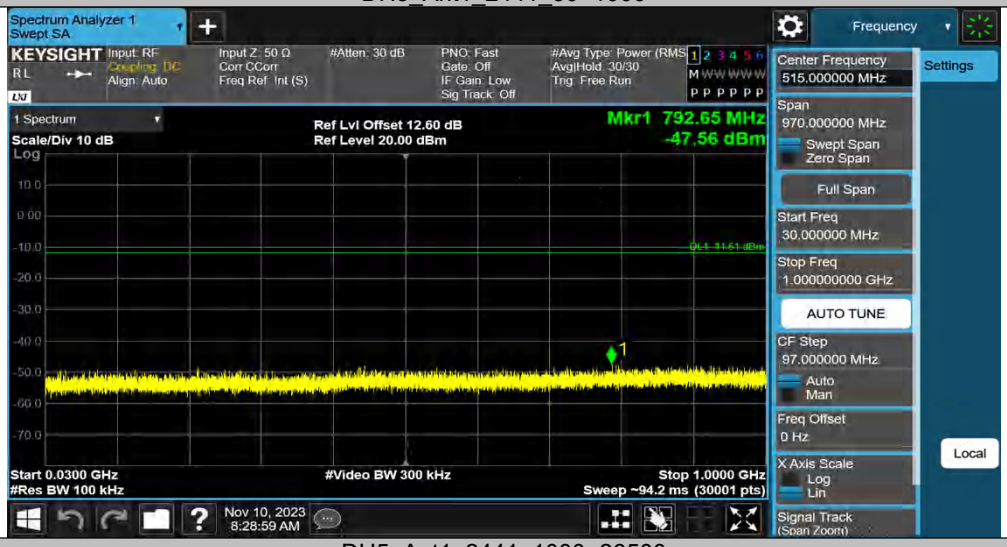
DH5_Ant1_2402_0~Reference

DH5_Ant1_2402_30~1000

DH5_Ant1_2402_1000~26500

DH5_Ant1_2441_0~Reference

DH5_Ant1_2441_30~1000



DH5_Ant1_2441_1000~26500

DH5_Ant1_2480_0~Reference

DH5_Ant1_2480_30~1000

DH5_Ant1_2480_1000~26500

3DH5_Ant1_2402_0~Reference

3DH5_Ant1_2402_30~1000

3DH5_Ant1_2402_1000~26500

3DH5_Ant1_2441_0~Reference

3DH5_Ant1_2441_30~1000

3DH5_Ant1_2441_1000~26500

3DH5_Ant1_2480_0~Reference

3DH5_Ant1_2480_30~1000

3DH5_Ant1_2480_1000~26500

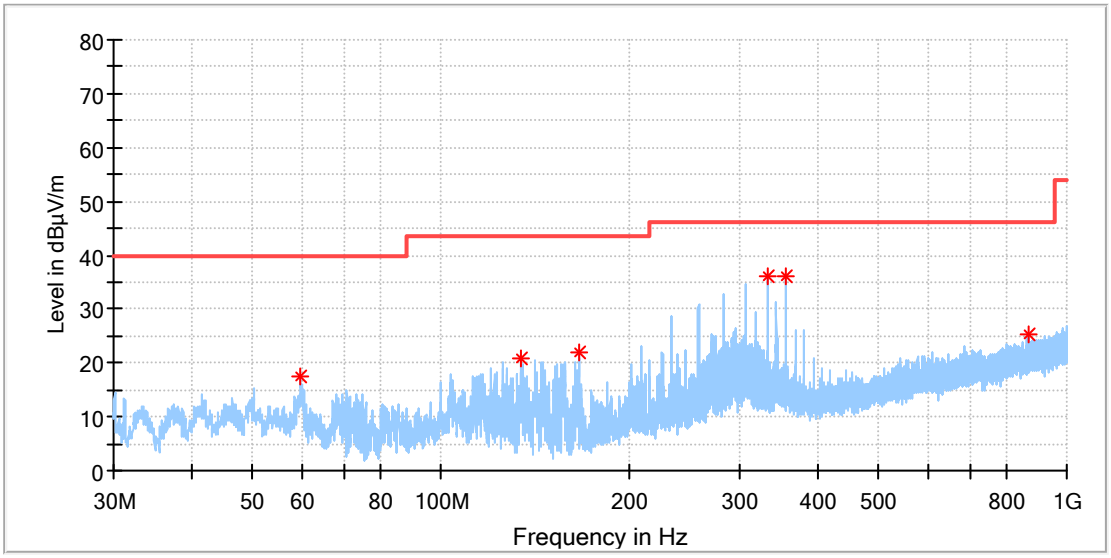
Appendix A.8: Test Results of Radiated Spurious Emissions

Note:
1) This testing was carried out on different modulations, but only the worst case was presented in this report.
2) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

30 MHz - 1GHz

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

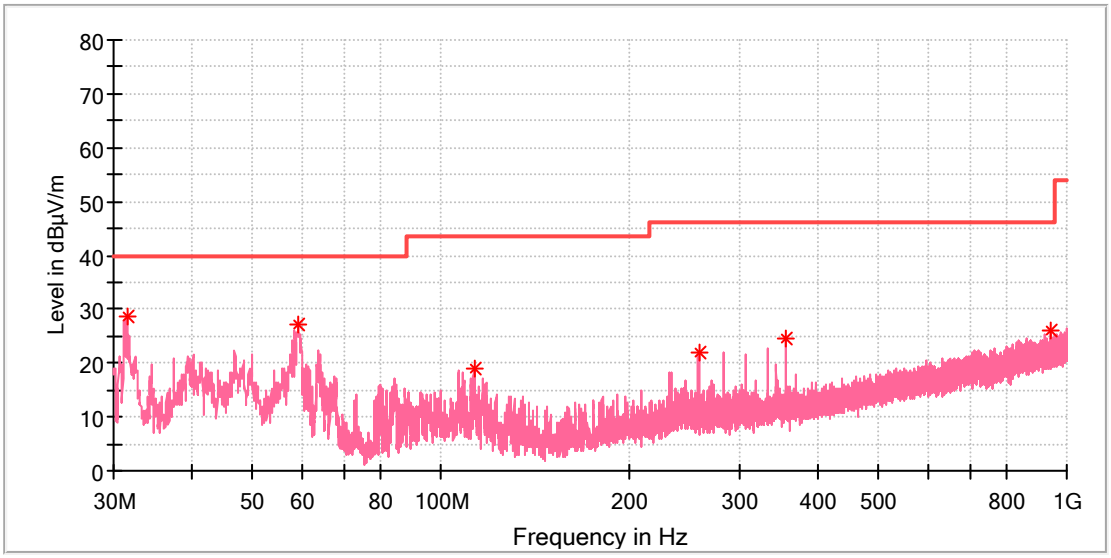


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
59.696923	17.35	40.00	22.65	100.0	H	1.0	-19.3
134.610769	21.02	43.50	22.48	100.0	H	112.0	-22.4
166.061154	21.95	43.50	21.55	100.0	H	47.0	-21.8
331.819231	36.16	46.00	9.84	100.0	H	79.0	-15.6
356.367692	35.93	46.00	10.07	100.0	H	89.0	-15.0
868.826154	25.33	46.00	20.67	100.0	H	104.0	-5.7

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

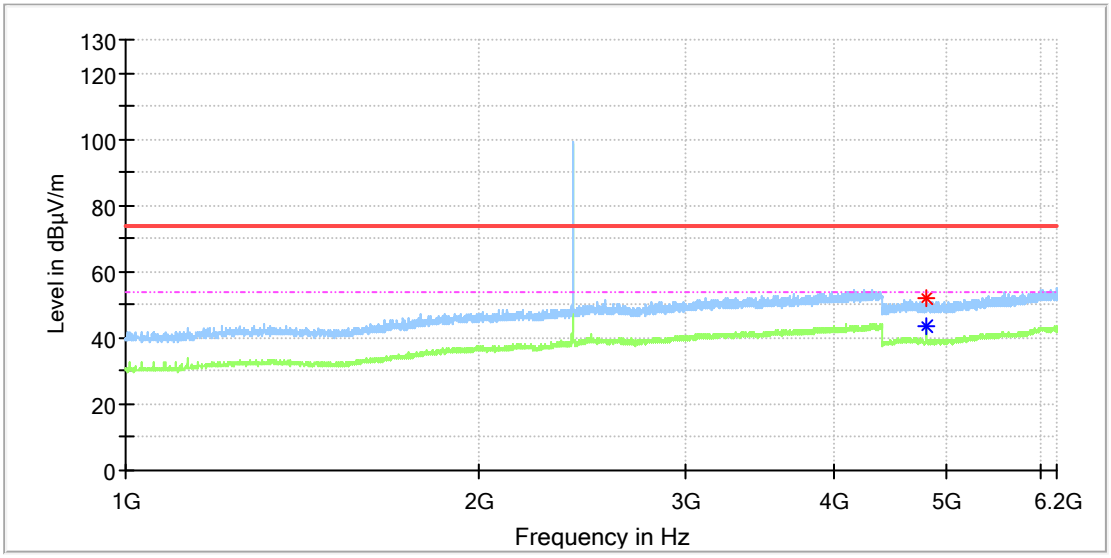
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.492308	28.58	40.00	11.42	100.0	V	0.0	-23.1
59.062692	27.16	40.00	12.84	100.0	V	178.0	-19.2
113.382692	18.97	43.50	24.53	100.0	V	290.0	-19.8
258.061923	22.01	46.00	23.99	100.0	V	39.0	-17.5
356.367692	24.69	46.00	21.31	100.0	V	170.0	-15.0
945.306923	25.88	46.00	20.12	100.0	V	22.0	-4.9

1GHz - 18GHz

Note: The highest waveform in the figure is Bluetooth Fundamental.

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

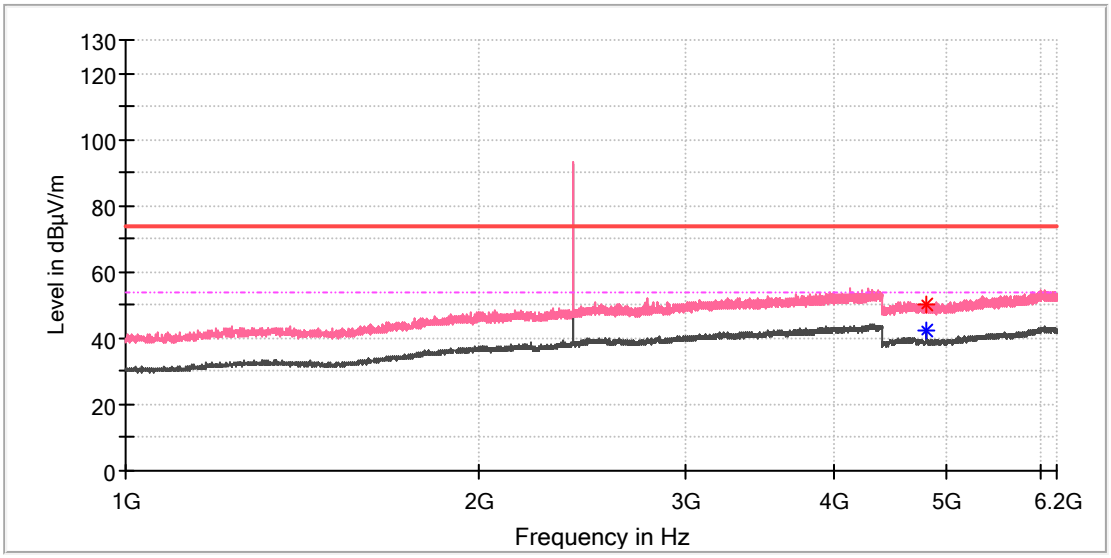


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	52.16	---	74.00	21.84	150.0	H	33.0	11.8
4803.500000	---	43.73	54.00	10.27	150.0	H	33.0	11.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

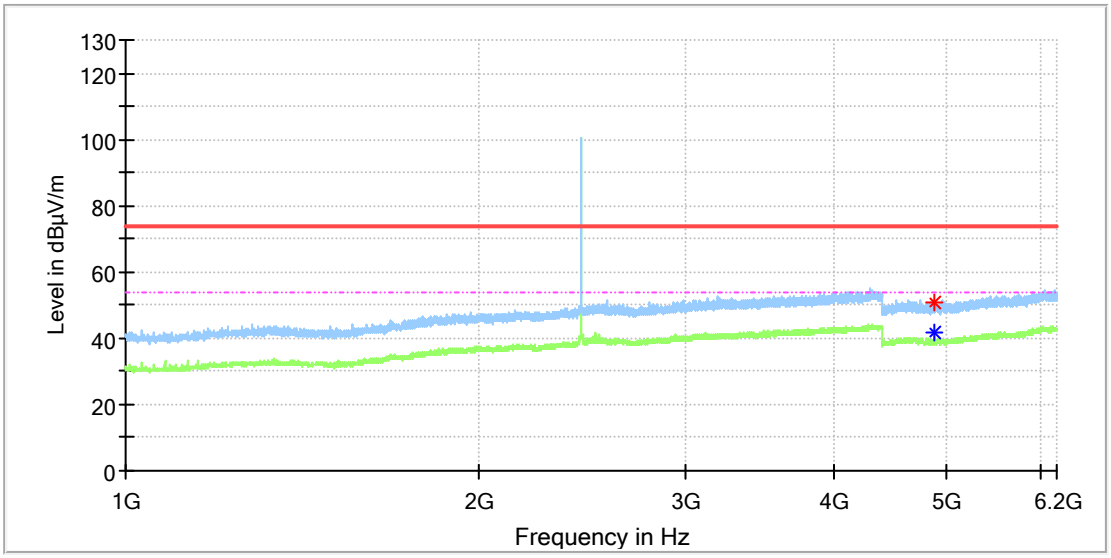


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	---	42.06	54.00	11.94	150.0	V	344.0	11.8
4807.500000	50.34	---	74.00	23.66	150.0	V	206.0	11.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

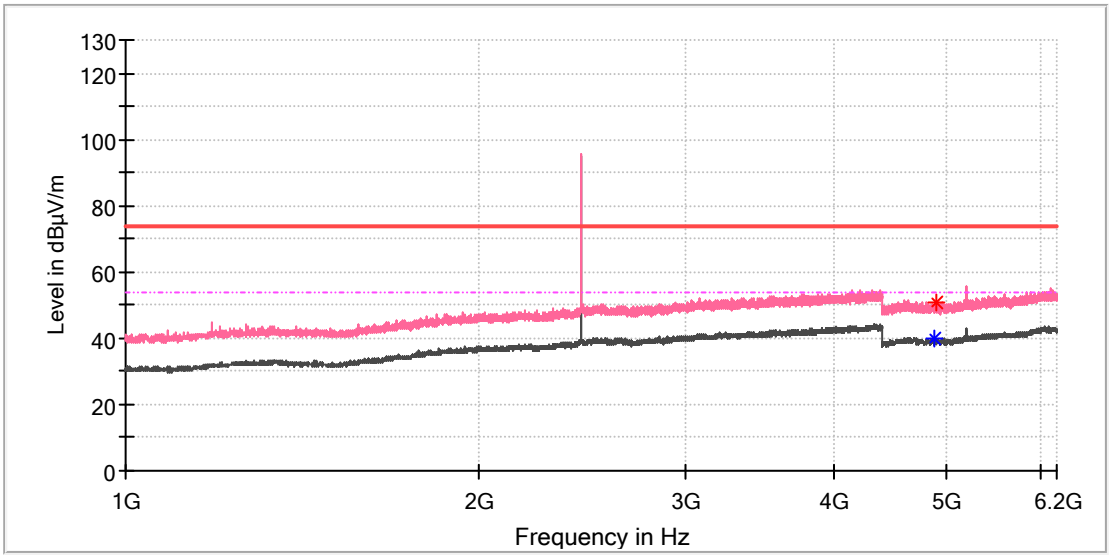


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4878.500000	50.51	---	74.00	23.49	150.0	H	194.0	11.8
4881.500000	---	41.68	54.00	12.32	150.0	H	41.0	11.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

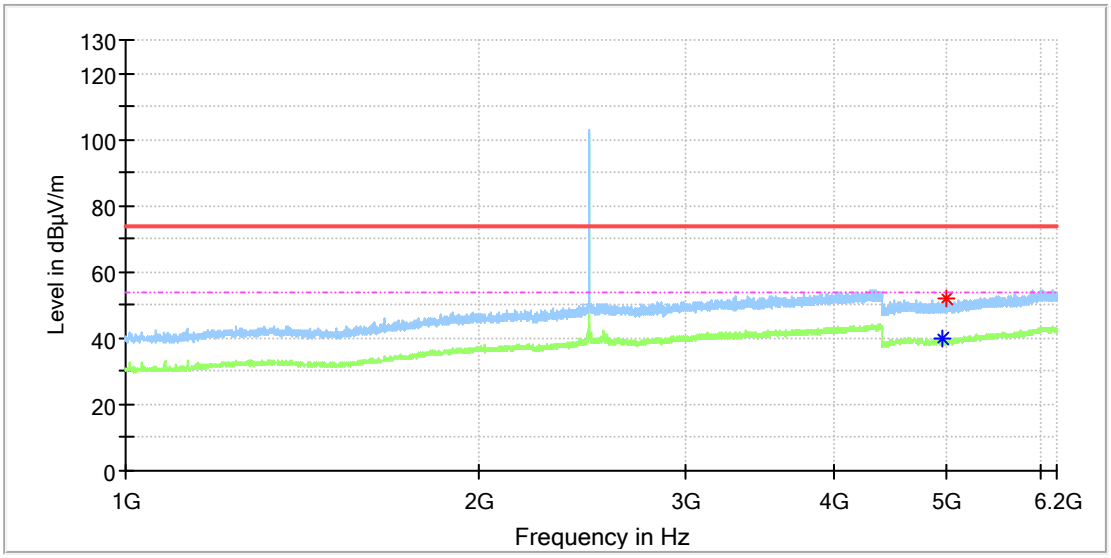


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4882.000000	---	40.00	54.00	14.00	150.0	V	216.0	11.8
4902.500000	50.83	---	74.00	23.17	150.0	V	82.0	11.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

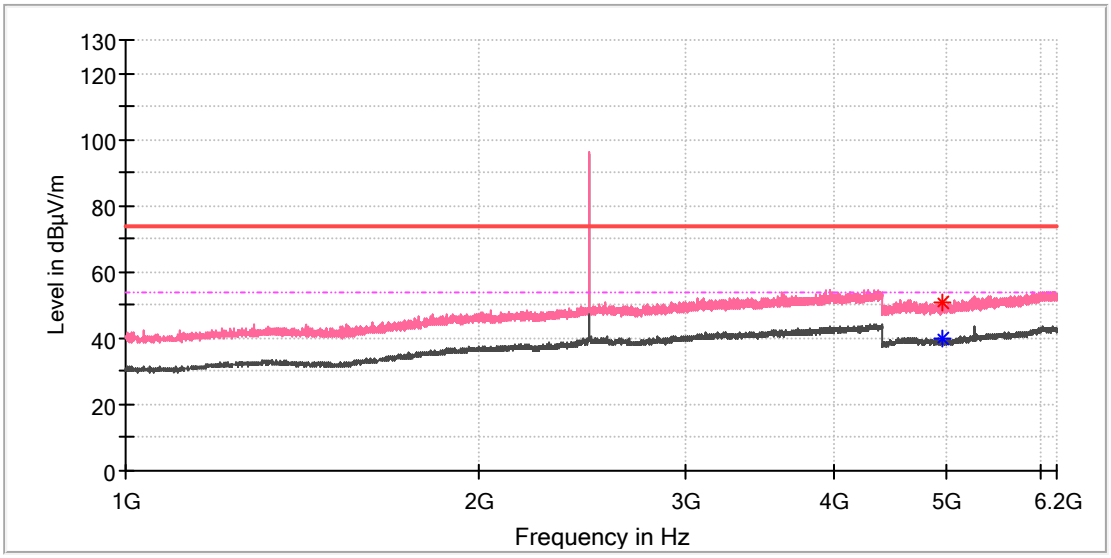


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	---	39.91	54.00	14.09	150.0	H	240.0	11.8
4996.000000	52.00	---	74.00	22.00	150.0	H	135.0	11.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

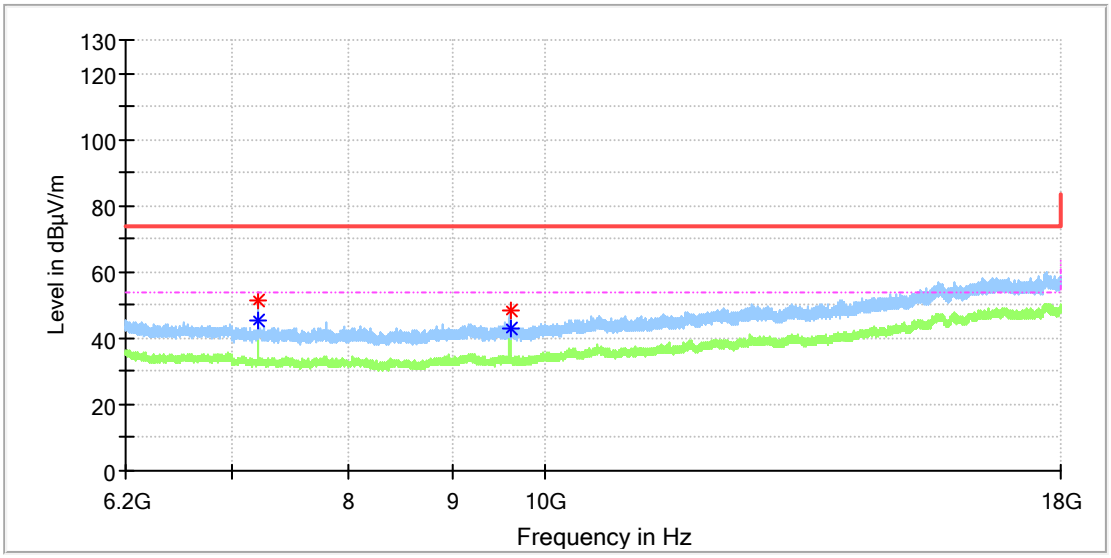


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	---	40.11	54.00	13.89	150.0	V	30.0	11.8
4961.000000	50.77	---	74.00	23.23	150.0	V	173.0	11.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

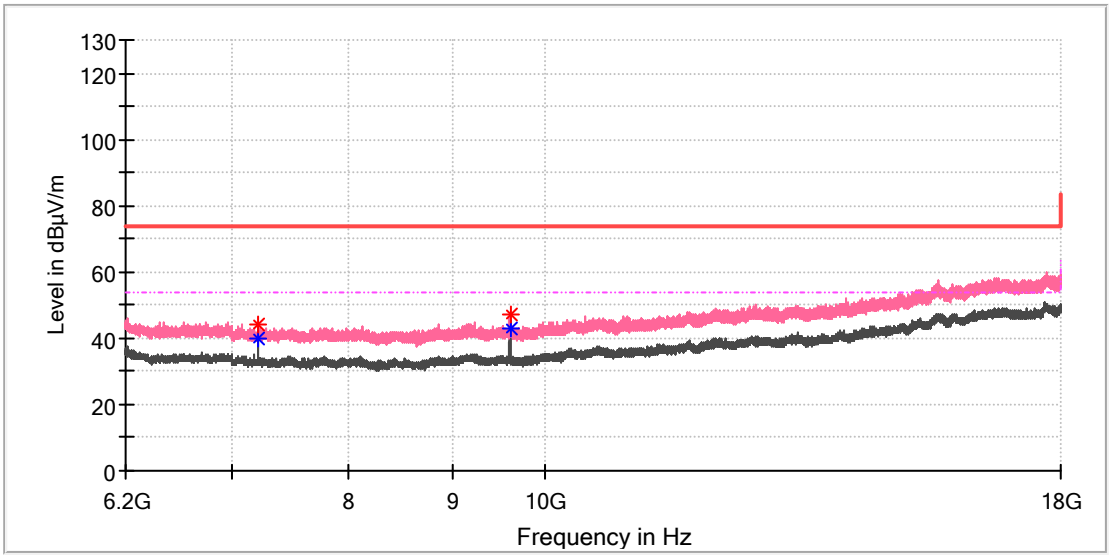


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.458333	---	45.47	54.00	8.53	150.0	H	5.0	8.8
7206.441667	51.10	---	74.00	22.90	150.0	H	5.0	8.8
9607.741667	48.31	---	74.00	25.69	150.0	H	0.0	10.4
9608.233333	---	43.06	54.00	10.94	150.0	H	34.0	10.4

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

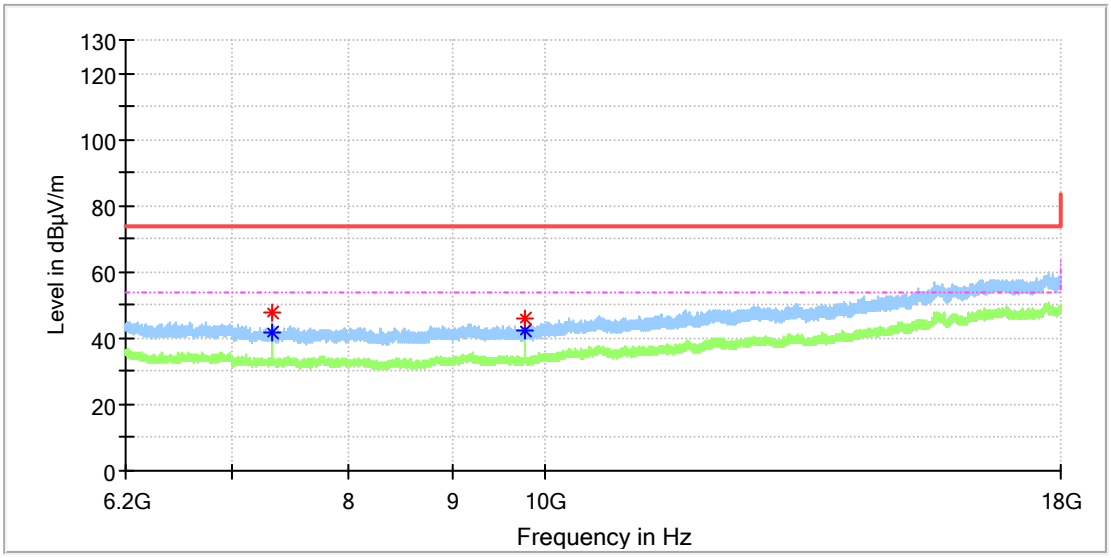


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	44.39	---	74.00	29.61	150.0	V	21.0	8.8
7205.950000	---	39.66	54.00	14.34	150.0	V	21.0	8.8
9607.741667	46.93	---	74.00	27.07	150.0	V	0.0	10.4
9607.741667	---	43.01	54.00	11.00	150.0	V	0.0	10.4

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

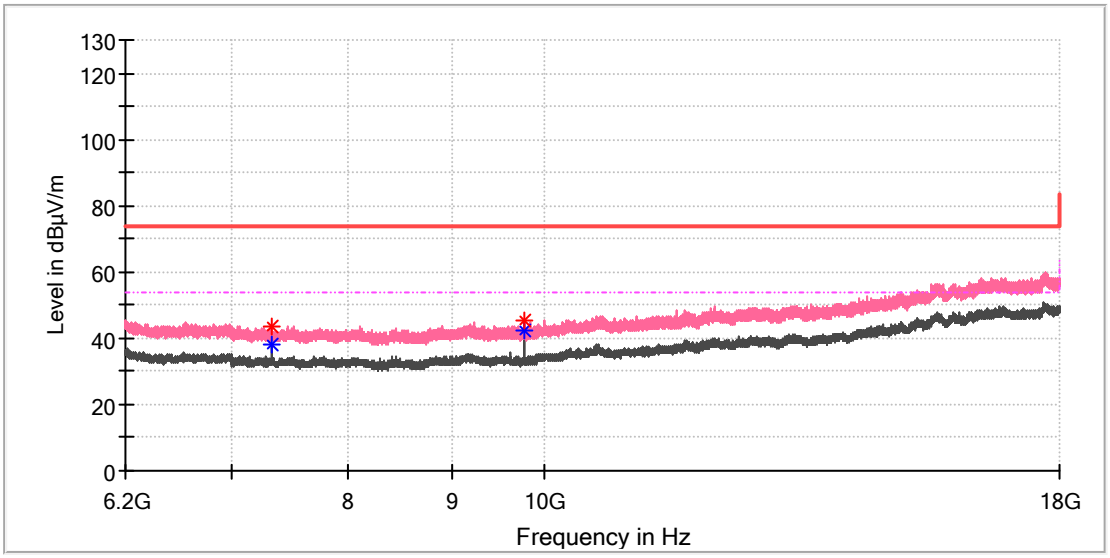


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.475000	---	41.63	54.00	12.37	150.0	H	326.0	8.2
7322.966667	47.93	---	74.00	26.07	150.0	H	326.0	8.2
9764.091667	46.10	---	74.00	27.90	150.0	H	351.0	10.4
9764.091667	---	42.56	54.00	11.44	150.0	H	351.0	10.4

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Mid channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

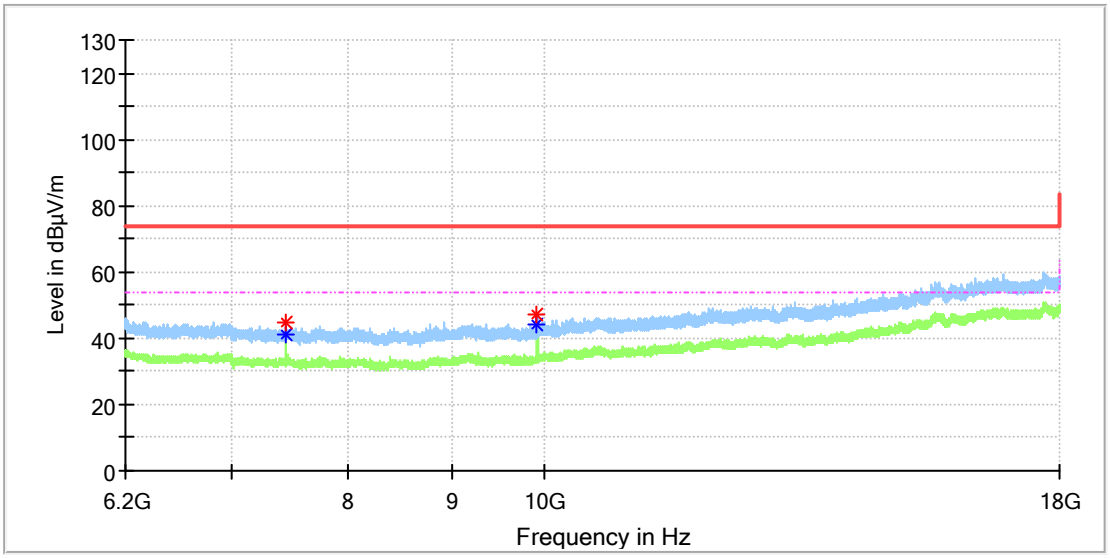


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7322.966667	43.74	---	74.00	30.26	150.0	V	0.0	8.2
7322.966667	---	37.82	54.00	16.18	150.0	V	0.0	8.2
9763.600000	45.50	---	74.00	28.50	150.0	V	63.0	10.4
9764.091667	---	42.14	54.00	11.86	150.0	V	75.0	10.4

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

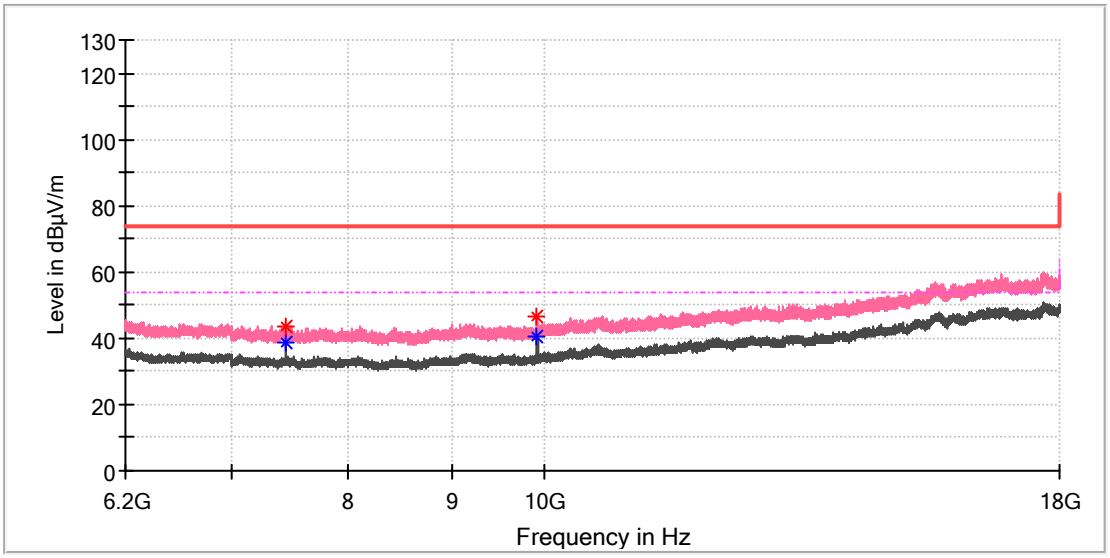


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	44.80	---	74.00	29.20	150.0	H	325.0	8.4
7439.983333	---	40.88	54.00	13.12	150.0	H	325.0	8.4
9919.950000	47.01	---	74.00	26.99	150.0	H	98.0	10.8
9919.950000	---	43.91	54.00	10.09	150.0	H	98.0	10.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



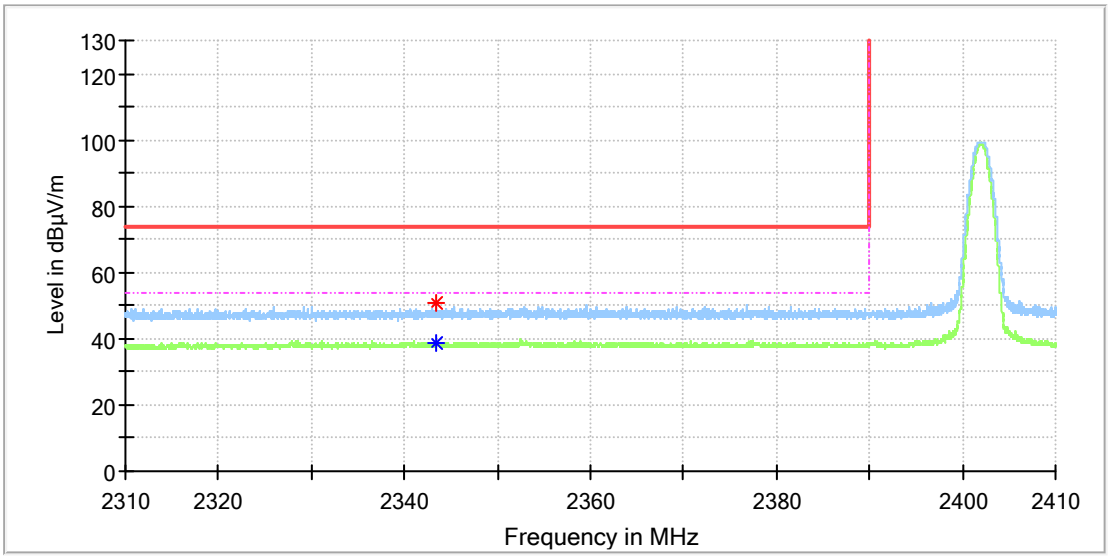
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.983333	43.47	---	74.00	30.53	150.0	V	342.0	8.4
7439.983333	---	38.76	54.00	15.24	150.0	V	342.0	8.4
9919.950000	46.36	---	74.00	27.64	150.0	V	0.0	10.8
9919.950000	---	40.77	54.00	13.23	150.0	V	0.0	10.8

Appendix A.9: Test Results of Radiated Emissions in Restricted Bands

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

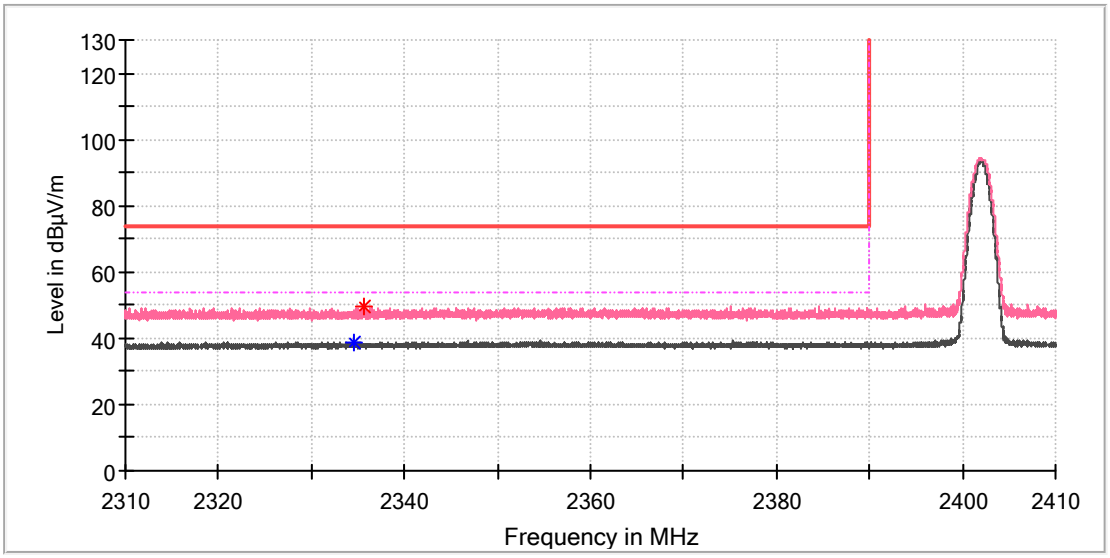


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2343.338235	50.63	---	74.00	23.37	150.0	H	347.0	6.8
2343.455882	---	38.69	54.00	15.31	150.0	H	2.0	6.9

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_Low channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

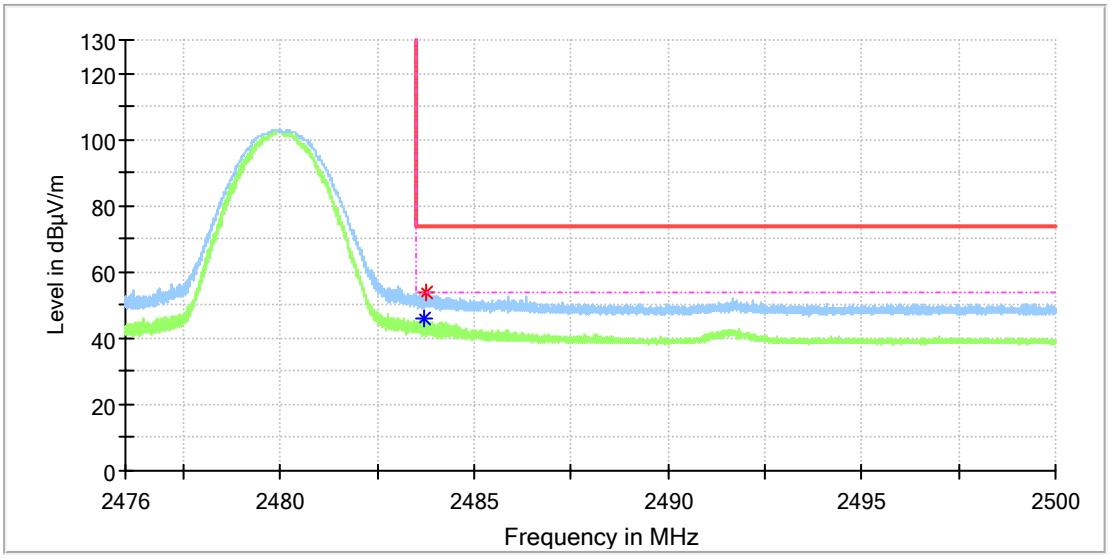


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2334.676471	---	38.58	54.00	15.42	150.0	V	359.0	6.8
2335.588235	49.51	---	74.00	24.49	150.0	V	262.0	6.8

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

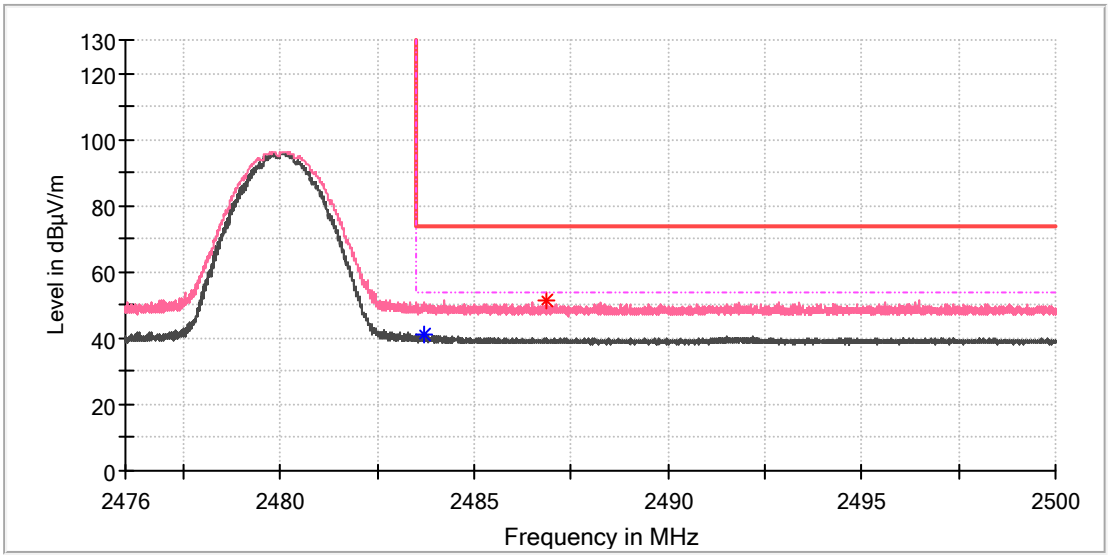


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.704706	---	45.75	54.00	8.25	150.0	H	29.0	7.4
2483.743530	53.83	---	74.00	20.17	150.0	H	36.0	7.4

EUT Information

EUT Name:	Kohler Amplifier
Model:	K-30319-NA
Test Mode:	BR_DH5_High channel
Order No/Sample No:	168450508/A003594929-007
Test Voltage::	AC 120V/60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



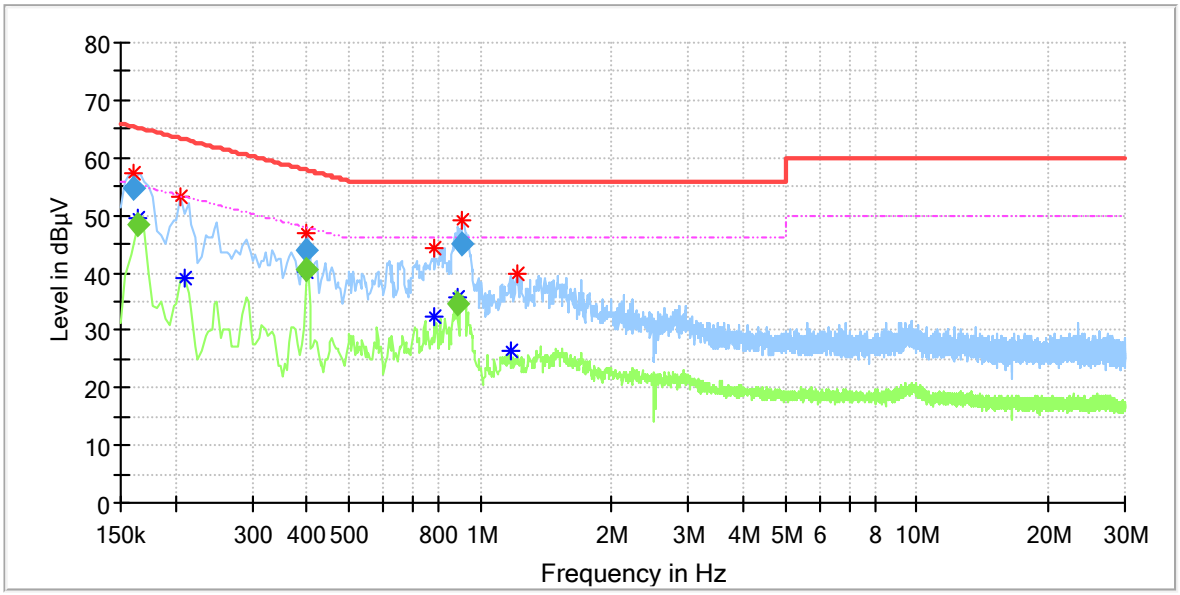
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.701177	---	41.22	54.00	12.78	150.0	V	24.0	7.4
2486.867059	51.29	---	74.00	22.71	150.0	V	94.0	7.4

Appendix A.10: Test Results of Conducted Emissions on AC Mains

EUT Information

EUT Name	Kohler Amplifier
Order Number:	168450508 140
Model:	K-30319-NA
Test Mode:	Bluetooth playing
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Guangshen Cen/Gary Chen
Tem./Hum./Pressure:	24.9°C/51.8%/101kPa
Remark:	SR1



Critical_Freqs

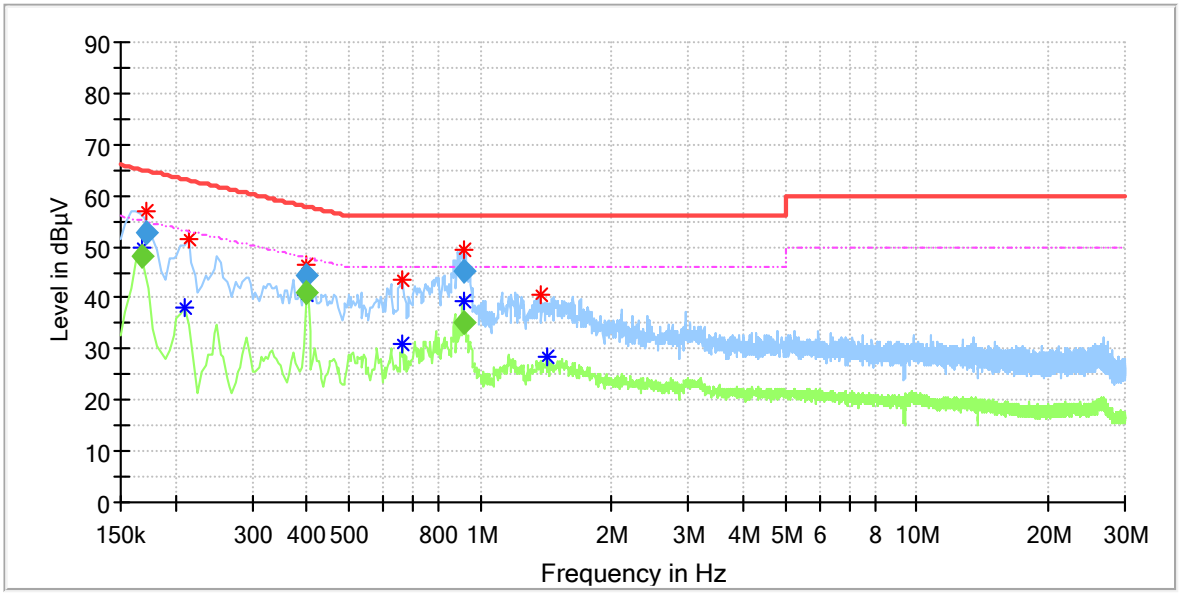
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.206000	53.24	---	63.37	10.12	L1	9.8
0.210000	---	39.16	53.21	14.05	L1	9.8
0.784000	---	32.46	46.00	13.54	L1	9.8
0.784000	44.33	---	56.00	11.67	L1	9.8
1.172000	---	26.45	46.00	19.55	L1	9.7
1.220000	39.77	---	56.00	16.23	L1	9.7

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.160500	54.85	---	65.44	10.59	1000.0	9.000	L1	9.6
0.164500	---	48.42	55.23	6.81	1000.0	9.000	L1	9.7
0.400500	---	40.61	47.84	7.23	1000.0	9.000	L1	9.9
0.400500	43.97	---	57.84	13.87	1000.0	9.000	L1	9.9
0.882500	---	34.49	46.00	11.51	1000.0	9.000	L1	9.7
0.906500	45.07	---	56.00	10.93	1000.0	9.000	L1	9.7

EUT Information

EUT Name	Kohler Amplifier
Order Number:	168450508 140
Model:	K-30319-NA
Test Mode:	Bluetooth playing
Test Voltage:	AC 120V/60Hz
Test Standard:	FCC Part 15B
Test By:/Review By:	Guangshen Cen/Gary Chen
Tem./Hum./Pressure:	24.9°C/51.8%/101kPa
Remark:	SR1



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.210000	---	37.91	53.21	15.30	N	9.7
0.214000	51.54	---	63.05	11.51	N	9.7
0.664000	---	30.94	46.00	15.06	N	9.8
0.664000	43.36	---	56.00	12.64	N	9.8
1.372000	40.48	---	56.00	15.52	N	9.8
1.416000	---	28.56	46.00	17.44	N	9.8

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.168500	---	48.29	55.03	6.74	1000.0	9.000	N	9.8
0.171500	52.86	---	64.89	12.03	1000.0	9.000	N	9.8
0.400500	---	41.22	47.84	6.63	1000.0	9.000	N	9.7
0.400500	44.46	---	57.84	13.38	1000.0	9.000	N	9.7
0.914500	---	35.08	46.00	10.92	1000.0	9.000	N	9.7
0.922500	45.28	---	56.00	10.72	1000.0	9.000	N	9.6