Prüfbericht - Produkte
Test Report - Products

ACCREDITED Certificate #4302.01

TÜVRheinland®

Prüfbericht-Nr.: *Test report no.:*	**CN22PP2G 001**	**Auftrags-Nr.:** *Order No.:*	170308120	**Seite 1 von 13** *Page 1 of 13*
Kunden-Referenz-Nr.: *Client reference no.:*	1774198	**Auftragsdatum:** *Order date.:*	2022.05.16	
Auftraggeber: *Client:*	IKEA of Sweden AB Box 702, SE-343 81 Älmhult, Sweden			
Prüfgegenstand: *Test item:*	VAPPEBY PT			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	E2133			
Auftrags-Inhalt: *Order content:*	TUV Rheinland - EMC service			
Prüfgrundlage: *Test specification:*	Conducted Emission limits describes at FCC 47 CFR Part 15 (October 1, 2020) Subpart B section 15.107 (a) Radiated Emission limits describes at FCC 47 CFR Part 15 (October 1, 2020) Subpart B section 15.109 (a) ICES-003 Issue 7 October 15, 2020			
Wareneingangsdatum: *Date of sample receipt:*	2022.06.06	*confidential sample*		
Prüfmuster-Nr.: *Test sample No.:*	A003241108			
Prüfzeitraum: *Testing period:*	Refer to the test report			
Ort der Prüfung: *Place of testing:*	Refer to section 2.1			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Guangdong) Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von: *tested by:*

Datum: *Date:*2022.06.22

Webb Luo

Stellung/*Position:* Webb Luo/PE

genehmigt von: *authorized by:*

Ausstelldatum: *Issue Date:*2022.06.23

Cherry He

Stellung/*Position:* Cherry He/Reviewer

Sonstiges / *Other:*

FCC ID: FHO-E2133

The RF characteristics of this product are not evaluated in this report.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:*

Prüfmuster vollständig und unbeschädigt
Test item complete and undamaged

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

V05

TEST SUMMARY

5.1 CONDUCTED EMISSION

RESULT: Pass

5.2 RADIATED EMISSION

RESULT: Pass

Contents

1 General Remarks

When applying the basic standards in this test report, please refer to the applied generic or product family standards for edition information:
For dated basic standards, only the edition cited applies. For undated basic standards, the latest edition (including any amendments) applies.

1.1 Complementary Materials

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

Appendix A: Test Setup Photos
Appendix 1: Test result
Appendix 2: List of Test and Measurement Instruments

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd. EMC Laboratory

No. 110, 1/F., Building B, No.102, 1F of Southwest and No.205, 2F of West Warehouse Building, No.767 Tianyuan Road, Tianhe District, Guangzhou 510650, Guangdong, P.R. China

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Refer to Appendix 2.

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, 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

Uncertainty of conducted emissions measurements 1.98 dB.
Uncertainty of radiated emissions measurements 5.34 dB (30-1000 MHz).
Uncertainty of radiated emissions measurements 4.56 dB (1000-6000 MHz).
Uncertainty of radiated emissions measurements 4.60 dB (6000-18000 MHz).
The reported expanded uncertainty is based on a standard uncertainty multiply by a coverage factor k=2, providing a level of confidence of approximately 95%.

2.6 Sample Calculations

Calculation of test results for conducted emission measurement:

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.150000	44.06	---	66.00	21.94	1000.0	9.000	L1	OFF
0.280500	30.44	---	60.80	30.36	1000.0	9.000	L1	OFF

Frequency (MHz) = Emission frequency in MHz
Level (dBuV) = Reading converted to dBuV and correction Factor added (QuasiPeak or CAverage)
Reading (dBuV) = Level (dBuV) – Corr. (dB) (Uncorrected Analyzer/Receiver reading)
Corr (dB) = LISN Factor (including extended outlet insertion loss if > 0.5dB) + Cable loss
Limit (dBuV) = Limit stated in standard
Margin (dB) = Limit (dBuV) – Level (dBuV)
Detector: QP= Quasi-Peak; AVG= Average; PK= Peak
e.g.: 21.94dB (Margin) = 66.00dBuV (Limit) – 44.06dBuV (Level)

Calculation of test results for radiated emission measurement:

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)	Comment
269.960000	22.6	1000.0	120.000	H	20.9	23.4	46.0	
276.000000	24.2	1000.0	120.000	H	21.2	21.8	46.0	

Frequency (MHz) = Emission frequency in MHz
Level (dBuV/m) = Reading converted to dBuV and correction Factor added (QuasiPeak)
Reading (dBuV/m) = Level (dBuV/m) – Corr. (dB) (Uncorrected Analyzer/Receiver reading)
Corr (dB) = Antenna factor + Cable loss
Limit (dBuV/m) = Limit stated in standard
Margin (dB) = Limit (dBuV/m) – Level (dBuV/m)
Detector: QP= Quasi-Peak; AVG= Average; PK= Peak
e.g.: 22.6dBuV/m(Level)= 1.7dBuV/m(Reading) + 20.9dB(Factor)
23.4dB(Margin)= 46.0dBuV/m(Limit) – 22.6dBuV/m(Level)

2.7 Location of original data

The original copies of all test data taken during actual testing were attached at Appendix 1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Guangdong) file for certification follow-up purposes.

2.8 Status of facility used for testing

TÜV Rheinland (Guangdong) Ltd. is listed on the US Federal Communications Commission list of facilities approved to perform measurements, whose designation number is CN1207.

3 General Product Information

The submitted model **E2133** is a rechargeable speaker for playing music via a Bluetooth connection. It belongs to Class B equipment.

The model **E2133** sold without specified AC/DC adapter.

According to the above information, all EMC tests have been performed on **E2133**.

3.1 Product Function and Intended Use

Refer to Technical Documentation and User Manual.

3.2 Ratings and System Details

Type Designation:	**E2133**
Input:	DC 5V, 2A
Battery Information:	Rechargeable 18650 Li-ion, DC 3.6V, 2600mAh
Ports:	DC input port
Protection Class:	III

Refer to the Technical Documentation for further information.

3.3 Independent Operation Modes

The basic operating modes as below:

Mode A	Charing with AC/DC adapter provided by the lab + Play 1KHz sinusoidal signal (Volume set to rated distortion-limited output voltage)
Mode B	Off

Refer to the Technical Documentation for further information

3.4 Submitted Documents

PCB Diagram
Circuit Diagram
Rating label
User Manual

4 Test Set-up and Operation Mode

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

Refer to Test set-up in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

The EUTs were tested with following accessories:

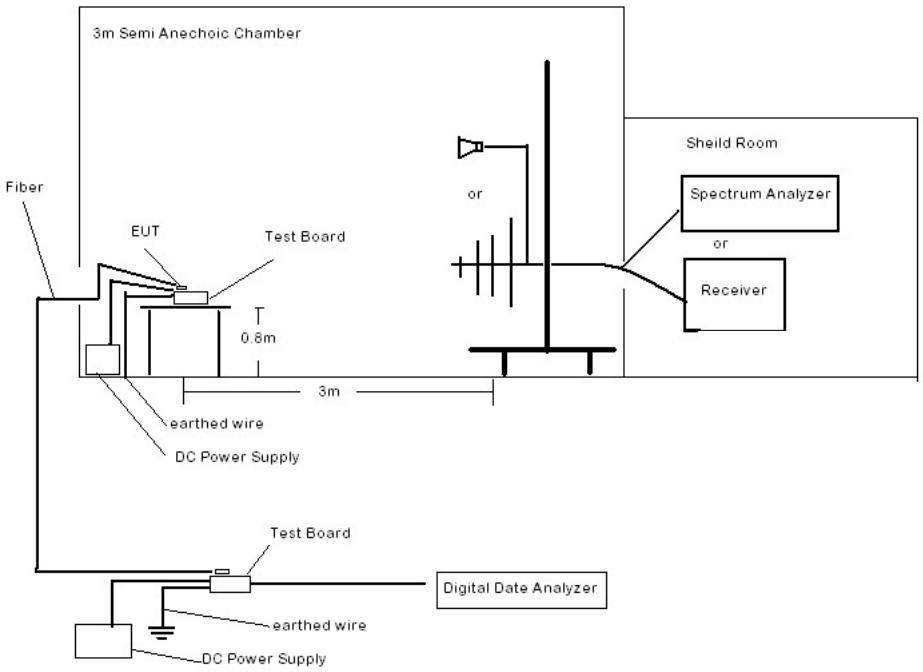
Accessory	Manufacturer	M/N	Parameter	Serial No.
AC-DC Power supply	ATTEN	APS3005S	AC 100-240, 50/60Hz	1010111900396

4.4 Countermeasures to achieve EMC Compliance

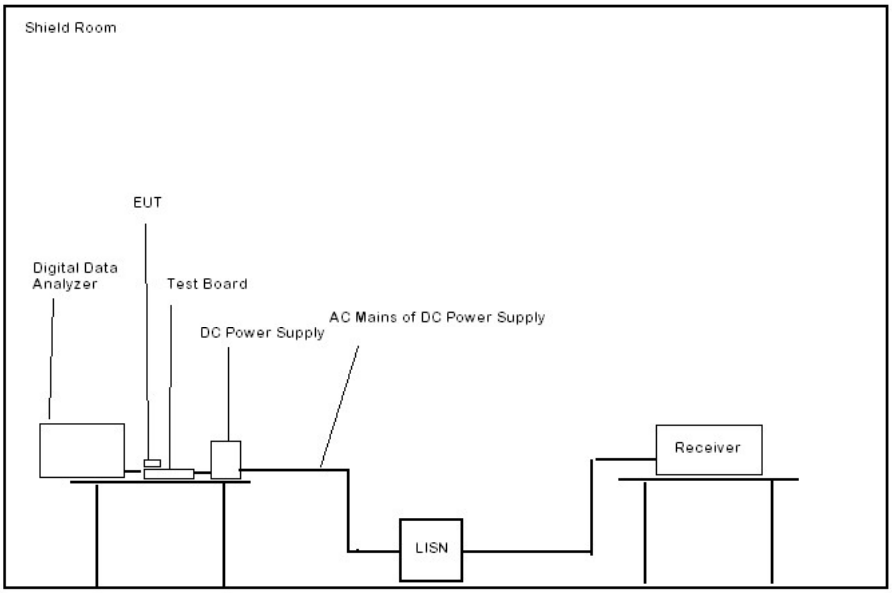
No additional countermeasures to the submitted test sample(s) were employed to achieve compliance.

4.5 Test set-up

Radiated Emission Setup



Conducted Emission Setup



5 Test Results of Emissions

5.1 Conducted Emission

RESULT: **Pass**

Date of testing	:	Refer to appendix 1
Test procedure	:	ANSI C63.4:2014, Clause 7.2; ANSI C63.4:2014 amended as per ANSI C63.4a-2017, Clause 7.2
Equipment class	:	B
Limits	:	FCC 47 CFR Part 15 Subpart B Section 15.107 (a), limit for Class B equipment. ICES-003 Clause 3.2.1, limit for Class B equipment.

Test Setup

Input voltage	:	Refer to appendix 1
Operation mode	:	A
Temperature	:	Refer to appendix 1
Humidity	:	Refer to appendix 1
Air pressure	:	Refer to appendix 1

Test procedure:

For tabletop device, the EUT and its peripherals were placed on a wooden table, 0.8cm above the horizontal reference plane and 40cm away from vertical reference plane in a shielded room. For floor-standing device, the EUT shall be placed either directly on the reference ground plane or on insulating material as described in ANSI C63.4 Clause 6.3.2.1. The EUT was connected to input power source through a line impedance stabilization network (LISN).The excess length of the power cord between the EUT and the LISN shall be folded back and forth at the center of the lead to form a bundle not exceeding 40cm in length.
The EUT was tested in a typical model of operation in accordance with ANSI C63.4:2014, Pre-test was performed in peak and average detection mode. Final measurement was performed using quasi-peak and average detection on the live and neutral lines with the worst case.
If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector may be omitted.
The test software Rohde & Schwarz EMC32 (Version: 9.26.00) was used during the test.
For setup photos, please refer to the attached appendix A.
For test results, please refer to the attached appendix 1.

5.2 Radiated Emission

RESULT: **Pass**

Date of testing	:	Refer to appendix 1
Test procedure	:	ANSI C63.4:2014, Clause 8.3; ANSI C63.4:2014 amended as per ANSI C63.4a-2017, Clause 8.3
Equipment class	:	B
Limits	:	FCC 47 CFR Part 15 Subpart B section 15.109 (a), limit for Class B equipment. ICES-003 Clause 3.2.2, limit for Class B equipment.

Test Setup

Input voltage	:	Refer to appendix 1
Operation mode	:	A
Temperature	:	Refer to appendix 1
Humidity	:	Refer to appendix 1
Air pressure	:	Refer to appendix 1

Test procedure:

For tabletop device, the EUT and its peripherals were placed on a wooden table, 80cm above ground plane in semi-anechoic chamber. For floor-standing equipment, the EUT and all cables shall be insulated, if required, from the ground plane by up to 12mm of insulating material in semi-anechoic chamber.
The EUT was set 3 meters away from the receiving antenna, which was mounted on a variable-height antenna tower. Test shall be made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height shall be varied from 1m to 4m. The table was rotated 360 degrees to detect the suspected emission frequency points. The position of the worst radiation case with both horizontal and vertical receiving antenna polarization was recorded together with the suspected emission frequency points above-mentioned.
The EUT was tested in a typical model of operation in accordance with ANSI C63.4:2014, Pre-test was performed in peak detection mode. Finial measurement was performed using quasi-peak detection with the worst case.
The test software Rohde & Schwarz EMC32 (Version: 9.25.00) was used during the test.
The highest frequency of the internal sources of the EUT is 2480MHz. The measurement shall only be made up to 12400MHz.

For setup photos, please refer to the attached appendix A.
For test results, please refer to the attached appendix 1.

6 List of Tables

Prüfbericht - Nr.: **CN22PP2G 001**
Test Report No.

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

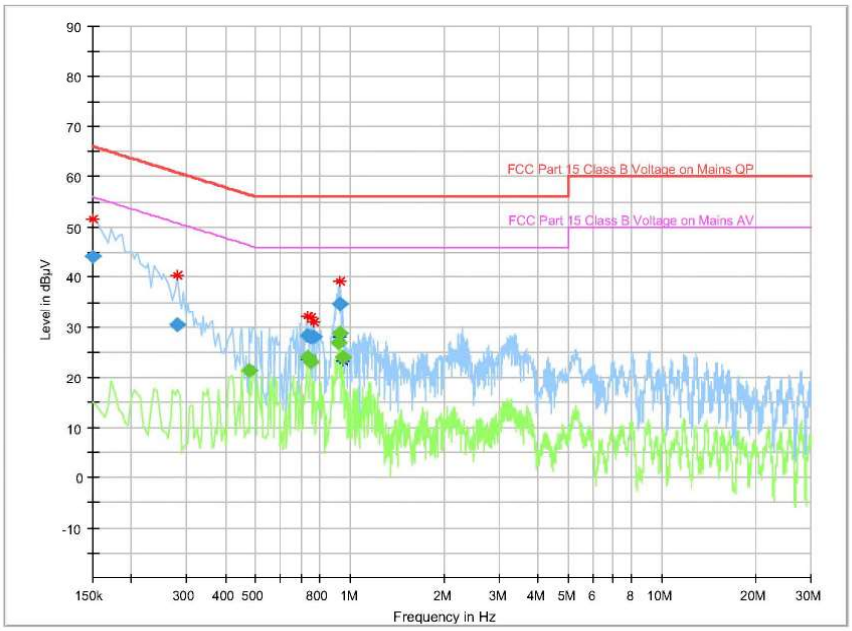
EMC Test Record (EMISSION)

Test Information

Manufacturer:	Ikea
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	FCC Part 15 B
Test Detail:	Conducted Emission
Operation Mode:	A+B
Climate Condition:	22 ℃; 50 %RH; 101 kPa.
Test Voltage/ Freq.:	AC 120 V/ 60 Hz
Port / Line:	AC Mains
Receipt No.:	170308120
Report No.:	/
Result:	Pass
Comment:	/

Hardware Setup:	1phase LISN ENV216 to ESCI 3
Level Unit:	dBµV

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCI 3



Tested by: Bin Fang 20220525

Reviewed by: Jacky Chen 20220603

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.150000	44.06	---	66.00	21.94	1000.0	9.000	L1	OFF
0.280500	30.44	---	60.80	30.36	1000.0	9.000	L1	OFF
0.478500	---	21.50	46.37	24.87	1000.0	9.000	L1	OFF
0.730500	28.20	---	56.00	27.80	1000.0	9.000	L1	OFF
0.730500	---	23.96	46.00	22.04	1000.0	9.000	L1	OFF
0.748500	---	23.12	46.00	22.88	1000.0	9.000	L1	OFF
0.748500	28.10	---	56.00	27.90	1000.0	9.000	L1	OFF
0.766500	28.02	---	56.00	27.98	1000.0	9.000	L1	OFF
0.915000	---	26.86	46.00	19.14	1000.0	9.000	L1	OFF
0.933000	34.58	---	56.00	21.42	1000.0	9.000	L1	OFF
0.933000	---	28.79	46.00	17.21	1000.0	9.000	N	OFF
0.946500	---	23.97	46.00	22.03	1000.0	9.000	N	OFF

Tested by: Bin Fang 20220525

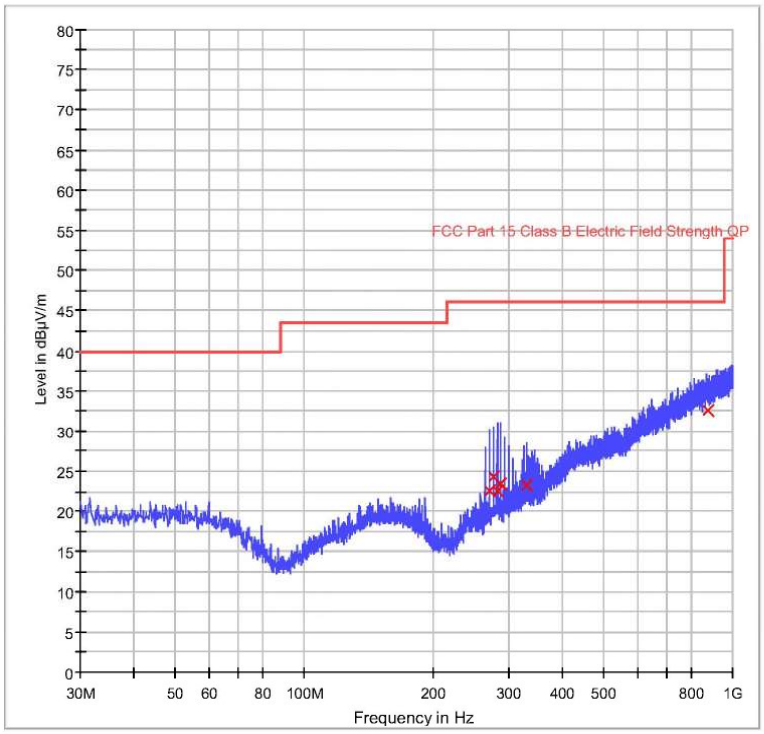
Reviewed by: Jacky chen 20220603

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	FCC Part 15B
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Horizontal
Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESW 8
Transducer:	VULB9168



Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)	Comment
269.960000	22.6	1000.0	120.000	H	20.9	23.4	46.0	
276.000000	24.2	1000.0	120.000	H	21.2	21.8	46.0	
281.960000	22.6	1000.0	120.000	H	21.5	23.4	46.0	
288.000000	23.5	1000.0	120.000	H	21.6	22.5	46.0	
329.960000	23.4	1000.0	120.000	H	23.0	22.6	46.0	
873.880000	32.5	1000.0	120.000	H	34.1	13.5	46.0	

Tested by Bin Fang Reviewed by Jacky chen

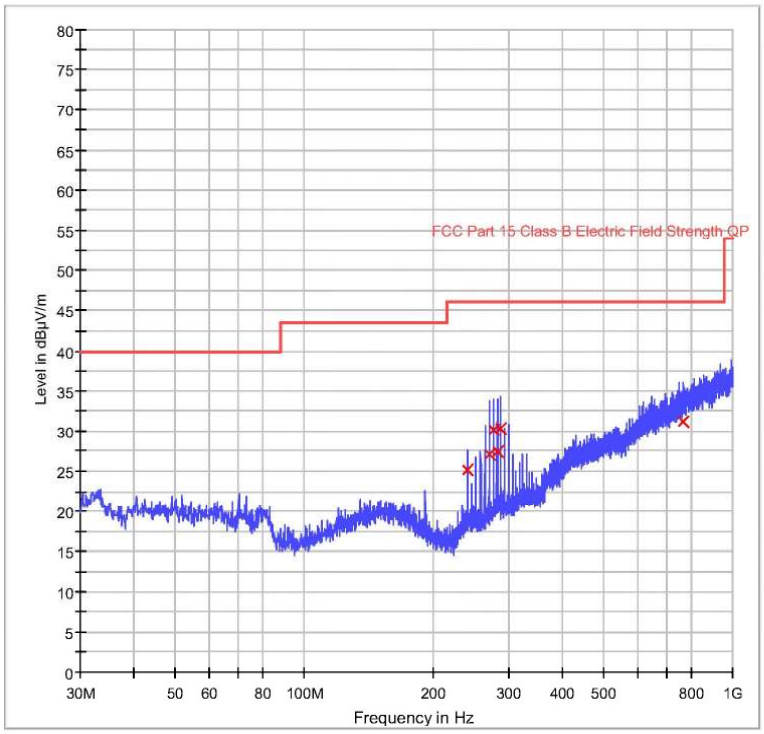
Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	FCC Part 15B
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Vertical
Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESW 8
Transducer:	VULB9168



Tested by Bin Feng Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)	Comment
240.000000	25.2	1000.0	120.000	V	19.8	20.8	46.0	
269.960000	27.2	1000.0	120.000	V	20.9	18.9	46.0	
276.000000	30.1	1000.0	120.000	V	21.2	15.9	46.0	
281.960000	27.4	1000.0	120.000	V	21.5	18.7	46.0	
288.000000	30.3	1000.0	120.000	V	21.6	15.7	46.0	
769.280000	31.2	1000.0	120.000	V	33.0	14.8	46.0	

Tested by Bin Feng Reviewed by Jacky chen

Date: 20220527 Date: 20220606

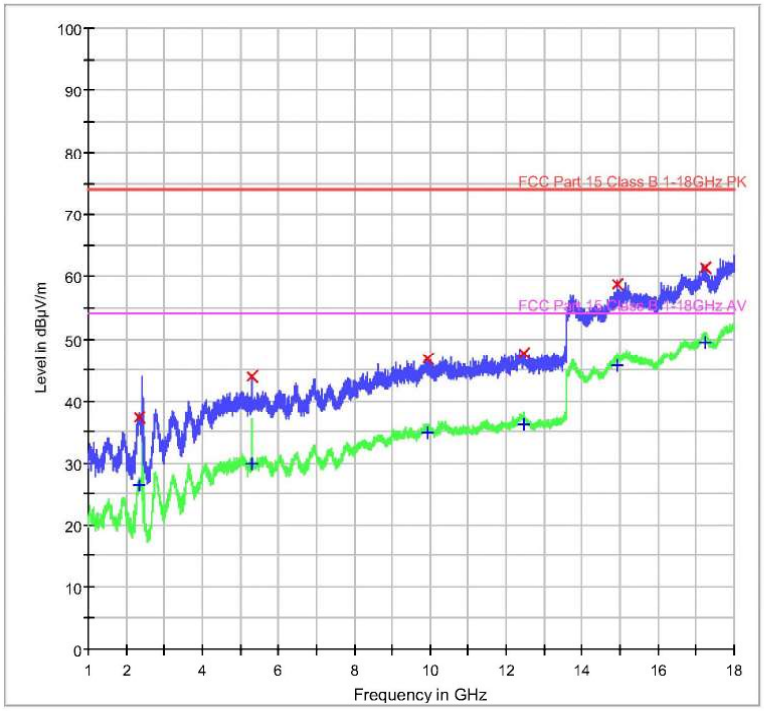
TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	FCC Part 15B
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Horizontal
Subrange 1	
Frequency Range:	1GHz-18GHz
Receiver:	TUV FSP30
Transducer:	TUV SAC HF907/ TUV FSP30-TUV SAC HF907

EMCTT_EREF011-A02-06_1GHz-18GHz_With PreAMP EXT& Hight-pass filter



Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)	Comment
2356.000000	37.2	1000.0	1000.000	H	-10.1	36.8	74.0	
5297.000000	44.0	1000.0	1000.000	H	-1.1	30.1	74.0	
9921.000000	46.7	1000.0	1000.000	H	9.9	27.3	74.0	
12466.000000	47.8	1000.0	1000.000	H	11.0	26.2	74.0	
14934.000000	58.8	1000.0	1000.000	H	13.1	15.2	74.0	
17239.000000	61.3	1000.0	1000.000	H	17.8	12.7	74.0	

Limit and Margin AV

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)	Comment
2356.000000	37.2	1000.0	1000.000	H	-10.1	27.6	54.0	
5297.000000	44.0	1000.0	1000.000	H	-1.1	24.2	54.0	
9921.000000	46.7	1000.0	1000.000	H	9.9	19.3	54.0	
12466.000000	47.8	1000.0	1000.000	H	11.0	17.9	54.0	
14934.000000	58.8	1000.0	1000.000	H	13.1	8.3	54.0	
17239.000000	61.3	1000.0	1000.000	H	17.8	4.6	54.0	

Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

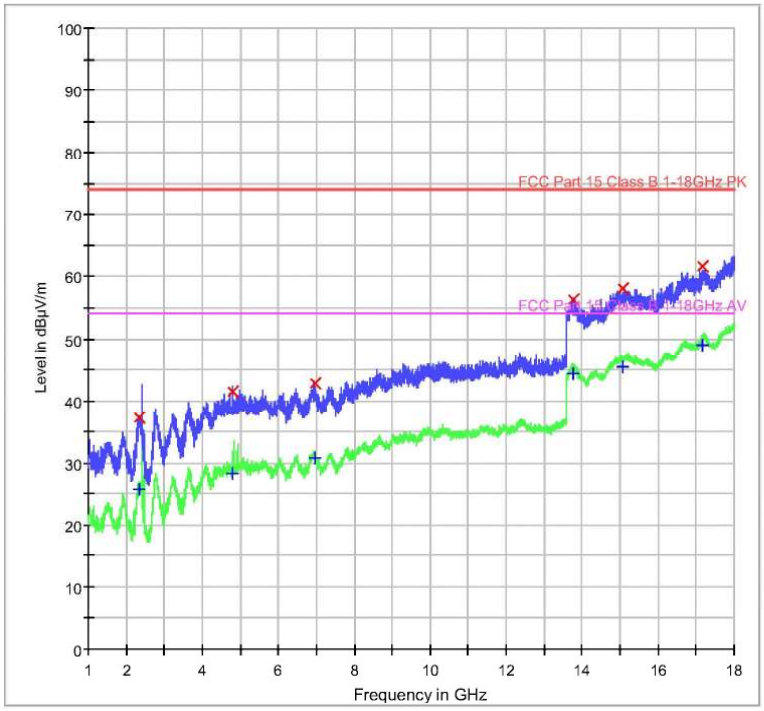
EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	FCC Part 15B
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Vertical

Subrange 1	
Frequency Range:	1GHz-18GHz
Receiver:	TUV FSP30
Transducer:	TUV SAC HF907/ TUV FSP30-TUV SAC HF907

EMCTT_EREF011-A02-06_1GHz-18GHz_With PreAMP EXT& Hight-pass filter



Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2341.000000	37.2	1000.0	1000.000	V	-10.2	36.8	74.0
4799.000000	41.5	1000.0	1000.000	V	-2.0	32.5	74.0
6950.000000	42.8	1000.0	1000.000	V	2.5	31.2	74.0
13752.000000	56.4	1000.0	1000.000	V	11.4	17.6	74.0
15065.000000	58.2	1000.0	1000.000	V	13.3	15.9	74.0
17178.000000	61.6	1000.0	1000.000	V	17.7	12.4	74.0

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2341.000000	25.7	1000.0	1000.000	V	-10.2	28.3	54.0
4799.000000	28.4	1000.0	1000.000	V	-2.0	25.7	54.0
6950.000000	30.8	1000.0	1000.000	V	2.5	23.2	54.0
13752.000000	44.4	1000.0	1000.000	V	11.4	9.6	54.0
15065.000000	45.5	1000.0	1000.000	V	13.3	8.5	54.0
17178.000000	49.0	1000.0	1000.000	V	17.7	5.0	54.0

Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

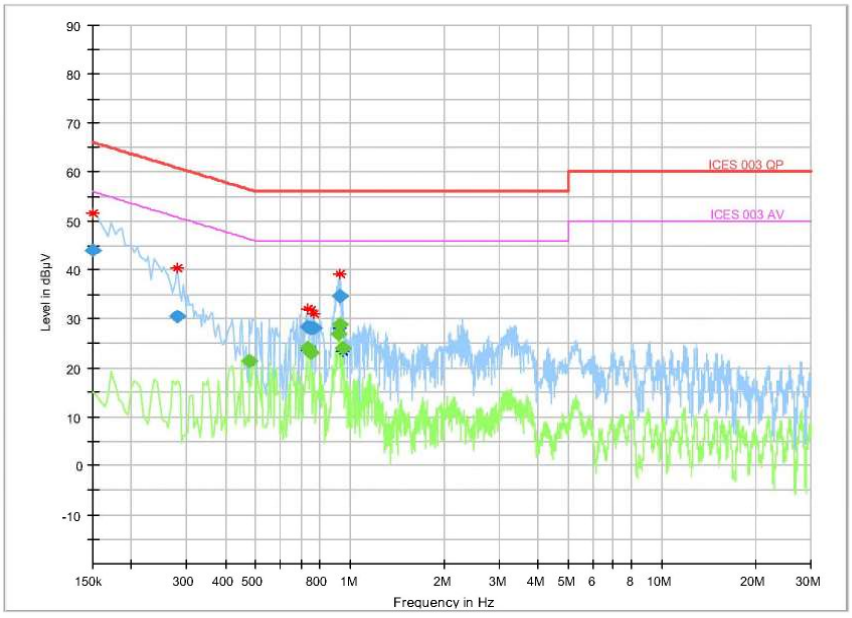
EMC Test Record (EMISSION)

Test Information

Manufacturer:	Ikea
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	ICES 003
Test Detail:	Conducted Emission
Operation Mode:	A+B
Climate Condition:	22 ℃; 50 %RH; 101 kPa.
Test Voltage/ Freq.:	AC 120 V/ 60 Hz
Port / Line:	AC Mains
Receipt No.:	170308120
Report No.:	/
Result:	Pass
Comment:	/

Hardware Setup:	1phase LISN ENV216 to ESCI 3
Level Unit:	dBµV

Subrange	Detectors	IF Bandwidth	Step Size	Meas. Time	Receiver
150kHz - 30MHz	Peak; Average	9kHz	4.5kHz	10ms	ESCI 3



Tested by: Bin Fang 20220525

Reviewed by: Jacky Chen 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter
0.150000	44.06	---	66.00	21.94	1000.0	9.000	L1	OFF
0.280500	30.44	---	60.80	30.36	1000.0	9.000	L1	OFF
0.478500	---	21.50	46.37	24.87	1000.0	9.000	L1	OFF
0.730500	28.20	---	56.00	27.80	1000.0	9.000	L1	OFF
0.730500	---	23.96	46.00	22.04	1000.0	9.000	L1	OFF
0.748500	---	23.12	46.00	22.88	1000.0	9.000	L1	OFF
0.748500	28.10	---	56.00	27.90	1000.0	9.000	L1	OFF
0.766500	28.02	---	56.00	27.98	1000.0	9.000	L1	OFF
0.915000	---	26.86	46.00	19.14	1000.0	9.000	L1	OFF
0.933000	34.58	---	56.00	21.42	1000.0	9.000	L1	OFF
0.933000	---	28.79	46.00	17.21	1000.0	9.000	N	OFF
0.946500	---	23.97	46.00	22.03	1000.0	9.000	N	OFF

Tested by: Bin Fang 20220525

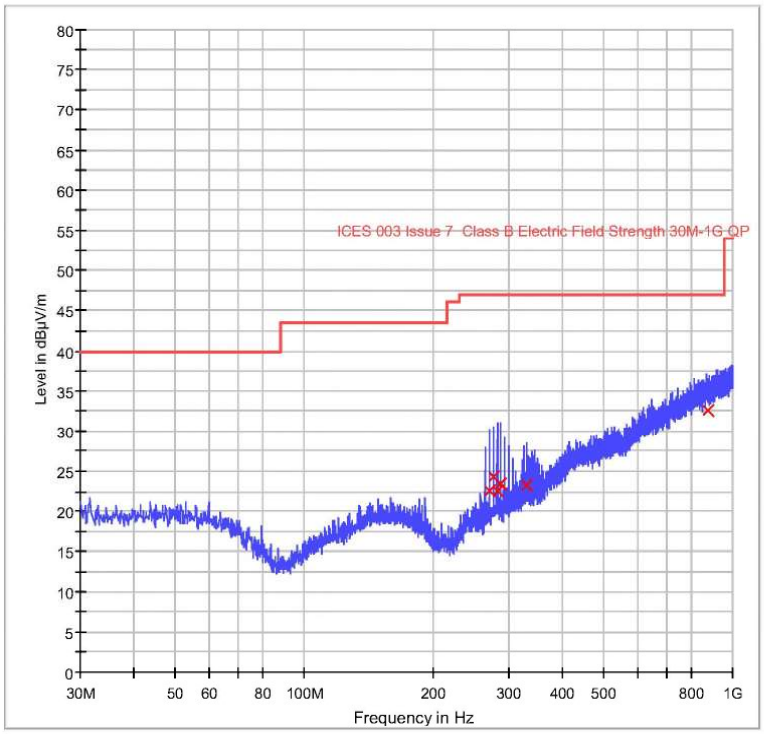
Reviewed by: Jacky chen 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	ICES 003
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Horizontal
Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESW 8
Transducer:	VULB9168



Tested by Bin Feng Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)	Comment
269.960000	22.6	1000.0	120.000	H	20.9	24.4	47.0	
276.000000	24.2	1000.0	120.000	H	21.2	22.8	47.0	
281.960000	22.6	1000.0	120.000	H	21.5	24.4	47.0	
288.000000	23.5	1000.0	120.000	H	21.6	23.5	47.0	
329.960000	23.4	1000.0	120.000	H	23.0	23.6	47.0	
873.880000	32.5	1000.0	120.000	H	34.1	14.5	47.0	

Tested by Bin Feng Reviewed by Jacky chen

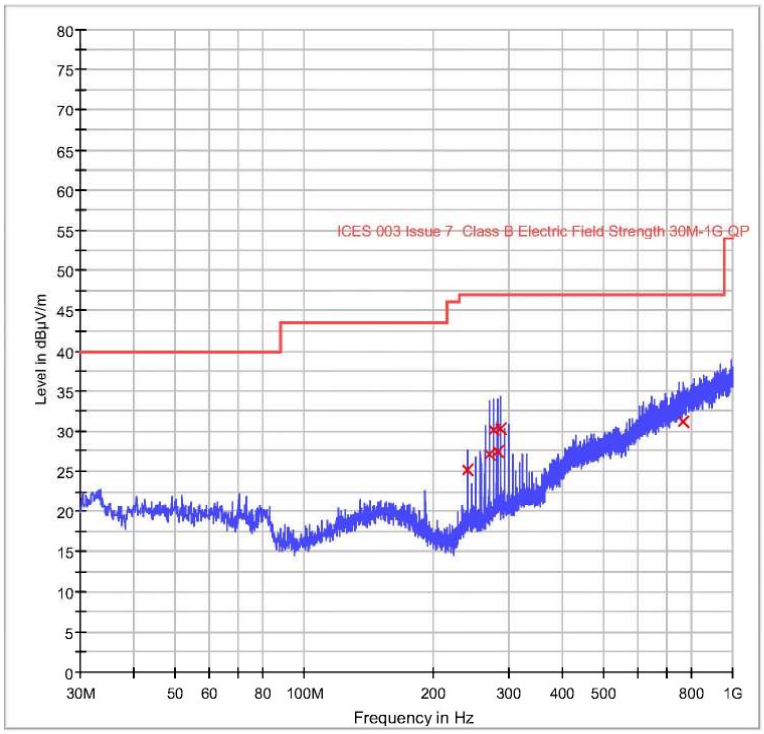
Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	ICES 003
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Vertical
Subrange 1	
Frequency range:	30-1000MHz
Receiver:	ESW 8
Transducer:	VULB9168



Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

QP

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBµV/m)	Comment
240.000000	25.2	1000.0	120.000	V	19.8	21.8	47.0	
269.960000	27.2	1000.0	120.000	V	20.9	19.9	47.0	
276.000000	30.1	1000.0	120.000	V	21.2	16.9	47.0	
281.960000	27.4	1000.0	120.000	V	21.5	19.7	47.0	
288.000000	30.3	1000.0	120.000	V	21.6	16.7	47.0	
769.280000	31.2	1000.0	120.000	V	33.0	15.8	47.0	

Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

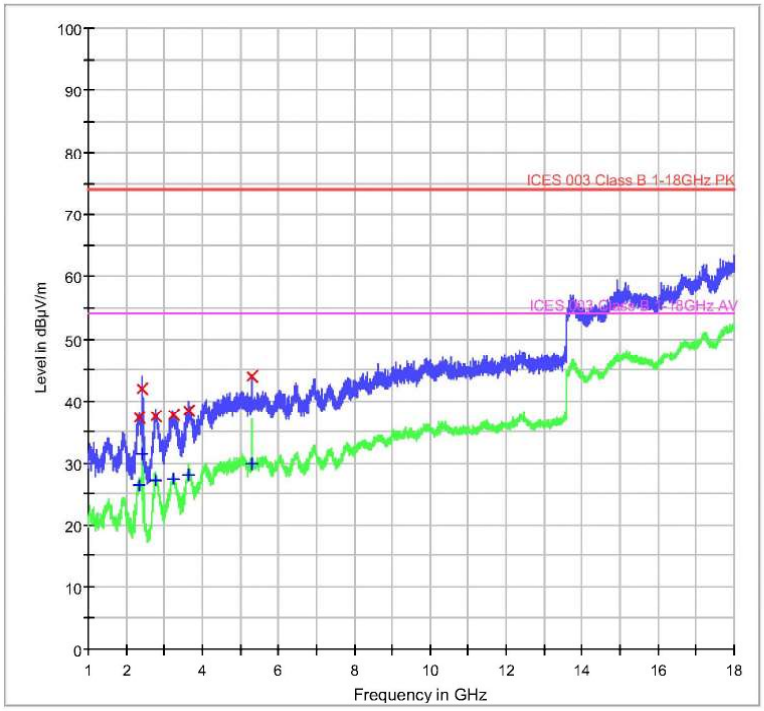
TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	ICES 003
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Horizontal
Subrange 1	
Frequency Range:	1GHz-18GHz
Receiver:	TUV FSP30
Transducer:	TUV SAC HF907/ TUV FSP30-TUV SAC HF907

EMCTT_EREF011-A02-06_1GHz-18GHz_With PreAMP EXT& Hight-pass filter



Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2356.000000	37.2	1000.0	1000.000	H	-10.1	36.8	74.0
2419.000000	41.8	1000.0	1000.000	H	-9.9	32.2	74.0
2766.000000	37.5	1000.0	1000.000	H	-8.3	36.5	74.0
3231.000000	37.7	1000.0	1000.000	H	-6.9	36.3	74.0
3654.000000	38.4	1000.0	1000.000	H	-5.5	35.6	74.0
5297.000000	44.0	1000.0	1000.000	H	-1.1	30.1	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2356.000000	26.4	1000.0	1000.000	H	-10.1	27.6	54.0
2419.000000	31.6	1000.0	1000.000	H	-9.9	22.4	54.0
2766.000000	27.3	1000.0	1000.000	H	-8.3	26.7	54.0
3231.000000	27.4	1000.0	1000.000	H	-6.9	26.6	54.0
3654.000000	28.3	1000.0	1000.000	H	-5.5	25.7	54.0
5297.000000	29.9	1000.0	1000.000	H	-1.1	24.2	54.0

Tested by Bin Fang Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

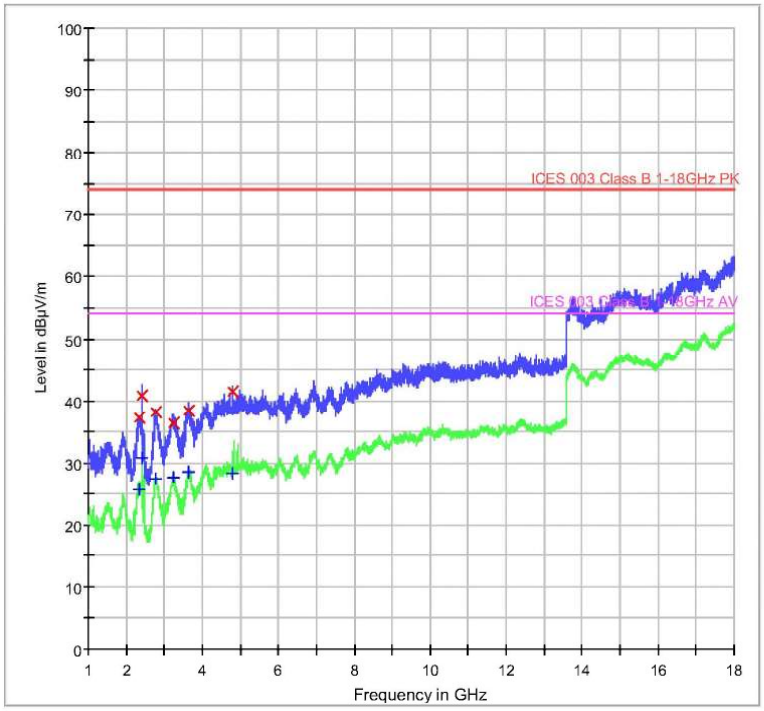
EMC Test Record (Emission)

Common Information

Manufacturer:	
Test Item:	VAPPEBY PT
Identification:	E2133
Test Standard:	ICES 003
Test Detail:	Radiated Emission
Operation Mode:	A
Climate Condition:	21 ℃, 52 %, 101 kPa
Test Voltage/ Freq:	AC 120 V / 60 Hz
Receipt No:	170308120
Report No:	
Result:	Pass
Comment:	Test distance is 3m; Vertical

Subrange 1	
Frequency Range:	1GHz-18GHz
Receiver:	TUV FSP30
Transducer:	TUV SAC HF907/ TUV FSP30-TUV SAC HF907

EMCTT_EREF011-A02-06_1GHz-18GHz_With PreAMP EXT& Hight-pass filter



Tested by Bin Feng Reviewed by Jacky chen

Date: 20220527 Date: 20220606

TUV Rheinland (Guangdong) Ltd. EMC Test Service Hotline: +86-20-28391188

PK

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - PK+ (dB)	Limit - PK+ (dBµV/m)
2341.000000	37.2	1000.0	1000.000	V	-10.2	36.8	74.0
2402.000000	40.8	1000.0	1000.000	V	-10.0	33.2	74.0
2766.000000	38.2	1000.0	1000.000	V	-8.3	35.9	74.0
3225.000000	36.4	1000.0	1000.000	V	-6.9	37.6	74.0
3654.000000	38.4	1000.0	1000.000	V	-5.5	35.6	74.0
4799.000000	41.5	1000.0	1000.000	V	-2.0	32.5	74.0

AV

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Corr. (dB/m)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
2341.000000	25.7	1000.0	1000.000	V	-10.2	28.3	54.0
2402.000000	30.8	1000.0	1000.000	V	-10.0	23.2	54.0
2766.000000	27.6	1000.0	1000.000	V	-8.3	26.4	54.0
3225.000000	27.8	1000.0	1000.000	V	-6.9	26.2	54.0
3654.000000	28.6	1000.0	1000.000	V	-5.5	25.4	54.0
4799.000000	28.4	1000.0	1000.000	V	-2.0	25.7	54.0

Tested by Bin Feng Reviewed by Jacky chen

Date: 20220527 Date: 20220606

Prüfbericht - Nr.: **CN22PP2G 001**
Test Report No.

Table 1: List of Test and Measurement Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Until	Cal Date
Disturbance Voltage					
EMI Test Receiver	Rohde&Schwarz	ESCI 3	100216	2023-03-04	2022-03-05
Two-Line V-Network	Rohde&Schwarz	ENV216	100195	2023-03-04	2022-03-05
Radiated disturbances (30 MHz – 1000 MHz)					
EMI Test Receiver	Rohde & Schwarz	ESW8	101312	2023-03-04	2022-03-05
Trilog-Broadband Antenna	Schwarzbeckmess-elektronik	VULB9168	684	2023-08-24	2021-08-23
Radiated disturbances (1GHz – 18 GHz)					
Double-Ridged Horn Antenna	Rohde & Schwarz	HF907	100377	2022-10-27	2020-10-28
Pre-Amplifier(1-18GHz)	MITEQ	AFS44-00101800-25-10P-44	1934457	2023-03-03	2022-03-04
EMI Test Receiver	Rohde & Schwarz	ESW8	101312	2023-03-04	2022-03-05