



# EMC TEST REPORT

**Applicant** Honor Device Co., Ltd.

**FCC ID** 2AYGCVNE-LX1

**Product** Smart Phone

**Model** VNE-LX1

**Report No.** R2208A0708-E1

**Issue Date** August 10, 2022

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC Code CFR47 Part15B (2021)/ ANSI C63.4-2014**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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## Summary of measurement results

Number	Test Case	Clause in FCC Rules	Conclusion
1	Radiated Emission	FCC Part15.109, ANSI C63.4-2014	PASS
2	Conducted Emission	FCC Part15.107, ANSI C63.4-2014	PASS
Date of Testing: July 13, 2022 ~July 16, 2022 and August 2, 2022(for FM)			
Date of Sample Received: July 13, 2022			
Note: All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

**VNE-LX1 (Report No.: R2208A0708-E1) is a variant model of VNE-LX3 (Report No.: R2207A0619-E1V2). Test values all duplicated from Original for variant. There is only test Radiated Emission (worst mode), and did not worsen, so they were not recorded in the report.**

**The difference between VNE-LX3 and VNE-LX1 are show in the below table:**

/	Model	VNE-LX3	VNE-LX1
Licensed Frequency	LTE Band	B2/B4/B5/B7/B13/B26/B38/B66	B5/B7
	UMTS Band	B2/B4/B5	B2/B5
Unlicensed Frequency	NFC	Not support	Support
Software	Version	2.1.0.34(SP02C900E5R1P1)	2.1.0.57(SP03C900E5R1P1)
RF	RF circuit	The RF circuit of the same frequency is the same.	The RF circuit of the same frequency is the same. The different frequency changed by hardware and some RF parameters. Changes are followed: DeleteWB4/LTEB2/B4/B13/B66/B38 SAWS and RF matching.
	Tune-up	The tune-up of the same frequency are the same.	The tune-up of the same frequency are the same.
Others		The same	The same

**The detailed product change description please refers to the Difference Declaration Letter.**



## 1 Test Laboratory

### 1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

### 1.2 Test facility

#### **FCC (Designation number: CN1179, Test Firm Registration Number: 446626)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

#### **A2LA (Certificate Number: 3857.01)**

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

### 1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
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## 2 General Description of Equipment under Test

### 2.1 Applicant and Manufacturer Information

Applicant	Honor Device Co., Ltd.
Applicant address	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
Manufacturer	Honor Device Co., Ltd.
Manufacturer address	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China

### 2.2 General information

EUT Description			
Device Type	Portable Device		
Model	VNE-LX1		
SN	A96BNU2625200516		
HW Version	HL1VNEM		
SW Version	2.1.0.57(SP03C900E5R1P1)		
Power Rating	DC 5V from Adapter.		
Connecting I/O Port(s)	Please refer to the User's Manual.		
Antenna Type	Internal Antenna		
Frequency	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824 ~ 849	869 ~ 894
	GSM 1900	1850 ~ 1910	1930 ~ 1990
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	WCDMA Band V	824 ~ 849	869 ~ 894
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	Bluetooth	2402 ~ 2480	2402 ~ 2480
	Wi-Fi 2.4G	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 5G(U-NII-1)	5150 ~ 5250	5150 ~ 5250
	Wi-Fi 5G(U-NII-2A)	5250 ~ 5350	5250 ~ 5350
	Wi-Fi 5G(U-NII-2C)	5470 ~ 5725	5470 ~ 5725
	Wi-Fi 5G(U-NII-3)	5725 ~ 5850	5725 ~ 5850
	FM	/	87.5 ~ 108
	NFC	13.56	13.56

EUT Accessory			
Accessory	Model	Manufacture	No.
Adapter	HW-050200E02	Honor Device Co., Ltd. (Manufacturer: Huntkey)	1
		Honor Device Co., Ltd. (Manufacturer: BYD)	2
	HW-050200B02	Honor Device Co., Ltd.	3



		(Manufacturer: Huntkey)	
		Honor Device Co., Ltd. (Manufacturer: BYD)	4
	HW-050200U02	Honor Device Co., Ltd. (Manufacturer: Huntkey)	5
		Honor Device Co., Ltd. (Manufacturer: BYD)	6
Battery	HB496590EFW	Honor Device Co., Ltd. (Manufacturer: SCUD)	1
		Honor Device Co., Ltd. (Manufacturer: NVT)	2
	HB496590EFW-F	Honor Device Co., Ltd. (Manufacturer: SCUD)	3
		Honor Device Co., Ltd. (Manufacturer: NVT)	4
Data Cable	RY0002	NingBo Broad Telecommunication Co., Ltd.	1
	AU2-CRO013HF	Freeport Resources Enterprises Corp.	2
	2120-00001-0	MING JI ELECTRONICS CO., LTD.	3
	L125UC007-CS-H	LUXSHARE PRECISION INDUSTRY CO., LTD.	4
	CUDU01B-HC451-EH	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	5
Earphone	MEND1532B528C00	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	1
	1293-3283-3.5MM-339	BOLUO COUNTY QUANCHENG ELECTRONIC CO.,LTD.	2
Auxiliary test equipment			
PC	PC Manufacturer: Dell Model: E5450 (SN : P48G001)		
Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 2. There is more than one Adapter/Battery/Data cable/Earphone, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 6 / Battery 3 /Data cable 1/ Earphone 1) will be recorded in this report.			



## 2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

### Test standards

**FCC Code CFR47 Part15B (2021)**

**ANSI C63.4-2014**



## 2.4 Test Mode

Test Mode	
Mode 1	Adapter +USB cable+ earphone + Front camera On +GNSS RX +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC receiver
Mode 2	Adapter +USB cable+ earphone + Front camera On +GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC Traffic
Mode 3	Adapter +USB cable+ earphone + Rear camera On +GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC receiver
Mode 4	Adapter +USB cable+ earphone + Rear camera On +GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC Traffic
Mode 5	Adapter + USB cable + earphone + Mp4
Mode 6	Adapter + USB cable + earphone + Mp3
Mode 7	Adapter + USB cable + earphone + GNSS Rx+ LTE receiver
Mode 8	Adapter + USB cable + earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC Traffic
Mode 9	USB Copy(EUT with PC) + USB cable + earphone
Mode 10	Front Camera On +earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC receiver
Mode 11	Front Camera On +earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC Traffic
Mode 12	Rear camera On +earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC receiver
Mode 13	Rear camera On +earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC Traffic
Mode 14	Earphone + MP4
Mode 15	Earphone + MP3
Mode 16	Earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC receiver
Mode 17	Earphone + GNSS Rx +GSM/WCDMA/LTE/ Bluetooth/ WLAN/NFC Traffic
Mode 18	Adapter+ USB+EUT +Fm(98mhz)+Earphone

During the test, the preliminary test was performed in all modes with all adapters, Data cable, Earphone and batteries, mode 6 and mode 18 for RE and mode 9 for CE are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



### 3 Test Case Results

#### 3.1 Radiated Emission

##### Ambient condition

Temperature	Relative humidity	Pressure
15°C~35°C	30%~60%	101.5kPa

##### Methods of Measurement

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated signal level.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.

Set the spectrum analyzer in the following:

Below 1GHz:

RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

Above 1GHz:

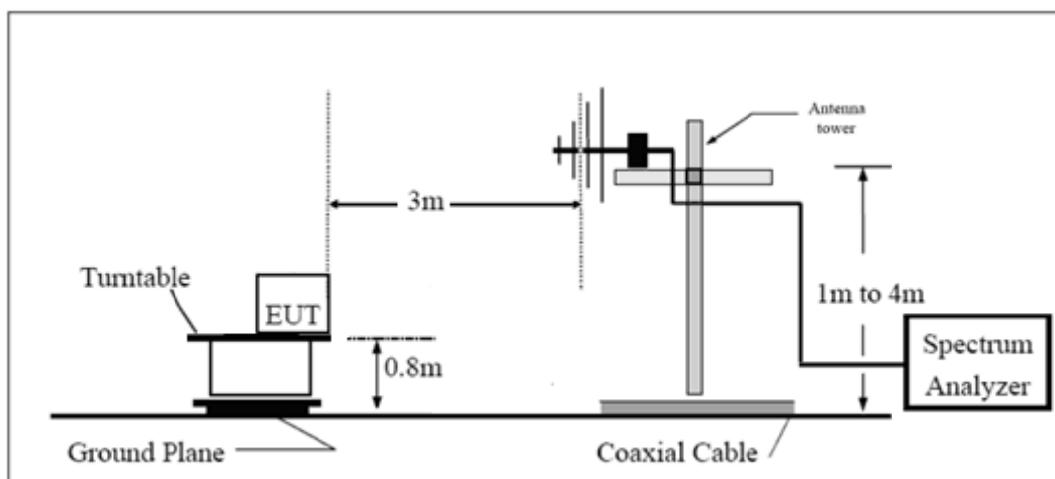
(a) PEAK Detector: RBW=1MHz / VBW=3MHz/ Sweep=AUTO

(b) AVERAGE Detector: RBW=1MHz / VBW=3MHz / Sweep=AUTO

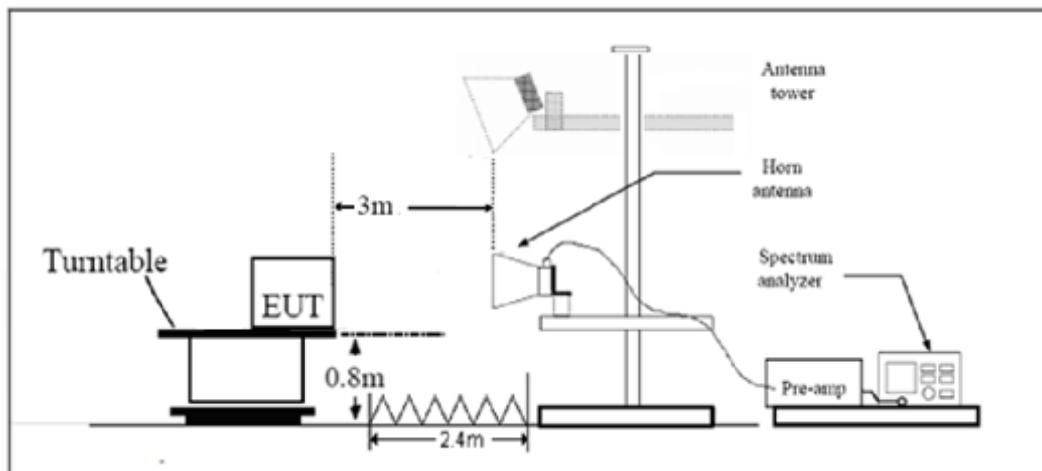
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

## Test Setup

### Below 1GHz



### Above 1GHz



Note: Area side: 2.4mX3.6m

Antenna Tower meets ANSI C63.4 requirements for measurements above 1 GHz by keeping the antenna aimed at the EUT during the antenna's ascent/ descent along the antenna mast.

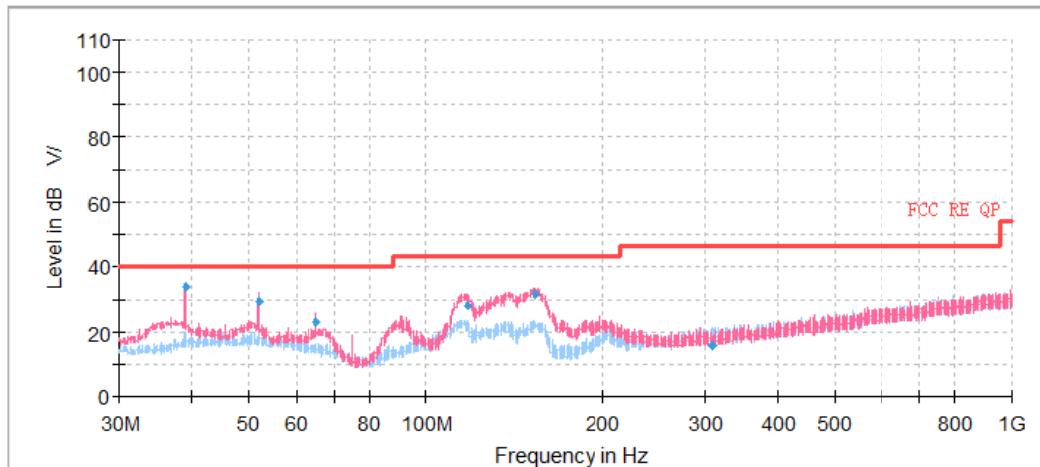
**Limits****Class B**

Frequency (MHz)	Field Strength (dB $\mu$ V/m)	Detector
30 -88	40.0	Quasi-peak
88-216	43.5	Quasi-peak
216 – 960	46.0	Quasi-peak
960-1000	54.0	Quasi-peak
1000-5 <sup>th</sup> harmonic of the highest frequency or 40GHz, which is lower	54 74	Average Peak

## Test Results

Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier. The Emissions in the frequency band 18GHz – 40GHz is more than 20dB below the limit are not reported.

The following graphs display the maximum values of horizontal and vertical by software. For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection. A font (  $\text{Level in dB } \mu\text{V}/\text{m}$  ) in the test plot = (level in dB  $\mu\text{V}/\text{m}$ )

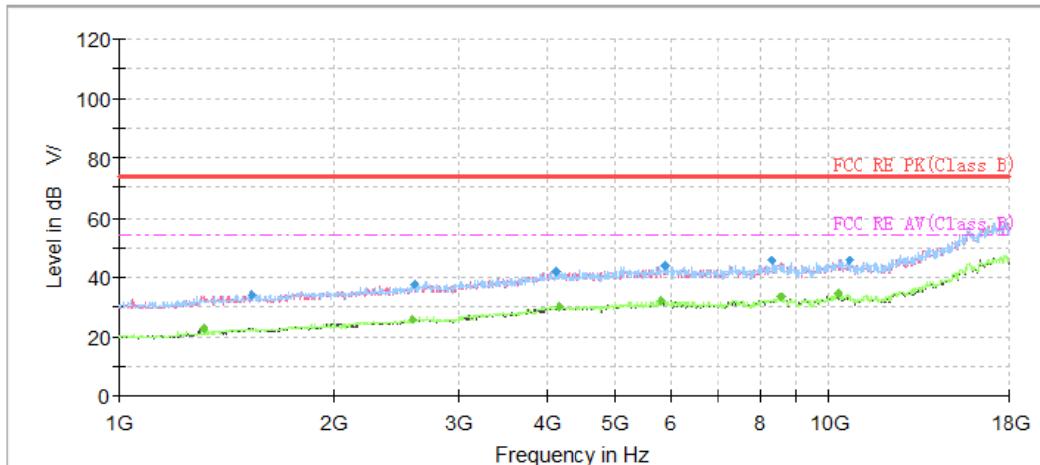


Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB $\mu\text{V}/\text{m}$ )	Limit (dB $\mu\text{V}/\text{m}$ )	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
38.99	33.58	40.00	6.42	1000.00	100.0	V	117.00	19
51.99	29.13	40.00	10.87	1000.00	125.0	V	30.00	20
64.98	23.26	40.00	16.74	1000.00	100.0	V	290.00	18
117.69	28.03	43.50	15.47	1000.00	100.0	V	133.00	17
153.46	31.43	43.50	12.07	1000.00	100.0	V	93.00	15
308.51	15.59	46.00	30.41	1000.00	100.0	H	275.00	20

**Remark: 1. Correction Factor = Antenna factor + Insertion loss(cable loss+ amplifier gain)**

**2. Margin = Limit – Quasi-Peak**



Radiated Emission from 1GHz to 18GHz

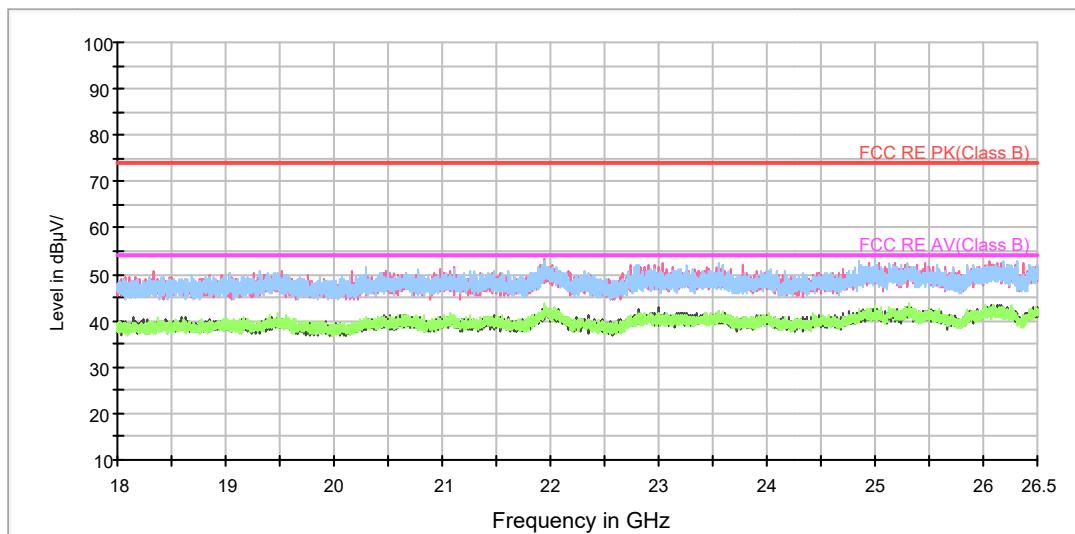
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1312.38	---	23.02	54.00	30.98	500.00	100.0	V	314.00	-17
1531.25	34.03	---	74.00	39.97	500.00	200.0	V	15.00	-15
2587.38	---	25.68	54.00	28.32	500.00	100.0	H	149.00	-10
2602.25	37.49	---	74.00	36.51	500.00	200.0	H	227.00	-10
4128.00	41.86	---	74.00	32.14	500.00	200.0	V	241.00	-3
4157.75	---	30.34	54.00	23.66	500.00	100.0	H	317.00	-3
5813.13	---	32.20	54.00	21.80	500.00	100.0	H	243.00	0
5876.88	43.46	---	74.00	30.54	500.00	100.0	H	185.00	0
8324.88	45.44	---	74.00	28.56	500.00	100.0	H	185.00	3
8541.63	---	33.20	54.00	20.80	500.00	100.0	H	308.00	4
10279.88	---	34.17	54.00	19.83	500.00	100.0	H	295.00	5
10643.25	45.60	---	74.00	28.40	500.00	100.0	H	47.00	5

Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss+ amplifier gain)

2. Margin = Limit – Quasi-Peak

A font (  $\mu$  ) in the test plot = (level in  $\mu$  V/m)

RE 18-26.5GHz PK+AV



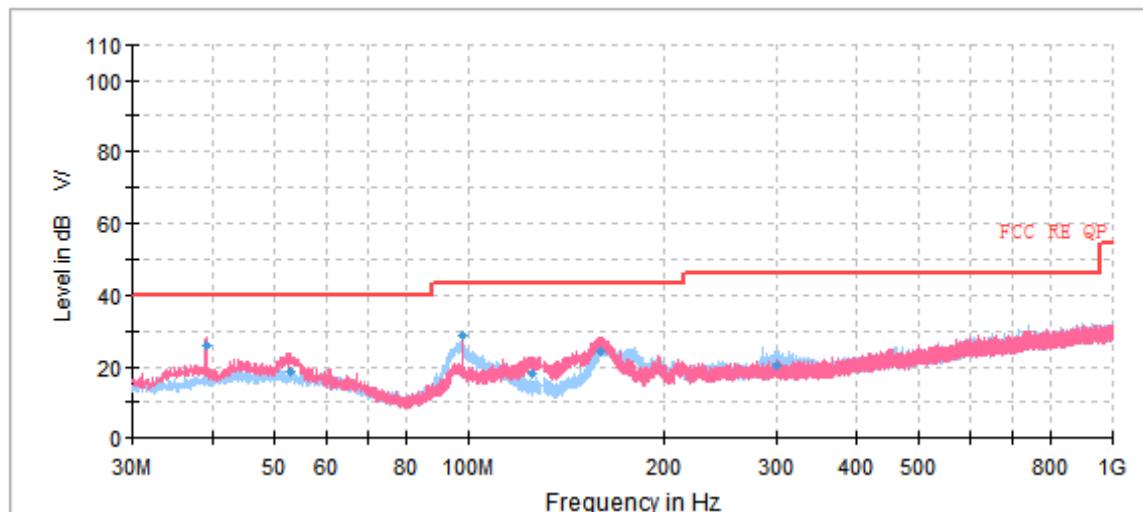
Radiated Emission from 18GHz to 26.5GHz

RE 26.5-40GHz PK+AV



Radiated Emission from 26.5GHz to 40GHz

FM



Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
38.99	26.23	40.00	13.77	1000.00	100.0	V	61.00	19
52.98	18.51	40.00	21.49	1000.00	100.0	V	100.00	20
98.00	28.61	43.50	14.89	1000.00	225.0	H	0.00	18
126.30	18.26	43.50	25.24	1000.00	100.0	V	309.00	16
159.27	24.15	43.50	19.35	1000.00	100.0	V	278.00	15
299.18	20.40	46.00	25.61	1000.00	100.0	H	273.00	20

Remark: 1. Correction Factor = Antenna factor + Insertion loss(cable loss+ amplifier gain)

2. Margin = Limit – Quasi-Peak

## 3.2 Conducted Emission

### Ambient condition

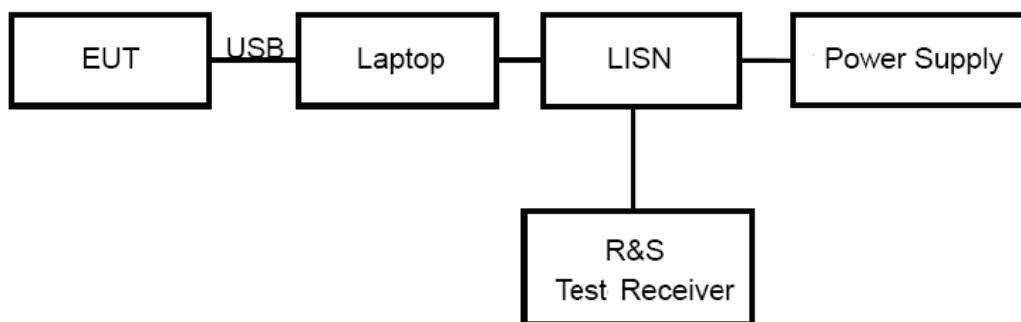
Temperature	Relative humidity	Pressure
15°C~35°C	30%~60%	101.5kPa

### Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.

During the test, EUT is connected to a laptop via a USB cable in the case of Transfer Data mode. The EUT is used as the peripheral equipment of the PC. The data is transferred from EUT to PC; PC is connected to server via a long LAN cable.

### Test Setup



Note: Power Supply is AC Power source and it is used to change the voltage 120V/60Hz.

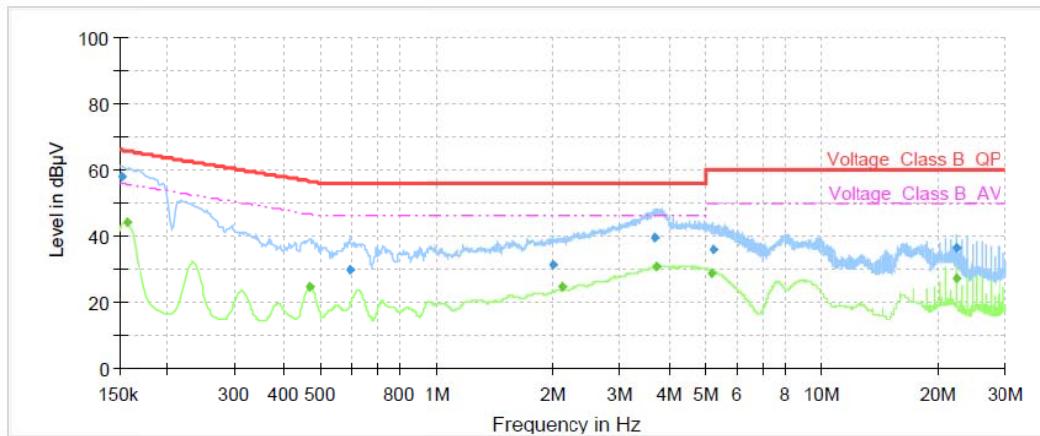
### Limits

Frequency (MHz)	Conducted Limits(dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 <sup>*</sup>	56 to 46 <sup>*</sup>
0.5 - 5	56	46
5 - 30	60	50

<sup>\*</sup>: Decreases with the logarithm of the frequency.

## Test Results

Following plots, Blue trace uses the peak detection; Green trace uses the average detection.

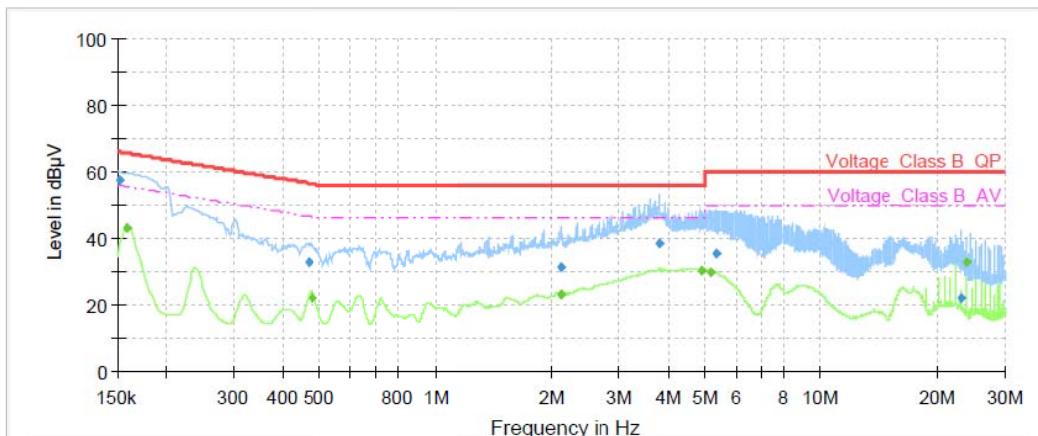


Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.15	57.78	---	65.88	8.10	1000.00	9.000	N	ON	21
0.16	---	44.32	55.63	11.31	1000.00	9.000	N	ON	21
0.47	---	24.69	46.52	21.83	1000.00	9.000	N	ON	20
0.59	29.89	---	56.00	26.11	1000.00	9.000	N	ON	20
1.99	31.52	---	56.00	24.48	1000.00	9.000	N	ON	20
2.12	---	24.50	46.00	21.50	1000.00	9.000	N	ON	20
3.70	39.67	---	56.00	16.33	1000.00	9.000	N	ON	19
3.73	---	30.54	46.00	15.46	1000.00	9.000	N	ON	19
5.15	---	28.90	50.00	21.10	1000.00	9.000	N	ON	19
5.20	35.78	---	60.00	24.22	1000.00	9.000	N	ON	19
22.38	36.55	---	60.00	23.45	1000.00	9.000	N	ON	20
22.39	---	27.30	50.00	22.70	1000.00	9.000	N	ON	20

**Remark: Correct factor=cable loss + LISN factor**

L line

Conducted Emission from 150 KHz to 30 MHz



Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.15	57.67	---	65.88	8.21	1000.00	9.000	L1	ON	21
0.16	---	43.13	55.52	12.39	1000.00	9.000	L1	ON	21
0.47	32.89	---	56.60	23.71	1000.00	9.000	L1	ON	20
0.48	---	22.26	46.40	24.14	1000.00	9.000	L1	ON	20
2.12	---	23.24	46.00	22.76	1000.00	9.000	L1	ON	20
2.12	31.37	---	56.00	24.63	1000.00	9.000	L1	ON	20
3.81	38.41	---	56.00	17.59	1000.00	9.000	L1	ON	19
4.90	---	30.19	46.00	15.81	1000.00	9.000	L1	ON	19
5.14	---	29.80	50.00	20.20	1000.00	9.000	L1	ON	19
5.32	35.22	---	60.00	24.78	1000.00	9.000	L1	ON	19
23.01	22.20	---	60.00	37.80	1000.00	9.000	L1	ON	20
23.83	---	33.05	50.00	16.95	1000.00	9.000	L1	ON	20

Remark: Correct factor=cable loss + LISN factor

N line  
Conducted Emission from 150 KHz to 30 MHz



## 4 Uncertainty Measurement

Case	Uncertainty	Factor k
Radiated Emission 30MHz – 200MHz	4.17 dB	1.96
Radiated Emission 200MHz – 1GHz	4.84 dB	1.96
Radiated Emission 1GHz – 18GHz	4.35 dB	1.96
Radiated Emission 18GHz – 26.5GHz	5.90 dB	1.96
Radiated Emission 26.5GHz – 40GHz	5.92 dB	1.96
Conducted Emission	2.57 dB	2



## 5 Main Test Instruments

Name of Equipment	Manufacturer	Type/Model	Serial Number	Calibration Date	Expiration Time
Radiated Emission					
EMI Test Receiver	R&S	ESR	102389	2022-05-25	2023-05-24
Signal Analyzer	R&S	FSV40	100816	2021-12-12	2022-12-11
TRILOG Broadband Antenna	SCHWARZBECK	9163	1023	2020-05-05	2023-05-04
Horn Antenna	Schwarzbeck	BBHA 9120D	430	2021-07-26	2024-07-25
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2019-12-24	2022-12-23
Software	R&S	EMC32	9.26.01	/	/
Conducted Emission					
Artificial main network	R&S	ENV216	102191	2020-12-13	2022-12-12
EMI Test Receiver	R&S	ESR	101667	2022-05-25	2023-05-24
Software	R&S	EMC32	10.35.10	/	/

\*\*\*\*\*END OF REPORT\*\*\*\*\*



## ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



## ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.



## ANNEX C: Product Change Description

The Product Change Description are submitted separately.