

EMC TEST REPORT

Applicant	Mobiwire SAS
FCC ID	QPN-LINIWA
Product	4G Smart Phone
Brand	MobiWire; Altice
Model	MobiWire Liniwa; Altice S25
Report No.	R2303A0223-E1V1
Issue Date	April 27, 2023

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC Code CFR47 Part15B (2022)/ 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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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	April 25, 2023
Rev.1	Update data.	April 27, 2023

Note: This revised report (Report No.: R2303A0223-E1V1) supersedes and replaces the previously issued report (Report No.: R2303A0223-E1). Please discard or destroy the previously issued report and dispose of it accordingly.



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: March 13, 2023 ~ April 18, 2023			
Date of Sample Received: March 6, 2023			
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.			

MobiWire Liniwa; Altice S25 (Report No.: R2303A0223-E1V1) is a variant model of MobiWire Liniwa; Altice S24 (Report No.: R2104A0308-E1V2).

The details of differences are shown below:

SOFTWARE MODIFICATIONS:

Other changes detailed: YES, update Android OS, update SW version

HARDWARE MODIFICATION:

Components on PCB changes: YES, G-sensor changes

Memory changes: YES, Add a new memory

LCD changes: YES, Add a new LCD

TP changes: YES, Add a new CTP

Camera changes: YES, front and back camera changes

Other changes: YES, Audio PA changes

MECHANICAL MODIFICATIONS:

Mechanical shell changes: YES, New battery cover, please see the below picture

Tested Case refers to the following table.

Test Case	Original	Variant
Radiated Emission	Pass	Retest, and Pass
Conducted Emission	Pass	Retest, and Pass

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.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City: Shanghai
Post code: 201201
Country: P. R. China
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E-mail: fanguangchang@ta-shanghai.com

2 General Description of Equipment Under Test

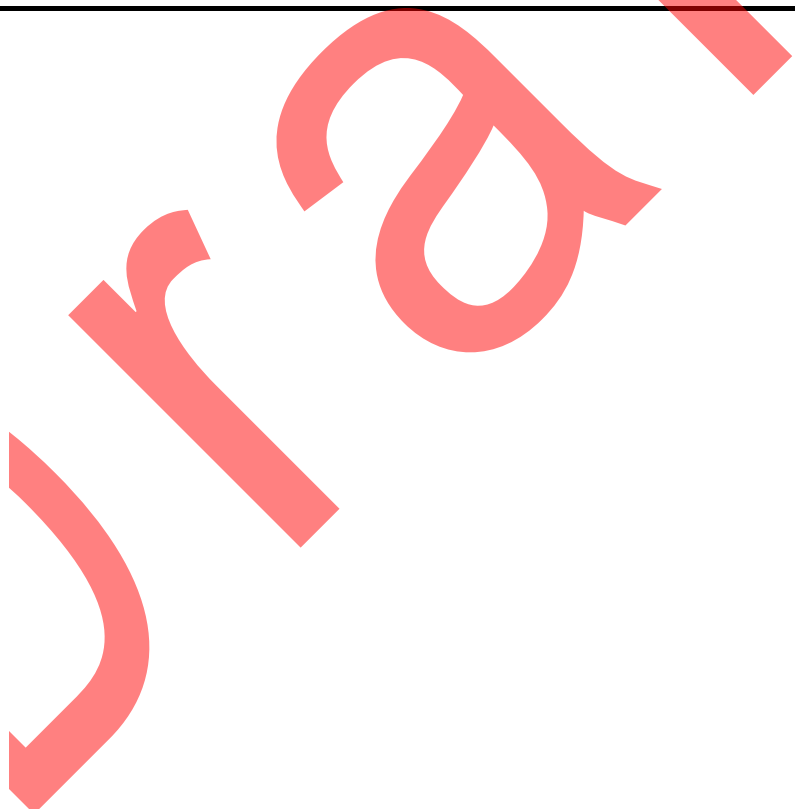
2.1 Applicant and Manufacturer Information

Applicant	Mobiwire SAS
Applicant address	107 Boulevard de la Mission Marchand 92400 Courbevoie, France
Manufacturer	Mobiwire SAS
Manufacturer address	107 Boulevard de la Mission Marchand 92400 Courbevoie, France

2.2 General Information

EUT Description			
Device Type	Portable Device		
Model	MobiWire Liniwa; Altice S25		
IMEI	Variant	IMEI1: 352055740000227 IMEI2: 352055740000235	
HW Version	V01		
SW Version	ALTICE_S25_DS_O_T_V01.1_230224_CEFCC		
Power Rating	DC 3.8V from battery		
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 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	Bluetooth	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 2.4G	2400 ~ 2483.5	2400 ~ 2483.5
EUT Accessory			
Adapter 1	Manufacturer: Dongguan Aohai Power Technology CO.,LTD Model: A31A-050100U-EU1 Input: 100-240V~50/60Hz 0.2A Output: 5.0V ---1.0A 5.0W		
Adapter 2	Manufacturer: Dongguan Aohai Power Technology CO.,LTD Model: A31A-050100U-US1		

	Input: 100-240V~50/60Hz 0.2A Output: 5.0V $\overline{\text{---}}$ 1.0A 5.0W
Battery	Manufacturer: GUANGDONG FENGHUA NEW ENERGY CO.,LTD Model: 178172056 DC 3.8V, 2000mAh, 7.6Wh
Earphone	Manufacturer: Shenzhen Juwei Electronics Co.,Ltd Model: JWEP0957-M01R
USB Cable	Manufacturer: SHENZHEN FKY-QY HARDWARE ELECTRONIC CO.,LTD Model: 2CA0MBWE001 100cm Cable, Shielded
Auxiliary test equipment	
PC	PC Manufacturer: DELL Model: Latitude 3400 (SN: 7VK5ZZ2)
<p>Note:</p> <ol style="list-style-type: none"> 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant. 2. There are more than one Adapter, each one should be applied throughout the compliance test respectively, however, only the worst case (Adapter 2) will be recorded in this report. 3. MobiWire Liniwa and Altice S25 are same with each other except model name. This report only tests Altice S25. 	



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 (2022)

ANSI C63.4-2014

Sample

2.4 Test Mode

Test Mode	
Mode 1	Adapter +USB cable+EUT+ Front camera On
Mode 2	Adapter +USB cable+EUT+ Rear camera On
Mode 3	Adapter + USB cable + EUT + 1KHz(Color bar)
Mode 4	USB Copy(EUT with PC) + USB cable
Mode 5	USB Copy(PC with EUT) + USB cable

During the test, the preliminary test was performed in all modes, mode 4 is 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
15°C~35°C	30%~60%

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

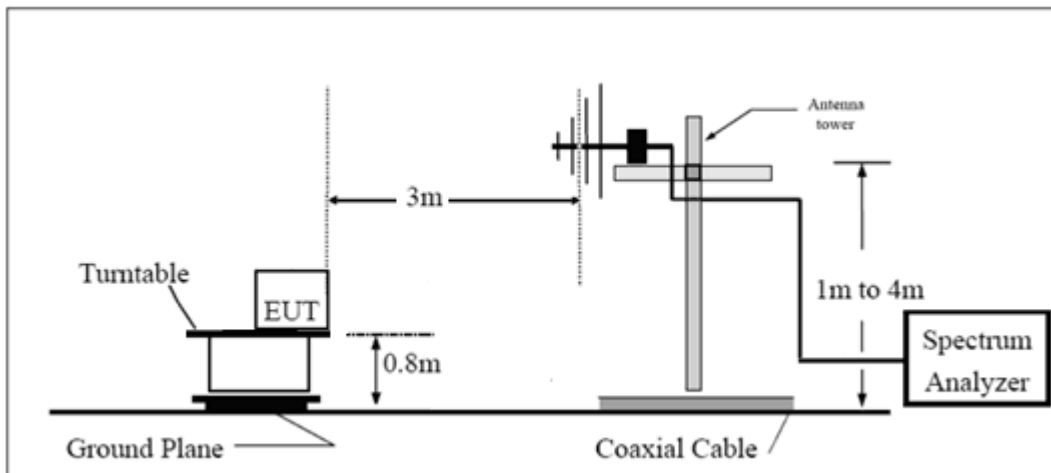
(b) AVERAGE Detector: RBW=1MHz / VBW=3MHz / Sweep=AUTO

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.

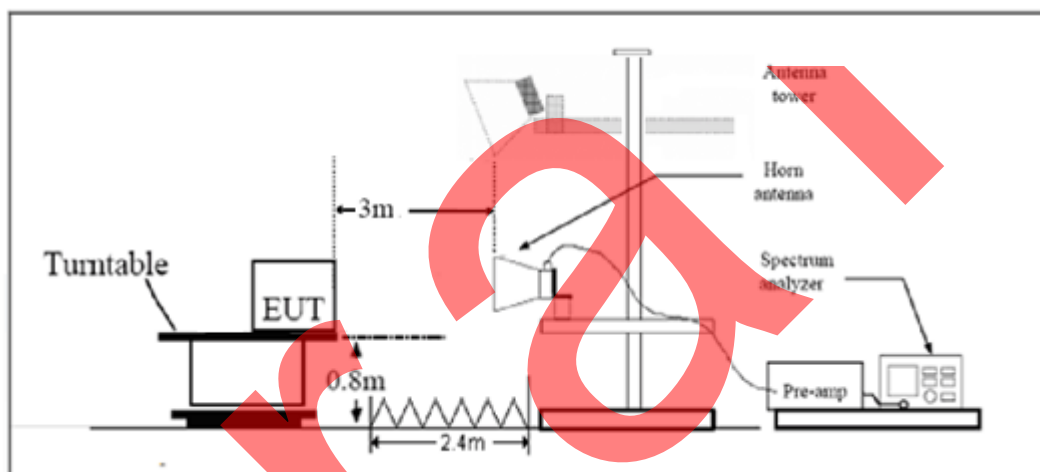
During the test, EUT is connected to a laptop via a USB cable in the case of Transfer Data mode. The EUT is used as the peripheral equipment of the PC. The data is transferred from EUT to PC; PC is connected to server via a long LAN cable.

Test Setup

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 μ 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 th harmonic of the highest frequency or 40GHz, which is lower	54 74	Average Peak

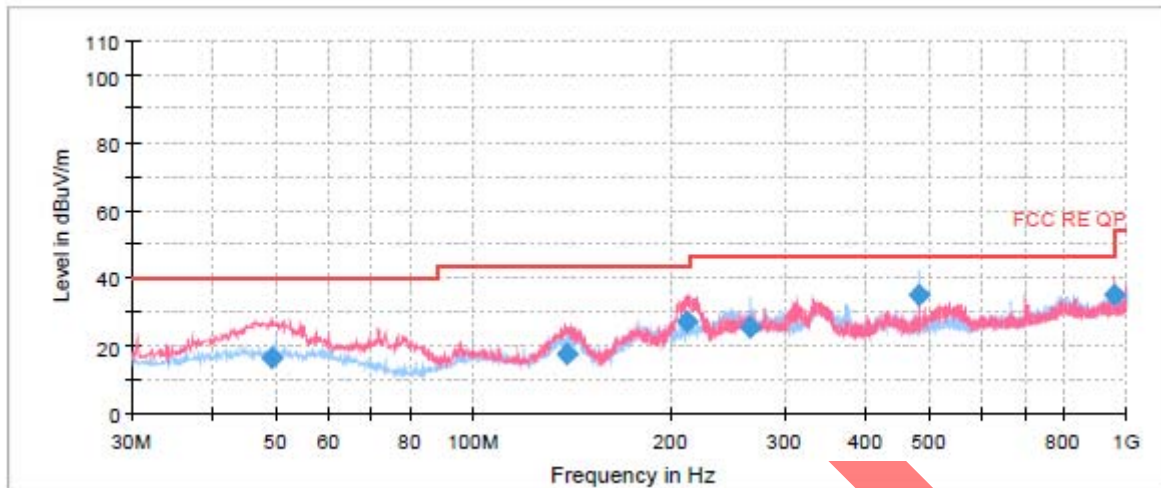
Frequency range of radiated measurements

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

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 – 26.5GHz 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.

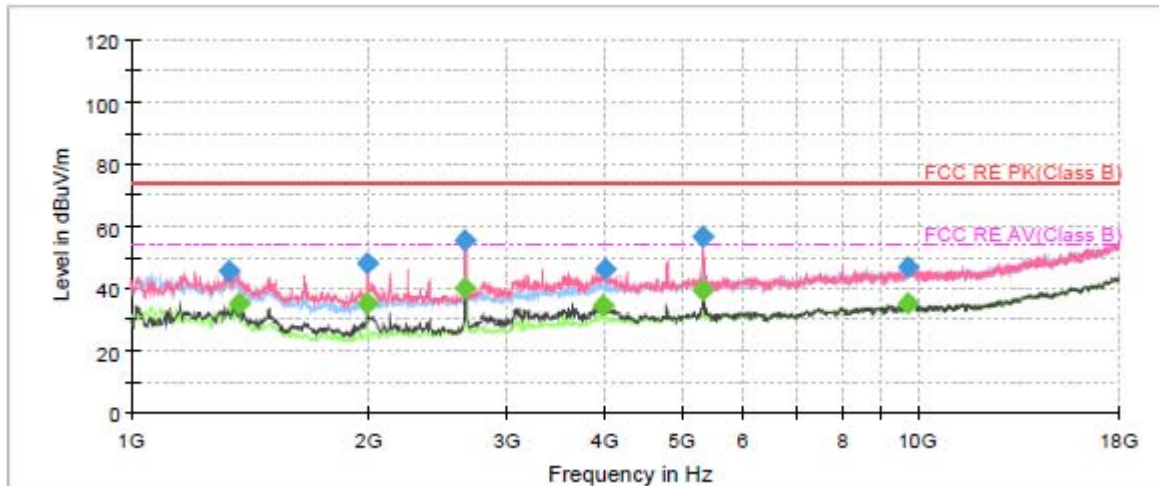


Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
49.112356	16.35	40.00	23.65	100.0	V	51.0	20.6
139.333000	17.26	43.50	26.24	100.0	V	134.0	14.8
211.738750	27.01	43.50	16.49	100.0	V	208.0	17.7
266.262500	25.41	46.00	20.59	125.0	H	92.0	19.6
479.998750	35.20	46.00	10.80	184.0	H	91.0	24.2
959.987500	34.85	46.00	11.15	109.0	V	136.0	30.6

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)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1331.500000	45.74	---	74.00	28.26	500.0	100.0	H	60.0	-16.9
1369.750000	---	34.99	54.00	19.01	500.0	100.0	V	317.0	-16.7
1994.500000	---	35.22	54.00	18.78	500.0	200.0	V	11.0	-13.5
1994.500000	47.91	---	74.00	26.09	500.0	200.0	V	11.0	-13.5
2655.375000	55.18	---	74.00	18.82	500.0	100.0	V	55.0	-10.4
2659.625000	---	39.88	54.00	14.12	500.0	100.0	V	281.0	-10.3
3985.625000	---	34.38	54.00	19.62	500.0	100.0	V	157.0	-5.5
3987.750000	46.46	---	74.00	27.54	500.0	200.0	V	183.0	-5.5
5322.250000	56.32	---	74.00	17.68	500.0	100.0	V	0.0	-2.6
5326.500000	---	39.13	54.00	14.87	500.0	100.0	V	0.0	-2.6
9670.000000	46.89	---	74.00	27.11	500.0	100.0	H	215.0	1.2
9674.250000	---	34.87	54.00	19.13	500.0	100.0	V	34.0	1.2

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

2. Peak Margin = Limit - MAX Peak/ Average

3.2 Conducted Emission

Ambient Condition

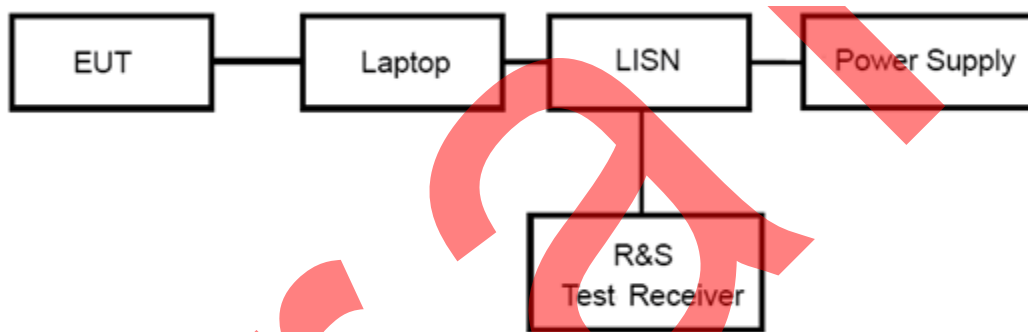
Temperature	Relative humidity
15°C~35°C	30%~60%

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.

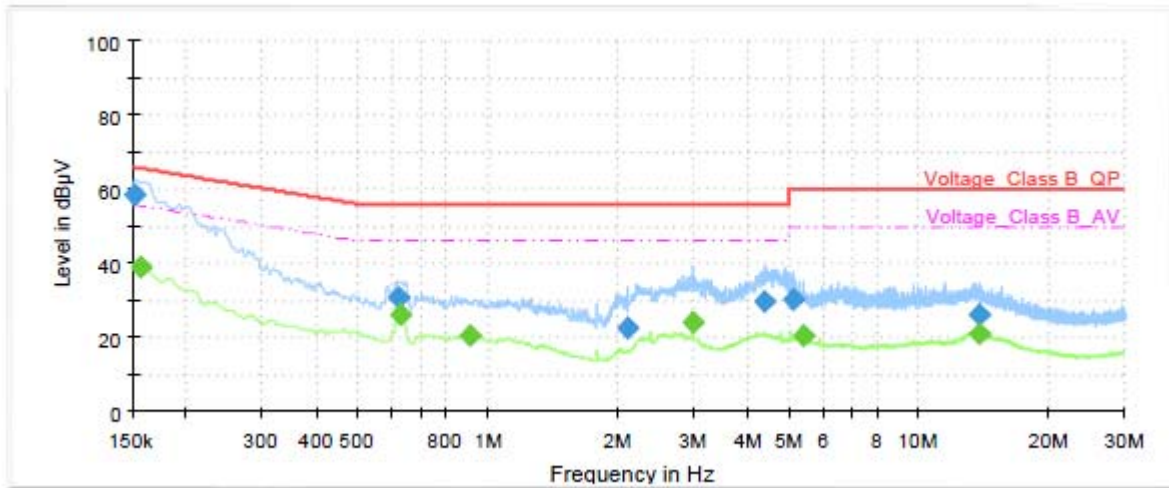
Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

*: Decreases with the logarithm of the frequency.

Test Results

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

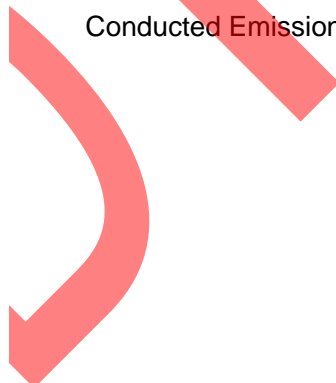


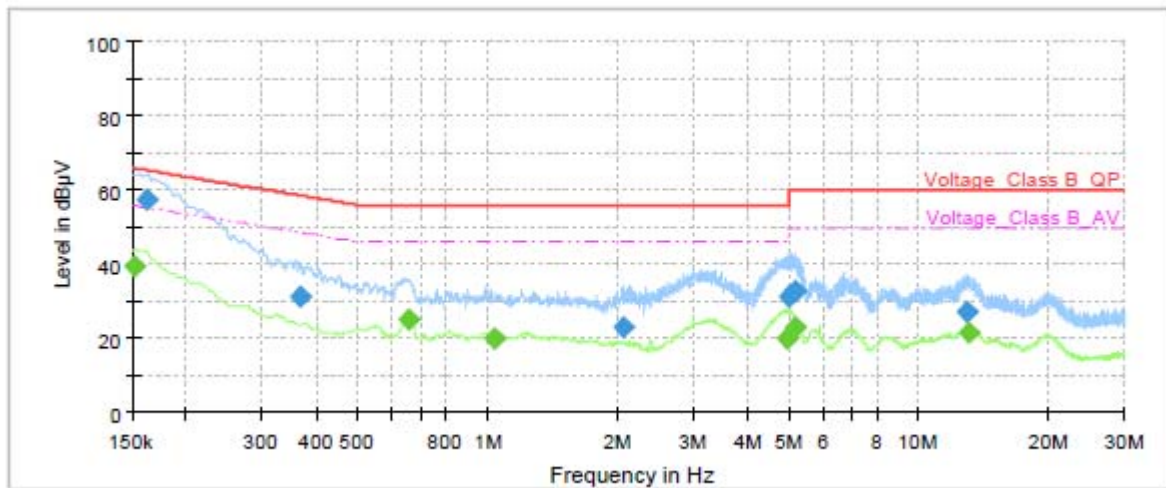
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.15	58.30	---	65.88	7.58	1000.0	9.000	L1	ON	21.0
0.16	---	39.04	55.63	16.59	1000.0	9.000	L1	ON	21.0
0.62	30.78	---	56.00	25.22	1000.0	9.000	L1	ON	20.7
0.63	---	26.39	46.00	19.61	1000.0	9.000	L1	ON	20.7
0.91	---	20.75	46.00	25.25	1000.0	9.000	L1	ON	20.3
2.11	22.80	---	56.00	33.20	1000.0	9.000	L1	ON	19.7
2.99	---	24.24	46.00	21.76	1000.0	9.000	L1	ON	19.6
4.41	29.53	---	56.00	26.47	1000.0	9.000	L1	ON	19.5
5.13	30.13	---	60.00	29.87	1000.0	9.000	L1	ON	19.5
5.38	---	20.72	50.00	29.28	1000.0	9.000	L1	ON	19.5
13.75	---	21.23	50.00	28.77	1000.0	9.000	L1	ON	19.6
13.83	26.21	---	60.00	33.79	1000.0	9.000	L1	ON	19.6

Remark: Correct factor=cable loss + LISN factor

L line

Conducted Emission from 150 KHz to 30 MHz





Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.15	---	39.42	55.88	16.46	1000.0	9.000	N	ON	21.0
0.16	57.68	---	65.40	7.72	1000.0	9.000	N	ON	21.0
0.37	31.30	---	58.54	27.24	1000.0	9.000	N	ON	21.0
0.65	---	25.02	46.00	20.98	1000.0	9.000	N	ON	20.7
1.04	---	19.82	46.00	26.18	1000.0	9.000	N	ON	20.2
2.05	23.07	---	56.00	32.93	1000.0	9.000	N	ON	19.7
4.92	---	20.04	46.00	25.96	1000.0	9.000	N	ON	19.5
4.98	31.16	---	56.00	24.84	1000.0	9.000	N	ON	19.5
5.14	32.97	---	60.00	27.03	1000.0	9.000	N	ON	19.5
5.14	---	23.18	50.00	26.82	1000.0	9.000	N	ON	19.5
12.91	27.37	---	60.00	32.63	1000.0	9.000	N	ON	19.6
13.06	---	21.29	50.00	28.71	1000.0	9.000	N	ON	19.6

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
Conducted Emission	2.57 dB	2

180303

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	101186	2022-05-14	2023-05-13
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1023	2020-05-05	2023-05-04
Horn Antenna	R&S	HF907	102723	2021-07-24	2024-07-23
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Software	R&S	EMC32	9.26.01	/	/
Conducted Emission					
Artificial main network	R&S	ENV216	101171	2022-12-10	2024-12-09
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.

