



EMC TEST REPORT

Applicant Mobiwire SAS
FCC ID QPN-MOBIPHONE
Product 3G Feature Phone
Brand Altice
Model H30
Report No. R1907A0371-E2
Issue Date August 5, 2019

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC Code CFR47 Part15B (2018)/ 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.

Wei Liu

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Summary of measurement results

Number	Test Case	Clause in FCC Rules	Conclusion
1	Radiated Emission	15.109, ANSI C63.4-2014	PASS
2	Conducted Emission	15.107, ANSI C63.4-2014	PASS
Test Date: July 18, 2019			

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

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

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 electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

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



1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
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E-mail: xukai@ta-shanghai.com

2 General Description of Equipment under Test

2.1 Client Information

Applicant	Mobiwire SAS
Applicant address	79 avenue Francois Arago, 92000 NANTERRE France
Manufacturer	Mobiwire SAS
Manufacturer address	79 avenue Francois Arago, 92000 NANTERRE France

2.2 General information

EUT Description			
Device Type:	Portable Device		
Model:	H30		
IMEI:	863336040007480		
HW Version:	V01		
SW Version:	NL185_H30_ODO_S_L_V01_20190628_MP		
Antenna Type:	Internal Antenna		
Frequency:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824 ~ 849	869 ~ 894
	GSM 1900	1850 ~ 1910	1930 ~ 1990
Modulation:	GSM: GMSK GPRS: GMSK EGPRS: GMSK/8PSK		
EUT Accessory			
Adapter	Manufacturer: Dongguan Aohai Aohai Power Power Technology Co., Ltd Model: A31A-050055U-US1		
Battery	Manufacturer: Shenzhen Aerospace Electronic Co.,Ltd. Model: 178100170 Power Rating: DC 3.7V, 1000mAh, Li-ion		
Charging cradle	Manufacturer: SAGETEL HK Model: H30		
Note: The information of the EUT is declared by the manufacturer.			



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(2018)

ANSI C63.4 (2014)

2.4 Test Mode

Test Mode	
Mode 1:	Adapter +charging cradle+Idle
Mode 2:	Adapter +charging cradle+ Traffic

During the test, the preliminary test was performed in all modes with all frequency bands (GSM), mode 1(Adapter +charging cradle+Idle) 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
24°C~26°C	45%~50%	102.5kPa

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:

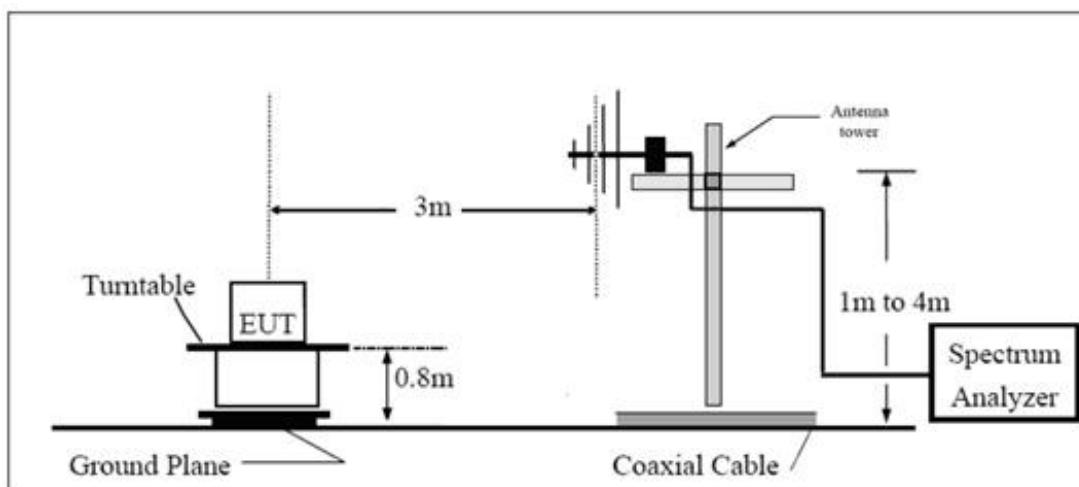
(a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO

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

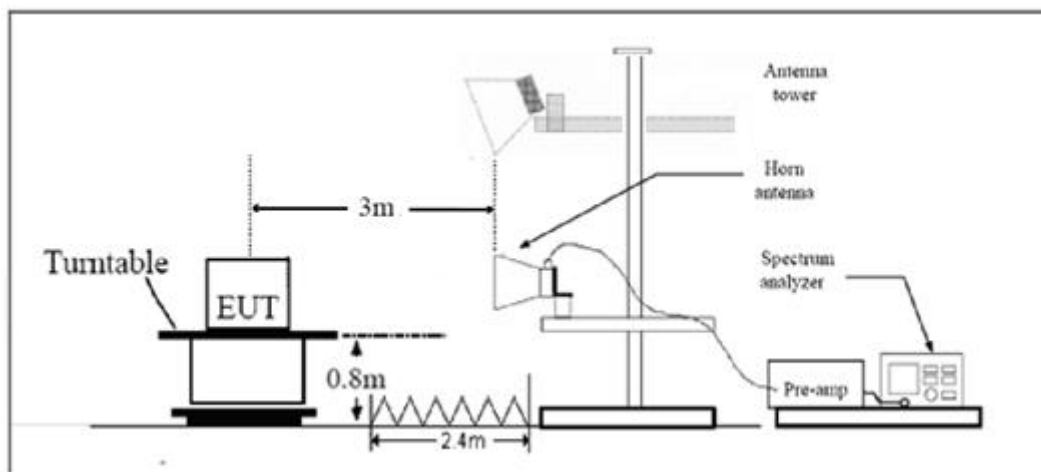
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

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

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

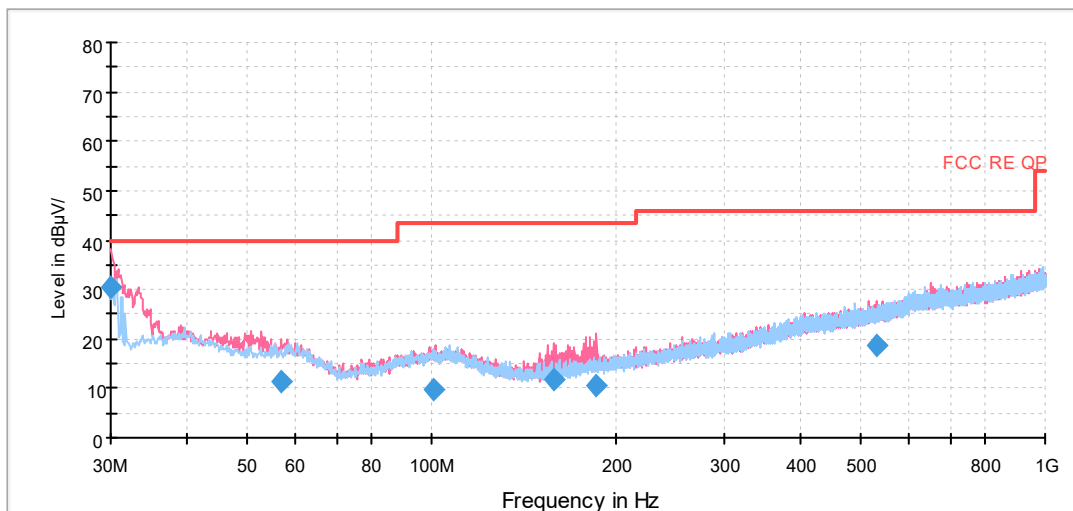
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U=3.704$ dB.

Test Results

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.

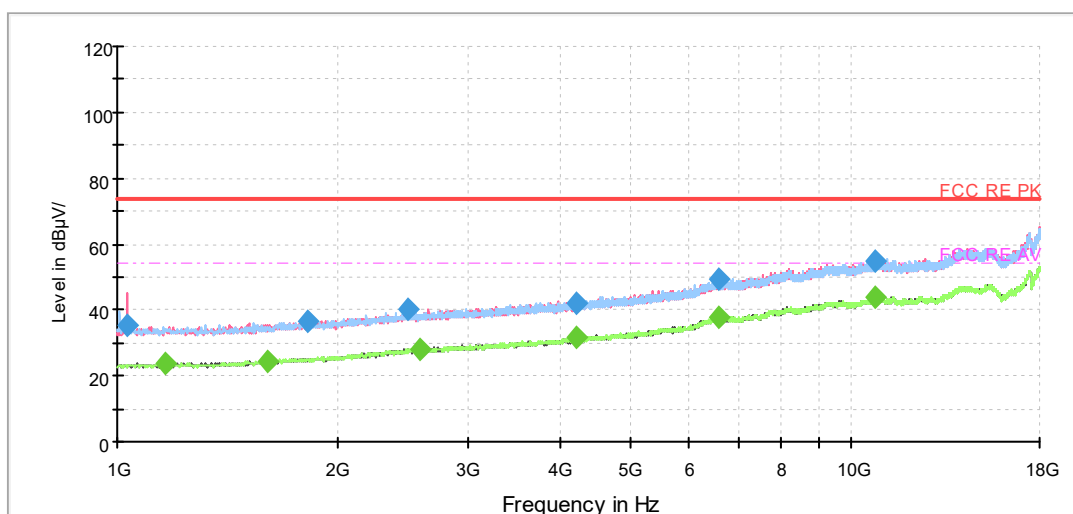
Variant



Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.000000	30.5	125.0	V	346.0	14.2	9.5	40.0
56.837500	11.5	175.0	V	247.0	13.9	28.5	40.0
100.775000	9.9	125.0	V	0.0	13.4	33.6	43.5
158.721250	11.9	100.0	V	304.0	10.0	31.6	43.5
185.327500	10.4	100.0	V	0.0	11.3	33.1	43.5
531.495000	18.9	189.0	V	125.0	21.7	27.1	46.0

- Remark: 1. Quasi-Peak = Reading value + Correction factor
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
3. Margin = Limit –Quasi-Peak



Radiated Emission from 1GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1032.718750	35.2	200.0	V	97.0	-11.7	38.8	74.0
1813.698750	36.7	200.0	V	250.0	-9.3	37.3	74.0
2491.101250	40.3	100.0	V	175.0	-6.4	33.7	74.0
4203.068750	42.3	200.0	H	149.0	-2.2	31.7	74.0
6566.681250	49.1	200.0	V	0.0	5.0	24.9	74.0
10779.407500	54.9	100.0	H	5.0	13.4	19.1	74.0

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1165.480000	23.8	200.0	H	252.0	-11.3	30.2	54.0
1600.108750	24.6	100.0	V	346.0	-10.0	29.4	54.0
2588.605000	28.2	200.0	H	318.0	-6.2	25.8	54.0
4225.577500	31.5	100.0	V	298.0	-2.1	22.5	54.0
6598.903750	37.8	100.0	V	0.0	5.0	16.2	54.0
10764.675000	43.7	100.0	H	1.0	13.4	10.3	54.0

3.2 Conducted Emission

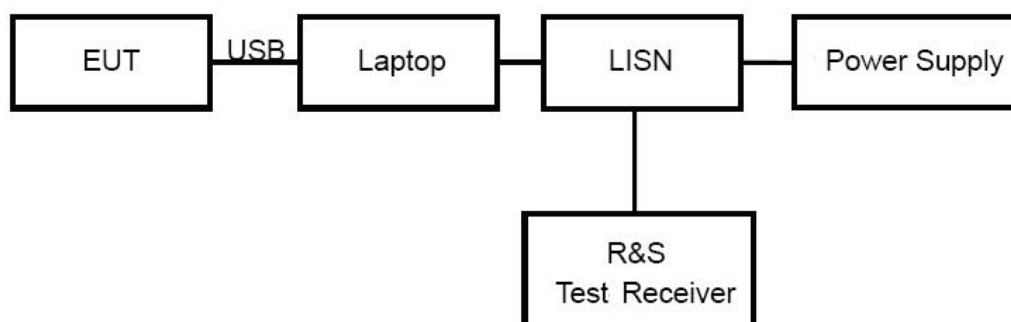
Ambient condition

Temperature	Relative humidity	Pressure
24°C ~26°C	50%~55%	102.5kPa

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.

Test Setup



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

Limits

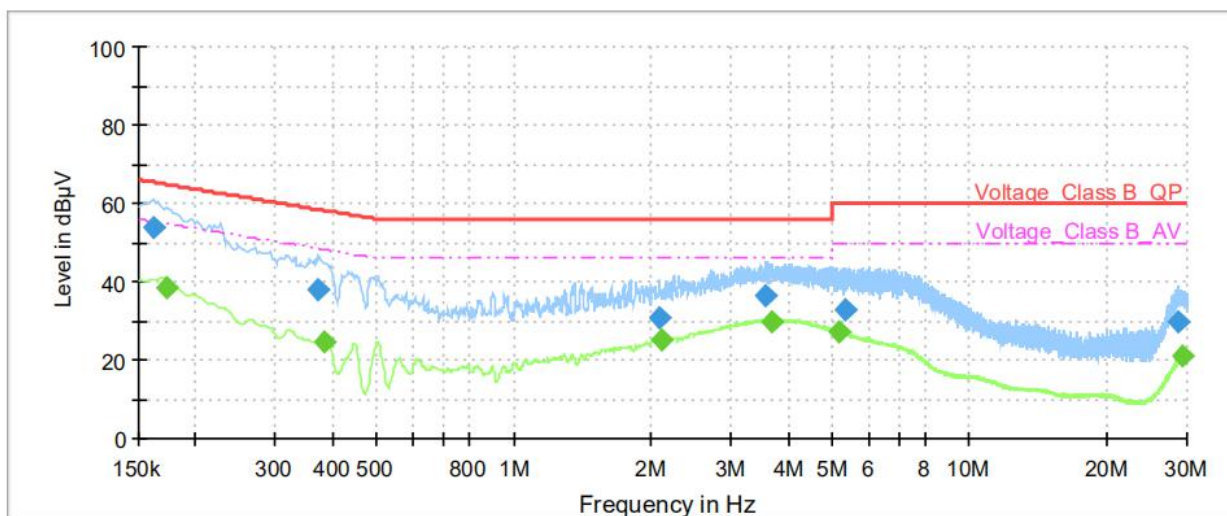
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$. $U = 2.57$ dB.

Test Results

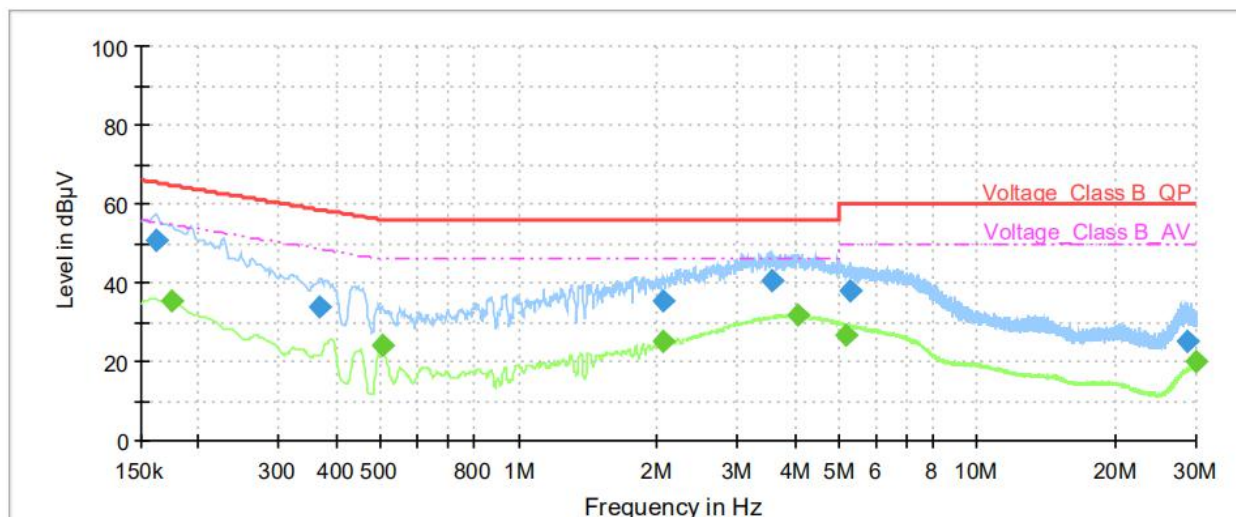
Following plots, Blue trace uses the peak detection; Green trace uses the average detection.



Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.16	53.78	---	65.40	11.62	1000.0	9.000	L1	ON	19.13
0.17	---	38.29	54.84	16.55	1000.0	9.000	L1	ON	19.15
0.37	37.94	---	58.44	20.50	1000.0	9.000	L1	ON	19.21
0.38	---	24.43	48.19	23.76	1000.0	9.000	L1	ON	19.23
2.09	30.70	---	56.00	25.30	1000.0	9.000	L1	ON	19.09
2.12	---	25.03	46.00	20.97	1000.0	9.000	L1	ON	19.08
3.57	36.39	---	56.00	19.61	1000.0	9.000	L1	ON	19.07
3.70	---	29.98	46.00	16.02	1000.0	9.000	L1	ON	19.07
5.16	---	27.06	50.00	22.94	1000.0	9.000	L1	ON	19.09
5.36	32.80	---	60.00	27.20	1000.0	9.000	L1	ON	19.10
28.73	29.52	---	60.00	30.48	1000.0	9.000	L1	ON	19.83
29.31	---	21.22	50.00	28.78	1000.0	9.000	L1	ON	19.84

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)
0.16	50.73	---	65.40	14.67	1000.0	9.000	N	ON	19.15
0.17	---	35.33	54.73	19.40	1000.0	9.000	N	ON	19.16
0.37	33.82	---	58.54	24.72	1000.0	9.000	N	ON	19.20
0.50	---	24.08	46.00	21.92	1000.0	9.000	N	ON	19.23
2.06	35.20	---	56.00	20.80	1000.0	9.000	N	ON	19.11
2.07	---	25.18	46.00	20.82	1000.0	9.000	N	ON	19.10
3.58	40.50	---	56.00	15.50	1000.0	9.000	N	ON	19.07
4.06	---	31.84	46.00	14.16	1000.0	9.000	N	ON	19.06
5.18	---	26.53	50.00	23.47	1000.0	9.000	N	ON	19.09
5.27	37.83	---	60.00	22.17	1000.0	9.000	N	ON	19.09
28.73	24.94	---	60.00	35.06	1000.0	9.000	N	ON	19.69
29.94	---	19.97	50.00	30.03	1000.0	9.000	N	ON	19.68

N line

Conducted Emission from 150 KHz to 30 MHz

4 Main Test Instrument

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Time
Spectrum Analyzer	R&S	FSV40	15195-01-00	2019-05-19	2020-05-18
EMI Test Receiver	R&S	ESCI	100948	2019-05-19	2020-05-18
Trilog Antenna	SCHWARZBECK	VULB 9163	9163-201	2017-11-18	2019-11-17
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Standard Gain Horn	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Bore Sight Antenna mast	ETS	2171B	00058752	/	/
Test software	EMC32	R&S	9.26.0	/	/

ANNEX A: The EUT Appearance and Test Configuration

A.1 EUT Appearance



Front Side



Back Side

a: EUT



b: Adapter

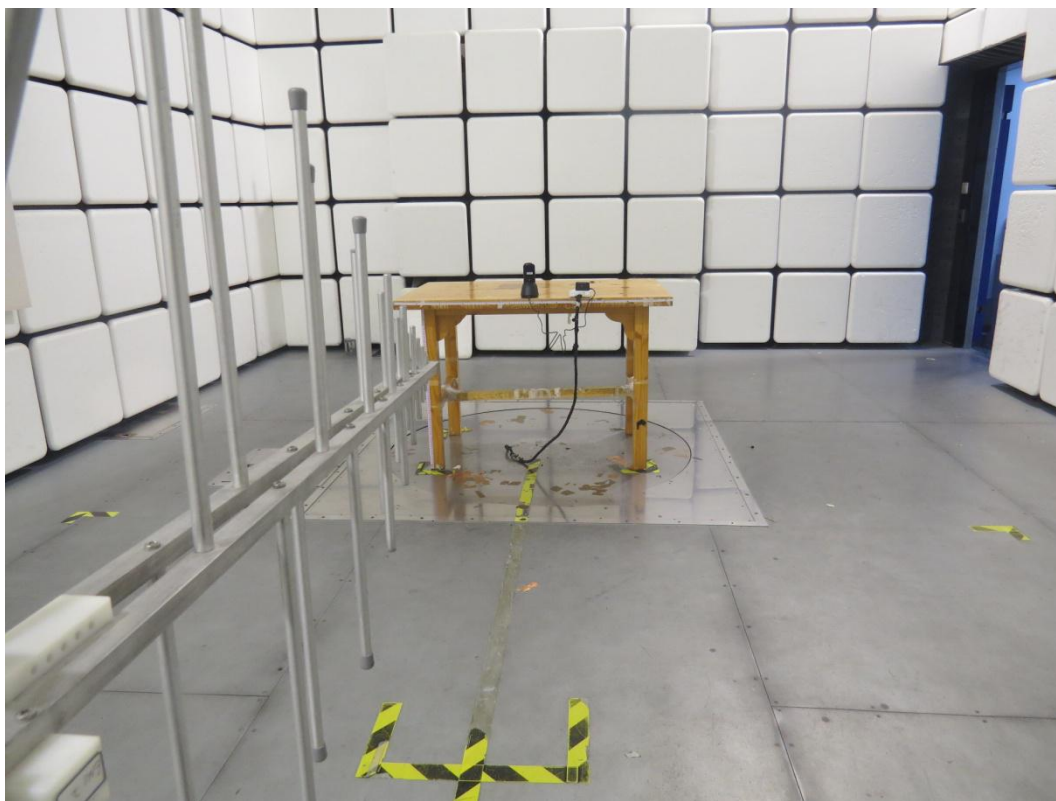


c: Charging cradle

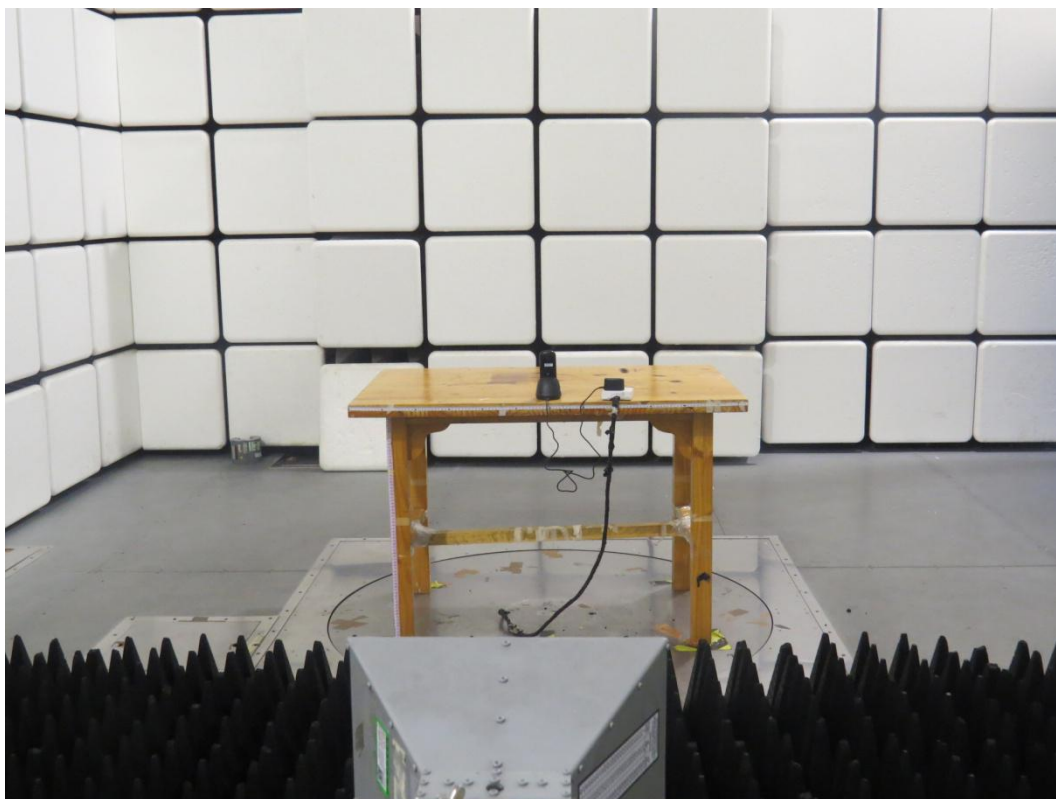


d: Battery
Picture 1EUT

A.2 Test Setup

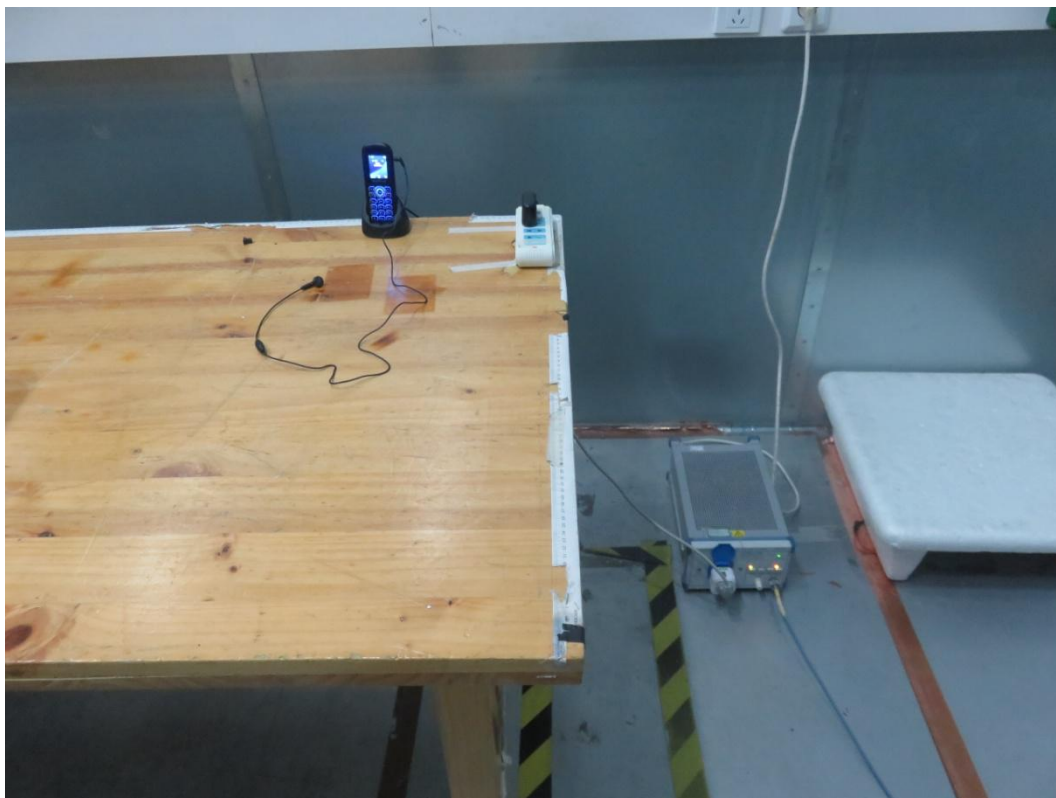


a: Below 1GHz



b: Above 1GHz

Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup