

EMC Test Report

Applicant : Mid Ocean Brands B.V.

Address : 7/F., Kings Tower, 111 King Lam Street, Cheung
Sha Wan, Kowloon, Hong Kong

Product Name : 3 in 1 Plug Adapter with Cable

Report Date : Jan. 04, 2024

Shenzhen Anbotech Compliance Laboratory Limited



Shenzhen Anbotech Compliance Laboratory Limited

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel: (86) 0755-26066440 Fax: (86) 0755-26014772 Email: service@anbotech.com



Hotline

400-003-0500

www.anbotech.com.cn



Contents

1. General Information	4
1.1. Client Information	4
1.2. Description of Device (EUT)	4
1.3. Auxiliary Equipment Used During Test	4
1.4. Description of Test Modes	5
1.5. Measurement Uncertainty	5
1.6. Test Summary	5
1.7. Description of Test Facility	6
1.8. EMS Performance Criteria	7
1.9. Test Equipment List	8
2. Conducted emissions from AC mains power ports (150kHz-30MHz)	10
2.1. EUT Operation	10
2.2. Test Setup	10
2.3. Test Data	11
3. Radiated emissions (30MHz-1GHz)	13
3.1. EUT Operation	13
3.2. Test Setup	13
3.3. Test Data	14
4. Electrostatic discharges	16
4.1. EUT Operation	16
4.2. Test Setup	16
4.3. Test Data	17
5. RF electromagnetic field disturbances	18
5.1. EUT Operation	18
5.2. Test Setup	18
5.3. Test Data	19
APPENDIX I -- TEST SETUP PHOTOGRAPH	20
APPENDIX II -- Photo documentation	22



Report No.: 18230EC30246501

Page 3 of 24

TEST REPORT

Applicant : Mid Ocean Brands B.V.
Manufacturer : Mid Ocean Brands B.V.
Product Name : 3 in 1 Plug Adapter with Cable
Model No. : MO9654
Trade Mark : N/A
Rating(s) : Support maximum 2.0A current in 5V voltage
Test Standard(s) : EN 55032:2015+A1:2020
EN 55035:2017+A11:2020

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with above listed standard(s) requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt:

Nov. 13, 2023

Date of Test:

Nov. 13, 2023 to Nov. 21, 2023

Prepared By:

We Zeng

(We Zeng)

Approved & Authorized Signer:

KingKong Jin

(KingKong Jin)

Shenzhen Anbotek Compliance Laboratory Limited

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel: (86)0755-26066440 Fax: (86)0755-26014772 Email: service@anbotek.com



Hotline
400-003-0500
www.anbotek.com.cn



1. General Information

1.1. Client Information

Applicant	:	Mid Ocean Brands B.V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Manufacturer	:	Mid Ocean Brands B.V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Factory	:	Mid Ocean Brands B.V.
Address	:	7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

1.2. Description of Device (EUT)

Product Name	:	3 in 1 Plug Adapter with Cable
Model No.	:	MO9654
Trade Mark	:	N/A
Test Power Supply	:	DC 5V via adapter
Test Sample No.	:	1-1-1
Adapter	:	N/A
Remark: (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. (2) As specified by the client, all the results in this report were quoted from report 18230EC30214201, test model: CB300M.		

1.3. Auxiliary Equipment Used During Test

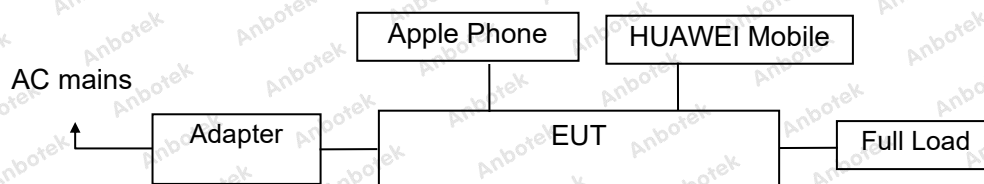
Title	Manufacturer	Model No.	Serial No.
Xiaomi 33W adapter	Xiaomi	MDY-11-EX	SA62212LA04358J
HUAWEI Mobile	HUAWEI	JAT-AL00	TMENW19925001206
Apple Phone	Apple	iPhone 12	DNPDJC7T0DYF



1.4. Description of Test Modes

Pretest Modes	Descriptions
TM1	charging mode

For Mode 1 Block Diagram of Test Setup



1.5. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.4dB
Radiated emissions (30MHz~1000MHz)	Horizontal: 3.96dB; Vertical: 4.60dB
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.6. Test Summary

Test Items	Test Modes	Status
Conducted emissions from AC mains power ports (150kHz-30MHz)	Mode1	P
Radiated emissions (30MHz-1GHz)	Mode1	P
Electrostatic discharges	Mode1	P
RF electromagnetic field disturbances	Mode1	P
Note: P: Pass N: N/A, not applicable		



Report No.: 18230EC30246501

Page 6 of 24

1.7. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.:434132

Shenzhen Anbotech Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 434132.

ISED-Registration No.: 8058A

Shenzhen Anbotech Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotech Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

Shenzhen Anbotech Compliance Laboratory Limited

Address:1/F.,Building D,Sogood Science and Technology Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86)0755-26066440 Fax:(86)0755-26014772 Email:service@anbotech.com



Hotline
400-003-0500
www.anbotech.com.cn



1.8. EMS Performance Criteria

General Performance Criteria

Performance Criteria A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance Criteria B

During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance.

If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance Criteria C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed.

Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.



1.9. Test Equipment List**Conducted emissions from AC mains power ports (150kHz-30MHz)**

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	2023-10-12	2024-10-11
2	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040D T001	2023-07-05	2024-07-04
3	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	2023-10-12	2024-10-11
4	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	/	/

Radiated emissions (30MHz-1GHz)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	2023-10-12	2024-10-11
2	Pre-amplifier	Schwarzbeck	BBV-9745	9745-075	2023-10-12	2024-10-11
3	Bilog Broadband Antenna	SCHWARZBECK	VULB 9163	01109	2022-10-16	2025-10-15
4	Software Name EZ-EMC	Farad Technology	EMEC-3A1	N/A	/	/

Electrostatic discharges

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	ESD Simulators	emtest	ESD NX30.1	11936	2023-03-17	2024-03-16



RF electromagnetic field disturbances						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	Signal Generator	Agilent	N5181A	MY50143107	2023-04-20	2024-04-19
2	Power Meter	Agilent	E4417A	MY45101384	2023-04-20	2024-04-19
3	Amplifier	Micotop	MPA-80-1000-600	MPA2110318	2023-04-20	2024-04-19
4	Amplifier	Micotop	MPA-1000-6000-100	MPA2110327	2023-04-20	2024-04-19
5	Log.-Per.-Antenna	Schwarzbeck	VULP 9118E	01012	/	/
6	Microwave Log.-Per. Antenna	Schwarzbeck	STLP 9149	00788	/	/
7	Power Sensor	KEYSIGHT	E9323A	US40410647	2023-04-20	2024-04-19
8	Power Sensor	KEYSIGHT	E9323A	MY53100007	2023-04-20	2024-04-19
9	Electric field Probe	Narda S.T.S /PMM	EP 601	811ZX10351	2023-04-20	2024-04-19
10	Software	EMtrace	EM 3	/	/	/



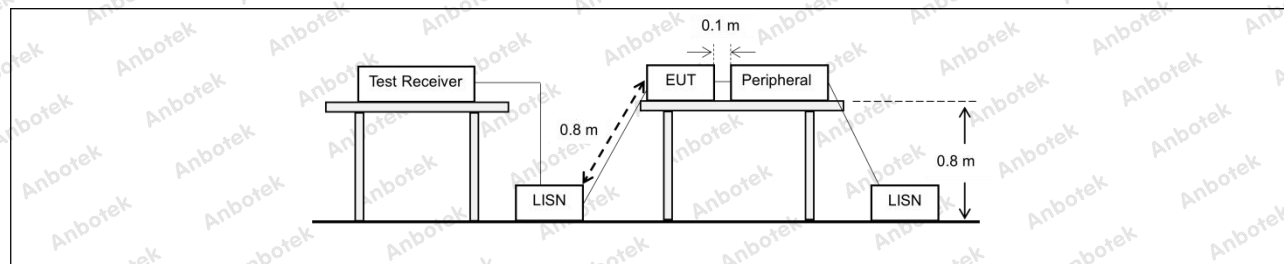
2. Conducted emissions from AC mains power ports (150kHz-30MHz)

Test Requirement:	Class B		
Test Limit:	Frequency Range	Limit (Quasi-Peak)	Limit (Average)
	0.15MHz to 0.5MHz	66dB(μV) to 56dB(μV)	56dB(μV) to 46dB(μV)
	0.5MHz to 5MHz	56dB(μV)	46dB(μV)
	5MHz to 30MHz	60dB(μV)	50dB(μV)
	Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz	
Test Method:	Clause 7 of CISPR 16-2-1:2014/AMD1:2017		
Procedure:	An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor		

2.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: charging mode

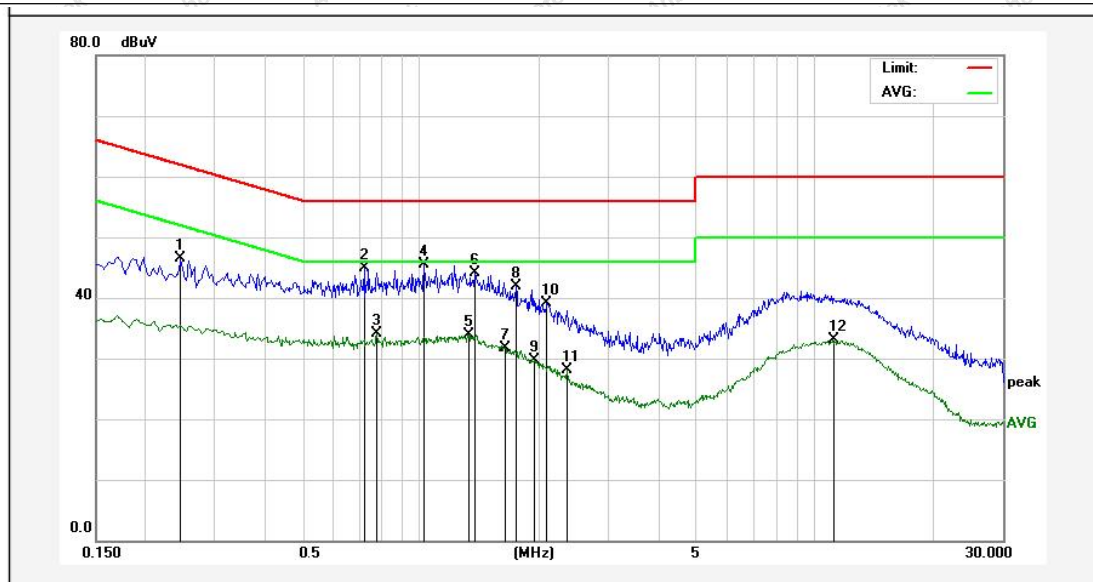
2.2. Test Setup



2.3. Test Data

Temperature:	21.4 °C	Humidity:	54.3 %	Atmospheric Pressure:	101 kPa
--------------	---------	-----------	--------	-----------------------	---------

TM1 / Line: Line



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.2460	26.74	19.82	46.56	61.89	-15.33	QP	
2	0.7220	25.04	19.87	44.91	56.00	-11.09	QP	
3	0.7780	14.29	19.87	34.16	46.00	-11.84	AVG	
4	1.0220	25.57	19.86	45.43	56.00	-10.57	QP	
5	1.3300	14.13	19.86	33.99	46.00	-12.01	AVG	
6	1.3740	24.32	19.86	44.18	56.00	-11.82	QP	
7	1.6380	11.86	19.85	31.71	46.00	-14.29	AVG	
8	1.7500	21.95	19.86	41.81	56.00	-14.19	QP	
9	1.9460	9.79	19.85	29.64	46.00	-16.36	AVG	
10	2.0980	19.25	19.85	39.10	56.00	-16.90	QP	
11	2.3500	8.24	19.85	28.09	46.00	-17.91	AVG	
12	11.1780	13.04	20.01	33.05	50.00	-16.95	AVG	



Report No.: 18230EC30246501

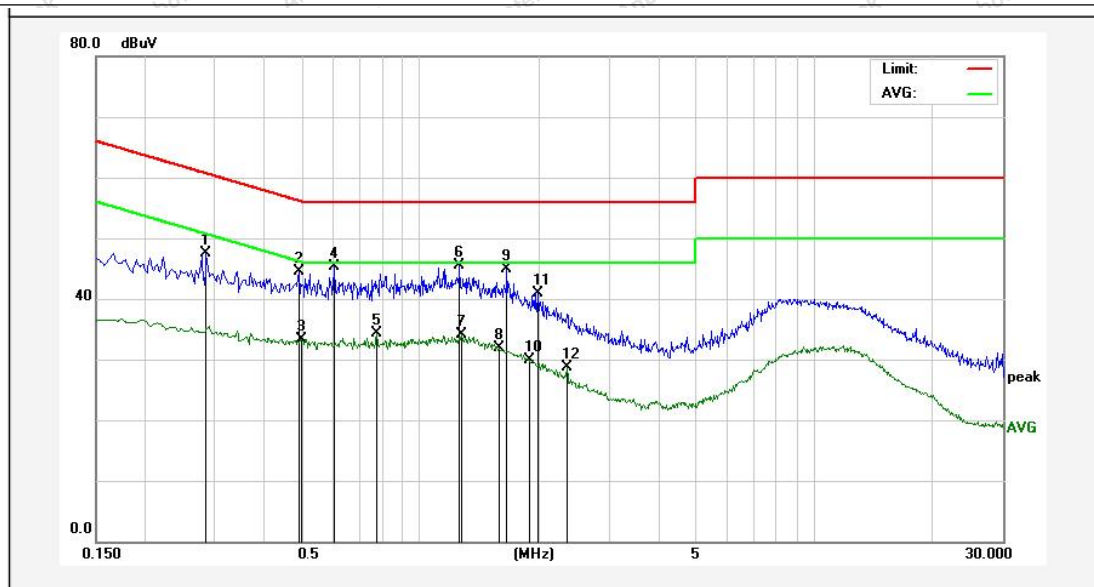
Page 12 of 24

Temperature: 21.4 °C

Humidity: 54.3 %

Atmospheric Pressure: 101 kPa

TM1 / Line: Neutral



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.2860	27.73	19.84	47.57	60.64	-13.07	QP	
2	0.4900	24.56	19.86	44.42	56.17	-11.75	QP	
3	0.4980	13.51	19.86	33.37	46.03	-12.66	AVG	
4	0.6060	25.53	19.87	45.40	56.00	-10.60	QP	
5	0.7780	14.48	19.87	34.35	46.00	-11.65	AVG	
6	1.2579	25.69	19.86	45.55	56.00	-10.45	QP	
7	1.2700	14.31	19.86	34.17	46.00	-11.83	AVG	
8	1.5859	12.08	19.85	31.93	46.00	-14.07	AVG	
9	1.6620	25.04	19.85	44.89	56.00	-11.11	QP	
10	1.8900	10.13	19.85	29.98	46.00	-16.02	AVG	
11	1.9860	21.11	19.85	40.96	56.00	-15.04	QP	
12	2.3500	8.84	19.85	28.69	46.00	-17.31	AVG	



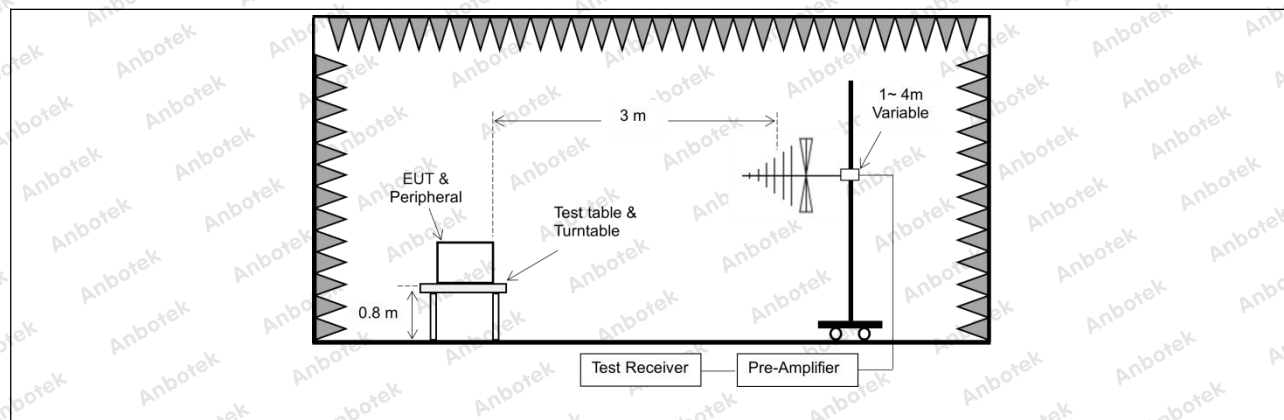
3. Radiated emissions (30MHz-1GHz)

Test Requirement:	Class B		
Test Limit:	Frequency (MHz)	Limit [dB(uV/m) at 10m]	Limit [dB(uV/m) at 3m]
	30 to 230	30	40
	230 to 1000	37	47
	Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz	
Test Method:	Clause 7.3 of CISPR 16-2-3:2016		
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor		

3.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: charging mode

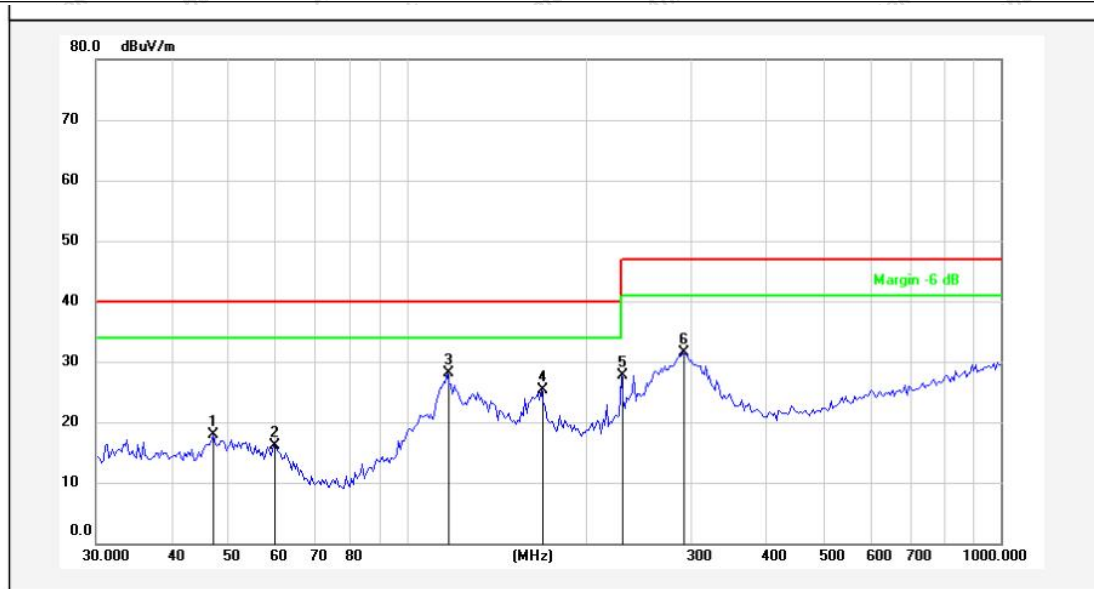
3.2. Test Setup



3.3. Test Data

Temperature:	24.2 °C	Humidity:	52 %	Atmospheric Pressure:	101 kPa
--------------	---------	-----------	------	-----------------------	---------

TM1 / Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	47.3255	35.08	-17.08	18.00	40.00	-22.00	QP			
2	60.0691	33.86	-17.73	16.13	40.00	-23.87	QP			
3	116.9495	47.28	-19.16	28.12	40.00	-11.88	QP			
4	168.4138	45.30	-20.04	25.26	40.00	-14.74	QP			
5	229.2931	44.59	-16.94	27.65	40.00	-12.35	QP			
6	291.0360	46.60	-15.07	31.53	47.00	-15.47	QP			



Report No.: 18230EC30246501

Page 15 of 24

Temperature: 24.2 °C

Humidity: 52 %

Atmospheric Pressure: 101 kPa

TM1 / Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	34.2760	43.68	-18.04	25.64	40.00	-14.36	QP			
2	47.3255	43.99	-17.08	26.91	40.00	-13.09	QP			
3	57.9993	43.39	-17.59	25.80	40.00	-14.20	QP			
4	116.9495	53.92	-19.16	34.76	40.00	-5.24	QP			
5	133.6188	52.44	-21.01	31.43	40.00	-8.57	QP			
6	291.0360	46.60	-15.07	31.53	47.00	-15.47	QP			



Test Requirement:	Contact Discharge: +/- 4kV Air Discharge: +/- 8kV
Test Method:	EN 61000-4-2: 2009
Procedure:	Discharge Impedance: 330Ω/150pF Number of Discharge: Minimum 10 times at each test point Discharge Mode: Single Discharge Discharge Period: 1 second minimum
Performance Criteria:	B

Operating Environment:	
Test mode:	1: TM1: charging mode



4.3. Test Data

Temperature:	22.7 °C	Humidity:	43 %	Atmospheric Pressure:	101 kPa
--------------	---------	-----------	------	-----------------------	---------

Discharge type	Volt (kV)	Polarity	Test Point	Result/ Observations
Air discharge	2,4,8	+	1	A
Air discharge	2,4,8	-	1	A
Contact discharge	4	+	2	A
Contact discharge	4	-	2	A
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

Test Point: 1. All insulated enclosure and seams.

2. All accessible metal parts of the enclosure.

3. All side.

A: No degradation in the performance of the EUT was observed.



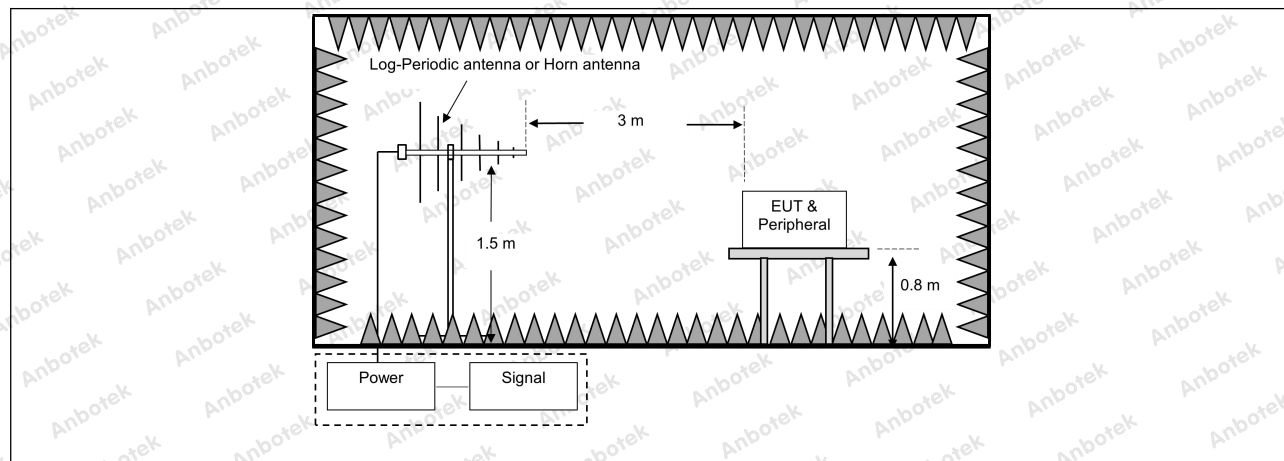
5. RF electromagnetic field disturbances

Test Requirement:	3V/m, 80%, 1kHz Amp. Mod.
Test Method:	EN IEC 61000-4-3: 2020
Procedure:	Frequency Range: 80MHz to 1GHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz Antenna Polarisation: Vertical and Horizontal Modulation: 1kHz, 80% Amp. Mod, 1% increment
Performance Criteria:	A

5.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: charging mode

5.2. Test Setup



5.3. Test Data

Temperature:	23.8 °C	Humidity:	42 %	Atmospheric Pressure:	101 kPa
--------------	---------	-----------	------	-----------------------	---------

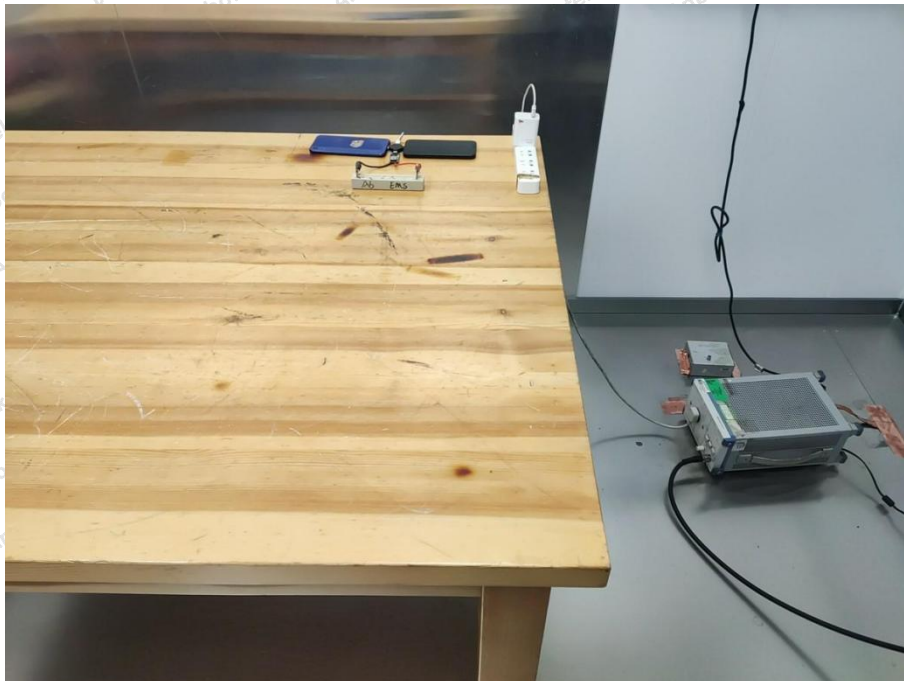
Frequency	Field Strength (V/m)	EUT face	Dwell time	Result/ Observations
80MHz-1GHz	3	Front	3s	A
80MHz-1GHz	3	Back	3s	A
80MHz-1GHz	3	Left	3s	A
80MHz-1GHz	3	Right	3s	A
80MHz-1GHz	3	Top	3s	A
80MHz-1GHz	3	Bottom	3s	A
1800MHz	3	Front	3s	A
1800MHz	3	Back	3s	A
1800MHz	3	Left	3s	A
1800MHz	3	Right	3s	A
1800MHz	3	Top	3s	A
1800MHz	3	Bottom	3s	A
2600MHz	3	Front	3s	A
2600MHz	3	Back	3s	A
2600MHz	3	Left	3s	A
2600MHz	3	Right	3s	A
2600MHz	3	Top	3s	A
2600MHz	3	Bottom	3s	A
3500MHz	3	Front	3s	A
3500MHz	3	Back	3s	A
3500MHz	3	Left	3s	A
3500MHz	3	Right	3s	A
3500MHz	3	Top	3s	A
3500MHz	3	Bottom	3s	A
5000MHz	3	Front	3s	A
5000MHz	3	Back	3s	A
5000MHz	3	Left	3s	A
5000MHz	3	Right	3s	A
5000MHz	3	Top	3s	A
5000MHz	3	Bottom	3s	A

A: No degradation in the performance of the EUT was observed.

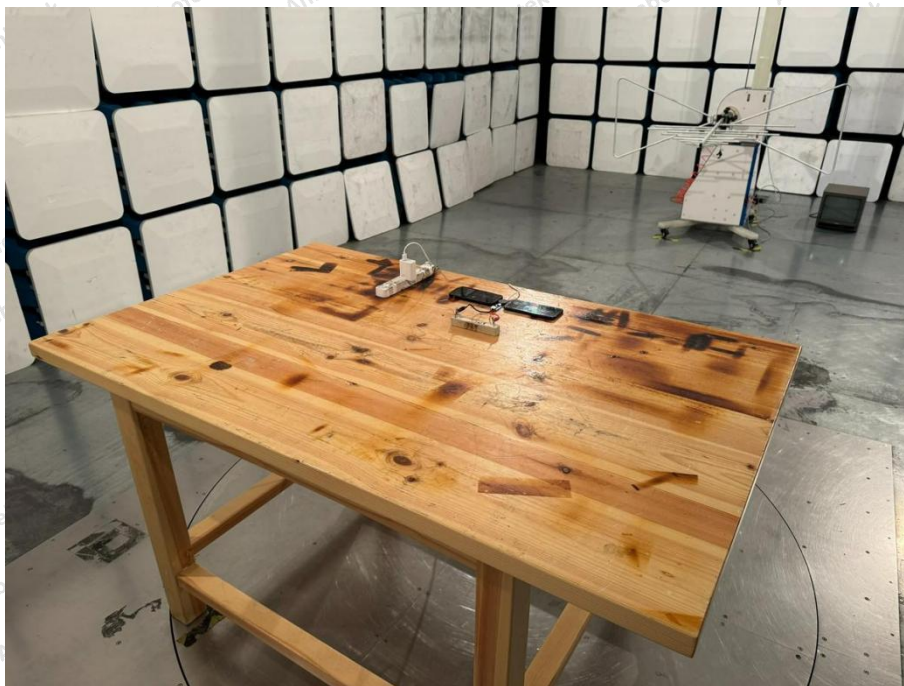


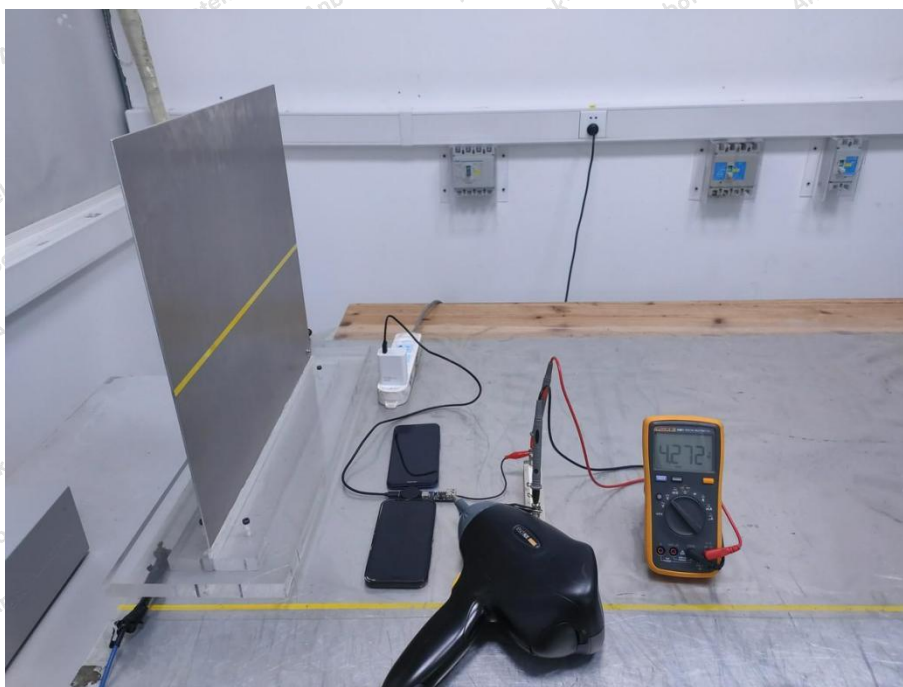
APPENDIX I -- TEST SETUP PHOTOGRAPH

Conducted emissions from AC mains power ports (150kHz-30MHz)



Radiated emissions (30MHz-1GHz)



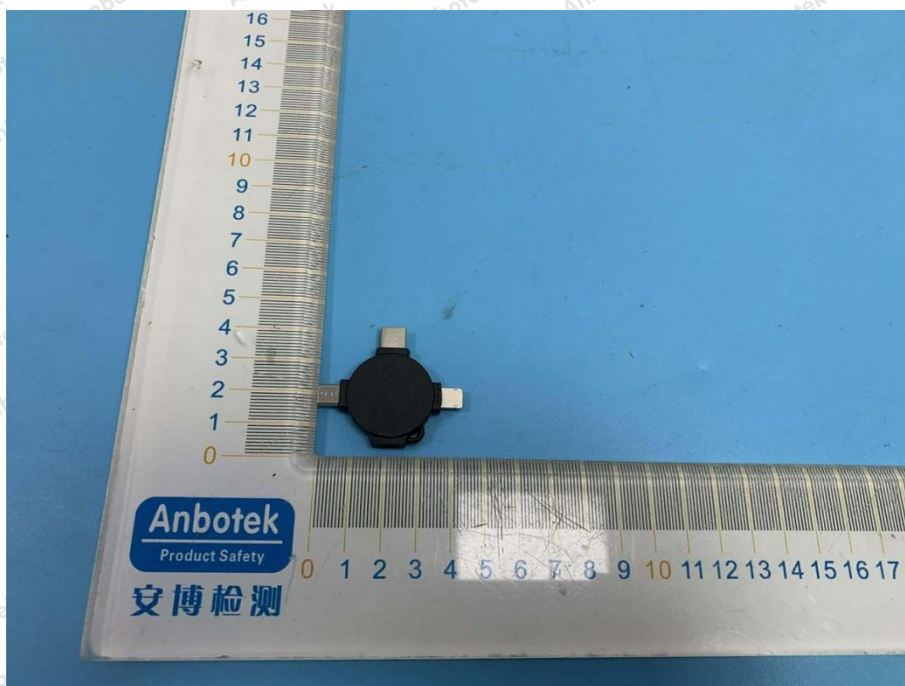
Electrostatic discharges**RF electromagnetic field disturbances****Shenzhen Anbotek Compliance Laboratory Limited**

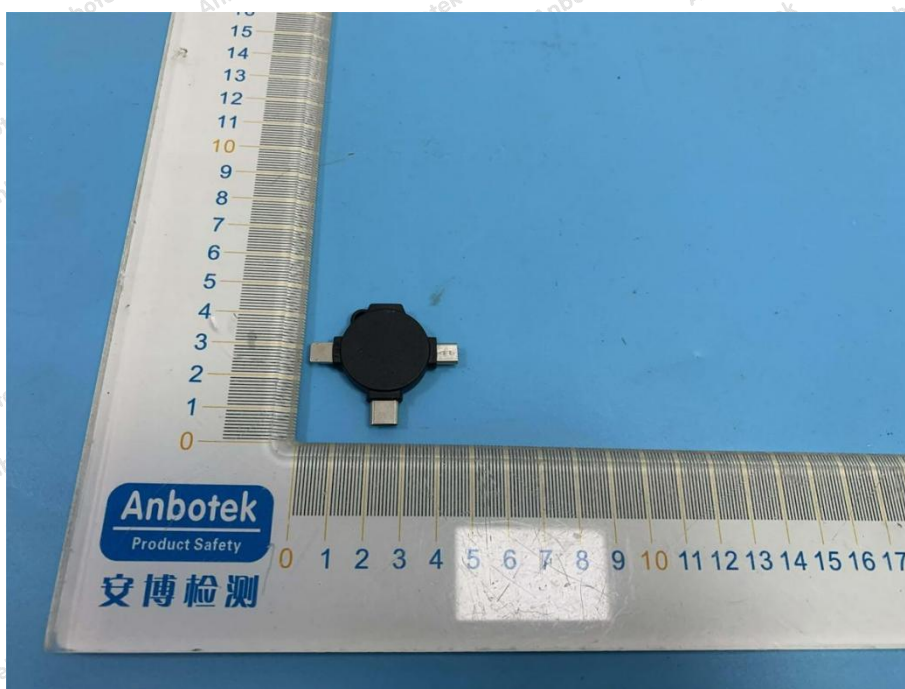
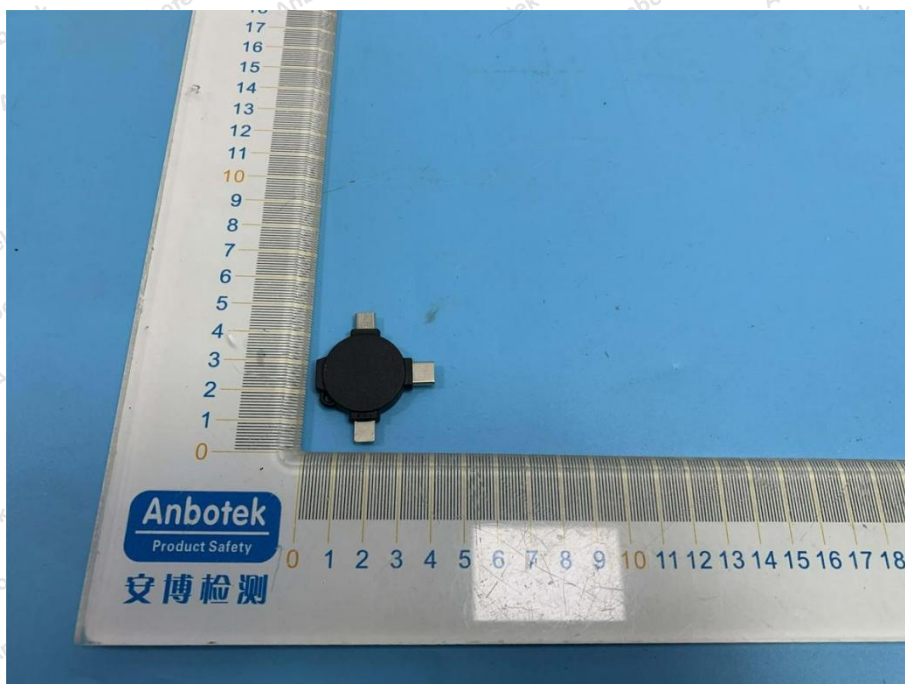
Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel: (86)0755-26066440 Fax: (86)0755-26014772 Email: service@anbotek.com



Hotline
400-003-0500
www.anbotek.com.cn



APPENDIX II -- Photo documentation



Shenzhen Anbotek Compliance Laboratory Limited

Address: 1/F., Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel: (86)0755-26066440 Fax: (86)0755-26014772 Email: service@anbotek.com



Hotline

400-003-0500

www.anbotek.com.cn



CE Label

1. The CE conformity marking must consist of the initials 'CE' taking the following form:
If the CE marking is reduced or enlarged, the proportions given in the above graduated drawing must be respected.
2. The CE marking must have a height of at least 5 mm except where this is not possible on account of the nature of the apparatus.
3. The CE marking must be affixed to the product or to its data plate. Additionally it must be affixed to the packaging, if any, and to the accompanying documents.
4. The CE marking must be affixed visibly, legibly and indelibly.
It must have the same height as the initials 'CE'.

----- End of Report -----

