

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR240900343902

Page: 1 of 41

TEST REPORT

Application No.: SZCR2409003439AT
Applicant: Anker Innovations Limited
Address of Applicant: Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong, China
Manufacturer: Anker Innovations Limited
Address of Manufacturer: Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong, China
Factory: Ten Pao Electronics (Huizhou) Co., Ltd.
Address of Factory: Dongjiang Industrial Area, Shuikou Town, Huizhou City, Guangdong Province, P.R.China
Equipment Under Test (EUT):
EUT Name: Anker SOLIX Solarbank 2 E1600 AC
Model No.: A17C2, A17C6 ♣
 ♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s) : EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
Date of Receipt: 2024-09-05
Date of Test: 2024-09-14 to 2024-09-27
Date of Issue: 2024-09-29

Test Result:	Pass*
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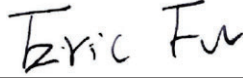
* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
 EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024-09-29		Original

Authorized for issue by:				
				
		Charlie Dai/Project Engineer		
				
		Eric Fu/Reviewer		



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4	EN 55032: 2015+A11:2020 +A1:2020	Class B	Pass
Radiated Emissions (30MHz-1GHz)		EN 55032: 2015+A11:2020 +A1:2020	Class B	Pass
Radiated Emissions (Above 1GHz)		EN 55032: 2015+A11:2020 +A1:2020	Class B	Pass
Harmonic Current Emission		EN IEC 61000-3-2:2019+A1:2021	Class A	N/A
Voltage Fluctuations and Flicker		EN 61000-3-3:2013+A1:2019 +A2:2021	Clause 5	N/A

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity (80MHz-6GHz)		EN IEC 61000-4-3:2020	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients Burst at AC Mains Power Port		EN 61000-4-4:2012	1kV; 5/50ns Tr/Td; 5kHz Repetition Frequency	Pass
Surge at AC Mains Power Port		EN 61000-4-5:2014 +A1:2017	1.2/50µs Tr/Td; 1kV Line to Line	Pass
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)		EN 61000-4-6:2014	3Vrms (emf), 80%, 1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions		EN IEC 61000-4-11:2020	0 % UT for 0.5per; 0 % UT for 1per; 0 % UT for 250per; 70 % UT for 25per; UT is Supply Voltage	N/A

Remark:

1. N/A means not applicable.
2. The EUT does not support taking power from the power grid.



Internal Source	Upper Frequency
Below 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5 times the highest frequency or 6 GHz, whichever is less

Declaration of EUT Family Grouping:

Model No.: A17C2, A17C6

Only the model A17C2 was tested, since according to the declaration from the applicant, the electrical circuit design, PCB layout, components used, internal wiring and functions were identical for all the above models, with only difference on output power of the AC output grid-connected port.



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3 Contents

	Page
1 Cover Page	1
2 Test Summary	3
3 Contents	5
4 General Information	7
4.1 Details of E.U.T.	7
4.2 Description of Support Units.....	7
4.3 Measurement Uncertainty	8
4.4 Test Location	9
4.5 Test Facility	9
4.6 Deviation from Standards.....	9
4.7 Abnormalities from Standard Conditions	9
4.8 EMS Monitor.....	9
5 Equipment List	10
6 Emission Test Results	13
6.1 Conducted Emissions at AC Mains Power Port (150kHz-30MHz).....	13
6.1.1 E.U.T. Operation	13
6.1.2 Test Mode Description	13
6.1.3 Test Setup Diagram	13
6.1.4 Measurement Procedure and Data	14
6.2 Radiated Emissions (30MHz-1GHz).....	17
6.2.1 E.U.T. Operation	17
6.2.2 Test Mode Description	17
6.2.3 Test Setup Diagram	17
6.2.4 Measurement Procedure and Data	18
6.3 Radiated Emissions (Above 1GHz).....	21
6.3.1 E.U.T. Operation	21
6.3.2 Test Mode Description	21
6.3.3 Test Setup Diagram	21
6.3.4 Measurement Procedure and Data	22
7 Immunity Test Results	25
7.1 Electrostatic Discharge.....	27
7.1.1 Test Setup Diagram	27
7.1.2 E.U.T. Operation	27
7.1.3 Test Mode Description	27
7.1.4 Test Condition and Results:	28
7.2 Radiated Immunity (80MHz-6GHz)	29
7.2.1 Test Setup Diagram	29
7.2.2 E.U.T. Operation	29
7.2.3 Test Mode Description	29



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7.2.4	Test Condition and Results:	30
7.3	Electrical Fast Transients Burst at AC Mains Power Port	31
7.3.1	Test Setup Diagram	31
7.3.2	E.U.T. Operation	31
7.3.3	Test Mode Description	31
7.3.4	Test Condition and Results:	32
7.4	Surge at AC Mains Power Port.....	33
7.4.1	Test Setup Diagram	33
7.4.2	E.U.T. Operation	33
7.4.3	Test Mode Description	33
7.4.4	Test Condition and Results:	34
7.5	Conducted Immunity at AC Mains Power Port (150kHz-80MHz).....	35
7.5.1	Test Setup Diagram	35
7.5.2	E.U.T. Operation	35
7.5.3	Test Mode Description	35
7.5.4	Test Condition and Results:	36
8	Test Setup Photo.....	37
9	EUT Constructional Details (EUT Photos).....	41



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4 General Information

4.1 Details of E.U.T.

Power supply:	<p>PV terminal: Max. PV input voltage: 60Vd.c., Max. PV input current: 16Ad.c.(per channel) Max. Isc. PV: 20Ad.c., Max. PV input power: 1200W Operation voltage range: 16-60Vdc Rechargeable Li-ion Battery: 16Vdc 75Adc 800W 100Ah AC input: Max. AC input power: 2000W Max. AC input: 10Aac, 230Vac AC output (On-grid terminal): AC output power: 800W, AC rated output: 220/230/240Va.c. 50/60Hz Max. AC output current: 3.5Aa.c. 230Va.c. Off-grid terminal: Max. AC output power: 2000W, AC rated output: 220/230/240Va.c. 50/60Hz Max. AC output: 10Aa.c. 230Va.c.</p> <p>Battery terminal: Battery rated voltage: 16Vd.c., Max. charge current: 75Ad.c. Max. discharge current: 75Ad.c., Rated power: 800W, Rated capacity:100Ah</p>
Cable(s):	<p>PV cable 299cm *4 Grid AC cable 498cm *1</p>
Internal Source:	Greater than 108MHZ

Remark:The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Bi-directional power supply	ITECH	IT6018C-800-75	N/A
DC power supply	ZHAOXIN	KXN-6020D	REF. No.SEA27B00
DC power supply	Chroma	62012P-80-60	REF. No.SEA27C00
DC power supply	XANTREX	XFR 100-12	REF. No.SEA27A00
Mobile Phone	Xiaomi	2201122C	REF. No.SEA16N01



4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)	± 3.1dB
Radiated Emissions (30MHz-1GHz)	± 5.0dB
Radiated Emissions (Above 1GHz)	± 4.6dB
Electrostatic Discharge	± 6%
Radiated Immunity (80MHz-6GHz)	± 2.1dB
Electrical Fast Transients Burst at AC Mains Power Port	± 5.5%
Surge at AC Mains Power Port	± 5.5%
Conducted Immunity at AC Mains Power Port (150kHz-80MHz)	± 1.5dB

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{CISPR/ETSI}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 EMS Monitor

Visual: Monitor the output of the EUT.

Audio: N/A



5 Equipment List

Conducted Emissions at AC Mains Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2022-05-14	2025-05-13
EMI Test Receiver	Rohde&Schwarz	ESCI	SEM004-02	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27a	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2024-07-06	2025-07-05
LISN	Rohde&Schwarz	ENV216	SEM007-01	2024-08-15	2025-08-14
LISN	ETS-LINDGREN	3816/2	SEM007-02	2024-03-14	2025-03-13

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05

Radiated Emissions (Above 1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-15	2025-03-14
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05

Electrostatic Discharge					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
ESD Generator	TESEQ AG	NSG 437	SEM019-02	2024-03-19	2025-03-18



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Radiated Immunity (80MHz-6GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2023-06-19	2026-06-18
Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2024-03-15	2025-03-14
Stacked Log.-Per.-Broadband Antenna	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A
Signal Generator	Rohde & Schwarz	SMB100A	SEM006-11	2024-03-15	2025-03-14
Broadband Amplifier	Rohde & Schwarz	BBA150-BC250	SEM005-12	2024-08-15	2025-08-14
Broadband Amplifier	Rohde & Schwarz	BBA150-D110	SEM005-13	2024-03-15	2025-03-14
Broadband Amplifier	Rohde & Schwarz	BBA150-E60	SEM005-16	2024-03-15	2025-03-14
Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A

Electrical Fast Transients Burst at AC Mains Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Ultra Compact Simulator	EM Test	UCS 500N7	SEM018-02	2024-03-15	2025-03-14

Surge at AC Mains Power Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Ultra Compact Simulator	EM Test	UCS 500N7	SEM018-02	2024-03-15	2025-03-14
High Speed Coupling/Decoupling Network	EM Test	CNI 508N2	SEM018-05	2024-03-29	2025-03-28

Conducted Immunity at AC Mains Power Port (150kHz-80MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	TST PASS	N/A	SEM001-17	2024-09-11	2027-09-10
RF-Generator	SCHAFFNER	NSG 2070	SEM006-01	2024-08-16	2025-08-15
Coupling/Decoupling Network	SCHAFFNER	CDN M016	SEM007-03	2024-03-27	2025-03-26



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General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17



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6 Emission Test Results

6.1 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 55032: 2015+A11:2020+A1:2020

Limit:

Frequency of emission(MHz)	Conducted limit(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.
 Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15MHz to 30MHz

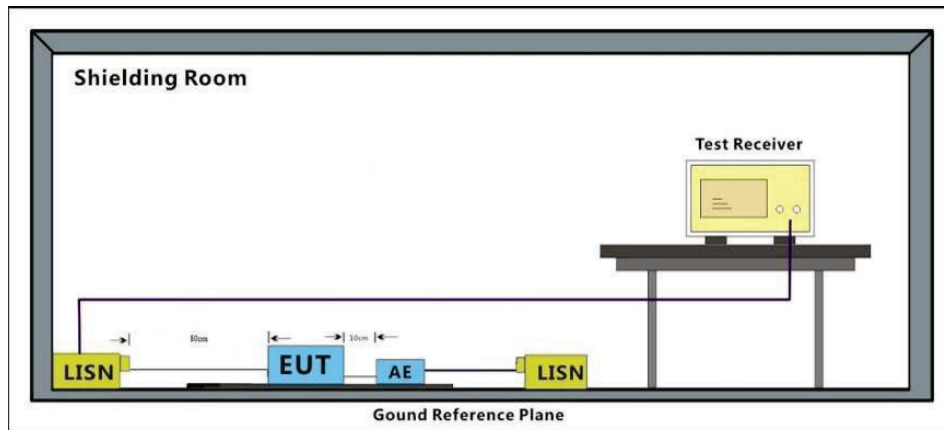
6.1.1 E.U.T. Operation

Operating Environment:
 Temperature: 23.5 °C Humidity: 47.5 % RH Atmospheric Pressure: 1020 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Pre-scan	08	Idle:Keep the EUT standby.

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data

Frequency range: 150kHz-30MHz

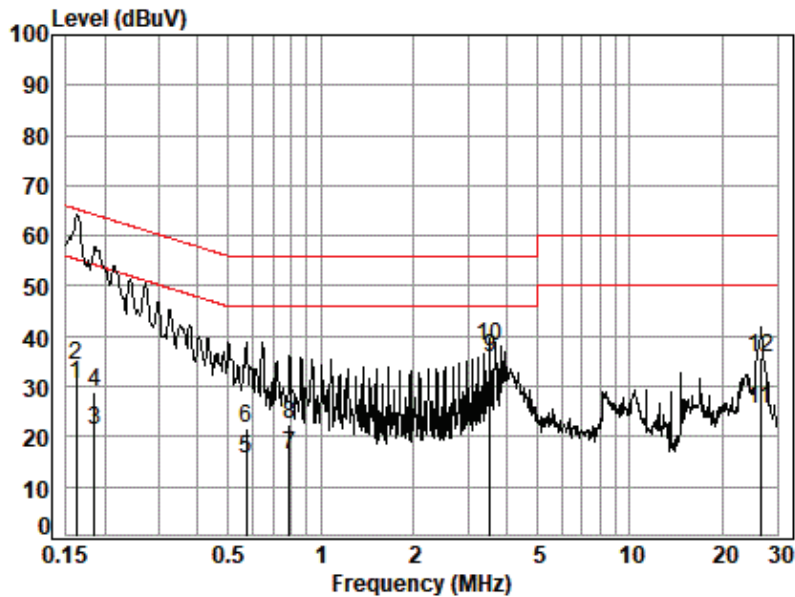
An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

Remark: Measured Level= Read Level+ Cable Loss+ LISN Factor



Test Mode: 07; Line: Live line



Site : chamber
 Condition: Line
 Job No. : 03439AT
 Test mode:

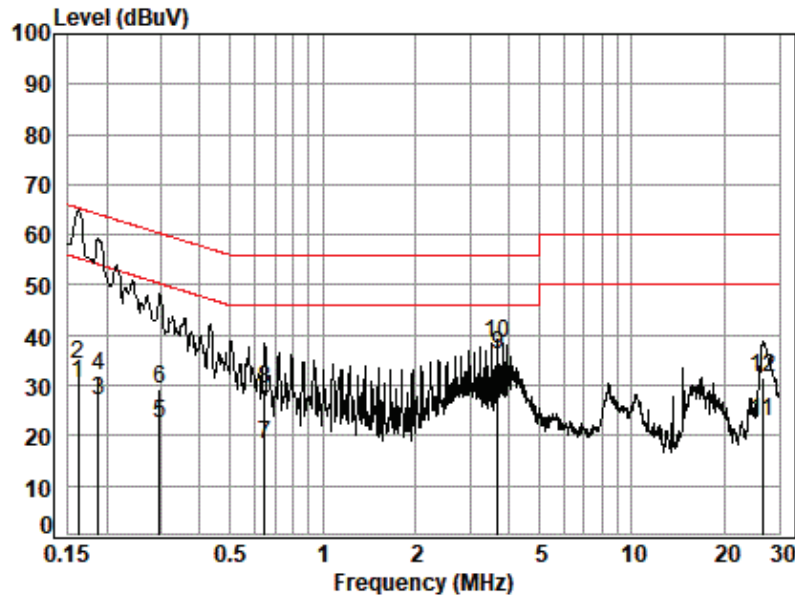
		LISN	Cable	Read	Limit	Over	
	Freq	Factor	Loss	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dB	
1	0.16	10.06	0.03	20.36	30.45	55.38	-24.93 Average
2	0.16	10.06	0.03	24.31	34.40	65.38	-30.98 QP
3	0.19	10.05	0.03	11.20	21.28	54.24	-32.96 Average
4	0.19	10.05	0.03	18.87	28.95	64.24	-35.29 QP
5	0.57	10.08	0.05	5.64	15.77	46.00	-30.23 Average
6	0.57	10.08	0.05	11.48	21.61	56.00	-34.39 QP
7	0.79	10.06	0.06	6.16	16.28	46.00	-29.72 Average
8	0.79	10.06	0.06	12.16	22.28	56.00	-33.72 QP
9	3.53	10.05	0.08	25.74	35.87	46.00	-10.13 Average
10 q	3.53	10.05	0.08	27.81	37.94	56.00	-18.06 QP
11	26.56	10.72	0.32	14.62	25.66	50.00	-24.34 Average
12	26.56	10.72	0.32	24.62	35.66	60.00	-24.34 QP



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Test Mode: 07; Line: Neutral Line



Site : chamber
 Condition: Neutral
 Job No. : 03439AT
 Test mode:

		LISN	Cable	Read	Limit	Over	
	Freq	Factor	Loss	Level	Line	Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB
1	0.16	9.56	0.03	20.81	30.40	55.38	-24.98 Average
2	0.16	9.56	0.03	24.56	34.15	65.38	-31.23 QP
3	0.19	9.55	0.03	17.31	26.89	54.11	-27.22 Average
4	0.19	9.55	0.03	22.33	31.91	64.11	-32.20 QP
5	0.30	9.55	0.04	12.77	22.36	50.37	-28.01 Average
6	0.30	9.55	0.04	19.65	29.24	60.37	-31.13 QP
7	0.65	9.57	0.05	8.72	18.34	46.00	-27.66 Average
8	0.65	9.57	0.05	19.72	29.34	56.00	-26.66 QP
9	3.67	9.55	0.08	26.54	36.17	46.00	-9.83 Average
10 q	3.67	9.55	0.08	28.82	38.45	56.00	-17.55 QP
11	26.56	10.22	0.32	12.13	22.67	50.00	-27.33 Average
12	26.56	10.22	0.32	21.13	31.67	60.00	-28.33 QP



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6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 55032: 2015+A11:2020+A1:2020
 Measurement Distance: 3m

Limit:

FREQUENCY (MHz)	dBuV/m (At 10m)	dBuV/m (At 3m)
	Class B	Class B
30 ~ 230	30	40
230 ~ 1000	37	47

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 1000MHz

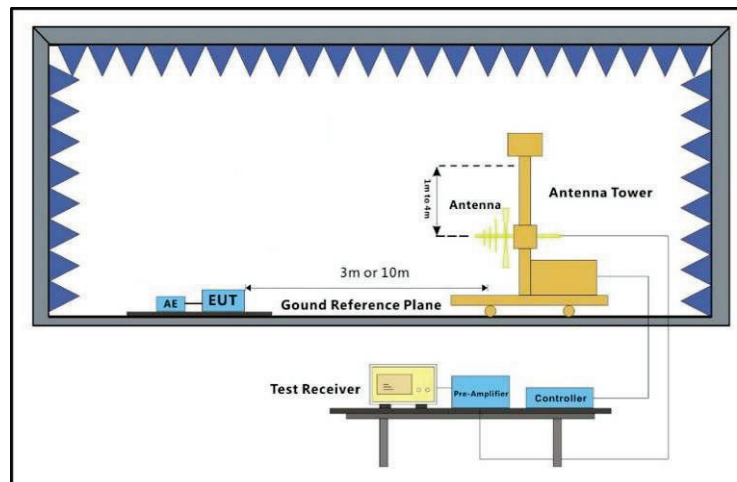
6.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 20.2 °C Humidity: 45.2 % RH Atmospheric Pressure: 1020 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Pre-scan	08	Idle:Keep the EUT standby.

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

Frequency range: 30MHz-1GHz

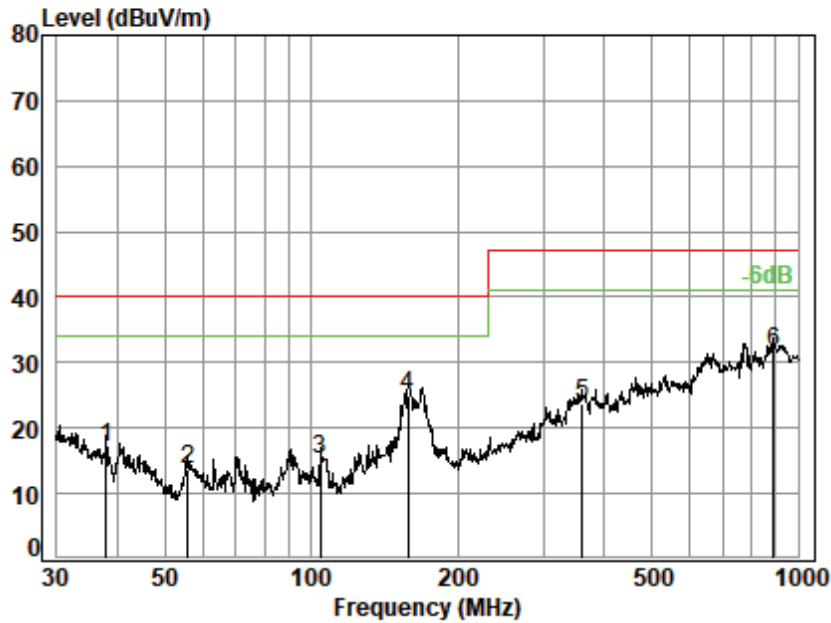
An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



Test Mode: 07; Polarity: Horizontal



Site : chamber
 Condition: 3m HORIZONTAL
 Job No. : 03439AT
 Test Mode: 07

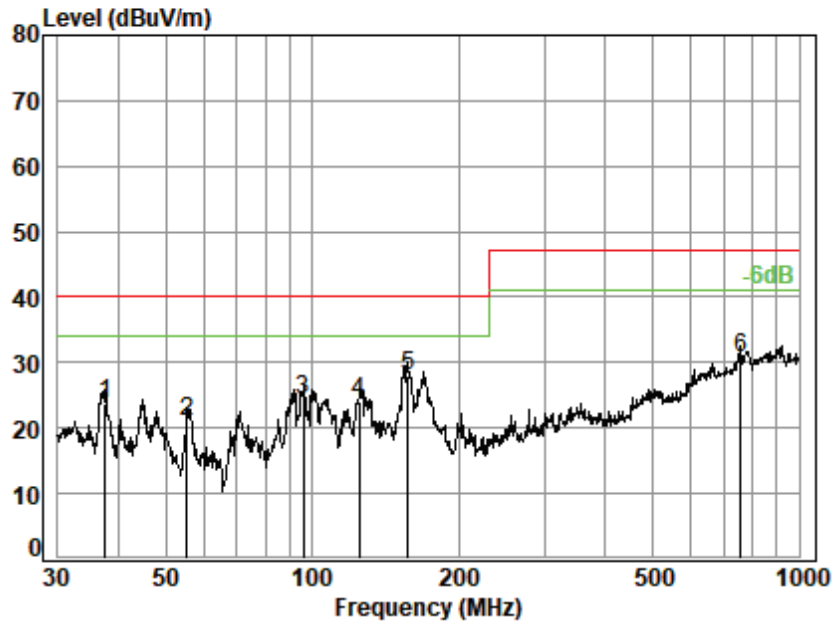
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Limit Level	Over Line	Limit	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	37.94	17.32	0.76	27.77	26.68	16.99	40.00	-23.01	QP
2	55.80	11.87	0.91	27.72	28.78	13.84	40.00	-26.16	QP
3	104.17	12.22	1.25	27.57	29.21	15.11	40.00	-24.89	QP
4 q	158.11	13.64	1.58	27.35	37.04	24.91	40.00	-15.09	QP
5	360.45	20.23	2.44	27.00	28.15	23.82	47.00	-23.18	QP
6	890.73	28.06	4.10	26.83	26.29	31.62	47.00	-15.38	QP



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Test Mode: 07; Polarity: Vertical



Site : chamber
 Condition: 3m VERTICAL
 Job No. : 03439AT
 Test Mode: 07

	Ant Freq	Cable Factor	Preamp Loss	Read Level	Limit Level	Over Line	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	37.55	17.50	0.76	27.77	33.23	40.00	-16.28 QP
2	55.22	11.94	0.91	27.72	35.84	40.00	-19.03 QP
3	96.10	12.17	1.20	27.60	38.69	40.00	-15.54 QP
4	125.01	10.98	1.39	27.48	39.24	40.00	-15.87 QP
5 q	157.56	13.63	1.57	27.35	40.15	40.00	-12.00 QP
6	758.04	26.48	3.73	27.58	28.02	47.00	-16.35 QP



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6.3 Radiated Emissions (Above 1GHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 55032: 2015+A11:2020+A1:2020
 Measurement Distance: 3m

Limit:

Frequency range(GHz)	Radiated emissions limit(dBμV/m)	
	Peak	Average
1GHz-6GHz	74	54
Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000MHz to 6000MHz		

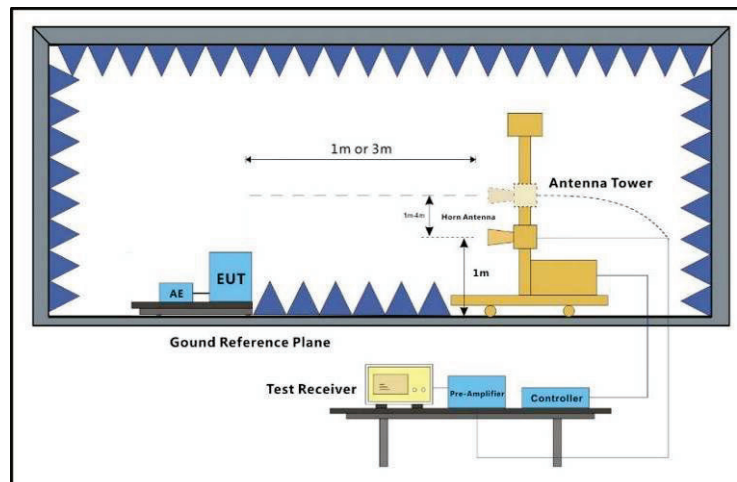
6.3.1 E.U.T. Operation

Operating Environment:
 Temperature: 21.9 °C Humidity: 57.8 % RH Atmospheric Pressure: 1020 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Pre-scan	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Pre-scan	08	Idle:Keep the EUT standby.

6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

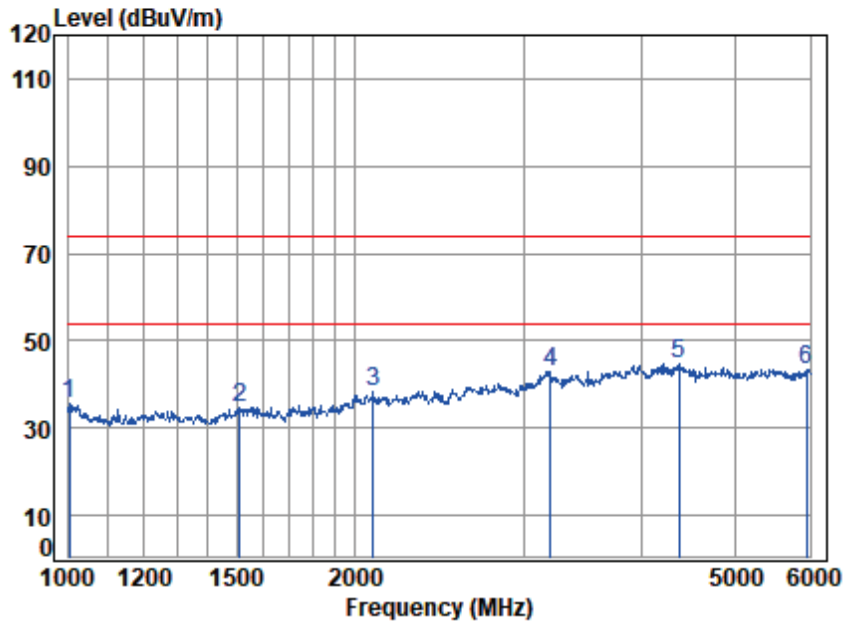
Frequency range: Above 1GHz

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



Test Mode: 06; Polarity: Horizontal



Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 03439AT
 Mode : 06

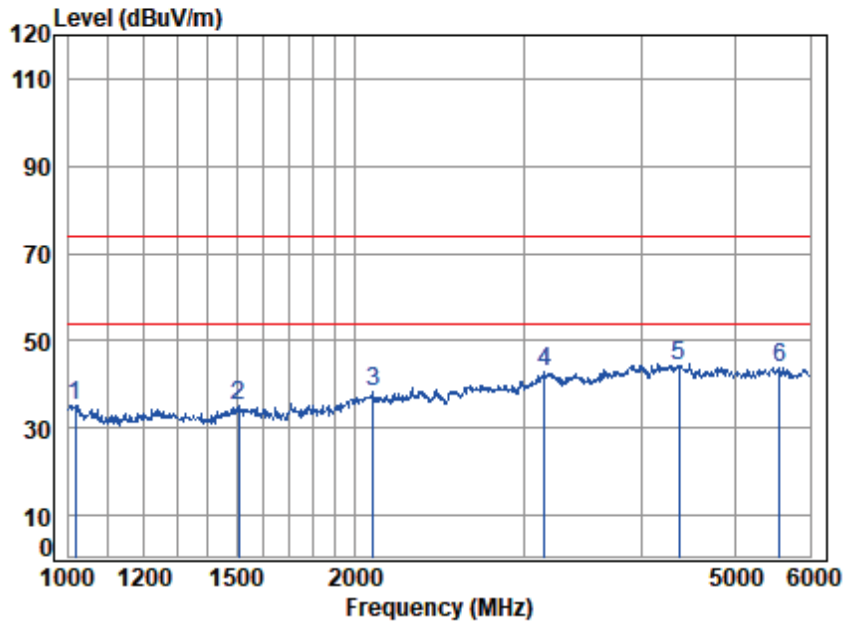
	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	1001.793	4.55	26.24	61.47	66.25	35.57	74.00	-38.43 peak
2	1509.992	4.59	26.84	61.66	64.94	34.71	74.00	-39.29 peak
3	2084.693	5.72	28.86	61.75	65.35	38.18	74.00	-35.82 peak
4	3204.781	6.78	32.82	61.36	64.76	43.00	74.00	-31.00 peak
5	4369.367	8.04	34.55	61.51	63.51	44.59	74.00	-29.41 peak
6	5946.487	9.50	34.69	62.72	61.66	43.13	74.00	-30.87 peak



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Test Mode: 06; Polarity: Vertical



Site : chamber
 Condition: 3m VERTICAL
 Job No : 03439AT
 Mode : 06

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	1016.257	4.55	25.78	61.48	66.31	74.00	-38.84	peak
2	1507.289	4.59	26.83	61.66	65.51	74.00	-38.73	peak
3	2084.693	5.72	28.86	61.75	65.31	74.00	-35.86	peak
4	3159.171	6.76	32.57	61.38	65.16	74.00	-30.89	peak
5	4369.367	8.04	34.55	61.51	63.29	74.00	-29.63	peak
6	5575.028	9.33	34.70	62.46	62.42	74.00	-30.01	peak



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7 Immunity Test Results

Performance Criteria Description in EN 301 489-1 V2.2.3

<p>Performance criteria for continuous phenomena</p>	<p>During the test, the equipment shall:</p> <ul style="list-style-type: none"> • continue to operate as intended; • not unintentionally transmit; • not unintentionally change its operating state; • not unintentionally change critical stored data.
<p>Performance criteria for transient phenomena</p>	<p>For all ports and transient phenomena with the exception described below, the following applies:</p> <ul style="list-style-type: none"> • The application of the transient phenomena shall not result in a change of the mode of operation (e.g. unintended transmission) or the loss of critical stored data. • After application of the transient phenomena, the equipment shall operate as intended. <p>For surges applied to symmetrically operated wired network ports intended to be connected directly to outdoor lines the following criteria applies:</p> <ul style="list-style-type: none"> • For products with only one symmetrical port intended for connection to outdoor lines, loss of function is allowed, provided the function is self-recoverable, or can be otherwise restored. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost. • For products with more than one symmetrical port intended for connection to outdoor lines, loss of function on the port under test is allowed, provided the function is self-recoverable. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.



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Performance Criteria Description in EN 301 489-17 V3.2.4

Criteria	During Test	After Test (i.e. as a result of the application of the test)
A	Shall operate as intended. (see note). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance. Shall be no loss of function. Shall be no loss of critical stored data.
B	May be loss of function.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no loss of critical stored data.
C	May be loss of function.	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no loss of critical stored data.

NOTE: Operate as intended during the test allows a level of degradation in accordance with Minimum performance level.

Minimum performance level

For equipment that supports a PER or FER, the minimum performance level shall be a PER or FER less than or equal to 10 %.

For equipment that does not support a PER or a FER, the minimum performance level shall be no loss of the wireless transmission function needed for the intended use of the equipment.

Performance criteria for Continuous phenomena

The performance criteria A shall apply.

Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur during the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur during the test.

Performance criteria for Transient phenomena

The performance criteria B shall apply, except for voltage dips greater than or equal to 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply.

Where the EUT is a transmitter in standby mode, unintentional transmission shall not occur as a result of the application of the test.

Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur as a result of the application of the test.



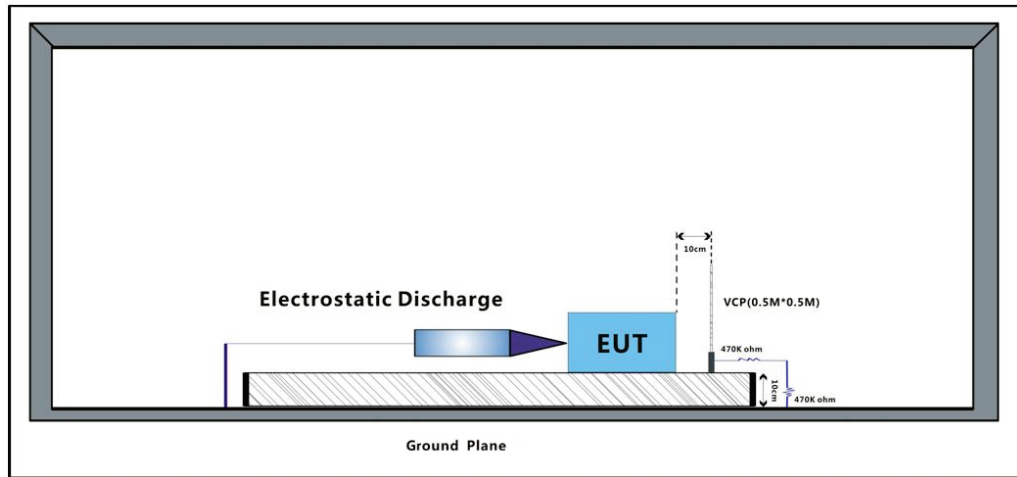
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7.1 Electrostatic Discharge

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 61000-4-2:2009

7.1.1 Test Setup Diagram



7.1.2 E.U.T. Operation

Operating Environment:
 Temperature: 24.7 °C Humidity: 52.8 % RH Atmospheric Pressure: 1020 mbar

7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Final test	08	Idle:Keep the EUT standby.



7.1.4 Test Condition and Results:

Performance Criterion: B

Discharge Impedance: 330Ω/150pF

Number of Discharge: Minimum 10 times at each test point

Discharge Mode: Single Discharge

Discharge Period: 1 second minimum

Test Point: 1. All insulated enclosure and seams.

2. All accessible metal parts of the enclosure.

3. All side

Discharge type	Level (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

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



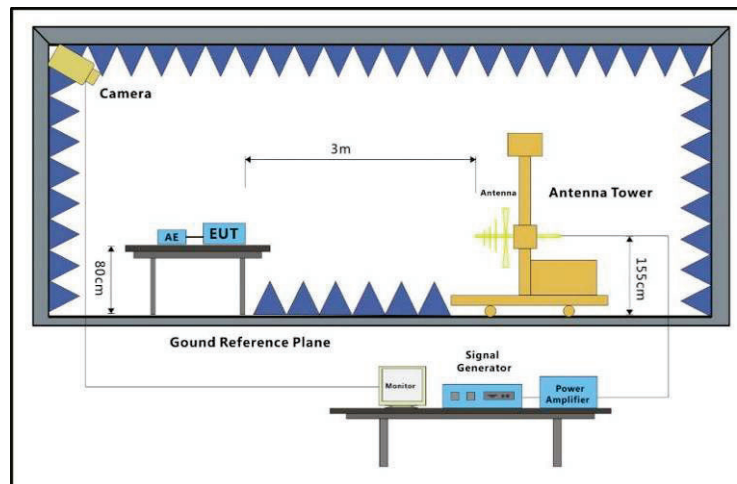
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7.2 Radiated Immunity (80MHz-6GHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN IEC 61000-4-3: 2020

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:
 Temperature: 23.5 °C Humidity: 48.9 % RH Atmospheric Pressure: 1020 mbar

7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Final test	08	Idle:Keep the EUT standby.



7.2.4 Test Condition and Results:

Performance Criterion: A
 Frequency Range: 80MHz to 6GHz
 Antenna Polarisation: Vertical and Horizontal
 Modulation: 1kHz,80% Amp. Mod,1% increment

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-6GHz	3	Front	2s	A
80MHz-6GHz	3	Back	2s	A
80MHz-6GHz	3	Left	2s	A
80MHz-6GHz	3	Right	2s	A
80MHz-6GHz	3	Top	2s	A
80MHz-6GHz	3	Underside	2s	A

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



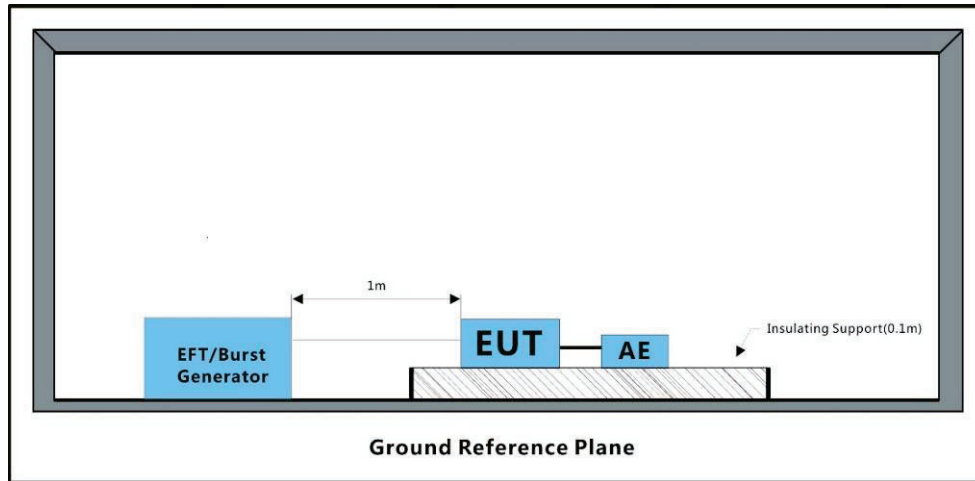
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7.3 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 61000-4-4:2012

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:
 Temperature: 26.8 °C Humidity: 51.5 % RH Atmospheric Pressure: 1020 mbar

7.3.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Final test	08	Idle:Keep the EUT standby.



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7.3.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC mains power port	1	+	CDN	A
AC mains power port	1	-	CDN	A

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



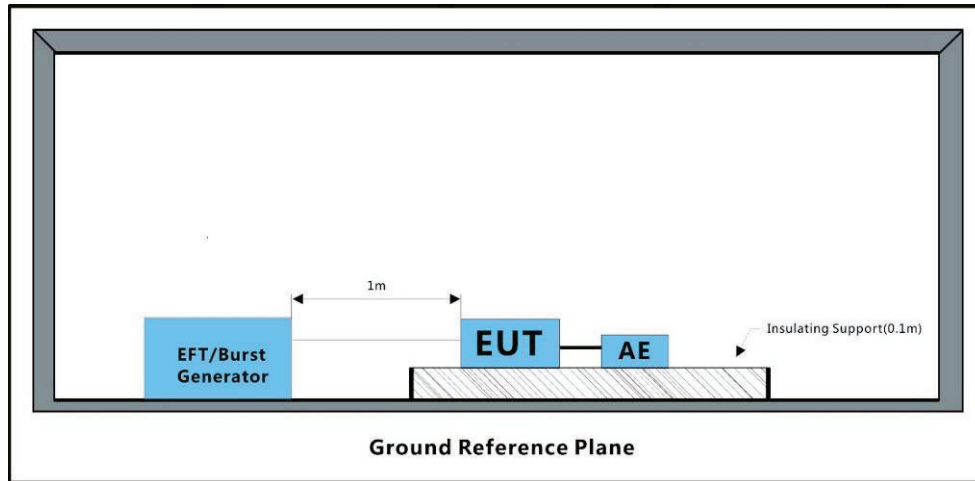
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7.4 Surge at AC Mains Power Port

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 61000-4-5:2014 +A1:2017

7.4.1 Test Setup Diagram



7.4.2 E.U.T. Operation

Operating Environment:
 Temperature: 26.8 °C Humidity: 51.5 % RH Atmospheric Pressure: 1020 mbar

7.4.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Final test	08	Idle:Keep the EUT standby.



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7.4.4 Test Condition and Results:

Performance Criterion: B

Interval: 60s between each surge

No. of surges: 5 positive, 5 negative at 0°, 90°, 180°, 270°

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	0°	A
L-N	1	-	0°	A
L-N	1	+	90°	A
L-N	1	-	90°	A
L-N	1	+	180°	A
L-N	1	-	180°	A
L-N	1	+	270°	A
L-N	1	-	270°	A

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



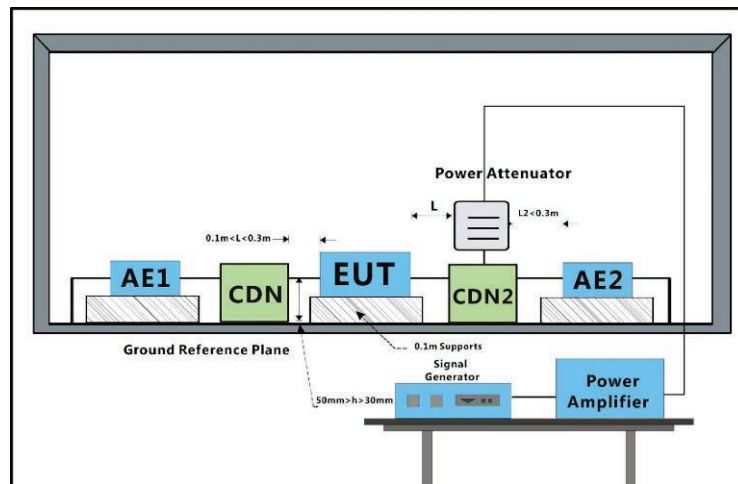
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7.5 Conducted Immunity at AC Mains Power Port (150kHz-80MHz)

Test Requirement: EN 301 489-1 V2.2.3
 EN 301 489-17 V3.2.4
 Test Method: EN 61000-4-6:2014

7.5.1 Test Setup Diagram



7.5.2 E.U.T. Operation

Operating Environment:
 Temperature: 26.8 °C Humidity: 51.5 % RH Atmospheric Pressure: 1020 mbar

7.5.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	Operation(BT):Keep the EUT communicating with other Bluetooth devices.
Final test	07	Operation(2.4G Wi-Fi):Keep the EUT communicating with router via 2.4G Wi-Fi.
Final test	08	Idle:Keep the EUT standby.



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7.5.4 Test Condition and Results:

Performance Criterion: A

Frequency Range: 0.15MHz to 80MHz

Modulation: 80%, 1kHz Amplitude Modulation

Step Size: 1%

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	3	CDN	2s	A
A: No degradation in the performance of the EUT was observed				

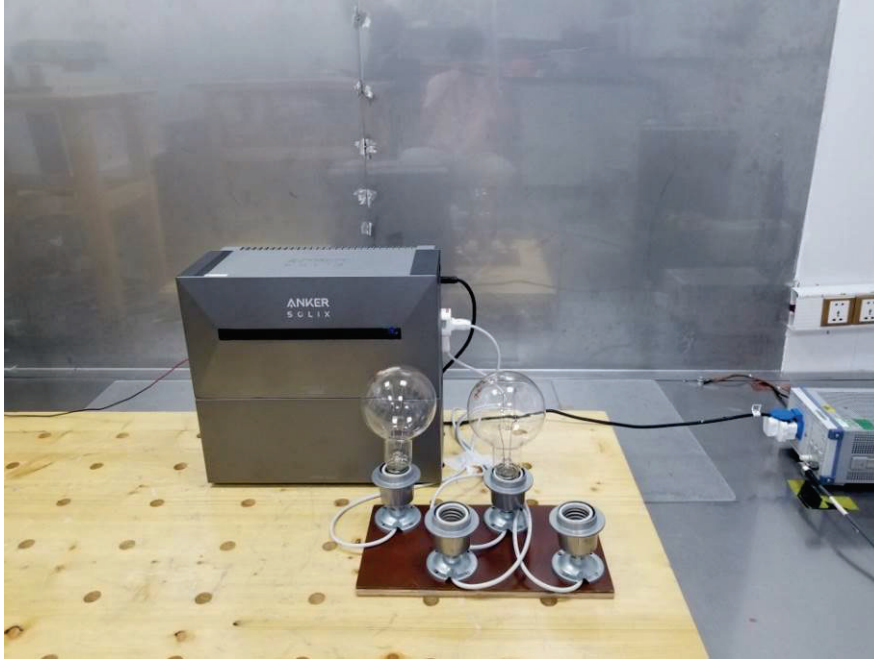


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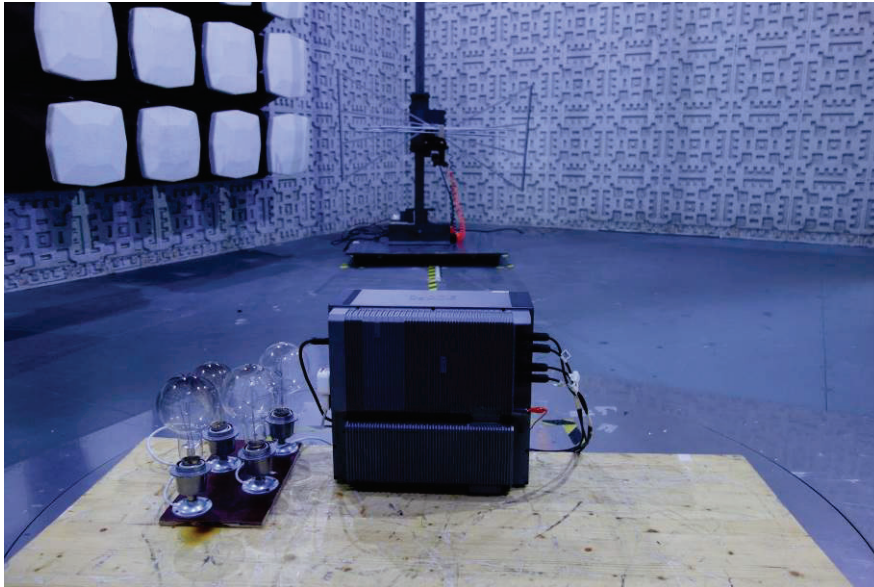
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8 Test Setup Photo

Conducted Emissions at AC Mains Power Port (150kHz-30MHz)



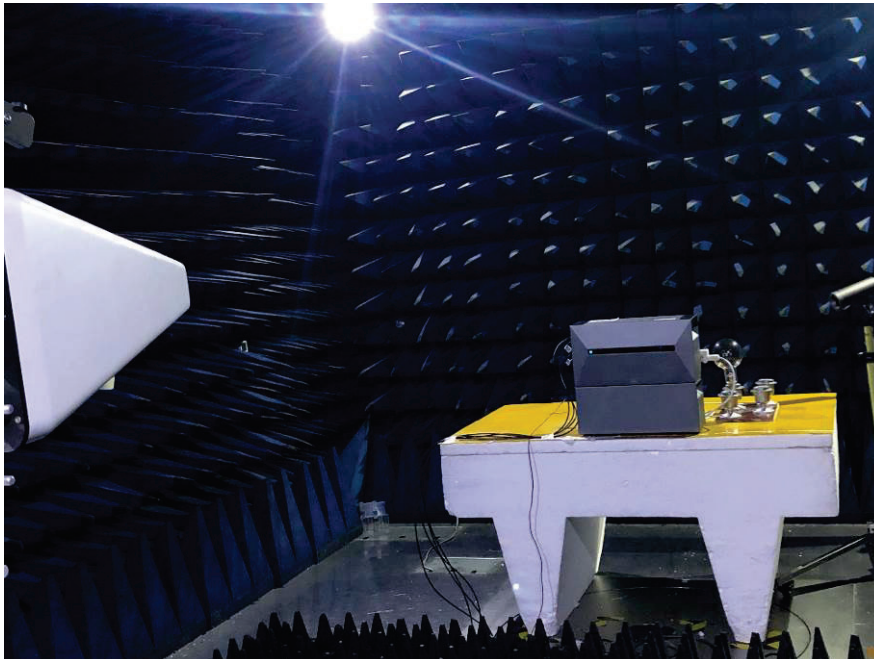
Radiated Emissions (30MHz-1GHz)



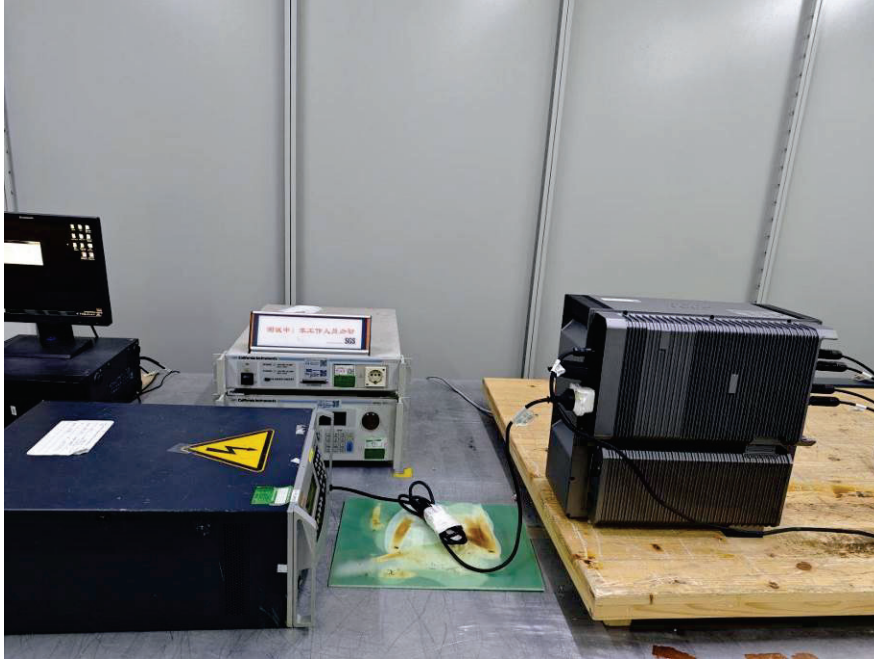
Electrostatic Discharge



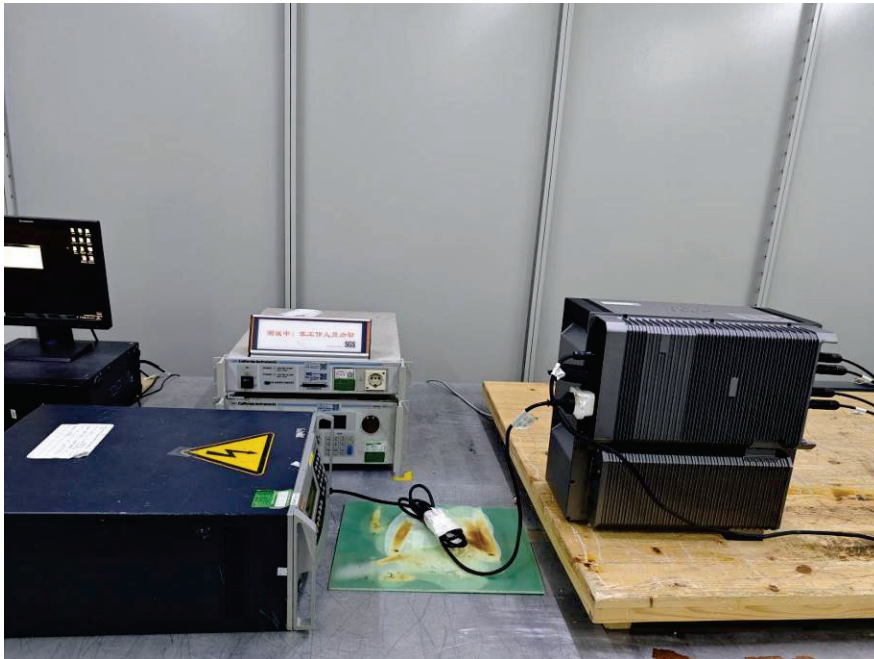
Radiated Immunity (80MHz-6GHz)



Electrical Fast Transients Burst at AC Mains Power Port



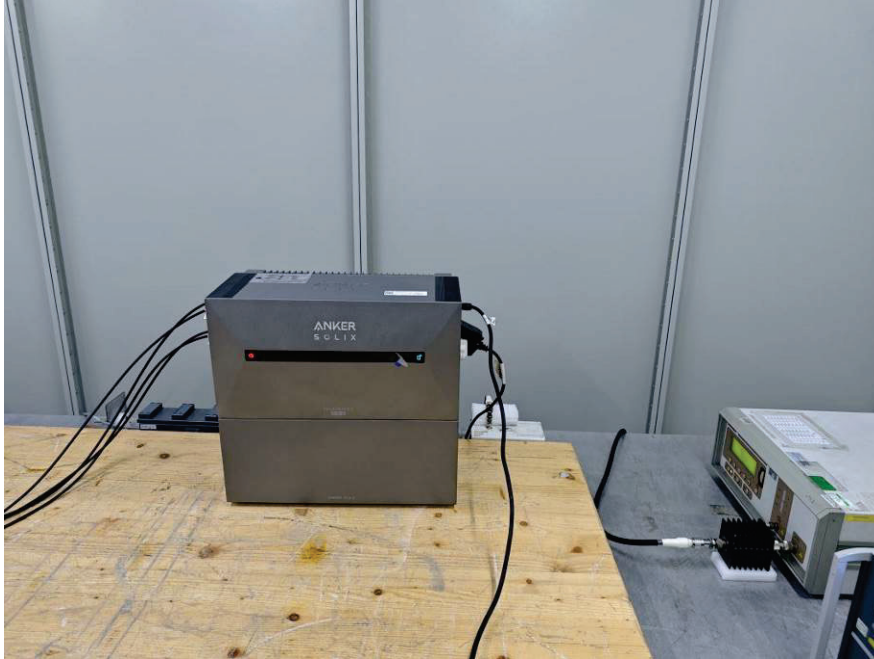
Surge at AC Mains Power Port



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Conducted Immunity at AC Mains Power Port (150kHz-80MHz)



9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for SZCR2409003439AT

- End of the Report -

