

# TEST REPORT

**Application No.:** SZCR2412004876AT  
**Applicant:** SHENZHEN TENDA TECHNOLOGY CO., LTD.  
**Address of Applicant:** 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Manufacturer:** SHENZHEN TENDA TECHNOLOGY CO., LTD.  
**Address of Manufacturer:** 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Equipment Under Test (EUT):**  
**EUT Name:** BE3600 Dual-Band Wi-Fi 7 Router  
**Model No.:** RE3L, TE3L ♣  
♣ 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 V3.3.1  
EN 61000-3-3: 2013+ A1:2019+A2:2021  
EN IEC 61000-3-2: 2019+A1:2021  
**Date of Receipt:** 2024-12-24  
**Date of Test:** 2024-12-27 to 2025-03-05  
**Date of Issue:** 2025-03-05

**Test Result:****Pass\***

\* In the configuration tested, the EUT complied with the standards specified above.



Keny Xu  
EMC Laboratory Manager




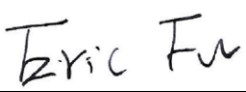
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-03-05		Original

Authorized for issue by:				
				
		Leo Lai/Project Engineer		
				
		Eric Fu/Reviewer		



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## 2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Port	EN 301 489-1 V2.2.3 EN 301 489-17 V3.3.1	EN 55032: 2015+A11:2020 +A1:2020	Class B	Pass
Conducted Emissions at Wired Network Port		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
Voltage Fluctuations and Flicker		EN 61000-3-3: 2013+A1:2019+A2:2021	Clause 5	Pass
Harmonic Current Emission		EN IEC 61000-3-2: 2019+A1:2021	Class A	N/A
N/A: Not Applicable.				

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 301 489-1 V2.2.3 EN 301 489-17 V3.3.1	EN 61000-4-2:2009	±4kV Contact Discharge; ±8kV Air Discharge	Pass
Radiated Immunity		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
Electrical Fast Transients Burst at Signal Port		EN 61000-4-4:2012	0.5kV; 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
Surge at Signal Port		EN 61000-4-5:2014 +A1:2017	1.2/50µs Tr/Td; 1kV Line to Ground	Pass
Conducted Immunity at AC Mains Power Port		EN 61000-4-6:2014	3Vrms (emf), 80%, 1kHz Amp. Mod.	Pass
Conducted Immunity at Signal Port		EN 61000-4-6:2014	3Vrms (emf), 80%, 1kHz Amp. Mod.	Pass



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Immunity Part				
Item	Standard	Method	Requirement	Result
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	Pass

### Declaration of EUT Family Grouping:

Model No.: RE3L, TE3L

Only the model RE3L 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 product model name.



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### 9 EUT Constructional Details (EUT Photos) .....56



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## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC 12V from AC/DC adapter Model: TEKA-TC120150EU, TEKA-TC120150BS Input: 100-240V~50/60Hz 0.5A Max Output: DC 12.0V 1.5A 18.0W  Test Voltage: 110V~60Hz, 230V~50Hz
Cable(s):	RJ45 Cable: 100cm

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.
Network Cable	SGS	N/A	REF. No.SEA11A00
Laptop	Lenovo	L480	REF. No.SEA18C00E
Mouse	Lenovo	M-U0025-O	REF. No.:SEA24A00





## 4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Port	$\pm 3.1\text{dB}$
Conducted Emissions at Wired Network Port	$\pm 4.8\text{dB}$
Radiated Emissions (30MHz-1GHz)	$\pm 5.0\text{dB}$
Radiated Emissions (Above 1GHz)	$\pm 4.6\text{dB}$
Voltage Fluctuations and Flicker	$\pm 4.2\%$
Harmonic Current Emission	$\pm 4.2\%$
Electrostatic Discharge	$\pm 6\%$
Radiated Immunity	$\pm 2.1\text{dB}$
Electrical Fast Transients Burst at AC Mains Power Port	$\pm 5.5\%$
Electrical Fast Transients Burst at Signal Port	$\pm 5.5\%$
Surge at AC Mains Power Port	$\pm 5.5\%$
Surge at Signal Port	$\pm 5.5\%$
Conducted Immunity at AC Mains Power Port	$\pm 1.5\text{dB}$
Conducted Immunity at Signal Port	$\pm 3.3\text{dB}$
Voltage Dips and Interruptions	$\pm 3.7\%$

### Remark:

The  $U_{\text{lab}}$  (lab Uncertainty) is less than  $U_{\text{CISPR/ETSI}}$  (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:

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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



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#### 4.8 EMS Monitor

Other: The EUT was set in below conditions during EMI and EMS testing.

Read/Write and Storage of Data

1. Let EUT be connected with notebook or PC.
2. Monitor the data transmission by checking whether there some error or abnormal action occurred.

WLAN

1. Enable WLAN function of the EUT.
2. The EUT links with supported units
3. Execute "PING IP" function under the "cmd" of Window system to transfer packet bi-directionally between the EUT and supported units.
4. Monitor the packet loss and WLAN radio performance.



## 5 Equipment List

Conducted Emissions at AC Power Port					
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	ESR	SZ-WRG-M-047	2025-01-8	2026-01-7
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

Conducted Emissions at Wired Network Port					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	SGS	N/A	SEM024-01	2024-07-06	2025-07-05
EMI Test Receiver	Rohde&Schwarz	ESR	SZ-WRG-M-047	2025-01-8	2026-01-7
Impedance Stabilisation Network	SCHWARZBECK MESS-ELEKTRONIK	ISN S8	SEM007-23	2024-03-27	2025-03-26
ISN T800	Teseq	ISN T800	SEM007-11	2024-03-14	2025-03-13
ISN T8-Cat6	Teseq	ISN T8-Cat6	SEM007-12	2024-03-14	2025-03-13
Measurement Software	AUDIX	e3 V8.2014-6-27a	N/A	N/A	N/A
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2022-05-14	2025-05-13

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-42	2024-06-19	2026-06-18
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



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SZEMC-TRF-01 Rev. A/1

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## Radiated Emissions (Above 1GHz)

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2024-08-16	2025-08-15
Pre-amplifier	TST PASS	LNA10180G45	SEM005-31	2024-03-14	2025-03-13
Pre-amplifier	TST PASS	LNA10180G60	SEM005-32	2024-03-14	2025-03-13
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
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05

## Voltage Fluctuations and Flicker

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
AC Power Source	California Instruments	5001ix	SEM016-02	2024-08-15	2025-08-14
Power Analyzer	California Instruments	PACS-1	SEM016-01	2024-09-04	2025-09-03
Measurement Software	California Instruments	CTS 4.0 V4.29.0	N/A	N/A	N/A

## Harmonic Current Emission

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
AC Power Source	California Instruments	5001ix	SEM016-02	2024-08-15	2025-08-14
Power Analyzer	California Instruments	PACS-1	SEM016-01	2024-09-04	2025-09-03
Measurement Software	California Instruments	CTS 4.0 V4.29.0	N/A	N/A	N/A

## 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
ESD Simulator	TESEQ AG	NSG 437	SEM019-04	2024-09-02	2025-09-01



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Radiated Immunity					
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
Wire ISN	Rohde & Schwarz	ENY 22	EMC0114	N/A	N/A
Audio Analyzer	Rohde & Schwarz	UPL	SEM008-01	2024-10-17	2025-10-16
Conditioning Amplifier	Brüel&Kjaer	2690-OS2	SEM005-10	2024-04-05	2025-04-08
Mouth Simulator	Brüel&Kjaer	4227	SEM017-01	2024-04-09	2025-04-08
Signal Source	Brüel&Kjaer	4231	SEM017-02	2024-03-22	2025-03-21
Coupling/Decoupling Network	SCHLODER	CDN-M2+3	SEM007-10	2024-08-15	2025-08-14
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	SEM010-06	2024-08-15	2025-08-14
Audio Analyzer	Rohde & Schwarz	UPV	SEM008-03	2024-08-16	2025-08-15
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	SEM010-03	2024-03-14	2025-03-13
Coaxial Cable	SGS	N/A	SEM038-01	2024-07-06	2025-07-05

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

Electrical Fast Transients Burst at Signal 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
Capacitive Coupling Clamp	EM Test	HFK	SEM018-03	2024-03-15	2025-03-14



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## 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

## Surge at Signal 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
Coupling network	EM TEST	CNV 504N1	SEM018-10	2024-03-29	2025-03-28
Coupling network	EM TEST	CNV 508T5	SEM018-11	2024-03-29	2025-03-28

## Conducted Immunity at AC Mains Power Port

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

## Conducted Immunity at Signal Port

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
EM Clamp	SCHAFFNER	KEMZ 801	SEM013-01	2024-03-27	2025-03-26

## Voltage Dips and Interruptions

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

## 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 Power Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 55032: 2015+A11:2020+A1:2020

Limit:  
0.15MHz-0.5MHz 66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average  
0.5MHz-5MHz 56dB(μV) quasi-peak, 46dB(μV) average  
5MHz-30MHz 60dB(μV) quasi-peak, 50dB(μV) average  
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

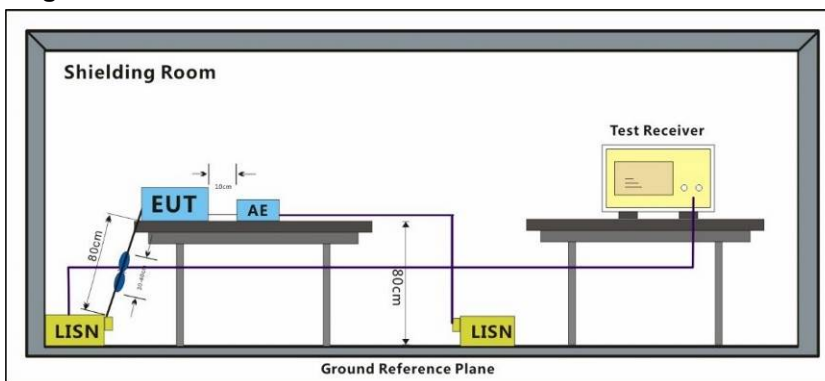
#### 6.1.1 E.U.T. Operation

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
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Pre-scan	08	Keep EUT in standby mode

#### 6.1.3 Test Setup Diagram



### 6.1.4 Measurement Procedure and Data

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





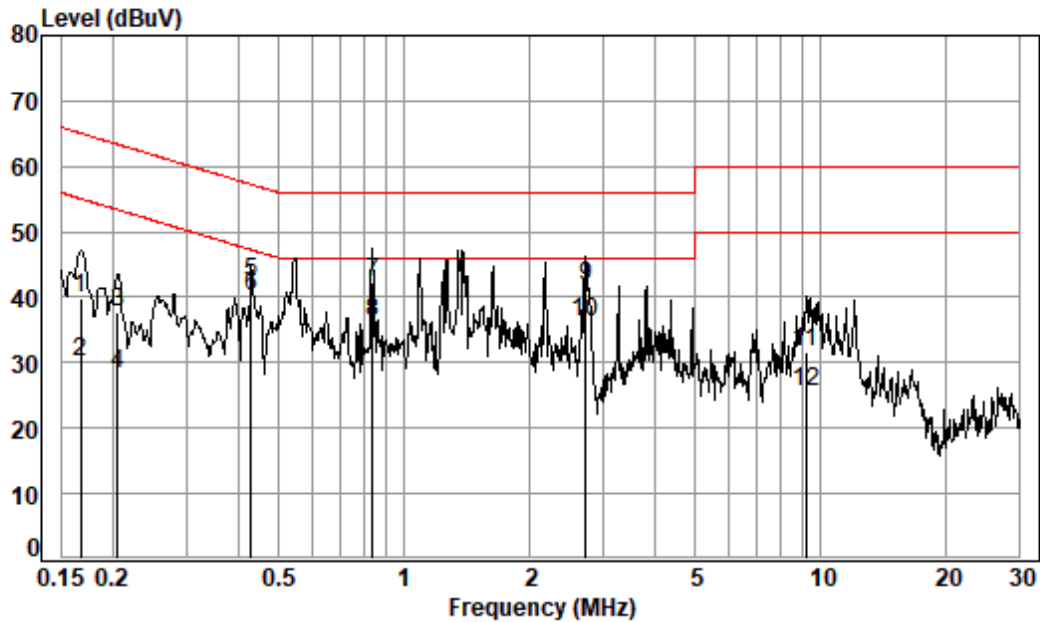
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Test Mode: 07; Line: Live line



Site : Shielding Room  
Condition: Line  
Job No. : 04876AT  
Test mode: 07

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1677	0.06	10.17	29.68	39.91	65.08	-25.17	QP
2	0.1677	0.06	10.17	19.74	29.97	55.08	-25.11	Average
3	0.2050	0.06	10.10	27.49	37.65	63.40	-25.75	QP
4	0.2050	0.06	10.10	18.01	28.17	53.40	-25.23	Average
5	0.4305	0.08	9.63	32.70	42.41	57.24	-14.83	QP
6 *	0.4305	0.08	9.63	30.51	40.22	47.24	-7.02	Average
7 *	0.8393	0.09	9.61	32.49	42.19	56.00	-13.81	QP
8	0.8393	0.09	9.61	26.52	36.22	46.00	-9.78	Average
9	2.7212	0.11	9.63	31.92	41.66	56.00	-14.34	QP
10	2.7212	0.11	9.63	26.46	36.20	46.00	-9.80	Average
11	9.2043	0.19	9.69	21.64	31.52	60.00	-28.48	QP
12	9.2043	0.19	9.69	15.55	25.43	50.00	-24.57	Average



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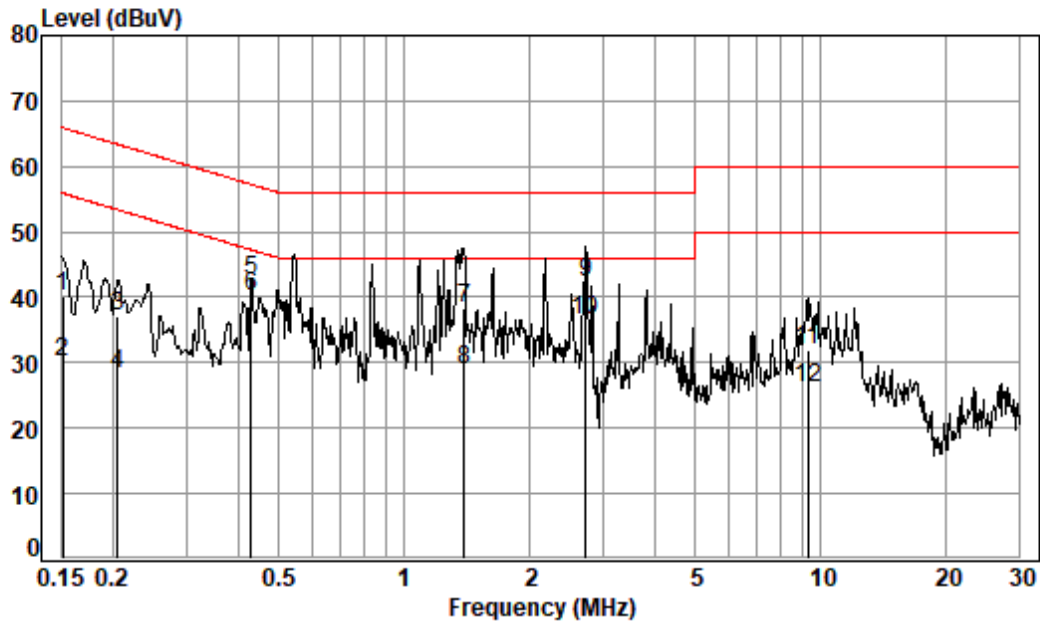
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Test Mode: 07; Line: Neutral Line



Site : Shielding Room  
Condition: Neutral  
Job No. : 04876AT  
Test mode: 07

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1516	0.06	10.15	29.89	40.10	65.91	-25.81	QP
2	0.1516	0.06	10.15	20.01	30.22	55.91	-25.69	Average
3	0.2050	0.06	10.06	26.96	37.08	63.40	-26.32	QP
4	0.2050	0.06	10.06	18.06	28.18	53.40	-25.22	Average
5	0.4305	0.08	9.73	32.70	42.51	57.24	-14.73	QP
6 *	0.4305	0.08	9.73	30.49	40.30	47.24	-6.94	Average
7	1.3958	0.10	9.54	28.57	38.21	56.00	-17.79	QP
8	1.3958	0.10	9.54	19.40	29.04	46.00	-16.96	Average
9 *	2.7212	0.11	9.54	32.76	42.41	56.00	-13.59	QP
10	2.7212	0.11	9.54	26.77	36.42	46.00	-9.58	Average
11	9.3024	0.19	9.59	22.20	31.98	60.00	-28.02	QP
12	9.3024	0.19	9.59	16.28	26.06	50.00	-23.94	Average



### 6.2 Conducted Emissions at Wired Network Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 55032: 2015+A11:2020+A1:2020

#### Limit:

0.15 MHz -0.5MHz 84dB(μV)-74dB(μV) quasi-peak, 74dB(μV)-64dB(μV) average  
0.5 MHz -30MHz 74dB(μV) quasi-peak, 64dB(μV) average  
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

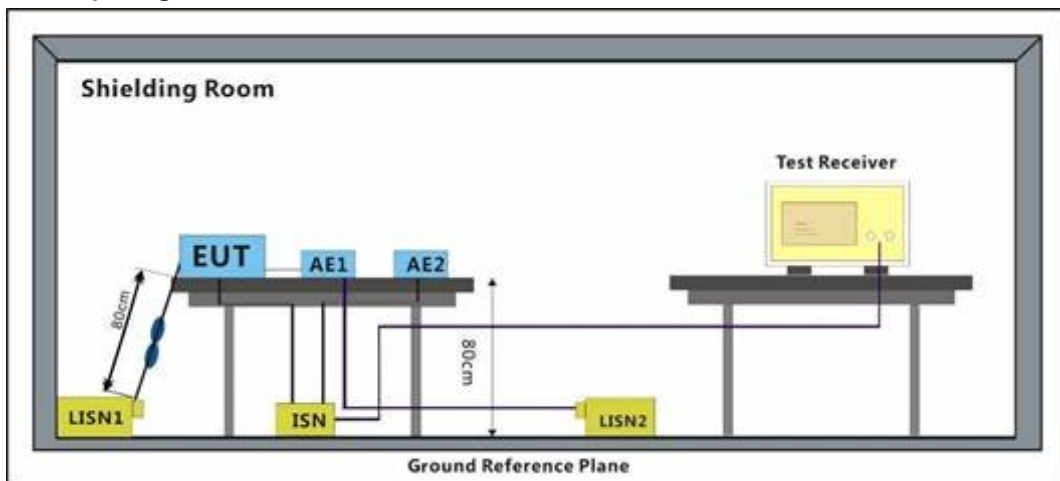
#### 6.2.1 E.U.T. Operation

Operating Environment:  
Temperature: 23.5 °C Humidity: 47.6 % RH Atmospheric Pressure: 1020 mbar

#### 6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Pre-scan	08	Keep EUT in standby mode

#### 6.2.3 Test Setup Diagram



#### 6.2.4 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.

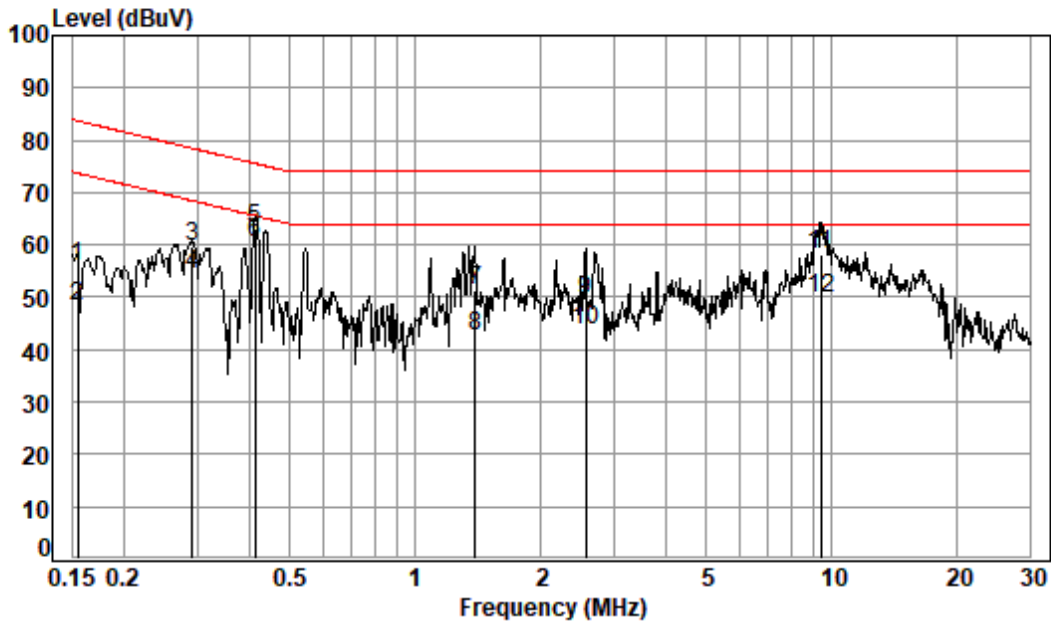
Remark: Measured Level= Read Level+ Cable Loss+ LISN Factor

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Site : Shielding Room

Condition:

Job No. : 04876AT

Test mode: 07

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1548	0.06	9.86	45.83	55.75	83.74	-27.99	QP
2	0.1548	0.06	9.86	38.23	48.15	73.74	-25.59	Average
3	0.2924	0.07	9.75	49.91	59.73	78.46	-18.73	QP
4	0.2924	0.07	9.75	44.46	54.28	68.46	-14.18	Average
5 *	0.4127	0.07	9.63	53.57	63.27	75.59	-12.32	QP
6 *	0.4127	0.07	9.63	50.73	60.43	65.59	-5.16	Average
7	1.3958	0.10	9.79	41.42	51.31	74.00	-22.69	QP
8	1.3958	0.10	9.79	32.61	42.50	64.00	-21.50	Average
9	2.5671	0.11	9.72	39.51	49.34	74.00	-24.66	QP
10	2.5671	0.11	9.72	33.76	43.59	64.00	-20.41	Average
11	9.4015	0.19	9.85	48.29	58.33	74.00	-15.67	QP
12	9.4015	0.19	9.85	39.87	49.91	64.00	-14.09	Average



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## 6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN 301 489-1 V2.2.3

EN 301 489-17 V3.3.1

Test Method: EN 55032: 2015+A11:2020+A1:2020

Measurement Distance: 3m

Limit:

Test Distance: 3m

30MHz-230MHz: 40 dB(μV/m) quasi-peak

230MHz-1GHz: 47 dB(μV/m) quasi-peak

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

Test Distance: 10m

30MHz-230MHz: 30 dB(μV/m) quasi-peak

230MHz-1GHz: 37 dB(μV/m) quasi-peak

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

Highest internal frequency (F<sub>x</sub>): F<sub>x</sub> ≤ 108MHz

Highest measured frequency: 1GHz

### 6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 20.2 °C

Humidity: 45.2 % RH

Atmospheric Pressure: 1020 mbar

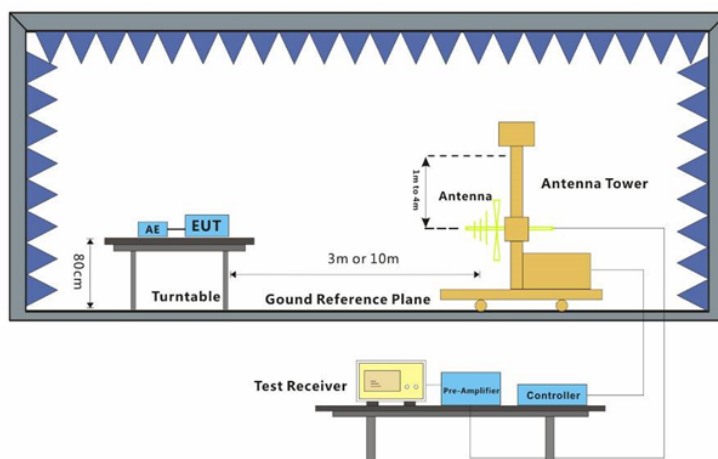
### 6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Pre-scan	08	Keep EUT in standby mode





### 6.3.3 Test Setup Diagram



### 6.3.4 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.

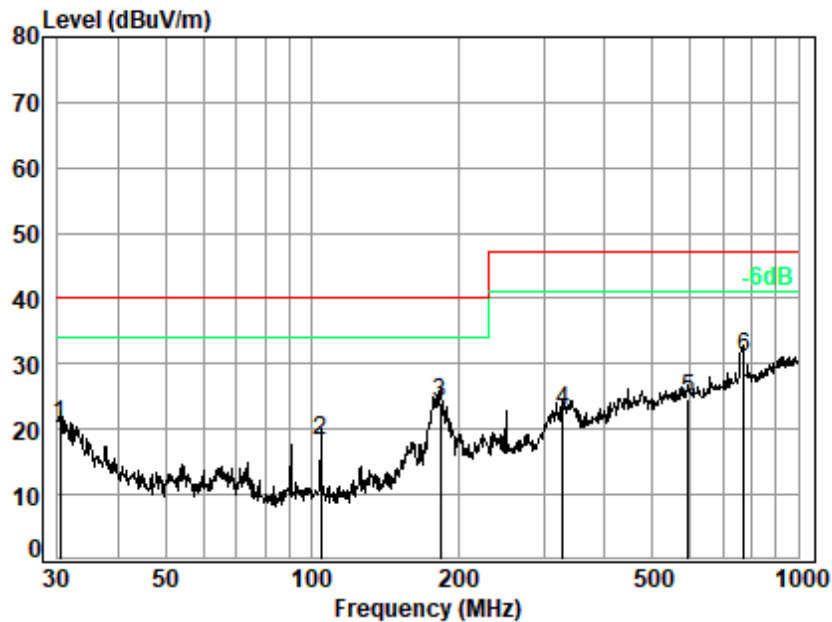
The red line show in graphic is the limit in standard used in this section.

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





Test Mode: 07; Polarity: Horizontal

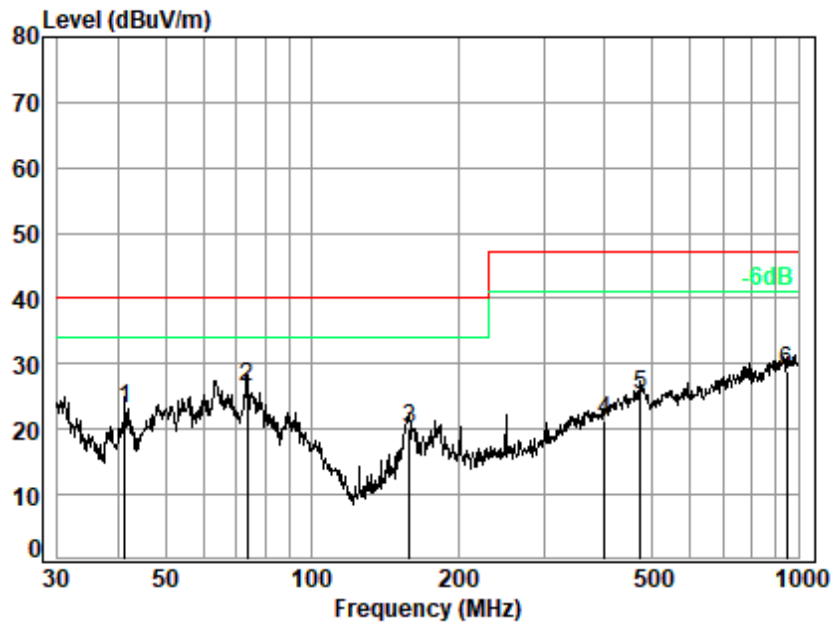


Site : chamber  
Condition: 3m HORIZONTAL  
Job No. : 04876AT  
Test Mode: 07

	Ant	Cable	Preamp	Read		Limit	Over	
Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	30.317	21.05	0.64	27.79	26.87	20.77	40.00	-19.23 QP
2	104.170	12.22	1.21	27.57	32.32	18.18	40.00	-21.82 QP
3 q	183.844	14.22	1.64	27.24	35.42	24.04	40.00	-15.96 QP
4	327.887	18.66	2.28	26.86	28.67	22.75	47.00	-24.25 QP
5	595.133	24.47	3.19	27.95	24.96	24.67	47.00	-22.33 QP
6	771.449	26.76	3.74	27.55	27.96	30.91	47.00	-16.09 QP



Test Mode: 07; Polarity: Vertical



Site : chamber  
Condition: 3m VERTICAL  
Job No. : 04876AT  
Test Mode: 07

		Ant	Cable	Preamp	Read	Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	41.277	15.76	0.76	27.76	34.29	23.05	40.00	-16.95 QP
2	73.617	10.41	1.02	27.67	42.61	26.37	40.00	-13.63 QP
3	158.668	13.63	1.51	27.34	32.27	20.07	40.00	-19.93 QP
4	400.432	20.60	2.55	27.16	25.15	21.14	47.00	-25.86 QP
5	473.835	22.43	2.80	27.46	27.51	25.28	47.00	-21.72 QP
6	948.761	28.23	4.22	26.42	22.97	29.00	47.00	-18.00 QP



### 6.4 Radiated Emissions (Above 1GHz)

Test Requirement: EN 301 489-1 V2.2.3

EN 301 489-17 V3.3.1

Test Method: EN 55032: 2015+A11:2020+A1:2020

Measurement Distance: 3m

Limit:

1000MHz-6000MHz: 74 dB(μV/m) peak; 54 dB(μV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000MHz to 6000MHz

Highest internal  
frequency (Fx):

Highest measured frequency:

$F_x \leq 108\text{MHz}$  1GHz

$108\text{MHz} < F_x \leq 500\text{MHz}$  2GHz

$500\text{MHz} < F_x \leq 1\text{GHz}$  5GHz

$F_x > 1\text{GHz}$   $5 \times F_x$  up to a maximum of 6GHz

#### 6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 19.7 °C

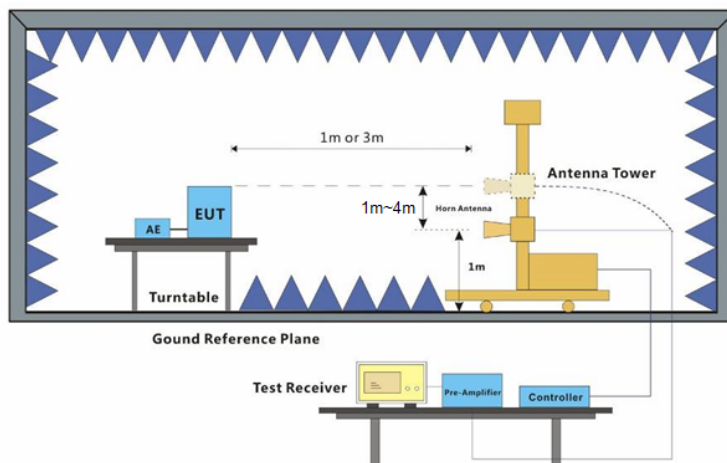
Humidity: 53.7 % RH

Atmospheric Pressure: 1020 mbar

#### 6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Pre-scan	08	Keep EUT in standby mode

#### 6.4.3 Test Setup Diagram



### 6.4.4 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



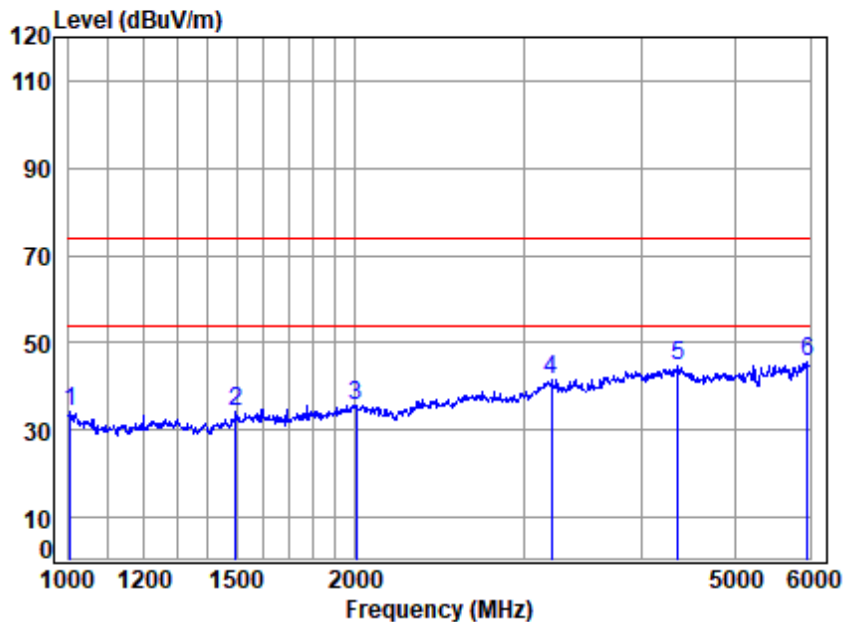
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Test Mode: 07; Polarity: Horizontal



Site : chamber  
Condition: 3m HORIZONTAL  
Job No : 04876AT  
Mode : 07

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1003.590	4.55	26.19	54.60	58.03	34.17	74.00	-39.83	Peak
2	1496.525	4.57	26.70	54.77	57.85	34.35	74.00	-39.65	Peak
3	2004.115	5.55	28.82	54.90	56.11	35.58	74.00	-38.42	Peak
4	3210.528	6.78	32.73	54.83	56.85	41.53	74.00	-32.47	Peak
5	4361.545	8.05	34.49	54.26	56.48	44.76	74.00	-29.24	Peak
6 p	5957.151	9.50	34.73	53.14	54.35	45.44	74.00	-28.56	Peak



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Shenzhen Branch

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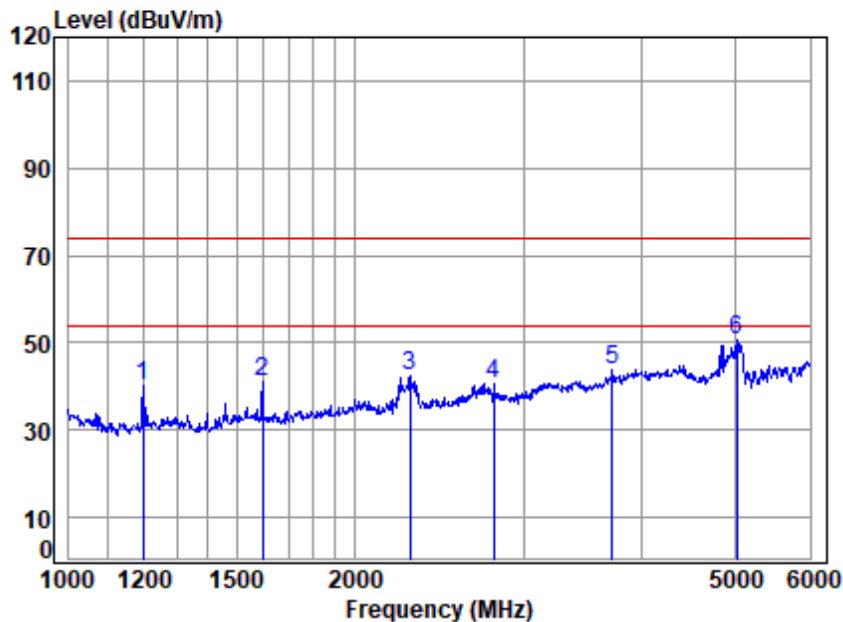
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Test Mode: 07; Polarity: Vertical



Site : chamber  
Condition: 3m VERTICAL  
Job No : 04876AT  
Mode : 07

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1196.231	4.56	24.36	54.68	66.05	40.29	74.00	-33.71	Peak
2	1599.100	4.79	26.80	54.80	64.38	41.17	74.00	-32.83	Peak
3	2284.166	6.11	28.24	54.93	62.95	42.37	74.00	-31.63	Peak
4	2791.777	6.62	29.78	54.98	59.10	40.52	74.00	-33.48	Peak
5	3718.646	7.65	32.96	54.48	57.56	43.69	74.00	-30.31	Peak
6 p	5024.748	8.14	34.25	54.17	62.23	50.45	74.00	-23.55	Peak



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### 6.5 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3: 2013+ A1:2019+A2:2021

EN 301 489-17 V3.3.1

Test Method: EN 61000-3-3: 2013+ A1:2019+A2:2021

#### 6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 18.6 °C

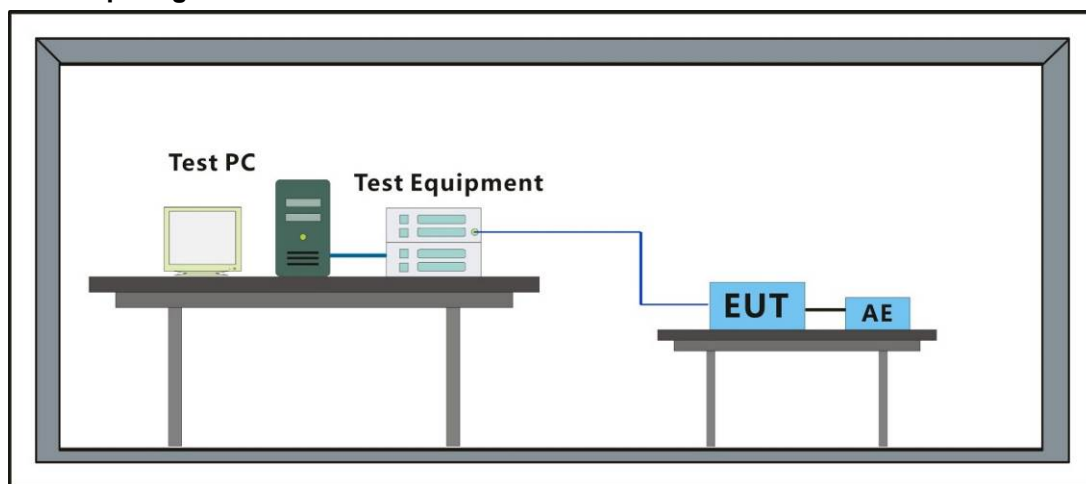
Humidity: 55.7 % RH

Atmospheric Pressure: 1020 mbar

#### 6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Pre-scan	08	Keep EUT in standby mode

#### 6.5.3 Test Setup Diagram



#### 6.5.4 Measurement Procedure and Data

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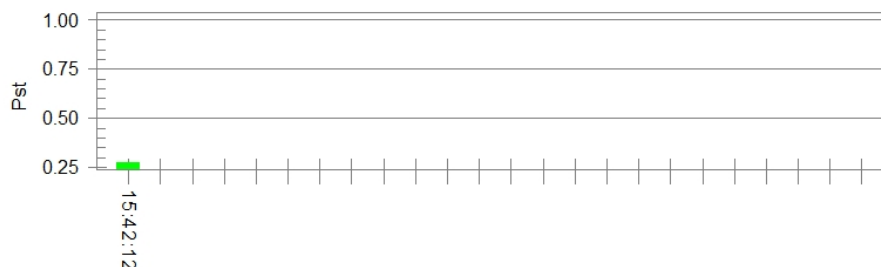
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Test Result: Pass

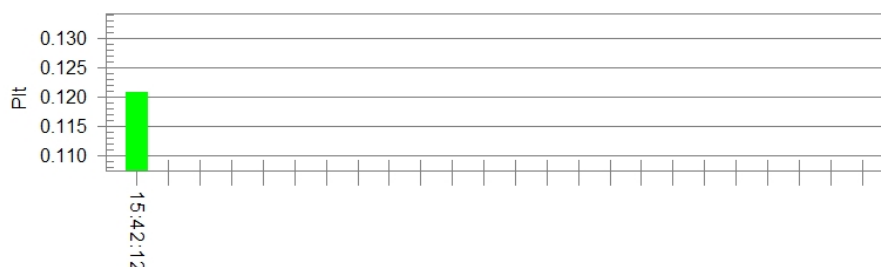
Status: Test Completed

Pst<sub>i</sub> and limit line

European Limits



Plt and limit line



### Parameter values recorded during the test:

Vrms at the end of test (Volt): 230.06

Highest dt (%):

T-max (mS): 0

Highest dc (%): 0.00

Highest dmax (%): 0.00

Highest Pst (10 min. period): 0.277

Test limit (%):

Test limit (mS): 500.0 Pass

Test limit (%): 3.30 Pass

Test limit (%): 4.00 Pass

Test limit: 1.000 Pass



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### 6.6 Harmonic Current Emission

Test Requirement: EN IEC 61000-3-2: 2019+A1:2021

EN 301 489-17 V3.3.1

Test Method: EN IEC 61000-3-2: 2019+A1:2021

#### 6.6.1 Conclusion

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN IEC 61000-3-2: 2019+A1:2021.

For further details, please refer to Clause 7 of EN IEC 61000-3-2: 2019+A1:2021 which states:

"For the following categories of equipment, limits are not specified in this standard.

equipment with a rated power of 75W or less, other than lighting equipment."





## 7 Immunity Test Results

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

<b>Performance criteria for continuous phenomena</b>	<p>During the test, the equipment shall:</p> <ul style="list-style-type: none"> <li>• continue to operate as intended;</li> <li>• not unintentionally transmit;</li> <li>• not unintentionally change its operating state;</li> <li>• not unintentionally change critical stored data.</li> </ul>
<b>Performance criteria for transient phenomena</b>	<p>For all ports and transient phenomena with the exception described below, the following applies:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• After application of the transient phenomena, the equipment shall operate as intended.</li> </ul> <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"> <li>• 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.</li> <li>• 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.</li> </ul>



## Performance Criteria Description in EN 301 489-17 V3.3.1

Criteria	During Test	After Test (i.e. as a result of the application of the test)
<b>A</b>	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>B</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.
<b>C</b>	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 shall be considered as:

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, (e.g. audio equipment and equipment transmitting sporadic messages) 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.

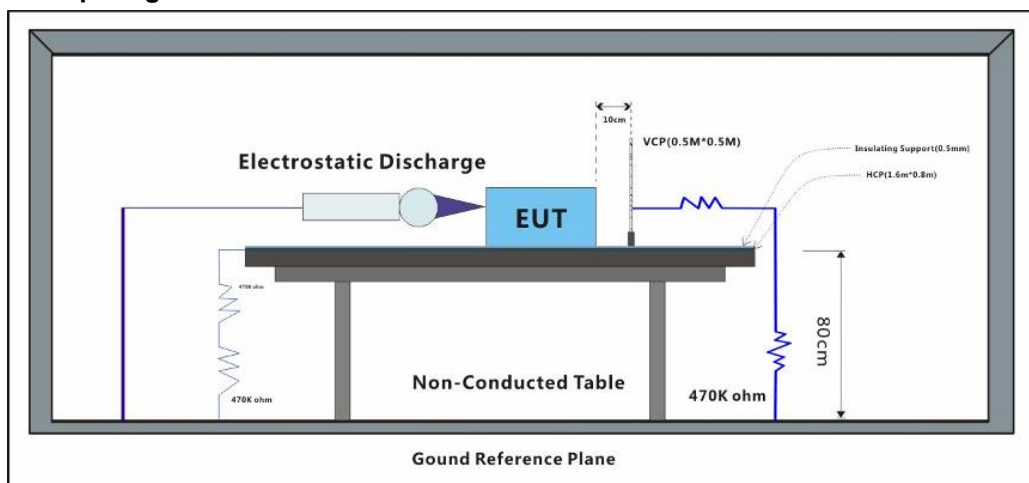
Where the EUT is a transceiver in receive mode, unintentional transmission shall not occur as a result of the application of the test.



### 7.1 Electrostatic Discharge

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 61000-4-2:2009

#### 7.1.1 Test Setup Diagram



#### 7.1.2 E.U.T. Operation

Operating Environment:  
Temperature: 25.5 °C Humidity: 45.5 % RH Atmospheric Pressure: 1020 mbar

#### 7.1.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode

#### 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



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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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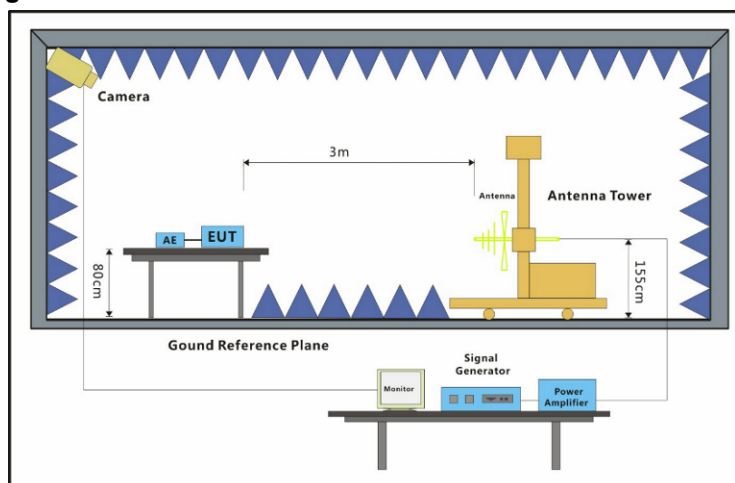
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### 7.2 Radiated Immunity

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN IEC 61000-4-3:2020

#### 7.2.1 Test Setup Diagram



#### 7.2.2 E.U.T. Operation

Operating Environment:  
Temperature: 23.6 °C Humidity: 47.8 % RH Atmospheric Pressure: 1020 mbar

#### 7.2.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode

#### 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





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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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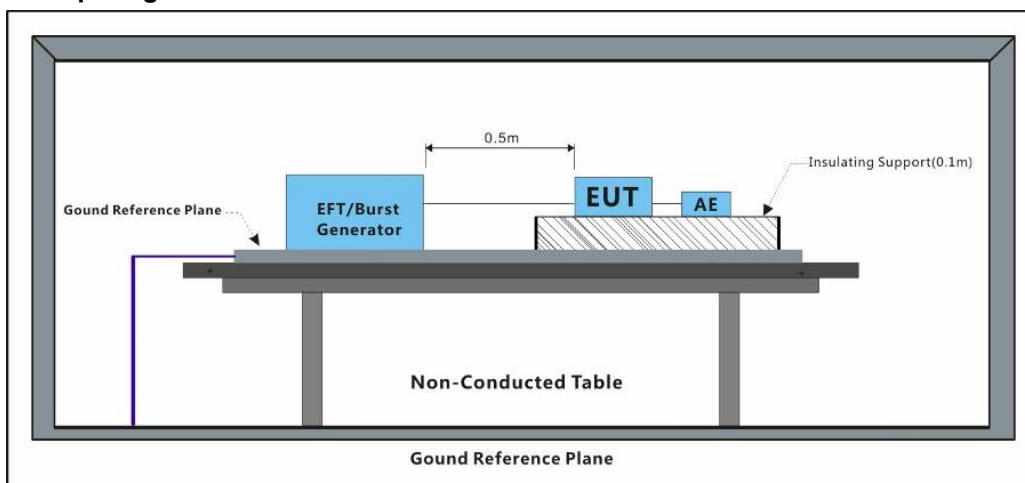
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### 7.3 Electrical Fast Transients Burst at AC Mains Power Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 61000-4-4:2012

#### 7.3.1 Test Setup Diagram



#### 7.3.2 E.U.T. Operation

Operating Environment:

Temperature: 18.6 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar

#### 7.3.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode

#### 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 power port	1	+	CDN	A
AC power port	1	-	CDN	A

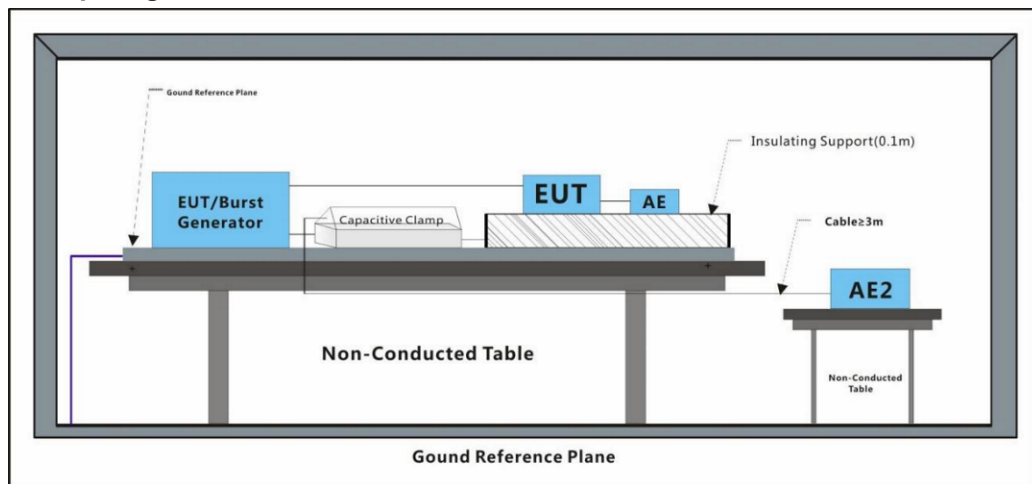
A: No degradation in the performance of the EUT was observed



### 7.4 Electrical Fast Transients Burst at Signal Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 61000-4-4:2012

#### 7.4.1 Test Setup Diagram



#### 7.4.2 E.U.T. Operation

Operating Environment:

Temperature: 18.6 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar

#### 7.4.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode

#### 7.4.4 Test Condition and Results:

Performance Criterion: B

Repetition Frequency: 5kHz

Burst Period: 300ms

Port	Level (kV)	Polarity	CDN/Clamp	Result / Observations
Signal port	0.5	+	Clamp	A
Signal port	0.5	-	Clamp	A

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

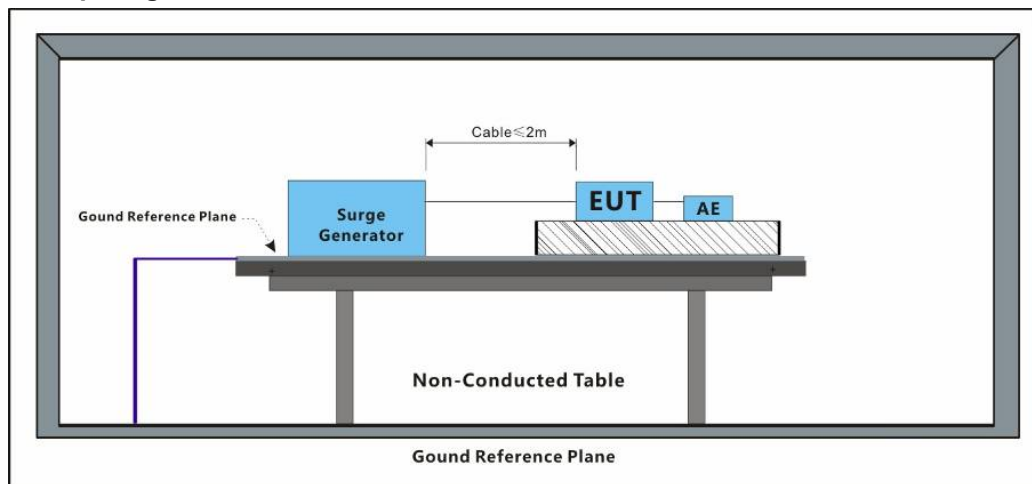




### 7.5 Surge at AC Mains Power Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 61000-4-5:2014 +A1:2017

#### 7.5.1 Test Setup Diagram



#### 7.5.2 E.U.T. Operation

Operating Environment:  
Temperature: 18.6 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar

#### 7.5.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode



## 7.5.4 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	0.5,1	+	0°	A
L-N	0.5,1	-	0°	A
L-N	0.5,1	+	90°	A
L-N	0.5,1	-	90°	A
L-N	0.5,1	+	180°	A
L-N	0.5,1	-	180°	A
L-N	0.5,1	+	270°	A
L-N	0.5,1	-	270°	A

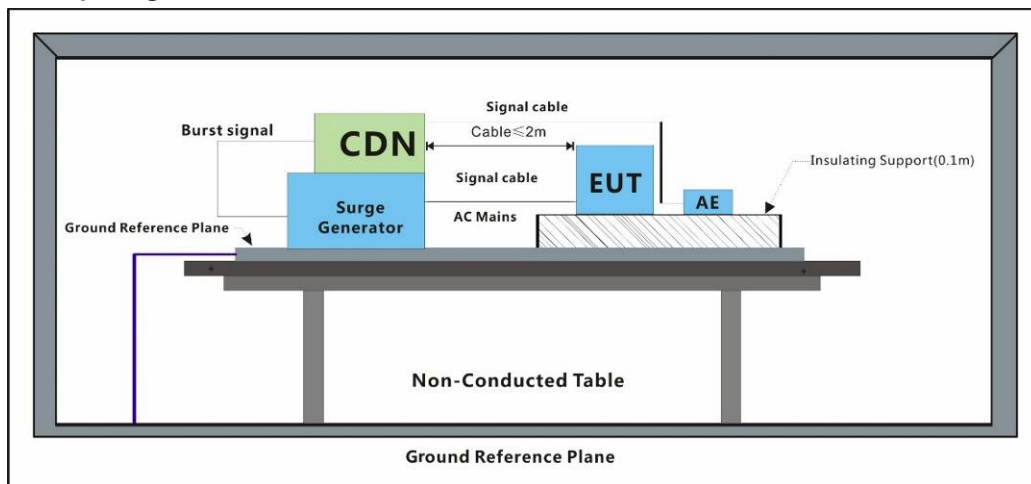
A: No degradation in the performance of the EUT was observed



### 7.6 Surge at Signal Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 61000-4-5:2014 +A1:2017

#### 7.6.1 Test Setup Diagram



#### 7.6.2 E.U.T. Operation

Operating Environment:  
Temperature: 18.6 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar

#### 7.6.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode

#### 7.6.4 Test Condition and Results:

Performance Criterion: B  
Interval: 60s between each surge  
Generator source impedance: 2Ω  
CDN coupling impedance(Line-to-ground):40Ω  
No. of surges:  
Five pulses for all test line.  
LAN 1 was selected to conducted test in this report.



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Test Line	Level (kV)	Polarity	Sync /Asyn	Result / Observations
Line to PE	1	+/-	Sync	A

Results:

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



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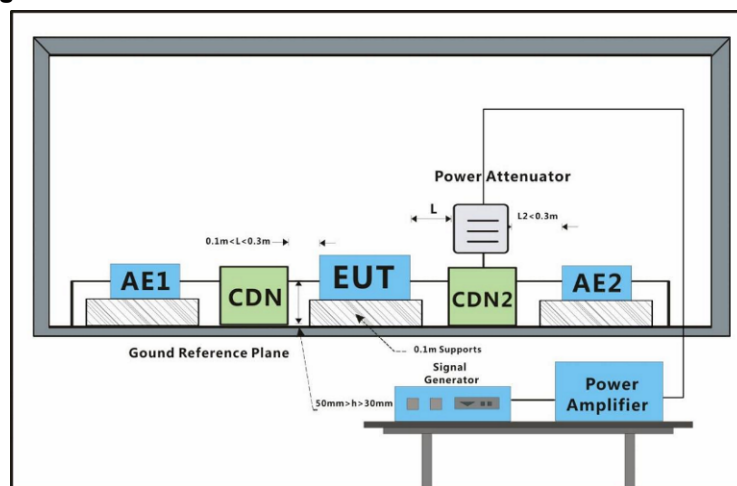
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### 7.7 Conducted Immunity at AC Mains Power Port

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN 61000-4-6:2014

#### 7.7.1 Test Setup Diagram



#### 7.7.2 E.U.T. Operation

Operating Environment:  
Temperature: 18.6 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar

#### 7.7.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode

#### 7.7.4 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

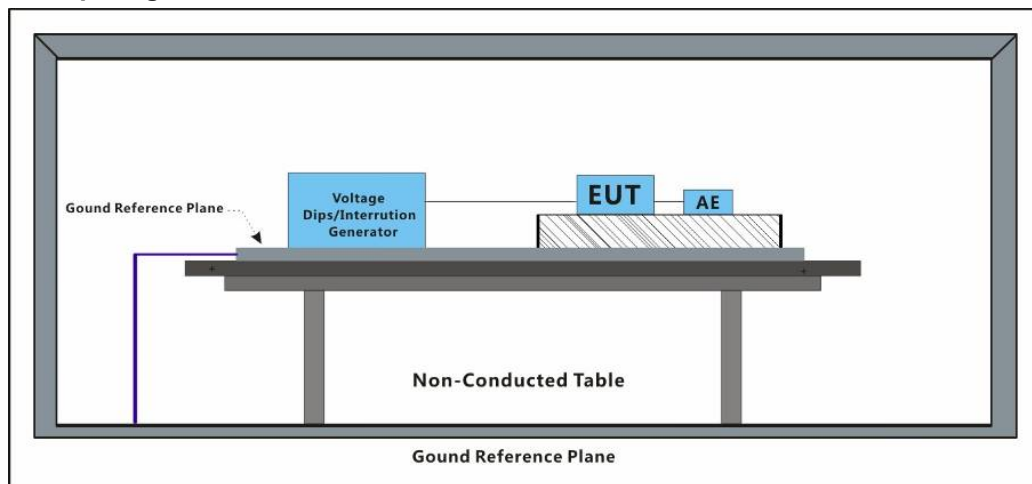




### 7.9 Voltage Dips and Interruptions

Test Requirement: EN 301 489-1 V2.2.3  
EN 301 489-17 V3.3.1  
Test Method: EN IEC 61000-4-11:2020

#### 7.9.1 Test Setup Diagram



#### 7.9.2 E.U.T. Operation

Operating Environment:  
Temperature: 18.6 °C Humidity: 55.7 % RH Atmospheric Pressure: 1020 mbar

#### 7.9.3 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	Keep EUT working via WiFi 2.4G&5G+RJ45+Adapter
Final test	08	Keep EUT in standby mode



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## 7.9.4 Test Condition and Results:

Performance Criterion:

0% of UT (Supply Voltage) for 0.5 Cycle:B;

0% of UT for 1 Cycle:B;

0% of UT for 250 Cycles:C;

70 % of UT for 25 Cycles:C

No. of Dips / Interruptions: 3 per Level

Time between dropout: 10s

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Cycle	3	A
0	180°	0.5 Cycle	3	A
0	0°	1 Cycle	3	A
0	180°	1 Cycle	3	A
0	0°	250 Cycles	3	C
0	180°	250 Cycles	3	C
70	0°	25 Cycles	3	A
70	180°	25 Cycles	3	A

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

C: The EUT stop working during the test. It can be recovered by user after the test.



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## 8 Test Setup Photo

### Conducted Emissions at AC Power Port



### Radiated Emissions (30MHz-1GHz)





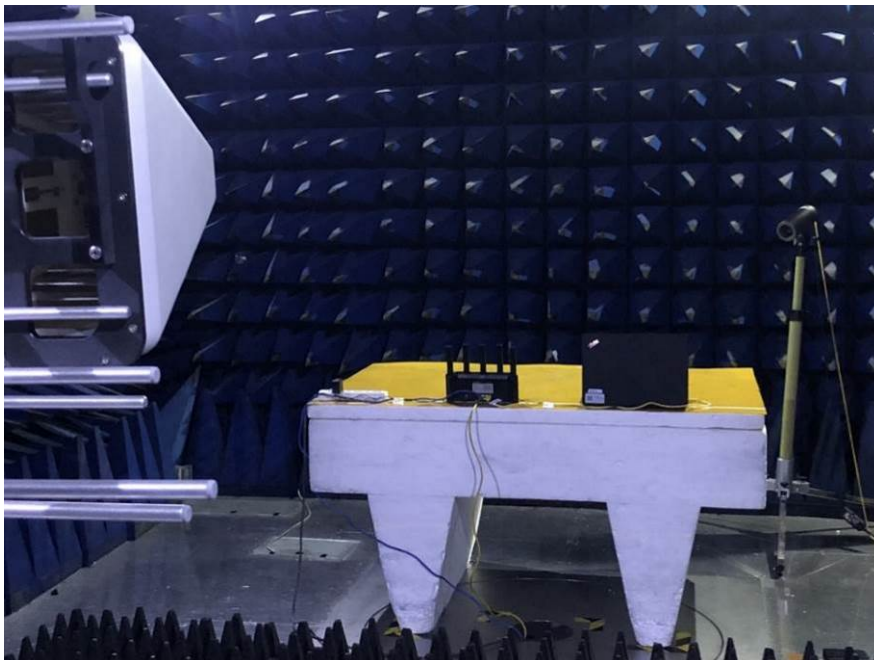
### Voltage Fluctuations and Flicker



### Electrostatic Discharge



### Radiated Immunity





### Electrical Fast Transients Burst at AC Mains Power Port



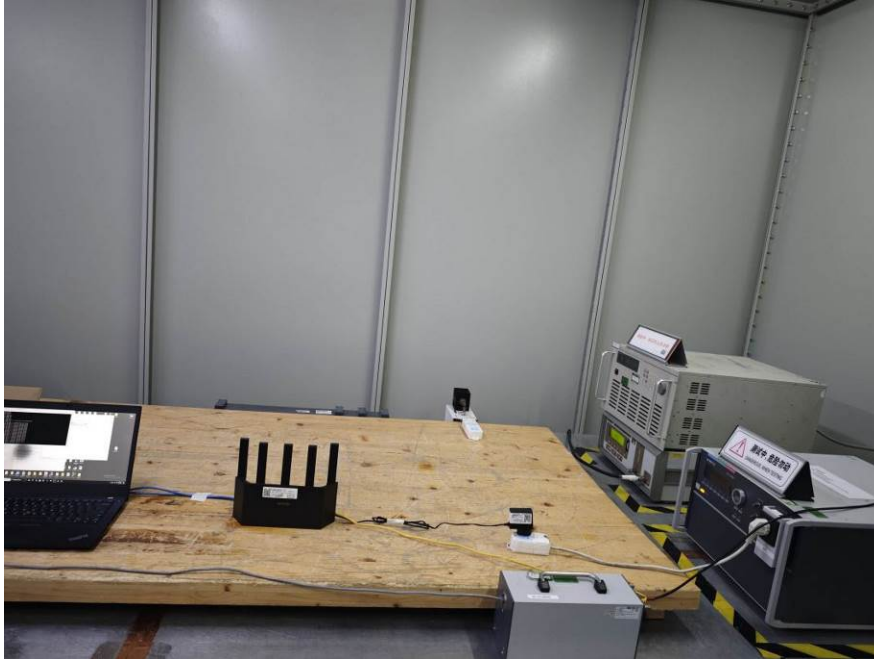
### Electrical Fast Transients Burst at Signal Port



### Surge at AC Mains Power Port

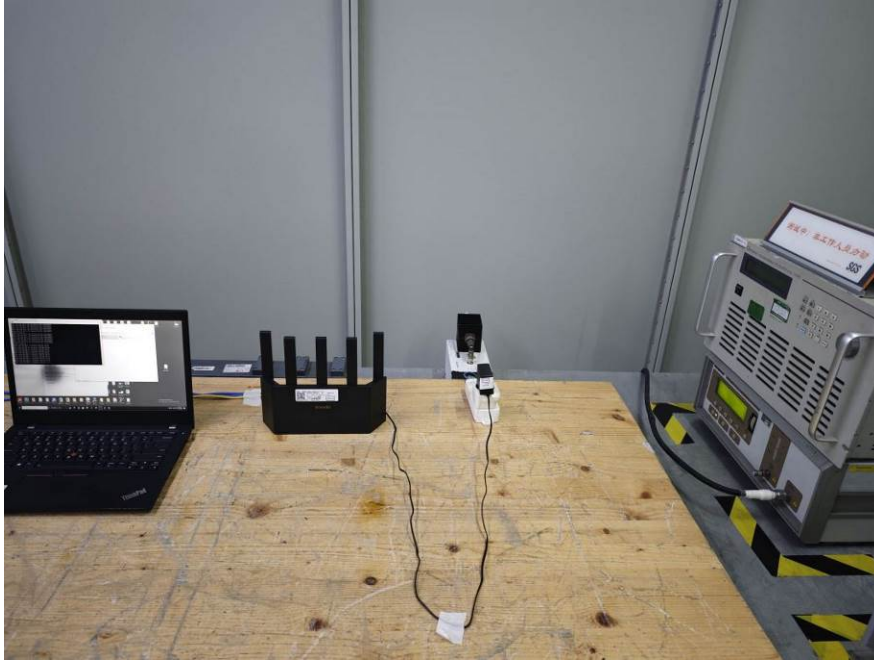


### Surge at Signal Port

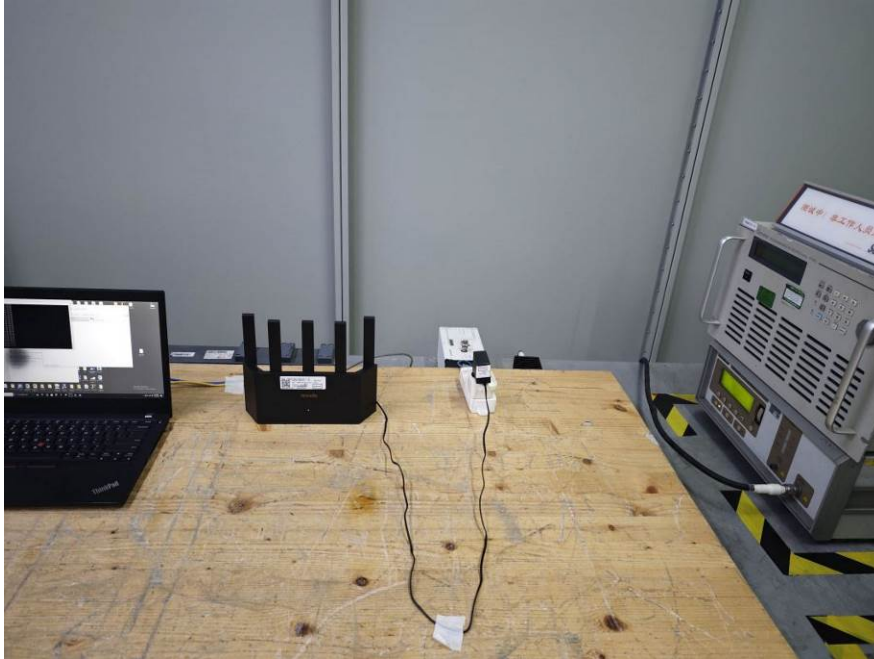




### Conducted Immunity at AC Mains Power Port



### Conducted Immunity at Signal Port





### Voltage Dips and Interruptions



## 9 EUT Constructional Details (EUT Photos)

Refer to Appendix\_Photographs of EUT Constructional Details for SZCR2412004876AT

- End of the Report -

