AN XIN TESTING CERTIFICATION

Certificate of Conformity

ANXIN TESTING

Certification No.	:	**AXJC20230522000307R**
Applicant	:	**Shenzhen yueerte Technology Co., Ltd**
Address	:	**Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen**
Manufacturer	:	**Shenzhen yueerte Technology Co., Ltd**
Address	:	**Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen**
Certification Marking	:	**CE-RoHS**
Product Description	:	**Bluetooth audio transmitter**
Model	:	**R20, R10, R30**
Trademark	:	**N/A**

An independent evaluation on the above-mentioned product(s) has been conducted pursuant to EU 2015/863 with 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and concluded that the equipment under evaluation met the legislative requirements of this directive.

Test standard: IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-6:2015, IEC 62321-8:2017

CE

Authorized Signer:_____

Kevin Liu/Manager

May. 26, 2023

Shenzhen An-Xin Testing Service Co., Ltd.

Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

ANXIN TESTING

TEST REPORT

For

Bluetooth audio transmitter

R20, R10, R30

Test Report Number: AXJC20230522000307G

Issued Date: May. 26, 2023

Applicant:

Shenzhen yueerte Technology Co., Ltd.

Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Issued by

Shenzhen An-Xin Testing Service Co., Ltd.

Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

TEL: +86 755 23009643

Fax: +86 755 23009643

Note: *This report shall not be reproduced except in full, without the written approval of Shenzhen An-Xin Testing Service Co., Ltd. This document may be altered or revised by Shenzhen An-Xin Testing Service Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.*

1 GENERAL INFORMATION

Applicant	Shenzhen yueerte Technology Co., Ltd.
Address	Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen
Manufacturer	Shenzhen yueerte Technology Co., Ltd.
Address	Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Equipment under Test (EUT)

Name:	Bluetooth audio transmitter
Model No.:	R20
EUT Power Supply:	DC 5V
Standards:	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-17 V3.2.4 (2020-09)

Test Result :	**PASS**

* In the configuration tested, the EUT detailed in this report complied with the standards specified above. Please refer to section 2 of this report for further details.

* The tests required in RED Directive 2014/53/EU were included in the report, The European Union's new Radio Equipment Directive (RED) 2014/53/EU was published on April 16, 2014, and EU member states must adopt and publish the laws, regulations and administrative provisions needed to comply with the new Directive by June 12, 2016.

Tested By: _____ **Date:** **May. 26, 2023**

Jet Chen

Approved By: _____ **Date:** **May. 26, 2023**

Kevin Liu

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

2 Contents

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

3 Test Summary

EMI Test				
Test Item	Test Requirement	Test Method	Application	Result
Radiated Emission	ETSI EN 301 489-17	ETSI EN301 489-1	Enclosure	Pass
Conducted Emission	ETSI EN 301 489-17	ETSI EN301 489-1	AC port	Pass
Harmonic Current Emissions	ETSI EN 301 489-17	ETSI EN301 489-1	AC port	N/A
Voltage Fluctuations and Flicker	ETSI EN 301 489-17	ETSI EN301 489-1	AC port	Pass
EMS Test				
ESD (Electrostatic Discharge)	ETSI EN 301 489-17	EN 61000-4-2	Enclosure	Pass
Radiated Immunity, 80MHz to 6 GHz	ETSI EN 301 489-17	EN 61000-4-3	Enclosure	Pass
EFT (Electrical Fast Transients	ETSI EN 301 489-17	EN 61000-4-4	AC port	Pass
Surge Immunity	ETSI EN 301 489-17	EN 61000-4-5	AC port	Pass
Injected Currents 150kHz to 80MHz	ETSI EN 301 489-17	EN 61000-4-6	AC port	Pass
Voltage Dips and Interruptions	ETSI EN 301 489-17	EN 61000-4-11	AC port	Pass

Remark:
Pass: The EUT complies with the essential requirements in the standard.
N/A: Not applicable

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

4 General Information

4.1 General Description of EUT

Product Name:	Bluetooth audio transmitter
Model No.:	R20
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is the model name for commercial purpose.	
Hardware Version:	IPC3516C-241AA-ZW MAIN REV:1.3
Software Version:	V2.0.01
Operation Frequency:	2412MHz~2472MHz(802.11b/802.11g/802.11n(H20)) 2422MHz~2462MHz(802.11n(H40))
Channel numbers:	13 for 802.11b/802.11g/802.11n(HT20) 9 for 802.11n(HT40)
Channel separation:	5MHz
Modulation Technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum(DSSS)
Modulation Technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	FPCB antenna
Antenna gain:	2.39dBi (declare by Applicant)
Power Supply:	DC 5V
Remark: Both adapter 1, 2 and 3 were tested, and found adapter 1 was the worst case. So only the worst was record on the report.	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

4.2 Operating Modes

Operating mode	Detail description
WiFi mode	Keep the EUT in charging and play internet information by wifi network.

4.3 Description of Support Units

None.

4.4 Test Facility

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

● **FCC —Registration No.: 600491**

EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Has been
Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

4.5 Test Location

RI test was performed at:
All other tests were performed at:

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

5 Equipment Used during Test

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	June. 03, 2022	June. 02, 2023
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 03, 2022	June. 02, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 03, 2022	June. 02, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 03, 2022	June. 02, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 03, 2022	June. 02, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 03, 2022	June. 02, 2023
9	Coaxial Cable	GTS	N/A	GTS211	June. 03, 2022	June. 02, 2023
10	Coaxial cable	GTS	N/A	GTS210	June. 03, 2022	June. 02, 2023
11	Coaxial Cable	GTS	N/A	GTS212	June. 03, 2022	June. 02, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 03, 2022	June. 02, 2023
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 03, 2022	June. 02, 2023
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 03, 2022	June. 02, 2023
15	Band filter	Amindeon	82346	GTS219	June. 03, 2022	June. 02, 2023
16	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June. 03, 2022	June. 02, 2023
17	D.C. Power Supply	Instek	PS-3030	GTS232	June. 03, 2022	June. 02, 2023
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS588	June. 03, 2022	June. 02, 2023
19	Splitter	Agilent	11636B	GTS237	June. 03, 2022	June. 02, 2023

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	June. 03, 2022	June. 02, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 03, 2022	June. 02, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 03, 2022	June. 02, 2023
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 03, 2022	June. 02, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 03, 2022	June. 02, 2023

ESD						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	ESD Simulator	KIKUSUI	KES4021A	GTS242	June. 03, 2022	June. 02, 2023
2	Thermo meter	KTJ	TA328	GTS243	June. 03, 2022	June. 02, 2023

Conducted Immunity						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Signal Generator	SCHLODER	CDG-6000-25	GTS553	June. 03, 2022	June. 02, 2023
2	CDN	SCHLODER	CDN-M2+3	GTS554	June. 03, 2022	June. 02, 2023
3	ATT	SCHLODER	ATT-6DB-100	GTS556	June. 03, 2022	June. 02, 2023
4	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS588	June. 03, 2022	June. 02, 2023

Harmonic/ Flicker						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	HARMONIC/FLICKER ANALYZER	KIKUSUI	KHA1000	GTS235	June. 03, 2022	June. 02, 2023
2	AC POWER SUPPLY	KIKUSUI	PCR4000LE	GTS236	June. 03, 2022	June. 02, 2023
3	LINE IMPEDANCE NETWORK	KIKUSUI	LIN1020JF	GTS237	June. 03, 2022	June. 02, 2023
4	Thermo meter	KTJ	TA328	GTS256	June. 03, 2022	June. 02, 2023

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EFT, Surge, Voltage dips and Interruption						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	EMTEST system	EMTEST	UCS500N	GTS239	June. 03, 2022	June. 02, 2023
2	Thermo meter	KTJ	TA328	GTS238	June. 03, 2022	June. 02, 2023

Radiated Immunity:						
Item	Test Equipment	Manufacturer	Model No.	Serial NO.	Cal.Date (mm-dd-yy)	Cal.Due Date (mm-dd-yy)
1	Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	June. 03, 2022	June. 02, 2023
2	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-08	June. 03, 2022	June. 02, 2023
3	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	June. 03, 2022	June. 02, 2023
4	Log-periodic Antenna (0.07-3GHz)	Schwarzbeck	VUSLP9111E	SEM003-17	N/A	N/A
5	Signal Generator	Rohde & Schwarz	SMB100A	SEM006-11	June. 03, 2022	June. 02, 2023
6	Broadband Amplifier (80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	June. 03, 2022	June. 02, 2023
7	Broadband Amplifier (800MHz-3GHz)	Rohde & Schwarz	BBA150-D110	SEM005-13	June. 03, 2022	June. 02, 2023
8	Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	SEM010-01	June. 03, 2022	June. 02, 2023
9	Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	June. 03, 2022	June. 02, 2023
10	Audio Analyzer	Rohde & Schwarz	UPV	SEM008-03	June. 03, 2022	June. 02, 2023
11	Conditioning Amplifier	Brüel & Kjaer	2690-OS2	SEM005-10	June. 03, 2022	June. 02, 2023

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	GTS243	June. 03, 2022	June. 02, 2023
2	Barometer	ChangChun	DYM3	GTS255	June. 03, 2022	June. 02, 2023

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6 EMC Requirements Specification in ETSI EN 301 489-17

6.1 EMI (Emission)

6.1.1 Radiated Emission

Test Requirement:	ETSI EN 301 489-17
Test Method:	ETSI EN 301 489-1 and EN55016-2-3
Test Frequency Range:	30MHz to 6GHz
Test site:	Measurement Distance: 3m

Receiver setup:

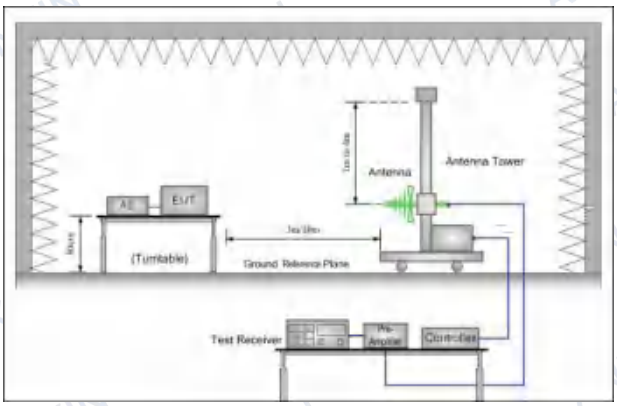
Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	AV	1MHz	3MHz	Average Value

Limit:

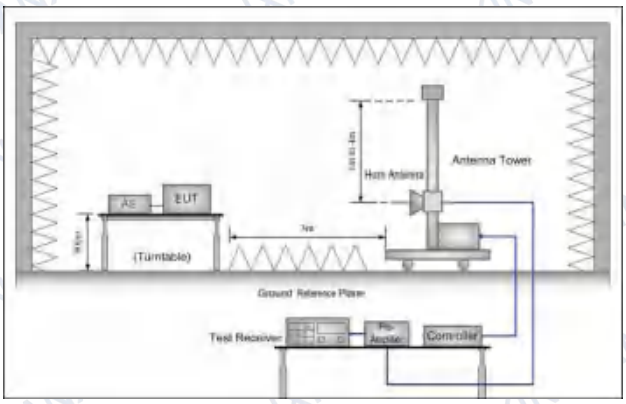
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-230MHz	40.00	Quasi-peak Value
230MHz-1GHz	47.00	Quasi-peak Value
1GHz-3GHz	50.00	Average Value
	70.00	Peak Value
3GHz-6GHz	54.00	Average Value
	74.00	Peak Value

Test setup:

Below 1GHz



Above 1GHz



Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Test Procedure:	■ **From 30MHz to 1GHz:** 1. The radiated emissions test was conducted in a semi-anechoic chamber. 2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation. 3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT. 4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization. ■ **Above 1GHz:** 1. The radiated emissions test was conducted in a fully-anechoic chamber. 2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation. 3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum plots of the EUT. 4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.				
Test environment:	Temp.:	25 ◦C	Humid.:	50%	Press.:	1 010mbar
Measurement Record:	Uncertainty: ± 4.5dB					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Remark:
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 🖷 86-0755-23009643 http://www.anxinlab.com/

Measurement Data

Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
49.88	44.98	12.20	0.77	30.00	27.95	40.00	-12.05	Vertical
35.38	40.10	11.20	0.61	30.07	21.84	40.00	-18.16	Vertical
124.57	43.66	8.75	1.40	29.54	24.27	40.00	-15.73	Vertical
190.41	43.48	9.70	1.79	29.23	25.74	40.00	-14.26	Vertical
467.24	34.30	16.83	3.17	29.36	24.94	47.00	-22.06	Vertical
890.73	31.69	22.12	4.82	29.11	29.52	47.00	-17.48	Vertical
48.84	29.72	12.23	0.76	30.00	12.71	40.00	-27.29	Horizontal
136.46	38.97	7.57	1.48	29.48	18.54	40.00	-21.46	Horizontal
194.45	37.39	9.87	1.81	29.22	19.85	40.00	-20.15	Horizontal
213.76	34.76	10.69	1.92	29.34	18.03	40.00	-21.97	Horizontal
483.91	27.19	17.20	3.23	29.33	18.29	47.00	-28.71	Horizontal
863.06	25.17	21.86	4.71	29.13	22.61	47.00	-24.39	Horizontal

Above 1GHz

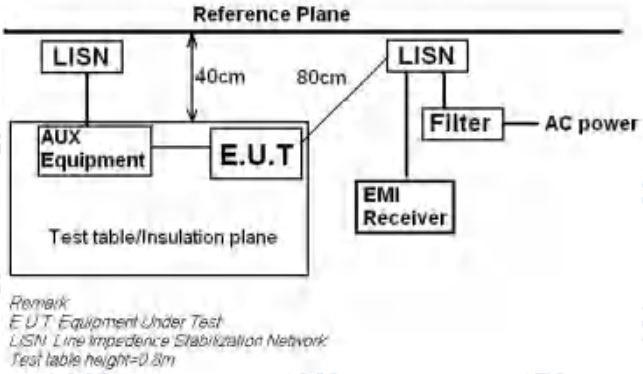
Peak measurement

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarity
1340.00	37.32	25.69	4.57	33.33	34.25	70.00	-35.75	Vertical
2145.00	35.51	27.52	5.12	34.30	33.85	70.00	-36.15	Vertical
2880.00	35.44	28.42	5.82	33.45	36.23	70.00	-33.77	Vertical
3450.00	35.67	28.80	6.86	32.81	38.52	74.00	-35.48	Vertical
4790.00	29.52	31.76	8.59	32.08	37.79	74.00	-36.21	Vertical
5720.00	29.66	32.53	9.81	32.29	39.71	74.00	-34.29	Vertical
1910.00	36.52	25.79	4.92	34.32	32.91	70.00	-37.09	Horizontal
2585.00	36.02	27.74	5.57	33.80	35.53	70.00	-34.47	Horizontal
3200.00	35.43	28.71	6.35	33.10	37.39	74.00	-36.61	Horizontal
3855.00	31.86	29.44	7.62	32.34	36.58	74.00	-37.42	Horizontal
4525.00	30.99	31.37	8.36	31.95	38.77	74.00	-35.23	Horizontal
5390.00	30.07	31.79	9.35	32.37	38.84	74.00	-35.16	Horizontal

Remark:
1. The EUT was test at 3m in field chamber.
2. If the average limit is met when using a Peak detector, the EUT shall be deemed to meet both peak and average limits. And measurement with the average detector is unnecessary.

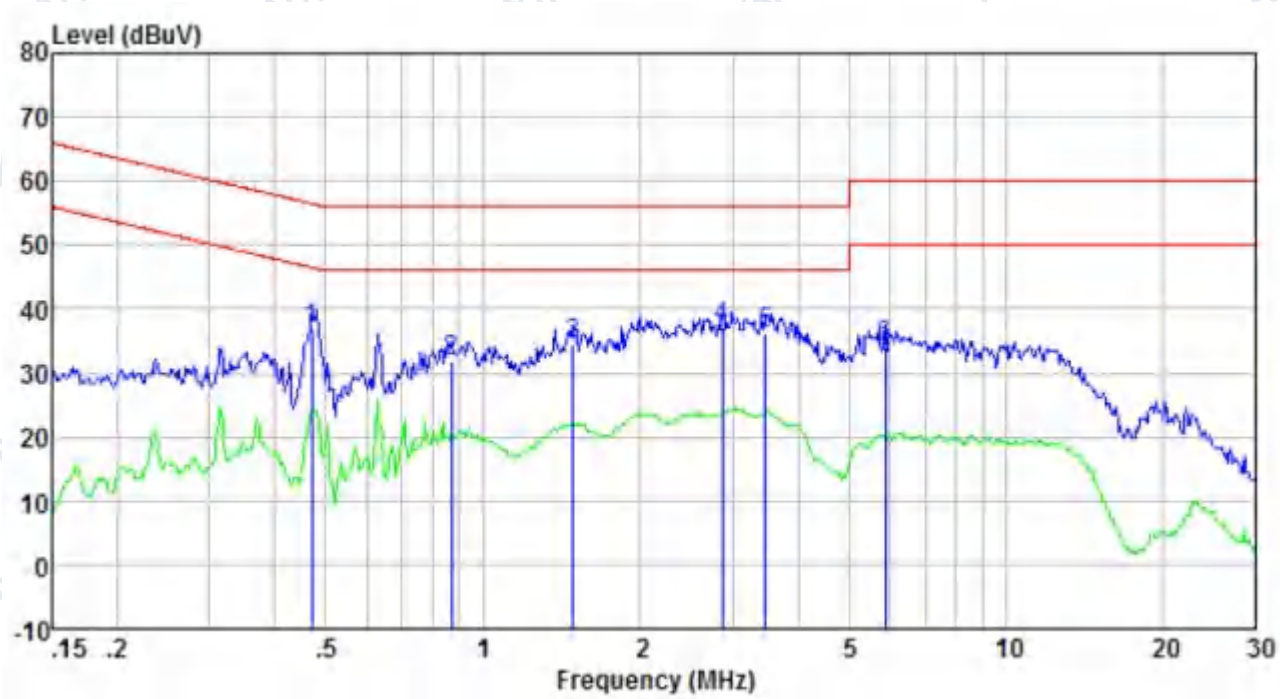
Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.1.2 Conducted Emissions

Test Requirement:	ETSI EN 301 489-17
Test Method:	ETSI EN 301 489-1
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9kHz, VBW=30kHz
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to EN55032 Class B on conducted measurement.
Test Instruments:	Temp.: 24 °C | Humid.: 51% | Press.: 1 010mbar
Measurement Record:	Uncertainty: ± 3.45dB
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 🖷 86-0755-23009643 http://www.anxinlab.com/

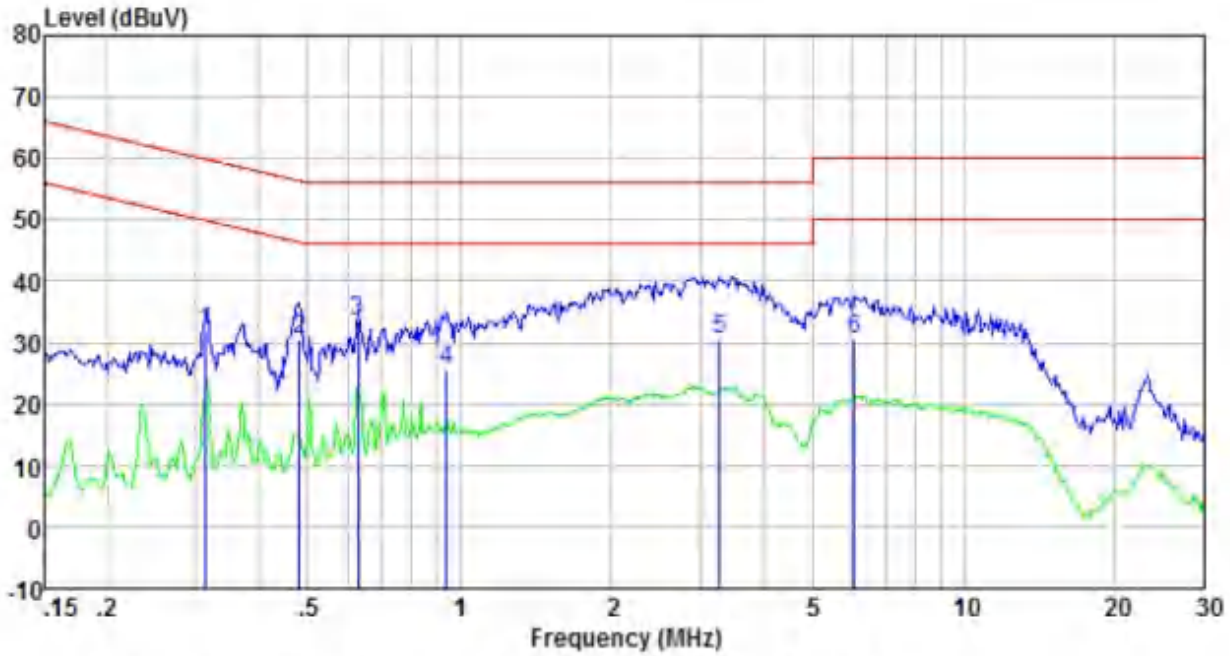
Line:



Freq MHz	Reading level dBuV	1ISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.471	36.44	0.39	0.11	36.94	56.49	-19.55	QP
0.871	31.54	0.26	0.13	31.93	56.00	-24.07	QP
1.487	34.15	0.22	0.13	34.50	56.00	-21.50	QP
2.869	36.66	0.20	0.15	37.01	56.00	-18.99	QP
3.472	35.83	0.21	0.15	36.19	56.00	-19.81	QP
5.867	33.96	0.21	0.16	34.33	60.00	-25.67	QP

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Neutral:



Freq MHz	Reading level dBuV	1ISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.313	31.30	0.42	0.10	31.82	59.88	-28.06	QP
0.481	30.04	0.36	0.11	30.51	56.32	-25.81	QP
0.627	32.97	0.27	0.12	33.36	56.00	-22.64	QP
0.943	25.24	0.21	0.13	25.58	56.00	-30.42	QP
3.276	30.10	0.21	0.15	30.46	56.00	-25.54	QP
6.056	30.25	0.21	0.16	30.62	60.00	-29.38	QP

Notes:

1. *An initial pre-scan was performed on the live and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss*
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.1.3 Harmonics Test Results

Test Requirement:	ETSI EN 301 489-17: EN 61000-3-2
Test Method:	N/A: See Remark Below
Remark:	There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2. For further details, please refer to Clause 7, Note 1 of EN 61000-3-2 Which states: "For the following categories of equipment limits are not specified in this edition of the standard. Note 1: Equipment with a rated power of 75W or less, other than lighting equipment."

6.1.4 Flicker Test Results

Test Requirement:	ETSI EN 301 489-17: EN 61000-3-3					
Test Method:	EN 61000-3-3					
Class/Severity:	Clause 5 of EN 61000-3-3					
Measurement Time:	10 min					
Detector:	As per EN 61000-3-3					
Test Instruments:	Temp.:	24 °C	Humid.:	51%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details, Only show test data of the worse mode on the test report.					
Test results:	Pass					

Measurement Data

	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.059	7.00	PASS
dt [s]	0.000	0.50	PASS

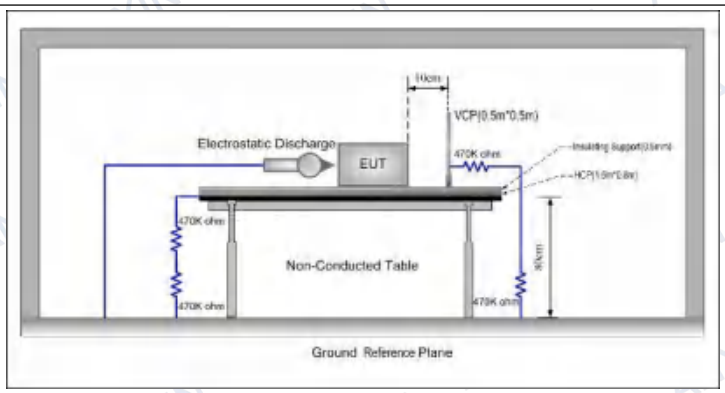
Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2 Immunity

Performance Criteria of ETSI EN 301 489-17, clause 6	
Continuous phenomena applied to transmitters (CT)	1. During the test, the uplink speech output level shall be at least 35 dB less than the previously recorded reference levels, when measured through an audio band pass filter of width 200 Hz, centred on 1 kHz (audio breakthrough check). 2. At the conclusion of the test, the EUT shall operate as intended with no loss of user control functions or stored data, and the communication link shall have been maintained. 3. In addition to confirming the above performance during a call, the test shall also be performed in idle mode, and the transmitter shall not unintentionally operate.
Transient phenomena applied to Transmitters (TT)	1. At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. 2. At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communication link shall have been maintained. 3. In addition to confirming the above performance during a call, the test shall also be performed in idle mode, and the transmitter shall not unintentionally operate.
Continuous phenomena applied to Receivers (CR)	1. During the test, the RXQUAL of the downlink shall not exceed the value of three, measured during each individual exposure in the test sequence. 2. During the test, the downlink speech output level shall be at least 35 dB less than the previously recorded reference levels, when measured through an audio band pass filter of width 200 Hz, centred on 1 kHz (audio breakthrough check). 3. At the conclusion of the test, the EUT shall operate as intended with no loss of user control the The communication link shall have been maintained.
Transient phenomena applied to Receivers (TR)	1. At the conclusion of each exposure the EUT shall operate with no user noticeable loss of the communication link. 2. At the conclusion of the total test comprising the series of individual exposures, the EUT shall operate as intended with no loss of user control functions or stored data, as declared by the manufacturer, and the communication link shall have been maintained
Ancillary equipment tested on a stand alone basis	If ancillary equipment is intended to be tested on a stand alone basis, the performance criteria described in the clauses above are not appropriate, then the manufacturer shall declare, for inclusion in the test report, his own specification for an acceptable level of performance or degradation of performance during and/or after the immunity tests. The performance specification shall be included in the product description and documentation.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2.1 Electrostatic Discharge

Test Requirement:	ETSI EN 301489-17
Test Method:	EN 61000-4-2
Discharge Voltage:	Contact Discharge: ±2kV, ±4kV Air Discharge: ±2kV, ±4kV, ±8kV HCP/VCP: ±2kV, ±4kV
Polarity:	Positive & Negative
Number of Discharge:	Contact Discharge: Minimum 25 times at each test point, Air Discharge: Minimum 10 times at each test point.
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Limit:	Criteria B
Test setup:	
Test Procedure:	**Air discharge:** 1. The test was applied on non-conductive surfaces of EUT. 2. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. 3. After each discharge, the discharge electrode was removed from the EUT. 4. The generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. 5. This procedure was repeated until all the air discharge completed **Contact Discharge:** 1. The test was applied on conductive surfaces of EUT. 2. the generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. 3. the tip of the discharge electrode was touch the EUT before the discharge switch was operated. **Indirect discharge for horizontal coupling plane** 1. At least 10 single discharges shall be applied at the front edge of each HCP opposite the centre point of each unit of the EUT and 0.1m from the front of the EUT. 2. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge. 3. Consideration should be given to exposing all sides of the EUT.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

	Indirect discharge for vertical coupling plane 1. At least 10 single discharges were applied to the center of one vertical edge of the coupling plane. 2. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. 3. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.					
Test environment:	Temp.:	24 °C	Humid.:	51%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Measurement Record:

Test points:	I: Please refer to red ring in below plots
	II: Please refer to red ring in below plots

Direct discharge				
Discharge Voltage (KV)	**Type of discharge**	**Test points**	**Observations Performance**	**Result**
± 2, ± 4	Contact	I	A	Pass
± 2, ± 4,± 8	Air	II	A	Pass

Indirect discharge				
Discharge Voltage (KV)	**Type of discharge**	**Test points**	**Observation Performance**	**Result**
± 2, ± 4	HCP-Bottom/Top/ Front/Back/Left/Right	Edge of the HCP	A	Pass
± 2, ± 4	VCP-Front/Back /Left/Right	Center of the VCP	A	Pass

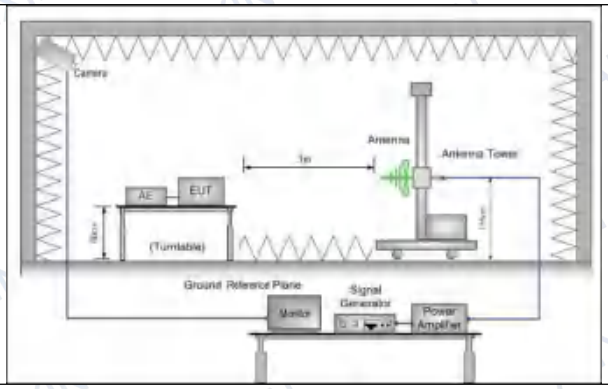
Remark:

A: Normal performance within the specification limits.

N/A:Not applicable

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2.2 Radiated Immunity

Test Requirement:	ETSI EN 301489-17
Test Method:	EN 61000-4-3
Frequency range:	80MHz to 6GHz
Test Level:	3V/m
Modulation:	80%, 1kHz Amplitude Modulation
Performance Criterion:	Criteria A
Test setup:	
Test Procedure:	1. For table-top equipment, the EUT was placed in the chamber on a non-conductive table 0.8m high. For arrangement of floor-standing equipment, the EUT was mounted on a non-conductive support 0.1m above the supporting plane. For human body-mounted equipment, the EUT may be tested in the same manner as table top items. 2. If possible, a minimum of 1 m of cable is exposed to the electromagnetic field. Excess length of cables interconnecting units of the EUT shall be bundled low-inductively in the approximate center of the cable to form a bundle 30 cm to 40 cm in length. 3. The EUT was initially placed with one face coincident with the calibration plane. The EUT face being illuminated was contained within the UFA (Uniform Field Area). 4. The frequency ranges to be considered were swept with the signal modulated and pausing to adjust the RF signal level or to switch oscillators and antennas as necessary.Where the frequency range was swept incrementally, the step size was not exceed 1 % of the preceding frequency value. 5. The dwell time of the amplitude modulated carrier at each frequency was not be less than the time necessary for the EUT to be exercised and to respond, and was not less than 0,5 s. 6. The test normally was performed with the generating antenna facing each side of the EUT. 7. The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned vertically and again with the antenna positioned horizontally. 8. The EUT was performed in a configuration to actual installation conditions, a video camera and/or a audio monitor were used to monitor the performance of the EUT.
Test monitor:	**Traffic mode:**

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

	1. The test system shall simulate a Base Station (BS) with Broadcast Control Channel/Common Control Channel (BCCH/CCCH) on one carrier. 2. The EUT shall be synchronized to the BCCH, listening to the CCCH and able to respond to paging messages.					
	Idle mode: 1. The test system shall simulate a Base Station (BS) with Broadcast Control Channel/Common Control Channel (BCCH/CCCH) on one carrier. 2. The EUT shall be synchronized to the BCCH, listening to the CCCH and able to respond to paging messages.					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test results:	Pass					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Measurement Record:

Measurement result:

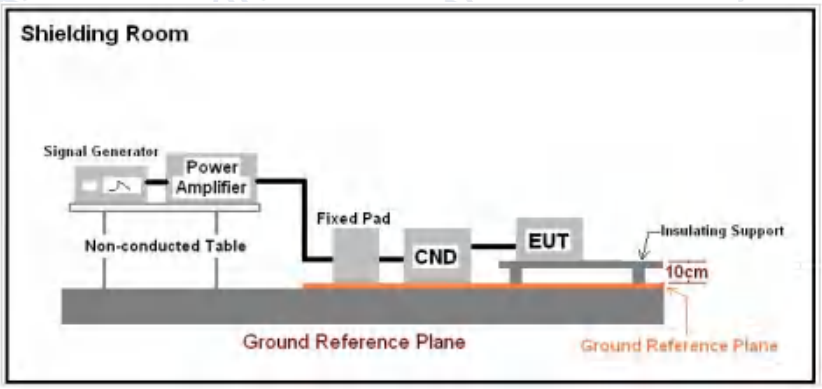
Frequency	Level	Modulation	Operating Mode	Antenna Polarization	EUT Face	Observations (Performance Criterion)
80 MHz-6 GHz	3 V/m	1 kHz, 80 % Amp. Mod, 10 % increment, dwell time=3seconds	Traffic mode	V	Front	A
				H		A
				V	Rear	A
				H		A
				V	Left	A
				H		A
				V	Right	A
				H		A
				V	Top	A
				H		A
				V	Bottom	A
				H		A

Remarks:

A: normal performance within the specification limits

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2.3 Radio frequency common mode

Test Requirement:	ETSI EN 301489-17					
Test Method:	EN 61000-4-6					
Frequency range:	0.15MHz to 80MHz					
Test Level:	3V rms on AC Ports (unmodulated emf into 150 Ω)					
Modulation:	80%, 1kHz Amplitude Modulation					
Performance Criterion:	Criteria A					
Test setup:						
Test Procedure:	1. Let the EUT work in test mode and test it. 2. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). 3. The disturbance signal described below is injected to EUT through CDN. 4. The EUT operates within its operational mode(s) under intended climatic conditions after power on. 5. The frequency range is swept from 0.150MHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.The rate of sweep shall not exceed $1.5*10^{-3}$decades/s. Where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value. 6. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.					
Test environment:	Temp.:	24 ◦C	Humid.:	51%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test results:	Pass					

Measurement Record:

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

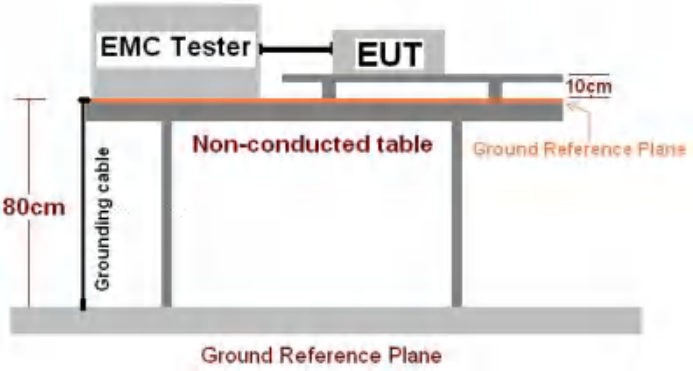
Frequency	Injected Position	Test Level	Modulation	Step Size	Dwell Time	Observations (Performance Criterion)
150kHz to 80MHz	AC Main	3Vrms	80%, 1kHz Amp. Mod.	1%	2s	A

Remark:

A: Normal performance within the specification limits.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2.4 Electrical Fast Transients

Test Requirement:	ETSI EN 301489-17					
Test Method:	EN 61000-4-4					
Test Level:	1.0kV on AC port					
Polarity:	Positive & Negative					
Repetition Frequency:	5kHz					
Burst Duration:	15ms					
Burst Period:	300ms					
Test Duration:	2 minute per level & polarity					
Performance Criterion:	B					
Test setup:						
Test Procedure:	1. The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. 2. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. 3. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables. 4. The length of the signal and power lines between the coupling device and the EUT is 0.5m **Test on Signal Ports, Telecommunication Ports and Control Ports:** The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 2 minutes. **Test on power supply ports:** 1. The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal. 2. Each of the Line and Neutral conductors is impressed with burst noise for 2 minutes.					
Test environment:	Temp.:	26 ◦C	Humid.:	54%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Record:

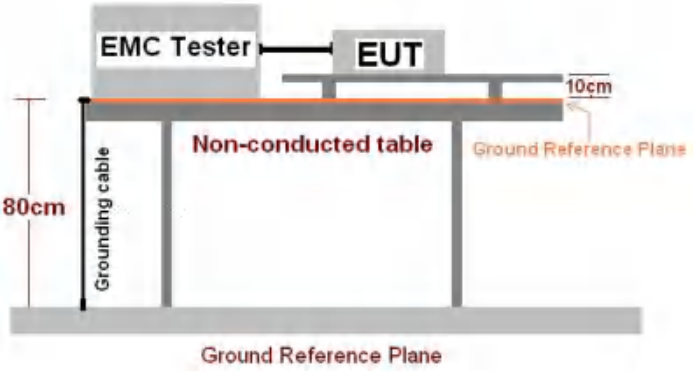
Lead under Test	Level (±kV)	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
L	± 1.0	Direct	A	Pass
N	± 1.0	Direct	A	Pass
L-N	± 1.0	Direct	A	Pass

Remark:

A: Normal performance within the specification limits

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2.5 Surge

Test Requirement:	ETSI EN 301489-17
Test Method:	ETSI EN 61000-4-5
Test Level:	±1kV Live to Neutral: Differential mode
Polarity:	Positive & Negative
Test Interval:	60s between each surge
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.
Performance Criterion:	B
Test setup:	
Test Procedure:	1. For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV. 2. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test. 3. Different phase angles are done individually. 4. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

Test environment:	Temp.:	26 °C	Humid.:	53%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Measurement Record:

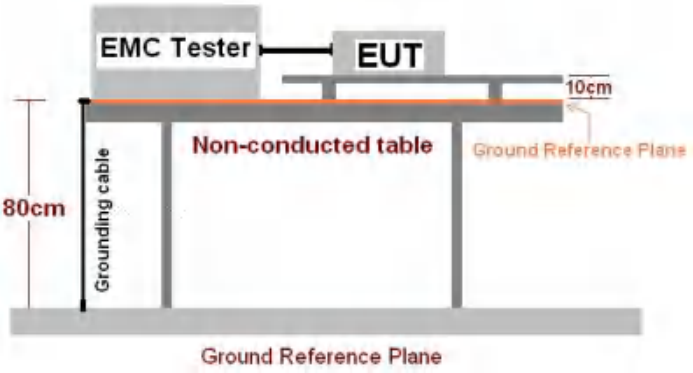
Location	Level(kV)	Pulse No	Surge Interval	Phase(deg)	Observations (Performance Criterion)
L-N	± 1	5	60s	0°	A
				90°	A
				180°	A
				270°	A

Remark:

A. Normal performance within the specification limits

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

6.2.6 Voltage Dip and Voltage Interruptions

Test Requirement:	ETSI EN 301489-17					
Test Method:	EN 61000-4-11					
Test Level:	0% of VT(Supply Voltage) for 0.5 period 0% of VT(Supply Voltage) for 1.0 period 70% of VT(Supply Voltage) for 25 period 0% of VT(Supply Voltage) for 250 period					
No. of Dips / Interruptions:	3 per Level					
Performance Criterion:	0% VD, 0.5 period----Performance criterion: B 0% VD, 1 period----Performance criterion: B 70% VD, 25 period----Performance criterion: C 0% VI, 250 period----Performance criterion: C					
Test setup:						
Test Procedure:	1>.The EUT and test generator were setup as shown on above setup photo. 2>.The interruptions are introduced at selected phase angles with specified duration. 3>.Record any degradation of performance.					
Test environment:	Temp.:	26 ◦C	Humid.:	53%	Press.:	1 010mbar
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Measurement Record:

Test Level U_T	Duration (Periods)	Phase angle	No of dropout	Time between dropout	Observations (Performance Criterion)
0%	0.5	0°, 90°, 180°, 270°	3	10s	A
0%	1.0	0°, 90°, 180°, 270°	3	10s	A
70%	25	0°, 90°, 180°, 270°	3	10s	B
0%	250	0°, 90°, 180°, 270°	3	10s	B

Remark:

A: No loss of function was observed.

B: During the test, the charging stopped, but after the test, the power charger can automatically return to normal

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

7 EUT PHOTOGRAPHS

Photo 1 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	
Photo 2 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

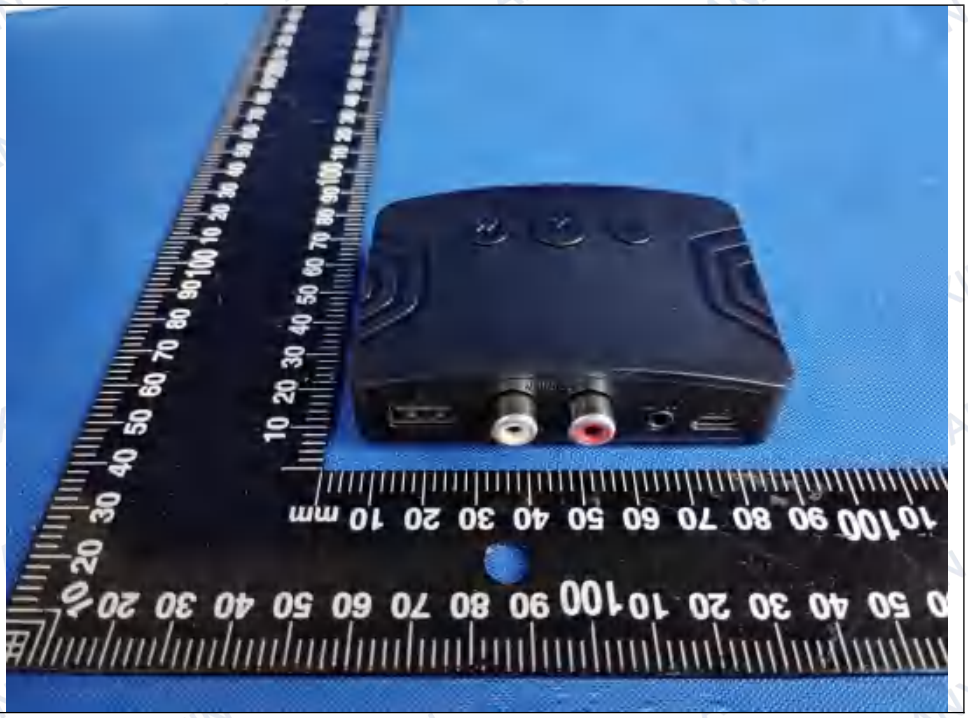
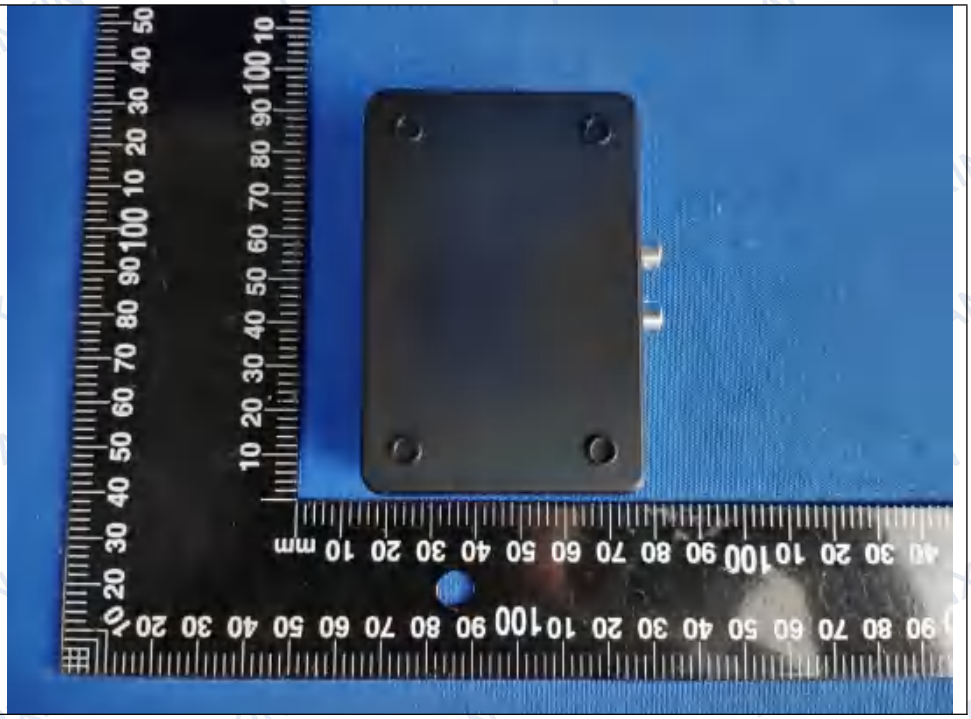
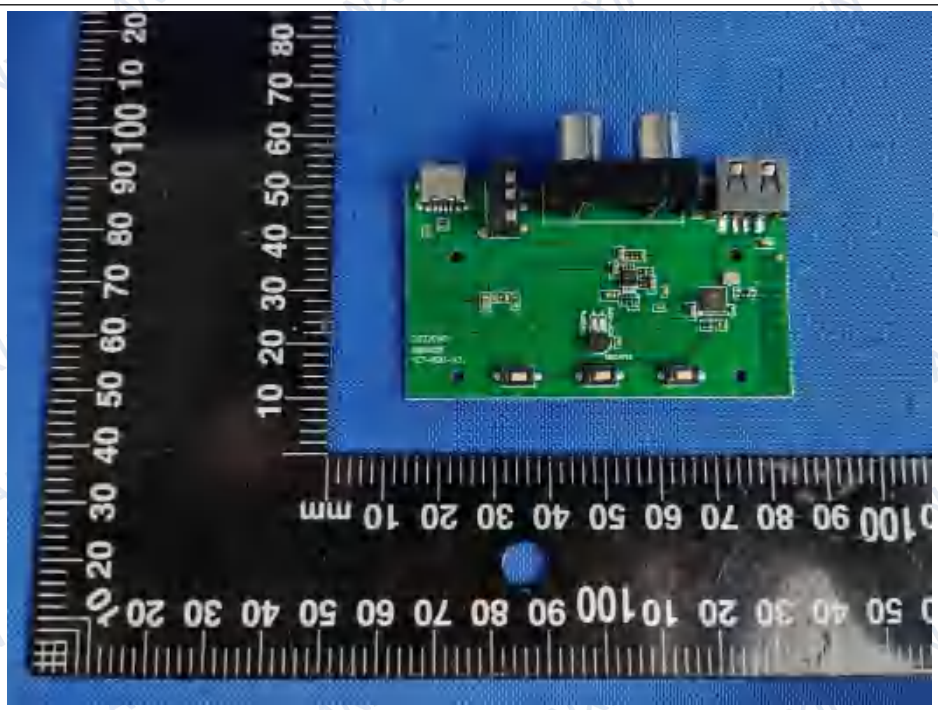
Photo 3 View: R20 [ ] Front [ ] Rear [√] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 4 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 5 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 6 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

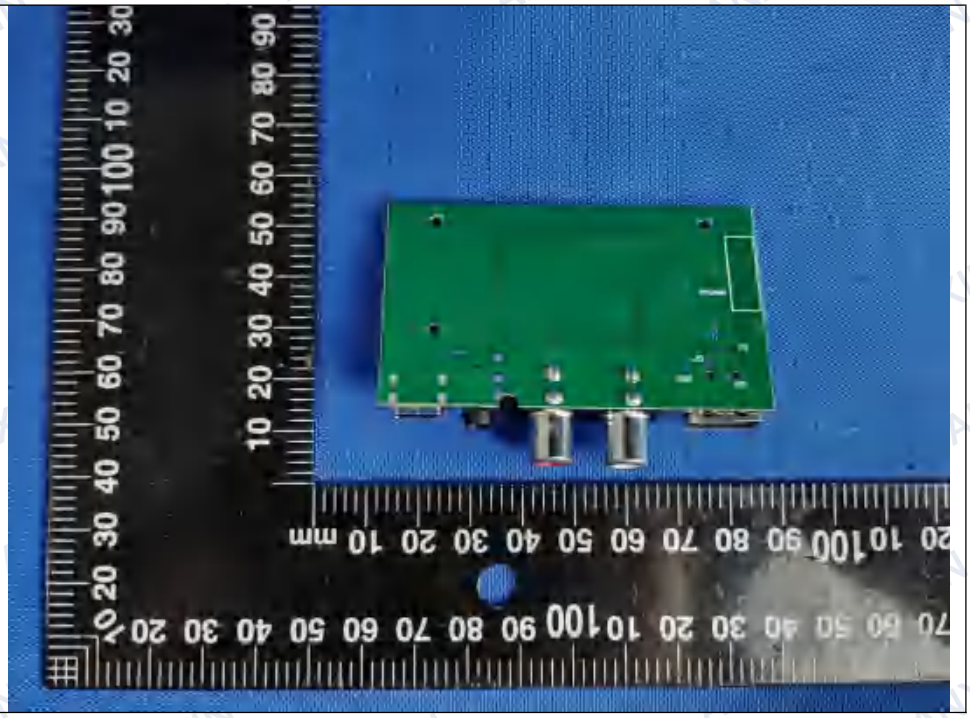
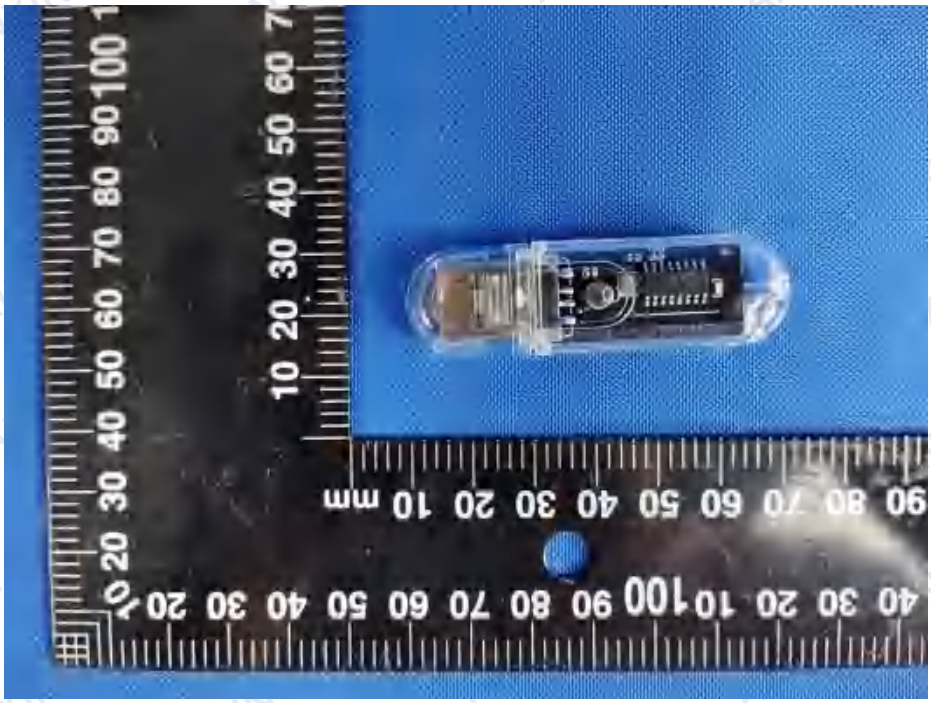
Photo 7 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 8 View: R10 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

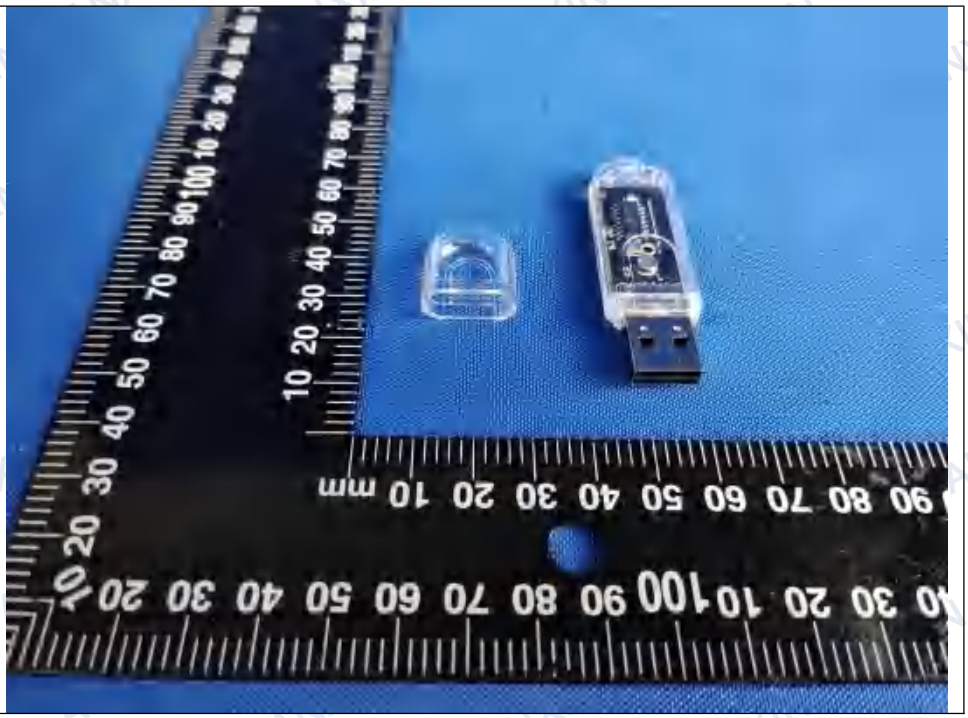
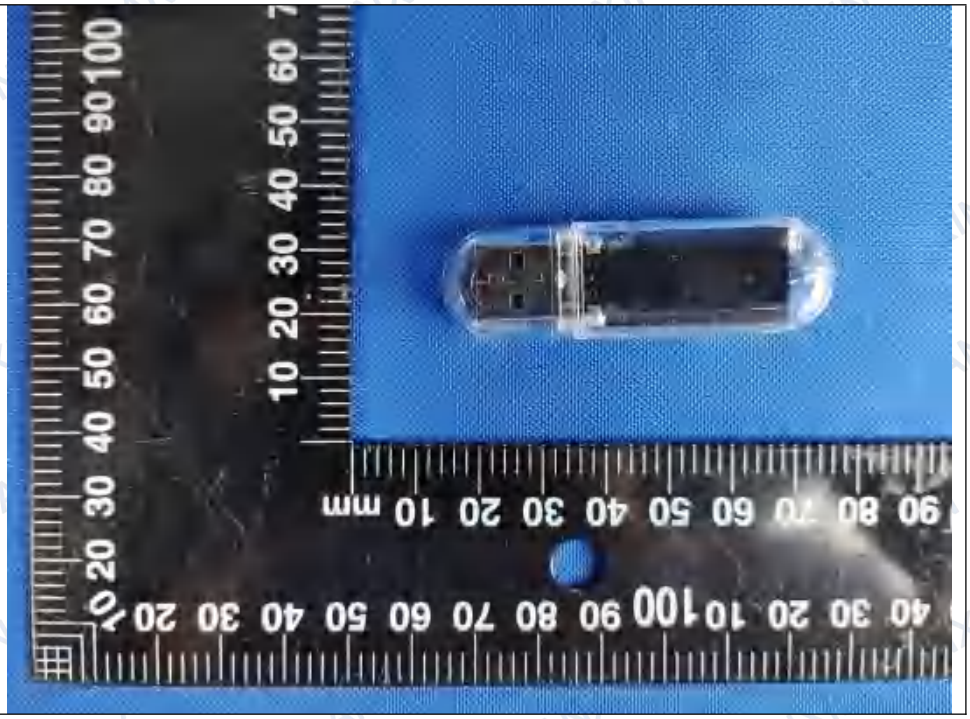
Photo 9 View: R10 [ ] Front [√] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 10 View: R10 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 11 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 12 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

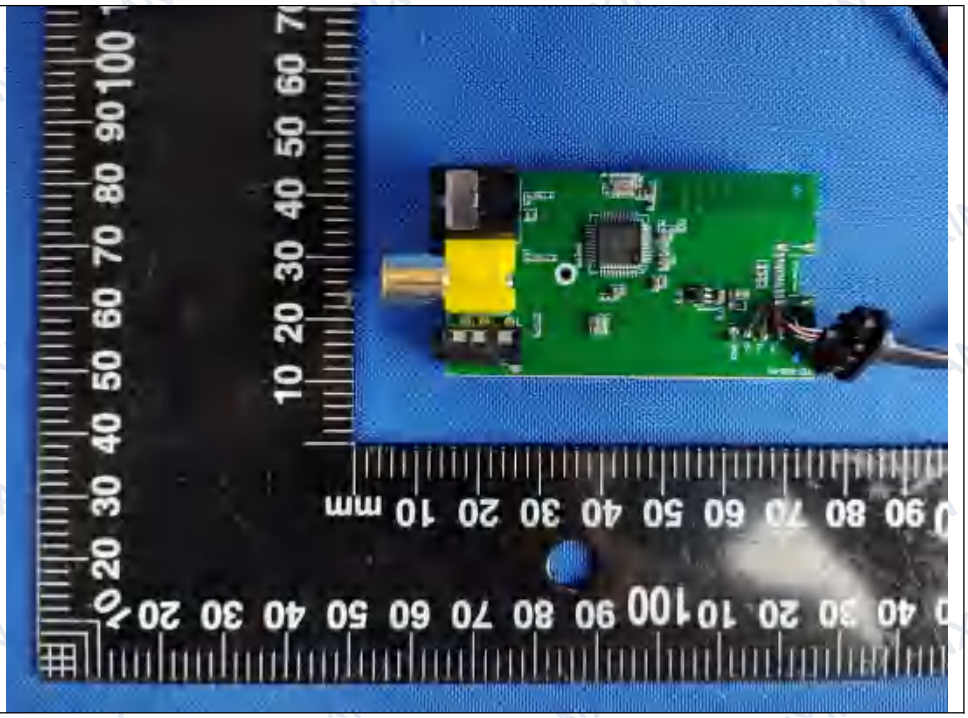
Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 13 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

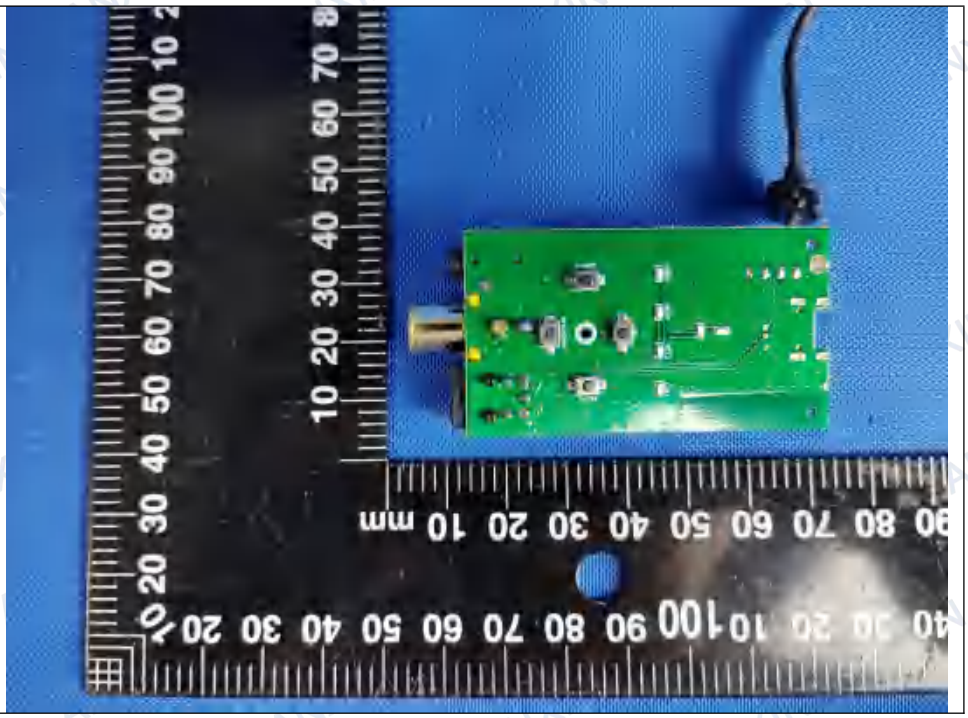
Photo 14 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 15 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 16 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 17 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

---END---

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

ANXIN TESTING

TEST REPORT

For

Bluetooth audio transmitter

Models No.:	**R20, R10, R30**
Applicant :	**Shenzhen yueerte Technology Co., Ltd. Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen**
Manufacturer :	**Shenzhen yueerte Technology Co., Ltd. Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen**
Issued By :	**Shenzhen An-Xin Testing Service Co., Ltd. Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China**
Tel :	**+86 755 23009643**
Fax :	**+86 755 23009643**
Report Number :	**AXJC20230522000307H**
Issued Date :	**May. 26, 2023**
Date of Report :	**May. 26, 2023**

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen An-Xin Testing Service Co., Ltd. This document may be altered or revised by Shenzhen An-Xin Testing Service Co., Ltd personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

2 Contents

Page

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

3 General Information

3.1 General Description of EUT

Product Name:	Bluetooth audio transmitter
Model No.:	R20
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is the model name for commercial purpose.	
Operation Frequency:	2412MHz~2472MHz(802.11b/802.11g/802.11n(H20)) 2422MHz~2462MHz(802.11n(H40))
Channel Numbers:	13 for 802.11b/802.11g/802.11n(HT20) 9 for 802.11n(HT40)
Channel Separation:	5MHz
Modulation Type: (IEEE 802.11b)	Direct Sequence Spread Spectrum(DSSS)
Modulation Type: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	FPCB Antenna
Antenna Gain:	2.39dBi
Power Supply:	DC 5V
Test standard:	EN 62311:2020
Remark: Both adapter 1, 2 and 3 were tested, and found adapter 1 was the worst case. So only the worst was record on the report.	

Tested By: Jet chen **Date:** May. 26, 2023

Jet Chen

Approved By: **Date:** May. 26, 2023

Kevin Liu

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

3.2 Test Facility

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

● **FCC —Registration No.: 600491**

EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Has been
Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

3.3 Test Location

All tests were performed at:

3.4 Description of Support Units

The EUT has been tested as an independent unit.

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

4 Technical Requirements Specification in EN 62311

Test Requirement:	EN 62311
Test Method:	EN 62311:2020
General Description of Applied Standards	EN 62311 Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.
Limit:	According to EN 62311, the criteria listed in the below table shall be used to evalouate the environmental inpact of human exposure to radio-frequency (RF) radiation as specified table 2 of Council Recommendation 1999/519/EC.

Reference levels for electric, magnetic and electromagnetic fields (0 Hz to 300 GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density S_{eq} (W/m²)
0-1 Hz	—	$3,2 \times 10^4$	4×10^4	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	4 000/f	5 000/f	—
0,025-0,8 kHz	250/f	4/f	5/f	—
0,8-3 kHz	250/f	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	0,73/f	0,92/f	—
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Notes:

1. f as indicated in the frequency range column.

Test method:	According to the Far field calculation formula: **Far Field Calculation Formula** $E = \frac{\sqrt{30PG(\theta,\phi)}}{r}$ G = antenna gain relative to an isotropic antenna θ, ϕ = elevation and azimuth angles to point of investigation r = distance from observation point to the antenna The antenna of the product, under normal use condition is at least 20cm away from the body of the user. Warning statement ot the user for keeing 20cm separation distance and the prohibition of operating to a person has been printed on the user manual. So, this product under normal use is located on electromagnetic far field between the human body.
Result:	Pass

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Measurement Data:

802.11b mode					
Frequency (MHz)	Output Power (dBm)	Output Power (mW)	E Field Strength (V/m)	Limit (V/m)	Result
2412	17.44	55.463	6.450	61.00	Pass
2442	17.40	54.954	6.420	61.00	Pass
2472	17.52	56.494	6.509	61.00	Pass

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

5. PHOTOGRAPHS OF EUT

Photo 1 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 2 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

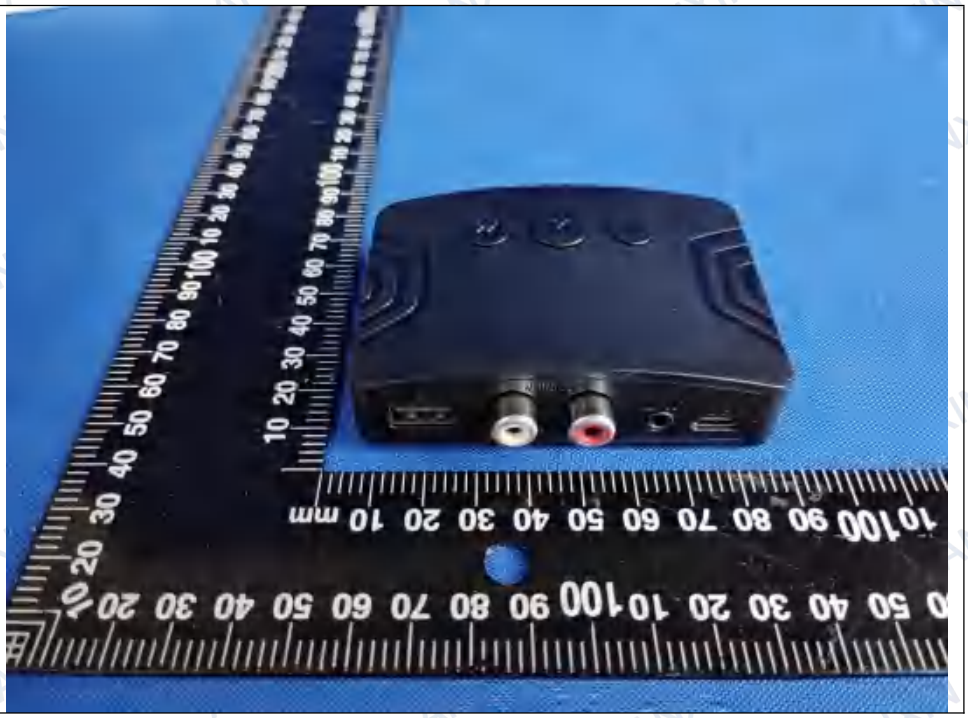
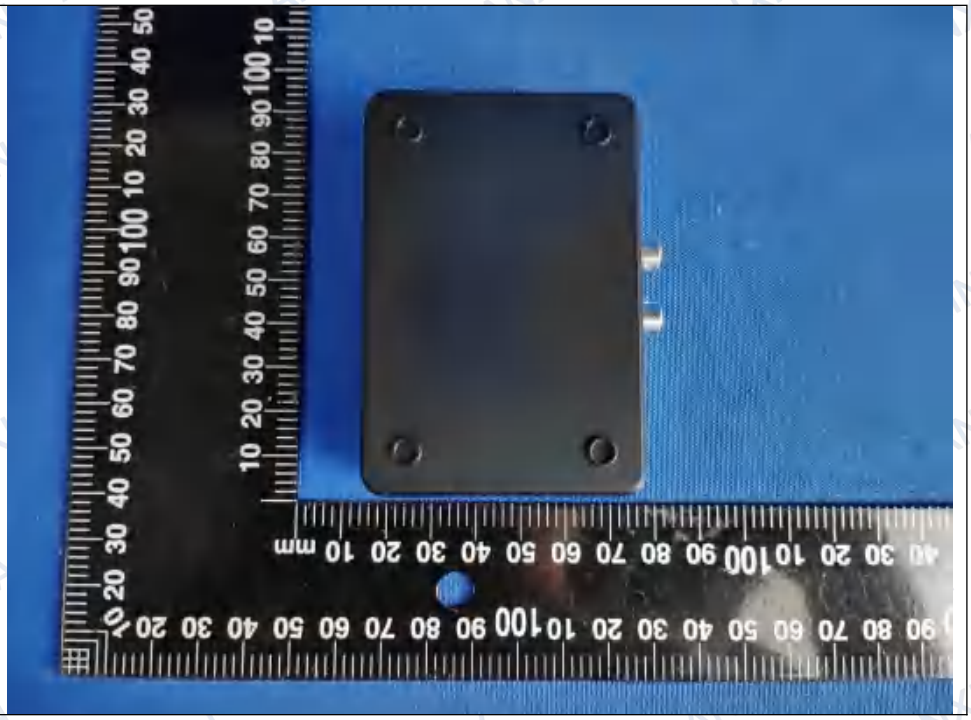
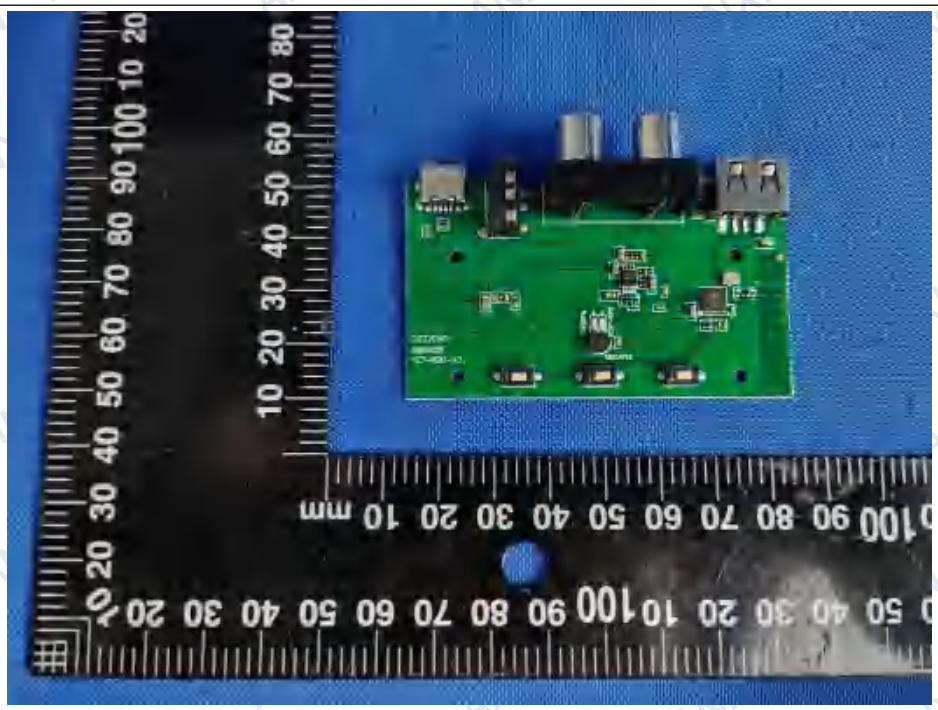
Photo 3 View: R20 [ ] Front [ ] Rear [√] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 4 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 5 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 6 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

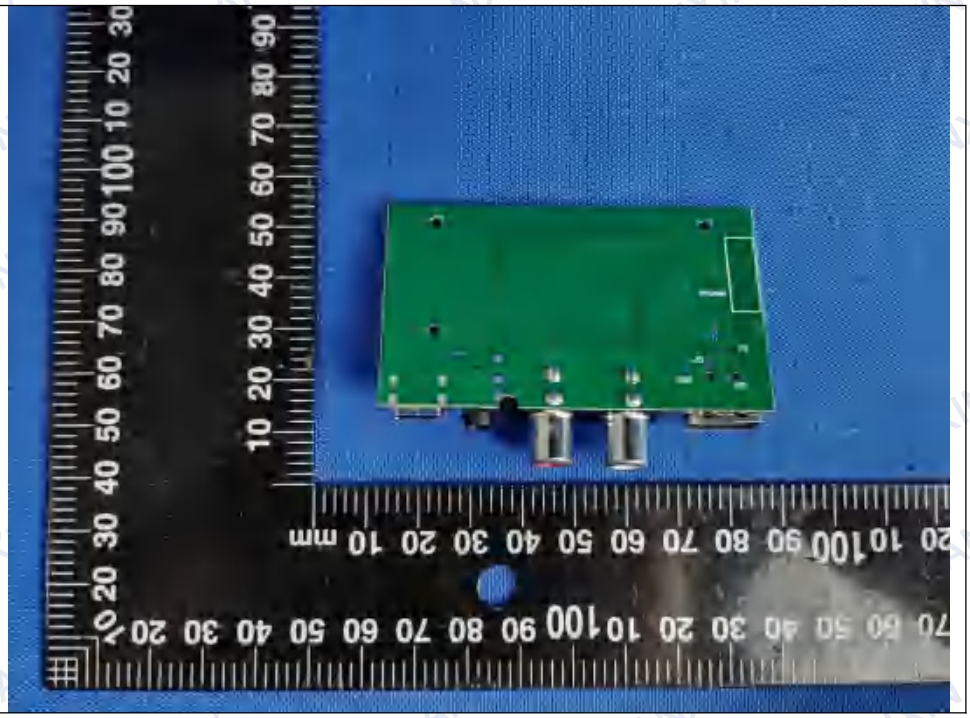
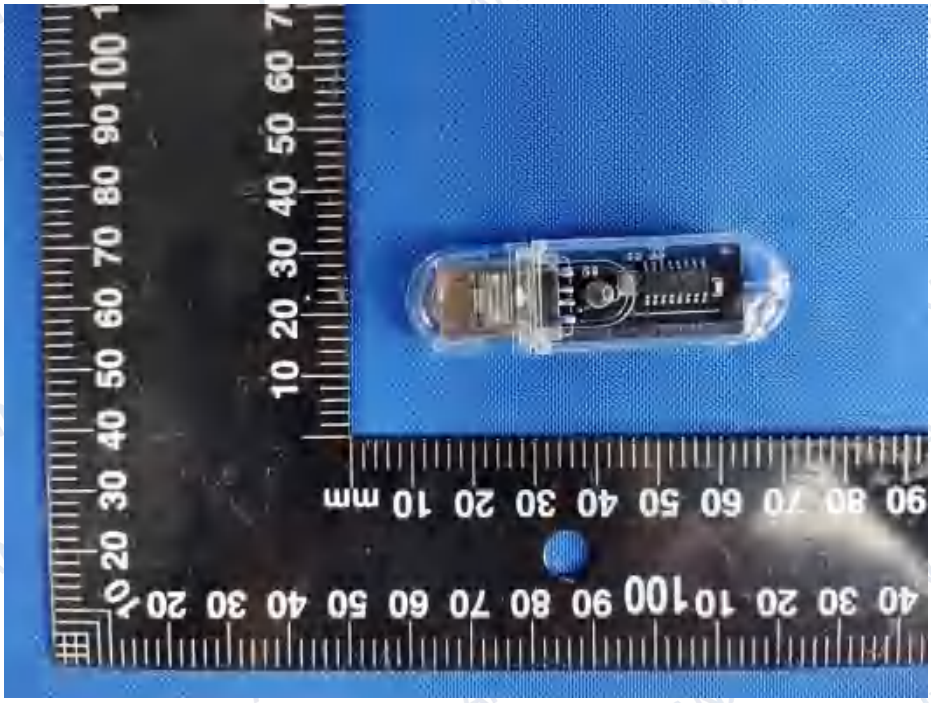
Photo 7 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 8 View: R10 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

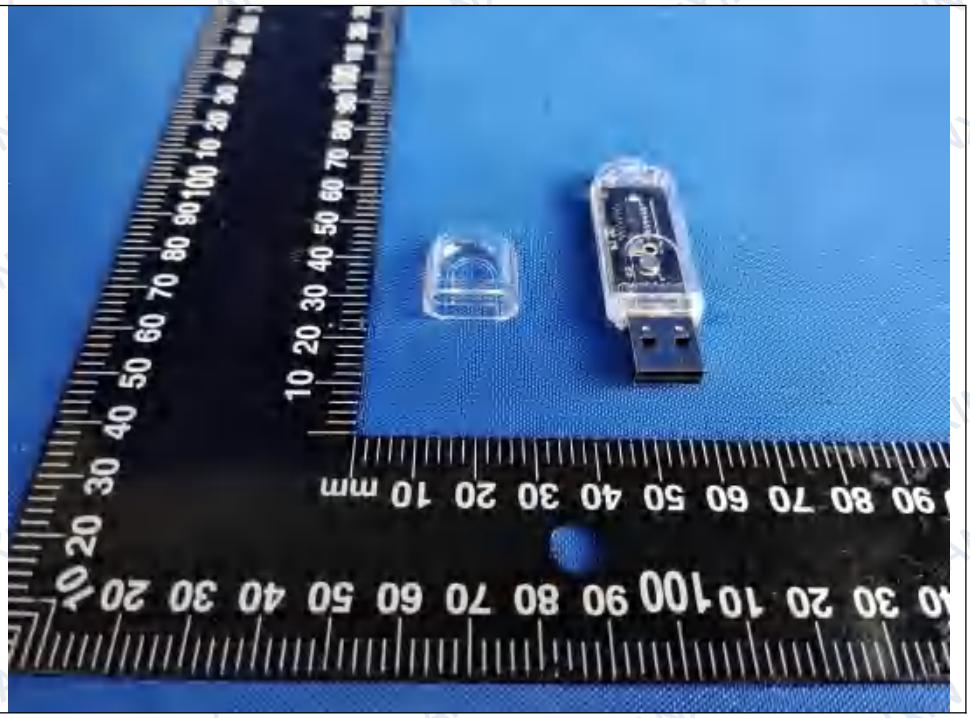
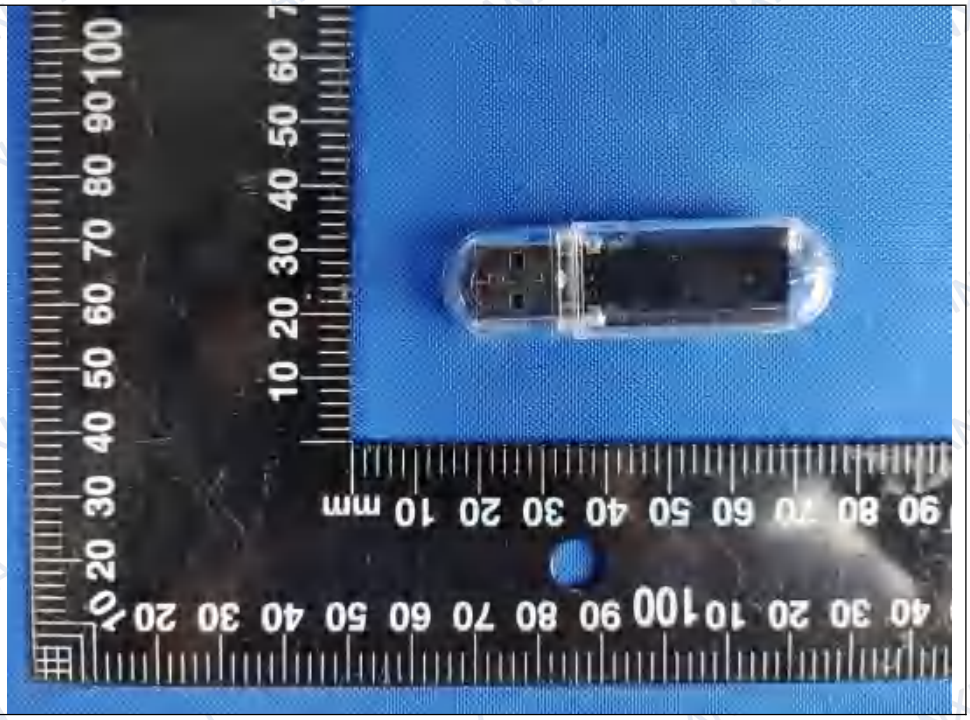
Photo 9 View: R10 [ ] Front [√] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 10 View: R10 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 11 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 12 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

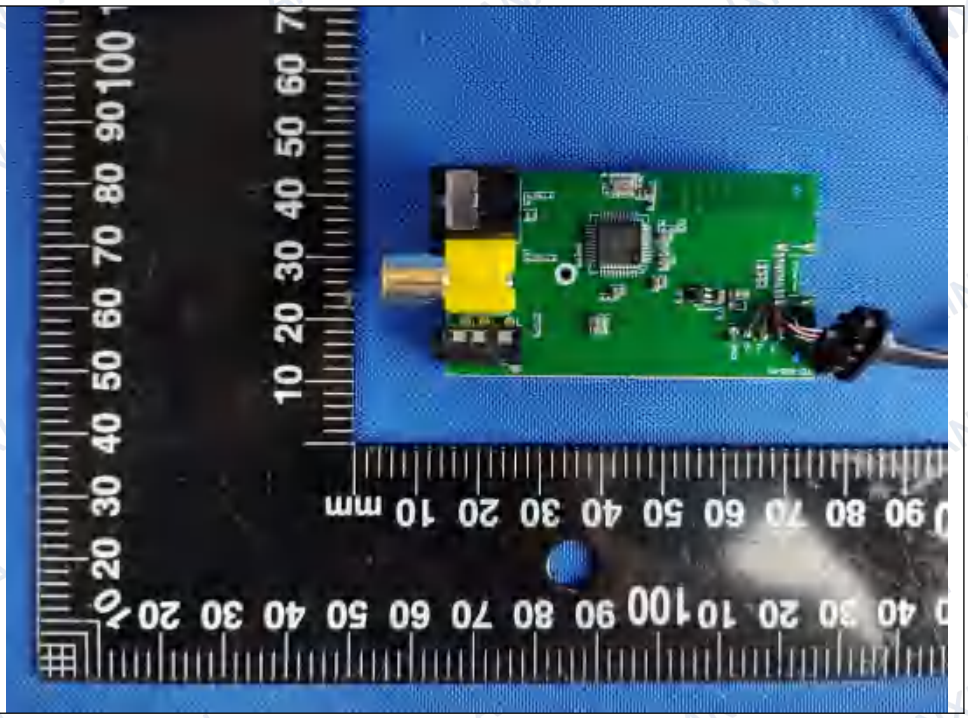
Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 13 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

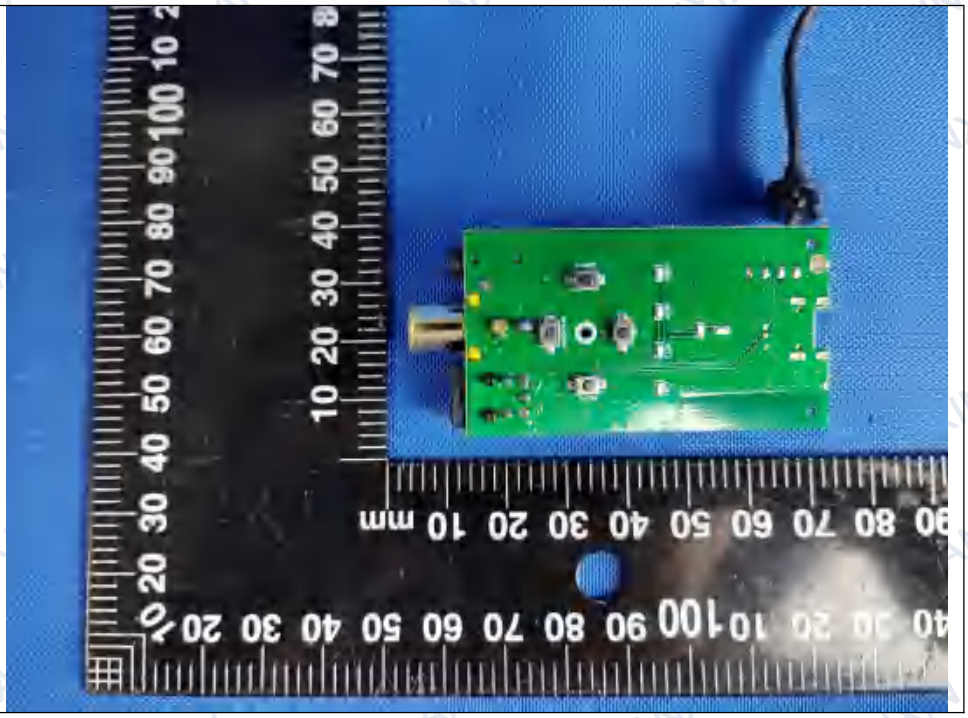
Photo 14 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 15 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 16 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 17 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

------End------

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

ANXIN TESTING

RoHS
TEST REPORT

For

Bluetooth audio transmitter

Model No.: R20, R10, R30

Applicant : Shenzhen yueerte Technology Co., Ltd
Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Manufacturer: Shenzhen yueerte Technology Co., Ltd
Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Issued By : Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

Tel : +86 755 23009643

Fax : +86 755 23009643

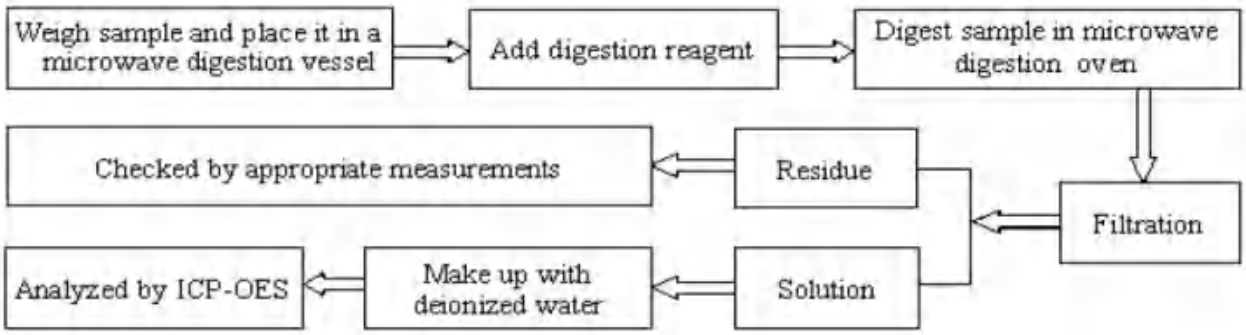
Report Number : AXJC20230522000307R

Issued Date : May. 26, 2023

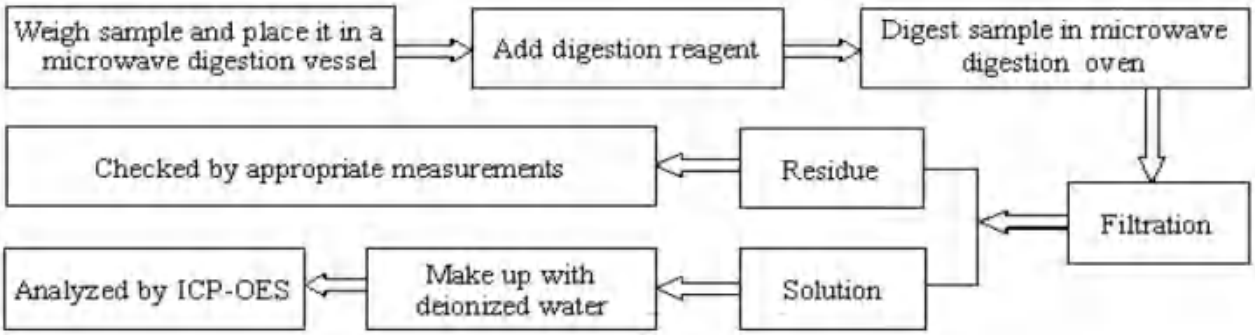
Date of Report : May. 26, 2023

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen An-Xin Testing Service Co., Ltd. This document may be altered or revised by Shenzhen An-Xin Testing Service Co., Ltd personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

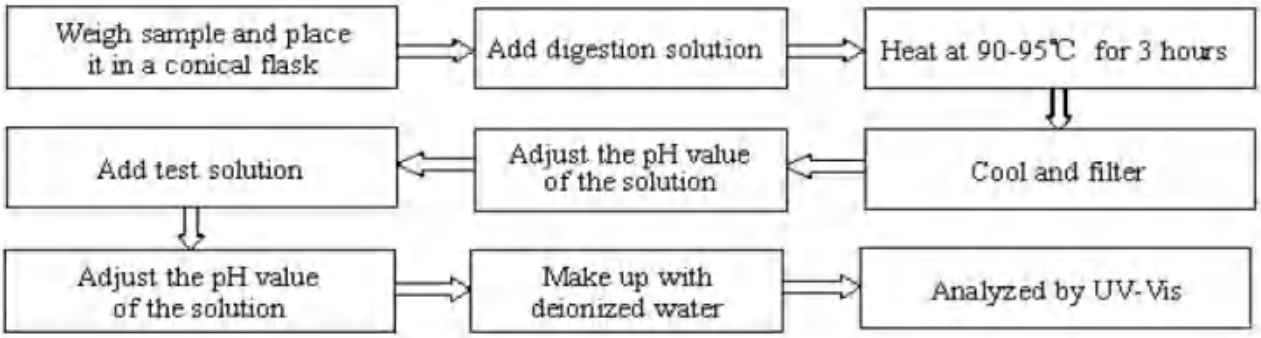
1. Lead(Pb), Cadmium(Cd)



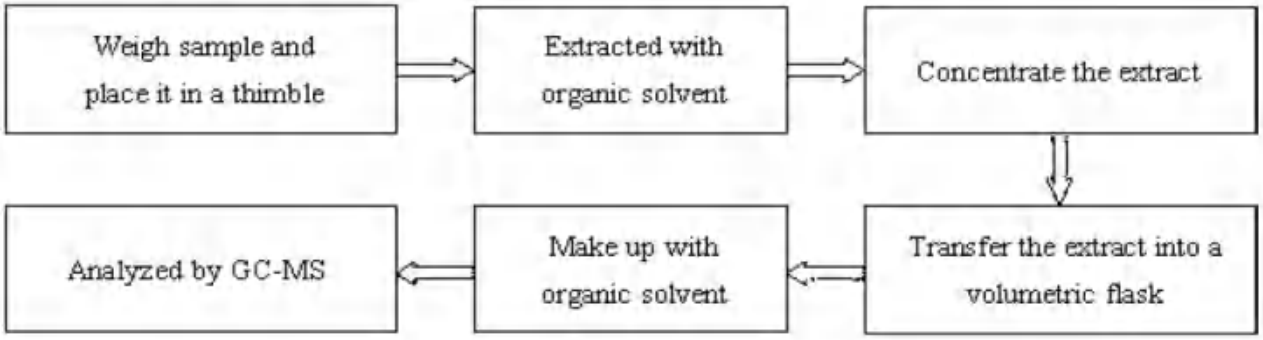
2. Mercury(Hg)



3. Hexavalent Chromium (Cr(VI))



4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers(PBDEs), DIBP, DBP, DEHP, BBP



Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Test Method:

Tested Item(s)	Test Method	Measured equipment(s)	Limits
Cadmium(Cd)	IEC 62321-5:2013	ICP-OES	0.01%(100 ppm)
Hexavalent chromium(Cr VI)	IEC 62321-7-1:2015 IEC 62321-7-2:2017	UV-Vis	0.1%(1000 ppm)
Mercury(Hg)	IEC 62321-4:2013+A1:2017	ICP-OES	0.1%(1000 ppm)
Lead(pb)	IEC 62321-5:2013	ICP-OES	0.1%(1000 ppm)
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS	0.1%(1000 ppm)
Polybrominated Dispheny1 Ethers(PBDEs)	IEC 62321-6:2015	GC-MS	0.1%(1000 ppm)
Diisobutyl phthalate(DIBP)	IEC 62321-8:2017	GC-MS	0.1%(1000 ppm)
Di-(2-ethylhexyl) phthalate (DEHP)	IEC 62321-8:2017	GC-MS	0.1%(1000 ppm)
Dibutyl phthalate (DBP)	IEC 62321-8:2017	GC-MS	0.1%(1000 ppm)
Benzylbutyl phthalate (BBP)	IEC 62321-8:2017	GC-MS	0.1%(1000 ppm)

Result	**:**	**Pass**
Conclusion	**:**	**An independent evaluation on the above-mentioned product(s) has been conducted pursuant to EU 2015/863 with 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and concluded that the equipment under evaluation met the legislative requirements of this directive.**

Reviewed by

Kevin Liu
Manager
May. 26, 2023

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Test Data Summary

SAMPLE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusion (P/F)
1	USB cord	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	/	＜1000	N.A.
		PBDEs	D	/	＜1000	N.A.
		DIBP	D	/	＜1000	N.A.
		DEHP	D	/	＜1000	N.A.
		DBP	D	/	＜1000	N.A.
		BBP	D	/	＜1000	N.A.
2	AV cord	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	N.D.	＜1000	P
		PBDEs	D	N.D.	＜1000	P
		DIBP	D	N.D.	＜1000	P
		DEHP	D	N.D.	＜1000	P
		DBP	D	N.D.	＜1000	P
		BBP	D	N.D.	＜1000	P
3	Black plastic case	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	N.D.	＜1000	P
		PBDEs	D	N.D.	＜1000	P
		DIBP	D	N.D.	＜1000	P
		DEHP	D	N.D.	＜1000	P
		DBP	D	N.D.	＜1000	P
		BBP	D	N.D.	＜1000	P
4	PCB	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	N.D.	＜1000	P
		PBDEs	D	N.D.	＜1000	P
		DIBP	D	N.D.	＜1000	P
		DEHP	D	N.D.	＜1000	P
		DBP	D	N.D.	＜1000	P
		BBP	D	N.D.	＜1000	P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

SAMPLE NO.	COMPONENTS	Item	Results of EDXRF (P/F/D)	Results of testing(mg/kg)	Chemical testing limit (mg/kg)	Conclusion (P/F)
5	Internal wire	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	N.D.	＜1000	P
		PBDEs	D	N.D.	＜1000	P
		DIBP	D	N.D.	＜1000	P
		DEHP	D	N.D.	＜1000	P
		DBP	D	N.D.	＜1000	P
		BBP	D	N.D.	＜1000	P
6	Button	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	N.D.	＜1000	P
		PBDEs	D	N.D.	＜1000	P
		DIBP	D	N.D.	＜1000	P
		DEHP	D	N.D.	＜1000	P
		DBP	D	N.D.	＜1000	P
		BBP	D	N.D.	＜1000	P
7	Insulation paper	Cd	P	N.D.	＜100	P
		Cr VI	P	N.D.	＜1000	P
		Hg	P	N.D.	＜1000	P
		Pb	P	N.D.	＜1000	P
		PBBs	D	N.D.	＜1000	P
		PBDEs	D	N.D.	＜1000	P
		DIBP	D	N.D.	＜1000	P
		DEHP	D	N.D.	＜1000	P
		DBP	D	N.D.	＜1000	P
		BBP	D	N.D.	＜1000	P

Note:

(1) N.D. = Not detected (<MDL)

(2) ppm = mg/kg

(3) N.A. = Not Analyzed

(4) Negative = the concentration of Hexavalent Chromium extracted from 50cm^2 sample is less than the detection limit.

(5) Cadmium(Cd), Lead(Pb), Mercury(Hg), Hexavalent Chrormium(Cr), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butyl benzyl phthalate (BBP), Di-(2-ethylhexyl) Phthalate(DEHP), Diisobutyl phthalate (DIBP).

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Appendix 1

Photo documentation

Photo 1 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 2 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 🖷 86-0755-23009643 http://www.anxinlab.com/

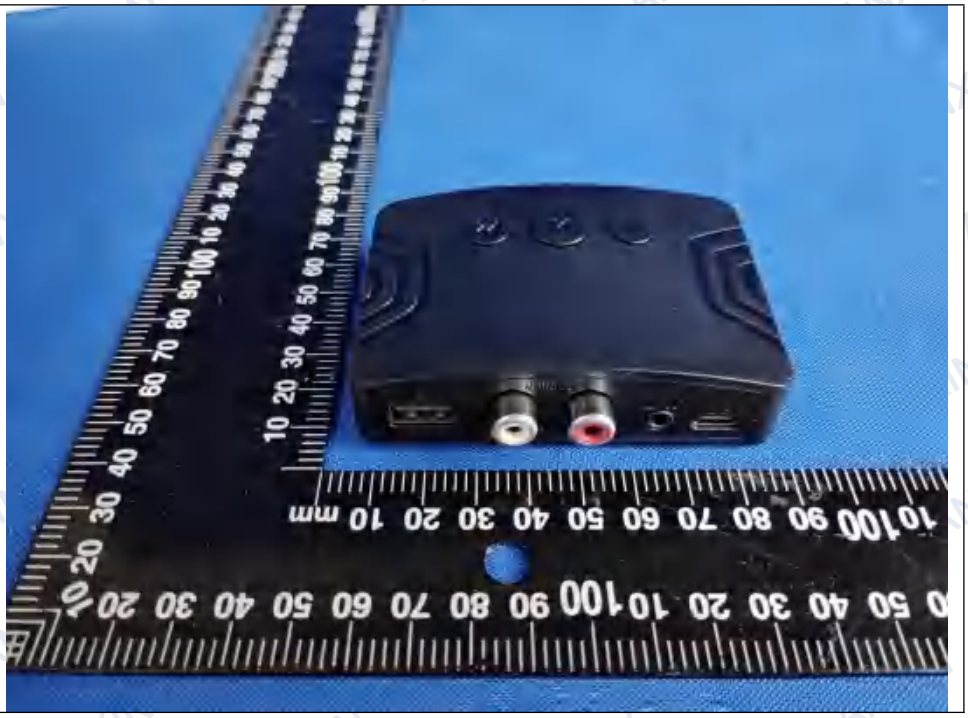
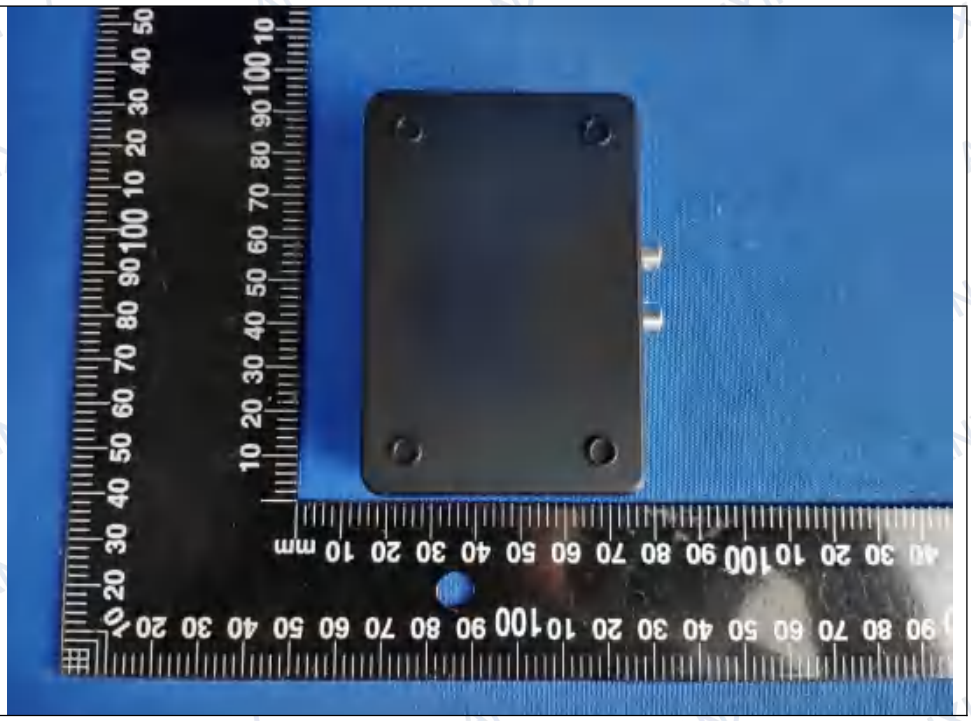
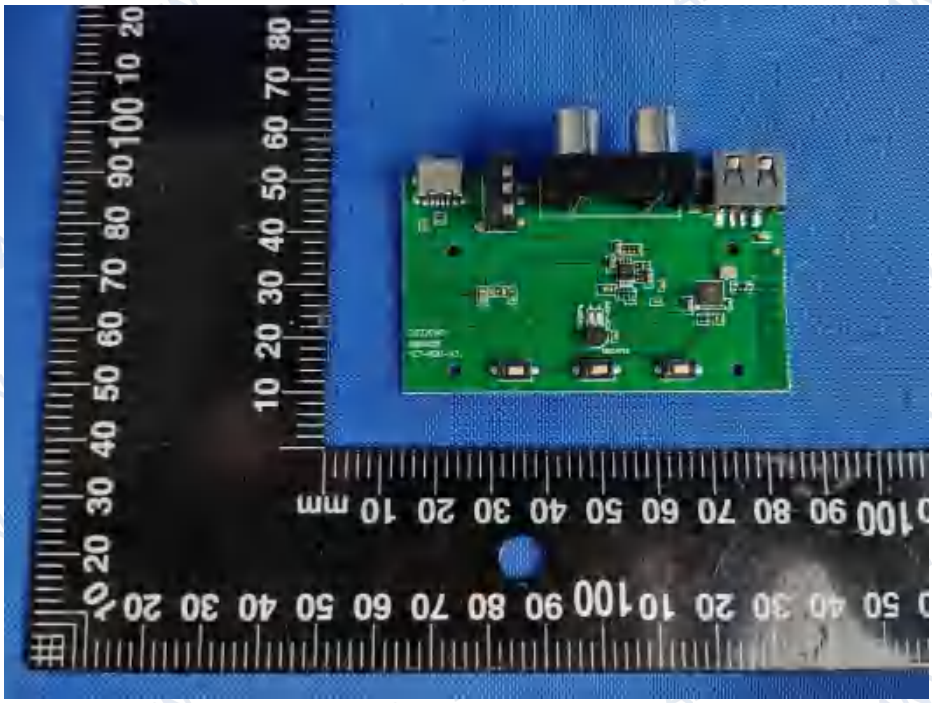
Photo 3 View: R20 [ ] Front [ ] Rear [√] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 4 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 5 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 6 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

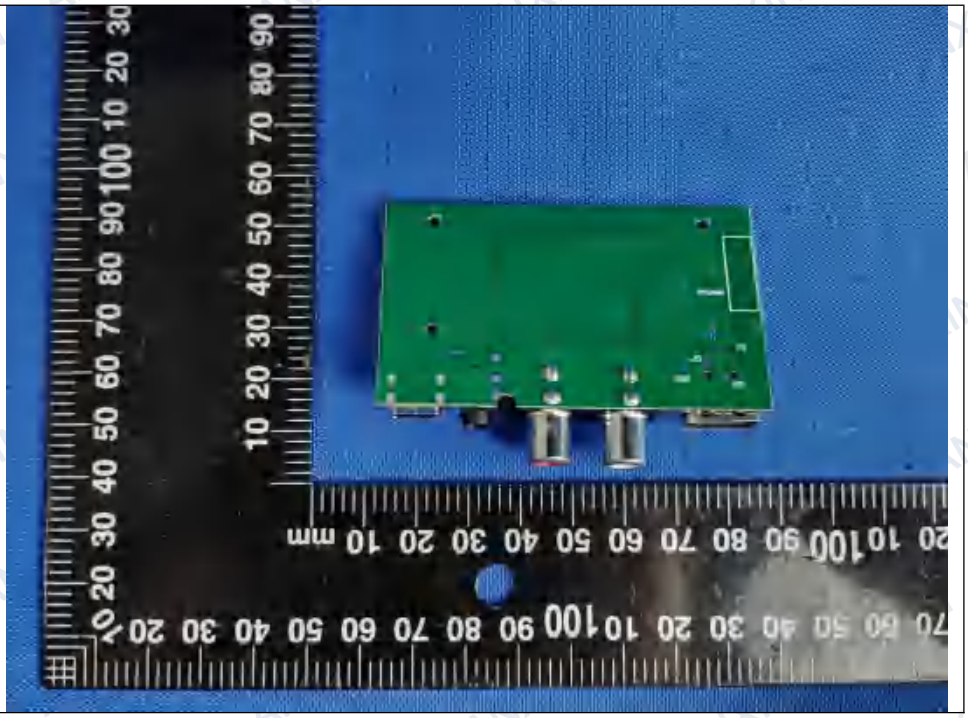
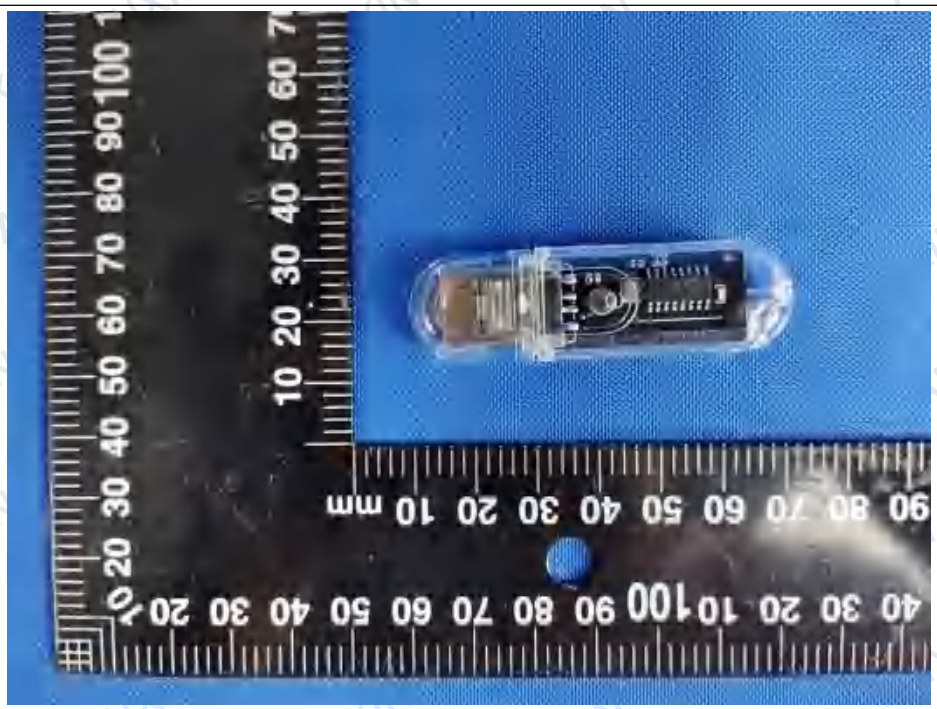
Photo 7 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 8 View: R10 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

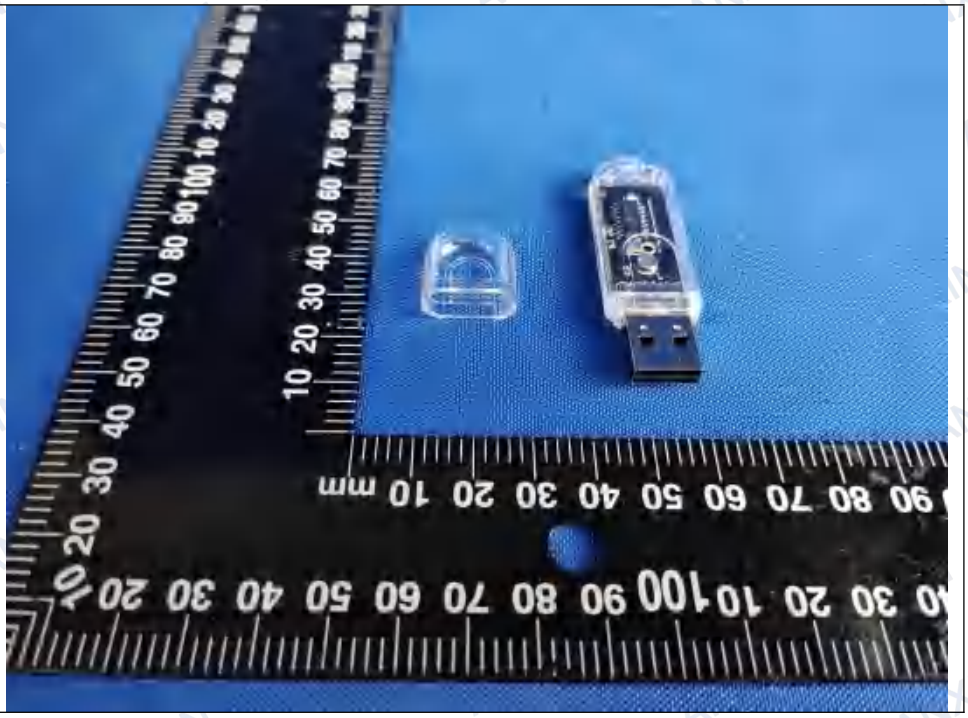
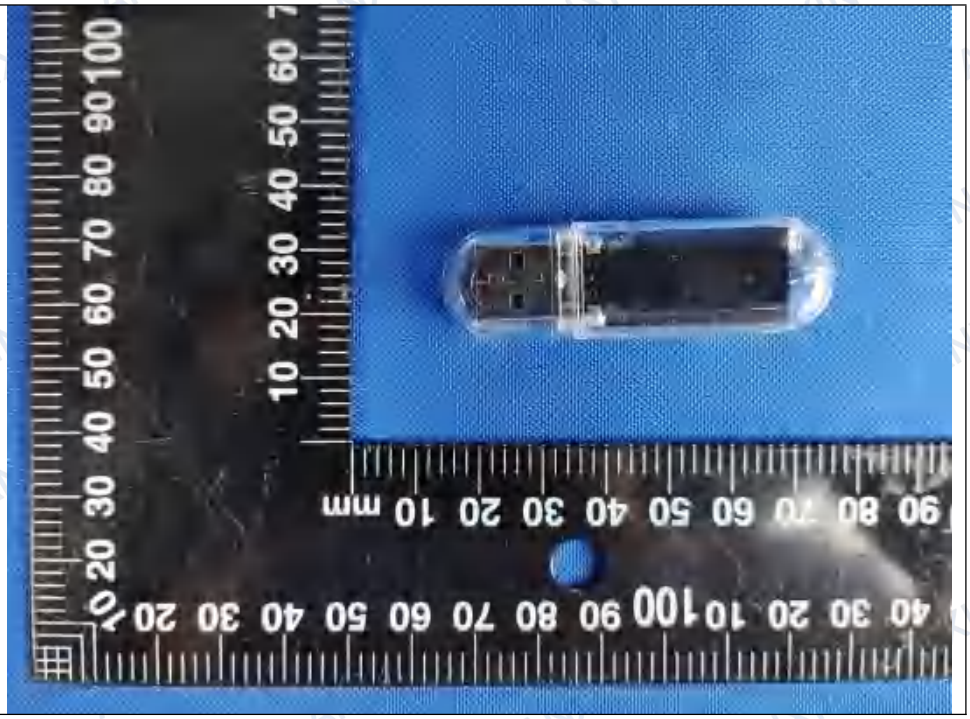
Photo 9 View: R10 [ ] Front [√] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 10 View: R10 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 11 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 12 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

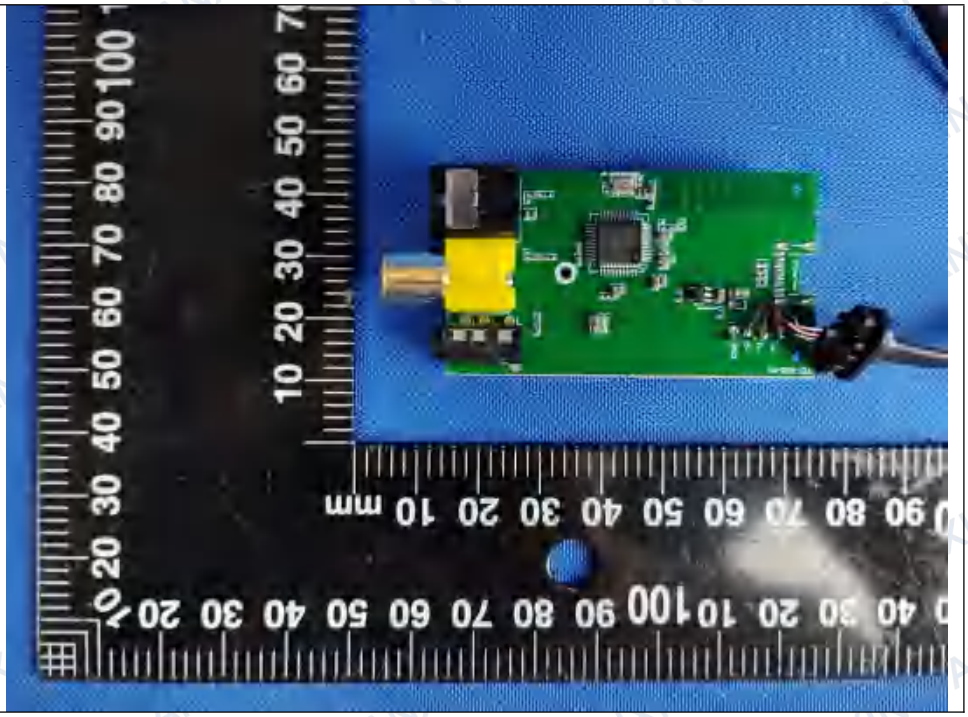
Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 13 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

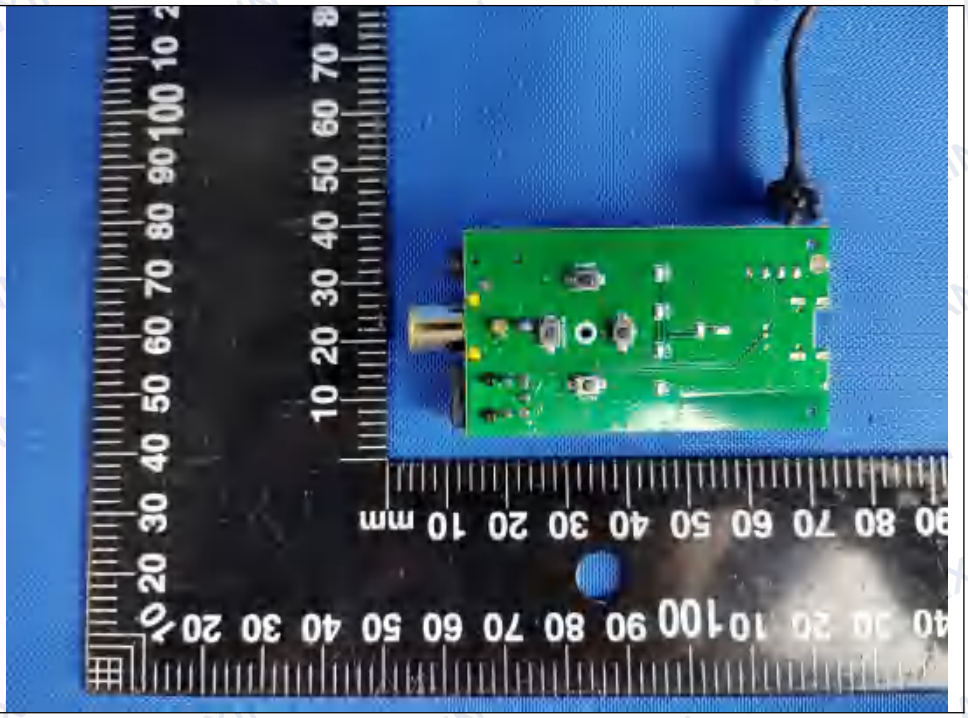
Photo 14 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 15 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 16 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 17 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

---END---

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 🖷 86-0755-23009643 http://www.anxinlab.com/

ANXIN TESTING

CE-LVD
TEST REPORT

For

Bluetooth audio transmitter

Models No.: R20, R10, R30

Prepared for : Shenzhen yueerte Technology Co., Ltd.
Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Manufacturer : Shenzhen yueerte Technology Co., Ltd.
Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Prepared By : Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405,Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

Tel : +86 755 23009643
Fax : +86 755 23009643

Report Number : AXJC20230522000307S
Issued Date : May. 26, 2023
Date of Report : May. 26, 2023

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen An-Xin Testing Service Co., Ltd. This document may be altered or revised by Shenzhen An-Xin Testing Service Co., Ltd personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample

TEST REPORT

EN 62368-1

Audio/video, information and communication technology equipment

Report Number.....	AXJC20230522000307S
Date of issue.....:	May. 26, 2023
Testing Laboratory:	Shenzhen An-Xin Testing Service Co., Ltd.
Address :	Room 402-405,Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
Applicant's name :	Shenzhen yueerte Technology Co., Ltd.
Address :	Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen
Test specification:	
Standard :	EN 62368-1:2020
Test procedure.....:	LVD-CE
Non-standard test method……..:	N/A
Test Report Form No.....:	N/A
Test Report Form(s) Originator.....:	N/A
Master TRF.....:	N/A

Test item description.....:	Bluetooth audio transmitter
Trade Mark.....:	N/A
Manufacturer.....	Shenzhen yueerte Technology Co., Ltd.
Address.....:	Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen
Models/Type reference.....:	R20, R10, R30
Ratings.....:	DC 5V

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 🖷 86-0755-23009643 http://www.anxinlab.com/

Possible test case verdicts :	
test case does not apply to the test object	N(/A.)
test object does meet the requirement	P(ass)
test object does not meet the requirement	F(ail)

Name and address of the testing laboratory :

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405,Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

Tested by : _____ May. 26, 2023
Signature Date

Jet Chen / Engineer
Name/title

Witnessed by: _____ May. 26, 2023
Signature Date

Henry Tian / project Engineer
Name/title

Approved by : _____ May. 26, 2023
Signature Date

Kevin Liu / Manager
Name/title

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 🖷 86-0755-23009643 http://www.anxinlab.com/

GENERAL PRODUCT INFORMATION:
Product Description –
Model Differences – N/A
Additional application considerations – (Considerations used to test a component or sub-assembly) – Some components are pre-certified, which have been evaluated according to the relevant requirements of IEC 62368-1, are employed in this product. Their suitability of use has been checked according to clauses 4.1.1 and 4.1.

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Bluetooth audio transmitter
Model: R20
Input: DC 5V

Shenzhen yueerte Technology Co., Ltd.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended Table 4.1.2.)	P
4.1.2	Use of components	Safeguard components are certified to IEC and/or national standards and are used correctly within their ratings.	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness	See below and Annex P.4	P
4.4.4.2	Steady force tests.....:	(See Annex T.4)	P
4.4.4.3	Drop tests.....:	(See Annex T.7)	P
4.4.4.4	Impact tests..... :		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests..... :	(See Annex T.9)	N/A
4.4.4.7	Thermoplastic material tests.....:		P
4.4.4.8	Air comprising a safeguard..... :		P
4.4.4.9	Accessibility and safeguard effectiveness	All safeguards remain effective.	P
4.5	Explosion	No explosion observed during normal / abnormal / single fault conditions.	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to .....:	10 N test was applied to conductors.	P
4.7	Equipment for direct insertion into mains socket - outlets		P
4.7.2	Mains plug part complies with the relevant standard..... :		P
4.7.3	Torque (Nm).....:		P
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—
4.8.4	Battery Compartment Mechanical Tests..... :		N/A
4.8.5	Battery Accessibility		N/A

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
4.9	Likelihood of fire or shock due to entry of conductive object..... :		N/A
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current..... :		P
5.2.2.3	Capacitance limits..... :		P
5.2.2.4	Single pulse limits..... :		N/A
5.2.2.5	Limits for repetitive pulses..... :		N/A
5.2.2.6	Ringing signals ..... :		N/A
5.2.2.7	Audio signals ..... :		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V..... :		N/A
	b) Electric strength test potential (V)..... :		N/A
	c) Air gap (mm) ..... :		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning..... :	(See sub-clause 5.4.8 and 5.4.9)	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree..... :		—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat softening temperature..... :		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
5.4.1.10.3	Ball pressure ..... :		P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage		P
5.4.2.3	Determining clearance using required withstand voltage ..... :		P
	a) a.c. mains transient voltage..... :		—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage..... :		—
	d) transient voltage determined by measurement ..... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages..... :		N/A
5.4.3	Creepage distances..... :		P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :		—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation .....:		P
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz.....:		N/A
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test		P
	Insulation resistance (MΩ)..... :	500 M	—

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
5.4.6	Insulation of internal wire as part of supplementary safeguard..... :		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%)..... :	93%.	—
	Temperature (°C) ..... :	25°C.	—
	Duration (h) ..... :	48 h.	—
5.4.9	Electric strength test..... :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.11	Insulation between external circuits and earthed circuitry..... :		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing U_{sa} ..... :		—
	U_{op}= U_{peak} + U_{sp} + U_{sa}..... :		—
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :		P
5.5.3	Transformers	(See Annex G.5.3)	N/A
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable..... :		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) ..... :		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2)..... :		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm)..... :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω)..... :		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current.....:		P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection)..... :		—

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Earthed conductive accessible parts.....:		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		N/A
6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault.... :		P
6.2.2.3	Power measurement for worst-case power source fault.....:		P
6.2.2.4	PS1 .....:		N/A
6.2.2.5	PS2 .....:	Supplied by external power supply which is complied with LPS.	P
6.2.2.6	PS3 .....:		P
6.2.3	Classification of potential ignition sources	See below.	P
6.2.3.1	Arcing PIS .....:	All conductors and devices are considered as Arcing PIS.	P
6.2.3.2	Resistive PIS .....:	All conductors and devices are considered as Resistive PIS.	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method of Control fire spread used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No PS1 circuits	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	No such circuit provided.	N/A
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards .....:		P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General.....:		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties	Equipment enclosure was evaluated as a fire enclosure.	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:	No opening	N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	No opening	N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)..... :		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:		N/A
6.5	Internal and external wiring		P
6.5.1	Requirements	See below.	P
6.5.2	Cross-sectional area (mm^2) ..... :	The material of VW-1 on internal wiring were considered compliance equal to equivalent to IEC/TS 60695-11-21 relevant standards.	—
6.5.3	Requirements for interconnection to building wiring.....:	No such interconnection to building wiring.	N/A
6.6	Safeguards against fire due to connection to additional equipment	(See Annex Q)	P
	External port limited to PS2 or complies with Clause Q.1	(See Annex Q)	P
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment	P
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		—
7.6	Batteries..... :		N/A
8	***MECHANICALLY-CAUSED INJURY***		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard..... :		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....:		N/A
8.5.5	High Pressure Lamps	No such Lamps provided.	N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test..... :		N/A
8.6	Stability	Classification MS1 according to table 35, line 5 and no stability requirements	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard..... :		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force)..... :		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling	No such equipment	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:		N/A
8.7.2	Direction and applied force..... :		N/A
8.8	Handles strength	No handles provided.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force..... :		—
8.10	Carts, stands and similar carriers		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force.....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications		P
9.3	Safeguard against thermal energy sources	Temperature of enclosure classed as TS1	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard		P
9.4.2	Instructional safeguard .....:		P
10	**RADIATION**		P
10.2	Radiation energy source classification	RS1	P
10.2.1	General classification		N/A
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....:		N/A
	Instructional safeguard.....:		—
	Tool.....:		—
10.4	Protection against visible, infrared, and UV radiation		P
10.4.1	General		P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
10.4.1.a)	RS3 for Ordinary and instructed persons.....:		N/A
10.4.1.b)	RS3 accessible to a skilled person..... :		N/A
	Personal safeguard (PPE) instructional safeguard..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1..:		P
10.4.1.d)	Normal, abnormal, single-fault conditions .....:		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A
10.4.1.g)	Materials resistant to degradation UV..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions .....:		N/A
10.4.2	Instructional safeguard.....:		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment .....:		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards..... :		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation..... :		—
	Abnormal and single-fault condition.....:		N/A
	Maximum radiation (pA/kg).....:		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A).....:		N/A
	Output voltage, unweighted r.m.s.....:		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards.....:		N/A
	Equipment safeguard prevent ordinary person to RS2.....:		—
	Means to actively inform user of increase sound pressure.....:		—
	Equipment safeguard prevent ordinary person to RS2.....:		—
10.6.5	Requirements for listening devices (headphones,		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	earphones, etc.)		
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output.....:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A).....:		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A).....:		—
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....:		P
	Audio Amplifiers and equipment with audio amplifiers..... :	No such equipment	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test	No voltage selector	N/A
B.3.4	Setting of voltage selector..... :		N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3)	N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited..... :		N/A
B.4.3	Motor tests		P
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended Table B.4)	P
B.4.9	Battery charging under single fault conditions.....:		N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V).....:		—
	Rated load impedance (Ω) .....:		
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	English	—
F.2	Letter symbols and graphical symbols		P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
F.2.1	Letter symbols according to IEC60027-1	Letter symbols and units are complied with IEC 60027-1	N/A
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment marking is located on the surface and is easily visible.	P
F.3.2	Equipment identification markings	See below.	P
F.3.2.1	Manufacturer identification .....:	See copy of marking plate	—
F.3.2.2	Model identification .....:	See copy of marking plate	—
F.3.3	Equipment rating markings	See copy of marking plate	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....:	See copy of marking plate	—
F.3.3.4	Rated voltage.....:	See copy of marking plate	—
F.3.3.4	Rated frequency.....:	See copy of marking plate	—
F.3.3.6	Rated current or rated power.....:	See copy of marking plate	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....:		N/A
F.3.5.2	Switch position identification marking.....:		N/A
F.3.5.3	Replacement fuse identification and rating markings.....:	The fuse resistor is located within the equipment and not replaceable by an ordinary person or an instructed person. The fuse resistor marked with: RF1 10ohm/1W	P
F.3.5.4	Replacement battery identification marking.....:		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal	Not permanently connected equipment.	N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:	IPX0	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	All markings required are easily discernible under normal lighting conditions.	P
F.3.10	Test for permanence of markings	After rubbing test by water and petroleum spirit, the marking still legible; it is not easily possible to remove the marking plate and show no curling.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present – marking		N/A
	b) Instructions given for installation or initial use		N/A
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		P
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		--
G.1	**Switches**		N/A
G.1.1	General requirements	No switch used	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao’an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :		—
	Single Fault Condition..... :		—
	Test Voltage (V) and Insulation Resistance (Ω).. :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	Time (s)....:		—
	Temperature (°C)....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1)....:	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	N/A
	Position....:		—
	Method of protection ....:	By protection circuit	—
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation	N/A
	Protection from displacement of windings....:	Tape, Triple insulated wire, bobbin	—
G.5.3.3	Overload test....:	(See appended table B.3)	N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements		N/A
	Position ....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) ....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) ....:		N/A
	Electric strength test (V)....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature ....:		N/A
	Electric strength test (V) ....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)....:		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	Electric strength test (V)..... :		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type..... :		—
	Rated current (A)..... :		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)..... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry..... :		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (m)..... :		—
	Temperature (°C)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
G.8.3.2	Varistor overload test..... :		N/A
G.8.3.3	Temporary overvoltage..... :		N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A)..... :		—
G.9.1 e)	Manufacturers' defined drift .....:		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements		P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)..... :		N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards**		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:		N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		P
D2)	Capacitance .....:		—
D3)	Resistance .....:		—

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) ..... :		—
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage..... :		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements		P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No such components used.	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance..... :		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method..... :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) ..... :		N/A
K.7.2	Overload test, Current (A)..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test ..... :		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
L	**DISCONNECT DEVICES**		P
L.1	General requirements	Not directly connected to the mains	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		P
L.4	Single phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method)... :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....:		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2 a)	Charging voltage, current and temperature.....:		—
M.4.2.2 b)	Single faults in charging circuitry.....:		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :		N/A

N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used..... :		—

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied.....:	Measurement is in accordance with applicable figures.	—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	No opening.	P
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) .....:		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....:		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....:		N/A
P.3	Safeguards against spillage of internal liquids	The equipment does not contain liquid.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C).....:		—
	Tr (°C).....:		—
	Ta (°C).....:		—
P.4.2 b)	Abrasion testing .....:		N/A
P.4.2 c)	Mechanical strength testing.....:		N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources	See below.	P
Q.1.1 a)	Inherently limited output	(See appended Tables Annex Q.1)	N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	(See appended Tables Annex Q.1)	P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	(See appended Tables Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method.....:		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		P
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		P
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		P
T.1	General requirements		P
T.2	Steady force test, 10 N .....:	(See appended table T.2, T.3, T.4, T.5)	P
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:	(See appended table T.2, T.3, T.4, T.5)	P
T.5	Steady force test, 250 N .....:		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:	(See appended table T.7)	N/A
T.8	Stress relief test.....:		P
T.9	Impact Test (glass)	(See appended table T.9)	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m).....:		—
T.10	Glass fragmentation test.....:	No such glass provided.	N/A
T.11	Test for telescoping or rod antennas	No such antennas provided.	N/A
	Torque value (Nm) .....:		—

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment	No access with test probes to any hazardous parts.	P
V.2	Accessible part criterion		P

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1]
Enclosure	GONGGUAN WENCHANG ELECTRONIC CO.,LTD	945GG	V-0, 120℃,1.9mm min.	UL 94	UL E214510
PCB	DONGGUAN YUKKWONG METAL OXIDIZATION PRODUCTS CO LTD	YK-02,YK-03, YK-04	V-1,min.130℃	UL 796	UL E234403

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.
2) Description line content is optional. Main line description needs to clearly detail the component used for testing.

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests	N/A

(The following mechanical tests are conducted in the sequence noted.)

4.8.4.2	TABLE: Stress Relief test	—

Part	Material	Oven Temperature (°C)	Comments

4.8.4.3	TABLE: Battery replacement test	—
Battery part no.....:		—

Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4	TABLE: Drop test	—

Impact Area	Drop Distance	Drop No.	Observations

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A

(The following mechanical tests are conducted in the sequence noted.)

		1	
		2	
		3	

4.8.4.5	**TABLE: Impact**	—

Impacts per surface	Surface tested	Impact energy (Nm)	Comments

4.8.4.6	**TABLE: Crush test**	—

Test position	Surface tested	Crushing Force (N)	Duration force applied (s)

Supplementary information:

4.8.5	**TABLE: Lithium coin/button cell batteries mechanical test result**	N/A

Test position	Surface tested	Force (N)	Duration force applied (s)

Supplementary information:

5.2	**Table: Classification of electrical energy sources**	P

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	6VDC	Output terminal(+,-)	Normal	15.06Vrms	-	-	ES1

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	Normal	--	--	--
			Abnormal	--	--	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

			Single fault – SC/OC	--	--	

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions:

Normal - Max. Normal load.

Abnormal - Output short

Supplementary information: SC=Short Circuit, OC=Open Circuit

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) ..... :	5	5.2	--	--	—
	Ambient T_{min} (°C) ..... :	24.6	24.3	--	--	—
	Ambient T_{max} (°C) ..... :	25.0	25.0	--	--	—
	Tma (°C) ..... :	25.0	25.0	--	--	—

Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
DC connector	38.6	38.9	--	--	Ref.
PCB near U1	35.4	35.1	--	--	130
L2	30.2	30.4	--	--	130
C1	38.9	38.5	--	--	105
Plastic enclosure outside	25.6	25.9	--	--	95

Supplementary information:

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Note 1: Tma should be considered as directed by appliable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

With a specified maximum ambient temperature and test temperature of 35°C, the maximum permittedtemperatures are calculated as follows:

Winding components (providing safety isolation):Class 130 (B) Tmax = 120°C - 10°C = 110°C

During the test, the sealing compound did not soften ormelt.

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)..... :			—
Object/ Part No./Material	Manufacturer/trademark	T softening (°C)	
--	--	--	

Supplementary information:

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics		P
Allowed impression diameter (mm) ..... :		≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
Plastic material	Shenzhen yueerte Technology Co., Ltd.	75	0.87
Supplementary information:			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
Trace of L, N before F1, F2	--	--	--	--	--	--	--
Trace of F1 different polarities	--	--	--	--	--	--	--
Primary to secondary trace under transformer T1	--	--	--	--	--	--	--

Supplementary information:

B: Basic insulation, R: Reinforced insulation

- Material group: IIIb
- The core of T1 considered as primary part, the insulation between secondary to core is reinforced insulation.
- Triple insulated wire used in secondary windings.

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage		P
	Overvoltage Category (OV):		II
	Pollution Degree:		2
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 above	--	--	--
Supplementary information:.			

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

Supplementary information:

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements	P[

Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Enclosure	600	--	Plastic	0.4	1)
Insulation tape used for transformer	600	--	Polyethylene	See only 5.4.4.9	See only 5.4.4.9
Supplementary information:					

5.4.9	TABLE: Electric strength tests	P

Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:			
--	--	--	--
Line to Neutral (with fuse resistor opened)	DC	2500 V	No
Reinforced:	--	--	--
From Primary (L/N) to Secondary (output)	DC	4000 V	No
From Primary (L/N) to Enclosure with metal foil	DC	4000 V	No
Insulation tape (one layer)	DC	4000 V	No
Supplementary information: All testing Including after Humidity required of clause 5.4.8, there are including unit, transformer and all material of transformer, see appended tables 4.1.2			

5.5.2.2	TABLE: Stored discharge on capacitors	N/A

Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
--	--	--	--	4	ES1
--	--	--	--	4	ES1

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

Supplementary information:
X-capacitors installed for testing are:
☐ bleeding resistor rating:
☐ ICX:
Notes:
A. Test Location:
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth
B. Operating condition abbreviations:
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part		Test current (A)	Duration (min)	Voltage drop (V)	Resistance (mΩ)
--		--	--	--	--
--		--	--	--	--
--		--	--	--	--
Supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage.....:			—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
Line to earth, Neutral to earthed accessible parts		1	--
		2*	--
		3	--
		4	--
		5	--
		6	--
		8	--

Supplementary Information:
Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage
[2] Earthed neutral conductor [Voltage differences less than 1% or more]
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
Output	Normal condition	Power (W) :	0.6	--	PS1
		V_A (V) :	5	--	
		I_A (A) :	0.12	--	
Supplementary Information: (*) Measurement taken only when limits at 3 seconds exceed PS1 limits Note: All circuits are considered PS3 except for the circuits of output connector complied with Q.1.					

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			N/A
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
All Internal circuits/components	--	--	--	Yes (declaration)
Supplementary information: An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15. All components in the equipment are considered as arcing PIS.				

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				N/A
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All Internal circuits/components	--	--	--	--	Yes (declaration)
Supplementary Information: A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

8.5.5	TABLE: High Pressure Lamp		N/A
Description		Values	Energy Source Classification
Lamp type.....:		--	—
Manufacturer.....:		--	—
Cat no.....:		--	—
Pressure (cold) (MPa).....:		--	MS_
Pressure (operating) (MPa).....:		--	MS_
Operating time (minutes).....:		--	—
Explosion method.....:		--	—
Max particle length escaping enclosure (mm). :		--	MS_
Max particle length beyond 1 m (mm).....:		--	MS_
Overall result .....:			
Supplementary information:			

B.2.5	TABLE: Input test						N/A
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Maximum normal load: Full display with max. brightness and contrast, USB2.0 port loaded with 0.5A.
Equipment may be having rated current or rated power or both. Both should be measured.

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests								N/A
Ambient temperature (°C) .....:									—
Power source for EUT: Manufacturer, model/type, output rating ..:						--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
-	-	-	-	-	-	--	--	-	
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.									

B.4	TABLE: Fault condition tests								P
Ambient temperature (°C) .....:									—
Power source for EUT: Manufacturer, model/type, output rating ..:									—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (mA)	T-couple	Temp. (°C)	Observation	
-	-	-	-	-	-	-	-	-	
Supplementary information: CD = Components damaged (damaged components indicated); TRSR = Test Repeated Similar Results (test times)									

Annex M	TABLE: Batteries									N/A
The tests of Annex M are applicable only when appropriate battery data is not available										--
Is it possible to install the battery in a reverse polarity position?.....:						No				--
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. Current	Manuf. Specs.		Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.	
Max. current during normal condition	--	--	--	--	--	--	--	--	--	
Max. current during fault condition	--	--	--	--	--	--	--	--	--	
Test results:										Verdict
- Chemical leaks						No such result occurred.				N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

- Explosion of the battery	No such result occurred.	N/A
- Emission of flame or expulsion of molten metal	No such result occurred.	N/A
- Electric strength tests of equipment after completion of tests	No such result occurred.	N/A
Supplementary information:		

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**	N/A

Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp I	
	Normal				
	Abnormal				
	Single fault –SC/OC				
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**	N/A

Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Output	-	-	-	-	-	-

Supplementary Information:
SC=Short circuit, OC=Open circuit

T.2, T.3, T.4, T.5	**TABLE: Steady force test**	N/A

Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
-	-	-	-	-	-
Supplementary information:					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
				No hazard	
Supplementary information: NB = No indication of dielectric breakdown.					

T.7	TABLE: Drop tests			P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Enclosure top	1)	1.5	1,000	Enclosure remained intact, no crack ,No insulation breakdown.
Enclosure side	1)	1.5	1,000	Enclosure remained intact, no crack ,No insulation breakdown.
Enclosure bottom	1)	1.5	1,000	Enclosure remained intact, no crack ,No insulation breakdown.
Supplementary information:				

T.8	TABLE: Stress relief test				N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
-	-	-	-	-	-
Supplementary information:					

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Differences according to.....: EN 62368-1:2020
Attachment Form No..... : EU_GD_IEC62368_1B **Attachment Originator**.....: Intertek Semko AB **Master Attachment**..... : Date (2020-07)
Copyright © 2015 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE)

	CENELEC COMMON MODIFICATIONS (EN)		P
1	NOTE Z1		P
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:		N/A
	a) Included as parts of the equipment		N/A
	b) For components in series with the mains; by devices in the building installation		N/A
	c) For pluggable type B or permanently connected; by devices in the building installation		N/A
5.4.2.3.2.4	Interconnection with external circuit		N/A
10.2.1	Additional requirements in 10.5.1		N/A
10.5.1	RS1 compliance measurement conditions		P
10.6.2.1	EN 71-1:2011, 4.20 and methods and distances		N/A
10.Z1	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz		N/A
G.7.1	NOTE Z1		N/A

ZB	***ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)***		N/A
4.1.15	**Denmark, Finland, Norway and Sweden:** Class I pluggable equipment type A marking		N/A
4.7.3	**United Kingdom:** Torque test socket-outlet BS 1363, and the plug part BS 1363.		N/A
5.2.2.2	**Denmark:** Warning for high touchcurrent		N/A
5.4.11.1 and Annex G	**Finland and Sweden:** Separation of the telecommunication network from earth		N/A
5.5.2.1	**Norway:** Capacitors rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	**Finland, Norway and Sweden:** Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2.		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
5.6.1	**Denmark:** Protection for pluggable equipment type A; integral part of the equipment		N/A
5.6.4.2.1	**Ireland and United Kingdom:** The protective current rating is taken to be 13 A		N/A
5.6.5.1	**Ireland and United Kingdom:** Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A		N/A
5.7.5	**Denmark:** The installation instruction affixed to the equipment if high protective conductor current		N/A
5.7.6.1	**Norway and Sweden:** Television distribution system isolation text in user manual		N/A
5.7.6.2	**Denmark:** Warning for high touch current		N/A
B.3.1 and B.4	**Ireland and United Kingdom:** Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment		N/A
G.4.2	**Denmark:** Appliances rated ≤13 A provided with a plug according to DS 60884-2-D1:2011.		N/A
	Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N/A
	If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.		N/A
	Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1-4a.		N/A
	Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.		N/A
	Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a		N/A
G.4.2	**United Kingdom:** The plug part of direct plug-in equipment assessed to BS 1363		N/A
G.7.1	**United Kingdom:** Equipment fitted with a ‘standard plug’ in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768	(See table 4.1.2)	N/A
G.7.1	**Ireland:** Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, “13 A Plugs and Conversion Adapters for Domestic Use		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao’an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

EN 62368-1			
Clause	Requirement +Test	Result - Remark	Verdict
G.7.2	**Ireland and United Kingdom:** A power supply cord for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	***ANNEX ZC, NATIONAL DEVIATIONS (EN)***		N/A
10.5.2	**Germany:** Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking.		N/A
F.1	**Italy:** The power consumption in Watts (W) indicated on TV receiver and in instruction for use		N/A
	TV receivers provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.		N/A
	Marking for controls and terminals in Italian language.		N/A
	Conformity declaration according to the above requirements in the instruction manual		N/A
	First importers of TV receivers manufactured outside EEC previous conformity certification to the Italian Post Ministry and Certification number on the backcover.		N/A

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Appendix 1

Photo documentation

Photo 1 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 2 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

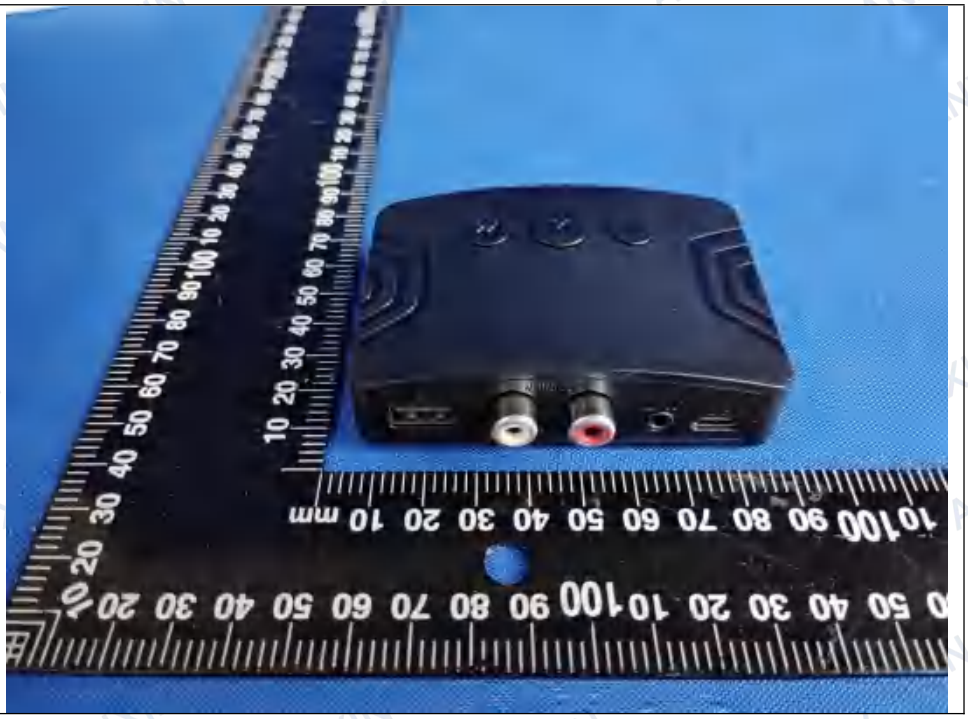
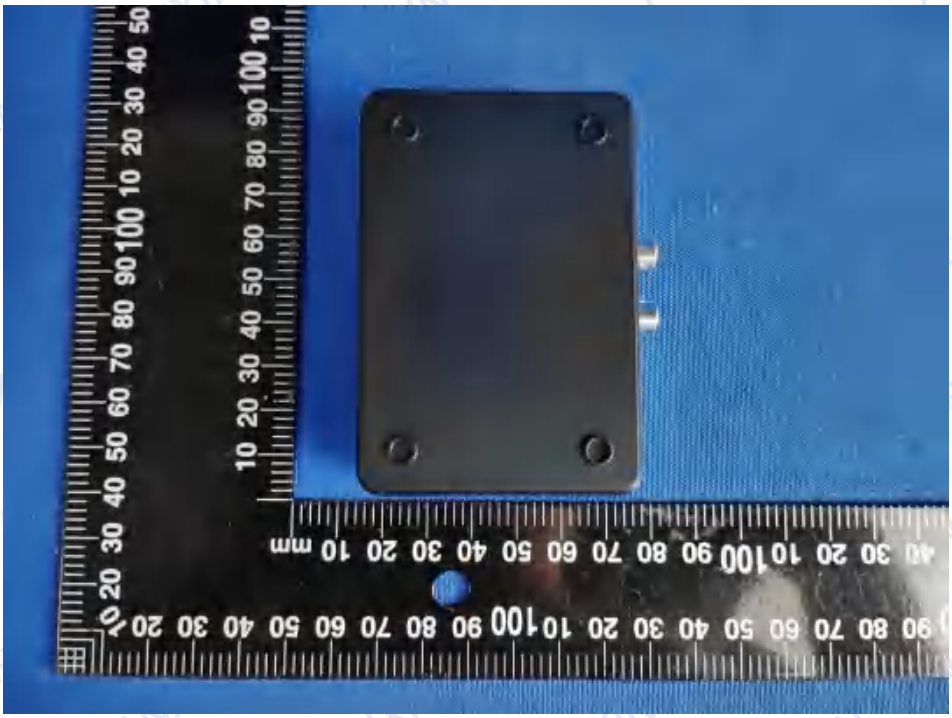
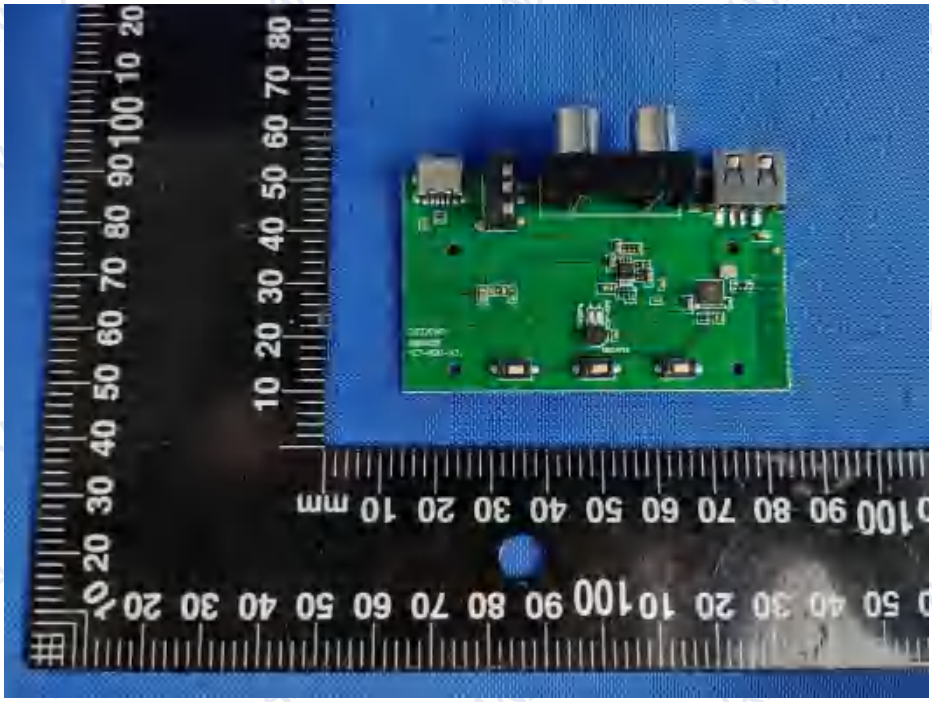
Photo 3 View: R20 [ ] Front [ ] Rear [√] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 4 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 5 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 6 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

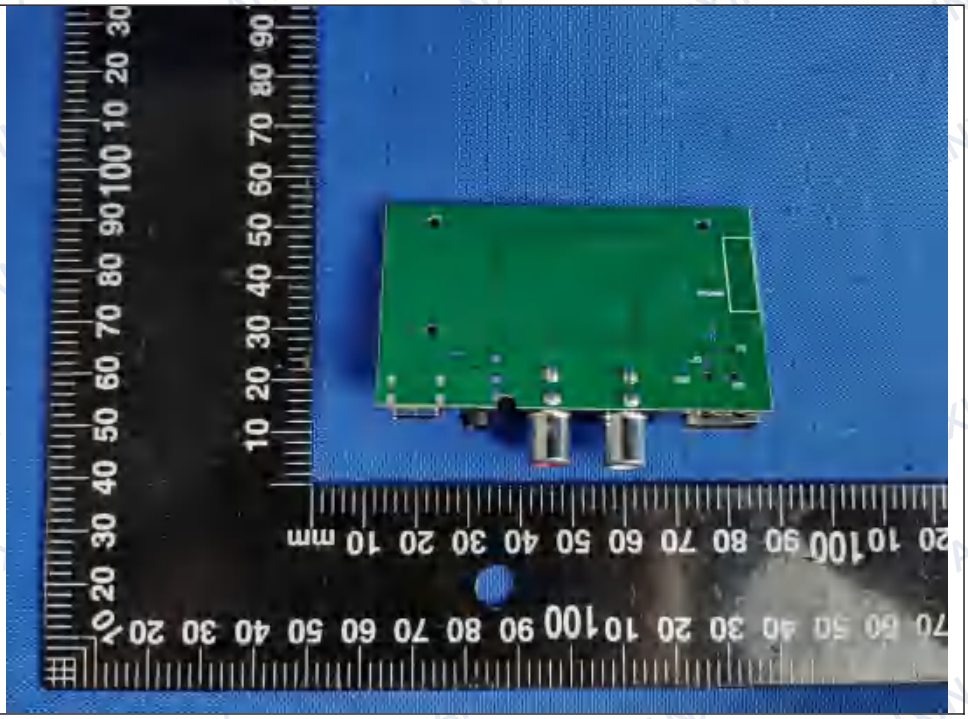
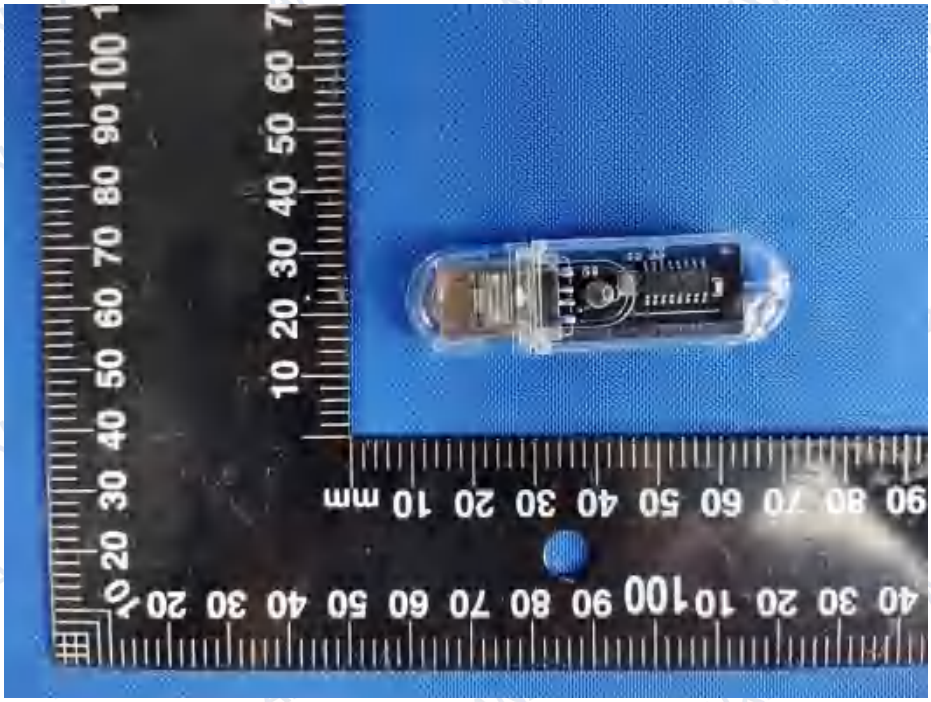
Photo 7 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 8 View: R10 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

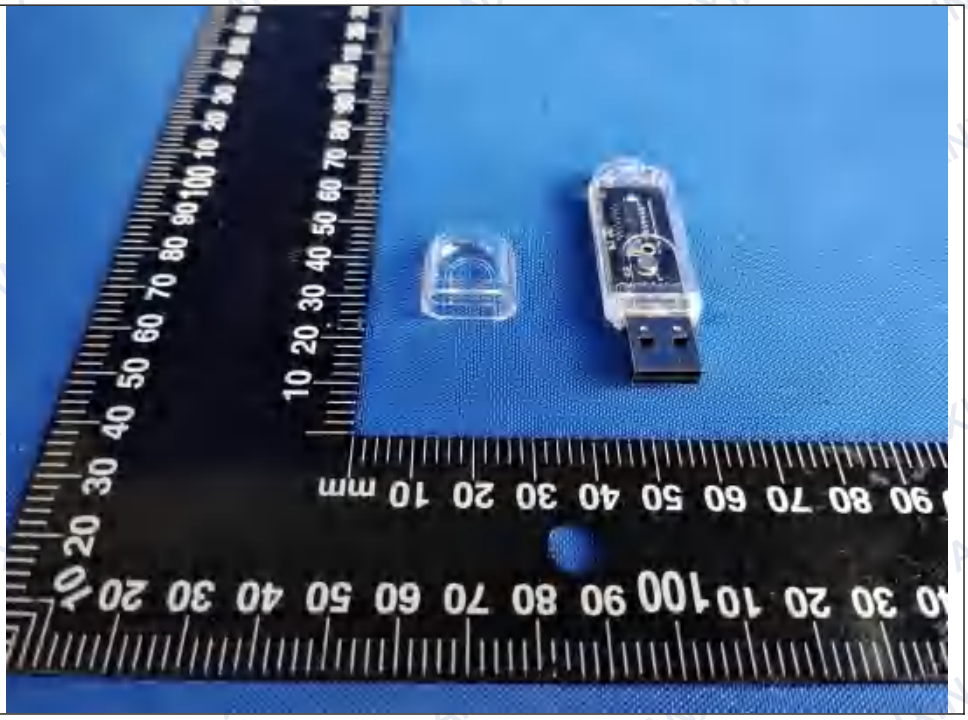
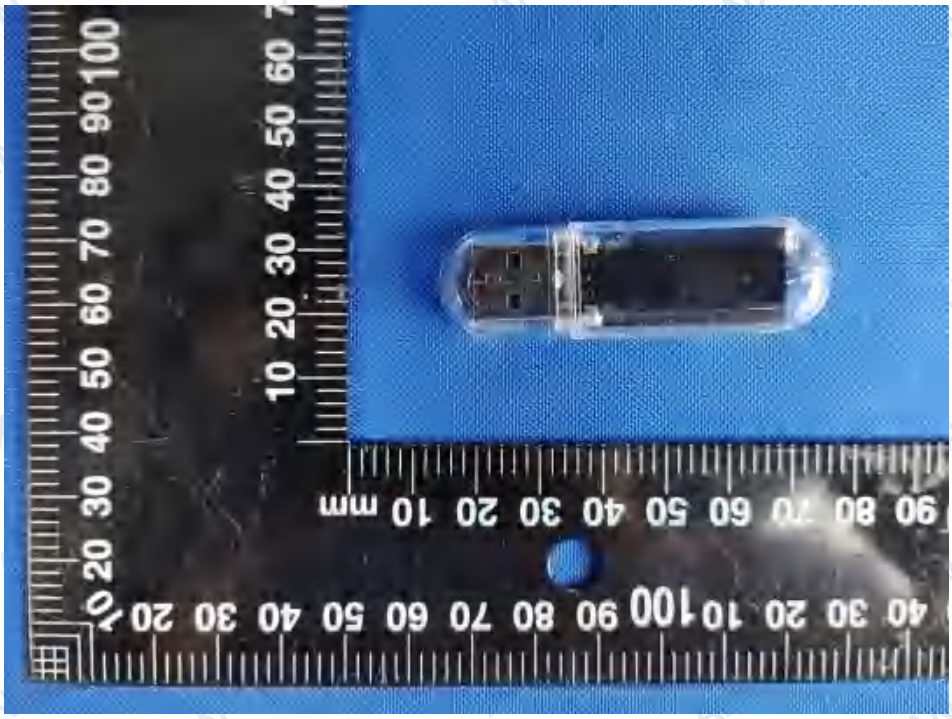
Photo 9 View: R10 [ ] Front [√] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 10 View: R10 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 11 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 12 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

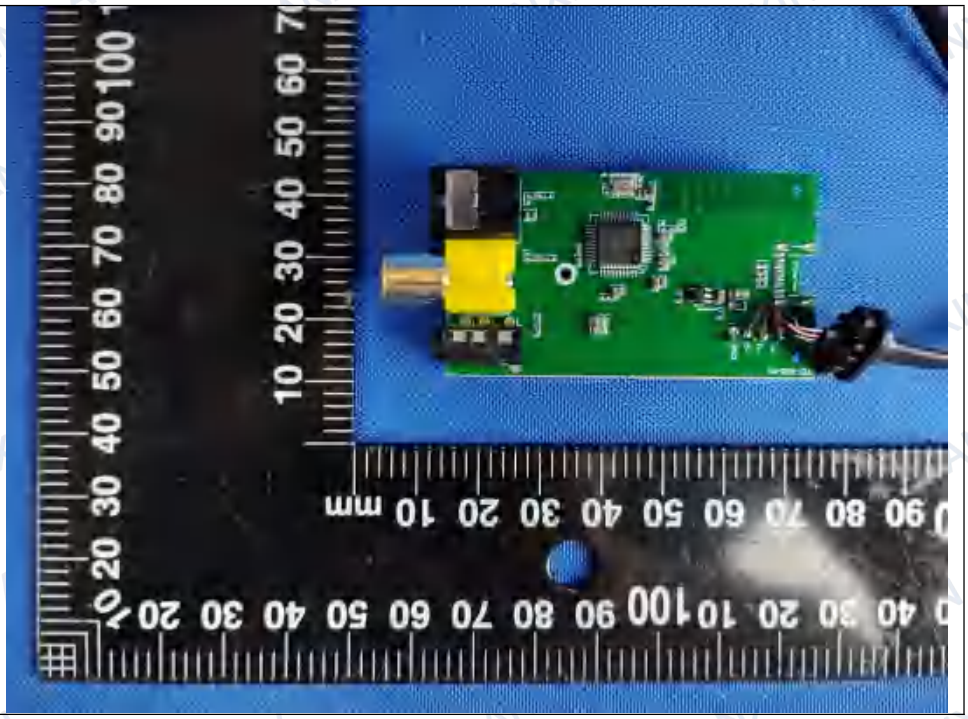
Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 13 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

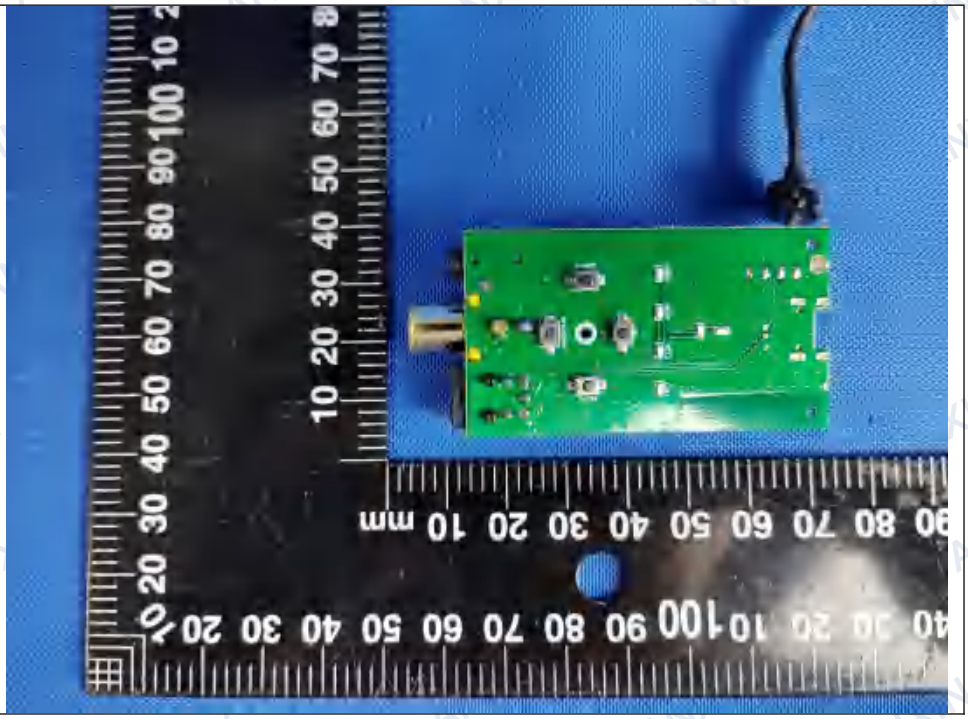
Photo 14 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 15 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 16 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Photo 17 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

The End Report

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

Certificate of Conformity

ANXIN TESTING

Certification No.	:	**AXJC20230522000307D**
Applicant	:	**Shenzhen yueerte Technology Co., Ltd**
Address	:	**Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen**
Manufacturer	:	**Shenzhen yueerte Technology Co., Ltd**
Address	:	**Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen**
Certification Marking	:	**CE-RED**
Product Description	:	**Bluetooth audio transmitter**
Model	:	**R20, R10, R30**
Trademark	:	**N/A**

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards		
2014/53/EU Safety	**EN 62368-1:2020**	**AXJC20230522000307S**
2014/53/EU EMC	**ETSI EN 301 489-1 V2.2.3 (2019-11)** **ETSI EN 301 489-17 V3.2.4 (2020-09)**	**AXJC20230522000307G**
2014/53/EU Radio	**ETSI EN 300 328 V2.2.2(2019-07)**	**AXJC20230522000307D**
2014/53/EU Health	**EN 62311:2020**	**AXJC20230522000307H**

The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test laboratory logo.

CE

Authorized Signer: _____

Kevin Liu /Manager

May. 26, 2023

Shenzhen An-Xin Testing Service Co., Ltd.
Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China
☎ 86-0755-23009643 86-0755-23009643 http://www.anxinlab.com/

ANXIN TESTING

TEST REPORT

For

Bluetooth audio transmitter

R20, R10, R30

Test Report Number: AXJC20230522000307D

Issued Date: May. 26, 2023

Applicant:

Shenzhen yueerte Technology Co., Ltd.

Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Issued by

Shenzhen An-Xin Testing Service Co., Ltd.

Room 402-405, Floor 4th, Building C, Yuxing Technology Industrial Park, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China

TEL: +86 755 23009643

Fax: +86 755 23009643

Note: *This report shall not be reproduced except in full, without the written approval of Shenzhen An-Xin Testing Service Co., Ltd. This document may be altered or revised by Shenzhen An-Xin Testing Service Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.*

1 GENERAL INFORMATION

Applicant	Shenzhen yueerte Technology Co., Ltd.
Address	Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen
Manufacturer	Shenzhen yueerte Technology Co., Ltd.
Address	Second floor, building C, Huaxing Industrial Park, shangxue village, Bantian, Longgang, Shenzhen

Equipment under Test (EUT)

Name:	Bluetooth audio transmitter
Model No.:	T10
EUT Power Supply:	DC5V
Standards:	ETSI EN 300 328 V2.2.2 (2019-07)

Test Result :	**PASS**

* In the configuration tested, the EUT detailed in this report complied with the standards specified above. Please refer to section 2 of this report for further details.

* The tests required in RED Directive 2019/53/EU were included in the report, The European Union's new Radio Equipment Directive (RED) 2019/53/EU was published on April 16, 2014, and EU member states must adopt and publish the laws, regulations and administrative provisions needed to comply with the new Directive by June 12, 2016.

Tested By: _____ **Date:** **May. 26, 2023**

Jet Chen

Approved By: _____ **Date:** **May. 26, 2023**

Kevin Liu

2 Contents

3 Test Summary

Radio Spectrum Matter (RSM) Part of Tx					
Test	**Test Requirement**	**Test method**	**Limit/Severity**	**Uncertainty**	**Result**
RF Output Power	Clause 4.3.2.2	Clause 5.4.2.2	20dBm	±1.5dB	PASS
Power Spectral Density	Clause 4.3.2.3	Clause 5.4.3.2	10dBm/MHz	±3dB	PASS
Duty Cycle, Tx-sequence, Tx-gap	Clause 4.3.2.4	Clause 5.4.2.2.1.3	Clause 4.3.2.4.3	±5 %	N/A
Medium Utilisation (MU) factor	Clause 4.3.2.5	Clause 5.4.2.2.1.4	≤ 10%	±5 %	N/A
Adaptivity	Clause 4.3.2.6	Clause 5.4.6.2	Clause 4.3.2.6.2.2 & Clause 4.3.2.6.3.2 & Clause 4.3.2.6.4.2	--	PASS
Occupied Channel Bandwidth	Clause 4.3.2.7	Clause 5.4.7.2	Clause 4.3.2.7.3	±5 %	PASS
Transmitter unwanted emissions in the OOB domain	Clause 4.3.2.8	Clause 5.4.8.2	Clause 4.3.2.8.3	±3dB	PASS
Transmitter unwanted emissions in the spurious domain	Clause 4.3.2.9	Clause 5.4.9.2	Clause 4.3.2.9.3	±6dB	PASS
Radio Spectrum Matter (RSM) Part of Rx					
Receiver spurious emissions	Clause 4.3.2.10	Clause 5.4.10.2	Clause 4.3.2.10.3	±6dB	PASS
Receiver Blocking	Clause 4.3.2.11	Clause 5.4.11.2	Clause 4.3.2.11.4	--	PASS
Geo-location capability	Clause 4.3.2.12	--	--	--	N/A

Remark:

The EUT belongs to receiver category 2.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

Temperature (Uncertainty): ±1°C Humidity(Uncertainty): ±5%

Uncertainty: ± 3%(for DC and low frequency voltages)

4 General Information

4.1 General Description of EUT

Product Name:	Bluetooth audio transmitter
Model No.:	R20
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is the model name for commercial purpose.	
Operation Frequency:	2412MHz~2472MHz(802.11b/802.11g/802.11n(H20)) 2422MHz~2462MHz(802.11n(H40))
Channel numbers:	13 for 802.11b/802.11g/802.11n(HT20) 9 for 802.11n(HT40)
Channel separation:	5MHz
Modulation Technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum(DSSS)
Modulation Technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Antenna Type:	FPCB Antenna
Antenna gain:	2.39dBi
Power Supply:	DC 5V
Remark: Both adapter 1, 2 and 3 were tested, and found adapter 1 was the worst case. So only the worst was record on the report.	

WIFI Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	5	2432MHz	9	2452MHz	13	2472MHz
2	2417MHz	6	2437MHz	10	2457MHz		
3	2422MHz	7	2442MHz	11	2462MHz		
4	2427MHz	8	2447MHz	12	2467MHz		

The EUT operation in above frequency list, and used test software to control the EUT for staying in continuous transmitting and receiving mode. So test frequency is below:

Test channel	**Frequency (MHz)**	
	802.11b/802.11g/802.11n(HT20)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2442MHz	2442MHz
Highest channel	2472MHz	2462MHz

4.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Receiving mode	Keep the EUT in receiving mode.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	*802.11b*	*802.11g*	*802.11n(HT20)*	*802.11n(HT40)*
Data rate	*1Mbps*	*6Mbps*	*6.5Mbps*	*13Mbps*

4.3 Test Facility

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

● **FCC —Registration No.: 600491**

EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Has been

Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

4.4 Test Location

All tests were performed at:

4.5 Description of Support Units

The EUT has been tested as an independent unit.

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

5 Test Instruments List

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	June. 03, 2022	June. 02, 2023
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	June. 03, 2022	June. 02, 2023
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	June. 03, 2022	June. 02, 2023
5	Double-ridged horn antenna	SCHWARZBECK	9120D	GTS208	June. 03, 2022	June. 02, 2023
6	Horn Antenna	ETS-LINDGREN	3160-09	GTS218	June. 03, 2022	June. 02, 2023
7	RF Amplifier	HP	8347A	GTS204	June. 03, 2022	June. 02, 2023
8	RF Amplifier	HP	8349B	GTS206	June. 03, 2022	June. 02, 2023
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	June. 03, 2022	June. 02, 2023
10	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	June. 03, 2022	June. 02, 2023
11	Universal Radio Communication tester	ROHDE&SCHWARZ	CMU 200	GTS538	June. 03, 2022	June. 02, 2023
12	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
13	Coaxial cable	GTS	N/A	GTS210	N/A	N/A
14	Coaxial Cable	GTS	N/A	GTS211	N/A	N/A
15	Thermo meter	N/A	N/A	GTS256	June. 03, 2022	June. 02, 2023

Conducted:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Signal Analyzer	Agilent	N9010A	MY48030494	June. 03, 2022	June. 02, 2023
2	vector Signal Generator	Agilent	E4438C	MY49070163	June. 03, 2022	June. 02, 2023
3	splitter	Mini-Circuits	ZAP-50W	NN256400424	June. 03, 2022	June. 02, 2023
4	Directional Coupler	Agilent	87300C	MY44300299	June. 03, 2022	June. 02, 2023
5	vector Signal Generator	Agilent	E4438C	US44271917	June. 03, 2022	June. 02, 2023
6	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080020	June. 03, 2022	June. 02, 2023
7	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54110001	June. 03, 2022	June. 02, 2023
8	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY53480008	June. 03, 2022	June. 02, 2023
9	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080019	June. 03, 2022	June. 02, 2023
10	4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063507	June. 03, 2022	June. 02, 2023
11	4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063513	June. 03, 2022	June. 02, 2023
12	splitter	Mini	PS3-7	4463	June. 03, 2022	June. 02, 2023

6 Radio Technical Specification in ETSI EN 300 328

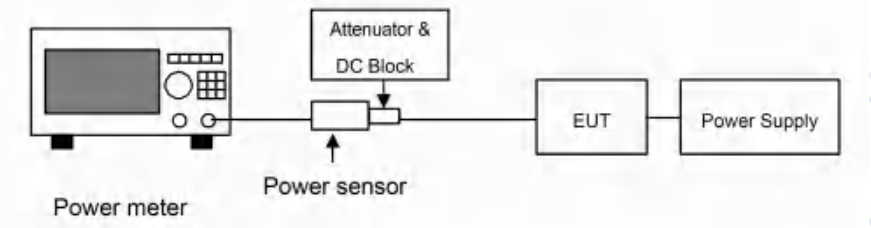
6.1 Test Environment and Mode

Test mode:			
Transmitting mode:	Keep the EUT in transmitting mode with modulation.		
Receiving mode	Keep the EUT in receiving mode.		
Operating Environment:			
Item	**Normal condition**	**Extreme condition**	
		NVHT	**NVLT**
Temperature	+25ºC	+45ºC	-10ºC
Humidity	20%-95%		
Atmospheric Pressure:	1008 mbar		

Setting	Value
Modulation	Other
Adaptive	Yes
Antenna Gain 1	2.39dBi
Nominal Channel Bandwidth	20MHz/40MHz
DUT Frequency not configurable	No
Frequency Low	2412MHz/2422MHz
Frequency Mid	2442MHz
Frequency High	2472MHz/2462MHz

6.2 Transmitter Requirement

6.2.1 RF Output Power

Test Requirement:	ETSI EN 300 328 clause 4.3.2.2
Test Method:	ETSI EN 300 328 clause 5.4.2.2.1.2
Limit:	20dBm
Test setup:	
Test procedure:	**Step 1:** Use a fast power sensor suitable for 2,4 GHz and capable of 1 MS/s. Use the following settings: - Sample speed 1 MS/s or faster. - The samples must represent the power of the signal. - Measurement duration: For non-adaptive equipment: equal to the observation period defined in clauses 4.3.1.3.2 or 4.3.2.4.2. For adaptive equipment, the measurement duration shall be long enough to ensure a minimum number of bursts (at least 10) are captured. For adaptive equipment, to increase the measurement accuracy, a higher number of bursts may be used. **Step 2:** For conducted measurements on devices with one transmit chain: -Connect the power sensor to the transmit port, sample the transmit signal and store the raw data.Use these stored samples in all following steps. For conducted measurements on devices with multiple transmit chains: -Connect one power sensor to each transmit port for a synchronous measurement on all transmit ports. -Trigger the power sensors so that they start sampling at the same time. Make sure the time difference between the samples of all sensors is less than 500ns. -For each individual smpling point(time domain), sum the coincident power samples of all ports and store them. Use these summed samples in all following steps. **Step 3:** Find the start and stop times of each burst in the stored measurement samples. The start and stop times are defined as the points where the power is at least 30 dB below the highest value of the stored samples in step 2. In case of insufficient dynamic range,the value of 30dB may need to be reduced appropriately. **Step 4:** Between the start and stop times of each individual burst calculate the

	RMS power over the burst using the formula below. Save these P_{burst} values, as well as the start and stop times for each burst. $$P_{burst} = \frac{1}{k}\sum_{n=1}^{k} P_{sample}(n)$$ With “k” being the total number of samples and “n” the actual sample number **Step 5:** The highest of all P_{burst} values (value "A" in dBm) will be used for maximum e.i.r.p. calculations. **Step 6:** Add the (stated) antenna assembly gain "G" in dBi of the individual antenna. If applicable, add the additional beamforming gain "Y" in dB. If more than one antenna assembly is intended for this power setting, the maximum overall antenna gain (G or G + Y) shall be used. The RF Output Power (P) shall be calculated using the formula below: P = A + G + Y **Step 7:** This value, which shall comply with the limit given in clause 4.3.1.2.3 or clause 4.3.2.2.3, shall be recorded in the test report.
Measurement Record:	Uncertainty: ± 1.5dB
Test Instruments:	See section 6.0
Test mode:	Transmitting mode

Measurement Data

802.11b mode						
Test conditions	**Channel**	**Burst RMS power (dBm)**	**Antenna Gain(dBi)**	**Calculated Power (dBm)**	**Limit (dBm)**	**Result**
Normal	Lowest	14.98	2.39	17.37	20	Pass
	Middle	14.85	2.39	17.24		
	Highest	14.76	2.39	17.15		
NVHT	Lowest	15.32	2.39	17.71		
	Middle	15.01	2.39	17.41		
	Highest	15.13	2.39	17.52		
NVLT	Lowest	15.36	2.39	17.75		
	Middle	15.09	2.39	17.48		
	Highest	15.12	2.39	17.51		
802.11g mode						
Test conditions	**Channel**	**Burst RMS power (dBm)**	**Antenna Gain(dBi)**	**Calculated Power (dBm)**	**Limit (dBm)**	**Result**
Normal	Lowest	11.95	2.39	14.34	20	Pass
	Middle	11.97	2.39	14.36		
	Highest	12.05	2.39	14.44		
NVHT	Lowest	11.87	2.39	14.26		
	Middle	12.09	2.39	14.48		
	Highest	12.32	2.39	14.71		
NVLT	Lowest	12.56	2.39	14.95		
	Middle	12.18	2.39	14.57		
	Highest	12.07	2.39	14.46		

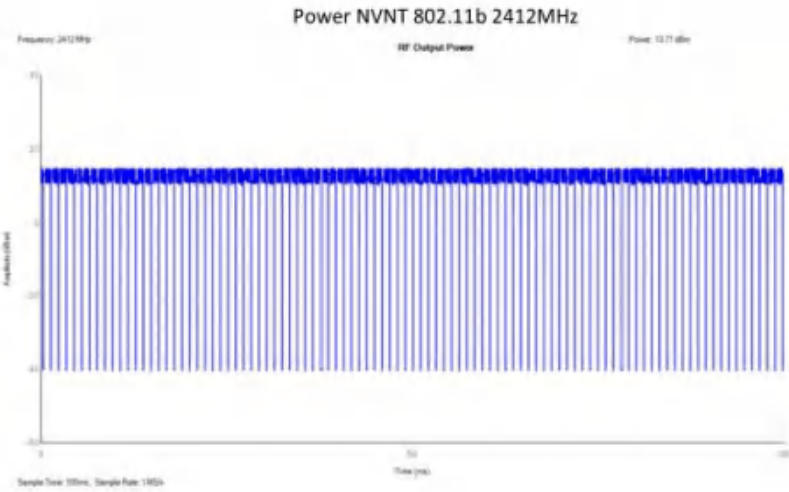
802.11n(HT20) mode						
Test conditions	**Channel**	**Burst RMS power (dBm)**	**Antenna Gain(dBi)**	**Calculated Power (dBm)**	**Limit (dBm)**	**Result**
Normal	Lowest	12.17	2.39	14.56	20	Pass
	Middle	11.98	2.39	14.37		
	Highest	11.99	2.39	14.38		
NVHT	Lowest	11.87	2.39	14.36		
	Middle	11.92	2.39	14.31		
	Highest	11.88	2.39	13.27		
NVLT	Lowest	12.05	2.39	14.44		
	Middle	11.87	2.39	14.26		
	Highest	11.87	2.39	14.36		
802.11n(HT40) mode						
Test conditions	**Channel**	**Burst RMS power (dBm)**	**Antenna Gain(dBi)**	**Calculated Power (dBm)**	**Limit (dBm)**	**Result**
Normal	Lowest	10.01	2.39	12.4	20	Pass
	Middle	9.96	2.39	12.35		
	Highest	9.81	2.39	12.2		
NVHT	Lowest	9.92	2.39	12.31		
	Middle	9.84	2.39	12.23		
	Highest	9.73	2.39	12.12		
NVLT	Lowest	9.97	2.39	12.36		
	Middle	9.76	2.39	12.15		
	Highest	9.83	2.39	12.22		

Remark:1>. Volt= Voltage, Temp= Temperature

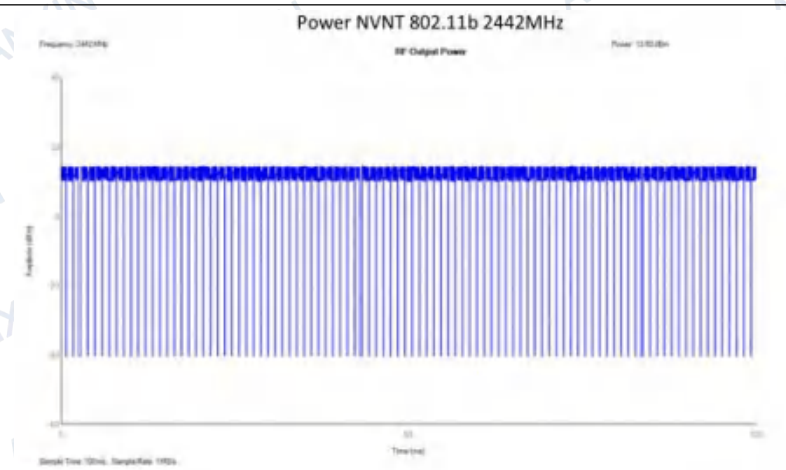
2>. Antenna Gain=2.39dBi

Test plots at normal condition are below:

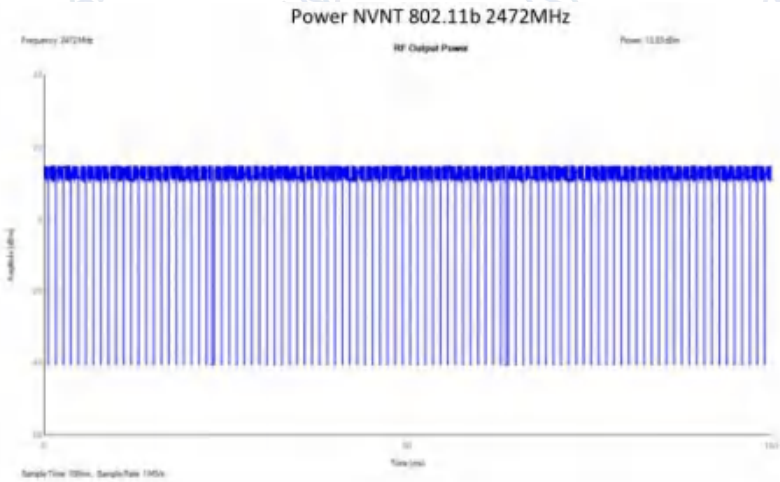
Test mode:	802.11b



Lowest Channel

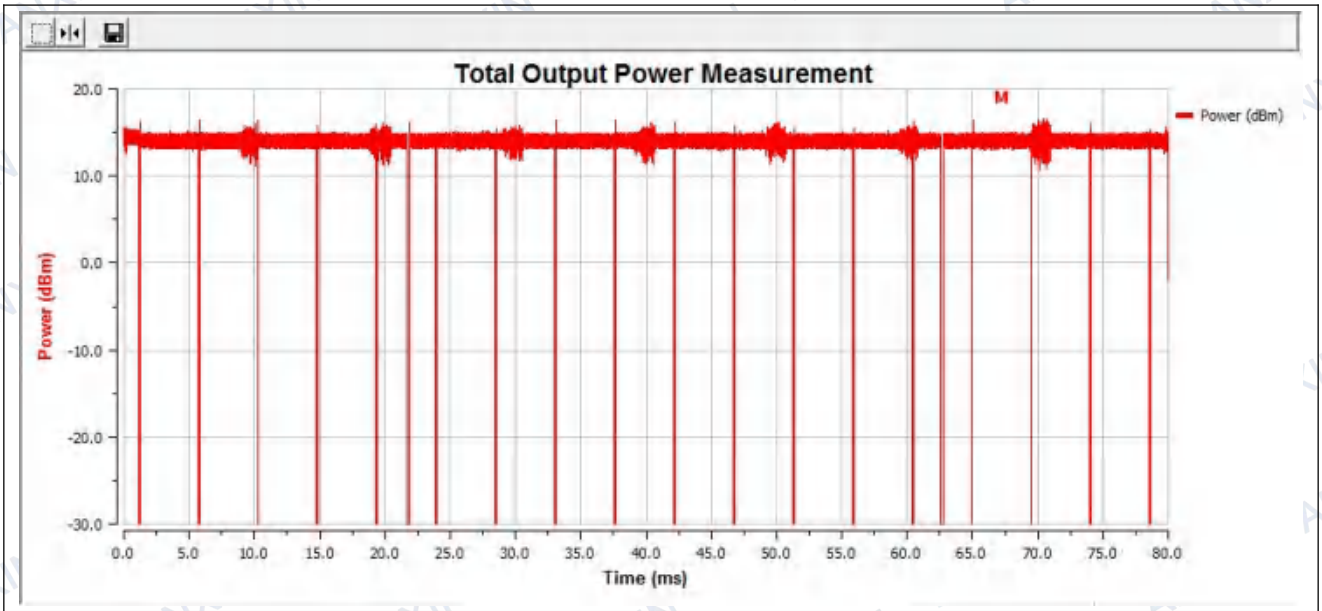


Middle Channel

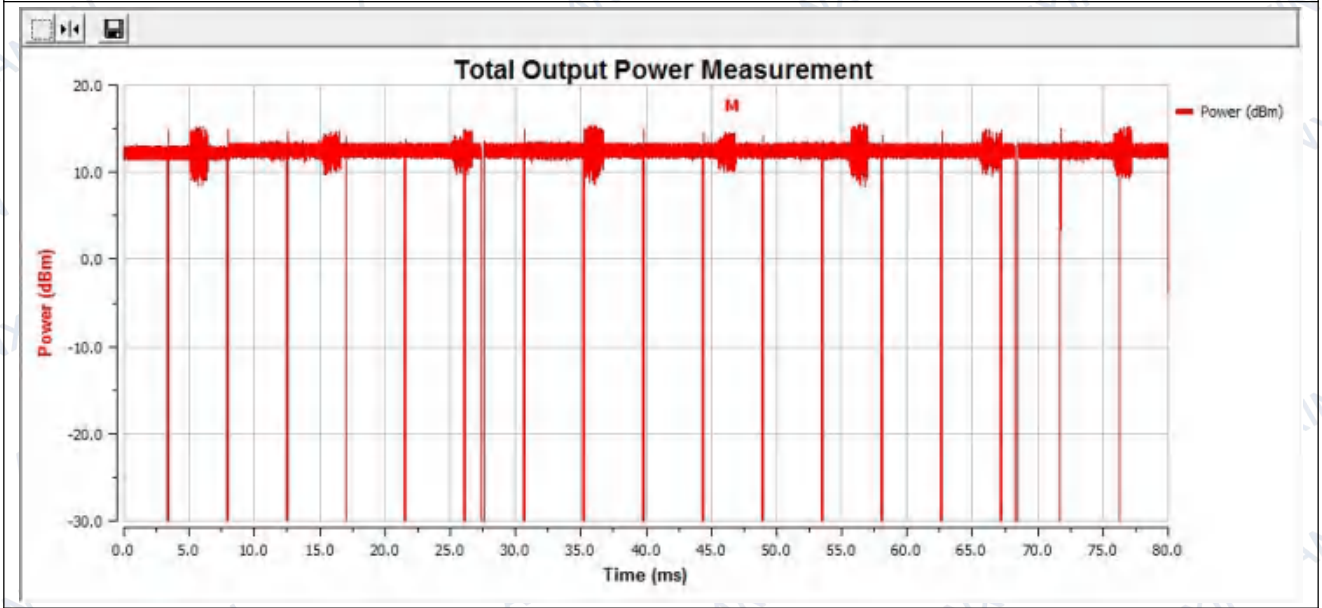


Highest Channel

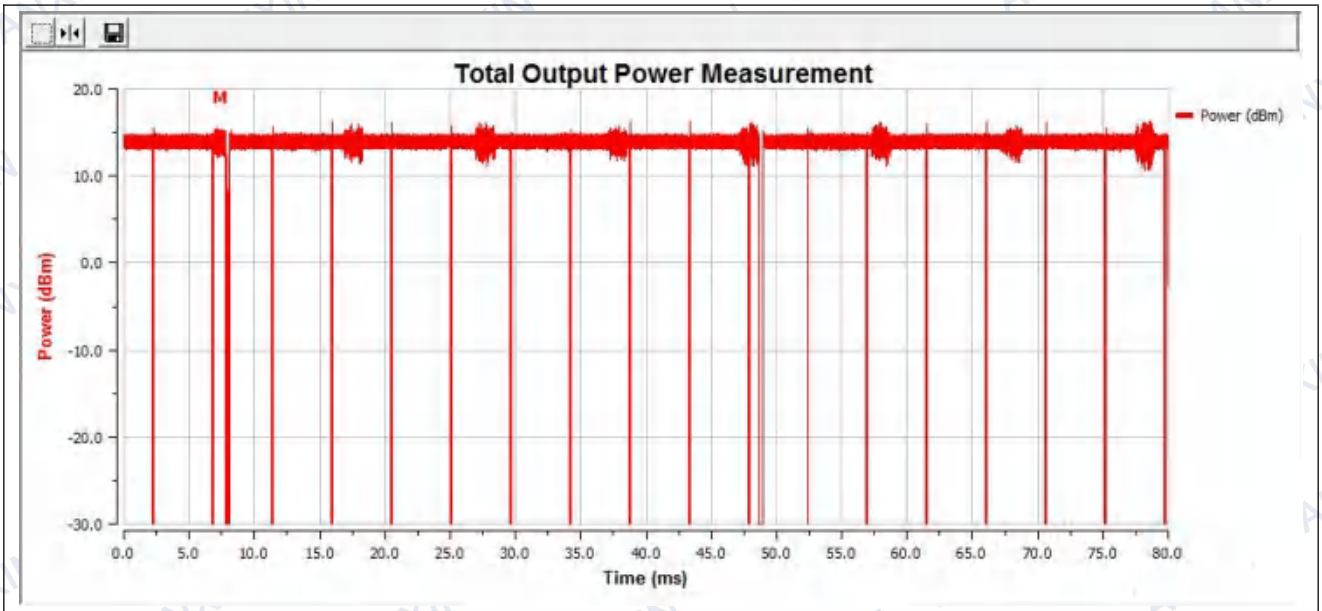
Test mode:	802.11g



Lowest Channel

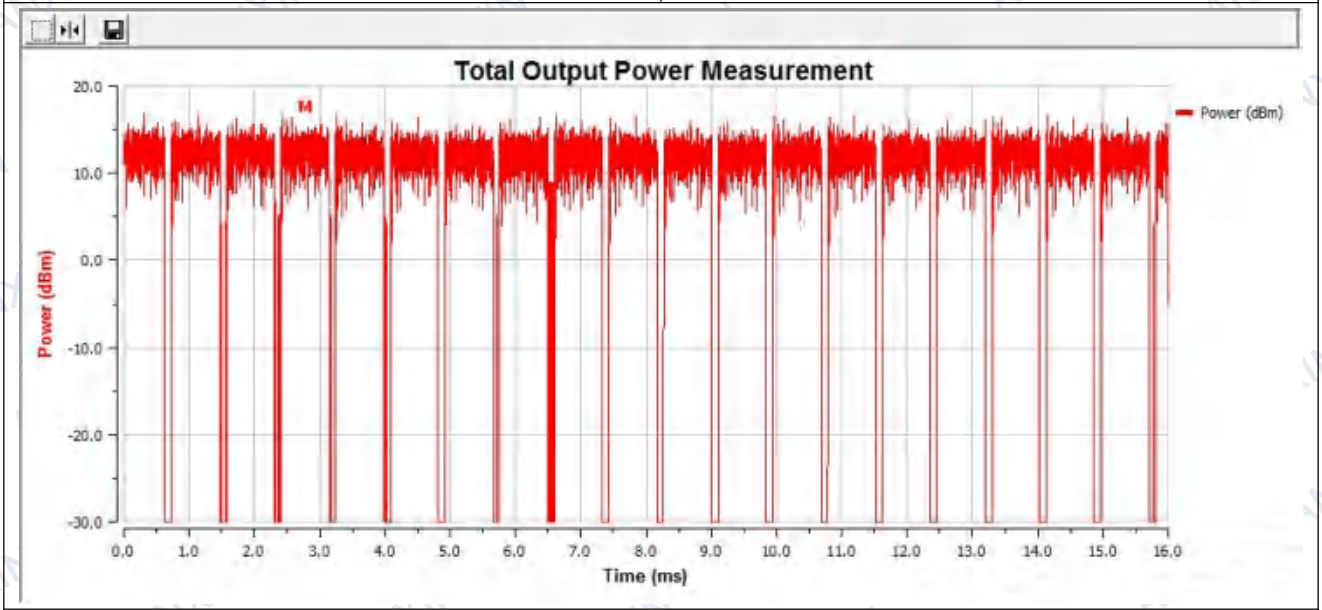


Middle Channel

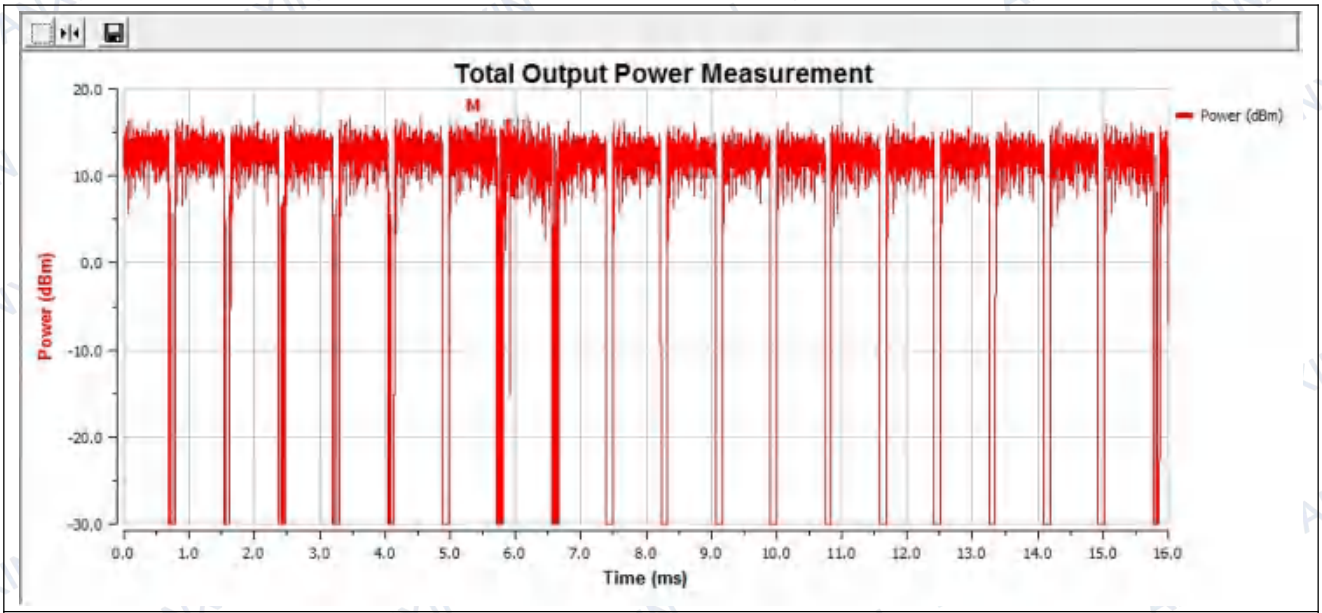


Highest Channel

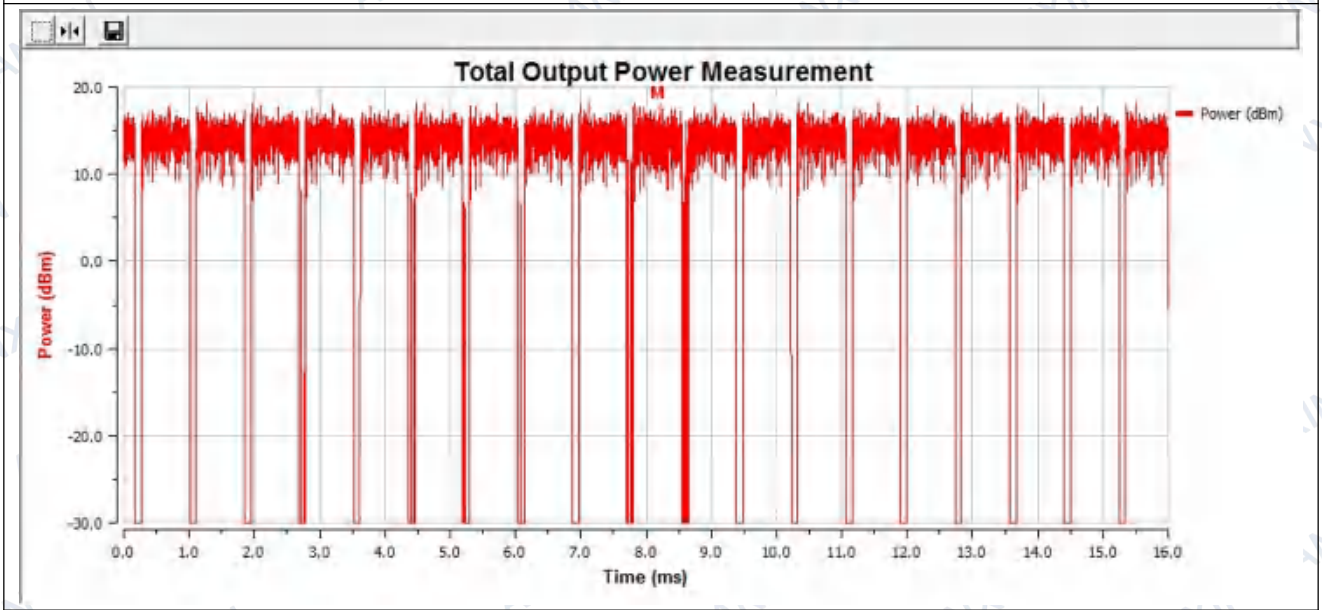
Test mode:	802.11n(HT20)



Lowest Channel

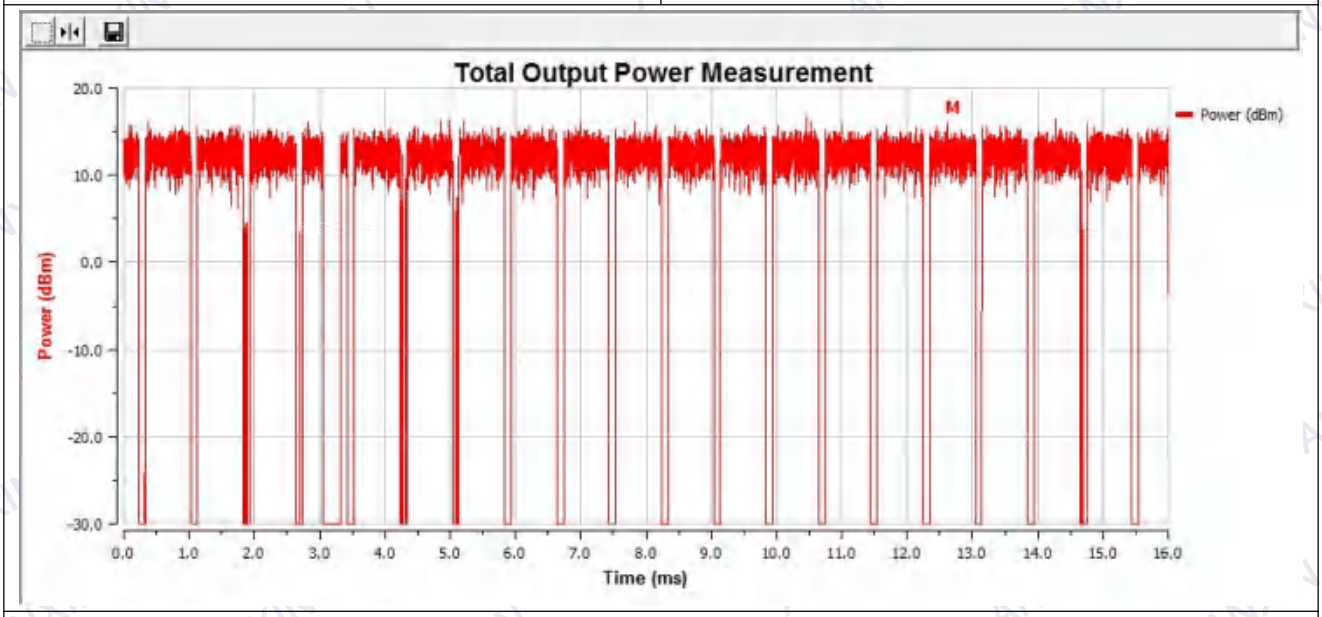


Middle Channel

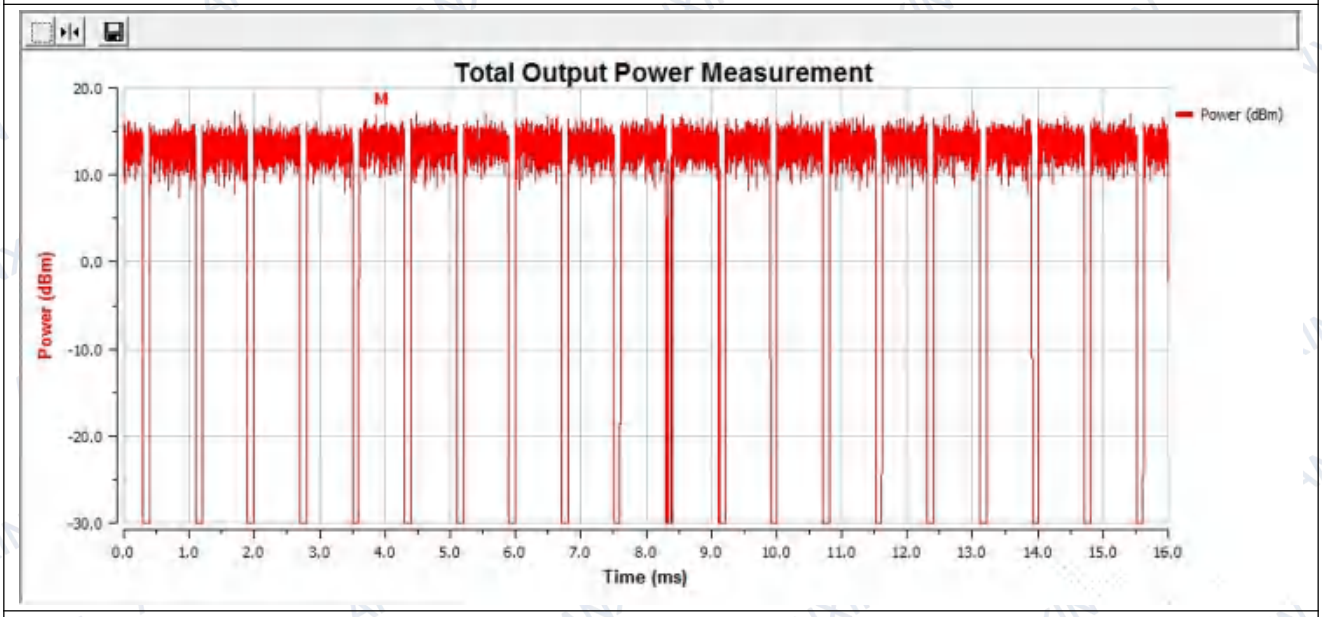


Highest Channel

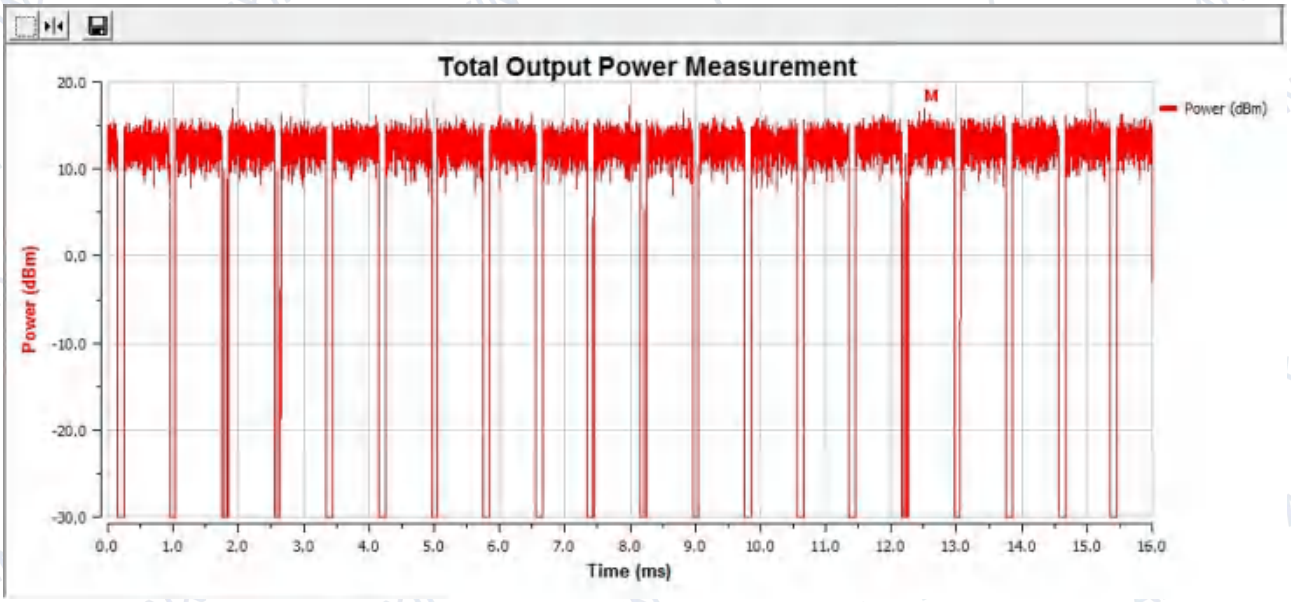
Test mode:	802.11n-HT40



Lowest Channel

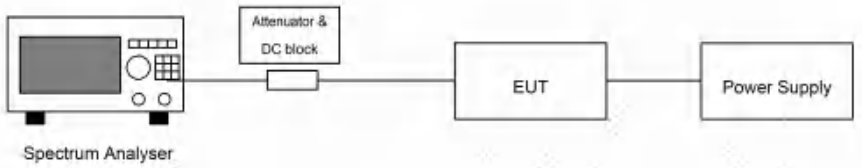


Middle Channel



Highest Channel

6.2.2 Power Spectral Density

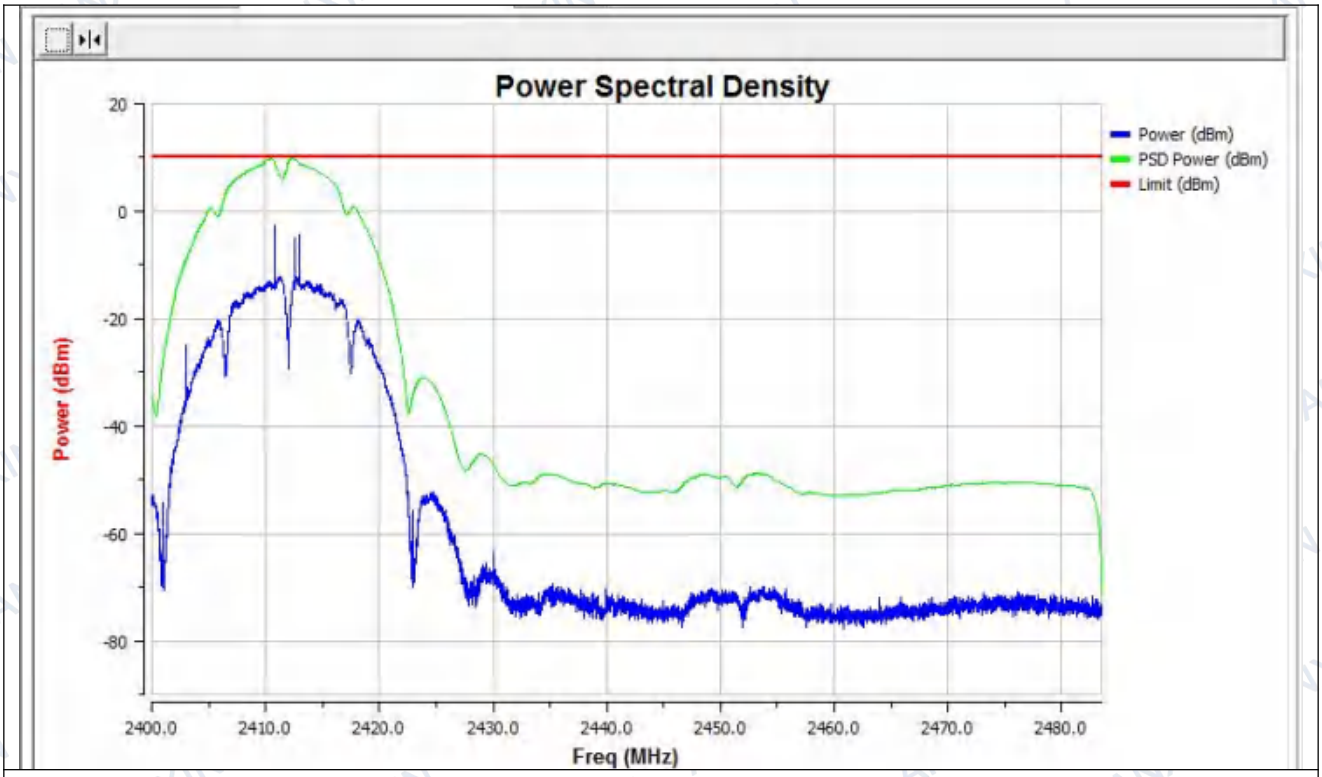
Test Requirement:	ETSI EN 300 328 clause 4.3.2.3
Test Method:	ETSI EN 300 328 clause 5.4.3.2.1
Limit:	10dBm/MHz
Test setup:	
Test procedure:	**Step 1:** Connect the UUT to the spectrum analyser and use the following settings: Start Frequency: 2400 MHz Stop Frequency: 2483.5 MHz Resolution BW: 10 kHz Video BW: 30 kHz Sweep Points: > 8350 For spectrum analysers not supporting this number of sweep points, the frequency band may be segmented. Detector: RMS Trace Mode: Max Hold Sweep time: 10s; the sweep time may be increased further until a value where the sweep time has no impact on the RMS value of the signal For non-continuous signals, wait for the trace to stabilize. Save the (trace data) set to a file. **Step 2:** For conducted measurements on smart antenna systems using either operating mode 2 or 3 (see clause 5.3.2.2), repeat the measurement for each of the transmit ports. For each sampling point(frequency domain) , add up the coincident power values(in mW) for the different transmit chains and use this as the new data set. **Step 3:** Add up the values for power for all the samples in the file using the formula below. $P_{Sum} = \sum_{n=1}^{k} P_{sample}(n)$ With “k” being the total number of samples and “n” the actual sample Number. **Step 4:** Normalize the individual values for power(in dBm) so that the sum is equal to the RF output Power (e.i.r.p.) measured in clause 5.4.2 and save the corrected data. The following formulas can be used: $C_{Corr} = P_{Sum} - P_{e.i.r.p.}$

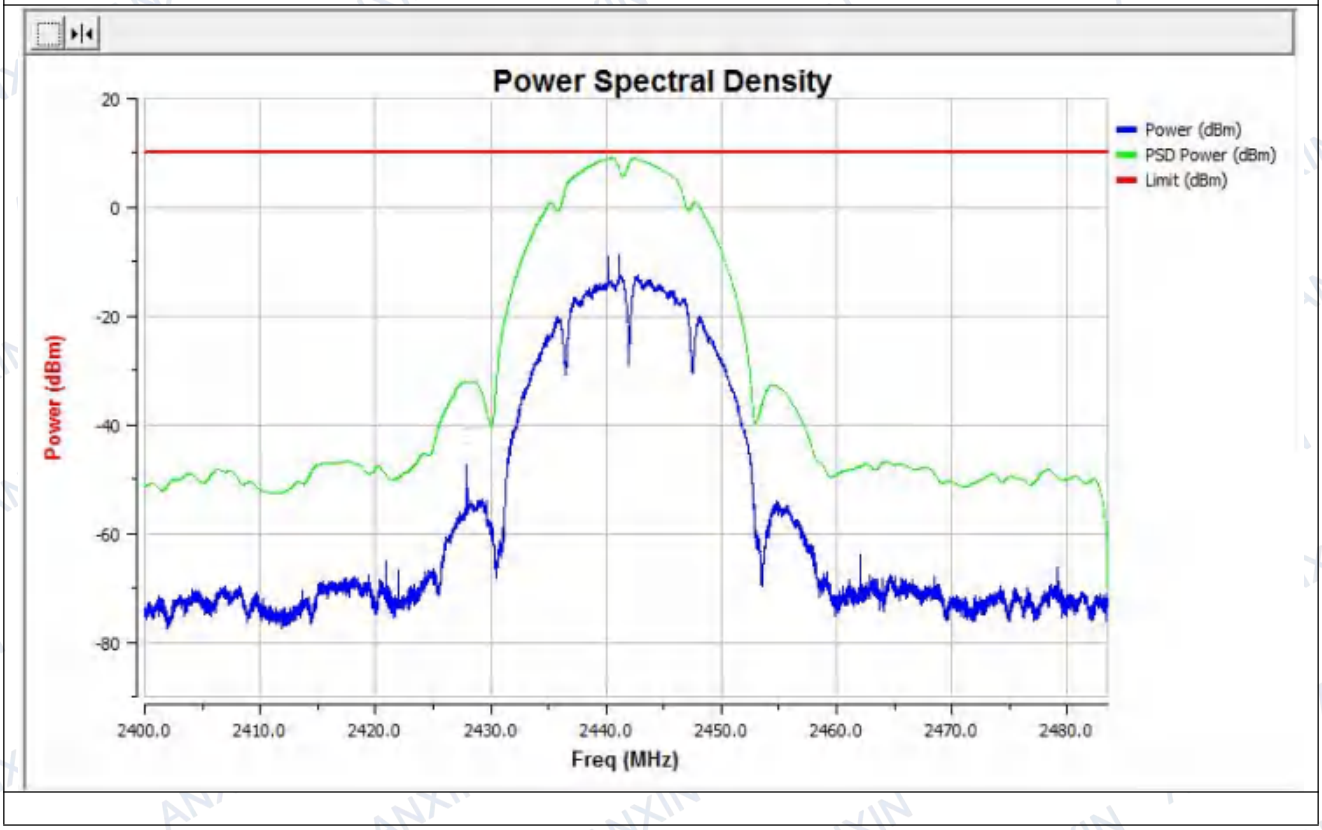
	$P_{Samplecorr}(n) = P_{Sample}(n) - C_{Corr}$ With"n" being the actual sample number **Step 5:** Starting from the first sample $P_{samplecorr(n)}$ (lowest frequency), add up the power(in mW) of the following samples representing a 1 MHz segment and record the results for power and position (i.e. sample #1 to #100). This is the Power Spectral Density (e.i.r.p.) for the first 1 MHz segment which shall be recorded. **Step 6:** Shift the start point of the samples added up in step 5 by one sample and repeat the procedure in step 5 (i.e. sample #2 to #101). **Step 7:** Repeat step 6 until the end of the data set and record the Power Spectral Density values for each of the 1 MHz segments. From all the recorded results, the highest value is the maximum Power Spectral Density for the UUT. This value, which shall comply with the limit given in clause 4.3.2.3.3,shall be recorded in the test report.
Measurement Record:	Uncertainty: ±3dB
Test Instruments:	See section 6.0
Test mode:	Transmitting mode

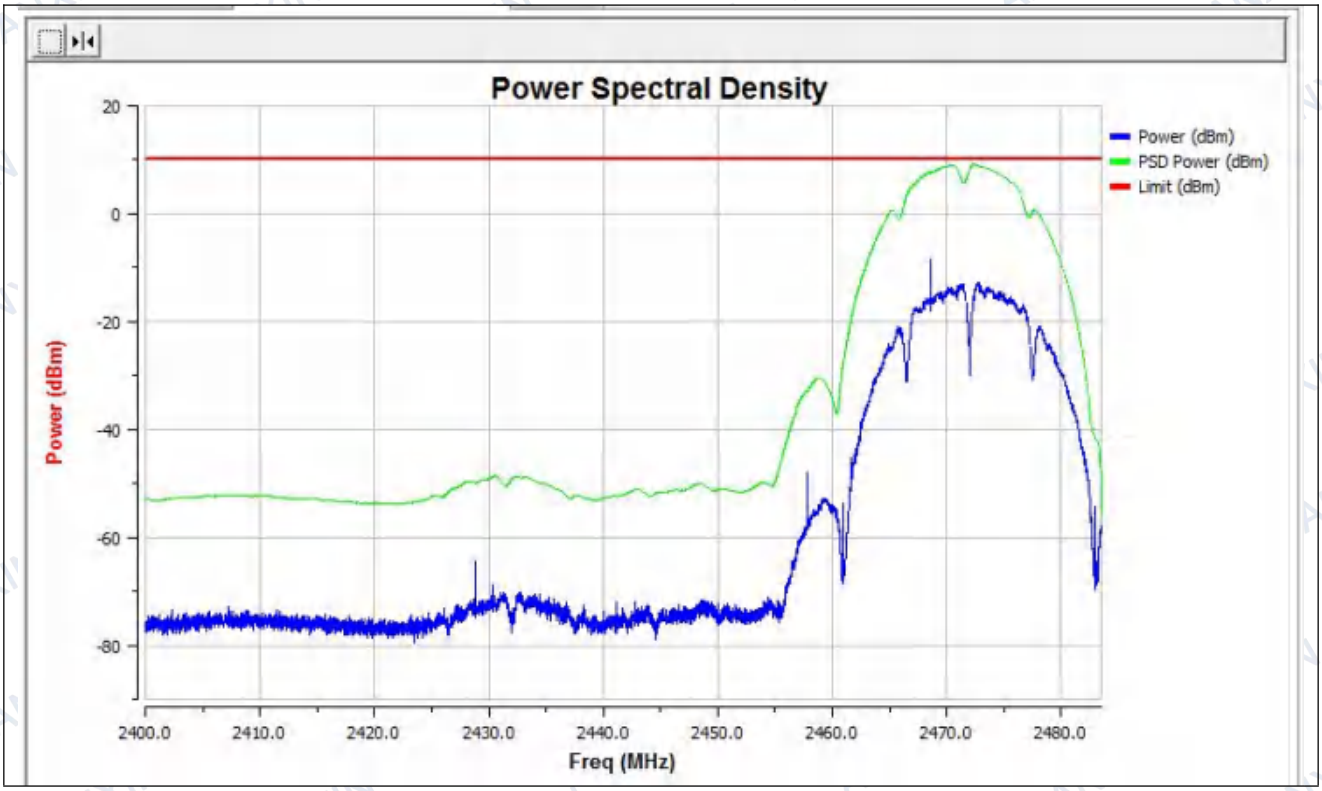
Measurement Data

802.11b mode			
Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
CH 1	9.24	10.00	Pass
CH 7	9.09		
CH 13	9.13		
802.11g mode			
Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
CH 1	7.12	10.00	Pass
CH 7	7.34		
CH 13	6.98		
802.11n-HT20 mode			
Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
CH 1	7.01	10.00	Pass
CH 7	6.93		
CH 13	6.84		
802.11n-HT40 mode			
Channel	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)	Result
CH 1	3.88	10.00	Pass
CH 7	4.06		
CH 13	3.95		

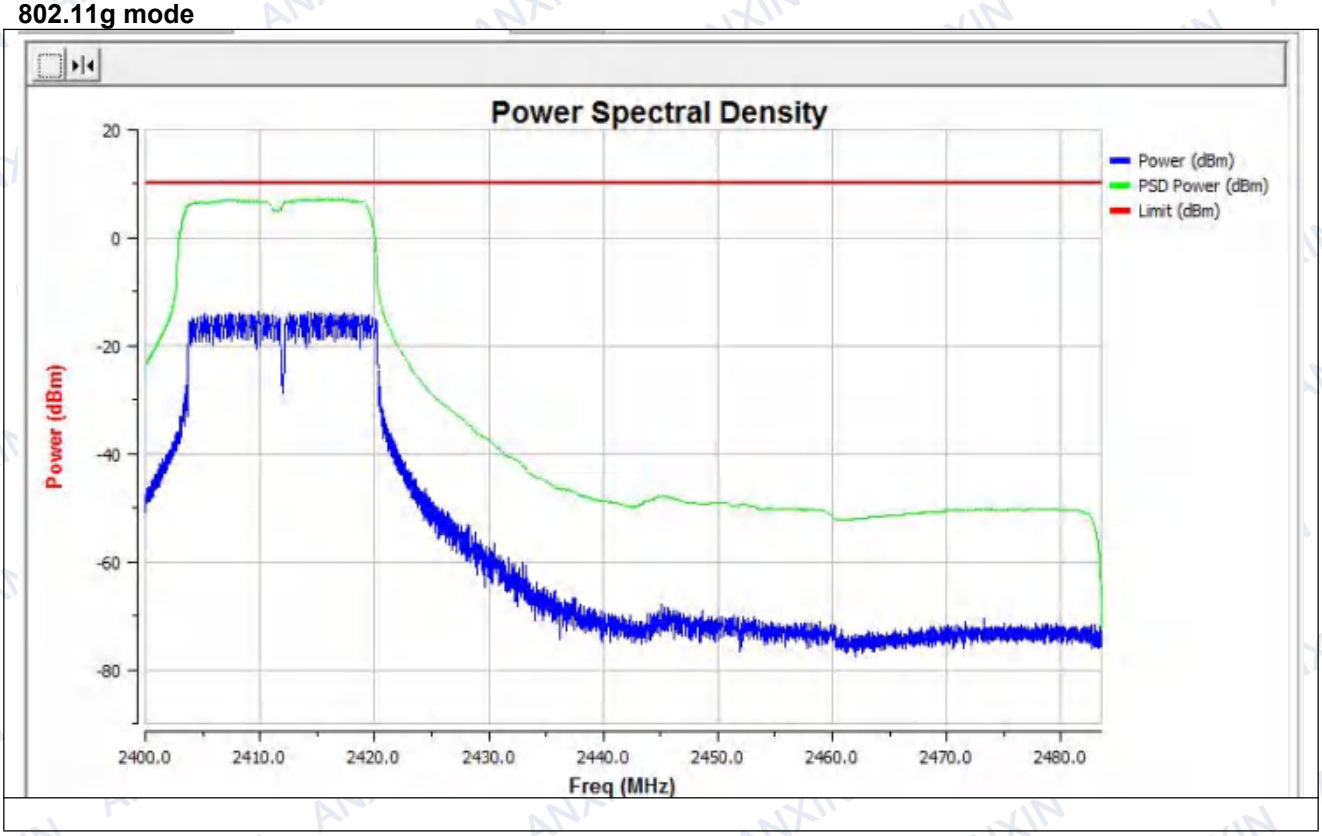
Test plots are followed:

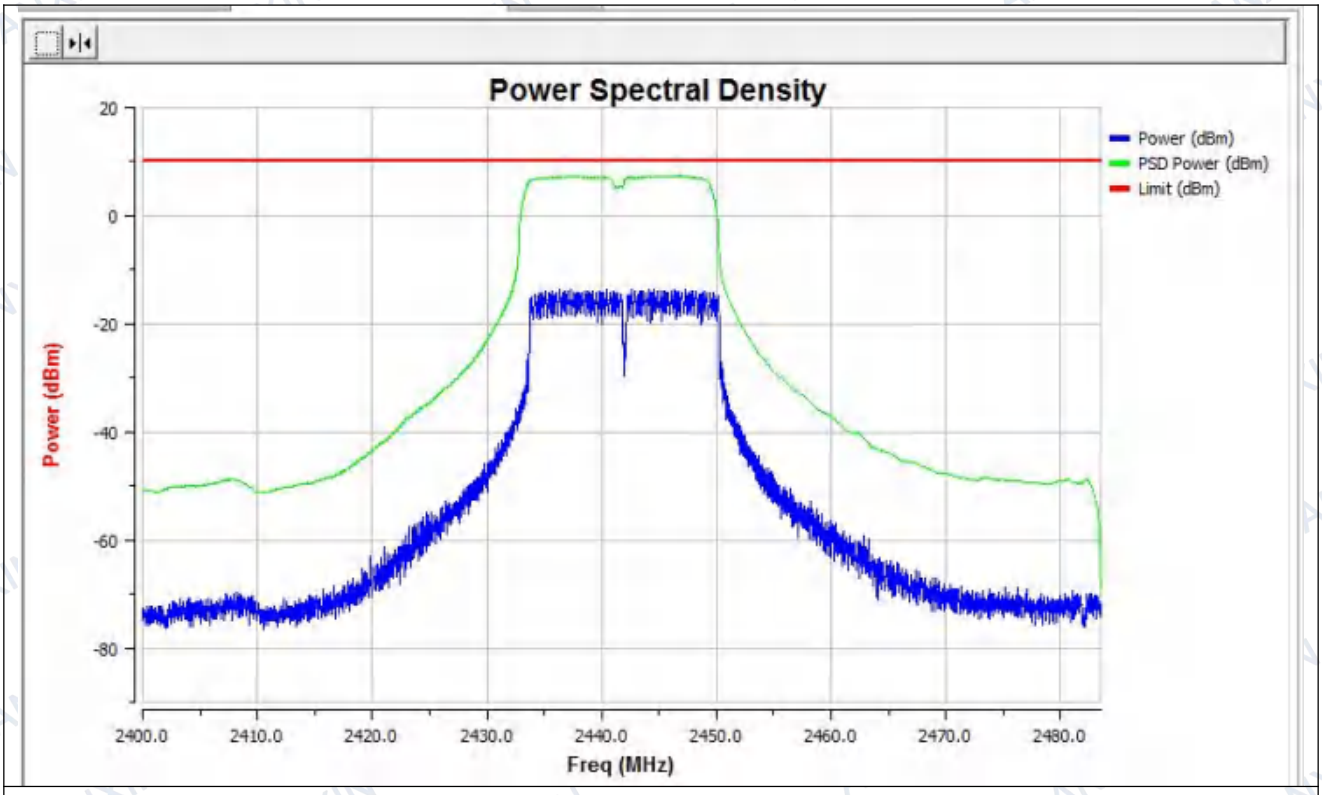


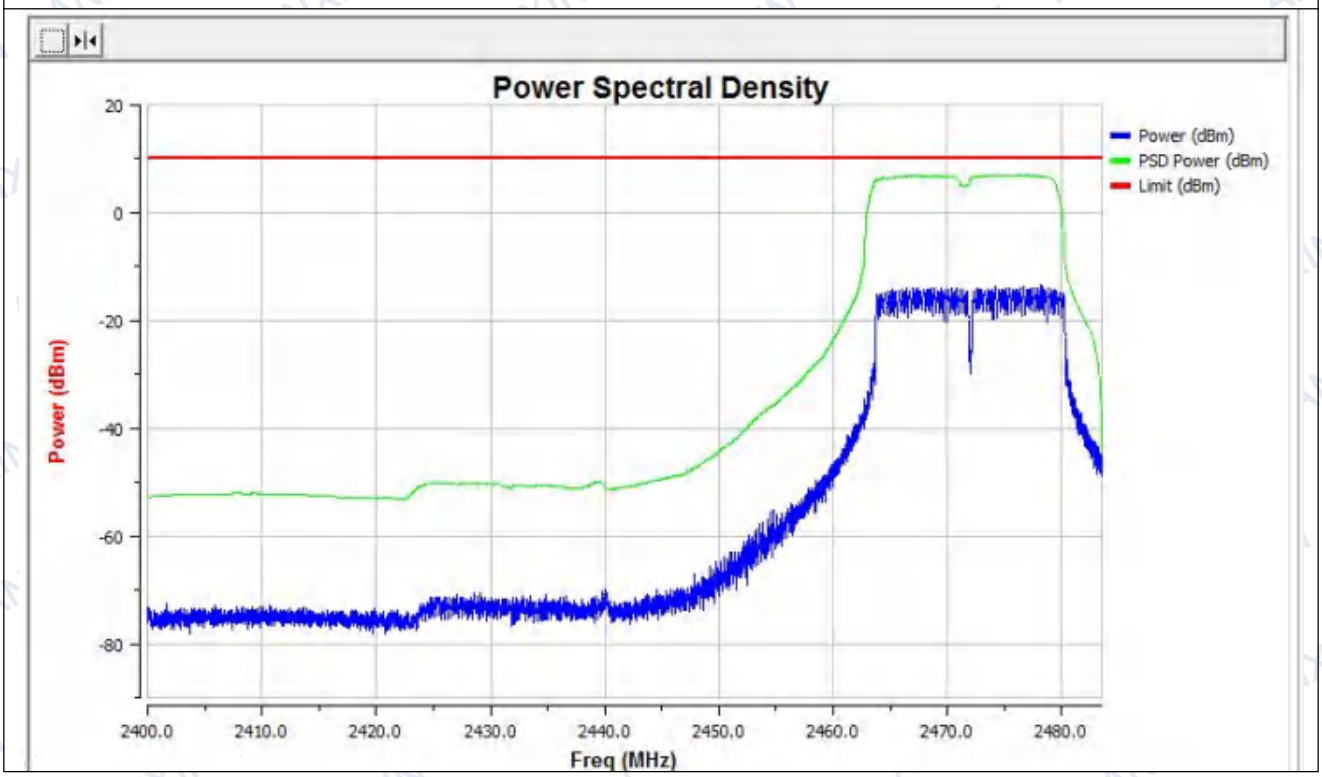



Power Spectral Density
Power (dBm)
PSD Power (dBm)
Limit (dBm)
Power (dBm)
20
0
-20
-40
-60
-80
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
Freq (MHz)

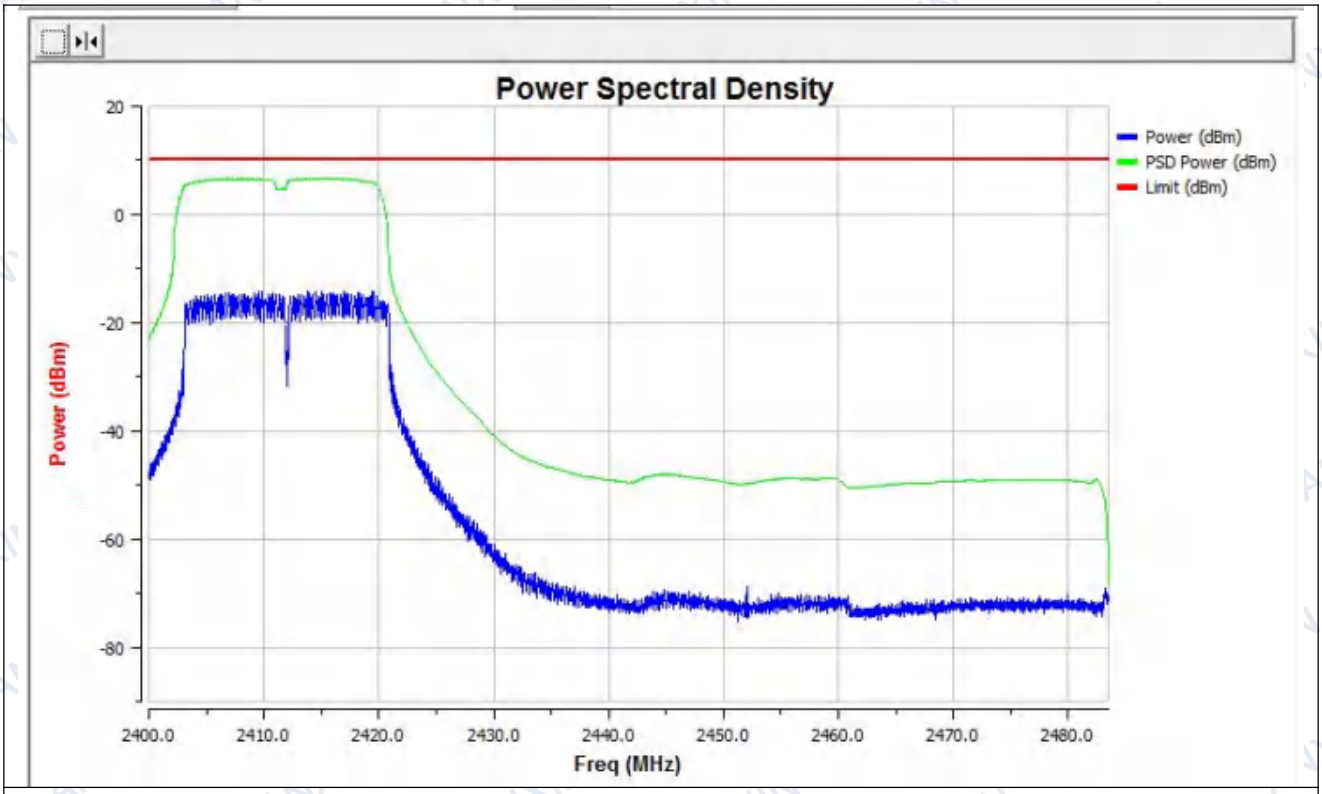
802.11g mode

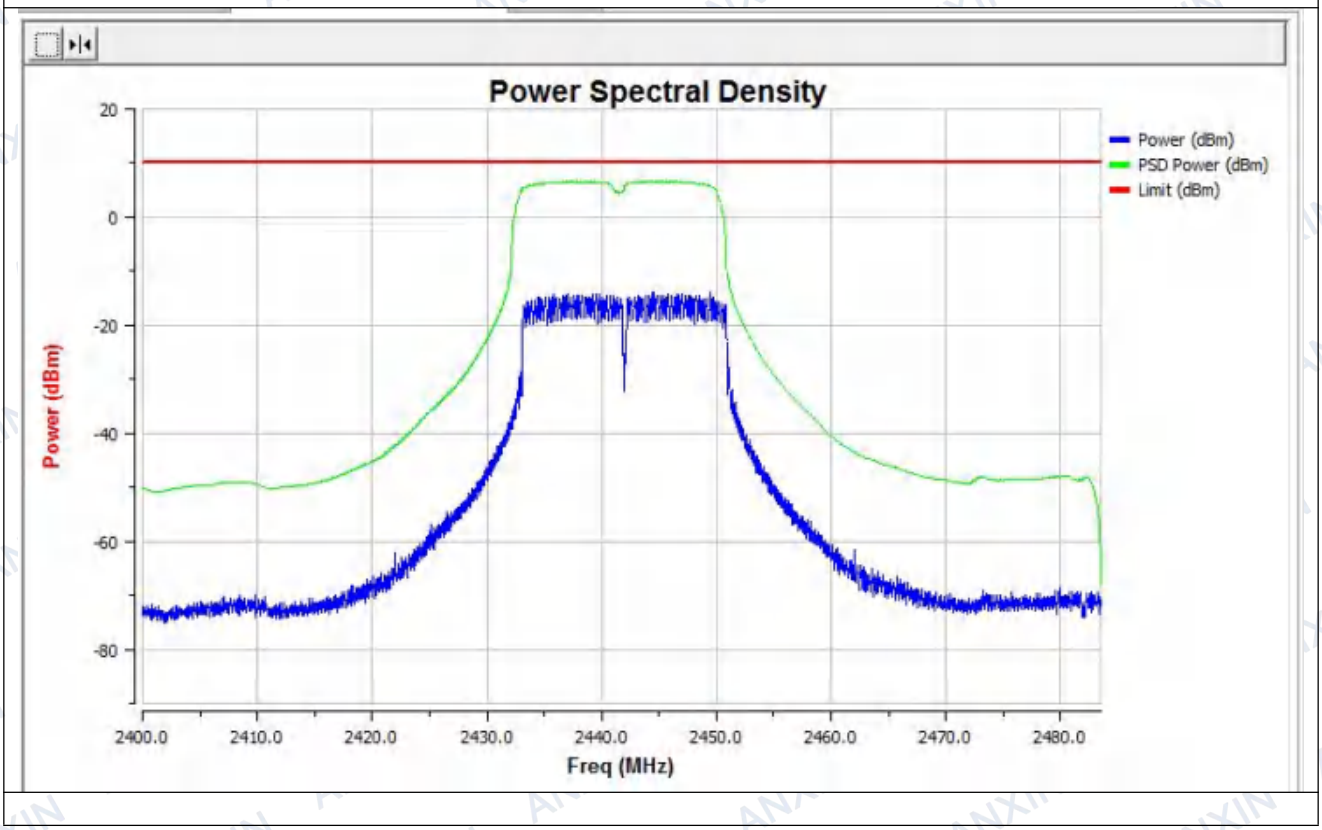

Power Spectral Density
Power (dBm)
PSD Power (dBm)
Limit (dBm)
Power (dBm)
20
0
-20
-40
-60
-80
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
Freq (MHz)

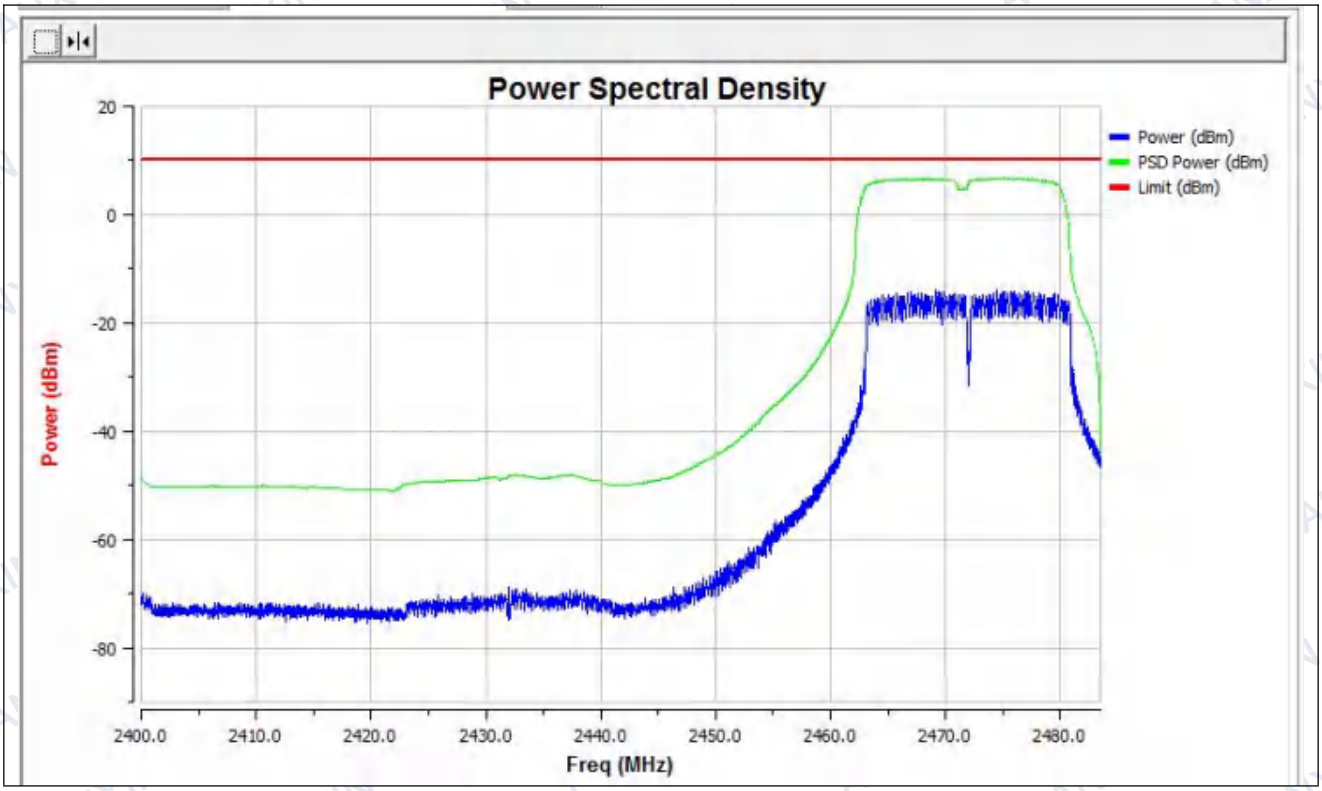

Power Spectral Density
Power (dBm)
PSD Power (dBm)
Limit (dBm)
Power (dBm)
20
0
-20
-40
-60
-80
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
Freq (MHz)


Power Spectral Density
Power (dBm)
PSD Power (dBm)
Limit (dBm)
Power (dBm)
20
0
-20
-40
-60
-80
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
Freq (MHz)

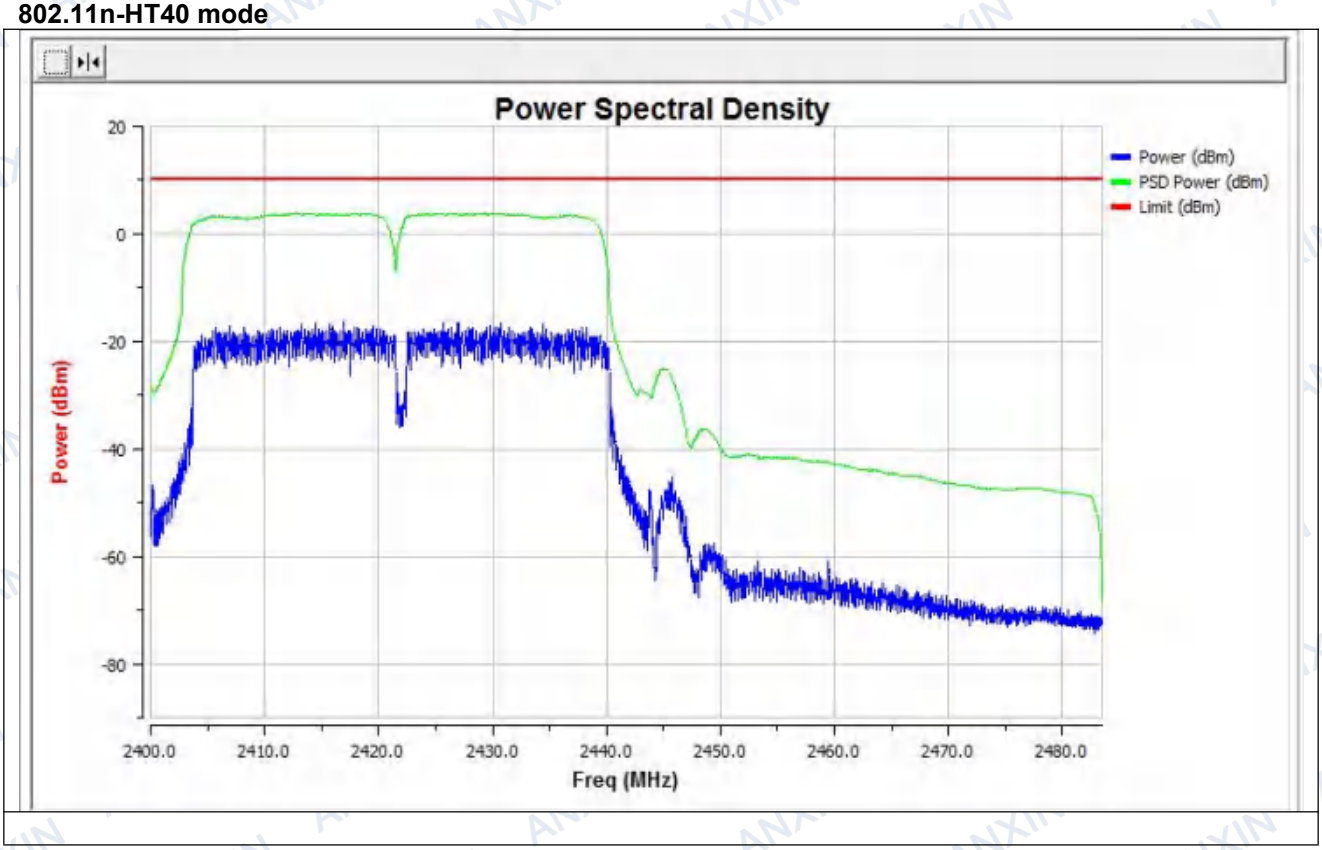
802.11n-HT20 mode

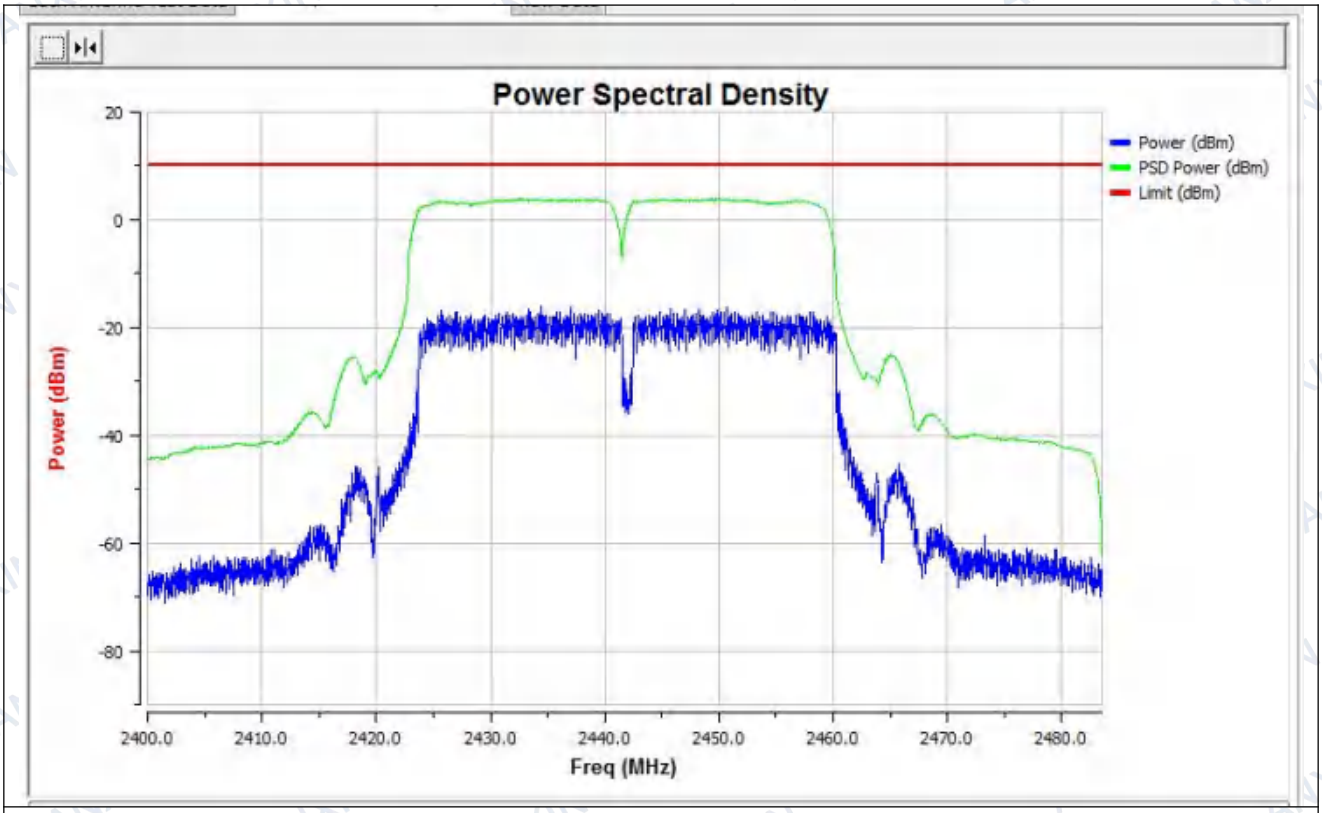


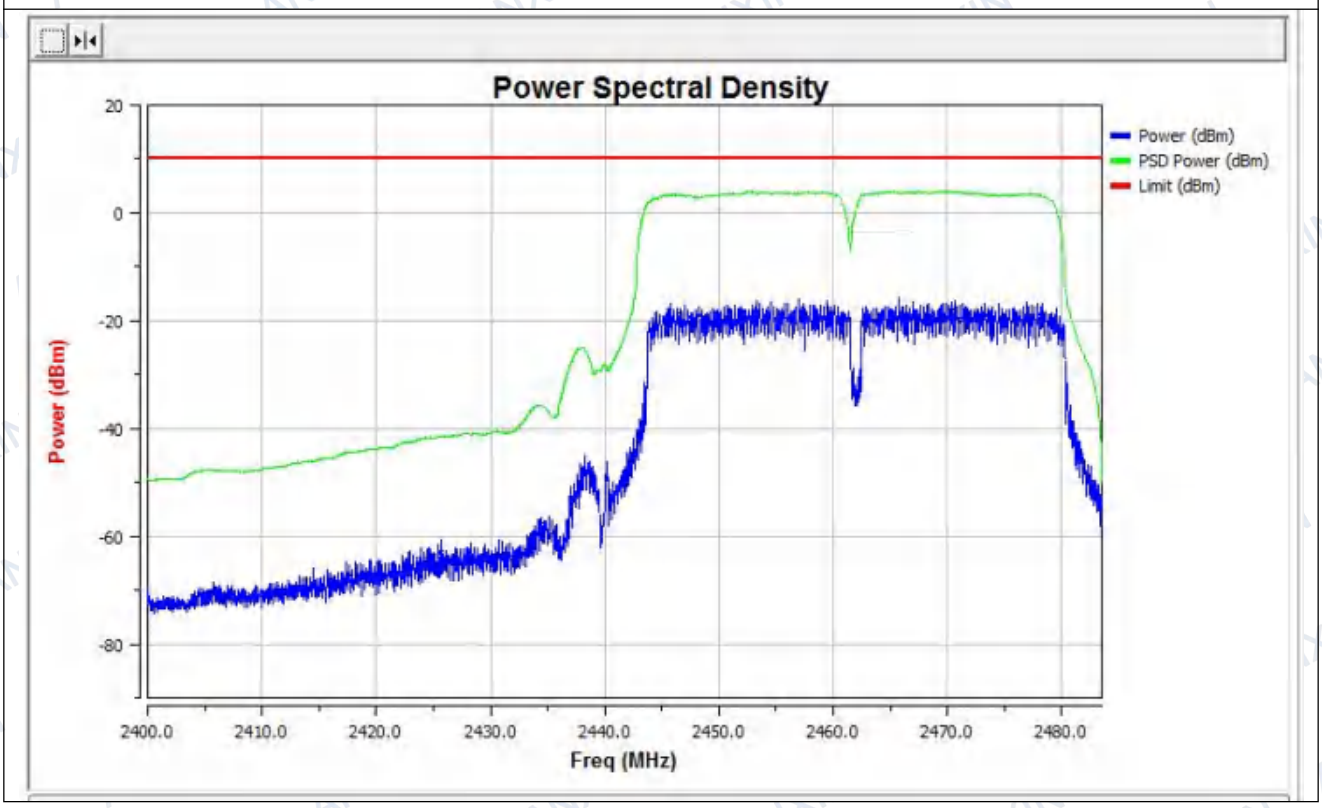




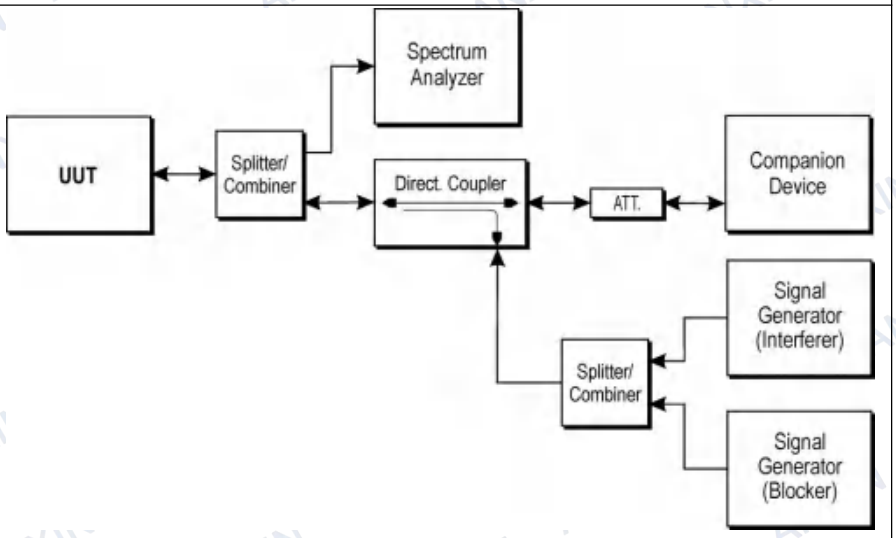
802.11n-HT40 mode




Power Spectral Density
Power (dBm)
PSD Power (dBm)
Limit (dBm)
Power (dBm)
20
0
-20
-40
-60
-80
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
Freq (MHz)


Power Spectral Density
Power (dBm)
PSD Power (dBm)
Limit (dBm)
Power (dBm)
20
0
-20
-40
-60
-80
2400.0
2410.0
2420.0
2430.0
2440.0
2450.0
2460.0
2470.0
2480.0
Freq (MHz)

Adaptivity

Test Requirement:	ETSI EN 300 328 clause 4.3.2.6
Test Method:	ETSI EN 300 328 clause 5.3.7.2.1
Limit:	Clause 4.3.2.6.2.2 & Clause 4.3.2.6.3.2 & Clause 4.3.2.6.4.2
Test setup:	
Test procedure:	**1. Adaptive Frequency Hopping equipment using DAA** The different steps below define the procedure to verify the efficiency of the DAA based adaptive mechanisms for frequency hopping equipment. These mechanisms are described in clause 4.3.1.7. For systems using multiple receive chains only one chain (antenna port) need to be tested. All other receiver inputs shall be terminated. **Step 1:** The UUT may connect to a companion device during the test. The interference signal generator, the blocking signal generator, the spectrum analyser, the UUT and the companion device are connected using a set-up equivalent to the example given by figure 5, although the interference and blocking signal generators do not generate any signals at this point in time. The spectrum analyser is used to monitor the transmissions of the UUT in response to the interfering and the blocking signals. For the hopping frequency to be tested, adjust the received signal level (wanted signal from the companion device) at the UUT to the value defined in table 2 and table 3 (clause 4). Testing of Unidirectional equipment does not require a link to be established with a companion device. The analyzer shall be set as follows: RBW: use next available RBW setting below the measured Occupied Channel Bandwidth Filter type: Channel Filter VBW: ≥ RBW Detector Mode: RMS Centre Frequency: Equal to the hopping frequency to be tesed Span: 0H Sweeptime: >Channel Occupancy Time of the UUT. If the Channel ccupancy Time is non-contiguous (non-LBT based equipment), the sweep time

shall be sufficint to cover the period over which the Channel Occupancy Time is spread out.

Trace Mode: Clear/Write

Trigger Mode: Video

Step 2:

Configure the UUT for normal transmissions with a sufficiently high payload to resulting in a minimum transmitter activity ratio(TxOn+TxOff)) of 0.3.Where this is not possible, the UUT shall be configured to the maximum payload possible.

Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that, for equipment with a dwell time greater than the maximum allowable Channel Occupancy Time, the UUT complies with the maximum Channel Occupancy Time and minimum Idle Period defined in clauses 4.3.1.7.2.2 and 4.3.1.7.3.2.

Step 3: Adding the interference signal

An interference signal as defined in clause B.6 is injected centred on the hopping frequency being tested. The Power Spectral Density level(at the input of the UUT) of this interference signal shall be equal to the detection threshold defined in clauses 4.3.1.7.2.2 or 4.3.1.7.3.2.

Step 4: Verification of reaction to the interference signal

The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected hopping frequency with the interfering signal injected. This may require the spectrum analyser sweep to be triggered by the start of the interfering signal.

Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:

i) The UUT shall stop transmissions on the hopping frequency being tested.

The UUT is assumed to stop transmissions on this hopping frequency within a period equal to the maximum Channel Occupancy Time defined in clauses 4.3.1.7.2.2 or clause 4.3.1.7.3.2 As stated in clause 4.3.1.7.3.2, the Channel Occupancy Time for non-LBT based frequency hopping systems may be non-contiguous.

ii) For LBT based frequency hopping equipment, apart from Short Control Signalling Transmissions (see iii) below), there shall be no subsequent transmissions on this hopping frequency, as long as the interference signal remains present.

For non-LBT based frequency hopping equipment, apart from Short Control Signalling Transmissions (see iii) below), there shall be no subsequent transmissions on this hopping frequency for a (silent) period defined in clause 4.3.1.7.3.2 step 2. After that, the UUT may have normal transmissions again for the duration of a single Channel Occupancy Time period (which may be non-contiguous). Because the interference signal is still present, another silent period as defined in clause 4.3.1.7.3.2 step 2 needs to be included. This sequence is repeated as long as the interfering signal is present.

In case of overlapping channels, transmissions in adjacent channels may generate transmission bursts on the channel being investigated, however they will have a lower amplitude as on-channel transmissions. Care should be taken to only evaluate the on-channel transmissions. The Time Domain Power Option of the analyser may be used to measure the RMS power of the individual bursts to distinguish on-channel transmissions from transmissions on adjacent channels. In some cases, the RBW may need to be reduced.

To verify that the UUT is not resuming normal transmissions as long as the interference signal is present,the monitoring time may need to be

60s or more.

iii) The UUT may continue to have Short Control Signalling Transmissions on the hopping frequency being tested while the interference signal is present. These transmissions shall comply with the limits defined in clause 4.3.1.7.4.2.

The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

iv) Alternatively, the equipment may switch to a non-adaptive mode.

Step 5: Adding the unwanted signal

With the interfering signal present, a 100 % duty cycle CW signal is inserted as the unwanted signal. The frequency and the level are provided in table 2 of clause 4.3.1.7.2.2, step 6 or table 3 of clause 4.3.1.7.3.2,step 6.

The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected hopping frequency. This may require the spectrum analyser sweep to be triggered by the start of the unwanted signal.

Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:

i) The UUT shall not resume normal transmissions on the hopping frequecy being tested as long as both the interference and unwanted signals remain present

To verify that the UUT is not resuming normal transmissions as long as the interference and blocking signals are present, the monitoring time may need to be 60s or more. If transmissions are detected during this period, the settings of the analyser may need to be adjusted to allow an accurate assessment to verify the transmissions comply with the limits for Short Control Signalling Transmissions.

ii) The UUT may continue to have Short Control Signalling Transmissions on the hopping frequency being tested while the interference and unwanted signal are present.These transmissions shall comply with the limits defined in clause 4.3.1.7.4.2

The verification of the Short Control Signalling transmissions may require the analyser settings to be changed(e.g.sweep time).

Step 6: Removing the interference and unwanted signal

On removal of the interference and unwanted signal,the UUT is allowed to re-include any channel previously marked as unavailable; however, for non-LBT based equipment, it shall be verified that this shall only be done after the period defined in clause 4.3.1.7.3.2 point 2.

Step 7:

The steps 2 to 6 shall be repeated for each of the hopping frequencies to be tested.

2. Non-LBT based adaptive equipment using modulations other than FHSS

The different steps below define the procedure to verify the efficiency of the non-LBT based DAA adaptive mechanism of equipment using wide band modulations other than FHSS.

For systems using multiple receive chains only one chain (antenna port) need to be tested. All other receiver inputs shall be terminated.

Step 1:

The UUT shall connect to a companion device during the test. The interference signal generator, the uwanted signal generator, the spectrum analyser, the UUT and the companion device are connected using a set-up equivalent to the example given by figure 5 although the interference and unwanted signal generator do not generate any signals at this point in

time. The spectrum analyser is used to monitor the transmissions of the UUT in response to the interfering and the unwanted signals.

Adjust the received signal level (wanted signal from the companion device) at the UUT to the value defined in table table 9 (clause 4.3.2.6.2.2).

Testing of Unidirectional equipment does not require a link to be established with a companion device.

The analyzer shall be set as follows:

RBW:	≥ Occupied Channel Bandwidth (if the analyser does not support this setting, he highest available setting s hall be used)
VBW:	3 × RBW (if the analyser does not suppot this setting, the highest available setting shall be used)
Detector Mode:	RMS
Cenre Frequnc:	Equalto the hopping frequency to be teste
Span:	0Hz
Seep ime:	> Channel Occupancy Time of the UUT
Trace Mode:	Clear/Write
Trigger Mode:	Video

Step 2:

Configure the UUT for normal transmissions with a sufficiently high payload resulting in a minimum transmitter activity ratio (TxOn+TxOff)) of 0.3 .Where this is not possible , the UUT shall be configured to the maximum payload possible.

Using the procedure defined in clause 5.3.7.2.1.4, it shall be verified that the UUT complies with the maximum Channel Occupancy Time and minimum Idle Period defined in clause 4.3.2.6.2.2.

Step 3: Adding the interference signal

An interference signal as defined in clause B.6 is injected centred on the current operating channel of the UUT. The Power Spectral Density level(at the input of the UUT) of this interference signal shall be equal to the detection threshold defined in clauses 4.3.2.6.2.2 step 5).

Step 4: Verification of reaction to the interference signal

The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel with the interfering signal injected. This may require the spectrum analyser sweep to be triggered bythe start of the interfering signal.

Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:

i) The UUT shall stop transmissions on the current operating channel being tested.

The UUT is assumed to stop transmissions within a period equal to the maximum Channel Occupancy Time defined in clause 4.3.2.6.2.2 step 4.

ii) Apart from Short Control Signalling Transmissions (see iii) below), there shall be no subsequent transmissions on this operating channel for a (silent) period defined in clause 4.3.2.6.2.2 step 2. After that, the UUT may have normal transmissions again for the duration of a single Channel Occupancy Time period. Because the interference signal is still present, another silent period as defined in clause 4.3.2.6.2.2 step 2 needs to be included. This sequence is repeated as long as the interfering signal is present.

To verify that the UUT is not resuming normal transmissions as long as the interference signal is present,the monitoring time may need to be 60 s or more.

iii) The UUT may continue to have Short Control Signalling Transmissions on the operating channel while the interference signal is present. These transmissions shall comply with the limits defined in clause 4.3.2.6.4.2.

The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

iv) Alternatively, the equipment may switch to a non-adaptive mode.

Step 5: Adding the unwanted signal

With the interfering signal present, a 100 % duty cycle CW signal is inserted as the unwanted signal. The frequency and the level are provided in table 9 of clause 4.3.2.6.2.2.

The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel. This may require the spectrum analyser sweep to be triggered by the start of the unwanted signal.

Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:

i) The UUT shall not resume normal transmissions on the current operating channel as long as both the interference and blocking signals remain present.
To verify that the UUT is not resuming normal transmissions as long as the interference and blocking signals are present, the monitoring time may need to be 60 s or more.

ii) The UUT may continue to have Short Control Signalling Transmissions on the operating channel while the interference and unwanted signals are present. These transmissions shall comply with the limits defined in clause 4.3.2.6.4.2.
The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

Step 6: Removing the interference and unwanted signal

On removal of the interference and unwanted signal the UUT is allowed to start transmissions again on this channel however, it shall be verified that this shall only be done after the period defined in clause 4.3.2.6.2.2 step 2.

Step 7:

The steps 2 to 6 shall be repeated for each of the frequencies to be tested.

3. LBT based adaptive equipment using modulations other than FHSS

Step 1 to step 7 below define the procedure to verify the efficiency of the LBT based adaptive mechanism of equipment using wide band modulations other than FHSS. This method can be applied on Load Based Equipment and Frame Based Equipment.

Step 1:

The UUT may connect to a companion device during the test. The interference signal generator, the unwanted signal generator, the spectrum analyser, the UUT and the companion device are connected using a set-up equivalent to the example given by figure 5 although the interference and unwanted signal generator do not generate any signals at this point in time. The spectrum analyser is used to monitor the transmissions of the UUT in response to the interfering and the unwanted signals.

Adjust the received signal level (wanted signal from the companion device) at the UUT to the value defined in table 10 (clause 4.3.2.6.3.2.2) for Frame Based Equipment or in table 11 (clause 4.3.2.6.3.2.3) for Load Based Equipment.

Testing of Unidirectional equipment does not require a link to be

established with a companion device.

The analyzer shall be set as follows:

RBW:	≥ Occupied Channel Bandwidth (if the analyser does not support this setting, the highest availabe setting shall be used)
VBW:	3 × RBW (if the analyser does not support this setting, the highest available setting shall be used)
Detector Mode:	RMS
Cente Frequency:	Equal to the centre frequency of the operating channel
Span:	0Hz
Sweep tim:	> aximum Channel Occupancy Time
Trace Mode:	Clear Write
Trigger Mode:	Video

Step 2:

Configure the UUT for normal transmissions with a sufficiently high payload resulting in a minimum transmitter activity ratio (TxOn / (TxOn + TxOff)) of 0,3. Where this is not possible, the UUT shall be configured to the maximum payload possible.

For Frame Based Equipment, using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that the UUT complies with the maximum Channel Occupancy Time and minimum Idle Period defined in clause 4.3.2.6.3.2.2 step 3). When measuring the Idle Period of the UUT, it shall not include the transmission time of the companion device.

For Load Based equipment, using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that the UUT complies with the maximum Channel Occupancy Time and minimum Idle Period defined in clause 4.3.2.6.3.2.3, step 2 and step 3. When measuring the Idle Period of the UUT, it shall not include the transmission time of the companion device

For the purpose of testing Load Based Equipment referred to in the first paragraph of clause 4.3.2.6.3.2.3 (IEEE 802.11™ [i.3] or IEEE 802.15.4™ [i.4] equipment), the limits to be applied for the minimum Idle Period and the maximum Channel Occupancy Time are the same as defined for other types of Load Based Equipment (see clause 4.3.2.6.3.2.3 step 2) and step 3). The Idle Period is considered to be equal to the CCA or Extended CCA time defined in clause 4.3.2.6.3.2.3 step 1) and step 2).

Step 3: Adding the interference signal

An interference signal as defined in clause B.7 is injected on the current operating channel of the UUT. The power spectral density level (at the input of the UUT) of this interference signal shall be equal to the detection threshold defined in clause 4.3.2.6.3.2.2 step 5) (frame based equipment) or clause 4.3.2.6.3.2.3 step 5) (load based equipment).

Step 4: Verification of reaction to the interference signal

The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel with the interfering signal injected. This may require the spectrum analyser sweep to be triggered by the start of the interfering signal.

Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:

i) The UUT shall stop transmissions on the current operating

channel.

The UUT is assumed to stop transmissions within a period equal to the maximum Channel Occupancy Time defined in clause 4.3.2.6.3.2.2 (frame based equipment) or clause 4.3.2.6.3.2.3 (load based equipment).

ii) Apart from Short Control Signalling Transmissions, there shall be no subsequent transmissions while the interfering signal is present.

To verify that the UUT is not resuming normal transmissions as long as the interference signal is present,the monitoring time may need to be 60 s or more.

iii) The UUT may continue to have Short Control Signalling Transmissions on the operating channel while the interfering signal is present. These transmissions shall comply with the limits defined in clause 4.3.2.6.4.2.

The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

iv) Alternatively, the equipment may switch to a non-adaptive mode.

Step 5: Adding the unwanted signal

With the interfering signal present, a 100 % duty cycle CW signal is inserted as the unwanted signal. The frequency and the level are provided in table 6 of clause 4.3.2.11.3.

The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel. This may require the spectrum analyser sweep to be triggered by the start of the unwanted signal.

Using the procedure defined in clause 5.3.7.2.1.4, it shall be verified that:

i) The UUT shall not resume normal transmissions on the current operating channel as long as both the interference and unwanted signals remain present.

To verify that the UUT is not resuming normal transmissions as long as the interference and unwanted signals are present, the monitoring time may need to be 60 s or more.

ii) The UUT may continue to have Short Control Signalling Transmissions on the operating channel while the interfering and unwanted signals are present. These transmissions shall comply with the limits defined

in clause 4.3.2.6.4.2.

The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

Step 6: Removing the interference and unwanted signal

On removal of the interference and unwanted signal the UUT is allowed to start transmissions again on this channel however this is not a requirement and therefore does not require testing.

Step 7:

The steps 2 to 6 shall be repeated for each of the frequencies to be tested.

4. Generic test procedure for measuring channel/frequency usage

This is a generic test method to evaluate transmissions on the operating (hopping) frequency being investigated. This test is performed as part of the procedures described in clause 5.4.6.2.1.2 to clause 5.4.6.2.1.4.

The test procedure shall be as follows:

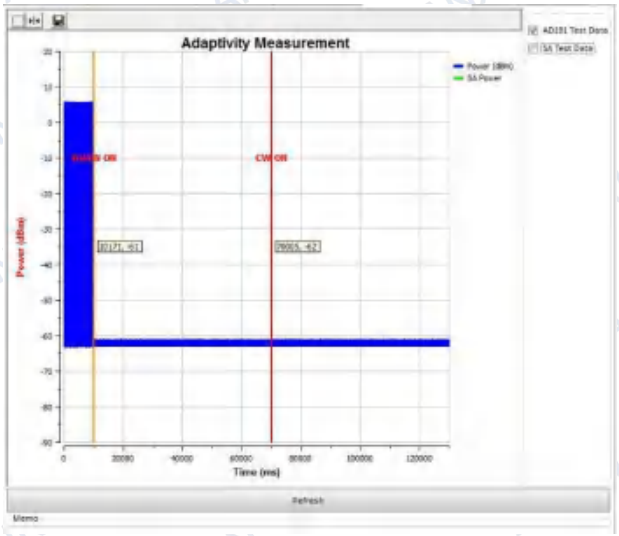
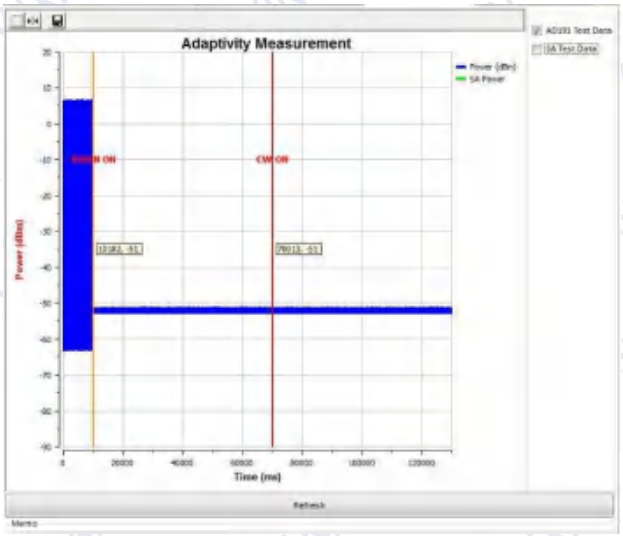
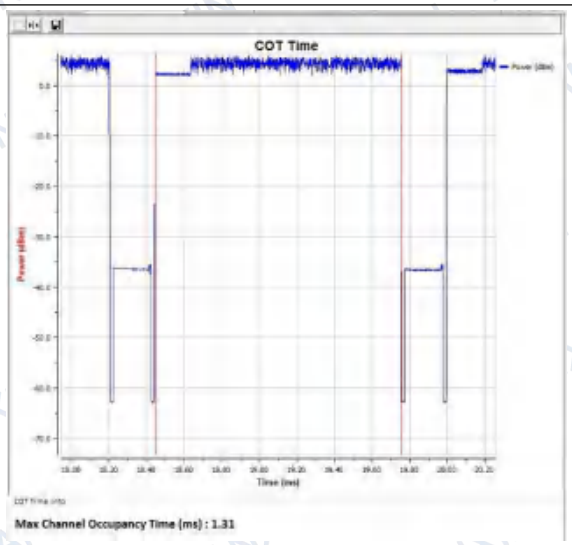
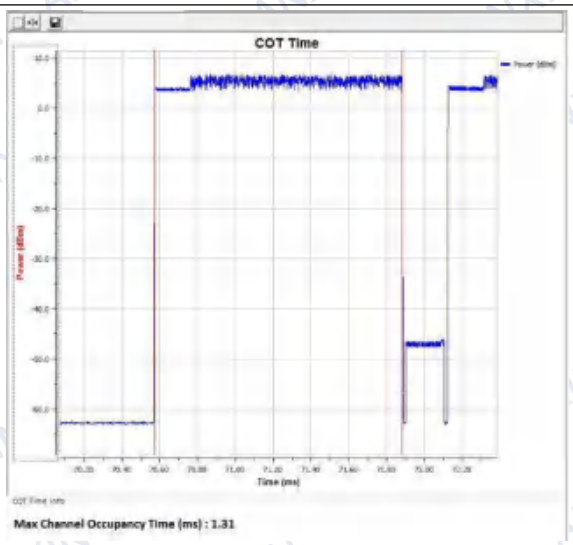
Step 1:

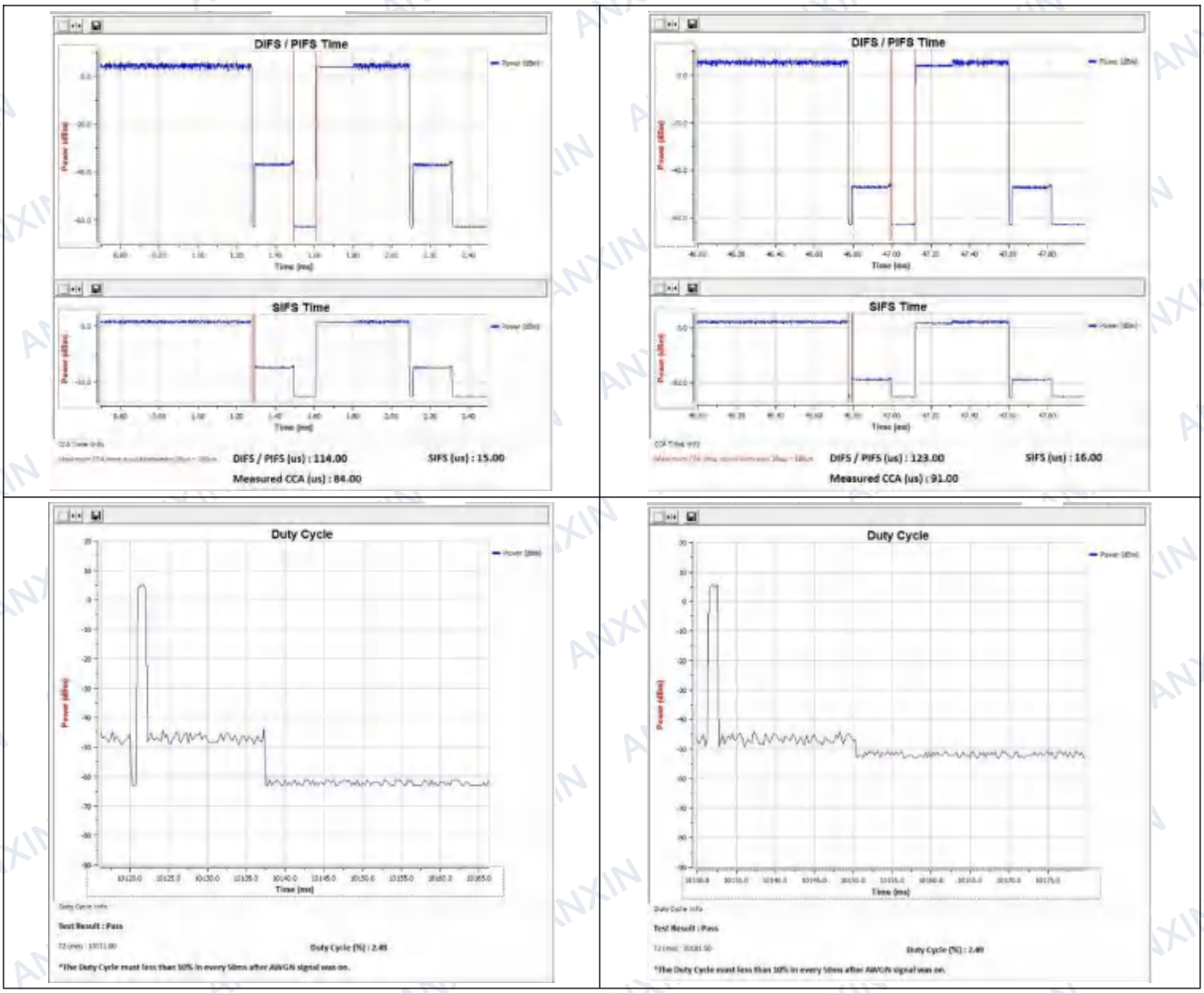
The analyzer shall be set as follows:

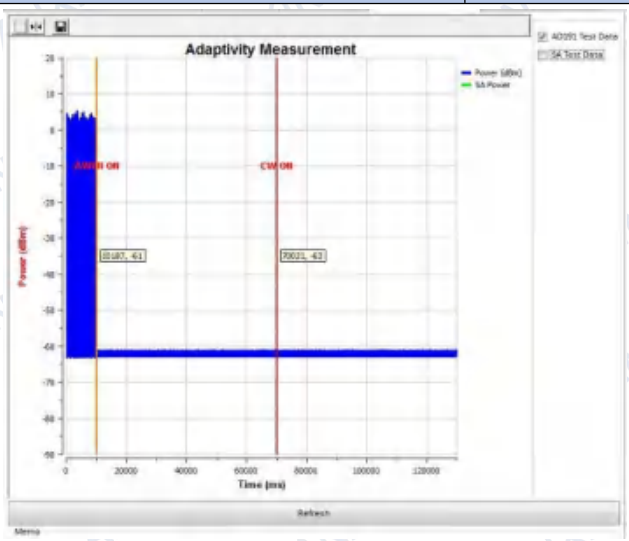
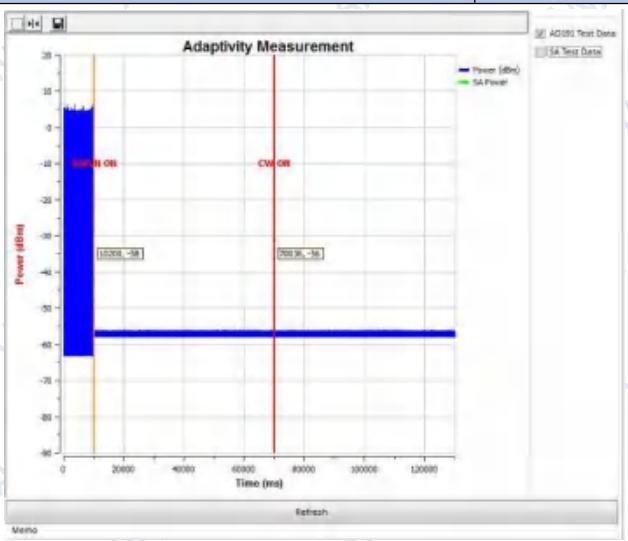
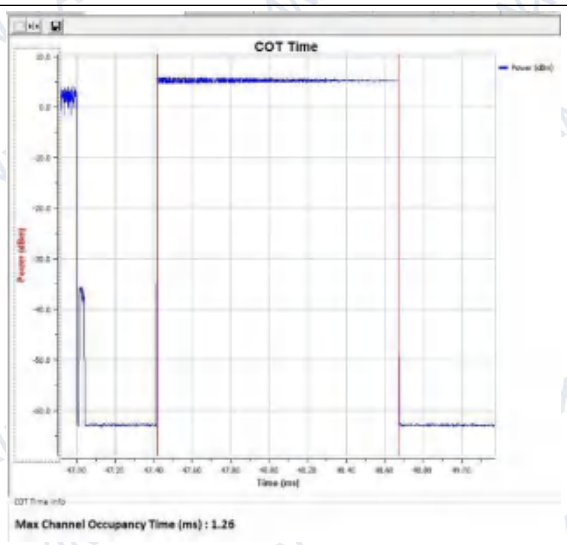
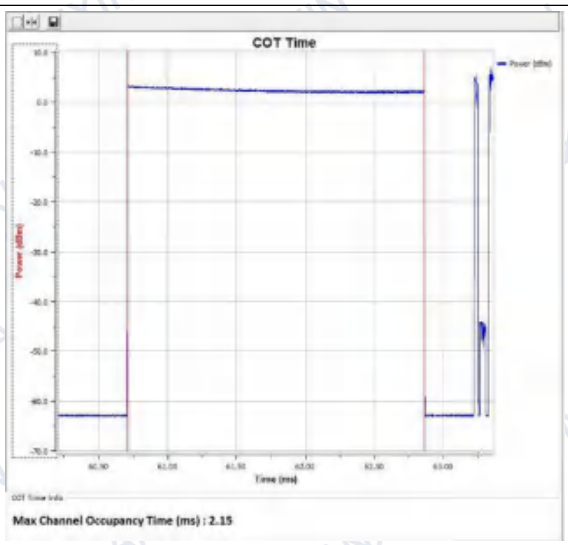
	Centre Frequency: Equal to the hopping frequency or centre frequency of the channel beinginvestigated Frequency Span: 0Hz RBW: ~ 50 % of the Occupied Channel Bandwidth (if the analyser does not support this setting, the highest available setting shall be used) VBW: ≥ RBW (if the analyser does not support this setting, the highest available setting shall be used) Detector Mode: RMS Sweep time: > the Channel Occupancy Time. It shall be noted that if the Channel Occupancy Time is non-contiguous (for non-LBT based Fequency Hopping Systems), the sweep time shall be sufficient to cover the period over which the Channel Occupancy Time is spread out Number of sweep points: The time resolution has to be sufficient to meet the maximum measurement uncertainty of 5 % for the period to be measured. In most cases, the Idle Period is the shortest period to be measured and thereby defining the time resolution. If the Channel Occupancy Time is non-contiguous (non-LBT based Frequency Hopping Systems), there is no Idle Period to be measured and therefore the time resolution can be increased (e.g. to 5 % of the dwell time) to cover the period over which the Channel Occupancy Time is spread out, without resulting in too high a number of sweep points for the analyzer. EXAMPLE 1: For a Channel Occupancy Time of 60 ms, the minimum Idle Period is 3 ms, hence the minimum time resolution should be < 150 µs. EXAMPLE 2: For a Channel Occupancy Time of 2 ms, the minimum Idle Period is 100 µs, hence the minimum time resolution should be < 5 µs. EXAMPLE 3: In case of a system using the non-contiguous Channel Occupancy Time approach (40 ms) and using 79 hopping frequencies with a dwell time of 3,75 ms, the total period over which the Channel Occupancy Time is spread out is 3,2 s. With a time resolution 0,1875 ms (5 % of the dwell time), the minimum number of sweep points is ~ 17 000. Trace mode: Clear / Write Trigger: Video In case of Frequency Hopping Equipment, the data points resulting from transmissions on the hopping frequency being investigated are assumed to have much higher levels compared to data points resulting from transmissions on adjacent hopping frequencies. If a clear determination between these transmissions is not possible, the RBW in step 1 shall be further reduced. In addition, a channel filter may be used. **Step 2:** Save the trace data to a file for further analysis by a computing device using an appropriate software application or program. **Step 3:**

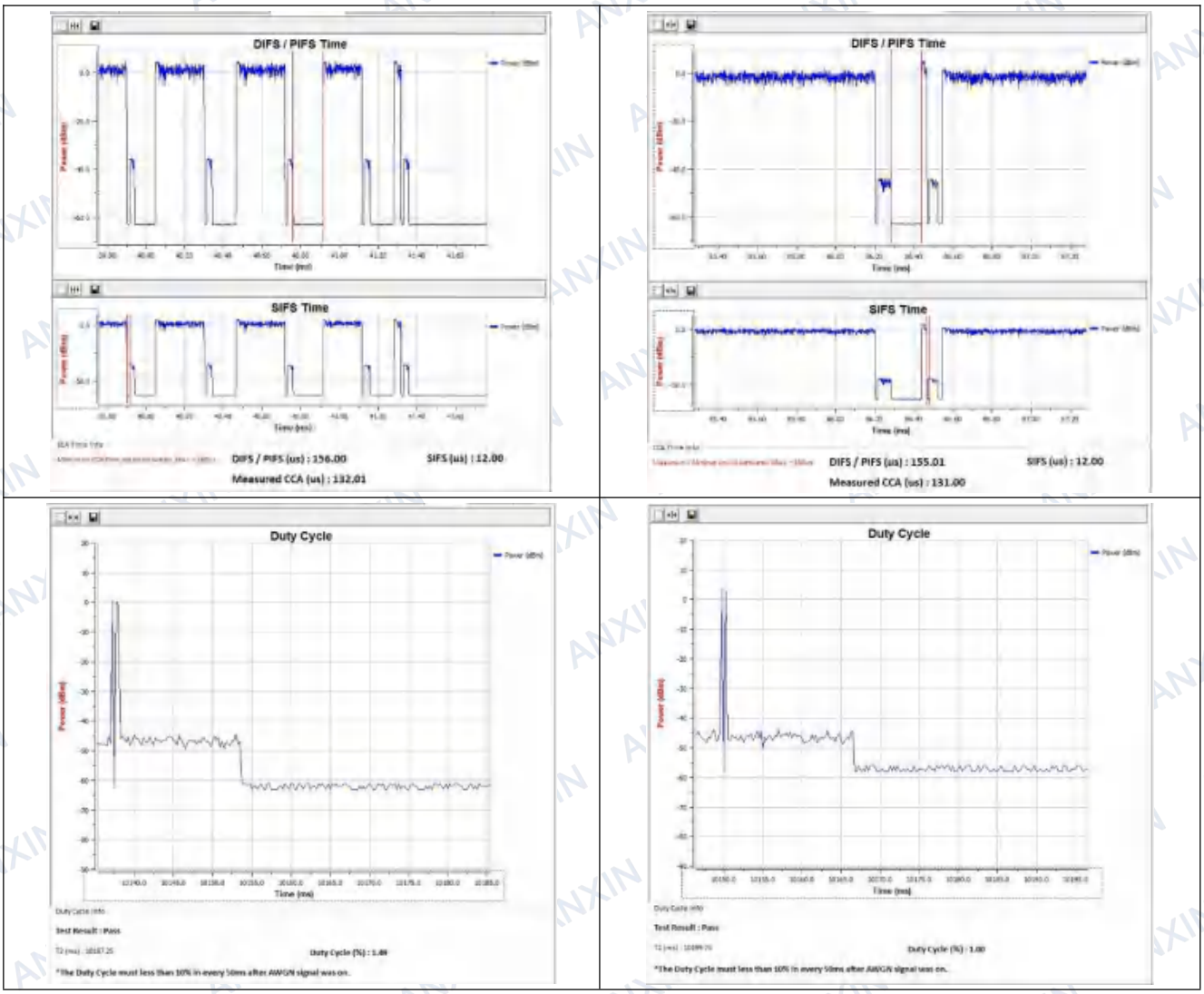
	Indentify the data points related to the frequency being investigated by applying a threshold. Count the number of consecutive data points identified as resulting from a single transmission on the frequency being investigated and multiply this number by the time difference between two consecutive data points. Repeat this for all the transmissions within the measurement window. For measuring idle or silent periods, count the number of consecutive data points identified as resulting from a single transmitter off period on the frequency being investigated and multiply this number by the time difference between two consecutive data points.Repeat this for all the transmitter off periods within the measurement window.
Measurement Record:	Uncertainty: N/A
Test Instruments:	See section 6.0
Test mode:	Normal link mode
Test Result:	Pass

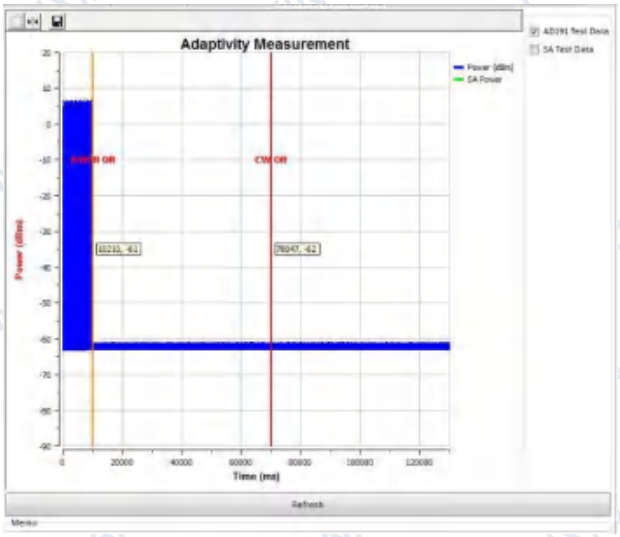
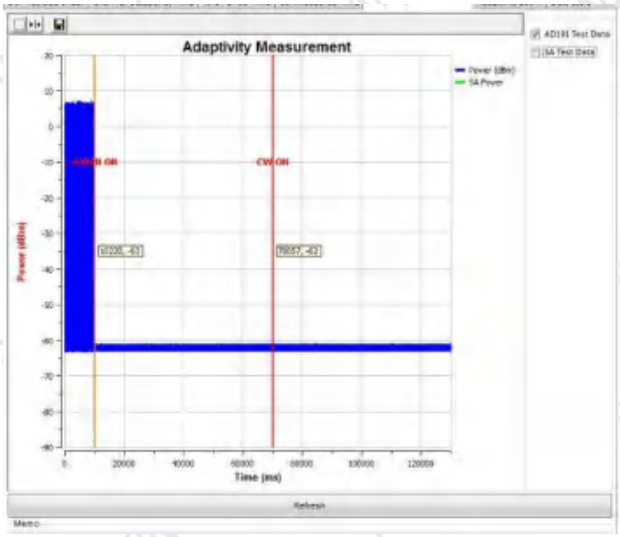
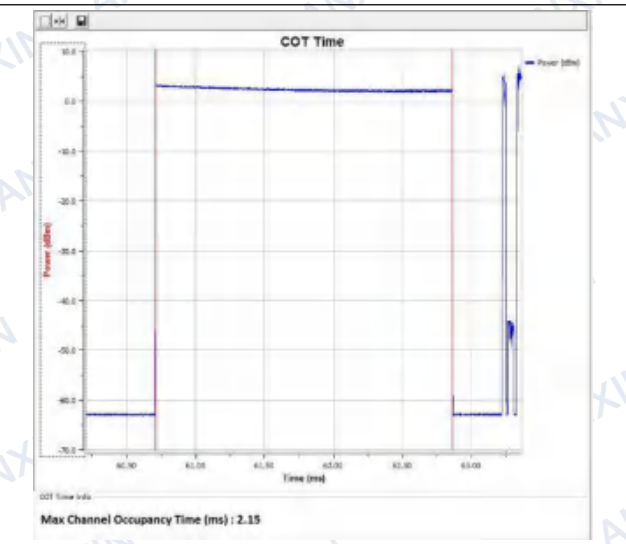
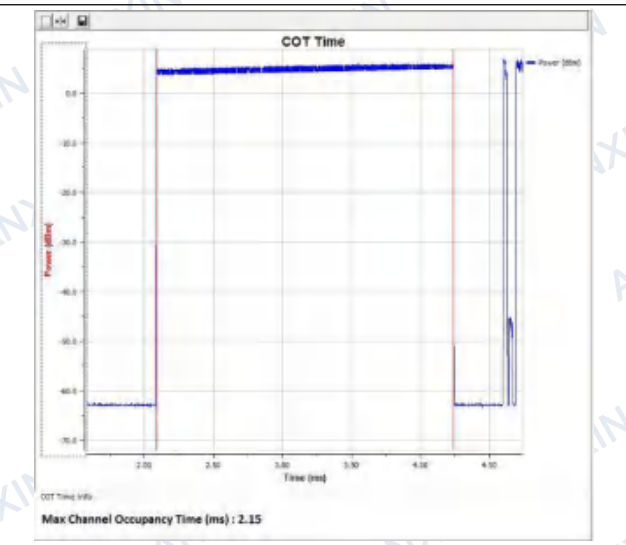
Test plots are below:

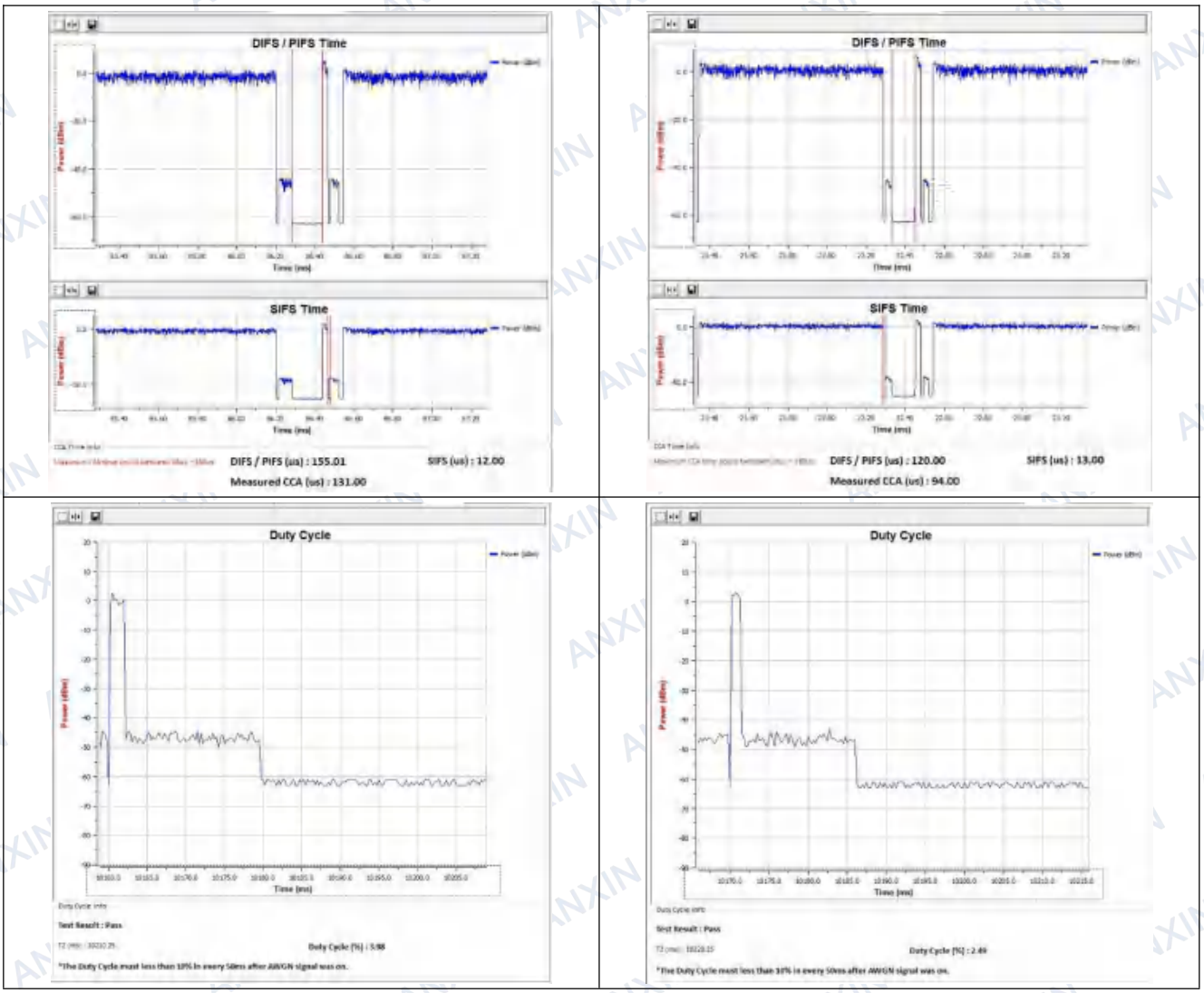
802.11b mode lowest channel		**802.11b mode highest channel**	
AWGN Interference Level (dBm)	-67.05	AWGN Interference Level (dBm)	-67.13
Unwanted CW Signal Level (dBm)	-35	Unwanted CW Signal Level (dBm)	-35
AWGN Interference Start Time (ms)	10171.00	AWGN Interference Start Time (ms)	10182.00
Unwanted CW Signal Start Time (ms)	70005.00	Unwanted CW Signal Start Time (ms)	70013.00
Max COT (ms)	1.31	Max COT (ms)	1.31
CCA Time (ms)	0.084	CCA Time (ms)	0.091
Duty Cycle (%)	2.49	Duty Cycle (%)	2.49
			
			


DIFS / PIFS Time
SIFS Time
DIFS / PIFS (us) : 114.00
SIFS (us) : 15.00
Measured CCA (us) : 84.00
DIFS / PIFS Time
SIFS Time
DIFS / PIFS (us) : 123.00
SIFS (us) : 16.00
Measured CCA (us) : 91.00
Duty Cycle
Test Result : Pass
Duty Cycle (%) : 2.49
*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.
Duty Cycle
Test Result : Pass
Duty Cycle (%) : 2.49
*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.

802.11g mode lowest channel		802.11g mode highest channel	
AWGN Interference Level (dBm)	-64.17	AWGN Interference Level (dBm)	-64.05
Unwanted CW Signal Level (dBm)	-35	Unwanted CW Signal Level (dBm)	-35
AWGN Interference Start Time (ms)	10187.00	AWGN Interference Start Time (ms)	10200.00
Unwanted CW Signal Start Time (ms)	70021.00	Unwanted CW Signal Start Time (ms)	70036.00
Max COT (ms)	1.26	Max COT (ms)	1.26
CCA Time (ms)	0.130	CCA Time (ms)	0.132
Duty Cycle (%)	1.49	Duty Cycle (%)	1.00
			
			


DIFS / PIFS Time
SIFS Time
DIFS / PIFS (us) : 156.00
SIFS (us) : 12.00
Measured CCA (us) : 132.01
DIFS / PIFS Time
SIFS Time
DIFS / PIFS (us) : 155.01
SIFS (us) : 12.00
Measured CCA (us) : 131.00
Duty Cycle
Test Result : Pass
Duty Cycle (%) : 1.49
*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.
Duty Cycle
Test Result : Pass
Duty Cycle (%) : 1.00
*The Duty Cycle must less than 10% in every 50ms after AWGN signal was on.

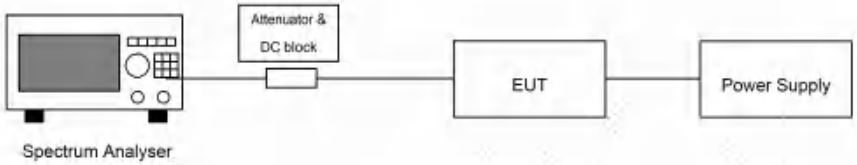
802.11n(HT20) mode lowest channel		802.11n(HT20) mode highest channel	
AWGN Interference Level (dBm)	-64.08	AWGN Interference Level (dBm)	-63.99
Unwanted CW Signal Level (dBm)	-35	Unwanted CW Signal Level (dBm)	-35
AWGN Interference Start Time (ms)	10210.00	AWGN Interference Start Time (ms)	10220.00
Unwanted CW Signal Start Time (ms)	70047.00	Unwanted CW Signal Start Time (ms)	70057.00
Max COT (ms)	2.15	Max COT (ms)	2.15
CCA Time (ms)	0.131	CCA Time (ms)	0.094
Duty Cycle (%)	3.98	Duty Cycle (%)	2.49
			
			



Note:

During the test, the signal observed on the channel being investigated is the Short Control Signalling Transmissions.

6.2.3 Occupied Channel Bandwidth

Test Requirement:	ETSI EN 300 328 clause 4.3.2.7
Limit:	The Occupied Channel Bandwidth for each hopping frequency shall fall completely within the band 2400MHz ~ 2483.5MHz. In addition, for non-adaptive equipment using wide band modulations other than FHSS and with e.i.r.p. greater than10 dBm, the occupied channel bandwidth shall be less than 20 MHz.
Test setup:	
Test Precedure:	**Step 1:** Connect the UUT to the spectrum analyser and use the following settings: Centre Frequency: The centre frequency of the channel under test Resolution BW: ~ 1 % of the span without going below 1 % Video BW: 3 × RBW Frequency Span 2 × Nominal Channel Bandwidth Detector Mode: RMS Trace mode: Max Hold Sweep time: 1 s **Step 2:** Wait for the trace to stabilize. Find the peak value of the trace and place the analyser marker on this peak. **Step 3:** Use the 99 % bandwidth function of the spectrum analyser to measure the Occupied Channel Bandwidth of the UUT. This value shall be recorded. Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.
Test Instruments:	See section 6.0
Test mode:	Transmitting mode

Measurement Data:

802.11b					
Test Channel	**99% Bandwidth (MHz)**	**Declared Bandwidth (MHz)**	**F_L/F_H (MHz)**	**Limit**	**Result**
Lowest	12.477	20	2418.239	2400MHz ~ 2483.5MHz	Pass
Highest	12.511	20	2478.3		Pass
802.11g					
Test Channel	**99% Bandwidth (MHz)**	**Declared Bandwidth (MHz)**	**F_L/F_H (MHz)**	**Limit**	**Result**
Lowest	16.842	20	2420.453	2400MHz ~ 2483.5MHz	Pass
Highest	16.803	20	2480.438		Pass
802.11n(H20)					
Test Channel	**99% Bandwidth (MHz)**	**Declared Bandwidth (MHz)**	**F_L/F_H (MHz)**	**Limit**	**Result**
Lowest	17.704	20	2420.862	2400MHz ~ 2483.5MHz	Pass
Highest	17.763	20	2480.94		Pass
802.11n(H40)					
Test Channel	**99% Bandwidth (MHz)**	**Declared Bandwidth (MHz)**	**F_L/F_H (MHz)**	**Limit**	**Result**
Lowest	36.077	40	2440.07	2400MHz ~ 2483.5MHz	Pass
Highest	36.149	40	2479.3		Pass

Test plots are followed:

Mode:	802.11b	Channel:	Lowest

OBW NVNT 802.11b 2412MHz

Mode:	802.11b	Channel:	Highest

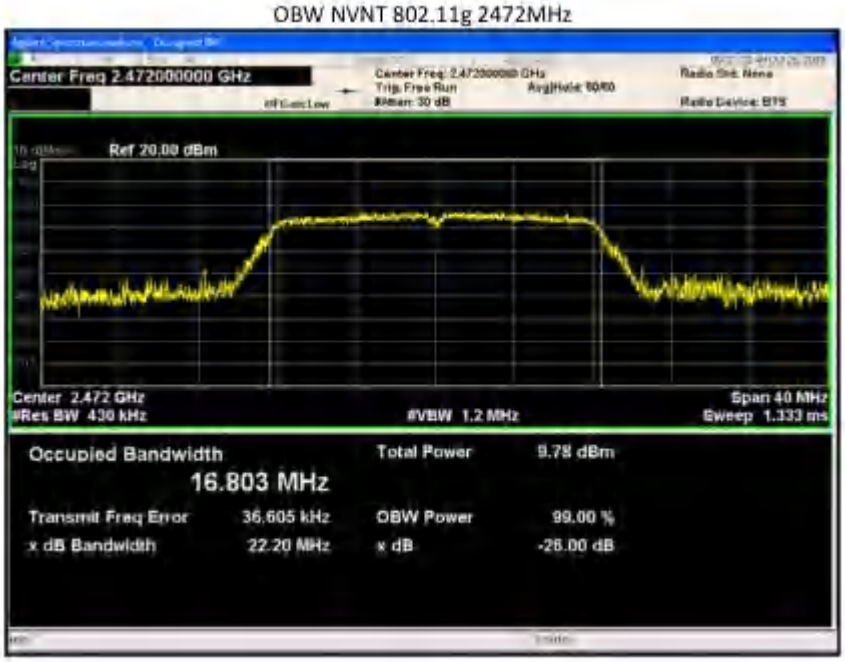
OBW NVNT 802.11b 2472MHz

Mode:	802.11g	Channel:	Lowest

OBW NVNT 802.11g 2412MHz

Mode:	802.11g	Channel:	Highest

OBW NVNT 802.11g 2472MHz



Mode:	802.11n(HT20)	Channel:	Lowest

OBW NVNT 802.11n(HT20) 2412MHz

Mode:	802.11n(HT20)	Channel:	Highest

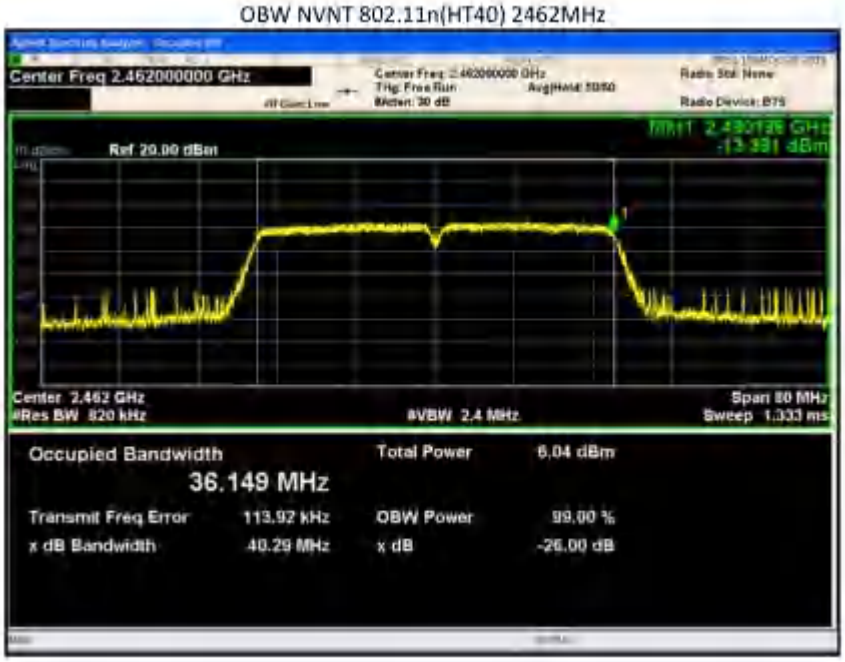
OBW NVNT 802.11n(HT20) 2472MHz

Mode:	802.11n(HT40)	Channel:	Lowest

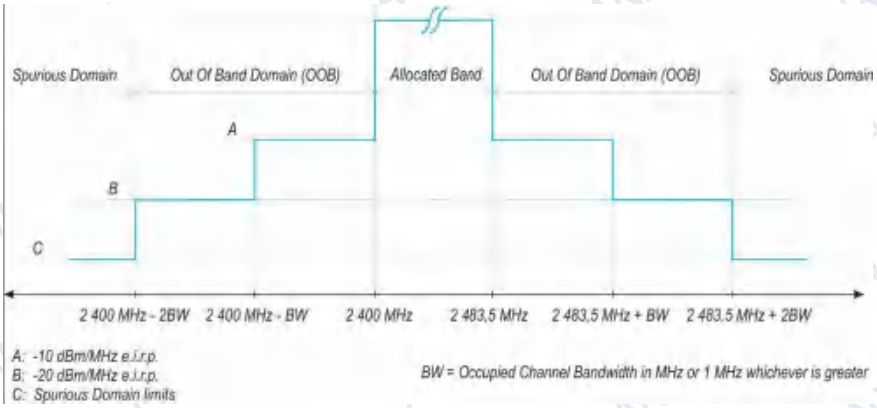
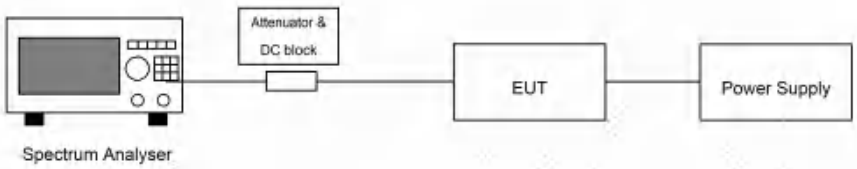
OBW NVNT 802.11n(HT40) 2422MHz

Mode:	802.11n(HT40)	Channel:	Highest

OBW NVNT 802.11n(HT40) 2462MHz



6.2.4 Transmitter unwanted emissions in the OOB domain

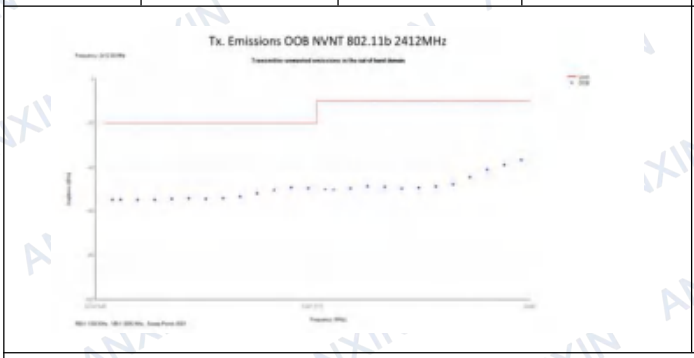
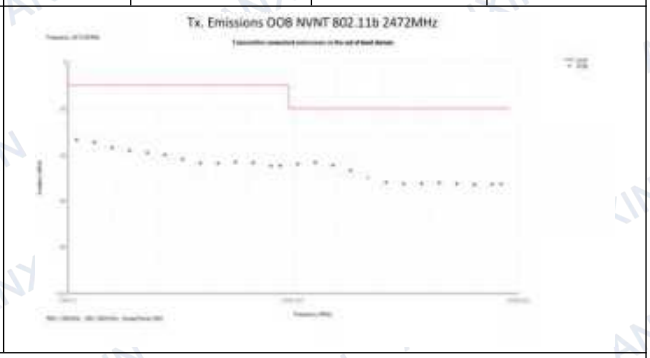
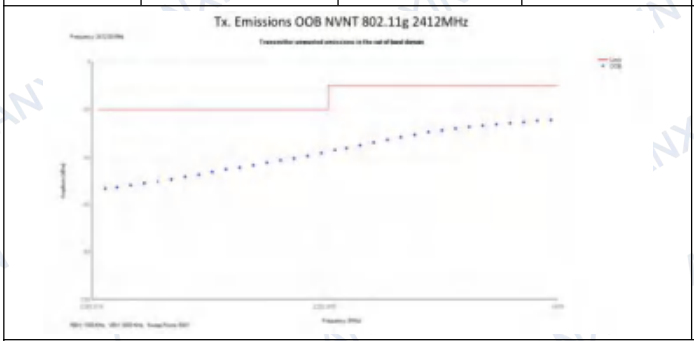
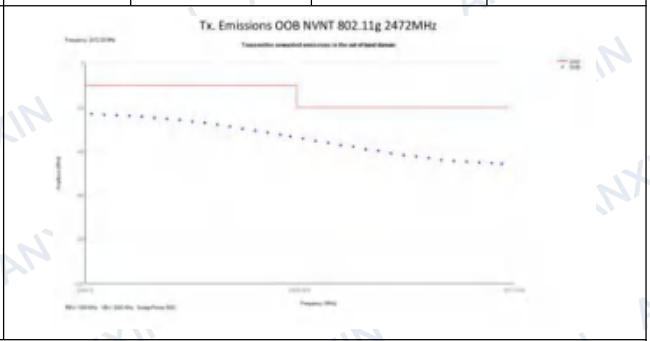
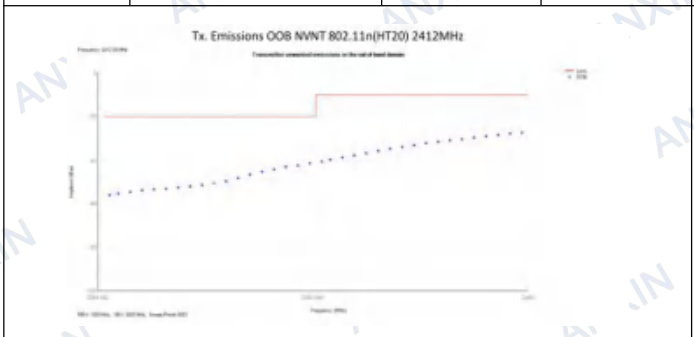
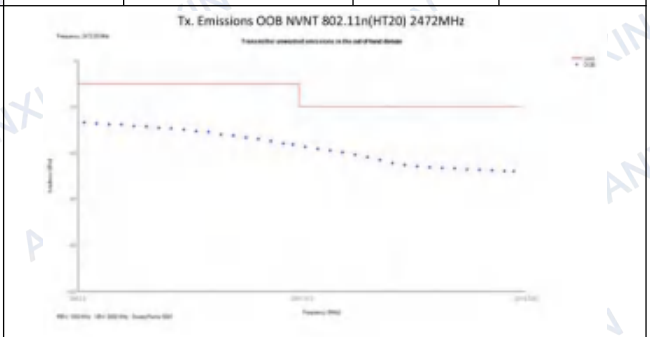
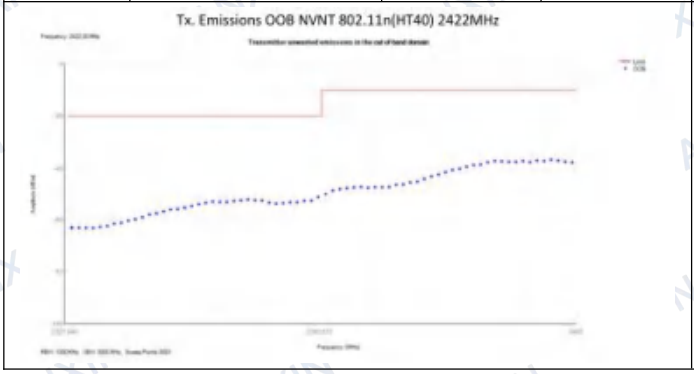
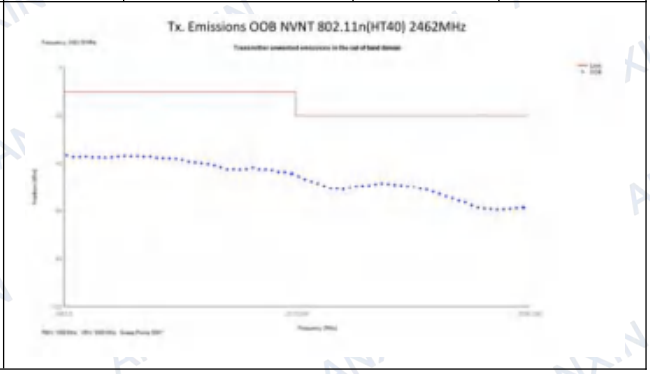
Test Requirement:	ETSI EN 300 328 clause 4.3.2.8
Test Method:	ETSI EN 300 328 clause 5.4.8.2
Limit:	The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in figure 1 Within the band specified in table 1, the Out-of-band emissions are fulfilled by compliance with the Occupied Channel Bandwidth requirement in clause 4.3.1.8. 
Test setup:	
Test procedure:	The applicable mask is defined by the measurement results from the tests performed under clause 5.4.7 (Occupied Channel Bandwidth). The Out-of-band emissions within the different horizontal segments of the mask provided in figures 1 and 3 shall be measured using the step 1 to step 6 below. This method assumes the spectrum analyser is equipped with the Time Domain Power option. **Step 1:** Connect the UUT to the spectrum analyser and use the following settings: Centre Frequency: 2 484 MHz Span: 0Hz Resolution BW: 1 MHz Filter mode: Channel filter Video BW: 3 MHz Detector Mode: RMS Trace Mode: Max Hold Sweep Mode: Continuous Sweep Points: Sweep Time [s] / (1 µs) or 5 000 whichever is greater Trigger Mode: Video trigger NOTE 1: In case video triggering is not possible, an external trigger source may be used.

	Sweep Time: >120 % of the duration of the longest burst detected during the measurement of the RF Output Power **Step 2: (segment 2 483,5 MHz to 2 483,5 MHz + BW)** Adjust the trigger level to select the transmissions with the highest power level. For frequency hopping equipment operating in a normal hopping mode, the different hops will result in signal bursts with different power levels. In this case the burst with the highest power level shall be selected. Set a window (start and stop lines) to match with the start and end of the burst and in which the RMS power shall be measured using the Time Domain Power function. Select RMS power to be measured within the selected window and note the result which is the RMS power within this 1 MHz segment (2 483,5 MHz to 2 484,5 MHz). Compare this value with the applicable limit provided by the mask. Increase the centre frequency in steps of 1 MHz and repeat this measurement for every 1 MHz segment within the range 2 483,5 MHz to 2 483,5 MHz + BW. The centre frequency of the last 1 MHz segment shall be set to 2 483,5 MHz + BW - 0,5 MHz (which means this may partly overlap with the previous 1 MHz segment). **Step 3: (segment 2 483,5 MHz + BW to 2 483,5 MHz + 2BW)** Change the centre frequency of the analyser to 2 484 MHz + BW and perform the measurement for the first 1 MHz segment within range 2 483,5 MHz + BW to 2 483,5 MHz + 2BW. Increase the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2 483,5 MHz + 2 BW - 0,5 MHz. (which means this may partly overlap with the previous 1 MHz segment). **Step 4: (segment 2 400 MHz - BW to 2 400 MHz)** Change the centre frequency of the analyser to 2 399,5 MHz and perform the measurement for the first 1 MHz segment within range 2 400 MHz - BW to 2 400 MHz Reduce the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2 400 MHz - BW + 0,5 MHz (which means this may partly overlap with the previous 1 MHz segment). **Step 5: (segment 2 400 MHz - 2BW to 2 400 MHz - BW)** Change the centre frequency of the analyser to 2 399,5 MHz - BW and perform the measurement for the first 1 MHz segment within range 2 400 MHz - 2BW to 2 400 MHz - BW. Reduce the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2 400 MHz - 2BW + 0,5 MHz. (which means this may partly overlap with the previous 1 MHz segment). **Step 6:** In case of conducted measurements on equipment with a single transmit chain, the declared antenna assembly gain "G" in dBi shall be added to the results for each of the 1 MHz segments and compared with the limits provided by the mask given in figures 1 or figure 3. If more than one antenna assembly is intended for this power setting, the antenna with the highest gain shall be considered. In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the measurements need to be

	repeated for each of the active transmit chains. The declared antenna assembly gain "G" in dBi for a single antenna shall be added to these results. If more than one antenna assembly is intended for this power setting, the antenna with the highest gain shall be considered. Comparison with the applicable limits shall be done using any of the options given below: Option 1: the results for each of the transmit chains for the corresponding 1 MHz segments shall be added. The additional beamforming gain "Y" in dB shall be added as well and the resulting values compared with the limits provided by the mask given in figure 1 or figure 3. Option 2: the limits provided by the mask given in figure 1 or figure 3 shall be reduced by 10 x log10(A_{ch}) and the additional beamforming gain "Y" in dB. The results for each of the transmit chains shall be individually compared with these reduced limits. NOTE: A_{ch} refers to the number of active transmit chains. It shall be recorded whether the equipment complies with the mask provided in figure 1 or figure 3.
Measurement Record:	Uncertainty: ± 1.5dB
Test Instruments:	See section 6.0
Test mode:	Transmitting mode

Measurement Data:

Test plots at normal condition are followed:

Test Condition:				Normal condition			
Mode:	802.11b	Channel:	Lowest	Mode:	802.11b	Channel:	Highest
							
Mode:	802.11g	Channel:	Lowest	Mode:	802.11g	Channel:	Highest
							
Mode:	802.11n(HT20)	Channel:	Lowest	Mode:	802.11n(HT20)	Channel:	Highest
							
Mode:	802.11n(HT40)	Channel:	Lowest	Mode:	802.11n(HT40)	Channel:	Highest
							

6.2.5 Transmitter unwanted emissions in the spurious domain

Test Requirement:	ETSI EN 300 328 clause 4.3.2.9
Test Method:	ETSI EN 300 328 clause 5.4.9.2

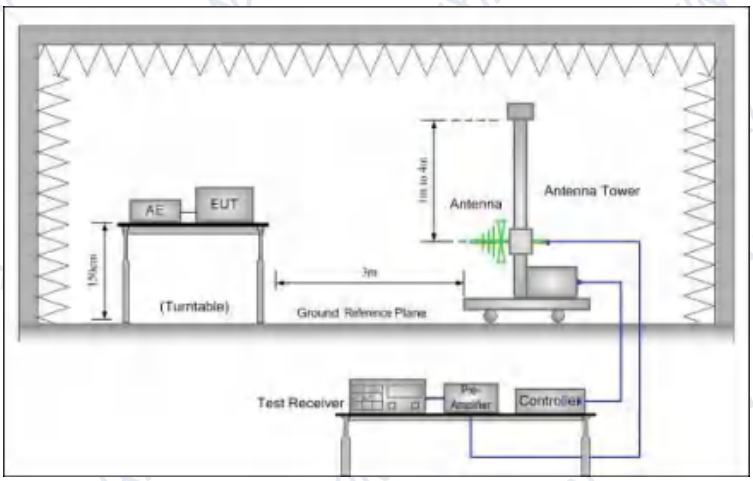
Limit:

Frequency Range	Maximum power e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87.5 MHz	-36 dBm	100 kHz
87.5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12.75 GHz	-30 dBm	1 MHz

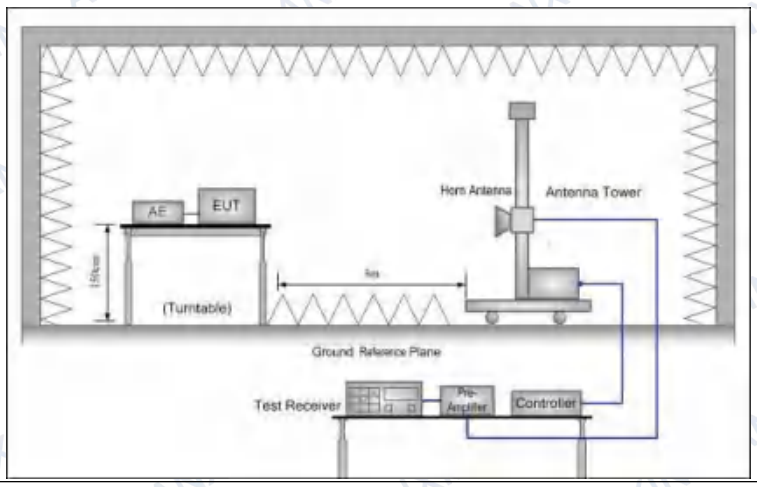
Test Frequency range:	30MHz to 12.75GHz

Test setup:

Below 1GHz



Above 1GHz



Test procedure:

1. Pre-scan

The test procedure below shall be used to identify potential unwanted

emissions of the UUT.

Step 1:

The sensitivity of the measurement set-up should be such that the noise floor is at least 12 dB below the limits given in table 4 or table 12.

Step 2:

The emissions over the range 30 MHz to 1 000 MHz shall be identified.
Spectrum analyser settings:

Resolution BW:	100 kHz
Video BW	300 kHz
Filter type:	3 dB (Gaussian)
Detector mode:	Peak
Trace Mode:	Max Hold
Sweep Points:	≥19 400

For spectrum analysers not supporting this high number of sweep points, the frequency band may need to be segmented.

Sweep time: For non continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 100 kHz frequency step, the measurement time is greater than two transmissions of the UUT.on any channel

For Frequency Hopping equipment operating in a normal operating (hopping not disabled) mode, the sweep time shall be further increased to capture multiple transmissions on the same hopping frequency in different hopping sequences.

The above sweep time setting may result in long measuring times in case of frequency hopping equipment. To avoid such long measuring times, an FFT analyser could be used.

Allow the trace to stabilize. Any emissions identified during the sweeps above and that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.9.2.1.3 and compared to the limits given in table 4 or table 12.

Step 3:

The emissions over the range 1 GHz to 12,75 GHz shall be identified.
Spectrum analyser settings:

Resolution BW:	1 MHz
Video BW	3 MHz
Filter type:	3 dB (Gaussian)
Detector mode:	Peak
Trace Mode:	Max Hold
Sweep Points:	≥ 23 500

For spectrum analysers not supporting this high number of sweep points, the frequency band may need to be segmented.

Sweep time: For non continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 1 MHz frequency step, the measurement time is greater than two transmissions of the UUT.on any channel

For Frequency Hopping equipment operating in a normal operating (hopping not disabled) mode, the sweep time shall be further increased to capture multiple transmissions on the same hopping frequencies

The above sweep time setting may result in long measuring times in case of frequency hopping equipment. To avoid such long measuring times, an FFT analyser could be used.

Allow the trace to stabilize. Any emissions identified during the sweeps above that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.9.2.1.3 and compared to the limits given in table 4 or table 12.

Frequency Hopping equipment may generate a block (or several blocks) of spurious emissions anywhere within the spurious domain. If this is the case, only the highest peak of each block of emissions shall be measured using the procedure in clause 5.4.9.2.1.3.

Step 4:

In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the steps 2 and 3 need to be repeated for each of the active transmit chains (A_{ch}).The limits used to identify emissions during this pre-scan need to be reduced by $10 \times \log_{10}(A_{ch})$

2. Measurement of the emissions identified during the pre-scan

The procedure in step 1 to step 4 below shall be used to accurately measure the individual unwanted emissions identified during the pre-scan measurements above. This method assumes the spectrum analyser has a Time Domain Power function.

Step 1:

The level of the emissions shall be measured using the following spectrum analyser settings:

Measurement Mode:	Time Domain Power
Centre Frequency:	Frequency of emission identified during the pre-scan
Resolution BW:	100 kHz (< 1 GHz) / 1 MHz (> 1 GHz)
Video BW	300 kHz (< 1 GHz) / 3 MHz (> 1 GHz)
Frequency Span:	Zero Span
Sweep mode:	Single Sweep
Sweep time:	> 120 % of the duration of the longest burst detected during the measurement of the RF Output Power
Sweep points:	Sweep time [µs] / (1 µs) with a maximum of 30 000
Trigger:	Video (burst signals) or Manual (continuous signals)
Detector:	RMS

Step 2:

Set a window where the start and stop indicators match the start and end of the burst with the highest level and record the value of the power measured within this window.If the spurious emission to be measured is a continuous transmission, the measurement window shall be set to

	match the start and stop times of the sweep. **Step 3:** In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), step 2 needs to be repeated for each of the active transmit chains (A_{ch}). Sum the measured power (within the observed window) for each of the active transmit chains. **Step 4:** The value defined in step 3 shall be compared to the limits defined in table 4 or table 12.
Measurement Record:	Uncertainty: ± 6dB
Test Instruments:	See section 6.0
Test mode:	Transmitting mode

Measurement Data

802.11b mode				
The lowest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	polarization	**Level(dBm)**		
30.00	Vertical	-65.90	-54.00	Pass
216.61	V	-61.90	-36.00	
480.98	V	-66.60	-30.00	
2362.73	V	-62.40	-30.00	
3589.18	V	-56.20	-30.00	
4917.84	V	-32.10	-30.00	
6825.65	Horizontal	-50.10	-36.00	
70.82	H	-76.20	-54.00	
3112.22	H	-64.00	-30.00	
3589.18	H	-67.20	-30.00	
4917.84	H	-57.70	-30.00	
6825.65	H	-50.10	-30.00	
The highest channel				
Frequency (MHz)	**Spurious Emission**		**Limit (dBm)**	**Test Result**
	polarization	**Level(dBm)**		
47.49	Vertical	-75.40	-54.00	Pass
335.19	V	-53.70	-36.00	
504.31	V	-67.10	-30.00	
2430.86	V	-54.10	-30.00	
4917.84	V	-30.90	-30.00	
6825.65	V	-50.20	-30.00	
47.49	Horizontal	-64.40	-36.00	
177.74	H	-64.80	-54.00	
480.98	H	-67.00	-30.00	
3112.22	H	-58.20	-30.00	
4917.84	H	-31.10	-30.00	
6655.31	H	-50.70	-30.00	

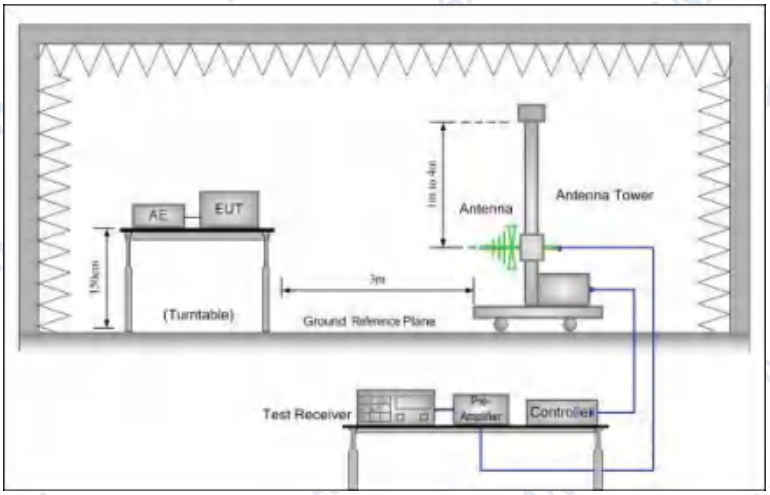
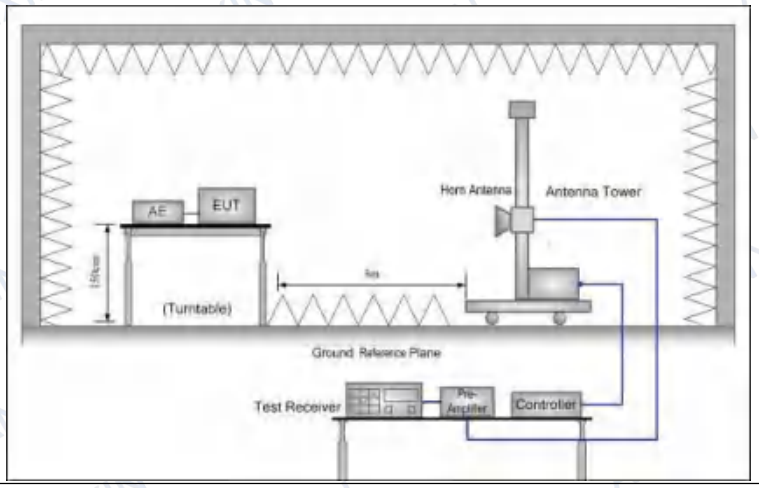
802.11g mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
94.18	Vertical	-70.98	-54.00	Pass
345.36	V	-67.68	-36.00	
4824.00	V	-51.75	-30.00	
7236.00	V	-45.19	-30.00	
9648.00	V	-41.96	-30.00	
12060.00	V	-44.15	-30.00	
121.57	Horizontal	-68.99	-36.00	
678.68	H	-68.30	-54.00	
4824.00	H	-50.79	-30.00	
7236.00	H	-44.62	-30.00	
9648.00	H	-42.20	-30.00	
12060.00	H	-44.89	-30.00	
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
150.18	Vertical	-70.12	-36.00	Pass
942.70	V	-62.64	-36.00	
4944.00	V	-51.47	-30.00	
7416.00	V	-44.55	-30.00	
9888.00	V	-42.56	-30.00	
12360.00	V	-42.67	-30.00	
121.38	Horizontal	-69.38	-36.00	
754.68	H	-71.21	-54.00	
4944.00	H	-50.71	-30.00	
7416.00	H	-45.05	-30.00	
9888.00	H	-41.75	-30.00	
12360.00	H	-41.55	-30.00	

802.11n(HT20) mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
190.19	Vertical	-69.39	-54.00	Pass
743.16	V	-63.84	-54.00	
4824.00	V	-52.15	-30.00	
7236.00	V	-44.77	-30.00	
9648.00	V	-43.06	-30.00	
12060.00	V	-42.98	-30.00	
199.27	Horizontal	-69.62	-54.00	
692.57	H	-61.86	-54.00	
4824.00	H	-52.10	-30.00	
7236.00	H	-45.69	-30.00	
9648.00	H	-43.08	-30.00	
12060.00	H	-44.49	-30.00	
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
280.18	Vertical	-68.76	-36.00	Pass
884.45	V	-65.55	-36.00	
4944.00	V	-51.66	-30.00	
7416.00	V	-43.79	-30.00	
9888.00	V	-42.66	-30.00	
12360.00	V	-43.58	-30.00	
141.24	Horizontal	-71.60	-36.00	
862.35	H	-70.99	-36.00	
4944.00	H	-50.32	-30.00	
7416.00	H	-46.21	-30.00	
9888.00	H	-42.77	-30.00	
12360.00	H	-45.03	-30.00	

802.11n(HT40) mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
110.77	Vertical	-69.17	-54.00	Pass
449.54	V	-60.00	-36.00	
4844.00	V	-51.94	-30.00	
7266.00	V	-45.04	-30.00	
9688.00	V	-42.48	-30.00	
12110.00	V	-44.61	-30.00	
149.02	Horizontal	-68.05	-36.00	
677.11	H	-63.06	-54.00	
4844.00	H	-51.64	-30.00	
7266.00	H	-45.18	-30.00	
9688.00	H	-41.83	-30.00	
12110.00	H	-44.46	-30.00	
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
113.31	Vertical	-68.87	-54.00	Pass
829.94	V	-61.97	-54.00	
4924.00	V	-51.73	-30.00	
7386.00	V	-45.36	-30.00	
9848.00	V	-41.82	-30.00	
12310.00	V	-44.45	-30.00	
191.86	Horizontal	-66.58	-54.00	
588.83	H	-63.72	-54.00	
4924.00	H	-49.84	-30.00	
7386.00	H	-45.74	-30.00	
9848.00	H	-43.69	-30.00	
12310.00	H	-45.57	-30.00	

6.3 Receiver Requirement

6.3.1 Spurious Emissions

Test Requirement:	ETSI EN 300 328 clause 4.3.2.10
Test Method:	ETSI EN 300 328 clause 5.4.10.2
Limit:	Frequency / Maximum power e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz) / Measurement bandwidth 30MHz to 1000 MHz / -57 dBm / 100 Hz 1GHz to 12.75GHz / -47 dBm / 1 MHz
Test Frequency range:	30MHz to 12.75GHz
Test setup:	Below 1GHz  Above 1GHz 

Test procedure:

1. Pre-scan

The procedure in step 1 to step 4 below shall be used to identify potential unwanted emissions of the UUT.

Step 1:

The sensitivity of the spectrum analyser should be such that the noise floor is at least 12 dB below the limits given in tables 5 or table13.

Step 2:

The emissions over the range 30 MHz to 1 000 MHz shall be identified.
Spectrum analyser settings:

Resolution BW:	100 kHz
Video BW	300 kHz
Filter type:	3dB (Gaussian)
Detector mode:	Peak
Trace Mode:	Max Hold
Sweep Points:	≥ 19 400
Sweep time:	Auto

Wait for the trace to stabilize. Any emissions identified during the sweeps above and that fall within the 6 dB range below the applicable limit or above, shall be individually measured using the procedure in clause 5.4.10.2.1.3 and compared to the limits given in table 5 or table 13.

Step 3:

The emissions over the range 1 GHz to 12,75 GHz shall be identified.
Spectrum analyser settings:

Resolution BW:	1 MHz
Video BW	3 MHz
Filter type:	3 dB (Gaussian)
Detector mode:	Peak
Trace Mode:	Max Hold
Sweep Points:	≥ 23500; for spectrum analysers not supporting this high number of sweep points,the frequency band may be segmented
Sweep time:	Auto

Wait for the trace to stabilize. Any emissions identified during the sweeps above that fall within the 6 dB range below, the applicable limit or above, shall be individually measured using the procedure in clause 5.4.10.2.1.3 and compared to the limits given in table 5 or table 13.
Frequency Hopping equipment may generate a block (or several blocks) of spurious emissions anywhere within the spurious domain. If this is the case, only the highest peak of each block of emissions shall be measured using the procedure in clause 5.4.10.2.1.3.

Step 4:

In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the steps 2 and 3 need to be repeated for each of the active transmit chains (A_{ch}).The limits used to identifyemissions during this pre-scan need to be reduced with $10 \times \log_{10}(A_{ch})$

2. Measurement of the emissions identified during the pre-scan

The procedure in step 1 to step 4 below shall be used to accurately measure the individual unwanted emissions identified during the pre-scan measurements above. This method assumes the spectrum analyser has

	a Time Domain Power function. **Step 1:** The level of the emissions shall be measured using the following spectrum analyser settings: Measurement Mode: Time Domain Power Centre Frequency: Frequency of the emission identified during the pre-scan Resolution Bandwidth: 100 kHz (< 1 GHz) / 1 MHz (> 1 GHz) Video Bandwidth: 300 kHz (< 1 GHz) / 3 MHz (> 1 GHz) Frequency Span: Zero Span Sweep mode: Single Sweep Sweep time: 30 ms Sweep points: ⩾ 30 000 Trigger: Video (for burst signals) or Manual (for continuous signals Detector: RMS **Step 2:** Set a window where the start and stop indicators match the start and end of the burst with the highest level and record, the value of the power measured within this window. If the spurious emission to be measured is a continuous, transmission, the measurement window shall be set to the start and stop times of the sweep. **Step 3:** In case of conducted measurements on smart antenna systems (equipment with multiple receive chains), step 2 needs to be repeated for each of the active receive chains A_{ch}.Sum the measured power (within the observed window) for each of the active receive chains. **Step 4:** The value defined in step 3 shall be compared to the limits defined in table 5 and table 13.
Measurement Record:	Uncertainty: ± 6dB
Test mode:	Kept Rx in receiving mode
Test Instruments:	See section 6.0

Measurement Data:

802.11b mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
112.35	Vertical	-71.37	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
803.67	V	-65.33		
4824.00	V	-64.49		
7236.00	V	-57.72		
9648.00	V	-54.24		
12060.00	V	-53.68		
225.63	Horizontal	-71.11		
521.21	H	-64.24		
4824.00	H	-61.42		
7236.00	H	-58.11		
9648.00	H	-55.36		
12060.00	H	-53.89		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
94.30	Vertical	-71.96	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
626.40	V	-65.12		
4944.00	V	-62.74		
7416.00	V	-57.98		
9888.00	V	-54.25		
12360.00	V	-52.77		
176.04	Horizontal	-70.00		
541.66	H	-63.60		
4944.00	H	-62.09		
7416.00	H	-55.36		
9888.00	H	-52.28		
12360.00	H	-52.02		

802.11g mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
101.93	Vertical	-70.40	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
659.41	V	-66.36		
4944.00	V	-62.79		
7416.00	V	-57.92		
9888.00	V	-53.70		
12360.00	V	-53.02		
118.81	Horizontal	-70.03		
592.41	H	-66.17		
4944.00	H	-61.56		
7416.00	H	-55.35		
9888.00	H	-53.64		
12360.00	H	-52.43		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
139.33	Vertical	-71.81	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
665.42	V	-72.50		
4944.00	V	-62.12		
7416.00	V	-57.18		
9888.00	V	-53.25		
12360.00	V	-52.66		
151.01	Horizontal	-71.27		
750.10	H	-67.57		
4944.00	H	-61.40		
7416.00	H	-56.78		
9888.00	H	-54.17		
12360.00	H	-52.04		

802.11n(HT20) mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
122.43	Vertical	-70.70	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
616.71	V	-68.82		
4824.00	V	-55.97		
7236.00	V	-60.28		
9648.00	V	-57.76		
12060.00	V	-55.41		
129.02	Horizontal	-70.79		
750.64	H	-63.33		
4824.00	H	-55.37		
7236.00	H	-60.83		
9648.00	H	-58.34		
12060.00	H	-54.50		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
236.45	Vertical	-69.21	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
929.10	V	-66.57		
4944.00	V	-63.27		
7416.00	V	-60.03		
9888.00	V	-56.08		
12360.00	V	-54.28		
324.01	Horizontal	-66.17		
940.52	H	-62.42		
4944.00	H	-61.06		
7416.00	H	-56.71		
9888.00	H	-54.74		
12360.00	H	-53.29		

802.11n(HT40) mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
119.96	Vertical	-68.09	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
799.43	V	-71.87		
4844.00	V	-63.25		
7266.00	V	-56.55		
9688.00	V	-52.92		
12110.00	V	-53.07		
170.28	Horizontal	-67.14		
904.13	H	-71.18		
4844.00	H	-61.56		
7266.00	H	-57.42		
9688.00	H	-54.84		
12110.00	H	-52.61		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
311.56	Vertical	-69.01	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
650.62	V	-71.47		
4924.00	V	-62.74		
7386.00	V	-57.98		
9848.00	V	-54.25		
12310.00	V	-53.12		
370.06	Horizontal	-67.90		
658.75	H	-71.32		
4924.00	H	-61.76		
7386.00	H	-56.46		
9848.00	H	-54.20		
12310.00	H	-52.75		

6.3.2 Receiver Blocking

Test Requirement:	ETSI EN 300 328 clause 4.3.2.11
Test Method:	ETSI EN 300 328 clause 5.4.11.2.
Limit:	While maintaining the minimum performance criteria as defined in clause 4.3.2.11.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided in table 14, table 15 or table 16.

Table 14: Receiver Blocking parameters for Receiver Category 1 equipment

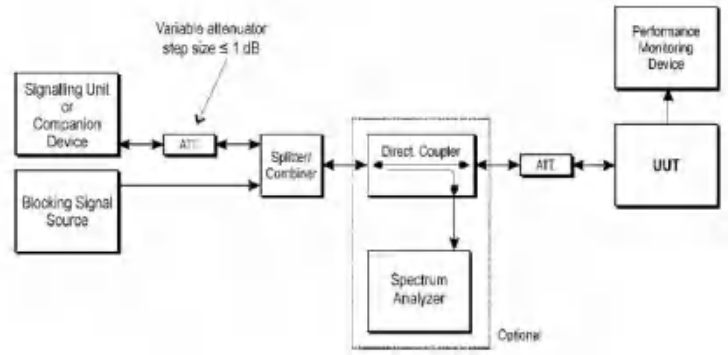
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
P_{min} + 6 dB	2 380 2 503,5	-53	CW
P_{min} + 6 dB	2 300 2 330 2 360	-47	CW
P_{min} + 6 dB	2 523,5 2 553,5 2 583,5 2 613,5 2 643,5 2 673,5	-47	CW
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.2.11.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels have to be corrected by the actual antenna assembly gain.			

Table 15: Receiver Blocking parameters receiver category 2 equipment

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
P_{min} + 6 dB	2 380 2 503,5	-57	CW
P_{min} + 6 dB	2 300 2 583,5	-47	CW
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.2.11.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels have to be corrected by the actual antenna assembly gain.			

Table 16: Receiver Blocking parameters receiver category 3 equipment

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
P_{min} + 12 dB	2 380 2 503,5	-57	CW
P_{min} + 12 dB	2 300 2 583,5	-47	CW
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined in clause 4.3.2.11.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the levels have to be corrected by the actual antenna assembly gain.			

Test setup:	
Test procedure:	For systems using multiple receive chains only one chain (antenna port) need to be tested. All other receiver inputs shall be terminated. The procedure in step 1 to step 6 below shall be used to verify the receiver blocking requirement as described in clause 4.3.1.12 or clause 4.3.2.11. Table 6, table 7 and table 8 in clause 4.3.1.12.4 contain the applicable blocking frequencies and blocking levels for each of the receiver categories for testing Receiver Blocking on frequency hopping equipment. Table 14, table 15 and table 16 in clause 4.3.2.11.4 contain the applicable blocking frequencies and blocking levels for each of the receiver categories for testing Receiver Blocking on equipment using wide band modulations other than FHSS. **Step 1:** For non-frequency hopping equipment, the UUT shall be set to the lowest operating channel. **Step 2:** The blocking signal generator is set to the first frequency as defined in the appropriate table corresponding to the receiver category and type of equipment. **Step 3:** With the blocking signal generator switched off, a communication link is established between the UUT and the associated companion device using the test setup shown in figure 6. The attenuation of the variable attenuator shall be increased in 1 dB steps to a value at which the minimum performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still met. The resulting level for the wanted signal at the input of the UUT is Pmin. This signal level (Pmin) is increased by the value provided in the table corresponding to the receiver category and type of equipment. **Step 4:** The blocking signal at the UUT is set to the level provided in the table corresponding to the receiver category and type of equipment. It shall be verified and recorded in the test report that the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is met. **Step 5:** Repeat step 4 for each remaining combination of frequency and level for the blocking signal as provided in the table corresponding to the receiver category and type of equipment. **Step 6:** For non-frequency hopping equipment, repeat step 2 to step 5 with the UUT operating at the highest operating channel.
Measurement Record:	Uncertainty: N/A
Test Instruments:	See section 6.0
Test mode:	Normal link mode

Measurement Data:

Test Channel	P_{min}(dBm)	PER(%)	Limit of PER(%)	Wanted signal mean power companion (P_{min}+6dB)	Blocking signal frequency (MHz)	Blocking signal Power (dBm)	Type of blocking signal	Result
Lowest Channel	-85.41	9.17	10	-79.41	2300.00	-47	CW	Pass
				-79.41	2330.00	-47		
				-79.41	2360.00	-47		
				-79.41	2380.00	-57		
Highest Channel	-84.67	9.25		-78.67	2503.50	-57		
				-78.67	2523.50	-47		
				-78.67	2553.50	-47		
				-78.67	2583.50	-47		
				-78.67	2613.50	-47		
				-78.67	2643.50	-47		
				-78.67	2673.50	-47		
Note: During the blocking test.The value of PER which display on the CMW 500 was no changed.Maybe the value of PER has a slight floating,but no bigger than 10%.								

Remark: According to ETSI EN 300328 V2.1.1 clause 5.4.11.1. Only the lowest data rate of 802.11b mode was tested and recorded. Because this product is an adaptive equipment and the power is greater than 10dBm e.i.r.p. .So it's belongs to category 1 device.

ANNEX E

E.1 Information as required by EN 300 328 V2.1.1, clause 5.4.1

In accordance with EN 300 328, clause 5.4.1, the following information is provided by the supplier.

a) The type of modulation used by the equipment:

☐ FHSS

☒ Other forms of modulation

b) In case of FHSS modulation:

In case of non-Adaptive Frequency Hopping equipment:

The number of Hopping Frequencies: _____

In case of Adaptive Frequency Hopping Equipment: _____

The maximum number of Hopping Frequencies: _____

The minimum number of Hopping Frequencies: _____

The (average)Dwell Time: _____

c) Adaptive / non-adaptive equipment:

☐ Non-adaptive Equipment

☒ Adaptive Equipment without the possibility to switch to a non-adaptive mode

☐ Adaptive Equipment which can also operate in a non-adaptive mode

d) In case of adaptive equipment:

The maximun Channel Occupancy Time implemented by the equipment: _____ ms

☒ The equipment has implemented an LBT based DAA mechanism

In case of equipment using modulation different from FHSS:

☐ The equipment is Frame Based equipment

☐ The equipment is Load Based equipment

☐ The equipment can switch dynamically between Frame Based and Load Based equipment

The CCA time implemented by the equipment: _____ µs

☐ The equipment has implemented an non-LBT based DAA mechanism

☐ The equipment can operate in more than one adaptive mode

e) In case of non-adaptive Equipment:

The maximum RF Output Power (e.i.r.p.): _____ dBm

The maximum (corresponding) Duty Cycle: _____ %

Equipment with dynamic behaviour, that behaviour is described here. (e.g. the different combinations of duty cycle and corresponding power levels to be declared): _____

f) The worst case operational mode for each of the following tests:

RF Output Power: 802.11b

Power Spectral Density: 802.11b

Duty cycle, Tx-Sequence, Tx-gap: N/A

Accumulated Transmit time, Frequency Occupation & Hopping Sequence (only for FHSS equipment) : N/A

Hopping Frequency Separation (only for FHSS equipment) : N/A

Medium Utilisation: N/A

Adaptivity & Receiver Blocking: 802.11 b

Nominal Channel Bandwidth: 802.11 n(HT40)

Transmitter unwanted emissions in the OOB domain: 802.11 n(HT40)

Transmitter unwanted emissions in the spurious domain: 802.11 b

Receiver spurious emissions: 802.11 b

g) The different transmit operating modes (tick all that apply):

☒ Operating mode 1: Single Antenna Equipment

☒ Equipment with only one antenna

☐ Equipment with two diversity antennas but only one antenna active at any moment in time

☐ Smart Antenna Systems with two or more antennas, but operating in a (legacy) mode where only one antenna is used. (e.g. IEEE 802.11™ [i.3] legacy mode in smart antenna systems)

☐ Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming

☐ Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode)

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

NOTE 1:Add more lines if more channel bandwidths are supported.

☐ Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming

☐ Single spatial stream / Standard throughput (e.g. IEEE 802.11™ [i.3] legacy mode)

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1

☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

NOTE 2:Add more lines if more channel bandwidths are supported.

h) In case of Smart Antenna Systems:

The number of Receive chains: _____

The number of Transmit chains: _____

☐ Symmetrical power distribution

☐ Asymmetrical power distribution

In case of beam forming, the maximum beam forming gain: _____

NOTE:The additional beam forming gain does not include the basic gain of a single antenna.

i) Operating Frequency Range(s) of the equipment:

Operating Frequency Range 1: 2412 MHz to 2472 MHz

Operating Frequency Range 2: 2422 MHz to 2462 MHz

NOTE: Add more lines if more Frequency Ranges are supported.

j) Occupied Channel Bandwidth(s):

Occupied Channel Bandwidth 1: 20 MHz

Occupied Channel Bandwidth 2: 40 MHz

NOTE: Add more lines if more channel bandwidths are supported.

k) Type of Equipment (stand-alone, combined, plug-in radio device, etc.):

☒ Stand-alone

☐ Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment)

☐ Plug-in radio device (Equipment intended for a variety of host systems)

☐ Other _____

l) The normal and extreme operating conditions that apply to the equipment:

Normal operating conditions (if applicable):

Operating temperature:

Other (please specify if applicable): _____

Extreme operating conditions:

Operating temperature range: 0 ° C to Maxmum: 5 ° C Minimum

Details provided are for the: ☒ stand-alone equipment
☐ Combined (or host) equipment
☐ Test jig

m) The intended combination(s) of the radio equipment power settings and one or more antenna assemblies and their corresponding e.i.r.p levels:

Antenna Type:

☒ Integral Antenna

Antenna Gain: 2.39 dBi

If applicable, additional beamforming gain (excluding basic antenna gain): _____ dB

☐ Temporary RF connector provided

☐ No temporary RF connector provided

☐ Dedicated Antennas (equipment with antenna connector)

☐ Single power level with corresponding antenna(s)

☐ Multiple power settings and corresponding antenna(s)

Number of different Power Levels:

Power Level 1:		dBm
Power Level 2:		dBm
Power Level 3:		dBm

NOTE 1: Add more lines in case the equipment has more power levels.

NOTE 2: These power levels are conducted power levels (at antenna connector).

For each of the Power Levels, provide the intended antenna assemblies, their corresponding gains (G) and the resulting e.i.r.p. levels also taking into account the beamforming gain (Y) if applicable

Power Level 1: _____ dBm

Number of antenna assemblies provided for this power level:

Assembly #	Gain (dBi)	e.i.r.p. (dBm)	Part number or model name
1			
2			

NOTE 3: Add more rows in case more antenna assemblies are supported for this power level.

Power Level 2: _____ dBm

Number of antenna assemblies provided for this power level:

Assembly #	Gain (dBi)	e.i.r.p. (dBm)	Part number or model name
1			
2			
3			

4			

NOTE 4: Add more rows in case more antenna assemblies are supported for this power level.

Power Level 3: _____ dBm

Number of antenna assemblies provided for this power level: _____

Assembly #	Gain (dBi)	e.i.r.p. (dBm)	Part number or model name
1			
2			
3			

NOTE 5: Add more rows in case more antenna assemblies are supported for this power level.

n) The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:

Details provided are for the: ☒ stand-alone equipment
☐ combined (or host) equipment
☐ test jig

Supply Voltage ☐ AC mains State AC voltage _____ V
☒ DC State DC voltage 5 V

In case of DC, indicate the type of power source
☐ Internal Power Supply
☒ External Power Supply or AC/DC adapter
☐ Battery
☐ Other: _____

o) Describe the test modes available which can facilitate testing:

p) The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3], proprietary, etc.):
IEEE 802.11TM

q) If applicable, the statistical analysis referred to in clause 5.4.1 q)
(to be provided as separate attachment)

r) If applicable, the statistical analysis referred to in clause 5.4.1 r)
(to be provided as separate attachment)

s) Geo-location capability supported by the equipment:
☐ Yes
☐ The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user
☒ No

t) Describe the minimum performance criteria that apply to the equipment (see clause 4.3.1.12.3 or clause 4.3.2.11.3):

7 EUT PHOTOGRAPHS

Photo 1 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	
Photo 2 View: [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

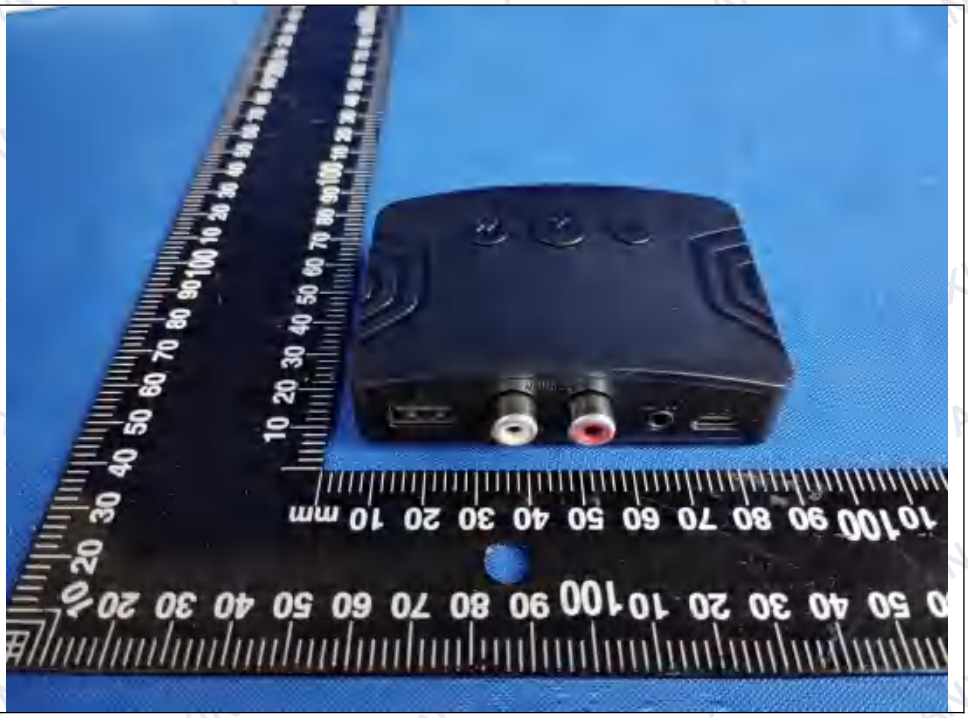
Photo 3 View: R20 [ ] Front [ ] Rear [√] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

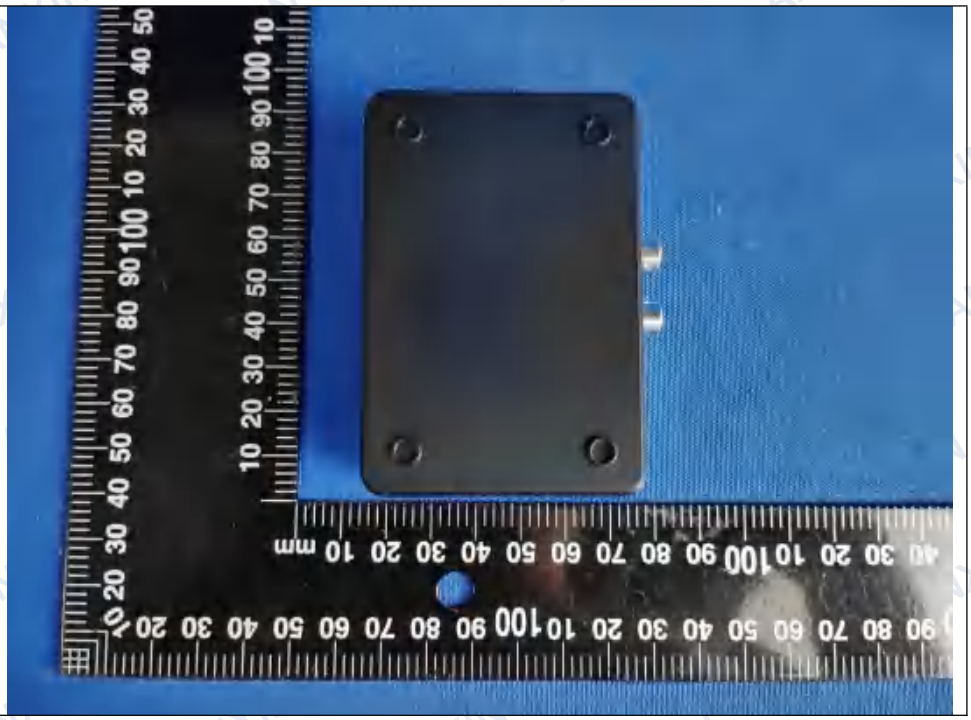
Photo 4 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Photo 5 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

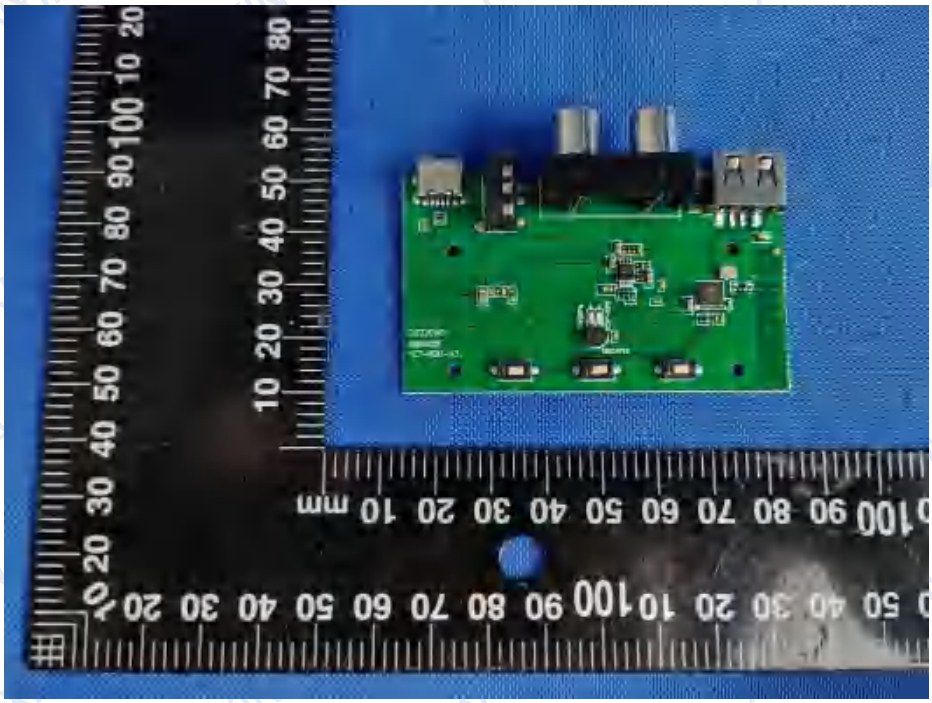
Photo 6 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

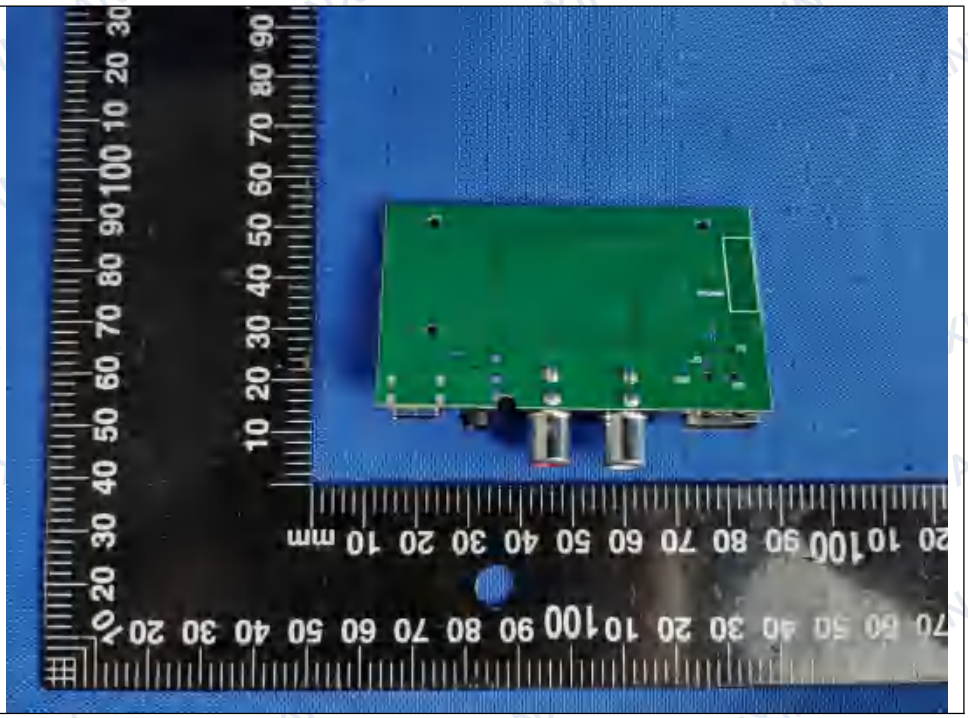
Photo 7 View: R20 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

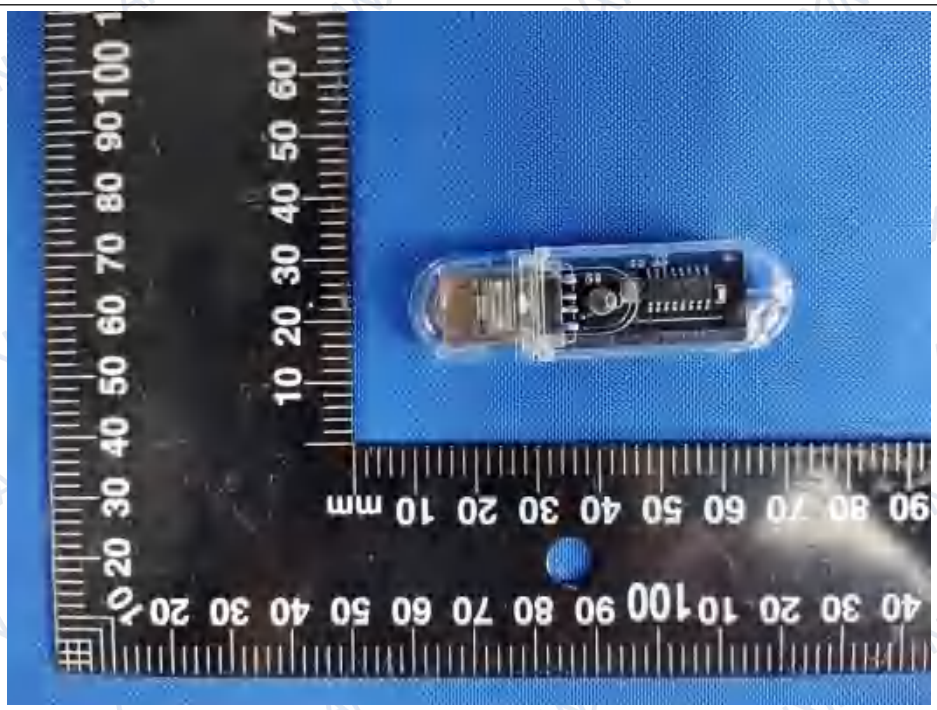
Photo 8 View: R10 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

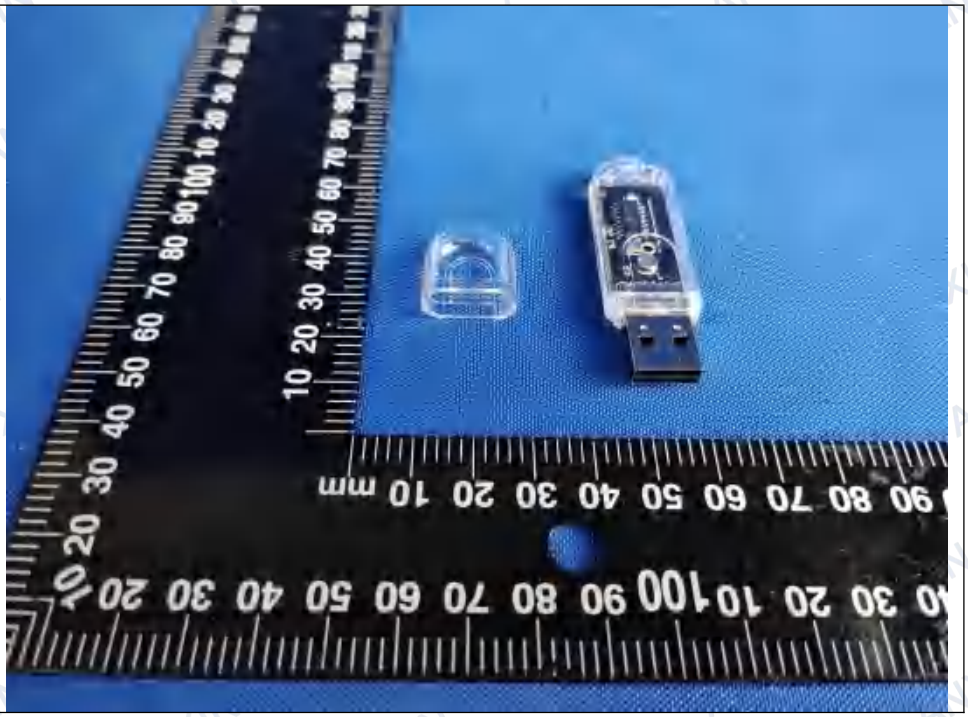
Photo 9 View: R10 [ ] Front [√] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

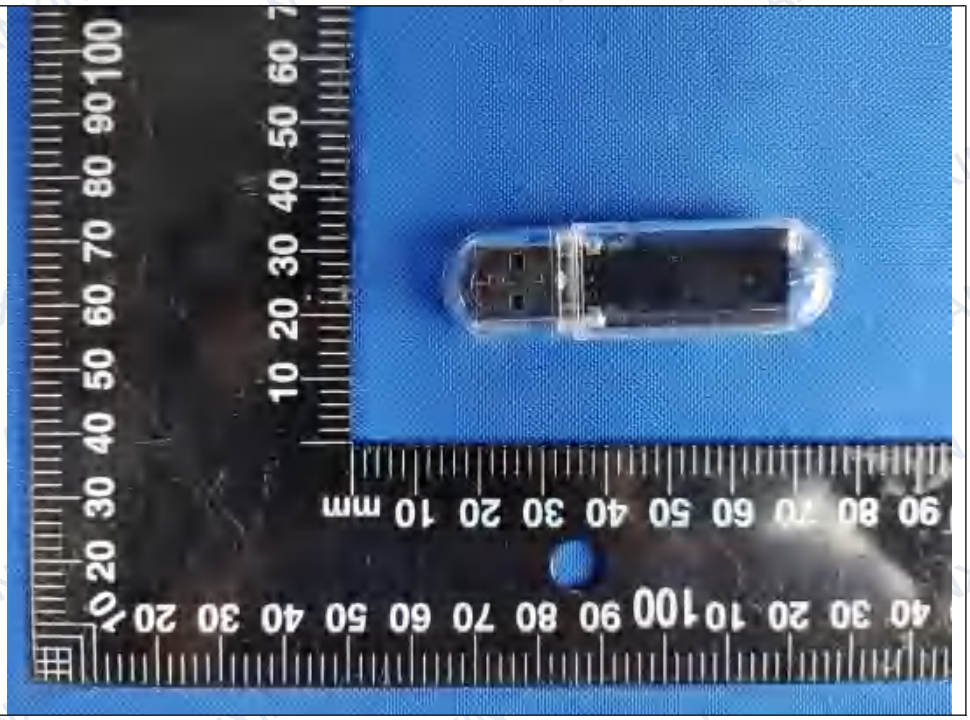
Photo 10 View: R10 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Photo 11 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 12 View: R30 [√] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [ ] Internal	

Photo 13 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Photo 14 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [√] Bottom [ ] Internal	

Photo 15 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

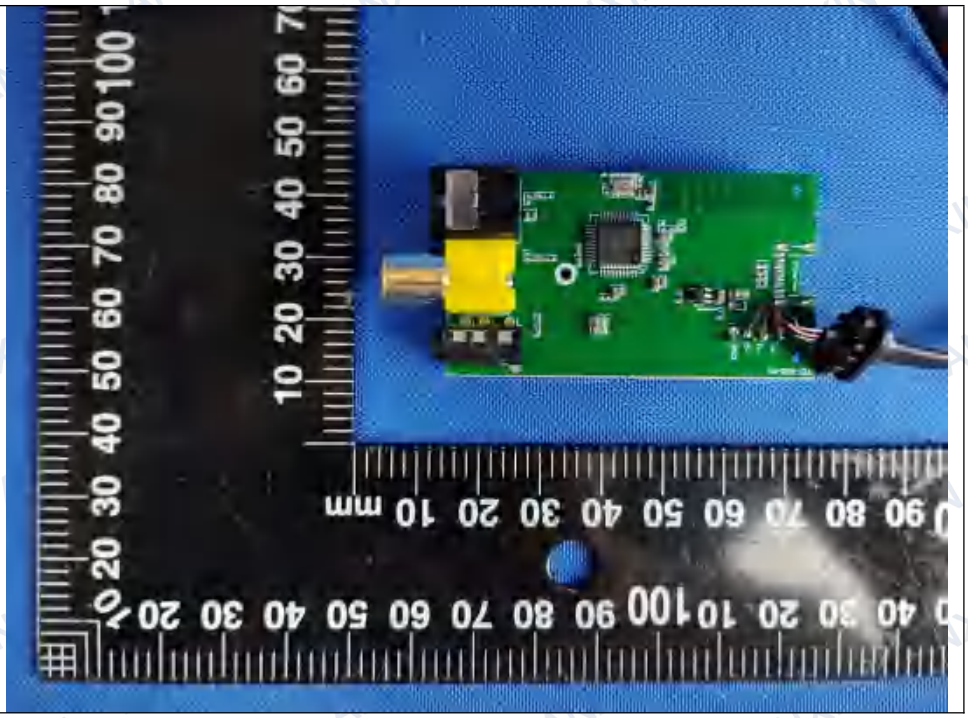
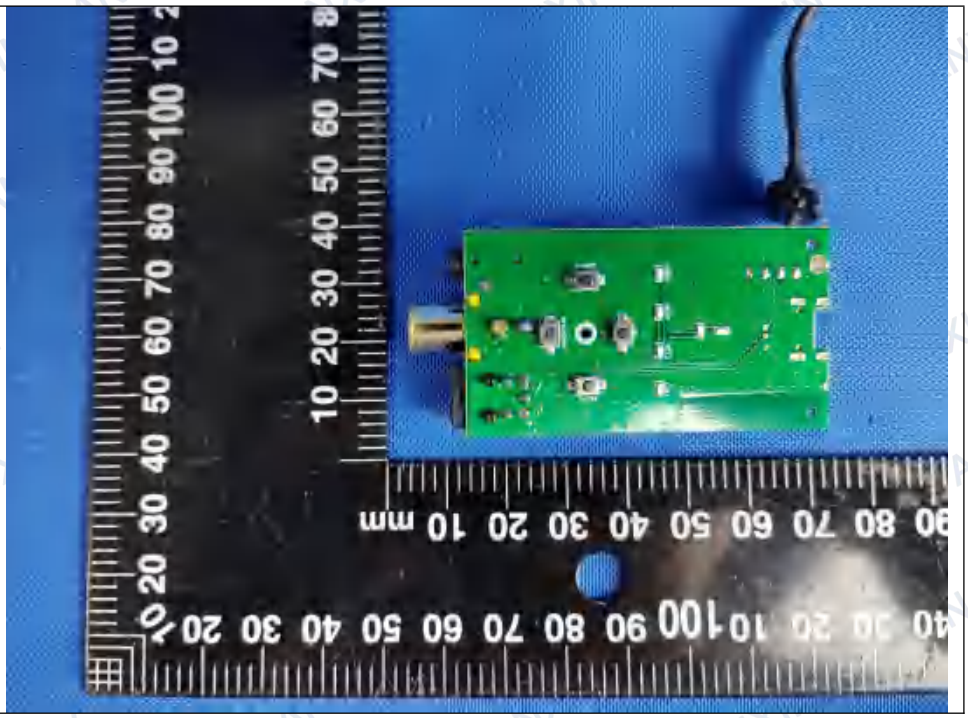
Photo 16 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

Photo 17 View: R30 [ ] Front [ ] Rear [ ] Right side [ ] Left side [ ] Top [ ] Bottom [√] Internal	

---END---