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EMC TEST REPORT

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Product : Smart Humidity & Temperature Sensor

Trade Mark : helle

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Model Name : ShellyH&T

Family Model : SHHT-v1

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Report No. : STE190920002001E

Prepared for

Allterco Robotics

NET 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

Prepared by

NIEt Shenzhen NTEK Testing Technology Co., Ltd. 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhen 518126 D.D. China Shenzhen 518126 P.R. China Tel.: +86-755-6115 6588 Fax.: +86-755-6115 6599

Website:http://www.ntek.org.cn

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TEST RESULT CERTIFICATION

 Applicant's Name
 Allterco Robotics

 Address
 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

 Manufacturer's Name
 Allterco Robotics

 Address
 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

 Address
 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

Product description

Product name

...... Smart Humidity & Temperature Sensor

Trade Mark

Model Name ShellyH&T Family Model SHHT-v1

ShellyH&T SHHT-v1 ETSI EN 301 489-1 V2.2.3 (2019-11) (Draft) ETSI EN 301 489-17 V3.2.2 (2019-12) EN 55032:2015 EN 55035:2017 EN 61000-3-2:2014 EN 61000-3-3:2013

Standards

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the article 3.1(b) of the Directive 2014/53/EU requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personnel only, and shall be noted in the revision of the document.

Date of Test.....

Testing Engineer

horka. (Korka Lin)

Technical Manager



Authorized Signatory :

(Sam Chen)

N2017.03.22.0322.V.1.0

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1. TEST SUMMARY

Test procedures according to the technical standards:

ETSI EN 301 489-1 V2.2.3 (2019-11) (Draft) ETSI EN 301 489-17 V3.2.2 (2019-12) EN 55032:2015; EN 55035:2017 EN 61000-3-2:2014;EN 61000-3-3:2013

EMC Emission Judgment Remark Standard Test Item Limit Conducted Emission On AC And PASS Class B Telecom Port 150kHz to 30MHz Disturbance Voltage at The Antenna N/A Terminals (30MHz To 2150MHz) Wanted signal and disturbance voltage EN 55032:2015 at the RF output terminals N/A (30MHz To 2150MHz) **Radiated Emission** Class B PASS 30MHz to 1000MHz **Radiated Emission** Class B PASS 1GHz to 6GHz EN61000-3-2:2014 Harmonic Current Emission Class D N/A NOTE (2) EN 61000-3-3:2013 PASS Voltage Fluctuations & Flicker **EMC** Immunity

Section EN 55035:2017	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2:2009	Electrostatic Discharge	AB A	PASS	2 2
EN 61000-4-3:2006+ A1:2008+A2:2010	RF electromagnetic field	T JAK	PASS	AL A
EN 61000-4-4:2012	Fast transients	в	PASS	t.
EN 61000-4-5:2006	Surges C	AB A	PASS	5 5
EN 61000-4-6:2009	Continuous radio frequency disturbances or Injected Current	A A	PASS	AL A
EN 61000-4-8:2010	Power Frequency Magnetic Field	At	N/A	NOTE (3)
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	BICIC	PASS	NOTE (4)

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

- (2) The power consumption of EUT is less than 75W and no Limits apply.
- (3) Applicable only to equipment containing devices intrinsically susceptible to magnetic fields, such as CRT monitors, Hall effect elements, electro-dynamic microphones, magnetic field sensors or audio frequency transformers.
- (4) Voltage dip: 100% reduction Performance Criteria B
 - Voltage dip: 30% reduction Performance Criteria C
 - Voltage Interruption: 100% Interruption Performance Criteria C

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(5) For client's request and manual description, the test will not be executed.

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1.1 TEST FACILITY

CNAS-Lab.

Shenzhen NTEK Testing Technology Co., Ltd. Add.: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhen 518126 P.R. China

> : The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005) The Certificate Registration Number is L5516

IC-Registration Certificate Registration Number is CN0074

FCC- Accredited

Test Firm Registration Number: 463705 Designation Number: CN1184

A2LA-Lab.

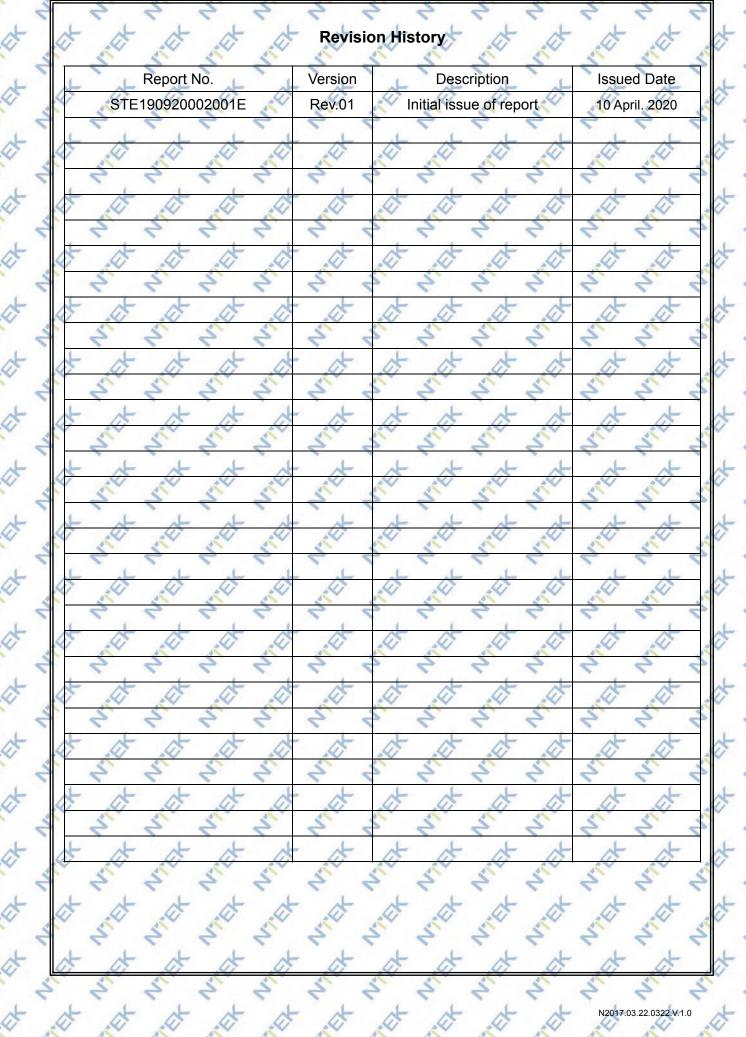
The Certificate Registration Number is 4298.01 This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

F	Test Item	Measurement Frequency Range	К	U(dB)	1
	AC Mains Conducted Emission	0.009kHz ~ 0.15MHz	2	2.66	12
1.	AC Mains Conducted Emission	0.15MH ~ 30MHz	at	2.80	
-	Telecom Conducted Emission(Cat 3)	0.15MHz ~ 30MHz	2	2.40	2
	Telecom Conducted Emission(Cat 5)	0.15MHz ~ 30MHz	2	2.58	1
	Radiated Emission	30MHz ~ 1000MHz	2	5.10	
	Radiated Emission	1000MHz ~ 6000MHz	2	2.40	5
	Radiated Emission	6000MHz ~ 18000MHz	2	2.52	5

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t			NTEKJ	Page 9 of 61 Report No.: STE190920002001E
2	3		2 2 2	2 2 2 2 2 2 2 2 2
the state	1.	Y	GENERAL INFORMA	
T	1	2	2.1 GENERAL DESCRIP	TION OF EUT
S	De	E.	Equipment	Smart Humidity & Temperature Sensor
t	1	4	Trade Mark	Shally to to to to to
3	10	-	Model Name	ShellyH&T 2 2 2 2 2 2
A	1	1	Family Model	SHHT-V1 A A A A A A A
1 AN	1st	×	Model Difference	N/A 2 2 2 2 2 2 2 2 2
at		4	Frequency Bands	802.11b/g/n(20MHz): 2412~2472MHz
2	Jo.		Modulation Mode:	IEEE 802.11b : DSSS (DBPSK, DQPSK, CCK)
A.		2	Davies Datis	IEEE 802.11g/n (HT20) : OFDM
2	10	-	Power Rating	DC 3V From Battery or DC 5V From Adapter
.st		Q.	Adapter	WA tot at
2	No		Battery	DC3V IN IN IN IN IN IN IN
.at		2	Connecting I/O Port(s)	Please refer to the User's Manual
2	2		Antenna	PCB Antenna
A.		Q	Hard Ware Version	ShellyH&T_v0.1.6
2	2		Soft Ware Version	
1 HE	5	4	Hard Ware Version Soft Ware Version	
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2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	🖉 🛷 🛷 Normal Working 💉
A Mode 2	🗧 🧳 🗧 WIFI 2.4G 🗳 🗳
* * *	* * * * * *

12 112 112 1	
	For Radiated Test
Final Test Mode	Description
Mode 1	🔨 🍼 Normal Working 🍼 🧹 🥂
	For EMS Test
Pretest Mode	Description
Mode 1	🖉 🛷 🛷 Normal Working 🛷 🛷 🛷
A Mode 2	🗧 🗧 🗧 WIFI 2.4G 🦂 🦂 🦂
Pretest Mode Mode 1	For EMS Test Description Normal Working

NOTE: The test modes were carried out for all operation modes. The final test mode of the EUT was the worst test mode for EMI, and its test data was showed. with white white white si

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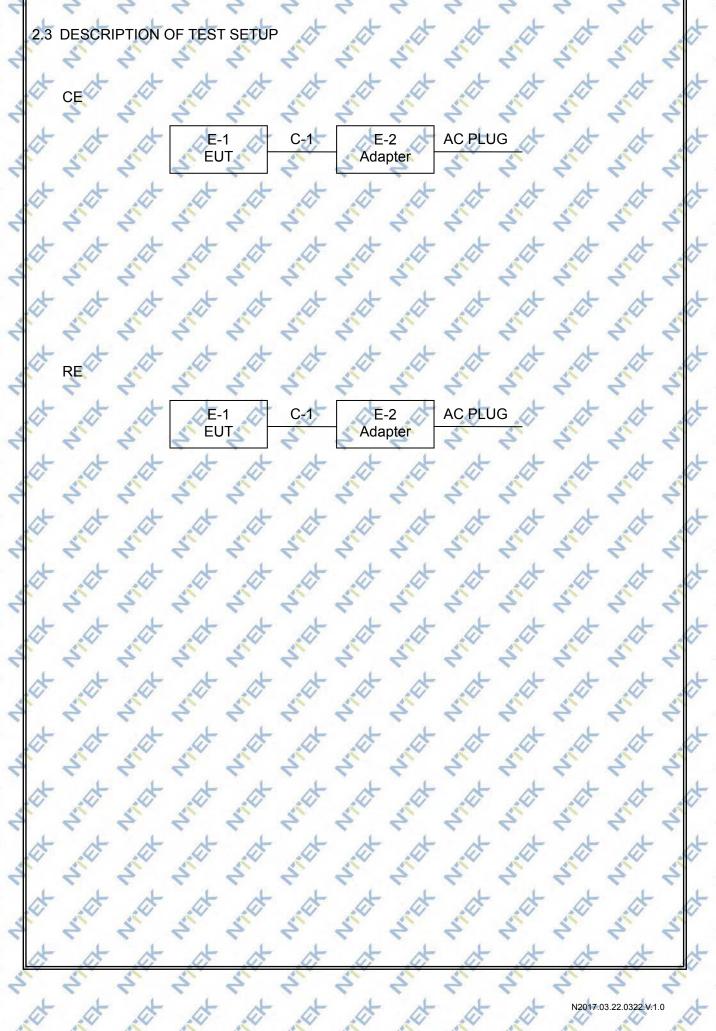
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2.3 DESCRIPTION OF TEST SETUP



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2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

	4	ltom		Drand	- A-				1	Note
1v	-	Item	Equipment Smart	Brand		Type No.		eries No.	~	Note
le.	W.	FE-1	Humidity & Temperature Sensor	Shelly Shelly	Shell	y Flood	et sie	HHT-VIC	Not	EUT
	/	E-2	Adapter	N/A	- 1	I/A	t	N/A	Pe	eripherals
No	4	2	2 2	1	-ST	5 5	2	2	2	1 2
	4	×.	at at	d 0	- st	A	at a	* \$	at	at .
Jo.		2	2 4	2	5	2 2	2	2	2	5 5
De.	12.	L. F	at at	A SA	- sit	sit s	A S	* st	1 stor	Sit S
1	4	ř.	¢ ¢	4	- t	t.	t, t	* *	, t	t.
J.		Item	Cable Type	e Shie	lded Type	Ferrite C	ore	Length	1	Note
	4	Υ.	5 5	5 .0	- A	Æ.	5 4	5.5	1	J.
No		1.	2 4	5 25	2	2 2	2	2	2	2 2
De.	14	Y Y	d d	A S	- At	St S	at a	* 5	S.C.	ST S
1	1	×	d d	at at	- at	at	at	* *	A	A.
No	1	1.	2 2 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2º	5 5		- Lin	S	2 2
le.	N.	y y	of sof	the side	- stat	STAT S	at a	* st	Not 1	Sit X
	4	Note:	at at	d .d	- at	at	at a	t at	at	at .
Do.		(1) <	The support							2 2
	4	(2)	For detachab	le type I/O c	able should	be specifie	ed the leng	oth in cm in	Length] column.
No		-5	1 4	5 2	5	5 5	5	2	2	2 2
De.	4	* *	at wat a	AT SH	Silt	Stat S	at si	t sit	A Relight	I wet I
1	N.	y a	at the e	it with	- At	a specific and a spec	at a	th in cm in	at	L M M
2		17	+ + +		2	2 2	4 7	+ + +	2	4 4
A.	2	N N		ST AND	A. C.	1 1 L	a si	AND AND	A.C.	2 2

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2.5.1 RADIATED TEST SITE Immediation of automatic data set of the s	t		N	TEK-	比测。	- at	Page 13	of 61 Repo	ort No.: STE1909	920002001E	dt .
2.5.1 RADIATED TEST SITE Immediation of automatic data set of the s	2	20.	4	2 2	2 2	2	5 5	2 4	2 2	5 5	
Item Kind of Equipment Manufacturer Type No. Serial No. Last calibration Calibrated until Calibration Calibrated until Period 1 Antennia Mast EM SC100 1 N/A N/A N/A 2 Turn Table EM SC100 060531 N/A N/A N/A 3 FEMI-Test Receiver R&S ESC1-7 101318 May 13, 2019 May 12, 2020 1 year 4 500 Switch Anintsu Corp MP59B 620098370 May 13, 2019 May 12, 2020 1 year 5 Spectrum, Analyzer Agilent E4407B MY451080 May 13, 2019 May 12, 2020 1 year 6 communication rester R&S CMU200 1400.008.0 May 13, 2019 May 12, 2020 1 year 7 Communication Tester R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Test Cable N/A R-01 N/A Apr. 15, 2019 Apr. 14, 2020 1 year <	SIL	Dr.	1	2 3	5 5	NTS LIST	Stat S	at sit.	Stat Stat	Stat 3	to si
Item Equipment Manuacture Type No. Serial No. Last calibration Calibrated uniti unitiation period 1 Antenna Mast EM SC100_1 N/A N/A N/A N/A 2 Turn Table EM SC100_1 N/A N/A N/A N/A 3 EMLTest Receiver R&S ESC1-7 101318 May 13, 2019 May 12, 2020 1 year 4 500 Switch Anintisu Corp MP59B 620098370 May 13, 2019 May 12, 2020 1 year 5 Analyzer Aglient E4407B MV451080 May 13, 2019 May 12, 2020 1 year 4 tornmultication rester R&S CMU200 1/00.008,0 May 13, 2019 May 12, 2020 1 year 7 Communication R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Test Cable N/A R-01 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 9 Test Cable	t	1	2.5.1							Calibration	t
2 Jum Table EM SC100 060531 N/A N/A N/A 3 EMI Test Receiver R&S ESCI-7 101318 May 13, 2019 May 12, 2020 1 year 4 500 Switch Anritsu Corp MP59B 620098370 May 13, 2019 May 12, 2020 1 year 5 Spectrum Analyzer Aglient E4407B MY451080 May 13, 2019 May 12, 2020 1 year 0 Unversal radio communication R&S CMU200 1100.008.0 May 13, 2019 May 12, 2020 1 year 7 Communication Radio R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Test Cable N/A R-01 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 9 Test Cable N/A R-02 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 10 Bilog Antenna TESEQ CBL111D 31216 Apr. 14, 2020 1 year 11 Horn Antenna	A.	2	Item		Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until		0 3
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3 Receiver PASS ESCF.7 101318 May 13, 2019 May 12, 2020 1 year 4 50Ω Switch Anntisu Corp MP59B 620098370 May 13, 2019 May 12, 2020 1 year 5 Spectrum Aglient E4407B MY451080 May 13, 2019 May 12, 2020 1 year 6 communication R&S CMU200 1400.008/0 May 13, 2019 May 12, 2020 1 year - Wideband Radio RAS CMW500 148500 May 13, 2019 May 12, 2020 1 year 7 Communication R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Tester Specifications R Specifications May 13, 2019 May 12, 2020 1 year 9 Test Cable N/A R-01 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 10 Bilog Antenna TESEQ CBL6111D 31216 Apr. 15, 2019 Apr. 14, 2020 1 year	A.		2	Turn Table	EM A	SC100	060531	N/A	N/A N	N/A	5
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5 Analyzer Aguient E44078 40 May 13, 2019 May 12, 2020 1 year Unversal radio communication R&S CMU200 1100.008.0 May 13, 2019 May 12, 2020 1 year Wideband Radio C CMU200 148500 May 13, 2019 May 12, 2020 1 year 7 Communication R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Test Cable N/A R-01 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 9 Test Cable N/A R-02 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 10 Bilog Antenna TESEQ CBL6111D 31216 Apr. 15, 2019 Apr. 14, 2020 1 year 11 Horn Antenna EM EMC05183 980246 Aug. 06, 2019 Aug. 05, 2020 1 year 2.5.2 ESD Ester EMC Serial No. Last calibration Calibrated until period 1 Unversal r	N. S. S.	14	4	50Ω Switch	Anritsu Corp	MP59B	5	May 13, 2019	May 12, 2020	1 year	
6 communication tester R&S CMU200 H00.008.0 2 May 13, 2019 May 12, 2020 1 year Wideband Radio Radio R May 13, 2019 May 13, 2019 May 12, 2020 1 year 7 Communication Tester R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Test Cable N/A R-01 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 9 Test Cable N/A R-02 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 10 Bilog Antenna TESEQ CBL6111D 31216 Apr. 15, 2019 Apr. 14, 2020 1 year 11 Horn Antenna EM EM-AH-101 201107140 Apr. 15, 2019 Apr. 14, 2020 1 year 2 Amplifier EMC EMC05183 980246 Aug. 06, 2019 Aug. 05, 2020 1 year 2 Communication R&S CMU200 1100.008.0 May 13, 2019 May 12, 2020 1 year Videband	1 th	1	5	Analyzer	Aglient	E4407B		May 13, 2019	May 12, 2020	1 year	d.
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7 Communication Tester Specifications R&S CMW500 148500 May 13, 2019 May 12, 2020 1 year 8 Test Cable N/A R-01 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 9 Test Cable N/A R-02 N/A Apr. 21, 2017 Apr. 20, 2020 3 years 10 Bilog Antenna TESEQ CBL6111D 31216 Apr. 15, 2019 Apr. 14, 2020 1 year 11 Horn Antenna EM EM-ArH-101 201107140 Apr. 15, 2019 Apr. 14, 2020 1 year 12 Amplifier EMC EMC05183 980246 Aug. 06, 2019 Aug. 05, 2020 1 year Videoband Ratio 1 Manufacturer Type No. Serial No. Last calibration Calibrated until Calibration period 1 Unversal radio 1 R&S CMU200 1100.008.0 2 May 13, 2019 May 12, 2020 1 year 2 Communication Ratio R&S CMU200 148500 May 13, 2019 May 12, 2020	A. C.	-	æ.	Wideband	NO NO	10	× 5		N N	Nº 1	0 2
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A. C.	11	¢1	Unversal radio communication tester	R&S	CMU200	1100.008.0 2	May 13 <mark>,</mark> 2019	May 12, 2020	1 year	to the
T	No. 1	2	Wideband Radio Communication	R&S	CMW500	148500	May 13, 2019	May 12, 2020	1 year	at it
t	*	t	Tester Specifications	4 4	t	dt.	at at	1 1	dt.	t's
4	No	3	Audio Power Amplifier	Brüel & Kjær	4602B	2185667	May 13, 2019	May 12, 2020	1 year	4
at		4	Mouth Simulator	Brüel & Kjær	2669	2143265	May 13, 2019	May 12, 2020	1 year	at a
24	2	5	Sound Calibrator	Brüel & Kjær	4185	2194825	May 13, 2019	May 12, 2020	1 year	4 7
A.S.	Nu	6	1/2" Pressure- field Microphone	Brüel & Kjær	735	2641678	May 13, 2019	May 12, 2020	1 year	is the
SIL	1ª	7	Telephone Test Head	Brüel & Kjær	4185	2631728	May 13 <mark>,</mark> 2019	May 12, 2020	1 year	to the
A	1	8	Audio Analyzer Ear Simulator	R&S	UPV	100419	May 13, 2019	May 12, 2020	1 year	*
1º	N	9	for Telephonometr	Brüel & Kjær	4185	2553612	May 13, 2019	May 12, 2020	year	No A
at		\$t	y y	at d	21425 (Fogu	at .	at at	\$ \$	at .	to a
N to	10.	10	Bilog Antenna	ETS	3142E(Fequ ency range 30MHz to 6 GHz)	00214244	Aug. 06, 2019	Aug. 05, 2020	1 year	at 1
2	J.	_11	Broadband Amplifier	AR	60S1G6	0350414	Aug. 06, 2019	Aug. 05, 2020	1 year	4
A.	100	12	PSG Analog Signal Generator	Agilent	E8257D	MY511101 12	Aug. 06, 2019	Aug. 05, 2020	year	the state
A.	14	13	Power Amplifier	rflight	NTWPA-00 810200	17063153	Aug. 06, 2019	Aug. 05, 2020	1 year	to a
14	2	14	Power Amplifier	AR	25S1G4A	308598	Aug. 06, 2019	Aug. 05, 2020	1 year	4 7
S	Si	15	Power Meter	Agilent	E4419B	MY451025 38	Aug. 0 <mark>6,</mark> 2019	Aug. 05, 2020	1 year	S S
t	*	16	Power Sensor	Agilent	M7301A	MY414956 44	Aug. 06, 2019	Aug. 05, 2020	1 year	at .
N.	No	17	Power Sensor	Agilent	M7301A	US392121 48	Aug. 06, 2019	Aug. 05, 2020	1 year	4
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3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

Table A.10 – Requirements for asymmetric mode conducted emissions from Class A equipment

Applicable to

wired network ports (3.1.30)
 optical fibre ports (3.1.24) with metallic shield or tension members
 antenna ports (3.1.3)

J. antenn	la ports (5.1.5)					
Table clause	Frequency range MHz	Coupling device (see Table A.7)	Detector type / bandwidth	Class A voltage limits dB(µV)	Class A current limits dB(μA)	
A10.1	0,15 – 0,5	AAN	Quasi Peak / 9 kHz	97 – 87		
	0,5 – 30	AAN	Quasi Peak / 9 kHz	87	-	
	0,15 - 0,5	AAN		84 – 74	n/a	
	0,5 – 30	AAN	Average / 9 kHz	74		
A10.2	0,15 – 0,5	CVP	Overi Dask (0.kl.)-	97 – 87	53 – 43	
	0,5 – 30	and current probe	Quasi Peak / 9 kHz	87	43	
	0,15 - 0,5	CVP		84 – 74	40 - 30	
	0,5 – 30	and current probe	Average / 9 kHz	74	30	
A10.3	0,15 - 0,5	Current Probe	Quasi Peak / 9 kHz		53 – 43	
	0,5 – 30	Current Probe	Quasi Peak / 9 km2		43	
-	0,15 – 0,5	Current Droke		- n/a	40 - 30	
	0,5 – 30	Current Probe	Average / 9 kHz		30	1

The choice of coupling device and measurement procedure is defined in Annex C.

AC mains ports that also have the function of a wired network port shall meet the limits given in Table A.8.

The test shall cover the entire frequency range.

The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to Table C.1 for applicability.

Testing is required at only one EUT supply voltage and frequency.

Applicable to ports listed above and intended to connect to cables longer than 3 m.

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Applicab	le to					
2. optical 3. broado	network ports (3. fibre ports (3.1. cast receiver tun a ports (3.1.3)	24) with metallic shield or t	ension members			
Table clause	Frequency range MHz	Coupling device (see Table A.7)	Detector type / bandwidth	Class B voltage limits dB(µV)	Class B current limits dB(µA)	
A11.1	0,15 – 0,5			84 - 74	n/a	
	0,5 – 30	AAN	Quasi Peak / 9 kHz	74		
	0,15 – 0,5	A A NI		74 – 64	n/a	
	0,5 – 30	AAN	Average / 9 kHz	64		
A11.2	0,15 – 0,5	CVP	Oursei Bask / O kills	84 - 74	40 – 30	
	0,5 – 30	and current probe	Quasi Peak / 9 kHz	74	30	
	0,15 – 0,5	CVP		74 – 64	30 – 20	
	0,5 – 30	and current probe	Average / 9 kHz	64	20	
A11.3	0,15 – 0,5	Current Probe	Quasi Peak / 9 kHz		40 – 30	
	0,5 – 30	Current Probe	Quasi Peak / 5 KHZ	7/2	30	
	0,15 – 0,5	Current Broke		n/a	30 – 20	
	0,5 – 30	Current Probe	Average / 9 kHz		20	

Screened ports including TV broadcast receiver tuner ports are tested with a common-mode impedance of 150 Ω. This is typically accomplished with the screen terminated by 150 Ω to earth.

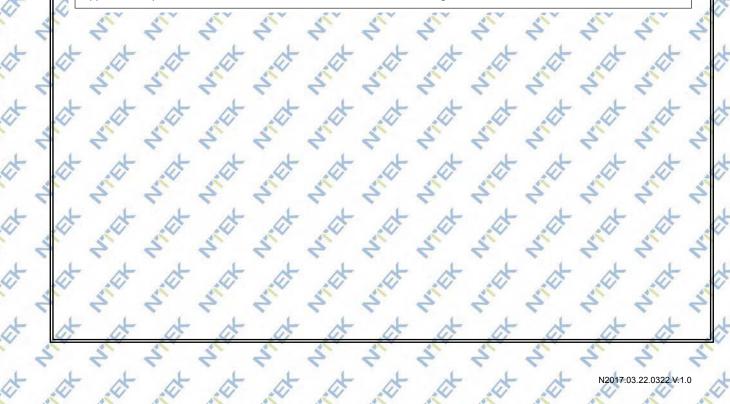
AC mains ports that also have the function of a wired network port shall meet the limits given in Table A.9.

The test shall cover the entire frequency range.

The application of the voltage and/or current limits is dependent on the measurement procedure used. Refer to Table C.1 for applicability.

Testing is required at only one EUT supply voltage and frequency.

Applicable to ports listed above and intended to connect to cables longer than 3 m.



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2. RF mod	adcast receiver t dulator output po	uner ports (3.1.8) with a orts (3.1.27) tuner ports (3.1.8) with a					
Table clause	Frequency range	Detector type/ bandwidth		Class B lim dB(μV) 75 s		Applicability	
	MHz	Oth	Other	Local Oscillator Fundamental	Local Oscillator Harmonics		
A12.1	30 – 950	For frequencies ≤1 GHz	46	46	46	See a)	
	950 – 2 150		46	54	54		
A12.2	950 – 2 150	Quasi Peak/	46	54	54	See b)	
A12.3	30 – 300	120 kHz	46	54	50	See c)	
	300 – 1 000				52	1	
A12.4	30 – 300	For frequencies	46	66	59	See d)	
	300 – 1 000	≥1 GHz			52	1	
A12.5	30 – 950	Peak/ 1 MHz	46	76	46	See e)	
	950 – 2 150		n/a	54			

a) Television receivers (analogue or digital), video recorders and PC TV broadcast receiver tuner cards working in channels between 30 MHz and 1 GHz, and digital audio receivers.

b) Tuner units (not the LNB) for satellite signal reception.

c) Frequency modulation audio receivers and PC tuner cards.

d) Frequency modulation car radios.

e) Applicable to EUTs with RF modulator output ports (for example DVD equipment, video recorders, camcorders and decoders etc.) designed to connect to TV broadcast receiver tuner ports.

Testing is required at only one EUT supply voltage and frequency.

The term 'other' refers to all emissions other than the fundamental and the harmonics of the local oscillator.

The test shall be performed with the device operating at each reception channel.

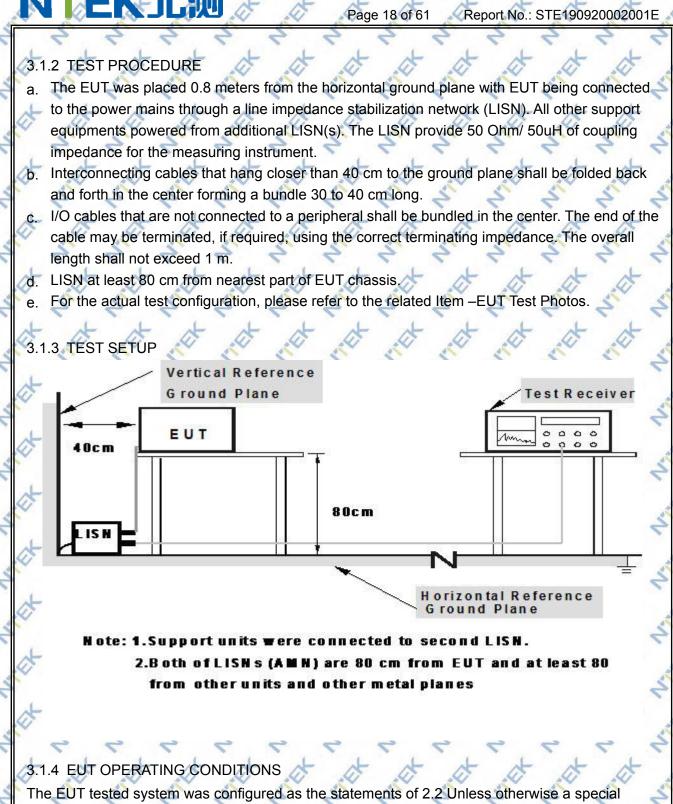
The test shall cover the entire frequency range.

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1		The followir	ng table is the setting of t	he receiv	ver	L	L	L	L	L	
	4	A.	Receiver Parameters	1	1	A	1	Setting	A.	A.	R
2		2	Attenuation	2	2	2	2	10 dB	2	2	2
	S	t at	Start Frequency	A	5	4	00	.15 MHz	4	at	1
1º		S	Stop Frequency	S	5	5	S	30 MHz	S	S	5
-		L L	IF Bandwidth	· t	-te	t	t	9 kHz	t	t	
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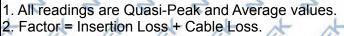
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EUT:	Smart Humidity & Temperature Sensor	Model Name :	ShellyH&T
Temperature:	21℃	Relative Humidity:	65%
Pressure:	1010hPa	Phase:	
Test Voltage:	N/A 💉 💉 🏅	Test Mode:	Mode 1 🗳 🍼 🏅

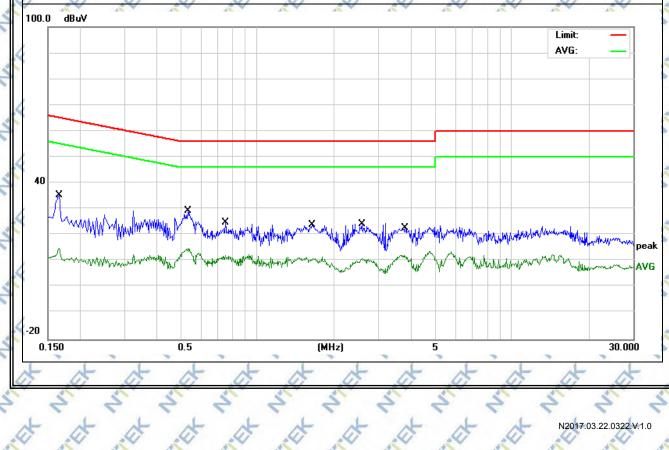
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F	Frequency	Meter Reading	Factor	Emission Level	Limits 2	Margin	Remark
×	(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
9	0.1660	25.74	9.73	35.47	65.15	-29.68	QP
1	0.1660	5.29	9.73	15.02	55.15	-40.13	AVG
	0.534	19.61	9.75	29.36	56.00	-26.64	QP
	0.5340	5.13	9.75	14.88	46.00	-31.12	AVG
1×	0.7500	15.02	9.75	24.77	<u>56.00</u>	-31.23	QP
	0.7500	2.52	9.75	12.27	46.00	-33.73	AVG
1	1.6379	14.08	9.78	23.86	56.00	-32.14	QP
9	1.6379	1,49	9.78	11.27	46.00	-34.73	AVG
4	2.5779	14.46	9.83	24.29	56.00	-31.71	CQP C
¢.	2.5779	1.17	9.83	11.00	46.00	-35.00	AVG
	3.8180	12.89	9.91	22.80	56.00	-33.20	QP S
×	3.8180	2.48	9.91	12.39	46.00	-33.61	AVG
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t			21°C	A lower	elative Humidity		t	
ST	10	Pressure: Test Voltage:	1010hPa		nase: est Mode:	N Mode 1	5 5	5
t	1	Test voltage.	at at at	at at			the state	-
147	1	Frequency	Meter Reading Fa	ictor Emissio	on Level Lim	its Margin	A A	1
2	5	(MHz)			μV) (dBμ		Remark	5
A.		0.5620	61 61 61	6	.31 56.0		QP	
2	2	0.562			.15 46.0		AVG	2
4		0.7740	20.54 9	.75 30	A. 1000 A.	00	QP	
5	No	0.7740	16.14 🔷 9	.75 25	.89 46.0	00 -20.11	AVG	~
at		0.9260	21.28 9	.75 31	.03 📌 56.0	00 -24.97	QP	
5	2	0.9260	thong thong t		.46 46.0	ten	AVG	5
int		1.5740	Van Van Van	A	.67 56.0		QP	
1º	1	1.5740			.52 46.0		AVG	5
t	1	2.7219	1 1 1	1	.97 56.0		QP	-
AT .	1	2.7219 3.7820		.84 23 .91 30			AVG QP	2
2	2	3.7820	1	.91 . 22	1		AVG	2
A		Remark:		.91 22	40.0	23.29	AVG.	-
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N. S.	2		nodes were carried out	t for all operation	n modes. The v	vorst test mode for	test data	1º
T.L	1	was show	ed in the report.	T T	5 5		T T L	5
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3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT (Below 1000MHz)

Table A.2 – Requirements for radiated emissions at frequencies up to 1 GHz for Class A equipment

~	Table clause	Frequency range	М	easurement	Class A limits dB(µV/m)	N. Y
2	oluuse	MHz	Distance m	Detector type/ bandwidth	OATS/SAC (see Table A.1)	
	A2.1	30 – 230	10		40	-
		230 – 1 000	10	Quasi Peak /	47	
<	A2.2	30 – 230	3	120 kHz	50	
		230 – 1 000	3		57	

Apply only A2.1 or A2.2 across the entire frequency range.

Table A.4 – Requirements for radiated emissions at frequencies up to 1 GHz for Class B equipment

Table clause	Frequency range	Ме	asurement	Class B limits dB(µV/m)		
	MHz	Distance m	Detector type/ bandwidth	OATS/SAC (see Table A.1)		
A4.1	30 – 230	10		30		
	230 – 1 000		Quasi Peak /	37		
A4.2	30 – 230		120 kHz	40		
	230 – 1 000	3		47		

Apply only table clause A4.1 or A4.2 across the entire frequency range.

Table A.6 – Requirements for radiated emissions from FM receivers

Table	Frequency range	Me	asurement	Class B lim	it dB(μV/m)	
clause	MHz	Distance	Detector type/	Fundamental	Harmonics	
		m	bandwidth	OATS/SAC (see Table A.1)	OATS/SAC (see Table A.1)	
A6.1	30 – 230				42	
	230 – 300	10		50	42	
	300 – 1 000		Quasi peak/		46	
A6.2	30 – 230		120 kHz		52	
	230 – 300	3		60	52	
	300 – 1 000				56	

Apply only A.6.1 or A.6.2 across the entire frequency range.

These relaxed limits apply only to emissions at the fundamental and harmonic frequencies of the local oscillator. Signals at all other frequencies shall be compliant with the limits given in Table A.4.

3.2.2 LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Table A.3 – Requirements for radiated emissions at frequencies above 1 GHz for Class A equipment

Table clause	Frequency range	Me	asurement	Class A limits dB(µV/m)
onucoo	MHz	Distance m	Detector type/ bandwidth	FSOATS (see Table A.1)
A3.1	1 000 – 3 000		Average /	56
	3 000 - 6 000		1 MHz	60
A3.2	1 000 – 3 000	3	Peak /	76
	3 000 - 6 000		1 MHz	80

Apply A3.1 and A3.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.

Table A.5 – Requirements for radiated emissions at frequencies above 1 GHz for Class B equipment

	Table clause	Frequency range	Me	easurement	Class B limits dB(µV/m)
2		MHz	Distance Detector type/ m bandwidth		FSOATS (see Table A.1)
	A5.1	1 000 – 3 000		Average/	50
		3 000 – 6 000	3	1 MHz	54
4	A5.2	1 000 – 3 000		Peak/	70
		3 000 – 6 000		1 MHz	74

Apply A5.1 and A5.2 across the frequency range from 1 000 MHz to the highest required frequency of measurement derived from Table 1.

Notes:

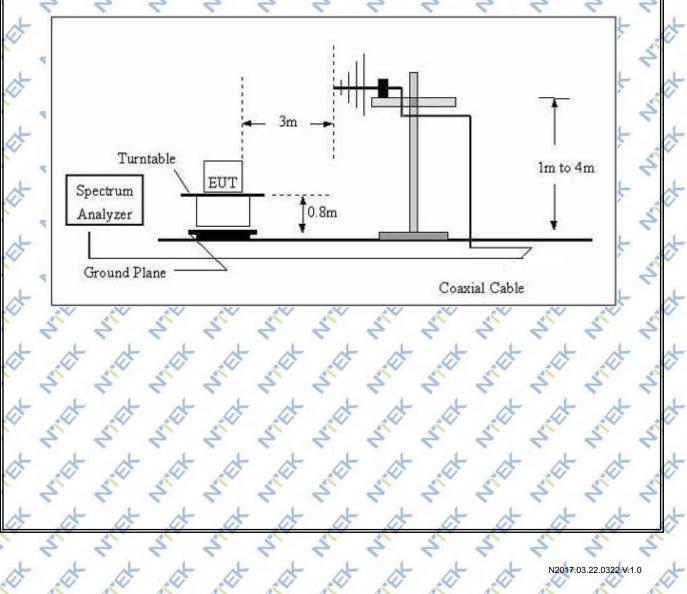
- (1) The limit for radiated test was performed according to as following: CISPR 32.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBμV/m)=20log Emission level (uV/m).

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- 3.2.3 TEST PROCEDURE
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz.
 For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
 - f. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.2.4 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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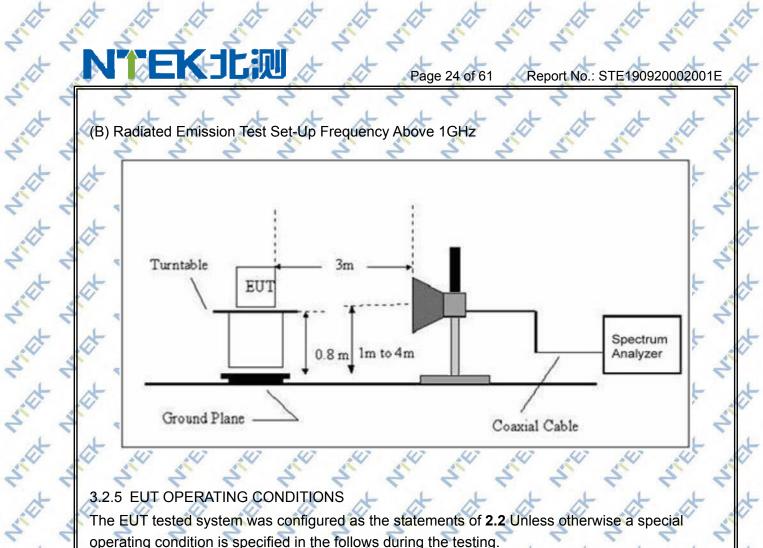
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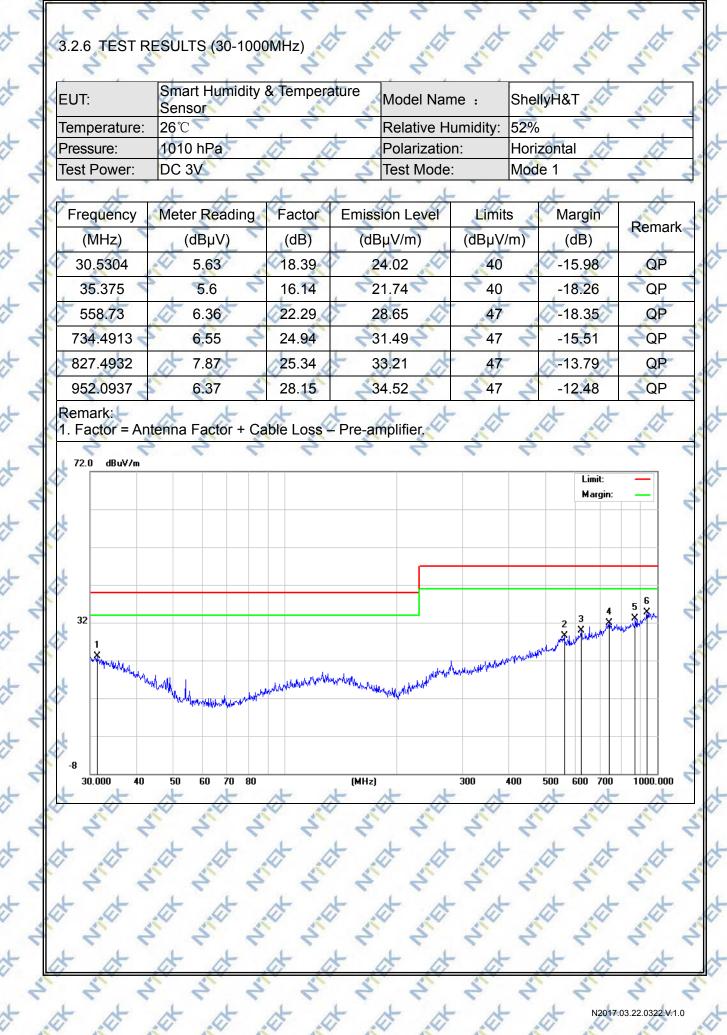
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The EUT tested system was configured as the statements of **2.2** Unless otherwise a special operating condition is specified in the follows during the testing will where where

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t		NTE	公上洞		Page 26 of 6		port No.: STE190	920002001E	at .
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T	1	Temperature:	26 ℃	the d	Relative H		52%	T T	at T
a la	-	Pressure:	1010hPa	10 10	Polarizatio		Vertical	AT .	
2	2	Test Power:	DC 3V	2 2	Test Mode	:	Mode 1 <	2 4	1 4
in		E E	IT IT	5 0		J.		AT .	5
2	2	Frequency	Meter Readir		Emission Level	Limits		Remark	2
.at		(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/ı	N N	A.	at a
1	10°	31.9544	7.03	17.87	\$24.9	<u> </u>	-15.1	QP _	4
NET		49.0144	11.53	9.85	21.38	40	-18.62	QP	at .
S	2	665.8034	7.06	22.57	29.63	47	-17.37	QP	1 5
t		747.4825	7.16	24.99	32,15	47	-14.85	QP	t.
The state	1	836.2441	7.23	25.76	32.99	47	-14.01	QP	
Vat	1	945.4397	6.6	28.05	34.65	47	-12.35	QP	at V
S.C.	10	Remark: 1. Factor = Ant	enna Factor +	- Cable Loss –	Pre-amplifier.	A.	St St	Star 1	0 5
t	1	72.0 dBuV/m							t
NIT	1						Limit:	_	a st
2	2						Margin:	_ <	1 2
A.		4							at a
2	Je.								2
at		4							at .
5	2							6	5
A		32					2 3 ¥	5	at .
S	1						and man all the Rent of a state	3	5
t	1	a service work of a margin		the Barry	nd a market	window when a water			×
A.C.	10	See	M. Unknown about of	Werndunumm	and a strather that the standard				U A
7 -	5								1 5
A.	.0	4							5
2	2	-8						2	1
1		30.000 40	50 60 70 8		(MHz)	300 40	0 500 600 700	1000.000	to a
1	No	2 2	5	2 2	5 5	5	2 2	5 2	
at			nodes were ca ed in the repo		l operation modes	6. The wo	rst test mode for	test data	at .
S	2	2 2		5 5	5 5	S	5 5	5 5	5
A		x x	t t	A	t t t	· A	t t	t	at .
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Tat	1	at at	at at	T T J	- at at	- at	T at at	E T E	at T
A.	1		a a	A A	A A	1	A N	and a	0 2
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(3.2.7 TEST RESULTS(1000-6000MHz)

4	3.2.7 TEST RE	SULTS(1000-6000MHz)	at side side	sit sit sit	Uner .
4		Smart Humidity & Temperature Sensor	Model Name :	ShellyH&T	-
1	Temperature:	26°C	Relative Humidity:	52% 🔶 🔶 🗧	2
1	Pressure:	1010hPa + +	Test Mode:	Mode 1-	
X	Test Power:	DC 3V		St St St	24

ATEL

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Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
N N	1375	41.53	2.16	43.69	<u>70</u>	-26.31	peak
F V	1562.5	41.5	2.51	44.01	70	-25.99	peak
V	2100	39.63	6.24	45.87	70	-24.13	peak
- V	4237.5	37.33	11.37	48.7	74	25.3	peak
V	4937.5	35.7	13.29	48.99	74	-25.01	peak
- V	5600	35.46	13.33	48.79	74	-25.21	peak
H.	21275	43.68	1.95	45.63	705	-24.37	peak
H H	1750	40.66	3.47	44.13	70	-25.87	peak
H.	2162.5	38.96	5.71	44.67	705	-25.33	peak
H H	4175	37.3	11.16	48.46	74	-25.54	peak
t.	4987.5	34.98	13.23	48.21	74	-25.79	peak
E H	5500	36.27	13.11	49.38	74	-24.62	peak
Remark		2 2	2			2	2 .

Remark:

Absolute Level= Reading Level+ Factor, Margin= Absolute Level - Limit

test Note: The test modes were carried out for all operation modes. The worst test mode for test data Not the was showed in the report. whet with whet we - with with with with what what while while while while the with with with not what with what what

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A. C.	De.	-	5		5	5	SIG	Silt	SIL	Silt	SIL	SA	NUT	Sit	Sil
t	-	3.3.	1LIMITS	OF HAF	RMONIC	S CURF	RENT	X	t	t	t	t	A	t	-
S	10	N.	S	S	Sta	Table	1 _ imit	s for Cla	ss A equi	oment	S.C.	S	S	1	S.
t	1	A	t	×	A	t	A	A	×	A	t	t	A	t	
A.	1	4	2 all	N. S.	Harmo	onic orde	ar (h)	The second secon	Maxim	um pern	nissible	N. S.	A.	1 Stand	
T at	5	1	Tat	T .L	Thanno			5	harmo	nic curre	ent (A)	~	The	T at	~
AL IN	10	4	A.	AT .	A.	A.	Od	d harmor	nics	,Q	14	A.	A.	1	1º
7	6	L	2°	4	7	3	7	5	7	2.3	5	7	5	5	4
and the second	2	0	A.	A.	A.	5	A.	1	A.	1.14	A.	A.	1	and	1
2	2	-	2	5	2	4	2	2	2	0.77	2	2	2	2	2
A.		S.	15	J.	A.	9	J.	A.	J.C.	0.4	J.	1	A.	and the	Jak Star
2	2		2	2	2	21	2	2	2	0.33	2	2	2	2	2
A		5	A.	4	4	13	4	4	4	0.21	4	4	A.	1	1
2	2		2	2	<u> </u>	5≤n≤39	-	2	-	.15*(15/	n)	2	2	2	2
4		\$	1	A	A	A	Eve	n harmo	nics		1	- A	1	d'	-
2	J.		2	2	5	~	S.	2	2	1.08	5	S	2	2	2º
di la		St.	.0	A.	A.	4	- At	A A		0.43 0.30	*	- At	.4	d'	-
2	1 ve		5	With With the	- 8	$\frac{0}{< n < 40}$	-	1		0.30).23*(8/r		1	5	~	2
THE		\$.at	d.	4		4	4	Q.	Q.	Q.	- At	4	d'	
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in the	1º		S	5	2	2	S	2	2	5	5	2	N	2	S
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t	1	A	A	at	A	t	r dt	t	A	A	t	t	t	A	. ~
A.	1	45	2	2	2	5	- Ci	2	1	- C	2	1	2 C	20	1
T at	5	A	T	T 1	T at	T +	T at	T +	T	T at	T at	N2017	03.22.0322.V.	1.0	
1		1	N.	A.	at	1	A.	A.	t	A.	N.	A.	A.	1	100

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3.3.2 TEST PROCEDURE

- a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions.
- b. The classification of EUT is according to section 5 of EN 61000-3-2. The EUT is classified as follows:
- Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.
- Class B: Portable tools. Portable tools.; Arc welding equipment which is not professional equipment.
- Class C: Lighting equipment.

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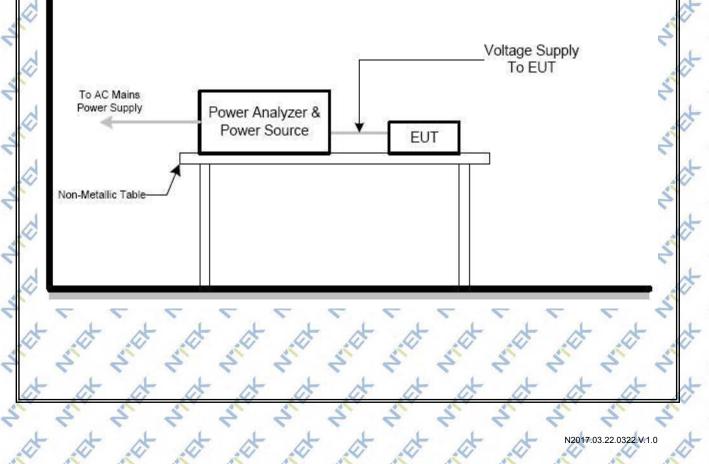
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- Class D: Equipment having a specified power less than or equal to 600W of the following types: Personal computers and personal computer monitors and television receivers.
- c. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

3.3.3 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.4 TEST SETUP



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3.3.5 TEST RESULTS

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SIL	le.	3.3.5 TEST RES	SULTS	Silt	SIL	siet siet	SIG	SIL	SIG	Silt	No.	*
.t	1	EUT:	Smart Humic Sensor	dity & Ter	mperatur	Model Nam	е:	ShellyH&	T	t	K	*
5	200	Temperature:	24 °C	5	5	Relative Hu	imidity:	52%	2	5	5	-
t		Pressure:	1012hPa	t	t	Test duratio	n:	150s	t	t	-	F
24	2	Classification:	Class D		and in	Test Power:		N/A	14	141	2	/
2	5	Test Mode:	N/A 🤝	2	7	2 2	2	2	2	2	2	. 5
Tel	100	at state at	A NA	NE	NE	with with	NE	N	N	NET	1. Sur	*
SIL	De l					ess than 75 W. N	o limits a	apply for	equipme	nt with ar	1	*.
at	1	active i	nput power up	p to and	including	75W.	t	t	at	at		L
A	A.	4 2 A	A AN	A.C.	A.	STO STO	N. C.	N.C.	A.	N. S.	1.	>
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NET	A.	at sat s	it wit	NET	NET	with with	NET	Net	Nict	will .	1º	*
NUT	A.	at sit s	at sidt	NET	NET	with with	A. A.	NET	NET	Niet.	Vin	*
the	Nu	at sit s	at such	NET	1 at	with with	T	NI	NET	N.C.	Vin	¥.
THE	Non	e to to to to	at sidt	N	NIET	with with	NICT	NET	NIE	11 at	1º	*
1 the ter	No	et with the the	et wet wet	NET	NUT	whet wet with	A.C.	the test the test	NIET	n the the the the	1.	*

Note: The active input power of the EUT is less than 75 W. No limits apply for equipment with an active input power up to and including 75W.

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3.4 VOLTAGE FLUCTUATION AND FLICKERS

3.4.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKERS

	N N	N 24 24 24	
1	Test items	Limits(EN61000-3-3)	- Descriptions
	Pst	\leq 1.0, T _p =10min	short-term flicker indicator
A.	Pu 🗧	≪0.65, T _p =2h ←	long-term flicker indicator
	det	≪3.3%	relative steady-state voltage change
Nu	d _{max}	≪4%(or 6% _{Note(1)} , 7% _{Note(2)})	maximum relative voltage change:
No		<a><a><a><a><a><a><a><a><a><a><a><a><a><	relative voltage change characteristic
	01 01	07 07 07 0	7 07 07 03 03 03

Note:

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1. 6 % for equipment which is:

a. switched manually, or

b. switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

2. 7 % for equipment which is

a. attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or b. switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

3.4.2 TEST PROCEDURE

a. Harmonic Current Test:

Test was performed according to the procedures specified in Sub-clause 6.2 of IEC/EN 61000-3-2 depend on which standard adopted for compliance measurement.

- b. Fluctuation and Flickers Test:
- Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 6.0/4.0 of IEC/EN 61000-3-3 depend on which standard adopted for compliance measurement.

c. All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

3.4.3 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

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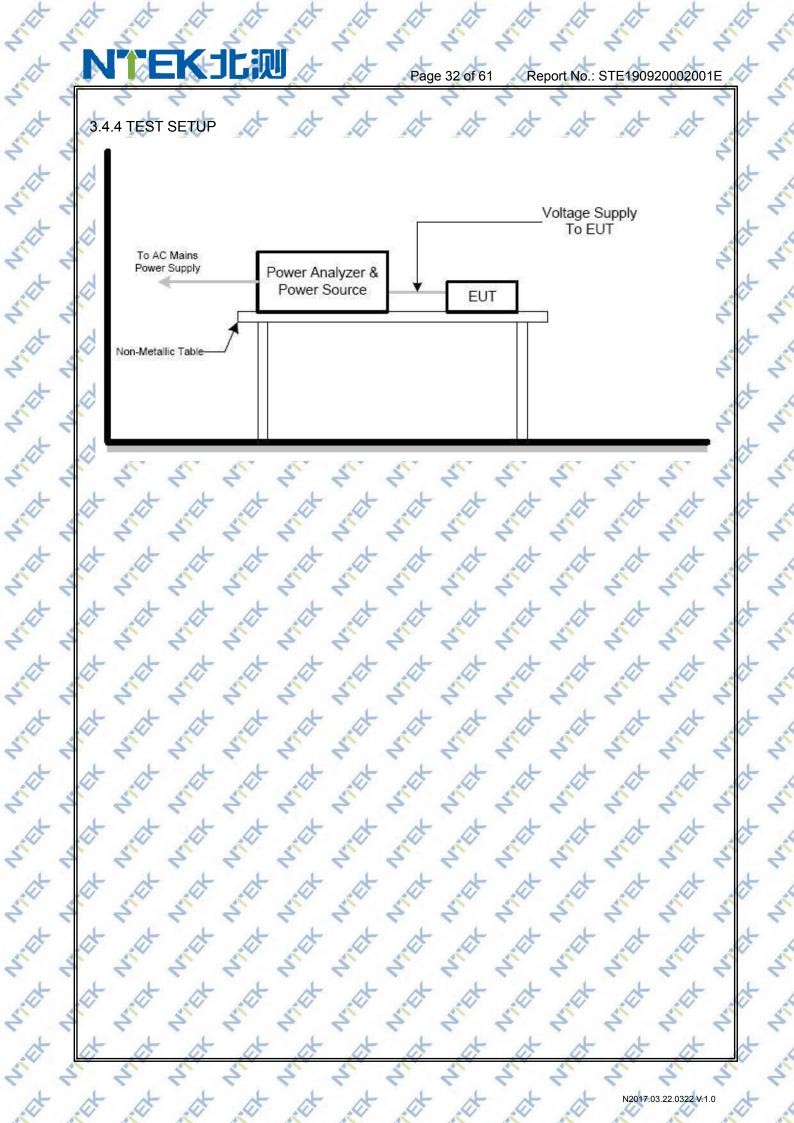
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14	3	.4.5 TEST RE	SULTS	d d		the the	1 th	t.	. t	2
1º +	2 E		Smart Humidity	& Temperature	Model Name :	ShellyH&	si.	the state	S .	12
A.	Te	emperature:	Sensor 24℃		Relative Humic	dity: 52%	S.	5 6		122
SIL		ressure: est Mode:	1010hPa	the state	Test Power:	DC 5V Fr			the state	A.S.
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EUT. Smart Humidity & Temperature Model Name : ShellyH&T Temperature: 24 °C Relative Humidity: 52% Pressue: 1010hPa Test Power. DC 5V From Adapter Test Mode: Mode 1 Image: ShellyH&T DC 5V From Adapter Test Mode: Mode 1 Image: ShellyH&T DC 5V From Adapter Test Mode: Mode 1 Image: ShellyH&T DC 5V From Adapter Test Mode: Mode 1 Image: ShellyH&T DC 5V From Adapter Patt 0.028 0.65 PASS dc [%] 0.000 3.30 PASS dmax [%] 0.164 4.00 PASS dmax [%] 0.000 0.50 PASS	* * * * * * *	the the the the the
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4. EMC IMMUNITY TEST

4.1 GENERAL PERFORMANCE CRITERIA

4.1.1 PERFORMANCE CRITERIA

According to EN 55035 standard, the general performance criteria as following:

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. Criterion A The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended. After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level **Criterion B** specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the Criterion C manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a

battery backup, shall not be lost.

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Accordin	g to EN 301 489-17 standard, the genera	performance criteria as following:
Criteria	During the test	After the test
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Shall operate as intended (see note 1). Shall be no loss of function.	Shall operate as intended. Shall be no degradation of performance
A A	Shall be no unintentional transmissions	(see note 3). Shall be no loss of function.
at a		Shall be no loss of stored data or user programmable functions
2	May show loss of function (one or	Functions shall be self-recoverable.
S 2	more).	Shall operate as intended after recovering.
B	May show degradation of performance	Shall be no degradation of performance
At a	(see note 2).	(see note 3).
4 . X	Shall be no unintentional	Shall be no loss of stored data or user
2	transmissions.	programmable functions.
A .		Functions shall be recoverable by the
S	5 5 5 5 5	operator. 🖉 💉 💉
C	May be loss of function (one or more)	Shall operate as intended after recovering.
4 <u>5</u>	Star Star Star Star	Shall be no degradation of performance
		(see note 3).

NOTE 1: Operate as intended during the test allows a level of degradation not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 2: Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance.

If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 3: No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

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PERFORMANCE FOR TT

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration, for which performance criteria C shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an acknowledgement (ACK) or not-acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

PERFORMANCE FOR TR

The performance criteria B shall apply, except for voltage dips of 100 ms and voltage interruptions of 5 000 ms duration for which performance criteria C shall apply. Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

PERFORMANCE FOR CT

The performance criteria A shall apply. Tests shall be repeated with the EUT in standby mode (if applicable) to ensure that unintentional transmission does not occur. In systems using acknowledgement signals, it is recognized that an Acknowledgement (ACK) or Not Acknowledgement (NACK) transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

PERFORMANCE FOR CR

The performance criteria A shall apply. Where the EUT is a transceiver, under no circumstances, shall the transmitter operate unintentionally during the test. In systems using acknowledgement signals, it is recognized that an ACK or NACK transmission may occur, and steps should be taken to ensure that any transmission resulting from the application of the test is correctly interpreted.

4.2 GENERAL PERFORMANCE CRITERIA TEST SETUP

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The EUT tested system was configured as the statements of 2.2 Unless otherwise a special operating condition is specified in the follows during the testing. with with with with at what what what we

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4.3 ESD TESTING

4.3.1 TEST SPECIFICATION

Q	Pe Pe Pe I	
	Basic Standard:	IEC/EN 61000-4-2
2	Discharge Impedance:	330 ohm / 150 pF
	Required Performance	BY I I I I I I
2	Discharge Voltage:	Air Discharge: 2kV/4kV/8kV
		Contact Discharge: 2kV/4kV (Direct/Indirect)
	Polarity:	Positive & Negative
4	Number of Discharge:	Air Discharge: min. 20 times at each test point
		Contact Discharge: min. 200 times in total
4	Discharge Mode:	A/C Discharge
	Discharge Period:	1 second minimum

4.3.2 TEST PROCEDURE

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

- a. Indirect application of the discharge:
- Vertical Coupling Plane (VCP):

At least 10 single discharges (in the most sensitive polarity) shall be applied to the centre of one vertical edge of the coupling plane. The coupling plane, of dimensions $0.5 \text{ m} \times 0.5 \text{ m}$, is placed parallel to, and positioned at a distance of 0.1 m from, the EUT. Discharges shall be applied to the coupling plane, with sufficient different positions such that

the four faces of the EUT are completely illuminated. One VCP position is considered to illuminate 0,5 m \times 0,5 m area of the EUT surface.

Horizontal Coupling Plane (HCP):

Discharge to the HCP shall be made horizontally to the edge of the HCP.

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the centre point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

The discharge electrode shall be in contact with the edge of the HCP before the discharge switch is operated

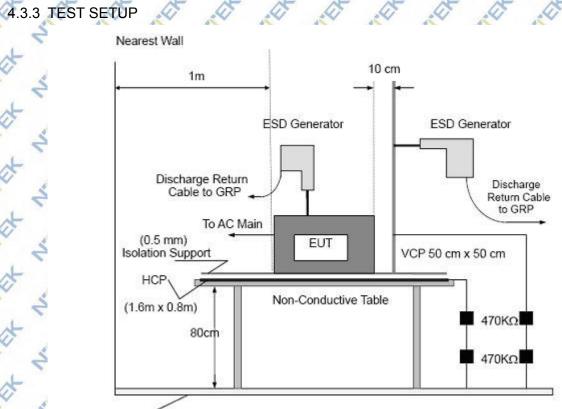
Direct application of discharges to the EUT

The test shall be performed with single discharges. On each pre-selected point at least 10 single discharges (in the most sensitive polarity) shall be applied.

For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.

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Ground Reference Plane(GRP) Bonded to PE

Note: 🐼

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

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4.3.4 TEST RESULTS

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4.4 RS TESTING

4.4.1 TEST SPECIFICATION

4	5 5 5 5	
	Basic Standard:	IEC/EN 61000-4-3
2	Required Performance	Addadad
-	Frequency Range:	According to EN 301 489-1:
/		80 MHz - 6000 MHz ;
5		According to EN 55035:
		80 MHz to 1000 MHz
9		1800 MHz 🖉 📈 🦯 📈
		2600 MHz
4		3500 MHz 🖉 🦽 🦽
1		5000 MHz
4	Field Strength:	3 V/m at at at at at
	Modulation:	1kHz Sine Wave, 80%, AM Modulation
/	Frequency Step:	1 % of fundamental
~	Polarity of Antenna:	Horizontal and Vertical
	Test Distance:	3 m L at at at at at
Ş	Antenna Height:	1.5 m 2 2 2 2
	Dwell Time:	at least 3 seconds
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4.4.2 TEST PROCEDURE

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

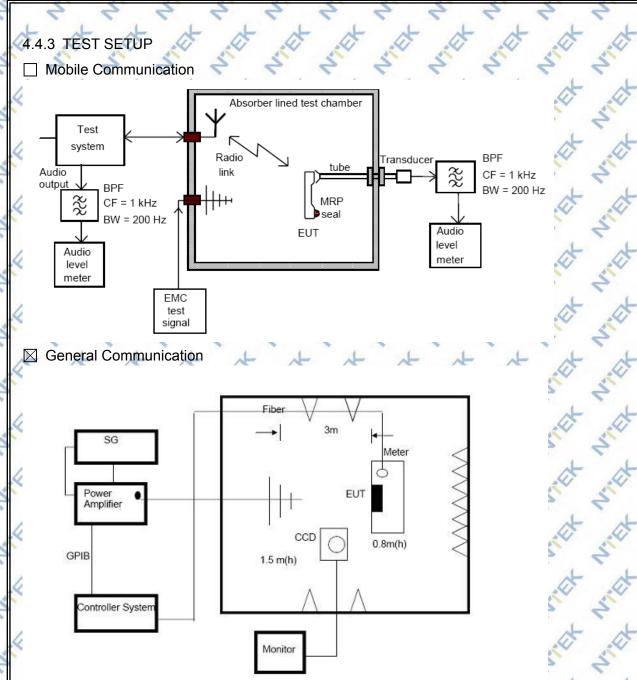
The testing distance from antenna to the EUT was 3 meters.

The other condition as following manner:

- a. The field strength level was 3V/m.
- b. The frequency range is swept from 80 MHz to 6000 MHz, 1800 MHz, 2600 MHz, 3500 MHz, and 5000MHz with the signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5 x 10⁻³ decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- c. Sweep Frequency 900 MHz, with the Duty Cycle:1/8 and Modulation: Pulse 217 Hz(if applicable)
- d. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- e. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.
 - f. For the actual test configuration, please refer to the related Item -EUT Test Photos.

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Note:

For the actual test configuration, please refer to the related Item –EUT Test Photos. TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

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4.4.4 TEST RESULTS

6 6		7 7	7 7 7 7
EUT:	Smart Humidity & Temperature Sensor	Model Name :	ShellyH&T
Temperature:	24°C	Relative Humidity:	53%
Pressure:	1010hPa	Test Power:	DC 3V
Test Mode:	Mode 1/2		

TEST RESULT

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	Mode 2 🔶	2	2 2	2	2 2	2 2	5	2
/	Frequency	RF Field	R.F.	Azimuth	Observation	Perform.	Results	
1	Range (MHz)	Position	Field Strength	Azimum	Observation	Criteria	Results	1
	2 4	2	2 4	Front	2 2	2 4	. ~ .	5
4	80~1000	5 4	3 V/m (rms)	Rear	15 15	.0	5 5	
	1000-6000	H/V	AM Modulated	Left	CT,CR	A A	PS	N
4	t at	at a	1000Hz, 80%	Right	4. 4	the state	at at	

Note:

1. The exclusion band has not been tested in 80MHz~6GHz.

The exclusion band for immunity testing of equipment operating in the 2,4 GHz band shall be: • lower limit of exclusion band = lowest allocated band edge frequency -120 MHz, i.e. 2 280 MHz; • upper limit of exclusion band = highest allocated band edge frequency +120 MHz, i.e. 2 603,5MHz.

2. "A" stand for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

Mode1	at at	at at	the the	at	at at
Frequency Range	RF Field	R.F.	Azimuth	Perform.	Results
(MHz)	Position	Field Strength	Azimum	Criteria	Tresuits
80~1000	\$.S	AT AT	Front	AT A	F A
~1000~6000	~		1 1	5. 4.	2
1800	d. d	3 V/m (rms)	Rear	at a	t at
2600	Н/У	AM Modulated	Left	STA ST	S.
3500	at at	1000Hz, 80%	at at	at	t at
5000	a la	La La	Right	R R	

Note: "A" stand for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions. There was not any unintentional transmission in standby mode.

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4.5 EFT/BURST TESTING

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4.5.1 TEST SPECIFICATION

4	4.5.1 TEST SPECIFICATIO	
2	Basic Standard:	IEC/EN 61000-4-4
9	Required Performance	Bee to to to to
	Test Voltage:	Power Line: 1 kV
4		DC/Signal/ wired network Line: 0.5 KV
	Polarity:	Positive & Negative
4	Impulse Frequency:	For xDSL wired network ports: 100 kHz
		For DC/AC ports: 5 kHz
2	Impulse Wave shape :	5/50 ns 1 1 1
	Burst Duration:	15 ms 5 5 5 5
/	Burst Period:	300 ms + + + +
1	Test Duration:	Not less than 1 min.

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4.5.2 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground 2 plane measured 1m*1m min. and 0.65mm thick min.

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- The other condition as following manner:
- The length of power cord between the coupling device and the EUT should not exceed 1 a. meter.
- b. Both positive and negative polarity discharges were applied.

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The duration time of each test sequential was 1 minute C.

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d. For the actual test configuration, please refer to the related Item -EUT Test Photos.

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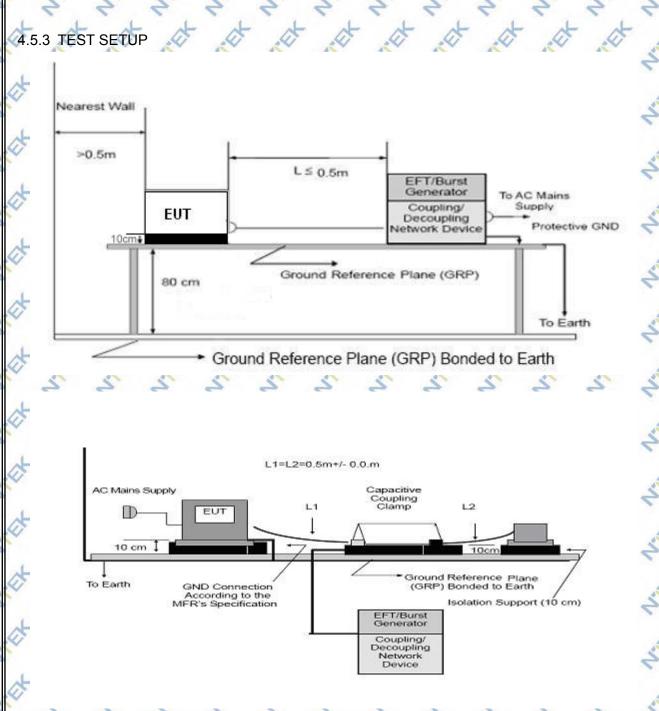
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Note:

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TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure. FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-4 and its cables were isolated from the Ground Reference Plane by an insulating support that is 0.1-meter thick. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system.

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4.5.4 TEST RESULTS

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Not .	100	4.5.4 TEST RE	SULTS	sit sit.	sit sit si	t sit sit sit s
at			Smart Humidi Sensor	ty & Temperature	Model Name :	ShellyH&T
5 .	-	Temperature:	24℃	5 6 .	Relative Humidity:	52%
at		Pressure:	1010hPa	A A	Test Power:	DC 5V from Adapter AC 230V/50Hz
5 .	-	Test Mode:	Mode 1/2	4. 4. 4	5 4 4	2 2 4 4
in the	100	TEST RESULT Mode 2	the state	Nit Nit .	sint sint si	at side side side si
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TEST RESULT Mode 2

5	5	lest	Mode: Mode	1/2	2	2	2	4 4	2	2 4	5	1	5
NE	Ne	1 4	TRESULT	AND	ANOT .	A.	NICT	with with	NI	sit sit		to .	1
A.		5			Test lev	/el (kV)					-	5	-
2	2		Coupling Line	0.5	1	2	4	WIFI	Criteri	Result	2		2
4		5		+ -	+ -	+ -	+ -	Observation	n on			5	10
2	2			РР	РР		× .		N 1	Complies	2		2
A.		4	N	PP	PP	A	1	AT A	E AT	Complies		at a	-
2	2		PE	2	2	2	2	2 2	2	6 6	2		2
A.	1	5	AC L+N	PP	P	A. C.	1	A A	A.	Complies		F	5
2	2		L+PE	2	2	2	2	TT,TR	₹ B	2 2	2	.L	2
A.	1	A.	N+PE	A	A.	A	A.	A D	AT .	AT A		C.	2
11	2	1 ·	L+N+PE	2	2	2	2	2 2		4 4	- 7	L	2
A.	2	4	DC Line	A.	1	A	A.	A D	10		12	Cr.	1º
1 t	5	J.	Signal Line	r +	r d	T at	F at	2 2	- +	r r 4	- 5	J-	5
S.C.	10	4	Star Star	A.	S.C.	1 an	S.C.	St St	1 All	Star Sta	3	Ũ	1º
t	1	t	t t	t	t	t	t	A A	- +	k k		t	
S	Pr	4	St St	S	S.C.	STAT	STU	5 50	S	5 5	Ś	¢.	S
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S	Si		St St	Si	S'V	SIV	SIL	St St	S	St St	5	~	Si
X		A	A A	A	A	A	A	A A	- 4	AN	-	t	-
25 M	No	× .	St St	25°	Nill I	S.	Si	fill fill	Si	and an	S	v .	2
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		+	-	+	-	+	-	+	-		
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121	2 N 2	Р	P	P	Р	2	2		2	2 4	Complies
5 5	PE		15		5	1	-	5	1	A.	A A
AC line	CL+NC	Р	P	R	Р	2	2		2	2 4	Complies
5 5	L+PE	5	.0		5	1		5	0	B	J. J.
2	<n+pe<< td=""><td>4</td><td>5</td><td>2</td><td></td><td>2</td><td>2</td><td></td><td>2</td><td>2 4</td><td>2</td></n+pe<<>	4	5	2		2	2		2	2 4	2
5 5	L+N+PE	5	4		5	4		5	5	.at	4 4
	C Line		5	2		2	2	4	2	2 4	5
Sigr	al Line	at l	4		5	A		\$	A	A	\$ \$
	5 5	-	5	2		2	2		~	~ ~	5 2
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	ere was not a	ny uni	ntenti	onal t	ransn	nission	in st	andb	y mode	2 4	5 2
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 aumtentional transmission in standby mode
 b) There was not any unintentional transmission in standby mode. 1)There was not any unintentional transmission in standby mode 2) In the table: 'P' represents 'PASS': 'E' represent interview which would would

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4.6 SURGE TESTING

4.6.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-5
Required Performance	BAAAAAAA
Wave-Shape:	Combination Wave
	1.2/50 us Open Circuit Voltage
	8 /20 us Short Circuit Current
Test Voltage:	Power Line:0.5 kV, 1 kV, 2 kV
Surge Input / Output:	L-N, L-PE, N-PE 🔶 🧉 🧉
Generator Source:	2 ohm between networks
Impedance:	12 ohm between network and ground
Polarity:	Positive/Negative
Phase Angle:	0 /90/180/270
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

4.6.2 TEST PROCEDURE

a. For EUT power supply:

- The surge is to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks shall be 2meters in length (or shorter).
- b. For test applied to unshielded unsymmetrically operated interconnection lines of EUT: The surge is applied to the lines via the capacitive coupling. The coupling /decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).
- c. For test applied to unshielded symmetrically operated interconnection /telecommunication lines of EUT:
 - The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).
- d. For the actual test configuration, please refer to the related Item -EUT Test Photos.

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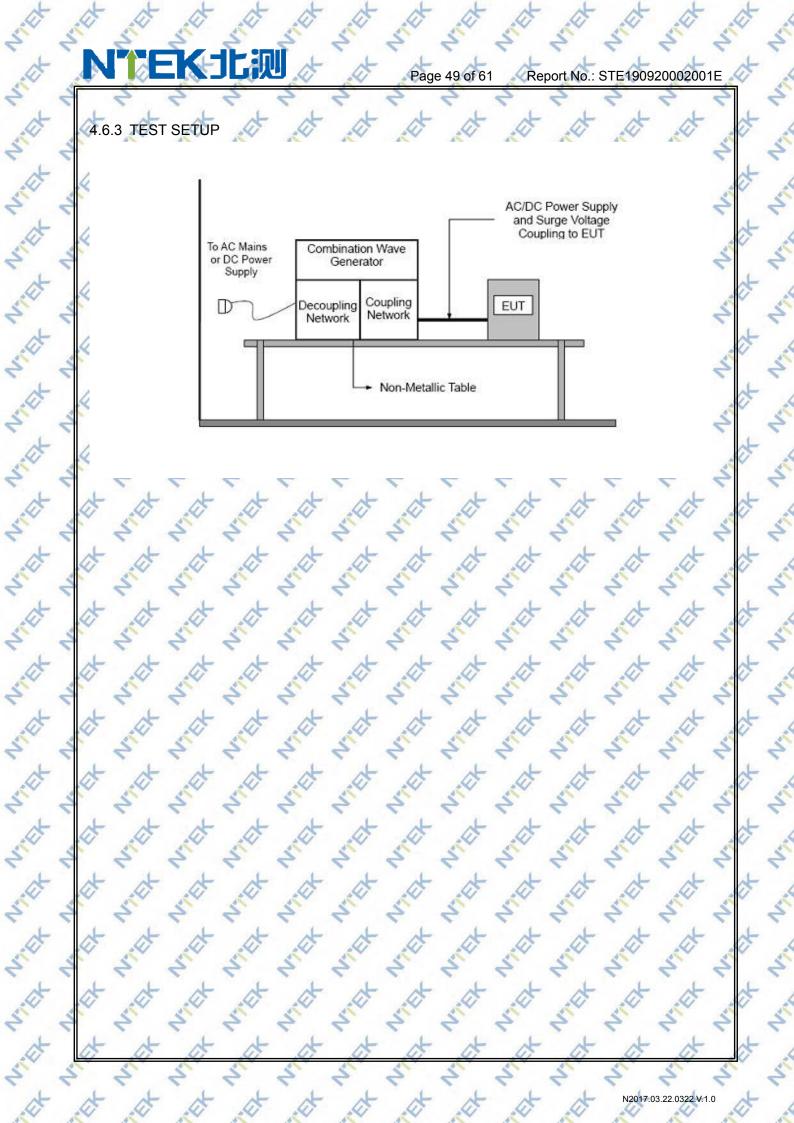
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4.6.4 TEST RESULTS

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T	lo.	4.6.4 TEST RE	SULTS	ATT AT	AND R	AT 20	The state	Not I	Not .	Us.
at		EUT:	Smart Hum Sensor	idity & Temperat	ure Model	Name :	ShellyH&T	t	at	10
~	2	Temperature:	24 °C	2 2	< Relativ	e Humidity:	52%	2	2 4	~
at		Pressure:	1010hPa		Test Po		DC 5V fron 230V/50Hz		r AC	1
2	2	Test Mode:	Mode 1/2	4. 4.	2 4	2. 4.	2	2	2 4	2
NET	100	TEST RESULT	at sid	sit sit	and a	set sid	NET	1 at	sit.	Vin
A		Mode 2	de de	i de d	- L	1	-	1	t	2

TEST RESULT Mode 2

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The state	No	TEST	RESI	NA.	NIC	An	A A		4	L. V	S.C.	1.	at -	NIC	NIE	NUT	NUT	1.	4.
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12	6	15	Co	oupling L	ine	0.5	kV	1k	٢V	2k∖	/ 4	kV	Obs	ervati	Criterion	Resu	ilt 🖵	2	at '
S.C.	1	4				+	-	+	-	+	- +	-	C	n			2		Ū.
t	1	x	X	X	0°	Ρ	P	Ρ	Ρ	T	A	1	×	h	4	X	1×		t
-STV	1m	~ ~	S.	L-N	90°	P	P	P	P			V		- Silv	Sil	Compl	lies	2	· .
t		d'	d.	t	180° 270°	P P	P	P P	P	-	d.		dt.	.0	- 4	t	At		t
5	Sol	4		2	2	5		5	24.	· ·	2	Y		2	2	2	2	2	
A		at .	AC	L-PE			4	Y	A	L.	1		dr.	TR	B	at	A	-	5
2	2.		line	2-FE	2	1.		V	1	1	2	1.		5	2	2	2	2	1
A.	1	4	A.	J.C.	J.		0		Q	5	.0		A.	J.C.	AL AND	J.	- Alt	12	5
2×	2	X	×	4	24	5	2	V	1. <	-	1	5	t	24	- 7	T +	24	2	t
S	100	4	Nº N	N-PE	S	1.	4		S		S	1.	N.	S	SIL	SUT	S	13	Ű.
t	1	d.	A	int	A	-	N	-	1	F	X		A	N	· t	int	N		t
2º	1m	1.1	-	DC Line	-	0.0	~		N.	10	Ś	1.	>	S	S.	S	5	2	× .
at		at .	A-S	ignal Li	ne		2	-	\$	-	de la		t	.0		t	t		t
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the t	10	4	AT .	S.C.	SU	1	j.Co		,Q		A.		AT .	S	SU	SUT	SU	134	0
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2				Test level									2			
	4	Coupling Line			0.5 kV ⁻			1 kV 2 kV		٨٧	4 kV		Criterion	Result	1	5
2					+	-	+	-	+	-	+	-	-		2	
	0	t	.tt	0°	R	P	P	P	e	4	1	t to	t.	\$. \$	4	t
1.		5	ČL-N	90°	Ρ	P	Ρ	SP	S.		5	4	5 5	Complies	2	
		- 4	at	180°	R	Ρ	P	P	-	A		t	t	at at		t
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	0	- of	at	A	A		t	2		at		t-	at	at at		t
De.	~	AC line	L-PE			S			2	~	N	× .	5 в 🟅	× 5	5	~
	0	- A	A	at	t	6	×	A	-	4	1	t	at	at at		t
lo.	~	S	S.	1 2		3		S.	2		2		5 3	2	S	~
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P	Y	S	DC Line	5 3	2	13		S	Pe	Y I	5	4	5 2	S	S	4
-	~		ignal Line	t	×		t	X		x		t	×	t t		×
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4.7.1 TEST SPECIFICATION

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	4.7 INJECTION CURRENT	TESTING & & & &
	5 5 5	2 2 2 2 2 2 2
2	4.7.1 TEST SPECIFICATIO	N & & & & & & & & & & & & & & & & & & &
		5 5 5 5 5 5 5 5 5 5 S
1 9	Basic Standard:	IEC/EN 61000-4-6
4	Required Performance	AND AN AN AN AN
	Frequency Range:	0.15 MHz - 80 MHz
4	Field Strength:	3 Vr.m.s.
	Modulation:	1kHz Sine Wave, 80%, AM Modulation
4	Frequency Step:	1 % of fundamental
	Dwell Time:	at least 3 seconds

4.7.2 TEST PROCEDURE

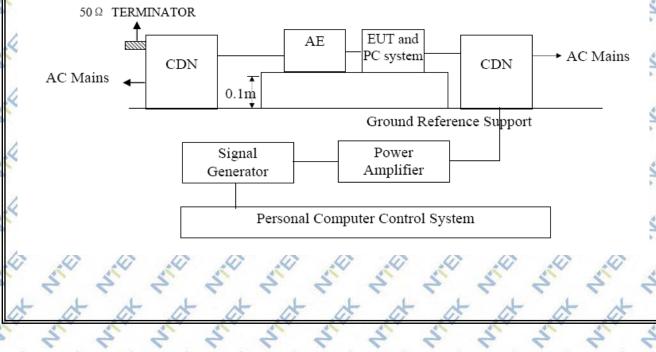
The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.

The other condition as following manner:

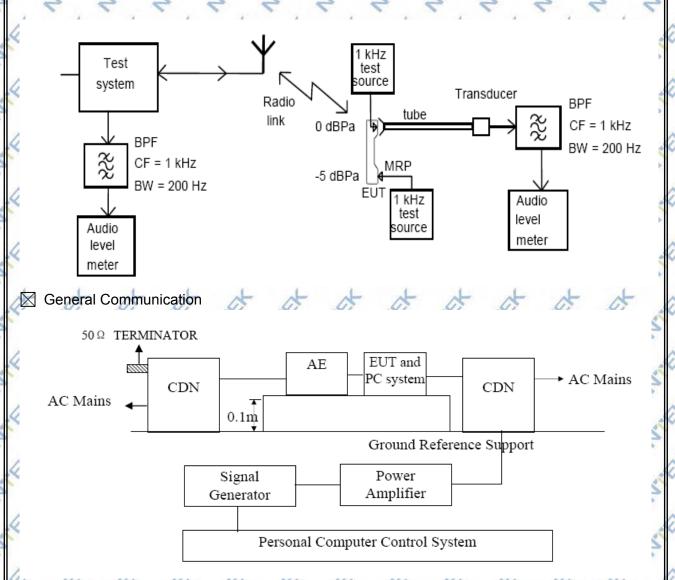
- The field strength level was 3V. a.
- b. The frequency range is swept from 150 KHz to 80 MHz, with the signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5 x 10⁻³ decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental. c. The dwell time at each frequency shall be not less than the time necessary for the
 - EUT to be able to respond.
- d. For the actual test configuration, please refer to the related Item -EUT Test Photos.

4.7.3 TEST SETUP

Mobile Communication



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For the actual test configuration, please refer to the related Item -EUT Test Photos.

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NOTE:

FLOOR-STANDING EQUIPMENT

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The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane. Will Will I

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4.7.4 TEST RESULTS

	2 2	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	2
4	ELLI.	Smart Humidity & Temperature Model Name : ShellyH&T	t .
	Temperature:	24°C C C Relative Humidity: 52%	2
1	Pressure:	1010hPa Test Power: DC 5V from Adapter AC 230V/50Hz	な
	Test Mode:	Mode 1/2	2

Mode 2

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Mode z	1 · ·	1 1 i		· · · ·		-
Test Ports (Mode)	Freq. Range (MHz)	Field Strength	Observation	Perform. Criteria	Results	
Input / Output AC. Power Port	0.1580	3V(rms)	CT, CR	AAA	1º4	N
Input / Output DC. Power Port	0.15 - 80	AM Modulated 1000Hz, 80%	N/A	N/A	N/A	11º
Signal Line	0.15 80	A A A	N/A	N/A	N/A	10

Note: "A" stand for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

Mode 1

2

Test Ports	Freq. Range	Field Strength	Perform.	Results
(Mode)	(MHz)		Criteria	Results
Input / Output	0.15 80			
AC. Power Port	0.15 00	3V(rms)	2 2	2 2
Input / Output	0.15 - 80	AM Modulated	N/A	N/A
DC. Power Port	0.13 00	1000Hz, 80%	S NAS	S N/AS
Signal Line	0.15 80	t of of	N/A	N/A

Note: "A" stand for, during test, operate as intended no loss of function, no degradation of performance, no unintentional transmissions and after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

5 5 5 5 5 5

Note:

There was not any unintentional transmission in standby mode
 In the table: 'P' represents 'PASS'; 'F' represents 'FAIL'.

3) There was not any unintentional transmission in standby mode.

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4.8 VOLTAGE INTERRUPTION/DIPS TESTING

4.8.1 TEST SPECIFICATION

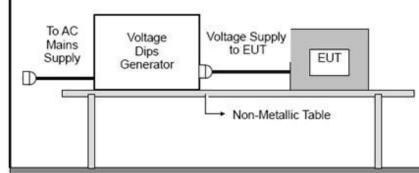
4.8.1 TEST SPECIFICATIO	
Basic Standard:	IEC/EN 61000-4-11
Required Performance	100% reduction, 0.5 Cycle
	100% reduction, 1.0 Cycle
	30% reduction, 25 Cycles
A.	30% reduction, 0.5 Cycle 🔨 💉 🤞
Voltage Interruptions:	100% reduction, 250 Cycles
Test Duration Time:	Minimum three test events in sequence
Interval between Event:	Minimum ten seconds
Phase Angle:	0°/45°/90°/135°/180°/225°/270°/315°/360°
Test Cycle:	3 times

4.8.2 TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

4.8.3 TEST SETUP

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For the actual test configuration, please refer to the related Item -EUT Test Photos

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Report No.: STE190920002001E Page 56 of 61

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141	4.8.4 TEST RE	SULTS of side and a	at stat sta	t stat stat stat st
~		Smart Humidity & Temperature Sensor	Model Name :	ShellyH&T
	Temperature:	24°C	Relative Humidity:	52%
	Pressure:	1010hPa	Test Power:	DC 5V from Adapter AC 230V/50Hz
	Test Mode:	Mode 1/2	2 2	1 1 1 4

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TEST RESULT Μ

Mode 2		in the		the state		.L
5	Voltage	Duration	WIFI	Perform	Results	45
2	Reduction	(ms)	Observation	Criteria	Results	
t "	Voltage dip: 0%	10	TT, TR	A B A	t.	at
2	Voltage dip: 0%	20	TT, TR	B	2 P Z	
t a	Voltage dip: 70%	10	TT, TR	4 c d	æ.	at.
4	Voltage dip: 70%	500	TT, TR	C	P P	
to all	Voltage interruptions: 0%	5000	́ТТ, Т В	¢ c ¢	e	4

Mode 1

NIO	de 1x A A	05 05	15 15 IS	
	Voltage	Duration	Perform	Results
	Reduction	(ms)	Criteria	4
45	Voltage dip: 0%	10	W LOB LW	PAU AU
A	Voltage dip: 0%	20	at B at	Pat
4	Voltage dip: 70%	10 10		PAR SU
A	Voltage dip: 70%	500	tet	A P A A
A.	Voltage interruptions: 0%	5000	SC S	S B S
at	at at at at	at at	at at at	at at at
Not	te? ? ? ?	5 5 4	. 4. 4.	2 2 2 4
x	1) There was not any uninten	tional transmission i	n standby mode	x x x
×	2) In the table: 'P' represents			N N N
	3) There was not any uninten		and the second s	2 7 7 7
5	15 15 15 15	AT AT		A A A
	5. 5. 5. 5.	2 2 4	5 4	2 2 2 4
at .	点 点 点 点	A A	4. 4. 4.	点 点 点
	2 2 2 2	5 5 5	2 2	5 5 5 6
A	* * * *	at at	at at at	at at at
	5 5 5 5	5 5 5	5 5	5 5 5 6
A	at at at at	at at	at at at	at at at
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Page 57 of 61 Report No.: STE190920002001E

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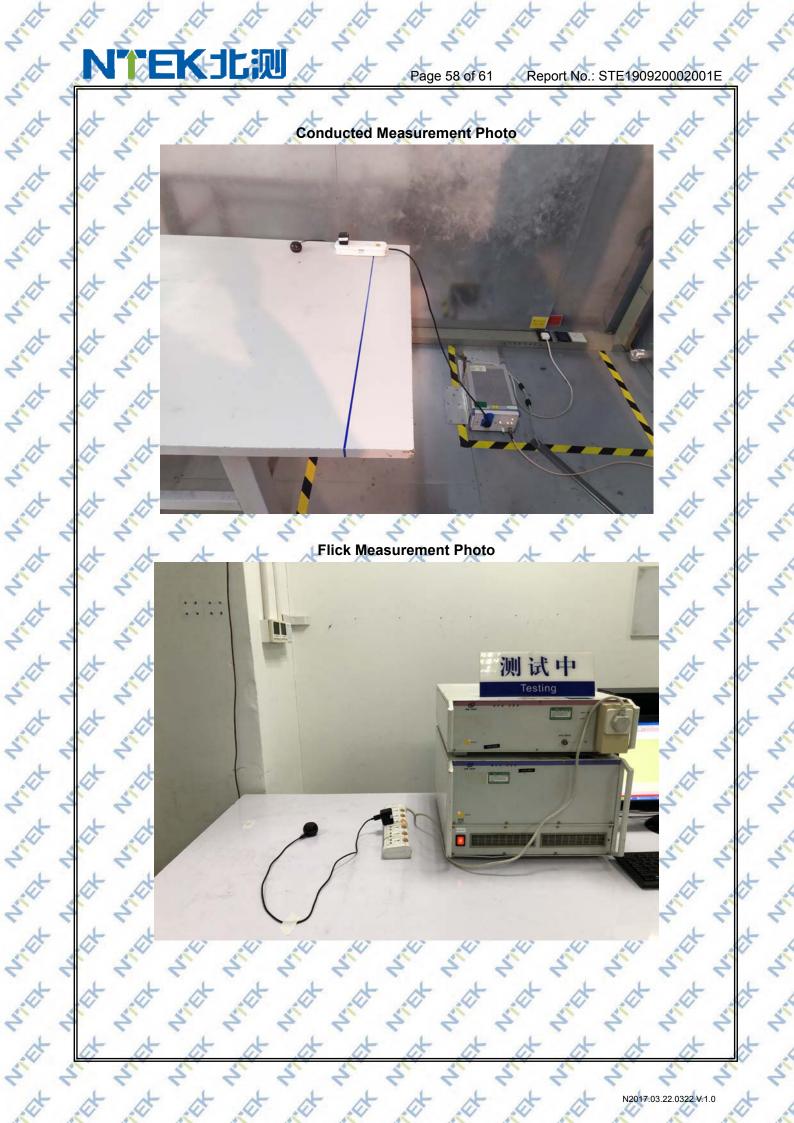
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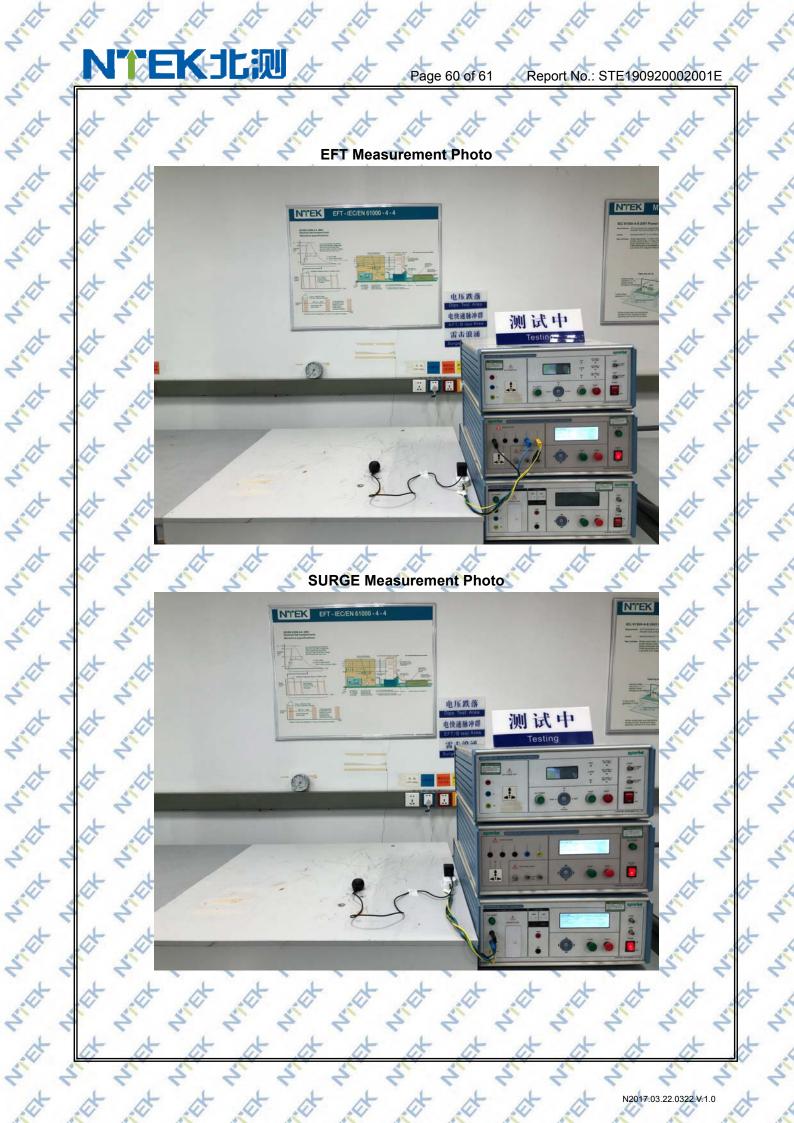
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EN62311 TEST REPORT

Product : SMART HUMIDITY & TEMPERATURE SENSOR Trade Mark : Model Name : ShellyH&T Family Model : SHHT-v1 Report No. : STR190920002001E

S.C.

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Prepared for

Allterco Robotics

1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd. 1/F, Building E, Fenda Science Park, Sanwei Community,Xixiang Street Bao'an District, Shenzhen 518126 P.R. China Tel.: +86-755-6115 6588 Fax.: +86-755-6115 6599 Website:http://www.ntek.org.cn

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TEST RESULT CERTIFICATION

Applicant's name	- Allterco Robotics
Address	1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria
Manufacturer's Name	Allterco Robotics 🔨 💉 🦿 🦿
Address	1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria
Product description	5 5 5 5 5 5 5 5 F
Product name	. SMART HUMIDITY & TEMPERATURE SENSOR
Trademark	Shelly " " " " "
Model Name	ShellyH&T to the tot tot
Family Model	SHHT-v12 2 2 2 2 2 2 2
Standards	- EN 62311:2008
* * *	e has been tested by Shenzhen NTEK, and the test results show that

requirements. And it is applicable only to the tested sample identified in the report. This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK,

this document may be altered or revised by Shenzhen NTEK, personnel only, and shall be noted in the revision of the document.

Date of Test

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Date (s) of performance of tests 20 Dec. 2019 ~ 8 April. 2020 8 April. 2020 Date of Issue ...

Pass Test Result.

Testing Engineer

18 Nen lin (Allen Liu)

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Technical Manager

hen | (Jason Cher)

Authorized Signatory

(Sam Chen)

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- 2 .EN 62311 REQUIREMENT
 - 2.1 GENERAL INFORMATION

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1. General Information 1.1 General Description Of EUT

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2	1.0	General Information General Description (
2	~	8 8 8	
-	x	Equipment	SMART HUMIDITY & TEMPERATURE SENSOR
2	No.	Trade Mark	Shelly & S S S S
-	A	Model Name.	ShellyH&T the state of the
3		Family Model	SHHT-v1
. `	4	Model Difference	N/A The EUT is SMART HUMIDITY & TEMPERATURE SENSOR
14	4		Operation Frequency: 802.11b/g/n(20MHz): 2412~2472MHz
-	A		Antenna PCB Antenna
3		Product Description	Antenno
- 1	1		Gain(Peak) 1dBi
3	1		Modulation IEEE 802.11b : DSSS (CCK,DQPSK, DBPSK)
2			Type: IEEE 802.11g/n: OFDM(64QAM, 16QAM, QPSK, BPSK)
	5	Channel List	Refer to below
2		Power Rating	DC 3V From Battery or DC 5V From Adapter
-	\$	Adapter	N/A A A A A A A A
2		Battery	DC3V C C C C C C C C C C C C C C C C C C
-	5	Hardware Version	ShellyH&T_v0.1.6
2		Software Version	
	\$	to to de	
2		5 5 5	7. 7. 7. 7. 7. 7. 7. 4. 4. 4
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1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. NET NIEt 13-Et NUT N.C.

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2.EN 62311 REQUIREMENT

2.1 GENERAL INFORMATION

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The essential requirements of Directive 99/5/ec in the article 3.1(a) and the limits must be taken from Council Recommendation 99/519/EC for General Population or from the ICNIRP Guidelines for Occupational Exposure, EN 62311:2008 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz) 2

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Report No.: STR190920002001E

Basic Restrictions Reference levels

Council Recommendation 99/519/EC Annex II

Basic restrictions for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Page 7 of 10

r r	Frequency range	Magnetic flux density (mT)	density	average	(head and trunk)	Localised SAR (limbs) (W/kg)	Power density, S (W/m2)	A. A
2	OHz 🖉	40	1	Q - Q	A- A	A A	0 - 0	
	>0-1Hz	2 .	8	2 2	2 - 2	2 - 2	4	4
F	1-4Hz 🙏	X	8/f	* *		· ·	* - *	
	4-1000Hz	1	2		N- N	N.		
	1000Hz-100kHz	r	f/500	7.7	4 4	1	5	1
5	100kHz-10MHz	5	f/500	0.08	2	4	5 - 5	
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-	10-300GHz	t	t	t t	- + +	t	10	ľ
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Note:

(1)f is the frequency in Hz.

(2)The basic restriction on the current density is intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body and includes a safety factor. The basic restrictions for ELF fields are based on established adverse effects on the central nervous system. Such acute effects are essentially instantaneous and there is no scientific justification to modify the basic restrictions for exposure of short duration. However, since the basic restriction refers to adverse effects on the central nervous system, this basic restriction may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.

(3)Because of electrical inhomogeneity of the body, current densities should be averaged over a cross section of 1cm2 perpendicular to the current direction.

(4)For frequencies up to 100 kHz, peak current density values can be obtained by multiplying the rms value by $\sqrt{2}(=1.414)$. For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp)

(5)For frequencies up to 100kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.

(6)All SAR values are to be averaged over any six-minute period.

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(7)Localised SAR averaging mass is any 10g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure. These 10g of tissue are intended to be a mass of contiguous tissue with nearly homogeneous electrical properties. In specifying a contiguous mass of tissue, it is recognised that this concept can be used in computational dosimetry but may present difficulties for direct physical measurements. A simple geometry such as cubic tissue mass can be used provided that the calculated dosimetric

quantities have conservation values relative to the exposure guidelines.

(8)For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp). Additionally, for pulsed exposures, in the frequency range 0,3 to 10GHz and for localised exposure of the head, in order to limit and avoid auditory effects caused by thermoelastic expansion, an additional basic restriction is recommended. This is that SA should not exceed 2mJ kg-1 averaged over 10g of tissue.

Reference Levels

Council Recommendation 99/519/EC Annex III Reference levels for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

	Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m2)
	0-1Hz	5 5 2	3,2×10⁴	4 ×10 ⁴	5 5
	1-8Hz	1000	3,2×10 ⁴ /f ²	$4 \times 10^{4}/f^{2}$	1 L
5	8-25Hz	1000	4000/f	5000/f	
0.	025Hz-0,8kHz	250/f	4/f 2	5/f6,25	2 - 2
x	0,8-3kHz	250/f	* 5+	6,25	チャチ
C .	3-150kHz	87	5	6,25	
1	0,15-1MHz	87	0.73/f	0,92/f	R . R
SF.	1-10MHz	87/f ^{1/2}	0.73/f	0,92/f	
	10-400MHz	28	0.073	0,092	52 5
4	100-2000MHz	1,375 f ^{1/2}	0,0037 f ^{1/2}	0,0046f ^{1/2}	f/200
C.	2-300GHz	61	0,16	0,20	40

Note:

(1)As indicated in the frequency range column.

(2)For frequencies between 100kHz and 10GHz, Seq, E2, H2 and B2 are to be averaged over any six-minute period.

(3)For frequencies exceeding 10GHz, Seq, E2, H2 and B2 are to be averaged over any 68/.1.05-minute period (.in GHz).

(4)No E-field value is provided for frequencies <1Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 20kV/m. Spark discharges causing stress or annoyance should be avoided.

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2.3 Limit calculations for radiated electric field strength measurement

For the calculation of the limits, the near field proportionality factor 1/d₃ has been used. For ten times the distance, the level is decreased by the cubical, giving 60 dB.

30MHz-400MHz 28V/m(149dBuV/m) 89dBuV/m 69 dE	AL A
	Buv/m
	BuV/m
400MHz-2GHz (149dBuV/m-155dBuV/m) 95dBuV/m 75dB	BuV/m
2GHz-300GHz 61V/m(155dBuV/m) 95dBuV/m 75dB	BuV/m

To deal with reflexions, other effects due to the measurement in 3 m distance and to deal with a measurement uncertainty of at least 5 dB, an additional span of 20 dB has been added.

For additional three times the distance, the level is decreased by additional 30 dB.

ĉ	Frequency range	Limit V/m @0.1m	Limit V/m @3m	Limit (add.span)
	30MHz-400MHz	28V/m(149dBuV/m)	59dBuV/m	39 dBuV/m
the state		27.5V/m-61.5V/m	59dBuV/m	39dBuV/m
400MHz-2	400MHz-2GHz	(149dBuV/m-155dBuV/m)	65dBuV/m	45dBuV/m
de la	2GHz-300GHz	61V/m(155dBuV/m)	65dBuV/m	45dBuV/m

To deal with reflexions, other effects due to the measurement in 3 m distance and to deal with a measurement uncertainty of at least 5 dB, an additional span of 20 dB has been added. Limits for radiated field according to EN 55032 / CISPR 32 for a class B appliance:

Frequency range	Limit dBuV/m @3m Peak	Limit dBuV/m @3m QP or Average	-
30MHz-230MHz	t t t t	40 dBuV/m QP	1
230MHz-1GHz		47dBuV/m QP	11
1GHz-3GHz	70dBuV/m Peak	50dBuV/m AV	
3GHz-6GHz	74dBuV/m Peak	54dBuV/mAV	1.

Conclusion: If the requirements for radiated emissions according to EN 55032 / CISPR 32 or other standards with the same limits are fulfilled, also the EMF requirements for the measured frequency range are fulfilled

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3.Result

 $Pd=(Pout^{*}G)(4^{*}pi^{*}R^{2})$

Where

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Pd= Power density in mW/cm²

Pout=output power to antenna in mW G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

R= distance between observation point and center of the radiator in cm(20cm) with Pd the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached. mW=10^(dBm/10) -

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Antenna gain: 1dBi, R=20cm

1	4G WIFI	1 stat	r r	t sit .	sit sit	sit si	t	V. J
N.	Mode	Chann	maximum output	maximum output	Power Density (S)	Limit of Power Density (S)	Result	Ver.
N.		el	power (dBm)	power (mW)	(mW/ cm ²)	(mW/ cm ²)	2	1
12	802.11b	CH13	9.84	9.64	0.0019	A A	Pass	1
X	802.11g 802.11n (20MHz)	CH13 CH13	9.58	9.08 8.81	0.0018	112	Pass Pass	1
			5 9.45	0.01	0.0018	2 2	rass	2

Note:

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The Output power is the maximum eirp power of this EUT, and the data comes from the RF 1. report for this EUT. NIEt NET Willt NET Willt

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EU – TYPE EXAMINATION CERTIFICATE RADIO EQUIPMENT DIRECTIVE 2014/53/EU Annex III Module B

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	Allterco Robotics
1.X	1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria
	Svetozar Iliev / Managing Director
	+359 2 957 1247/support@shelly.cloud
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PRODUCT DESCRIPTION

Trademark/Trade Name		Shelly
Model Number	X.	ShellyH&T, SHHT-v1
Product Description		Smart Humidity & Temperature Sensor

TECHNICAL DOCUMENTATION

	Block Diagram, BOM, Label and its Location, Operational Description, PCB Layout, Schematics, User Manual, Parts Components					
Signed by (Name & Title) :	Svetozar lliev / Managing Director	Date :	April 21, 2020			
Company Name :	Allterco Robotics					

NOTIFIED BODY

Certificate issued by	Notified Body 1177, TIMCO Engineering, Inc.					
Certificate number	TCF-991CC20					
Name and Signature	Bruno Clavier	Bruno Clauice	Date :	April 30, 2020		

The device shall be marked as follows: C ϵ

Based on the evidence presented in the Technical Documentation, TIMCO Engineering, Inc., as appointed Notified Body, has issued this EU-Type Examination Certificate in accordance with Annex III Module B. The product described appears to be in conformity with the essential requirements Article 3.1(a), 3.1(b), and 3.2 of RED 2014/53/EU. This certificate relates only to the documents as provided to Timco Engineering, Inc. and is valid up to (1) the date of cessation of presumption of conformity of any of the superseded standards which were used for testing this product and assessed by Notified Body or (2) the date of modifications to the approved type that may affect the conformity of the apparatus with the essential requirements of this Directive or the conditions for validity of that certificate, whichever comes first.

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EU – TYPE EXAMINATION CERTIFICATE ANNEX 1 TCF-991CC20

Date: April 30, 2020

PRODUCT SPECIFICATIONS

I RODUCT SI LUITOR	110	
Intended Use / Category		SRD – Wideband data transmission system
RF output power	Ň	9.87dBm (EIRP)
Frequency range (MHz)		2412~2472MHz
Modulation		IEEE 802.11b: DSSS(CCK, QPSK, DBPSK)
	×.	IEEE 802.11g/n(HT20): OFDM(64QAM, 16QAM, QPSK, BPSK)
Antenna type		PCB Antenna

According to the Technical Documentation compiled by the Manufacturer, this radio equipment was assessed for compliance with the following standards, which were applied in full:

ESSENTIAL REQUIREMENTS ASSESSED

Aspects	Standard Number	
Radio	ETSI EN 300 328 V2.1.1(2016-11)	e se se se
EMC	ETSI EN 301 489-1 V2.2.3(2019-11)	
	Draft ETSI EN 301 489-17 V3.2.2(2019-12)	
	EN 55032 :2015	
	EN55035 :2017	
	EN 61000-3-2 :2014	
	EN 61000-3-3 :2013	
Health	EN 62311:2008	
Safety	EN 62368-1:2014+A11:2017	

LIST OF DOCUMENTS REVIEWED

Item	Exhibit Description	
1.	Copy of the Declaration of Conformity	Ø
2.	Agent/Representative authorization letter from Manufacturer (if application is filed by someone other than Manufacturer)	Ø
3.	Attestation letter for compliance with Article 10(2)	
4.	Attestation letter and/or exhibits for compliance with Article 10(10) (i.e. info on packaging completed with users instructions)	
5.	A general description of the radio equipment (e.g. Operational Description)	N
6.	Photographs or illustrations showing external features, marking and internal layout	Ø
7.	RED Annex VI Point 8 - Versions of software or firmware affecting compliance with essential requirements	
8.	User information and installation instructions	Ø
9.	Conceptual design and manufacturing drawings and schemes of components, sub-assemblies, circuits and other relevant similar elements	
10.	Descriptions and explanations necessary for the understanding of those drawings and schemes and the operation of the radio equipment	
11.	RED Annex III module B - Analysis and assessment of the risk(s)	Ø
12.	Where the conformity assessment module in Annex III has been applied, copy of the EU-type examination certificate and its annexes as delivered by the notified body involved	

Page 2 of 3

Item	Exhibit Description (Cont.)							
13.	Results of design calculations made, examinations carried out, and other relevant similar							
	elements							
14.	Test reports	Item	Report No.	Issue Date/Rev #	Ø			
		Health	STR190920002001E	Apr. 10, 2020/Rev.01				
		EMC	STE190920002001E	Apr. 10, 2020/Rev.01				
		Radio	STR190920002002E	Apr. 10, 2020/Rev.01	8.3			
		Safety	STS190920002001E	Apr. 14, 2020				



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Willt **RADIO TEST REPORT-WIFI** ETSI EN 300 328 V2.1.1 (2016-11)

Product : Smart Humidity & Temperature Sensor Trade Mark : hell Model Name : ShellyH&T Family Model : SHHT-v1 Report No. : STR190920002002E

Prepared for

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1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

Allterco Robotics

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd. 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhon 510100 D.D. Citi Bao'an District, Shenzhen 518126 P.R. China Tel.: +86-755-6115 6588 Fax.: +86-755-6115 6599 Website:http://www.ntek.org.cn

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Report No.: STR190920002002E

TEST RESULT CERTIFICATION

Applicant's name Allterco Robotics Manufacturer's Name: Allterco Robotics Address 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

Product description

Product name

Trademark

.....: Smart Humidity & Temperature Sensor

Model Name .: ShellyH&T

Family Model :

SHHT-v1

Standards. ETSI EN 300 328 V2.1.1 (2016-11)

This device described above has been tested by Shenzhen NTEK, and the test results show that the equipment under test (EUT) is in compliance with the 2014/53/EU RED Directive Art.3.2 requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK, this document may be altered or revised by Shenzhen NTEK, personnel only, and shall be noted in the revision of the document.

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Date of Test

20 Dec. 2019 ~ 6 April. 2020 Date (s) of performance of tests 09 April. 2020 Date of Issue Test Result Pass

Testing Engineer

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(Allen liu)

1 Sten Gran

Technical Manager

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Authorized Signatory

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- **1.2 INFORMATION ABOUT THE EUT**
- **1.3 TEST CONDITIONS AND CHANNEL**
- **1.4 DESCRIPTION OF TEST CONDITIONS**
- 1.5 DESCRIPTION OF SUPPORT UNITS
- **1.6 EQUIPMENTS LIST FOR ALL TEST ITEMS**
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 - 3.1.4 TEST RESULTS
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 - 3.2.1 LIMITS OF POWER SPECTRAL DENSIT
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2	\$1.	GENERAL INFORMA	
ALL AND	A.	GENERAL DESCRIPT	
t		Equipment	Smart Humidity & Temperature Sensor
S	S	Trade Mark	Shelly & St St St St St
t	1	Model Name.	ShellyH&T + + + + + + +
A. C.	1 al	Family Model	SHHT-v1 / / / / / / / /
T at	5	Model Difference	N/A at at at at at at at at
A.	10	The EUT is SMART FL	
2	2	Operation Frequency:	802.11b/g/n(20MHz): 2412~2472MHz
1	.0		IEEE 802.11b ; DSSS (DBPSK, DQPSK, CCK)
1	5	Modulation Type:	IEEE 802.11g/n (HT20) : OFDM
at	5	the the	(64QAM, 16QAM, QPSK, BPSK) 802.11b:11/5.5/2/1 Mbps
5	S	5 5 5	802.11g:54/48/36/24/18/12/9/6Mbps
t	1	Bit Rate of Transmitter	
1 Charles	1º	Dir Tate of Transmitter	65.0/58.5/52.0/39.0/26.0/19.5/13.0/6.5 Mbps
T at	5		(MCS0~MCS7)
AT .	20	A dantius (nan adantius	
12	2	Adaptive/non-adaptive	Adaptive equipment 2 2 2 2 2 2 2
10	Nº	Receiver categories	
V.L	5	Number Of Channel	Please see Note 2.
A	10	Antenna Designation	PCB Antenna
2	2	Antenna Gain(Peak)	
A	,a	Channel List	Refer to below
2	2	Adapter	N/A ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
1	4	Battery	DC 3V
2	2	Rating	DC 3V from Battery or DC 5V From Adapter
.at	.a	I/O Ports	Refer to users manual to the state of the st
5	5	Hardware Version	ShellyH&T_v0.1.6 2 2 2 2 2 2
at	4	Software Version	1.6.0 d d d d d d d d d
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Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

	t d	- A	A	- Chan	nel List	at	A	t t
130	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
	1-01 A	2412	05	2432	- 09 🙏	2452	13	2472
3	02	2417	06	2437	10	2457	× ×	
5	03	2422	07	2442	1	2462	2 2	2
	1_04	2427	08	2447	L 12 🔔	2467	A	at at

1.2 INFORMATION ABOUT THE EUT

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 maximum Channel Occupancy Time implemented by the equipment: 1.212ms
 - 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 a 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.):
- 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):

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

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- RF Output Power
- 802.11 b
- Power Spectral Density
- 802.11 b

N/A

- Duty cycle, Tx-Sequence, Tx-gap
- Accumulated Transmit time, Frequency Occupation & Hopping Sequence (only for FHSS equipment)
 N/A
- Hopping Frequency Separation (only for FHSS equipment)
- Medium Utilization
- N/A

N/A

- Adaptivity
- N/A
- Nominal Channel Bandwidth
- 802.11 n20
- Transmitter unwanted emissions in the OOB domain
- 802.11 n20
- Transmitter unwanted emissions in the spurious domain 802.11 b
- Receiver spurious emissions
- 802.11 b
- Receiver Blocking
- 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 Nominal Channel Bandwidth 1
 - High Throughput (> 1 spatial stream) using Nominal 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 Nominal Channel Bandwidth 1
 - High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2 NOTE 2: Add more lines if more channel bandwidths are supported.

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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 (additional) beam forming gain: dB
- 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) Nominal Channel Bandwidth(s):

- Nominal Channel Bandwidth 1: 17.714MHz (n20)
- Nominal Channel Bandwidth 2:
- 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

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

Normal operating conditions (if applicable):

Operating temperature: 15℃~35℃

Other (please specify if applicable): .

Extreme operating conditions:

Operating temperature range: Minimum: -10°C Maximum 40°C Other (please specify if applicable): Minimum: Maximum Details provided are for the:

-St

- stand-alone equipment
- combined (or host) equipment
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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: FPC Antenna
- Integral Antenna (information to be provided in case of conducted measurements) Antenna Gain: 1 dBi
 - If applicable, additional beamforming gain (excluding basic antenna gain): dl
 - 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.
- •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 #	5	5	Gain	(dBi)	5 2	e.i.r.p.	(dBm)	5	Part	numbe	r or mode	Iname
4	1 1	A	1	1	x	X	9.91	x	1		x	x	x
/		100	101	(N.V.	NY A		2V	2V		~		100

- 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
- 2

 - Number of antenna assemblies provided for this power level:
- Assembly # Gain (dBi) e.i.r.p. (dBm) Part number or model name
- NOTE 5: Add more rows in case more antenna assemblies are supported for this power level.

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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

with with with with Supply Voltage 🔲 AC mains State AC voltage

DC State DC voltage: DC 3V

In case of DC, indicate the type of power source

- Internal Power Supply
- External Power Supply or AC/DC adapter:
- Battery: DC 3V

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

p) The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3], IEEE 802.15.4™ [i.4], proprietary, etc.): IEEE 802.11™ [i.3]

at

q) If applicable, the statistical analysis referred to in clause 5.4.1 q)

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

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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

X No

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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):

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The	A.	Frek J	the wet wet	stat stat stat stat stat stat st
N. C.	all a	TEST CONDITIONS	Page 12 of 74	Report No.: STR190920002002E
STA	ALL AND	d d	Normal Test Conditions	Extreme Test Conditions
· · ·		Temperature	15℃ - 35℃	40°C ~ -10°C Note: (1)
A.	a star	Relative Humidity	20% - 75%	N/A Q Q Q Q Q
5.	~	Supply Voltage	DC 3V	1 2 2 2 2 2 2 2
at	A	t t	802.11b/11g/11n	
5	2			4 4
at	at	Test Channel	EUT Channel	Test Frequency (MHz)
1 AV	1º	lowest	СН01 💉 🥂 🥂	2412 💉 🥂 🥂 🤇
5	5	middle	CH07	2442 ~ ~ ~ ~ ~ ~ ~ ~

5	5	Supply Vol	ltage	DC 3V	2	2	21	2.	2	2	2	~	2
at	A	at	dt.	at .at	802.11	1b/11g/11	n(20M)	A	at	A	at	at	and and
2	2						<u> </u>		<i></i>			2	2
A	X	Test Chan	nel	EUT Channe	el		Test F	requence	y (MHz)		*	A	1
1 Charles	1º	lowest	NY I	CH01 💉	N	N	2412	N. S.	and	N	144	1 Contraction	1º
5	5	middle	2 2	CH07	5	5	2442	5	5	5	5	5	1
at	.0	highest	4	СН13 🟑	A.	.at	2472	J.	J.	1	4	.05	4
5	5	5 -	5 4	1	5	2	5	2°	5	5	5	5	2
at	A	A	A	at at	at	At	at	at	at	A	at	at	4
5	5	5 .	5 2	2	2	S	5	5	5	5	5	5	2
A		ote:	A	tont	A	A	A	at	t	t	A	A	1
SII	SP		l bne o'	T 10°C Was	doclarato	d hy mar	nufacturo	r Tho E	LIT could	In't ha a	norato	50	-

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Note: (1) The HT 40°C and LT -10°C was declarated by manufacturer, The EUT couldn't be operate normally with higher or lower temperature. (2) The measurements are performed at the highest, middle, lowest available observations ight whet w (2) The measurements are performed at the highest, middle, lowest available channels.

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1.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests. A 1-A t A A

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N.	24 24	14 . W	N.	N N	N.	No.	24	N.	1
Item	Equipment	Brand	1	Model/Type No.		Series No.		Note	2
E-1	Smart Humidity & Temperature	She P P		ShellyH&T	A.	SHHT-v1	1. Tak	EUT	Non
A.	Sensor	with with	N.C.	it it	N.C.	N. C.	AL AL	AL AL	N
the second	at sit	with with	int .	sit sit	Not I	Not I	N.C.	THE NEW	Visit
A.	at sit	stat stat	sit.	the set	Set	sit	st	Sitt	13
dit.	10 10	# #	A	4 4	A	A	at	A	
Item	Shielded Type	Ferrite Core	Lengt	h		Note			2
A.	to state	Stat Stat	SIL	int sit	Sit	Sit	Sich	Sit	1º
the state	at set	st st	A.	stat stat	Not a	St	Stat	N. A.	1
Not	e:	and and	AND -	siet siet	NE	N. C.	N. A.	NET	Nr.
1 (1) The suppo	rt equipment wa	s authorize	d by Declaratio	on of Cor	firmation	-L	-	

Note:

NET For detachable type I/O cable should be specified the length in cm in "Length " column. The support equipment was authorized by Declaration of Confirmation. (1)with wi (2)

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Nº14 1.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

4	NTEK	JCiw	A Page	15 of 74	Repo	ort No.: STR1	9092000200
J.Y	1.6 EQUIPMENTS	LIST FOR AL		N N	54 5	4 .4 A	2.4
		- A-		الم الم	at	at at	- at
all all	EQUIPMENT	Manufastura	Time Na	O a minel N la	Last	Calibrated	Calibration
S	TYPE	Manufacturer	Type No.	Serial No.	calibration	until	period
	EMI Test Receiver	R&S	ESPI7	101318	2019.05.13	2020.05.12	1 year
4	Bilog Antenna	TESEQ	CBL6111D	31216	2019.04.15	2020.04.14	1 year
25	Turn Table	EM X	SC100_1	60531	N/A	N/A	N/A
5	Antnna Mast	EM C	SC100	N/A	N/A	N/A	N/A
- /	Horn Antenna	e Alune	EM-AH-10180	2011071402	2019.04.15	2020.04.14	1 year
and and	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2019.12.10	2020.12.09	1 year
5	Test Cable (30MHz-1GHz)	∼ N/A <	R-01	N/A	2017.04.21	2020.04.20	3 year
A	Test Cable (1-18GHz)	N/A	R-02	N/A	2017.04.21	2020.04.20	3 year
2	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2018.05.19	2020.05.18	2 year
A	Pre-Amplifier	EMC	EMC051835S E	980246	2019.08.06	2020.08.05	1 year
2	Spectrum Analyzer	Agilent	E4407B	MY45108040	2019.05.13	2020.05.12	1 year
- ^	Filter	TRILTHIC	2400MHz	29	2017.04.19	2020.04.18	3 year
-X	Attenuator	Weinschel	33-10-33	AR4010	2017.04.19	2020.04.18	3 year
2	Attenuator MXA Signal	Weinschel	24-20-34	BP4485	2017.04.19	2020.04.18	3 year
- ,	Analyzer	Agilent	N9020A	MY49100060	2019.08.28	2020.08.27	1 year
N. S.	ESG VETCTOR SIGNAL GENERAROR	Agilent	E4438C	MY45093347	2019.05.13	2020.05.12	1 year
- 4	PSG Analog Signal Generator	Agilent	E8257D	MY51110112	2019.08.06	2020.08.05	1 year
5	Power Splitter	Mini-Circuits/U SA	ZN2PD-63-S+	SF025101428	2017.04.19	2020.04.18	3 year
A	Coupler	Mini-Circuits	ZADC-10-63-S +	SF794101410	2017.04.19	2020.04.18	3 year
2	Directional Coupler	MCLI/USA	CB11-20	0D2L51502	2017.08.16	2020.08.15	3 year
- 0	Attenuator	Agilent	8495B	MY42147029	2017.04.19	2020.04.18	3 year
Si	Power Meter		RPR3006W	15I00041SNO 84	2019.08.06	2020.08.05	1 year
- 0	MXG Vector Signal Generator	Agilent	N5182A	MY47070317	2019.05.13	2020.05.12	1 year
2	Wideband Radio	5 5		N 1	5 2	1	~
/	Communication Tester	R&S	CMW500	148500	2019.05.13	2020.05.12	1 year
N RA	Specifications temporary antenna connector (Note)	ANTS A	R001	N/A	N/A	N/A	N/A
< V	ote: /e will use the temporal nd this temporary anter	ry antenna conne	ctor (soldered on	the PCB board) W	hen conducted	test	AND .

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2. SUMMARY OF TEST RESULTS

	EN 300 328 V2.1.1 (2016-11)	<u> </u>
se	Test Item	Results
Y.	TRANSMITTER PARAMETERS	No the state
.2	RF Output Power	Pass
.3	Power Spectral Density	Pass
4	Duty cycle, Tx-Sequence, Tx-gap	Not Applicable (See Note 1/2)
2.5	Medium Utilization (MU) factor	Not Applicable (See Note 1/2)
2.6	Adaptivity A Adaptivity	Pass
2.7	Occupied Channel Bandwidth	Pass
2.8	Transmitter unwanted emission in the OOB domain	Pass
2.9	Transmitter unwanted emissions in the spurious domain	Pass
A	RECEIVER PARAMETERS	AA
10	Receiver Spurious Emissions	Pass
11	Receiver Blocking	Pass
(t)	and and and and and and and	and and a
	se 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 10 .11	Test Item TRANSMITTER PARAMETERS 2.2 RF Output Power 2.3 Power Spectral Density 2.4 Duty cycle, Tx-Sequence, Tx-gap 2.5 Medium Utilization (MU) factor 2.6 Adaptivity 2.7 Occupied Channel Bandwidth 2.8 Transmitter unwanted emission in the OOB domain 2.9 Transmitter unwanted emissions in the spurious domain RECEIVER PARAMETERS 10 Receiver Spurious Emissions

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less than 10 dBm EIRP or for equipment when operating in a mode where the RF output power of is less than 10 dBm EIRP. These requirements apply to part AN INT

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These requirements apply to non-adaptive frequency hopping equipment or to adaptive frequency hopping equipment operating in a non-adaptive mode.

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2.1 TEST FACILITY

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Add.: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China FCC Registered No.: 463705 / IC Registered No.:9270A-1 CNAS Registration No.:L5516 will we

FCC Registered No.: 463705 /IC Registered No.: 9270A-1

- AN INTER 2.2 MEASUREMENT UNCERTAINTY

.... reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expended uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k=2}$, providing a level of confidence of approximately **95** % • with with wi .o. NET with with wi

5	S	S	N.	St St	N	S	5	S.	S	1	5	5	5
t	t	t	No.	Item	t	t	1	Uncertain	ity	t	t	t	1
A. A.	20	A.	1.4	Radio Freque	ncy	N.	2	±1.38dB	N.	J.C.	No.	N. S. S.	2ª
2	2	2	2	Total RF powe	er, conduc	cted	2	±0.16dB	2	2	2	2	2
A.	A.	1	3	RF power der	nsity, conc	ducted	A.	±0.16dB	J.	J.	A.	A.	1
2	2	2	4	All emissions,	radiated	2	2	±0.21dB	2	2	2	2	5
A	4	A	5	Temperature	di la	4	4	±0.5°C	at the	4	1	1	4
2	2	2	6	Humidity	2	5	2	±2%	2	5	2	2	2
d.	.at	.t	7	DC and low F	requency	voltage	s 🔬	±0.04%	t.	.st	d.	.st	-
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2	2	2	2 4	2. 4.	5	2	2	4	2	2	2	2	2
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with with RT. KJEW Ariet Wiet

with with Page 18 of 74 2.3 MAXIMUM MEASUREMENT UNCERTAINTY

(FOR ETSI EN 300 328)

STEIVIENT UNCERTAINTY OR ETSI EN 300 328) For the test methods, according to ETSI EN 300 328 standard, the measurement uncertainty figures shall be calculated in accordance with ETR 100 028-1[4] and shall correspond to an expansion factor(coverage factor) k=1.96 or k=2 (which provide confict respectively 95 % and 95.45 % in the case where the diveringures shall be calculated in accordance with ETR 100 028-1[4] and shall correspond to an expansion factor(coverage factor) k=1.96 or k=2 (which provide confidence levels of respectively **95** % and **95.45** % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). wifet wifet wi

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2	2	2	21 .		pied Channe			2	± 5%	2	2	2	2
.at	.at	at	2	N/	utput Power			A	±1.5dB	A	.0	.at	-
5	2	2	3		pectral Dens	-	-	5	± 3dB	S	5	5	5
A	A	A	4_	6	ted emissior	6	cted	A	± 3dB	A	A	A	
S	Si	S	5	A	I <mark>l emissions,</mark>	radiated	5	S	± 6dB	5	S	Sil	S
int	it	t	6	t	Temperat		1	t	± 3°C	t	it	t	
Nº N	N.C.	N.C.	7	24	Humidit	ty 🖉	A.	A.	± 3%	N. C.	Nº I	A. C.	2
T.L	T.L	T.L	9		Time	T L	5	7	± 5%	T	T IL	T	5
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at	at	at	at	at	at at	- at	at	at	at	at	at	at	
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2	Maximum	meas	ureme	ent ur	certainty	

NET	4N	TEKJEW A	t with with with with with a site a
.t	at	Page 19	of 74 Report No.: STR190920002002E
2	🗧 3. T	EST PROCEDURES AND RESUTLS	5 4 4 4 4 4 4
1	at	at at at at at a	t a a a a a a
2	\$ 3.1	EQUIVALENT ISOTROPIC RADIATED PC	WER 2 2 2 2 2 2
.at	A.	西西西西西	
2	< 3.1.	I LIMITS OF EQUIVALENT ISOTROPIC RADI	IATED POWER
A.	Refe	r to chapter 4.3.2.2.3 of ETSI EN EN 300 328	V2.1.1 (2016-11)
2	2		2 2 2 2 2 7 7 7
5	5	RF OUTPUT	POWER F
A	2 V		
5	2º	Condition	Limit
in t	ANT.		Equal to or less than the value declared
in the	with	Condition Non-adaptive wide band modulations systems	Equal to or less than the value declared by the supplier. This declared value shall be equal to or
in the t	with t	Non-adaptive wide band modulations	Equal to or less than the value declared by the supplier.
n ten ten	with the the	Non-adaptive wide band modulations systems	Equal to or less than the value declared by the supplier. This declared value shall be equal to or less than 20 dBm.
in the ten t	in the ter t	Non-adaptive wide band modulations	Equal to or less than the value declared by the supplier. This declared value shall be equal to or
in the ten the	in the ten te	Non-adaptive wide band modulations systems	Equal to or less than the value declared by the supplier. This declared value shall be equal to or less than 20 dBm.
in the test the -	And	 Non-adaptive wide band modulations systems Adaptive wide band modulations systems 	Equal to or less than the value declared by the supplier. This declared value shall be equal to or less than 20 dBm.
in the ten ten ter	1	 Non-adaptive wide band modulations systems Adaptive wide band modulations systems TEST PROCEDURE 	Equal to or less than the value declared by the supplier. This declared value shall be equal to or less than 20 dBm.
in the ten ten ten	1	 Non-adaptive wide band modulations systems Adaptive wide band modulations systems 	Equal to or less than the value declared by the supplier. This declared value shall be equal to or less than 20 dBm.
in this ten ten to	1	 Non-adaptive wide band modulations systems Adaptive wide band modulations systems TEST PROCEDURE 	Equal to or less than the value declared by the supplier. This declared value shall be equal to or less than 20 dBm. <20dBm

5	Adaptive	e wide band modulatio	ns systems	5 5	≪20dBm	5 .	5	5	2
NET	with with with	t with with a	sit sit	with an	+ with	with ,	S.C.	NET	1. S.
T	3.1.2 TEST PRO	CEDURE 5.4.2.2 of ETSI EN EN	1 300 328 V2.1	.1 (2016-11)	* Arit	Niet .	Net	Net	With
1				alar a			-		100
A.C.			Measureme					10	and and
A.		cted measurement	Measureme		ed measure	ment	5	ALL I	1.s.
the ter	3.1.3 TEST SET	t tet tet	Measureme		ed measure	ment	s. at	A CEL	Wry Wry

2	Ref	er to chapter 5.4.2.2 c	of ETSI EN EN 30	00 328 V2.1.1 (20	016-11)	4 4	2
A	A			Measurement			5
2	~	Conducted me		5 5	Radiated measuremer	it 🗧 🕹	2
NET	3.1	.3 TEST SETUP	t with site	t with an	at sitet sitet as	at wat a	at 1
N. S.	N	and and an	AT AND AND	MO Dower	Temperature Humidity Cha	and wher	A A
the state	NIC	PC (Test software)	Me	MO Power asurement Test Set	EUT		at a
THE	Niet	sit sit si	it will all	t with sh	at 11 12 12	ant a	at at
NET	N. Ct	sit sit it	it will will	t sit si	AC/DC PC		at a
Wilt	N.C.	with with with	it will sit	t with with	Supply Supply	and a	at 2
the state	NIG	with with with	t with with	t with si	at with with w	et siet s	at a
NET	NE	with with with	it will sit	t sit si	at with with as	et siet s	at at
NET	NIET	stat stat st	t sitt sit	t wilt at	t sitt sitt s	at wat a	at is
at	at	to the	t at a	* at a	t at at	of of	dt .

4	-	4 4 4	t. t. t	dt.	4 4 4	at at	the de	× ×
5	2	NTEK		5 5	4 4	S S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	15
A.	1			Page 2		Report No.: STR19	0920002002E	the st
2	2	3.1.4 TEST RESU	JLTS <	2 2		2 2	4 4	2
A.C.	X	EUT :	Smart Humidity &	Temperature	Model Name :	ShellyH&T	A A	T &
P at	5	Temperature :	Sensor Sensor	2 7	Relative Humidity:	55 %	2 4	7 7
No and a start	1º	Pressure :	1012 hPa	A 2	Test Voltage :	DC 3V(NORMAL	.) <	
T at	5	Test Mode :	802.11b/g/n20 Mc	de CH01 / C	H07 / CH13	the st	t	LT
SU	S	54 54	St St Te	est data refere	nce attachment	St St	54 5	S
A		t t t	- A A	A	x x x	t t	t	t
S	Sil	St St	St St	St S	y in in	Si Si	St St	S
it	6	t at at	- d d	at	at at at	at at	at 1	+
25°	2º	1 2° 2°	AT AT	5 5	- ANY ANY	25 25	5 5	
t	4	t. t. d	t. t	at .	t. t. t	to to	at 4	× ×
5	2º	2 2	5 5	5 5	2 2	5 5	5 5	2
t	4	故故故	t at at	at .	本 本 本	to the	at a	× ×
2	2	1º 1º	2 2	5 5	5 5	5 5	5 5	~
4	-	5 5 6		at .	at . at . at	A A	At A	× ×
2	2	2 2	2 2	2 2	2 2	2 2	4 4	2
A.				AT .		AT AT	AT &	× ×
2	5	22	2 2	5 5	2 2	2 2	2 2	12
A.	K		AT AT	A s	T T T	AT AT	AT &	5
11	2	at at at		4 4	at at at	7 7	4 4	L R
A.C.	N.		AT AT	20 2		AT AT	A A	
L +	5	* * *	- + +	T T	x x x	T T T	T T	+ F
S	S	5 50	54 54	5 5	y su su	S" S"	St St	Ś
A		* * *	- x x	At	t t t	At	A	+
Sil	-Sil	J' J'	J' J'	Si Si	L' ST	Si Si	Jil Jil	-Si
at	6	t at at	tot	dt.		at at	at a	*
2º	S	- 2° - 2°	y y	5 5	- All All	2° 2°	2° 2'	2
at	4	t. t. t	t. t. t	at .	t. t. t	at at	at 4	* .
2	5	2 2	2 2	5 5	2 2	2 2	5 5	5
at	-	5.0.0	. d. d.	At .	at .at .at	at at	At A	× ×
2	2	2 2	2 2	2 2	2 2	2 2	2 2	2
A	1 de la			AT .	a a a	A A	AT A	× st
2	4	2. 2	4. 4	2 2	1 2	4 4	5 4	1 2
A.	and a		A A	AT .		AT AT	AT A	Y a
2	2	2 2	2 2	5 5	2 2	5 5	5 4	2
1 dt	A			A .		A A	AT A	5 2

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-Sile 3.2. PEAK POWER DENSITY

Page 21 of 74 NU 3.2.1 LIMITS OF POWER SPECTRAL DENSITY

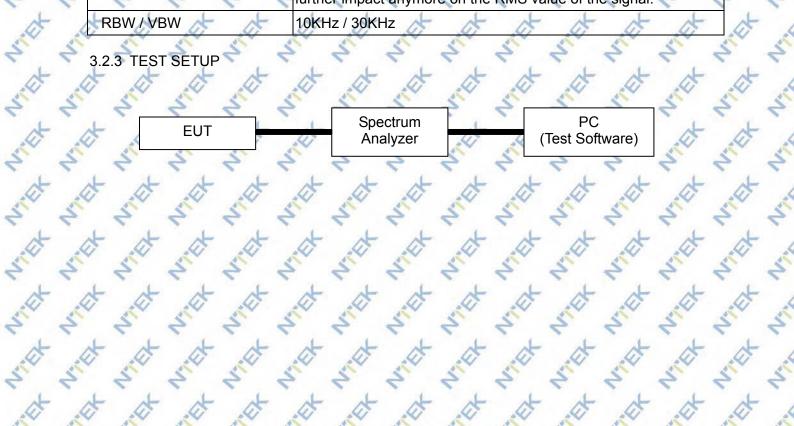
Niet wet Refer to chapter 4.3.2.3.3 of ETSI EN EN 300 328 V2.1.1 (2016-11)

RF OUTPUT POWER	S 3
Condition	Limit
For equipment using wide band modulations other than FHSS	S≪10 dBm/MHz
2 TEST PROCEDURE	and and all all all a
to the to the to the	set set set set set
er to chapter 5.4.3.2 of ETSI EN EN 300 328 V2.1.1 (2016	

with with 3.2.2 TEST PROCEDURE

Arriet with Refer to chapter 5.4.3.2 of ETSI EN EN 300 328 V2.1.1 (2016-11)

7	Refer to chapter 5.4.3.2 of ETSI EN EN 300 328 V2.1.1 (2016-11)	
A	· <u> </u>	-
1 and a second	Measurement 💦 🔧	
2	Conducted measurement C Radiated measurement	
at	The setting of the Spectrum Analyzer	
2	Start Frequency 2400MHz 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
×	Stop Frequency 2483.5MHz	-
14	Detector RMS A A A A A	
2	A state of the sector of th	
at	Sweep Point sweep points, the frequency band may be segmented	
2	For non-continuous transmissions: 2 × Channel Occupancy Time	
and the	× number of sweep points	-
5	Sweep time: For continuous transmissions: 10 s; the sweep time may be	
A.	increased further until a value where the sweep time has no	
2	Further impact anymore on the RMS value of the signal.	
t	RBW / VBW 10KHz / 30KHz	-
5	3.2.3 TEST SETUP 4 4 4 4 4 4 4 4 4 4 4 4 4	
t		-



at	-	*	the the	A	4 4 4	4 4	the state	A .
5	2	NTEK		5 4		S S	4	1 2
A.	1			Page	22 of 74	Report No.: STR1	90920002002	
2	2	3.2.4 TEST RESU	JLTS <	2 4		2 2	2 2	. 2
AL AND	X	EUT :	Smart Humidity &	Temperatu	re Model Name :	ShellyH&T		A 2
T A	5	Temperature :	Sensor Sensor	5 5	Relative Humidity:	60 %	- + -	AT
N.C.	1º	Pressure :	1012 hPa	St a	Test Voltage :	DC 3V	14	4 5
t	5	Test Mode :	802.11.b Mode	t	A A A	t	t	x
SY	Sil	3 3	J' J'T	est d <mark>a</mark> ta refer	rence attachment	St St	54 3	\$ 5
at	-	t at at	- d d	at	at at at	at at	t	d'
1º	2º		and an	1 - A	st at at	and an	5 2	× 5
at	4	t . t . t	·	A	t. t. t.	. t. t	. dt	at .
5	2	2 2	2 2	2° 2	5 2 2	2 2	2 2	1 2
at	4	* * *	the the	at .	A A A	A 4	at .	at a
2	2	2 2	2 2	2 4	2 2 2	2 2	2 4	1 2
A	-			AT .	A A A	AT AT	at a	A A
2	2	~ ~ ~	2 2	2 2		2 2	2 2	. 7
A.	1º		AT AT	A.	A A A	AT AT	A L	JE 2
1	4	+ + +	- + +	5 5	at at at	~ ~ ~ ~	4 4	4 7
S	S	54 54	St St	St S	54 54 5W	St St	50 3	\$ 5
A		* * *	- x x	1 th	x x x	A A	· A	t)
SIL	Sil	and an	J' J'	2 2	in sin sin	St St	21 Z	i si
at	4	* & &	- 4 4	at	at at at	at at	t	dt .
Z	2	2 2	2 2	2 2	5 2 2	5 5	2 2	5
t	4	*	. d. d.	at	A . A . A	.tt	.t	at a
2	2	2 2	2 2	2 4	2 7 7	2 2	2 2	1 2
A	a ch	* # #	A A	AT.	A A A	A A	AT .	A 1
2	2	2. 2	2 2	2 4	2 2 2	4 4	2 2	4
A.	2 A		AT AT	A.		A A	A .	A A
2	5	4 4 4	~ ~ ~ ~	2 4	at at at	2 4 4 H	2 2	+ 2
SUL		Star Star	Sta Sta	Star .	Sta Sta	Sta Sta	Star 1	4
A	-	t to the	- the	A	the the	A A	· A	AT
S	Sil	St St	Jiv Jiv	5 2	St St St	St St	314 S	S' S'
A	1	t at at	- d d	at	at at at	AA	t	d'
S	-Sil	and and	L' L'	25 2	ST ATT ATT	and all	5 2	× 5
at	6	t at at	t at	at	at at at	at at	t	at .
5	25	2 2	2 2	2 4	5 - 2° - 2°		2 2	1 2
1 dt	4	t. t. t	t. t.	at	A & A	.dd	at	to a

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3.3. OCCUPIED CHANNEL BANDWIDTH

3.3.1 LIMITS OF OCCUPIED CHANNEL BANDWIDTH

OCCUPIED CHANNEL BA	NDWIDTH		
Condition	Limit		
All types of equipment	Shall fall completely within the band 2400 to 2483.5 MHz		
For non-adaptive using wide band modulations other than FHSS system and E.I.R.P >10 dBm	Less than 20 MHz		
requirement For non-adaptive frequency hopping system and E.I.R.P >10 dBm	Less than 5 MHz		

3.3.2 TEST PROCEDURE

Refer to chapter 5.3.8.2 of ETSI EN 300328 V1.9.1 (2015-02)

15

					Ме	asureme	ent				
Conducted measurement					A	x	A	Radiated	measure	ement	A
×	N	N	N.V.	N	S. C.	2	N.V.	X	N.V.	N	N

The setting of the Spectrum Analyzer

Center Frequency	The centre frequency of the channel under test								
Frequency Span	2 × Occupied Channel Bandwidth (e.g. 40 MHz for a 20 MHz channel)								
Detector	RMS de de de de de de de de de								
	~ 1 % of the span without going below								
RBW ~ ~	1 %RBW (510KHz for 802.11b/g/ n 20, 1MHz for 802.11 n 40)								
VBW 🖉 💉 👔	3 × RBW (1.5MHz for 802.11b/g/ n 20, 3MHz for 802.11 n 40)								
Trace C	Max hold								
3.3.3 DEVIATION FROM TEST STANDARD									
No deviation	the state states								
231 TEST SETLID									

3.3.3 DEVIATION FROM TEST STANDARD

3.3.4 TEST SETUP

EUT

Spectrum Analyzer

be performed only on the lowest and the highest frequency within the ststed frequency range. In case of conducted measurements the transmitter shall be connected to the measurement equipment via a suitable attract. AN ET equipment via a suitable attenuator. Controlling software has been activated to set the EUT on specific status. NET

at

the state	-	女 令	\$. \$	A A	女 女	A.	4. 4	t	.at	d.	-
5	2	NTE	く北沢	2 2	5	2 2	5	2	~	2	5
4	-	大、小	at at	AT A	Page 24 of	74	Report No	.: STR19	09200020	002E	-
2	2	3.3.5 TEST RE	SULTS	5 2	2	5 4	-2	2	2	2	2
4	1	* *	the the	To and	* *	A l	x st	at	at	0	
2	2	EUT :	Smart Humidi Sensor	ity & rempera		odel Name :	ShellyHa	ST.	2	2	5
at	4	Temperature :	26°C	at l	13 6	elative Humidit		A	at	t	4
S	5	Pressure :	1012 hPa	<u>× ×</u>		st Voltage :	DC 3V	5	5	-	2
A	1	Test Mode :	802.11b Mode		3 ta reference	attachment	t t	A	A	A	1
Sil	S	5 3	ST.	5 5	S	5 5	N SN	S	Si	Si	S
t	-	* *	t t	t.	* *	A.	t t	int	A	A	
S	S	5 3	N Str	<u>× × × × × × × × × × × × × × × × × × × </u>	S	5 5	S	S	Sil	Si	S
int		t t	x x	t.	* *	t	t t	t	t	A	-
S	Sil	5 3	Stor -	Si Si	S	St St	5	ST	Sil	Sil	Si
t		t	t	t	t t	t	t	t	t	t	
AL AND	1º	1 1 1 1	w w	Nº S	I SHI	14 S		S.C.	S.C.	N. C.	1ª
T at	~	t t	at at	the states	t t	T A T	at at	T	t	-t	~
A.	2ª		4 14	A R	T AT	AT &	a sa	2 CT	14	2 CT	2º
2.1	5		+ + +	2 2	1 7 .L	2 4	1 T 1	7	5.1	7	5
A.	2 al		a p	A A	F A	AT A	a a	A.	A.	A.	2
2	2	5 5	2	2 2	2	5 4	2	2	4	2	2
A.	A	F JE	IT IT	AT A	5 5	AT &	5 5	A.	.ar	A.	and and
2	2	5 5	2	5 5	2	4 4	2	2	2	2	2
A.	A		5 5	AT A	5 5	AT !	5 5	A	A	1	1º
2	2	4 4	2	5. 4.	2	5 4	2	2	2	2	2
A	A	大人	A 1	IT A	7 5	all a	5 5	A.	4	1	-
2	2	2 2		5 5	-2	2 2	-2	2	2	2	2
.at	4	大。太	A. A.	A 4	长 太	at .	4. 4	.at	.at	at	~
2	2	5 5	5	5 5	2	5 5	5	5	5	5	2
t	4	大、大、	t t	A 4	女。女	to a	4.4	at	.t	.at	
2	2	5 5	5	5 5	2	5 5	2	2	2	2	2
at	4		et net te te te te te te te te te	A 4	t of	met n n n n n n n n n n n n n n	ot ot	t	at	at	4
5	5	5 2	5	5 2	S	5 5	25	25	25	2º	3
at	6	t at	at at	at a	t at	at	at at	at	at	at	1
ST	5	5 2	3	× ×	S	5 5	- ST	2st	S	S	2
A	1	t at	at at	at 1	t A	A	at at	A	A	A	1
SIV	Sil	5 5	N SIN	ST ST	S	S' S	1 ST	Si	Sil	Sil	S
A	-	tt	t t	t.	t t	A	t t	A	int	A	
S	Sil	5 3	N St	Si Si	S	S' S	S	S	Si	SIL	Si
t		tt	t	t	t	t	tt	t	t	t	
Nº S	2	E E	A A	St St		St E	U LU	1. Con	1º	Nº S	and and
1 st	7	4 4 7	at t	T T	at T	T T T	at at	T	T	T	5
A.	-		A A	A A		all a	0 .Q	N.	A.	4	100

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3.4. TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN

3.4.1 LIMITS OF TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN Refer to chapter 4.3.2.8.3 of ETSI EN 300 328 V2.1.1 (2016-11)

	TRANSMITTER UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN								
Condition Limit									
	Under all test conditions	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 below figure.							
	A A A A								

	A		
	1		
В			
с			

A: -10 dBm/MHz e.i.r.p.

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N. C.

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- B: -20 dBm/MHz e.i.r.p.
- C: Spurious Domain limits

BW = Occupied Channel Bandwidth in MHz or 1 MHz whichever is greater

3.4.2 TEST PROCEDURE

Refer to chapter 5.4.8.2 of ETSI EN 300 328 V2.1.1 (2016-11)
--

4	Measurement	t
	urement Radiated measurement	5
The setting of the Spectrum A	nalyzer at at at at at at at	at
Span < <		\$
Filter Mode	Channel Filter	A
Trace Mode	Max Hold S S S S S	S.V
Trigger Mode	Video trigger; in case video triggering is not possible, an external trigger source may be used	at the
Detector	RMS + + + + + + +	t
Sweep Point / Sweep Mod	e Sweep Time [s] / (1 μ s) or 5 000 whichever is greater/ Continuou	s
RBW / VBW	1MHz/3MHz	A
250 250 250	210 210 210 210 210 210 210 210	A.
at sint sint sint	stat stat stat stat stat stat stat	Nat
d d d d	本本本本本本本 本	at

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3.4.3 DEVIATION FROM TEST STANDARD

Spectrum

Analyzer

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Report No.: STR190920002002E

No deviation

3.4.4 TEST SETUP

AC/DC Power Supply

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According to the EN 300328 V2.1.1 clause 5.4.8.1: These measurements shall only be performed at normal test conditions. For equipment using FHSS modulation, the measurements shall be performed during normal operation (hopping).

For equipment using wide band modulations other than FHSS, the measurement shall be performed at the lowest and the highest channel on which the equipment can operate. These operating channels shall be recorded.

The equipment shall be configured to operate under its worst case situation with respect to output power.

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If the equipment can operate with different Nominal Channel Bandwidths (e.g. 20 MHz and 40 MHz), then each channel bandwidth shall be tested separately.

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5	2	NTEK	北测	2 2	5 7 7	5 5	5 4	5 5
1				Page	27 of 74	Report No.: STR	190920002002	
2	4	3.4.5 TEST RESU	JLTS	5 4	5 5 5	5 5	4 4	5
A.	A		Smart Humidity	& Temperatu	rel			AT &
2	2		Sensor	5 4		ShellyH&T	2 4	, 4
A.	A	Temperature: Pressure:	24 ℃ 1010 hPa		Relative Humidity	54% DC 3V		AT 1
2	5		802.11b Mode C	H1 / CH13				. 4
A	A		A .0		ference attachment		4	AT 1
2	2	1 4	2 2	2 4	2 2 2	2 2	4 4	2 2
at .	4	* # #			at at at		4	at .
2	2	5 5	2 2	2 4	5 7 7	5 5	2 4	5
.0	-	* * *		A	A A A	t d	d-	at .
2	~	5 5	2 2	~ ~	2 2 2	2 2	2 4	2
4	4	t . t . t			4 4 4	·	dt	to a
5	5	5 5	5 5	5 7	5 5 5	5 5	5 6	5 5
.at	4	故故故	t . d	th.	1 1 A	·	d	at .
2	2	5 5	5 5	5 4	2. 2. 2.	5 5	2 4	2 2
A	4	t at at	- 0 0	- d	at at at	- at a	- 4	at .
2	2	1 2	1 1º	5 2	5 5 5	5 5	2 2	5 2
A	4	t at at	- at a	- d	at at at	- at a	- A	dt .
2	5	5 5	1 1º	5 2	5 5 5	5 5	5 2	5 2
t	4	* & &	t d	- d	at at at	- 0 0	- 4	at .
2	25	5 5	2 2º	2 2	5 2 2	2 2º	2 4	5 2
at	6	t at at	- at a	- at	at at at	- at a	- d	dt .
S	S	5 5	5 5	5 2	5 2 2	and an	5 2	5 5
t	1	t at at	- at a	- A	at at at	- at at	- At	at .
S	S	at at	and and	5 2	5 25 25V	St St	2 2	5 5
A	1	t at at	- A A	- A	at at at	- A A	- 4	at
SIL	S	2 2	5 5	2 2	St at at	St St	25 2	ST ST
at	1	the state with the state of the	- at a	- 2		- A A	- At	at .
S	S	Jan Jan	ST ST	5 2	5 5° 5°	ST ST	ST 2	S' S'
A	-	* * *	- A A	- A	at at at	- A A	- 1	A
Sil	Si	ST ST	ST ST	St 2	ST ST ST	ST ST	5 2	2 2
A	1	* * *	- A A	- A	A A A	- A A	- ~	A
SIL	Si	5 5	St St	54	5 5° 5°	St St	St A	5 5
t	-	t t t	- A A	- +	at at at	- A A	- t	x
Nº S	1ª	St St	Stor Stor	Store .	St St St	St St	Store a	SU S
A	1	t to the	- I - J	- 1- 5	at at at	- The -	- + 5	AT
A.	and and		A A	All a	a la la	A R	AL .	4 8
1 th	2	at at at	5 5 4			4 4	5 4 5	47
1	A			A.		A A	1	A 2

Page 28 of 74 3.5. ADAPTIVE (CHANNEL ACCESS MECHANISM)

Report No.: STR190920002002

3.5.1 APPLICABILITY OF ADAPTIVE REQUIREMENTS AND LILIT FOR WIDE BAND MODULATION TECHNIQUES Refer to chapter 4.3.2.6 of ETSI EN 300 328 V2.1.1 (2016-11)

Relef to chapter 4.5.2.0	JULLISI LING	000 320 VZ. I. I (20							
4	Operational Mode								
		⊠LI	LBT based Detect and Avoid						
Requirement	Non-LBT based Detect and Avoid	Frame Based Equipment	⊠Load Based Equipment (CCA using 'energy detect')	Load Based Equipment (CCA not using any of the mechanisms referenced as note 2					
Minimum Clear Channel Assessment (CCA) Time	A NA	not less than 18 us (see note 1)	(see note 2)	not less than 18 us (see note 1)					
Maximum Channel Occupancy (COT) Time	<40 ms	1ms to 10 ms	(see note 2)	(13/32)*q ms (see note 3)					
Minimum Idle Period	5 % minimum of 100 µs	5% of COT	(see note 2)	t NA t					
Extended CCA check	NA	NA	(see note 2)	R*CCA (see note 4)					
Short Control Signalling Transmissions	Maximur	n duty cycle of 10% (:	within an observationsee note 5)	on period of 50 ms					
Note 1: The CCA time used by the equipment shall be declared by the supplier.									

Note 2: Load Based Equipment may implement an LBT based spectrum sharing mechanism based on the Clear Channel Assessment (CCA) mode using energy detect as described in IEEE 802.11™-2012 [i.3], clause 9, clause 10, clause 16, clause 17, clause 19 and clause 20, or in IEEE 802.15.4 [™]-2011 [i.4], clause 4, clause 5 and clause 8 providing the equipment complies with the conformance requirements referred to in clause 4.3.2.6.3.4. Note 3: q is selected by the manufacturer in the range [4...32]

Note 4: The value of R shall be randomly selected in the range [1...q] Note 5: Adaptive equipment may or may not have Short Control Signaling Transmissions.

Interference threshold level

The detection threshold shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the detection threshold level (TL) shall be equal to or less than -70 dBm/MHz at the input to the receiver assuming a 0 dBi (receive) antenna assembly. This threshold level (TL) may be corrected for the (receive) antenna assembly gain (G); however, beamforming gain (Y) shall not be taken into account. For power levels less than 20 dBm e.i.r.p., the detection threshold level may be relaxed to:

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TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mW e.i.r.p.)

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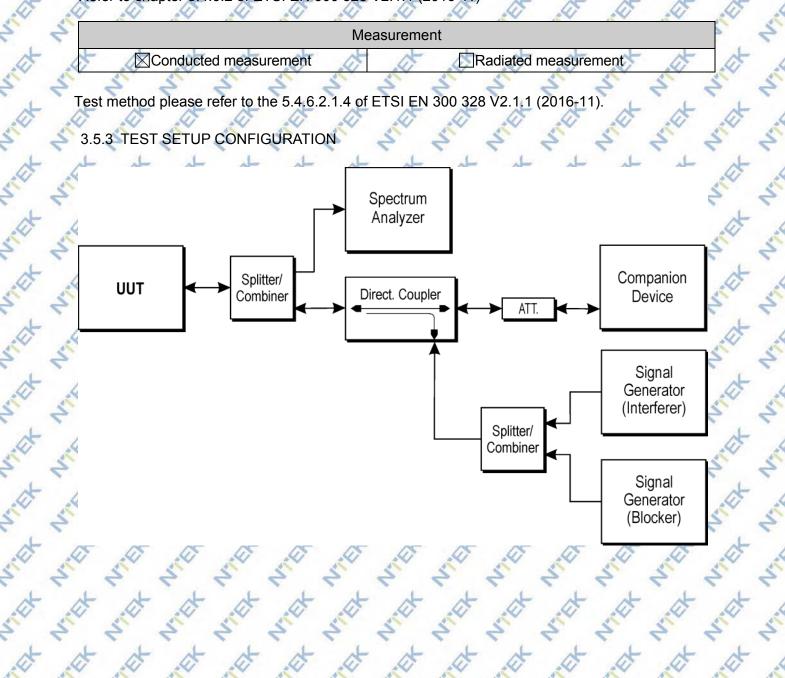
	Table 9:	Unwanted	Signal	parameters
--	----------	----------	--------	------------

	Table	S. Onwanted Signal parameters	
	Wanted signal mean power from companion device	Unwanted signal frequency	Unwanted CW signal power (dBm)
	(dBm)	(MHz)	
1	-30/ sufficient to maintain the link(see note 2)	2 395 or 2 488,5 (see note 1)	-35 (see note 2)

NOTE 1: The highest frequency shall be used for testing operating channels within the range 2 400 MHz to 2 442 MHz, while the lowest frequency shall be used for testing operating channels within the range 2 442 MHz to 2 483,5 MHz. See clause 5.4.6.1. NOTE 2: A typical value which can be used in most cases is -50 dBm/MHz. NOTE 3: The level specified is the level in front of the UUT antenna. In case of conducted measurements, this level has to be corrected by the actual antenna assembly gain.

3.5.2 TEST PROCEDURE

Refer to chapter 5.4.6.2 of ETSI EN 300 328 V2.1.1 (2016-11)



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Wilt	X			A	Page	230 of 74	AND R	eport No.	: STR19092	000200	D2E	1
1	.0				UUT op	erational Mode	;				.0	4
NH	N AT	N. N	Frame Based	Equipment		ased Equipmen ng 'energy dete V	nt act')	CCA not	sed Equipm using any c sms referen	of the	A HI	er ver
A	A		at at	at at	A	at at	A	A	A	t	A	
J. C.	A.C.	3	Clause	Te	est Parame	ter	Rem	arks	PASS/FAIL	- V	and a	1
2	2	2	4.3.2.5.2.2.1	Adaptive (Frar	Equipment)	Not Ap	olicable	N/A		2	2	
A	at		4.3.2.5.2.2.2	Adaptive (Load	d Based Ed	quipment)	Appli	cable	PASS	A	A	-
S	S	1	4.3.2.5.3	Short Control	Signaling T	ransmissions	Appli	cable	PASS	S	S	5
t	t	-	d'at	d d	t	at at	t	t	at .	at	t	

at	at	Frame Based	I Equipment	(CCA using 'e		ot')	CCA not mechanis	using ar sms refe	ny of the renced)	at	-
2	2	2 2	2. 2.	5. 5.1	12	2	2	2	2	4	4
A.	A	Clause	Te	est Parameter		Rer	narks	PASS/F	AIL	1	104
2	4	4.3.2.5.2.2.1	Adaptive (Fran	ne Based Equip	ment)	Not Ap	plicable	🔷 N/A	2	2	2
.at	4	4.3.2.5.2.2.2		d Based Equipm			icable	PAS	1 A A	A	
2	5	4.3.2.5.3	Short Control	Signaling Transr	missions	Appl	icable	PAS	S	2	2
at	at	at at	A .A	at at	t	at	at	at	at	at	-
2	2	2 2	5 2	5 5	2	2	2	5	2	2	2
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at	at	at at	\$ \$	1 1	- at	at	at	at	at	at	-
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- AL		and and	and and	AND AND	A.C.	-S-W	-Sile	-Sile		2. C	25
NE	N.C.	SIT SIT	Stat Stat	ATT ATT	N. C.	NO	NOT	N. C.	A	NICH	-S
A	set	stat stat	set set	Set set	at	stat	Sat	S.at	S.at	.at	-
t	T	T T T	t t	T T A	- +	TA	T	T	t	T	~
N	S.C.	AND AND	Star Star	AND AND	- Star	-Sill	AN	2. Cur	Sil	2. Clark	2
NIGT	Silt	sit sit	sit sit	sit sit	Silt	Silt	Silt	Silt	Silt	Silt	S
.th	t	to to	at at	the the	t	t	at	at	t	at	and
2	2	2 2	2 2	2 2	2	5	2	2	5	2	2
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2.4	-	Pressure :	1010 hPa	AT.	est data r	5	Test Power ce attachme	:	DC 3V	2	2	7	4
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NIE	A.S.	t stat sta	with .	N.C.	1 stat	N	+ with	N.C.	NET	NE	T	NET	A
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3.6.1 LIMITS OF TRANSMITTER UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN Refer to chapter 4.3.2.9.3 of ETSLEN 200220 V/0.4.4 (2016) 111 Refer to chapter 4.3.2.9.3 of ETSI EN 300328 V2.1.1 (2016-11) NUT

TRANSMITTER UNWANT	ED EMISSIONS IN THE SPURIO	US DOMAIN
Frequency Range	Maximum Power Limit (E.R.P.(≤1 GHz) E.I.R.P.(> 1 GHz))	Bandwidth
30 MHz to 47 MHz	-36dBm 🖉 🤤	100 kHz
47 MHz to 74 MHz	-54dBm	100 kHz
74 MHz to 87.5 MHz	-36dBm <	100 kHz 🔶
87.5 MHz to 118 MHz	-54dBm	100 kHz
118 MHz to 174 MHz	-36dBm <	100 kHz <
174 MHz to 230 MHz	-54dBm	100 kHz
230 MHz to 470 MHz	-36dBm -	100 kHz
470 MHz to 862 MHz	-54dBm	100 kHz
862 MHz to 1 GHz	-36dBm -	100 kHz
1 GHz ~ 12.75 GHz	-30dBm	1 MHz
5 5 6 6	2 2 2 2 4	2 2 2
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chapter 5.4.9.2 of ETSI EN 300	0328 V2.1.1 (2016-11)	at at at

NET 3.6.2 TEST PROCEDURE

Refer to chapter 5.4.9.2 of ETSI EN 300328 V2.1.1 (2016-11)

t	Refer to chapter 5.4.9.2 of ETSI EN 300328 V2.1.1 (2016-11)	tt.t.t.
5	Measurement	5
.at	Conducted measurement	ent d
5	The setting of the Spectrum Analyzer	5 4 4 4
at the	RBW 100K(<1GHz) / 1M(>1GHz)	
2	VBW 300K(<1GHz) / 3M(>1GHz)	2 4 4 4
N.C.	3.6.3 DEVIATION FROM TEST STANDARD	site site site s
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(Test Software)

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Radiated measurement: Fully Anechoic Chamber Radio Absorbing Material NICH EUT 1.5 m 1.5 m Spectrum Analyzer ANOT Conducted measurement: GPIB cable ₽ Coxial cable + at (0.1m)₽ (1m)₽ PC. Spectrum. **Fliter**₊ EUT⊬

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ANILY NO. 1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).

Analyzer.

- The measurements were performed when normal hopping was disabled. In this case measurements were performed when operating at the lowest and the bioboot being frequency. measurements were performed when operating at the lowest and the highest hopping
- 3. The equipment was configured to operate under its worst case situation with respect to output power.
- 4. The test setup has been constructed as the normal use condition. Controlling software has been activated to set the EUT on specific status. where whet whet whet whet whet whet whet whet whet which which which which which whet whet we whet we whet with with with with with which which which which with with with with with with with with with

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1. le 3.6.5 TEST RESULTS

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with with Page 34 of 74 with with BELOW 1 GHz WORST- CASE DATA(30 MHz ~ 1GHz) A

		3.0.3 IEC	RESULIS						
A	1	t t	BI	ELOW 1 GHz W	ORST- CA	ASE DATA(30 M	1Hz ~ 1GH	z)	- A
-	1	EUT :	Smart I Sensor	Humidity & Temp	perature	Model Name	: She	llyH&T	N
at	6	Temperatu	ure: 26°C	at at	A	Relative Humi	dity: 60 %	6	- 2
1	2	Pressure :	1012 h	Pa	N 3	Test Voltage	: DC	3V 💉	A. C.
5	-	Test Mode	e : TX-802	.11b Mode(CH1	3)			1	
4	A		A.	15 . IS	S.	10 . LT	S.		
5	5	Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	_
A	1	(H/V)		g					Remark
S	S		(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
N.L	-	V J	50.5859	-80.02	9.38	-70.64	-54	-16.64	peak
	/						(A)	A	

2	-	est Mode	: TX-802	.11b Mode(CH	+13)	lest voltage	· DC.		-	-	2
at	0		IN COL			A 15	5	5 0	- 6	4	
the state	AN A	Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark	Hi I	2
A. C.	N.S.	(11/ V)	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		S.C.	S
-t	A	- V 1	50.5859	-80.02	9.38	-70.64	54	16.64	_ peak_	t	
14	10	V	92.787	-82.66	9.96	-72.7	-54	-18.7	peak	147	2
2	2	V	210.786	-83.78	11.02	-72.76	-54	-18.76	peak	2	2
×	A	V	416.1791	-85.12	14.68	-70.44	-36	-34.44	peak	A	
.45	14	V	636.134	-88.22	20.14	-68.08	-54	-14.08	peak	141	1
2	2	V	782.3451	-86.17	22.03	-64.14	-54	-10.14	peak	2	2
A	A	H	35.375	91.57_	17.14	-74.43	-36	-38.43	peak	A	
Jest I	24	H	186.4404	-85.38	11.66	-73.72	-54	-19.72	peak	1	3
2	2	di la	338.4001	-85.21	13.88	-71.33	-36	-35.33	peak	2	2
×	×	H	658.836	-87.22	20.59	-66.63	-54	-12.63	peak	A	
and a	2 C	H	726.8052	-85.69	21.66	-64.03	-54	-10.03	peak	14	5
2	2	H	848.0561	-90.68	23.36	-67.32	-54	-13.32	peak	2	2
A	A	Remark			Eactor Mar	gin= Limit- Abs		t a	t x	A	1
2 Contraction	1º					worst data reco			A. C.	1 star	3
2	2	2. All un	e modes nau	been testeu,	but only the	worst data rect		e report.		2	2
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7	5	7	6 6	~ ~	4 4	2 4	2 4	5	5	5	5
at	0	- 1	A	at at	at	4 4	at a	1 0	t at	at	
1 AV	2	1 AV	5 2		8 3	Y KY	8 8	N IN	N. C.	1 AV	5
2	5	5	4 4	5	2 2	5 5	2 4	7	4	5	5
5	4	- 1	0	4 4	0	4 4	at a	1 0	5	at	
S	1ª	1º	1 C	a ser	N 0	N. C.	N 1	1	~	S	1
7	5	5	2 2	5	6 6	5 5	2,7	7	5	5	7
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est Mode		.11b Mode(CH0	1/CH7/CH		4	2	2
~	-	A A	~	X X	1 1	+ *	- 1
Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
2	2 2	op 🗧	eration free	quency:2412 🤝	2	2	2
V	4824.000	-48.88	8.49	-40.39	-30.00	-10.39	peak
V	7236.000	-49.06	10.54	-38 <mark>.</mark> 52	-30.00	-8.52	peak
4	4824.000	-48.32	8.48	-39.84 🤜	-30.00	-9.84	peak
HA	7236.000	-49.79	10.54	-39.25	-30.00	-9.25	peak
N. S. S.	14		eration free	quency:2442	N. X		N. N.
V	4884.000	-47.97	8.47	-39.50 🔷	-30.00	-9.50	peak
V	7326.000	-49.06-	10.52	-38.54	-30.00	-8.54	peak
H.C.	4884.000	-48.14	8.46	-39.68	-30.00	-9.68	peak
d'	7326.000	-48.88	10.53	-38.35 🔷	-30.00	-8.35	peak
A	- A			quency:2472	st 1	+ +	- A-
V	4944.000	-49.17	8.46	-40.71	-30.00	-10.71	peak
V	7416.000	-50.42	10.51	-39.91 类	-30.00	-9.91	peak
H	4944.000	-49.33	8.44	-40.89	-30.00	-10.89	peak
H	7416.000	-50.1	10.52	-39.58	-30.00	-9.58	peak
Remar		= ReadingLevel+	Factor, M	argin= Absolute	Level – Li	mit.	2
		ad been tested,					5

ABOVE 1 GHz WORST- CASE DATA (1GHz ~ 12.75GHz)

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Note: Only the worst data were recorded in this report. NIEt where whet whet whet whet whet

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2	3.7.F	RECEIVER SPURIOUS RADIA	TION AT AT AT	2 2 2 2 2 2							
all a	AT .	to to to to	A A A A	the state of the							
2		LIMITS OF RECEIVER SPURIO		2 2 2 2 2 2							
S.	Refer	to chapter 4.3.2.10.3 of ETSI EN									
5	5 5	RECEIVER SPURIOUS EMISSIONS									
at	At .	Frequency Range	Maximum Power Limit (E.R.P.(≤1 GHz) E.I.R.P.(> 1 GHz))	Measurement Bandwidth							
7.1	5 5	30 MHz ~ 1 GHz	-57dBm	100KHz							
J.C.	STE 2	1 GHz ~ 12.75 GHz	-47dBm	1MHz							
in the second	3.7.2	TEST PROCEDURE	at sit sit sit	and and and and a							
at	Refer	to chapter 5.4.10.2 of ETSI EN 30	00 328 V2.1.1 (2016-11)	· · · · · ·							
2	4		Measurement	5							
A		AAA		AAAA							

with with with with

S	1 GHz ~ 12.75 GHz -47dBm 1 MHz	S	Si	5
T	3.7.2 TEST PROCEDURE Set Set Set Set Set Set Set	Net	NET	1
at	Refer to chapter 5.4.10.2 of ETSI EN 300 328 V2.1.1 (2016-11)	at	at	and
2	Measurement			2
A.	Conducted measurement	A.	J.	-
2	The setting of the Spectrum Analyzer	2	2	2
A.	RBW 100K(<1GHz) / 1M(>1GHz)	A.	A.	
2	VBW 300K(<1GHz) / 3M(>1GHz)	5	4	2
N	3.7.3 DEVIATION FROM TEST STANDARD	N. S.	A. C.	2
NE	No deviation	NET	Niet	1º
T	stat stat stat stat stat stat stat stat	Net	Net	1
Net	stat stat stat stat stat stat stat stat	sat	NET	A.
Nat	sit	J'at	NET	1
Net	stat stat stat stat stat stat stat stat	siet	N. Ct	N. S.
with	stat stat stat stat stat stat stat stat	sint	NIET	- Al
Nat		Nat	NET	1
Net	stat stat stat stat stat stat stat stat	Net	N.Ct	A
Net	set	Nat	NET	-
at	* * * * * * * * * * * *	at	t	. and

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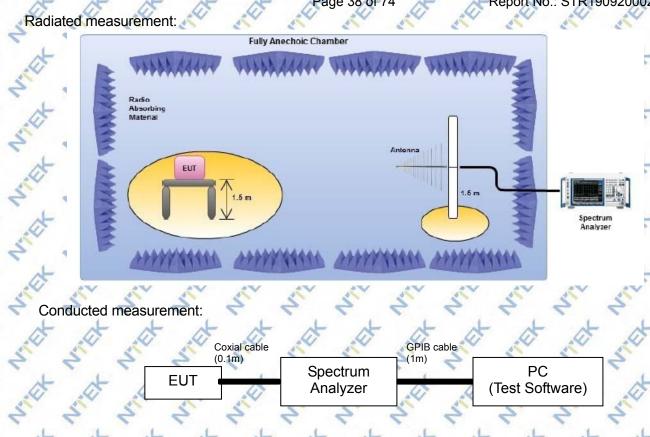
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NIE 1. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration).

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- Testing was performed when the equipment was in a receive-only mode.
 The measurement
- 3. The measurements were performed when normal hopping was disabled. In this case NIET measurements were performed when operating at the lowest and the highest hopping
- 4. The test setup has been constructed as the normal use condition. Controlling software has been activated to set the EUT on specific status. marker marker marker marker marker marker with with with

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AN 3.7.4 TEST RESULTS

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With with Niet RX BELOW 1 GHz WORST- CASE DATA(30 MHz ~ 1GHz)

to t	2	Polar	Freque	ency I	Meter Reading	Factor	Emission Level	Limits	Margin	Remark	
4	4	0. 0	.0	-		S 1				J.	
5	-	Test Mode	e : R	K Mode	e-802.11b Mod	e(CH01)		1			
S.	5	Pressure :	10	12 hPa	ă 💉	5 5	Test Voltage :	DC 3	V 💉	N. N.	
at	6	Temperatu	ure : 26	°C	t t	at 1	Relative Humid	lity: 60 %	ty t	- 4	
-Silv	2	EUT :		nart Hu ensor	umidity & Temp	perature	Model Name :	Shell	yH&T	2 Store	
at	1	x x	- 1	RX	BELOW 1 GHz	WORST-	CASE DATA(30	MHz ~ 10	Hz) 📈	- +	
	-	0.7.4 100									

~~	4	4	4	4 4	4 4		4 A A		4
N.L	2	Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
A.	A.C.	(H/V)	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
7	5	V	43.3534	-89.14	12.92	-76.22	-57	-19.22	peak
4	A	V	109.4116	-87.17	10.24	-76.93	-57	-19.93	peak
1 AV	and a	V	195.1365	-88.11	11.43	-76.68	-57	-19.68	peak
5	5		280.0237	-88.87	11.95	-76.92	-57	-19.92	peak
1	~	VX	807.4288	-96.52	22.76	-73.76	-57	-16.76	peak
1	1 AV	V	989.5353	-98.44	27.2 🔨	-71.24 🔍	-57 🏑	-14.24	peak
7	5	T .	42.1542	-88.96	13.41	-75.55 🥆	-57	-18.55	peak
A	A	· HX	72.8465	-86.89	9.72	-77.17	-57	-20.17	peak
1 C	2 CV	Ĭ,	107.1337	-86.89	10.26	-76.63	-57	-19.63	peak
2	5	F	196.5098	-88.21	11.44	-76.77	-57	-19.77	peak
A	X	- HX	463.9696	-89.3	16.21	-73.09	-57	-16.09	peak
1 and a start	1 C	H	699.3046	-90.85	21.07	-69.78	-57	-12.78	peak
2	2	Remark		4 4	4	4 4	2	7	4
A	A	1. Ab	solute Level=	= ReadingLevel+	Factor, N	largin= Absolute	: Level – Li	imit. 🙏	t

Remark:

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1. Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit. All the modes had been tested, but only the worst data recorded in the report. with with with with

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A	A	(H/V)	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)		
S	SA	Polar	Free	quency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark	
5	5		1	1				1	1	-	
1º	NT-	est Mode	e :	RX Mod	de-802.11b Mode	e(CH01)	N 15 1	1 N	N. N.	1	
A	P	ressure :		1010 h	Pat of	A	Test Power :	DC 3	V A	- 4	
2	S I	emperati	ure :	24 °C	4 4	2 4	Relative Humid	lity 54%	2	2	5
at	E	UT :		Smart H Sensor	lumidity & Temp	erature	Model Name :	Shell	ун&т	- At	
N	2	2º	2	RX	ABOVE 1 GHz V	WORST- C	ASE DATA(1GH	Hz ~ 12.75	GHz)	2º	V
at	1	- 0		at -	at at	Page 40	0 of 74	Report	No.: STR1	909200020	0
2	< r	VT		K 1		2 4	2 2		2	2	~
A	4		-	\$	to to	AT 1	公 (本)	AT A	* \$	-	
					1	1	1	4	1	4	

\$		Frequency	Meter	Factor	Emission	Limits	Margin	
	Polar (H/V)	(MHz)	Reading (dBm)	(dB)	Level (dBm)	(dBm)	(dB)	Remark
0	V	1127.5	-66.79	0.96	-65.83	-47	-18.83	peak
-	V	2020	-71.58	7.27	-64.31	-47	-17.31	peak
ale	V	4187.5	-70.05	7.95	-62.1	-47	-17.31	peak
.0	V	5165	-67.26	5.68	-61.58	-47	-14.58	peak
-	V	5632.5	-69.42	8.12	-61.3	-47	-14.3	peak
ale	V	8607.5	-79.63	15.11	-64.52	-47	-17.52	peak
2	H	2020	-68.58	7.27	-61.31	-47	-14.31	peak
-	A.	3465	-70.81	8.78	-62.03	-47	-15.03	peak
the	H	5250		6.1	-63.77	4-47	-16.77	peak
47	H	6100	-73.4	10.09	-63.31	-47	-16.31	peak
	A.	7630	-76.33	13.59	-62.74	-47	-15.74	peak
A	H	10690		23.05	-65.38	4-47	-18.38	peak
4	1. Ab				argin= Absolute	Level - Li		20
	2. All	the modes ha	ad been tested,	but only th	ne worst data re	corded in t	he report.	2
A	A	· At	x x	A	t t	t 1	t t	- 1
N.	1	A A A	a sa .	N. S.	4	Nº X	A A	and a
NC	ote: Only	the worst da	ta were recorde	ed in this re	eport.	4	2	2
at	A	t.	at at	de la	at at	at 1	* 4	- 4
~	1 AV	N 2		× 5	× × <	Y A	NY NY	1ªV
	7	2 2	5 5	7 7	2 2	4	5	5
5	the state	4	5 5	at .	4 4	5 0	5 5	- 5
	St.	N 3	× × .	8 S	× × ×	N 8	N.	1 AV
1	5	2 2	1 1 1	2 2	1	1	1 5 1	5
5	5	AF .	5 5	St.	J. J.	5 4	5.0	- A
	S	5 5	5 3	5 5	5 3	1 5	2	5
1	1 L	L.	L L	-L	L	L.	L	L
5	.4	A.	a a	SF .	T IT	S 1		1
-	2	5 5	5 2	5 5	5 3	1 5	5	5
1	A	- t	at at	A	at at	At .	t at	- A
\$	1	19	4 4	A A	a la la	S A	1 4	14
	2	2 2	2 4	2 2	2 2		2	2
×	A	- At	t t	A	t t	t.	t t	- +
W.	and a	whether whethe		NY A	e e e e e e e e e e	A A	T A	all'
	2	5 4	2 4	2 4	2 2	4	2	2
A	A	t	t t	A	t t	x 1	t t	- t
N.	all'	1	Y NY	NY X		Y X	1	and a
	2	5 4	6 4	5 5	5 5	4	2	2
A	A	t	x x	A	x x	A 1	t t	- A
~	1º	and a		N A	× × ×	V X	1 all	and the second s
	2	4 4	2 4	5 4	5 5	4	2	7
A	A	A	x x	A	t t	At 1	* *	- 1
N.	S.	1 1		N S	× × 2	er in	N. S. C.	1 Alexandre
	7	5 4	5 4	5 4	5 5	4	2	2
A	A	· A	x x	A	t t	x 1	+ 4	- 1
0	24			× 1		N N	24	A A

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3.8. RECEIVER BLOCKING

3.8.1 PERFORMANCE CRITERIA

The minimum performance criterion shall be a PER less than or equal to 10 %. The manufacturer may declare alternative performance criteria as long as that is appropriate for the intended use of the equipment (see clause 5.4.1.t)).

3.8.2 LIMITS OF RECEIVER BLOCKING

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.

		oking parameters for	neeenter eutogery requ	pinein		
Wanted sign	nal mean power from	Blocking signal	Blocking signal power	Type of blocking		
companion	device (dBm)	Frequency (MHz)	(dBm) (see note 2)	signal 🗧		
at at	Pmin+6 dB	2 380 2 503,5	At 153 At	of cw		
4.4	Pmin + 6 dB	2 300 2 330 2 360	-47	A CW		
t t	Pmin + 6 dB	2 523,5 2 553,5 2 583,5	47 47	CW CW		
t to	at at at at	2 613,5 2 643,5 2 673 5	at at at	At At		

Table 14: Receiver Blocking parameters for Receiver Category 1 equipment

NOTE 1: Pmin 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	Blocking signal	Blocking signal power	Type of blocking
companion device (dBm)	Frequency (MHz)	(dBm) (see note 2)	signal signal
Pmin + 6 dB	2 380 2 503,5	-57	~ cw
Pmin + 6 dB	2 300 2 583,5	-47 -47	¢w 4

NOTE 1: Pmin 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.

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		blocking parameters	receiver category 5 equip	mem
X	Wanted signal mean power from	Blocking signal	Blocking signal power	Type of blocking
2	companion device (dBm)	Frequency (MHz)	(dBm) (see note 2)	signal
14	Pmin + 12 dB	2 380 2 503,5	57	cw/
1	Pmin + 12 dB	2 300 2 583,5	at	Cw Cw
2	NOTE 1: Pmin is the minimum level of the w	vanted signal (in dBm) re	quired to meet the minimum p	erformance criteria

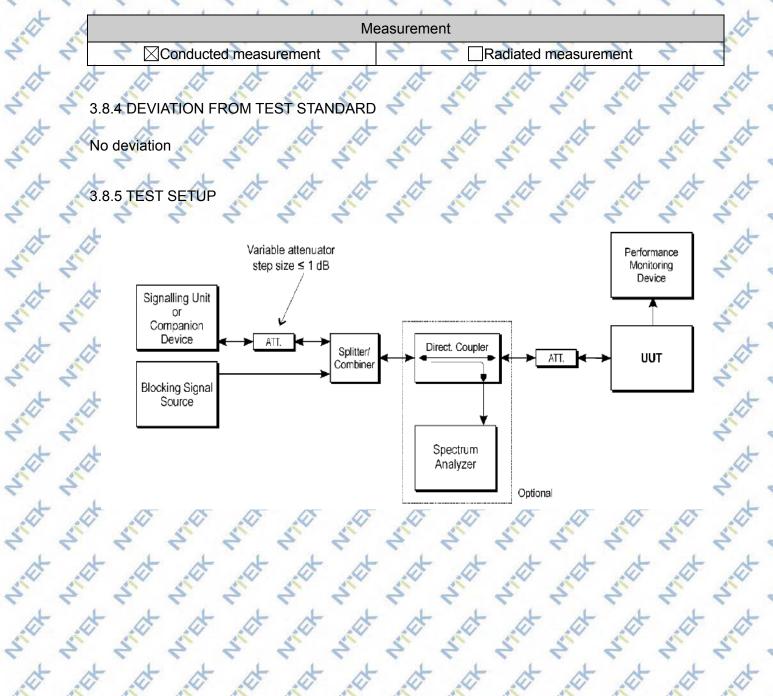
Table 16: Receiver Blocking parameters receiver category 3 equipment

NOTE 1: Pmin 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.

3.8.3 TEST PROCEDURE

ATEX

Refer to chapter 5.4.11.2 of ETSI EN 300 328 V2.1.1 (2016-11)



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3.8.6 TEST RESULTS

Tern	NTE	C	t is
Niet	3.8.6 TEST RES	Page 44 of 74 Report No.: STR190920002002E	* *
NET	EUT :	Smart Humidity & Temperature Model Name : ShellyH&T	+ si
SIL	Temperature : Pressure :		t si
Silt	Test Mode : CH01:	RX Mode(802.11b-CH01/CH13)	t is
Net	Wanted signal from companie	nean power Blocking signal Blocking signal PER PER Limit	t is
A	(dBm) _{Note(1)}	(MHz) (dBm) / ⁷⁰ Note(2) / ⁷⁰	t,

A	Test Mode : RX Mode(80	2.11b-CH01/CH	13) 🙏 🙏	x x	t t	At .
S	SCHO1: ST ST	Strecei	ver category 2	Star Star	St St.	5 5
A	Wanted signal mean power	Blocking signal	Blocking signal	t t	x x	A
S	from companion device	Frequency	power	PER	PER Limit	5 5
t	(dBm) _{Note(1)}	(MHz)	(dBm)	%Note(2)	*	t.
S	-71+6 dB	2 380	-575	3.53	≤10%	s" s'
t	t t t t	2 503,5	t t	2.94		x
S	-71 ± 6 dB	2 300	-47	2.99	≤10%	5 5
A		2583.5	**	3.03	* *	x
Sil	CH13: 5	St Stace	ver category 2	St St.	5 5	s" s'
t	Wanted signal mean power	Blocking signal	Blocking signal	at at	* *	d.

CH13:

receiver category 2

5	-71 ±6 dB	2583.5	-475	3.03	≤10%	5 5
NE	CH13	AT AT	iver category 2	AND AND	AND AND	with a
.at	Wanted signal mean power	Blocking signal	Blocking signal	PER	PER Limit	dt .
2	from companion device	Frequency	power	%Note(2)	~ ~	5 5
at .	(dBm) _{Note(1)}	(MHz)	(dBm)	A 4	at at	t.
2	-71 + 6 dB	2 380	-57	3.48	≤10%	2 2
A	4 4 4 4	2 300,5	4 4	2.67	1	at a
2	-71 + 6 dB <	2583.5	-47	2.69	≤10%	2 2
ALL AND	Note: (1) The above results v	05 05	om laboratory tests		ALL ALL	Star S
t		T T	· t t	t t	T T T	TT
N.S.	ATT ATT ATT	2ª 2ª	AN AN	AN AN	AN AN	AN A
at	1. 1. 1. 1. 1. 1.	. t. t.	t. t.	. t. t	A. 4.	đ.
5	5 5 5 5	5 5	5 5	2 2	5 5	5 5
N.C.	sit sit sit sit	sit sit	sit sit	sit sit	sit sit	sitt s
at	a a a a	of of	t t	at at	d d	dt.
2	5 5 5 5	5 5	2 2	5 5	5 5	5 5
A. A.	sit sit sit sit	sit sit	sitt sitt	sit sit	sit sit	NIT 2
At	\$ \$ \$ \$ \$.t. t	t t	.t. t	t t	đ.
1	2 2 2 2	2 2	5 5	2 2	5 2	2 2
the test of	wet wet wet wet	wet wet	with with	with with	with with	the the the
at	at at at at	at at	at at	at at	at at	at

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The state	NTE	KINNE ster ster ster ster ster ster ster ster
ALL A	the states	Page 45 of 74 Report No.: STR190920002002E
ALL A	EUT :	Smart Humidity & Temperature Model Name : ShellyH&T
t	Temperature :	26°C
all at	Pressure :	1012 hPa
4 4	Test Mode :	RX Mode(802.11g-CH01/CH13)
At &	CH01:	receiver category 2 / / / /
141	Wanted signal	mean power Blocking signal Blocking signal PER PER Limit

receiver category 2

5	Test Mode : RX Mode(80	02.11g-CH01/CH	13)	2 2	2 4	6 6
ALL .	CH01: A A	recei	ver category 2	A A	A A	AT &
7 at	Wanted signal mean power	Blocking signal	Blocking signal	A PERT	PER Limit	5 5
A.	from companion device	Frequency	power	%Note(2)	%	A &
7 2	(dBm) _{Note(1)}	(MHz)	(dBm)		T T	4 4
N.C.	-71 + 6 dB	2 380 2 503,5	-57	3.03 2.84	<10%	ST I
NE	-71 + 6 dB	2 300 2583.5	-47	2.16 3.11	≤10%	Silt St
The start	The child and and	with with	with with	sit sit	with with	silt si
A	x x x x	recei	ver category 2	x x	t t	at 1

S	Ster St	-71 + 6 dB	5 3	2 300 2583.5	-47	-	2.16 3.11		10%	AT I	S
Net	A CHART	* sidt	Silt S	et set	sit sit	ANT	Net	with .	sit.	Silt	- Ales
at	CH13:	t t	A	recei	ver category 2	t	it	at	t	at	
S	Wanted	signal mean p	ower Blo	cking signal	Blocking signal	-	PER	PE	Limit	ST.	5
A.	from co (dBm) _{No}	mpanion devic	e Fre (MF	quency Iz)	power (dBm)	at	% _{Note(2)}	A.	%	at .	1. Carl
A	A A	-71 + 6 dB	A A	2 380 2 503,5	-57 dt	The state	3.06 3.03		10%	at	T
2 st	2 2	-71 + 6 dB	5 4	2 300 2583.5	4-47 dt	1	2.74	r dr	10%	t at	2
25V	Note: (1) T	he above res	8 8		n laboratory tests	2	2	2	5.	ST.	2ª
Niet	ANT AN	t with	sit a	et set	with with	NET	NET	ATEL .	Nict.	NET	N.S.
with	sitt sit	t with	sit is	et set	with with	NET	NET	NET	with .	N. CT	1
Niet	AND AN	t sit.	sitt is	at sat	with with	Niet	Net	wet	siet.	A	1
wilt	ANT AN	t wit.	sitt is	at sat	sit sit	Niet	Net	Net.	sint.	A. C.	1 st
Net	AND AN	t sit.	sit is	et sit	sit sit	NOT	Niet	Net	Net.	in the second	2
Net	AND AN	t sit.	Sitt is	at the	sit sit	NET	Not	Net	Nict.	N. CT	1 sector
NET	I WE WE WE	* With the	n the n	at wat	with with	NET	n ten ten te	n tet tet tet	Will the the	Nat	1 st
at	At &	t at	at .	\$ \$	at at	at	at	at	at	.t	-

Think .	NTE	K-11.30	sit sit s	to wat his	at in	with with	siter 1
S. Et .	Stat Stat S	at sat	Page 4	6 of 74	Report No	.: STR190920002	002E
t	EUT :	Smart Humidit	y & Temperature	Model Name :	ShellyH	ST of of	t.
5	Temperature :	26°C	5 5 3	Relative Humidit	ty: 60 %	5 5	5 5
t	Pressure :	1012 hPa	at at	Test Voltage :	DC 3V	at at	J.
AT .	Test Mode 💠	RX Mode(802.	.11n20-CH01/CH1;	39 19 1	U U	14 14	4
5	CH01;	2 4	5 4 4	2 4	2	2 2	5 5
A	t t	t t	receiver of	category 2	t t	t t	t
S.C.	Wanted signal	mean power B	Blocking signal	Blocking signal	PER	PER Limit	5 3
t	from companio	n device F	requency	power	%Note(2)	* %*	1 t

t	Pressure :	1012 hPa	at at	Test Voltage	: DC 3V	at at	at	•
A	Test Mode :	RX Mode(80	2.11n20-CH01/C	H13)	19 19	19 19	1	1
2		2	2 2	2 2 4	2 4	2 2 4	5 4	5
A	At At	the the	receiv	er category 2	t t	At at	A	1
ST	Wanted signal	mean power	Blocking signal	Blocking signal	PER	PER Limit	S.	1º
T	from companio	n device	Frequency	power		* % *	L.	•
A.	(dBm) _{Note(1)}	Q Q	(MHz)	(dBm)	%Note(2)	18 18	A.	1
2	2 2 2 2 +70 +		2 380		3.18	≤10%	2	2
.at		OUD A	2 503,5	J-5/ J	3.96		4	4
S	5 5 5		2 300	5 5 6	2.92		\$.	2
at	71+0	o dB	2583.5	At -47 At	2.32	≤10%	at	2
S	СH13: К	Ser Ser	and and	5 5 e	ST ST	J J ,	Š,	5
A		t t	receiv	er category 2	tit	t t	x	- /

	-71 + 6 dB	2 300	-47	2.92	≤10%	
4	A A A A	2583.5	A	2.32	4	at .
5	CH13:	2 2	2 2 2	1	2° 2°	5 5
A	the state of	recei	iver category 2	At At	at at	A
S	Wanted signal mean power	Blocking signal	Blocking signal		DEP	S S
t	from companion device	Frequency	power	PER	PER Limit	A
A.	(dBm) _{Note(1)}	(MHz)	(dBm)	%Note(2)	× %	19 3
2		2 380		3.03	S 10%L	4 4
AL.		2 503,5		2.75		AT &
2	+70 + 6 dB	2 300	2 2 2	2.19	≤10%	5 5
A	AT AT AT AT	2583.5	4	2.09	4	15
2	Note: (1) The above results	were obtained f	rom laboratory tests		2 4	5 4
.at				\$ \$	t.t.	at .
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at	at at at at	at at	at at	at at	at at	at .
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t	the the the	t t	t t	at at	at at	A
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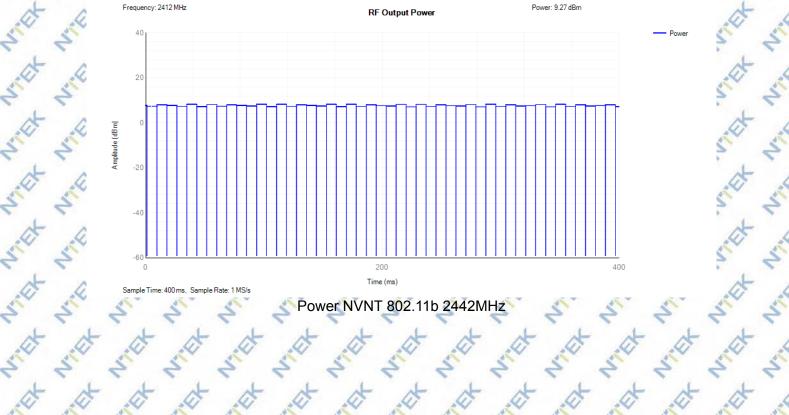
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	A A	* * *	t.	Page 47 of 74	\$ \$	Report No	o.: STR19092	200020028	dt .
	4. TEST	RESULTS	5 5	5 3	5	5	5 2	5	5
-	4.1 RF Out		the state	at at	at at	at	at	at .	at .
	Condition	<mode <<="" td=""><td>Frequency</td><td>Max Burst</td><td>Burst</td><td>Max</td><td>Limit</td><td>Verdict</td><td>2</td></mode>	Frequency	Max Burst	Burst	Max	Limit	Verdict	2
ar.	At 1	+ + 1	(MHz)	RMS Power	Number	EIRP	(dBm)	x	X
	NY NY		AN A	(dBm)	N N	(dBm)	1 de la	N A	4
	NVNT	802.11b	2412 🔶	8.27	49	9.27	20 ~	Pass	2
	NVLT	802.11b	2412	8.67	47	9.67	20	Pass	A
	NVNHT	802.11b	2412	7.63	49	8.63	20	Pass	4
	NVNT	802.11b	2442	7.76	48	8.76	20	Pass	2
	NVLT	802.11b	2442	8.21	46	9.21	20	Pass	1-
	NVNHT	802.11b	2442	7.08	V 47 V	8.08	20	Pass	4
	S NVNTS	802.11b	2472 🔊	8.62	49	9.62	20 2	Pass	2
	NVLT	802.11b	2472	8.84	48	9.84	20	Pass	L
ŕ	NVNHT	802.11b	2472	8.02	A7 🐼	9.02	20	Pass	S .
	NVNT	802.11g	2412 🔬	8.21	279	9.21	\$ 20	Pass	5
	NVLT	802.11g	2412	8.54	278	9.54	20	Pass	1
-	NVNHT	802.11g	2412	7.62	279	8.62	20	Pass	5
	NVNT	802.11g	2442	8.02	280	9.02	20	Pass	1
	NVLT	802.11g	2442	8.43	282	9.43	20	Pass	5
-	NVNHT /	802.11g	2442	7.17	280	8.17	20	Pass	1×
	NVNT	802.11g	2472	8.58	279	9.58	20	Pass	× 5
	NVLT	802.11g	2472	8.87	279	9.87	20	Pass	2
-	NVNHT	802.11g	2472	7.85	277	8.85	20	Pass	x
	NVNT	802.11n(HT20)	2412	8.07	224	9.07	20	Pass	Y at
	NVLT	802.11n(HT20)	2412	8.24	223	9.24	20 5	Pass	2
-	NVNHT	802.11n(HT20)	2412	7.41	222	8.41	20	Pass	A
	NVNT	802.11n(HT20)	2442	7.91	224	8.91	20	Pass	4 3
	NVLT	802.11n(HT20)	2442	8.16	222	9.16	20	Pass	2
-	NVNHT	802.11n(HT20)	2442	7.13	222	8.13	20	Pass	A
	NVNT	802.11n(HT20)	2472	8.45	224	9.45	20	Pass	47 2
	NVLT	802.11n(HT20)	2472	8.73	223	9.73	20	Pass	-
	NVNHT	802.11n(HT20)	2472	7.74	222	8.74	20	Pass	1
						1	~		
	5 2	2 2	Power	NVNT 802.11b 2		2	2 4		4
er.	Frequ	ency: 2412 MHz		RF Output Power	F	ower: 9.27 dBm			-

Power NVNT 802.11b 2412MHz



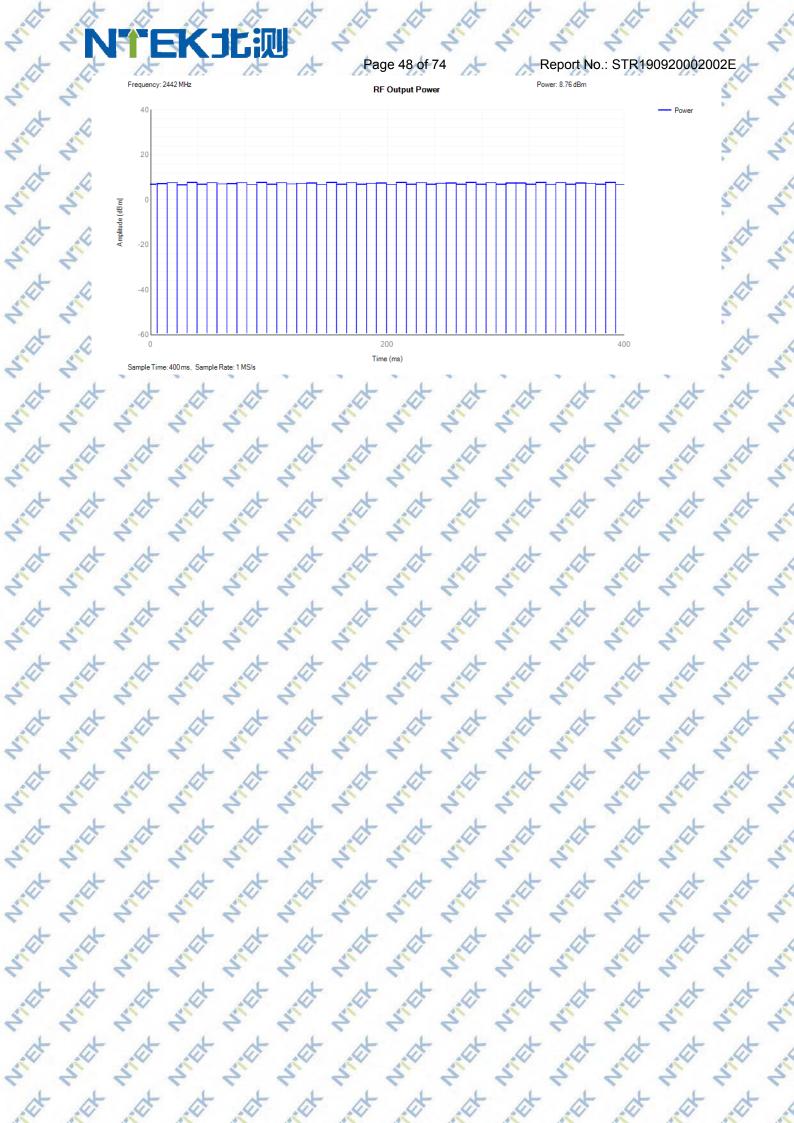
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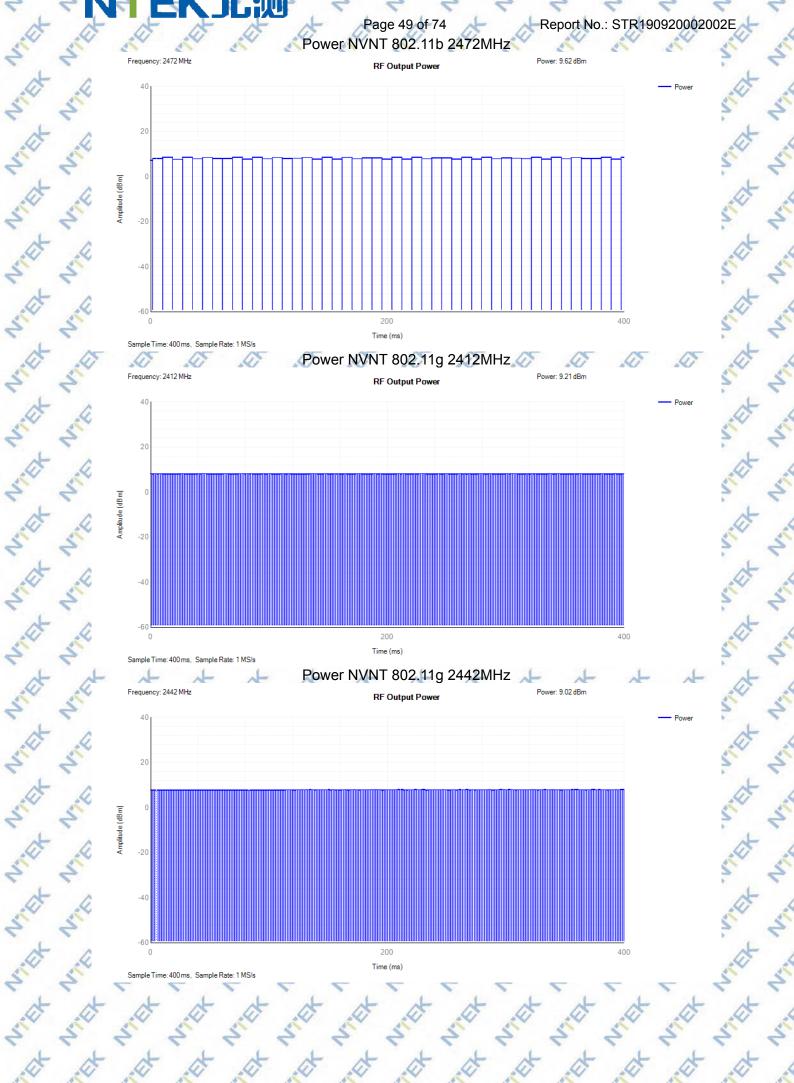
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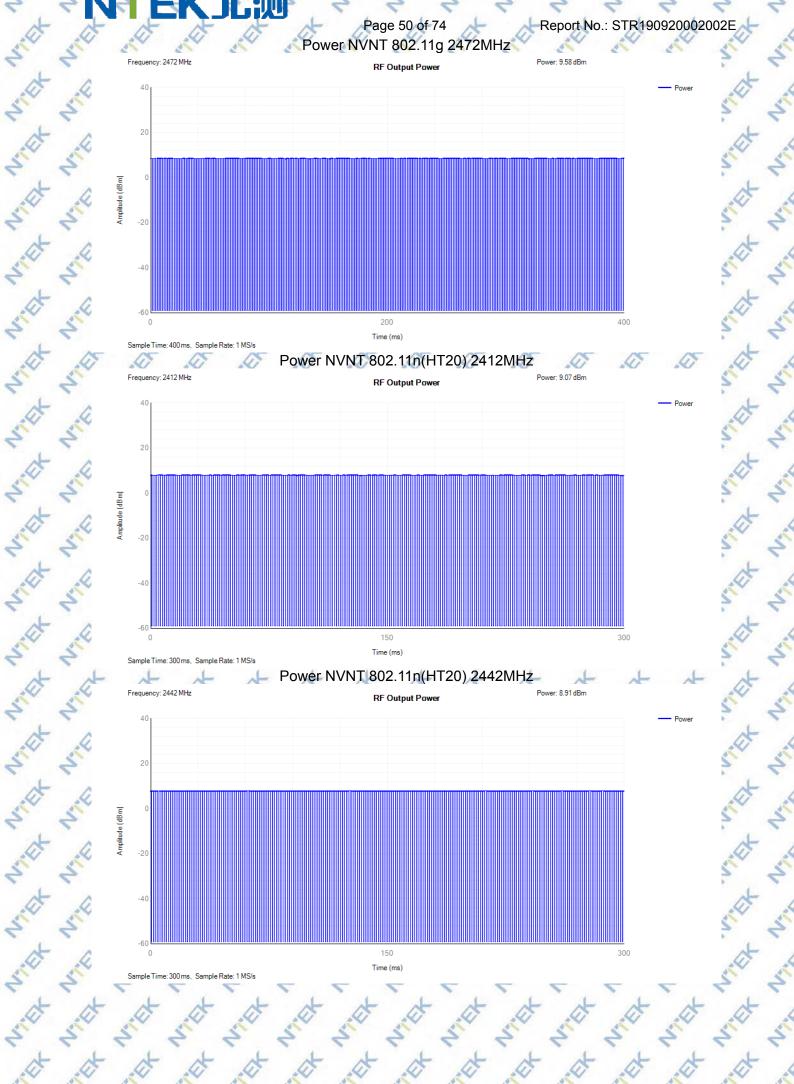
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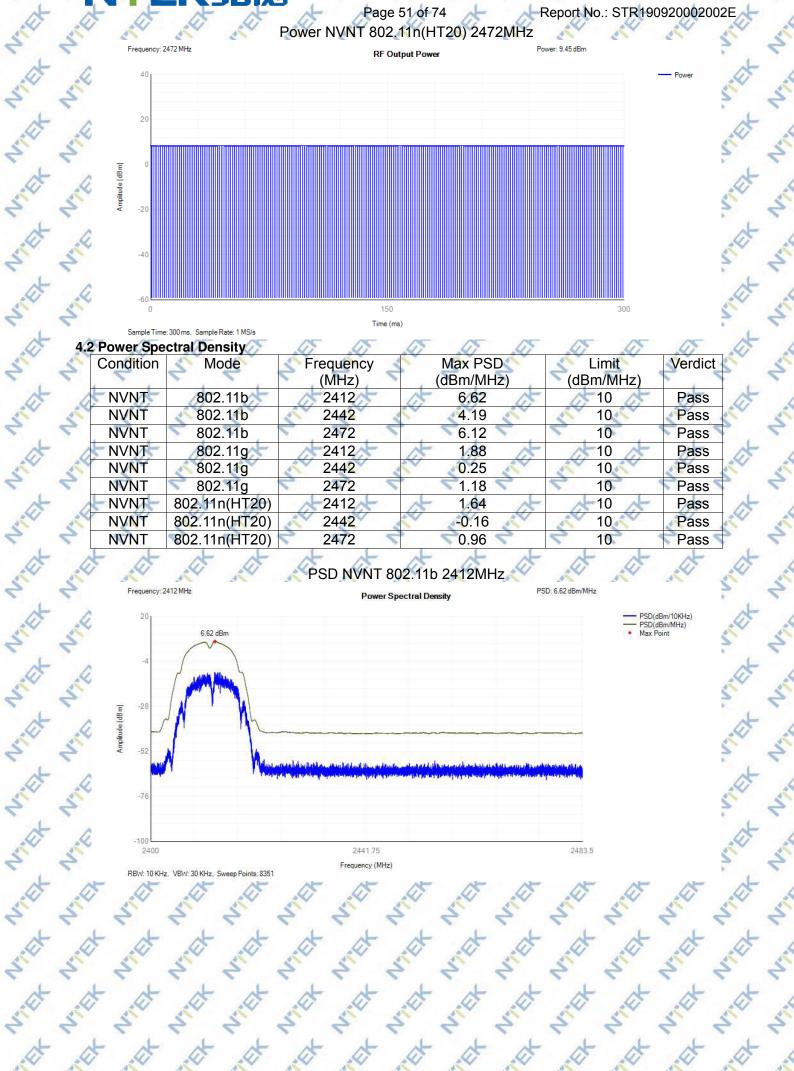
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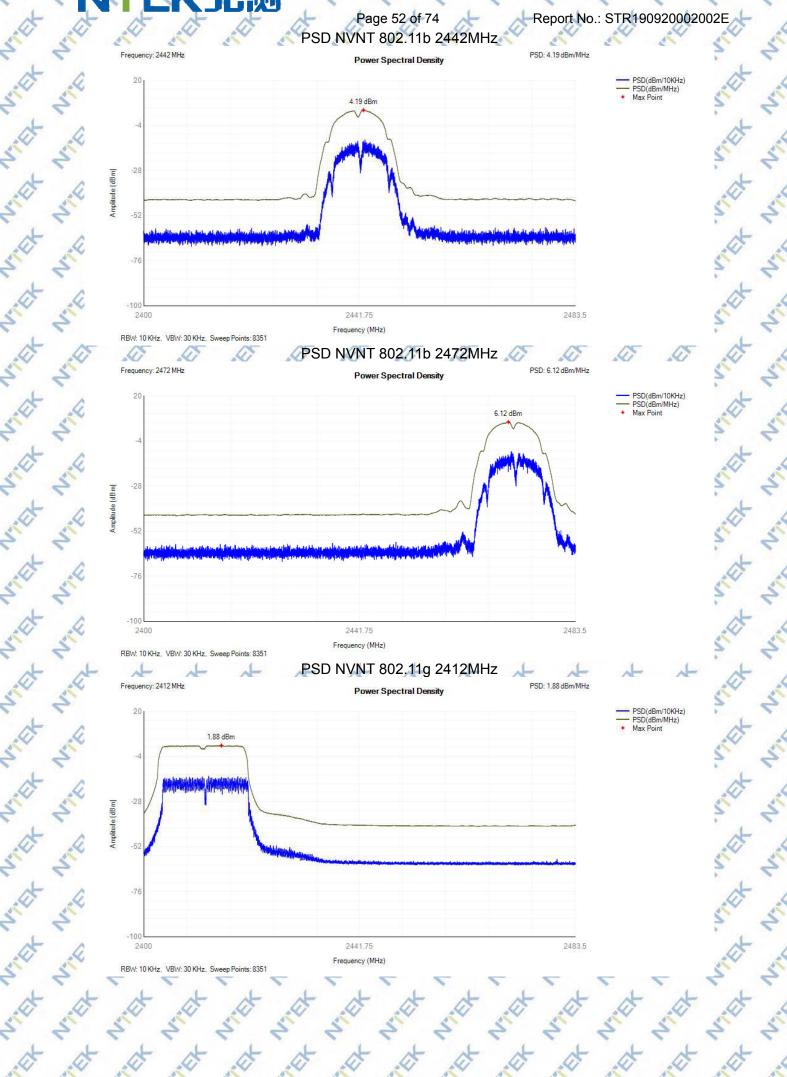
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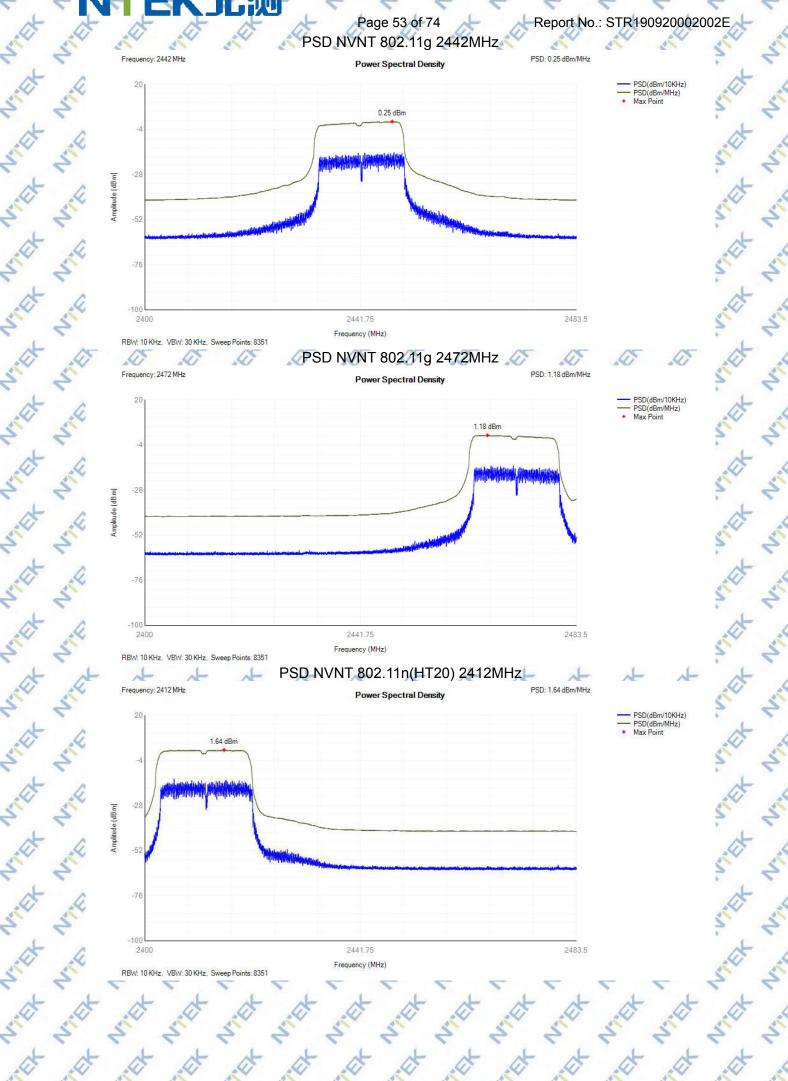
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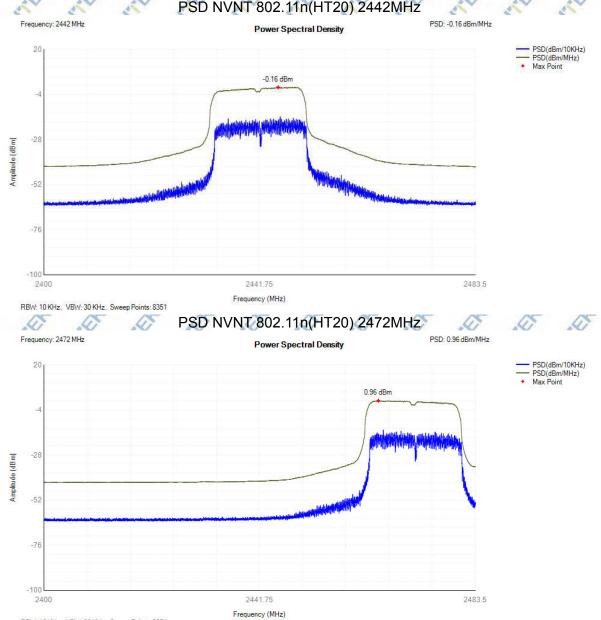
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NIC RBW: 10 KHz, VBW: 30 KHz, Sweep Points: 8351

1	4.3 Occup	bied Channel	Bandwidth	at at	1	st-	J- J-	t.	t t
N.	Condition	Mode	Frequency	Center	OBW	Lower Edge	Upper Edge		Verdict
5	2 3	1	(MHz)	Frequency (MHz)	(MHz)	(MHz)	(MHz)	(MHz)	
~	NVNT	802.11b	2412	2411.944	10.775	2406.557	2417.331	2400 -	Pass
at	at	of of	at .	a a	at	0 0	4 4	2483.5MHz	* *
2º	NVNT	802.11b	2442	2442.186	11.059	2436.657	2447.715	2400 - 2483.5MHz	Pass
at	NVNT	802.11b	2472	2471.762	11.091	2466.217	2477.307	2400 - 2483.5MHz	Pass
5	NVNT	802.11g	2412	2411.936	16.646	2403.613	2420.259	2400 - 2483.5MHz	Pass
AL.	NVNT	802.11g	2442	2442.012	16.718	2433.653	2450.371	2400 - 2483.5MHz	Pass
5	NVNT	802.11g	2472	2471.884	16.662	2463.553	2480.215	2400 - 2483.5MHz	Pass
A.	NVNT	802.11n(HT20)	2412	2411.938	17.674	2403.101	2420.775	2400 - 2483.5MHz	Pass
T A	< NVNT	802.11n(HT20)	2442	2442.022	17.714	2433.165	2450.879	2400 - 2483.5MHz	Pass
Sil	NVNT	802.11n(HT20)	2472	2471.892	17.662	2463.061	2480.723	2400 - 2483.5MHz	Pass
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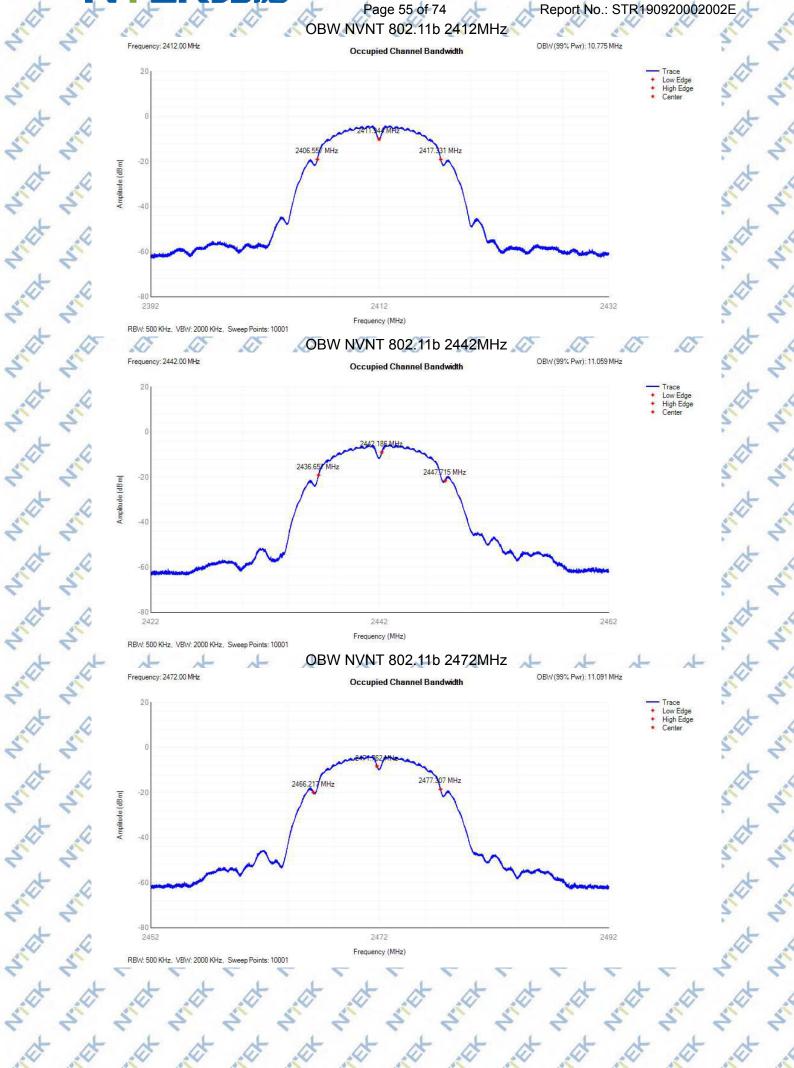
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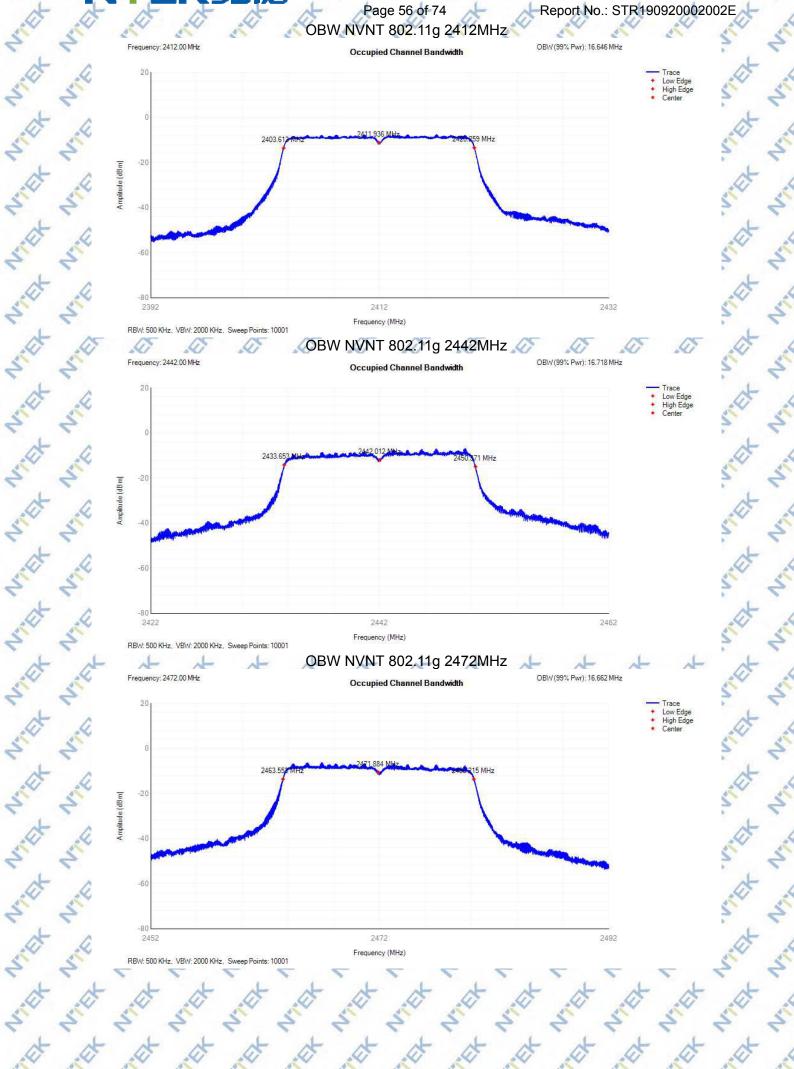
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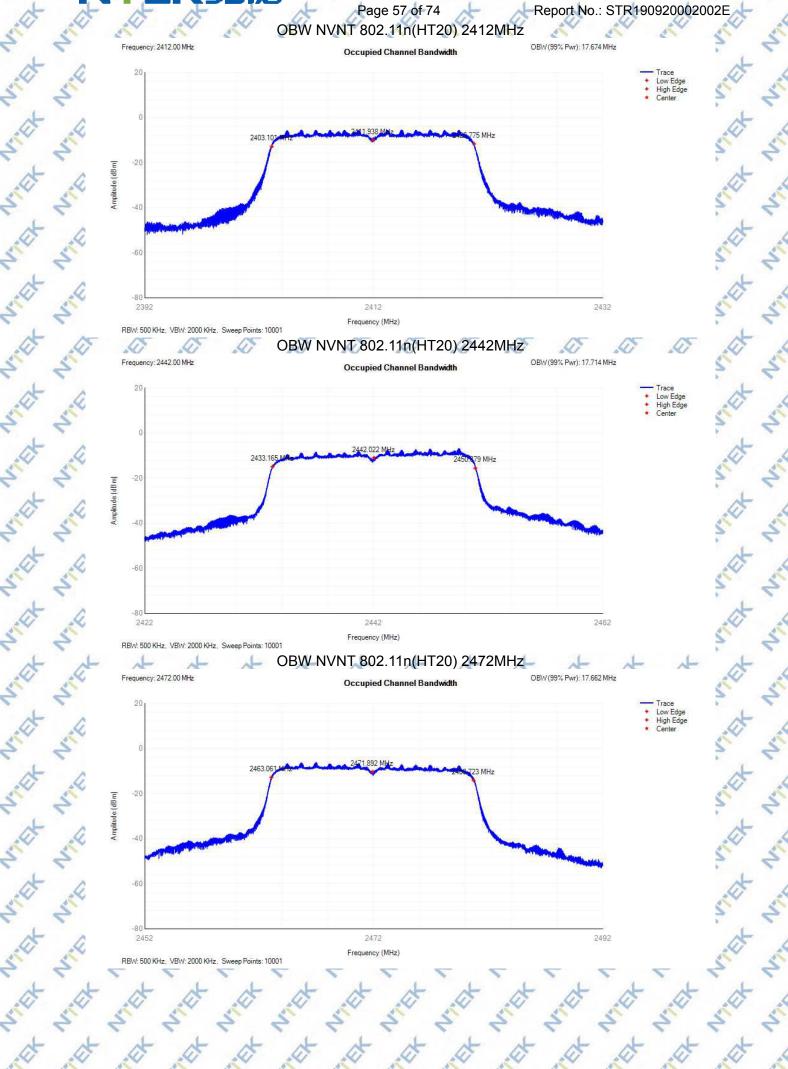
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A	A	A		A Pa	ge 58 of 74	Re	port No.: STR19	0920002	002E
1 Charles	4.4 1		r unwanted emiss			1 Charles and a start of the st	Nº Nº	2 M	N 6
5	5	Condition	Mode			Level Bm/MHz)	Limit (dBm/MHz)	Verdict	4 4
A.	1	1	A. A.	(MHz)	Frequency (dl (MHz)	DITI/IV(HZ)		1	15
S	5	NVNT	802.11b	2412		-51.39	-10	Pass	5 5
A	A	NVNT	802.11b	2412		-49.32	1-10	Pass	A
1º	2ª	NVNT NVNT	802.11b 802.11b	2412	4	-48.41 -49.98	-10.4	Pass Pass	- 5 S
2	2	NVNT	802.11b	2412		-53.26	-10	Pass	4 4
J.	1	NVNT	802.11b	2412	A Design of the local division of the local	-52.55	-10	Pass	A .
5	5	NVNT	802.11b	2412		-55.36	-10	Pass	5 5
t	t	NVNT NVNT	802.11b 802.11b	2412		-55.59 -56.54	-10	Pass Pass	t
2 de la	2 CT	NVNT	802.11b	2412		-57.08	-10	Pass	Nº A
2	2	NVNT	802.11b	2412		-57.07	-10	Pass	4 4
5	.0	NVNT	802.11b	2412		-57.02	-20	Pass	4
5	5	NVNT NVNT	802.11b 802.11b	2412		-56.42 -56.27	-20 -20	Pass Pass	5 5
A	A	NVNT	802.11b	2412	2385.725	-55.8	-20	Pass	A
14	all'	NVNT	802.11b	2412	2384.725	-55.3	-20	Pass	Nº X
2	2	NVNT	802.11b	2412		-55.59	-20	Pass	4 4
A	5	NVNT NVNT	802.11b 802.11b	2412	2382.725 2381.725	-56.58 -57	-20	Pass Pass	5
S	S	NVNT	802.11b	2412		-57.38	-20	Pass	5 5
t	A	NVNT	802.11b	2412		-56.85		Pass	t
AT .	10	NVNT	802.11b	2412	2378.95	-57.3	-20	Pass	A A
2	2	NVNT NVNT	802.11b 802.11b	2472		-47.31 -46.3	-10	Pass	4 4
at	A	NVNT	802.11b	2472	2485 2486	-46.17	-10	Pass Pass	at .
5	S	NVNT	802.11b	2472		-48.15	-10	Pass	2 2
L	.L	NVNT	802.11b	2472		-52.24	-10	Pass	L
A.	A.	NVNT	802.11b	2472		-56.41	-10	Pass	- A .
2	~	NVNT NVNT	802.11b 802.11b	2472 2472		-56.85 -57.13	-10 -10	Pass Pass	5 6
A	A	NVNT	802.11b	2472		-57.81	A-10 A	Pass	A
1 A	1º	NVNT	802.11b	2472		-57.58	-10	Pass	5 8
5	5	NVNT	802.11b	2472		-57.89	-10	Pass	6 6
de la	1	NVNT NVNT	802.11b 802.11b	2472	2494.091 2495.091	-57.94 -58.09	-10	Pass Pass	- A .
2	2	NVNT	802.11b	2472	2495.091	-58.2	-20	Pass	5 2
A	A	NVNT	802.11b	2472	2497.091	-58.27	1-20 A	Pass	A
2 Charles	and a	NVNT	802.11b	2472		-58.41	-20	Pass	Nº S
5	5	NVNT NVNT	802.11b 802.11b	2472		-58.46 -58.37	-20	Pass Pass	6 6
1	5	NVNT	802.11b	2472		-58.33	-20	Pass	4
5	5	NVNT	802.11b	2472	2502.091	-58.4	-20	Pass	5 5
A	A	NVNT	802.11b	2472		-58.45	-20	Pass	A
1 and a start	1 Start	NVNT NVNT	802.11b 802.11b	2472		-58.44 -58.42	-20	Pass Pass	N 8
2	5	NVNT	802.11b	2472		-58.43	-20	Pass	2 4
5	0	NVNT	802.11g	2412	2399.5	-40.61	-10	Pass	5
5	S	NVNT	802.11g	2412		-42.68	-10	Pass	5 5
A	A	NVNT NVNT	802.11g	2412	2397.5 2396.5	-43.73 -44.61	-10	Pass	at
and a	A.	NVNT	802.11g 802.11g	2412	2395.5	-44.61	-10	Pass Pass	A PA
2	2	NVNT	802.11g	2412		-45.77	-10	Pass	5 5
at	at	NVNT	802.11g	2412	2393.5	-46.17	-10	Pass	at .
S	S	S.	at at	ST ST	St St	5.	S S	S	5 5
t	A	A	at at	at at	at at	t	at at	A	t
14	N.	and the second s	14 14	W W	A A	19	P. P.	14	A 1

NUME Dec 90 ft Dec 90 ft NVNT 8002119 2412 2391.5 44.83 100 Pass Pass Pass NVNT 8002119 2412 2391.5 44.84 100 Pass Pass NVNT 8002119 2412 2391.5 44.84 100 Pass Pass NVNT 8002119 2412 2382.5 49.94 100 Pass Pass NVNT 8002119 2412 2383.5 49.94 100 Pass Pass NVNT 802119 2412 2383.85 49.94 100 Pass NVNT 802119 2412 2383.85 49.94 100 Pass NVNT 802119 2412 2383.85 49.94 100 Pass NVNT 802119 2412 237.854 53.25 200 Pass NVNT 802119 2412 237.854 54.25 200 Pass NVNT 802119 2412 237.854 54.57 20	.t	d.	A	t.	d.	4.4	t .t	.t	. t. t.	·	.t
Pege 59 of 74 Report No: STRF8002002022 NVNT 802.11g 2412 2392.5 446.89 10 Pass NVNT 802.11g 2412 2390.5 43.18 10 Pass NVNT 802.11g 2412 2390.5 43.18 10 Pass NVNT 802.11g 2412 2385.5 49.81 10 Pass NVNT 802.11g 2412 2385.5 50.93 10 Pass NVNT 802.11g 2412 2384.5 51.01 10 Pass NVNT 802.11g 2412 2383.854 51.01 10 Pass NVNT 802.11g 2412 2381.854 51.92 20 Pass NVNT 802.11g 2412 2379.854 52.39 20 Pass NVNT 802.11g 2412 2379.854 53.67 20 Pass NVNT 802.11g 2412 2378.854 54.6 20	2	SIN	J FF	- K -1		5	5 5	5	5 5	5	5 2
NVNT 802110 2412 2391.5 47.43 -10 Pass NVNT 802110 2412 2390.5 48.38 10 Pass NVNT 802110 2412 2395.5 48.34 10 Pass NVNT 802110 2412 2385.5 50.91 10 Pass NVNT 802110 2412 2385.5 50.91 10 Pass NVNT 802110 2412 2383.5 50.91 10 Pass NVNT 802110 2412 2383.5 51.91 10 Pass NVNT 802111 2412 2383.54 51.91 10 Pass NVNT 802111 2412 2381.854 51.92 20 Pass NVNT 802111 2412 2378.854 52.83 20 Pass NVNT 802111 2412 2378.854 55.15 20 Pass NVNT 802.119 2412 2378.854 </td <td>A</td> <td>A</td> <td>A</td> <td></td> <td></td> <td>A Pa</td> <td>ge 59 of 74</td> <td>A</td> <td>Report No.: STR1</td> <td>90920002</td> <td>002E</td>	A	A	A			A Pa	ge 59 of 74	A	Report No.: STR1	90920002	002E
NVNT 802.11g 2412 2390.5 48.84 -10 Pass NVNT 802.11g 2412 2383.5 49.81 -10 Pass NVNT 802.11g 2412 2383.5 49.81 -10 Pass NVNT 802.11g 2412 2383.5 -60.81 -10 Pass NVNT 802.11g 2412 2383.5 -60.83 -10 Pass NVNT 802.11g 2412 2383.54 -51.01 -10 Pass NVNT 802.11g 2412 2383.54 -51.82 -20 Pass NVNT 802.11g 2412 2380.854 -52.33 -20 Pass NVNT 802.11g 2412 2378.854 -53.72 -20 Pass NVNT 802.11g 2412 2378.854 -53.38 -20 Pass NVNT 802.11g 2412 2378.854 -56.11 -20 Pass NVNT 802.11g	and a second	1 Charles			<u> </u>					Pass	Nº .
NVNT 802,119 2412 2386.5 48.84 -10 Pass NVNT 802,119 2412 2387.5 49.81 -10 Pass NVNT 802,119 2412 2387.5 -49.81 -10 Pass NVNT 802,119 2412 2388.5 50.93 -10 Pass NVNT 802,119 2412 2383.85 -51.01 -10 Pass NVNT 802,119 2412 2382.85 -51.01 -10 Pass NVNT 802,119 2412 2381.854 -51.41 -20 Pass NVNT 802,119 2412 2381.854 -51.82 -20 Pass NVNT 802,119 2412 237.854 -52.33 -20 Pass NVNT 802,119 2412 237.854 -53.23 -20 Pass NVNT 802,119 2412 237.854 -53.8 -20 Pass NVNT 802,119 24	5	~ .									6 6
NVNT 602.11g 2412 2386.5 49.81 -10 Pass NVNT 802.11g 2412 2386.5 50.93 -10 Pass NVNT 802.11g 2412 2386.5 50.93 -10 Pass NVNT 802.11g 2412 2384.5 -51.01 -10 Pass NVNT 802.11g 2412 2384.854 -51.41 -10 Pass NVNT 802.11g 2412 2381.854 -51.82 -20 Pass NVNT 802.11g 2412 2390.854 -52.89 -20 Pass NVNT 802.11g 2412 2378.854 -53.23 -20 Pass NVNT 802.11g 2412 2378.854 -54.15 20 Pass NVNT 802.11g 2412 2378.854 -55.38 -20 Pass NVNT 802.11g 2412 2378.854 -56.15 -20 Pass NVNT 802.11g <	4	1				/ / 2		7 4 18			1
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NVNT 802.11g 2472 2504.662 -55.79 -20 Pass NVNT 802.11g 2472 2505.662 -55.95 -20 Pass NVNT 802.11g 2472 2506.662 -56.03 -20 Pass NVNT 802.11g 2472 2507.662 -56.03 -20 Pass NVNT 802.11g 2472 2507.662 -56.22 -20 Pass NVNT 802.11g 2472 2508.662 -56.42 -20 Pass NVNT 802.11g 2472 2509.662 -56.48 -20 Pass NVNT 802.11g 2472 2509.662 -56.48 -20 Pass NVNT 802.11g 2472 2509.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2511.662 -56.76 -20 Pass	A	t	NVNT	802.1	1g	2472	2502.662	-55.01	-20	Pass	1
NVNT 802.11g 2472 2505.662 -55.95 -20 Pass NVNT 802.11g 2472 2506.662 -56.03 -20 Pass NVNT 802.11g 2472 2507.662 -56.22 -20 Pass NVNT 802.11g 2472 2508.662 -56.42 -20 Pass NVNT 802.11g 2472 2509.662 -56.42 -20 Pass NVNT 802.11g 2472 2509.662 -56.48 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2511.662 -56.76 -20 Pass	A.	all'									1
NVNT 802.11g 2472 2506.662 -56.03 -20 Pass NVNT 802.11g 2472 2507.662 -56.22 -20 Pass NVNT 802.11g 2472 2508.662 -56.42 -20 Pass NVNT 802.11g 2472 2509.662 -56.48 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2511.662 -56.76 -20 Pass	2	2									2 4
NVNT 802.11g 2472 2507.662 -56.22 -20 Pass NVNT 802.11g 2472 2508.662 -56.42 -20 Pass NVNT 802.11g 2472 2509.662 -56.48 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.76 -20 Pass	at	A						A Design of the local division of the local	A Destrict A Dest	and the second s	4
NVNT 802.11g 2472 2509.662 -56.48 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2511.662 -56.76 -20 Pass	S	S	NVNT	802.1	1g 🔬	2472	2507.662	-56.22	-20		5 1
NVNT 802.11g 2472 2510.662 -56.32 -20 Pass NVNT 802.11g 2472 2511.662 -56.76 -20 Pass	L	, L		802.1	1g						- L
NVNT 802.11g 2472 2511.662 -56.76 -20 Pass	A.	A.									1
	2	2									2 4
	at	A									A
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	all a	1	A.	a star	T .	5 5	AT AT	1	A 4	1	A.

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A	A	A	A A	A Pa	age 60 of 74	A	Report No.: STR19	0920002	002E
1 and a start	1 C	NVNT	802.11g	2472	2513.662	-57.06	-20	Pass	5 5
5	~ .	NVNT	802.11g	2472	2514.662	-57.1	-20	Pass	4 4
1	1	NVNT NVNT	802.11g 802.11g	2472	2515.662 2516.324	-57.29 -57.3	-20	Pass Pass	A 1
5	5	NVNT	802.11n(HT20		2399.5	-40.11	-10	Pass	5 5
A	A	NVNT	802.11n(HT20) 12412	2398.5	-42.01	10	Pass	x
1 all	2 de la	NVNT	802.11n(HT20		2397.5	-43.08	-10	Pass	- 54 5
2	2	NVNT NVNT	802.11n(HT20 802.11n(HT20	/	2396.5 2395.5	-43.97 -44.52	-10	Pass Pass	4 4
J.	1	NVNT	802.11n(HT20		2393.5	-44.85	-10	Pass	5
5	5	NVNT	802.11n(HT20		2393.5	-45.21	-10	Pass	5 5
t	- A	NVNT	802.11n(HT20	AL DOUBLE ALL DOUBLE	2392.5	-45.7	-10	Pass	t.
14	10	NVNT NVNT	802.11n(HT20		2391.5 2390.5	-46.39	-10	Pass	- 24 2
2	2	NVNT	802.11n(HT20 802.11n(HT20	Long Contraction	2390.5	-46.87 -47.64	-10	Pass Pass	4 4
at	at	NVNT	802.11n(HT20	/	2388.5	-48.59	-10	Pass	at
5	S	NVNT	802.11n(HT20) 2412	2387.5	-49.29	-10	Pass	5 5
	1	NVNT	802.11n(HT20	/	2386.5	-49.65	-10	Pass	L L
A.	1	NVNT NVNT	802.11n(HT20 802.11n(HT20		2385.5 2384.5	-49.73 -50.18	-10	Pass Pass	- A 1
2	~	NVNT	802.11n(HT20		2383.5	-50.18	-10	Pass	5 2
A	A	NVNT	802.11n(HT20	/	2382.826	-51.05	-10	Pass	x
1 Charles	24	NVNT	802.11n(HT20		2381.826	-51.22	-20	Pass	Nº S
2	2	NVNT	802.11n(HT20	/	2380.826	-51.44	-20	Pass	4 4
J.	5	NVNT NVNT	802.11n(HT20 802.11n(HT20		2379.826 2378.826	-51.6 -51.84	-20	Pass Pass	5
5	5	NVNT	802.11n(HT20		2377.826	-52.45	-20	Pass	5 5
-	- L	NVNT	802.11n(HT20	1	2376.826	-53.1		Pass	t it
J.	1	NVNT	802.11n(HT20		2375.826	-53.6	-20	Pass	
2	~	NVNT	802.11n(HT20		2374.826	-53.99	-20	Pass	2 2
×	A	NVNT NVNT	802.11n(HT20 802.11n(HT20		2373.826 2372.826	-54.18 -54.5	-20 -20	Pass Pass	t
1 and a start	2 CV	NVNT	802.11n(HT20		2372.820	-54.88	-20	Pass	- 1 A
2	5	NVNT	802.11n(HT20	and the second sec	2370.826	-55.43	-20	Pass	6 6
J.	1	NVNT	802.11n(HT20		2369.826	-55.83	-20	Pass	4
S	5	NVNT	802.11n(HT20		2368.826	-56.2	-20	Pass	5 5
t	A	NVNT NVNT	802.11n(HT20 802.11n(HT20	/	2367.826 2366.826	-56.27 -56.61	-20	Pass Pass	t
all a	N. C.	NVNT	802.11n(HT20		2365.826	-56.73	-20	Pass	14
2	2	NVNT	802.11n(HT20) 2412	2365.152	-56.97	-20	Pass	5 5
at	A	NVNT	802.11n(HT20) 2472	2484	-36.53	-10	Pass	at .
S	S		802.11n(HT20		2485	-37.87	-10	Pass	5 5
L	1	NVNT NVNT	802.11n(HT20 802.11n(HT20	,	2486	-39.31	-10	Pass Pass	L.L.
A.	1	NVNT	802.11n(HT20		2488	-41.37	-10	Pass	A I
2	~	NVNT	802.11n(HT20) 2472	2489	-42.16	-10	Pass	2 2
A	A	NVNT	802.11n(HT20		2490	-43.66	-10	Pass	A
1 Charles	1	NVNT	802.11n(HT20		2491	-44.78	-10	Pass	N 8
2	5	NVNT NVNT	802.11n(HT20 802.11n(HT20		2492	-45.74 -46.99	-10	Pass Pass	2 2
5	0	NVNT	802.11n(HT20		2494	-48.57	-10	Pass	5
5	S	NVNT	802.11n(HT20) 2472	2495	-49.94	-10	Pass	5 5
-	· ·	NVNT	802.11n(HT20		2496	-51.05	-10	Pass	t
A.	A.		802.11n(HT20		2497	-52.07	-10	Pass	and a
2	2	NVNT NVNT	802.11n(HT20 802.11n(HT20		2498	-52.6 -53.35	-10	Pass Pass	2 2
A	A	NVNT	802.11n(HT20	,	2500	-53.91	-10	Pass	A
1 Alexandre	e.	1 and a start		N 10	Nº N	1 Charles	Nº Nº	1	N 8
5	5	5	2 2	2 2	2 2	5	2 2	5	6 6
J.	5	.0	A. 4.	A .A	4.4	1	A. 4.	1	5
									.0

北测 Report No.: STR190920002002E Page 61 of 74 NVNT 802.11n(HT20) 2472 2500.662 -54.14 -10 Pass NVNT 802.11n(HT20) 2472 -54.58 -20 Pass 2501.662 -54.93 -20 NVNT 802.11n(HT20) 2472 2502.662 Pass -20 NVNT 802.11n(HT20) 2472 2503.662 -55.23 Pass -20 NVNT 802.11n(HT20) 2472 2504.662 -55.51 Pass -55.71 NVNT 802.11n(HT20) 2472 2505.662 -20 Pass **NVNT** 2472 -55.83 -20 802.11n(HT20) 2506.662 Pass NVNT 2472 2507.662 -55.95 -20 Pass 802.11n(HT20) NVNT 802.11n(HT20) 2472 2508.662 -56.43 -20 Pass 2472 -20 NVNT 802.11n(HT20) 2509.662 -56.6 Pass 2472 -20 NVNT 802.11n(HT20) 2510.662 -56.52 Pass NVNT 802.11n(HT20) 2472 2511.662 -56.93 -20 Pass 802.11n(HT20) 2472 2512.662 -57.06 -20 NVNT Pass -20 NVNT 802.11n(HT20) 2472 2513.662 -57.12 Pass -20 NVNT 802.11n(HT20) 2472 2514.662 -57.11 Pass 802.11n(HT20) 2472 2515.662 -57.17 -20 NVNT Pass NVNT 802.11n(HT20) 2472 2516.662 -57.23 -20 Pass -20 2472 NVNT 802.11n(HT20) 2517.662 -57.3 Pass NVNT 2472 2518.324 -20 802.11n(HT20) -57.34 Pass

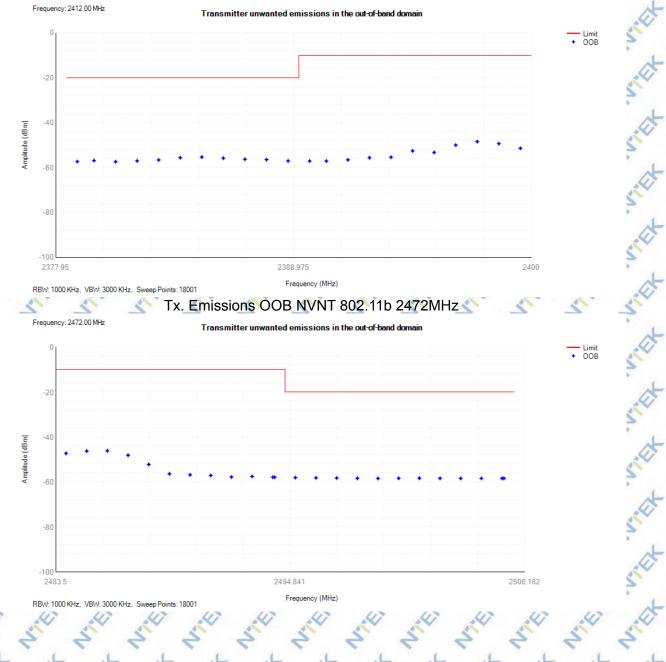


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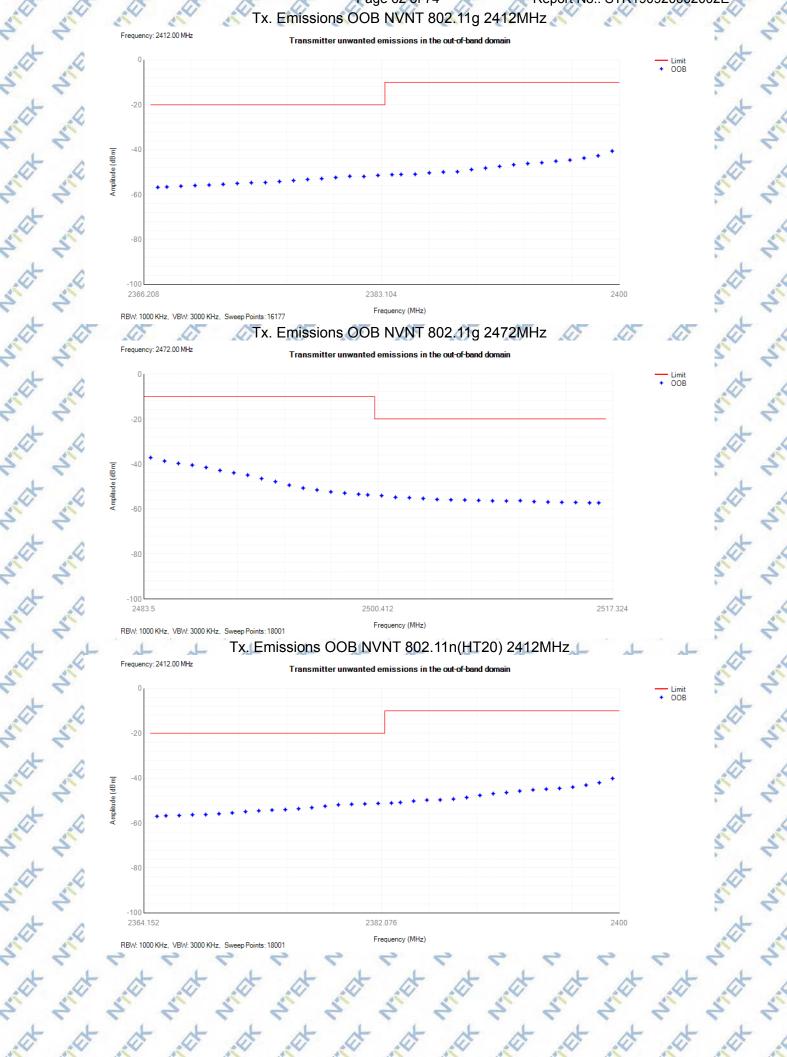
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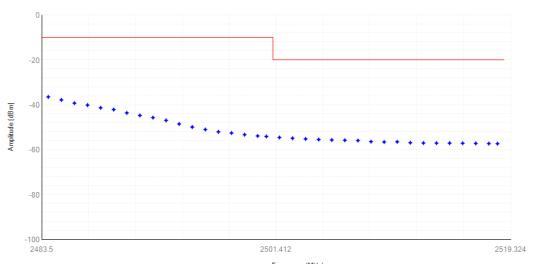
Frequency: 2472.00 MHz

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 Report No.: STR190920002002E

 Tx. Emissions OOB NVNT 802.11n(HT20) 2472MHz
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+ Limit OOB

Transmitter unwanted emissions in the out-of-band domain



RBW: 1000 KHz, VBW: 3000 KHz, Sweep Points: 18001

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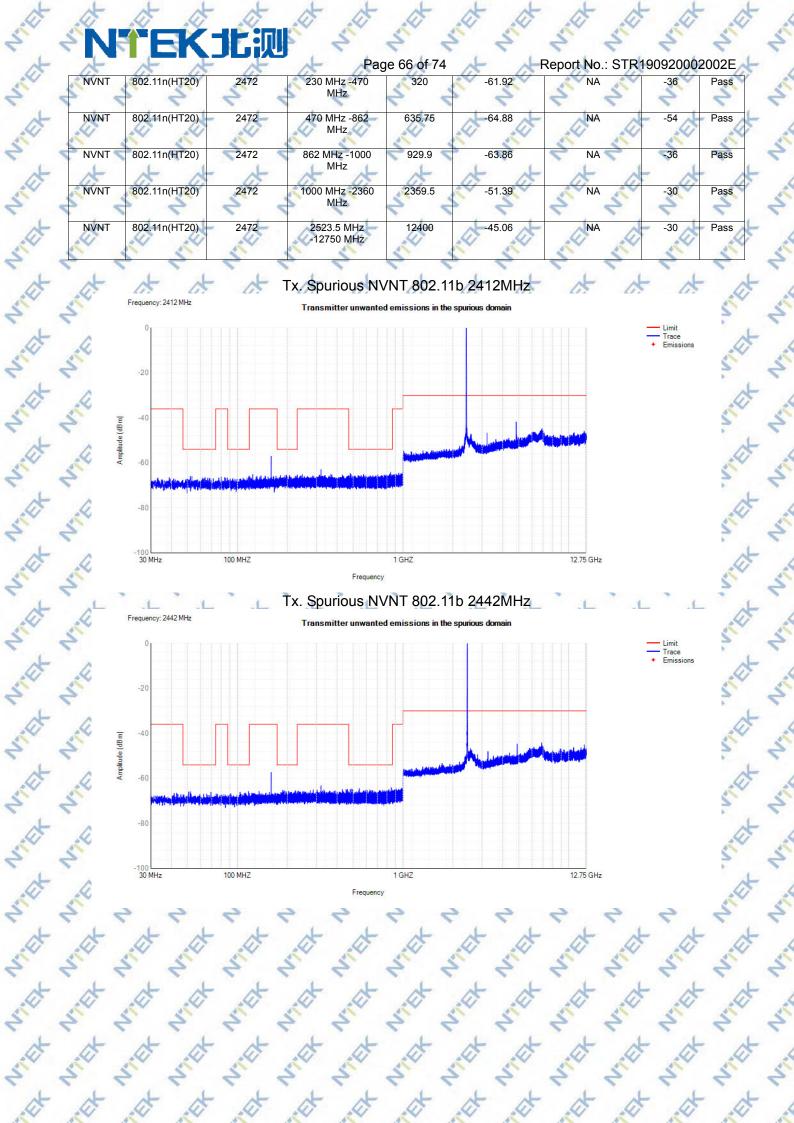
Frequency (MHz)

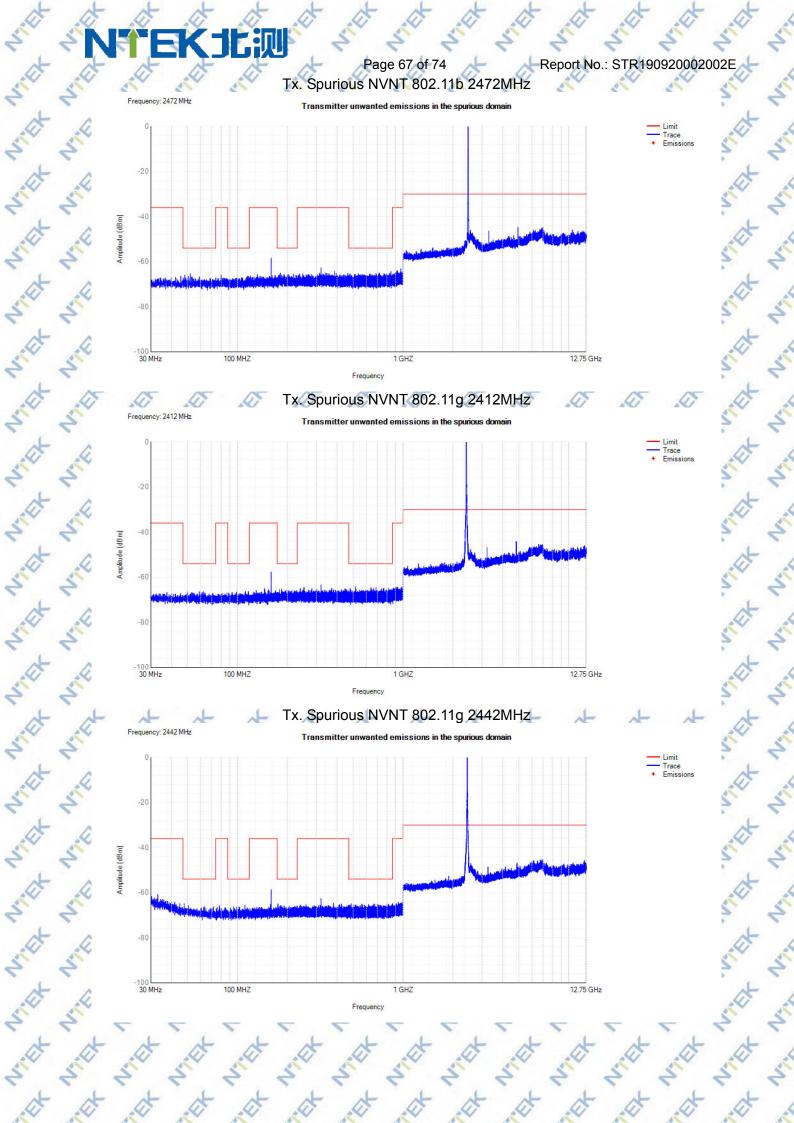
			ons in the spuric			0 0	6	4
Condition	Mode	Frequency	Range	Spur Freq	Spur Level	Spur Level	Limit	Verdict
		(MHz)		(MHz)	Peak(dBm)	RMS(dBm)	(dBm)	2
NVNT	802.11b	2412	30 MHz -47 MHz	38.85	-66.55	NA	-36	Pass
NVNT	802.11b	2412	47 MHz -74 MHz	51.95	-65.94	NA	-54	Pass
NVNT	802.11b	2412	74 MHz -87.5 MHz	80.05	-66.29	NA	-36	Pass
NVNT	802.11b	2412	87.5 MHz -118 MHz	117.7	-65.82	NA <>	-54	Pass
NVNT	802.11b	2412	118 MHz -174 MHz	159.95	-57.05	NA	-36	Pass
NVNT	802.11b	2412	174 MHz -230 MHz	197.35	-65.37	S NA	-54	Pass
NVNT	802.11b	2412	230 MHz -470 MHz	319.95	-62.92	NA	-36	Pass
NVNT	802.11b	2412	470 MHz -862 MHz	841	-64.15	NA X	-54	Pass
NVNT	802.11b	2412	862 MHz -1000 MHz	941.65	-64.52	NA	-36	Pass
NVNT	802.11b	2412	1000 MHz -2360 MHz	2353	-49.79	NA O	-30	Pass
NVNT	802.11b	2412	2523.5 MHz -12750 MHz	4824	-41.79	S NA S	-30	Pass
NVNT	802.11b	2442	30 MHz -47 MHz	42.95	-66.53	NA	-36	Pass
NVNT	802.11b	2442	47 MHz -74 MHz	51.95	-65.9	NA S	-54	Pass
NVNT	802.11b	2442	74 MHz -87.5 MHz	74.5	-66.85	NA S	-36	Pass
NVNT	802.11b	2442	87.5 MHz -118	116.9	-65.79	NA	-54	Pass
		_	MHz			L I		
NVNT	802.11b	2442	118 MHz -174 MHz	160	-57.33	NA Q	-36	Pass
NVNT	802.11b	2442	174 MHz -230 MHz	187.6	-65.26	NA C	-54	Pass
NVNT	802.11b	2442	230 MHz -470 MHz	319.95	-63.27	NA A	-36	Pass
NVNT	802.11b	2442	470 MHz -862 MHz	850.25	-64.12	S NA S	-54	Pass
NVNT	802.11b	2442	862 MHz -1000 MHz	976.45	-64.39	NA	-36	Pass
NVNT	802.11b	2442	1000 MHz -2360	2351.5	-52.33	NA X	-30	Pass
NVNT	802.11b	2442	MHz 2523.5 MHz	6855.5	-44.18	NA	-30	Pass
NVNT	802.11b	2472	-12750 MHz 30 MHz -47 MHz	45.55	-66.36	NA A	-36	Pass
NVNT	802.11b	2472	47 MHz -74 MHz	51.95	-65.35	NA NA	-54	Pass
NVNT		2472	74 MHz -87.5 MHz	80	-65.67			Pass
	802.11b				-66.4		-36	
NVNT	802.11b	2472	87.5 MHz -118 MHz	115.4	AA	NA		Pass
NVNT	802.11b	2472	118 MHz -174 MHz	159.95	-58.43	S NA	-36	Pass
NVNT	802.11b	2472	174 MHz -230 MHz	181.85	-65.01	NA	-54	Pass
NVNT	802.11b	2472	230 MHz -470 MHz	319.95	-62.75	NA C	-36	Pass
NVNT	802.11b	2472	470 MHz -862 MHz	844.35	-64.33		-54	Pass
NVNT	802.11b	2472	862 MHz -1000	970.25	-63.11	NA	-36	Pass

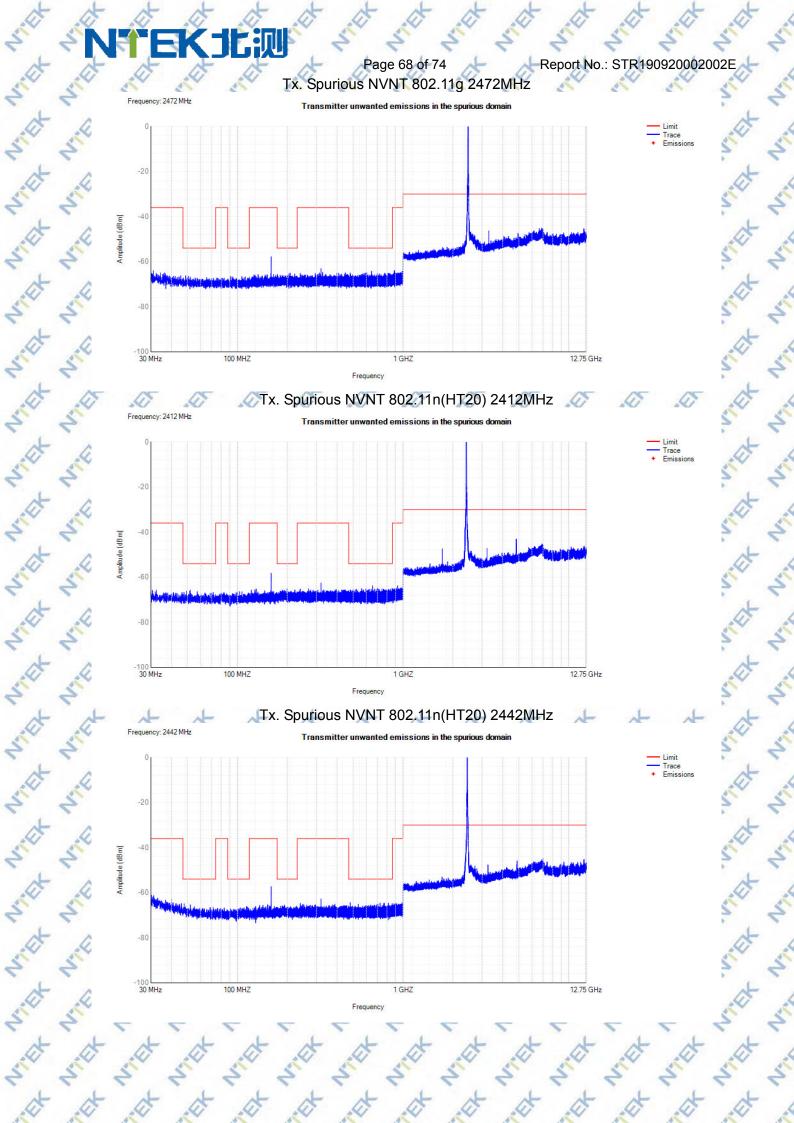
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the state	A.		A.	MHz	e 64 of 74	Nº N	Report No.: STR1	A.	02E
2	NVNT	802.11b	2472	1000 MHz -2360 MHz	2348	-52.36			Pass
A.	NVNT	802.11b 802.11g	2472 2412	2523.5 MHz -12750 MHz	4944 37.55	-44.77	NA NA	10	Pass
2		802.11g	2412	30 MHz -47 MHz 47 MHz -74 MHz	59.2	-66.41	NA NA	-54 F	Pass S
at .	NVNT NVNT	802.11g 802.11g	2412 2412	74 MHz -87.5 MHz 87.5 MHz -118	86.55 116.7	-67	NA NA	A SHOT	Pass Pass
5	NVNT	802.11g	2412	MHz 118 MHz -174 MHz	159.95	-57.69	< NA <	-36 F	Pass
t	NVNT	802.11g	2412	174 MHz -230 MHz	184.6	-65.24	NA O	-54 F	Pass
5	NVNT	802.11g	2412	230 MHz -470 MHz	320	-63.39	S NA S	5	Pass
at	NVNT	802.11g	2412	470 MHz -862 MHz	516.3	-64.27	NA		Pass
5	NVNT	802.11g 802.11g	2412	862 MHz -1000 MHz 1000 MHz -2360	907.8 2357	-64.35	NA NA	2	Pass
A	NVNT	802.11g	2412	MHz 2523.5 MHz	4829	-44.17	NA	- str	Pass
SIL	NVNT	802.11g	2442	-12750 MHz 30 MHz -47 MHz	33.1	-60.8		1	Pass
A	NVNT NVNT	802.11g 802.11g	2442 2442	47 MHz -74 MHz 74 MHz -87.5 MHz	47.75 77.9	-64.85	NA NA	-54 F	Pass
S	NVNT	802.11g	2442	87.5 MHz -118 MHz	111.05	-65.68	S NA	611	Pass
t	NVNT	802.11g	2442	118 MHz -174 MHz	160	-58.64	NA	-36 F	Pass
A.	NVNT	802.11g	2442	174 MHz -230 MHz	175.95	-64.95	NA K	1	Pass
7	NVNT	802.11g	2442	230 MHz -470 MHz	320	-62.59		1	Pass
A	NVNT NVNT	802.11g 802.11g	2442 2442	470 MHz -862 MHz 862 MHz -1000	487.15 998.5	-63.96	NA NA	24	Pass
2	NVNT	802.11g	2442	MHz 1000 MHz -2360	2358.5	-48.95		5	Pass
J.F	NVNT	802.11g	2442	MHz 2523.5 MHz	6957.5	-45.2	NA NA	-30 F	Pass
2	NVNT	802.11g	2472	-12750 MHz 30 MHz -47 MHz	31.1	-63.93	NA		Pass
A.		802.11g 802.11g	2472 2472	47 MHz -74 MHz 74 MHz -87.5 MHz	48.7 83.25	-66.29 -67.32	NA NA	1.2	Pass Pass
2	4 4	2	4 4	2. 2.	2	4 4	5 2	2	5 4
.at	NVNT	802.11g	2472	87.5 MHz -118 MHz	90.8	-66.54	NA O	-54 F	Pass
Nº 1	NVNT	802.11g	2472	118 MHz -174 MHz	160	-57.74	< NA <	-36 F	Pass
Niet	NVNT	802.11g	2472	174 MHz -230	208.45	-65.06	NA A	-54 F	ass
2		002. Hg	2412	MHz	200.45	-03.00	2.2	2	
at	NVNT	802.11g	2472	230 MHz -470 MHz	320	-63.04	NA	-36 F	Pass
S	NVNT	802.11g	2472	470 MHz -862	645.7	-64.21	NA C	-54 F	Pass
A	A	At	A	A MHz	A	at at	at a	- At	At
Si	NVNT	802.11g	2472	862 MHz -1000 MHz	886.85	-63.89	S NA	-36 F	Pass
A	NVNT	802.11g	2472	1000 MHz -2360	2300.5	-51.93	NA		Pass
ST	NIVALT -	000 44		MHz 2522 5 MHz	0004 5		S NA S		1 ×
A	NVNT	802.11g	2472	2523.5 MHz -12750 MHz	6864.5	-45.07	S NA S	-30 F	Pass
N. S.	NVNT	802.11n(HT20)	2412	30 MHz -47 MHz	32.45	-65.71	NA K		Pass
r .L	NVNT	802.11n(HT20)	2412	47 MHz -74 MHz	51.95	-65.76	NA A	6	Pass /
A.	A NINI	002.TH(F120)	24		51.95	-05.70			
2		1 2	5 .	2 2	2	C . C .	2 2	2	2 3
A.	A.	15 15	1	5 5	A	AT AT	AT AT	A.	AT .
2	2 4	2 4	2 .	5 2	2	2 2	2 2	2	5 4
A	AT .	\$ \$	AT.	A A	A	A A	A .A	A.	A.

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2.4	2N	TEK	ᅸᆊ	A Pa	ge 65 of 7	74 + +	Report No.	: STR19	0920002	002E	2
A.	NVNT	802.11n(HT20)	2412	74 MHz -87.5 MHz		-66.83	NA	SIL	-36	Pass	-St
at	NVNT	802.11n(HT20)	2412	87.5 MHz -118 MHz	103.3	-66.39	NA	1	-54	Pass	
2º at	NVNT	802.11n(HT20)	2412	118 MHz -174 MHz	160	-58.23	NA	P at	-36	Pass	2
N.C.	NVNT	802.11n(HT20)	2412	174 MHz -230 MHz	199.8	-65.13	S NA	N. Contraction	-54	Pass	Sil
at	NVNT	802.11n(HT20)	2412	230 MHz -470 MHz	320	-62.56	NA	1	-36	Pass	
15 at	NVNT	802.11n(HT20)	2412	470 MHz -862 MHz	654.45	-63.85	NA	2	-54	Pass	2
AL AL	NVNT	802.11n(HT20)	2412	862 MHz -1000 MHz	928.65	-63.84	A NA	2 C	-36	Pass	N
at	NVNT	802.11n(HT20)	2412	1000 MHz -2360 MHz	2359	-46.6	NA	A	-30	Pass	
24	NVNT	802.11n(HT20)	2412	2523.5 MHz -12750 MHz	4827.5	-43.03	NA	2	-30	Pass	4
N. S.	NVNT	802.11n(HT20)	2442	30 MHz -47 MHz	30.25	-61.15	NA NA	2	-36	Pass	-Si
at	NVNT	802.11n(HT20)	2442	47 MHz -74 MHz	47.75	-64.92	NA	A	-54	Pass	1
2.4	NVNT	802.11n(HT20)	2442	74 MHz -87.5 MHz	83.35	-66.77	NA	- t	-36	Pass	2
N.S.	NVNT	802.11n(HT20)	2442	87.5 MHz -118 MHz	113.65	-66.09	NA NA	2ª	-54	Pass	2
t	NVNT	802.11n(HT20)	2442	118 MHz -174 MHz	159.95	-57.32	NA	1	-36	Pass	and and
1	NVNT	802.11n(HT20)	2442	174 MHz -230 MHz	192.3	-65.51	NA	- t	-54	Pass	2
NET	NVNT	802.11n(HT20)	2442	230 MHz -470 MHz	320	-62.81	NA NA	2	-36	Pass	1º1
NET	NVNT	802.11n(HT20)	2442	470 MHz -862 MHz	479.95	-64.35	NA	A	-54	Pass	and and
14	NVNT	802.11n(HT20)	2442	862 MHz -1000 MHz	984.1	-64.48	NA	1 t	-36	Pass	2
NICT	NVNT	802.11n(HT20)	2442	1000 MHz -2360 MHz	2342	-50.69	NA .	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-30	Pass	- AN
THE	NVNT	802.11n(HT20)	2442	2523.5 MHz -12750 MHz	6999	-45	NA	A	-30	Pass	K
14	NVNT	802.11n(HT20)	2472	30 MHz -47 MHz	37.2	-64.74	NA	24	-36	Pass	2
NET	NVNT	802.11n(HT20)	2472	47 MHz -74 MHz	57	-66.4	NA .	5	-54	Pass	-S
at	NVNT	802.11n(HT20)	2472	74 MHz -87.5 MHz	87.3	-66.26	NA	A	-36	Pass	and and
1	NVNT	802.11n(HT20)	2472	87.5 MHz -118 MHz	104.4	-66.04	NA	The state	-54	Pass	2
T	NVNT	802.11n(HT20)	2472	118 MHz -174 MHz	159.95	-57.57	NA NA	25	-36	Pass	2
at	NVNT	802.11n(HT20)	2472	174 MHz -230 MHz	192.15	-64.34	NA	A	-54	Pass	and and
1×	the state	the the	- At	4 4	1×	* *	t t	r t	The state	T A	2
15 M	- st	ST Z		ATT ATT	SIL	AN AN	2º	2. Child	-	2	- And
at	at	the st	at	t t	at	et et	at	at	at	at	-







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Frequency: 2472 MHz

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L WIEL ANET WEEK NUT x Page 69 of 74 Tx. Spurious NVNT 802.11n(HT20) 2472MHz

Report No.: STR190920002002E Transmitter unwanted emissions in the spurious domain -40 Amplitude (dBm) -80

Limit
 Trace
 Emissions

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No. 14

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1	ŚŊ	TEK :	北迥		20 70 of 74		Report No.: STR19			2
A.	4.6 Re	eceiver spurious	emissions	A Ara	ge 70 of 74	A A		09200020	JUZE	and a
2	Condition	Mode	Frequency (MHz)	Range	Spur Freq (MHz)	Spur Level Peak(dBm)	Spur Level RMS(dBm)	Limit (dBm)	Verdict	2
A.	NVNT	802.11b	2412	30 MHz -1000 MHz	480	-68.99	NA NA	-57	Pass	1
2	NVNT	802.11b	2412	1000 MHz -12750 MHz	12416.5	-56.08	NA	-47	Pass	2
A.	NVNT	802.11b	2442	30 MHz	480	-68.49	NA	-57	Pass	1
2	NVNT	802.11b	2442	-1000 MHz 1000 MHz	9244.5	-55.95		-47	Pass	2
A.	NVNI	002.110	2442	-12750 MHz	9244.5	-55.95			r ass	-
2	NVNT	802.11b	2472	30 MHz -1000 MHz	480	-68.81	NA	-57	Pass	2
AF.	NVNT	802.11b	2472	1000 MHz -12750 MHz	6700.5	-56.23	NA A	-47	Pass	1
2	NIVAT	P02 11a	2412		~ ~	-67.89	A-NA A-	2 57	Page	2
S.C.		802.11g	141	30 MHz -1000 MHz	480	4 4	A A	-57	Pass	1 and a star
2	NVNT	802.11g	2412	1000 MHz -12750 MHz	12436	-55.77	NAS NAS	47	Pass	2
A.	NVNT	802.11g	2442	30 MHz	480	-69.11	NA	-57	Pass	1
7	NVNT	802.11g	2442	-1000 MHz 1000 MHz	6951	-55.93	NA	-47	Pass	2
A.	A		AT .	-12750 MHz	1	A A	AT AT	A.	A.	2ª
2	NVNT	802.11g	2472	30 MHz -1000 MHz	480	-67.09	P NA	-57	Pass	2
A.	NVNT	802.11g	2472	1000 MHz -12750 MHz	6754	-56.74	NA	-47	Pass	2
24	NVNT	802.11n(HT20)	2412	30 MHz	480	-68.69	LNA L	-57	Pass	2
AL IN	NVNT	802.11n(HT20)	2412	-1000 MHz 1000 MHz	6704	-55.75	NA	-47	Pass	1
T at	5 at	r r	r t	-12750 MHz	~ ~ ~	at the	T at at	r t	T at	7
A. A.	NVNT	802.11n(HT20)	2442	30 MHz -1000 MHz	480	-68.29	NA A	-57	Pass	1º
T at	NVNT	802.11n(HT20)	2442	1000 MHz -12750 MHz	6839	-56.46	NA	-47	Pass	5
NET	NVNT	802.11n(HT20)	2472	30 MHz	480	-68.52	NA	-57	Pass	1
T A	NVNT	802.11n(HT20)	2472	-1000 MHz 1000 MHz	6850	-57.84	-NA -	-47	Pass	5
N.S.	SU	St St	Stor -	-12750 MHz	Str 3	A SU	St St	S.S.S.	SUI	5
t	A	t t	A	xx	A	tt	t	t	t	
S	Sil	St St	5 2	St St	St 3	St St	St St	Sil	Sil	Si
int	int	A A	A	t t	A	x x	t t	A	A	
S	S	ST ST	Si 2	St St	5 2	ST ST	St St	S	Sil	S
A	A	A A	A	at at	A	x x	at at	A	A	·)
Sil	Si	ST ST	5 2	ST ST	5 2	ST ST	St St	S	Sil	S
A	A	AA	A	at at	A	A A	at at	A	A	
SI	Si	ST ST	25 2	ST ST	Si 2	ST ST	Si Si	SIL	Si	S
at	at	at at	at	at at	A	at at	at at	A	A	
S	S	ST ST	5 2	ST ZST	Si a	ST ST	ST ST	S	S	S
at	at	at at	at	at at	at	at at	at at	at	at	
Si	Si	ST ST	25 2	St St	Si à	St St	Si Si	S	S	S
at	at	at at	at	at at	at	at at	at at	at	at	
A. C. C.	A.V.		AV.		AV .		NY NY	N.V.	N.V.	1

A.C. JEW NICH NIEt Wilt NET Wilt NIET the state N.C. Report No.: STR190920002002E Page 71 of 74 Site In Rx. Spurious NVNT 802.11b 2412MHz 12 15 Frequency: 2412 MHz Milet Mile Receiver spurious emissions Not Internet Limit
 Trace
 Emissions Anter Ante N. Statest -20 Anitet Mark -40 Amplitude (dBm W. Hat -60 With With N. T. T. T. Antet Ante 30 MHz 100 MHZ 1 GHZ 12.75 GHz stat Ariet Ariet Frequency stet with 0 0 Rx. Spurious NVNT 802.11b 2442MHz S S 10 Frequency: 2442 MHz Receiver spurious emissions with with Not International And Limit Trace
 Emissions Antet Mile -20 N. THE MAN -40 Amplitude (dBm) ANTER ANE With Mart -60 Antet Asile with his -80 Milt Mile stat In 30 MHz 100 MHZ 1 GHZ 12.75 GHz Aniet Milet Frequency Rx. Spurious NVNT 802.11b 2472MHz with the 1 Frequency: 2472 MHz Receiver spurious emissions Limit Anter Ante Trace
 Emissions stat M -20 Anter Ante W. The Mark -40 mplitude (dBm) with with the state of the s -60 Anitet Anite week writer writer w -80 with with 100 MHZ 1 GHZ 12.75 GHz week with wet with T work with t which with Frequency wet with welt with wet with west with west with west with west with

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 Trace
 Emissions Anter Ante N. Statest -20 Anitet Mark -40 Amplitude (dBm W. Hat -60 With With N. T. T. T. Antet Ante Art 30 MHz 100 MHZ 1 GHZ 12.75 GHz stat Arriet Arreit Frequency stet with 0 0 Rx. Spurious NVNT 802.11g 2442MHz S S 10 Frequency: 2442 MHz Receiver spurious emissions with with Not International And Limit Trace
 Emissions Antet Mile -20 N. THE MAN -40 Amplitude (dBm) ANTER ANE With the way -60 Antet Asile with his -80 **All All products** Milt Mile stat In 30 MHz 100 MHZ 1 GHZ 12.75 GHz Aniet Milet Frequency Rx. Spurious NVNT 802.11g 2472MHz with the 1 Frequency: 2472 MHz Receiver spurious emissions Limit ANTER ANTE Trace
 Emissions stat M -20 Anter Ante N. Tet -40 mplitude (dBm) with with the state of the s -60 Anitet Anite week writer writer w -80 with with 100 MHZ 1 GHZ 12.75 GHz week with T which will a week writer welt writer which with Frequency west with which white where with west with west with whet with

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NICT NIEt Willt NIEt 北测 Report No.: STR190920002002E Page 73 of 74 Rx. Spurious NVNT 802.11n(HT20) 2412MHz 1 Frequency: 2412 MHz Receiver spurious emissions

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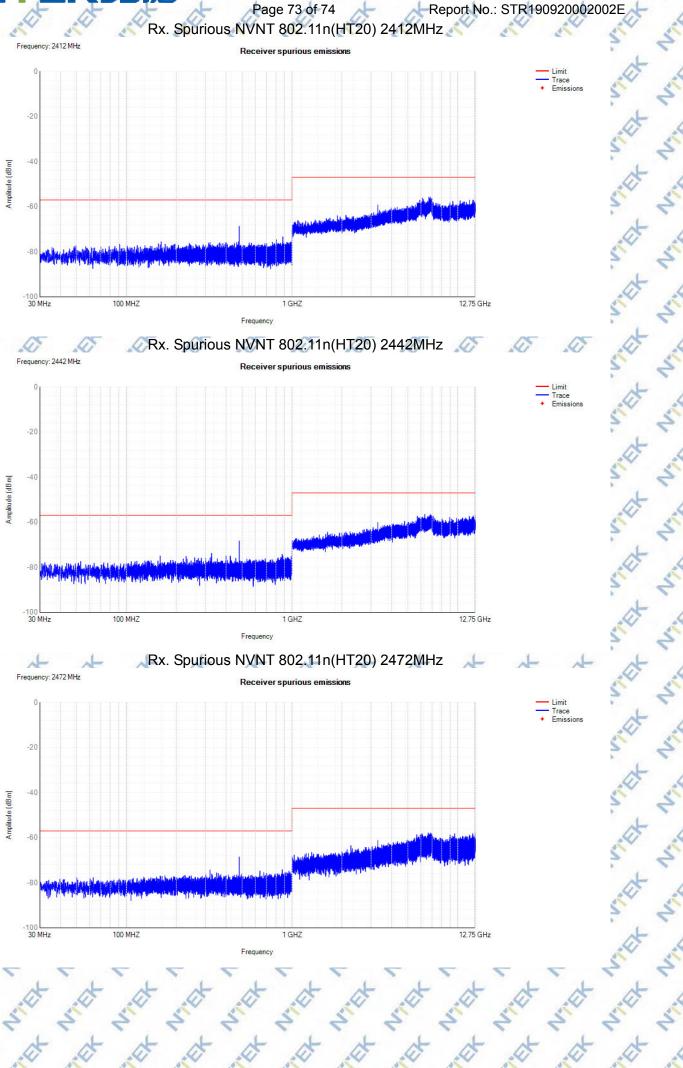
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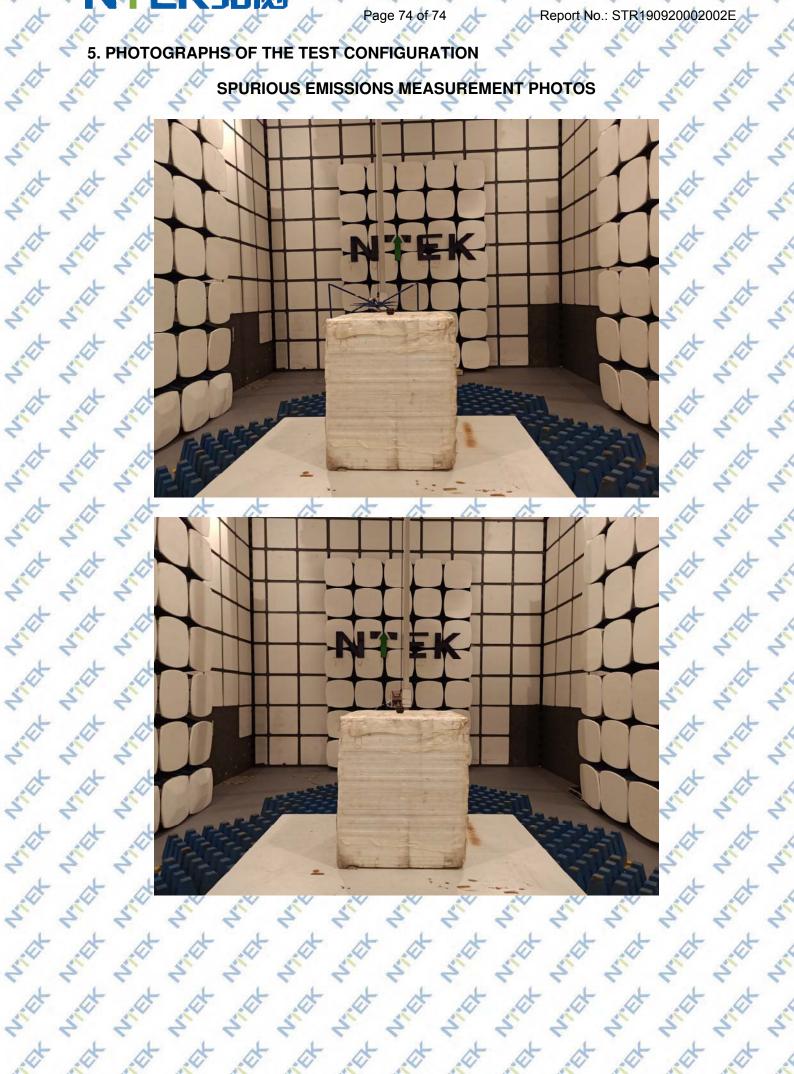
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Page 74 of 74 5. PHOTOGRAPHS OF THE TEST CONFIGURATION with with

SPURIOUS EMISSIONS MEASUREMENT PHOTOS



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WEIT **Report No.:** STS190920002001E NIEt Smart Humidity & Temperature Sensor Product: Model No.: ShellyH&T, SHHT-v1 **Applicant:** Allterco Robotics ASTER A 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria Address: Issued by: Shenzhen NTEK Testing Technology Co., Ltd. Lab Location: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China Tel : +86-755-6115 6588 Fax: +86-755-6115 6599 NIET AN IN

will will Arter with with with This test report consists of 62 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by NTEK. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to NTEK within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit. which with with whether whether whether which with with week writer with and with with

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at Audio/video, information and communication technology equipment Part 1: Safety requirements

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Tested by (name + signature)...... Keny Fu

S	As.	1 2 2 2 2	A A ANTER A A A A
at .		Approved by (name + signature)	Coco Li
5	No	Date of issue	2020-04-14
at		Testing Laboratory	Shenzhen NTEK Testing Technology Co., Ltd.
5	10°	Address	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang
at		* * * *	Street, Bao'an District, Shenzhen 518126 P.R. China
SIV	1m	Applicant's name:	Allterco Robotics
X	4	Address:	1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria
Silv	2	Test specification:	<u>'</u> '' '' '' '' '' '' '' '' '' '' ''
t		Standard:	□IEC 62368-1:2014 (Second Edition)
A. C.	11	Test procedure	EN 62368-1:2014+A11:2017
T	1	Non-standard test method	
AT .	10	Test Report Form No:	
2	2	Test Report Form(s) Originator :	
A.	-	Master TRF;	2014-03
2	2		em for Conformity Testing and Certification of Electrotechnical E), Geneva, Switzerland. All rights reserved.
AL.	1	X X X X	Smart Humidity & Temperature Sensor
2	2	Trade Mark	
1			Shelly to the to the to the
2	2	Manufacturer	Allterco Robotics
A.		Manufacturer address	. 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria
2	No	Model/Type reference	
at		Ratings	.5V===0.5A or DC3V, supplied by a CR123A Li-MnO2 battery
5	2	Ratings the	5V==0.5A or DC3V, supplied by a CR123A Li-MnO2 battery Shenzhen NTEK Testing Technology Co., Ltd
A		d d d d	
5	2	1 1 1 2 2	5 5 5 5 5 5 5 5 5
at		at at at at	Shenzhen NTEK Testing Technology Co., Ltd
S	3	S 5 5 5 5	· _ · · · · · · · · · · · · · · · · · ·
A		x x x x	t t t t t t t t t t
S	3	5 5 5 5 5 S	Shenzhen NTEK Testing Technology Co., Ltd
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Niet		- Page 3 of 62 - Report No. STS190920002001E
at	* * * * * * *	Report No. STS190920002001E
5	TEST ITEM PARTICULARS:	
A	Classification of use by	Ordinary person
S. C.	ST ST ST ST ST	Instructed person
t	the the the the the	Skilled person
14		Children likely to be present
2	Supply Connection	AC Mains DC Mains
A		\sim - \boxtimes ES1 \square ES2 \square ES3
4	Supply % Tolerance	□ +10%/-10%
at	* * * * * *	
S	ST ST ST ST ST ST	□ + <u>25%/-15</u> % <u></u>
t		None
	Supply Connection – Type:	pluggable equipment type A -
V L		non-detachable supply cord
AT .		direct plug-in
2	2 2 2 2 2 2 2	mating connector
.at		pluggable equipment type B -
5	5 5 5 5 5 5	non-detachable supply cord
A	A A A A A A	appliance coupler permanent connection
S. C.	S S S S S	mating connector 🛛 other: Micro USB or Li-MnO2
t	at at at at at at	battery
a la	Considered current rating of protective device as part of building or equipment installation	N/A (Not directly connected to mains)
2		Installation location: Duilding; Dequipment
A.	Equipment mobility	☐ movable ☐ hand-held
2		rack-mounting wall-mounted
A	Over voltage category (OVC):	
S	<u> </u>	OVC IV Other: (Not directly connected to mains)
A	Class of equipment	
1 Charles	Access location	restricted access location N/A
N.L	Pollution degree (PD)	
A.	Manufacturer's specified maxium operating ambient:	40°C
2	IP protection class	
A	Power Systems	
5	Altitude during operation (m)	2000 m or lessm
at	Altitude of test laboratory (m)	2000 m or less m
S	Mass of equipment (kg):	approx.0.035kg
Net	stat stat stat stat stat	stat stat stat stat stat stat stat
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NTEKJU
Report No. STS190920002001E
POSSIBLE TEST CASE VERDICTS:
- test case does not apply to the test object N/A
- test object does meet the requirement: P (Pass)
- test object does not meet the requirement: F (Fail)
TESTING: C C C C C C C C C C C
Date of receipt of test item:: 2019-09-24
Date (s) of performance of tests: 2019-09-24 to 2019-10-12
GENERAL REMARKS: A A A A A A A A A
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Throughout this report a 🗔 comma / 🖄 point is used as the decimal separator.
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:
The application for obtaining a CB Test Certificate
includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has
been provided
When differences exist; they shall be identified in the General product information section.
Name and address of factory (ies): Same as manufacturer
GENERAL PRODUCT INFORMATION:
Product Description – -The product is a Smart Humidity & Temperature Sensor, there two kind of PCB board used for equipment: one supplied by a CR123A Li-MnO2 battery only; The other one supplied by 5V via micro USB only. -The maximum operating temperature is 40°C.
Model Differences – Designation model is different only.
All models are the same only except the model names.
Additional application considerations – (Considerations used to test a component or sub-assembly) –
Star and
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Page 5 of 62

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Report No. STS190920002001E

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Smart Humidity & Temperature Sensor Model: ShellyH&T



Add.: 1407 Sofia, Bulgaria, 103 Cherni Vrah Blvd, Bulgaria

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Shenzhen NTEK Testing Technology Co., Ltd

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ot	-	Report No. STS190920002001E
	10	ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:
×		(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)
t	A.	(Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.
¥ .	0	Electrically-caused injury (Clause 5):
1	5	(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source
5		classification) Example: +5 V dc input ES1
	10.	Source of electrical energy Corresponding classification (ES)
x		Internal circuits
4	10.	Input USB port
*		Battery output
	10	Electrically-caused fire (Clause 6):
at	1	(Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2
	10.	Source of power or PIS Corresponding classification (PS)
x		Internal circuits
	-	Battery output
.L	6	Injury caused by hazardous substances (Clause 7)
5		(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as
3	A.	part of the component evaluation.) Example: Liquid in filled component Glycol
al		
12		
Ũ		Source of hazardous substances
	10.	Source of hazardous substances Corresponding chemical Battery Complied with annex M
5	Ac.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Complex N
	Ac. Ac.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)
5 5 5 5	Ac. Ac.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit
0 d d	le. A. A.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS)
	Ac. Ac. Ac.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1
* * * *	As. As. As.	Source of hazardous substancesCorresponding chemicalBatteryComplied with annex MMechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) MS2Source of kinetic/mechanical energyCorresponding classification (MS)Sharp edges and corners of accessible partsMS1Product massMS1
* * * *	Ac. Ac. Ac. Ac.	Source of hazardous substancesCorresponding chemicalBatteryComplied with annex MMechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) MS2Source of kinetic/mechanical energyCorresponding classification (MS)Sharp edges and corners of accessible partsMS1Product massMS1Thermal burn injury (Clause 9)
* * * * *	Ac. Ac. Ac. Ac.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part,
* * * * *	To Do Do Do Do	Source of hazardous substancesCorresponding chemicalBatteryComplied with annex MMechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) MS2Source of kinetic/mechanical energyCorresponding classification (MS)Sharp edges and corners of accessible partsMS1Product massMS1Thermal burn injury (Clause 9)
* * * * * *	As. As. As. As. As.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) MS1 (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)
* * * * * *	. de de de de de	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) MS1 (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) TS1
* * * * * *	As. As. As. As. As. As.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1 Source of thermal energy Corresponding classification (TS) Accessible parts TS1
* * * * * *	Ac. De. De. De. De. De.	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) MS1 (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1 Source of thermal energy Corresponding classification (TS) Accessible parts TS1 Radiation (Clause 10) TS1 (Note: List the types of radiation present in the product and the corresponding energy source classification.)
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* * * * * * * *	As. As. As. As. As. As. As. As.	Source of hazardous substances Corresponding chemical Battery Complied with annex M. Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1 Source of thermal energy Corresponding classification (TS) Accessible parts TS1 Radiation (Clause 10) TS1 Note: List the types of radiation present in the product and the corresponding energy source classification.) RS1 Type of radiation Corresponding classification (RS)
* * * * * * * * *	1. Do Do Do Do Do Do Do Do. Do	Source of hazardous substances Corresponding chemical Battery Complied with annex M Mechanically-caused injury (Clause 8) Corresponding MS classification based on Table 35.) Example: Wall mount unit MS2 Source of kinetic/mechanical energy Corresponding classification (MS) Sharp edges and corners of accessible parts MS1 Product mass MS1 Thermal burn injury (Clause 9) MS1 (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) TS1 Example: Hand-held scanner – thermoplastic enclosure TS1 Source of thermal energy Corresponding classification (TS) Accessible parts TS1 Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1 Type of radiation Corresponding classification (RS) N/A N/A

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AN OF Indicate which energy sources are included in the energy source diagram. Insert diagram below ES A.C. 🛛 TS 🛛 RS Remark: N/A Niet NIEt will NIET NICT NICT AND ANCE! AN INT NIET N.C. N.C. AN IN Wilt AN INT AN EX with NET with Nich with with with NIEt AND with willt NET NET with WEIT Willt NET WERT NIEt N'Et 25 CO with with with ANDE with with AND willt with NIET NET AN COL AN CON Wilt With ANT ANTH AN INT WEIT with NET N'E with with with with Ariet Ariet Will will NET NIEt Ariet N'Et AN ICT will will Will Will with with with AND Niet AND A AN CONTRACT Will will AND ANER ANTH NIEt ANT AN IN N.C. with with with with with with will AND Niet ANER ASTER . AN AN with ANIEL ANT will Nict AND with with With With with with NET with ATEL NET NET NICH AN AN with with with with ANET Aritet Aritet with willt with -ANE A AN INT With with AND WIEt with N.C. Night NICH with with Willt Niet NIEt with NET Niet N.C. N.C. with ATEL NICH AN OF NET N.C. A.C. ----1 AL N.C. Nat NOT A.C. 5 5 Shenzhen NTEK Testing Technology Co., Ltd 13 et et

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L	OVERVIEW OF EMPLOYI	ED SAFEGUARDS				L
1	Clause	Possible Hazard				A N
2	5.1	Electrically-caused injury				2 4
A.	Body Part	Energy Source		Safeguards		5
2 A	(e.g. Ordinary)	(ES3: Primary Filter circuit)	Basic	Supplementary	Reinforced (Enclosure)	5 4
14	Ordinary person,	ES1: Internal circuits	N/A	N/A	N/A	4 2
2	Skilled person	ES1: Input USB port	4 4	4 4	2 5	
4	A A A	ES1: Battery output			the the	A.
2	6.1	Electrically-caused fire				5 2
A	Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)		Safeguards		A
S.	4		Basic	Supplementary	Reinforced	S 2
. at	Internal combustible material/ internal plastic enclosure	PS1: Internal circuits PS1: Battery output	1, No ignition occurred. 2, No parts	N/A	N/A	A.
24	4 4 4 4	A 4 4 4	exceeding 90% of its	* * * *	* * *	4
AN +	AN AN AN A		spontaneous ignition temperature.			5 × 4
1	7.1	Injury caused by hazardous	s substances			AT &
2	Body Part	Energy Source		Safeguards		2
A	(e.g., skilled)	(hazardous material)	Basic	Supplementary	Reinforced	A.
5	Battery pack	Complied with annex M	N/A 🍝	₹N/A ₹	N/A	5 3
x	8.1	Mechanically-caused injury	/			x
1 AV	Body Part	Energy Source		Safeguards		× 1
the ter	(e.g. Ordinary)	(MS3: High Pressure Lamp)	Basic	Supplementary	Reinforced (Enclosure)	at .
2	Ordinary person,	MS1: Sharp edges and	<₽N/A ₹	<n∕a <<="" th=""><th>N/A</th><th>2 4</th></n∕a>	N/A	2 4
SIG	Skilled person	corners of accessible parts MS1: Product mass	N/A Z	N/A Z	N/A	at a
L	Ordinary person, Skilled person					at l
N	9.1	Thermal Burn				A s
2	Body Part	Energy Source		Safeguards		2 2
A.	(e.g., Ordinary)	(TS2)	Basic	Supplementary	Reinforced	\$
the t	Ordinary person, Skilled person	TS1: Accessible parts		N/A	N/A	5. 5
A.	10.1	Radiation		113	13 113	2 3
2	Body Part	Energy Source		Safeguards		5
SIL	(e.g., Ordinary)	(Output from audio port)	Basic	Supplementary	Reinforced	A A
L			L L	the state	L L	L
15	AT AT AT		Shenzhen NTE	K Testing Techn	ology Co., Ltd	ST 3
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Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" - Normal Condition; "A" - Abnormal Condition; "S" Single Fault. N. Contraction

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2	2 2	222222	2 2 2 2 2	2 2 2
4	4	GENERAL REQUIREMENTS	alar alar alar alar	AP A
5	4.1.1	Acceptance of materials, components and	2 2 2 2	PP P
at	A	subassemblies	x x x x	t t
S	4.1.2	Use of components	(See appended table 4.1.2)	S P S S
1 at	4.1.3	Equipment design and construction	at at at at	P +
A. C.	4.1.15	Markings and instructions	(See Annex F)	KAP AV A
2	4.4.4	Safeguard robustness	6 6 6 6	6 P 6 4
1	4.4.4.2	Steady force tests	(See Annex T.4)	
5	4.4.4.3	Drop tests	(See Annex T.7)	PP 2
×	4.4.4.4	Impact tests	* * * *	N/A
Sil	4.4.4.5	Internal accessible safeguard enclosure and	No such enclosure and barrier	<u> N/A </u>
t	A	barrier tests	A A A A	tt
N. C.	4.4.4.6	Glass Impact tests	Surface area not exceeding 0.1m ²	<u></u> N/A
5	4.4.4.7 🤝	Thermoplastic material tests	~ ~ ~ ~	N/A C
ALL AND	4.4.4.8	Air comprising a safeguard	Considered, but no such barrier or enclosure provided	N/A
5	4.4.4.9	Accessibility and safeguard effectiveness	All safeguards remain effective	P
AF	4.5	Explosion		AP A
2	4.6	Fixing of conductors	2 2 2 2 2	PP P
at	4.6.1	Fix conductors not to defeat a safeguard		OP OF
S	4.6.2	10 N force test applied to	5 5 5 5	SP S S
at	4.7	Equipment for direct insertion into mains socket - outlets	No such apparatus	N/A
2	4.7.2	Mains plug part complies with the relevant	R R R R	N/A
4	5	standard	4 4 4 4	5 5
5	4.7.3 🖉	Torque (Nm)	5 5 5 5	S`N/A S`
A	4.8	Products containing coin/button cell batteries	No coin/button cell batteries used	N/A
1 Alexandre	4.8.2	Instructional safeguard	N N N N	<u> </u>
5	4.8.3	Battery Compartment Construction		N/A
N.C.	S. S.	Means to reduce the possibility of children removing the battery	ST ST ST ST	- 6
A	4.8.4	Battery Compartment Mechanical Tests	x x x x	N/A
N. Contraction	4.8.5	Battery Accessibility	N N N N	<u></u>
A	4.9	Likelihood of fire or shock due to entry of conductive object	(See Annex P)	
Sil	5 5		2 2 2 2 2	2 2 2 2
t	×	the the the the the	the the the	t t
S	5 5	Share	enzhen NTEK Testing Technolog	y Co., Ltd
et	at .	4 4 4 4 4	\$ \$ \$ \$ \$	t t
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5	2 2		2 2 2 2 2	2 2 2
at	Clause	Requirement + Test	Result - Remark	Verdict
2	5	ELECTRICALLY-CAUSED INJURY	2, 2, 2, 2, 2,	P 7 7
A	5.2.1	Electrical energy source classifications	(See appended table 5.2)	AP A
~	5.2.2	ES1, ES2 and ES3 limits		P C
A	5.2.2.2	Steady-state voltage and current:	(See appended table 5.2)	10 A 1
5	5.2.2.3	Capacitance limits		N/A
A	5.2.2.4	Single pulse limits	No single pulse introduced	N/A
STA	5.2.2.5	Limits for repetitive pulses	No repetitive pulses introduced	N/A 2 2
A	5.2.2.6	Ringing signals	No means for connection to	N/A
AN AN	AND AN		telephone network and no ringing signal generated	ATT A AT
A	5.2.2.7	Audio signals	at at at at	N/A
5	5.3	Protection against electrical energy sources	All internal circuits considered ES1	<u></u> N/A <u></u>
t	5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	\$ \$ \$ \$ \$	N/A
24	5.3.2.1	Accessibility to electrical energy sources and safeguards	the the the the	N/A C
A. C. C.	5.3.2.2	Contact requirements	8 8 8 8	<u>N/A</u>
at	t	a) Test with test probe from Annex V:	at at at at	N/A
AT .	A A	b) Electric strength test potential (V)		N/A
2	2 2	c) Air gap (mm):	1 1 1 1	
A.	5.3.2.4	Terminals for connecting stripped wire		N/A
S	5.4 关	Insulation materials and requirements	2 2 2 2	SP S
A	5.4.1.2	Properties of insulating material	x x x x	A A
S	5.4.1.3	Humidity conditioning	5 5 5 5	<u></u>
at	5.4.1.4	Maximum operating temperature for insulating materials	4 4 4 4	a a
2	5.4.1.5 <	Pollution degree:	5 4 4 4	- 2
ALL ALL	5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	to to to to	N/A
T I	5.4.1.5.3	Thermal cycling		N/A
4	5.4.1.6	Insulation in transformers with varying dimensions		N/A
2	5.4.1.7 <	Insulation in circuits generating starting pulses	2 2 2 2	N/A <
d.	5.4.1.8	Determination of working voltage	4. 4. 4. 4.	N/A
5	5.4.1.9	Insulating surfaces	1 1 1 1 1	🗧 N/A 🍝 🚽 🍝
at	5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	to to to	N/A
2	5.4.1.10.2	Vicat softening temperature:	4 4 4 4	N/A
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2	5.4.1.10.3		2	2	2	2			2
.at	5.4.2	Ball pressure: Clearances	A.	A.	\$	A.	N/A N/A	5	-
2	5.4.2.2	Determining clearance using peak working voltage	-	-			N/A		S
at	5.4.2.3	Determining clearance using required withstand	A	t	A	đ	N/A	t	
5	5.4.2.0	voltage	S	S	S	S	5 3	~	2
A	A	a) a.c. mains transient voltage	A	A	A	A		x	
SIL	5 5	b) d.c. mains transient voltage	S	S	S	S		N.	3
A	A	c) external circuit transient voltage:	A	t	t	t		t	
AL AND	2 2	d) transient voltage determined by measurement:	N. Contraction	A.	A.	N. Contraction	—	\$	2ª
2.1	5.4.2.4	Determining the adequacy of a clearance using an	P.L	T'L	< .L	Y L	N/A	4	2
AT .		electric strength test	1	A. C.	J.S.	J.F.	AT .	S.	40
2	5.4.2.5	Multiplication factors for clearances and test voltages:	2	2	2	2	<u></u> N/A		2
A	5.4.3	Creepage distances	1	1	1	1	N/A	\$	
1	5.4.3.1	General C C C	2º	2	2	2	N/A		5
at	5.4.3.3	Material Group	A	5	A	A	_	A	
3	5.4.4	Solid insulation	5	5	5	5	🗧 N/A 🍝		5
A	5.4.4.2	Minimum distance through insulation	A	A	A	at	N/A	A	
5	5.4.4.3	Insulation compound forming solid insulation	S	S	S	5	<u></u> N/A	Y	S
t	5.4.4.4	Solid insulation in semiconductor devices	t	A	t	×	N/A	t	-
1 di	5.4.4.5	Cemented joints	N	S. S. S.	2 and	1 and a start	<u></u> <u> </u>	S.	2
P.L	5.4.4.6	Thin sheet material	r.L	r L	T IL	T I	N/A	1	5
A.	5.4.4.6.1	General requirements	A.	A.	A.	AL.	N/A	5	100
2	5.4.4.6.2	Separable thin sheet material	2	2	2	2	N/A		2
.at	5	Number of layers (pcs):	4	1	4	A	N/A	5	
2	5.4.4.6.3	Non-separable thin sheet material	S	5	2	2	< N/A <		~
A	5.4.4.6.4	Standard test procedure for non-separable thin sheet material	A	A	at	A	N/A	t	
S	5.4.4.6.5	Mandrel test	2		2	2	N/A		3
A	5.4.4.7	Solid insulation in wound components	A	A	At	A	N/A	A	
S	5.4.4.9	Solid insulation at frequencies >30 kHz:	S	SV	S	S	N/A S	N.	S
t	5.4.5	Antenna terminal insulation	Class II	t	int	t	N/A	×	
A. C.	5.4.5.1	General		A A A A A A A A A A A A A A A A A A A	A.	1 A	N/A	¢,	and and
5	5.4.5.2	Voltage surge test	E .L	5	5	5 L	N/A	L	5
1	No 1	Insulation resistance (MΩ)	1	and the	1	and the second s		5	and and
2	4 4		-	-	-	-	· · ·	1	2
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2 x	5.4.6	Insulation of internal wire as part of	1×	2.	2 x	2 x	N/A	X	2
S	5.4.7	supplementary safeguard	S	Š.	SV	S	N/A	Ś	S
t	J.4.7	cemented joints	t	t	t	At		t	1
ALC .	5.4.8	Humidity conditioning	N.V	1 Contraction of the second se	2 C	No.	N/A	200	2 and
~	6 6	Relative humidity (%):	7	5	5	5	_		2
a la	A A	Temperature (°C)	1	and the	No.	A.		5	and a
2	2 2	Duration (h)	0	2 .	2	2			2
A	5.4.9	Electric strength test	1	A	4	1	N/A	A.	-
5	5.4.9.1 🔷	Test procedure for a solid insulation type test	2	2 .	2	2	🗧 N/A	2	~
at	5.4.9.2	Test procedure for routine tests	4	a	at	at	N/A	at	
-ST	5.4.10	Protection against transient voltages between external circuit	No tran circuit	sient voltag	e from e	external	SN/A	5	-s
1	5.4.10.1	Parts and circuits separated from external circuits	1	A.	A	A.	N/A	1	-
2	5.4.10.2	Test methods	1	2	2	2	N/A	2	5
.st	5.4.10.2.1	General	St.	A.	A.	A.	N/A	A.	-
5	5.4.10.2.2	Impulse test	12	No.		S	🗲 N/A 🗧	5	2
at	5.4.10.2.3	Steady-state test	A	A	A	A	N/A	A	
25 C	5.4.11	Insulation between external circuits and earthed circuitry	No suc	h external c	circuit	25°	N/A	5	- S
AND A	5.4.11.1	Exceptions to separation between external circuits and earth	SIL	Star.	SIL	SIL	N/A	E.	S
t	5.4.11.2	Requirements	int	A	the	A	N/A	×	
	Nº S	Rated operating voltage U _{op} (V):	1 C	1 Alexandre	S.V	N.			S.
at	The state of the s	Nominal voltage U _{peak} (V):	N.L	T	-	T		al	1
1 Star	and all	Max increase due to variation U _{sp} :	1	and the	1	A.			Jak and
2	2 2	Max increase due to ageing ΔU_{sa} :	2	2 .	2	2	—		5
AT.	A A	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa} \dots$		A	A.	A A			-
2	5.5	Components a	is safegi	uards	2	2	2 4	1	2
A	5.5.1	General	St.	d'	A	St.	N/A	t	4
5	5.5.2	Capacitors and RC units	S	5.	S	S	SN/A	5	2ª
A	5.5.2.1	General requirement	A	A	A	A	N/A	A	
- Silver	5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	J.V.	L'il	N. N	Lin	N/A	S.	2
at .	5.5.3	Transformers	1	5	\$	St.	N/A	1	
5	5.5.4	Optocouplers	i's	2 .	Ś	S	SN/A	5	2
stat	at a	of the tot tot tot sh	nenzher		stina Te	echnoloa	y Co., Ltd	A	- Carl
1. dt		5.5.5.5.5.5	T.St	1 th	t.	T.Ct	L'at	. dt	2
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1. A	A LE LE	the side side side side	N.C.	with with	A. A.	AND AN	t the
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1	2 2	EC/EN 62368-	Ś	2 2	5	2 2	2º
at	Clause	Requirement + Test	A	Result - Remark	(t	Verdict	+ se
2	5.5.5	Relays L L L L	2	2 2	2	N/A	2
A.	5.5.6	Resistors	A		A.	N/A	F at
2	5.5.7	SPD's	2	5 6	-	N/A	2
A	5.5.7.1	Use of an SPD connected to reliable earthing	A.	4 4	.at	N/A	× ×
2	5.5.7.2	Use of an SPD between mains and protective	2	2 2	2	N/A	~
A	at	earth at at at at	A	at at	at	at a	t .
5	5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable	S	L 2	S	SN/A S	5
A	5.6	Protective conductor	A	at at	A	N/A	t,
S	5.6.2	Requirement for protective conductors	S	5 5	S	N/A 2	S'
t	5.6.2.1	General requirements	t	t t	t	N/A	t.
1 all	5.6.2.2	Colour of insulation	~	Nº Nº	1	<u> </u>	A. A.
T .L	5.6.3	Requirement for protective earthing conductors	T.		-	N/A	LY
A.	Nº 1	Protective earthing conductor size (mm ²)	20	A A	19		1
2	5.6.4	Requirement for protective bonding conductors	5	5 5	5	N/A	1 2
AT .	5.6.4.1	Protective bonding conductors	A.	A A	A	N/A	F at
2	2 2	Protective bonding conductor size (mm ²):	2	2 2	2	_	2
.t	5.6.4.2	Protective current rating (A)	1	A 4	.5	- 4	t .
5	5.6.4.3	Current limiting and overcurrent protective	2	2 2	2	🗧 N/A 🍝	~
at	A	devices L L L L	at	at at	A	at o	t .
S	5.6.5	Terminals for protective conductors	S.Y	ST ST	S	N/A	S'
A	5.6.5.1	Requirement	t	t t	t	N/A	t)
5	5 3	Conductor size (mm ²), nominal thread diameter (mm).	SIL	St St	Sil	N/A	1
at	5.6.5.2	Corrosion	A	the the	- the	N/A	F
1 Charles	5.6.6	Resistance of the protective system	1 Carlor	N N	2.4	<u> N/A</u>	i di
~ _	5.6.6.1	Requirements	V.L	C C	S.L	N/A	5
and the	5.6.6.2	Test Method Resistance (Ω)	AL AND	A A	A.	N/A	1 al
2	5.6.7	Reliable earthing	2	2 2	2	N/A	2
A	5.7	Prospective touch voltage, touch current and prote	ective con	nductor current	A.	N/A	t at
5	5.7.2	Measuring devices and networks	J.	2 2	2	<n <<="" a="" td=""><td>~</td></n>	~
at	5.7.2.1	Measurement of touch current	at	4 4	A	N/A	t .
S	5.7.2.2	Measurement of prospective touch voltage	SI	5 5	S	<u>N/A</u>	S
A	5.7.3	Equipment set-up, supply connections and earth connections	A	A A	A	N/A	t,
ST	SV S		ST	St St	S	5 5	S
t	t	the the the the the the	A	the the	t	t.	F
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2	4 4	C C C C C C C C C C C C C C C C C C C	2 2 2 2 2	2 2 2
at	Clause	Requirement + Test	Result - Remark	Verdict
1 st	2 2	System of interconnected equipment (separate connections/single connection)	* * * * *	- 4
2	1 12	Multiple connections to mains (one connection at a time/simultaneous connections)	2 2 2 2	~ ~
A.	5.7.4	Earthed conductive accessible parts		N/A
2	5.7.5	Protective conductor current	5 4 4 4	N/A
AT.	AT I	Supply Voltage (V)		
2	2 2	Measured current (mA):	2 2 2 2	~
A	4	Instructional Safeguard		N/A
2º	5.7.6	Prospective touch voltage and touch current due to external circuits		N/A Z
A.	5.7.6.1	Touch current from coaxial cables	A A A A	N/A
24	5.7.6.2	Prospective touch voltage and touch current from external circuits	the the the	N/A
1º	5.7.7	Summation of touch currents from external circuits	No such external circuits	<u></u> X/A Z
A. C.	ST 3	a) Equipment with earthed external circuits Measured current (mA)	STA STA STA	STN/A ST ST
at	at .	b) Equipment whose external circuits are not referenced to earth. Measured current (mA)	at at at at	N/A
2	5. 5	4 4 4 4 4	5. 5. 5. 5.	4 4 4
at the	6	ELECTRICALLY- CAUSED FIRE		AP AT
5	6.2 🭝	Classification of power sources (PS) and potential is	gnition sources (PIS)	SP S
t	6.2.2	Power source circuit classifications	4 4 4 4	P & A
~	6.2.2.1	General Statut	5 5 5 5	SP3 S
at	6.2.2.2	Power measurement for worst-case load fault :	(See appended table 6.2.2)	F of
2	6.2.2.3	Power measurement for worst-case power source fault	the the the the	5 N/A 5 5
at	6.2.2.4	PS1	(See appended table 6.2.2)	OP of
S	6.2.2.5	PS2	5 5 5 5	<u>SN/A</u> S
at	6.2.2.6	PS3	at at at at	N/A
S	6.2.3	Classification of potential ignition sources	ST ST ST ST	STP ST S
A	6.2.3.1	Arcing PIS	at at at at	N/A
S	6.2.3.2	Resistive PIS		N/A
t	6.3	Safeguards against fire under normal operating and		P
A.	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 5.4.1.5, 6.3.2, 9.0, B.2.6)	1 4 5 A
at	A a		henzhen NTEK Testing Technolog	y Co., Ltd
1 st				1 1 1 1

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2	6.3.1 (b)	Combustible materials outside fire enclosure	2	2 2	2 4			2
1	6.4	Safeguards against fire under single fault conditions	A A	A.	A A	5 0	P	1
2	6.4.1	Safeguard Method	and the second s	of control fir	e spread u	sed	P	2
NET	6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	STA	Sill 2	A S	A SA	VA	
at	6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	A	at	At .	at a	VA	-
2	6.4.3.1	General 7 7 7 7	2	4 4	2 4			4
A.	6.4.3.2	Supplementary Safeguards	A.	A.	A .	V N	VA	and and
24	2 2	Special conditions if conductors on printed boards are opened or peeled	2 st	2.4	A P	the a		2
ST	6.4.3.3	Single Fault Conditions:	S	SY A	× 5		I/A	S
×	t	Special conditions for temperature limited by fuse	t	t	t	-		-
14	6.4.4	Control of fire spread in PS1 circuits	1	and the second s	A L	V PV	P	and and
5	6.4.5	Control of fire spread in PS2 circuits	C° L	6 6	. 5	4	I/A <	4
A.	6.4.5.2	Supplementary safeguards	5	J.S.	A A	y y		1
2	6.4.6	Control of fire spread in PS3 circuit	2	5 6	2 2	-		2
A	6.4.7 6.4.7.1	Separation of combustible materials from a PIS General	1	A.	4	6 6		-
5	6.4.7.2	Separation by distance	1	5 -				~
at	6.4.7.3	Separation by a fire barrier	A	at the	de la	A A		- 4
S.	6.4.8	Fire enclosures and fire barriers	2	2 2	<u> </u>	1		S
A	6.4.8.1	Fire enclosure and fire barrier material properties	A	A	A	1	VA A	- ,
S.	6.4.8.2.1	Requirements for a fire barrier	S	S S	Š Š	V SV	I/A 🍝	S.
t	6.4.8.2.2	Requirements for a fire enclosure	t	t	×		A A	- `
AN A	6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	S.V.	2 4	1 - S	4 A	I/A 🏅	25
at the	6.4.8.3.1	Fire enclosure and fire barrier openings	1		A .	A 10	A	-
2	6.4.8.3.2	Fire barrier dimensions	2	2 2	5 2	2 N	I/A <	5
ALL ALL	6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)	ALL ALL	AT .	AT &		I/A	-
S.L		Needle Flame test	L L		- F	N		7
N. C.	6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)	AL AN	Stall 2	1 ×		A S	N
and the	At .	Flammability tests for the bottom of a fire enclosure	A	at	at .	at a	VA	-
~	2 7	2 2 2 2 2	5	2 4	. ~	2	-	2
N. C.	Star St	The set of set of set	enzhen	NTEK Test	ting Techn	iology Co.,	Ltd	J.
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5 5	22222	2 2 2 2 2	2
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c)	本本本本	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating	2. 2. 2. 2. 2. P	N/A
6.5	Internal and external wiring	8 8 8 8 8 4	N/A
6.5.1	Requirements	PS1 only	N/A
6.5.2	Cross-sectional area (mm ²):		
6.5.3	Requirements for interconnection to building wiring:		N/A
6.6	Safeguards against fire due to connection to additional equipment	25 25 25 25 25 2	N/A
St S	External port limited to PS2 or complies with Clause Q.1	ST ST ST ST S	N/A
t	the the the the the the	the the the the	at a
7	INJURY CAUSED BY HAZARDOUS SUBSTANC	ES 🛛	CP 30
7.2	Reduction of exposure to hazardous substances	No such hazardous substances	N/A
7.3	Ozone exposure	No ozone production	🕅/A 🧹
7.4	Use of personal safeguards (PPE)		N/A
. C	Personal safeguards and instructions		_ 🖉
7.5	Use of instructional safeguards and instructions	5 5 5 5 5	N/A 🤝
A .	Instructional safeguard (ISO 7010)		- 4
7.6	Batteries	(See appended tables Annex M)	P
dt .	to to to to to	* * * *	at a
8	MECHANICALLY-CAUSED INJURY		PS
8.1	General	A A A A	P A
8.2	Mechanical energy source classifications		YP K
8.3	Safeguards against mechanical energy sources	at at at at	P
8.4	Safeguards against parts with sharp edges and corners	att att att att a	
8.4.1	Safeguards	MS1 classification	N/A
8.5	Safeguards against moving parts	5 5 5 5 5	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	2. 2. 2. 2.	_
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
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2			~	2	2	2		~
at	8.5.4.2	Equipment having electromechanical device for destruction of media	at	A.	A	A.	N/A	at a
2	8.5.4.2.1	Safeguards and Safety Interlocks	2	2.	2	2	N/A <	~
A	8.5.4.2.2	Instructional safeguards against moving parts	St.	A.	4	A.	N/A	¢ .
S	5 5	Instructional Safeguard	1.	5	2	1		1
at	8.5.4.2.3	Disconnection from the supply	A	at	A	A	N/A	A
5	8.5.4.2.4	Probe type and force (N)	S	St.	5	S	<u></u> N/A	S
A	8.5.5	High Pressure Lamps	1	×	×	A	N/A	x
and the second s	8.5.5.1	Energy Source Classification	11	N. Contraction	N. S.	N. S.	<u> </u>	4
T .L	8.5.5.2	High Pressure Lamp Explosion Test	L	L	1	T it	N/A	LT
and the second second	8.6	Stability	Mass <	7kg	A.	AL.	N/A	T at
4	8.6.1	Product classification	MS1	2	2	2	🧟 N/A 🤿	2
di la		Instructional Safeguard	A.	AL AL	A.	1		¢ .
-	8.6.2	Static stability	2	2	-	2	🔶 N/A 🔶	- i
at	8.6.2.2	Static stability test	A.	J.	5	A	N/A	d.
5	5 5	Applied Force	Nº N	5	5	5	_	5
A	8.6.2.3	Downward Force Test	X	A	A	A	N/A	x
S	8.6.3	Relocation stability test	S	St.	S	Sil	<u></u> N/A	× 3
t	t	Unit configuration during 10° tilt	4	1×	· t	X	—	t
A.C.	8.6.4	Glass slide test	The second	A. C. C.	S. S. S.	N. C.	<u> </u>	9 2
5	8.6.5	Horizontal force test (Applied Force):	L.L	E L	L.	T I	N/A	LT
A. C.	A A	Position of feet or movable parts	A.	and the	A.	A.	_	0
2	8.7	Equipment mounted to wall or ceiling	2	2	2	2	💙 N/A 🤝	2
ALL .	8.7.1	Mounting Means (Length of screws (mm) and mounting surface)	A.	ALL ALL	A.	A.	N/A	at a
5	8.7.2	Direction and applied force:		-	5	5	N/A	1 5
and the second s	8.8	Handles strength	A.	A. C.	A.	A.	N/A	E .
2	8.8.1	Classification	2	2	2	2	N/A	2
.At	8.8.2	Applied Force	1	.at	1		N/A	5
5	8.9	Wheels or casters attachment requirements	5	5	2	2	N/A <	~
at	8.9.1	Classification	at	at	at	A	N/A	at .
S'	8.9.2	Applied force	S	S.	S	SIV	_	1 5
A	8.10	Carts, stands and similar carriers	A	A	×	A	N/A	A
1 Charles	8.10.1	General S	S	5	S.C.	S	<u> </u>	1
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t	8.10.2	Marking and instructions	t t t t	N/A	t
5	Nº N	Instructional Safeguard	N N N N	_	S
t	8.10.3	Cart, stand or carrier loading test and compliance		N/A	t
AL AND	AL A	Applied force	A A A A	_	5
<	8.10.4	Cart, stand or carrier impact test	2 2 2 2	N/A	7
1	8.10.5	Mechanical stability		N/A	5
2	2 2	Applied horizontal force (N):	5. 5. 5. 5.	—	2
A.	8.10.6	Thermoplastic temperature stability (°C):		N/A	dr.
2	8.11 🔶	Mounting means for rack mounted equipment	5 5 5 5	🖉 N/A 🍣	2
at	8.11.1	General A A A	* * * *	N/A	at .
S.	8.11.2	Product Classification	ST 5 5	<u></u> N/A	2
A	8.11.3	Mechanical strength test, variable N	at at at at	N/A	t.
1	8.11.4	Mechanical strength test 250N, including end stops	IN IN IN IN	N/A	5
S at	8.12	Telescoping or rod antennas		N/A	L
A. C.	A L	Button/Ball diameter (mm)	A A A A		T I
2	2 4	2 2 2 2 2	2 2 2 2	2 2	1 7
15	9	THERMAL BURN INJURY	T	Р	5
5	9.2	Thermal energy source classifications	TS1: accessible parts	Р	-

5	6 6	~ ~ ~ ~ ~ ~ ~		6 6	7
.at	9	THERMAL BURN INJURY	Р	5 4	
5	9.2	Thermal energy source classifications	TS1: accessible parts	Р	1
A	9.3	Safeguard against thermal energy sources		N/A	x ,
S	9.4	Requirements for safeguards		N/A	× 5
t	9.4.1	Equipment safeguard		N/A	+
ALL .	9.4.2	Instructional safeguard:		N/A	9 8
2	4 4	666666		6 6	1 2
15	10	PADIATION		NUA	A I

A	9.4.1	Equipment safeguard	N/A	t
ALL IN	9.4.2	Instructional safeguard:	N/A	9 2
2	4 4		4 4	14
1	10	RADIATION	N/A	
~	10.2 <	Radiation energy source classification	N/A	1
at -	10.2.1	General classification	N/A	d a
5	10.3	Protection against laser radiation	<u></u> N/A 🚄	1 5
A	X	Laser radiation that exists equipment:	_	x
S.V.	5 3	Normal, abnormal, single-fault	<u></u> N/A	2 3
t	t	Instructional safeguard	_	x
AL AND	8 2	Tool		4
P +	10.4	Protection against visible, infrared, and UV	N/A	45
1		radiation to the the the the		a de
2	10.4.1	General S S S S S S S S	<u>N/A</u>	5
at.	E.		at the	A A
5	5 5	Shenzhen NTEK Testing Technology	y Co., Ltd	1 2
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2	10.4.1.a)	RS3 for Ordinary and instructed persons:	2	2 2	5	N/A	2
at the	10.4.1.a)	RS3 accessible to a skilled person	A	A A	A.	N/A	t s
2		Personal safeguard (PPE) instructional	2	4 4	-		2
.at	A A	safeguard	t	5 5	· st		t x
2	10.4.1.c)	Equipment visible, IR, UV does not exceed RS1.	5	5 5	2	🖉 N/A 🍼	~
at	10.4.1.d)	Normal, abnormal, single-fault conditions	A	at at	at	N/A	* .
25	10.4.1.e)	Enclosure material employed as safeguard is opaque	25°	1 1º	25°	< <u> N/A</u>	
at	10.4.1.f)	UV attenuation:	A	at at	A	N/A	× ,
S.	10.4.1.g)	Materials resistant to degradation UV:	S	5 5	S	N/A 🗲	í sí
×	10.4.1.h)	Enclosure containment of optical radiation:	t	t t	t	N/A	t
AN .	10.4.1.i)	Exempt Group under normal operating conditions	AN .	AT AT	AN.	N/A	1
A.	10.4.2	Instructional safeguard	1		A.	N/A	× ×
2	10.5 <	Protection against x-radiation	2	2 2	2	🔶 N/A 🔶	2
.at	10.5.1	X- radiation energy source that exists equipment :	t	5 5	A	N/A	t it
2	5 5	Normal, abnormal, single fault conditions	5	5 5	5	<u></u> N/A _	2
at	at .	Equipment safeguards:	A	at at	A	N/A	*
S.	5 5	Instructional safeguard for skilled person :	S.V	St St	STY	<u> </u>	1
At	10.5.3	Most unfavourable supply voltage to give maximum radiation:	t	t t	t	_	*
2	2 2	Abnormal and single-fault condition:	2	2 2	2	N/A	2
AT.	100	Maximum radiation (pA/kg)	A	A 4	A.	N/A	*
1	10.6	Protection against acoustic energy sources		5 5		N/A	~
at .	10.6.1 10.6.2	General Classification	A	\$ \$	A	N/A N/A	t i
2	2.0.2	Acoustic output, dB(A)	2	4 4	2	N/A	2
at	5	Output voltage, unweighted r.m.s.	A	A 1	A	N/A	*
S.	10.6.4	Protection of persons	S	2 2	S	N/A	1 and
A	A.	Instructional safeguards	A	A A	A	N/A	× ,
S.	5 5	Equipment safeguard prevent ordinary person to	S	5 5	S	_	S'
A	t	RS2	t	At At	t	/	t
S.	St S	Means to actively inform user of increase sound pressure	Sil	St St	SIL		S
at	dt .	Equipment safeguard prevent ordinary person to RS2	at	at at	A	- 0	* .
5	10.6.5	Requirements for listening devices (headphones,	S	2 2	S	N/A	in si
A	10.0.5	A A A A A	t	AA	A		t .
N. S.	1 1 1	and an an an an sh	enzhen	NTEK Testing	Technolog	y Co., Ltd	
at	at .	古西西西西	at	at at	t	at 1	t is

1. A	with a		sitt sitt sitt	The state	AND AND	- AN
T	NT	EKILW and and and	with with with	- Page 21	of 62	- AN
at	the second		Report No.	STS19092	20002001E	-
2	5 2	CIEC/EN 62368-	2 2 2	2	5 4	2
AL.	Clause	Requirement + Test	Result - Remark		Verdict	and a
2	2 2	earphones, etc.)	2 2 2	2	2 2	2
N.C.	10.6.5.1	Corded passive listening devices with analog input	ATT ATT ATT	N	N/A J	- Si
stat	AT &	Input voltage with 94 dB(A) <i>L_{Aeq}</i> acoustic pressure output	to the tot	at	- &	
7	10.6.5.2	Corded listening devices with digital input		7	N/A	2
and the second	A A	Maximum dB(A)	A A A	A.		2
2	10.6.5.3	Cordless listening device	2 2 2	2	N/A <	2
AT .	ST .	Maximum dB(A)		J.S.		and and
2	5 2	2 2 2 2 2 2	5. 5. 5.	2	2 2	2
-at	В	NORMAL OPERATING CONDITION TESTS, ABI CONDITION TESTS AND SINGLE FAULT COND			A A	-
2	B.2	Normal Operating Conditions	2 2 2	2	C P C	2
T	B.2.1	General requirements	(See summary of testing appended test tables)	8 . (A)	SP SP	- Si
at	dt .	Audio Amplifiers and equipment with audio amplifiers	at at at	.at	N/A	-
2	B.2.3	Supply voltage and tolerances	(See appended table B.2		PP	2
1	B.2.5	Input test	(See appended table B.2	.5)	AP A	-
2	B.3	Simulated abnormal operating conditions		Ś	SP S	2
.st	B.3.1	General requirements	(See appended table B.3) A	P N/A	-
2	B.3.2 B.3.3	Covering of ventilation openings	1 1 1 1		N/A N/A	S
A	B.3.4	Setting of voltage selector	No such voltage selector.	t	N/A	
S	B.3.5	Maximum load at output terminals	No such terminals	2	N/A	5
A	B.3.6	Reverse battery polarity	at at at	A	OF A	- ,
- STA	B.3.7	Abnormal operating conditions as specified in Clause E.2.	AT AT AT	-ST	N/A Z	
AN A	B.3.8	Safeguards functional during and after abnormal operating conditions	AND AND AND	A.	STOP ST	1
at	B.4	Simulated single fault conditions	at at at	at	P	- 1
2 m	B.4.2	Temperature controlling device open or short- circuited:	1 2 A	5	S N/A S	2º
1	B.4.3	Motor tests		A	N/A	10
2 A	B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	2 2 2 2	24	N/A	- 2.
SIL	B.4.4	Short circuit of functional insulation	ST ST ST	N. N.	P C	5
A	A	the the the the	the the the	t	At At	-
AN AN	5 5	St St St St St	nenzhen NTEK Testing T	echnolog	y Co., Ltd	- Sec
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N.C.	N T		Page 22 o	of 62 th and a
A.	AT A		Report No. STS190920	002001E
2	5 4	C C C C C EC/EN 62368-1	5 5 5 5	5 5 5
ALL AND	Clause	Requirement + Test	Result - Remark	Verdict
T t	B.4.4.1	Short circuit of clearances for functional insulation (S	See appended table B.4)	F T
2	B.4.4.2	Short circuit of creepage distances for functional (S insulation	See appended table B.4)	2 " 2" 2"
and the	B.4.4.3	Short circuit of functional insulation on coated printed boards	the state of the	N/A
L.L.	B.4.5	Short circuit and interruption of electrodes in (S tubes and semiconductors	See appended table B.4)	A A
5	B.4.6	Short circuit or disconnect of passive components (S	See appended table B.4)	SP S S
A	B.4.7	Continuous operation of components	x x x x	N/A
~~	B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	1	AP A A
1	B.4.9	Battery charging under single fault conditions : (S	See appended table M)	N/A
5 .	5 5	2 2 2 2 2 2 2	1 2 2 2	5 5 5

at	С	UV RADIATION	N/A	at a
N.	Ç.1 💉	Protection of materials in equipment from UV radiation within the EUT. radiation	<n <<="" a="" td=""><td>1</td></n>	1
AT.	C.1.2	Requirements	N/A	
2	C.1.3	Test method	🗧 N/A <	2
A	C.2	UV light conditioning test	N/A	at a
5	C.2.1	Test apparatus	<u></u> N/A	1 5
A	C.2.2	Mounting of test samples	N/A	t.
S	C.2.3	Carbon-arc light-exposure apparatus	<u></u> <u> </u>	× 5
t	C.2.4	Xenon-arc light exposure apparatus	N/A	t
ALL .	A A		and a	10 A
7	D	TEST GENERATORS	S N/A	1 2
4	D,1	Impulse test generators	N/A	AT A
5	D.2	Antenna interface test generator	< N/A <	
at	D.3	Electronic pulse generator	N/A	at a
S.	5 5	<u></u>	5 5	5
	-	TEAT AGAIDITIONS FOR FOURIENT CONTAINING AUDIO AND LEIFRO		

2	2	-	2	2	2	-	2	2	-	2	2	2	2	~
A	E		TEST CON	DITIONS	FOR EQ	JIPMENT		INING AL	JDIO AMI	PLIFIERS		N/A	t	
1 and a start	E	1 yes	Audio amp	ifier norma	al operati	ng <mark>con</mark> diti	ions	N. S.	1 and a start	1 and a start	N. S.	N/A	2	1
T.L	T +	1	Audio signa	al voltage	(V)	5	~	r.L	T I	T L	T.L		J.	5
A	2	No.	Rated load	impedanc	æ (Ω)	A.		1	1	AT .	1		Ø	and a
2	E.2	1	Audio amp	ifier abnor	mal operation	ating con	ditions	1	2	2	2	N/A	2	2
AT.	A.	-		4	4	A	4	al a	A.	A.	A.	A	4	al al
5	5	~	-S	S	5	S	5	2	2	2	5	S.	5	S
x	A		x x	- 1	×	A	X	A	A	A	A	A	×	1

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2	5 5		5 5 5 5	5 5 5
1	Clause	Requirement + Test	Result - Remark	Verdict
2	5 5 F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND		2 2 2
A.	F.1	General requirements		A A
2	6 6	Instructions – Language	English checked	
.at	F.2	Letter symbols and graphical symbols		AP A
5	F.2.1	Letter symbols according to IEC60027-1	2 2 2 2	P P P
Silt	F.2.2	Graphic symbols IEC, ISO or manufacturer specific	STAT STAT STAT	STOP STOT ST
A	F.3	Equipment markings	the the the state	Pt
AL IN	F.3.1	Equipment marking locations		P A
5	F.3.2	Equipment identification markings	~ ~ ~ ~	C P C C
A.	F.3.2.1	Manufacturer identification	See copy of marking plate	🖉 🔬
2	F.3.2.2 🔷	Model identification	See copy of marking plate	- 2
.at	F.3.3	Equipment rating markings		N/A
2	F.3.3.1 关	Equipment with direct connection to mains	5 5 5 5	🗧 N/A 🊄 🛛 🍣
ALL ALL	F.3.3.2	Equipment without direct connection to mains	Equipment without direct connection to mains	N/A
T.L	F.3.3.3	Nature of supply voltage		L ⁵
AT .	F.3.3.4	Rated voltage		
2	F.3.3.4 <	Rated frequency	5 7 7 7	- 2
at .	F.3.3.6	Rated current or rated power		- 4
5	F.3.3.7	Equipment with multiple supply connections	No multiple supply connection.	🗧 N/A 🊄 🛛 🍣
at	F.3.4	Voltage setting device	No such device.	N/A
ST.	F.3.5	Terminals and operating devices	N N N N	<u></u> N/A
at	F.3.5.1	Mains appliance outlet and socket-outlet markings	No mains appliance outlet.	N/A
2	F.3.5.2	Switch position identification marking	Not such switch.	N/A <
SIL	F.3.5.3	Replacement fuse identification and rating markings	Provided the user manual.	N/A
A	F.3.5.4	Replacement battery identification marking :	Provided the user manual.	P
A. A.	F.3.5.5	Terminal marking location	A A A A	N/A
14	F.3.6	Equipment markings related to equipment classification	t t t t	N/A C
S'	F.3.6.1	Class I Equipment	a a a a	<u> </u>
A	F.3.6.1.1	Protective earthing conductor terminal	to to to to	N/A
1 Con	F.3.6.1.2	Neutral conductor terminal	A LA LA LA	N/A
5	F.3.6.1.3	Protective bonding conductor terminals	~ ~ ~ ~ ~	N/A
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at	A.	A A A A A A	Report No. STS19092	20002001E
2	2 4		4 4 4 4	5 5 5
A.	Clause	Requirement + Test	Result - Remark	Verdict
2	F.3.6.2	Class II equipment (IEC60417-5172)	5 5 5 5	N/A
A.	F.3.6.2.1	Class II equipment with or without functional earth		N/A
2	F.3.6.2.2	Class II equipment with functional earth terminal	2 4 4 4	N/A
AT.	AT .	marking to the total		AT AT 2
2	F.3.7	Equipment IP rating marking	IP20, no marking is needed	- 2
A	F.3.8	External power supply output marking	* * * *	N/A
5	F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also	5 5 5
A	A	* * * * * *	the following details.	at at
5	F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The	P Z Z
at	ot	* * * * * *	label was rubbed with cloth soaked	at at
S	5 2	5° 5° 5° 5° 5° 5°	with water for 15 sec. And then again for 15 sec. With the cloth	5 5 5
X	A	* * * * * * *	soaked with petroleum spirit. After this test there was no	x x
SIL	5 2	S S S S S S S	damage to the label. The marking	5 5 5
t	A	* * * * * * *	on the label did not fade. There was no curling and lifting of the	t t
A. C.	~ · ·		label edge. After each test, the marking	E E
t	t	the the the the the the	remained legible.	at at
AL .	F.4	Instructions	La la la la	KAP CA S
7	L L	a) Equipment for use in locations where children		N/A
A.	A.	b) Instructions given for installation or initial use		P C C
2	C 5	c) Equipment intended to be fastened in place	2 2 2 2	N/A L
AT.	A. C.	d) Equipment intended for use only in restricted	Not used in restricted access area.	N/A
7	2 4	access area	2 2 2 2	2 4 4
A.	A.	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in		N/A
2	2 4	accordance F.3.6.1	5 5 5 5	5 5 5
A	at the	f) Protective earthing employed as safeguard		N/A
2	2 4	g) Protective earthing conductor current exceeding ES2 limits	2 2 2 2	N/A < <
A	at the	h) Symbols used on equipment		4
5	2 8	i) Permanently connected equipment not provided	2 2 2 2	N/A 🗧 🧹
at	at	with all-pole mains switch	d d d d	at at
2º	5 2	j) Replaceable components or modules providing safeguard function	and the the the	5 ^{×N/A} 5 ^{××}
at	F.5	Instructional safeguards	\$ \$ \$ \$ \$	to the second
25	5 2	5 5 5 5 5 5	5 5 5 5	2 2 2
A	At	at at at at at at	at at at at	at at
Sil	5 2	ST ST ST ST ST	enzhen NTEK Testing Technolog	y Co., Ltd 🧹 了
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AT A		Report No. STS19092	0002001E
5 4		2 2 2 2 2	5 5
Clause	Requirement + Test	Result - Remark	Verdict
5 5	2 2 2 2 2 A	2 2 2 2	4 4
STAT ST	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	stat stat stat	STREE S
t	t t t t t t	t t t t	it
G	COMPONENTS		P 2
G.1	Switches		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load	2 2 2 2	🦿 N/A 🦿
G.2	Relays 5 5 5 5		N/A
G.2.1	General requirements 🧢 🛛 🧢	2 2 2 2	< N/A <
G.2.2	Overload test	at at at at	N/A
G.2.3	Relay controlling connectors supply power	5 5 5 5	<u>N/A</u>
G.2.4	Mains relay, modified as stated in G.2	at at at at	N/A
G.3	Protection Devices		<u> </u>
G.3.1	Thermal cut-offs	No thermal cut-off used.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	SA SA SA SA	S ^{(N/A} S
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)	at at at at	N/A
G.3.1.2	Thermal cut-off connections maintained and secure	~ ~ ~ ~ ~	N/A
G.3.2	Thermal links 🥂 🥂 🥂	N N N N	🔨 N/A 🏼 🔬
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link used.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
5 5	Aging hours (H)	2 2 2 2	
AT A	Single Fault Condition		
2 2	Test Voltage (V) and Insulation Resistance (Ω). :	2. 2. 2. 2.	
G.3.3	PTC Thermistors	5 5 5 5	N/A
G.3.4	Overcurrent protection devices	5 5 5 5	≤ 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		<u> х N/A</u>
G.3.5.2	Single faults conditions	A. A. A. A.	N/A
G.4	Connectors 2 2 2	2 2 2 2	<n <<="" a="" td=""></n>
G.4.1	Spacings	Not directly connected to mains	N/A
G.4.2	Mains connector configuration	5 5 5 5	<u></u> N/A

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5	2 2	CIEC/EN 62368-	Ś	2 2	2	2 2	Ś
at	Clause	Requirement + Test	A.	Result - Rema	rk	Verdict	t a
2	G.4.3	Plug is abanad that incertion into mains applicate	~	5 5	2		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
A	G.4.3	Plug is shaped that insertion into mains socket- outlets or appliance coupler is unlikely	at	1 1		N/A	t i
2	G.5	Wound Components	2	5. 4	2	N/A <	2
A	G.5.1	Wire insulation in wound components:	A	4		N/A	t s
N.	G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	S.	2 2	5	SN/A S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
A.	G.5.1.2 b)	Construction subject to routine testing	1	A A	A.	N/A	it is
2	G.5.2	Endurance test on wound components	2	4 4	2	N/A	2
AT.	G.5.2.1	General test requirements	A.	A 4		N/A	the start
5	G.5.2.2	Heat run test 🧢 🧳 🧳	2º	5 5	2	< N/A <	~
A	at .	Time (s)	at	0 0	- 4	—	t.
5	5 5	Temperature (°C):	5	5 5	5		~
A	G.5.2.3	Wound Components supplied by mains	A	at a	- A	N/A	t.
S	G.5.3	Transformers		1 1º	- Star	N/A	1
At	G.5.3.1	Requirements applied (IEC61204-7, IEC61558- 1/-2, and/or IEC62368-1)	At	AA	- A	N/A	t.
S	5 5	Position	3	5 5	5	_	Ś
A	x	Method of protection	×	A A	- 1	_	t
S.C.	G.5.3.2	Insulation 💉 💉 💉	S	5 5	S	<u></u> N/A	1
t	×	Protection from displacement of windings	t	A A	- +	_	t
and a start	G.5.3.3	Overload test	N. S.	Nº Nº	K	N/A	
T at	G.5.3.3.1	Test conditions	The state	E E		N/A	LT
ALL AND	G.5.3.3.2	Winding Temperatures testing in the unit	A.	A A	A.	N/A	
7	G.5.3.3.3	Winding Temperatures - Alternative test method	5	7 7	7	N/A <	1 7
A.	G.5.4	Motors	A.		A.	N/A	1
2	G.5.4.1	General requirements	2	2 2	~	N/A <	
A.	G.5.4.2	Test conditions	J.	A A	A		1
2	G.5.4.2 G.5.4.3	Running overload test	2	2 2	2	N/A N/A	2
1	G.5.4.4	Locked-rotor overload test	1	A A		N/A	5
2	2 4	Test duration (days)	2	2 2	-	_	2
A.	G.5.4.5	Running overload test for d.c. motors in secondary circuits	S.C.	Sill Sill	- Stat	N/A	at as
at	G.5.4.5.2	Tested in the unit	A	at at	- At	N/A	× .
-ST	S S	Electric strength test (V)	ST	Si Si	N. N.		- S
- at	At a	के की की की की Sh	nenzher	NTEK Testing	Technolog	y Co., Ltd	at is
1 the	THE .	the the the	T.at	tot d	- th	THE A	* .

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at	At 1		at	Repo	ort No.	STS19092	0002001E	at .
2	2 2	CIEC/EN 62368-	2	2	2	2	5 5	1 2
A.	Clause	Requirement + Test	A.	Result	- Remark	A.	Verdict	1 J
N A	G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)	4 th	n th	A.A.	2 th	N/A	the for
2	5 2	Electric strength test (V)	2	2	2	2	_	2
Silt	G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits	A.	ALL AND	ALL ALL	A. C.	N/A	d y
X	G.5.4.6.2	Tested in the unit	t	t	· t	t	N/A	×
N. C.	2 4	Maximum Temperature: Electric strength test (V)	A LAN	A.	2 Million	2 M	N/A N/A	5
ALL STREET	G.5.4.6.3	Tested on the bench - Alternative test method; test time (h)	AL AND	A.S.	A. A.	AL AND	N/A	the start
t	at	Electric strength test (V)	t	The	t	t	N/A	t
and the second s	G.5.4.7	Motors with capacitors	A.	N. S.	A.	A. C.	N/A	4
2	G.5.4.8	Three-phase motors	2	2	2	2	🔨 N/A 🏹	12
A.	G.5.4.9	Series motors	A.	A.	A.	A.	N/A	5
2	2 2	Operating voltage:	2	2	2	~	—	2
.st	G.6	Wire Insulation	A	J.	A	A	N/A	at .
2	G.6.1	General	2	5	5	S	≤ N/A 🚄	2
at	G.6.2	Solvent-based enamel wiring insulation	A	A	at	at	N/A	A
S	G.7	Mains supply cords	S	5	S	S	<u></u> N/A	1
A	G.7.1	General requirements	Not dire	ectly conr	nected to	mains	N/A	A
S	5 5	Type	S	5	SIL	S		1
t	t	Rated current (A)	t	t	t	A		×
ALL .	A A	Cross-sectional area (mm ²), (AWG):	N.	14	N.	A.	—	4
4	G.7.2	Compliance and test method		7	7	7	N/A <	1 7
J. W.	G.7.3	Cord anchorages and strain relief for non- detachable power supply cords	S.C.	S.C.	SIL	SAT	N/A	E A
A	G.7.3.2	Cord strain relief	A	A	A	A	N/A	A
S	G.7.3.2.1	Requirements	S	5	S	5	N/A	1
A	t	Strain relief test force (N)	t	t	t	t	_	x
A. C.	G.7.3.2.2	Strain relief mechanism failure	A.	N. S.	A.	A.	N/A	4
5	G.7.3.2.3	Cord sheath or jacket position, distance (mm):	2	2	5	5	_	15
15	G.7.3.2.4	Strain relief comprised of polymeric material	A.	J.S.	A.	J.	N/A	G .
2	G.7.4	Cord Entry	2	2	2	2	<u></u> N/A <u></u>	2
A	G.7.5	Non-detachable cord bend protection	.st	A	.0	A	N/A	5
5	G.7.5.1	Requirements A A	12	5	S	S	<u>N/A</u>	
A	Stat St	of set set set set set	enzhen		esting Te	echnolog	y Co., Ltd	at s
A	at .	4. 4. 4. 4. 4. 4	.at	at	at	t	t.	dt .

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.at	at at		Report No. STS19092	20002001E
2	5 2		2 2 2 2	2 2 2
at	Clause	Requirement + Test	Result - Remark	Verdict
S	2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	5 5 5 5	2 2 2
A	G.7.5.2	Mass (g)	x x x x	- *
S	N 8	Diameter (m)	N N N N	
t	t	Temperature (°C)	at at at at	- +
A. C. C.	G.7.6	Supply wiring space	A CA CA CA	<u>N/A</u>
7	G.7.6.2	Stranded wire	~ ~ ~ ~ ~	N/A S
1	G.7.6.2.1	Test with 8 mm strand		N/A
2	G.8	Varistors	4 4 4 4	≷ N/A <
1	G.8.1	General requirements	No varistors used.	N/A
in the second se	G.8.2	Safeguard against shock	5 5 5 5	<u>N/A</u>
at	G.8.3	Safeguard against fire	at at at at	N/A
5	G.8.3.2	Varistor overload test	N N N N	<u>N/A</u>
A	G.8.3.3	Temporary overvoltage	the the the	N/A
1 al	G.9	Integrated Circuit (IC) Current Limiters		N/A
t	G.9.1 a)	Manufacturer defines limit at max. 5A.	No such IC used.	N/A S
ALL ALL	G.9.1 b)	Limiters do not have manual operator or reset		N/A
2	G.9.1 c)	Supply source does not exceed 250 VA	2 2 2 2	- 2
A	G.9.1 d)	IC limiter output current (max. 5A)		<u> </u>
2	G.9.1 e)	Manufacturers' defined drift	2 2 2 2	- 2
at .	G.9.2	Test Program 1	4 4 4 4	N/A
S	G.9.3	Test Program 2	5 5 5 5	<u>N/A</u>
A	G.9.4	Test Program 3	at at at at	N/A
S	G.10	Resistors	S S S	N/A
t	G.10.1	General requirements		N/A
1 H	G.10.2	Resistor test		N/A
V.L	G.10.3 🔿	Test for resistors serving as safeguards between the mains and an external circuit consisting of a		
A.	AT A	coaxial cable		
2	G.10.3.1	General requirements	2 2 2 2	₹ N/A ₹
4	G.10.3.2	Voltage surge test		N/A
2	G.10.3.3	Impulse test	5 5 5 5	<u>N/A</u>
at	G.11	Capacitor and RC units	at at at at	N/A
5	G11.1	General requirements	No such components used	N/A S
A	G.11.2	Conditioning of capacitors and RC units	A A A A	N/A
1	G.11.3	Rules for selecting capacitors	N N N N	N/A
T.L	G.12	Optocouplers		N/A S
A. A.	2 ¹⁰ - 2 ¹	Star and an and an an an an	nenzhen NTEK Testing Technolog	y Co., Ltd
A	at .	古 南 南 南 南	南南南南	at at

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NT NT	EKILW wet wet and	willt	silt silt	- Page 29	of 62	th
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5 2 2	IEC/EN 62368-	2º	2 2	-	2 2	5
Clause	Requirement + Test	at .	Result - Remar	k A	Verdict	t de
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)	N total	A A A A	N AL	NA	t
x x	Type test voltage Vini	A	t t	- At	- /	F
5° 5° 5	Routine test voltage, Vini,b	N.V.	St St	N.		S
G.13	Printed boards	1 at	at at	- t	P	L
G.13.1	General requirements	A.	and and	A.	P Q	and and
G.13.2	Uncoated printed boards	2	2 2	2	PP	2
G.13.3	Coated printed boards	A.		A.	N/A	5
G.13.4	Insulation between conductors on the same inner surface	2ª	2 2 2 d	2º at	► N/A <	1-25
2 2 2	Compliance with cemented joint requirements (Specify construction)	N. S.	L'E LE	A. C.		- A
G.13.5	Insulation between conductors on different surfaces	and the	AT AT	A.	N/A	t K
at the	Distance through insulation		T T		N/A	
	Number of insulation layers (pcs)	D.	A D	A.	_ 🖉	A STATE
G.13.6	Tests on coated printed boards	2	2 2	2	N/A	2
G.13.6.1	Sample preparation and preliminary inspection	J.	A. A.	J	N/A	t a
G.13.6.2a)	Thermal conditioning	S	2 2	2º	关 N/A 关	-
G.13.6.2b)	Electric strength test	A	at at	- At	N/A	F ,
G.13.6.2c)	Abrasion resistance test	S	St St	S	<u>N/A</u>	S
G.14	Coating on components terminals	A	the the	- At	N/A	F
G.14.1	Requirements	1 Standard	No No	A. C.	<u>N/A</u>	1
G.15	Liquid filled components	N.	T T	5	N/A	LT
G.15.1	General requirements	A.	A A	A.	N/A	1
G.15.2 <	Requirements	2	2 2	5	N/A <	2
G.15.3	Compliance and test methods	A.	5 5		N/A	5
G.15.3.1	Hydrostatic pressure test	2	2 2	2	🗲 N/A 🍝	2
G.15.3.2	Creep resistance test	A	at at	- at	N/A	F
G.15.3.3	Tubing and fittings compatibility test	ST	ST ST	S	<u></u> N/A	5
G.15.3.4	Vibration test	t	t it	- A	N/A	F
G.15.3.5	Thermal cycling test	A.	N N	2	<u>N/A</u>	-
G.15.3.6	Force test	5	5 5	7	N/A	2
G.15.4	Compliance	de la	5 0	4	N/A	5 1
G.16 🔶	IC including capacitor discharge function (ICX)	2	2 2	2	< N/A <	2
t stat	of at at at at at at	enzhen	NTEK Testing	Technolog	y Co., Ltd	t si
t at	a a a a a a	et	at at	- dt	.at .a	F

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at	at a	* * * * * * *	at	Report No. 5	STS19092	0002001E	at a
5	2 2			2 2	2	2 2	2º
at	Clause	Requirement + Test	A.	Result - Remark	.at	Verdict	at a
1 to	a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	A.	a a	A.A.	N/A	at ?
2	b) <	Impulse test using circuit 2 with Uc = to transient voltage	2.	2 2	2	< N/A <	2
NE	C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes	J.C.	AND AND	N	S ^{N/A}	at at
.t	C2)	Test voltage	to the	A A	A	—	d.
in the	D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer	it.	i i i	i de	<u>ک</u> N/A کے	4 4
S.	D2)	Capacitance	Š,	5 5	S		í sí
×	D3)	Resistance	A	XX	X		x.
S.V.	2 12	The The The The The	ST.	5 5	S.	5 5	Ś
×	н	CRITERIA FOR TELEPHONE RINGING SIGNAL	s			N/A	×
14	Har X	General	1	8 8	1 Charles	<u> </u>	
5	H.2	Method A			5	N/A	1 5
A.	H.3	Method B	A.	A .A	A.	N/A	E a
2	H.3.1 <	Ringing signal	2	2 2	2	< N/A <	4
1	H.3.1.1	Frequency (Hz)	J.	A .A	. At	—	5
5	H.3.1.2 关	Voltage (V)	1	5 5	2º		~
at	H.3.1.3	Cadence; time (s) and voltage (V)	t	A A	A	—	t.
S.	H.3.1.4	Single fault current (mA):	1	5 5	S	—	2
A	H.3.2	Tripping device and monitoring voltage	X	t t	A	N/A	x
2	H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with	No.	ATT ATT		< ^{N/A} <	4
1	H.3.2.2	Tripping device	J.	A D	J.S.	N/A	E .
2	H.3.2.3	Monitoring voltage (V)	2	2 2	2		2
at the second se	5	* * * * * *	5	5 5	4		5
2	J	INSULATED WINDING WIRES FOR USE WITHO		RLEAVED INSUL	ATION	<u></u> <u> N/A</u> <u> </u> N/A	~
at	at .	General requirements	At	at at	t	N/A	at .
5			0	N N	0		5
A	K	SAFETY INTERLOCKS	No octo		the	N/A	A
2º	K.1	General requirements	EUT	y interlocks inside	e ine	N/A	1
at	K.2	Components of safety interlock safeguard mechanism				N/A	at .
2	K.3	Inadvertent change of operating mode				N/A	2
at	A A		anzhon M		choology		at a
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Clause	Requirement + Test	Result - Remark	Ve
K.4	Interlock safeguard override	~ ~ ~ ~ ~	~
K.5	Fail-safe		
	Compliance		
K.6	Mechanically operated safety interlocks		
K.6.1	Endurance requirement		
K.6.2	Compliance and Test method:		
K.7	Interlock circuit isolation		
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location):		
K.7.2	Overload test, Current (A):		1
K.7.3	Endurance test		I
K.7.4	Electric strength test:		
L	DISCONNECT DEVICES	1	
L.1	General requirements		
L.2	Permanently connected equipment		
L.3	Parts that remain energized		
L.4	Single phase equipment		
L.5	Three-phase equipment		I
L.6	Switches as disconnect devices		1
L.7	Plugs as disconnect devices		1
L.8	Multiple power sources		1
М	EQUIPMENT CONTAINING BATTERIES AND TH	HEIR PROTECTION CIRCUITS	
M.1	General requirements		
M.2	Safety of batteries and their cells		
M.2.1	Requirements		
M.2.2	Compliance and test method (identify method) :	Li-MnO2 battery used	
M.3	Protection circuits		
M.3.1	Requirements		1
M.3.2	Tests		1
	- Overcharging of a rechargeable battery		1
	- Unintentional charging of a non-rechargeable		1

battery - Reverse charging of a rechargeable battery

Shenzhen NTEK Testing Technology Co., Ltd

N/A

Excessive discharging rate for any battery P M.3.3 Compliance After above test have not created a hazard in the meaning of this standard P M.4 Additional safeguards for equipment containing secondary lithium battery N/A N/A M.4.1 General N/A M.4.2 Charging safeguards N/A M.4.2 Charging voltage, current and temperature: — M.4.2.2.b) Single faults in charging circuitry — M.4.2.2.b) Single faults in charging circuitry — M.4.2.2 Preparation N/A M.4.2.2.b) Single faults in charging circuitry N/A M.4.2.1 Preparation N/A M.4.2 Preparation N/A M.4.3 Drop and charge/discharge function tests N/A M.4.4.2 Preparation N/A M.4.5 Result of charge-discharge cycle test N/A M.4.4.5 Result of charge-discharge cycle test N/A M.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from eithor effects of electric current N/A M.6.1.2 Test method to simulate an internal fault N/A M.6.1.3			Page 32	of 62
IEC/EN 62368-1 Olause Reguirement + Test Result - Remark Verdict - Excessive discharging rate for any battery P P M.3.3 Compliance After above test have not created a hazard in the meaning of this standard P M.4 Additional safeguards for equipment containing secondary lithium battery N/A P M.4.1 General N/A N/A M.4.2 Charging safeguards N/A M.4.2.2.0 Charging outlage, current and temperature — M.4.2.2.0 Single faults in charging circuitry — M.4.2.2.0 Single faults in charging circuitry — M.4.2.2.0 Single faults in charging circuitry — M.4.2.2.1 Charging voltage, current and temperature — M.4.2.2.10 Single faults in charging function tests N/A M.4.2.2.10 Single faults N/A M.4.2.2 Preparation N/A M.4.2.2 Preparation N/A M.4.3 Drop N/A M.4.4.4 Preparation N/			4 4 4 4	2.
Clause Reguirement + Test Result - Remark Verdict - Excessive discharging rate for any battery P M.3.3 Compliance After above test have not created a hazard in the meaning of this standard P M.4 Additional safeguards for equipment containing scondary lithium battery N/A N/A M.4.1 General N/A N/A M.4.2 Charging safeguards N/A M.4.2.2 Charging operating limits N/A M.4.2.2.0 Single faults in charging circuitry — M.4.2.2.0 Single faults in charging circuitry — M.4.2.2.0 Single faults in charging circuitry — M.4.2.2 Single faults in charging circuitry — M.4.2.4 Preparation N/A M.4.2.5 Nigle faults in charging function tests N/A Drop N/A N/A M.4.4.2 Preparation N/A M.4.4.2 Preparation N/A M.4.4.3 Fire Enclosure N/A M.4.4.4 Preparatio	AT 1		Report No. STS19092	0002001E
Excessive discharging rate for any battery P M.3.3 Compliance After above test have not created a hazard in the meaning of this standard P M.4 Additional safeguards for equipment containing secondary lithium battery N/A N/A M.4.1 General N/A M.4.2 Charging safeguards N/A M.4.2 Charging voltage, current and temperature: — M.4.2.2.b) Single faults in charging circuitry — M.4.2.2.b) Single faults in charging circuitry — M.4.2.2 Preparation N/A M.4.2.2.b) Single faults in charging circuitry N/A 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 Drop N/A N/A Drop N/A M.4.4.3 Drop and charge/discharge function tests N/A M.4.4.1 Charge N/A M.4.5 Result of charge-discharge cycle test N/A M.4.4.5 Result of charge-discharge cycle test N/A M.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1.	2 4		2 2 2 2 2	5 .
M.3.3 Compliance After above test have not created a hazard in the meaning of this standard P M.4 Additional safeguards for equipment containing secondary lithium battery N/A M.4.1 General N/A M.4.2 Charging pafeguards N/A M.4.2.1 Charging operating limits N/A M.4.2.20 Charging voltage, current and temperature — M.4.2.20 Single faults in charging circuitry — M.4.2.20 Single faults in charging circuitry — M.4.2.21 Single faults in charging circuitry — M.4.2.20 Single faults in charging circuitry — M.4.2.4 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 N/A M.4.4.3 Drop and charge-discharge cycle test N/A M.4.4.5 Result of charge-cischarge cycle test N/A M.4.4.5 Result of charge-discharge cycle test N/A M.5.1 Requirement N/A M.5.2	Clause	Requirement + Test	Result - Remark	Verdict
a hazard in the meaning of this standard 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 Charging voltage, current and temperature — M.4.2.2.0 Single faults in charging circuitry — M.4.2.2.0 Single faults in charging circuitry — M.4.2.1 Endurance of equipment containing a secondary lithium battery N/A M.4.3 Drop and charge/discharge function tests N/A M.4.4.2 Preparation N/A M.4.4.3 Drop and charge/discharge function tests N/A M.4.4.3 Drop and charge/discharge cycle test N/A M.4.4.4 Charge N/A M.5 Risk of burn due to short circuit during carrying N/A M.5.1 Requirement N/A M.5 Risk of burn due to short circuit and protection from other effects of electric current N/A M.6.1 Short circuits N/A	2 2	- Excessive discharging rate for any battery	6 6 6 6	P
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.4.2.2a) Charging voltage, current and temperature — M.4.2.2b) Single faults in charging circuitry — M.4.2.2b) 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 N/A M.4.4.3 Drop and charge/discharge function tests 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.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from other effects of electric current N/A M.6.1.3 Compliance (Specify M.6.1.2 or alternative method) N/A <td>M.3.3</td> <td>Compliance:</td> <td>a hazard in the meaning of this</td> <td>Р</td>	M.3.3	Compliance:	a hazard in the meaning of this	Р
M.4.2 Charging safeguards N/A M.4.2.1 Charging operating limits N/A M.4.2.2a) Charging voltage, current and temperature: — M.4.2.2b) Single faults in charging circuitry — 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 M.4.4.3 Drop and charge/discharge function tests N/A M.4.4.4 Charge 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.4.4.5 Result of charge-discharge cycle test N/A M.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from other effects of electric current N/A M.6.1.2 Test method to simulate an internal fault N/A M.6.1.3 Compl	M.4			N/A
M.4.2.1 Charging operating limits N/A M.4.2.2a) Charging voltage, current and temperature: — M.4.2.2b) 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 Preparation N/A M.4.4.2 Preparation N/A M.4.4.3 Drop and charge/discharge function tests N/A M.4.4.3 Drop and charge/discharge function tests N/A M.4.4.4 Charge N/A M.4.4.5 Result of charge-discharge cycle test N/A M.4.4.5 Result of charge-discharge cycle test N/A M.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from other effects of electric current 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.6.1.3 Compliance (Sp	M.4.1	General		N/A
M.4.2.2a) Charging voltage, current and temperature: — M.4.2.2a) 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 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 N/A M.4.4.4 Charge N/A Discharge N/A 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.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from other effects of electric current 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.6.1.3 Compliance (Specify M.6.1.2 or al	M.4.2	Charging safeguards		N/A
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 Endurance of equipment containing a secondary lithium battery N/A M.4.4.2 Preparation N/A M.4.4.2 Preparation N/A M.4.4.3 Drop and charge/discharge function tests N/A Drop N/A M.4.4.4 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.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from other effects of electric current 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.6.1.3 Compliance (Specify M.6.1.2 or alternative method) N/A M.6.2	M.4.2.1	Charging operating limits		N/A
M.4.3 Fire Enclosure N/A M.4.4 Endurance of equipment containing a secondary lithium battery 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 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.5.1 Requirement N/A M.5.2 Compliance and Test Method (Test of P.2.3) N/A M.6.1 Short circuits and protection from other effects of electric current 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.6.1.3 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	M.4.2.2a)	Charging voltage, current and temperature:		
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 Charge N/A Discharge N/A M.4.4.3 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.6.1.3 Compliance (Specify M.6.1.2 or alternative method) 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.6.1 Compliance (Specify M.6.1.2 or alternative method) N/A	M.4.2.2 b)	Single faults in charging circuitry		_
lithium batteryImage: Constraint of the second	M.4.3	Fire Enclosure		N/A
M.4.4.3 Drop and charge/discharge function tests N/A Drop N/A Charge N/A Discharge N/A M.4.4.4 Charge-discharge cycle test 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.4.4			N/A
DropN/AChargeN/ADischargeN/ADischargeN/AM.4.4.4Charge-discharge cycle testN/AM.4.4.5Result of charge-discharge cycle testN/AM.5Risk of burn due to short circuit during carryingN/AM.5.1RequirementN/AM.5.2Compliance and Test Method (Test of P.2.3)N/AM.6Prevention of short circuits and protection from other effects of electric currentN/AM.6.1.1General requirementsN/AM.6.1.2Test method to simulate an internal faultN/AM.6.1.3Compliance (Specify M.6.1.2 or alternative method)N/AM.7Risk of explosion from lead acid and NiCd batteriesN/AM.7.1Ventilation preventing explosive gas concentrationN/A	M.4.4.2	Preparation		N/A
ChargeN/ADischargeN/AM.4.4.4Charge-discharge cycle testN/AM.4.4.5Result of charge-discharge cycle testN/AM.4.5.7Risk of burn due to short circuit during carryingN/AM.5Risk of burn due to short circuit during carryingN/AM.5.1RequirementN/AM.5.2Compliance and Test Method (Test of P.2.3)N/AM.6Prevention of short circuits and protection from other effects of electric currentN/AM.6.1Short circuitsN/AM.6.1.2Test method to simulate an internal faultN/AM.6.1.3Compliance (Specify M.6.1.2 or alternative method)N/AM.6.2Leakage current (mA)N/AM.7Risk of explosion from lead acid and NiCd batteriesN/AM.7.1Ventilation preventing explosive gas concentrationN/A	M.4.4.3	Drop and charge/discharge function tests		N/A
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M.4.4.4Charge-discharge cycle testN/AM.4.4.5Result of charge-discharge cycle testN/AM.5Risk of burn due to short circuit during carryingN/AM.5RequirementN/AM.5.1RequirementN/AM.5.2Compliance and Test Method (Test of P.2.3)N/AM.6Prevention of short circuits and protection from other effects of electric currentN/AM.6.1Short circuitsN/AM.6.1.1General requirementsN/AM.6.1.2Test method to simulate an internal faultN/AM.6.1.3Compliance (Specify M.6.1.2 or alternative method)N/AM.6.2Leakage current (mA)N/AM.7Risk of explosion from lead acid and NiCd batteriesN/AM.7.1Ventilation preventing explosive gas concentrationN/A		Charge		N/A
M.4.4.5Result of charge-discharge cycle testN/AM.5Risk of burn due to short circuit during carryingN/AM.5RequirementN/AM.5.1RequirementN/AM.5.2Compliance and Test Method (Test of P.2.3)N/AM.6Prevention of short circuits and protection from other effects of electric currentN/AM.6.1Short circuitsN/AM.6.1.2Test method to simulate an internal faultN/AM.6.1.3Compliance (Specify M.6.1.2 or alternative method)N/AM.6.2Leakage current (mA)N/AM.7Risk of explosion from lead acid and NiCd batteriesN/AM.7.1Ventilation preventing explosive gas concentrationN/A		Discharge		N/A
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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.6.1.3			N/A
M.7Risk of explosion from lead acid and NiCd batteriesN/AM.7.1Ventilation preventing explosive gas concentrationN/A	M.6.2			N/A
concentration	M.7	Risk of explosion from lead acid and NiCd		N/A
	M.7.1			N/A
* * * * * * * * * * * *	M.7.2	Compliance and test method		N/A
	A	* * * * * * *	at at at at	A

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5 5	EC/EN 62368-	A A A A	0002001E
Clause	Requirement + Test	Result - Remark	Verdict
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
Ν	ELECTROCHEMICAL POTENTIALS	Τ	N/A
	Metal(s) used:		—
0	MEASUREMENT OF CREEPAGE DISTANCES A	AND CLEARANCES	N/A
	Figures O.1 to O.20 of this Annex applied:	Considered	
Ρ	SAFEGUARDS AGAINST ENTRY OF FOREIGN INTERNAL LIQUIDS	OBJECTS AND SPILLAGE OF	N/A
P.1	General requirements	Not required any safeguard	N/A
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
	(laonanoaiton of ouppionionial) baloguara/ inini		
P.3	Safeguards against spillage of internal liquids		N/A
			N/A N/A
P.3	Safeguards against spillage of internal liquids General requirements	nenzhen NTEK Testing Technolog	N/A

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S.C.	Clause	Requirement + Test Result - Remark	Verdict	S.
A	P.3.2	Determination of spillage consequences	N/A	
141	P.3.3	Spillage safeguards	N/A	5
2	P.3.4	Safeguards effectiveness	N/A	2
A.	P.4	Metallized coatings and adhesive securing parts	N/A	-
2	P.4.2 a)	Conditioning testing	N/A	2
.at		Tc (°C):	- 0	
2		Tr (°C):		5
at		Ta (°C):	- 24	
S.	P.4.2 b)	Abrasion testing:	N/A	S
A	P.4.2 c)	Mechanical strength testing:	N/A	
-			~	-

14	P.4.2 b)	Abrasion testing	N/A	
	P.4.2 c)	Mechanical strength testing:	N/A	×
				Y
	Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDIN	NG WIRING N/A	1
	Q.1	Limited power sources	N/A	
1	Q.1.1 a)	Inherently limited output	N/A	
	Q.1.1 b)	Impedance limited output	N/A	5
3		- Regulating network limited output under normal operating and simulated single fault condition	N/A	×
	Q.1.1 c)	Overcurrent protective device limited output	N/A	4
13	Q.1.1 d)	IC current limiter complying with G.9	N/A	-
	Q.1.2	Compliance and test method	N/A	
3	Q.2	Test for external circuits – paired conductor cable	N/A	
ſ		Maximum output current (A):		at the
		Current limiting method:	_	
		· · · · ·		A
	R	LIMITED SHORT CIRCUIT TEST	N/A	~
1				

A				A
× .	R	LIMITED SHORT CIRCUIT TEST	N/A	~
L	R.1	General requirements	N/A	1-
7	R.2	Determination of the overcurrent protective device and circuit	N/A	4
¥	R.3	Test method Supply voltage (V) and short-circuit current (A)).	N/A	at .
L				A

at the	R.3	Test method Supply voltage (V) and short-circuit current (A)).	N/A	at a
14	S	TESTS FOR RESISTANCE TO HEAT AND FIRE	N/A	de la
A let	S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	N/A	at 1
2		Samples, material:		
with .	ST S	Shenzhen NTEK Testing Tech	nology Co., Ltd	at st
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A		A	Report No.	STS1909200	
5 5	EC/EN 62368-1	St S	Report No.	5151909200	J02001E
Clause	Requirement + Test	A R	esult - Remark		Verdict
5 3	Wall thickness (mm):	\$ 5	5	5	Ś.
	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):				
	Cheesecloth did not ignite				N/A
S.4	Flammability classification of materials				N/A
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
Т	MECHANICAL STRENGTH TESTS				Р
T.1	General requirements				Р
Т.2	Steady force test, 10 N				N/A
Т.3	Steady force test, 30 N			12	N/A
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AT .		Report No. STS190920	0002001E
2 2	CALC CIEC/EN 62368-	5 5 5 5	5 5
Clause	Requirement + Test	Result - Remark	Verdict
Т.4	Steady force test, 100 N:	(See appended table T.4)	P
T.5	Steady force test, 250 N:	+ +	N/A
Т.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test:	(See appended table T.7)	Р
T.8	Stress relief test:	Metal enclosure	N/A
Т.9	Impact Test (glass)	Surface area not exceeding 0.1m ²	N/A
T.9.1	General requirements	1	N/A
T.9.2	Impact test and compliance	+ +	N/A
	Impact energy (J):	1	
	Height (m):	1	
T.10	Glass fragmentation test:	1	N/A
T.11	Test for telescoping or rod antennas	1	N/A
	Torque value (Nm):	1 ,	

U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION	N/A
U.1	General requirements	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs	N/A
U.3	Protective Screen:	N/A

1	protected GRTS		1
V.3	Protective Screen	N//	A 🔗
1			
v	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES A	ND WEDGES) P	5
V.1	Accessible parts of equipment	Р	
€ V.2	Accessible part criterion	P	A
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EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment - Part 1: Safety requirements)

 Differences according to	EN 62368-1:2014+A11:2017	
Attachment Form No.	EU_GD_IEC62368_1B_II	1
Attachment Originator	Nemko AS	S.
Master Attachment	Date 2017-09-22	

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A	t t	t	t	A	×	A	t	A	t	A	
	CENELEC COMM			-	-					P	1
L L	Clauses, subclaus in IEC 62368-1:20				s and ann	exes w	nich are a	additional	to those	L L	
CONTENT	Add the following Annex ZA (normat corresponding Eur Annex ZB (normat Annex ZC (informat Annex ZD (informat	ive) Nor ropean p ive) Spe ative) A-	mative r ublicatio ecial nati deviatio	ional co ns	onditions	Silt	Stat	Sit	Silt	ATTP -	Vir Vir
Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:									P	1.	
A C		0.2.1	Note	1	Note 3	4.1.15	Note	A.	A.	A.	10
1 1 1	1	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5-	7	74	2
2 L		5.4.2.3.2.4	Note 1 and 3 Note	5.4.2.5 5.5.6	Note 2 Note	5.4.5.1 5.6.4.2.1	Note 2 and 3	A.C.	A.C.	A.	1
at .	x x .	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	.t	t	.t	1
5 3	1 2 2	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	S	S	5	S
Special	For special nation	al conditi	ions, see	e Anne>	(ZB. –	A	×	A	A	P	1
1	Add the following I NOTE Z1 The use of a electronic equipment is 2011/65/EU.	certain sub				Silve at	- AN	11 st	The state	P 4	1.
4.Z1	Protective devices the equipment or a installation:				rts of	N. C.	-Sill	- STA	N. C.	N/A	1 ser
A.	a) Included as par	ts of the	equipme	ent	1	1	1	1	A.	N/A	
2 2	b) For components devices in the built	ding inst	allation	-	s; by	2 x	2 t	24	24	N/A	
50 3	c) For pluggable ty connected; by dev				allation	SU	S	SU	SU	N/A	1 and 1

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AL.	Claus	se	or for	Requi	rement +	Test	A	A.	Result	- Remark	A.	Verdie	ot 🖉	1 al
2 t	5.4.2.3.	2.4	Add the follo					- t	24	7 x	- t	N/A	-	2
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A	10.2.1	1	Add the follo	equirements	s, see 10.5.	1. 1	-	A	1 st	At	A	N/A	X	
SIL	10.5.1	1	Add the follo For RS 1 con	mpliance	is checke	ed by mea		SIL	Sil	Sil	Sil	N/A	S	S
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ALL STREET	A.		fault conditio	ons causii	ng an inc	rease of t	he high-	S.S.S.	A.S.	A.	A.	A.	1	and and
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AL AND	10		measurement For RS1, the	e dose-rat	te shall n		l 1 <mark>µS</mark> v/h	No.	2.CT	A.	N.C.	A.	2	1º
t	TA		taking account NOTE Z2 These				/Euratom of	t	TA	The	t	t	X	5
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2	5	2	fields (0 Hz t For intention	o 300 GH	Hz).	2	2	2	2	2	2	2	2	2
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2	2.1	2	Electromagn hand-held a	etic Field	ls (up to 3	300 GHz)	. For	R	2	2	2	P L	2	4
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T'AL	G.7.1	2	Add the follo NOTE Z1 The to the IEC cord	harmonized	l code desig	gnations cor	responding	r at	4	24	54	N/A	5	2
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with AN ANT Report No. STS190920002001E

0	S.V	3	S.	S	25 V	S	S	SV	Siv	S	S.V	SIL	25°
	Ň.		ÊKĴ	上测	NET	ANT	NIEt	A.C.	AN INT	N'Et-	Page 39	of 62	AN IN
	A.	-		A.	A.	A	A.	AT .	Repo	ort No. S	STS19092	00020011	
		5	2	5	5	< EN	62368-1	2	7	5	5	5	5
	Claus	se		Requir	ement +	Test	A.	A.	Result ·	- Remark	J.S.	Verdic	rt 🖉
	2	2	IEC 60130-9		OTE Har	monized	as EN 601	30-9.	2	2	5	5	5
	1	-	IEC 60269-2	N	OTE Har	monized	as HD 602	269-2.	1	at the	1	4	5
	5	3	IEC 60309-1 IEC 60364				as EN 603 armonized		84/HD 60	364 serie	S	S.	2
	A		IEC 60601-2	-4 N	OTE Harr	nonized a	as EN 606	01-2-4.	A	×	A	A	A
	N.	2	IEC 60664-5 IEC 61032:1				as EN 606 as EN 6103		not modif	fied)	1 Alexandre	2 de la	1 AV
	5	5	IEC 61508-1	N	OTE Harr	nonized a	as EN 615	08-1.	ilot moun	içu).	7	5	5
	1	1	IEC 61558-2 IEC 61558-2				as EN 615 as EN 615		A.	de la comercia de la	1	1	1
Ż	Ś	2	IEC 61558-2				as EN 615		2	2	5	~	Ś
	x		IEC 61643-1				as EN 616		A	A	A	A	A
	1 AV	5	IEC 61643-2 IEC 61643-3				as EN 616 as EN 616		S	S.	1º	N.	3
	L	-	IEC 61643-3	21 NO	OTE Harr	nonized a	as EN 616	43-321.	T	L	T.L	L	1
	Æ	1	IEC 61643-3	20	~	~	as EN 616	~	J.S.	J.F	J.	15	4
	ZB		ANNEX ZB,					(EN)				Р	
	4.1.15		Denmark, Fi					at	at	at	at	N/A	4
	5	5	added:	5	5	5	5	S	S	S	S	ST	3
	L		Class I plug for connection					A	t	t	at	t	t
	N.	1	shall, if safet	y relies of	n connec	tion to rel	iable	and the	and the	A.	a la	10	1
	2	2	earthing or if between the					2	2	2	2	2	2
	5	4	parts, have a	marking	stating th	hat the eq	uipment	5	5	5	at.	5	5
	S	3	shall be conroutlet.	nected to	an earthe	ed mains	socket-	5	5	5	S	S'	S
	A		The marking		e applica	ble count	ries shall	A	A	A	A	A	×
	1 AV	200	be as follows In Denmark :		tote stikn	on skal ti	Icluttor	1 all	A.C.	and	1 Contraction	1º	14
	5	5	en stikkontal					5	5	5	5		5
	1	-	stikproppens					1	1	1	1	1	1
	Ś	2	In Finland : " varustettuun			Suojakosk	etumina	S	S.	5	i'	Ś	Ś
	A		In Norway: "			ples jorde	et 🙏	A	A	A	A	A	A
	A. C.	1	stikkontakt" In Sweden : '	'Apparate	en skall a	nslutas til	l iordat	1 Charles	- Carlor	S.C.	1 AV	1 Contraction of the second se	3
ľ	T t	5	uttag"		E at	The state	-		T	T	T	T	5
	4.7.3	-	United King To the end o		clause the		a is	A.	1	1	A.	N/A	1
	2	2	added:	2	2	2	2	2	2	2	2	2	2
	at	4	The torque to complying w					at	at	at	at	at	4
	S.	3	be assessed					5	S	S	S	5	3
	1	-	Also see Anr	1ex G.4.2	of this a	nnex	at	t	t	t	t	t	A
	5.2.2.2	1	Denmark After the 2nd	paragra	oh add th	e followin	g: 💉	1	14	19	and and a second	N/A	1
	6	2	A warning (n	narking sa	afeguard) for high	touch	2	2	2	7	2	2
	J.	-	current is re the limits of 3				exceeds	\$	5	5	A.	A.	5
1	5.4.11.	15	Finland and	Sweden	S	S	5	3	5	5	5	N/A	2
	and		To the end o	t the subo	clause the	e tollowing	g is	t	A	A	A	A	A
	A. C.	1		N.	2	~	Sł	nenzhen	NTEK T	esting Te	chnology	/ Co., Lt	d
13	5	5	L T L	5	5	5	5	5	5	5	5	5	5

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2 4	2	C C C C EN 62368-1	2	2	2	5	2	2
Clause	Ser.	Requirement + Test	A.	Result -	Remark	A.	Verdic	rt 🔏
Annex G	-	added:	5	~	5	5	5	C
	1	For separation of the telecommunication network	A	A	A	A	1	1
2 C	5	from earth the following is applicable:	1	and the second s	2ªV	1	1 A	1
2 4	2	If this insulation is solid, including insulation	5	5	5	7	2	2
A		forming part of a component, it shall at least	A	A	×	A	×	1
1 ser	-	consist of either	2 V	N. C.	N. C.	A.	, wi	1
5 4	2	 two layers of thin sheet material, each of which 	2	2	2	2	2	2
L	*	shall pass the electric strength test below, or	.L	L	L.	L	L	
1	-	• one layer having a distance through insulation of	1	J.	2	2	.0	4
5 .	5	at least 0,4 mm, which shall pass the electric	5	2	2	5	5	S
		strength test below.		1	1	1		-
5	6	component (e.g. an optocoupler), there is no	1	5	5	5	5	0
S	5	distance through insulation requirement for the	~	2 Cr	e l'	1 AN	S.	2
	1	insulation consisting of an insulating compound	7	7	7	7	7	6
A		completely filling the casing, so that clearances	A	A	A	A	A	/
S S S S S S S S S S S S S S S S S S S	1	and creepage distances do not exist, if the	A CONTRACTOR	504	1 and a		A.C.	1
2 4	2	component passes the electric strength test in	2	2	2	2	2	2
A		accordance with the compliance clause below	A	A	A	A	at	
1	3	and in addition 🔊 🔗 🔗	1	a star	N.	1	1	4
S .	5	 passes the tests and inspection criteria of 5.4.8 	5	S	5	S	S	S
		with an electric strength test of 1,5 kV multiplied	1		1	1		
5	3	by 1,6 (the electric strength test of 5.4.9 shall be	5	5	5	5	5	4
N 1	5	performed using 1,5 kV), and	1	1	1	1	~	4
	1	• is subject to routine testing for electric strength	5	5	5	5	5	6
A		during manufacturing, using a test voltage of 1,5kV.	A	A	A	A	A	1
A CONTRACTOR	1	It is permitted to bridge this insulation with a	Nº C	and the second s	1 Alexandre	A.C.	1	3
2 4	2	capacitor complying with EN 60384-14:2005,	2	2	2	2	2	0
A		subclass Y2.	A	A	A	A	A	
14	-	A capacitor classified Y3 according to EN 60384-	247	A.	N. C.	147	14	1
2 .	S	14:2005, may bridge this insulation under the	2	2	2	2	2°	2
	*	following conditions:	i.	1		1	1	
S.		 the insulation requirements are satisfied by 	5	0	S.	15	S.	4
5	5	having a capacitor classified Y3 as defined by EN	5	5	5	5	5	5
	-	60384-14, which in addition to the Y3 testing, is			5			-
15	1	tested with an impulse test of 2,5 kV defined in	15	5	5	4	A	6
1 Alexandre	2	5.4.11;• the additional testing shall be performed on all	1 AV	1 AV	1 AV	1 NY	1 AV	2
5 5	2	the test specimens as described in EN 60384-14;	7	7	5	5	7	5
A		the impulse test of 2,5 kV is to be performed	A	A	A	A	×	/
A. C.	-	before the endurance test in EN 60384-14, in the				and a second	1	
2 4	2	sequence of tests as described in EN 60384-14.	2	2	2	2	2	2
5.5.2.1		Norway	-	al-	-	al	N/A	
5.5.2.1	1	After the 3rd paragraph the following is added:	A.	1	J.	1	A A	4
5	5	Due to the IT power system used, capacitors are	2	5	2	S	5	2
		required to be rated for the applicable line-to-line		1		1		
5	6	voltage (230 V).	5	5	5	5	5	0
5.5.6	1	Finland, Norway and Sweden 💉 💦 🔨	1	1	1	2 miles	N/A	2
5	7	To the end of the subclause the following is	5	5	7	7	5	5
A		added:	A	A	×	A	A	
A. C. C.	1	Resistors used as basic safeguard or bridging	and a second	A COL	1	A A A A A A A A A A A A A A A A A A A	and a second	and the
2 4	2	basic insulation in class I pluggable	2	2	2	2	2	2
A		equipment type A shall comply with G.10.1 and	ster	A	A	1	1	
S.	1		4	0	10	N.	4	- 4

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	at		* * * * * *	at	Repo	ort No. S	STS19092	0002001E	1
1	2	2	< < < < EN 62368-1	2	2	2	2	2	2
	Claus	se 📈	Requirement + Test	AL.	Result	- Remark	A.	Verdic	t 🔊
13	2	2	the test of G.10.2.	2	2	2	2	2	2
1	5.6.1	4	Denmark	.05	5	5	5	N/A	4
4	A A	1º	Add to the end of the subclause Due to many existing installations where the	L'ÉV	25°	25°	-ST	A.	2
	5	4	socket-outlets can be protected with fuses with	5	5	5	5	.0	1
	5	3	the protection for pluggable equipment type A	5	5	3	S	5	5
	at		shall be an integral part of the equipment.	at	at	- de	t	at	-
	1	100	Justification: In Denmark an existing 13 A socket outlet can be	A.	A.	A.	A.	A.	1
3	2	2	protected by a 20 A fuse.	2	2	2	2	2	2
	5.6.4.2.	1	Ireland and United Kingdom	X	X	X	A	N/A	X
	1	1	After the indent for pluggable equipment type A , the following is added:	1 and a start	1 AV	1 AV	1 and a start	1 Alexandre	-
4	5	5	- the protective current rating is taken to be 13		5	5	5		5
	5	14	A, this being the largest rating of fuse used in the	1	.0-	A.	1	.5	4
- 24		2	mains plug. Ireland and United Kingdom To the second	2	5	5	5		-
	5.6.5.1		paragraph the following is added:	t	t	t	t	N/A	J
	2	1	The range of conductor sizes of flexible cords to	1	1	A.	A.	A.	1
le	5	2	be accepted by terminals for equipment with a	2	2	2	2	~	2
,	A		rated current over 10 A and up to and including 13 A is:	A	A	×	A	A	A
	1	1	1,25 mm ² to 1,5 mm ² in cross-sectional area.	and a second	and a second		A A A A A A A A A A A A A A A A A A A		2
1	5.7.5	5	Denmark	2	5	5	5	N/A	2
	St.	4	To the end of the subclause the following is added:	A.	J.	5	5	ST.	5
	5	5	The installation instruction shall be affixed to the	5	5	5	5	5	S
	L	-	equipment if the protective conductor current	L	L	L	L	L	1
		-	exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	1	A.	A.	-A	4	0
1	5.7.6.1	2	To the end of the subclause the following is	S'	2	2	5	< <u>∕</u> N/A	2
ł	A		added:	A	A	×	A	×	A
	1 star	5	The screen of the television distribution system is normally not earthed at the entrance of the	1 Chill	1 Contraction	and the	A.C.	and a second	14
	2	2	building and there is normally no equipotential	2	2	2	2	2	2
1	5	4	bonding system within the building. Therefore the	5	at	5	at	5	4
	5	5	protective earthing of the building installation needs to be isolated from the screen of a cable	S	- Star	S	S	S	3
			distribution system.	1	L	L	L	L	1
	1	-	It is however accepted to provide the insulation	15	A.	1	S.	1	.05
1	S	2	external to the equipment by an adapter or an interconnection cable with galvanic isolator, which	Ś	S	S	S	S	S
	A		may be provided by a retailer, for example.	A	A	A	t	A	A
	14	10 10	The user manual shall then have the following or	141	and the	A.	14	14	141
0	2	2	similar information in Norwegian and Swedish	2	2	2	2	2	2
	A	4	language respectively, depending on in what country the equipment is intended to be used in:	A	A	at	at	at	A
	S	5	"Apparatus connected to the protective earthing of	ST	S	5	SIL	S	3
		1	the building installation through the mains			1	1		
	5	-	connection or through other apparatus with a connection to protective earthing – and to a	de la	15	1	1	4	1
1	5	5	television distribution system using coaxial cable,	S	S	2	S	5	2
	A	*	may in some circumstances create a fire hazard.	A	A	A	A	t	· J
	1	-		N.		A)	N.	4	- A

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	A.	1		A.	Repo	rt No. S	STS19092	00020011	
1		5		2	2	2	2	2	2
	Claus	se 💦	Requirement + Test	A.	Result -	Remark	, ar	Verdic	ot 🔊
	2	2	Connection to a television distribution system	2	2	2	2	2	es.
	Night -	N	therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)"	Night -	N'III	ANIEL -	NICT	A LA	A L
	N. C.	1	NOTE In Norway, due to regulation for CATV- installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz.	N. C.	A. C.	N. C.	A.C.	A. A.	1
5	AL	2	The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.	NICH	A.C.	- int	N.C.	N.C.	N III
	S.C.	S	Translation to Norwegian (the Swedish text will also be accepted in Norway): "Apparater som er koplet til beskyttelsesjord via	SIG	Silt	Silt	SIL	S. A.	N at
	the state	-	nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det	.at	at	At	at	t	T
	2	5	ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet	5	2	2	2	2	2
1	SIL	2	og kabel-TV nettet." Translation to Swedish:	N. C.	SIL	3. AT	N.C.	N.C.	N. Chi
	at the	-	"Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i	sit.	at the	at	at	at	at a
1	t.at	P	vissa fall medfőra risk főr brand. Főr att undvika detta skall vid anslutning av apparaten till kabel- TV nät galvanisk isolator finnas mellan apparaten	1 dt	T. at	T.at	- at	1 th	1 dt
	5.7.6.2	-	och kabel-TV nätet.".			~		N/A	-
	SIL	2	To the end of the subclause the following is added: The warning (marking safeguard) for high touch	SIL	SIL	Silt	SIL	SIL	1 AL
ŕ	A		current is required if the touch current or the protective current exceed the limits of 3,5 mA.	A	at	A	A	A	t
	B.3.1	3	Ireland and United Kingdom	S	25 V	S	S	SN/A	S
	and B.4		The following is applicable: To protect against excessive currents and short-	A	at	at	at	A	A
	S.V	S	circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and	SIV	S.V	SIV	SIV	SIV	S
	A		B.4 shall be conducted using an external miniature circuit breaker complying with EN	A	A	A	A	A	A
	S	S	60898-1, Type B, rated 32A. If the equipment	S	SI	S	Sil	S	S
	X		does not pass these tests, suitable protective devices shall be included as an integral part of the	A	A	A	A	A	A
0	S	S	direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met	S	S	S	S	S	S
	G.4.2		Denmark: Appliances rated ≤13 A provided with a plug according to DS 60884-2-D1:2011.	at	A	at	at	N/A	at
	2	2	Class I equipment provided with socket-outlets	2	2	2	2	2	2
1	SAL	5	provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having rated >13 A or	STA	SIL	SIL	STAT	AL AL	A.
ł	t		poly-phase equipment provided with a supply	t	t	A	t	t	X
	-	-		-		1	and in		- N.

W.	N. Colorest	1m	at with	A.	The state	T	NIT	N. Contraction	- AL	T	N. Contraction	it.	A. A.	1. Star
the state	Ň		ÊKJ	上测	Niet	AN INT	NIE	NIEt	Night	NIE	Page 43	of 62	NIC	N.S.
and the	at the	-	at at	at	at	at	at	at	Repo	ort No.	STS19092	20002001	E	and
2	2	2	2	2	~ .	<pre>C EN</pre>	62368-1	2	5	2	~	2	5	2
AL.	Claus	se 💦	t st	Require	ement + -	Test	A.	A.	Result	- Remark	J.S.	Verdi	ct 🔬	2ª
1 the	A A	A star	cord with a p standard she 60309-2.	ets DK 6-	1a in DS	60884-2-	D1 or EN	S	1 at	1 the	2 th	1 th	The state	1
L	L	1.1	Mains socke to Class II ap with DS 6088 4a.	oparatus r	ated 2,5	A in accoi	rdance	L AL	List	1 st	L'Et	1 the	THE M	L. K.
NE	A. C.	A	Other curren with Standard Mains socke	d Sheet D t-outlets v	0KA 1-3a vith earth	or DKA 1 in compli	-1c. ance with	1. at	Net	NET	Net	Net	NE	-Sil
ALL .	A	-	DS 60884-2- DK 1-1c, DK	1-1d, DK			< 1-3a,	A	A	A	A	A	at the	and and
14	G.4.2	2	United King To the end o added:	f the subc	15	1	1	1 at	14	24	14	N/A	14	2
- Silv	ST.	2	The plug par assessed to 12.9, 12.11,	BS 1363:	Part 1, 1	2.1, 12.2,	12.3,	S.V	ST.	25	- ST	AN L	4	- A
N.C.	S.C.	2	except that the less than 125	he test of 5 °C. Whe	12.17 is pere the me	performed etal earth	d at not pin is	S.C.	S.C.	in the second	25 AF	A.C.	N	J.
at	t	and and	replaced by a (ISOD), the r also apply.	equireme				at	.th	A	at	at	A	and
14	G.7.1	2	United King To the first p	aragraph				24	7	24	24	N/A	2×	2
1. Star	N. S. S.	2	Equipment w cord and is d socket confo	lesigned t	o be coni	nected to	a mains	S.C.	- Silv	2 Charles	-Sile	A.	2	- Al
T	A. C.	1 st	flexible cable 'standard plu Sockets etc (ig' in acco (Safety) R	ordance w Regulatior	vith <mark>th</mark> e Pl ns 1994, S	ugs and Statutory	NOT	NI	NET	ASIG	A.C.	1 in	- AN
ALL AND	. at	1 second	Instrument 1 those regulat NOTE "Stand	tions.	5	5	5	at the	and the	A	at	A.	at the	N.
1 th	L.at	5	and essentia conforming to conversion p	lly means o BS 1363	an appro	oved plug		L. It	T.at	T.A.	E. at	.at	T. dt	
5	G.7.1	2	Ireland To the first p	2	the follow	ving is add	ded:	5	2	2	2	N/A	2	2
A	A. C.	2	Apparatus w cord shall be with Statutor	hich is fitte provided	ed with a with a pl	flexible c ug in acco	able or ordance	A. C.	N. C.	N. C.	A. C.	A. C.	1 A	N
S. At	Sat	1 and	and Convers Regulations: recognition o	ion Adapt 1997. S.I	ters for D . 525 pro	omestic L vides for	Ise	SIG	Sat	Not -	Stat	A.	at the	and
t	at	-	State which i Standard					t	t	at	t	at	t	5
2º	G.7.2	2	Ireland and To the first p	aragraph	the follow			5	2	2	2	N/A	2	2º
1 Stat	S. Cont	N. S.	A power sup mm ² is allow 10 A and up	ed for equ	uipment v	vhich is ra		J.C.	S. C.	-	SIL	ALL N	AL A	J.
at	at		t t	at	đ	at	d'a	Penzhan		Lesting T	echnolog	V Co	td stat	de la
14	2 at	2	* *	14	24	2 At	14	2 at	2 ct	Sound It		A ST	2 at	2
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.et	4.1.2	TABI	Filiet	of critica	al com	onents	4	. At	t	t	t	A.	at	4
in the	Object / pa			facturer/		Type / mo	del	Technical	data	Standar	rd	Mark(s) conform		
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A	Enclosure	A	Interc	hangeabl	e A	Interchang	geable	Min. HB, 6	50°C	UL 94	A	ULA	X	٦,
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A	A	A	A	At	A	A	A	abnormal current 10	0 0	A	A	applian	ce A	·)
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NET	Clause	Requirement + Test	368-1 Result - Remark	Verdict
they to	4.8.5	thium coin/button cell batteries	x x x x	
2	<	I tests are conducted in the seque	nce noted.)	
4	Part	Material	Oven Temperature (°C)	Comments
2	6 6 6	6 6 6 6	6666	5 6
ALL.	4.8.4.3 TABLE: Ba	ttery replacement test		
2	Battery part no		5 5 5 5	
A.	Battery Installation/witho	Irawal	Battery Installation/Removal Cycle	Comments
1 th	the the			t t
1 they	AND AND AND	stat stat stat st		
N. C.	and and and	with with with a		
A.	4 4 4		t 10 t	
2	4.8.4.4 TABLE: Dro		4 4 4 4	
ALL CONTRACT	Impact Area	Drop Distance	Drop No.	Observations
7 at	4 4 4			7 7 1
S.C.	5 5 5	5 5 5 5 5		5 5
A	4.8.4.5 TABLE: Im	pact to the	t t t t	<u> </u>
the way	Impacts per surface	Surface tested	Impact energy (Nm)	Comments
at	太 太 太	to to to	本本本本 。	本、な、な
5	4.8.4.6 TABLE: Cr	ush test 🖉 🍼 🍝	5 5 5 5	—
A	Test position	Surface tested	Crushing Force (N)	Duration force applied (s)
2	4 4 4	5 5 5 5	5 5 5 5	5 - 5
A.	Supplementary information	on: A A A		

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A	Test	t nositio	n	9	Surface te	ested			Force (N	1)		uration fo	rce	
2 4	4.8.5 🤿	TAB	E: Lith	ium coin	/button c	ell batte	ries mec	hanical t	est resul	12	2	N/A	2	2
at	at .	dt.	at .	at	at	at	at	at	A	at	A	at	at	-
5 4	Clause	1.	Š	Requir	ement +	Test	2º	1	Resul	t - Remai	k S	Verdi	ict	2
A	at	at	t	at	at	HEC	C 62368-1	A	at	at	t	at	at	4
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A	A	A	A	A	A	A	A	A	t	A	t	×	A	

AND A	4.8.5 TABLE: Lit	hium coin/button cell batteries	mechanical test result	N/A
Night &	Test position	Surface tested	Force (N)	Duration force applied (s)
Silt .	Supplementary information	n: the set of	t set set set s	

4 4	2	2 2	4 4	4 4		6 6	2	2 7	2 4	2
AT .	5.2	Table:	Classification of e	electrical energy	source	s 🖉 🖉		A	P A	*
2 4	5.2.2.2 -	- Steady Sta	te Voltage and Cur	rent conditions						~
A			Location (e.g.			Р	arameters			t.
2 4	No.	Supply Voltage	circuit	Test condition	ns	U	I		ES Class	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
at the		Voltage	designation)			(Vrms or Vpk)	(Apk or Arms)	Hz		the set
5 5	2 1	🗧 Full 🧲	2 2	Normal		2-2	2	< - <	2 6	1 2
ALL AND A	A		All internal circuits	Abnormal:	S.	1		A.	ES1 (declared)	5
i a	s,	5V	1 2 2	Single fault:		2	4		2 2	Ś
at	5.2.2.3 -	Capacitand	e Limits							*
5.		Supply	Location (e.g.	T 1 10		Paran	neters		50.01	
A	No.	Voltage	circuit designation)	Test conditions	Ca	pacitance, nF	Upk	(V)	ES Class	t

5.2.2.3 - Capacitance Limits

1×	5.2.2.3 -	Capacitance	Limits					*
5.	N	Supply	Location (e.g.	T	Paramo	eters		
ot	No.	Voltage	circuit designation)	Test conditions	Capacitance, nF	Upk (V)	ES Class	×
St.	5	5 5	2 2	Normal:	1 2 2	2 2 ,	5 2	
t	.at	At 4	t at	Abnormal:	d d d	d- d	1 4	*
1		5 5	5 5	Single fault:	1 2	4 4 4	5 2	
AL.	5.2.2.4 -	Single Pulses	S	de de				*

1 4	1.	4 4	2 2	Single fault: SC/OC		2 2		2 2	L
A.	5.2.2.4	- Single Pulse	S						5
2 4		Supply	Location (e.g.	-		Parameters			
AL.	No.	Voltage	circuit designation)	Test conditions	Duration (ms)	Upk (V)	lpk (mA)	ES Class	F.
5 4	1.	4 4	2 2	Normal	4	2-5	2 4	5 5	
ALL ALL	A.	AT C		Abnormal Single fault –	to to	A R		At A	F
L t	. A	4 4	A T A T	SC/OC	at at	T T	- Fat	L F	F
A.	5.2.2.5	- Repetitive P	ulses						
5 5		Supply	Location (e.g.	-		Parameters		50.01	
A	No.		circuit	Test conditions				ES Class	page .

5.2.2.5 - Repetitive Pulses

									6 C
2	S N.	Supply	Location (e.g.	Testessi		Parameters			2
A. C.	No.	Voltage	circuit designation)	Test conditions	Off time (ms)	Upk (V)	lpk (mA)	ES Class	The second
2	5-	2 2	- 6 4	Normal	2 2	2 2	- 6 5	- 7	2
15	J.	J.	G G	A A	Shonzk	en NTEK Test		W Co Itd	5 2
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8 8	V N	NU	10	2ª	AN .	K K Be	eport No.	STS1909	20002
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Clause		Beau	uirement +	4		Besi	ult - Remai	rk 🚫	Ve
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A 1	0 20	A.	Abno	rmal	A.	A - A	- North	and the second s	A.
2 4		5	Single SC/O	e fault -	5 5	·	5	7	5
Test Condit	ions:	A	150/0		A.	A A	A	A	A
	Normal -	5	2	2	2 5	2 2	2	2	2
AT &	Abnorma		A.	1		A A	A	A.	A
	tary informatic					ce was ignited.	2	2	2
The prospe	clive louch vo	mage was	measure	a when	the liash devi	ce was ignited.	4	A	4
5.4.1.4,	TABLE: The	ermal reg	wirement	is is		<u> </u>	5		-
6.3.2, 9.0, B.2.6	at the	A.	A A	A		at at	A	and the	A.
at t	Supply voltag	ge (V)	N.L		Condition 1	Condition 2	The state	The state	1
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X 3	Ambient T _{min}	ייייי (°C) ייייי			See below	See below	1		R
	Ambient T _{min} Ambient T _{max}	Contraction of the second	~	~	See below See below	See below See below	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~
	-	Contraction of the second	× A		5	5	A.		~
	Ambient T _{max} Tma (°C) neasured tem	_x (°C)	T of	~	See below	See below)		
Maximum r part/at:	Ambient T _{max} Tma (°C) neasured tem	_x (°C)	T of	20	See below	See below See below)		
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part/at: DC inlet	Ambient T _{max} Tma (°C) neasured tem	_x (°C)	T of		See below	See below See below T (°C 47.1)		
part/at: DC inlet PCB near t	Ambient T _{max} Tma (°C) neasured terr	_x (°C)	T of		See below	See below See below T (°C			
part/at: DC inlet PCB near L PCB near L	Ambient T _{max} Tma (°C) neasured tem	_x (°C)	T of		See below See below	See below See below T (°C 47.1 47.9			
part/at: DC inlet PCB near L	Ambient T _{max} Tma (°C) neasured tem J1 J1&IC Q1	_x (°C)	T of	A A A	See below See below	See below See below T (°C 47.1 47.9 55.0			
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part/at: DC inlet PCB near L PCB near C PCB near C Battery boo	Ambient T _{max} Tma (°C) neasured tem J1 J1&IC J1&IC	x (°C)	T of	The Train of the train of the	See below See below 56.9 53.0 49.0	See below See below T (°C 47.1 47.9 55.0 51.4 			
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at 1	Temperature T of winding: t_1 (°C) R_1 (Ω) t_2 (°C) R_2 (Ω)T (°C)AllowedTemperature T of winding: T_1 (°C) T_1 (°C) T_1 (°C) T_1 (°C) T_1 (°C) T_1 (°C)	
AT .	5 5 5 5 5 5 5 5 5 5 5	· · · · ·
×	Supplementary information:	t
A.		A CO
A	5.4.1.10.2 TABLE: Vicat softening temperature of thermoplastics	N/A
A)	Penetration (mm)	_ >
at.	Object/ Part No./Material Manufacturer/t rademark T softening (°C)	*
	5 5 5 5 5 5 5 5 5 5 5 5	5
d.	Supplementary information:	t t
1	5.4.1.10.3 TABLE: Ball pressure test of thermoplastics	N/A
A	Allowed impression diameter (mm):: $\leq 2 \text{ mm}$	
r:		
	Object/Part No./Material Manufacturer/trademark Test temperature (°C) Impression diam	neter (mm)
F	Object/Part No./Material Manufacturer/trademark Test temperature (°C) Impression diam	neter (mm)
10	Object/Part No./Material Manufacturer/trademark Test temperature (°C) Impression diam	neter (mm)
L T T	Supplementary information: 5.4.2.2, TABLE: Minimum Clearances/Creepage distance	neter (mm)
1 1 1	Supplementary information: 5.4.2.2, TABLE: Minimum Clearances/Creepage distance 5.4.2.4 and 5.4.3	
		N/A ST
	Supplementary information: Supplementary information: Supplementary information: <td< th=""><th>N/A ST</th></td<>	N/A ST
	Supplementary information: 5.4.2.2, 5.4.2.4 and 5.4.3 TABLE: Minimum Clearances/Creepage distance Clearance (cl) and creepage distance (cr) at/of/between: Up (V) U r.m.s. Frequency (KHz)# Required cl (mm) Required cr (mm) Basic/supplementary insulation	N/A ST
	Supplementary information: Supplementary information: Supplementary information: Supplementary information: Supplementary information: Supplementary information: Supplementary information: Supplementary information: Supplementary information: <t< th=""><th>N/A ST</th></t<>	N/A ST
	Supplementary information: 5.4.2.2, 5.4.2.4 and 5.4.3 TABLE: Minimum Clearances/Creepage distance Clearance (cl) and creepage distance (cr) at/of/between: Up (V) V.m.s. Frequency (V) Required cl (mm) Required cr (mm) Basic/supplementary insulation Reinforced insulation	N/A ST
	Supplementary information: 5.4.2.2, 5.4.2.4 and 5.4.3 TABLE: Minimum Clearances/Creepage distance Clearance (cl) and creepage distance (cr) at/of/between: Up (V) U r.m.s. Frequency (KHz)# Required cl (mm) Required cr (mm) Basic/supplementary insulation	N/A ST
	Supplementary information: Supplementary information: S.4.2.2, S.4.3 and S.4.3 TABLE: Minimum Clearances/Creepage distance Clearance (cl) and creepage distance (cr) at/of/between: Up (V) U r.m.s. (V) Frequency (KHz)# Required cl (mm) Required cr (mm) Basic/supplementary insulation Reinforced insulation Supplementary information: Supplementary information: Supplementary information: (#) Frequencies above and below 30 kHz Note 2: Bl: basic insulation; Sl: supplementary insulation; Dl: double insulation; Rl: reinforced insulation	N/A Cr (mm)
* * * * * * *	Supplementary information:	N/A Cr (mm)
T T T T T T T T T		N/A Cr (mm)
		N/A Cr (mm)
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1	A A A A	A	×	A	A	A	t	A	A	At
4	Pollution Degree:	× .	~	<u> </u>	<u>~</u>	<u>×</u> .	<u></u>	2		1
	Clearance distanced between:		wit	Required hstand volta	ge	Require (mm		Meas	ured cl (m	m)
V.	Basic / supplementary insulation	5 2	5	5 8	5	5	5	S	S	5
	* * * *	t	A	A	4	A	A	A	-	At
2	Reinforced insulation	5	5	5 -	5	5		5	5	S
	Supplementary information:	. At	A		A	A	A	4	. At	.et
A.	1. BI: basic insulation; SI: s	upplementar	y insul	ation; DI: do	uble insi	ulation; F	RI: reinfoi	ced ins	ulation;	~
r	4 4 4 4	5	5	A.	5	5	5	5	4	A
~	5.4.2.4 TABLE: Clearance					S	5	5	N/A	5
	Test voltage applied between:		Requir (mn			ltage (Kv m.s. / d.o			akdown s / No	×
5	2 2 2 2	2 4		2 2		5	2	2		2
			and the second sec		ALC: NOT	A	A		A	
	Supplementary information: Not u	used the alter	native	method to de	etermine	the clea	rances.	A.	J.	5
1.	1 1 1 1 1	2 4	S	2 2		the clea	rances.	A.	-	-STOR
1.	5.4.4.2, TABLE: Distance t	2 4	S	2 2		the clea	rances.	25 CT	N/A	in the
A. A.	1 1 1 1 1	2 4	S	2 2		the clea	rances.	N H	N/A	in the
a A. A.	5.4.4.2, TABLE: Distance t	2 4	Ilation	2 2		A CH	Required (mn		DTI (mm)	Not the state
A. A. A.	5.4.4.2, 5.4.4.5 c)TABLE: Distance to Distance through insulation di at/of:	hrough insu Peak voltag	Ilation	Frequency	ents	A CH	Required		DTI	Not the total
. A. A. A.	5.4.4.2,TABLE: Distance t5.4.4.5 c)5.4.4.9Distance through insulation	hrough insu Peak voltag	Ilation	Frequency	ents	A CH	Required		DTI	AN AN AN AN
A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency	ents	A CH	Required		DTI (mm)	AL A A
A. A. A. A.	5.4.4.2, 5.4.4.5 c) 5.4.4.9TABLE: Distance to Distance through insulation di at/of:Supplementary information:5.4.9TABLE: Electric str	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm)	A A A A A
A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency	ents Mate	erial	Required		DTI (mm)	A VI
. A. A. A. A. A.	5.4.4.2, 5.4.4.5 c) 5.4.4.9TABLE: Distance to Distance through insulation di at/of:Supplementary information:5.4.9TABLE: Electric str	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
1. A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
A. A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
A. A. A. A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
A. A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
A. A. A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz)	ents Mate	erial	Require (mn		DTI (mm) 	A VI
A. A. A. A. A. A. A. A.	5.4.4.2, TABLE: Distance to the second s	Peak voltag (V)	e	Frequency (Hz) Voltage sha (AC, DC	ents Mate	erial	Required (mn voltage (DTI (mm) 	A T T T T T T T T T T T T T T T T T T T

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- Page 51 of 62

A.

2 2	2 2		2	2	2	Rep	ort No.	STS1909	20002001E	
at at	at	at at	HE	C 62368-	t	at	at	at	at	6
Clause	2 2	Requirement +	Test	-S	4	Result	- Remark	5	Verdict	5
at at	at	at at	A	at	A	A	at	t	at-	~
5.4.9 TA	BLE: Electri	ic strength tes	sts	A.	24	AT .	147	A.	N/A	10
-				× / 1.						

Test voltage applied between: Voltage shape Breakdown Test voltage (V) (AČ, DC) Yes/No

Supplementary information:

	5.5.2.2 TABLE: SI	tored discharg	ge on capacitor	× 1		N/A 🔇	0
5	Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	20
-	at at at	t.	at the	the second		t t	2

Supplementary information:

X-capacitors installed for testing are:

bleeding resistor rating: ICX:

Notes:

15 C

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 OC- Opened circuit

5.6.6.2 TABLE: Res	istance of	protective condu	uctors and termi	nations	2 ² 2 ²	N/A
Accessible part		Test current (A)	Duration (min)	Voltage (V)	drop Resis (1	
4 4 4	2. 2	2. 2.	2. 4.	5. 4	2 2	2

Supplementary information:

							1				
5.7.2.2, 5.7.4	TABLE: E	arthed ac	cessible	conducti	ve par	t at	. At	A.	A	+	A
Supply volta	age	5	5	5	5	- 5	5	4	2	—	
Location						Test condi IEC 60990 in IEC 609 through 6.) or Fault 990 clause	Condition e 6.2.2.1	No	Touch cur (mA)	rrent
Measured t	<u>o PE</u>	13il	-in-	2	12	- silv	2*	- At	- AL	<u>N/A</u> <u>N/A</u>	
AN AN	AND AND	1 AN	N. C.	A.	1. N	- A	3	A.	Arr	<u>N/A</u> <u>N/A</u>	1 second
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25 ⁶ 25	EK:		ALL N	AL A	at.	S. At	K Rep	oort No.	STS1909	92000200	E
A	x x	A	A	IEC 6	2368-1	A	A	A	A	A	A
Clause	2	Requirer	ment + Te	st 🦂	, ·	A CONTRACTOR	Result	- Remar	ĸ	Verc	lict
				1	1	1	1		1	-	A

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Supplementary Information:

Notes:

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- [1] Supply voltage is the anticipated maximum Touch Voltage
- [2] Earthed neutral conductor [Voltage differences less than 1% or more]

A.C.

- [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 pet applicable

AN W

NET Niet AN AN [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided. 2 ~

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N: Normal condition, R: Reverse condition. A. C.

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S. C.	Ter	TEL	A COL	NUT	SIL	N. A.	Silt	A.C.	NIL	- Page 5	3 of 62 -	-Silt
S.V	1. W	A.C.	E	NOT	N.C.	ANT	Net	Rep	port No.	STS190	92000200	DIE
at	at	t	A	at	C.	C 62368-	1 4	at	t	t	at	at
Cla	use	2	Requ	irement +	Test	-St	A.	Resul	t - Remar	ĸŚ	Verc	dict

6.2.2 Ta	able: Electrical	power sources	(PS) measurements fo	or classification	P P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s* ⁾	PS Classification
* *	× ·	Power (W) :	10.6	* *	x x
Battery	normal	V _A (V) :	×1.9	5 5 5	PS1
t t	A	I _A (A) :	5.4	t t	t t

Supplementary Information: SC: short circuit

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.

(&) Power measurement for worst-case fault.

(#) Power measurement for worst-case power source fault.

6.2.3.1 Table: Determination	on of Potential Igni	ition Sources (Arc	ing PIS)	N/A 🔨
	Open circuit voltage After 3 s	Measured r.m.s current	Calculated value	Arcing PIS?
Location	(Vp)	(Irms)	(V _p x I _{rms})	Yes / No
		- A	A A	

Supplementary information:

S.C.

S

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.

	6.2.3.2 Table: Dete	ermination of Potentia	al Ignition Sour	ces (Resistive P	ris)	N/A
A. 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
	t t t	* - +	* -*	* *	x - x	× 1

Supplementary Information:

All internal circuits were considered as resistive PIS.

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.

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.1.			silt si	* with	wilt	AND R	-Page 5	4 of 62 -
1.	St I' A		STAT ST	5	2	Repor	t No. STS190	920002001E
	at at	at at	A 6	IEC 62368-	1 4	at	at at	at at
V	Clause	Require	ment + Test	5	5	Result -	Remark	Verdict
	8.5.5 TABL	E: High Pressure	Lamp	t st	at	ALL .	at at	N/A
V	Description				Values		Energy Source	Classification
	Lamp type	te de		Y A	A.	A.		- 7
1	Manufacturer		2. 2.	2	2	2 4		-
	Cat no	ot ot	A	to t	A	A	_	
5	Pressure (cold) (MF	Pa)	<u> </u>	5	S.	5 6	S (S MS	5 5
	Pressure (operating	g) (MPa)		t t	A	A	A MS	- t t
	Operating time (mir	nutes)	N. N	N. N.	1 Alexandre	S.		-
	Explosion method	at at		t t	at	t		L
	Max particle length	escaping enclosu	ire (mm).:	T	147	and a	KANS KANS	
5	Max particle length	beyond 1 m (mm)	2	5	6 6	S MS	2 2
	Overall result	to to		5 5	1	A.	15 15	AT AT
5	Supplementary info	ormation:	2. 5.	2	2	2 4	2. 2.	2 2
Г	XX	t t	A	* *	A	A	x x	at at
<		BLE: Input test						Р
-	113 113	(A) Irated (A)	113	P rated (W)	Fuse No	Ifuse (A)	Conditio	n/status
	5Vdc 0	.06 0.5	0.3	- AL	1 Contraction of the second se	× ·	Normal operation	ion 💎 💦
	Supplementary info	ormation: the mos	t unfavorable	e charging co	ondition wa	s considere	ed.	t
	A A I	AT AT	A St	T A	A.	AT .	A A	AT AT
5	B.3 TABI	LE: Abnormal op	perating con	dition tests				Р
	Ambient temperatu	ure (°C)			: Se	e below		- *
1.	Power source for E	EUT: Manufacture	er, model/type	e, output rati	ng .: Se	e cover pag	e for details	
1.		dition Supply voltage, (V)		use Fu no. currer		couple	Temp. (°C)	Observation
1.	Battery Rev polarity	erse Full battery discharg	10mins		T NA	AND R	ALL ALL	EUT shut down. No damaged, no hazards.

Supplementary information:

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N	and and		AND AND	T AN	- A	at with	Rep	port No.	STS19092000200	UE C	A.
NICH	Clause	STAT ST	Requiremen	·	IEC 623	368-1	Resul	t - Remark		lict	A.
at	at at	1	at a	-		st al	- +	A	at at	×	1
S	B.4	TABLE: Fa					05.0		Р	-	S
t	Ambient tempera Power source fo						25.0 See cover	nage for		×	2
S				Juei/type;	ouipui		details	page ioi			S
T	Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	1	- AN
NUT	Ariter Orient	S SC	Full batteries discharg	10mins	+	at Are	AN AN	N	Unit shut down, recoverable, no damage, no		N. S.
SIE	sit sit.	site si	Full	T IS	t si	at with	Silt	sit	hazards.	1 it	A.
A	R36	SC	batteries discharg e	10mins	t	8 - B	The second	The	normally. No damage. No hazard.	Not I	in the second se
NET	A COL OF COL	Sec 2	Full batteries discharg e	10mins	t -	x	N.C.	1 int	Unit shut down, recoverable, no damage, no hazards.	A. Paster	1. Service
in the	AND AND	SC SC	5VDC	10mins			AND A	N. A	Unit shut down, recoverable, no damage, no	(A	1 st
AN AN	5 5	5 2	1	2	2	2	2	2	hazards. Unit operation normally. No	2	2º
A. C. L.	R36	Start St	5VDC	10mins		to and	N. Contraction	A.	damage. No hazard.	J. Cart	N.S.
NET	And and	Sec S	5VDC	10mins	t N	at we	NET	NICT	Unit shut down, recoverable, no damage, no hazards.	A. Descent	
A.	Supplementary i CD - Componen	ts damaged (list damage		onents)	A AN	AND A	-	A A A	13 Pet	N.S.
N	NB - No indication	th remained i	ntact. 🥂	(n.	t si	at with	- ASIE	NICT	with with	Net	A.
N	and and	STO ST	at and	A.		A A	A.C.	2. Ch	and and	25 CEL	No.
N	sitet sitet.	STAT ST	at si	t zz	t in	at with	- AND	NIC	and and	A.C.	A.S.
A	st st.	and a	at is	t in	1	Shenz		Testing	Technology Co.,	Ltd	A.
at	at at	At 1	t d	t a	t a	t d	- At	at	t t	at	-

A A	at a		t at	A	A	A	at .	at de	×
1 A A	A A		* *	1 th	A A	A R	At 1	at 1	×
NTE	Kjri		at wat	Net	Repo	.at	Page 56 of	at a	*
Clause	A A A	quirement + Test	IEC 62368-	1 at	at	Remark	Set 4	Verdict	×
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	BLE: Batteries		to the	S. S. S.				to a	¥
		cable only when a ry in a reverse po				ilable No	di la		*
		eable batteries		49.0	echargeabl		s		
	Dischargin		Char	ging	Discha	arging	Reversed	I charging	*
		anuf. ecs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	L
Max. current during normal condition	0.101A			N		\$	1	1	7
Max. current during fault condition	0.112A		t st	AND A	A A		4	1	* *
Test results:	7 7	2 2	~	~	6 5	2 5	2	/erdict	
- Chemical leaks	s to the		t at	at the	A.	J	AT .	NO	¥
- Explosion of th	e battery	2 2	2	2	2 4	1	2 4	NO <	
N/ N/	- NU - NU	n of molten metal		A.	A.		4	NO	*
- Electric strengt Supplementary	1 1	oment after compl	etion of tests	2	2 3	5 6	2 4	- 2	2
Supplementary			F AT		A C	A L	A de		5
Annex M.4 Tat	ole: Additional	safeguards for e	equipment c	ontaining	secondary	y lithium		N/A	1
bat	teries		5 .5	A.	.C	J.	J.	15 A	7
Battery/Cell No.	Тє	est conditions		Meas	urements		Obs	ervation	4
110.		<u>د</u> دے	U (V)	I (A)	Ter	mp (°C)	Em 6		7
		t t	t	A	X	×	X	t	t
Supplementary I	Charging a		ervation	Char	ging at	X	Observatior		/
Battery identification	T _{lowest} (°C)			T _{hi}	ighest °C)				*
Supplementary I	Information:	t at a	tit	A	A	A	A	at 1	¥
		2 2	- St	25 V	5 -	5 2	5 3	2	/
At	at a	t at a	t at	at	at	At .	at .	at a	*
Si Si	5 5	5 5	S	5	2 0	5 2	5 2	2	

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NTE	KJLW	sitt sitt	with with	Report No.	STS190920002001
at at	at at	A ALEC	C 62368-1	at .at	t at
Clause	Require	ement + Test	5 5	Result - Rema	ark Verdi
Annex TA Q.1	BLE: Circuits inte	nded for interco	nnection with bu	uilding wiring (LF	PS)
Note:	d d	at at	AA	* *	- d d
Output	Components	U _{oc} (V)	I _{sc} (A)		S (VA)
Circuit			Meas.	Limit	Meas. Limit
Chi Sta	Star Star	Store Store	St St	Star Star	St St
Supplementary	Information:	t	at at	At	- at at
		Star Star	S S	Star Star	54 5
T.2, T.3, TA T.4, T.5	BLE: Steady force t	est t	t t	x x	
Part/Locatio	on Material Th	nickness Forc (mm) (N)		on	Observation
Top of enclosur	e Plastic	1.3 100	N 5	No da	maged, no hazard
Bottom of enclo	osure Plastic	1.3 100	N~ ~5	No da	maged, no hazard
Side of enclosu		1.3 100	N 5	No da	maged, no hazard
Supplementary	information:	2 2	2 2	2 2	5 2
T.6, T.9	ABLE: Impact tests	4 4	4 4	A 4	N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	0	Observation
N 8	5 5 .		5 5	5 5	5 5
Supplementary i	information:	the the	tot tot	the state	- the the
Т.7 ТА	BLE: Drop tests	L L	7 7	7 4	L L
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Ot	oservation
Top	Plastic	1.3	1000	No dam	age, no hazard.
Side	Plastic	1.3	<u>1000</u>		age, no hazard.
Bottom	Plastic	1.3	1000	No dam	age, no hazard.
Supplementary i	information:	AN AN	AT AT	and an	14 Th
t t	BLE: Stress relief t	est	\$ \$. d.	A AP
T.8 TA	ADLL. JUC33 ICHCI U				

N. C. C.	Supplementary inf	ormation:		20 20 A	A A		
at	Т.8 ТАВ	LE: Stress relief to	est A	at at		* # #	P
1 th	Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	*
in t	* * *	* * *	* *	2 2 2	2 2	+ + +	2 2
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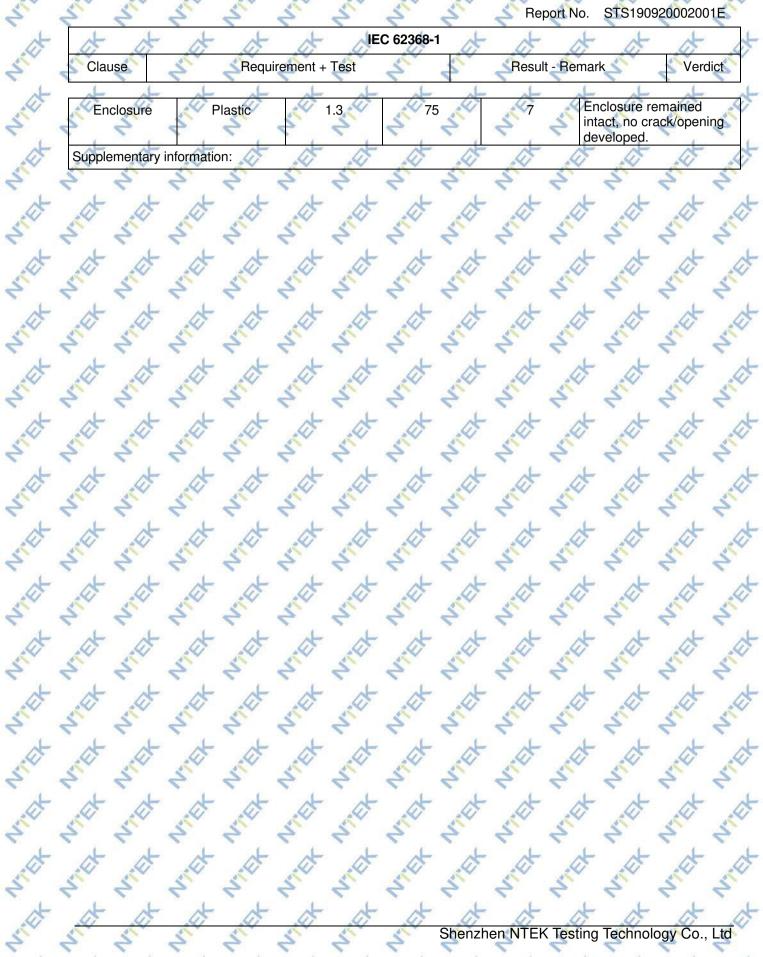
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