

CERTIFICATE

of Conformity

EC Council Directive 2014/53/EU

Certificate No.: SiCT2409141534C

Applicant : 012027

Manufacturer : 012027

Product : Power Bank

Trademark : N/A

Model : PBM01, 25411

Standard(s):		Report No.:
Article 3.1 (a)	EN IEC 62368-1:2020+A11:2020	SiCT2409141534S
	EN IEC 62311:2020	SiCT2409141534-1E
Article 3.1 (b)	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.3.2 (2023-01) EN 55032:2015+A11:2020 EN 55035:2017+A11:2020	SiCT2409141534-2E
Article 3.2	ETSI EN 303 417 V1.1.1 (2017-09)	SiCT2409141534-3E

The certificate of conformity is based on an evaluation of a sample of the above-mentioned product(s). The technical report is at the disposal of the applicant. This is to certify that the tested sample is in conformity with all provisions of above RED directive. It is only valid in connection with the test report number as listed.

Any use of the SiCT name or its marks for the sale of the tested product must first be approved in writing by SiCT. The test results referenced in this Verification are relevant only to the sample tested.



Authorized Signer:

Andy Wang

Andy Wang/Manager

Date: Sep. 23, 2024



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CE/RF RADIO TEST REPORT

Applicant: 012027

Address: XXXXX

Manufacturer: 012027

Address: XXXXX

EUT: Power Bank

Trademark: N/A

Model Number: PBM01, 25411

Test Date: Sep. 13, 2024 - Sep. 23, 2024

Date of Report: Sep. 23, 2024

Report No.: SiCT2409141534-3E

Test Result: The equipment under test was found to be compliance with the requirements of the standards applied.

Test Procedure Used:

Standard : ETSI EN 303 417 V1.1.1 (2017-09)

Compiled by:

Daisy Wei

Daisy Wei

Reviewed by:

Sky Wang

Sky Wang

Approved by:

Andy Wang

Andy Wang/Manager



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen SiCT Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

Product Name:	Power Bank
Trademark:	N/A
Test Model:	PBM01
Model/Type reference:	25411
Ratings:	Input: 5V===2A, 9V===2A, 12V===1.5A Output: 5W/7.5W/10W/15W (MAX) Class III equipment.
Adapter information (Auxiliary test supplied by testing Lab)	N/A
Wireless technology	
Frequency band:	110-205 KHz
Modulation type:	MSK
Antenna type:	Loop Coil Antenna
ANT Gain	0.0dBi

1.2. Objective

The tests were performed according to following standards:

[ETSI EN 303 417 V1.1.1 \(2017-09\)](#)- Wireless power transmission systems, using technologies other than radio frequency beam in the 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz ranges; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

1.3. Related Submittal(s)/Grant(s)

No Related Submittals.

1.4. Test Methodology

The objective is to determine compliance with ETSI EN 303 417 V1.1.1 (2017-09)

1.5. Support equipment List

Manufacturer	Description	Model	Series Number	Certificate
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1.6. External I/O

I/O Port Description	Quantity	Cable
--	--	--

1.7. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Occupied Channel Bandwidth	5%
RF output power, conducted	1.5dB
Power Spectral Density, conducted	3.0dB
Unwanted Emissions, conducted	3.0dB

All emissions, radiated	6.0dB
Temperature	1°C
Humidity	5%
DC and low frequency voltages	3%
Time	5%
Duty Cycle	5%

1.8. Test Environment

Items	Required(IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

1.9. Description of Test Modes

The can operate the operation mode description as bellow:

Operational Mode		Description
☒	1	Base station in stand-by, idle mode
☒	2	Communication before charging, adjustment charging mode / position
☒	3	Communication
☒	4	Energy transmission

1.10. Equipments Used during the Test

Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2023/12/26	2024/12/25
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2023/12/26	2024/12/25
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2023/12/26	2024/12/25
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2023/12/26	2024/12/25
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2023/12/26	2024/12/25
Impuls-Begrenze r	ROHDE&SCHWARZ	ESH3-Z2	100281	2023/12/26	2024/12/25
System Controller	CT	SC100	-	2023/12/26	2024/12/25
Oscillator	KENWOOD	AG-203D	3070002	2023/12/26	2024/12/25
Spectrum Analyzer	HAMEG	HM5012	-	2023/12/26	2024/12/25
CDN	EM TEST	CDN M2/M3	-	2023/12/26	2024/12/25
Attenuation	EM TEST	ATT6/75	-	2023/12/26	2024/12/25
Resistance	EM TEST	R100	-	2023/12/26	2024/12/25
Electromagnetic Injection Clamp	LITTHI	EM101	35708	2023/12/26	2024/12/25
Inductive Components	EM TEST	MC2630	-	2023/12/26	2024/12/25
Antenna	EM TEST	MS100	-	2023/12/26	2024/12/25
Signal Generator	ROHDE&SCHWARZ	SMT03	100029	2023/12/26	2024/12/25
Power Amplifier	AR	150W/1000	300999	2023/12/26	2024/12/25
Field probe	Holaday	HI-6005	105152	2023/12/26	2024/12/25
Bilog Antenna	Chase	CBL6111C	2576	2023/12/26	2024/12/25
Loop Antenna	EMCO	6502	00042960	2023/12/26	2024/12/25
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2023/12/26	2024/12/25
3m OATS	SIDT FRANKONIA	SAC-3M	03CH03-HY	2023/12/26	2024/12/25
Vector Signal Generator	AGILENT	E4438C	MY49070163	2023/12/26	2024/12/25
Splitter	Mini-Circuits	ZAP-50W	NN256400424	2023/12/26	2024/12/25
Directional Coupler	AGILENT	87300C	MY44300299	2023/12/26	2024/12/25
vector Signal Generator	AGILENT	E4438C	US44271917	2023/12/26	2024/12/25
4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	AGILENT	U2531A	TW54063507	2023/12/26	2024/12/25
4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	AGILENT	U2531A	TW54063513	2023/12/26	2024/12/25
Splitter	Mini	PS3-7	4463	2023/12/26	2024/12/25
Spectrum Analyzer	AGILENT	E7405A	US44210471	2023/12/26	2024/12/25
Attenuator	Resnet	20dB	(n.a)	2023/12/26	2024/12/25
Signal Analyzer	AGILENT	N9010A	MY48030494	2023/12/26	2024/12/25

The calibration interval is 1 year.

2. SYSTEM TEST CONFIGURATION

2.1. Justification

The system was configured for testing in engineering mode.

2.2. EUT Exercise Software

N/A

2.3. Special Accessories

N/A

2.4. Block Diagram/Schematics

Please refer to the related document.

2.5. Equipment Modifications

Shenzhen SiCT Technology Co., Ltd. has not done any modification on the EUT.

2.6. Configuration of Test Setup

Please refer to the test setup photo.

3. SUMMARY OF TEST RESULT

ETSI EN 303 417 requirements		
Permitted range of operating frequencies	ETSI EN 303 417 V1.1.1 Sub-clause 4.3.2	PASS
Operating frequency ranges	ETSI EN 303 417 V1.1.1 Sub-clause 4.3.3	PASS
H-field requirements	ETSI EN 303 417 V1.1.1 Sub-clause 4.3.4	PASS
Transmitter spurious emissions	ETSI EN 303 417 V1.1.1 Sub-clause 4.3.5	PASS
Transmitter out of band (OOB) emissions	ETSI EN 303 417 V1.1.1 Sub-clause 4.3.6	PASS
WPT system unwanted conducted emissions	ETSI EN 303 417 V1.1.1 Sub-clause 4.3.7	N/A
Receiver blocking	ETSI EN 303 417 V1.1.1 Sub-clause 4.4.2	PASS

4. TEST ITEM AND RESULTS

4.1 Permitted range of operating frequencies

LIMIT

ETSI EN 303 417 V1.1.1 (2017-09) Sub-clause 4.3.2.3

The permitted range of operating frequency range(s) for intentional emissions shall be within 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz.

TEST RESULTS

Pass

The manufacturer declares the ranges of this device are 110-205 KHz, Belong to 100 - 300 kHz band.

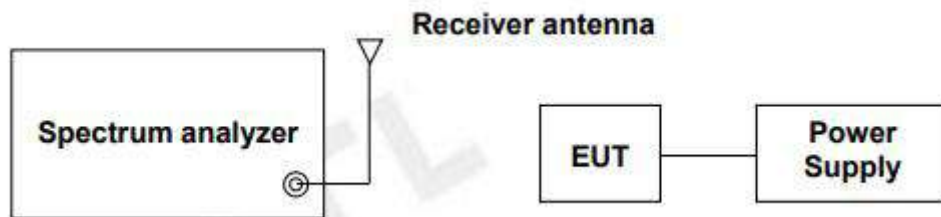
4.2 Operating frequency range

LIMIT

ETSI EN 303 417 V1.1.1 (2017-09) Sub-clause 4.3.3.3

The operating frequency range for emissions shall be within one of the following limits: 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz.

TEST CONFIGURATION



TEST PROCEDURE

The OBW function of the spectrum analyzer shall be used with a limit of 99 % to determine the operating frequency range:

f_H is the frequency of the upper marker resulting from the OBW.

f_L is the frequency of the lower marker resulting from the OBW.

The following values shall be recorded:

f_H as the frequency of the upper marker resulting from the "OBW"-function of a spectrum analyzer, using 99 % of the power (see Figure 1). Alternatively the frequency above the center frequency f_c shall be recorded where the level is 23 dB lower than the maximum;

f_L as the frequency of the lower marker resulting from the "OBW"-function of a spectrum analyzer, using 99 % of the power (see Figure 1). Alternatively the frequency below the center frequency shall be recorded where the level is 23 dB lower than the maximum;

$$f_c = \frac{f_H + f_L}{2};$$

f_c is the center frequency.

OFC = $f_H - f_L$.

TEST RESULTS

The resonance frequency of the EUT is 131.0 KHz , Operation frequency rang form 110 kHz to 205kHz. Outside the permitted range the unintentional emissions was reduced to the spurious emission limits. Refer to RSE test data for further details.

4.3 H-field requirements

LIMIT

ETSI EN 303 417 V1.1.1 (2017-09) Sub-clause 4.3.4.3

The radiated H-field in the direction of maximum field strength under specified conditions of measurement shall not exceed as table below:

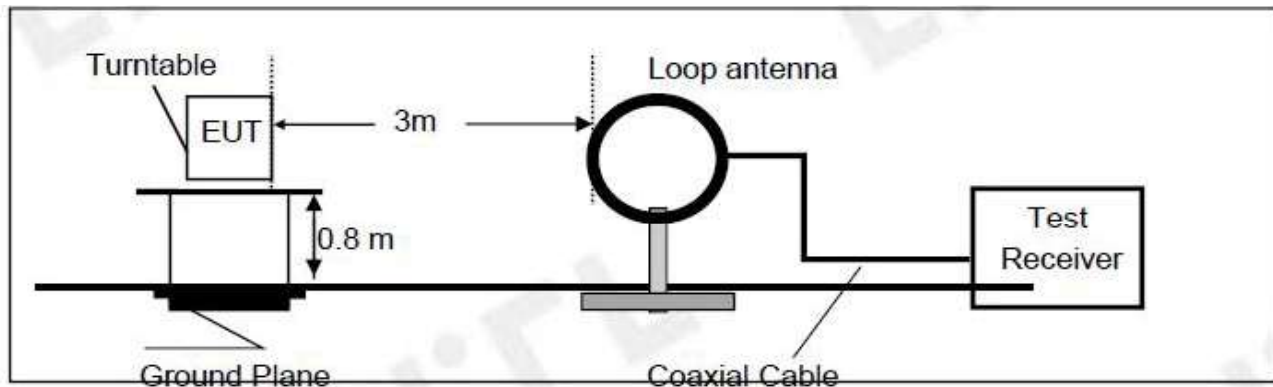
Table 3: H-field limits

Frequency range [MHz]	H-field strength limit [dB μ A/m at 10 m]	Comments
$0,019 \leq f < 0,021$	72	
$0,059 \leq f < 0,061$	69,1 descending 10 dB/dec above 0,059 MHz	See note 1
$0,079 \leq f < 0,090$	67,8 descending 10 dB/dec above 0,079 MHz	See note 2
$0,100 \leq f < 0,119$	42	
$0,119 \leq f < 0,135$	66 descending 10 dB/dec above 0,119 MHz	See note 1
$0,135 \leq f < 0,140$	42	
$0,140 \leq f < 0,1485$	37,7	
$0,1485 \leq f < 0,30$	-5	
$6,765 \leq f < 6,795$	42	

NOTE 1: Limit is 42 dB μ A/m for the following spot frequencies: 60 kHz $\pm$ 250 Hz and 129,1 kHz $\pm$ 500 Hz.
NOTE 2: At the time of preparation of the present document the feasibility of increased limits for high power wireless power transmission systems to charge vehicles [i.4] was prepared. New specific requirements for such systems (e.g. higher H-field emission limits in the 79 - 90 kHz band) will be reflected within a future revision of the present document.

TEST CONFIGURATION

Below 30MHz



TEST PROCEDURE

Follow the test description in section 6.2.1 of ETSI EN 303 417 V1.1.1 (2017-09)

TEST RESULTS

Pass

Test performed at Normal condition and Exteme Condition, only rerord worst case results as following:

Operating Mode with Modulation			
Frequency	Measuring Bandwidth	H-field Level(10m)	Limit in Table 3(10m)
110 kHz	200 Hz	-40.52 dBμA/m	42dBμA/m
125 kHz	200 Hz	-10.36 dBμA/m	65.79dBμA/m
131 kHz	200 Hz	0.64 dBμA/m	65.58dBμA/m
145 kHz	200 Hz	-10.17 dBμA/m	37.7 μA/m
205 kHz	9 kHz	-30.98 dBμA/m	-5 dBμA/m
Standby Mode			
Frequency	Measuring Bandwidth	H-field Level	Limit in Table 3
110 kHz	200 Hz	N/A	42dBμA/m
116.4 kHz	200 Hz	N/A	65.79dBμA/m
131 kHz	200 Hz	-30.55 dBμA/m	65.58dBμA/m
145 kHz	9 kHz	N/A	37.7 μA/m
205 kHz	9 kHz	N/A	-5 dBμA/m
N/A, Not applicable, for the ERP level of the EUT was too weak to be detected.			

Note:

1) Test performed at 3m(H_{3m}) , test resust convert to $H_{10m}=H_{3m}-C_3$ The correct factor C_3 is equal to or approximately equal to 31.4dB2) **The resonance frequency of the EUT is 131.0KHz, Test results is representative for the operating frequency range 110-250kHz.**

4.4 Transmitter spurious emissions

LIMIT

ETSI EN 303 417 V1.1.1 (2017-09) Sub-clause 4.3.5.3

The radiated field strength of spurious emissions below 30 MHz shall not exceed the generated H field given in table below:

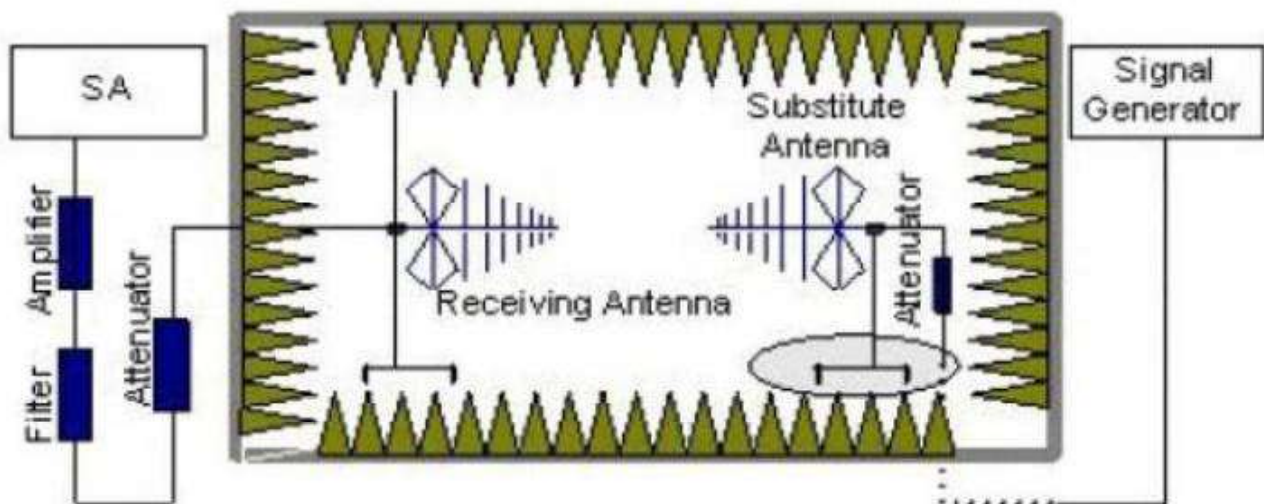
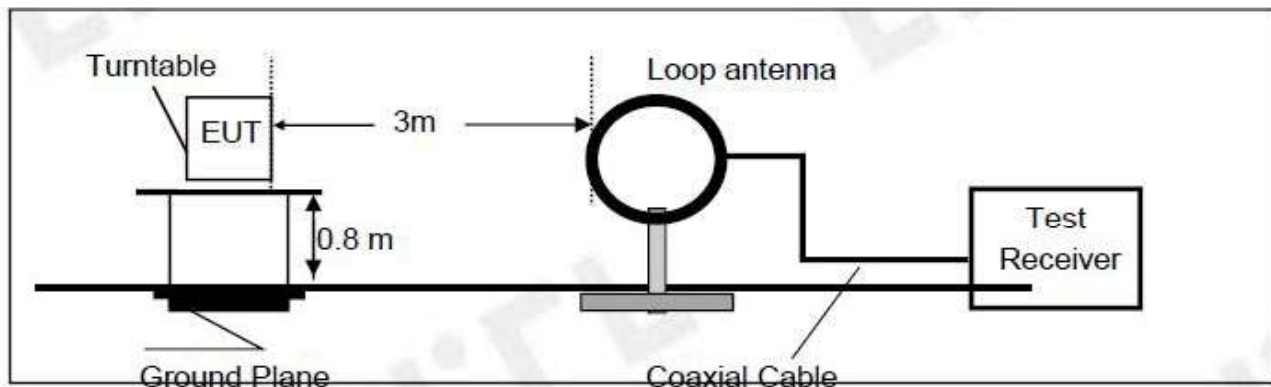
Table 4

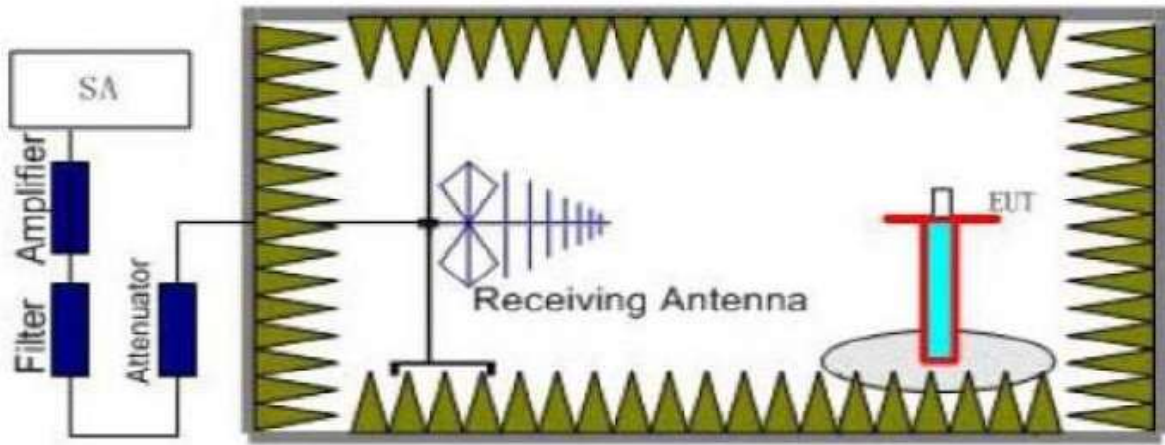
State (see note)	Frequency $9 \text{ kHz} \leq f < 10 \text{ MHz}$	Frequency $10 \text{ MHz} \leq f < 30 \text{ MHz}$
Operating	27 dB μ A/m at 9 kHz descending 10 dB/dec	-3,5 dB μ A/m
Standby	5,5 dB μ A/m at 9 kHz descending 10 dB/dec	-25 dB μ A/m
NOTE: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2.		

The power of any radiated emission above 30MHz shall not exceed the values given in table below.

Table 5

State (see note)	47 MHz to 74 MHz 87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 790 MHz	Other frequencies between 30 MHz to 1 000 MHz
Operating	4 nW	250 nW
Standby	2 nW	2 nW
NOTE: "Operating" means mode 2, 3 and 4 according to Table 2; "standby" means mode 1 according to Table 2.		





TEST PROCEDURE

Follow the test description in section 6.2.1 of ETSI EN 303 417 V1.1.1 (2017-09)

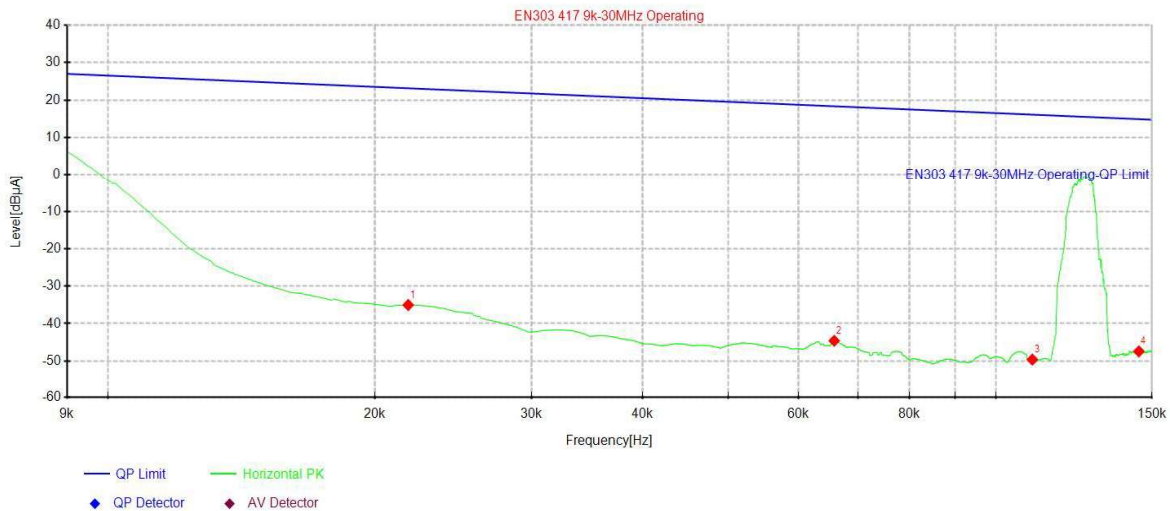
TEST RESULTS

All modes are tested and the worst mode 3 is shown.

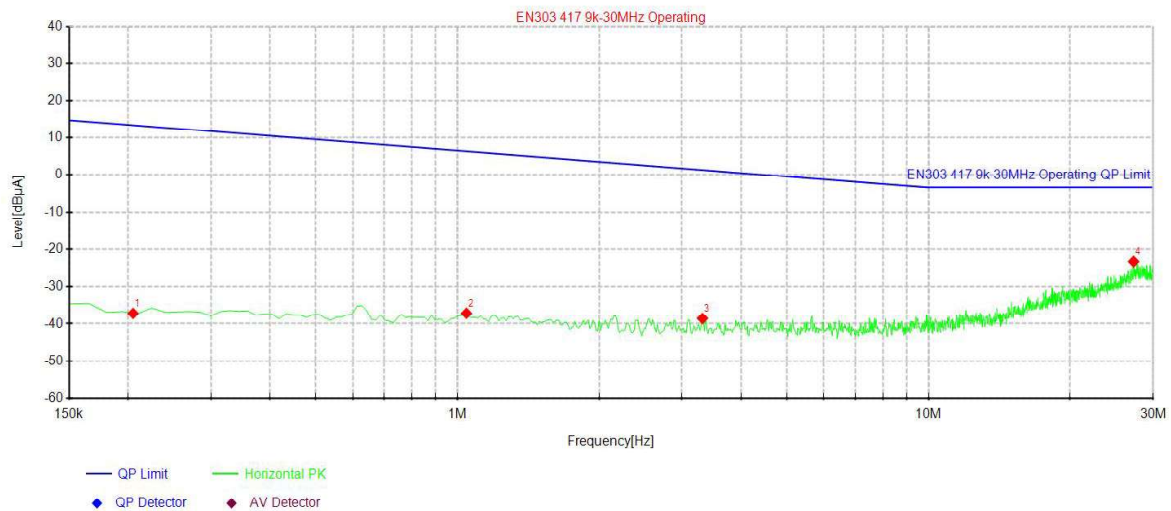
Blow 30MHz

Test performed at Normal condition and Exteme Condition, only rerord worst case results as following:

TX Mode Test results



NO.	Freq. [MHz]	Reading [dBμA]	Level [dBμA/m]	Factor [dB]	Limit [dBμA/m]	Margin [dB]
1	0.0218	16.35	-35.04	-51.39	23.16	58.20
2	0.0658	14.91	-44.58	-59.49	18.35	62.93
3	0.11	11.09	-49.60	-60.69	16.11	65.72
4	0.145	13.41	-47.41	-60.82	14.91	62.32



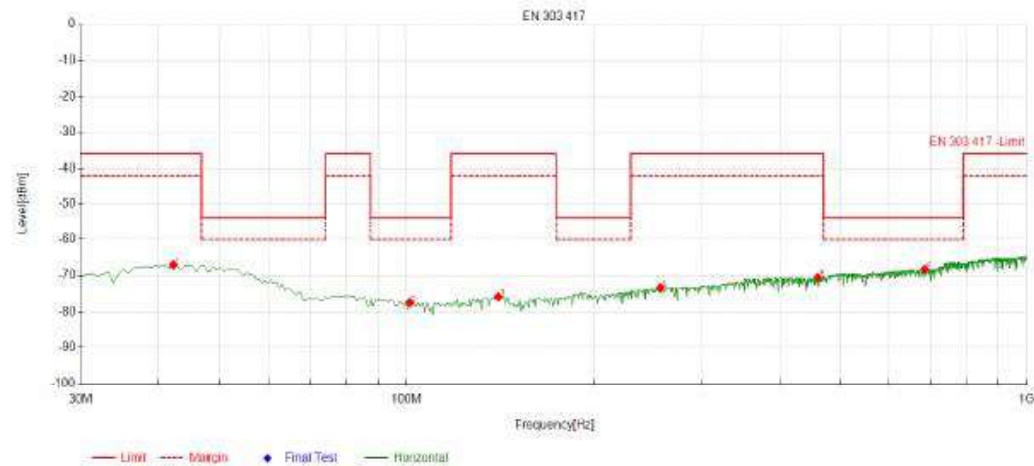
NO.	Freq. [MHz]	Reading [dBμA]	Level [dBμA/m]	Factor [dB]	Limit [dBμA/m]	Margin [dB]
1	0.205	23.92	-37.13	-61.05	13.31	50.44
2	1.0455	24.48	-37.10	-61.58	6.32	43.42
3	3.3141	21.90	-38.53	-60.43	1.30	39.83
4	27.253	21.99	-23.32	-45.31	-3.50	19.82

1) Emission Level= Read Level+ Correct Factor

Test at 3m distance, Limit_{3m}=Limit_{10m}+C3 refer to ETSI EN300 330 Annex H.2

2) The resonance frequency of the EUT is 131KHz, Test results is representative for the operating frequency range 110-250kHz.

(30M- 1G) (Horizontal/Vertical)



Suspected Data List

NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Path [dB]	Polarity
1	42.2867	-64.03	-67.04	-36.00	31.04	-3.01	-30.64	Horizontal
2	101.1333	-64.56	-77.43	-54.00	23.43	-12.87	-30.43	Vertical
3	140.58	-64.23	-75.87	-36.00	39.87	-11.64	-30.37	Horizontal
4	256.3333	-64.67	-73.38	-36.00	37.38	-8.71	-30.37	Vertical
5	460.68	-64.03	-70.53	-36.00	34.53	-6.50	-30.75	Vertical
6	684.4267	-64.52	-68.31	-54.00	14.31	-3.79	-30.65	Horizontal

Note:

- 1) $Emission\ Level = Read\ Level + Correct\ Factor$
- 2) The resonance frequency of the EUT is 131.0KHz, Test results is representative for the operating frequency range 110-250kHz.

4.5 Transmitter out of band (OOB) emissions

LIMIT

ETSI EN 303 417 V1.1.1 (2017-09) Sub-clause 4.3.6.3

The OOB limits are visualized in Figures 4 and 5; they are descending from the intentional limits from Table 3 at f_H/f_L with 10 dB/decade.

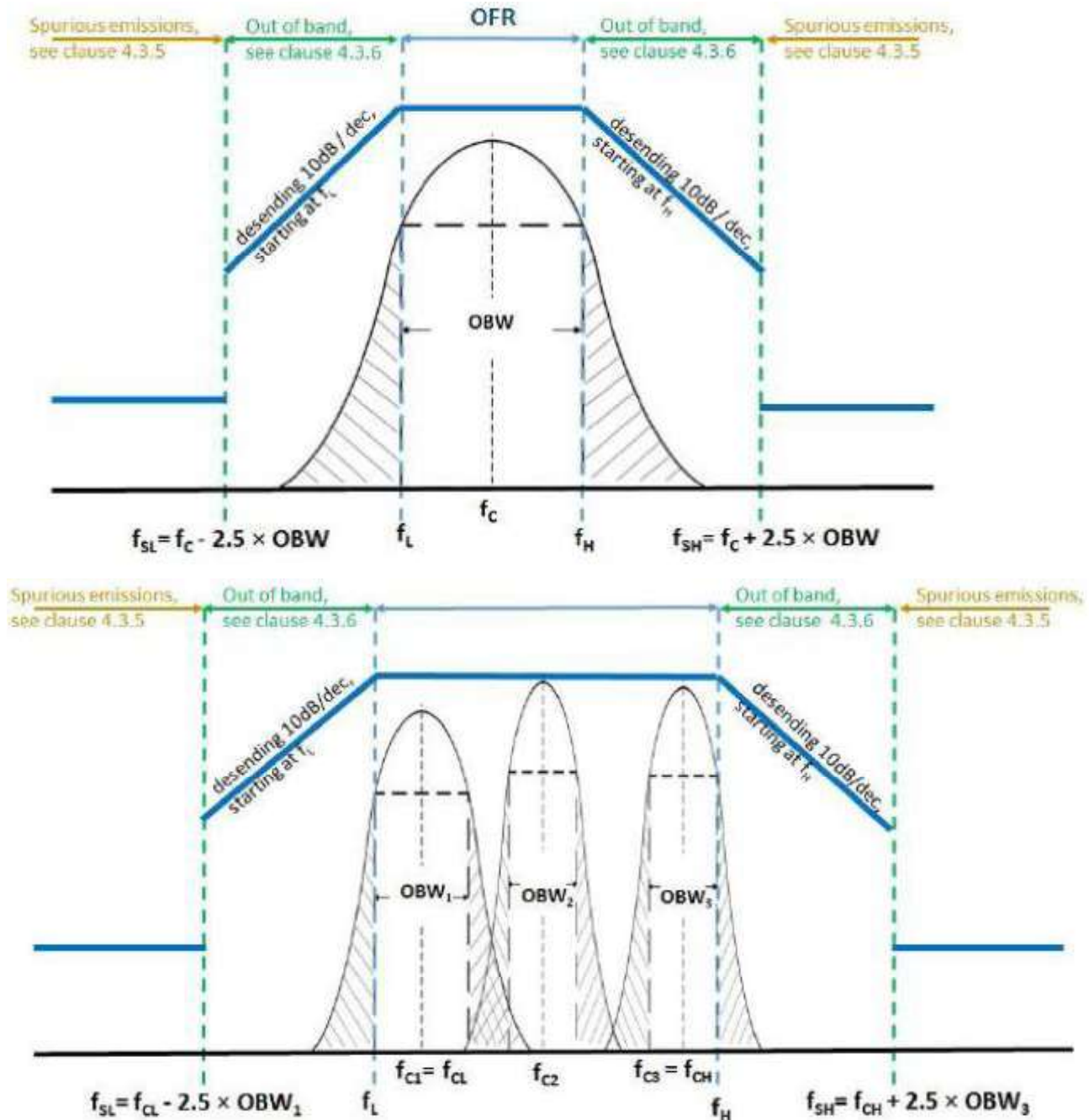
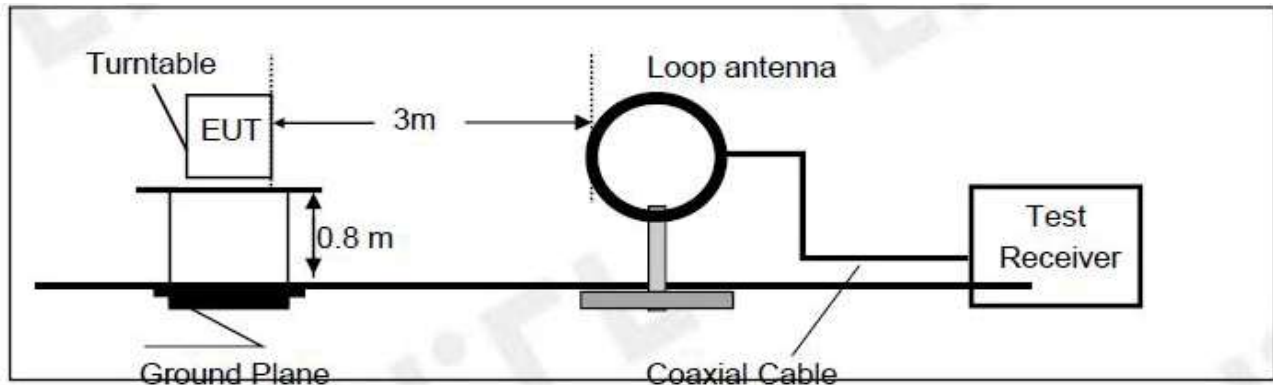


Figure 5: Out of band and spurious domain of a multi - frequency system (during one WPT system cycle time)

TEST CONFIGURATION

Below 30MHz



TEST PROCEDURE

Follow the test description in section 6.2.1 of ETSI EN 303 417 V1.1.1 (2017-09)

TEST RESULTS

Pass

Frequency	H-field Level(dBuA/m)	Limit in Table 3 (dBuA/m)	Result
129.00kHz	-20.45	65.65	PASS
130.75kHz	-3.38	65.59	PASS
130.95kHz	-0.79	65.58	PASS
131.05kHz	-3.82	65.58	PASS
131.25kHz	-33.94	65.57	PASS
133.00kHz	-20.16	65.52	PASS

Note: The resonance frequency of the EUT is 131.0KHz, Test results is representative for the operating frequency range 110-250kHz.

4.6 Receiver blocking

LIMIT

	In-band signal	OOB signal	Remote-band signal
Frequency	Centre frequency (f_c) of the WPT system (see clause 4.3.3)	$f = f_c \pm F$ (see note)	$f = f_c \pm 10 \times F$ (see note)
Signal level field strength at the EUT	72 dB μ A/m	72 dB μ A/m	82 dB μ A/m

NOTE: $F = \text{OFR}$ see clause 4.3.3.

TEST CONFIGURATION

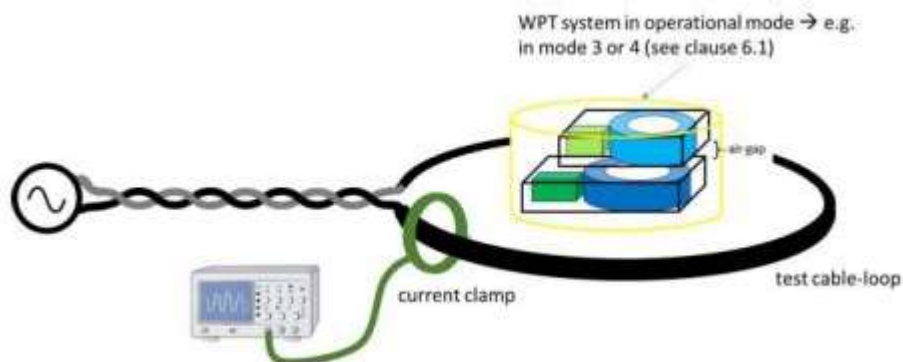


Figure 11: Schematic test set-up for the RX-blocking test

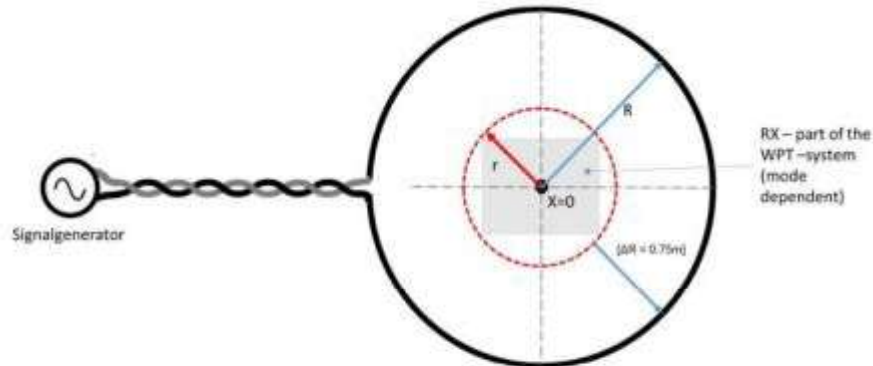


Figure 12: Schematic test set-up for the RX-blocking test

TEST PROCEDURE

Follow the test description in section 6.3.2 of ETSI EN 303 417 V1.1.1 (2017-09)

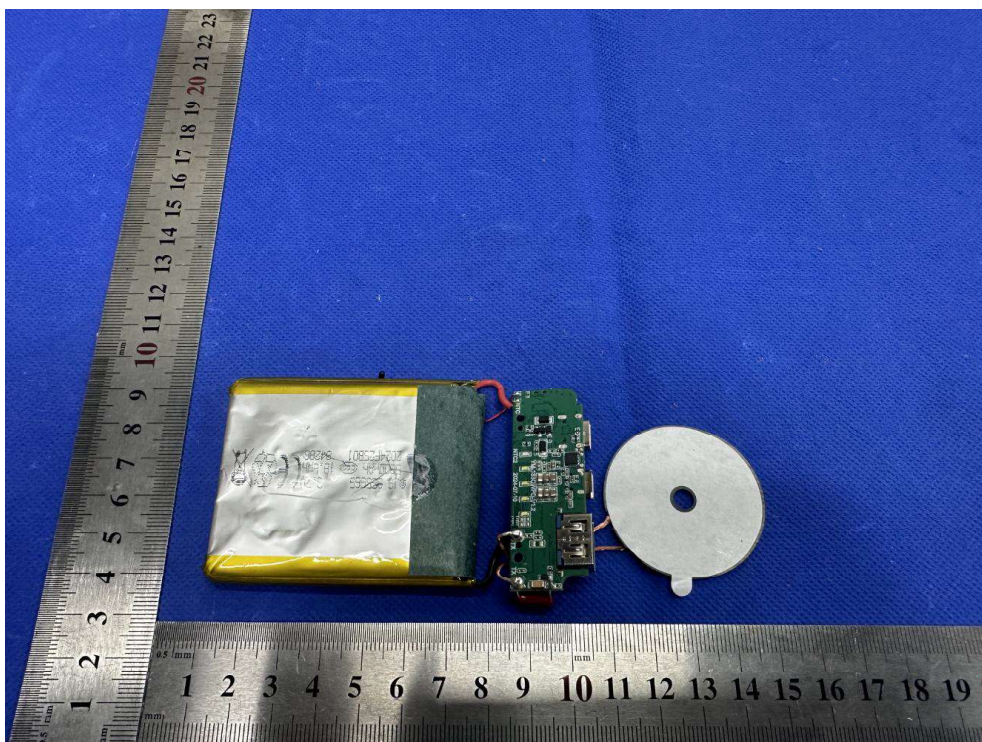
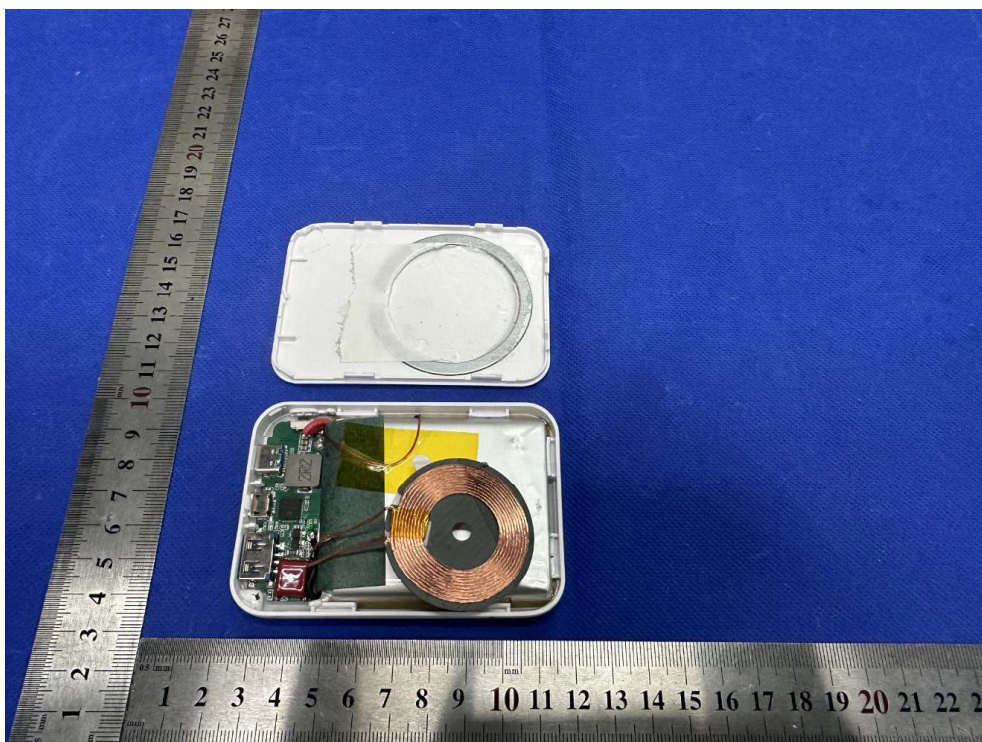
TEST RESULTS

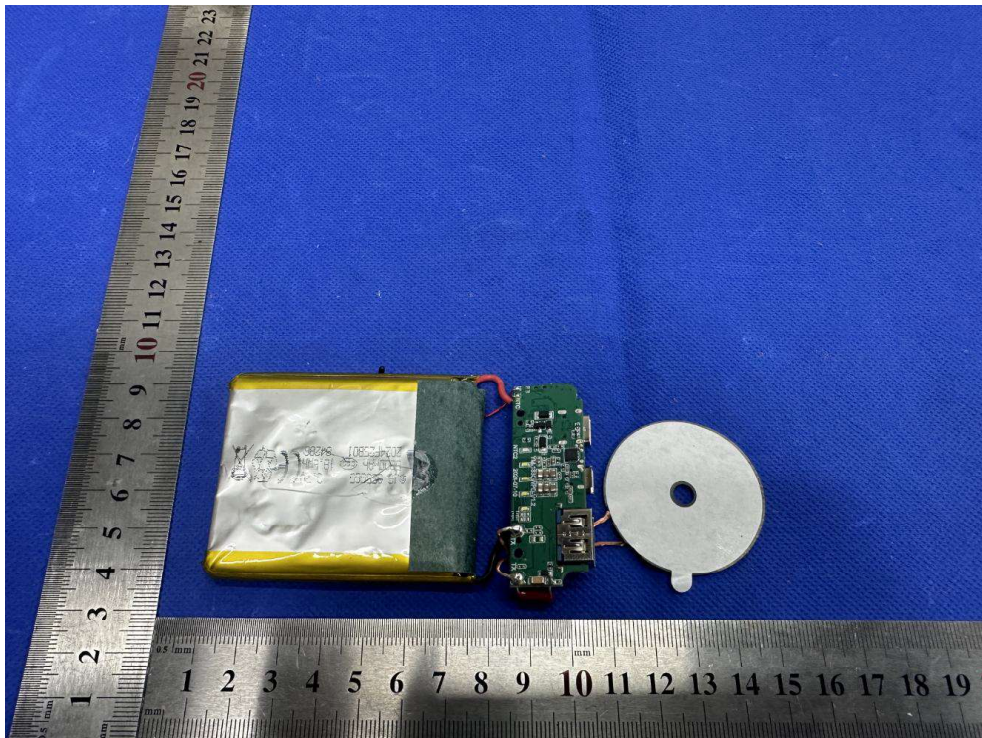
EUT Operational Mode	Interference			Conclusion
	Unwanted Input Signal Type	Test Frequency (KHz)	Unwanted Input Signal Level (dBμA/m)	
Mode 4 (worst case)	In-band signal	fc=131KHz	72	PASS
	OOB signal	fc - OFR	72	PASS
		fc + OFR	72	PASS
	Remote-band signal	fc - 10*OFR	82	PASS
		fc + 10*OFR	82	PASS
Note: F = OFR				

5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT











-----THE END OF REPORT-----

CE/HEALTH TEST REPORT

Applicant: 012027

Address: XXXXX

Manufacturer: 012027

Address: XXXXX

EUT: Power Bank

Trademark: N/A

Model Number: PBM01, 25411

Test Date: Sep. 13, 2024 - Sep. 23, 2024

Date of Report: Sep. 23, 2024

Report No.: SiCT2409141534-1E

Test Result: The equipment under test was found to be compliance with the requirements of the standards applied.

Test Procedure Used:

Standard : EN IEC 62311:2020

Compiled by:

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Andy Wang

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1. SUMMARY

Product Name:	Power Bank
Trademark:	N/A
Test Model:	PBM01
Model/Type reference:	25411
Ratings:	Input: 5V $\overline{=}$ 2A, 9V $\overline{=}$ 2A, 12V $\overline{=}$ 1.5A Output: 5W/7.5W/10W/15W (MAX) Class III equipment.
Adapter information (Auxiliary test supplied by testing Lab)	N/A
Wireless technology	
Frequency band:	110-205 KHz
Modulation type:	MSK
Antenna type:	Loop Coil Antenna
ANT Gain	0.0dBi

1.1. Equipment under Test

Power supply system utilised

Power supply voltage	:	☐ 230V / 50 Hz	☐ 120V / 60Hz
		☐ 12 V DC	☐ 24 V DC
		☒ Other (specified in blank below)	

DC 5.0V

1.2. EUT operation mode

The EUT and test equipment were configured for testing While transmitting

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen SiCT Technology Co., Ltd.

No.111 Huanguan Middle Road, Songyuanxia Community, Guanhu Street, Longhua District,

Shenzhen,Guangdong, China.

2.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen SiCT Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen SiCT Technology Co., Ltd. is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

3. Method of measurement

3.1. Applicable Standard

EN IEC 62311:2020: Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)

3.2. Limit

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

Frequency range	Magnetic flux density (mT)	Current density (mA/m ²)	Whole body average SAR(W/kg)	Localised SAR (head and trunk)(W/kg)	Localised SAR (limbs) (W/kg)	Power density, S (W/m ²)
0Hz	40	--	--	--	--	--
>0-1Hz	--	8	--	--	--	--
1-4Hz	--	8/f	--	--	--	--
4-1000Hz	--	2	--	--	--	--
1000Hz-100khz	--	f/500	--	--	--	--
100khz-10Mhz	--	f/500	0.08	2	4	--
10Mhz-10Ghz	--	--	0.08	2	4	--
10-300Ghz	--	--	--	--	--	10

Notes:

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 t_p the equivalent frequency to apply in the basic restrictions should be calculated as $a_s = 1/(2t_p)$.
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.
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 t_p the equivalent frequency to apply in the basic restrictions should be calculated as $a_s = 1/(2t_p)$. 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 for electric, magnetic and electromagnetic fields (0Hz to 300GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density $S_{eq}(W/m^2)$
0-1Hz	--	3.2×10^4	4×10^4	--
1-8Hz	10000	$3.2 \times 10^4 / f^2$	$4 \times 10^4 / f^2$	--
8-25Hz	10000	$4000/f$	$5000/f$	--
0.025-0.8KHz	$250/f$	$4/f$	$5/f$	--
0.8-3KHz	$250/f$	5	6.25	--
3-150KHz	87	5	6.25	--
0.15-1MHz	87	$0.73/f$	$0.92/f$	--
1-10MHz	$87/f^{1/2}$	$0.73/f$	$0.92/f$	--
10-400MHz	28	0.073	0.092	2
400-2000MHz	$1.375f^{1/2}$	$0.0037f^{1/2}$	$0.0046f^{1/2}$	$f/200$
2-300GHz	61	0.16	0.20	10

Notes: 1. As indicated in the frequency range column.

2. For frequencies between 100kHz and 10GHz, S_{eq} , E^2 , H^2 and B^2 are to be averaged over any six-minute period.

3. For frequencies exceeding 10GHz, S_{eq} , E^2 , H^2 and B^2 are to be averaged over any $68/f^{1.05}$ -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.

Occupational Exposure limit and action values for relectromahnnetic fields

Exposure limit values(Article3(1)).All conditions to be satisfied

Frequency range	Current density for head and trunk J (mA/m ²) (rms)	Whole body average SAR(W/kg)	Localised SAR (head and trunk)(W/kg)	Localised SAR (limbs) (W/kg)	Power density, S (W/m ²)
Up to 1Hz	40	--	--	--	--
1-4Hz	$40/f$	--	--	--	--
4-1000Hz	10	--	--	--	--
1000Hz-100kHz	$f/100$	--	--	--	--
100kHz-10MHz	$f/100$	0.4	10	20	--
10MHz-10GHz	--	0.4	10	20	--
10-300GHz	--	--	--	--	50

Notes:

1. f is the frequency in Hz.

2. The exposure limit values on the current density are intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body. The exposure limit values in the frequency range 1Hz to 10MHz 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 exposure limit values for exposure of short duration. However, since the exposure limit values refer to adverse effects on the central nervous system, these exposure limit values may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.

3. Because of the electrical in homogeneity of the body, current densities should be calculated as averages over across-section of 1cm² perpendicular to the current direction.

4. For frequencies up to 100kHz, peak current density values can be obtained by multiplying the rms value by $(2)^{1/2}$.

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 exposure limit value. For pulses of duration t_p , the equivalent frequency to apply for the exposure limit values should be calculated as $f=1/(2t_p)$.

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

7. Localised SAR averaging mass is any 10 g of contiguous tissue; the maximum SAR so obtained should be the value used for estimating exposure. These 10 g of tissue are intended to be a mass of contiguous tissue with nearly homo-geneous 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. As imple geometry such as cubical tissue mass can be used provided that the calculated dosimetric quantities have conservative values relative to the exposure guidelines.

8. 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 exposure limit value is recommended. This is that the SA should not exceed 10mJ/kg averaged over 10g of tissue.

9. Power densities are to be averaged over any 20cm² of exposed area and any 68/f^{1.05}-minute period (where f is in GHz) to compensate for progressively shorter penetration depth as the frequency increases. Spatial maximum power densities averaged over 1cm² should not exceed 20 times the value of 50W/m².

10. With regard to pulsed or transient electromagnetic fields, or generally with regard to simultaneous exposure to multiple frequency fields, appropriate methods of assessment, measurement and/or calculation capable of analysing the characteristics of the waveforms and nature of biological interactions have to be applied, taking account of European harmonised standards developed by Cenelec.

The action values referred to in Table are obtained from the exposure limit values according to the rationale used by the International Commission on Non-ionising Radiation Protection (ICNIRP) in its guidelines on limiting exposure to non-ionising radiation (ICNIRP 7/99).

Action values (Article 3(2)) (unperturbed rms values)

Frequency range	Electric field strength, E(V/m)	Magnetic field strength, H(A/m)	Magnetic field strength, H(A/m)	Equivalent plane wave power density, S _{eq} (W/m ²)	Contact current, I _c (mA)	Limb induced current, I _L (mA)
0-1Hz	-	1.63x10 ⁵	2x10 ⁵	-	1.0	-
1-8Hz	20000	1.63x10 ⁵ /f ²	2x10 ⁵ /f ²	-	1.0	-
8-25Hz	20000	2x10 ⁴ /f	2.5x10 ⁴ /f	-	1.0	-
0.025-0.82kHz	50/f	20/f	25/f	-	1.0	-
0.82-2.5kHz	500/f	24.4	30.7	-	1.0	-
2.5-65kHz	610	24.4	30.7	-	0.4f	-
65-100kHz	610	1600/f	2000/f	-	0.4f	-
0.1-1MHz	610	1.6/f	2/f	-	40	-
1-10MHz	610/f	1.6/f	2/f	-	40	-
10-110MHz	61	0.16	0.2	10	40	100
110-400MHz	61	0.16	0.2	10	-	-
400-2000MHz	3f ^{1/2}	0.008f ^{1/2}	0.01f ^{1/2}	f/40	-	-
2-300GHz	137	0.36	0.45	50	-	-

Notes: 1. As indicated in the frequency range column.

2. For frequencies between 100kHz and 10GHz, S_{eq}, E, H, B and I_L are to be averaged over any six-minute period.

3. For frequencies exceeding 10GHz, S_{eq}, E, H and B are to be averaged over any 68/f^{1.05}-minute period (f in GHz).

4. For frequencies up to 100kHz, peak action values for the field strength can be obtained by multiplying the rms value by (2)^{1/2}. For pulses of duration t_p, the equivalent frequency to apply for the action values should be calculated as f=1/(2t_p).

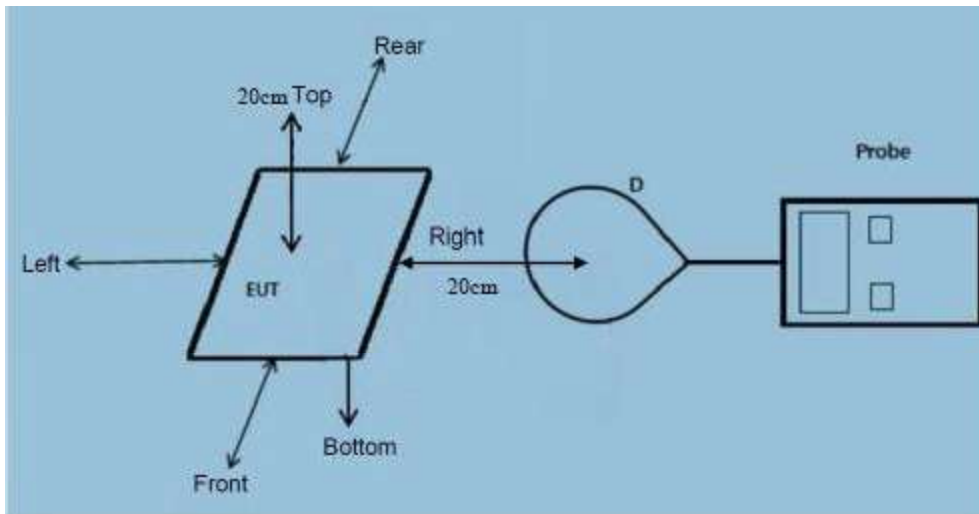
For frequencies between 100kHz and 10MHz, peak action values for the field strengths are calculated by multiplying the relevant rms values by 10, where a=(0.665log(f/10)+0.176), finHz.

For frequencies between 10MHz and 300GHz, peak action values are calculated by multiplying the corresponding rms values by 32 for the field strengths and by 1000 for the equivalent plane wave power density.

5. With regard to pulsed or transient electromagnetic fields, or generally with regard to simultaneous exposure to multiple frequency fields, appropriate methods of assessment, measurement and/or calculation capable of analysing the characteristics of the waveforms and nature of biological interactions have to be applied, taking account of harmonised European standards developed by Cenelec.

6. For peak values of pulsed modulated electromagnetic fields, it is also suggested that, for carrier frequencies exceeding 10MHz, S_{eq} as averaged over the pulse width should not exceed 1000 times the S_{eq} action values or that the field strength should not exceed 32 times the field strength action values for the carrier frequency.

3.3. TEST SETUP



3.4. Result

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 cm(Top) and 20cm(Edge). E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 20 cm(Top) and 20cm(Edge) measured from the center of the probe(s) to the edge of the device

Maximum Permissible Exposure				
Charging	Separation	Probe from EUT side	E-field(V/m)	H-field(A/m)
<1% battery	20cm	Front	0.694	0.198
<1% battery	20cm	Rear	0.680	0.187
<1% battery	20cm	Left	0.755	0.243
<1% battery	20cm	right	0.798	0.201
<1% battery	20cm	Top	0.777	0.351
Limit			87	4.17
Result			PASS	

Maximum Permissible Exposure				
Charging	Separation	Probe from EUT side	E-field(V/m)	H-field(A/m)
<50% battery	20cm	Front	0.698	0.231
<50% battery	20cm	Rear	0.721	0.251
<50% battery	20cm	Left	0.732	0.241
<50% battery	20cm	right	0.770	0.261
<50% battery	20cm	Top	0.777	0.281
Limit			87	4.17
Result			PASS	

Maximum Permissible Exposure				
Charging	Separation	Probe from EUT side	E-field(V/m)	H-field(A/m)
>99% battery	20cm	Front	0.971	0.189
>99% battery	20cm	Rear	0.912	0.189
>99% battery	20cm	Left	0.901	0.210
>99% battery	20cm	right	0.912	0.123
>99% battery	20cm	Top	0.921	0.204
Limit			87	4.17
Result			PASS	

.....End of Report.....

CE/EMC TEST REPORT

Applicant: 012027

Address: XXXXX

Manufacturer: 012027

Address: XXXXX

EUT: Power Bank

Trademark: N/A

Model Number: PBM01, 25411

Test Date: Sep. 13, 2024 - Sep. 23, 2024

Date of Report: Sep. 23, 2024

Report No.: SiCT2409141534-2E

Test Result: The equipment under test was found to be compliance with the requirements of the standards applied.

Test Procedure Used:

Standard : ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.3.2 (2023-01)
EN 55032:2015+A11:2020, EN 55035:2017+A11:2020

Compiled by:

Daisy Wei

Daisy Wei

Reviewed by:

Sky Wang

Sky Wang

Approved by:

Andy Wang

Andy Wang/Manager



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen SiCT Technology Co., Ltd.

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1. TEST STANDARDS

The tests were performed according to following standards:

The tests were performed according to following standards:

[ETSI EN 301 489-1 V2.2.3 \(2019-11\)](#)—ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

[ETSI EN 301 489-3 V2.3.2 \(2023-01\)](#)—ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

[EN 55032:2015+A11:2020](#)—Electromagnetic compatibility of multimedia equipment - Emission Requirements

[EN 55035:2017+A11:2020](#)—Electromagnetic compatibility of multimedia equipment - Immunity requirements

2. SUMMARY

2.1. Product Description

Product Name:	Power Bank
Trademark:	N/A
Test Model:	PBM01
Model/Type reference:	25411
Ratings:	Input: 5V $\overline{=}$ 2A, 9V $\overline{=}$ 2A, 12V $\overline{=}$ 1.5A Output: 5W/7.5W/10W/15W (MAX) Class III equipment.
Adapter information (Auxiliary test supplied by testing Lab)	N/A
Wireless technology	
Frequency band:	110-205 KHz
Modulation type:	MSK
Antenna type:	Loop Coil Antenna
ANT Gain	0.0dBi

2.2. EUT operation mode

Test mode	Charging mode
1	■

Note:

1. ■ is operation mode.
2. Pre-scan above all test mode, found below test mode which it was worse case mode.

Test item	Test mode (Worse case mode)
Conducted emission	Mode 1
Radiated emission	Mode 1
EMS	All modes

2.3. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

○ Adapter Cable	Length	<1.2m
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2.4. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen SiCT Technology Co., Ltd.

No.111 Huanguan Middle Road, Songyuanxia Community, Guanhu Street, Longhua District,

Shenzhen,Guangdong, China.

3.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Lative Humidity	55 %
Air Pressure	989 hPa

3.3. Test Description

Emission Measurement		
Radiated Emission	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	PASS
Conducted Emission	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A
Harmonic Current Emissions	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A
Voltage Fluctuations and Flicker	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A
Immunity Measurement		
Electrostatic Discharge	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	PASS
RF Electromagnetic Field	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	PASS
Fast Transients Common Mode	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A
RF Common Mode 0,15 MHz to 80 MHz	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A
Voltage Dips and Interruptions	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A
Surges	ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03)	N/A

Remark:1. N/A means “not applicable”.

2.The measurement uncertainty is not included in the test result.

3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“and is documented in the Shenzhen SiCT Technology Co., Ltd.acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. Hereafter the best measurement capability for Shenzhen SiCT Technology Co., Ltd.for Products Quality is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.5. Equipments Used during the Test

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Previous Calibration Date	Last Cal.	Calibration Due Date
1	EMI Test Receiver	R&S	ESPI 3	101841-cd	/	2023/12/26	2024/12/25
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	893606/008	/	2023/12/26	2024/12/25
3	Pulse Limiter	Agilent	EM5010A	3107A04120	/	2023/12/26	2024/12/25
4	EMI Test Receiver	ROHDE & SCHWARZ	ESCI 7	101102	/	2023/12/26	2024/12/25
5	Spectrum Analyzer	Agilent	N9020A	MY48010425	/	2023/12/26	2024/12/25
6	Spectrum Analyzer	R&S	FSV40	100019	/	2023/12/26	2024/12/25
7	Active Loop Antenna	Beijing Da Ze Technology Co.,Ltd.	ZN30900C	15006	2022/10/12	2023/12/26	2024/12/25
8	By-log Antenna	SCHWARZBECK	VULB9163	000976	/	2023/12/26	2024/12/25
9	Double Ridged Horn Antenna (1~18GHz)	SCHWARZBECK	BBHA 9120D	01622	2022/11/18	2023/12/26	2024/12/25
10	Horn Antenna (18GHz~40GHz)	Schwarzbeck	BBHA9170	791	2022/11/18	2023/12/26	2024/12/25
11	Amplifier (30MHz~1GHz)	Schwarzbeck	BBV 9743	#202	/	2023/12/26	2024/12/25
12	Amplifier (1GHz~18GHz)	Taiwan Chengyi	EMC051845 B	980355	/	2023/12/26	2024/12/25
13	Amplifier (26.5GHz~40GHz)	Schwarzbeck	BBV9179	9719-025	/	2023/12/26	2024/12/25
14	ESD Simulators	EMC Partner	ESD3000	ESD3000-1680	2022/11/18	2023/12/26	2024/12/25
15	RF POWER AMPLIFIER	OPHIR	5225R	1079	/	2023/12/26	2024/12/25
16	RF POWER AMPLIFIER	OPHIR	5273F	1025	/	2023/12/26	2024/12/25
17	RF POWER AMPLIFIER	SKET	HAP_03G06 G-50W	--	/	2023/12/26	2024/12/25

18	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-112	/	2023/12/26	2024/12/25
19	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-594	/	2023/12/26	2024/12/25
20	Electric field probe	Narda S.TS./PMM	EP601	611WX90121	/	2023/12/26	2024/12/25
21	ESG Vector Signal Generator	Agilent	MY49072627	E4594C	/	2023/12/26	2024/12/25
22	Power meter	Agilent	MY45104493	E4602B	/	2023/12/26	2024/12/25
23	Power sensor	Agilent	MY41495234	E7201H	/	2023/12/26	2024/12/25
24	Ultra Compact Simulator	EMC Partner	TRANSIENT 3000	TRA3000 F5-S-D-V-1527	/	2023/12/26	2024/12/25
25	Coupling Clamp	EMC Partner	CN-EFT1000	CN-EFT1000-1574	/	2023/12/26	2024/12/25
26	Signal Line Coupling Network	EMC Partner	CN-R40C05	CN-R40C05-1513	/	2023/12/26	2024/12/25
27	CS Test system	Frankonia	CIT-10-75	126B1333	/	2023/12/26	2024/12/25
28	6dB Attenuator	Frankonia	75-A-FFN-06	1509	/	2023/12/26	2024/12/25
29	CDN	Frankonia	M2+M3	A2210239	/	2023/12/26	2024/12/25
30	Power Clamp	Frankonia	EMCL-20	132A1216	/	2023/12/26	2024/12/25
31	Harmonic and Flicker Analyzer	EMC Partner	HAR1000-1P	HAR1000-1P 230V-0221	/	2023/12/26	2024/12/25
32	RF Cable	HUBER+SUHNER	RG214	N/A	/	2023/12/26	2024/12/25
33	ISN	Schwarzbeck	CAT5 8158	121	/	2023/12/26	2024/12/25
34	Radio Communication Tester	Rohde&Schwarz	CMW500	115406	/	2023/12/26	2024/12/25
35	Sound Level meter	BK Precision	735	7350087310010020	/	2023/12/26	2024/12/25
36	Audio Analyzer	R&S	UPV	1146.2003K02-101721-UW	/	2023/12/26	2024/12/25
37	Mouse Simulation	Bruel & Kjaer	4227	A0304216	/	2023/12/26	2024/12/25
38	Ear Simulation and supply	Bruel & Kjaer	2669.4182.5935	A0305284	/	2023/12/26	2024/12/25
39	Acoustical Calibrators	Bruel & Kjaer	4231	A0304215	/	2023/12/26	2024/12/25
40	Automatic filter bank	Tonscend	JS0806-F	19F8060177	/	2023/12/26	2024/12/25
41	Conducted Emission	Tonscend	JS32-CE	Ver 2.5	/	/	/
42	Radiated Emission	Tonscend	JS32-RE	Ver 2.5.1.8	/	/	/

The calibration interval is 1 year.

4. TEST CONDITIONS AND RESULTS

4.1. EMISSION

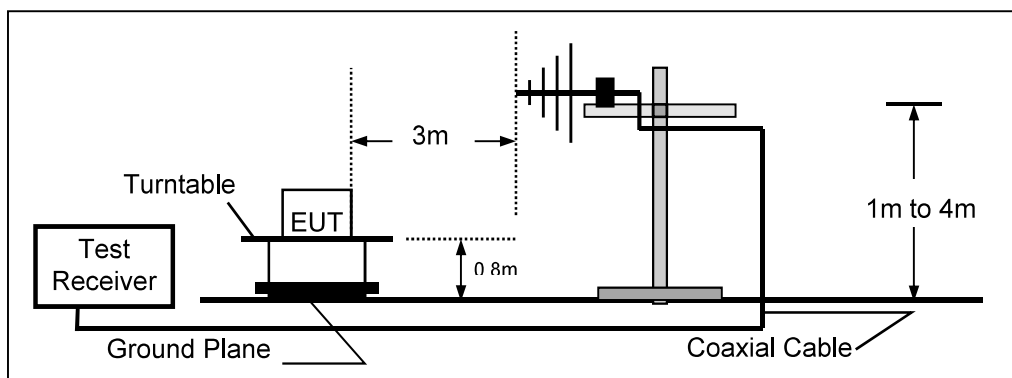
4.1.1. Radiated Emission

LIMIT

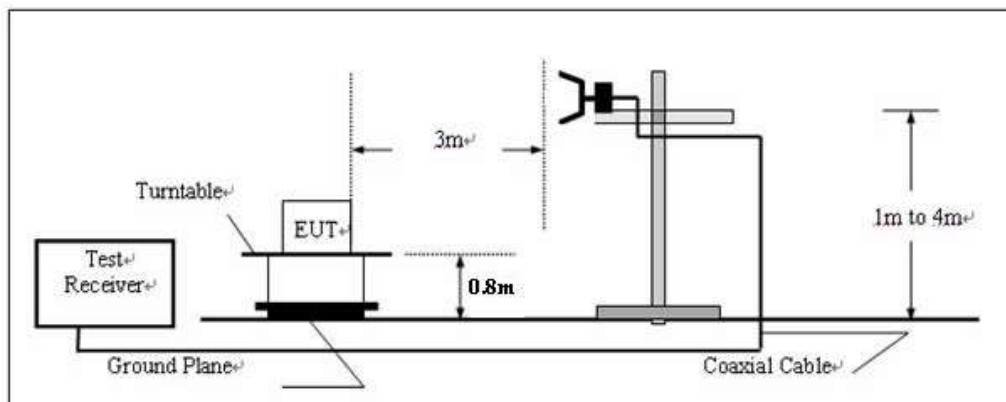
Please refer to ETSI EN301489-1 Clause 8.2.3, Table 4 and EN55032 Annex A, Table A.2,A.3, and Class B

TEST CONFIGURATION

- a) Radiated emission test set-up, frequency below 1000MHz:



- b) Radiated emission test set-up, frequency above 1000MHz



TEST PROCEDURE

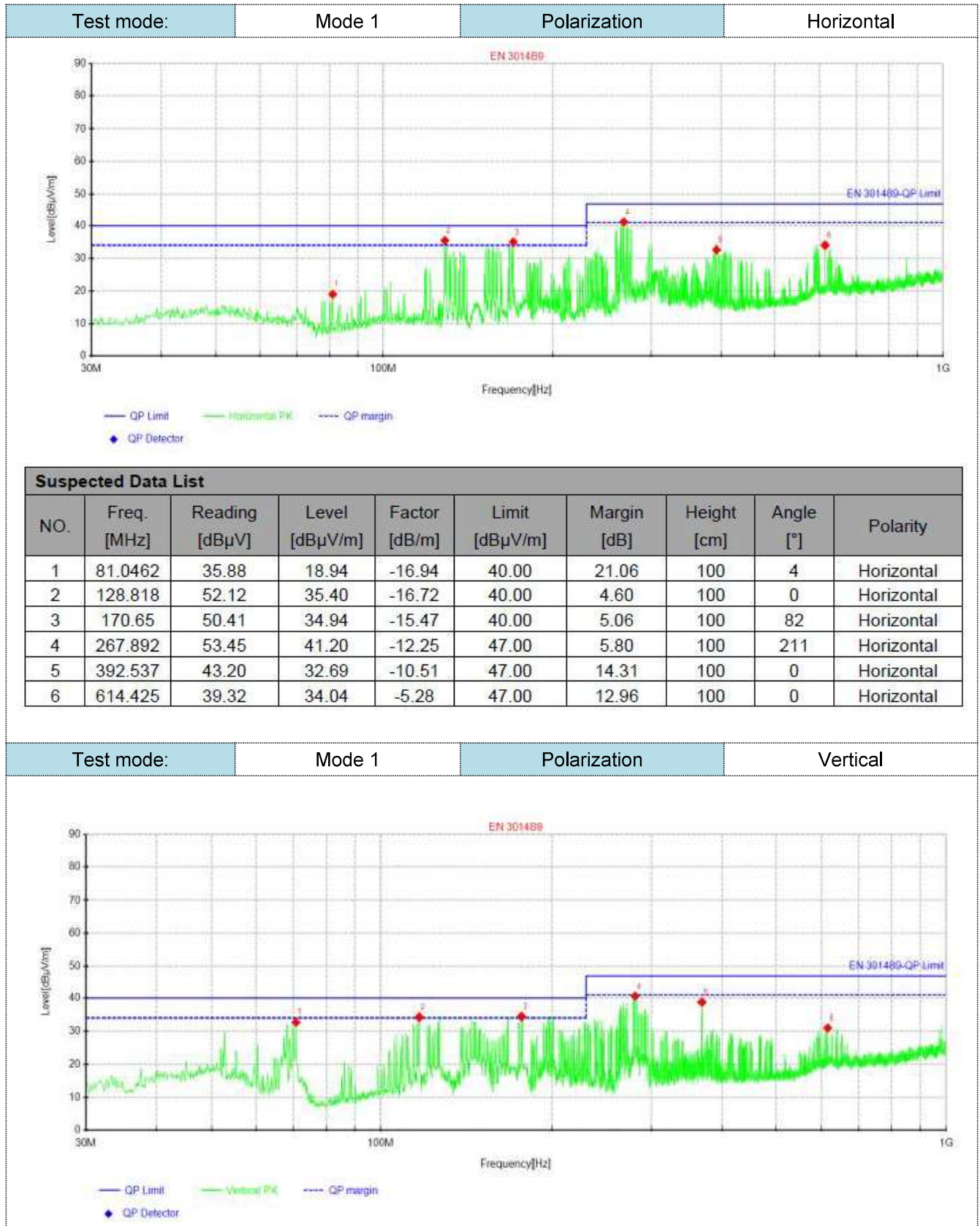
Please refer to ETSI EN 301 489-1 Clause 8.2.3 and EN55032 Annex A for the measurement methods

TEST RESULTS

Passed

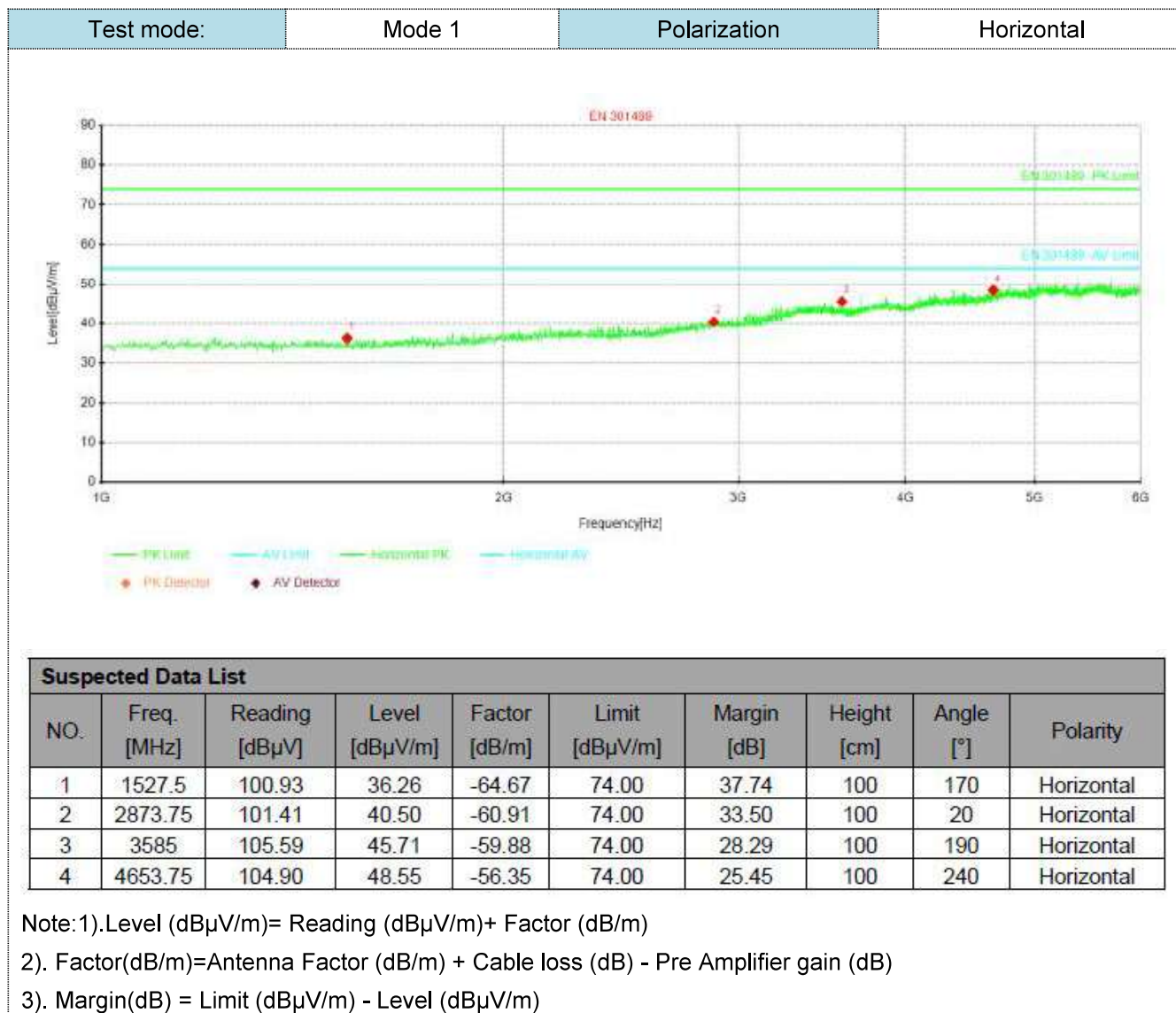
Please refer to the below test data:

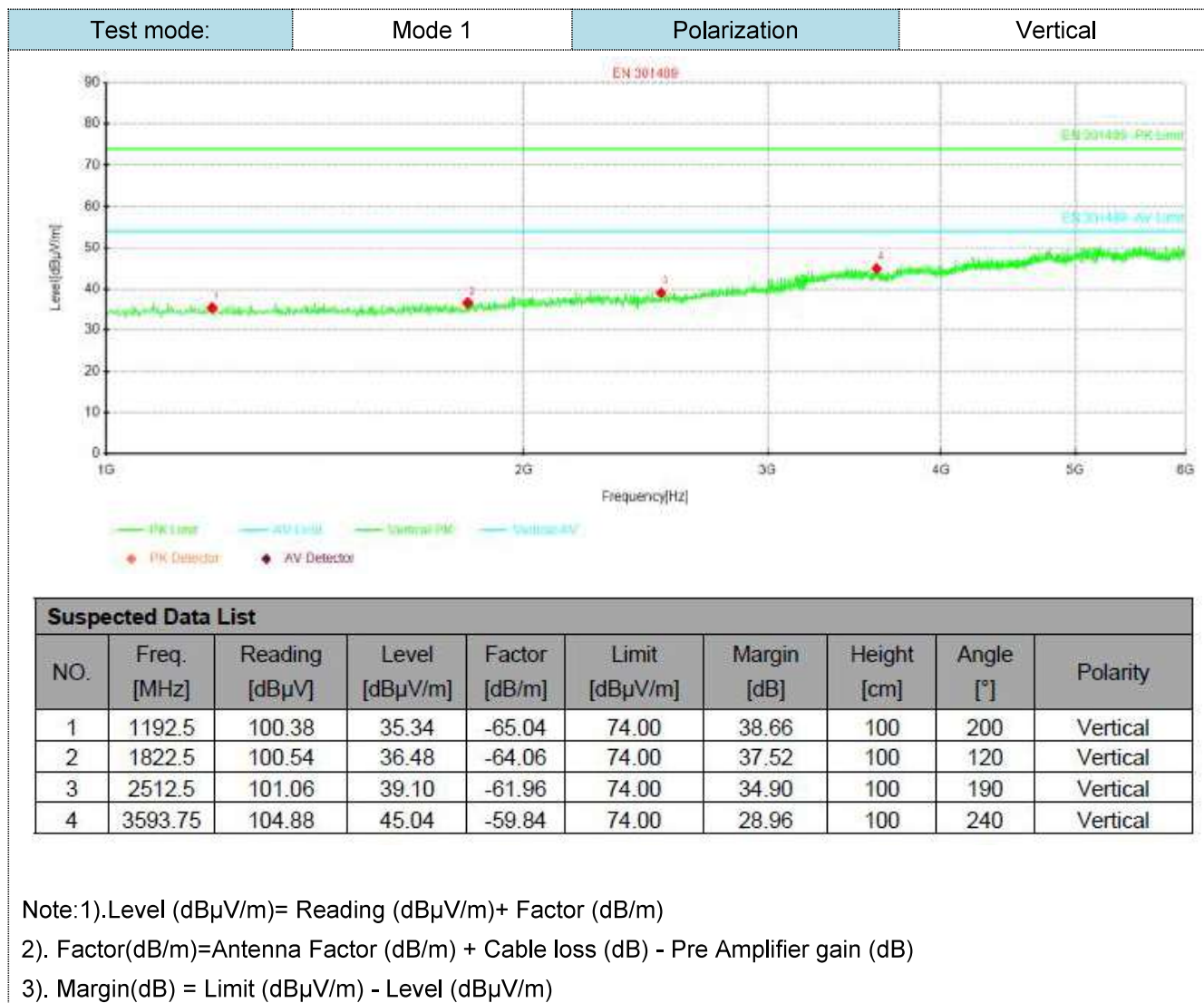
Note: While performing the testing, the notch filter is used for avoiding test instrument overload



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	70.74	47.87	32.78	-15.09	40.00	7.22	100	90	Vertical
2	116.815	48.37	34.26	-14.11	40.00	5.74	100	287	Vertical
3	177.44	49.65	34.45	-15.20	40.00	5.55	100	360	Vertical
4	280.745	52.55	40.62	-11.93	47.00	6.38	100	287	Vertical
5	368.651	49.68	38.77	-10.91	47.00	8.23	100	3	Vertical
6	616.122	36.34	31.07	-5.27	47.00	15.93	100	3	Vertical



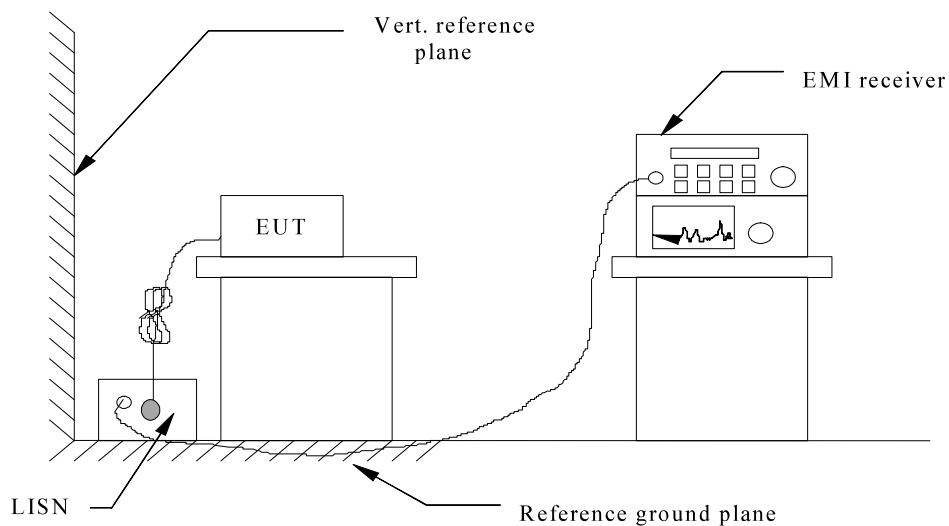


4.1.2. Conducted Emission

LIMIT

Please refer to ETSI EN301489-1 Clause 8.4.3, Table 8 and EN55032 Annex A, Table A.10, A.12

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 8.4.3 and EN55032 Annex A for the measurement methods.

TEST RESULTS

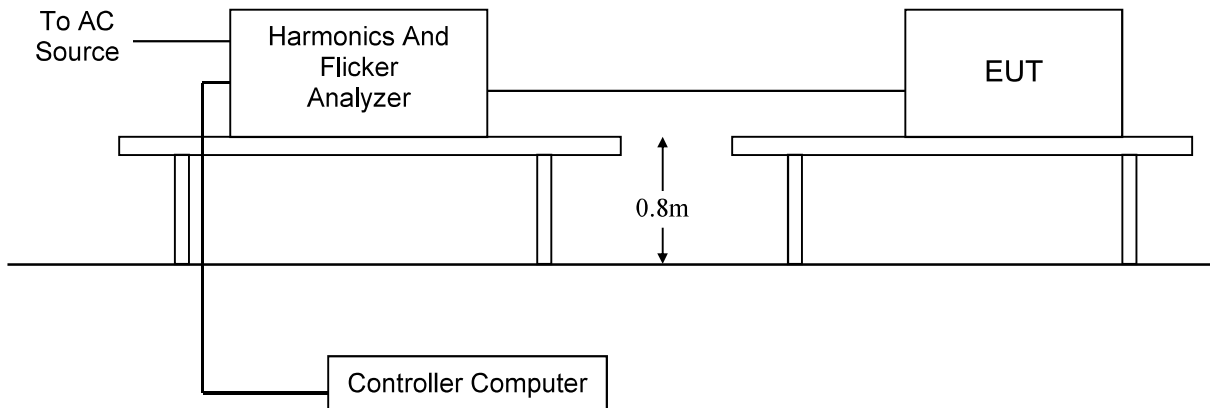
N/A

4.1.3. Harmonic Current Emission

LIMIT

Please refer to EN 61000-3-2

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-3-2 for the measurement methods.

TEST RESULTS

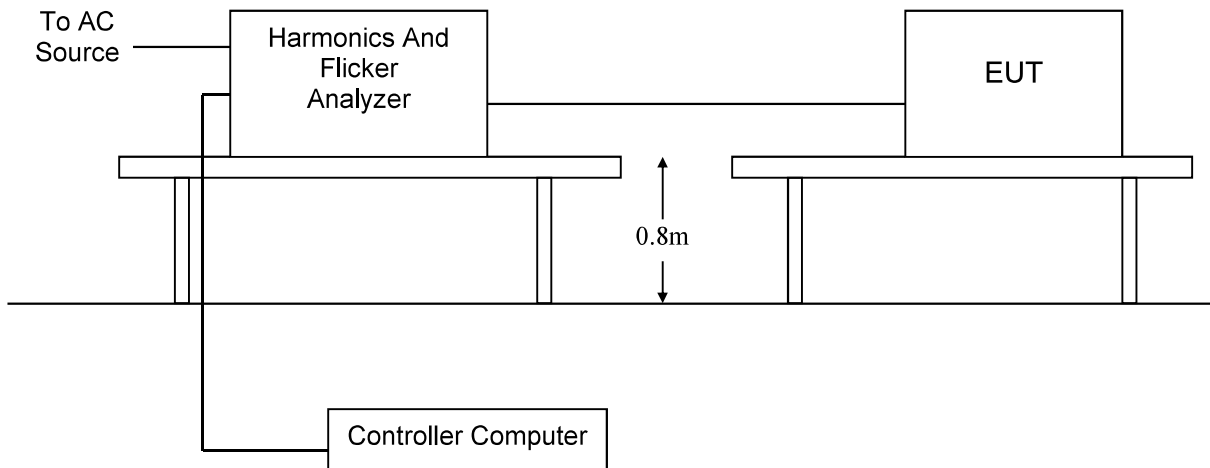
N/A

4.1.4. Voltage Fluctuation and Flicker

LIMIT

Please refer to EN 61000-3-3

TEST CONFIGURATION



TEST PROCEDURE

Please refer to EN 61000-3-3 for the measurement methods.

TEST RESULTS

N/A

4.2. IMMUNITY

4.2.1. Performance criteria

ETSI EN301489-3

General performance criteria

- performance criterion A applies for immunity tests with phenomena of a continuous nature;
- performance criterion B applies for immunity tests with phenomena of a transient nature.
- The equipment shall meet the minimum performance criteria as specified in the following.

Criteria	During test	After test
A	Operate as intended No loss of function No unintentional responses	Operate as intended No loss of function No degradation of performance No loss of stored data or user programmable functions
B	May show loss of function No unintentional responses	Operate as intended Lost function(s) shall be self-recoverable No degradation of performance No loss of stored data or user programmable functions

NOTE: Where "operate as intended" or "no loss of function" is specified, the EUT shall demonstrate correct functioning as described in clause 5.

4.2.2. Electrostatic Discharge

PERFORMANCE CRITERION

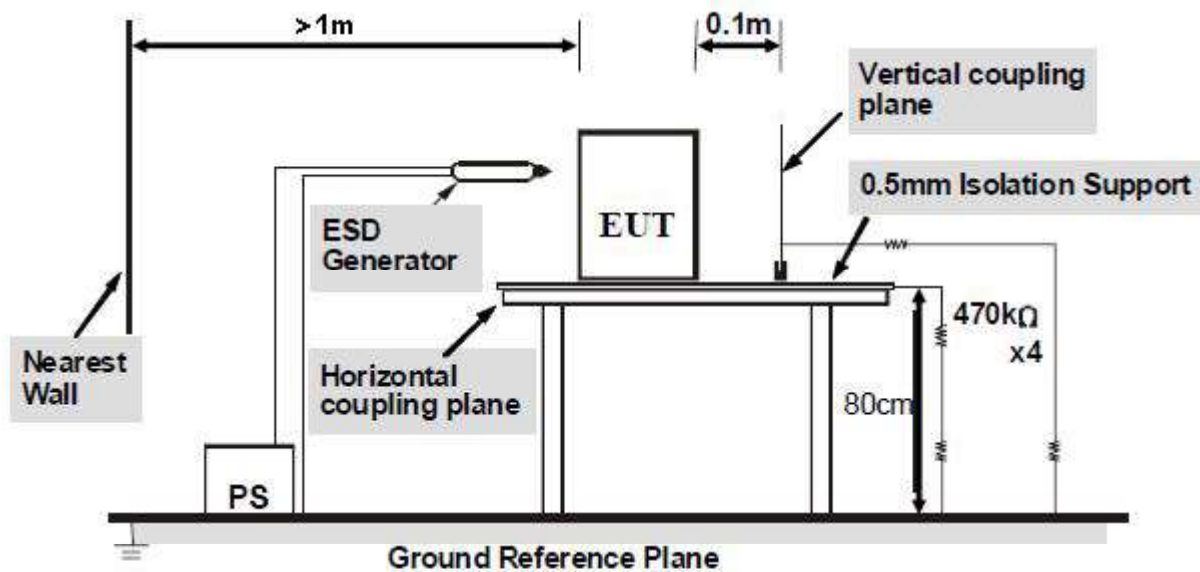
Criteria B

LIMIT

SEVERITY LEVELS OF ELECTROSTATIC DISCHARGE

Test level: Contact Discharge at $\pm 2\text{KV}$, $\pm 4\text{KV}$ Air Discharge at $\pm 2\text{KV}$, $\pm 4\text{KV}$, $\pm 8\text{KV}$

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.3.2 , EN 55035 and EN 61000-4-2 for the measurement methods.

Contact Discharge:

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Air Discharge:

Air discharge is used where contact discharge can't be applied. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Indirect discharge for horizontal coupling plane:

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

Indirect discharge for vertical coupling plane:

At least 10 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

Direct discharge				
Type of discharge	Discharge voltage (KV)	Observations Performance	Criteria Level	Result
Contact discharge	±2	N/A	B	Pass
	±4	N/A	B	
Air discharge	±2	A	B	
	±4	A	B	
	±8	A	B	
Indirect discharge				
Type of discharge	Discharge voltage (KV)	Observations Performance	Criteria Level	Result
HCP (6 sides)	±2	A	B	Pass
	±4	A	B	
VCP (4 sides)	±2	A	B	
	±4	A	B	

Remark: The ancillary equipment's specification for an acceptable level of performance or degradation of performance during and/or after the ESD tests.

4.2.3. RF Electromagnetic Field

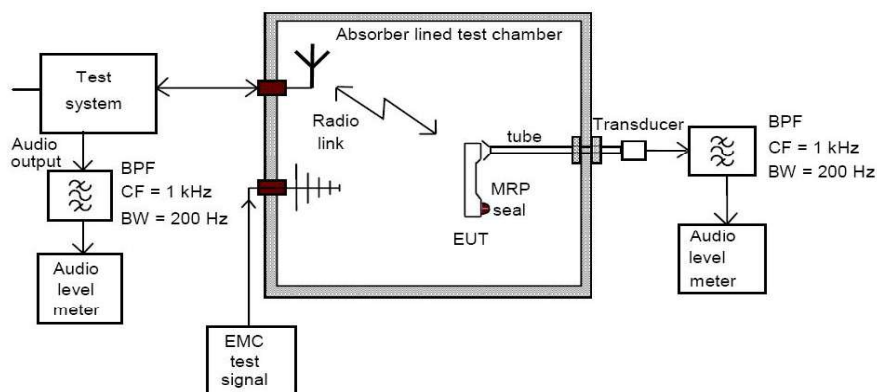
PERFORMANCE CRITERION

Criteria A

TEST LEVEL

3V/m (80%, 1kHz Amplitude Modulation)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.2.2 and EN 61000-4-3 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

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

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

4.2.4. Surges

PERFORMANCE CRITERION

Criteria B

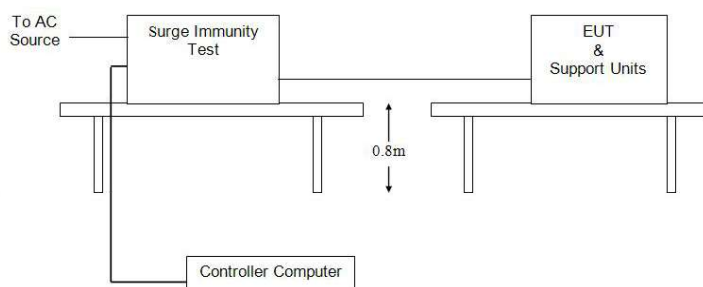
TEST LEVEL

1kV Line to Line: Differential mode

2kV Line to Ground: Common mode

(Voltage Waveform: 1.2/50 us; Current Waveform: 8/20 us)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.8.2 and EN 61000-4-5 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

N/A

4.2.6. Fast Transients Common Mode

PERFORMANCE CRITERION

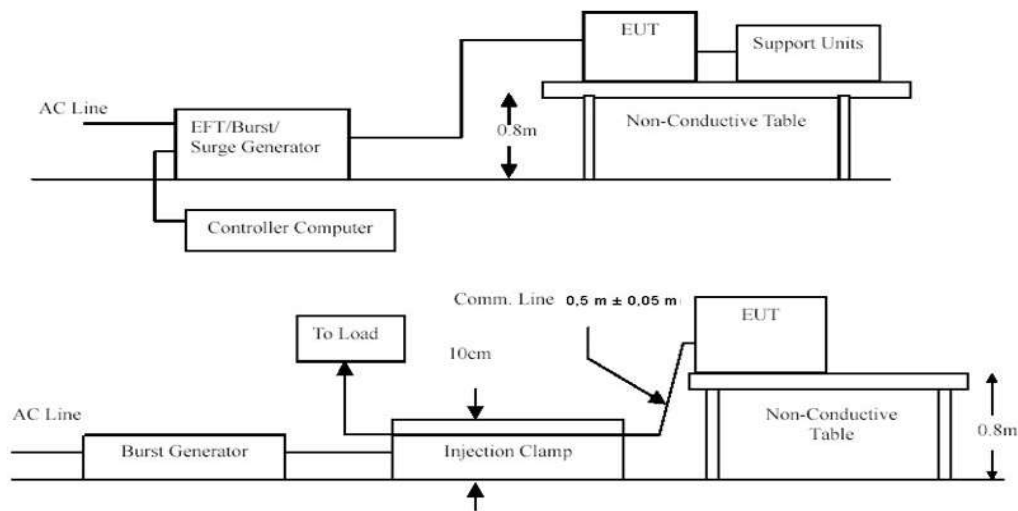
Criteria B

TEST LEVEL

1KV for AC main port

(Impulse Frequency: 5 kHz; Tr/Th: 5/50ns; Burst Duration: 15ms; Burst Period: 3Hz)

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.4.2 , EN55035 and EN 61000-4-4 for the measurement methods.

TEST MODE

Please reference to the section 2.3

TEST RESULTS

N/A

4.2.7. Voltage Dips and Interruptions

PERFORMANCE CRITERION

>95% VD, 0.5 period----Performance criterion: B

>95% VD, 1.0 period----Performance criterion: B

30% VD, 25 period----Performance criterion: C

>95% VI, 250 period----Performance criterion: C

TEST LEVEL

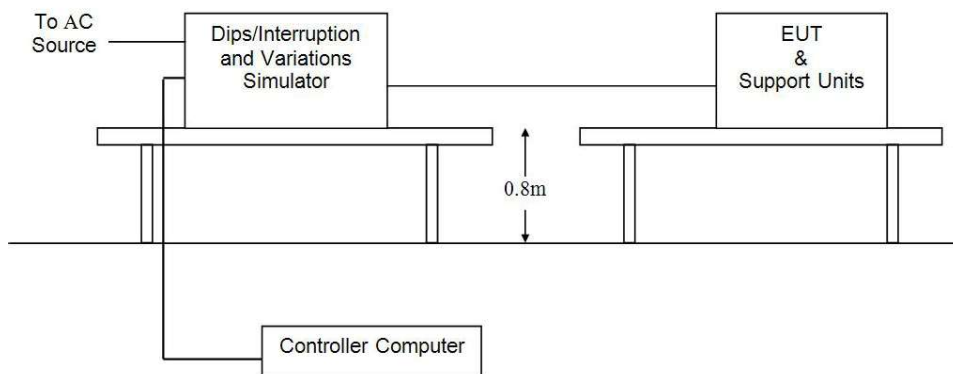
0% of VT(Supply Voltage) for 0.5 period

0% of VT(Supply Voltage) for 1.0 period

70% of VT(Supply Voltage) for 25 period

0% of VT(Supply Voltage) for 250 period

TEST CONFIGURATION



TEST PROCEDURE

Please refer to ETSI EN 301 489-1 Clause 9.7.2 and EN 61000-4-11 for the measurement methods.

TEST MODE

Please reference to the section 2.3

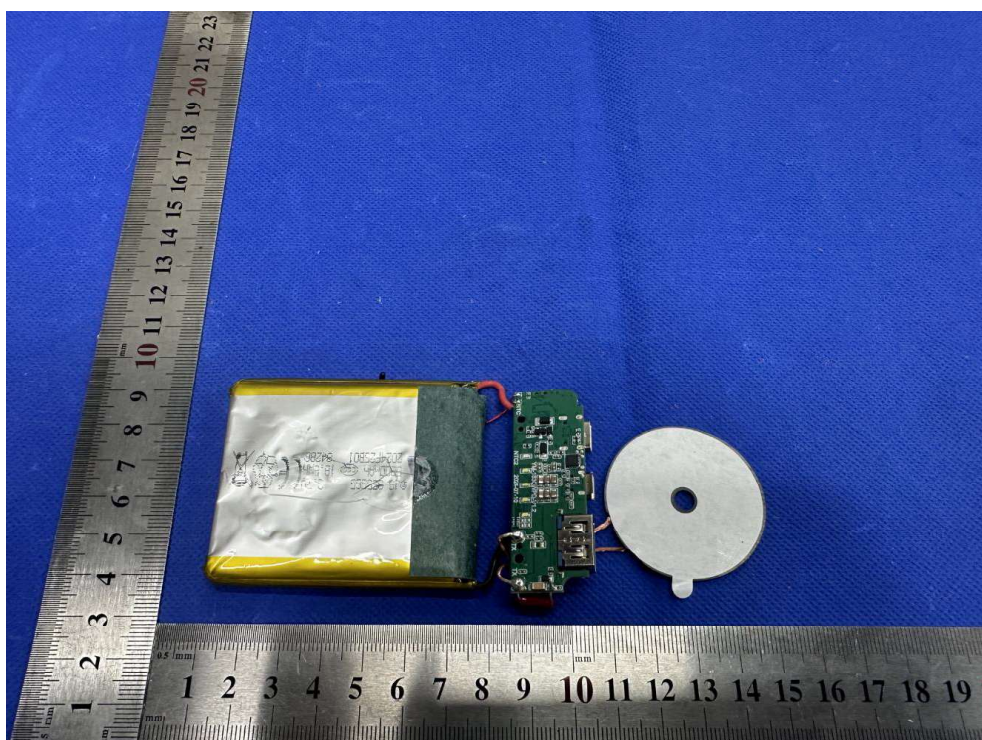
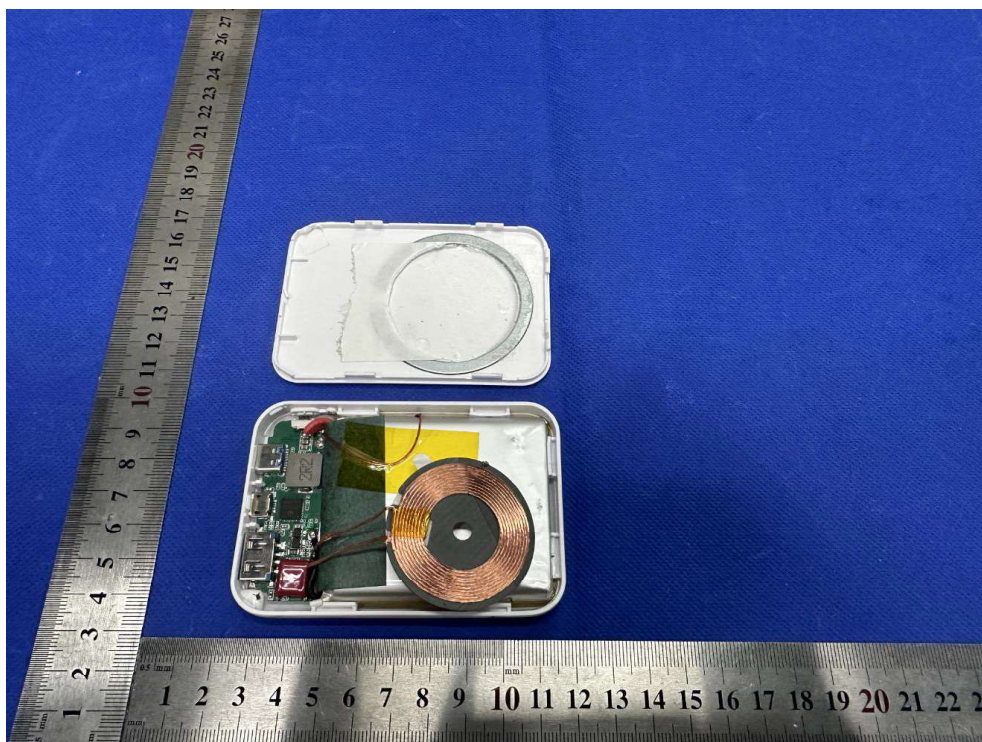
TEST RESULTS

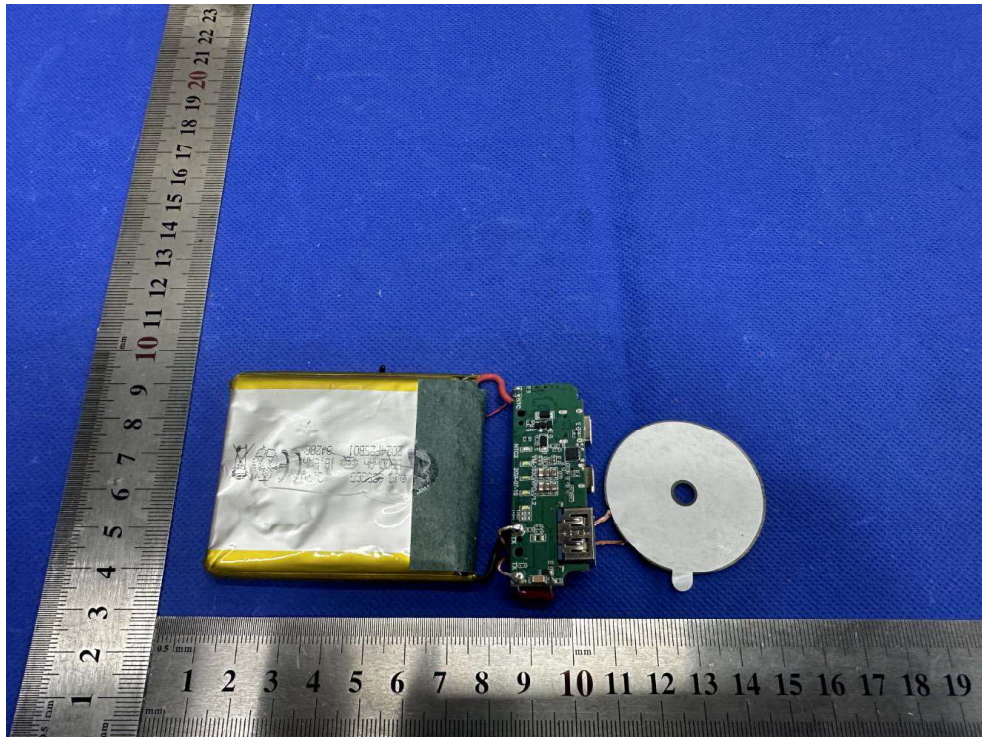
N/A

5. External and Internal Photos of the EUT











.....End of Report.....

**TEST REPORT
EN IEC 62368-1****Audio/video, information and communication technology equipment
Part 1: Safety requirements**

Report Number.....: SiCT2409141534S

Tested by (name + signature).....: Rachel Yang

Rachel Yang

Reviewed by (name + signature)....: Jean Shu

Jean Shu

Approved by (name + signature)....: Andy Wang

Andy Wang



Date of issue.....: Sep. 23, 2024

Total number of pages.....: 71 pages

Name of Testing Laboratory
preparing the Report.....: Shenzhen SiCT Technology Co., Ltd.202, Building 3, No.111 Huanguan Middle Road, Songyuanxia
Community, Guanhu Street, Longhua District, Shenzhen, Guangdong,
China

Applicant's name.....: 012027

Address.....: XXXXX

Test specification:

Standard.....: EN IEC 62368-1:2020+A11:2020

Test procedure.....: Type test

Non-standard test method.....: N/A

Test item description.....: Power Bank

Trade Mark(s): N/A

Manufacturer.....: 012027

2A11, building 1, Ganghong Industrial Zone, No. 7 Xiangye Road,
South Bend Street, Shenzhen City

Model/Type reference.....: PBM01, 25411

Ratings.....: Micro Input: 5V $\overline{=}$ 2A, 9V $\overline{=}$ 2A, 12V $\overline{=}$ 1.5AType-C Input: 5V $\overline{=}$ 3A, 9V $\overline{=}$ 2A, 12V $\overline{=}$ 1.5AUSB Output: 5V $\overline{=}$ 3A, 9V $\overline{=}$ 2A, 12V $\overline{=}$ 1.5AType-C Output: 5V $\overline{=}$ 3A, 9V $\overline{=}$ 2.2A, 12V $\overline{=}$ 1.67A

Wireless charging output: 15W MAX

Battery capacity: 3.7V 5000mAh 18.5Wh

List of Attachments (including a total number of pages in each attachment):

- Attachment No.1: European Group Differences and National Differences (23 pages)
- Attachment No.2: Product photos (5 pages)

Summary of testing: the EUT was full loaded.**Tests performed (name of test and test clause):**

-Refer to appended clause table for details

Testing location:**Shenzhen SiCT Technology Co., Ltd.**202, Building 3, No.111 Huanguan Middle Road,
Songyuanxia Community, Guanhu Street, Longhua
District, Shenzhen, Guangdong, China**European Group Differences and National Differences**☒ **The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020.**

Copy of marking plate:

Power Bank

Model: PBM01

Micro Input: 5V $\overline{\text{---}}$ 2A, 9V $\overline{\text{---}}$ 2A, 12V $\overline{\text{---}}$ 1.5A

Type-C Input: 5V $\overline{\text{---}}$ 3A, 9V $\overline{\text{---}}$ 2A, 12V $\overline{\text{---}}$ 1.5A

USB Output: 5V $\overline{\text{---}}$ 3A, 9V $\overline{\text{---}}$ 2A, 12V $\overline{\text{---}}$ 1.5A

Type-C Output: 5V $\overline{\text{---}}$ 3A, 9V $\overline{\text{---}}$ 2.2A, 12V $\overline{\text{---}}$ 1.67A

Wireless charging output: 15W MAX

Battery capacity: 3.7V 5000mAh 18.5Wh



Importer: XXXXXX

Address: XXXXXX

Manufacturer: 012027

Made in China

Label for representative**Note:**

- The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

Test item particulars:	
Product group	☒ end product ☐ built-in component
Classification of use by.....	☒ Ordinary person ☐ Children likely present ☐ Instructed person ☐ Skilled person
Supply connection.....	☐ AC mains ☐ DC mains ☒ not mains connected: ☒ ES1 ☐ ES2 ☐ ES3
Supply tolerance	☐ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☒ None
Supply connection – type	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☒ other: External power supply
Considered current rating of protective device.....	☐ A; Location: ☐ building ☐ equipment ☒ N/A
Equipment mobility.....	☒ movable ☐ hand-held ☒ transportable ☐ direct plug-in ☐ stationary ☐ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC)	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☒ other: not directly connected to the mains
Class of equipment	☐ Class I ☐ Class II ☒ Class III ☐ Not classified ☐
Special installation location	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T _{ma}	25 °C ☐ Outdoor: minimum °C
IP protection class	☒ IPX0 ☐ IP____
Power systems	☒ TN ☒ TT ☐ IT - V _{L-L} ☐ not AC mains
Altitude during operation (m)	☒ 2000 m or less ☐ m
Altitude of test laboratory (m)	☒ 2000 m or less ☐ m
Mass of equipment (kg)	133g

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:

Date of receipt of test item..... : Sep. 13, 2024

Date (s) of performance of tests..... : Sep. 13, 2024 - Sep. 23, 2024

General remarks:

"(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 IEC60068-2-1:

The application for obtaining a 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..... :

☐ Yes

☒ Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... : 012027

XXXXX

General product information and other remarks:**Product Description**

1. The product covered in this report was Power Bank, it can be supplied by DC source via USB-C and internal re-chargeable battery.
2. The product was submitted and evaluated for use at the max ambient temperature (Tma) permitted by the manufacturer's specification of: 25°C.

Model Differences

All models covered by this report are identical, except model no. and appearance of enclosure (for silk-screen, color and decorating parts only) for marketing purpose.

Additional application considerations

N/A

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES1: All circuit	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS2: Battery cell output	Plastic enclosure and Printed board	See 6.3	Enclosure and PCB min. V-1	N/A
PS2: USB output	--	N/A	N/A	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and Corners	Ordinary	N/A	N/A	N/A
MS1: Equipment mass	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1:	Ordinary	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	(See appended table 4.1.2)	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.3, T.4, T.5)	P
4.4.3.3	Drop tests	(See Clause T.7)	P
4.4.3.4	Impact tests		N/A
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests	(See Clause T.9, Annex U)	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		P
4.4.3.9	Air comprising a safeguard		N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective	P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	Explosion		P
4.5.1	General	(See Annex M for batteries)	P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test..... :	(See Clause T.2)	N/A
4.7	Equipment for direct insertion into mains socket-outlets		N/A
4.7.2	Mains plug part complies with relevant standard... :		N/A
4.7.3	Torque (Nm)..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P
4.10	Component requirements		N/A
4.10.1	Disconnect Device	(See Annex L)	N/A
4.10.2	Switches and relays	(See Annex G)	N/A

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current limits..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits..... :	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses..... :	(See appended table 5.2)	N/A
5.2.2.6	Ring signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		N/A
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		N/A
	Test with test probe from Annex V		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Material is non-hygroscopic		N/A
5.4.1.4	Maximum operating temperature for insulating materials..... :	(See appended table)	N/A
5.4.1.5	Pollution degrees..... :		N/A
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage..... :	(See appended table 5.4.1.8)	N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test..... :	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure test..... :	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances		N/A
5.4.2.1	General requirements		N/A
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance		N/A
5.4.2.3.2.2	a.c. mains transient voltage..... :		—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage..... :		—
5.4.2.3.2.5	Transient voltage determined by measurement..... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement..... :	(See appended table 5.4.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.3	Creepage distances		N/A
5.4.3.1	General		N/A
5.4.3.3	Material group..... :		—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.3)	N/A
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) :		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)..... :	(See appended Table 5.4.4.9)	N/A
	Alternative by electric strength test, tested voltage (V), K_R :	(See appended Tables 5.4.4.9 and 5.4.9)	N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance ($M\Omega$)..... :		N/A
	Electric strength test..... :	(See appended table 5.4.9)	N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%), temperature ($^{\circ}C$), duration (h)..... :		—
5.4.9	Electric strength test		N/A
5.4.9.1	Test procedure for type test of solid insulation..... :	(See appended table 5.4.9)	N/A
5.4.9.2	Test procedure for routine test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test..... :	(See appended table 5.4.9)	N/A
5.4.10.3	Verification for insulation breakdown for impulse test..... :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance..... :	(See appended table 5.4.9)	N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid..... :	(See appended table 5.4.9)	N/A
5.4.12.3	Compatibility of an insulating liquid..... :	(See appended table 5.4.9)	N/A
5.4.12.4	Container for insulating liquid..... :		N/A
5.5	Components as safeguards		N/A
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	N/A
5.5.5	Relays	(See sub-clause 5.4)	N/A
5.5.6	Resistors	(See Clause G.10)	N/A
5.5.7	SPDs	(See Clause G.8)	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)..... :		—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²)..... :		—
5.6.4.2	Protective current rating (A)..... :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm)..... :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	N/A
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current		N/A
5.7.2.2	Measurement of voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	Equipment set-up, supply connections and earth connections		N/A
5.7.4	Unearthed accessible parts..... :	(See appended table 5.7.4)	N/A
5.7.5	Earthed accessible conductive parts..... :	(See appended table 5.7.5)	N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)..... :		N/A
	b) Equipment connected to unearthed external circuits, current (mA)..... :		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES..... :	(See appended table 5.8)	N/A
	Air gap (mm)..... :		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS :	(See appended table 6.2.3.1)	N/A
6.2.3.2	Resistive PIS :	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table B.1.5 and B.3)	N/A
	Combustible materials outside fire enclosure..... :		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.2	Single Fault Conditions.....:	(See appended table B.4)	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards		N/A
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Fire enclosure used	P
6.4.8.2	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Enclosure material: V-0	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		P
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm).....:		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm).....:		N/A
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	N/A
	Instructional Safeguard.....:		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm).....:		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c).....:		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating.....:		N/A
6.4.9	Flammability of insulating liquid.....:		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring.....:		N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets.....:		N/A
6.6	Safeguards against fire due to the connection to additional equipment		N/A
7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards		N/A
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard..... :		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)..... :		N/A
	Space between end point and nearest fixed mechanical part (mm)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly.....:		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts..... :		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)..... :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test.....:		N/A
8.5.5.3	Glass particles dimensions (mm)..... :		N/A
8.6	Stability of equipment		N/A
8.6.1	General		N/A
	Instructional safeguard..... :		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test.....:		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)..... :		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test..... :		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type.....:		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....:		N/A
	Test 2, number of attachment points and test force (N).....:		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm)..... :		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.8.2	Handle strength test		N/A
	Number of handles.....:		—
	Force applied (N).....:		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions.....:		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N).....:		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N).....:		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm).....:		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts.....:	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard		P
9.5.2	Instructional safeguard.....:		N/A
9.6	Requirements for wireless power transmitters		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.6.1	General		P
9.6.2	Specification of the foreign objects		P
9.6.3	Test method and compliance.....:	(See appended table 9.6)	P

10	RADIATION		N/A
10.2	Radiation energy source classification		N/A
10.2.1	General classification		N/A
	Lasers.....:		—
	Lamps and lamp systems.....:		—
	Image projectors.....:		—
	X-Ray.....:		—
	Personal music player.....:		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply.....:		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location.....:		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure.....:	(See Annex C)	N/A
10.4.3	Instructional safeguard.....:		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons.....:		—
10.5.3	Maximum radiation (pA/kg).....:	(See appended tables B.3 & B.4)	—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS).....:		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30).....:		N/A
	Warning for MEL ≥ 100 dB(A).....:		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards.....:		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....:		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....:		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers.....:	No audio amplifier circuits	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General		P
B.3.2	Covering of ventilation openings		P
	Instructional safeguard.....:		N/A
B.3.3	DC mains polarity test		P
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifiers	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions.....:	(See appended table B.3)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4	Simulated single fault conditions 错误!未指定书签。		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such controlling device	N/A
B.4.3	Blocked motor test	No motor used	N/A
B.4.4	Functional insulation		N/A
B.4.4.1	Short circuit of clearances for functional insulation		N/A
B.4.4.2	Short circuit of creepage distances for functional insulation		N/A
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnection of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	Not intermittent or short-time operation equipment	N/A
B.4.8	Compliance during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	P
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard..... :	See Clause F.5	—

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Clause	Requirement + Test	Result - Remark	Verdict
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type..... :		—
	Audio output power (W)..... :		—
	Audio output voltage (V)..... :		—
	Rated load impedance (Ω) :		—
	Requirements for temperature measurement	(See Table B.1.5)	N/A
E.3	Audio amplifier abnormal operating conditions	(See Table B.3, B.4)	N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language :	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Located on the external enclosure surface	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification :		P
F.3.2.2	Model identification :	See copy of marking plate	P
F.3.3	Equipment rating markings	See copy of marking plate	P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of the supply voltage..... :	See copy of marking plate	P
F.3.3.4	Rated voltage..... :	See copy of marking plate	P
F.3.3.5	Rated frequency..... :	DC	N/A
F.3.3.6	Rated current or rated power..... :	See copy of marking plate	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings :		N/A
F.3.5.2	Switch position identification marking..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings :		N/A
	Instructional safeguards for neutral fuse..... :		N/A
F.3.5.4	Replacement battery identification marking..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment	Class III Equipment	N/A
F.3.6.1.1	Protective earthing conductor terminal.....:		N/A
F.3.6.1.2	Protective bonding conductor terminals		N/A
F.3.6.2	Equipment class marking..... :		N/A
F.3.6.3	Functional earthing terminal marking..... :		N/A
F.3.7	Equipment IP rating marking..... :	IPX0	P
F.3.8	External power supply output marking..... :		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		P
	c) Instructions for installation and interconnection		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		P
	i) Graphic symbols used on equipment		N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		N/A
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :	(See appended table B.4)	N/A
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration..... :		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound components		N/A
G.5.1	Wire insulation in wound components		N/A
G.5.1.2	Protection against mechanical stress		N/A
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3	Transformers		N/A
G.5.3.1	Compliance method..... :		N/A
	Position..... :		N/A
	Method of protection..... :		N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings..... :		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding temperatures		N/A
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter..... :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature :		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Operating voltage		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type.....		—
G.7.2	Cross sectional area (mm ² or AWG).....		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N).....		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, <i>D</i> (mm).....		—
	Radius of curvature after test (mm).....		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A).....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics		N/A
	Type test voltage $V_{ini,a}$		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		P
G.13.1	General requirements	(See appended table 4.1.2)	P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	(See Clause G.13)	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
J.1	General		N/A
	Winding wire insulation..... :		—
	Solid round winding wire, diameter (mm)..... :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
J.2/J.3	Tests and Manufacturing	(See separate test report)	—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard..... :		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance..... :		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2..... :	(See appended table 5.4.9)	N/A
K.7.2	Overload test, Current (A)..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard..... :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		P
M.1	General requirements		P
M.2	Safety of batteries and their cells		P

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Clause	Requirement + Test	Result - Remark	Verdict
M.2.1	Batteries and their cells comply with relevant IEC standards..... :		P
M.3	Protection circuits for batteries provided within the equipment		P
M.3.1	Requirements		P
M.3.2	Test method		P
	Overcharging of a rechargeable battery		P
	Excessive discharging		P
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance	(See appended table M.3)	P
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		P
M.4.1	General		P
M.4.2	Charging safeguards		P
M.4.2.1	Requirements		P
M.4.2.2	Compliance..... :	(See appended table M.4.2)	P
M.4.3	Fire enclosure..... :		P
M.4.4	Drop test of equipment containing a secondary lithium battery		P
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		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
	Calculated hydrogen generation rate..... :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)..... :		N/A
M.7.3	Ventilation tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%).....:		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate.....:		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%).....:		N/A
M.7.4	Marking.....:		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (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		N/A
	Instructional safeguard.....:		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used.....:		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		N/A
	Value of X (mm).....:	Considered	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm)		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C)..... :		—
	Duration (weeks)..... :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance..... :	(See appended table Q.1)	P
	Current rating of overcurrent protective device (A) :		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) :		N/A
	Current limiting method..... :		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test..... :		—
R.3	Test method		N/A
	Cord/cable used for test..... :		—
R.4	Compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
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
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm).....:		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	N/A
T.3	Steady force test, 30 N	(See appended table T.3)	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N	(See appended table T.5)	N/A
T.6	Enclosure impact test	(See appended table T.6)	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P

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Clause	Requirement + Test	Result - Remark	Verdict
T.8	Stress relief test.....:	(See appended table T.8)	P
T.9	Glass Impact Test.....:	(See appended table T.9)	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		P
V.1.6	Terminals tested with rigid test wire		P
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance.....:	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by.....:		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure.....:		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods..... :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3..... :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test..... :	(See Table T.6)	N/A

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

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
12Vdc	All circuits	Normal	12.0	--	SS	--	ES1 (declared)
		Abnormal	--	--	SS	--	
		Single fault – SC/OC	--	--	SS	--	
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

5.4.1.8	TABLE: Working voltage measurement				N/A
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
Supplementary information:					

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics				N/A
Method..... :			ISO 306 / B50		—
Object/ Part No./Material	Manufacturer/trademark		Thickness (mm)	T softening (°C)	
Supplementary information:					

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				N/A
Allowed impression diameter (mm).....:			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:					

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

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Supplementary information:								
1) Only for frequency above 30 kHz								
2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								

5.4.4.2	TABLE: Minimum distance through insulation				N/A
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Supplementary information:					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_p	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Supplementary information:							

5.4.9	TABLE: Electric strength tests				N/A
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No		
Supplementary information:					

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

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (V _{pk})	ES Class	
Supplementary information:						
X-capacitors installed for testing:						
[] bleeding resistor rating:						
[] ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						

5.6.6	TABLE: Resistance of protective conductors and terminations				N/A
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					N/A
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part			N/A
Supply voltage (V).....:				—
Phase(s) :	[] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System :	[] TN [] TT [] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Supplementary Information:				

5.8	TABLE: Backfeed safeguard in battery backed up supplies				N/A
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IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
All circuits	Normal	--	--	--	--	PS2 (declared)
All circuits	Battery pack	4.25	12.36	52.53	3	PS2
All circuits	DC output port	5.11	4.23	21.62	3	PS2
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

6.2.3.1	TABLE: Determination of Arcing PIS				N/A
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
Supplementary information:					

6.2.3.2	TABLE: Determination of resistive PIS			P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No	
Input circuit/components	--	>15	Yes	
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
Supplementary information:					

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

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9.6	TABLE: Temperature measurements for wireless power transmitters							P
Supply voltage (V).....:				DC12V				—
Max. transmit power of transmitter (W).....:				15W				—
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Steel disc	27.8	25.0	55.4	25.0	27.3	25.0	26.4	25.0
Aluminium ring	25.9	25.0	57.0	25.0	28.8	25.0	26.1	25.0
Aluminium foil	26.3	25.0	56.1	25.0	26.9	25.0	26.9	25.0
Supplementary information:								

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements							P
Supply voltage (V).....:				5Vdc charge	Battery discharge	--	--	—
Ambient temperature during test T_{amb} (°C).....:				25.0	25.0	--	--	—
Maximum measured temperature T of part/at:				T (°C)				Allowed T_{max} (°C)
PCB near U1				54.1	55.4	--	--	130
PCB near U2				57.7	56.9	--	--	130
L1 body				59.1	54.8	--	--	130
PCB near D1				54.8	62.9	--	--	130
Battery surface				58	53.5	--	--	Ref.
Plastic enclosure (inside)				50.5	47.4	--	--	Ref.
Plastic enclosure (outside)				36.9	33.8	--	--	77
Ambient				25.0	25.0	--	--	Ref.
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class	
Supplementary information:								

B.2.5	TABLE: Input test	P
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IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
5.0	DC	2.81	3.0	14.05	--	--	--	Normal work
9.0	DC	1.88	2.0	16.92	--	--	--	Normal work
12.0	DC	1.36	1.5	16.32	--	--	--	Normal work
Supplementary information: Equipment may be have rated current or rated power or both. Both should be measured								

B.3, B.4		TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T _{amb} (°C)..... :					25.0°C		—
Power source for EUT: Manufacturer, model/type, outputrating... :					--		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
U1 pin 2 to 5	S-C	4.2VDC	10 min	--	--	Unit shutdown immediately, recoverable when the fault removed, no damage, no hazard	
U1 pin 1 to 3	S-C	4.2VDC	10 min	--	--	Unit shutdown immediately, recoverable when the fault removed, no damage, no hazard	
D7	S-C	4.2VDC	10 min	--	--	Unit shutdown immediately, recoverable when the fault removed, no damage, no hazard	
DC output	S-C	4.2VDC	10 min	--	--	Unit shutdown immediately, recoverable when the fault removed,no damage, no hazard	
Battery	S-C	4.2VDC	10 min	--	--	Unit shutdown immediately, recoverable when the fault removed,no damage, no hazard	
Supplementary information:							

M.3	TABLE: Protection circuits for batteries provided within the equipment		P
Is it possible to install the battery in a reverse polarity position?.....:		No	—
Equipment Specification	Charging		
	Voltage (V)	Current (A)	
	5V	3.0	

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

Manufacturer/type	Battery specification						
	Non-rechargeable batteries		Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
Voltage (V)			Current (A)				
Guangdong Cvasun New Energy Technology Co., Ltd /955565	--	--	Max. 4.2	5A	5A	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C).....:				--			
Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
Battery	Normal	Charge mode	--	--	Max. 2.82	Max. 4.18	No damage, No hazards
Battery	B- P- SC	Charge mode	--	--	Max. 2.86	Max. 4.20	No damage, No hazards
Battery	Normal	Discharge mode	--	--	Max. 2.25	--	No damage, No hazards
Battery	B- P- SC	Discharge mode	--	--	Max. 4.68	--	No damage, No hazards
Supplementary information:							
Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery					P
Maximum specified charging voltage (V).....					Max. 4.2V	—
Maximum specified charging current (A)					Max. 5A	—
Highest specified charging temperature (°C)					45	
Lowest specified charging temperature (°C)					0	
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		
Guangdong Cvasun New Energy Technology Co., Ltd /955565	Normal operation	4.189	0	Charging case battery body:45.0°C (under 45.0 ° C ambient)	The charging voltage not exceed 4.20V and the charging current not exceed 5000mA	
Guangdong Cvasun New Energy Technology Co., Ltd	Abnormal operation	4.186	0	Charging case battery body:45.1°C	The charging voltage not exceed 4.20V and the charging current not exceed	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
/955565				(under 45.0°C ambient)	5000mA
Guangdong Cvasun New Energy Technology Co., Ltd /955565	Single fault (U1 pin 2-7 SC)	4.187	0	Charging case battery body: 45.0°C (under 45°C ambient)	Unit shut down immediately, no damage, no hazards.
Guangdong Cvasun New Energy Technology Co., Ltd /955565	Normal operation	4.189	1.56	Charging case battery body: 6.3°C (under 0°C ambient)	The charging voltage not exceed 4.20V and the charging current not exceed 5000mA
Guangdong Cvasun New Energy Technology Co., Ltd /955565	Abnormal operation	4.186	1.56	Charging case battery body: 6.1°C (under 0°C ambient)	The charging voltage not exceed 4.20V and the charging current not exceed 5000mA
Guangdong Cvasun New Energy Technology Co., Ltd /955565	Single fault (U1 pin 2-7 SC)	4.187	0	Charging case battery body: 0°C (under 0°C ambient)	Unit shut down immediately, no damage, no hazards.
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
USB output port	normal	5.11	5s	4.23	8	21.62	100
USB output port	U1(1-4) SC	0	5s	0	8	0	100
USB output port	U1(1-7) SC	0	5s	0	8	0	100
USB output port	U2(1-5) SC	0	5s	0	8	0	100
Supplementary Information:							

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

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Enclosure top, side, bottom (T.4)	Plastic	1.5mm	—	100	5	No damage, No hazards
Supplementary information:						

T.6, T.9	TABLE: Impact test				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Supplementary information:					

T.7	TABLE: Drop test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure top, side, bottom	Plastic	1.5mm	1000	No damage, No hazards	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure top, side, bottom	Plastic	1.5mm	70	7	No damage, No hazards	
Supplementary information:						

X	TABLE: Alternative method for determining minimum clearances distances			N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)	
Supplementary information:				

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

4.1.2	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Plastic enclosure	SABIC INNOVATIVE PLASTICS BV	C2950	V-0, 75°C	UL94	UL	
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL796	UL	
Battery pack	Guangdong Cvasun New Energy Technology Co., Ltd	955565	3.7V, 5000mAh, 18.5Wh	IEC 62133-2	IEC test report	
Supplementary information:						
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.						

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT		
IEC 62368-1		
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES		
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)		
Differences according to.....: EN IEC 62368-1:2020+A11:2020		
Attachment Form No.....: EU_GD_IEC62368_1E		
Attachment Originator.....: UL(Demko)		
Master Attachment.....: 2021-02-04		
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.		
	CENELEC COMMON MODIFICATIONS (EN)	P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".	P
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords	P
1	Modification to Clause 3 .	N/A
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>	N/A

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A
3.3.19.3	sound exposure, E A-weighted sound pressure (p) squared and integrated over a stated period of time, T Note 1 to entry: The SI unit is $\text{Pa}^2 \text{ s}$. $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	sound exposure level, SEL logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans. Note 1 to entry: SEL is measured as A-weighted levels in dB. $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.		N/A
3.3.19.5	digital signal level relative to full scale, dBFS levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.		N/A
2	Modification to Clause 10		N/A
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.1.1	Introduction Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that: – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players:		N/A

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	• long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. – a player while connected to an external amplifier that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
10.6.2.1	General This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $LA_{eq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term $LA_{eq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In		N/A

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.		
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general		N/A

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed "programme simulation noise" as described in EN 50332-1.		
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		N/A
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	“programme simulation noise” described in EN 50332-1.		
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard . Between RS2 and an ordinary person , the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows:  – element 1a: the symbol  , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A skilled person shall not be unintentionally exposed to RS3.		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		N/A
10.6.5.2	Dose-based warning and requirements When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.		N/A
10.6.5.3	Exposure-based requirements With only dose-based requirements, cause and effect could be far separated in time, defying the		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input With 94 dB LAeq acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the LAeq,T acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices		N/A

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Clause	Requirement + Test				Result - Remark		Verdict																																																												
	In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.																																																																		
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>						N/A																																																												
3	Modification to the whole document						P																																																												
	Delete all the “country” notes in the reference document according to the following list: <table><tr><td>0.2.1</td><td>Note 1 and 2</td><td>1</td><td>Note 4 and 5</td><td>3.3.8.1</td><td>Note 2</td></tr><tr><td>3.3.8.3</td><td>Note 1</td><td>4.1.15</td><td>Note</td><td>4.7.3</td><td>Note 1 and 2</td></tr><tr><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 12</td><td>Note c</td><td>5.4.2.3.2.4</td><td>Note 1 and 3</td></tr><tr><td>5.4.2.3.2.4 Table 13</td><td>Note 2</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.4.10.2.1</td><td>Note</td><td>5.4.10.2.2</td><td>Note</td><td>5.4.10.2.3</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3 and 4</td></tr><tr><td>5.6.8</td><td>Note 2</td><td>5.7.6</td><td>Note</td><td>5.7.7.1</td><td>Note 1 and Note 2</td></tr><tr><td>8.5.4.2.3</td><td>Note</td><td>10.2.1 Table 39</td><td>Note 3 and 4 and 5</td><td>10.5.3</td><td>Note 2</td></tr><tr><td>10.6.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td><td>Y.4.1</td><td>Note</td></tr><tr><td>Y.4.5</td><td>Note</td><td></td><td></td><td></td><td></td></tr></table>						0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2	10.6.1	Note 3	F.3.3.6	Note 3	Y.4.1	Note	Y.4.5	Note					P
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Y.4.5	Note																																																																		
4	Modification to Clause 1						P																																																												
1	Add the following note: <i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU</i>						P																																																												

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Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		
4.Z1	Add the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
6	Modification to 5.4.2.3.2.4		
5.4.2.3.2.4	Add the following to the end of this subclause: The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.		P
7	Modification to 10.2.1		
10.2.1	Add the following to ^{c)} and ^{d)} in table 39: For additional requirements, see 10.5.1.		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		N/A
10.5.1	Add the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus. Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 μSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
9	Modification to G.7.1		N/A
G.7.1	Add the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict

10	Modification to Bibliography		P
	Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		P
11	ADDITION OF ANNEXES		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
4.1.15	Denmark, Finland, Norway and Sweden To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	Denmark After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	Norway After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden To the end of the subclause the following is added: Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A, the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
5.7.7.1	Norway and Sweden To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkøplet utstyr – og er tilkøplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
	Translation to Swedish: "Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet."		
8.5.4.2.3	United Kingdom Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Denmark To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a <i>Justification:</i> Heavy Current Regulations, Section 6c		N/A
G.4.2	United Kingdom To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

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European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	Ireland To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

Attachment No.1

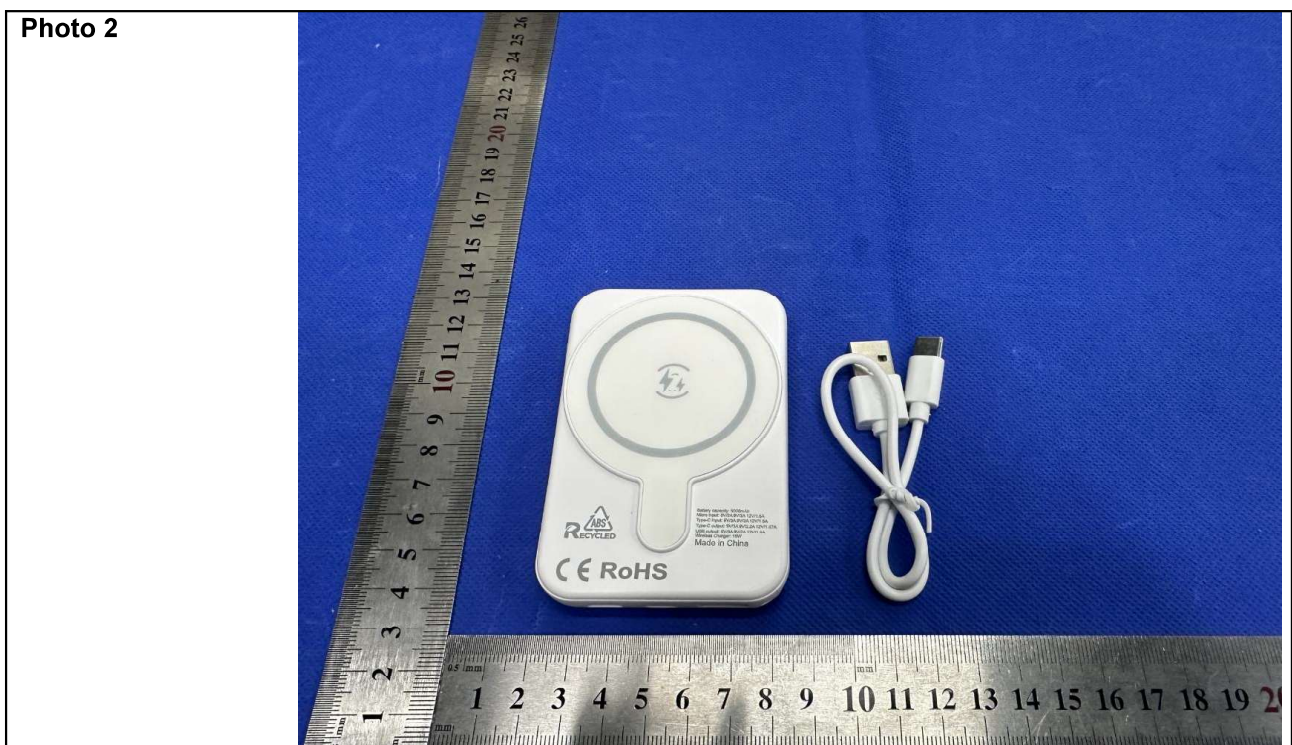
European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de		N/A

Attachment No.1

European group differences and national differences of EN IEC 62368-1:2020+A11:2020			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A					
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	N/A
	Type of flexible cord	Code designations						
		IEC	CENELEC					
	PVC insulated cords							
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y					
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F					
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F					
	Rubber insulated cords							
	Braided cord	60245 IEC 51	H03RT-F					
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F					
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F					
	Heavy polychloroprene sheathed flexible cord	60245 IEC 86	H07RN-F					
	Cords having high flexibility							
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H					
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H					
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H					
	Cords insulated and sheathed with halogen-free thermoplastic compounds							
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F						
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F						

Attachment No.2 Product photos



Attachment No.2 Product photos

Photo 3



Photo 4



Attachment No.2 Product photos

Photo 5

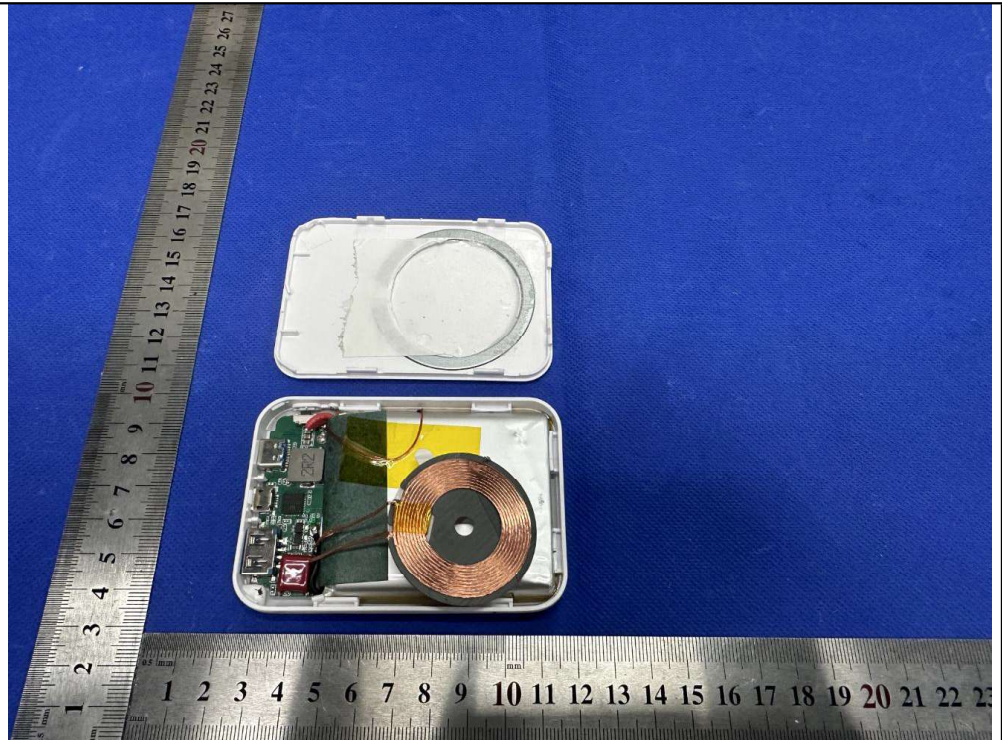
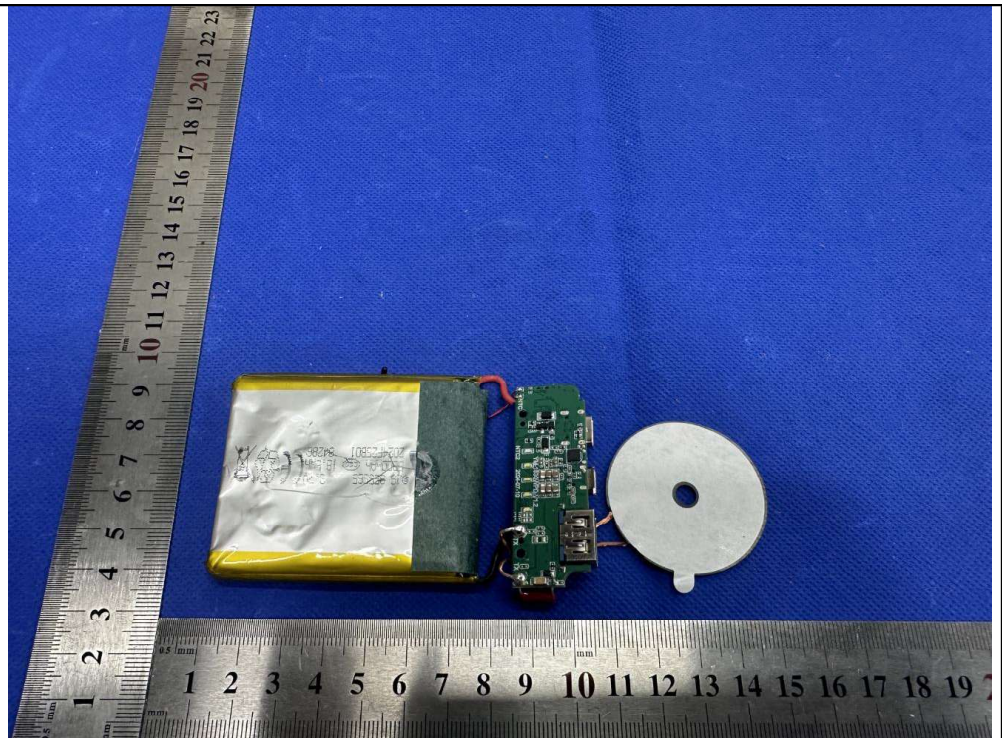
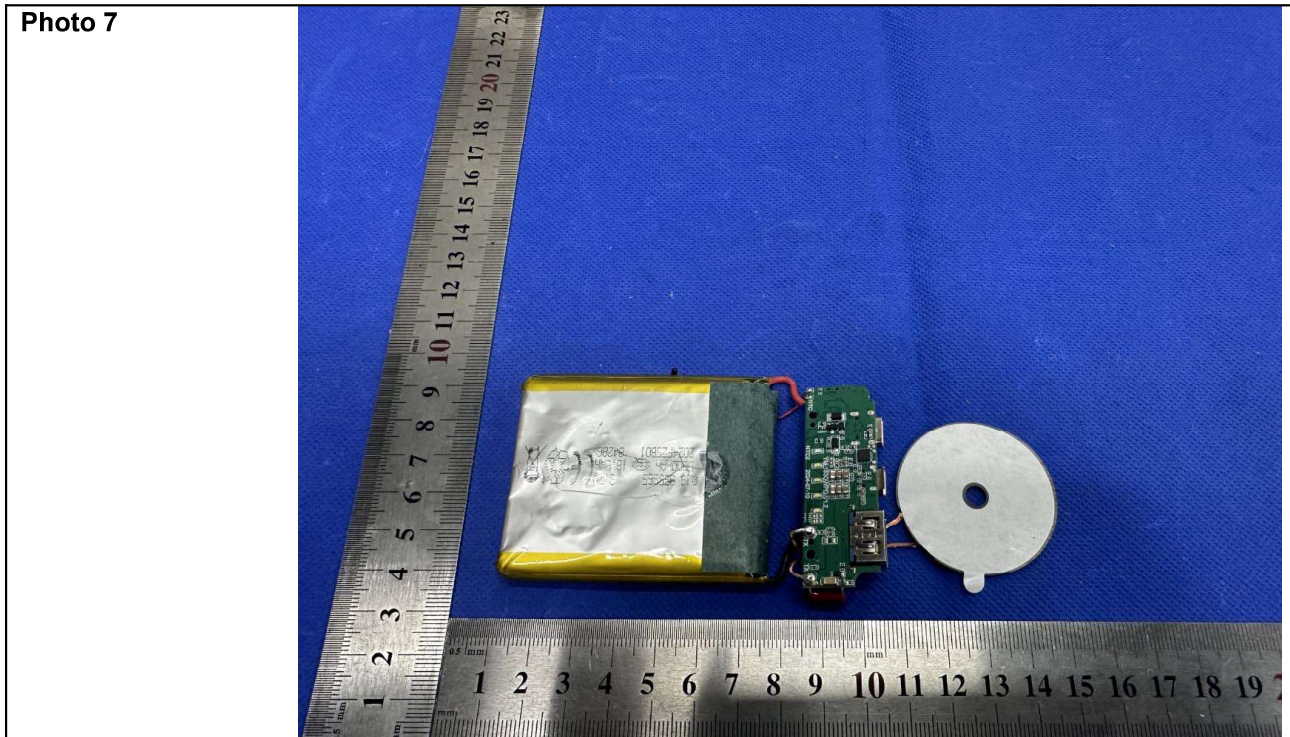


Photo 6



Attachment No.2 Product photos



Attachment No.2 Product photos



*****The End of Report*****

CERTIFICATE of Conformity

EC Council Directive 2011/65/EU and 2015/863/EU

Certificate No.: SiCT2409141535C

Applicant : 012027

Manufacturer : 012027

Product : Power Bank

Trademark : N/A

Model : PBM01, 25411

**Test Standard : IEC 62321-3-1:2013, IEC 62321-5:2013,
IEC 62321-4:2013 + AMD1:2017,
IEC 62321-6:2015, IEC 62321-7-1:2015,
IEC 62321-7-2:2017, IEC 62321-8:2017**

The certificate of conformity is based on an evaluation of a sample of the above-mentioned product(s). The technical report is at the disposal of the applicant. This is to certify the tested sample that is in conformity with all provisions of above RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU. It is only valid in connection with the report No. SiCT2409141535R.

Any use of the SiCT name or its marks for the sale of the tested product must first be approved in writing by SiCT. The test results referenced in this Verification are relevant only to the sample tested.

RoHS

Authorized Signer:

Andy Wang
Andy Wang/Manager
Date: Sep. 23, 2024



Shenzhen SiCT Technology Co., Ltd.

202, Building 3, No.111 Huanguan Middle Road, Songyuanxia
Community, Guanhu Street, Longhua District, Shenzhen, Guangdong, China
E-mail: info@sict-lab.com.cn Http:// www.sict-lab.com.cn

TEST REPORT

Applicant: 0120 27
Address: XXXXX
Manufacturer: 0120 27
Address: XXXXX

The following sample(s) was /were submitted and identified on behalf of the clients as :

Sample Name: Power Bank
Trademark: N/A
Model Number: PBM01, 25411
Sample Received Date: Sep. 13, 2024
Testing Period: Sep. 13, 2024 - Sep. 23, 2024
Report No.: SiCT2409141535R

Test Requested: 1. As specified by client, to screen Lead(Pb), Cadmium(Cd), Mercury(Hg), Chromium(Cr) and Bromine(Br) in the submitted sample(s) by XRF.
2. As specified by client, when screening results exceed the XRF screening limit in IEC62321:2013 Edition 1.0, further use of wet chemical methods are required to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutylphthalate (DBP), and Diisobutyl phthalate (DIBP) in the submitted sample(s).

Test Method: Please refer to the following page(s).

Test Result(s): Please refer to the following page(s).

Test Conclusion: The test results comply with the limits of RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU.

Compiled by:

Daisy Wei

Daisy Wei

Reviewed by:

Sky Wang

Sky Wang

Approved by:

Andy Wang

Andy Wang/Manager



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen SiCT Technology Co., Ltd.

Test Method:

when screening results exceed the XRF screening limit in IEC 62321-3-1:2013, further use of chemical methods are required to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs) and Polybrominated Diphenyl Ethers(PBDEs)

1. XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013

Element	Limit of IEC 62321-3-1:2013 (mg/kg)		
	Polymers	Metals	Composite material
Pb	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$ $< (1500+3\sigma) \leq OL$
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$ $< (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	/	$BL \leq (250-3\sigma) < X$

Note: BL=Under the XRF screening limit OL=Over the XRF screening limit
X=The symbol "X" marks the region where further investigation is necessary.
 3σ =The reproducibility of analytical instruments LOD= Detection limit

2. Chemical Test

Test item	Test method	Test instrument	MDL	Limit
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES	10 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES	10 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ICP-OES	10 mg/kg	1000 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321-7-1:2015 Ed.1.0	UV-Vis	0.10 $\mu\text{g}/\text{cm}^2$	1000 mg/kg
	IEC 62321-7-2:2017 Ed.1.0		10 mg/kg	
Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015 Ed.1.0	GC-MS	100 mg/kg	1000 mg/kg
Polybrominated, Diphenyl Ethers(PBDEs)	IEC 62321-6:2015 Ed.1.0	GC-MS	100 mg/kg	1000 mg/kg
Bis-(2-ethylhexyl) Phthalate (DEHP)	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg
Benzyl butyl Phthalate (BBP)	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg
Dibutyl Phthalate (DBP)	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg
Diisobutyl Phthalate(DIBP)	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg

Test Results:

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
1.	White plastic shell	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
2.	Wireless filling plastic panel	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
3.	Double-sided tape	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
4.	Magnet	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
5.	Metal screws	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
6.	Yellow tape	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
7.	Grey insulating paper	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
8.	Fixing glue	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
9.	Red line	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
10.	Black line	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
11.	Grey round SLATE	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
12.	PCB	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	IN	N.D.	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
13.	Chip	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
14.	Capacitor	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
15.	Resistor	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
16.	Indicator light	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
17.	Plastic switch	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
18.	Switch metal parts	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
19.	USB metal port	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
20.	USB plastic card slot	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	

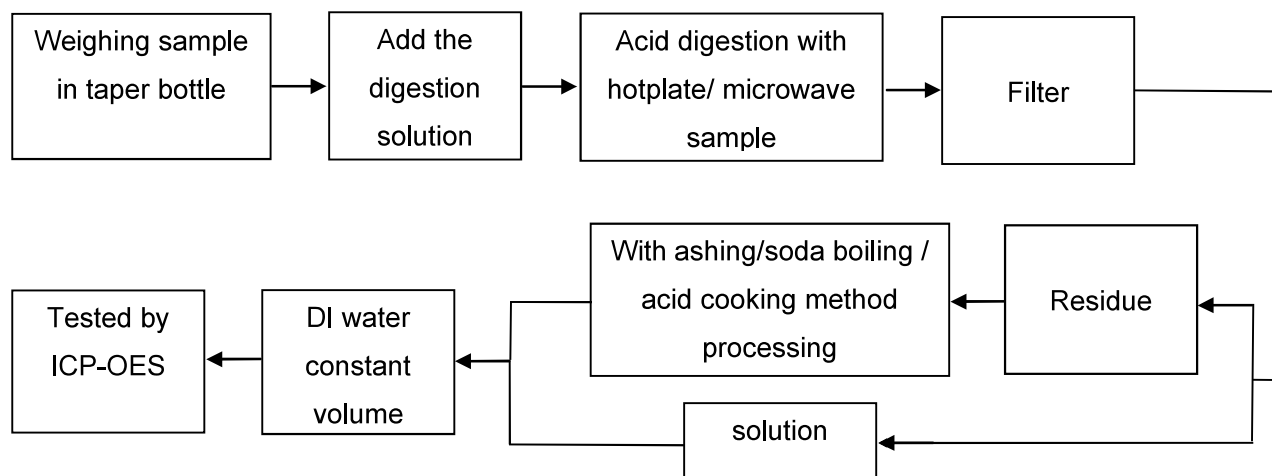
Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
21.	MICRO metal port	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
22.	MICRO plastic card slot	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	
23.	Type-C metal port	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
24.	Type-C plastic card slot	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
		DBP	/	N.D.	
		DEHP	/	N.D.	
		BBP	/	N.D.	
		DIBP	/	N.D.	

Sample No.	Sample Description	Tested Items	XRF Screening Test	Chemical Test Unit (mg/kg)	Conclusion
25.	Metal PIN	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	
26.	Metal solder	Pb	BL	/	Pass
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
		DBP	/	/	
		DEHP	/	/	
		BBP	/	/	
		DIBP	/	/	

- Note:
- 1.N.D. = Not Detected (<MDL) MDL = Method Detection Limit
mg/kg = ppm =0.0001% /=Not Regulated or Not Applicable
 2. BL = Under the XRF screening limit
IN = Further chemical test will be conducted when the screening result inconclusive
OL = Further chemical test will be conducted while the result is above the screening limit.
 3. For metal samples, the sample is negative for Cr(VI), if the Cr(VI) concentration is less than 0.10 µg/cm², the coating is considered a non- Cr(VI) based coating;
The sample is positive for Cr(VI), if the Cr(VI) concentration is greater than 0.13 µg/cm², The sample coating is considered to contain Cr(VI);
The result is considered to be inconclusive, the Cr(VI) concentration is between the 0.10 µg/cm² and 0.13 µg/cm², Unavoidable coating variations may influence the determination. Because the storage condition and production date of the sample are not known, the test results of the sample of hexavalent chromium can only represent the state of hexavalent chromium in the samples tested.
- Remark:
1. The screening results are only used for reference.
 2. When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.
 3. According to the client's statement , the material of the sample(s) comply with RoHS directive 2011/65/EU Annex III Exemption, Corresponding exemption clause:
#1 6(c) Lead is exempted as copper alloy containing up to 4% lead by weight .
#2 7(a) Lead is exempted as Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

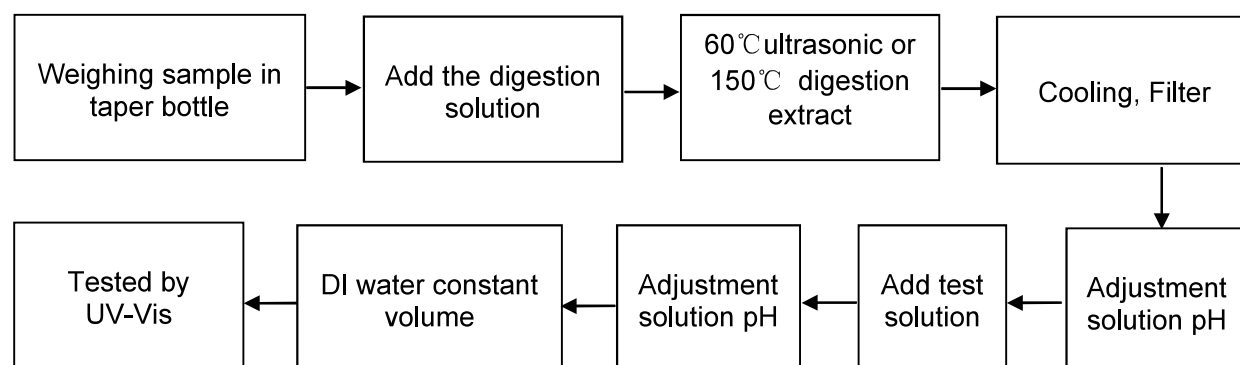
Test Flow:

1. Lead(Pb), Cadmium(Cd) , Mercury (Hg)

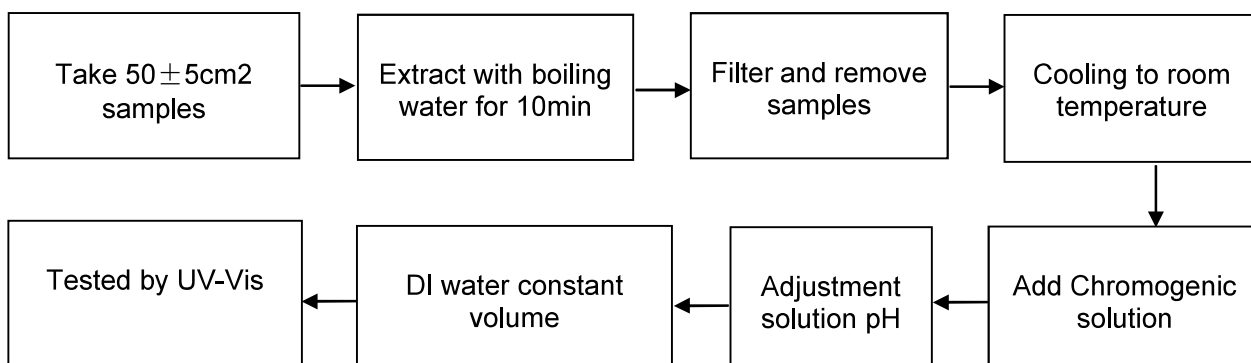


2. Hexavalent Chromium(Cr(VI))

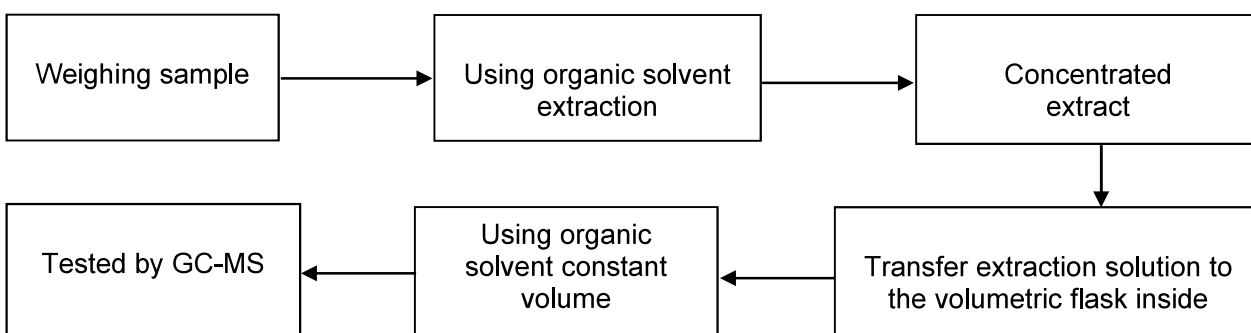
2.1 Non- metal sample(s)



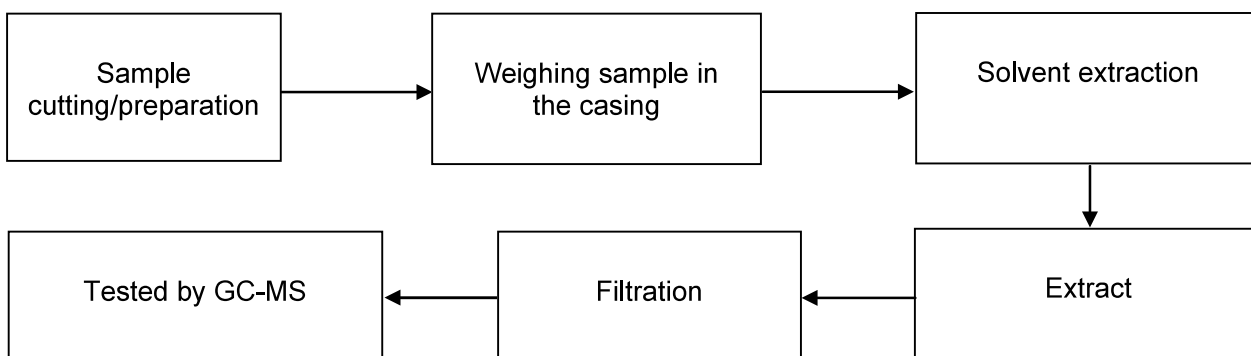
2.2 Metal sample(s)



3. PBBs/ PBDEs

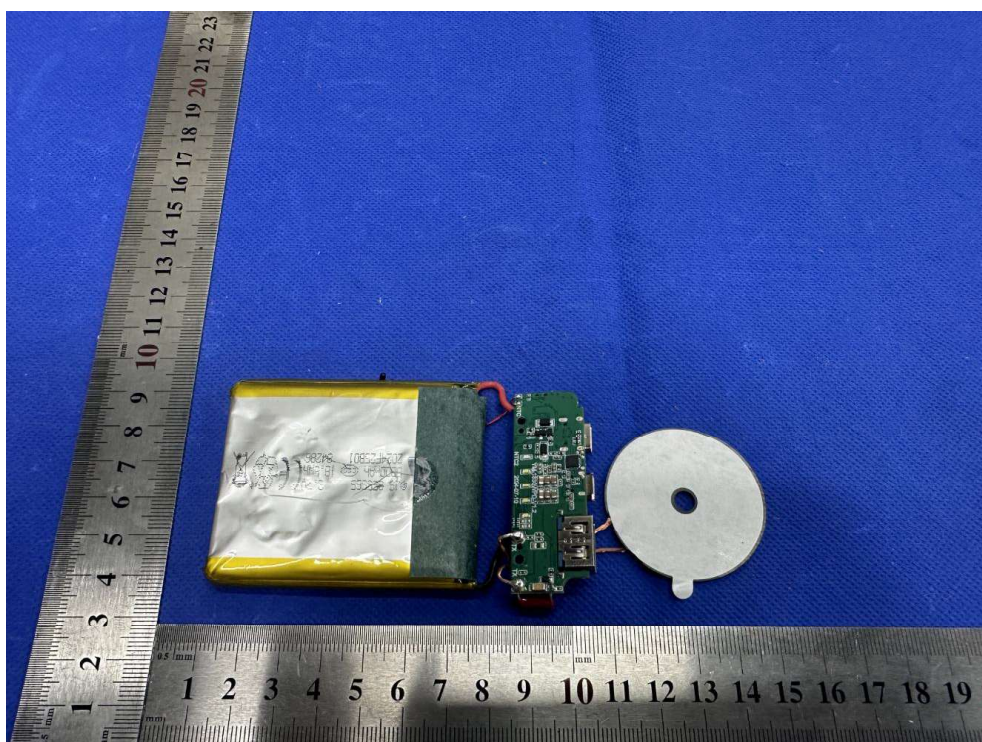
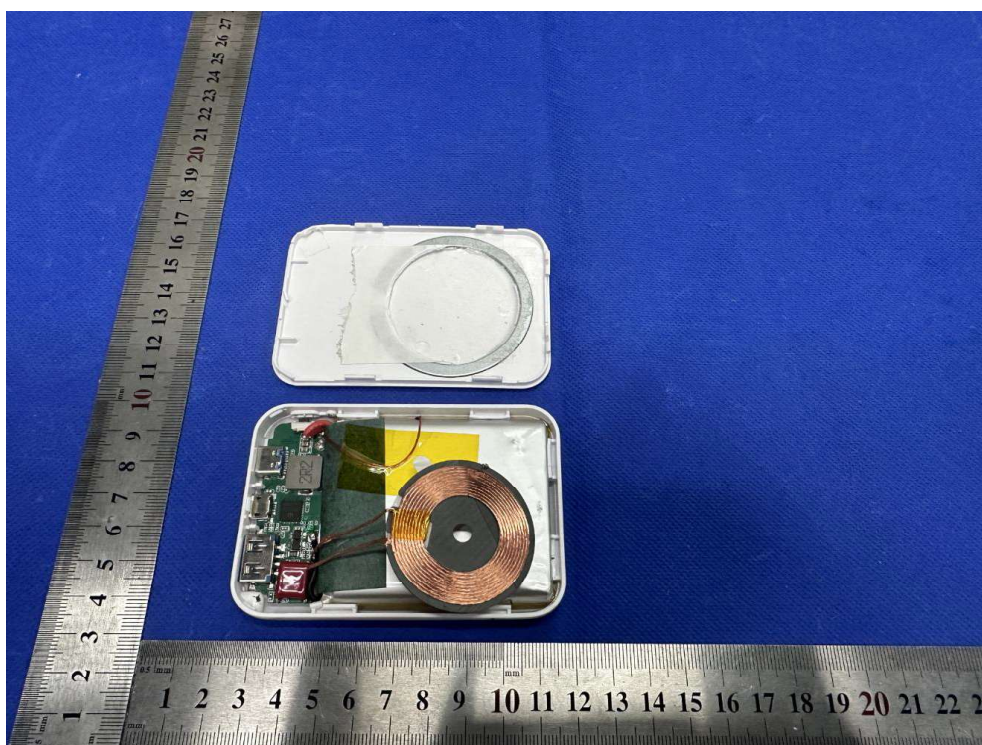


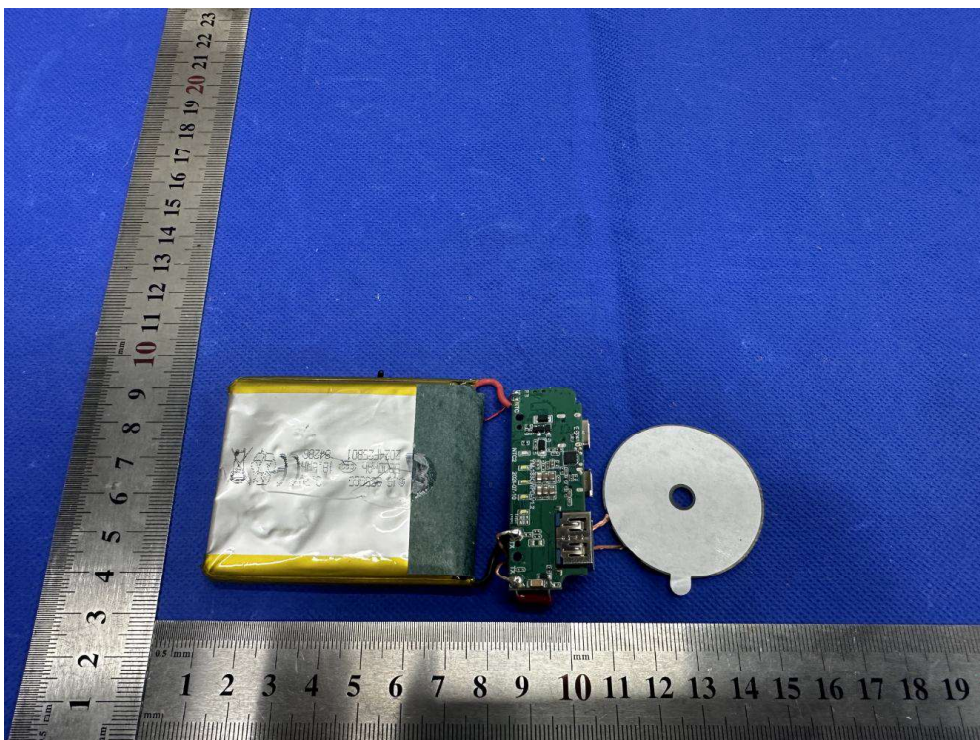
3. Phthalates



SAMPLE PHOTO(S):









***** END OF REPORT *****

TEST REPORT

Applicant: 012027
Address: XXXXX
Manufacturer: 012027
Address: XXXXX

The following sample(s) was /were submitted and identified on behalf of the clients as :

Sample Name: Power Bank
Trademark: N/A
Model Number: PBM01, 25411
Sample Received Date: Sep. 13, 2024
Testing Period: Sep. 13, 2024 - Sep. 23, 2024
Report No.: SiCT2409141536R

Test Requested: As specified by client, based on the list published by European chemicals agency (ECHA) for public consultation regarding regulation (EC) No 1907/2006 concerning the REACH, to determine the Two hundred and forty-one (241) Substances of Very High Concern (SVHC) in the submitted sample.

Test Method: Please refer to the following page(s).

Test Result(s): Please refer to the following page(s).

Test Conclusion: Based upon the performed tests by submitted samples, the test results comply with the limits of REACH regulation (EC) No 1907/2006.

Compiled by:

Daisy Wei

Daisy Wei

Reviewed by:

Sky Wang

Sky Wang

Approved by:

Andy Wang

Andy Wang/Manager



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen SiCT Technology Co., Ltd.

Test method and Test equipment:

No.	Test Item	CAS No.	MDL (%)	Result (%) A	Result (%) B
1	Anthracene	120-12-7	0.005	N.D.	--
2	4,4'-Diaminodiphenylmethane	101-77-9	0.005	N.D.	--
3	Dibutyl phthalate (DBP)	84-74-2	0.005	N.D.	--
4	5-tert-butyl-2,4,6-trinitro-m-Xylene(musk xylene)	81-15-2	0.005	N.D.	--
5	Diisooctyl Phthalate (DEHP)	117-81-7	0.005	N.D.	--
6	Hexabromocyclododecane (HBCDD)	25637-99-4 3194-55-6 (134237-51-7, 34237-50-6, 134237-52-8)	0.005	N.D.	--
7	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	0.01	N.D.	--
8	Benzyl butyl phthalate (BBP)	85-68-7	0.005	N.D.	--
9	Bis(tributyltin)oxide	56-35-9	0.005	N.D.	--
10	Cobalt dichloride	7646-79-9	0.005	N.D.	N.D.
11	Diarsenic pentaoxide	1303-28-2	0.005	N.D.	N.D.
12	Diarsenic trioxide	1327-53-3	0.005	N.D.	N.D.
13	Triethyl arsenate	15606-95-8	0.005	N.D.	N.D.
14	Lead hydrogen arsenate	7784-40-9	0.005	N.D.	N.D.
15	Sodium dichromate, dihydrate	10588-01-9	0.005	N.D.	N.D.

16	Anthracene oil	90640-80-5	0.005	N.D.	--
17	Anthracene oil, anthracene paste, distn. Lights	91995-17-4	0.005	N.D.	--
18	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	0.005	N.D.	--
19	Anthracene oil, anthracene-low	90640-82-7	0.005	N.D.	--
20	Anthracene oil, anthracene paste	90640-81-6	0.050	N.D.	--
21	Diisobutyl phthalate	84-69-5	0.005	N.D.	--
22	2,4-Dinitrotoluene	121-14-2	0.005	N.D.	--
23	coal tar pitch, high temperature	65996-93-2	0.050	N.D.	--
24	tris(2-chloroethyl)phosphate	115-96-8	0.005	N.D.	--
25	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	0.005	N.D.	N.D.
26	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)	12656-85-8	0.005	N.D.	N.D.
27	Lead chromate	7758-97-6	0.005	N.D.	N.D.
28	Acrylamide	79-06-1	0.005	N.D.	--
29	Trichloroethylene	79-01-6	0.005	N.D.	--
30	Boric acid	11113-50-1	0.005	N.D.	N.D.
31	Disodium tetraborate, anhydrou	12179-04-3	0.005	N.D.	N.D.
32	tetraboron disodium heptaoxide hydrate	12267-73-1	0.005	N.D.	N.D.
33	Sodium chromate	7775-11-3	0.005	N.D.	N.D.
34	Potassium chromate	7789-00-6	0.005	N.D.	N.D.

35	Ammonium dichromate	7789-09-5	0.005	N.D.	N.D.
36	Potassium dichromate	7778-50-9	0.005	N.D.	N.D.
37	Cobalt sulfate	10124-43-3	0.005	N.D.	N.D.
38	Cobalt dinitrat	10141-05-6	0.005	N.D.	N.D.
39	Cobalt carbonate	513-79-1	0.005	N.D.	N.D.
40	Cobalt diacetate	71-48-7	0.005	N.D.	N.D.
41	2-Methoxyethanol	109-86-4	0.005	N.D.	--
42	2-Ethoxyethanol	110-80-5	0.005	N.D.	--
43	Chromium trioxide	1333-82-0	0.005	N.D.	N.D.
44	Chromic acid	7738-94-5	0.005	N.D.	N.D.
	Dichromic acid	13530-68-2			
	Oligomers of chromic acid and dichromic acid	--			
45	2-ethoxyethyl acetate	111-15-9	0.005	N.D.	--
46	strontium chromate	7789-06-2	0.005	N.D.	N.D.
47	1,2-Benzenedicarboxylic acid, di-(C7-11)- branched and linear alkylesters	68515-42-4	0.005	N.D.	--
48	Hydrazine	7803-57-8 302-01-2	0.005	N.D.	--
49	1-Methyl-2-pyrrolidinone	872-50-4	0.005	N.D.	--
50	1,2,3-trichloropropane	96-18-4	0.005	N.D.	--
51	1,2-Benzenedicarboxylic acid, di-(C7-11)-branched and linear alkylesters, C7-rich	71888-89-6	0.005	N.D.	--

52	Zirconia Aluminosilicate Refractory Ceramic Fibres	--	0.005	N.D.	N.D.
53	Calcium arsenate	7778-44-1	0.005	N.D.	N.D.
54	Bis(2-methoxyethyl) ether	111-96-6	0.005	N.D.	--
55	Aluminosilicate Refractory Ceramic Fibres	--	0.005	N.D.	N.D.
56	Chromate, hydroxyoctaoxodizincatedi-, potassium	11103-86-9	0.005	N.D.	N.D.
57	Lead dipicrate	6477-64-1	0.005	N.D.	N.D.
58	N,N-dimethylacetamide	127-19-5	0.005	N.D.	--
59	Arsenic acid	7778-39-4	0.005	N.D.	N.D.
60	2-Methoxyaniline; o-Anisidine	90-04-0	0.005	N.D.	--
61	Trilead diarsenate	3687-31-8	0.005	N.D.	N.D.
62	1,2-dichloroethane	107-06-2	0.005	N.D.	--
63	Pentazinc chromate octahydroxide	49663-84-5	0.005	N.D.	N.D.
64	4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	0.005	N.D.	--
65	Formaldehyde, oligomeric reaction products aniline	25214-70-4	0.005	N.D.	--
66	Bis(2-methoxyethyl) phthalate	117-82-8	0.005	N.D.	--
67	Lead diazide, Lead azide	13424-46-9	0.005	N.D.	N.D.
68	Lead styphnate	15245-44-0	0.005	N.D.	N.D.
69	2,2'-dichloro-4,4'-methylenedianiline	101-14-4	0.005	N.D.	--

70	Phenolphthalein	77-09-8	0.005	N.D.	--
71	Dichromium tris(chromate)	24613-89-6	0.005	N.D.	N.D.
72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	0.005	N.D.	--
73	1,2-dimethoxyethane;ethylene glycol dimethyl ether (EGDME)	110-71-4	0.005	N.D.	--
74	Diboron trioxide	1303-86-2	0.005	N.D.	N.D.
75	Formamide	75-12-7	0.005	N.D.	--
76	Lead(II)bis(methanesulfonate)	17570-76-2	0.005	N.D.	N.D.
77	TGIC(1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	2451-62-9	0.005	N.D.	--
78	β -TGIC(1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	0.005	N.D.	--
79	4,4'-bis(dimethylamino)benzophenone(Michler's ketone)	90-94-8	0.005	N.D.	--
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	0.005	N.D.	--
81	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3)	548-62-9	0.005	N.D.	--
82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylenecyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Blue 26)	2580-56-5	0.005	N.D.	--
83	α,α -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4)	6786-83-0	0.005	N.D.	--
84	4,4'-bis(dimethylamino)-4''-(methylenamino)trityl alcohol	561-41-1	0.005	N.D.	--
85	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	0.005	N.D.	--

86	4-methyl-m-phenylenediamine (2,4-toluene-diamine)	95-80-7	0.005	N.D.	--
87	N-methylacetamide	79-16-3	0.005	N.D.	--
88	Pentalead tetraoxide sulphate	12065-90-6	0.005	N.D.	N.D.
89	Biphenyl-4-ylamine	202-177-1	0.005	N.D.	--
90	Dinoseb	88-85-7	0.005	N.D.	--
91	Dioxobis(stearato)trilead	12578-12-0	0.005	N.D.	N.D.
92	Lead dinitrate	10099-74-8	0.005	N.D.	N.D.
93	Tetralead trioxide sulphate	12202-17-4	0.005	N.D.	N.D.
94	Lead oxide (lead monoxide)	1317-36-8	0.005	N.D.	N.D.
95	Lead titanium trioxide	12060-00-3	0.005	N.D.	N.D.
96	4,4'-methylenedi-o-toluidine	838-88-0	0.005	N.D.	--
97	Acetic acid, lead salt, basic	51404-69-4	0.005	N.D.	N.D.
98	Dimethyl sulphate	77-78-1	0.005	N.D.	--
99	Furan	110-00-9	0.005	N.D.	--
100	Pyrochlore, antimony lead yellow	8012-00-8	0.005	N.D.	--
101	Tetraethyllead	78-00-2	0.005	N.D.	N.D.
102	[Phthalato(2-)]dioxotrilead	69011-06-9	0.005	N.D.	N.D.
103	Diethyl sulphate	64-67-5	0.005	N.D.	--
104	Lead cyanamidate	20837-86-9	0.005	N.D.	N.D.

105	Silicic acid, barium salt, lead-doped	68784-75-8	0.005	N.D.	N.D.
106	Trilead dioxide phosphonate	12141-20-7	0.005	N.D.	N.D.
107	o-Toluidine; 2-Aminotoluene	95-53-4	0.005	N.D.	--
108	o-aminoazotoluene	97-56-3	0.005	N.D.	--
109	4-Aminoazobenzene; 4-Phenylazoaniline	60-09-03	0.005	N.D.	--
110	6-methoxy-m-toluidine (p-cresidine)	120-71-8	0.005	N.D.	--
111	Dibutyltin dichloride (DBT)	683-18-1	0.005	N.D.	--
112	Lead Titanium Zirconium Oxide	12626-81-2	0.005	N.D.	N.D.
113	Propylene oxide; 1,2-epoxypropane; methyloxirane	75-56-9	0.005	N.D.	--
114	1-bromopropane	106-94-5	0.005	N.D.	--
115	Basic lead carbonate (trilead bis (carbonate)dihydroxide)	1319-46-6	0.005	N.D.	N.D.
116	Fatty acids, C16-18, lead salts	91031-62-8	0.005	N.D.	N.D.
117	Lead tetroxide (orange lead)	1314-41-6	0.005	N.D.	N.D.
118	Sulfurous acid, lead salt, dibasic	62229-08-7	0.005	N.D.	N.D.
119	4,4'-oxydianiline and its salts	101-80-4	0.005	N.D.	--
120	lead oxide sulphate	12036-76-9	0.005	N.D.	N.D.
121	Lead bis(tetrafluoroborate)	13814-96-6	0.005	N.D.	N.D.
122	Silicic acid, lead salt	11120-22-2	0.005	N.D.	N.D.
123	Bis(pentabromophenyl) ether (DecaBDE)	1163-19-5	0.005	N.D.	--

124	4-Nonylphenol, branched and linear - substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof	--	0.005	N.D.	--
125	Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	0.005	N.D.	--
126	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated - covering well-defined substances and UVCB substances, polymers and homologues	--	0.005	N.D.	--
127	1,2-Diethoxyethane	629-14-1	0.005	N.D.	--
128	Hexahydromethylphthalic anhydride Hexahydro-4-methylphthalic anhydride Hexahydro-1-methylphthalic anhydride Hexahydro-3-methylphthalic anhydride	25550-51-0 19438-60-9 48122-14-1 57110-29-9	0.005	N.D.	--
129	Cyclohexane-1,2-dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA)	85-42-7	0.005	N.D.	--
130	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	0.005	N.D.	--
131	N-pentyl-isopentylphthalate	--	0.005	N.D.	--
132	Heptacosafuorotetradecanoic acid	376-06-7	0.005	N.D.	--
133	Pentacosafuorotridecanoic acid	72629-94-8	0.005	N.D.	--
134	Henicosafuoroundecanoic acid	2058-94-8	0.005	N.D.	--
135	Tricosafuorododecanoic acid	307-55-1	0.005	N.D.	--
136	Methoxy acetic acid	625-45-6	0.005	N.D.	--

137	Diisopentylphthalate	605-50-5	0.005	N.D.	--
138	N,N-dimethylformamide; dimethyl formamide	68-12-2	0.005	N.D.	--
139	Cadmium	7440-43-9	0.005	N.D.	N.D.
140	Cadmium oxide	1306-19-0	0.005	N.D.	N.D.
141	Dipentyl phthalate (DPP)	131-18-0	0.005	N.D.	--
142	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	--	0.005	N.D.	--
143	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	0.005	N.D.	--
144	Pentadecafluorooctanoic acid (PFOA)	335-67-1	0.005	N.D.	--
145	Cadmium Sulfide	1306-23-6	0.005	N.D.	N.D.
146	Di-N-Hexyl Phthalate	84-75-3	0.005	N.D.	--
147	Direct Red 28	573-58-0	0.005	N.D.	--
148	Direct Black 38	1937-37-7	0.005	N.D.	--
149	Ethlenethiourea	96-45-7	0.005	N.D.	--
150	Acetic Acid	301-04-2	0.005	N.D.	N.D.
151	Trixylyl Phosphate	25155-23-1	0.005	N.D.	--

152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	0.005	N.D.	--
153	Cadmium chloride	10108-64-2	0.005	N.D.	N.D.
154	Sodium perborate; perboric acid, sodium salt	--	0.005	N.D.	N.D.
155	Sodium peroxometaborate	7632-4-4	0.005	N.D.	N.D.
156	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	0.005	N.D.	N.D.
157	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	0.005	N.D.	N.D.
158	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	--	0.005	N.D.	--
159	2-(2H-benzotriazol-2-yl)-4,6-ditertphenyl phenol (UV-328)	25973-55-1	0.005	N.D.	--
160	Cadmium fluoride	7790-79-6	0.005	N.D.	--
161	Cadmium sulphate	10124-36-4, 31119-53-6	0.005	N.D.	--
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	0.005	N.D.	--
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	--	0.005	N.D.	--

164	Nitrobenzene	98-95-3	0.005	N.D.	--
165	4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol	3864-99-1	0.005	N.D.	--
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol	136437-37-3	0.005	N.D.	--
167	3-propanesultone	1120-71-4	0.005	N.D.	--
168	Perfluorononan-1-oic acid	375-95-1 21049-39-8 4149-60-4	0.005	N.D.	--
169	Benzo(a)pyrene	50-32-8	0.005	N.D.	--
170	Bisphenol A	80-05-7	0.005	N.D.	--
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2	0.005	N.D.	--
172	4-heptylphenol, branched and linear (4-HPbl)	--	0.005	N.D.	--
173	4-tert-Amylphenol (PTAP)	80-46-6	0.005	N.D.	--
174	Perfluorohexane-1-sulfonic acid and its salts (PFHxS)	--	0.005	N.D.	--
175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecach Loropentacyclo [12.2.1.16,9.02,13.05,10] octadeca-7,15-diene ("DechloranePlus"™) [covering any of its individual anti-and syn-isomers or any combination thereof].	--	0.050	N.D.	--
176	Benz[a]anthracene	56-55-3	0.050	N.D.	--
177	Cadmium nitrate	10325-94-7	0.050	N.D.	N.D.
178	Cadmium carbonate	513-78-0	0.050	N.D.	N.D.
179	Cadmium hydroxide	21041-95-2	0.050	N.D.	N.D.

180	Chrysene	218-01-9	0.050	N.D.	N.D.
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-H P) [with $\geq 0.1\%$ w/w 4-heptylphenol, branched and linear].	--	0.050	N.D.	--
182	1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride)	209-008-0	0.005	N.D.	--
183	Dicyclohexyl phthalate (DCHP)	201-545-9	0.005	N.D.	--
184	Benzo (g hi) perylene	191-24-2	0.005	N.D.	--
185	Decamethylcyclopentasiloxane (D5)	541-02-6	0.005	N.D.	--
186	Disodium octaborate	12008-41-2	0.001	N.D.	N.D.
187	Dodecylmethylcyclohexasiloxane (D6)	540-97-6	0.005	N.D.	--
188	Ethylenediamine	107-15-3	0.005	N.D.	--
189	Lead	7439-92-1	0.001	N.D.	N.D.
190	Octacyclotetrasiloxane (D4)	556-67-2	0.005	N.D.	--
191	Terphenyl hydrogenated	61788-32-7	0.005	N.D.	--
192	2,2-bis(4'-hydroxyphenyl)-4-methylpenta ne	6807-17-6	0.005	N.D.	--
193	Benzo[k]fluoranthene	207-08-9	0.005	N.D.	--
194	Fluoranthene	206-44-0	0.005	N.D.	--
195	Phenanthrene	85-01-8	0.005	N.D.	--
196	Pyrene	129-00-0	0.005	N.D.	--

197	1,7,7-trimethyl-3-(phenylmethylene) bicyclo[2.2.1]heptan-2-one	15087-24-8	0.005	N.D.	--
198	HFPO-DA 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	--	0.005	N.D.	--
199	2-Methoxyethyl Acetate	110-49-6	0.005	N.D.	--
200	Tris(4-nonylphenyl, branched and linear) Phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)	--	0.005	N.D.	--
201	4-tert-Butylphenol (PTBP)	98-54-4	0.005	N.D.	--
202	2-Benzyl-2-Dimethylamino-1-(4-morpholinylphenyl)Butanone	119313-12-1	0.005	N.D.	--
203	2-Methyl-1-(4-methylthiophenyl)-2-morpholinyl-1-Propan-1-One	71868-10-5	0.005	N.D.	--
204	Diisohexyl Phthalate	71850-09-4	0.005	N.D.	--
205	Perfluorobutane Sulfonic Acid (Pfs) And Its Salts	-	0.005	N.D.	--
206	1-vinyl-1H-imidazole	1072-63-5	0.005	N.D.	--
207	2-methylimidazole	693-98-1	0.005	N.D.	--
208	Butyl 4-hydroxybenzoate	94-26-8	0.005	N.D.	--
209	Dibutylbis(pentane-2,4-dionato-O,O'-tin)	22673-19-4	0.005	N.D.	--
210	Bis(2-(2-methoxyethoxy)ethyl)ether	143-24-8	0.005	N.D.	--
211	Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	-	0.005	N.D.	--

212	1,4-dioxane	123-91-1	0.005	N.D.	--
213	2,2-bis(bromomethyl)propane-1,3-diol (BMP); 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis (bromomethyl)-1-propanol (TBNPA); 2,3-dibromo-1-propanol (2,3-DBPA)	-	0.005	N.D.	--
214	2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	-	0.005	N.D.	--
215	4,4'-(1-methylpropylidene)bisphenol	77-40-7	0.005	N.D.	--
216	Glutaral	111-30-8	0.005	N.D.	--
217	Medium-chain chlorinated paraffins (MCCP) UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17	-	0.005	N.D.	--
218	Orthoboric acid, sodium salt	-	0.005	N.D.	--
219	Phenol, alkylation products (mainly in para position) with C12-rich branched alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP)	-	0.005	N.D.	--
220	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methyl ene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)	-	0.005	N.D.	--
221	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol	119-47-1	0.005	N.D.	--
222	S-(tricyclo(5.2.1.0' ² ,6)deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	255881-94-8	0.005	N.D.	--
223	tris(2-methoxyethoxy)vinylsilane	1067-53-4	0.005	N.D.	--
224	N-(hydroxymethyl)acrylamide	924-42-5	0.005	N.D.	--
225	Resorcinol	108-46-3	0.005	N.D.	--

226	2,2',6,6'-tetrabromo-4,4'-isopropyliden ediphenol	79-94-7	0.005	N.D.	--
229	4,4'-sulphonyldiphenol	80-09- 1	0.005	N.D.	--
228	Barium diboron tetraoxide	13701-59-2	0.005	N.D.	--
229	bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof Bis(2-ethylhexyl) tetrabromophthalate	-	0.005	N.D.	--
230	Isobutyl 4-hydroxybenzoate	4247-02-3	0.005	N.D.	--
231	Melamine	108-78-1	0.005	N.D.	--
232	Perfluoroheptanoic acid and its salts Sodium perfluoroheptanoate potassium perfluoroheptanoate Ammonium perfluoroheptanoate Perfluoroheptanoic acid	-	0.005	N.D.	--
233	reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1, 1, 1,2,3,3,3-hepta fluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl) morpholine	-	0.005	N.D.	--
234	Bis(4-chlorophenyl) sulphone	80-07-9	0.005	N.D.	--
235	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	0.005	N.D.	--
236	2,4,6-tri-tert-butylphenol	732-26-3	0.005	N.D.	--
237	2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)	3147-75-9	0.005	N.D.	--
238	2-(dimethylamino)-2-[(4-methylphenyl)methyl]-1-[4-(morpholin-4-yl)phenyl]butan-1-one	11934-4-86-4	0.005	N.D.	--
239	Bumetrizole (UV-326)	3896-11-5	0.005	N.D.	--
240	Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol	-	0.005	N.D.	--
241	Bis(a,a-dimethylbenzyl) peroxide	80-43-3	0.005	N.D.	--

Note:

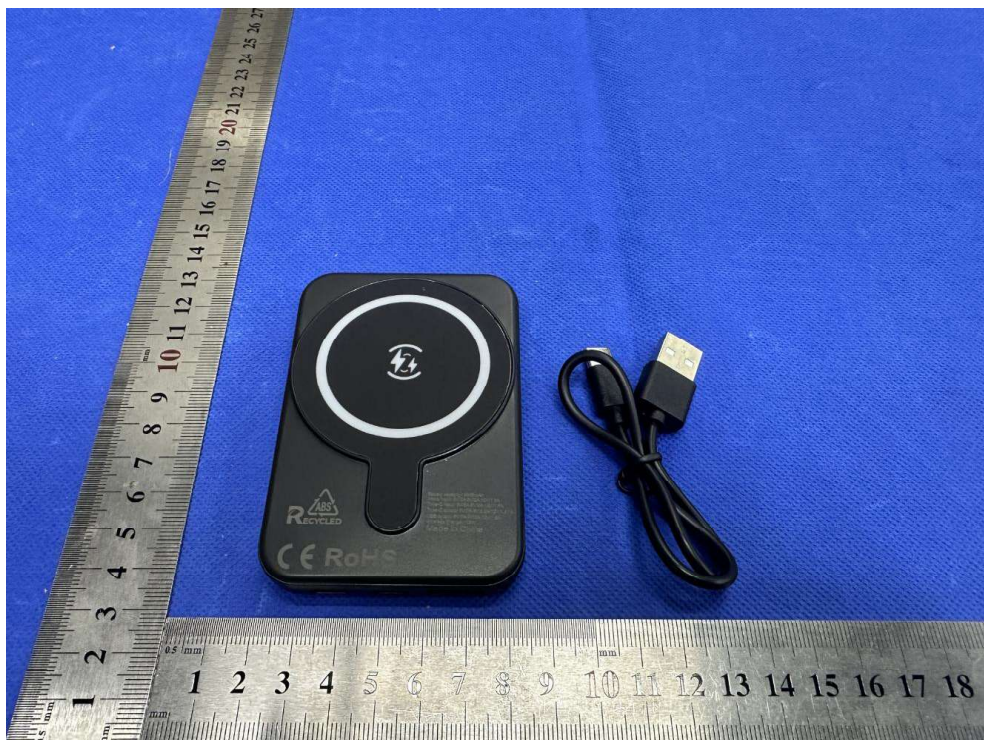
1. Sample for Ethylene glycol ether and water solution
2. Nonmetal include:[According to the head of plastic(PC), Internal localizer(polyoxymethylene), Under the base(PC), Micro shell(PC), Waterproof circle(silica gel)]
3. “*” =Calculated concentration of bis(tributyltin)oxide TBTO is based on the identified tributyltin, TBT results. The result is screening testing of TBTO and other salts under current technology.
4. “**” = Calculated concentration of cobalt dichloride is based on the identified heavy metal and anion result. Calculated concentration of diarsenic pentaoxide, diarsenic trioxide, sodium dichromate, dehydrate, Leadhydrogen arsebnate and triethyl arsenate are based on the identified heavy matal result.
5. Definition of classification of this report in accordance 67/548/EEC and Regulation (EC) No.1907/2006.
- 6.Test Method : Analyzed by ICP-AES,UV-VIS,GC-MS,HPLC-DAD/MS and ColorimetricMethod.
7. A= Nonmetallic material; B=metallic material
- 8.MDL = Method Detection Limit
9. N.D.= No Detection(<MDL)

Remarks:

1. In accordance Regulation (EC) No. 1907/2006, any producer or importer of articles shall notify REACH, In accordance paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance Article 59 (1) of the Regualation, namely (a) the substance is present in those article in quantities totaling over one ton per producer per year; and (b) the substance is present in those articles higher than 0.1% weight by weight (w/w).
2. Article 33 of Regulation (EC) No.1907/2006 requires supplier of an article containing a substance meets the criteria in Article 57 and identified in accordance Article 59(1) in a concertration higher than 0.1% weight byweight (w/w) shall provide the recipient of the article sufficient information, available to the supplier, to all ow safe use the article including, as a minimum, the name of that.

SAMPLE PHOTO(S):





***** END OF REPORT *****