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

Report Number .....:	E359706-A6056-IT-6
Date of issue.....:	2022-03-02
Total number of pages .....:	103
Name of Test Laboratory preparing the Report .....:	UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China
Applicant's name.....:	**ZHEJIANG UNIVIEW TECHNOLOGIES CO LTD**
Address .....:	**88 JIANGLING RD** **BINJIANG DISTRICT** **HANGZHOU** **ZHEJIANG 310051 CHINA**
Test specification:	
Standard.....:	IEC 62368-1:2014
Test procedure .....:	Informative
Non-standard test method.....:	N/A
TRF template used .....:	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No.....:	IEC62368_1D
Test Report Form(s) Originator .....:	UL(US)
Master TRF.....:	Dated 2021-02-04

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory.
The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item description .....:	Network Video Recorder
Trade Mark(s) .....:	
Manufacturer .....:	ZHEJIANG UNIVIEW TECHNOLOGIES CO LTD 88 JIANGLING RD BINJIANG DISTRICT HANGZHOU ZHEJIANG 310051 CHINA
Model/Type reference .....:	1) NVR302-08S, NVR302-08Q, NVR302-08U, NVR302-16S, NVR302-16Q, NVR302-xxxxxxxx-yyyyyyyy-zzz 2) NVR302-09E-B, NVR302-16E-B 3) NVR302-32S, NVR302-32S-NB 4) NVR302-16E-IF, NVR302-32E-IF 5) XVR302-08Q, XVR302-08Q-NB, XVR302-16Q, XVR302-16Q-NB, XVR302-xxxxxxxx-yyyyyyyy-zzz, XVR302-16Q-IF, XVR302-08U-IF 6) NVR302-32E2 ("x" can be 0-9,A-Z,a-z or blank,denoting difference in interface;"y" can be 0-9,A-Z,a-z or blank, denoting performance difference; "z"can be 0-9,A-Z,a-z or blank,denoting target regional, "-" may be blank)
Ratings .....:	(optional) 1) 12Vdc,2A for models: NVR302-08S, NVR302-16S, NVR302-xxxxxxxx-yyyyyyyy-zzz, NVR302-09E-B, NVR302-16E-B 2) 12Vdc,3.0A for models: NVR302-08Q, NVR302-08U, NVR302-16Q 3) 12Vdc,2A for models NVR302-32S, NVR302-32S-NB 4) 12Vdc,2A for models NVR302-16E-IF, NVR302-32E-IF 5) 12Vdc,3.0A for model XVR302-08Q, XVR302-08Q-NB, XVR302-16Q, XVR302-16Q-NB, XVR302-xxxxxxxx-yyyyyyyy-zzz, XVR302-16Q-IF, XVR302-08U-IF 6) 12Vdc,3.3A for model NVR302-32E2

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒ CB Testing Laboratory:		
Testing location/ address .....:	UL-CCIC Company Limited, No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China	
Tested by (name, function, signature).....:	Yuheng Xu(T)/Matt Ma / Project Handler	Matt Ma
Approved by (name, function, signature).....:	Xing Liu / Reviewer	Xing Liu

☐ Testing procedure: CTF Stage 1:		
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Approved by (name, function, signature).....:		
☐ Testing procedure: CTF Stage 2:		
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) ...:		
Approved by (name, function, signature).....:		
☐ Testing procedure: CTF Stage 3:		
☐ Testing procedure: CTF Stage 4:		
Testing location/ address.....:		
Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) ...:		
Approved by (name, function, signature).....:		
Supervised by (name, function, signature)..:		

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

National Differences (30 pages)
Enclosures (134 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing Location:**
	CBTL: UL-CCIC Company Limited, No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China
INPUT TEST: SINGLE PHASE (B.2.5)	
NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT (B.2.6, 5.4.1.4, 6.3, 9.2)	
SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)	
LIMITED POWER SOURCE (ANNEX Q.1)	

Summary of compliance with National Differences:

List of countries addressed: Australia / New Zealand, EU Group and National Differences, Japan, USA / Canada

☒ **The product fulfils the requirements of: EN 62368-1:2014 + A11:2017**

Statement concerning the uncertainty of the measurement systems used for the tests

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

TEST ITEM PARTICULARS:	
Classification of use by	Ordinary person Children likely to be present
Supply Connection	External Circuit - not Mains connected ES1
Supply % Tolerance	None
Supply Connection – Type	mating connector supplied by adapter
Considered current rating of protective device as part of building or equipment installation	N/A
Equipment mobility	movable
Over voltage category (OVC)	OVC II
Class of equipment	Class III
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	55
IP protection class	IPX0
Power Systems	N/A
Altitude during operation (m)	up to 2000 m
Altitude of test laboratory (m)	up to 2000 m
Mass of equipment (kg)	Max. 3.1
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..... :	2021-12-14
Date (s) of performance of tests..... :	2022-01-07 to 2022-01-19
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 IECEE 02:	

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	ZHEJIANG UNIVIEW SYSTEMS TECHNOLOGY CO LTD NO.1277 SOUTH QINGFENG SOUTH ROAD, TONGXIANG JIAXING ZHEJIANG 310000 CHINA DBG TECHNOLOGY (INDIA) PRIVATE LIMITED PLOT NO. 2, SECTOR-8, IMT BAWAL REWARI HARYANA 123501 INDIA TDG TECHNOLOGY CO LTD NO 1 YATAI RD NANHU DISTRICT JIAXING ZHEJIANG 314050 CHINA

GENERAL PRODUCT INFORMATION:

Product Description

The products compose the mainboard, two HDDs(optional) and two other functional PWBs. All electronic components were mounted on min.V-1 PWB and housed with metal and plastic enclosure.

Model Differences

Models NVR302-08S, NVR302-16S, NVR302-xxxxxxxx-yyyyyyyy-zzz are identical to each other except the model designations and software.

Models NVR302-09E-B, NVR302-16E-B are identical to each other except the model designations and software.

Models NVR302-08S and NVR302-16E-B are identical to each other except for main board.

Model NVR302-16Q are identical to NVR302-16S except mainboard, rating and NVR302-16Q with fan.

Models NVR302-08Q, NVR302-08U are identical to NVR302-08S except mainboard, rating and NVR302-08U with fan.

Models NVR302-32S, NVR302-32S-NB are identical to NVR302-16E-B except the mainboard.

Model NVR302-16E-IF is same to model NVR302-32E-IF except model names.

Model NVR302-16E-IF are identical to NVR302-16E-B except the mainboard and software.

Models XVR302-xxxxxxxx-yyyyyyyy-zzz are similar to NVR302-xxxxxxxx-yyyyyyyy-zzz except the mainboard.

Model XVR302-16Q-IF are identical to XVR302-08U-IF except the mainboard and software.

Additional application considerations – (Considerations used to test a component or sub-assembly) –

This report is based on previously conducted testing (as listed below) and the review of product construction of original CBTR Ref. No. E359706-A112-CB-2, dated 2019-01-09, CBTC Ref. No. DK-79848-UL issued date 2019-01-09 and CBTR Ref. No. E359706-A112-CB-2-Amendment-1, dated 2019-11-04, CBTC Ref. No. DK-79848-M1-UL issued date 2019-11-04 and CBTR Ref. No. E359706-A112-CB-2-Amendment-2, dated 2020-02-26, CBTC Ref. No. DK-79848-M2-UL issued date 2020-02-26 issued by UL. Refer to Section “Test performed (name of test and test clause)” covering all applicable performance tests and rationale for waived tests.

For test record 2(Project NO.4789822631):

1.Add new alternate mainboard for original model NVR302-32S (refer to enclosure 03-79&03-80).

2.Correct EN standard due to typo error.

For test record 3(Project NO.4790000883):

1.Add three new alternate fan for original model NVR302-09E-B (refer to enclosure 03-90/91/92/93/94/95, table 4.12 Item 11b to 11d for details), and all the test was conducted with fan (model: DA04010B12LA), because the CFM is lower than others.

2.Change the rating current from 3.3A to 3.0A for models in series 2) and series 5).

For project 4790146319:

Alternate one mainboard(refer to Enclosures 03-96&03-97) for model NVR302-xxxxxxxx-yyyyyyyy-zzz.

For project 4790175335；

--This report has been reissued, due to:

1. Alternate one main board , one front panel and one rear panel for original model NVR302-16IF-IN, NVR302-xxxxxxxx-yyyyyyyy-zzz(refer to Enclosures 03-98&03-101 for details), and all the test was conducted with model NVR302-16IF-IN.

--This report is a reissue of CBTR Ref. No.

1.Test Report Ref No. E359706-A6056-CB-1, dated 2020-06-02, Test Certification Ref No.DK-97933-UL, dated 2020-06-02;

2.Test Report Ref No. E359706-A6056-CB-1-Amendment-1, dated 2021-04-08, Test Certification Ref No.DK-97933-M1-UL, dated 2021-04-12;

3.Test Report Ref No. E359706-A6056-CB-1-Amendment-2, dated 2021-08-04, Test Certification Ref No.DK-97933-M2-UL, dated 2021-08-05;

4.Test Report Ref No. E359706-A6056-CB-1-Amendment-3, dated 2021-11-09, Test Certification Ref No.DK-97933-M3-UL, dated 2021-11-10;

--Based on previously conducted testing and the review of product construction, only limited test was deemed necessary:

B.2.5 – INPUT TEST: SINGLE PHASE

B.2.6, 5.4.1.4, 6.3, 9.2 – NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT

B.3 – SIMULATED ABNORMAL OPERATING CONDITIONS

ANNEX Q.1 – LIMITED POWER SOURCE

For project 4790225489, test record 5:

1. Add new model NVR302-32E2. 2. Alternate mainboards for NVR302-xxxxxxxx-yyyyyyyy-zzz.
Technical Considerations • The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C • The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : All output ports. • The Risk Group of a lamp or lamp system (including LEDs) is : Exempt • The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual • The product was investigated to the following additional standard : EN 62368-1:2014 + A11:2017

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
External power supply output (12V)	ES1
Internal circuits	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
External power supply output (12V)	PS2
Internal circuits	PS2
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
Battery	Lithium
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass	MS1
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
Enclosure	TS1
Internal components	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
indicating lights	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
--	--	--	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Components	PS2: Internal circuit	See sub-clause 6.3	Mounted on V-1 PWB	--
Internal plastic material	PS2: Internal circuit	See sub-clause 6.3	Suitable material, min. V-2	--
Internal wiring	PS2: Internal circuit	See sub-clause 6.3	Suitable material, VW-1	--
Internal connector	PS2: Internal circuit	See sub-clause 6.3	Suitable material, min. V-2	--
Plastic enclosure part	PS2: Internal circuit	See sub-clause 6.3	Suitable material, min. HB	--
Metal enclosure part	PS2: Internal circuit	See sub-clause 6.3	Metal	--
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
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9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--

Supplementary Information:
(1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault

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Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		Pass
4.1.1	Acceptance of materials, components and subassemblies		Pass
4.1.2	Use of components		Pass
4.1.3	Equipment design and construction		Pass
4.1.15	Markings and instructions ..... :	(See Annex F)	Pass
4.4.4	Safeguard robustness		Pass
4.4.4.2	Steady force tests ..... :	(See Annex T.4, T.5)	Pass
4.4.4.3	Drop tests..... :		N/A
4.4.4.4	Impact tests..... :	(See Annex T.6)	Pass
4.4.4.5	Internal accessible safeguard enclosure and barrier tests ..... :		N/A
4.4.4.6	Glass Impact tests..... :		N/A
4.4.4.7	Thermoplastic material tests ..... :	(See Annex T.8)	Pass
4.4.4.8	Air comprising a safeguard ..... :		N/A
4.4.4.9	Accessibility and safeguard effectiveness	No class 3 energy source is generated within the equipment and all other safeguards remain effective.	Pass
4.5	Explosion		Pass
4.6	Fixing of conductors		N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to ..... :		N/A
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard ..... :		N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	Products containing coin/button cell batteries	Professional equipment.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery ..... :		—
4.8.4	Battery Compartment Mechanical Tests..... :	(See Table 4.8.4)	N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object ..... :	(See Annex P)	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
5	**ELECTRICALLY-CAUSED INJURY**		Pass
5.2.1	Electrical energy source classifications .....:	All internal circuits are considered to be ES1. They are supplied by external power supply with SELV output which complies with IEC 60950-1.	Pass
5.2.2	ES1, ES2 and ES3 limits	The output of adaptor was considered as ES1.	Pass
5.2.2.2	Steady-state voltage and current.....:	(See appended table 5.2)	N/A
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	Ringing 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	All components considered as ES1.	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V .....:		N/A
	b) Electric strength test potential (V).....:		N/A
	c) Air gap (mm) .....:		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		Pass
5.4.1.2	Properties of insulating material	Functional insulation only.	N/A
5.4.1.3	Humidity conditioning..... :	(See sub-clause 5.4.8)	N/A
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4)	N/A
5.4.1.5	Pollution degree.....:	Degree 2.	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		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 softening temperature .....:	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure .....:	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances		N/A
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	N/A
5.4.2.3	Determining clearance using required withstand voltage .....:	(See appended table 5.4.2.3)	N/A
	a) a.c. mains transient voltage .....:		—
	b) d.c. mains transient voltage .....:		—
	c) external circuit transient voltage .....:		—
	d) transient voltage determined by measurement... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....:		N/A
5.4.3	Creepage distances .....:	(See appended table 5.4.3)	N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group .....:		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz ..... :	(See appended Table 5.4.4.9)	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
	Insulation resistance (MΩ) ..... :		—
5.4.6	Insulation of internal wire as part of supplementary safeguard ..... :	(See appended table 5.4.4.2)	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 (°C) ..... :		—
	Duration (h) ..... :		—
5.4.9	Electric strength test..... :	(See appended table 5.4.9)	N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	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
5.4.11	Insulation between external circuits and earthed circuitry..... :	(See appended table 5.4.9)	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V) ..... :		—
	Nominal voltage U_{peak} (V) ..... :		—
	Max increase due to variation U_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ ..... :		—
5.5	Components as safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.1	General	No such components used as safeguard.	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	(See Annex G.5.3)	N/A
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	N/A
5.5.5	Relays	(See Annex G.2)	N/A
5.5.6	Resistors	(See Annex G.10)	N/A
5.5.7	SPD's	(See Annex G.8)	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable ..... :	(See Annex G.10.3)	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2).....:		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm). .....:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω) .....:	(See appended table 5.6.6.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.7	Reliable earthing		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 .....:	(See appended table 5.7.4)	N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection) .....:		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....:		—
5.7.4	Earthed conductive accessible parts .....:	(See appended Table 5.7.4)	N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V) .....:		—
	Measured current (mA) .....:		—
	Instructional Safeguard .....:	(See F.4 and F.5)	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA) .....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) .....:		N/A
6	**ELECTRICALLY- CAUSED FIRE**		Pass
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		Pass
6.2.2	Power source circuit classifications	All internal circuits are supplied by LPS source which considered to be PS2 circuits.	Pass
6.2.2.1	General	Circuits complied with LPS are considered to comply with test method/criteria of PS2.	Pass
6.2.2.2	Power measurement for worst-case load fault....:	(See appended table 6.2.2)	N/A
6.2.2.3	Power measurement for worst-case power source fault .....:	(See appended table 6.2.2)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.4	PS1 .....:	(See appended table 6.2.2)	N/A
6.2.2.5	PS2 .....:	Circuits complied with LPS are considered to comply with test method/criteria of PS2.	N/A
6.2.2.6	PS3 .....:	(See appended table 6.2.2)	N/A
6.2.3	Classification of potential ignition sources		Pass
6.2.3.1	Arcing PIS .....:	All internal circuits are not considered as arcing PIS. They are supplied by external power supply whose open voltage is less than 50V.	N/A
6.2.3.2	Resistive PIS .....:	All internal circuits of PS2 circuits are considered as resistive PIS.	Pass
6.3	Safeguards against fire under normal operating and abnormal operating conditions		Pass
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	Pass
6.3.1 (b)	Combustible materials outside fire enclosure	Combustible materials outside fire enclosure are at least HB.	Pass
6.4	Safeguards against fire under single fault conditions		Pass
6.4.1	Safeguard Method	Control fire spread method used.	Pass
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	(See appended table 6.4.3)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		Pass
6.4.5.2	Supplementary safeguards ..... :	(See appended tables 4.1.2 and Annex G) - Printed boards are rated minimum V-1. - All combustible materials other than connector rated at least HB - Connectors with rating minimum V-2.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuit	No PS3 circuit.	N/A
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General ..... :	(See tables 6.2.3.1 and 6.2.3.2)	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	No fire enclosure.	N/A
6.4.8.1	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) ..... :		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) ..... :		N/A
	Flammability tests for the bottom of a fire enclosure ..... :		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) ..... :		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating ..... :		N/A
6.5	Internal and external wiring		Pass
6.5.1	Requirements	Internal wirings or external wirings with VW-1 rating are considered to meet IEC TS 60695-11-21 requirements.	Pass
6.5.2	Cross-sectional area (mm^2) ..... :		—
6.5.3	Requirements for interconnection to building wiring ..... :	(See Annex Q.)	N/A
6.6	Safeguards against fire due to connection to additional equipment		Pass
	External port limited to PS2 or complies with Clause Q.1		Pass

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		Pass
7.2	Reduction of exposure to hazardous substances		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions.....:		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		—
7.6	Batteries..... :	(See Annex M)	Pass
8	**MECHANICALLY-CAUSED INJURY**		Pass
8.1	General	MS1: Equipment mass. < 7kg MS1: Sharp edges and corners. MS1: Plastic fan.	Pass
8.2	Mechanical energy source classifications		N/A
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
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard ..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard .....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test .....:	(See appended table 8.5.5.2)	N/A
8.6	Stability	Equipment mass is MS1.	Pass
8.6.1	Product classification	Equipment mass is MS1.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard ..... :	Equipment mass is MS1.	—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force..... :		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt..... :		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) ..... :		N/A
	Position of feet or movable parts ..... :		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) ..... :		N/A
8.7.2	Direction and applied force ..... :		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force ..... :		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force..... :		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard ..... :		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force..... :		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)..... :		—
8.10.6	Thermoplastic temperature stability (°C) ..... :		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas	(See Annex T)	N/A
	Button/Ball diameter (mm) ..... :		—
9	**THERMAL BURN INJURY**		Pass
9.2	Thermal energy source classifications	The accessible part is TS1; The internal component is considered as TS3	Pass
9.3	Safeguard against thermal energy sources		Pass
9.4	Requirements for safeguards		Pass
9.4.1	Equipment safeguard	The accessible part is TS1	Pass
9.4.2	Instructional safeguard ..... :		N/A
10	**RADIATION**		Pass
10.2	Radiation energy source classification	RS1: Infrared LED light. which complied with IEC exempt group	Pass
10.2.1	General classification		Pass
10.3	Protection against laser radiation		N/A
	Laser radiation that exists in the equipment:		—
	Normal, abnormal, single-fault ..... :	(See attached laser test report)	N/A
	Instructional safeguard..... :		—
	Tool ..... :		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons ..... :		N/A
10.4.1.b)	RS3 accessible to a skilled person ..... :		N/A
	Personal safeguard (PPE) instructional safeguard ..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 ..... :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....:	(See appended table B.3 & B.4)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.e)	Enclosure material employed as safeguard is opaque ..... :		N/A
10.4.1.f)	UV attenuation ..... :		N/A
10.4.1.g)	Materials resistant to degradation UV..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation ..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions ..... :		N/A
10.4.2	Instructional safeguard ..... :		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment :	(See appended table B.3 & B.4)	N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards ..... :		N/A
	Instructional safeguard for skilled person .....:		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation..... :		—
	Abnormal and single-fault condition.....:	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg) .....:		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) .....:		N/A
	Output voltage, unweighted r.m.s. .....:		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards.....:		N/A
	Equipment safeguard prevent ordinary person to RS2 .....:		—
	Means to actively inform user of increase sound pressure .....:		—
	Equipment safeguard prevent ordinary person to RS2..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output .....:		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....:		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....:		—
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		Pass
B.2	Normal Operating Conditions		Pass
B.2.1	General requirements .....:	(See Test Item Particulars and appended test tables)	Pass
	Audio Amplifiers and equipment with audio amplifiers.....:	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	Not directly connected to mains. No tolerance is considered.	Pass
B.2.5	Input test .....:	(See appended table B.2.5)	Pass
B.3	Simulated abnormal operating conditions		Pass
B.3.1	General requirements .....:	(See appended table B.3)	Pass
B.3.2	Covering of ventilation openings		Pass
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector.....:		N/A
B.3.5	Maximum load at output terminals.....:	(See appended table B.3)	Pass
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		Pass
B.4	Simulated single fault conditions		Pass
B.4.2	Temperature controlling device open or short-circuited.....:	(See appended table B.4)	N/A
B.4.3	Motor tests	Blocked motor	Pass
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....:	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 disconnect of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		Pass
B.4.9	Battery charging under single fault conditions ....:	(See Annex M)	N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) ..... :		—
	Rated load impedance (Ω) ..... :		—
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		Pass
F.1	General requirements		Pass
	Instructions – Language ..... :	English	—
F.2	Letter symbols and graphical symbols		Pass
F.2.1	Letter symbols according to IEC60027-1	Letter symbols comply with IEC 60027-1.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphic symbols comply with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	Pass
F.3	Equipment markings		Pass
F.3.1	Equipment marking locations	Outside BOTTOM enclosure, which showed in instruction.	Pass
F.3.2	Equipment identification markings		Pass
F.3.2.1	Manufacturer identification ..... :	ZHEJIANG UNIVIEW TECHNOLOGIES CO LTD	—
F.3.2.2	Model identification ..... :	1) NVR302-08S, NVR302-08Q, NVR302-08U, NVR302-16S, NVR302-16Q, NVR302-xxxxxxxx-yyyyyyyy-zzz 2) NVR302-09E-B, NVR302-16E-B 3) NVR302-32S, NVR302-32S-NB 4) NVR302-16E-IF, NVR302-32E-IF 5) XVR302-08Q, XVR302-08Q-NB, XVR302-16Q, XVR302-16Q-NB, XVR302-xxxxxxxx-yyyyyyyy-zzz, XVR302-16Q-IF, XVR302-08U-IF ("x" can be 0-9,A-Z,a-z or blank,denoting difference in interface;"y" can be 0-9,A-Z,a-z or blank, denoting performance difference; "z"can be 0-9,A-Z,a-z or blank,denoting target regional, "-" may be blank)	—
F.3.3	Equipment rating markings		Pass
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains		Pass
F.3.3.3	Nature of supply voltage ..... :	DC symbol IEC 60417 No. 5031 provided.	—
F.3.3.4	Rated voltage ..... :	See “Models and Ratings”.	—
F.3.3.5	Rated frequency..... :	--	—
F.3.3.6	Rated current or rated power ..... :	See “Models and Ratings”.	—
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		Pass
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.3	Replacement fuse identification and rating markings.....:		N/A
F.3.5.4	Replacement battery identification marking.....:	A marking close to the battery or a statement in the servicing instructions.	Pass
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :		—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		Pass
F.3.10	Test for permanence of markings		N/A
F.4	Instructions		Pass
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		Pass
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		Pass
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) .....:		—
	Single Fault Condition .....:		—
	Test Voltage (V) and Insulation Resistance (Ω) .:		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions .....:	(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

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Clause	Requirement + Test	Result - Remark	Verdict
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components	(See Annex J)	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) ..... :		—
	Temperature (°C) ..... :		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :		N/A
	Position ..... :		—
	Method of protection ..... :		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings ..... :		—
G.5.3.3	Overload test..... :	(See appended table B.3)	N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements		N/A
	Position ..... :		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)..... :		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) ..... :		N/A
	Electric strength test (V)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature ..... :		N/A
	Electric strength test (V) ..... :		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) ..... :		N/A
	Electric strength test (V)..... :		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		Pass
G.6.1	General	all wire complied with ES1.	Pass
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type ..... :		—
	Rated current (A) ..... :		—
	Cross-sectional area (mm^2), (AWG) ..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) ..... :		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :	(See appended table 5.4.11.1)	N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) ..... :		—
	Diameter (m) ..... :		—
	Temperature (°C) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test ..... :	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage ..... :	(See appended table B.3)	N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA ..... :		—
G.9.1 d)	IC limiter output current (max. 5A) ..... :		—
G.9.1 e)	Manufacturers' defined drift ..... :		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		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 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) ..... :		N/A
	Type test voltage Vini ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Routine test voltage, Vini,b ..... :		—
G.13	**Printed boards**		N/A
G.13.1	General requirements		N/A
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) ..... :		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation..... :	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs) ..... :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :	(See G.13)	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
G.16 a)	Humidity treatment in accordance with sc 5.4.8 – 120 hours		N/A
G.16 b)	Impulse test using circuit 2 with Uc = to transient voltage ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.16 C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
G.16 C2)	Test voltage ..... :		—
G.16 D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
G.16 D2)	Capacitance ..... :		—
G.16 D3)	Resistance ..... :		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) ..... :		—
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		—
H.3.1.4	Single fault current (mA): ..... :		—
H.3.2	Tripping device and monitoring voltage ..... :		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) ..... :		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
	General requirements	(See separate test report)	N/A
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance ..... :	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method ..... :		N/A
K.7	Interlock circuit isolation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A).....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:	(See appended table 5.4)	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
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		Pass
M.1	General requirements		Pass
M.2	Safety of batteries and their cells		Pass
M.2.1	Requirements		Pass
M.2.2	Compliance and test method (identify method) .. :	Comply with UL1642.	Pass
M.3	Protection circuits		Pass
M.3.1	Requirements		Pass
M.3.2	Tests		Pass
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery	Protected by circuit.	Pass
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery	Due to engineering judgement, double protection, the reverse current will not exceed the limits of RTC battery.	Pass
M.3.3	Compliance .....:	(See appended Tables and Annex M.3 and M.4)	Pass
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.2.2a)	Charging voltage, current and temperature ..... :	(See Annex M.4)	—
M.4.2.2 b)	Single faults in charging circuitry ..... :	(See Annex B.4)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s) ..... :		—
M.8.2.3	Correction factors ..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :	See manual.	Pass
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used ..... :	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Figures O.1 to O.20 of this Annex applied..... :		—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		Pass
P.1	General requirements		Pass
P.2.2	Safeguards against entry of foreign object		Pass
	Location and Dimensions (mm) ..... :	openings that do not exceed 5 mm in any dimension;	—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C) ..... :		—
	Ta (°C) ..... :		—
P.4.2 b)	Abrasion testing ..... :	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing..... :	(See Annex T)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		Pass
Q.1	Limited power sources		Pass
Q.1.1 a)	Inherently limited output		Pass
Q.1.1 b)	Impedance limited output		Pass
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). ..... :		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		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) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4000 W		N/A
	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
	Conditioning (test condition), (°C)..... :		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		Pass
T.1	General requirements		Pass
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)	N/A
T.5	Steady force test, 250 N ..... :	(See appended table T.5)	Pass
T.6	Enclosure impact test	(See appended table T.6)	Pass
	Fall test		Pass
	Swing test		N/A
T.7	Drop test ..... :	(See appended table T.7)	N/A
T.8	Stress relief test ..... :	(See appended table T.8)	Pass
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) ..... :		—
	Height (m)..... :		—
T.10	Glass fragmentation test..... :	(See sub-clause 4.4.4.9)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen .....:	(See Annex T)	N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A

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

4.1.2	TABLE: List of critical components	Pass

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
01.Adapter (Optional) (for models: NVR302-08S, NVR302-16S, NVR302-xxxxxxxx-yyyyyyyy-zzz, NVR302-09E-B, NVR302-16E-B, NVR302-32S, NVR302-32S-NB, NVR302-16E-IF, NVR302-32E-IF)	Interchangeable	Interchangeable	Output: 12Vdc, min. 2A, 55degree C. LPS	UL/IEC 60950-1 2nd Edition, UL/IEC 62368-1 2nd Edition	UL , CB BY NCB
01a.Adapter (Optional) (for models: NVR302-08Q, NVR302-08U, NVR302-16Q, XVR302-08Q, XVR302-08Q-NB, XVR302-16Q, XVR302-16Q-NB, XVR302-xxxxxxxx-yyyyyyyy-zzz, XVR302-16Q-IF, XVR302-08U-IF)	Interchangeable	Interchangeable	Output: 12Vdc, min. 3.0A, 55degree C. LPS	UL/IEC 60950-1 2nd Edition, UL/IEC 62368-1 2nd Edition	UL , CB BY NCB
01b.Adapter (Optional) for models NVR302-32E2	Interchangeable	Interchangeable	Output: 12Vdc, min. 3.3A, 55degree C. LPS	UL/IEC 60950-1 2nd Edition, UL/IEC 62368-1 2nd Edition	UL , CB BY NCB
02. Metal Enclosure	--	--	Metallic, min 0.6mm, see enclosure 4-01 for dimension details	--	-- , --
02a. Metal Enclosure for	--	--	Metallic, min 0.6mm, see	--	-- , --

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
model XVR302-08U-IF			enclosure 4-10 for dimension details		
02b. Metal Enclosure for model XVR302-16Q-IF	--	--	Metallic, min 0.6mm, see enclosure 4-11 for dimension details	--	-- , --
03. Plastic Enclosure for Front Panel	KINGFA SCI & TECH CO LTD	FW-620HT	Min. thickness: 1.5 mm, Min. V-1, RTI is 80 degree C, see enclosure 4-01 for dimension details	UL 94	UL , --
03a. Plastic Enclosure for Front Panel (for model XVR302-08U-IF, XVR302-16Q-IF)	KINGFA SCI & TECH CO LTD	FW-620T	Min. thickness: 1.5 mm, Min. V-0, RTI is 80 degree C, see enclosure 4-10/11 for dimension details	UL 94	UL , --
04.RTC Battery	CHANGZHOU JINTAN CHAOCHUANG BATTERY CO LTD	CR1220	Max Abnormal Charging Current: 2mA, Max Abnormal Charging Voltage:12 Vdc.	UL 1642	UL , --
04a.RTC Battery (Alternate)	GUANGDONG TIANQIU ELECTRONICS TECHNOLOGY CO LTD	CR1220	Max Abnormal Charging Current: 2.5mA, Max Abnormal Charging Voltage:3.5 Vdc.	UL 1642	UL
04c.RTC Battery (for model XVR302-08U-IF, XVR302-16Q-IF, NVR302-32S, NVR302-32E2)	CHANGZHOU JINTAN CHAOCHUANG BATTERY CO LTD	CR2032	Max Abnormal Charging Current: 8mA, Max Abnormal Charging Voltage:12 Vdc	UL 1642	UL , --
04d.RTC Battery -Alternate (for model XVR302-08U-IF, XVR302-16Q-IF, NVR302-	GUANGDONG TIANQIU ELECTRONICS TECHNOLOGY CO LTD	CR2032	Max Abnormal Charging Current: 10mA, Max Abnormal Charging Voltage:3.5 Vdc	UL 1642	UL , --

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
32S, NVR302-32E2)					
05. Interconnecting Cable (Optional)	Interchangeable	Interchangeable	Minimum 80 degree C, 60V, maximum 3.05m long, jacketed, rated VW-1.	UL 758	UL , --
06. Connector	Interchangeable	Interchangeable	Metal/Plastic	UL 498, UL 1977,	UL , --
06a. Connector (Alternate)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated V-2 minimum.	UL 94, UL 746C	UL , --
07. Internal Wiring	Interchangeable	Interchangeable	Marked VW-1, 80 degree C, 60V	UL 758	UL , --
08. Internal plastic parts	Interchangeable	Interchangeable	Min.V-2 or HF-2.	UL 94, UL 746C	UL , --
09. Label	Interchangeable	Interchangeable	Minimum 70 degree C, suitable for affixed material.	UL 969	UL , --
10. PWB	Interchangeable	Interchangeable	V-1 or better, minimum 105 degree C	UL 796	UL , --
11 Fan (for main board of model NVR302-16E-B)	SHENZHEN XIEHENGDA ELECTRONIC CO LTD	DFS401012L	12Vdc, 0.06A, minimum 5.0CFM	UL 507	UL , --
11a.Fan(for main board of model NVR302-E-B, XVR302-08U-IF, XVR302-16Q-IF, NVR302-16Q, XVR302-16Q, NVR302-08U)	SUNON	HA40101V4-1000C-A99	12Vdc,0.031A, minimum 5.4 CFM	UL507	UL , --
11b. Fan (for main board of model NVR302-09E-B)	ASIA VITAL COMPONENTS CO.,LTD	DAZA0410R2H(V), (V) may be XXXX, where X may be A through	12Vdc,0.06A,5.72 CFM Max	UL507	UL , --

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
		Z, 0 through 9, "-" or blank.			
11c. Fan (for main board of model NVR302-09E-B)	PROTECHNIC ELECTRIC	MGA4012SR-O10	12Vdc,0.06A,5.30 CFM Max	UL507	UL , --
11d. Fan (for main board of model NVR302-09E-B)	Shenzhen Huaxia Hengtai Electronic Co.,Ltd	DA04010B12LA	12Vdc,0.06A,5.05 CFM Max	UL507	UL , --
12. PTC (protected for USB and HDMI port)	LITTELFUSE INC	miniSMDC260F/13.2	13.2Vdc, Ih: 2.6 A, It: 5.0 A, Tmoa:85 degree C, 1(125), 2, 3, 4, #	UL 1434	UL , --
12a. PTC (protected for USB and HDMI port) (Alternate)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-MSM110/8	8Vdc, Ih: 1.1 A, It: 2.2 A, Tmoa:85 degree C, 1(119.8),2.3.4#	UL 1434	UL , --
12b. PTC (protected for USB and HDMI port) (Alternate)	LITTELFUSE INC	miniSMDC110	8Vdc, Ih: 1.1 A, It: 2.2 A, Tmoa:85 degree C, 1(125), 2, 3, 4, #	UL 1434	UL , --
12c. PTC (protected for USB and HDMI port) (Alternate)	STARHOPE ELECTRONICS CO LTD	MSM110	Vmax 8V, Ih=1.1A, It=2.2A, 85 degree C, C1, 1(130.3), 2, 3, 4 #	UL1434	UL , --
12d.PTC (protected for USB for Model NVR302-32S, XVR302-16Q-IF, XVR302-08U-IF, NVR302-32E2) (Alternate)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-MSM150/16	16Vdc, Ih=1.5 A, It=3 A, 85 degree C, C1,1(116),2.3.4#	UL1434	UL , --
12e.PTC (protected for USB for Model NVR302-32S, XVR302-16Q-IF, XVR302-08U-IF, NVR302-32E2) (Alternate)	LITTELFUSE INC	miniSMDC150F/16-2	8Vdc, Ih: 1.1 A, It: 2.2 A, Tmoa:85 degree C, 1(125), 2, 3, 4, #	UL1434	UL , --

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Clause	Requirement + Test	Result - Remark	Verdict

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
13.HDD (Two Provided)	Interchangeable	Interchangeable	12 Vdc, 0.75A; 5 Vdc, 0.75A max	UL60950-1	UL , --
14.Heat sink for main board of model NVR302-08S	--	--	Aluminum, See enclosure 4-05 for details.	--	-- , --
14a.Heat sink for main board of model NVR302-16E-B	--	--	Aluminum, See enclosure 4-06 for details.	--	-- , --
14b.Heat sink for main board of model NVR302-16Q, NVR302-08U, XVR302-16Q, XVR302-16Q-IF, XVR302-08U-IF	--	--	Aluminum, See enclosure 4-12 for details.	--	-- , --
14c.Heat sink for main board of model NVR302-08Q	--	--	Aluminum, See enclosure 4-13 for details.	--	-- , --
14c.Heat sink for main board of model NVR302-32E2	--	--	Aluminum, See enclosure 4-14 for details.	--	-- , --

Supplementary information:

1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.

2) License avaible upon request.

3) The CBTL has verified the component information.

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

4.8.4.2	**TABLE: Stress Relief test**	—

Part	**Material**	**Oven Temperature (°C)**	**Comments**

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

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

4.8.4.4	**TABLE: Drop test**	—

Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

4.8.4.5	**TABLE: Impact**	—

Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**

4.8.4.6	**TABLE: Crush test**	—

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

Supplementary information:

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

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

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

5.2	Table: Classification of electrical energy sources	Pass

5.2.2.2 – Steady State Voltage and Current conditions

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
			Normal				
			Abnormal				
			Single fault – SC/OC				

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
			Normal			
			Abnormal			
			Single fault – SC/OC			

5.2.2.4 - Single Pulses

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

5.2.2.5 - Repetitive Pulses

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

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

Test Conditions: Normal – Abnormal - Supplementary information: SC=Short Circuit, OC=Open Circuit

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**					Pass
	Supply voltage (V) ..... :	See below	See below	See below	See below	—
	Ambient T_{min} (°C) ..... :	--	--	--	--	—
	Ambient T_{max} (°C) ..... :	--	--	--	--	—
	Tma (°C) ..... :	--	Shift to Tma	--	Shift to Tma	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Data from report E359706-A112		--	--	--	--	--
Model: NVR302-16E-B		12VDC	12VDC	--	--	--
1 Battery body		35.9	66.8	--	--	100
2 PWB near battery		35.6	66.5	--	--	105
3 PWB between T12 and T13		33.8	64.7	--	--	105
4 PWB near U6		39.2	70.1	--	--	105
5 PWB near C153		40.9	71.8	--	--	105
6 PWB between U38 and U39		38.6	69.5	--	--	105
7 PWB between U36 and U37		39.8	70.7	--	--	105
8 PWB near D17		32.9	63.8	--	--	105
9 PWB between C925 and Q30		38.5	69.4	--	--	105
10 PWB near U27		35.9	66.8	--	--	105
11 PWB near U2		35.5	66.4	--	--	105
12 PWB between D14 and D15 bottom side		37.1	68.0	--	--	105
13 PWB near U25 bottom side		42.1	73.0	--	--	105
14 Metal enclosure on the topside		26.9	57.8	--	--	70
15 Metal enclosure on the bottom side		29.2	60.1	--	--	70
16 Plastic enclosure on the front panel		25.7	56.6	--	--	95
17.Ambient		24.1	Shift to 55	--	--	--
Model: NVR302-16E-B		12VDC	12VDC	--	--	--
1 Battery body		35.9	36.8	--	--	80

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
2 PWB near battery	35.6	36.5	--	--	104
3 PWB between T12 and T13	33.8	34.7	--	--	104
4 PWB near U6	39.2	40.1	--	--	104
5 PWB near C153	40.9	41.8	--	--	104
6 PWB between U38 and U39	38.6	39.5	--	--	104
7 PWB between U36 and U37	39.8	40.7	--	--	104
8 PWB near D17	32.9	33.8	--	--	104
9 PWB between C925 and Q30	38.5	39.4	--	--	104
10 PWB near U27	35.9	36.8	--	--	104
11 PWB near U2	35.5	36.4	--	--	104
12 PWB between D14 and D15 bottom side	37.1	38	--	--	104
13 PWB near U25 bottom side	42.1	43	--	--	104
14 Metal enclosure on the topside	26.9	27.8	--	--	70
15 Metal enclosure on the bottom side	29.2	30.1	--	--	70
16 Plastic enclosure on the front panel	25.7	26.6	--	--	94
17.Ambient	24.1	Shift to 25	--	--	--
Model: NVR302-08S	12VDC	12VDC	--	--	--
1 Battery body	35.6	66.8	--	--	100
2 PWB near battery	37.0	68.2	--	--	105
3 PWB near T4	38.5	69.7	--	--	105
4 PWB near U18	37.6	68.8	--	--	105
5 PWB near C53	41.1	72.3	--	--	105
6 PWB between U15 and U16	46.3	77.5	--	--	105
7 PWB between U5 and U6	43.9	75.1	--	--	105
8 PWB near U21	41.7	72.9	--	--	105
9 PWB near D3	36.6	67.8	--	--	105
10 PWB near L1	40.3	71.5	--	--	105
11 PWB near U10 bottom side	41.0	72.2	--	--	105
12 PWB near U7 bottom side	44.9	76.1	--	--	105
13 PWB near U8 bottom side	42.1	73.3	--	--	105
14 Metal enclosure on the topside	27.2	58.4	--	--	70
15 Metal enclosure on the bottom side	32.1	63.3	--	--	70
16 Plastic enclosure on the front panel	26.1	57.3	--	--	95
Ambient	23.8	Shift to 55	--	--	--
Model: NVR302-08S	12VDC	12VDC	--	--	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
1 Battery body	35.6	36.8	--	--	80
2 PWB near battery	37.0	38.2	--	--	104
3 PWB near T4	38.5	39.7	--	--	104
4 PWB near U18	37.6	38.8	--	--	104
5 PWB near C53	41.1	42.3	--	--	104
6 PWB between U15 and U16	46.3	47.5	--	--	104
7 PWB between U5 and U6	43.9	45.1	--	--	104
8 PWB near U21	41.7	42.9	--	--	104
9 PWB near D3	36.6	37.8	--	--	104
10 PWB near L1	40.3	41.5	--	--	104
11 PWB near U10 bottom side	41.0	42.2	--	--	104
12 PWB near U7 bottom side	44.9	46.1	--	--	104
13 PWB near U8 bottom side	42.1	43.3	--	--	104
14 Metal enclosure on the topside	27.2	28.4	--	--	70
15 Metal enclosure on the bottom side	32.1	33.3	--	--	70
16 Plastic enclosure on the front panel	26.1	27.3	--	--	94
Ambient	23.8	Shift to 25	--	--	--
Model NVR302-16S	--	--	--	--	--
1 Battery body	36.5	67.2	--	--	100
2 PWB near battery	38.4	69.1	--	--	105
3 PWB between T7 and D57	41.6	72.3	--	--	105
4 PWB near U39	47.2	77.9	--	--	105
5 PWB near D58 bottom side of mainboard	44.1	74.8	--	--	105
6 Metal enclosure	30.5	61.2	--	--	70
7 Metal on the back side	31.8	62.5	--	--	70
8 Plastic on the front	27.2	57.9	--	--	95
9 Ambient	24.3	Shift to 55.0	--	--	--
Model NVR302-16S	--	--	--	--	--
1 Battery body	36.5	37.2	--	--	80
2 PWB near battery	38.4	39.1	--	--	104
3 PWB between T7 and D57	41.6	42.3	--	--	104
4 PWB near U39	47.2	47.9	--	--	104
5 PWB near D58 bottom side of mainboard	44.1	44.8	--	--	104
6 Metal enclosure	30.5	31.2	--	--	70
7 Metal on the back side	31.8	32.5	--	--	70

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
8 Plastic on the front	27.2	27.9	--	--	94
9 Ambient	24.3	Shift to 25	--	--	--
Model: NVR302-16Q	--	--	--	--	--
1 Battery body	37.5	68.7	--	--	100
2 PWB near battery	38.9	70.1	--	--	105
3 PWB between U7 and U8	42.8	74.0	--	--	105
4 PWB under heatsink	43.0	74.2	--	--	105
5 PWB between L1 and L2	40.2	71.4	--	--	105
6 Metal enclosure on the top side	27.5	58.7	--	--	70
7 Metal enclosure on the bottom side	32.3	63.5	--	--	70
8 Plastic enclosure on the front side	25.7	56.9	--	--	95
9 Ambient	23.8	Shift to 55	--	--	--
Model: NVR302-16Q	12Vdc	12Vdc	--	--	--
1 Battery body	37.5	38.7	--	--	80
2 PWB near battery	38.9	40.1	--	--	104
3 PWB between U7 and U8	42.8	44	--	--	104
4 PWB under heatsink	43.0	44.2	--	--	104
5 PWB between L1 and L2	40.2	41.4	--	--	104
6 Metal enclosure on the top side	27.5	28.7	--	--	70
7 Metal enclosure on the bottom side	32.3	33.5	--	--	70
8 Plastic enclosure on the front side	25.7	26.9	--	--	94
9 Ambient	23.8	Shift to 25	--	--	--
Model: NVR302-08Q	12Vdc	12Vdc	--	--	--
1 Battery body	37.8	69.1	--	--	100
2 PWB near battery	39.1	70.4	--	--	105
3 PWB between U11 and U12	42.1	73.4	--	--	105
4 PWB under heatsink	46.6	77.9	--	--	105
5 PWB near L33	43.2	74.5	--	--	105
6 Metal enclosure on the top side	30.8	62.1	--	--	70
7 Metal enclosure on the bottom side	33.3	64.6	--	--	70
8 Plastic enclosure on the front side	26.8	58.1	--	--	95
9 Ambient	23.7	Shift to 55	--	--	--
Model: NVR302-08Q	12Vdc	12Vdc	--	--	--
1 Battery body	37.8	39.1	--	--	80
2 PWB near battery	39.1	40.4	--	--	104

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
3 PWB between U11 and U12	42.1	43.4	--	--	104
4 PWB under heatsink	46.6	47.9	--	--	104
5 PWB near L33	43.2	44.5	--	--	104
6 Metal enclosure on the top side	30.8	32.1	--	--	70
7 Metal enclosure on the bottom side	33.3	34.6	--	--	70
8 Plastic enclosure on the front side	26.8	28.1	--	--	94
9 Ambient	23.7	Shift to 25	--	--	--
Model: NVR302-08U	12Vdc	12Vdc	--	--	--
1 Battery body	36.8	67.8	--	--	100
2 PWB near battery	39.1	70.1	--	--	105
3 PWB between U3 and U4	42.0	73.0	--	--	105
4 PWB under heatsink	45.2	76.2	--	--	105
5 PWB between Q14 and Q16	42.3	73.3	--	--	105
6 Metal enclosure on the top side	26.9	57.9	--	--	70
7 Metal enclosure on the bottom side	33.2	64.2	--	--	70
8 Plastic enclosure on the front side	25.5	56.5	--	--	95
9 Ambient	24.0	Shift to 55	--	--	--
Model: NVR302-08U	12Vdc	12Vdc	--	--	--
1 Battery body	36.8	37.8	--	--	80
2 PWB near battery	39.1	40.1	--	--	104
3 PWB between U3 and U4	42.0	43	--	--	104
4 PWB under heatsink	45.2	46.2	--	--	104
5 PWB between Q14 and Q16	42.3	43.3	--	--	104
6 Metal enclosure on the top side	26.9	27.9	--	--	70
7 Metal enclosure on the bottom side	33.2	34.2	--	--	70
8 Plastic enclosure on the front side	25.5	26.5	--	--	94
9 Ambient	24.0	Shift to 25	--	--	--
Model: NVR302-32S	12Vdc	12Vdc	--	--	--
RTC body	37.6	71.3	--	--	100
PWB near RTC	40.8	74.5	--	--	105
PWB between T2 and T3	39.4	73.1	--	--	105
PWB near U4 AND C341	52.1	85.8	--	--	105
Front plastic panel	23.9	57.6	--	--	95
Metal enclosure up near mainboard	31.9	65.6	--	--	70
Metal enclosure bottom near mainboard	34.5	68.2	--	--	70

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Clause	Requirement + Test	Result - Remark			Verdict
Ambient	21.3	Shift to 55	--	--	-
Model: NVR302-32S	12Vdc	12Vdc	--	--	--
RTC body	37.6	41.3	--	--	80
PWB near RTC	40.8	44.5	--	--	104
PWB between T2 and T3	39.4	43.1	--	--	104
PWB near U4 AND C341	52.1	55.8	--	--	104
Front plastic panel	23.9	27.6	--	--	94
Metal enclosure up near mainboard	31.9	35.6	--	--	70
Metal enclosure bottom near mainboard	34.5	38.2	--	--	70
Ambient	21.3	Shift to 25	--	--	-
For test record 6	--	--	--	--	--
Main board	--	--	--	--	--
1.BAT	38.3	69.1	--	--	100
2.PWB near BAT	40.7	71.5	--	--	130
3.PWB near U6	46.3	77.1	--	--	130
4.PWB near U37	44.4	75.2	--	--	130
5.USB board	34.6	65.4	--	--	--
6.Center of PWB	49.4	80.2	--	--	130
7.Front plastic panel	26.3	57.1	--	--	95
8.Metal enclosure up near mainboard	28.0	58.8	--	--	70
9.Metal enclosure bottom near mainboard	34.4	65.2	--	--	70
Ambient	24.2	Shift to 55	--	--	--
For test record 6	12Vdc	12Vdc	--	--	--
Main board	--	--	--	--	--
1.BAT	38.3	39.1	--	--	80
2.PWB near BAT	40.7	41.5	--	--	104
3.PWB near U6	46.3	47.1	--	--	104
4.PWB near U37	44.4	45.2	--	--	104
5.USB board	34.6	35.4	--	--	--
6.Center of PWB	49.4	50.2	--	--	104
7.Front plastic panel	26.3	27.1	--	--	94
8.Metal enclosure up near mainboard	28.0	28.8	--	--	70
9.Metal enclosure bottom near mainboard	34.4	35.2	--	--	70
Ambient	24.2	Shift to 25	--	--	--
Data of upgrading standard	--	--	--	--	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Normal Condition	--	--	--	--	--
Model: XVR302-08U-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	44.4	76.5	--	--	105
PWB near U7	40.6	72.7	--	--	105
PWB near BAT	37.9	70.0	--	--	105
PWB bottom Center on the mainboard	38.2	70.3	--	--	105
BAT on the mainboard	34.0	66.1	--	--	100
SDD	32.7	64.8	--	--	--
PWB Center on the USB 2.0 board	38.8	70.9	--	--	105
PWB Center on the sensor board	39.3	71.4	--	--	105
Front plastic panel inside	25.9	58.0	--	--	80
Ambient	22.9	Shift to 55	--	--	--
Top metal enclosure outside near heatsink	25.1	27.2	--	--	70
Side metal enclosure outside near USB port	28.8	30.9	--	--	70
Front plastic panel outside	24.4	26.5	--	--	94
Ambient	22.9	Shift to 25	--	--	
Model: XVR302-16Q-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	40.2	72.4	--	--	105
PWB near U9	38.9	71.1	--	--	105
PWB near BAT	39.5	71.7	--	--	105
PWB bottom Center on the mainboard	39.4	71.6	--	--	105
BAT on the mainboard	35.5	67.7	--	--	100
SDD	32.9	65.1	--	--	--
PWB Center on the USB 2.0 board	42.1	74.3	--	--	105
PWB Center on the sensor board	37.8	70.0	--	--	105
Front plastic panel inside	24.8	57.0	--	--	80
Ambient	22.8	Shift to 55	--	--	--
Top metal enclosure outside near heatsink	24.1	26.3	--	--	70
Side metal enclosure outside near USB port	24.7	26.9	--	--	70
Front plastic panel outside	27.8	30.0	--	--	94
Ambient	22.8	Shift to 25	--	--	--
Abnormal Condition	Opening Cover	Opening Cover	--	--	--
Model: XVR302-08U-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	45.9	78.7	--	--	300
PWB near U7	43.2	76.0	--	--	300

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
PWB near BAT	40.9	73.7	--	--	300
PWB bottom center on the mainboard	40.6	73.4	--	--	300
BAT on the mainboard	37.0	69.8	--	--	300
SDD	33.7	66.5	--	--	300
PWB center on the USB 2.0 board	41.4	74.2	--	--	300
PWB center on the sensor board	42.8	75.6	--	--	300
Front plastic panel inside	26.7	59.5	--	--	300
Ambient	22.2	55	--	--	--
Top metal enclosure outside near heatsink	21.5	24.3	--	--	80
Side metal enclosure outside near USB port	31.2	34.0	--	--	80
Front plastic panel outside	24.7	27.5	--	--	104
Ambient	22.2	25	--	--	
Model: XVR302-16Q-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	42.9	75.0	--	--	300
PWB near U9	43.3	75.4	--	--	300
PWB near BAT	44.1	76.2	--	--	300
PWB bottom center on the mainboard	43.1	75.2	--	--	300
BAT on the mainboard	39.9	72.0	--	--	300
SDD	35.6	67.7	--	--	300
PWB center on the USB 2.0 board	44.3	76.4	--	--	300
PWB center on the sensor board	40.2	72.3	--	--	300
Front plastic panel inside	26.5	58.6	--	--	300
Ambient	22.9	55.0	--	--	--
Top metal enclosure outside near heatsink	26.2	28.3	--	--	80
Side metal enclosure outside near USB port	27.9	30.0	--	--	80
Front plastic panel outside	29.8	31.9	--	--	104
Ambient	22.9	25.0	--	--	--
Abnormal Condition	USB3.0 OL	USB3.0 OL	--	--	--
Model: XVR302-08U-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	62.3	95.2	--	--	300
PWB near U7	55.0	87.9	--	--	300
PWB near BAT	50.5	83.4	--	--	300
PWB bottom center on the mainboard	54.9	87.8	--	--	300
BAT on the mainboard	45.7	78.6	--	--	300
SDD	40.1	73.0	--	--	300

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
PWB center on the USB 2.0 board	58.7	91.6	--	--	300
PWB center on the sensor board	57.0	89.9	--	--	300
Front plastic panel inside	28.6	61.5	--	--	300
Ambient	22.1	55.0	--	--	--
Top metal enclosure outside near heatsink	30.2	33.1	--	--	80
Side metal enclosure outside near USB port	39.3	42.2	--	--	80
Front plastic panel outside	28.0	30.9	--	--	104
Ambient	22.1	25.0	--	--	
Model: XVR302-16Q-IF	USB3.0 OL	USB3.0 OL	--	--	--
PWB near heatsink	47.3	78.2	--	--	300
PWB near U9	45.9	76.8	--	--	300
PWB near BAT	44.6	75.5	--	--	300
PWB bottom center on the mainboard	45.1	76.0	--	--	300
BAT on the mainboard	39.9	70.8	--	--	300
SDD	37.2	68.1	--	--	300
PWB center on the USB 2.0 board	47.4	78.3	--	--	300
PWB center on the sensor board	46.6	77.5	--	--	300
Front plastic panel inside	28.1	59.0	--	--	300
Ambient	24.1	55.0	--	--	--
Top metal enclosure outside near heatsink	27.7	28.6	--	--	80
Side metal enclosure outside near USB port	28.6	29.5	--	--	80
Front plastic panel outside	35.3	36.2	--	--	104
Ambient	24.1	25.0	--	--	--
Abnormal Condition	USB2.0 OL	USB2.0 OL	--	--	--
Model: XVR302-08U-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	61.3	94.6	--	--	300
PWB near U7	54.1	87.4	--	--	300
PWB near BAT	49.5	82.8	--	--	300
PWB bottom center on the mainboard	53.3	86.6	--	--	300
BAT on the mainboard	45.2	78.5	--	--	300
SDD	40.7	74.0	--	--	300
PWB center on the USB 2.0 board	63.0	96.3	--	--	300
PWB center on the sensor board	55.7	89.0	--	--	300
Front plastic panel inside	29.7	63.0	--	--	300

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Ambient	21.7	55.0	--	--	--
Top metal enclosure outside near heatsink	29.8	33.1	--	--	80
Side metal enclosure outside near USB port	38.0	41.3	--	--	80
Front plastic panel outside	27.9	31.2	--	--	104
Ambient	21.7	25.0	--	--	
Model: XVR302-16Q-IF	USB2.0 OL	USB2.0 OL	--	--	--
PWB near heatsink	47.8	79.0	--	--	300
PWB near U9	44.8	76.0	--	--	300
PWB near BAT	44.6	75.8	--	--	300
PWB bottom center on the mainboard	45.0	76.2	--	--	300
BAT on the mainboard	39.8	71.0	--	--	300
SDD	36.4	67.6	--	--	300
PWB center on the USB 2.0 board	49.5	80.7	--	--	300
PWB center on the sensor board	46.4	77.6	--	--	300
Front plastic panel inside	27.7	58.9	--	--	300
Ambient	23.8	55.0	--	--	--
Top metal enclosure outside near heatsink	27.1	28.3	--	--	80
Side metal enclosure outside near USB port	28.1	29.3	--	--	80
Front plastic panel outside	33.8	35.0	--	--	104
Ambient	23.8	25.0	--	--	--
Abnormal Condition	HDMI SC	HDMI SC	--	--	--
Model: XVR302-08U-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	60.9	94.4	--	--	300
PWB near U7	53.8	87.3	--	--	300
PWB near BAT	49.2	82.7	--	--	300
PWB bottom center on the mainboard	54.1	87.6	--	--	300
BAT on the mainboard	44.6	78.1	--	--	300
SDD	39.9	73.4	--	--	300
PWB center on the USB 2.0 board	58.4	91.9	--	--	300
PWB center on the sensor board	55.2	88.7	--	--	300
Front plastic panel inside	28.1	61.6	--	--	300
Ambient	21.5	55.0	--	--	--
Top metal enclosure outside near heatsink	30.0	33.5	--	--	80
Side metal enclosure outside near USB port	37.7	41.2	--	--	80

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Front plastic panel outside	26.7	30.2	--	--	104
Ambient	21.5	25.0	--	--	
Model: XVR302-16Q-IF	HDMI SC	HDMI SC	--	--	--
PWB near heatsink	47.3	79.6	--	--	300
PWB near U9	43.9	76.2	--	--	300
PWB near BAT	43.6	75.9	--	--	300
PWB bottom center on the mainboard	44.2	76.5	--	--	300
BAT on the mainboard	39.2	71.5	--	--	300
SDD	34.8	67.1	--	--	300
PWB center on the USB 2.0 board	47.0	79.3	--	--	300
PWB center on the sensor board	44.6	76.9	--	--	300
Front plastic panel inside	26.1	58.4	--	--	300
Ambient	22.7	55.0	--	--	--
Top metal enclosure outside near heatsink	25.7	28.0	--	--	80
Side metal enclosure outside near USB port	27.1	29.4	--	--	80
Front plastic panel outside	33.8	36.1	--	--	104
Ambient	22.7	25.0	--	--	--
Abnormal Condition	Blocked system fan	Blocked system fan			
Model: XVR302-08U-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	54.8	87.5	--	--	300
PWB near U7	48.6	81.3	--	--	300
PWB near BAT	45.0	77.7	--	--	300
PWB bottom center on the mainboard	46.5	79.2	--	--	300
BAT on the mainboard	41.1	73.8	--	--	300
SDD	38.1	70.8	--	--	300
PWB center on the USB 2.0 board	47.8	80.5	--	--	300
PWB center on the sensor board	51.6	84.3	--	--	300
Front plastic panel inside	28.0	60.7	--	--	300
Ambient	22.3	55.0	--	--	--
Top metal enclosure outside near heatsink	29.1	31.8	--	--	80
Side metal enclosure outside near USB port	35.2	37.9	--	--	80
Front plastic panel outside	27.3	30.0	--	--	104
Ambient	22.3	25.0	--	--	

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Model: XVR302-16Q-IF	12Vdc	12Vdc	--	--	--
PWB near heatsink	52.0	84.1	--	--	300
PWB near U9	50.5	82.6	--	--	300
PWB near BAT	51.1	83.2	--	--	300
PWB bottom center on the mainboard	50.6	82.7	--	--	300
BAT on the mainboard	46.9	79.0	--	--	300
SDD	39.0	71.1	--	--	300
PWB center on the USB 2.0 board	52.0	84.1	--	--	300
PWB center on the sensor board	48.8	80.9	--	--	300
Front plastic panel inside	28.3	60.4	--	--	300
Ambient	22.9	55.0	--	--	--
Top metal enclosure outside near heatsink	26.8	28.9	--	--	80
Side metal enclosure outside near USB port	30.3	32.4	--	--	80
Front plastic panel outside	35.2	37.3	--	--	104
Ambient	22.9	25.0	--	--	--
NORMAL CONDITION	--	--	--	--	--
NVR302-32S with alternate mainboard(refer to enclosure 03-79&03-80)	12Vdc	12Vdc	--	--	--
1BT1	35.0	67.3	--	--	100
PWB near BT1	36.3	68.6	--	--	105
PWB near heatsink	44.1	76.4	--	--	105
PWB near T2 and T3	36.6	68.9	--	--	105
PWB bottom center	49.0	81.3	--	--	105
Metal enclosure outside near mainboard	31.0	63.3	--	--	--
Plastic enclosure outside near mainboard	23.8	56.1	--	--	--
Ambient	22.7	Shift to 55	--	--	--
BT1	35.0	37.3	--	--	80
PWB near BT1	36.3	38.6	--	--	104
PWB near heatsink	44.1	46.4	--	--	104
PWB near T2 and T3	36.6	38.9	--	--	104
PWB bottom center	49.0	51.3	--	--	104
Metal enclosure outside near mainboard	31.0	33.3	--	--	70
Plastic enclosure outside near mainboard	23.8	26.1	--	--	94
Ambient	22.7	Shift to 25	--	--	--
ABNORMAL CONDITION	--	--	--	--	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
NVR302-32S with alternate mainboard(refer to enclosure 03-79&03-80)	USB 2.0 Overload	USB 2.0 Overload	USB 2.0 SC	USB 2.0 SC	--
BT1	41.3	73.1	39.5	71.8	100
PWB near BT1	43.1	74.9	41.4	73.7	300
PWB near heatsink	54.9	86.7	53.0	85.3	300
PWB near T2 and T3	44.4	76.2	42.8	75.1	300
PWB bottom center	57.7	89.5	56.1	88.4	300
Ambient	23.2	55	22.7	55	--
Metal enclosure outside near mainboard	36.9	38.7	35.4	37.7	80
Plastic enclosure outside near mainboard	25.9	27.7	25.9	28.2	104
Ambient	23.2	Shift to 25	22.7	Shift to 25	--
NVR302-32S with alternate mainboard(refer to enclosure 03-79&03-80)	USB 3.0 Overload	USB 3.0 Overload	USB 3.0 SC	USB 3.0 SC	--
BT1	41.5	73.3	39.8	72.1	100
PWB near BT1	43.4	75.2	41.7	74	300
PWB near heatsink	55.1	86.9	53.2	85.5	300
PWB near T2 and T3	44.6	76.4	43.1	75.4	300
PWB bottom center	58.4	90.2	56.0	88.3	300
Ambient	23.2	Shift to 55	22.7	Shift to 55	--
Metal enclosure outside near mainboard	37.3	39.1	35.2	37.5	80
Plastic enclosure outside near mainboard	27.0	28.8	25.2	27.5	104
Ambient	23.2	Shift to 25	22.7	Shift to 25	--
NVR302-32S with alternate mainboard(refer to enclosure 03-79&03-80)	Openings Cover	Openings Cover	--	--	--
BT1	38.0	70.3	--	--	100
PWB near BT1	39.3	71.6	--	--	300
PWB near heatsink	47.5	79.8	--	--	300
PWB near T2 and T3	39.4	71.7	--	--	300
PWB bottom center	52.2	84.5	--	--	300
Ambient	22.7	55	--	--	--
Metal enclosure outside near mainboard	33.4	35.7	--	--	80
Plastic enclosure outside near mainboard	26.0	28.3	--	--	104
Ambient	22.7	Shift to 25	--	--	--
For model NVR302-09E-B: normal	--	--	--	--	with fan (model: DA04010B12LA)

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
RTC Body	33.2	64.8	--	--	100
PCB near RTC	34.9	66.5	--	--	105
PCB near heatsink	45.1	76.7	--	--	105
PCB center on the bottom side	41.6	73.2	--	--	105
HDD body	33.4	65.0	--	--	For reference
Sensor board	27.8	59.4	--	--	105
Metal near main board	25.3	56.9	--	--	For reference
Metal near USB 3.0	28.1	59.7	--	--	For reference
Plastic enclosure near USB 2.0	25.6	57.2	--	--	For reference
Switch	26.5	58.1	--	--	77
Ambient	23.4	Shift to 55	--	--	--
RTC Body	33.2	34.8	--	--	80
PCB near RTC	34.9	36.5	--	--	104
PCB near heatsink	45.1	46.7	--	--	104
PCB center on the bottom side	41.6	43.2	--	--	104
HDD body	33.4	35.0	--	--	70
Sensor board	27.8	29.4			104
Metal near main board	25.3	26.9	--	--	70
Metal near USB 3.0	28.1	29.7	--	--	70
Plastic enclosure near USB 2.0	25.6	27.2	--	--	94
Switch	26.5	28.1	--	--	77
Ambient	23.4	Shift to 25	--	--	--
For model NVR302-09E-B: abnormal	USB 3.0 SC	USB 3.0 SC	USB 3.0 overload	USB 3.0 overload	with fan (model: DA04010B 12LA)
RTC Body	--	--	35.2	66.0	100
PCB near RTC	--	--	36.9	67.7	300
PCB near heatsink	--	--	47.5	78.3	300
PCB center on the bottom side	--	--	44.3	75.1	300
HDD body	--	--	35.7	66.5	300
Sensor board	--	--	29.0	59.8	300
Ambient	--	Shift to 55	24.2	Shift to 55	--
Metal near main board	--	--	26.7	27.5	80

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Metal near USB 3.0	--	--	32.2	33.0	80
Plastic enclosure near USB 2.0	--	--	26.3	27.1	104
Switch	--	--	30.9	31.7	87
Ambient	--	Shift to 25	24.2	Shift to 25	--
For model NVR302-09E-B: abnormal	System fan block	System fan block			with fan (model: DA04010B 12LA)
RTC Body	37.4	69.4			100
PCB near RTC	39.6	71.6			300
PCB near heatsink	52.2	84.2			300
PCB center on the bottom side	47.7	79.7			300
HDD body	39.9	71.9			300
Sensor board	31.4	63.4			300
Ambient	23.0	Shift to 55			--
Metal near main board	28.3	30.3			80
Metal near USB 3.0	32.3	34.3			80
Plastic enclosure near USB 2.0	27.1	29.1			104
Switch	30.4	32.4			87
Ambient	23.0	Shift to 25			--
For model NVR302-09E-B: abnormal	Cover opening	Cover opening	--	--	with fan (model: DA04010B 12LA)
RTC Body	35.3	66.6	--	--	100
PCB near RTC	36.9	68.2	--	--	300
PCB near heatsink	47.3	78.6	--	--	300
PCB center on the bottom side	43.7	75.0	--	--	300
HDD body	35.6	66.9	--	--	300
Sensor board	28.6	59.9	--	--	300
Ambient	23.7	Shift to 55	--	--	--
Metal near main board	27.2	28.5	--	--	80
Metal near USB 3.0	30.3	31.6	--	--	80
Plastic enclosure near USB 2.0	26.2	27.5	--	--	104
Switch	28.9	30.2	--	--	87
Ambient	23.7	Shift to 25			--
Model: NVR302-32S-DT	--	--	--	--	--
NORMAL CONDITION	12Vdc	12Vdc	--	--	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
1.PWB near U4	49.4	83.0	--	--	105
2.Heatsink	54.1	87.7	--	--	For ref.
3.PWB near BT1	36.1	69.7	--	--	105
4.BT1	32.9	66.5	--	--	100
5.PWB near power interface	35.8	69.4	--	--	105
6.Front USB board	25.7	59.3	--	--	105
7.Metal enclosure outside near power interface	29.2	62.8	--	--	For ref.
8.Metal enclosure outside near USB 3.0	30.3	63.9	--	--	For ref.
9.Metal enclosure outside near mainboard	29.0	62.6	--	--	For ref.
10.Plastic enclosure outside near front USB 2.0	24.4	58.0	--	--	For ref.
11.Ambient	21.4	Shift to 55	--	--	--
1.PWB near U4	49.4	53.0	--	--	104
2.Heatsink	54.1	57.7	--	--	80
3.PWB near BT1	36.1	39.7	--	--	104
4.BT1	32.9	36.5	--	--	80
5.PWB near power interface	35.8	39.4	--	--	104
6.Front USB board	25.7	29.3	--	--	104
7.Metal enclosure outside near power interface	29.2	32.8	--	--	80
8.Metal enclosure outside near USB 3.0	30.3	33.9	--	--	80
9.Metal enclosure outside near mainboard	29.0	32.6	--	--	80
10.Plastic enclosure outside near front USB 2.0	24.4	28.0	--	--	94
11.Ambient	21.4	Shift to 25	--	--	--
ABNORMAL CONDITION	12Vdc	12Vdc	--	--	--
FOR USB 3.0	Overload	Overload	--	--	--
1.PWB near U4	53.2	85.6	--	--	300
2.Heatsink	57.7	90.1	--	--	For ref.
3.PWB near BT1	41.0	73.4	--	--	300
4.BT1	37.4	69.8	--	--	For ref.
5.PWB near power interface	38.7	71.1	--	--	300
6.Front USB board	27.3	59.7	--	--	300
Ambient	22.6	Shift to 55	--	--	--
7.Metal enclosure outside near power interface	31.7	34.1	--	--	80
8.Metal enclosure outside near USB 3.0	35.6	38.0	--	--	80
9.Metal enclosure outside near mainboard	31.4	33.8	--	--	80
10.Plastic enclosure outside near front USB 2.0	25.1	27.5	--	--	104

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
11.Ambient	22.6	Shift to 25	--	--	--
FOR FRONT USB 2.0	Overload	Overload	--	--	--
1.PWB near U4	51.7	84.4	--	--	300
2.Heatsink	56.2	88.9	--	--	For ref.
3.PWB near BT1	38.8	71.5	--	--	300
4.BT1	35.8	68.5	--	--	For ref.
5.PWB near power interface	38.5	71.2	--	--	300
6.Front USB board	29.1	61.8	--	--	300
Ambient	22.3	Shift to 55	--	--	--
7.Metal enclosure outside near power interface	30.9	33.6	--	--	80
8.Metal enclosure outside near USB 3.0	31.7	34.4	--	--	80
9.Metal enclosure outside near mainboard	30.7	33.4	--	--	80
10.Plastic enclosure outside near front USB 2.0	25.7	28.4	--	--	104
11.Ambient	22.3	Shift to 25	--	--	--
FOR OPENINGS	Covered	Covered	--	--	--
1.PWB near U4	54.1	87.4	--	--	300
2.Heatsink	58.5	91.8	--	--	For ref.
3.PWB near BT1	39.6	72.9	--	--	300
4.BT1	36.3	69.6	--	--	For ref.
5.PWB near power interface	41.0	74.3	--	--	300
6.Front USB board	31.4	64.7	--	--	300
Ambient	21.7	Shift to 55	--	--	--
7.Metal enclosure outside near power interface	32.0	35.3	--	--	80
8.Metal enclosure outside near USB 3.0	32.2	35.5	--	--	80
9.Metal enclosure outside near mainboard	30.7	34.0	--	--	80
10.Plastic enclosure outside near front USB 2.0	26.7	30.0	--	--	104
11.Ambient	21.7	Shift to 25	--	--	--
For model NVR302-16IF-IN: Normal	12Vdc	12Vdc	--	--	--
1.RTC Body	35.5	67.2	--	--	100
2.PCB near RTC	36.7	68.4	--	--	105
3.PCB near heatsink	46.2	77.9	--	--	105
4.PCB center on the bottom side	47.4	79.1	--	--	105
5.HDD body	41.9	73.6	--	--	For reference
6.Sensor board	28.6	60.3	--	--	105
10.Ambient	23.3	Shift to 55	--	--	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
1.RTC Body	35.5	37.2	--	--	80
2.PCB near RTC	36.7	38.4	--	--	104
3.PCB near heatsink	46.2	47.9	--	--	104
4.PCB center on the bottom side	47.4	49.1	--	--	104
5.HDD body	41.9	43.6	--	--	80
6.Sensor board	28.6	30.3			104
7.Metal enclosure outside near main board	32.4	34.1	--	--	60
8.Metal enclosure outside near USB 3.0	32.5	34.2	--	--	60
9.Plastic enclosure outside near USB 2.0	26.4	28.1	--	--	77
10.Ambient	23.3	Shift to 25	--	--	--
For model NVR302-16IF-IN: Abnormal	USB 3.0 overload	USB 3.0 overload	--	--	--
1.RTC Body	37.8	68.4	--	--	300
2.PCB near RTC	39.2	69.8	--	--	300
3.PCB near heatsink	54.8	85.4	--	--	300
4.PCB center on the bottom side	53.3	83.9	--	--	300
5.HDD body	43.6	74.2	--	--	300
6.Sensor board	29.3	59.9	--	--	300
10.Ambient	24.4	Shift to 55	--	--	--
7.Metal enclosure outside near main board	35.2	35.8	--	--	70
8.Metal enclosure outside near USB 3.0	43.8	44.4	--	--	70
9.Plastic enclosure outside near USB 2.0	27.1	27.7	--	--	87
10.Ambient	24.4	Shift to 25	--	--	--
For model NVR302-16IF-IN: Abnormal	Cover opening	Cover opening	--	--	--
1.RTC Body	37.9	69.5	--	--	300
2.PCB near RTC	38.8	70.4	--	--	300
3.PCB near heatsink	48.2	79.8	--	--	300
4.PCB center on the bottom side	49.6	81.2	--	--	300
5.HDD body	44.4	76.0	--	--	300
6.Sensor board	29.8	61.4	--	--	300
10.Ambient	23.4	Shift to 55	--	--	--
7.Metal enclosure outside near main board	34.3	35.9	--	--	70
8.Metal enclosure outside near USB 3.0	34.7	36.3	--	--	70
9.Plastic enclosure outside near USB 2.0	27.7	29.3	--	--	87
10.Ambient	23.4	Shift to 25	--	--	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Model: NVR302-32E2	--	--	--	--	--
NORMAL CONDITION	12Vdc	12Vdc	--	--	--
1.PWB near H1	47.1	81.9	--	--	105
2.Heatsink	48.1	82.9	--	--	For ref.
3.PWB near BT1	37.7	72.5	--	--	105
4.BT1	37.3	72.1	--	--	100
5.PWB near power interface	41.6	76.4	--	--	105
6.Mental enclosure outside near power interface	31.9	66.7	--	--	For ref.
7.Mental enclosure outside near USB 3.0	29.9	64.7	--	--	For ref.
8.Mental enclosure outside near mainboard	34.0	68.8	--	--	For ref.
9.Plastic enclosure outside near front USB 2.0	24.8	59.6	--	--	For ref.
Ambient	20.2	Shift to 55	--	--	--
1.PWB near H1	47.1	51.9	--	--	104
2.Heatsink	48.1	52.9	--	--	80
3.PWB near BT1	37.7	42.5	--	--	104
4.BT1	37.3	42.1	--	--	80
5.PWB near power interface	41.6	46.4	--	--	104
6.Mental enclosure outside near power interface	31.9	36.7	--	--	70
7.Mental enclosure outside near USB 3.0	29.9	34.7	--	--	70
8.Mental enclosure outside near mainboard	34.0	38.8	--	--	70
9.Plastic enclosure outside near front USB 2.0	24.8	29.6	--	--	94
Ambient	20.2	Shift to 25	--	--	--
ABNORMAL CONDITION	12Vdc	12Vdc	12Vdc	12Vdc	--
FOR USB 3.0	Overload	Overload	SC	SC	--
1.PWB near H1	53.8	89.9	54.6	90.6	300
2.Heatsink	54.2	90.3	55.7	91.7	300
3.PWB near BT1	41.7	77.8	42.7	78.7	300
4.BT1	41.3	77.4	42.2	78.2	300
5.PWB near power interface	51.5	87.6	45.9	81.9	300
Ambient	18.9	Shift to 55	19.0	Shift to 55	--
6.Mental enclosure outside near power interface	36.8	42.9	35.2	41.2	80
7.Mental enclosure outside near USB 3.0	38.2	44.3	38.2	44.2	80
8.Mental enclosure outside near mainboard	38.8	44.9	39.3	45.3	80
9.Plastic enclosure outside near front USB 2.0	27.4	33.5	27.5	33.5	104
Ambient	18.9	Shift to 25	19.0	Shift to 25	--

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
FOR FRONT USB 2.0	Overload	Overload	SC	SC	--
1.PWB near H1	58.7	93.5	60.3	95.4	300
2.Heatsink	57.8	92.6	59.8	94.9	300
3.PWB near BT1	44.5	79.3	46.3	81.4	300
4.BT1	43.9	78.7	45.8	80.9	300
5.PWB near power interface	55.0	89.8	48.2	83.3	300
Ambient	20.2	Shift to 55	19.9	Shift to 55	--
6.Mental enclosure outside near power interface	40.0	44.8	36.6	41.7	80
7.Mental enclosure outside near USB 3.0	39.4	44.2	38.9	44.0	80
8.Mental enclosure outside near mainboard	41.1	45.9	40.9	46.0	80
9.Plastic enclosure outside near front USB 2.0	38.0	42.8	27.8	32.9	104
Ambient	20.2	Shift to 25	19.9	Shift to 25	--
FOR OPENINGS	Covered	Covered	--	--	--
1.PWB near H1	54.2	89.1	--	--	300
2.Heatsink	56.9	91.8	--	--	300
3.PWB near BT1	42.7	77.6	--	--	300
4.BT1	42.2	77.1	--	--	300
5.PWB near power interface	47.4	82.3	--	--	300
Ambient	20.1	Shift to 55	--	--	--
6.Mental enclosure outside near power interface	36.3	41.2	--	--	80
7.Mental enclosure outside near USB 3.0	36.1	41.0	--	--	80
8.Mental enclosure outside near mainboard	38.1	43.0	--	--	80
9.Plastic enclosure outside near front USB 2.0	26.6	31.5	--	--	104
Ambient	20.1	Shift to 25	--	--	--
Model: NVR302-32S with alternate mainboard(enclosure 03-102&03-103)	--	--	--	--	--
NORMAL CONDITION	12Vdc	12Vdc	--	--	--
1.PWB near U4	48.2	81.9	--	--	105
2.Heatsink	53.2	86.9	--	--	For ref.
3.PWB near BT1	34.6	68.3	--	--	105
4.BT1	32.4	66.1	--	--	100
5.PWB near power interface	38.6	72.3	--	--	105
6.Mental enclosure outside near power interface	29.8	63.5	--	--	For ref.
7.Mental enclosure outside near USB 3.0	27.8	61.5	--	--	For ref.
8.Mental enclosure outside near mainboard	33.3	67.0	--	--	For ref.
9.Plastic enclosure outside near front USB 2.0	23.7	57.4	--	--	For ref.

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Ambient	21.3	Shift to 55	--	--	--
1.PWB near U4	48.2	51.9	--	--	104
2.Heatsink	53.2	56.9	--	--	80
3.PWB near BT1	34.6	38.3	--	--	104
4.BT1	32.4	36.1	--	--	80
5.PWB near power interface	38.6	42.3	--	--	104
6.Mental enclosure outside near power interface	29.8	33.5	--	--	70
7.Mental enclosure outside near USB 3.0	27.8	31.5	--	--	70
8.Mental enclosure outside near mainboard	33.3	37.0	--	--	70
9.Plastic enclosure outside near front USB 2.0	23.7	27.4	--	--	94
Ambient	21.3	Shift to 25	--	--	--
ABNORMAL CONDITION	12Vdc	12Vdc	12Vdc	12Vdc	--
FOR USB 3.0	Overload	Overload	SC	SC	--
1.PWB near U4	55.4	89.6	54.3	84.7	300
2.Heatsink	61.4	95.6	60.8	91.2	300
3.PWB near BT1	41.0	75.2	42.1	72.5	300
4.BT1	39.6	73.8	40.2	70.6	300
5.PWB near power interface	47.6	81.8	39.0	69.4	300
Ambient	20.8	Shift to 55	24.6	Shift to 55	--
6.Mental enclosure outside near power interface	34.0	38.2	32.2	32.6	80
7.Mental enclosure outside near USB 3.0	32.9	37.1	31.5	31.9	80
8.Mental enclosure outside near mainboard	38.6	42.8	37.0	37.4	80
9.Plastic enclosure outside near front USB 2.0	30.9	35.1	27.4	27.8	104
Ambient	20.8	Shift to 25	24.6	Shift to 25	--
FOR FRONT USB 2.0	Overload	Overload	SC	SC	--
1.PWB near U4	55.4	89.6	56.9	89.9	300
2.Heatsink	61.4	95.6	64.2	97.2	300
3.PWB near BT1	41.0	75.2	43.9	76.9	300
4.BT1	39.6	73.8	42.2	75.2	300
5.PWB near power interface	47.6	81.8	42.1	75.1	300
Ambient	20.8	Shift to 55	22.0	Shift to 55	--
6.Mental enclosure outside near power interface	34.0	38.2	33.3	36.3	80
7.Mental enclosure outside near USB 3.0	32.9	37.1	33.0	36.0	80
8.Mental enclosure outside near mainboard	38.6	42.8	40.0	43.0	80
9.Plastic enclosure outside near front USB 2.0	30.9	35.1	24.8	27.8	104

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

Ambient	20.8	Shift to 25	22.0	Shift to 25	--
FOR OPENINGS	Covered	Covered	--	--	--
PWB near U4	49.7	83.0	--	--	300
Heatsink	55.2	88.5	--	--	300
PWB near BT1	36.1	69.4	--	--	300
BT1	34.6	67.9	--	--	300
PWB near power interface	38.3	71.6	--	--	300
Ambient	21.7	Shift to 55	--	--	--
Mental enclosure outside near power interface	29.6	32.9	--	--	80
Mental enclosure outside near USB 3.0	27.1	30.4	--	--	80
Mental enclosure outside near mainboard	34.1	37.4	--	--	80
Plastic enclosure outside near front USB 2.0	25.4	28.7	--	--	104
Ambient	21.7	Shift to 25	--	--	--
Supplementary information:					

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information:							
Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

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

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	Test temperature (°C)	Impression diameter (mm)
Supplementary information:			

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

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
Supplementary information:							
Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			N/A
	Overvoltage Category (OV):			
	Pollution Degree:			
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)	
Supplementary information:				

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

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Supplementary information:						

5.4.9	TABLE: Electric strength tests	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:			
Basic/supplementary:			
Reinforced:			
Routine Tests:			
Supplementary information:			

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
Supplementary information:					
X-capacitors installed for testing are: [ ] bleeding resistor rating: [ ] ICX: Notes: A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition					

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

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

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

Notes:

[1] Supply voltage is the anticipated maximum Touch Voltage

[2] Earthed neutral conductor [Voltage differences less than 1% or more]

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

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

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

6.2.2	Table: Electrical power sources (PS) measurements for classification				Pass
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
A		Power (W) :			
		V_A (V) :			
		I_A (A) :			
Supplementary Information:					
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits					

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

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

8.5.5	TABLE: High Pressure Lamp		N/A
Description		Values	Energy Source Classification
Lamp type .....:			—
Manufacturer .....:			—

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

Cat no.....:		—
Pressure (cold) (MPa) .....:		MS_
Pressure (operating) (MPa).....:		MS_
Operating time (minutes).....:		—
Explosion method .....:		—
Max particle length escaping enclosure (mm) .:		MS_
Max particle length beyond 1 m (mm).....:		MS_
Overall result .....:		
Supplementary information:		

B.2.5	TABLE: Input test							Pass
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Data from report E359706-A112	--	--	--	--	--	--	--	--
Test with model: NVR302-16E-B	--	--	--	--	--	--	--	--
12Vdc	--	1.6892	2	20.2704	--	--	--	Maximum normal load
Test with model: NVR302-08S	--	--	--	--	--	--	--	--
12Vdc	--	1.6335	2	19.6020	--	--	--	Maximum normal load
Model : NVR302-16S	--	--	--	--	--	--	--	--
12Vdc	--	1.73	2.0	20.76	--	--	--	Maximum normal load
Model: NVR302-16Q	--	--	--	--	--	--	--	--

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
12Vdc	--	2.26	3.0	27.12	--	--	--	Maximum normal load
Model: NVR302-08Q	--	--	--	--	--	--	--	-
12Vdc	--	1.68	3.0	20.16	--	--	--	Maximum normal load
Model: NVR302-08U	--	--	--	--	--	--	--	--
12Vdc	--	2.13	3.0	25.56	--	--	--	Maximum normal load
Model: NVR302-32S	--				--	--	--	
12Vdc	--	2.08	2.0	24.96	--	--	--	Maximum normal load
12Vdc	--	1.72	2.0	20.64	--	--	--	Maximum normal load
Model: XVR302-08Q	--	--	--	--	--	--	--	--
12Vdc	--	1.21	3.0	14.52	--	--	--	Max normal load
Model: XVR302-16Q	--	--	--	--	--	--	--	--
12Vdc	--	2.14	3.0	25.68	--	--	--	Max normal load
Data of upgrading standard	--	--	--	--	--	--	--	--
Model: XVR302-08U-IF	--	--	--	--	--	--	--	--
12Vdc	--	1.8	3.0	21.6	--	--	--	Max Normal Load
Model: XVR302-16Q-IF	--	--	--	--	--	--	--	--
12Vdc	--	2.0	3.0	24.0	--	--	--	Max Normal Load
NVR302-32S with alternat	--	--	--	--	--	--	--	--

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
e mainboard(refer to enclosure 03-79&03-80)								
12Vdc	--	1.83	2.0	21.96	--	--	--	Max normal load
Model: NVR302-09E-B	--	--	--	--	--	--	--	--
12Vdc	--	1.98	2.0	23.76	--	--	--	Max Normal Load
Model: NVR302-32S-DT	--	--	--	--	--	--	--	--
12Vdc	--	1.66	2.0	19.92	--	--	--	Max normal load
Model: NVR302-16IF-IN	--	--	--	--	--	--	--	--
12Vdc	--	1.99	2.0	23.88	--	--	--	Max normal load
Model: NVR302-32E2	--	--	--	--	--	--	--	--
12VDC	--	2.35	3.3	28.2	--	--	--	Max normal load
Model: NVR302-32S with alternate mainboard(enclosure 03-102&03-103)	--	--	--	--	--	--	--	--
12VDC	--	1.86	2.0	22.3	--	--	--	Max normal load
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured. Max Normal Load: Work continuously, and connected with camera, USB 2.0 load 0.5A, USB 3.0 load 0.9A. For model NVR302-32S, NVR302-32E2 and NVR302-32S-DT: Max normal load: Work continuously, two HDDs, with USB 2.0 loaded 0.5A, USB 3.0 loaded 0.9A.								

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

Model: NVR302-16IF-IN: Work continuously, read and write two HDDs, all USB ports load the max. rating 2.5W for USB 2.0, 4.5W for USB 3.0

B.3	TABLE: Abnormal operating condition tests		Pass
Ambient temperature (°C) .....:		See below	—
Power source for EUT: Manufacturer, model/type, output rating ..:		--	—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Data from report E359706-A112	--	--	--	--	--	--	--	--
Test with model: NVR302-16E-B	--	--	--	--	--	--	--	--
Openings	Blocked	12Vdc	30min	--	--	--	--	Unit normal operation, NC, NT. The maximum temperature of key components: PWB near U25 bottom side: 47.0 degree C at ambient 24.6 degree C.
Test with model: NVR302-08S	--	--	--	--	--	--	--	--
Openings	Blocked	12Vdc	30min	--	--	--	--	Unit normal operation, NC, NT. The maximum temperature of key components: PWB between U15 and U16： 50.4 degree C at ambient 24.2 degree C

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
For project 4788168990	--	--	--	--	--	--	--	--
Model NVR302-16S	--	--	--	--	--	--	--	--
Openning	Blocked	12Vdc	0h46m	--	--	--	--	Unit normal operation NC,NT The maximum temperature of key components: PWB near U39: 49.1 degree C at ambient 25.1 degree C
For project 4788611218	--	--	--	--	--	--	--	--
Model:NVR302-16Q	--	--	--	--	--	--	--	--
Openings	Blocked	12Vdc	53min	--	--	--	--	Unit operate normally NC,NT Input current:2.26A The maximum temperature of key components 1. PWB under heatsink:51.5 (C at ambient 23.9(C 2. PWB between L1 and L2:50.5(C at ambient 23.9(C
Model:NVR302-08Q	--	--	--	--	--	--	--	--
Openings	Blocked	12Vdc	1h02min	--	--	--	--	Unit operate normally NC,NT

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
								Input current:1.68A The maximum temperature of key components 1. PWB under heatsink:49.1(C at ambient 23.8(C 2. PWB between U11 and U12:45.1(C at ambient 23.8(C
Model:NVR302-08U	--	--	--	--	--	--	--	--
Openings	Blocked	12Vdc	41min	--	--	--	--	Unit operate normally NC,NT Input current:2.13A The maximum temperature of key components 1. PWB under heatsink:51.2(C at ambient 23.9(C 2. PWB between Q14 and Q16:49.8(C at ambient 23.9(C
Model: NVR302-32S				--	--	--	--	--
Opening	blocked	12Vdc	35min	--	--	--	--	Unit normal operation NC,NT Key Temp： Metal enclosure up near

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
								mainboard：37.3(C, the ambiebnt：22.1(C
For test record 6	--	--	--	--	--	--	--	--
Opening	blocked	12Vdc	53m	--	--	--	--	Unit normal operation. NC,NT. The maximum temperature of key components: Center of PWB : 53.6°C at 24.2°C ambient
Data of upgrading standard	--	--	--	--	--	--	--	--
Model: XVR302-08U-IF	--	--	--	--	--	--	--	--
Opening	Blocked	12Vdc	59min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:1.8A Unit normal operated NC,NT
USB 3.0	Over load	12Vdc	2h53min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P(MAX):2.4 A USB3.0 port shutdown NC,NT
USB 3.0	Short	12Vdc	5min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:0.9A USB3.0 port shutdown NC,NT
USB 2.0	Over load	12Vdc	4h48min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P(MAX):2.4 A USB2.0 port shutdown NC,NT
USB 2.0	Short	12Vdc	5min	--	--	See 5.4.1.4, 6.3.2,	See 5.4.1.4, 6.3.2,	I/P:0.9A USB2.0 port shutdown

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
						9.0, B.2.6	9.0, B.2.6	NC,NT
HDMI PIN2	Short	12Vdc	34min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:2.3A Unit normal operated NC,NT
Model: XVR302-16Q-IF	--	12Vdc	--	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	--
Opening	Blocked	12Vdc	58min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:2.0A Unit normal operated NC,NT
USB 3.0	Over load	12Vdc	3h	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P(MAX):2.9 A USB3.0 port shutdown NC,NT
USB 3.0	short	12Vdc	5min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:1.2A USB3.0 port shutdown NC,NT
USB 2.0	Over load	12Vdc	2h52min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P(MAX):2.7 A USB2.0 port shutdown NC,NT
USB 2.0	Short	12Vdc	5min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:1.5A USB2.0 port shutdown NC,NT
HDMI PIN2	Short	12Vdc	1h	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:2.6A Unit normal operated NC,NT
NVR302-32S with alternate mainboard(refer to enclosure 03-79&03-80)	--	--	--	--	--	--	--	--

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Openings	Cover	12 Vdc	2h18min	--	--	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Normal operation /NC,NT
USB 2.0	SC	12 Vdc	1h41min	--	--	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Normal operation /NC,NT
USB 2.0	Overload	12 Vdc	4h29min	--	--	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Normal operation /NC,NT
USB 3.0	SC	12 Vdc	2h35min	--	--	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Normal operation /NC,NT
USB 3.0	Overload	12 Vdc	7h33min	--	--	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Normal operation /NC,NT
Model: NVR302-09E-B	--	--	--	--	--	--	--	--
Opening	Cover	12 Vdc	48min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	Unit normal operation. NC,NT.
USB 3.0	Overload	12 Vdc	2h10min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	Unit normal operated and USB port shutdown with load 1.7A I/P:1.98A to 2.16A to

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
								2.26A to 1.22A O/P:0.9A to 1.4A to 1.6A to 1.7A NC,NT
USB 3.0	SC	12 Vdc	5min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	Unit normal operated and USB port shutdown Immediately NC,NT
Model: NVR302-32S-DT	--	--	--	--	--	--	--	--
USB 3.0	SC	12 Vdc	5min	F1/no	0.99	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Unit continues to work. NC,NT.
USB 3.0	Overload	12 Vdc	144min	F1/no	1.67-> 1.94-> 1.02	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Unit operated normally, Additional overload from 0.90A to 1.80A and then 1.90 A shut down. NC,NT.
USB 2.0	SC	12 Vdc	5min	F1/no	1.54	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Unit continues to work. NC,NT.
USB 2.0	Overload	12 Vdc	212min	F1/no	1.67-> 1.94-> 1.98-> 0.68	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Unit operated normally, Additional overload form 0.50A to 1.30A and then 1.36 A,and then1.40A shut down.

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
								NC,NT.
Openings	Covered	12 Vdc	57min	F1/no	1.67	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	See table 5.4.1.4, 6.3.2, 9.0, B.2.6, B.2.7	Unit continues to work. NC,NT.
Model: NVR302-16IF-IN	--	--	--	--	--	--	--	--
Opening	Cover	12(DC)	1h2min	--	1.92	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	The unit operated normally. NC,NT PCB center on the bottom side: 49.6 degree C at ambient 23.4 degree C
USB 3.0	overload	12(DC)	7h11min	--	1.88→2.93→3.79→2.90	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	The unit operated normally. NC,NT PCB near heatsink: 54.8 degree C at ambient 22.5 degree C
USB 3.0	SC	12(DC)	1h44min	--	2.20→1.60	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	The unit operated normally. NC,NT PCB near heatsink: 47.5 degree C at ambient 22.5 degree C
Model: NVR302-32E2	--	--	--	--	--	--	--	--
USB3.0	A-1	12VDC	5h05m	--	In:2.37-2.92-3.01-1.82	see temperature measurement table	see temperature measurement table	Unit works normally until USB port shut down.

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
					Out:0.96-2.16-2.35-0	See 5.4.1.4, 9.2, 6.3, B.2.6	See 5.4.1.4, 9.2, 6.3, B.2.6	(See temperature measurement table below, Key comments: NF, IP)
USB3.0	A-2	12VDC	2h22m	--	In:2.38-1.82 Out:0.96-0.38	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
USB2.0	A-1	12VDC	6h	--	In:2.38-3.17-3.23(2.07) Out:0.54-2.16-2.25(0)	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
USB2.0	A-2	12VDC	4h05m	--	In:2.38-2.28 Out:0.54-0.37	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
OPENING	A-3	12VDC	1h46m	-	2.38	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally (See temperature measurement table below, Key comments: NF)
Model: NVR302-32S	--	--	--	--	--	--	--	--

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
with alternate mainboard(enclosure 03-102&03-103)								
USB3.0	A-1	12VDC	4h15m	--	In:1.85-2.43-2.49(1.38 Out:-0.96-2.21-2.38(0)	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
USB3.0	A-2	12VDC	2h25m	--	In:1.86-1.35 Out:0.96-0.41	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
USB2.0	A-1	12VDC	4h15m	--	In:1.86-2.56-2.65(1.59) Out:-0.54-2.20-2.36(0)	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
USB2.0	A-2	12VDC	3h15m	--	In;1.86-1.78 Out:0.54-0.36	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	see temperature measurement table See 5.4.1.4, 9.2, 6.3, B.2.6	Unit works normally until USB port shut down. (See temperature measurement table below, Key comments: NF, IP)
OPENING	A-3	12VDC	2h32m	--	1.87	see temperature measure	see temperature measur	Unit works normally

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

						ment table See 5.4.1.4, 9.2, 6.3, B.2.6	ement table See 5.4.1.4, 9.2, 6.3, B.2.6	(See temperature measurement table below, Key comments: NF)

Supplementary information:

Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.

The following codes are used for “A” Abnormal Conditions:

A-1: Overload

A-2: SC

A-3: Covered

NF - No Flame

IP – internal protection operated

B.4	TABLE: Fault condition tests							Pass
Ambient temperature (°C) .....:				See below				—
Power source for EUT: Manufacturer, model/type, output rating ..:				--				—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Data from report E359706-A112	--	--	--	--	--	--	--	--
Test with model: NVR302-16E-B	--	--	--	--	--	--	--	--
Fan	Locked	12 Vdc	30min	--	--	--	--	Unit normal operation, NC, NT. PWB near U25 bottom side: 52.5 degree C at ambient 24.6 degree C.
For project 4788611218	--	--	--	--	--	--	--	--
Model:NVR302-16Q	--	--	--	--	--	--	--	--
Fan	Locked	12Vdc	48min	--	--	--	--	Unit operate normally NC,NT

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
								Input current:2.26A The maximum temperature of key components 1. PWB under heatsink:57.1 (C at ambient 23.9(C 2. PWB between L1 and L2:55.9(C at ambient 23.9(C 3. PWB between U7 and U8: 55.9(C at ambient 23.9(C
Model:NVR302-08U	--	--	--	--	--	--	--	--
Fan	Locked	12Vdc	44min	--	--	--	--	Unit operate normally NC,NT Input current:2.13A The maximum temperature of key components 1. PWB under heatsink:57.3 (C at ambient 24.1(C 2. PWB between Q14 and Q16:55.7(C at ambient 24.1(C
Data of upgrading standard	--	--	--	--	--	--	--	--
Model: XVR302-08U-IF	--	--	--	--	--	--	--	--

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
System fan	blocked	12Vdc	1h	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:1.7A Unit normal operated NC,NT
Model: XVR302-16Q-IF	--	--	--	--	--	--	--	--
System fan	blocked	12Vdc	1h03min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	I/P:1.9A Unit normal operated NC,NT
Model: NVR302-09E-B	--	--	--	--	--	--	--	--
System fan	blocked	12Vdc	1h46min	--	--	See 5.4.1.4, 6.3.2, 9.0, B.2.6	See 5.4.1.4, 6.3.2, 9.0, B.2.6	Unit operate normally NC,NT
Supplementary information:								

Annex M.3	**TABLE: Batteries**									Pass
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position? ..... :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:										Verdict
- Chemical leaks										Pass
- Explosion of the battery										Pass
- Emission of flame or expulsion of molten metal										Pass
- Electric strength tests of equipment after completion of tests										N/A
Supplementary information:										

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

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (°C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
Supplementary Information:					

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

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**			Pass
Note: Measured UOC (V) with all load circuits disconnected:				

Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Data from report E359706-A112	--	--	--	--	--	--
Test with model: NVR302-16E-B	--	--	--	--	--	--
Front USB port	866725	4.9927Vdc	2.000	8	6.00	100
Back USB port	866725	4.9924Vdc	1.630	8	3.33	100
Test with model: NVR302-08S	--	--	--	--	--	--
Back USB port	866721-002	4.9927Vdc	2.000	8	6.00	100

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
Front USB port	866721-002	4.9924Vdc	1.630	8	3.33	100
Audio out	866725	0	0	8	0	100
Alarm in port	866725	Pin1~pin8:5.0590Vdc	0	8	0	100
Alarm out port	866725	0	0	8	0	100
RS485 port	866725	PinA:4.8158Vdc PinB:0.2350Vdc PinG:0	0	8	0	100
Two RJ45	866725	0	0	8	0	100
VGA	866725	pin1:0.4035Vdc Pin2:0.4279Vdc Pin3:0.4287Vdc Pin13:0.2186Vdc	0	8	0	100
HDMI	866725	Pin2:5.0723Vdc Pin4:5.0673Vdc Pin5:5.0704Vdc Pin8:0.1372Vdc Pin10:0.1425Vdc Pin11:0.1181Vdc Pin14:0.1287Vdc Pin16:0.1243Vdc Pin17:0.1407Vdc Pin18:0.1438Vdc Pin19:0.1302Vdc	Pin2:1.425 Pin4:0 Pin5:0 Pin8:0 Pin10:0 Pin11:0 Pin14:0 Pin16:0 Pin17:0 Pin18:0 Pin19:0	8	Pin2:1.60 Pin4:0 Pin5:0 Pin8:0 Pin10:0 Pin11:0 Pin14:0 Pin16:0 Pin17:0 Pin18:0 Pin19:0	100
Test with model:	--	--	--	--	--	--

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
NVR302-08S						
Audio in	866721-002	0	0	8	0	100
Audio out	866721-002	0	0	8	0	100
Alarm in port	866721-002	pin1~pin4:4.9898Vdc	0	8	0	100
Alarm out port	866721-002	pin1:0.2402Vdc pinG: 0	0	8	0	100
RJ45	866721-002	0	0	8	0	100
VGA	866721-002	Pin1:0.4119Vdc Pin2:0.4339Vdc Pin3:0.4508Vdc Pin13:0.2254Vdc	0	8	0	100
HDMI	866721-002	Pin2:4.9554Vdc Pin4:4.9345Vdc Pin5:4.9554Vdc	Pin2:1.335 Pin4:0 Pin5:0	8	Pin2:1.40 Pin4:0 Pin5:0	100
For project 4788168990,Test record 3:	--	--	--	--	--	--
Model: NVR302-16S	--	--	--	--	--	--
Audio out	1184483	0	0	8	0	100
LAN	1184483	0	0	8	0	100
VGA.1,2,3	1184483	0.45	0	8	0	100
HDMI.2	1184483	4.96	0.66	8	1.63	100
HDMI.4	1184483	4.93	0	8	0	100
HDMI.5	1184483	4.93	0	8	0	100
HDMI.11	1184483	2.77	0	8	0	100
HDMI.14	1184483	2.77	0	8	0	100
HDMI.16	1184483	2.77	0	8	0	100
HDMI.17	1184483	2.78	0	8	0	100
HDMI.18	1184483	2.78	0	8	0	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
HDMI.19	1184483	2.78	0	8	0	100
USB 2.0	1184483	5.05	2.01	8	6.96	100
USB front panel 2.0	1184483	5.05	2.01	8	6.51	100
For project 4788611218	--	--	--	--	--	--
Model: NVR302-16Q	--	--	--	--	--	--
AUDIO OUT	1780223-001	0	0	8	0	100
VGA	1780223-001	0.43	0	8	0	100
VIDEO OUT	1780223-001	1.09	0	8	0	100
HDMI	1780223-001	5.05	0.64	8	1.66	100
RJ45	1780223-001	0	0	8	0	100
USB3.0	1780223-001	5.12	2.23	8	10.85	100
RS485	1780223-001	4.64	0	8	0	100
USB front panel	1780223-001	5.12	2.5	8	10.03	100
Model: NVR302-08Q	--	--	--	--	--	--
AUDIO OUT	1780223-002	0	0	8	0	100
VGA	1780223-002	0.46	0	8	0	100
VIDEO OUT	1780223-002	1.07	0	8	0	100
HDMI	1780223-002	5.0	0.68	8	1.54	100
RJ45	1780223-002	0	0	8	0	100
USB2.0	1780223-002	5.08	2.39	8	10.55	100
RS485(A)	1780223-002	4.57	0	8	00	100
USB front panel	1780223-002	5.07	2.69	8	8.85	100
Model: NVR302-08U	--	--	--	--	--	--
AUDIO OUT	1780223-003	0	0	8	0	100
VGA	1780223-003	0.40	0	8	0	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
VIDEO OUT	1780223-003	1.08	0	8	0	100
HDMI	1780223-003	5.03	0.61	8	1.71	100
USB3.0	1780223-003	5.11	2.12	8	10.3	100
RJ45	1780223-003	0	0	8	0	100
ALARM OUT	1780223-003	0	0	8	0	100
RS485	1780223-003	4.60	0	8	0	100
USB front panel	1780223-003	5.11	2.00	8	9.56	100
Model: NVR302-32S						
Audio Out	1951139	0	0	8	0	100
RJ45 1	1951139	0	0	8	0	100
RJ45 2	1951139	0	0	8	0	100
VGA Port1, 2	1951139	0.6	0	8	0	100
Port3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15	1951139	0	0	8	0	100
HDMI Port1	1951139	0.3	0	8	0	100
Port2, 4, 5	1951139	4.9	0	8	0	100
Port3, 6, 7, 8, 10, 11, 14, 16, 17, 18, 19	1951139	0	0	8	0	100
Back USB 3.0 port	1951139	5.0	2.59	8	10.32	100
Back USB 2.0 port	1951139	5.0	2.56	8	10.16	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Front USB port	1951139	5.0	2.29	8	8.04	100
For test record 6	--	--	--	--	--	--
HDMI.pin2	2472317	5.04	0.98	8	1.21	100
Back USB 3.0 port	2472317	5.03	2.19	8	9.34	100
Back USB 2.0 port	2472317	5.04	2.16	8	9.21	100
Audio Out	2472317	0	0	8	0	100
VGA.pin6	2472317	3.26	0	8	0	100
HDMI.pin4	2472317	5.01	0	8	0	100
HDMI.pin5	2472317	5.01	0	8	0	100
ALARM 1+	2472317	0	0	8	0	100
ALARM 1-	2472317	0	0	8	0	100
ALARM 2+	2472317	0	0	8	0	100
ALARM 2-	2472317	0	0	8	0	100
ACT 1	2472317	0	0	8	0	100
ACT 2	2472317	0	0	8	0	100
For test record 7 (project number 4789338863)						
Model : XVR302-08Q	--	--	--	--	--	--
HDMI.pin2	Normal	5.08	1.32	8	1.65	100
HDMI.pin5 &4	Normal	5.02	0	8	0	100
VGA	Normal	0.45	0	8	0	100
USB 2.0 up	Normal	5.14	2.39	8	9.93	100
USB 2.0 down	Normal	5.14	2.43	8	10.11	100
Audio out	Normal	0	0	8	0	100
Video out	Normal	1.08	0	8	0	100
27995408 100RJ45	Normal	0	0	8	0	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
RS485(A)	Normal	4.65	0	8	0	100
Model : XVR302-16Q	--	--	--	--	--	--
HDMI.pin2	Normal	5.17	1.31	8	1.63	100
HDMI.pin5 &4	Normal	5.09	0	8	0	100
VGA	Normal	0.46	0	8	0	100
USB 3.0	Normal	5.21	3.67	8	11.55	100
USB front panel	Normal	5.21	3.21	8	9.85	100
Audio out	Normal	0	0	8	0	100
Video out	Normal	1.06	0	8	0	100
RJ45	Normal	0	0	8	0	100
RS485(A)	Normal	4.71	0	8	0	100
Data of upgrading standard	--	--	--	--	--	--
Model: XVR302-08U-IF	--	--	--	--	--	--
VIDEO IN 1-8	3022799-S001	0	0	8	0	100
AUDIO OUT	3022799-S001	0	0	8	0	100
AUDIO IN 1-4	3022799-S001	0	0	8	0	100
VGA	3022799-S001	0	0	8	0	100
VIDEO OUT	3022799-S001	0	0	8	0	100
HDMI Pin2	3022799-S001	5.0vdc	1.08	8	1.2	100
HDMI Pin4,5	3022799-S001	5.0vdc	0	8	0	100
HDMI Pinothers	3022799-S001	0	0	8	0	100
USB3.0	3022799-S001	5.1vdc	2.91	8	9.6	100
RJ45 PORT	3022799-S001	0	0	8	0	100
ALARM IN 1-8	3022799-S001	5.0vdc	0	8	0	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
ALARM OUT	3022799-S001	0	0	8	0	100
RS485	3022799-S001	0	0	8	0	100
USB 2.0 PORT	3022799-S001	5.1vdc	2.25	8	8.5	100
Model: XVR302-16Q-IF	--	--	--	--	--	--
VIDEO IN 1-16	3022799-S002	0	0	8	0	100
AUDIO OUT	3022799-S002	0	0	8	0	100
AUDIO IN	3022799-S002	0	0	8	0	100
VGA Pin 13	3022799-S002	3.0	0	8	0	100
Pin others	3022799-S002	0	0	8	0	100
VIDEO OUT	3022799-S002	0	0	8	0	100
HDMI Pin 2	3022799-S002	4.8vdc	1.13	8	1.3	100
Pin 4,5	3022799-S002	4.8vdc	0	8	0	100
Pin 11,14,16,17,18,19	3022799-S002	1.5vdc	0	8	0	100
Pin others	3022799-S002	0	0	8	0	100
USB3.0	3022799-S002	5.0vdc	2.64	8	10.0	100
RJ45 PORT	3022799-S002	0	0	8	0	100
ALARM IN 1-4	3022799-S002	5.0vdc	0	8	0	100
ALARM OUT	3022799-S002	0	0	8	0	100
RS485	3022799-S002	0	0	8	0	100
USB 2.0 PORT	3022799-S002	5.1vdc	2.58	8	8.04	100
NVR302-32S with alternate mainboard (refer to enclosure 03-79&03-80)	--	--	--	--	--	--

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
AUDIO OUT	3639760	0	0	8	0	100
AUDIO IN	3639760	1.91	0	8	0	100
RJ45-1	3639760	0	0	8	0	100
RJ45-2	3639760	0	0	8	0	100
HDMI-18	3639760	4.94	2.46	8	5.90	100
HDMI-1	3639760	2.77	0	8	0	100
HDMI-3	3639760	2.77	0	8	0	100
HDMI-4	3639760	2.78	0	8	0	100
HDMI-5	3639760	2.77	0	8	0	100
HDMI-9	3639760	2.76	0	8	0	100
HDMI-15	3639760	4.92	0	8	0	100
HDMI-16	3639760	4.92	0	8	0	100
VGA-1	3639760	0.62	0	8	0	100
VGA-2	3639760	0.62	0	8	0	100
VGA-3	3639760	0.63	0	8	0	100
USB 2.0	3639760	5.13	2.76	8	12.22	100
USB 2.0(Plastic enclosure)	3639760	5.13	2.46	8	10.17	100
USB 3.0	3639760	5.14	2.94	8	12.63	100
Model: NVR302-32S-DT	--	--	--	--	--	--
FRONT USB 2.0	Normal	5.07	2.71	8	9.58	100
RJ45-1	Normal	0	0	8	0	100
RJ45-2	Normal	0	0	8	0	100
AUDIO IN	Normal	1.95	0	8	0	100
AUDIO OUT	Normal	0	0	8	0	100
HDMI	Normal	4.95	0	8	0	100
USB 3.0-1	Normal	5.08	2.80	8	11.33	100
USB 3.0-2	Normal	5.08	2.80	8	11.33	100
VGA	Normal	0.62	0	8	0	100
Model: NVR302-16IF-IN	--	--	--	--	--	--
--	Audio in	0	0	8	0	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
--	Audio out	0	0	8	0	100
--	ALM in	Pin1~pin4: 5.00	0	8	0	100
--	ALM out	0	0	8	0	100
--	HDMI	Pin1~pin14:0 Pin15~pin16: 4.85 Pin17:0 Pin18:4.95 Pin19:0	Pin1~pin17:0 Pin18:6.00 Pin19:0	8	Pin1~pin17:0 Pin18:12.79 Pin19:0	100
--	USB 3.0	5.11	5.70	8	23.60	100
--	USB 2.0	5.11	5.80	8	19.97	100
--	VGA	0	0	8	0	100
--	RJ45-1	0	0	8	0	100
--	RJ45-2	0	0	8	0	100
Model: NVR302-32E2	--	--	--	--	--	--
RJ45-1	normal	0	0	8	0	100
RJ45-2	normal	0	0	8	0	100
AUDIO IN	normal	0	0	8	0	100
AUDIO OUT	normal	0	0	8	0	100
VGA	normal	4.65VDC	0	8	0	100
HDMI	normal	5.08 VDC	1.20	8	3.2	100
USB 3.0	normal	5.14 VDC	2.95	8	11.5	100
USB 2.0	normal	5.14 VDC	2.95	8	11.5	100
FRONT USB 2.0	normal	5.11 VDC	2.30	8	6.7	100
ALARM IN TO G	normal	5.05 VDC	0	8	0	100
ALARM OUT TO G	normal	0	0	8	0	100
RS485	normal	2.98	0	8	0	100
Model: NVR302-32S with alternate mainboard (enclosure 03-	--	--	--	--	--	--

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
102&03-103)						
RJ45-1	normal	0	0	8	0	100
RJ45-2	normal	0	0	8	0	100
AUDIO IN	normal	1.97VDC	0	8	0	100
AUDIO OUT	normal	0	0	8	0	100
VGA	normal	0.63	0	8	0	100
HDMI	normal	5.03	2.52	8	7.5	100
USB 3.0	normal	5.06	2.80	8	11.0	100
USB 2.0	normal	5.07	2.80	8	10.5	100
FRONT USB 2.0	normal	5.06	2.40	8	7.0	100
Supplementary Information:						
SC=Short circuit, OC=Open circuit HDMI, USB2.3, USB3.0 port was protected by RT2. (Mfr: CYG WAYON CIRCUIT PROTECTION CO LTD, Model: LP-MSM150/16 or Mfr: LITTELFUSE INC, Model: miniSMDC150F/16-2)						

T.2, T.3, T.4, T.5	TABLE: Steady force test				Pass
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Data from report E359706-A112	--	--	--	--	--
Model: NVR302-16E-B	--	--	--	--	--
All side of enclosure beside power supply	Metal	1.0	250	5	No damage, No Cracking
Front plastic enclosure side	Plastic	2.0	250	5	No damage, No Cracking
Model: XVR302-16Q-IF	--	--	--	--	--
Top	Metal	0.6	250	5	No damage, No Cracking
Bottom	Metal	0.6	250	5	No damage, No Cracking
Sides	Metal/Plastic	0.6/1.5	250	5	No damage, No Cracking
Model: XVR302-08U-IF	--	--	--	--	--

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

Top	Metal	0.6	250	5	No damage, No Cracking
Bottom	Metal	0.6	250	5	No damage, No Cracking
Sides	Metal/Plastic	0.6/1.5	250	5	No damage, No Cracking
Supplementary information:					

T.6, T.9	TABLE: Impact tests				Pass
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Data of upgrading standard	--	--	--	--	
Model: XVR302-16Q-IF	--	--	--	--	
Top	Metal	0.6	1300	No damage,no cracking	
Sides	Metal/Front Plastic panel	0.6/1.5	1300	No damage,no cracking	
Model: XVR302-08U-IF	--	--	--	--	
Top	Metal	0.6	1300	No damage,no cracking	
Sides	Metal/Front Plastic panel	0.6/1.5	1300	No damage,no cracking	
Supplementary information:					
Plastic (Mfr: KINGFA SCI & TECH CO LTD, model: FW-620T).					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test				Pass
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Data of upgrading standard	--	--	--	--	--
Model: XVR302-08U-IF	--	--	--	--	--
Front plastic panel	Plastic	1.5	70	7	No softening, no cracking
Model: XVR302-16Q-IF	--	--	--	--	--
Front plastic panel	Plastic	1.5	70	7	No softening, no cracking
Supplementary information:					

Enclosure
National Differences

Australia / New Zealand
EU Group and National Differences
Japan
USA / Canada

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)	
Differences according to	AS/NZS 62368.1:2018
TRF template used	IECEE OD-2020-F3, Ed. 1.1
Attachment Form No.	AU_NZ_ND_IEC62368_1D
Attachment Originator	JAS-ANZ
Master Attachment	2021-04-19

	NATIONAL DIFFERENCES		Pass
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		Pass
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		Pass
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		Pass
2	*Add* the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets* -AS/NZS 3123*, Approval and test specification—Plugs, socket-outlets and couplers for general industrial application* -AS/NZS 3191, *Electric flexible cords* -AS/NZS 60065, *Audio, video and similar electronic apparatus—Safety requirements* *(IEC 60065:2015 (ED.8.0) MOD)* -AS/NZS 60320.1, *Appliance couplers for household and similar general purposes,* *Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)* -AS/NZS 60320.2.2, *Appliance couplers for household and similar general purposes* *Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-* *2, Ed.2.0 (1998) MOD)* -AS/NZS 60695.2.11, *Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products*		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	-AS/NZS 60695.11.5, *Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance* -AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W* *horizontal and vertical flame test methods* -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes,* *Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)* *IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for* *verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015*), Safety of Power Transformers,* *Power Supplies, Reactors and Similar Products, Part 1: General requirements and* *tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar* *products for voltages up to 1 100 V, Part 2.16:* *Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 Replace the text 'IEC 60065' with 'AS/NZS 60065'.		N/A
4.7	**Equipment for direct insertion into mains socket-outlets**		N/A
4.7.2	**Requirements** Delete the text of the second paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	**Compliance Criteria** Delete the first paragraph and Note 1 and Note 2 and replace with the following:		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.		
4.8	Delete existing clause title and replace with the following: **4.8 Products containing coin/button cell batteries**		N/A
4.8.1	**General** 1 Second dashed point, delete the text and replace with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, insert the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, renumber the existing Note as 'NOTE 2'. 4 Fifth dashed point, delete the word 'lithium'.		N/A
4.8.2	**Instructional Safeguard** First line, delete the word 'lithium'.		N/A
4.8.3	**Construction** First line, after the word 'Equipment' insert the words 'containing one or more coin/button batteries and'		N/A
4.8.5	**Compliance criteria** Delete the first paragraph and replace with the following: Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.		N/A
5.4.10.2	**Test Methods**		N/A
5.4.10.2.1	**General** Delete the first paragraph and replace with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A
Table 29	*Replace* the table with the following:		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<table><tr><td rowspan="2">Parts</td><td colspan="2">Impulse test</td><td colspan="2">Steady state test</td></tr><tr><td>New Zealand</td><td>Australia</td><td>New Zealand</td><td>Australia</td></tr><tr><td>Parts indicated in Clause 5.4.10.1 a) [a]</td><td>2.5 kV 10/700 µs</td><td>7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs</td><td>1.5 kV</td><td>3 kV</td></tr><tr><td>Parts indicated in Clause 5.4.10.1 b) and c) [b]</td><td colspan="2">1.5 kV 10/700 µs [c]</td><td>1.0 kV</td><td>1.5 kV</td></tr><tr><td colspan="5">[a] Surge suppressors shall not be removed. [b] Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. [c] During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.</td></tr></table>		
5.4.10.2.2	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	**Electrically-caused fire**		N/A
6.1	General After the first paragraph, *insert* the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		N/A
6.6	After Clause 6.6, add the new Clauses 6.201 and 6.202 as follows: **6.201 External power supplies, docking stations and other similar devices and** **6.202 Resistance to fire—Alternative tests** (see special national conditions)		N/A
8.5.4	**Special categories of equipment comprising moving parts**		N/A
8.5.4.1	**Large data storage equipment** In the first dashed row and the second dashed rows replace 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	**Stability of equipment**		N/A
8.6.1 and Table 36	**Requirements** 1. Table 36, *insert* Footnote c at the end of the 'Glass slide' heading, and add a new Footnote c		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	after the text of Footnote b in the last row of Table 36 as follows: c The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, *insert* '201' at the end of 'No stability requirements' 3. Table 36, ninth row, *insert* '201' at the end of 'No stability requirements' 4. Table 36, add the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, delete the words 'MS2 and MS3 television sets' and replace with 'MS2 and MS3 television sets and display devices'		
8.6.1	After Clause 8.6.1 *add* the following new clauses: **8.6.1.201 Instructional safeguard for fixed-mount television sets** (see special national conditions)		N/A
Annex F Paragraph F.3.5.1	**Mains appliance outlet and socket-outlet markings** *Replace* 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G Paragraph G.4.2	**Mains connectors** 1 In the second line *insert* 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line *insert* 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 *Add* the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
Paragraph G.5.3.1	**Transformers, General** 1 In the third dashed point replace 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point *replace* 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Paragraph G.7.1	**Mains supply cords, General** In the fourth dashed paragraph, *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Table G.5	**Sizes of conductors** 1 In the second row, first column, *delete* '6' and *replace* with '7.5' 2 In the second row, second column, *delete* '0,75' and *replace* with '0.75[b] 3 *Delete* Note 1. 4 *Replace* 'NOTE 2' with 'NOTE:'. 5 *Delete* the text of 'Footnote b' and *replace* with the following: [b] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c *replace* 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M Paragraph M.3.2	**Protection circuits for batteries provided within the equipment, Test method** After the first dashed point add the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		Pass
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4		
6.202	**Resistance to fire - Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what ‘small parts’ are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another. *Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.*		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		
6.202.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	**Testing of insulating materials** Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Clause of AS/NZS 60695.11.5	Change
9 Test procedure	
9.2 Application of needle-flame	*Delete* the first and second paragraphs and *replace* with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s +1 s.
9.3 Number of test specimens	*Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.
11 Evaluation of test results	*Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.

The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.

6.202.4 **Testing in the event of non-extinguishing material** — N/A

If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glow wire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.

NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.

NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.

NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.

6.202.5 **Testing of printed boards** — N/A

The base material of printed boards shall be subjected to the needle-flame test of Clause

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Clause	Requirement + Test	Result - Remark	Verdict
	6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Conformance* shall be determined using the smallest thickness of the material. NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		
6.202.6	**For open circuit voltages greater than 4 kV** Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		N/A
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		
8.6.1.202	**Restraining device** MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment - Part 1: Safety requirements)	
Differences according to	EN 62368-1:2014+A11:2017
Attachment Form No.	EU_GD_IEC62368_1D_II
Attachment Originator	Nemko AS
Master Attachment	Date 2021-02-04
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	CENELEC COMMON MODIFICATIONS (EN)		Pass
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".		Pass
CONTENTS	**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		Pass
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:		Pass
	For special national conditions, see Annex ZB.		Pass
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		N/A
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:		N/A
	a) Included as parts of the equipment		N/A
	b) For components in series with the mains; by devices in the building installation		N/A
	c) For pluggable type B or permanently connected; by devices in the building installation		N/A
5.4.2.3.2.4	**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.		N/A

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

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Clause	Requirement + Test	Result - Remark	Verdict
10.2.1	**Add** the following to c) and d) in table 39: For additional requirements, see 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 presets 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
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 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
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
Bibliography	**Add** the following standards: **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.		Pass

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		Pass
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
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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 1,5kV. 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 60384-14:2005, 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

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Clause	Requirement + Test	Result - Remark	Verdict
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. *Justification:* 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
5.6.5.1	**Ireland and United Kingdom** 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
5.7.5	**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
5.7.6.1	**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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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 jordtilkoplet utstyr – og er tilkoplet 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." 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.".		
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
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
G.4.2	**Denmark:** Appliances rated ≤13 A provided with a plug according to DS 60884-2-D1:2011. Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	with DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a		
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
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
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		Pass

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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. *Justification:* 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

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT
IEC 62368-1
(JAPAN) NATIONAL DIFFERENCES
(Audio/video, information and communication technology equipment – Part 1: Safety requirements)

Differences according to .....:	J62368-1 (2020)
TRF template used: .....:	IECEE OD-2020-F3, Ed. 1.1
Attachment Form No.....:	JP_ND_IEC62368_1D
Attachment Originator .....:	UL (JP)
Master Attachment.....:	Date 2021-02-04

	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		N/A
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm^2 or more cross-sectional area		
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIC C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) [b,c]		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	equipment provided with independent protective earthing conductor.		
G.8.3.3	Withstand 1,71 × 1.1 × U_0 for 5 s.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 U.S.A. AND CANADA NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)	
Differences according to……:	CSA/UL 62368-1:2014
TRF template used……...:	IECEE OD-2020-F3, Ed. 1.1
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Master Attachment……..:	Dated 2021-02-04

IEC 62368-1 - US and Canada National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		N/A
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.		N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment		N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex M	Battery packs for stationary applications comply with special component requirements.		N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.		N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the “Normal Operating Condition” in Table 2 of CAN/CSA C22.2 No. 235.”		N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).		N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1are marked with the voltage rating and “Class 2” or equivalent; marking is located adjacent to the terminals and visible during wiring.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		N/A
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A

IEC62368_1D – ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.		N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Top view for model NVR302-16E-B
Photographs	03-02	Bottom view for model NVR302-16E-B
Photographs	03-03	Side view for model NVR302-16E-B
Photographs	03-04	Internal side view1 for model NVR302-16E-B
Photographs	03-05	Internal side view2 for model NVR302-16E-B
Photographs	03-06	Internal side view3 for model NVR302-16E-B
Photographs	03-07	Internal side view4 for model NVR302-16E-B
Photographs	03-09	Mainboard component side view for model NVR302-16E-B
Photographs	03-10	Mainboard trace side view for model NVR302-16E-B
Photographs	03-11	Top view for model NVR302-08S
Photographs	03-12	Bottom view for model NVR302-08S
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Photographs	03-14	Internal side view1 for model NVR302-08S
Photographs	03-18	Internal side view 2 for model NVR302-08S
Photographs	03-19	Internal side view 3 for model NVR302-08S
Photographs	03-20	Internal side view 4 for model NVR302-08S
Photographs	03-21	Mainboard component side view for model NVR302-08S
Photographs	03-22	Mainboard Trace side view for model NVR302-08S
Photographs	03-23	Mainboard topside view
Photographs	03-24	Mainboard bottom side view
Photographs	03-25	Top view for model NVR302-16Q
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Photographs	03-27	Side view for model NVR302-16Q
Photographs	03-28	Internal view for model NVR302-16Q
Photographs	03-29	Mainboard Top view for model NVR302-16Q
Photographs	03-30	Mainboard Bottom view for model NVR302-16Q
Photographs	03-31	Top view for model NVR302-08Q
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Photographs	03-33	Side view for model NVR302-08Q
Photographs	03-34	Internal view for model NVR302-08Q
Photographs	03-35	Mainboard Top view for model NVR302-08Q
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Photographs	03-37	Top view for model NVR302-08U
Photographs	03-38	Bottom view for model NVR302-08U

Photographs	03-39	Side view for model NVR302-08U
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Photographs	03-41	Mainboard Top view for model NVR302-08U
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Photographs	03-44	Mainboard Top view for model NVR302-32S of part 2
Photographs	03-45	Mainboard Top view for model NVR302-32S of part 3
Photographs	03-46	Mainboard Bottom view for model NVR302-32S of part 1
Photographs	03-47	Mainboard Bottom view for model NVR302-32S of part 2
Photographs	03-48	Mainboard Bottom view for model NVR302-32S of part 3
Photographs	03-49	Top view of mainboard of model NVR302-16E-IF
Photographs	03-50	Bottom view of mainboard of model NVR302-16E-IF
Photographs	03-51	Top view of mainboard of model XVR302-08Q
Photographs	03-52	Bottom view of mainboard of model XVR302-08Q
Photographs	03-53	Top view of mainboard of model XVR302-16Q
Photographs	03-54	Bottom view of mainboard of model XVR302-16Q
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Photographs	03-56	Internal view-01 for model XVR302-16Q-IF
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Photographs	03-60	Overall view-02 for model XVR302-08U-IF
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Photographs	03-96	Top view of alternate mainboard(0301C2M2) for NVR302-32S-DT
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Photographs	03-102	Top view of alternate mainboard for NVR302-32S
Photographs	03-103	Bottom view of alternate mainboard for NVR302-32S
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Diagrams	04-01	Enclosure

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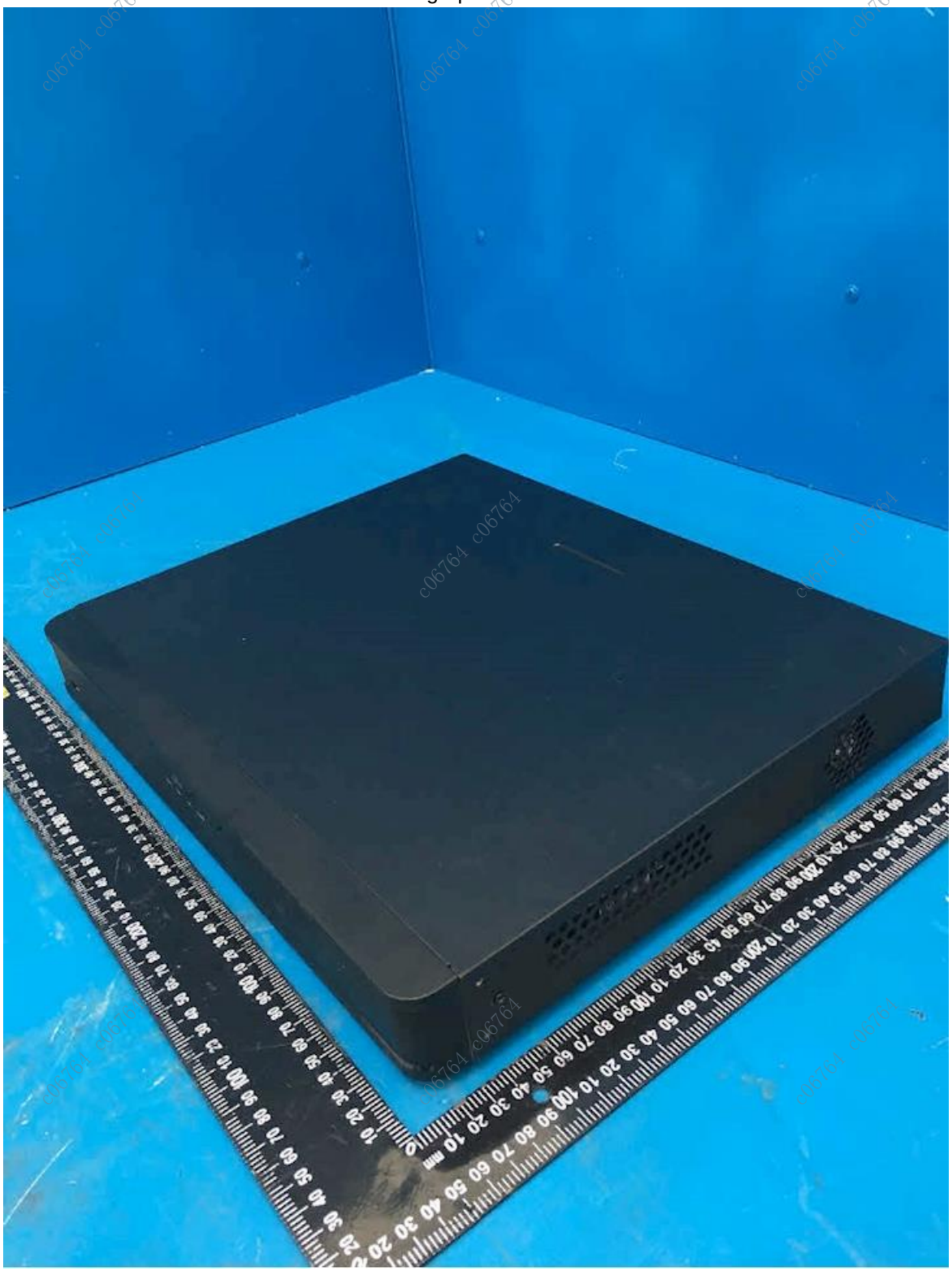
Diagrams	04-05	Heat sink for main board of model NVR302-08S
Diagrams	04-06	Heat sink for main board of model NVR302-16E-B
Diagrams	04-07	Enclosure of model NVR302-32S part 2
Diagrams	04-08	Enclosure of model NVR302-32S part 1
Diagrams	04-09	Heat sink for main board of model NVR302-32S
Diagrams	04-10	Enclosure for model XVR302-08U-IF
Diagrams	04-11	Enclosure for model XVR302-16Q-IF
Diagrams	04-12	Heatsink spec for models NVR302-16Q, NVR302-08U, XVR302-16Q, XVR302-16Q-IF, XVR302-08U-IF
Diagrams	04-13	Heatsink spec for model NVR302-08Q
Diagrams	04-14	Heatsink spec. of NVR302-32E2
Manuals	06-01	Caution for battery
Miscellaneous	07-07	HA4010 SUNON UL identification
Miscellaneous	07-08	HA4010 SUNON TUV identification
Miscellaneous	07-09	HA4010 SUNON specification
Miscellaneous	07-15	CB declaration
Marking Plate	13-03	Marking plate
Marking Plate	13-04	Marking plate of model XVR302-08Q
Marking Plate	13-05	Marking plate of model XVR302-16Q
Marking Plate	13-06	Marking plate of model NVR302-16IF-IN

Enclosures

Photographs ID 03-01



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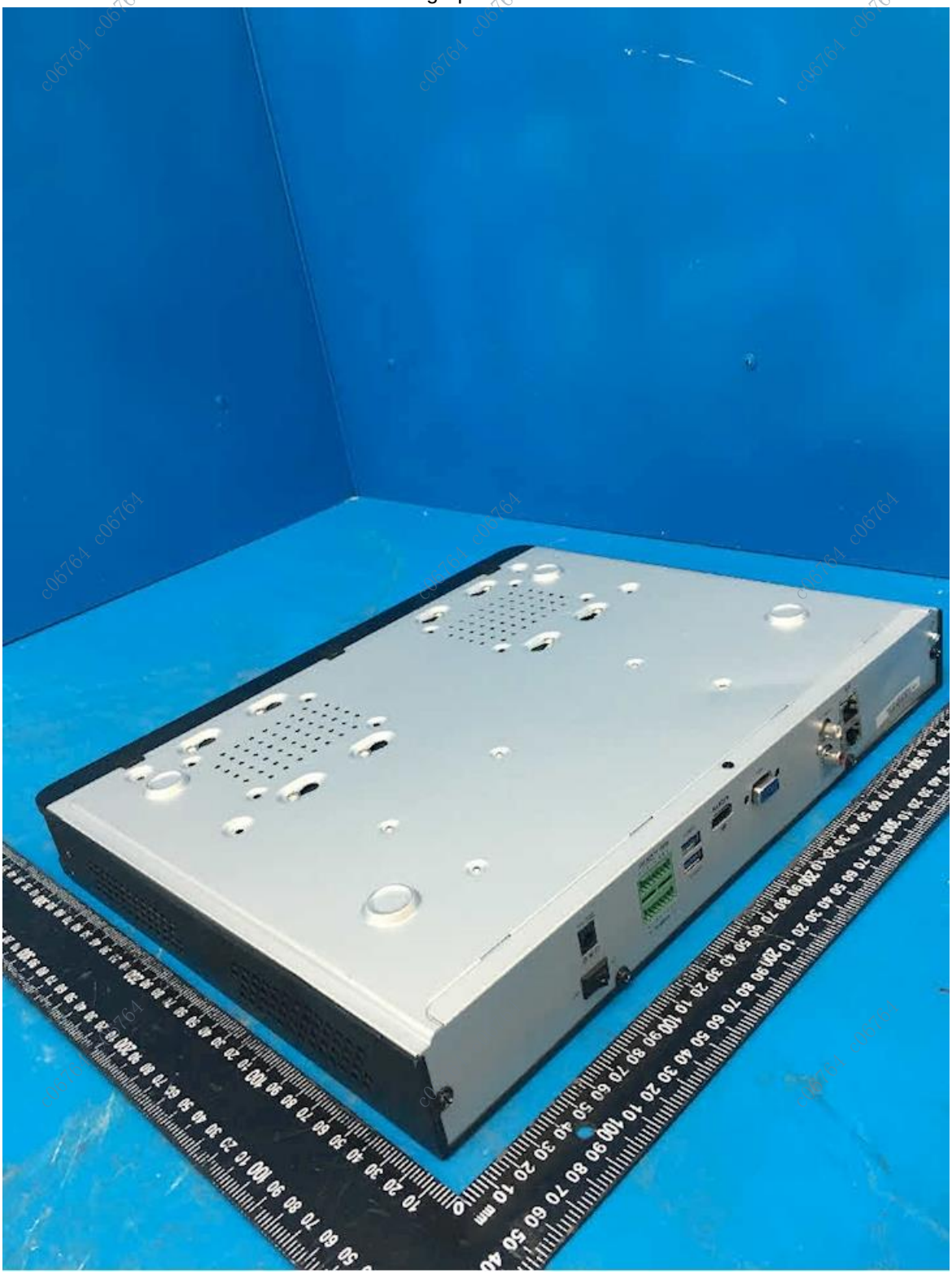

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Photographs ID 03-04

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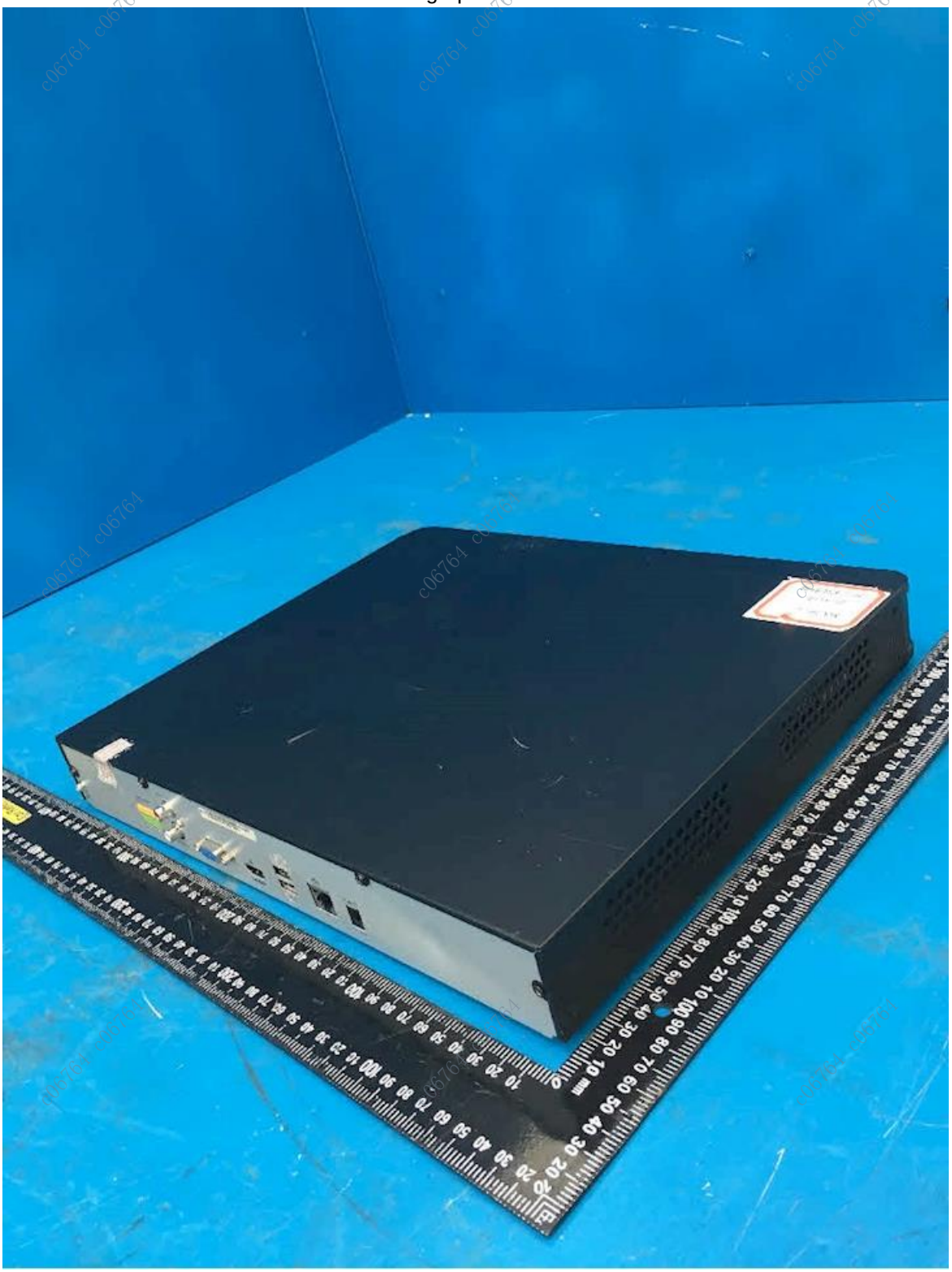
Photographs ID 03-11



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Photographs ID 03-13

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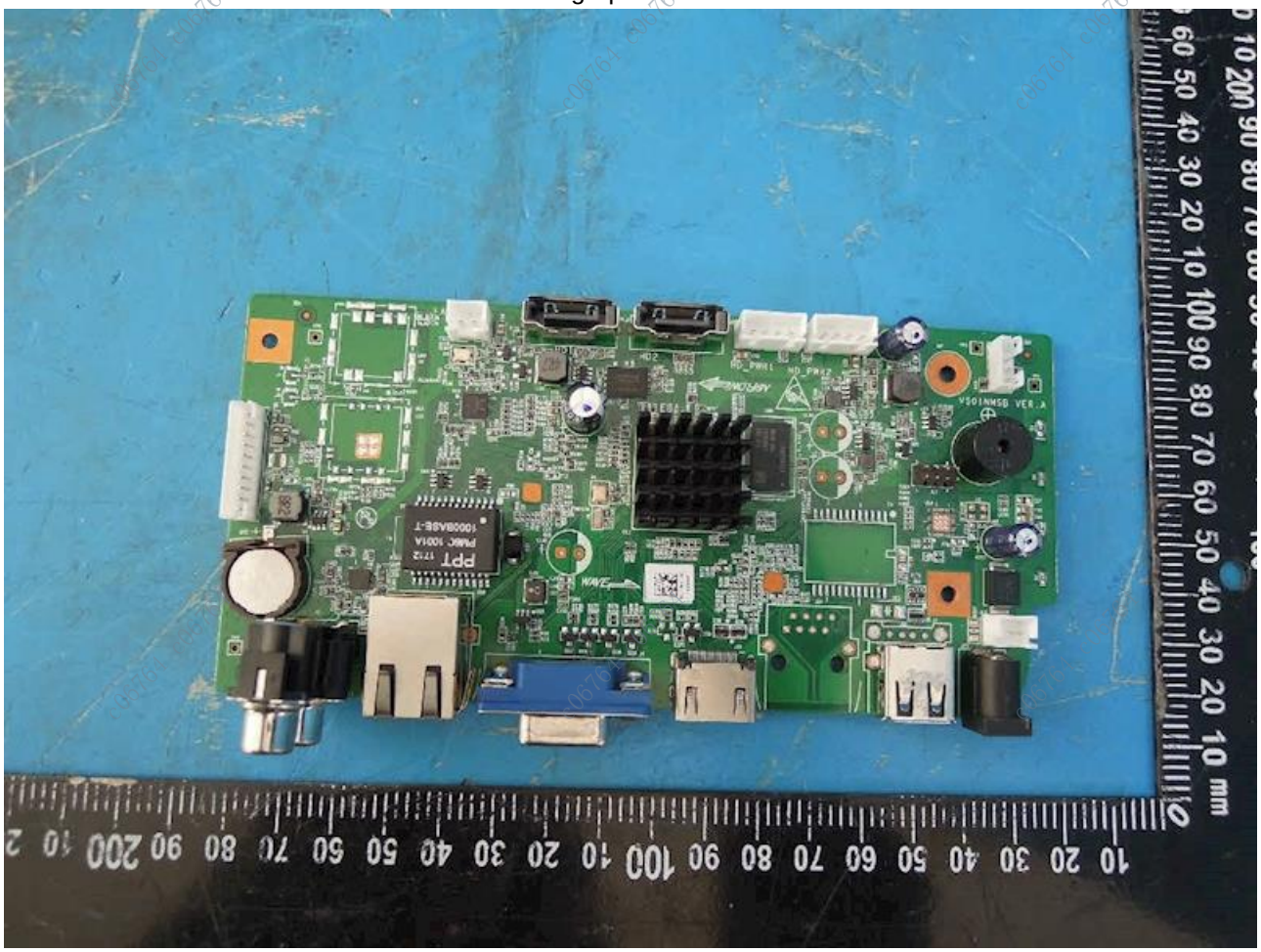
Photographs ID 03-23



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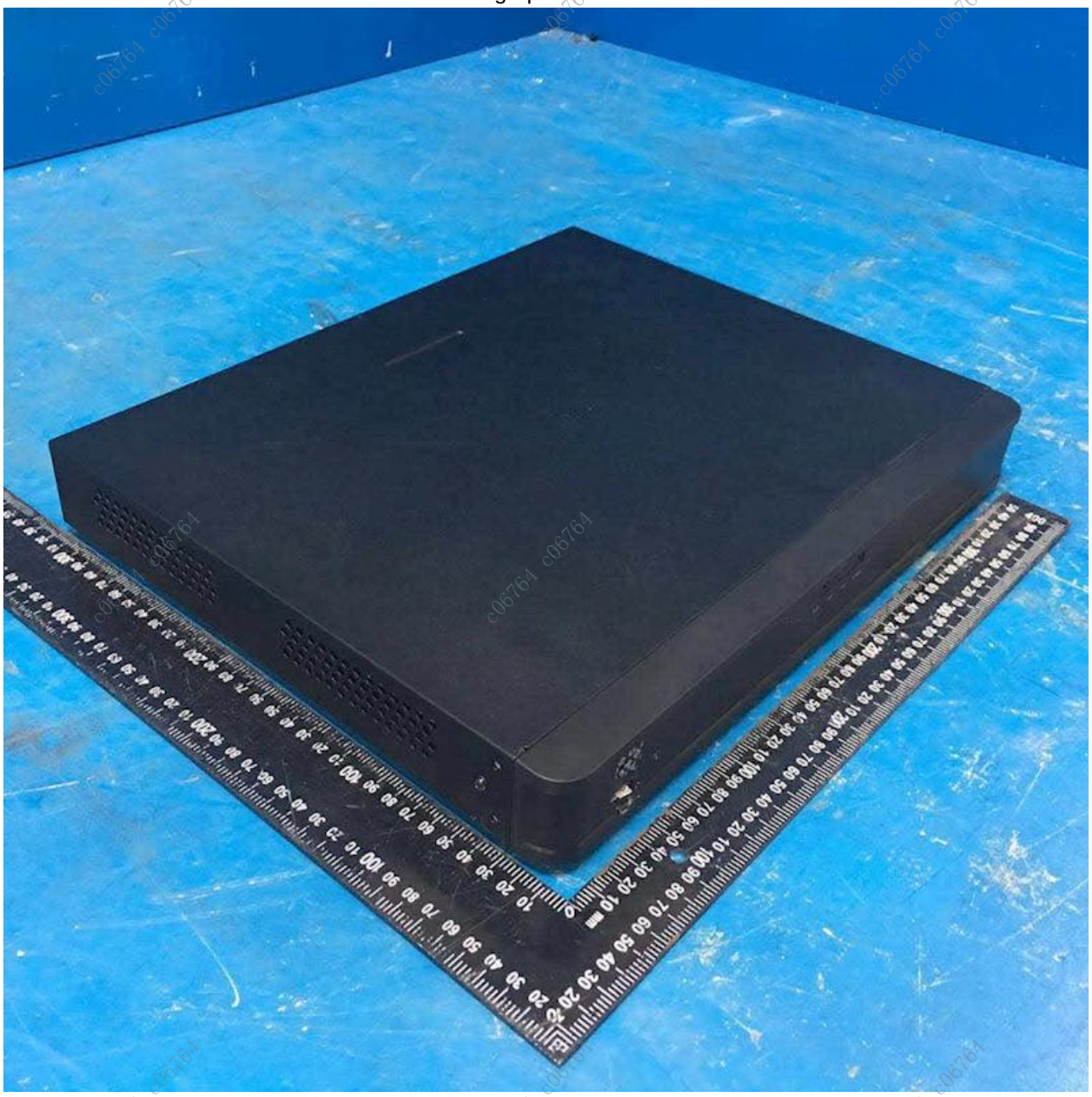

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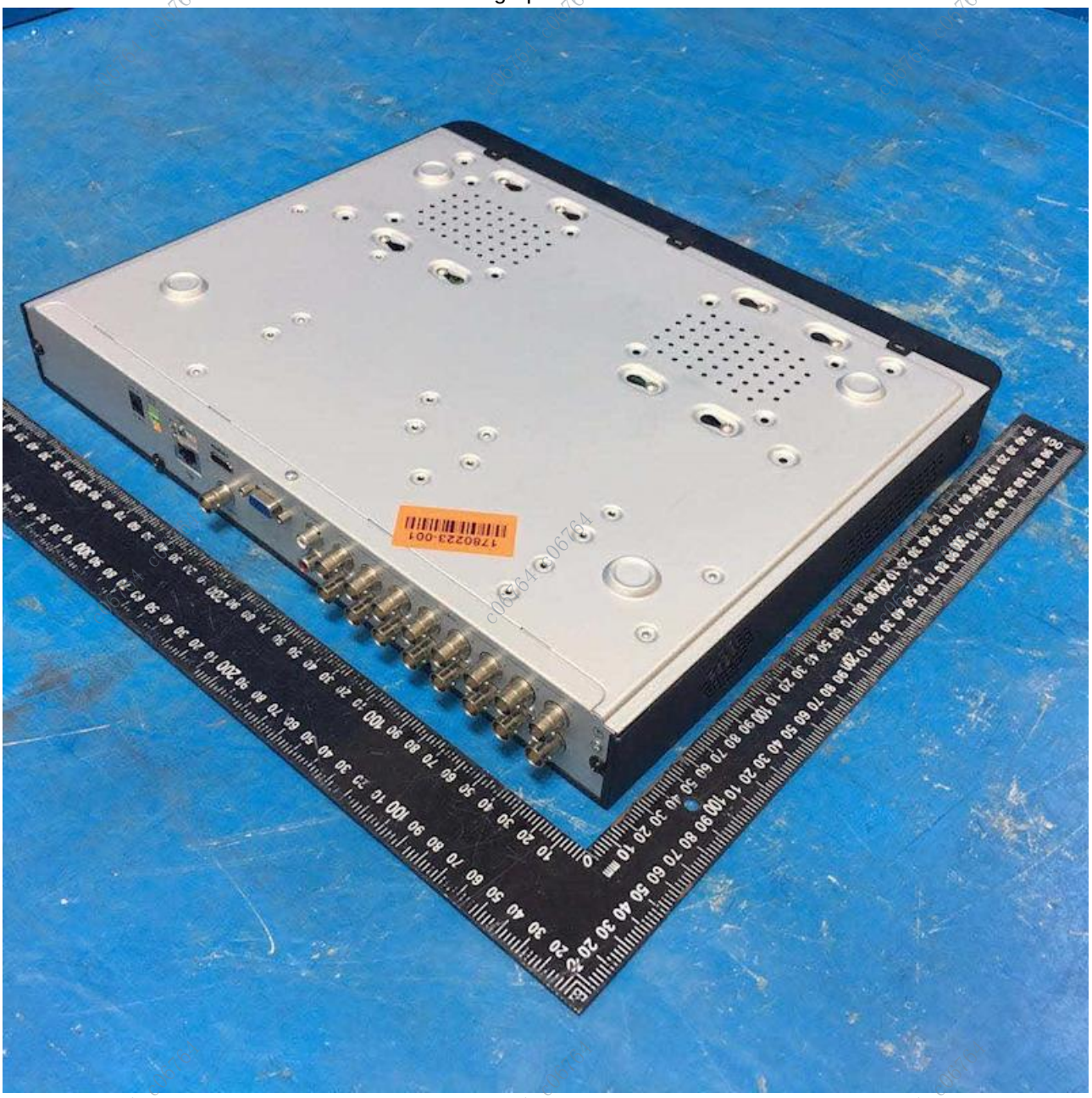

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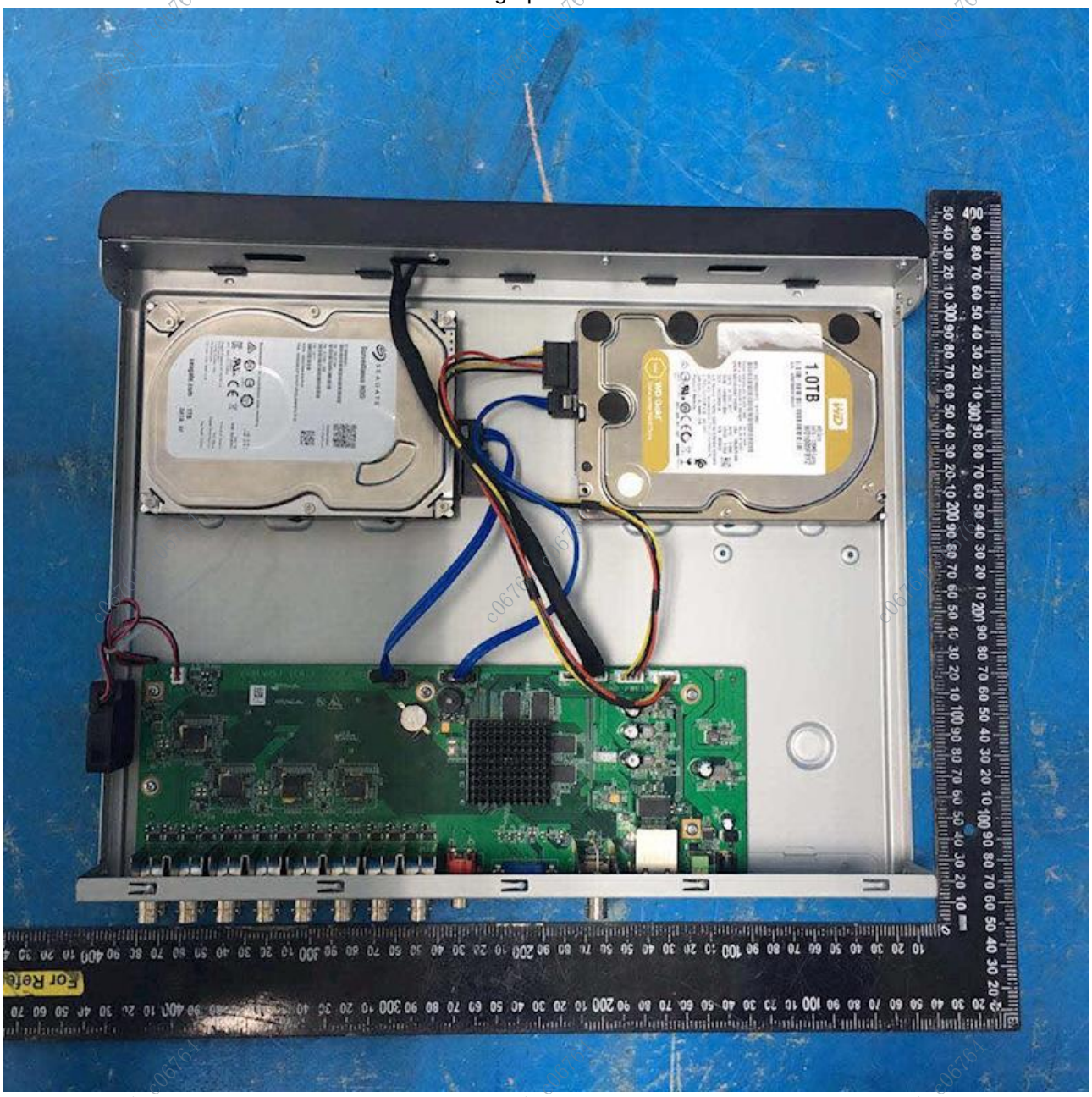

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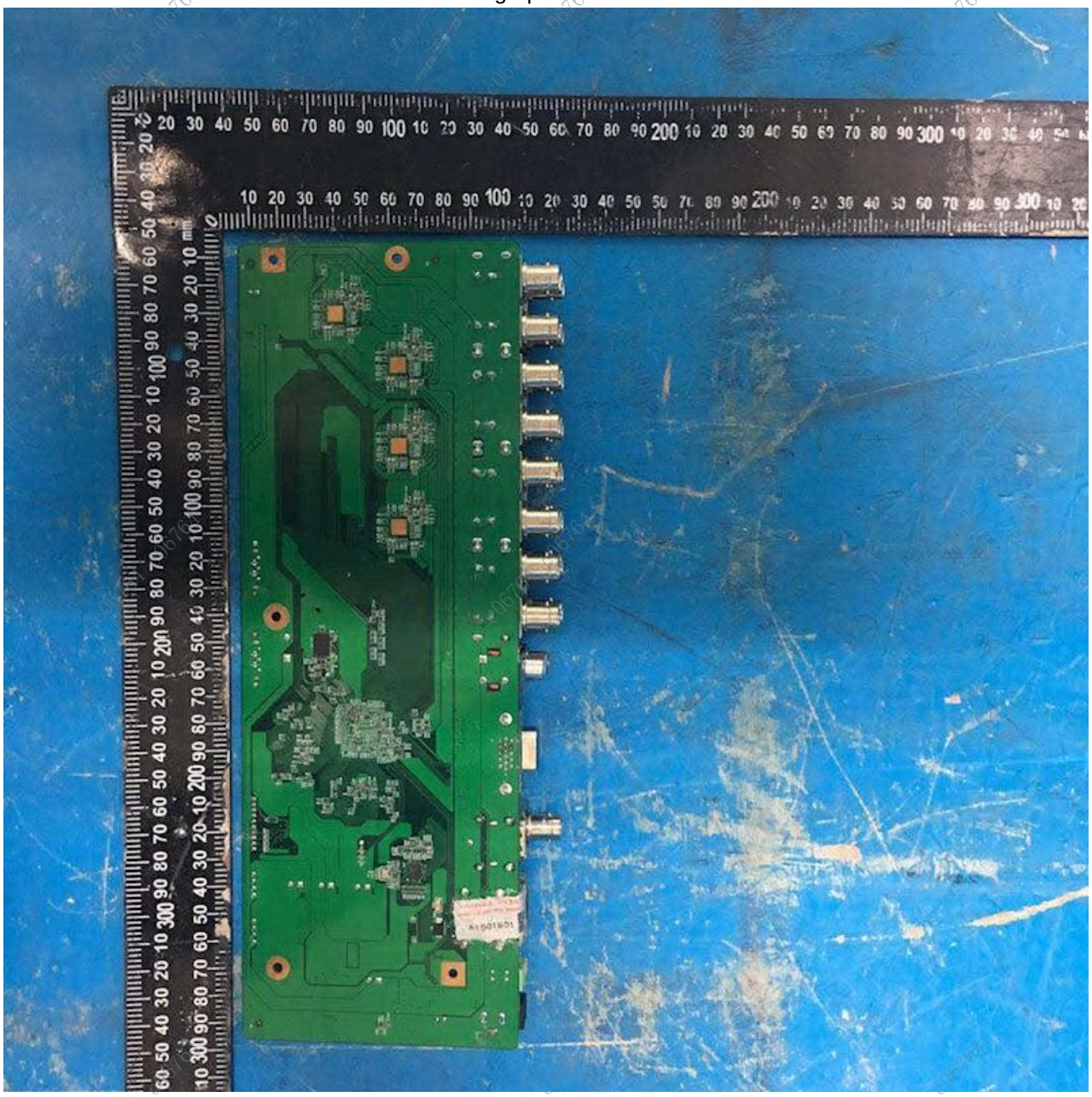

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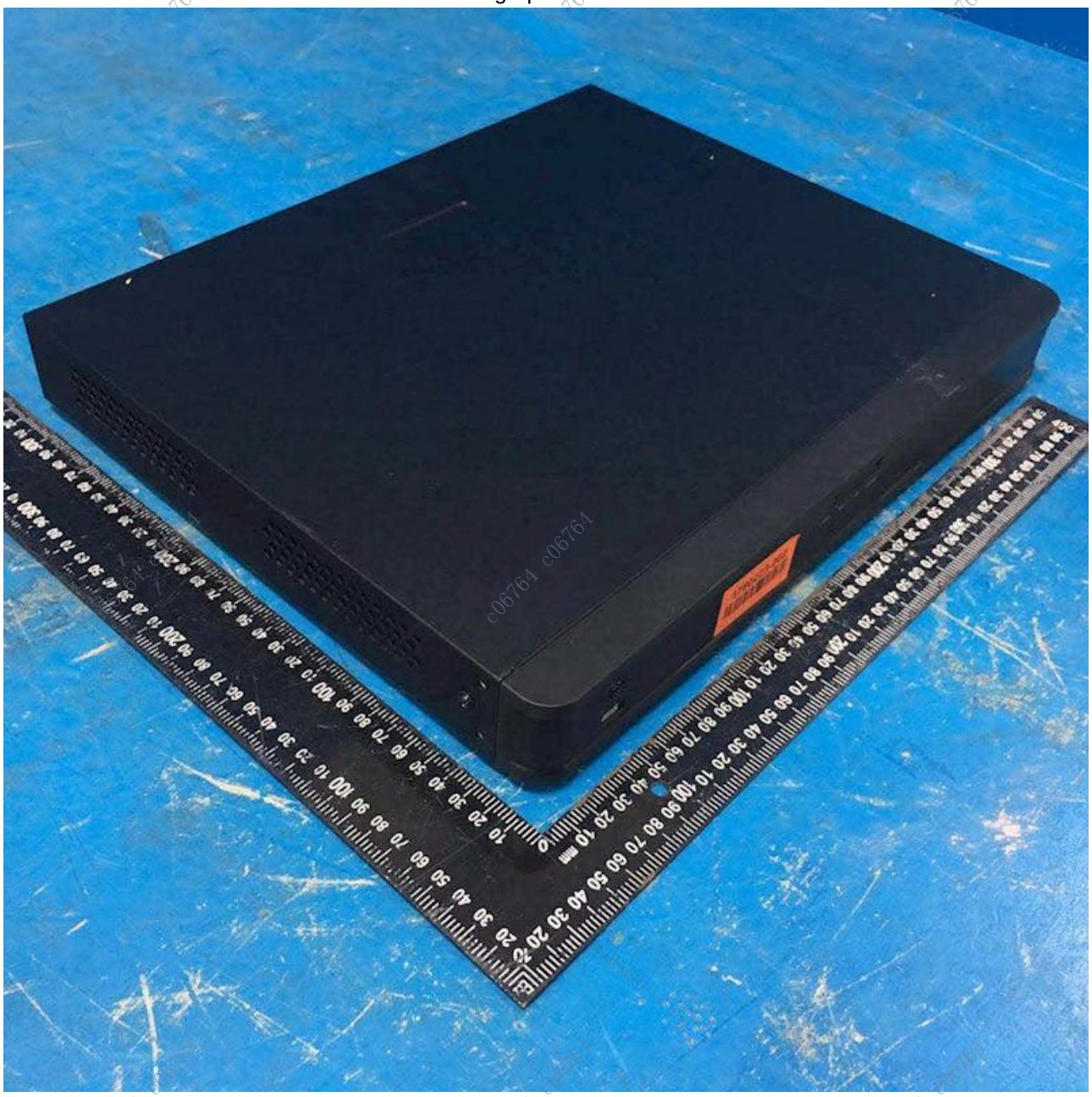

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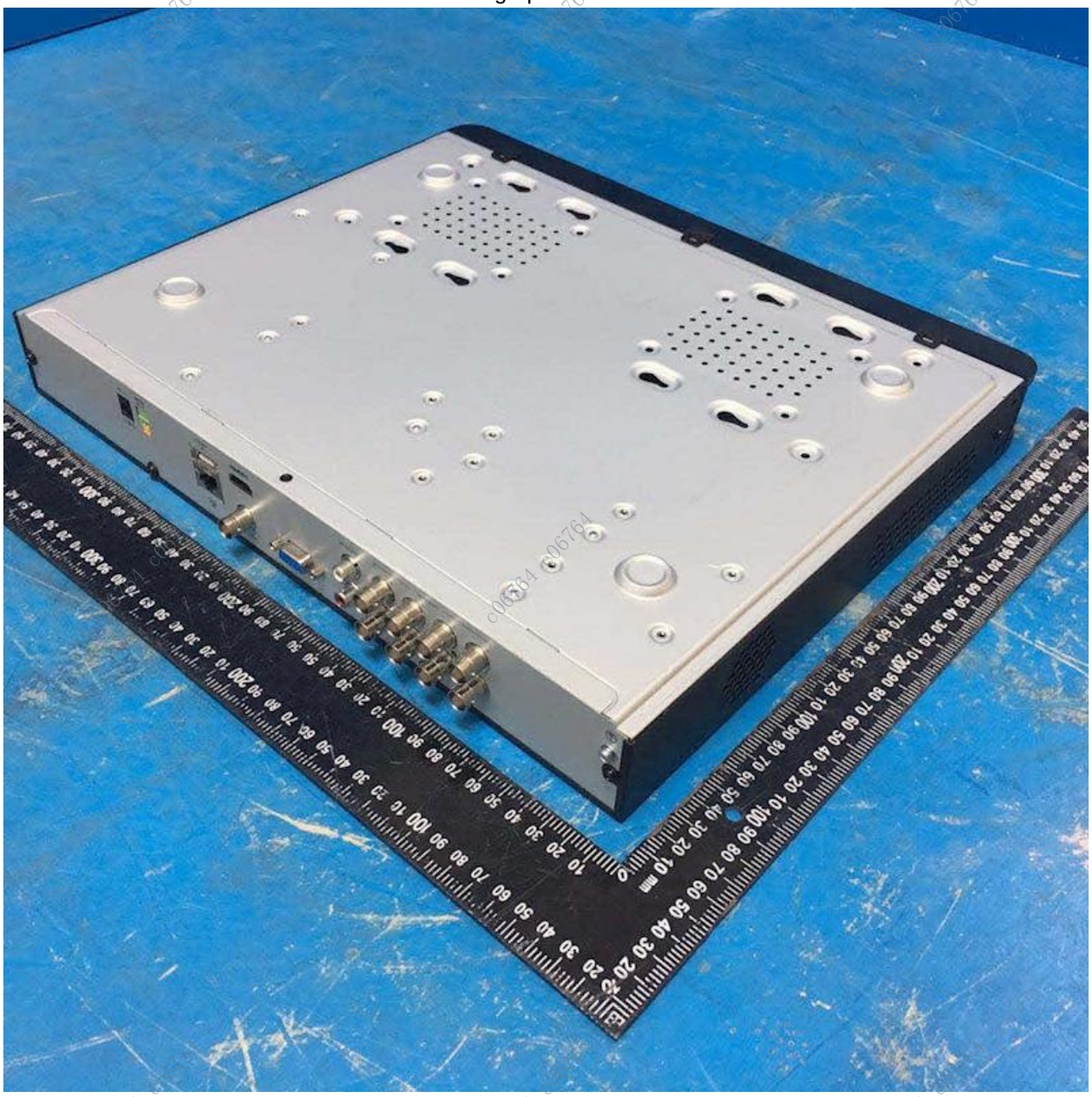

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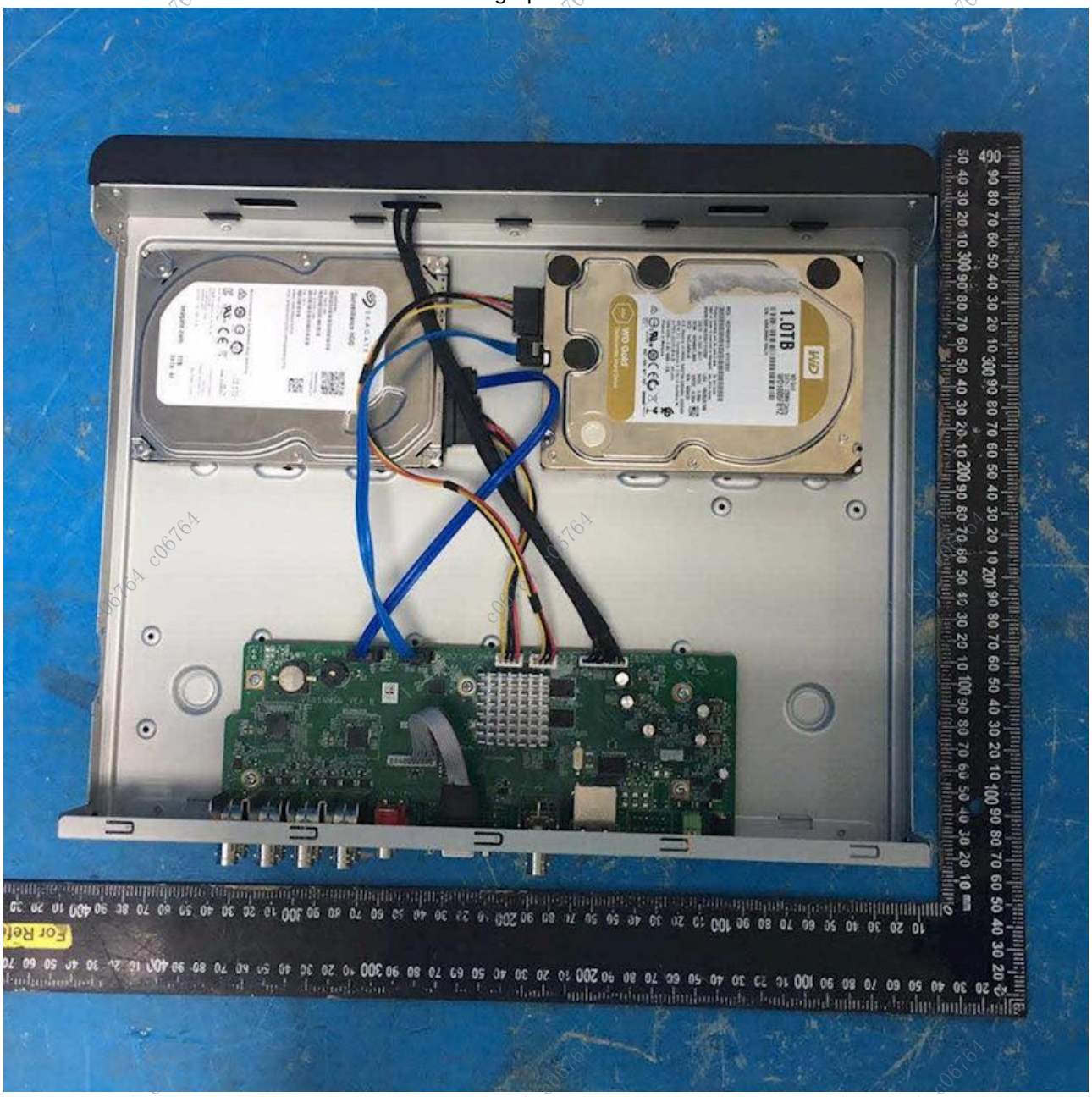

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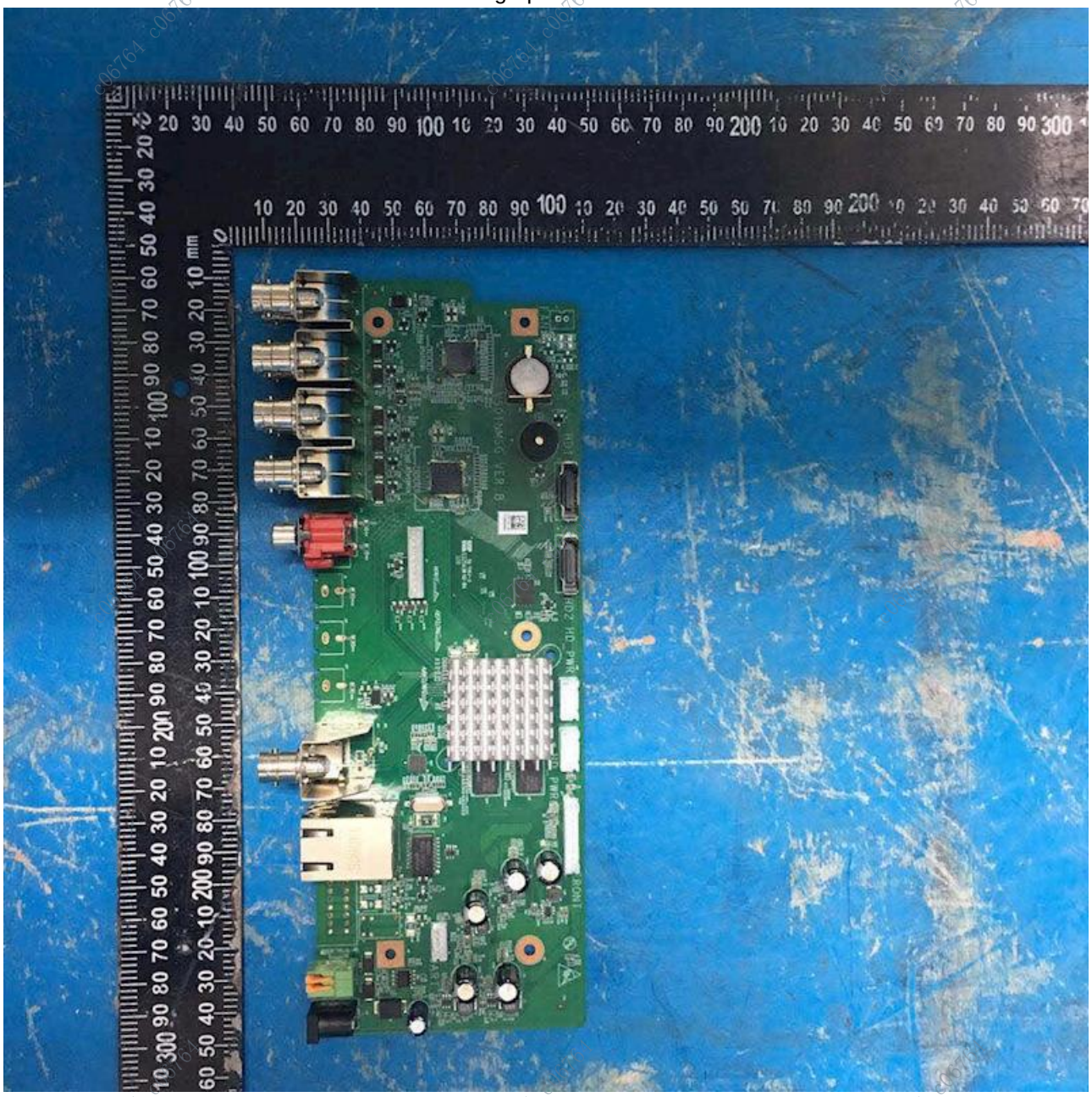

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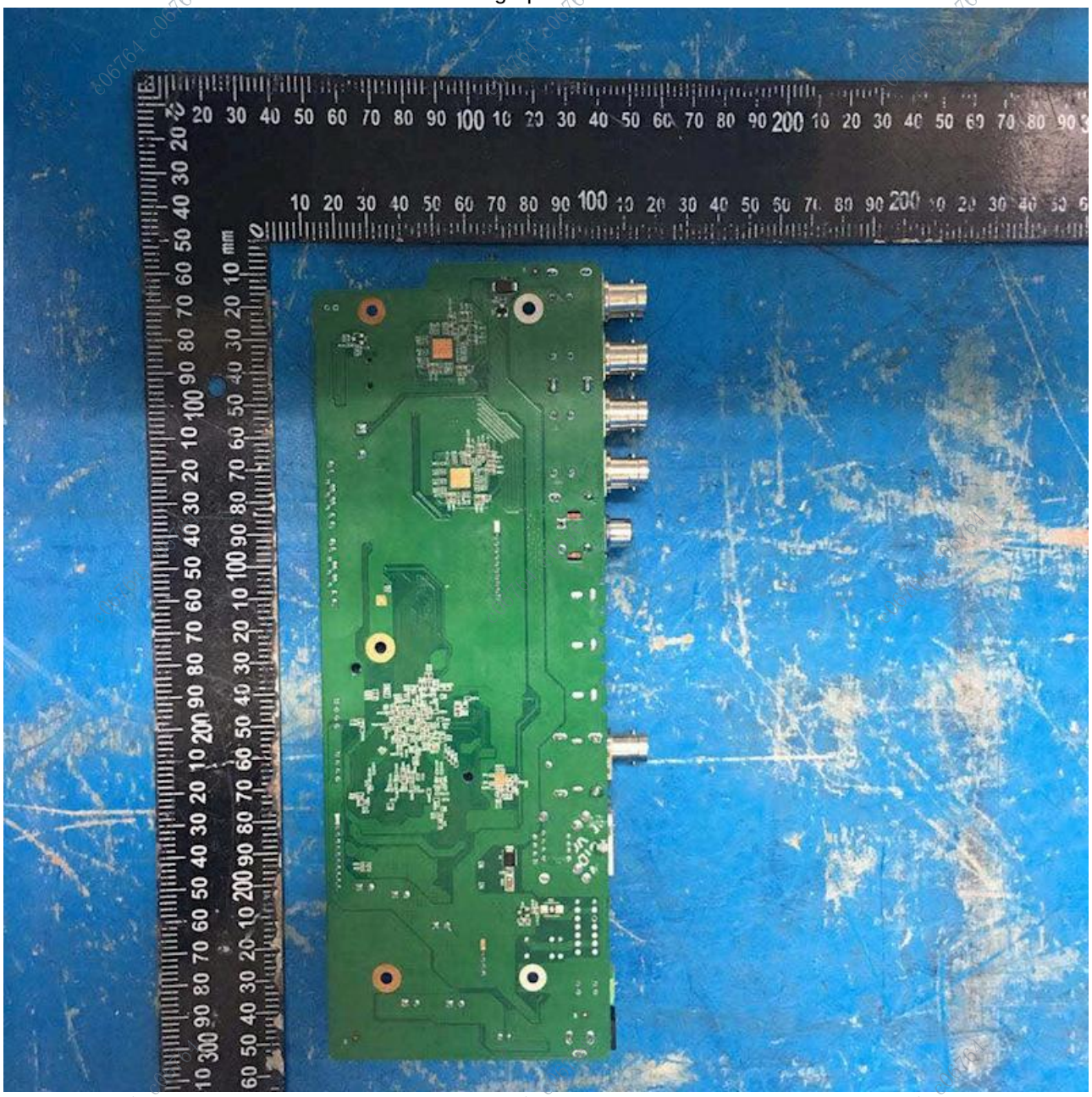

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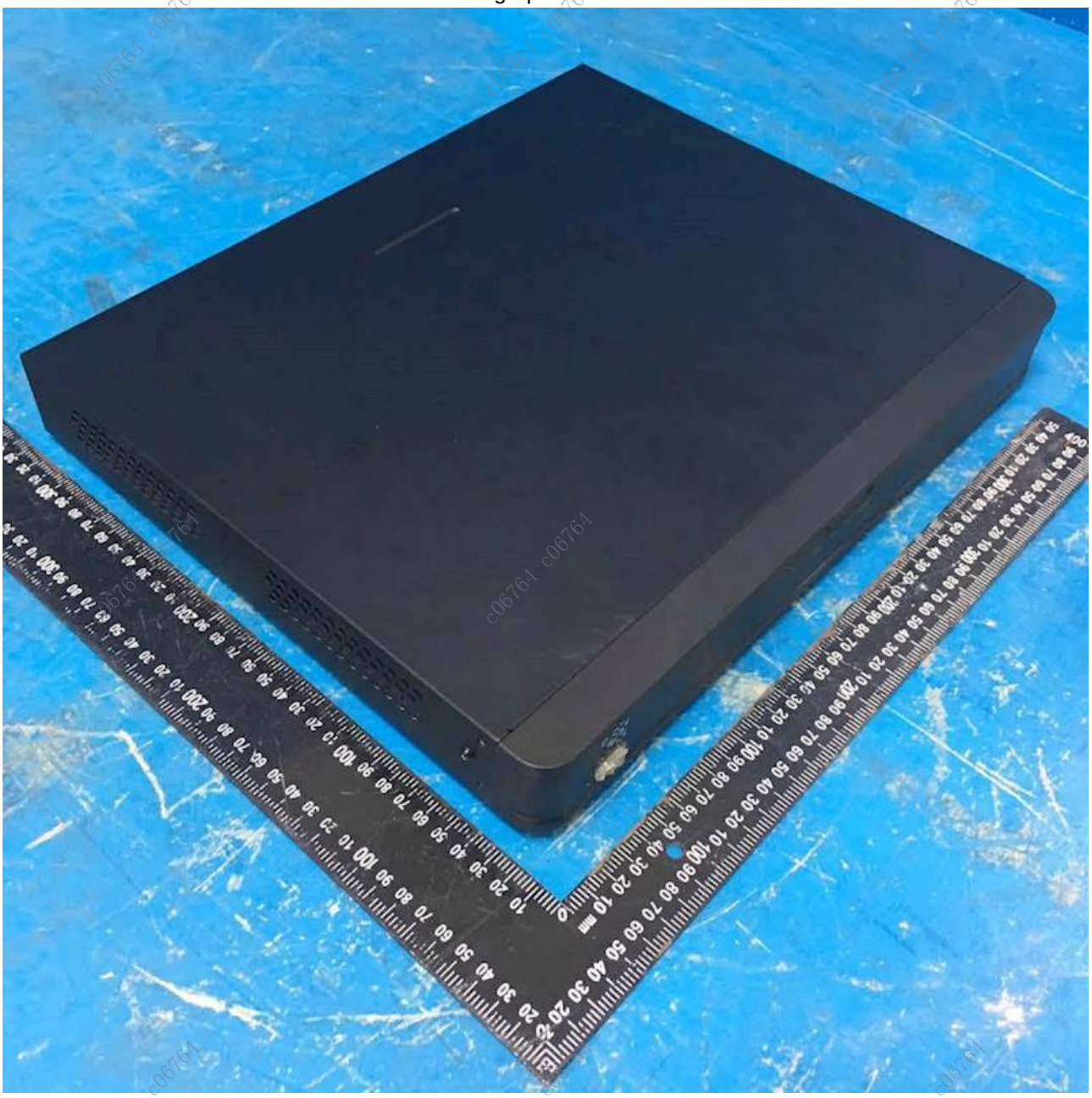

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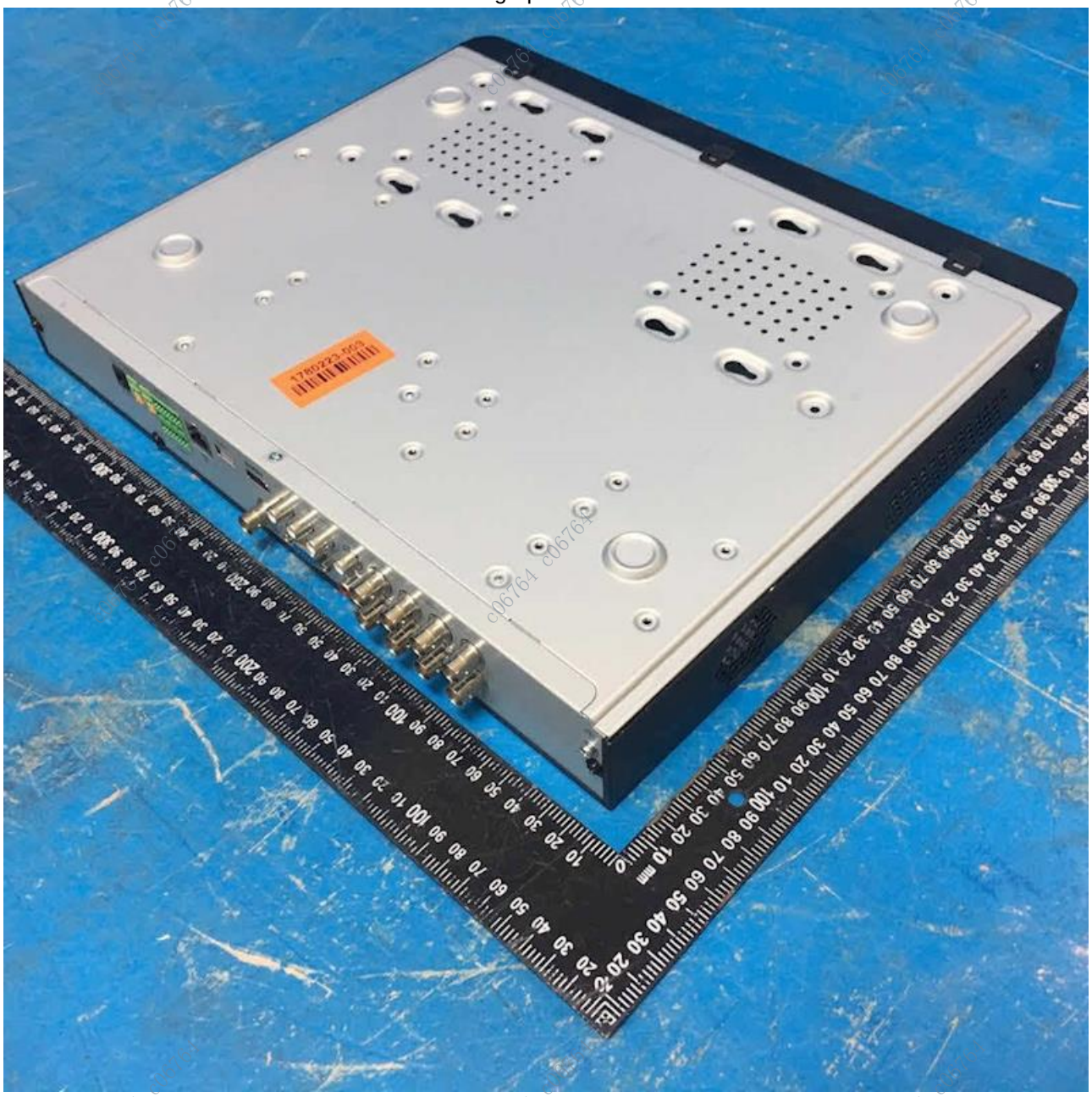

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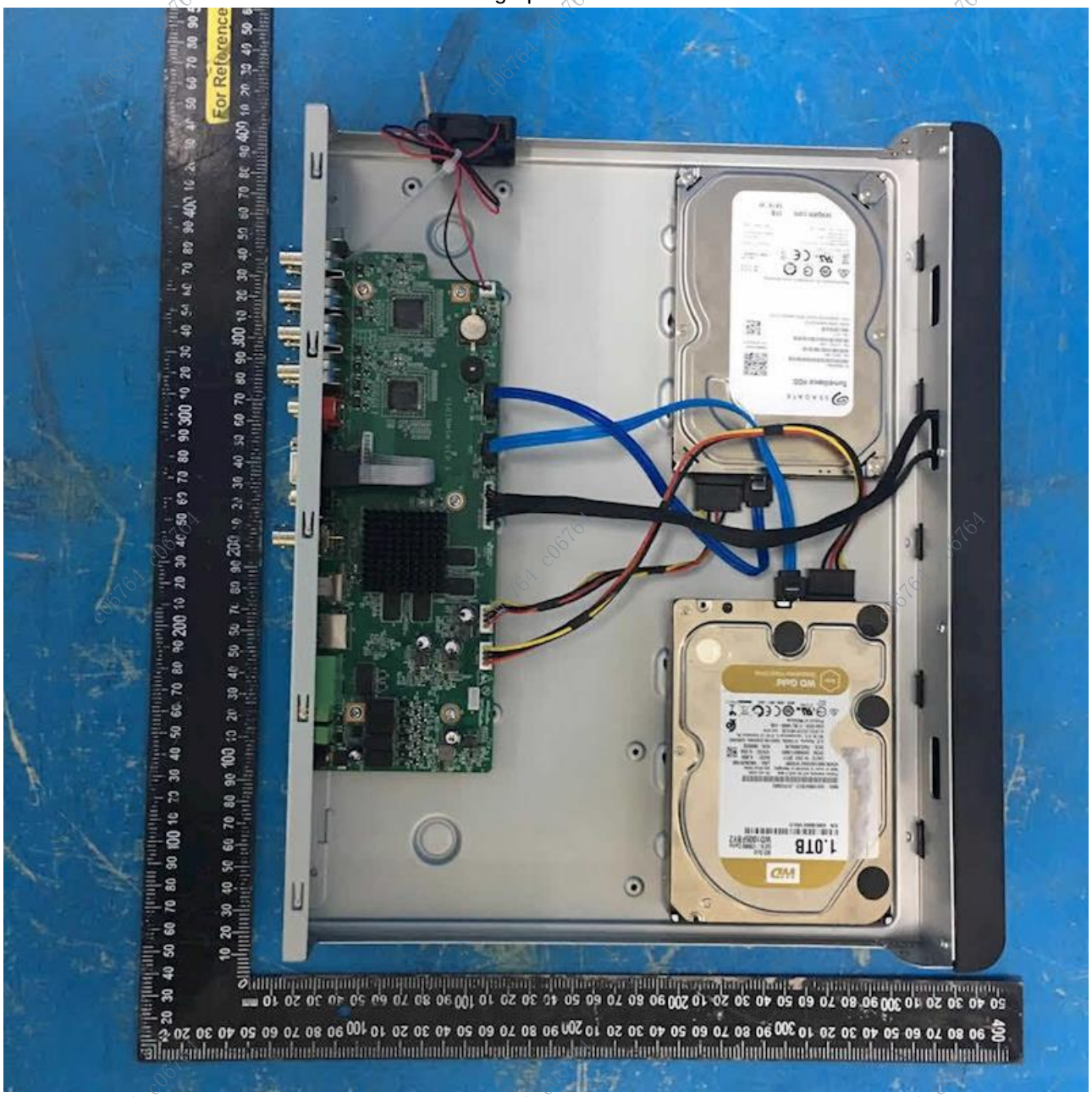

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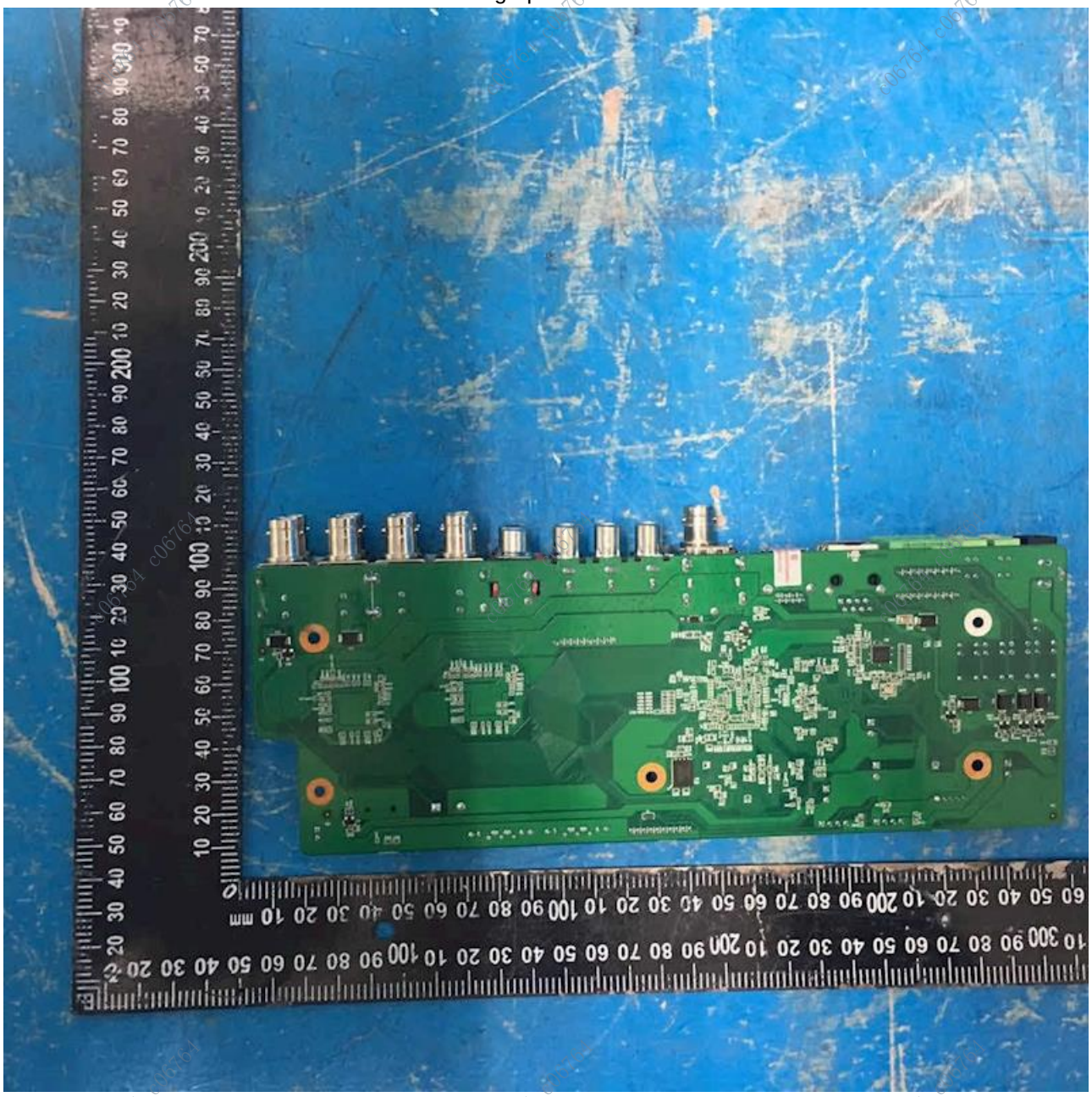

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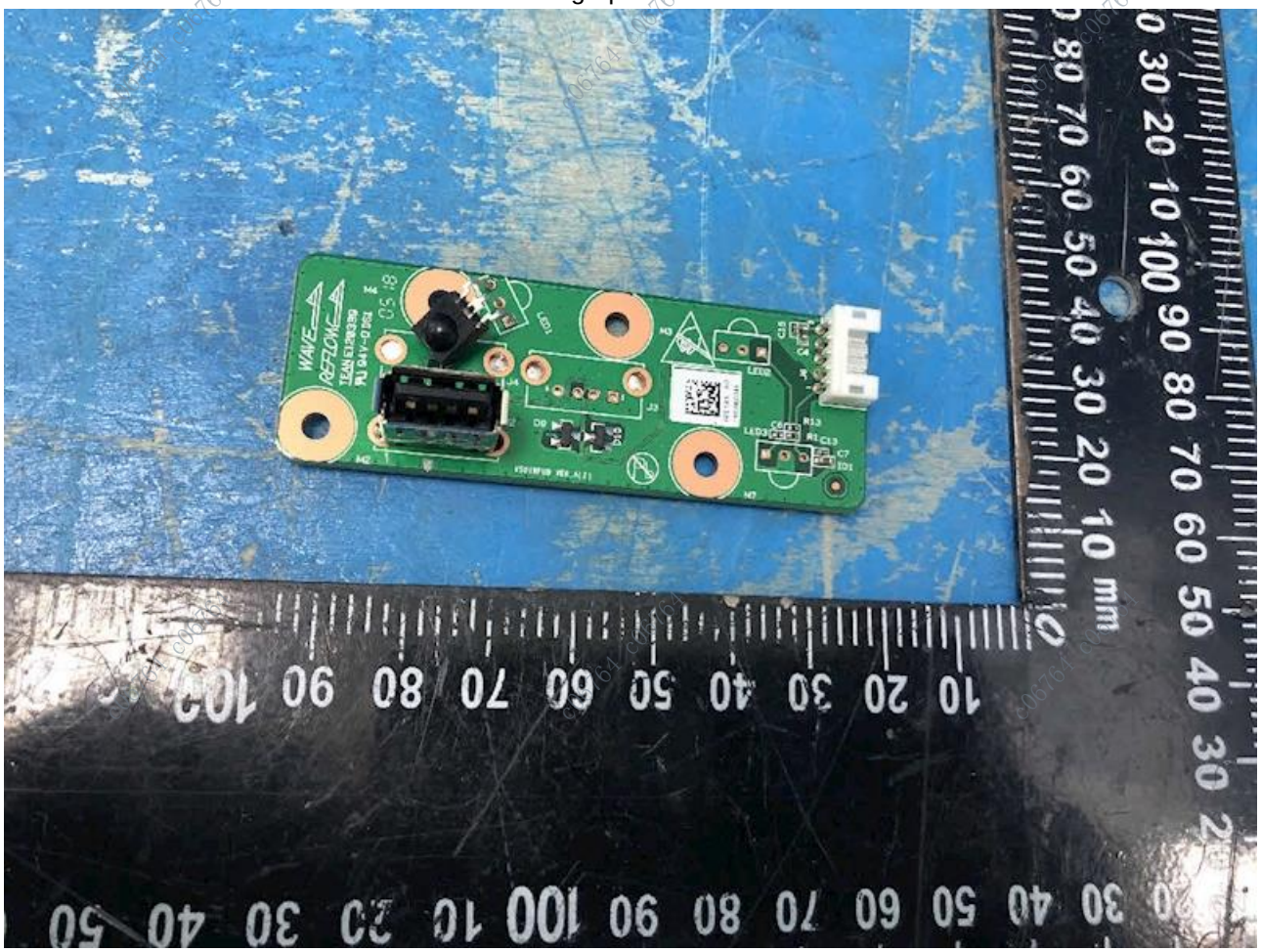

Enclosures

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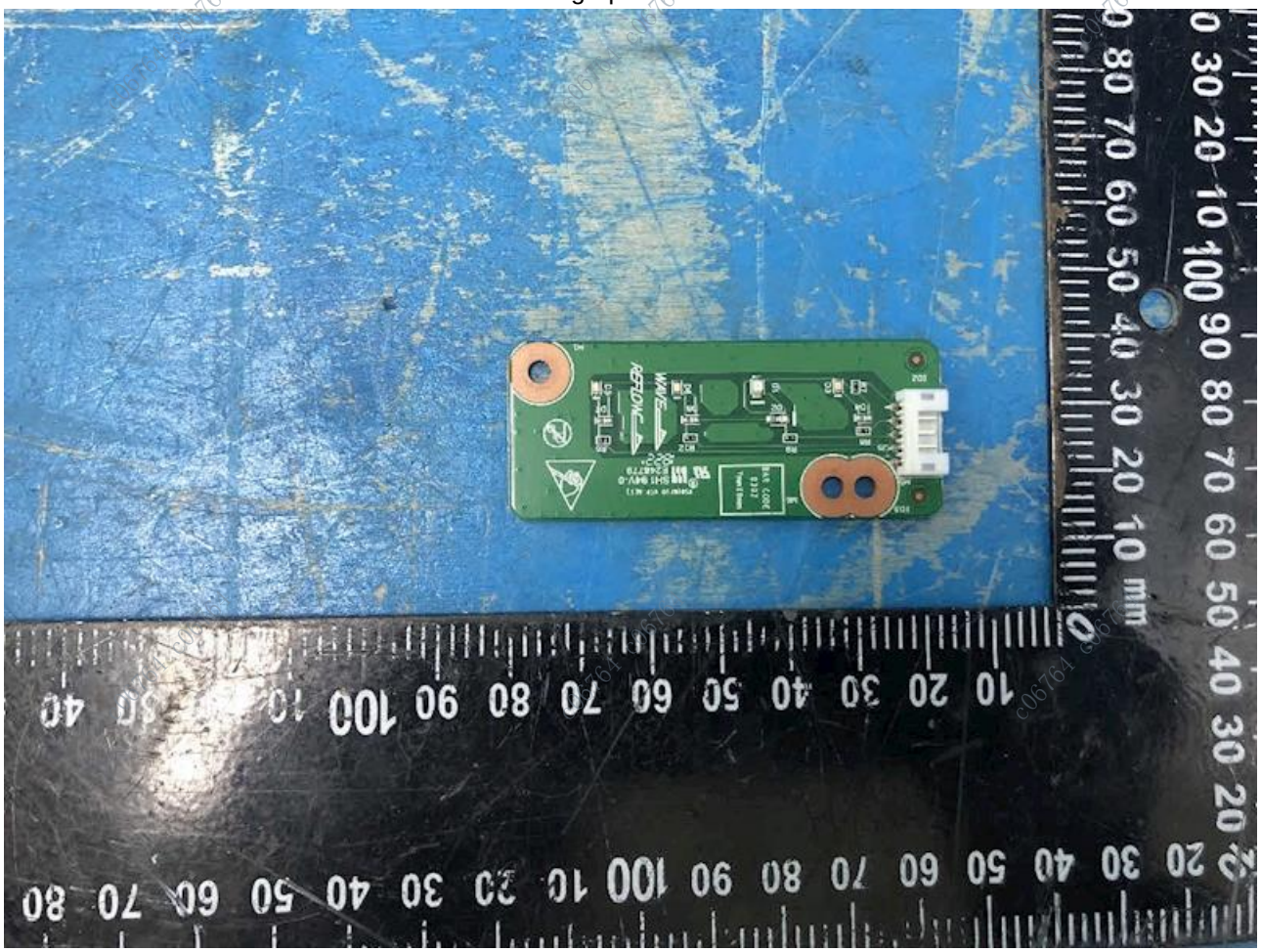

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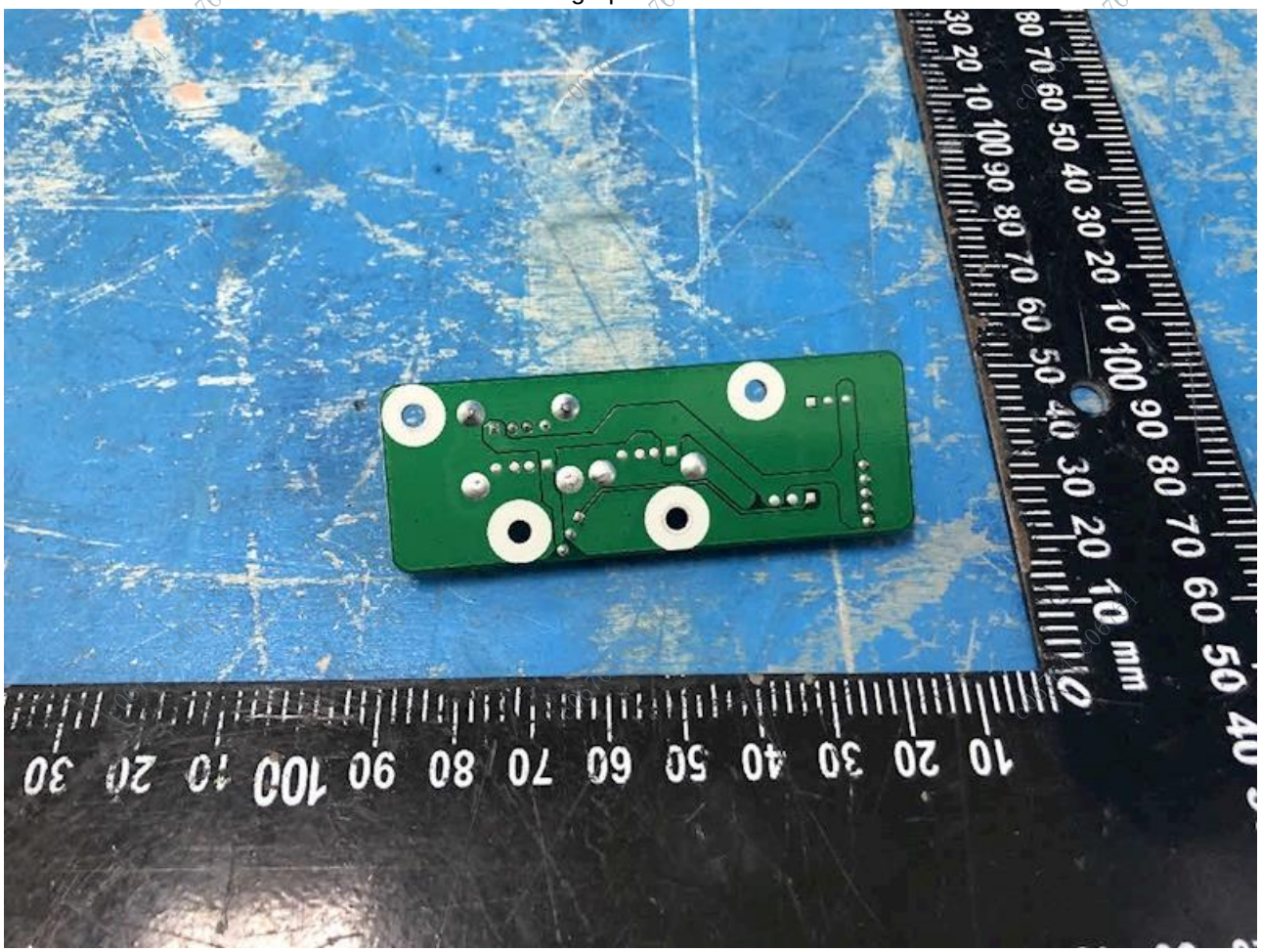

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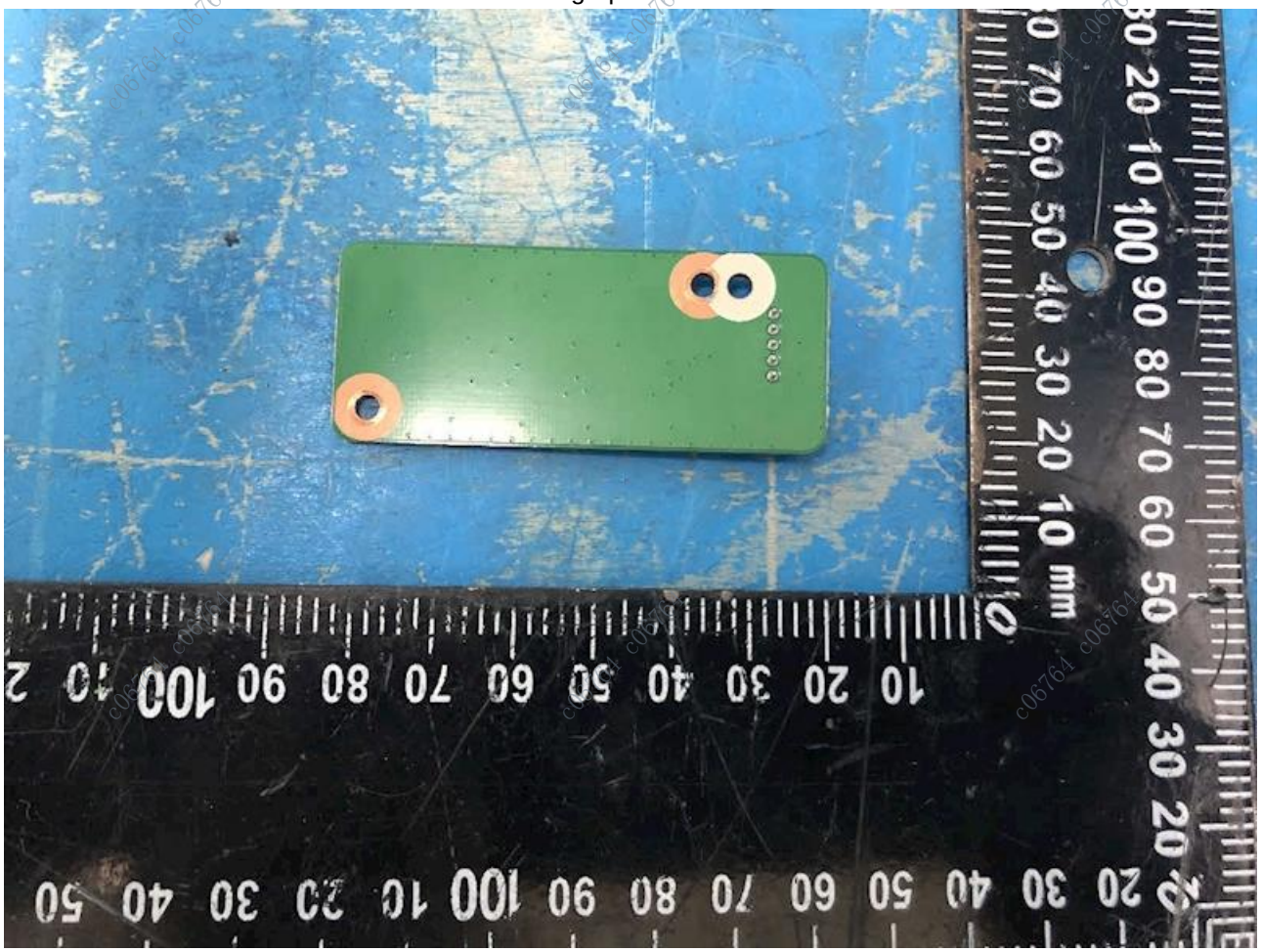

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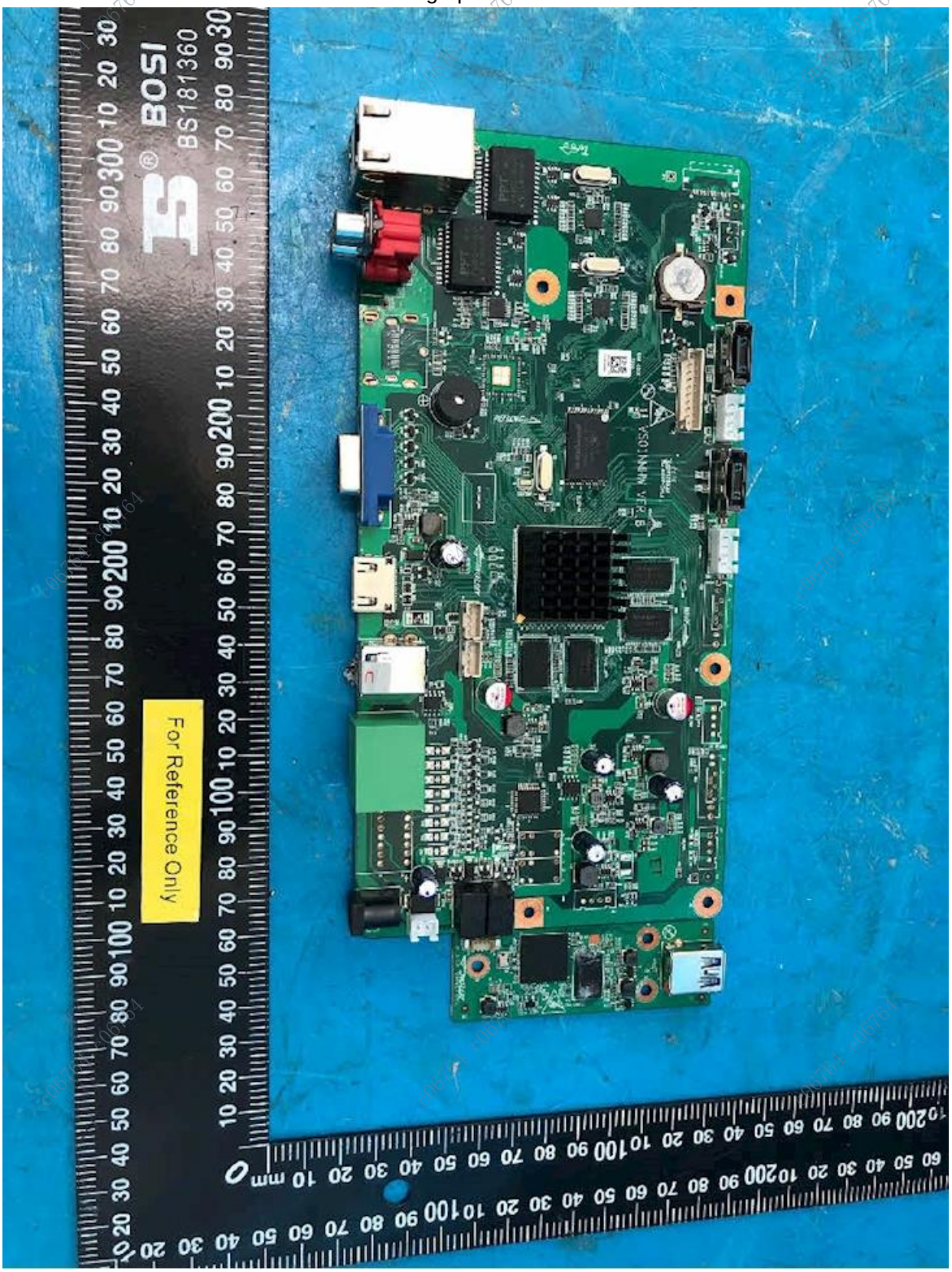

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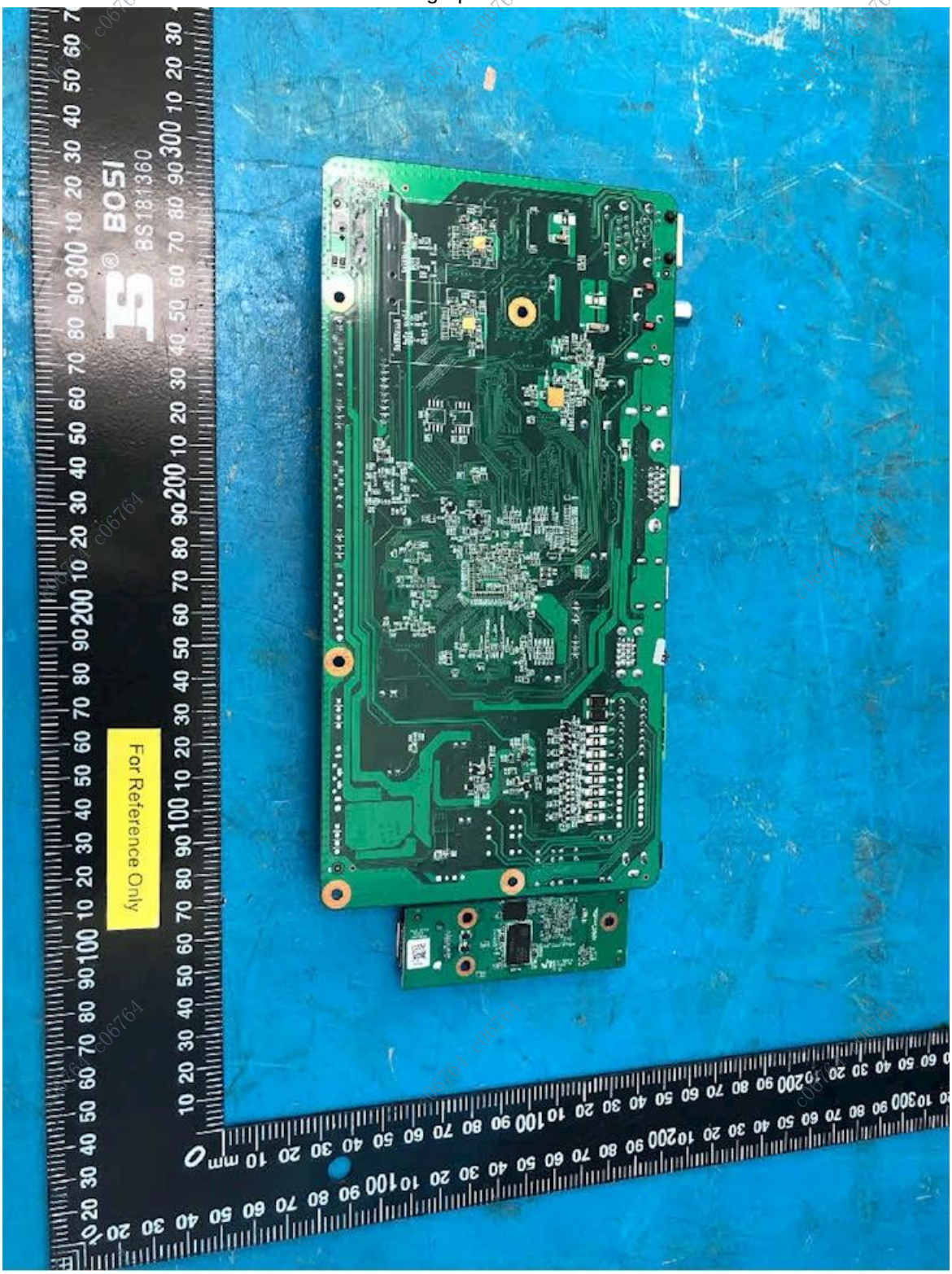

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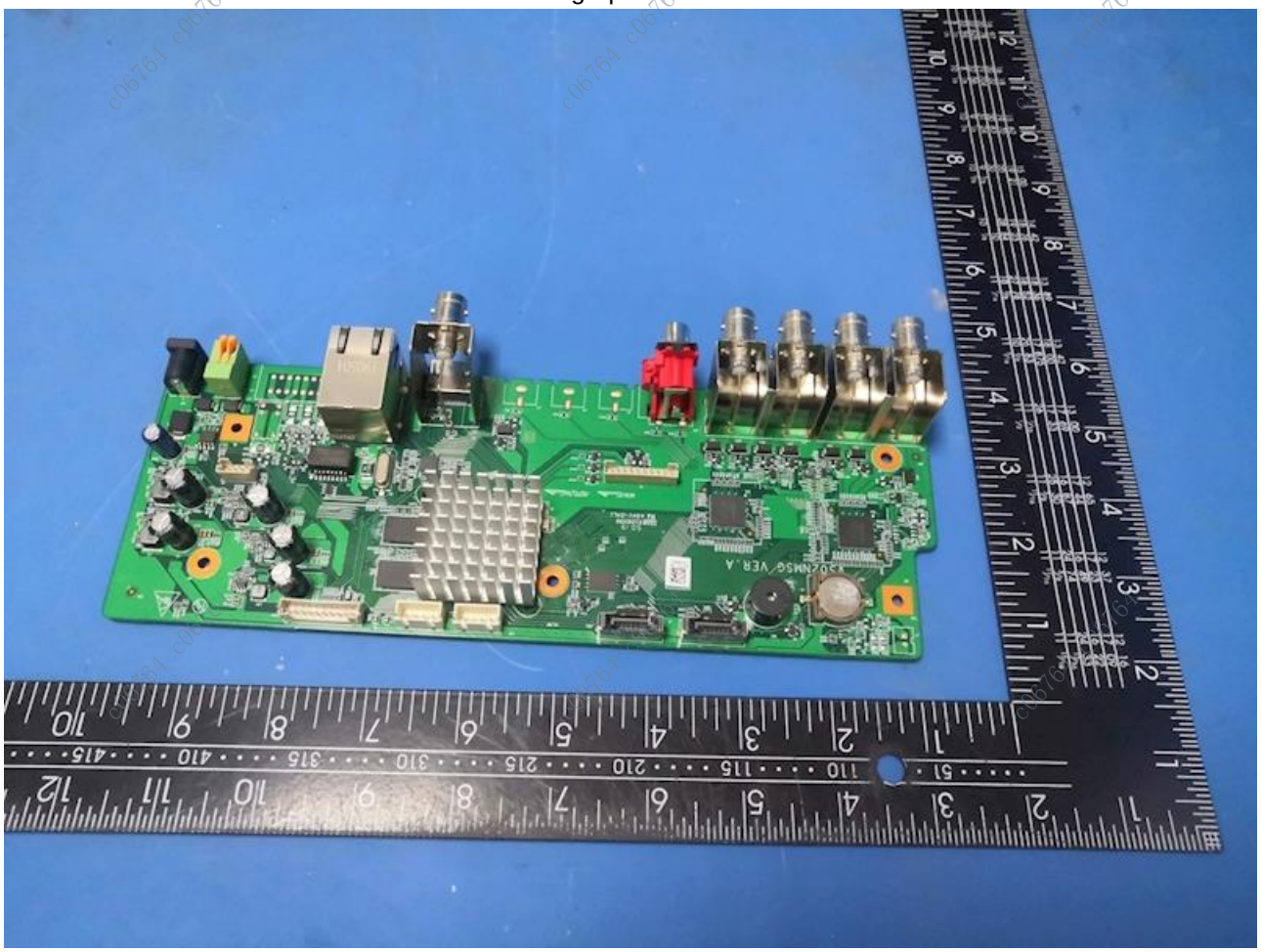

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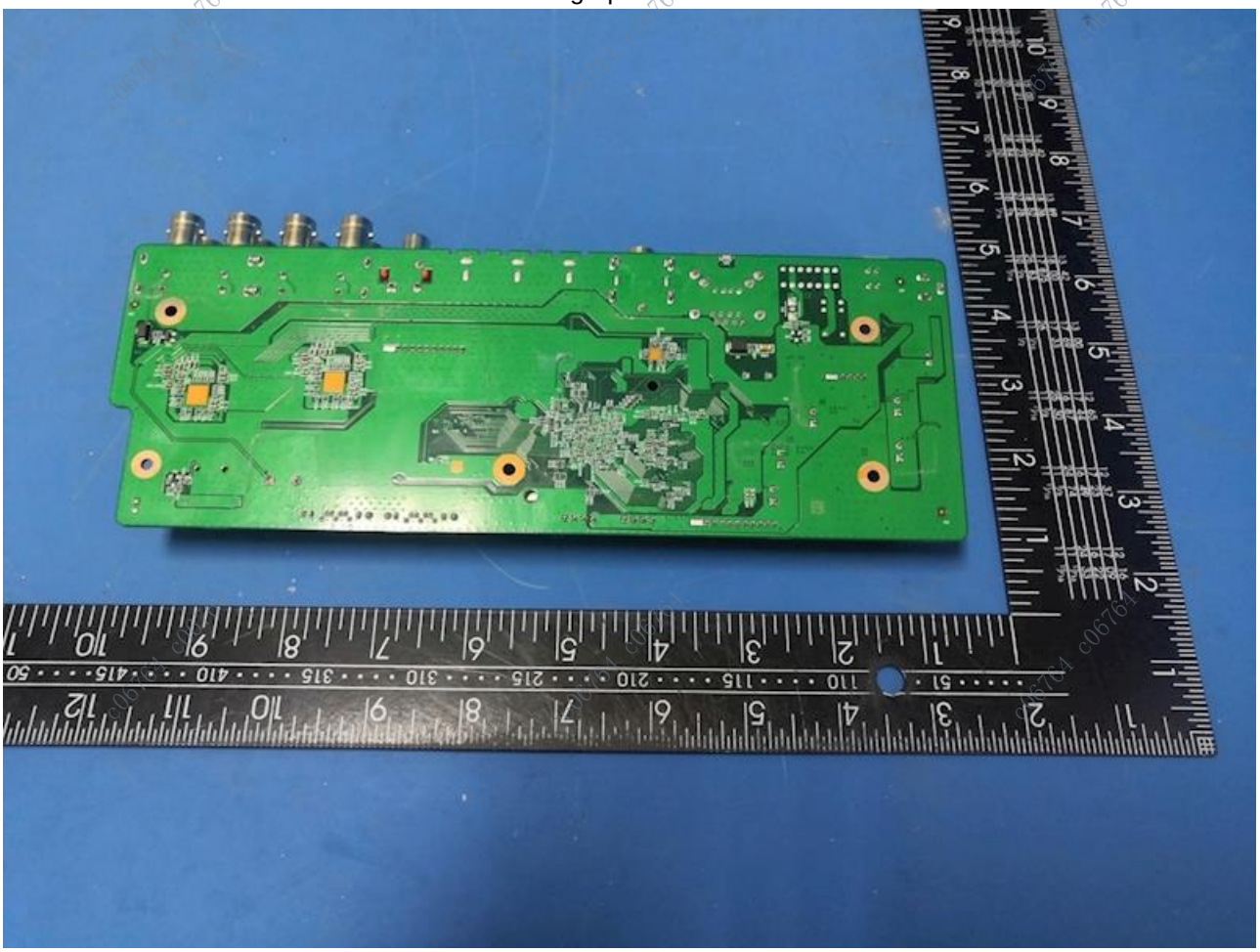

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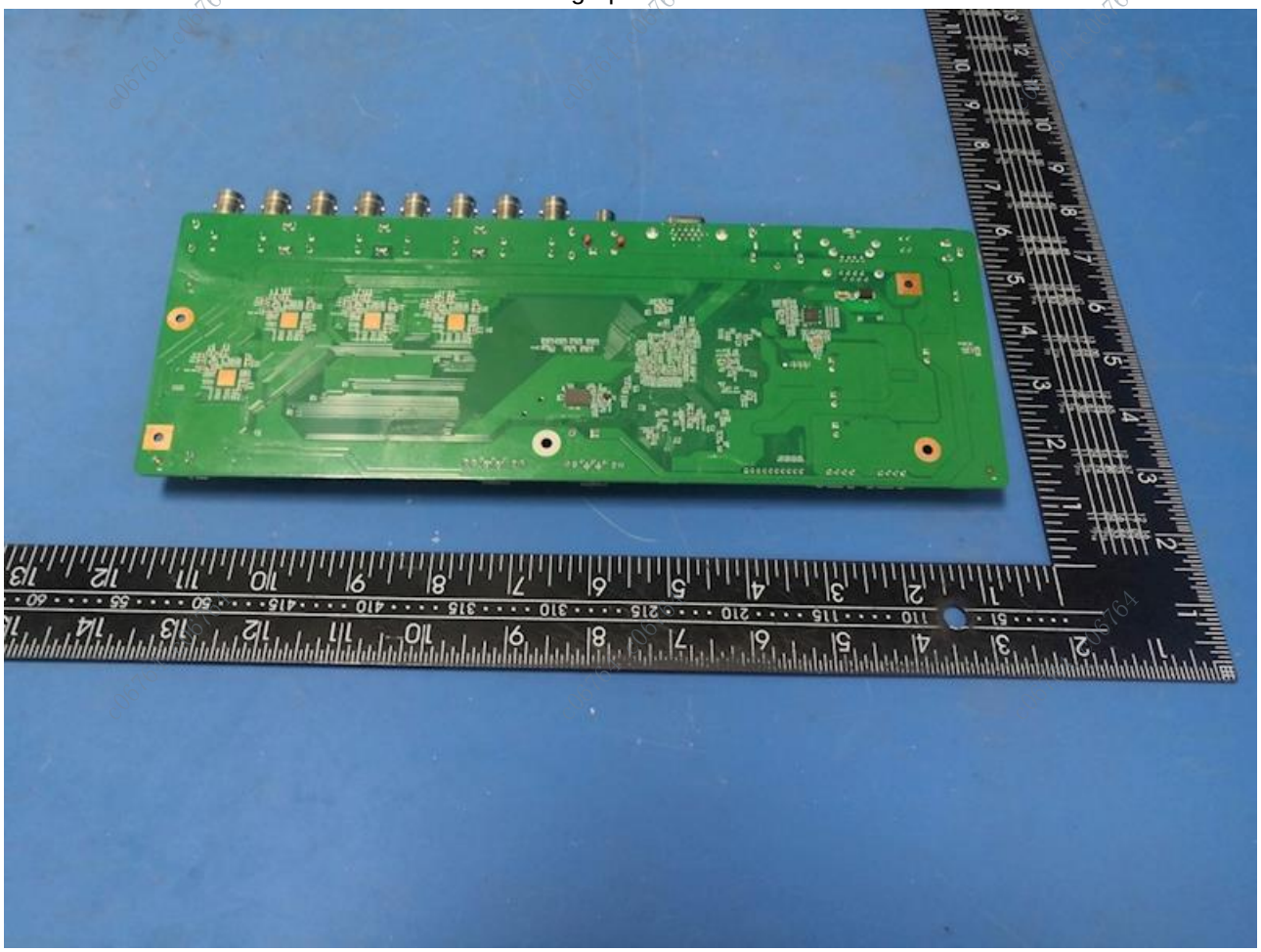

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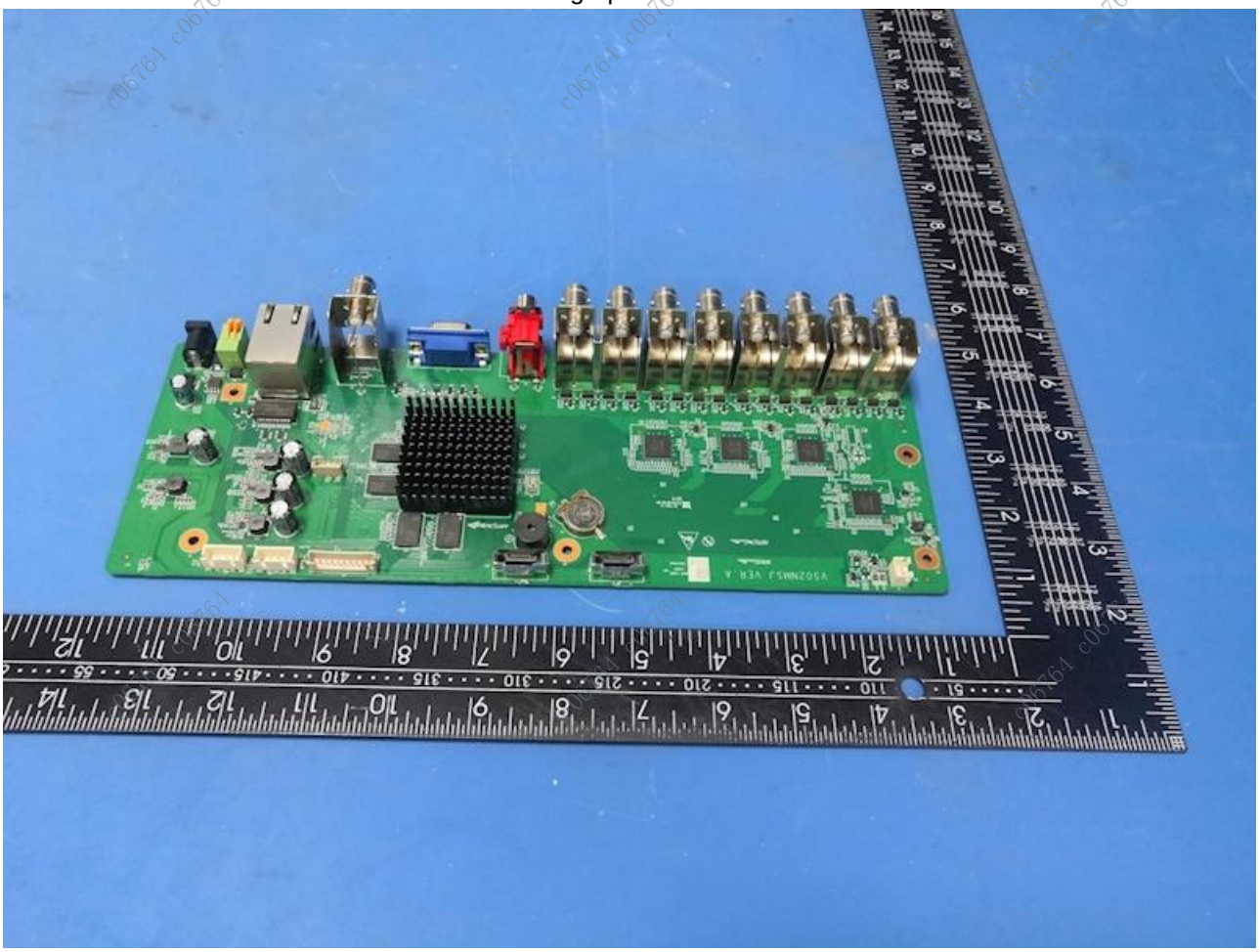

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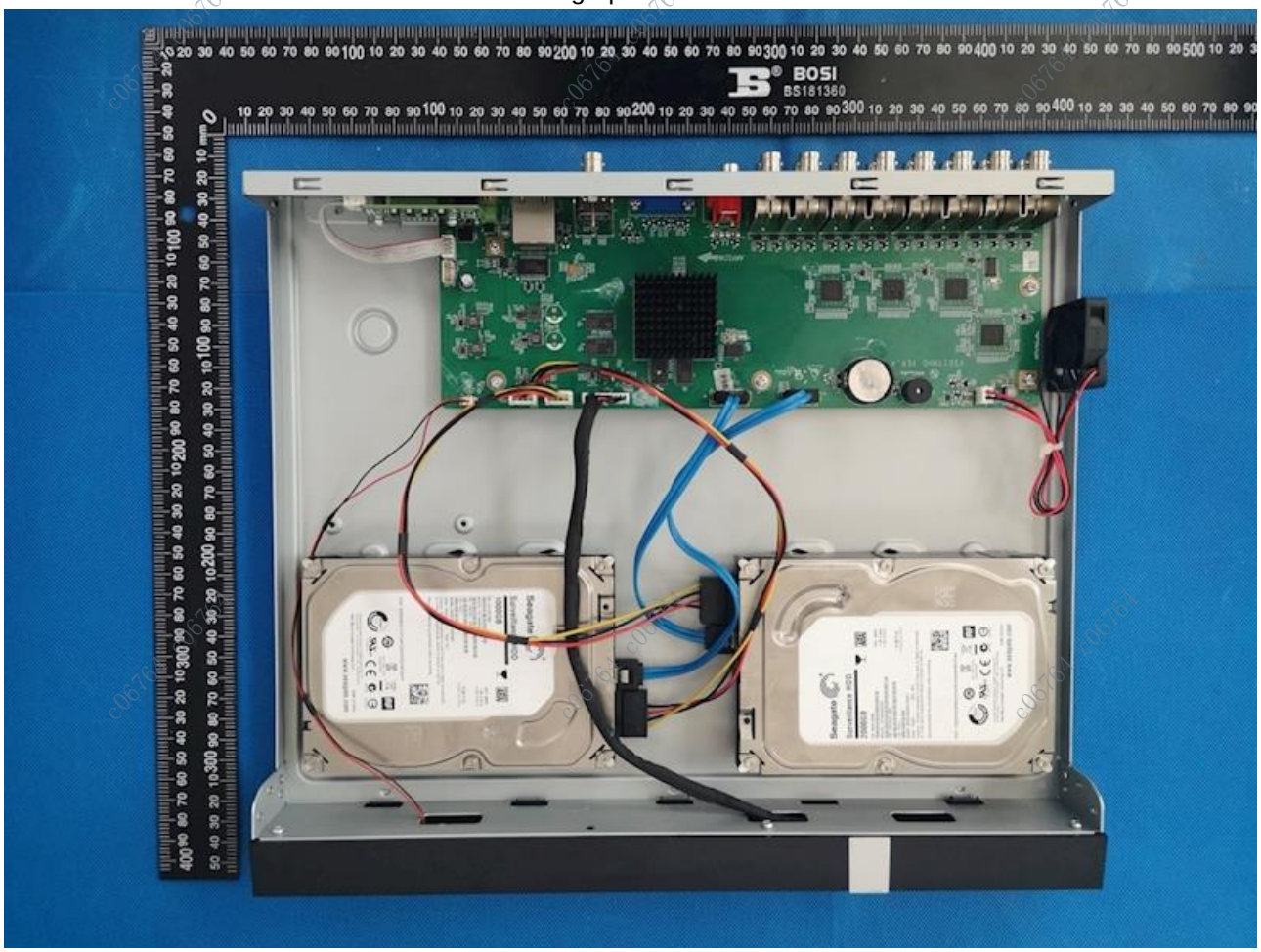

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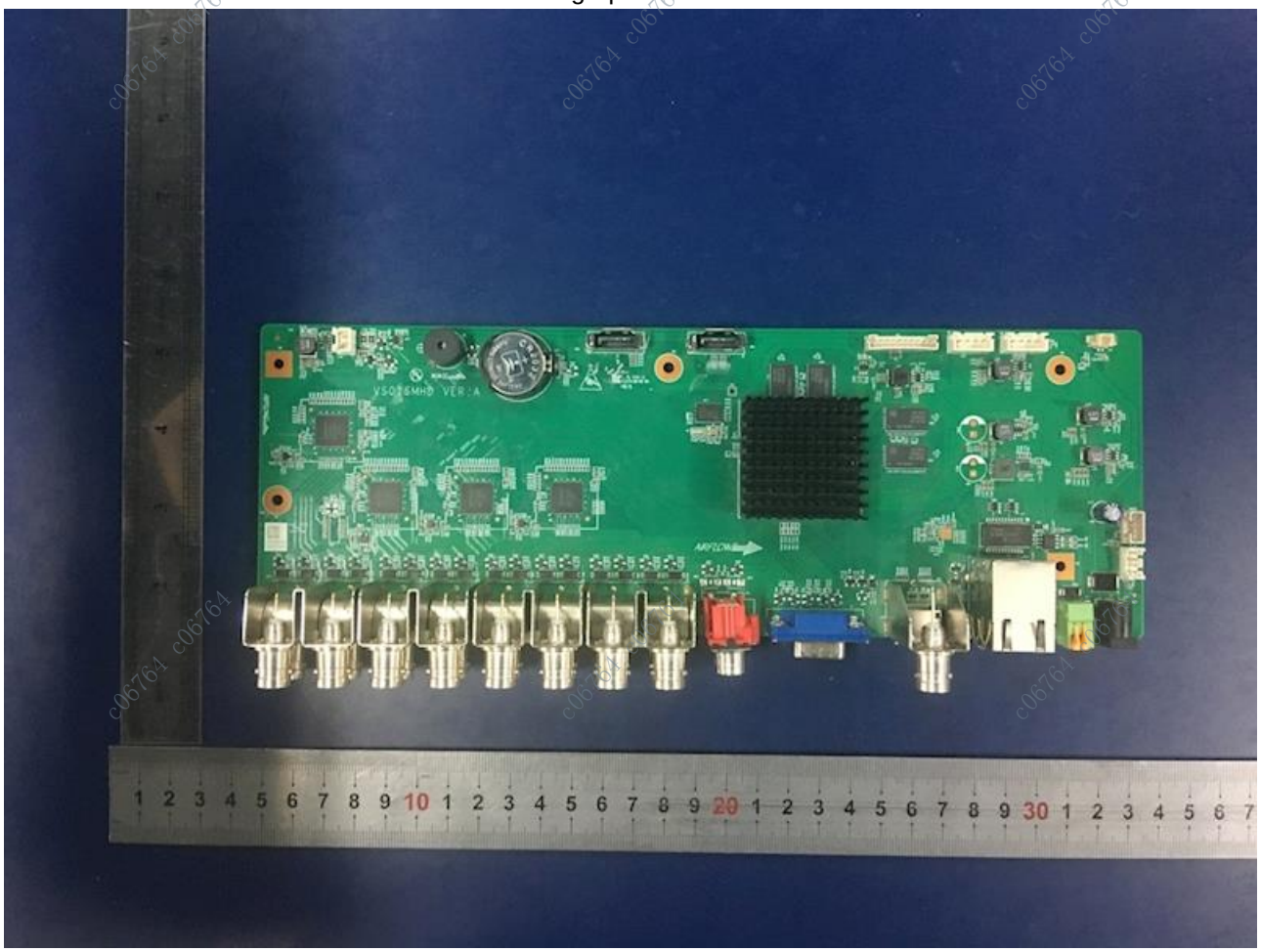

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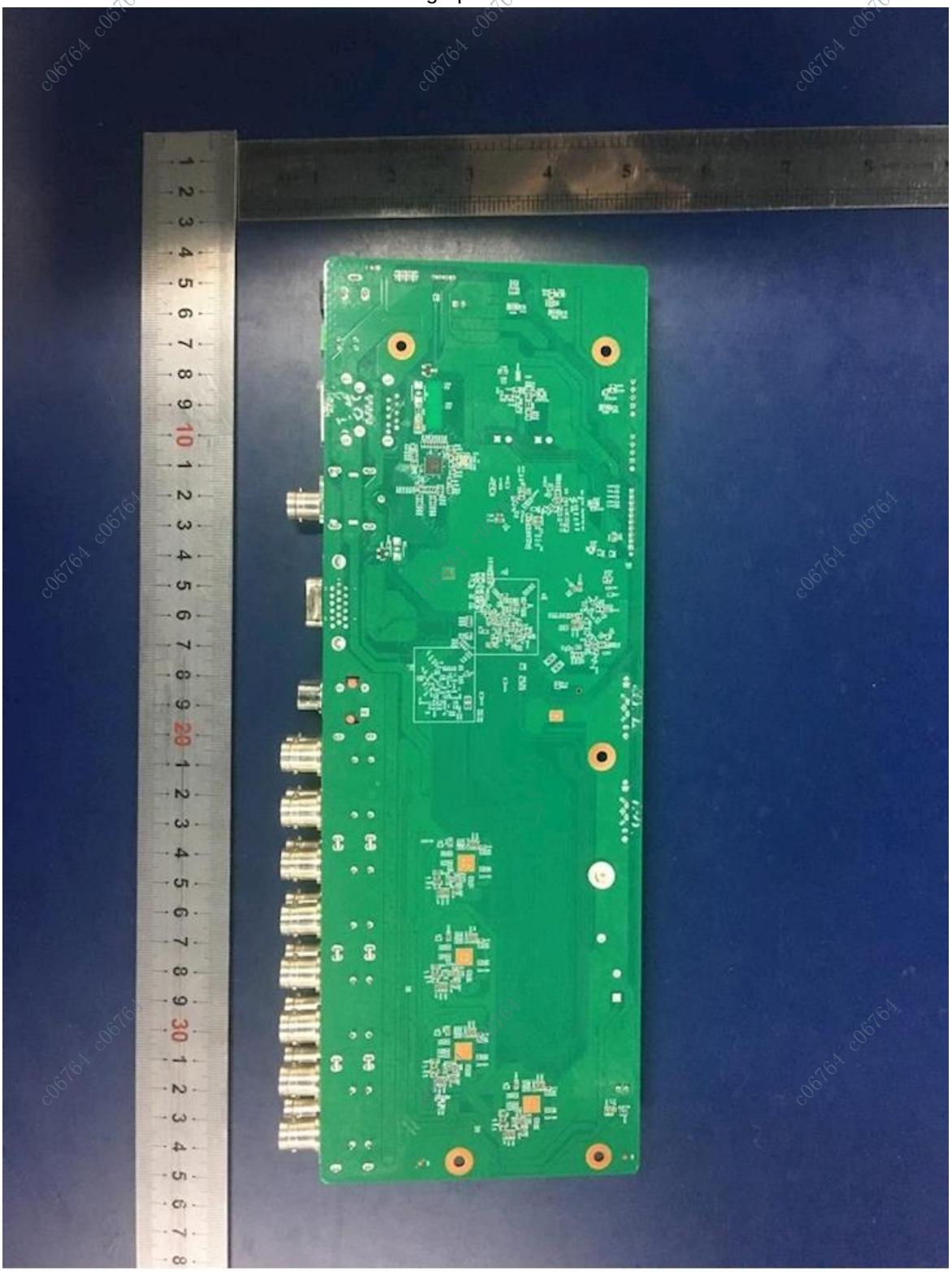

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Photographs ID 03-59

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Photographs ID 03-60

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Photographs ID 03-61

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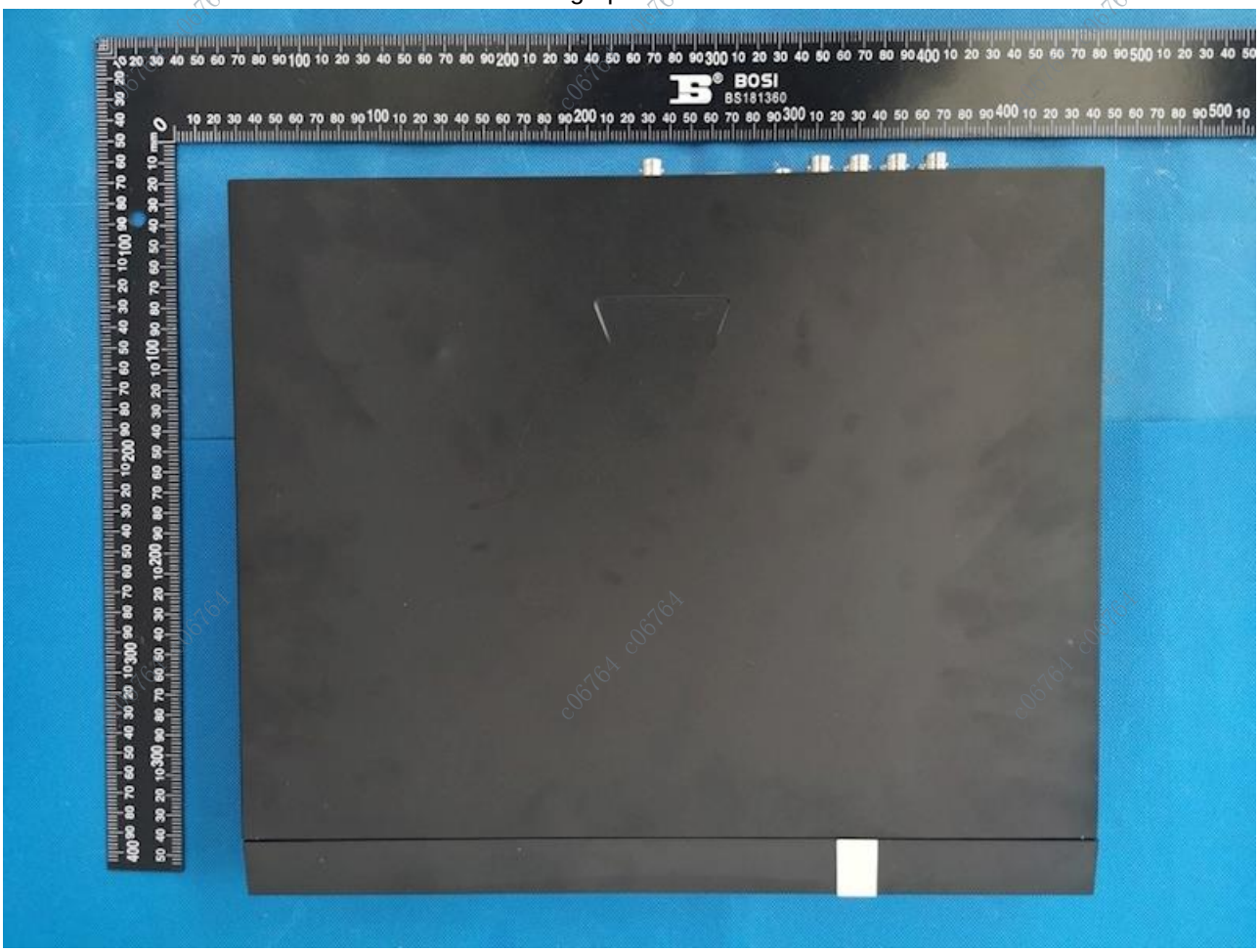
Photographs ID 03-62

Enclosures

Photographs ID 03-63



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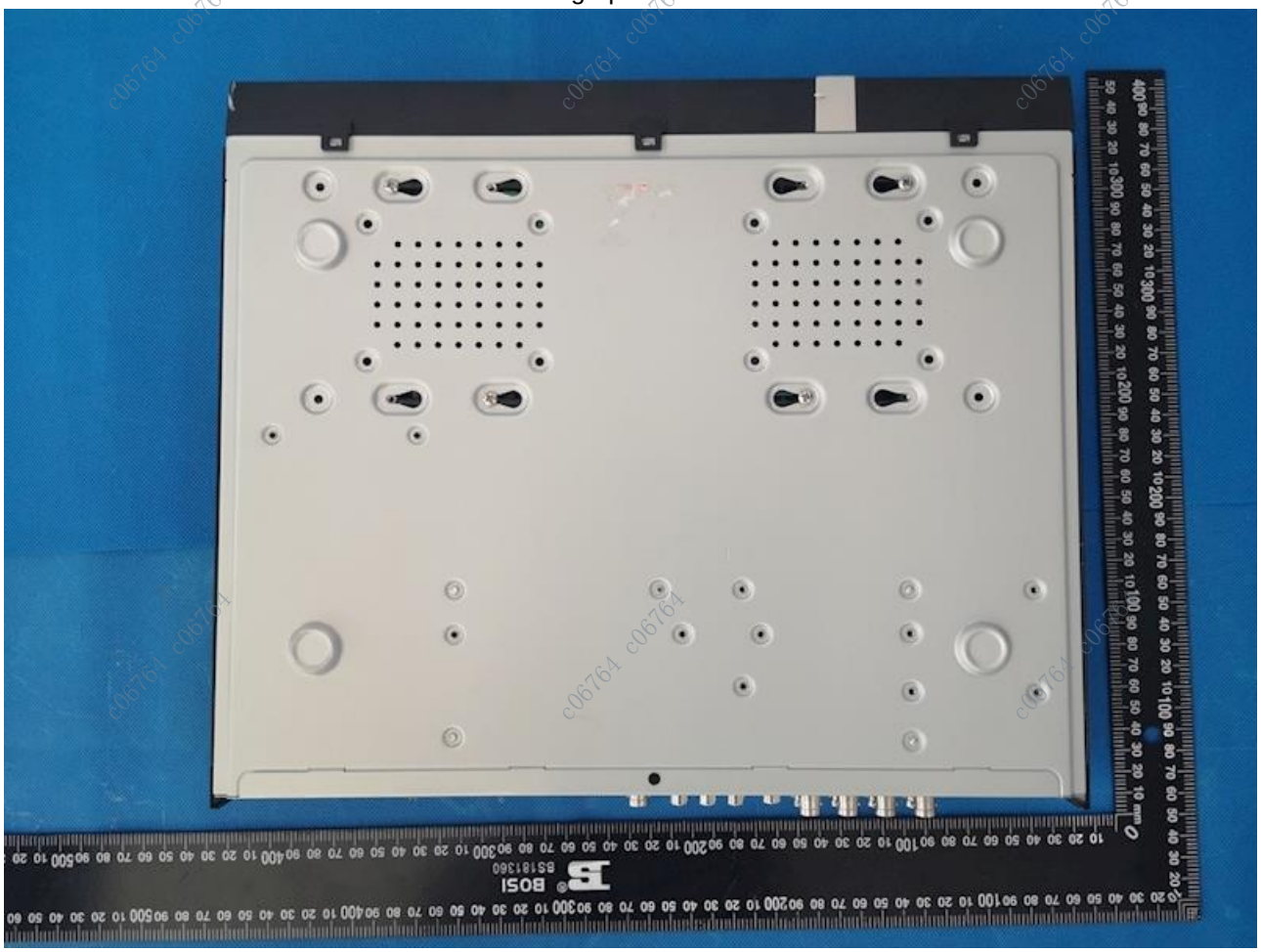

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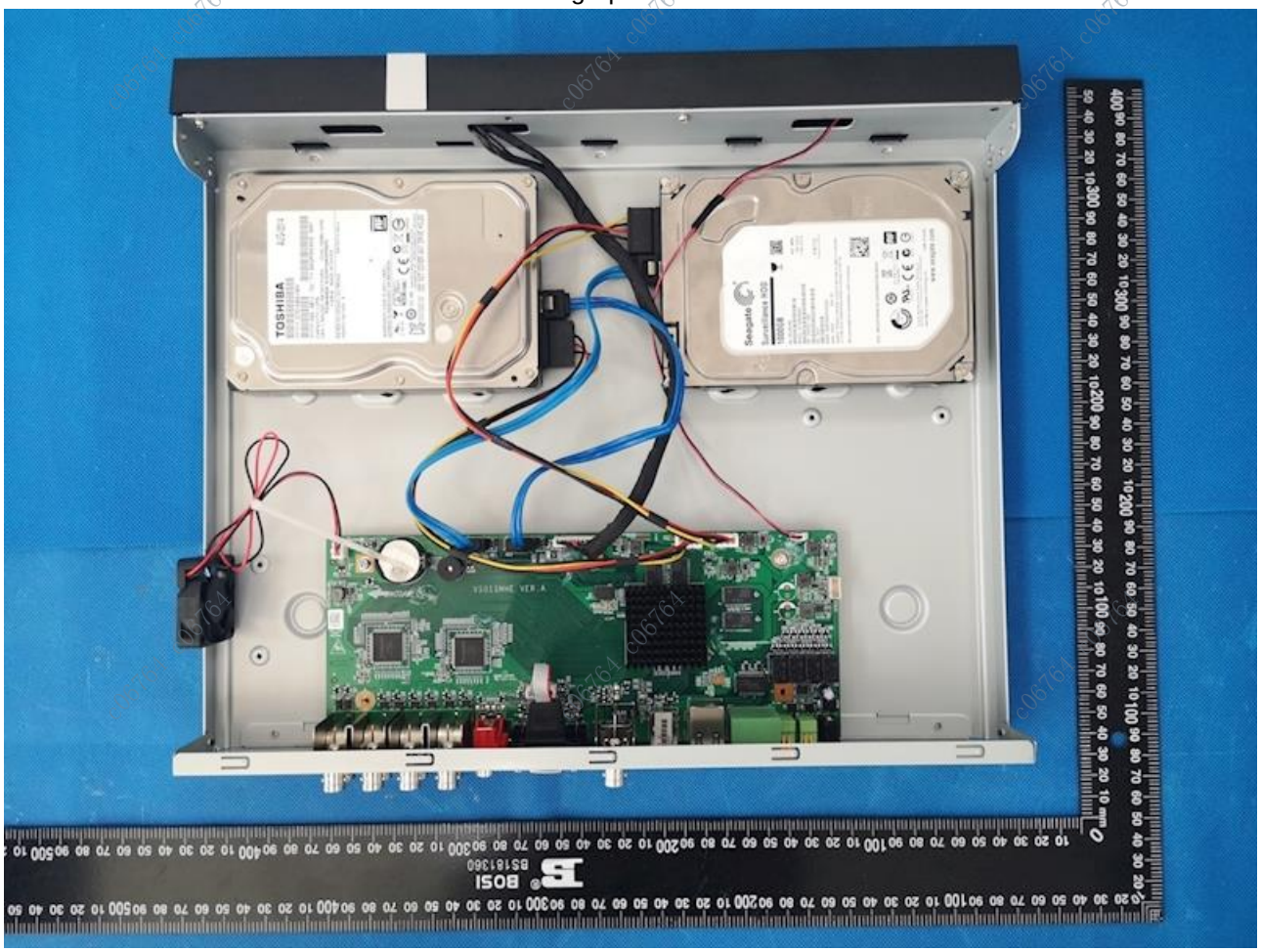

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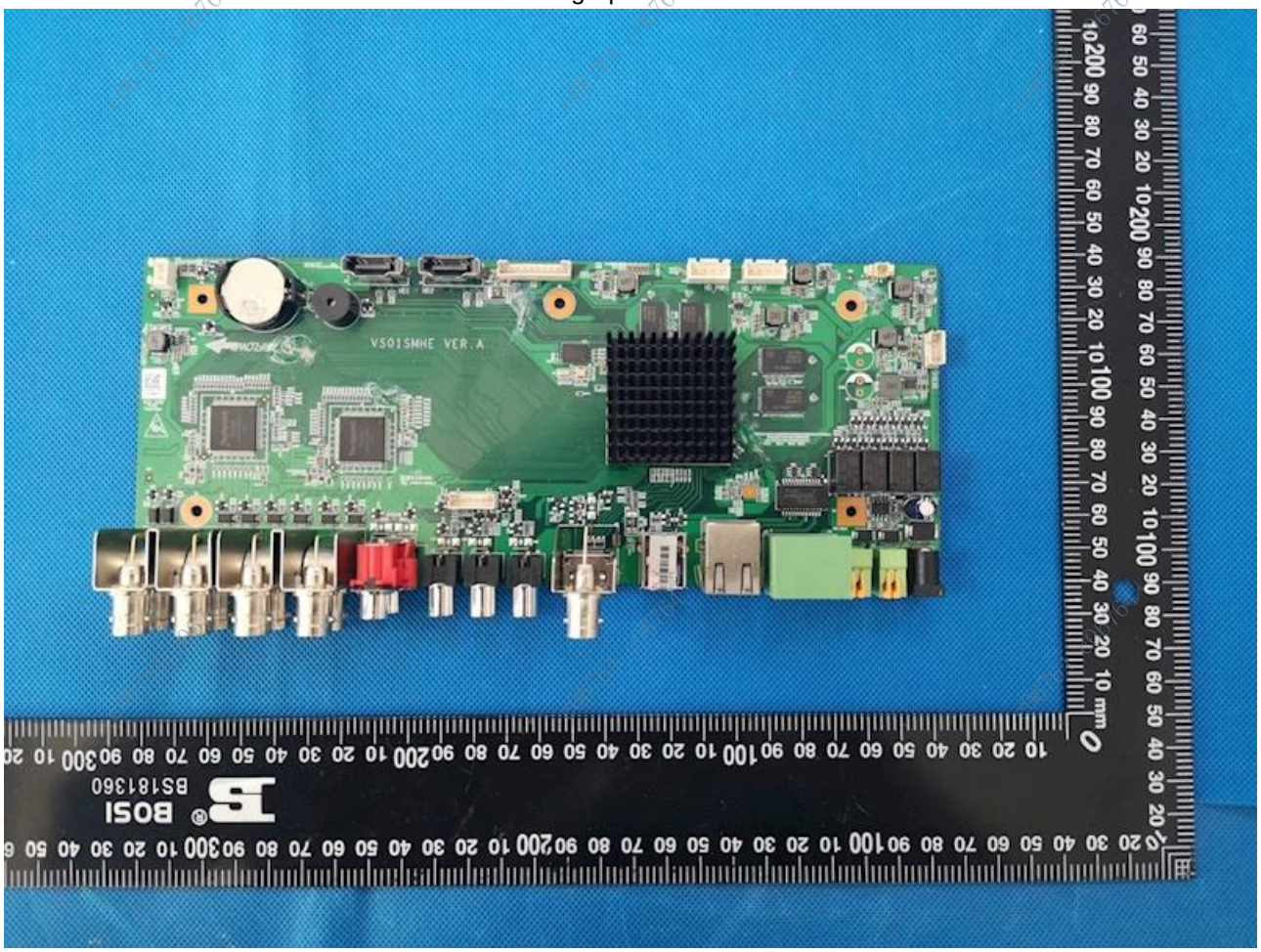
Photographs ID 03-66

Enclosures

Photographs ID 03-67



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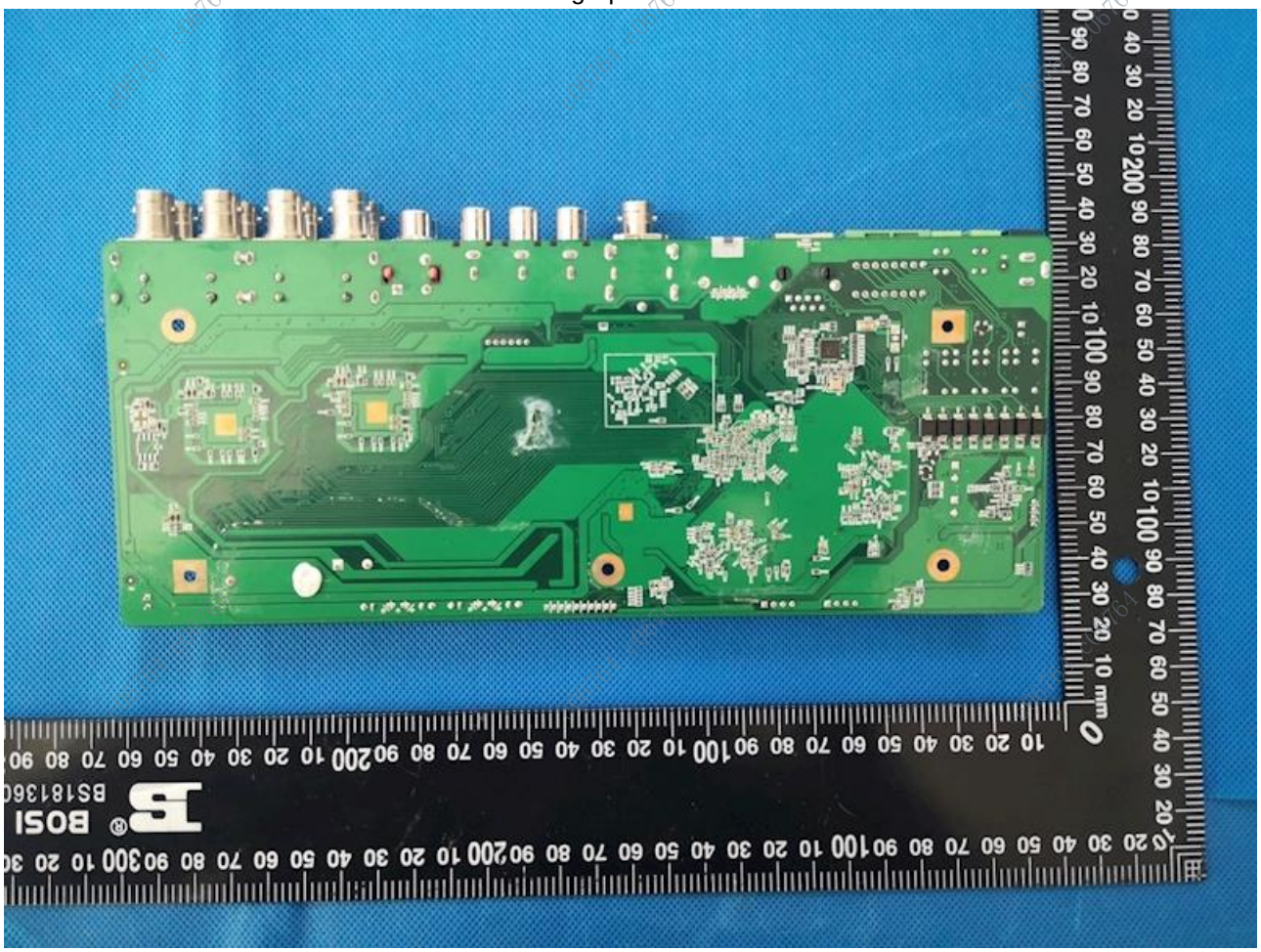

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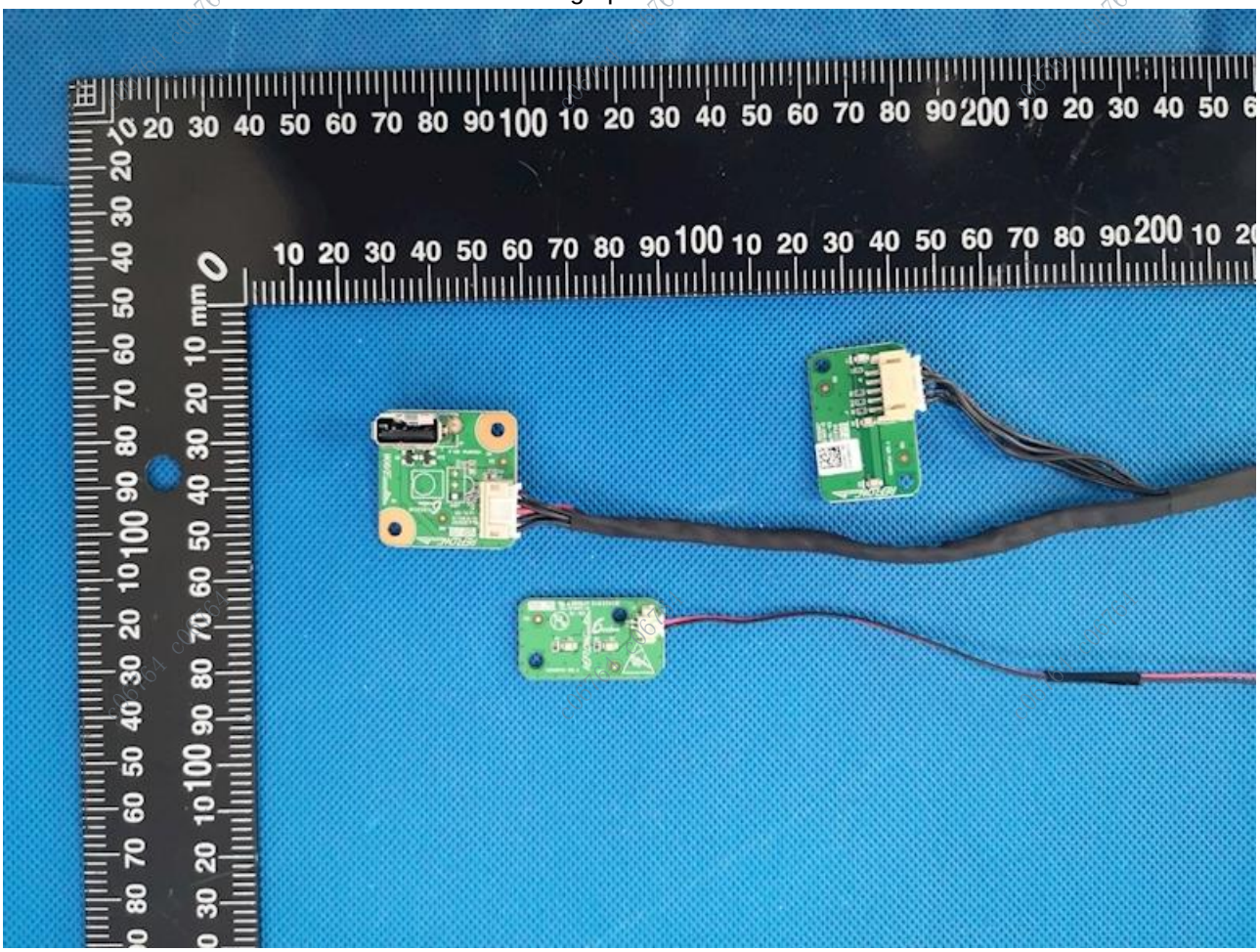

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Enclosures

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Photographs ID 03-78

Enclosures

Photographs ID 03-79

Enclosures

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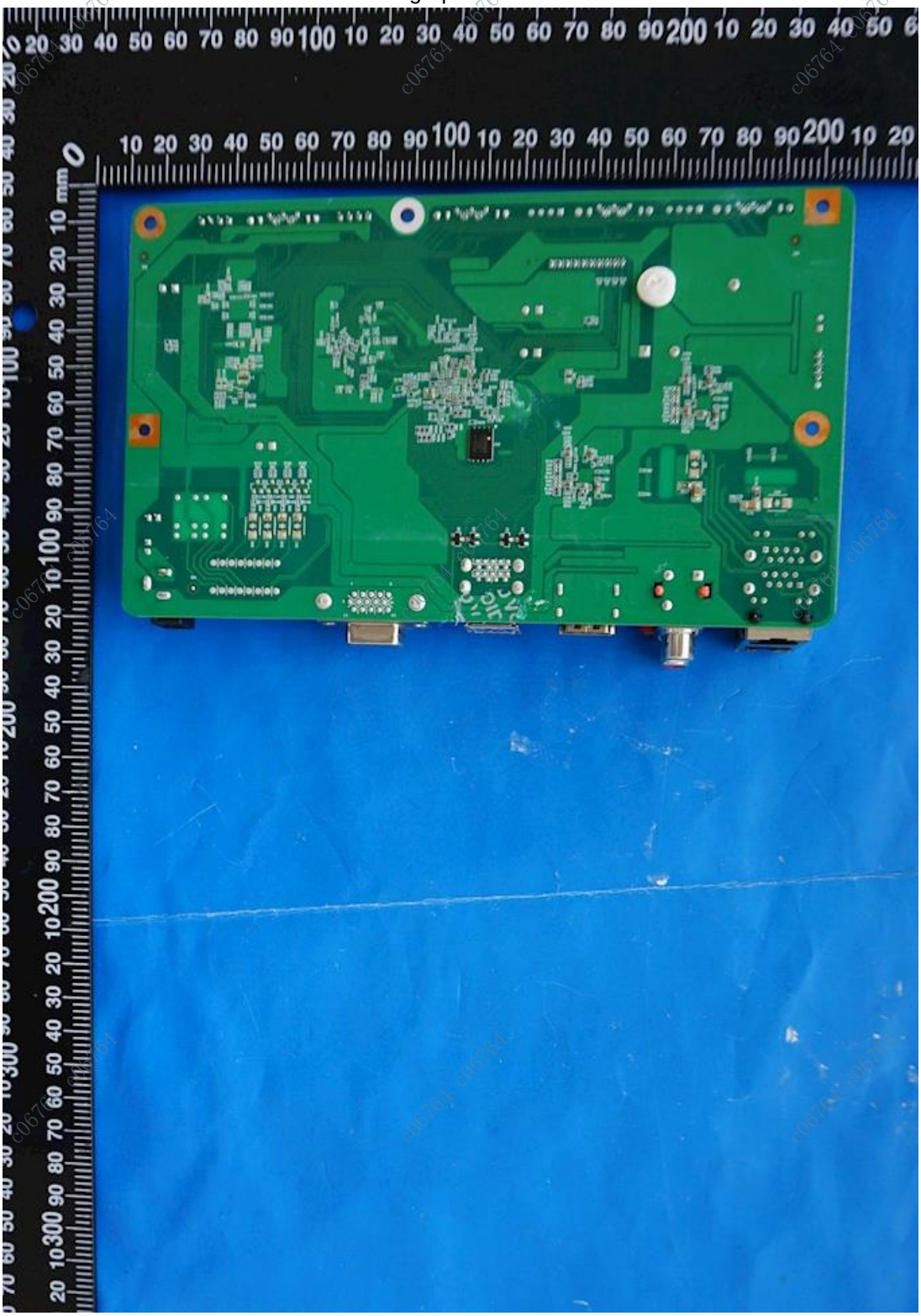

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Enclosures

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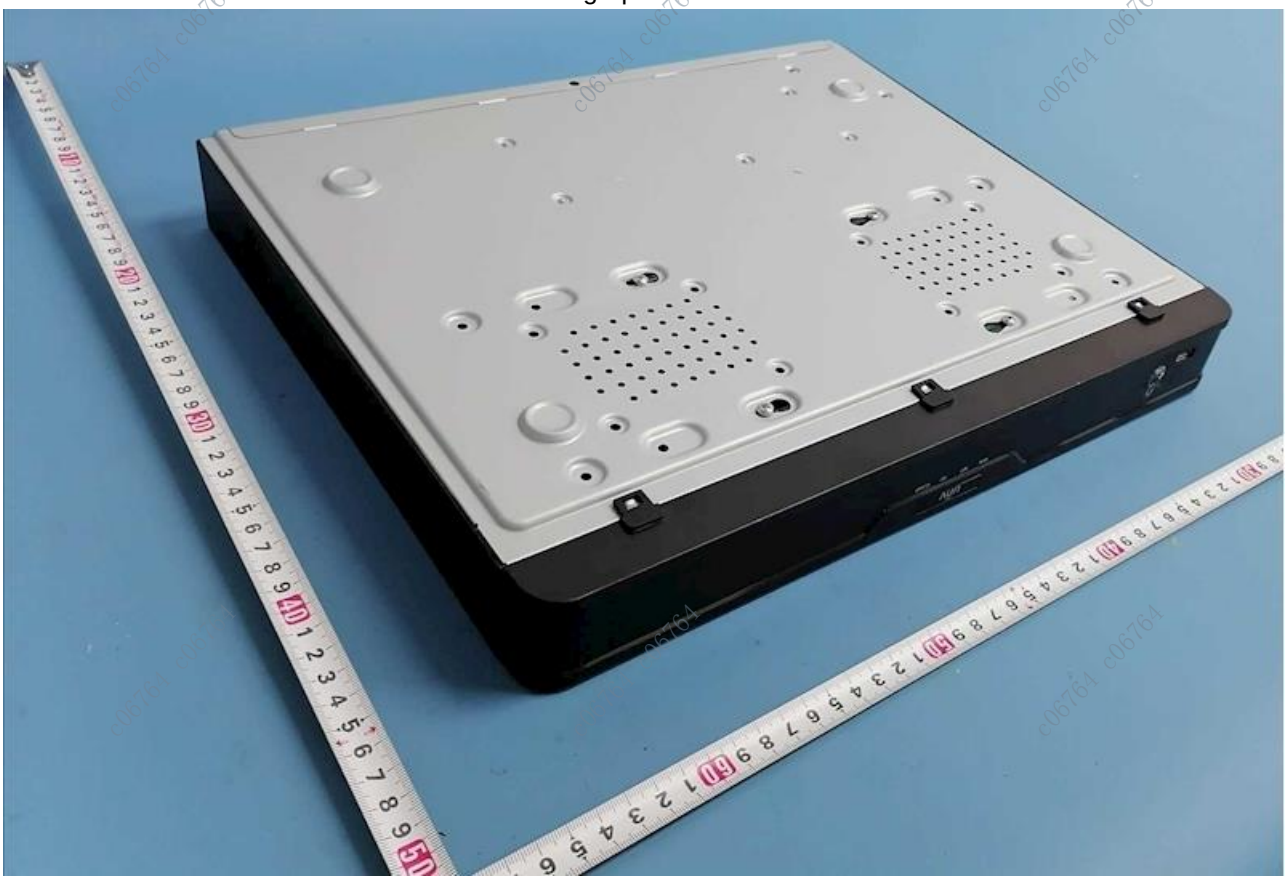

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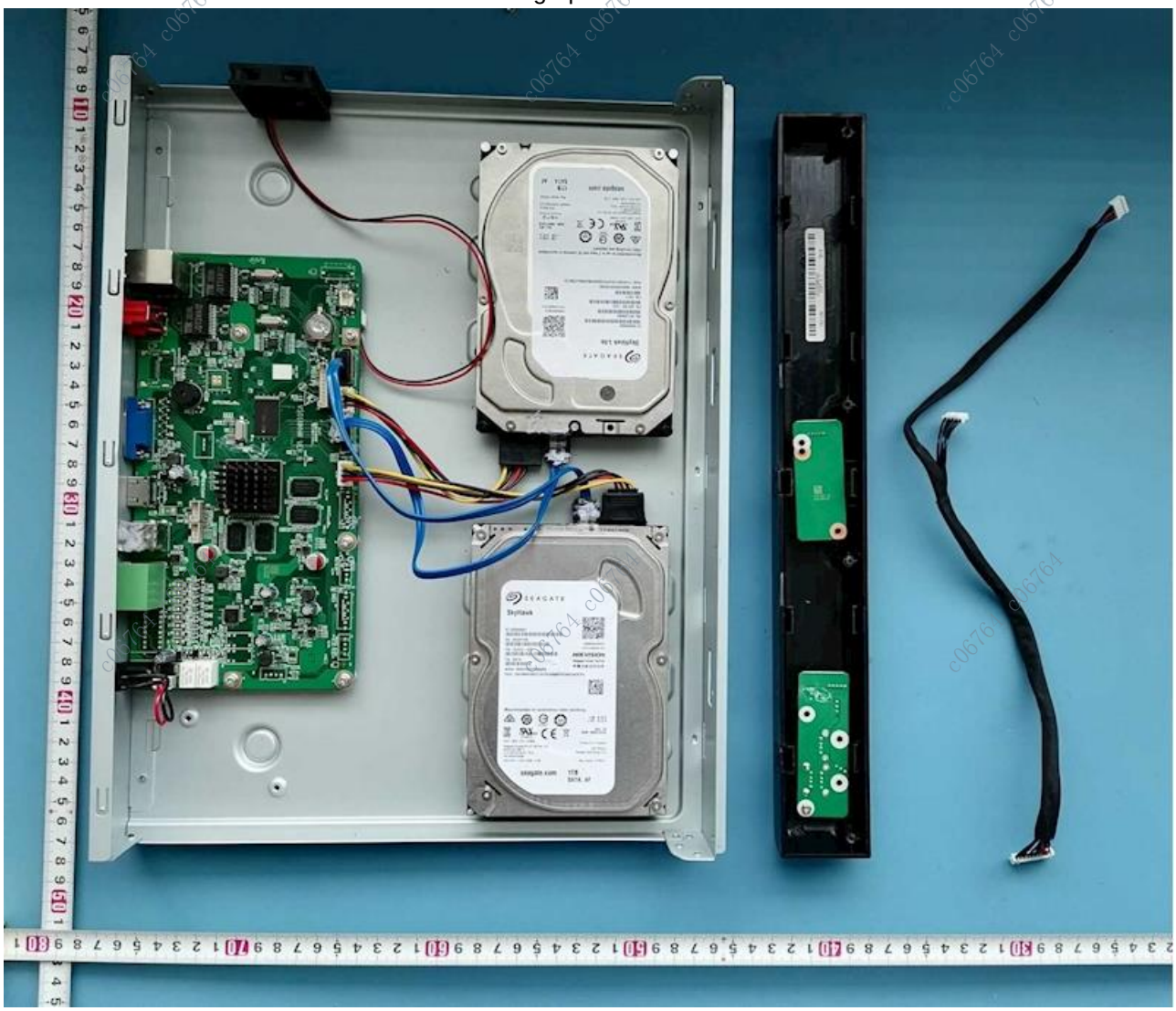

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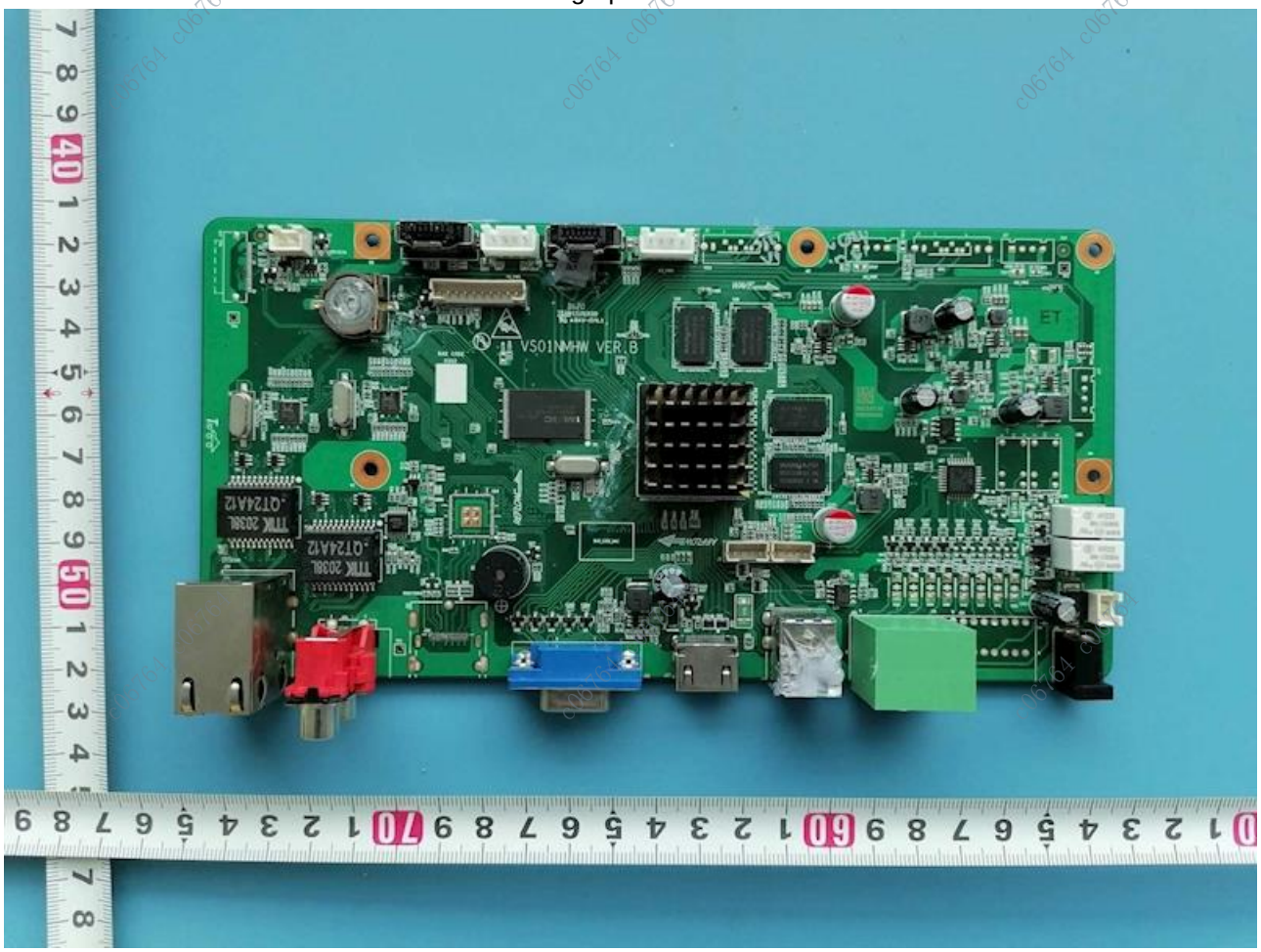

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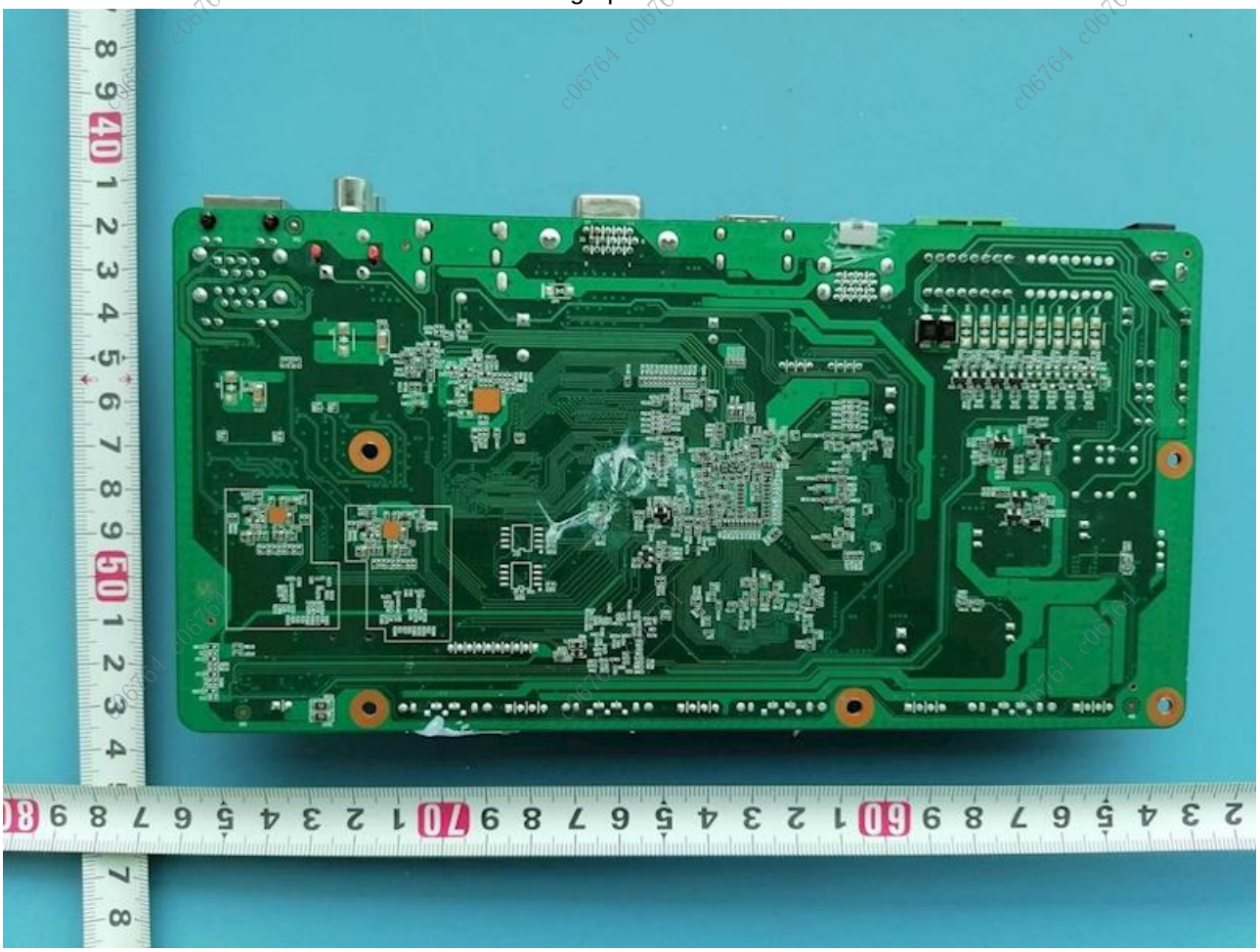

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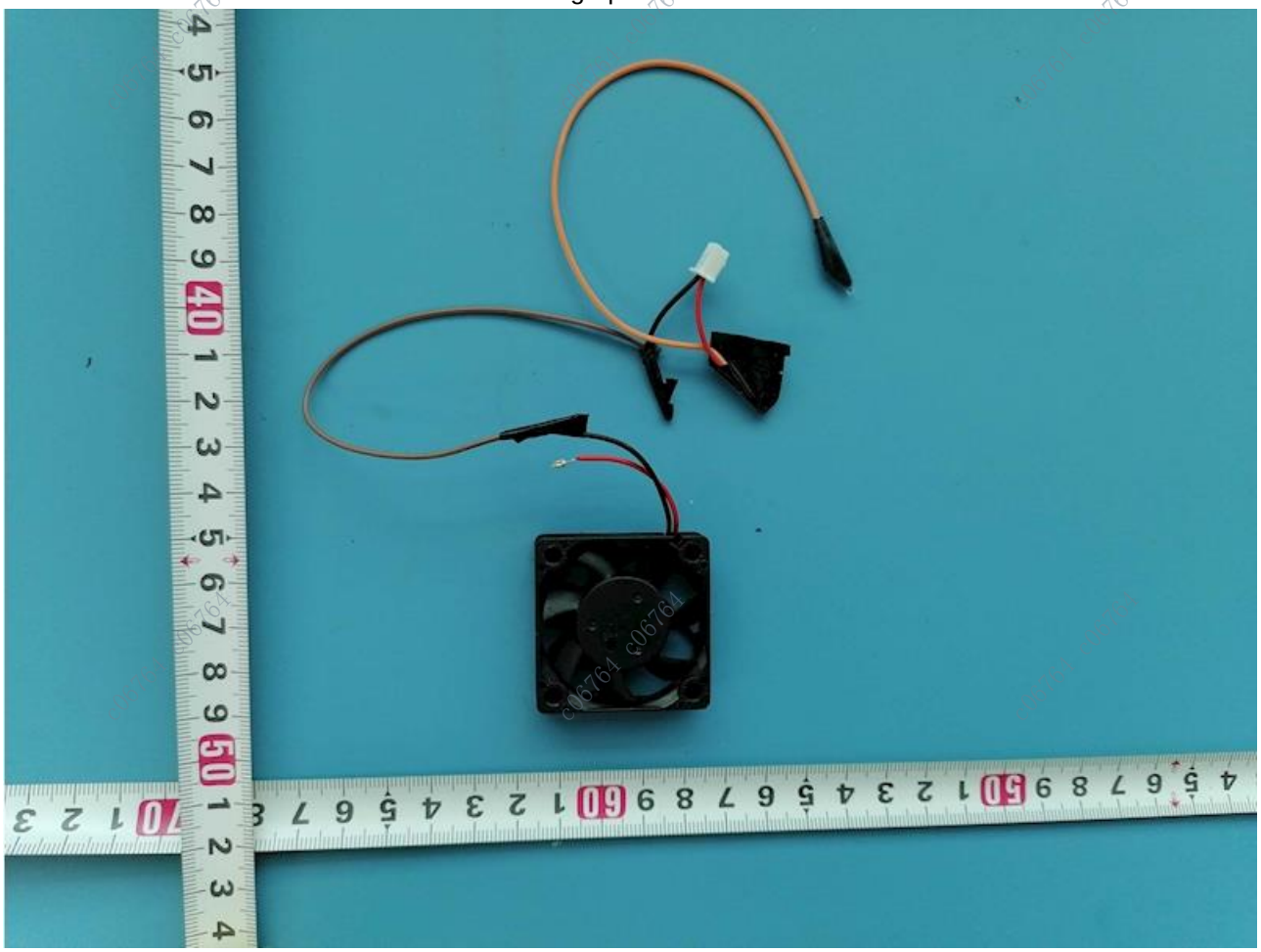

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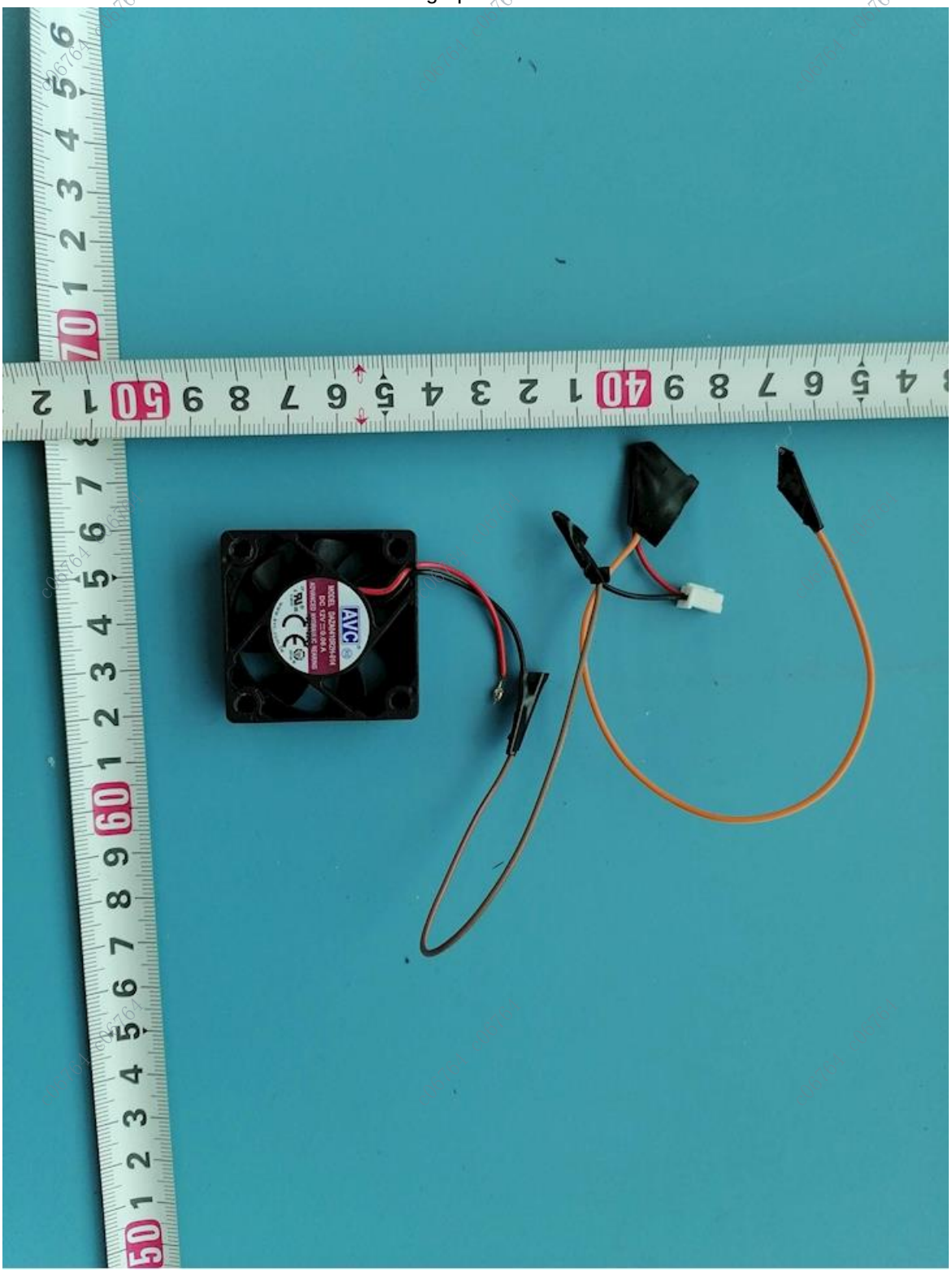

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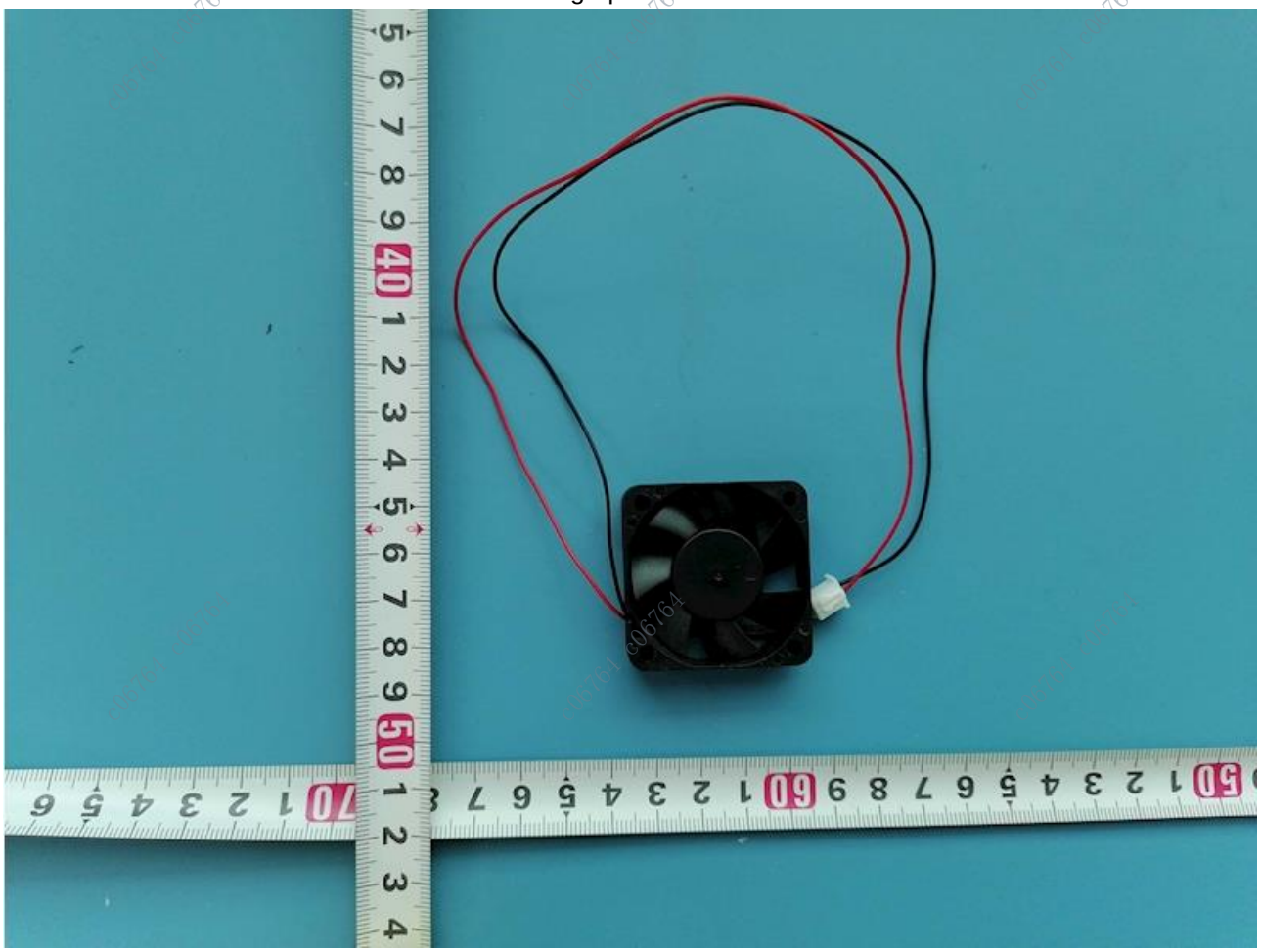

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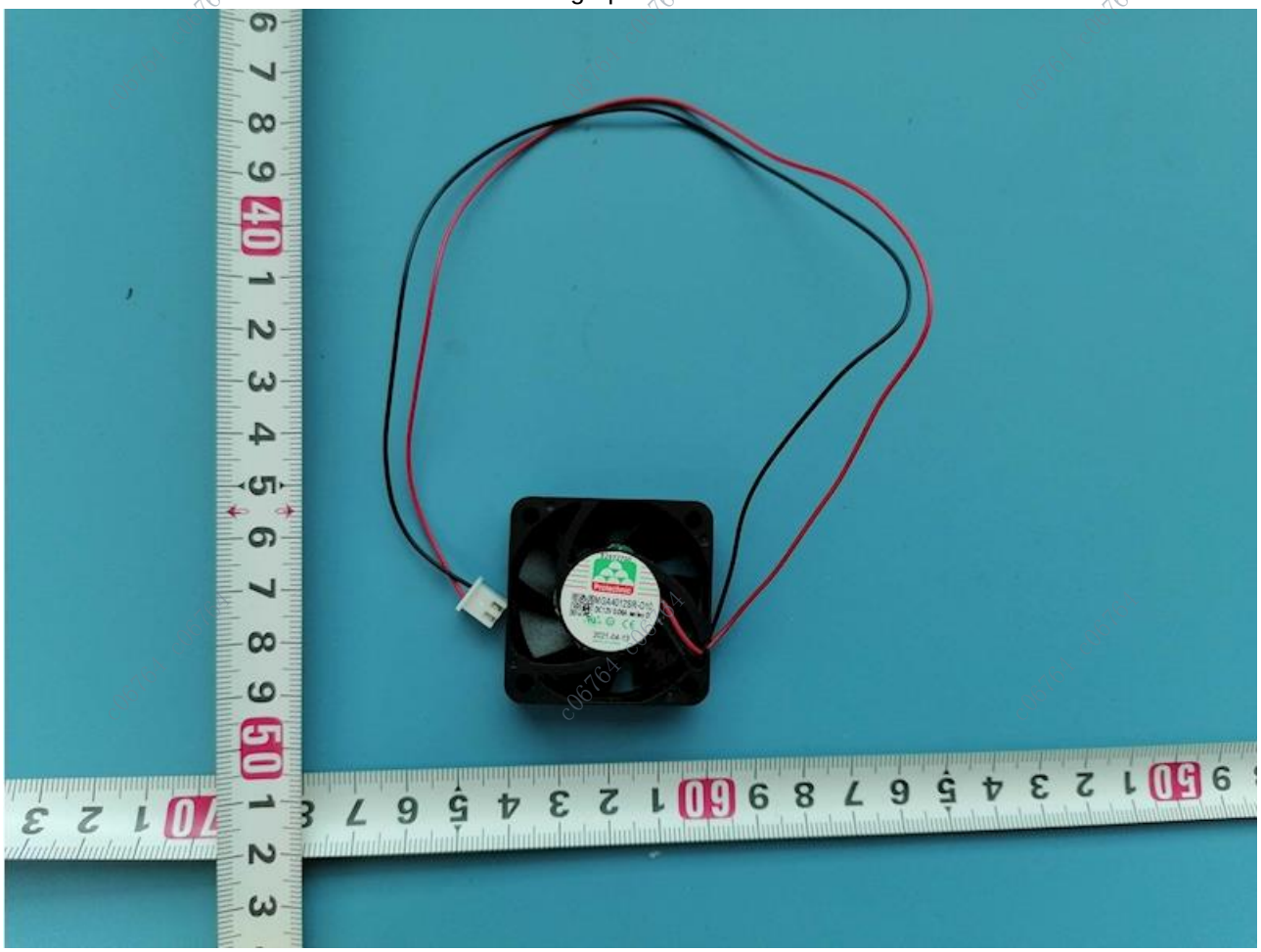

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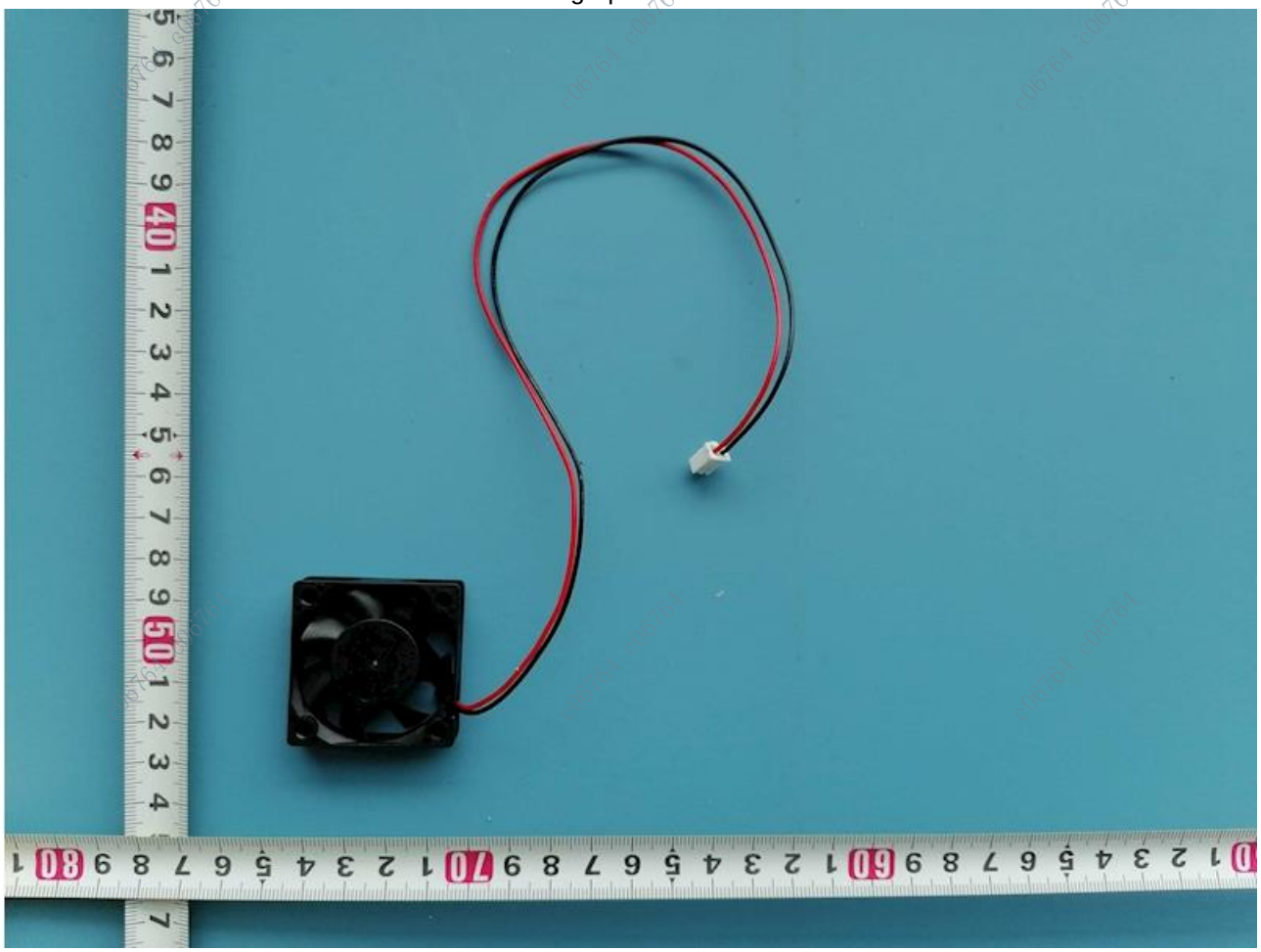

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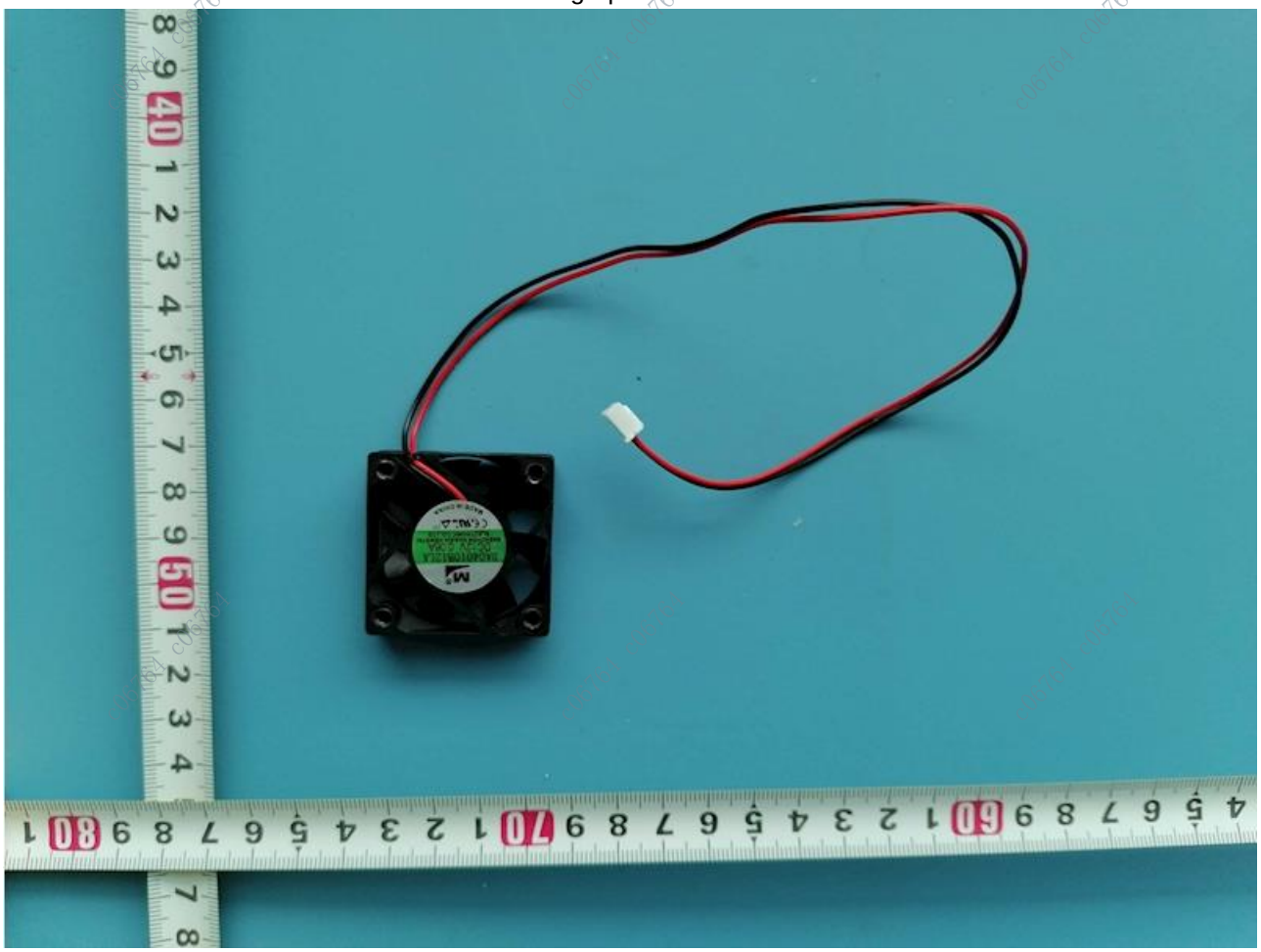

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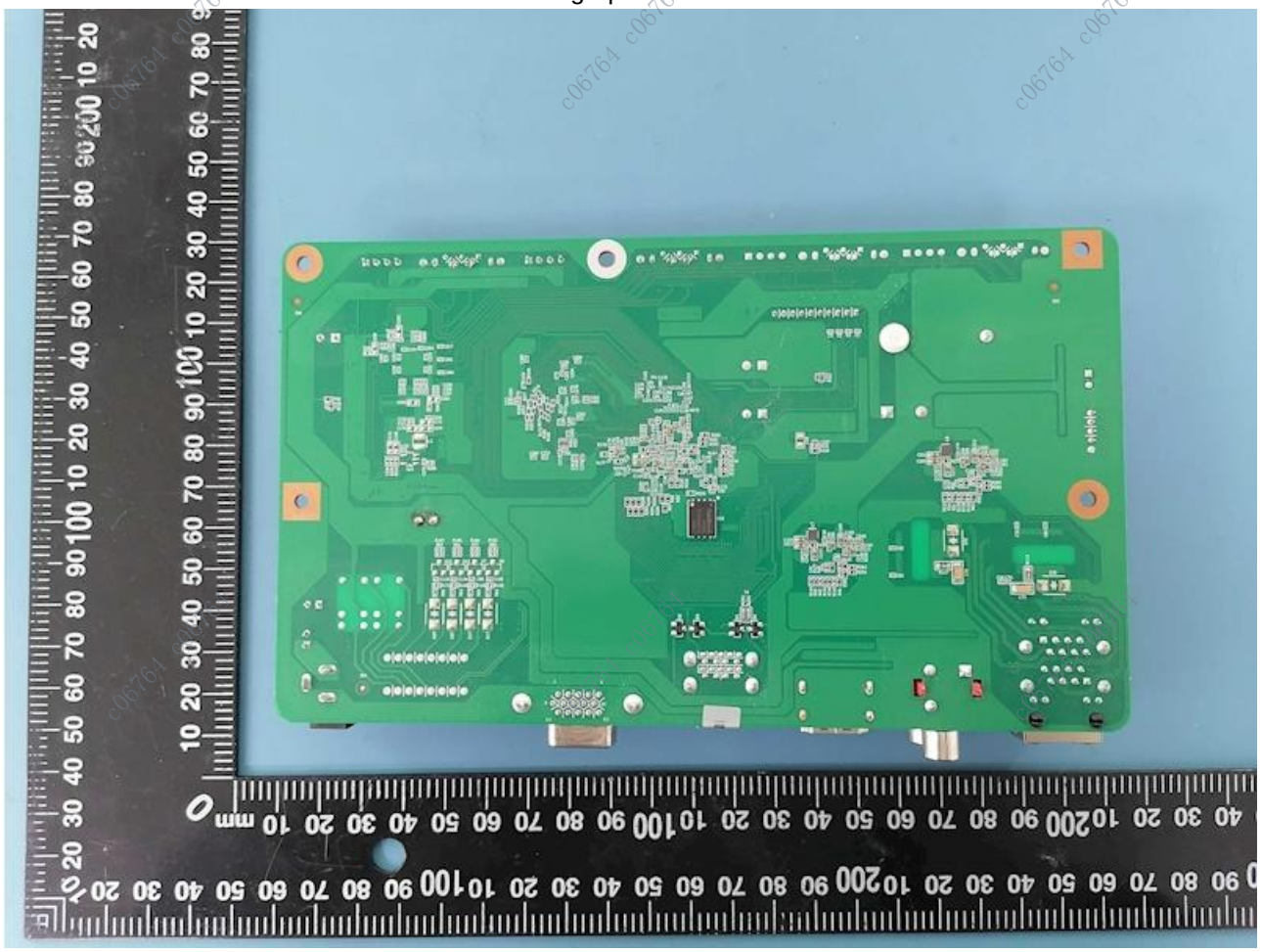

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Photographs ID 03-98

Enclosures

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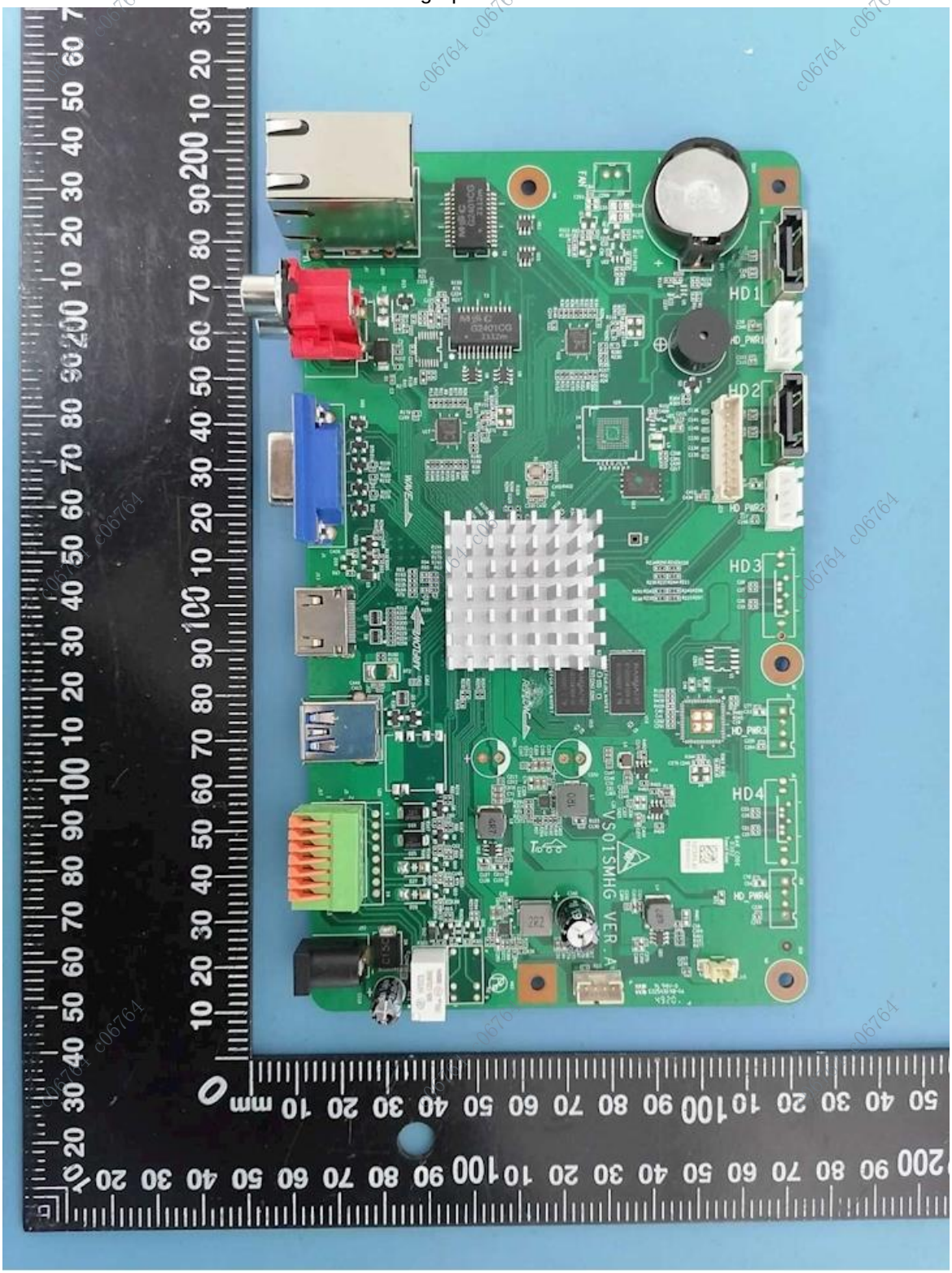

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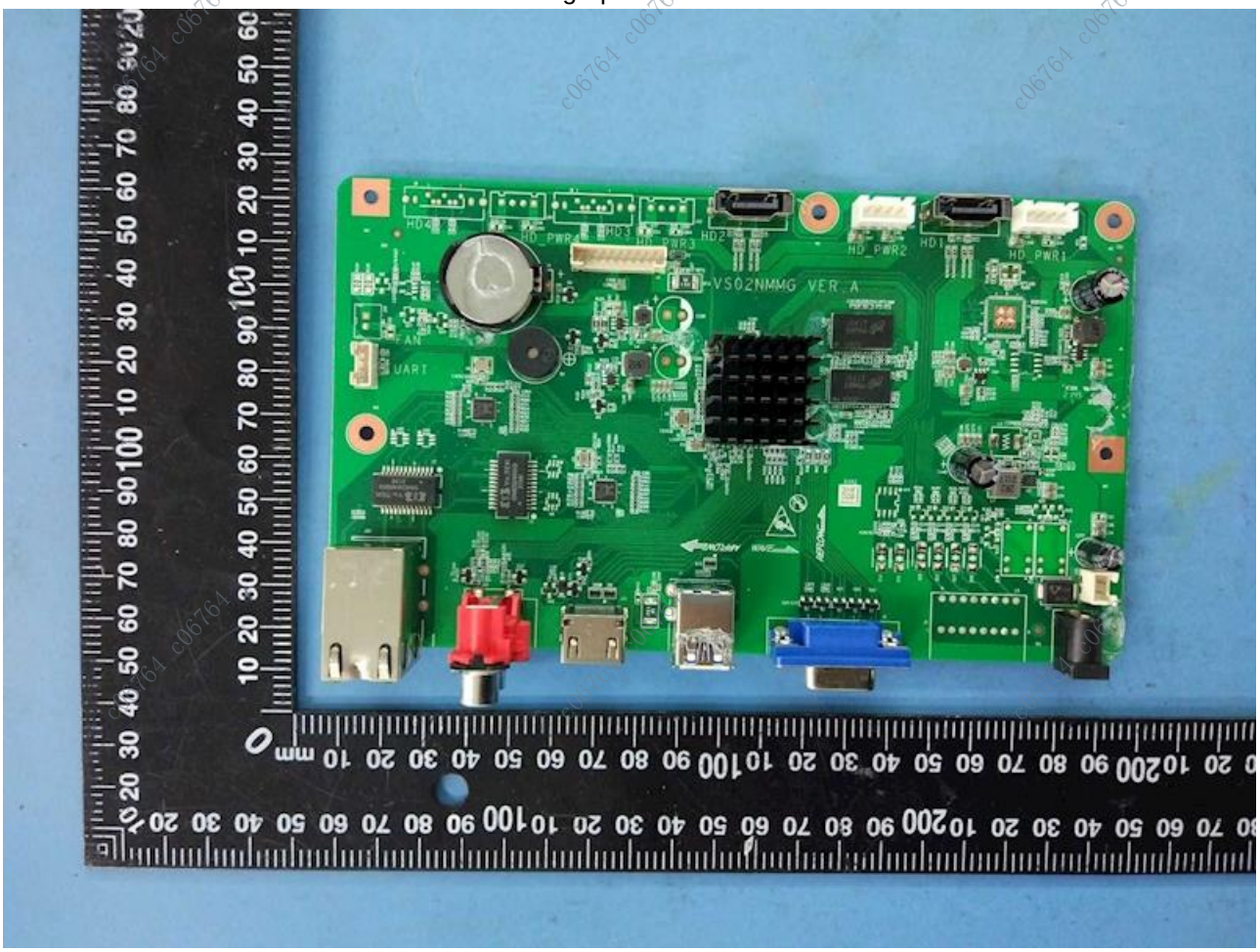

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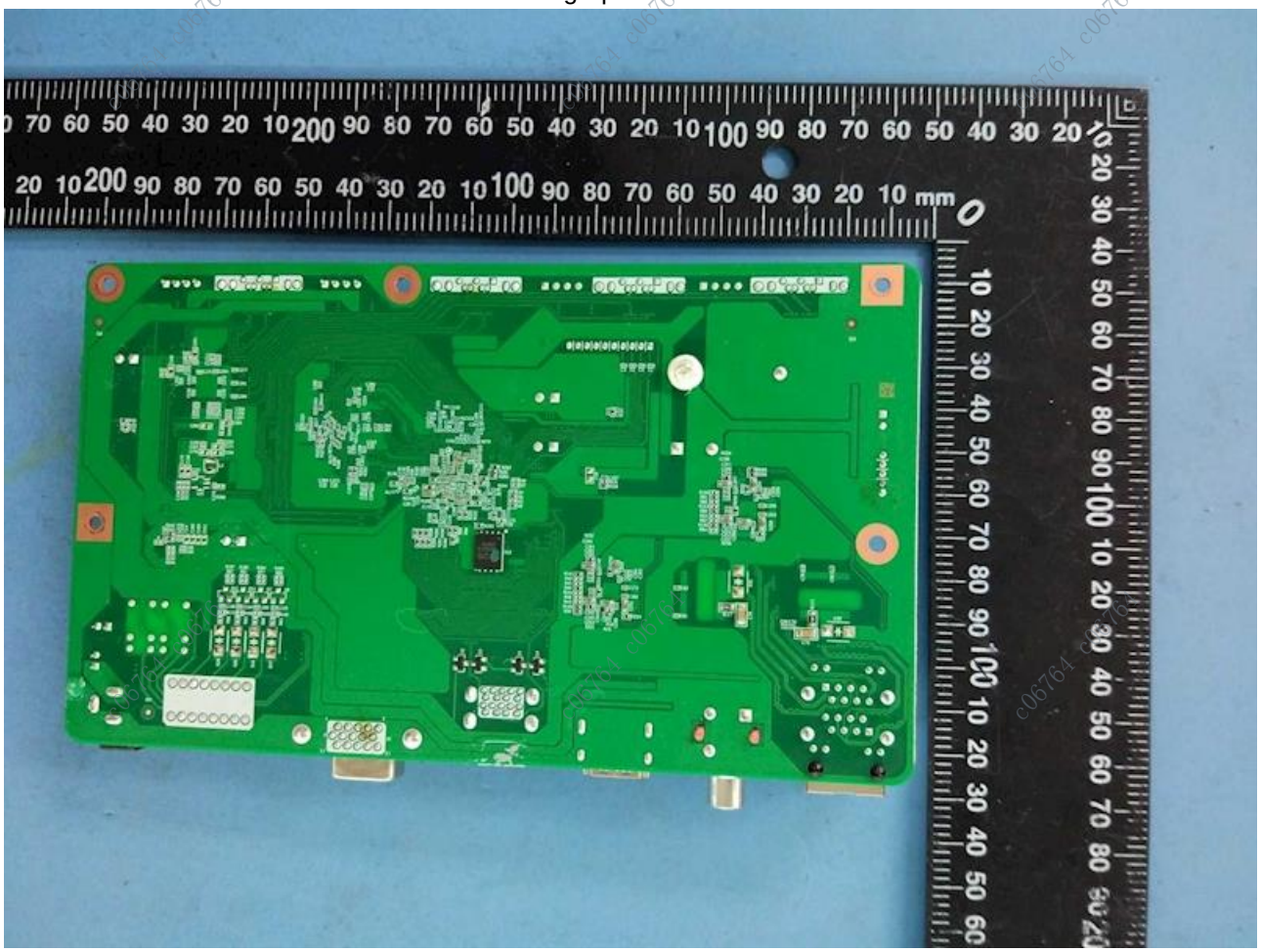

Enclosures

Photographs ID 03-104

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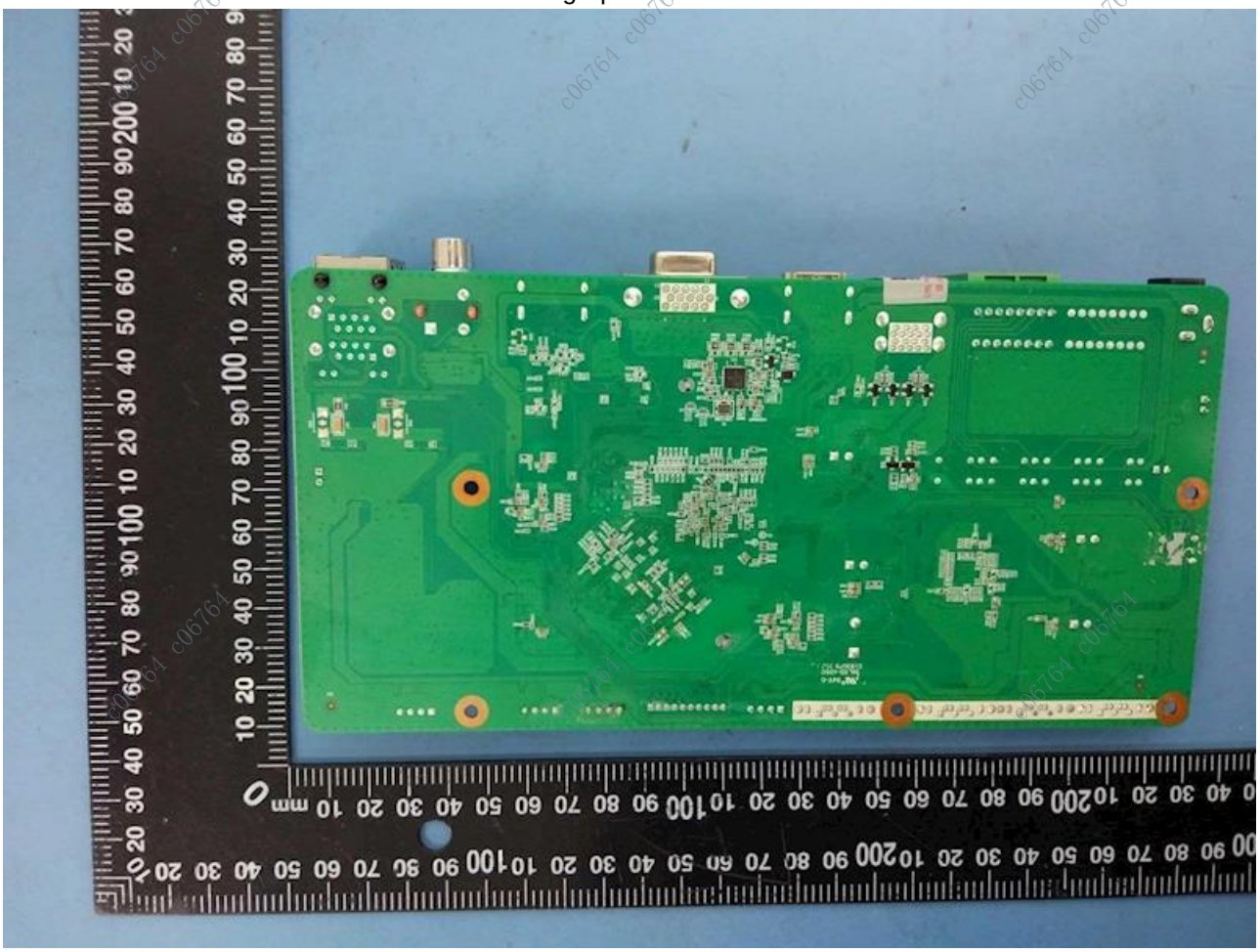

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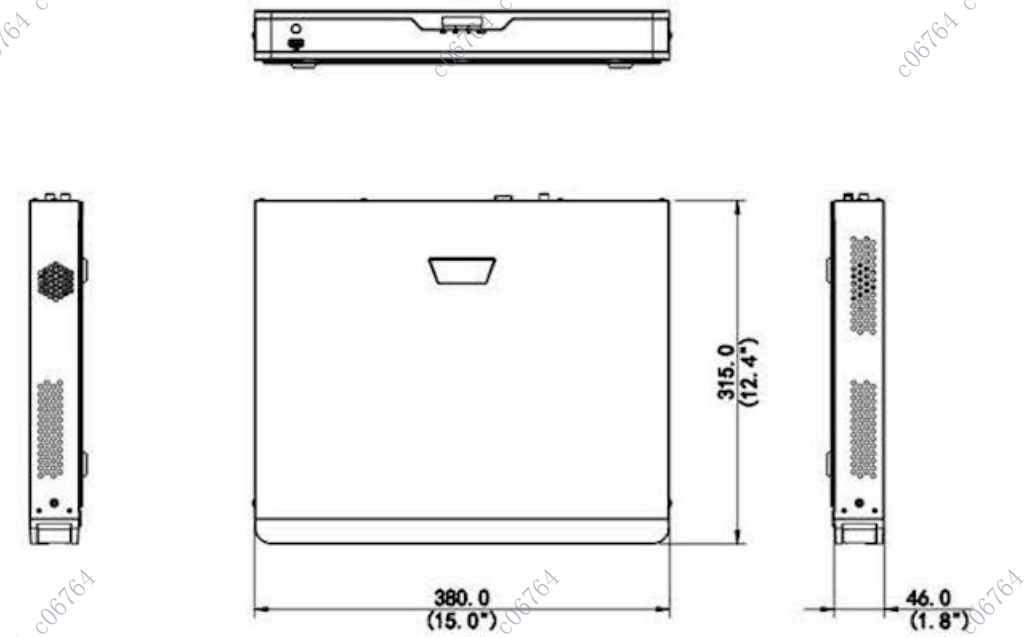

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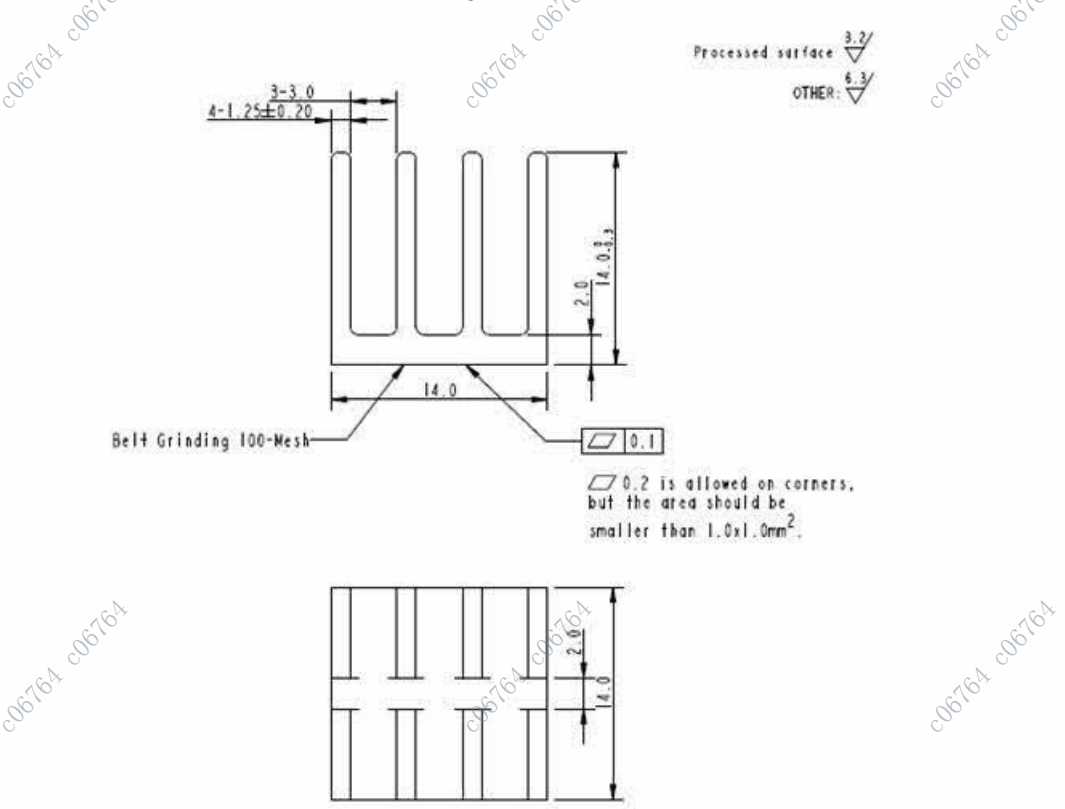

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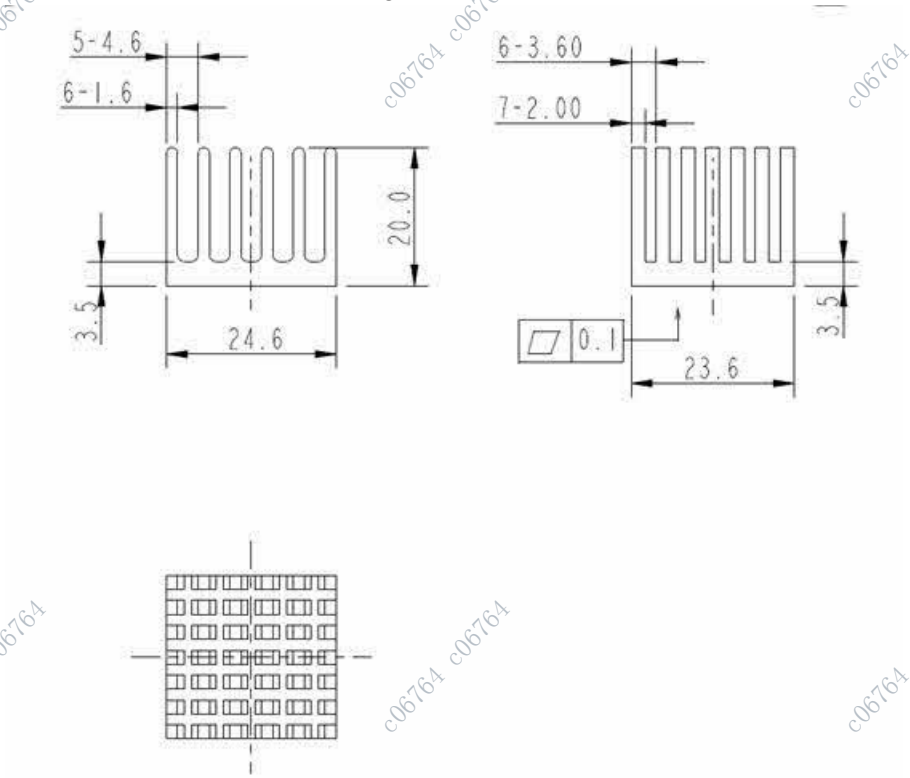

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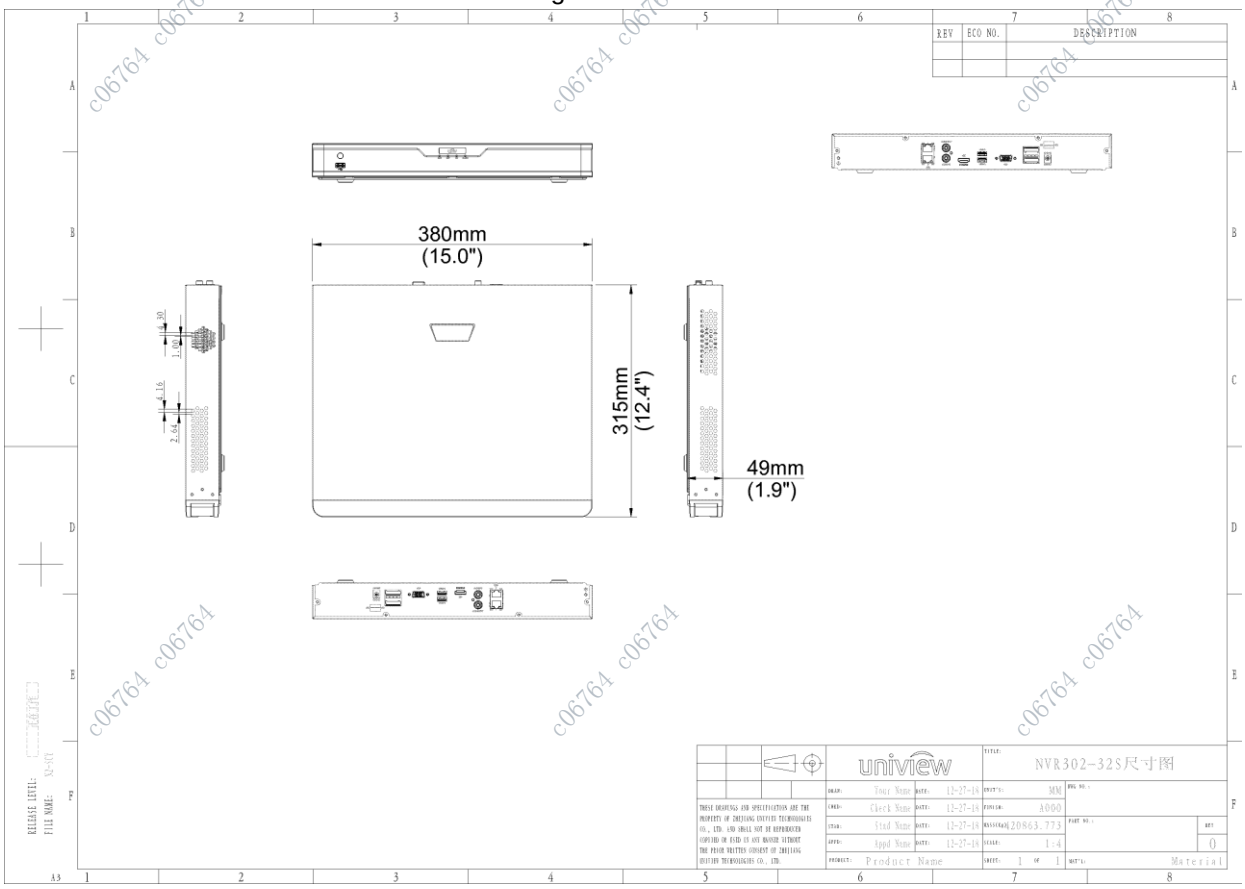

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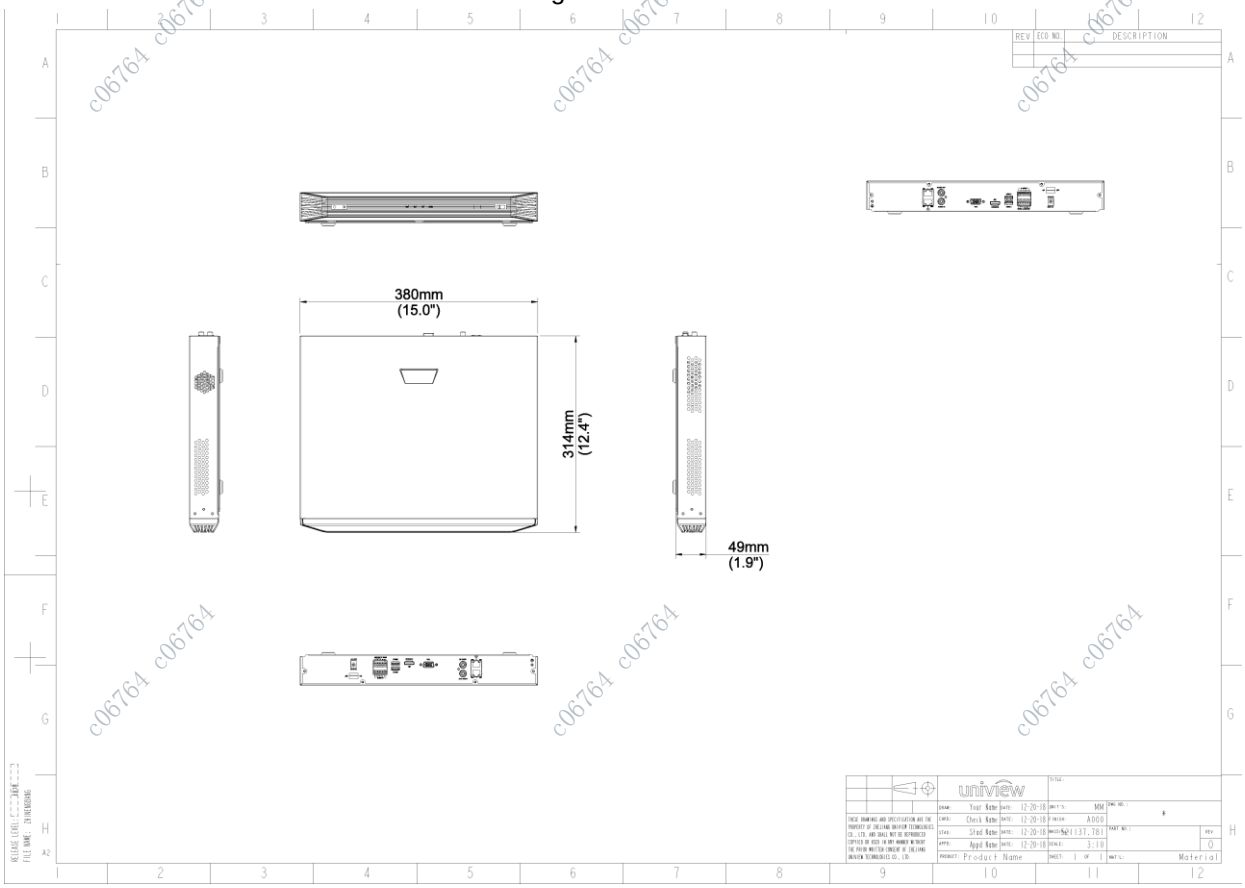

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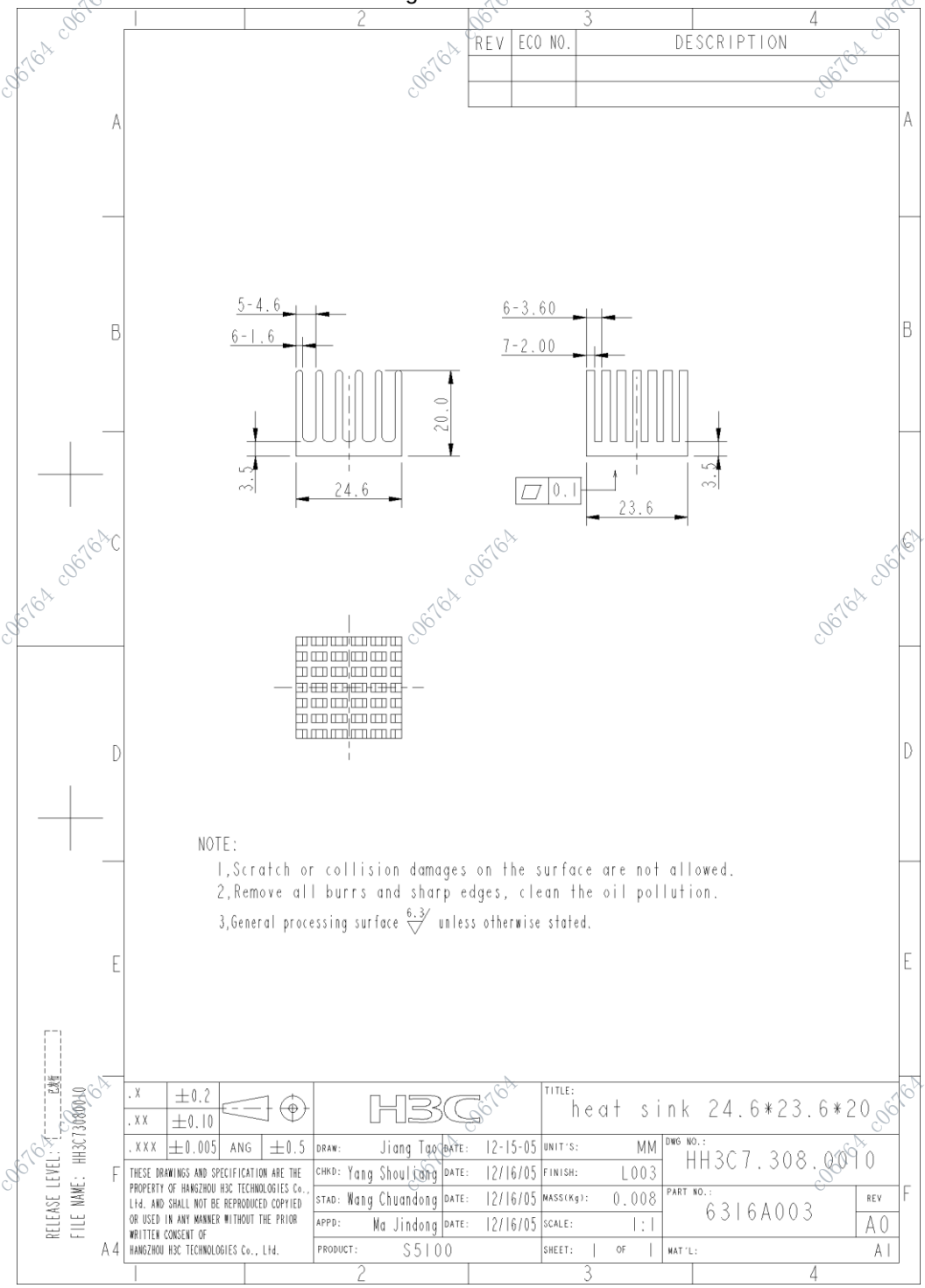

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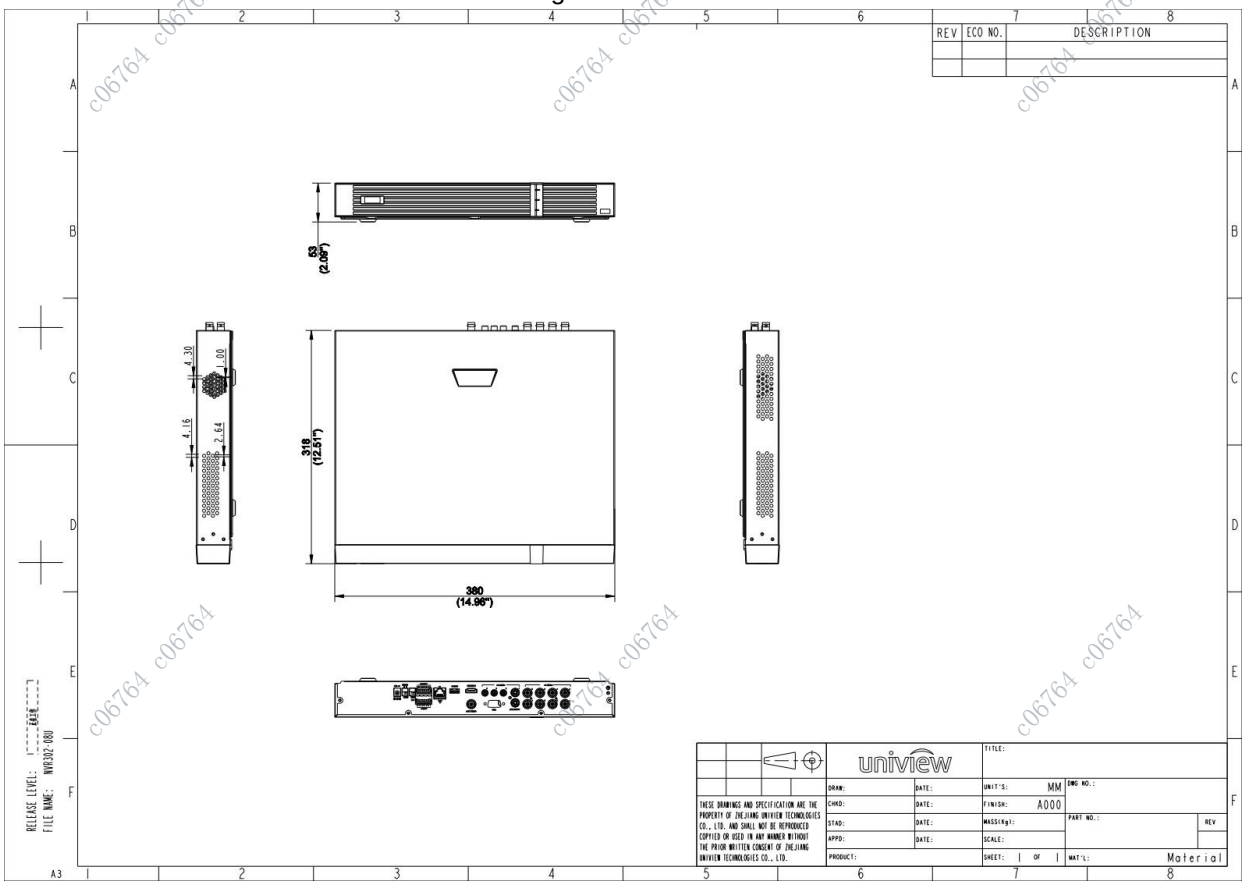

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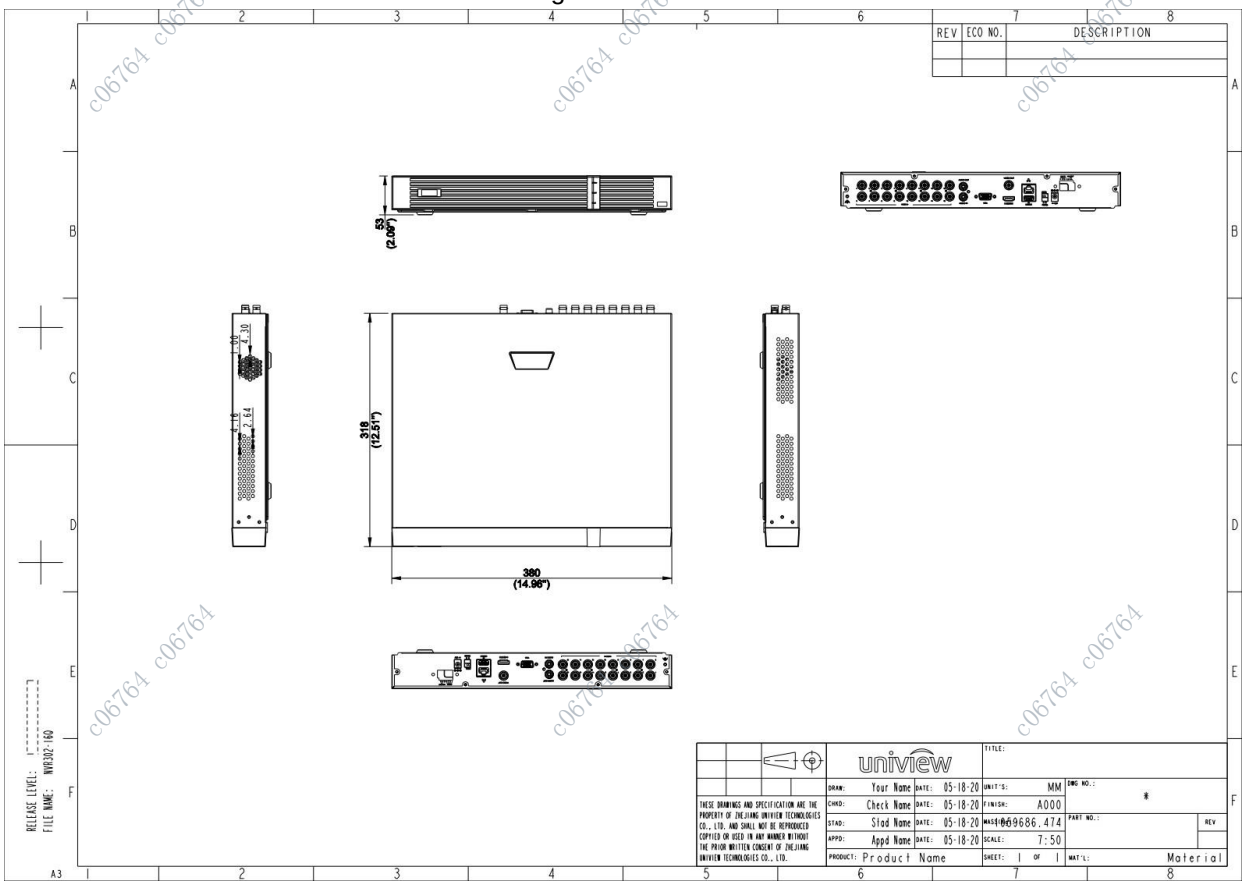

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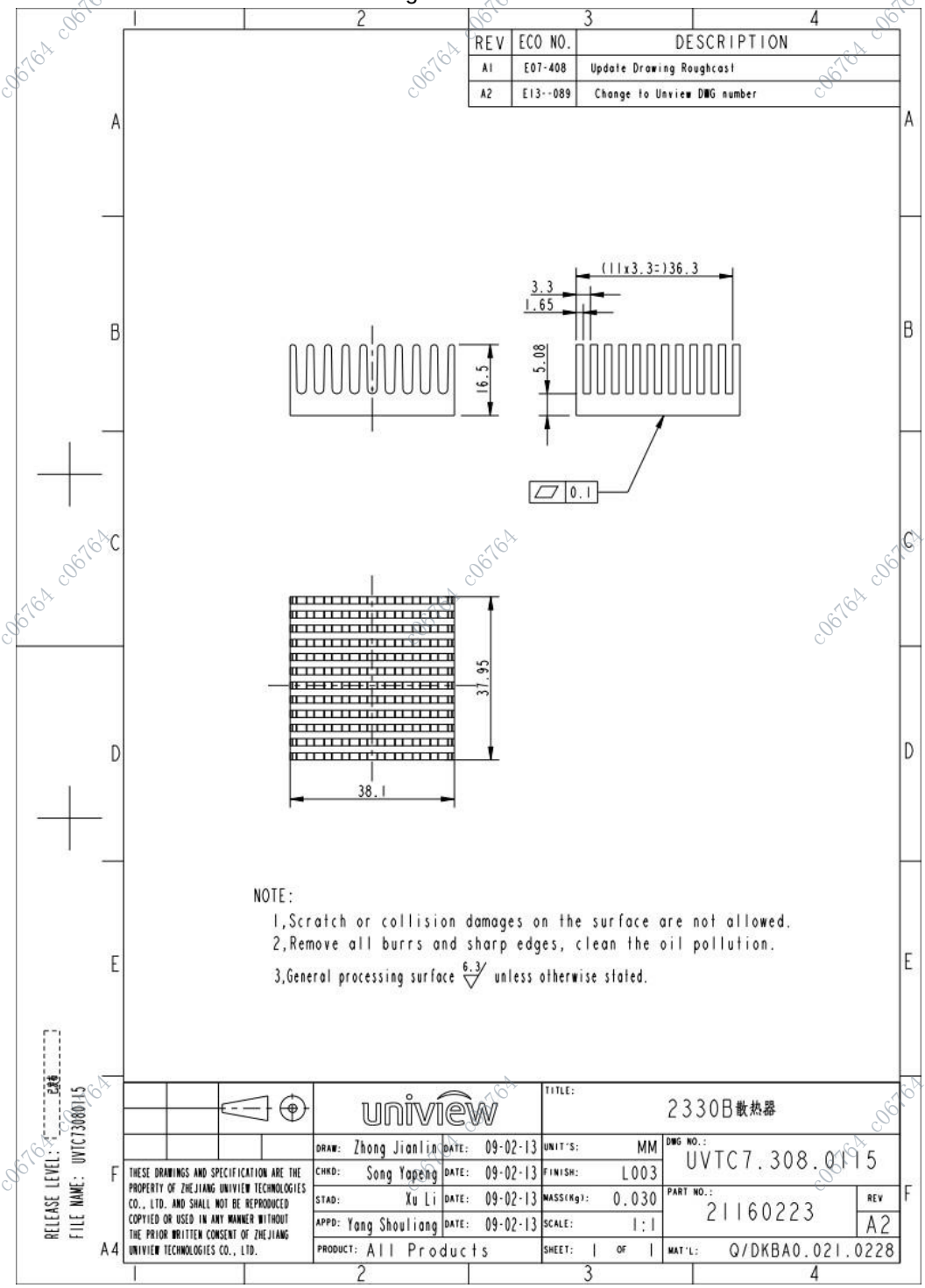

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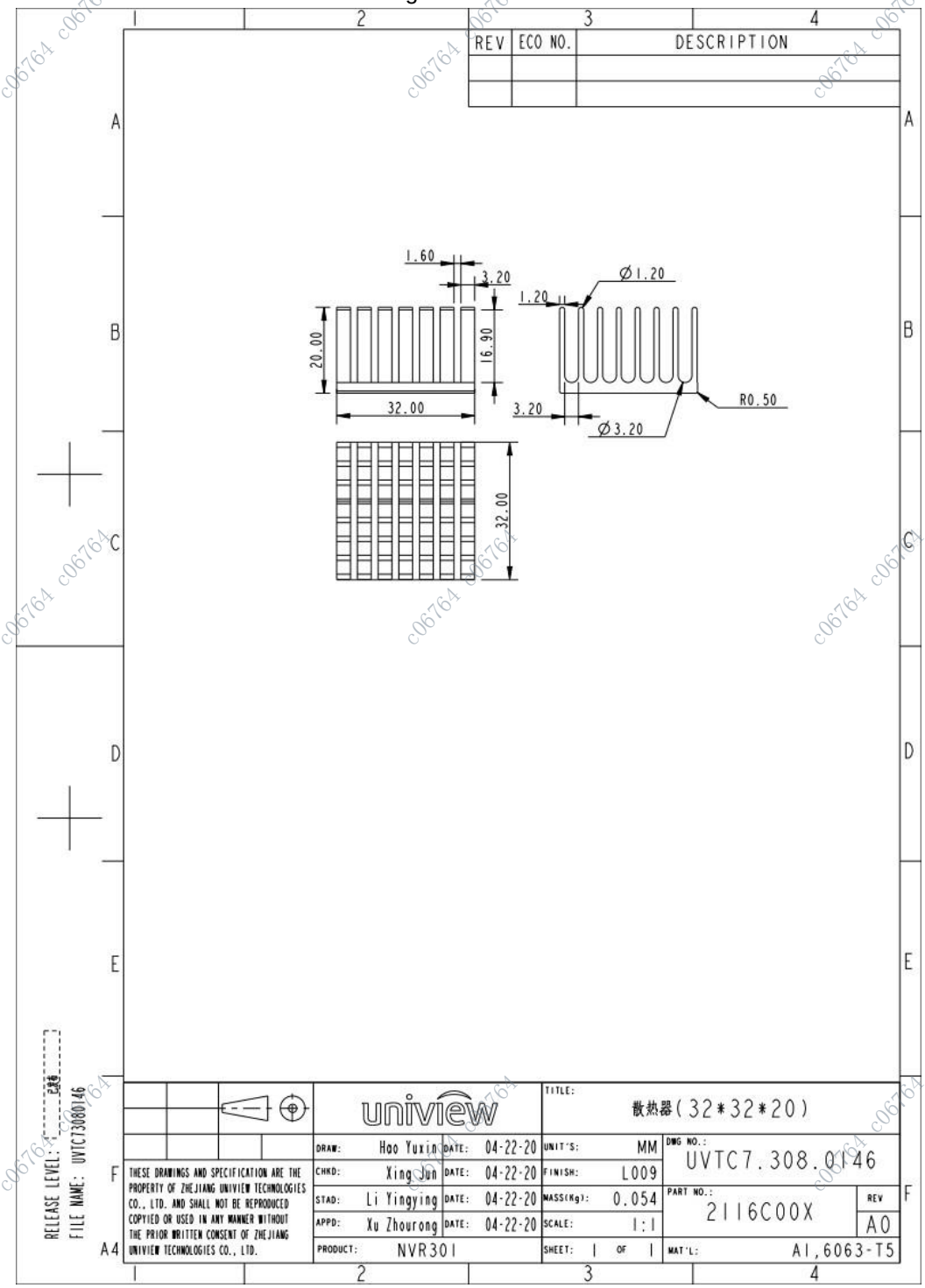

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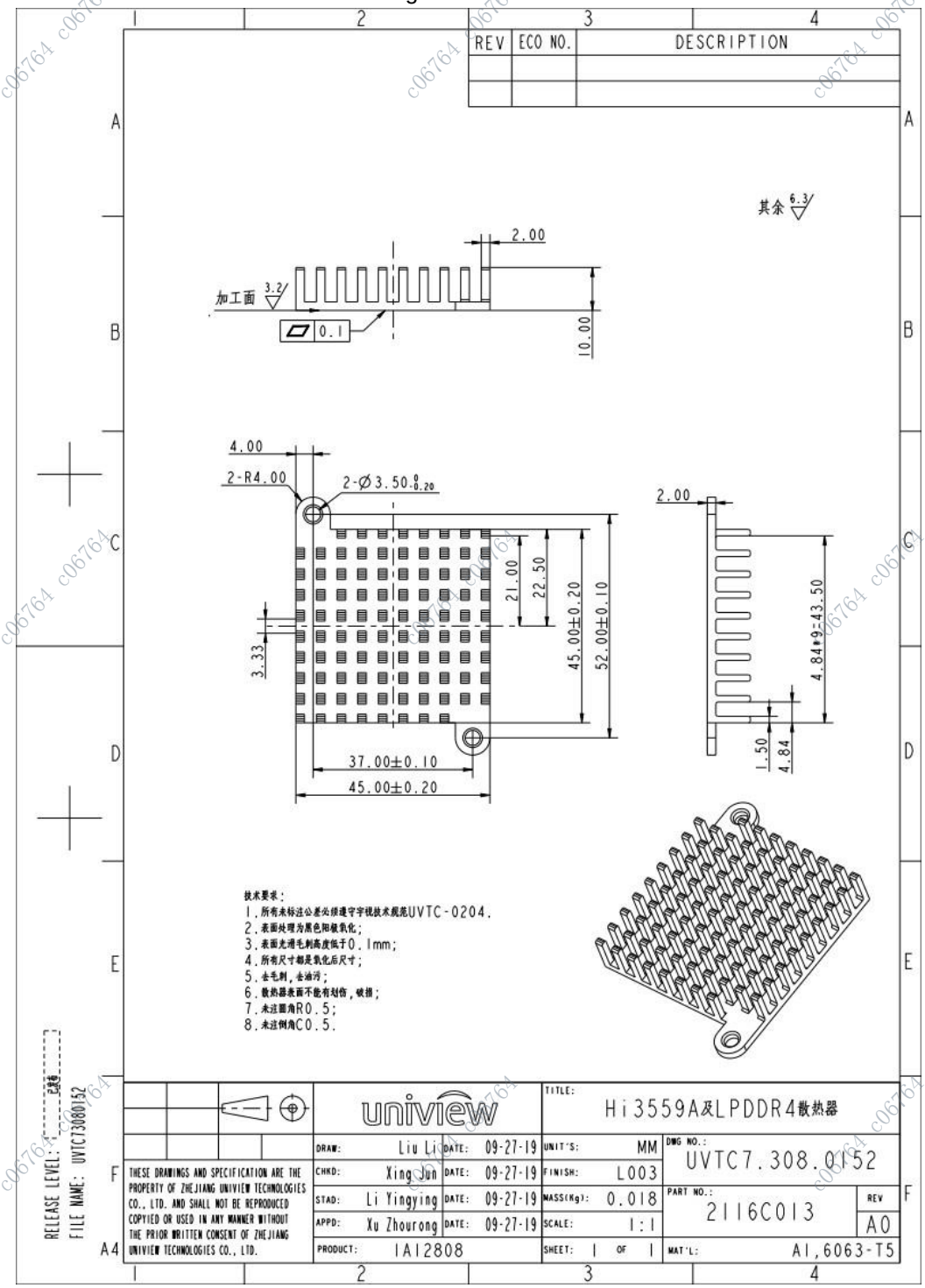

Enclosures

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Battery Use Caution

- When battery is used, avoid:
  - High or low extreme temperatures during use, storage and transportation;
  - Extremely low air pressure, or low air pressure at high altitude.
  - Battery replacement.
- Use the battery properly. Improper use of the battery such as the following may cause risks of fire, explosion or leakage of flammable liquid or gas.
  - Replace battery with an incorrect type;
  - Dispose of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery;
- Dispose the used battery according to your local regulations or the battery manufacturer's instructions
- **Personal safety warnings:**
  - Chemical Burn Hazard. This product contains a coin cell battery. Do not ingest battery. If the coin cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
  - Keep new and used batteries away from children.
  - If the battery compartment does not close securely, stop using the product and keep it away from children.
  - If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

Avertissement de l'utilisation de la batterie

- Lorsque utiliser la batterie, évitez:
  - Températures extrêmement élevées ou basses pendant l'utilisation, le stockage et le transport;
  - Pression d'air extrêmement basse, ou pression d'air basse à haute altitude.
  - Remplacement de la batterie.
- Utilisez la batterie correctement. Mauvaise utilisation de la batterie comme celles mentionnées ici, peut entraîner des risques d'incendie, d'explosion ou de fuite liquide de gaz inflammables.
  - Remplacer la batterie par un type incorrect;
  - Disposer d'une batterie dans le feu ou un four chaud, écraser mécaniquement ou couper la batterie;
- Disposer la batterie utilisée conformément à vos règlements locaux ou aux instructions du fabricant de la batterie
- **Avertissements de sécurité personnelle:**
  - Risque de brûlure chimique. Ce produit contient une batterie de

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cellules. N'ingérer pas la batterie. Si la batterie de cellule est avalée, elle peut causer de graves brûlures internes en seulement 2 heures et peut entraîner la mort.

- Gardez les batteries nouvelles ou utilisées à l'écart des enfants.
- Si le compartiment de la batterie ne se ferme pas en toute sécurité, cessez d'utiliser le produit et gardez-le à l'écart des enfants.
- Si vous pensez que des piles ont pu être avalées ou placées à l'intérieur d'une partie du corps, consultez immédiatement un médecin.

Enclosures

Miscellaneous ID 07-07

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Model Nos.	Source Of Supply	Section
USR, CNR – Models EF50050S1-C59(Y), EF75070S1-C38(Y), EG50050S1-C89(Y), MF75090V1-C4(Y), EG50040S1-C62(Y), EG50040S1-C63(Y), EG75070S1-C09(Y), EG75070S1-C12(Y), EG75070S1-C1(Y), EG50040S1-C61(Y), MG60090V1-C25(Y), EG75070S1-C062(Y), EG75070S1-C08(Y), EF80251S1-1(Y), **EF80251S2-1(Y)**, **EF80251S3-1(Y)** EF80251S3-1Q(Y), EF80251S1-1(Y)(X)(Y), EF92251S1-1(Y), **EF92251S2-1(Y)**, **EF92251S3-1(Y)**, EF92251S1-1(Y)(X)(Y), HA40101V4-1(Y), PF92251B3-Q(Y), PF92251V3-D(Y), MF80201VX-Q060(Y), EF50201B2-Q0(Y), PF40281B2-Q05(Y) EB40201S2-D(Y) and EG50040S1-C87(Y) series, where (Y) stands for 30 variables, each variable may be A through Z, 0 through 9, "-", "(", ")", ".", "/" or blank; (X) may be F, R, Q or 2.	DC	270
USR, CNR – AC Component Fans, Models CF4113HB(X)(Y), CF4113HB(X)(Y)A(Z)(Y), CF4113HB(X)(Y)AA(Y), CF4113MB(X)(Y), CF4113MB(X)(Y)A(Z)(Y), CF4113MB(X)(Y)AA(Y), CF4113LB(X)(Y) and CF4113LB(X)(Y)A(Z)(Y), CF4113LB(X)(Y)AA(Y)series, where (X) may be L or T; (Z) may be B, C, D, E or F; (Y) stands for 30 variables, each variable may be A through Z, 0 through 9, "-", "(", ")", ".", "/" or blank.	AC	271
USR, CNR – Models EF70070S1-C(Y) series, where (Y) stands for 30 variables, each variable may be A through Z, 0 through 9, "-", "(", ")", ".", "/" or blank.	DC	272
USR, CNR – Models MF70070V1-C(Y), EF50050S1-C6(Y), EF75070S1-C43(Y), EG50050S1-C87(Y), EG60070S1-C11(Y), EG75070S1-C13(Y), EG75070S1-C18(Y), EF70100S1-C(Y), EF90201V1-C0(Y), PFC0321B3-C0(Y), MF80251V(A)-1(Y), MF80251V(A)-1(Y)(X)(Y), MF92251V(A)-1(Y), MF92251V(A)-1(Y)(X)(Y), PF40561BX-Q3(Y), PF40561BX-Q4(Y), PF38281BX-Q19(Y), PF38281BX-Q191(Y), PF38281BX-Q20(Y), PF38281BX-Q27(Y), PF38281B1-Q04(Y), GF80251B(B)(Y), GF80251B(B)(Y)(X)(Y), GF92251B(B)(Y), GF92251B(B)(Y)(X)(Y), GF80252B(B)(Y), GF80252B(B)(Y)(X)(Y), GF92252B(B)(Y), GF92252B(B)(Y)(X)(Y), MF50152VX-C(Y), PF70202BX-Q(Y), and PF60202BX-Q(Y), where (A) may 1, 2 or 3; (B) may be 5, 6 or 7; (Y) stands for 30 variables, each variable may be A through Z, 0 through 9, "-", "(", ")", ".", "/" or blank; (X) may be F, R, Q or 2.	DC	273

Enclosures

Miscellaneous ID 07-08

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50275749

Blatt *Page*
0036

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue (day/mo/yr)*
TUV150511/114036358	ZTW1-JAL- 10045484 020	04.06.2015	

Genehmigungsinhaber *License Holder*
Sunonwealth Electric Machine
Industry Co., Ltd.
No. 30, Ln. 296, Xinya Rd.
Qianzhen Dist. Kaohsiung 80673
Taiwan, R.O.C.

Fertigungsstätte *Manufacturing Plant*
Sunon Electronics (Kunshan)
Co., Ltd.
168 Nanban Road, Kunshan
Jangsu 215301
P.R. China

Prüfzeichen *Test Mark*
TÜVRheinland ZERTIFIZIERT
Bauart geprüft
Sicherheit
Regelmäßige Produktions-überwachung
www.tuv.com
ID 2000000000

Geprüft nach *Tested acc. to*
EN 60950-1:2006+A11+A1+A12+A2

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product* (*Product Identification*)	**Lizenzentgelte - Einheit** *License Fee - Unit*
Ventilator (DC Fan)	
wie Blatt (as page) 01, Ergänzung (Addition)	
Bezeichnung (Type Designation):	
EF50050S1-C59Z, EF75070S1-C38Z, EG50050S1-C89Z (SUNON)	3
MF75090V1-C4Z, EG50040S1-C62Z, EG50040S1-C63Z (SUNON)	3
EG75070S1-C09Z, EG75070S1-C12Z, EG75070S1-C1Z (SUNON)	3
EG50040S1-C61Z, MG60090V1-C25Z, EG75070S1-C062Z (SUNON)	3
EF80251S1-1Z, EF80251S1-1ZXZ, EF92251S1-1Z (SUNON)	3
EF92251S1-1ZXZ, HA40101V4-1Z, PF92251B3-QZ (SUNON)	3
PF92251V3-DZ, MF80201VX-Q060Z, EF50201B2-Q0Z (SUNON)	3
PF40281B2-Q05Z, EB40201S2-DZ (SUNON)	2
Z steht für 30 Kennzeichen. Jedes Kennzeichen entspricht	1
einem der folgenden Zeichen. (Z stands for 30 characters.	
Each character stands for one of the following signs):	
0-9, A-Z, (,), ., /, - oder (or) freibleibend (blank)	
Nur zum Zwecke der Vermarktung (for marketing purpose only).	
X steht für (stands for): F, Q, R, 2	1
Nennspannung/Nennstrom/Nennleistung : siehe Anlage	
(Rated Voltage/Rated Current/Rated Power) (see appendix)	
	25

ANLAGE (Appendix): 2.6

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH
TÜVRheinland®
Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Dipl.-Ing. (FH) A. Klinker

Miscellaneous ID 07-09

D.C.
2017.09.11
發行章

SUNON

SPECIFICATION FOR APPROVAL

CUSTOMER :

MOTOR TYPE : MAGLev Fan & Blower by SUNON

DESCRIPTION : **MagLev Motor Fan**

DIMENSIONS : **40X40X10 mm**

M O D E L : **HA40101V4-1000C-A99**

SUNON SPEC. NO. : **D04111020G-B2**

CUSTOMER APPROVAL NO. :

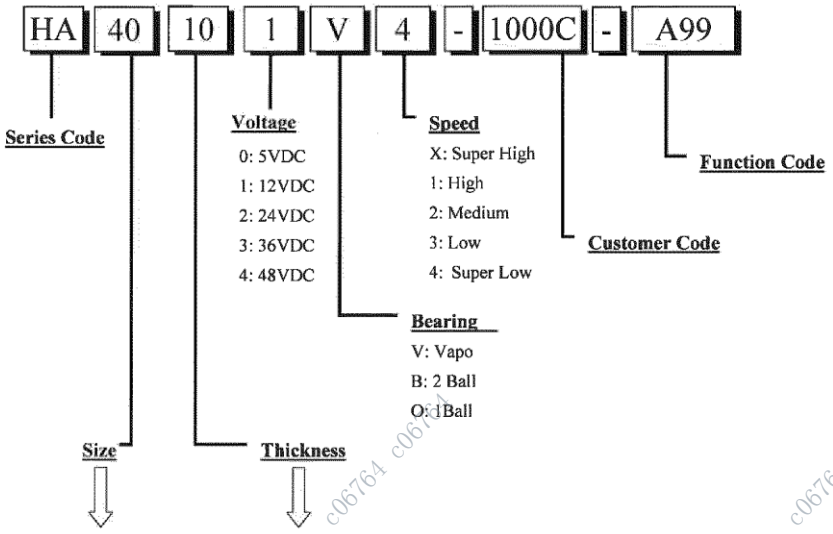
APPROVED BY CUSTOMER :
(AUTHORIZED)

DRAWN	yo-Kung 07/24	CHECKED	Kelly Chin-Jung	APPROVED	Gavinlee	SPEC.NO	D04111020G-B2
						ISSUE DATE	07.24.2017
						EDITION	0
						REVISION DATE	
						E.SPEC	E11500159

建準電機工業股份有限公司
SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD.
NO. 30, LN. 296, XINYA RD., QIANZHEN DIST., TEL:886-7-8135888
KAOHSIUNG CITY 80673, TAIWAN (R.O.C) FAX:886-7-8230505/8230606/8231010
URL:http://www.sunon.com E-mail: sunon@email.sunon.com.tw

Miscellaneous ID 07-09

I. MODEL NUMBERING SYSTEM



編碼	尺寸(mm)	編碼	尺寸(mm)	編碼	尺寸(mm)	編碼	尺寸(mm)
01~09	01~09	A0~A9	100~109	K0~K9	200~209	V0~V9	300~309
10~19	10~19	B0~B9	110~119	L0~L9	210~219	W0~W9	310~319
20~29	20~29	C0~C9	120~129	M0~M9	220~229	X0~X9	320~329
30~39	30~39	D0~D9	130~139	N0~N9	230~239	Y0~Y9	330~339
40~49	40~49	E0~E9	140~149	P0~P9	240~249	Z0~Z9	340~349
50~59	50~59	F0~F9	150~159	Q0~Q9	250~259		
60~69	60~69	G0~G9	160~169	R0~R9	260~269		
70~79	70~79	H0~H9	170~179	S0~S9	270~279		
80~89	80~89	I0~I9	180~189	T0~T9	280~289		
90~99	90~99	J0~J9	190~199	U0~U9	290~299		

Miscellaneous ID 07-09

II. SPECIFICATION

1. MECHANICAL CHARACTERISTIC

MOTOR DESIGN	Single phase, 4-poles Brushless DC motor.
BEARING SYSTEM	Vapo bearing system
DIMENSIONS	See Page 6
MATERIALS OF FRAME	Thermoplastic PBT of UL 94V-0
MATERIALS OF FAN BLADE	Thermoplastic PBT of UL 94V-0
DIRECTION OF ROTATION	Counter-clockwise viewed from front of fan blade
MOUNTING HOLES	Diameter 4.3 mm in 4 holes
WEIGHT	15.4 g

2. ELECTRIC CHARACTERISTIC

RATED VOLTAGE	12 VDC
RATED CURRENT	31 mA / Max. 38 mA
RATED POWER CONSUMPTION	0.38 WATTS / Max. 0.46 WATTS
SAFETY POWER CONSUMPTION	0.43 WATTS
OPERATING VOLTAGE RANGE	4.5~13.8 VDC
STARTING VOLTAGE	4.5 VDC (25 deg. C POWER ON/OFF)
OPERATING TEMPERATURE RANGE	-10 to + 70 deg. C
STORAGE TEMPERATURE RANGE	-40 to + 70 deg. C

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3. PERFORMANCE CHARACTERISTIC

RATED SPEED	**5000 RPM ± 15% at rated voltage**
AIR FLOW	**5.4 CFM**
STATIC PRESSURE	**0.09 Inch-H_2O**
ACOUSTIC NOISE	**15.7 dB(A)**
AIR FLOW V.S. PRESSURE	**See Page 5**
INSULATION CLASS	**UL Class A**
INSULATION RESISTANCE PLASTIC HOUSING	**10M ohm at 500 VDC between internal stator and lead wire (+)**
DIELECTRIC STRENGTH	**Applied AC 500 V for one minute or AC 600 V for 2 Seconds between housing and lead wire (+)**
LIFE EXPECTANCY	**60,000 Hours at 40 deg. C, 65% humidity, 90% CL**
PROTECTION	**☑Automatic Restart** Note: In a situation where the fan is locked by an external force while the electricity is on, an increase in coil temperature will be prevented by temporarily turning off the electrical power to the motor. The fan will automatically restart when the locked rotor condition is released.
	☐Polarity Protection

4. SAFETY

SAFETY	UL	CUR	TUV	CE
NO.	E77551	E77551	✓	✓

Enclosures

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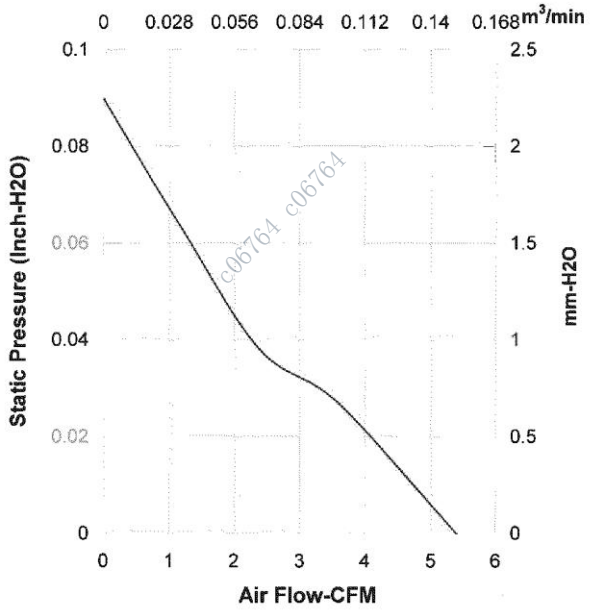
MODEL : HA40101V4-1000C-A99

PERFORMANCE CURVES



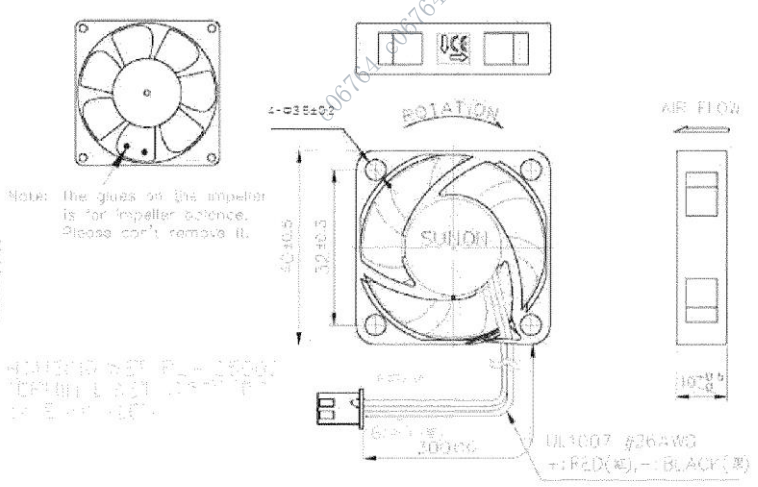
Enclosures

Miscellaneous ID 07-09

DIMENSIONS

Screw Type (Pan head)	Torque	Screw Spec	
		Size	Standard
Machine screw	3～4 Kgf-cm	M4.0	JIS B1111-1974
Self-tapping screw	6～8 Kgf-cm	ϕ 5.0	JIS B1122 Type 2

Note: SUNON recommends the screw and torque as above. Please contact SUNON, if any new requirement is requested.



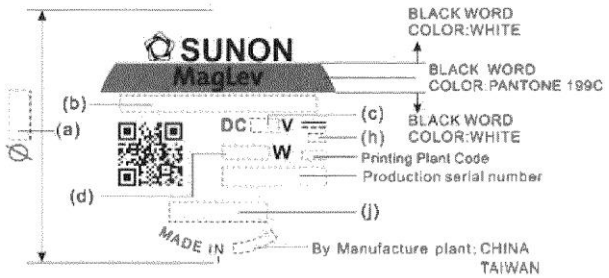
UNIT：mm

Enclosures

Miscellaneous ID 07-09

D.S.C. 2017.09.11 發行章

LABEL



(a)Dimension	(b)Model Name	(c)Voltage	(d)Power Consumption	(h)Protection
20	HA4010V4-1000C-A99	12	0.43	EP

(j)Safety
TUV/UL+CUR

1.English font type: Swis721 Series & Switzerland Narrow, Chinese font type: 超研泰中中等體.

2.Safety(TUV/UL+CUR)

Miscellaneous ID 07-09

III. OTHER SPECIFIED TESTING

The following is a general description of certain tests that are performed on representative SUNON fans. Nothing in this document is intended to suggest that these tests are performed on every model of SUNON fan. Moreover, the descriptions that follow each test are meant only to provide a general explanation of each test. If you would like a more detailed explanation as to any test identified in this Section, SUNON can provide such an explanation upon request.

1. **DROP PROOF TEST**
   Fans are packaged in a standard size shipping box and are dropped to the ground from certain heights and angles depending on the weight of the particular box.

2. **HUMIDITY PROOF TEST**
   The fan is operated for 96 continuous hours in an environment with humidity of 90% to 95% RH at 60°C ± 2°C.

3. **VIBRATION PROOF TEST**
   Vibration with an amplitude 2mm and a frequency of 5-55-5hz is applied in all 3 directions (X,Y,Z), in cycles of 1 hour each, for a total vibration time of 3hours.

4. **THERMAL CYCLING TEST**
   The fan is operated in a testing chamber for 50 cycles. In each cycle, the temperature is gradually increased from -10°C to 70°C for 90 minutes, and subsequently operated at 70°C for 120 minutes. The temperature is then gradually decreased from 70°C to -10°C for 90 minutes, and subsequently operated at -10°C for 120 minutes.

5. **SHOCK PROOF TEST**
   100G of force is applied in the 3 directions (X,Y, and Z) for 2 milliseconds each.

6. **LIFE EXPECTANCY**
   The "Life Expectancy" of SUNON fans is determined in SUNON's reliability test laboratory by using temperature chambers. The "Life Expectancy" of this fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports (L10 and MTTF Report) that relate to this fan are only for reference.

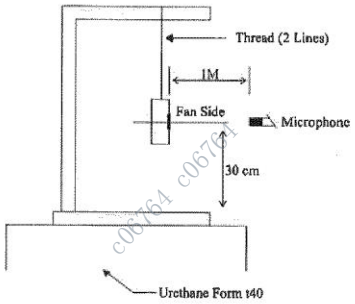
Miscellaneous ID 07-09

IV. CHARACTERISTIC DEFINITION

The following is a general description of certain tests that are performed on representative SUNON fans in order to determine the specifications of the fan. Nothing in this document is intended to suggest that these tests are performed on every model of SUNON fan. Moreover, the descriptions that follow each test are meant only to provide a general explanation of each test. If you would like a more detailed explanation as to any test identified in this Section, SUNON can provide such an explanation upon request.

1. ACOUSTICAL NOISE

Measured in a semi-anechoic chamber with background noise level below 15dB(A).



1 METER FROM MICROPHONE TO FAN INTAKE

The fan is running in free air under shaft horizontal condition with the microphone at distance of one meter from the fan intake.

2. INPUT POWER

Measured after continuous 10 minute operation at rated voltage in clean air (STATIC PRESSURE=0), and at ambient temperature of 25 degrees C under shaft horizontal condition.

3. RATED CURRENT

Measured after continuous 10 minute operation at rated voltage in clean air (STATIC PRESSURE=0), and at ambient temperature of 25 degrees C under shaft horizontal condition.

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4. RATED SPEED

Measured after continuous 10 minute operation at rated voltage in clean air (STATIC PRESSURE=0), and at ambient temperature of 25 degrees C under shaft horizontal condition.

5. STARTING VOLTAGE

Measured the voltage which enables to start the fan in the clean air (static pressure = 0) by switching on at the voltage under shaft horizontal condition. It is not at continuously increasing voltage adjustment.

6. LOCKED ROTOR CURRENT

Measured immediately after the fan blade is locked.

7. AIR FLOW AND STATIC PRESSURE

The performance specification of air flow and static pressure shown in this specification for approval is measured using the exhaust method. A double chamber is used in accordance with AMCA 210 standard or DIN 24163 specification . The values are recorded when the fan speed has stabilized at rated voltage.

8. INSULATION RESISTANCE

1. PLASTIC HOUSING:
   (1) Measured between internal stator and lead wire(+).
   (2) Measured between housing and lead wire(+).

2. ALUMINIUM HOUSING:
   Measured between internal stator and lead wire(+).

9. DIELECTRIC STRENGTH

Measure between housing and lead wire(+).

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V. NOTE

I .SAFETY

1. DO NOT use or operate this fan in excess of the limitations set forth in this specification. SUNON is not responsible for the non-performance of this fan and/or any damages resulting from its use, if it is not used or operated in accordance with the specifications.

2. SUNON recommends adding a protection circuit to the product or application in which this fan is installed, such as a thermo-fuse, or current-fuse or thermo-protector. The failure to use such a device may result in smoke, fire, electric shock by insulation degradation in cases of motor lead short circuit, overload, or over voltage, and/or other failure.

3. SUNON recommends installing a protection device to the product or application in which this fan is installed if there is a possibility of reverse-connection between VDC (+) and GND (-). The failure to install such a device may result in smoke, fire, and/or destruction, although these conditions may not manifest immediately.

4. This fan must be installed and used in compliance with all applicable safety standards and regulations.

5. Use proper care when handling and/or installing this fan. Improper handling or installation of this fan may cause damage that could result in unsafe conditions.

6. Use proper care during installation and/or wiring. Failure to use proper care may cause damage to certain components of the fan including, but not limited to, the coil and lead wires, which could result in smoke and/or fire.

7. DO NOT use power or ground PWM to control the fan speed. If the fan speed needs to be adjusted, please contact SUNON to customize the product design for your application.

8. For critical or extreme environments, including non stop operation, please contact SUNON and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.

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II. SPECIFICATION MODIFICATION

1. SUNON offers engineering assistance on fan installation and cooling system design.

2. All changes, modifications and/or revisions to the specifications, if any, are incorporated in the attached specifications.

3. No changes, modifications and/or revisions to these specifications are effective absent agreement, by both SUNON and the customer, in writing.

4. This fan will be shipped in accordance with the attached specification unless SUNON and the customer have agreed otherwise, in writing, as specified in Paragraph 3, above.

III. OTHER

1. When building your device, please examine thoroughly any variation of EMC, temperature rise, life data, quality, etc. of this product by shock/drop/vibration testing, etc. If there are any problems or accidents in connection with this product, it should be mutually discussed and examined.

2. Use proper care when handling this fan. Components such as fan holders or bearings may be damaged, if touched with fingers or other objects. Additionally, static electricity (ESD) may damage the internal circuits of the fan.

3. DO NOT operate this fan in proximity to hazardous materials such as organic silicon, cyanogens, formalin, phenol, or corrosive gas environments including, but not limited to, H_2S, SO_2, NO_2, or Cl_2.

4. SUNON recommends that you protect this fan from exposure to outside elements such as dust, condensation, humidity or insects. Exposure of this fan to outside elements such as dust, condensation, humidity or insects may affect its performance and may cause safety hazards. SUNON does not warrant against damage to the product caused by outside elements.

5. This fan must be installed properly and securely. Improper mounting may cause harsh resonance, vibration, and noise.

Enclosures

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6. Fan guards may prevent injury during handling or installation of the fan and are available for sale with this fan.

7. Unless otherwise noted, all testing of this fan is conducted at 25°C ambient temperature and sixty-five percent (65%) relative humidity.

8. DO NOT store this fan in an environment with high humidity. This fan must be stored in accordance with the attached specifications regarding storage temperature. If this fan is stored for more than 6 months, SUNON recommends functional testing before using.

9. SUNON reserves the right to use components from multiple sources at its discretion. The use of components from other sources will not affect the specifications as described herein.

10. The "Life Expectancy" of this fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports (L10 and MTTF Report) that relate to this fan are only for reference.

VI. WARRANTY

This fan is warranted against all defects which are proved to be fault in our workmanship and material for one year from the date of our delivery. The sole responsibility under the warranty shall be limited to the repair of the fan or the replacement thereof, at SUNON's sole discretion. SUNON will not be responsible for the failures of its fans due to improper handing, misuse or the failure to follow specifications or instructions for use. In the event of warranty claim, the customer shall immediately notify SUNON for verification. SUNON will not be responsible for any consequential damage to the customer's equipment as a result of any fans proven to be defective.

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Declaration of RoHS

Control declaration of environment-related substances/materials

1. **In accordance with the Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU, SUNON product have complied with law and discipline not to employ the forbidden substances, and restrict the allowable concentration of some limited substances deliberately in our components.**

No	Substance		Criteria
1	CFCs & HCFCs (ozone depleting substances)		Forbidden
2	Chlorinated Organic Solvent		Forbidden
3	Lead and its compounds	Plastic (Frame, Impeller, wire harness, etc.)	<100ppm
		Solder	<1000ppm
		Steel alloy	<3500ppm
		Aluminium alloy	<4000ppm
		Copper alloy	<4wt%
4	Cadmium and its compounds	Solder	<20ppm
		Parts composed of metals containing zinc (e.g. brass, zinc for die casting)	<100ppm
		Plastic	<5ppm
5	PBBs and PBDEs		Forbidden
6	PCB and PCT		Forbidden
7	CP, Short-chain Chlorinated paraffins C10-13, Cl ≥48 wt%		Forbidden
8	Mirex		Forbidden
9	PCN		Forbidden
10	Hexavalent Chromium compounds		<100ppm
11	Mercury and its compounds		Forbidden
12	Asbestos		Forbidden
13	Organic Tin compounds		Forbidden
14	Azo compounds		Forbidden
15	TBBP-A in external case plastic parts of products (PCB is exempted)		<1000ppm
16	Nickel in external case parts, which are likely to result in prolonged skin exposure		<1000ppm
17	Hexabromocyclododecane (HBCDD)		<1000ppm
18	Di-butyl Phthalate (DBP)		<1000ppm
19	Benzyl butyl Phthalate (BBP)		<1000ppm
20	Di-ethylhexyl Phthalate (DEHP)		<1000ppm
21	Di-isobutyl Phthalate (DIBP)		<1000ppm

建準電機
SUNONWEALTH
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Enclosures

Miscellaneous ID 07-15

DRAFT CB TEST CERTIFICATE INFORMATION

Generated by BlueBox Publisher on: 2022/02/07

Product	Network Video Recorder
Name and address of the Applicant	ZHEJIANG UNIVIEW TECHNOLOGIES CO LTD 88 JIANGLING RD BINJIANG DISTRICT HANGZHOU ZHEJIANG 310051 CHINA
Name and address of the Manufacturer	ZHEJIANG UNIVIEW TECHNOLOGIES CO LTD 88 JIANGLING RD BINJIANG DISTRICT HANGZHOU ZHEJIANG 310051 CHINA
Name and address of the Factory(ies)	ZHEJIANG UNIVIEW SYSTEMS TECHNOLOGY CO LTD NO.1277 SOUTH QINGFENG SOUTH ROAD, TONGXIANG JIAXING ZHEJIANG 310000 CHINA DBG TECHNOLOGY (INDIA) PRIVATE LIMITED PLOT NO. 2, SECTOR-8, IMT BAWAL REWARI HARYANA 123501 INDIA TDG TECHNOLOGY CO LTD NO 1 YATAI RD NANHU DISTRICT JIAXING ZHEJIANG 314050 CHINA
Rating and principal characteristics	(optional) 1) 12Vdc,2A for models: NVR302-08S, NVR302-16S, NVR302-xxxxxxxx-yyyyyyyy-zzz, NVR302-09E-B, NVR302-16E-B 2) 12Vdc,3.0A for models: NVR302-08Q, NVR302-08U, NVR302-16Q 3) 12Vdc,2A for models NVR302-32S, NVR302-32S-NB 4) 12Vdc,2A for models NVR302-16E-IF, NVR302-32E-IF 5) 12Vdc,3.0A for model XVR302-08Q, XVR302-08Q-NB, XVR302-16Q, XVR302-16Q-NB, XVR302-xxxxxxxx-yyyyyyyy-zzz, XVR302-16Q-IF, XVR302-08U-IF 6) 12Vdc,3.3A for model NVR302-32E2
Trademarks (if any)	None
Model / Type ref.	1) NVR302-08S, NVR302-08Q, NVR302-08U, NVR302-16S, NVR302-16Q, NVR302-xxxxxxxx-yyyyyyyy-zzz 2) NVR302-09E-B, NVR302-16E-B 3) NVR302-32S, NVR302-32S-NB 4) NVR302-16E-IF, NVR302-32E-IF 5) XVR302-08Q, XVR302-08Q-NB, XVR302-16Q, XVR302-16Q-NB, XVR302-xxxxxxxx-yyyyyyyy-zzz, XVR302-16Q-IF, XVR302-08U-IF

Enclosures

Miscellaneous ID 07-15

	6) NVR302-32E2 ("x" can be 0-9,A-Z,a-z or blank,denoting difference in interface;"y" can be 0-9,A-Z,a-z or blank, denoting performance difference; "z"can be 0-9,A-Z,a-z or blank,denoting target regional, "-" may be blank)
Additional information (if necessary)	
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014 (Second Edition)
As shown in the Test Report Ref. No. which forms part of this Certificate	E359706-A6056

Client Representative	xufeng
Client email (or fax)	xufeng@uniview.com

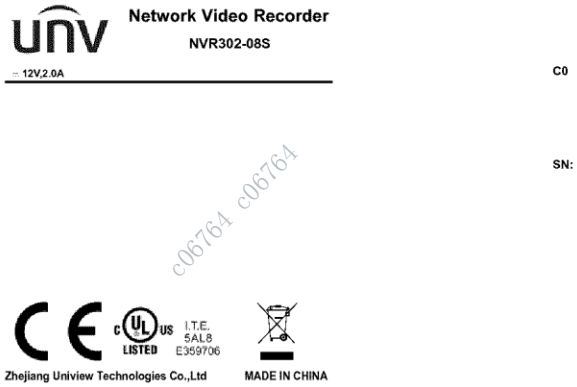
This form is to acknowledge that the above information has been reviewed and the material has been found to be accurate as stated. This is also to record client's confirmation that above factories manufacture product(s) that are equal to those submitted for testing and certification. (Refer to IECEE 02, Sub-clause 4.2.5: "When the application covers more than one factory, the address of each factory shall be stated in the CB Test Certificate and the NCB shall take steps to ensure that the products from all the factories are equal. That shall be confirmed in the Test Report.")

Signed: Wang Chenjin **Dated:** 2022/2/14

***Definitions** per IECEE 02 (http://www.iecee.com/cbscheme/pdf/IECEE02.pdf):
Applicant: A firm or a person who applies to an NCB for obtaining a CB Test Certificate.
Manufacturer: An organization, situated at a stated location or locations, that carries out or controls such stages in the manufacture, assessment, handling and storage of a product that enables it to accept responsibility for continued compliance of the product with the relevant requirements and undertakes all obligations in that connection.
Factory: The location(s) at which the product is produced or assembled and follow-up service is established by the NCB.

Enclosures

Marking Plate ID 13-03



Enclosures

Marking Plate ID 13-04

Enclosures

Marking Plate ID 13-05

Enclosures

Marking Plate ID 13-06