
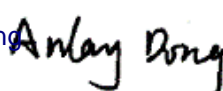




The following sample(s) was/were submitted and identified on behalf of the client as:

<b>TEST REPORT</b>	
<b>Railway applications – Electronic equipment used on rolling stock (EN: 50155:2017)</b>	
<b>Report Reference No.</b> .....	GZES191202852002
<b>Tested by (name + signature)</b> .....	Chico Li 
<b>Approved by (+ signature)</b> .....	Anlay Dong 
<b>Date of issue</b> .....	2020-02-13 Amendment-1: 2020-11-30
<b>Total number of pages</b> .....	9
<b>Testing Laboratory</b> .....	<b>SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch</b>
<b>Address</b> .....	198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China
<b>Applicant's name</b> .....	Hangzhou Hikvision Digital Technology Co., Ltd.
<b>Address</b> .....	No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China
<b>Test specification:</b>	
<b>Test procedure</b> .....	Railway applications – Electronic equipment used on rolling stock (EN: 50155:2017)
<b>Non-standard test method</b> .....	None
<b>Test Report Form No.</b> .....	EN50155_D
<b>Test Report Form(s) Originator</b> .....	SGS-CSTC
<b>Master TRF</b> .....	2018-2-28



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TRF No. EN50155\_D

<b>Test item description.....:</b>	<b>Network Camera</b>
<b>Model/Type reference .....</b>	DS-2XM6222G0-I/ND, DS-2XM6222G0-IM/ND, DS-2XM6222G0-IM/NDUHK, DS-2XM6222G0-IM/NDCKV, DS-2XM6222G0-IM/NDUVS, DS-2XM6222G0-IM/NDKVO, DS-2XM6222G0-IM/NDHUN, DS-2XM6222G0-I/NDUHK, DS-2XM6222G0-I/NDCKV, DS-2XM6222G0-I/NDUVS, DS-2XM6222G0-I/NDKVO, DS-2XM6222G0-I/NDHUN, DS-2XM6212G0-IM/ND, DS-2XM6212G0-IM/NDUHK, DS-2XM6212G0-IM/NDCKV, DS-2XM6212G0-IM/NDUVS, DS-2XM6212G0-IM/NDKVO, DS-2XM6212G0-IM/NDHUN, DS-2XM6212G0-I/ND, DS-2XM6212G0-I/NDUHK, DS-2XM6212G0-I/NDCKV, DS-2XM6212G0-I/NDUVS, DS-2XM6212G0-I/NDKVO, DS-2XM6212G0-I/NDHUN



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Ratings .....	PoE (36 Vd.c. – 57 Vd.c.); 0,14 A – 0,09 A; 5,2 W
Brand name .....	HIKVISION
Manufacturer .....	Same as applicant
Factory .....	<p>Hangzhou Hikvision Technology Co., Ltd. No.700, Dongliu Road, Binjiang District, Hangzhou Ctiy, Zhejiang, 310052, China</p> <p>Hangzhou Hikvision Electronics Co., Ltd. No.299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China</p> <p>Chongqing Hikvision technology Co., Ltd. No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325, China</p>

**Summary of testing:**

The sample(s) in this report has considered and complied below mandatory tests and requirements according to Railway applications – Electronic equipment used on rolling stock (EN: 50155:2017).  
 Model DS-2XM6222G0-I/ND was selected for test as representative.  
 After reviewed, tests of clause 13.4.4 and 13.4.5 are needed to be considered in this report.

**Tests performed:**

Selected verdict	Sub-clause	Test name	Reference test method standard
<input checked="" type="checkbox"/>	13.4.4	Low temperature start-up test,	EN 60068-2-1:2007 (test Ad)
<input checked="" type="checkbox"/>	13.4.5	Dry heat test	EN 60068-2-2: 2007 (test Be)

**Test location:**

Name: SGS-CSTC Standards Technical Services Co., Ltd.  
 Guangzhou Branch  
 Address:198 Kezhu Road, Science City, Economic & Technology Development Area, Guangzhou, Guangdong, China

The test item with \* markings are optional test subject to contract agreement between the user and the manufacturer, and the items without marking are mandatory tests according to standard.

The report does not contain 13.4.8 EMC test.

**Copy of marking plate**

Refer to previous test report



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<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N (or N/A)
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing .....</b>	
Date of receipt of test item .....	2020-11-13
Date (s) of performance of tests .....	2020-11-23 to 2020-11-24
<b>General remarks:</b>	
<p>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 testing laboratory.                  "(see Enclosure #)" refers to additional information appended to the report.                  "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p>	



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**General product information:**

Function:	Network Camera main function is collecting real-time video signals, Power by stabilized PoE then through Signal terminal transmission to PC online surveillance
Power Source:	Stabilized Power over Ethernet
Installation:	Used on rolling stock inside railway vehicles, body mounted
Construction:	Metal enclosure fixed by screws
Accessories:	No
Altitude	<input checked="" type="checkbox"/> A1 (default requirement) ; <input type="checkbox"/> A2 <input type="checkbox"/> A3 <input type="checkbox"/> AX
Operation temperature:	<input type="checkbox"/> OT1 <input type="checkbox"/> OT2 <input checked="" type="checkbox"/> OT3 (default requirement) <input type="checkbox"/> OT4 <input type="checkbox"/> OT4 <input type="checkbox"/> OT5 <input type="checkbox"/> OT6
Switch-on extended operating temperature:	<input type="checkbox"/> ST0 <input type="checkbox"/> ST1 (default requirement), <input checked="" type="checkbox"/> ST2, <input type="checkbox"/> NA
Rapid temperature variation	<input checked="" type="checkbox"/> H1 (default requirement), <input type="checkbox"/> H2 <input type="checkbox"/> N/A
Vibration and shock	<input type="checkbox"/> category 1 Class A <input checked="" type="checkbox"/> category 1 Class B (recommended requirement); <input type="checkbox"/> 2 (Bogie mounted), <input type="checkbox"/> 3 (Axle mounted)
Interruption voltage supply	<input type="checkbox"/> S1 <input checked="" type="checkbox"/> S2 (default requirement), <input type="checkbox"/> S3 <input type="checkbox"/> N/A
Supply change-over	<input checked="" type="checkbox"/> C1 default requirement, <input type="checkbox"/> C2 <input type="checkbox"/> N/A
Documentation	<input type="checkbox"/> class M <input checked="" type="checkbox"/> M0 default requirement,

**Model differences:**

All models are identical except model name and software version.



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**Amendment-1:**

Test report No. GZES191202852001 dated on 2020-02-13, was modified on 2020-11-30 with following updated and changes:

1. Removed the following models:

DS-2XM6212FWD-IM/ND, DS-2XM6212FWD-IM/NDUHK, DS-2XM6212FWD-IM/NDCKV, DS-2XM6212FWD-IM/NDUVS, DS-2XM6212FWD-IM/NDKVO, DS-2XM6212FWD-IM/NDHUN, DS-2XM6212FWD-I/ND, DS-2XM6212FWD-I/NDUHK, DS-2XM6212FWD-I/NDCKV, DS-2XM6212FWD-I/NDUVS, DS-2XM6212FWD-I/NDKVO, DS-2XM6212FWD-I/NDHUN, DS-2XM6222FWD-IM/ND, DS-2XM6222FWD-IM/NDUHK, DS-2XM6222FWD-IM/NDCKV, DS-2XM6222FWD-IM/NDUVS, DS-2XM6222FWD-IM/NDKVO, DS-2XM6222FWD-IM/NDHUN, DS-2XM6222FWD-I/ND, DS-2XM6222FWD-I/NDUHK, DS-2XM6222FWD-I/NDCKV, DS-2XM6222FWD-I/NDUVS, DS-2XM6222FWD-I/NDKVO, DS-2XM6222FWD-I/NDHUN

2. Changed the Operation temperature from OT2 into OT3.

After reviewed, tests of clause 13.4.4 and 13.4.5 are needed to be considered in this report.

**Test report No. GZES191202852002 dated on 2020-11-30 is not valid without the previous test report No. GZES191202852001 dated on 2020-02-13.**



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Railway applications – Electronic equipment used on rolling stock (EN: 50155:2017)																	
Cl.	Requirement-Test	Result-Remark	Verdict														
<b>13.4.4 Low temperature start-up test</b>																	
	This test is carried out in accordance with EN 60068-2-1, test Ad.		P														
	Equipment is placed, without any voltage applied, in a test chamber.		P														
	Equipment shall be tested according to its operating temperature class, low operating temperature ( $T_{TEST}$ ) shall be taken from Table 1.	Class OT3 used according to manufacturer: - 25 °C	P														
	<p><b>Table 1 — Operating temperature classes</b></p> <table border="1"> <thead> <tr> <th>Class</th> <th>Equipment operating temperature range (°C)</th> </tr> </thead> <tbody> <tr> <td>OT1</td> <td>-25 to +55</td> </tr> <tr> <td>OT2</td> <td>-40 to +55</td> </tr> <tr> <td>OT3</td> <td>-25 to +70</td> </tr> <tr> <td>OT4</td> <td>-40 to +70</td> </tr> <tr> <td>OT5</td> <td>-25 to +85</td> </tr> <tr> <td>OT6</td> <td>-40 to +85</td> </tr> </tbody> </table>	Class	Equipment operating temperature range (°C)	OT1	-25 to +55	OT2	-40 to +55	OT3	-25 to +70	OT4	-40 to +70	OT5	-25 to +85	OT6	-40 to +85		
Class	Equipment operating temperature range (°C)																
OT1	-25 to +55																
OT2	-40 to +55																
OT3	-25 to +70																
OT4	-40 to +70																
OT5	-25 to +85																
OT6	-40 to +85																
	The equipment shall be first conditioned by leaving it, after thermal stabilization of the chamber, for a sufficient period of time in which to achieve thermal stabilization. In any case, this period shall not be less than 2 h.		P														
	At the end of this period the equipment shall be switched on and a performance check is carried out, keeping the equipment at the low temperature. After recovery, this performance check is repeated at normal room temperature.  Test acceptance requirements: during and after the test, the equipment shall work as intended and within its specified limits (Performance criterion A)	Performance check was passed under low temperature condition and normal room temperature condition.	P														
<b>13.4.5 Dry heat test</b>																	
	This test is carried out in accordance with EN 60068-2-2, test Be		P														



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Railway applications – Electronic equipment used on rolling stock (EN: 50155:2017)															
Cl.	Requirement-Test	Result-Remark	Verdict												
	<p>The temperature value for this test is dependent of the temperature class and the switch-on extended operating temperature class of equipment under test (table 1 and table 2)</p> <p style="text-align: center;">Table 2 — Switch-on extended Operating temperature classes</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Class</th> <th>Switch-on extended operating temperature (duration: 10 min)</th> <th>Thermal test cycle See 13.4.5</th> </tr> </thead> <tbody> <tr> <td>ST0</td> <td>No switch-on extended operating temperature</td> <td>Test cycle A</td> </tr> <tr> <td>ST1</td> <td>OTx +15 °C</td> <td>Test cycle B</td> </tr> <tr> <td>ST2</td> <td>OTx +15 °C</td> <td>Test cycle C</td> </tr> </tbody> </table>	Class	Switch-on extended operating temperature (duration: 10 min)	Thermal test cycle See 13.4.5	ST0	No switch-on extended operating temperature	Test cycle A	ST1	OTx +15 °C	Test cycle B	ST2	OTx +15 °C	Test cycle C	<p>Class OT3 and ST2 used according to manufacturer: 70 °C, Test cycle C,</p>	P
Class	Switch-on extended operating temperature (duration: 10 min)	Thermal test cycle See 13.4.5													
ST0	No switch-on extended operating temperature	Test cycle A													
ST1	OTx +15 °C	Test cycle B													
ST2	OTx +15 °C	Test cycle C													
13.4.5.2 - Cycle A	<p>the switched off equipment is placed in a chamber where the temperature is progressively raised to the maximum operating temperature (<math>T_{TEST}</math>)</p> <p>Once the temperature has stabilised, In any case, this period shall not be less than 2 h, then the equipment is switched on and left for a time period of 6 h with continuous operational check carried out at max. operating temperature <math>T_{TEST}</math></p> <p>The equipment is then allowed to cool to ambient temperature and a further performance test is carried out after the stabilization time.</p> <p>Test acceptance requirements: during and after the test, the equipment shall work as intended and within its specified limits (Performance criterion A)</p>	Class ST2	N/A												



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Railway applications – Electronic equipment used on rolling stock (EN: 50155:2017)			
Cl.	Requirement-Test	Result-Remark	Verdict
13.4.5.3- Cycle B	<p>the switched off equipment is placed in a chamber where the temperature is progressively raised to the maximum operating temperature (<math>T_{TEST}</math>)</p> <p>Once the temperature has stabilised, In any case, this period shall not be less than 2 h, then the equipment is switched on and left for a time period of 6 h with continuous operational check carried out at max. operating temperature (<math>T_{TEST}</math>).</p> <p>once this test is complete, a continuous operation check is carried out with the 10 min over-temperature value.</p> <p>The equipment is then allowed to cool to ambient temperature and a further performance test is carried out after the stabilization time.</p> <p>Test acceptance requirements: during and after the test, the equipment shall work as intended and within its specified limits (Performance criterion A)</p>	Class ST2	N/A
13.4.5.4- cycle C	<p>The switched off equipment is placed in a chamber where the temperature is progressively raised to the extended operating temperature (<math>T_{TEST}+15^{\circ}C</math>) according to the selected temperature class.</p> <p>Once the temperature has stabilised, In any case, this period shall not be less than 2 h, then the equipment is switched on and continuous operation check are carried out at this extended operating temperature value for 10 min.</p> <p>Equipment is then allowed to cool to the max. operating temperature (<math>T_{TEST}</math>) and continuous operation check last or a time period of 6 h.</p> <p>The equipment is then allowed to cool to ambient temperature and a further performance test is carried out after the stabilization time.</p> <p>Test acceptance requirements: during and after the test, the equipment shall work as intended and within its specified limits (Performance criterion A)</p>	<p>85 °C, 10 min. and 70 °C, 6 h;</p> <p>Performance check was passed under dry heat condition and normal room temperature condition.</p>	P

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