

TEST REPORT

1. **Report Number** KCTL16-YRS0093
2. **Applicant**
 - Name Hanwha Techwin Co.,Ltd
 - Address 1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea
 - Date of Receipt March 18, 2016
3. **Manufacturer**
 - Name Hanwha Techwin Co.,Ltd
 - Address 1204, Changwon-daero, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea
4. **Use of Report** For Quality management
5. **Test item description**
 - **Product Name** Network Camera
 - **Model Name** SNV-L6014RM>(* N:NTSC / P:PAL)
6. **Test method used** Customer request: EN 50155: 2007 (See page 3)
7. **Date of Test** 2016.03.22 - 2016.03.25
8. **Environment**
 - Temperature (15 ~ 35) °C
 - Relative Humidity (25 ~ 75) % R.H
9. **Test Results** See of the test result

※ This test results apply only to the test sample supplied by applicant and do not guarantee the whole product quality. This test report shall not be reproduced except in full, without the written approval by the KCTL Inc.

Affirmation	Tested by	Technical Manager
	Name : Kyung Hoon, Ahn (Signature)	Name : Jae-Kyu, Lee (Signature)

March. 28. 2016

KCTL INC.

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1. Test Laboratory

1.1 General

Name of Test Laboratory	KCTL INC.
Address	52-20, Sinjeong-ro 41 beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do 446-599, Korea
TEL	031-326-6778
FAX	0505-299-8311
Home page	www.kctl.co.kr

1.2 Certificate of Designated Testing Laboratory

Mark.	Registration No.
KC	KR0040
KOLAS	NO. KT231
FCC	Registration No. 793314
INDUSTRY CANADA	Registration No. 8035A

2. Specification

Division	Specification
Test Voltage	PoE Adapter use (DC 48-56 V)
Function	Network Camera
Unit Weight	0.34 kg
Customer request Standard	EN 50155: 2007 Section 12.2.11 Vibration, Shock and bump test Section 12.2.3 Cooling test(T3) Section 12.2.4 Dry heat test(T2, TX)

- Basic model: SNV-L6014RM**(* N:NTSC / P:PAL)
- Variant model: SNV-L6013R*(* N:NTSC /P:PAL)
- The basic model and variant model are identical Hardware
- The model SNV-L6014RM**(* N:NTSC / P:PAL) was conducted tests representatively.

3. Test Method and Result

3.1 Simulated long life test

1) Test Equipment

Number	Instrument description	Model Number	Manufacturer	Due Cal
1	Vibration sensor	VP-32(6369U)	IMV / JAPAN	2017-02-26
2	Vibration sensor	731-B	EMIC / JAPAN	2016-10-14

2) Test Conditions

- Standard : EN 50155: 2007(Section 12.2.11) / EN 61373: 2010(Category 1 Class A)
- Test type : Random
- Frequency : (5 ~ 150) Hz
- Acceleration : Z - 4.25 m/s² r.m.s.
X - 2.09 m/s² r.m.s.
Y - 2.83 m/s² r.m.s.
- Test time : Total 15 h (5 h in each axis)
- Test axis : Vertical (Z), Transverse (X), Longitudinal (Y)
- Check time : Before the test, After the test
- Sample condition : Unpackaged product / Non-operation
- Sample quantity : 1 EA

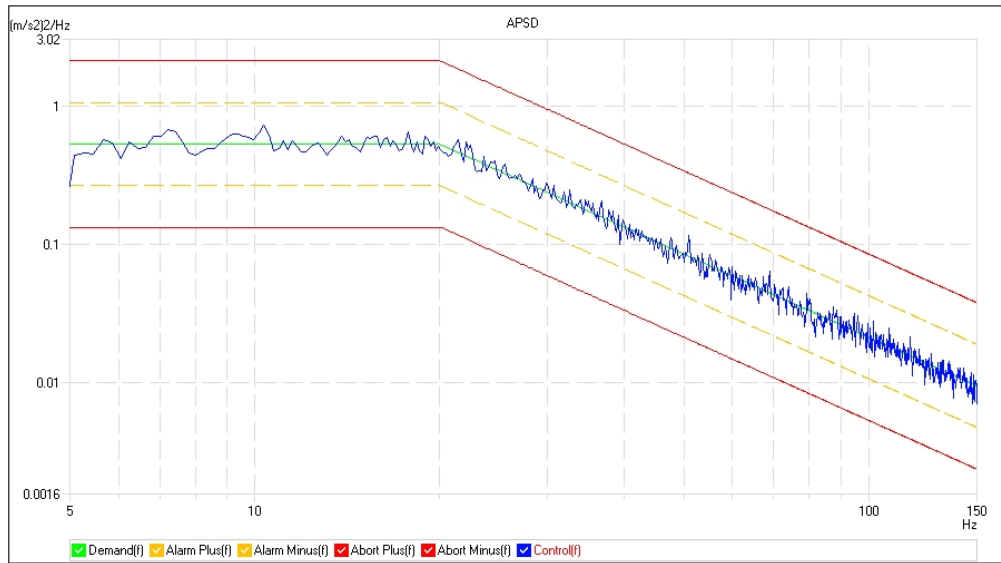
3) Test Method

- Perform a visual inspection and an operational check for the specimen.
- Fix the specimen on the vibration table.
- Operate the vibration tester.
- Repeat from steps Z axis to step Y axis for each required axis.
- Perform a final visual inspection and an operational check for the specimen.

4) Test Result

Check List	Test Result
<Before the test> -Operation check (Video output check) -Visual inspection (crack, deformation, separating, etc)	-No abnormal was found
<After the test> -Operation check (Video output check) -Visual inspection (crack, deformation, separating, etc)	-No abnormal was found

5) Data Sheet



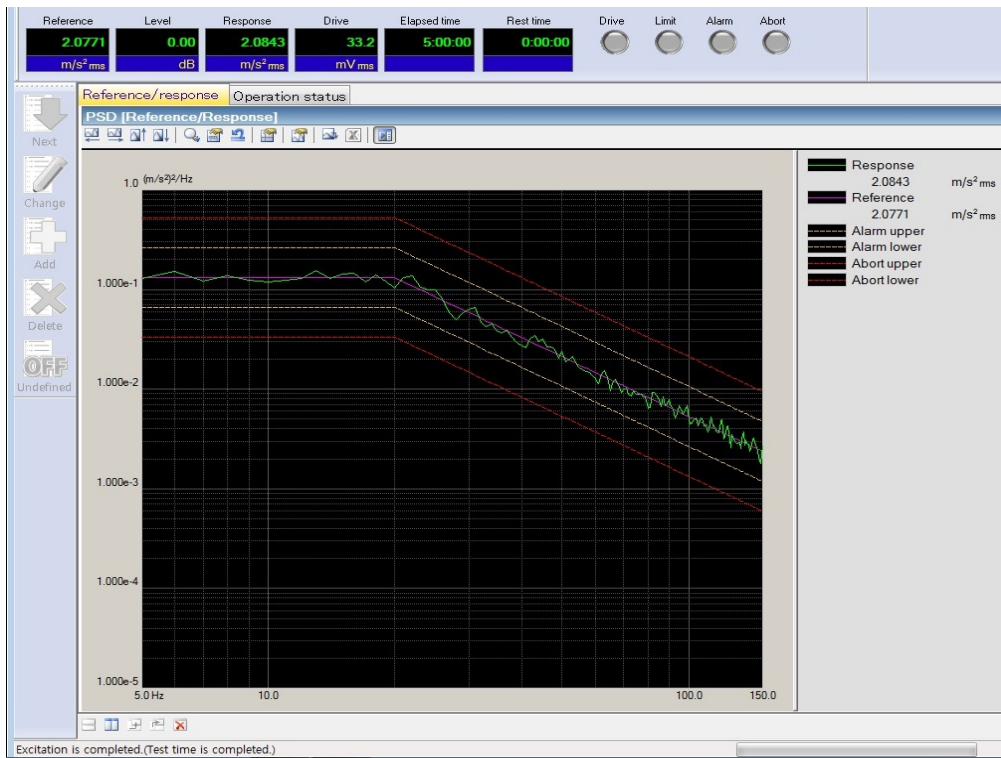
Demand RMS: 4.156 m/s² Control RMS: 4.1592 m/s² Drive RMS: 0.0209 V Level: 100 %

Test Time: 05:00:22

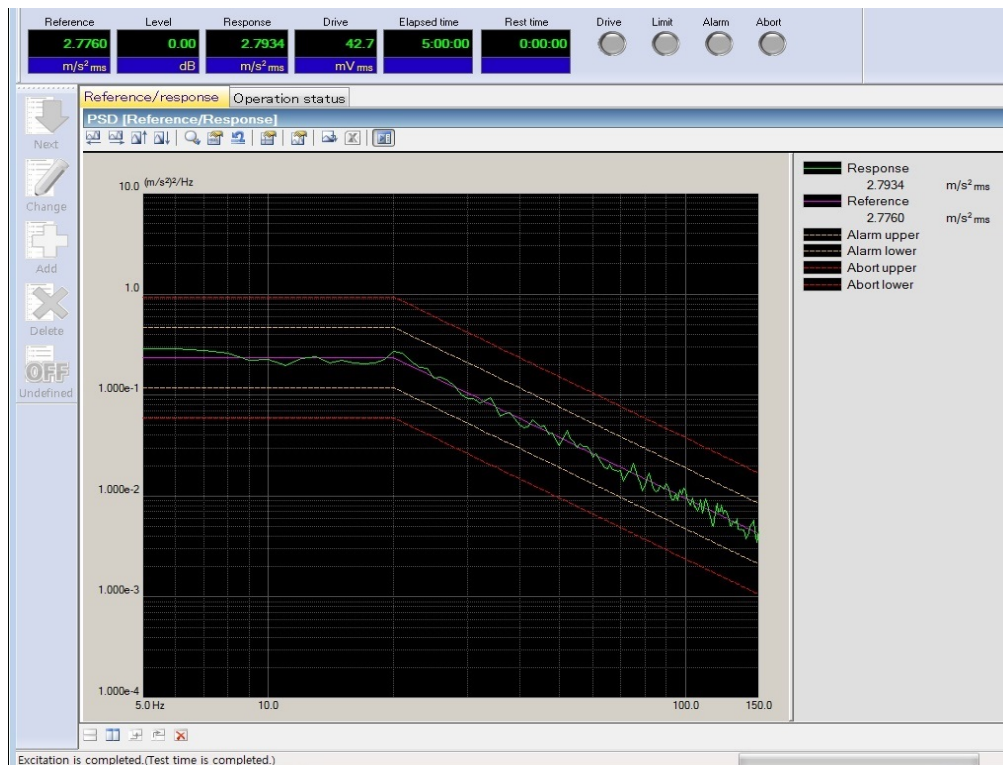
Remaining Time: 00:00:00

Total Time: 05:03:01

< Vertical >



< Transverse >



< Longitudinal >

3.2 Shock test

1) Test Equipment

Number	Instrument description	Model Number	Manufacturer	Due Cal
1	Vibration sensor	VP-32(6369U)	IMV / JAPAN	2017-02-26
2	Vibration sensor	731-B	EMIC / JAPAN	2016-10-14

2) Test Conditions

- Standard : EN 50155: 2007(Section 12.2.11) / EN 61373: 2010(Category 1 Class A)
- Test type : Half sine
- Acceleration : Z - 30 m/s², X - 30 m/s², Y - 50 m/s²
- Duration : 30 ms
- Test time : 18 times in total
(6 times in each axis : positive 3 times / negative 3 times)
- Test axis : Vertical (Z), Transverse (X), Longitudinal (Y)
- Check time : Before the test, After the test
- Sample condition : Unpackaged product / Non-operation
- Sample quantity : 1 EA

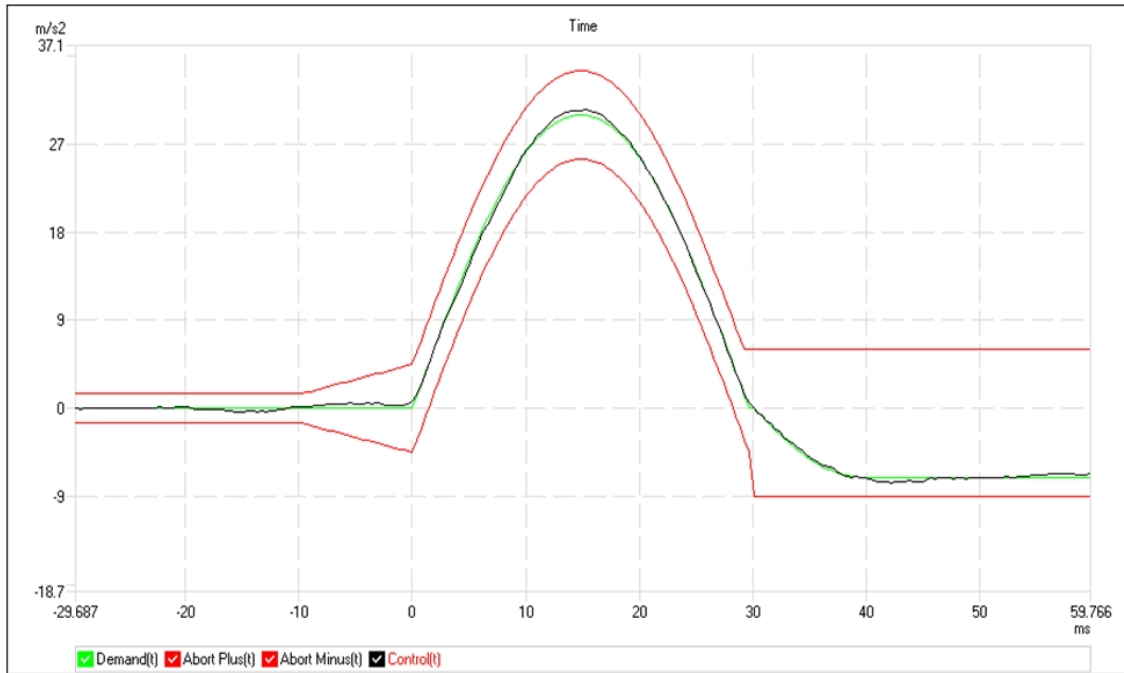
3) Test Method

- Perform a visual inspection and an operational check for the specimen.
- Fix the specimen on the vibration table.
- Operate the vibration tester.
- Repeat from steps Z axis to step Y axis for each required axis.
- Perform a final visual inspection and an operational check for the specimen.

4) Test Result

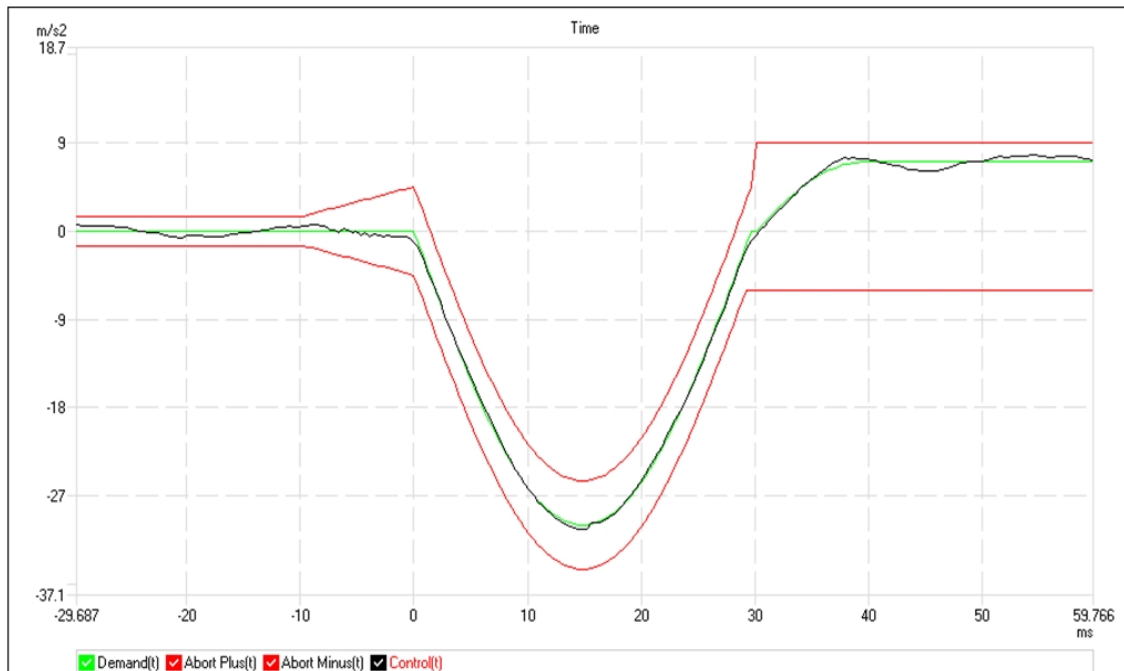
Check List	Test Result
<Before the test> -Operation check (Video output check) -Visual inspection (crack, deformation, separating, etc)	-No abnormal was found
<After the test> -Operation check (Video output check) -Visual inspection (crack, deformation, separating, etc)	-No abnormal was found

5) Data Sheet



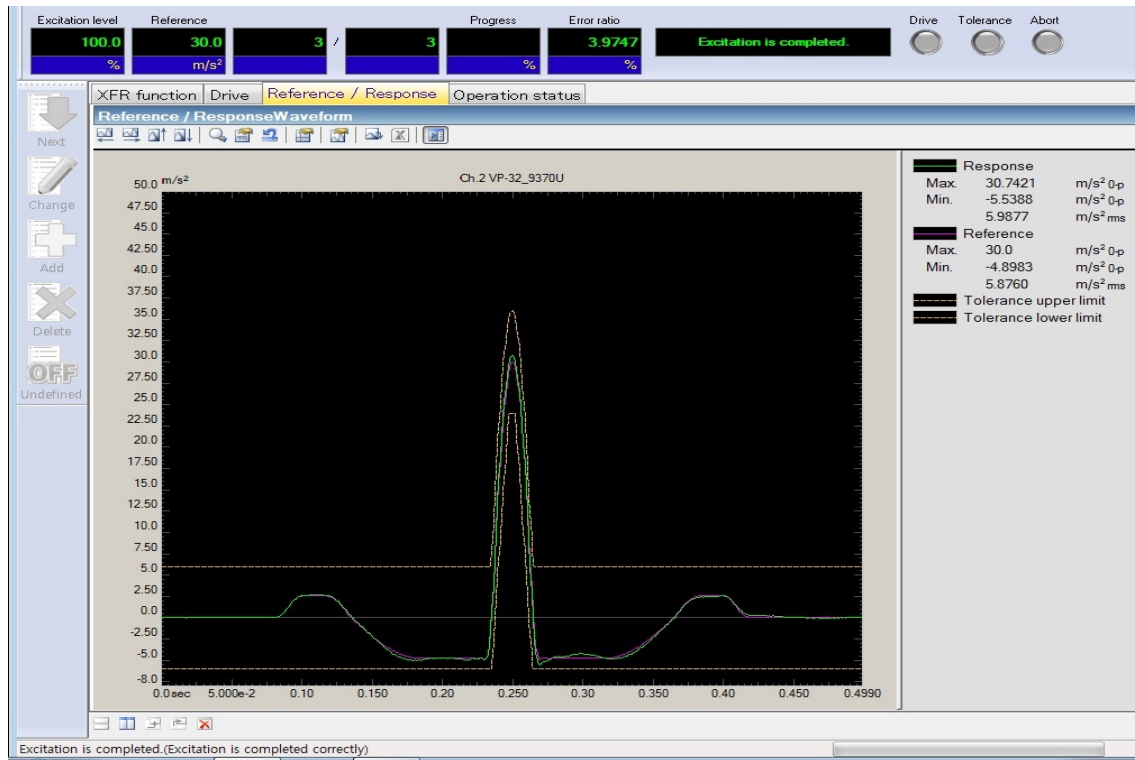
Demand Peak: 30 m/s² Control Peak: 30.493 m/s² Drive Peak: 0.1428 V Level: 100 %

Test Pulses: 13 Remain Pulses: 0 Pulse Wave Type: Half Sine Amplitude: 30 m/s² Pulse Duration: 30 ms
< Vertical (+) >

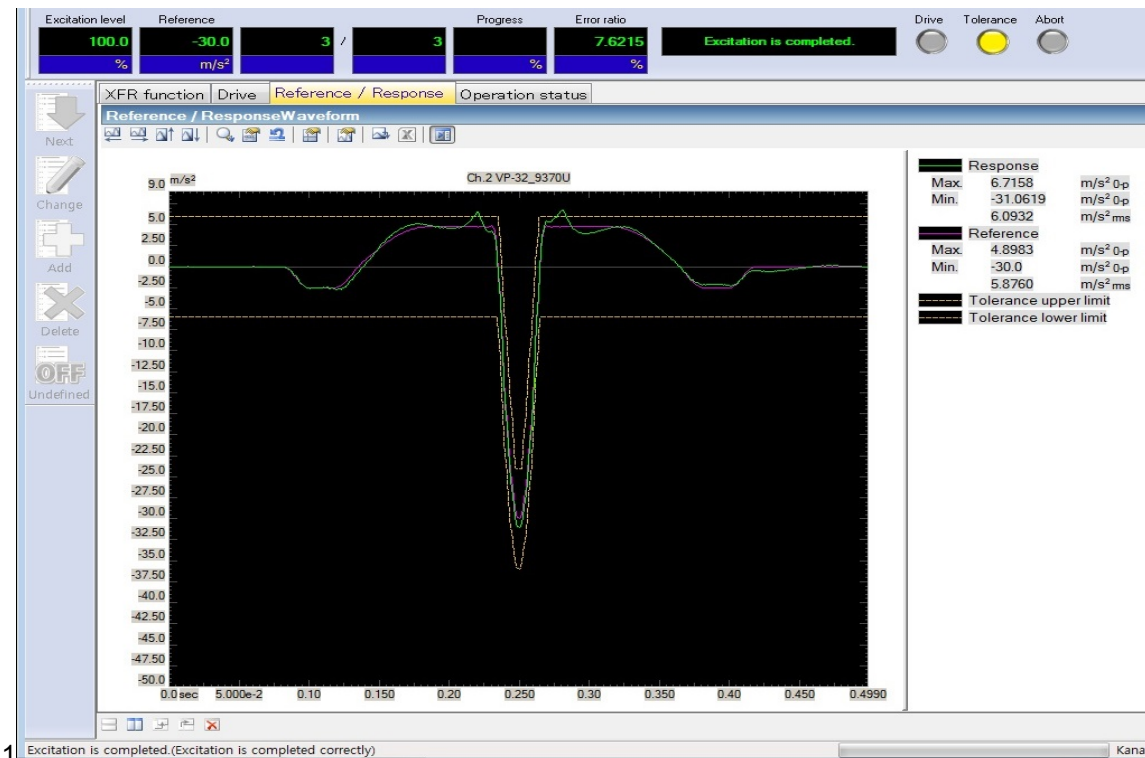


Demand Peak: 30 m/s² Control Peak: 30.45 m/s² Drive Peak: 0.1434 V Level: 100 %

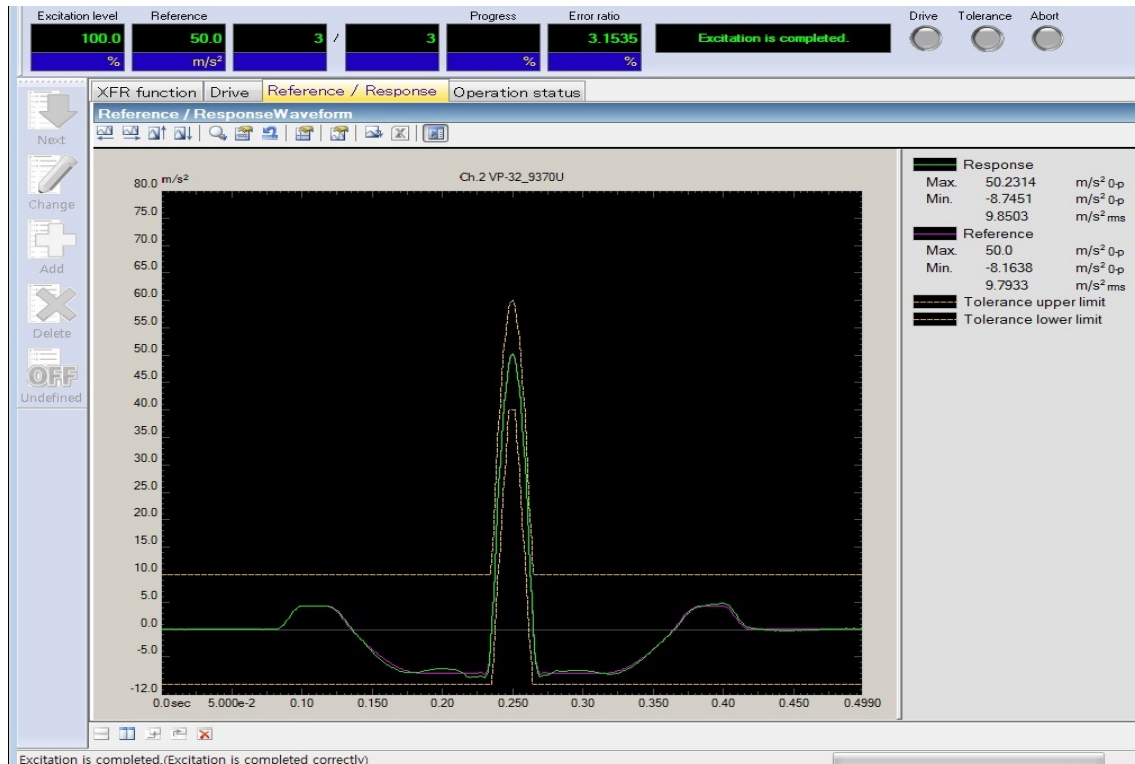
Test Pulses: 13 Remain Pulses: 0 Pulse Wave Type: Half Sine Amplitude: 30 m/s² Pulse Duration: 30 ms
< Vertical (-) >



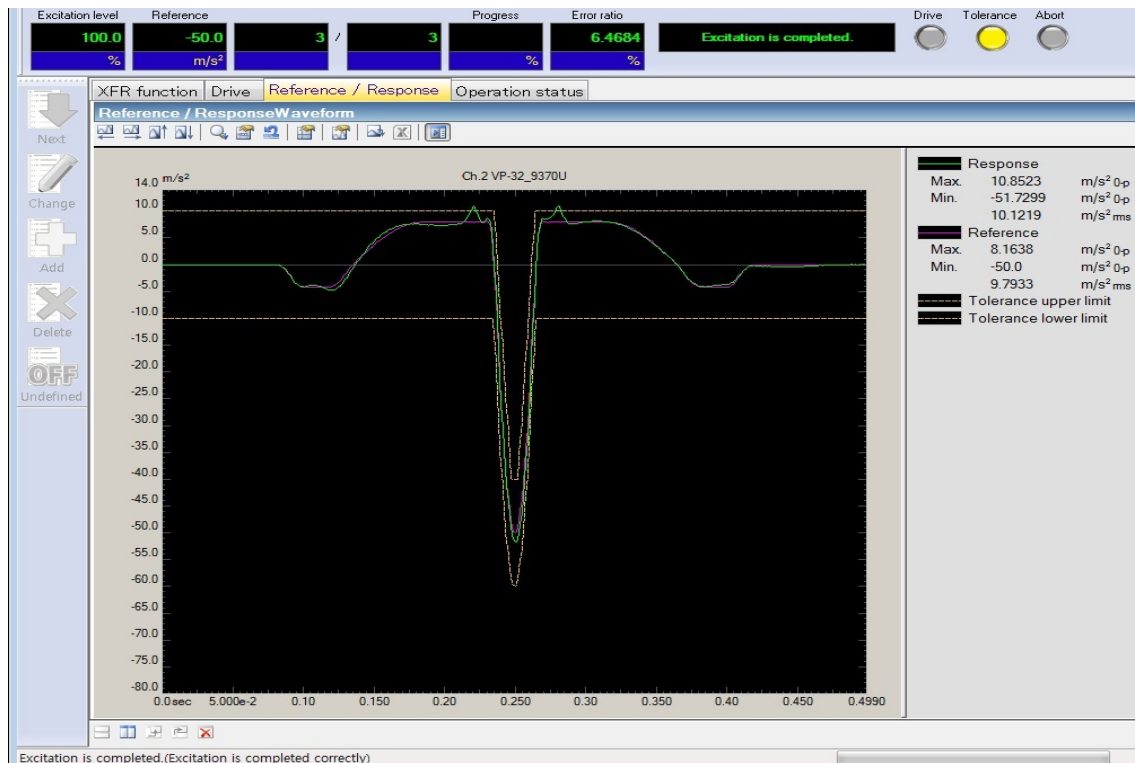
< Transverse (+) >



< Transverse (-) >



< Longitudinal (+) >



< Longitudinal (-) >

3.3 Functional random test

1) Test Equipment

Number	Instrument description	Model Number	Manufacturer	Due Cal
1	Vibration sensor	VP-32(6369U)	IMV / JAPAN	2017-02-26
2	Vibration sensor	731-B	EMIC / JAPAN	2016-10-14

2) Test Conditions

- Standard : EN 50155: 2007(Section 12.2.11) / EN 61373: 2010(Category 1 Class A)
- Test type : Random
- Frequency : (5 ~ 150) Hz
- Acceleration : Z - 0.75 m/s² r.m.s.
X - 0.37 m/s² r.m.s.
Y - 0.50 m/s² r.m.s.
- Test time : Total 30 min (10 min in each axis)
- Test axis : Vertical (Z), Transverse (X), Longitudinal (Y)
- Check time : Before the test, During the test, After the test During the test
- Sample condition : Unpackaged product / Operation
- Sample quantity : 1 EA
- Input voltage : PoE Adapter use (DC 48-56 V)

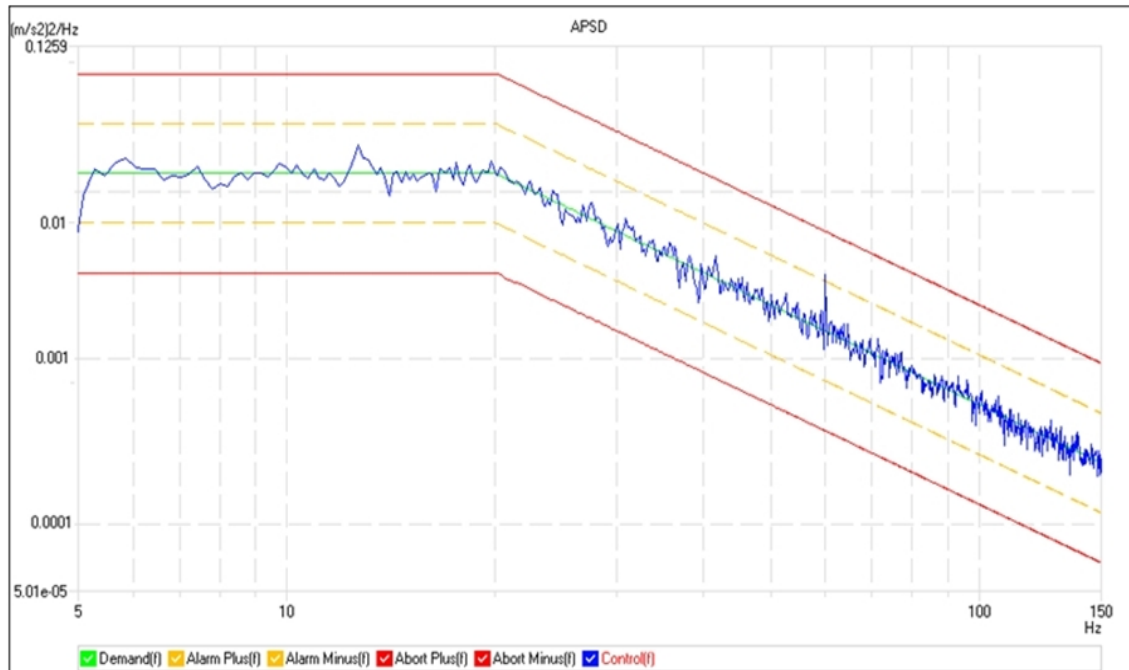
3) Test Method

- Perform a visual inspection and an operational check for the specimen.
- Fix the specimen on the vibration table.
- Operate the vibration tester.
- Repeat from steps Z axis to step Y axis for each required axis.
- Perform a final visual inspection and an operational check for the specimen.

4) Test Result

Check List	Test Result
<Before the test> -Operation check (Video output check) -Visual inspection (crack, deformation, separating, etc)	-No abnormal was found
<During the test> -Operation check (Video output check)	-No abnormal was found
<After the test> -Operation check (Video output check) -Visual inspection (crack, deformation, separating, etc)	-No abnormal was found

5) Data Sheet



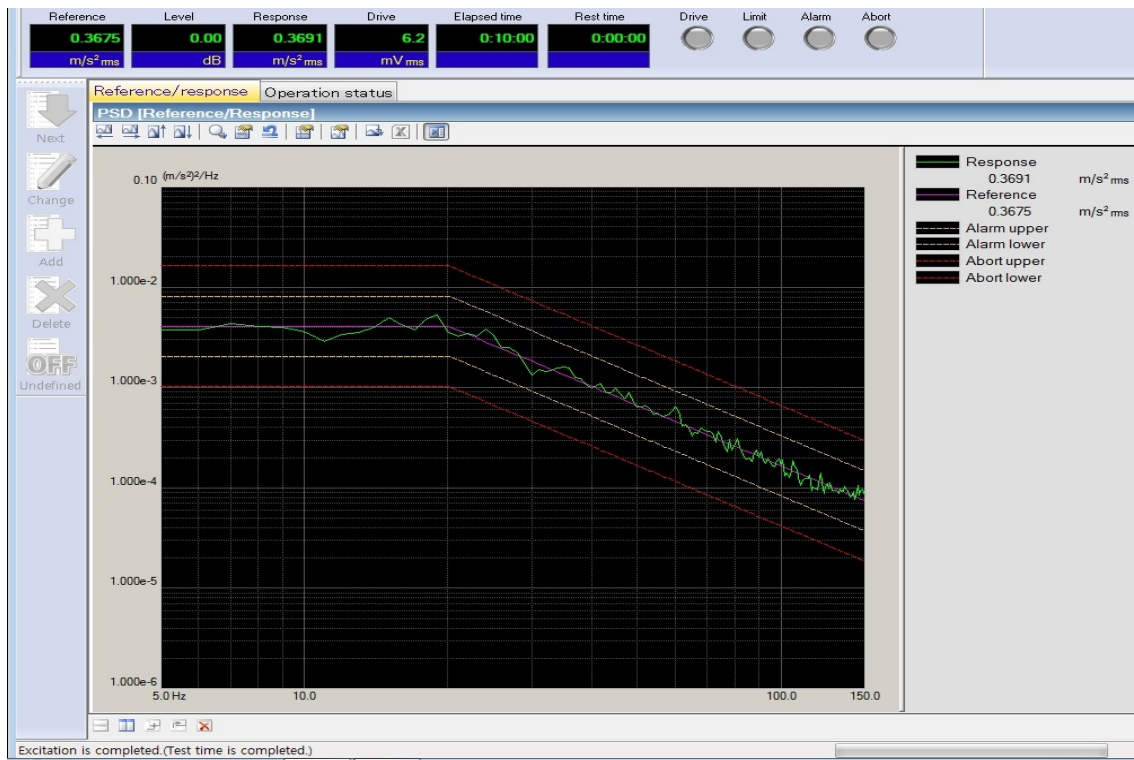
Demand RMS: 0.7341 m/s² Control RMS: 0.7394 m/s² Drive RMS: 0.0037 V Level: 100 %

Test Time: 00:10:20

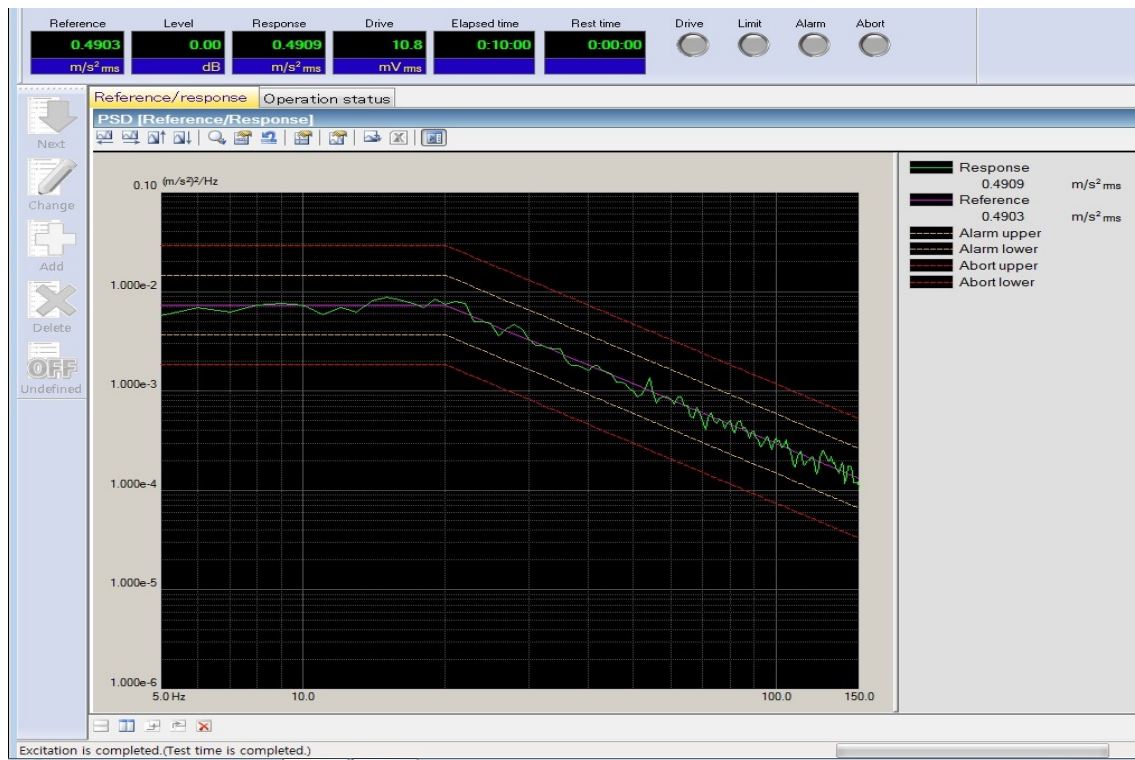
Remaining Time: 00:00:00

Total Time: 00:12:58

< Vertical >



< Transverse >



< Longitudinal >

3.4 Cooling test

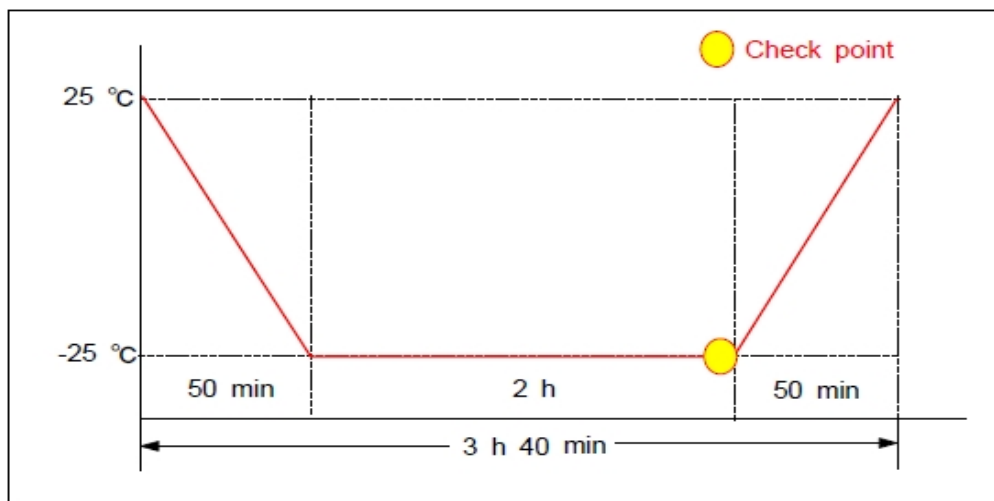
1) Test Equipment

Number	Instrument description	Model Number	Manufacturer	Due Cal
1	TEMP. & HUMI. CHAMBER	THC 1000	DAEJIN ENGINEERING	2017-02-25

2) Test Conditions

- Standard : EN 50155: 2007 (Section 12.2.3 Class T3 # Column 1)
- Test temperature : -25 °C
- Test time : 3 h 40 min
- Check point : Before the test, During the test, After the test
- Status of product : ① Unpacked product ② Non-operation(Check point power on)
- Input voltage : PoE Adapter use (DC 48-56 V)
- Sample quantity : 1 EA

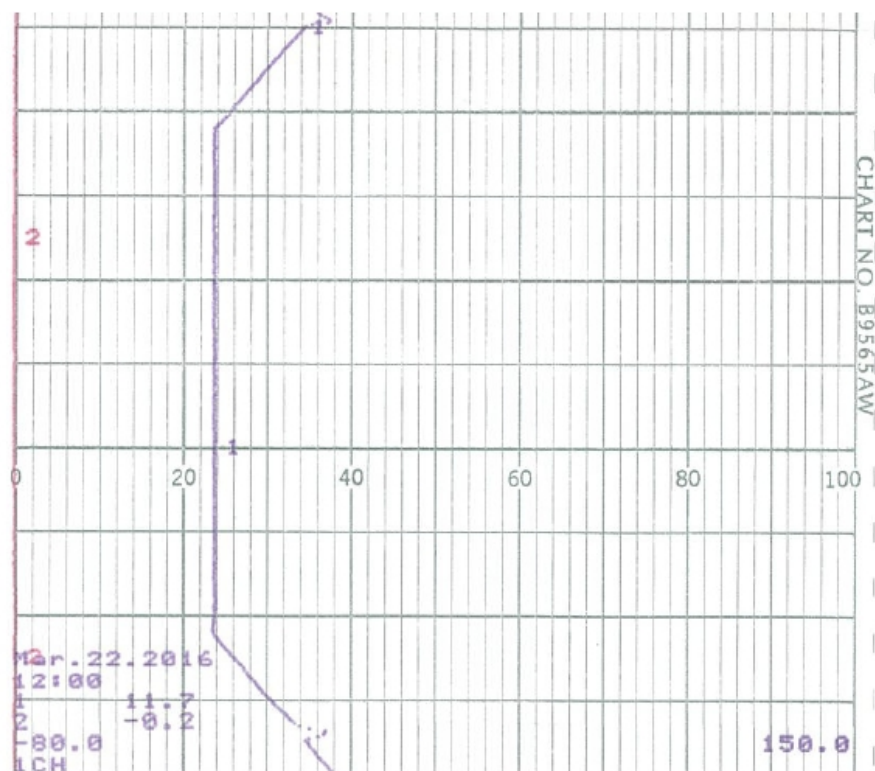
3) Test profile



4) Test Result

Check List	Test Result
<Before the test> -Operation check (Video output check) -Visual inspection	-No abnormal was found
<During the test> -Operation check (Video output check)	-No abnormal was found
<After the test> -Operation check (Video output check) -Visual inspection	-No abnormal was found

5) Data Sheet



3.5 Dry heat test (T2)

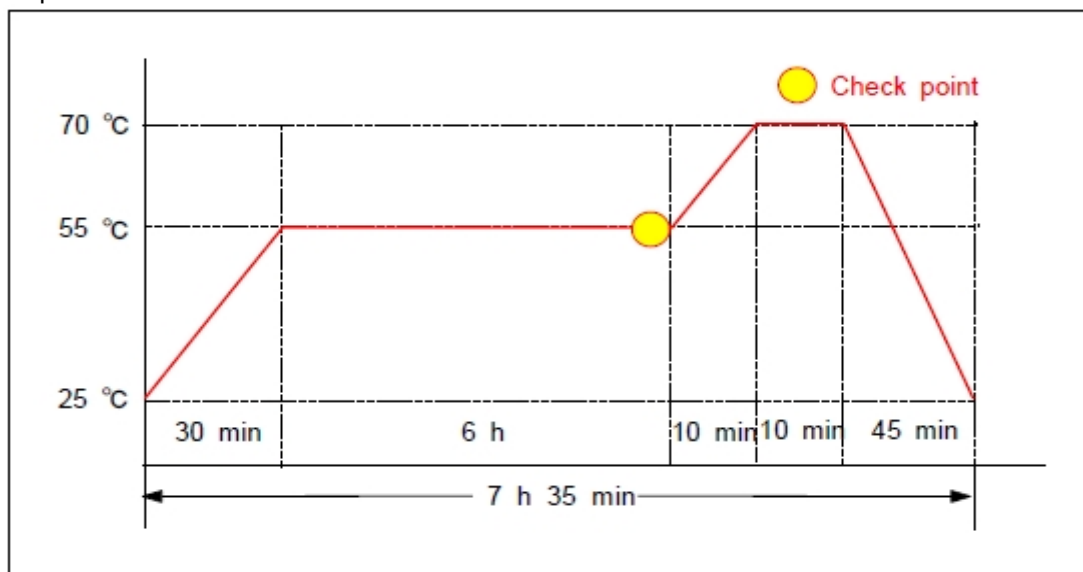
1) Test Equipment

Number	Instrument description	Model Number	Manufacturer	Due Cal
1	TEMP. & HUMI. CHAMBER	THC 1000	DAEJIN ENGINEERING	2017-02-25

2) Test Conditions

- Standard : EN 50155: 2007 (Section 12.2.4 Class T2 # Column 2)
- Test temperature : (25 ~ 70) °C
- Test time : 7 h 35 min
- Check point : Before the test, During the test, After the test
- Status of product : ① Unpacked product ② Non-operation(Check point power on)
- Input voltage : PoE Adapter use (DC 48-56 V)
- Sample quantity : 1 EA

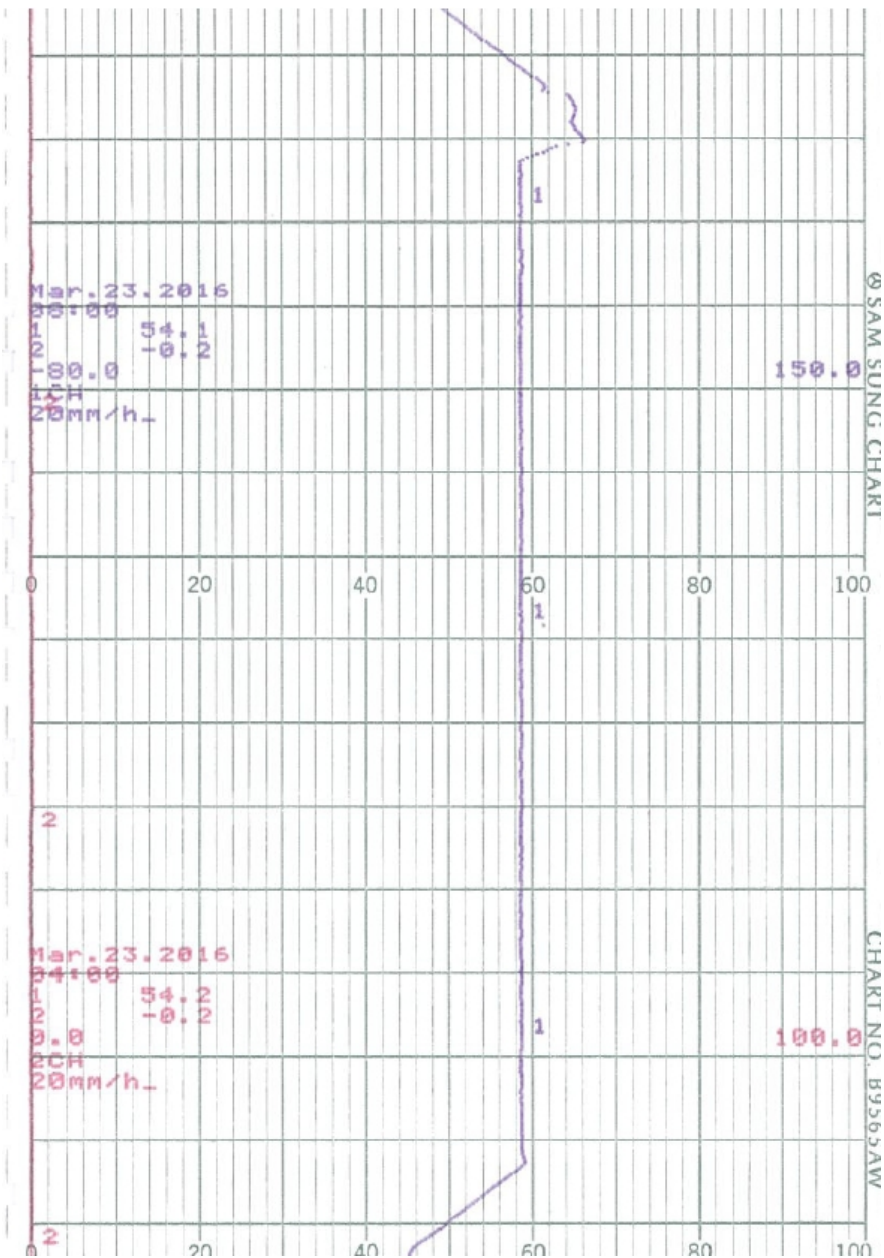
3) Test profile



4) Test Result

Check List	Test Result
<Before the test> -Operation check (Video output check) -Visual inspection	-No abnormal was found
<During the test> -Operation check (Video output check)	-No abnormal was found
<After the test> -Operation check (Video output check) -Visual inspection	-No abnormal was found

5) Data Sheet



3.6 Dry heat test (TX)

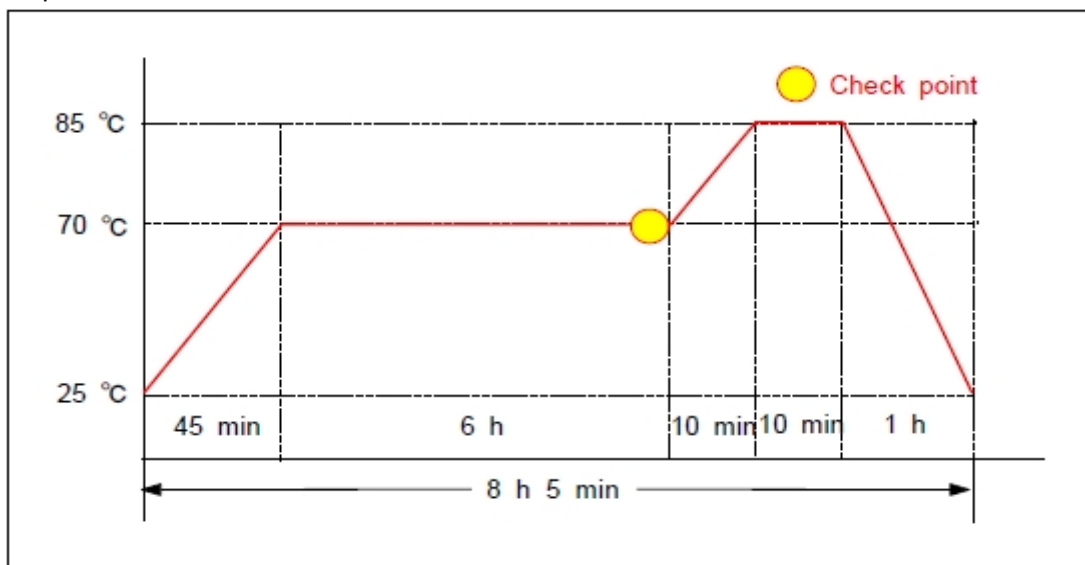
1) Test Equipment

Number	Instrument description	Model Number	Manufacturer	Due Cal
1	TEMP. & HUMI. CHAMBER	THC 1000	DAEJIN ENGINEERING	2017-02-25

2) Test Conditions

- Standard : EN 50155: 2007 (Section 12.2.4 Class TX # Column 2)
- Test temperature : (25 ~ 85) °C
- Test time : 8 h 5 min
- Check point : Before the test, During the test, After the test
- Status of product : ① Unpacked product ② Non-operation(Check point power on)
- Input voltage : PoE Adapter use (DC 48-56 V)
- Sample quantity : 1 EA

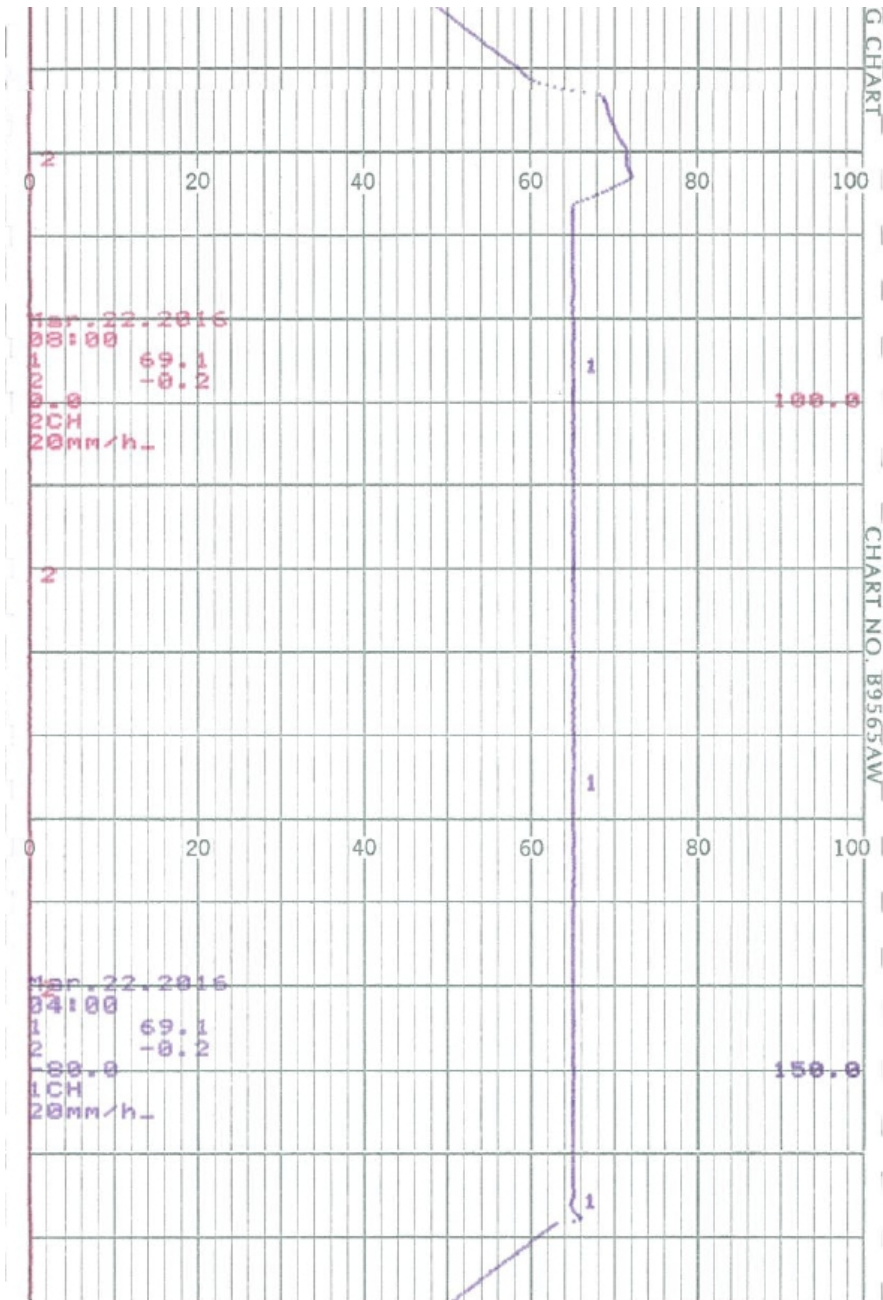
3) Test profile



4) Test Result

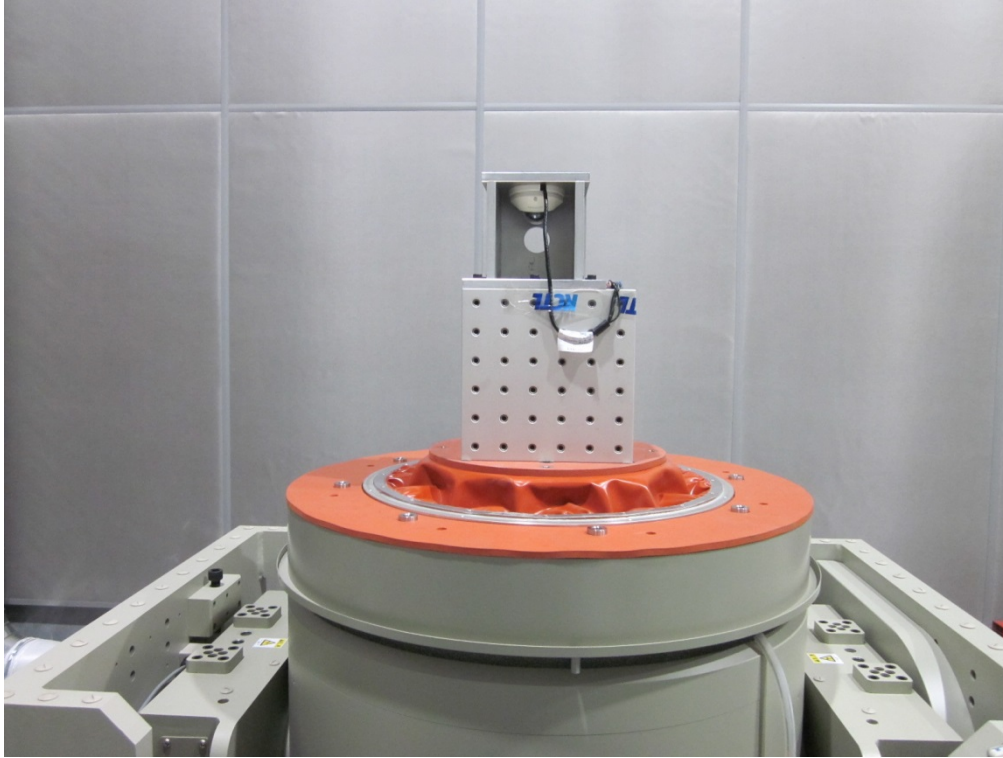
Check List	Test Result
<Before the test> -Operation check (Video output check) -Visual inspection	-No abnormal was found
<During the test> -Operation check (Video output check)	-No abnormal was found
<After the test> -Operation check (Video output check) -Visual inspection	-No abnormal was found

5) Data Sheet

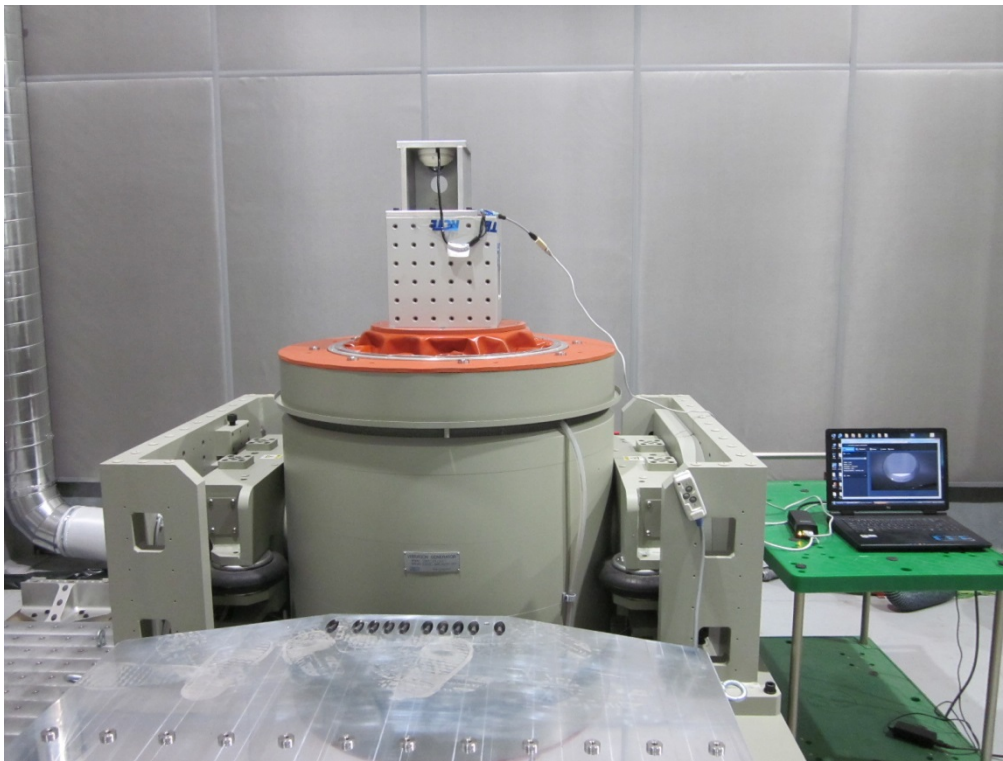


4. TEST Photograph

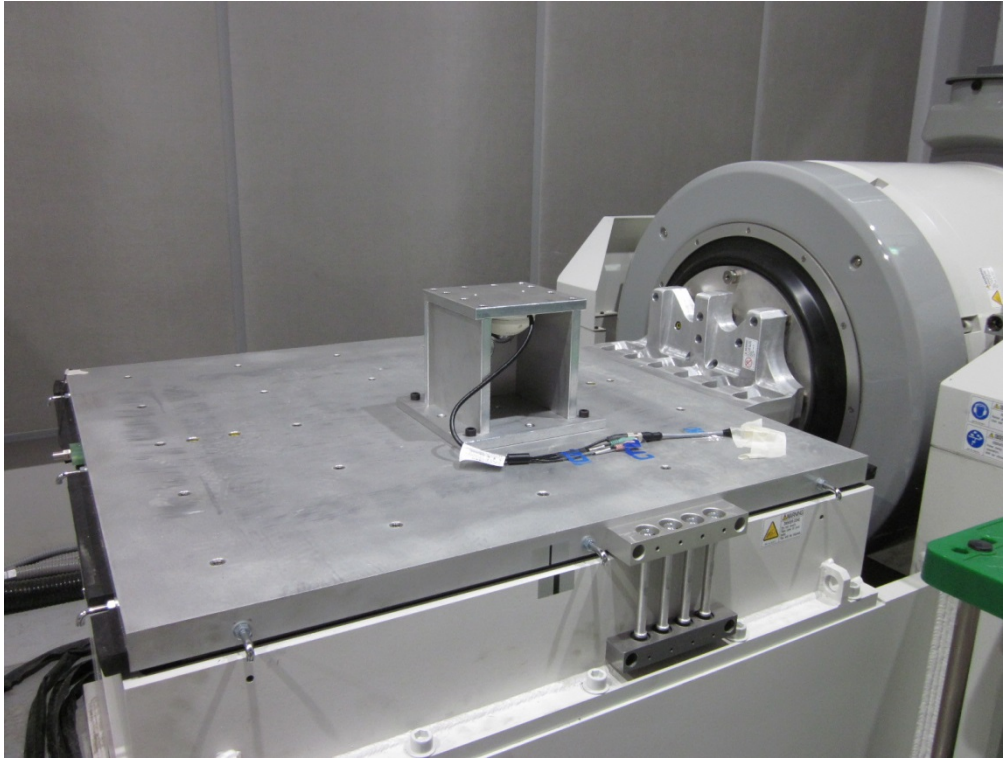
4.1 Simulated long life test



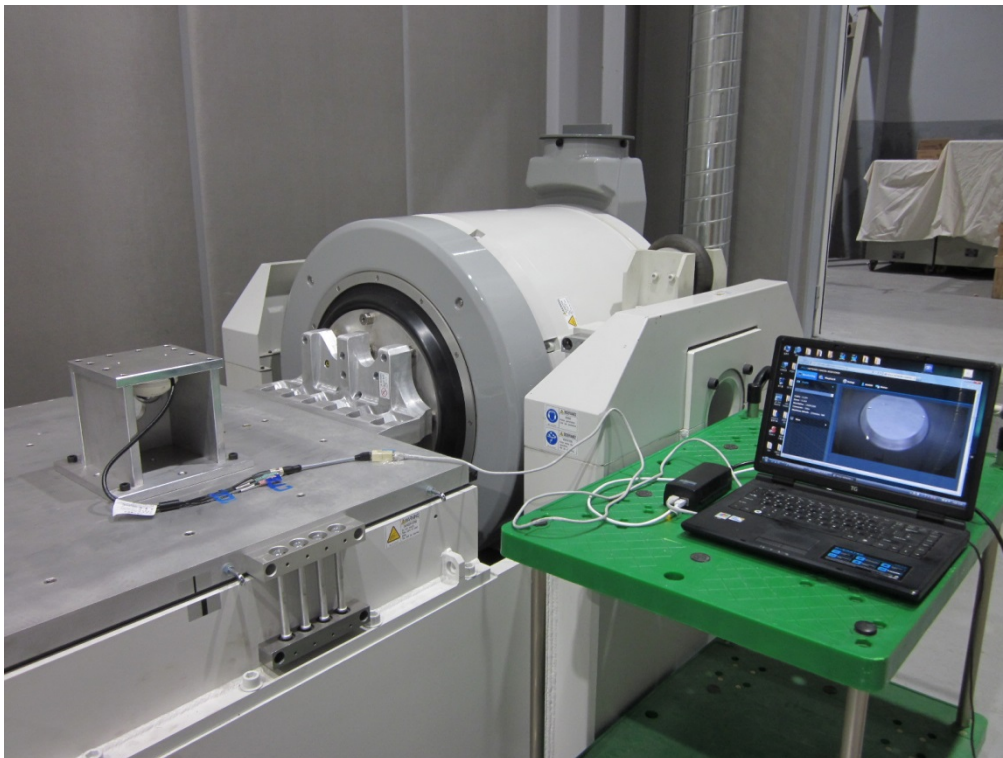
[Simulated long life test_Vertical]



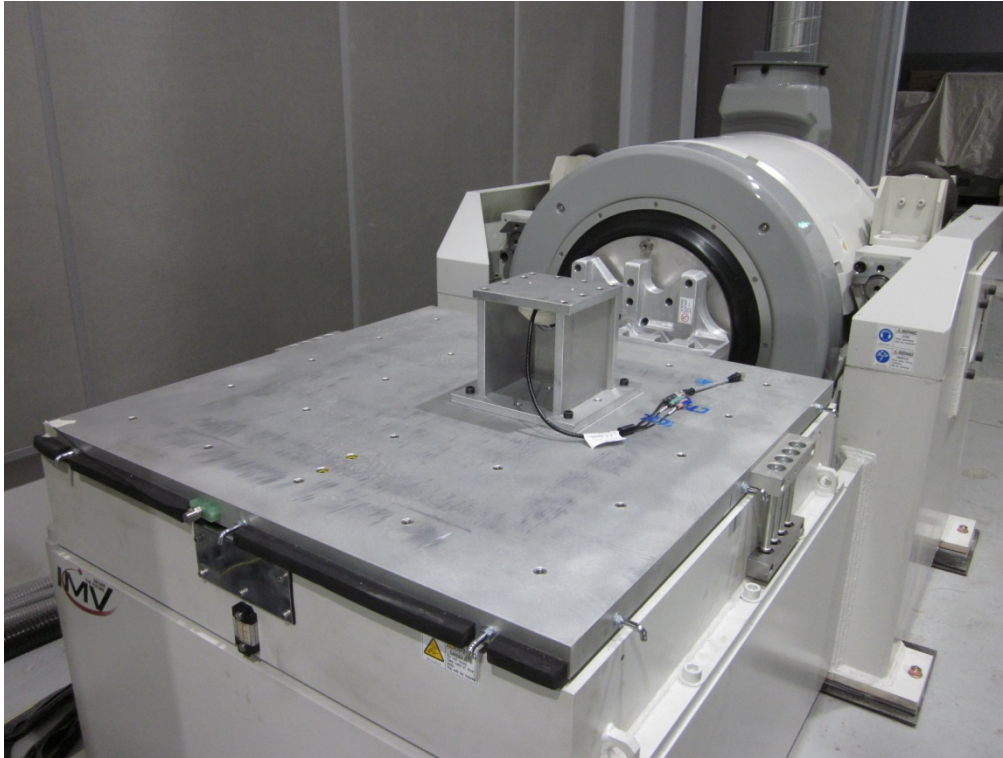
[Vertical_Check operation]



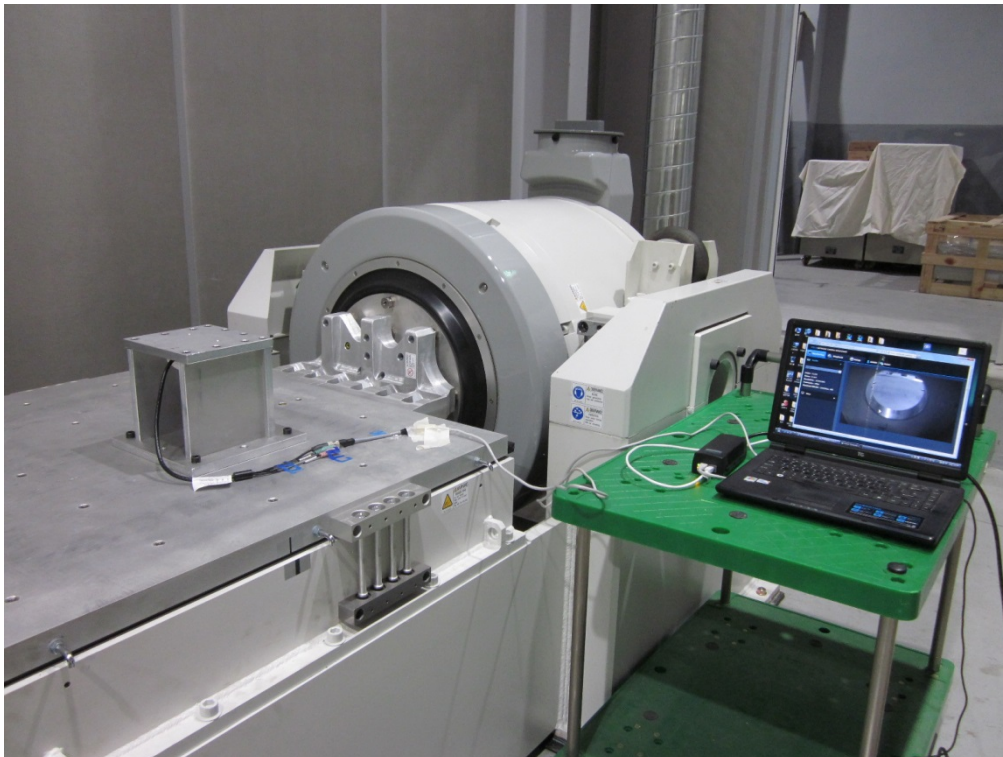
[Simulated long life test_Transverse]



[Transverse_Check operation]



[Simulated long life test_Longitudinal]

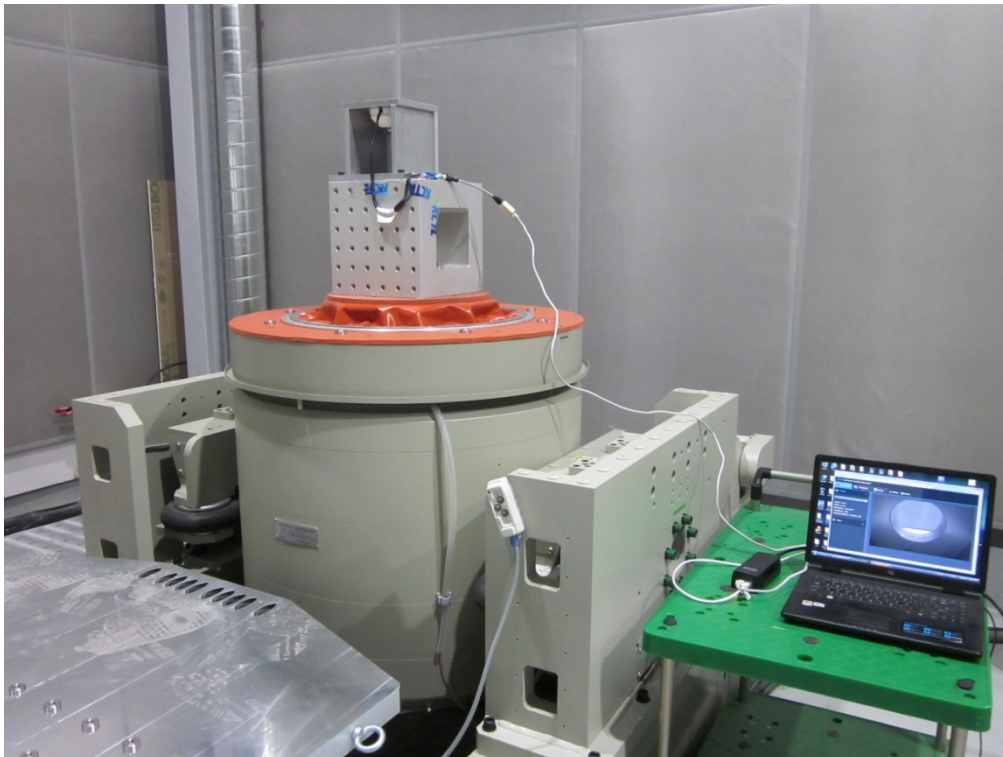


[Longitudinal_Check operation]

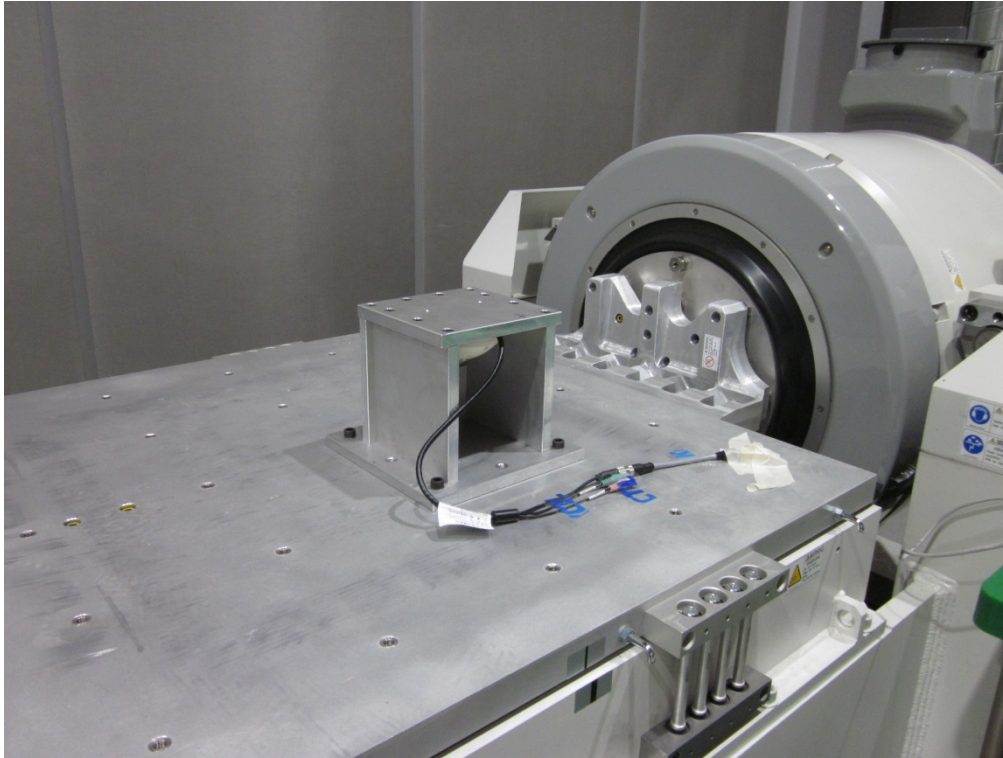
4.2 Shock test



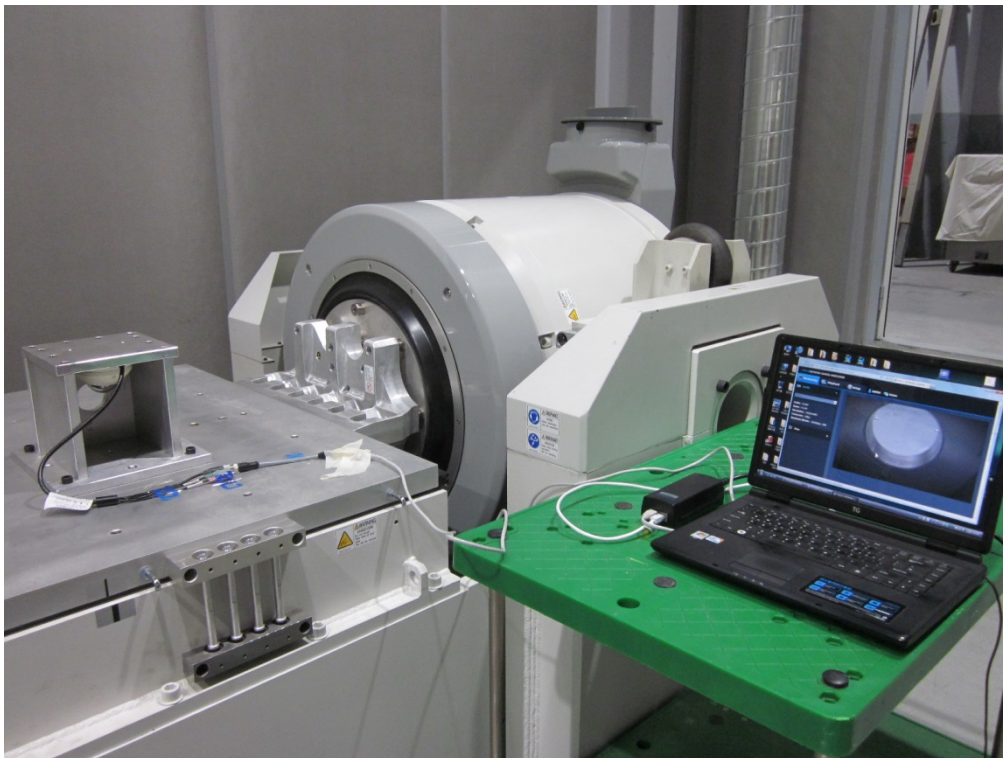
[Shock test_Vertical]



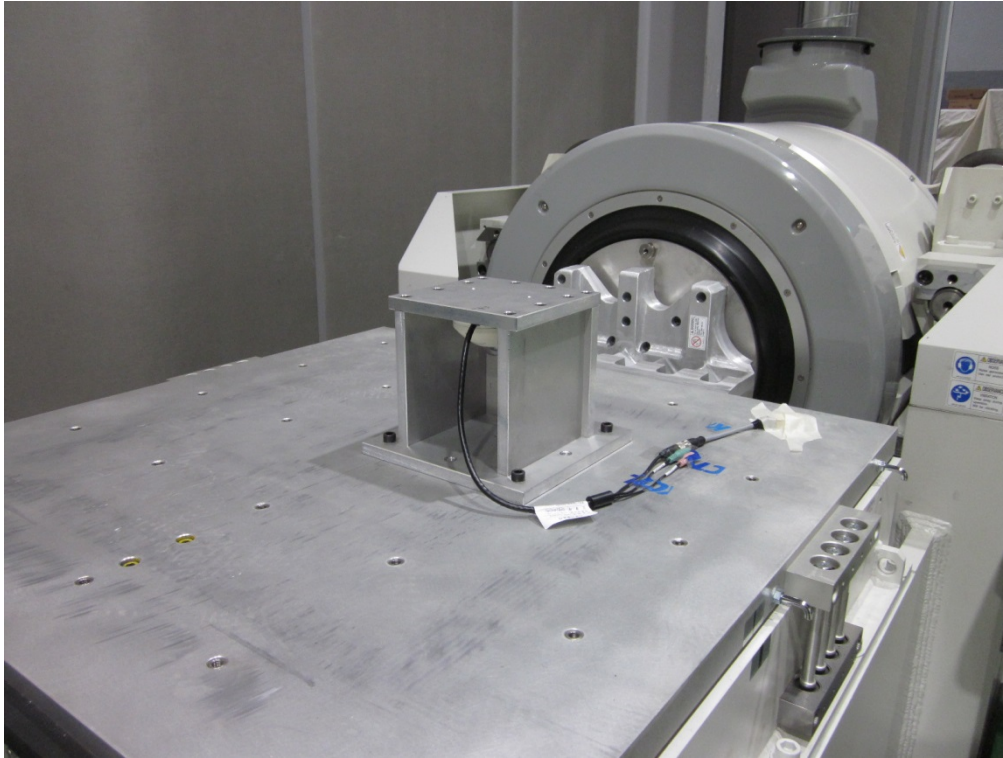
[Vertical_Check operation]



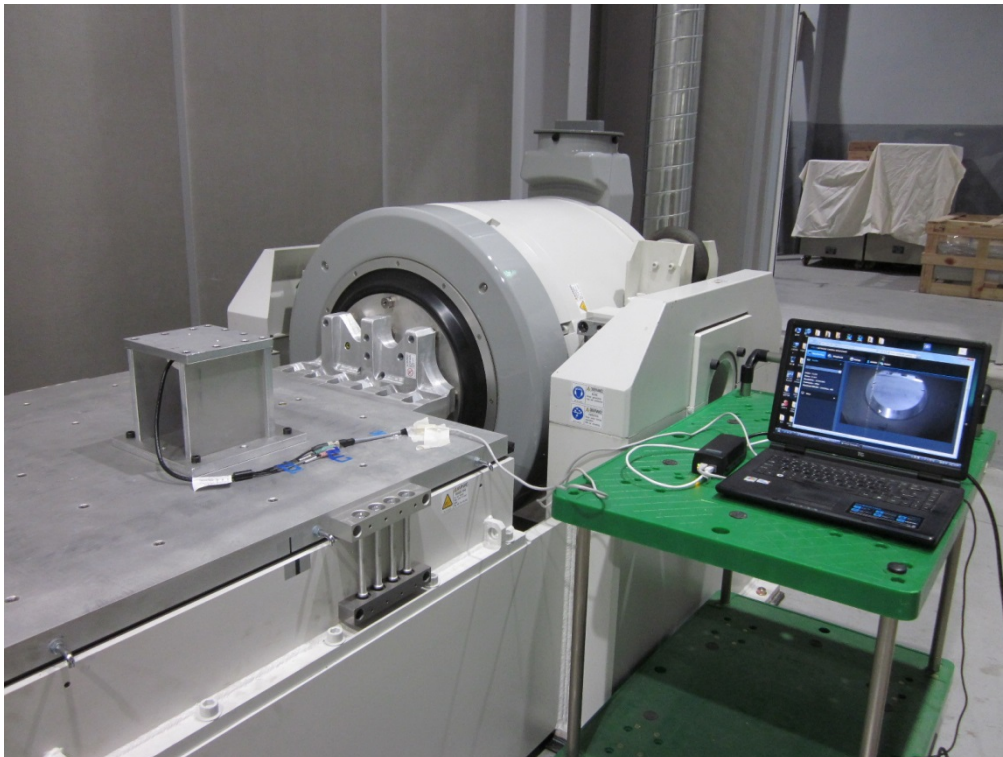
[Shock test_Transverse]



[Transverse_Check operation]

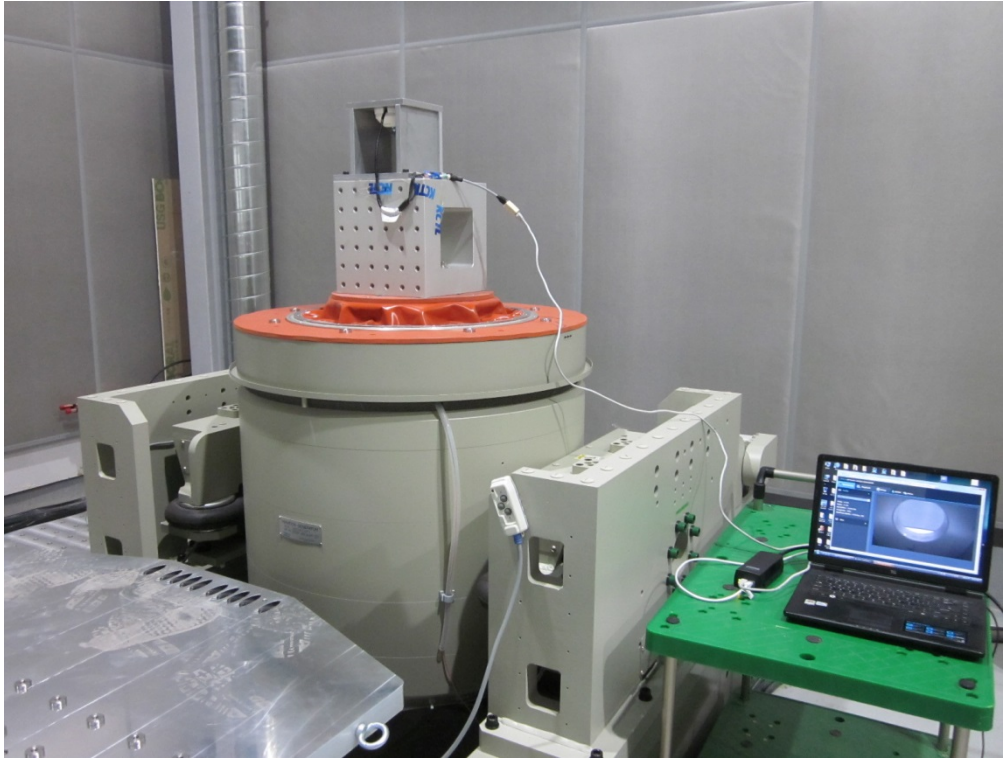


[Shock test_Longitudinal]

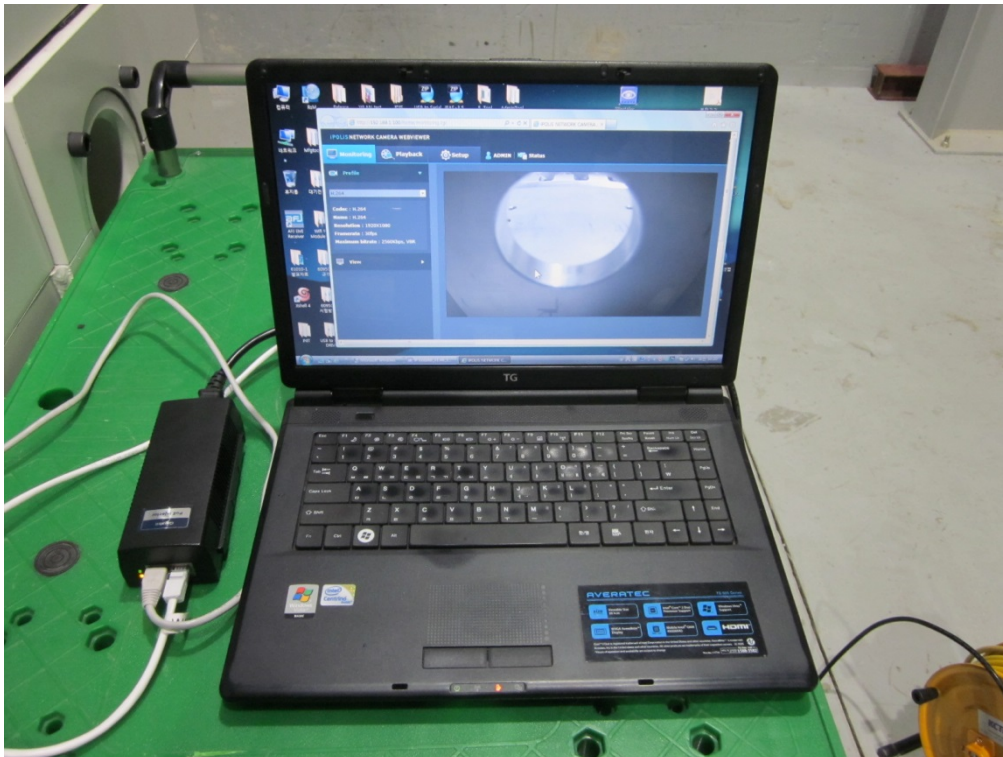


[Longitudinal_Check operation]

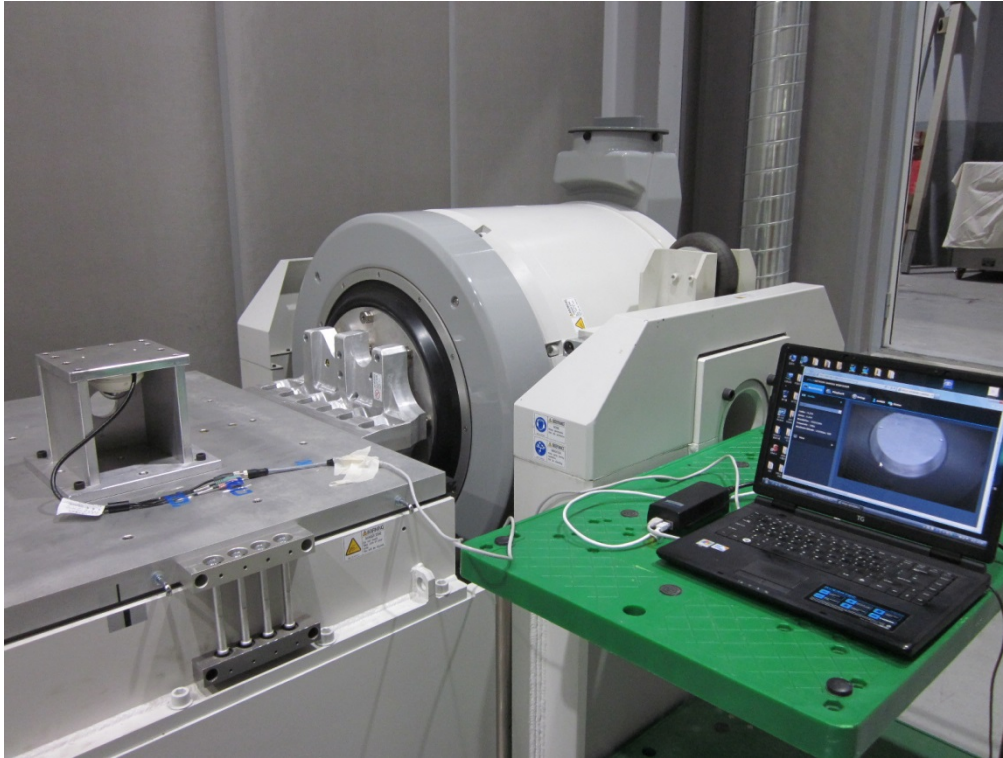
4.3 Functional random test



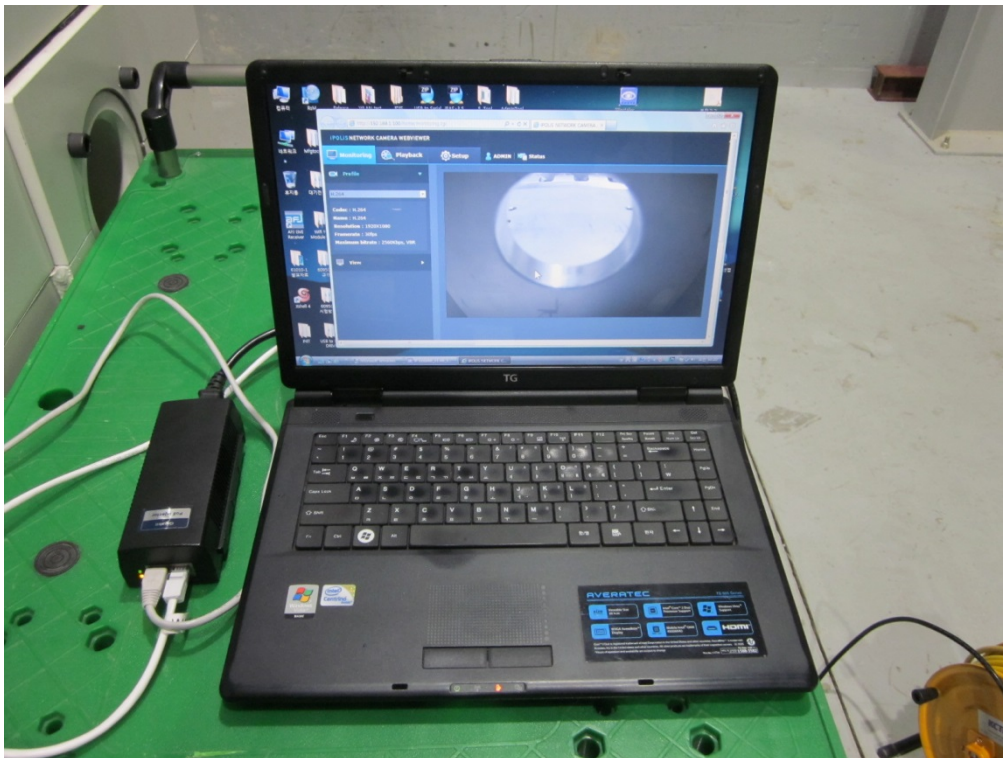
[Functional random test_Vertical]



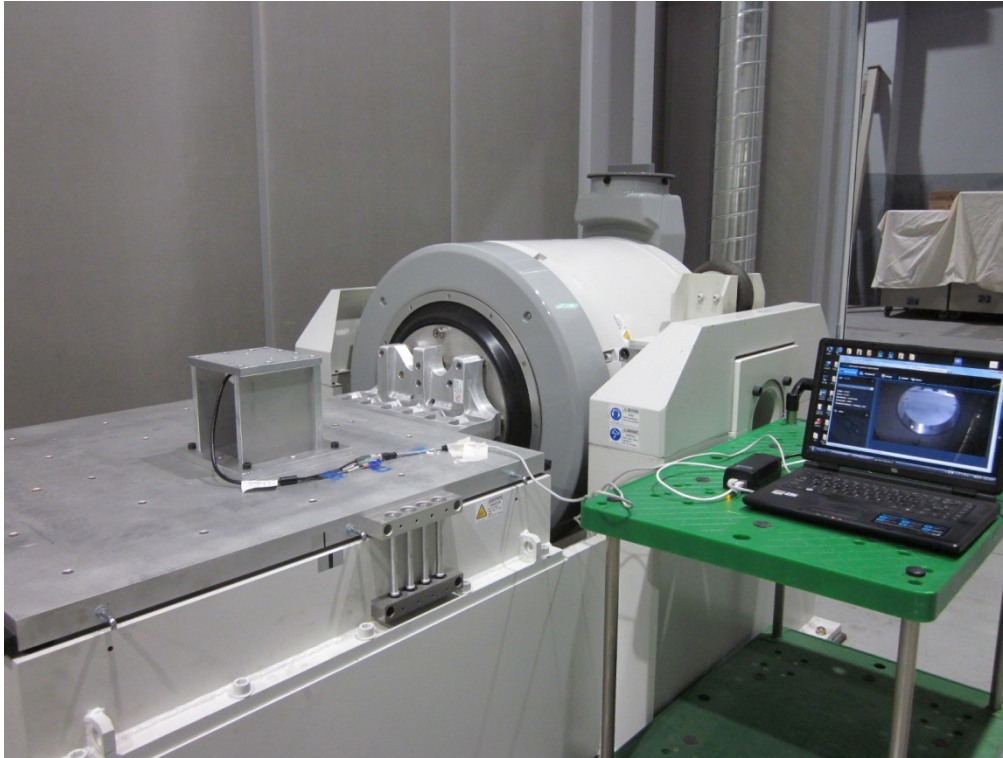
[Vertical_Check operation]



[Functional random test_Transverse]



[Transverse_Check operation]



[Functional random test_Longitudinal]



[Longitudinal_Check operation]

4.4 Cooling test



[Cooling test]



[Check operation]

4.5 Dry heat test(T2)



[Dry heat test(T2)]



[Check operation]

4.6 Dry heat test(TX)



[Dry heat test(TX)]



[Check operation]

5. Product Photograph

[Front]



[Rear]



-End-