

TEST REPORT

NCT CO., LTD.

211-71, Geumgok-ro, Dongtan-myeon,
Hwaseong-si, Gyeonggi-do, 18511, Republic of
Korea
(Tel: +82 31 323 6070 / Fax: +82 31 323 6071)

Report No.:
NR1804-R008

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**1. Client**

- o Name : ENTEC ELECTRIC & ELECTRONIC CO., LTD.
- o Address : 225-38 Choerubaek-ro, Bongdam-eup, Hwaseong-si, Gyeonggi-do, Rep. of Korea

2. Sample Description

- o Product Name : Recloser Controller
- o Model Name : EVRC2A-NT
- o Manufacturer : ENTEC ELECTRIC & ELECTRONIC CO., LTD.

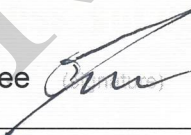
3. Date of Test : 2018. 04. 13 to 2018. 04. 16

4. Test method used: IEC60255-21-1: 1988 (Class 1)

5. Test Results: Refer to the Test results

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

This laboratory is not accredited for the test results marked *.

Affirmation	Tested by Name : Dae-Jun Lee 	Technical Manager Name : Kyung-Hyun Cha 
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The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

2018. 04. 19

NCT CO., LTD

President

(signature)

Accredited by KOLAS, Republic of Korea





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1. Laboratory details

1.1 General information

division	Criteria	Remarks
Name	NCT CO., LTD.	
Address	211-71, Geumgok-ro, Dongtan-myeon, Hwaseong-si, Gyeonggi-do, 18511, Republic of Korea	
Telephone	+82-31-323-6070	
Facsimile	+82-31-323-6071	

2. Product

2.1 Product information

Product Name: Recloser Controller

Model Name: EVRC2A-NT

Rating: 220 V.a.c

Quantity: 1 EA

Serial No.: #1



3. Test results

3.1 Vibration response

1) List of used equipment

No.	Description	Model	Manufacture	Calibration laboratory
1	Vibration test set	EDS10000LS3-550	FAMTECH	2017-05-26
2	Acceleration sensor	8703A250M5	Kistler	2017-11-16
3	Humi./Baro/Temp. data recorder	MHB-382SD	Lutron	2018-03-14

2) Test Date

- 2018. 04. 13 ~ 2018. 04. 16

3) Test Sample No.

- #1

4) Test Condition

- A. Test type : Sweep sine
- B. Frequency : (10 ~ 150) Hz
- C. Test time : 1 oct / min, 1 Sweep Cycle
- D. Test direction : x axis, y axis, z axis
- E. Inspection time : Before test, During test, After test
- F. Sample condition : Single / Operation

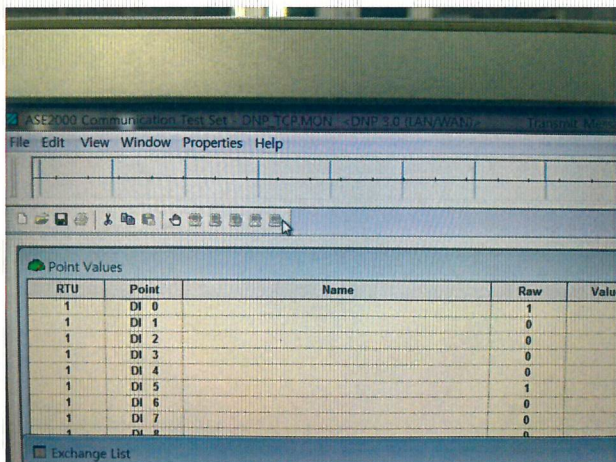
Frequency (Hz)	Displacement (mm)	Acceleration (g)
10 ~ 60	0.035 (Amplitude)	-
60 ~ 150	-	0.5

5) Test results

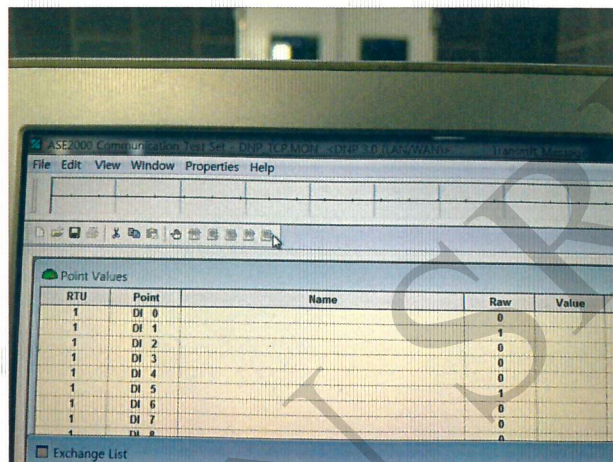
Report No : NR1804-R008

211-71, Geumgok-ro, Dongtan-myeon, Hwaseong-si, Gyeonggi-do, 18511, Republic Korea

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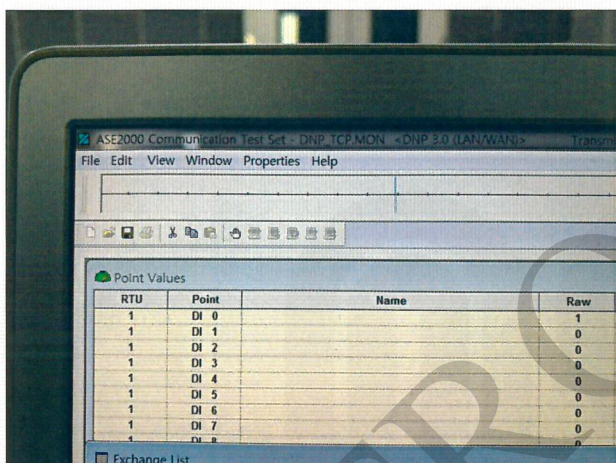


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

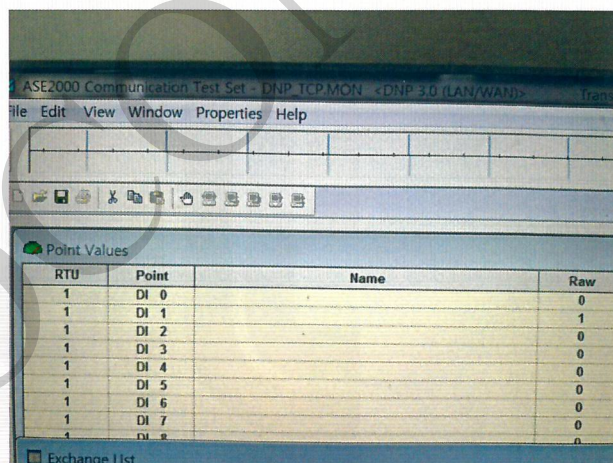


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

[X axis_Befor test]

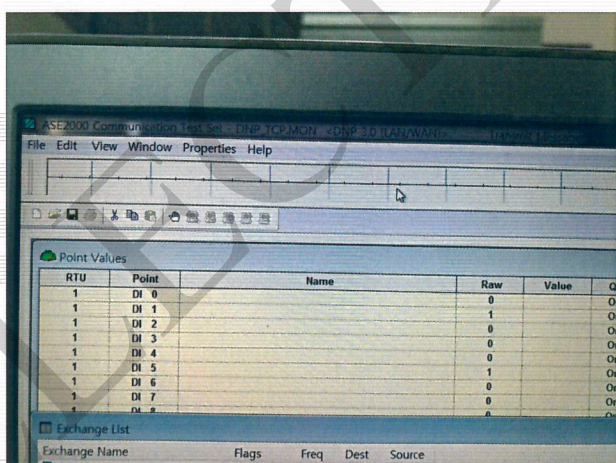


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

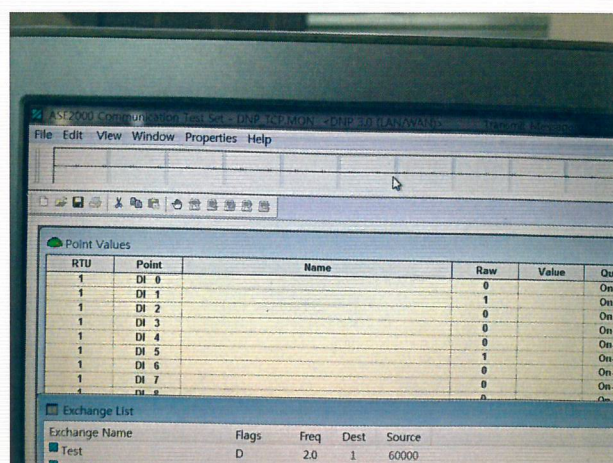


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

[X axis_During test]

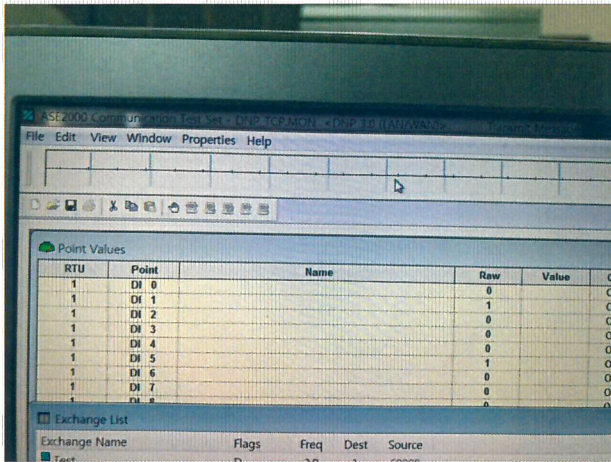


RTU	Point	Name	Raw	Value	Qual
1	DI 0		0		On-li
1	DI 1		1		On-li
1	DI 2		0		On-li
1	DI 3		0		On-li
1	DI 4		0		On-li
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1	DI 7		0		On-li
1	DI 8		0		On-li

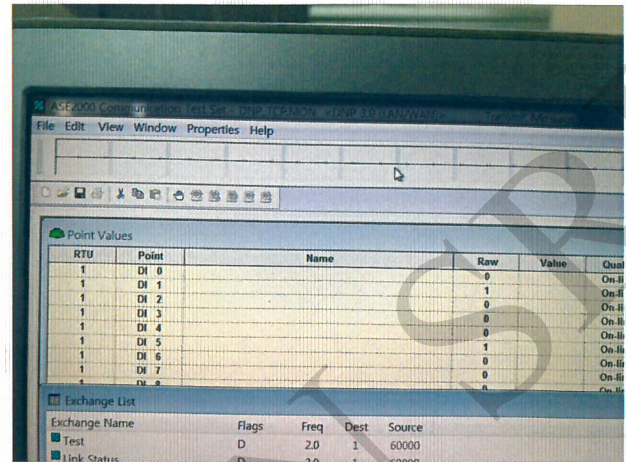


RTU	Point	Name	Raw	Value	Qual
1	DI 0		0		On-li
1	DI 1		1		On-li
1	DI 2		0		On-li
1	DI 3		0		On-li
1	DI 4		0		On-li
1	DI 5		1		On-li
1	DI 6		0		On-li
1	DI 7		0		On-li
1	DI 8		0		On-li

[X axis_After test]

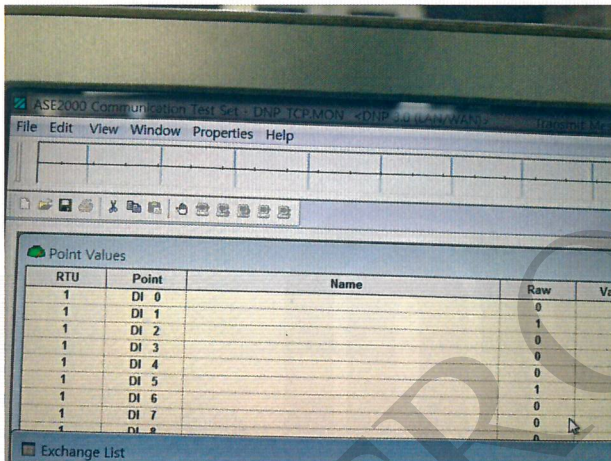


RTU	Point	Name	Raw	Value	Qual
1	DI 0		0		On
1	DI 1		1		On
1	DI 2		0		On
1	DI 3		0		On
1	DI 4		0		On
1	DI 5		1		On
1	DI 6		0		On
1	DI 7		0		On
1	DI 8		0		On

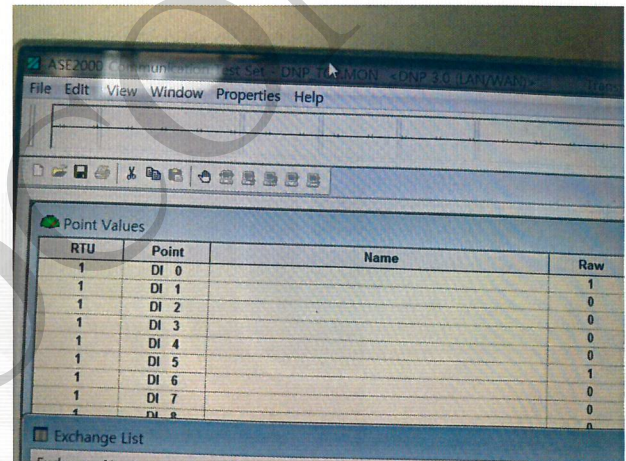


RTU	Point	Name	Raw	Value	Qual
1	DI 0		0		On
1	DI 1		1		On
1	DI 2		0		On
1	DI 3		0		On
1	DI 4		0		On
1	DI 5		1		On
1	DI 6		0		On
1	DI 7		0		On
1	DI 8		0		On

[Y axis_Befor test]

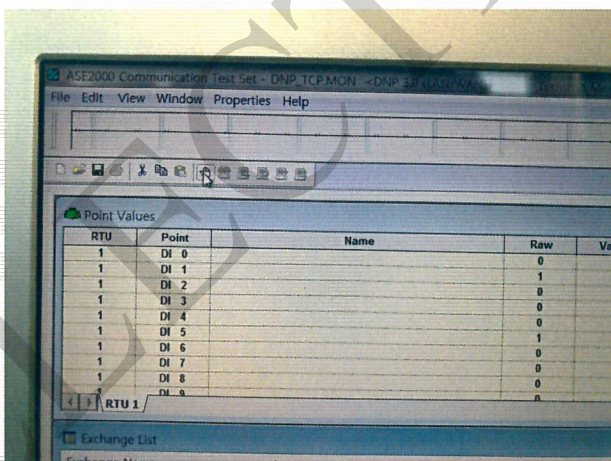


RTU	Point	Name	Raw	Val
1	DI 0		0	
1	DI 1		0	
1	DI 2		1	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		1	
1	DI 7		0	
1	DI 8		0	

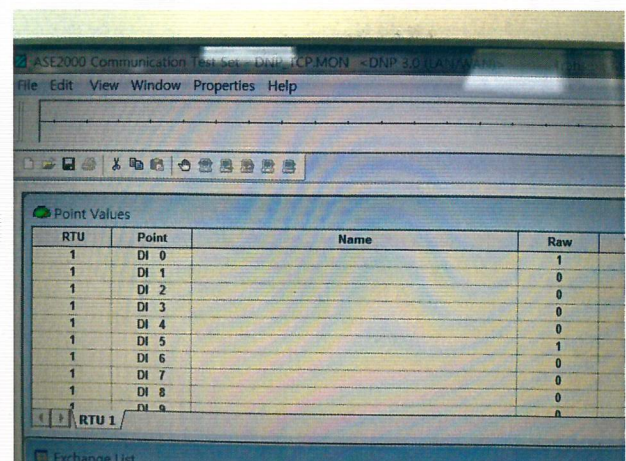


RTU	Point	Name	Raw
1	DI 0		1
1	DI 1		0
1	DI 2		0
1	DI 3		0
1	DI 4		0
1	DI 5		0
1	DI 6		1
1	DI 7		0
1	DI 8		0

[Y axis_During test]

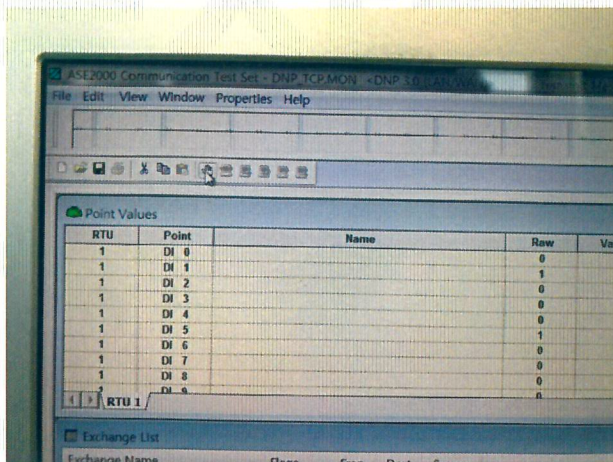


RTU	Point	Name	Raw	Val
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

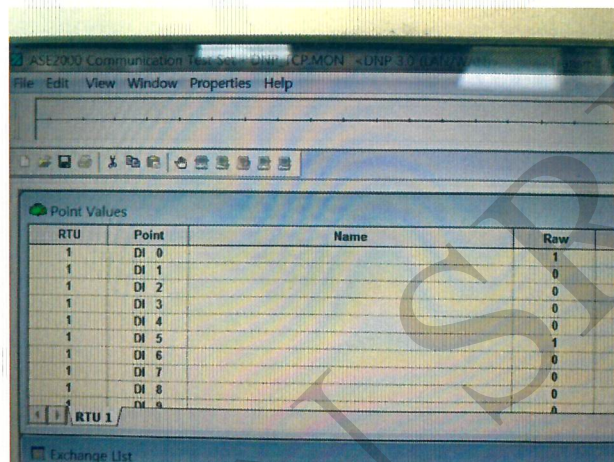


RTU	Point	Name	Raw
1	DI 0		1
1	DI 1		0
1	DI 2		0
1	DI 3		0
1	DI 4		0
1	DI 5		1
1	DI 6		0
1	DI 7		0
1	DI 8		0

[Y axis_After test]

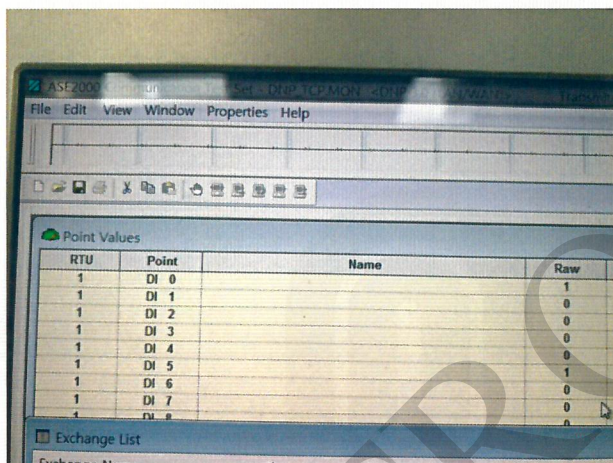


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

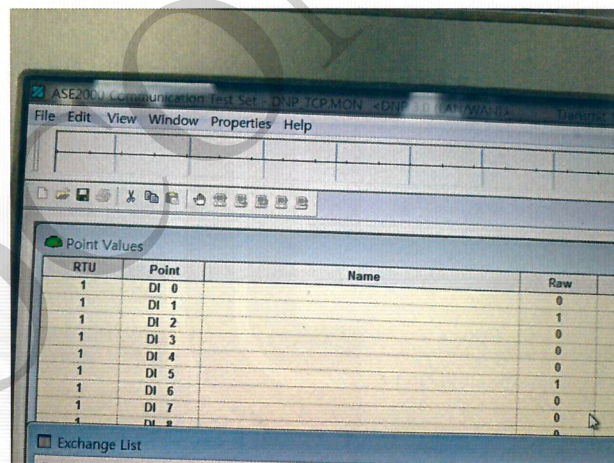


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		1	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

[Z axis_Befor test]

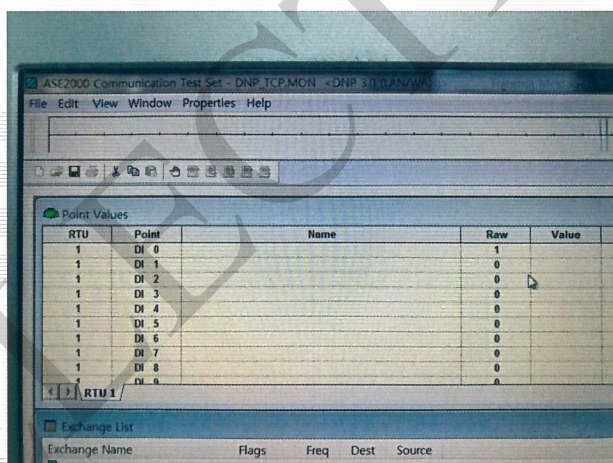


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

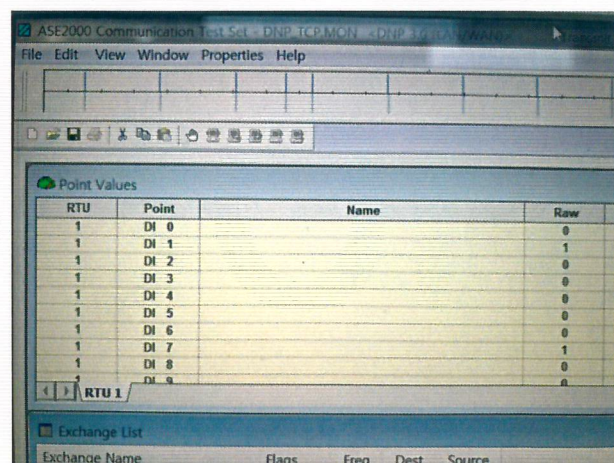


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		1	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

[Z axis_During test]



RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

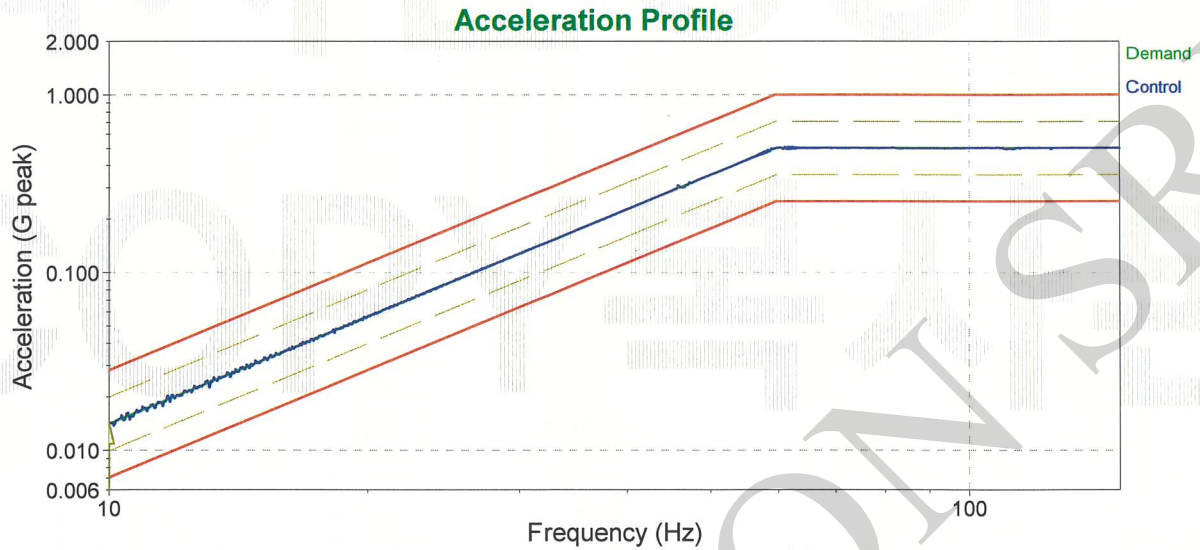


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		1	
1	DI 8		0	
1	DI 9		0	

[Z axis_After test]



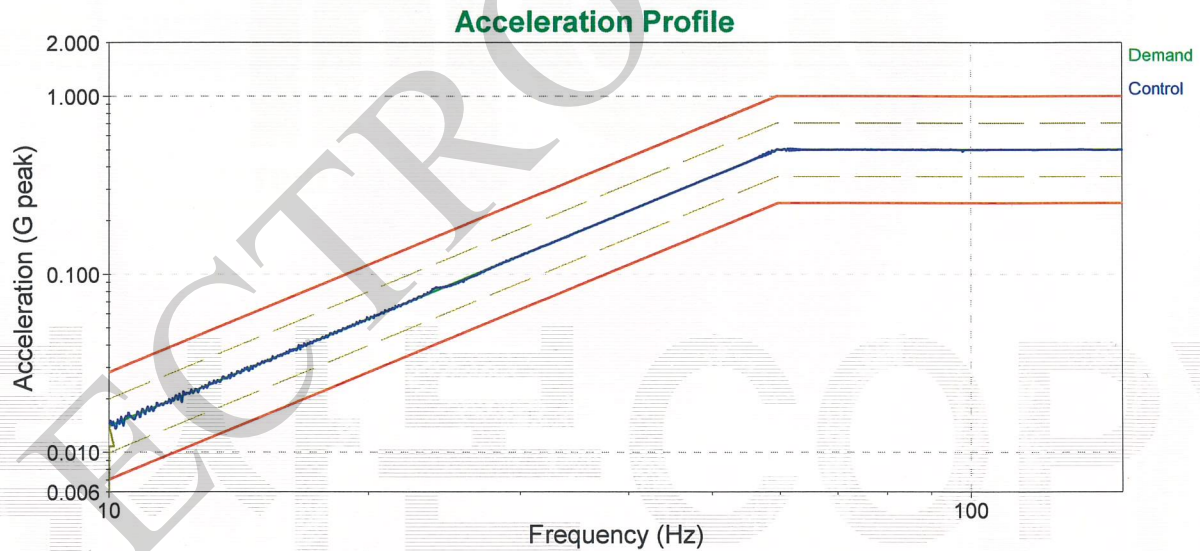
7) Test Data



Apr 16, 2018 10:40:56 Level 1) 100 %
Demand: 0.01409 G Level Time: 0:07:49
Control: 0.0142 G Total Time: 0:07:55

Output: 0.003609 Volts peak IEC60255-21-1
Frequency: 10 Hz
End of Sweep Test

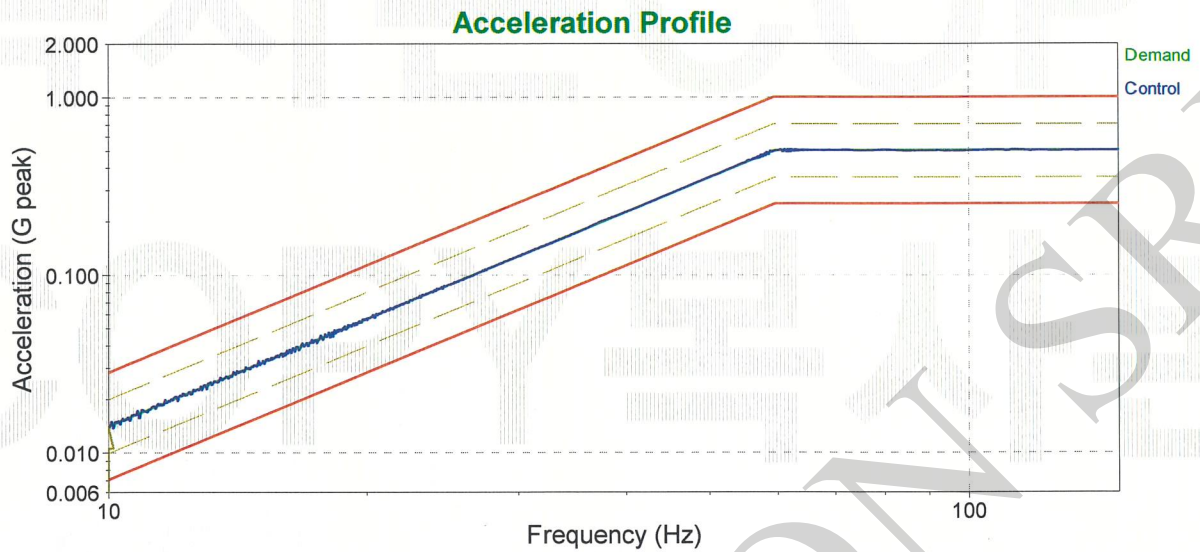
[X axis]



Apr 16, 2018 14:14:46 Level 1) 100 %
Demand: 0.01409 G Level Time: 0:07:49
Control: 0.01408 G Total Time: 0:07:54

Output: 0.00367 Volts peak ICE60255-21-1
Frequency: 10 Hz
End of Sweep Test

[Y axis]



Apr 13, 2018 14:41:16 Level 1) 100 %
Demand: 0.01409 G Level Time: 0:07:49
Control: 0.01376 G Total Time: 0:07:55

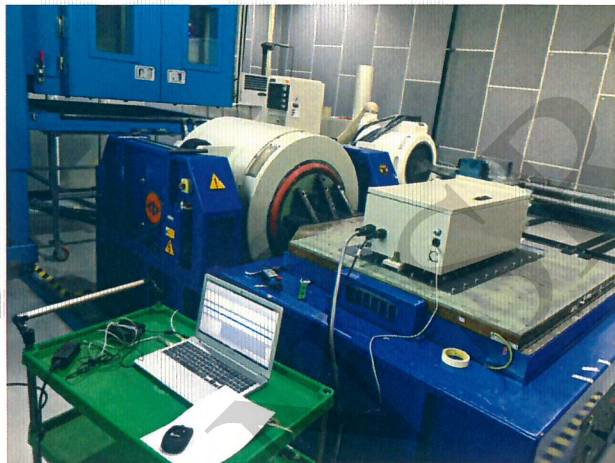
Output: 0.003868 Volts peak ICE60255-21-1
Frequency: 10 Hz
End of Sweep Test

[Z axis]

6) Test Picture



[X axis_TEST SETUP]



[Y axis_TEST SETUP]



[Z axis_TEST SETUP]



3.2 Vibration endurance

1) List of used equipment

No.	Description	Model	Manufacture	Calibration laboratory
1	Vibration test set	EDS10000LS3-550	FAMTECH	2017-05-26
2	Acceleration sensor	8703A250M5	Kistler	2017-11-16
3	Humi./Baro/Temp. data recorder	MHB-382SD	Lutron	2018-03-14

2) Test Date

- 2018. 04. 13 to 2018. 04. 16

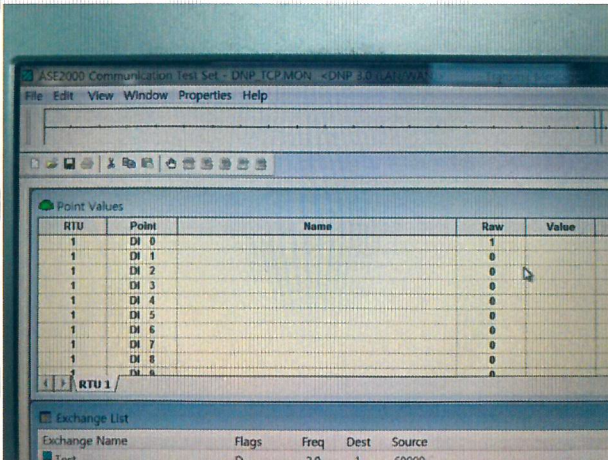
3) Test Sample No..

- #1

4) Test Condition

- A. Test type : Sweep sine
- B. Acceleration : 1 g
- C. Frequency : (10 ~ 150) Hz
- D. Test time : 1 oct / min, 20 Sweep Cycle
- E. Test direction : x axis, y axis, z axis
- F. Inspection time : Before test, After test
- G. Sample condition : Single / Non operation

5) Test results



ASE2000 Communication Test Set - DNP TCP MON - <DNP 3.0> LAN/WAN

File Edit View Window Properties Help

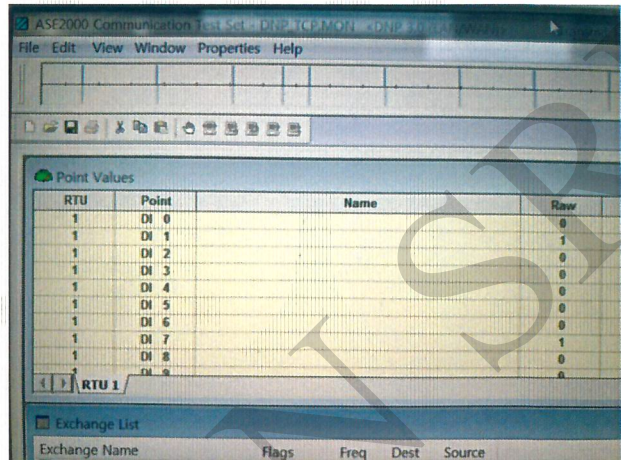
Point Values

RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

RTU 1

Exchange List

Exchange Name	Flags	Freq	Dest	Source
Test		30	1	60000



ASE2000 Communication Test Set - DNP TCP MON - <DNP 3.0> LAN/WAN

File Edit View Window Properties Help

Point Values

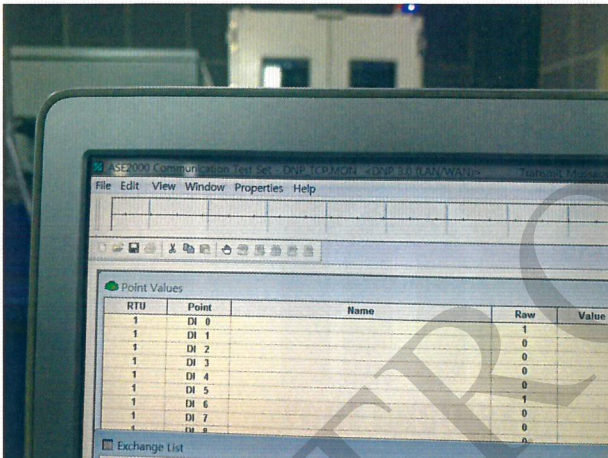
RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		1	
1	DI 8		0	
1	DI 9		0	

RTU 1

Exchange List

Exchange Name	Flags	Freq	Dest	Source
Test		30	1	60000

[X axis_Befor test]



ASE2000 Communication Test Set - DNP TCP MON - <DNP 3.0> LAN/WAN

File Edit View Window Properties Help

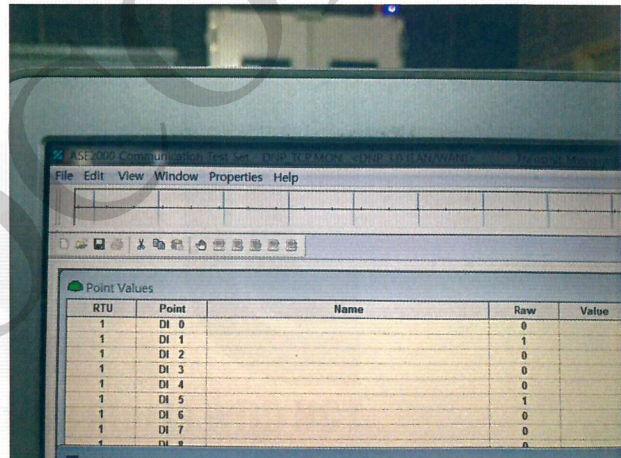
Point Values

RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		1	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

RTU 1

Exchange List

Exchange Name	Flags	Freq	Dest	Source
Test		30	1	60000



ASE2000 Communication Test Set - DNP TCP MON - <DNP 3.0> LAN/WAN

File Edit View Window Properties Help

Point Values

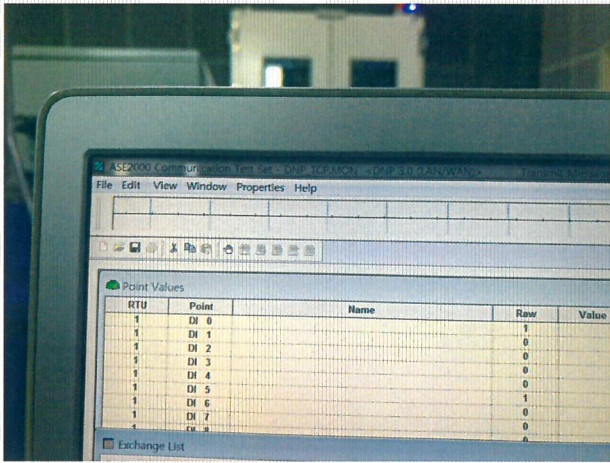
RTU	Point	Name	Raw	Value
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1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	
1	DI 9		0	

RTU 1

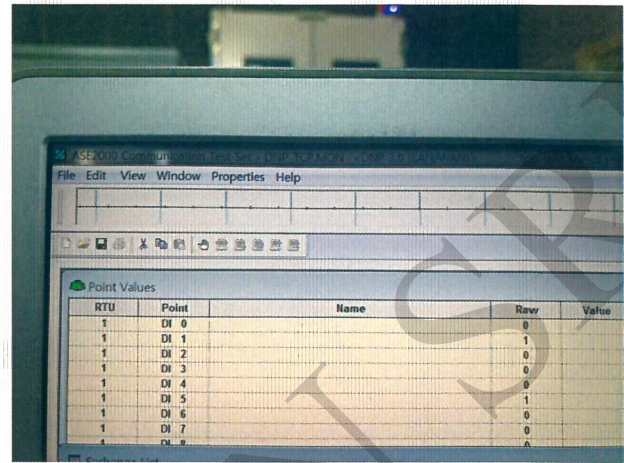
Exchange List

Exchange Name	Flags	Freq	Dest	Source
Test		30	1	60000

[X axis_After test]

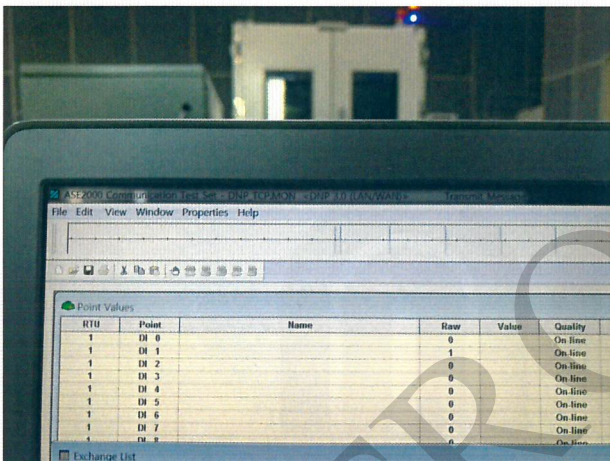


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		1	
1	DI 7		0	
1	DI 8		0	

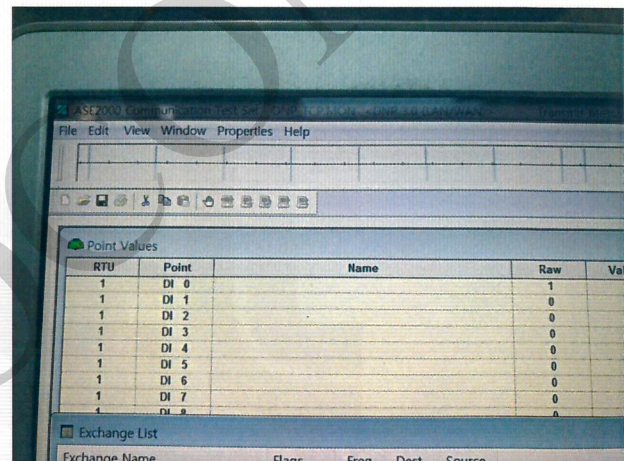


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		1	
1	DI 7		0	
1	DI 8		0	

[Y axis_Befor test]

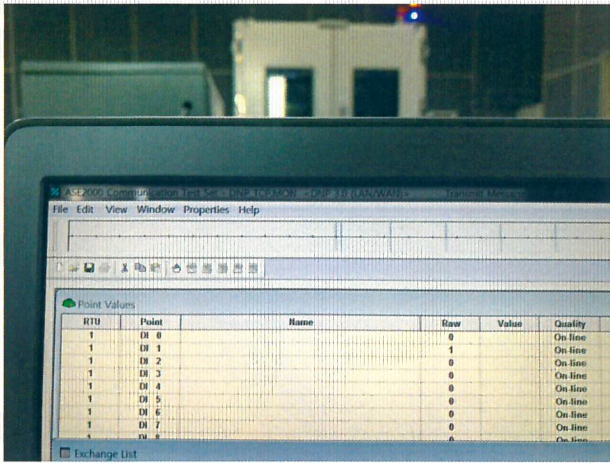


RTU	Point	Name	Raw	Value	Quality
1	DI 0		0		On-line
1	DI 1		1		On-line
1	DI 2		0		On-line
1	DI 3		0		On-line
1	DI 4		0		On-line
1	DI 5		0		On-line
1	DI 6		0		On-line
1	DI 7		0		On-line
1	DI 8		0		On-line

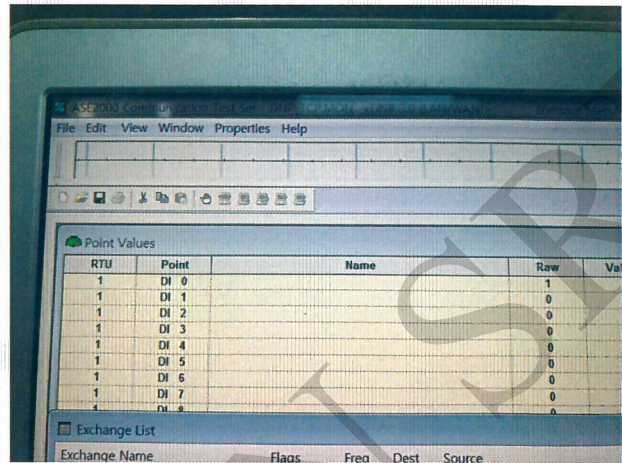


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

[Y axis_After test]

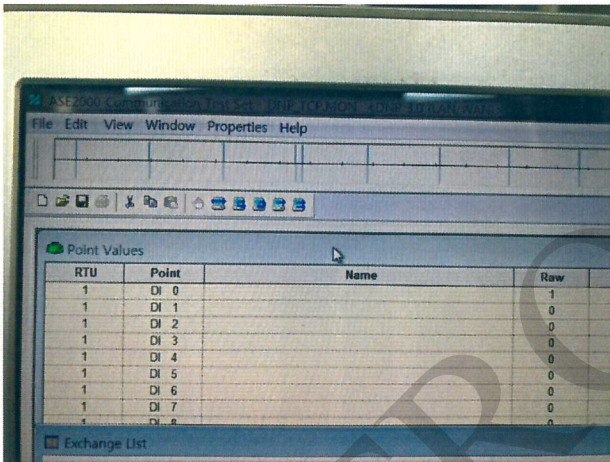


RTU	Point	Name	Raw	Value	Quality
1	DI 0		0		On line
1	DI 1		1		On line
1	DI 2		0		On line
1	DI 3		0		On line
1	DI 4		0		On line
1	DI 5		0		On line
1	DI 6		0		On line
1	DI 7		0		On line
1	DI 8		0		On line

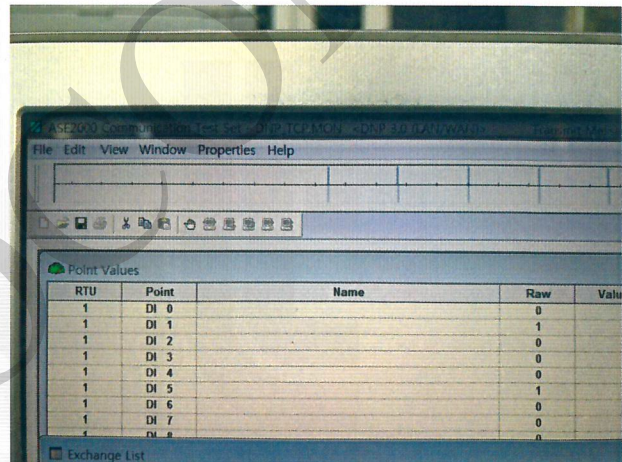


RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

[Z axis_Befor test]



RTU	Point	Name	Raw	Value
1	DI 0		1	
1	DI 1		0	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		0	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

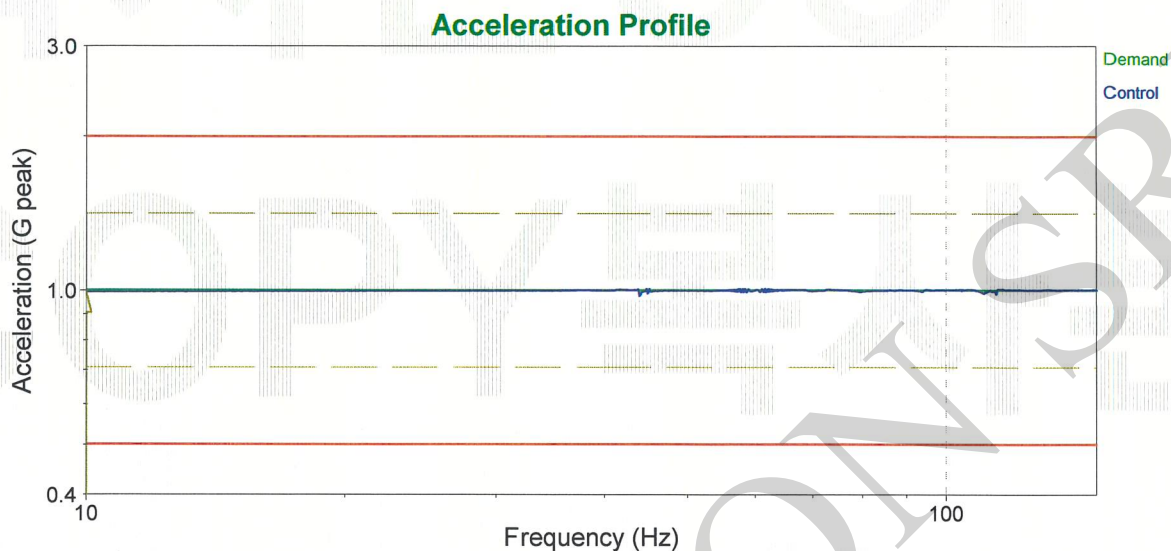


RTU	Point	Name	Raw	Value
1	DI 0		0	
1	DI 1		1	
1	DI 2		0	
1	DI 3		0	
1	DI 4		0	
1	DI 5		1	
1	DI 6		0	
1	DI 7		0	
1	DI 8		0	

[Z axis_After test]



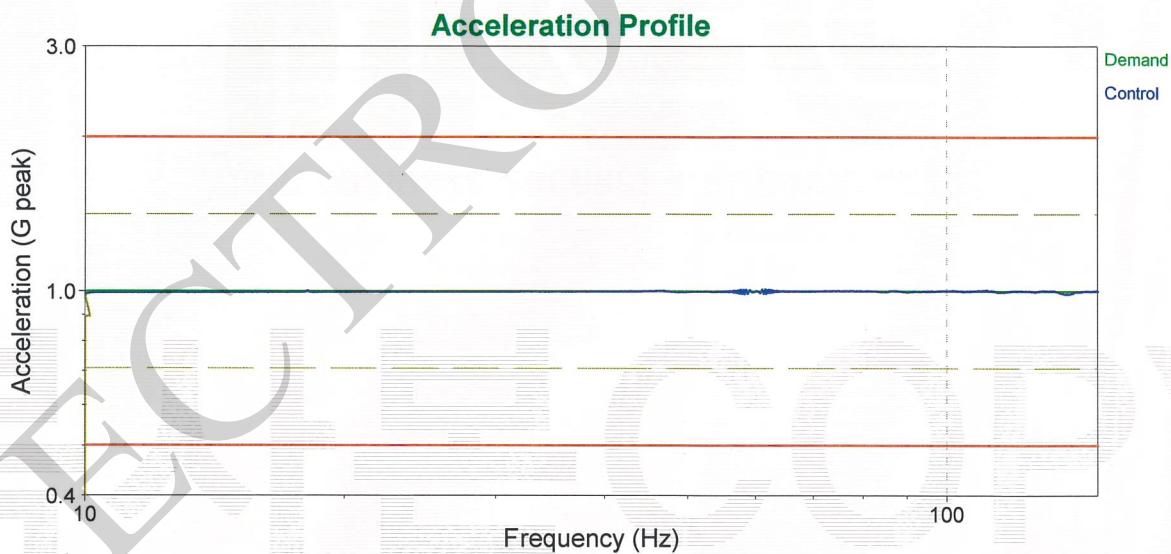
7) Test Data



Apr 16, 2018 13:18:43 Level 1) 100 %
Demand: 1 G Level Time: 2:36:17
Control: 0.9922 G Total Time: 2:36:26

Output: 0.2019 Volts peak ICE60255-21-1
Frequency: 10 Hz
End of Sweep Test

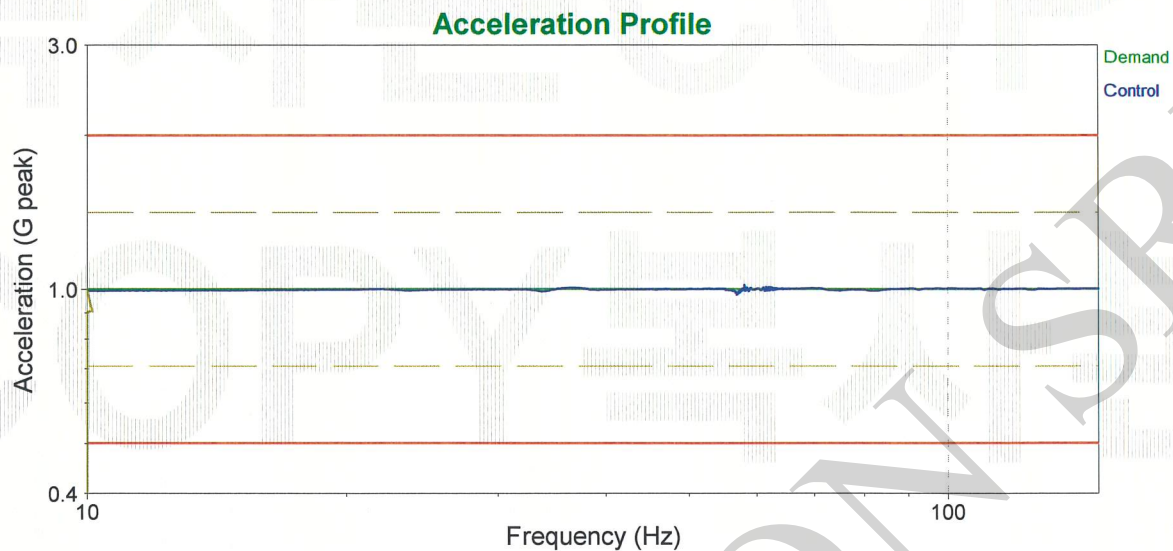
[X axis]



Apr 16, 2018 16:51:34 Level 1) 100 %
Demand: 1 G Level Time: 2:36:17
Control: 0.9793 G Total Time: 2:36:26

Output: 0.204 Volts peak ICE60255-21-1
Frequency: 10 Hz
End of Sweep Test

[Y axis]



Apr 13, 2018 17:20:07 Level 1) 100 %
Demand: 1 G Level Time: 2:36:17
Control: 0.9915 G Total Time: 2:36:26

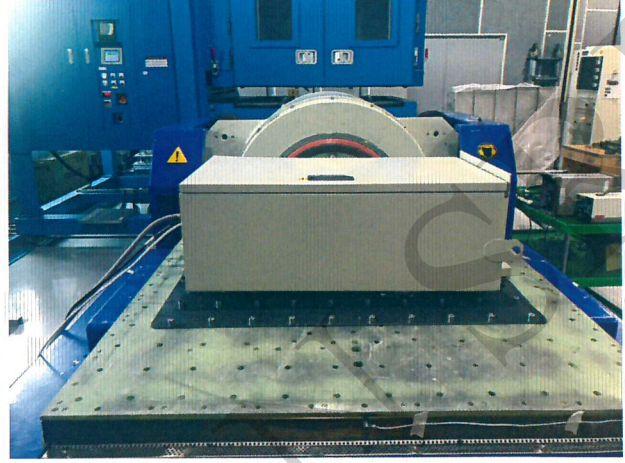
Output: 0.2038 Volts peak ICE60255-21-1
Frequency: 10 Hz
End of Sweep Test

[Z axis]

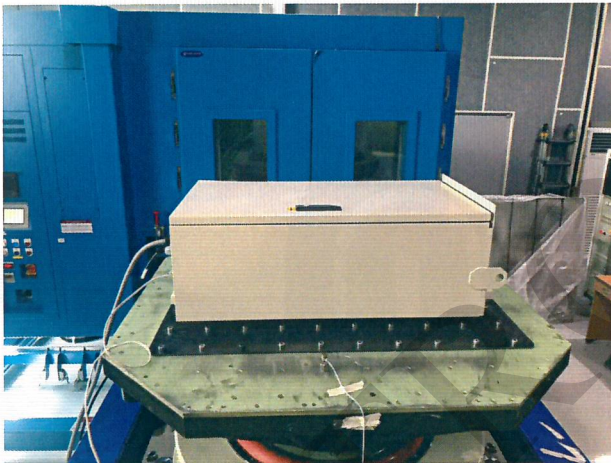
6) Test Picture



[X axis_TEST SETUP]

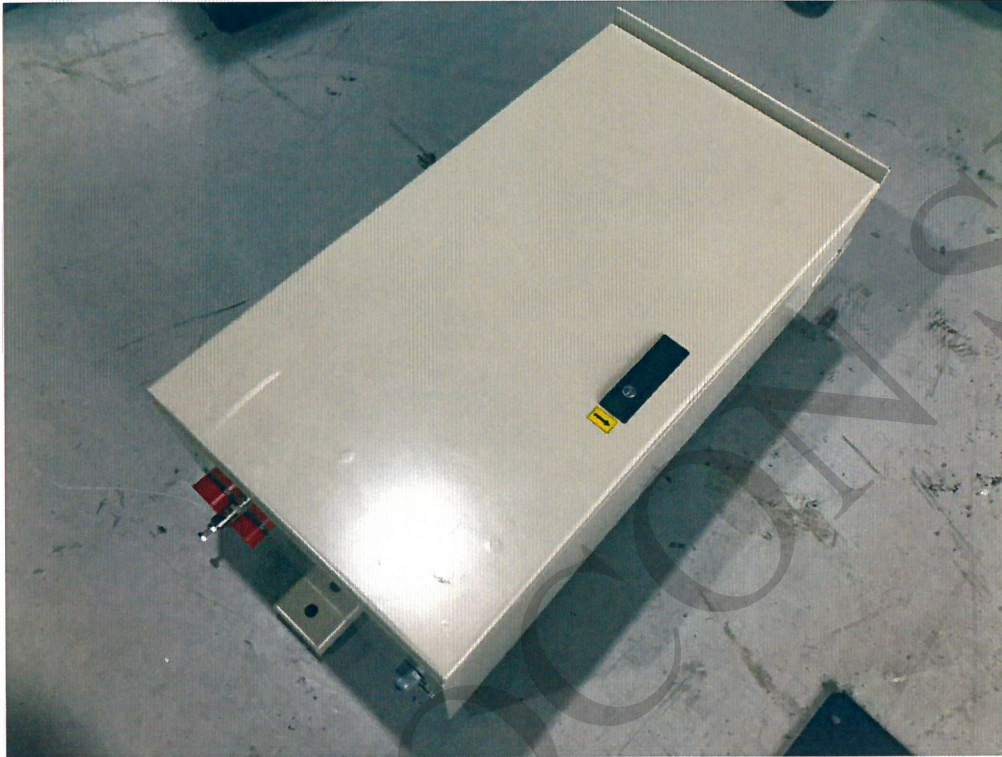


[Y axis_TEST SETUP]

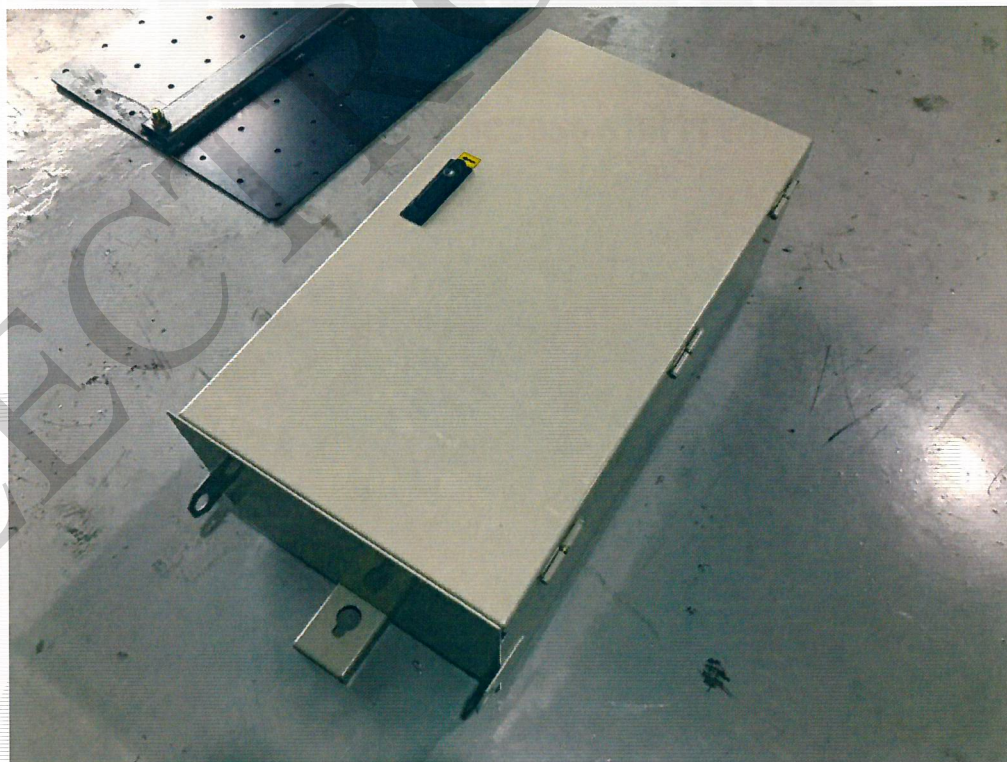


[Z axis_TEST SETUP]

4. Pictures of sample



[Picture_1]



[Picture_2]