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<b>Test Report No.:</b>	<b>UNT150420C12</b>	
<b>Client</b>		
<b>Name :</b>	<b>LEGO System A/S</b>	
<b>Address :</b>	<b>Aastvej 1 7190 Billund, Denmark</b>	
<b>Test Item :</b>	<b>Lithium-Ion Rechargeable Battery</b>	
<b>Identification :</b>	<b>87662 NXT - DC Rechargeable Bat.Box</b>	
<b>Testing laboratory</b>		
<b>Name :</b>	<b>Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch</b>	
<b>Address :</b>	<b>No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan</b>	
<b>Test specification</b>		
<b>Standard :</b>	<b>United Nations, Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (Rev. 5<sup>th</sup>, Amendment 2), Section 38.3</b>	
<b>Test Result :</b>	The test item passed.	
<b>Prepared By :</b>		
		<u>2015-05-07</u>
	Signature	Date
	<u>Bob Tsai</u>	
	Senior Engineer	
<b>Approved By:</b>		
		<u>2015-05-07</u>
	Signature	Date
	<u>Danny Lin</u>	
	Assistant Manager	
This report should not be used by the client to claim product certification, approval, or endorsement by TAF, NVLAP, NIST or any government agencies.		 
<p>This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.</p>		

**TEST REPORT**



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United Nations, Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (Rev. 5<sup>th</sup>, Amendment 2), Section 38.3

Report Reference No.....: UNT150420C12

Compiled by .....: See cover sheet

Approved by .....: See cover sheet

Date of issue.....: 2015-05-07

Total number of pages 23

Testing Laboratory.....: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Address .....: No. 19, Hwa Ya 2nd Rd, Kueishan Taoyuan, Taiwan, R.O.C.

Applicant's name.....: LEGO System A/S

Address .....: Aastvej 1 7190 Billund, Denmark

Test specification:

Standard.....: United Nations, Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (Rev. 5<sup>th</sup>, Amendment 2), Section 38.3.

Test item description.....: Lithium-Ion Rechargeable Battery

Trade Mark.....: LEGO

Manufacturer.....: IN-TECH ELECTRONICS LIMITED

Model/Type reference.....: 87622

Ratings.....: 7.4V, 2200mAh

Summary of testing:

The load conditions used during testing: The battery pack is charged and discharged according to its rating.

Nominal capacity (Ah):	2.2
Nominal voltage (Vdc):	7.3
Minimum end voltage of discharge (Vdc)	6.0
Max. charge voltage (Vdc): (for internal battery module)	8.46
Max. charge current (A): (for internal battery module)	2.1
Max. charge voltage (Vdc):	10 (DC jack)
Max. charge current (A):	0.6 (DC Jack)
Max. continue discharge current (A)	2.1

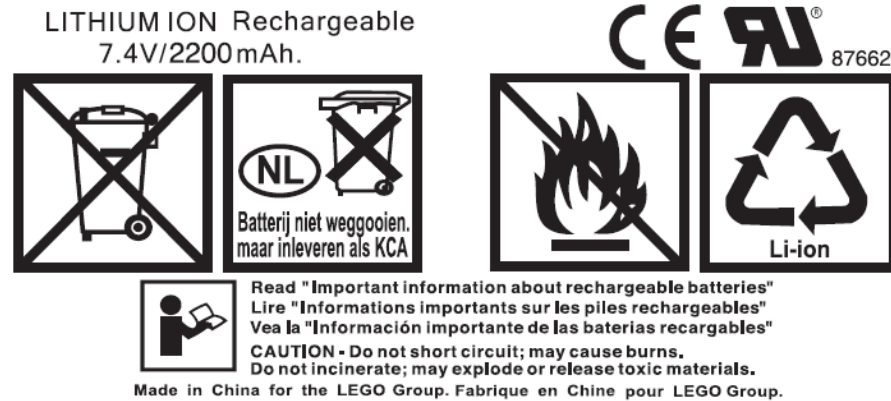


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**Tests performed (name of test and test clause):**

Reference Standard	Clause	Contents of Test
UN 38.3	38.3.4.1	Altitude simulation
UN 38.3	38.3.4.2	Thermal test
UN 38.3	38.3.4.3	Vibration
UN 38.3	38.3.4.4	Shock
UN 38.3	38.3.4.5	External short circuit
UN 38.3	38.3.4.6	Impact
UN 38.3	38.3.4.7	Over charge
UN 38.3	38.3.4.8	Forced discharge

**Copy of marking plate:**



**Explanation of date Code:**

Due to traceability, all LEGO products are produced with production date code as described in LEGO Product Safety Handbook. All production areas have a specific letter code, which is added in production date.

Week – letter code – year e.g. 08M5



<b>Test item particulars</b> .....	
Classification of installation and use .....	Built-in
Supply Connection .....	Customized terminal
.....	.....
.....	.....
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing</b> .....	
Date of receipt of test item .....	2015-03-27
Date (s) of performance of tests .....	2015-03-27 – 2015-04-28
<b>General remarks:</b>	
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.  Throughout this report a point is used as the decimal separator.	
<b>General product information:</b>	
(1) The equipment under test (EUT) model 87662 is a 2 series 1 parallel built in type Rechargeable Li-ion Battery.	
(2) The battery pack maximum ambient temperature is specified as 45°C for Charging and 60°C for Discharging.	
(3) Dimension of the Battery backup unit: (T) 23.5mm by (W) 69.68 mm by (L) 88.3mm max.	
(4) Battery pack Weight: 129 g max.	
<b>Test condition:</b>	
Temperature: 20±5°C	
Relative humidity: 60%	
Air pressure: 950 mbar	
The test samples were pre-production samples without serial number.	



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United Nations, Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (Rev. 5 <sup>th</sup> , Amendment 2), Section 38.3			
Clause	Requirement + Test	Result - Remark	Verdict
<b>38.3</b>	<b>Lithium batteries</b>		P
<b>38.3.1</b>	<b>Purpose</b>		P
<b>38.3.2</b>	<b>Scope</b>		P
38.3.2.1	Lithium cells or batteries which differ from a tested type by: (a) A change of more than 0.1 g or 20% by mass, whichever is greater, to the cathode, to the anode, or to the electrolyte; or (b) A change that would materially affect the test results.	This a new product (new application)	N/A
38.3.2.2	Classification	The EUT is a rechargeable small battery.	P
<b>38.3.3</b>	<b>The number and condition of cells and batteries</b>		P
	Cells (Primary/Rechargeable)	The EUT is a rechargeable Lithium ion battery	P
	Batteries (Primary/Rechargeable)	The EUT is a rechargeable Lithium ion battery	N/A
<b>38.3.4</b>	<b>Procedure</b>		P
	Each cell and battery type must be subjected to tests 1 to 8. Tests 1 to 5 must be conducted in sequence on the same cell or battery. Tests 6 and 8 should be conducted using not otherwise tested cells or batteries. Test 7 may be conducted using undamaged batteries previously used in Tests 1 to 5 for purposes of testing on cycled batteries.	The sequence Test 1 to Test 5 tests were conducted on the same samples. Test 6 was conducted on the new component cell samples. Test 8 was conducted on the new component cell samples.	P
38.3.4.1	Altitude simulation	The batteries were no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and the OCV of batteries after testing was not less than 90% of its voltage before testing.	P
38.3.4.2	Thermal test	The batteries were no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and the OCV of batteries after testing was not less than 90% of its voltage before testing.	P



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United Nations, Recommendations on the Transport of Dangerous Goods, Manual of Test and Criteria (Rev. 5 <sup>th</sup> , Amendment 2), Section 38.3			
Clause	Requirement + Test	Result - Remark	Verdict
38.3.4.3	Vibration	The batteries were no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and the OCV of batteries after testing was not less than 90% of its voltage before testing.	P
38.3.4.4	Shock	The batteries were no mass loss, no leakage, no venting, no disassembly, no rupture and no fire and the OCV of batteries after testing was not less than 90% of its voltage before testing.	P
38.3.4.5	External short test	The batteries were no disassembly, no fire and no rupture, and the external temperature did not exceed 170 °C.	P
38.3.4.6	Impact	The batteries were no disassembly, no fire and no rupture, and the external temperature did not exceed 170 °C.	P
	Crush	The battery is cylindrical type	N/A
38.3.4.7	Overcharge	The batteries were no disassembly, no fire and no rupture	P
38.3.4.8	Forced discharge	The cells were no disassembly and no fire.	P



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Clause	Requirement + Test	Result - Remark	Verdict

<b>38.3.2.2</b>	<b>TABLE: List of critical Components</b>					N/A
Object/part No.	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity	
--	--	--	--	--	--	
supplementary information: --						

<b>38.3.4.1</b>	<b>Altitude simulation</b>							P								
Model / Sample No.	Sample Status	Before test		After test		Mass loss (%)	Residual OCV (%)	Other Event								
		Weight (g)	OCV (V)	Weight (g)	OCV (V)											
87622 / 001	At first cycle	129	8.36	129	8.35	0	99	OK								
87622 / 002	At first cycle	129	8.36	129	8.34	0	99	OK								
87622 / 003	At first cycle	128	8.35	128	8.34	0	99	OK								
87622 / 004	At first cycle	129	8.36	129	8.35	0	99	OK								
87622 / 005	After 50 cycle	129	8.35	129	8.34	0	99	OK								
87622 / 006	After 50 cycle	129	8.34	129	8.32	0	99	OK								
87622 / 007	After 50 cycle	129	8.35	129	8.34	0	99	OK								
87622 / 008	After 50 cycle	128	8.34	128	8.32	0	99	OK								
Note(s): Mass loss limit: <table border="1" style="width: 100%; margin-top: 5px;"> <tr> <th style="width: 60%;">Mass M of cell or battery</th> <th style="width: 40%;">Mass loss limit</th> </tr> <tr> <td>M&lt;1g</td> <td>0.5%</td> </tr> <tr> <td>1g&lt;M&lt;5g</td> <td>0.2%</td> </tr> <tr> <td>M&gt;5g</td> <td>0.1%</td> </tr> </table> L-Leakage V-Venting D-Disassembly R-Rupture F-Fire OK-No Leakage, No Venting, No Disassembly, No Rupture, No Fire									Mass M of cell or battery	Mass loss limit	M<1g	0.5%	1g<M<5g	0.2%	M>5g	0.1%
Mass M of cell or battery	Mass loss limit															
M<1g	0.5%															
1g<M<5g	0.2%															
M>5g	0.1%															





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Clause	Requirement + Test	Result - Remark	Verdict

38.3.4.2		Thermal test						P
Model / Sample No.	Sample Status	Before test		After test		Mass loss (%)	Residual OCV (%)	Other Event
		Weight (g)	OCV (V)	Weight (g)	OCV (V)			
87622 / 001	At first cycle	129	8.35	129	8.30	0	99	OK
87622 / 002	At first cycle	129	8.34	129	8.28	0	99	OK
87622 / 003	At first cycle	128	8.34	128	8.30	0	99	OK
87622 / 004	At first cycle	129	8.35	129	8.29	0	99	OK
87622 / 005	After 50 cycle	129	8.34	129	8.27	0	99	OK
87622 / 006	After 50 cycle	129	8.32	129	8.328	0	99	OK
87622 / 007	After 50 cycle	129	8.34	129	8.27	0	99	OK
87622 / 008	After 50 cycle	128	8.32	128	8.26	0	99	OK

Note(s):

Mass loss limit:

Mass M of cell or battery	Mass loss limit
M<1g	0.5%
1g<M<5g	0.2%
M>5g	0.1%

L-Leakage

V-Venting

D-Disassembly

R-Rupture

F-Fire

OK-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



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United Nations, Recommendations on the Transport of Dangerous Goods,  
Manual of Test and Criteria (Rev. 5<sup>th</sup>, Amendment 2), Section 38.3

Clause	Requirement + Test	Result - Remark	Verdict
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38.3.4.3		Vibration						P
Model / Sample No.	Sample Status	Before test		After test		Mass loss (%)	Residual OCV (%)	Other Event
		Weight (g)	OCV (V)	Weight (g)	OCV (V)			
87622 / 001	At first cycle	128	8.28	128	8.25	0	99	OK
87622 / 002	At first cycle	129	8.28	129	8.26	0	99	OK
87622 / 003	At first cycle	128	8.29	128	8.26	0	99	OK
87622 / 004	At first cycle	129	8.28	129	8.25	0	99	OK
87622 / 005	After 50 cycle	129	8.25	129	8.23	0	99	OK
87622 / 006	After 50 cycle	129	8.27	129	8.24	0	99	OK
87622 / 007	After 50 cycle	128	8.26	128	8.23	0	99	OK
87622 / 008	After 50 cycle	128	8.25	128	8.22	0	99	OK

Note(s):

Mass loss limit:

Mass M of cell or battery	Mass loss limit
M<1g	0.5%
1g<M<5g	0.2%
M>5g	0.1%

L-Leakage

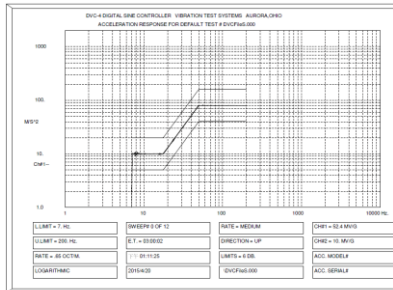
V-Venting

D-Disassembly

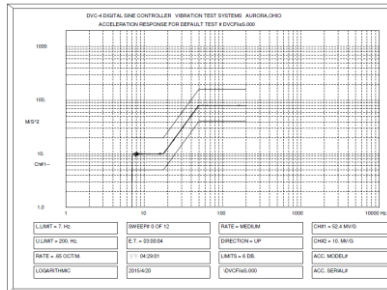
R-Rupture

F-Fire

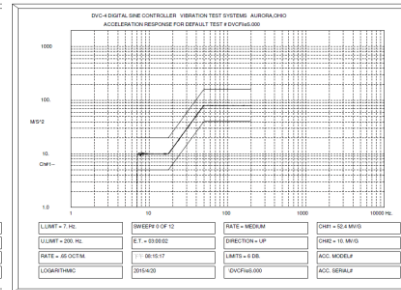
OK-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



X axis



Y axis



Z axis



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Clause	Requirement + Test	Result - Remark	Verdict
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38.3.4.4		Shock								P
Model / Sample No.	Sample Status	Before test		After test		Mass loss (%)	Residual OCV (%)	Other Event		
		Weight (g)	OCV (V)	Weight (g)	OCV (V)					
87622 / 001	At first cycle	128	8.24	128	8.23	0	99	Pass		
87622 / 002	At first cycle	129	8.25	129	8.24	0	99	Pass		
87622 / 003	At first cycle	128	8.25	128	8.23	0	99	Pass		
87622 / 004	At first cycle	129	8.25	129	8.24	0	99	Pass		
87622 / 005	After 50 cycle	129	8.23	129	8.22	0	99	Pass		
87622 / 006	After 50 cycle	129	8.24	129	8.23	0	99	Pass		
87622 / 007	After 50 cycle	128	8.22	128	8.21	0	99	Pass		
87622 / 008	After 50 cycle	128	8.21	128	8.20	0	99	Pass		

Note(s):

Mass loss limit:

Mass M of cell or battery	Mass loss limit
M < 1g	0.5%
1g < M < 5g	0.2%
M > 5g	0.1%

L-Leakage

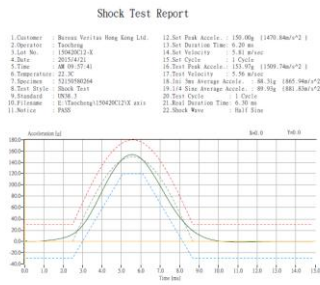
V-Venting

D-Disassembly

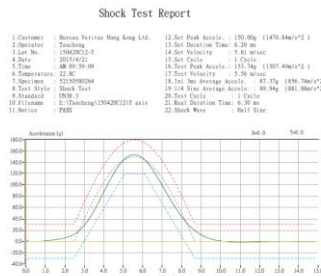
R-Rupture

F-Fire

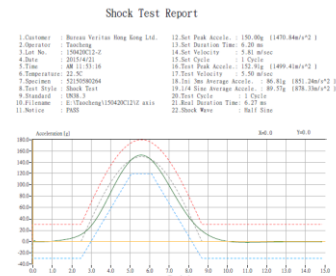
OK-No Leakage, No Venting, No Disassembly, No Rupture, No Fire



X axis



Y axis



Z axis



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Clause	Requirement + Test	Result - Remark	Verdict

<b>38.3.4.5</b>	<b>External short circuit</b>			P
Model / Sample No.	Sample Status	Max. External temperature of EUT surface(°C)	Other Event	
87622 / 001	At first cycle	56.3	OK	
87622 / 002	At first cycle	56.1	OK	
87622 / 003	At first cycle	56.2	OK	
87622 / 004	At first cycle	56.3	OK	
87622 / 005	At first cycle	56.0	OK	
87622 / 006	At first cycle	55.7	OK	
87622 / 007	At first cycle	55.7	OK	
87622 / 008	At first cycle	55.9	OK	
Note(s): D-Disassembly R-Rupture F-Fire OK- No Disassembly, No Fire, The external temperature of cell not exceeds 170°C.				

<b>38.3.4.6</b>	<b>Impact</b>			P
Model / Sample No.	Sample Status	Max. External temperature of EUT surface(°C)	Other Event	
INR18650P201/ 001	At first cycle 50% of the design rated capacity	99.7	OK	
INR18650P201/ 002	At first cycle 50% of the design rated capacity	96.5	OK	
INR18650P201/ 003	At first cycle 50% of the design rated capacity	101.3	OK	
INR18650P201/ 004	At first cycle 50% of the design rated capacity	87.6	OK	
INR18650P201/ 005	At first cycle 50% of the design rated capacity	93.5	OK	
Note(s): The component cell is cylindrical type				



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Clause	Requirement + Test	Result - Remark	Verdict

<b>38.3.4.6</b>	<b>Crush</b>		N/A
<b>Model / Sample No.</b>	<b>Sample Status</b>	<b>Max. External temperature of EUT surface(°C)</b>	<b>Other Event</b>
--	--	--	--
Note(s): D-Disassembly F-Fire OK- No Disassembly, No Fire, The external temperature of cell not exceeds 170°C.			

<b>38.3.4.7</b>	<b>Overcharge</b>		P
<b>Model / Sample No.</b>	<b>Sample Status</b>	<b>Other Event</b>	
87622 / 009	At first cycle	OK	
87622 / 010	At first cycle	OK	
87622 / 011	At first cycle	OK	
87622 / 012	At first cycle	OK	
87622 / 013	At 50 cycle	OK	
87622 / 014	At 50 cycle	OK	
87622 / 015	At 50 cycle	OK	
87622 / 016	At 50 cycle	OK	
Note(s):			



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Manual of Test and Criteria (Rev. 5<sup>th</sup>, Amendment 2), Section 38.3

Clause	Requirement + Test	Result - Remark	Verdict
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38.3.4.8	Forced discharge		P
Model / Sample No.	Sample Status	Other Event	
INR18650P201 / 006	At first cycle	OK	
INR18650P201 / 007	At first cycle	OK	
INR18650P201 / 008	At first cycle	OK	
INR18650P201 / 009	At first cycle	OK	
INR18650P201 / 010	At first cycle	OK	
INR18650P201 / 011	At first cycle	OK	
INR18650P201 / 012	At first cycle	OK	
INR18650P201 / 013	At first cycle	OK	
INR18650P201 / 014	At first cycle	OK	
INR18650P201 / 015	At first cycle	OK	
INR18650P201 / 016	After 50 cycles	OK	
INR18650P201 / 017	After 50 cycles	OK	
INR18650P201 / 018	After 50 cycles	OK	
INR18650P201 / 019	After 50 cycles	OK	
INR18650P201 / 020	After 50 cycles	OK	
INR18650P201 / 021	After 50 cycles	OK	
INR18650P201 / 022	After 50 cycles	OK	
INR18650P201 / 023	After 50 cycles	OK	
INR18650P201 / 024	After 50 cycles	OK	
INR18650P201 / 025	After 50 cycles	OK	

Note(s):  
D-Disassembly  
F-Fire  
OK- No Disassembly, No Fire





A D T

中環水務有限公司 中環水務有限公司 英國 英國 英國  
Bureau Veritas Consumer Products Services (U.K.) Ltd., Thornton Branch [ Bureau Veritas ADT ]



Page 1 of 3  
Issued Date: 04-27-08  
Revised: 04-16-2010

INSTRUMENTATION RECORD DATA SHEET  
TEST INSTRUMENTS

File No:  
Project No:

Test	Position Class	Instr No. S/N	Range Used	* Instruments, Type	Maker	Model	Calibration Date	Calibration Due
Thermal abuse	Y	1. 070103		Test Oven	TAUCHY	MC00-200	Jan-09-2014	Jun-08-2015
Mechanical shock		2. 0637		Shock Tester	VISQUORCE	SF6006-2	Jan-16-2014	Jun-17-2015
Crushing of cells	Y	3. 0701		Hydraulic Ram Apparatus	Aisa Dash	A1-1	May-19-2014	May-18-2015
Low pressure		4. 0601		Vacuum Chamber	Aisa Dash	A-1	Oct-28-2014	Oct-27-2015
Heating		11. 41140007	-40-400°C, 30CH	Hybrid Recorder	Yokokawa	HR-2500E	Apr-19-2015	Apr-14-2016
	Y	13. 43140009	-40-400°C, 20CH	Hybrid Recorder	Yokokawa	HR-1500	Dec-12-2014	Dec-11-2015
	Y	14. 41620040	-40-400°C, 20CH	Hybrid Recorder	Yokokawa	DR134	Jan-09-2014	Jun-08-2015
	Y	15. 42140009	-40-400°C, 30CH	Hybrid Recorder	Yokokawa	HR-2500	Mar-09-2015	Mar-09-2016
Input / Leakage /		22. 60502022	200V/10A, 300W *1	Electric Load	Prodgit 3342	3302	Sep-03-2014	Sep-02-2015
Heating / Abnormal		23. 60502023	250V/10A, 300W *1	Electric Load	Prodgit 3342	3302	Oct-30-2014	Oct-29-2015
		24. 60502020	500V/5A, 300W *1	Electric Load	Prodgit 3342	3201	Jan-23-2015	Jan-23-2016
Exhaustion Push		31. 060053	0 - 20 Kg	Pump - Pull Maker	Aisch	AE-30	Nov-12-2014	Nov-11-2015
General	Y	39. 7030742	R, V, A, Full Range	Digital Multimeter	Fluke	8741	Jul-03-2014	Jul-02-2015
		40. 7030759	R, V, A, Full Range	Digital Multimeter	Fluke	8741	Jul-16-2014	Jul-17-2015
	Y	43. 060054	0-200 mm	Dynemic Caliper	Mitutoyo	500-11P CD-87CS	Jan-23-2015	Jan-22-2016
		45. W081030	-42 ~ 150 Degree C	STANDARD TEMPERATURE HUMIDITY CHAMBER	WIT	TH-45-C	Jan-09-2014	Jun-08-2015
		46. ---		Timer (Clock)	Chyau-Jye	Chyau-Jye	Nov-11-2014	Nov-10-2015
Insulation	Y	49-1. 83304		Timer (Clock)	ORIENT	QUARTZ	Jan-26-2014	Jan-24-2015
		52. 143073	30-1000V, 0-1-0000	Insulation Tester	Estech	8305	Sep-09-2014	Sep-09-2015
		57. 021002853	-40-400°C, 60CH	Recorder	Yokokawa	DR236	Apr-17-2014	Under calibration
Heating		66. 01000-32	-40-400°C, 30CH	Recorder	Yokokawa	DR236	Dec-01-2014	Nov-30-2015
Input / Leakage /		71. 204020066	500V/5A, 200W *1	Electric Load	Prodgit 3324	3302	Mar-12-2015	Mar-11-2016
Heating		73. 204020077	250V/10A, 300W *1	Electric Load	Prodgit 3312C	3302	Oct-30-2014	Oct-29-2015
		77. 124003583	-40-400°C, 20CH	Hybrid Recorder	Yokokawa	DR134	Mar-09-2015	Mar-08-2016
		78. 126016473	-40-400°C, 40CH	Recorder	Yokokawa	DR236	Jan-18-2014	Jan-17-2015
		86. 126016624	-40-400°C, 20CH	Recorder	Yokokawa	DR134-00-24-1	Jan-26-2014	Jan-25-2015
Vibration		87. 4282	20Hz-100Hz, 0.3-1.5mm	Vibration Test	VISQUORCE	VS-5066L	Dec-11-2014	Dec-10-2015

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中國核工業集團有限公司 (中國核電) 核電部  
Bureau Veritas Customer Products Services (UK) Ltd., Tianjin Branch [ Bureau Veritas ADT ]

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INSTRUMENTATION RECORD DATA SHEET  
TEST INSTRUMENTS

File No:  
Project No:

Test	Position Check	Instr No. S/N	Range Used	Instruments, Type	Maker	Model	Calibration Date	Calibration Due
		101, 27CA14501	-40-400°C, 30CH	Hybrid Recorder	Yokogawa	DR-230	Jan-21-2015	Jan-20-2016
		102, 27CA14502	-40-400°C, 30CH	Hybrid Recorder	Yokogawa	DR-230	Aug-28-2014	Aug-27-2015
		103, 27CA14503	-40-400°C, 30CH	Hybrid Recorder	Yokogawa	DR-230	May-09-2014	May-07-2015
		104, 27CA14504	-40-400°C, 30CH	Hybrid Recorder	Yokogawa	DR-230	Sep-12-2014	Sep-11-2015
		105, 27CA14505	-40-400°C, 30CH	Hybrid Recorder	Yokogawa	DR-230	Sep-28-2014	Sep-26-2015
Input / Leakage / Heating / Abnormal		106, 368014816	500/600A	Electronic Load	Prodigit	3301A	May-13-2014	May-12-2015
		107, 368014817	500/600A	Electronic Load	Prodigit	3301A	Jan-09-2011	exp. exp.
General		108, 368014819	500/600A	Electronic Load	Prodigit	3301A	May-13-2014	May-12-2015
		108, 368014820	500/600A	Electronic Load	Prodigit	3301A	Dec-19-2014	Dec-18-2015
		110, 368014821	500/600A	Electronic Load	Prodigit	3301A	Jul-17-2015	Jul-17-2015
		113, 603200010	R, V, A full range	DC-AC 1000Hz TRMS DMM	BRUNNEN	BRN990CF	Sep-01-2014	Sep-02-2015
Temperature cycling	Y	114, 603200030	R, V, A full range	DC-AC 1000Hz TRMS DMM	BRUNNEN	BRN990CF	Oct-16-2014	Oct-29-2015
		116, 603604	-70°C -100°C, 20%~80% RH	TEMPERATURE/HUMIDITY METER	TAUCHY	THU-4668U	Nov-19-2014	Nov-17-2015
Modded case stress at high ambient temperature		117, 603605	0-200°C	TEMPERATURE OVEN	TAUCHY	OK-900	Nov-18-2014	Nov-17-2015
		122, 600204	0-500V, 20A	Digital Power Meter	ibc	DP-3200A	Dec-13-2014	Dec-11-2015
General		123, 600205	0-500V, 20A	Digital Power Meter	ibc	DP-3200A	Oct-03-2014	Oct-01-2015
	Y	128, --	0-5m	tape measure	EDS	3.5mm	Jan-30-2014	Jan-29-2015
Heating		135, 27E214508 504	-40-400°C, 30CH	Data Acquisition Unit	Yokogawa	MR100-E-1D	Jan-26-2015	Jan-25-2016
		137, 4060500064	0.00µF~0.005F, 50~500MHz	LCR Meter	Mosch	MT4060A-S1	Jan-26-2015	Jan-26-2016
reconnect installation of IGBT		154, --	--	Torque Wrench	Yon Sheng	--	--	--
		160, 8190201	--	Crush Tester Equipment	Asia Green	81-6	Oct-07-2013	Oct-06-2015
	161, 8190202	--	Projectile Tester Equipment	HSJ	PTD-146	Oct-07-2013	Oct-06-2015	
	162, 0644012040	0-600g	Electronic Scale	HEWQI	100B-600	Dec-15-2014	Dec-14-2015	

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INSTRUMENTATION RECORDS DATA SHEET  
TEST INSTRUMENTS

File No:  
Project No:

Test	Function Check	Instr No. & SN	Range Used	* Instruments, Type	Maker	Model	Calibration Date	Calibration Due
	Y	168, 3302F-01-00608FD9404	50V/600A/3000W	Electronic Load	Prodigit	3302F-01-11F	Jul-03-2014	Jul-03-2015
	Y	167, 3302F-01-00608FD9441	50V/600A/3000W	Electronic Load	Prodigit	3302F-01-11F	Jul-18-2014	Jul-17-2015
	Y	168, 3302F-01-00608FD9406	50V/600A/3000W	Electronic Load	Prodigit	3302F-01-11F	Jul-03-2014	Jul-03-2015
	Y	168, 3302F-01-00608FD9405	50V/600A/3000W	Electronic Load	Prodigit	3302F-01-11F	Jul-03-2014	Jul-03-2015
	Y	170, 600-158	30V/25A	Programmable DC Source	EDC	DSP-600-025HD	Jul-19-2014	Jul-18-2015
	Y	171, 600-157	30V/25A	Programmable DC Source	EDC	DSP-600-025HD	Jul-20-2014	Jul-19-2015
	Y	172, 600-155	30V/25A	Programmable DC Source	EDC	DSP-600-025HD	Jul-19-2014	Jul-17-2015
	Y	173, 600-159	30V/25A	Programmable DC Source	EDC	DSP-600-025HD	Jul-21-2014	Jul-20-2015
Vibration	Y	214, 6280	5-50/2000Hz, 0.1-10mm	Vibration Test	SHIMIZU	V8-100	Jan-07-2015	Jan-06-2016
	Y	222, 131113325	0-10AC, 0-80V	Internal resistance meter	HEBO	BT2682	Feb-05-2015	Feb-04-2016
		223, 0620392	Temp.: 0-80°C Humid.: 0-80%	Thermo-Hygro Graph	CAESAR	CEHT-3000	Feb-05-2015	Feb-04-2016
		224, C3PC2202V	0-600V, 0-30A	DIGITAL POWER METER	Yocogawa	WT310	Dec-18-2014	Dec-18-2015
	Y	225, 130812	30V/25A	Programmable DC Source	EDC	DSP-600-025MR	Dec-23-2014	Dec-23-2015
		226, 98195078	300-1200 LPS	atmospheric pressure gauge	Tecla	tecla 611	Jan-16-2014	Jan-15-2015

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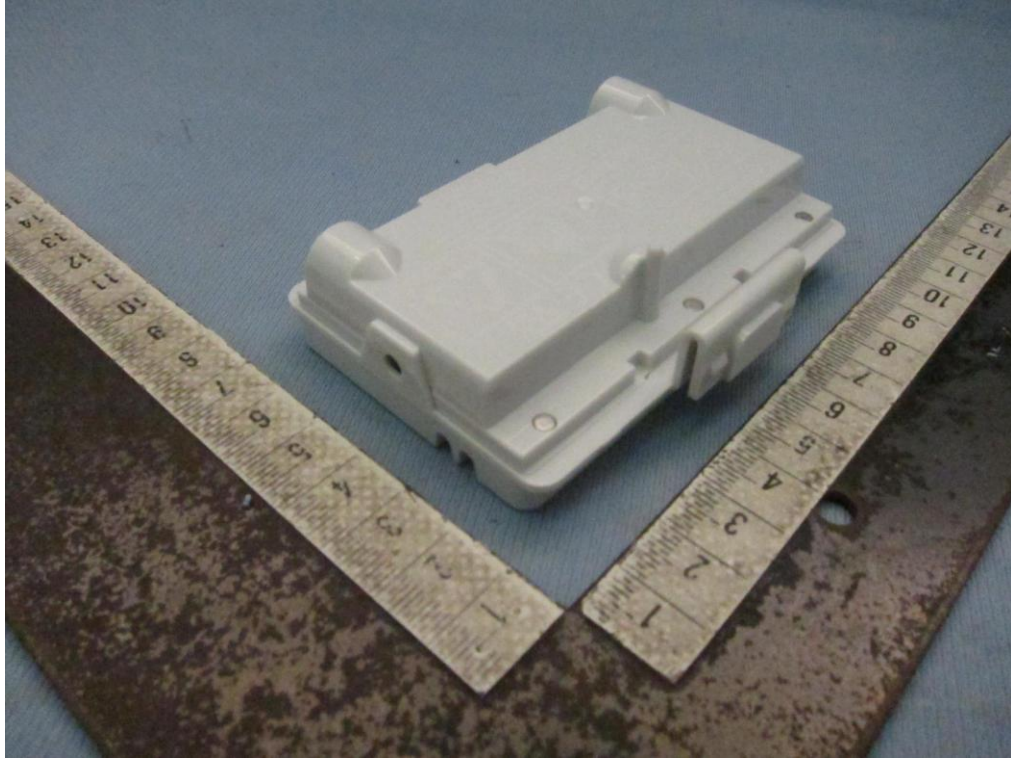
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### MAXIMUM UNCERTAINTIES OF MEASUREMENTS

This table indicates the maximum values of uncertainties associated with the tests being able to be present in this document.

Type of measurement	Uncertainty of measurement (k=2)
Generic measure of electrical value by direct reading of digital instrument) <ul style="list-style-type: none"><li>● Voltage (V)</li><li>● Current (A)</li><li>● Power (W)</li><li>● Resistance (Ohms)</li></ul>	(V) meter accuracy 0.1% (A) meter accuracy 0.5% (W) meter accuracy 1.0% (Ohms) meter accuracy 1.5%
Generic measure of time	+/- 0.38 Second
Generic measure of length value	caliper (0-200mm): +/-0.15 mm tape measure (0-500cm): +/-1.4 mm
Generic measure of weight value	scale (0-600g): +/- 0.55 g balance (0-150kg): +/- 15.95 g

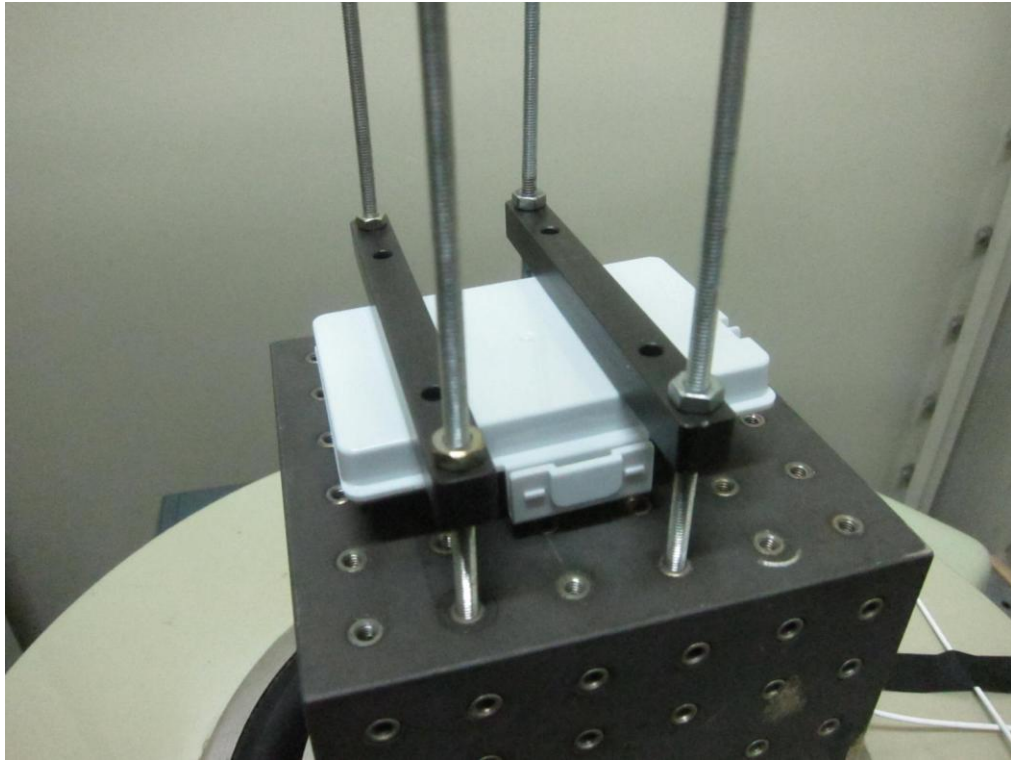
**A D T**  
**Photos:**



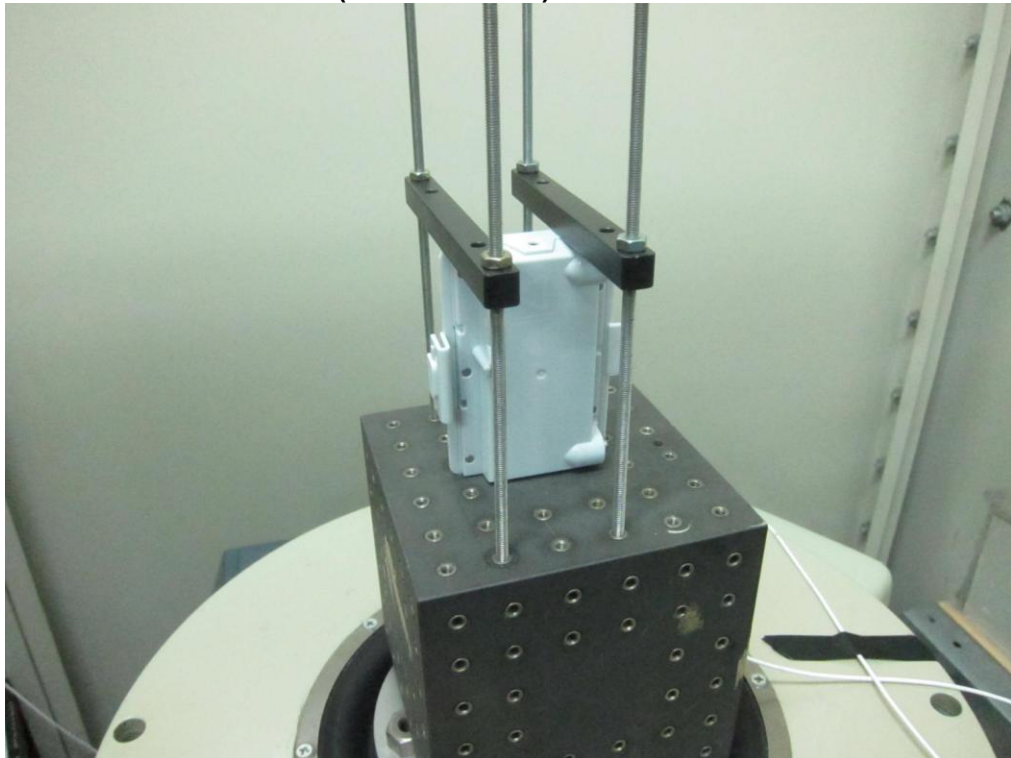
**Top external view of Battery pack**



**Bottom external view of Battery pack**

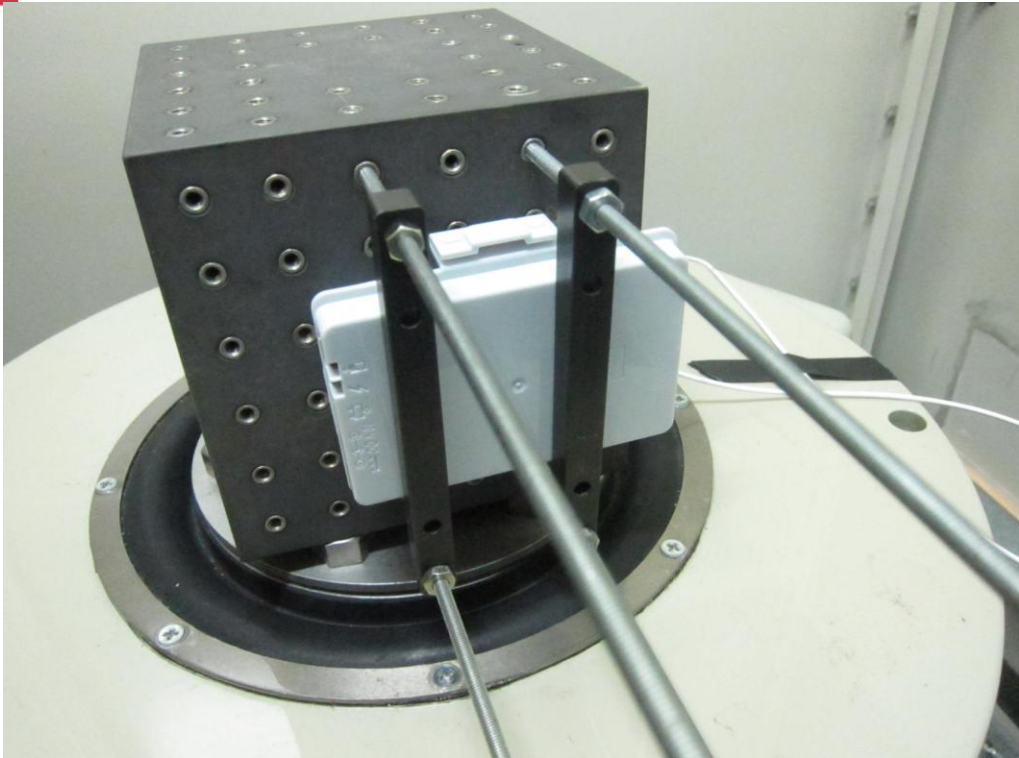


**Vibration test condition -1 (X axis direction)**

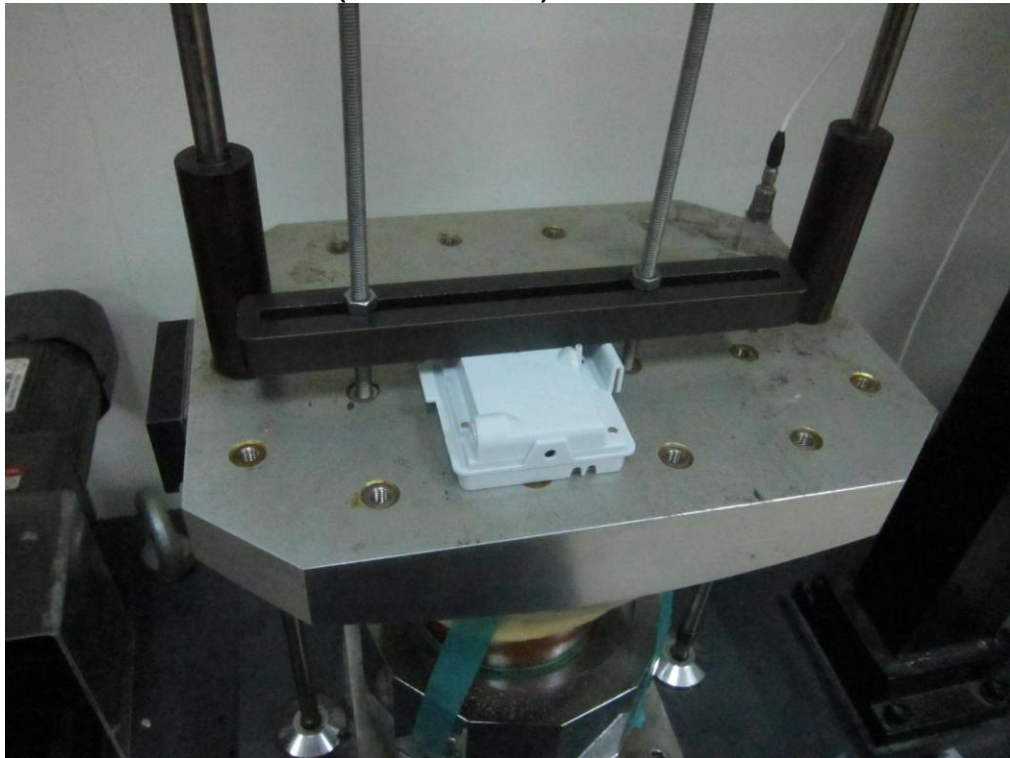


**Vibration test condition -2 (Y axis direction)**

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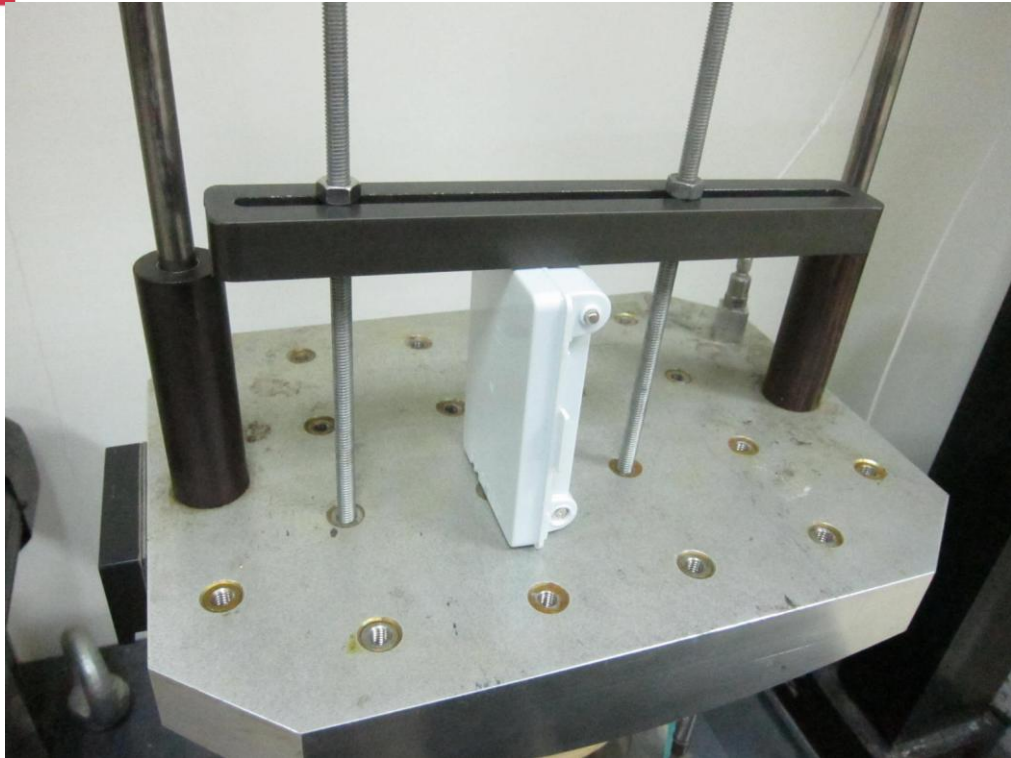


**Vibration test condition -3 (Z axis direction)**

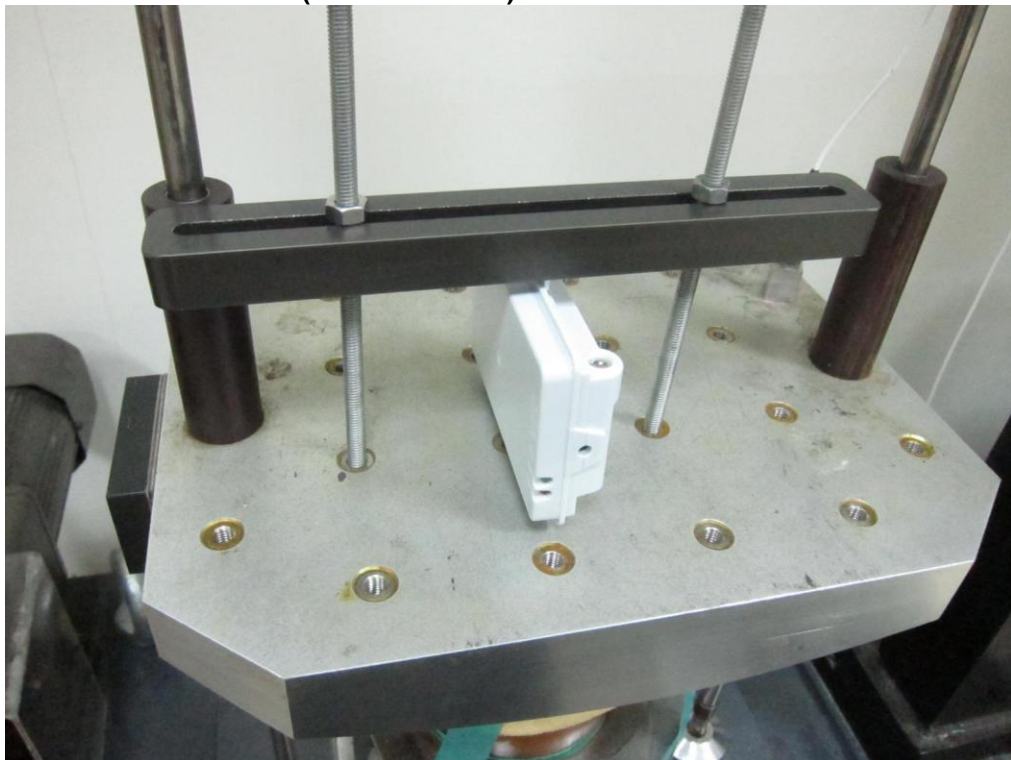


**Shock test condition -1 (X axis direction)**

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**Shock test condition -2 (Y axis direction)**



**Shock test condition -3 (Z axis direction)**