

TEST REPORT

Report Number: 160426004GZU-001

Issued Date: May 16, 2016

Specimen Description

Product : Hard Case
Reference Number : 382718
Sample Received Date : April 25,2016
Quantity of Sample : 6 pieces

Test Content

Date Test Conducted : From April 28,2016 to May 15,2016
Test Requested : Performance Test
Test Standard/Method : According to applicant's requirement

Test Results

: **Pass**
Please see the following pages for details

Remark: When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Prepared by:

Reviewed by:



Steven Zhou
Project Engineer
Intertek Guangzhou



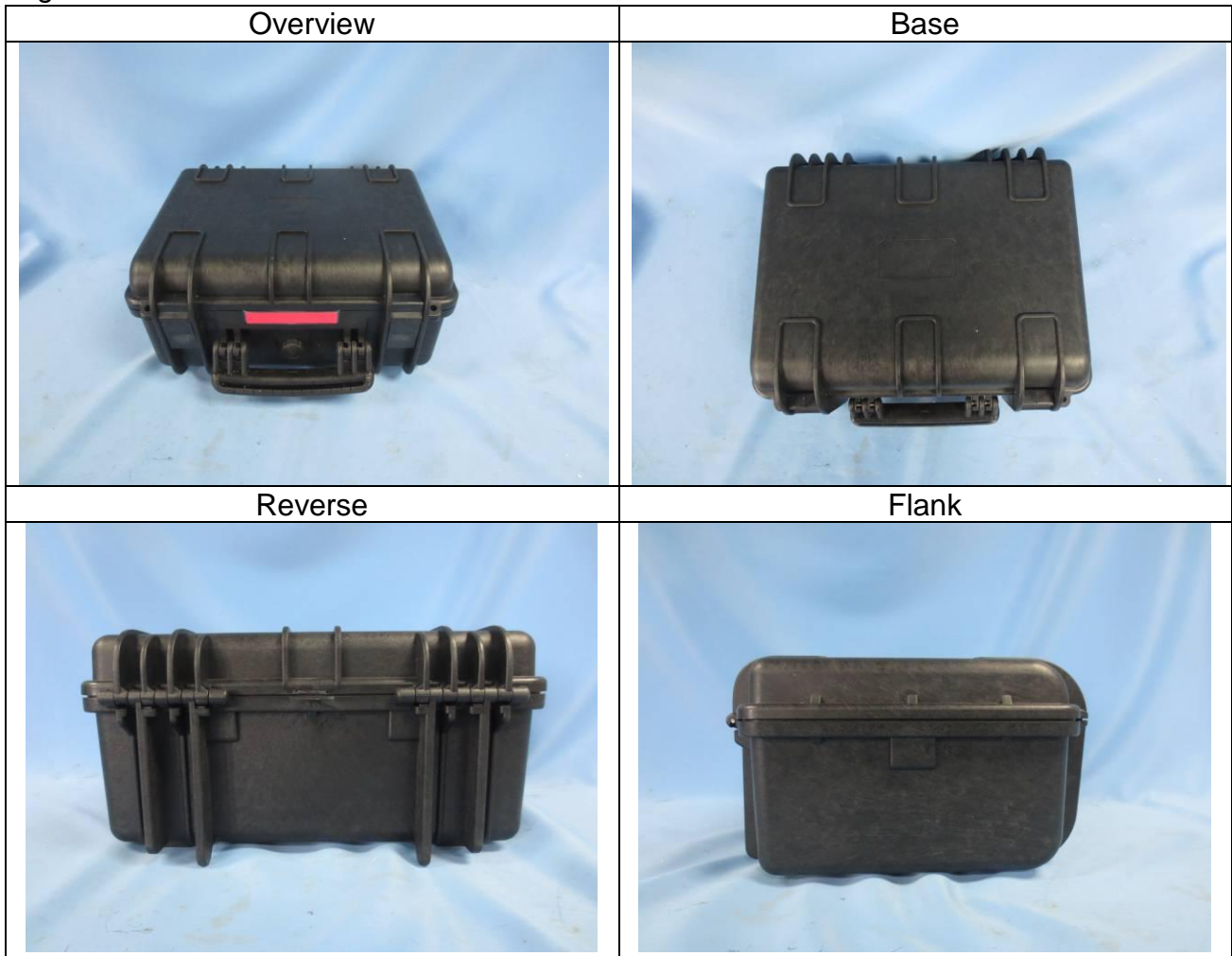
William Su
Supervisor
Intertek Guangzhou

Sample Information:

Total 6 pieces specimens were received, no visual damage was found on these specimens before test.


Sample's Size: 15.75"x13.5"x8.0"

Weight: 7.96lbs



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Sample Information (Continued):

<p style="text-align: center;">Lock</p> 	<p style="text-align: center;">Internal</p> 
<p style="text-align: center;">Internal</p> 	<p style="text-align: center;">Seal Ring</p> 

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Test Procedure

Test Items	Test Method	Sample Size	Test Purposes / Requirements	Results
1.Low temperature test	IEC60068-2-1 Sixth edition	1	Sample was placed in the chamber of -40°C for 72 hours, inspected by visual when temperature recovered to ambient, sample shall no deformation, crack and worked normally.	Pass
2.High temperature test	IEC60068-2-2 Fifth edition	1	Sample was placed in the chamber of 90°C for 72 hours, inspected by visual when temperature recovered to ambient, sample shall no deformation, crack and worked normally.	Pass
3.Ultraviolet lamp exposure test	ASTM G154-12a	1	Specimens were cut from sample and placed in UV test chamber, exposure condition according to cycle 1 of ASTM G154 for 100 hours. Exposure condition: Cycle 1 Lamp UVA-340 Typical Irradiance:0.89W/m ² /nm Approximate Wavelength:340nm Exposure cycle: 8 h UV at 60 (±3) °C Black Panel Temperature; 4 h Condensation at 50 (±3) °C Black Panel Temperature Inspected specimen by visual after ultraviolet exposure test and shall no color change, crack, deformation	Pass See appendix I
4.Salt spray test	ASTM B117-07	1	Sample was placed in the salt spray test chamber for 100 hours. Salt solution was prepared by dissolving 5±1parts by mass of sodium chloride in 95 parts of water. pH of salt solution e salt solution shall be such that when atomized at 35°C (95°F) the collected solution will be in the pH range from 6.5 to 7.2 Temperature of salt chamber: 35±2°C After test, sample was gently washed in clean running water not warmer than 38°C to removed salt deposits from sample' surface and dried, then inspected sample by visual, shall no corrosion, rust.	Pass See appendix I

Test Procedure (Continued)

Test Items	Test Method	Sample Size	Test Purposes / Requirements	Results
5.Performance of Lock	Applicant's requirement	1	The lock of sample shall simulated for user to lock and unlock for 1000cycles, one cycle contained unlock the sample to open at suitable site and then close cover and lock tightness while sample was locking.. Lock shall be lock tightness and work normally after 1000 cycles.	Pass
6.IP67	IEC60529 edition 2.2 Clause 13.6 and clause 14.2.7	2	Test item:IP6X Sample was made a hole and connected with vacuum pump, and make sure pressure inside of sample was lower than surrounding atmospheric pressure, not exceed than 2.0KPa Sample was placed in the dust chamber of IEC60529 for 8 hours Shall no dust entrance in the internal of sample after IP6X test. Test item:IPX7 Sample was placed into water tank, and make sure the lowest point of sample was located 1000mm below the surface of water. The temperature of sample and water were different by more than 5K. Test duration :30 min Shall no water entrance in the internal of sample after IPX7 test.	Pass
7.Free fall drop test	Fed-std-101C Method 5007.1 march 13,1980	1	The steel lump of 14 Kg were enclosed into sample and locked, then the sample was made to performed free fall drop test at height of 25 inches, contained corner, edge, face, total 26 drops, impact plane was steel. Sample shall no crack, broken and can worked normally.	Pass

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Test Procedure (Continued)

Test Items	Test Method	Sample Size	Test Purposes / Requirements	Results																																
8.Low temperature free fall drop test	Fed-std-101C Method 5007.1 march 13,1980	1	Sample was placed into chamber of -20° F temperature for 24 hours while the sample was stabilized and then put steel lump of 14 Kg into sample and locked, then the sample was made to performed free fall drop test at height of 25 inches immediately,contained corner, edge , face, total 26 impacts, impact plane was steel. Sample shall no crack, broken and can worked normally.	Pass																																
9. Random vibration test	ASTM D4169-01	1	Sample was withstand with random vibration of truck for level II, Every orientation of sample be tested for 40 minutes ,shall no loosen, broken and power spectral density level as follow: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Frequency, Hz</th> <th>Assurance Level I</th> <th>Assurance Level II</th> <th>Assurance Level III</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0001</td> <td>0.00005</td> <td>0.000025</td> </tr> <tr> <td>4</td> <td>0.02</td> <td>0.01</td> <td>0.005</td> </tr> <tr> <td>16</td> <td>0.02</td> <td>0.01</td> <td>0.005</td> </tr> <tr> <td>40</td> <td>0.002</td> <td>0.001</td> <td>0.0005</td> </tr> <tr> <td>80</td> <td>0.002</td> <td>0.001</td> <td>0.0005</td> </tr> <tr> <td>200</td> <td>0.00002</td> <td>0.00001</td> <td>0.000005</td> </tr> <tr> <td>Overall, g rms</td> <td>0.73</td> <td>0.52</td> <td>0.37</td> </tr> </tbody> </table>	Frequency, Hz	Assurance Level I	Assurance Level II	Assurance Level III	1	0.0001	0.00005	0.000025	4	0.02	0.01	0.005	16	0.02	0.01	0.005	40	0.002	0.001	0.0005	80	0.002	0.001	0.0005	200	0.00002	0.00001	0.000005	Overall, g rms	0.73	0.52	0.37	Pass See appendix I
Frequency, Hz	Assurance Level I	Assurance Level II	Assurance Level III																																	
1	0.0001	0.00005	0.000025																																	
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Overall, g rms	0.73	0.52	0.37																																	
10.Spray test	ASTM D4169-01	1	Spray intensities of 100+25mm/h was used to sample and 40 minutes every face of sample. Sample shall no corrosion, structural integrity, water entrance.	Pass																																

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Test Procedure (Continued)

Test Items	Test Method	Sample Size	Test Purposes / Requirements	Results
11.Impact resistance test	ATA300 revision 8.0 B-2-5	1	A bar of 3.2 centimeters in diameter with a hemispherical end, weighing 6 kilograms, and height of 0.5m from bottom of bar to the top of sample, Impact point was the weakest of any exterior surface of sample. Shall no crack, broken or degrade the structural strength of sample.	Pass
12.Immersion test	MIL-STD-810 F Notice 3 method 512.4	1	Sample was placed into water tank, and make sure the lowest point of sample was located 1000mm below the surface of water. Test duration :60 minutes Shall no water entrance in the internal of sample after test	Pass

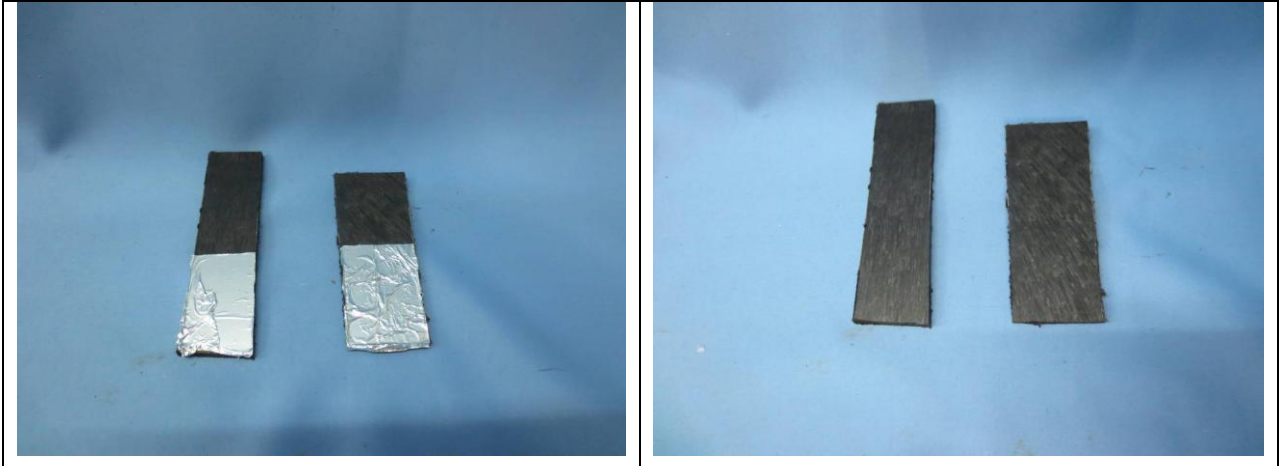
Please see appendix I for more details

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Appendix I

3. Ultraviolet lamp exposure test

A half of samples were sealed with aluminum foil in ultraviolet exposure test for result's comparison after test, no color change, crack, deformation was found after test.



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Appendix I (Continued)

4. Salt spray test

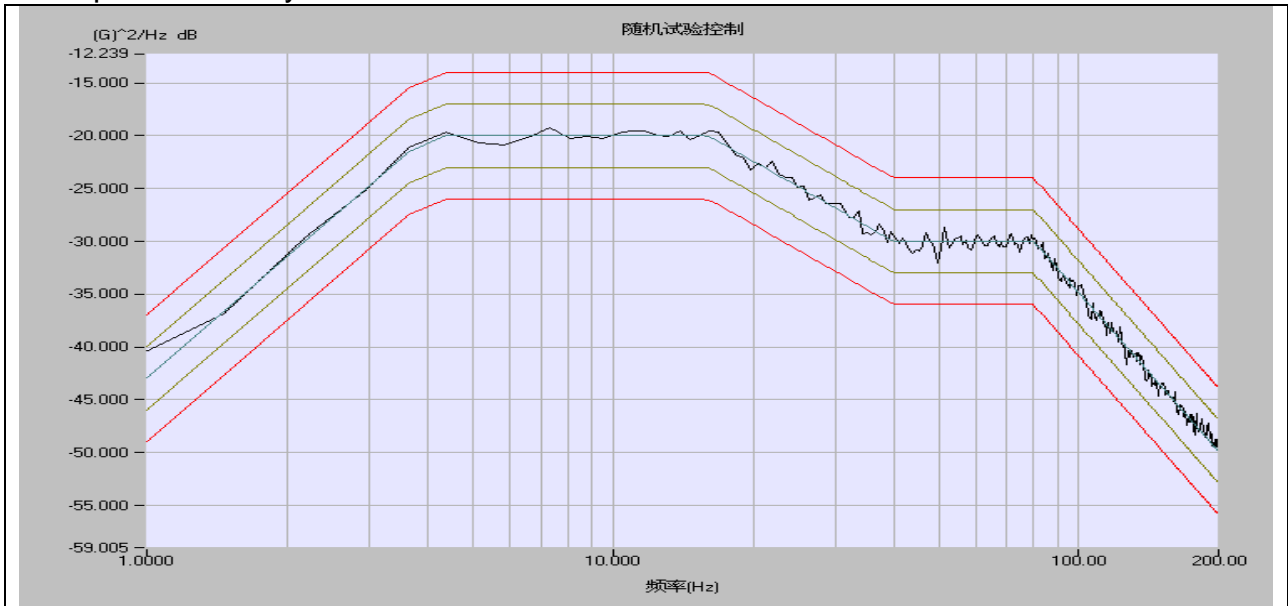


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Appendix I (Continued)

9. Random vibration test

Power spectral density


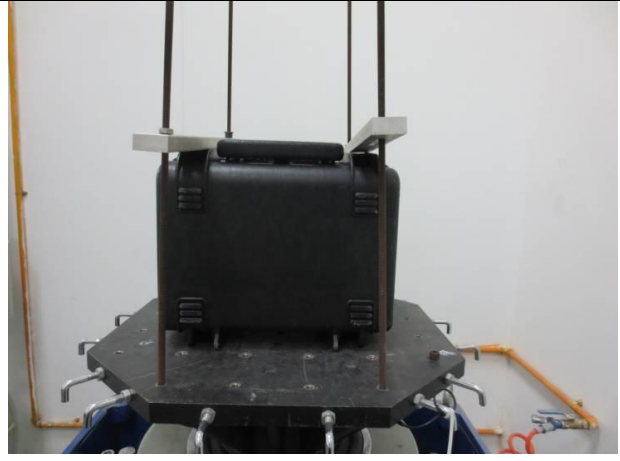
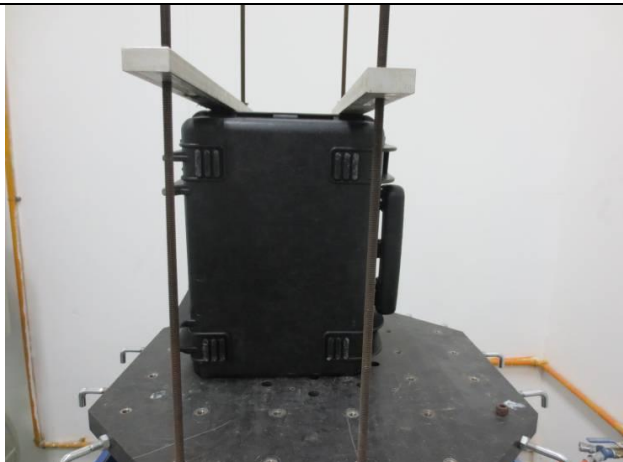


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Appendix I (Continued)

9. Random vibration test

Test axis

Axis Z	Axis Y
	
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REVISION SUMMARY

Date	Project Handler Reviewer	Page	Description of Change
			None

***** End of Report *****