

HALT Test Report for K18X001.01 (FFC Cable)

Prepared by Jackson Huang
Test Engineer, HWQA Engineering Dept.

Checked by Kenji Chen
Supervisor, HWQA Engineering Dept.

Approved by Jy Deng
Manager, HWQA Engineering Dept.

Revision Change History		
Revision	Description of Change	Date
1.0	HALT Test	09/13/2021
2.0	FFC Cable Test	06/17/2022

HON HAI PRECISION IND. CO., LTD.

Notice:

All rights reserved. Except for distribution within company that authorized by Foxconn, passing on and copying of this document, use and communication of its contents with the third party is not permitted without written authorization from HON HAI PRECISION IND. CO., LTD.

Table of Contents

Table of Contents1

Purpose:2

Scope:2

The summary of test items:3

Panel Drawing:4

Test setup and function test:.....4

 Highly Accelerated Lift Test (HALT).....5

Purpose:

1. Provide a formal functional demonstration of the product design reliability.
2. Identify any design discrepancies.
3. Reliability assurance of trial samples which are designed and fabricated in accordance with the customer's product specifications.
4. Conduct robustness testing on early production samples in accordance to customer's product environmental testing specification.

Scope:

This document describes the performance requirements, validation criteria, and the validation tests which focus on K18X001.01 product.

The DUT H/W revision is V005 and S/W revision is 19.532.17-20220309.

The summary of test items:

No.	Item	Test Condition	Q'ty	Period	Pass Criteria	Test result
1	Highly Accelerated Life Test (HALT)	1. Vibration step stress test. 2. Combined environment stress test.	2	1 days	To be followed customer spec.	PASS

Panel Drawing:



Front

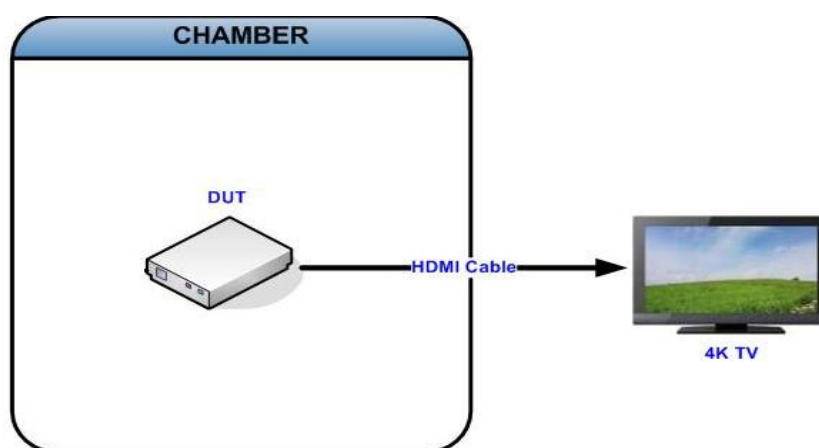


Rear



Adapter

Test setup and function test:



Highly Accelerated Life Test (HALT)

Purpose:

To demonstrate that the product can be a step-stress process to isolate design weaknesses under temperature and vibration stresses.

Quantity: 2 units

Test Objective:

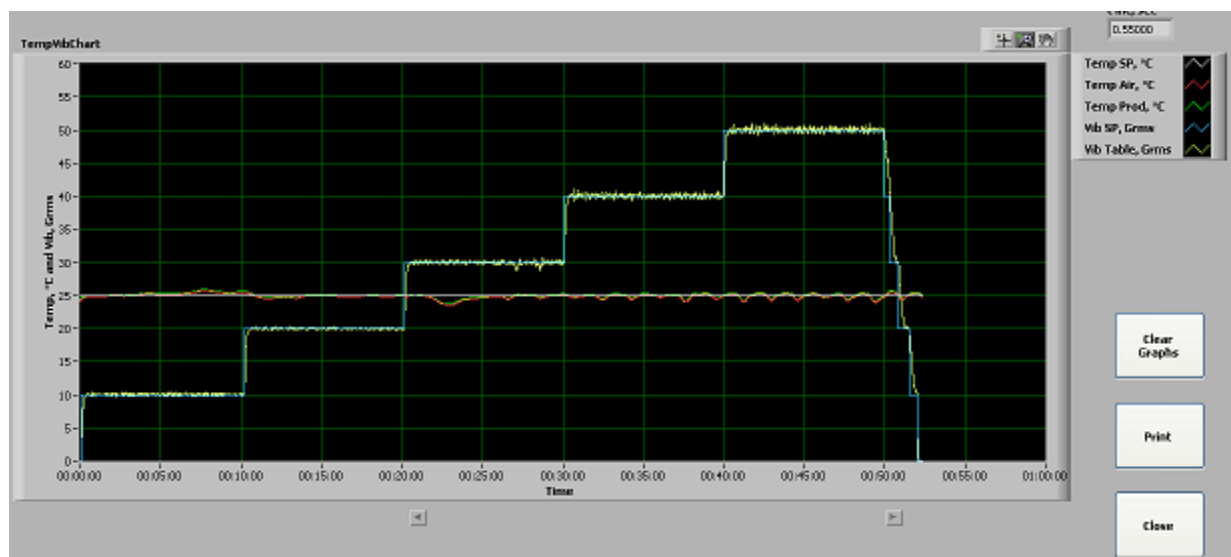
1. Vibration step stress test.
2. Combined environment stress test.

Test Profile:

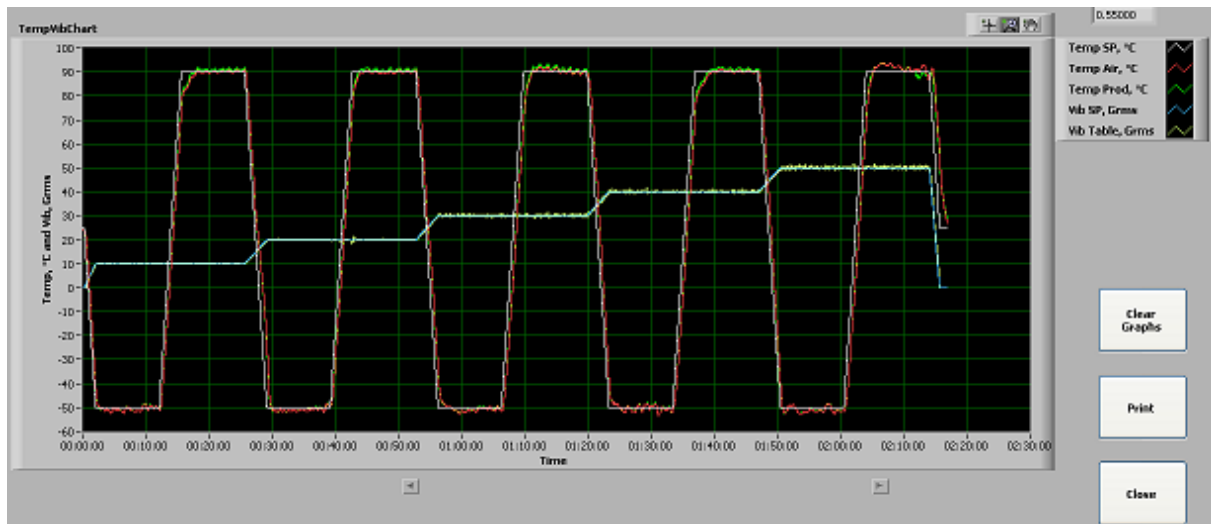


Function Test Setup

1. Vibration step stress test:



2. Combined environment stress test:



Test Procedure:

1. Vibration step stress test:

- 1.1 Perform vibration step stress. Start at 10Grms and increase, dwell time for 10 minutes for each step.
- 1.2 During each step, perform one AC power on-off cycle in addition to the specified functional test.
- 1.3 Check for fixable defects and weaknesses.
- 1.4 Continue until unit can no longer be repaired or chamber limit (50G) is reached.

2. Combined environment stress test:

- 2.1 The combined test combines power cycle, vibration and temperature stresses
- 2.2 The temperature levels are determined to refer to "Thermal step stress Cold / Hot maximum temperature".
- 2.3 Maximum temperature transition rate by 40 °C per minute.
- 2.4 The vibration test profile is 10, 20, 30, 40, 50 Grms
- 2.5 Minimum dwell time at each combination condition is run one cycle of the diagnostics or 10 minutes.
- 2.6 5 cycles are required to complete the combined test.

Pass Criteria:

1. No performance degradation during the test functional verification
2. No damage such as cracks, gaps to the test unit, or loss of connectivity, etc.

Basis for Profile:

In developing this profile, the concepts and ideas expressed in the following sources have been reviewed: PRS (Pace Requirements Specification) Version 1.5

Test result: **PASS**

Test Step Stress:

1. System level vibration step stress result:

Set Point (Grms)	Test Result	Notes
10	Pass	
20	Pass	
30	Pass	
40	Pass	
50	Pass	

Notes: Vibration step stress test has reached HALT machine limit of 50 Grms.

2. System level combined environment results:

Cycle	Temperature Set Point (°C)	Vibration Set Point (Grms)	Test Result	Notes
1	-50	10	Pass	
1	90	10	Pass	
2	-50	20	Pass	
2	90	20	Pass	
3	-50	30	Pass	
3	90	30	Pass	
4	-50	40	Pass	
4	90	40	Pass	
5	-50	50	Pass	
5	90	50	Pass	

Notes:

1. Combined thermal cycling with vibration test result was passed.
2. Combined environment test result was passed.

Notes:

FFC Cable Picture

