

Mechanical test

Abstract:

This instruction describes the appearance features, technical specifications, interface definitions and communication protocols of Mechanical test.

Key Words: Satellite, Mechanical test, Specification

1. Appearance

The appearance of Mechanical test is shown as figure1.



Fig.1 Mechanical test

2. Specifications

It has a Mechanical test laboratory, which undertakes the task of Mechanical test. Its annual test capacity is 1000 sets. The Mechanical test laboratory has 6 sets of Mechanical test equipment, all of which can meet the test requirements of GJB1027- 2005.

Table1 Mechanical test laboratory List

Item	Number	Remark
Sine vibration equipment	3	3.5t,5t,18t
Random vibration equipment	3	3.5t,5t,18t
Impact test equipment	2	
Acceleration test equipment	1	

It can be used for whole satellite, subsystem and single machine.

Table2 Vibration test system

Item	Ability	Remark
Thrust	18t	
Item	Sine vibration; Random vibration	
Acceleration	$\leq 100g$	
Rate	$\leq 2m/s$	
Peak displacement	76mm	
Frequency	$2Hz \leq f \leq 2500Hz$	

Table3 Acceleration test system

Item	Ability	Remark
Acceleration	$3g \leq$ $\leq 100g$	
Load	$\leq 100kg$	Single arm

Table4 Impact test system

Item	Ability	Remark
Frequency	$100Hz \leq f \leq 4000Hz$	
Acceleration	$\leq 2000g$	
Time	$\leq 20ms$	
Load	$\leq 50kg$	Single arm
Volume	600mmX600mm	

3. Sever Item

Table5 Sever Item

Item	Ability	Remark
Satellite	Sine vibration equipment; Random vibration equipment; Impact test equipment; Acceleration test equipment.	
Subsystem	Sine vibration equipment; Random vibration equipment; Impact test equipment; Acceleration test equipment.	
Equipment	Sine vibration equipment; Random vibration equipment; Impact test equipment; Acceleration test equipment.	
Mechanical	Response testing	

4. **Application**

- 1) Manned Space Engineering;
- 2) The lunar exploration program;
- 3) Micro nano satellite.