

REVISIONS

Letter	ECO No.	Description	Checked	Approved	Date
		TAKEN FROM LSE SPEC. QAP-G-403			10/3/90
A		INITIAL RELEASE			

	NAME	DATE	MASSACHUSETTS INSTITUTE OF TECHNOLOGY CENTER FOR SPACE RESEARCH			
Drawn:	BRIAN KLATT	12/18/90	ELECTROSTATIC DISCHARGE (ESD), HANDLING OF PARTS AND EQUIPMENT			
Checked:	W. F. MAYER	1/8/91				
Approved:						
Released:						
			Size	Code Identification No.	Drawing No.	Rev.
			T	80230	99-01003	A
			Scale: NONE		Sheet: 1 of 4	

HANDLING REQUIREMENTS FOR STATIC SENSITIVE ELECTRONIC PARTS AND ASSEMBLIES

1.0 SCOPE

This specification covers the handling requirements for static sensitive electronic parts and assemblies and the procedures to be followed from the receipt of electronic piece parts to the completion of component assembly.

1.1 Objective

The objective of this procedure is the prevention of electrostatic discharge (ESD) damage to sensitive parts and assemblies, by protecting hardware and personnel from excessive leakage current.

2.0 TRANSFERRING PARTS AND ASSEMBLIES

When flight parts and assemblies are moved from one controlled area to another, they will be transferred in static free containers.

3.0 PROCEDURE

3.1 Receiving

Static Sensitive electronic parts used in flight hardware must be delivered to MIT in ESD protective packaging, and identified on the external package as ESD sensitive. Receiving personnel will check the external packaging for damage caused by mishandling. The external packing is then opened and the internal contents will be checked for the following:

- a. damage caused by mishandling
- b. quantity agrees with quantity ordered on the purchase order or packing list
- c. parts are packaged to prevent ESD damage

3.1 Receiving (continued)

If the parts are not received in static free containers, they will be held by receiving for MRB action. Receiving personnel will not remove the parts from their protective packaging. If it is necessary to open the protective packaging for packing list verification, it will be done under controlled conditions described in section 4.0.

3.1.1 Incoming Inspection

Incoming visual inspection on ESD sensitive electronic parts will be done in a controlled area as described in section 4.0

3.1.2 Incoming Electrical Testing

When incoming electrical testing is done on ESD sensitive electronic parts, it will be performed in a controlled area as described in section 4.0.

3.2 Bonded Storage

ESD sensitive parts will be kept in static free containers and stored in metal cabinets.

3.3 Kitting

Kitting will be done in a controlled area as described in section 4.0.

3.4 Fabrication, Assembly, and Integration:

Fabrication, assembly, and integration will take place in a controlled area as described in section 4.0. Shorting plugs will be installed on printed wiring board connectors when complete, unless test cables are plugged in.

3.5 Cleaning

Spot cleaning can be done in the assembly area but final cleaning will be done under an exhaust hood suitable for chemical use. The use of compressed air or dry nitrogen is prohibited unless an ionizing air gun is used.

3.6 Storage

Parts, sub-assemblies, assemblies, and components, when not in work, will be stored in static free containers or bags in a metal cabinet.

3.7 Electrical Test

Testing will be done in a controlled area as described in section 4.0.

3.8 Assembly and Component Electrical Test:

Electrical test will be done to an approved procedure that has adequate provisions to ensure that no damage occurs during testing.

4.0 CONTROLLED AREA

The controlled area is an area (fabrication, assembly, inspection, bonded stock etc.) that has limited access and has a static free work area. The static free work area has conductive floor mats, conductive work surfaces, personnel wrist ground straps, wrist strap monitors, and is equipped with grounded tools and equipment. Ground connections shall be commonly connected to earth ground with a resistance sufficient to limit any leakage current to five (5) milliamperes.

5.0 PROCESS CONTROL

Process control is the responsibility of the person in charge of the area. Quality Assurance will monitor receiving, kitting, fabrication, assembly, inspection, and test areas to ensure compliance with these procedures.