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Keysight Technologies Suppliers ESD Control Requirements

1.0 Purpose

This exhibit defines the minimum requirements for an Electro Static Discharge (ESD) control program for Contract Manufacturers and Suppliers of ESD Sensitive parts (ESDS). It also defines packaging requirements for ESDS parts.

2.0 Scope and Limitations

These requirements apply to Contract Manufacturers (CM's), suppliers and subcontractors of products and services to Keysight Technologies, Inc. (Keysight), applicable whenever parts are ESD sensitive (ESDS).

Notes: Contract Manufacturers (CM's) are defined as organizations that make products under contract for Keysight, where products are designed by Keysight. CM's are a form of outsourcing manufacturing processes (e.g.: Assembly, Test, etc.).

3.0 Responsibility

Contract Manufacturers, suppliers and subcontractors of ESD sensitive products : To adhere to Keysight Supplier ESD Control Requirements

4.0 References

- 4.1 ANSI/ESD S.20.20, ESD Association Standard for the Development of an Electrostatic Discharge Control Program
- 4.2 IEC 61340-5-1, Protection of electronic devices from electrostatic phenomena - General requirements
- 4.3 IEC/TR 61340-5-2, Protection of electronic devices from electrostatic phenomena – User guide
- 4.4 ANSI/ESD S541 Packaging material for sensitive items
- 4.5 ANSI/ESD S8.1 Symbols- ESD Awareness
- 4.6 RCJS-5-1 Protection of electronic devices from electrostatic phenomena-General Requirements

5.0 Definitions

No.	Terms	Definition
5.1	ESD	Electrostatic Discharge
5.2	ESDS	ESD Sensitive
5.3	CM	Contract Manufacturer

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6.0 Process Description

6.1 Contract Manufacturers ESD Control Requirements

Keysight's Contract Manufacturers (CM's) shall have an ESD program that:

- 1) Certified to ANSI/ESD S20.20;
- 2) Compliant to ANSI/ESD S20.20; or
- 3) At a minimum includes the following ESD program elements:
 - a. A documented ESD procedure
 - b. Training (initial and periodic) for anyone that handles ESD sensitive parts
 - c. Periodic verification of the installed ESD controls
 - d. Grounding for personnel and installed ESD control items must comply with ANSI/ESD S20.20 or IEC 61340-5-1 or RCJS-5-1
 - e. Defined ESD Protected Areas
 - f. ESD Sensitivity Information for the components supplied to Keysight. At a minimum there should be Human Body Model (HBM) and Charged Device Model (CDM) data available upon request

6.2 Keysight Supplier and Contract Manufacturers ESD Control and Packaging Requirements

6.2.1 ESD control is required for all CMs, suppliers and subcontractors furnishing or handling ESD sensitive items. The suppliers shall have written ESD control policies, procedures or practices in place to provide continuous protection for ESDS parts, assemblies and equipment. The applicable control program functions shall also applied to subcontractors, suppliers and vendors to provide continuous protection for ESDS parts, assemblies and equipment. Assemblies, components and equipments shall be designed to provide ESD.

6.2.2 CMs, Suppliers and subcontractors of ESD sensitive devices are required to ship the parts in ESD protective material. ESD packaging used to protect the ESD sensitive products shall comply with ANSI/ESD S541 or IEC 61340-5-1 or RCJS-5-1. Supplier shall have test reports showing that the packaging material was tested using the test methods and technical limites as required by ANSI/ESD S541 or IEC 61340-5-1 or RCJS-5-1.

6.2.3 All ESD bag shall have ESD Awareness Symbols defined in ANSI/ESDS8.1 as per below.

Example Marking:



6.2.4 Packaging should be marked with information that allows traceability to the packaging manufacturer and to the manufacturer's date/lot code information. The date/lot code

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should allow traceability to quality control information pertaining to the manufacture of the specific lot of packaging.