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Handling Procedure
Electrostatic Discharge Sensitive Devices
(ESD)

Mo/Yr

Revisions			Rev:	
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1.0 Purpose

To define minimum requirements for effective electrostatic discharge (ESD) control. Adherence to this procedure will provide adequate protection for ESD sensitive devices during handling and storage processes. [redacted]

2.0 Scope

This procedure is specifically written for the handling of an ESD sensitive circuit card but may be applied to any ESD sensitive device included in any process as deemed applicable by the Responsible Authority (RA).

3.0 Discussion

All processing of an ESD sensitive device or of a subassembly or assembly containing an ESD sensitive device must [redacted]

4.0 Responsibility

4.1 Personnel

All personnel who handle ESD sensitive parts and assemblies must be trained and certified in ESDS handling techniques. Training and certification should be updated on an "as needed" basis. Each person should handle and protect the components according to this procedure. Each person is responsible for [redacted]

4.2 Supervisor/Training Requirements

All lead operators, supervisors, or other personnel who directly oversee or manage individuals who handle ESD sensitive parts and/or assemblies shall have ESD training. They will also ensure [redacted]

4.3 Non-Company Personnel

Customers, Government representatives, or other non-Company personnel [redacted] shall have ESD training.

5.0 Definitions

Anti static (Anti-stat) - [redacted]

Electrostatic Discharge (ESD) - [redacted]

Electrostatic Discharge Sensitive (ESDS) - [redacted]

ESDS Device (component, part) - [redacted]

ESDS Device Zone - [redacted]

Electrostatic Field - [redacted]

Faraday Cage - [redacted]

Insulator - [redacted]

Resistivity (Surface) - [redacted]

Static Conductive - [redacted]

Static Dissipative - [redacted]

Static Protective -

Static Safe -

Static Safe Perimeter -

Static Shielding -

Static Table Mat -

6.0 ESDS Identification

6.1 ESDS ID requirements

All ESDS devices or assemblies containing ESDS components must The following provisions need to be reviewed for applicability and addressed as necessary:

a)

b)

c)

d)

e)

6.2 ESDS Device Designation

An ESDS device or component may reach a point during production where [redacted] This is true when [redacted] Once the device is [redacted] with the following exceptions:

1 - [redacted]

2 - [redacted]

3 - [redacted]

Note: Work [redacted] whenever possible.

7.0 ESDS Device Handling Procedures

7.1 ESDS Device Handling

The handling procedures for ESDS devices have two basic requirements:

1 - [redacted]

2 - [redacted]

These requirements are met with [redacted] and with [redacted]

ESDS devices include [redacted] Special handling procedures will apply to:

- [redacted]
- [redacted]
- [redacted]

7.2 Receiving Inspection Handling

When any item is received [redacted] If any damage exists, [redacted]

7.3 ESDS Device Transportation

ESDS devices or assemblies If the device needs the device will

7.4 Shipment of ESDS Device

When packaging an ESDS device for return shipment, .

For ESDS devices or assemblies that are built into a container, the container will

7.5 Specific Handling Procedures

ESDS devices should keep the device's Once ESDS devices have been .

Before handling ESDS devices, an individual shall

While handling an ESDS device, to

Minimize touching An ESDS device that has material shall

Warning: When working where 120 volts or more may be present, always to your before

7.5.1 The circuit cards used in a container [redacted] until [redacted] The cards may [redacted] When needed for processing, the shipping container will [redacted] While handling the ESDS device, [redacted] by continuous [redacted] When not in [redacted] shall be stored [redacted] Once the ESD device is installed in the next assembly, the connector pins [redacted] A conductive dust cap may be used to replace the normal dust cap. If a conductive dust cap is used [redacted]

7.6 Low Humidity Operation

When the relative humidity drops below 30%, the following precautions must be taken:

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

8.0 Static Safeguarded Work Station/Zone Requirements

8.1 Static Safeguarded Work Stations

Static Safeguarded Work Stations shall include:

-

-

-

Basically, a properly is required to

All Static Safeguarded Work Stations

8.2 ESDS Device Work Zone Requirement

Work zones that will be used for ESDS device processing will consist of

This work zone will be inclusive of

The work zone shall include the following requirements:

1)

2)

3)

4)

5)

6)

7)

8) [redacted]

9.0 ESDS Work Zone Operations

9.1 Personnel Grounding

For processes in which an operator stays at a fixed location and handles an ESDS device, [redacted] is required at all times. The resistance from the operator's body surface to ground shall [redacted] All personnel working within an ESDS Device Zone shall [redacted] If the wrist strap is removed, it shall [redacted] All personnel who will be in the work zone while work on an ESDS device is being performed must [redacted] Visitors must not [redacted]

Warning: When working where 120 volts or more may be present, always [redacted] before handling the ESDS assembly.

9.2 Personnel Apparel

Clothing and its movement [redacted] involving the handling of ESDS devices. The following will minimize the static generation within the Static Safe Perimeter.

- [redacted]
- [redacted]
- [redacted]
- [redacted]

9.3 ESD Shop Coats

All personnel working on ESDS devices in an area identified as a Static Safeguarded Work Station or personnel who will be in the ESD work zone while ESDS devices are present must [redacted] to properly [redacted] the operator must [redacted]

In addition, It is recommended that An ESD can contribute to ESD damage

9.4 Prohibited materials

High static generating materials shall be

- -
a) s)
b)
c)
d)
e)
-

9.5 Paperwork

Paper and wood products with normal humidity conditions (over 30% relative humidity) As a normal precautionary measure, Do not place an ESDS device on

9.6 Ionized Air

Excessive static charge must when one or more of the following exist:

- -
- -
- -

As a standard rule [redacted] shall be tested [redacted] to neutralize a static charge.

9.7 Equipment grounding (Electrical)

All electrical equipment [redacted] needs a [redacted]
Soldering irons, test fixtures, or meters [redacted] cannot be [redacted]

9.8 Hand Tools

All hand tools must [redacted]

9.9 ESD Shielding Bags

The standard bag for all ESD protection will be [redacted] discarded if [redacted]
The presence of staples, [redacted] unless they are [redacted]
Use the following rule: [redacted]

10.0 Work Station and Equipment Calibration

Equipment required:
- [redacted]
- [redacted]
- [redacted]
- [redacted]

All equipment shall be calibrated.

10.1 Calibration of Work Station

Place the [redacted] ESD mat. Measure [redacted] from [redacted] If resistance measurements are above these values, try [redacted] Do not use mats [redacted]
For the next measurement the operator [redacted]

The static field meter shall verify With the meter turn and repeat If the turn the meter repeat the If no the item must

10.2 Equipment Checks

Using the from the tip The value must be

11.0 Potential Damage

If an ESDS device may function

If an ESDS device is that person will

If an ESDS item has exposed to ESD threats need