



Electrostatic Discharge Technical Bulletin

Introduction:

In order to maintain the functionality of electronics devices, precautions must be taken by anyone who comes into contact with the exposed metal surfaces, both inside and out.

Background:

Electrostatic discharge, or ESD, is the sudden flow of electric current between two objects, where one has a high level of static electricity.

Some of the common causes of ESD include:

- Human movement, which can cause charge to build up on clothing
- Handling sheets of paper or plastic
- Using tape, even if it's electrical tape

Damage Caused by ESD:

Discharge current can cause immediate damage to semiconductor components, such as chips, fine connections wires, or other sensitive parts of an electronic device. It can also cause latent damage, which can cause one or more components to fail in the future, even if they work immediately after the event.

The estimated yearly losses to the electronics industry from ESD damage is \$40 billion.

How We Can Stop Damage from ESD:

There are two things that can be done to stop damage that is caused by ESD.

The first precaution that can be taken is to make sure that sensitive electronics are always carried and shipped in special ESD packaging, as seen below.



The second precaution that should be implemented is to ensure that ESD wrist straps are always used. These will prevent the build-up of static electricity by connecting to “ground.”



ESD Safety with Tiger Optics’ Products:

All of our products and their frames are “grounded” when plugged in. With the product plugged in and powered off, you can connect the wrist strap to any internal exposed metal in order to keep the electronics ESD safe. However, it is best to have an external ESD solution. You can connect your wrist strap to grounded ESD mats, or to another piece of equipment that is grounded.

Conclusion:

ESD damage can be caused by a variety of occurrences, and costs billions of dollars each year. If simple precautions are taken when around sensitive electronics, damage can be avoided. Making sure that you are always “grounded” when working on exposed electronics will prevent the loss of financial resources as well as valuable time.