

## ESD Protection of Set Top Appliances with PolySurg™ ESD Suppressors



### What Are Set Top Boxes?

The continuing trend is to link broadband signal delivery to the home entertainment display, and other devices via set top boxes. Set top boxes used to be just an analog cable tuner/decoder but now it includes the likes of digital cable, satellite controller, internet service controllers, digital video recording systems and home networking.

These devices allow the various cable and satellite signal operators to deliver a wide variety of services from television to internet and the hardware manufacturers can provide many features and benefits including home networking capabilities. There is digital video recording onto hard disk drives, replacing the cassette format, allowing pause and replay of and live television, or interactive TV. There are new standards being created to facilitate the design of the boxes such as a recent reference blueprint development by communications chipmaker Broadcom using the Microsoft interactive TV software system. The set top box is going to be a high volume commodity with many forms and functions.

### Why are Set Top boxes vulnerable to ESD

The more sophisticated boxes include a variety of I/O jacks such as front panel USB, Audio/Video, S-Video, rear panel Satellite, cable, TV antenna, Wireless transmitter connection, home networking HPNA option, Toslink digital input, connections for CD, DVD, VCR, Outputs for Video, Audio, and more. Most of these jacks are susceptible to ESD threat.

### The PolySurg™ solution to the ESD protection problem

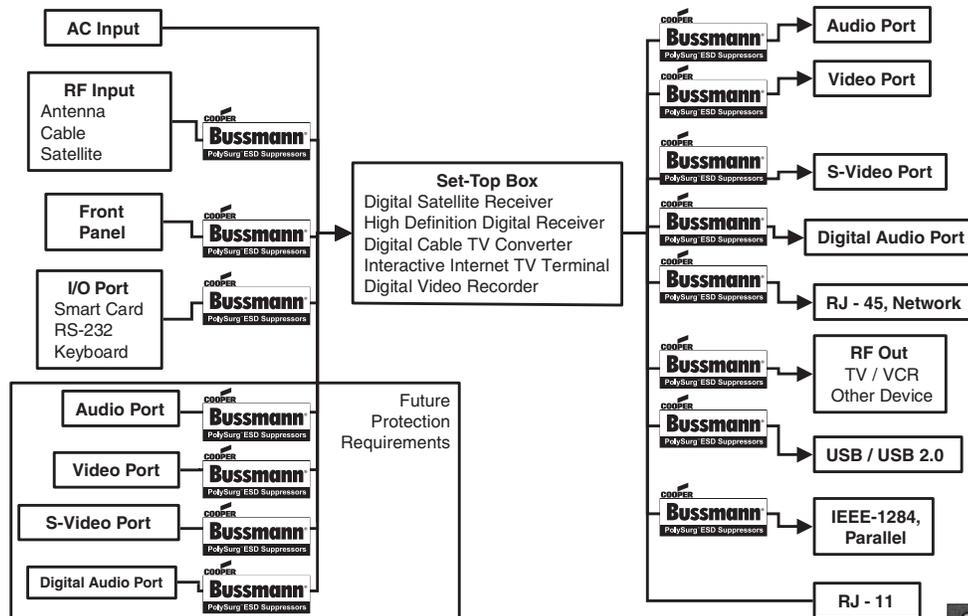
Utilize the 0402ESDA-MLP, 0603ESDA-MLP, or 0603ESDA-TR1 PolySurg™ devices to protect the set top box electronics from catastrophic ESD damage at each potential outside metal contact or connector on each line. Audio, Video, RF, USB and RS-232 lines may be protected from ESD TVS occurrences on set top systems.

### Design Wins with Set Top boxes

Cooper Bussmann has recorded some notable design wins already with it's PolySurg™ ESD Suppressors in applications involving the protection of set top systems.



## Protection Against ESD Threat for Set Top System Input/Output Ports with PolySurg™



A Typical Set Top Box Rear View



Typical ESD Protection Applications with  
PolySurg™ 0402ESDA-MLP, 0603ESDA-MLP, or 0603ESDA-TR

