Electrostatic discharge (ESD) events are important indicators of excessive charge accumulation in environments where they may be detrimental to manufacturing processes in the semiconductor or LCD industries.

Trek’s Model 901HS is a diagnostic tool used to identify incidents or verify suspected areas of ESD activity. Electromagnetic waves, generated by electrostatic discharge, transmit differently in different environments. In order to accommodate these differences, the Model 901HS includes two antennas - one active and one passive - that can be used for detection purposes. The determination of which antenna to use will typically be based on the environment in which it’s being deployed and the level of detection that is required.

The active antenna may be connected directly to the Model 901HS or with an extension cable that lengthens the antenna to 1.5 meters. It provides high flexibility in positioning the antenna to achieve the best possible reception. The active antenna can detect ESD events as small as 10 V, at a distance of 50 mm. A passive, monopole antenna is also provided. This antenna has a detection capability that identifies ESD events as small as 50 V, at a distance of 90 mm and is generally used when less sensitive detection is required.

When an ESD event is detected, the Model 901 signals the operator by playing an audible notification tone and by displaying the detected event level visually via its five LED lights. Since measurement results will vary due to the distance from the signal source and whether there are physical obstacles present in the environment, the LED display indicates a relative signal strength rather than an actual signal strength. A stereo connector on the Model 901 enables connection to an optional external display device to display the measurement results.
**Model 901HS Specifications**

### Features

**Detection Levels**
Five (5) LEDs indicate the relative level of the ESD event

- 1st Level: Yellow
- 2nd Level: Yellow
- 3rd Level: Yellow
- 4th Level: Red
- 5th Level: Red

**Power LED Lamp**
Indicates that the power ON and that the unit is operating

**Power ON-OFF**
A slide switch. In the ON position, the Power LED is illuminated.

**Auto Reset ON-OFF**
A slide switch. In the ON Position: Enables the unit to automatically detect the next event within 2 sec. of being returned to ON after a failure.
In the OFF Position: A detected event is held until the reset switch is depressed.

**Buzzer ON-OFF**
A slide switch. In the ON position, an audible alarm is sounded when an event is detected.

**Reset Button**
Clears previous measurements

### Features (cont.)

**Buzzer**
The audible alarm that sounds when an event is detected and the Buzzer ON-OFF is in the ON position.

**External Monitor Connection**
Stereo Jack

**Power Supply**
Universal AC-DC adapter connected to an AC power source, or Four (4) size AA, Lithium, 1.5V batteries

**Model 901HSA Antenna A (Active)**
Connector: sub-miniature SMA adapter
Cable: 1.5 m length antenna cable

**Model 901HSP Antenna P (Passive)**
Monopole type, built in SMA adapter for connection to the Model 901HS

### General

**Dimensions**
Main Unit: 110 mm H x 80 mm W x 45 mm D (4.3” H x 3.1” W x 1.8” D)

**Weight**
500 grams (includes battery) 1.1 lb.

### Operating Conditions

**Temperature**
10° to 40° C

**Humidity**
5% to 60% RH

The table below indicates the distances (in millimeters) and relative ESD voltages that will trigger the level indicators the Model 901HS when it is used with the 901HSA or 901HSP antenna.

<table>
<thead>
<tr>
<th>ESD Event Sensitivity Rating – Antenna A (Active)</th>
<th>ESD Event Sensitivity – Antenna P (Passive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>Level 1</td>
</tr>
<tr>
<td>10 V</td>
<td>50 mm</td>
</tr>
<tr>
<td>20 V</td>
<td>90 mm</td>
</tr>
<tr>
<td>30 V</td>
<td>100 mm</td>
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<tr>
<td>50 V</td>
<td>160 mm</td>
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<tr>
<td>60 V</td>
<td>200 mm</td>
</tr>
<tr>
<td>80 V</td>
<td>300 mm</td>
</tr>
<tr>
<td>100 V</td>
<td>400 mm</td>
</tr>
<tr>
<td>150 V</td>
<td>500 mm</td>
</tr>
<tr>
<td>200 V</td>
<td>450 mm</td>
</tr>
</tbody>
</table>

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