

OPERATIONAL DESCRIPTION For ESD Check Point Test Station

The ESD Check Point is a test station for verifying proper operation of electrostatic discharge protection devices worn by personnel in areas where electronic parts and devices are being handled.

All electronics for the ESD Check Point is housed in an ESD Tester box that gets power from a 5V wall adapter. On its own, the ESD Tester box can verify whether or not an ESD wrist strap will provide an acceptable ESD discharge path while worn by someone who is using the test station. When metal footplates are plugged into jacks on the ESD Tester box, a test station user can determine whether or not ESD footwear is providing an acceptable ESD discharge path. To complete low-current electrical path(s) for a test, the user plugs in their ESD wrist strap into the ESD Tester box and/or stands on footplates while wearing ESD footwear and touches a pad on the front of the ESD Tester.

The ESD Check Point is marketed as two models that differ by the accessories included with the ESD Tester box.

- The “Deputy Agent” ships with the ESD Tester box, a 5V wall adapter and a bracket for mounting the ESD Tester box to a wall. A stand with footplates is offered as an accessory that can be ordered separately.
- The “Agent” ships with the ESD Tester box, a 5V wall adapter, and includes the stand with footplates.

A WiFi adapter is included within the ESD Check Point's ESD Tester box in the form of a dongle that plugs into an internal USB port. This allows the ESD Tester box to act as an access point during setup and, once setup, to provide a WiFi link for external access to the ESD Tester's web page for monitoring the station's operation, collected test data, and changing operational parameters.

- The WiFi dongle used in ESD Check Point test stations: Edimax EW-7811Un
- The Edimax EW-7811Un plugs into an internal USB port on the ESD Tester's processor board.
- Operating Band: 2.4 GHz

To operate the ESD Tester, a user must pass an RFID badge within range of an RFID module which resides within the ESD Tester box. The badge has been programmed by an administrator with user information. (Badge programming can be done using the ESD Tester itself.) When the ESD Tester detects a badge and senses that a low-current circuit has been completed by the user through an ESD wrist strap and/or footwear, the ESD Tester checks, displays and logs resistance levels for that user.

- The RFID badges use an Ultralight NFC chip.
- The RFID module is per the TRF7970ATB module designed by Texas Instruments.
- Operating frequency: 13.56 MHz

Inside the ESD Tester, a processor board controls all operations. It provides the web page for WiFi access to data and operational control, responds to data coming from the RFID module, initiates and logs all ESD tests, controls what is shown on the LCD display, and provides power management to all circuitry in the ESD Tester. It also communicates with a micro controller used to handle the details of switching relays and collecting analog data for each test. A battery backed real-time-clock circuit is included to ensure the ESD Tester will not lose track of the current date and time for data logging.