

ES631-G2 Cable Discharge Evaluation System



1. Description

The ES631-G2 Cable Discharge Event (CDE) Evaluation System is a comprehensive solution designed to simulate the effects of charged cable (Ethernet, USB, HDMI, etc...) discharge to any system or device.

The system is designed with three CDE test modes (single line discharge mode, differential pair discharge mode, contact sequence discharge mode) and two Failure/Degrade Inspection Connections (Oscilloscopes or Link Partner Paths). Therefore, it allows user to be able to setup, simulate and analyze the cable discharge event in all different discharge combinations. This system also allows traffic tester to connect through the CDE test system to check the traffic functionality.

LABVIEW control software is an option provided for customers for full functions in remote control. The system is also designed with a versatile 5-inch large touchscreen interface for panel operation.

2. Features

- Ethernet Cable ESD test up to 4.0 kV
- Multiple CDE test modes available (Single Line Discharge, Differential Pair Discharge, Contact Sequence Discharge)
- Dual Failure/Degrade Inspection Modes (Oscilloscope Link Pulse Test or Link Partner Traffic Test)
- Embedded ESD current probes for discharged lines
- 5 Inch Large Touch Screen Control
- USB-Optical RS232 (virtual serial port) remote control
- Firmware upgrade-able
- Multiple Cable Adapters available (USB, HDMI, Ethernet, etc....)
- Powerful LABVIEW ATE Software (automatic test control)

3. Applications

- General Cable Discharge Event (CDE) and analysis
- PHY ESD protection test and analysis
- Network switch / router ESD robustness test and analysis
- Automatic Test Equipment (ATE) for system level Cable ESD

4. Specifications

CDE Main Controller Base Unit

Model	ES631-G2.2	ES631-G2.4
Maximum Charge voltage	± 2 kV	± 4 kV
Charge voltage Resolution	10 V Step	10 V Step
Charge voltage stability	± 0.1% per hour (after 30 min warm up)	
Number of charge lines	8 lines (4 differential pairs)	
Number of current probes	8 probes for 4 differential pairs	
Current Probe Specification	SMA connectors, 1V/A, from 1.2 KHz -200 MHz, Precision ± 3%	
DUT Connection Port	Unshielded RJ45	
DUT Connection Port	Shielded RJ45	
Charge Cable Unit Connection Port	ESDEMC Designed High Voltage 9 Pin Circular Connector	
Dimension	35 x 28 x 15 cm (17.5 x 13 x 5.9 inch)	
Weight	About 10 kg (22 lb)	

Options for ES631-G2 CDE Main Controller

Option Number	Descriptions
ES631-AUSB3	ES613 Charge Cable Adapter for USB
ES631-PUSB3	ES613 DUT Probe for USB
ES631-ARJ45	ES613 Charge Cable Adapter for RJ45
ES631-PRJ45	ES613 DUT Probe for RJ45
ES631-AHDMI	ES613 Charge Cable Adapter for HDMI
ES631-PHDMI	ES613 DUT Probe for HDMI
ES631-LAN-SW	LABVIEW Software for ATE test control
ES631-LAN-CAL	ES631 CDE System Discharge Waveform Calibration Setup

Ethernet Charge Cable Module

Model	ES631-LAN-C5EUTP200 200 meter CAT5E UTP Charge Cable Module	ES631-LAN-C5EFTP200 200 meter CAT5E FTP Charge Cable Module
Maximum voltage from line to GND	DC High Voltage Break Down Tested up to ± 4.5 kV	
Maximum voltage Between Lines	DC High Voltage Break Down Tested up to ± 4.5 kV	
Cable Length	200 \pm 2 Meter	
Ethernet Cable Type	CAT 5 Unshielded Twisted Pair	CAT5 Shielded Twisted Pair
Dimension	35 x 28 x 15 cm (17.5 x 13 x 5.9 inch)	35 x 28 x 15 cm (17.5 x 13 x 5.9 inch)
Weight	About 23 kg, (50 lb)	About 19 kg, (40 lb)

5. Ordering Information

Line	Part or Option Number	Description
1	ES631-G2.2	ES631-G2.2 CDE Main Controller, 2kV Base Unit
2	ES631-G2.4	ES631-G2.4 CDE Main Controller, 4kV Base Unit
3	ES631-AUSB3	ES613 Charge Cable Adapter for USB
4	ES631-PUSB3	ES613 DUT Probe for USB
5	ES631-ARJ45	ES613 Charge Cable Adapter for RJ45

6	ES631-PRJ45	ES613 DUT Probe for RJ45
7	ES631-AHDMI	ES613 Charge Cable Adapter for HDMI
8	ES631-PHDMI	ES613 DUT Probe for HDMI
9	ES631-SW	LABVIEW Software for ATE test control Option for ES631-LAN CDE System
10	ES631-CAL	Discharge Waveform Calibration Option for ES631-LAN CDE System
11	ES631-LAN-C5EUTP200	200 meter CAT5E UTP Charge Cable Module
12	ES631-LAN-C5EFTP200	200 meter CAT5E FTP Charge Cable Module