Copper Ports Test on Gigabit Ethernet Ports on ESW2-350G Switches

Objective

Gigabit Ethernet (GE) ports are often used for transmission of large files and videos. GE ports offer speeds of up to 1000 Mbps (1Gbps). Green Ethernet has three modes. Energy Detect Mode moves a port into inactive mode if the link is inactive. Short Reach Mode determines the cable length and adjusts the power usage for various cable lengths. 802.3 Energy Efficient Ethernet (EEE) Mode reduces power consumption when there is no traffic on the link.

This document explains the performance of copper ports test done by the Virtual Cable Tester (VCT) on gigabit Ethernet (GE) ports. VCT performs Digital Signal Processing (DSP)-based tests on the GE ports on ESW2-350G Switches.

Note: The test can be done on cables of up to 140 meters long. After choosing the port on which the copper test is going to be performed, the port is set to the Down state. After the test, the port is returned to the Up state.

Applicable Devices

- ESW2-350G
- ESW2-350G-DC

Software Version

- 1.3.0.62

Copper Test

Note: Basic cable test results are accurate if Short Reach is disabled, and the advanced cable test results are accurate if Energy Efficient Ethernet (EEE) is disabled. Short reach and EEE can be disabled by navigating through Port Management > Properties. In the Properties page, check the respective check box to enable and uncheck to disable them.

Step 1. Log in to the web configuration utility and choose Administration > Diagnostics > Copper Test. The Copper Test page opens:
Step 2. Choose the GE port on which the copper test is to be performed from the Port dropdown list.
Step 3: Click **Copper Test**.

⚠️ The port is shut down during the brief testing period. Click OK to continue or Cancel to stop the test.

- Don't show me this again

[OK] [Cancel]

Step 4. A pop-up message is displayed. Click **OK** to continue the test or **Cancel** to stop the test.
The Test Results area displays the following fields:

- **Last Update** — The date and time of the last test conducted on the port.
- **Test Results** — The cable test results.
  - **OK** — Cable has passed the test.
  - **No Cable** — Cable is not connected to the port.
  - **Open Cable** — Cable is connected on only one side.
  - **Short Cable** — A short circuit has occurred on the cable.
  - **Unknown Test Result** — Error has occurred.
- **Distance to Fault** — Displays the distance of the fault from the port to the destination where the fault occurred.
- **Operational Port Status** — Displays whether the port is in the Up or Down state.

When the VCT is run on a Gigabit port (GE1 or GE2) the Advanced Information area displays the following fields.

**Note:** The cable used in GE ports is made up of twisted pair copper wire.
• Cable Length — The length of the cable.

• Pair — Indicates the cable wire pair under test.

• Status — Indicates the cable wire pair status.
  – Red — Indicates fault.
  – Green — Indicates status is OK.

• Channel — Indicates the cable channel.

• Polarity — Indicates whether automatic polarity detection and correction is activated for the wire pair or not. Automatic polarity detection and correction permits on all RJ-45 ports for automatic adjustment of wiring errors. Polarity shows normal if the cable is working properly.

• Pair Skew — Indicates the time difference in nano seconds for the cable wire pair.