

J-Proof

Ethernet Forwarding Test for Switched Networks



J-Proof (Just-Proof) is a test option for the T-BERD® 6000A/8000 that verifies transparent end-to-end Ethernet forwarding through switched Ethernet networks.



Intended Audience

Tier I special operations technicians and tier II/III central office technicians who turn up end-to-end circuits.

Applications

Testing Ethernet control-plane forwarding across networks and network element(s) and testing Ethernet transparency across third-party-provided network segments.

Value Proposition

For technicians who must troubleshoot and install end-to-end Ethernet circuits, the J-Proof Test Option saves hours of troubleshooting by verifying transparent forwarding of Ethernet frames through switched Ethernet fabrics. Unlike sending Ethernet over dark fiber, when Ethernet passes over switched Ethernet networks, improperly configured network elements, such as routers and switches, could drop Ethernet control-plane messages causing installation delays and creating troubleshooting nightmares.

Ordering Information

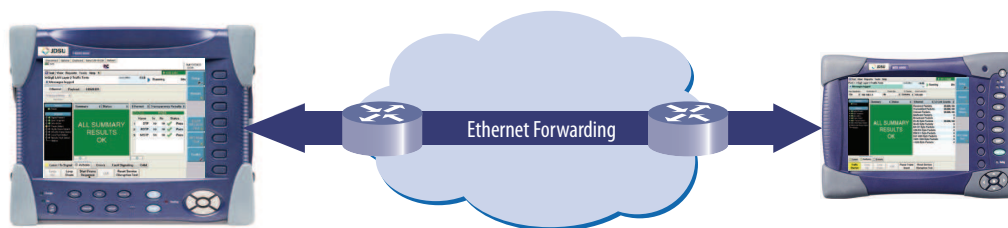
T-BERD/MTS-6000A – CTL2TRANSP (-U1)
T-BERD/MTS-8000 – CL2TRN (-U1, -U2)

Feature/Benefit Summary

Feature	Description	Advantage	Benefit
VLAN and Q-in-Q	Test transparency over virtual LANs	Verify transparency for a specific customer or customer's traffic flow/service	Fine tune troubleshooting to specific VLAN/service with the problem
VLAN Priority	Automatically "walk the P-bits"	Confirm control plane Ethernet frame priority	Ensure control messages do not time out or get dropped
Quick Config. User Interface	Intuitive GUI with easy pass/fail results	Semi-automated test setup configures most parameters	Simple repetition with powerful customization
Cisco Proprietary Protocol Test	Test Cisco VTP and CDP	Test commonly used non-standard Ethernet frames	Provide true end-to-end transparency test
GARP and STP Test	Test GMRP/GVRP and STP/RSTP/MSTP	Test transparency of registration and topology protocols	Ensure bridge switches can transparently exchange topology information

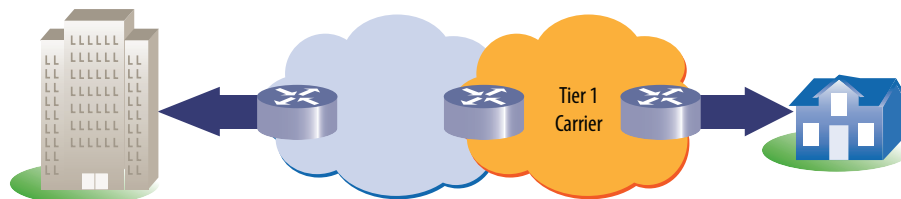
Use Case: Ethernet Element Test During Circuit Turn-Up

When provisioning a point-to-point Ethernet circuit, the typical procedure includes a sequential set of tests. First an Ethernet Connectivity verifies that a signal is present and a link has been acquired. This is followed by an Ethernet BERT test to confirm the SLA has been properly configured. Lastly, an RFC2544 test will automate the process of confirming throughput, latency, and frame loss at different traffic rates with different packet sizes. Adding a J-Proof test can confirm transparent forwarding of Ethernet traffic between end points. This additional test helps to avoid customer calls and trouble tickets if they are later unable to pass Cisco CDP/VTP traffic, spanning tree protocol traffic, or the GARP family of topology discovering Ethernet traffic.



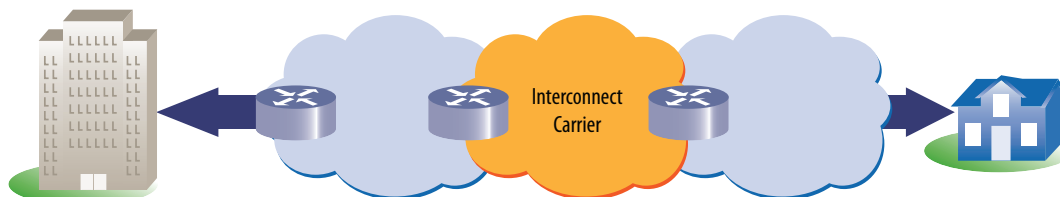
Use Case: Last Mile Ethernet Service Turn-Up

A facilities-based service provider has many options when delivering Ethernet service to a customer outside the normal coverage area, one of which could involve leasing a UNE and installing a colocated access concentrator (DSLAM/ONT). A more cost-effective approach is to use the incumbent's infrastructure and confirm the SLA and Ethernet-circuit transparency during service turn-up. In this later scenario, the facilities-based service provider should test the Ethernet circuit for transparency to ensure that control plane traffic used to manage CPE will transparently traverse the incumbent's access network.



Use Case: Ethernet Circuit Backhaul

Select the the **intended interface** for the Layer 2 traffic test. Enter the **setup button** and under the **Ethernet tab** set the test mode to **Transparency**. Select the **Transparency tab**. Select the **Quick Config button**. Select the **family of protocols** to test and then select which **encapsulation** to use.

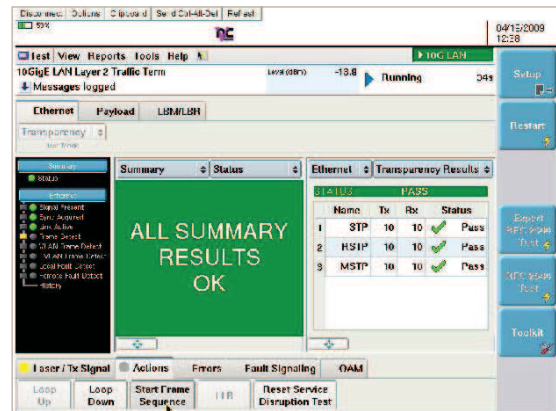
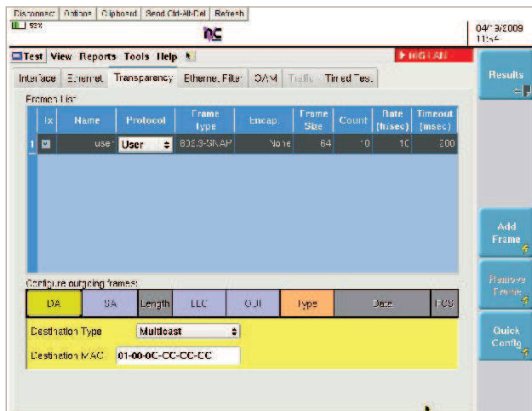


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Test Customization and Simple Results

To customize transparency testing for proprietary or nonsupported Ethernet frames, exit **Quick Config**. Select **User** under the protocol column. At the bottom of the page, configure the **Destination MAC** address and the **LLC DSAP/SSAP** address.

Simple graphical **Summary** results show a pass/fail (green/red) for the overall test. For more granular, but equally simple results, the **Ethernet** interface will display pass/fail by Ethernet frame type.



FAQ

Q: Is the J-Proof test another throughput test?

A: No! Even though the Layer 2 transparency test is configured from within the Layer 2 Traffic Test Suite, it sends traffic more slowly, similar to control plane traffic, and verifies the control plane transparency of an Ethernet circuit.

Q: How does this feature differ from our Ethernet test options?

A: Our Ethernet test options let users send a BERT/ATP across an "Ethernet Pipe" to confirm throughput, latency, and frame loss. However, they do not test to ensure that the network/equipment will forward different types of Ethernet frames. The J-Proof test option confirms that Cisco, Spanning Tree, and GARP Ethernet messages will not be dropped or filtered out.

Q: Based on the use cases, who would benefit the most from this feature?

A: Service providers who do not typically own 100 percent of their network infrastructure would benefit most.



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