CISCO SYSTEMS

DATA SHEET

CISCO ONS 15454 SONET ELECTRICAL CONTINUITY TEST CARDS

The Cisco® ONS 15454 SONET electrical continuity test cards speed the verification of accurate electrical cabling during installation, troubleshooting, or new card additions.

PRODUCT OVERVIEW

The Cisco ONS 15454 electrical continuity test cards provide an efficient solution for system operators to verify that their DS-1, DS-3, and EC-1 electrical cabling between the Cisco ONS 15454 shelf assembly and the Digital Signal Cross-Connect (DSX) panel are correctly wired, detecting shorts, opens, wrong connections, and tip/ring reversals. The Cisco ONS 15454 test card is offered in two versions: a turn-up model designed for initial installations in a depopulated shelf assembly (Figure 1), and an in-service model designed for cabling additions for shelf assemblies currently carrying live traffic (Figure 2).

The turn-up test card operates in the protection card slots (slot 3 or 15) of a Cisco ONS 15454 shelf assembly and can test up to 112 transmit and 112 receive cables terminated on the side of the shelf in which the card is installed. The test card is powered by the shelf assembly or by an AC/DC adapter. The test card is compatible with Cisco ONS 15454 shelf assemblies installed with either lower- or higher-density electrical interface adapter panels and DS-1 or DS-3/EC-1 cabling.

The turn-up test card supports two operational modes: handheld or loopback. In handheld mode, the test card is used in conjunction with the Cisco ONS 15454 handheld console. Each cable (or cable pair) is verified by connecting the handheld console to each DSX port (Figure 3). The console's LCD panel and an audible sound will inform the user if the test signal is received correctly. In this mode, the console will store the test results that can be later downloaded and stored to a computer. The console can also be set to a manual mode of operation that is useful for debugging individual ports.

Figure 1
Turn-Up Test Card

Figure 2
In-Service Test Card

In loopback mode, the test card is used in conjunction with a third-party vendor's test set. A test card in this mode will electrically connect (loop) the transmit and receive cables together for each circuit (Figure 4). A third-party test set can then be used to add a signal at the DSX panel and receive it back at the DSX panel, verifying the two cable paths for a circuit. Either mode of test operation can be performed by a single technician, eliminating the need for coordinated operations at the DSX panel and the Cisco ONS 15454 shelf assembly.

The in-service test card operates in any service card slot (slots 1–6 and 12–17) of a Cisco ONS 15454 shelf assembly and can test up to 56 transmit and 56 receive cables terminated on a shelf slot in which the card is installed. The in-service test card allows the user to select a specific cable group to test, allowing any remaining in-service cable groups to continue to carry traffic. The test card is only powered by the shelf assembly. The test card is compatible with Cisco ONS 15454 shelf assemblies installed with either lower- or higher-density electrical interface adapter (EIA) panels and DS-1 or DS-3/EC-1 cabling. The in-service test card supports the same handheld and loopback operation modes as well as test-result logging and downloading.

Figure 3

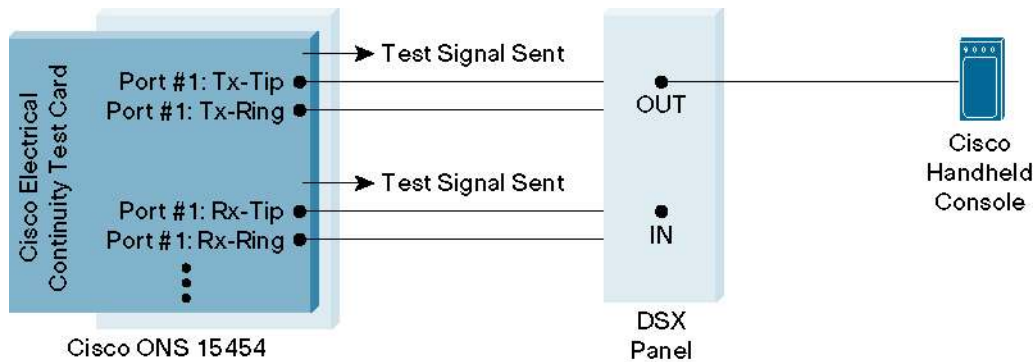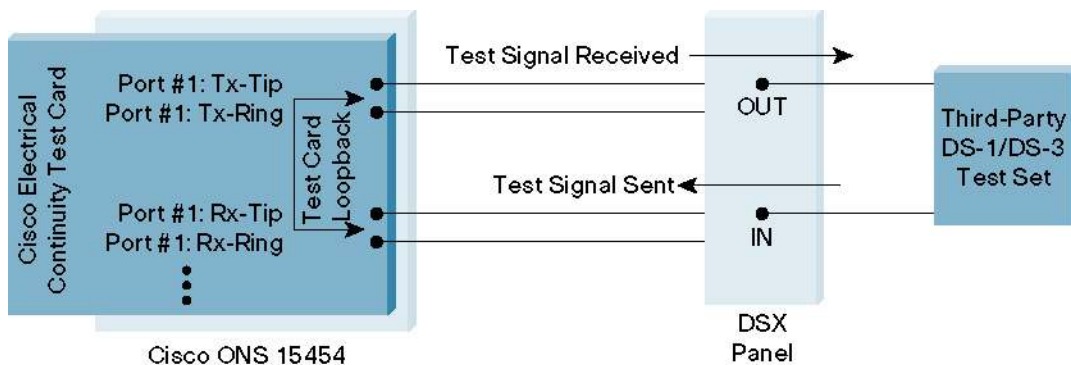Testing Option Using the Cisco Test Card's Handheld Console

Figure 4

Testing Option Using the Cisco Test Card's Loopback Option and a Third-Party Vendor's Test Set

The Cisco ONS 15454 test cards are both sold in kit form (Figure 5) that includes the Cisco test card (either turn-up or in-service), Cisco handheld console, patch cords (WECo 440A male plug, WECo 358 male plug, BNC plug, LCP plug, bantam plug, or 310 plug), DB-9 cable assembly, instructions, AC/DC adapter (turn-up kit only), and carrying case.

Figure 5
Turn-Up Test Kit Contents

SUMMARY/CONCLUSION

The Cisco ONS 15454 test cards help the user to verify electrical interface cabling prior to the turn-up of live traffic. This can significantly reduce future costs and frustration from traffic turn-ups that may become delayed because of cabling errors. The test solution also provides a means for installation contractors to document that their work was performed satisfactorily.

PRODUCT SPECIFICATIONS

Tables 1 and 2 outline the specifications for the Cisco ONS 15454 test cards and handheld console.

Table 1. Product Specifications for Cisco ONS 15454 Test Cards

Parameter	Turn-Up Test Card	In-Service Test Card
Physical dimensions	Single-slot width 13.7 x .716 x 9.5 in. (H x W x D)	Single-slot width 13.7 x .716 x 9.5 in. (H x W x D)
Operating temperature	41 to 149°F (–5 to 65°C)	41 to 149°F (–5 to 65°C)
Power	Shelf-powered or 120 VAC/–48 VDC adapter 0.12A	Shelf-powered 0.12A
Card-level indicators	Power LED Active LED Loop LED	Power LED Active LED Loop LED Connector LCD panel
Cable types	DS-1, DS-3/EC-1	DS-1, DS-3/EC-1

Table 2.   Product Specifications for Cisco ONS 15454 Handheld Console

Parameter	Handheld Console
Physical dimensions	7.5 x 4 x 1.2 in. (L x W x D)
Operating temperature	41 to 122°F (–5 to 50°C)
Power	Four AA alkaline batteries 80 hours of continuous use
Weight	12 ounces

SYSTEM REQUIREMENTS

The Cisco ONS 15454 system requirements for operation of the Cisco ONS 15454 test cards are outlined in Table 3.

Table 3.   System Requirements

System Parameter	Turn-Up Test Card	In-Service Test Card
Shelf assembly	Any SONET	Any SONET
EIA panel	Any	Any
Processor card	–	Any
Cross-connect card	–	Any
System software	–	–
Slot compatibility	Slot 3 and 15	Any service slot

ORDERING INFORMATION

To place an order, visit the Cisco Ordering Home Page. Table 4 outlines the ordering codes for the Cisco ONS 15454 test cards.

Table 4.   Ordering Information

Product Description	Part Number
Electrical continuity test kit, turn-up, for cable testing on new shelf installations without traffic	15454-TU-DSX-KIT=
Electrical continuity test kit, in-service, for new cable testing on traffic-carrying shelf	15454-IS-DSX-KIT=

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FOR MORE INFORMATION

For more information about the Cisco ONS 15454 SONET Multiservice Provisioning Platform, visit:
http://cisco.com/en/US/products/hw/optical/ps2006/ps2010/index.html or contact your local account representative.

CISCO SYSTEMS

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
      800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

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