

Chapter 48

Test Facility

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Introduction

This chapter describes the main features of the Test Facility on the switch, and how to set up and use the Test Facility. The Test Facility provides a simple, efficient method of validating the operation of the switch hardware, including ports. The Test Facility does not test the switch processing core but it must be operational for the Test Facility to operate. The switch processing core is tested during every power up.

Before running tests Before using the Test Facility, we recommend that you disable interface configurations by using the command:

```
set config=none
```

Then restart or reboot the switch by using either of the commands:

```
restart reboot  
restart switch
```

Operating mode The Test Facility runs in the normal switch operating environment. This means that the switch processing core and an access port must be operational before you begin testing. Tests operate by using standard switch device drivers, so this software must also be fully operational. Control tests with the Command Line Interface (CLI), either from a local terminal port or remotely with Telnet. An SNMP management system can determine whether an interface is being tested, but cannot be used to initiate a test. The objects in the enterprise MIB used to set an interface to test mode may be written and read, but do not result in any action.

Test hardware required Tests on interfaces require external connections to be made to loopbacks or specialised test hardware.

Displaying test status and results When a test is initiated from a local asynchronous connection, test messages are printed for tests that are completed or halted. These messages may occur at any time during the test. If the test command has been entered from another source, such as a remote Telnet connection, these messages are not printed. In this case, use the [show test command on page 48-13](#) to display the test status and results.

Impact of testing Tests have the potential to degrade network operations if they are enabled on active resources, such as ports connected to a LAN or another switch. To limit this potential problem, tests stop when they detect an active resource. The resource is returned to its pre-test configuration after a test stops.

With the exception of asynchronous ports, tests should not be used to test the interface through which access was obtained to the switch. The reason for this is that the connection to the switch is broken when the Test Facility attaches to the interface. No mechanism is provided to prevent this from occurring. It is the responsibility of the user to check the operation of a resource before starting the test.

Test methodology Interface tests use data loopbacks and (where applicable) control line loopbacks. Frames containing a known data sequence are repeatedly transmitted via the hardware being tested. The contents of frames received via the hardware are compared against this sequence. If a packet is received with the wrong sequence it is counted as a bad frame.

The loopback error free rate is calculated as the number of good frames received divided by the number of frames sent, where a good frame is one where the received and transmitted data and lengths match. For interfaces that do not transport frames (for example, asynchronous ports), the term “frame” means the test string.

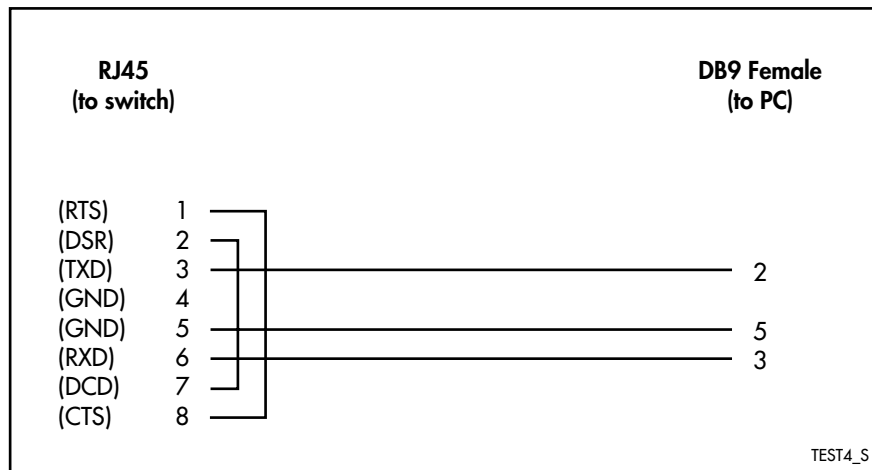
All interfaces can be tested simultaneously, including the interface used to enter the test command, by using the command:

```
enable test interface=all
```

Special cable for testing the access port

The Test Facility automatically detects when a test is enabled on the same asynchronous port attached to the terminal from which the test command was entered, and tests only the port's control signals. Testing of the data path is by visual inspection—if the command interpretation and the response displayed on the terminal are correct then the data path is judged to be functional. A special cable must be used in this case to provide a normal data path while looping the control signals ([Figure 48-1 on page 48-3](#)). Alternatively, use Telnet to access the CLI and initiate the test.

Figure 48-1: Cable pinouts for connecting a terminal to an asynchronous port under test



Ethernet Port Tests

Ethernet port tests can be used to verify the operation of all switched and unswitched Ethernet ports. Examples of switched Ethernet ports are 10BASE-T, 100BASE-TX, 1000BASE-T, 100BASE-FX, 1000BASE-SX, 1000BASE-LX, and 10GBASE-R ports. An example of an unswitched Ethernet port is eth0 on the x900-24X switch.

Tests on unswitched Ethernet ports use two internal loopbacks (ENDEC and MAC) and one or two external loopbacks. Tests on switched Ethernet ports use external loopbacks. The tests cycle through each loopback in turn.

When tests are enabled on an Ethernet port the configurations of all the attached modules are stored and their configuration is replaced by the Test Facility.

To quickly detect if the test is being run on an active LAN, the transceiver or twisted pair loopback test is run first. If data is detected on the LAN, it is assumed to be active and the test is immediately aborted.

For 10/100Mbps Ethernet ports, the TP external loopback can be provided using a transceiver loopback plug ([Figure 48-2 on page 48-4](#)). Alternatively, connect pairs of ports by using standard crossover cables, and enable tests with the command:

```
enable test interface=all
```

For fibre ports, connect pairs of ports by using standard fibre cables, and enable tests by using the command:

```
enable test interface=all
```

Switched gigabit copper ports can be tested at 10/100Mbps by using a standard 10/100Mbps Ethernet TP loopback plug (Figure 48-2). To test gigabit copper ports at gigabit rates, connect pairs of ports by using a loopback cable (Figure 48-3), and enable tests with the command:

```
enable test interface=all
```

The 10/100/1000BASE-T out-of-band management port on x900-24X switches can be tested at gigabit rates using a loopback plug (Figure 48-4 on page 48-5).

Figure 48-2: 10/100 Ethernet twisted pair (TP) loopback plug pinouts (RJ45)

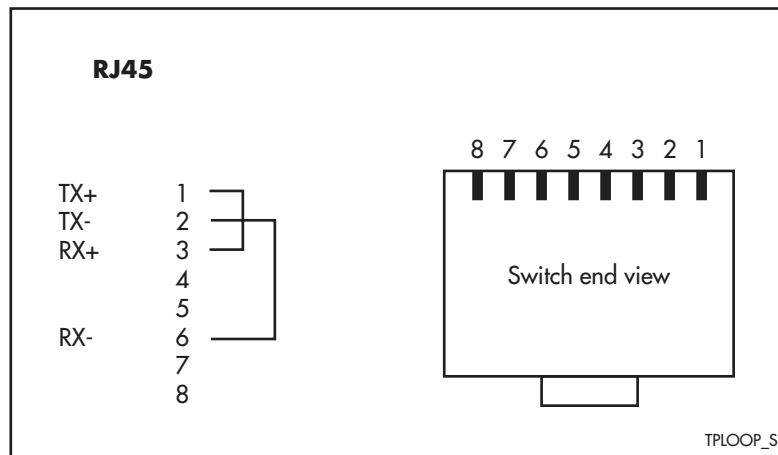


Figure 48-3: Gigabit Ethernet twisted pair (TP) loopback cable pinouts

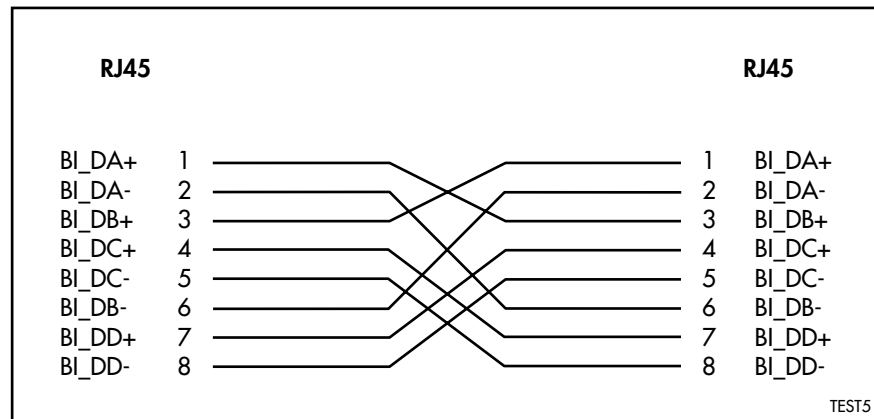
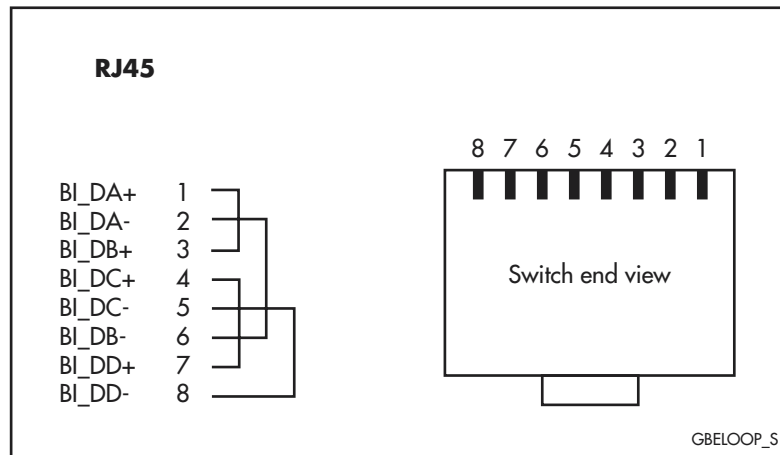


Figure 48-4: Gigabit Ethernet twisted pair (TP) loopback plug pinouts (RJ45)



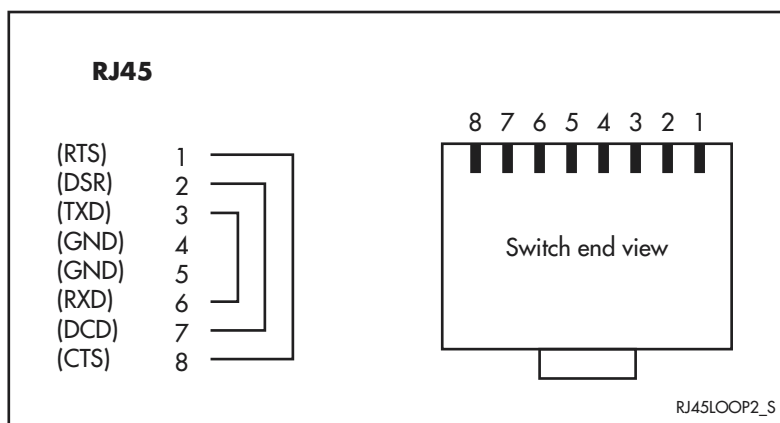
Possible test outcomes are described in the following table.

Event	Action	Error	Result
2 non-sent frames received in any second	Halt test	Active LAN	Bad
10 consecutive bad or missing frames during transceiver loop	Complete test	No Transceiver warning	See below
< 99.9% error free frames	Complete test	-	Bad
>= 99.9% error free frames	Complete test	-	Good

Asynchronous Port Tests

The asynchronous port test requires a loopback plug in the port being tested in order to loop data and control signals back to the switch ([Figure 48-5](#)).

Figure 48-5: Asynchronous loopback plug pinouts (RJ45)



Tests cannot be run on an asynchronous port that is already configured for use by other modules, for example, as a printer port or a Telnet session.

To test the port control signals, the output signals are continuously toggled, and the corresponding (looped back) input state is examined. To pass the control signal test, the state of an input must match the state of the corresponding output.

The following table describes the error thresholds that determine the test outcome. For the error rate calculations, a test data sequence is considered to be the equivalent of a frame.

Event	Action	Error	Result
10 consecutive bad or missing sequences	Halt test	No loopback	Bad
< 99.9% error free sequences	Complete test	-	Bad
>= 99.9% error free sequences	Complete test	-	Good

Cable Tests for AT-9900 Switches

Use the virtual cable test to diagnose cable faults and the approximate distance to the fault. The Virtual Cable Test Facility is supported on the AT-9924T and AT-9924T/4SP models.

The Virtual Cable Test Facility tests all four pairs of wires inside the cable for Gigabit Ethernet RJ-45 switch ports. Not all copper SFPs support this feature; refer to the Hardware Reference for approved SFPs.

To locate cable faults for all ports or a specific one, use the [enable test cable command on page 48-10](#). If the test does not finish in 10 seconds, it stops and displays an error message.



Caution After you enter the **enable test cable** command, do not connect or disconnect the cable of the port under test.

On the AT-9924T and AT-9924T/4SP, RJ-45 ports 1 to 4 use the same physical interface as SFP ports 1 to 4. When an SFP is inserted into an SFP port, the corresponding RJ-45 port is disabled. If you are testing RJ-45 ports 1 to 4, do not insert an SFP into the corresponding SFP port.

To display test results for a port, use the [show test cable command on page 48-19](#).

Test results are reported for all four pairs of cable and are shown in “state(length)” format. Possible states are:

- no test
- testing
- failed
- good
- short
- open

When the state is open or short, the length shown is the approximate distance to a fault. The accuracy of the distance is ± 2 meters.

Good cable length is reported after the gigabit link is established, but no length is shown for good ports operating at 10Mbps or 100Mbps. When the state is good for ports operating at 1000Mbps, the length is the approximate length of the specified pair of cables. The actual value depends on factors such as the attenuation of the cable, output levels of the remote transceiver, and connector impedance. The accuracy is plus-or-minus 10 meters.

See the [show test cable command on page 48-19](#) for example output.

To stop a cable test that is active, use the [disable test cable command on page 48-9](#).

To clear previous test results and prepare to start a new test, use the [reset test cable command on page 48-12](#).

Storage Device Tests

You can use the [enable test device](#) command to perform a series of tests on the x900-24X switches to verify that the Secure Digital (SD) card slot is working correctly and that the card is compatible with the slot.

Presence of card To test that the card slot detects the presence of a card, first enter the [enable test device](#) command with the card slot empty. The following figure shows the output. Look for the message in bold.

```
Running SD card slot test...  
SD card is not present.
```

Now insert the card into the slot and enter the command again. The following figure shows the output. Look for the message in bold.

```
Running SD card slot test...  
SD card is present and write-enabled.  
SD card has been changed. Card change reset is OK.  
SD card response to CMD0 = 3F 01 FF FF FF FF FF FF FF FF FF  
.  
.  
.
```

Exchanging cards To test that the card slot detects when cards are exchanged, insert a card into the slot. If you are performing this series of tests sequentially, first remove the card from the previous test, then insert it again. The following figure shows the output. Look for the messages in bold.

```
Running SD card slot test...  
SD card is present and write-enabled.  
SD card has been changed. Card change reset is OK.  
SD card response to CMD0 = 3F 01 FF FF FF FF FF FF FF FF FF  
.  
.  
.
```

Now enter the **enable test device** command again. The following figure shows the output. Look for the messages in bold.

```
Running SD card slot test...
SD card is present and write-enabled.
SD card has not been changed. Card change reset is OK.
SD card response to CMD0 = 3F 01 FF FF FF FF FF FF FF FF FF FF
.
.
.
```

Write-protection

To test that the card slot detects whether a card is write-protected, first write-enable the card by sliding its write-protect tab toward the metal contacts. Then insert the card into the card slot, and enter the **enable test device** command. The following figure shows the output. Look for the message in bold.

```
Running SD card slot test...
SD card is present and write-enabled.
SD card has been changed. Card change reset is OK.
SD card response to CMD0 = 3F 01 FF FF FF FF FF FF FF FF FF FF
.
.
.
```

Now remove the card and write-protect it by sliding its write-protect tab away from the metal contacts. Insert the card again, and enter the same command. The following figure shows the output. Look for the message in bold.

```
Running SD card slot test...
SD card is present and write-protected.
SD card has been changed. Card change reset is OK.
SD card response to CMD0 = 3F 01 FF FF FF FF FF FF FF FF FF FF
.
.
.
```

Data interface to card

To test the data interface to the card and the compatibility of the card with the card slot, insert a card into the slot and enter the **enable test device** command. The following figure shows the output. Look for the message in bold.

```
Running SD card slot test...
SD card is present and write-protected.
SD card has been changed. Card change reset is OK.
SD card response to CMD0 = 3F 01 FF FF FF FF FF FF FF FF FF FF
.
.
.
All SD card responses are good.
```

Command Reference

This section describes the commands available on the switch for testing the switch's hardware.

The shortest valid command is denoted by capital letters in the Syntax section. See [“Conventions” on page xlix of About this Software Reference](#) in the front of this manual for details of the conventions used to describe command syntax. See [Appendix A, Messages](#) for a complete list of messages and their meanings.

To alert the user of a test failure, a bell character is printed each time a negative test result is printed. In the following outputs, a bell character is printed for each * character displayed in the outputs (the * character is included in the actual output).

disable test cable

Syntax `DISable TEST CABLE`

Description This command halts cable tests that are active, and sets the test state to "no test". Cable tests are supported on the AT-9924T and AT-9924T/4SP models only.

Example To disable a cable test, use the command:

```
dis test cab
```

Related Commands [enable test cable](#)
 [reset test cable](#)
 [show test cable](#)

disable test interface

Syntax `DISable TEST INTerface=interface`

where *interface* is the interface being tested

Description This command halts interface tests that are active. The interface must be specified.

Examples To disable testing on asyn0, use the command:

```
dis test int=asyn0
```

Related Commands [enable test interface](#)
 [reset test interface](#)
 [show test](#)

enable test cable

Syntax ENABle TEST CABle [POrt={*port-number*|ALL}]

where *port-number* is a single port number from 1 to 24

Description This command enables the cable test to locate faults for all ports or a specific one. The **port** parameter specifies the port, which must be a Gigabit Ethernet RJ-45 switch port. Not all copper SFPs support this feature; however, those listed in the Hardware Reference are approved. Cable tests are supported on the AT-9924T and AT-9924T/4SP models only.



Caution After you enter the **enable test cable** command, do not connect or disconnect the cable of the port under test.

On the AT-9924T and AT-9924T/4SP, RJ-45 ports 1 to 4 use the same physical interface as SFP ports 1 to 4. When an SFP is inserted into an SFP port, the corresponding RJ-45 port is disabled. If you are testing RJ-45 ports 1 to 4, do not insert an SFP into the corresponding SFP port.

Example To enable a cable test on port 9, use the command:

```
ena test cab po=9
```

Related Commands [disable test cable](#)
[reset test cable](#)
[show test cable](#)

enable test device

Syntax ENABle TEST DEvIce=CARD TYpe=SLOTtest

Description This command tests the Secure Digital (SD) card slot on the front of the x900-24X switch to verify that the hardware does the following:

- detects the presence of a card
- detects whether a card has been exchanged
- detects write-protection on a card
- transfers data to and from a card

The test does not write data to the card or harm data already on it. For more information and example output, see [“Storage Device Tests” on page 48-7](#).

Example To test the operation of the card slot with an SD card, use the command:

```
ena test dev=card ty=slot
```

Related Commands [show card counters](#)

enable test interface

Syntax ENABle TEST INTERface=*interface* [Time=*time*|CONT] [MORE]

where:

- *interface* is the interface to be tested.
- *time* is the required test duration in minutes.

Description Before using the Test Facility, disable configurations (**set configuration=none**) and restart or reboot the switch. This command enables interface tests described in the following table.

This interface option...	Tests this...
ALL	All switch interfaces
ASYNn	Asynchronous port n
BASE	All interfaces on the base board
EXPansion	All interfaces on expansion options/modules
ETHn	Out-of-band Ethernet management port n
PORTn	Switch port n

The **time** parameter specifies the duration of the tests in minutes. If **time** is not specified, tests run for four minutes. If **cont** is specified, tests run continuously.

The **more** parameter provides continuous updates of the status of the current test and control states of asynchronous interfaces ([Figure 48-6 on page 48-11](#)). Control signal faults are logged to the switch's logging facility. To display this information, use the [show log command on page 45-31 of Chapter 45, Logging Facility](#).

The **more** parameter should be used only on a single interface at a time. The **more** parameter is not valid when **interface** specifies a group of them; however, no mechanism is provided to prevent **more** being individually enabled on multiple interfaces. This command is provided for hardware servicing only.

Due to the nature of the output, it may be difficult to enter commands, including the [disable test interface command on page 48-9](#), while the **more** option is in effect. Therefore, tests should be enabled for short periods.

Figure 48-6: Example output from the **enable test interface more** command for an asynchronous port

```

asyn1 control signals; cycle 2

output          input
-----
rts    OFF      cts    OFF
dtr    ON       cd     ON
              ring    -
-----

```

Examples To enable testing on asynchronous port 0, use the command:

```
ena test int=asyn0
```

To enable testing on switch port 3, use the command:

```
ena test int=port3
```

Related Commands [disable test interface](#)
[reset test interface](#)
[show test](#)

reset test cable

Syntax RESET TEST CABLE

Description This command clears previous test results and sets the state column to "no test". Cable tests are supported on the AT-9924T and AT-9924T/4SP models only.

Example To clear previous test results and get ready to start a new test, use the command:

```
reset test cab
```

Related Commands [enable test cable](#)
[disable test cable](#)
[show test cable](#)

reset test interface

Syntax RESET TEST INTERface

Description This command clears all the results from interface tests; that is, it sets the state column to "no test" and clears previous results.

Examples To clear all previous test results ready to start a new test, use the command:

```
reset test int
```

Related Commands [disable test interface](#)
[enable test interface](#)
[show test](#)

show test

Syntax `SHoW TEST [INTErface[={ALL|BAsE|EXpansion}]] [COUnTer]`

Description This command displays the unit test status and results. Results are stored until one of the following takes place:

- a test is rerun
- the **reset test interface** command is entered
- the switch is powered off or reset

Parameter	Description
INTErface	Type of interface. Default: all
ALL	All switch interfaces.
BAsE	All interfaces on the base board.
EXpansion	All interfaces on expansion options/modules.
COUnTer	Total number of frames transmitted and received, and the number of good and bad frames received. Default: no default

Figure 48-7: Example output from the **show test** command for x900-24X switches

Board	ID	Bay	Board Name	Host Id	Rev	Serial number
Base	255		AT-9924Ts		A-0	45AX4A00G
Interface	State	Result	Type	Duration (minutes)	Data(%OK)	Control
port1	complete	good	ALL	4	good(100.0)	-
port2	complete	good	ALL	4	good(100.0)	-
port3	complete	good	ALL	4	good(100.0)	-
port4	complete	good	ALL	4	good(100.0)	-
port5	complete	good	ALL	4	good(100.0)	-
port6	complete	good	ALL	4	good(100.0)	-
port7	complete	good	ALL	4	good(100.0)	-
.						
.						
.						
port20	complete	good	ALL	4	good(100.0)	-
port21	complete	good	ALL	4	good(100.0)	-
port22	complete	good	ALL	4	good(100.0)	-
port23	complete	good	ALL	4	good(100.0)	-
port24	complete	good	ALL	4	good(100.0)	-
eth0	complete	good	trans	0	-	-
			TP	2	good(100.0)	-
			ENDEC	0	-	-
			MAC	2	good(100.0)	-
asyn0	complete	good	-	4	good(100.0)	good

Figure 48-8: Example output from the **show test** command for x900-48FE switches

Board	ID Bay	Board Name	Host Id	Rev	Serial number	
Base	201	AT-8948		0 P4-3	58824056	
Interface	State	Result	Type	Duration (minutes)	Details Data(%OK)	Control
port1	complete	good	ALL	4	good(100.0)	-
port2	complete	good	ALL	4	good(100.0)	-
port3	complete	good	ALL	4	good(100.0)	-
port4	complete	good	ALL	4	good(100.0)	-
port5	complete	good	ALL	4	good(100.0)	-
port6	complete	good	ALL	4	good(100.0)	-
port7	complete	good	ALL	4	good(100.0)	-
.						
.						
.						
port46	complete	good	ALL	4	good(100.0)	-
port47	complete	good	ALL	4	good(100.0)	-
port48	complete	good	ALL	4	good(100.0)	-
port49	no test	-	-	-	-	-
port50	no test	-	-	-	-	-
port51	no test	-	-	-	-	-
port52	no test	-	-	-	-	-
asyn0	complete	good	-	4	good(100.0)	good

Figure 48-9: Example output from the **show test** command for AT-9900 switches

Board	ID Bay	Board Name	Host Id	Rev	Serial number
Base	220	9924T/4SP		0 P2-0	61110758

Interface	State	Result	Type	Duration (minutes)	Details Data(%OK) Control

port1	complete	good	ALL	4	good(100.0) -
port2	complete	good	ALL	4	good(100.0) -
port3	complete	good	ALL	4	good(100.0) -
port4	complete	good	ALL	4	good(100.0) -
port5	complete	good	ALL	4	good(100.0) -
port6	complete	good	ALL	4	good(100.0) -
port7	complete	good	ALL	4	good(100.0) -
.					
.					
.					
port20	complete	good	ALL	4	good(100.0) -
port21	complete	good	ALL	4	good(100.0) -
port22	complete	good	ALL	4	good(100.0) -
port23	complete	good	ALL	4	good(100.0) -
port24	complete	good	ALL	4	good(100.0) -
asyn0	complete	good	-	4	good(100.0) good

Table 48-1: Parameters in output of the **show test** command

Parameter	Meaning
Board	Possible board types: Base Expansion
ID	Identification number for the board model.
Bay	Bay number where the expansion card or module is installed.
Board Name	Short name for the board.
Host ID	Used when the stacking feature is enabled to uniquely identify each stack member in a stack.
Rev	Version number of the board.
Serial Number	Unique serial number for the board.
Interface	Name of the interface to which the test results apply.
State	Status of the test module for this interface: No test Testing Complete Halted
Result	Test results. If the test has been completed, the result can be good or bad. If testing is in progress, the result is either wait continuous or wait <mins> minutes. If testing has been halted, the result is either Active LAN, BAD, no SynTstr, or BAD or no loop.
Type	Test sub-mode, which varies depending on the switch model and interface type being tested. Not all tests have multiple sub-modes. Ethernet sub-modes are trans, TP, ENDEC, and MAC.
Duration (minutes)	Duration of the test.
Details	Three columns of detailed results. Due to the criteria used to halt tests, they may show "good" if the event that halted the test occurred after the test had been running correctly.
Data	Whether results for data signals are good or bad.
%OK	Number of data frames successfully received as a percentage of the total number of data frames transmitted.
Control	Whether results for control signals are good or bad. A dot is printed when the State is "testing". For asyn0 tests, it indicates the interface mode being tested. For Ethernet tests, it indicates the loopback mode being tested.

Figure 48-10: Example output from the **show test counter** command for the x900-24X switches

Board	ID	Bay	Board Name	Host	Id	Rev	Serial number
Base	255		AT-9924Ts			A-0	45AX4A00G
Interface	State	Type	Duration (minutes)	Tx	RxTotal	RxGood	RxBad
port1	complete	ALL	4	000025224	000025223	000025223	000000000
port2	complete	ALL	4	000025224	000025223	000025223	000000000
port3	complete	ALL	4	000025224	000025223	000025223	000000000
port4	complete	ALL	4	000025223	000025223	000025223	000000000
port5	complete	ALL	4	000025224	000025223	000025223	000000000
port6	complete	ALL	4	000025224	000025223	000025223	000000000
port7	complete	ALL	4	000025223	000025223	000025223	000000000
.							
.							
port20	complete	ALL	4	000025224	000025224	000025224	000000000
port21	complete	ALL	4	000025224	000025224	000025224	000000000
port22	complete	ALL	4	000025224	000025223	000025223	000000000
port23	complete	ALL	4	000025225	000025224	000025224	000000000
port24	complete	ALL	4	000025225	000025224	000025224	000000000
eth0	testing	trans	0	000000000	000000000	000000000	000000000
		TP	5	000003503	000003469	000001903	000001566
		ENDEC	5	002465873	002465872	002465872	000000000
		MAC	5	002607090	002607090	002607090	000000000
asyn0	complete	-	4	000002399	000002399	000002399	000000000

Figure 48-11: Example output from the **show test counter** command for x900-48FE switches

Board	ID	Bay	Board Name	Host	Id	Rev	Serial number
Base	201		AT-8948			0 P4-3	58824056
Interface	State	Type	Duration (minutes)	Tx	RxTotal	RxGood	RxBad
port1	complete	ALL	4	000025224	000025223	000025223	000000000
port2	complete	ALL	4	000025224	000025223	000025223	000000000
port3	complete	ALL	4	000025224	000025223	000025223	000000000
port4	complete	ALL	4	000025223	000025223	000025223	000000000
port5	complete	ALL	4	000025224	000025223	000025223	000000000
port6	complete	ALL	4	000025224	000025223	000025223	000000000
port7	complete	ALL	4	000025223	000025223	000025223	000000000
.							
.							
.							
port46	complete	ALL	4	000025224	000025223	000025223	000000000
port47	complete	ALL	4	000025225	000025224	000025224	000000000
port48	complete	ALL	4	000025225	000025224	000025224	000000000
port49	no test	-	-	-	-	-	-
port50	no test	-	-	-	-	-	-
port51	no test	-	-	-	-	-	-
port52	no test	-	-	-	-	-	-
asyn0	complete	-	4	000002399	000002399	000002399	000000000

Figure 48-12: Example output from the **show test counter** command for AT-9900 switches

Board	ID	Bay	Board Name	Host	Id	Rev	Serial number
Base	220		9924T/4SP			0 P2-0	61110758
Interface	State	Type	Duration (minutes)	Tx	RxTotal	RxGood	RxBad
port1	complete	ALL	4	000025224	000025223	000025223	000000000
port2	complete	ALL	4	000025224	000025223	000025223	000000000
port3	complete	ALL	4	000025224	000025223	000025223	000000000
port4	complete	ALL	4	000025223	000025223	000025223	000000000
port5	complete	ALL	4	000025224	000025223	000025223	000000000
port6	complete	ALL	4	000025224	000025223	000025223	000000000
port7	complete	ALL	4	000025223	000025223	000025223	000000000
.							
.							
port20	complete	ALL	4	000025224	000025224	000025224	000000000
port21	complete	ALL	4	000025224	000025224	000025224	000000000
port22	complete	ALL	4	000025224	000025223	000025223	000000000
port23	complete	ALL	4	000025225	000025224	000025224	000000000
port24	complete	ALL	4	000025225	000025224	000025224	000000000
asyn0	complete	-	4	000002399	000002399	000002399	000000000

Table 48-2: Parameters in output of the **show test counter** command

Parameter	Meaning
Board	Possible board types: Base Expansion
ID	Identification number for the board model.
Bay	Bay number where the expansion card or module is installed.
Board Name	Short name for the board.
Host ID	Used when the stacking feature is enabled to uniquely identify each stack member in a stack.
Rev	Version number of the board.
Serial Number	Unique serial number for the board.
Interface	Name of the interface to which the test counters apply.
State	Status of the test module for this interface: No test Testing Complete Halted
Type	The test sub-mode, which varies depending on the switch model and interface type being tested. Not all tests have multiple sub-modes. Ethernet sub-modes are trans, TP, ENDEC, and MAC.
Duration (minutes)	Duration of the test.

Table 48-2: Parameters in output of the **show test counter** command (Continued)

Parameter	Meaning
Frame Counters	Four columns of details.
Tx	Total number of frames transmitted on the interface.
RxTotal	Total number of frames received on the interface.
RxGood	Number of good frames received on the interface.
RxBad	Number of bad frames received on the interface.

Examples To display results from testing all interfaces on the switch, use the command:

```
sh test int=all
```

Related Commands [disable test interface](#)
[enable test interface](#)
[reset test interface](#)

show test cable

Syntax `SHoW TEST CAbLe [POrt={port-number|ALL}]`

where *port-number* is a single port number from 1 to 24

Description This command displays test results about all ports or a specific one (Figure 48-13, Table 48-3 on page 48-20). Results are stored until one of the following happens:

- a new test is enabled
- the **reset test cable** command is entered
- the switch is powered off or reset

Cable tests are supported on the AT-9924T and AT-9924T/4SP models only.

Figure 48-13: Example output from the **show test cable** command

Port	Pair 1-2	Pair 3-6	Pair 5-4	Pair 7-8
1	no test	no test	no test	no test
2	open (0m)	open (0m)	open (0m)	open (0m)
3	short (1m)	good	good	good
4	open (0m)	open (0m)	open (0m)	open (0m)
5	open (40m)	open (40m)	open (39m)	open (40m)
6	good	open (10m)	good	good
7	good	good	short (81m)	short (82m)
8	open (0m)	open (0m)	open (0m)	open (0m)
9	good (4m)	good (4m)	good (2m)	good (2m)
10	good	good	good	good
11	open (0m)	open (0m)	open (0m)	open (0m)
12	open (0m)	open (0m)	open (0m)	open (0m)
13	good (122m)	good (123m)	good (120m)	good (126m)
14	open (0m)	open (0m)	open (0m)	open (0m)
15	open (0m)	open (0m)	open (0m)	open (0m)
16	open (0m)	open (0m)	open (0m)	open (0m)
17	open (0m)	open (0m)	open (0m)	open (0m)
18	open (0m)	open (0m)	open (0m)	open (0m)
19	open (0m)	open (0m)	open (0m)	open (0m)
20	open (0m)	open (0m)	open (0m)	open (0m)
21	open (0m)	open (0m)	open (0m)	open (0m)
22	open (0m)	open (0m)	open (0m)	open (0m)
23	open (0m)	open (0m)	open (0m)	open (0m)
24	open (0m)	open (0m)	open (0m)	open (0m)

Table 48-3: Parameters in output of the **show test cable** command

Parameter	Meaning
Port	Number of the switch port.
Pair 1-2, Pair 3-6, Pair 5-4, Pair 7-8	<p>The cable test status or results for each pair of wires inside the cable is shown in "state(length)" format. The state is one of no test, testing, failed, good, short, or open.</p> <p>The good cable length measurement is only an estimate. The actual value depends on such factors as the attenuation of the cable, output levels of the remote transceiver, and connector impedance. The accuracy is plus or minus 10 meters.</p> <p>When the state is open or short the length shown is the approximate distance to that fault. The accuracy of the distance to the open or short location is plus or minus two meters.</p> <p>When the state is good the length shown indicates the approximate length of that pair.</p>

Example To display cable test results for all ports, use the command:

```
sh test cab
```

Related Commands [enable test cable](#)
[disable test cable](#)
[reset test cable](#)