CHAPTER 6

# Diagnostic Commands in the CLI

This chapter describes the following diagnostic and troubleshooting commands:

| | |
|---|---|
| **connect** | Logically attach the console or modem I/O port to a specified card in the node in which the CLI session is running. |
| **loadcard** | Load the specified file into the specified card, start the card, and establish a console connection between the CLI and the TCS slave on the card. |
| **test** | Run field diagnostics tests from the CLI. |
| **read** | Read memory and hardware registers accessible by the TCS. For qualified personnel only. |
| **write** | Write hex values to memory and hardware registers. For qualified personnel only. |

See also the **ping** command, described in Chapter 4.

## connect

Connect the CLI to a line card as a console.

### Description

Use the **connect** command to connect the CLI to the specified line card so it can act as a terminal for a program, such as diagnostics, running on the line card. Type **~.** (tilde-dot) to interrupt the connection.

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**Note** The **connect** command requires CLI protected mode. (See the **protected** command in Chapter 4.) This command affects *only* the node on which the CLI is running when you execute it, regardless of a target set with the command **set snmp hostname** *name*. It does not work on a Sun workstation.

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### Syntax

```
connect card# [force] [diagnostic]
```

### Arguments

| | |
|---|---|
| *card#* | The card number, in the range 3-10. (A connection to either of the NP slots is refused.) |
| **force** | Optionally force this CLI session to take control of the slot even if it was being used by another CLI in the network. |
| **diagnostic** | Used only when connecting to a card to run diagnostics. See the *LightStream 2020 Hardware Reference Manual*. |

# loadcard

Load a file into a card, start it, and establish a console connection with its TCS slave.

### Description

The **loadcard** command loads a line card program, such as the operational software or a diagnostic program, into the specified card. The command resets the card, then loads and starts the line card software.

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**Note** The **test** command is the preferred way to run diagnostics on a card from the CLI.

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**Note** The **loadcard** command requires CLI protected mode. (See the **protected** command in Chapter 4.) This command affects *only* the node on which the CLI is running when you execute it, regardless of a target set with the command **set snmp hostname** *name*. It does not work on a Sun workstation.

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### Syntax

```
loadcard card# [load-address] [filename]
```

### Arguments

| | |
|---|---|
| *card#* | The card number, in the range 3-10. |
| *load-address* | The load address (optional). Normally, you omit this argument and use the default load address. |
| *filename* | The name of the file containing the program you want to load (optional). If no filename is specified, this command loads the operational software for the card. |

# test

Run diagnostics on a specified card.

## Description

The **test** command runs diagnostic tests on a specified card to determine whether it should be replaced. If a card fails, record the displayed error codes and report them when returning the card. The software automatically takes the card out of service (changing its status to `testing`), identifies the type of card, and runs appropriate tests, as specified in files in /usr/diag.

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**Note** The **test** command requires CLI protected mode. (See the **protected** command in Chapter 4.) This command affects *only* the node on which the CLI is running when you execute it, regardless of a target set with the command **set snmp hostname** *name*. It does not work on a Sun workstation.

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**Note** The **test** command takes the tested card out of service. To test the NP on a single-NP system, you must deactivate the node, load diagnostics manually, and run tests through the diagnostics interface. See the *Lightstream 2020 Hardware Reference Guide* for information about this procedure, and for information about replacing a defective card.

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## Syntax

`test` *`card#`* [**`-l`**][*`-p`*][**`-s`**][**`-x`**][**`-F`***`file`*] `test` *`card#`* **`-r`** `test` *`card#`* **`-m`** [**`-F`***`file`*]

## Switches

**-F***file* Load diagnostics from *file* rather than from the default file for the card. *file* can only be a copy of the default file, and you must ensure that *file* matches the card type.

**-l** Run tests that require looping plugs or cables. For additional details, see the *LightStream 2020 Hardware Reference Manual*..

**-m** Access the diagnostics interface to run tests interactively. This is equivalent to loading the manufacturing diagnostics with **loadcard** and connecting to the card (see the *Lightstream 2020 Hardware Reference Manual*). The following message is the last displayed after the diagnostics have been loaded:

```
fcload: slot card#: releasing per-slot synchronization lock.
```

Press [**Return**] periodically until the prompt appears. Type **?** for a list of tests. Type [**^C**] to terminate a test in progress. Type **~.** to exit. The **-r** switch cannot be used to retrieve output of **test -m**.

**-p** Poll test output approximately every second until completion or timeout. Tests completed between these snapshots are not displayed. If a test runs longer than one polling interval, successive dots indicate the successive polls. A test in progress may be terminated with [**^C**]. The **-r** switch may be used after completion.

**-r** Retrieve results of tests, until the card status changes to `active` or `inactive` or until the card is loaded with some other software, overwriting the memory locations in which test results are stored. If the same test is active over successive polls with **test -r**, the `heartbeat` value in the display indicates whether the diagnostics are running.

The **-r** switch does not retrieve results of tests run interactively with the **-m** switch.

**-s** Run tests that loop data through the switch fabric for the specified slot.

Do not use the **-s** switch on an operational system. If the card is defective, spurious data could be communicated over the network.

**-x** Run long memory tests. These extended tests may take an hour or more to run.

The default behavior, with only the *card#* argument, is to run standard pass/fail tests in the background. The **-l**, **-s**, and **-x** switches add other tests to the default set. Test results can be viewed during the test run if the tests are invoked with the **-p** switch, or retrieved later with the **test -r** command.

# read

Read memory and hardware registers accessible by the TCS.

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**Note** This command is only for use by LightStream support personnel. It is of no value without detailed knowledge of memory locations, hardware registers, their contents, and their functions in the LS2020 node.

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**Note** This command affects *only* the node on which the CLI is running when you execute it, regardless of a target set with the command **set snmp hostname** *name*. It does not work on a Sun workstation.

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**Note** The **read** command requires CLI protected mode. (See the **protected** command in Chapter 4.)

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# write

Write memory and hardware registers accessible by the TCS.

**Caution** This command is only for use by LightStream support personnel. Without detailed knowledge of memory locations, hardware registers, their contents, and their purposes, use of this command will almost certainly destroy the functioning of the LS2020 node.

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**Note** This command affects *only* the node on which the CLI is running when you execute it, regardless of a target set with the command **set snmp hostname** *name*. It does not work on a Sun workstation.

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**Note** The **write** command requires CLI protected mode. (See the **protected** command in Chapter 4.)

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