



Tool Manual

CIF Device Driver Setup and Test Program - cifSET

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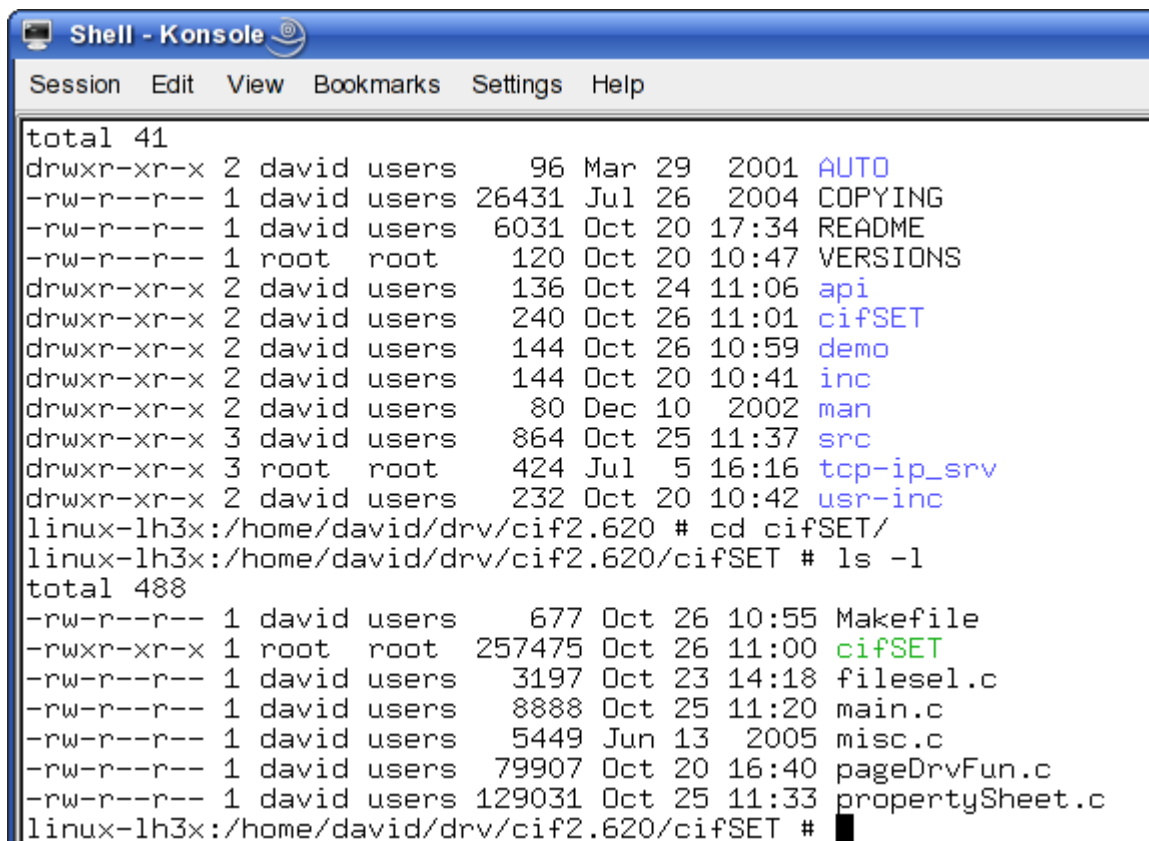
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Introduction

This GTK+ based tool supports you by starting up Hilscher communication interfaces on machines running Linux OS. Using it, the hardware and the driver itself can be tested extensively. The CIF Device Driver can operate up to four **cif** boards at the same time. The tool's support functionality contains **firmware** and **configuration database** download functions indispensable for the hardware set-up. Subsequent pages describe the setup and test tool in detail.

*Note: Do not forget to load the **cif** device driver prior to starting S&T program.*

The Package



```

total 41
drwxr-xr-x 2 david users 96 Mar 29 2001 AUTO
-rw-r--r-- 1 david users 26431 Jul 26 2004 COPYING
-rw-r--r-- 1 david users 6031 Oct 20 17:34 README
-rw-r--r-- 1 root root 120 Oct 20 10:47 VERSIONS
drwxr-xr-x 2 david users 136 Oct 24 11:06 api
drwxr-xr-x 2 david users 240 Oct 26 11:01 cifSET
drwxr-xr-x 2 david users 144 Oct 26 10:59 demo
drwxr-xr-x 2 david users 144 Oct 20 10:41 inc
drwxr-xr-x 2 david users 80 Dec 10 2002 man
drwxr-xr-x 3 david users 864 Oct 25 11:37 src
drwxr-xr-x 3 root root 424 Jul 5 16:16 tcp-ip_srv
drwxr-xr-x 2 david users 232 Oct 20 10:42 usr-inc
linux-lh3x:/home/david/drv/cif2.620 # cd cifSET/
linux-lh3x:/home/david/drv/cif2.620/cifSET # ls -l
total 488
-rw-r--r-- 1 david users 677 Oct 26 10:55 Makefile
-rwxr-xr-x 1 root root 257475 Oct 26 11:00 cifSET
-rw-r--r-- 1 david users 3197 Oct 23 14:18 filesel.c
-rw-r--r-- 1 david users 8888 Oct 25 11:20 main.c
-rw-r--r-- 1 david users 5449 Jun 13 2005 misc.c
-rw-r--r-- 1 david users 79907 Oct 20 16:40 pageDrvFun.c
-rw-r--r-- 1 david users 129031 Oct 25 11:33 propertySheet.c
linux-lh3x:/home/david/drv/cif2.620/cifSET #

```

*Illustration 1: CIF Device Driver Package for Linux, **cifSET** folder contents*

Our CIF Device Driver package comes as a .tbz file. The Setup & Test tool **cifSET** is located in the cifSET/ sub folder of the driver installation folder. The executable name is **cifSET**. Please, try always to recompile the tool on your machine, in your development environment.

'Boards' Dialog Page

This entry page allows selection of detected boards. One board at a time can be active and all tool functions use the current board number. It is possible to change boards operating mode, setting it to interrupt or polling one. On all pages the bottom panes are used by the tool as an error/info messages output window.

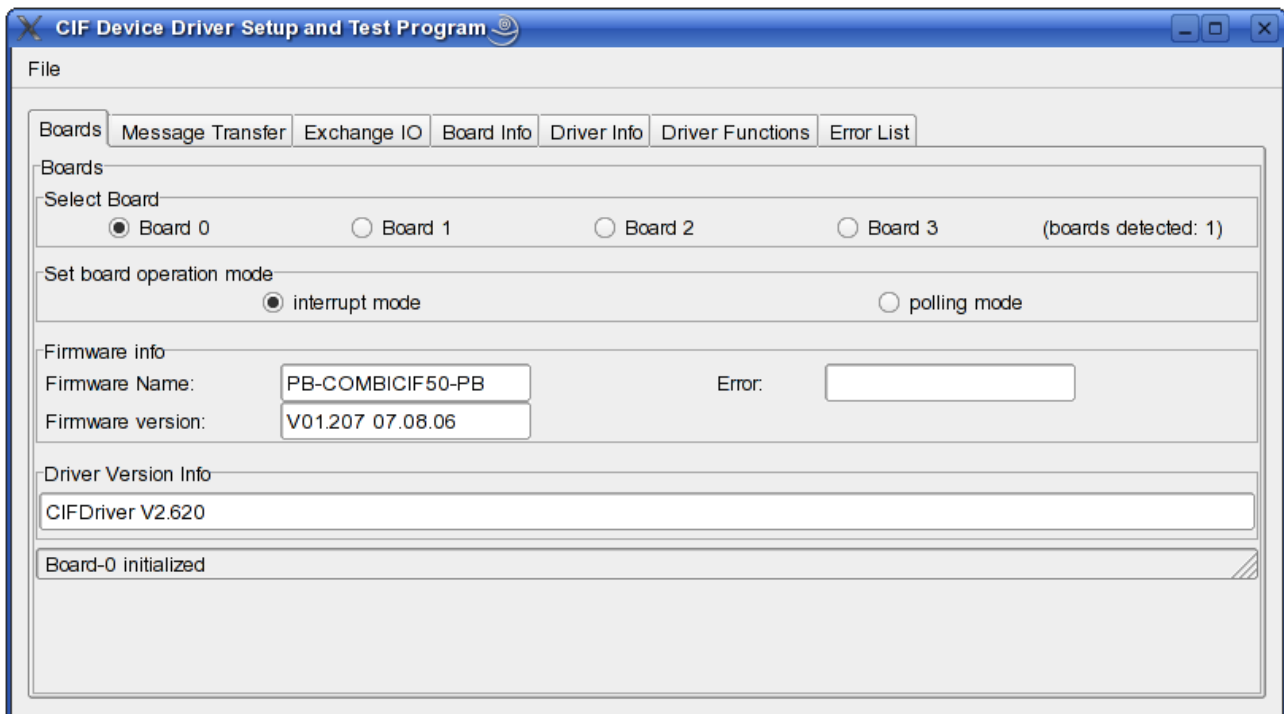


Illustration 2: 'Boards' page

'Message Transfer' Dialog Page

This is an RCS message transfer facility. Diagnose messages can be sent to/received from the **cif** board or even simple cyclic message transfer test can be done here. For RCS message structure and semantics, please, consult the corresponding protocol manual.

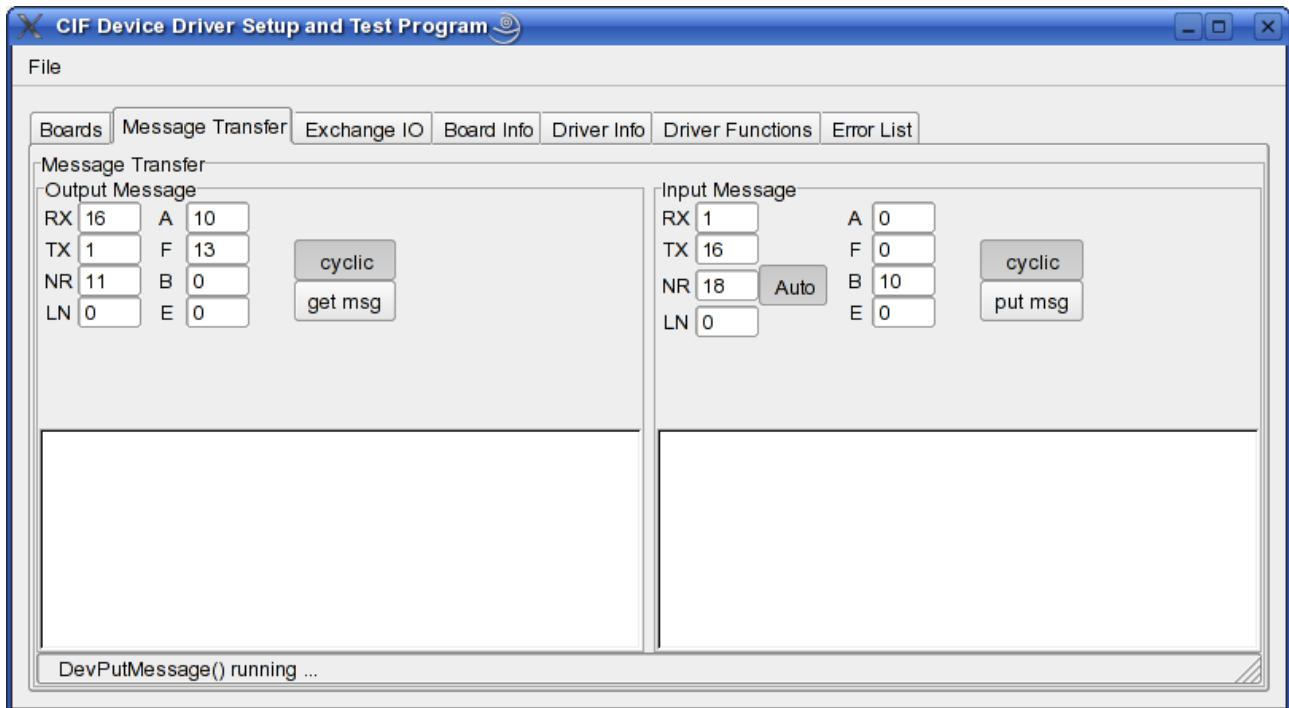


Illustration 3: 'Message Transfer' page

Text box in Output Message container is read only. The S&T tool displays in it the message contents received from **cif**. The output message header fields – RX/TX/NR/LN/A/F/B/E – are auto-filled by the tool based on received RCS message.

In the text box in Input Message container the tool expects the message contents to be sent to the **cif**. The input message header has to be initialized correspondingly. Auto-counting of sent messages can be activating with 'Auto' button.

'Exchange IO' Dialog Page

Process data exchange, cyclic or one-shot, can be tested here. There are three different exchange modes available:

- process data exchange
- process data exchange, extended
- process data exchange, with error detection

'extended' mode allows varying of handshake modes.

'error detection' mode allows setting of COM error mode and display of COM error state.

Receive Process Data text box is read only, the tool displays receive data in it. In Send Process Data text box the tool expects hexadecimal input data to be sent to the board. Offsets and lengths are tunable for both transfer directions.

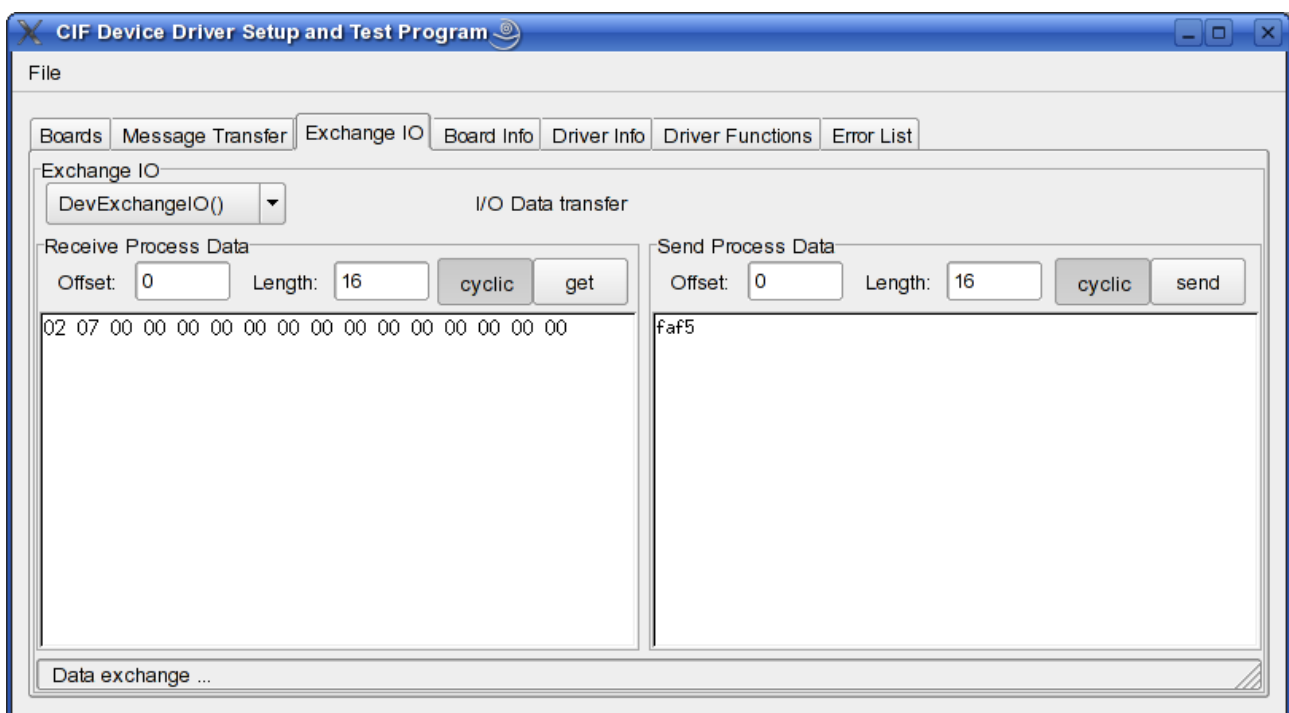
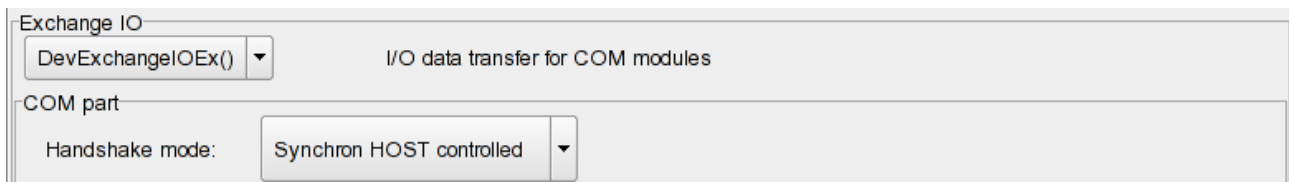


Illustration 4: 'Exchange IO' page



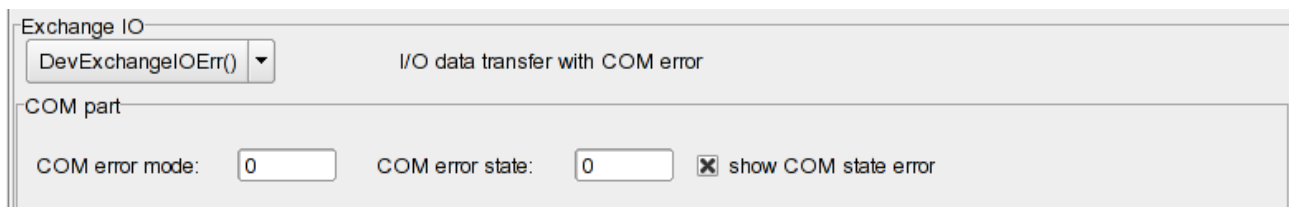
Exchange IO

DevExchangeIOEx() ▼ I/O data transfer for COM modules

COM part

Handshake mode: Synchron HOST controlled ▼

Illustration 5: 'Exchange IO' page, extended mode



Exchange IO

DevExchangeIOErr() ▼ I/O data transfer with COM error

COM part

COM error mode: 0 COM error state: 0 ☒ show COM state error

Illustration 6: 'Exchange IO' page, COM error mode

'Board Info' Dialog Page

The functions available on this page allow retrieving of various information from the **cif** device. The buttons' labels are self-explanatory. The illustration below shows the hardware information.

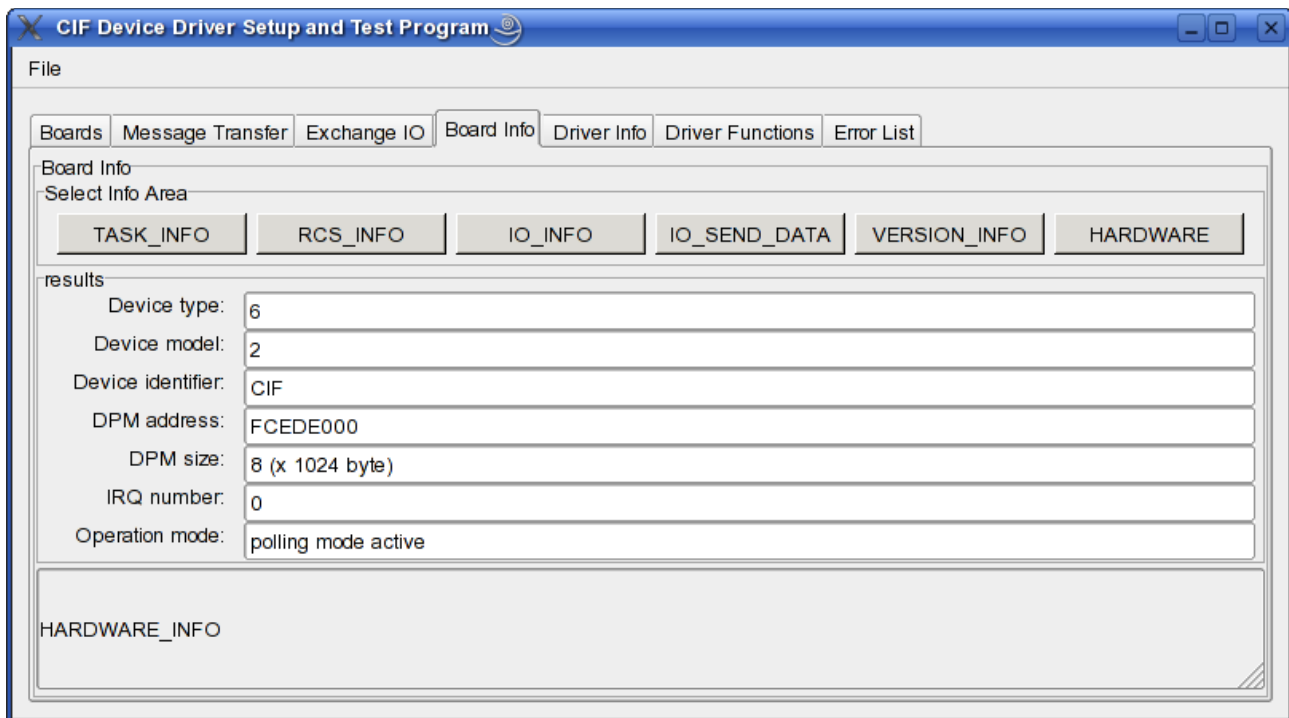


Illustration 7: 'Board Info' page

'Driver Info' Dialog Page

Some driver related control information can be fetched here. Press 'Update' button to let the driver updating display values.

The screenshot shows a window titled "CIF Device Driver Setup and Test Program" with a menu bar containing "File". Below the menu bar is a tabbed interface with tabs: "Boards", "Message Transfer", "Exchange IO", "Board Info", "Driver Info" (selected), "Driver Functions", and "Error List". The "Driver Info" tab contains a form with two columns of input fields. The left column includes: "open counter:" (1), "read counter:" (0), "write counter:" (0), "interrupt counter:" (1), "init state:" (0xC0), "HostMBXState:" (0x00), and "DeviceMBXState:" (0x00). The right column includes: "last function:" (0x00), "write state:" (0x00), "read state:" (0x00), "HOST flags:" (0xC0), "Device flags:" (0x20), "IO flags:" (0x00), and "IO Exchange:" (0). Below these fields is an "update" button. At the bottom of the window is a large text area containing the word "Done".

| Field | Value |
|--------------------|-------|
| open counter: | 1 |
| read counter: | 0 |
| write counter: | 0 |
| interrupt counter: | 1 |
| init state: | 0xC0 |
| HostMBXState: | 0x00 |
| DeviceMBXState: | 0x00 |
| last function: | 0x00 |
| write state: | 0x00 |
| read state: | 0x00 |
| HOST flags: | 0xC0 |
| Device flags: | 0x20 |
| IO flags: | 0x00 |
| IO Exchange: | 0 |

update

Done

Illustration 8: 'Driver Info' page

'Driver Functions' Dialog Page

A collection of helpful driver functions are accessible on this page. Simply press corresponding button to call the function wanted. All of them display a specific dialog box for function call parametrization and /or displaying results. The CIF Device Driver manual, **cif_drv.pdf**, describes each of these functions in detail.

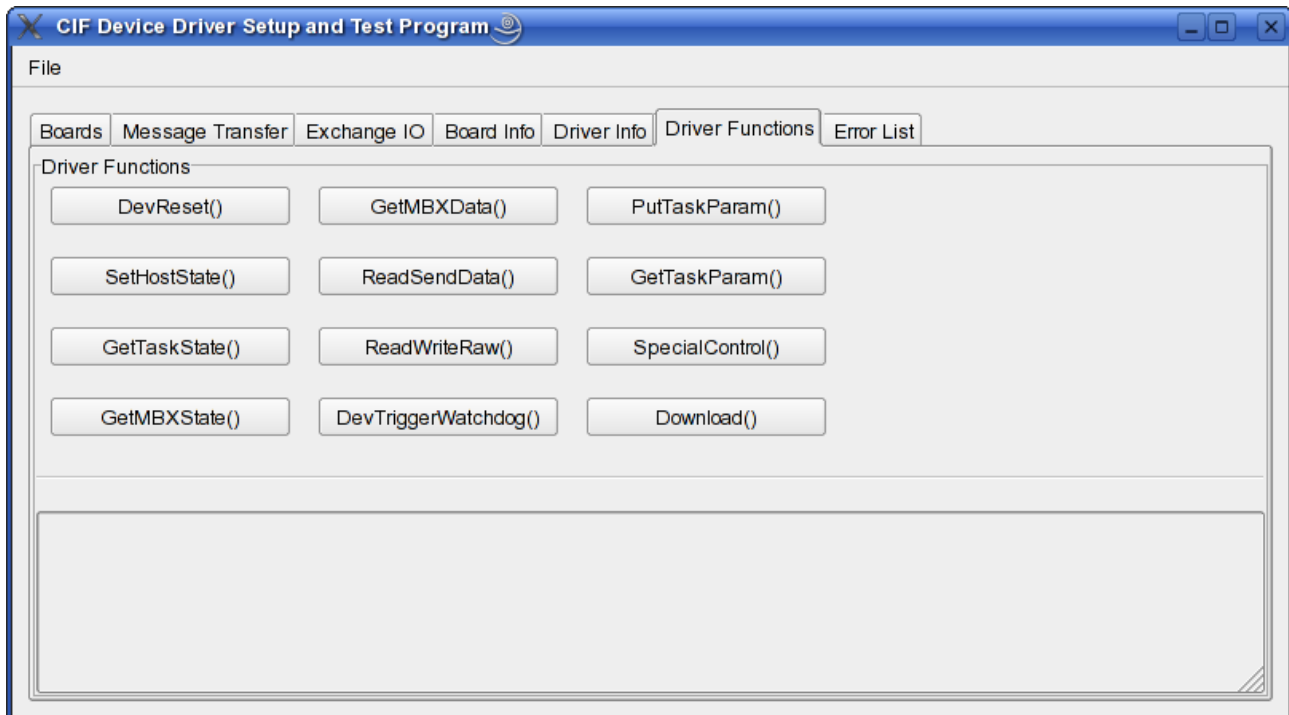


Illustration 9: 'Driver Functions' page

'Error List' Dialog Page

- **Driver** related
- **Device** / hardware related
- **User** / Application or file operation related
- **RCS** / Firmware related

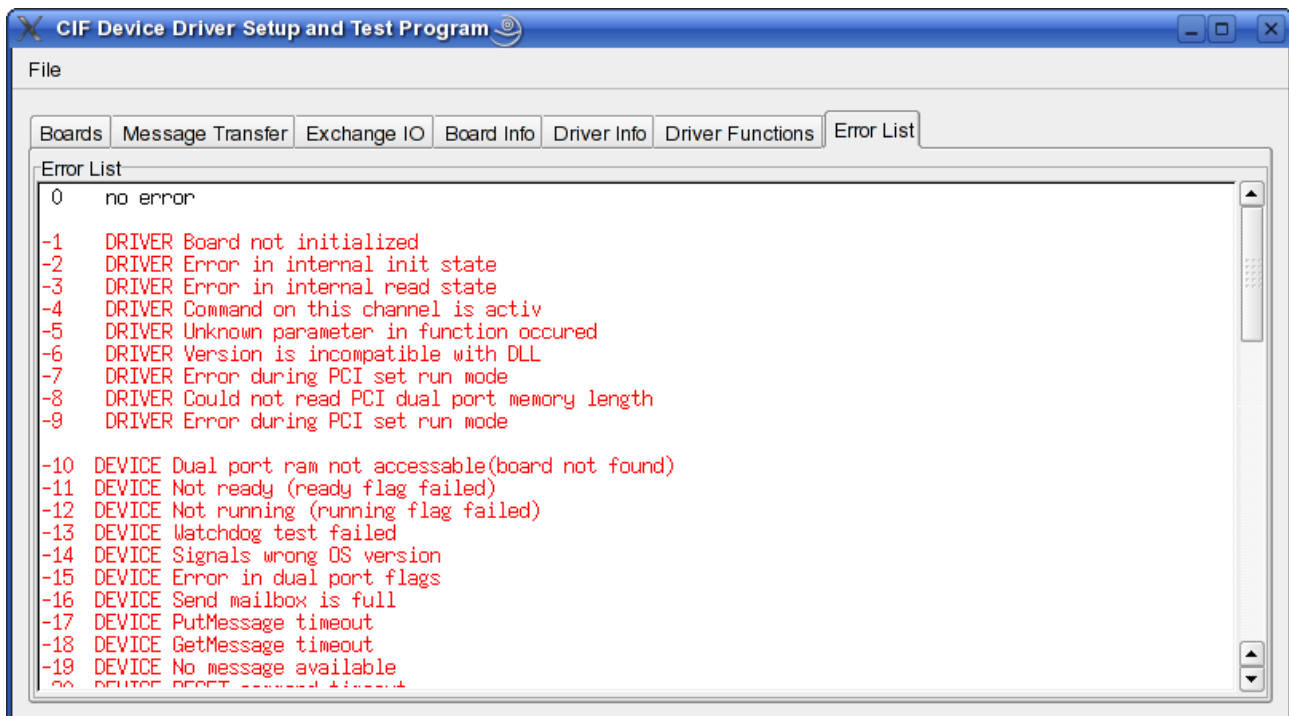


Illustration 10: 'Error List' page