NAME

zs – Zilog 8530 SCC serial communications driver

SYNOPSIS

```
#include <fcntl.h>
#include <sys/termios.h>

open("/dev/term/n", mode);
open("/dev/ttyn", mode);
open("/dev/cua/n", mode);
```

AVAILABILITY

SPARC

DESCRIPTION

The Zilog 8530 provides two serial input/output channels that are capable of supporting a variety of communication protocols. A typical system uses two or more of these devices to implement essential functions, including RS-423 ports (which also support most RS-232 equipment), and the console keyboard and mouse devices.

The **zs** module is a loadable STREAMS driver that provides basic support for the 8530 hardware, together with basic asynchronous communication support. The driver supports those **termio**(7I) device control functions specified by flags in the **c_cflag** word of the **termios** structure and by the **IGNBRK**, **IGNPAR**, **PARMRK**, or **INPCK** flags in the **c_iflag** word of the **termios** structure. All other **termio**(7I) functions must be performed by STREAMS modules pushed atop the driver. When a device is opened, the **ldterm**(7M) and **ttcompat**(7M) STREAMS modules are automatically pushed on top of the stream, providing the standard **termio**(7I) interface.

The character-special devices **/dev/term/a** and **/dev/term/b** are used to access the two serial ports on the CPU board.

Note: **/dev/cua/**[**a-z**], **/dev/term/**[**a-z**] and **/dev/tty**[**a-z**] are valid name space entries. The number of entries used in this name space are machine dependent.

The **/dev/tty***n* device names only exist if the *binary compatibility package* is installed. The **/dev/tty***n* device names are created by the **ucblinks** command. This command is only available via the *binary compatibility package*.

To allow a single tty line to be connected to a modem and used for both incoming and outgoing calls, a special feature, controlled by the minor device number, is available. By accessing character-special devices with names of the form **/dev/cua/***n* it is possible to open a port without the Carrier Detect signal being asserted, either through hardware or an equivalent software mechanism. These devices are commonly known as dial-out lines.

Once a **/dev/cua/***n* line is opened, the corresponding tty line cannot be opened until the **/dev/cua/***n* line is closed; a blocking open will wait until the **/dev/cua/***n* line is closed (which will drop Data Terminal Ready, after which Carrier Detect will usually drop as well) and carrier is detected again, and a non-blocking open will return an error. Also, if the tty line has been opened successfully (usually only when carrier is recognized on the modem) the corresponding **/dev/cua/***n* line cannot be opened. This allows a modem to be attached to, for example, **/dev/term/***n* (renamed from **/dev/tty***n*) and used for dial-in (by enabling the line for login in **/etc/inittab**) and also used for dial-out (by **tip**(1) or

uucp(1C)) as **/dev/cua/***n* when no one is logged in on the line.

IOCTLS

The standard set of **termio ioctl**( ) calls are supported by **zs**.

If the **CRTSCTS** flag in the **c_cflag** field is set, output will be generated only if CTS is high; if CTS is low, output will be frozen. If the **CRTSCTS** flag is clear, the state of CTS has no effect.

If the **CRTSXOFF** flag in the **c_cflag** field is set, input will be received only if RTS is high; if RTS is low, input will be frozen. If the **CRTSXOFF** flag is clear, the state of RTS has no effect.

The **termios CRTSCTS** (respectively **CRTSXOFF)** flag and **termiox CTSXON** (respectively **RTSXOFF)** can be used interchangeably.

Breaks can be generated by the **TCSBRK**, **TIOCSBRK**, and **TIOCCBRK ioctl**( ) calls.

The state of the DCD, CTS, RTS, and DTR interface signals may be queried through the use of the **TIOCM_CAR**, **TIOCM_CTS**, **TIOCM_RTS**, and **TIOCM_DTR** arguments to the **TIOCMGET** ioctl command, respectively. Due to hardware limitations, only the RTS and DTR signals may be set through their respective arguments to the **TIOCMSET**, **TIOCMBIS**, and **TIOCMBIC** ioctl commands.

The input and output line speeds may be set to any of the speeds supported by **termio**. The speeds cannot be set independently; when the output speed is set, the input speed is set to the same speed.

ERRORS

An **open**( ) will fail if:

ENXIO The unit being opened does not exist.

EBUSY The dial-out device is being opened and the dial-in device is already open, or the dial-in device is being opened with a no-delay open and the dial-out device is already open.

EBUSY The port is in use by another serial protocol.

EBUSY The unit has been marked as exclusive-use by another process with a **TIOCEXCL ioctl**( ) call.

EINTR The open was interrupted by the delivery of a signal.

FILES

/dev/cua/[a-z]	dial-out tty lines
/dev/term/[a-z]	dial-in tty lines
/dev/tty[a-z]	binary compatibility package device names

SEE ALSO

cu(1C), **tip**(1), **ucblinks**(1B), **uucp**(1C), **ports**(1M), **ioctl**(2), **open**(2), **ldterm**(7M), **termio**(7I), **ttcompat**(7M), **zsh**(7D)

Binary Compatibility Guide

DIAGNOSTICS

zs*n* **: silo overflow.**
The 8530 character input silo overflowed before it could be serviced.

zs*n* **: ring buffer overflow.**

The driver's character input ring buffer overflowed before it could be serviced.