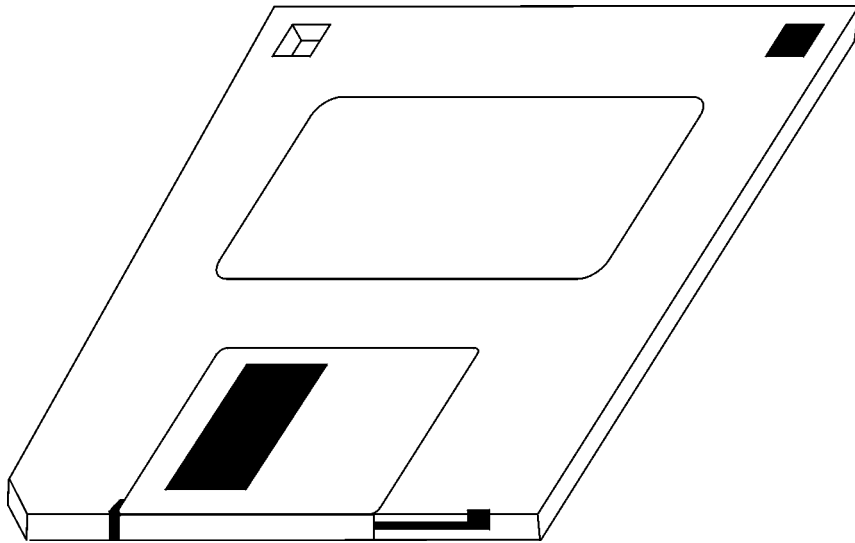*UNIX 3.2 XENIX Driver Version 1.4.2*
Release Notes

COMPUTONE
Corporation

1060 Windward Ridge Parkway
Suite 100
Alpharetta, GA 30005-3992
U.S.A.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language, in any form or by any means (electronic or otherwise) without the prior written permission of Computone Corporation.

Disclaimer: Computone Corporation ("Computone") makes no representations or warranties with respect to the contents hereof, and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Furthermore, Computone reserves the right to revise this publication and make changes from time to time to the contents hereof, without obligation of Computone to notify any person of such revisions or changes.

<u>**Support Information:**</u> If you require technical support, contact your Computone dealer or Computone Technical Support. The Computone Technical Support staff can be reached by phone at the following numbers, from 8:30 a.m. to 8:00 p.m. Eastern time, Monday through Friday:

> (800) 241-3946 ext. 2002
> (770) 625-0000 ext. 2002
> (770) 625-0013 (FAX)

Technical Support can be contacted by email at the Internet address `support@computone.com`

Trademarks: Computone and IntelliServer are trademarks of Computone Corporation. All other brand names or product names are trademarks or registered trademarks of their respective corporations.

Release Notes, SCO Unixware 7.01 Driver Installation   P/N: 0-28002, Rev.B

Contents

UNIX 3.2 XENIX Driver Version 1.4.2

This Release Note provides additional information for installing and using the IntelliPort Plus EX drivers on UNIX and XENIX systems. It supplements information found in the *IntelliPort II UNIX Software Reference Guide*.

If you are installing the IntelliPort Plus EX UNIX drivers for the first time, read the section *"Product Installation/Removal"* in this Release Note, and read the *IntelliPort II UNIX Software Reference Guide*, before you begin the installation. After installing the drivers, read the sections *"Known Limitations"* and *"Additional Notes"* in this Release Note.

If you are upgrading an existing IntelliPort Plus EX installation, read this entire Release note and the *IntelliPort II UNIX Software Reference Guide* before you begin the installation.

It is recommend that you install the IntelliPort Plus EX software before the IntelliPort Plus EX hardware.

> **IMPORTANT!** To avoid damage to hardware, always turn off the power to the system before you plug or unplug IntelliPort Plus EX cables or components.

Product Installation/Removal

Briefly, you install or update the IntelliPort Plus EX drivers using the *custom* utility (on SCO products) or the *sysadm* utility (on all other products). For detailed instructions, see Chapter 2 of the *IntelliPort II UNIX Software Reference Guide.*

While installing or removing the IntelliPort Plus EX drivers, keep the following in mind:

- Under AT&T/Interactive 3.2.2, the Editing Package, as well as the kernel configuration kit, must be installed.

- Under AT&T/Interactive 3.2.3, the Computone IntelliPort Plus EX Driver diskette must remain in the floppy drive during the entire installation procedure.

- During installation, you will encounter a series of menu screens. While these screens are displayed, the **F4** key returns you to the Main Menu instead of returning to the previous menu, as noted on the screen.

- You should select the "ALL" option during product installation and removal. This ensures that the file */etc/default/fip.d/FIP_NOTES* is copied onto the system. This file identifies all currently supported Computone IntelliFeatures.

Additions and Corrections

Installation & Setup Utilities

Existing board settings are no longer lost if the installation menu is aborted with the **F4** key.

Driver

The following outlines the problems and improvements with the driver:

- If a modem port was opened with O_NDELAY and the CLOCAL bit was then set with an ioctl, proper VMIN/VTIME operation was hindered and reads would return without delay.

- Setting IXANY and -IXON in previous releases would cause the XON (CTRL-Q) and XOFF (CTRL-S) characters to be removed from the input stream even though flow control was not enabled.

- Corrected problem with opens of the modem device. It was possible to succeed in the open of the modem device without DCD active if the port had previously closed while DCD was still active.

- Updated loadware to Ver. 1.6.2. Previous versions would give false failures on older boards.

- Corrected the problem of a host locking when a "board fatal" message from a MC board (or EISA set for level sensitive IRQ's.) was generated.

- Added code to prevent lockups when a ASIC-CEX board has 3 or more expansion boxes and sits idle for several minutes.

- Added support for write select when **osproc** is not set.

- Input data is more efficiently processed in the line disciplines.

IntelliFeatures

The following outlines the problems and improvements with the IntelliFeatures:

- Corrected problems with slow transparent printing. The IntelliPrint parameter **pause** now functions properly. In previous releases, this parameter was ignored.

- IntelliPrint profiles now default to *pause=5*. The values of **startdelay** and **pause** are in 1/10 of a second. Each time the **startdelay** or **pause** expires up to 64 (if available) characters of transparent print data will be sent.

- An effort is now made to keep escape sequences sent to a transparent print device intact. They will not be broken up with screen data or printoff/printon sequences. The **escdelay** and **maxesclen** IntelliPrint profile parameters have been added in order tune this new feature.

- Added IntelliSet parameter **dsrreq**. This is used to ignore input unless DSR active.

- Corrected problem of not always clearing hardware flow control when changing IntelliSet profiles.

Cosmetic

The following outlines cosmetic changes with the driver:

- The installation menu now refers to the CEX type boards as "Expandable" without reference to the number of ports.

- The installation menu (specifying the number of ports per box for expandable cards) has rearranged where the board number appears.

- The I/O range and Slot Address fields in the installation menu default to more generic values when installing new boards.

- The driver no longer displays a warning message at boot time indicating a board is in 8-bit mode (SW-8). This message was causing concern among users of ASIC ISA-8 and ISA-4 boards. These boards appear to the driver as expandable boards with SW-8 set.

- The activity indicator now spins counterclockwise during driver removal.

SCO XENIX

The following outlines the problems/changes with SCO XENIX:

- Xenix does not have the facilities to support PCI cards.

- In previous driver versions the print spooler could disable the printer after printing a job if the spool device was an IntelliPrint port.SCO UNIX

The following outlines the problems/changes to SCO UNIX:

- Additional support added for scancode mode

- Alternate screens no longer count against the max user license

- Alternate start and stop chars can now be set with TCSETA family of ioctls. (Previous versions only supported AIOCSETSS)

- Added support for PCI cards

ISC/AT&T UNIX

The following outlines the problems/changes to ISC/AT&T UNIX:

- Previous releases of the IntelliPort Plus EX driver would not install properly under Interactive UNIX 4.1 because of a bug introduced with this O/S release. This version includes a work-around for this problem.

- The cton_8bit_???? entries that are added to */etc/gettydefs* now include HUPCL.

- Duplicate entries for the main screen were being created in /etc/inittab during a new install. This has been fixed.

- There is now an entry (ip2_tty) in sysadm under Machine->Tty_managment to administer the ports. This is the same as typing "mkdev fip".
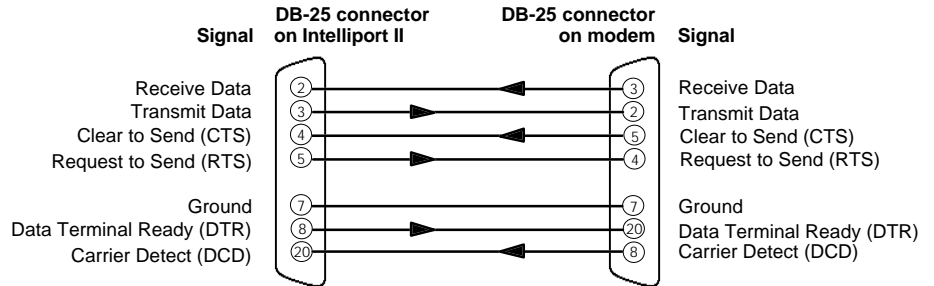
Default IntelliView Profiles

This section lists some of the IntelliView profiles included in the *intellicap* file and the hot-key sequences recognized by each profile. The profile names follow the convention described within the *intellicap* file itself.

Profile Name	Terminal Type	Next Screen Sequence	Screen Selection Sequences
wy60.2t	Wyse 60	[F12]	none
wy60.2pt, wy60.2pt.xon, wy60.2pt.cts	Wyse 60	[F12]	[CTRL][F1], [CTRL][F2]
wy60.3t	Wyse 60	[F12]	[CTRL][F1] - [CTRL][F3]
wy60.3pt, wy60.3pt.xon, wy60.3pt.cts	Wyse 60	[F12]	[CTRL][F1] - [CTRL][F3]
wy60_50.7p, wy60_50.7p.xon, wy60_50.7p.cts	Wyse 60	[F12]	[CTRL][F1] - [CTRL][F7]
a230.2pt, a232.2pt, tvi925.2pt	Ampex 230, Televideo 925	[SHIFT][F1]	(none)
microterm.2p	Microterm 6600	(none)	^JA, ^JB
tr170.3pt	Relisys TR170	[F12]	[CTRL][F1] - [CTRL][F3]
tv955.2p, tv955.2pt, tv955.2p.xon, tv955.2pt.xon, tv955.2pt.cts, tv955.2pt.cts	Televideo 955	(none)	[SHIFT][F10], [SHIFT][F11]
dumb.8t	Dumb terminal	^A0	^A1 - ^A8

Manual Errata

On pages 3-9 and 3-13 of the *IntelliPort II Hardware Reference*, the first cable diagram (on both pages) has a wiring error. The diagram is for connecting modems to the IntelliPort II, and should look like this:

Signal	DB-25 connector on Intelliport II	DB-25 connector on modem	Signal
Receive Data	② ◄——	——③	Receive Data
Transmit Data	③ ——►	——②	Transmit Data
Clear to Send (CTS)	④ ◄——	——⑤	Clear to Send (CTS)
Request to Send (RTS)	⑤ ——►	——④	Request to Send (RTS)
Ground	⑦ ——	——⑦	Ground
Data Terminal Ready (DTR)	⑧ ——►	——⑳	Data Terminal Ready (DTR)
Carrier Detect (DCD)	⑳ ◄——	——⑧	Carrier Detect (DCD)

Known Limitations

The following are known limitations for using the IntelliPort II UNIX driver:

- Because of O/S limitations, PCI cards are not supported in the SCO Xenix driver.

- If you are running IntelliView and using **tab3** expansions, switching screens may cause a problem with the expansion.

- When under a heavy load, high speed input (such as 115,200 baud) may occasionally lose characters regardless of flow control settings.

- Transparent print data may be corrupted when logging off a terminal with a transparent print job active.

- Running *fip_reinit* or *mkdev fip* while flow control is continuously active on one or more ports may result in the program terminating with an error. This only happens if you run *fip_reinit* or *mkdev fip* after system initialization; the usual cause is that a printer is off-line and data is waiting to be sent to the printer.

- IntelliView and PC Term applications require 8-bit mode. However, AT&T/ Interactive UNIX does not support this. Therefore, new *gettydefs* entries prefixed with *cton_8bit_* are provided that can be used for this purpose. These entries do not circulate.

- Hot-key sequences (sent from the terminal to the host) are limited to seven (7) characters in length. Screen switch sequences (sent from the host to the terminal) are limited to 15 characters in length.

- If IntelliView screen switch sequences or IntelliPrint printer control sequences contain linefeed (0x0a) characters, and the port is in cooked mode, these are converted to CR/LF sequences. This does not happen when the port is in raw mode.

- IntelliSet **tab** and **onlcr** settings have no effect for Alternate screens.

- If your application turns off the cursor, some terminals do not restore the cursor when changing screens. This is a limitation of the terminal.

- Be careful when using the following form of the *fipInit* command, where the environment variable TERM specifies an IntelliView profile:

```
fipInit icap_file < `tty`
```

This command changes the IntelliFeatures profile used by the current port. You use this form of the *fipInit* command in a .login file, after a *tset* command, to assign an IntelliFeatures profile to the port. This is useful mainly for dial-up ports that may be used with various terminals. If you use this command, make sure any IntelliFeatures profiles that could be assigned with this command support the same number of screens or the results may be unpredictable.

Additional Notes

The following sections provide additional information concerning the drivers.

System Init (AT&T UNIX)

At system initialization, AT&T UNIX systems show assigned interrupt numbers in octal. For example, if you configured the IntelliPort Plus EX controllers to use IRQ 10, the system prints "irq=12" at startup.*mkdev fip*

On UNIX systems, if additional (comment) information is available in the **init.d/fip** entries, this information is duplicated on all IntelliView Alternate screen entries in */etc/inittab*. This happens only if you manually edit comments into the **init.d/fip** entries.

Directly-Connected Printers

Printers connected directly to an IntelliPort Plus EX port can lose data at the end of the file. Use the IntelliSet **noflush** parameter on direct printer ports to avoid this problem.

Scan Code Applications

Many terminals using PC scan codes issue their break codes as "make+80H". But, some varieties of UNIX use *gettydef* entries that default to 7-bit operation. (If the application echoes double characters from the keyboard (once on press, once on release), make sure the terminal and the getty are set up for 8-bit characters.

Flow Control Issues

Most gettydefs entries default to **ixany**. That means that if you press **Ctrl-S** to stop output, pressing any other key restarts output.

If the application is sending data so fast that the terminal can not keep up, the terminal sends an XOFF to prevent its buffer from overflowing. If the operator is typing ahead in the application, the incoming keys may re-enable output inappropriately, causing loss of data. Here it is best to specify -**ixany** in the *gettydefs* defaults. Remind users that if they press **Ctrl-S**, they must press **Ctrl-Q** to re-enable the output. Unfortunately, some applications explicitly set **ixany** at startup. You can use the IntelliSet option *outflow=xon!* to force the port to ignore changes to the flow control settings.

The IntelliPort II UNIX drivers provide for two types of hardware flow control. The incoming data-set signals CTS and DSR can provide output flow control, and the outgoing dataset signals RTS and DTR can provide for input flow control. This type of flow control can be specified by using IntelliSet entries; for example, *inflow=dtr!* or *outflow=cts!*. For SCO products, the *stty* command supports the keywords RTSFLOW and CTSFLOW to enable this flow control.

The serial hardware within the IntelliPort II can directly handle the DTR and CTS signals. However, the driver software must handle the DSR and RTS signals. This makes DTR (for input flow control) and CTS (for output flow control) more efficient for high-speed applications.

When using terminals, it is not customary to use any form of input flow control. (Notice that the normal stty settings for terminal sessions usually specify **ixon**, possibly **ixany**, but never **ixoff**.) This is because input is never expected at a high enough rate to overrun the host. When connecting a terminal using hardware flow control, you should specify CTSFLOW (*outflow=cts!*) but not RTSFLOW (*inflow=rts!, inflow=busyready!*). In some cases, you may want to connect a PC running a terminal emulator package and other software, instead of a terminal. If you are using the terminal emulator to transfer files to the host, the host application which supports this may need to invoke input flow control while the transfer is taking place.

UUCP/CU

Modem Control and TTY Selection

Incoming lines with a modem attached should use the uppercase port or the port with modem control (/dev/ttyS00 instead of /dev/ttys00). For direct connections, the lowercase port should be used on both sides of the connection. Use the -r option with *uugetty*. If the originating side of the communication is connected to a modem and the port is also enabled for login with *uugetty*, use the port with modem control (uppercase). If the port is used strictly for dial out, you can use the lowercase port. Make sure all configuration files are correct (*/usr/lib/uucp/ Devices*, etc.) and that the modems are configured correctly.

Device Characteristics

The IntelliPort II driver provides a modem (uppercase) device, and a non-modem (lowercase) device. By default, the modem device reports the true state of carrier detect, while the non-modem device does not. The processes on the modem port block waiting for carrier detect while the processes using the non-modem port do not block. (For further information, see the *IntelliPort II UNIX Software Reference Guide* in the section *"Modem vs Non-Modem Devices"*.)

IntelliFeatures and *uucp/cu*

Do not use IntelliView and IntelliPrint on ports that are to be used for *uucp*. Binary files transferred using *uucp* could conflict with IntelliPrint and IntelliView hot keys. It is best to use a "dumb" profile for *uucp* ports.

You can use IntelliSet to set RTS/CTS flow control or to lock in a data rate only if both ends of the connection are set the same.

Select an */etc/gettydefs* entry that has IXON and IXOFF enabled for dial-in/dial-out ports. If you must *cu* out a non-modem port with Alternate Screens configured and logins are enabled on the corresponding modem port, disable hot-key scanning with the command */etc/fip_hot -d*.

Direct connect and *cu*

For direct serial connections between machines, use non-modem (lowercase) ports. For UNIX, use *uugetty -r* to prevent race conditions from occurring.

uugetty/getty

For UNIX systems, any manual entry made in the */etc/inittab* file for IntelliPort II ports must also be placed in the */etc/conf/init.d/fip* file. If this is not done, the entries are replaced by whatever is in the */etc/conf/init.d/fip* file every time *mkdev fip* runs.

Selection of the proper entry in */etc/gettydefs* is critical for dial in/dial out ports. In general, you should avoid 7-bit entries and make sure that circulating entries (entries that may change the data rate of the port) are appropriate for the hardware connected to the port.

For XENIX systems, ports can be used for both originate (dial-out) and answer (dial-in) by using the modem (uppercase) port with *getty* and using the non-modem (lowercase) port with dial-out programs. Use the non-modem port name in the entries for the *Devices* file.

For SCO UNIX and Interactive UNIX, if you are using a modem on a port enabled for login, you should set up the *getty* or the *uugetty* in the */etc/inittab* file to use the modem port (i.e. ttyS00 as opposed to ttys00).

Cautions

Always turn off the power to the system and to all the IntelliPort II components before you unplug the cable from the controller or expansion module, or decouple expansion modules from one another. To ensure reliable operation, use the supplied clips when connecting expansion modules together.

Remote Diagnostics

The IntelliPort II UNIX/XENIX drivers include a remote diagnostics utility. The *slash etc slash fip_report* utility runs on the host system and displays information about specified IntelliPort II ports.

Synopsis

fip_report [-?] [-m] [-x] [-i] [-q] [-u[k]] [-s] [-l *sec*] [-z *msec*] [[[-p *ports*] [-b *boxes*] [-c *cards*]]|[-d *dev*]]

Flags

Table 1. Flag Definition Table

Flag	Description
-?	Lists the available options
-m	Displays information on IntelliView Alternate screens.
-x	Displays information on IntelliPrint screens.
-i	Displays information about the specified controller.
-q	Be quiet (print no error messages) for ports not found.
-u	Unclogs any specified port waiting on flow control. For ports using CTS flow control, *fip_report* shuts off flow control entirely until you reinitialize the port with *fip_reinit*. For ports using XON flow control, *fip_report* only deasserts flow control; subsequent XON characters have their intended effect.
-uk	Unclogs any specified port and sends a SIGKILL to the process group.
-s	Displays a port summary.
-l *sec*	Loops every *sec* seconds until you press the **DEL** key.
-z *msec*	Specify the response timeout interval for the specified controller. The default is 100 milliseconds.
-p *ports*	Specifies the ports to display. If this option (and the -d option) is omitted, *fip_report* prompts you for the ports. The argument *ports* can be a number, a range in the format *nn-nn* (where *nn* is a decimal number from 00 to 15), or the keyword *ALL*.

Table 1. Flag Definition Table

Flag	Description
-b *boxes*	Specifies the expansion modules to display. If this option (and the -d option) is omitted, *fip_report* prompts you for the expansion modules. The argument *boxes* can be a number, a range in the format *n-n* (where *n* is a decimal number from 0 to 3), or the keyword *ALL*.
-c *cards*	Specifies the controllers to display. If this option (and the -d option) is omitted, *fip_report* prompts you for the controllers. The argument *cards* can be a number, a range in the format *n-n* (where *n* is a decimal number from 0 to 3), or the keyword *ALL*.
-d *dev*	Specifies the port(s) by device name (*/dev/ttysnn*, *nn*, or use shell wildcard expansion). NOTE: -d must be the LAST option specified on the command line. If you use this option, do *not* specify any of the -p, -b, or -c options.

Examples

```
% /etc/fip_report -d /dev/ttys00
Valid data = Y
Card = 0  Box = 0  Port = 00 (all numbers are 0 based)

NOTE: UPPERCASE indicates the signal is active
output rs232 signals = DTR RTS
input  rs232 signals = dcd cts RI dsr
NOTE: RI (ring) is forced active on some cards (ISA4, ISA8,
      MC8, ...)

The char counters are 16 bit (they will wrap at 65535)
xmit char count since boot = 00053
rcv char count since boot = 00000

reasons why card is not transmitting data
>  There is no data in the card for this port.

modem and non-modem port open status
>  The local (non-modem) port is open.

% /etc/fip_report -i
Please enter a card number (default is 0) or range (0-3) 0
Information for Card 0
The card is a IntelliPort-II Expandable
Total IRQ's for all cards = 13
IRQ count (since boot) for card 0 is 13
The board and driver are using IRQ 10 (decimal)
The board is using 8 bytes of I/O address starting at 0x308
Firmware version on card is 1.0.2
Loadware version is 1.6.2
Driver Version is 1.4.2
On-board memory size is 512K
CPU speed is 20Mhz
CPU type is 80186
FIFO size is 1024 bytes
Card interface I/O width is 16 bits
The board has 1 boxes installed
Box 0 has 16 ports
The board is installed in a 16 bit slot
Total ports = 16.
The following shows the ports present (an * indicates port
      was found.)
0 3  7      15      23      31      39      47      55      63
```

```
+--+---+-------+-------+-------+-------+-------+-------+----
       ---+
***************
%
```