RocketPort® Series Device Driver (6500) for the SCO™ UNIX® Operating System

Installation Guide

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Document Number: 6500D

Before You Begin

Scope

Use this guide to install the RocketPort device driver for the SCO UNIX operating system (part number: 6500) and RocketPort series controllers.

Prerequisites

This guide assumes that you have already installed the SCO UNIX operating system (OS) and that you have a basic understanding of OS operation.

This product was developed and tested using SCO UNIX 3.2 V4.2.

Audience

This guide is primarily for the System Administrator or the person who installs software and hardware on the system.

The secondary audience includes the system user.

Organization

This guide contains the following information to install and use the device driver and RocketPort series controllers:

Section 1. Installing RocketPort Systems
Contains procedures to install the device driver (and to remove the device driver, if necessary). In addition, it discusses installing RocketPort series controllers.

Section 2. Rebooting the System and Enabling Ports
Contains procedures to boot and enable the ports.

Section 3. Troubleshooting and Technical Support
Contains information that may help you resolve installation or operations problems. In addition, it lists information that you should gather before calling for technical support.

Appendix A.   Transparent Print
Contains information about the Transparent Print feature, which
allows you to use a printer attached to the auxiliary port of your
terminal.

Appendix B.   Accessing Higher Baud Rates
Contains the procedure to set baud rates above 38,400 baud.

Appendix C.   Device Names and Port Numbers
Contains a complete table that associates each device name to the
corresponding port number.

Screen and Installation Conventions

Use the following key conventions in the Comtrol RocketPort
Installation screen.

Keys	Description of Usage
ARROW KEYS	Moves to the item above, below, to the right, or to the left of the current position, depending on which **ARROW** key you use.
<TAB>	Moves to the next item on the installation screen.
<ENTER>	Opens the I/O address ranges pop-up menu, selects an I/O address range in pop-up menu, or executes the **OK TO INSTALL** or **QUIT** items on the screen.
<ESC><ESC>	Leaves the I/O Address Ranges pop-up menu without making any changes.
<F1>	Provides a help screen for the currently selected item.
<F1><F1>	Online help for the Comtrol RocketPort Installation screen key conventions.

Table of Contents

Index

Flowcharts and Tables

Flowcharts

Tables

Section 1. Installing RocketPort Systems

1.1. Product Introduction

The RocketPort multiport serial controller series fits into a 16-bit ISA slot of a personal computer. The RocketPort series uses a 36 MHz processor specifically designed to process asynchronous serial communications, thereby maximizing performance and eliminating bottlenecks.

RocketPort series uses Application Specific Integrated Circuits (ASICs) technology to replace most hardware components, including:

- The processor
- Serial controller
- Bus interface logic and other miscellaneous logic

The RocketPort series is I/O mapped eliminating memory mapping conflicts.

The RocketPort series supports RS-232 or RS-422 mode and connects easily to the interface box or your peripherals, depending on the type of RocketPort controller you purchased.

The device driver supports up to four RocketPort controllers (128 ports) in one PC. You can install any combination of the series, which includes the following:

- 4-port model (RocketPort 4 or RocketPort 4J–the RocketPort 4J does not require an interface box)
- 8-port model (RocketPort 8 or RocketPort 8J–the RocketPort 8J does not require an interface box)
- 16-port model (RocketPort 16)
- 32-port model (RocketPort 32)

The RocketPort series is easy to install and configure using Subsection 1.2.

1.2. Software and Hardware Installation Procedures

Use Flowchart 1-1 to determine which installation procedure to follow.

```
┌─────────────────┐  ┌─────────────────┐  ┌─────────────────┐
│Installing the   │  │Updating the     │  │Installing a new │
│device driver the│  │device driver    │  │version of the   │
│first time.      │  │(adding new      │  │device driver.   │
│                 │  │controllers).    │  │                 │
└─────────────────┘  └─────────────────┘  └─────────────────┘
                                                   │
                                                   ▼
                                          ┌─────────────────┐
                                          │Remove the       │
                                          │existing         │
                                          │RocketPort device│
                                          │driver using     │
                                          │custom (see 1.3).│
                                          └─────────────────┘

              ┌─────────────────────────────────────────┐
              │Install the device driver using custom    │
              │(see 1.4).                                 │
              └─────────────────────────────────────────┘

              ┌─────────────────────────────────────────┐
              │Set the DIP switch and install the         │
              │controller (see 1.5).                      │
              └─────────────────────────────────────────┘

              ┌─────────────────────────────────────────┐
              │Connect the interface box to the controller│
              │(if applicable) and your peripherals to the│
              │interface box (if you have not already done│
              │so). For specific cabling information, see │
              │the appropriate Hardware Reference Card.   │
              └─────────────────────────────────────────┘

              ┌─────────────────────────────────────────┐
              │Reboot the system and enable the ports     │
              │(see Section 2).                           │
              └─────────────────────────────────────────┘

              ┌─────────────────────────────────────────┐
              │Optionally, configure transparent print    │
              │(see Appendix A).                          │
              └─────────────────────────────────────────┘

              ┌─────────────────────────────────────────┐
              │Optionally, enable higher baud rates       │
              │(see Appendix B).                          │
              └─────────────────────────────────────────┘
```

Flowchart 1-1. Hardware and Software Installation Overview

Note: *If you have an installation or operations problem, see Chapter 3.*

1.3. Removing Existing RocketPort Device Drivers

We recommend removing older levels of the RocketPort device driver before installing a new release of the device driver.

Use the following steps to remove any existing RocketPort device driver.

1. Log in as the system administrator (**root**) and invoke the **custom** utility.

2. Select the **Remove** option.

3. Scroll through the box of options to remove and select the **RocketPort Device Driver** option.

4. Select the **ALL** option listed with the RocketPort device driver.

5. Select **Yes** to verify that you want to remove the device driver.

6. Type **Y** to boot the kernel by default.

7. Type **Y** to rebuild the kernel environment.

8. Press any key to return to the **custom** menu.

9. Select **Quit** and **Yes** in the **custom** utility

10. You may want to shutdown the system at this time.

    If you have other device drivers to remove, you may want to delay rebooting until you are finished removing device drivers. Changes take place on the next kernel reboot.

To install a new device driver, go to the next subsection.

1.4. Installing the Device Driver

To install the RocketPort device driver, follow these steps:

1. Boot the system, login as the system administrator (**root**), and invoke the **custom** utility. (For information about this utility, see the System Administrator's Guide for your operating system.)

2. Select the **Install** option.

3. Select the **A New Product** option.

4. Select the **Packages** option.

5. Insert the RocketPort controller device driver diskette in the primary drive and press **<Enter>**, when asked to insert the **Distribution volume 1** diskette.

   You will see the message **Installing custom data files ...**

6. Select the **ALL** option in the pop-up menu.

7. Press **<Enter>** at the next prompt (because you already inserted the diskette).

   You will see the message, **Extracting files ...** and then the installation script executes.

8. Enter **Y** or **N** to answer whether you have a monochrome VGA™ monitor (the default is **N**). Press **<Enter>** to continue. The following screen appears.

```
            Comtrol RocketPort Installation


                I/O Address Ranges
RocketPort 1:    180-1C3


RocketPort 2:   Not installed
                                       OK TO INSTALL

RocketPort 3:   Not installed
                                       QUIT

RocketPort 4:   Not installed

   Arrow keys scroll, <ENTER> to quit install, <F1> for Help
```

> ***Note:*** *Press **F1** for help with any field, press **F1** twice for help with the installation.*

The I/O address identifies the location in the system's I/O space used to pass control information between the system and the controller.

For the first controller, you will select a 68-byte I/O address range. For subsequent controllers, you will select a 64-byte range.

Most peripherals use I/O address ranges between 0 and 3FF hexadecimal. If you have peripherals installed above 400h, you may experience an I/O conflict.

RocketPort controllers use I/O address ranges at 400h intervals above the I/O address range. Make sure that other peripherals in the system do not use these I/O address ranges. See Table 3-1 for information about common I/O usage.

9. Select **OK TO INSTALL** option.

   A summary screen appears that shows you how to set the DIP switch for the first controller. You may want to fill in the blank switches provided for you or place a check mark in Table 1-1 (on the following page), which illustrates common I/O ranges.

   Press <**ENTER**> to view the DIP switch settings for additional controllers.

Controller #1 **NO**   Controller #2 **NO**

Controller #3 **NO**   Controller #4 **NO**
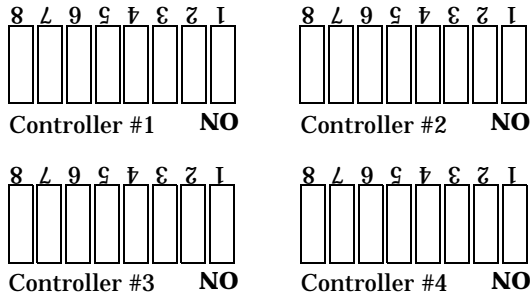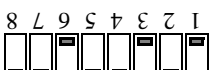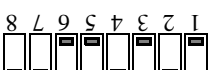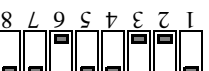
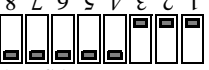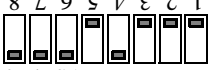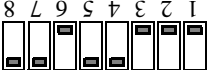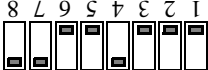> ***Note:*** *You may want to set the DIP switches for the controllers while looking at the summary screen. You can also use the /**comtrol/rckt/iinstall.log** file to set the switches, if you do not set them at this time.*
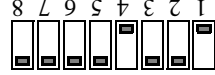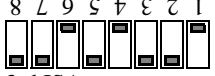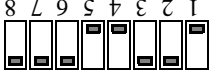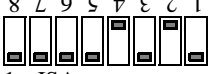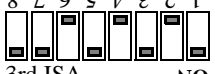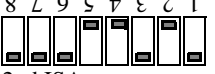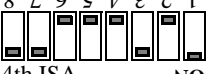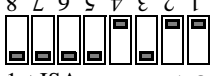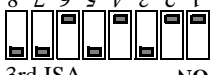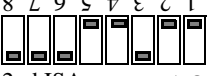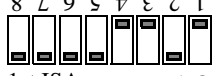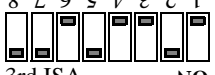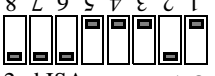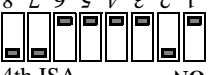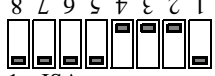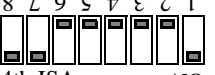
10. At the confirmation screen, press <**Enter**> to install the device driver.

> If you do not want to install the device driver, press <Q> to quit.

11. Press **Y** to answer **Do you want this kernel to boot by default?**

    If you want to boot the old kernel, press **N**.

12. Press **Y** to answer **Do you want the kernel environment rebuilt?**

13. Press any key to continue.

14. Remove the Comtrol device driver diskette.

15. Select **Quit** and then press **Yes**.

16. Shutdown the system and turn the computer off.

17. Install the controller using Subsection 1.5.

After installing the hardware, you can go to Section 2 to reboot the system and enable the ports.

Controller #1 I/O Address Range	DIP Switch Settings Controller #1 determines other controller settings
100 - 143 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO
140 - 183 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO
180 - 1C3 hex (Default)	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO

Controller #1 I/O Address Range	DIP Switch Settings Controller #1 determines other controller settings
200 - 243 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO
240 - 283 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO
280 - 2C3 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO
300 - 343 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO
340 - 383 hex	1st ISA NO 2nd ISA NO 3rd ISA NO 4th ISA NO

Controller #1 I/O Address Range	DIP Switch Settings Controller #1 determines other controller settings
380 - 3C3 hex	8 7 6 5 4 3 2 1 8 7 6 5 4 3 2 1 1st ISA NO 2nd ISA NO 8 7 6 5 4 3 2 1 8 7 6 5 4 3 2 1 3rd ISA NO 4th ISA NO

1.5. Installing the Controller

To prepare your controller for installation, you may need to set the I/O address DIP switch. The default I/O address range is 180 through 1C3. You must change the I/O address settings on any additional controllers, even if you select the default addresses range.

If you did not set the DIP switch on the controller or controllers during the software installation, do so at this time. Make sure that you set each controller as advised during the software installation or use the information in **/comtrol/rckt/iinstall.log**.

After you set the I/O DIP switch, you are ready to install the controller. Use the following steps to install the controller:

1. Turn the power switch for the system unit to the OFF position.
2. Remove the system unit cover.
3. Select a slot to install the controller.
4. Remove the expansion slot cover.
5. Insert the controller in the expansion slot, make sure that it is properly seated.
6. Attach the controller to the chassis with the expansion slot screw. Repeat Steps 3 through 5 for each controller.
7. Replace the cover on the system unit.

If connecting a system with an interface box:

    a. Attach the male end of the RocketPort cable to the controller and the female end to the connector on the interface box labeled *Host*.

Note: *If you have a RocketPort 32, the connector labelled J1 corresponds to ports 0 through 15 on the interface box and the connector labeled J2 (closest to the bus)*

corresponds to ports 16 through 31.

    b.   Connect the peripherals to the interface box.

Note: *The ports on the interface box are numbered from 0 to 3, 7, or 15.*

    c.   If applicable, set each port to the appropriate communications mode (RS-232 or RS-422) for your peripheral using the slide switch.

If connecting a system with a Quad/Octacable:

    a.   Attach the male end of the Quad/Octacable to the controller.

    b.   Connect the Quad/Octacable to the peripherals.

If connecting a RocketPort 4J or 8J controller:

    a.   Connect your peripheral devices to the RJ style connector on the controller.

After installing and configuring the controller, you are ready to attach your peripherals. Refer to the *Hardware Reference Card* if you need information about the pinouts for the connectors.

After connecting the peripherals, you can go to Section 2 to reboot the system and enable the ports.

Optionally, use Appendix A to configure the Transparent Print feature. In addition, use Appendix B to access baud rates higher than 38,400 baud.

Section 2. Rebooting the System and Enabling Ports

2.1. Rebooting the System

Reboot the operating system after installing the controller. At the **boot:** prompt, press <ENTER> to boot the default kernel.

If the device driver and hardware installations were successful, the following line appears for each controller in the hardware boot screen:

> **%RocketPort** *xxxh - xxxh*   **-   -   nports=**X **vX.X**
>
> where *xxxh - xxxh* represents the I/O address range and represents the number of ports (8, 16, or 32) on the controller.

If the installation was not successful, the **nport=** statement displays the wrong number of ports.

Go to the next subsection to enable the ports for the controller.

2.2. Enabling the Ports for the Controller

The RocketPort device driver provides three device types:

*   Direct

    Enabling direct device names allows communications with a serial device over a simple 3-wire connection consisting of the transmit and receive data lines and signal ground.

*   Modem

    The modem names require modem control to function properly. Specifically, the carrier detect signal must be present before the serial port becomes active.

*   Transparent Print

    This is an output-only device that allows you to access the auxiliary port on a terminal.

Table 2-1 shows the device names assigned to each direct device, modem, and Transparent Print serial port on each RocketPort controller.

Table 2-1.   Device Names

Direct	Board 1	Board 2	Board 3	Board 4
Ports 0 – 7	**ttyr0a – ttyr0h**	**ttyr4a – ttyr4h**	**ttyr8a – ttyr8h**	**ttyrca– ttyrch**
Ports 8 –15	**ttyr1a – ttyr1h**	**ttyr5a – ttyr5h**	**ttyr9a – ttyr9h**	**ttyrda – ttyrdh**
Ports 16 – 23	**ttyr2a –** ttyr2h	**ttyr6a – ttyr6h**	**ttyraa – ttyrah**	**ttyrea – ttyreh**
Ports 24 – 31	**ttyr3a – ttyr3h**	**ttyr7a – ttyr7h**	**ttyrba – ttyrbh**	**ttyrfa – ttyrfh**
Modem	**Board 1**	**Board 2**	**Board 3**	**Board 4**
Ports 0 – 7	**ttyr0A – ttyr0H**	**ttyr4A – ttyr4H**	**ttyr8A – ttyr8H**	**ttyrcA– ttyrcH**
Ports 8 – 15	**ttyr1A – ttyr1H**	**ttyr5A – ttyr5H**	**ttyr9A – ttyr9H**	**ttyrdA – ttyrdH**
Ports 16 – 23	**ttyr2A – ttyr2H**	**ttyr6A – ttyr6H**	**ttyraA – ttyraH**	**ttyreA – ttyreH**
Ports 24 – 31	**ttyr3A – ttyr3H**	**ttyr7A – ttyr7H**	**ttyrbA – ttyrbH**	**ttyrfA – ttyrfH**
Transparent Print	**Board 1**	**Board 2**	**Board 3**	**Board 4**
Ports 0 – 7	**tpr0a – tpr0h**	**tpr4a – tpr4h**	**tpr8a – tpr8h**	**tprca– tprch**
Ports 8 – 15	**tpr1a – tpr1h**	**tpr5a – tpr5h**	**tpr9a – tpr9h**	**tprda – tprdh**
Ports 16 – 23	**tpr2a – tpr2h**	**tpr6a – tpr6h**	**tpraa – tprah**	**tprea – tpreh**
Ports 24 – 31	**tpr3a – tpr3h**	**tpr7a – tpr7h**	**tprba – tprbh**	**tprfa – tprfh**

Once the controller is active, you can enable the individual ports using the **enable** command. Consult your operating system guides for further information on the **enable** command.

The following example enables port **ttyr0c** (from the **root**):

enable ttyr0c

The following message indicates that SCO UNIX appended changes to the **/etc/inittab** file.

/etc/inittab updated

/etc/conf/init.d/rckt updated

After you enable the ports, you may need to do the following:

• Optionally, use Appendix A to configure Transparent Print.

• Optionally, use Appendix B to access baud rates above 38,400 baud.

Section 3. Troubleshooting and Technical Support

3.1. Resolving Installation Problems

If installation fails or you are trying to resolve a problem, you should try the following before calling the Comtrol technical support line:

- Check the signals between your peripherals and the interface box to verify that they match (if applicable). See the appropriate *Hardware Reference Card* for signal information.
- Check to make sure the cables are connected properly.
- Check to see if the DIP switch is set to the desired address by checking the **/comtrol/rckt/iinstall.log** file against the settings on each controller.
- Reseat the controller in the slot.
- Make sure that the expansion slot screw was replaced after inserting the controller.
- Reinstall the device driver, selecting a different I/O address range for the controller. For possible I/O address conflicts, see Tables 3-1 and 3-2.

If you have not been able to get the controller operating

1. Turn off your PC and insert the diagnostic diskette.
2. Boot the PC and follow the instructions provided by the diagnostic diskette.

Table 3-1 defines the 64-byte I/O address blocks from 0 through 3FFh and their known uses. Table 3-2 defines the 64-byte I/O address blocks from 400 through FFFh and their aliases.

Table 3-1. System I/O Addresses – Up to 3FF

Address Block	Addresses Used	Description
000 – 03F		Reserved for Motherboard
040 – 07F		Reserved for Motherboard
080 – 0BF		Reserved for Motherboard
0C0 – 0FF		Reserved for Motherboard
100 – 13F		
140 – 17F		
180 – 1BF		
1C0 – 1FF	1F0 – 1F8	Fixed Disk
200 – 23F	218 – 21B	Other Comtrol controllers
240 – 27F	278 – 27F	LPT2
280 – 2BF		
2C0 – 2FF	2E8 – 2EF 2F8 – 2FF	COM4 COM2
300 – 33F	318 – 31B	Other Comtrol controllers
340 – 37F	378 – 37F	LPT1
380 – 3BF	3B0 – 3BF	Monochrome Display and LPT3
3C0 – 3FF	3D0 – 3DF 3E8 – 3EF 3F0 – 3F7 3F8 – 3FF	Graphics Monitor Adapter COM3 Floppy Disk Controller COM1

Table 3-2. System I/O Address Aliases – Above 3FF

Address Block	1st Alias	2nd Alias	3rd Alias
000 – 03F	400 – 43F	800 – 83F	C00 – C3F
040 – 07F	440 – 47F	840 – 87F	C40 – C7F
080 – 0BF	480 – 4BF	880 – 8BF	C80 – CBF
0C0 – 0FF	4C0 – 4FF	8C0 – 8FF	CC0 – CFF
100 – 13F	500 – 53F	900 – 93F	D00 – D3F
140 – 17F	540 – 57F	940 – 97F	D40 – D7F
180 – 1BF	580 – 5BF	980 – 9BF	D80 – DBF
1C0 – 1FF	5C0 – 5FF	9C0 – 9FF	DC0 – DFF
200 – 23F	600 – 63F	A00 – A3F	E00 – E3F
240 – 27F	640 – 67F	A40 – A7F	E40 – E7F
280 – 2BF	680 – 6BF	A80 – ABF	E80 – EBF
2C0 – 2FF	6C0 – 6FF	AC0 – AFF	EC0 – EFF
300 – 33F	700 – 73F	B00 – B3F	F00 – F3F
340 – 37F	740 – 77F	B40 – B7F	F40 – F7F
380 – 3BF	780 –7BF	B80 – ABF	F80 – FBF
3C0 – 3FF	7C0 – 7FF	BC0 – BFF	FC0 – FFF

3.2. Placing a Support Call

Before you place a technical support call to Comtrol, please make sure that you have the following information.

Table 3-3. Support Call Information

Item	Your System Information
Controller type	4-port, 8-port, 16-port, or 32-port model
Interface type (connector)	DB9, DB25, RJ45, or RJ11
If ISA, mark your I/O address selections	
Operating system type and release	
Device driver release number (to verify, use **custom**)	
PC make, model, and speed	
List other devices in the PC and their addresses	

After you have gathered this information, contact Comtrol using one of the following methods:

Corporate Headquarters:

email: support@comtrol.com

FAX: (612) 631-8117

BBS (for device driver updates): (612) 631-8310

*Note: The BBS supports modem speeds up to 28.8 Kbps (V.FC)
          with 8 bits and no parity.*

FTP site: ftp.comtrol.com

Phone: (612) 631-7654

Comtrol Europe:

email: support @comtrol.co.uk

BBS: +44 (0) 1 869-243-687

*Note: The BBS supports modem speeds up to 14.4 Kbps with 8
          bits and no parity.*

FAX: +44 (0) 1 869-323-211

Phone: +44 (0) 1 869-323-220

3.3. Retrieving Future Software Updates

Comtrol supports BBSs that provide software updates for our
customers. See the BBS numbers listed above.

Appendix A. Transparent Print

A.1. Introducing Transparent Print

Transparent Print allows RocketPort users operating a SCO
UNIX system to attach a printer to an auxiliary port on an
ASCII terminal. Data is directed through the terminal to the
printer transparently, without disturbing the normal
keyboard and terminal display functions. You may assign a
printer name to the port using a print spool facility and use it
as any other output-only device.

Transparent Print capability is installed when you install the
RocketPort device driver. To utilize Transparent Print, you
must configure the devices by editing the **/comtrol/rckt/tprint.cfg**
file. Subsection A-2 discusses configuration.

The device name for a printer attached to **ttyr0a** (or **ttyr0A**) is
tpr0a, **ttyr0b** (or **ttyr0B**) is **tpr0b**, and so forth through **tprfh**.

The following two files configure Transparent Print operations
for the entire system:

> **/comtrol/rckt/psetup**
> **/comtrol/rckt/tprint.cfg**

The **psetup** program processes the statements in the **tprint.cfg**
Transparent Print configuration file and configures the
RocketPort device driver.

The **psetup** program invokes automatically at boot time or you
can invoke the **psetup** program at the command line by
entering:

> **/comtrol/rckt/psetup**

A.2. Configuring Transparent Print

Each printer device must be described in the **tprint.cfg** file. The
description of each device consists of a group of statements
that describe the characteristics of the terminal and printer
used.

Each statement consists of a keyword/parameter pair of the
following form:

> **keyword=parameter(s)**

Transparent Print requires five keywords: **device**, **auxon**, **auxoff**, **printcps**, and **option**. The keywords and their parameters are explained in Table A-1.

You can use the following example as a guide to editing your **tprint.cfg** file.

The following example is contained in the **/comtrol/rckt/ tprint.sample** file:

```
# device tpr0a (attached to device ttyr0a)
# terminal: Link Technologies model 220
# printer: Okidata model u92
device=tpr0a
        auxon=(esc [ 5 i)
        auxoff=(esc [ 4 i)
        printcps=90
        option=onlcr
```

More examples may be found in the **/comtrol/rckt/tprint.sample** file.

Table A-1. Transparent Print Parameters

Statement	Parameter Description
device	The **device** statement specifies the printer device name that you wish to configure for the group of statements. This must be the first statement in each group of statements describing a printer device. All statements that follow this statement, up to the next **device** statement or the end of the file, apply to the named device. The printer device attached to **ttyr0a** (or **ttyr0A**) is **tpr0a**, **ttyr0b** (or **ttyr0B**) is **tpr0b**, and so forth through **tprfh**. See Table 2-1 for more information about printer device names and port numbers.

Table A-1. Transparent Print Parameters (Continued)

Statement	Parameter Description
auxon	The **auxon** statement specifies the control sequence that must be sent to the terminal to enable Transparent Print operation. This is also known as auxiliary ON. This statement specifies a one-to-four character sequence of ASCII characters, mnemonics, or both, in parenthesis. You can represent the characters the sequence in one of three ways: • An actual ASCII character • A hexadecimal value preceded with a backslash. For example, \28 is **(** - the left parenthesis character. • A mnemonic character that you can use to represent control characters. See Table A-2 at the end of this appendix. Characters or mnemonics must be separated by spaces. See your terminal documentation for information about the control sequence.
auxoff	The **auxoff** statement specifies the control sequence that must be sent to the terminal to disable Transparent Print operation. This is also known as auxiliary OFF. This statement specifies a one-to-four character sequence of ASCII characters or mnemonics, or both, in parenthesis. • An actual ASCII character • A hexadecimal value preceded with a backslash. For example, \28 is **(** - the left parenthesis character. • A mnemonic character that you can use to represent control characters. See Table A-2 at the end of this appendix. Characters or mnemonics must be separated by spaces. See your terminal documentation for information about the control sequence.

Table A-1. Transparent Print Parameters (Continued)

Statement	Parameter Description
printcps	The **printcps** statement specifies (in decimal) the throughput count for the printer in characters per second (not the baud rate). The device driver meters out 80% of this number. For example, if you select 100, the actual throughput count is 80 characters per second. See your printer documentation for information about the throughput count.
option	The **option** statement specifies any optional post-processing that is to be performed on characters output to the auxiliary device. There are three options available: • **onlcr** outputs a newline character as nl,cr (newline, carriage return) • **ocrnl** outputs a carriage return as a newline • **none** produces normal output See your printer documentation for information about any post-processing.

A.3. Verifying the Configuration File

You can verify the syntax of the statements in the configuration file by invoking the configuration program in test mode.

To verify the syntax in the configuration file, enter the following command and press <ENTER>.

> **/comtrol/rckt/psetup -t**

If you have any errors, they are noted with the line numbers on which they occurred.

You must enable the terminal attached to a configured printer, otherwise no data is sent to the printer.

The **stty** command is not effective for the auxiliary devices supported by Transparent Print. This is important when setting up a printer interface program through the print spool facility.

The **stty** commands must be removed or disabled within these programs, otherwise a "bad address" message appears at the top of any printed output.

It is not necessary to restart the system if the configuration file is changed. Simply enter the following command:

  /comtrol/rckt/psetup

The configuration file is re-scanned and port is configured with the new parameters.

Table A-2. ASCII Control Character Mnemonics

Mnemonic	ASCII Code	Mnemonic	ASCII Code
ack	06h	etx	03h
bel	07h	ff	0Ch
bs	08h	fs	1Ch
can	18h	gs	1Dh
cr	0Dh	ht	09h
dc1	11h	lf	0Ah
dc2	12h	nak	15h
dc3	13h	nul	00h
dc4	14h	rs	1Eh
dle	10h	si	0Fh
em	19h	so	0Eh
enq	05h	soh	01h
eot	04h	stx	02h
esc	1Bh	sub	1Ah
etb	17h	syn	16h
eot	04h	us	1Fh

Appendix B. Accessing Higher Baud Rates

This appendix discusses how to access baud rates above 38,400 baud (such as, 57.6K, 76.8K, 115.2K, or 230.4K). You can access the higher baud rates on a port or ports using one of the following methods:

- Remap the baud rates for a port or ports for this session only by running the **setbaud** program in the **/comtrol/rckt** directory. See Subsection B.2 for information about the **setbaud** program. See Subsection B.3 for information about returning the baud rate to the original setting.

- Remap the baud rates for a port or ports automatically each time the system boots by editing the **baud.cfg** file in the **/comtrol/rckt** directory.

Table B-1 illustrates how the baud rates are remapped.

If you need more information about baud support, see the **termio** manual page that came with your operating system.

Table B-1. Remapping Baud Rates

System Baud Rate	Remapped Rate
50 baud*	57,600 baud
75 baud	76,800 baud
110 baud	115,200 baud
134 baud	230,400 baud

* *For example, after changing the baud rate for the controller,* **stty 50** *sets your terminal to 57.6K baud instead of 50 baud.*

B.1. Temporarily Changing the Baud Rate

Use the following procedure to access higher baud rates for this session. If you want these changes to take place automatically, use Subsection B.3.

1. Run the following program using your port name:

    /comtrol/rckt/setbaud -h *<port-name>*

    Where:

    <port-name> is the full path name. For example, **dev/ttyr0a.**

2. Repeat the previous step for each port that you wish to remap to a higher baud rate.

    After changing the baud rate, follow normal **tty** administrative procedures.

B.2. Returning to the Default Baud Rates

Use the following procedure to reset the baud rates to their normal values.

1. Run the following program using your port name:

    /comtrol/rckt/setbaud -n *<port-name>*

    Where:

    <port-name> is the full path name. For example, **/dev/ttyr0a.**

2. Repeat the previous step for each port that you wish to remap to the original baud rate.

    After changing the baud rate, follow normal **tty** administrative procedures.

B.3. Automatically Changing the Baud Rate

To remap baud rates automatically at each system reboot, place the device name in the **/comtrol/rckt/baud.cfg** file. The changes take place after rebooting the system.

After changing the baud rate, follow normal **tty** administrative procedures.

To update **baud.cfg** without rebooting, execute the **baud.init** file.

Appendix C. Device Names and Port Numbers

Table C-1. Device Names and Port Numbers

Device	Port #	Device	Port #	Device	Port #	Device	Port #
ttyr0a	0	**ttyr2b**	17	**ttyr4c**	34	**ttyr6d**	51
ttyr0b	1	**ttyr2c**	18	**ttyr4d**	35	**ttyr6e**	52
ttyr0c	2	**ttyr2d**	19	**ttyr4e**	36	**ttyr6f**	53
ttyr0d	3	**ttyr2e**	20	**ttyr4f**	37	**ttyr3g**	54
ttyr0e	4	**ttyr2f**	21	**ttyr4g**	38	**ttyr3h**	55
ttyr0f	5	**ttyr2g**	22	**ttyr4h**	39	**ttyr7a**	56
ttyr0g	6	**ttyr2h**	23	**ttyr5a**	40	**ttyr7b**	57
ttyr0h	7	**ttyr3a**	24	**ttyr5b**	41	**ttyr7c**	58
ttyr1a	8	**ttyr3b**	25	**ttyr5c**	42	**ttyr7d**	59
ttyr1b	9	**ttyr3c**	26	**ttyr5d**	43	**ttyr7e**	60
ttyr1c	10	**ttyr3d**	27	**ttyr5e**	44	**ttyr7f**	61
ttyr1d	11	**ttyr3e**	28	**ttyr5f**	45	**ttyr7g**	62
ttyr1e	12	**ttyr3f**	29	**ttyr5g**	46	**ttyr7h**	63
ttyr1f	13	**ttyr3g**	30	**ttyr5h**	47	**ttyr8a**	64
ttyr1g	14	**ttyr3h**	31	**ttyr6a**	48	**ttyr8b**	65
ttyr1h	15	**ttyr4a**	32	**ttyr6b**	49	**ttyr8c**	66
ttyr2a	16	**ttyr4b**	33	**ttyr6c**	50	**ttyr8d**	67

Continued

Table C-1. Device Names and Port Numbers (Continued)

Device	Port #	Device	Port #	Device	Port #	Device	Port #
ttyr8e	68	ttyrad	83	ttyrcc	98	ttyreb	113
ttyr8f	69	ttyrae	84	ttyrcd	99	ttyrec	114
ttyr8g	70	ttyraf	85	ttyrce	100	ttyred	115
ttyr8h	71	ttyrag	86	ttyrcf	101	ttyree	116
ttyr9a	72	ttyrah	87	ttyrcg	102	ttyref	117
ttyr9b	73	ttyrba	88	ttyrch	103	ttyreg	118
ttyr9c	74	ttyrbb	89	ttyrda	104	ttyreh	119
ttyr9d	75	ttyrbc	90	ttyrdb	105	ttyrfa	120
ttyr9e	76	ttyrbd	91	ttyrdc	106	ttyrfb	121
ttyr9f	77	ttyrbe	92	ttyrdd	107	ttyrfc	122
ttyr9g	78	ttyrbf	93	ttyrde	108	ttyrfd	123
ttyr9h	79	ttyrbg	94	ttyrdf	109	ttyrfe	124
ttyraa	80	ttyrbh	95	ttyrdg	110	ttyrff	125
ttyrab	81	ttyrca	96	ttyrdh	111	ttyrfg	126
ttyrac	82	ttyrcb	97	ttyrea	112	ttyrfh	127

Index

Part Number: 6500D June 3, 1996