



PC COM_SCOPE

OPERATION MANUAL



DECISION
Computer International Co., Ltd.

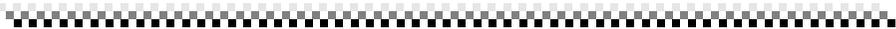




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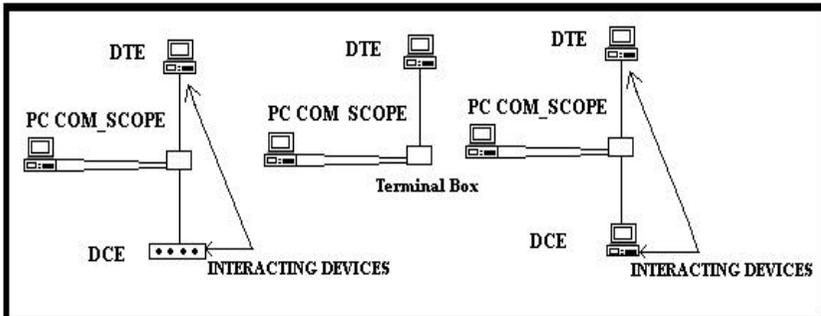
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CHAPTER 1

INTRODUCTION**THE TOTAL TOOL FOR RS_232 COMMUNICATION**

Unleash everything in RS-232. You can now discover the protocols behind the detection of devices in serial ports during boot-up of some operating system!!!!

PC COM_SCOPE is a software that monitor all the data and signals between two interacting devices, or a single device.

With **PC COM_SCOPE** you can transform your PC into a total RS-232 analyzer without the need of expensive hardware or plug in boards.

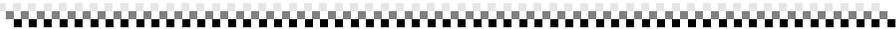
PC COM_SCOPE creates an unsurpassed tool for RS-232 device driver, communications protocol and traffic analysis. Unlike other products, **RS_SCOPE** requires little or no learning difficulties.

PC COM_SCOPE also comes with our **terminal box** that provides signals splicing and with light indicator of all RS-232 signals.



 **The feautres of the PC COM Scope are:**

- All UART parameters are fully configurable.
- Capture data in ASCII, HEX, or EBCDIC data format.
- Review received data saved in memory or disk in any data format.
- Monitor data and all signals of both devices at same time.
- Automatically save the most current 3Kbyte of monitored data to memory.
- Monitor the interaction of both devices (**Monitor** mode).
- Monitor data and signals transparently (**Transparent** mode)..
- Send data and signals to one or both devices while PC COM_SCOPE assure that both devices will not have interaction and at same time monitor responses (**Go Host** mode).
- PC COM_SCOPE automatically tests UART internally.
- PC COM_SCOPE is build with friendly interface for easy learning.
- Monitor the number of data and signals transmit and receive.
- For users with custom or non-standard PC's, PC COM_SCOPE will function on any two user defined port address, and any two IRQ.
- A **terminal box** that provides the signal splicing for you, or you can have your own (refer to the ***Pins Connection*** in ***Chapter 4*** for connections of signals of every mode).



CHAPTER 2

INSTALLATION

I. Software Installation

To install the software on a hard drive, simply create a subdirectory and copy the file *scopedap.exe* from the supplied CD to this subdirectory.

How to make a subdirectory and copy all the files into the harddisk

- a.) Be sure that the original CD of PC COM_SCOPE is inserted into CD drive.
- b.) To create a subdirectory, type at the C prompt the following:

```
C:> MD scope <press ENTER>
```

- c.) Copy the file **scopedap.exe** from the original CD to the harddisk. We assume your CD drive is assigned as your D drive.

```
D:> copy scopedap.exe c:\scope <press ENTER>
```

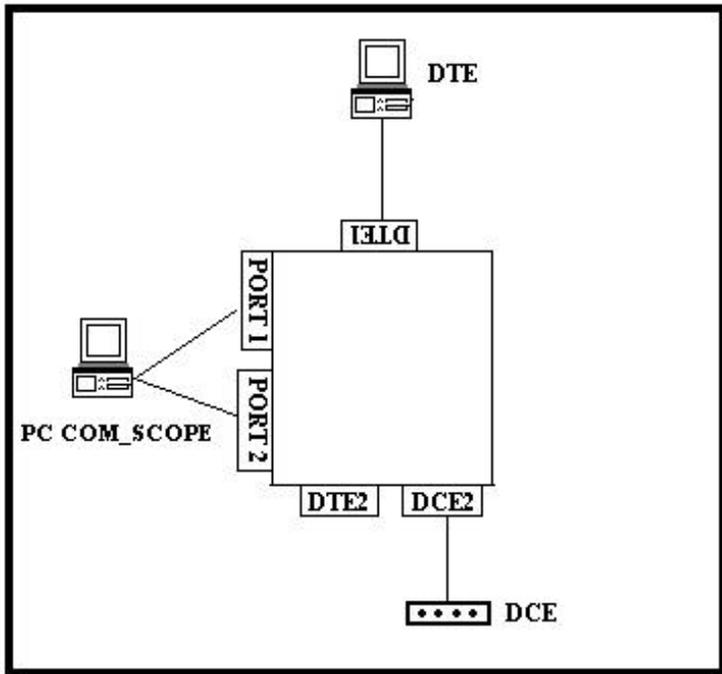
- d.) Check whether you have copied the file into the harddisk.

II. Hardware installation

The cable to be use in connecting ports from **terminal box** to devices should not be a cross-link cable. If you wish not to use our terminal box, refer to the connection of signals of devices in Chapter 4.

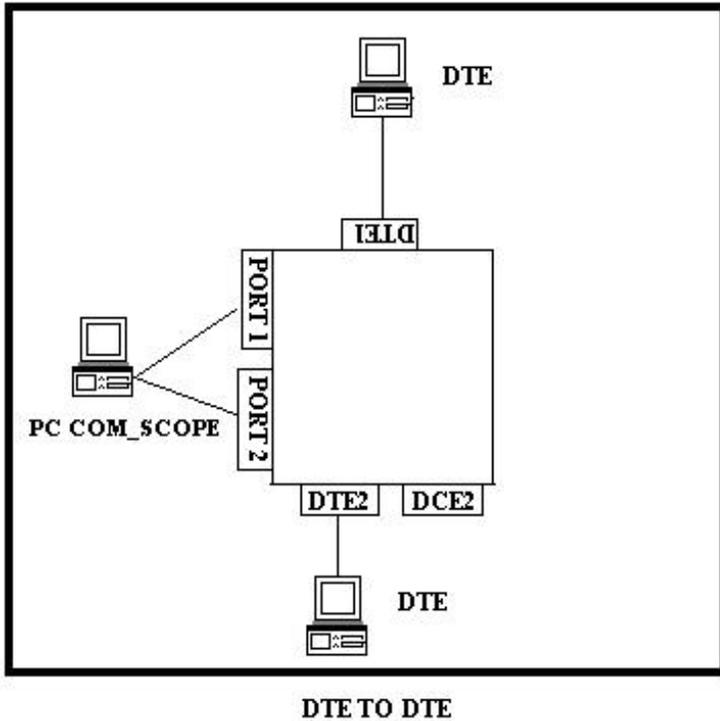
- a.) Connect **Port1** and **Port2** of the **terminal box** to two serial ports of the computer where RS_SCOPE will be running.
- b.) Connect **DTE1** and **DTE2** or **DCE2** to the serial ports of the devices to be monitored. Refer to the figures below.

Fig.1: Show how DTE and DCE were connected to **terminal box**.



DTE TO DCE

Fig.2: Show how two DTE are connected to terminal box.



Warning: You cannot use DTE2 and DCE2 at same time.



CHAPTER 3

SOFTWARE INFORMATION

File Menu

Setup

Setup the UART.

Port1 is the address of the UART or serial port of the computer used by the PC COM_SCOPE and where **Port1** of **terminal box** is connected, if **Port1** of **terminal box** is connected to COM1 (standard PC) of the PC COM_SCOPE's computer then Port1 is "03F8" and **IRQ1** is 4.

Port2 is the address of the UART or serial port of the computer used by the PC COM_SCOPE and where **Port2** of **terminal box** is connected, if **Port2** of **terminal box** is connected to COM2 (standard PC) of the PC COM_SCOPE's computer then Port2 is "02F8" and **IRQ2** is 3.

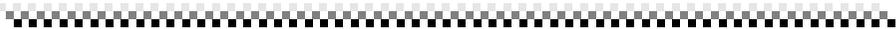
Baudrate, wordlength, stop bit, and parity are setup according to both devices to be monitored.

Open Memory

View the monitored data saved in the memory. Three KBytes of memory was allotted for each device, meaning only the current three KBytes of monitored data can only be view.

Open File

View the monitored data saved in files.



Go Monitor

Start monitoring in a way that both connected devices has interaction. This mode allow both devices to receive and response with data and signals transmits by both device.

Go Host

Start monitoring in a way where both connected devices was assured by the PC_SCOPE will not have interaction. You can send data and signals to one or both devices while observing responses. You can send signal to DSR and CTS of both devices.

Go Transparent

Start monitoring in transparent mode. Meaning both devices is directly connected to each other and PC COM_SCOPE does not interfere with the interaction of both devices.

Quit

Abandon PC COM-SCOPE.

CHAPTER 4

TECHNICAL GUIDE*I. Sample Process*

In this example, it was assumed that your PC has 2 available serial ports. A standard PC has COM1 and COM2 with corresponding port address of "03F8" for COM1 with IRQ 4 and port address "02f8" with IRQ 3.

- a.) Connect **Port1** and **Port2** of the **terminal box** to the serial ports of the computer where PC COM_SCOPE program will be execute. Connect *Port1* to COM1 and *Port2* to COM2.
- b.) Connect *DTE1* to a computer or any DTE, and *DTE2* to a computer or any DTE.
- c.) Start the PC COM_SCOPE by executing the file *SCOPEDAPEXE*
- d.) Chose Setup menu and encode the following parameters:

Port1: 03F8

IRQ1: 4

Port2: 02F8

IRQ2: 3

Baudrate, Wordlength, Stop bit, and Parity bit: depends on the devices you are to be monitor.

- e.) Start monitoring in the mode you like (as Monitor, Host, and in Transparent).

II. *Sample Application*

If you want to know how Windows 95 detect your mouse during boot-up, here's the procedure...

- a.) Connect **Port1** and **Port2** of *terminal box* to the serial port of the computer where PC COM_SCOPE will be executed.
- b.) Connect **DTE1** of the *terminal box* to the serial port (to the port where the mouse used to be connected) of a computer where WINDOWS 95 will be executed.
- c.) Connect **DCE2** to mouse.
- d.) Run the PC COM_SCOPE by executing the file **scopedap.exe**.
- e.) Choose **Setup** menu. If you use the default COM ports of standard PC then encode the following:

Port1: 03F8
IRQ1: 4
Port2: 02F8
IRQ2: 3

Baudrate: 1200 bps (some mouse use this baudrate)
Wordlength: 7

Stop bit: 1
Parity: disable
- f.) Choose the Go Monitor menu and start monitoring.
- g.) Boot-up Windows 95 then observe the responses of both devices.

III. Configuring PC COM_SCOPE in Non-Standard PC or in any Plugin Boards.

PC COM_SCOPE will run on any two user defined port address and any two IRQ,s.

- a.) Make sure that the Port addresses that you encode in the Setup menu are the addresses of the serial ports you will be using.
- b.) Make sure that the IRQ are the designated IRQ for each serial port.
- c.) Refer to the manual of your plug-in cards for the address and IRQ setup.

IV. Connection of Pins in Different Mode:

Here are the connections of signals of devices to PCCOM_SSCOPE in different *modes*. Our **terminal box** provide these connections for your ease.

Host Mode:

| PORT1 | DTE1 | PORT2 | DTE2 |
|-------|-------|-------|-------|
| DCD 1 | 1 DCD | DCD 1 | 1 DCD |
| RXD 2 | 3 TXD | RXD 2 | 3 TXD |
| TXD 3 | 2 RXD | TXD 3 | 2 RXD |
| DTR 4 | 6 DSR | DTR 4 | 6 DSR |
| GND 5 | 5 GND | GND 5 | 5 GND |
| DSR 6 | 4 DTR | DSR 6 | 4 DTR |
| RTS 7 | 8 CTS | RTS 7 | 8 CTS |
| CTS 8 | 7 RTS | CTS 8 | 7 RTS |
| RI 9 | 9 RI | RI 9 | 9 RI |

DTE to DTE

| PORT1 | DTE1 | PORT2 | DCE2 |
|-------|-------|-------|-------|
| DCD 1 | 1 DCD | DCD 1 | 1 DCD |
| RXD 2 | 3 TXD | RXD 2 | 2 TXD |
| TXD 3 | 2 RXD | TXD 3 | 3 RXD |
| DTR 4 | 6 DSR | DTR 4 | 4 DTR |
| GND 5 | 5 GND | GND 5 | 5 GND |
| DSR 6 | 4 DTR | DSR 6 | 6 DSR |
| RTS 7 | 8 CTS | RTS 7 | 7 RTS |
| CTS 8 | 7 RTS | CTS 8 | 8 CTS |
| RI 9 | 9 RI | RI 9 | 9 RI |

DTE to DCE

- *PORT1 refer to serial port of PCCOM_SCOPE's computer.
- *PORT2 refer to another serial port of PCCOM_SCOPE's computer.
- *DTE1 refer to serial port of first DTE (like computer).
- *DTE2 refer to serial port of second DTE.
- *DCE2 refer to serial port of DCE (modem, mouse, barcode reader, etc).

Monitor Mode:

| PORT1 | DTE1 | PORT2 | DTE2 |
|-------|-------|-------|-------|
| DCD 1 | 1 DCD | DCD 1 | 1 DCD |
| RXD 2 | 3 TXD | RXD 2 | 3 TXD |
| TXD 3 | 2 RXD | TXD 3 | 2 RXD |
| DTR 4 | 6 DSR | DTR 4 | 6 DSR |
| GND 5 | 5 GND | GND 5 | 5 GND |
| DSR 6 | 4 DTR | DSR 6 | 4 DTR |
| RTS 7 | 8 CTS | RTS 7 | 8 CTS |
| CTS 8 | 7 RTS | CTS 8 | 7 RTS |
| RI 9 | 9 RI | RI 9 | 9 RI |

DTE to DTE

| PORT1 | DTE1 | PORT2 | DCE2 |
|-------|-------|-------|-------|
| DCD 1 | 1 DCD | DCD 1 | 1 DCD |
| RXD 2 | 3 TXD | RXD 2 | 2 TXD |
| TXD 3 | 2 RXD | TXD 3 | 3 RXD |
| DTR 4 | 6 DSR | DTR 4 | 4 DTR |
| GND 5 | 5 GND | GND 5 | 5 GND |
| DSR 6 | 4 DTR | DSR 6 | 6 DSR |
| RTS 7 | 8 CTS | RTS 7 | 7 RTS |
| CTS 8 | 7 RTS | CTS 8 | 8 CTS |
| RI 9 | 9 RI | RI 9 | 9 RI |

DTE to DCE

*PORT1 refer to serial port of PCCOM_SCOPE's computer.

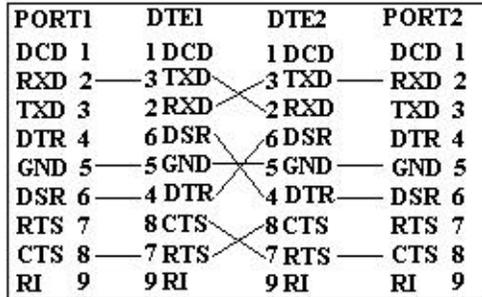
*PORT2 refer to another serial port of PCCOM_SCOPE's computer.

*DTE1 refer to serial port of first DTE (computer).

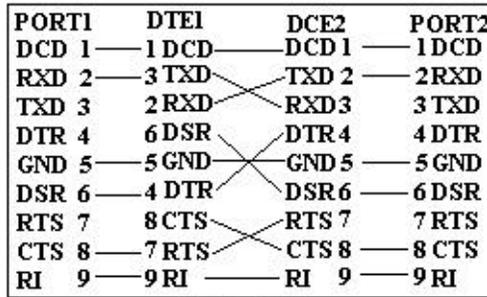
*DTE2 refer to serial port of second DTE.

*DCE2 refer to serial port of DCE (modem, mouse, barcode reader, etc).

Transparent Mode:



DTE to DTE



DTE to DCE

*PORT1 refer to serial port of PCCOM_SCOPE's computer

*PORT2 refer to another serial port of PCCOM_SCOPE's computer.

*DTE1 refer to serial port of first DTE (computer).

*DTE2 refer to serial port of second DTE.

*DCE2 refer to serial port of DCE (modem, mouse, barcode reader, etc).

APPENDIX A

TECHNICAL SUPPORT

Decision customer can request to any modification or customization of the program, or they may give their requirements.

We believe that customer report is the most valuable source for creating successful products. In case you need support for PCCOM_SCOPE, or have suggestions about the future functionality, please feel free to contact our Local Distributor.

We continuously update and extend the PCCOM_SCOPE with new functionality, for specific applications, to meet your specific needs, and provide supportive products.

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