

PC COM_Scope for Windows (32-bit)

**Available for
Windows ® 95
Windows ® 98
Windows NT ®**

Operation Manual

Decision Computer International Co., Ltd.

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I. INTRODUCTION

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 for Windows is software that monitors all the data and signals between two interacting devices, or a single device.

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

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

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

II. INSTALLATION

A. Hardware

To connect the DTE1 (Port1) and the DTE2/DCE (Port2) that the user is going to communicate with, the user need 2 serial ports available on its computer. So the user have to install the Decision PCCOM serial card on its computer. To install another Decision PCCOM cards please refer to its manual.

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.

- 1.) Connect **Port1** and **Port2** of the **terminal box** to two serial ports of the computer where PC COM_Scope will be running.
- 2.) Connect **DTE1** and **DTE2** or **DCE** to the serial ports of the devices to be monitored. Refer to the figures below.

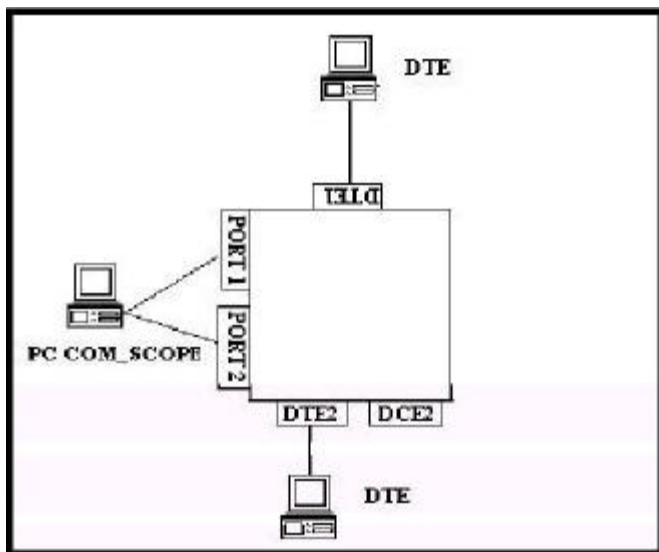


Fig.1: Show how DTE and DCE were connected to **terminal box**.

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 RXD
TXD 3	2 RXD	TXD 3	3 TXD
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

TRANSPARENT mode

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

DTE to DTE

PORT1	DTE1	DCE2	PORT2
DCD 1	1 DCD	DCD 1	1 DCD
RXD 2	3 TXD	RXD 2	2 RXD
TXD 3	2 RXD	TXD 3	3 TXD
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

B. Software

How to install PC COM_Scope for Windows

1. Insert installation disks on drive A or drive D (if in CD).
2. Click the Start button, then go to the Settings then select the Control Panel.
3. Double click the Add/Remove Programs.
4. Click the Install button followed by clicking the next button. The Command Line for installation program must contain A:\SETUP or D:\SETUP. Then click the Finish button.
5. The setup program for PC COM _Scope will run. Just follow the instruction until you finish installing the program.

III. PC COM_Scope SPECIFICATION

A. Operating System:

- Windows 95
- Windows 98
- Windows NT 4.0

B. Functions:

- All UART parameters are fully configurable.
- Review received data.
- Save received data.
- Monitor data of one or both devices at same time.
- Monitor all signals of one or both devices at same time.
- 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.
- User friendly.
- Monitor the number of data and signals transmit and receive.
- Flow Control selectable.
- Bits Per Second selectable.
- Data bits selectable.
- Parity selectable.
- Communication port selectable.

IV. INSIDE PC COM_Scope

A. The main form.

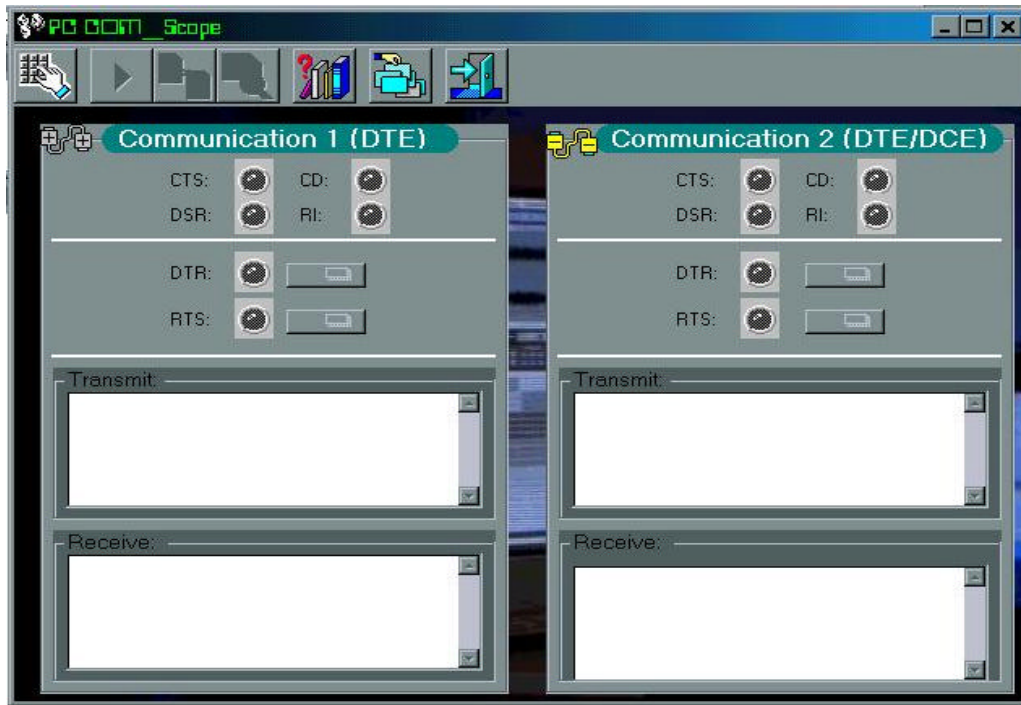
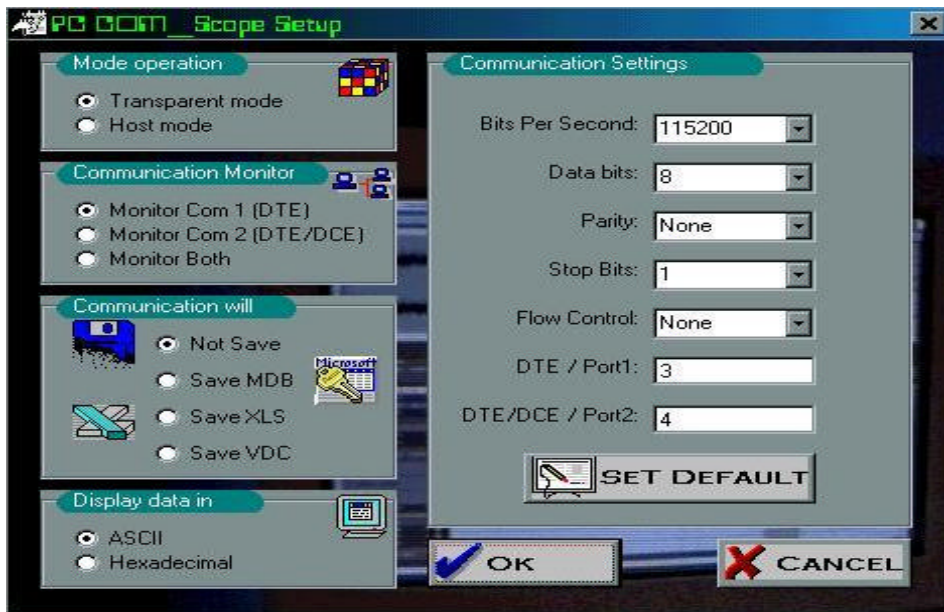


Figure 4-A.

At the main form you will see the buttons available to monitor the communication. The corresponding buttons are the “Setup”, “Start / Stop Communication”, “Data Conversion”, “Watch Data”, “Help File”, “Open Saved File” and the “Exit” button.

There are 2 frames at the main form, the first frame is to monitor the first DTE or Communication 1 and the other monitor the second DTE or DCE also known as Communication 2. In each frame the user can monitor the UART controls, which is represented by the LED display, and a switch on DTR and RTS at host mode. The transmitted data and the received data are also monitored



B. The setup configuration.

Figure 4-B.

Before you monitor the communication you have to setup the correct configuration. Below are the frames function and choices:

Mode operation frame

Under this operation the user have the following options:

- Transparent mode – In this mode the user is about to monitor the UART controls, transmitted data and the receive data.
- Host mode - In this mode the operation is the same with the transparent mode but in additional it can configure the UART control and the user can transmit data at the transmit text box.

Communication Monitor frame

Under the communication monitor the user have the following option:

- Monitor Com 1 (DTE) – This option will monitor the data terminal equipment connected to port 1.
- Monitor Com 2 (DTE/DCE) – This option will monitor the second data terminal equipment or the data communication equipment connected to port 2.
- Monitor Both – This option will monitor both the DTE1 and the DTE2/DCE connected to the port 1 and port 2.

Communication will frame

Under this frame the user have the following option:

- Not Save – This option will not save the received data
- Save MDB – This option will save the received data to Microsoft Data Base (Access)
- Save XLS – This option will save the received data to Microsoft Excel

Display data in frame

Under the Display data the user have the following option:

- ASCII – This option will display the received data in ASCII format.
- Hexadecimal – this option will display the received data in hexadecimal format.

Communication Settings frame

Under the Communication Settings frame the user have the following box:

- Bits Per Second – This combo box let the user to select the baud rate of the communication ports.
- Data bits – This combo box let the user to select the proper data bits of the communication ports.
- Parity – This combo box let the user to select the proper parity of the communication ports.
- Stop Bits – This combo box let the user to select the proper stop bits of the communication ports.
- Flow Control – This combo box let the user to select the proper flow control of the communication ports.
- DTE / Port1 – This text box let the user to enter the port number of the first monitoring port.
- DTE/DCE / Port2 – This text box let the user to enter the port number of the second monitoring port.

Set Default button – This button will set the default setting of the Communication settings.

OK button – This button will apply the setup configuration, exit to this form and go back to the main form.

Cancel button – This button will cancel the setup configuration, exit to this form and go back to the main form.

C. How to start / stop the communication

To start the communication simply press the play button or click the right mouse button and select the start/stop communication on the pop up menu.

To stop the communication simply press the stop button or click the right mouse button and select the start/stop communication on the pop up menu.

D. Changing the data

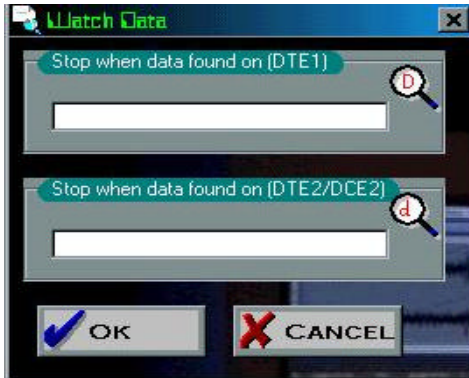


Figure 4-C

Changing the data is a function for host mode. The data receive from an external device known as present value can be change and will be transmitted to the other port. The new data transmitted is known as converted value.

To change some data receive that will be transmitted to the other port, press the assign data conversion button or click the right mouse button and select the data conversion menu.

From figure 4-c. fill up the blank text box. It is not necessary to complete the text box. And press the OK button, if you press the cancel button it will disregard the data conversion function.



E. Watch data

Figure 4-D.

The watch data is available on host mode only. This will watch the transmitted and the received data. Once the data which is enter on the textbox on the Watch data form found, the communication would automatically stop.

To activate this function press the watch data (stopper) at the toolbar or right click the mouse button and select the watch data menu.

At the watch data form, enter your desired data that will stop the communication once it is found at the textbox. Click the Ok will apply the setting and will exit to this form and clicking the cancel button will cancel this function.

F. Getting the help information.

To get a help information just press the help button on the toolbar or right click the mouse button and select the help from the menu.

G. Exiting from PC COM_Scope

To exit on this program just press the exit button on the toolbar or right click the mouse button and select the exit from the menu.

V. Hands on PC COM_Scope

This chapter is a step by steps how to use the PC COM_Scope.

1. Make sure that you have a 2 serial communication port available to be used by the PC COM_Scope.
2. Set the hardware connection as discussed at the “Installation – Hardware” topic. Check also the setting of the terminal box it must be at host mode at this moment.
3. Make sure that you have already installed the PC COM_Scope. If you have not yet install the PC COM_Scope then please proceed to “Installation – Software” topic and then return to this topic.
4. Click the Start button, go to the Programs folder and select the PC COM_Scope to run the program.
5. The main form will appear. At the main form click the setup button (it is located at the leftmost of the toolbar just below the Caption of the form.) or right click the mouse button as the popup menu appear, select the “setup” menu. The setup configuration form will appear.
6. At the setup configuration form there are several frames. Select the Host mode at the Mode operation frame.
7. At the Communication monitor frame, it will be automatically select to monitor both since the PC COM_Scope has the control over port1 and port2 at Host mode. So you don't have to problem this frame at this moment.
8. At the Communication will frame, let it be Not save.
9. At the Display data in frame let it be ASCII.
10. Assuming that you have a COM3 and COM4 Leave the Communication Settings as default.
11. Click the OK button. After clicking the OK button you must be at the main form!
12. At the main form click the play button at the toolbar beside the setup button or right click the mouse button as the popup menu appear select the start communicating at the menu. You will notice that the play button will be change to stop button. So at anytime you can click the stop button to stop the communication or by selecting it at the popup menu by clicking the right mouse button.

At Host mode you can change the data from the Port1 to Port2 or vice versa where Port1 is your DTE1 and the Port2 is your DTE2 or the DCE

13. Click the Data conversion button at the toolbar, the 3rd button or select it at the popup menu by clicking the right mouse button. The Data Conversion form will appear.
14. In the Data Conversion there are 2 frames the first frame is for Port1 configuration and the other port is for Port2 configuration. At the Present Value you can put the

character or array of character that you want to be change once encountered. At the Converted Value you can put the character or array of character that will replace the present value encountered on that port.

15. It is not necessary to fill up all the text box in filling up the Data Conversion form and once you are finish filling up the form click the OK button

The user can stop the communication once the user had received the data it is looking for by activating the watch data.

16. Click the Watch data button at the toolbar, the 4th button or select it at the popup menu by clicking the right mouse button. The watch data form will show.
17. Put a character on the text box, where if the character is receive the communication will temporarily stop. You can continue the communication by clicking the play button at the toolbar.
18. The top textbox is configuration for Port1 and the lower textbox is configuration for Port2. Click Ok button to accept and apply the settings.

VI. Saving Data

In analyzing the data sometimes you have to save the data for future viewing and/or editing. Using PC COM_Scope you can save the data as Microsoft Excel, Microsoft Access or PC COM_Scope file type. To save the data during setup please make sure at the PC_COM Scope setup form (for more information to this form please review the topic “Inside PC COM_Scope” b. The setup configuration.) at the Communication will frame options was set not on the “not save”.

VII. Loading Data

If you save the data as MS Excel or MS Access you can load it under its original application program. If you save it as VDC you can load it using the PC COM_Scope editor by clicking the “Open Scope Saved file” button of the toolbar located at the side of the exit button. When the PC COM_Scope editor appear you can explore the data by clicking the browser button. The user can search the data by clicking the “Find data” button at the toolbar. The user may save all his/her modification by clicking the “save and exit” button or may exit without saving by clicking the “Do not save and exit” button at the toolbar. For visualization please refer to the figure 7.0.

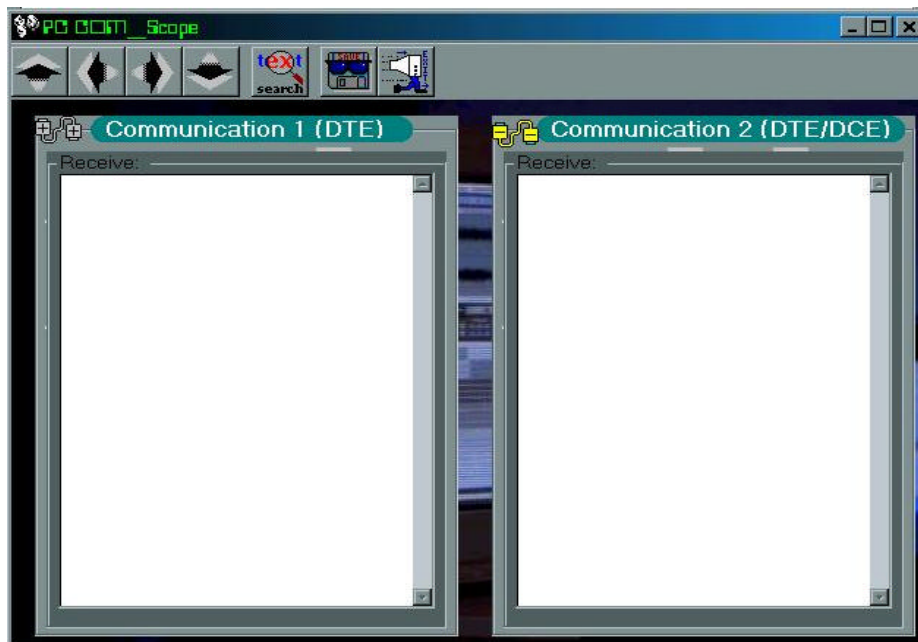


Figure 7.0

The left side edit box is the display for the received data on Com1 and on the right side edit box is the display for the received data on Com2.

VIII. Technical Support

Obtaining Technical Support

We believe that customer input is the most valuable source for creating successful products.

In case you need support for using the PC COM_Scope, or have suggestions about the future functionality, please feel free to contact us!

We will continuously update and extend the PC COM_Scope with new capabilities and functions for specific products, to meet your needs, and provide supportive products around Decision Computer International Co., Ltd.

When reporting a problem or requesting technical assistance please kindly answer the following questions. We will not begin to address the problem until you have them.

- What is the serial number of the Decision product?
- Where did you purchase Decision product?
- What type of CPU are you using and who is the manufacturer (Pentium, 80486, 80386, 80286, 8088 & Intel, AMD, Cyrix, Pentium II, etc.)?
- What are the setup and value of the Decision product (Address, IRQ, mode, polarity etc.)?

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