CEDAC SOFTWARE

VIRTUAL NET

OPERATOR'S MANUAL

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1 INTRODUCTION

1.1 Who should read this manual?

Users of Virtual Net Analyzer should read this manual for information about:

- General Virtual Net Analyzer features
- System requirements
- Installing software and hardware
- Getting additional information and support

This chapter is a brief introduction to the Virtual Net Analyzer and its system requirements.

1.2 Introduction to the Virtual Net Analyzer

The Virtual Net Analyzer has these toolset features:

- Standard mode operation
  - Select board properties: serial code and source node
  - Split box of text receive
- Analyzer mode operation
  - Different type of data acquisition: packet failed, number of packet, throughput, etc.
  - Show data acquisition analysis in real time
  - Show details of data acquisition
- Test mode operation
  - Used for electrical test

1.3 Host system requirements

To use the Virtual Net Analyzer, the minimum system requirements are:

- Windows 95/98 or Windows NT 4.0
- 32 MB system RAM and 5 MB free drive space
- Available asynchronous communications port (COM1, COM2, COM3 or COM4) for communication between the Virtual Net Board and the computer.

1.4 Packing List

Description	Qty.
• Virtual Net	3
• Demo Board	3
• 9 Pin Serial Cable	3
• AC-DC Adapter 230V~50HZ 9 V 0,4 A	3
• Virtual Net Analyzer Software CD	1

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2 HARDWARE INSTALLATION

2.1 Overwiev

This chapter explains how to:

- Connect the Virtual Net to Virtual Net Demo Board
- Configure the Virtual Net Demo Board

CAUTION

Ordinary amounts of static electricity from clothing or the work environment can damage or degrade electronic devices and equipment. For example, the electronic components installed on printed circuit board are extremely sensitive to electrostatic discharge (ESD). Wear a grounding wrist strap whenever handling any printed circuit board. This strap provides a conductive path for safely discharging static electricity to ground.

2.2 Assembling The Hardware

To install the hardware the following operation must be made:

- Take the Virtual Net and put it over the Virtual Net Board.
- Connect the 9 pin serial cable to PC
- Connect the 9 pin serial cable to Demo Board
- Connect the adapter to the board

2.3 Configuring The VIRTUAL NET DEMO BOARD

Use the correct jumper setting on each of the Virtual Net Demo Board according to the following description:

- Jumper 1 off
- Jumper 2 on
- Jumper 3 off
- Jumper 4 on
- Jumper 5 on
- Jumper 6 on
- Jumper 7 on
- Jumper 8 off
- Jumper 9 off

See Figure 2-1.

MODE SELECTION OPTIONS

JUMPER POS	ON	OFF
1	RTS MODEM SIDE	
2	RTS PC SIDE	
3	CTS MODEM SIDE	
4	CTS PC SIDE	
5	DTR AND COMMAND EN.	
6	DCD ALWAYS POWER ON	AUTO POWER OFF
7	DSR ALWAYS ON	
8	DSR ALWAYS OFF	
9	MODEM SIDE	PC SIDE

Figure 2-1:Configuration of jumper for Virtual Net

3 SOFTWARE INSTALLATION AND INIZIALIZATION

3.1Overwiev

This chapter is an overview of the VA windows, menus, options and procedures for using each of them.

3.2 Getting Started

Before starting the Network Analyzer editor, the VA software must be installed on the host computer.

To start VA editor, select the VA icon by selecting the VA icon from Windows 95/98 Start menu. The possible configurations of screen are shown in Figure 3-1 .

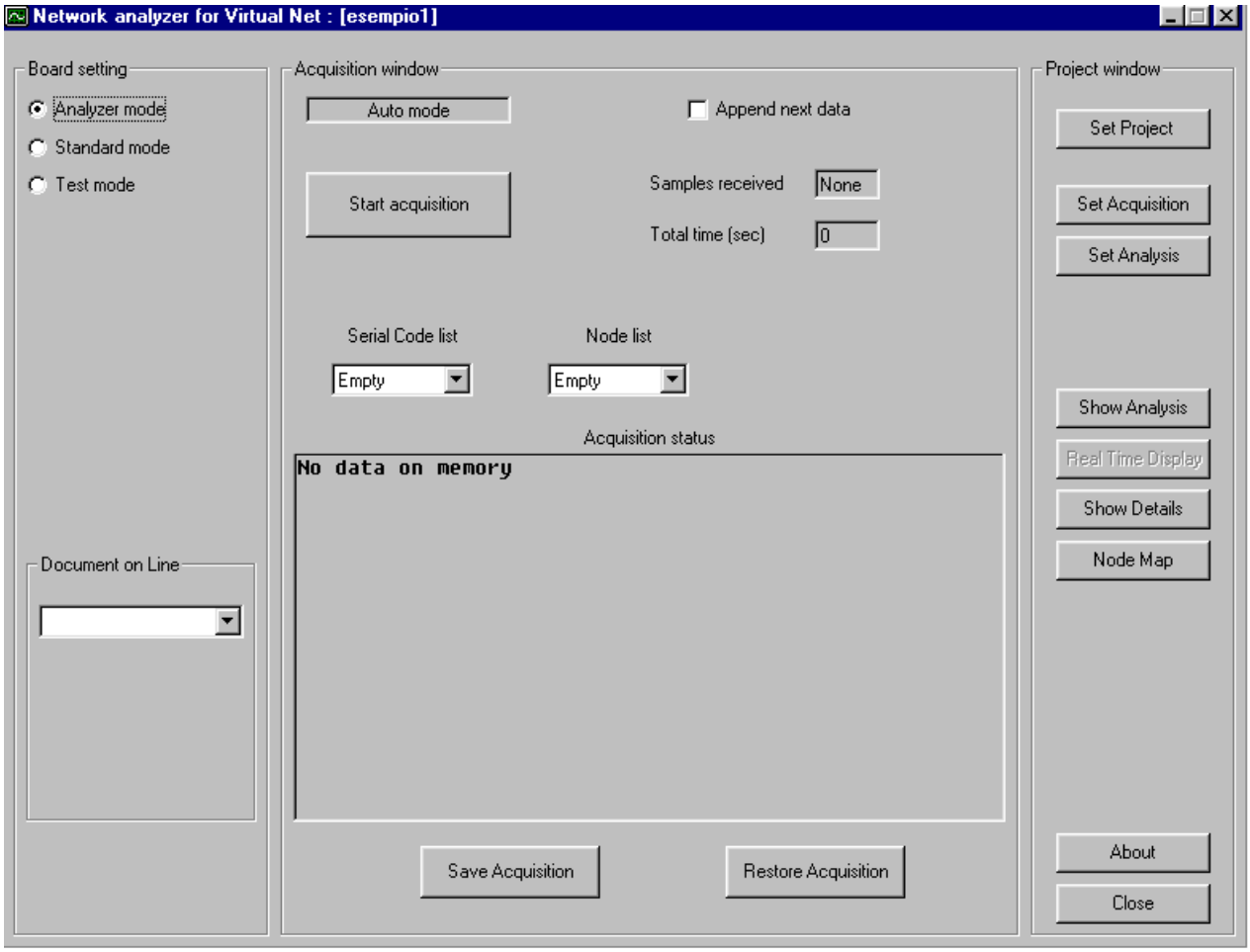


Figure 3-1: Analyzer mode window

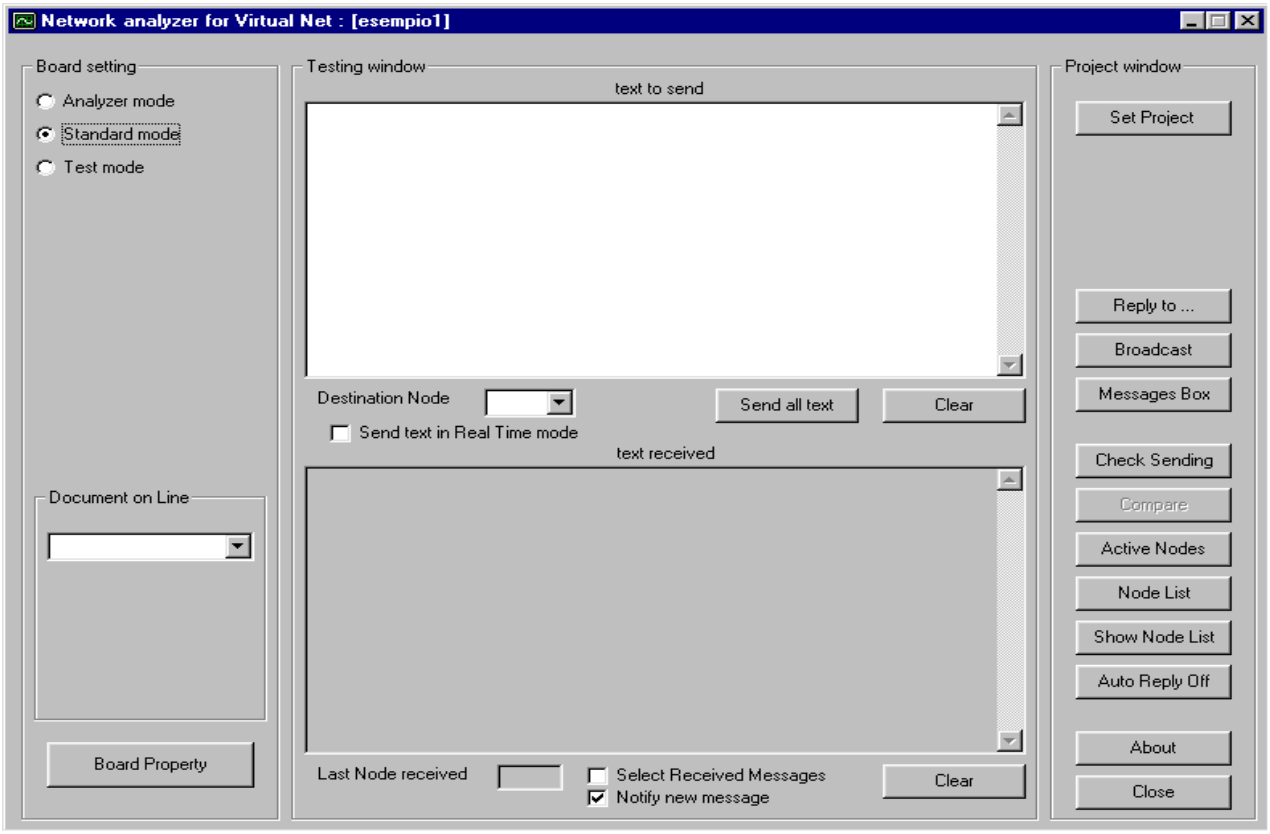


Figure 3-2: Standard mode window

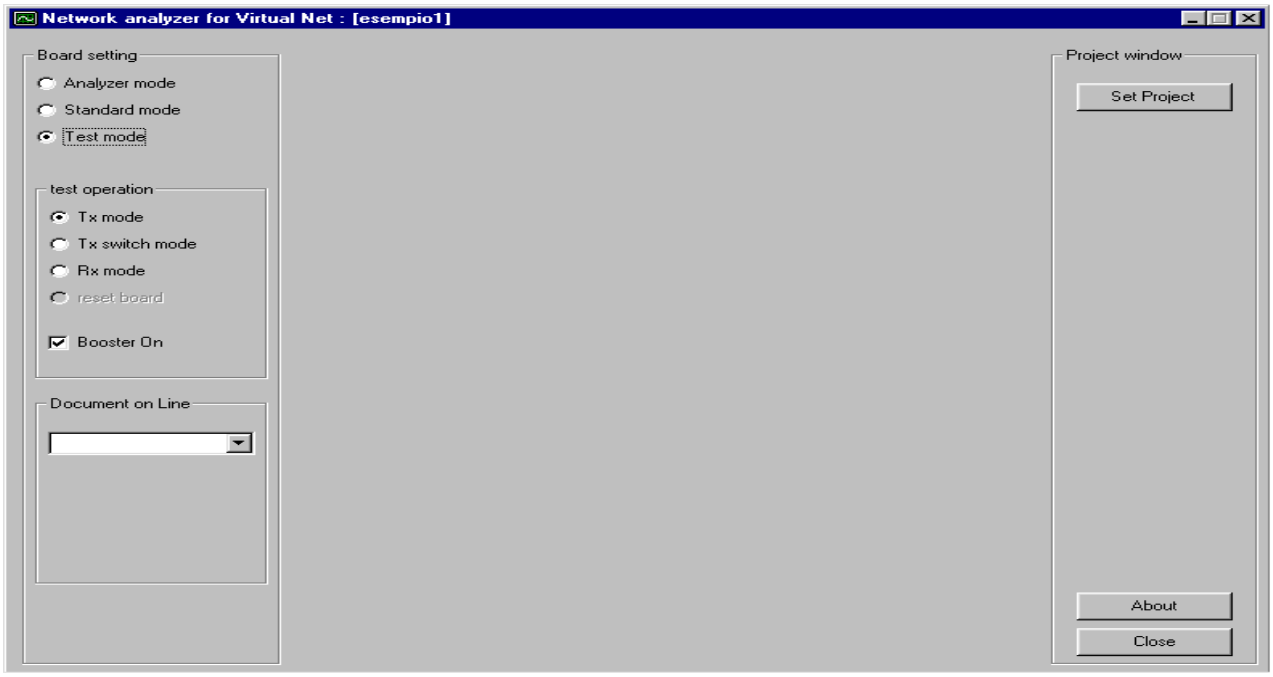


Figure 3-3: Analyzer mode window

3.2.1 STANDARD MODE SELECTION

Select *Standard Mode* and then select *Set Project* button and write your data. The Directory Name is the name of directory in which you want to save your acquisition file and File Name is the name of your acquisition file. See Figure 3-4. For more details about data acquisition see Analyzer mode selection.

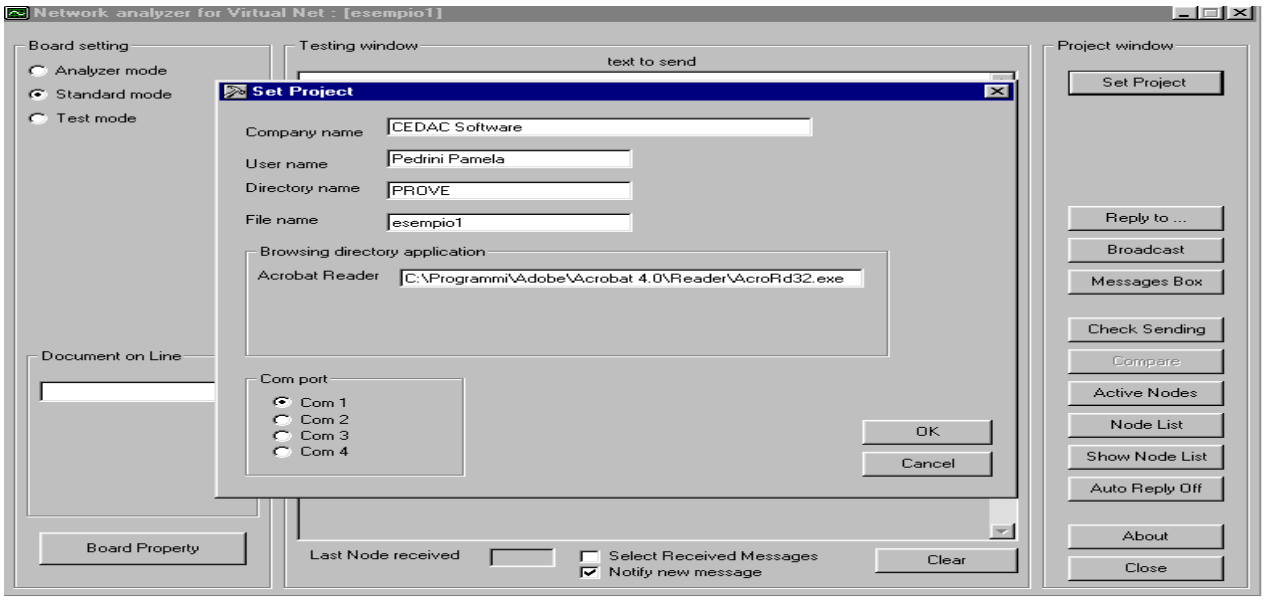


Figure 3-4: Set Project window

Select *Board Property* button. Configure the Board Property by entering the values of parameters such as Serial Code, Source Node, Expired Time, see Figure 3-5.

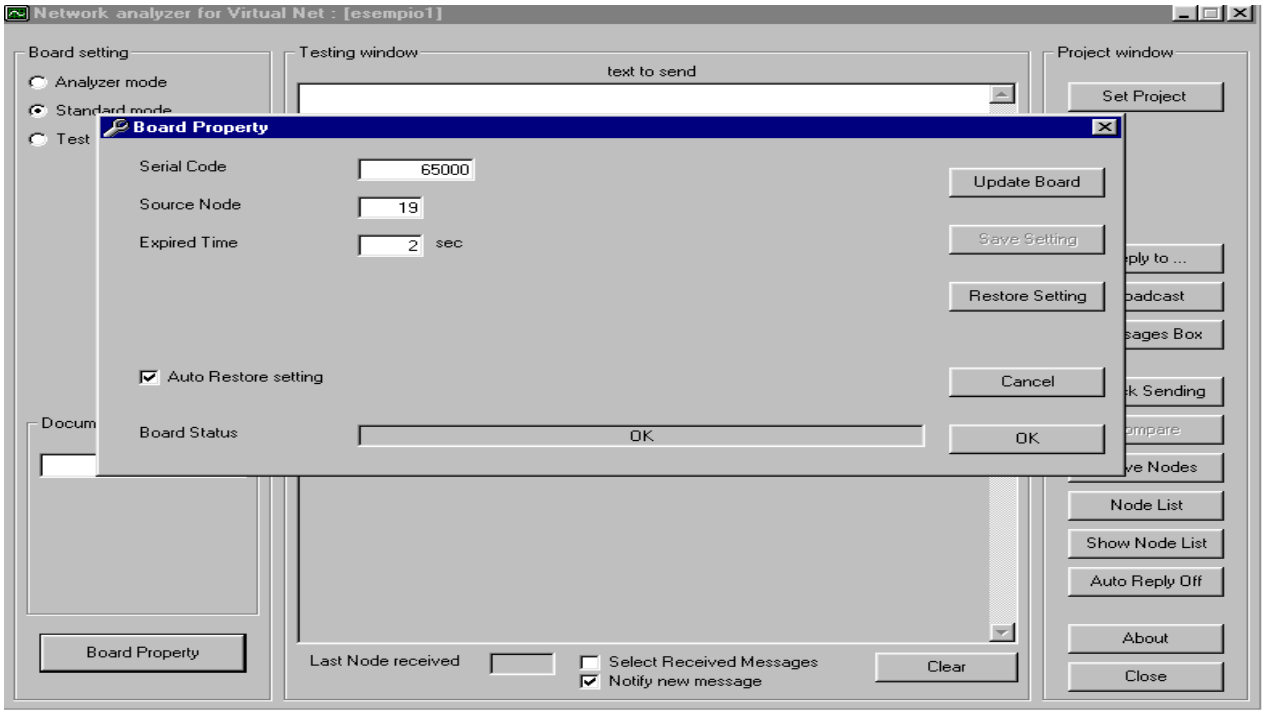


Figure 3-5: Board Property window

A virtual net can be created with different units that have the same Serial Code but different Source Node. The Expired Time parameter denotes the time life of the transmitted packet. Click the *Update Board* button to update the card. If the Auto *Restore Setting* is set this is the default configuration when a restart is made. If you want to restore setting after a restart you must save the configuration clicking *Save Setting*. Now you are going to send messages to each other. Write text to send in *text to send* box, choice the *Destination Node*, and click *Send all text*. You can see the active nodes by click *Active Nodes* and the result in *Destination Nodes* list box. So you update the Node List. If you click *Node List* you search new active node and increase it. In this way the Node List contains either active node or unused node that had activated in past. If you click *Show Node List* you can see the active nodes and your node. The active node are coloured in green, your node in blue and if there is another node with the same number the box becomes red as shown in Figure 3-7. With *Replay to* button you can replay to last sender node. The *Check Sending* button sends a file named test.txt to the selected destination node. This and other file are included in *Document on Line*. If the user put a pdf document in the VA directory, when VA start this document is included in *Document on Line*. Clicking *Auto Replay* the received message is send as well as it had received. The *Compare* button compares the received test.txt with the one contains in Document on Line. Clicking the *Messages Box* you can select the received text from node and put them in different box, see Figure 3-6 .

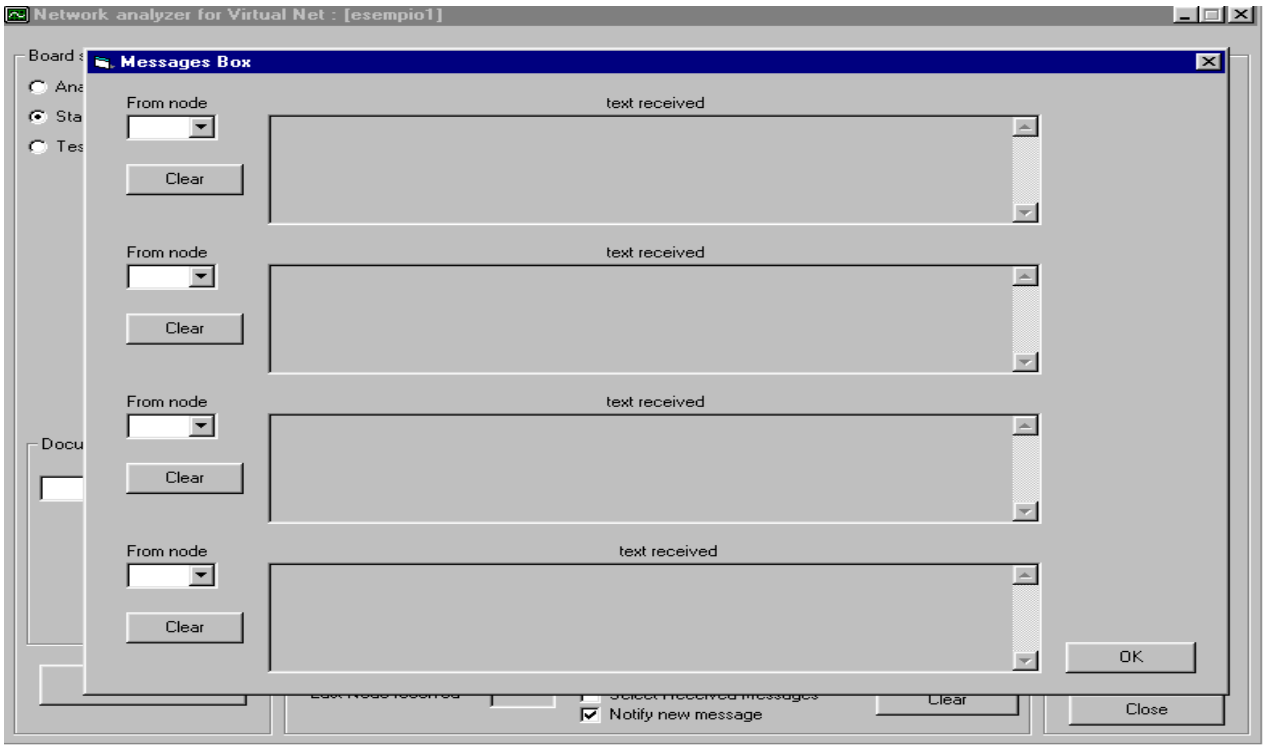


Figure 3-6: received text box

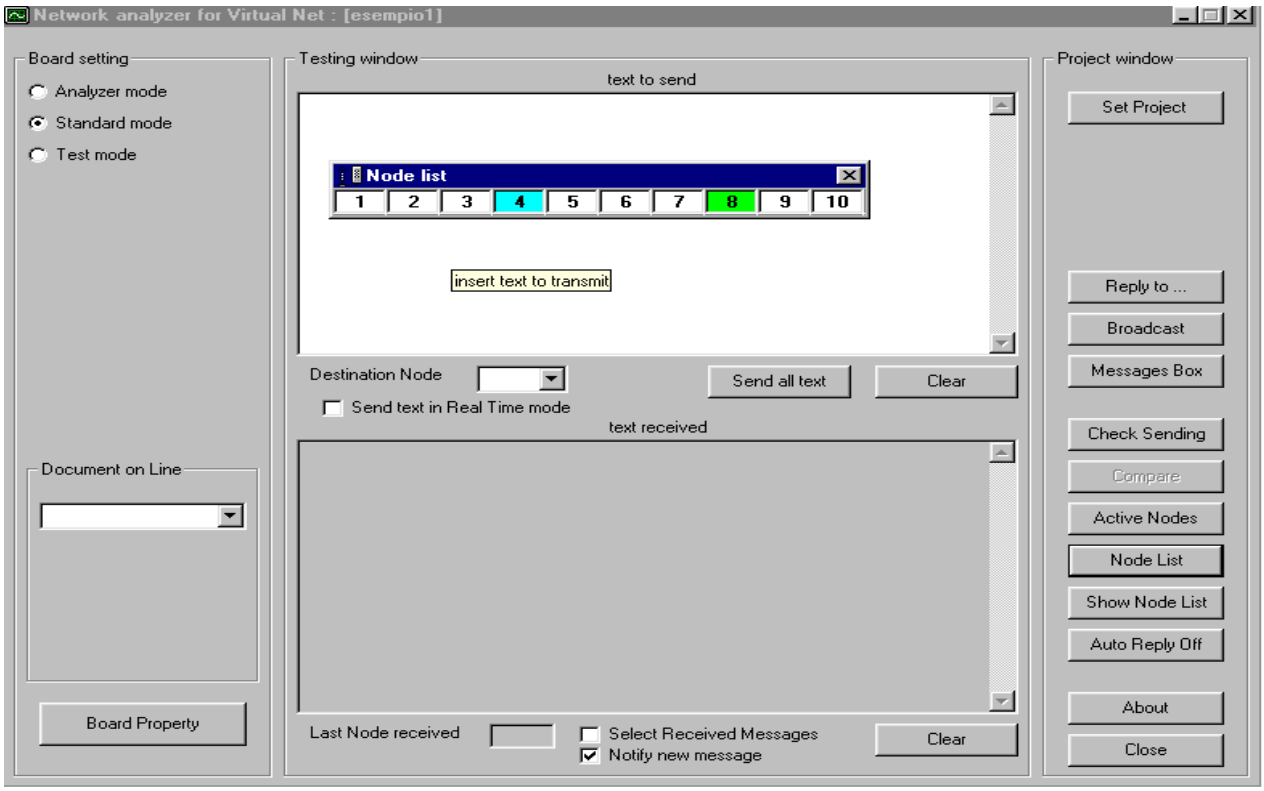


Figure 3-7: Node list

If you set *Send text in Real Time mode* all character, that you write in text to send, are sent in real time. If *Select Received Messages* is set the messages come from destination, selected in messages box, don't appear in text received box but only in Selected Received Text.

3.2.2 TEST MODE SELECTION

Select Test mode. This mode is used only for electrical text.
Tx mode: send frame continuously
Rx mode: receive frame and set RI (RS232 pin) when a correct packet is received
Tx switch mode: send frame and switch in receive mode but the receive circuit isn't active.
Booster On: when set, a 10mW booster is activated.

3.2.3 ANALYZER MODE SELECTION

This mode can be used to analyzer a net for example makes a debugging of user application or simply to estimate wireless family product. Select *Set Acquisition* and the window is shown in Figure 3-8 .

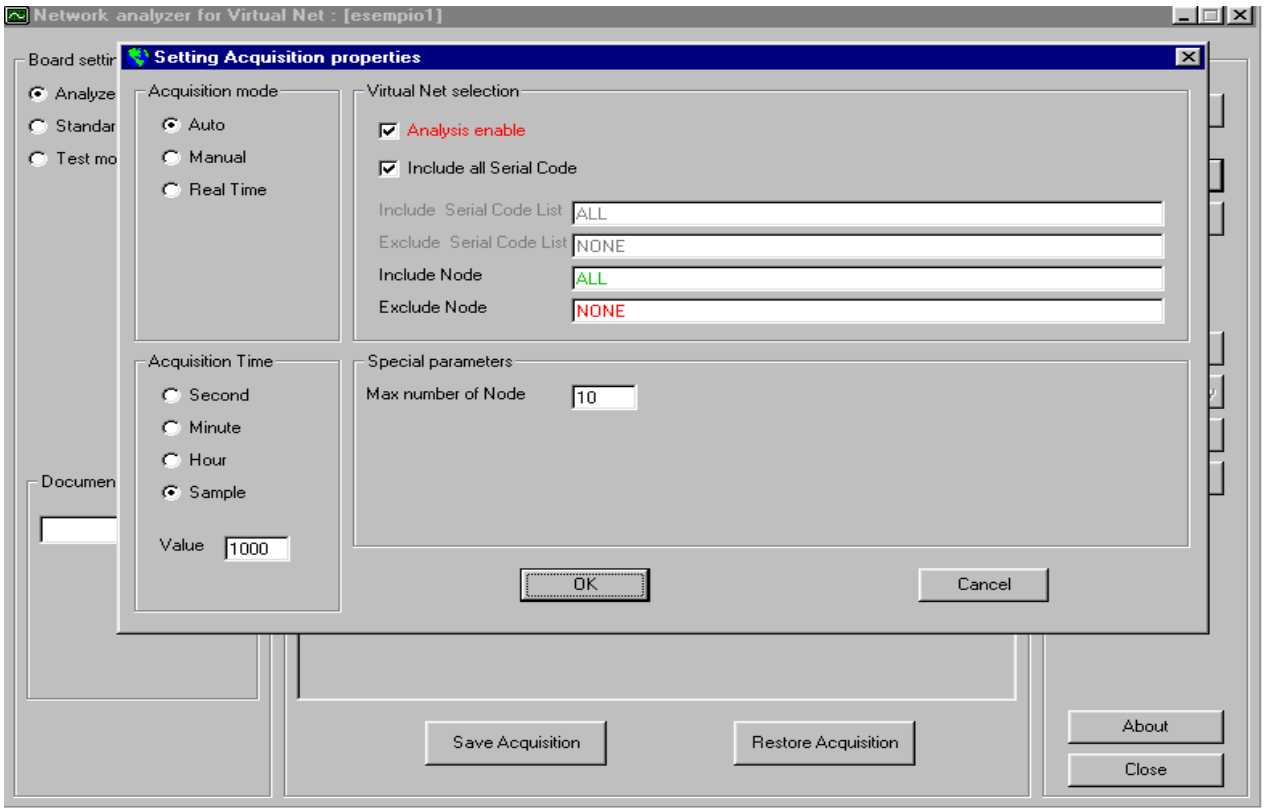


Figure 3-8: setting acquisition properties

Acquisition time

Allow to selecting the value of acquisition time in second or minute, hour and sample.

Acquisition mode

Auto: end the acquisition when the value given in acquisition time is reached.
Manual: start and end the data acquisition when Start Acquisition button is pushing.
Real Time: acquiring data in real time

Virtual Net selection

Decoding enable: enable data analysis of Virtual Net.
Decode all code: all nodes, of any Serial Code, are analysed. When this field isn't set you can choice if exclude or include one node instead of other.Also the Serial Code could be included or excluded.

After then you can save your acquisition and restore it when you want to use it. To save press *Save acquisition* button and to restore the acquisition press the *Restore acquisition* button.
If you press *Set Analysis* button you can choice different parameters as shown in Figure 3-9.

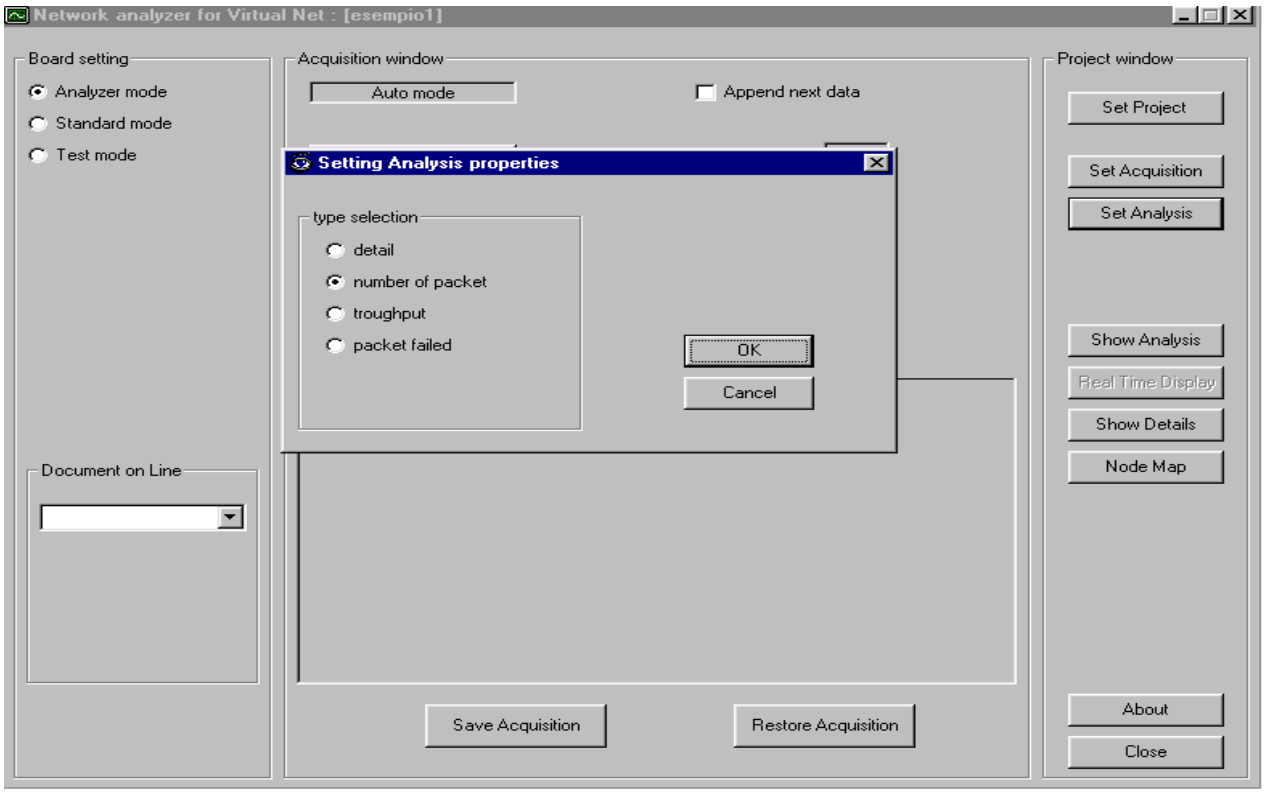


Figure 3-9: setting analysis properties

Now you are ready to view your data acquisition pressing *Show Analysis* as shown in

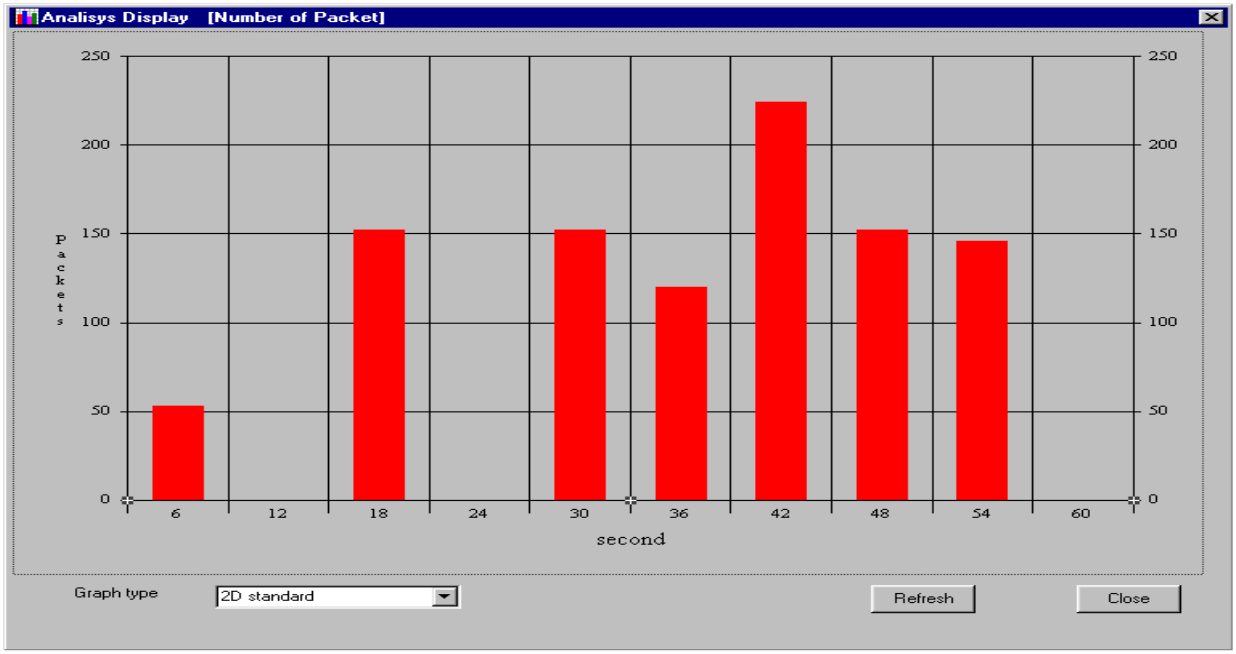


Figure 3-10: Number of packets in 2D standard

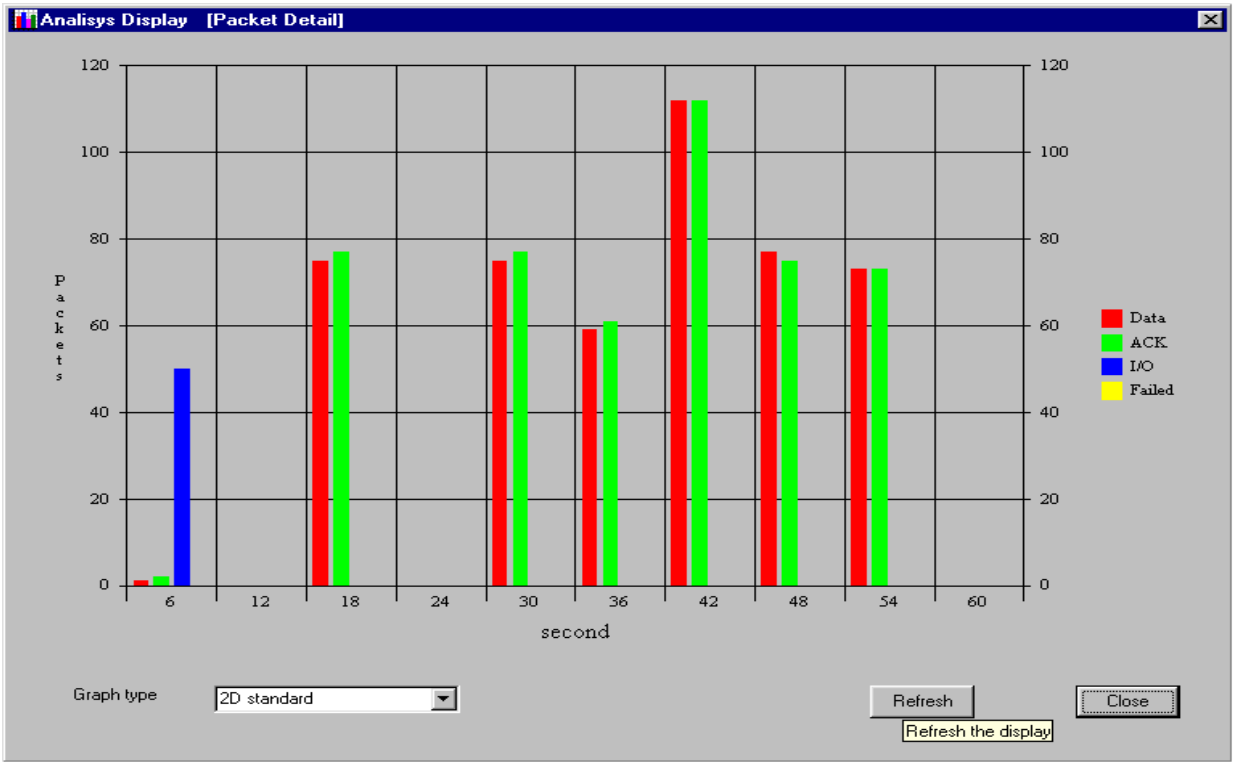


Figure 3-11: Packets details in 2D standard

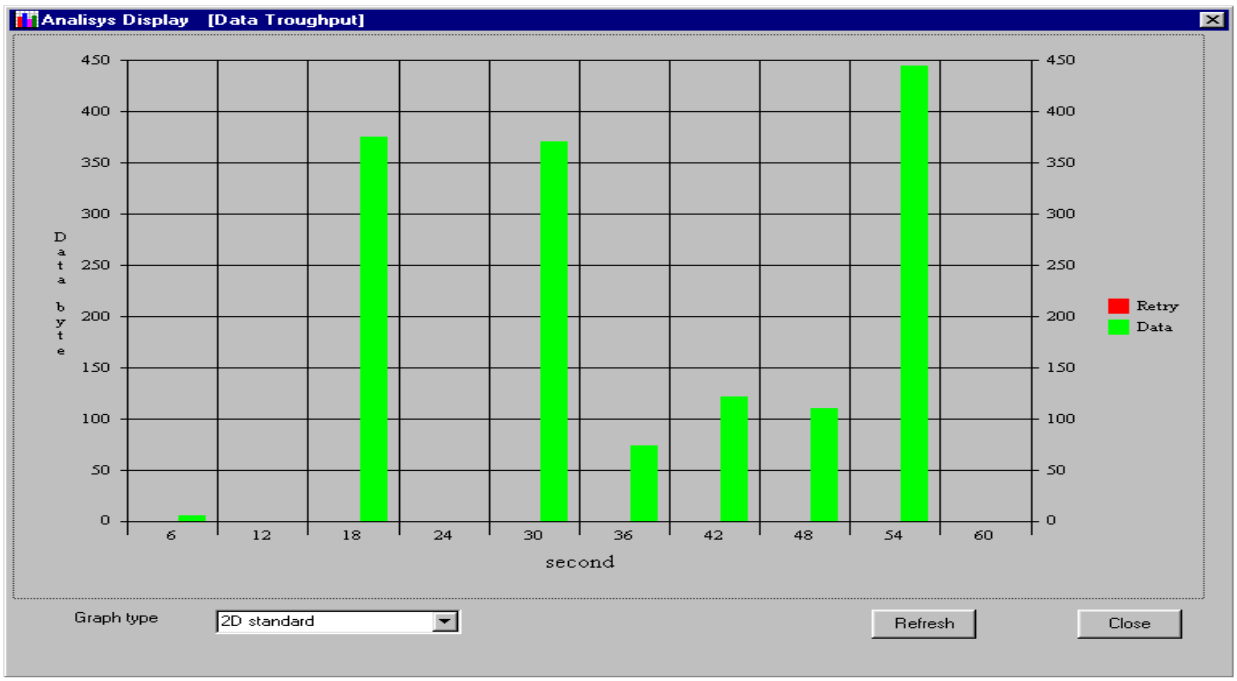


Figure 3-12: Throughput in 2D standard

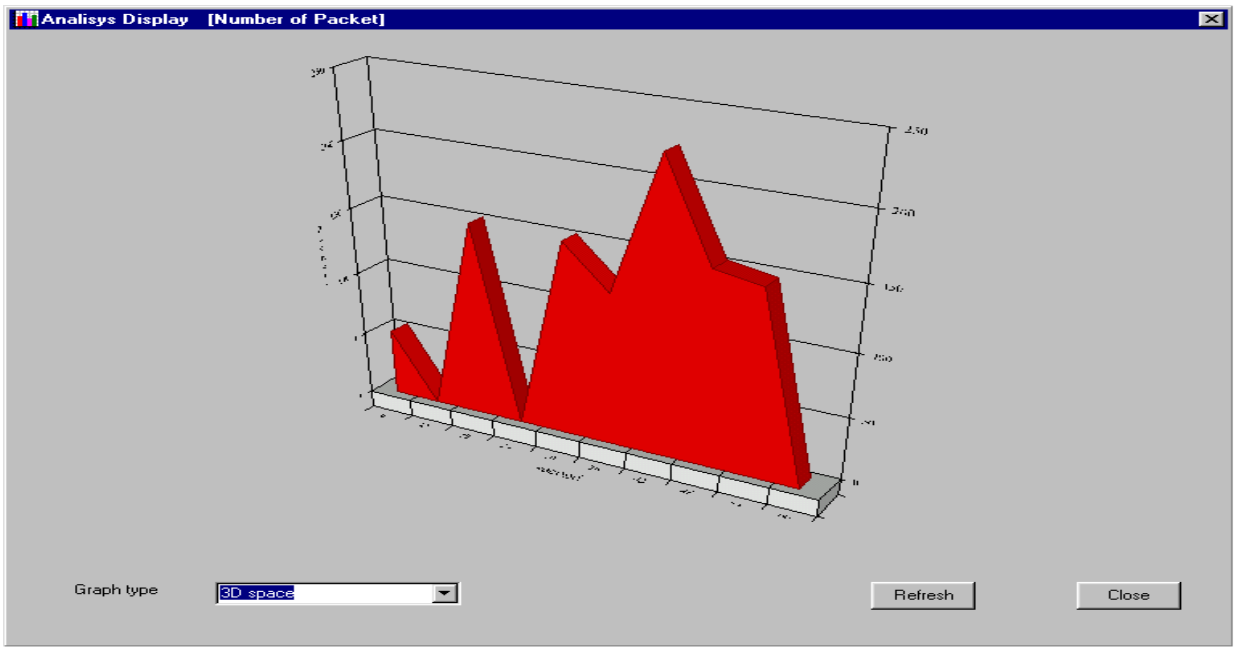


Figure 3-13: Number of packets in 3D space

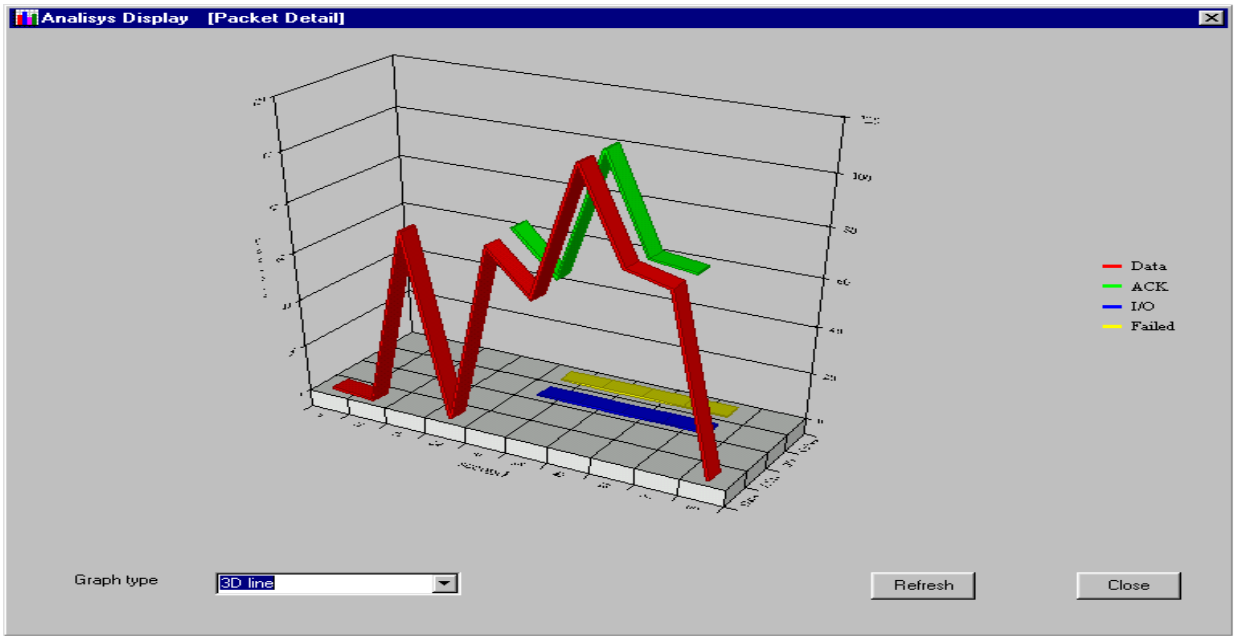


Figure 3-14: Packets details in 3D line

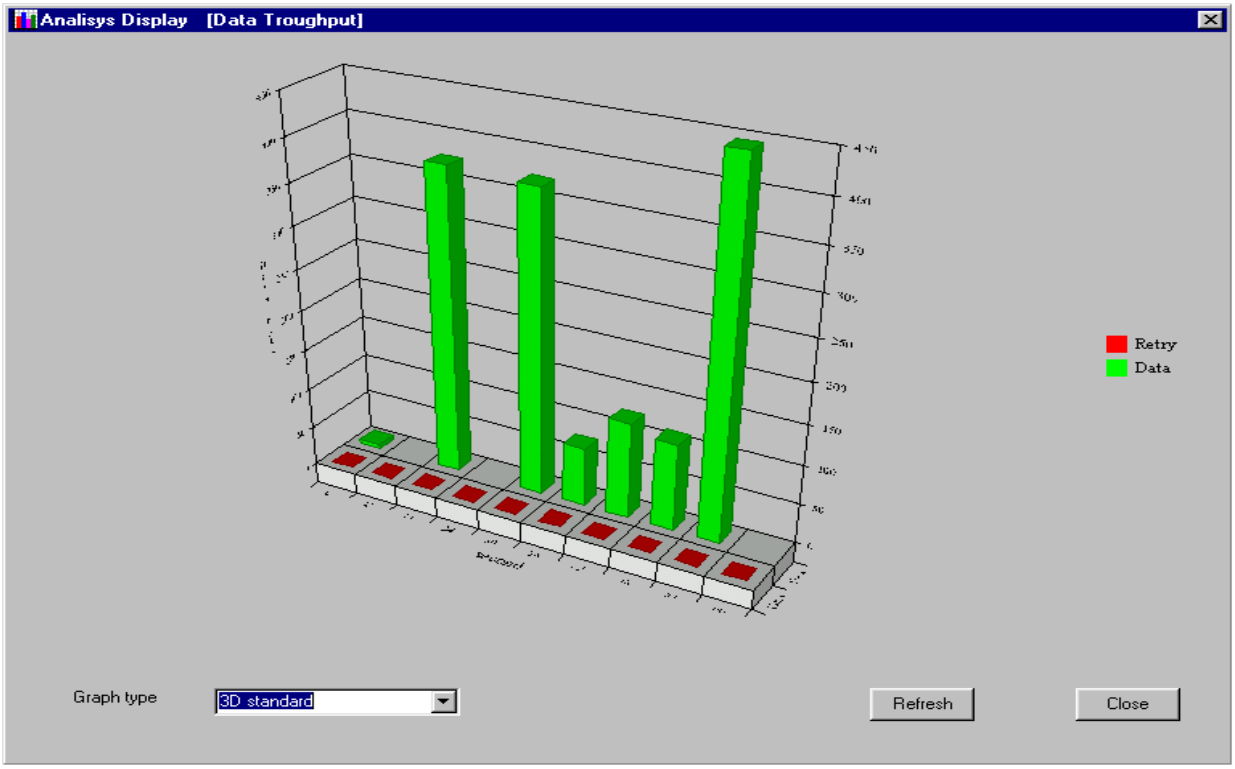
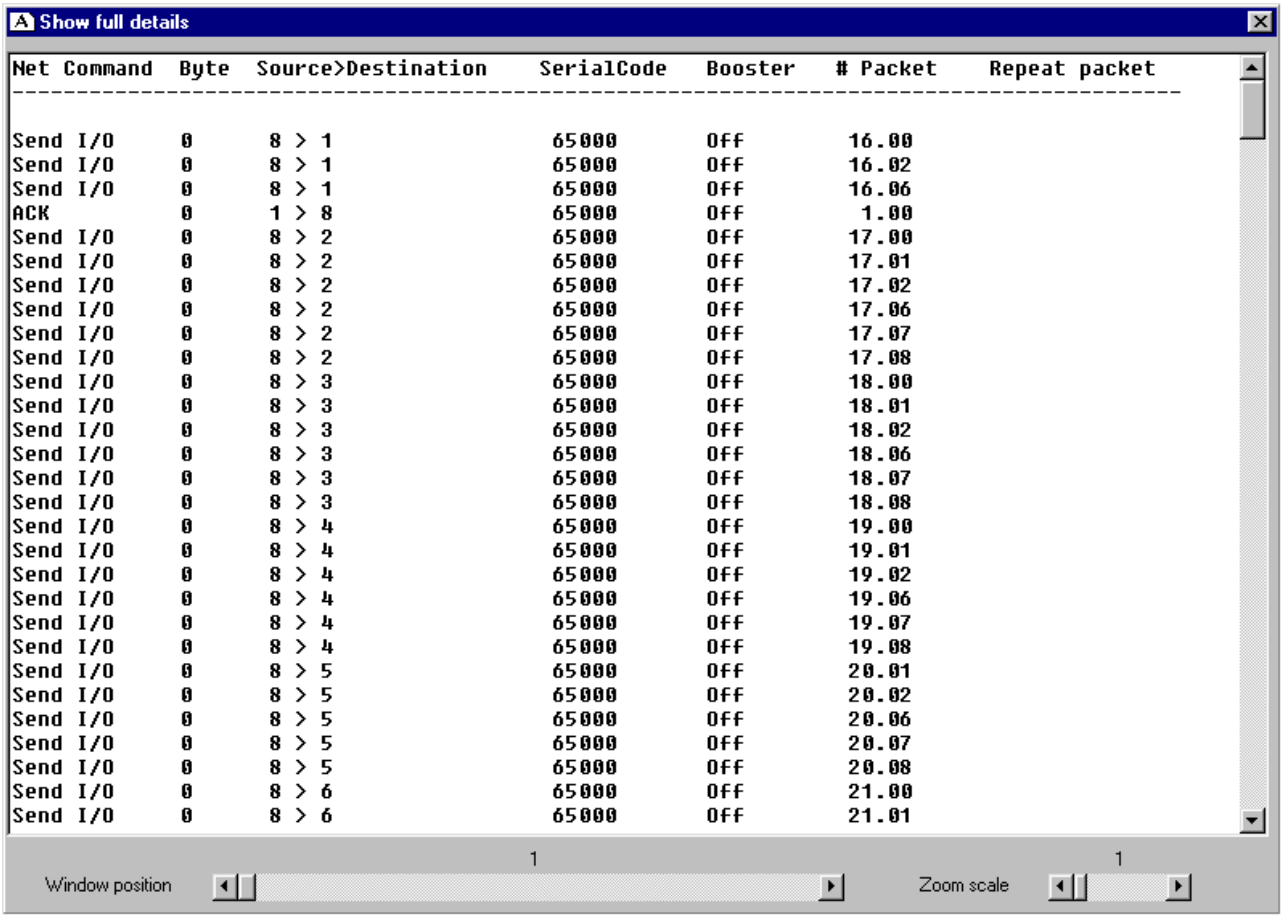


Figure 3-15: Throughput in 3D standard

The data acquisition could be made in real time pressing *Real Time Displa*y button. You could also see more details about your data acquisition clicking *Show Details* button as shown in Figure 3-16 .



Net Command	Byte	Source>Destination	SerialCode	Booster	# Packet	Repeat packet
Send I/O	0	8 > 1	65000	Off	16.00	
Send I/O	0	8 > 1	65000	Off	16.02	
Send I/O	0	8 > 1	65000	Off	16.06	
ACK	0	1 > 8	65000	Off	1.00	
Send I/O	0	8 > 2	65000	Off	17.00	
Send I/O	0	8 > 2	65000	Off	17.01	
Send I/O	0	8 > 2	65000	Off	17.02	
Send I/O	0	8 > 2	65000	Off	17.06	
Send I/O	0	8 > 2	65000	Off	17.07	
Send I/O	0	8 > 2	65000	Off	17.08	
Send I/O	0	8 > 3	65000	Off	18.00	
Send I/O	0	8 > 3	65000	Off	18.01	
Send I/O	0	8 > 3	65000	Off	18.02	
Send I/O	0	8 > 3	65000	Off	18.06	
Send I/O	0	8 > 3	65000	Off	18.07	
Send I/O	0	8 > 3	65000	Off	18.08	
Send I/O	0	8 > 4	65000	Off	19.00	
Send I/O	0	8 > 4	65000	Off	19.01	
Send I/O	0	8 > 4	65000	Off	19.02	
Send I/O	0	8 > 4	65000	Off	19.06	
Send I/O	0	8 > 4	65000	Off	19.07	
Send I/O	0	8 > 4	65000	Off	19.08	
Send I/O	0	8 > 5	65000	Off	20.01	
Send I/O	0	8 > 5	65000	Off	20.02	
Send I/O	0	8 > 5	65000	Off	20.06	
Send I/O	0	8 > 5	65000	Off	20.07	
Send I/O	0	8 > 5	65000	Off	20.08	
Send I/O	0	8 > 6	65000	Off	21.00	
Send I/O	0	8 > 6	65000	Off	21.01	

Figure 3-16: details display

The fields of *Show full details* are more specified in Figure 3-17 .

1°field	2°field	3°field	4°field	5°field	6°field	7°field
Net command	Byte	Source Destination	Serial Code	Booster	#Packet	Repeat Packet

1°field: type of command
2°field: number of byte sent
3°field: number node of source and destination
4°field: number of Serial Code
5°field: booster on or off
6°field: number of packet
7°field: number of repeat packet

Figure 3-17: field description of Show full details

At the end, you could overwrite your acquisition with another if you don't set *Append next data* or append it to the precedent if you set this flag.

4 SUPPORT

4.1 Contacting customer support

For technical support, contact CEDAC SOFTWARE S.R.L. by telephone or fax at the number below.
Telephone: +39053493811
Telephone support hours are Monday through Friday,
9:00 a.m. to 1:00 p.m. and 2:30 p.m. to 6:30 p.m.
Fax: +39053493899
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Internet:www.cedac.com

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