



NICSET-GE User Guide

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VIA Networking Technologies, INC.

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Revision History

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1 Introduction

Welcome to the user guide of NICSET-GE.

NICSET-GE is a windows based utility which enables you to monitor, test and configure VIA Networking Rhine-GE Family Gigabit Ethernet Adapter included VT6110, VT6120, VT6122 and VT6121 on desktop systems and servers. It could be run under Microsoft Windows operation systems such as Windows 95/95osr2/98/98se/me/nt4/2000/XP/server 2003.

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2 NICSET-GE Installer

For detail about installing NICSET-GE on various Microsoft Windows platform:

2.1 Install VIA NICSET-GE in Windows 2000/XP/Server 2003

In Microsoft windows 2000, XP and Server 2003, VIA SNMP service installation procedure is listed as the following:

1. In the folder contains VIA NICSET-GE package, there are two version of setup program
2. A Self-Extracting EXE and the NICSET-GE subfolder contains uncompressed setup program.
3. Double Click on the **Self-Extracting EXE** or the **setup.exe** in the NICSET-GE subfolder to launch the setup program,
4. Following the instruction of the setup program, to finish the setup of **VIA NICSET-GE**.

Note:

1. You must be logged on as an administrator or a member of the Administrators group in order to complete this procedure.
2. VIA NICSET-GE could be effect right after installation.
3. The setup program will prompt your to remove previous installation and to update miniport driver of your network adaptor if needed before installation.

2.2 Install VIA NICSET-GE in Windows 95/98/ME/NT4

In Microsoft windows 95/98/ME/NT4, VIA NICSET-GE installation procedure is listed as the following:

1. In the folder contains VIA NICSET-GE package, there are two version of setup program
2. A Self-Extracting EXE and the NICSET-GE subfolder contains uncompressed setup program.
3. Double Click on the **Self-Extracting EXE** or the **setup.exe** in the NICSET-GE subfolder to launch the setup program.
4. Following the instruction of the setup program, to finish the setup of **VIA NICSET-GE**.

Note:

1. VIA NICSET-GE could be effect after system restart.
2. The setup program will prompt your to remove previous installation and to update miniport driver of your network adaptor if needed before installation.

2.3 Update Miniport Driver

In Microsoft windows 95/98/ME/NT4/2000/XP/Server 2003, VIA NICSET-GE installation procedure will automatically update driver in your system if necessary. It will show a progress bar while performing driver update.



Installing Rhine Family Ethernet Adapter....Wait please....

2.4 Remove VIA NICSET-GE in Windows platform

In Microsoft windows 95/98/ME/NT4/2000/XP/Server 2003, VIA NICSET-GE installation procedure is listed as the following:

1. Click **Start**, point to **Settings**, and click **Control Panel**. Double-click **Add/Remove Programs**.
2. In the list of installed program, choose **VIA NICSET-GE**.
3. Click Add/Remove button to remove VIA NICSET-GE.

Or

1. Click **Start**, point to **Program Files**→**VIA NICSET-GE**, and click **VIA NICSET-GE uninstall**.

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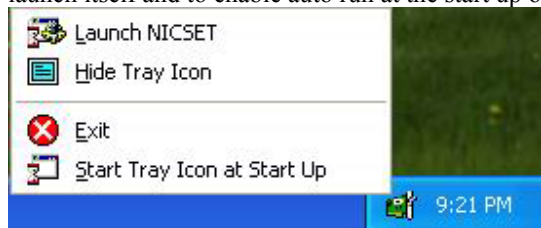
3 Starting NICSET-GE

While NICSET-GE was installed onto the system, there are several Shortcuts to launch it.

3.1 System Tray Shortcut



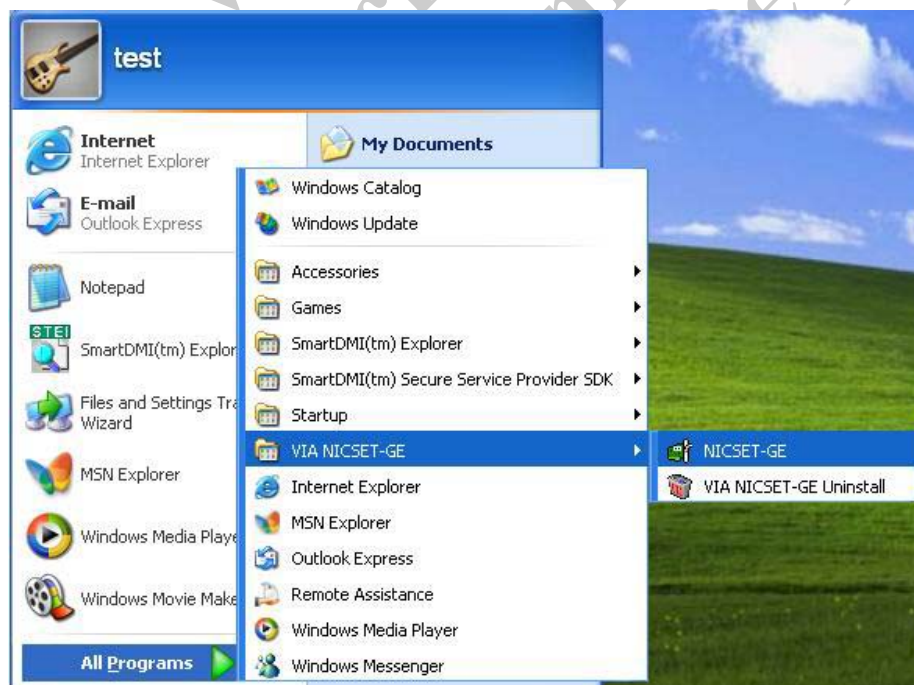
Despite of double click on the icon to launch NICSET-GE, NICSET-GE also provide a right click menu to launch itself and to enable auto run at the start up of windows



3.2 Control Panel Shortcut



3.3 Program File Shortcut



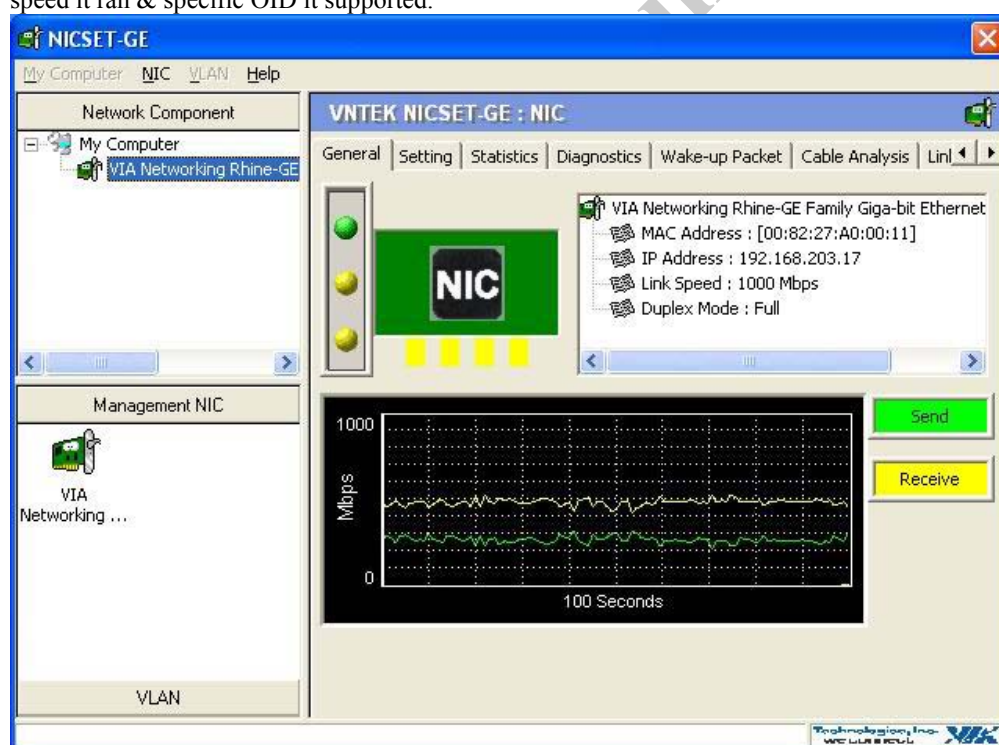
4 Basic Feature

The Basic Feature covered the general information, advance properties setting and historical statistics data of the network adapter.

4.1 General Page

The General Page shows the basic information of the adapter such as IP Address/MAC Address/Link Speed/Duplex Mode. And the current/historical network activities as well.

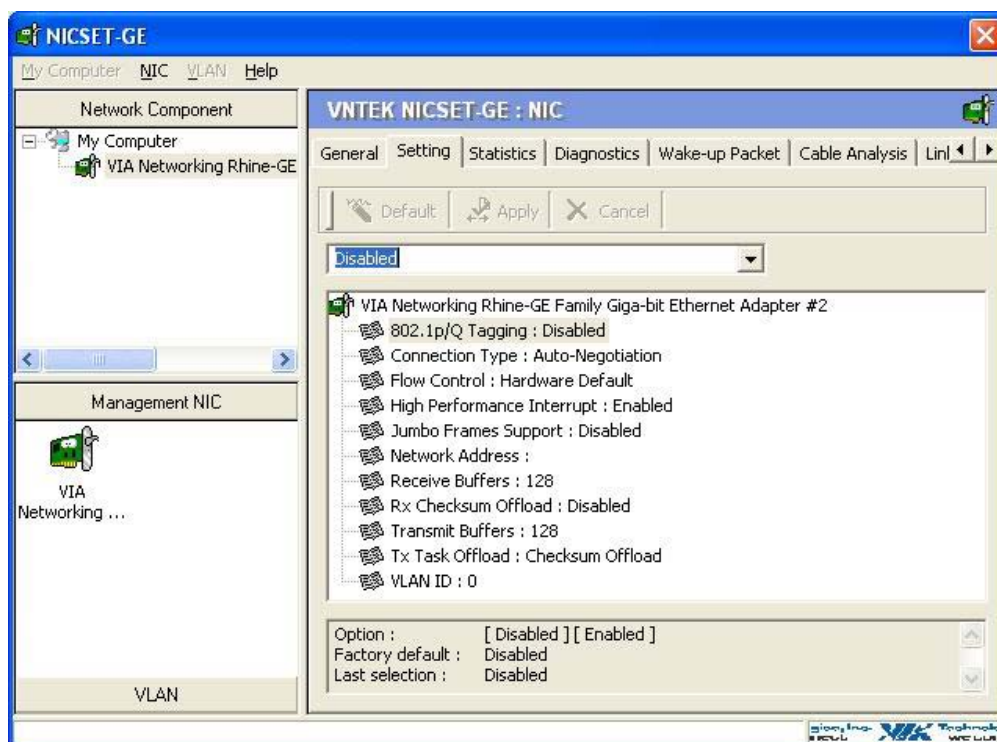
The diagram in the below of General Page will show the continuous historical 100 seconds network utilization of Send/Receive in green/yellow line. And the scale/unit of X-axis will change dynamically depended on which speed it ran & specific OID it supported.



4.2 Setting Page

Instead of using Advance Properties Page embedded in Device Manager of Windows, NICSET-GE provide a more friendly interface to set value of properties of network adapter.

All possible setting will be listed on the bottom of this page. All of the changed could be done through the one click on button "Apply", and all default setting could be done through button "Default" as well.



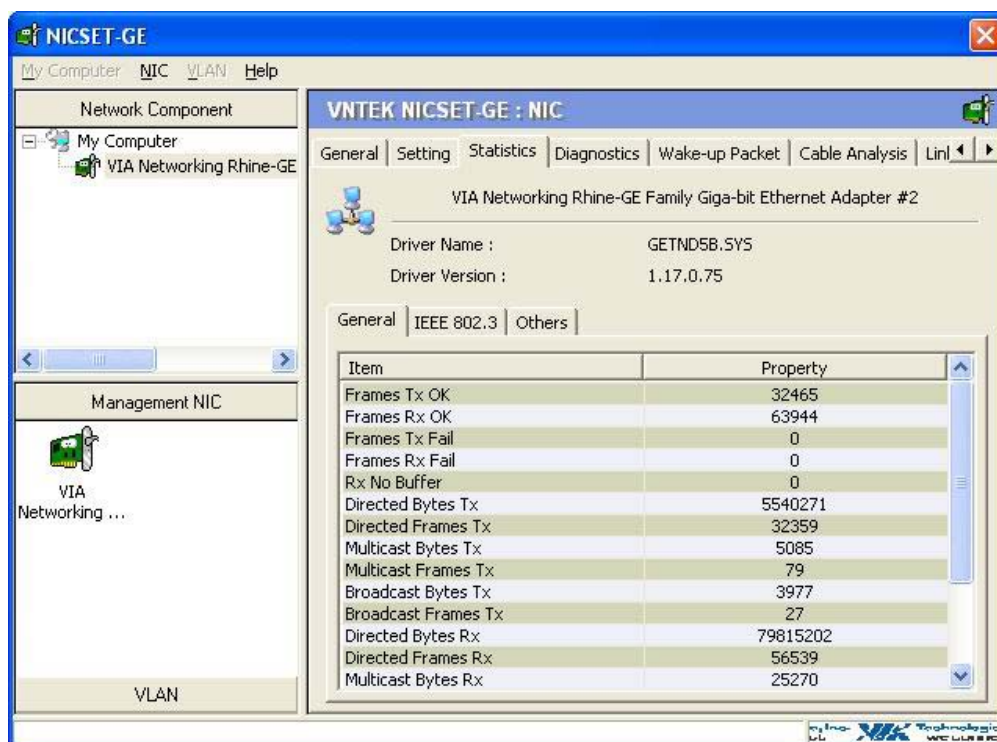
4.3 Statistics Page

Statistics Page contains the information about the current driver loaded for the network adapter. The adapter name, driver name and driver version:

It also contains three set of OID list to store the statistics information of the network adapter.

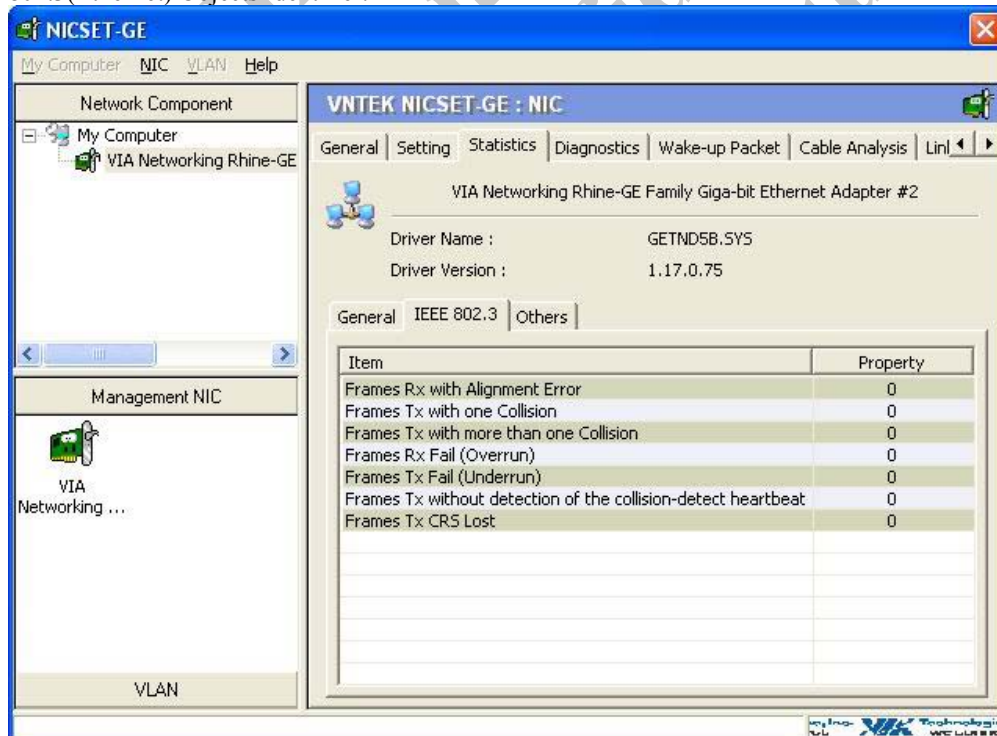
4.3.1 General OID List

General Objects Identifier:



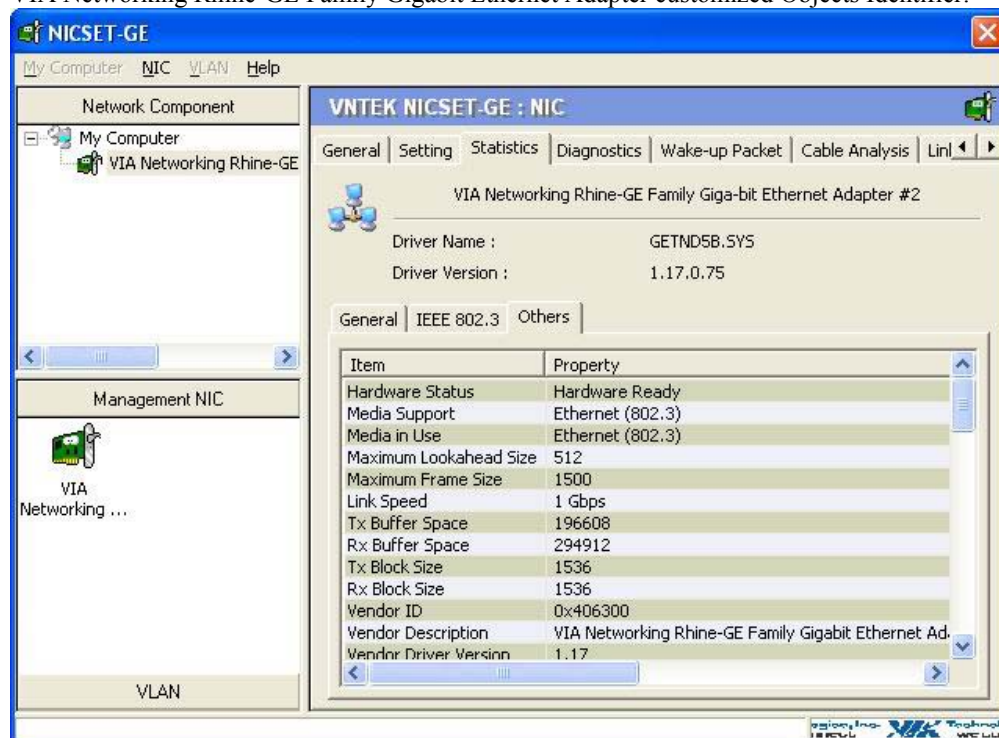
4.3.2 IEEE 802.3 OID List

802.3(Ethernet) Objects Identifier:



4.3.3 Customized OID List

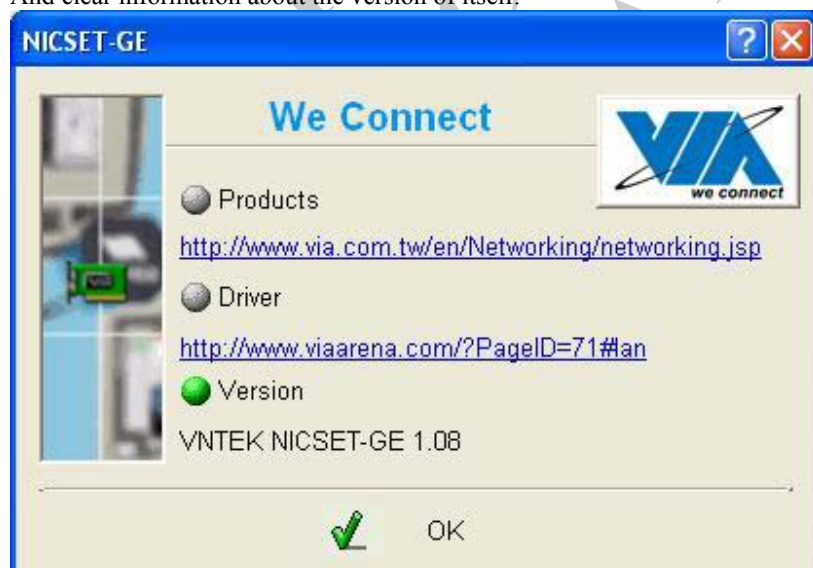
VIA Networking Rhine-GE Family Gigabit Ethernet Adapter customized Objects Identifier:



4.4 About Page

NICSET-GE provides information about company, product and driver. The text and bitmap is hyper links to the destination location.

And clear information about the version of itself.



5 Advance Feature

The Analytic Feature includes Cable Analysis & Link Analysis to retrieve the status & quality of signal over the cable as well as the physical status of cable.

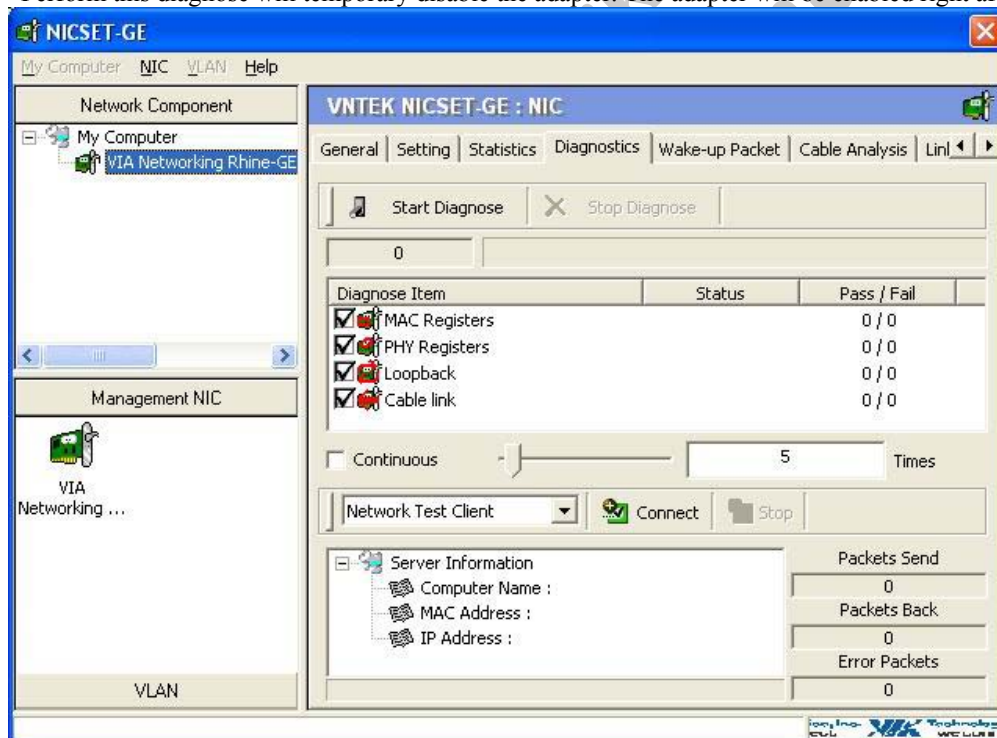
5.1 Diagnostic Page

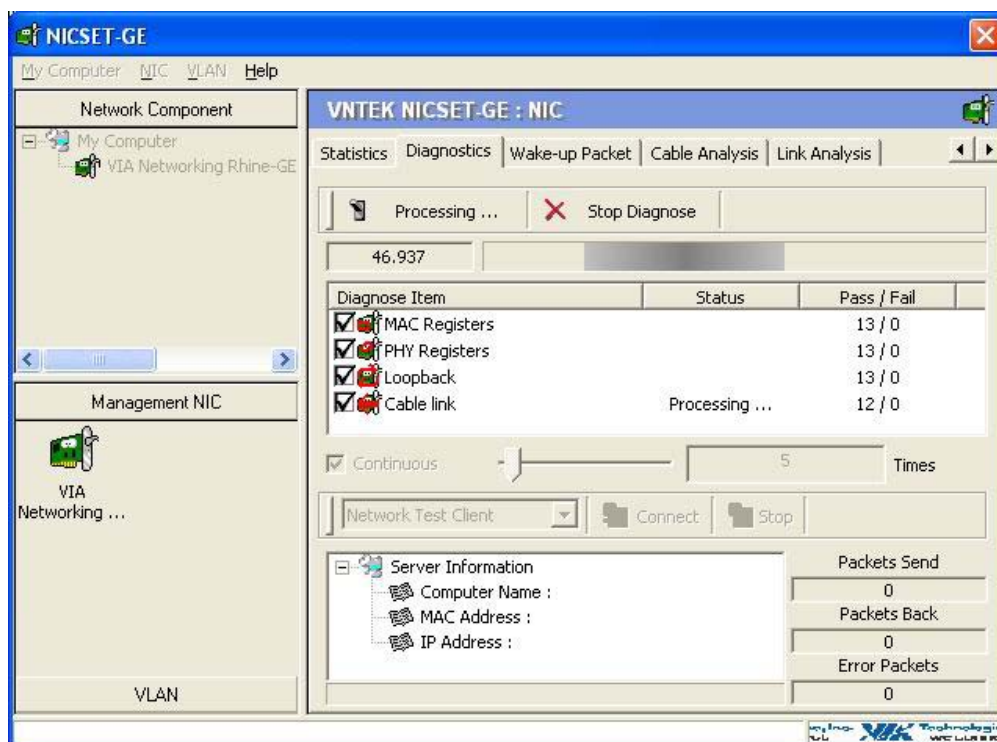
NICSET-GE provides some simple but useful test over the adapter and entire network. It can test the register in the adapter, is cable link or not and whether any two node in the network topology is connected or not.

5.1.1 NIC Diagnostic

This will perform overall simple test on the NIC, the test item covered MAC Registers/PHY Register/Loopback/Cable Link. The Continuous option can be set to do an infinite loop of test.

*Perform this diagnose will temporary disable the adapter. The adapter will be enabled right after the test.



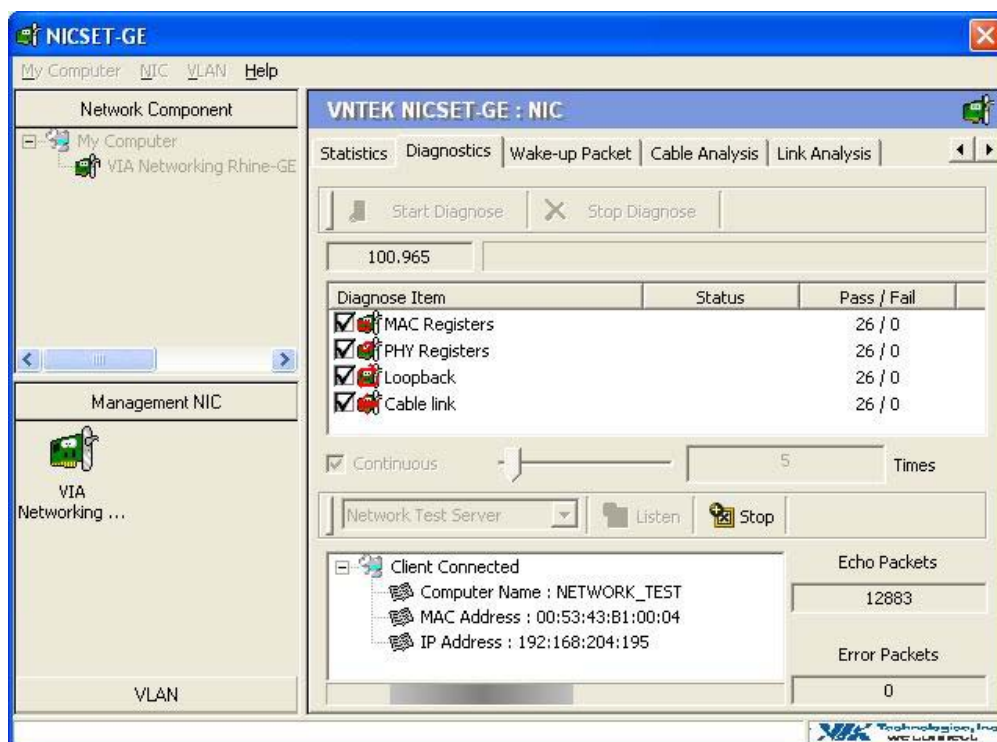


5.1.2 Network Test

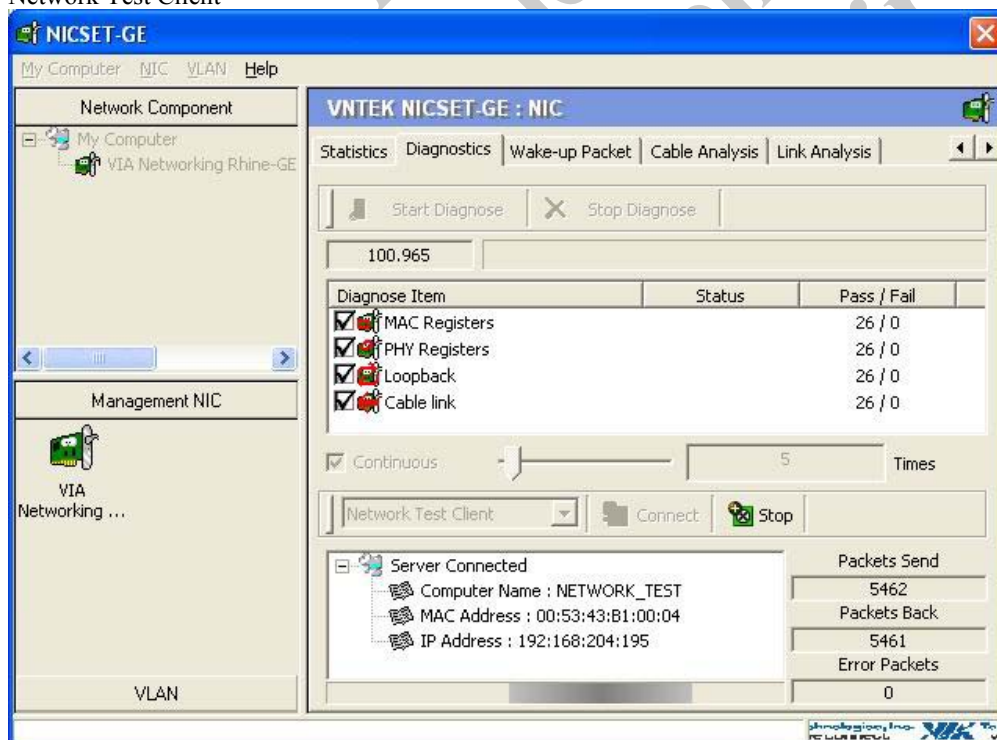
For the test of the link status of entire network, any two of computers on the same subnet can be picked to test the link between those two nodes.

To perform Network Test, NICSET-GE should be installed on two machines respectively. Then one played as Server that does listening and another as client that does connecting.

Network Test Server



Network Test Client



5.2 Wake-up Packet Page

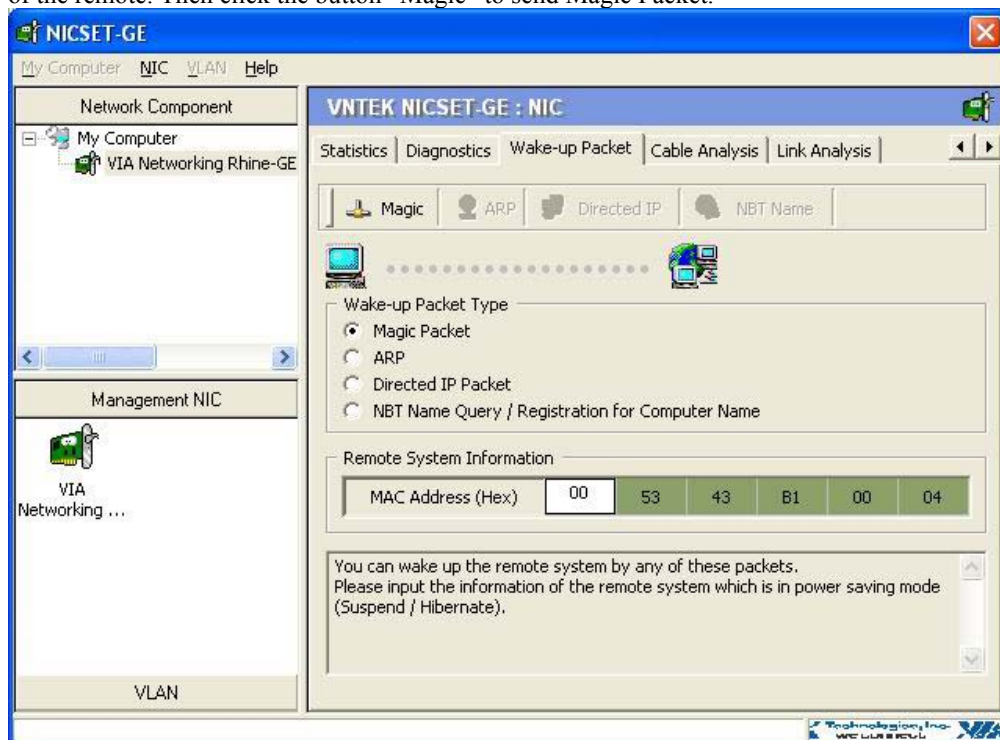
NICSET-GE support 4 kind of Wake on LAN method, each is Magic packet, ARP, Direct IP, NBT. Which can bring remote machine up from suspend/hibernate mode if there is WOL support on remote machine.

*For operation system to support Wake in LAN event, the option on advance property page of network adapter to enable adapter to wake up the system should be open.

Network Adapter→Properties→Power Management→Allow this device to bring this computer out of standby.

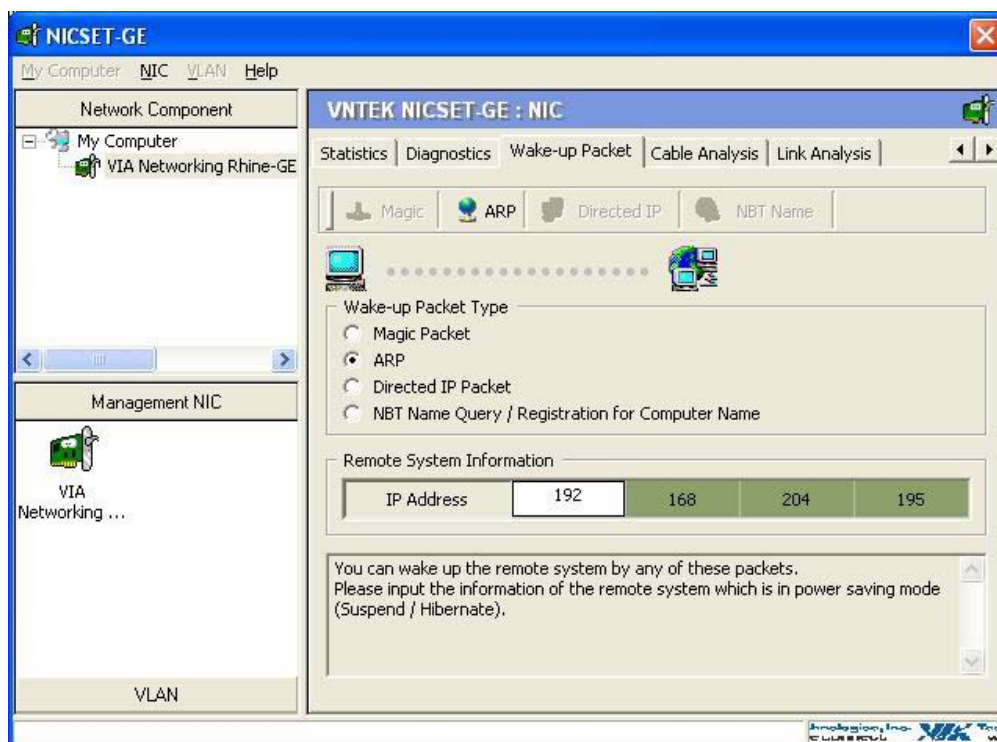
5.2.1 Magic Packet

To wake remote machine by Magic Packet. Click the radio button of Magic Packet, and enter the MAC address of the remote. Then click the button “Magic” to send Magic Packet.



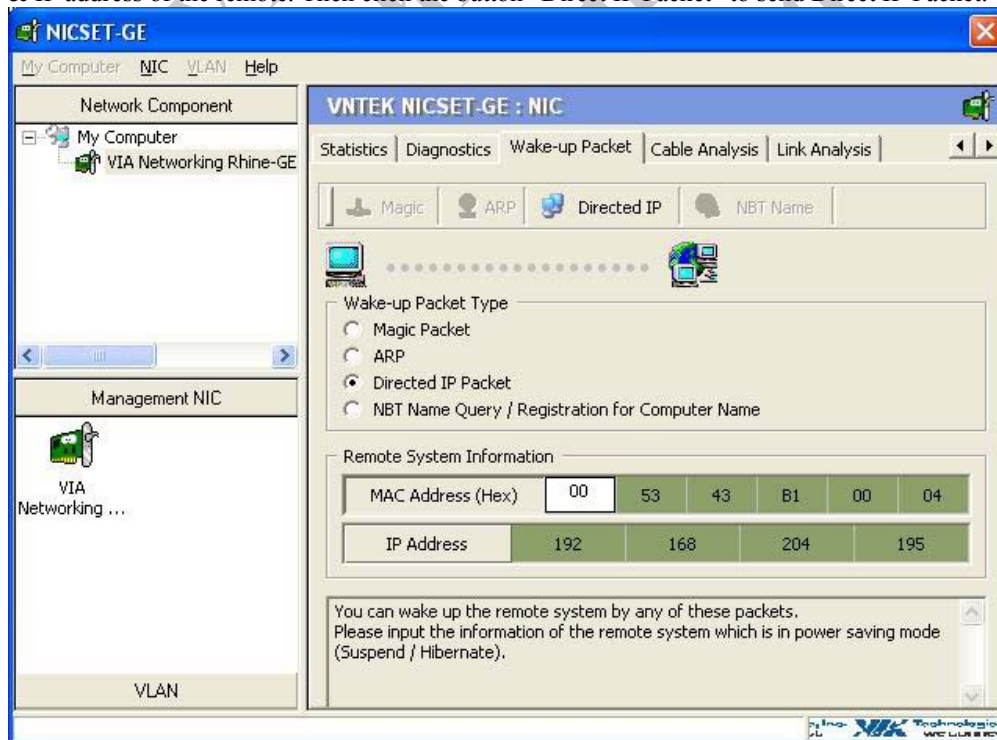
5.2.2 ARP Packet

To wake remote machine by ARP Packet. Click the radio button of ARP, and enter the IP address of the remote. Then click the button “ARP” to send ARP Packet.



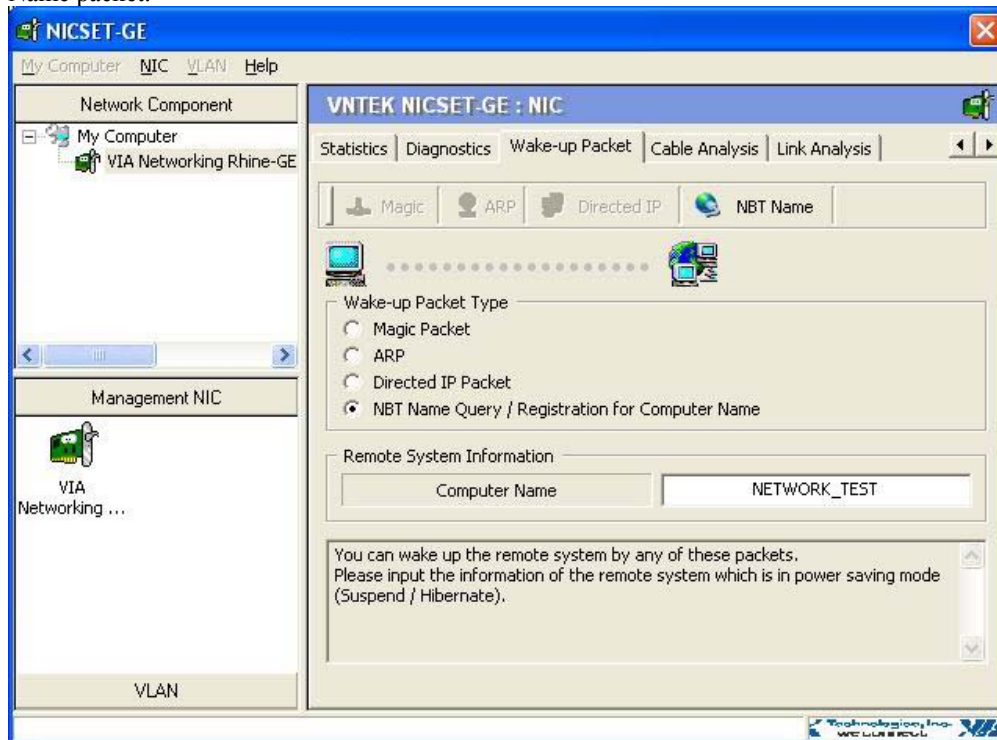
5.2.3 Direct IP Packet

To wake remote machine by Direct IP Packet. Click the radio button of Directed IP Packet, and enter the MAC & IP address of the remote. Then click the button “Direct IP Packet” to send Direct IP Packet.



5.2.4 NBT Name Query/Registration for Computer Name

To wake remote machine by NBT Name Packet. Click the radio button of NBT Name Query/Registration for Computer Name, and enter the computer name of the remote. Then click the button “NBT Name” to send NBT Name packet.



6 Analytic Feature

The Analytic Feature includes Cable Analysis & Link Analysis to retrieve the status & quality of signal over the cable as well as the physical status of cable.

6.1 Cable Analysis Page

Cable Analysis page can perform three kind analyses on data loss for each wire pair:

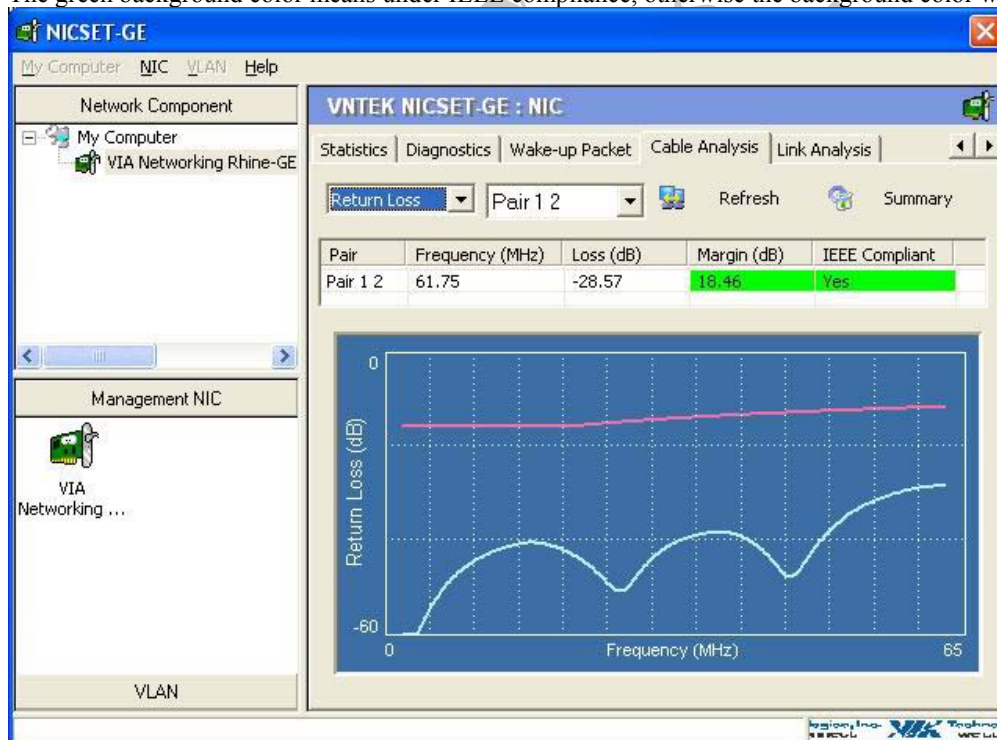
- Cable Loss
- Return Loss
- Next Loss

Light blue Line: Actual measured value.

Pink Line: IEEE Standard Limit.

The data of edge point will be listed on the page which included its Frequency, measured value of data loss, the margin compared to standard limit and if the measured value is IEEE compliant or not.

The green background color means under IEEE compliance, otherwise the background color will be in red.



6.2 Link Analysis Page

Link Analysis page would perform miscellaneous analyses include:

- Link Quality

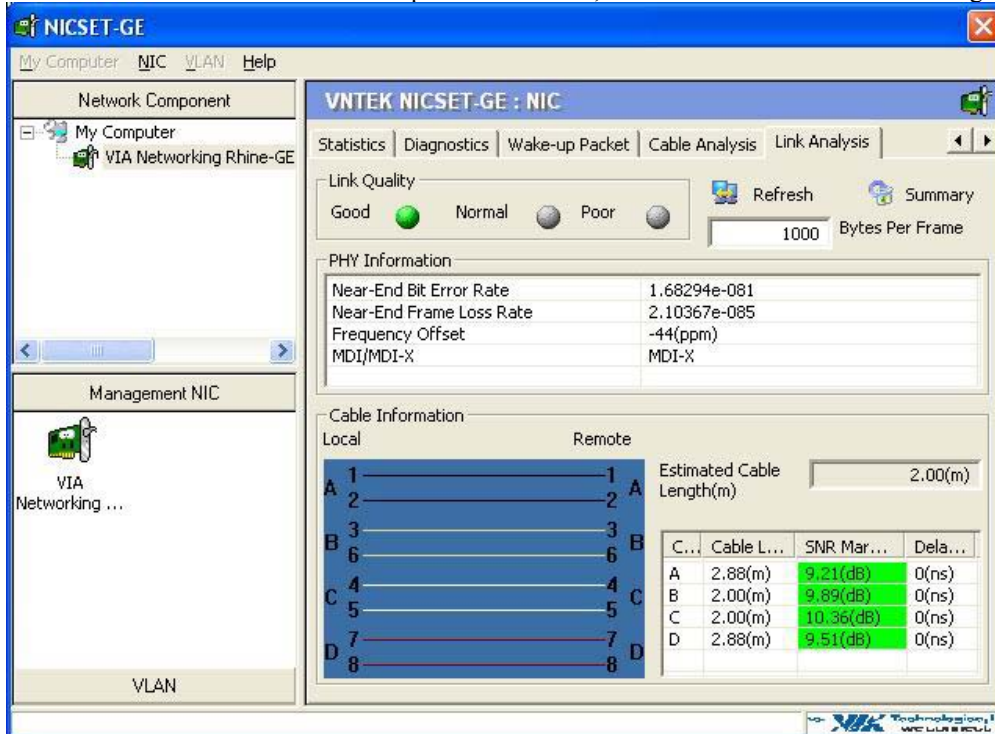
The Green light will detect the quality of network and set the status to Good/Normal/Poor depended on the quality so far.

- PHY Information

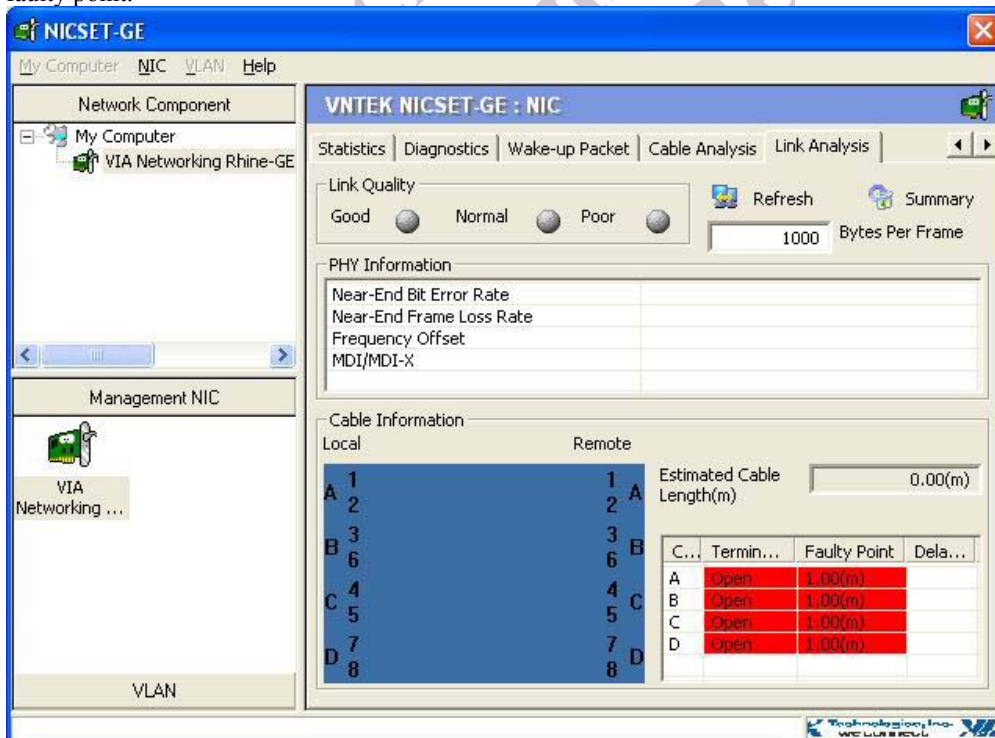
PHY Information gets MDI status and retrieve Near-End Error Rate depended on the number Bytes Per Frame.

■ Cable Information

Cable Information shows the wired map of each channel, and estimate the current Cable Length.



Cable Information will still function even the link is down, it will show the termination status and the distance of faulty point.



6.3 Summary Page

In order to get the summary data of both Cable & Link Analysis, the summary button in each page can retrieve Cable & Link diagnostic and show the outline of Analysis

The image shows a software dialog box titled "Analysis Summary". It contains two main sections: "Cable Diagnostic" and "Link Diagnostic". Each section has three data fields with their respective values. At the bottom, there is a green checkmark icon and an "OK" button.

Cable Diagnostic	
Minimum Cable Loss Margin(dB)	2.26
Minimum Return Loss Margin(dB)	14.53
Minimum Next Loss Margin(dB)	0.41

Link Diagnostic	
Near-End Bit Error Rate	1.6e-088
Estimated Cable Length(m)	2.88
Minimum SNR Margin(dB)	9.13

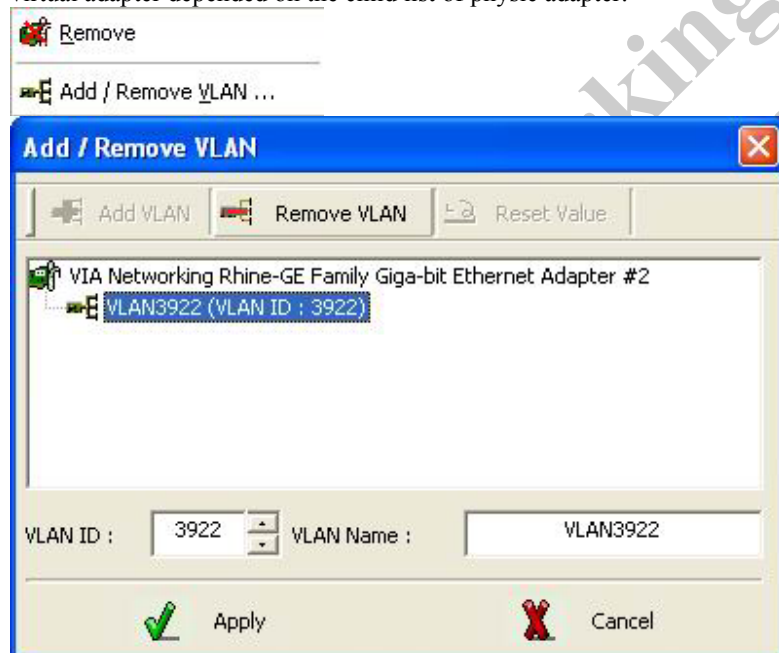
At the bottom of the dialog box, there is a green checkmark icon and the text "OK".

7 Management Feature

VIA Networking Rhine-GE Family Gigabit Ethernet Adapter support Virtual Adapter (VLAN). And the number was up to 64. Right click on Management NIC or NIC button on toolbar to perform this function.

7.1 Virtual Adapter (VLAN) Page

The add/remove VLAN dialog can help to add or remove multiple virtual adapters at one time. Just add/remove virtual adapters to/from the child list of physic adapter, then click button Apply. NICSET-GE will add/remove virtual adapter depended on the child list of physic adapter.



The properties of VLAN could be changed after creation. Change VLAN Properties dialog could help to change VLAN ID & VLAN Name in runtime.

