

**Exhibit E**

**User's Manual**

**SILICON INTEGRATED SYSTEMS CORP.**

**FCC ID.: K4N70167014DAQ**

**FAST ETHERNET NIC**



# **SiS7016/7014 10/100Mbps Fast Ethernet NIC**

## **User's Manual**

Preliminary

Revision 1.0

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Silicon Integrated Systems Corp.

This specification is subject to change without notice.



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## FCC INFORMATION

The equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user should not modify or change this equipment without written approval from Silicon Integrated Systems Corporation. Modification could void authority to use this equipment.



## 1. INTRODUCTION

SiS is introducing CMOS 100Mbps Fast Ethernet solution to market. SiS7016 Fast Ethernet NIC is fully compliant with IEEE 802.3 10Base-T and IEEE 802.3 100Base-TX standards. The SiS7016 fully implements the PCI version 2.1 bus interface for host communications. Packet descriptors and data are transferred via bus-mastering, reducing the burden on the host CPU. The SiS7016 supports both half duplex and full duplex operation within minimum interframe gap and IEEE802.3x flow control.

In order to meet the PC 98 and the Green PC power saving requirements, the SiS7016 Fast Ethernet NIC supports ACPI and Network Device Class Power Management specification. All the device states of D0, D1, D2, D3hot, and D3cold are implemented in the SiS7016. The SiS7016 also supports Remote Wake On LAN and OnNow for the Desktop PC management.

And for standardizing the process of removing and installing the PCI adapter cards while the system is running, the SiS7016 supports PCI Hot-Plug specification for this purpose.



### 1.1 Features

1. SiS7016 Fast Ethernet PCI Bus 10/100Mbps LAN Controller
2. SiS7014 single chip 100Base-TX/10Base-T Physical Layer solution
3. IEEE 802.3 and 802.3u standard compatible
4. IEEE 802.3u Auto Negotiation and Parallel detection for automatic speed selection
5. Full duplex and half duplex mode for both 10 and 100 Mbps
6. Fully compatible with PC98, ACPI, OnNow, Flow Control (ANTC), and PCI Bus Power Management Interface 1.0 specifications
7. Support Wake-On-LAN function
8. Support 256KB Boot ROM interface
9. .35µm process and 3.3 V operation voltage ensure low power consumption
10. No external memory and TTL required
11. LED outputs -Link/ -Activity/ -Collision/ -Full Duplex/ -10/100
12. Full range drivers support



## 2. INSTALLATION

This section describes how to install the adapter card. To be connected to a network, you must have the following:

1. Network adapter card installed to your computer
2. Cabling (compatible with network topology)
3. Software for the adapter card containing both configuration and driver

### 2.1 Install NIC

**Caution:**

Under ordinary circumstances, this adapter card will not be affected by static charge as may be received through your body during handling of the unit. In special circumstances where you may carry any extraordinary high static charge, it is good practice to reduce the charge by touching a ground before handling the adapter card.

1. Turn off the computer and unplug its power cord.
2. Remove the computer's cover.
3. Insert the contact edge of the card into the connector of any available PCI Bus master expansion slot. Press the card firmly into the connector to PCI slot. Please make sure that the card's contacts are fully seated in the PCI slot.
4. Install the bracket screw that secures the card to the computer chassis.
5. Replace the computer's cover.
6. Connect the CAT3 or CAT5 UTP cable to the RJ45 network connector.
7. Remove Drivers diskette from the PC disk drive.
8. Reconnect the computer's power cord, and switch computer power on.
9. If the BIOS section of your computer's boot program is Plug and Play compliant, then at power-



up the BIOS will configure any newly installed NIC automatically.

## 2.2 Connect Fast Ethernet

Category 5 UTP cable is required for Fast Ethernet operation. The maximum cable run between the adapter and the supporting hub is 100 m. Make the network connection by plugging one end of the cable into the RJ-45 receptacle of the adapter, and the other end into a port of the hub.

## 2.3 Connect 10Mbps Ethernet

Category 3, Category 4, and Category 5 UTP cable all qualify under Ethernet cabling rules. The maximum cable run between this adapter and the supporting hub is 100 m. Make the network connection by plugging one end of the cable into the RJ-45 receptacle of this adapter, and the other end into a port of the hub.

## 2.4 Drivers and Utilities Diskette

The Drivers diskette contains the following network OS drivers.

- \* **NDIS 4.0** Windows NT 4.0, Win98, Win95 OSR2
- \* **NDIS 3.0** Win95, Windows for Workgroup 3.11
- \* **NDIS 2.0** DOS, OS/2
- \* **Netware 4.x** (Server)
- \* **Netware 3.12** (Server)
- \* **DOS ODI16** (for Client 32)
- \* **ODI32** (for Client 32)
- \* **Packet Driver**
- \* **SCO UNIX** (Open Server 5.0)
- \* **Diagnostic**
- \* **Serial EPROM Programming Tool**
- \* **ReadMe** (Installation Guide)
- \* **NDIS 5.0**



## 2.5 Software Installation

The NIC may be installed in many network environments, you can run “install.exe” for the help about the frequency of revisions in those network systems, and the instructions for each network software installation.

## 2.6 Installation for Win95

When you add the NIC after installing Win95, the Add New Hardware Wizard takes you step by step through the process of installing the hardware.

1. Please refer to this guide section 2.1 Install NIC procedures to install this card into your computer.
2. After Win95 reboot, the PCI Ethernet Controller will be found. Please press <Next> button.
3. Please type the location that contains driver files and press <OK> button to finish installation procedure.
4. Please refer to the other Win95 books for installation clients of network operating system, services and protocols. The network client enables computer to communicate with a specific network operating system. Each network server type from Novell, Microsoft, and others requires a client to be loaded to communicate with server from each of these vendors. The servers enable your computer to share your hard drive or printer with others on the network. The protocol defines how computers can find other computers and what rules they use to transfer data. The most popular protocols are IPX/SPX, TCP/IP, NetBEUI, and NetBIOS.

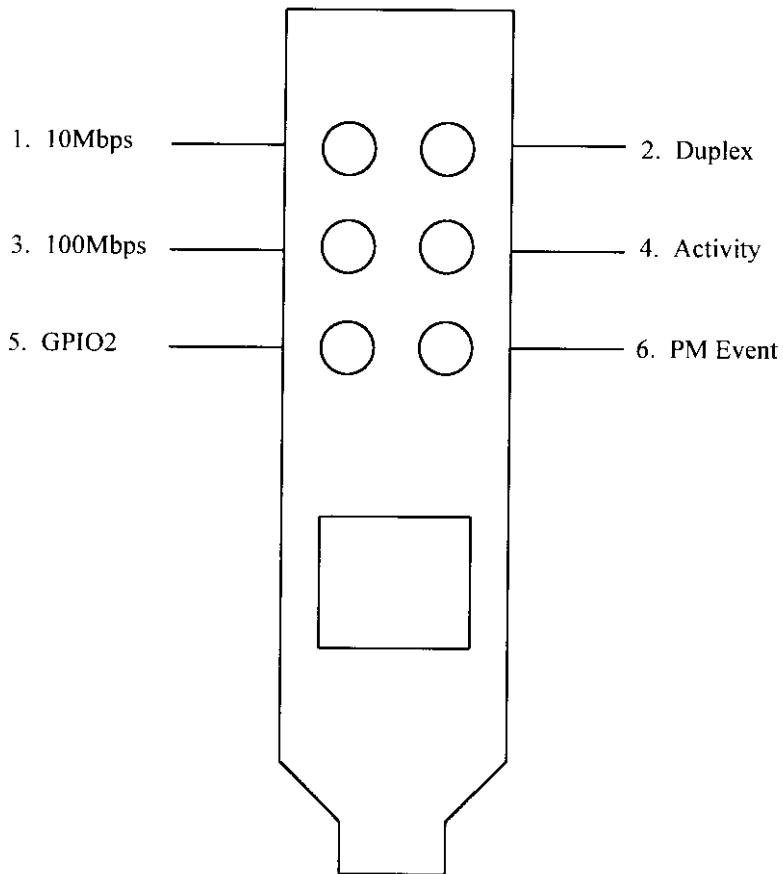


## 2.7 Test Program

This test program verifies configuration of the NIC as set by the installation procedure, and assists with isolation of any faults in operation. Test procedures are optional, and will only be useful in the unusual event that there is a fault, such as an interrupt number conflict among your computer's add-on cards. If your installation provides normal operation, you do not need these test procedures.

1. At your DOS prompt, type a:\install.exe and press <Enter>.
2. The opening screen of the installation screen will appear. The program's menus are listed at the top of the screen.
3. Use keys to select one item for your operation system. A highlight bar indicates which item is selected. Four options are available: EEPROM Utility, Install Info., Adapter Information, and Tests.
4. Select Install Info. and press <Return> key to begin extracting driver files to your hard disk driver.
5. Select Adapter Information to view information on Node ID, Bus Mode, Media Type, I/O Base Address, and Interrupt Number.
6. Select Tests to demo functions including Controller Loopbacks, External Loopbacks, Send Magic Packet, Send Wake-Up Frame, and Set Wake-Up Events.
7. Select quit to return to DOS mode.

## 2.8 LED Indicators



### LED Status Description

#	Reference	Component	LED Status	Description
1	10Mbps	Orange LED	On	Indicates operation at 10Mbps
2	Duplex	Green LED	On	Indicates full duplex operation
			Off	Indicates half duplex operation
3	100Mbps	Orange LED	On	Indicates operation at 100Mbps
4	Activity	Green LED	Blinking	Traffic is traversing the port TX or RX
5	GPIO2	Orange LED	On	Indicates operation in sleep mode
6	PM Event	Green LED	On	Indicates sending out of power management event



This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.