S2KONNECT

S2Konnect N-3010AVB

10/100/1000Base-T Adapter

PCI Express

User Manual

This manual refers to the S2Konnect N-3010AVB 10/100/1000Base-T Adapter with AVB ,
PCI Express x1, 1 x RJ-45.
Contents are subject to change without notice.

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If you have comments on this documentation, please send to:

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76275 Ettlingen / Germany

visit our web site: http://www.s2konnect.com

Conventions

The following conventions apply to this manual.

Warnings and Notes

Used to indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury. Example: dangerous voltage.

Used to indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. Example: electrostatic discharge.

Used for additional information and advice.

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Safety Precautions

To protect yourself from injuries and avoid damage of the device, always observe the following safety instructions when installing the network adapter.

Avoiding injuries

Electrical current!
Electrical current from power, phone, and communications cables can be hazardous.
Never touch any electrical elements with bare hands.

To avoid potential shock hazards:

- Do not carry out any installation, maintenance, or (re)configuration work during a thunderstorm.
- Do not connect or disconnect any power cables during a thunderstorm.
- For installation into systems which are supporting Hot-Plug and will be not disconnected from electrical power system read the relevant documentation first.
- Do not connect the network adapter to a telephone line.

Electrical installations must comply with the safety regulations of the country in which they are operated.

Avoiding damage

Electrostatic discharge!
Electrostatic discharge may damage or destroy the Network adapter.

To avoid damaging the S2Konnect N-3010AVB Network adapter observe the following:

- Switch off the computer.
- Disconnect the power cord from the power outlet.
- Remove the computer cover.
- Before installing the network adapter, put on an antistatic wrist strap (electrically conductive).
- Connect the wrist strap to the computer chassis
  Do not connect the wrist straps to the ground terminal of the power supply!
  Faulty wiring could make this terminal live and potentially lethal.
- When you are ready to install the network adapter, open the antistatic bag.
- Hold the antistatic packaging of the network adapter against the bracket of an expansion slot on your computer for at least two seconds.
  This reduces the static charge in the packaging and in your body.
  If you need to place the network adapter somewehre after removing it from the antistatic bag, make sure you place it on the antistatic bag and on a level surface.
  Do not place the network adapter on the computer cover or on any other metal surface.
- Cautiously insert the adapter into the corresponding slot.
  Do not touch any circuits on the network adapter or any of its port contacts.

In general, observe the following:

- Never use force when working with the network adapter or the PCI Express bus.
- Do not allow anyone else to touch the network adapter.
- Avoid unnecessary movement since this can increase electrostatic charge.

1   Introduction

Thank you for purchasing a S2Konnect product.

This document describes the installation of the network adapter card.
The N-3010AVB is a PCI Express adapter which must be installed in a PCI Express slot of the computer.
The adapter contains a Network chipset "Marvell 88E8059"

2   System requirements

Computer System:

The N-3010AVB adapter is a typical desktop adapter supporting high throughput of data.
You may utilize this adapter in any system supporting PCI Express bus with one Lane (PCIe x1).

Cable:

You must use minimum a Category 5 unshielded twisted pair cable for 100 MB/s or Gigabit (1000 MB/s) transfer rates.

3   Installation of the S2Konnect N-3010AVB Network Adapter

The installation procedure in Hot-Plug systems may differ from the following. For Hot-Plug systems, read the corresponding documentation. Have the computer manual ready and if necessary, a key and screwdriver to open the cover and remove the bracket.

To install the adapter in the computer, proceed as follows:

1.   Switch off the computer in wich the network adapter is to be installed.
2.   Disconnect the power cord from the power outlet.
     Observe the safety instructions (see page 7).
3.   Open the computer cover as described in your computer manual.
     You may need a screwdriver or similar tool to remove the screws from the cover.
     If you are installing a network adapter in a tower computer, we recommend to put the computer on its side in order to apply the correct force to insert the adapter into the PCI Express slot.
4.   Consult the section in your computer manual that describes how to install expansion cards.
5.   Locate a free PCI Express slot on the motherboard.

S2Konnect PCI Express adapters can be installed in x1, x4, x8 and x16 slots.

6.   Remove the bracket from the expansion slot (if applicable).
     Follow the instruction in your computer manual.
7.   Remove the network adapter from the antistatic bag.
     Observe the safety instructions (see page 7).
8.   Insert the network adapter into the PCI Express slot as described in your computer manual (also see figure 1 "Insertion of the adapter into the computer").
     Make sure the network adapter is correctly aligned with the PCI Express slot on the motherboard.
9.   Push the network adapter down vertically into the slot until it is firmly seated.
10. If available, tighten the locking screw on the fixing bracket until the adapter is firmly connected to the computer cover (or to the attachment provided for expansion cards).
11. Replace the computer cover.
12. Replace and tighten all screws.
13. Reconnect the power supply.
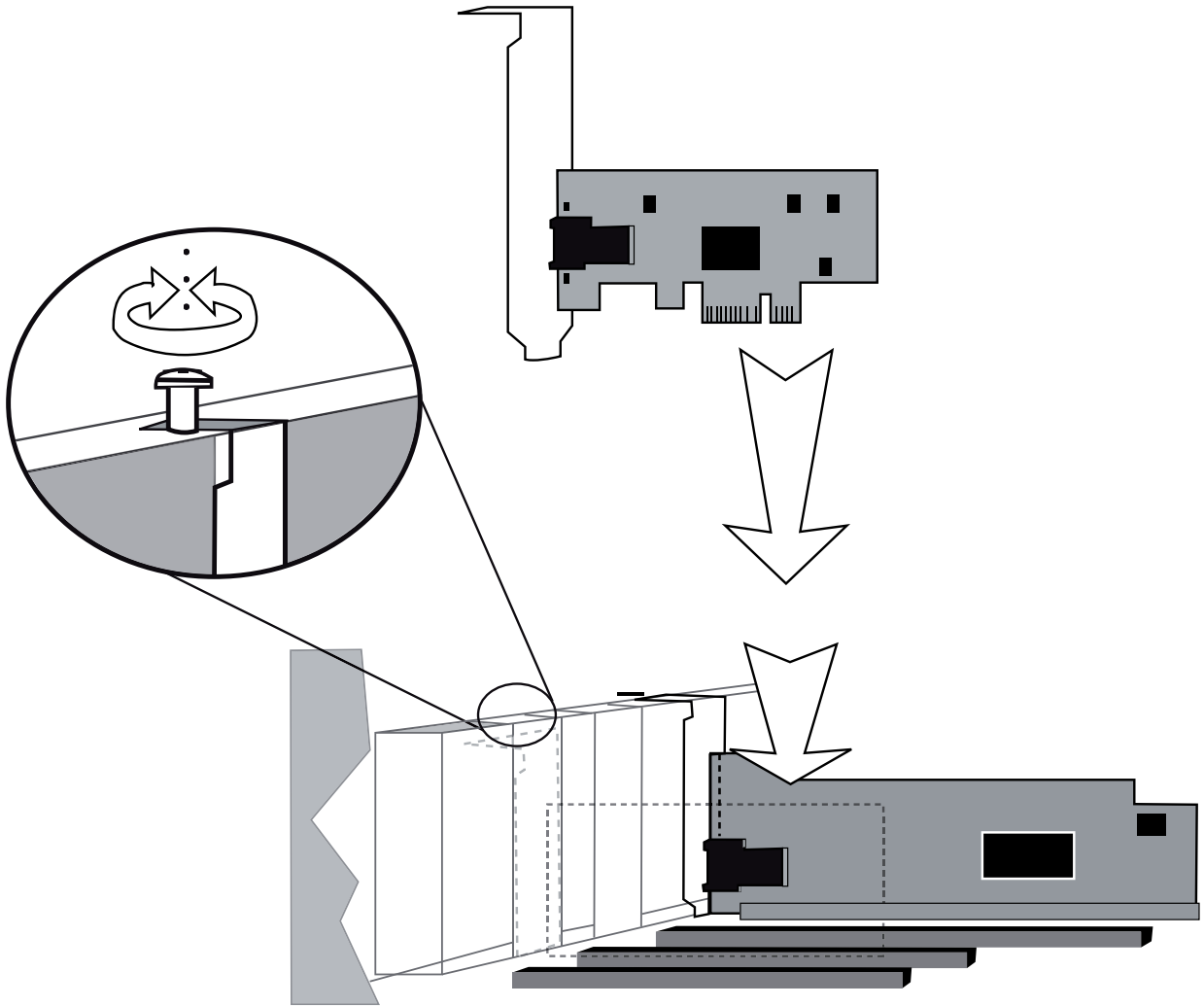   Observe the safety instructions (see page 7).

Figure 1. Insertion of the adapter into the computer

4 Connection of the Network Adapter

This chapter describes the physical connection of the S2Konnect N-3010AVB Network Adapter to a network.

Transmission Distances

The maximum transmission distance for the S2Konnect N-3010AVB 10/100/1000Base-T adapter, is 100m, you have to use a Category 5 unshielded twisted pair cable or better.

Connection to the Network

Observe the safety instructions given on page 7.

In order to connect the adapter to the network, proceed as follows:

1.   If necessary, configure the port on the switch to which the network adapter is to be connected (also see the switch manual).
2.   If possible, disconnect the switch and the computer from the power supply.
3.   At one end of the cable connect the RJ-45 connector to the port on the switch.
4.   At the other end of the cable connect the connector to the port on the network adapter. (see figure 2. "Connection of the RJ-45 cable/plug").
        The port type (e.g. 1000Base-T) on the network device and that on the switch must be identical.

ACT/LINK

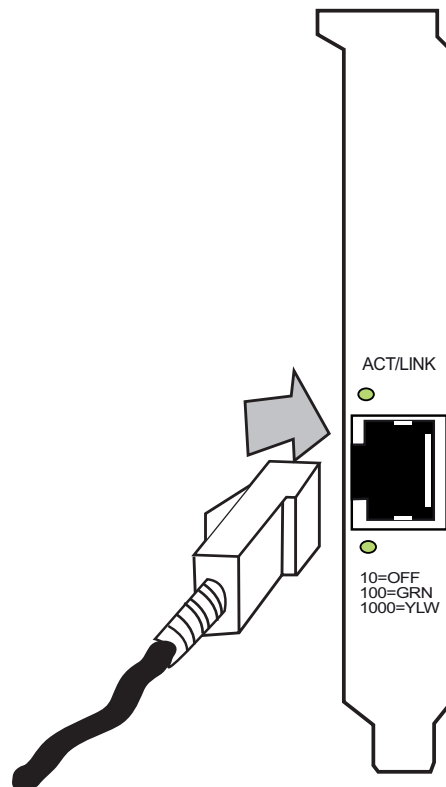10=OFF
100=GRN
1000=YLW

Figure 2. Connection of the RJ-45 cable/plug

5.   Turn on the computer and the Switch.
6.   Check the green link LED to find out if the cable is connected correctly.
            If the LED is on or blinking, the connection is established and active. Otherwise you have to check the network adapter more closely.

As soon as the connection to the network is etablished, the installation of the network adapter is complete. Keep this manual with your computer manual for future reference.

The network adapter will not be fully operational until suitable drivers are loaded. See how to install drivers for the operating system of your choice. Refer to drivers "Read me" or manuals for driver installation.

You will find a list of available drivers at: http://www.marvell.com

```
> SUPPORT >
> CHOOSE A PLATFORM >
> SEARCH >
> ACCEPT AND SUBMIT >
> DOWNLOAD THE ARCHIVE ON A ZIP FILE
```

The chipset you have to select is: "88E8059"

5   Hardware Features

The S2Konnect N-3010AVB 10/100/1000Base-T Adapter, PCI Express constitutes a follow-up model of the SK-9E21D Adapter family. It is compliant to the PCI Express 1.0a standard and supports a PCI Express single lane (x1).

For information about other S2Konnect network products, refer to the product overview on our web site: http://www.s2konnect.com.

Adapter Characteristics

The following table lists the characteristics of the S2Konnect N-3010AVB 10/100/1000Base-T Adapter, PCI Express.

	S2Konnect N-3010AVB 10/100/1000Base-T Adapter PCI Express
LAN interface	10/100/1000Base-T
Port	Single port
Connector	RJ-45
Media	Copper
Cable Type	Cat5

The type of port on the network adapter must be identical with that on the switch.

LED Displays

Once the driver has been installed, the adapter is operational. The current status and speed are indicated by the LEDs.

Figure 3. Location of the LEDs

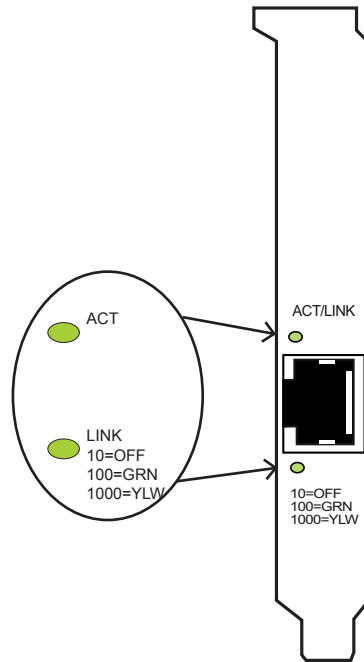The LEDs of the S2Konnect N-3010AVB 10/100/1000Base-T Adapter, PCI Express have the following meaning:

Marking on bracket	Color	Status	Description
ACT	green	Blinking	Link up and Receiving/Transmitting
10/100/1000		OFF	Speed 10 Mbit/s
	green	ON	Speed 100 Mbit/s
	yellow	ON	Speed 1000 Mbit/s

Link at 10 Mbit/s is shown only if ACTIVITY.

6   Software Features

Operating System Support

The drivers for the S2Konnect N-3010AVB 10/100/1000Base-T Adapters, PCI Express support the following operating systems:

- Windows NT 4.0, Windows 98 Second Edition, Windows Millennium Edition, Windows 7 Windows 2000, Windows XP, Windows Server 2003, Server 2008 and Windows Vista on 32-bit systems
- Linux kernel 2.4.13 and higher stable versions
- Novell NetWare 5.x and Novell Netware 6.x
- Novell Netware Client32 and Novell NetWare VLM Client for DOS[1]
- Sun Solaris 10 on 32-bit systems (x86) and 64-bit systems (x64)
- FreeBSD 6.0 on Intel x86 systems

The latest version of all available network drivers can be downloaded from the Marvell web site (see section "Driver download").

High Performance

The S2Konnect N-3010AVB 10/100/1000Base-T Adapters, are high performance and highly reliable adapters. They use the new PCI Express technology that offers increased bandwidth and extended capabilities over the conventional PCI bus.

TCP, UDP and IP Checksum Calculation

The S2Konnect N-3010AVB 10/100/1000Base-T adapters support the calculation of TCP, UDP, and IP checksums. These calculations are integrated in the hardware of the Gigabit Ethernet adapters. The checksums are calculated without time loss by the MAC controller for both receive and transmit path. This improves the overall performance of the system and shifts these CPU-intensive tasks away from the host CPU.

Jumbo Frames

The S2Konnect N-3010AVB 10/100/1000Base-T adapter, supports 9014 Byte Jumbo frames. They are tested according to the prevailing standard and switches on the market.

TCP Segmentation (Large Send Off-Load)

TCP Segmentation that is handled by the S2Konnect N-3010AVB 10/100/1000Base-T adapter, reduces CPU load significantly. This provides high throughput for superior network performance and improves application response.

Dynamic Interrupt Moderation

If the network is running at Gigabit speed and small packets are being transferred, there may in extreme cases be more than 100,000 interrupts per second. To reduce the load on the CPU, the Gigabit Ethernet adapters can use Interrupt Moderation to group these interrupts so that several data packets can be handled per interrupt.

For more information, refer to the White Paper "SK-NET GE Gigabit Ethernet Server Adapter", which can be found on the "SysKonnect" web site.

(*[1]) S2Konnect offers for these drivers no support

Promiscuous Mode / Multicast Support

The S2Konnect N-3010AVB 10/100/1000Base-T Adapters, supports Promiscuous Mode for analyzers. Promiscuous mode means that ail traffic received by the adapter is passed to the CPU and not only packets addressed to it. By default, the promiscuous mode is turned off. In addition, the adapters supports multicast (frames can be sent to more than one destination) for special applications, which use multicast addresses.

Alert Standard Format (ASF)

The S2Konnect N-3010AVB 10/100/1000Base-T Adapters fully support integrated ASF 2.0 *(Alert Standard Format)* functionality that enables monitoring and remote controlling of client systems that are in "Shut down" or "OS absent" states.

Possible usage scenarios for ASF are:
*   system's health monitoring *(e.g., voltage and temperature alerts)*
*   asset management *(e.g., Chassis intrusion alerts)*
*   remote management and control *(e.g., power down and system reset)*

PXE / RPL Support

The S2Konnect N-3010AVB 10/100/1000Base-T adapter, supports both the standard PXE 2.1 (Pre-Boot eXecution Environment) and the protocol RPL (Remote Program Load). This allows networked computers that are not yet loaded with an operating system to be configured and booted remotely by an administrator. PXE and RPL grant the advantage that client machines do not necessarily need an operating system or a hard disk and that they can be rebooted remotely in the event of hardware or software failures.

Boot Agent ROM

The Boot Agent ROM for S2Konnect N-3010AVB 10/100/1000Base-T adapter, comprises the boot protocols PXE and RPL, allowing the user to choose between both protocols during every boot. In addition, it includes a setup program where the user can define several default boot options.

Advanced Power Management / Wake on LAN

The S2Konnect N-3010AVB 10/100/1000Base-T Adapters, support power management as defined in the PCI Bus Power Management Interface Specification V1.1 and Network Device Class Power Management Reference Specification V2.0. The power management features are implemented according to the Advanced Configuration and Power Interface (ACPI) Specification V2.0.

The S2Konnect N-3010AVB Adapters utilize an auxiliary power supply to keep some parts running. This setting enables the network device to "Wake on LAN".

The Wake on LAN functionality uses three mechanisms to create a wake-up event:

- pattern match
  Incoming packets are compared to up to seven patterns stored in a pattern matching table. A match causes a wake-up event.
- Magic Packet™
  The incoming data stream is searched for a so-called magic packet frame that consists of 6 bytes of OxFF followed by 16 iterations of the adapter's MAC address, If this sequence is found, a wake-up event is created.
- link change

  Any change of the link status from "link down" to "link up" will cause a wake-up event.

Wake on LAN is supported by Windows 98 SE, Windows Me, Windows 2000, Windows XP, Windows Server 2003, and Windows Vista/Windows 7. For information on other operating systems supporting Wake on LAN, check the appropriate readme(s) on the Marvell web site.

Reliability

The S2Konnect N-3010AVB 10/100/1000Base-T adapter, PCI Express come with a variety of reliability features, They aim at maintaining a connection as long as possible. This is reached by redundant or grouped links (link aggregation).

The driver functions help to monitor the health of adapters and their ports enabling pro-active network management. The reliability features are described in the following sections.

Link Aggregation

Link aggregation or Trunking is a method of combining physical network links into a single logical link for increased bandwidth. With link aggregation, it is possible to increase the capacity and availability of the communications channel between devices (both switches and end stations) using existing Fast Ethernet and Gigabit Ethernet technology. Two or more Gigabit Ethernet connections are combined into a team in order to increase the bandwidth capability and to create resilient and redundant links. A set of multiple parallel physical links between two devices is grouped together to form a single logical link. Link aggregation offers an efficient and low-cost solution to increase bandwidth between server and switch. Another advantage it provides is that if a connection fails completely, the remaining links can take over the traffic and thus replace the broken line.

Link aggregation also provides load balancing where the processing and communications activity is distributed across several links so that no single link is overwhelmed.

By taking multiple LAN connections and treating them as a unified, aggregated link, practical benefits can be achieved in many applications.

Link aggregation provides the following important benefits:

- higher link availability
- increased link capacity
- improvements are obtained using existing hardware (no upgrading to higher-capacity link technology is necessary)

Demanding applications running in high-performance environments like servers in enterprises, web servers, and intra net servers gain particularly from the high-bandwidth and duplex capabilities of link aggregation.

All S2Konnect Gigabit Ethernet Adapters support link aggregation according to the IEEE standard 802.3ad. At the moment, Marvell provides a link aggregation driver for Windows 2000, Windows XP, Windows Server 2003, and Windows Vista, Windows 7. The drivers for Linux are able to support link aggregation according to the IEEE standard 802.3ad by installing third party open source modules. For details, refer to the corresponding readme file. In the future, link aggregation support according to IEEE 802.3ad will be implemented in S2Konnect drivers for other operating systems as well. For driver updates, refer to Marvell web site: http://www.marvell.com.

For more information on link aggregation, refer to the White Paper "Link Aggregation according to IEEE 802.3ad", which can be found on SysKonnect web site.

Hot-Plug

As a member of the PCI Special Interest Group, Marvell has a long experience in the standardization of the insertion and removal of PCI computer cards during normal operation. The S2Konnect N-3010AVB Adapters provide native Hot-Plug Support according to the PCI Express 1.0a and Advanced Configuration and Power Interface Specification Revision V2.0. Hot-Plug enables the replacement of failed devices in a running system.

The following conditions have to be met in order for Hot-Plug to work on S2Konnect Gigabit Ethernet Adapters:

- The target system has PCI Express Hot-Plug slots, i.e., the power can be switched on and off under the control of the operating system.
- The adapter is installed in one of the PCI Express Hot-Plug slots.
- The operating system supports PCI Express Hot-Plug on the target system.

The drivers for the following operating systems support PCI Express Hot-Plug:

- Windows 2000, Windows XP, Windows Server 2003, and Windows Vista, Windows 7.
- NetWare 4.20 and higher.
- Solaris 7 and higher.

Parity

The integrity of data that pass from the network through the system and back to the network is monitored by generating and checking parity information on all available data paths. All data errors are detected immediately and can be reported.

User Diagnostics (DOS and Windows)

The user diagnostics programs (available for DOS and Windows) provide users, system administrators, and engineers with profound tools to analyze the network adapter and check adapter-specific data.

Marvell Network Control (Windows)

Marvell offers a utility program for Windows 2000, Windows XP, and Windows Server 2003, Windows 7. The "Marvell Network Control" is part of the "Marvell Network Driver Installation Package" available for Windows 2000 XP/Server 2003/2008. With the "Marvell Network Control", all S2Konnect adapters can be controlled and configured. This tool displays the current configuration and status of the S2Konnect N-3010AVB Adapters.

Predominantly, the "Marvell Network Control" helps to perform the following tasks:

* configuration of the adapters and their corresponding ports
* monitoring of the status of the adapters installed
* establishment of VLANs
* building of teams (enabling of link aggregation according to IEEE 802.3ad)
* enabling of RLMT for dual port adapters
* monitoring of the voltage and temperature sensors

The "Marvell Network Control" is started from the Control Panel window: `START > SETTINGS > CONTROL PANEL > NETWORK CONTROL`.

The various tabs contain trees showing the currently installed adapters and their configuration:

* The "Adapter" tab displays the network adapters available in your system with their corresponding ports. It shows the ports which have been configured as VLANs, for RLMT, and those which have been aggregated Into a team.
  This tab only serves as an overview. For configuration, select one of the other tabs.
* The "Virtual LAN" tab lists all configured virtual LANs along with the corresponding ports and the ports which may be bound by VLANs.
  In this tab, the user can add, remove, and configure VLANs and set VLAN specific parameters.
* The "Team" tab shows all links or ports which may be aggregated in a team or have already been aggregated to form a team.
  In this tab, the user can add, remove, rename, and configure teams.
* The "RLMT" tab offers the possibility to configure dual port adapters for Redundant Link Management Technology (RLMT). RLMT monitors the status of both ports. If the link of the active port fails, RLMT automatically switches to the standby link, and the connection is maintained.
  In this tab, the user can add and remove RLMT to/from the ports and set RLMT specific parameters.
* The "Protocol" tab shows all entities (port, VLAN, RLMT, Team) and the protocols which have been bound to these entities.
* The "Power Management" tab shows the current power management settings of all installed adapters.
* The "Statistics" tab lists statistic values, e.g., Transmit Packet OK (XMIT OK).
* The "Sensors" tab shows the values of the voltage and temperature sensors (if available).
* The "Specifications" tab lists fixed values during operating time, such as Hardware Revision, Software version, Max. Frame Size.
* The "Support" tab provides information on how to reach the Marvell Technical Support.

When a component in the tree is selected, the corresponding parameters are displayed.
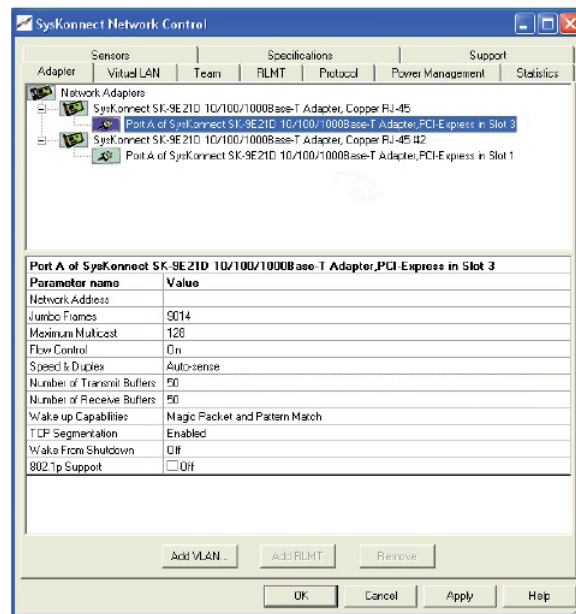

Figure 4. Adapter overview in "Marvell Network Control"

For more information on the „Marvell Network Control", refer to the online help available for this program (click the HELP button when the program is running).

Virtual LAN (VLAN) Support

A virtual LAN is a group of network devices that belong to the same network segment, regardless of the physical network structure. A logical network structure based on business requirements is possible. With virtual networks, physical location no longer specifies the network a user is assigned to: user clients with similar networking requirements can be united in one network group or VLAN. This VLAN can be established to meet a wide variety of organizational or technical needs. All members of a department can, for example, be gathered into a network group, even if they are distributed over several buildings. Colleagues working on the same project can be united in a common VLAN, even if they belong to different departments in, different buildings or even different locations. Other network groups can be made invisible to these users. Using virtual LANs can improve network performance, limit broadcast storms, minimize security problems, and ease the management task.

By means of Frame Tagging, the S2Konnect N-3010AVB 10/100/1000Base-T Adapters, can support up to 64 IP address assignments in a single network connection. Thus, multiple VLANs can be configured for one port. Stations can be accessed from systems in multiple IP subnets without traversing routers. Additionally, multiple application VLANs can be defined to isolate traffic for performance and security purposes. For this reason, the server can be physically connected to a single switch port but still belong to several VLANs. The Gigabit Ethernet adapter can receive tagged packets and is able to tag outgoing packets. The switch the adapter is connected to must support VLAN tagging according to IEEE 802.1q.

For several operating systems, Marvell offers drivers that support VLAN tagging and thus can be applied for VLAN servers and terminal units.
For more information on virtual LANs, refer to the White Paper "Virtual Networks", which can be found SysKonnect web site in the Download Center. Also see the corresponding readme files for the respective drivers.

7 Troubleshooting

Problem	What to do
Another expansion card fails to work after the network adapter has been installed	Make sure all cables are connected to the correct expansion cards. Make sure the expansion cards are correctly inserted. Check if any internal connections in the computer have been disengaged or have been damaged during the installation of the network adapter. Check for resource conflicts in the computer. Check PCI Express configuration and resource allocation.
The computer does not detect the network adapter	Make sure the adapter is properly seated in the computer. Try installing the adapter in a different PCI Express slot.
The computer adapter fails during a normal operation	Load or install the driver again.
Loopback test is successful but link LED does not light (no connection)	Check the connections and try another switch port if necessary. Is the switch port configured correctly? Is the network driver loaded? Is the maximum transmission distance exceeded (see section "Transmission Distances")?
LED for transmitting/ receiving data packets (ACT) is not illuminated	Make sure the network driver is loaded. Is there any network overload? Is the switch port configured correctly? Is the maximum transmission distance exceeded (see page 10)? If you have any other S2Konnect adapter installed, compare your setup with this adapter.

If the problem persists, you can analyze the status of the network adapter with the aid of the LEDs and the diagnostics programs.

8   Important Information

Technical Support

If you encounter any problems, read the relevant section of the manual. If you cannot solve your problems, consult our technical support.

If you contact our technical support engineers, have the following information ready:
- adapter type
- driver version
- operating system
- configuration of your computer
- type of cabling

Our support team can be reached following the instructions on our website.

Please go to: http://www.s2konnect.com, contact section.

Returning an Adapter for Repair

If you want to return a faulty product to S2Konnect, follow these steps:

1. Contact us by phone, fax, or e-mail.
   We will send you an RMA (Return Material Authorization) form by fax or e-mail.
2. Complete the form.
3. Return the form to us.
   We will send you a unique reference number and inform you if the product is still under warranty.
4. Send us the faulty product packed in an antistatic bag, with a copy of the completed form enclosed in its original packaging (or comparable packaging).
5. Write the reference number issued by S2Konnect clearly visible on the outer packaging.

S2Konnect cannot accept any returned product without an RMA number on the outer packaging. The warranty does not apply to products that have been damaged by electrostatic discharge or inadequate packaging
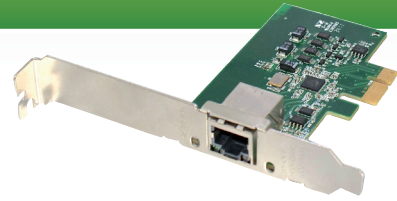
Additional Documentation and Updates

S2Konnect maintains a site on the World Wide Web where you can find the latest information on our product range and our customer support services. The latest drivers are provided on the Marvell web site.

To download the latest drivers from our web site, proceed as follows:

1. Visit the web site: http://www.marvell.com
2. Click the DOWNLOAD CENTER button.
3. In the field "Product", select the desired adapter. You need to know the chipset, see p. 11.
4. In the field "Type", select DRIVER.
5. In the field "System", select the desired operating system.
6. Click SEARCH.

A list of all available drivers matching your search is displayed.
7. In the outer right column of the line containing the desired driver, click DOWNLOAD.

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N-3010AVB - 10/100/1000Base-T Adapter with AVB, PCI Express x1, 1 x RJ-45

Product Highlights

- Audio Video Bridging support (AVB)
- Supports up to 64 VLANs
- WoL support and Smart Power Down
- TCP Segmentation (IPv4 and IPv6)

Features

- AVB support according to IEEE 802.1QAV
- Supports both AVB and non AVB queues
- Suports priority between non AVB high and low traffic
- Suports priority between AVB high and low traffic
- Supports up to six flow rates and two class rates for AVB traffic
- Precise Time Protocol (PTP) for IEEE 802.1AS and IEEE 1588
- Hardware VLAN TAG removal and insertion
- PCIe x1 with 2,5 GHz signalling
- Active state power management (L0s/L1) support
- Descriptor bursting and caching
- Auto MDI/MDIX crossover at all speeds
- Integrated auto-negotiation state machine
- Wake on Link
- Parity check on all data path
- TCP, UDP, and IP checksum generation and checking on chip
- Jumbo Frame support
- Dynamic Interrupt Moderation
- Advanced Power Management (ACPI)
- PCI Low Profile (Bracket included)

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N-3010AVB - 10/100/1000Base-T Adapter with AVB, PCI Express x1, 1 x RJ-45

Standard Compliance

- IEEE 802.3u (Ethernet and Fast Ethernet)
- IEEE 802.3ab and IEEE 802.3z (Gigabit Ethernet)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow control and Auto-negotiation)
- IEEE 802.1p (Quality of Service)
- IEEE 802.1q and IEEE 802.3ac (VLAN and VLAN tagging)
- IEEE 802.1QAV Audio Video Bridging

Driver

- X86 : Windows 7, Windows Vista, Windows XP, Windows 2000, Windows 2003 (.Net), NT4, Windows98 SE, ME
- x64 : Windows 7, Windows Vista, Windows XP, Windows 2003 (.Net)
- Solaris : SPARC 32:7,8,9
- Solaris : X64:10
- Linux : X86:Kernel 2.2, Kernel 2.4, Kernel 2.6
- NetWare : X86:4.2, 5.x, 6.x, DOS ODI
- Mac OS X : 10.2, 10.3, 10.4
- FreeBSD : X86:5.1, 5.2, 5.3, 5.4, 6.0

Boot Options

- Standard PXE 2.1 (Pre-Boot eXecution Environment)
- RPL (Remote Program Load)

Additional Software

- Marvell Virtual Cable Tester VCT

Safety Standard

- CSA, CB, CE

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N-3010AVB - 10/100/1000Base-T Adapter with AVB, PCI Express x1, 1 x RJ-45

EMC

- CE
- FCC

Environment Specifications

- Storage: -20°C to +70°C, 30% to 80% rel. humidity (non-condensing)
- Operating: -0°C to +50°C, 10% to 95% rel. humidity (non-condensing)

ROHs

- Compliant with EN 2002/95/EU

Power Consumption

- @ +3.3V / VCC max. 2.3 W
- @ 3.3V (aux): max 375 mA

Dimension

- 86.36 mm x 55.32 mm

Weight

- Weight : Unit 64 g; Packet 148 g

Warranty

- 2 years

Green Feature

- Advanced Power Management

Order numbers

- 100-000-100-102

Appendix A. License and Warranty Information
The Americas, Asia, Australia, New Zealand, Pacific

Dear Customer,

if you acquired your S2Konnect product in the UNITED STATES, CANADA or any other country in the AMERICAS, ASIA, AUSTRALIA, NEW ZEALAND, PACIFIC, the following license and purchase agreement applies to you.

This is a legal agreement between you, the end user and S2Konnect Incorporated in Ettlingen/Federal Republic of Germany.

S2Konnect GmbH. License and Purchase Agreement
By opening the sealed disk package and taking possession of the hardware, you are agreeing to be bound by the terms of this Agreement. If you do not agree to the terms of this Agreement, promptly return the unopened and unused disk package and hardware with the accompanying items (including all written materials and other accessories) to the place of purchase for a full refund.

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Hardware
S2Konnect GmbH warrants, that the hardware will be delivered free from defect and in working condition. S2Konnect GmbH does not assume liability for nor warrant damage to the hardware after delivery. S2Konnect also does not warrant total applicability for specific applications or customer network environments.

Limited Warranty for Hardware and Software
Limited Warranty
S2Konnect warrants that the SOFTWARE will perform substantially in accordance with the accompanying Product Manual(s) for a period of 90 days from the date of receipt.

S2Konnect warrants that NETWORK INTERFACE CARDS will be free from defects in materials and workmanship under normal use and service for a period of 2 years from the date of receipt, that NETWORK INFRASTRUCTURE COMPONENTS (e.g., hubs, Switches, concentrators) will be free from defects in materials and workmanship under normal use and service for a period of 2 years from the date of receipt, and other HARDWARE for a period of 6 months from the date of receipt respectively.

This warranty is given by S2Konnect as producer of the PRODUCT; possible legal warranty or liability claims against the dealer, whom you have acquired your SOFTWARE or HARDWARE product from, shall neither replaced by nor limited through this warranty.

Customer Remedies
S2Konnect's entire liability and your exclusive remedy shall be, at S2Konnect's option, either return of the price paid, or repair or replacement of the SOFTWARE or HARD-WARE that does not meet S2Konnect's Limited Warranty and which is returned to S2Konnect GmbH with a copy of your receipt. This Limited Warranty is void if failure of the SOFTWARE or HARDWARE has resulted from accident, abuse, or misapplication. Any replacement SOFTWARE will be warranted by S2Konnect GmbH only for the remainder of the original warranty period or 30 days, whichever is longer. Any replacement HARDWARE will be warranted for the remainder of the original warranty period or 6 months, whichever is longer.

No other Warranties
S2Konnect GmbH disclaims all other warranties or liabilities with respect to the SOFTWARE, the HARDWARE, the accompanying Product Manual(s) and other written materials and any other accessories.

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S2Konnect GmbH does not warrant the software and hardware for a specific application, nor does S2Konnect GmbH accept any consequential damages due to the use of the hardware or software. S2Konnect GmbH and its suppliers shall not be liable for any other damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information or data, property loss or other financial loss), arising out of the use of or the inability to use this S2Konnect GmbH product, even if S2Konnect GmbH has been advised of the possibility of such damages. In any case, S2Konnect's entire liability shall be limited to the amount actually paid by you for the product.

Other
This agreement is governed by the procedural and substantive laws of the State California, U.S.A.. UN Trade Laws shall not be applicable in any case.

Should individual stipulations of this Agreement be or become invalid, this invalid stipulation shall be replaced by a stipulation, which is as close as possible to the invalid stipulation.

Should you have any questions concerning this Agreement, or if you desire to contact S2Konnect GmbH for any reason, please use the address information enclosed in this product or write to: S2Konnect GmbH, Siemensstrasse 23, 76275 Ettlingen, Germany.

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Europe

Dear Customer,

if you acquired your S2Konnect product in EUROPE, the following license and purchase agreement applies to you: This is a legal agreement between you, the end user and S2Konnect GmbH, in Ettlingen/Federal Republic of Germany.

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By opening the sealed disk package and taking possession of the hardware, you are agreeing to be bound by the terms of this Agreement. If you do not agree to the terms of this Agreement, promptly return the unopened and unused disk package and hardware with the accompanying items (including all written materials and other accessories) to the place of purchase for a full refund.

Grant of Software License

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You may not rent or lease the SOFTWARE or HARDWARE, but you may transfer your rights under this S2Konnect License and Purchase Agreement on a permanent basis provided you transfer all copies of the SOFTWARE and all written materials, and the recipient agrees to the terms of this Agreement. You may not reverse engineer, decompile or disassemble the SOFTWARE. Any transfer must include the most recent update and all prior versions.

Hardware

The risk passes to you, the end user, upon taking possession (hand over) of the HARDWARE. Total qualities were not warranted.

Limited Warranty for Hardware and Software

Limited Warranty

S2Konnect warrants that the SOFTWARE will perform substantially in accordance with the accompanying Product Manual(s) for a period of 90 days from the date of receipt if you have created the required technical preconditions.

S2Konnect warrants that NETWORK INTERFACE CARDS will be free from defects in materials and workmanship under normal use and service for a period of 5 years from the date of receipt, that NETWORK INFRASTRUCTURE COMPONENTS (e.g., hubs, Switches, concentrators) will be free from defects in materials and workmanship under normal use and service for a period of 2 years from the date of receipt, and other HARDWARE for a period of 6 months from the date of receipt respectively.

Any implied warranties on the SOFTWARE are limited to 90 days, to 5 years on the NETWORK INTERFACE CARDS, to 2 years on the NETWORK INFRASTRUCTURE COMPONENTS and to 6 months on all other hardware. This warranty is given by S2Konnect as producer of the PRODUCT; possible legal warranty or liability claims against the dealer, whom you have acquired your SOFTWARE or HARDWARE product from, shall neither replaced by nor limited through this warranty.

Customer Remedies

S2Konnect's entire liability and your exclusive remedy shall be, at S2Konnect's option, either return of the price paid, or repair or replacement of the SOFTWARE or HARD-WARE that does not meet S2Konnect's Limited Warranty and which is returned to S2Konnect with a copy of your receipt. This Limited Warranty is void if failure of the SOFTWARE or HARDWARE has resulted from accident, abuse, or misapplication. Any replacement SOFTWARE will be warranted by S2Konnect only for the remainder of the original warranty period or 30 days, whichever is longer. Any replacement HARDWARE will be warranted for the remainder of the original warranty period or 6 months, whichever is longer.

No other Warranties

S2Konnect disclaims all other warranties or liabilities with respect to the SOFTWARE, the HARDWARE, the accompanying Product Manual(s) and other written materials and any other accessories.

No Liability for Consequential Damages

S2Konnect does not warrant the software and Hardware for a specific application, nor does S2Konnect accept any consequential damages due to the use of the hardware or software. S2Konnect and its suppliers shall not be liable for any other damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information or data, property loss or other pecuniary loss), arising out of the use of or the inability to use this S2Konnect product, even if S2Konnect has been advised of the possibility of such damages. In any case, S2Konnect's entire liability shall be limited to the amount actually paid by you for the product.

Other

This agreement is governed by the procedural and substantive laws of the Federal Republic of Germany. UN Trade Laws shall not be applicable in any case. Place of litigation is Karlsruhe, FRG, as far as this can be agreed upon operatively in this way.

Should individual stipulations of this Agreement be or become invalid, this invalid stipulation shall be replaced by a stipulation, which is as close as possible to the invalid stipulation.

Should you have any questions concerning this Agreement, or if you desire to contact S2Konnect for any reason, please use the address information enclosed in this product or write to: S2Konnect GmbH, Siemensstrasse 23, D-76275 Ettlingen, Germany.

Deutschland, Schweiz, Österreich, Liechtenstein

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Mit der Inbesitznahme (Übergabe) dieser Hardware geht die Gefahr auf Sie, den Endanwender über. Eigenschaften wurden nicht zugesichert.

Beschränkte Garantie für Hardware und Software

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