

eConnectivity Solutions

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Evolve to eConnectivity



Ethernet Data Gateways

The Ethernet data gateways enable RS-232/422/485 serial devices to be connected to a host computer over an Ethernet network quickly and cost-effectively. No extra programming effort is required at the host computer, so software development costs can be saved. Ethernet data gateways are especially suitable for remotely controlling and monitoring your serial devices via Ethernet.

RS-232/422/485 to Ethernet Universal Data Gateway

Universal Serial Device Gateways allow RS-232/422/485 serial devices to connect to Ethernet networks and operate as Ethernet nodes. Through TCP, UDP, IP, Socket or Winsock, Universal Serial Device Gateways can be used for different operating systems ranging from Microsoft Windows to Linux. Moreover, serial devices can use peer-to-peer communication without any intermediate host PCs and software programming to save costs and effort.

Modbus to Ethernet Data Gateway

The ADAM-4572 Modbus gateway serves as an interface between Modbus serial devices and computer hosts running Modbus/TCP on Ethernet networks. Fully compliant with Modbus/TCP, the ADAM-4572 offers a convenient solution to connect existing devices or controllers running Modbus serial protocol (Modbus/ASCII or Modbus/RTU) to an Ethernet network.

The Transparent Ethernet Data Gateway Board

The EDG-4100 is a cost effective network-enabled board module. It enables nearly any device to communicate over the Internet and shared networks, and it allows those devices to be remotely monitored, managed, and controlled. Thus, it is especially suitable for remote management and data accessibility for devices that normally can't connect to a network. This includes: factory machinery, security systems, heating and ventilation systems, lighting control system and Point-of-Sale devices.

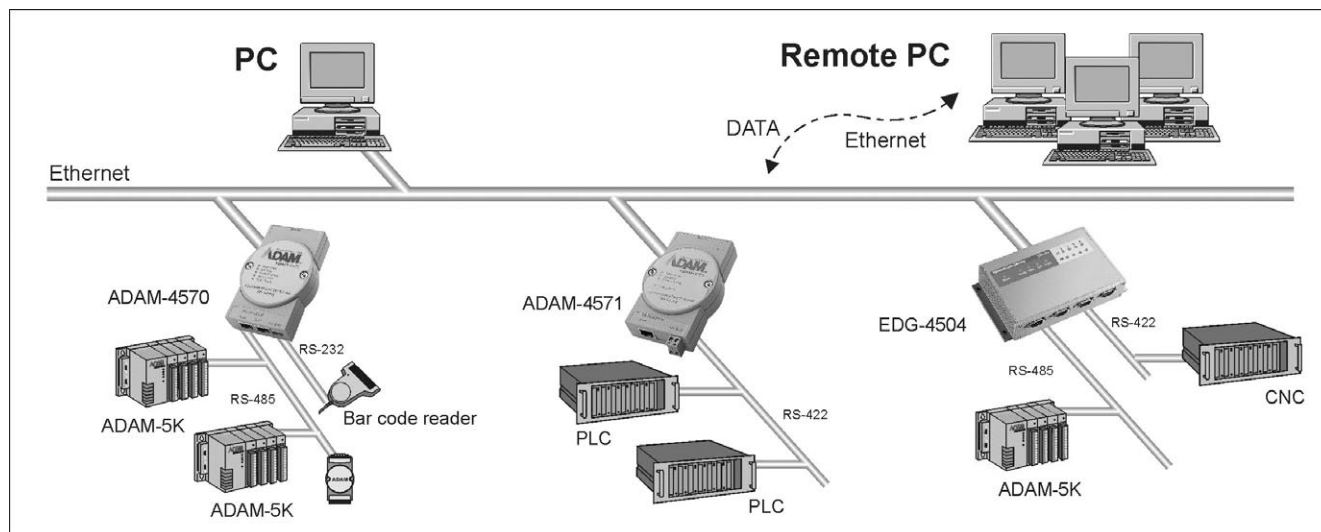
Introduction

As the world becomes more and more wired, it becomes critical to manage and connect devices. Advantech offers a comprehensive and cost-effective eConnectivity solution for easy installation and operation in critical industrial environments. This solution fulfills all requirements from worldwide enterprises that need supervisory control, operator interfaces, and logging of events and alarms via serial communication over Ethernet networks.

Advantech's eConnectivity solution is divided into five parts:

- Industrial-grade hubs and switches
- Ethernet media converters
- Ethernet data gateways
- Web-enabled communication controllers
- Serial media converters

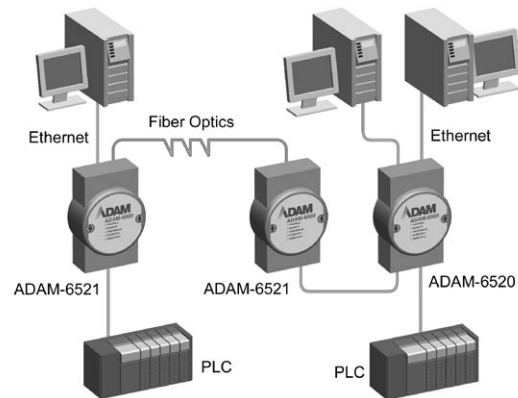
EDG System Architecture



Bring Your Devices to the eWorld

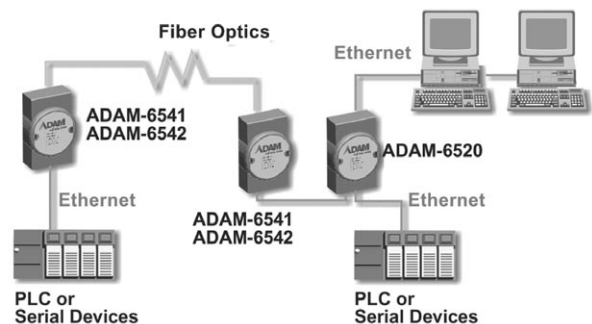
Industrial-Grade Hubs and Switches

The industrial-grade hubs and switches (ADAM-6510/6520/6521) are especially suitable for industrial environments with Ethernet networking needs, such as semiconductor factories, inventory control at warehouses, assembly lines and production. Use them to expand your industrial network fast and cost-effectively. The rugged industrial-grade design assures reliability and stability.



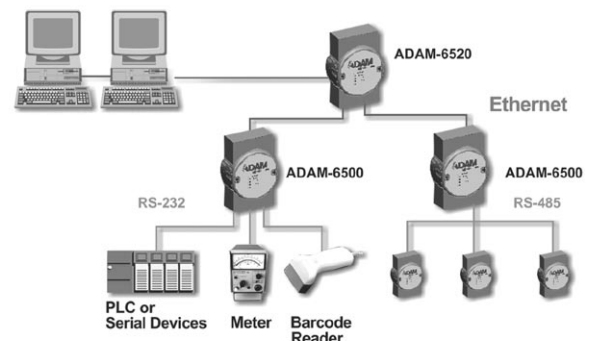
Ethernet Media Converters

The Ethernet media converters are designed to convert Ethernet network signals (10/100Base-TX) to fiber network signals (100Base-FX). They transparently convert Ethernet signals into optic signals. Fiber optic communication provides wide bandwidth and secure long-distance transmission without electromagnetic interference.



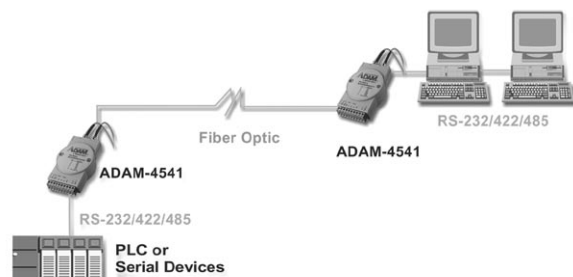
Web-enabled Communication Controllers

The Web-enabled communication controllers provide ideal environments to develop applications that handle RS-232/485 devices/equipment data for Ethernet/Internet. Advantech's web-enabled communication controllers: ADAM-6500 and ADAM-6501, with built-in Windows® CE .NET operating system, let you run new programs in Microsoft embedded VC++. The Windows environment also includes a web server to allow you to develop web-enabled applications. The result is a powerful solution for industrial automation and control.



Serial Media Converters

The Serial Media Converters provide conversion between serial networks and other media. They can transparently convert RS-232 signals to RS-422/485 signals, as well as wireless and fiber optic signals. The ADAM-4520 transparently converts RS-232 signals into RS-422 or RS-485 signals without changing a PC's hardware or software. The ADAM-4510S enables extension of serial network transmission. The ADAM-4541 can be used as a RS-232/422/485 point-to-point or point-to-multipoint connection for transmitting and converting full/half-duplex signals and their equivalents within a fiber optic environment.



- 1 Software
- 2 IP/PC
- 3 TPC
- 4 FPM
- 5 ATM & AWS
- 6 DA&C
- 7 cPCI
- 8 ADAM-3000
- 9 Motion Control
- 10 ICOM
- 11 eConnectivity
- 12 UNO
- 13 ADAM-4000
- 14 ADAM-5000
- 15 ADAM-6000
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Selection Guide

Ethernet Data Gateway Series

	Model Name	Interface	Ports	Serial Type	Transmission Speed	Surge Protection	Parity Bit	Data Bit
Ethernet Data Gateway	EDG-4100	10/100 Mbps Ethernet	1	RS-232	50 ~ 230 kbps	-	odd, even, none, space, mark	5,6,7,8
	EDG-4110	10/100 Mbps Ethernet	1	RS-422/485	50 ~ 230 kbps	-	odd, even, none, space, mark	5,6,7,8
	ADAM-4571	10/100 Mbps Ethernet	1	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	ADAM-4571L	10/100 Mbps Ethernet	1	RS-232	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	ADAM-4571S	10/100 Mbps Ethernet	1	RS-422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	ADAM-4570	10/100 Mbps Ethernet	2	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	ADAM-4570L	10/100 Mbps Ethernet	2	RS-232	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	ADAM-4570S	10/100 Mbps Ethernet	2	RS-422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	EDG-4504	10/100 Mbps Ethernet	4	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	EDG-4508+	10/100 Mbps Ethernet	8	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	EDG-4508R+	10/100 Mbps Ethernet	8	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	EDG-4516+	10/100 Mbps Ethernet	16	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	EDG-4516R+	10/100 Mbps Ethernet	16	RS-232/422/485	50 ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark	5,6,7,8
	ADAM-4572	10/100 Mbps Ethernet	1	RS-232/422/485	300 ~ 115.2 kbps	N/A	odd, even, none	7,8
Universal Serial Device Gateway	ADAM-4577	10 Mbps Ethernet	1	RS-232/422/485	30 ~ 230 kbps	N/A	odd, even, none, space, mark	5,6,7,8
	ADAM-4579	10/100 Mbps Ethernet	2	RS-232/422/485	30 ~ 230 kbps	N/A	odd, even, none, space, mark	5,6,7,8

Wireless Data Gateway

	Model Name	Interface	Ports	Serial Type	Speed	Surge Protection	Parity
Wireless Data Gateway	EDG-4100W	802.11b	1	RS-232	50 bps ~ 230 kbps	-	odd, even, none, space, mark
	EDG-4110W	802.11b	1	RS-422/485	50 bps ~ 230 kbps	-	odd, even, none, space, mark
	ADAM-4570W	802.11b	2	RS-232/422/485	50 bps ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark
	ADAM-4571W	802.11b	1	RS-232/422/485	50 bps ~ 230 kbps	15 K V _{ESD}	odd, even, none, space, mark

Ethernet Media Converters & Ethernet Hub/Switches

	Model Name	Interface	Ports	Connectors	Surge Protection	ESD Protection	Power Requirement	Operating Temperature
Ethernet Media Converters	ADAM-6541	10/100 Mbps 100 Mbps	1	1 x RJ-45 1 x Fiber	3000 V _{DC}	1500 V _{RMS}	10 ~ 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-6542/W15	10/100 Mbps 100 Mbps	1	1 x RJ-45 1 x Fiber WDM	3000 V _{DC}	1500 V _{RMS}	10 ~ 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-6542/W13	10/100 Mbps 100 Mbps	1	1 x RJ-45 1 x Fiber WDM	3000 V _{DC}	1500 V _{RMS}	10 ~ 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
Ethernet Hub	ADAM-6510	10 Mbps	4	4 x RJ-45 1 x RJ-45 (uplink)	3000 V _{DC}	-	10 ~ 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
Ethernet Switches	ADAM-6520	10/100 Mbps	5	5 x RJ-45	3000 V _{DC}	-	10 ~ 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-6521	10/100 Mbps 100 Mbps	5	4 x RJ-45 1 x Fiber	3000 V _{DC}	-	10 ~ 30 V _{DC}	0 ~ 65 °C (32 ~ 149 °F)
	EDG-6528	10/100 Mbps	8	8 x RJ-45	3000 V _{DC}	4000 V _{DC}	12 ~ 48 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	EDG-6528I	10/100 Mbps	8	8 x RJ-45	3000 V _{DC}	4000 V _{DC}	12 ~ 48 V _{DC}	-40 ~ 85 °C (-40 ~ 185 °F)
	EDG-6528M	10/100 Mbps	8	6 x RJ-45	3000 V _{DC}	4000 V _{DC}	12 ~ 48 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	EDG-6528S	100 Mbps	8	2 x Fiber	3000 V _{DC}	4000 V _{DC}	12 ~ 48 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)



Stop Bits	Software Utility Max @ 128 pcs serial-connection	Connectors		Drivers	Power Requirements	Operating Temperature
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45 or 4 pin header	Serial: 8 pin header	Windows 98/NT/2000/XP	+ 5 V _{DC} ± 5%	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45 or 6 pin header	Serial: 8 pin header	Windows® 98/NT/2000/XP	+ 5 V _{DC} ± 5%	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® 98/NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: DB9	Windows® 98/NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® 98/NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: DB-9	Windows® 98/NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 55 °C (32 ~ 131 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® 98/NT/2000/XP	90 ~ 260 V _{AC}	0 ~ 55 °C (32 ~ 131 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® 98/NT/2000/XP	90 ~ 260 V _{AC}	0 ~ 55 °C (32 ~ 131 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® 98/NT/2000/XP	90 ~ 260 V _{AC}	0 ~ 55 °C (32 ~ 131 °F)
1,1.5,2	Configuration/ Port Mapping	Network: RJ-45	Serial: RJ-48	Windows® 98/NT/2000/XP	90 ~ 260 V _{AC}	0 ~ 55 °C (32 ~ 131 °F)
1,2	Configuration	Network: Modbus/TCP	Modbus/Serial: Modbus/ ASCII, Modbus/RTU	Socket or WinSocket	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration	Network: RJ-45	Serial: DB9	Socket or WinSocket	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
1,1.5,2	Configuration	Network: RJ-45	Serial: RJ-48	Socket or WinSocket	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)

Data Bit	Stop Bit	Software Utility	Connector	Driver	Power Requirement	Operating Temperature
5,6,7,8	1,1.5,2	Configuration/ Port Mapping	Network: RJ-45 or 7 pin header Serial: 8 pin header	Windows® 98/NT/2000/XP	+ 5 V _{DC} ± 5%	0 ~ 60 °C (32 ~ 140 °F)
5,6,7,8	1,1.5,2	Configuration/ Port Mapping	Network: RJ-45 or 8 pin header	Windows® 98/NT/2000/XP	+ 5 V _{DC} ± 5%	0 ~ 60 °C (32 ~ 140 °F)
5,6,7,8	1,1.5,2	Configuration/ Port Mapping Max @ 128 pcs serial-connection	Network: RJ-45 Serial: RJ-48	Windows® 98/NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)
5,6,7,8	1,1.5,2	Configuration/ Port Mapping Max @ 128 pcs serial-connection	Network: RJ-45 Serial: RJ-48	Windows® 98/NT/2000/XP	+ 10 ~ + 30 V _{DC}	0 ~ 60 °C (32 ~ 140 °F)

Serial Media Converters

	Model Name	Interface	Ports	Transmission Speeds	Connectors	Isolation	Surge	Power Requirement	Operating Temperature
Serial Media Converters	ADAM-4510	RS-422/485	1	1200 bps ~ 115.2 kbps	RS-422/485: Plug-in screw terminal	-	-	+ 10 ~ + 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-4510S	RS-422/485	1	1200 bps ~ 115.2 kbps	RS-422/485: Plug-in screw terminal	3000 V _{DC}	-	+ 10 ~ + 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-4520	RS232 to 422/485	1	1200 bps ~ 115.2 kbps	RS-232: Female DB9, RS-422/485: Plug-in screw terminal	3000 V _{DC}	-	+ 10 ~ + 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-4522	RS232 to 422/485	1	1200 bps ~ 115.2 kbps	RS-232: Female DB9, RS-422/485: Plug-in screw terminal	-	-	+ 10 ~ + 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-4521	RS-422/485 to RS-232	1	300 bps ~ 115.2 kbps	RS-232: Female DB9, RS-422/485: Plug-in screw terminal	1000 V _{DC}	-	+ 10 ~ + 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-4541/ 4542+	Fiber Optic RS-232/ 422/485	1	up to 115.2 kbps	Fiber: ST RS-232/422/485: Plug-in screw terminal	-	-	+ 10 ~ + 30 V _{DC}	0 ~ 70 °C (32 ~ 158 °F)
	ADAM-4561	USB RS-232/422/485	1	50 bps ~ 115.2 kbps	Network: USB type A connector (Type A to Type B cable provided) Serial: twist-wire	3000 V _{DC}	3000 V _{DC}	-	0 ~ 70 °C (32 ~ 158 °F)

EDG-4504

4-port RS-232/422/485 to Ethernet Data Gateway



FCC CE

Features

- Automatic network connection recovery
- Auto-detects 10/100 Mbps Ethernet interface
- Supports an advanced security mechanism to avoid unauthorized access
- Tx/Rx LEDs for all ports to monitor data transmission
- Convenient and simple installation wizard
- Simple setup and configuration

Introduction

The EDG-4504 is an industrial-grade, network-based, serial device server for connecting four RS-232/422/485 devices, such as CNCs, PLCs, scales, and scanners, directly to a TCP/IP network (Ethernet or Internet). Compared to similar devices on the market, it has a lower cost, great performance, and the most advanced features. Both 10 Mbps and 100 Mbps Ethernet connections are supported, providing higher bandwidth, lower traffic impact, and more layout flexibility.

Specifications

Hardware

- **I/O Controller** 16C954 or compatible (auto hardware flow control)
- **Memory** 4 MB (4 ports)
- **Connector Type** DB9

Interface

- **Network** 10/100Base-T (10/100 Mbps)
- **Serial** RS-232/422/485
- **Signals** TxD, RxT, RTS, CTS, DTR, DSR, DCD, GND

Performance

- **Speed** 50 bps ~ 230.4 kbps
- **Max. No. of Ports** 256 (per Windows® NT)

Configuration

- **Parity** None, even, odd, space, mask
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2

OS supported

- **EDG-4504** Windows® 98/NT/2000/XP

Power and Environment

- **Power Requirements** 10 ~ 30 V_{DC}
- **Operating Temperature** 0 ~ 55° C (32 ~ 131° F)
- **Surge Protection** 15,000 V_{ESD}

Ordering Information

- **EDG-4504** 4-port RS-232/422/485 to Ethernet Data Gateway

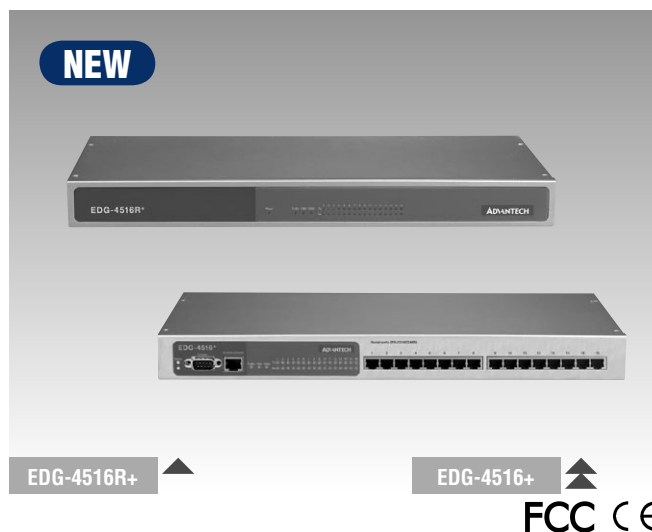
Applications

- Industrial/Factory automation
- SCADA systems
- Telecommunications
- Automatic warehouse control
- Building automation
- Wafer fabrication systems
- Self-service banking systems
- Large scale retail systems

EDG-4508+/4508R+ EDG-4516+/4516R+

8-port RS-232/422/485 to Ethernet
Data Gateway with Front/Rear Wiring

16-port RS-232/422/485 to Ethernet
Data Gateway with Front/Rear Wiring



Features

- Support local console, utility and remote Web configuration
- Support 8 DI/O channels for alarm/event control
- Optional dual power supply mechanism (EDG-4508+/4516+ only)
- Support advanced security mechanism to avoid unauthorized access
- Automatic connection recovery
- Auto-detect 10/100 Mbps Ethernet interface
- Status LEDs for all ports Tx/Rx, mode and power
- Windows native COM port compatible drivers
- Rear Wiring (EDG-4508R+ and EDG-4516R+)

Introduction

EDG-4508+ and EDG-4516+ are industrial-grade network-based serial device servers for connecting up to 8 or 16 RS-232/422/485 devices, such as CNCs, PLCs, scales and scanners, directly to a TCP/IP network (Ethernet or Internet). Compared with similar products on the market, EDG-4508+ and EDG-4516+ has a low cost, but offer high performance with dual CPUs.

EDG-4508+ and EDG-4516+ provides many advanced features for both local and remote configuration through a software utility, V.24 console and the Web. To allow extra control, EDG-4508+ and EDG-4516+ have built-in 4 digital input and 4 digital output channels on their back side. To enhance their reliability as device servers, EDG-4508+ and EDG-4516+ supports a redundant power mechanism for future expansions.

Both EDG-4508+ and EDG-4516+ supports 10/100 Mbps Ethernet connections for higher bandwidth, lower traffic impact and more layout flexibility. With Tx/Rx LEDs for all ports and LEDs for mode and power on the front panel; operation, administration and maintenance are simplified.

*In default, only one power supply is included.

Specifications

Hardware

- I/O Controller** 16C954 or compatible (auto hardware flow control)
- Connector Type** Network: RJ-45
Serial: RJ-48

Interface

- Network** 10/100Base-T
- Serial** RS-232/422/485
- Signals** TxD, RxT, RTS, CTS, DTR, DSR, DCD, GND

Performance

- Speed** 50 bps ~ 230.4 kbps
- Max. No. of Ports** 256

Configuration

- Data Bits** 5, 6, 7, 8
- Stop Bits** 1, 1.5, 2
- Parity** None, even, odd, space, mark

I/O Type: 4 DI & 4 DO

- Digital Input** Dry contact
Logic level 0: close to GND
Logic level 1: open
- Digital Output** Open collector to 30 V, 200 mA max. load
- OS** Windows® 98/NT/2000/XP

Power and Environment

- Power Requirements** 90 ~ 260 V_{AC}, 47 ~ 63 Hz(optional dual power supply)
- Operating Temperature** 0 ~ 55° C (32 ~ 131° F)
- Surge Protection** 15,000 V_{ESD}

Ordering Information

- EDG-4508+** 8-port RS-232/422/485 to Ethernet Data Gateway (1 pc of 30 cm RJ-48 to male DB9 RS-232/422/485 cable included)
- EDG-4516+** 16-port RS-232/422/485 to Ethernet Data Gateway (1 pc of 30 cm RJ-48 to male DB9 RS-232/422/485 cable included)
- EDG-4508R+** 8-port RS-232/422/485 to Ethernet Data Gateway with Rear Wiring (1 pc of 30 cm RJ-48 to male DB9 RS-232/422/485 cable included)
- EDG-4516R+** 16-port RS-232/422/485 to Ethernet Data Gateway with Rear Wiring (1 pc of 30 cm RJ-48 to male DB9 RS-232/422/485 cable included)
- OPT1A** 1m RJ-48 to male DB9 RS-232/422/485 cable
- OPT1D** 30cm RJ-48 to male DB9 RS-232/422/485 cable

Applications

- Industrial/Factory automation
- SCADA systems
- Telecommunications
- Automatic warehouse control
- Building automation
- Self-service banking systems
- Large scale retail systems

1
Software

2
IPPC

3
TPC

4
FPM

5
ATM & AWS

6
DA&C

7
cPCI

8
ADAM-3000

9
Motion Control

10
ICOM

11
eConnectivity

12
UNO

13
ADAM-4000

14
ADAM-5000

15
ADAM-6000

16
ADAM-8000

17
BAS

ADAM-4577 ADAM-4579

1-port Universal Serial Device Gateway

2-port Universal Serial Device Gateway



FCC CE

Features

- Supports 10/100Base-T (ADAM-4579); 10Base-T (ADAM-4577)
- Supports standard networking API: WinSock, Socket
- Provides multiple networking architectures: polling, event handling, peer-to-peer
- Supports several AT-style commands to control (ADAM-4579)
- Allows a maximum of 8 host PCs to access with command response mode using UDP protocol
- Supports any operating system with TCP/IP protocol: Windows®, Linux® etc.
- Auto-searching Windows configuration utility
- Download and testing utility: Easy to download firmware and self-diagnostic
- Easy to locate specific EDG series
- Surge protection for RS-485 line and power supply
- Mounts on DIN rail, panel or piggyback easily

Introduction

ADAM-4577 and ADAM-4579 are universal serial device gateways that bring RS-232/422/485 to Ethernet. They allow nearly any device with serial ports to connect and share an Ethernet network. ADAM-4577 and ADAM-4579 provide a quick, simple and cost-effective way to bring the advantages of remote management and data accessibility to thousands of devices that cannot connect to a network.

With ADAM-4577 or ADAM-4579, your existing serial devices can be used with the most popular operating systems on the market. There is no need to write special drivers for specific operating systems. Moreover, you can make serial devices communicate with other devices peer-to-peer, without any intermediate host PCs and software programming. That saves a lot of cost and effort. In addition, you can actively request data or issue commands from the RS-232/422/485 side or Ethernet side. This data can be sent bilaterally. Thus, the ADAM-4577 and ADAM-4579 are especially suitable for remote monitoring environments such as security systems, factory automaton, SCADA, transportation and more.

For fulfilling the different applications that need network connectivity, ADAM-4577 provides 4 types of network architectures: polling, event-handling, peer-to-peer, and multi-host access (UDP protocol). ADAM-4579 also provides 4 types of network architectures: polling, event-handling, peer-to-peer, and controlling.

Specifications

- **Protocol** TCP/IP (ADAM-4579)
TCP/IP, UDP (ADAM-4577)
- **Standard Networking API** WinSock, Socket
- **Network Type** ADAM-4577: polling, event handling, peer-to-peer, multi-host access
ADAM-4579: polling, event handling, peer-to-peer, controlling
- **Network Port** IEEE 802.3, IEEE 802.3u
- **Interface** Network: 10Base-T (ADAM-4577); 10/100Base-T (ADAM-4579)
Serial: 3-wire RS-232, RS-422, RS-485
- **Port** ADAM-4577: 1 independent RS-232/422/485 port
ADAM-4579: 2 independent RS-232/422/485 ports
- **Connector** Network: RJ-45
Serial: ADAM-4577: DB-9
ADAM-4579: RJ-48 (RJ-48 to DB-9 cable provided)
- **Transmission Speed** 30 bps to 230 kbps
- **Parity Bit** Odd, even, none, space, mark
- **Data Bit** 5, 6, 7, and 8
- **Stop Bit** 1, 1.5, and 2
- **Diagnostic LEDs** Network: TX/RX, Link, Speed (10/100 Mbps), Power
Serial: TX/RX, Status
- **Utility Software** Auto-detecting configuration utility (up to 128 devices)
Easy-to-diagnose download & testing utility
UDP testing utility (ADAM-4577)

- **Power Requirements** Unregulated 10 ~ 30 V_{DC} with surge protection
- **Power Consumption** 2 W (ADAM-4577); 4 W (ADAM-4579)
- **Mounting** DIN-rail, panel mounting, piggyback stack

Environmental Specifications

- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **ADAM-4577** 1-port Universal Serial Device Gateway
- **ADAM-4579** 2-port Universal Serial Device Gateway
(2 pcs of 1 m RJ-48 to male DB9 RS-232/422/485 cable included)
- **OPT1A** 1m RJ-48 to male DB9 RS-232/422/485 cable
- **OPT1D** 30cm RJ-48 to male DB9 RS-232/422/485 cable

ADAM-4570 ADAM-4571

2-port RS-232/422/485 to Ethernet Data Gateway

1-port RS-232/422/485 to Ethernet Data Gateway



FCC CE

Features

- Supports 10/100Base-T Ethernet port
- Supports high transmission speeds up to 230 kbps
- Supports an advanced security mechanism to avoid unauthorized access
- Auto-reconnection
- Remote download firmware
- Auto-detecting
- Easy-managing Port Mapping Utility
- Supports Windows® 98/NT/2000/XP driver
- Surge protection for RS-485 line and power supply
- Automatic RS-485 data flow control

Introduction

ADAM-4570 and ADAM-4571 are lightning fast and cost effective data gateways between RS-232/422/485 and Ethernet interfaces. These units immediately upgrade your existing device(s) to the Ethernet world. Functionally transparent and efficient, the ADAM-4570 and ADAM-4571 are specially designed for remotely controlling and monitoring devices via the Internet.

One or two RS-232/422/485 serial ports can each be easily configured for your needs. There is also support for transmission speeds up to 230 kbps, which meets the demand for today's high-speed data exchanges. You can use a Windows® utility to configure the units without need for further programming. ADAM-4570 and ADAM-4571 not only protect your current hardware investment but also ensure future network expandability. Since the protocol conversion is transparent, all existing devices can be seamlessly integrated into the Ethernet network. Therefore, ADAM-4570 and ADAM-4571 can be used in security systems, factory automation, SCADA, transportation and more.

The units integrate both your existing human-machine interface software (HMI) and RS-232/422/485 system architecture with an Ethernet network. The result helps save cabling space and software development costs. ADAM-4570/ and ADAM-4571 also provide a high-performance RISC CPU and real-time operating system to reduce CPU load. These components make the units more stable and reliable. Another benefit is the ability to remotely download programs to a designated device via Ethernet. This reduces the need for on-site maintenance and diagnosis.

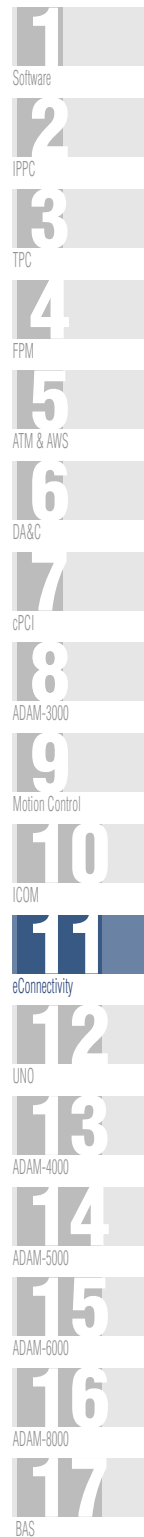
A Windows configuration and port-mapping utility is also included. This configuration tool can auto-detect all Ethernet Data Gateway devices on a local network, and helps users to easily adjust all settings. The port mapping utility helps to set up COM ports for one Windows® 95/98/NT/2000/XP platform. This helps you configure all ports to meet your requirements.

Specifications

- Protocol** TCP/IP
- Network** 10/100Base-T Ethernet
- Port** 1/2 Independent RS-232/422/485 ports
- Connector** Network: RJ-45
Serial: RJ-48 (RJ-48 to DB9 cable provided)
- Transmission Speed** 50 bps ~ 230 kbps
- Parity Bits** Odd, even, none, space, mark
- Data Bits** 5, 6, 7, 8
- Stop Bits** 1, 1.5, 2
- Diagnostic LEDs** Network: Tx/Rx, Link, Speed (10/100 Mbps), Power
Serial: Tx/Rx, Status
- Surge Protection** 15 K V_{ESD} (RS-232/422/485)
- Utility Software** Auto-detecting configuration utility (up to 128 devices)
port mapping utility
- Drivers Supported** Windows® 98/NT/2000/XP
- Power Requirements** Unregulated 10 to 30 V_{DC}
- Power Consumption** 4 watt
- Mounting** DIN-rail, panel mounting, piggyback stack
- Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- Operating Humidity** 20 ~ 95% (non-condensing)
- Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- ADAM-4571** 1-port RS-232/422/485 to Ethernet Data Gateway
(1 pc of 1 m RJ-48 to male DB9 RS-232/422/485 cable included)
- ADAM-4570** 2-port RS-232/422/485 to Ethernet Data Gateway
(2 pcs of 1 m RJ-48 to male DB9 RS-232/422/485 cable included)
- OPT1A** 1m RJ-48 to male DB9 RS-232/422/485 cable
- OPT1D** 30cm RJ-48 to male DB9 RS-232/422/485 cable



ADAM-4570L ADAM-4571L

**2-port RS-232 to Ethernet
Data Gateway**

**1-port RS-232 to Ethernet
Data Gateway**



FCC CE

Features

- Supports 10/100Base-T Ethernet
- Supports high transmission speeds up to 230 kbps
- Supports an advanced security mechanism to avoid unauthorized access
- Auto-reconnect
- Remote download firmware
- Auto-detecting
- Easy-managing Port Mapping Utility
- Supports Windows® 98/NT/2000/XP driver

Introduction

ADAM-4570L and ADAM-4571L are cost-effective data gateways that connects RS-232 and Ethernet interfaces. It provides a quick and low-cost way to connect any RS-232 device with an Ethernet network. Through networking transparency features, ADAM-4570L and ADAM-4571L make it possible to cut costs by using existing hardware and software. The units also bring the advantages of remote management and data accessibility to RS-232 devices.

ADAM-4570L and ADAM-4571L provide one or two RS-232 serial ports. The transmission speed of the units is up to 230 kbps, meeting the demands for high-speed data exchanges. In addition, you can use Windows® utilities to configure the ADAM-4570L and ADAM-4571L without further programming. The units not only protects your current hardware investment but also ensures future network expandability. Since the protocol conversion is transparent, all your existing devices can be seamlessly integrated with an Ethernet network. Therefore, ADAM-4570L and ADAM-4571L can be used in security systems, factory automation, SCADA, transportation and more.

ADAM-4570L and ADAM-4571L link both your existing human-machine interface (HMI) PC and your RS-232 devices with Ethernet cables. The result extends your access from local RS-232 to global Ethernet/Internet. Another benefit is that the units allow users to remotely download programs to a designated device via Ethernet. This reduces the need for on-site maintenance and diagnosis.

Lastly, ADAM-4570L and ADAM-4571L come with a Windows® configuration and port-mapping utility. The configuration tool can auto-detect all Ethernet Data Gateway devices on the local network, and let you easily adjust all settings. The port mapping utility helps you to set up COM ports for one Windows® 95/98/NT/2000/XP platform. This helps you configure all ports to meet your needs.

Specifications

- **Protocol** TCP/IP
- **Network** 10/100Base-T Ethernet
- **Port** 1/2 Independent RS-232 ports
- **Connector** Network: RJ-45
Serial: RJ-48 (ADAM-4570L)
DB9 (ADAM-4571L)
- **Transmission speed** 50 bps to 230 kbps
- **Parity Bits** Odd, even, none, space, mark
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Diagnostic LEDs** Network: Tx/Rx, Link, Speed (10/100 Mbps),
Power Serial: Tx/Rx, Status
- **Utility Software** Auto-detecting Configuration Utility (up to 128 devices)
Port mapping utility
- **Drivers Supported** Windows® 98/NT/2000/XP
- **Power Requirements** Unregulated 10 to 30 V_{DC}
- **Power Consumption** 1.5 watt (ADAM-4570L)
1.5 watt (ADAM-4571L)
- **Mounting** DIN-rail, panel mounting, piggyback stack
- **Operating Temperature** 0 ~ 60° C (32 ~ 140° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **ADAM-4571L** 1-port RS-232 to Ethernet Data Gateway
- **ADAM-4570L** 2-port RS-232 to Ethernet Data Gateway
(2 pcs of 1 m RJ-48 to male DB9 RS-232/422/
485 cable included)
- **OPT1A** 1m RJ-48 to male DB9 RS-232/422/485 cable
- **OPT1D** 30cm RJ-48 to male DB9 RS-232/422/485 cable

ADAM-4572

1-port Modbus® to Ethernet Data Gateway



FCC CE

Features

- Supports 10/100 Mbps communication speeds
- Allows up to 8 clients to access field data simultaneously
- Supports popular HMI software with Modbus/TCP driver or OPC server
- Up to 3 Independent serial ports capacity if configured to RS-485 serial mode
- Provides auto-searching device ID Windows utility
- Surge protection for RS-485 and power line
- Automatic RS-485 data flow control
- Easy mounting on DIN-rail, panel piggyback
- Supports Modbus/ASCII, RTU Protocol to control devices

Introduction

ADAM-4572 serves as an interface between Modbus® serial devices and computer hosts running Modbus/TCP on an Ethernet network. Fully compliant with Modbus/TCP, it is ideal for those who looking for an easy way to connect their existing devices or controllers running Modbus serial protocols (Modbus/ASCII or Modbus/RTU) to Ethernet networks. It works like a bridge between Modbus® serial devices and controllers over TCP/IP Ethernet networks. Benefits are also abundant for customers who want to expand their Ethernet-based Modbus® (Modbus/TCP) applications.

Networks have become increasingly vital for industrial automation applications, but many control devices today do not have a network port and can only communicate with a dedicated local PC or control panel. Advantech's revolutionary network-enabling technology is now allowing control devices with serial ports to connect to the Ethernet and share networks quickly and cost-effectively. The ADAM-4572 Modbus to Ethernet Data Gateway allows users to integrate new and existing Modbus/RTU and Modbus/ASCII serial devices to newer TCP/IP network-based devices. Manufacturers, system integrators, and end users can now use the ADAM-4572 to create networked applications to remotely manage and access data from control devices no matter where they are.

ADAM-4572 provides features such as: 10/100 Mbps data rate for Ethernet/Fast Ethernet connection, serial port speed up to 115.2 kbps, auto-searching device, Modbus® RTU, Modbus/ASCII, Modbus/TCP protocol, diagnostic LEDs, RJ-45 connectors and surge protection on network. This represents a true communication Data Gateway between Ethernet and Modbus, and an easy choice when your factory needs improved network integration and resource sharing.

Specifications

- **Protocols** Ethernet: Modbus/TCP
Serial: Modbus/RTU, Modbus/ASCII
- **Network Port** 10Base-T (IEEE 802.3) 100Base-TX (IEEE 802.3u)
RJ-45 connector
- **Serial Port** RS-232/422/485
plug-in screw terminal
Transmission speed: 300 bps to 115.2 kbps
Parity: odd, even, none
Data bit: 7, 8
Stop bit: 1, 2
- **Compatibility** Ethernet /IEEE 802.3, IEEE 802.3u
Modbus/Serial: Modbus/ASCII, Modbus/RTU
Network: Modbus/TCP
- **Diagnostic LEDs** Network: Tx/Rx, Link, Speed (10/100 Mbps), Power
Serial: Status, Tx/Rx
- **Utility Software** Windows-based, device auto-searching (up to 128 devices)
Device Setting: name, description, serial port
- **Compatible with application software running on Modbus/TCP standard**
- **Power Requirements** Unregulated 10 ~ 30 V_{DC}
- **Power Consumption** 3 W
- **Case** ABS with captive mounting hardware
- **Mounting** DIN-rail, Panel mounting, piggyback stack

Environmental Specifications

- **Operating Temperature** 0 ~ 60° C
- **Storage Temperature** -20 ~ 80° C
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **ADAM-4572** 1-port Modbus® to Ethernet Data Gateway

1
Software

2
IPPC

3
TPC

4
FPM

5
ATM & AWS

6
DA&C

7
cPCI

8
ADAM-3000

9
Motion Control

10
iCOM

11
eConnectivity

12
UNO

13
ADAM-4000

14
ADAM-5000

15
ADAM-6000

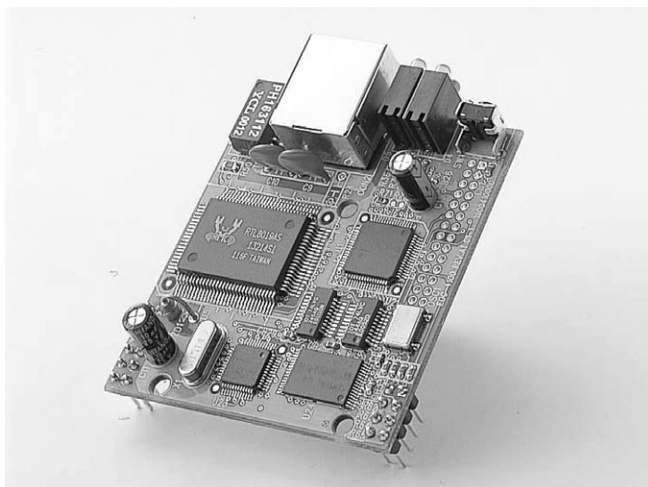
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ADAM-8000

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BAS

EDG-4100 EDG-4110

1-port RS-232 to Ethernet Data Gateway Module

1-port RS-422/485 to Ethernet Data Gateway Module



FCC CE

Features

- Supports 10/100Base-T Ethernet standard
- Supports high transmission speeds up to 230 kbps
- Supports LED indicators for easy diagnosis
- Provides RS-232 (EDG-4100), 422/485 (EDG-4110) interfaces
- Supports TCP/IP protocol
- Provides 8 universal digital inputs/outputs for emergent ON/OFF control
- Easy configuration via utility
- Supports Windows® 98/NT/2000/XP driver
- Automatic RS-485 data flow control (EDG-4110)
- Easy to mount through backside PIN connectors

Introduction

EDG-4100 and EDG-4110 are fast and cost-effective network-enabled board modules. EDG-4100 provides one RS-232 port, while EDG-4110 provides one RS-422/485 port. The modules enable nearly any device to communicate over the Internet and shared networks, and they allow network devices to be remotely monitored, managed, and controlled. Functionally transparent and efficient, EDG-4100 and EDG-4110 provide a complete software and hardware solutions. The modules effectively eliminate the need for OEMs and systems integrators to invest engineering resources to develop Ethernet networking solutions, and reduce the time it takes to bring intelligent devices to market. Thus, the modules are especially suitable for remote management and data accessibility to thousands of devices that cannot previously could not connect to the network such as: factory machinery, security systems, heating and ventilation systems, lighting control systems and Point-of-Sale devices.

EDG-4100 and EDG-4110 are 54 x 59 mm Ethernet-enabled boards, so they can easily fit into almost any device. Pin headers are provided to connect LAN, DI/O, power and RS-232/422/485 into your boards, for a quick and cost-effective method to connect the system to the Internet. There are also 8 DI/O, which provides additional flexibility.

EDG-4100 and EDG-4110 replace expensive dedicated PCs or lengthy serial cables with fast and reliable networking technology.

Specifications

- | | |
|--------------------------------|---|
| ▪ Protocol | TCP/IP |
| ▪ Compatibility | IEEE 802.3, IEEE 802.3u |
| ▪ Interface | Network: 10/100 Base-T Ethernet
Serial: RS-232 (EDG-4100)
RS-422/485 (EDG-4110) |
| ▪ Port | 1 Independent RS-232 port (EDG-4100)
1 Independent RS-422/485 port (EDG-4110) |
| ▪ Connector | Network: RJ-45 or 4-pin header
Serial: 8-pin header |
| ▪ DI/DO | 4DI, 4DO |
| ▪ Transmission Speeds | 50 bps ~ 230 kbps |
| ▪ Parity Bits | Odd, even, none, space, mark |
| ▪ Data Bits | 5, 6, 7, 8 |
| ▪ Stop Bits | 1, 1.5, 2 |
| ▪ Diagnostic LEDs | Network: Tx/Rx, Link, Speed |
| ▪ Utility Software | Configuration utility
Port mapping utility |
| ▪ Driver Support | Windows® 98/NT/2000/XP |
| ▪ Power Requirement | 5 V _{DC} ± 5% |
| ▪ Power Consumption | 0.6 W @ 10 M, 0.9 W @ 100 M |
| ▪ Operating Temperature | 0 ~ 60° C (32 ~ 140° F) |
| ▪ Storage Temperature | -20 ~ 80° C (-4 ~ 176° F) |
| ▪ Operating Humidity | 20 ~ 95% (non-condensing) |
| ▪ Storage Humidity | 0 ~ 95% (non-condensing) |

Ordering Information

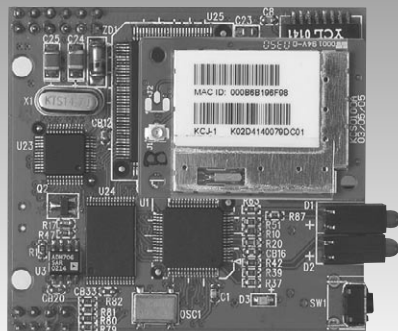
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|-------------------|---|
| ▪ EDG-4100 | 1-port RS-232 to Ethernet Data Gateway Module |
| ▪ EDG-4110 | 1-port RS-422/485 to Ethernet Data Gateway Module |

EDG-4100W EDG-4110W

1-port RS-232 to WLAN Data Gateway Module

1-port RS-422/485 to WLAN Data Gateway Module

NEW



Features

- Supports 802.11b standard
- Supports high transmission speeds up to 230 kbps
- Supports LED indicators for easy diagnosis
- Provides RS-232 (EDG-4100W), 422/485 (EDG-4110W) interfaces
- Supports TCP/IP protocol
- Provides 8 universal digital inputs/outputs for emergent ON/OFF control
- Easy configuration via utility
- Supports Windows® 98/NT/2000/XP driver
- Automatic RS-485 data flow control (EDG-4110W)
- Easy to mount through backside PIN connectors

Introduction

EDG-4100W and EDG-4110W are fast and cost-effective 802.11b wireless networking-enabled board modules. EDG-4100W provides one RS-232 port, while EDG-4110W provides one RS422/485 port. The modules enable nearly any device to communicate with 802.11b wireless LAN and shared networks, and they allow those devices to be remotely monitored, managed, and controlled. Functionally transparent and efficient, EDG-4100W and EDG-4110W provide a complete software and hardware solution. The modules effectively eliminates the need for OEMs and systems integrators to invest engineering resources to develop 802.11b wireless Ethernet networking solutions, and reduces the time it takes to bring intelligent devices to market. Thus, the modules are especially suitable to provide remote management and data accessibility to thousands of devices that cannot connect to the network such as factory machinery, security systems, heating and ventilation systems, lighting control systems and Point-of-Sale devices.

EDG-4100W and EDG-4110W are 54 x 59 mm wireless networking-enabled boards, so they can easily fit into almost any device. A wireless antenna is provided to connect to the 802.11b wireless LAN and pin headers are provided to connect DI/O, power and RS-232/422/485 into your boards. There are also 8 DI/O, which provides additional flexibility.

EDG-4100W and EDG-4110W replaces expensive dedicated PCs or lengthy serial cables with fast and reliable networking technology.

Specifications

- **Protocol** TCP/IP
- **Network** 802.11b
- **Port** 1 Independent RS-232 port (EDG-4100W)
1 Independent RS-422/485 port (EDG-4110W)
- **Connector** WLAN: 802.11b antenna
Serial: 8 pin header
- **DI/DO** 4DI, 4DO
- **Transmission Speeds** 50 bps ~ 230 kbps
- **Parity Bit** odd, even, none, space, mark
- **Data Bit** 5, 6, 7, 8
- **Stop Bit** 1, 1.5, 2
- **Diagnostic LEDs** W-LAN: Active, Link
- **Utility Software** Auto-detecting configuration utility
Port mapping utility
- **Driver Support** Windows® 98/NT/2000/XP
- **Power Requirement** 5 V_{DC} ± 5%
- **Power Consumption** Max @ 3 Watt
- **Operating Temperature** 0 ~ 60° (32 ~ 140°)
- **Storage Temperature** -20 ~ 80° (-4 ~ 176°)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **EDG-4100W** 1-port RS-232 to WLAN Data Gateway Module
- **EDG-4110W** 1-port RS-422/485 to WLAN Data Gateway Module

1
Software

2
IPPC

3
TPC

4
FPM

5
ATM & AWS

6
DA&C

7
cPCI

8
ADAM-3000

9
Motion Control

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ICOM

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eConnectivity

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UNO

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ADAM-4000

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ADAM-5000

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ADAM-6000

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ADAM-8000

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BAS

ADAM-6510 ADAM-6520

**4-port Industrial 10 Mbps
Ethernet Hub**

**5-port Industrial 10/100
Mbps Ethernet Switch**



Features

- Supports full/half duplex flow control (ADAM-6520)
- Supports Integrated Loop-up engine (ADAM-6520)
- Supports MDI/MDI-X auto crossover (ADAM-6520)
- Provides broadcast storm protection (ADAM-6520)
- Supports +10 ~ 30 V_{DC} voltage power input
- Provides surge protection 3000V_{DC} for power line
- Provides flexible mounting: DIN rail, panel, piggyback
- Supports operating temperatures from -10 ~ 70° C

Introduction

ADAM-6510 is a 4-port industrial-grade hub with Ethernet connectivity and 10 Mbps transfer rate. ADAM-6520 is a 5-port industrial-grade switch with Ethernet connectivity and from 10 to 100 Mbps transfer rates. (Auto-senses transfer rate).

Just like any other product in the ADAM® family, ADAM-6510 and ADAM-6520 can be mounted in three different ways: DIN rail, panel and piggyback. Solid industrial-grade design assures reliable operation in common application areas like: semi-conductor factories, inventory control environments, assembly lines, manufacturing and many more.

Both modules support a wide voltage range of +10 ~ 30 V DC over the terminal block, and 3,000 V DC surge protection ensures that over-voltage is no concern. The wide operating temperature of ADAM-6510 and ADAM-6520 goes from -10 to 70° C (14 to 158° F). This permits them to be functional in harsh operating environments.

The six inclusive LED indicators make troubleshooting of the modules easier. Each port has a pair of LEDs that indicate link status and port activities. This easily informs users of any collisions, the link status, power failure and data receipts for immediate on-site diagnosis.

Specifications

Common

- **Compatibility** IEEE 802.3, IEEE 802.3u
- **Surge Protection** 3000 V_{DC} (Power)
- **LED** Power, 10/100 Mbps
- **Power Requirements** Unregulated 10 ~ 30 V_{DC}
- **Power Consumption** 2 Watt (ADAM-6510)
2.4 Watt (ADAM-6520)
- **Case** ABS/PC with captive mounting hardware
- **Mounting** DIN-rail, panel mounting, piggyback stack
- **Operating Temperature** -10 ~ 70° C (14 ~ 158° F)
- **Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- **Operating Humidity** 20 ~ 95 % (non-condensing)
- **Storage Humidity** 0 ~ 95 % (non-condensing)

ADAM-6510

- **Interface** Network: 10Base-T Ethernet
- **Port** 4 x 10 Mbps , 1 x 10 Mbps uplink
- **Connector** RJ-45

ADAM-6520

- **Interface** Network: 10/100Base-T Ethernet
- **Port** 5 x 10/100 Mbps
- **Connector** RJ-45

Ordering Information

- **ADAM-6510** 4-port Industrial 10 Mbps Ethernet Hub
- **ADAM-6520** 5-port Industrial 10/100 Mbps Ethernet Switch

ADAM-6521

5-port Industrial 10/100 Mbps Ethernet Switch with Fiber Port



Features

- Supports 1 port 100 Mbps multimode Fiber duplex SC & 4-port 10/100 Mbps RJ-45 connectors
- Supports full/half duplex flow control
- Supports Integrated Loop-up engine
- Supports MDI/MDI-X auto crossover
- Provides broadcast storm protection
- Supports +10~ 30 V_{DC} voltage power input
- Provides surge protection 3000V_{DC} for power line
- Provides flexible mounting: DIN rail, panel, piggyback
- Supports operating temperatures from -10 ~ 65° C

Introduction

ADAM-6521 is an industrial-grade Ethernet switch with fiber optic ports that makes it possible to expand industrial networks fast and cost-effectively. ADAM-6521 consists of 1 fiber port and 4 RJ-45 ports. With fiber optics, you can prevent noise interfering with your system and implement transmission distances up to 2 km.

ADAM-6521 is especially suited for industrial environments with Ethernet networking needs such as: semi-conductor factories, inventory control environments, assembly line and production and more.

Like other products in the ADAM® family, ADAM-6521 can be mounted in three different ways: DIN rail, panel and piggyback, suitable for any industrial environment.

ADAM-6521 supports a wide voltage range of +10 ~ 30 V_{DC} over the terminal block, and 3,000 V_{DC} surge protection to protect it from being damaged by over-voltage. A wide operating temperature range from -10 to 65° C (14 ~ 149° F), makes it functional in harsh operating environments.

The six inclusive LED indicators make troubleshooting the ADAM-6521 easier. Each port has a pair of LEDs that indicate link status and port activities. This function conveniently informs users of any collisions, the link status, power failure and data receipts for immediate on-site diagnostics.

Specifications

- Compatibility** IEEE 802.3, IEEE 802.3u
- Surge Protection** 3000 V_{DC} (Power)
- LEDs** Power, 10/100 Mbps
- Transmission Distance** 2000 m (fiber)
- Power Requirements** Unregulated 10 to 30 V_{DC}
- Power Consumption** 3.5 W
- Case** ABS/PC with captive mounting hardware
- Mounting** DIN-rail, panel mounting, piggyback stack
- Operating Temperature** -10 ~ 65° C (14 ~ 149° F)
- Storage Temperature** -20 ~ 80° C (-4 ~ 176° F)
- Operating Humidity** 20 ~ 95 % (non-condensing)
- Storage Humidity** 0 ~ 95 % (non-condensing)
- Interface** Network: 10/100Base-T & 100Base-FX Ethernet
- Port** 4 x 10/100 Mbps (RJ-45), 1 x 100 Mbps (Fiber)
- Connector** 4 x RJ-45 & 1 x Fiber (SC type)

Ordering Information

- ADAM-6521** 5-port Industrial 10/100 Mbps Ethernet Switch with Fiber port

1
Software

2
IPPC

3
TPC

4
FPM

5
ATM & AWS

6
DA&C

7
cPCI

8
ADAM-3000

9
Motion Control

10
ICOM

11
eConnectivity

12
UNO

13
ADAM-4000

14
ADAM-5000

15
ADAM-6000

16
ADAM-8000

17
BAS

ADAM-6541

Ethernet to Multi-Mode Fiber Optic Converter



Features

- Supports 1-port 100 Mbps multimode fiber optics
- Supports 10 ~30 V_{DC} power input
- Easily mounted on a DIN-rail, panel or piggyback
- Supports full/half-duplex flow control.
- Supports MDI/MDIX auto crossover.
- Embedded with a switch controller, supports auto-negotiation.
- Embedded with memory buffer, supports store and forward transmission.

Introduction

ADAM-6541 is an industrial-grade converter that is designed to convert Ethernet network signals (10/100Base-TX) to fiber networks (100Base-FX). It transparently converts Ethernet signals into optic signals. The advantages of fiber optics are wide bandwidth, EMI immunity and its suitability for long-distance transmissions. Therefore, ADAM-6541 is an ideal solution for "fiber to building" applications at central offices or local sites.

ADAM-6541 supports MDI/MDIX auto detection so no crossover wire is necessary. It also includes a switch controller that can sense transmission speed (10/100 Mbps) automatically. Both the Ethernet port and fiber port have memory buffers that support store-and-forward mechanism, this assures that data can be transmitted properly.

ADAM-6541 is extremely compact and it can be mounted in three different ways. DIN rail, panel and piggyback. It works normally at -10 to 70°C and accepts wide unregulated voltage range from +10 ~ 30 V_{DC}. Besides, it also has 3,000 V_{DC} surge protection against over-voltage so it is suitable for harsh operating environments.

The ADAM-6541 provides three LED indicators: Power, LNK/ACT, and 10/100Mbps, which let you troubleshoot easier.

Specifications

- | | |
|--------------------------------|--|
| ▪ Interface | Network: 10/100Base-TX & 100Base-FX standard |
| ▪ Port | 1 x 10/100 Mbps (RJ-45), 1 x 100 Mbps (Fiber) |
| ▪ Connector | 1 x RJ-45 & 1 x Fiber (SC type) |
| ▪ Compatibility | IEEE 802.3, IEEE 802.3u |
| ▪ Surge Protection | 3,000 V _{DC} (Power) |
| ▪ Isolation | 1,500 Vrms (Ethernet port) |
| ▪ LEDs | Power, LNK/ACT, 10/100Mbps |
| ▪ Transmission Distance | Multi mode fiber: 50/125, 62.5/125 or 100/140 μm
Multi mode fiber, 412 m for half duplex, 2 km for full duplex. |
| ▪ Power Requirement | Unregulated 10 ~ 30 V _{DC} |
| ▪ Power Consumption | 3 W |
| ▪ Case | ABS/PC with captive mounting hardware. |
| ▪ Mounting | DIN-rail, panel mounting, piggyback stack |
| ▪ Operating Temperature | -10 ~ 70 °C |
| ▪ Storage Temperature | -20 ~ 80 °C |
| ▪ Operating Humidity | 20 ~ 95% (non-condensing) |
| ▪ Storage Humidity | 0 ~ 95% (non-condensing) |

Ordering Information

- | | |
|--------------------|--|
| ▪ ADAM-6541 | Ethernet to Multi-Mode Fiber Optic Converter |
|--------------------|--|

ADAM-6542

Ethernet to Single Strand WDM Fiber Optic Converter



Features

- Supports 1-port 100 Mbps single strand fiber optics
- Supports 10 ~30 V_{DC} power input
- Easily to mounted on a DIN-rail, panel or piggyback
- Provides 100Base-FX WDM single strand fiber
- Supports MDI/MDIX auto crossover.
- Embedded with a switch controller, supports auto-negotiation.
- Embedded with the memory buffer, supports store and forward transmission.

Introduction

ADAM-6542 is an industrial-grade converter that is designed to convert Ethernet networks to fiber networks. It does so by transparently converting Ethernet signals to optic signals. The advantages of fiber optics are wide bandwidth, EMI immunity and long-distance transmission capability. Therefore, ADAM-6542 is an ideal solution for "fiber to building" applications at central offices or local sites.

ADAM-6542 uses WDM (Wavelength Division Multiplexing) technology, which increases the information-carrying capacity of fiber by multiplex transmission and reception of signals at different wavelengths on a single strand cable. WDM technology is implemented in couples. One site uses an ADAM-6542/W15 where the transmission channel is 1550nm and the reception channel is 1310nm. The other site installs an ADAM-6542/W13 where the transmission channel is 1310nm and the reception channel is 1550nm. Both the transmission and reception channels of ADAM-6542/W15 and ADAM-6542/W13 are multiplexed to a single strand cable. This means that cabling costs are halved when you use ADAM-6542/W15 and ADAM-6542/W13 instead of a dual fiber converter.

ADAM-6542 supports MDI/MDIX auto detection, so you don't need to use crossover wires. It also includes a switch controller that can sense the transmission speed (10/100 Mbps) automatically. Both the Ethernet port and the fiber port have memory buffers that support store-and-forward mechanisms. This assures data can be transmitted properly.

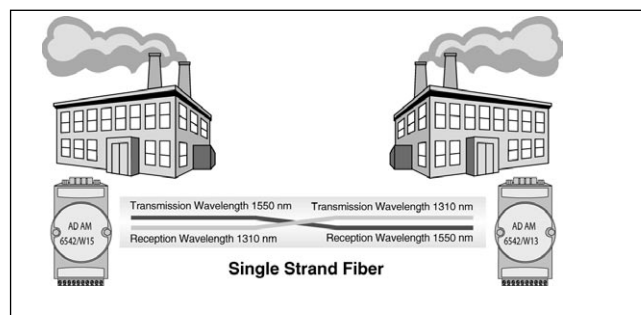
ADAM-6542 is extremely compact and can be mounted in three different ways. DIN rail, panel and piggyback. ADAM-6542 can work normally from -10 to 70°C and accepts a wide unregulated voltage range from +10 ~ 30 V_{DC}. Besides, it also provides 3,000 V_{DC} surge protection against over-voltage so it is suitable for harsh operating environments.

ADAM-6542 provides three LED indicators: Power, LNK/ACT, and 10/100Mbps, which let you trouble shoot easier.

Specifications

- Interface: Network** 10/100Base-TX & 100Base-FX standard
- Port** 1 x 10/100 Mbps (RJ-45), 1 x 100 Mbps (Fiber)
- Connector** 1 x RJ-45 & 1 x Fiber (SC type)
- Compatibility** IEEE 802.3, IEEE 802.3 u
- Surge Protection** 3,000 V_{DC} (Power)
- Isolation** 1,500 Vrms (Ethernet Port)
- LED** Power, LNK/ACT, 10/100 Mbps
- Transmission Distance** 8.3/125, 8.7/125, 9/125 or 10/125 μ m single Mode fiber, 20 km for WDM (Wavelength Division Multiplexing)
- Power Requirement** Unregulated 10 ~ 30 V_{DC}
- Power Consumption** 3 W
- Case** ABS/PC with captive mounting hardware.
- Mounting** DIN-rail, panel mounting, piggyback stack
- Operating Temperature** -10 ~ 70° C
- Storage Temperature** -20 ~ 80° C
- Operating Humidity** 20 ~ 95% (non-condensing)
- Storage Humidity** 0 ~ 95% (non-condensing)

System Architecture



Ordering Information

- ADAM-6542/W15** 10/100Base-TX Ethernet to 100Base-FX WDM Single Strand Fiber Optic Converter (Tx: 1550nm; Rx: 1310 nm)
- ADAM-6542/W13** 10/100Base-TX Ethernet to 100Base-FX WDM Single Strand Fiber Optic Converter (Tx: 1310 nm; Rx: 1550 nm)

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Software

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IPPC

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TPC

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FPM

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ATM & AWS

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DA&C

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cPCI

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ADAM-3000

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Motion Control

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ICOM

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eConnectivity

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UNO

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ADAM-4000

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ADAM-5000

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ADAM-6000

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ADAM-8000

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BAS

EDG-6528

EDG-6528I

8-Port Industrial 10/100 Mbps Ethernet Switch

8-Port Industrial 10/100 Mbps Ethernet Switch w/Wide Operating Temperature

NEW



Features

- Provides 8 x 10/100 Mbps Ethernet ports with RJ-45 connector
- Supports full/half duplex flow control
- Supports MDI/MDIX auto crossover
- Provides broadcast storm protection
- Embedded with a switch controller, supports auto-negotiation
- Embedded with the memory buffer, supports store-and-forward transmission
- Supports +12 ~ 48 V_{DC} voltage
- Provides surge protection 3000 V_{DC} for power line
- Supports 4000 V_{DC} Ethernet ESD protection
- Provides flexible mounting: DIN rail and panel-mounting
- Supports wide-range operating temperature: -40 ~ 85° C (EDG-6528I)
- Supports two individual power sources

Introduction

EDG-6528 is an industrial-grade Ethernet switch that realizes fast and cost-effective expansion of industrial networks. EDG-6528 has eight 10/100 Mbps Ethernet ports for connection with up to eight Ethernet devices. Moreover, EDG-6528 has industrial-grade design that assures high reliability and stability. Therefore, EDG-6528 is an excellent solution for industrial environments with Ethernet networking, such as semi-conductor factories, inventory control environments, assembly lines and production.

EDG-6528 includes a switch controller that can automatically sense transmission speeds. (10/100 Mbps) The RJ-45 interface can also be auto-detected, so MDI or MDIX is automatically selected and a cross-over cable is not required. All Ethernet ports have memory buffers that support the store-and-forward mechanism. This assures that data can be transmitted properly.

The EDG-6528 is extremely compact and can be mounted on a DIN-rail or a panel, so it is suitable for any space-constrained environment. The power line of EDG-6528 supports up to 3,000 V_{DC} surge protection, which secure equipment against unregulated voltage and make systems safer and more reliable.

For extreme operating temperatures, the EDG-6528I covers a range between -40° and 85° C. With such a wide range you can use the EDG-6528I in some of the harshest industrial environments that exist.

The LED indicators make troubleshooting quick and easy. Each port has a couple of LEDs that display the link status, power failure, and port activity for immediate on-site diagnostics.

Specifications

- | | |
|--------------------------------|---|
| ▪ Interfaces | Network 10/100Base-Tx standard |
| ▪ Ports | 8 x 10/100 Mbps (RJ-45) |
| ▪ Connectors | 8 x RJ-45 |
| ▪ Compatibility | 1EEE 802.3, IEEE 802.3u |
| ▪ Surge Protection | 3000 V _{DC} (Power) |
| ▪ ESD Protection | 4000 V _{DC} (Ethernet) |
| ▪ LEDs | Power, LINK, 10/100Mbps |
| ▪ Transmission Distance | 100 m (Ethernet) |
| ▪ Power Requirement | Unregulated +12 ~ 48 V _{DC} (2 individual power sources) |
| ▪ Case | Aluminum with mounting hardware |
| ▪ Mounting | DIN-rail, panel |
| ▪ Operating Temperature | EDG-6528: 0 ~ 70° C
EDG-6528I: -40 ~ 85° C |
| ▪ Operating Humidity | 20~95% (non-condensing) |

Ordering Information

- | | |
|--------------------|--|
| ▪ EDG-6528 | 8-Port Industrial 10/100 Mbps Ethernet Switch |
| ▪ EDG-6528I | 8-Port Industrial 10/100 Mbps Ethernet Switch w/wide-operating temperature |

EDG-6528M

EDG-6528S

Industrial Switch with 6 10/100 Mbps Ethernet Ports & 2 Multi-Mode Fiber Ports

Industrial Switch with 6 10/100 Mbps Ethernet Ports & 2 Single-Mode Fiber Ports

NEW



Features

- Provides 6 x 10/100 Mbps Ethernet ports with RJ-45 connector
- Provides 2 x 100 Mbps multi-mode (EDG-6528M) / single-mode (EDG-6528S) fiber ports
- Supports full/half duplex flow control
- Supports MDI/MDI-X auto crossover
- Provides broadcast storm protection
- Embedded with a switch controller, supports auto-negotiation
- Embedded with the memory buffer, supports store-and-forward transmission
- Supports +12 ~ 48 V_{DC} voltage
- Provides 3000 V_{DC} surge protection for power line
- Supports 4000 V_{DC} Ethernet ESD protection
- Provides flexible mounting: DIN rail and panel-mounting
- Supports two individual power sources

Introduction

EDG-6528M and EDG-6528S are industrial-grade Ethernet switches that enable you to expand your industrial network fast and cost-effectively. The EDG-6528M/6528S have six 10/100 Mbps Ethernet ports to connect up to six Ethernet devices. EDG-6528M also provides two multi-mode fiber optic ports with SC-type connectors. Using fiber optics, you can prevent noise from interfering with your system and support high-speed (100 Mbps) and high-distance (up to 2 km) transmissions. EDG-6528M and EDG-6528S have industrial-grade design that assures high reliability and stability in harsh industrial environments, which makes it a robust bridge between enterprise fiber backbones and Ethernet devices.

EDG-6528M and EDG-6528S include a switch controller that can automatically sense transmission speeds. (10/100 Mbps) The RJ-45 interface can also be auto-detected, so MDI or MDI-X is automatically selected and a cross-over cable is not required. All the Ethernet ports have memory buffers that support the store-and-forward mechanism. This assures that data can be transmitted properly.

EDG-6528M and EDG-6528S are extremely compact and can be mounted on a DIN-rail or a panel. They are suitable for any space-constrained environment.

The power lines of EDG-6528M and EDG-6528S support up to 3,000 V DC surge protection, which secure equipment against unregulated voltage and make systems safer and more reliable. The operating temperature of EDG-6528M and EDG-6528S is between 0 ~ 70° C. With such a wide range you can use the EDG-6528M and EDG-6528S in some of the harshest industrial environments that exist.

The LED indicators make troubleshooting quick and easy. Each port has a couple of LEDs that display the link status, power failure, and port activity for immediate on-site diagnostics.

Specifications

- Interfaces** Network 10/100Base-Tx standard
100Base-Fx multi-mode standard (EDG-6528M)
100Base-Fx single-mode standard (EDG-6528S)
- Ports** 6 x 10/100 Mbps (RJ-45)
2 x 100 Mbps (Fiber)
- Connectors** 6 x RJ-45
2 x Fiber with SC type connector
- Compatibility** IEEE 802.3, IEEE 802.3u
- Surge Protection** 3000 V_{DC} (Power)
- ESD Protection** 4000 V_{DC} (Ethernet)
- LEDs** Power, LINK, 10/100Mbps
- Transmission Distance** Ethernet 100 m
Multimode fiber 2 Km
Singlemode fiber 15 Km
- Power Requirement** Unregulated +12 ~ 48 V_{DC} (2 individual power sources)
- Case** Aluminum with mounting hardware
- Mounting** DIN-rail, panel
- Operating Temperature** 0 ~ 70° C (31 ~ 158° F)
- Operating Humidity** 20 ~ 95% (non-condensing)

Ordering Information

- EDG-6528M** Industrial Switch with 6 10/100 Mbps Ethernet Ports & 2 Multi-Mode Fiber Ports
- EDG-6528S** Industrial Switch with 6 10/100 Mbps Ethernet Ports & 2 Single-Mode Fiber Ports

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Software

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IPPC

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TPC

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FPM

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ATM & AWS

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DA&C

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ADAM-3000

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ADAM-4000

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ADAM-5000

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ADAM-6000

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ADAM-8000

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BAS

ADAM-4570W ADAM-4571W

**2-port RS-232/422/485 to WLAN
Data Gateway**

**1-port RS-232/422/485 to WLAN
Data Gateway**



Features

- Supports 802.11b standard
- Supports Wireless LAN Ad-Hoc and Infrastructure modes
- Supports high transmission speeds up to 230 kbps
- Supports an advanced security mechanism to avoid unauthorized access
- Auto-reconnection
- Remote download firmware
- Auto-detecting
- Easy-managing Port Mapping Utility
- Supports Windows® 98/NT/2000/XP driver
- Surge protection for RS-485 line and power supply
- Automatic RS-485 data flow control

Introduction

ADAM-4570W/4571W is a cost-effective data gateway between RS-232/422/485 and 802.11b Wireless LAN interfaces. It provides a quick and low-cost method to connect any RS-232/422/485 device to 802.11b wireless LAN. Functionally transparent and efficient, ADAM-4570W and ADAM-4571W saves costs when existing H/W & S/W must continue to be used. ADAM-4570W and ADAM-4571W bring the advantages of remote management and data accessibility to thousands of RS-232/422/485 devices that cannot connect to the network.

ADAM-4570W and ADAM-4571W provide one or two RS-232/422/485 serial ports, and the transmission speed is up to 230 kbps, meeting the demand for high-speed data exchange. In addition, you can use a Windows® utility to configure ADAM-4570W and ADAM-4571W without further programming. This not only protects your current hardware investment but also ensures future network expandability. Since the protocol conversion is transparent, all your existing devices can be seamlessly integrated with the 802.11b wireless LAN network. Therefore, ADAM-4570W and ADAM-4571W can be used in security systems, factory automation, SCADA, transportation and more.

ADAM-4570W and ADAM-4571W integrate both your existing human-machine interface software (HMI) and the RS-232/422/485 system architecture with an 802.11b Wireless LAN network. The result helps you save cabling and software development costs. Another benefit is that ADAM-4570W and ADAM-4571W makes it possible to remotely download programs to a designated device via 802.11b wireless LAN. This reduces the need for on-site maintenance and diagnosis. In addition, ADAM-4570W and ADAM-4571W comes with a Windows configuration and port-mapping utility. The configuration tool can auto-detect all 802.11b wireless LAN Data Gateway products on the local network. It also lets you adjust all settings easily. The port mapping utility helps you to set up COM ports for one Windows® NT/2000/XP platform. This helps you configure all ports to meet your requirements.

Specifications

- **Protocol** TCP/IP
- **Network** 802.11b
- **Port** 1/2 Independent RS-232/422/485 ports
- **Connector** Serial: RJ-48 (RJ-48 to DB9 male cable provided)
- **Transmission Speeds** 50 bps ~ 230 kbps
- **Parity Bits** Odd, even, none, space, mark
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **Diagnostic LEDs** WLAN: Active, Link
Serial: Tx/Rx
System: Status, Power
- **Surge Protection** 15 K V_{ESD}
- **Utility Software** Auto-detecting configuration utility
Port mapping utility
- **Driver Support** Windows® 98/NT/2000/XP
- **Power Requirement** Unregulated 10 to 30 V_{DC}
- **Power Consumption** Max @ 4 Watt
- **Mounting** DIN-rail, panel mounting, piggyback stack
- **Operating Temperature** 0 ~ 60° (32 ~ 140°)
- **Storage Temperature** -20 ~ 80° (-4 ~ 176°)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **ADAM-4571W** 1-port RS-232/422/485 to WLAN Data Gateway
(1 pc of 1 m RJ-48 to male DB9 RS-232/422/485 cable included)
- **ADAM-4570W** 2-port RS-232/422/485 to WLAN Data Gateway
(2 pcs of 1 m RJ-48 to male DB9 RS-232/422/485 cable included)
- **OPT1A** 1m RJ-48 to male DB9 RS-232/422/485 cable
- **OPT1D** 30cm RJ-48 to male DB9 RS-232/422/485 cable

WiCOM-3910

Wireless Remote & Monitor Display Extender



Features

- Supports 802.11b, 802.11g standard
- Active alarm and record list
- Automatic/manual WLAN mode configuring
- High speed wireless presentation
- Supports up to 32-bit color resolution
- WEP encryption security up to 128 bits
- Robust network security protection

Introduction

WiCOM-3910 replaces long stretches of VGA cables and KVM switches with its innovative transmission of computer displays over wireless networks.

WiCOM-3910 comes with firmware and a HTTP server to access its settings. It also comes with software that is installed on the computer(s) it will connect with. This software turns VGA signals into compressed data packets that can be sent over a network, and then uncompressed to be displayed on the screen that is connected to WiCOM-3910. This means the refresh rate depends on what is showing on the screen, but in most cases WiCOM-3910 will be able to effectively reproduce a VGA signal at 1024x768.

With two USB V2.0 connectors, a mouse and keyboard can be connected to WiCOM-3910 and used to control remote computers. The USB ports also open up for remote control of various equipment.

The most appealing application for WiCOM-3910 is probably control of multiple remote computers. With Windows® 2000 or XP installed on the remote computers, WiCOM-3910 can become the interface for several computers over a wireless network. This could for example make inaccessible embedded computers that are distributed in a factory, available from a protected control room. VGA cables are expensive and cannot be stretched too far, and Cat5 network cables may not be convenient in hazardous environments. WiCOM-3910 has WEP 128 bits encryption for security concerns.

Specifications

- | | |
|-----------------------------|---|
| ▪ Network | WLAN: 802.11b, 802.11g
LAN: 10/100M Ethernet |
| ▪ Processor System | SoC Processor |
| ▪ Memory | 64 MB SDRAM |
| ▪ Storage | Flash Memory 8 MB |
| ▪ I/O Interface | VGA DB15 x 1, 10/100Base-Tx x 1, USB2.0 x 2 |
| ▪ Miscellaneous | Reset Button, Power Switch, Indicator LEDs |
| ▪ Indicator LEDs | WLAN, LAN, USB, Power |
| ▪ Power Requirement | AC/DC power adapter, DC 12V input |
| ▪ Dimensions | 180 x 34.5 x 119.3 mm |
| ▪ Support Resolution | VGA, SVGA, XGA, SXGA |
| ▪ Color Depth | 8/16/24/32 bits |

PC Requirements (Recommended)

- | | |
|----------------------------|----------------------------------|
| ▪ CPU | Intel® Pentium® 500 MHz or above |
| ▪ RAM | 128 MB recommended |
| ▪ Operating Systems | Windows® 2000/XP |

Ordering Information

- | | |
|---------------------|--|
| ▪ WiCOM-3910 | Wireless Remote & Monitor Display Extender |
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Software

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IPPC

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TPC

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FPM

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ATM & AWS

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DA&C

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cPCI

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ADAM-3000

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Motion Control

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ICOM

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eConnectivity

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UNO

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ADAM-4000

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ADAM-5000

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ADAM-6000

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ADAM-8000

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BAS

ADAM-6500 ADAM-6501

Web-enabled Communication Controller Web-enabled Universal Communication Controller



CE FCC

Features

- Powerful Ethernet-enabled communication controller in a small package
- Built-in Windows CE .NET to run embedded Ethernet applications
- Built-in web server
- Microsoft embedded VC++ development environment supported
- Built-in CompactFlash® slot
- Flash disk for WinCE and user's AP (ADAM-6500: 16 MB, ADAM-6501: 32 MB)
- Built-in real-time clock and watchdog timer
- Offers RS-232 and RS-485 series communication port (ADAM-6500: 3 x RS-232, 2 x RS-485; ADAM-6501: 1 x RS-232, 1 x RS-485)
- Automatic data flow control in RS-485 mode
- Communication speed up to 115.2 kbps
- Easy to mount on a DIN-rail or panel

Introduction

ADAM-6500 and ADAM-6501 are fully functional Ethernet-enabled controllers for industrial automation and control. They provide an ideal environment to develop applications converting RS-232/485 devices/equipment data to the Ethernet/Internet world with minimum effort. Their built-in Windows CE .NET operating system lets users run new programs produced in Microsoft embedded VC++. The Windows environment also includes a web server to allow the designer to develop web-enabled applications.

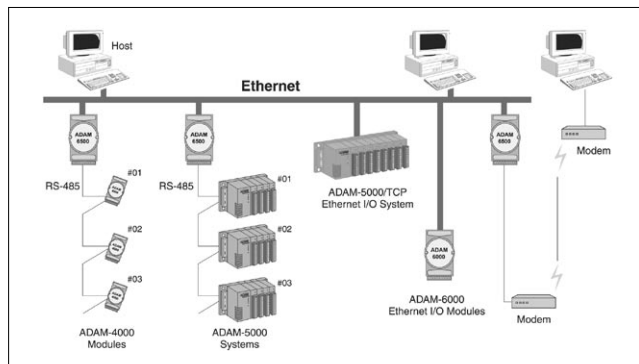
Specifications

- **CPU** ADAM-6500: 32 bit Intel® StrongArm® 206 MHz
ADAM-6501: 32 bit Intel® XScale® 400 MHz
- **Flash Memory** 16 MB flash memory for ADAM-6500
32MB flash memory for ADAM-6501
- **Memory** 64 MB SDRAM
- **Operating System** Windows CE .NET
- **Ethernet Port** ADAM-6500: One 10Base-T
ADAM-6501: One 10/100Base-T
- **Serial Ports (isolated)** ADAM-6500: 3 RS-232, 2 RS-485
ADAM-6501: 1 RS-232 (RJ-48), 1 RS-485
Speed: 115.2 kbps
- **Built-in Watchdog Timer** Yes
- **Real-time Clock** Yes
- **LED Indicators** Power, diagnostics, communication
- **Protocols Supported** TCP/IP, UDP
- **System Management** Web-based remote configuration via standard browser with Java® support.
Console mode command line configuration.
- **Mounting** DIN-rail, panel, wall, piggyback stack
- **Default Setting** Onboard
- **Recovery**
- **Power Supply Voltage** +24 V_{DC} (Range: 10 ~ 30 V_{DC})
- **Max. Power** +24 V_{DC} @ 0.25 A
- **Requirements**
- **Operating Temperature** 0 ~ 55° C
- **Storage Temperature** -20~ 80° C

Feature Details

Built-in Ethernet and RS-232/485 COM Ports

The ADAM-6500 has one Ethernet (10BASE-T), and four communication ports (3 x RS-232 and 2 x RS-485). The ADAM-6501 has one Ethernet (10/100BASE-T), one RS-232 and one RS-232/485 ports. These provide easy communication between the controller and devices in your applications, and has been designed for program downloading, debugging and linking serial devices with the Ethernet/Internet. Both ADAM-6500 and 6501 is equipped with a COM1 port (RS-232) supporting full RS-232 signals for applications such as modem connections, while the 3-pin RS-232 and RS-485 are designed as the interface for traditional RS-232/485 devices/equipment. This design allows the controller to be used in a variety of applications. For example, the user may download a data logging application into the ADAM-6500/6501's memory while the ADAM-6500/6501 is connected to a RS-485 network, and then collect the data over the network.



Built-in Real-time Clock and Watchdog Timer

The real-time clock in the controller ensures accurate time recording when the system operates. The watchdog timer is designed to automatically reset the CPU if the system fails.

Ordering Information

- **ADAM-6500** Web-enabled Communication Controller
- **ADAM-6501** Web-enabled Communication Controller

ADAM-4500

PC-based Communication Controller



Features

- Powerful communication controller in a small package
- Built-in Boot ROM DOS to run PC programs
- Free ROM/RAM memory for user's applications
- 2-wire, multi-drop RS-485 networking
- Communication speed up to 115.2 Kbps
- RS-232/RS-485 modes (jumper selectable)
- Automatic data flow control in RS-485 mode
- Built-in real-time clock and watchdog timer
- Easy mounting on a DIN-rail or panel
- Accepts unregulated power sources between 10 to 30 V_{DC}
- Program download cable and utility included

Introduction

The ADAM-4500 is a fully functional stand-alone controller for industrial automation and control. It provides an ideal environment for controlling PC hardware with a minimal amount of development effort. Its built-in ROM-DOS lets users run standard PC programs or new programs produced by PC language development tools. ROM-DOS is an MS-DOS equivalent operating system allowing you to run all standard PC software.

Built-in RS-232/485 COM Ports

The ADAM-4500 has two communication ports (COM1 and COM2). These provide easy communication between the controller and other devices in your applications. COM1 can be configured for RS-232 or RS-485 communication via a jumper setting, while COM2 is dedicated as an RS-485 port. This design allows the controller to be used in a variety of applications. For example, a user can download an application into the ADAM-4500's on-board Flash memory while the ADAM-4500 is connected to an RS-485 network, then let it control all the modules in the network.

Built-in Real-time Clock and Watchdog Timer

The real-time clock in the controller ensures accurate time recording while the system operates. The watchdog timer is designed to automatically reset the CPU if the system fails.

Specifications

Board

▪ CPU	80188-40
▪ Flash ROM	256 KB (170 KB free memory for users)
▪ Operating System	Boot ROM DOS
▪ Timer BIOS	Yes
▪ SRAM	256 KB (234 KB free memory for users)
▪ Real-time Clock	Yes
▪ Watchdog Timer	Yes
▪ COM1	RS-232/485
▪ COM2	RS-485
▪ Program Download Port(RS-232)	Tx, Rx, GND
▪ Power Requirement	Unregulated +10 to +30 V _{DC}
▪ Power Consumption	2.0 W
▪ Operating Temperature	-10 ~ 70°C (14 ~ 158°F)
▪ Case	ABS with captive mounting hardware
▪ Plug-in Screw	Accepts 0.5 mm to 2.5 mm
▪ Terminal Block	1-#12 or 2-#14 ~ #22 AWG
▪ Dimensions	60 x 120 mm (2.36" x 4.72")

RS-232 Interface

▪ Signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND
▪ Mode	asynchronous full duplex, point to point
▪ Transmission Speed	Up to 115.2 kbps
▪ Max Transmission Distance	15.2 meters (50 feet)

RS-485 interface

▪ Signals	DATA+, DATA-, GND
▪ Mode	Half duplex, multi-drop
▪ Transmission Speed	Up to 115.2 kbps
▪ Max Transmission Distance	1200 meters (4000 feet)

Software

The ADAM-4500 module provides 170 KB ROM for your downloaded applications and 234 KB RAM for application operation. Its built-in ROM-DOS is an MS-DOS equivalent operating system, which provides all of the basic functions of MS-DOS except BIOS. Application programs written in high level languages such as C or C++ can run under ROM-DOS. Application programs should be converted into 80188 compatible code before being downloaded into the ADAM-4500. The download utility is included with the ADAM-4500.

Ordering Information

- **ADAM-4500** PC-based communication controller

1

Software

2

IPPC

3

TPC

4

FPM

5

ATM & AWS

6

DA&C

7

cPCI

8

ADAM-3000

9

Motion Control

10

ICOM

11

eConnectivity

12

UNO

13

ADAM-4000

14

ADAM-5000

15

ADAM-6000

16

ADAM-8000

17

BAS

ADAM-4510/4510S ADAM-4520/4522 ADAM-4521

Isolated RS-422/485 Repeater

Isolated RS-232 to 422/485 Converter Addressable RS-422/485 to RS-232 Converter



Features

- Automatic RS-485 data flow control
- 1000 V_{DC} (ADAM-4521)/3000 V_{DC} (ADAM-4510S/4520) isolation protection
- Surge protection RS-485 data line
- Transmission speed up to 115.2 Kbps
- Networking up to 1200 meters (4000 feet)
- Reserved space for termination resistors
- Power and data flow indicator for troubleshooting
- Power requirement: +10 to +30 V_{DC}
- Mounts easily on a DIN-rail, panel or piggyback

ADAM-4521 only

- RS-232 and RS-485 can be set to different baud rates
- Watchdog timer function
- Software configurable to either addressable or non-addressable mode
- All communication setups stored in EEPROM

Introduction

Most industrial computer systems come with standard RS-232 serial ports. Though widely accepted, RS-232 has limited transmission speed, range and networking capabilities. The RS-422 and RS-485 standards overcome these limitations by using differential voltage lines for data and control signals. The ADAM-4520/4522 converter lets you take advantage of RS-422 and RS-485 on systems originally equipped with RS-232. It transparently converts RS-232 signals into isolated RS-422 or RS-485 signals. You do not need to change your PC's hardware or your software. The ADAM-4520/4522 lets you easily build an industrial grade, long distance communication system with standard PC hardware.

The ADAM-4521 is an intelligent RS-422/485 to RS-232 converter specifically designed to connect RS-422/485 devices to an RS-232 network. RS-232 is the most common transmission standard. Although widely available on most computer systems, measurement equipment, PLCs, and industrial devices, its transmission speed, communication distance, and especially networking capability are limited due to unbalanced transmission. The ADAM-4521 addressable converter solves this problem and lets you easily build up an RS-485 network with your RS-232 devices by assigning each one an address for easier communication.

The ADAM-4510/4510S repeater simply amplifies, or boosts, existing RS-422/485 signals to enable them to cover longer distances. It extends the communication distance by 1200 m (4000 ft.) or increases the maximum number of connected nodes by 32.

Built-in Intelligence

The ADAM-4521 is equipped with a built-in microprocessor, which uses two UARTs and automatically processes data before transmitting it to the RS-232 device. This allows the ADAM-4521 to handle different baud rates between RS-232 devices and the RS-485 network. The microprocessor also verifies whether the data is transmitted with the appropriate address, which enables each RS-232 device on the RS-485 network to communicate with your PC over long distances.

An RS-485 Network with Automatic Data Flow Control Using RS-232 Software

The RS-485 standard supports half-duplex communication. This means that a single pair of wires is used to both transmit and receive data. Handshaking signals such as RTS (Request To Send) are normally used to control the direction of the data flow. A special I/O circuit in the ADAM-4510/4510S/4520/4521/4522 automatically senses the direction of the data flow and switches the transmission direction. No handshaking signals are necessary—you can build an RS-485 network with just two wires. This RS-485 control is completely transparent to the user. Software written for half-duplex RS-232 works without modification.

Specifications

Common

- Power Requirement** Unregulated +10 ~ +30 V_{DC}. Module protected from power reversals
- Case** ABS with captive mounting hardware
- Accessories (supplied)** ABS DIN-rail mounting adapter, Nylon DIN-rail mounting adapter (ADAM-4521 only) SECC panel mounting bracket
- Plug-in Screw Terminal Wiring** Accepts AWG 1- #12 or 2- #14 ~ #22 (0.5 to 2.5 mm²) wires
- Operating Temperature** -10 ~ 70°C (14 ~ 158°F)
- Dimensions** 60 x 120 mm (2.36" x 4.41")

ADAM-4510/4510S

- Transmission Speeds (bps)** 1200, 2400, 4800, 9600, 19.2 k, 38.4 k, 57.6 k, 115.2 k (switchable)
- Isolation Voltage** 3000 V_{DC} (ADAM-4510S only)
- RS-422/RS-485 Interface Connector** Plug-in screw terminal
- Power Consumption** 1.4 W @ 24 V_{DC}

ADAM-4520/4521/4522

- Transmission Speed (bps)** 300, 600 (ADAM-4521 only), 1200, 2400, 4800, 9600, 19.2 k, 38.4 k, 57.6 k 115.2 k, RTS control and RS-422 mode (switchable)
- Isolation Voltage** 3000 V_{DC} (ADAM-4520 only)
- RS-232 Interface Connector** Female DB9
- RS-422/RS-485 Interface Connector** Plug-in screw terminal
- Power Consumption** 1.2 W (ADAM-4520/4522) 1 W @ 24 V_{DC} (ADAM-4521)

Ordering Information

- ADAM-4510** RS-422/RS-485 repeater
- ADAM-4510S** Isolated RS-422/RS-485 repeater
- ADAM-4520** Isolated RS-232 to RS-422/485 converter
- ADAM-4522** RS-232 to RS-422/485 converter
- ADAM-4521** Addressable RS-422/485 to RS-232 Converter with 1000 V_{DC} Isolation

ADAM-4541 ADAM-4542+

Multi-Mode Fiber-Optic to RS-232/422/485 Converter

Single-Mode Fiber-Optic to RS-232/422/485 Converter



CE

Features

- Easily mounted on a DIN-rail, panel or piggyback
- Transmission speeds of up to 115.2 kbps
- Optical fibers enable transmission of 2.5 km (measured with 62.5/125 mm) for ADAM-4541
- Half/Full-duplex, bidirectional transmission mode
- Avoids lightning strikes and EMI/RFI interference
- Prevents damage from electrostatic discharge
- Stable and error-free data transmission
- Automatic internal RS-485 bus supervision
- No external flow control signals required for RS-485
- Transient suppression and over-current protection on RS-422/485 data lines
- Reserved space for termination resistors
- LED for power and data flow indication
- Power requirement: +10 to +30 V_{DC}

Introduction

Fiber-optic transmission offers the benefits of wide bandwidth, immunity to EMI/RFI interference, and secure data transmission. ADAM-4541 and ADAM-4542+ can be used as an RS-232/422/485 point-to-point or point-to-multipoint connection for transmitting and converting full/half-duplex signals and their equivalents within a fiber optic environment. Fiber optics is the perfect solution for applications where the transmission medium must be protected from electrical exposure, lightning, atmospheric conditions or chemical corrosion.

ADAM-4541 and ADAM-4542+ is specifically designed to link various machinery equipped with an RS-232/422/485 communication ports (such as computer systems or manufacturing machines). Using standard ST connectors, the module's fiber-optic ports can accommodate a wide range of fiber-optic cable sizes, including 62.5/125, 250/125, and 100/140 mm.

Specifications

- **Casing** ABS with captive mounting hardware
- **Communication Mode** Asynchronous
- **Connector** Plug-in screw terminal
- **Transmission Mode** Full/half-duplex, bidirectional
- **Transmission Rate** Up to 115.2 kbps
- **Operating Temperature** -10 ~ 70° C (14 ~ 158° F)
- **Operating Humidity** 5 ~ 95% (non-condensing)
- **Accessories (included)** Nylon DIN-rail mounting adapter, SECC panel mounting bracket

ADAM-4541

- **Fiber Port** ST
- **Fiber-Optic Transfer Mode** Multi-mode
- **Wavelength** 820 nm
- **Transmission Distance** 2.5 km
- **Optical Power Budget (attenuation)** 12.5 dB
- **Power Consumption** 1 W (typical)
1 W (max.)

ADAM-4542+

- **Fiber Port** SC
- **Fiber-Optic Transfer Mode** Single mode
- **Wavelength** 1310 nm
- **Transmission Distance** 15 km
- **Optical Power Budget** 9 dB
- **Power Consumption** 1 W (typical), 1.5 W (max)

Ordering Information

- **ADAM-4541** Multi-Mode Fiber-Optic to RS-232/422/485 converter
- **ADAM-4542+** Single-mode Fiber-Optic to RS-232/422/485 Converter

Advantages of Fiber Optics

All Dielectric

- Low signal radiation
- Secure transmission
- Lightning immunity
- High-voltage insulation

Compact

- Less duct space
- Fewer additional ducts installed

Low Attenuation

- Greater distance / fewer repeaters
- Less installation and maintenance

Optical Signals

- No ground loops
- No spark hazard
- Operation in flammable areas

High Bandwidth

- Future signal capacity expansion

1
Software

2
IPPC

3
TPC

4
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5
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ADAM-3000

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Motion Control

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ICOM

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eConnectivity

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ADAM-4000

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ADAM-5000

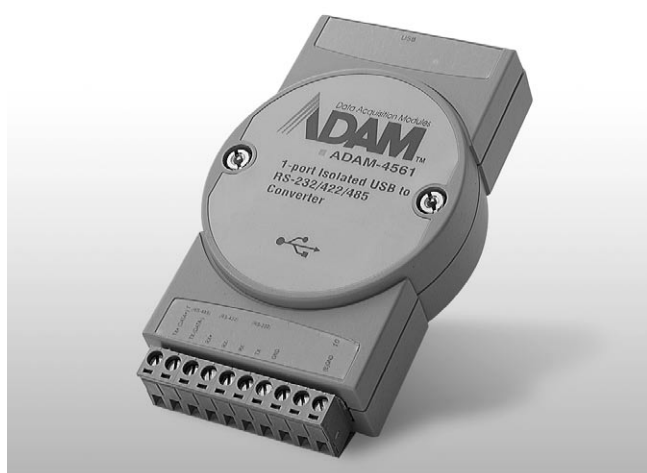
15
ADAM-6000

16
ADAM-8000

17
BAS

ADAM-4561

1-port Isolated USB to RS-232/422/485 Converter



Features

- Full compliance with USB V1.1 specifications.
- RS-232/422/485 port supported
- Transmission speed up to 115.2 kbps
- Isolation protection 3000 V_{DC} provided
- Automatic RS-485 data flow control
- No external power supply necessary; the hub derives its power from the USB port.
- Plug & Play installation.
- No additional IRQs or I/O ports required.
- Hot attach & detach function supported

Introduction

ADAM-4561 allows PC users to connect a serial device to a system that use a USB interface. To attach the ADAM-4561 to a PC, you don't need to open the chassis or power down your PC. Instantly get one or two extra high-speed RS-232/422/485 ports. The power is derived from the USB port, so there are no power adapters to deal with. This makes the ADAM-4561 especially suitable for modems, printers, POS systems and industrial control devices.

Compliant with USB V1.1, ADAM-4561 features several powerful functions such as high-speed 115.2 kbps transmission, support for various operating systems, independent RS-232/422/485 ports and more. By simply plugging in a USB hub, ADAM-4561 eliminates the configuration issues associated with high-priced, older card solutions. You only have to install the drivers, no need to set cards slots, IRQ addresses, DMA channels, or device addresses. This reduces programming effort.

USB, now standard on virtually all new PCs, offers significant advantages over earlier bus types. A single USB interface can connect up to 127 devices at data rates up to 12 Mbps. That kind of easy and convenient connectivity means that your network can grow with your requirements.

Specifications

- **Compatibility** USB v1.1 standard
- **Interface** **Network:** USB
Serial: 3-wire RS-232, RS-422, RS-485
- **Ports** 1 x RS-232/422/485
- **Connector** **Network:** USB type A connector (Type A to Type B cable provided)
Serial: twist-wire
- **Transmission Speed** 50 bps to 115.2 kbps
- **Parity Bits** Odd, even, none
- **Data Bits** 5, 6, 7, 8
- **Stop Bits** 1, 1.5, 2
- **RS-232 Signals** Tx, Rx, GND
- **Surge Protection** 3000 V_{DC} (RS-485)
- **Isolation Protection** 3000 V_{DC} (RS-232/422/485)
- **Driver Supported** Windows® 98/2000/ME/XP, Linux®
- **Power Consumption** 270 mA @ 5 V (Typical)
300 mA @ 5 V (Max.)
- **Max. Distance** 15 ft (4.6m)
- **Case** ABS with captive mounting hardware
- **Mounting** DIN-rail, panel mounting, piggyback stack
- **Operating Temperature** 0 ~ 70° C (32 ~ 158° F)
- **Storage Temperature** -25 ~ 80° C (-13 ~ 176° F)
- **Operating Humidity** 20 ~ 95% (non-condensing)
- **Storage Humidity** 0 ~ 95% (non-condensing)

Ordering Information

- **ADAM-4561** 1-port Isolated USB to RS-232/422/485 Converter