INDUSTRIAL PC'S EXPERT

EXPERT DAQ®

Remote I/O module (DAQ)

& Control module

& TCP/IP System

& Internet embedded controller

9520 Series

AIO DIO Series

9188 Series

9188E Series

Fiber Optic Series

Connect to the future®

FC CE

Process Management is a provider of embedded system and hardware development, with good experience from working with embedded control systems in the Plastic, Textile, Pharmaceutical, Marine and Medical industry. We provide software project management, requirement analysis, system analysis, software development, testing, integration and maintenance.

Embedded Design Softwares / Products Smaller, faster and better - these words define the embedded software development. With rapid technology advancements hardware is getting smaller and faster. Software has to rapidly adapt to deliver more and more innovative, secure and reliable solutions based on state of the art hardware.
Our team of embedded software engineers has been groomed to take on challenges in every new software design project. Our engineers have extremely low platform migration time and design implementation is carried out with utmost attention to minute details ensuring maximum quality output. We develop embedded software with a detailed process flow that involves different stages.

Research & Development We offer complete product realization services that include: Research, Design and Prototyping, Development, Verification & Validation, Evaluation, Outsourcing, Migration and Optimization. We provide a wide range of design, development and support services for embedded components and embedded systems. This includes product development, maintenance, and testing services that empower you to bring your embedded software products to market faster, in a more cost- effective manner, with increased functionality.

Automation Services We work with client to craft new direction, turn them into business reality, and make the best use of information technology. Our core expertise is bringing together business, technology, and operational skills to provide truly integrated services. We also provide Automation Solutions for all your projects and Engineering Services needs in diverse industry verticals. We have expertise in providing Engineering services & solutions in all leading PLC, DCS, SCADA . We are One Stop Shop for all your Embedded Systems and Automation Needs.

Robotics We are combining robotics with telephony so that smart phone will evolve into more than smart phone. Our experts have microprocessor knowledge as basic and the protocols knowledge as well so that they can work on any OS which will keep on evolving . All these equipments will follow these protocols to communicate with each other.

Table of Contents

Index

processmanagement

Table of Contents

Index

processmanagement

EX9000/EX9000-Modbus Series

EX9000 Series provides high quality and highly cost-effective products for reliable valuable Industry control network and system.

We offer the full range of products like as Digital I/O , Analog I/O, Time/Counter, RS232 to RS485/422, GSM/GPRS & Wireless Lan Module & Ethernet to Modbus Data Gateway & Fiber Optic & USB converter, Repeater, mainframe interface, data display and application software.

EX9000/EX9000-Modbus Series Feature:

- "AutoPro" function inside
- All-in-one function
- Industrial specification
- Watchdog design
- High speed Isolation
- Microprocessor built-in
- I/O Range Programmable
- Wide Range power input(35/48 VDC available)
- Din-Rail & Panel/wall & piggyback
- Complete software environment

What's AutoPro & Dual Watchdog Timer

"AutoPro" inside design

PAT.NO. : 90303288
PAT.NO. : 90301256

"**AutoPro**" function is built in RS232 to RS485 converter to detect different baud rate & data format for the whole RS-485 network.

Almost all RS232 to RS485 converter on the market use DIP-switches to select baud rate and data format. **"AutoPro"** provides auto configuration of the baud rate and data format of whole RS-485 network, so that EX9520/A/R/AR can automatically connect at different baud rates & data formats as shown in the network diagram.

Dual Watchdog=Module Watchdog+Host Watchdog

The Module Watchdog is a hardware reset circuit to monitor the module's operating status. While working in harsh or noisy environment, the module may be down by the external signal. The circuit ensures may let the module to work continues and never halt.

The **Host Watchdog** is a software function to monitor the host's operating status. It's purpose is to prevent the network from having communication problems or host halt. When the timeout interval expires, the module will reset all outputs to safe predefined values to prevent the controlled target from getting into unexpected situations.

EX9000 modules with **Dual Watchdog** will make the controlled system work in a more reliable and stable way.

EX9510/A

The EX-9510 repeater boosts the RS-422/485 signals to extend the range of the network to a distance up to 4000 ft (1200m) and increases the maximum number of connected nodes up to 128. With a special circuitry, EX-9510 is able to automatically detect the data flow and accordingly switch the direction of the data lines.

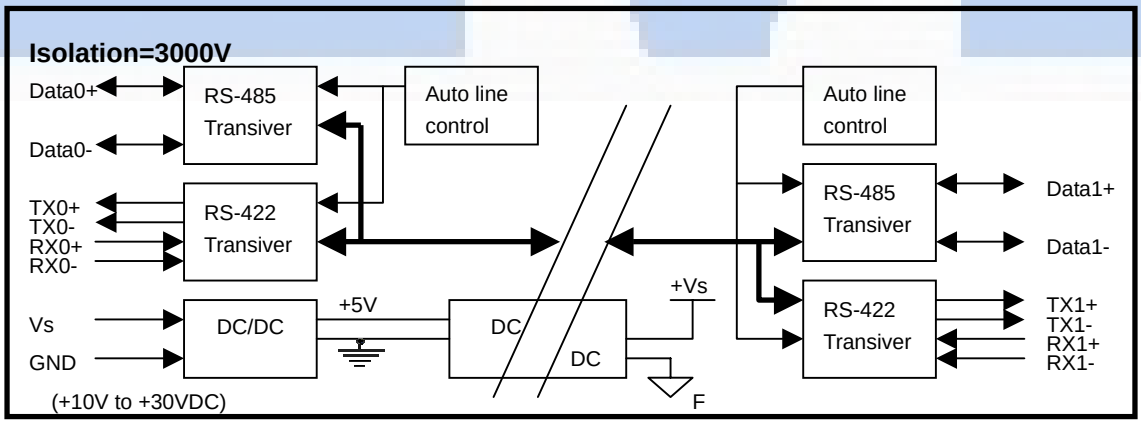
"Auto baud rate detector" enables EX-9510 automatically to configure RS-422/485 baud rate without setting external DIP-switches.

Build in Opto-isolation on EX-9510 provides 3000VDC isolation to protect the host computer from ground loops and destructive voltage spikes on the RS-422/485 data lines. EX-9510 also offers internal surge-protection on the data lines. Internal high-speed transient suppression on each data line protects the module from dangerous voltage levels and spikes.

Features

- Automatic internal RS-422/485 bus supervision
- No external flow control signals required for RS-485
- Minimum 3000VDC isolation protection
- Transient suppression on RS-485 data lines
- Supported baud rate up to 115.2Kbps
- Reach distance up to 4000 feet (1200m)
- Reserved space for termination resistors (R8,R9)
- Power and data flow indicator for troubleshooting
- Power requirement: +10V to +30VDC
- Mounts easily on DIN-rail or panel

Block Diagram:



EX9520/A/R/AR

Key Specifications/Special Features:

- Input: RS-232 protocol
- Speed: "AutoPro" designed auto switch baud rate, 300~115200Bps
- 256 modules max. in one RS-485 network without repeater
- 3000V isolation
- Multiple baud rate; multiple data format
- Communication distance:
  - 2.1km/9600Bps
  - 2.7km/4800Bps
  - 3.6km/2400Bps
  - Power requirements: +10V-30VDC
  - Power consumption 2.2W(max.)
  - Dimensions: 7 x 10 x 2cm
  - Series products: RS422/RS485/RS232; digital I/O AD/DA module
  - Operation Temp: -25℃ to +75℃
  - Storage Temp: -40℃ to +80℃

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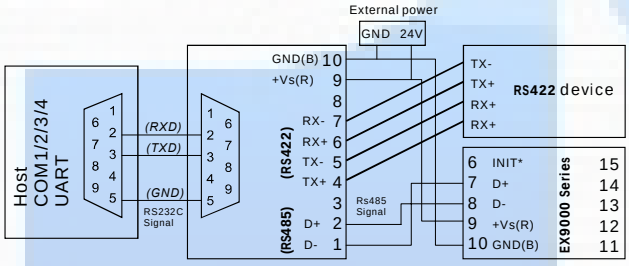
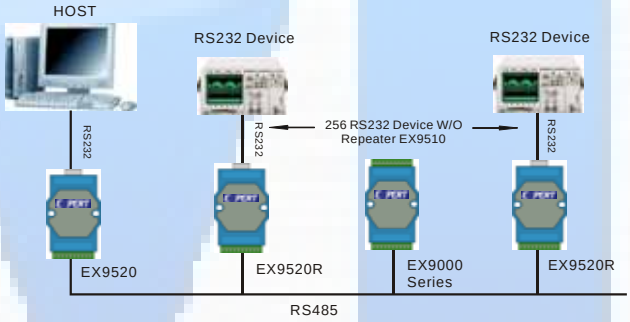
Serial products:

	422	485	Isolate	Repeater
EX9520		ˇ	232	
EX9520R		ˇ	485	
EX9520A	ˇ	ˇ	232	
EX9520AR	ˇ	ˇ	422/485	
EX9510		ˇ	485	ˇ
EX9510A	ˇ	ˇ	422/485	ˇ

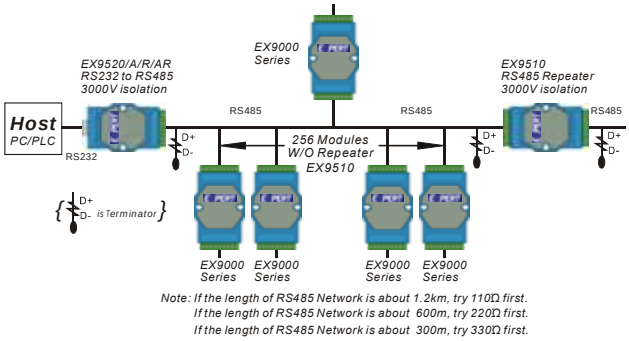
Ref. Of Connection I:



RS232 Devices Network:

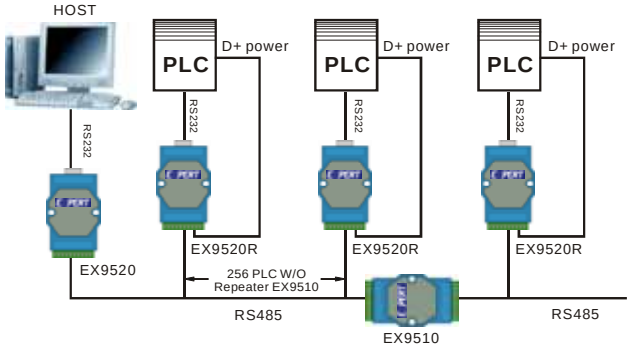


Ref. Of Connection II:



Note: If the length of RS485 Network is about 1.2km, try 110Ω first.
If the length of RS485 Network is about 600m, try 220Ω first.
If the length of RS485 Network is about 300m, try 330Ω first.

PLC Network:



EX9530

The EX-9530 converter is an intelligent, stackable expansion module which can be connected to a PC's USB port or a USB Hub. The modules provide a High-Speed RS-232/RS-422 or RS-485 serial port with jumperless auto baud rate detection (**"AutoPro"**). The EX-9530 offers easy connectivity to traditional serial devices.

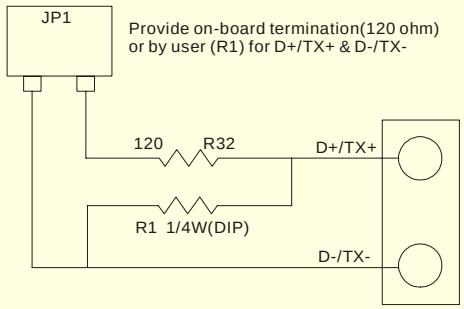
The RS-232 standard supports full-duplex communication and handshaking signals (such as RTS, CTS). The RS-485 controller is completely transparent to the user and the software is written to work with half-duplex on the COM port without any modification.

The EX-9530's opto-isolation provides 3000 VDC isolation to protect the host computer from ground loops and destructive voltage spikes on the RS-232/RS-422 and RS-485 data lines.

EX-9530 also offers internal surge-protection on its data lines. Internal high-speed transient suppression on each data line protects the module from dangerous voltage levels or spikes.

Features

- USB Specification 1.1 Compliant
- Auto direction flow control on RS-485
- Full-Duplex RS-232/RS-422 support
- RS-232 support RTS & CTS handshake signals
- Minimum 3000 VDC isolation protection
- Transient suppression on RS-485 data lines
- Auto switching for USB to RS-232/RS-422 or RS-485
- Auto Switching Baud Rate up to 115.2 Kbps
- Reserved space for termination resistors R1(TX/DATA), R2(RX)
- Power and data flow indicator for troubleshooting
- Driver support for Windows 95/98/ME/2000/XP, Linux
- Power requirement: Self Power



Termination Resistor "R1" for D+/TX+ & D-/TX-

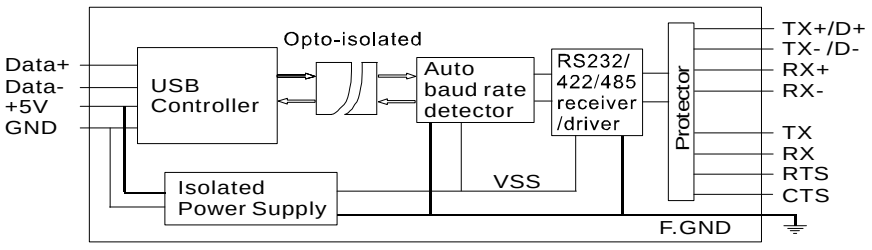
Termination Resistor "R2" for RX+ & RX-

If the length of RS-485 is about 1.2KM, try 120 ohm first.

If the length of RS-485 is about 600M, try 220 ohm first.

If the length of RS-485 is about 300M, try 330 ohm first.

Block diagram:



EX9531

The EX-9531 convert is an intelligent, stackable expansion module that connects to a PC USB port or USB Hub via the Universal Serial Bus(USB) port, providing one High-Speed RS-422 or RS-485 serial port(jumperless) The EX-9531 features easy connectivity for traditional serial devices.

The RS-232 standard supports full-duplex communication and handshaking signals (such as RTS, CTS) and The RS-485 control is completely transparent to the user and software written for half-duplex COM works without any modification.

The EX-9531's Opto-isolators provide 3000 Vdc of isolation to protect the host computer from ground loops and destructive voltage spikes on the RS-422/485 data lines.

EX-9531 also offer internal surge-protection on their data lines. Internal high-speed transient suppressors on each data line protect the modules from dangerous voltages levels or spikes.

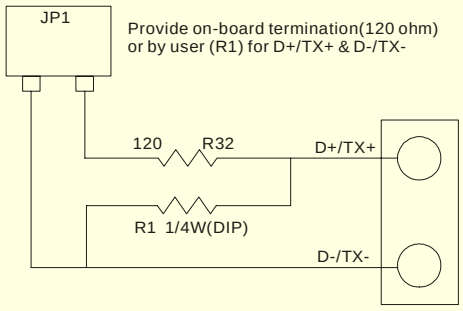
The EX-9531 module derives the power from USB port and doesn't need any power adapter

Features

- USB Specification 1.1 Compliant
- Auto direction flow control on RS-485
- Full-Duplex RS-422 support
- RS-422 support RTS & CTS handshake signals
- Minimum 3000 VDC isolation protection
- Transient suppression on RS-485 data lines
- Auto switching for USB to RS-422 or RS-485(jumperless)
- Auto Switching Baud Rate up to 115.2 Kbps
- Reserved space for termination resistors

R1(TX/DATA), R2(RX), R3(CTS), R4(RTS)

- Power and data flow indicator for troubleshooting
- Driver support for Windows 95/98/ME/2000/XP, Linux
- Power requirement: Self Power



Termination Resistor "R1" for D+/TX+ & D-/TX-

Termination Resistor "R2" for RX+ & RX-

Termination Resistor "R3" for CTS+/CTS-

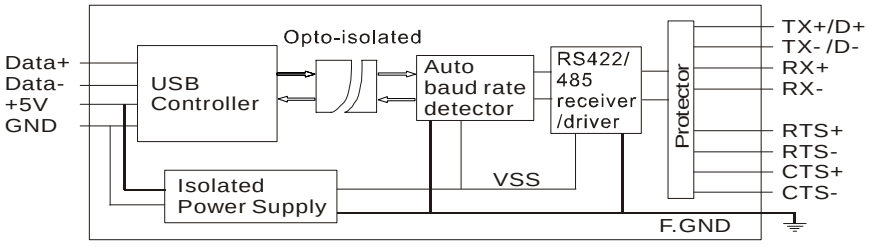
Termination Resistor "R4" for RTS+/RTS-

If the length of RS-485 is about 1.2KM, try 120 ohm first.

If the length of RS-485 is about 600M, try 220 ohm first.

If the length of RS-485 is about 300M, try 330 ohm first.

Block diagram:



TCP/IP & RS422/485 Network

EX9000/EX9000-Modbus Series:

RS422/485 Converter

Repeater

A/D, D/A, D I/O

EX9188XD Series:

AD, A5D, A8D, Modbus/RTU

EX952N: EX9521D/22D/23D

EX9188END Series:

E1D, E2D, E3D, E4D, E5D, E8D, Modbus/TCPIP

Micro PLC W/Expansion board:

4M/8M/16M/32M/ Nand Flash

256K/512K W/Battery

DI*3/4/5 W/RS232*2

DO*3/4/5 W/RS232*2

AIO & DIO

PCI DIO/AIO Card Series:

PCI RS232/485 Card Series:

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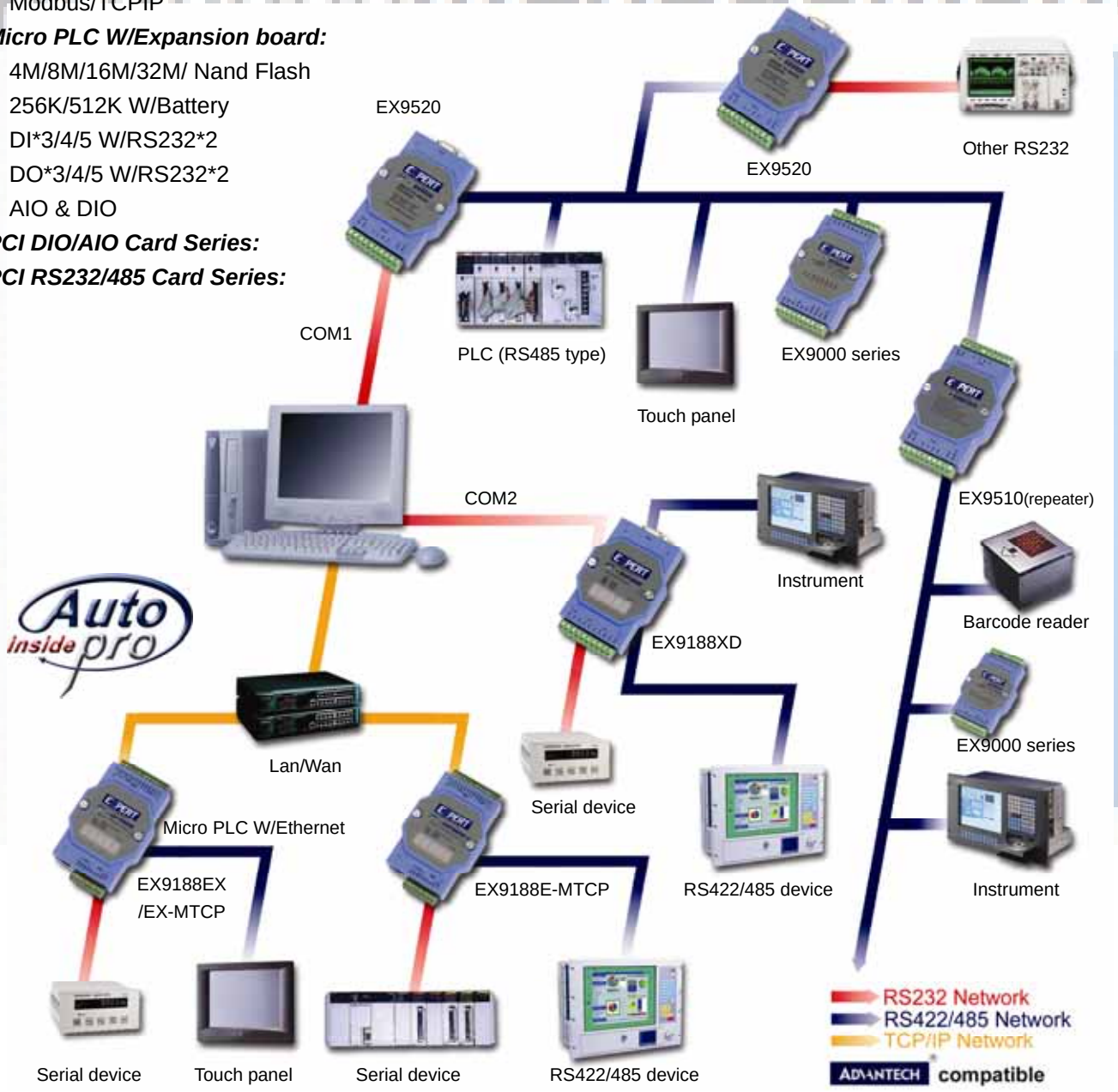
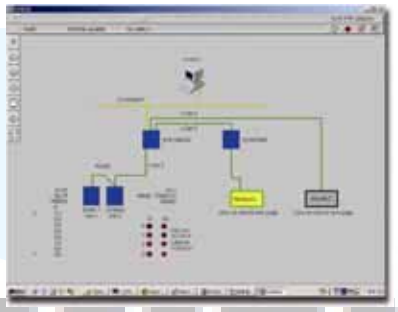


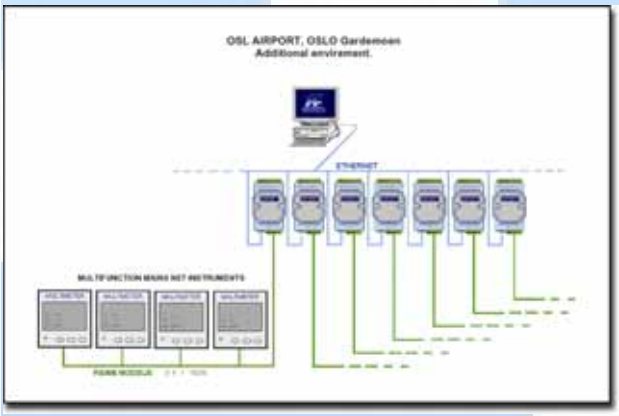
TCP/IP & RS422/485 Network

001: Application for EX9520AR; EX9017F; EX9060D of EX9000 Series & Modbus & Koyo PLC under Citect of SCADA system



002: Application for EX9188E4D; EX9520AR; EX9510; Siemens; CVM-BD RED under Citect of SCADA system

003: Application for EX9188E4D; EX9017F; PLC(Koyo); Modbus Converter under Citect SCADA system

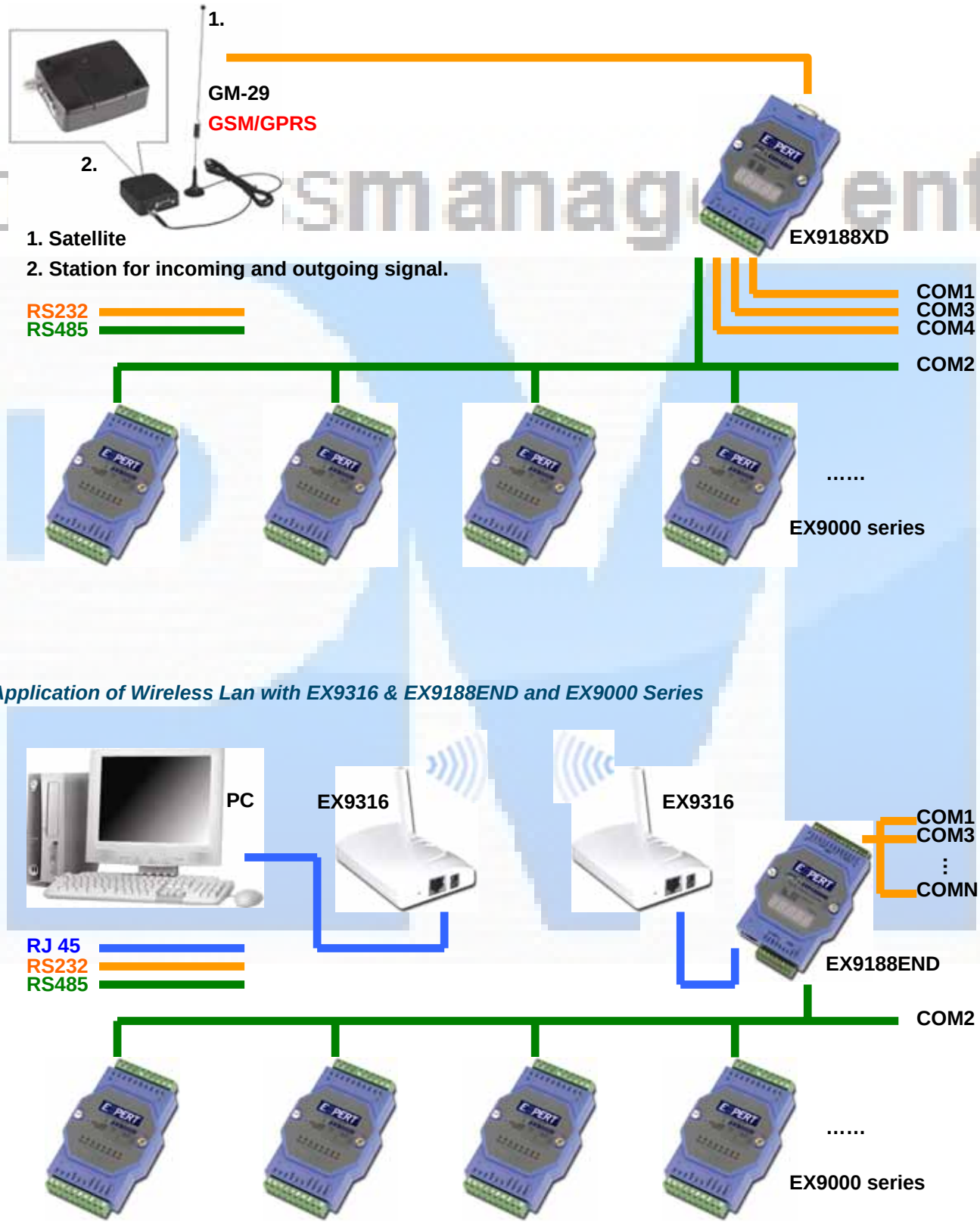


004: Application(OSL Airport) for EX9188END & Modbus under Citect of SCADA system

005: Application for Solar & Pollution control by EX9188AD & EX9060D & EX9017F & EX9044D

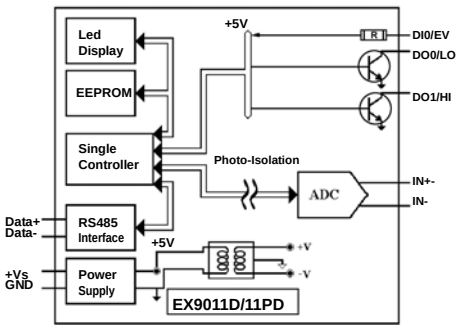
TCP/IP & RS422/485 Network

Application of GSM/GPRS with GM29 & EX9188XD and EX9000 Series



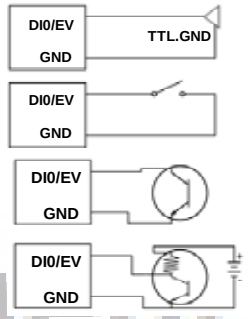
Application of Wireless Lan with EX9316 & EX9188END and EX9000 Series

EX9011PD

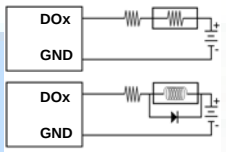


- Resolution: 16bit
- **Analog I/P channel: 1 diff**
  - Sampling rate: 10Hz
  - Voltage I/P: +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V
  - Current I/P: +/-20mA
  - Sensor I/P: J, K, T, E, R, S, B, N, C, L, M
  - 4.5 digit LED
  - Isolation: 3000V
- **Digital I/P Channels: 1 diff**
- **Digital O/P Channels: 2 open collector**
  - Event Counter
  - H/L Alarm
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1.5W
- Operating Temp: -25~75℃

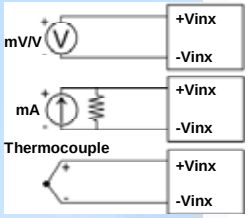
D/I Wire Connection:



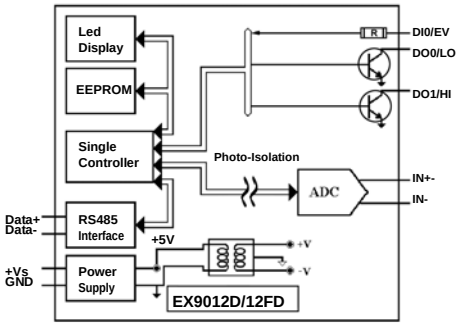
D/O Wire Connection:



A/D Wire Connection:

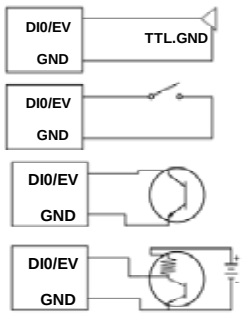


EX9012D/12FD

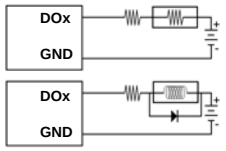


- Resolution: 16bit/**12bit(9012FD)**
- **Analog I/P channel: 1 diff**
  - Sampling rate: 10Hz/100Hz**(9012FD)**
  - Voltage I/P: +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V
  - Current I/P: +/-20mA
  - 4.5 digit LED
  - Isolation: 3000V
- **Digital I/P Channels: 1 diff**
- **Digital O/P Channels: 2 open collector**
  - Event Counter
  - H/L Alarm
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1.9W
- Operating Temp: -25~75℃

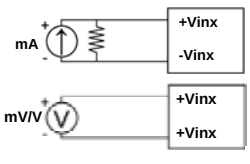
D/I Wire Connection:



D/O Wire Connection:

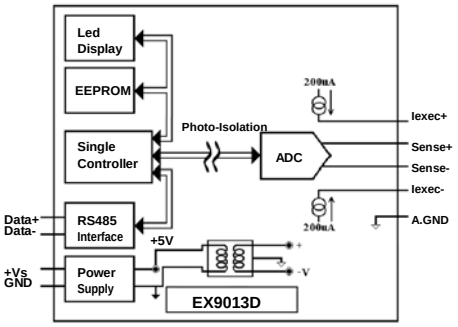


A/D Wire Connection:

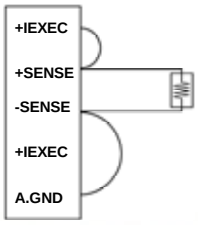


EX9013D

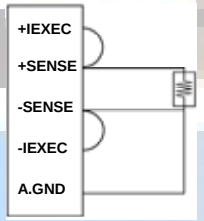
- Resolution: 16bit
- **Analog I/P channel: 1 diff**
  - Sampling rate: 15Hz
  - Sensor I/P: RTD(Pt, Ni)
  - 4.5 digit LED
  - Isolation: 3000V
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2.2W
- Operating Temp: -25~75℃



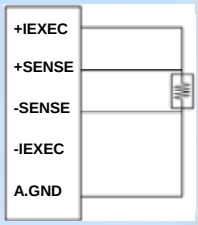
2-wire RTD connection



3-wire RTD connection

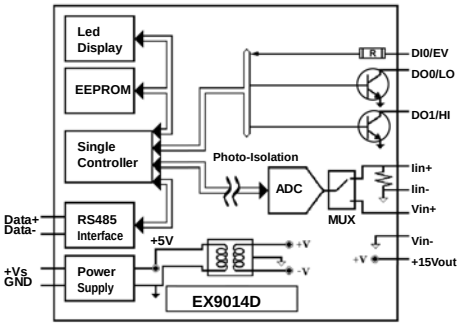


4-wire RTD connection

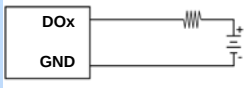


EX9014D

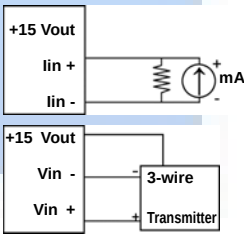
- Resolution: 16bit
- **Analog I/P channel: 1 diff**
  - Sampling rate: 10Hz
  - Voltage I/P: +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V
  - Current I/P: +/-20mA
  - 4.5 digit LED
  - Isolated loop power: 15V
  - I/P Linear Scaling
  - Isolation: 3000V
- **Digital I/P Channels: 1 diff**
- **Digital O/P Channels: 2 open collector**
  - Event Counter
  - H/L Alarm
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1.9W
- Operating Temp: -25~75℃



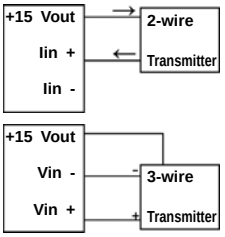
D/O Wire connection



A/D wire connection

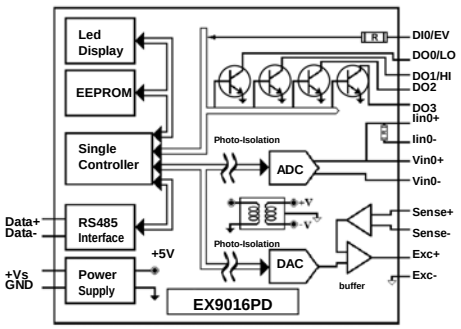


Transmitter A/D

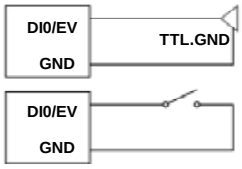


EX9016D

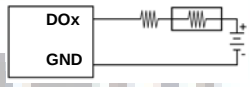
- Resolution: 16bit
- **Analog I/P channel: 1 diff**
  - Sampling rate: 10Hz
  - Voltage I/P: +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V
  - Current I/P: +/-20mA
  - Sensor I/P: Strain gauge, 4 wire
  - 4.5 digit LED
  - I/P Liner Scaling
  - Isolation: 3000V
- **Digital I/P Channels: 1 diff**
- **Digital O/P Channels: 4 open collector**
  - Event Counter
  - H/L Alarm
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1W
- Operating Temp: -25~75℃



D/I Wire Connection:



D/O Wire Connection

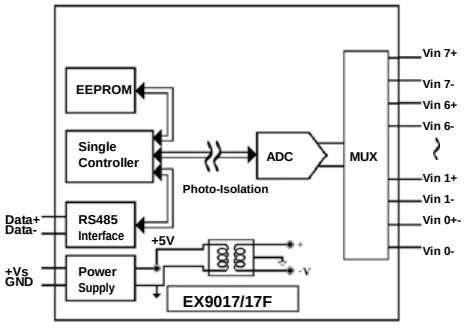


A/D Wire Connection:

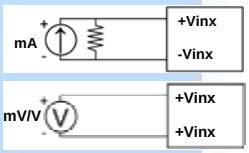
D/A Wire Connection:

EX9017/17F

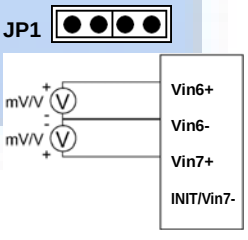
- Resolution: 16bit/**12bit(9017F)**
- **Analog I/P channel: 8 diff**
  - Sampling rate: 10Hz/**75Hz(9017F)**
  - Voltage I/P: +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V
  - Current I/P: +/-20mA
  - Isolation: 3000V
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1.3W
- Operating Temp: -25~75℃



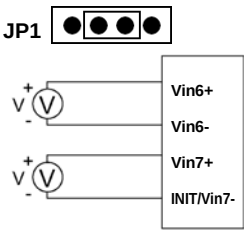
A/D Wire Connection:



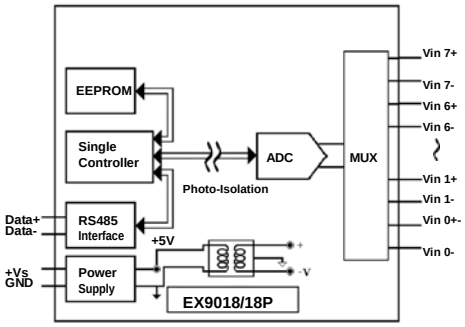
Init* mode connection:



Differential mode Connection:

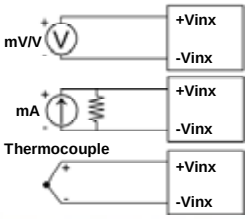


EX9018/9018BL

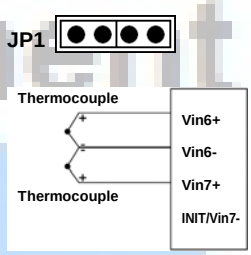


- Resolution: 16bit
- **Analog I/P channel: 8 diff**
  - Sampling rate: 10Hz
  - Voltage I/P: +/-15mV, +/-50mV, +/-100mV, +/-500mV, +/-1V, +/-2.5V
  - Current I/P: +/-20mA
  - Sensor I/P: J, K, T, E, R, S, B, N, C
  - Isolation: 3000V
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1W
- Operating Temp: -25~75℃
- Thermocouple break line detection **(9018BL)**

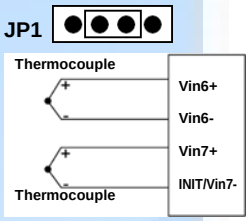
A/D Wire Connection:



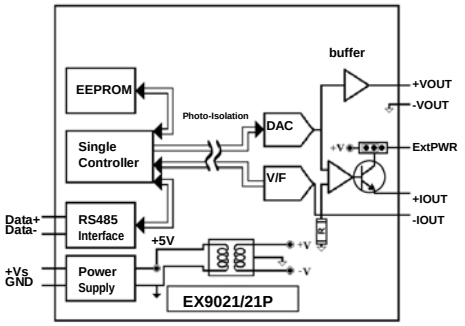
Init* mode connection:



Differential mode Connection:

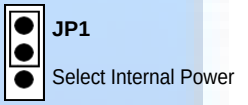


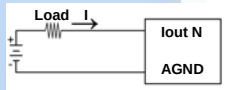
EX9021

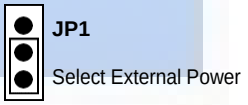


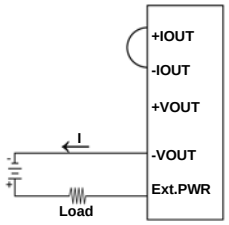
- Resolution: **12bit**
- **Analog O/P Channel: 1**
  - Voltage O/P: 0~10V
  - Current O/P: 0~20mA, 4~20mA
  - Safe Value (When host fail / Comm fail)
- Power-on Value
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2W
- Operating Temp: -25~75℃

Current D/A Wire Connection:



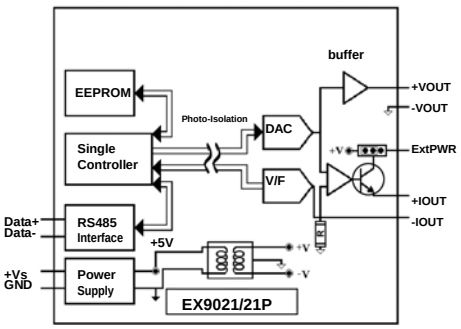




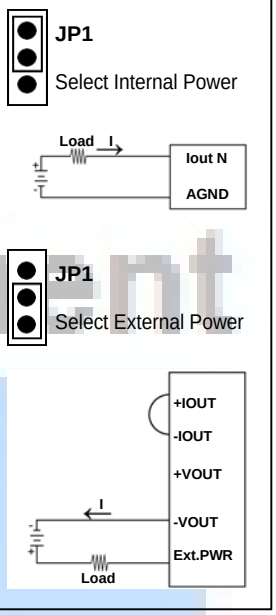


EX9021P

- Resolution: **16bit**
- **Analog O/P Channel: 1**
  - Voltage O/P: 0~10V
  - Current O/P: 0~20mA, 4~20mA
  - Safe Value (When host fail / Comm fail)
- Power-on Value
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2W
- Operating Temp: -25~75℃

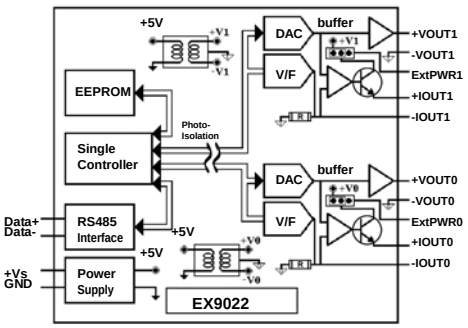


Current D/A Wire Connection:

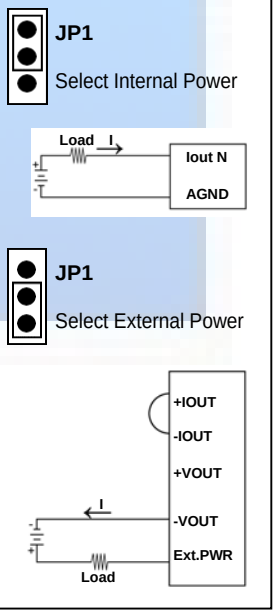


EX9022

- Resolution: 12bit
- **Analog O/P Channel: 2**
  - Voltage O/P: 0~10V
  - Current O/P: 0~20mA, 4~20mA
  - Safe Value (When host fail / Comm fail)
- Power-on Value
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2W
- Operating Temp: -25~75℃



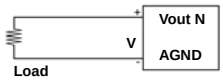
Current D/A Wire Connection:



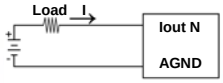
EX9024

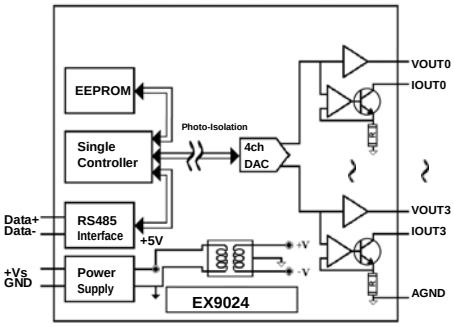
- Resolution: 14bit
- **Analog O/P Channel: 4**
  - Voltage O/P: +/-10V, 0~10V, +/-5V, 0~5V
  - Current O/P: 0~20mA, 4~20mA
  - Safe Value (When host fail / Comm fail)
  - Power-on Value
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2W
- Operating Temp: -25~75℃

Voltage D/A Wire Connection:



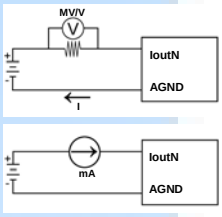
Current D/A Wire Connection:





Current D/A Calibration sequence:

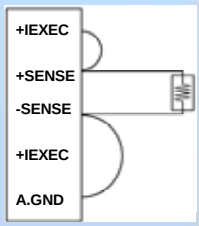
1. Connect meter and external power sources to module's current output channel 0
2. Setting type to 30. (0 to 20mA)
3. Output 0mA.
4. Check the meter and trim the output until 0mA match by apply trim command
5. Perform 0mA Calibration Command.
6. Output 20mA
7. Check the meter and trim the output until 20mA match by apply trim command.
8. Perform 20mA Calibration Command.
9. Repeat 1 to 8 for channel 1,2 and 3.



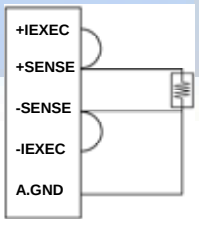
EX9033D

- Resolution: 16bit
- **Analog I/P channel: 3 diff**
  - Sampling rate: 15Hz
  - Sensor I/P: RTD(Pt, Ni)
  - 4.5 digit LED
  - Isolation: 3000V
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2.5W
- Operating Temp: -25~75℃

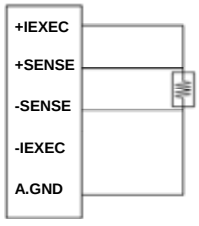
2-wire RTD connection

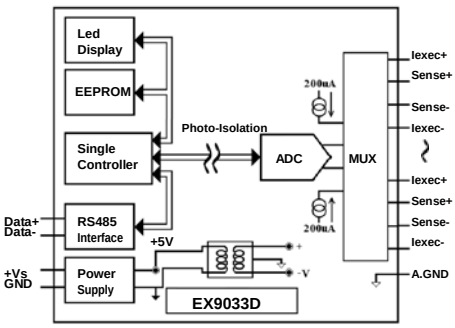


3-wire RTD connection



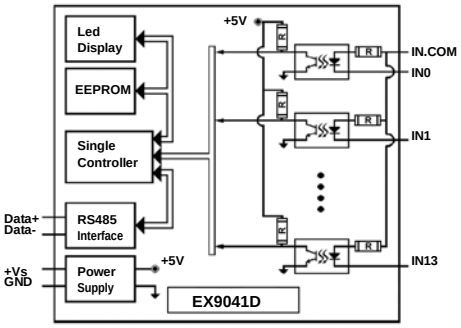
4-wire RTD connection



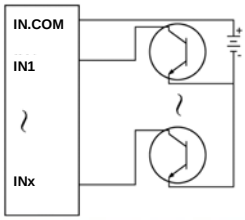


EX9041D

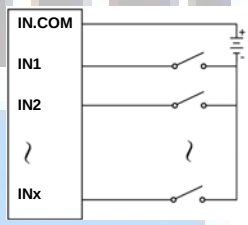
- **Digital I/P channel: 14 by Single-ended**
  - Isolation: Isolation with common sources
  - Isolation Voltage: 3750Vrms
  - Digital Level 0: +1V max
  - Digital Level 1: +4V to +30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 0.9W
- Operating Temp: -25~75℃



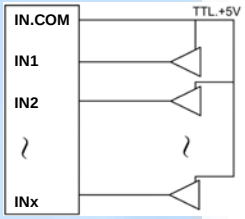
Open Collector signal D/I



Dry Contact signal D/I



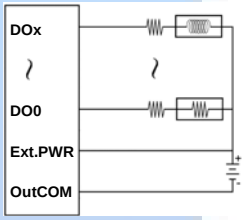
TTL/CMOS signal D/I

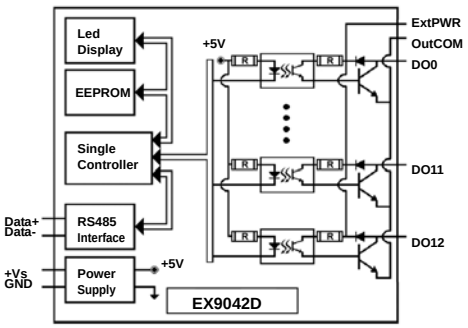


EX9042D

- **Digital O/P Channel: 13 by open collector**
  - Isolation: Isolation with common power
  - Isolation Voltage: 3750Vrms
  - Load Voltage: Max to +30V
  - Max Load current: 100mA
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.7W
- Operating Temp: -25~75℃

D/O Wire Connection:

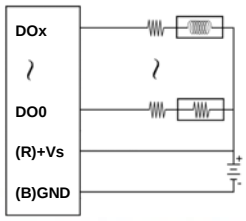


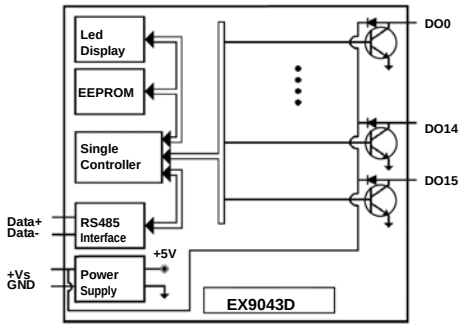


EX9043D

- **Digital O/P Channel: 16 by open collector**
  - Load Voltage: Max to +30V
  - Max Load current: 100mA
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.1W
- Operating Temp: -25~75℃

D/O Wire Connection:

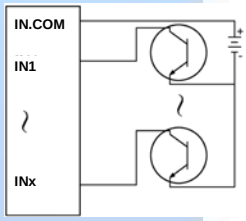




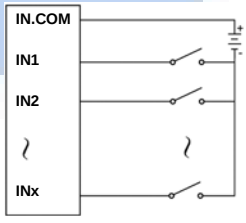
EX9044D

- **Digital O/P Channel: 8 by open collector**
  - Isolation: Isolation with common power
  - Isolation Voltage: 3750Vrms
  - Load Voltage: Max to +30V
  - Max Load current: 375mA
- **Digital I/P Channel: 4 by Single-ended**
  - Isolation: Isolation with common Sources
  - Isolation Voltage: 3750Vrms
  - Digital Level 0: 1V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.7W
- Operating Temp: -25~75℃

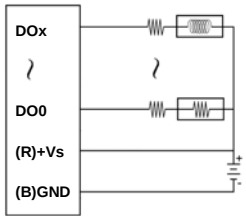
Open Collector signal D/I

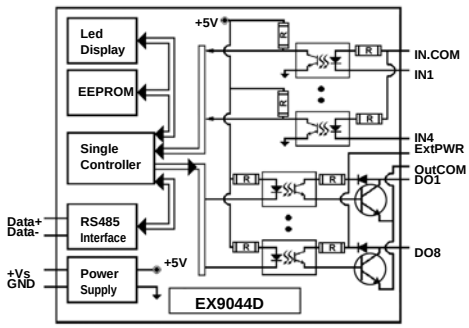


Dry Contact signal D/I



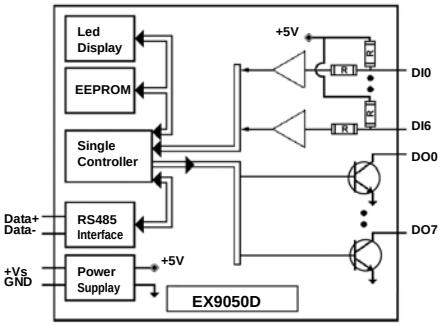
D/O Wire Connection:



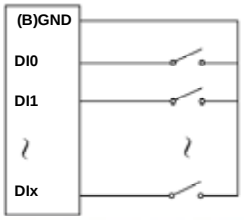


EX9050D

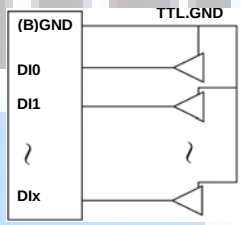
- **Digital O/P Channel: 8 by open collector**
  - Load Voltage: Max to +30V
  - Max Load current: 30mA
- **Digital I/P Channel: 7 by Single-ended**
  - Digital Level 0: 1V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.7W
- Operating Temp: -25~75℃



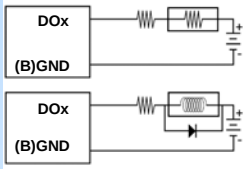
Dry Contact signal D/I



TTL/CMOS signal D/I

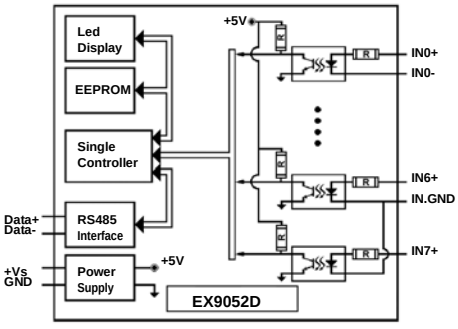


D/O Wire Connection:

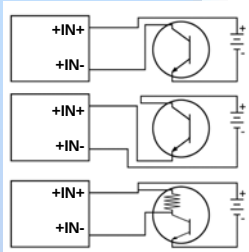


EX9052D

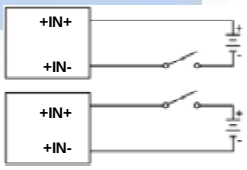
- **Digital I/P Channel: 8**
  - Isolation: 6 diff & 2 single-ended
  - Isolation Voltage: 5000Vrms
  - Digital Level 0: 1V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 0.6W
- Operating Temp: -25~75℃



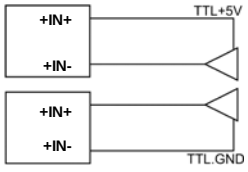
Open Collector signal D/I



Dry Contact signal D/I

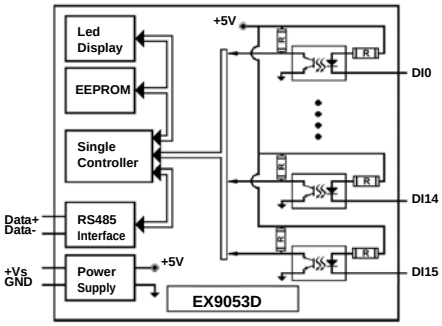


TTL/CMOS signal D/I

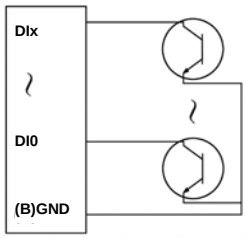


EX9053D

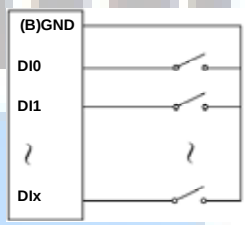
- **Digital I/P Channel: 16 by single-ended**
  - Digital Level 0: 2V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 820 Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 0.9W
- Operating Temp: -25~75℃



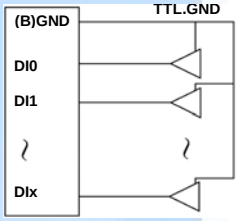
Open Collector signal D/I



Dry Contact signal D/I

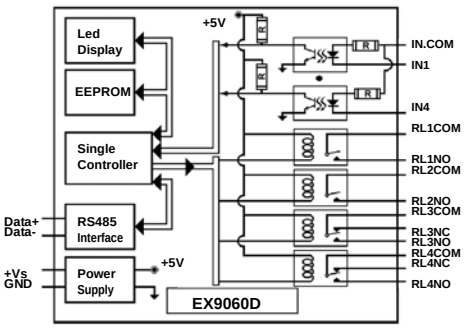


TTL/CMOS signal D/I

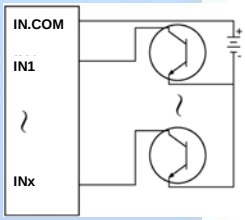


EX9060D

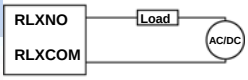
- **Digital O/P Channel: 4**
  - Relay type: Form A: RL1, RL2
    Form B: RL3, RL4
  - Surge Strength: 500V
  - Operate Time: 3mS
  - Release Time: 2mS
  - Min. Life: $5*10^5$ops
- **Digital I/P Channel: 4 by single-ended**
  - Isolation: Isolation with common Sources
  - Isolation Voltage: 3750Vrms
  - Digital Level 0: 1V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.9W
- Operating Temp: -25~75℃



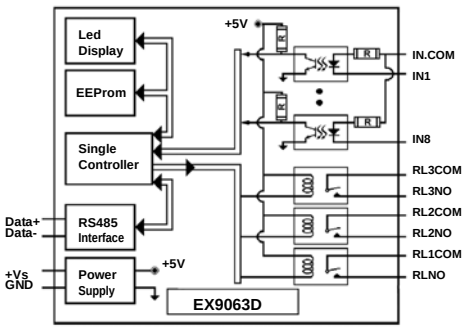
Open Collector signal D/I



Relay O/P on:

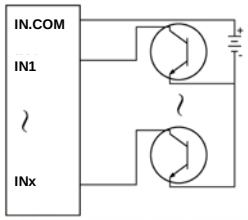


EX9063D/AD/BD



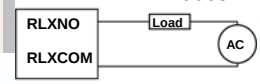
- **Digital O/P Channel: 3**
  - Relay type: **9063D** 5A@250VAC/30VDC
  - **9063AD** AC-SSR Normal Open
  - **9063BD** DC-SSR Normal Open
- **Digital I/P Channel: 8 by single-ended**
  - Isolation: Isolation with common Sources
  - Isolation Voltage: 3750Vrms
  - Digital Level 0: 1V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.5W
- Operating Temp: -25~75℃

Open Collector signal D/I

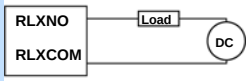


Relay O/P on:

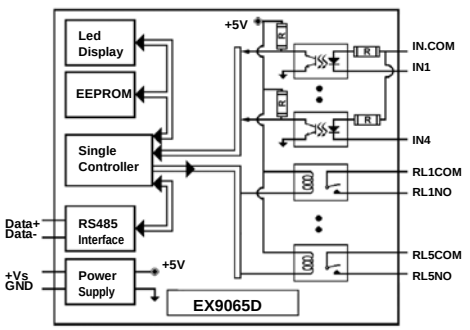
9063AD



9063BD

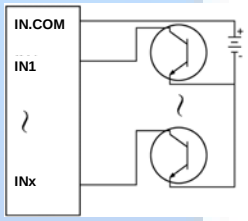


EX9065D/AD/BD



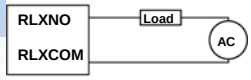
- **Digital O/P Channel: 5**
  - Relay type: **9065D** 5A@250VAC/30VDC
  - **9065AD** AC-SSR Normal Open
  - **9065BD** DC-SSR Normal Open
- **Digital I/P Channel: 4 by single-ended**
  - Isolation: Isolation with common Sources
  - Isolation Voltage: 3750Vrms
  - Digital Level 0: 1V Max
  - Digital Level 1: 4V to 30V
  - Input Impedance: 3K Ohms
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.5W
- Operating Temp: -25~75℃

Open Collector signal D/I

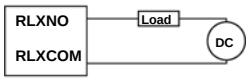


Relay O/P on:

9065AD



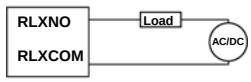
9065BD

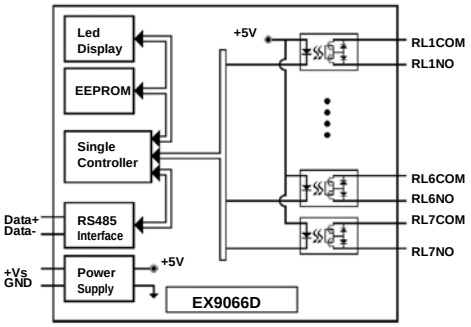


EX9066D

- **Digital O/P Channel: 7 (PhotoMOS)**
  - Load Current: 0.13A
  - Load Voltage: 350V Max
  - Isolation Voltage: 350V Max
  - TurnOn Time: 0.7mS typ
  - TurnOff Time: 0.05mS typ
  - Power Input: +10V to +30VDC
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.9W
- Operating Temp: -25~75℃

Relay O/P on:

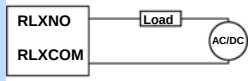


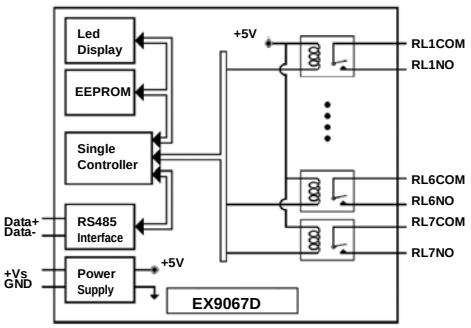


EX9067D

- **Digital O/P Channel: 7**
  - Relay type: Form A
  - Contact Rating: 0.5A@120AC, 1A@24VDC
  - Surge Strength: 1500V
  - Operate Time: 5mS Max
  - Release Time: 2mS Max
  - Min. Life: 10^5ops
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 1.9W
- Operating Temp: -25~75℃

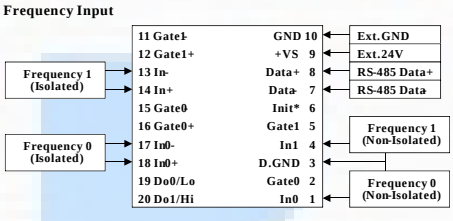
Relay O/P on:

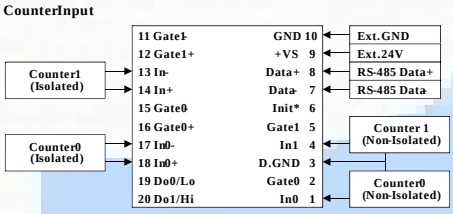


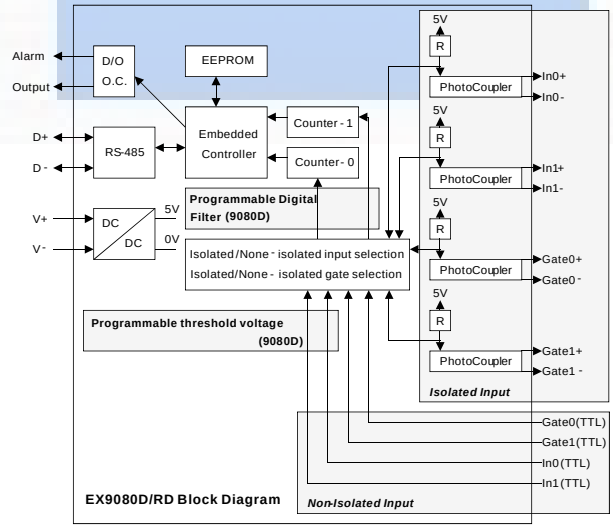


EX9080D/RD

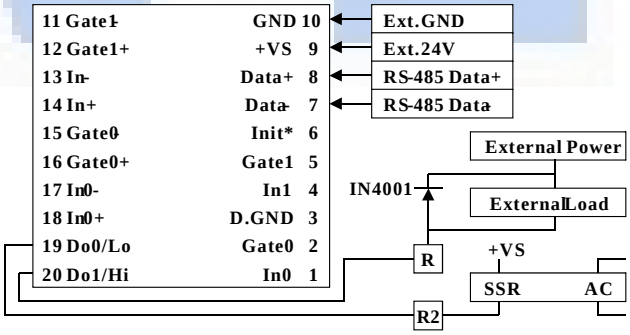
- **Digital O/P Channel: 2 Open collector**
  - Load Voltage: Max to +30V
  - Max Load current: 30mA
  - Power dissipation: 300mW
- **Digital I/P Channel: 2**
  - ***Counter input:***
    - Isolation Input levels: Logic level 0: +1V max
      Logic level 1: +3.5V to +30V
      Isolation Voltage: 3750Vrms
    - Non-Isolation input threshold level: programmable **(for EX9080D only)**
      Logic level 0: 0 to +5V (default: 0.8V)
      Logic level 1: 0 to +5V (default: 2.4V)
    - Maximum count: 32 bit (4,294,967,295)
    - Programmable digital noise filter: 2 us to 65 ms (for EX9080D only)
    - Alarming: alarm on counter 0 or counter 0 & 1, programmable
    - Counter preset value: programmable
  - ***Frequency Measurement:***
    - Input frequency: 1 Hz to 100K Hz max
    - Programmable build-in gate time: 1.0/0.1 sec
- 4.5 digit LED
- Dual Watchdog Timer
- Power Input: +10V to 30VDC
- Power Consumption: 2.2W
- Operating Temp: -25~75℃







Output Drive SSR or Other Load



Note:
If the external load is resistive load, the 1N4001 ca be omitted (transistor, lamp, resistor....)
If the external load is inductive load, the 1N4001 ca be omitted (relay, coil....)

EX9017F-M

- Resolution: 12bit
- **Analog I/P channel: 8 diff**
  Sampling rate: 75Hz
  Voltage I/P: +/-150mV, +/-500mV, +/-1V, +/-5V, +/-10V
  Current I/P: +/-20mA
  Isolation: 3000V
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1.3W
- Operating Temp: -25~75℃
- Support Modbus protocol

EX9024-M

- Resolution: 12bit
- **Analog O/P Channel: 4**
  Voltage O/P: +/-10V, 0~10V, +/-5V, 0~5V
  Current O/P: 0~20mA, 4~20mA
  Safe Value (When host fail / Comm fail)
  Power-on Value
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 2W
- Operating Temp: -25~75℃
- Support Modbus protocol

EX9043D-M

- **Digital O/P Channel: 16 open collector**
  Load Voltage: Max to +30V
  Max Load current: 100mA
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 1.1W
- Operating Temp: -25~75℃
- Support Modbus protocol

EX9053D-M

- **Digital I/P Channel: 16**
  Digital Level 0: 2V Max
  Digital Level 1: 4V to 30V
  Input Impedance: 820 Ohms
- Dual Watchdog Timer
- Power I/P: +10V to +30V
- Power Consumption: 0.9W
- Operating Temp: -25~75℃
- Support Modbus protocol

EX9060-M

- **Digital O/P Channel: 4**
  Relay type: Form A: RL1, RL2
  Form B: RL3, RL4
  Surge Strength: 500V
  Operate Time: 3mS
  Release Time: 2mS
  Min. Life: $5*10^5$ops
- **Digital I/P Channel: 4**
  Isolation: Isolation with common Sources
  Isolation Voltage: 3750Vrms
  Digital Level 0: 1V Max
  Digital Level 1: 4V to 30V
  Input Impedance: 3K Ohms
- Power input: +10V to +30VDC
- Power Consumption: 1.9W
- Operating Temp: -25~75℃
- Support Modbus protocol

EX9188XD Series

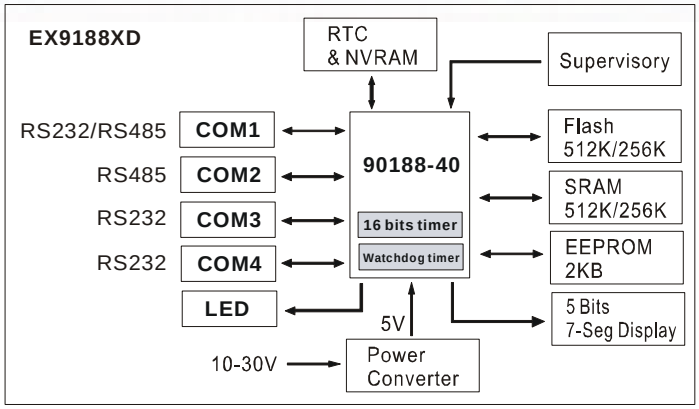
Key Specification/Special Features:

- EX9188XD Series：Support 4/5/8 RS232/RS485 devices
- COM4 Can be used to download program and can be RS232 port
- Watchdog support for system recovery
- CPU：80188, 40MHZ
  - SRAM：256KB
  - FLASH ROM：512KB
  - EEPROM：2KB
  - EMBEDDED OS：RomDos(Datalight)
  - RTC
  - **Optional: 512KB SRAM**
- 3000V Isolation option
- Operating Temp: -25~75℃
- Power input: +10 to 30VDC (35/48VDC Available)
- Series：EX9188AD, EX9188AD-512, EX9188A5D, EX9188A5D-512, EX9188A8D, EX9188A8D-512

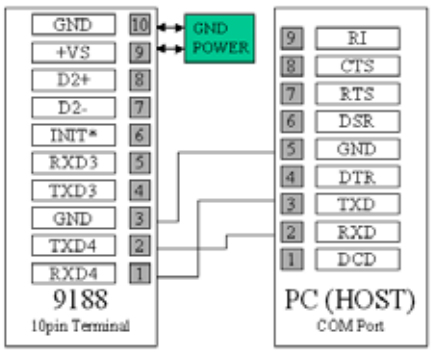
Serial products:

Model	EX9188AD	EX9188AD-512	EX9188A5D	EX9188A5D-512	EX9188A8D	EX9188A8D-512
Flash	512K	512K	512K	512K	512K	512K
SRAM	256K	512K	256K	512K	256K	512K
RTC	v	v	v	v	v	v
COM1	RS232/485 ***1**	RS232/485 ***1**	RS232(5wire) ***2**	RS232(5wire) ***2**	RS232(5wire) ***2**	RS232(5wire) ***2**
COM2	RS485	RS485	RS485	RS485	RS485	RS485
COM3	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM4	RS232(3wire) ***2**	RS232(3wire) ***2**	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM5	x	x	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM6	x	x	x	x	RS232(3wire)	RS232(3wire)
COM7	x	x	x	x	RS232(3wire)	RS232(3wire)
COM8	x	x	x	x	RS232(3wire)	RS232(3wire)

***1: RS232 (5wire) / RS485 (2wire)**
***2: Use to Program download**



Use COM4 for Debug System
(EX9188XD, EX9188XD-512)



EX952N Series

Key Specification/Special Features:

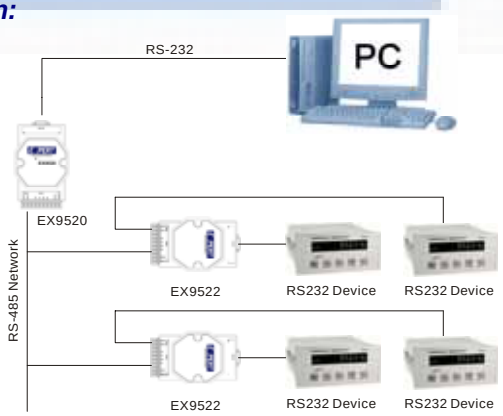
- Built in "Addressable RS485 to RS232 Converter" firmware
- Watchdog timer provides fault tolerance and recovery
- CPU 80188, 40MHZ
  - SRAM 256KB
  - FLASH ROM 512KB
  - EEPROM 2KB
  - EMBEDDED OS RomDos(Datalight)
  - Communication speed: 115.2K bps max
  - Operating temperature: -25℃ to +75℃
  - Storage temperature: -40℃ to +80℃
  - **Optional: 512KB SRAM, RTC**
- Power input: +10 to 30VDC (35/48VDC Available)
- Series EX9521D, EX9522D, EX9523D, EX9524D, EX9527D

Serial products:

Model No.	EX9521D	EX9522D	EX9523D	EX9524D	EX9527D
Flash	512	512	512	512	512
SRAM	256	256	256	512	512
RTC	x	x	x	v	v
COM1	x	x	RS232(3wire)	RS232(5wire) ***1**	RS232(5wire) ***1**
COM2	RS485	RS485	RS485	RS485	RS485
COM3	x	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM4	RS232(3wire) ***2**	RS232(3wire) ***2**	RS232(3wire) ***2**	RS232(3wire)	RS232(3wire)
COM5	x	x	x	RS232(3wire)	RS232(3wire)
COM6	x	x	x	x	RS232(3wire)
COM7	x	x	x	x	RS232(3wire)
COM8	x	x	x	x	RS232(3wire)

***1: Program download from COM1(RS232 5Wire) for EX9524D/27D**
***2: Program download from COM4(RS232 3Wire) for EX9521D/22D/23D**

Application:



EX9188END Series

Key Specification/Special Features:

- EX9188END Support 1/2/3/4/5/8 RS232/485 devices
- Ethernet port for TCP/IP features TCP, UDP, IP, ICMP, ARP, RARP
- COM1 Can be used to download program and can be RS232 port
- Dual Watchdog support for system recovery
- CPU 80188, 40MHZ
  - o SRAM 256KB
  - o FLASH ROM 512KB
  - o EEPROM 2KB
  - o EMBEDDED OS RomDos(Datalight)
  - o **Optional: 512KB SRAM, RTC (EX9188END-512)**
- Operating Temp: -25~75℃
- Power input: +10 to 30VDC (35/48VDC Available)
- Series: EX9188E1D, EX9188E2D, EX9188E3D, EX9188E4D, EX9188E5D, EX9188E8D

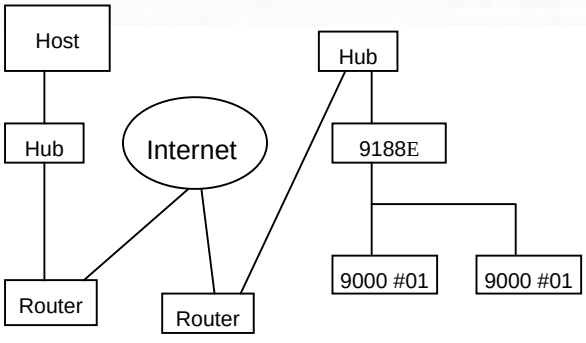
processmanage

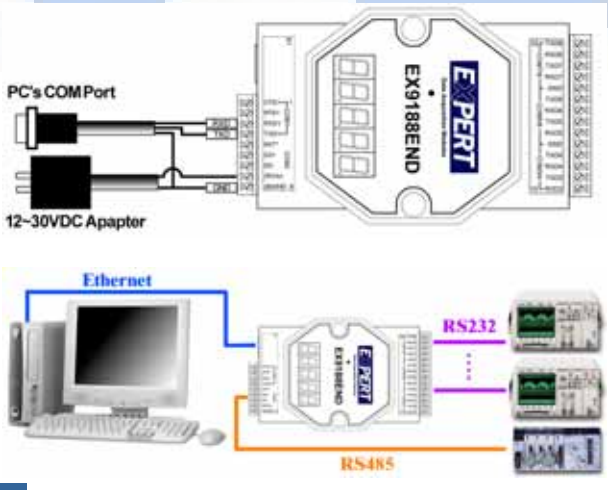
Serial products:

Model No.	EX9188E1D	EX9188E2D	EX9188E3D	EX9188E4D	EX9188E5D	EX9188E8D
Ethernet port	10 BASE T	10 BASE T	10 BASE T	10 BASE T	10 BASE T	10 BASE T
COM1	RS232(5wire)	RS232(5wire)	RS232(5wire)	RS232(5wire)	RS232(5wire)	RS232(5wire)
COM2	x	RS485	RS485	RS485	RS485	RS485
COM3	x	x	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM4	x	x	x	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM5	x	x	x	x	RS232(3wire)	RS232(3wire)
COM6	x	x	x	x	x	RS232(3wire)
COM7	x	x	x	x	x	RS232(3wire)
COM8	x	x	x	x	x	RS232(3wire)

Program download from COM1(RS232 3Wire)

Simple Structure of EX9188E Network:





EX9188END-MTCP Series

Key Specification/Special Features:

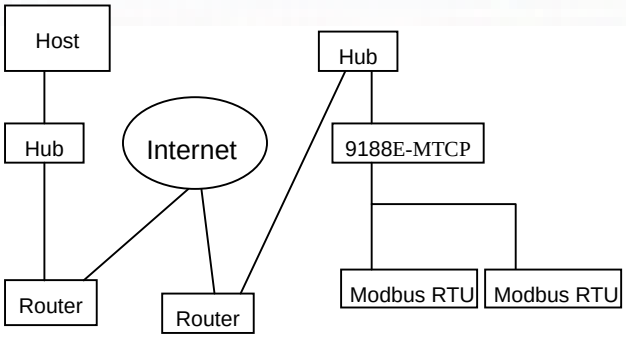
- EX9188END-MTCP Support 1/2/3/4/5/8 RS232/485 devices
- Ethernet port for TCP/IP features TCP, UDP, IP, ICMP, ARP, RARP
- COM1 Can be used to download program and can be RS232 port
- Dual Watchdog support for system recovery
- CPU 80188, 40MHZ
  - SRAM 512KB
  - FLASH ROM 512KB
  - EEPROM 2KB
  - EMBEDDED OS RomDos(Datalight)
  - RTC
- Operating Temp: -25~75℃
- Power input: +10 to 30VDC (35/48VDC Available)
- Modbus/TCP
- For Modbus/RTU slave devices
- For Non-Modbus/RTU slave devices
- Series: EX9188E1D-MTCP, EX9188E2D-MTCP, EX9188E3D-MTCP, EX9188E4D-MTCP, EX9188E5D-MTCP, EX9188E8D-MTCP

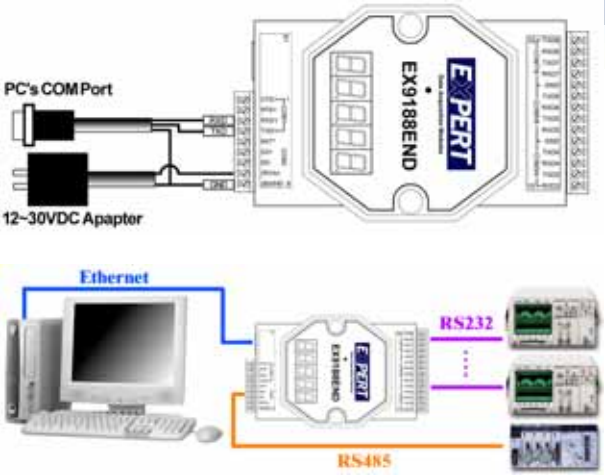
Serial products:

Model No.	EX9188E1D-MTCP	EX9188E2D-MTCP	EX9188E3D-MTCP	EX9188E4D-MTCP	EX9188E5D-MTCP	EX9188E8D-MTCP
Ethernet port	10 BASE T	10 BASE T	10 BASE T	10 BASE T	10 BASE T	10 BASE T
COM1	RS232(5wire)	RS232(5wire)	RS232(5wire)	RS232(5wire)	RS232(5wire)	RS232(5wire)
COM2	x	RS485	RS485	RS485	RS485	RS485
COM3	x	x	RS232(3wire)	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM4	x	x	x	RS232(3wire)	RS232(3wire)	RS232(3wire)
COM5	x	x	x	x	RS232(3wire)	RS232(3wire)
COM6	x	x	x	x	x	RS232(3wire)
COM7	x	x	x	x	x	RS232(3wire)
COM8	x	x	x	x	x	RS232(3wire)

Program download from COM1(RS232 3Wire)

Simple Structure of EX9188E-MTCP





EX9188EX/EX9188EX-MTCP

Key Specification/Special Features:

- Main board suitable for I/O Expansion board
- Support 1*RS232, 1*RS485
- Ethernet port for TCP/IP features TCP, UDP, IP, ICMP, ARP, RARP
- COM1 Can be used to download program and can be RS232 port
- Dual Watchdog support for system recovery
- CPU 80188, 40MHZ
  - SRAM 512KB
  - FLASH ROM 512KB
  - EEPROM 2KB
  - EMBEDDED OS RomDos(Datalight)
  - Support RTC
- Operating Temp: -25~75℃
- Power input: +10 to 30VDC (35/48VDC Available)
- Modbus/TCP to multi Modbus/RTU **(EX9188EX-MTCP)**
- For Modbus/RTU slave devices **(EX9188EX-MTCP)**

I/O Expansion Board

Expansion Board for EX9188EX/EX9188EX-MTCP:

		RS232	SRAM	Storage Flash	D/I	D/O	D/A	A/D
EX100		x	x	x	*7	x	x	x
EX101		x	x	x	x	*7	x	x
EX310 Series	EX310-1	x	x	x	*3	*2	*2	*2
	EX310-2	x	x	x	*2	*3	*1	*1
	EX310-3	x	x	x	*3	*2	*1	*1
	EX310-4	x	x	x	*2	*3	x	*2
	EX310-5	x	x	x	*3	*2	*2	x
	EX310-6	x	x	x	x	x	x	*1
EX509 Series	EX509-1	*2	x	x	*5	*2	x	x
	EX509-2	*2	x	x	*4	*3	x	x
	EX509-3	*2	x	x	*3	*4	x	x
	EX509-4	*2	x	x	*2	*5	x	x
EX603		x	x	16M Bytes	x	x	x	x
EX604		x	x	32M Bytes	x	x	x	x
EX607		x	256K	x	x	x	x	x
EX608		x	512K	x	x	x	x	x

P.S. RS232 3-Wire up to 115.2K

SRAM with Battery Backup.

D/A Range: 0~10V

A/D Range: 0~10V/0~20mA

Software Support for download

EX9000 Series

- Diag Program (Simple Diagnostic for Ex9000 Series)
- Utility [EX9000 Series (DIO, AIO): Searching, Address & Baud Rate Checksum & Slew Rate & Configuration & Signal Input & Output]
- DLL(Dynamic link Library for develop the driver of application system)
- VB Demo
- T9K OPC Server

processmanagement

EX9188XD & EX9188XD-MRTU Series

- Romdisk (Image file for download to Flash ROM of EX9188XD series)
- Library (Library for function call of EX9188XD series)
- Demo (Example of Demo program for EX9188XD series)
- Modbus Demo (To become Modbus converter from RS232/RS485 interface)
- Emulator By C++
- Modbus RTU/Slave source program

EX9188END & EX9188END-MTCP Series

- Utility(Wizard: Wire connection, Configuration; Download Image file; Nettest; Trouble Shooting; Modbus Setting & Testing)
- Winsocket VB Demo
- Infoset (EX9188END & EX9188END-MTCPIP Series setting: MAC ADDR; IP ADDR; Gateway; Baud Rate; Data Bit; Parity; Stopbit; Default; Modbus Setting; Flow control Setting)
- Nettest (For Internet connection & execute the command of EX9000 series & EX9188END series)
- Rom (Image file for download to Flash ROM of EX9188END & EX9188END-MTCPIP series)
- TCP/IP Library (TCP/IP Library for function call of EX9188END series) & TCPIP demo
- UDP (To become a UDP feature for Ethernet port of TCP/IP)
- EViSP (Virtual Serial Port)/(Vir COM) [For Ethernet connections it can be used to take care of network protocol Layers and let the host computer visualize COM ports of EX9188END Series. It makes the host computer have virtual COM ports which and actually mounted in EX9188END Series. w/flow control setting & Modbus Enable/Disable Setting.]

EX952N Series

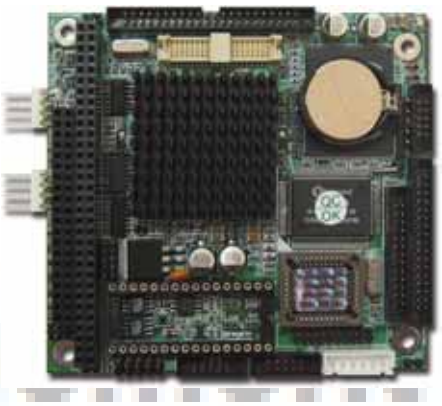
- EX9521 Romdisk (Image file for downland)
- EX9522 Romdisk
- EX9523 Romdisk
- EX9524 Romdisk
- EX9527 Romdisk

SCADA software compatible:

- iFix, Citect, Wonderware, Intouch, Iconix..etc

EX9482VN

Key Specification/Special Features:



The EX9482VN is a full-function PC/104 CPU Module which integrates the VGA/TFT LCD panel, IDE CF, Ethernet, GPIO and other enhanced I/O interface on a PC104 CPU Modules

This modules uses an embedded SGS-THOMSON STPC ATLAS PENTIUM performance 5x86DX2-133MHZ low power CPU and embedded 32MB SDRAM on board.

- **PC/104 ISA-Bus Embedded CPU Module**
- **CPU:** STPC ATLAS 5x86DX2-133MHZ low power CPU (Fanless)
- **System memory:** On-board 32MB SDRAM (up to 64MB)
- **Bus Interface:** PC/104 ISA Bus
- **Display:** SVGA CRT/TFT interface
- **Lan:** 10/100 Mbps RTL8139C PCI controller
- **CompactFlash Slot:** One IDE CompactFlash Slot
- **Serial Ports:** Three RS-232C(COM2) and one RS-232/485 serial Ports(COM1)
- **Solid state disk:** Ine expended 320-pin sockets for M-system DiskOnChip
- **EEPROM:** Provide 256 words(16bit) EEPROM register for user
- **General Purpose I/O interface:** Provide 16 channels TTL level General Purpose I/O interface. Each channel can be software programmed to be input or output individual software programmable interrupt mask.
- **Watch Dog Timer:** The watchdog timer range from 0 to 254 sec
- **Power Supply voltage:** +5VDC
- **Power Consumption:** +5VDC/1.6A(Max)
- **Dimensions:** 96(L)*90(W)mm

EX9529

Key Specification/Special Features:

- **CPU+Chipset** : NS Geode GXLV/GX1 & GX5530A chipset with built-in 6x86-166/233/300/333 MMX CPU, GXLV support low-power 0~85°C CPU (1.5~5.4W), GX1 support very low-power 0~85°C CPU (0.8~3W)
- **Cache Memory**: 16KB L1 cache memory
- **I/O Chipset**: NS PC97317
- **BIOS**: Award BIOS, 128KB (Flash) EPROM
- **DRAM**: 1 x 144-pin SO-DIMM socket on solder side support 8MB ~ 128MB SDRAM
- **LCD/VGA w/ MPEG II**: SMA 64-bit TFT LCD/CRT, support CRT and 18-bit TFT LCD flat panel up to1280x1024x8 BPP and 1024x768x16 BPP, supportMPEG1 and MPEG2 assist, 41-pin LCD connector;
- **DSTN signal**: for optional DSTN board
- **Audio signal**: for optional Audio daughter board
- **USB x 2**: Pin header
- **IrDA**: Pin header
- **Optional IDE Flash Disk**: Daughter board support 8/16/32/64/96/128/192MB IDE Flash Disk
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard**: 5-pin header
- **PS/2 Mouse**: 5-pin header
- **IDE Interface**: support one port up to 2 x IDE devices
- **FDD**: Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port**: One bi-directional SPP/EPP/ECP parallel port configured as LPT1,2,3
- **Serial Port x 2**: 16-byte FIFO 16C550 serial port jumper selectable RS-232 x 1 + RS-232/422/485 x 1
- **Watchdog Timer**: Programmable 0 ~ 30 sec
- **Miscellaneous Connectors/Jumpers**: Reset, HDD LED, 2-pin/3-pin single +5V power connector
- **Power Requirement**: Single +5V power by using 2-pin/3-pin connector
- **Operating Temperature**: 0 ~ 60°C. 0 ~ 85°C low-power CPU just need metal cooler

processmanagement

EX9544

Key Specification/Special Features:

- **CPU + Chipset**: NS Geode GXLV/GX1 & CX5530A chipset with built-in 6x86-166/233/300/333 MMX CPU, GXLV support low-power CPU (1.5W ~ 5.4W), GX1 support very-low-power CPU (0.8W ~ 3W)
- **Cache Memory**: 16KB L1 cache memory
- **I/O Chipset**: NS PC97317 + SMC669
- **BIOS**: Award BIOS, 128KB (Flash) EPROM
- **DRAM**: 1 x 144-pin SO-DIMM socket support up to 128MB SDRAM and low-profile application
- **LCD/CRT w/ MPEG II**: SMA 64-bit TFT LCD/CRT, support CRT and 18-bit TFT LCD flat panel up to 1280x1024x8 BPP and 1024x768x16 BPP, support MPEG1 and MPEG2 assist, 44-pin LCD connector. Optional DSTN daughter board.
- **100/10M Ethernet with BOOT ROM**: Intel 82559 100/10Mbps Ethernet with optional BOOT ROM
- **100/10M Ethernet x 2**: Optional 2nd Intel 82559 100/10M Ethernet on board
- **Flash Disk SSD**: 32-pin socket for DiskOnChip SSD 8MB ~ 288MB
- **Optional Compact Flash II socket**: Support IDE Flash Disk or IBM 340MB/1GB Micro Drive HDD
- **Audio**: 16-bit stereo FM synthesis, OPL3 emulation
- **Touch Panel interface**: Optional
- **USBX2 and IrDA:** Pin header
- **High-quality NTSC/PAL TV-out**: Optional on board
- **LVDS/DSTN daughter board**: Optional
- **GPS Socket**: Optional socket for 2nd generation GPS
- **Bus type**: PC/104 socket and PCI slot
- **Speaker:** Buzzer on Board
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard +PS/2 Mouse**: 8-pin header
- **IDE Interface x 2**: Support up to 4 x IDE devices
- **FDD**: Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port**: One bi-directional SPP/EPP/ECP
- **Serial Port x 4**: 16-byte FIFO 16C550 serial port jumper selectable RS-232 x 3 +RS-232/422/485 x 1(Serial Port support +5V and +12V voltage)
- **Watchdog Timer**: Programmable 0 ~ 1024 sec.
- **Power Requirement**: +/-5V, +/-12V power by using ATX connector; or, single +5V by 2-pin connector with optional hi-current +12V for LCD inverter
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 ~60°C. 0 ~ 85°C CPU just need metal cooler (don't need fan)

EX9546

Key Specification/Special Features:

- **CPU + Chipset**: NS GXLV/GX1 processor & CX5530A chipset with built-in 6x86-166/233/300/333 MMX CPU, GXLV support low-power 0~85℃ CPU (1.5W ~ 5.4W), GX1 support very-low-power CPU (0.8W ~ 3W)
- **Cache Memory**: 16KB L1 cache memory
- **I/O Chipset**: NS PC97317 + SMC669
- **BIOS**: Award BIOS, 128KB (Flash) EPROM
- **DRAM**: 1 x 144-pin SO-DIMM socket support up to128MB SDRAM and low-profile application
- **LCD/VGA w/ MPEG II**: SMA 64-bit LCD/VGA, support CRT and 18-bit TFT LCD flat panel up to 1280x1024x8 BPP and 1024x768x16 BPP, support MPEG1 and MPEG2 assist, 44-pin LCD connector; Optional LVDS/DSTN & -40V~+40V VEE supply
- **100/10M Ethernet with BOOT ROM**: Realtek 8139C 100/10Mbps Ethernet with BOOT ROM
- **Optional 100/10M Ethernet x 2**: Realtek 8139C
- **Flash Disk SSD**: 32-pin socket for DiskOnChip
- **Optional CompactFlash II socket**: Support IDE Flash Disk or IBM 340MB/1GB MicroDrive HDD
- **Audio**: 16-bit stereo FM synthesis, OPL3 emulation
- **Touch Panel interface**: Optional
- **USBX2 and IrDA:** Pin header
- **High-quality NTSC/PAL TV out**: Optional on board
- **LVDS/DSTN daughter board**: Optional
- **GPS Socket**: Socket for 1st & 2nd generation GPS
- **Bus type**: PC/104 socket and PCI slot
- **Speaker**: Buzzer on Board
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard +PS/2 Mouse**: 8-pin header
- **IDE Interface x 2**: Support up to 4 x IDE devices
- **FDD**: Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port**: One bi-directional SPP/EPP/ECP parallel port configured as LPT1,2,3
- **Serial Port x 4**: 16-byte FIFO 16C550 serial port jumper selectable RS-232 x 3+RS-232/422/485 x 1(Serial Port support +5V and +12V voltage)
- **Watchdog Timer**: Programmable 0 ~ 1024 sec.
- **Power Requirement**: +/-5V, +/-12V power by using ATX connector; or, single +5V by 2-pin connector with optional hi-current +12V for LCD inverter
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 ~ 60°C. 0~85°C CPU just need metal cooler (don't need fan)

process management

EX9588

Key Specification/Special Features:

- **CPU+Chipest:** NS Geode GXLV/GX1 & GX5530A chipset with built-in 6x86-166/233/300/333 MMX CPU, GXLV support low-power 0~85°C CPU (1.5~5.4W), GX1 support very low-power 0~85°C CPU (0.8~3W)
- **Cache Memory:** 16KB L1 cache memory
- **I/O Chipset:** NS PC97317
- **BIOS:** Award BIOS, 128KB (Flash) EPROM

DRAM: 1 x 144-pin SO-DIMM socket on solder side support 8MB ~ 128MB SDRAM

- **LCD/VGA w/ MPEG II:** SMA 64-bit TFT LCD/CRT, support CRT and 18-bit TFT LCD flat panel up to1280x1024x8 BPP and 1024x768x16 BPP, supportMPEG1 and MPEG2 assist, 41-pin LCD connector;
- **DSTN signal:** for optional DSTN board
- **Audio signal:** for optional Audio daughter board
- **USB x 2:** Pin header
- **IrDA:** Pin header
- **Optional IDE Flash Disk:** Daughter board support 8/16/32/64/96/128/192MB IDE Flash Disk
- **CMOS Backup:** Backup by Li battery
- **PS/2 Keyboard:** 5-pin header
- **PS/2 Mouse:** 5-pin header
- **IDE Interface:** support one port up to 2 x IDE devices
- **FDD:** Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port:** One bi-directional SPP/EPP/ECP parallel port configured as LPT1,2,3
- **Serial Port x 2:** 16-byte FIFO 16C550 serial port jumper selectable RS-232 x 1 + RS-232/422/485 x 1
- **Watchdog Timer:** Programmable 0 ~ 30 sec
- **Miscellaneous Connectors/Jumpers:** Reset, HDD LED, 2-pin/3-pin single +5V power connector
- **Power Requirement:** Single +5V power by using 2-pin/3-pin connector
- **Operating Temperature:** 0 ~ 60°C. 0 ~ 85°C low-power CPU just need metal cooler

processmanagement

EX9612

Key Specification/Special Features:

General Specifications:

- **CPU :** Intel Ultra Low Voltage Celeron 400MHz to Low Voltage PentiumIII 933MHz processor with FSB 100/133 MHz EBGA package.
- **Chipset :** Intel 815E with Integrated VGA AGP 2X Graphics core and Intel ICH2
- **BIOS :** AWARD Flash BIOS , FWH 4MB
- **Green Function :** power saving supported in BIOS. DOZE / STANDBY / SUSPEND modes, ACPI & APM
- **L2 Cache :** Integrated on CPU (256 KB / 512 KB)
- **DRAM Memory :** Onboard SODIMM socket up to 512MB of SDRAM
- **Mini PCI :** supports single slot Mini PCI Type III.
- **Enhanced IDE with UltraDMA :** supports single port and up to 2 ATAPI devices, Ultra DMA transfer 33 MB/sec.
- **Real-time Clock :** built-in chipset with lithium battery backup. CMOS data backup of BIOS setup and BIOS default.
- **Watchdog Timer** : 256 levels timer generate RESET

High Speed Multi I/O:

- **Chipset** : Winbond 83627HF
- **Serial Ports** : Three high speed RS-232C ports (COM1,COM3, COM4). One high speed RS-232C/422/485 port COM2 (jumper selectable). Both with 16C550 compatible UART.
- **USB** : 4 onboard USB ports Ver 1.1.
- **SIR Interface** : onboard IrDA TX/RX port (on COM4)
- **Floppy Disk Drive Interface** : 2 floppy disk drives, 3? " (720 KB, 1.44 MB or 2.88 MB).
- **Bi-directional Parallel Port :** SPP, EPP and ECP mode.
- **Keyboard and Mouse Connectors :** external PS/2 KB/Mouse port (2-in-1 mini DIN)
- **Audio Chipset:** Intel ICH2 AC97 2.0 compliant, Multistream Direct Sound and Direct Sound 3D acceleration. (Line-in, CD Audio in, MIC in, Speaker out)

Network Interface Controller:

- **Chipset** : Single Intel 82562ET, 10/100 Mbps
- **Connector** : external RJ-45 with LEDs on connector

Display Controller:

Flat Panel / CRT (EX-9612VL)

- **Chipset:** Intel 82815E integrated 2D/3D Video Accelerator, supporting 2x AGP and 128-bit engine
- **Display Memory:** Shared Memory by Intel Dynamic Video Memory Technology
- **Display Type:** CRT, TMDS
- **CRT:** up to 1280 x 1024 @ 24 bpp
- **TMDS:** DVI Transmitter up to 165MHz

Flat Panel / CRT (Ex-9612VLS):

- **Chipset:** SMI Lynx3DM+ SMI 722, 128-bit GUI 3D engine
- **Display Memory:** 8MB on-die SGRAM
- **Display Type:** CRT and Flat Panel (MONO, DSTN, TFT), Dual Display
- **CRT:** up to 1280x1024 @ 24bpp
- **LCD Interface:** TTL 24-bit, LVDS 24-bit
- **TV-out:** Support NTSC, PAL NTSC-EIA (Japan) format, 640 x 480 resolutions

SSD Interfaces:

Compact Flash Card (CFC)

- **Compact Flash Socket :** supports Type I/II CFC
- **Capacity** : up to 1GB CFC

Environmental and Power (EX-9612VLS/C400and 256MB SDRAM):

- **Power Requirements :** +5 V @ 2.23 A (typical);(Ultra Low Voltage Embedded Intel Celeron 400 MHz and 256MB SDRAM)
- **Board Dimensions :** 145mm x 102mm
- **Board Weight :** 0.176kg
- **Operating Temperature :** 0 to 60°C (32 to 140°F)
- **Operating Humidity :** 0%~90%

EX9640

Key Specification/Special Features:

- **CPU**: Support both Coppermine Pentium III and Celeron Socket 370 CPU up to 1GHz, ZIF socket
- **System chip**: Intel 82443BX/82371EB chipset
- **Cache**: Built in CPU
- **BIOS**: Award/AMI BIOS, 256KB (Flash) EPROM
- **DRAM**: 1 x 168-pin DIMM socket support SDRAM DRAM up to 512MB memory
- **LCD/ LVDS/ CRT/ TV-out**: Top-performance **Dual-View** S3 AGP-2X 128-bit 3D CRT/LCD with **8MB**SGRAM, support CRT to 1600x1200 true color and TFT/DSTN LCD panel to 1280x1024 resolution, **Dual-View** technology support simultaneous different images & refresh rate on LCD/CRT, LCD/TV; Integrated single-channel 10MHz **LVDS** transmitter, and top-quality NTSC/PAL **TV-out** without Macrovision.MPEG-2 video textures and motion compensation for full speed DVD playback.
- **Optional Video IN/ Capture**: pin header
- **100/10M LAN x 2**: Intel 82559 100/10M Ethernet x 1, UTP port; optional on-board **LAN x 2**
- **Audio**: C-MEDIA hi-end PCI 3D audio support A3D/DirectSound 3D/DirectMusic/AC3 5.1CH interface.
- **USB and IrDA**: USB and IrDA pin header on board
- **Temperature monitoring**: Beeping alarm when CPU's temperature over heating 55°C±5°C.
- **CompactFlash I/ II Socket**: CF-2 Socket for Flash Disk or IBM 340MB/1GB MicroDrive
- **Touch Panel interface**: Optional
- **GPS Socket**: Optional
- **Bus type**: PC/104 socket, PCI slot x 1
- **Speaker**: Buzzer on Board
- **CMOS Backup**: Backup by 12887 or equivalent
- **PS/2 Keyboard**: 5-pin JSP header
- **PS/2 Mouse**: 5-pin JSP header
- **IDE x 2 port**: Support up to 4 x IDE devices
- **FDD**: Two 3.5" or 5.25" FDD or LS120
- **Parallel Port**: One bi-directional SPP/EPP/ECP port
- **Serial Port x 4**: RS-232 x 3 + RS-232/422/485 x 1(Serial Port support +5V & +12V)
- **WDT**: Programmable 0 ~ 1024 sec
- **Power Requirement**: +/-5V & +/-12V by ATX power
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 to 60°C (140°F)

EX9670/9671

Key Specification/Special Features:

- **CPU: low-power fanless** P-III class VIA Eden ESP ESP4000/5000/6000 400/533/667MHz 0~85℃ CPU, 3W/5W/5W, 128K L1 cache & 64K L2 cache, 133 FSB.
- **System chip**: VIA VT8606 (PN133T Twister-T) & VT82C686A/B
- **Cache**: 128K L1 Cache & 64K L2 Cache built in CPU
- **BIOS**: Award/AMI BIOS, 256KB (Flash) EPROM
- **DRAM**: 1 x 168-pin DIMM socket support memory up to 512MB PC133/PC100 SDRAM/ VCM-SDRAM
- **AGP-4X LCD/ LVDS/ CRT**: AGP-4X Savage4 3D/2D LVDS/TFT/DSTN LCD/CRT W/ 8M~32M SMA memory (share system memory as display memory), support 1600x1200 TFT/DSTN/LVDS (2-channel 110MHz) LCD & 1920x1440 2D/3D CRT
- **DVD:** Hardware-Assisted MPEG-2 architecture for DVD full-screen video playback
- **TV-out:** Signal pin for optional TV-out daughter board
- **100/10M LAN:** Realtek 8139C 100/10M LAN (or Intel 82559 100/10M)
- **CompactFlash I/II socket**: CF-2 socket for IDE Flash Disk, or, IBM 1.8" MicroDrive 340MB/1GB HDD
- **USBx4 and IrDA:** USB and IrDA pin header on board
- **Touch Panel interface**: Support 4/5/7/8-wire Panel and almost all OS and real-time OS
- **Audio:** AC97 Audio on board
- **Temperature/fan monitoring**: 686B on-chip function
- **Digital I/O**: 4-bit DI and 4-bit DO, TTL level
- **Bus type:** PC/104 socket, PCI slot x 1 (suitable Position for riser card for low-profile application)
- **Speaker**: Buzzer on Board
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard & PS/2 Mouse**: 5-pin JSP header
- **ATA100/66/33 IDE Port x 2**: Up to 4 x IDE devices
- **FDD**: Two 3.5" or 5.25" FDD or LS120
- **Parallel Port**: Bi-directional SPP/EPP/ECP port
- **Serial Port x 4**: RS-232 x 3 + RS-232/422/485 x 1
- **Watchdog Timer**: Programmable 0 ~ 256 sec.
- **Power Requirement**:+/-5V & +/-12V by ATX power; and, single +5V by 2-pin power connector
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 to 60℃ (140℉) and 0~85℃ CPU support fanless application.

EX9671: W/ 2 or 3 LAN

EX9679

Key Specification/Special Features:

- **CPU:** P-III class VIA Eden ESP ESP4000/5000/6000 400/533/667MHz low-power fanless CPU, 3W/5W/5W, 128K L1 cache and 64K L2 cache, 133 FSB, 0~85C.
- **System chip:** VIA VT8606 (PN133T Twister-T) & VT82C686A/B
- **Cache:** 128K L1 Cache & 64K L2 Cache built in CPU
- **BIOS:** Award/AMI BIOS, 256KB (Flash) EPROM
- **DRAM:** 1 x 144-pin DIMM socket support memory up to 256MB PC133/PC100 SDRAM/ VCM-SDRAM
- **AGP-4X LCD/ LVDS/ CRT:** AGP-4X Savage4 3D/2D LVDS/TFT/DSTN LCD/CRT W/ 8M~32M SMA memory (share system memory as display memory), support 1600x1200 TFT/DSTN/LVDS (2-channel 110MHz) LCD & 1920x1440 2D/3D CRT
- **DVD:** Hardware-Assisted MPEG-2 architecture for DVD full-screen video playback
- **100/10M Ethernet x 1:** Realtek 8139C LAN x 1, or, Intel 82559 LAN x 1
- **Optional AC97 audio:** AC97 audio daughter board
- **USBx2 and IrDA:** USB and IrDA pin header on board
- **Temperature/fan monitoring:** 686B on-chip function
- **CompactFlash I / II Socket:** CF-2 socket for IDE Flash Disk, or, IBM 1.8” MicroDrive 340MB/1GB HDD
- **Digital I/O:** 4-bit DI and 4-bit DO, TTL level
- **Bus type:** PC/104 socket.
- **Speaker:** Buzzer on Board
- **CMOS Backup**: Backup by Li Battery
- **PS/2 Keyboard & Mouse:** 5-pin JSP header
- **ATA100/66/33 IDE Port x 1:** Up to 2 x IDE devices
- **FDD:** Two 3.5” or 5.25” FDD or LS120
- **Parallel Port x 1:** Bi-directional SPP/EPP/ECP port
- **Serial Port x 4:** RS-232 x 3 + RS-232/422/485 x 1 (+5V/+12V Power Output in Pin1 or Pin9 via jumper setting, TTL-level Reserved in COM2)
- **WDT: P**rogrammable 0 ~ 256 sec
- **Power Requirement:** +5V & +12V or Single +5V by 4-pin power connector; ATX Power control pin
- **Dimension:** 145mm x 102mm
- **Operating Temperature:** 0 to 60℃ (140℉) and 0~85℃ CPU support fanless application.

EX9680

Key Specification/Special Features:

- **CPU:** Support Intel Socket 370 Tualatin, Pentium III, Celeron & VIA C3 CPU up to 1.3GHz+, ZIF socket. Support 133/100/66 FSB (Front Side Bus)
- **System chip**: VIA Chipset
- **Cache**: Built in CPU
- **BIOS**: Award/AMI BIOS, 256KB (Flash) EPROM
- **DRAM**: 1 x 168-pin DIMM socket support memory up to 512MB PC133/PC100 SDRAM/ VCM-SDRAM
- **AGP-4X LCD/ LVDS/ CRT**: AGP-4X Savage4 3D/2D LVDS/TFT/DSTN LCD/CRT W/ 8M~32M SMA memory (share system memory as display memory), support 1600x1200 TFT/DSTN/LVDS (2-channel 110MHz) LCD & 1920x1440 2D/3D CRT
- **DVD**: Hardware-Assisted MPEG-2 architecture for DVD full-screen video playback
- **TV-out**: Signal pin for optional TV-out daughter board
- **100/10M Ethernet x 1**: Realtek 8139C LAN x 1, or, Intel 82559 LAN x 1
- **CompactFlash I/II socket**: CF-2 socket for IDE Flash Disk, or, IBM 1.8" MicroDrive 340MB/1GB HDD
- **Audio**: AC97 Audio on board
- **Touch Panel interface**: Support 4/5/7/8-wire Panel and almost all OS and real-time OS
- **USBX4 and IrDA:** USB and IrDA pin header on board
- **Temperature/fan monitoring**: 686B on-chip function
- **Digital I/O**: 4-bit DI and 4-bit DO, TTL level
- **GPS Socket**: Socket for 1st & 2nd generation GPS
- **Bus type**: PC/104 socket, PCI slot x 1 (suitable Position for riser card for low-profile application)
- **Speaker**: Buzzer on Board
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard & PS/2 Mouse**: 5-pin header
- **ATA100/66/33 IDE Port x 2**: Up to 4 x IDE devices
- **FDD**: Two 3.5" or 5.25" FDD or LS120
- **Parallel Port**: Bi-directional SPP/EPP/ECP port
- **Serial Port x 4**: RS-232 x 3 + RS-232/422/485 x 1
- **Watchdog Timer**: Programmable 0 ~ 256 sec.
- **Power Requirement**:+/-5V & +/-12V by ATX power
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 to 60℃ (140℉)

EX9686

Key Specification/Special Features:

- **CPU:** Support Intel Socket 370 **Tualatin**, Pentium III, Celeron & VIA C3 CPU up to 1.3GHz+, or above, ZIF socket. Support 133/100/66 FSB (Front Side Bus)
- **System chip**: VIA VT8606 (PN133T Twister-T) & VT82C686A/B, SMC666/669
- **Cache**: Built in CPU
- **BIOS**: Award/AMI BIOS, 256KB (Flash) EPROM
- **DRAM**: 1 x 168-pin DIMM socket support memory up to 512MB PC133/PC100 SDRAM/ VCM-SDRAM
- **AGP-4X LCD/ LVDS/ CRT**: AGP-4X Savage4 3D/2D LVDS/TFT/DSTN LCD/CRT W/ 8M~32M SMA memory (share system memory as display memory), support 1600x1200 TFT/DSTN/LVDS (2-channel 110MHz) LCD & 1920x1440 2D/3D CRT
- **DVD**: Hardware-Assisted MPEG-2 architecture for DVD full-screen video playback
- **TV-out**: Signal pin for optional TV-out daughter board
- **100/10M Ethernet x 2**: **Realtek 8139C LAN x 2.**
- **CompactFlash I/II socket**: CF-2 socket for IDE Flash Disk, or, IBM 1.8" MicroDrive 340MB/1GB HDD
- **Optional Audio**: Signal pin for audio daughter board
- **Touch Panel interface**: Support 4/5/7/8-wire Panel and almost all OS and real-time OS
- **USBX4 and IrDA:** USB and IrDA pin header on board
- **Temperature/fan monitoring**: 686B on-chip function
- **Digital I/O**: 4-bit DI and 4-bit DO, TTL level
- **Bus type**: PC/104 socket, PCI slot x 1 (suitable Position for riser card for low-profile application)
- **Speaker**: Buzzer on Board
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard & PS/2 Mouse**: 5-pin JSP header
- **ATA100/66/33 IDE Port x 2**: Up to 4 x IDE devices
- **FDD**: Two 3.5" or 5.25" FDD or LS120
- **Parallel Port**: Bi-directional SPP/EPP/ECP port
- **Serial Port x 4**: RS-232 x 3 + RS-232/422/485 x 1
- **Watchdog Timer**: Programmable 0 ~ 256 sec.
- **Power Requirement**:+/-5V & +/-12V by ATX power
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 to 60℃ (140℉)

EX9710

Key Specification/Special Features:

- **CPU+Chipset: CPU:**Socket 478 for Intel Pentium-M and Celeron-M CPU, Optional BGA type Celeron-M soldered, 400/533 FSB.
- **System chip: Intel 855GME + 6300ESB**
- **Cache:** built in CPU
- **BIOS**: Phoenix-Award BIOS, 4Mbit with LAN boot ROM
- **DRAM**: 1 x 184-pin DDR DIMM socket
- **DualView LVDS / DVI / CRT:**

LVDS/DVI LCD / CRT with max. 256MB SMA memory (share system memory as display memory), support 1280x1024 LVDS, 2048x1536 DVI & 1600x1200 CRT

- **DVD:**Hardware-Assisted MPEG-2 architecture for DVD full-screen video playback
- **100/10M Ethernet x 1:** Realtek 8100C LAN x 1
- **Optional 1G/100M/10M Ethernet: RTL 8110S**
- **CompactFlash I/II socket: CF-2 socket for IDE Flash Disk, or, IBM 1.8" MicroDrive 340MB/1GB HDD**
- **USB2.0x4 and IrDA:** USB2.0 and IrDA pin header
- **Audio:** AC97 Audio on board
- **Bus type:** PC/104-Plus (PC/104+) PCI only PCI-104 socket x 1

PCI slot x 1 support up to 4 PCI masters

Mini-PCI Type-III socket x 1

- **Speaker: Buzzer on Board**
- **CMOS Backup: Backup by Li battery**
- **PS/2 Keyboard & PS/2 Mouse**: 5-pin JSP header
- **ATA100 IDE Port x 2:** Up to 4 x IDE devices
- **SATA-150 IDE Port x 2:** Support Serial ATA IDE devices
- **FDD**: Two 3.5" or 5.25" FDD or LS120
- **Parallel Port x 1:** Bi-directional SPP/EPP/ECP port
- **Serial Port x 4**: RS-232 x 3 + RS-232/422/485 x 1
- **WDT: Up to 300 level as RESET feature**
- **Power Requirement:+/-5V & +/-12V by ATX power**
- **Dimension**: 203mm x 146mm
- **Operating Temperature**: 0 to 60℃ (140℉)

EX9741

Key Specification/Special Features:

Feature：

- **Intel Ultra Low Voltage Celeron M 1.0Ghz CPU FSB400**
- **Intel Low Voltage Pentium M Dothan 1.4Ghz CPU FSB400**
- **Intel Pentium M Dothan socket 478 CPU up to 2.0Ghz**
- **One PC/104-Plus Interface**
- **Support 6 RS-232 Serial Ports with Daughter Board (Optional)**
- **Support 16-bit Programmable DIO with Daughter Board (Optional)**
- **Support Dual Independent Displays**
- **Support DDR 200/266 up to 1GB DDR SDRAM**
- **Support 6 High Speed USB 2.0 Ports**

industrial management

System

- **CPU :**
  Intel Pentium M Socket 478 CPU up to 2.0G FSB400Mhz
  Intel ULV Celeron M 1000Mhz CPU FSB400Mhz
  Optional：
  Intel ULV Celeron M 600Mhz CPU FSB400Mhz
  Intel Low Voltage Pentium M 1.4Ghz CPU FSB400Mhz
- **Cache :** 2nd level 2MByte
- **Memory :** 1 x 200Pin SO-DIMM up to 1GB DDR SDRAM
- **Chipset :** Intel 852GM + Intel ICH4
- **BIOS :** Phoenix-AWARD PnP Flash BIOS
- **ATA/IDE :** 1 x Ultra DMA 33, support 2 IDE drives
- **Flash Disk :** 1 x Type II Compact Flash Disk Socket
- **Watchdog Timer :** 255-level Reset

Display

- **Graphics Chipset :** Intel 852GM Extreme Graphics2 Engine up to 64MByte UMA Video RAM
- **Graphics Interface :** CRT support CRT QXGA up to 2048 x 1536 LCD support 18/48bit LVDS UXGA up to 1600 x 1200
  TV-out support NTSC/PAL up to 1024 x 768
  DVI support 12bit up to 1024 x 768
  Dual Mode support independent dual display

I/O

- **Serial Port :** 2 x RS-232 ports (COM1/2)
- **Parallel port :** SPP/EPP/ECP mode share with Floppy
- **Floppy :** Support 1 floppy disk drive share with LPT
- **USB port :** 6 x USB 2.0 compliant
- **KB/MS :** 1 x PS2 K/B and Mouse
- **Expansion Bus :** 1 x 32 bit/33MHz PCI interface to support 3 PCI master

Mechanical & Environmental

- **Power Consumption :** Ex-9741 5V/2.86A~5.62A
- **Operating Temperature :** 0°C ~ 60°C (32 ~ 140°F)
- **Operating Humidity :** 5% ~ 95%(non-condensing)
- **Dimension (L x W) :** 145 x 102 mm (5.7" x 4 ")
- **Weight :** 0.85 kg (0.19lb)

Eethernet

- **Chipset :** Intel 82856ET 10/100 base-T Built-in Boot ROM in Flash BIOS, support Boot from LAN

Audio

- **Codec / Interface :** Realtek ALC655A AC97 Codec, support Mic-in / Line-in / Line-out

EX9761

Key Specification/Special Features:

Feature：

- **Intel Ultra Low Voltage Celeron M 1.0Ghz CPU FSB400**
- **Intel Low Voltage Pentium M Dothan 1.4Ghz CPU FSB400**
- **Intel Pentium M Dothan socket 478 CPU up to 2.0Ghz**
- **One PCI Interface to support 3 PCI master**
- **Support 6 RS-232 Serial Ports with Daughter Board(Optional)**
- **Support 16-bit Programmable DIO with Daughter Board (Optional)**
- **Support Dual Independent Displays**
- **Support DDR 200/266 up to 1GB DDR SDRAM**
- **Support 6 High Speed USB 2.0 Ports**

industrial management

System

- **CPU :**
  Intel Pentium M Socket 478 CPU up to 2.0G FSB400Mhz
  Intel ULV Celeron M 600Mhz CPU FSB400Mhz
  Optional：
  Intel ULV Celeron M 1.0Ghz CPU FSB400Mhz
  Intel Low Voltage Pentium M 1.4Ghz CPU FSB400Mhz
- **Cache :** 2nd level 2MByte
- **Memory :** 1 x 200Pin SO-DIMM up to 1GB DDR SDRAM
- **Chipset :** Intel 852GM + Intel ICH4
- **BIOS :** Phoenix-AWARD PnP Flash BIOS
- **ATA/IDE :** 1 x Ultra DMA 33, support 2 IDE drives
- **Flash Disk :** 1 x Type II Compact Flash Disk Socket
- **Watchdog Timer :** 255-level Reset

Display

- **Graphics Chipset :** Intel 852GM Extreme Graphics2 Engine up to 64MByte UMA Video RAM
- **Graphics Interface :** CRT support CRT QXGA up to 2048 x 1536 LCD support 18/48bit LVDS UXGA up to 1600 x 1200 TV-out support NTSC/PAL up to 1024 x 768 DVI support 12bit up to 1024 x 768 Dual Mode support independent dual display

I/O

- **Serial Port :** 2 x RS-232 ports (COM1/2)
- **Parallel port :** SPP/EPP/ECP mode share with Floppy
- **Floppy :** Support 1 floppy disk drive share with LPT
- **USB port :** 6 x USB 2.0 compliant
- **KB/MS :** 1 x PS2 K/B and Mouse
- **Expansion Bus :** 1 x 32 bit/33MHz PCI interface to support 3 PCI master

Mechanical & Environmental

- **Power Consumption :** Ex-9761 5V/2.86A~5.62A
- **Operating Temperature :** 0°C ~ 60°C (32 ~ 140°F)
- **Operating Humidity :** 5% ~ 95%(non-condensing)
- **Dimension (L x W) :** 145 x 102 mm (5.7" x 4 ")
- **Weight :** 0.85 kg (0.19lb)

Eethernet

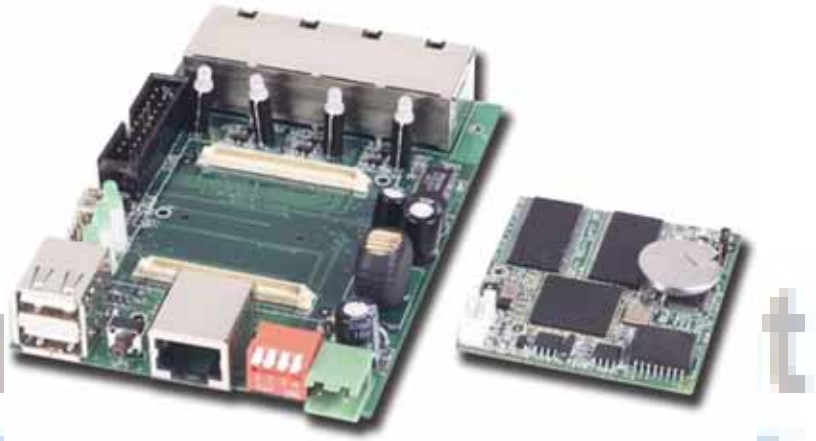
- **Chipset :** Intel 82856ET 10/100 base-T Built-in Boot ROM in Flash BIOS, support Boot from LAN

Audio

- **Codec / Interface :** Realtek ALC655A AC97 Codec, support Mic-in / Line-in / Line-out

EX9486-L Linux

Key Specification/Special Features:



H/W Specifications：

CPU/Memory

- CPU: ATMEL AT91RM9200 (ARM9-core)
- Clock: 180MHz
- SDRAM: 32MB
- Flash: 8/16/32/64MB (8MB as standard)
- EEPROM: 2KB

Network Interface

- Type: 10/100BaseT, RJ-45 connector
- Protection: 1.5KV magnetic isolation

TTY (Serial) Ports

- Port 1: can be set as RS-232, RS-422, or RS-485
- Port 2,3,4: RS-232
- Connector: RJ45 connector

TTY (Serial) Port Parameters

- Baud Rate: up to 921.6 Kbps
- Parity: None, Even, Odd, Mark, Space
- Data Bits: 5,6,7,8
- Stop Bit: 1, 1.5, 2 bits
- Flow Control: RTS/CTS, XON/XOFF, None

USB Ports

- Host: two ports, USB 2.0 compliant, supports
- low-speed (1.5Mbps) and full- speed (12Mbps) data rate
- Client: one port, USB 2.0 compliant, supports full-speed (12Mbps) data rate

Mass Storage

- One SD 1.0 compliant socket inside

General

- WatchDog Timer: yes, for kernel use
- Real Time Clock: yes
- Buzzer: yes
- Power input: 9~48VDC
- Power consumption: 300mA@12VDC
- Dimension: 78 x 108 x 24mm
- Operation Temperature: -10 to 60C(14 to 140F)
- Regulation: CE Class A, FCC Class A

S/W Specifications：

General

- OS: Linux, kernel 2.6.x
- Boot Loader: U-Boot 1.1.2
- File Systems: JFFS2, ETX2/ETX3, VFAT/FAT, NFS

Protocol stacks

- IPv4, ICMP, ARP, DHCP, NTP, TCP, UDP, FTP, Telnet, HTTP, PPP, PPPoE, CHAP, PAP, SMTP, SNMP V1/V3, SSL, SSH 1.0/2.0

Utilities

- bash: shell command
- tinylogin: login and user manager utility
- telnet: Telnet client program
- busybox: Linux utility collection
- ftp: FTP client program

Daemon

- pppd: Dial In/out over serial port & PPPoE
- snmpd: SNMP agent program
- telnetd: Telnet server program
- inetd: TCP server program
- ftpd: FTP server program
- boa: Web server program
- sshd: secured shell server
- iptables: Firewall service manager
- exmd: Expert manager daemon

Tool Chain for Linux

- GCC: C/C++ PC cross compiler
- GLIBC: POSIX Library

Device Drivers

- SD/MMC, UART, Real Time Clock, Buzzer, Digital I/O, Ethernet, Watchdog Timer

USB Host Drivers (could be customized)

- Flash disk, WiFi (IEEE-802.11b/g), and RS-232 adaptors

EX9486-2L Linux

Key Specification/Special Features:

H/W Specifications：

CPU/Memory

- **CPU**: ATMEL AT91RM9200 (ARM9-core)
- **CPU:** Star STR9104
- **Flash:** 8MB
- **RAM:** 32MB SDRAM
- **EEPROM:** 16Kb
- **RTC:**
- **Buzzer:**
- **Ethernet:** 10/100 mbps x2 RJ45
- **Serial:** COM1,2 RS-232/422(4 wire)/485 (Software Config)

  8. 1 RS-422: TxD-, TxD+, RxD-, RxD+, GND
- **USB:** USB 2.0 host x2
- **Reset button x1**
- **DIP Switching x1**
- **DIO:** GPIO x16
- **H/W Reset SW:** Push button to perform hardware reset
- **DIP S/W1 x2:** SW position 1 and 2 are connected to PIO for program definition
- **Power:** +9VDC~48VDC Input connector: T/B
- **Operation temperature:** 0 to 50C degree
- **LAN LED:** LAN Link/Activity status
- **Ready LED:** Software Control via a PIO
- **COMX LED:** Dual Color LED for RX/TX status
- **USB/Host:** Dual USB host
- **H/W Reset button:** Trigger H/W reset
- **CN1 Pin header:** Pin header connector for PIO
- **Buzzer:** connect to timer output of PIO

S/W Specifications：

General

- OS: Linux, kernel 2.6.x
- Boot Loader: U-Boot 1.1.2
- File Systems: JFFS2, ETX2/ETX3, VFAT/FAT, NFS

Protocol stacks

- IPv4, ICMP, ARP, DHCP, NTP, TCP, UDP, FTP, Telnet, HTTP, PPP, PPPoE, CHAP, PAP, SMTP, SNMP V1/V3, SSL, SSH 1.0/2.0

Utilities

- bash: shell command
- tinylogin: login and user manager utility
- telnet: Telnet client program
- busybox: Linux utility collection
- ftp: FTP client program

Daemon

- pppd: Dial In/out over serial port & PPPoE
- snmpd: SNMP agent program
- telnetd: Telnet server program
- inetd: TCP server program
- ftpd: FTP server program
- boa: Web server program
- sshd: secured shell server
- iptables: Firewall service manager
- exmd: Expert manager daemon

Tool Chain for Linux

- GCC: C/C++ PC cross compiler
- GLIBC: POSIX Library

Device Drivers

- SD/MMC, UART, Real Time Clock, Buzzer, Digital I/O, Ethernet, Watchdog Timer

USB Host Drivers (could be customized)

- Flash disk, WiFi (IEEE-802.11b/g), and RS-232 adaptors

EX9370

Key Specification/Special Features:

- **CPU+Chipset**: ALI M6117C single chip with on-chip 386SX-40 CPU
- **I/O Chipset**: SMC37C669 I/O chipset
- **BIOS**: AMI BIOS, 128KB (Flash) EPROM
- **DRAM**: 4MB (optional 1MB) DRAM soldered on board and optional 1 x 72-pin SIMM socket
- **Flash Disk SSD**: 32-pin socket for DiskOnChip SSD 2MB ~ 288MB
- **Bus type**: PC/104 Connector and ISA bus
- **Speaker**: Buzzer on board
- **CMOS Backup**: Backup by Li battery
- **Keyboard**: 5-pin header and mini DIN connector
- **PS/2 Mouse**: 5-pin header and mini DIN connector
- **IDE Interface**: support one port up to 2 x IDE devices
- **FDD**: Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port**: One bi-directional SPP/EPP/ECP parallel port configured as LPT1,2,3
- **Serial Port x 2**: Two 16-byte FIFO 16C550 RS-232/485. Jumper selectable RS-232 x 1 + RS-232/422/485 x 1
- **Serial Port x 4** (optional): COM x 4 for NC-370C, Jumper selectable RS-232 x 3 + RS-232/422/485
- **Watchdog Timer**: Programmable 1, 2, 4, 8, 16, 32, 64, 128, 256 & 512 sec. Optional 0 ~ 1024 sec. with 4 sec. interval (256 levels)
- **Miscellaneous Connectors/Jumpers**: Reset, HDD LED, Single +5V 2-pin connector, +/-5V and +/-12V 6-pin P8 Power connector for external power
- **Power Requirement**: Single +5V power by using 2-pin connector or +/-5V @2.0A, +/-12V @20mA by using 6-pin P8 power connector
- **Dimension**: 185mm x 122mm
- **Operating Temperature**: 0 – 60°C (140°C)

EX99523

Key Specification/Special Features:

- **CPU+Chipset**: NS Geode GXLV/GX1 & CX5530A chipset W/ on-chip 6x86-166/233/300/333 MMX CPU, GXLV support low-power type (1.5W~5.4W), GX1 support very low-power type (0.8W~3W)
- **Cache Memory**: 16KB L1 cache memory
- **I/O Chipset**: NS PC97317
- **BIOS**: Award BIOS, 128KB (Flash) EPROM
- **DRAM**: 1 x 168-pin SO-DIMM socket support 8MB ~ 128MB SDRAM
- **LCD/CRT**: On-chip shared-memory 64-bit LCD/CRT,support CRT and 18-bit TFT LCD flat panel up to 1280x1024x8 BPP and 1024x768x16 BPP, support MPEG1 and MPEG2 assist, 44-pin LCD connector
- **DSTN signal**: Support opional DSTN daughter board
- **100/10M Ethernet**: Realtek 8139 100/10M Ethernet
- **Flash Disk SSD**: 32-pin socket for DiskOnChip SSD 8MB ~ 288MB
- **Audio signal**: Support AC97 audio daughter board
- **Touch Panel interface**: Optional
- **CompactFlash II socket**: Optional CF-2 socket for IDE Flash Disk or IBM MicroDrive 340MB/1GB HDD
- **Bus type**: PC/104 Connector & PISA (PCI+ISA) bus
- **IrDA and USB x 2**
- **Speaker**: Buzzer on Board
- **CMOS Backup**: Backup by Li battery
- **PS/2 Keyboard**: 5-pin header and 6-pin mini-DIN
- **PS/2 Mouse**: 5-pin header and 6-pin mini-DIN
- **IDE Interface x 2**: Support up to 4 x IDE devices,
- **FDD**: Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port**: One bi-directional SPP/EPP/ECP parallel port configured as LPT1,2,3
- **Serial Port x 2**: 16-byte FIFO 16C550 serial port jumper selectable RS-232 x 1 +RS-232/422/485 x 1(Serial Port support +5V & +12V voltage)
- **Watchdog Timer**: Programmable 0 ~ 1024 sec.
- **Miscellaneous Connectors/Jumpers**: Reset, HDD LED, single +5V or +5V/+12V by FDD type 4-pin power connector, 3-pin ATX control pin
- **Power Requirement**: +5V, +12V power by using 4-pin power connector; or, single +5V by using same 4-pin power connector; also support ATX control pin for connect to ATX power connector on backplane
- **Dimension**: 185mm x 122mm
- **Operating Temperature**: 0 ~ 60°C.0 ~ 85°C CPU just need metal cooler (don't need fan)

EX99527

Key Specification/Special Features:

- **CPU+Chipset:** NS Geode GXLV/GX1 & CX5530A chipset w/ on-chip 6x86-166/233/300/333 MMX CPU, GXLV support low-power type (1.5W~5.4W), GX1 support very low-power type (0.8W~3W)
- **Cache Memory:** 16KB L1 cache memory
- **I/O Chipset:** NS PC97317 + SMC 669
- **BIOS:** Award BIOS, 128KB (Flash) EPROM
- **DRAM:** 1 x 144-pin SO-DIMM socket
- **LCD/CRT:** On-chip shared-memory 64-bit LCD/CRT, support CRT and 18-bit TFT LCD flat panel up to 1280x1024x8 BPP and 1024x768x16 BPP, support MPEG1 and MPEG2 assist, 44-pin LCD connector
- **DSTN signal:** Support optional DSTN board
- **Flash Disk SSD:** Socket for 8~288MB DiskOnChip
- **Audio:** Optional AC 97 audio soldered on board
- **Touch Panel interface:** Optional
- **CompactFlash II socket:** Optional CF-2 socket
- **Bus type:** PC/104 Connector and ISA bus
- IrDA and USB x 2
- **Speaker:** Buzzer on Board
- **CMOS Backup:** Backup by Li battery
- **PS/2 Keyboard/Mouse:** 5-pin header/ mini-DIN
- **IDE Interface x 2:** Support up to 4 x IDE devices,
- **FDD:** Two 3 1/2" or 5 1/4" FDD, Drives A, B swappable
- **Parallel Port:** One bi-directional SPP/EPP/ECP
- **Serial Port x 4:** 16-byte FIFO 16C550 serial port jumper selectable RS-232 x 3 +RS-232/422/485 x 1(Serial Port support +5V & +12V voltage)
- **Watchdog Timer:** Programmable 0 ~ 1024 sec.
- **Miscellaneous Connectors/Jumpers:** Reset, HDD LED, +/-5V & +12V 4-pin power connector, 3-pin ATX control, 2-pin single +5V power connector
- **Power Requirement:** +/-5V, 12V power by using 4-pin power connector; or, single +5V by using 2-pin power connector; also support ATX control pin
- **Dimension:** 185mm x 122mm
- **Operating Temperature:** 0 ~ 60°C. 0 ~ 85° CPU just need metal cooler (don't need fan)

EX96420

Key Specification/Special Features:

- **CPU :** Intel Pentium 4 socket 478 CPU up to 3.4Ghz FSB400/533/800Mhz
- **Cache :** 2nd level 1MByte
- **Memory :** 2 x 184Pin DIMM up to 2GB DDR SDRAM
- **Chipset :** Intel 865G + Intel ICH5
- **BIOS :** Phoenix - AWARD PnP Flash BIOS
- **ATA/IDE :** 2 x Ultra DMA 100, support 4 IDE drives
- **SATA/IDE :** 2 x serial ATA 150, support 2 IDE drives
- **Watchdog Timer :** 255-level Reset
- **Serial Port :** 2 x RS-232 ports (COM1 / COM2)
- **Parallel port :** SPP/EPP/ECP mode
- **Floppy :** Support 2 Floppy disk drives
- **IrDA :** 1 x SIR IrDA 1.1 compliant
- **USB port :** 4 x USB 2.0 compliant
- **KB/MS :** 1 x PS2 K/B and Mouse
- **Chipset :** Intel 82547GI 1000 base-T (Gigabit)
- **Codec / Interface :** Realtek ALC202 AC97 Codec, support Mic-in / Line-in / line-out (optional)
- **Graphics Chipset :** Intel 865G Extreme Graphics 2 Engine up to 16MByte UMA Video RAM
- **Graphics Interface :** CRT support up to 1600 x 1200
- **Operating Temperature :** 0°C ~ 60°C (32 ~ 140°F)
- **Operating Humidity :** 0% ~ 90%, non-condensing
- **Dimension (L x W) :** 338 x 122 mm (13.3" x 4.8")
- **Weight :** 0.45 kg (0.99 lb)

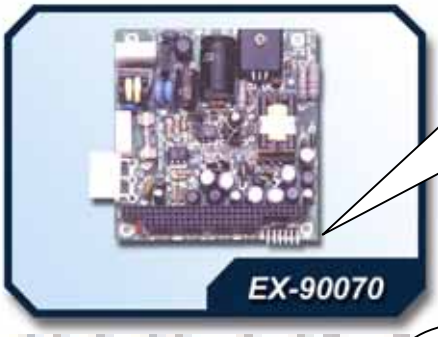
processmanagement

EX9674

Key Specification/Special Features:

- CPU:P-III class VIA Eden ESP ESP4000/5000/6000 400/533/667MHz FSB, low-power fanless CPU, 3W/5W, 128K L1 cache & 64K L2 cache, 100/133 0~+85°C
- System chip: VIA VT8606 (PN133T Twister-T) & VT82C686A/B
- Cache: 128K L1 Cache & 64K L2 Cache built in CPU
- BIOS: Award/AMI BIOS, 256KB (Flash) EPROM
- DRAM: 1 x 168-pin DIMM socket support memory up to 512MB PC133/PC100 SDRAM/ VCM-SDRAM
- AGP-4X LCD/ LVDS/ CRT: AGP-4X Savage4 3D/2D LVDS/TFT/DSTN LCD/CRT W/ 8M~32M SMA memory (share system memory as display memory), support 1600x1200 TFT/DSTN/LVDS (2-channel 110MHz) LCD & 1920x1440 2D/3D CRT
- DVD: Hardware-Assisted MPEG-2 architecture for DVD full-screen video playback
- 100/10M LAN: Realtek 8139C 100/10M LAN (or Intel 82559 100/10M)
- CompactFlash I/II socket: CF-2 socket for IDE Flash Disk, or, IBM 1.8" MicroDrive 340MB/1GB HDD
- USBx2 and IrDA: USB and IrDA pin header on board
- Optional Audio: AC97 Audio signal pin on board
- Temperature/fan monitoring: 686B on-chip function
- I2C: I2C signal pin
- Bus type: ISA Bus
- Speaker: Buzzer on Board
- CMOS Backup: Backup by Li battery
- PS/2 Keyboard & PS/2 Mouse: DIN & pin header
- ATA100/66/33 IDE Port x 2: Up to 4 x IDE devices
- FDD: Two 3.5" or 5.25" FDD or LS120
- Parallel Port: Bi-directional SPP/EPP/ECP port
- Serial Port x 2: RS-232 x 1 + RS-232/422/485 x 1(+5V/+12V Power Output in Pin1 or Pin9)
- Watchdog Timer: Programmable 0 ~ 256 sec.
- Power Requirement:+5V & +12V or Single +5V by 4-pin power connector; ATX Power control pin
- Dimension: 185mm x 122mm
- Operating Temperature: 0 to +60°C (140°F) and 0~+85°C CPU support fanless application.

EX-PC104



EX90070

- AC/DC
- Power Supply

EX9388L

- 386SX-40
- LCD/VGA
- DDC SSD socket, WDT
- I/O, PC104, RS232/485

EX9389

- 386SX-40, 4MB, DOC SSD socket, IDE, PC/104
- RS-232/422/485 (support +5V & +12V), WDT, I/O

EX9589

- Geode 6x86-166/233/300/333 MMX CPU, WDT, PC/104-Plus, DOC, RS232/422/485,
- IDE, FDD, Parallel, I/O, IrDA, USB, Single +5V,
- Optional Audio & DSTN

EX9812

- Ethernet BNC+UDP+AUI
- Boot ROM socket
- DDC SSD socket

EX9840

- Sound, DOC SSD socket

EX-PC104

EX9842

- Sound, RS-232/485*2
- DOC SSD socket

EX9860

- GPS Socket, COM*2
- Touch Panel interface

EX9891

- TV-out, DSTN, LVDS, IDE Flash Disk,
- -40V~+40V VEE, Hi-current+12V

EX9893

- 2-slot PCMCIA Module
- 16~64MB IDE Flash Disk

EX9911

- 24-bit digital I/O
- 3Ch. Counter/Timer

EX9930

- Opto-isolated
- 16-bit DI

PCI AIO Cards

EX92016: *PCI-bus 16 Channels Isolation Analog Input and digital I/O Card*

- 32-bit PCI-Bus, Plug and Play
- 16-CH 12-bit single-ended opto-isolated analog inputs
- Isolation 1500Vrms continuous, 2500Vrms for one minute
- Programmable gain of 1, 10, 100
- Sampling rate up to 100KHz
- Trigger mode: software trigger, timer pacer, external trigger
- On-board A/D 1K WORDS FIFO memory
- Auto-scanning channel selection
- 8 channel opto-isolated digital output
- 8 channel opto-digital input

processmanagement

EX92026: *PCI-bus 16 channel 12-bit advanced Multi-function DAS Cards*

- 32-bit PCI-Bus
- 12-bit analog input resolution
- On-board A/D FIFO memory
- Auto-scanning channel selection
- Up to 110Khz A/D sampling rates
- 16 single-ended or 8 differential analog input channels
- Bipolar or unipolar input signals
- Programmable gain of x0.5, x1, x2, x4
- On-chip sample & hold
- Two 12-bit monolithic multiplying analog output channels
- 8 digital output channels
- 3 independent programmable 16-bit down counters
- Three A/D trigger modes: software, programmable pacer, and external pulse
- Integral DC-to-DC converter for stable analog power source
- 37-pin D-type connector for EX92026

EX93008: *PCI-bus 8 channel Sync Isolated Analog Output Board*

- 32-bit PCI-Bus, Plug and Play, complies with PCI local bus Rev 2.1
- 8-CH 12-bit voltage output
- Fully isolation protection from PC power to external device
- 2500Vrms isolation voltage
- Unipolar or bipolar voltage output range
- Current output available on PCI-93008A
- On board DC-to-DC converter provide voltage and current source
- 8 Isolated digital input channels
- 8 Isolated digital output channels

EX98354: *PCI-bus Multi-functions Counter / Timer*

- Four 8254 chips provide twelve 16 bits down counters
- Multi-configurations of counters / timers:
- Flexible setting for each independent counter
- Clock source could be external, internal or cascaded
- Provide debounce function with flexible setting to prevent from bounce phenomenon
- 8 digital output channels
- 8 digital input channels
- Dual interrupt sources: output of counter#12,external source.
- 37-pin D-type female connector for Timer/counter output

PCI DIO Cards

EX94064: *PCI-bus 64-Channel Optically Isolated Open-collector Digital Output Board*

- 64-channel optically isolated digital output /open collector
- Eight isolated bank.
- 3750V DC isolation voltage
- high output driving current (125mA / channel)

EX94132: *PCI-bus 32 channel isolated digital input Board with interrupt and digital debounce*

- 32 Optical isolated digital input channels
- Built-in internal DC-DC converter for detecting dry contacts
- On-board software programmable digital debounce timer
- Software programmable Interrupt handling for 16 input channels

EX94133: *PCI-bus 32 channel optically isolated open-collector output Board*

- 32 Open-Collector output channels
- High driving output current (130 mA/Channel)
- Four isolated bank.
- Optically isolated for each channel

EX94164: *PCI-bus 64-Channel Optically Isolated Digital Input Board*

- 32 Open-Collector output channels
- High driving output current (130 mA/Channel)
- Four isolated bank.
- Optically isolated for each channel

PCI DIO Cards

EX94232: *PCI-bus 16-CH isolated digital input, 16-CH open-collector output Board*

- 16 Open-Collector output channels
- 16 Optical isolated digital input channels
- Built-in internal DC-DC converter for detecting dry contacts
- Software programmable Interrupt handling

EX94264: *PCI-bus 32-CH isolated digital input, 32-CH open-collector output Board*

- 32 Open-Collector output channels
- 32 Optical isolated digital input channels
- Built-in internal DC-DC conveter for detecting dry conatcs
- on-board software programmable digital debounce
- Software programmable Interrupt handling for 16 input channels

EX94288: *PCI-bus 16 channel isolated digital input, 16 channel relay output*

- 16 Relay output channels
- 16 Optical isolated digital input channels
- Built-in internal DC-DC converter for detecting dry contacts
- Software programmable Interrupt handling

EX94632: *PCI-bus 32 channel general purpose digital I/O with interrupt*

- 32 digital input/output Lines divided into 4 groups
- Each group can be configured to input or output mode
- Four layer SMT, short card
- Provides One 37-pin D-type connector
- Programmable interrupt handling
- Output status readback
- Interrupt triggered by :Channel 0,1

EX94664: *64 channel general purpose digital I/O with interrupt*

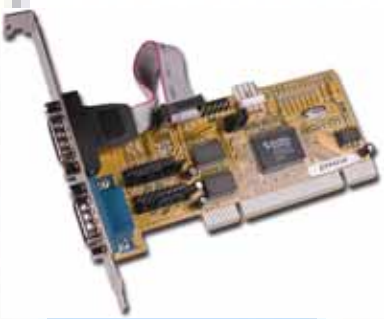
- 64 digital input/output Lines divided into 4 groups
- Each group can be configured to input or output mode
- On-board software programmable digital debounce
- Provides One SCSI 68-pin connector
- Programmable interrupt handling
- Output status readback
- Interrupt triggered by: Channel 0~15

PCI RS232/485 & Ethernet to Fiber

EX94022: 2S RS-422/485 PCI Card

- Two 16C950 UART Serial Ports over PCI Slot
- PCI 32-bit, PIO Mode with 133MB/S Bandwidth
- Supports RS-485 Auto Transceiver Turn Around by Unique
- PCI IRQ Sharing Feature Eliminates IRQ Conflicts
- Two DB9-male Connectors
- 4-wire RS-422/485 and 2-wire RS-485 applications
- RS-422/485 speed up to 921.6Kpbs
- Optional Model: Isolated and 15KV ESD Surge Protection
- Supports Windows 95/98, Me, NT, XP, Win2000, Linux
- Built-in internal DC-DC converter for detecting dry contacts
- Software programmable Interrupt handling

process management



EX94220: 2S PCI Card

- Two 16C550 UART Serial Ports
- PCI 32-bit, PIO Mode with 133MB/S Bandwidth
- PCI IRQ Sharing Feature Eliminates IRQ Conflicts
- Supports both 5V and 3.3V Standard PCI Slots
- Two DB9-Male Connectors (or 2 internal Headers)
- Optional Short Brackets for Low Profile PCI Slot
- Works with all types of I/O peripherals: Modems, Plotters, PDAs, Printers, Removable Cartridge Drives, CD-ROM/R/RW, SuperDisk, LS-120, Digital Camera and others.
- Supports Win 95/98, Me, NT, Win2000, XP, Linux

EX94241: 4S/1P 16C950 Serial I/O Adapter

- Fully PCI Bus 2.2 and PCI Power Management 1.0 Compliant, works in 5V or 3.3V Slots
- Fully 16C950 High performance UART channels
- IEEE1284 EPP parallel port
- Baud rates up to 15Mbps in a asynchronous mode and 60Mbps in external 1x clock mode
- 128-byte deep FIFO per transmitter and receiver
- Automated in-band flow control using programmable Xon/Xoff in both directions
- Automated out-of-band flow control using CTS#RTS# and/or DSR#DTR#
- Complete Software Supports for Win95/98/Me, Windows NT, Windows 2000

EX94280: PCI 8S Card

- 8 x 16C950 UART Serial Ports
- PCI 32-bit, PIO Mode with 133MB/S Bandwidth
- PCI IRQ Sharing Feature Eliminates IRQ Conflicts
- One DB62 Female Connector
- One DB62-to-8-DB9-Male cable for 8 Ports
- Works with all types of I/O peripherals: Modems, Plotters, PDAs, Digital Camera and others.
- Supports Windows 98, Me, NT, Win2000

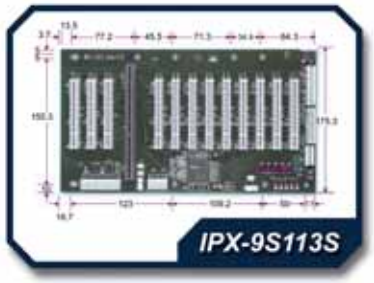
EX9543/G(PCI Card): PCI 64/32-Bit Gigabit 1000Base-X Fiber NIC

- High bandwidth 1000Mbps Network Speed
- Supports Full-Duplex Mode
- Supports IEEE 802.3x Full-Duplex Flow Control
- Supports 32/64 bits PCI bus
- Compliant with PCI 2.2 Interface
- Supports Jumbo Frame up to 9014 Bytes
- Supports High Level VLAN Filtering Function
- Supports on-board verification of IP headers and TCP / UDP checksums for received data
- Supports on-board screening of VLAN tagged Ethernet frames

EX-Backplane

ISA Backplane

PCISA Bridged Backplane



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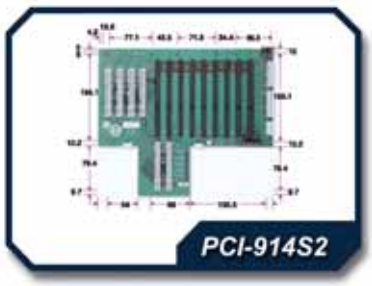
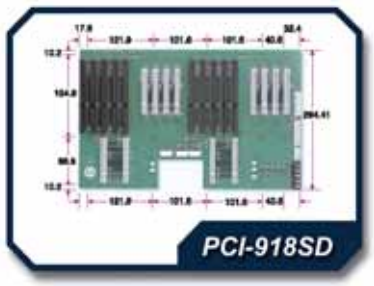
ISA Backplane

PICMC Bridged Backplane

PICMC Bus Passive





EX-Chassis

EX9110: 1U

- Support ATX M/B (Max. to 12" x 9.6")
- Drive Bays: 0.5" High Slim CD-ROM×1, 0.5" High Slim FDD×1, 3.5" HDD (Hidden)× 3
- 250W~300W ATX P/S
- Cooling: 4CM Fan (7.0 CFM) ×2, 4CM Fan (8.6 CFM)× 3
- Extension Port: Front Side USB Port×2, Front Side PS/2 Port×1
- Indicators: Leds for Power ON/OFF, HDD Active
- Switch: Power O N/OFF, System Reset
- Dimensions: 483(W) x 44(H) x 450(D) mm (19" x 1.75" x 17.7")

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EX9212ATX: 2U

- Support ATX M/B (Max. to 12" x 9.6")
- Drive Bays: 5.25"×1, 3.5"×1, 3.5" (Hidden)×3
- (Front Installation) PS/2 size single 250~400W ATX P/S (Optional)
- Cooling: 6CM Ball Bearing Fan×1, 8CM Ball Bearing Fan×1, Removable Air Filter×1
- Riser Card: 2 or 3 Expansion Slots
- Indicators: Leds for Power ON/OFF, HDD Active
- Switch: Power ON/OFF, System Reset
- Dimensions: 483(W) x 88(H) x 501(D) mm (19" x 3.5" x 19.7")

EX9414ATXR/9414SR: 4U

- Support ATX M/B (Max. to 12" x 9.6")(9414ATXR)
- 14/15-slot Passive Backplane (9414SR)
- Drive Bays: 5.25"×3, 3.5"×1, 3.5" (Hidden)(Optional)×1
- PS/2 size single 250~400W ATX or Mini Redundant 230~300W ATX P/S (Optional)
- Cooling: 12CM Ball Bearing Fan (108 CFM)(One Optional)×2
- Indicators: Leds for Power ON/OFF, HDD
- Switch: Power ON/OFF, System Reset
- Flexible Hold Down Bar Protects The Plug in Cards From Vibration
- Removable Air Filter
- Dimensions: 483(W) x 177(H) x 510(D) mm (19" x 7" x 20.1")

EX9418ATXR/94182SR: 4U

- Support ATX M/B (Max. to 12" x 9.6")(9418ATXR)
- 14/15-slot Passive Backplane (9418SR)
- Drive Bays: 5.25"×3, 3.5" ×1, 3.5" (Hidden)(Optional)×2
- PS/2 size single 300W ATX or Mini Redundant 300W ATX P/S (Optional)
- Cooling: 12CM Ball Bearing Fan (90 CFM)×2 More Fans Can Be Optionally Added
- Indicators: Leds for Power ON/OFF, HDD
- Switch: Power ON/OFF, System Reset
- Flexible Hold Down Bar Protects The Plug in Cards From Vibration and Fans Can be added onto It
- Removable Air Filter
- Dimensions: 483(W) x 177(H) x 510(D) mm (19" x 7" x 20.1")

EX-KVM

EX96104: ***4 PORT KVM Switch (Desk Top or Rack mount)***

- 4-computer port
- Daisy chain 3 layer capability switch operation: button
- hot key, for Win NT/9x/Me/2000
- Linux/Unix; Novell

processmanagement

EX96108: ***8 PORT KVM Switch (Desk Top or Rack mount)***

- 8-computer port
- Daisy chain 3 layer capability switch operation: button
- hot key, for Win NT/9x/Me/2000
- Linux/Unix; Novell

EX96116D: ***16 PORT KVM Switch (Rack mount)***

- 16-computer port
- Daisy chain 3 layer capability switch operation: button
- hot key, for Win NT/9x/Me/2000
- Linux/Unix; Novell

For OEM/ODM Only

Fiber Optic to RS232/422/485 converter

EX9541/EX9542

- Full-duplex, bidirectional transmission mode
- Avoide lighting strikes and EMI/RFI interference
- Transmission rate up to 115Kbps
- Direct plug-and-play
- Easily mounted on a DIN-rail, panel or piggyback
- Prevents damage from electronic discharge
- Stable and error-free data transmission
- Automatic internal RS485 bus supervision
- No external flow control signals required for RS485
- EX9541: Multimode optical fibers allow transmission distances up to 2.5Km
- EX9542: Single mode optical fibers allow transmission distances up to 15Km
- Transient suppression and over-current protection on RS422/485 data lines
- Reserved space for termination resistors
- LED for power and data flow indication

processmanagement

Ethernet to Fiber Optic Converter

EX9543, EX9543/G (1000Mbps)

EX9543 is a Fast Ethernet 100 Base-TX to Fiber 100 Base-FX converter. It features one fiber port with SC, ST, MT-RJ or VF-45 connector and one twisted pair port with RJ-45 connector.

It converts electrical signal from 100 Base-TX side into optical signal at 100 Base-FX side and vice versa. Support Fast Ethernet 100Base-TX and 100 Base-FX Multiple choices for fiber connectors:

SC / ST / MT-RJ / VF-45 for multi-mode and single-mode

- Fiber Cable: 50/125, 62.5/125, or 100/140µm multi-mode

80/125, 8.7/125, 9/125 or 10/125µm single-mode

- Data Transfer Rate: 100Mbps auto-duplex-negotiation

100Mbps for half-duplex mode

200Mbps for full-duplex mode

- LED Indicators: FX Tx, Link, TX Tx, Link, FDX, POWER
- Power Requirement: 1A @ +5V (from MII Connector)
- Ambient Temperature: 0℃ to 50℃

Dual band GSM/GPRS serial modem

GM29

The Sony Ericsson GM29 is a dual band (GSM 900/1800MHz) GSM/GPRS serial modem that offers integrators an instant and cost-effective M2M solution for getting applications to market fast.

The GM29 is a plug-and-play modem with an integral SIM card reader and standard connector interfaces. By plugging the RS232 connector directly into an application or computer the GM29 becomes ready to use as a wireless modem. The modem can send and receive data by GPRS, HSCSD, CSD, SMS, and fax as well as handle voice calls.

The GM29 is a powerful and flexible solution that can be used in virtually any imaginable application and is ideal for vending, monitoring and control, security/alarms and fleet management.

The same levels of excellence that have been trademarks of Sony and Ericsson worldwide go into every radio device design. Sony Ericsson applies the same R&D and manufacturing expertise in these products as it does in its world-class mobile telephones. M2M Com Product Unit of Sony Ericsson Mobile Communications is ISO-9001 Certified.

Smart Wireless Lan Ethernet Clint

EX9316

High performance WLAN Ethernet client; no drivers required

Excellent receiver sensitivity and TOPS's optimized built-in antenna provide maximumExcellent receiver sensitivity and TOPS's optimized built-in antenna provide maximum range and signal integrity. Connects to a PC Ethernet port, so no driver install / uninstall is necessary.

Wi-Fi compliant to ensure network compatibility

Tested and certified for interoperability with Wi-Fi (802.11b) Access Points and network adaptors; the global industry-standard for wireless networking.

Operating System independent

The ***EX-9316*** Smart Wireless LAN Ethernet Client connects to an Ethernet port, so it is completely OS independent. Configuration is done via web browser, making set-up and firmware upgrade simple and intuitive. This also makes it easy to add wired network devices, such as printers and web cameras, to a wireless LAN.

Lowest Total Cost of Ownership

TOPS has a global reputation for providing the highest quality, feature-rich WLAN products with extremely competitive pricing.

EX94009

- **Provides 4 Serial Ports over USB Port**
- Fully 16C550 UART Compatible
- Provides 4 DB9-Male Connectors
- DC Jack for Optional DC 5V Power Input
- Optional DC 5V over DB9-Male Connector
- Supports Windows 98, Me, XP, Win2000 hot key, for Win NT/9x/Me/2000

EX98009

- **Provides 8 DSUB Connectors**
- Baud Rate from 75 bps to 6Mbps
- 512-Byte Deep FIFOs for each Port
- Supports 5,6,7,8 Data Bits
- Odd, Even, Mark, Space, or None parity mode
- Supports 1, 1.5 and 2 Stop Bits
- Supports USB Bus Power
- DC Jack for Optional DC 5V Power Input
- Optional DC 5V over DB9-Male Connector
- Supports Win98, Me, XP, CE, Win2000, 2003

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