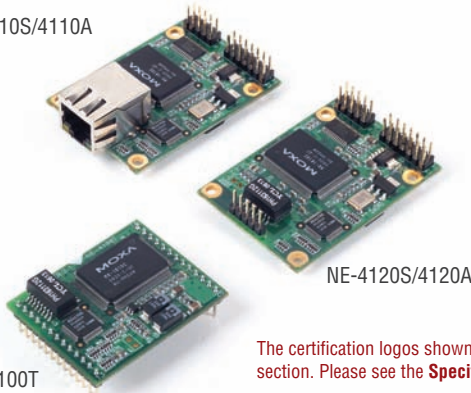# NE-4100 Series

10/100 Mbps embedded serial device servers

NE-4110S/4110A

NE-4120S/4120A

NE-4100T

> **10/100 Mbps Ethernet interface**
> **Up to 230.4 Kbps baudrate support**
> **Choice of operation modes: Real COM, TCP Server, TCP Client, and UDP**
> **DHCP, BootP, Static IP, and ARP supported**
> **SNMP and e-mail alerts for event trapping and notification**
> **Half the size of a credit card—only 57 × 40 mm**
> **Low power consumption at 1.5W, with single +5V input**

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.

RoHS   CE   FC

: Overview

Moxa's NE-4100 embedded device servers are designed for manufacturers who want to add sophisticated network connectivity to their serial devices. Moxa's embedded device servers can be used to convert any device with a standard serial interface to an Ethernet-enabled device in no time. The NE-4100 embedded device servers support 10/100 Mbps Ethernet, and provide ready-to-use operation modes, including TCP Server, TCP Client, and UDP. In addition, a Real COM driver is included for backward compatibility with legacy software.

## : SNMP and E-mail Alerts for Event Trap and Notification

NE-4100 embedded device servers can be configured to send an SNMP trap or e-mail under the following conditions:

- Cold/warm start
- Password authentication failure

- Change in DSR/DCD line signal
- Change in IP address
- Change in password

: On-site Configuration with Serial Command Mode

- Easy on-site configuration of network settings
- Simple command frame format
- Comprehensive command set for serial and network configuration
- Easily switch between software and hardware triggers
- Software reset

: Typical Installation Examples
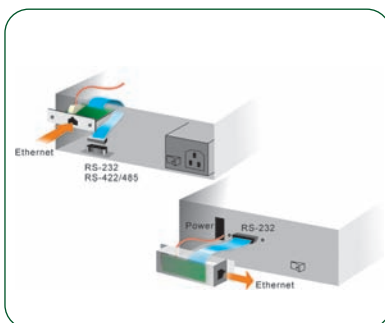
NE-4110: RJ45 Ethernet connector in stand-alone form factor

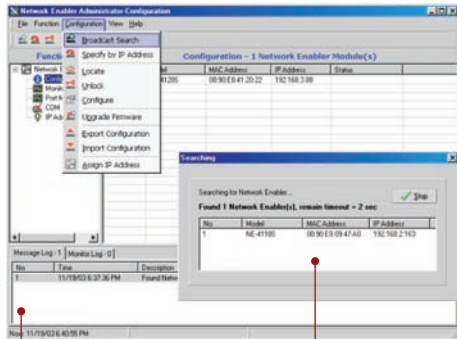**NE-4120:** Pin-header Ethernet in stand-alone form factor

NE-4100T: Dual-in-line pin header in drop-in form factor

: Powerful, User-friendly Utilities
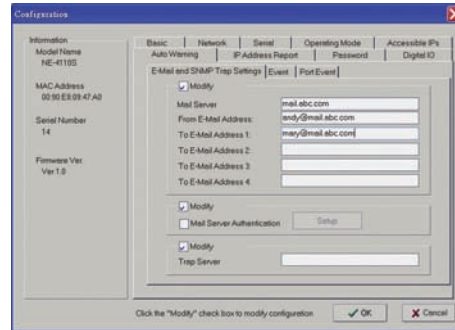
Web-based Configuration

NE-4100 embedded device servers can be configured with the web console, which can be accessed from the web browser of any networked computer.

System log for cold boot, warm boot, etc.

Search for installed embedded device servers

Configure and manage embedded device servers with Moxa's Windows Utility

Network Enabler Administrator is a powerful, Windows-based configuration and management tool for NE-4100 embedded device servers. With Network Enabler Administrator, users can modify IP addresses, update communication parameters, and configure all other settings over the network. This utility has the following useful features:

• Search your LAN for embedded device servers
• Export and import configuration parameters
• Upgrade firmware over the network
• Remotely monitor data traffic, serial line status, and TCP/IP connections
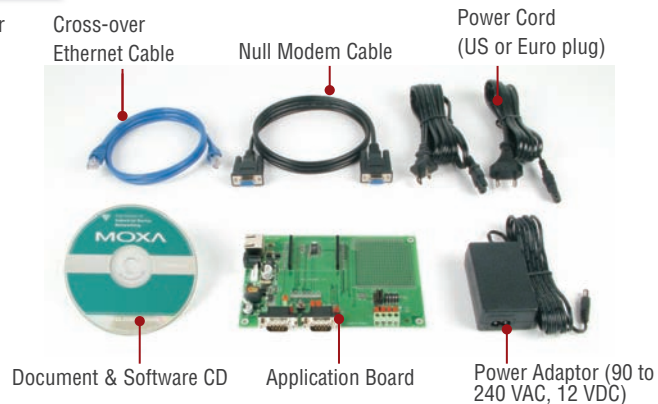• Configure SNMP and e-mail alerts

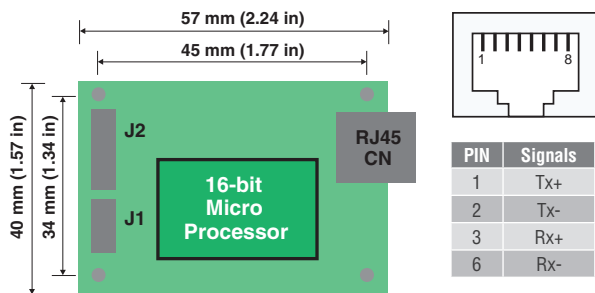Remotely configure serial, network, alarm, and other parameters

: NE-4100 Starter Kit

The Network Enabler Starter Kit includes an evaluation board, power adaptor, software, and serial and Ethernet cables to allow quick and easy evaluation of all embedded device server functions. The evaluation board is equipped with serial, Ethernet, digital I/O, and power circuits to help you test your modules and applications.

Cross-over Ethernet Cable
Null Modem Cable
Power Cord (US or Euro plug)
Document & Software CD
Application Board
Power Adaptor (90 to 240 VAC, 12 VDC)

: Dimensions and Pin Assignment

NE-4110S/4110A

57 mm (2.24 in)
45 mm (1.77 in)
40 mm (1.57 in)
34 mm (1.34 in)

J2
J1
16-bit Micro Processor
RJ45 CN

PIN	Signals
1	Tx+
2	Tx-
3	Rx+
6	Rx-

NE-4120S/4120A

57 mm (2.24 in)
45 mm (1.77 in)
40 mm (1.57 in)
34 mm (1.34 in)

J2
J1
16-bit Micro Processor
J3

J3

Ethernet Pin-header

1	Tx+
2	Tx-
3	
4	Rx+
5	Rx-

8

Serial Device Servers > NE-4100 Series
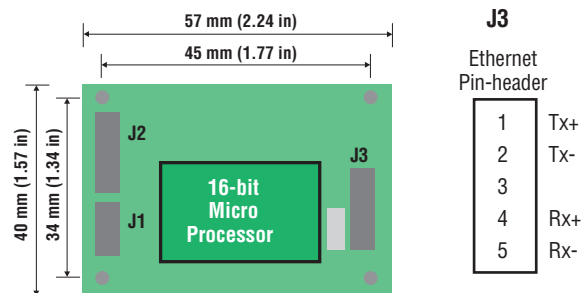
NE-4110/4120 Series
J2

GND	14	13	VCC(+5V)
GND	12	11	VCC(+5V)
DIO0	10	9	10M_LED
DIO1	8	7	100M_LED
DIO2	6	5	Ready_LED
DIO3	4	3	Reset
TxD1	2	1	RxD1

NE-4110S/4120S
J1

NC	10	9	NC
CTS0	8	7	RTS0
DSR0	6	5	GND
DTR0	4	3	TxD0
RxD0	2	1	DCD0

NE-4110A/4120A
J1

NC	10	9	NC
NC	8	7	NC
NC	6	5	GND
RxD- (Data-)	4	3	RxD+ (Data+)
TxD+	2	1	TxD-

For 2-wire RS-485 mode, Pin 3 is Data+, Pin 4 is Data-

NE-4110T

Pin No.	Signal
1	ETx+
2	ETx-
3	ERx+
4	ERx-
5	LED 10M
6	TxD0
7	RxD0
8	RTS0
9	CTS0
10	Reset
11	GND
12	GND
13	TxD1
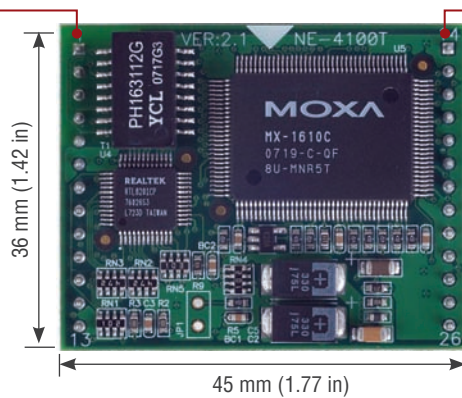
Pin No.	Signal
14	PIO0
15	PIO1
16	PIO2
17	PIO3
18	LED 100M
19	DCD0
20	DSR0
21	DTR0
22	GND
23	Ready LED
24	+5V
25	+5V
26	RxD1

36 mm (1.42 in)
45 mm (1.77 in)

(45 × 36 mm, 26-pin DIL package, 2.54 mm pitch)

: Specifications

Form Factor

Type:
NE-4110/4120: Ready-to-go stand-alone modules
NE-4100T: 26-pin dual-in-line package

Dimensions:
NE-4110/4120: 57 × 40 mm (2.24 x 1.57 in)
NE-4100T: 45 × 36 mm (1.77 x 1.42 in)

Ethernet Interface

Number of Ports: 1

Speed: 10/100 Mbps, Auto MDI/MDIX

Connectors:
NE-4110 Series: RJ45
NE-4120 Series: 5-pin pin header
NE-4100T: 26-pin dual-in-line

Magnetic Isolation Protection: 1.5 KV built-in

Serial Interface

Number of Ports: 2

Serial Standards for Port 1:
NE-4110S/4120S: RS-232
NE-4110A/4120A: RS-422, RS-485-4w, RS-485-2w
NE-4100T: TTL

Serial Standards for Port 2:
TTL console port

RS-485 Flow Control: ADDC® (automatic data direction control)

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF

Baudrate: 110 bps to 230.4 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: Tx+, Tx-, Rx+, Rx-, GND

RS-485-4w: Tx+, Tx-, Rx+, Rx-, GND

RS-485-2w: Data+, Data-, GND

TTL (Port 1): TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

TTL (Port 2): TxD, RxD, GND

Digital I/O Pins

GPIO: 4 programmable I/O pins

Software

Network Protocols: ICMP, ARP, IP, TCP, UDP, DHCP, Telnet, HTTP, SNMP, SMTP

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, XP x64, 2003 x64), Linux Real TTY driver, Unix

Environmental Limits

Operating Temperature:
Standard Models: 0 to 55°C (32 to 131°F)
Wide Temperature (T) Models: -40 to 75°C (-40 to 167°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 70°C (-4 to 158°F)

Power Requirements

Input Voltage: 5 VDC (±5%)

Power Consumption: 290 mA @ 5 VDC max.

Regulatory Approvals

EMC: CE (Class A), FCC (Class A)

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

: Ordering Information

Available Models

NE-4110S: Device server module for RS-232 devices, supports 10/100BaseT(x) with RJ45 connector

NE-4110A: Device server module for RS-422/485 devices, supports 10/100BaseT(x) with RJ45 connector

NE-4120S: Device server module for RS-232 devices, supports 10/100BaseT(x) with 5-pin Ethernet pin header

NE-4120A: Device server module for RS-422/485 devices, supports 10/100BaseT(x) with 5-pin Ethernet pin header

NE-4100T: Device server module for TTL devices, supports 10/100BaseT(x) with DIL package

NE-4110-ST: Starter kit for the NE-4110S and NE-4110A

NE-4120-ST: Starter kit for the NE-4120S and NE-4120A

NE-4100-ST: Starter kit for the NE-4100T

Package Checklist (modules)

• NE-4100 series module

Package Checklist (starter kits)

• NE-4100 series module
• NE-4100-ST or NE-4110-ST or NE-4120-ST evaluation board
• Universal power adaptor
• 2 power cords
• Null modem cable
• Cross-over Ethernet cable
• Document and Software CD
• Quick Installation Guide (printed)
• Warranty Card

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Serial Device Servers > NE-4100 Series