# NE-4100-CMD Series
Lets you configure on-site

- **Easy to configure Network settings on-site**
- **Simple command frame format**
- **Comprehensive readable command set for Network settings and Serial settings**
- **Easily switch between Software and Hardware Trigger Types**
- **Software Reset available**

◤ Overview

The NE-4100-CMD Series, an advanced series of Embedded Network Enablers based on Moxa's NE-4100 Series, provides customers with the capability of sending serial commands via the serial port. Serial commands are used to retrieve or configure parameters stored in the flash memory, and since the commands are sent via the module's serial port, NE-4100-CMD Series offers serial device manufacturers the option of adding local configuration capability to their products.

For example, card reader manufacturers can program the keypad on a card reader to configure network settings (IP address, netmask, etc.) allowing end-users to configure the device on-site, without the need to carry around and set up a laptop.
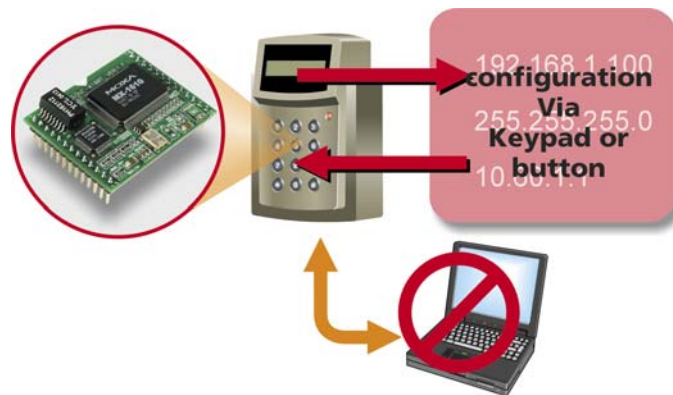
◤ Target Markets

- Card Reader Manufacturers
- Electronic Scales Manufacturers
- Manufacturers of Keypads, LCD Display Devices, and other devices with an HMI (Human Machine Interface)

◤ Operation Flowchart
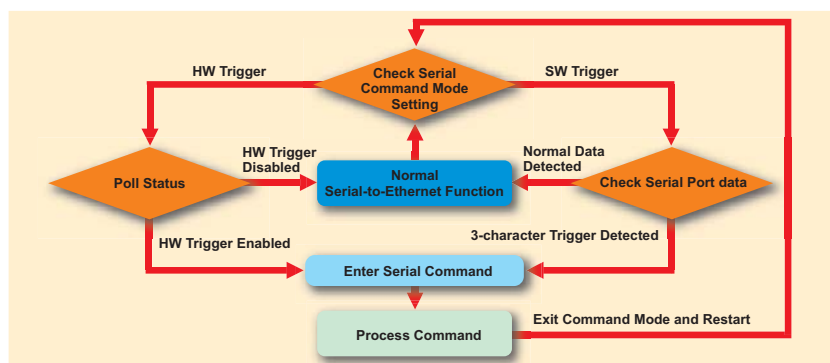
NE-4100 Series

100 Mbps Embedded Network Enabler for Serial Devices

Features

- Ready-to-go Serial-to-Ethernet module to network enable any serial device (RS-232/422/485, TTL)
- 10/100 Mbps Ethernet interface, 115.2 Kbps Serial interface
- Supports TCP Server/Client, UDP, and Real COM operation modes
- Supports DHCP, BootP, Static IP, and ARP
- Supports SNMP and Email Alert functions for event trapping and notification
- Half the size of a credit card—only 57 × 40 mm
- Single +5V input, 1.5W low power consumption

CE FC

NE-4110S
NE-4110A
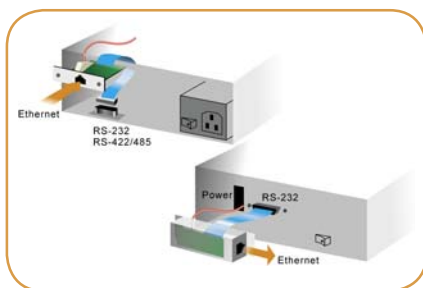
NE-4120S
NE-4120A

NE-4100T

MOXA NE-4100 Series Network Enablers are designed for manuafacturers who want to add sophisticated network connectivity to their products. Any device with a standard serial interface can now connect to Ethernet with Moxa Network Enablers in a snap. NE-4110 Series provides a 10/100 Mbps Ethernet interface with ready-to-use TCP Server/Client and UDP, and a Real COM driver is also included for backward compatibility with the original software.

SNMP and Email Alert for Event Trap/Notification

NE-4100 Series will send SNMP trap or Emails when the following conditions occur:

- Cold/Warm start
- Password authentication fails
- DSR/DCD line signal changes
- IP Setting changes
- Password changes

◤ Typical Installation Examples

Stand-alone Type
(RJ45 Ethernet, NE-4110 Series)

Stand-alone Type
(Pin header Ethernet, NE-4110 Series)

Drop-in Type
(Dual-in-line pin header, NE-4100T)

Specifications

Form Factor

Type:

NE-4110/4120 Series: Stand-alone module, ready-to-go

NE-4100T Series: 26-pin dual-in-line package

Dimensions:

NE-4110/4120 Series: 57 × 40 mm

NE-4100T Series: 45 × 36 mm

LAN Interface

Type: 10/100 Mbps auto-sensing

Protection: 1.5 KV isolation

Connector: NE-4110 Series: RJ45 connector

NE-4120 Series: 5-pin Pin Header

Serial Interface

Port 1:

NE-4110S/4120S: RS-232

NE-4110A/4120A: RS-422/RS-485 (2-wire)/RS-485 (4-wire)

NE-4100T: serial (TTL)

Port 2: serial (TTL) console port

Serial Signals

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

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

RS-485: Data+, Data-, GND with ADDC™

(Automatic Data Direction Control)

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

TTL (Port 2): TxD, RxD, GND

Serial Parameters

Parity: None, Even, Odd, Space, Mark

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Flow Control: RTS/CTS, XON/XOFF

Speed: 50 bps to 115.2 Kbps

Digital I/O Pins

Four programmable I/O pins (GPIO)

Software Features

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

Operation Modes: TCP Server, TCP Client, UDP, Real COM Driver (supporting Windows 98/NT/2000/XP)

Management

Management Tools: Windows Administration Utility, Web browser, Telnet console, serial console, and NECI (.DLL) for developing users' own management utility

SNMP trap: Cold/Warm start, IP setting changed, Password authentication failure, Password changed, DSR/DCD line signal changed

Power Requirements

Power input: 5 VDC, +/- 5%

Power consumption: 290 mA @ 5 VDC (max.)

Temperature/Humidity

Operation: 0 to 70°C (32 to 158°F), 5 to 95% RH

Storage: -20 to 85°C (-4 to 185°F), 5 to 95% RH
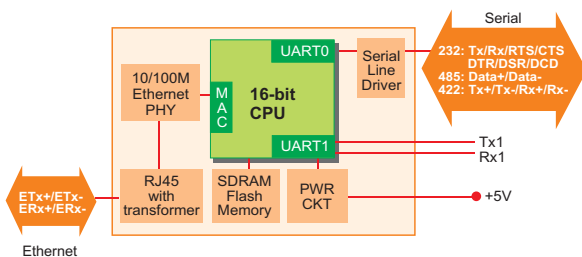
Regulatory Approvals
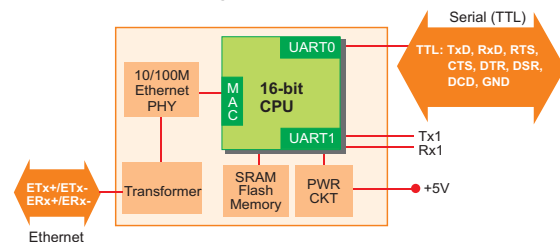
FCC Class B, CE Class B

Warranty

5 years

Block Diagram
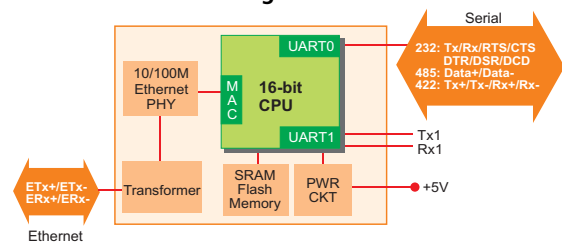
NE-4110 Series Block Diagram

NE-4100T Block Diagram
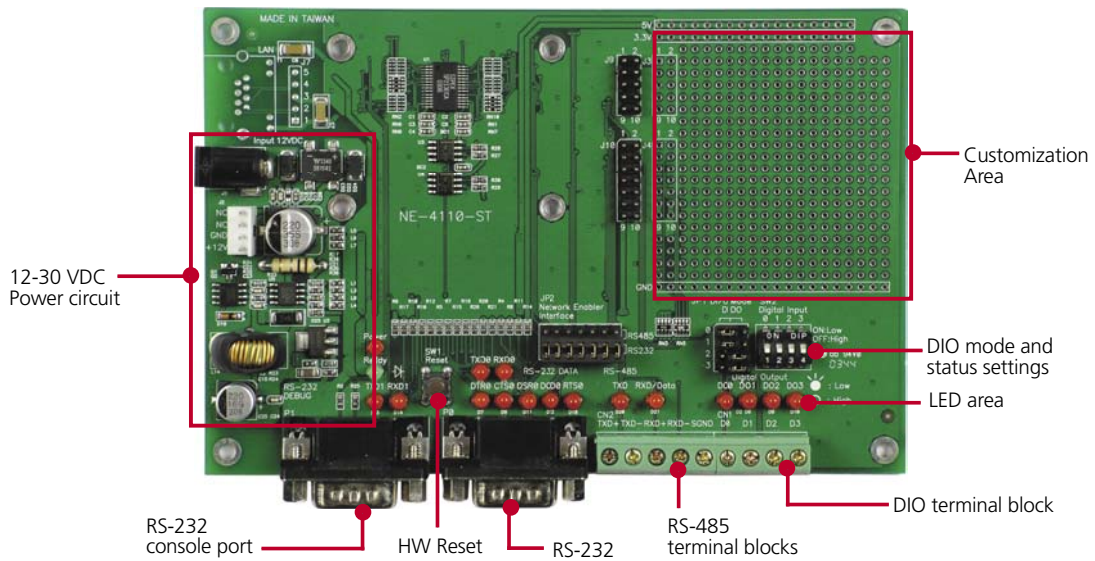

NE-4120 Series Block Diagram

NE-4100 Series

100 Mbps NE-4110/4120 Series Pin Assignments and Dimensions

NE-4110S/4110A

Unit: mm (inch)

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

NE-4120S/4120A

Unit: mm (inch)

J3
Ethernet
Pin-header

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

NE-4100T Pin Assignments

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

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

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
(Data-)RxD-	4	3	RxD+(Data+)
TxD+	2	1	TxD-

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

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

Get Going with Moxa's Starter Kit

Cross-over Ethernet Cable

Null Modem Cable

Power Cord (US or Euro plug)

Documentation & Software CD

Application Board

Power Adaptor (90 to 240 VAC, 12 VDC)

MOXA's Network Enabler Starter Kits, which include an evaluation board, power adaptor, Ethernet and serial cables, and software CD-ROM, let you evaluate all Network Enabler functions quickly and easily. The evaluation board is equipped with serial, Ethernet, digital I/O, and power circuits that help you evaluate the Network Enabler modules.

How to Select the NE-4100 Series Starter Kit

Starter Kit	NE-4100 Series Module		
	Standard Version	Programmable Version	Serial Command Version
NE-4100-ST	NE-4100T	NE-4100T-P	NE-4100T-CMD
NE-4110-ST	NE-4110S	NE-4110S-P	NE-4110S-CMD
	NE-4110A	NE-4110A-P	NE-4110A-CMD
NE-4120-ST	NE-4120S	NE-4120S-P	NE-4120S-CMD
	NE-4120A	NE-4120A-P	NE-4120A-CMD

NE-4110-ST Evaluation Board

12-30 VDC Power circuit
Customization Area
DIO mode and status settings
LED area
DIO terminal block
RS-232 console port
HW Reset
RS-232
RS-485 terminal blocks

NE-4120-ST Evaluation Board

10/100M Ethernet
12-30 VDC Power circuit
Customization Area
DIO mode and status settings
LED area
DIO terminal block
RS-232 console port
HW Reset
RS-232
RS-485 terminal blocks

NE-4100 Series

NE-4100-ST Evaluation Board

10/100M Ethernet

Customization Area

12-48 VDC Power circuit

DIO mode and status settings

LED area

DIO terminal bolck

RS-232 console port

HW Reset

RS-232 Data port

Ordering Information

NE-4110S: 100 Mbps Network Enabler for RS-232 devices, with RJ45 Ethernet connector

NE-4110A: 100 Mbps Network Enabler for RS-422/485 devices, with RJ45 Ethernet connector

NE-4120S: 100 Mbps Network Enabler for RS-232 devices, with 5-pin Ethernet pin header

NE-4120A: 100 Mbps Network Enabler for RS-422/485 devices, with 5-pin Ethernet pin header

NE-4100T: 100 Mbps Network Enabler for TTL devices, with DIL package

NE-4110S-P: Programmable Version, 100 Mbps Network Enabler for RS-232 devices, with RJ45 Ethernet connector

NE-4110A-P: Programmable Version, 100 Mbps Network Enabler for RS-422/485 devices, with RJ45 Ethernet connector

NE-4120S-P: Programmable Version, 100 Mbps Network Enabler for RS-232 devices, with 5-pin Ethernet pin header

NE-4120A-P: Programmable Version, 100 Mbps Network Enabler for RS-422/485 devices, with 5-pin Ethernet pin header

NE-4100T-P: Programmable Version, 100 Mbps Network Enabler for TTL devices, with DIL package

NE-4110S-CMD: Serial Command Version, 100 Mbps Network Enabler for RS-232 devices, with RJ45 Ethernet connector

NE-4110A-CMD: Serial Command Version, 100 Mbps Network Enabler for RS-422/485 devices, with RJ45 Ethernet connector

NE-4120S-CMD: Serial Command Version, 100 Mbps Network Enabler for RS-232 devices, with 5-pin Ethernet pin header

NE-4120A-CMD: Serial Command Version, 100 Mbps Network Enabler for RS-422/485 devices, with 5-pin Ethernet pin header

NE-4100T-CMD: Serial Command Version, 100 Mbps Network Enabler for TTL devices, with DIL package

NE-4110-ST: Starter Kit for NE-4110 Series

NE-4120-ST: Starter Kit for NE-4120 Series

NE-4100-ST: Starter Kit for NE-4100T Series