

ThinkCore IA241/IA240

RISC-based Industrial Ready-to-Run Embedded Computers with 4 Serial Ports, 4 DI Channels, 4 DO Channels, Dual LANs, PCMCIA, SD

Features

- > MOXA ART 32-bit ARM9 industrial processor
- > On-board 64 MB RAM, 16 MB flash disk
- > 4 RS-232/422/485 serial ports
- > 4-ch digital input and 4-ch digital output
- > Dual 10/100Mbps Ethernet for network redundancy
- > PCMCIA supports wireless expansion (802.11b/g, GPRS/UMTS/HSDPA)
- > SD socket for storage expansion supported
- > Ready-to-run Linux Kernel 2.6 platform
- > Unique patented Software Encryption Lock
- > Industrial DIN-rail installation, wall-mount is also possible
- > Robust, fanless design, IP30 protection mechanism
- > -40 to 75°C wide temperature model available

ThinkCore IA241/IA240

Overview

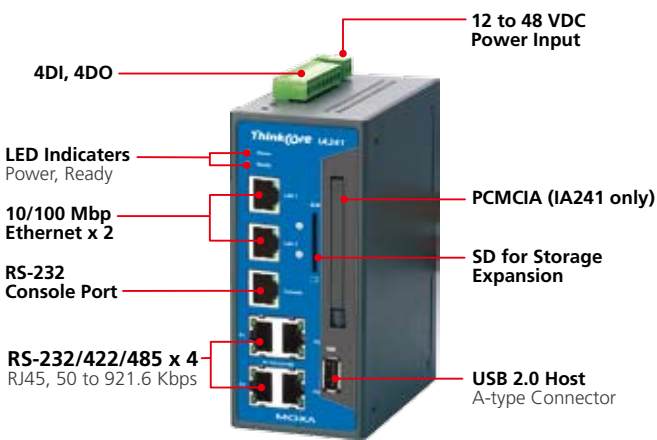
ThinkCore IA241/IA240 embedded computers for industrial automation feature 4 RS-232/422/485 serial ports, dual LANs, 4 digital input channels, 4 digital output channels, and a PCMCIA cardbus and SD socket in a compact, IP30 protected, industrial-strength rugged chassis.

The DIN-Rail vertical form factor is cost effective for users to install the IA241/IA240 into a small cabinet. This space-saving solution also facilitates easy wiring, and is the best choice of front-end embedded controller for industrial applications.

In addition to the standard model, ThinkCore IA241/IA240 also comes in wide temperature models. IA241-T and IA240-T fit the -40 to 75°C operating temperature range, and are appropriate for harsh industrial automation environments.

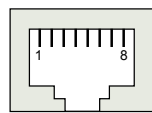
The industrial mechanism of the ThinkCore IA241/IA240 design provides robust, reliable computing. Due to the RISC-based architecture, ThinkCore IA241/IA240 will not generate too much heat while being used. The high communication performance and fanless design make the IA241/IA240 ideal for industrial automation environments.

Appearance



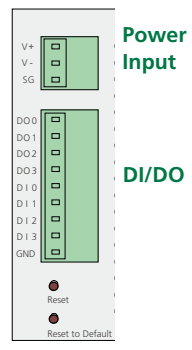
Pin Assignment

Serial Port, RJ45 Connector



PIN	RS-232	RS-422	RS-485
1	DSR	---	---
2	RTS	TxD+	---
3	GND	GND	GND
4	TxD	TxD-	---
5	RxD	RxD+	Data+
6	DCD	RxD-	Data-
7	CTS	---	---
8	DTR	---	---

Terminal Block on Top



Hardware Specifications

System

- CPU:** MOXA ART ARM9 32-bit RISC CPU, 192 MHz
- DRAM:** 64 MB onboard (optional 128 MB for IA241 ODM)
- Flash:** 16 MB onboard (optional 32 MB for IA241 ODM)
- DI/DO:** DI x 4, DO x 4, TTL (3.3 v)
- PCMCIA:** Cardbus card and 16-bit PCMCIA 2.1/ JEIDA 4.2 card (IA241 only)
- Storage Expansion:** SD socket x 1
- USB:** USB 2.0 host x 1
- Console Port:** RS-232 x 1, RJ45, support PPP
- Other:** RTC, buzzer, Watch Dog Timer
- OS:** Built-in embedded Linux

Network Communication

- LAN:** 10/100 Mbps x 2, RJ45
- Protection:** Built-in 1.5 KV magnetic isolation protection

Serial Communication

- Serial Port:** RS-232/422/485 x 4, software-selectable, RJ45
- Protection:** Built-in 15 KV ESD protection for all signals
- Data bits:** 5, 6, 7, 8
- Stop bits:** 1, 1.5, 2
- Parity:** None, Even, Odd, Space, Mark

- Flow Control:** RTS/CTS, XON/XOFF, RS-485 ADDC™
- Speed:** 50 bps to 921.6 Kbps, supports Any Baudrate

LEDs

- System:** Power x 1, Ready x 1
- LAN:** 10M/Link x 2, 100M/Link x 2 (on connector)
- Serial:** Tx/D x 4, Rx/D x 4 (on connector)

Power Requirements

- Power Input:** 12 to 48 VDC
- Power Consumption:** 7W

Mechanical

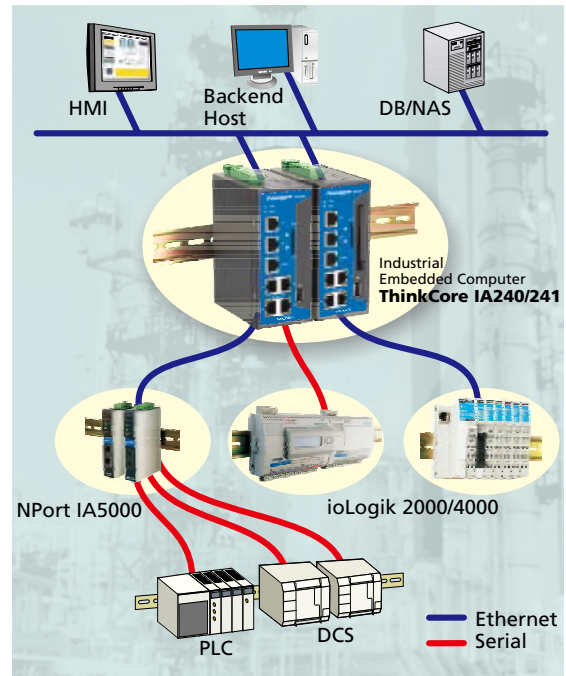
- Dimensions (WxDxH):** 60 x 100 x 137 mm (2.36 x 3.94 x 5.39 in)
- Weight:** 500 g (IA241), 430 g (IA240)

Software Specifications

Linux

- Kernel Version:** 2.6.9
- Boot Loader:** Redboot
- Protocol Stacks:** TCP, UDP, IPv4, SNMP V1/V3, ICMP, IGMP, ARP, HTTP, CHAP, PAP, SSH 1.0/ 2.0, SSL, DHCP, NTP, NFS, SMTP, Telnet, FTP, PPP, PPPoE
- File System:** JFFS2 (on-board flash)
- System Utilities:** bash, busybox, tinylogin, telnet, ftp, scp
- Supporting Services and Daemons:**
 - telnetd: Telnet Server daemon
 - ftpd: FTP server daemon
 - sshd: Secure shell server
 - Apache: Web server daemon
 - OpenVPN: Virtual private network service manager
 - iptables: Firewall service manager

MOXA Industrial Automation Solution



- Construction Material:** aluminum, 1 mm
- Mounting:** DIN-Rail, Wall-mounting
- Environmental**
- Operating Temperature:**
 - 10 to 60°C (14 to 140°F), 5 to 95% RH
 - 40 to 75°C (-40 to 167°F) is optional for -T models
- Storage Temperature:**
 - 20 to 80°C (-4 to 176°F), 5 to 95% RH
 - 40 to 85°C (-40 to 185°F) is optional for -T models

Regulatory Approvals

- EMC:** FCC Part 15, CISPR 22 Class A
 - CE Class A: EN55022 Class A, EN61000-3-2 Class A, EN61000-3-3, EN55024

Safety: TÜV: IEC/EN60950

- pppd: dial in/out over serial port daemon & PPPoE
- snmpd: snmpd agent daemon
- inetd: TCP server manager program

Application Development Environment:

- MOXA Linux API Library
- Linux Tool Chain: Gcc, Glibc, GDB
- Windows Tool Chain: Gcc, Glibc, Insight (Windows-based source level debug utility)

Software Encryption Lock:

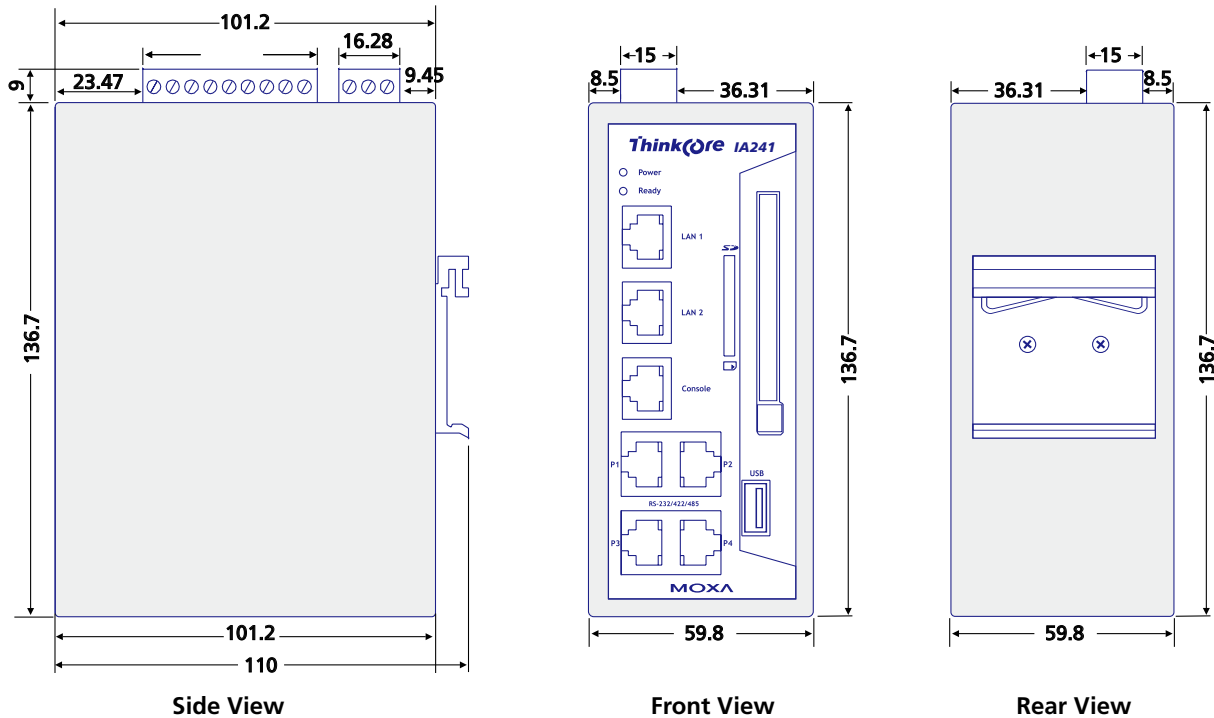
BINEncryptor: Encryption tool for binary files; based on the patented MOXA Intellectual Technology

Device Drivers:

- PCMCIA CardBus (supports 802.11b/g wireless LAN Card), SD Card, USB (supports USB flash disk), Watchdog Timer (WDT), UART, DI/DO, RTC, Buzzer

Dimensions

Unit = mm



Ordering Information

Standard Operating Temperature Models (-10 to 60°C)

ThinkCore IA241-LX

RISC-based Industrial Ready-to-Run Embedded Computer with 4 Serial Ports, 4 DI Channels, 4 DO Channels, Dual LANs, PCMCIA, SD, Linux OS

ThinkCore IA240-LX

RISC-based Industrial Ready-to-Run Embedded Computer with 4 Serial Ports, 4 DI Channels, 4 DO Channels, Dual LANs, SD, Linux OS

Wide Operating Temperature Models (-40 to 75°C)

ThinkCore IA241-T-LX

RISC-based Industrial Ready-to-Run Embedded Computer with 4 Serial Ports, 4 DI Channels, 4 DO Channels, Dual LANs, PCMCIA, SD, Linux OS, Wide Temperature

ThinkCore IA240-T-LX

RISC-based Industrial Ready-to-Run Embedded Computer with 4 Serial Ports, 4 DI Channels, 4 DO Channels, Dual LANs, SD, Linux OS, Wide Temperature

All items include

- 1 IA241 or IA240
- Quick Installation Guide
- Wall-Mounting Kit
- DIN-Rail Mounting Kit
- Document & Software CD
- Ethernet Cable: RJ45 to RJ45 cross-over cable, 100 cm
- Console Port Cable: CBL-RJ45F9-150 8-pin RJ45 to female DB9 cable, 150 cm
- Serial Port Cable: CBL-RJ45M9-150 8-pin RJ45 to male DB9 cable, 150 cm
- Universal Power Adaptor (includes terminal block to power jack converter)
- Product Warranty Statement