



DA-682 Series Embedded Computer Quick Installation Guide

Second Edition, December 2009

1. Overview

The Moxa DA-682 Series of X86-based rackmount embedded computers are designed for industrial data acquisition applications. The state-of-art design includes room for two expansion modules to provide f up to 16 RS-232/422/485 serial ports, or up to “4+8” Ethernet ports. The user-friendly design gives users the advantage of being able to swap out modules quickly and easily. The DA-682’s operating system is based on the Intel Celeron M processor and 915GME chipset, which supports standard X86 VGA, USB, PS/2 keyboard/mouse, 4 Gigabit LAN ports, and EIDE/SATA disk interface.

In addition, the DA-682 comes with a built-in CompactFlash socket and pre-installed operating system. Users can choose Linux, WinCE 6.0, or Windows XP Embedded. Programmers will find the full-function development kit a great benefit for developing software and building reliable communication applications. The housing is a standard 2U, 19-inch wide rack-mounted rugged enclosure. The robust, rack-mountable design provides the type of hardened protection needed for applications in industrial environments.

2. Model Names and Package Checklist

The DA-682 Series includes the following models:

- **DA-682-CE basic unit**
VGA, 4 Gigabit LANs, USB x 4, CompactFlash socket, 256 MB system memory, 256 MB WinCE 6.0 pre-installed flash disk module
- **DA-682-LX basic unit**
VGA, 4 Gigabit LANs, USB x 4, CompactFlash Socket, 512 MB system memory, 1 GB Linux pre-installed flash disk module.
- **DA-682-XPE basic unit**
VGA, 4 Gigabit LANs, USB x 4, CompactFlash Socket, 512 MB system memory, 1 GB Windows XPE pre-installed flash disk module.

P/N: 1802006820011

Each basic system model is shipped with following standard items:

- DA-682 basic unit
- Quick Installation Guide
- Document & Software CD
- Cross-over Ethernet cable
- AC Power Cord
- Product Warranty Statement

Optional Expansion Modules:

- **DA-SP08-I-DB:**
8 RS-232/422/485 serial ports with isolation protection, DB9 connectors
- **DA-SP08-I-TB:**
8 RS-232/422/485 serial ports with isolation protection, terminal block connector
- **DA-LN04-RJ:**
4 10/100 Mbps LAN ports
- **DA-UPCI-DK:**
5V standard PCI extension kit

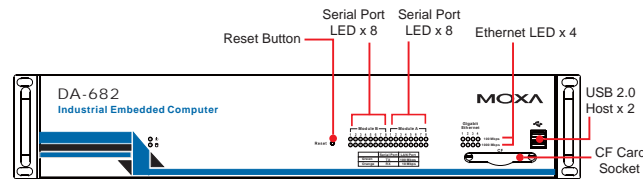
NOTE: Additional expansion modules are currently under development.

3. Hardware Installation

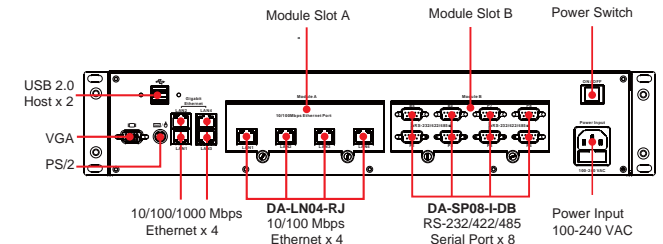
Appearance



Front View



Rear View



NOTE: Expansion modules can be installed in either Slot A or Slot B. For example, in the above figure the LAN port module DA-LN04-RJ is installed in Slot A and the serial port module DA-SP08-I-DB is installed in Slot B.

Connecting the Power

To power on the DA-682 Series Embedded Computer, connect the power line to the DA-682’s AC power connector. If the power is properly supplied, the Power LED will light up first. The Storage LED will start blinking when the Flash Disk Module is accessed during boot up. It takes about 30 to 60 seconds for different operating system to boot up.

Reset Button

Pressing the Reset button initiates a hardware warm reboot. The button plays the same role as a desktop PC’s reset button. After pressing the reset button, the system will reboot automatically.

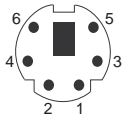
Front Panel LEDs

There are 40 LED indicators on the front panel. Information about each LED is given in the following table.

LED	Color	Description
Power	Green	Power is on
	Off	No power input or power error
Storage	Yellow/ Blinking	Data is being written to or to read from the storage unit.
	Off	Storage unit is idle.
Gigabit LAN LEDs 1-4	Green	100 Mbps Ethernet mode
	Yellow	1000 Mbps (Gigabit) Ethernet mode
	Off	No activity or 10 Mbps Ethernet mode
Module A LEDs 1-8	Green	100 Mbps Ethernet mode or serial port's TX signal is active
	Yellow	10 Mbps Ethernet mode or serial port's RX signal is active
	Off	No activity
Module B LEDs 1-8	Green	100 Mbps Ethernet mode or serial port's TX signal is active.
	Yellow	10 Mbps Ethernet mode or serial port's RX signal is active.
	Off	No operation

Connecting to a Keyboard and Mouse

The DA-682 comes with a PS/2 mini-DIN connector to connect a PS/2 keyboard and PS/2 mouse. This 6-pin mini-DIN connector's pin assignments are shown below.



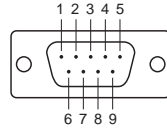
Pin No.	Signal Definition
1	PS/2 Keyboard Data
2	PS/2 Mouse Data
3	GND
4	VCC
5	PS/2 Keyboard Clock
6	PS/2 Mouse Clock

Use the Y-type cable to convert the mini-DIN connector into two 6-pin mini-DIN connectors to connect both a PS/2 keyboard and PS/2 mouse at the same time.



DA-SP08-I-DB Serial Port Expansion Module

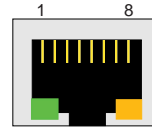
The DA-SP08-I-DB serial port expansion module offers 8 software-selectable DB9 connector serial ports with isolation protection. Each port can be configured by software for RS-232, RS-422, or RS-485. The pin assignments for the ports are shown in the following table:



Pin	RS-232	RS-422	RS-485 (4-wire)	RS-485 (2-wire)
1	DCD	TxDA(-)	TxDA(-)	---
2	RxD	TxDB(+)	TxDB(+)	---
3	TxD	RxDB(+)	RxDB(+)	DataB(+)
4	DTR	RxDA(-)	RxDA(-)	DataA(-)
5	GND	GND	GND	GND
6	DSR	---	---	---
7	RTS	---	---	---
8	CTS	---	---	---

DA-LN04-RJ LAN Port Expansion Module

The DA-LN04-RJ LAN port expansion module has 4 10/100 Mbps Ethernet RJ45 ports. The pin assignments for the ports are shown in the following table:



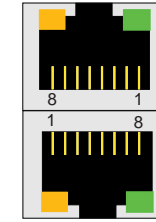
Pin No.	Signal Definition
1	TX+
2	TX-
3	RX+
4	---
5	---
6	RX-
7	---
8	---

The LEDs on the RJ45 port indicate the following conditions:

LED	Color	Description
RJ45 Connector	Green	100 Mbps Ethernet mode
	Yellow	10 Mbps Ethernet mode
	Off	No activity

Gigabit LAN Ports

The DA-682 basic unit has 4 Gigabit LAN ports. When the cable is properly connected, the LEDs on the RJ45 connectors will glow to indicate a proper connection.



Pin	10/100 Mbps	1000 Mbps
1	ETx+	TRD(0)+
2	ETx-	TRD(0)-
3	ERx+	TRD(1)+
4	---	TRD(2)+
5	---	TRD(2)-
6	ERx-	TRD(1)-
7	---	TRD(3)+
8	---	TRD(3)-

The LEDs on the RJ45 port indicate the following conditions:

LED	Color	Description
Gigabit RJ45 Connector	Green	100 Mbps Ethernet mode
	Yellow	1000 Mbps (Gigabit) Ethernet mode
	Off	No operation or 10 Mbps Ethernet mode

The default IP addresses and netmasks of the Gigabit LAN ports are as follows:

	Default IP Address	Netmask
LAN 1	192.168.3.127	255.255.255.0
LAN 2	192.168.4.127	255.255.255.0
LAN 3	192.168.5.127	255.255.255.0
LAN 4	192.168.6.127	255.255.255.0

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