



DA-683 Quick Installation Guide

Second Edition, February 2011

1. Overview

The DA-683 computers are based on the Intel x86 processor and support DVI-I, 6 Gigabit Ethernet ports, 2 RS-232 serial ports, CompactFlash, and USB. The DA-683 comes in a standard 19-inch, 2U high form factor.

With the Core Duo processor, the DA-683 can perform many industrial tasks yet consume little power, ensuring a cost-effective solution for industrial applications. Two slots available for expansion modules provide the great flexibility in system integration and expansion.

The DA-683 runs Linux, or Windows XP Embedded (pre-installed), to provide a familiar environment for developing sophisticated application software. Moxa's comprehensive software support makes the programmer's job easier, and helps programmers develop bug-free code quickly and at a lower cost.

2. Model Names and Package Checklist

The DA-683 Series includes the following models:

- **DA-683-SP-XPE:** x86 Ready-to-Run Rackmount Computer with 1.66 GHz CPU, DVI-I, 6 Giga LANs, 2 RS-232 Serial Ports, 4 DI + 4DO, 2 Peripherals Expansion Slots, CompactFlash, 4 USB, Single Power, Windows Embedded Standard, -10 to 60°C operating temperature
- **DA-683-SP-LX:** x86 Ready-to-Run Rackmount Computer with 1.66 GHz CPU, DVI-I, 6 Giga LANs, 2 RS-232 Serial Ports, 4 DI + 4DO, 2 Peripherals Expansion Slots, CompactFlash, 4 USB, Single Power, Linux, -10 to 60°C operating temperature
- **DA-683-DPP-T-XPE:** IEC 61850-3 x86 Ready-to-Run Rackmount Computer with 1.66 GHz CPU, DVI-I, 6 Giga LANs, 2 RS-232 Serial Ports, 4 DI + 4 DO, 2 Peripherals Expansion Slots, CompactFlash, 4 USB, Dual Power, Windows Embedded Standard, -40 to 70°C operating temperature
- **DA-683-DPP-T-LX:** IEC 61850-3 x86 Ready-to-Run Rackmount Computer with 1.66GHz CPU, VGA, 6 Giga LANs, 2 RS-232 Serial Ports, 4 DI + 4 DO, 2 Peripherals Expansion Slots, CompactFlash, 4 USB, Dual Power, Linux, -40 to 70°C operating temperature.

Each basic system model is shipped with following standard items:

- **DA-683 basic unit**
- **Quick Installation Guide**
- **Document & Software CD**

P/N: 1802006830011

- **Ethernet Cable: RJ45 to RJ45 cross-over cable, 100 cm**
- **Product Warranty Statement**

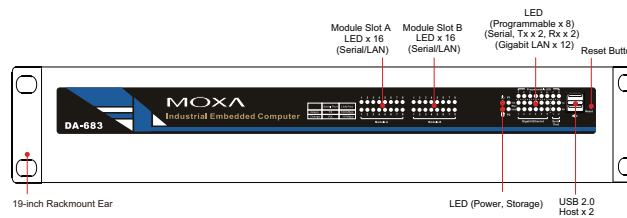
Optional Expansion Modules:

- **DA-SP08-I-DB:** 8-port RS-232/422/485 serial module with DB9 connector and digital isolation
- **DA-SP08-DB:** 8-port RS-232/422/485 serial module with DB9 connector
- **DA-SP08-I-TB:** 8-port RS-232/422/485 serial module with terminal block connector and digital isolation
- **DA-SP38-I-TB:** 8-port RS-422/485 serial module with terminal block connector and digital isolation
- **DA-SW08-RJ:** 8-port 10/100 Mbps unmanaged switch module
- **DA-LN04-RJ:** 4-port 10/100 Mbps LAN module
- **DA-UPCI-DK:** Universal PCI development kit

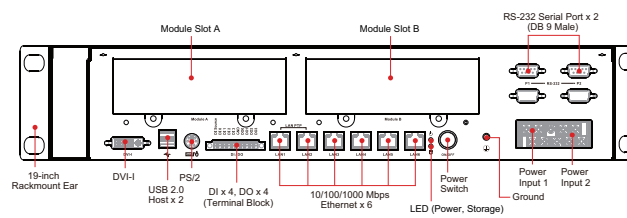
NOTE: Additional expansion modules are currently under development.

3. Hardware Installation

Front View



Rear View

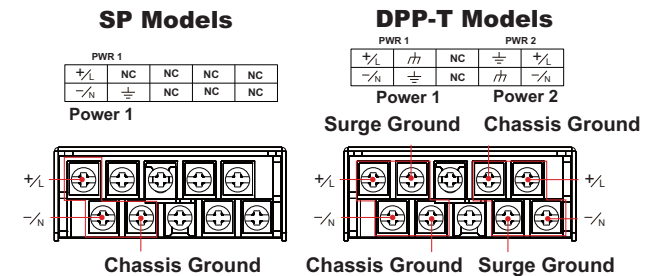


NOTE Expansion modules can be installed in either Slot A or Slot B. For example, in the above figure the LAN port module DA-LN04-RJ is installed in Slot A and the serial port module DA-SP08-I-DB is installed in Slot B.

Connecting the Power

DA-683 offers both single power and dual power inputs. Please use a screwdriver to remove the screws. Connect the power cord to the screws, and then attach the screws to the unit. For single power models (SP), use Power 1 only; for dual power models (DPP-T),

use both Power 1 and Power 2. Refer to the following figure for detailed information. When finished, press the Power Switch button to start the system. It will take about 30 to 60 seconds for your operating system to boot up.



For more detailed power connection and surge protection information, please refer to the Hardware User's Manual.

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.

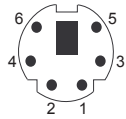
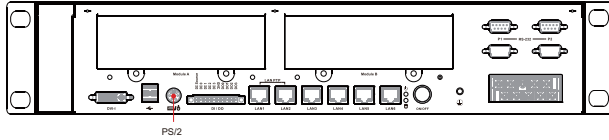
Front Panel LEDs

There are 60 LED indicators on the front panel. Information about each LED is given in the following table. Additional ports LEDs, Port 1 and Port 2, are temporarily reserved.

LED Name	Color	LED 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
Ethernet Port 1000 Mbps	Green	1000 Mbps of Ethernet port is active
	Off	No activity
Ethernet Port 100 Mbps	Yellow	100 Mbps of Ethernet port is active
	Off	10 Mbps or no activity
Serial Port TX 1-2	Green	Serial port is transmitting data
	Off	No operation
Serial Port RX 1-2	Yellow	Serial port is receiving data
	Off	No operation
Module Slot A	Green	Serial port is transmitting data, or 100 Mbps Ethernet port is active
	Orange	Serial port is receiving data, or 10 Mbps Ethernet port is active
Module Slot B	Green	Serial port is transmitting data, or 100 Mbps Ethernet port is active
	Orange	Serial port is receiving data, or 10 Mbps Ethernet port is active

Connecting a PS/2 Keyboard and Mouse

Your DA-683 embedded computer comes with a PS/2 mini-DIN connector to connect to a PS/2 keyboard and PS/2 mouse with a Y-type cable. This 6-pin mini-DIN connector has the pin assignments 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 a 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. The Y-type cable is not included in the accessory package. It should be purchased separately. You may also use the USB ports to connect your USB-based keyboard and mouse.



ATTENTION

Please note that without the Y-type cable, the PS/2 connector on the DA-683 can only work with a PS/2 keyboard. A PS/2 mouse will not function when directly connected to the PS/2 connector on the DA-683 embedded computer.

Connecting to a Display

Your DA-683 embedded computer comes with a 25-pin DVI-I female connector to connect to a DVI-I monitor. Be sure to turn off the power before you connect or disconnect the monitor cable.

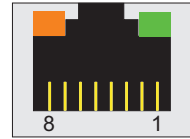
Connecting USB Devices

The DA-683 embedded computer has four USB 2.0 ports: two are on the front panel, and two are on the rear panel. All of the ports are UHCI, Rev 2.0 compliant, and support Plug & Play and hot swapping. These ports can be used to connect USB devices, such

as a keyboard, mouse, USB flash disk, and USB CD-ROM. In addition, both USB ports can support boot disks; this can be activated by modifying the BIOS settings. The chapter "BIOS Setup" describes the configuration process in detail.

Connecting LAN Ports

The DA-683 has 6 10/100/1000 Mbps LAN ports. When the cable is properly connected, the LEDs on the RJ45 connectors will glow to indicate a proper connection.



Pin No.	Gigabit Ethernet Signal
1	TRD (0)+
2	TRD (0)-
3	TRD (1)+
4	TRD (2)+
5	TRD (2)-
6	TRD (1)-
7	TRD (3)+
8	TRD (3)-

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
LAN 5	192.168.7.127	255.255.255.0
LAN 6	192.168.8.127	255.255.255.0

Connecting Digital Input/Output Channels

The DA-683 computer comes with 4 digital input channels and 4 digital output channels located on the rear panel. These DI/DO channels can be connected with the terminal block. Refer to the Hardware User's Manual for detailed wiring methods.

Inserting and Removing Expansion Modules

The DA-683 embedded computer has two expansion slots for inserting expansion modules. Expansion modules can be installed in either on Slot A or Slot B. To insert or remove expansion modules, follow these instructions:

1. Disconnect the DA-683 from the power source.
2. Unscrew expansion module A or module B on the rear panel.
3. Carefully insert or remove the expansion module by pushing or pulling on both two screws at the same time. By pushing or pulling on the two screws evenly, you can ensure that the board is inserted or removed without being damaged.

4. Configuring the Ethernet Interface

Linux users should follow these steps:

If you use the console cable to configure Network settings for the first time, use the following commands to edit the interfaces file:

```
#ifdown -a
//Disable LAN1~LAN6 interface first, before you
reconfigure the LAN settings. LAN1 = eth0, LAN2 =
eth1 and so
on//
#vi /etc/network/interfaces
//check the LAN interface first//
```

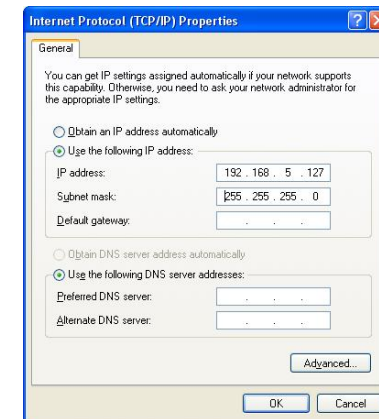
After the boot setting of the LAN interface has been modified, use the following commands to activate the LAN settings immediately:

```
#sync; ifup -a
```

WinXPE users should follow these steps:

Step 1: Go to **Start** → **Settings** → **Network Connections**.

Step 2: In the screen of **Local Area Connection Properties**, click **Internet Protocol (TCP/IP)** and then select **Properties**.



Step 3: Click **OK** after inputting the proper IP address and Netmask.

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