



# DA-685 Series Embedded Computer Quick Installation Guide

Second Edition, February 2014

## 1. Overview

DA-685 x86 substation computers excel in a wide array of power automation applications. The DA-685 series is built around Intel's energy-efficient Atom processor and supports VGA, 6 Gigabit Ethernet ports, 2 software-selectable RS-232/422/485 and 6 RS-485 serial ports, CompactFlash, and 2 USB 2.0 slots. The computers come standard in a 19 inch/2U rackmount form factor. With the Intel Atom processor, these computers pack enough punch to easily dispose of demanding industrial tasks without consuming a lot of power.

## 2. Model Names and Package Checklist

The DA-685 Series includes the following models:

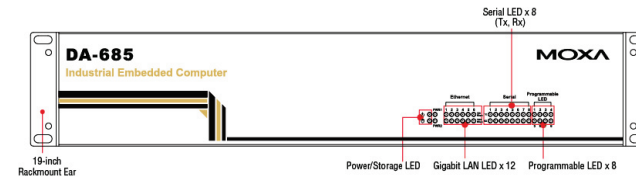
- DA-685-LX:**  
 Rackmount x86 computer with 1.66 GHz CPU, VGA, 6 Gigabit Ethernet ports, 2 software-selectable RS-232/422/485 ports, 6 2-wire RS-485 interfaces, CompactFlash socket, 2 USB 2.0 ports, single power input, and a Linux operating system
- DA-685-XPE:**  
 Rackmount x86 computer with 1.66 GHz CPU, VGA, 6 Gigabit Ethernet ports, 2 software-selectable RS-232/422/485 ports, 6 2-wire RS-485 interfaces, CompactFlash socket, 2 USB 2.0 ports, single power input, and Windows Embedded Standard
- DA-685-W7E:**  
 Rackmount computer with 1.66 GHz CPU, VGA, 6 Gigabit Ethernet ports, 2 RS-232/422/485, 6 2-wire RS-485 Ports, CompactFlash, 2 USB ports, single power input, Windows Embedded Standard 7

Each basic system model is shipped with following standard items:

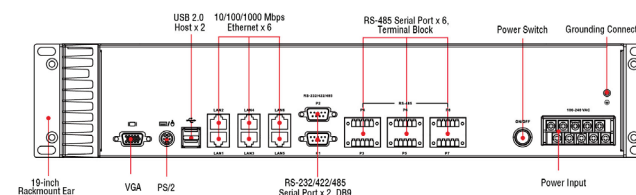
- DA-685 embedded computer
- Rackmount kit
- Documentation CD or DVD
- Quick installation guide (printed)
- Warranty card

## 3. Hardware Installation

### Front View

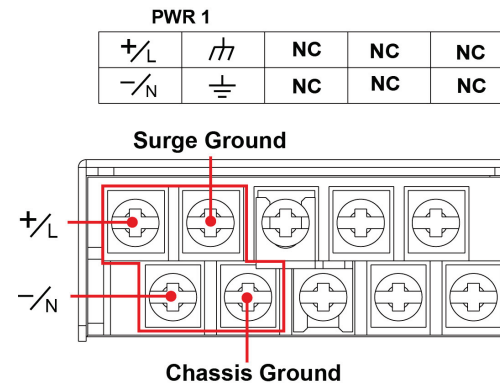


### Rear View



### Connecting the Power

Use a Philips-head screwdriver to remove the screws on the terminal block clamps. Connect the power supply to the terminal via the unit's screw clamps. Refer to the figure below for a pinout diagram, or refer to the Hardware Manual for more detailed specifications.



When finished, press the Power Switch button on the rear panel to start the system. It will take 30 to 60 seconds to boot up, depending on your operating system.

### Front Panel LEDs

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

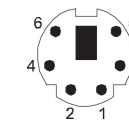
LED Name	Color	LED Description
Power	Green	Power is on
	Off	No power input or power error
Storage	Yellow / Blinking	Data is being written to or to read from the storage unit
	Off	Storage unit is idle
Ethernet Port 100 Mbps	Green	Ethernet Port is active at 100 Mbps
	Off	No activity
Ethernet Port 1000 Mbps	Yellow	Ethernet Port is active at 1000 Mbps
	Off	No activity
Serial Port TX 1-8	Green	Serial port is transmitting data
	Off	No operation
Serial Port RX 1-8	Yellow	Serial port is receiving data
	Off	No operation
Programmable Port 1-8	Green	User Defined
	Yellow	User Defined
Power Fail 1	Unused	--
	Unused	--
Power Fail 2	Unused	--
	Unused	--

### Connecting to a Display

Your DA-685 embedded computer comes with a D-Sub 15-pin female connector to connect to the VGA monitor. Be sure to remove the power before you connect or disconnect the monitor cable.

### Connecting to a Keyboard and Mouse

The DA-685 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. (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.)



### USB Ports

The DA-685 comes with two USB 2.0 ports on the rear panel. Use these USB ports to connect flash drives for storing large amounts of data.

### Serial Ports

The DA-685 offers six 2-wire terminal block RS-485 ports and two software-selectable DB9 RS-232/422/485 ports. 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	-	-	-

### Ethernet Ports

The DA-685 provides 6 100/1000 Mbps Ethernet RJ45 ports. The pin assignments are shown in the following table:

Pin	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 default IP addresses and netmasks of the Ethernet ports are as follows. Note that the XPE and W7E models use DHCP.

	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

## 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:

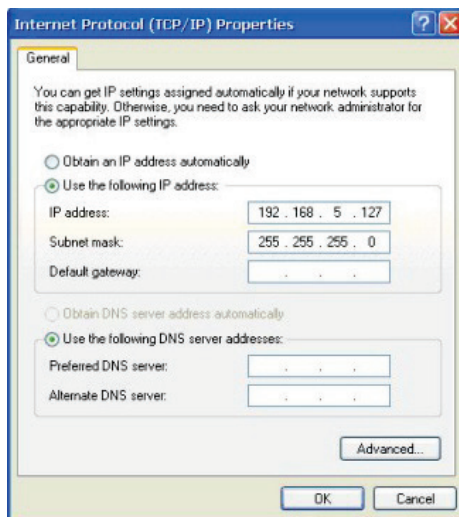
```
#sync; ifup -a
```

### XPE users should follow these steps:

Step 1: Go to **Start → 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.

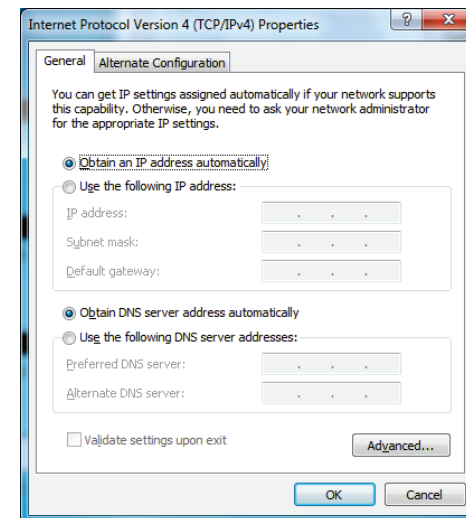


### W7E users should follow these steps:

Step 1: Go to **Start → Control Panel → Network and Internet → View network status and tasks → Change adapter setting**.

Step 2: In the screen of **Local Area Connection Properties**, click **Internet Protocol (TCP/IP)** and then select **Properties**. Select Internet Protocol Version 4, then click Properties.

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



**NOTE** Refer to the User's Manual for additional configuration information.

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