UC-8410A
Quick Installation Guide

Edition 2.0, June 2018

MOXA®

Overview

The UC-8410A Series of dual-core embedded computers support a rich variety of communication interfaces, and come with 8 RS-232/422/485 serial ports, 3 Ethernet ports, 1 PCIe mini slot for a wireless module (not for the -NW model), 4 digital input channels, 4 digital output channels, 1 SD card slot, 1 mSATA socket, and 2 USB 2.0 hosts. The computer's built-in 8 GB eMMC and 1 GB DDR3 SDRAM give you sufficient memory to run your applications, while the SD slot and mSATA socket provide you the flexibility to expand the data storage capacity.

Package Checklist

- 1 UC-8410A embedded computer
- Wall-mounting kit
- Ethernet cable: RJ45 to RJ45 cross-over cable, 100 cm
- CBL-4PINDB9F-100: 4-pin pin header to DB9 female console port cable, 100 cm
- Quick installation guide (printed)
- Warranty card

*Please notify your sales representative if any of the above items are missing or damaged.*

Panel Layout

Refer to the following figures for the panel layouts.

Front View

NOTE The -NW model is not provided with the antenna connectors and SIM card socket. However, all models come with a cover.

Rear View

LED Indicators
(power, ready, storage, programmable)

Ethernet Ports x 3
(10/100/1000 Mbps, RJ45)

Ground Screw

LED Indicators
(diagnostic, wireless status, programmable)

DI Channels x 4
DO Channels x 4

Power Input
(12 to 48 VDC)

Left-Side View

SD Card slot x 1
Mini-PCIe socket x 1
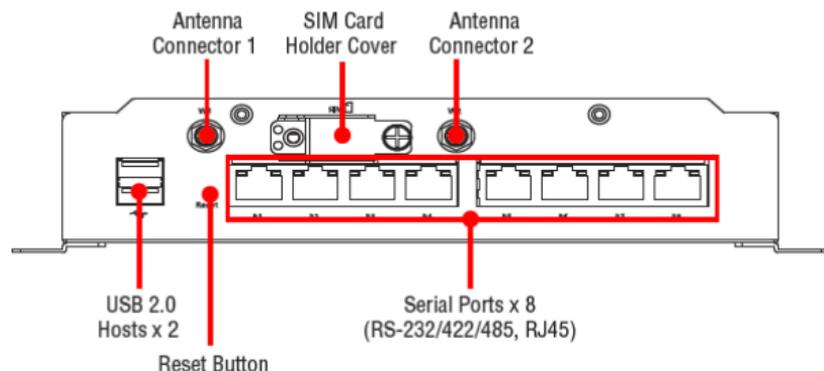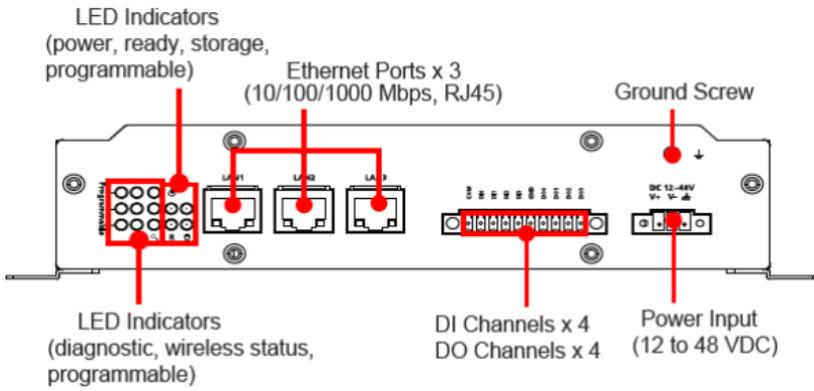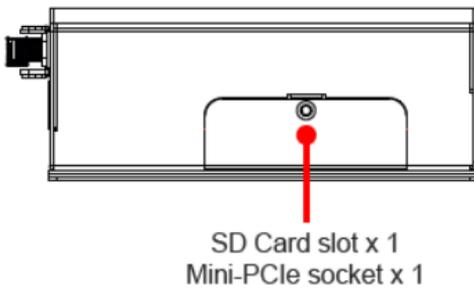
Installing the UC-8410A

Wall or Cabinet

The two metal brackets included with the UC-8410A can be used to attach it to a wall or the inside of a cabinet. Using two screws per bracket, first attach the brackets to the bottom of the UC-8410A. Next, use two screws per bracket to attach the UC-8410A to a wall or cabinet.

Connector Description

Power Connector

Connect the 12-48 VDC power line to the UC-8410A's terminal block. The Ready LED will glow a steady green color after 30 to 60 seconds have passed.

Grounding the UC-8410A

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting the power.

⚠️ **ATTENTION**

This product is intended to be mounted on to a well-grounded mounting surface, such as a metal panel.

Ground Connector
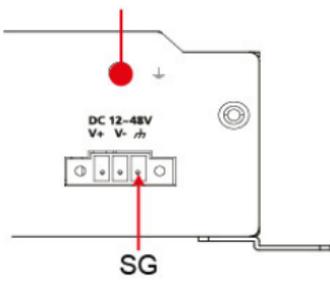
SG: The Shielded Ground (sometimes called Protected Ground) contact is the right most contact on the 3-pin power terminal block connector when viewed from the angle shown here. Connect the SG wire to an appropriate grounded metal surface. An additional ground connector is provided just above the power terminal block, which you can use for grounding protection.

Ethernet Port

The 3 10/100/1000 Mbps Ethernet ports (LAN 1, LAN 2, and LAN3) use RJ45 connectors.

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)-
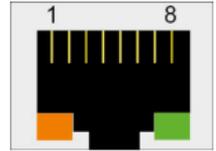
Serial Port

The 8 serial ports (P1 to P8) use RJ45 connectors. Each port can be configured by software as RS-232, RS-422, or RS-485. The pin assignments are shown in the following table:

Pin	RS-232	RS-422/RS-485-4W	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	–	–
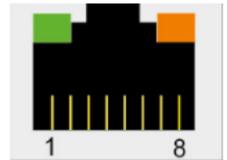
Digital Inputs and Digital Outputs

The UC-8410A has 4 digital output channels and 4 digital input channels. Refer to the *UC-8410A Hardware User's Manual* for detailed pinouts and wiring.

SD/mSATA

The UC-8410A comes with a SD card slot and an mSATA socket for storage expansion.

To replace or install the SD card, or to install an mSATA card, follow these steps:

1. Use a screwdriver to remove the screws on the rear and side panels of the cover over the mSATA socket.

2. Remove the cover to access the SD-card slot and the mSATA socket.

3. Push the SD card in gently to release it and remove the SD card to insert a new one in the socket. Make sure your SD card has been securely inserted.
4. Insert the mSATA card into the socket, and then fasten the screws. Please note that the mSATA card is NOT included in the product package and must be purchased separately. Standard mSATA card types have been tested with the UC-8410A computer and have been found to work normally. For additional details, refer to the UC-8410A hardware manual.

Console Port

The serial console port is a 4-pin pin-header RS-232 port that is located below the SD card socket. Use a screwdriver to remove the two screws holding the cover to the embedded computer's housing. The port is used for the serial console terminal, which is useful for viewing boot-up messages. Use the CBL-4PINDB9F-100 cable included with the UC-8410A-LX to connect a PC to the UC-8410A's serial console port. For details on configuring the UC-8410A-LX, refer to the *Connecting the UC-8410A Computer to a PC* section.

Reset Button

Self-Diagnostic: The red LED will start blinking when you press the reset button. Keep the button pressed until the green LED lights up for the first time, and then release the button to enter diagnostic mode.

Reset to Factory Default: The red LED will start blinking when you press the reset button. Keep the button pressed until the green LED lights up for the second time and then release the button to start the reset to factory default process.

USB

The UC-8410A supports 2 USB 2.0 hosts for external storage expansion.

Installing the Wireless Modules (Not for the –NW Model)

Instructions for installing the Wi-Fi and cellular modules on the UC-8410A computer are available in the *Installing the Wireless Modules* section of the *UC-8410A Hardware User's Manual*.

Installing the SIM Card

Follow these steps to install the SIM card for the cellular module.

1. Unfasten the screw on the SIM card holder cover located on the front panel of the computer.
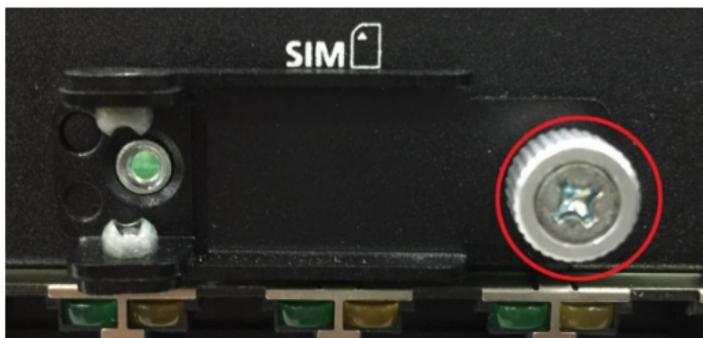
2. Insert the SIM card into the slot. Make sure you insert the card in the direction indicated above the card slot.


3. Close the cover and fasten the screw.

Powering on the UC-8410A Computer

To power on the UC-8410A, connect a *terminal block to power jack converter* to the UC-8410A's DC terminal block (located on the left rear panel), and then connect the power adapter. Note that the Shielded Ground wire should be connected to the right most pin of the terminal block. It takes approximately 30 seconds for the system to boot up. Once the system is ready, the Ready LED will light up.
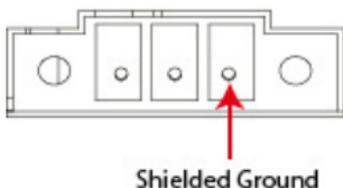
Connecting the UC-8410A Computer to a PC

There are two ways to connect the UC-8410A to a PC: (1) through the serial console port (2) using Telnet over the network. The COM settings for the serial console port are: **Baudrate=115200 bps**, **Parity=None**, **Data bits=8**, **Stop bits =1**, **Flow Control=None**.

> ⚠️ **ATTENTION**
>
> Remember to choose the "VT100" terminal type. Use the CBL-4PINDB9F-100 cable included with the product to connect a PC to the UC-8410A's serial console port.

To use Telnet, you will need to know the UC-8410A's IP address and netmask. The default LAN settings are shown below. For initial configuration, you may find it convenient to use a cross-over Ethernet cable to connect directly from the PC to the UC-8410A.

	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

Once the UC-8410A is powered on, the Ready LED will light up, and a login page will open. Use the following default Login name and Password to proceed.

Linux:

> **Login:** moxa
> **Password:** moxa

Configuring the Ethernet Interface

Linux Models

If you are using the console cable for a first-time configuration of the network settings, use the following commands to edit the **interfaces** file:

```
#ifdown –a
  //Disable LAN1/LAN2/LAN3 interface first, before you
  reconfigure the LAN settings. LAN 1 = eth0, LAN 2= eth1, LAN
  3= eth2
#vi /etc/network/interfaces
  //check the LAN interface first//
```

After the boot settings of the LAN interface have been modified, use the following command to activate the LAN settings with immediate effect:

```
#sync; ifup –a
```

NOTE Refer to the *UC-8410A Series Linux Software User's Manual* for additional configuration information.