

UC-8112-LX-STK Software Quick Installation Guide

First Edition, May 2015

Introduction

This guide describes how to use Webmin to control the UC-8112-LX computer remotely. You may also use Webmin for system evaluation and data acquisition.

Preparing a Bootable SD Card

We strongly suggest that you prepare a bootable SD card to ensure that you have the latest kernel on your UC-8112 computer. You can download the latest UC-8112-LX-STK software image from Moxa's website.

On a Windows Platform

1. Make sure the write protect switch on the SD card is unlocked.



- 2. Insert the SD card into a Windows PC.
- 3. Download win32diskimager from the following link: <u>http://sourceforge.net/projects/win32diskimager/</u>
- 4. Execute **win32diskimager** after the installation.
- 5. Make sure the device name matches the USB device.

👒 Win32 Disk Imager 📃	
Image File	-Device -
.Settings/Lock_lin/桌面/uc81 ing/I-TEST/14042214/14042214.ing 📔	[G:\] 🔽
Copy MD5 Hash	
Version: 0.9 Cancel Read Write	Exit

6. Select the image file.



7. After selecting the correct image file, click the Write button.
 8. When finished, click OK.

👒 Win32 Disk Imager	😪 Win32 Disk Imager
Image File Device mo_board/am335x_bm/NGC/NGC_IMG/UC81xx_NGC_0.9.2.img 🔁 [3 🕽 💙	Image File
Copy MD5 Hest:	Copy MDS Hash: Progress Write Saccessful
	ОК
Version: 0.9 Cancel Read Write Exct	Venion: 0.9 Concer Kean Write Exit

On a Linux Platform

- 1. Make sure the write protect switch on the SD card is unlocked.
- 2. Insert the SD card into the Linux PC.
- 3. Use the **dmesg** command to identify the device node.

csi 25:0:0:0: Direct-Access TS-RDF5 SD Transcend TS35 PQ: 0 ANSI: 6
d 25:0:0:0: Attached scsi generic sg3 type 0
d 25:0:0:0:[[sdd]] 31260672 512-byte logical blocks: (16.0 GB/14.9 GiB)
d 25:0:0:0: [sdd] Write Protect is off
d 25:0:0:0: [sdd] Mode Sense: 23 00 00 00
d 25:0:0:0: [sdd] Write cache: disabled, read cache: enabled, doesn't support DPO or FU
sdd: unknown partition table
d 25:0:0:0: [sdd] Attached SCSI removable disk

4. Use the **dd** command to configure the UC-8112-LX image on the SD card.

ot@Lock-Lin:/home/work# sudo dd if=./140				
2420.img of=/dev/sdd				
s=512k				
1954+0 records in				
954+0 records out				
024458752 bytes (1.0 GB) copied, 119.572 s, 8.6 MB/s				

Connecting to the UC-8100 Computer

Use an Ethernet cable to connect to the LAN1 port on your UC-8112's computer. Open a browser on your computer and connect to the following address:

https://192.168.3.127:10000

After connecting to the UC-8100, the following figure should appear:

Logout successful. Use the form below to login again.



Provide the following information for Username and Password: Username: **root**

Password: root

The main menu items will be displayed on the left, and the main information of the UC-8100 will be shown in the middle. Next, determine the location of the **Command Shell** from the **Others** drop-down list.

Others	
Command Shell	
File Manager	

Click Command Shell and enter the commands in the field.

Module Config	Command Shell	
Enter a shell command to execute in the text field below.	The cd command may be used to change directory for subsequent commands.	

Execute command:

Configuring the Cellular Module

To enable and dial up the cellular module, type the following command in the Command Shell:

cell_mgmt start

To disable and disconnect the cellular module, type the following command in the Command Shell:

cell_mgmt stop

To power off the cellular module, type the following command: cell_mgmt power_off

To power on the cellular module, type the following command: cell_mgmt power_on

To enable the routing function of the cellular module, type the following command:

lte_router

Note that once the routing function has been enabled, the device connecting to the LAN 2 port of the UC-8100 computer can connect to the network via the cellular module. Remember to enable the device's DHCP function.

Configuring IPSec Settings

To set up the IP address of the IPSec server, edit the following file: /etc/ipsec-tools.conf

Flush the SAD and SPD
#
flush;
spdflush;
Some sample SPDs for use racoon

spdadd 10.10.10.78 10.10.10.10 any -P out ipsec esp/transport//require;

spdadd 10.10.10.10 10.10.10.78 any -P in ipsec esp/transport//require;

Note that 10.10.10.10 is the IP address of the remote host.

To configure the setup key, edit the following file: /etc/racoon/racoon.conf

```
log notify;
path pre shared key "/etc/racoon/psk.txt";
path certificate "/etc/racoon/certs";
remote anonymous {
      exchange mode main, aggressive;
      proposal {
             encryption algorithm aes 256;
             hash algorithm sha256;
             authentication method
pre shared key;
             dh group modp1024;
      generate policy off;
sainfo anonymous{
      pfs group 2;
      encryption algorithm aes 256;
      authentication algorithm hmac sha256;
      compression algorithm deflate;
```

To configure the pre-shared key, edit the following file: /etc/racoon/psk.txt.

- 10.10.10.10 1234567890

- /etc/init.d/setkey restart /etc/init.d/racoon restart

Note: Authentication Mode

- Pre-shared key
- X.509

In this example, 10.10.10.10 is the IP address of the host, while 1234567890 is the pre-shared key.

To start the IPSec configuration, run the following commands: /etc/init.d/setkey restart /etc/init.d/racoon restart To enable the IPSec function when the system starts, take the following steps:

1. Select the **Bootup and Shutdown** option in Webmin.



2. Click Create a new bootup and shutdown action.

Module Config Create a new bootup and shutdown action.		Bootup and Shutdown Boot system : SysV init	
Action	At boot?	Description	
apache2	No	Start/stop apache2 web server	
boot_scripts.sh	No	Enable service provided by daemon. Various things that don't need to be done particularly	
bootlogs	Ves		

Enter the following commands in the Bootup commands field. /etc/init.d/setkey restart /etc/init.d/racoon restart

Module Index	Create Action
Action Details	
Name	
Description	
Bootup commands	/wtc/init.d/setsey restart /wtc/init.d/secsey restart
Shutdown commands	
Start at boot time?	® Yes ☉ No
Create	
Return to bootup and shutd	an actions

When finished, click **Create**.

Data Acquisition

This Start Kit comes with an ioLogik E1242 RTU controller. To acquire the data from the controller, use the following commands in the Command Shell field:

To read the value from Digital Input 0: Em2240 -d 192.168.31.66 -i 0

To read the value from Analog Input 0: Em2240 -d 192.168.31.66 -i 1

To set Digital Input to high level: Em2240 -d 192.168.31.66 -o 1 -s 1

Configuring DHCP Server Settings

To configure the DHCP server, take the following steps.

- 1. Select the **DHCP Server** option in Webmin.
- Servers



2. A default DHCP server is shown. Click the DHCP server icon.

Subnets and Shared Networks				
Select all. Invert selection. Add a new subnet. Add a new shared network.				
J 10 100 00				
Select al. Invert selection. Add a new subnet. Add a new shared network.				
Delete Selected				

3. You can configure the DHCP server settings on this page. When finished, click **Save**.

		Edit Subhet		
Subnet Details				
Subnet description				
Network address	10.10.0.0	Netmask	255.255.255.0	
Address ranges	10.10.0.25 - 10.10.0.50	Dynamic BOOTP ?		Dynamic BOOTP ?
Shared network	<none> •</none>	Default lease time	Default	secs
Boot filename	None	Maximum lease time	Default O	secs
Boot file server	* This server 🔍	Server name	Default O	
Lease length for BOOTP clients	Forever secs	Lease end for BOOTP clients	Never	
Dynamic DNS enabled?	⊖Yes ONo ®Default	Dynamic DNS domain name	Default	
Dynamic DNS reverse domain	Default	Dynamic DNS hostname	From client	
Allow unknown clients?	C Allow Deny Ignore Default			
Can clients update their own records?	○ Allow ○ Deny ○ Ignore ● Default			
Server is authoritative for this subnet?	Yes * No	Courses d'avaitaile de la sub-su-		
nosts directly in this subnet	*	Groups directly in this subnet	÷	
Save	Edit Client Options	U	st Leases	Del
Add a new host. Add a new host group.				
Address Pools for Subnet				
No address pools defined				
Ard an address neel				

- +	Return	to	subnet	list

Module Index



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