

Quick Manual

Kontron embedded Linux for NanoClient (Atom)

Revision 03

Revision History			
Rev.	Description	Date	Author
01	Initial Release	20.11.09	M. Kaiser
02	added missing BIOS configuration option	08.12.09	M. Kaiser
03	reformatted removed extensive and superfluous BIOS description	20.08.10	M. Kaiser

Table of Contents

Preface.....	5
Features.....	6
Hardware.....	7
Serial COM port parameters.....	7
Image Size.....	7
System Configuration.....	8
Configuration Menu and Keyboard Hotkeys.....	8
Basic Network Setup.....	8
Set a static network address.....	8
Set a dynamic IP address (DHCP).....	9
Setting up the Browser Start Page.....	9
Saving the Browser Settings.....	9
Restoring the Browser Default Settings.....	9
Setting the Browser Startup Mode.....	9
Disable/enable Firefox Autostart.....	10
Setting the X11 server blank time (dark screen).....	10
Setting the Virtual Keyboard Startup.....	10
Change the Keyboard Mapping.....	10
Useful Commands.....	11
System Reboot.....	11
Touch Calibration.....	11
Start the Virtual Keyboard.....	11
Start a Terminal Window.....	11
Stop an Application.....	11
Toggle Firefox Fullscreen.....	11
Start Mozilla Firefox.....	12
USB devices.....	12
Image Version.....	12
Changing the Keyboard Locale.....	13
BIOS Setup.....	14
Serial Port COM2.....	14
Display Setting.....	14

Preface

The document describes the features and adjustments for the MicroClient II Kontron Embedded Linux Image for Intel Atom processor.

It is not a Linux manual, but it does not require more than a very basic knowledge of the Linux operating system. The important configuration tasks can be done in small applications with a few clicks. When it is necessary to type something on a command line this manual gives detailed guidance what to do.

Features

On-Board Hardware Support

- external COM Port
- 2 USB ports
- Ethernet (LAN)
- Flat panel interface

Storage Devices

- Compact Flash (CF)
- USB storage devices (USB memory stick, USB CD-ROM)
- Automount

User Interface

- USB HID support (keyboard + mouse)
- Touch Screen (Hampshire) at internal COM port

Communication Services and Networking

- Wired LAN 802.3
- Telnet and FTP clients

Applications

- Mozilla Firefox / JRE
- xpdf document viewer
- text editors nano and joe

Standard Configuration

- The GUI starts with only a terminal window.
- The LAN adapter is configured with a dynamic IP address (DHCP).

Hardware

Serial COM port parameters

Port	Address	IRQ	Linux device
COM1	0x3F8	4	/dev/ttyS0
COM2 (internal)	0x2F8	3	/dev/ttyS1

Image Size

The released image size is approximately 720MB.

System Configuration

Configuration Menu and Keyboard Hotkeys

In most cases, the configuration tasks described in the following chapters can be started in one of these ways:

- Find the corresponding menu entry: Click the menu icon in the lower left corner, then follow the instructions of this manual. Note, that there is no menu bar in kiosk mode.
- Press **<CTRL>+<ESC>** to open the menu.
- Press a keyboard hotkey as described in this manual.

Basic Network Setup

Initially, the LAN adapters (eth0 and eth1) are configured with a dynamic IP address (DHCP).

Set a static network address

- Press **<Alt>+<Ctrl>+<i>** on the keyboard or enter the menu “NetworkPrefs/SetupIP” to start the network configuration dialog.
- Press the “yes” button to continue.
- Choose your network adapter LAN2. (LAN1 is not supported on this system.)
- Now press the “static” button
- You get some dialog fields:
- First enter your IP address
- Next enter the subnet mask
- If you need a domain name server enter the IP address of your DNS
- If you need a gateway/router press the “yes” button in the next dialog and enter the gateway address.
- Follow the instructions

Your static network address is set up now.

System Configuration

Set a dynamic IP address (DHCP)

- Press **<Alt>+<Ctrl>+<i>** on the keyboard to configure basic network support or enter the menu “NetworkPrefs/SetupIP” to start the network configuration dialog.
- Press the “yes” button to continue.
- Choose your network adapter LAN2. (LAN1 is not supported on this system.)
- Now press the “dhcp” button
- Follow the instructions

Setting up the Browser Start Page

- Press **<Alt>+<Ctrl>+<h>** or enter the menu “BrowserPrefs/setStartupHomepage” to start the configuration dialog.
- Enter your default startup homepage site in the edit box.
- Save your new browser settings (see section 12).

Note: Changes do not take place before the next reboot.

Saving the Browser Settings

Since the image is mounted read-only, changes in the Firefox preferences are temporary. To make them permanent open the menu and select “BrowserPrefs/saveBrowserPrefs”.

Restoring the Browser Default Settings

It is possible to revert the Firefox settings back to the image defaults. Open the menu then select “BrowserPrefs/restoreBrowserDefaultPrefs”.

Setting the Browser Startup Mode

To change the Firefox startup mode from kiosk to standard mode or vice versa press **<CTRL>+<ALT>+<u>** or select “BrowserPrefs/setBrowserStartupMode” from the menu. Choose kiosk or normal mode.

The default mode for the image is normal mode.

Disable/enable Firefox Autostart

Press **<CTRL>+<ALT>+<w>** or select “BrowserPrefs/autoStartbrowser” from the menu. Choose yes or no.

In the default mode Firefox is not started automatically.

Setting the X11 server blank time (dark screen)

The blank time setting influences the X11 standby timer. The two other timers (with longer time outs), suspend and off, are not changed or disabled.

- Press **<Alt>+<Ctrl>+** or open the menu “System/SetBlankTime” to open the blank time configuration dialog
- Move the slider to modify the blank time.

The default blank time is set to 10 minutes. If you want to disable this timer choose “0” with the slider for infinite time out.

Setting the Virtual Keyboard Startup

- Press **<CTRL>+<ALT>+<v>** to open the virtual keyboard configuration dialog.
- Choose “yes” to enable the automatic virtual keyboard startup, or “no” to disable.

Note: This setting will be in effect after system reboot.

Change the Keyboard Mapping

The image starts with English (US) layout. To change the keyboard mapping from US layout to German, press **<CTRL>+<ALT>+d**. To change back, press **<CTRL>+<ALT>+n**.

Useful Commands

System Reboot

Some of the configuration changes (see p. 8 ff.) require a reboot. This can be done in one of three possible ways:

- In a text console, type “reboot<CR>”.
- Open the menu, then choose “Reboot”.
- Press <CTRL>+<ALT>+<e>.

Touch Calibration

To invoke the touch screen calibration program press <CTRL>+<ALT>+<c> or use the menu item “TouchCalib”. Touch the calibration markers on the screen. The program finishes automatically after the last input.

Start the Virtual Keyboard

To display a virtual (i.e. screen) keyboard press <CTRL>+<ALT>+<k> or choose “xvkbd” from the menu.

Start a Terminal Window

To open a new terminal window press <CTRL>+<ALT>+<t> or choose xterm from the menu.

Stop an Application

It is possible to stop an application running in IceWM by pressing <ALT>+<F4>.

Toggle Firefox Fullscreen

The <F11>-key toggles between fullscreen (kiosk) mode and normal mode. Note that this change is not stored, after a reboot the system returns to the configured mode.

Useful Commands

Start Mozilla Firefox

To start Firefox and open a browser window press **<CTRL>+<ALT>+f** or click the Firefox icon in the IceWM toolbar.

USB devices

When a USB device (like USB memory stick) is attached to the system, the automount daemon will mount the device when the user is going to use it for the first time. All USB devices are mounted relative to the path `"/tmp/media"`. The first storage device is called `"usbdisk1"`, the second one `"usbdisk2"` and so on. To see the contents of the first USB storage device, e.g., type

```
"ls /tmp/media/usbdisk1".
```

When you remove the USB storage device, it is recommended to unmount it:

```
"umount /tmp/media/usbdisk1".
```

You may prefer to use the menu. Open it and go to `"System/Mount USB disk"` to make available the USB storage device. Use `"System/Free USB disk"` to unmount it. (This works only for the first USB stick.)

USB-CD devices work very similar. Type

```
"ls /tmp/media/cd"
```

to mount the CD drive and list the directory content. When you remove the USB CD drive, it is recommended to unmount it:

```
"umount /tmp/media/cd".
```

Again if you prefer to use the menu, open it and go to `"System/Mount USB CD-ROM"` to make available the CD-ROM device, use `"System/Free USB CD-ROM"` to unmount it.

Image Version

To query the image version press **<CTRL>+<ALT>+<q>**. Close the xterm window with **<ENTER>**.

Changing the Keyboard Locale

In X11, the keyboard locale can be set by the command “setxkbmap”. After boot, the system is set to an English keyboard layout. To switch to a German keyboard, e.g., type

“setxkbmap de”.

BIOS Setup

For a complete description of BIOS settings please refer to the hardware documentation. This manual will mention only the settings that may cause trouble with the Linux image.

Display Setting

The preferred setting for the display (Chipset/North Bridge Configuration/Displaycontrol) is “Flat Panel Mode” = “Auto/Default”. If the mode is set to “Fixed Mode”, “Flat Panel Type” has to match the display resolution.