How to compile Linux with Qt5 option using Yocto for LICHEE PI ZERO

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2020-04-23 -

Blog (https://www.emsyslabs.com/category/blog/) / Linux (https://www.emsyslabs.com/category/linux/) -

0 Comments (https://www.emsyslabs.com/how-to-compile-linux-with-qt5-option-using-yocto-for-lichee-pi-zero/#respond)

Instruction how to build an image for Lichee Pi Zero and Lichee Pi Zero Dock in Yocto

Products:

Lichee Pi Zero Version

(https://github.com/voloviq/meta-licheepizero/blob/zeus/Lichee_Pi_Zero.png)

Lichee Pi Zero Dock Version

Recent Posts

Somlabs Visionsom STM32MP1 Kicad library (https://www.emsyslabs.com/somlabs-visionsom-stm32mp1-kicad-library/)

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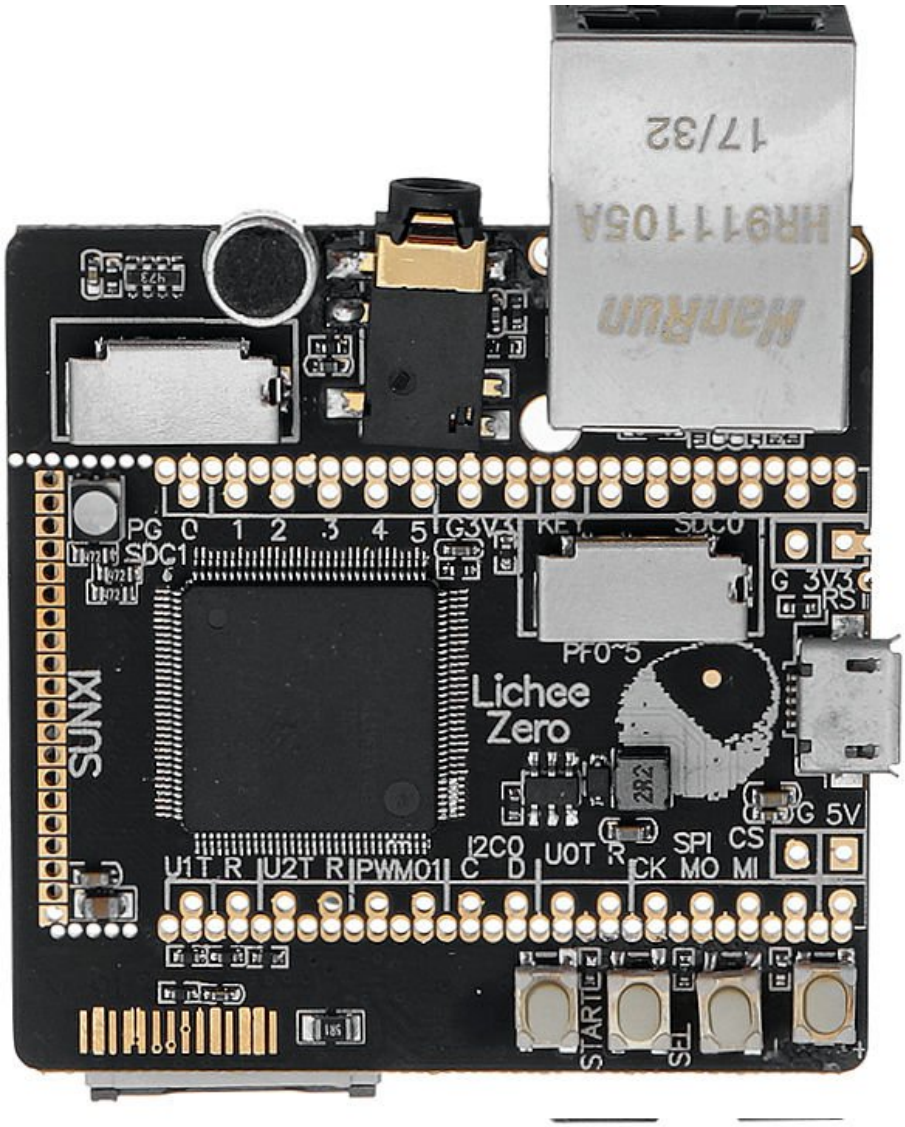
read more on ISIX-RTOS v3 mini operating system for Cortex-M0 / M3 / M4 / M7 –



(https://github.com/voloviq/meta-licheepizero/blob/zeus/Lichee_Pi_Zero_Dock.jpg)

General Note:

Assumed that Linux Ubuntu is installed

List of tested elements

WiFi
Ethernet
Lcd
Touchscreen
Led
Backlight for Lcd

List of not tested elements

Bluetooth – appears during system boot up
Microphone
Headphone

functional description and system characteristics (https://www.emsyslabs.com/isix-rtos-v3-mini-operating-system-for-cortex-m0-m3-m4-m7-functional-description-and-system-characteristics/#comment-494)

온라인슬롯머신 on ISIX-RTOS v3 mini operating system for Cortex-M0 / M3 / M4 / M7 – functional description and system characteristics (https://www.emsyslabs.com/isix-rtos-v3-mini-operating-system-for-cortex-m0-m3-m4-m7-functional-description-and-system-characteristics/#comment-488)

온라인키자노 on ISIX-RTOS v3 mini operating system for Cortex-M0 / M3 / M4 / M7 – functional description and system characteristics (https://www.emsyslabs.com/isix-rtos-v3-mini-operating-system-for-cortex-m0-m3-m4-m7-functional-description-and-system-characteristics/#comment-487)

Jamesrek on ISIX-RTOS v3 mini operating system for Cortex-M0 / M3 / M4 / M7 – functional description and system characteristics (https://www.emsyslabs.com/isix-rtos-v3-mini-operating-system-for-cortex-m0-m3-m4-m7-functional-description-and-system-characteristics/#comment-394)

How to build images

1. First, make sure to following packages are installed in the system

```
sudo apt-get install gawk wget diffstat unzip texinfo gcc-multilib build-essential chrpath socat libsdl1.2-dev xterm libgmp3-dev libmpc-dev
```

Note: More information can be found on the Yocto reference manual.

2. Download necessary Yocto packaged listed below. Be sure to be in the root of the home folder.

```
mkdir yocto
cd yocto
mkdir build
git clone git://git.yoctoproject.org/poky --depth 1 -b dunfell
cd poky
git clone git://git.openembedded.org/meta-openembedded --depth 1 -b dunfell
git clone https://github.com/meta-qt5/meta-qt5.git (https://github.com/meta-qt5/meta-qt5.git) --depth 1 -b dunfell
git clone https://github.com/voloviq/meta-licheepizero (https://github.com/voloviq/meta-licheepizero) --depth 1 -b dunfell
```

3. Select directory to build Linux

Zero version

source oe-init-build-env ~/yocto/build/licheepizero

Zero Dock version

source oe-init-build-env ~/yocto/build/licheepizero-dock

4. Modify bblayers.conf(located in ~/yocto/build/licheepizero/conf(or licheepizero-dock/conf))

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```
BBLAYERS ?= " \
${HOME}/yocto/poky/meta \
${HOME}/yocto/poky/meta-poky \
${HOME}/yocto/poky/meta-openembedded/meta-oe \
${HOME}/yocto/poky/meta-openembedded/meta-
networking \
${HOME}/yocto/poky/meta-openembedded/meta-python \
${HOME}/yocto/poky/meta-qt5 \
${HOME}/yocto/poky/meta-licheepizero \
"
```

Note: Please adapt PATH of conf/bblayers.conf if necessary.

5. Modify or align following elements in local.conf(located in ~/yocto/build/licheepizero/conf(or licheepizero-dock/conf)) file

```
MACHINE ??= "licheepizero-dock"
or
MACHINE ??= "licheepizero"
DL_DIR = "${HOME}/yocto/downloads"
SSTATE_DIR = "${HOME}/yocto/sstate-cache"
TMPDIR = "${HOME}/yocto/tmp"
at the end add some option if necessary
RM_OLD_IMAGE = "1"
INHERIT += "rm_work"
```

Note: Please adapt rest of conf/local.conf parameters if necessary.

6. Build objects

Issue from console one of the following option

Linux (https://www.emsyslabs.com/category/linux/)

QT (https://www.emsyslabs.com/category/ui/qt/)

Somlabs (https://www.emsyslabs.com/category/linux/somlabs/)

UI (https://www.emsyslabs.com/category/ui/)

Uncategorized (https://www.emsyslabs.com/category/uncategorized/)

Meta

Log in (https://www.emsyslabs.com/wp-login.php)
Entries feed (https://www.emsyslabs.com/feed/)
Comments feed (https://www.emsyslabs.com/comments/feed/)
WordPress.org (https://wordpress.org/)

```
console image
bitbake console-image

sato (X11) image
bitbake sato-core-image

qt5 image
bitbake qt5-image

qt5 toolchain sdk
bitbake meta-toolchain-qt5
```

7. After compilation images appear in

Zero version
~/yocto/tmp/deploy/images/licheepizero
Zero Dock version
~/yocto/tmp/deploy/images/licheepizero-dock

8. Insert SD CARD into dedicated CARD slot and issue the following command to write an image

Note:
Be 100% sure to provide a valid device name (of=/dev/**sde**). Wrong name "/dev/sde" damage Your system file !

Zero version
sudo dd if=~/yocto/tmp/deploy/images/licheepizero/qt5-image-licheepizero.sunxi-sdimg of=/dev/sde bs=1024
Zero Dock verison
sudo dd if=~/yocto/tmp/deploy/images/licheepizero-dock/qt5-image-licheepizero-dock.sunxi-sdimg of=/dev/sde bs=1024

Limitation

```
1. rootfs-resize not working (SD CARD size can be resized manualy)
2. no wiringpi or similar library to control GPIO in C code
3. discover problem when WiFi connected to access point (probably some drivers issues), nevertheless WiFi works
```

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