MYS-ZU5EV
Application Development Notes
Installation of QT creator and cross compilation of QT application

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[√] Release	AUTHOR :	Fengyong
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Revision History

VERSION	AUTHOR	PARTICIPANT	DATE	DESCRIPTION
V1.10	Fengyong	--	20210602	Create a document. The QT version used is 5.13.2

CONTENT

1. Overview

Qt is a cross-platform graphics application development framework that is used on devices and platforms of different sizes, while providing different copyright versions for users to choose. MYS-ZU5EV Use Qt 5.13.2 for application development. In Qt application development, it is recommended to use QtCreator integrated development environment, Qt application can be developed under Linux PC, automated cross-compiled as a board ARM architecture.
This chapter uses the SDK tool built by Petalinux as a cross-compilation system to quickly develop graphics class applications with QtCreator.

2.Hardware resources

- MYS_ZU5EV development board
- 12 V DC power
- MicroUSB cable
- SDcard (no less than 4GB in size)
- DP monitor (include DP cable)

3.Software resources

- Ubuntu16.04 desktop
- Qtcreator4.12
- QT-SDK

4. Environmental preparation

The ubuntu desktop system is required, and subsequent operations are performed under the ubuntu16.04 desktop version, please install the desktop system.

The QT-SDK provided by MYIR Electronics needs to be installed，path：03-Tools\Complie-Toolchain\QT-SDK\qt-sdk.tar.xz，please check out section 2 of the《MYS-ZU5EV_Linux Software Development Guide》 for installation.

5. Operation steps

5.1.Install Qt Creator

Get the Qtcreator installation package from the QT Download Pack or MYIR Official Package, downloaded from the QT website (in the case of version 4.12-rc1), Official download address : http://download.qt.io/development_releases/qtcreator/

QtCreator installation package is a binary program under the ubuntu system that can be installed by executing directly under the ubuntu terminal :

./qt-creator-opensource-linux-x86_64-4.12.0-rc1.run

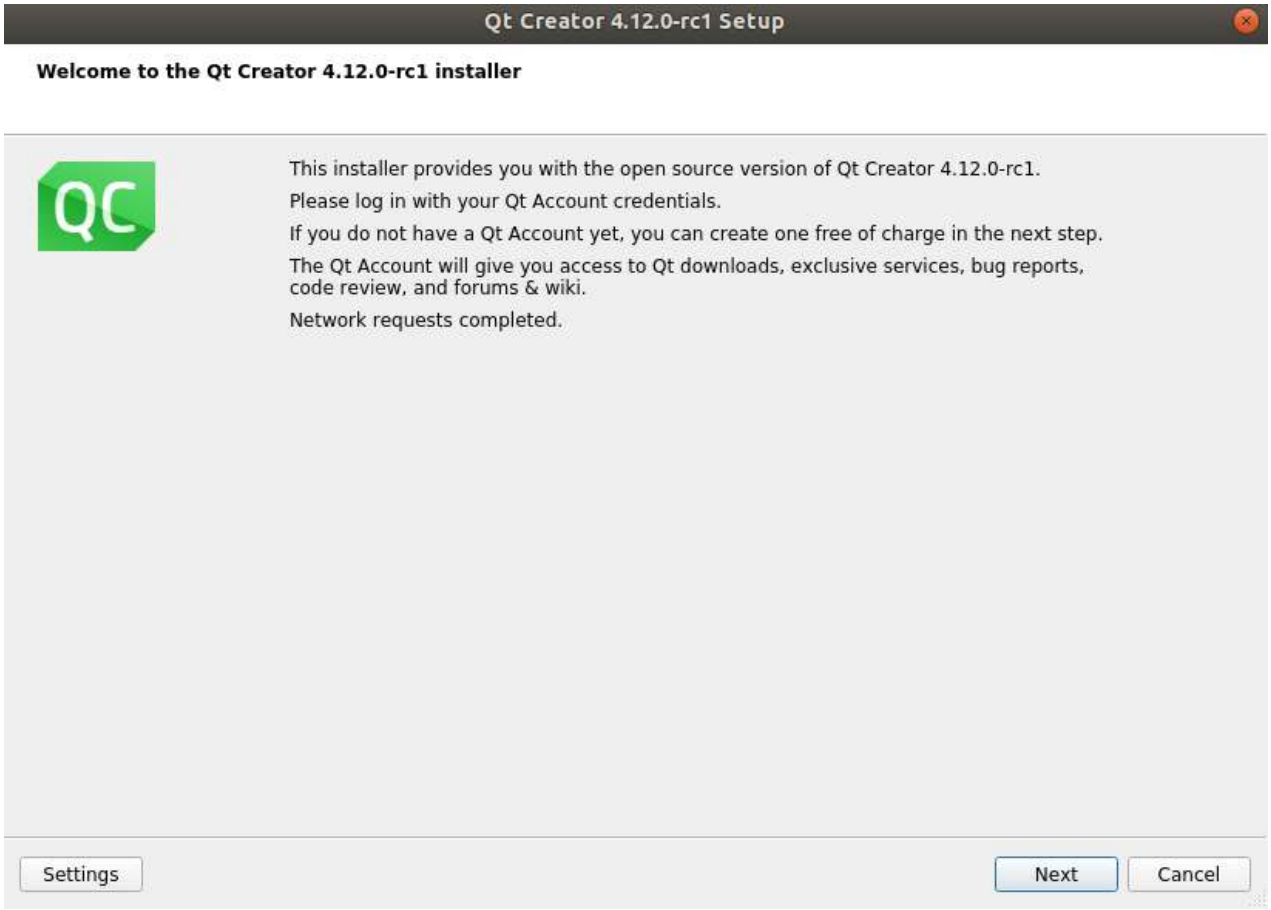

Figure 5-1.QTCreator installation

Click next to enter the account and password, the account needs to register on the official website https://login.qt.io/register

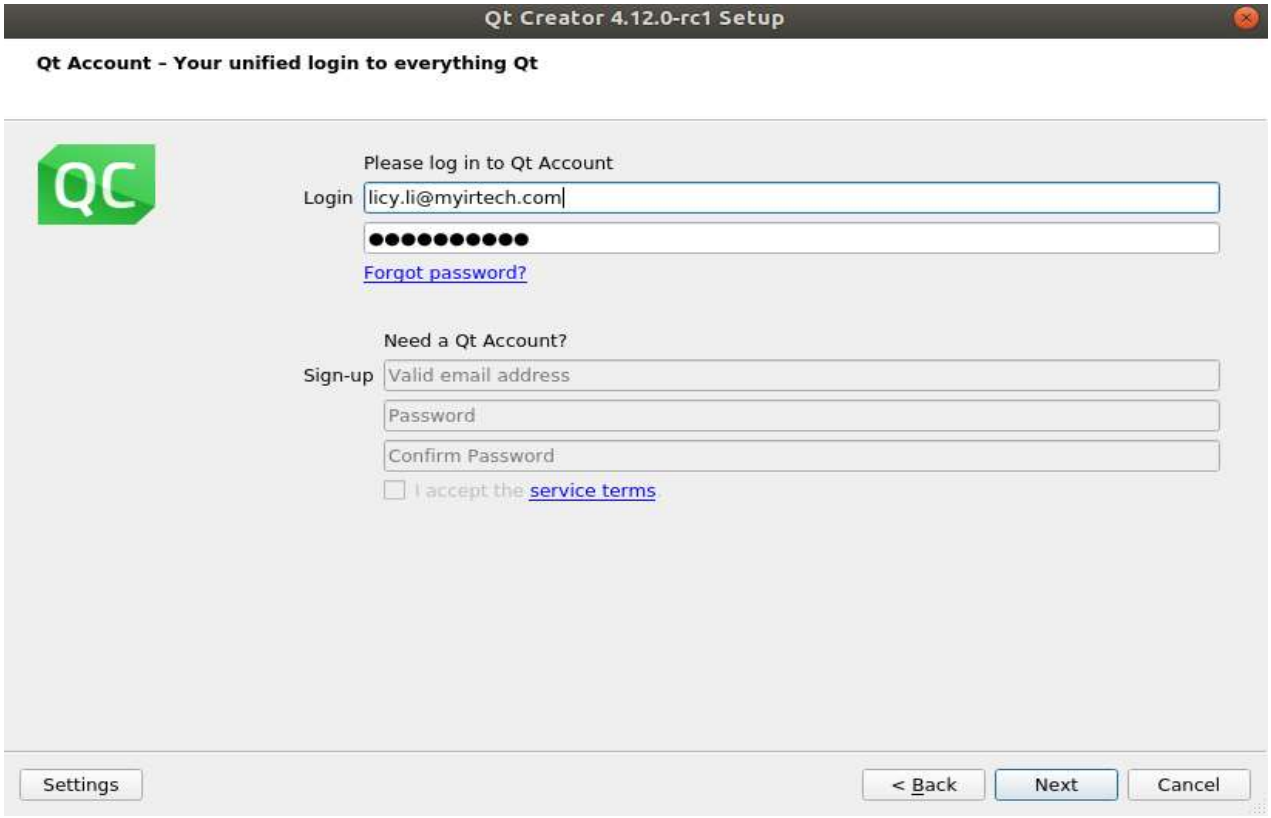

Figure 5-2. Login account and password

For other configuration items, please choose by yourself and configure the installation path

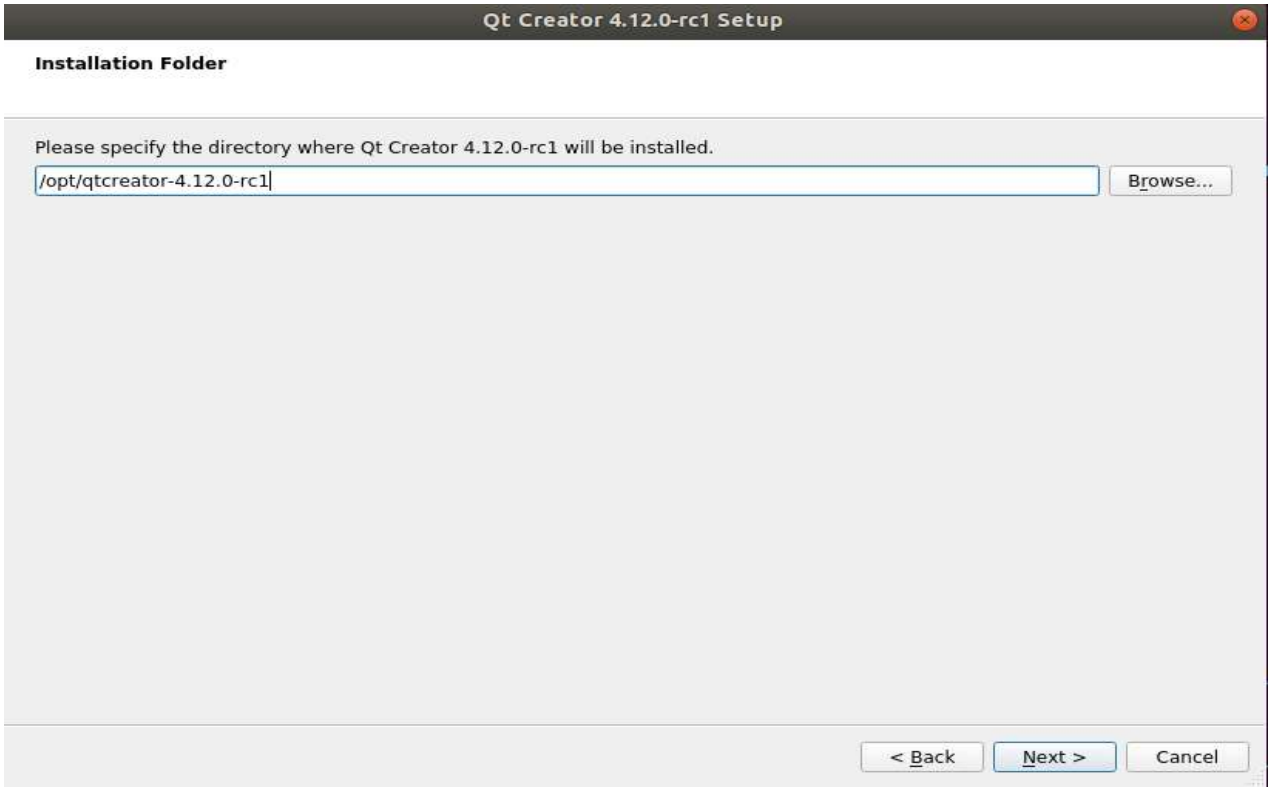

Figure 5-3. Select the installation path

Subsequent operation can be completed according to the prompts

Figure 5-4. installation is complete

5.2. Configure cross compile environment

(1) To open qtcreator, please execute "qtcreator.sh" from the terminal to start qtcreator, as shown below： /opt/qtcreator-4.12.0-rc1/bin/qtcreator.sh &

(2) After running QtCreator, click Tools -> Options, the options dialog box appears, click kits on the left and select the Compilers tab on the right.

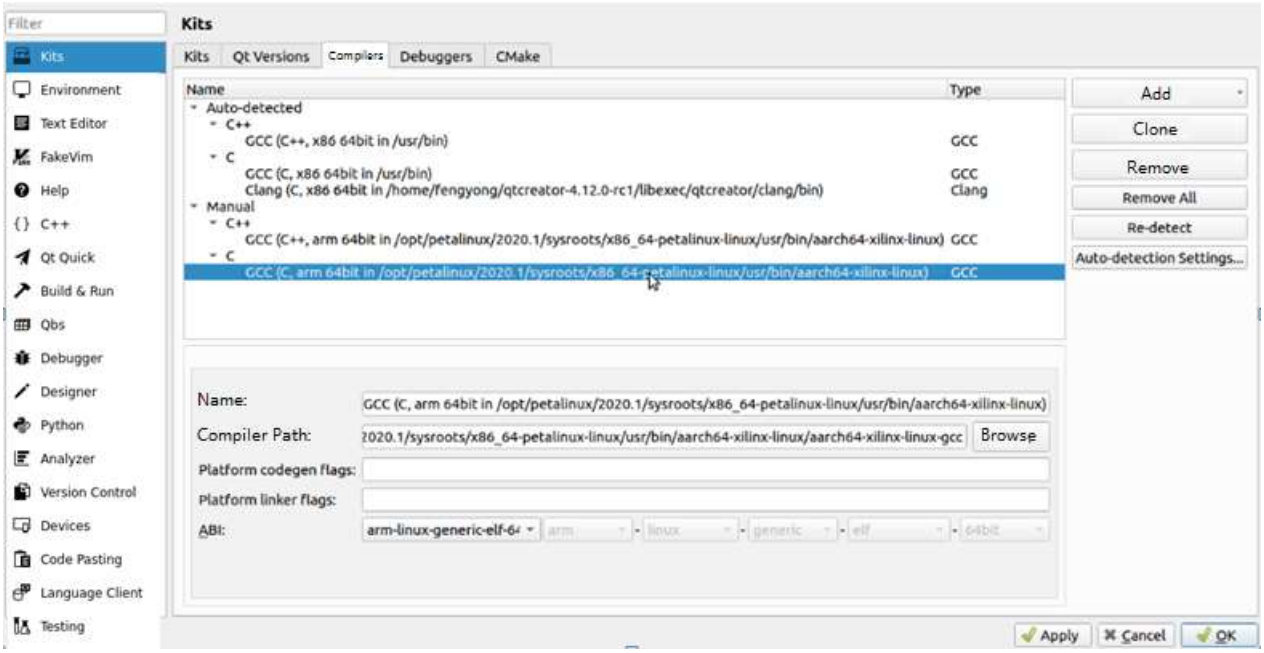

Figure 5-5. select compilation

(3) Click Add on the right, pop up the drop-down list, select GCC, fill in "Name" below for "zynqMP-GCC" and "Compiler path" click on "Browse.." Button selects the path of aarch64-xilinx-linux-g++, in the example of "/opt/petalinux/2020.1/sysroots/x86_64-petalinux-linux/usr/bin/aarch64-xilinx-linux/aarch64-xilinx-linux-g++". Once you're done, click "Apply".

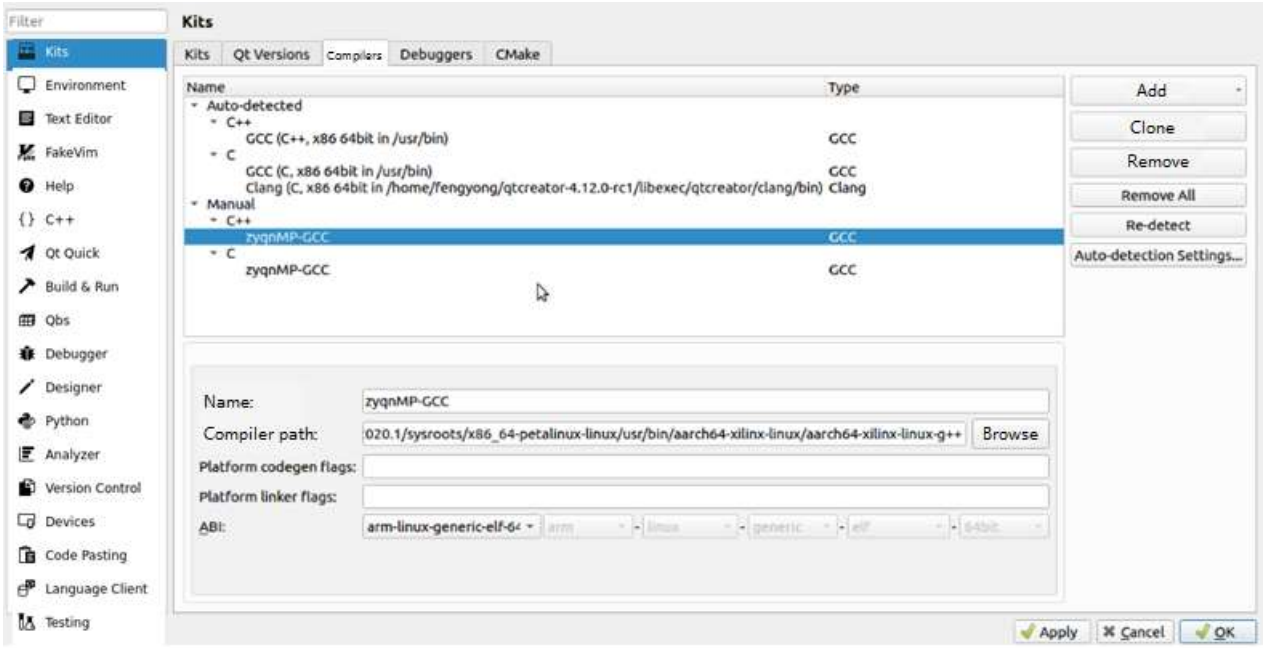

Figure 5-6. Select path

(4) Select the "Qt Version" tab and click "Add..."on the right, which will pop up the qmake path selection dialog box, which is used as an example of "/opt/petalinux/2020.1/sysroots/x86_64-petalinux-linux/usr/bin/qmake". Once you select the "qmake" file, click the "Open" button. Replace "Version name" with "Qt %(Qt:Version) (zynqMP-sytem)" . Then click the "Apply" button.

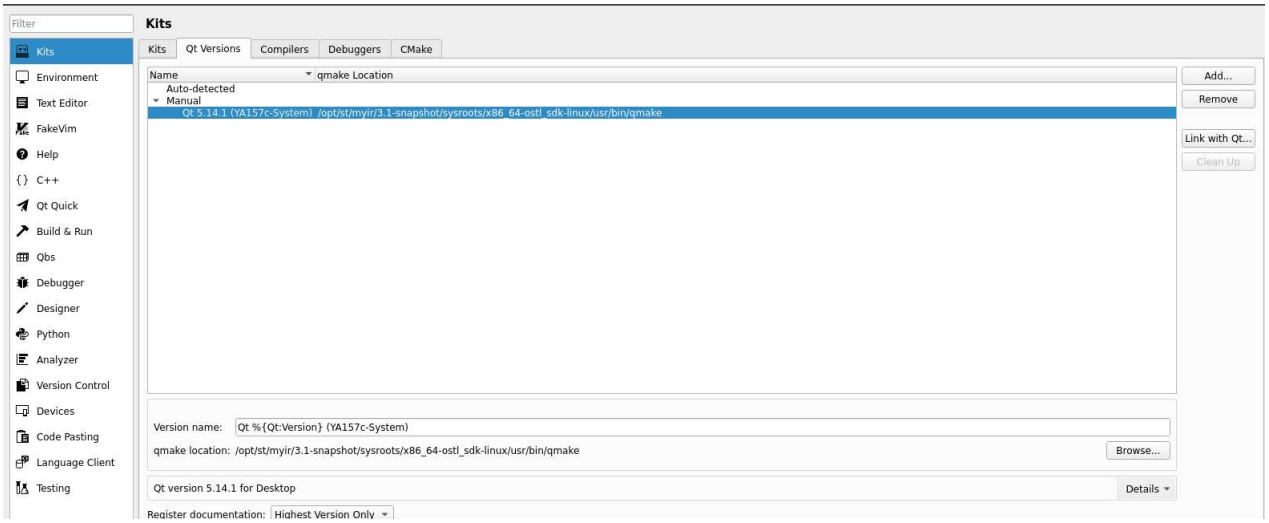

Figure5-7. Configuration version information

(5) Select "Devices" on the left, click the "Add..." button on the right, fill in the content "Name" for "MYIR-zynqMP-Board", "name Host" for the IP address of the

board (any address can be filled in temporarily), "Username" for "root" and then "Apply". (This item is optional)

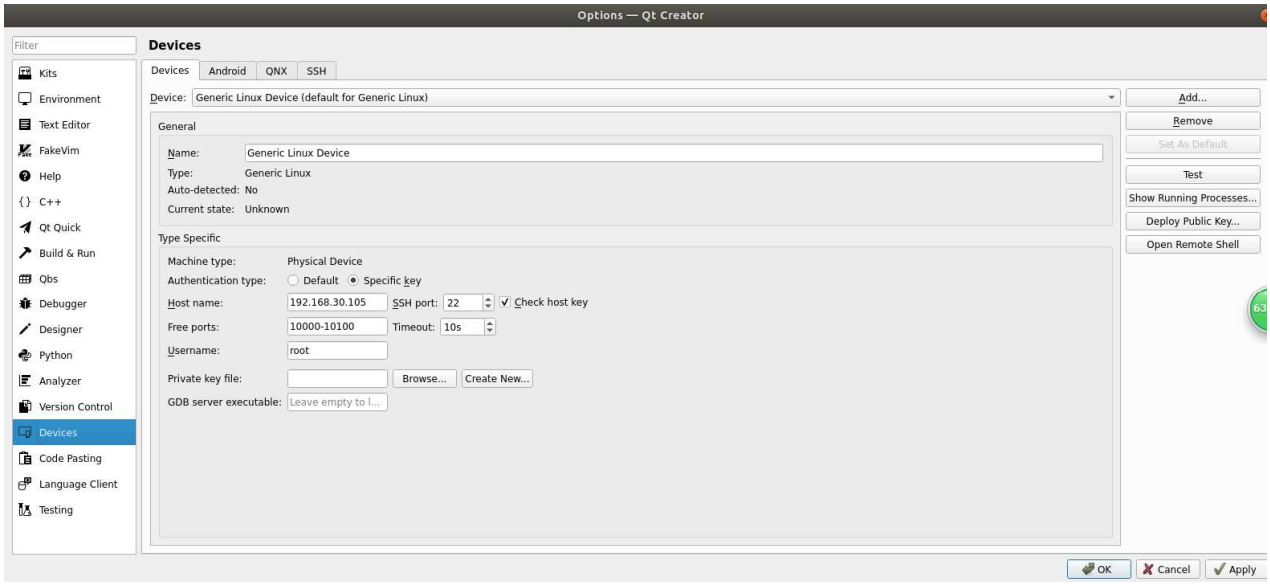

Figure 5-8. Configuration device information

(6) Click on the left side of "Build -Run" to go back to the "Kits" tab, "Name" is set to "zynqMP-dev-kit" and "Device" selects the "MYIR-zynqMP-Board" option. "Sysroot" selects the system directory of the target device, here in the example "/opt/petalinux/2020.1/sysroots/x86_64-petalinux-linux". "Compiler" selects the previously configured name "zynqMP-GCC", "Qt version" selects the previously configured name "Qt 5.13.2 (zynqMP-System)," and "Qt mkspec" is filled in as "linux-oe-g-plus". Other defaults, finally click on the "Apply" and "OK" buttons.

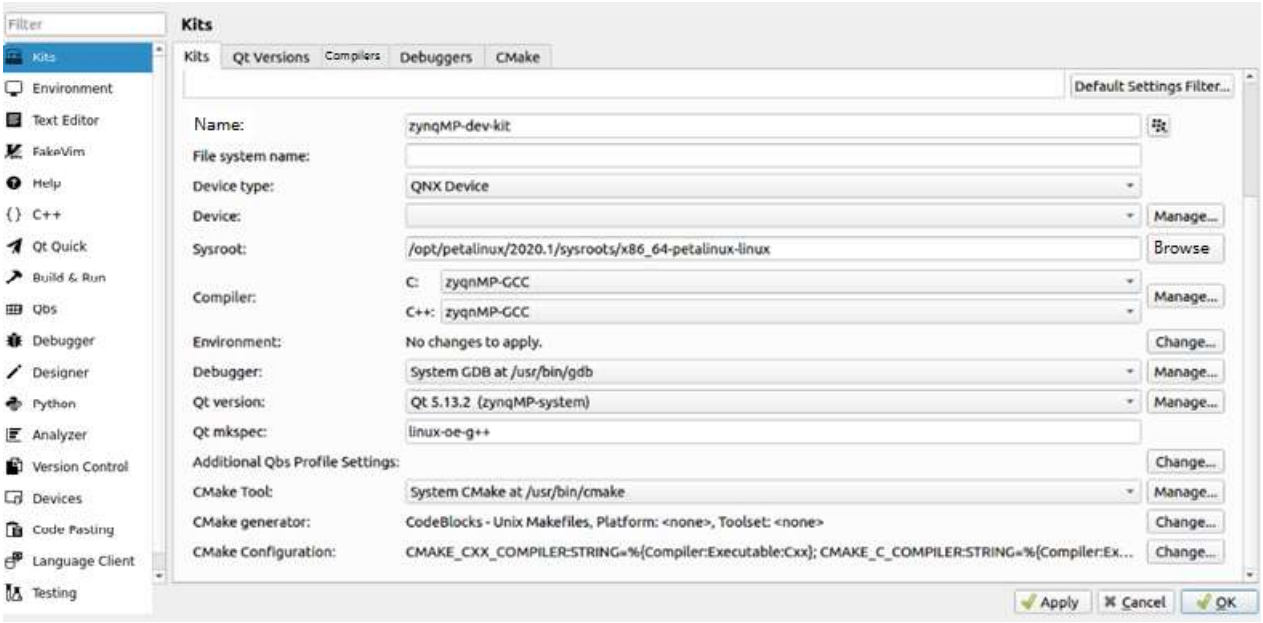

Figure 5-9. Configure board information

5.3. Qt application cross compilation

Copy the hello.tar.gz to a working directory under Ubuntu and unzip the source code. This routine can be compiled by configuring the appropriate compilation tool suite.

Select "File" - > "Open File or Project" in the menu bar, browse to the directory of the "hello" routine in the open dialog box, select the "hello.pro" file, and click the "Open" button.

Once the project is open, in the menu column on the left, select the Projects icon, switch to the manage kits management interface on the right, and select the "zynqMP" option under the "Build and Run" tab, so that the project will build the app using the relevant configuration of "zynqMP".

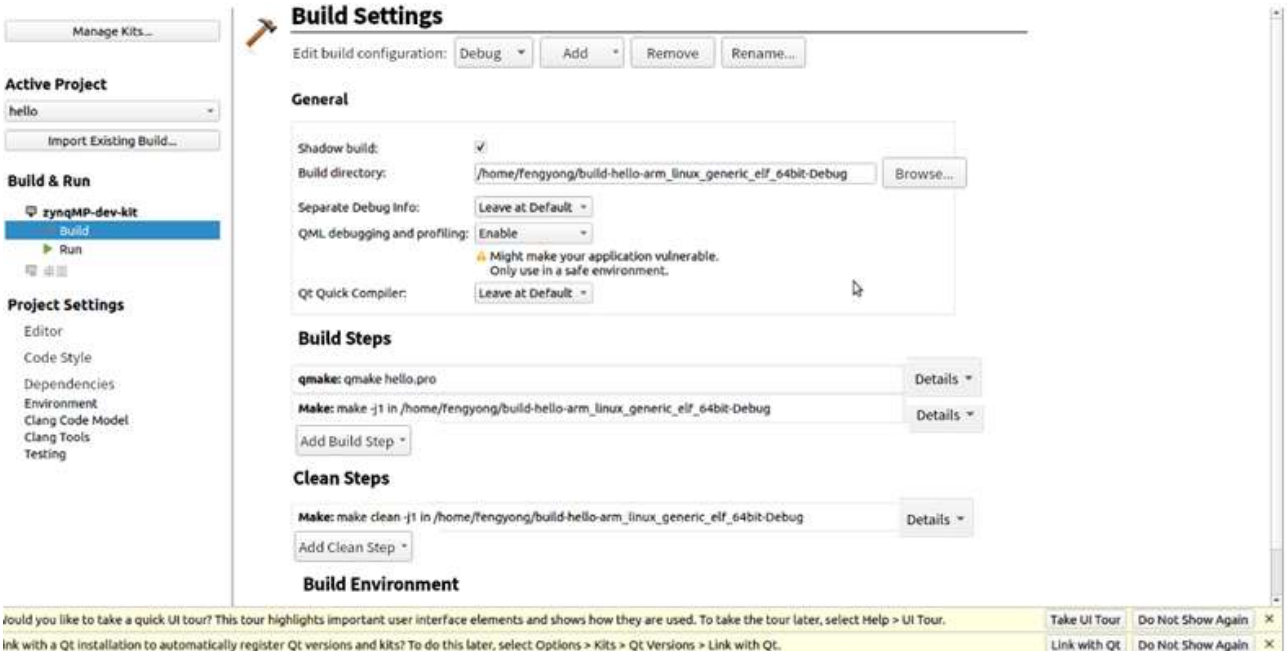

Figure 5-10.Open project

Click on the menu bar "Build"-> "Build Project"hello" button to compile the project, with the compilation process output on the lower side.

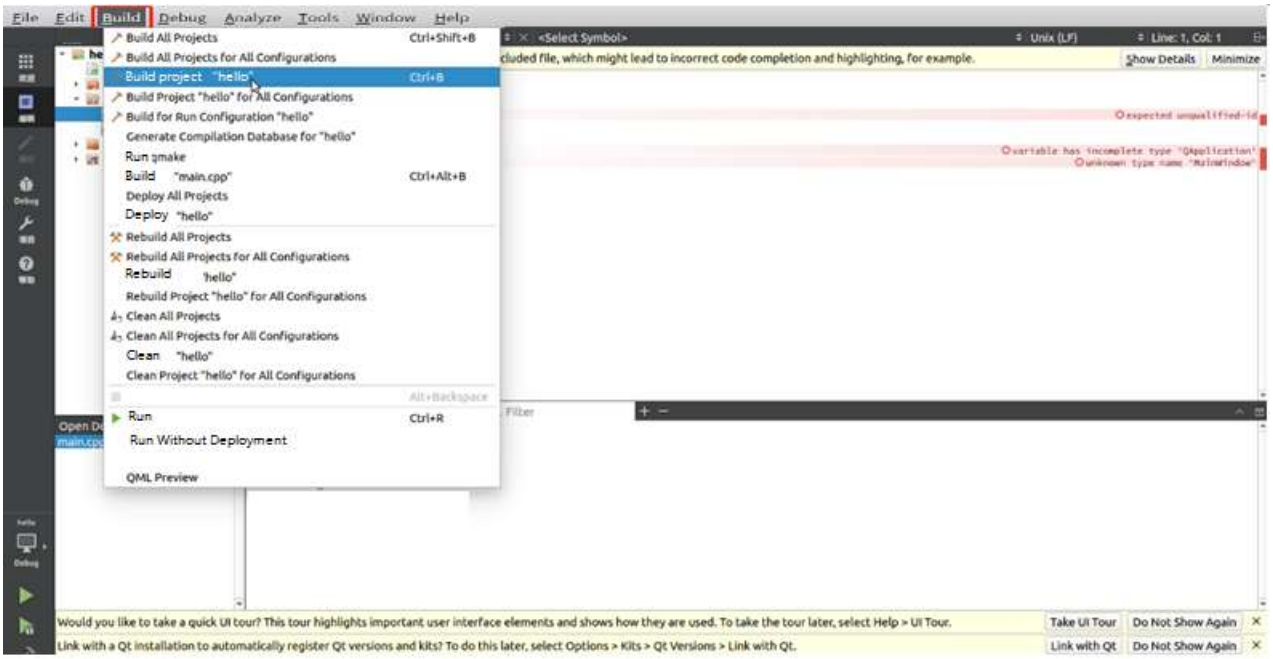

Figure 5-11.Compile project

After QtCreator build the hello project, the compiled binaries are stored in the specified directory. Then copy the hello file to run under the board.

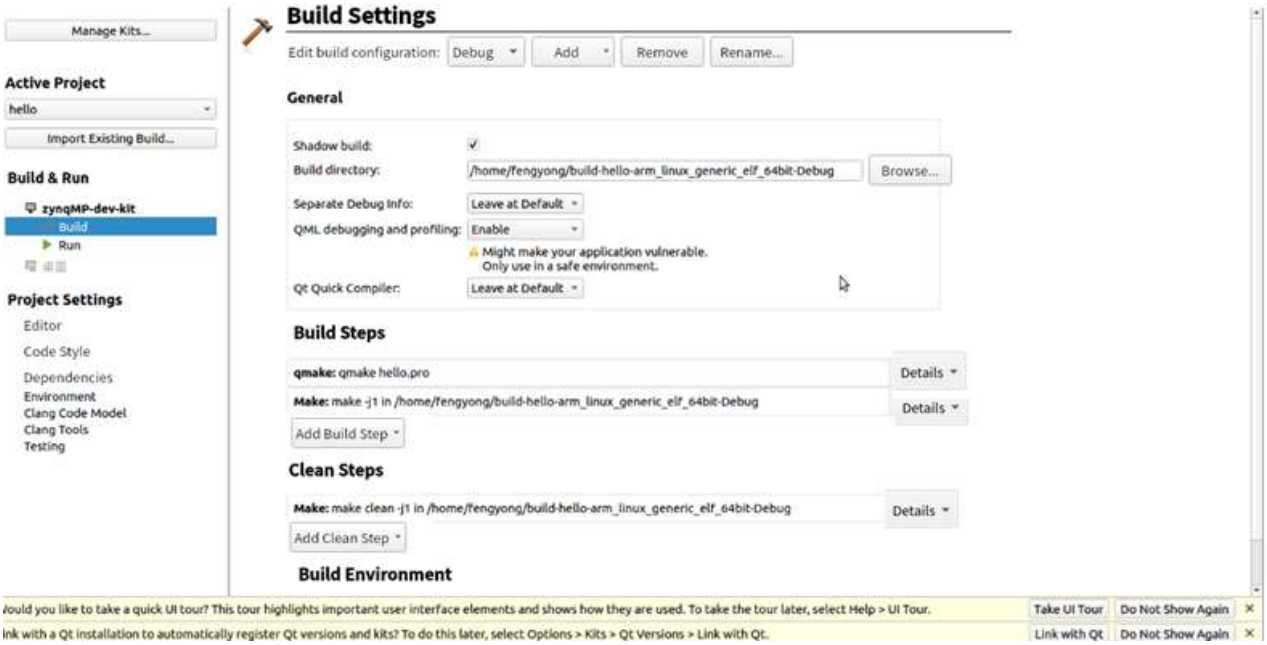

Figure 5-12.Ouput directory

6. Reference

https://ubuntu.com/download/desktop

https://www.qt.io/

Appendix A

Warranty & Technical Support Services

MYIR Electronics Limited is a global provider of ARM hardware and software tools, design solutions for embedded applications. We support our customers in a wide range of services to accelerate your time to market.

MYIR is an ARM Connected Community Member and work closely with ARM and many semiconductor vendors. We sell products ranging from board level products such as development boards, single board computers and CPU modules to help with your evaluation, prototype, and system integration or creating your own applications. Our products are used widely in industrial control, medical devices, consumer electronic, telecommunication systems, Human Machine Interface (HMI) and more other embedded applications. MYIR has an experienced team and provides custom design services based on ARM processors to help customers make your idea a reality.

The contents below introduce to customers the warranty and technical support services provided by MYIR as well as the matters needing attention in using MYIR’ s products.

Service Guarantee

MYIR regards the product quality as the life of an enterprise. We strictly check and control the core board design, the procurement of components, production control, product testing, packaging, shipping and other aspects and strive to provide products with best quality to customers. We believe that only quality products and excellent services can ensure the long-term cooperation and mutual benefit.

Price

MYIR insists on providing customers with the most valuable products. We do not pursue excess profits which we think only for short-time cooperation. Instead, we hope to establish

long-term cooperation and win-win business with customers. So we will offer reasonable prices in the hope of making the business greater with the customers together hand in hand.

Delivery Time

MYIR will always keep a certain stock for its regular products. If your order quantity is less than the amount of inventory, the delivery time would be within three days; if your order quantity is greater than the number of inventory, the delivery time would be always four to six weeks. If for any urgent delivery, we can negotiate with customer and try to supply the goods in advance.

Technical Support

MYIR has a professional technical support team. Customer can contact us by email (support@myirtech.com), we will try to reply you within 48 hours. For mass production and customized products, we will specify person to follow the case and ensure the smooth production.

After-sale Service

MYIR offers one year free technical support and after-sales maintenance service from the purchase date. The service covers:

Technical support service

MYIR offers technical support for the hardware and software materials which have provided to customers:

- To help customers compile and run the source code we offer;
- To help customers solve problems occurred during operations if users follow the user manual documents;
- To judge whether the failure exists;
- To provide free software upgrading service.

However, the following situations are not included in the scope of our free technical support service:

- Hardware or software problems occurred during customers' own development;
- Problems occurred when customers compile or run the OS which is tailored by themselves;
- Problems occurred during customers' own applications development;
- Problems occurred during the modification of MYIR's software source code.

After-sales maintenance service

The products except LCD, which are not used properly, will take the twelve months free maintenance service since the purchase date. But following situations are not included in the scope of our free maintenance service:

- The warranty period is expired;
- The customer cannot provide proof-of-purchase or the product has no serial number;
- The customer has not followed the instruction of the manual which has caused the damage the product;
- Due to the natural disasters (unexpected matters), or natural attrition of the components, or unexpected matters leads the defects of appearance/function;
- Due to the power supply, bump, leaking of the roof, pets, moist, impurities into the boards, all those reasons which have caused the damage of the products or defects of appearance;
- Due to unauthorized weld or dismantle parts or repair the products which has caused the damage of the products or defects of appearance;
- Due to unauthorized installation of the software, system or incorrect configuration or computer virus which has caused the damage of products.

Warm tips

1. MYIR does not supply maintenance service to LCD. We suggest the customer first check the LCD when receiving the goods. In case the LCD cannot run or no display, customer should contact MYIR within 7 business days from the moment get the goods.

2. Please do not use finger nails or hard sharp object to touch the surface of the LCD.

3. MYIR suggests user purchasing a piece of special wiper to wipe the LCD after long time use, please avoid clean the surface with fingers or hands to leave fingerprint.

4. Do not clean the surface of the screen with chemicals.

5. Please read through the product user manual before you using MYIR’ s products.

6. For any maintenance service, customers should communicate with MYIR to confirm the issue first. MYIR’ s support team will judge the failure to see if the goods need to be returned for repair service, we will issue you RMA number for return maintenance service after confirmation.

Maintenance period and charges

- MYIR will test the products within three days after receipt of the returned goods and inform customer the testing result. Then we will arrange shipment within one week for the repaired goods to the customer. For any special failure, we will negotiate with customers to confirm the maintenance period.
- For products within warranty period and caused by quality problem, MYIR offers free maintenance service; for products within warranty period but out of free maintenance service scope, MYIR provides maintenance service but shall charge some basic material cost; for products out of warranty period, MYIR provides maintenance service but shall charge some basic material cost and handling fee.

Shipping cost

During the warranty period, the shipping cost which delivered to MYIR should be responsible by user; MYIR will pay for the return shipping cost to users when the product is repaired. If the warranty period is expired, all the shipping cost will be responsible by users.

Products Life Cycle

MYIR will always select mainstream chips for our design, thus to ensure at least ten years continuous supply; if meeting some main chip stopping production, we will inform customers in time and assist customers with products updating and upgrading.

Value-added Services

1. MYIR provides services of driver development base on MYIR’ s products, like serial port, USB, Ethernet, LCD, etc.

2. MYIR provides the services of OS porting, BSP drivers’ development, API software development, etc.

3. MYIR provides other products supporting services like power adapter, LCD panel, etc.

4. ODM/OEM services.

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