

# MYS-ZU5EV SDK Release Notes



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# CONTENT

MYS-ZU5EV SDK Release Notes .....	- 1 -
CONTENT.....	- 2 -
1. Overview .....	- 3 -
2. Software Information .....	- 5 -
2.1. Functional Characteristics.....	- 5 -
2.2. Software List.....	- 9 -
2.3. Document information.....	- 11 -
3. Version History .....	- 12 -
4. Remaining Problems .....	- 13 -
Appendix A .....	- 14 -
Warranty & Technical Support Services.....	- 14 -

# 1. Overview

MYS-ZU5EV SDK is based on Xilinx's zynqMP zu5ev chip design and development, including the underlying BSP source code, precompiled images, Linux software evaluation and development documentation, FPGA development manuals, and some tools used in the development and commissioning process. The corresponding hardware information is also published in the form of a CD image with the SDK, the full contents of the CD are as follows :

Table 1-1. MYS-ZU5EV SDK CD Content description

Class	Name	Description	Location
Document	Datasheet	data sheet for MYS-ZU5EV	01-Document
	Hardware	MYS-ZU5EV Hardware Design Information	
	User_Manual	Product manuals , software documents etc	
File Systems	mys-zu5ev-core	System images based on Petalinux does not include components such as QT, OpenCV, etc.	02_Images
	mys-zu5ev-full	System images based on Petalinux, with components such as QT, OpenCV, etc.	
	mys-zu5ev-mipi	System images based on Petalinux, mainly with MIPI input. include QT, OpenCV and other components.	
Tools	Development SDK	Qt-SDK	03_Tools
	Development Tool	Petalinux2020.1 Download Link	
	Debugging Tool	No delivery	
	Programming Tools	Win32DiskImager	
Source code	Bootloader	U-boot 2020.01	04_Sources
	Kernel	Linux Kernel 5.4.0	
	Petalinux	Petalinux 2020.1	
	Example	Application examples	
	Other firmware		

Vivado		Include Vivado example project	05_Programma ble_Logic
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Users can get the latest version of the SDK for MYS-ZU5EV products from this website : <http://d.myir-tech.com/FZ5/>.

The current SDK is suitable for board models : MYS-ZU5EV。

For a specific description of the board, you can learn more by visiting the MYIR website link : <http://www.myirtech.com/list.asp?id=638>.

## 2. Software Information

The Linux of the MYS-ZU5EV board is built using Petalinux tools, and we provide three images for different types of usage scenarios, as described in the table below :

Table 2-1. MYS-ZU5EV Images Description

Image Files Name	Content Description	Notes
mys-zu5ev-core	Images built with Petalinux, including complete hardware drivers in addition to mipi, commonly used system tools, debugging tools, etc., support application development using Shell, C/C, Python.	Acronyms for "CORE" are given below
mys-zu5ev-full	A mirror built with Petalinux that includes complete hardware drivers in addition to mipi, commonly used system tools, debugging tools, and more, including X11 desktop environments, QT runtimes, OpenCV, Gstreamers, and more. Supports application development using Shell, C/C, QML, Python.	Acronyms for "FULL" are given below
mys-zu5ev-mipi	The image built with Petalinux mainly contains the hardware driver of the mipi input DP display, commonly used system tools, debugging tools, etc., including X11 desktop environment, QT runtime, OpenCV, Gstreamer, etc. Supports application development using Shell, C/C, QML, Python.	Acronyms for "MIPI" are given below

### Notes :

1. What is not included in the mirror file can be added or supported by contacting us at the contact details in the appendix.

### 2.1. Functional Characteristics

The following is a detailed comparison of the specific functional characteristics of the two mirrors to facilitate the evaluation and secondary development of the software.

Table 2-2. MYS-ZU5EV Software Features List

Class	Function	Description	Image File	
			FULL/MIPI	CORE

<b>bootload</b>	FSBL	Initialize DDR, clock, etc	support	support	
	U-Boot	EMMC/TF card supports reading and writing	support	support	
		EMMC/TF card support fat file system access	support	support	
		Complete upgrade of image through TF card	support	support	
		Ethernet supports networking, PING, TFTP protocols	support	support	
		Ethernet Support DHCP Protocol	support	support	
		Device Tree FIT	support	support	
		Memory read-write test, MDIO read-write, I2C read-write, reset	support	support	
<b>Kernel</b>	Network support	TCP/IP network protocol stack	support	support	
		Ethernet protocol	support	support	
		Net Bridge, IP Route, Netfilter	support	support	
		PPP protocol and USB serial	support	support	
		CAN bus subsystem	support	support	
		IPV6	support	support	
	File systems support	DEVTMPFS	support	support	
		Ext2/3/4 File System	support	support	
		Network File System	support	support	
		MSDOS File System	support		
		VFAT File System	support	support	
		NTFS File System	support	support	
	Multimedia modules	Multimedia related modules , including platform supported video input module, uvc, v4l2	support	Not support	
	Graphics modules	Display related modules , display includes the DP display.	support	Not support	
	Input subsystem	Button , HID, touch subsystem. Platform supported input devices	support	Not support	
	USB gadget	Mass storage, rndis, serial	support	support	
	<b>Root file system</b>	Initial subsystem	Systemd/systemV/busybox	support	support
			udev(include udev rules)	support	support
			login	support	support
		System tools	Bash shell environment	support	support
coreutils(chgrp,chmod,chown,kill,cp,dd... )			support	support	

		util-linux(sfdisk, fdisk, fsck...)	support	support
		tar with long options	support	support
		mtd-tools(flashcp flash_erase...)	support	support
		top	support	support
		u-boot-tools(fw_printenv, fw_setenv)	support	support
		e2fsck	support	support
		resize2fs	support	support
		gzip	support	support
	System settings	Localized data ( C en_US )	support	support
		Time zone information(Asia/Shanghai)	support	support
		User and password ( account root, password is root )	support	support
	Test tools	mementester	support	support
		i2c-tools	support	support
		mmc-utils	support	support
		mtd-utils	support	support
		can-utils	support	support
		microcom	support	support
		minicom	support	support
		hwclock	support	support
		gdbserver	support	support
		evtest	support	support
		hexdump	support	support
	Development Language	python3.5.6 and above ( include pip )	support	support
		c/c++	support	support
		perl	support	support
	Date Base	sqlite3	support	support
	Network Application	scp	support	support
		ethtool	support	support
		netstat	support	support
		iptables	support	support
		iperf3	support	support
		iproute2	support	support
		dns	support	support
		udhcp	support	support
		udhcpd	support	support

		tftpd	support	support
		tftp	support	support
		lftp	support	support
		ftp	support	support
		ntpd	support	support
		pppd	support	support
		ifconfig	support	support
		openssh server(sshd)	support	support
		openssh client(ssh)	support	support
		tcpdump	support	support
		telnet	support	support
		route	support	support
		avahi	support	support
		samba	support	support
	Safety	pam	support	support
		openssl-devel	support	support
	Word Processing	ncurses	support	support
		readline	support	support
		grep	support	support
		Sed	support	support
		Awk	support	support
		Vim(vi)	support	support
	Graphics System	qt5.13.2(qtbase)	support	Not support
		fbset	support	support
		X11	support	Not support
		OpenCV	support	Not support
	Multimedia	gstreamer	support	Not support
		v4l-utils	support	support
	Other	bc	support	support
		pv	support	support
		dbus	support	support
		gobject introspection	support	support
<b>SDK</b>	Toolchain: aarch64-xilinx-linux-gcc		support	support
	Cfunction library : glibc		support	support
	C++ function library : libstdc++		support	support
	qmake:		support	support

	libssl-dev	support	support
	libxml2	support	support

## 2.2. Software List

MYS-ZU5EV's bootloader, kernel and file systems, as well as the source code of various parts of the application are fully open, in addition to the user can obtain from the CD image, but also through the code hosting platform to obtain a real-time updated version, the code information is as follows :

### - U-boot:

Version : V2020.01

URL : <https://github.com/MYiR-Dev/myir-zynqMP-uboot.git>

Branch : FZ5

### - Linux Kernel:

Version : V5.4.0

URL : <https://github.com/MYiR-Dev/myir-zynqMP-kernel.git>

Branch : FZ5

### - Petalinuxbsp :

Version : petalinux2020.1

URL : <https://github.com/MYiR-Dev/myir-xilinx-petalinux.git>

Branch : FZ5

In order to facilitate the user to carry out kernel porting, the source path of the kernel-driven modules is organized as follows :

Table 2-3. MYS-ZU5EV Kernel driver list

Module	Description	Source Path
MMC	Emmc driver	drivers/mmc
QSPI	MTD driver	drivers/mtd
I2C	i2c driver	drivers/i2c/busses/ i2c-cadence.c
USB Host	USB driver	drivers/usb/host/xhci-platform.c
Ethernet	Gigabit network driver	drivers/net/ethernet/cadence/macb_main.c
RS232/RS485/Uart	Serial driver	drivers/tty/serial/xilinx_uartps.c
Can bus	Can bus driver	drivers/net/can/xilinx_can.c
RTC	RTC driver	drivers rtc/rtc-zynqmp.c
Gpio Led	Led driver	drivers/leds/leds-gpio.c
Watchdog	Watchdog driver	drivers/gpio/myir_wdt.c
DP display	DP driver	drivers/gpu/drm/xlnx/zynqmp_dpsub.c
Mipi camera input	Mipi camera driver	drivers/media/platform/xilinx/
Vcu	Vcu driver	drivers/soc/xilinx/xlnx_vcu_core.c

## 2.3. Document information

Depending on the stages of the user's use of the board, the SDK contains different categories of documentation and manuals, such as getting started, evaluation guides, development guides, application notes, and frequently used questions and answers, in addition to this release note.

The Getting Started Guide is a booklet that tells users how to quickly connect hardware, start a board, and quickly obtain information for subsequent evaluation and development after getting the board; The evaluation guide focuses on the use and experience of the development board, informs the user of the specific hardware and software characteristics of the board and makes corresponding demonstrations, so that users can make project evaluation; The development guide focuses on the entire process of porting operating systems and applications, and tells users how to quickly port operating systems and applications to hardware platforms based on our core board design based on our SDK; In the development phase, for a specific function or module we also provide detailed application notes to guide users to develop; In addition, we will also be each stage of the common problems to organize a summary, forming a list of commonly used questions and answers, provided to users as a reference, the complete documentation information as shown in the table below :

Table 2-4. MYS-ZU5EV SDK List of documents

Use Phase	Document Name	Notes
Primary Stage	MYS-ZU5EV –QSG	Product package contains a quick start guide
Evaluation stage	MYS-ZU5EV_Linux Software Evaluation Guide	
Development stage	MYS-ZU5EV_Linux Software Development Guide	
	MYS-ZUEV_FPGA Development Manual	
	MYS-ZU5EV_QT Application Development Notes	
Support	MYS-ZU5EV Software FAQ	Not released
Release Notes	MYS-ZU5EV_SDK Release Notes	

## 3. Version History

Table 3-1. MYS-ZU5EV SDK Version History

Version	Description	Download Path
V1.01	Petalinux2019.01 version	<a href="http://d.myirtech.com/FZ5/">http://d.myirtech.com/FZ5/</a>
V1.10	Update to Vitis2020.01 和 petalinux2020.01 , add mipi camera function	<a href="http://d.myirtech.com/FZ5/">http://d.myirtech.com/FZ5/</a>

## 4. Remaining Problems

The following table lists some of the problems with this release package. Please read the following list carefully before using to determine if you want to make some hardware and software changes. For help, please contact us with the contact information in the appendix.

Table 4-1. Remaining Issues and Handling

ID	Scope of influence	Description	Solution
1			

# 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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