

IDO-EVB3568-V1 Linux5.10(IDO)开发手册



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文档修订历史

版本	PCBA版本	修订内容	修订	审核	日期
V1.0	V1D	创建文档	TWX	IDO	2024/11/27
V1.1	V1D	《开发环境搭建》一章新增依赖软件包	ODM	IDO	2024/12/31
V1.2	V1D	更新ido版本sdk编译说明	TWX	IDO	2025/03/044

1、源码获取

1.1 下载源码

链接：<https://pan.baidu.com/s/1Jg9DYMssLLFYjLpD8zo4Gw?pwd=1234>

提取码：1234

1.2 解压源码

▼Shell

```
1 $ cat ido-evb3568-v1d-Linux5.10-ido-sdk-V1.0-250304.tar.gz.* > ido-evb3568-v1d-Linux5.10-ido-sdk-V1.0-250304.tar.gz
2 $ tar -zxvf ido-evb3568-v1d-Linux5.10-ido-sdk-V1.0-250304.tar.gz
```

解压得到rk3568_linux5.10_rkr8_v1-ido-240304目录即为SDK目录。

2、开发环境搭建

建议使用Ubuntu18.04及以上版本系统上开发，并安装依赖软件包。

```
1  sudo apt-get install repo git ssh make gcc libssl-dev liblz4-tool expect
2  sudo apt-get install g++ patchelf chrpath gawk texinfo chrpath diffstat
3  sudo apt-get install binfmt-support qemu-user-static live-build bison flex
4  sudo apt-get install fakeroot cmake gcc-multilib g++-multilib unzip
5  sudo apt-get install device-tree-compiler python-pip libncurses5-dev python-
n-pyelftools
6
7  sudo apt-get install repo git ssh make gcc libssl-dev liblz4-tool \
8  expect g++ patchelf chrpath gawk texinfo chrpath diffstat binfmt-support \
9  qemu-user-static live-build bison flex fakeroot cmake \
10 unzip device-tree-compiler python-pip python-is-python3 ncurses-dev python-
-pyelftools expect-dev
```

3、SDK编译

3.1 选择屏幕配置

```
1  $ ./build.sh lunch
2  1. rockchip_rk3568_evb3568v1_dlvds_1920x1080_defconfig
3  2. rockchip_rk3568_evb3568v1_edp_1920x1080_defconfig
4  3. rockchip_rk3568_evb3568v1_hdmi_defconfig
5  4. rockchip_rk3568_evb3568v1_lvds_1280x800_defconfig
6  5. rockchip_rk3568_evb3568v1_mipi_1200x1920_buildroot_defconfig
7  6. rockchip_rk3568_evb3568v1_mipi_1200x1920_debian_defconfig
8  7. rockchip_rk3568_evb3568v1_mipi_1200x1920_ubuntu_defconfig
```

每个defconfig配置对应的显示屏不同。

3.2 文件系统选择

通过环境变量RK_ROOTFS_SYSTEM进行文件系统的选择：

buildroot
debian
ubuntu20

例如选择debian文件系统，则将RK_ROOTFS_SYSTEM赋值debian：

```

1  export RK_ROOTFS_SYSTEM=debian

```

3.3 开始编译

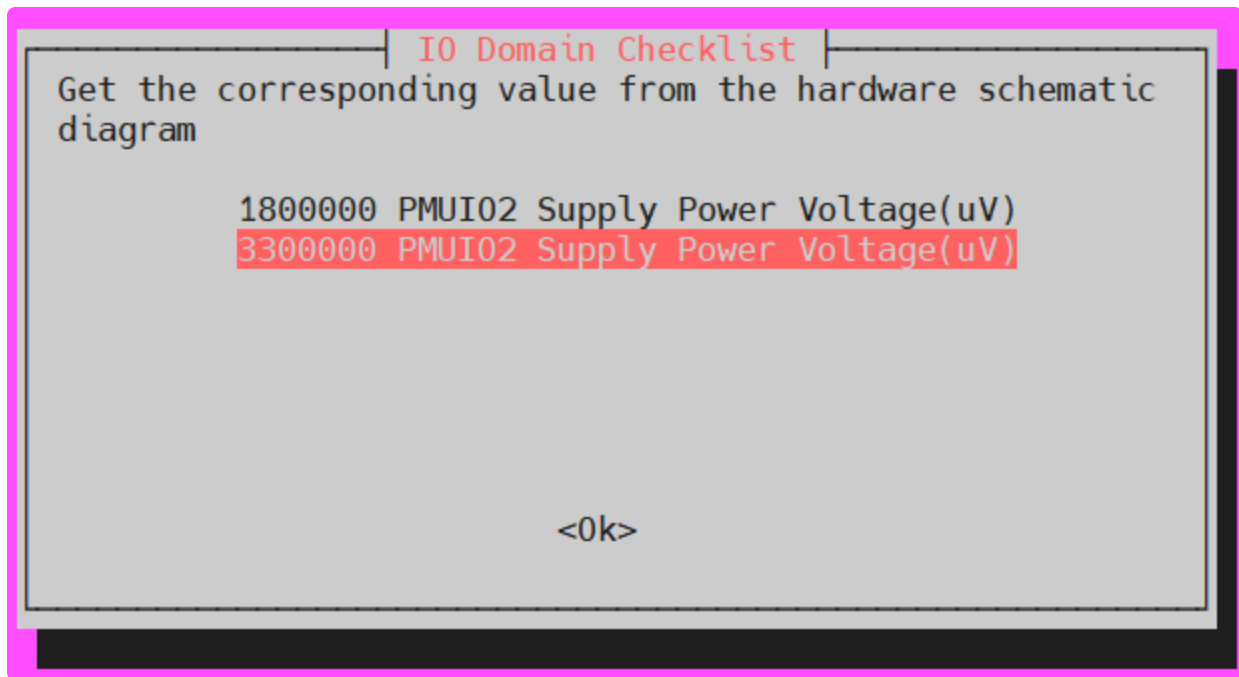
3.3.1 一键编译

```

1  $ ./build.sh

```

如果前面lunch切换过mk，则编译会弹出IO Domain Checklist弹窗：



注意vccio4 和 vccio6 选择1.8V，其余为3.3v，在提示弹窗内，使用键盘上下键选择正确的值
等待编译完成后，将生成镜像在rockdev目录下：

```

1 $ ls rockdev/
2 boot.img MiniLoaderAll.bin misc.img oem.img parameter.txt recovery.im
  g rootfs.ext4 rootfs.img uboot.img update.img userdata.img

```

其中update.img为完整固件包。

3.3.2 部分编译

SDK支持单独编译某个模块，如loader、uboot和kernel等。

以单独编译kernel为例：

```
1 $ ./build.sh kernel
```

编译完成后，会生成rockdev/boot.img。

4、FAQ

编译Buildroot提示：g++:internal compiler error: Killed (program cclplus)

```

8/host/include -I/home/luffy/share/3568/rk356x_linux_sdk_211116/buildroot/output/rockchip_rk3568/host/include -I../gcc/../libdecnumber -I../gcc/../libdecnumber/dpd -I../libdecnumber -I../gcc/..
h.o -MT generic-match.o -MD -MF .deps/generic-match.o -c generic-match.c
2022-01-05T10:38:16 g++: internal compiler error: Killed (program cclplus)
2022-01-05T10:38:16 Please submit a full bug report.
2022-01-05T10:38:16 with preprocessed source if appropriate.
2022-01-05T10:38:16 See <file:///usr/share/doc/gcc-5/README.Bugs> for instructions.
2022-01-05T10:38:16 Makefile:1116: recipe for target 'gimple-match.o' failed
2022-01-05T10:38:16 make[3]: *** [gimple-match.o] Error 4
2022-01-05T10:38:16 make[3]: *** Waiting for unfinished jobs....
2022-01-05T10:38:23 rm gcc.pod
2022-01-05T10:38:23 Makefile:4300: recipe for target 'all-gcc' failed
2022-01-05T10:38:23 make[2]: *** [all-gcc] Error 2
2022-01-05T10:38:23 package/pkg-generic.mk:228: recipe for target '/home/luffy/share/3568/rk356x_linux_sdk_211116/buildroot/output/rockchip_rk3568/build/host-gcc-initial-9.3.0/.stamp_built' failed
2022-01-05T10:38:23 make[1]: *** [/home/luffy/share/3568/rk356x_linux_sdk_211116/buildroot/output/rockchip_rk3568/build/host-gcc-initial-9.3.0/.stamp_built] Error 2
2022-01-05T10:38:26 /home/luffy/share/3568/rk356x_linux_sdk_211116/buildroot/output/rockchip_rk3568/Makefile:16: recipe for target '_all' failed
2022-01-05T10:38:26 make: *** [_all] Error 2
Command exited with non-zero status 1
you take 26:56.07 to build builroot
ERROR: Running build_builroot failed!
ERROR: exit code 1 from line 556:
/usr/bin/time -f "you take %e to build builroot" $COMMON_DIR/mk-buildroot.sh $BOARD_CONFIG
root@luffy-virtual-machine:~/share/3568/rk356x_linux_sdk_211116# dd if=/dev/

```

提示memory 不够, 可以通过增加swap空间来避免

- 查看Swap空间大小

▼Shell |

```
1 free -m
2
3          total        used        free      shared  buff/cache   avail
4 Mem:    7868        1144        5495         352         1228
5 Swap:    8075           0        8075
```

- 在原有的Swap基础上增加8G空间（大小可自己定）

▼Shell |

```
1 sudo dd if=/dev/zero of=swapfile bs=1G count=8
2
3 记录了8+0 的读入
4 记录了8+0 的写出
5 8589934592 bytes (8.6 GB, 8.0 GiB) copied, 45.0893 s, 191 MB/s
```

- 创建一个Swap文件

▼Shell |

```
1 sudo mkswap /swap/swapfile
2
3 Setting up swspace version 1, size = 8 GiB (8589930496 bytes)
4 无标签, UUID=179cba9a-944b-458a-9e1c-c924ad578662
```

- 尝试激活Swap文件

▼Shell |

```
1 swapon /swap/swapfile
2
3 swapon: /swap/swapfile: 不安全的权限 0644, 建议使用 0600。
4 swapon: /swap/swapfile: swapon 失败: 不允许的操作
```

- 修改文件权限

▼Shell |

```
1 chmod 0600 /swap/swapfile
```

- 再次查看Swap空间大小

▼ Shell							
1	<code>free -m</code>						
2		total	used	free	shared	buff/cache	avail
3	Mem:	7868	1178	1174	371	5516	
4	Swap:	16267	0	16267			

- 重启计算机可能会退回8G，如果需要一直保持这个swap空间，可以把它写入/etc/fstab文件中

▼ Shell							
1	<code>sudo vim /etc/fstab</code>						
2							
3	#增加以下两行:						
4							
5	(add swap space on /swap/swapfile)						
6	/swap/swapfile		/swap	swap	defaults		
	0 0						