

[VistaCube] Quick Android/Linux Porting Guide.

Published by Jin Park on October 17, 2017

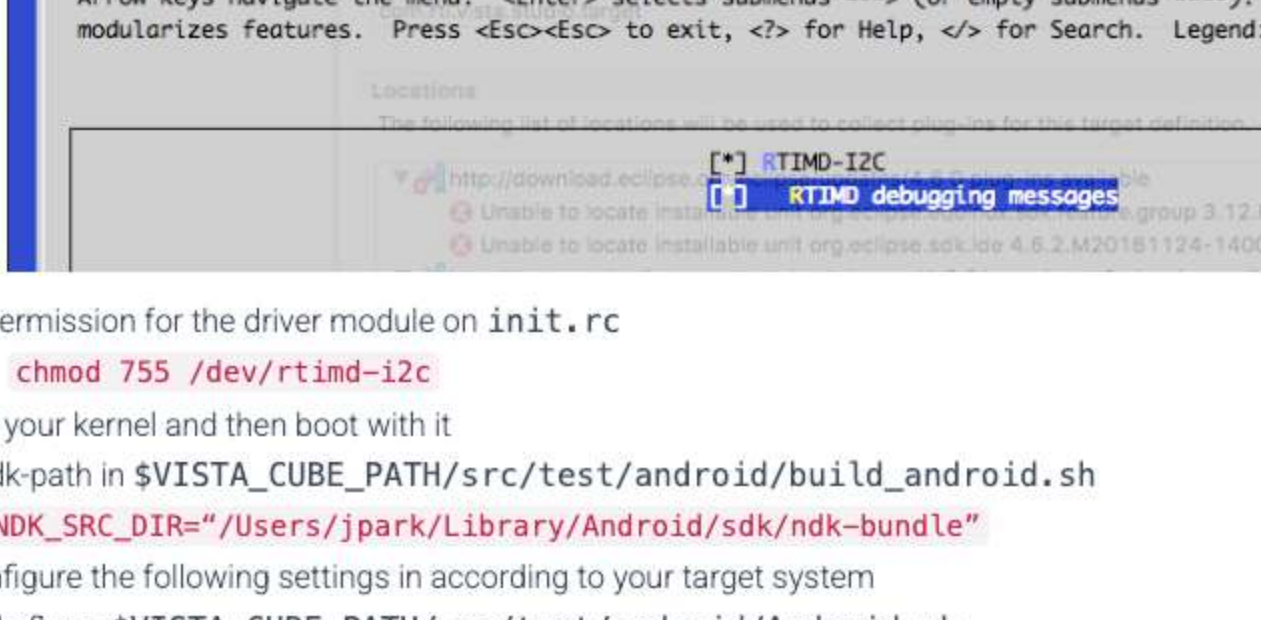
This post describes how to port Vista Cube™ for RDC200/RDP550F initialization using 1)Linux console application or 2) Android Java Application.

We assume that our porting environment is on Android Linux and our target products are RDC200/RDP550F and you already setup a display driver for them.

Case 1) Linux console application

Take step by step!!

- Download a VistaCube.zip on our dev-site. And extract the password protected zip-file into the appropriate location on your host computer.
 - You need to know the password. If you don't know, contact us.
- Include our RAONTECH i2c(**rtimd-i2c**) driver module into our linux system.
 - Copy \$VISTA_CUBE_PATH/src/linux_driver/rtimd-i2c/ into \$KERNEL_PATH/drivers/misc/
 - Write **source drivers/misc/rtimd-i2c/Kconfig** into \$KERNEL_PATH/drivers/misc/Kconfig/
 - Write **obj-y += rtimd-i2c/** in \$KERNEL_PATH/drivers/misc/Makefile
 - Apply the driver module to your kernel
 - sudo make menuconfig** in \$KERNEL_PATH/
 - Navigate : Device Drivers -> Misc devices -> RAONTECH Micro Display I2C support
 - Check all sub-menu items
- Set permission for the driver module on **init.rc**
 - chmod 755 /dev/rtimd-i2c**
- Build your kernel and then boot with it
- Set your ndk-path in \$VISTA_CUBE_PATH/src/test/android/build_android.sh
 - e.g. **NDK_SRC_DIR="/Users/jpark/Library/Android/sdk/ndk-bundle"**
- Check/Configure the following settings in according to your target system
 - enable flags:\$VISTA_CUBE_PATH/src/test/android/Android.mk
 - USE_VC_DEBUG_MSG := y**
 - USE_MDC_RDC200 := y**
 - USE_PANEL_RDP550F := y**
 - i2c bus number: \$VISTA_CUBE_PATH/src/libvc/include/rti_vc_config.h
 - _CFG_I2C_BUS_NR_RDC_RDP0 6**
 - _CFG_I2C_BUS_NR_RDC_RDP1 1**
 - Check if a path is accessible or not: \$VISTA_CUBE_PATH/src/test/test.h
 - #define RDC200_LUT_FILE_PATH "/data/vclut/rdc200"**
- Download an appropriate init file (RDC100 init file / RDC200 init file) in according to your target. And extract it into an appropriate location on your host computer.
- Write the whole path you want to download in **rdcxxx_download_file_list.txt**
 - e.g in **\$INIT_FILE_PATH/download/rdp550f/rdc200_download_file_list.txt**
 - NOTE: The path (/data/vclut/rdc200) must match up with that wrote in the step 4.
 - 0 /data/vclut/rdc200/rdc200_fw_v1.5_gpioB_20171010.hex**
 - 1 /data/vclut/rdc200/fw_rdc200.cfg**
 - 2 /data/vclut/rdc200/init_rdc200_R1_F5_rdp550f-e_20170614.rega**
 - 3 /data/vclut/rdc200/init_rdp550f-e_20170405.rega**
 - 4 /data/vclut/rdc200/20170406_gamm2.0.lut**
 - 10 /data/vclut/rdc200/bootlogo_00.bmp**
- Copy the init files including **rdcxxx_download_file_list.txt** into your target platform
 - e.g in your host computer
 - adb shell mkdir -p /data/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/download/rdp550f/fw_rdc200.cfg /data/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/download/rdp550f/rdc200_download_file_list.txt /data/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/feature/rdc200_fw_v1.5_gpioB_20171010.hex /data/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/feature/20170406_gamm2.0.lut /data/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/feature/bootlogo_00.bmp /data/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/init_lut/rdc200/init_rdc200_R1_F5_rdp550f-e_20170614.rega /data/vclut/rdc200**
 - add push \$INIT_FILE_PATH/init_lut/rdp550f/init_rdp550f-e_20170405.rega /data/vclut/rdc200**
- Check the path you put the init files on \$VISTA_CUBE_PATH/src/test/test.h
 - #define RDC200_LUT_FILE_PATH /data/vclut/rdc200**
- Start **vcctest** app and then download on CLI
 - cd \$VISTA_CUBE_PATH/src/test/android**
 - chmod u+x build_android.sh**
 - ./build_android.sh**
 - adb push libs/arm64-v8a/vctest /data**
 - adb shell**
 - cd /data**
 - ./vctest**
 - Download followings
 - 0 ↵ # Firmware image**
 - 0 ↵ # [0]: /data/vclut/rdc200/rdc200_fw_v1.5_gpioB_20171010.hex**
 - 1 ↵ # Firmware Configuration**
 - 0 ↵ # [0]: /data/vclut/rdc200/fw_rdc200.cfg**
 - 2 ↵ # RDC init LUT**
 - 2 ↵ # [2]: /data/vclut/rdc200/init_rdc200_R1_F5_rdp550f-e_20170614.rega**
 - 3 ↵ # RDP init LUT**
 - 3 ↵ # [3]: /data/vclut/rdc200/init_rdp550f-e_20170405.rega**
 - 4 ↵ # Gamma LUT**
 - 0 ↵ # [0]: /data/vclut/rdc200/20170406_gamma2.0.lut**
 - a ↵ # Bootlogo image**
 - 0 ↵ # [0]: /data/vclut/rdc200/bootlogo_00.bmp**



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- After finishing step 9, reboot. Then you will see your platform's default screen on our display panels.

Case 2) Android Java Application

- Same as the above.
- Same as the above.
 - But there could be android permission issue.
 - For testing, you can disable it temporarily:
 - adb shell setenforce 0**
 - adb shell chmod 777 /dev/rtimd-i2c**
 - Or you can avoid it when build kernel
 - Write **/dev/rtimd-i2c u:object_r:rtimodule_device:s0** in \$ANDROID_SRC_PATH/external/sepolicy/file_contexts
 - Write **type rtimodule_device, dev_type;** in \$ANDROID_SRC_PATH/external/sepolicy/device.te
 - Write **allow untrusted_app rtimodule_device:chr_file rw_file_perms;** in \$ANDROID_SRC_PATH/external/sepolicy/untrusted_app.te
 - Write **chmod 0777 /dev/rtimd-i2c** in \$ANDROID_SRC_PATH/system/core/rootdir/init.rc
- Build Android Java App
 - cd \$VISTA_CUBE_PATH/src/test/android_app/**
 - PATH=\$PATH:/Users/jpark/Library/Android/sdk/ndk-bundle**
 - ndk-build**
 - Import existing android project (\$VISTA_CUBE/src/test/android_app) into Eclipse SDK
 - Build and then install the output apk into your target platform
- Same as the above.
 - Check if a path is accessible or not: \$VISTA_CUBE_PATH/src/test/test.h
 - #define RDC200_LUT_FILE_PATH "/sdcard/Movies/vclut/rdc200"**
- Same as the above.
- Write the whole path you want to download in **rdcxxx_download_file_list.txt**
 - NOTE: The path (/sdcard/Movies/vclut/rdc200) must match up with that wrote in the step 4.
 - 0 /sdcard/Movies/vclut/rdc200/rdc200_fw_v1.5_gpioB_20171010.hex**
 - 1 /sdcard/Movies/vclut/rdc200/fw_rdc200.cfg**
 - 2 /sdcard/Movies/vclut/rdc200/init_rdc200_R1_F5_rdp550f-e_20170614.rega**
 - 3 /sdcard/Movies/vclut/rdc200/init_rdp550f-e_20170405.rega**
 - 4 /sdcard/Movies/vclut/rdc200/20170406_gamm2.0.lut**
 - 10 /sdcard/Movies/vclut/rdc200/bootlogo_00.bmp**
- Copy the init files including **rdcxxx_download_file_list.txt** into your target platform
 - adb shell mkdir -p /sdcard/Movies/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/download/rdp550f/fw_rdc200.cfg /sdcard/Movies/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/download/rdp550f/rdc200_download_file_list.txt /sdcard/Movies/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/feature/rdc200_fw_v1.5_gpioB_20171010.hex /sdcard/Movies/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/feature/20170406_gamm2.0.lut /sdcard/Movies/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/feature/bootlogo_00.bmp /sdcard/Movies/vclut/rdc200**
 - adb push \$INIT_FILE_PATH/init_lut/rdc200/init_rdc200_R1_F5_rdp550f-e_20170614.rega /sdcard/Movies/vclut/rdc200**
 - add push \$INIT_FILE_PATH/init_lut/rdp550f/init_rdp550f-e_20170405.rega /sdcard/Movies/vclut/rdc200**
- Check the path you put the init files on \$VISTA_CUBE_PATH/src/test/test.h
 - #define RDC200_LUT_FILE_PATH "/sdcard/Movies/vclut/rdc200"**
- Select **Controller** ComboBox to be **RDC200**
- Select **Panel** ComboBox to be **RDP550F**
- Click **APPLY** button (It shows a list of downloading file)
- Click **DOWNLOAD** button (It will take some time)
- Same as the above.

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