Содержание

Rockchip RV1103 RV1106

Overview

boot	https://opensource.rock-chips.com/wiki_Boot_option
rkbin	https://github.com/rockchip-linux/rkbin/blob/master/RKBOOT/RV1106MINIALL_EMMC_TB.ini
rkdeveloptool	https://opensource.rock-chips.com/wiki_Rkdeveloptool
rockusb	https://opensource.rock-chips.com/wiki_Rockusb
boot\emmc\u-boot\...	https://blog.csdn.net/qq_28877125/article/details/132999147
sdcard + sdio	https://blog.csdn.net/qq_28877125/article/details/133634104
sdcard boot	https://wiki.luckfox.com/Luckfox-Pico/Luckfox-Pico-Plus-SD
luckfox sdk	https://github.com/LuckfoxTECH/luckfox-pico
luckfox download	https://wiki.luckfox.com/Luckfox-Pico/Datasheets/
luckfox info	https://www.spotpear.com/index/study/detail/id/1100.html
luckfox-pico Ultra	https://www.luckfox.com/Luckfox-Pico/EN-Luckfox-Pico-Ultra-W-PoE-Kit
Sololinker-A	https://www.sololinker.com/1447.html
Sololinker-A sch	https://www.sololinker.com/wp-content/uploads/2023/11/20240325062742800050.pdf

Feature	RV1103G1	RV1106G2
制程	14nm	14nm
CPU	1.5GHz, Cortex-A7	1.5GHz, Cortex-A7
NPU	0.5TOPs	0.5TOPs
GPU/DSP	/	/
MCU	RISC-V 400MHz	RISC-V 400MHz
PMU		
存储温度(℃)	-40~125	-40~125
参考工作温度(℃)	0~80	0~80
编码能力	H.265/H.264 4MP@30	H.265/H.264 5MP@30
外部存储	16Bit SPI FLASH SD3.0, MMC ver4.5	16Bit eMMC 4.51 SPI FLASH SD3.0, MMC ver4.51
DDR内存大小	内置DDR2-64MB	内置DD3L-128MB
显示接口		1xMCU TX 1x串口 TX 1 x BT.1120 TX 1xRGB666 Support 1280x720
屏最大分辨率		1280x720
USB	1xUSB 2.0 OTG	1xUSB 2.0 OTG
PCIE	/	/
SPI/I2C/UART/ PWM/	2/5/12/6/1/12	2/5/6/12/6/1/12
网口	1xEthernet/100M/10M	1xEthernet/100M/10M
音频接口	Audio Codec	1 x I2S（8ch）+3 x I2S（2ch) Audio Codec
封装	QFN88 (body: 9mm x 9mm pin pitch 0.35mm))	QFN128(body: 12.3mm x 12.3mm pitch 0.35mm)
支持系统版本	LINUX	LINUX
摄像头类型	2xMIPI-CSI +1xDVP MIPI摄像头2个（400W)+DVP摄像头1个	2xMIPI-CSI+DVP MIPI摄像头2个（500W)+DVP摄像头1个
优势	快速启动、低功耗、自研第四代NPU	快速启动、低功耗、自研第四代NPU
参考最小漏电流		
参考休眠功耗		
应用领域	IP carema	IP carema

Boot

Boot from SPI flash means firmware for stage 2 and 3(SPL and U-Boot only) in SPI flash and stage 4/5 in other place;

Конспект U-Boot v2017 (next-dev) Development Guide

Boot from USB

- Power ON

    - BOOT ROM
    - wait for download
- xrock maskrom ddr
    - download 471
        - ddr init
        - in SRAM
        - rc4_off - отключение шифрования?
        - инициализация DDR
    - wait 1ms
    - download 472
        - usb plug
        - in SDRAM?
        - rc4_off - отключение шифрования?
        - реализация USB обмена (команды write, exec)
    - wait 1ms
- xrock write spl bin (0x0)
    - RAW IMAGE
    - FROM RAM
    - не запускать и не загружать U-boot?
- xrock exec (0x0)
- xrock write u-boot bin (0x200000)
    - RAW IMAGE
- xrock exec (0x200000)

Struct

Docs

link	ext	description	version	date	lang

Pinout RV1103G1

Pin Name	Pin	Bank	Group
MIPI_CLK0_OUT/GPIO3_C4_d	1	GPIO3	
GPIO3_C5_d	2	GPIO3	
PWM7_IR_M2/MIPI_CLK1_OUT/GPIO3_C6_d	3	GPIO3	
I2C4_SCL_M2/UART5_TX_M2/GPIO3_C7_d	4	GPIO3	
I2C4_SDA_M2/UART5_RX_M2/GPIO3_D0_d	5	GPIO3	
DVDD_1	6	CORE	PWR
GPIO4_VCC3V3	7	GPIO4	PWR
SDMMC0_DET/GPIO3_A1_u	8	GPIO3	
SDMMC0_D1/UART2_TX_M0/PWM9_M0/GPIO3_A2_u	9	GPIO3	
SDMMC0_D0/UART2_RX_M0/PWM8_M0/GPIO3_A3_u	10	GPIO3	
SDMMC0_CLK/UART5_RTSN_M0/I2C0_SCL_M2/PWM10_M0/GPIO3_A4_d	11	GPIO3	
SDMMC0_CMD/UART5_CTS_M0/I2C0_SDA_M2/PWM11_IR_M0/GPIO3_A5_u	12	GPIO3	
SDMMC0_D3/UART5_TX_M0/JTAG_CPU_TMS_M0/JTAG_HPMCU_TMS_M1/GPIO3_A6_u	13	GPIO3	
SDMMC0_D2/UART5_RX_M0/JTAG_CPU_TCK_M0/JTAG_HPMCU_TCK_M1/GPIO3_A7_u	14	GPIO3	
SARADC_IN1/PWM1_M1/GPI4_C1_z	15	GPI4	
SARADC_IN0/GPI4_C0_z	16	GPI4	
SARADC_USB_AVDD1V8	17	USB	PWR

Pin Name	Pin	Bank	Group
USB_DM	18	USB	USB
USB_DP	19	USB	USB
USB_AVDD3V3	20	USB	PWR
CODEC_LINEOUT	21	CODEC	AUDIO
CODEC_VCM	22	CODEC	AUDIO
CODEC_AVDD1V8	23	CODEC	AUDIO
CODEC_MIC0P_MICP	24	CODEC	AUDIO
CODEC_MICBIAS	25	CODEC	AUDIO
CODEC_MIC1P_MICN	26	CODEC	AUDIO
GPIO3_VCC	27	GPIO3	PWR
FSPI_D3/GPIO4_A6_u	28	GPIO4	
FSPI_D0/GPIO4_A4_u	29	GPIO4	
FSPI_D1/GPIO4_A3_u	30	GPIO4	
FSPI_D2/GPIO4_A2_u	31	GPIO4	
FSPI_CS0/GPIO4_B0_u	32	GPIO4	
FSPI_CLK/GPIO4_B1_d	33	GPIO4	
DDR_VDDQ_1	34	DDR	PWR
DDR_VDDQ_2	35	DDR	PWR
DVDD_2	36	CORE	PWR
DRAM_ZQ	37	DDR	SYS
DDR_PLL_AVDD1V8	38	DDR	PWR
DVDD_3	39	CORE	PWR
DDR_VDDQ_3	40	DDR	PWR
TVSS	41		PWR
PWR_CTRL_M0/PWM1_M0/GPIO0_A4_d	42	GPIO0	
PMU_VCC3V3	43		PWR
OSC_PLL_PMU_DVDD	44	CLK	PWR
OSC_XIN	45	CLK	CLK
OSC_XOUT	46	CLK	CLK
OSC_AVDD1V8/PLL_AVDD1V8	47	CLK	PWR
PWM0_M0/CPU_AVS/GPIO1_A2_d	48	GPIO1	
JTAG_CPU_TCK_M1/UART2_TX_M1/JTAG_HPMCU_TCK_M0/GPIO1_B2_d	49	GPIO1	
JTAG_CPU_TMS_M1/UART2_RX_M1/JTAG_HPMCU_TMS_M0/GPIO1_B3_u	50	GPIO1	
GPIO1_VCC3V3	51	GPIO1	PWR
PWM10_M1/UART4_RTSN_M1/GPIO1_C6_d	52	GPIO1	
PWM11_IR_M1/UART4_CTSN_M1/GPIO1_C7_d	53	GPIO1	
I2C3_SCL_M1/UART5_TX_M1/PWM11_IR_M2/AUD_DSM_N/GPIO1_D3_d	54	GPIO1	
I2C3_SDA_M1/UART5_RX_M1/SPI0_CS1_M0/PWM0_M1/AUD_DSM_P/GPIO1_D2_d	55	GPIO1	
PWM10_M2/UART5_CTS_M1/UART3_RX_M1/GPIO1_D1_d	56	GPIO1	
PWM3_IR_M2/UART5_RTS_M1/UART3_TX_M1/GPIO1_D0_d	57	GPIO1	
DVDD_4	58	CORE	PWR
GPIO6_VCC	59	GPIO6	PWR
PWM9_M1/UART4_TX_M1/SDMMC1_D2_M1/GPIO1_C5_d	60	GPIO1	
PWM8_M1/UART4_RX_M1/SDMMC1_D3_M1/GPIO1_C4_d	61	GPIO1	
PWM6_M2/I2C4_SDA_M1/SDMMC1_CMD_M1/SPI0_MISO_M0/GPIO1_C3_d	62	GPIO1	
PWM5_M2/I2C4_SCL_M1/SDMMC1_CLK_M1/SPI0_MOSI_M0/GPIO1_C2_d	63	GPIO1	
PWM4_M2/SPI0_CLK_M0/SDMMC1_D0_M1/GPIO1_C1_d	64	GPIO1	
PWM2_M2/SPI0_CS0_M0/SDMMC1_D1_M1/GPIO1_C0_d	65	GPIO1	

Pin Name	Pin	Bank	Group
OTP_AVDD1V8/ETH_AVDD1V8/TSADC_AVDD1V8	66		PWR
ETH_PHY_RXN	67	ETH	ETH
ETH_PHY_RXP	68	ETH	ETH
ETH_PHY_TXN	69	ETH	ETH
ETH_PHY_TXP	70	ETH	ETH
ETH_AVDD3V3	71	ETH	PWR
ETH_EXTR	72	ETH	ETH
DVDD_5	73	CORE	PWR
CPU_DVDD	74	CORE	PWR
DVDD_6	75	CORE	PWR
MIPI_CSI_RX_D3N/LVDS_RX_D3N/GPI3_B0_d	76	GPI3	
MIPI_CSI_RX_D3P/LVDS_RX_D3P/GPI3_B1_d	77	GPI3	
MIPI_CSI_RX_CK1N/LVDS_RX_CK1N/GPI3_B2_d	78	GPI3	
MIPI_CSI_RX_CK1P/LVDS_RX_CK1P/GPI3_B3_d	79	GPI3	
MIPI_CSI_RX_D2N/LVDS_RX_D2N/GPI3_B4_d	80	GPI3	
MIPI_CSI_RX_D2P/LVDS_RX_D2P/GPI3_B5_d	81	GPI3	
MIPI_CSI_RX_D1N/LVDS_RX_D1N/GPI3_B6_d	82	GPI3	
MIPI_CSI_RX_D1P/LVDS_RX_D1P/GPI3_B7_d	83	GPI3	
MIPI_CSI_RX_CK0N/LVDS_RX_CK0N/GPI3_C0_d	84	GPI3	
MIPI_CSI_RX_CK0P/LVDS_RX_CK0P/GPI3_C1_d	85	GPI3	
MIPI_CSI_RX_D0N/LVDS_RX_D0N/GPI3_C2_d	86	GPI3	
MIPI_CSI_RX_D0P/LVDS_RX_D0P/GPI3_C3_d	87	GPI3	
MIPI_AVDD1V8/GPIO7_VCC1V8	88	GPIO7	PWR
VSS	E-PAD		PWR

GPIO

GPIO	FUNC	RV1106	RV1103
GPIO0A0	0	GPIO0_A0	
GPIO0A0	1	UART0_RX_M0	
GPIO0A0	2	CLK_32K	
GPIO0A0	3	CLK_REFOUT	
GPIO0A0	4	RTC_CLKO	
GPIO0A1	0	GPIO0_A1	
GPIO0A1	1	UART0_TX_M0	
GPIO0A1	2	PWM2_M0	
GPIO0A1	3	TEST_CLK6_OUT	
GPIO0A2	0	GPIO0_A2	
GPIO0A2	1	PWM3_IR_M0	
GPIO0A2	3	TEST_CLK7_OUT	
GPIO0A3	0	GPIO0_A3	
GPIO0A3	1	PMIC_SLEEP_M1	
GPIO0A4	0	GPIO0_A4	GPIO0_A4
GPIO0A4	1	PMIC_SLEEP_M0	PMIC_SLEEP_M0
GPIO0A4	2	PWM1_M0	PWM1_M0
GPIO0A5	0	GPIO0_A5	

GPIO	FUNC	RV1106	RV1103
GPIO0A5	1	I2C1_SCL_M0	
GPIO0A5	2	UART1_RTSN_M0	
GPIO0A5	3	PWM5_M0	
GPIO0A6	0	GPIO0_A6	
GPIO0A6	1	I2C1_SDA_M0	
GPIO0A6	2	UART1_CTSN_M0	
GPIO0A6	3	PWM6_M0	
GPIO1A0	0	GPIO1_A0	
GPIO1A0	1	UART3_TX_M0	
GPIO1A0	2	I2C2_SCL_M0	
GPIO1A0	3	PWM7_IR_M0	
GPIO1A1	0	GPIO1_A1	
GPIO1A1	1	UART3_RX_M0	
GPIO1A1	2	I2C2_SDA_M0	
GPIO1A1	3	PMU_DEBUG	
GPIO1A1	4	PWM4_M0	
GPIO1A2	0	GPIO1_A2	GPIO1_A2
GPIO1A2	1	PWM0_M0	PWM0_M0
GPIO1A2	2	AVS_ARM	AVS_ARM
GPIO1A2	3	VICAP_D0_M1	VICAP_D0_M1
GPIO1A3	0	GPIO1_A3	
GPIO1A3	1	UART1_TX_M0	
GPIO1A3	2	I2C0_SCL_M0	
GPIO1A4	0	GPIO1_A4	
GPIO1A4	1	UART1_RX_M0	
GPIO1A4	2	I2C0_SDA_M0	
GPIO1B0	0	GPIO1_B0	
GPIO1B0	1	UART4_RX_M0	
GPIO1B0	2	PWM3_IR_M1	
GPIO1B1	0	GPIO1_B1	
GPIO1B1	1	UART4_TX_M0	
GPIO1B1	2	PWM7_IR_M1	
GPIO1B1	3	SPI1_CS1N_M0	
GPIO1B1	4	VICAP_D1_M1	
GPIO1B2	0	GPIO1_B2	GPIO1_B2
GPIO1B2	1	A7_JTAG_TCK_M1	A7_JTAG_TCK_M1
GPIO1B2	2	UART2_TX_M1	UART2_TX_M1
GPIO1B2	3	HPMCU_JTAG_TCK_M0	HPMCU_JTAG_TCK_M0
GPIO1B2	4	LPMCU_JTAG_TCK_M0	LPMCU_JTAG_TCK_M0
GPIO1B3	0	GPIO1_B3	GPIO1_B3
GPIO1B3	1	A7_JTAG_TMS_M1	A7_JTAG_TMS_M1
GPIO1B3	2	UART2_RX_M1	UART2_RX_M1
GPIO1B3	3	HPMCU_JTAG_TMS_M0	HPMCU_JTAG_TMS_M0
GPIO1B3	4	LPMCU_JTAG_TMS_M0	LPMCU_JTAG_TMS_M0

GPIO	FUNC	RV1106	RV1103
GPIO1C0	0	GPIO1_C0	GPIO1_C0
GPIO1C0	1	LCD_D7	LCD_D7
GPIO1C0	2	VICAP_D2_M1	VICAP_D2_M1
GPIO1C0	3	PWM2_M2	PWM2_M2
GPIO1C0	4	SPI0_CS0N_M0	SPI0_CS0N_M0
GPIO1C0	5	SDMMC1_D1_M1	SDMMC1_D1_M1
GPIO1C1	0	GPIO1_C1	GPIO1_C1
GPIO1C1	1	LCD_D6	LCD_D6
GPIO1C1	2	VICAP_D3_M1	VICAP_D3_M1
GPIO1C1	3	PWM4_M2	PWM4_M2
GPIO1C1	4	SPI0_CLK_M0	SPI0_CLK_M0
GPIO1C1	5	SDMMC1_D0_M1	SDMMC1_D0_M1
GPIO1C2	0	GPIO1_C2	GPIO1_C2
GPIO1C2	1	LCD_D5	LCD_D5
GPIO1C2	2	VICAP_D4_M1	VICAP_D4_M1
GPIO1C2	3	PWM5_M2	PWM5_M2
GPIO1C2	4	I2C4_SCL_M1	I2C4_SCL_M1
GPIO1C2	5	SDMMC1_CLK_M1	SDMMC1_CLK_M1
GPIO1C2	6	SPI0_MOSI_M0	SPI0_MOSI_M0
GPIO1C3	0	GPIO1_C3	GPIO1_C3
GPIO1C3	1	LCD_D4	LCD_D4
GPIO1C3	2	VICAP_D5_M1	VICAP_D5_M1
GPIO1C3	3	PWM6_M2	PWM6_M2
GPIO1C3	4	I2C4_SDA_M1	I2C4_SDA_M1
GPIO1C3	5	SDMMC1_CMD_M1	SDMMC1_CMD_M1
GPIO1C3	6	SPI0_MISO_M0	SPI0_MISO_M0
GPIO1C4	0	GPIO1_C4	GPIO1_C4
GPIO1C4	1	LCD_D3	LCD_D3
GPIO1C4	2	VICAP_D6_M1	VICAP_D6_M1
GPIO1C4	3	PWM8_M1	PWM8_M1
GPIO1C4	4	UART4_RX_M1	UART4_RX_M1
GPIO1C4	5	SDMMC1_D3_M1	SDMMC1_D3_M1
GPIO1C5	0	GPIO1_C5	GPIO1_C5
GPIO1C5	1	LCD_D2	LCD_D2
GPIO1C5	2	VICAP_D7_M1	VICAP_D7_M1
GPIO1C5	3	PWM9_M1	PWM9_M1
GPIO1C5	4	UART4_TX_M1	UART4_TX_M1
GPIO1C5	5	SDMMC1_D2_M1	SDMMC1_D2_M1
GPIO1C6	0	GPIO1_C6	GPIO1_C6
GPIO1C6	1	LCD_D1	LCD_D1
GPIO1C6	2	VICAP_D8_M1	VICAP_D8_M1
GPIO1C6	3	PWM10_M1	PWM10_M1
GPIO1C6	4	UART4_RTSN_M1	UART4_RTSN_M1
GPIO1C7	0	GPIO1_C7	GPIO1_C7

GPIO	FUNC	RV1106	RV1103
GPIO1C7	1	LCD_D0	LCD_D0
GPIO1C7	2	VICAP_D9_M1	VICAP_D9_M1
GPIO1C7	3	PWM11_IR_M1	PWM11_IR_M1
GPIO1C7	4	UART4_CTSN_M1	UART4_CTSN_M1
GPIO1D0	0	GPIO1_D0	GPIO1_D0
GPIO1D0	1	LCD_DEN	LCD_DEN
GPIO1D0	2	VICAP_CLKIN_M1	VICAP_CLKIN_M1
GPIO1D0	3	PWM3_IR_M2	PWM3_IR_M2
GPIO1D0	4	UART5_RTSN_M1	UART5_RTSN_M1
GPIO1D0	5	UART3_TX_M1	UART3_TX_M1
GPIO1D1	0	GPIO1_D1	GPIO1_D1
GPIO1D1	1	LCD_HSYNC	LCD_HSYNC
GPIO1D1	2	VICAP_HSYNC_M1	VICAP_HSYNC_M1
GPIO1D1	3	PWM10_M2	PWM10_M2
GPIO1D1	4	UART5_CTSN_M1	UART5_CTSN_M1
GPIO1D1	5	UART3_RX_M1	UART3_RX_M1
GPIO1D2	0	GPIO1_D2	GPIO1_D2
GPIO1D2	1	LCD_VSYNC	LCD_VSYNC
GPIO1D2	2	VICAP_VSYNC_M1	VICAP_VSYNC_M1
GPIO1D2	3	I2C3_SDA_M1	I2C3_SDA_M1
GPIO1D2	4	UART5_RX_M1	UART5_RX_M1
GPIO1D2	5	SPI0_CS1N_M0	SPI0_CS1N_M0
GPIO1D2	6	PWM0_M1	PWM0_M1
GPIO1D2	7	DSMAUDIO_P	DSMAUDIO_P
GPIO1D3	0	GPIO1_D3	GPIO1_D3
GPIO1D3	1	LCD_CLK	LCD_CLK
GPIO1D3	2	VICAP_CLKOUT_M1	VICAP_CLKOUT_M1
GPIO1D3	3	I2C3_SCL_M1	I2C3_SCL_M1
GPIO1D3	4	UART5_TX_M1	UART5_TX_M1
GPIO1D3	5	PWM11_IR_M2	PWM11_IR_M2
GPIO1D3	7	DSMAUDIO_N	DSMAUDIO_N
GPIO2A0	0	GPIO2_A0	
GPIO2A0	1	SDMMC1_D1_M0	
GPIO2A0	2	I2S0_SCLK	
GPIO2A0	3	LCD_D8	
GPIO2A0	4	UART1_CTSN_M1	
GPIO2A0	5	I2C4_SDA_M0	
GPIO2A1	0	GPIO2_A1	
GPIO2A1	1	SDMMC1_D0_M0	
GPIO2A1	2	I2S0_LRCK	
GPIO2A1	3	LCD_D9	
GPIO2A1	4	UART1_RTSN_M1	
GPIO2A1	5	I2C4_SCL_M0	
GPIO2A2	0	GPIO2_A2	

GPIO	FUNC	RV1106	RV1103
GPIO2A2	1	SDMMC1_CLK_M0	
GPIO2A2	2	I2S0_MCLK	
GPIO2A2	3	LCD_D10	
GPIO2A3	0	GPIO2_A3	
GPIO2A3	1	SDMMC1_CMD_M0	
GPIO2A3	2	I2S0_SDO3_SDI1	
GPIO2A3	3	LCD_D11	
GPIO2A4	0	GPIO2_A4	
GPIO2A4	1	SDMMC1_D3_M0	
GPIO2A4	2	I2S0_SDO0	
GPIO2A4	3	LCD_D12	
GPIO2A4	4	UART1_TX_M1	
GPIO2A5	0	GPIO2_A5	
GPIO2A5	1	SDMMC1_D2_M0	
GPIO2A5	2	I2S0_SDI0	
GPIO2A5	3	LCD_D13	
GPIO2A5	4	UART1_RX_M1	
GPIO2A6	0	GPIO2_A6	
GPIO2A6	1	UART0_RTSN_M1	
GPIO2A6	2	I2S0_SDO2_SDI2	
GPIO2A6	3	LCD_D14	
GPIO2A6	4	PWM2_M1	
GPIO2A6	5	I2C3_SCL_M0	
GPIO2A6	6	FLASH_TRIG_OUT	
GPIO2A7	0	GPIO2_A7	
GPIO2A7	1	UART0_CTSN_M1	
GPIO2A7	2	I2S0_SDO1_SDI3	
GPIO2A7	3	LCD_D15	
GPIO2A7	4	PWM4_M1	
GPIO2A7	5	I2C3_SDA_M0	
GPIO2A7	6	PRELIGHT_TRIG_OUT	
GPIO2B0	0	GPIO2_B0	
GPIO2B0	1	UART0_RX_M1	
GPIO2B0	2	I2C1_SDA_M1	
GPIO2B0	3	LCD_D16	
GPIO2B0	4	PWM5_M1	
GPIO2B0	5	TEST_CLK4_OUT	
GPIO2B1	0	GPIO2_B1	
GPIO2B1	1	UART0_TX_M1	
GPIO2B1	2	I2C1_SCL_M1	
GPIO2B1	3	LCD_D17	
GPIO2B1	4	PWM6_M1	
GPIO2B1	5	TEST_CLK5_OUT	
GPIO3A1	0	GPIO3_A1	GPIO3_A1

GPIO	FUNC	RV1106	RV1103
GPIO3A1	1	SDMMC0_DET	SDMMC0_DET
GPIO3A2	0	GPIO3_A2	GPIO3_A2
GPIO3A2	1	SDMMC0_D1	SDMMC0_D1
GPIO3A2	2	UART2_TX_M0	UART2_TX_M0
GPIO3A2	3	TEST_CLK0_OUT	TEST_CLK0_OUT
GPIO3A2	4	PWM9_M0	PWM9_M0
GPIO3A3	0	GPIO3_A3	GPIO3_A3
GPIO3A3	1	SDMMC0_D0	SDMMC0_D0
GPIO3A3	2	UART2_RX_M0	UART2_RX_M0
GPIO3A3	3	TEST_CLK1_OUT	TEST_CLK1_OUT
GPIO3A3	4	PWM8_M0	PWM8_M0
GPIO3A4	0	GPIO3_A4	GPIO3_A4
GPIO3A4	1	SDMMC0_CLK	SDMMC0_CLK
GPIO3A4	2	UART5_RTSN_M0	UART5_RTSN_M0
GPIO3A4	3	I2C0_SCL_M2	I2C0_SCL_M2
GPIO3A4	4	LPMCU_JTAG_TCK_M1	LPMCU_JTAG_TCK_M1
GPIO3A4	5	PWM10_M0	PWM10_M0
GPIO3A5	0	GPIO3_A5	GPIO3_A5
GPIO3A5	1	SDMMC0_CMD	SDMMC0_CMD
GPIO3A5	2	UART5_CTSN_M0	UART5_CTSN_M0
GPIO3A5	3	I2C0_SDA_M2	I2C0_SDA_M2
GPIO3A5	4	LPMCU_JTAG_TMS_M1	LPMCU_JTAG_TMS_M1
GPIO3A5	5	PWM11_IR_M0	PWM11_IR_M0
GPIO3A6	0	GPIO3_A6	GPIO3_A6
GPIO3A6	1	SDMMC0_D3	SDMMC0_D3
GPIO3A6	2	UART5_TX_M0	UART5_TX_M0
GPIO3A6	3	A7_JTAG_TMS_M0	A7_JTAG_TMS_M0
GPIO3A6	4	HPMCU_JTAG_TMS_M1	HPMCU_JTAG_TMS_M1
GPIO3A7	0	GPIO3_A7	GPIO3_A7
GPIO3A7	1	SDMMC0_D2	SDMMC0_D2
GPIO3A7	2	UART5_RX_M0	UART5_RX_M0
GPIO3A7	3	A7_JTAG_TCK_M0	A7_JTAG_TCK_M0
GPIO3A7	4	HPMCU_JTAG_TCK_M1	HPMCU_JTAG_TCK_M1
GPIO3B0	0	GPIO3_B0	GPIO3_B0
GPIO3B0	1	VICAP_D0_M0	VICAP_D0_M0
GPIO3B0	2	MIPI_LVDS_D3N	MIPI_LVDS_D3N
GPIO3B1	0	GPIO3_B1	GPIO3_B1
GPIO3B1	1	VICAP_D1_M0	VICAP_D1_M0
GPIO3B1	2	MIPI_LVDS_D3P	MIPI_LVDS_D3P
GPIO3B2	0	GPIO3_B2	GPIO3_B2
GPIO3B2	1	VICAP_D2_M0	VICAP_D2_M0
GPIO3B2	2	MIPI_LVDS_CK1N	MIPI_LVDS_CK1N
GPIO3B3	0	GPIO3_B3	GPIO3_B3
GPIO3B3	1	VICAP_D3_M0	VICAP_D3_M0

GPIO	FUNC	RV1106	RV1103
GPIO3B3	2	MIPI_LVDS_CK1P	MIPI_LVDS_CK1P
GPIO3B4	0	GPIO3_B4	GPIO3_B4
GPIO3B4	1	VICAP_D4_M0	VICAP_D4_M0
GPIO3B4	2	MIPI_LVDS_D2N	MIPI_LVDS_D2N
GPIO3B5	0	GPIO3_B5	GPIO3_B5
GPIO3B5	1	VICAP_D5_M0	VICAP_D5_M0
GPIO3B5	2	MIPI_LVDS_D2P	MIPI_LVDS_D2P
GPIO3B6	0	GPIO3_B6	GPIO3_B6
GPIO3B6	1	VICAP_D6_M0	VICAP_D6_M0
GPIO3B6	2	MIPI_LVDS_D1N	MIPI_LVDS_D1N
GPIO3B7	0	GPIO3_B7	GPIO3_B7
GPIO3B7	1	VICAP_D7_M0	VICAP_D7_M0
GPIO3B7	2	MIPI_LVDS_D1P	MIPI_LVDS_D1P
GPIO3C0	0	GPIO3_C0	GPIO3_C0
GPIO3C0	1	VICAP_D8_M0	VICAP_D8_M0
GPIO3C0	2	MIPI_LVDS_CK0N	MIPI_LVDS_CK0N
GPIO3C1	0	GPIO3_C1	GPIO3_C1
GPIO3C1	1	VICAP_D9_M0	VICAP_D9_M0
GPIO3C1	2	MIPI_LVDS_CK0P	MIPI_LVDS_CK0P
GPIO3C2	0	GPIO3_C2	GPIO3_C2
GPIO3C2	1	VICAP_CLKIN_M0	VICAP_CLKIN_M0
GPIO3C2	2	MIPI_LVDS_D0N	MIPI_LVDS_D0N
GPIO3C3	0	GPIO3_C3	GPIO3_C3
GPIO3C3	1	VICAP_HSYNC_M0	VICAP_HSYNC_M0
GPIO3C3	2	MIPI_LVDS_D0P	MIPI_LVDS_D0P
GPIO3C4	0	GPIO3_C4	GPIO3_C4
GPIO3C4	1	VICAP_CLKOUT_M0	VICAP_CLKOUT_M0
GPIO3C4	2	MIPI_REFCLK_OUT0	MIPI_REFCLK_OUT0
GPIO3C5	0	GPIO3_C5	GPIO3_C5
GPIO3C5	1	VICAP_VSYNC_M0	VICAP_VSYNC_M0
GPIO3C6	0	GPIO3_C6	GPIO3_C6
GPIO3C6	1	VICAP_D10	VICAP_D10
GPIO3C6	2	PWM7_IR_M2	PWM7_IR_M2
GPIO3C6	3	MIPI_REFCLK_OUT1	MIPI_REFCLK_OUT1
GPIO3C7	0	GPIO3_C7	GPIO3_C7
GPIO3C7	1	VICAP_D11	VICAP_D11
GPIO3C7	2	UART5_TX_M2	UART5_TX_M2
GPIO3C7	3	I2C4_SCL_M2	I2C4_SCL_M2
GPIO3D0	0	GPIO3_D0	GPIO3_D0
GPIO3D0	1	VICAP_D12	VICAP_D12
GPIO3D0	2	UART5_RX_M2	UART5_RX_M2
GPIO3D0	3	I2C4_SDA_M2	I2C4_SDA_M2
GPIO3D1	0	GPIO3_D1	
GPIO3D1	1	VICAP_D13	

GPIO	FUNC	RV1106	RV1103
GPIO3D1	2	UART5_RTSN_M2	
GPIO3D1	3	I2C3_SCL_M2	
GPIO3D2	0	GPIO3_D2	
GPIO3D2	1	VICAP_D14	
GPIO3D2	2	UART5_CTSN_M2	
GPIO3D2	3	I2C3_SDA_M2	
GPIO3D3	0	GPIO3_D3	
GPIO3D3	1	VICAP_D15	
GPIO3D3	2	PWM1_M2	
GPIO4A0	0	GPIO4_A0	
GPIO4A0	1	EMMC_D7	
GPIO4A0	2	SPI1_MISO_M0	
GPIO4A0	3	UART0_RX_M2	
GPIO4A0	4	I2C0_SDA_M1	
GPIO4A0	5	TEST_CLK2_OUT	
GPIO4A1	0	GPIO4_A1	
GPIO4A1	1	EMMC_D6	
GPIO4A1	2	SPI1_MOSI_M0	
GPIO4A1	3	UART0_TX_M2	
GPIO4A1	4	I2C0_SCL_M1	
GPIO4A1	5	TEST_CLK3_OUT	
GPIO4A2	0	GPIO4_A2	GPIO4_A2
GPIO4A2	1	EMMC_D2	EMMC_D2
GPIO4A2	2	FSPI_D2	FSPI_D2
GPIO4A3	0	GPIO4_A3	GPIO4_A3
GPIO4A3	1	EMMC_D1	EMMC_D1
GPIO4A3	2	FSPI_D1	FSPI_D1
GPIO4A4	0	GPIO4_A4	GPIO4_A4
GPIO4A4	1	EMMC_D0	EMMC_D0
GPIO4A4	2	FSPI_D0	FSPI_D0
GPIO4A5	0	GPIO4_A5	
GPIO4A5	1	EMMC_D4	
GPIO4A5	2	SPI1_CS0N_M0	
GPIO4A5	3	UART1_TX_M2	
GPIO4A5	4	I2C2_SDA_M1	
GPIO4A6	0	GPIO4_A6	GPIO4_A6
GPIO4A6	1	EMMC_D3	EMMC_D3
GPIO4A6	2	FSPI_D3	FSPI_D3
GPIO4A7	0	GPIO4_A7	
GPIO4A7	1	EMMC_D5	
GPIO4A7	2	SPI1_CLK_M0	
GPIO4A7	3	UART1_RX_M2	
GPIO4A7	4	I2C2_SCL_M1	
GPIO4B0	0	GPIO4_B0	GPIO4_B0

GPIO	FUNC	RV1106	RV1103
GPIO4B0	1	EMMC_CMD	EMMC_CMD
GPIO4B0	2	FSPI_CS0N	FSPI_CS0N
GPIO4B1	0	GPIO4_B1	GPIO4_B1
GPIO4B1	1	EMMC_CLK	EMMC_CLK
GPIO4B1	2	FSPI_CLK	FSPI_CLK
GPIO4C0	0	GPIO4_C0	GPIO4_C0
GPIO4C0	1	ADC_IN0	ADC_IN0
GPIO4C1	0	GPIO4_C1	GPIO4_C1
GPIO4C1	1	ADC_IN1	ADC_IN1
GPIO4C1	2	PWM1_M1	PWM1_M1