

BES2600WM Mainboard HW user guide

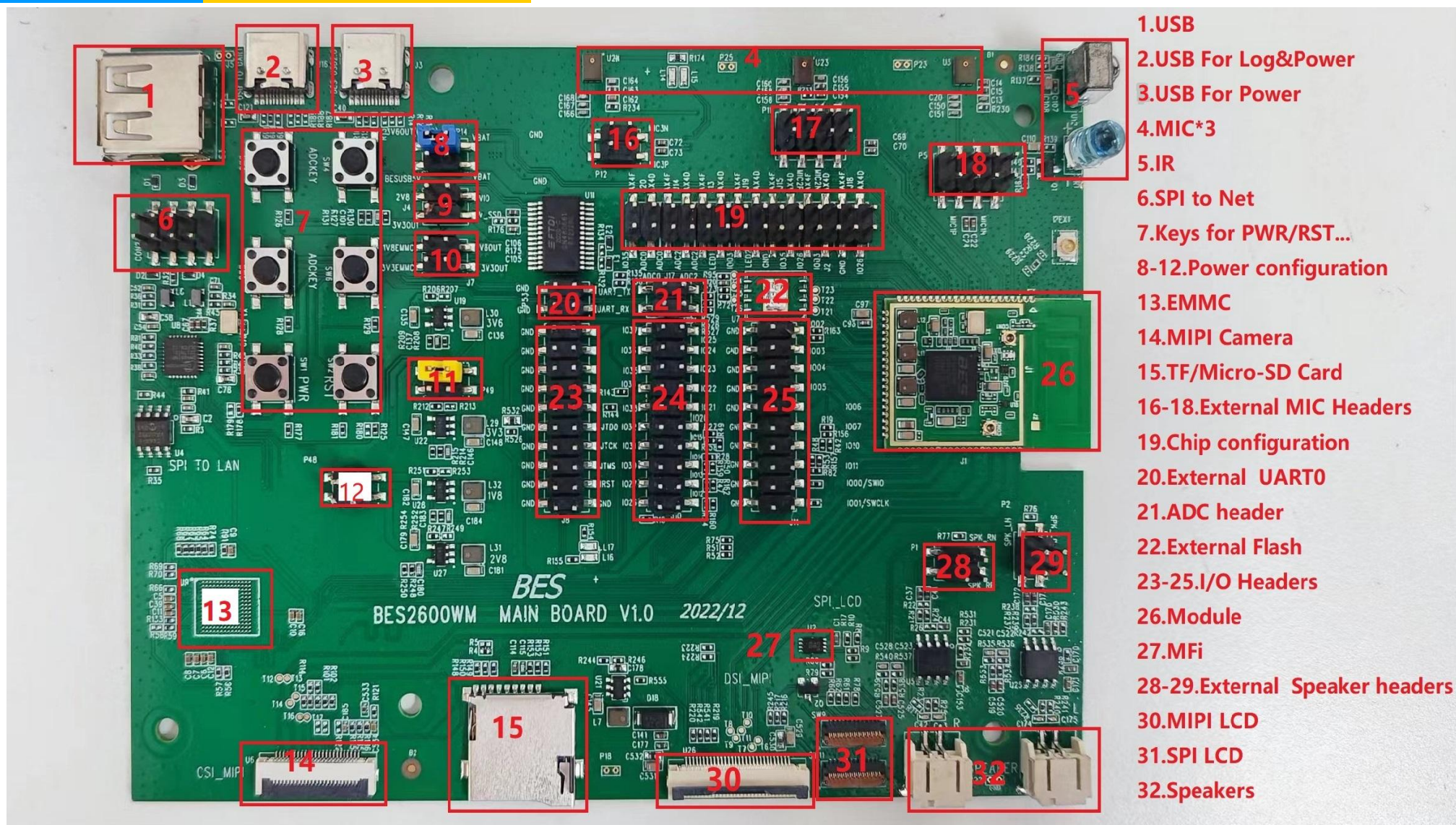
2023.02.16

V1.0



- EVB 功能描述
- GPIO配置

EVB 功能描述



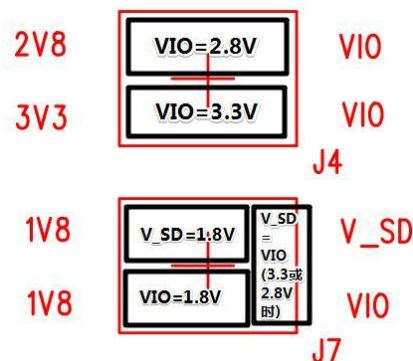
EVB 功能描述

电源配置

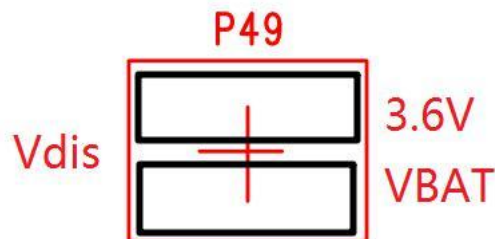
1. 标记 1: USB接口。
2. 标记 2: 烧录及供电接口。此 Type-C 接口主要用于串口通信，亦可以作为供电使用，其输入经板载 DCDC 转换为 3.6V 电源，再提供给模组和其他功能模块。额定电压 5V，电流要求 800mA 以上。
3. 标记 3: Type-C 及供电接口，额定电压 5V，电流要求 800mA 以上。
4. 标记 8: 电源选择模块。通过跳线帽选择默认 5V 输入（板上丝印 VBUS）或 3.6V 输入（板上丝印 3V6）。开发板默认通过标记2供电以及烧录跳帽接3v6。



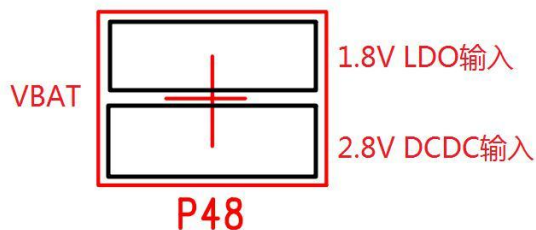
5. 标记 9&10: I/O 电平选择模块。通过跳线帽选择 VIO 电源为 3.3V、2.8V 或 1.8V。



6.标记 11：Display 供电选择模块。通过跳线帽选择 VBAT 或 3.6V 作为 Display 模块的输入电源，此处按默认配置选择 VBAT 即可。



7.标记 12：1.8V IO 电源及 2.8V 摄像头模块输入电源配置。

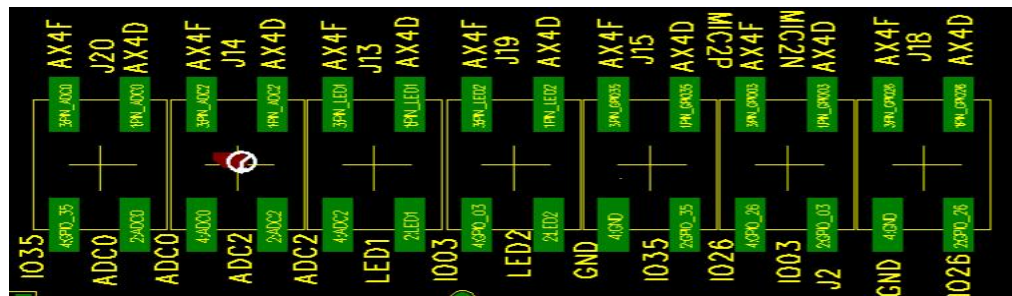


EMMC

8.标记 13：预留EMMC功能

CHIP 兼容

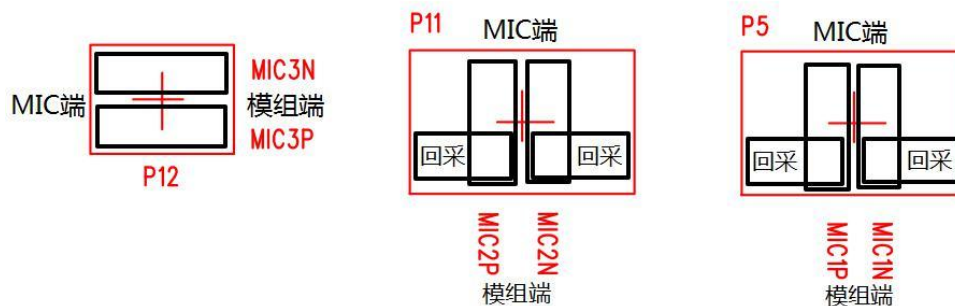
9.标记 19: 芯片兼容端子。AX4D&GX6D 选择AX4D跳帽, AX4F选择AX4F跳帽。



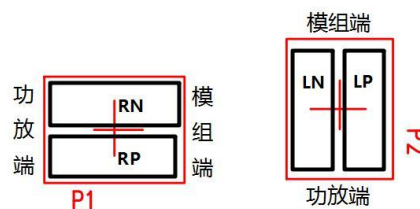
音频配置

10.标记 4: 模拟MIC*3

11.标记 16-18: 可选外接麦克风以及回采电路端子。P2.54 排针, 如需外接模拟麦, 或者激活回采电路, 可通过此排针进行配置。



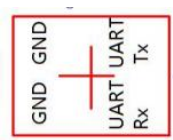
12.标记 28-29: 外接功放端子。如客户需要外接其他功放, 可拔除此处跳线帽, 利用 P2.54 排针进行飞线。



13.标记 32: 板载语音功放输出端子, 功放型号为纳芯威/NS4150C, 额定输出功率 2.8W (5V/4Ω, THD=10%), 采用 2pin PH2.0 规格底座。

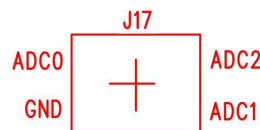
烧录/debug

14.标记 20: 外接软件烧录口以及debug口。



ADC

15.标记 21: ADC 接口接线端子。



按键

标记 7: 按键

SW1: Power 按键;

SW2: Reset 按键;

SW3 - SW6: 按键阵列

其他功能

标记 5: 红外收发器。

标记 6: SPI转网卡。

标记 14: MIPI 摄像头模组 FPC 座, 24pin, 下接, 0.5mm pitch。

标记 15: TF(Micro-SD) 卡槽, 支持插拔检测。

标记 26: BES2600WM 模组。

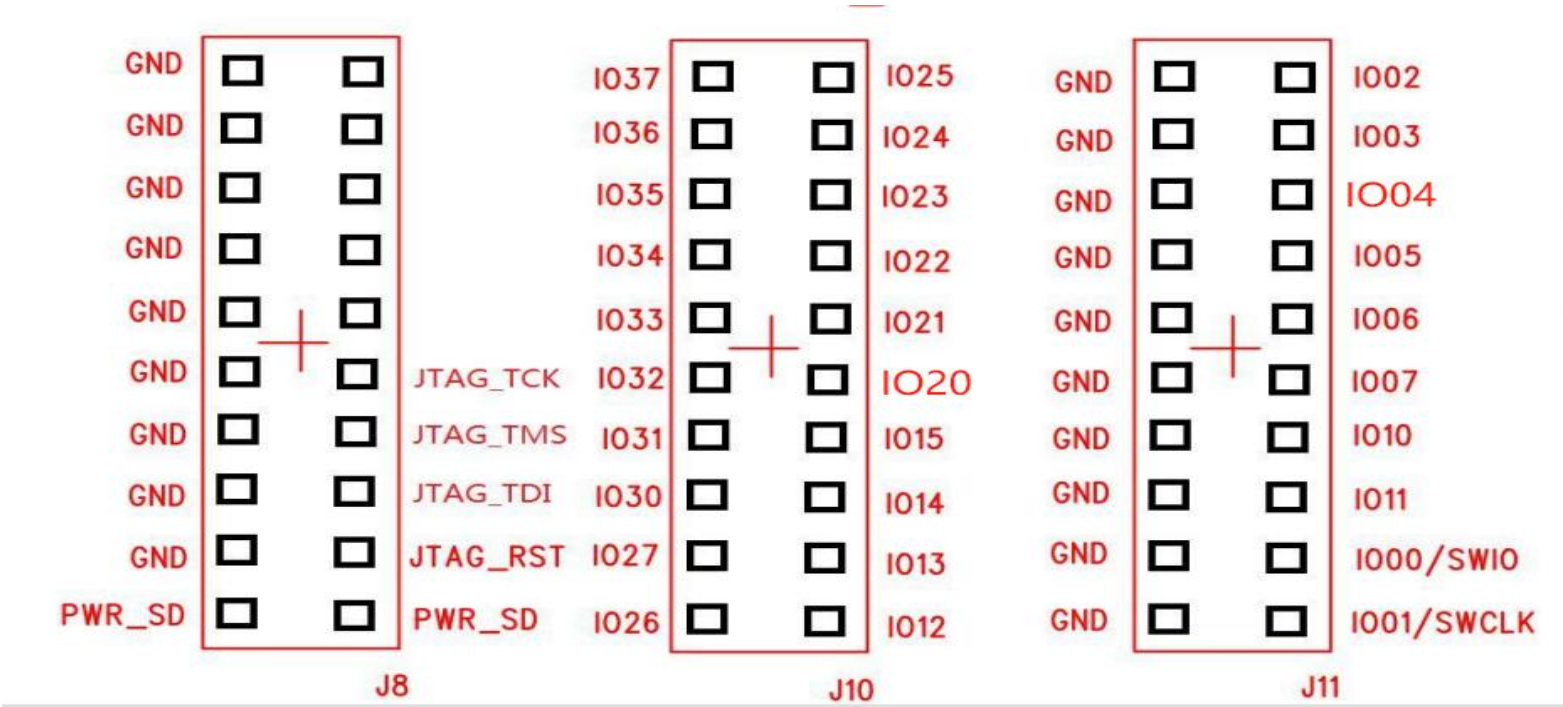
标记 27: MFi 认证芯片。

标记 30: MIPI LCD 模组 FPC 座, 30pin, 下接, 0.5mm pitch。

标记 31: SPI LCD 模组 FPC座, 25pin, 翻盖, 0.3mm pitch。

GPIO

标记 22-25：模组GPIO，用户可通过杜邦线自行完成外接应用。具体针脚对应 IO 如图所示。



GPIO MUX

Notes	IO	IO Status	Reference Voltage	Default Status	IO	Priority High	Function 0	Function 1	Function 2	Function 3	Function 4	Function 5	Function 6	Function 7	Function 8	Function 9	Function 10	Function 11	Function 12	IO
	GPIO_P0_0	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM0	UART2_RX	UART1_CTS	I2C_M0_SCL	SPI1_DIO	SPI1_DCN			JTMS/SWDIO		IR_RX	PDM0_CK	I2S0_DIO	WF_FEM_SW8	GPIO_P0_0
	GPIO_P0_1	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM1	UART2_TX	UART1_RTS	I2C_M0_SDA	SPI1_DIO				JTCK/SWCK		IR_TX	PDM0_D	I2S0_DO0	WF_FEM_SW9	GPIO_P0_1
	GPIO_P0_2	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM2	UART1_RX	UART0_CTS	I2C_M1_SCL	SPI1_CS0	SPI1_DI1	SPDIF_DI	JTDI		DISPLAY_BL_EN	IR_RX	PDM1_D	I2S0_WS	WF_FEM_SW1	GPIO_P0_2
	GPIO_P0_3	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM3	UART1_TX	UART0_RTS	I2C_M1_SDA	SPI1_CLK	SPI1_DI2	SPDIF_DO	JTDO		DISPLAY_BL_PWM	IR_TX	PDM2_D	I2S0_SCK	WF_FEM_SW7	GPIO_P0_3
	GPIO_P0_4	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM4	UART3_RX	UART1_CTS	I2C_M0_SCL	SPI0_DIO	SPI1_DI3	I2S_MCLK	CLK_OUT		SPI0_DCN	SDMMC_DATA7	PDM1_CK	I2S0_DO3	WF_FEM_SW4	GPIO_P0_4
	GPIO_P0_5	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM5	UART3_TX	UART1_RTS	I2C_M0_SDA	SPI0_CLK	SPI1_CS1	DISPLAY_SPI_CLK	JRST		DISPLAY_TE	SDMMC_DATA6	PDM0_D	I2S0_DO2	WF_FEM_SW5	GPIO_P0_5
	GPIO_P0_6	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM6	UART3_RX	UART2_CTS	I2C_M1_SCL	SPI0_CS0	SPI1_CS2	DISPLAY_SPI_CS	WF_SDIO_IRQ		IR_RX	SDMMC_DATA5	PDM1_D	I2S0_DO1		GPIO_P0_6
	GPIO_P0_7	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM7	UART3_TX	UART2_RTS	I2C_M1_SDA	SPI0_DIO	SPI1_CS3	DISPLAY_SPI_DIO	SPDIF_DO		IR_TX	SDMMC_DATA4	PDM2_D	I2S0_DO0		GPIO_P0_7
	GPIO_P1_0	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM0	UART1_RX	UART2_CTS	I2C_M2_SCL	SPI1_CLK	SPI0_CS1	DISPLAY_SPI_DO1/DC	IR_RX		WF_SDIO_CK	SDMMC_DATA2	SPDIF_DI	I2S0_DI3		GPIO_P1_0
	GPIO_P1_1	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM1	UART1_TX	UART2_RTS	I2C_M2_SDA	SPI1_CS0	SPI0_CS2	DISPLAY_SPI_DO2	IR_TX		WF_SDIO_CMD	SDMMC_DATA3	SPDIF_DO	I2S0_DI2		GPIO_P1_1
	GPIO_P1_2	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM2	UART2_RX	UART3_CTS	I2C_M2_SCL	SPI1_CS1	SPI0_CS3	DISPLAY_SPI_DO3	CLK_32K_IN		WF_SDIO_D0	SDMMC_CMD	IR_RX	I2S0_DI1	WF_FEM_SW2	GPIO_P1_2
	GPIO_P1_3	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM3	UART2_TX	UART3_RTS	I2C_M2_SDA	SPI1_DCN	SPI0_DI1	I2S_MCLK	CLK_OUT		WF_SDIO_D1	SDMMC_CLK	IR_TX	I2S0_DIO	WF_FEM_SW3	GPIO_P1_3
	GPIO_P1_4	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM4	UART2_RX	UART1_CTS	I2C_M1_SCL	SPI1_DIO	SPI0_DI2	DISPLAY_SPI_DI	FLAG_EXC_M33		WF_SDIO_D2	SDMMC_DATA0	IR_RX	DISPLAY_TE	WF_FEM_SW0	GPIO_P1_4
	GPIO_P1_5	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM5	UART2_TX	UART1_RTS	I2C_M1_SDA	SPI1_DIO	SPI0_DI3	I2S_MCLK	CLK_OUT		WF_SDIO_D3	SDMMC_DATA1	IR_TX	DISPLAY_TE	WF_FEM_SW6	GPIO_P1_5
	GPIO_P1_6	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM6	UART0_RX	UART3_CTS	I2C_M0_SCL						WF_SDIO_IRQ	BT_UART_RX				GPIO_P1_6
	GPIO_P1_7	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM7	UART0_TX	UART3_RTS	I2C_M0_SDA							BT_UART_TX				GPIO_P1_7
	GPIO_P2_0	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM0	UART1_RX	UART0_CTS	I2C_M0_SCL	SPI1_DIO	SPI1_DCN	I2S_MCLK	CLK_OUT		WF_UART_RX	BT_UART_RX	SPDIF_DI	I2S1_DIO	WF_FEM_SW0	GPIO_P2_0
	GPIO_P2_1	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM1	UART1_TX	UART0_RTS	I2C_M0_SDA	SPI1_DIO	IR_TX	DISPLAY_TE	CLK_OUT		WF_UART_TX	BT_UART_TX	SPDIF_DO	I2S1_DO0	WF_FEM_SW6	GPIO_P2_1
	GPIO_P2_2	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM2	UART2_RX	UART1_CTS	I2C_M1_SCL	SPI1_CS0	DISPLAY_BL_EN	I2S_MCLK	CLK_OUT		WF_UART_CTS	BT_UART_CTS	IR_RX	I2S1_WS	WF_FEM_SW2	GPIO_P2_2
	GPIO_P2_3	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM3	UART2_TX	UART1_RTS	I2C_M1_SDA	SPI1_CLK	SPI0_DCN	DISPLAY_BL_PWM	PCM_DI		WF_UART_RTS	BT_UART_RTS	CLK_OUT	I2S1_SCK	WF_FEM_SW3	GPIO_P2_3
	GPIO_P2_4	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM4	UART3_RX	UART0_CTS	I2C_M2_SCL	SPI0_DIO	SPI0_DI3	SPI0_DCN	PCM_DO		SPDIF_DI	WF_SDIO_CK	CLK_REQ_OUT	I2S1_DO3	WF_FEM_SW4	GPIO_P2_4
	GPIO_P2_5	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM5	UART3_TX	UART0_RTS	I2C_M2_SDA	SPI0_DIO	SPI0_CS3	DISPLAY_TE	PCM_FSYNC		FLAG_EXC_M33	WF_SDIO_CMD	CLK_REQ_IN	I2S1_DO2	WF_FEM_SW5	GPIO_P2_5
	GPIO_P2_6	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM6	UART3_RX	UART2_CTS	I2C_M0_SCL	SPI0_CS0	SPI1_DI1	CLK_32K_IN	PCM_CLK		IR_RX	WF_SDIO_D0	SPDIF_DI	I2S1_DO1	WF_FEM_SW1	GPIO_P2_6
	GPIO_P2_7	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM7	UART3_TX	UART2_RTS	I2C_M0_SDA	SPI0_CLK	SPI1_CS1	I2S_MCLK	CLK_OUT		IR_TX	WF_SDIO_D1	SPDIF_DO	I2S1_DO0	WF_FEM_SW9	GPIO_P2_7
	GPIO_P3_0	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM0	UART1_RX	UART0_RTS	I2C_M1_SCL	SPI0_DIO	SPI1_DI2	SPI0_DCN	WF_UART_RX		SPI1_CS1	WF_SDIO_D2	PDM0_D	I2S1_DI3	WF_FEM_SW0	GPIO_P3_0
	GPIO_P3_1	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM1	UART1_TX	UART0_CTS	I2C_M1_SDA	SPI0_DIO	SPI1_CS2	DISPLAY_SPI_DI	WF_UART_TX		IR_RX	WF_SDIO_D3	PDM1_D	I2S1_DI2	WF_FEM_SW6	GPIO_P3_1
	GPIO_P3_2	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM2	UART1_RX	UART3_CTS	I2C_M2_SCL	SPI0_CS0	SPI1_CS3	DISPLAY_SPI_DO3	WF_UART_CTS		IR_TX	WF_SDIO_IRQ	PDM2_D	I2S1_DI1	WF_FEM_SW2	GPIO_P3_2
	GPIO_P3_3	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM3	UART1_TX	UART3_RTS	I2C_M2_SDA	SPI0_CLK	SPI1_DI3	DISPLAY_SPI_DO2	WF_UART_RTS		SPI1_DCN	DISPLAY_TE	PDM2_CK	I2S1_DIO	WF_FEM_SW3	GPIO_P3_3
	GPIO_P3_4	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM4	UART3_RX	UART2_CTS	I2C_M0_SCL	SPI1_DIO	SPI0_DI1	DISPLAY_SPI_DO1/DC	CLK_OUT		SPI1_DCN	IR_RX	PDM0_CK	I2S0_DI3	WF_FEM_SW4	GPIO_P3_4
	GPIO_P3_5	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM5	UART3_TX	UART2_RTS	I2C_M0_SDA	SPI1_DIO	SPI0_CS1	DISPLAY_SPI_DIO	CLK_32K_IN		FLAG_EXC_M33	IR_TX	PDM0_D	I2S0_DI2	WF_FEM_SW5	GPIO_P3_5
	GPIO_P3_6	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM6	UART2_RX	UART3_CTS	I2C_M2_SCL	SPI1_CS0	SPI0_DI2	DISPLAY_SPI_CS	CLK_REQ_OUT		SPDIF_DI	IR_RX	PDM1_D	I2S0_DI1	WF_FEM_SW7	GPIO_P3_6
	GPIO_P3_7	Pull up/ Pull down	AVDDIO	no pull	I/O	PWM7	UART2_TX	UART3_RTS	I2C_M2_SDA	SPI1_CLK	SPI0_CS2	DISPLAY_SPI_CLK	CLK_REQ_IN		SPDIF_DO	IR_TX	PDM2_D	I2S0_DIO	WF_FEM_SW8	GPIO_P3_7
	LED1	Pull up/ Pull down	3.0V(Internal)	Pull up	O	PWM														LED1
	LED2	Pull up/ Pull down	3.0V(Internal)	Pull up	O	PWM														LED2
	POWKEY	Pull down	VBAT	Pull down	I															POWKEY



THANK YOU