Version: 1.0

Version code: 7012

Date: 2021-11-24

First edition

注意事项：
　　1、PE12/PE14/PE15与RGB屏幕复用，在使用RGB 4寸屏幕时请勿使用这几个IO。
　　2、请确保直流电源Power插座输入电压不超过16V且5V串口插座输入电压不超过5.4V（绝对最大值），否则有可能造成PCBA永久损坏。
　　3、在插拔核心板、线束插头与任何软排线之前，请先切断电源。

NOTICE:
    1. GPIO PE12/PE14/PE15 was connected to RGB 4 Inch LCD, don't use them while using RGB LCD.
    2. Make sure that the "Power" connector input voltage below 16V and the 5V UART connector input voltage below 5.4V(absolute max), or the PCBA wolud be damaged by the too high voltage.
    3. Please power-off the whole board before insert/remove operation with the core board or any FPC and connector.

P00_CoreBoard
File: P00_CoreBoard.kicad_sch

P01_Power
File: P01_Power.kicad_sch

P02_Display
File: P02_Display.kicad_sch

P03_EPHY
File: P03_EPHY.kicad_sch
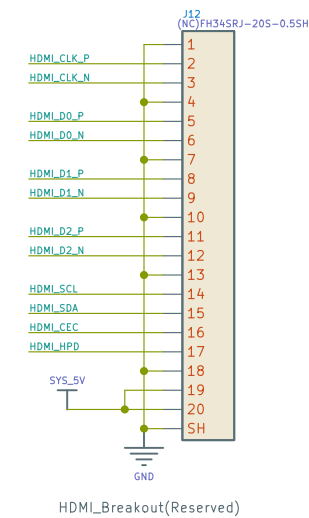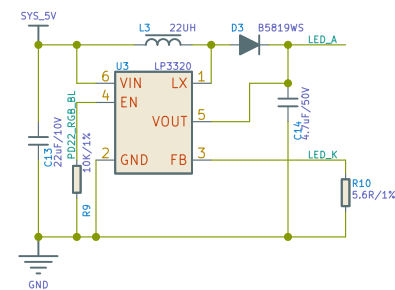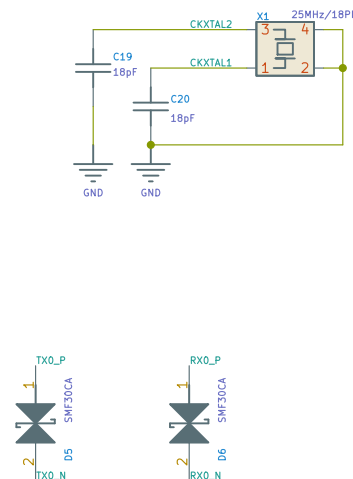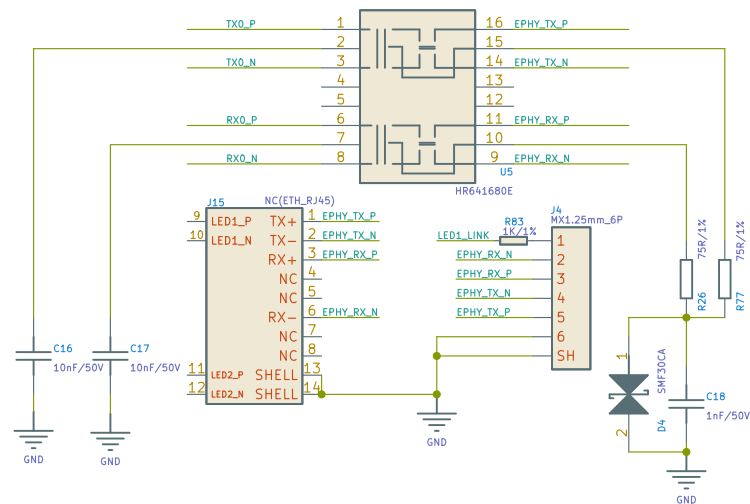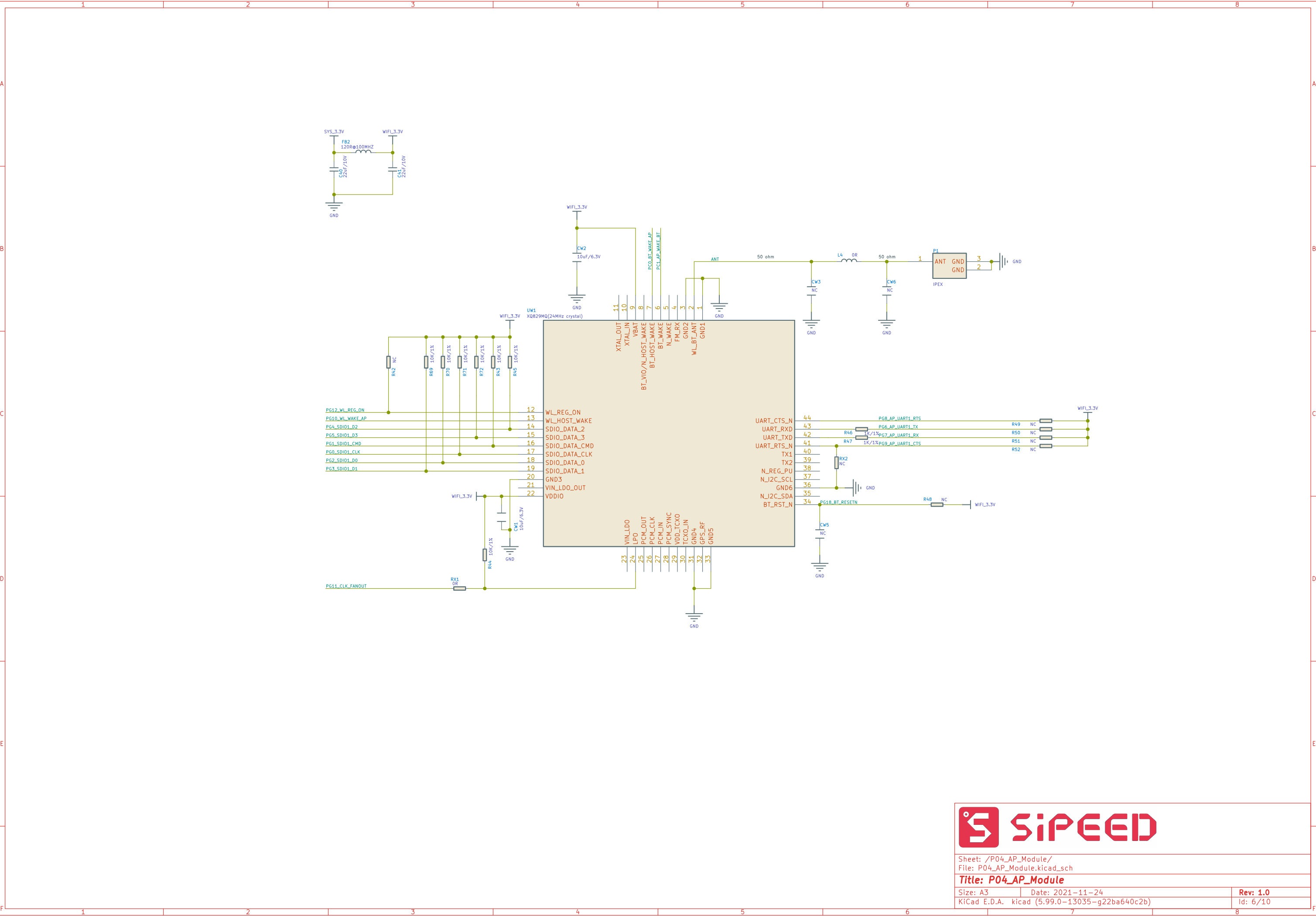
P04_AP_Module
File: P04_AP_Module.kicad_sch

P05_Audio
File: P05_Audio.kicad_sch
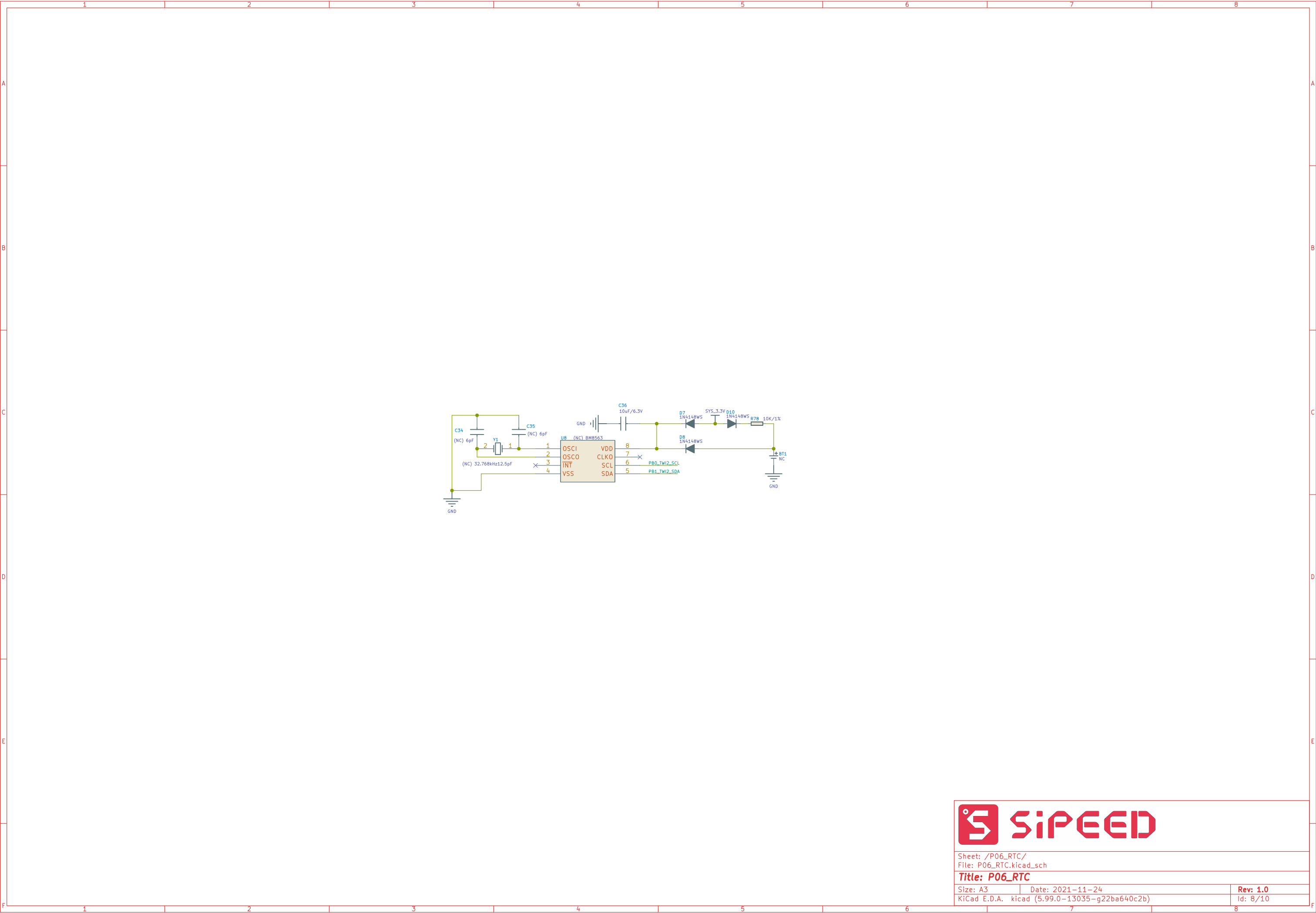
P06_RTC
File: P06_RTC.kicad_sch

P07_USB
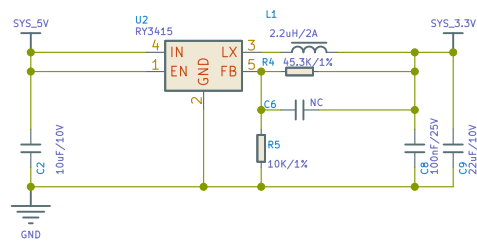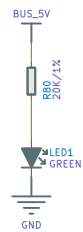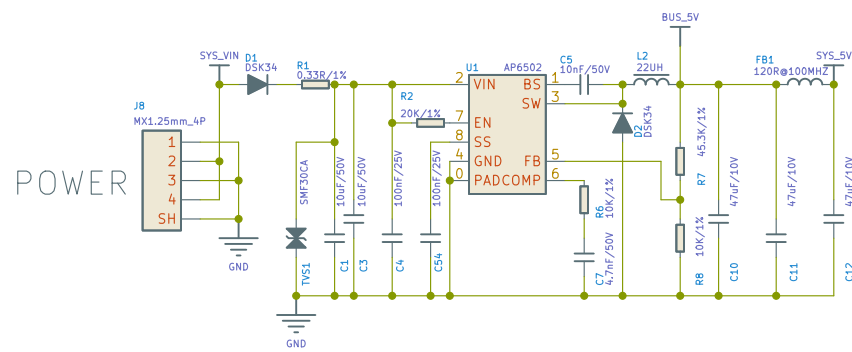File: P07_USB.kicad_sch

P08_ExtIO
File: P08_ExtIO.kicad_sch

SIPEED

Sheet: /
File: D1_86_Panel_7012.kicad_sch
Title: D1_86_Panel
Size: A4 | Date: 2021-11-24 | Rev: 1.0
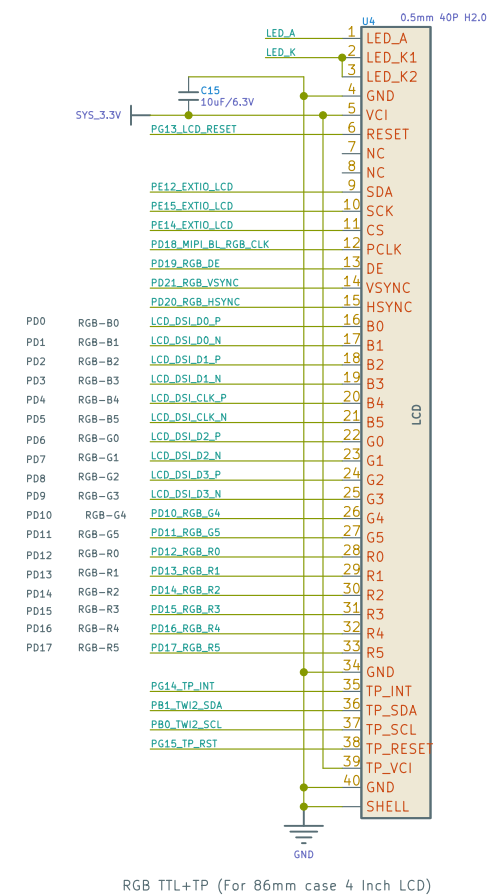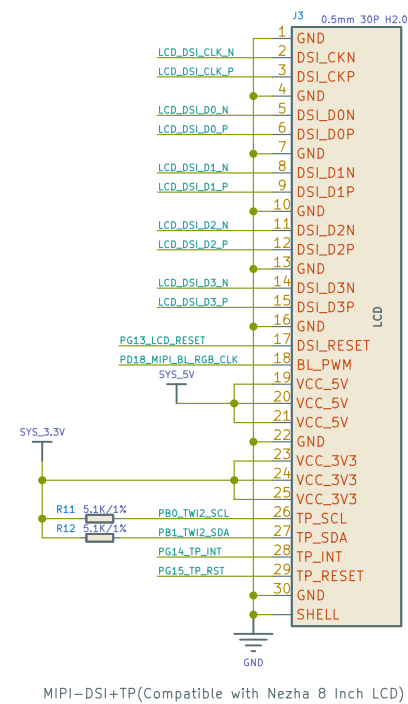KiCad E.D.A. kicad (5.99.0-13035-g22ba640c2b) | Id: 1/10

J1 M.2_67P_B-KEY_H4.2

SYS_5V

GND

S1 RESET

VIN_5V	2
GND	4
GND	6
FEL	8
RESET	10

PG8_AP_UART1_RTS — 20 — PG8/UART1-RTS/TWI1-SCK/RGMII-RXD2/UART3-TX/PG-EINT8
PG9_AP_UART1_CTS — 22 — PG9/UART1-CTS/TWI1-SDA/RGMII-RXD3/UART3-RX/PG-EINT9
PG10_WL_WAKE_AP — 24 — PG10/PWM3/TWI3-SCK/RGMII-RXCK/CLK-FANOUT0/IR-RX/PG-EINT10
PG11_CLK_FANOUT — 26 — PG11/I2S1-MCLK/TWI3-SDA/EPHY-25M/CLK-FANOUT1/TCON-TRIG/PG-EINT11
PG12_WL_REG_ON — 28 — PG12/I2S1-LRCK/TWI0-SCK/RGMII-TXCTRL/RMII-TXEN/CLK-FANOUT2/PWM0/UART1-TX/PG-EINT12
PG13_LCD_RESET — 30 — PG13/I2S1-BCLK/TWI0-SDA/RGMII-CLKIN/RMII-RXER/PWM2/LEDC-DO/UART1-RX/PG-EINT13
PG14_TP_INT — 32 — PG14/I2S1-DIN0/TWI2-SCK/MDC/I2S1-DOUT1/SPI0-WP/UART1-RTS/PG-EINT14
PG15_TP_RST — 34 — PG15/I2S1-DOUT0/TWI2-SDA/MDIO/I2S1-DIN1/SPI0-HOLD/UART1-CTS/PG-EINT15
EXT_PG17 — 36 — PG17/UART2-TX/TWI3-SCK/PWM7/CLK-FANOUT0/IR-TX/UART0-TX/PG-EINT17
PG18_BT_RESETN — 38 — PG18/UART2-RX/TWI3-SDA/PWM6/CLK-FANOUT1/SPDIF-OUT/UART0-RX/PG-EINT18
EXT_PG16 — 40 — PG16/IR-RX/TCON-TRIG/PWM5/CLK-FANOUT2/SPDIF-IN/LEDC-DO/PG-EINT16
42 — ADC_LRADC
44 — ADC_GPADC1
46 — ADC_GPADC0
48 — AUDIO_HP_DET
AUDIO_HPFB — 50 — AUDIO_HP_OUTFB
AUDIO_HPOUTR — 52 — AUDIO_HP_OUTR
AUDIO_HPOUTL — 54 — AUDIO_HP_OUTL
56 — AGND
AUDIO_HBIAS — 58 — AUDIO_HP_BIAS
AUDIO_MICIN3_N — 60 — AUDIO_MICIN3_N
AUDIO_MICIN3_P — 62 — AUDIO_MICIN3_P
AUDIO_LINEIN_L — 64 — AUDIO_LINEIN_L
AUDIO_LINEIN_R — 66 — AUDIO_LINEIN_R
AUDIO_MICIN_DET — 68 — AUDIO_MICIN_DET
EXT_PB12 — 70 — PB12/DMIC-CLK/PWM0/SPDIF-IN/SPI1-CS/DBI-CSX/CLK-FANOUT2/IR-RX/PB-EINT12
PB11_DMIC_D0 — 72 — PB11/DMIC-DATA0/PWM2/TWI0-SDA/SPI1-CLK/DBI-SCLK/CLK-FANOUT1/UART1-CTS/PB-EINT11
EXT_PB10_AMP_EN — 74 — PB10/DMIC-DATA1/PWM7/TWI0-SCK/SPI1-MOSI/DBI-SDO/CLK-FANOUT0/UART1-RTS/PB-EINT10

AGND

SH1 — GND

PF0/SDC0-D1/JTAG-MS/R-JTAG-MS/I2S2-DOUT1/I2S2-DIN0/PF-EINT0 — 1
PF1/SDC0-D0/JTAG-DI/R-JTAG-DI/I2S2-DOUT0/I2S2-DIN1/PF-EINT1 — 3
PF4/SDC0-D3/UART0-RX/TWI0-SDA/PWM6/IR-TX/PF-EINT4 — 5
PF5/SDC0-D2/JTAG-CK/R-JTAG-CK/I2S2-LRCK/PF-EINT5 — 7
PF3/SDC0-CMD/JTAG-DO/R-JTAG-DO/I2S2-BCLK/PF-EINT3 — 9
PF2/SDC0-CLK/UART0-TX/TWI0-SCK/LEDC-DO/SPDIF-IN/PF-EINT2 — 11

REFCLK-OUT — 21
PG7/UART1-RX/TWI2-SDA/RGMII-TXD3/SPDIF-IN/PG-EINT7 — 23 — PG7_AP_UART1_RX
PG3/SDC1-D1/UART3-TX/RGMII-TXCK/RMII-TXCK/UART4-RX/PG-EINT3 — 25 — PG3_SDIO1_D1
PG4/SDC1-D2/UART5-TX/RGMII-TXD0/RMII-TXD0/PWM5/PG-EINT4 — 27 — PG4_SDIO1_D2
PG2/SDC1-D0/UART3-RTS/RGMII-RXD1/RMII-RXD1/UART4-TX/PG-EINT2 — 29 — PG2_SDIO1_D0
PG1/SDC1-CMD/UART3-RX/RGMII-RXD0/RMII-RXD0/PWM6/PG-EINT1 — 31 — PG1_SDIO1_CMD
PG0/SDC1-CLK/UART3-CTS/RGMII-RXCTRL/RMII-CRS-DV/PWM7/PG-EINT0 — 33 — PG0_SDIO1_CLK
PG5/SDC1-D3/UART5-RX/RGMII-TXD1/RMII-TXD1/PWM4/PG-EINT5 — 35 — PG5_SDIO1_D3
PG6/UART1-TX/TWI2-SCK/RGMII-TXD2/PWM1/PG-EINT6 — 37 — PG6_AP_UART1_TX
USB1_HOST_P — 39 — USB_HOST_P
USB1_HOST_N — 41 — USB_HOST_N
HDMI_HPD — 43 — HDMI_HPD
HDMI_CEC — 45 — HDMI_CEC
HDMI_SDA — 47 — HDMI_SDA
HDMI_SCL — 49 — HDMI_SCL
GND — 51
HDMI_TX2_N — 53 — HDMI_D2_N
HDMI_TX2_P — 55 — HDMI_D2_P
57
HDMI_TX1_N — 59 — HDMI_D1_N
HDMI_TX1_P — 61 — HDMI_D1_P
GND — 63
HDMI_TX0_N — 65 — HDMI_D0_N
HDMI_TX0_P — 67 — HDMI_D0_P
GND — 69
HDMI_CLK_N — 71 — HDMI_CLK_N
HDMI_CLK_P — 73 — HDMI_CLK_P
GND — 75

SH2 — GND

P3 — GND

J2 M.2_67P_B-KEY_H4.2

SH1 — GND

PB8/DMIC-DATA3/PWM5/TWI2-SCK/SPI1-HOLD/DBI-DCX/DBI-WRX/UART0-TX/UART1-TX/PB-EINT8 — 1 — PB8_UART0_TX
PB9/DMIC-DATA2/PWM6/TWI2-SDA/SPI1-MISO/DBI-SDI/DBI-TE/DBI-DCX/UART0-RX/UART1-RX/PB-EINT9 — 3 — PB9_UART0_RX
PB7/LCD0-D17/I2S2-MCLK/TWI3-SDA/IR-RX/LCD0-D23/UART3-RX/CPUBIST1/PB-EINT7 — 5 — EXT_PB7
PB0/PWM3/IR-TX/TWI2-SCK/SPI1-WP/DBI-TE/UART0-TX/UART2-TX/SPDIF-OUT/PB-EINT0 — 7 — PB0_TWI2_SCL
PB1/PWM4/I2S2-DOUT3/TWI2-SDA/I2S0-DIN0/UART0-RX/UART2-RX/IR-RX/PB-EINT1 — 9 — PB1_TWI2_SDA
PB6/LCD0-D16/I2S2-LRCK/TWI3-SCK/PWM1/LCD0-D22/UART3-TX/CPUBIST0/PB-EINT6 — 11 — EXT_PB6

EXT_PB4 — 2 — PB4/LCD0-D8/I2S2-DOUT0/TWI1-SCK/I2S2-DIN1/LCD0-D20/UART5-TX/PB-EINT4
EXT_PB5 — 4 — PB5/LCD0-D9/I2S2-BCLK/TWI1-SDA/PWM0/LCD0-D21/UART5-RX/PB-EINT5
EXT_PB3 — 6 — PB3/LCD0-D1/I2S2-DOUT1/TWI0-SCK/I2S2-DIN0/LCD0-D19/UART4-RX/PB-EINT3
EXT_PB2 — 8 — PB2/LCD0-D0/I2S2-DOUT2/TWI0-SDA/I2S2-DIN2/LCD0-D18/UART4-TX/PB-EINT2
PD19_RGB_DE — 10 — PD19/LCD0-DE/LVDS1-V3N/DMIC-DATA0/PWM3/PD-EINT19

PD14/LCD0-D20/LVDS1-V2P/SPI1-HOLD/DBI-DCX/DBI-WRX/UART3-CTS/PD-EINT14 — 21 — PD14_RGB_R2 — RGB-R2 — PD14
PD13/LCD0-D19/LVDS1-V1N/SPI1-MISO/DBI-SDI/DBI-TE/DBI-DCX/UART3-RTS/PD-EINT13 — 23 — PD13_RGB_R1 — RGB-R1 — PD13
PD12/LCD0-D18/LVDS1-V1P/SPI1-MOSI/DBI-SDO/TWI0-SDA/PD-EINT12 — 25 — PD12_RGB_R0 — RGB-R0 — PD12
PD11/LCD0-D15/LVDS1-V0N/SPI1-CLK/DBI-SCLK/UART3-RX/PD-EINT11 — 27 — PD11_RGB_G5 — RGB-G5 — PD11
PD10/LCD0-D14/LVDS1-V0P/SPI1-CS/DBI-CSX/UART3-TX/PD-EINT10 — 29 — PD10_RGB_G4 — RGB-G4 — PD10
PD21/LCD0-VSYNC/TWI2-SDA/UART1-TX/PWM5/PD-EINT21 — 31 — PD21_RGB_VSYNC
PD20/LCD0-HSYNC/TWI2-SCK/DMIC-CLK/PWM4/PD-EINT20 — 33 — PD20_RGB_HSYNC
PD22/SPDIF-OUT/IR-RX/UART1-RX/PWM7/PD-EINT22 — 35 — PD22_RGB_BL
GND — 37

20 — GND
PD9 — RGB-G3 — LCD_DSI_D3_N — 22 — PD9/LCD0-D13/LVDS0-V3N/DSI-D3N/PWM6/PD-EINT9
PD8 — RGB-G2 — LCD_DSI_D3_P — 24 — PD8/LCD0-D12/LVDS0-V3P/DSI-D3P/UART4-RX/PD-EINT8
26 — GND
PD7 — RGB-G1 — LCD_DSI_D2_N — 28 — PD7/LCD0-D11/LVDS0-CKN/DSI-D2N/UART4-TX/PD-EINT7
PD6 — RGB-G0 — LCD_DSI_D2_P — 30 — PD6/LCD0-D10/LVDS0-CKP/DSI-D2P/UART5-RX/PD-EINT6
32 — GND
PD5 — RGB-B5 — LCD_DSI_CLK_N — 34 — PD5/LCD0-D7/LVDS0-V2N/DSI-CKN/UART5-TX/PD-EINT5
PD4 — RGB-B4 — LCD_DSI_CLK_P — 36 — PD4/LCD0-D6/LVDS0-V2P/DSI-CKP/UART2-CTS/PD-EINT4
38 — GND
PD3 — RGB-B3 — LCD_DSI_D1_N — 40 — PD3/LCD0-D5/LVDS0-V1N/DSI-D1N/UART2-RTS/PD-EINT3
PD2 — RGB-B2 — LCD_DSI_D1_P — 42 — PD2/LCD0-D4/LVDS0-V1P/DSI-D1P/UART2-RX/PD-EINT2
44 — GND
PD1 — RGB-B1 — LCD_DSI_D0_N — 46 — PD1/LCD0-D3/LVDS0-V0N/DSI-D0N/UART2-TX/PD-EINT1
PD0 — RGB-B0 — LCD_DSI_D0_P — 48 — PD0/LCD0-D2/LVDS0-V0P/DSI-D0P/TWI0-SCK/PD-EINT0
50 — GND
PD18_MIPI_BL_RGB_CLK — R73 220R/1% — 52 — PD18/LCD0-CLK/LVDS1-V3P/DMIC-DATA1/PWM2/PD-EINT18
PD17 — RGB-R5 — PD17_RGB_R5 — 54 — PD17/LCD0-D23/LVDS1-CKN/DMIC-DATA2/PWM1/PD-EINT17
PD16 — RGB-R4 — PD16_RGB_R4 — 56 — PD16/LCD0-D22/LVDS1-CKP/DMIC-DATA3/PWM0/PD-EINT16
PD15 — RGB-R3 — PD15_RGB_R3 — 58 — PD15/LCD0-D21/LVDS1-V2N/SPI1-WP/DBI-TE/IR-RX/PD-EINT15
PC0_BT_WAKE_AP — 60 — PC1/UART2-RX/TWI2-SDA/PC-EINT1
PC6_NAND_WP — 62 — PC6/SPI0-WP/SDC2-D0/UART3-TX/TWI3-SCK/DBG-CLK/PC-EINT6
PC1_AP_WAKE_BT — 64 — PC0/UART2-TX/TWI2-SCK/LEDC-DO/PC-EINT0
PC2_NAND_SCK — R76 22R/1% — 66 — PC2/SPI0-CLK/SDC2-CLK/PC-EINT2
PC5_NAND_MISO — 68 — PC5/SPI0-MISO/SDC2-D1/BOOT-SEL1/PC-EINT5
PC4_NAND_MOSI — 70 — PC4/SPI0-MOSI/SDC2-D2/BOOT-SEL0/PC-EINT4
PC7_NAND_HOLD — 72 — PC7/SPI0-HOLD/SDC2-D3/UART3-RX/TWI3-SDA/TCON-TRIG/PC-EINT7
PC3_NAND_CS — 74 — PC3/SPI0-CS0/SDC2-CMD/PC-EINT3

PE0/NCSI0-HSYNC/UART2-RTS/TWI1-SCK/LCD0-HSYNC/RGMII-RXCTRL/RMII-CRS-DV/PE-EINT0 — 39 — PE0_RMII_CRS_DV
PE2/NCSI0-PCLK/UART2-TX/TWI0-SCK/CLK-FANOUT0/UART0-TX/RGMII-RXD1/RMII-RXD1/PE-EINT2 — 41 — PE2_RMII_RXD1
PE1/NCSI0-VSYNC/UART2-CTS/TWI1-SDA/LCD0-VSYNC/RGMII-RXD0/RMII-RXD0/PE-EINT1 — 43 — PE1_RMII_RXD0
PE3/NCSI0-MCLK/UART2-RX/TWI0-SDA/CLK-FANOUT1/UART0-RX/RGMII-TXCK/RMII-TXCK/PE-EINT3 — 45 — PE3_RMII_TXCK
PE4/NCSI0-D0/UART4-TX/TWI2-SCK/CLK-FANOUT2/D-JTAG-MS/R-JTAG-MS/RGMII-TXD0/RMII-TXD0/PE-EINT4 — 47 — PE4_RMII_TXD0
PE5/NCSI0-D1/UART4-RX/TWI2-SDA/LEDC-DO/D-JTAG-DI/R-JTAG-DI/RGMII-TXD1/RMII-TXD1/PE-EINT5 — 49 — PE5_RMII_TXD1
PE7/NCSI0-D3/UART5-RX/TWI3-SDA/SPDIF-OUT/D-JTAG-CK/R-JTAG-CK/RGMII-CLKIN/RMII-RXER/PE-EINT7 — 51 — PE7_RMII_RXER
PE6/NCSI0-D2/UART5-TX/TWI3-SCK/SPDIF-IN/D-JTAG-DO/R-JTAG-DO/RGMII-TXCTRL/RMII-TXEN/PE-EINT6 — 53 — PE6_RMII_TXEN
PE8/NCSI0-D4/UART1-RTS/PWM2/UART3-TX/JTAG-MS/MDC/PE-EINT8 — 55 — PE8_RMII_MDC
PE9/NCSI0-D5/UART1-CTS/PWM3/UART3-RX/JTAG-DI/MDIO/PE-EINT9 — 57 — PE9_RMII_MDIO
PE13/TWI2-SDA/PWM5/I2S0-DOUT0/I2S0-DIN1/DMIC-DATA3/RGMII-RXD2/PE-EINT13 — 59 — EXT_PE13
PE11/NCSI0-D7/UART1-RX/I2S0-DOUT3/I2S0-DIN3/JTAG-CK/RGMII-TXD2/PE-EINT11 — 61 — EXT_PE11
PE10/NCSI0-D6/UART1-TX/PWM4/IR-RX/JTAG-DO/EPHY-25M/PE-EINT10 — 63 — EXT_PE10
PE12/TWI2-SCK/NCSI0-FIELD/I2S0-DOUT2/I2S0-DIN2/RGMII-TXD3/PE-EINT12 — 65 — PE12_EXTIO_LCD
PE15/TWI1-SDA/D-JTAG-DI/PWM6/I2S0-LRCK/DMIC-DATA1/RGMII-RXCK/PE-EINT15 — 67 — PE15_EXTIO_LCD
PE14/TWI1-SCK/D-JTAG-MS/I2S0-DOUT1/I2S0-DIN0/DMIC-DATA2/RGMII-RXD3/PE-EINT14 — 69 — PE14_EXTIO_LCD
PE16/TWI3-SCK/D-JTAG-DO/PWM7/I2S0-BCLK/DMIC-DATA0/PE-EINT16 — 71 — PE16_RMII_RST
PE17/TWI3-SDA/D-JTAG-CK/IR-TX/I2S0-MCLK/DMIC-CLK/PE-EINT17 — 73 — PE17_DMIC_CLK
GND — 75

SH2 — GND

SYS_3.3V

R95 10K/1%	R96 10K/1%	R97 10K/1%
C53 100nF/25V		

EXT_PC3_NAND_CS — R92 22R/1% — CS# VCC
EXT_PC5_NAND_MISO — R93 22R/1% — SO HOLD#
EXT_PC2_NAND_SCK — R94 22R/1% — SCLK WP#
EXT_PC4_NAND_MOSI — SI GND

R98 22R/1% — EXT_PC7_NAND_HOLD
R99 22R/1% — EXT_PC6_NAND_WP

U12
(NC) MX35LF2GE4AD-Z4I

GND

SIPEED

Sheet: /P00_CoreBoard/
File: P00_CoreBoard.kicad_sch
Title: P00_CoreBoard
Size: A3 | Date: 2021-11-24 | Rev: 1.0
KiCad E.D.A. kicad (5.99.0-13035-g22ba640c2b) | Id: 2/10

POWER

J8
MX1.25mm_4P
1
2
3
4
SH

SYS_VIN D1 DSK34
R1 0.33R/1%
R2 20K/1%

U1 AP6502
VIN BS
EN SW
SS
GND FB
PADCOMP

C6 10nF/50V
L2 22UH
FB1 120R@100MHZ
BUS_5V
SYS_5V

D2 DSK34

R6 10K/1%
R7 45.3K/1%
R8 10K/1%

C7 4.7nF/50V
C10 47uF/10V
C11 47uF/10V
C12 47uF/10V

SMF30CA
TVS1
C1 10uF/50V
C3 10uF/50V
C4 100nF/25V
C5A 100nF/25V

GND
GND

BUS_5V
R80 20K/1%
LED1 GREEN
GND

SYS_5V
U2 RY3415
IN LX
EN FB
GND
L1 2.2uH/2A
R4 45.3K/1%
SYS_3.3V

C2 10uF/10V
C6 NC
R5 10K/1%
C8 100nF/25V
C9 22uF/10V
GND

SIPEED

HDMI_Breakout(Reserved)

SYS_5V

L3 22UH
D3 B5819WS
LED_A

U3 LP3220
VIN LX
EN
VOUT
GND FB

C13 22pF/10V
P022_RGB_BL
10K/1%
C14 47pF/50V
LED_K
R10 5.6R/1%

R9

GND

J12 (NC)FH34SRJ-20S-0.5SH
1
HDMI_CLK_P 2
3
HDMI_CLK_N 4
5
HDMI_D0_P 6
7
HDMI_D0_N 8
9
HDMI_D1_P 10
11
HDMI_D1_N 12
13
HDMI_D2_P 14
15
HDMI_D2_N 16
17
HDMI_SCL 18
HDMI_SDA 19
HDMI_CEC 20
HDMI_HPD SH
SYS_5V

GND

MIPI-DSI+TP(Compatible with Nezha 8 Inch LCD)

J3 0.5mm 30P H2.0
1 GND
LCD_DSI_CLK_N 2 DSI_CKN
LCD_DSI_CLK_P 3 DSI_CKP
4 GND
LCD_DSI_D0_N 5 DSI_D0N
LCD_DSI_D0_P 6 DSI_D0P
7 GND
LCD_DSI_D1_N 8 DSI_D1N
LCD_DSI_D1_P 9 DSI_D1P
10 GND
LCD_DSI_D2_N 11 DSI_D2N
LCD_DSI_D2_P 12 DSI_D2P
13 GND
LCD_DSI_D3_N 14 DSI_D3N
LCD_DSI_D3_P 15 DSI_D3P
16 GND
PG13_LCD_RESET 17 DSI_RESET
PD18_MIPI_BL_RGB_CLK 18 BL_PWM
SYS_5V 19 VCC_5V
20 VCC_5V
21 VCC_5V
22 GND
SYS_3.3V 23 VCC_3V3
24 VCC_3V3
25 VCC_3V3
R11 5.1K/1% PB0_TWI2_SCL 26 TP_SCL
R12 5.1K/1% PB1_TWI2_SDA 27 TP_SDA
PG14_TP_INT 28 TP_INT
PG15_TP_RST 29 TP_RESET
30 GND
SHELL

GND

RGB TTL+TP (For 86mm case 4 Inch LCD)

U4 0.5mm 40P H2.0
LED_A 1 LED_A
LED_K 2 LED_K1
3 LED_K2
C15 10uF/6.3V 4 GND
SYS_3.3V 5 VCI
PG13_LCD_RESET 6 RESET
7 NC
8 NC
PE12_EXTIO_LCD 9 SDA
PE15_EXTIO_LCD 10 SCK
PE14_EXTIO_LCD 11 CS
PD18_MIPI_BL_RGB_CLK 12 PCLK
PD19_RGB_DE 13 DE
PD21_RGB_VSYNC 14 VSYNC
PD20_RGB_HSYNC 15 HSYNC
PD0 RGB-B0 LCD_DSI_D0_P 16 B0
PD1 RGB-B1 LCD_DSI_D0_N 17 B1
PD2 RGB-B2 LCD_DSI_D1_P 18 B2
PD3 RGB-B3 LCD_DSI_D1_N 19 B3
PD4 RGB-B4 LCD_DSI_CLK_P 20 B4
PD5 RGB-B5 LCD_DSI_CLK_N 21 B5
PD6 RGB-G0 LCD_DSI_D2_P 22 G0
PD7 RGB-G1 LCD_DSI_D2_N 23 G1
PD8 RGB-G2 LCD_DSI_D3_P 24 G2
PD9 RGB-G3 LCD_DSI_D3_N 25 G3
PD10 RGB-G4 PD10_RGB_G4 26 G4
PD11 RGB-G5 PD11_RGB_G5 27 G5
PD12 RGB-R0 PD12_RGB_R0 28 R0
PD13 RGB-R1 PD13_RGB_R1 29 R1
PD14 RGB-R2 PD14_RGB_R2 30 R2
PD15 RGB-R3 PD15_RGB_R3 31 R3
PD16 RGB-R4 PD16_RGB_R4 32 R4
PD17 RGB-R5 PD17_RGB_R5 33 R5
34 GND
PG14_TP_INT 35 TP_INT
PB1_TWI2_SDA 36 TP_SDA
PB0_TWI2_SCL 37 TP_SCL
PG15_TP_RST 38 TP_RESET
39 TP_VCI
40 GND
SHELL

GND

P03_EPHY

PE4_RMII_TXD0 — R21 22R/1% — PHY_TXD0
PE5_RMII_TXD1 — R22 22R/1% — PHY_TXD1

PE6_RMII_TXEN — R23 22R/1% — PHY_TXEN

PE16_RMII_RST — R19 22R/1% — PHY_RSTn

PE8_RMII_MDC — R13 22R/1% — PHY_MDC
PE9_RMII_MDIO — R14 22R/1% — PHY_MDIO

PE1_RMII_RXD0 — R15 22R/1% — PHY_RXD0/RXDLY
PE2_RMII_RXD1 — R16 22R/1% — PHY_RXD1/TXDLY

PE0_RMII_CRS_DV — R17 22R/1% — PHY_CRS/CRS_DV

PE7_RMII_RXER — R18 22R/1% — PHY_RXER
PE3_RMII_RXCK — R20 22R/1% — PHY_TXCLK

EPHY Address is 0x01

U6
RTL8201F

MII_RXD1=0 LED MODE
MII_RXD1=1 WOL MODE

MII_RXD3=0 : REF_CLK output
MII_RXD3=1 : REF_CLK input

RXDV=0 MII MODE
RXDV=1 RMII MODE

X1 25MHz/18PF

HR641680E U5

J15 NC(ETH_RJ45)

J4 MX1.25mm_6P

SYS_3.3V   WIFI_3.3V

FB2
120R@100MHZ

C540
22uf/10V

C541
22uf/10V

GND

WIFI_3.3V

CW2
10uf/6.3V

GND

WIFI_3.3V

UW1
XQ829MQ(24MHz crystal)

R42 NC
R69 10K/1%
R70 10K/1%
R71 10K/1%
R72 10K/1%
R43 10K/1%
R45 10K/1%

PG12_WL_REG_ON   12 WL_REG_ON
PG10_WL_WAKE_AP   13 WL_HOST_WAKE
PG4_SDIO1_D2   14 SDIO_DATA_2
PG5_SDIO1_D3   15 SDIO_DATA_3
PG1_SDIO1_CMD   16 SDIO_DATA_CMD
PG0_SDIO1_CLK   17 SDIO_DATA_CLK
PG2_SDIO1_D0   18 SDIO_DATA_0
PG3_SDIO1_D1   19 SDIO_DATA_1
                    20 GND3
WIFI_3.3V   21 VIN_LDO_OUT
                    22 VDDIO

CW1
10uf/6.3V

R44 10K/1%

GND

RX1
0R

PG11_CLK_FANOUT

XTAL_OUT 11
XTAL_IN   10
VBAT   9
N_WL_HOST_WAKE 8
BT_HOST_WAKE   7
BT_WAKE   6
N_WAKE   5
FM_RX   4
GND2   3
WL_BT_ANT 2
GND1   1

BT_VIO

PG0_BT_WAKE_AP
PG1_AP_WAKE_BT

ANT   50 ohm   L4 0R   50 ohm
                                      P1
                                      ANT GND 3
                                           GND 2
                                      IPEX   GND

CW3 NC   CW6 NC

GND   GND

GND

UART_CTS_N 44   PG8_AP_UART1_RTS   R49 NC   WIFI_3.3V
UART_RXD   43   PG6_AP_UART1_TX   R50 NC
UART_TXD   42 R46 1K/1% PG7_AP_UART1_RX R51 NC
UART_RTS_N 41 R47 1K/1% PG9_AP_UART1_CTS R52 NC
TX1   40
TX2   39   RX2 NC
N_REG_PU   38
N_I2C_SCL   37
GND6   36   GND
N_I2C_SDA   35
BT_RST_N   34   PG18_BT_RESETN   R48 NC   WIFI_3.3V

CW5 NC

GND

VIN_LDO   23
LPO   24
PCM_OUT   25
PCM_CLK   26
PCM_IN   27
PCM_SYNC 28
VDD_TCXO 29
TCXO_IN   30
GND4   31
GPS_RF   32
GND5   33

GND

AUDIO_LINEIN_L — C46 100nF/25V
AUDIO_LINEIN_R — C47 100nF/25V

AUDIO_HPOUTL — C44 22uF/10V — R55 47R/1%
AUDIO_HPOUTR — C45 22uF/10V — R56 47R/1%
AUDIO_HPFB

C27 100nF/25V
C28 100nF/25V
C29 100nF/25V
R53 22R/1%
R94 22R/1%
R57 1K/1%
AMP_ASIG

GND

EXT_PB10_AMP_EN — R74 NC
SYS_3.3V — R75 10K/1%
R58 1K/1%
GND — C30 100nF/25V

U7 NS4150
1 CTRL   VoP 8
2 BYPASS GND 7 — GND
3 INP   VCC 6 — SYS_5V
4 INN   VoN 5

C31 100nF/25V — R59 33K/1%
AMP_ASIG
GND — C32 100nF/25V — R60 33K/1%

SYS_5V
C33 10uF/6.3V
GND

FB3 600R@100MHz
FB4 600R@100MHz
SPEAKER_P
SPEAKER_N
C42 470pf/25V
C43 470pf/25V
GND

J5 MX1.25mm_2P
1
2
SH
GND

AUDIO_HBIAS — R86 2K/1%
C50 2.2uF/10V — AGND
AUDIO_MICIN_DET — R87 1K/1%
AUDIO_MICIN3_P — C48 100nF/25V — AMIC_P
AUDIO_MICIN3_N — C49 100nF/25V

MIC1
+
−
NC
AGND

SYS_3.3V — R88 4.7R/1%
U10 MSM26104030H1
1 VDD GND 5
2 L/R GND 6
PE17_DMIC_CLK — 3 CLK GND 7
PB11_DMIC_D0 — R89 47R/1% — 4 DATA GND 8
C51 2.2uF/10V
GND

SYS_3.3V — R90 4.7R/1%
U11 MSM26104030H1
1 VDD GND 5
2 L/R GND 6
PE17_DMIC_CLK — 3 CLK GND 7
PB11_DMIC_D0 — R91 47R/1% — 4 DATA GND 8
C52 2.2uF/10V
GND

Sheet: /P05_Audio/
File: P05_Audio.kicad_sch
Title: P05_Audio
Size: A3   Date: 2021-11-24   Rev: 1.0
KiCad E.D.A. kicad (5.99.0-13035-g22ba640c2b)   Id: 7/10

C34
(NC) 6pF

C35
(NC) 6pF

Y1
(NC) 32.768kHz12.5pF

C36
10uF/6.3V

GND

U8   (NC) BM8563

1 OSCI	VDD 8
2 OSCO	CLKO 7
3 INT	SCL 6
4 VSS	SDA 5

PB0_TWI2_SCL
PB1_TWI2_SDA

D7
1N4148WS

D10
1N4148WS

SYS_3.3V

R78   10K/1%

D8
1N4148WS

BT1
NC

GND

GND

SiPEED

SYS_5V

D9
DSK34

USB_5V

J6   TYPEC_16P
VCC   DP1   A6
A5   CC1   DP2   B6
B5   CC2   DN1   A7
GND   DN2   B7
SHELL

USB-UART

R63   22R/1%   USB_UART_P
R64   22R/1%   USB_UART_N

R61   5.1K/1%
R62   5.1K/1%

GND

U9   CH340E
1   D+   TXD   8
2   D-   RXD   9
7   VCC   TNOW 6
10 3V3   CTS   5
3   GND   RTS   4

R67   1K/1%   PB9_UART0_RX
R68   1K/1%   PB8_UART0_TX

C38   10nf/10V
C39   22uf/10V

GND

GND

FU1   1.1A_PTC_FUSE

J7   TYPEC_16P
VCC   DP1   A6
A5   CC1   DP2   B6
B5   CC2   DN1   A7
GND   DN2   B7
SHELL

USB-HOST

C37   10uf/10V

GND

ESD33
R65   22R/1%   USB_HOST_P
R66   22R/1%   USB_HOST_N
ESD34

GND

GND

J10   (NC) USB-A
VCC
DM
DP
GND
SHELL

USB-A Reserved

GND

SiPEED

J9 2X8 2.54mm

	Left signals			Right signals	
ESD1	EXT_PC3_NAND_CS	1 2	EXT_PC7_NAND_HOLD	ESD9
ESD2	EXT_PC4_NAND_MOSI	3 4	EXT_PC5_NAND_MISO	ESD10
ESD3	EXT_PC2_NAND_SCK	5 6	EXT_PG17	ESD11
ESD4	EXT_PC6_NAND_WP	7 8	EXT_PG16	ESD12
ESD5	EXT_PB2	9 10	EXT_PB3	ESD7
ESD6	EXT_PB5	11 12	EXT_PB4	ESD8
		13 14		
		15 16		

J11 2X8 2.54mm

	Left signals			Right signals	
ESD17	PE15_EXTIO_LCD	1 2	PE14_EXTIO_LCD	ESD25
ESD18	EXT_PE10	3 4	PE12_EXTIO_LCD	ESD26
ESD19	EXT_PE13	5 6	EXT_PE11	ESD27
ESD13	EXT_PB7	7 8	EXT_PB6	ESD15
ESD14	EXT_PB10_AMP_EN	9 10	EXT_PB12	ESD16
ESD22	PB8_UART0_TX	11 12	PB9_UART0_RX	ESD20
		13 14		
		15 16		

DMIC-CLK

GND   FU2 1.1A_PTC_FUSE
SYS_5V

FU3 1.1A_PTC_FUSE
SYS_3.3V

GND   GND   GND

J13 0.5mm 16P H2.0

EXT_PB4	1	
EXT_PB5	2	
EXT_PB10_AMP_EN	3	
EXT_PB12	4	
EXT_PB7	5	
EXT_PB6	6	
EXT_PE11	7	
EXT_PE13	8	
	9	
	10	
	11	
BUS_5V	12	
	13	
	14	
	15	
SYS_VIN	16	
	SH	

Ext_FPC(Reserved)

GND

J16 MX1.25mm_4P

BUS_5V

EXT_PB6	R84 220R/1%	1
EXT_PB7	R85 220R/1%	2
		3
		4
		SH

UART+5V Power 4Pin(Reserved)

GND

SIPEED