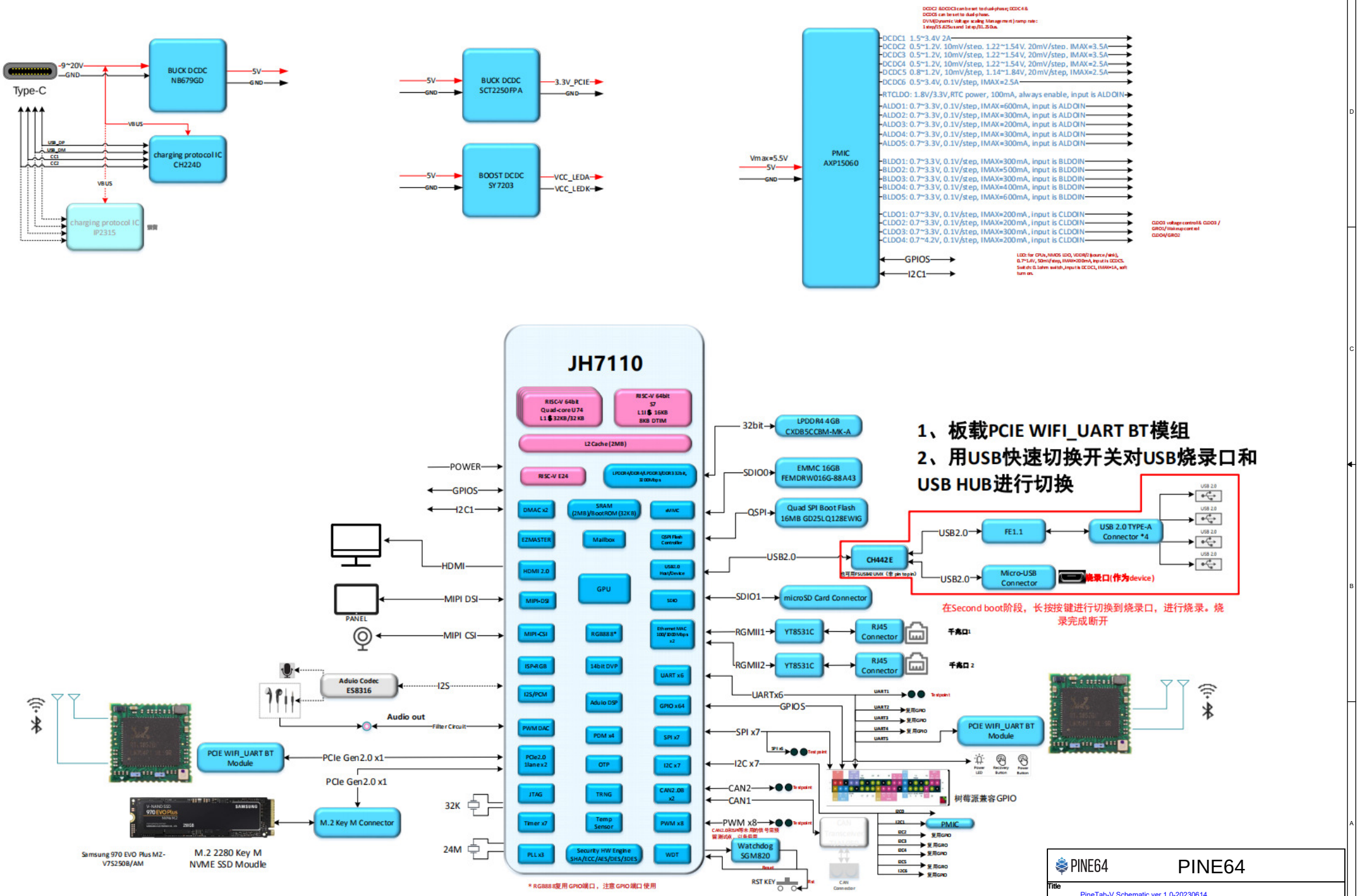
Type-C
9~20V
GND
BUCK DCDC
NB679GD
5V
GND
VBUS
USB_DP
USB_DM
CC1
CC2
charging protocol IC
CH224D
charging protocol IC
IP2315
5V
GND
BUCK DCDC
SCT2250FPA
3.3V_PCIE
GND
5V
GND
BOOST DCDC
SY7203
VCC_LEDA
VCC_LEDK
DCDC2 &DCDC3 can be set to dual-phase; DCDC4 &
DCDC5 can be set to dual-phase.
DVM(Dynamic Voltage scaling Management) ramp rate:
1 step/15.625us and 1 step/31.25us.
Vmax=5.5V
5V
GND
PMIC
AXP15060
DCDC1 1.5~3.4V 2A
DCDC2 0.5~1.2V, 10mV/step, 1.22~1.54V, 20mV/step, IMAX=3.5A
DCDC3 0.5~1.2V, 10mV/step, 1.22~1.54V, 20mV/step, IMAX=3.5A
DCDC4 0.5~1.2V, 10mV/step, 1.22~1.54V, 20mV/step, IMAX=2.5A
DCDC5 0.8~1.2V, 10mV/step, 1.14~1.84V, 20mV/step, IMAX=2.5A
DCDC6 0.5~3.4V, 0.1V/step, IMAX=2.5A
RTCLDO: 1.8V/3.3V,RTC power, 100mA, always enable, input is ALDOIN
ALDO1: 0.7~3.3V, 0.1V/step, IMAX=600mA, input is ALDOIN
ALDO2: 0.7~3.3V, 0.1V/step, IMAX=300mA, input is ALDOIN
ALDO3: 0.7~3.3V, 0.1V/step, IMAX=200mA, input is ALDOIN
ALDO4: 0.7~3.3V, 0.1V/step, IMAX=300mA, input is ALDOIN
ALDO5: 0.7~3.3V, 0.1V/step, IMAX=300mA, input is ALDOIN
BLDO1: 0.7~3.3V, 0.1V/step, IMAX=300mA, input is BLDOIN
BLDO2: 0.7~3.3V, 0.1V/step, IMAX=500mA, input is BLDOIN
BLDO3: 0.7~3.3V, 0.1V/step, IMAX=300mA, input is BLDOIN
BLDO4: 0.7~3.3V, 0.1V/step, IMAX=400mA, input is BLDOIN
BLDO5: 0.7~3.3V, 0.1V/step, IMAX=600mA, input is BLDOIN
CLDO1: 0.7~3.3V, 0.1V/step, IMAX=200mA, input is CLDOIN
CLDO2: 0.7~3.3V, 0.1V/step, IMAX=200mA, input is CLDOIN
CLDO3: 0.7~3.3V, 0.1V/step, IMAX=300mA, input is CLDOIN
CLDO4: 0.7~4.2V, 0.1V/step, IMAX=200mA, input is CLDOIN
GPIOS
I2C1
CLDO3 voltage control & CLDO3 / GPIO1/ Wake up control
CLDO4/GPIO2
LDO: for CPUs, NMOS LDO, VDDR/2 (source / sink),
0.7~1.4V, 50mV/step, IMAX=200mA, input is DCDC5.
Switch: 0.1ohm switch, input is DCDC1, IMAX=1A, soft
turn on.
JH7110
RISC-V 64bit
Quad-core U74
L1 $ 32KB/32 KB
RISC-V 64bit
S7
L1I$ 16KB
8KB DTIM
L2 Cache (2MB)
RISC-V E24
LPDDR4/DDR4/LPDDR3/DDR3 32bit, 3200Mbps
DMAC x2
SRAM (2MB)/BootROM (32KB)
eMMC
EZMASTER
Mailbox
QSPI Flash Controller
HDMI 2.0
USB2.0 Host/Device
MIPI-DSI
GPU
SDIO
MIPI-CSI
RGB888*
Ethernet MAC 100/1000Mbps x2
ISP-RGB
14bit DVP
UART x5
I2S/PCM
Aduio DSP
GPIO x64
PWM DAC
PDM x4
SPI x7
PCIe2.0 1lane x2
OTP
I2C x7
JTAG
TRNG
CAN2.0B x2
Timer x7
Temp Sensor
PWM x8
PLL x3
Security HW Engine SHA/ECC/AES/DES/3DES
WDT
* RGB888是用 GPIO端口，注意 GPIO端口 使用
POWER
GPIOS
I2C1
HDMI
MIPI DSI
PANEL
MIPI CSI
Aduio Codec ES8316
I2S
Audio out
Filter Circuit
PCIE WIFI_UART BT Module
PCIe Gen2.0 x1
PCIe Gen2.0 x1
M.2 Key M Connector
Samsung 970 EVO Plus MZ-V7S250B/AM
M.2 2280 Key M NVME SSD Moudle
32K
24M
32bit
LPDDR4 4GB CXDB5CCBM-MK-A
SDIO0
EMMC 16GB FEMDRW016G-88A43
QSPI
Quad SPI Boot Flash 16MB GD25LQ128EWIG
USB2.0
CH442E
也可用FSUSB42UMX（全 pin to pin）
USB2.0
FE1.1
USB 2.0 TYPE-A Connector *4
USB2.0
Micro-USB Connector
烧录口(作为device)
SDIO1
microSD Card Connector
RGMII1
YT8531C
RJ45 Connector
千兆口1
RGMII2
YT8531C
RJ45 Connector
千兆口 2
UARTx6
GPIOS
SPI x7
I2C x7
CAN2
CAN1
PWM x8
CAN2.0B等未用的信号需预留测试点，以备后用
Watchdog SGM820
RST KEY
Reset
1、板载PCIE WIFI_UART BT模组
2、用USB快速切换开关对USB烧录口和USB HUB进行切换
在Second boot阶段，长按按键进行切换到烧录口，进行烧录。烧录完成断开
PCIE WIFI_UART BT Module
树莓派兼容GPIO
PMIC
Power LED
Recovery Button
Power Button
Test point
复用GPIO
PINE64
PINE64
Title
PineTab-V Schematic ver 1.0-20230614
Size
A3
Document Number
Diagram-SYSTEM
Rev
V1.0
Date:
Wednesday, February 08, 2023
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1
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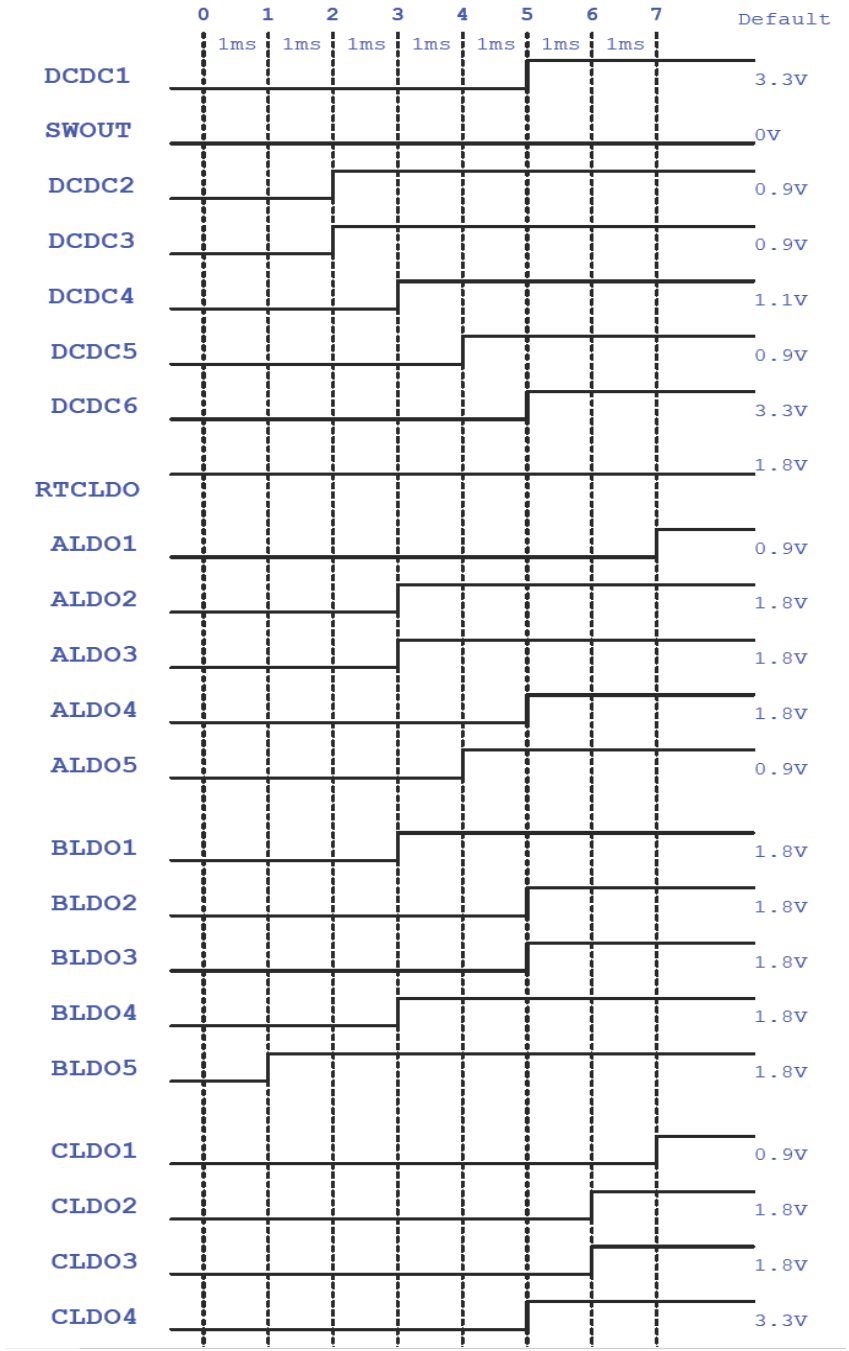


Group	Power pin in PMIC	Package Ball Name	Power pin index	Voltage(V)	Comments
	VDD09_AON	VDD			
		VDD_RTC	1	0.9	In standby mode,always on power domain,turn off other power domain
	VDD09_CPU	VDD_CPU	2	0.9~1.0	CPU core supply can adj to 1.0V. Note:0.9≤VDD_CPU≤1.0
	VDD18_AON	VDD18_OSC			
		VDD18_OTP	3	1.8	always on domain GPIO, RPIO,RESETN,TESTEN,1.8v only
		VDD1833_AON			
	VDD1825_GMAC0	VDD1825_GMAC0	4	1.8/2.5	GMAC0 IO Power domain,1.8V/2.5V,Always on.
	VDD18_HDMI	AVDD_HDMI	5	1.8	HDMI & MIPITX 1.8v analog power supply,Power on first
	VDD09_HDMI	AVDD09_HDMI	6	0.9	
		PVDD_HDMI			0.9V power on after VDD18_HDMI_MIPITX,VDD09_HDMIand VOUT digital turn on/off together
	VDD18_MIPITX	VCC18A_MIPITX	7	1.8	
	VDD09_MIPITX	VDD_MIPITX	8	0.9	
	VDD18_MIPIRX	VCC18A_MIPIRX	9	1.8	MIPI RX 1.8v analog power supply, power on first
	VDD09_MIPIRX	VCC09A_MIPIRX	10	0.9	MIPI RX 0.9v power supply, power on after VDD18_MIPIRX
	VDD33_USB2	VCCA33_USB	11	3.3	3.3V for USB2.0,the seq with other power:power on after 0.9 & 1.8 , power off before
	VDD09_TOP	AVDD09_USB			
		AVDL_PCIE0			
		AVDL_PCIE1			
		VDD_PLL0	12	0.9	
		VDD_PLL1			
		VDD_PLL2			
		VDD_DDR			DDRPHY core power 0.9v
		VDDPLL_DDR			DDRPHY PLL power 0.9v
	VDD18_TOP	VCCA18_PLL0			
		VCCA18_PLL1			
		VDD18_TEMP			
		VDDA18_TEMP	13	1.8	
		VCCA18_PLL2			
		AVDH_PCIE0			
		AVDH_PCIE1			
		VCCA18_USB			
	VDDQ11_DDR	VDDQ_DDR			
		VDDQCK_DDR	14	1.1	DDRPHY IO and CLK IO voltage, 1.1v
	VDD1833_GPIO1	VDD1833_GPIO1			
	VDD1833_GPIO2	VDD1833_GPIO2	15		
	VDD1833_GPIO3	VDD1833_GPIO3		1.8/3.3	
	VDD1833_GPIO4	VDD1833_GPIO4			
	VDD1833_SD0	VDD1833_SD0	16		
	VDD1833_QSPI	VDD1833_QSPI			
	VDD1825_GMAC1	VDD1825_GMAC1	17	1.8/2.5	

See the JH7110_Package_spec Excel for details.

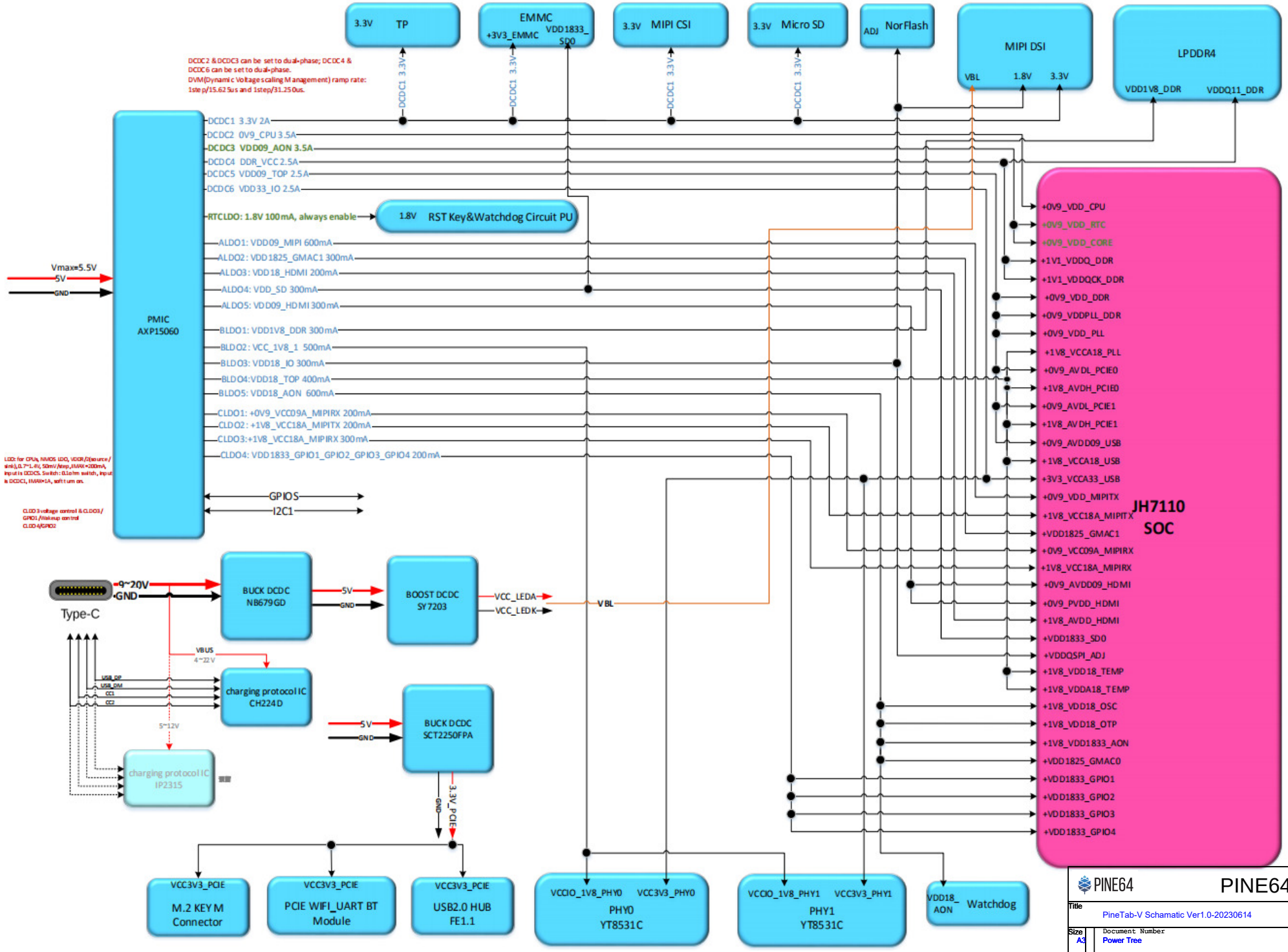
PINE64

PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

Size: B | Document Number: Diagram-PD SEQ | Rev: V1.0

Date: Wednesday, February 08, 2023 | Sheet 2 of 21



PINE64

PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

Size	Document Number	Rev
A3	Power Tree	V1.0

Date: Wednesday, February 08, 2023 Sheet 3 of 21

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PAGE02: Power Tree

PAGE03:GPIOs or Connectors List

PAGE04: Power IN

PAGE05: PMIC_AXP15060

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PAGE07: JH7110 Power

PAGE08: JH7110 DDR Ctrl

PAGE09: LPDDR4 RAM

PAGE10: JH7110 EMMC&QSPI&MicroSD

PAGE11: JH7110 GMAC & SYS

PAGE12: JH7110 GPIOs

PAGE13: JH7110_HDMI_PCIE_MIPI_USB

PAGE14: Ethernet_0

PAGE15: Ethernet_1

PAGE16: MIPI TX_RX

PAGE17: M.2 KEY M&WIFI_BT MODULE

PAGE18: MIPI_LCD&Digital Video

PAGE19: USB2.0 HUB_Programming

PAGE20: IO ConnectorUART Debug

PAGE21: Audio ES8316

GPIO or Connector Lists

Power Group	GPIO Name	Default FUN	Connector or EXT Jumper	Function
VDD1833_GPIO3	GPIO00	HDMI_I2C_SCL	J1	USB Tpye-C Power IN Connector
	GPIO01	HDMI_I2C_SDA		
	GPIO02	DSI_I2C_SDA		
	GPIO03	DSI_I2C_SCL		
	GPIO04	I2S_MCLK	J2	Micro SD Card Connector
	GPIO05	UART0_TX		
	GPIO06	UART0_RX		
VDD1833_GPIO4	GPIO07	SD_SDIO1_D2	J3	Giga PHY0 RJ45 Connector
	GPIO08	SD_SDIO1_D3		
	GPIO09	SD_SDIO1_CMD		
	GPIO10	SD_SDIO1_CLK		
	GPIO11	SD_SDIO1_D0	J4	Ext POE Connector
	GPIO12	SD_SDIO1_D1		
	GPIO13	GMAC_PHYRSTN		
	GPIO14	HDMI_CEC_GPIO	J5	Giga PHY1 RJ45 Connector
	GPIO15	HDMI_HPDIN		
	GPIO16	CSI_I2C_SCL		
	GPIO17	CSI_I2C_SDA	J6	MIPI DSI 1C2L 30PIN Connector
	GPIO18	CSI_PWDN0		
	GPIO19	I2C_SCL		
	GPIO20	I2C_SDA	J7	MIPI CSI 1C2L 30PIN Connector
VDD1833_GPIO1	GPIO21	PCIE1_PWREN_H		
	GPIO22	MIPI_PWR_EN	J8	WL0 ANT :IPEX MHF1 Connector Receptacle, Male Pin 50Ohm Surface Mount Solder
	GPIO23	LCD_RESET		
	GPIO24	MIPI_LCD_BL		
	GPIO25	TP_DET	J9	WL1 ANT :IPEX MHF1 Connector Receptacle, Male Pin 50Ohm Surface Mount Solder
	GPIO26	PCIE0_PERSTN		
	GPIO27	PCIE0_PRSN		
	GPIO28	PCIE1_PERSTN	J10	PCIE1 M.2 KEY M screw Connector
	GPIO29	PCIE1_PRSN		
	GPIO30	TP_INT		
	GPIO31	TP_RST	J11	BT ANT :IPEX MHF1 Connector Receptacle, Male Pin 50Ohm Surface Mount Solder
	GPIO32	PCIE0_PWREN_H		
	GPIO33	GPIO33 --> J16		
	GPIO34	GPIO34 --> J16	J12	HDMI Connector
	GPIO35	GPIO_RST		
VDD1833_GPIO2	GPIO36	GPIO36 --> J16	J13	USB2.0 TYPE-A x2 Connector
	GPIO37	GPIO37 --> J16		
	GPIO38	GPIO38 --> J16		
	GPIO39	GPIO39 --> J16	J14	USB2.0 TYPE-A x2 Connector
	GPIO40	HP_IRQ		
	GPIO41	SD_SDIO0_CD		
	GPIO42	STS_PWR	J15	MicroUSB SYS Programming Connector
	GPIO43	GPIO43 --> J16		
	GPIO44	SOC_UART_RX		
	GPIO45	SOC_UART_TX	J16	20PIN GPIOS Header2x10-2_54mm Connector
	GPIO46	SOC_UART_RTS		
	GPIO47	SOC_UART_CTS		
	GPIO48	I2S_DSDIN	J17	3PIN UART0 HDR1X3-2p54-DIP-V Connector
	GPIO49	GPIO49 --> J16		
	GPIO50	PCIE0_WL_ON		
	GPIO51	I2S_ASDOUT	J18	MicroUSB UART0 Debug Connector
	GPIO52	GPIO52 --> J16		
	GPIO53	I2S_LRCK		
	GPIO54	I2S_SCLK		
	GPIO55	SOC_PCM_OUT		
	GPIO56	PCIE0_BT_ON		
	GPIO57	GPIO57 --> J16		
	GPIO58	GPIO58 --> J16		
	GPIO59	GPIO59 --> J16		
	GPIO60	SOC_PCM_SYNC		
	GPIO61	SOC_PCM_CLK		
	GPIO62	SDIO0_RSTN		
	GPIO63	SOC_PCM_IN		
VDD18_AON	RGPIO0	Boot_Mode		
	RGPIO1	Boot_Mode		
	RGPIO2	Boot_Mode		

PINE64 PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

Size: A3 | Document Number: Diagram-GPIOs or Connectors List | Rev: V1.0

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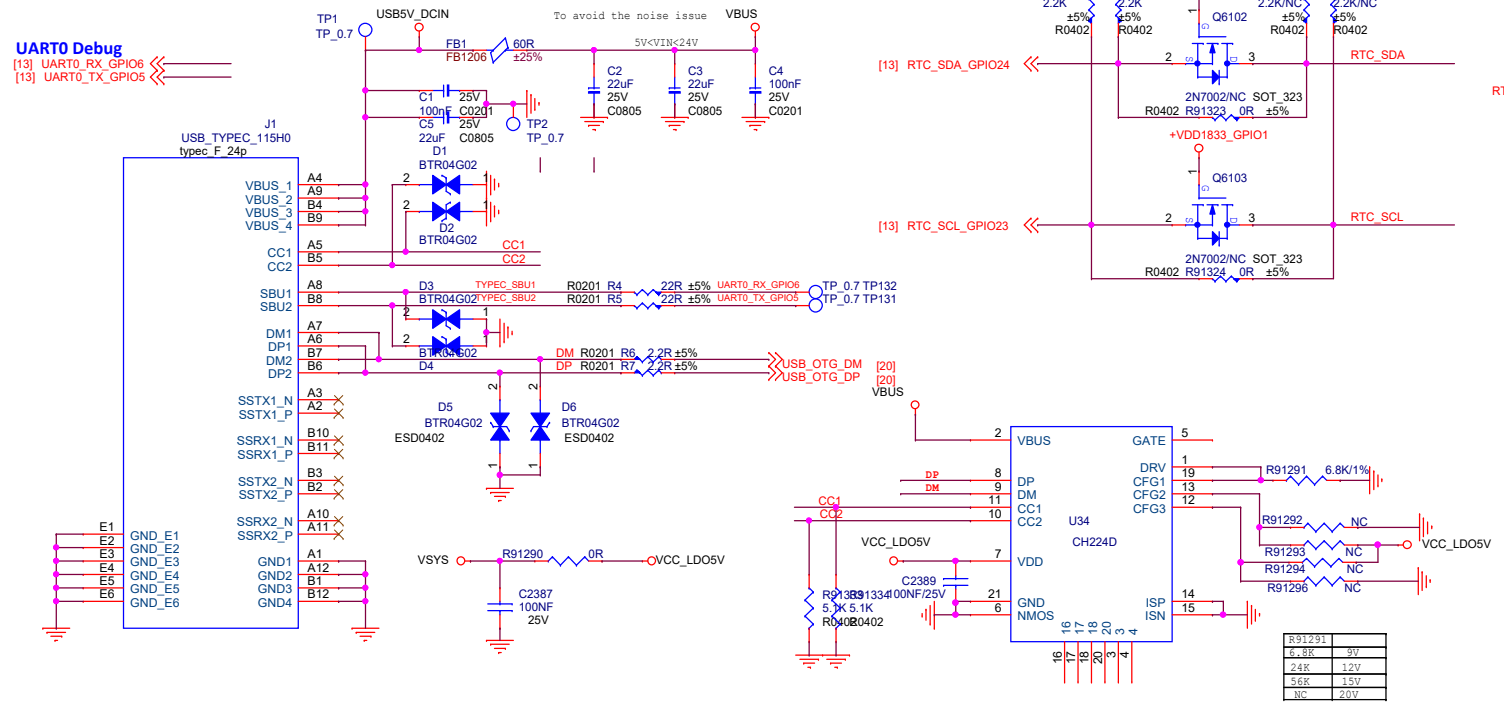
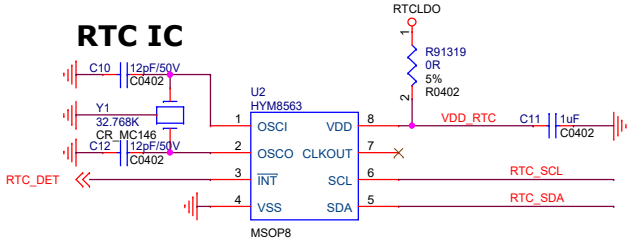
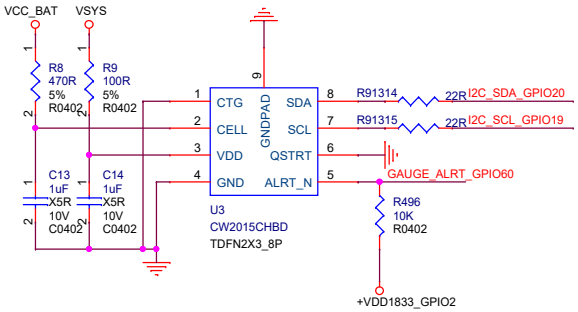
USB Tpye-C Power



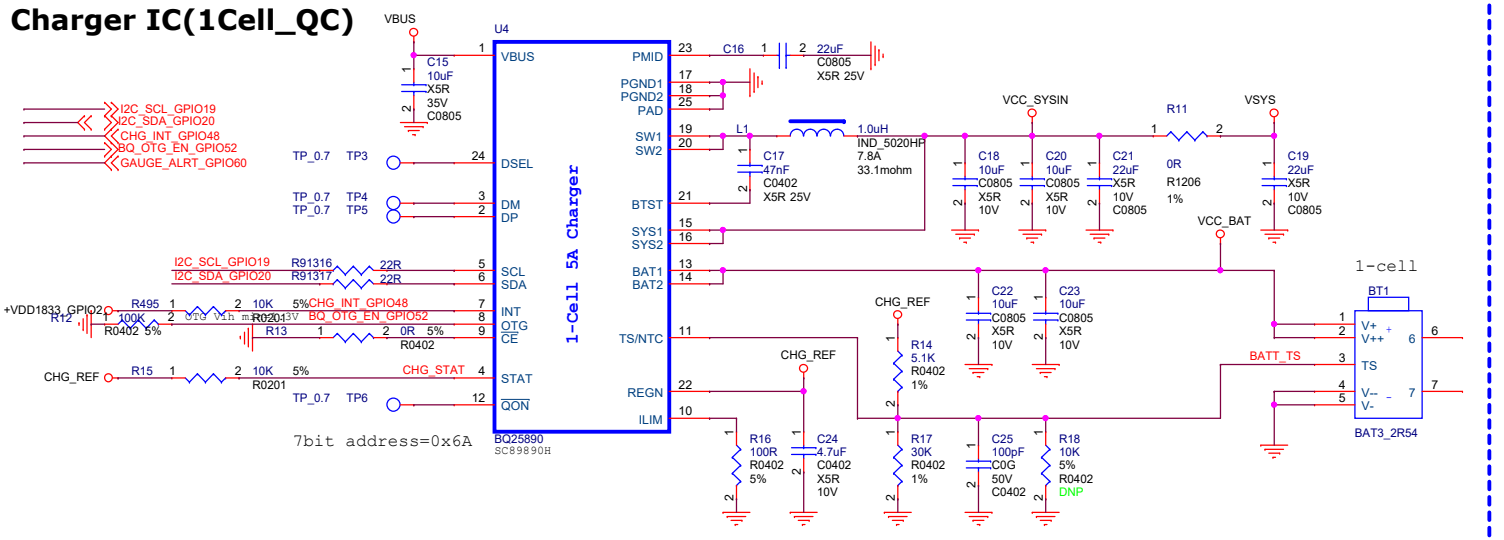
RTC IC



Gas Gauge



Charger IC(1Cell_QC)



PINE64 PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

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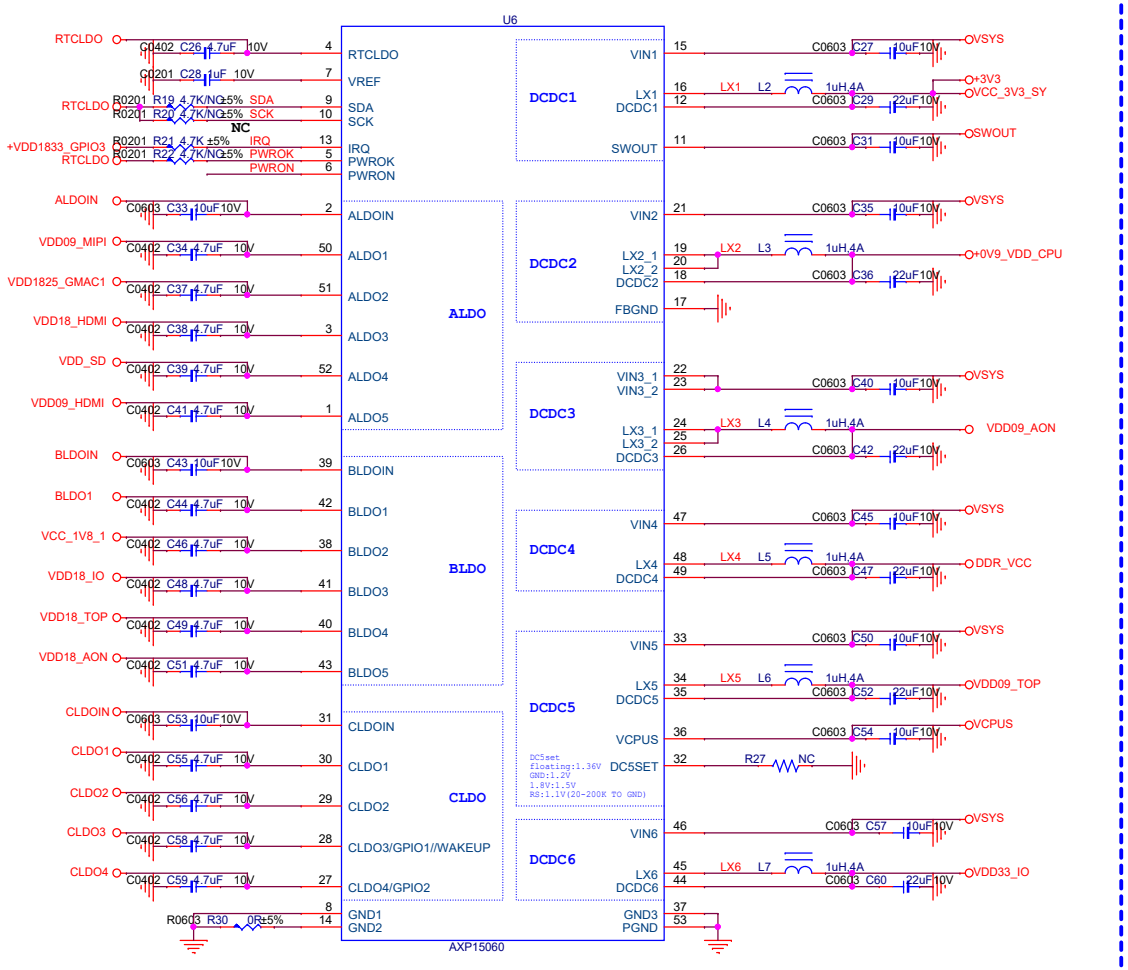
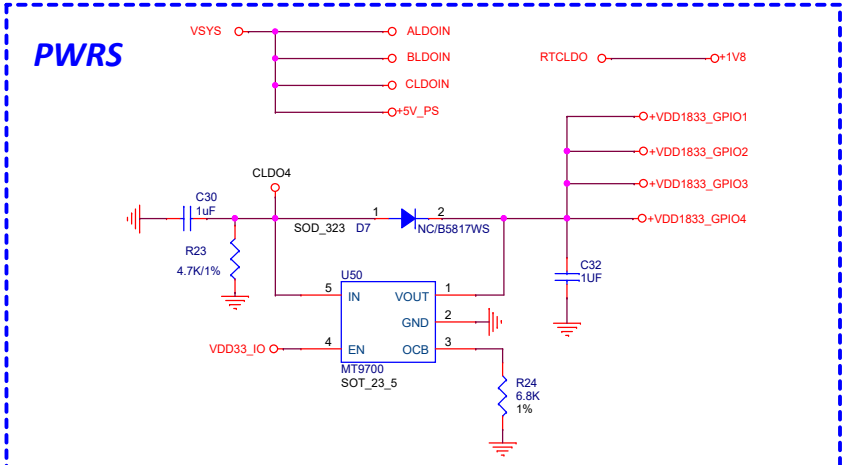
PMIC

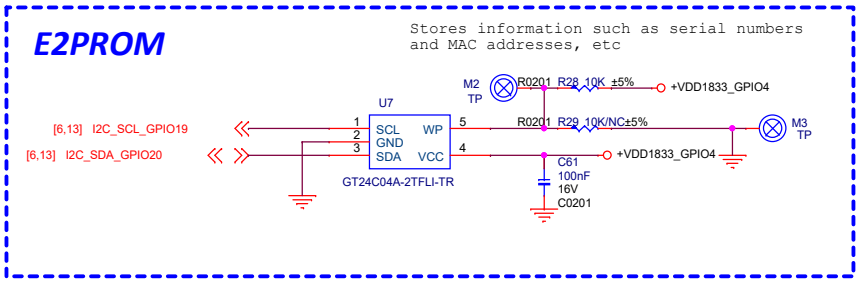


PWRS

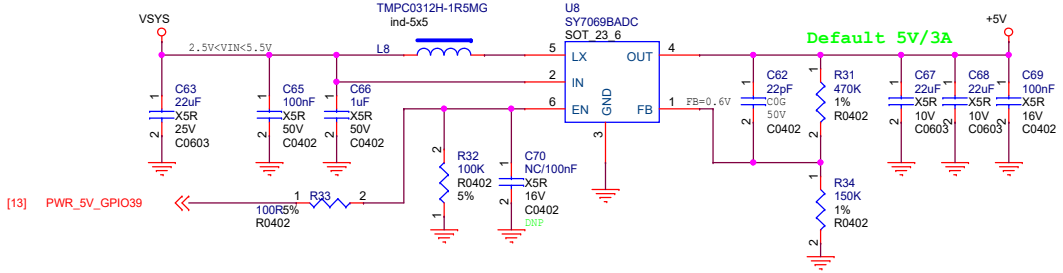


I2C_GPIOS

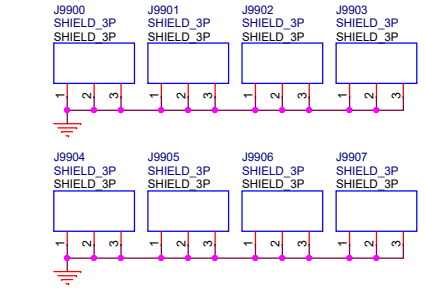
E2PROM



VCC_5V0



Shield



PINE64

PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

Size	Document Number	Rev
A3	PMIC_AXP15060	V1.0

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AON POWER

Timing 2

VDD09_AON → +0V9_VDD_RTC
VDD09_AON → +0V9_VDD

Timing 1

VDD18_AON → +1V8_VDD18_OSC
VDD18_AON → +1V8_VDD18_OTP
VDD18_AON → +1V8_VDD1833_AON
VDD18_AON → +VDD1825_GMAC0

JH7110 Power MUX

VDD18_IO — R0402 R35 0R ±5% — +VDDQSPI_ADJ
VDD1825_GMAC1 → +VDD1825_GMAC1
DDR_VCC → +1V1_VDDQ_DDR
VDDQ11_DDR
+1V1_VDDQCK_DDR
VDD18_TOP → +1V8_VCCA18_PLL
+1V8_VDD18_TEMP
+1V8_VDDA18_TEMP
+1V8_AVDH_PCIE0
+1V8_AVDH_PCIE1
+1V8_VCCA18_USB
VDD09_TOP → +0V9_AVDD09_USB
+0V9_AVDL_PCIE0
+0V9_AVDL_PCIE1
+0V9_VDD_PLL
+0V9_VDD_DDR
+0V9_VDDPLL_DDR
VDD_SD — R0402 R43 0R ±5% — +VDD1833_SD0
VDD18_HDMI → +1V8_AVDD_HDMI
CLDO2 → +1V8_VCC18A_MIPITX
CLDO3 → +1V8_VCC18A_MIPIRX
VDD09_HDMI → +0V9_AVDD09_HDMI
+0V9_PVDD_HDMI
VDD09_MIPI → +0V9_VDD_MIPITX
CLDO1 → +0V9_VCC09A_MIPIRX
VDD33_IO → +3V3_VCCA33_USB

System Sleep_Wake

M6 TP
R91307 100R → RTC_DET
R40 100R
SOD_323 D5202 B5817WS → POWER_IO_GPIO59 [13]
R41 10K → RTCLDO
SW3 TS-024 SW8 PWR-ON
R42 100R → PWRON [3]
ED3 BTR04G02
C73 10NF

SYS RESET Circuit

+VDD_POR
R494 NC
U31 LDO-1.8/3.3V XC6221A332MR-G
VOUT VIN EN NC GND
C559 0.1uF
C562 0.1uF
R478 NC → +5V
R463 0R → VDD33_IO
C560 0.1uF
TD_RST_EN
C561 4.7uF/NC
R464 100k/NC → VDD18_IO
R469 0
R470 100k
TD_RST
VDD33_IO
R471 4.7k/NC
U33 MAX809/3 MAX809S
GND VCC RST
R468 510R
R472 0 → PWROK [15,16]
C566 0.1uF
VDD33_IO
VDD18_IO
R492 NC
R465 10K
C564 10nF/NC
U32 SGM836-1.8XN6G/TR TPS3808G18DBV TPS3828-33DBVR
VDD RST SENSE CT MR GND
RSTN
R467 NC
R466 15k
C565 33nF
R473 18k
C563 220nF
R485 NC → VDD18_AON
R479 1k → SYS_RSTN [10,15]
R480 NC
R481 0
[15] MR_RSTN
R91335 4.7K
Q9 WNM2021
WDO_RST
R482 4.7k
R483 1k → GPIO35 [10,15]

Hall Sensor

+VDD1833_GPIO2
R91318 4.7K → HALL_SEN_GPIO40 [13]
C76 100nF C0402 X5R 16V
VDD VOUT GND
SOT23 TH9245 Q1

PINE64

Title	PineTab-V Schamatic Ver1.0-20230614
Size	A3
Document Number	PWR MUX & SYS RESET
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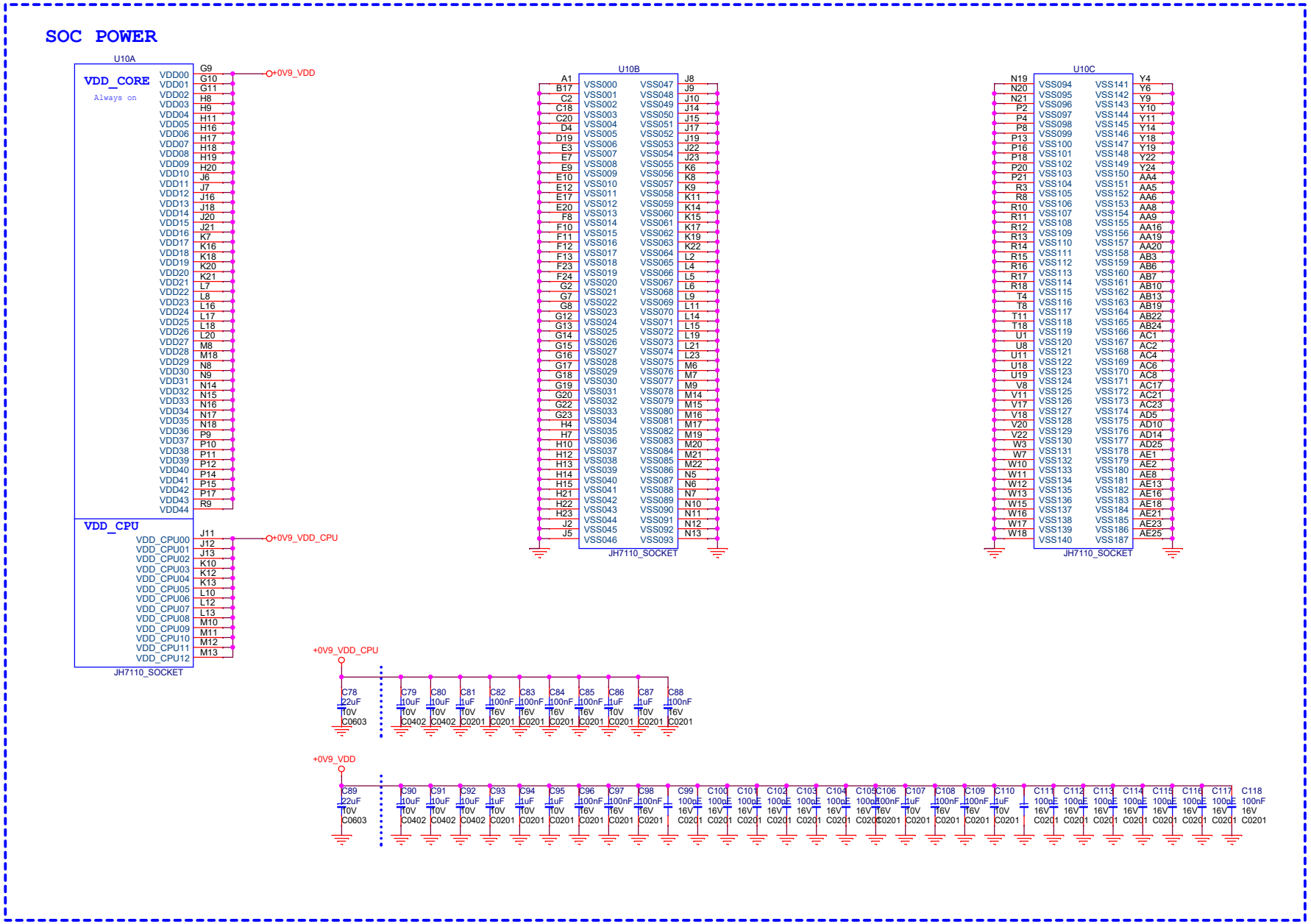
SOC POWER



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PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

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A3	JH7110 Power	V1.0

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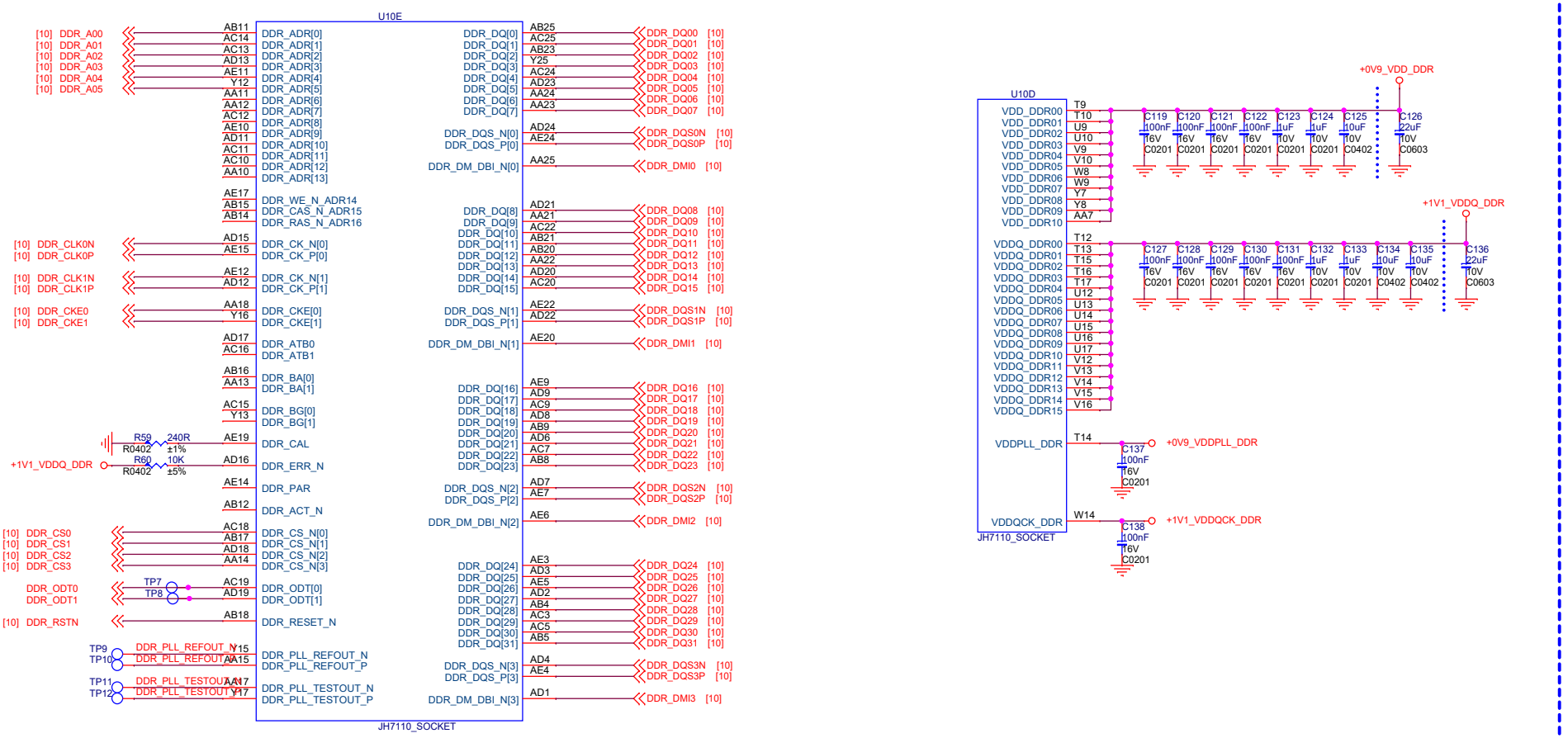
SOC DDR CTRL



PINE64	PINE64	
Title	PineTab-V Schamatic Ver1.0-20230614	
Size: A3	Document Number: JH7110 DDR Ctrl	Rev: V1.0
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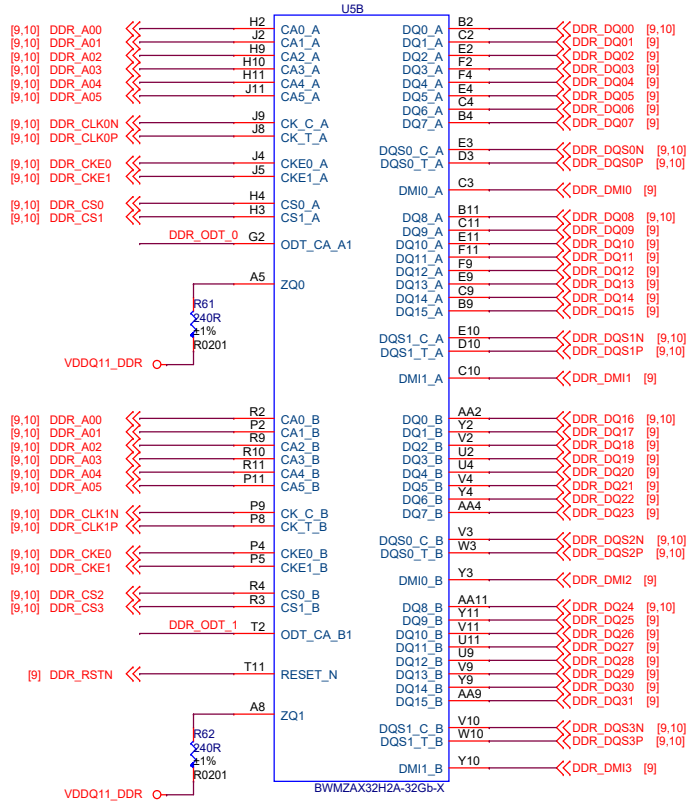
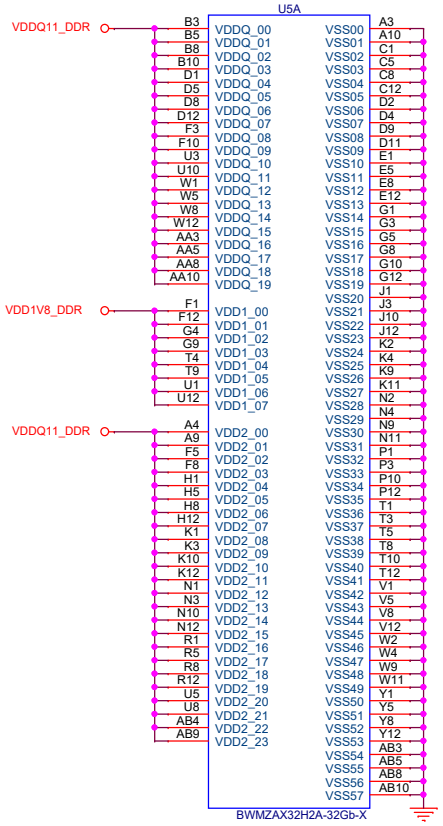
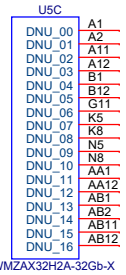
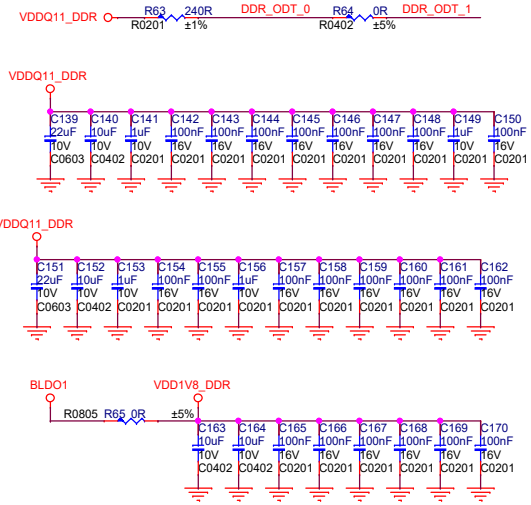
LPDDR4









Test Points

TP14 TP16 TP18 — DDR_DQ00 [9,10], DDR_DQS0N [9,10], DDR_DQS0P [9,10]

TP20 TP21 TP22 — DDR_DQ08 [9,10], DDR_DQS1N [9,10], DDR_DQS1P [9,10]

TP23 TP24 TP25 — DDR_DQ16 [9,10], DDR_DQS2N [9,10], DDR_DQS2P [9,10]

TP26 TP27 TP28 — DDR_DQ24 [9,10], DDR_DQS3N [9,10], DDR_DQS3P [9,10]

TP29 TP30 TP31 TP32 TP33 TP34 — DDR_A00 [9,10], DDR_A01 [9,10], DDR_A02 [9,10], DDR_A03 [9,10], DDR_A04 [9,10], DDR_A05 [9,10]

TP35 TP36 — DDR_CLK0N [9,10], DDR_CLK0P [9,10]

TP37 TP38 — DDR_CLK1N [9,10], DDR_CLK1P [9,10]

TP39 TP40 TP41 TP42 — DDR_CS0 [9,10], DDR_CS1 [9,10], DDR_CS2 [9,10], DDR_CS3 [9,10]

TP13 TP15 TP17 TP19

PINE64	PINE64
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Rev	V1.0
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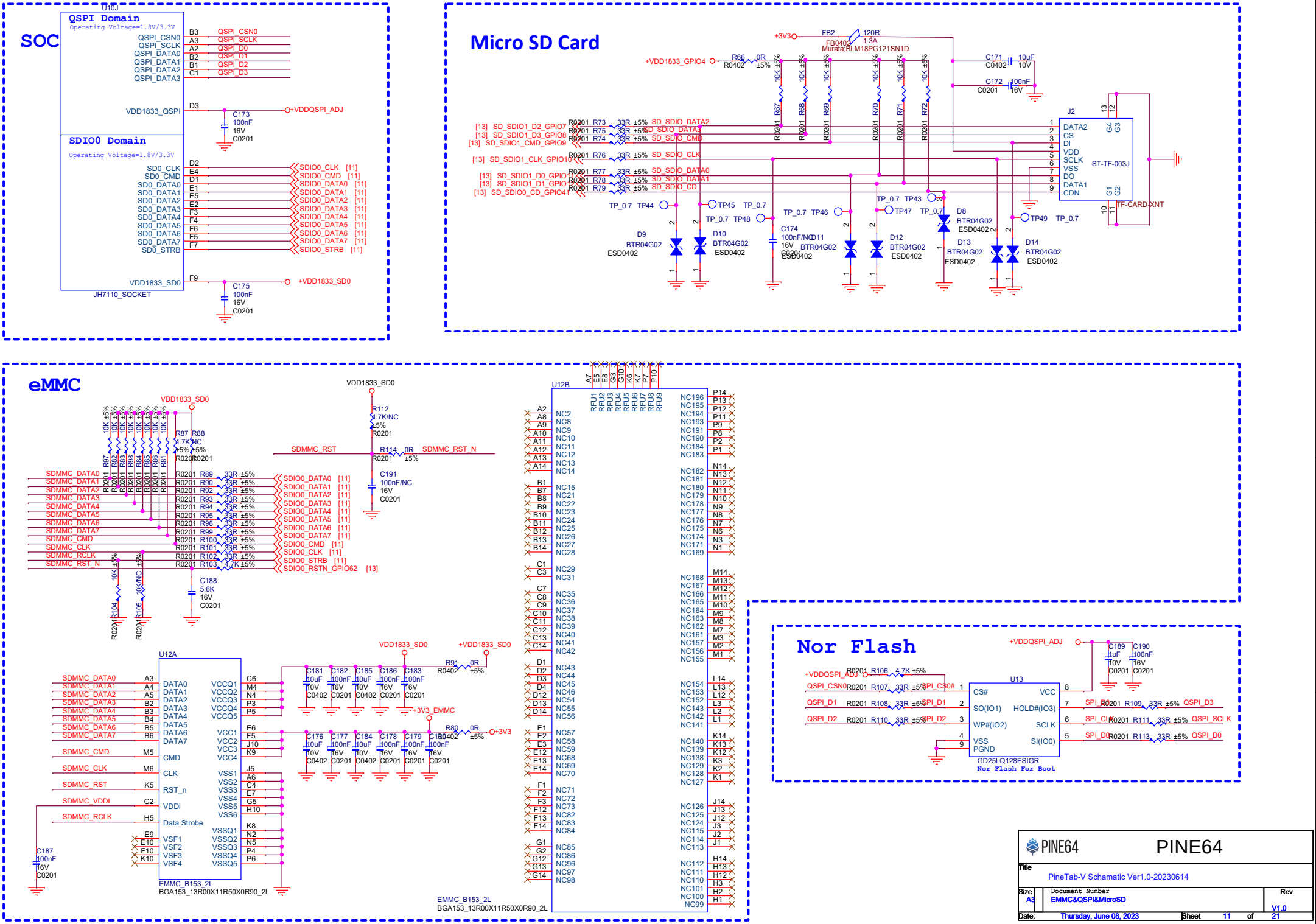
SOC
U10J
QSPI Domain
Operating Voltage=1.8V/3.3V
QSPI_CSN0
QSPI_SCLK
QSPI_DATA0
QSPI_DATA1
QSPI_DATA2
QSPI_DATA3
B3 QSPI_CSN0
A3 QSPI_SCLK
A2 QSPI_D0
B2 QSPI_D1
B1 QSPI_D2
C1 QSPI_D3
VDD1833_QSPI
D3
C173 100nF 16V C0201
+VDDQSPI_ADJ
SDIO0 Domain
Operating Voltage=1.8V/3.3V
SD0_CLK
SD0_CMD
SD0_DATA0
SD0_DATA1
SD0_DATA2
SD0_DATA3
SD0_DATA4
SD0_DATA5
SD0_DATA6
SD0_DATA7
SD0_STRB
D2 SDIO0_CLK [11]
E4 SDIO0_CMD [11]
D1 SDIO0_DATA0 [11]
E1 SDIO0_DATA1 [11]
E5 SDIO0_DATA2 [11]
E2 SDIO0_DATA3 [11]
F3 SDIO0_DATA4 [11]
F4 SDIO0_DATA5 [11]
F6 SDIO0_DATA6 [11]
F5 SDIO0_DATA7 [11]
F7 SDIO0_STRB [11]
VDD1833_SD0
F9
C175 100nF 16V C0201
+VDD1833_SD0
JH7110_SOCKET
Micro SD Card
+3V3
FB2 120R 1.3A FB0402 Murata:BLM18PG121SN1D
+VDD1833_GPIO4
R66 0R R0402 ±5%
10K ±5%
C171 10uF 10V C0402
C172 100nF 16V C0201
[13] SD_SDIO1_D2_GPIO7
[13] SD_SDIO1_D3_GPIO8
[13] SD_SDIO1_CMD_GPIO9
[13] SD_SDIO1_CLK_GPIO10
[13] SD_SDIO1_D0_GPIO
[13] SD_SDIO1_D1_GPIO
[13] SD_SDIO0_CD_GPIO41
R0201 R73 33R ±5% SD_SDIO_DATA2
R0201 R75 33R ±5% SD_SDIO_DATA3
R0201 R74 33R ±5% SD_SDIO_CMD
R0201 R76 33R ±5% SD_SDIO_CLK
R0201 R77 33R ±5% SD_SDIO_DATA0
R0201 R78 33R ±5% SD_SDIO_DATA1
R0201 R79 33R ±5% SD_SDIO_CD
J2
DATA2
CS
DI
VDD
SCLK
VSS
DO
DATA1
CDN
ST-TF-003J
TF-CARD-XNT
TP_0.7 TP44
TP45 TP_0.7
TP_0.7 TP48
TP_0.7 TP46
TP_0.7 TP43
TP47 TP_0.7
TP49 TP_0.7
C174 100nF/NC 16V C0201
D8 BTR04G02 ESD0402
D9 BTR04G02 ESD0402
D10 BTR04G02 ESD0402
D11 BTR04G02 ESD0402
D12 BTR04G02 ESD0402
D13 BTR04G02 ESD0402
D14 BTR04G02 ESD0402
eMMC
VDD1833_SD0
R87 4.7K/NC ±5%
R88 ±5%
SDMMC_DATA0
SDMMC_DATA1
SDMMC_DATA2
SDMMC_DATA3
SDMMC_DATA4
SDMMC_DATA5
SDMMC_DATA6
SDMMC_DATA7
SDMMC_CMD
SDMMC_CLK
SDMMC_RCLK
SDMMC_RST_N
R89 33R ±5% SDIO0_DATA0 [11]
R90 33R ±5% SDIO0_DATA1 [11]
R92 33R ±5% SDIO0_DATA2 [11]
R93 33R ±5% SDIO0_DATA3 [11]
R94 33R ±5% SDIO0_DATA4 [11]
R95 33R ±5% SDIO0_DATA5 [11]
R96 33R ±5% SDIO0_DATA6 [11]
R99 33R ±5% SDIO0_DATA7 [11]
R100 33R ±5% SDIO0_CMD [11]
R101 33R ±5% SDIO0_CLK [11]
R102 33R ±5% SDIO0_STRB [11]
R103 4.7K ±5% SDIO0_RSTN_GPIO62 [13]
R104 10K ±5%
R105 10K/NC ±5%
C188 5.6K 16V C0201
VDD1833_SD0
R112 4.7K/NC ±5%
SDMMC_RST
R114 0R SDMMC_RST_N
C191 100nF/NC 16V C0201
U12A
DATA0
DATA1
DATA2
DATA3
DATA4
DATA5
DATA6
DATA7
CMD
CLK
RST_n
VDDi
Data Strobe
VCCQ1
VCCQ2
VCCQ3
VCCQ4
VCCQ5
VCC1
VCC2
VCC3
VCC4
VSS1
VSS2
VSS3
VSS4
VSS5
VSS6
VSSQ1
VSSQ2
VSSQ3
VSSQ4
VSSQ5
VSF1
VSF2
VSF3
VSF4
C187 100nF 16V C0201
VDD1833_SD0
+VDD1833_SD0
R91 0R R0402 ±5%
C181 10uF 10V C0402
C182 100nF 16V C0201
C185 10uF 10V C0402
C186 100nF 16V C0201
C183 100nF 16V C0201
+3V3_EMMC
R80 0R R0402 ±5%
+3V3
C176 10uF 10V C0402
C177 100nF 16V C0201
C184 10uF 10V C0402
C178 100nF 16V C0201
C179 100nF 16V C0201
C180 100nF 16V C0201
EMMC_B153_2L
BGA153_13R00X11R50X0R90_2L
U12B
RFU1
RFU2
RFU3
RFU4
RFU5
RFU6
RFU7
RFU8
RFU9
NC2
NC8
NC9
NC10
NC11
NC12
NC13
NC14
NC15
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NC129
NC128
NC127
NC126
NC125
NC124
NC115
NC114
NC113
NC112
NC111
NC110
NC101
NC100
NC99
EMMC_B153_2L
BGA153_13R00X11R50X0R90_2L
Nor Flash
+VDDQSPI_ADJ
C189 1uF 10V C0201
C190 100nF 16V C0201
+VDDQSPI_ADJ
R0201 R106 4.7K ±5%
QSPI_CSN0
QSPI_D1
QSPI_D2
R0201 R107 33R ±5% QSPI_CS0#
R0201 R108 33R ±5% QSPI_D1
R0201 R110 33R ±5% QSPI_D2
U13
CS#
SO(IO1)
WP#(IO2)
VSS
PGND
VCC
HOLD#(IO3)
SCLK
SI(IO0)
R0201 R109 33R ±5% QSPI_D3
R0201 R111 33R ±5% QSPI_SCLK
R0201 R113 33R ±5% QSPI_D0
GD25LQ128ESIGR
Nor Flash For Boot
PINE64
PINE64
Title
PineTab-V Schamatic Ver1.0-20230614
Size A3
Document Number EMMC&QSPI&MicroSD
Rev V1.0
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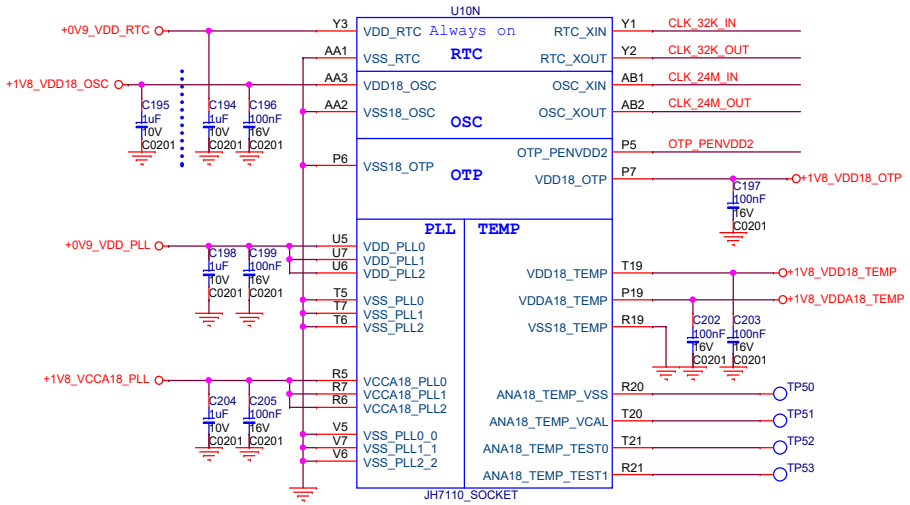
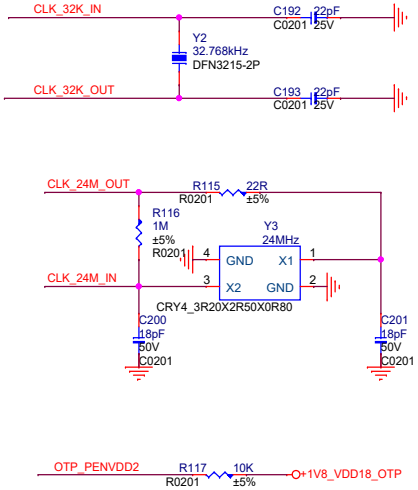
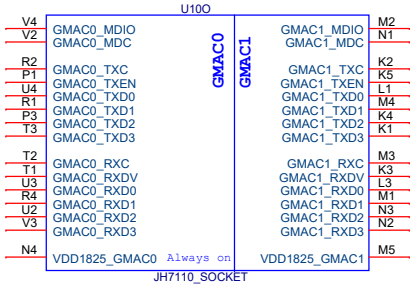
SOC SYS_RTC





SOC GMAC



PINE64

Title	PineTab-V Schamatic Ver1.0-20230614
Size: A3	Document Number: JH7110 GMAC & SYS
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SOC GPIOS

U10F

GPIO3 Domain
Operating Voltage=1.8V/3.3V

GPIO0	A4	HDMI_I2C_SCL_GPIO0 [19]
GPIO1	C4	HDMI_I2C_SDA_GPIO1 [19]
GPIO2	B4	DSI_I2C_SDA_GPIO2 [13,17,19,22]
GPIO3	C5	DSI_I2C_SCL_GPIO3 [13,17,19,22]
GPIO4	C6	I2S_MCLK_GPIO4 [13,22]
GPIO5	D6	UART0_TX_GPIO5 [13,21]
GPIO6	D5	UART0_RX_GPIO6 [13,21]
VDD1833_GPIO3	E8	+VDD1833_GPIO3

C206 100nF 16V C0201

PMU Domain
Operating Voltage=1.8V
Always on

PAD_SD_SEL18	E6	SD0_SEL_VDD1833 [13]
PAD_QSPI_SEL18	C3	QSPI_SEL_VDD1833 [13]
RGPIO0	W4	BOOT_Mode_RGPIO0 [13]
RGPIO1	W5	BOOT_Mode_RGPIO1 [13]
RGPIO2	W2	BOOT_Mode_RGPIO2 [13]
RGPIO3	W6	TP134
TESTEN	W1	TEST_EN [13]
RSTN	V1	SYS_RSTN [7]
VDD1833_AON	Y5	+1V8_VDD1833_AON

C207 100nF 16V C0201

JH7110_SOCKET

U10I

GPIO2 Domain
Operating Voltage=1.8V/3.3V

GPIO36	D21	HP_DET_H_GPIO36 [21]
GPIO37	D18	LCD_3V3EN_GPIO37 [19]
GPIO38	F17	I2S_SCLK_GPIO38 [22]
GPIO39	C19	PWR_5V_GPIO39 [21]
GPIO40	F18	HALL_SEN_GPIO40 [18]
GPIO41	B19	SD_SDIO0_CD_GPIO41 [11]
GPIO42	B20	WIFI_DISn_GPIO42 [18]
GPIO43	E21	EESK_GPIO43 [18]
GPIO44	F22	I2S_DSDIN_GPIO44 [22]
GPIO45	C17	LCD_EN_GPIO45 [21]
GPIO46	E18	WIFI_ON_GPIO46 [18]
GPIO47	F14	WIFI_RESET_GPIO47 [18]
GPIO48	E16	CHG_INT_GPIO48 [21]
GPIO49	A17	VOL+_GPIO49 [21]
GPIO50	D15	SPK_CTL_GPIO50 [21]
GPIO51	A19	VOL-_GPIO51 [21]
GPIO52	B18	BQ_OTG_EN_GPIO52 [21]
GPIO53	A18	MIPI_SW_GPIO53 [18]
GPIO54	E15	BT_DISn_GPIO54 [18]
GPIO55	E19	FLASH_LED_EN_H_GPIO55 [18]
GPIO56	D16	WIFI_WAKE_HOST_GPIO56 [18]
GPIO57	F21	I2S_I2C_SCL_GPIO57 [13]
GPIO58	G21	I2S_I2C_SDA_GPIO58 [13]
GPIO59	C21	POWER_IO_GPIO59
GPIO60	F19	GAUGE_ALRT_GPIO60 [18]
GPIO61	F20	I2S_ASDOUT_GPIO61 [22]
GPIO62	D17	SDIO0_RSTN_GPIO62 [11]
GPIO63	D20	I2S_LRCK_GPIO63 [22]
VDD1833_GPIO2_0	F15	+VDD1833_GPIO2
VDD1833_GPIO2_1	F16	

C208 100nF 16V C0201
C209 1uF 10V C0201

JH7110_SOCKET

U10G

GPIO4 Domain
Operating Voltage=1.8V/3.3V

GPIO7	J3	SD_SDIO1_D2_GPIO7 [11]
GPIO8	J1	SD_SDIO1_D3_GPIO8 [11]
GPIO9	H1	SD_SDIO1_CMD_GPIO9 [11]
GPIO10	J4	SD_SDIO1_CLK_GPIO10 [11]
GPIO11	H2	SD_SDIO1_D0_GPIO11 [11]
GPIO12	H5	SD_SDIO1_D1_GPIO12 [11]
GPIO13	H3	HEADSET_MIC_DET_GPIO13 [19]
GPIO14	G4	HDMI_CEC_GPIO14 [19]
GPIO15	G3	HDMI_HPD_GPIO15 [19]
GPIO16	F2	CSI_I2C_SCL_GPIO16 [13,17]
GPIO17	G1	CSI_I2C_SDA_GPIO17 [13,17]
GPIO18	F1	SSD_EN_GPIO18 [13,17]
GPIO19	G6	I2C_SCL_GPIO19 [6,13]
GPIO20	G5	I2C_SDA_GPIO20 [6,13]
VDD1833_GPIO4	H6	+VDD1833_GPIO4

C211 100nF 16V C0201

JH7110_SOCKET

U10H

GPIO1 Domain
Operating Voltage=1.8V/3.3V

GPIO21	W24	PCIE1_CLK_GPIO21 [18]
GPIO22	Y21	CSI_PWDN1_GPIO13 [15]
GPIO23	Y23	RTC_SCL_GPIO23 [19]
GPIO24	W22	RTC_SDA_GPIO24 [19]
GPIO25	W25	CSI_PWDN0_GPIO25 [19]
GPIO26	W23	PCIE1_WAKE_GPIO26 [19]
GPIO27	W21	BT_WAKE_HOST_H_GPIO27 [18]
GPIO28	V23	PCIE1_PERSTN_GPIO28 [18]
GPIO29	W19	PCIE1_PRSN_GPIO29 [18]
GPIO30	Y20	TP_INT_L [19]
GPIO31	W20	TP_RST_L [19]
GPIO32	V21	HOST_WAKE_BT_H_GPIO32 [18]
GPIO33	U22	CSI_RST0_GPIO33 [21]
GPIO34	U21	CSI_RST1_GPIO34
GPIO35	T22	GPIO35 [7]
VDD1833_GPIO1_0	V19	+VDD1833_GPIO1
VDD1833_GPIO1_1	U20	

C212 100nF 16V C0201
C213 1uF 10V C0201

JH7110_SOCKET

BOOT MODE

BOOT MODE (RGPIO2)	Boot Vector	Boot Selection (RGPIO1,0)	Note
0x1	0x00_2100_0000	XIP Flash	can not boot from XIP Flash, if disabled thru OTP Configuration.
0x0	0x00_2A00_0000	0x0: 1Bit QSPI Nor Flash 0x1: SDIO3.0 0x2: eMMC5.0 0x3: UART	on-chip boot ROM(32KB)

I2S MCLK OSC

+VDD1833_GPIO2

Close to ES8316

FB3 1.7A 60R FB0402

OSC1
VDD 4
OE 1
GND 2
OUT 3

12.288MHz
CRY4_3225

R0402 R1200R ±5%

C210 NC

I2S_MCLK_GPIO4 [13,22]

SOC GPIOS PU or PD

R0201 R123 4.7K/NC ±5% +1V8_VDD1833_AON
[13] BOOT_Mode_RGPIO2 R0201 R126 4.7K ±5%
[13] TEST_EN R0201 R127 4.7K/NC ±5% +1V8_VDD1833_AON
R0201 R128 4.7K ±5%

[13] I2S_I2C_SDA_GPIO58 R0201 R121 4.7K ±5% +VDD1833_GPIO2
[13] I2S_I2C_SCL_GPIO57 R0201 R124 4.7K ±5%

[6,13] I2C_SCL_GPIO19 R0201 R122 4.7K ±5% +VDD1833_GPIO4
[6,13] I2C_SDA_GPIO20 R0201 R125 4.7K ±5%

[13,17,19,22] DSI_I2C_SDA_GPIO2 R0201 R130 4.7K ±5% +VDD1833_GPIO3
[13,17,19,22] DSI_I2C_SCL_GPIO3 R0201 R132 4.7K ±5%

R0201 R133 4.7K ±5% +1V8_VDD1833_AON
[13] SD0_SEL_VDD1833 R0201 R1344.7K/NC ±5%
[13] QSPI_SEL_VDD1833 R0201 R137 4.7K ±5% +1V8_VDD1833_AON
R0201 R1404.7K/NC ±5%

[13,21] UART0_TX_GPIO5 R0201 R135 4.7K ±5% +VDD1833_GPIO3
[13,21] UART0_RX_GPIO6 R0201 R138 4.7K ±5%

[13,17] CSI_I2C_SDA_GPIO17 R0201 R136 4.7K ±5% +VDD1833_GPIO4
[13,17] CSI_I2C_SCL_GPIO16 R0201 R139 4.7K ±5%

PINE64 PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

Size	Document Number	Rev
A3	JH7110 GPIOs	V1.0

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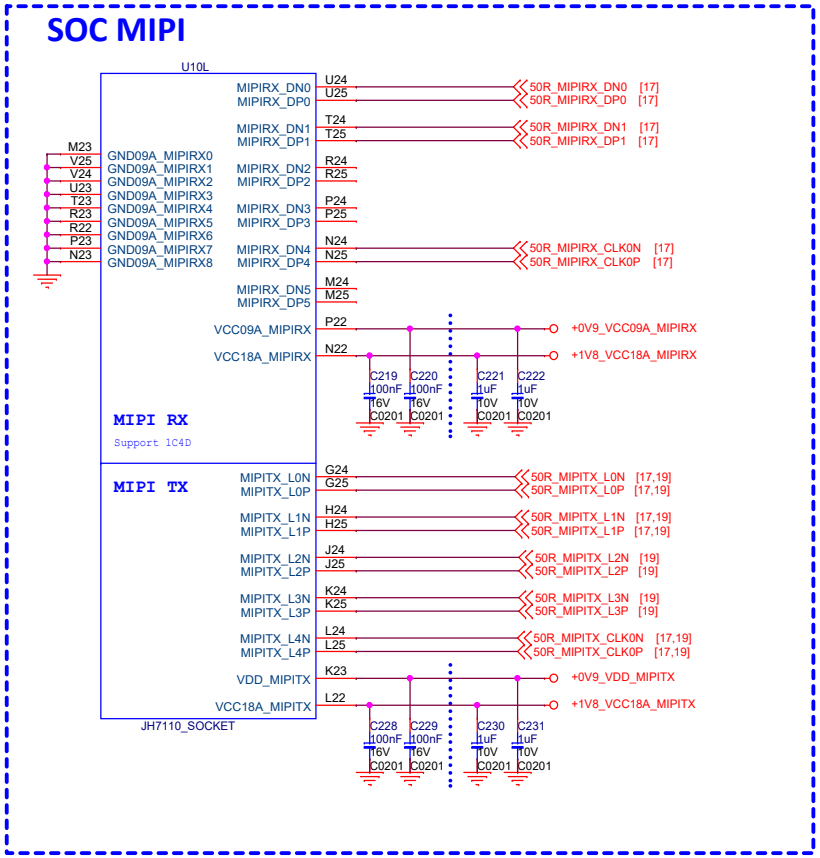

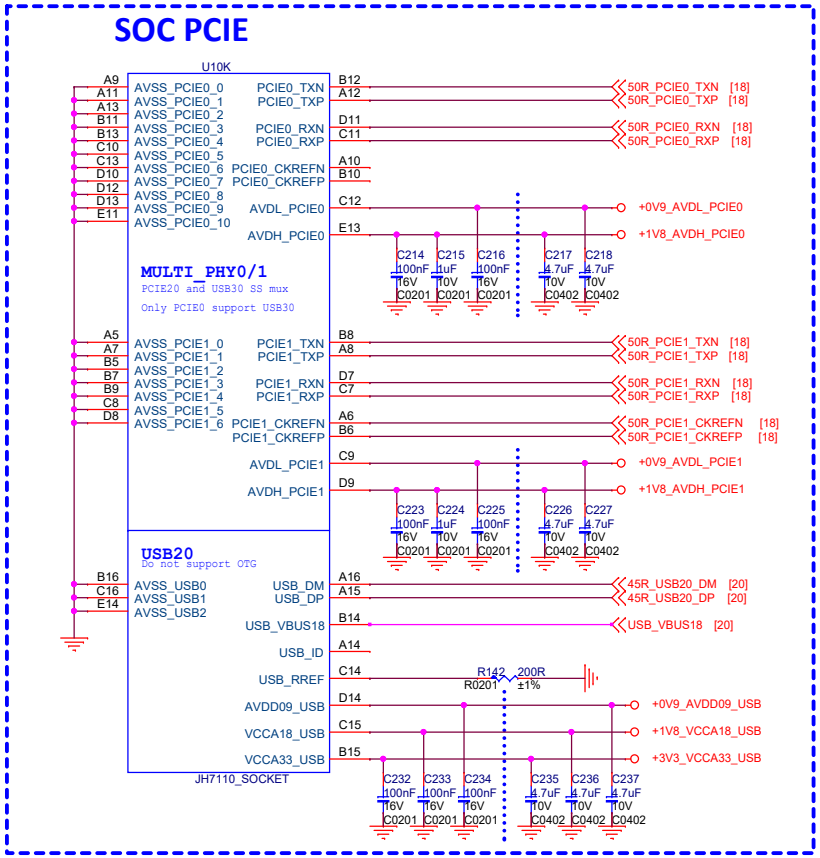

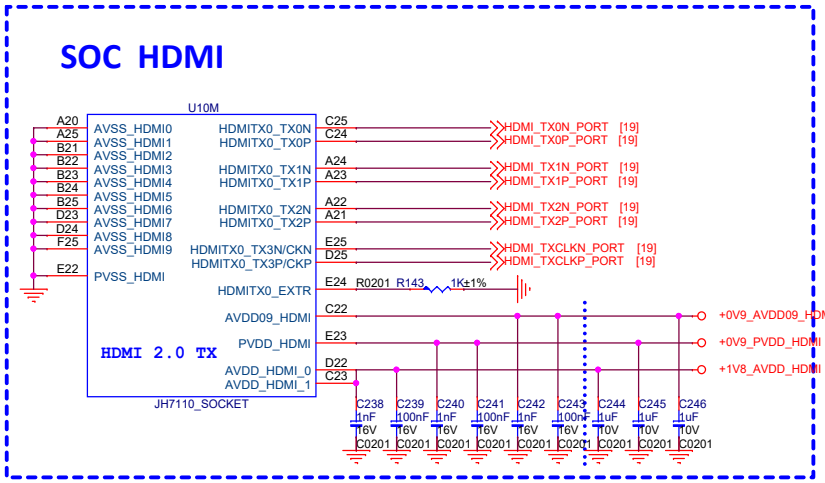

PINE64

PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

Size	Document Number	Rev
A3	JH7110_HDMI_PCIE_MIPI_USB	V1.0

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MIPI CSI 1C2L

[13] CSI_I2C_SCL_GPIO16
[13] CSI_I2C_SDA_GPIO17
[13] CSI_PWDN0_GPIO25
[13] CSI_RST0_GPIO33
[13] CSI_PWDN1_GPIO13
[13] CSI_RST1_GPIO34
[13] FLASH_LED_EN_H_GPIO55

TRUTH TABLE

SEL	/OE	Function
0	0	DA1,DA2,CLKA
1	0	DB1,DB2,CLKB

+3V3
C249 1uF 16V C0402
C250 100nF 16V C0201
22R R145
[14] MIPI_SW_GPIO53
[14] 50R_MIPIRX_CLK0P
[14] 50R_MIPIRX_CLK0N
[14] 50R_MIPIRX_DP1
[14] 50R_MIPIRX_DN1
[14] 50R_MIPIRX_DP0
[14] 50R_MIPIRX_DN0

J4
Header Of RPI
VCC, OE, SEL, CLKP, CLKN, D1P, D1N, D2P, D2N, NC0, NC1, GND
CLKBN, CLKBP, DB1N, DB1P, DB2P, DB2N, CLKAP, CLKAN, DA1P, DA1N, DA2P, DA2N
MIPI_CSI_RX_CLK0N
MIPI_CSI_RX_CLK0P
MIPI_CSI_RX_D0N
MIPI_CSI_RX_D0P
MIPI_CSI_RX_D1P
MIPI_CSI_RX_D1N
MIPI_CSI_RX_CLK1P
MIPI_CSI_RX_CLK1N
MIPI_CSI_RX_D2P
MIPI_CSI_RX_D2N
MIPI_CSI_RX_D3P
MIPI_CSI_RX_D3N
BCT642A

VCC_1V8_1 — 0R R144 — VCC1V8_DVP
100NF C247
100NF C248

J3
CSI_I2C_SDA_GPIO17 TP57
CSI_I2C_SCL_GPIO16 TP59
CSI_RST0_GPIO33 TP54
CSI_PWDN0_GPIO25 TP55
TP56
TP60
MIPI_MCLKF TP61
TP62
MIPI_MCLKB TP63
TP64
MIPI_CSI_RX_CLK1N TP65
MIPI_CSI_RX_CLK1P TP66
MIPI_CSI_RX_D3P TP67
MIPI_CSI_RX_D3N TP68
MIPI_CSI_RX_D2P TP69
MIPI_CSI_RX_D2N TP70
MIPI_CSI_RX_D1P TP71
MIPI_CSI_RX_D1N TP72
MIPI_CSI_RX_D0P TP73
MIPI_CSI_RX_D0N TP74
MIPI_CSI_RX_CLK0P TP75
MIPI_CSI_RX_CLK0N TP76
TP77
CSI_RST1_GPIO34 TP78
CSI_PWDN1_GPIO13 TP79
F_LED- TP80
F_LED+ TP81
VCC2V8_DVP
VCC1V8_DVP
VCCIO_DVP
VCC1V8_DVP
VCC2V8_AF
VDD1V5_DVP
NC0, GND0, SDA, AVDD-2V8, SCL, RST0, VSYNC, PDN0-F, HREF, DVDD, VCCIO-DVP, NC1, CLKOUT, NC2, GND1, NC3, CLKIN, NC4, NC5, NC6, NC7, NC8, VCC-1V8, AF-VDD, GND2, MIPI-CLK1N-F, MIPI-CLK1P-F, GND3, MIPI-D3P-F, MIPI-D3N-F, MIPI-D2P-F, MIPI-D2N-F, MIPI-D1P-B, MIPI-D1N-B, MIPI-D0P-B, MIPI-D0N-B, GND4, MIPI-CLK0P-B, MIPI-CLK0N-B, GND5, VDD-1V5, MIPI-RST, PDN1-B, LED-, LED+, G0, G1
46
47
CFPC0310-45RL-TAG

+VDD1833_GPIO3
100NF C251
R146 10K
U14
VCC NC OUT GND
SOC_24MHz
CRY4_3225
MIPI_MCLKB 0R R148
MIPI_MCLKF 0R R149
C252 NC

FLASH LED

+5V — R147 75R 5% R0603 — F_LED+
F_LED-
FLASH_LED_EN_H_GPIO55 — R150 10K 5% R0402 — Q3 S8050 SOT_23
R151 51K R0402 5%

U15 TCS2185B-D28
IN FB/OUT EN GND NC
FBP1x1-4
VCC_3V3_SY
VCC1V8_DVP
VCC2V8_DVP
C253 1uF X5R 10V C0201
R152 10K 5%
C259 DNP C0201
C254 4.7uF X5R 10V C0201
C255 100nF

U16 TCS2185B-D15
IN FB/OUT EN GND NC
FBP1x1-4
VCC_3V3_SY
VCC1V8_DVP
VDD1V5_DVP
C256 1uF X5R 10V C0201
R153 10K 5%
C260 DNP C0201
C257 4.7uF X5R 10V C0201
C258 100nF

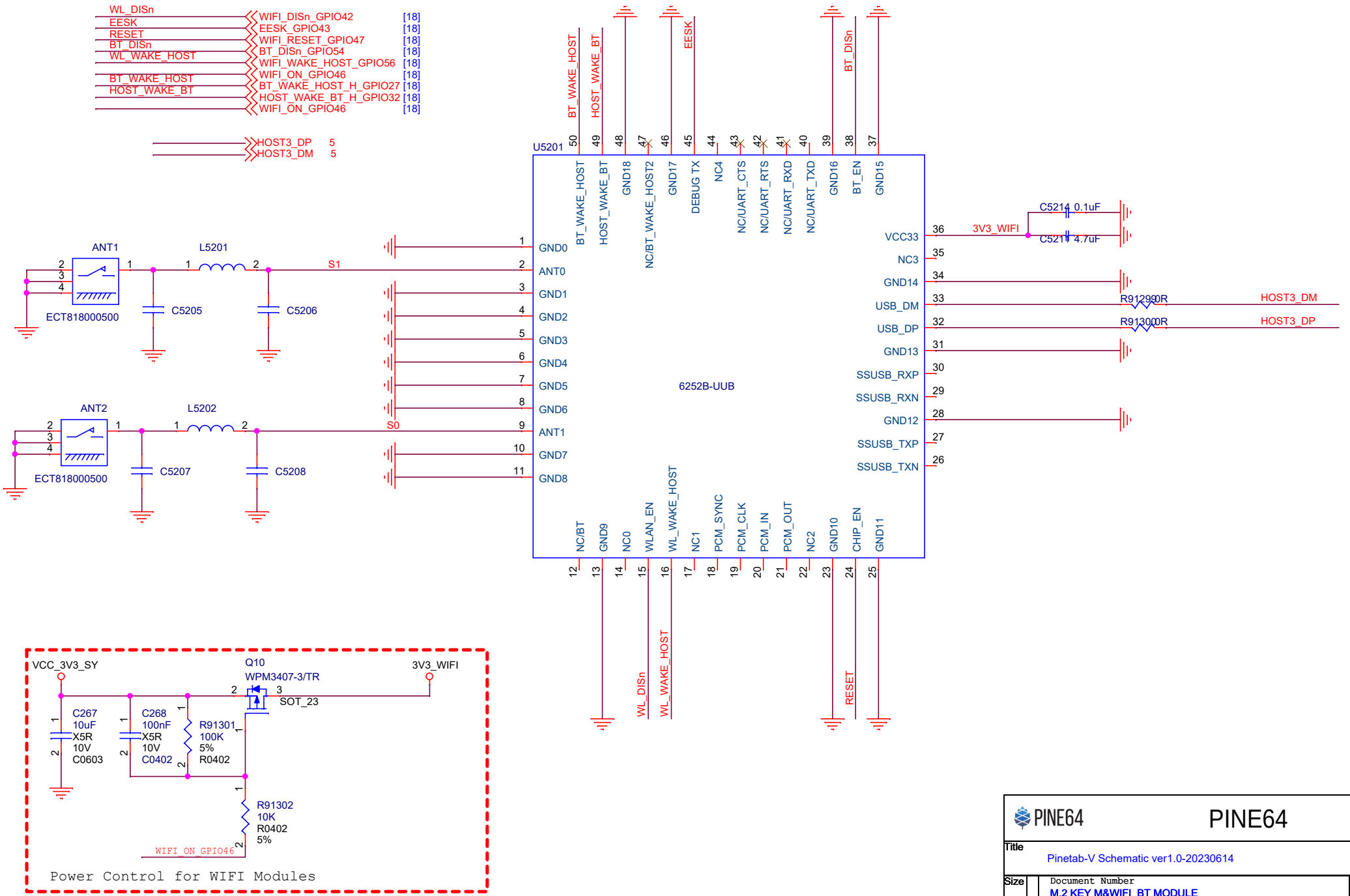
VCC2V8_DVP — FB5 180R-100M R0402 1.5A 25% — VCC2V8_AF
C261 10uF X5R 6.3V C0402
C262 100nF X5R 16V C0402

VCC1V8_DVP — FB6 180R-100M R0402 1.5A 25% — VCCIO_DVP
C263 10uF X5R 6.3V C0402
C264 100nF X5R 16V C0402

PINE64

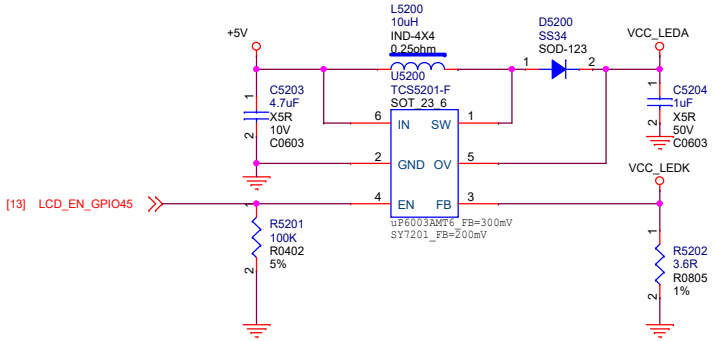
Title	Pinetab-V Schematic ver1.0-20230614
Size	Document Number: MIPI TX_RX; Rev: V1.0
Date:	Tuesday, June 13, 2023; Sheet 15 of 21

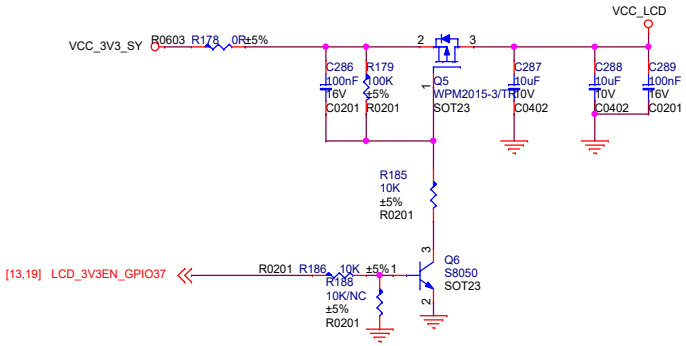
PCIE1 WIFI_BT Module

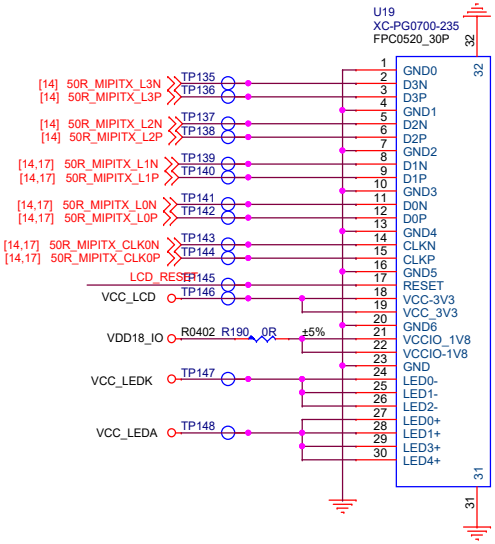


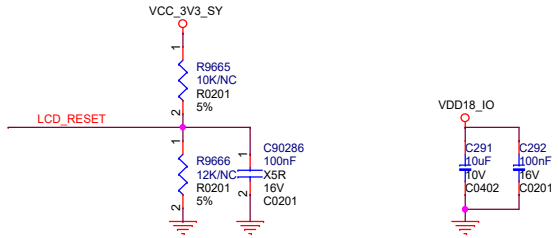
PINE64	PINE64	
Title	Pinetab-V Schematic ver1.0-20230614	
Size	Document Number: M.2 KEY M&WIFI_BT MODULE	Rev: V1.0
Date: Wednesday, March 01, 2023	Sheet 16 of 21	

MIPI_LCD_TX1

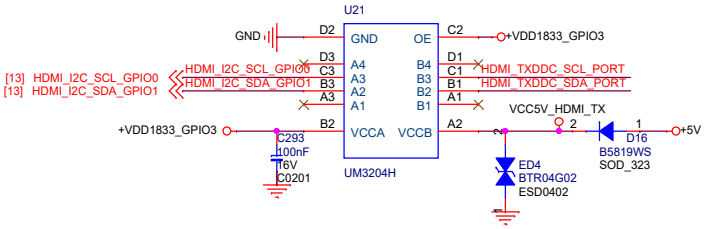


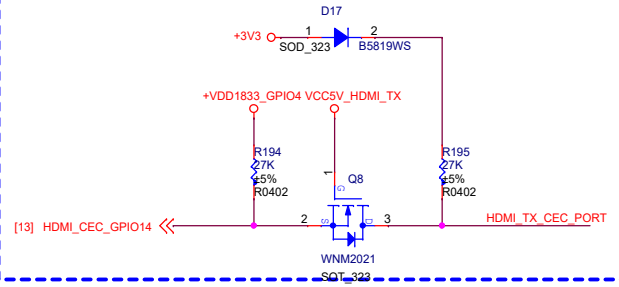


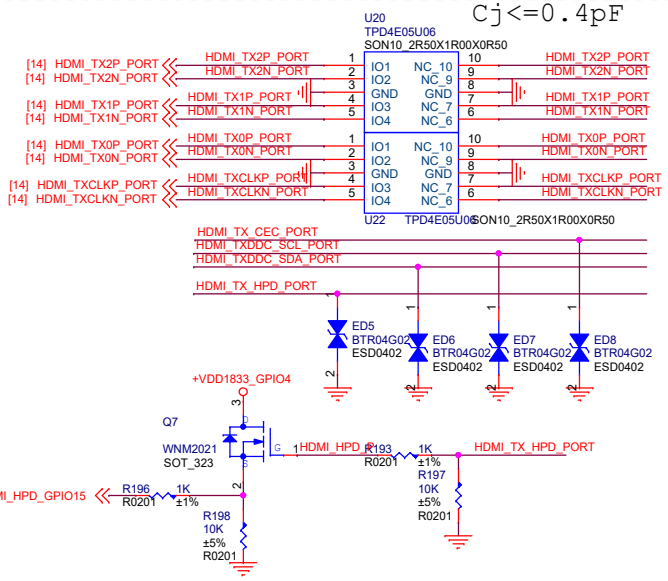


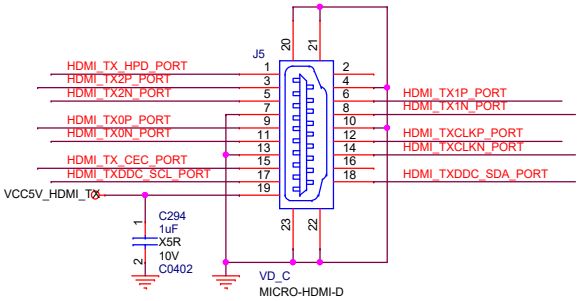


DIGITAL VIDEO









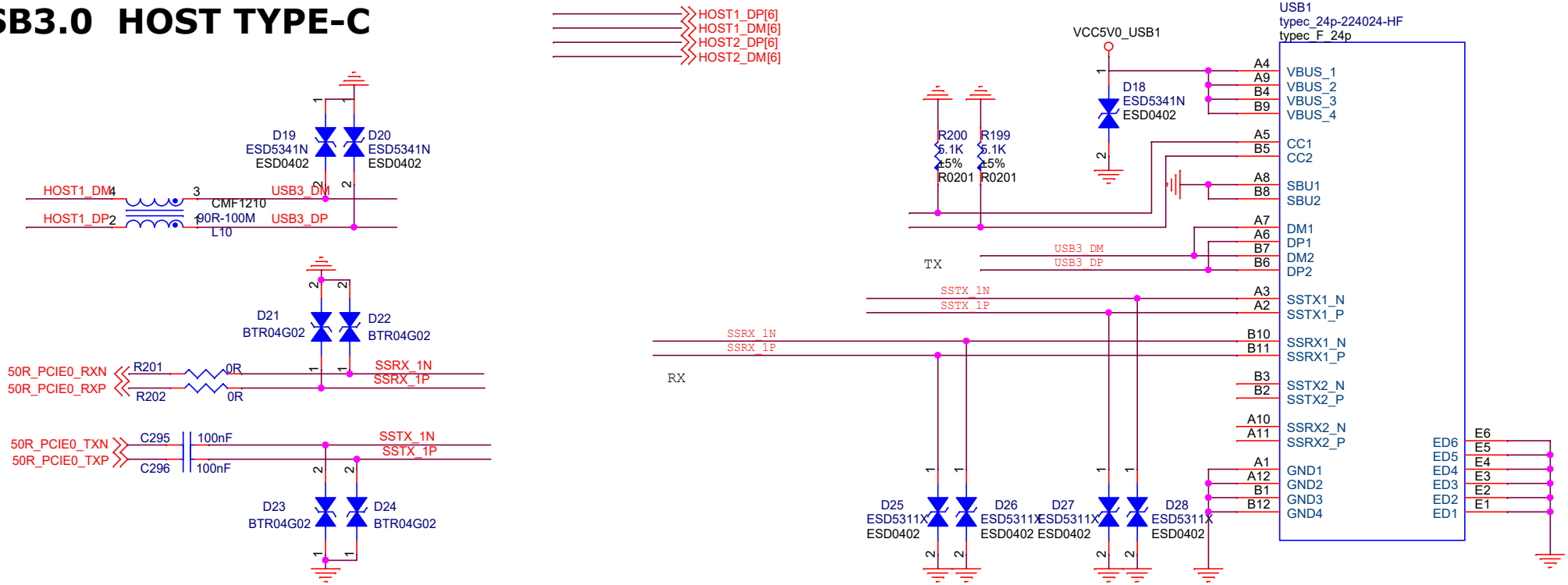
PINE64 PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

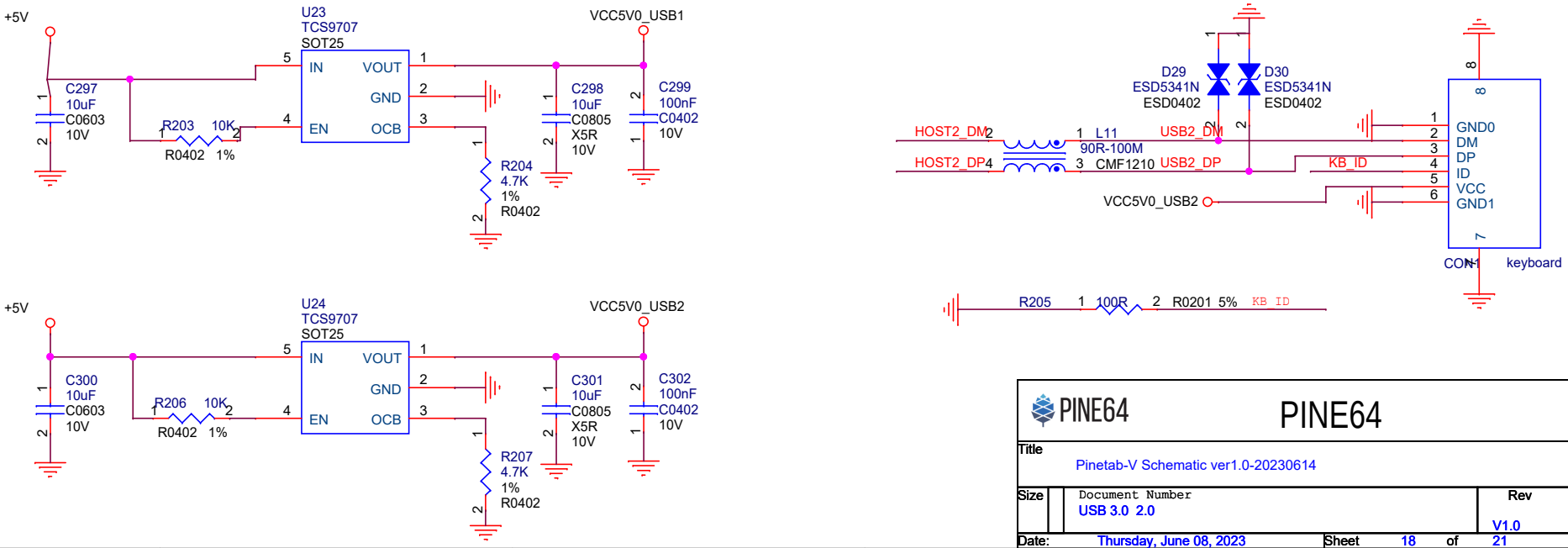
Size	Document Number	Rev
A3	MIPI_LCD & Digital Video	V1.0

Date: Monday, June 12, 2023 Sheet 17 of 21

USB3.0 HOST TYPE-C



USB2.0 HOST KeyBoard



PINE64

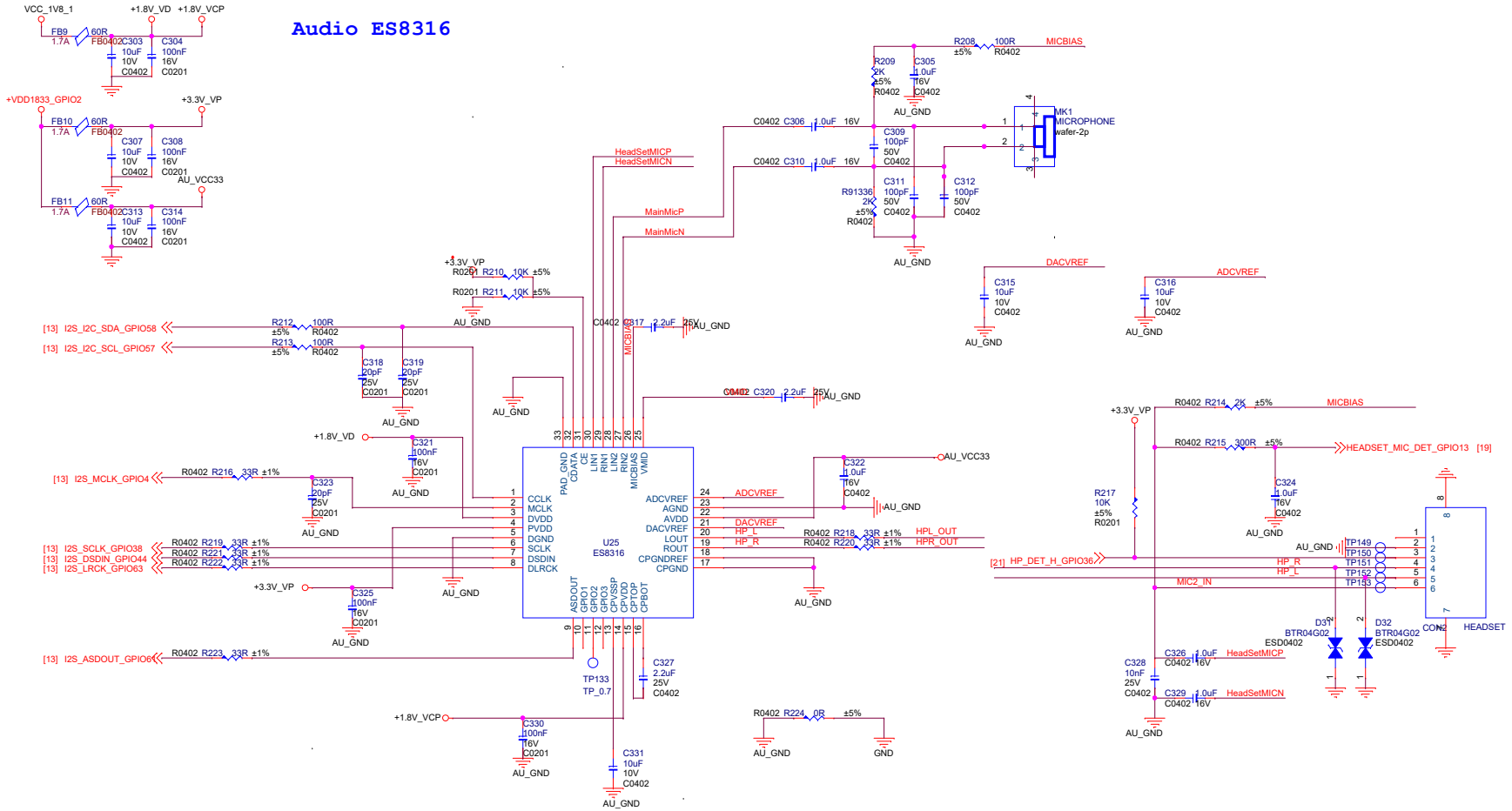
PINE64

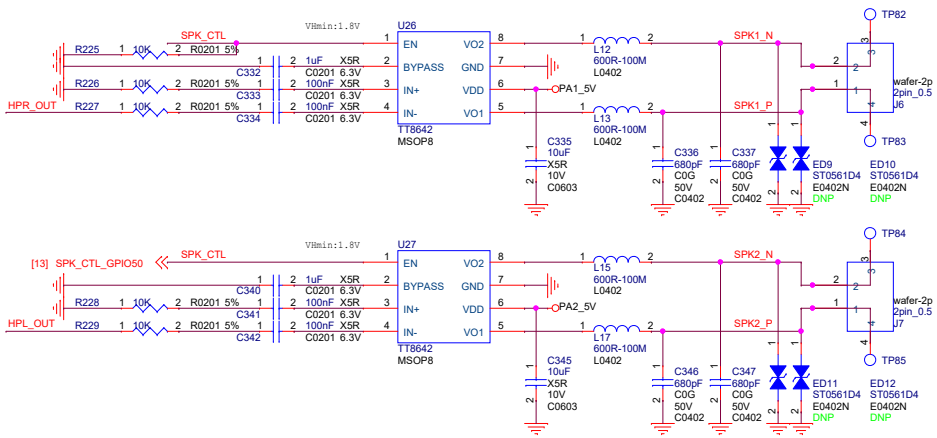
Title: Pinetab-V Schematic ver1.0-20230614

Size	Document Number	Rev
	USB 3.0 2.0	V1.0

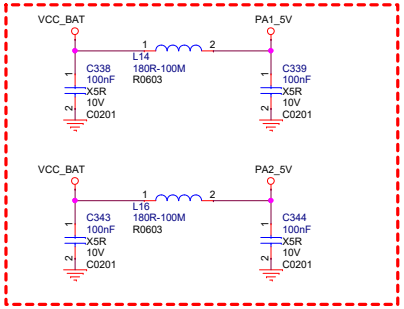
Date: Thursday, June 08, 2023 Sheet 18 of 21

Audio ES8316





Speaker Output(Stereo)



PINE64	PINE64		
Title	PineTab-V Schematic ver 1.0-20230614		
Size	Document Number: Audio ES8316		Rev: V1.0
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TP COB Connector

Note:26x14 channel,
suit for Touch Panel size≤12''

[13,17,22] DSI_I2C_SCL_GPIO3
[13,17,22] DSI_I2C_SDA_GPIO2
[13] TP_INT_L
[13] TP_RST_L

+VDD1833_GPIO1
R230 10K 5% R0402
TP_RST_L
C348 10nF 10V X5R C0402

J8
CFPC0310-45RL-TAG

U28
GT911
qfn_6x6mm_52_0d4

AVDD POWER: 3.3V
VCC_3V3_SY
FB12 180R-100M R0603 1.5A 25%
VCC_TP
C349 10uF 10V X5R C0402
C350 100nF 16V X5R C0201
close to pin3

VCCIO POWER: 1.8V
+VDD1833_GPIO3
R231 0R/NC R0402 5%
VCCIO_TP
C351 2.2uF/NC 16V X5R C0402
C352 2.2uF 16V X5R C0402

R232 300K R0201 5%
R233 300K R0201 5%

TP127 TP_INT_L
TP128 DSI_I2C_SDA_GPIO2
TP129 DSI_I2C_SCL_GPIO3
TP130 TP_RST_L

default VCCIO=1.8V

COB Sensor ID连接方法

S_OPT1	S_OPT1	模组ID
GND	GND	模组1(默认)
NC	GND	模组3
GND	NC	模组4
NC	NC	模组6

PINE64

Title: Pinetab-V Schematic ver1.0-20230614

Size | Document Number: TP-GT911 | Rev: V1.0

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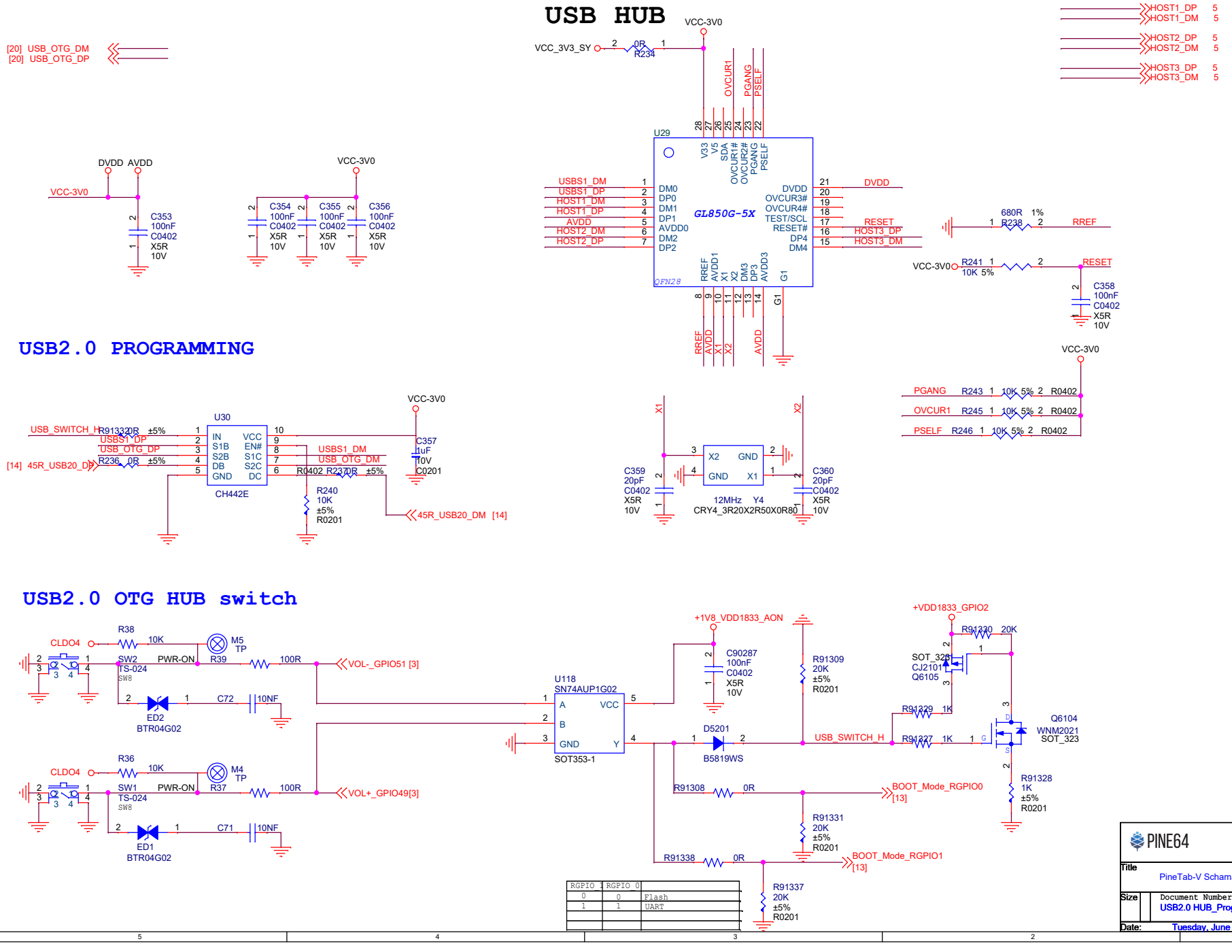
USB HUB



USB2.0 PROGRAMMING

USB2.0 OTG HUB switch

PINE64

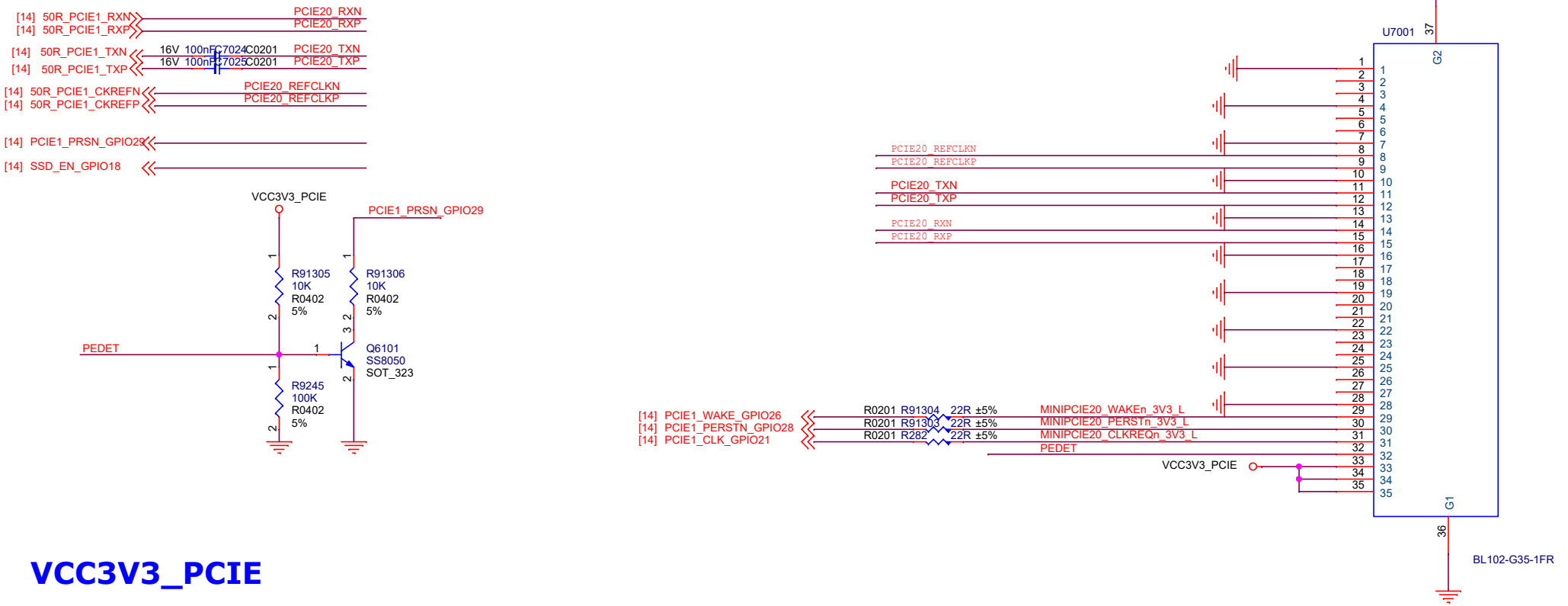
PINE64

Title: PineTab-V Schamatic Ver1.0-20230614

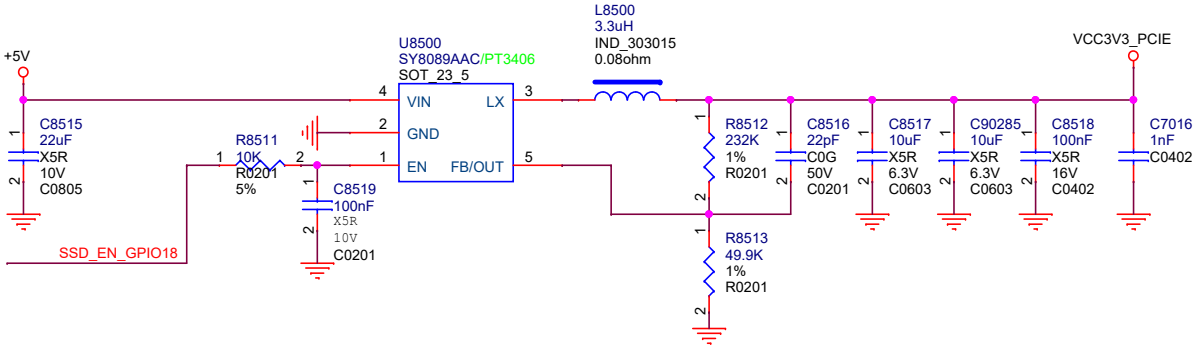
Size | Document Number: USB2.0 HUB_Programming | Rev: V1.0

Date: Tuesday, June 13, 2023 | Sheet 21 of 21

NVMe PCIE 2.0



VCC3V3_PCIE



PINE64	PINE64	
Title	Pinetab-V Schematic ver1.0-20230614	
Size	Document Number: NVMe PCI-e 2.0	Rev
Date: Monday, June 12, 2023	Sheet 1 of 1	