Schematics Index:

P01: REVISION HISTORY
P02: BLOCK
P03: POWER TREE
P04: GPIO ASSIGNMENT
P05: CPU
P06: POWER
P07: CAMERA-FLASH
P08: LCD
P09: EPHY
P10: WIFI
P11: UART-USB
PineCube Mainboard Schematic ver 1.0

- PMU
- SENSOR, CTP
- TWI0
- TWI1
- MIPI
- MIPI
- Ethernet 100/10M
- EMAC+PHY
- CAMERA(ISP)
- CSI
- SPI
- SDIO0
- SDIO1
- RTL8189
- TF CARD
- AUDIO
- HEADPHONE
- RGB
- POWER
- LCD
- UART1
- UART2
- DEBUG UART
- DCDC/LDO
- AXP209
- Battery Voltage Supply 3.55V-4.20V

- Class D&AB AMP
- SPEAKER
- Keyboard
- Keys
- Battery Voltage Supply 3.55V-4.20V

- 24MHz
- 32.768K

- S3
AXP209

Battery Charger & Power Detect

LAN 5V

USB 5V

PS
DC/DC2
DC/DC3

1.25V/1.6A VDD 1.2V For SYS&GPU(ON)
3.3V/1.2A VCC 3.3V for VCC-IO and external device(ON)

LDO1 3.3V/30mA VCC 3.3V for RTC(ON)
LDO2 3.0V/200mA VCC 3.0V for AVCC&PLL(ON)
LDO3 2.8/200mA VDD2.8V For VCC-PE(OFF)
LDO4

EX

PS

DC/DC3
DC/DC2

2.5V@300mA VDD 1.5V For VDD-EFUSE(ON)

LDO 5V@2A VCC 5V For VBUS,LCD,CAMERA(ON)

BOOST

1.5V@700mA VCC 1.5V for DRAM(ON)

DCDC

LDO4

VCC 1.5V For VBUS,LCD,CAMERA(ON)

Battery Charger & Power Detect

PineCube Mainboard Schematic ver 1.0
Vout = 0.6*(1+R1/R2)=1.5V/1.8V

VCC - 3.3V/2A
VIN1 - 10K, Vout = 1.5V
VIN2 - 20K, Vout = 1.8V

Power-Out

DCDC1
DCDC2
DCDC3

5V

1.8V-3.3V/20mA

1400mA

0.7V-3.5V

2300mA

1.25V
RGB LCD

BACK LIGHT

VDC- LX [VCC-LCD]

diff pairs line from AP to U8
[d22,d23] [D21,D20]
[HSYNC,VSYNC] [DE,CLK]
Differential pairs
Z0 = 100 ohm

PoE: 8V-24V
adjust according to actual case
Differential pairs $Z_0 = 90$ ohm

USB TYPE A

Layout diff. 90R

Differential pairs $Z_0 = 90$ ohm