S3-OLinuXino — Schematic

U1A — AllWinner-S3 (FBGA-234)

BT-UART-RX — B3 — PB0/UART2_TX/PB_EINT0
BT-UART-TX — B4 — PB1/UART2_RX/PB_EINT1
BT-UART-CTS — B8 — PB2/UART2_RTS/PB_EINT2
PB3 — C4 — PB3/UART2_CTS/PB_EINT3
LCD-PWM — C8 — PB4/PWM0/PB_EINT4
GPIO_LED — C7 — PB5/PWM1/PB_EINT5
PB6\TWI0-SCK — A7 — PB6/TWI0_SCK/PB_EINT6
PB7\TWI0-SDA — B7 — PB7/TWI0_SDA/PB_EINT7
PB8\TWI1-SCK — B6 — PB8/TWI1_SCK/UART0_TX/PB_EINT8
PB9\TWI1-SDA — C6 — PB9/TWI1_SDA/UART0_RX/PB_EINT9
USB-VBUSDET — A5 — PB10/JTAG_MS/PB_EINT10
WL-WAKE-AP — C5 — PB11/JTAG_CK/PB_EINT11
HP(MIC)-DET — B5 — PB12/JTAG_D0/PB_EINT12

Pins:25

A3 — PC0/SDC2_CLK/SPI0_MISO — SDC2-CLK\SPI0-MISO
B2 — PC1/SDC2_CMD/SPI0_CLK — SDC2-CMD\SPI0-CLK
B1 — PC2/SDC2_RST/SPI0_CS — SDC2-RST\SPI0-CS
C2 — PC3/SDC2_D0/SPI0_MOSI — SDC2-D0\SPI0-MOSI
F3 — PC4/SDC2_D1 — SDC2-D1
F4 — PC5/SDC2_D2 — SDC2-D2
C1 — PC6/SDC2_D3 — SDC2-D3
D3 — PC7/SDC2_D4 — SDC2-D4
D1 — PC8/SDC2_D5 — SDC2-D5
D2 — PC9/SDC2_D6 — SDC2-D6
A2 — PC10/SDC2_D7 — SDC2-D7
PB13/JTAG_DI/PB_EINT13 — CTP-INT

Boot Order:
SDC0 -> SDC2 -> SPI0 -> USB

eMMC / NAND / SPI-Flash

Flash1A — Flash[2x(PA-V16X-2X10-LF)]

VCCF(3.3V) — 1
VCCQ(3.3/1.8V) — 3
eMMC-RST — 5
eMMC-CMD — 7
NAND-RB0 — 9
NAND-CE0 — 11
NAND-RE — 13
NAND-CLE — 15
NAND-ALE — 17
NAND0-WE — 19

VCCF(3.3V) — 2 — +3.3V
VCCQ(3.3/1.8V) — 4 — +3.3V
GND — 6 — GND
SPI-SCLK(CLK) — 8 — SDC2-CMD\SPI0-CLK
GND — 10 — GND
SPI-MOSI(IO0) — 12 — SDC2-D0\SPI0-MOSI
SPI-HOLD(IO3) — 14
SPI-MISO(IO1) — 16 — SDC2-CLK\SPI0-MISO
SPI-WPn(IO2) — 18
SPI-CSn(CMD) — 20 — SDC2-RST\SPI0-CS

Flash1B — Flash[2x(PA-V16X-2X10-LF)]

GND — 21 — SDC2-CLK\SPI0-MISO
eMMC-CLK — 23
GND — 25
eMMC(NAND)-D3 — 27
GND — 29
eMMC(NAND)-D2 — 31
GND — 33
eMMC(NAND)-D1 — 35
GND — 37
eMMC(NAND)-D0 — 39 — SDC2-D0\SPI0-MOSI

GND — 22
eMMC-DS — 24
GND — 26
eMMC(NAND)-D4 — 28 — SDC2-D4
GND — 30
eMMC(NAND)-D5 — 32 — SDC2-D5
GND — 34
eMMC(NAND)-D6 — 36 — SDC2-D6
GND — 38
eMMC(NAND)-D7 — 40 — SDC2-D7

CSI-CAMERA

I2C Address: 0x30

CAM1 — OV2640 (FPV-WZB21-24-LF)

1 — STROBE
2 — AGND
3 — SIO_D — CSI-SDA
4 — AVDD
5 — SIO_C — CSI-SCK
6 — RESET — CAM-RST
7 — VSYNC — CSI-VSYNC
8 — PWDN — CAM-PWDN
9 — HREF — CSI-HSYNC
10 — DVDD
11 — DOVDD
12 — Y9 — CSI-D11
13 — XCLK1 — CSI-MCLK
14 — Y8 — CSI-D10
15 — DGND
16 — PCLK — CSI-PCLK
17 — Y7 — CSI-D9
18 — Y6 — CSI-D8
19 — Y5 — CSI-D7
20 — Y4 — CSI-D6
21 — Y3 — CSI-D5
22 — Y2 — CSI-D4
23 — Y1 — CSI-D3
24 — Y0 — CSI-D2

R2 2.2k/R0402
R3 2.2k/R0402
R60 10k/R0402
R61 10k/R0402
R62 22R/R0402
R63 22R/R0402
C101 100nf/10V/10%/X7R/C0402
C102 100nf/10V/10%/X7R/C0402
C103 100nf/10V/10%/X7R/C0402
C104 NA(15pF/C0402)

U1C — AllWinner-S3 (FBGA-234)

Pins: 27

VCC-PE0 — M11
VCC-PE1 — M12

F14 — PE0/CSI_PCLK/LCD_CLK — CSI-PCLK
G13 — PE1/CSI_MCLK/LCD_DE — CSI-MCLK
C14 — PE2/CSI_HSYNC/LCD_HSYNC — CSI-HSYNC
F15 — PE3/CSI_VSYNC/LCD_VSYNC — CSI-VSYNC
F12 — PE4/CSI_D0/LCD_D2 — AP-WAKE-BT
C13 — PE5/CSI_D1/LCD_D3 — BT-DIS-N
E12 — PE6/CSI_D2/LCD_D4 — CSI-D2
G15 — PE7/CSI_D3/LCD_D5 — CSI-D3
E13 — PE8/CSI_D4/LCD_D6 — CSI-D4
E14 — PE9/CSI_D5/LCD_D7 — CSI-D5
J13 — PE10/CSI_D6/LCD_D10 — CSI-D6

K14 — PE24/LCD_D23/UART1_CTS
L14 — PE23/LCD_D22/UART1_RTS
J16 — PE22/CSI_SDA/TWI1_SDA/UART1_RX
G16 — PE21/CSI_SCLK/TWI1_SCK/UART1_TX
H15 — PE20/CSI_FIELD/CSI_MIPI_MCLK
E16 — PE19/CSI_D15/LCD_D21
E15 — PE18/CSI_D14/LCD_D20
D14 — PE17/CSI_D13/LCD_D19
D15 — PE16/CSI_D12/LCD_D18
K13 — PE15/CSI_D11/LCD_D17
L16 — PE14/CSI_D10/LCD_D16
L13 — PE13/CSI_D9/LCD_D15
G14 — PE12/CSI_D8/LCD_D12
J15 — PE11/CSI_D7/LCD_D11

MIPI-CSI-PWDN
MIPI-CSI-RESET
CSI-SDA
CSI-SCK
CTP-RST
WL-PMU-EN
LCD_PWR
CAM-PWDN
CAM-RST
CSI-D11
CSI-D10
CSI-D9
CSI-D8
CSI-D7

C1 100nf/10V/10%/X7R/C0402

UEXT & DBG-Uart

UEXT1 — HN2x5

UART1_TX — 1 2
PB8\TWI1-SCK — 3 4 — UART1_RX
PB9\TWI1-SDA — 5 6
7 8
9 10

D1 1N5819(S4SOD-123)
R7 10k/R0402

Extension

EXT1 — NA(HN2x10)

+3.3V IPS   +5V_EXT
1 2
3 4
5 6 — AXP_BACKUP
7 8 — AXP_PWRON
LRADC0 — 9 10 — AXP_RST
LRADC1 — 11 12 — AXP_GPIO1
PB6\TWI0-SCK — 13 14 — AXP_GPIO2
PB7\TWI0-SDA — 15 16 — AXP_GPIO3
CSI-SCK — 17 18 — PB3
CSI-SDA — 19 20 — GPIO_LED

EEPROM

U2 — AT24C16C-SSHM-T (SOIC-8_150mil)

Array EEPROM
1 — A0
2 — A1
3 — A2
4 — SDA
5 — VCC
6 — WP
7 — SCL — PB8\TWI1-SCK
8 — ...

PB9\TWI1-SDA
R4 2.2k/R0402
R5 2.2k/R0402
C3 100nf/10V/10%/X7R/C0402

MAC Address and Board Specific Data.
I2C Address: From 0x50 to 0x57;

WiFi&BT

U3 — RTL8723BS (ComboModule)

RM1C 3,2 3,1 RA1206_(4x0603)_4B8_100k
RM1B 2,2 2,1 RA1206_(4x0603)_4B8_100k
RM2B 2,2 2,1 RA1206_(4x0603)_4B8_100k
RM2A 1,2 1,1 RA1206_(4x0603)_4B8_100k
RM1D 4,2 4,1 RA1206_(4x0603)_4B8_100k
RM1A 1,2 1,1 RA1206_(4x0603)_4B8_100k

9 — VDD33
22 — VDD_IO
8 — WL_DSI#/GPIO9 — 12 — WL-PMU-EN
13 — WL_HOST_WAKE — WL-WAKE-AP
14 — SD_CLK — WL-SDIO-CLK
16 — SD_CMD — WL-SDIO-CMD
19 — SD_D0 — WL-SDIO-D0
18 — SD_D1 — WL-SDIO-D1
17 — SD_D2 — WL-SDIO-D2
15 — SD_D3 — WL-SDIO-D3

R9 22R/R0402

28 — PCM_SYNC — BT-PCM-SYNC
26 — PCM_CLK — BT-PCM-CLK
27 — PCM_DIN — BT-PCM-DIN
25 — PCM_DOUT — BT-PCM-DOUT

42 — UART_OUT — BT-UART-TX
43 — UART_IN — BT-UART-RX
44 — UART_CTS — BT-UART-CTS

RM2D 4,2 4,1 RA1206_(4x0603)_4B8_100k
RM2C 3,2 3,1 RA1206_(4x0603)_4B8_100k

30 — BT_WAKE — AP-WAKE-BT
34 — BT_HOST_WAKE — BT-WAKE-AP
— BT_DIS# — BT-DIS-N
— SUSCLK_IN/GPIO6 — AP-CK32KO

WIFI/BT_ANT

C6 10uf/6.3V/20%/X5R/C0603
C7 100nf/10V/10%/X7R/C0402
C8 10uf/6.3V/20%/X5R/C0603
C9 100nf/10V/10%/X7R/C0402
R8 22R/R0402
R13 NA
L1 3.3nH/+-0.1nH/L0402(LQP15MN3N3802D)
C10 10pF/50V/5%/COG/C0402
C11 1.5pF/50V/+-0.25pF/COG/C0402 / 0.8pF/50V/+-0.25pF/COG/C0402
C13 ...

ANT1 — U.FL-R-SMT-1

U1B — AllWinner-S3 (FBGA-234)

Pins: 45

VCC-PD0 — L11
VCC-PD1 — L12

LCD_D2 — K15 — PD0/LCD_D2/RGMII_RXD3/RMII_NULL
LCD_D3 — C11 — PD1/LCD_D3/RGMII_RXD2/RMII_NULL
LCD_D4 — J14 — PD2/LCD_D4/RGMII_RXD1/RMII_RXD1
LCD_D5 — J15 — PD3/LCD_D5/RGMII_RXD0/RMII_RXD0
LCD_D6 — B16 — PD4/LCD_D6/RGMII_RXCK/RMII_NULL
LCD_D7 — C16 — PD5/LCD_D7/RGMII_RXCTL/RMII_NULL
LCD_D10 — B9 — PD6/LCD_D10/RGMII_NULL/RMII_RXER
LCD_D11 — A9 — PD7/LCD_D11/RGMII_TXD3/RMII_NULL
LCD_D12 — C15 — PD8/LCD_D12/RGMII_TXD2/RMII_NULL
LCD_D13 — L15 — PD9/LCD_D13/RGMII_TXD1/RMII_TXD1
LCD_D14 — A15 — PD10/LCD_D14/RGMII_TXD0/RMII_TXD0
LCD_D15 — B15 — PD11/LCD_D15/RGMII_NULL/RMII_CRS_D
LCD_D18 — B14 — PD12/LCD_D18/LVDS_VP0/RGMII_TXCK/RMII_TXCK
LCD_D19 — A14 — PD13/LCD_D19/LVDS_DN0/RGMII_TXCTL/RMII_TXEN
LCD_D20 — B13 — PD14/LCD_D20/LVDS_VP1/RGMII_NULL/RMII_NULL
LCD_D21 — A13 — PD15/LCD_D21/LVDS_VN1/RGMII_CLKIN/RMII_NULL
LCD_D22 — C12 — PD16/LCD_D22/LVDS_VP2/MDC
LCD_D23 — B12 — PD17/LCD_D23/LVDS_VN2/MDIO
LCD_CLK — A11 — PD18/LCD_CLK/LVDS_VPC
LCD_DE — B11 — PD19/LCD_DE/LVDS_VNC
LCD_HSYNC — C10 — PD20/LCD_HSYNC/LVDS_VP3
LCD_VSYNC — B10 — PD21/LCD_VSYNC/LVDS_VN3
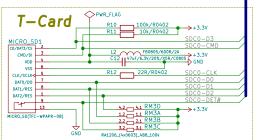
P16 — PG0/SDC1_CLK/PG_EINT0 — WL-SDIO-CLK
N15 — PG1/SDC1_CMD/PG_EINT1 — WL-SDIO-CMD
P15 — PG2/SDC1_D0/PG_EINT2 — WL-SDIO-D0
N16 — PG3/SDC1_D1/PG_EINT3 — WL-SDIO-D1
R16 — PG4/SDC1_D2/PG_EINT4 — WL-SDIO-D2
R15 — PG5/SDC1_D3/PG_EINT5 — WL-SDIO-D3
M15 — PG6/UART1_TX/PG_EINT6 — UART1_TX
M14 — PG7/UART1_RX/PG_EINT7 — UART1_RX
T14 — PG8/UART1_RTS/PG_EINT8 — BT-WAKE-AP
P14 — PG9/UART1_CTS/PG_EINT9
T15 — PG10/PCM_SYNC/PG_EINT10 — BT-PCM-SYNC
M13 — PG11/PCM_BCLK/PG_EINT11 — BT-PCM-CLK
— PG12/PCM_DOUT/PG_EINT12 — BT-PCM-DIN
— PG13/PCM_DIN/PG_EINT13 — BT-PCM-DOUT

USB-ID

PF6
M1 — PF5/SDC0_D2/JTAG_CK — SDC0-D2
M2 — PF4/SDC0_D3/UART0_RX — SDC0-D3
N1 — PF3/SDC0_CMD/JTAG_DO — SDC0-CMD
N2 — PF2/SDC0_CLK/UART0_TX — SDC0-CLK
P1 — PF1/SDC0_D0/JTAG_DI — SDC0-D0
R1 — PF0/SDC0_D1/JTAG_MS — SDC0-D1

C4 100nf/10V/10%/X7R/C0402

LCD

LCD_CON1 — FPV-WZA21-40-LF

+3.3V +5V

LCD_D18 — LCD_D19
LCD_D20 — LCD_D21
LCD_D22 — LCD_D23
LCD_D10 — LCD_D11
LCD_D12 — LCD_D13
LCD_D14 — LCD_D15
LCD_D2 — LCD_D3
LCD_D4 — LCD_D5
LCD_D6 — LCD_D7
LCD_HSYNC — LCD_VSYNC
LCD_CLK — LCD_DE
LCD_PWR — LCD-PWM
CTP-INT — CTP-RST
PB6\TWI0-SCK — PB7\TWI0-SDA

LED

GPIO_LED
R6 2.2k/R0402
GPIO_LED1 — LED/Red/0603

T-Card

MICRO_SD1 — MICRO_SD(TFC-WPAPR-08)

PWR_FLAG
R10 100k/R0402
R11 10k/R0402

CD/DAT3/CS — SDCO-D3
CMD/DI — SDCO-CMD
VDD
VSS
CLK/SCLK — SDCO-CLK
DAT0/DO — SDCO-D0
DAT1/RES — SDCO-D1
DAT2/RES — SDCO-DET#

L2 FB0805/600R/2A
C12 47uf/6.3V/20%/X5R/C0805
R12 22R/R0402

RM3D 4,2 4,1
RM3A 1,2 1,1
RM3B 2,2 2,1
RM3C 3,2 3,1
RA1206_(4x0603)_4B8_100k

Fiducials

FID1 FID3 FID5
FID2 FID4 FID6
Fiducial

R1 2.2k/R0402
GND

Power Supply

I2C Address: 0x34

This was exported from Eagle to KiCad and was corrected! To be checked from someone else!!!

AXP209(QFN-48)

LDO1 Voltage

LDO1SET	GND	VINT
LDO1 Voltage	1.3V	3.3V

USB-OTG

Iset = 6800/Rset
Iset = 1744mA

Rset

SY6280AAC(SOT23-5)

MICRO_USB\MISB-SWMM-5B_LF

Audio

MIC/LINEIN1
PJ-W47S-05D2-LF

HEADPHONES/LINEOUT1
PJ-W47S-05D2-LF

Option for Handsfree Usage

Buttons

PWR1 IT-1185AU2-160G-G-TR AXP_PWRON
RST1 IT-1185AU2-160G-G-TR AXP_RESET

RPi-MiPi_Camera

RPi_CAMERA1

I2C Address (Slave Address):
For OmniVision OV5647: 0x36;
For Sony IMX219PQH5-C: 0x20;

1.0mm-pitch_ZIF_SMT-15P

CPU Power Supply

AllWinner-S3(FBGA-234)

Pins: 77

Ethernet

LAN1

LPJG0926HENL(MagJack_10_100_1000_with_PoE)

PoE - Option!

Isolation

[2x(HN1x2)+HN1x4]

Mounting Holes

MH1 MH3
MH2 MH4

AllWinner-S3(FBGA-234) Pins:60

Vout=0.6*(1+Ra\Rb)

Vout=0.6*(1+Ra/Rb)

MT3608(SOT23-6)

SY8089AAAC(SOT23-5)

IRLML6402(SOT-23)

LI-ION_BATTERY 4.2V

DW02S

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Sheet: /PowerSupply_USB_Audio_Ethernet_Buttons_MiPi-Camera/
File: PowerSupply_USB_Audio_Ethernet_Buttons_MiPi-Camera.sch

Title: S3-OLinuXino

Size: A3	Date: 2019-10-25	Rev: A
KiCad E.D.A. kicad 5.99.0-unknown-18d4112100ubuntu18.04.1		Id: 2/2