DDR3:1GByte

DDR3

U1A

AllWinner-A64(FBGA396)

PINS:88

U2

K4B8G1646D-MYK0(FBGA-96_512Mx16_DDR3-1600_11-11-11)

U3

K4B8G1646D-MYK0(FBGA-96_512Mx16_DDR3-1600_11-11-11)

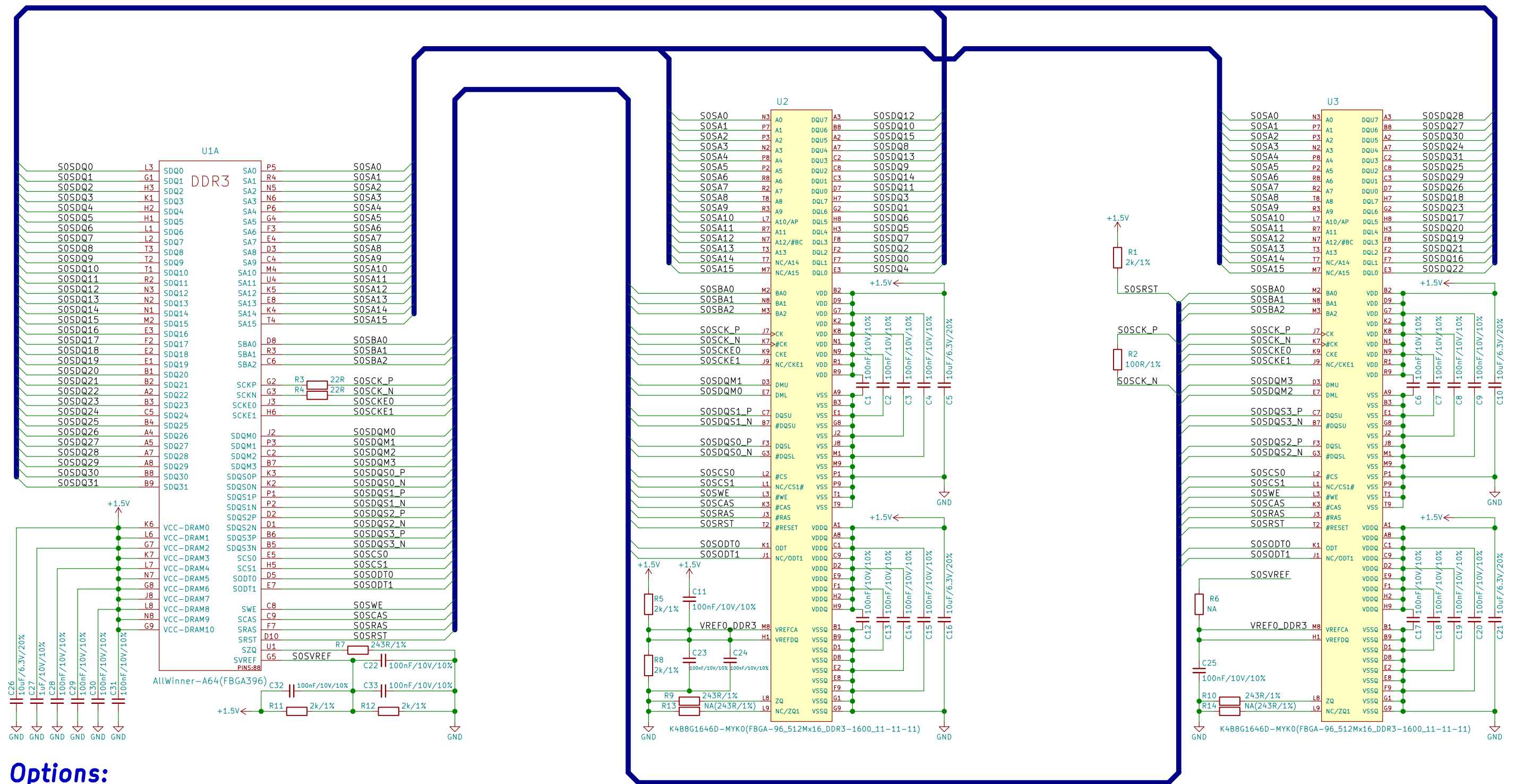## Options:
=======
1. Use 2(DDR3 256Mx16 Memory chips)x4Gb = 1GByte, i.e. 2xH5TQ4G63MFR-PBC(or K4B4G1646Q-HYK0) -> Default
2. Use 2(DDR3 512Mx16 Memory chips)x8Gb = 2GBytes, i.e. 2xH5TC8G63AMR-PBA(or K4B8G1646Q-MYK0)

Note:
=====
We have used a number of fully compatible, but different DDR3 memories due to supply unavailability.
In such cases the memory part name in the schematic might remain outdated.
It is recommended to always refer to the exact memory name printed on the component itself.
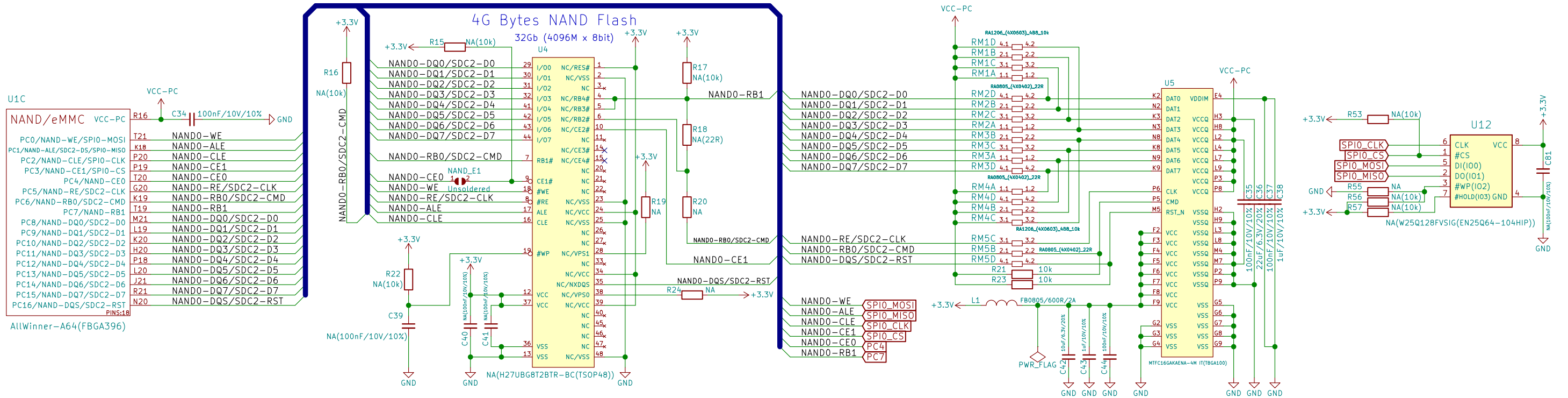
NAND Flash   eMMC   SPI flash

Option!
=====
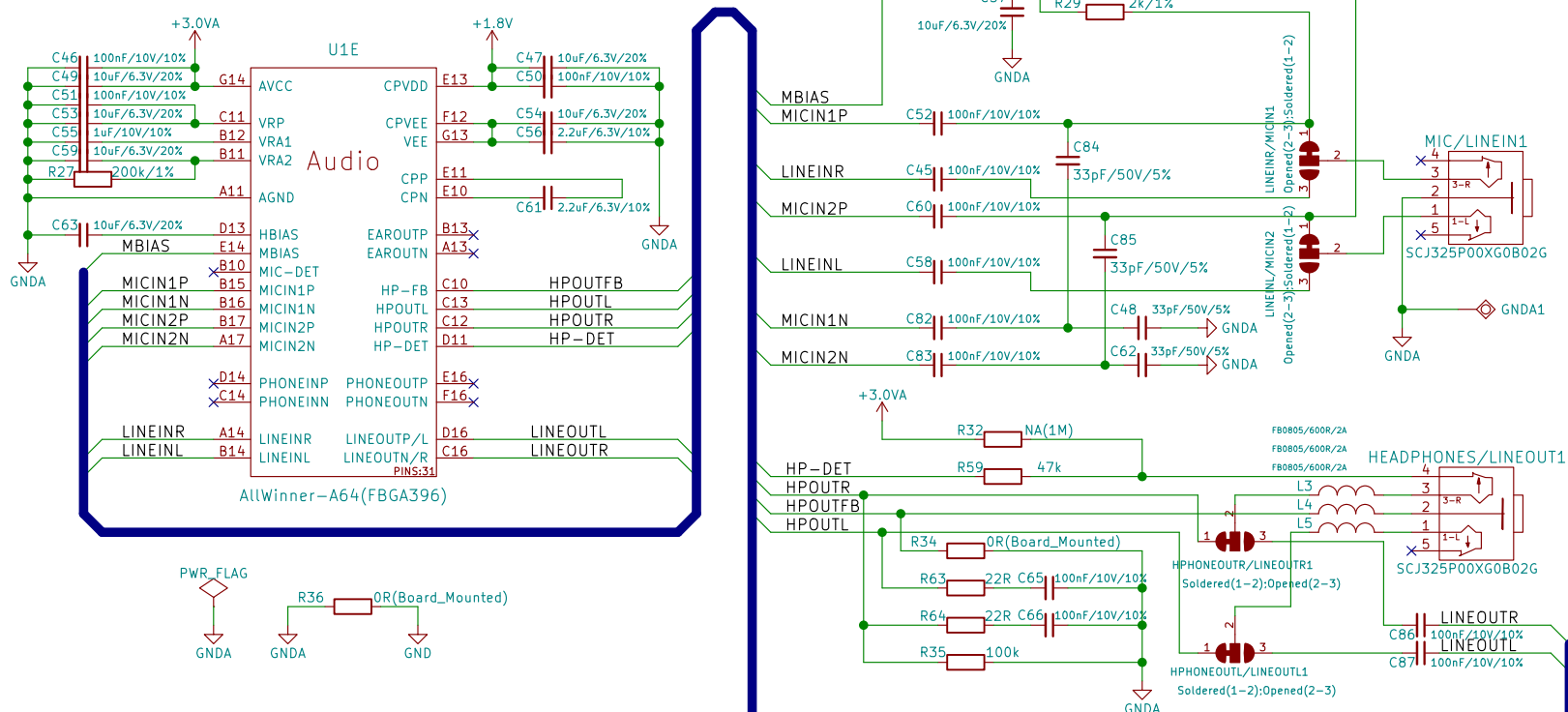eMMC is default, because in this case, SPIO is not multipexed with eMMC as is with the NAND Flash!
SPIO is available on the UEXT connector!

4G Bytes NAND Flash
32Gb (4096M x 8bit)
U4

U1C
NAND/eMMC VCC-PC

AllWinner-A64(FBGA396)
PINS:18

NA(H27UBG8T2BTR-BC(TSOP48))

U5
MTFC16GAKAENA-4M IT(TBGA100)

U12
NA(W25Q128FVSIG(EN25Q64-104HIP))

Audio

CPVEE and VEE to be made as Kelvin connection.
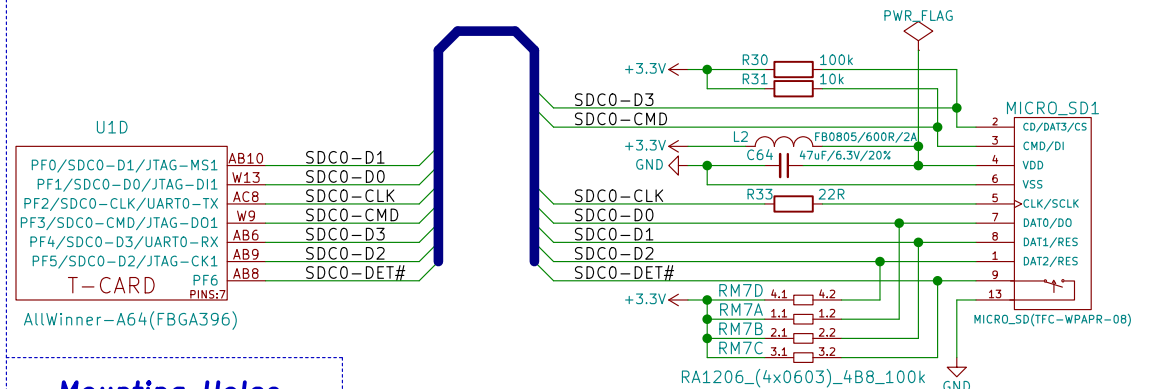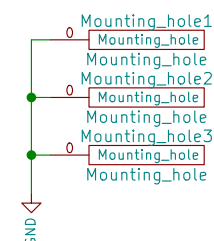
U1E
Audio

AllWinner-A64(FBGA396)
PINS:31

MIC/LINEIN1
SCJ325P00XG0B02G

HEADPHONES/LINEOUT1
SCJ325P00XG0B02G

T-Card

U1D
T-CARD
AllWinner-A64(FBGA396)
PINS:7

MICRO_SD1
MICRO_SD(TFC-WPAPR-08)

RA1206_(4x0603)_4B8_100k

Mounting Holes
Mounting_hole1
Mounting_hole
Mounting_hole2
Mounting_hole
Mounting_hole3
Mounting_hole

HDMI

USB

Gigabit Ethernet or LCD

WiFi&BT

LCD/Ethernet

USB & HDMI

WiFi & BT

AllWinner-A64(FBGA396)

KSZ9031RNXIC-TR(QFN48_1DRILL(PADPITCH-0.5MM))

NA(RTL8723BS(ComboModule))

Ilim(A)=6800/Rset(Ohm)

Ilim=0.5A

Ilim=1.7A
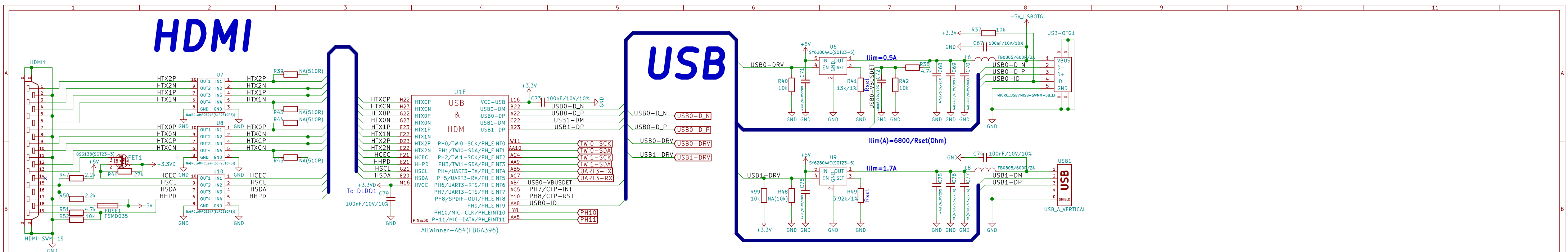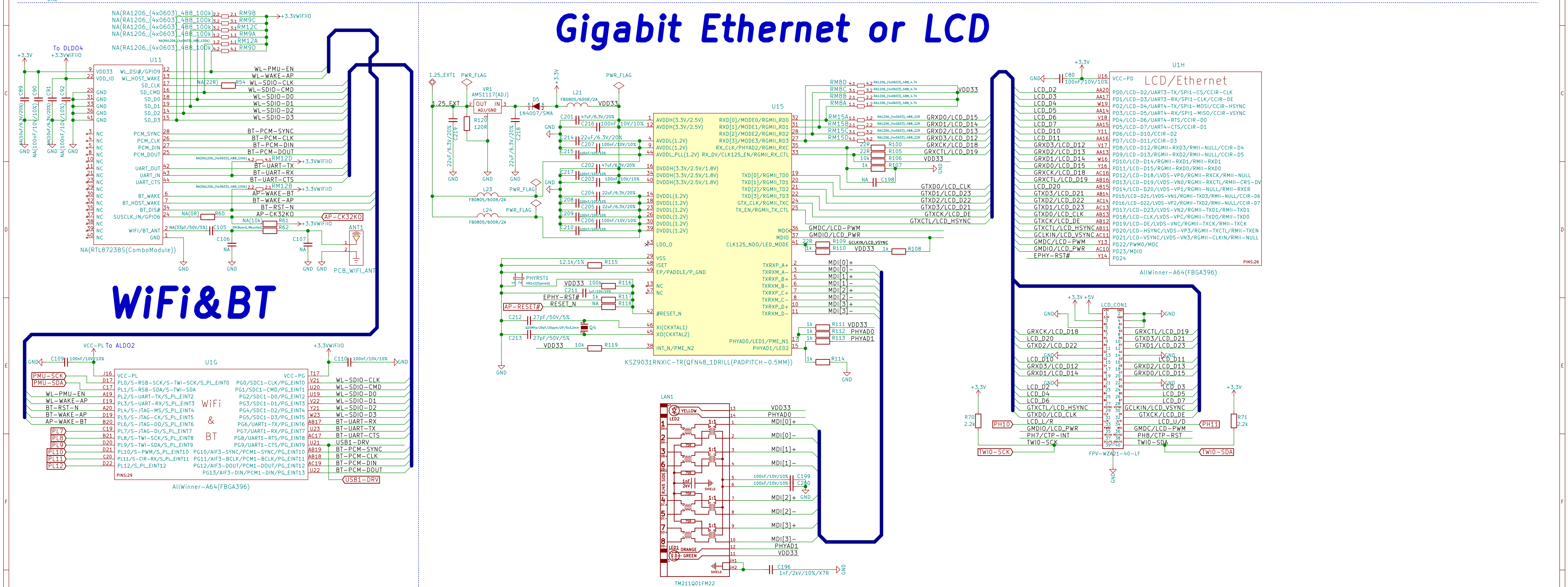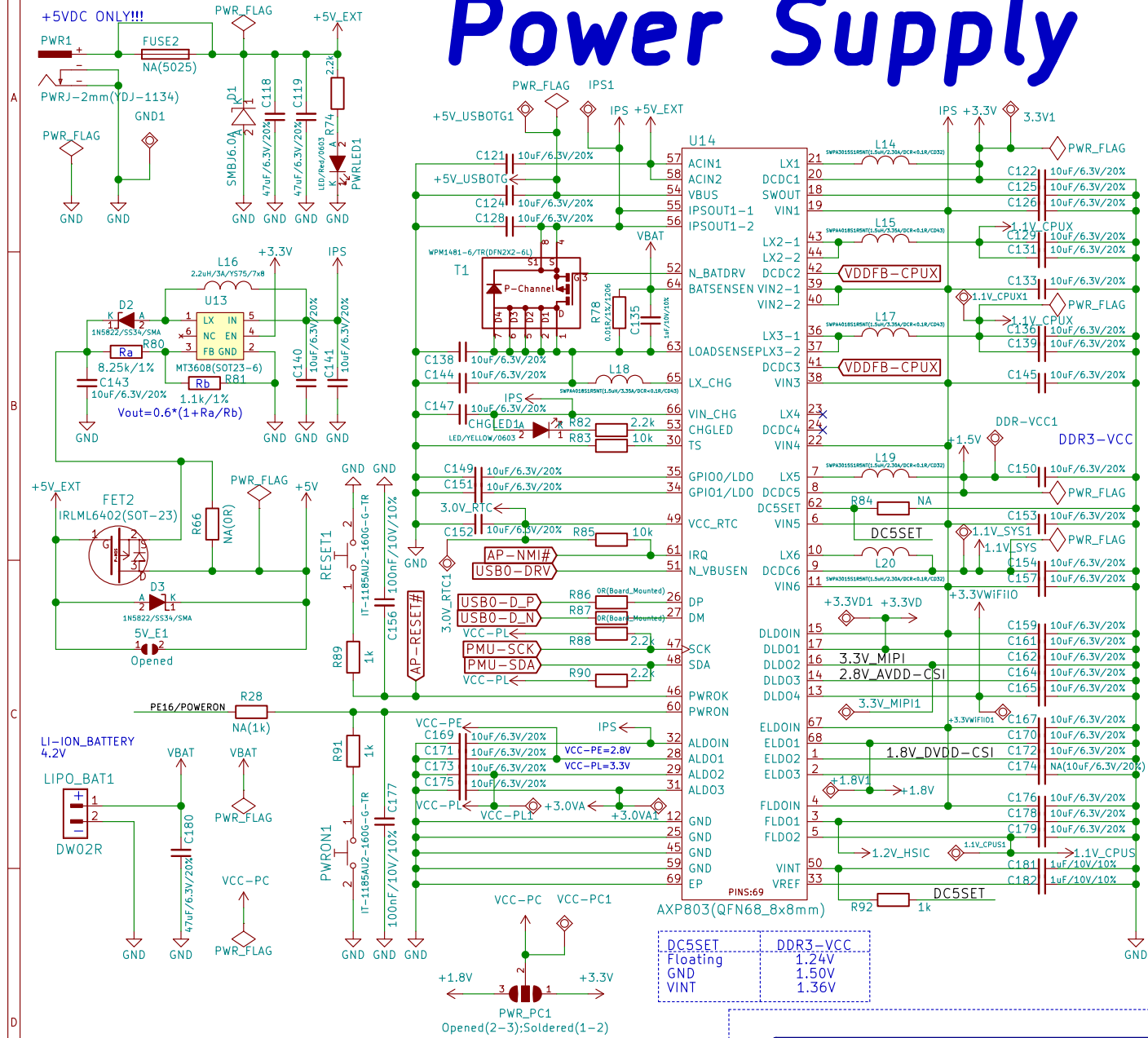
Power Supply

UEXT
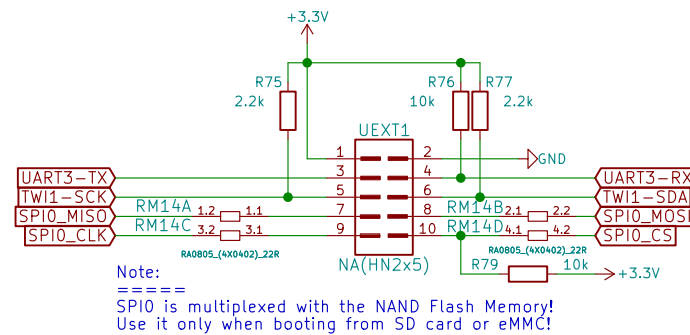
Extension
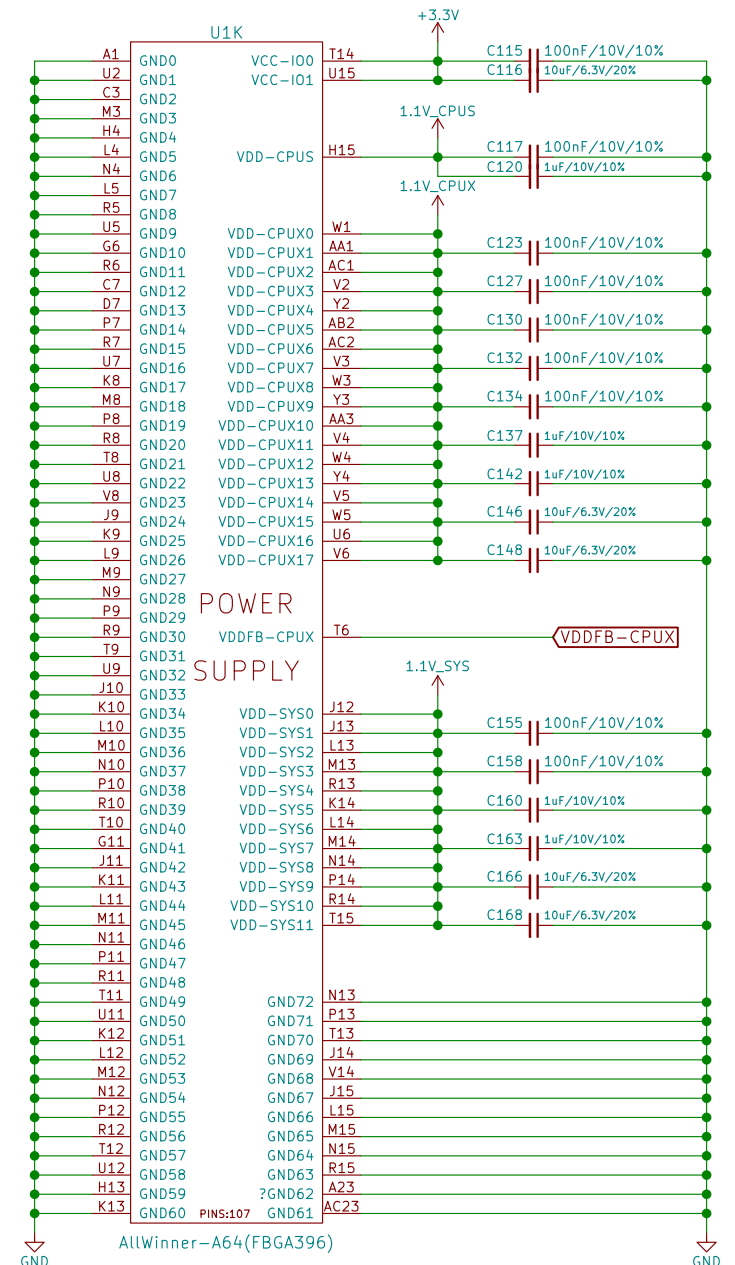
Crystal, RTC & Control

MiPi-DSI

+5VDC ONLY!!!

PWR1
PWRJ-2mm(YDJ-1134)
FUSE2 NA(5025)
PWR_FLAG
+5V_EXT
SMBJ6.0A
PWRLED1
LED/Red/0603
GND1
GND

U14 AXP803(QFN68_8x8mm) PINS:69

T1 P-Channel
FET2 IRLML6402(SOT-23)
U13 MT3608(SOT23-6)
Vout=0.6*(1+Ra/Rb)

LI-ION_BATTERY 4.2V
LIPO_BAT1 DW02R

Notes:
1.PC4 and PC7 could be used only when NAND Flash is not populated!
2. VCC-PE is 2.8V(default), VCC-PB, VCC-PC and VCC-PL are 3.3V.

DC5SET	DDR3-VCC
Floating	1.24V
GND	1.50V
VINT	1.36V

PWR_PC1
Opened(2-3):Soldered(1-2)

UEXT
UEXT1 NA(HN2x5)
UART3-TX, TWI1-SCK, SPI0_MISO, SPI0_CLK
UART3-RX, TWI1-SDA, SPI0_MOSI, SPI0_CS
R75 2.2k, R76 10k, R77 2.2k, R79 10k
RA0805_(4X0402)_22R

Note:
=====
SPI0 is multiplexed with the NAND Flash Memory!
Use it only when booting from SD card or eMMC!

Extension
GPIO1 NA(HN2x20)
PE0...PE16, PB0...PB4, PC4, PC7, PL7, PL8, PL9, PL10, PL11, PL12
AP-RESET#, UBOOT, KEYADC
1.8V_DVDD-CSI, 2.8V_AVDD-CSI, 2.8V_DOVDD-CSI
R103 100k, R104 NA(10k), R65 22R

Power Supply
U1K AllWinner-A64(FBGA396) PINS:107
VCC-IO0, VCC-IO1
VDD-CPUS, 1.1V_CPUS, 1.1V_CPUX
VDD-CPUX0...VDD-CPUX17
VDDFB-CPUX
VDD-SYS0...VDD-SYS11
1.1V_SYS

Crystal, RTC & Control
U1B AllWinner-A64(FBGA396) PINS:20
X32KFOUT, X32KOUT, X32KIN, X24MO, X24MI
VCC-EFUSE, VDDBP-EFUSE, VCC-RTC, VCC-PLL, RTC-VIO
TEST, JTAGSEL0, JTAGSEL1, RESET, NMI, KEYADC, FEL/UBOOT
Q2 32.768kHz/12.5pf/20ppm/#/SMD8038
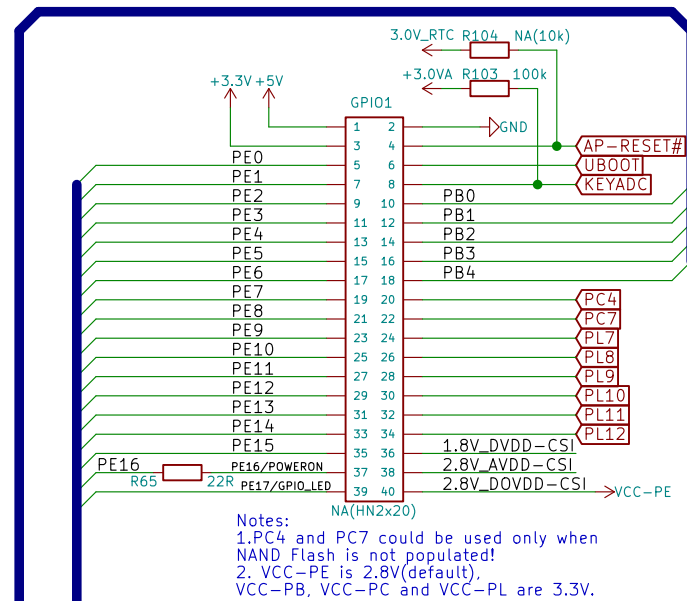Q3 24MHZ/20pf/20ppm/2P/5x3.2mm
C183 22pF/50V/5%, C184 22pF/50V/5%, C185 33pF/50V/5%, C187 33pF/50V/5%
R93 10M, AP-CK32KO
HSIC1, HSIC_E1, 1.2V_HSIC
UBOOT1 IT-1185AU2-160G-G-TR
AP-RESET#, AP-NMI#, KEYADC, UBOOT

MiPi-DSI
MIPI-DSI1 FPV-WZA21-20-LF
3.3V_MIPI, MIPI-DSI-RST, MIPI-DSI-BKL, MIPI-DSI-EN
DSI-D0N, DSI-D0P, DSI-D1N, DSI-D1P, DSI-D2N, DSI-D2P, DSI-D3N, DSI-D3P, DSI-CKN, DSI-CKP

2G/3G MODEM
U1J AllWinner-A64(FBGA396) PINS:10
PB0/UART2-TX/JTAG-MS0/PB_EINT0
PB1/UART2-RX/JTAG-CK0/PB_EINT1
PB2/UART2-RTS/JTAG-DI0/PB_EINT2
PB3/UART2-CTS/I2S0-MCLK/JTAG-DI0/PB_EINT3
PB4/AIF2-SYNC/PCM0-SYNC/PB_EINT4
PB5/AIF2-BCLK/PCM0-BCLK/PB_EINT5
PB6/AIF2-DOUT/PCM0-DOUT/PB_EINT6
PB7/AIF2-DINPCM0-DIN/PB_EINT7
PB8/UART0-TX/PB_EINT8
PB9/UART0-RX/PB_EINT9

DBG_UART1 HN1x3
1N5819(S4S0-123)

U1I AllWinner-A64(FBGA396) PINS:30
PE0/CSI-PCLK/TS_CLK, PE1/CSI-MCLK/TS_ERR
PE2/CSI-HSYNC/TS_SYNC, PE3/CSI-VSYNC/TS_DVLD
PE4/CSI-D0/TS_D0, PE5/CSI-D1/TS-D1
PE6/CSI-D2/TS-D2, PE7/CSI-D3/TS-D3
PE8/CSI-D4/TS-D4, PE9/CSI-D5/TS-D5
PE10/CSI-D6/TS-D6, PE11/CSI-D7/TS-D7
PE12/CSI-SCK, PE13/CSI-SDA
PE14/PLL-LOCK-DBG/TWI2-SCK, PE15/TWI2-SDA
PE16, PE17
DSI-CKP, DSI-CKN, DSI-D0P, DSI-D0N, DSI-D1P, DSI-D1N, DSI-D2P, DSI-D2N, DSI-D3P, DSI-D3N
VCC-DSI, VCC-PE
& MIPI CAMERA

GPIO_LED1 LED/Red/0603
R58 1k, PE17/GPIO_LED
R101 NA(2.2k), R102 NA(2.2k)
3.3V/VCC-PE:2.8V1
Opened(2-3):Closed(1-2)