

DDR3: 1GByte

The schematic diagram illustrates the connection of three 1GByte DDR3 memory chips (U1A, U2, U3) to an AllWinner-A64 (FBGA396) processor. The processor is connected to the memory chips via a series of pins, including data, address, control, and power. The diagram shows the following components and connections:

- Memory Chips (U1A, U2, U3):** Each chip is a K4B4G1646D-BCK0 (FBGA-96_256Mx16_DDR3-1600_11-11-11). The pins are labeled with their respective functions, such as S0SA0, S0SDQ0, S0SCK_P, S0SCK_N, S0SCKE1, S0SDQM1, S0SDQM0, S0SDQS1_P, S0SDQS1_N, S0SDQS0_P, S0SDQS0_N, S0SCS0, S0SCS1, S0SWE, S0SCAS, S0SRAS, S0SRST, S0SODT0, S0SODT1, S0SVREF, VREFCA, VREFDQ, and VREFDQ.
- Processor (U1A):** The AllWinner-A64 (FBGA396) processor is connected to the memory chips via a series of pins, including S0SA0, S0SDQ0, S0SCK_P, S0SCK_N, S0SCKE1, S0SDQM1, S0SDQM0, S0SDQS1_P, S0SDQS1_N, S0SDQS0_P, S0SDQS0_N, S0SCS0, S0SCS1, S0SWE, S0SCAS, S0SRAS, S0SRST, S0SODT0, S0SODT1, S0SVREF, VREFCA, VREFDQ, and VREFDQ.
- Power and Ground Connections:** The diagram shows the connection of power and ground to the memory chips. The power supply is +1.5V, and the ground is GND. The power supply is connected to the memory chips via a series of pins, including S0SA0, S0SDQ0, S0SCK_P, S0SCK_N, S0SCKE1, S0SDQM1, S0SDQM0, S0SDQS1_P, S0SDQS1_N, S0SDQS0_P, S0SDQS0_N, S0SCS0, S0SCS1, S0SWE, S0SCAS, S0SRAS, S0SRST, S0SODT0, S0SODT1, S0SVREF, VREFCA, VREFDQ, and VREFDQ.
- Passive Components:** The diagram includes various passive components, such as resistors (R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100) and capacitors (C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100).

1. Use 2(DDR3 256Mx16 Memory chips)x4Gb = 1GByte, i.e. 2xH5TQ4G63MFR-PBC(or K4B4G1646D-BCK0) -> Default
2. Use 2(DDR3 512Mx16 Memory chips)x8Gb = 2GBytes, i.e. 2xH5TC8G63AMR-PBA(or K4B8G1646Q-MYK0)

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.

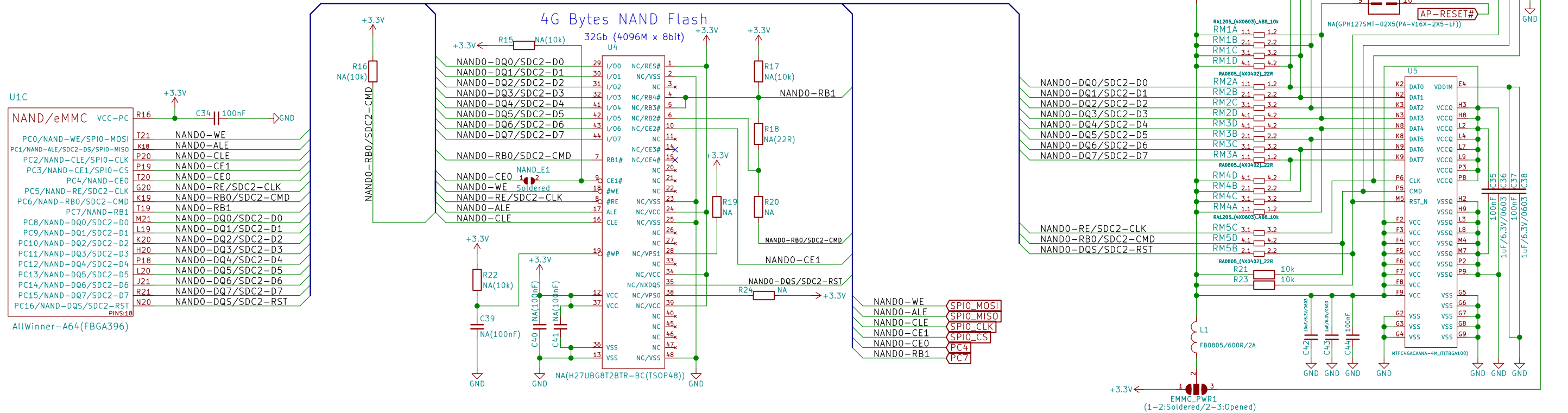
DDR3 Memory	
<c> 2015 OLIMEX LTD, Bulgaria	
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Size: A3	Date: 2015-10-15
KiCad E.D.A. kicad_0.201601191446+649542ubuntu15.10.1-product	Rev: Rev_A Id: 1/4

NAND Flash

eMMC

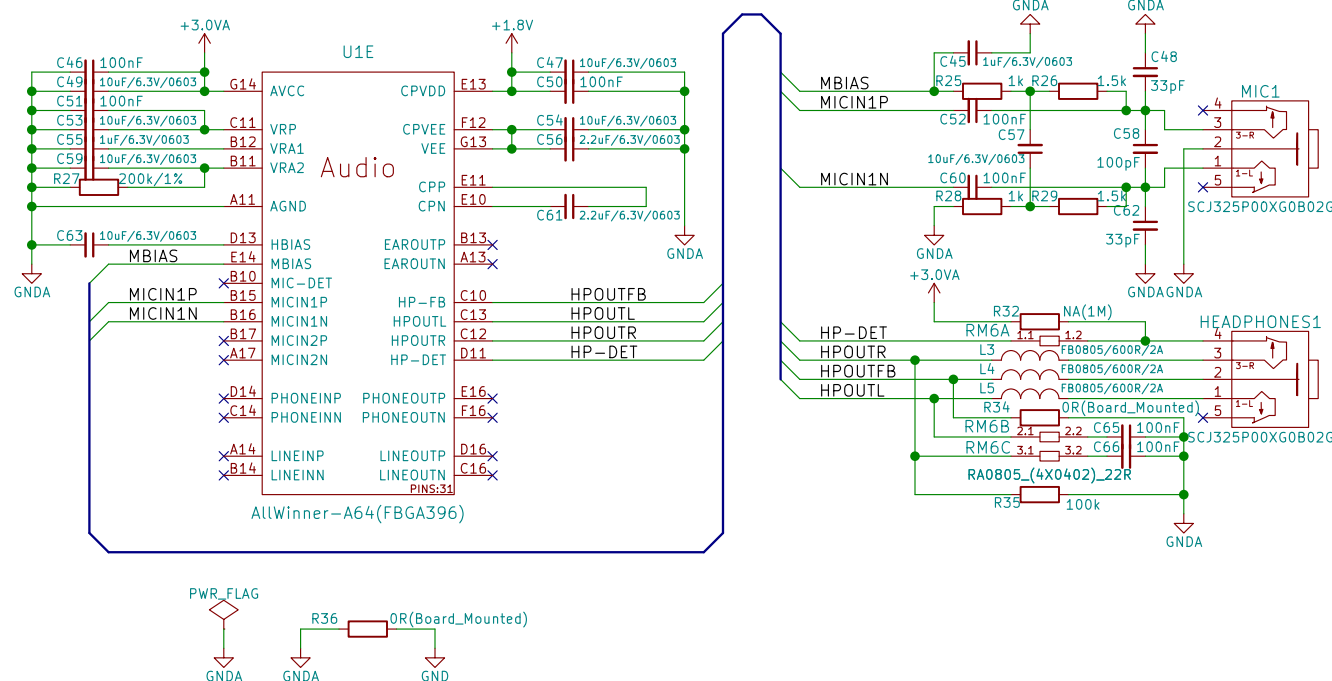
Option!
=====

eMMC is default, because in this case, SPI0 is not multiplexed with eMMC as is with the NAND Flash!
SPI0 is available on the UEXT connector!

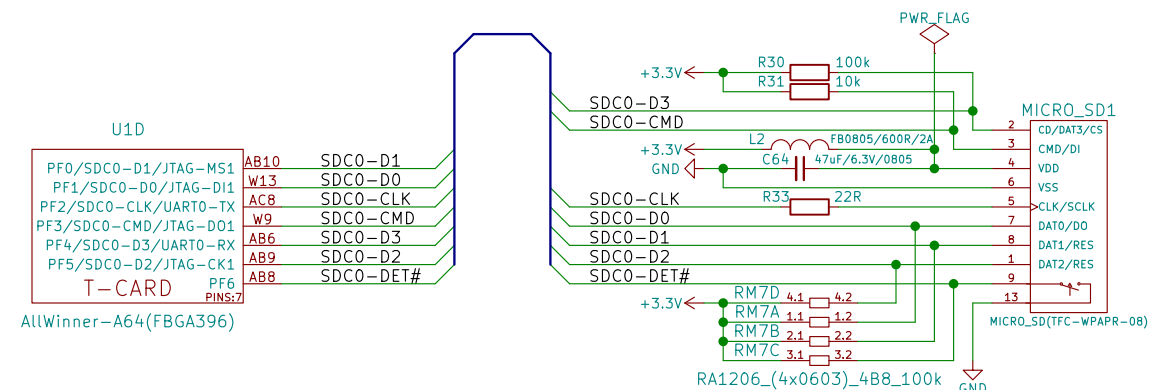


Audio

CPVEE and VEE to be made as Kelvin connection.



T-Card



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OLIMEX LTD, Bulgaria

Sheet: /NAND Flash , eMMC, T-Card and Audio/
File: NAND Flash , eMMC, T-Card and Audio.sch

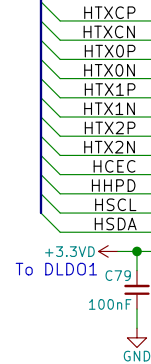
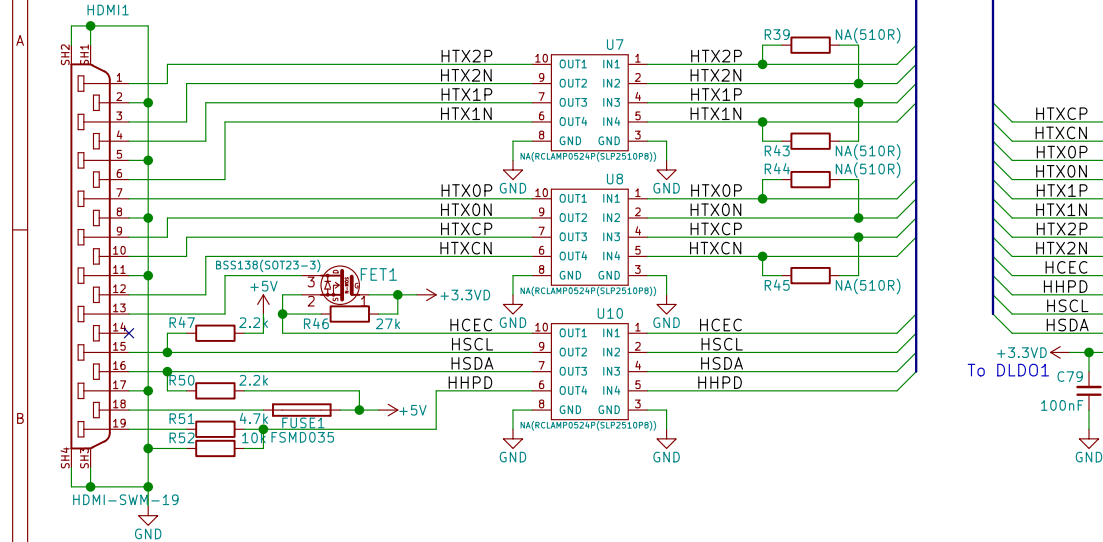
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Size: A3 Date: 2015-10-15

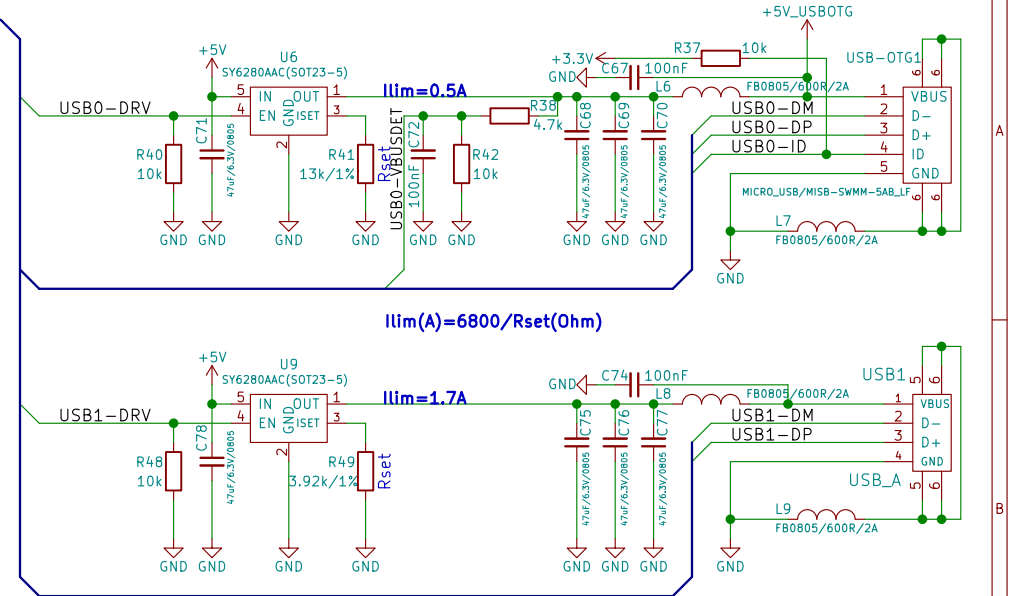
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Rev: Rev_A

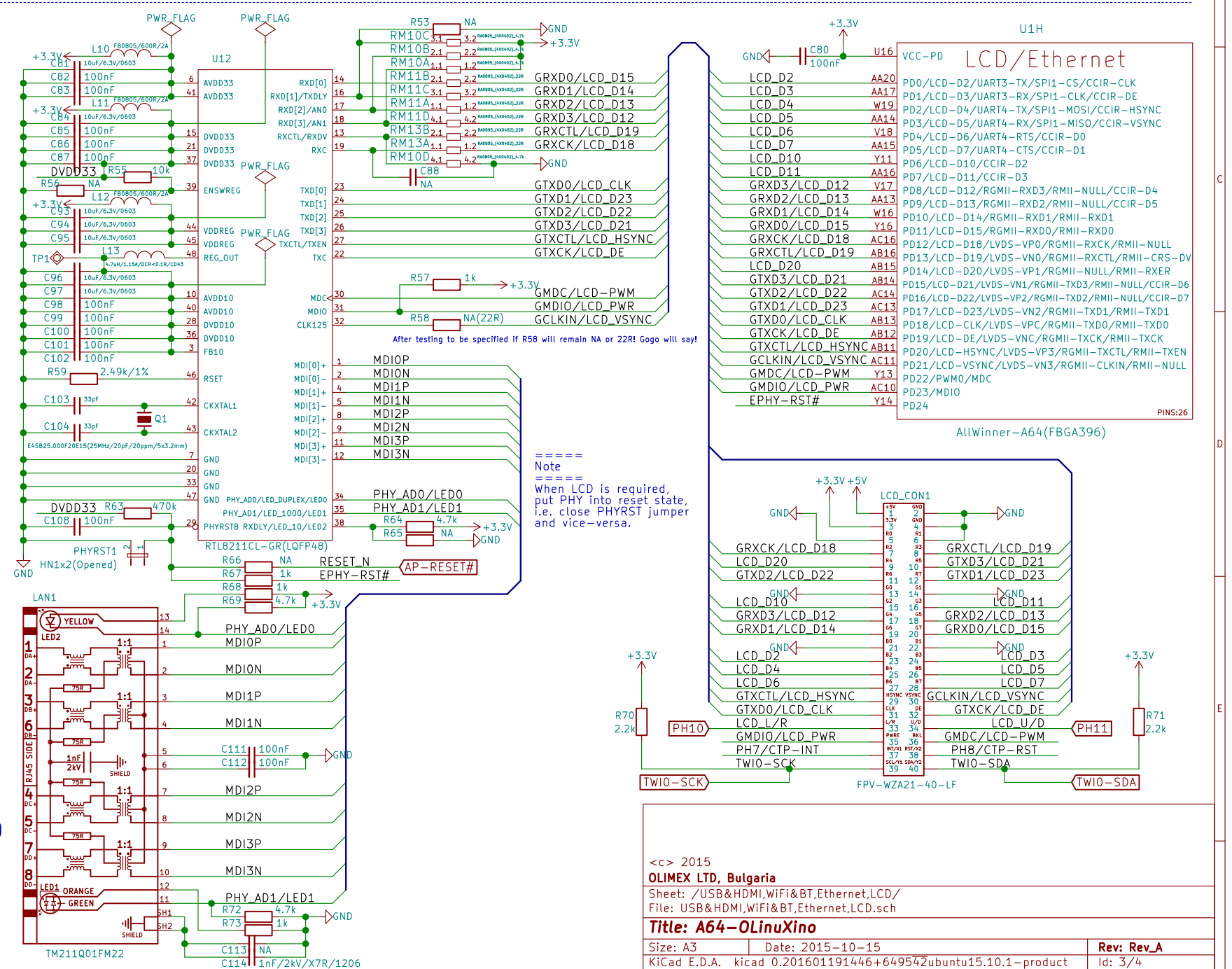
HDMI



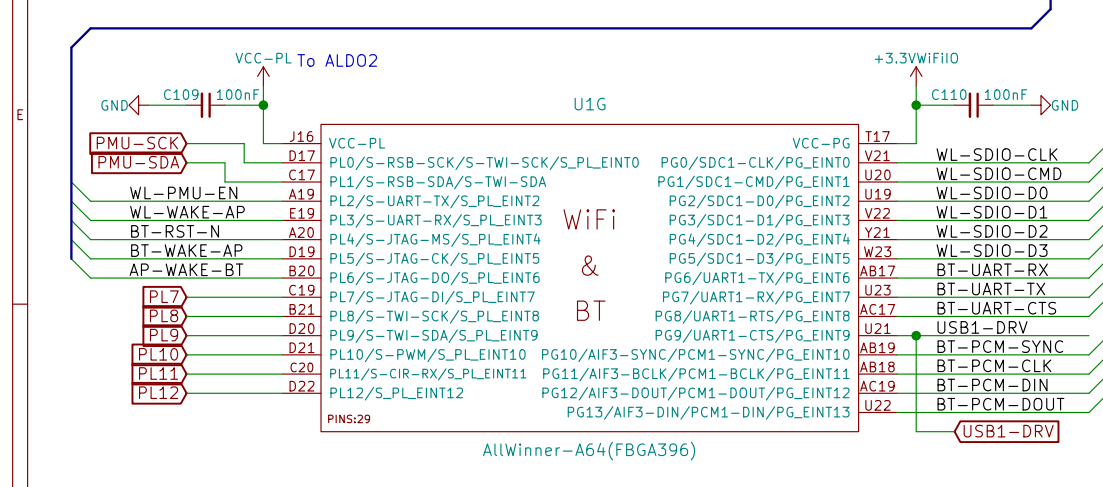
USB



Gigabit Ethernet or LCD

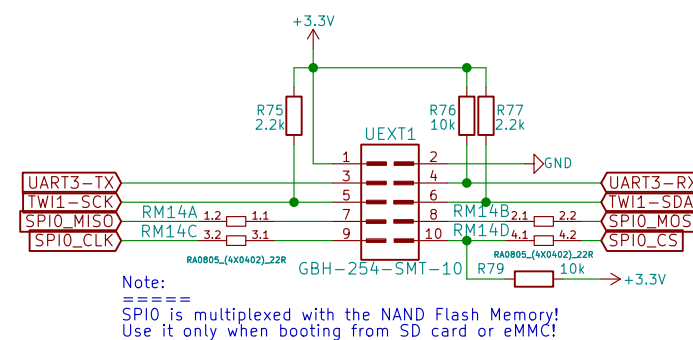


WiFi&BT



CEC STILL NOT READY!

UEXT

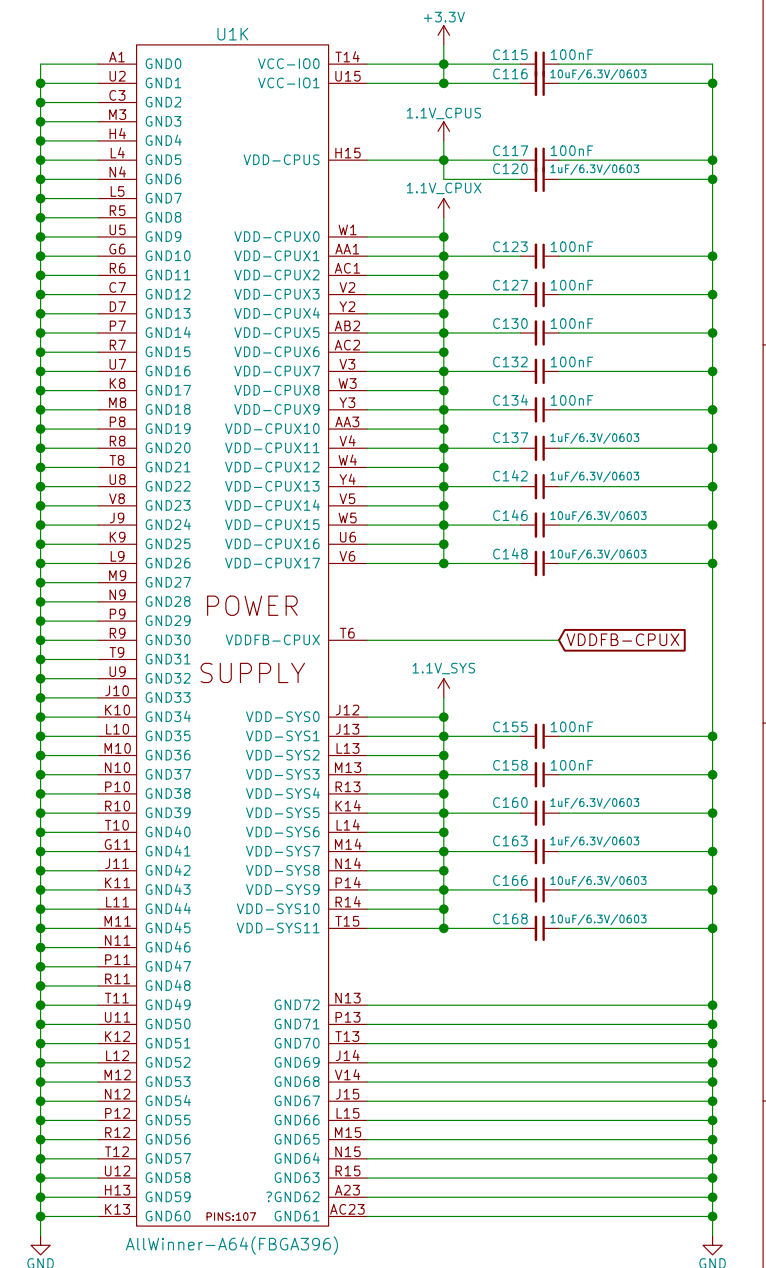


Pin configuration diagram for the STM32F103C8T6 microcontroller. The diagram shows the 40 pins of the package and their connections. Pins 1-17 are labeled PE0 through PE17. Pins 18-20 are labeled PB4, PB3, PB2, PB1, and PB0. Pins 21-24 are labeled PC4, PC7, PL7, and PL8. Pins 25-28 are labeled PL9, PL10, PL11, and PL12. Pins 29-32 are labeled 1.8V_DVDD-CS1, 2.8V_AVDD-CS1, 2.8V_DVDD-CS1, and VCC-PE. Pins 33-36 are labeled 3.0V_RTC_R104, 3.0V_R103, NA(100k), and NA(100k). Pins 37-40 are labeled AP-RESET, UB001, KEYADC, and GND. The diagram also shows the connections for the 3.3V and 5V power supplies, and the connections for the 1.8V, 2.8V, and 3.3V power supplies.

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.



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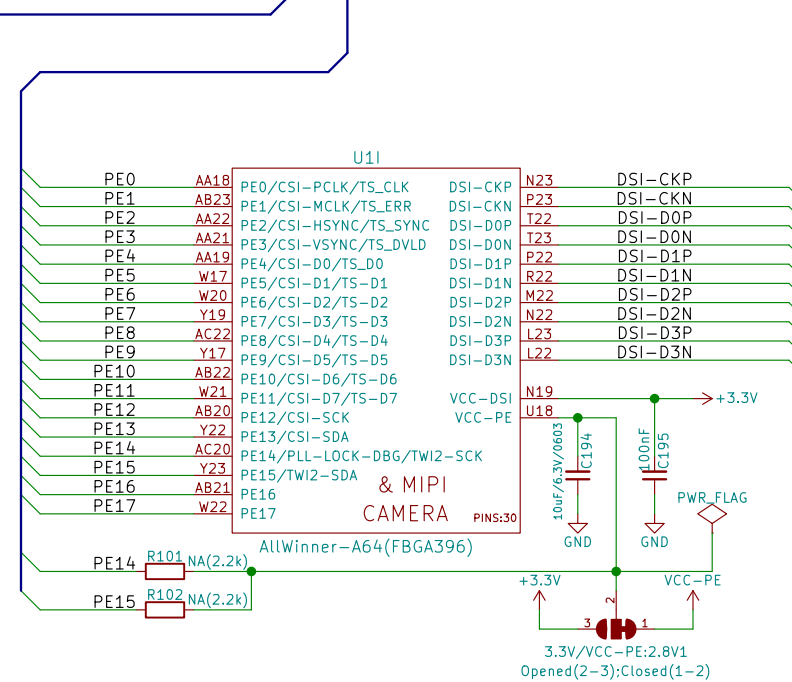
OLIMEX LTD, Bulgaria

Sheet: /Power Supply, Extensions and MiPi-DSI/
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Title: A64-OLinXino

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MiPi-DSI



Size: A5	Date: 2015-10-15	Rev: 1
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Size: A3	Date: 2015-10-15	Rev: Rev_A
KiCad E.D.A. kicad 0.201601191446+649542ubuntu15.10.1-product		Id: 4/4