REV	Description	DATE DD/MM/YYYY	BY
3a	Initial Production Release. The BBB_Derivat Rev 3A has the same range of functions and specifications as the original BeagleBone Black Rev C.	29/07/2015	MG

Communication Bone: BBB_Derivat

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5V DC POWER

Battery access pins. Pins are randomly placed to fit them in, but will be able to tie into them either with a cape or wires. Pins will not be populated.

POWER LED

MTG1 MHOLE
MTG2 MHOLE
MTG3 MHOLE
MTG4 MHOLE

P1
PJ-200A
VDD_5V
DGND
USB_DC
VDD_3V3A
R3 1.5K, 1%
R4 1.5K, 1%
C2 10uF, 10V
C1 10uF, 10V
C3 0.1uf, 6V3
C4 10uF, 10V
P_INT_LDO
P_BYPASS
PMIC_POWR_EN
PWR_BUT
I2C0_SCL
I2C0_SDA
S3
KMR231GLFS

U2
TPS65217C
AC
USB
NC1
NC
INT_LDO
BYPASS
MUX_IN
PWR_EN
RESET
PB_IN
SCL
SDA
ISET2
ISET1
VIN_DCDC1
VIN_DCDC2
VIN_DCDC3
LS1_IN
LS2_IN
VINLDO
AGND
PGND
PPAD
SYS1
SYS2
BAT1
BAT2
BAT_SENSE
TS
MUX_OUT
VIO
PGOOD
LDO_PGOOD
WAKEUP
INT
ISINK1
ISINK2
FB_WLED
L4
L1
VDCDC1
L2
VDCDC2
L3
VDCDC3
LS1_OUT
LS2_OUT
VLDO1
VLDO2

SYS_5V
TP1
TP5
TP6
TP7
TP8
PMIC_POWR_EN
PWR_BUT
I2C0_SCL
I2C0_SDA
PMIC_PGOOD
LDO_PGOOD
WAKEUP
PMIC_INT
R1 100K, 1%
C7 10uF, 10V
C8 10uF, 10V
C10 10uF, 10V
C13 10uF, 10V
P_L1
P_L2
P_L3
L1 2.2uH, 2.6A
L2 2.2uH, 2.6A
L3 2.2uH, 2.6A
R6 0R, 1%
1.5V
VDDS_DDR
VDD_MPU
VDDS
VDD_CORE
C11 10uF, 10V
C12 10uF, 10V
C9 10uF, 10V
R9 0R, 1%, DNI
VDD_1V8
C14 10uF, 10V
R7 0R, 1%
R5 0R, 1%
R8 0R, 1%
VRTC
C15 10uF, 10V
C16 2.2uF, 6V3
VDD_3V3AUX
C18 2.2uF, 6V3
D1 Blue
598-8170-107F
PWR_LEDR
R12 820, 5%

U4
TL5209
IN
EN
GND
GND
OUT
ADJ
GND
GND
R10 470K, 1%
R11 280K, 1%
C17 2.2uF, 6V3
C19 470pF, 50V
C20 0.1uf, 6V3
VDD_3V3B

Communication Bone: BBB_Derivat
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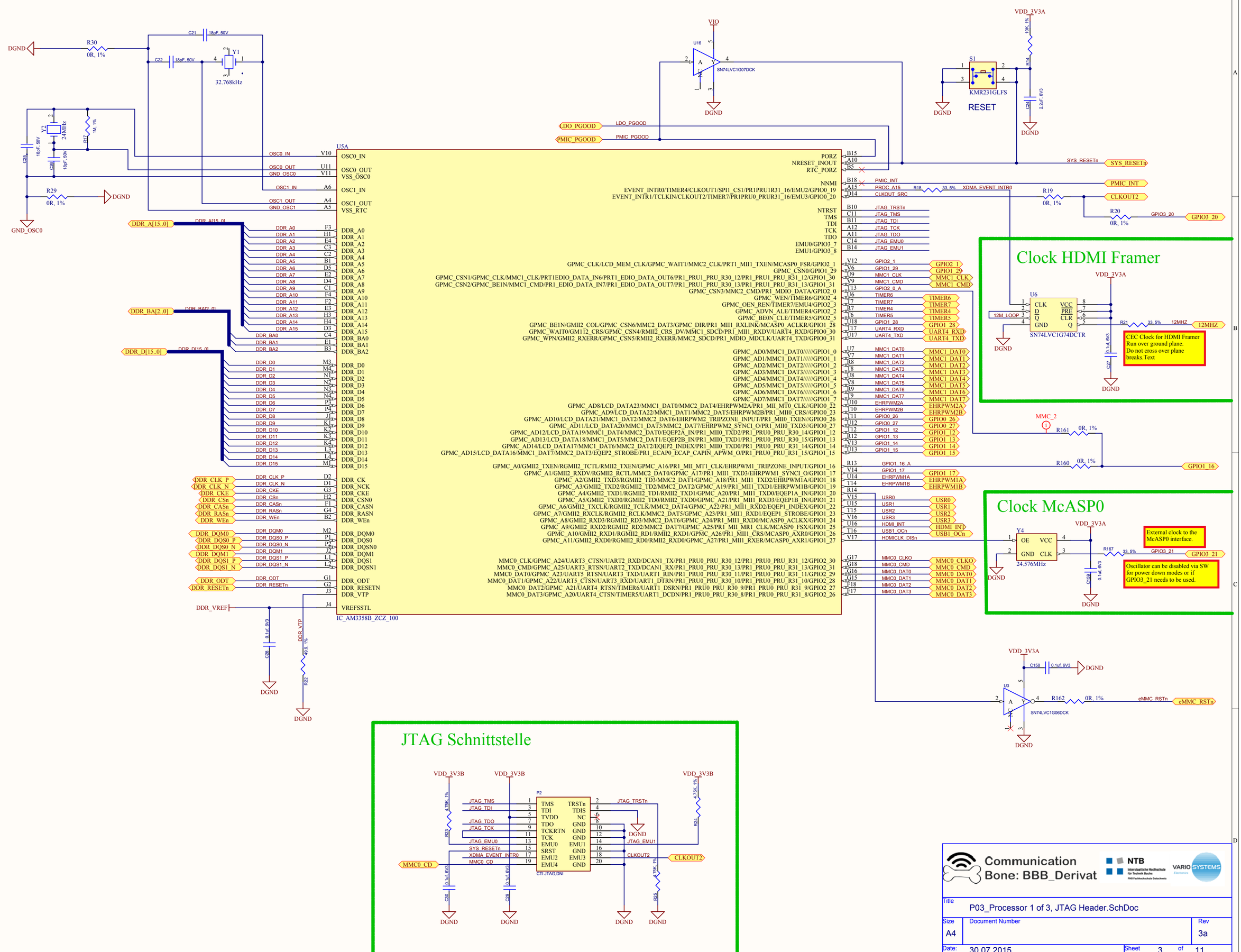
Title	P02_Power Management.SchDoc	
Size A4	Document Number	Rev 3a
Date: 30.07.2015	Sheet 2 of 11	



Title	P03_Processor 1 of 3, JTAG Header.SchDoc
Size	A4
Document Number	
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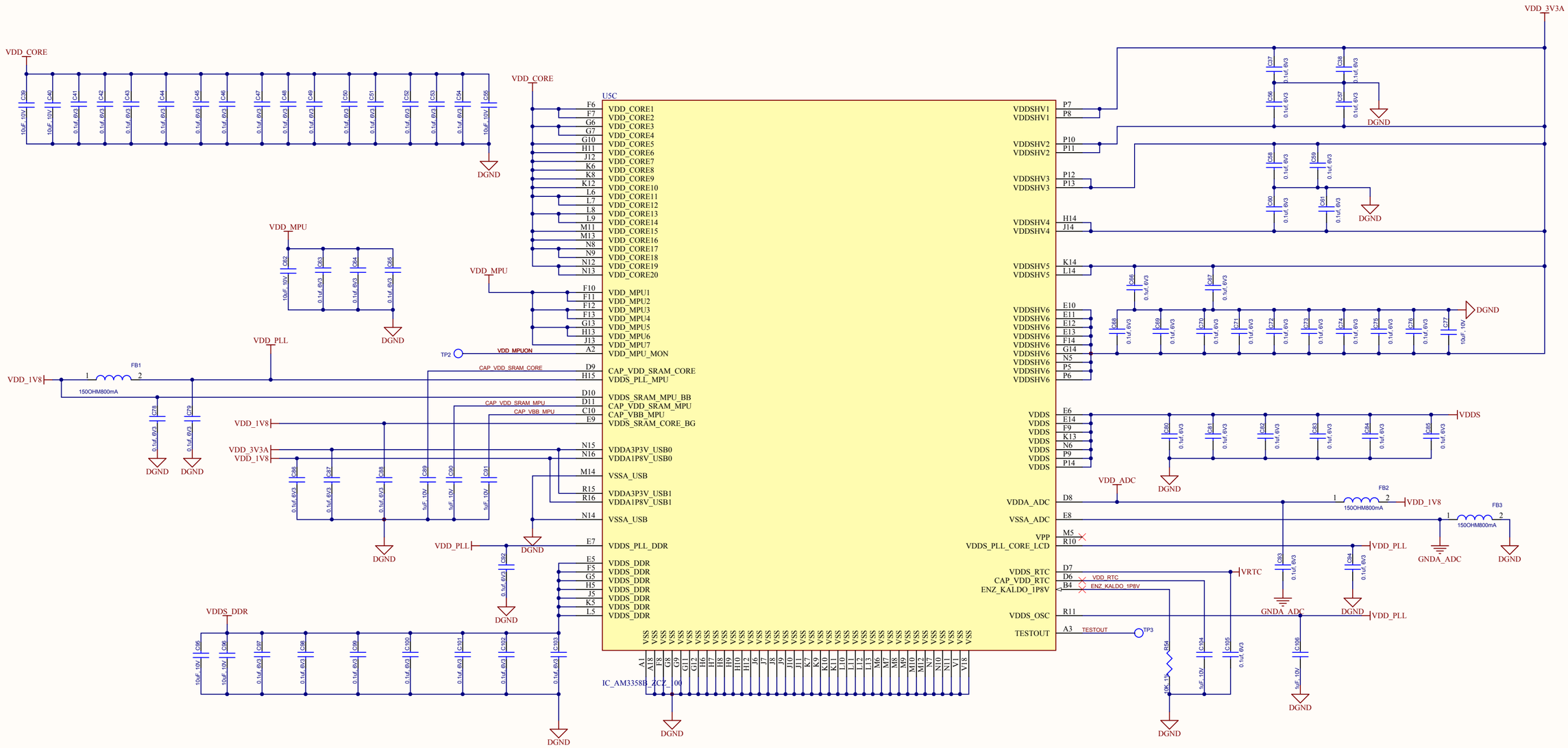
UART 0, Debugschnittstelle

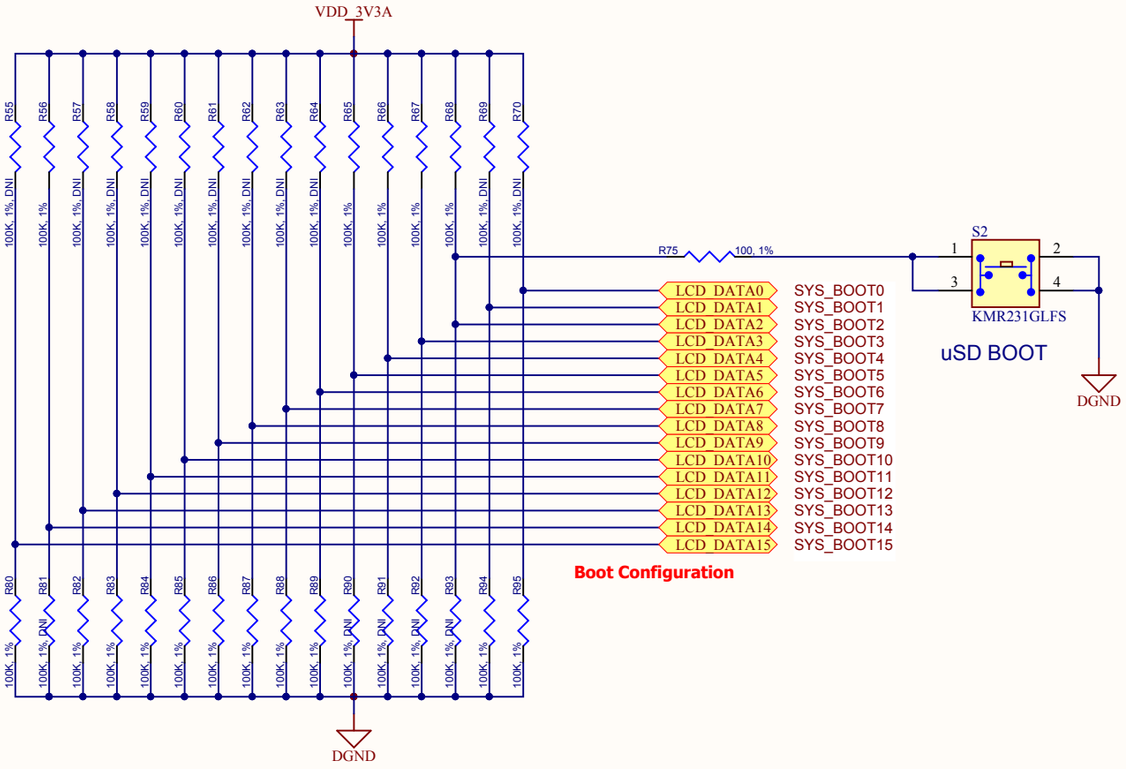
USB Host

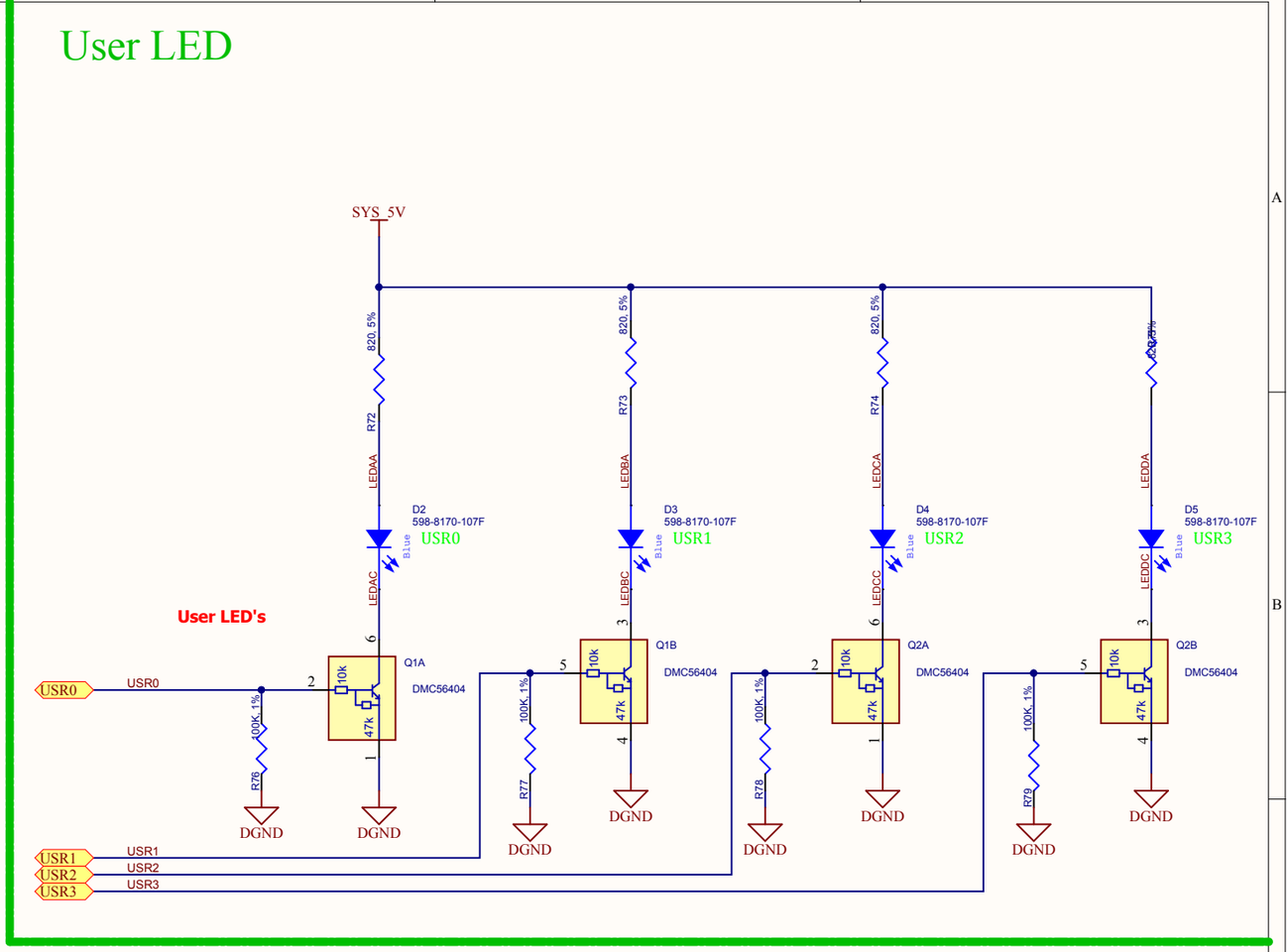
USB PC Connector

Communication Bone: BBB_Derivat	NTB Interstaatliche Hochschule für Technik Buchs FHO Fachhochschule Ostschweiz; VARIO SYSTEMS Electronics
Title	P04_Processor 2 or 3, USB and Serial.SchDoc
Size: A4	Document Number
Rev: 3a	
Date: 30.07.2015	Sheet 4 of 11



Communication Bone: BBB_Derivat	NTB Interstaatliche Hochschule für Technik Buchs; VARIO SYSTEMS
Title	P05_Processor Page 3 of 3.SchDoc
Size A4 / Document Number / Rev 3a	
Date: 30.07.2015	Sheet 5 of 11





SYSBOOT[15:14]	SYSBOOT[13:12]	SYSBOOT[11:10]	SYSBOOT[9]	SYSBOOT[8]	SYSBOOT[7:6]	SYSBOOT[5]	SYSBOOT[4:0]	Boot Sequence			
00b = 19.2MHz 01b = 24MHz 10b = 25MHz 11b = 26MHz	00b (all other values reserved)	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	0 = CLKOUT1 disabled 1 = CLKOUT1 enabled	11100b	MMC1	MMC0	UART0	USB0[5]
00b = 19.2MHz 01b = 24MHz 10b = 25MHz 11b = 26MHz	00b (all other values reserved)	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	0 = CLKOUT1 disabled 1 = CLKOUT1 enabled	11000b	SPI0	MMC0	USB0[5]	UART0

Communication Bone: BBB_Derivat

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Title	P06_LED, Config, & Button.SchDoc		
Size	Document Number		Rev
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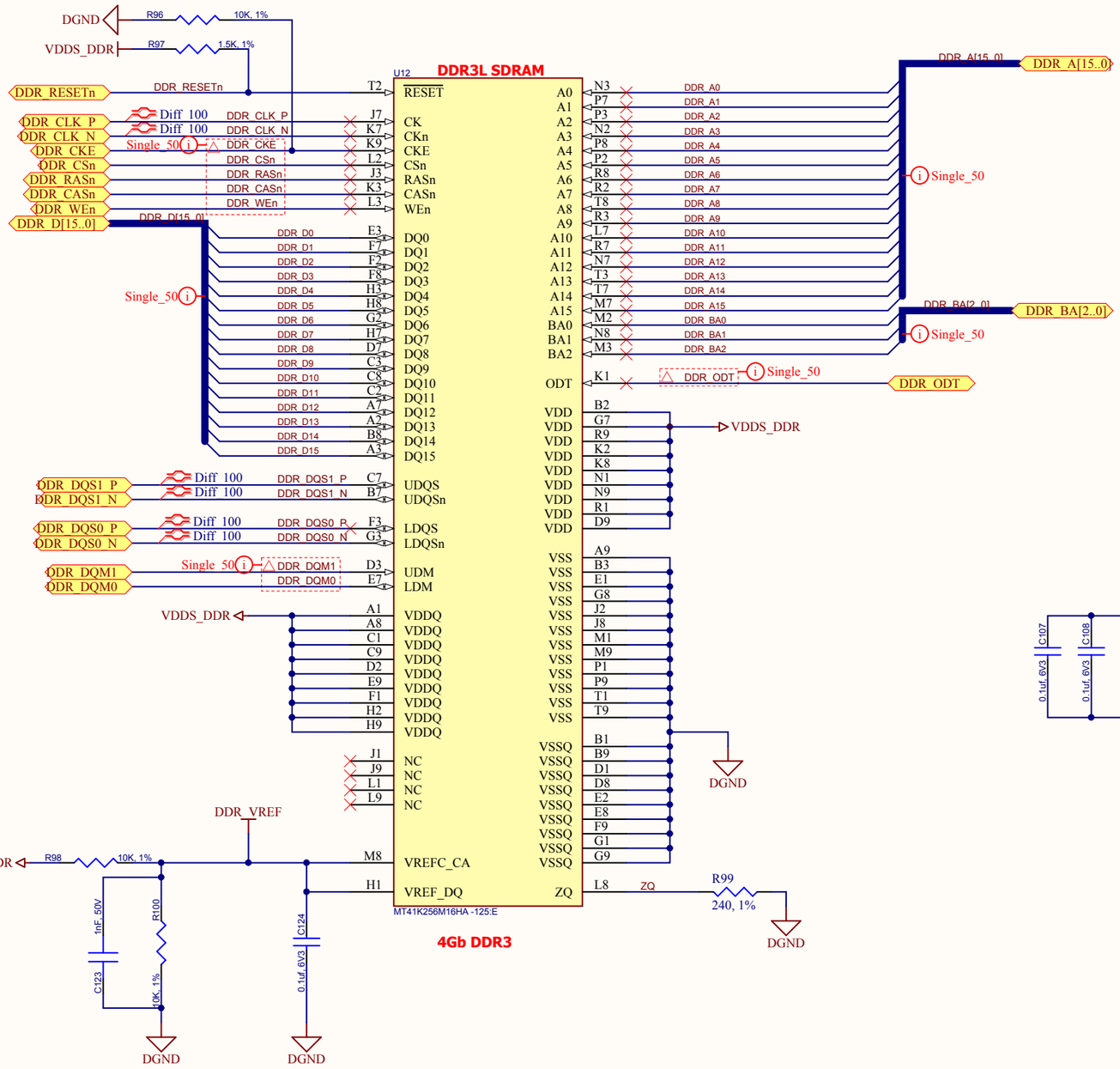

Communication Bone: BBB_Derivat

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Title	P07_DDR3 Memory.SchDoc	
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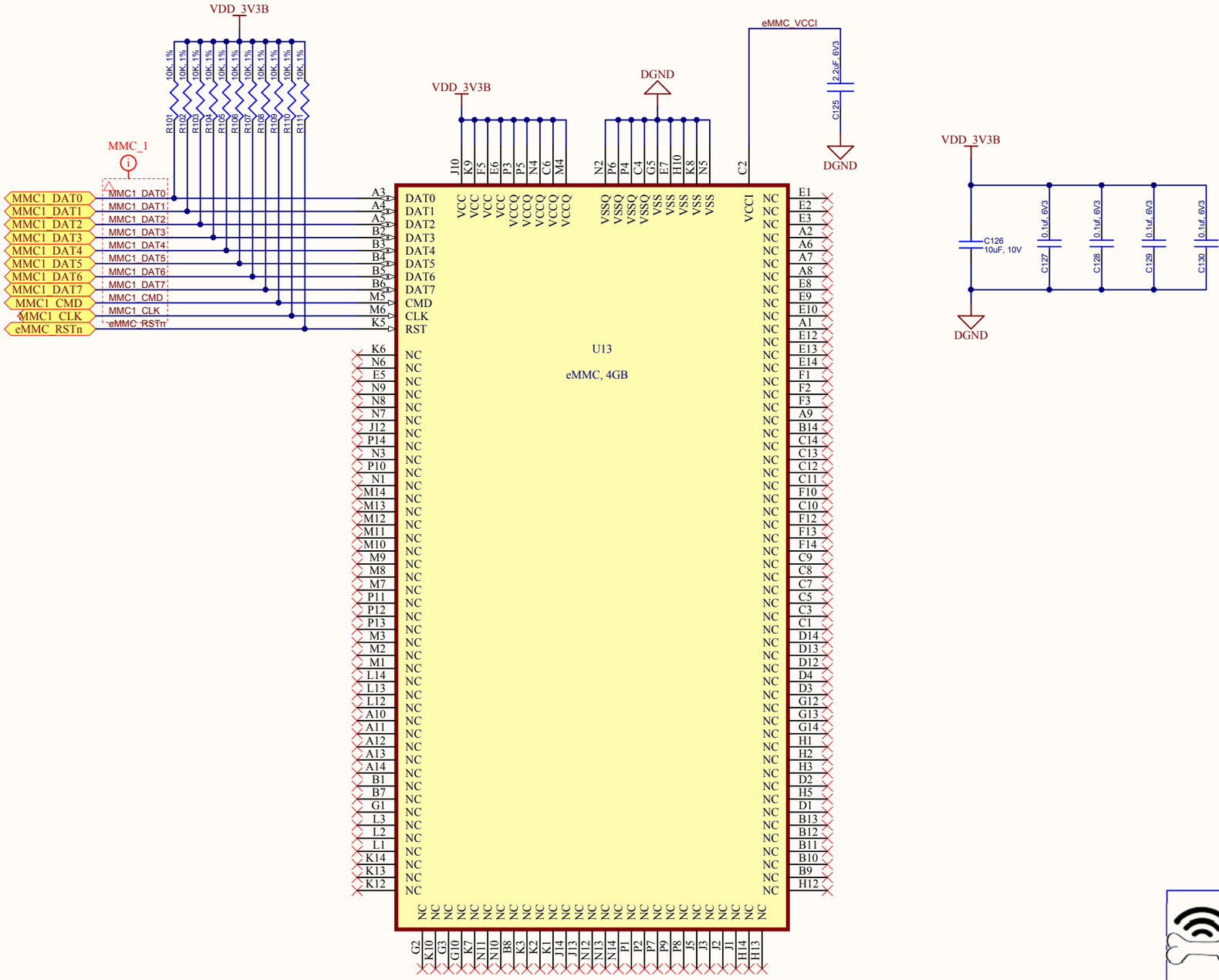

Communication Bone: BBB_Derivat

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VARIO SYSTEMS Electronics

Title	P08_eMMC.SchDoc	
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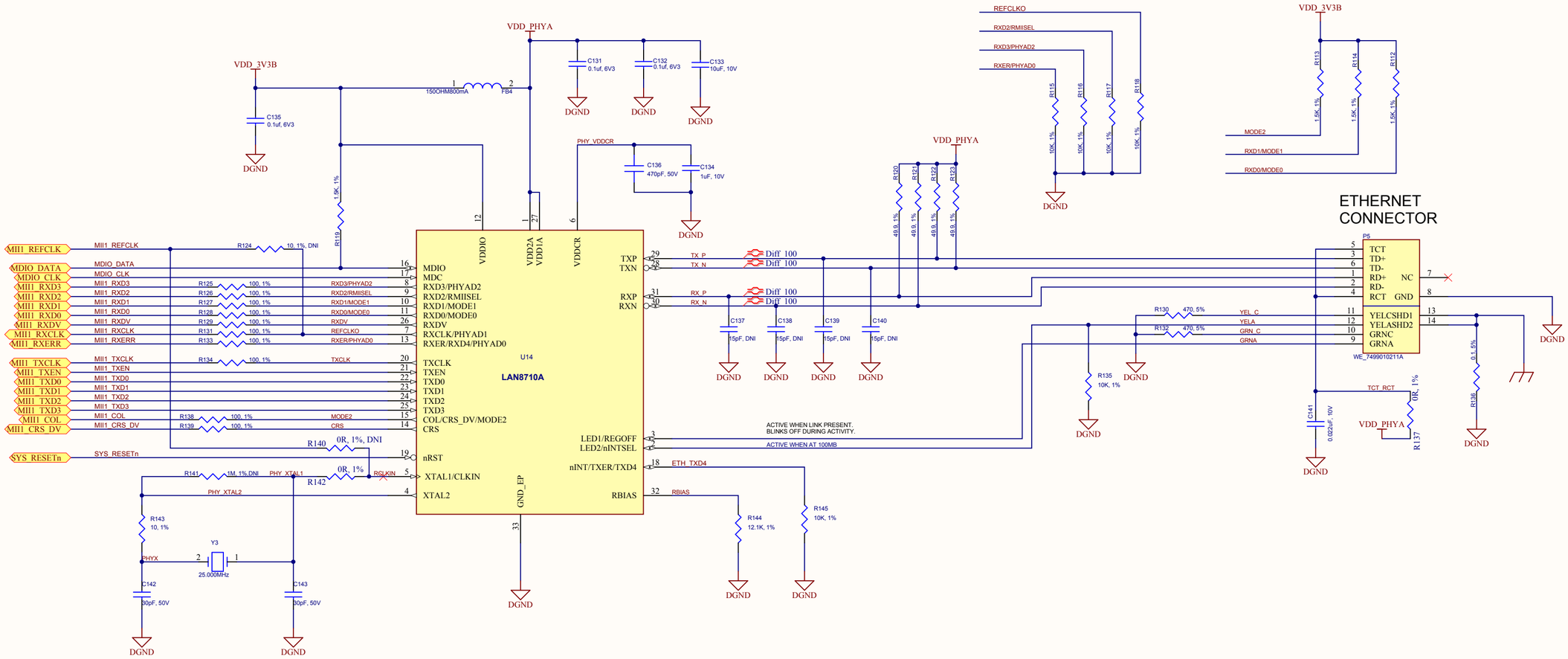
Ethernet



Communication Bone: BBB_Derivat

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Title	P09_Ethernet.SchDoc	
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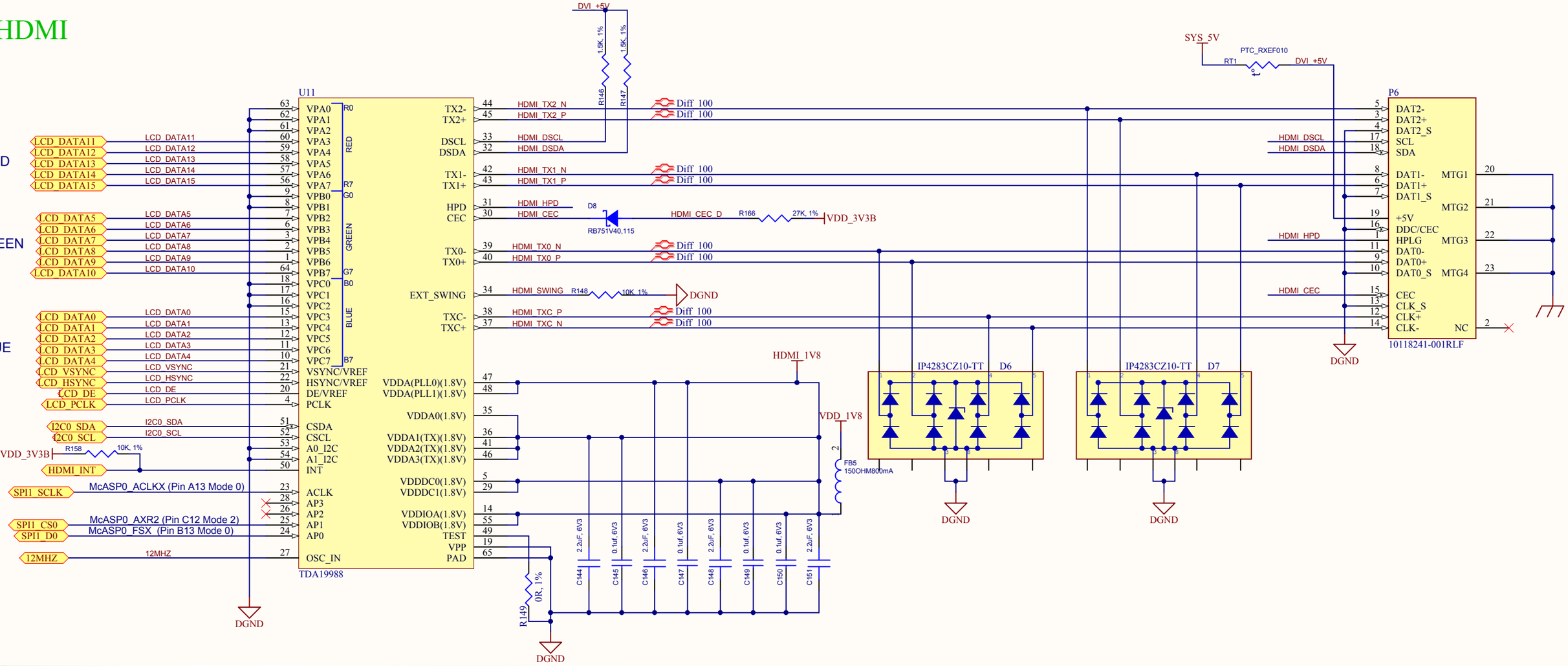
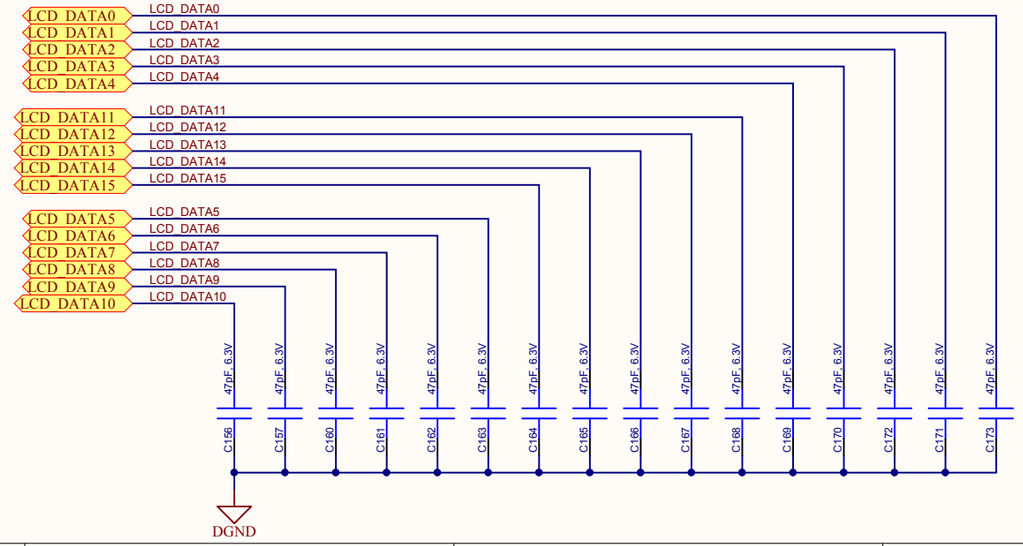
HDMI



LCD or HDMI



Communication Bone: BBB_Derivat

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Title	P10_HDMI Framer.SchDoc	
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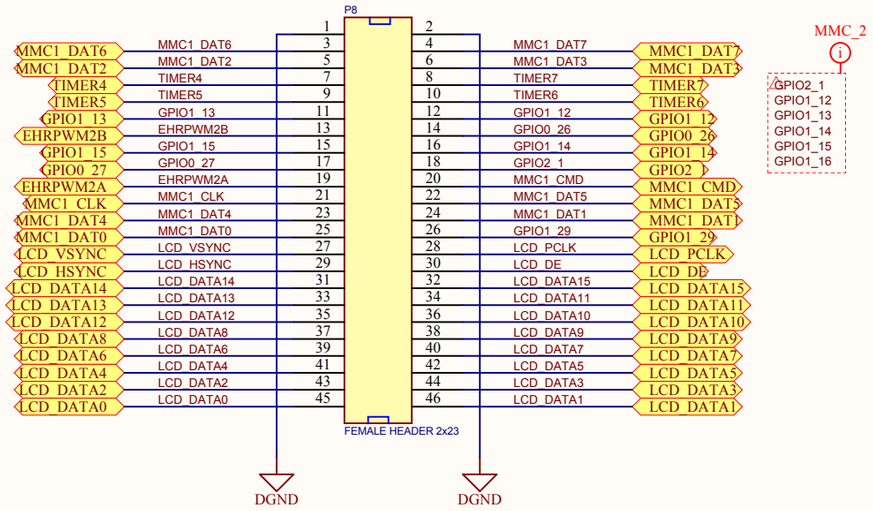
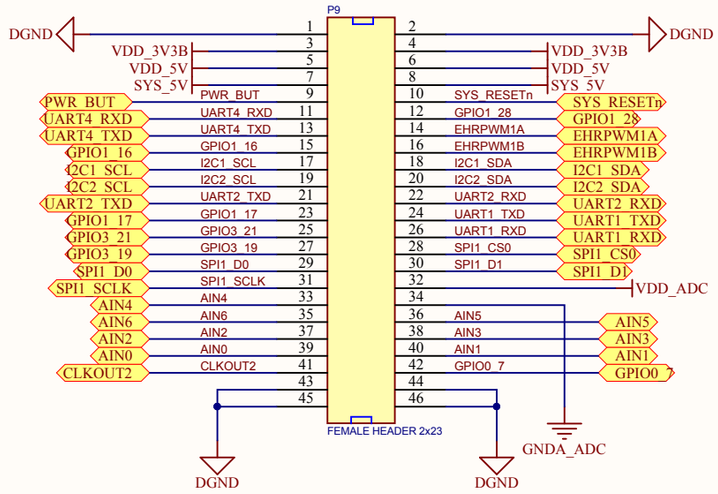
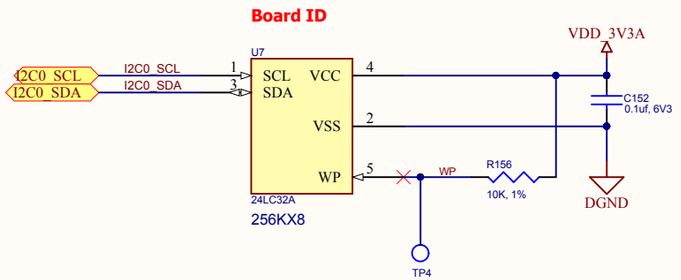
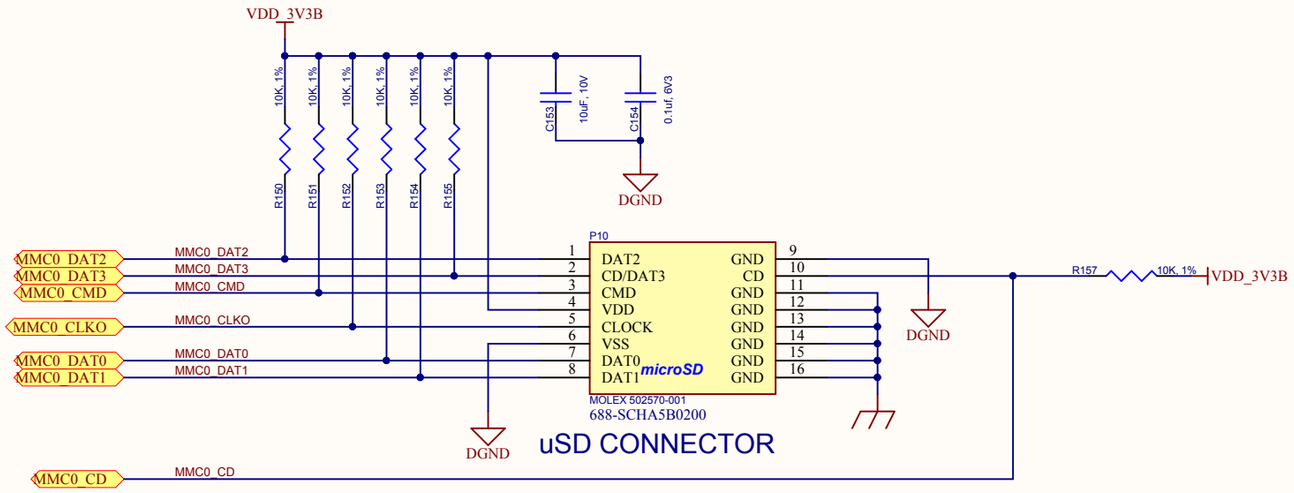
Extension Header for Capes









Communication Bone: BBB_Derivat

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Title	P11_Exp Conn, uSD, and .SchDoc	
Size: A4	Document Number	Rev: 3a
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