UDOO X86 II SINGLE BOARD

These schematics are provided exclusively to support the receiver for its internal activities.
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CONFIGURATIONS:

eMMC ON-BOARD
A0 --> eMMC mounted
A1 --> eMMC not mounted

RAM ICs DENSITY
B0 --> 1Gb ICs
B1 --> 2Gb ICs
B2 --> 4Gb ICs
B3 --> 8Gb ICs

SINGLE/DUAL CHANNEL RAM
C0 --> DUAL CHANNEL
C1 --> SINGLE CHANNEL

ABSOLUTE MAXIMUM RATINGS

Voltage applied at Vin to GND.....-0.3 V to 13 V

RECOMMENDED OPERATING CONDITIONS

Supply voltage.....12V ± 5%

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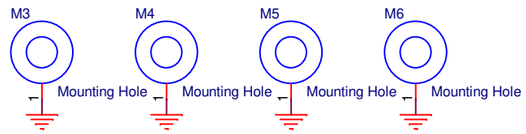
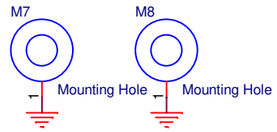
Reference Table

Components with CFG = DNP indications are foreseen in the PCB but must not be mounted

Components with CFG indications have to be mounted only on specific board's configurations (see table in this same page)



STANDARD MOUNTING HOLES



HEATSINK HOLES

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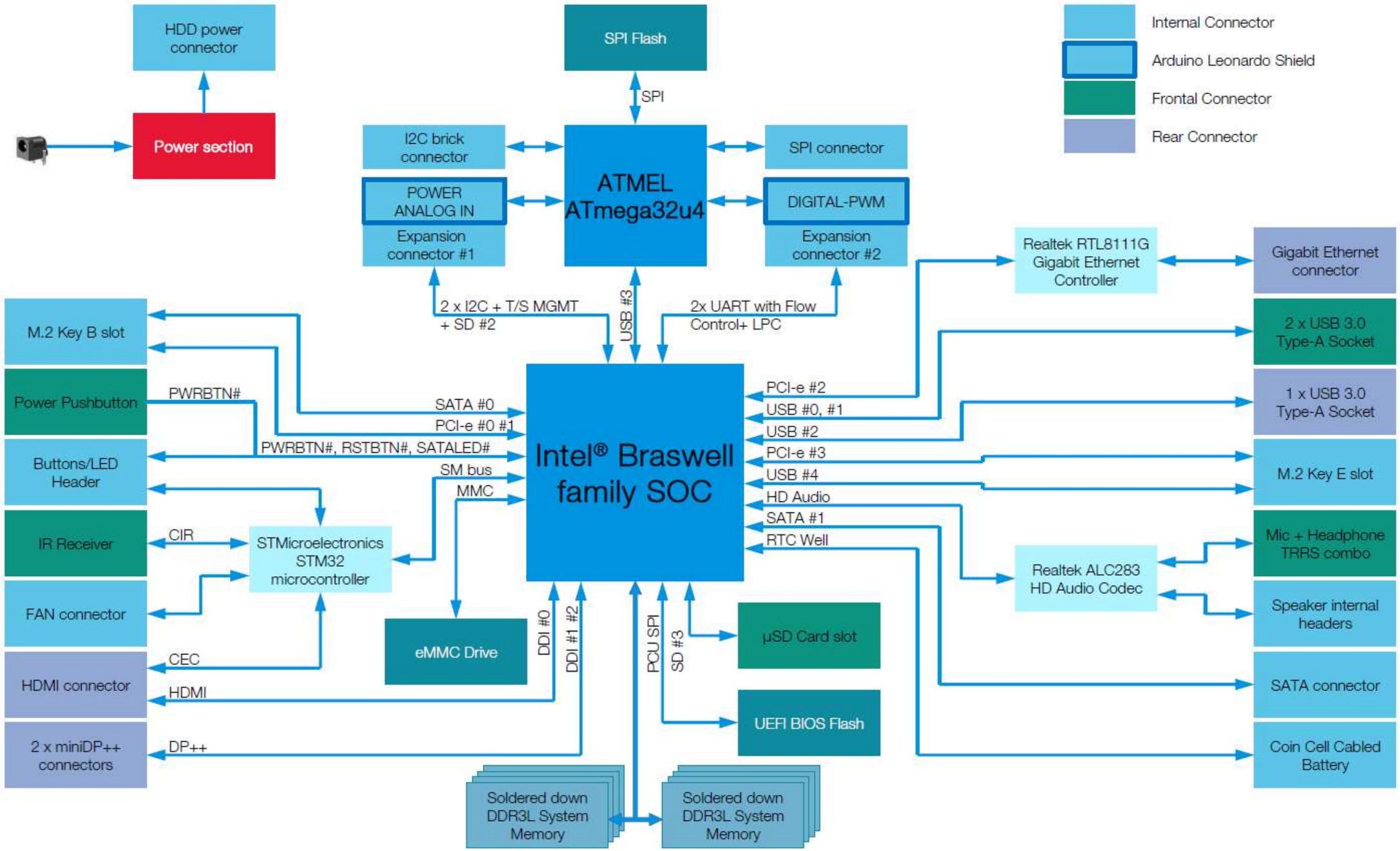

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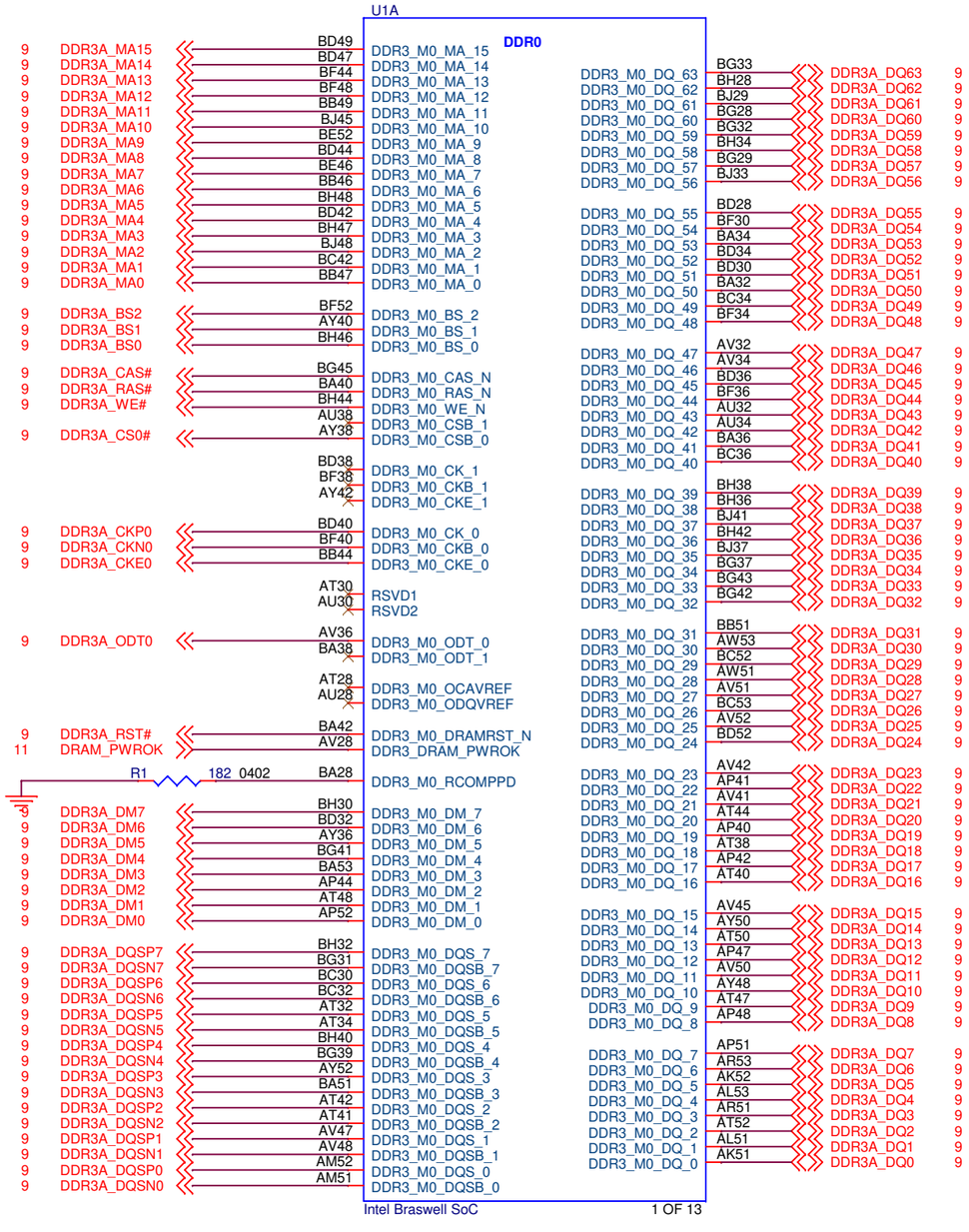

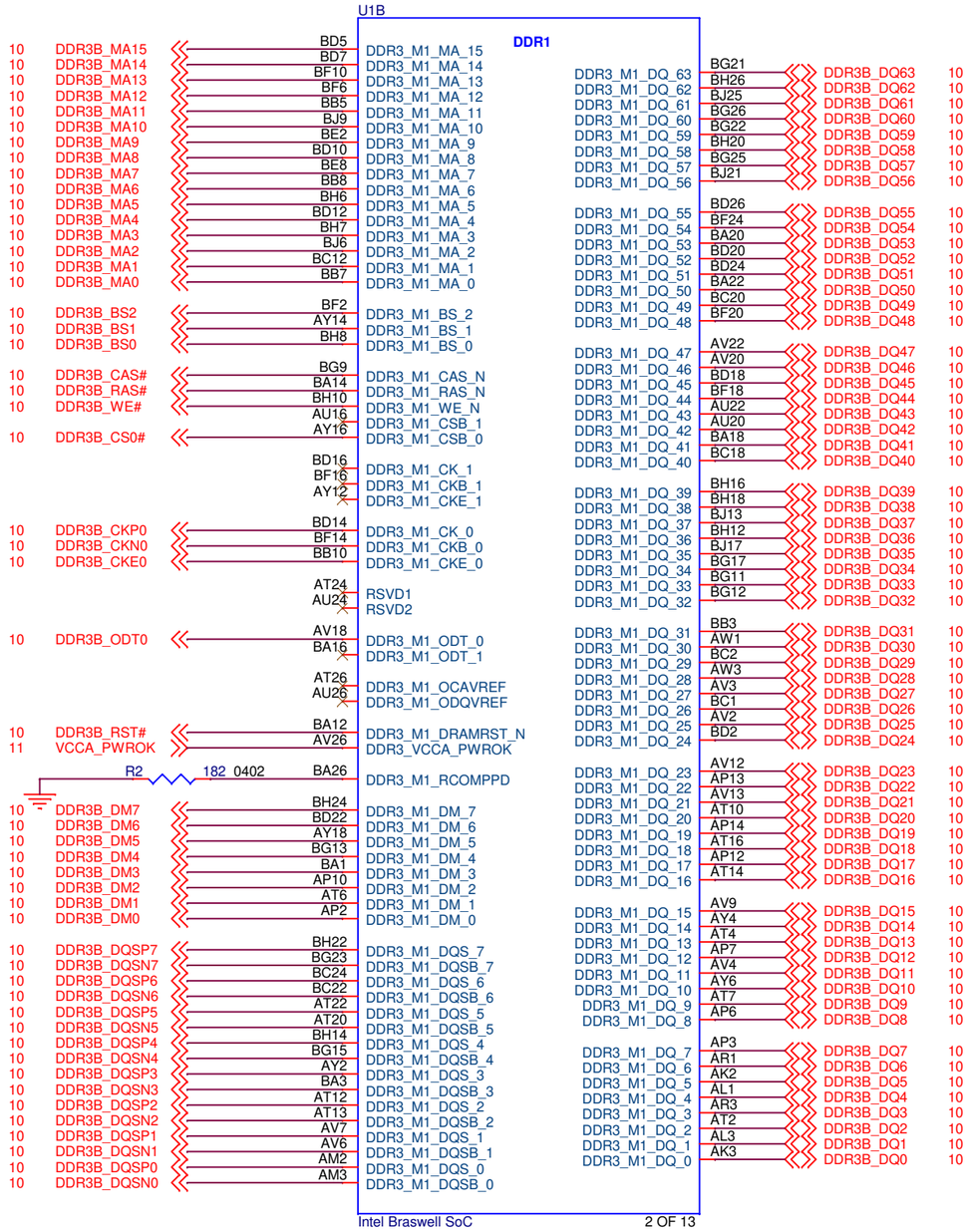

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U1C

DDI0

14	DDI0_TXP0	D50	DDI0_TXP_0	
14	DDI0_TXN0	C51	DDI0_TXN_0	
14	DDI0_TXP1	H49	DDI0_TXP_1	
14	DDI0_TXN1	H50	DDI0_TXN_1	
14	DDI0_TXP2	F53	DDI0_TXP_2	
14	DDI0_TXN2	F52	DDI0_TXN_2	
14	DDI0_TXP3	G53	DDI0_TXP_3	
14	DDI0_TXN3	G52	DDI0_TXN_3	
		H47	DDI0_AUXP	
		H46	DDI0_AUXN	
14	DDI0_HPD#	W51	HV_DDI0_HPD	
14	DDI0_DDC_SCL	Y51	HV_DDI0_DDC_SCL	
14	DDI0_DDC_SDA	Y52	HV_DDI0_DDC_SDA	
	BOARD_ID_BIT1	V52	PANEL0_BKLTEN	
	BOARD_ID_BIT0	V51	PANEL0_BKLTCTL	
	BOARD_ID_BIT2	W53	PANEL0_VDDEN	
		F38	DDI0_PLLOBS_P	
	R3 402 0402	G38	DDI0_PLLOBS_N	

DDI1

15	DDI1_TXP0	J51	DDI1_TXP_0	
15	DDI1_TXN0	H51	DDI1_TXN_0	
15	DDI1_TXP1	K51	DDI1_TXP_1	
15	DDI1_TXN1	K52	DDI1_TXN_1	
15	DDI1_TXP2	L53	DDI1_TXP_2	
15	DDI1_TXN2	L51	DDI1_TXN_2	
15	DDI1_TXP3	M52	DDI1_TXP_3	
15	DDI1_TXN3	M51	DDI1_TXN_3	
15	DDI1_AUX_DP	M42	DDI1_AUXP	
15	DDI1_AUX_DN	K42	DDI1_AUXN	
15	DDI1_HPD#	R51	HV_DDI1_HPD	
		P51	PANEL1_BKLTEN	
		P52	PANEL1_BKLTCTL	
		R53	PANEL1_VDDEN	
		F47	DDI1_PLLOBS_P	
	R9 402 0402	F49	DDI1_PLLOBS_N	

DDI2

15	DDI2_TXP0	F40	DDI2_TXP_0	
15	DDI2_TXN0	G40	DDI2_TXN_0	
15	DDI2_TXP1	J40	DDI2_TXP_1	
15	DDI2_TXN1	K40	DDI2_TXN_1	
15	DDI2_TXP2	F42	DDI2_TXP_2	
15	DDI2_TXN2	G42	DDI2_TXN_2	
15	DDI2_TXP3	D44	DDI2_TXP_3	
15	DDI2_TXN3	F44	DDI2_TXN_3	
15	DDI2_AUX_DP	D48	DDI2_AUXP	
15	DDI2_AUX_DN	C49	DDI2_AUXN	
15	DDI2_HPD#	U51	HV_DDI2_HPD	
15	DDI1_DDC_SCL	T51	HV_DDI2_DDC_SCL	
15	DDI1_DDC_SDA	T52	HV_DDI2_DDC_SDA	

NC's

B53	RSVD6	
A52	RSVD3	
E52	RSVD9	
D52	RSVD8	
B50	RSVD5	
B49	RSVD4	
E53	RSVD10	
C53	RSVD7	
A51	RSVD2	
A49	RSVD1	
G44	RSVD11	

MCSI and Camera interface

	RSVD15	M44		
	RSVD12	K44		
	RSVD14	K48		
	RSVD13	K47		
	MCSI_1_CLKP	T44	MCSI1_CLKP	22
	MCSI_1_CLKN	T45	MCSI1_CLKN	22
	MCSI_1_DP_0	Y47	MCSI1_DP0	22
	MCSI_1_DN_0	Y48	MCSI1_DN0	22
	MCSI_1_DP_1	V45	MCSI1_DP1	22
	MCSI_1_DN_1	V47	MCSI1_DN1	22
	MCSI_1_DP_2	V50		
	MCSI_1_DN_2	V48		
	MCSI_1_DP_3	T41		
	MCSI_1_DN_3	T42		
	MCSI_2_CLKP	P50		
	MCSI_2_CLKN	P48		
	MCSI_2_DP_0	P47		
	MCSI_2_DN_0	P45		
	MCSI_2_DP_1	M48		
	MCSI_2_DN_1	M47		
	MSCI_3_CLKP	T50		
	MSCI_3_CLKN	T48		
	MCSI_COMP	P44	R4 150 0402	

GP_CAMERASB

GP_CAMERASB00	AB41			
GP_CAMERASB01	AB45			
GP_CAMERASB02	AB44			
GP_CAMERASB03	AC53			
GP_CAMERASB04	AB51			
GP_CAMERASB05	AB52			
GP_CAMERASB06	AA51	GP_CAMERASB6	R5 10 0402	CAM_PD 22
GP_CAMERASB07	AB40			
GP_CAMERASB08	Y44	ICLK_XTAL_OSC_BYPASS		
GP_CAMERASB09	Y42	CCU_SUS_RO_BYPASS	R6 10 0402	CAM_RST# 22
GP_CAMERASB10	Y41			
GP_CAMERASB11	V40	RTC_OSC_BYPASS		

SDMMC1

SDMMC1_CLK	M7	SDMMC1_CLK	R7 10 0402	MMC_CLK 19
SDMMC1_CMD	P6	SDMMC1_CMD	R8 10 0402	MMC_CMD 19
SDMMC1_D0	M6	SDMMC1_D0	R10 10 0402	MMC_DAT0 19
SDMMC1_D1	M4	SDMMC1_D1	R11 10 0402	MMC_DAT1 19
SDMMC1_D2	P9	SDMMC1_D2	R12 10 0402	MMC_DAT2 19
SDMMC1_D3_CD_N	P7	SDMMC1_D3	R13 10 0402	MMC_DAT3 19
SDMMC1_D4_SD_WE	T6	SDMMC1_D4	R14 10 0402	MMC_DAT4 19
SDMMC1_D5	T7	SDMMC1_D5	R15 10 0402	MMC_DAT5 19
SDMMC1_D6	T10	SDMMC1_D6	R16 10 0402	MMC_DAT6 19
SDMMC1_D7	T12	SDMMC1_D7	R17 10 0402	MMC_DAT7 19
SDMMC1_RCLK	T13	SDMMC1_RCLK	R18 10 0402	MMC_RCLK 19
SDMMC1_RCOMP	P13	R19 100 0402		

SDMMC2

	K10	SDMMC2_CLK		
SDMMC2_CLK	K9	SDMMC2_CMD	R20 10 0402	SDIO_CLK 18
SDMMC2_CMD				SDIO_CMD 18
SDMMC2_D0	M12	SDMMC2_D0	R21 10 0402	SDIO_DAT0 18
SDMMC2_D1	M10	SDMMC2_D1	R22 10 0402	SDIO_DAT1 18
SDMMC2_D2	K7	SDMMC2_D2	R23 10 0402	SDIO_DAT2 18
SDMMC2_D3_CD_N	K6	SDMMC2_D3	R24 10 0402	SDIO_DAT3 18

SDMMC3

	F2	SDMMC3_CLK		
SDMMC3_CLK	D2	SDMMC3_CMD	R25 10 0402	SD_CLK 19
SDMMC3_CMD	K3	SDMMC3_CD#		SD_CMD 19
SDMMC3_CD_N				SD_CD# 5,19
SDMMC3_D0	J1	SDMMC3_D0	R26 10 0402	SD_DAT0 19
SDMMC3_D1	J3	SDMMC3_D1	R27 10 0402	SD_DAT1 19
SDMMC3_D2	H3	SDMMC3_D2	R28 10 0402	SD_DAT2 19
SDMMC3_D3	G2	SDMMC3_D3	R29 10 0402	SD_DAT3 19
	K2			
SDMMC3_1P8_EN	L3			SD_1.8V_EN 19
SDMMC3_PWR_EN_N	P12	R30 80.6 0402		SD_PWR_EN# 19
SDMMC3_RCOMP				

Intel Braswell SoC

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1.8V_ALW

R33 10K 0402 BOARD_ID_BIT1 R34 10K 0402 CFG = DNP
R35 10K 0402 CFG = DNP BOARD_ID_BIT0 R36 10K 0402
R37 10K 0402 BOARD_ID_BIT2 R38 10K 0402 CFG = DNP

1.8V_ALW

SD_CD# R31 4.7K 0402
SD_PWR_EN# R32 1K 0402

ICLK_XTAL_OSC_BYPASS R39 100K 0402
CCU_SUS_RO_BYPASS R40 100K 0402
RTC_OSC_BYPASS R41 100K 0402

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R42 200K 0402
C1 10pF 50V 0402
C2 10pF 50V 0402
Y1
SX3225F150NLE19.2M18TR
U1E
P24 OSCIN
M22 OSCOUT
J26 RSVD13
N26 RSVD17
P20 ICLKICOMP
N20 ICLKRCOMP
P26 RSVD18
K26 RSVD14
M26 RSVD16
AH45 RSVD1
R52 2.49K 0402
R53 49.9 0402
iCLK
A9 MF_PLT_CLK0
C9 MF_PLT_CLK1
B8 MF_PLT_CLK2
B7 MF_PLT_CLK3
B5 MF_PLT_CLK4
B4 MF_PLT_CLK5
PLTFM CLK's
22 CAM_CLK
R54 10 0402
AM40 GPIO_DFX0
AM41 GPIO_DFX1
AM44 GPIO_DFX2
AM45 GPIO_DFX3
AM47 GPIO_DFX4
AK48 GPIO_DFX5
AM48 GPIO_DFX6
AK41 GPIO_DFX7
AK42 GPIO_DFX8
GPIO_DFX
DDI0_DETECT
DDI1_DETECT
A16_SWAP
MIPI-DSI_DETECT
BOOT_BIOS_STRAP
FLASH_DESCRIPTOR
HALT_BOOT
DFX_SUS_DEBUG
ICLK_SFR_BYPASS
PLL_SFR_BYPASS
GPIO_SUS10
POSM_SELECT
R55 100 0402
AD51 GPIO_SUS0
AD52 GPIO_SUS1
AH50 GPIO_SUS2
AH48 GPIO_SUS3
AH51 GPIO_SUS4
AH52 GPIO_SUS5
AG51 GPIO_SUS6
AG53 GPIO_SUS7
AF52 SEC_GPIO_SUS9
AF51 SEC_GPIO_SUS8
AE51 SEC_GPIO_SUS10
AC51 SEC_GPIO_SUS11
AH40 GPIO0_RCOMP
Y3 GPIO_ALERT
GPIO_SUS
18 SDIO_WAKE#
20 BT_KILL
20 WIFI_KILL
21 uC_WAKE#
Intel Braswell SoC
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RESERVED
C11 RSVD3
B10 RSVD2
F12 RSVD9
F10 RSVD8
D12 RSVD5
E8 RSVD7
C7 RSVD4
D6 RSVD6
J12 RSVD11
F7 RSVD10
J14 RSVD12
L13 RSVD15
I2C
AK6 I2C0_SCL
AH7 I2C0_SDA
AF6 I2C1_SCL
AH6 I2C1_SDA
AF9 I2C2_SCL
AF7 I2C2_SDA
AE4 I2C3_SCL
AD2 I2C3_SDA
AC1 I2C4_SCL
AD3 I2C4_SDA
AB2 I2C5_SCL
AC3 I2C5_SDA
AA1 I2C6_SCL
AB3 I2C6_SDA
SD_WP R73 0 0402
AA3 RSVD_AA3
Y2 RSVD_Y2
SMBUS
AM6 MF_SMB_CLK
AM7 MF_SMB_DATA
AM9 MF_SMB_ALERT_N
SMB_ALERT#
NGFF_I2C_SCL 18
NGFF_I2C_SDA 18
CURIE_RST# 18
CAM_I2C_SCL 22
CAM_I2C_SDA 22
DDI2_DDC_SCL 15
DDI2_DDC_SDA 15
TS_I2C_SCL 18
TS_I2C_SDA 18
CEC_CIR_WAKE# 21
SD_CD# 4,19
SMB_CLK 21
SMB_DAT 21
1.8V_ALW
R43 3.3K 0402
R44 20K 0402
C3 100nF 25V 0402
R45 20K 0402
U2
N25Q064A11E
S# DQ1 W#/Vpp/DQ2 VSS VCC HOLD#/DQ3 C DQ0
BIOS_SPI_CS# R46 10 0402 BIOS_CE#
BIOS_SPI_D1 R48 10 0402 BIOS_SO
BIOS_SPI_D2 R47 10 0402 BIOS_WP#
BIOS_HOLD# R49 10 0402 BIOS_SPI_D3
BIOS_SCK R50 10 0402 BIOS_SPI_CLK
BIOS_SI R51 10 0402 BIOS_SPI_D0
SMB_CLK R56 1K 0402 CFG = DNP
SMB_DAT R57 1K 0402 CFG = DNP
SMB_ALERT# R58 1K 0402 CFG = DNP
RAM_CFG1 R59 240 0402 CFG = B0 & B2
RAM_CFG2 R60 240 0402 CFG = B0 & B1
RAM_CFG3 R61 240 0402 CFG = C0
CURIE_RST# R448 4.7K 0402
CEC_CIR_WAKE# R62 10K 0402
PCIE_REQ0# R63 10K 0402
PCIE_REQ1# R64 10K 0402
PCIE_REQ2# R65 10K 0402
PCIE_REQ3# R440 10K 0402
SD_WP R67 10K 0402 CFG = DNP
R66 4.7K 0402 CFG = DNP
M.2_PCIE/SATA# R433 10K 0402
DDI0_DETECT R69 4.7K 0402
DDI1_DETECT R70 4.7K 0402
A16_SWAP R71 4.7K 0402
BOOT_BIOS_STRAP R72 4.7K 0402
HALT_BOOT R74 4.7K 0402
DFX_SUS_DEBUG R75 10K 0402
MIPI-DSI_DETECT R76 10K 0402 CFG = DNP
GPIO_SUS10 R77 10K 0402 CFG = DNP
FLASH_DESCRIPTOR R78 4.7K 0402
PLL_SFR_BYPASS R81 4.7K 0402
ICLK_SFR_BYPASS R82 4.7K 0402 CFG = DNP
POSM_SELECT R84 100K 0402
U1D
PCIE_TXP0 C24
PCIE_TXN0 B24
PCIE_RXP0 G20
PCIE_RXN0 J20
PCIE_TXP1 A25
PCIE_TXN1 C25
PCIE_RXP1 D20
PCIE_RXN1 F20
PCIE_TXP2 B26
PCIE_TXN2 C26
PCIE_RXP2 D22
PCIE_RXN2 F22
PCIE_TXP3 A27
PCIE_TXN3 C27
PCIE_RXP3 G24
PCIE_RXN3 J24
PCIe
AM10 PCIE_CLKREQ0_N
AM12 PCIE_CLKREQ1_N
AK14 PCIE_CLKREQ2_N
AM14 PCIE_CLKREQ3_N
A21 CLK_DIFF_P_0
C21 CLK_DIFF_N_0
C19 CLK_DIFF_P_1
B20 CLK_DIFF_N_1
C18 CLK_DIFF_P_2
B18 CLK_DIFF_N_2
C17 CLK_DIFF_P_3
A17 CLK_DIFF_N_3
C16 RSVD_C16
B16 RSVD_B16
D26 PCIE_RCOMP_P
R86 402 0402
F26 PCIE_RCOMP_N
C4 C6 100nF 25V 0402
C11 C13 100nF 25V 0402
C563 C564 100nF 25V 0402
C565 C566 100nF 25V 0402
PCIE_TXP_L0 PCIE_TXN_L0
PCIE_TXP_L1 PCIE_TXN_L1
PCIE_TXP_L2 PCIE_TXN_L2
PCIE_TXP_L3 PCIE_TXN_L3
20 PCIE_TXP0
20 PCIE_TXN0
20 PCIE_RXP0
20 PCIE_RXN0
20 PCIE_TXP1
20 PCIE_TXN1
20 PCIE_RXP1
20 PCIE_RXN1
14 PCIE_TXP2
14 PCIE_TXN2
14 PCIE_RXP2
14 PCIE_RXN2
20 PCIE_TXP3
20 PCIE_TXN3
20 PCIE_RXP3
20 PCIE_RXN3
20 PCIE_REQ0#
PCIE_REQ1#
14 PCIE_REQ2#
20 PCIE_REQ3#
20 PCIE_CLKP0
20 PCIE_CLKN0
14 PCIE_CLKP2
14 PCIE_CLKN2
20 PCIE_CLKP3
20 PCIE_CLKN3
SPI
V14 SPI1_CLK
Y13 SPI1_CS0_N
Y12 SPI1_CS1_N
V13 SPI1_MISO
V12 SPI1_MOSI
20 M.2_PCIE/SATA#
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SATA
C31 SATA_TXP0
B30 SATA_TXN0
N28 SATA_RXP0
M28 SATA_RXN0
C29 SATA_TXP1
A29 SATA_TXN1
J28 SATA_RXP1
K28 SATA_RXN1
SATA_TXP_L0 C5 10nF 50V 0402
SATA_TXN_L0 C7 10nF 50V 0402
SATA_RXP_L0 C8 10nF 50V 0402
SATA_RXN_L0 C9 10nF 50V 0402
SATA_TXP_L1 C10 10nF 50V 0402
SATA_TXN_L1 C12 10nF 50V 0402
SATA_RXP_L1 C14 10nF 50V 0402
SATA_RXN_L1 C15 10nF 50V 0402
SATA_TXP0 20
SATA_TXN0 20
SATA_RXP0 20
SATA_RXN0 20
SATA_TXP1 19
SATA_TXN1 19
SATA_RXP1 19
SATA_RXN1 19
AH3 SATA_LED_N
AH2 SATA_GP0
AG3 SATA_GP1
AG1 SATA_GP2/SATA_DEVSLP0
AF3 SATA_GP3/SATA_DEVSLP1
SATA_LED# 22
MMC_RST# 19
TS_INT# 18
TS_RST# 18
FAST SPI
N30 SATA_RCOMP_P
R68 402 0402
M30 SATA_RCOMP_N
W3 FST_SPI_CLK
BIOS_SPI_CLK
V4 FST_SPI_CS0_N
BIOS_SPI_CS#
V6 FST_SPI_CS1_N
V7 FST_SPI_CS2_N
V2 FST_SPI_D0
V3 FST_SPI_D1
U1 FST_SPI_D2
U3 FST_SPI_D3
BIOS_SPI_D0
BIOS_SPI_D1
BIOS_SPI_D2
BIOS_SPI_D3
AUDIO
AF13 MF_HDA_RST_N
R79 75 0402
AD6 MF_HDA_SDI1
AD9 MF_HDA_CLK
R80 75 0402
AD7 MF_HDA_SDI0
AF12 MF_HDA_SYNC
R83 75 0402
AF14 MF_HDA_SDO
R85 75 0402
AB9 MF_HDA_DOCKEN_N
AB7 MF_HDA_DOCKRST_N
H4 SPKR
HDA_RST# 17
HDA_CLK 17
HDA_SDIN 17
HDA_SYNC 17
HDA_SDO 17
SPKR 17
AK9 GP_SSP_2_CLK
RAM_CFG1
AK10 GP_SSP_2_FS
RAM_CFG2
AK12 GP_SSP_2_TXD
AK13 GP_SSP_2_RXD
RAM_CFG3
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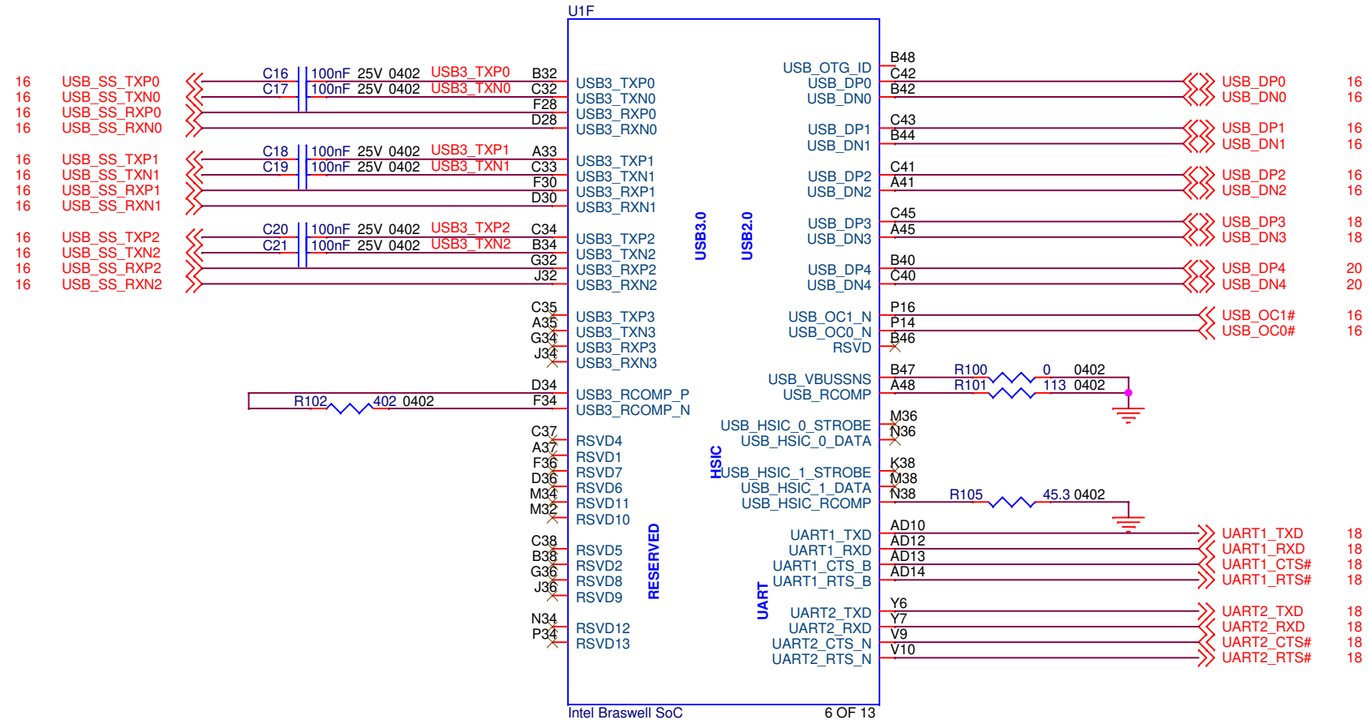

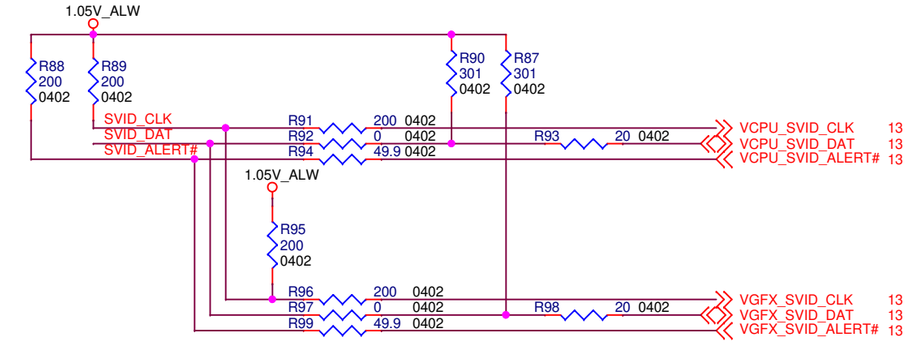

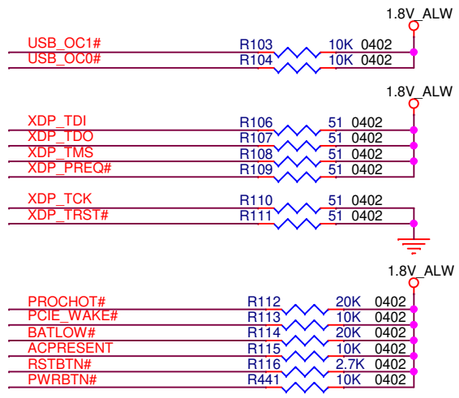

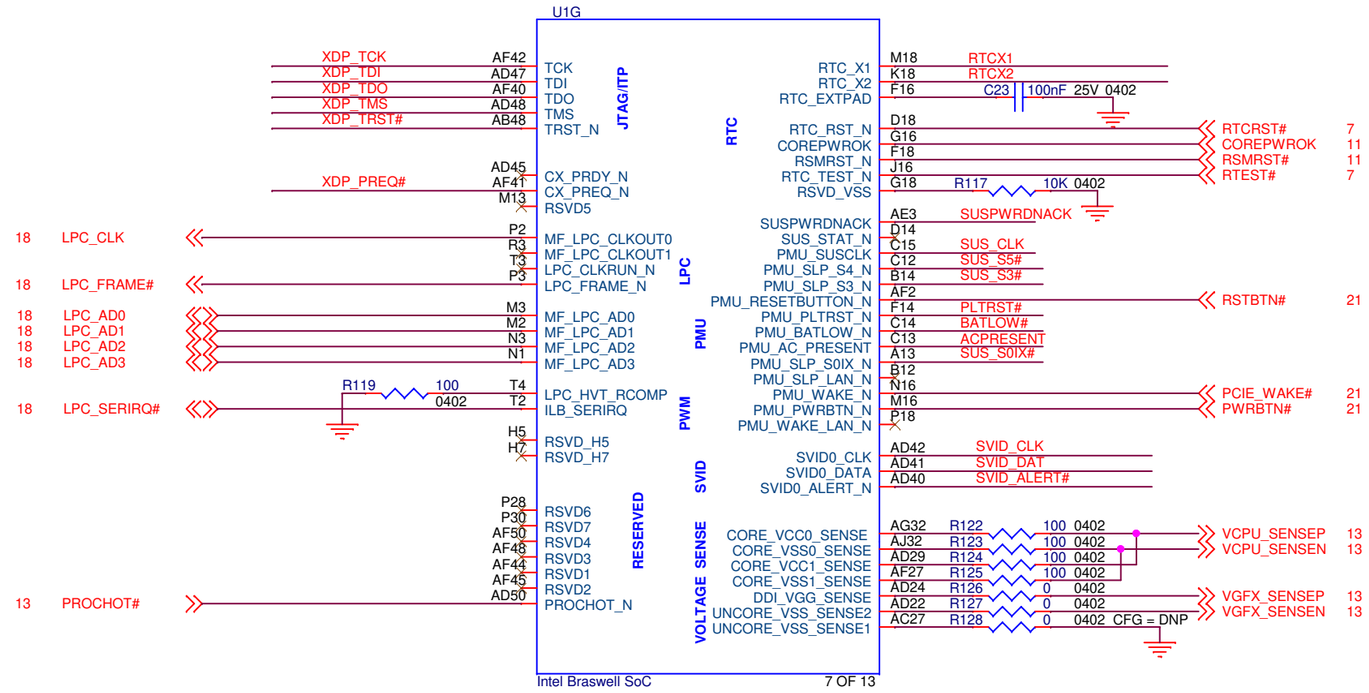

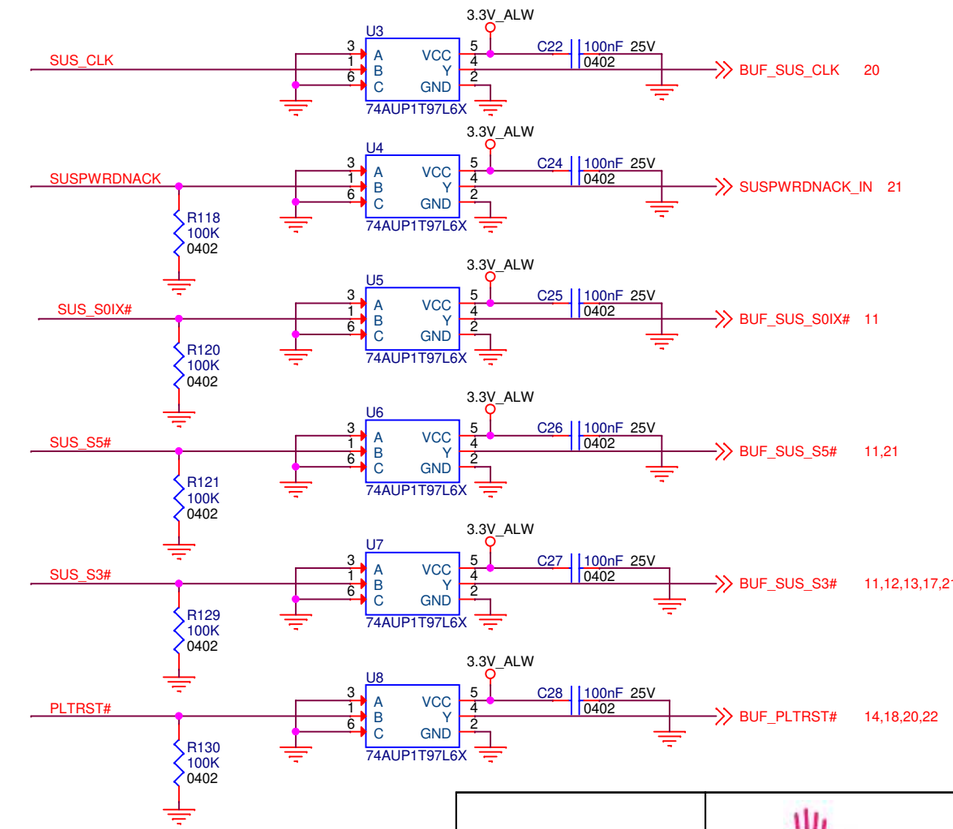

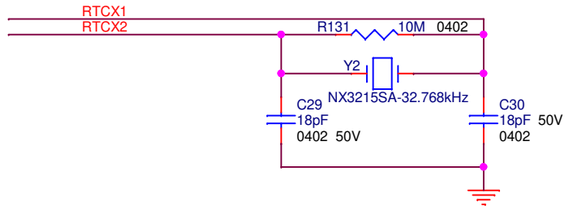

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Page Name: USB UART Interfaces
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Date: Thursday, June 13, 2019
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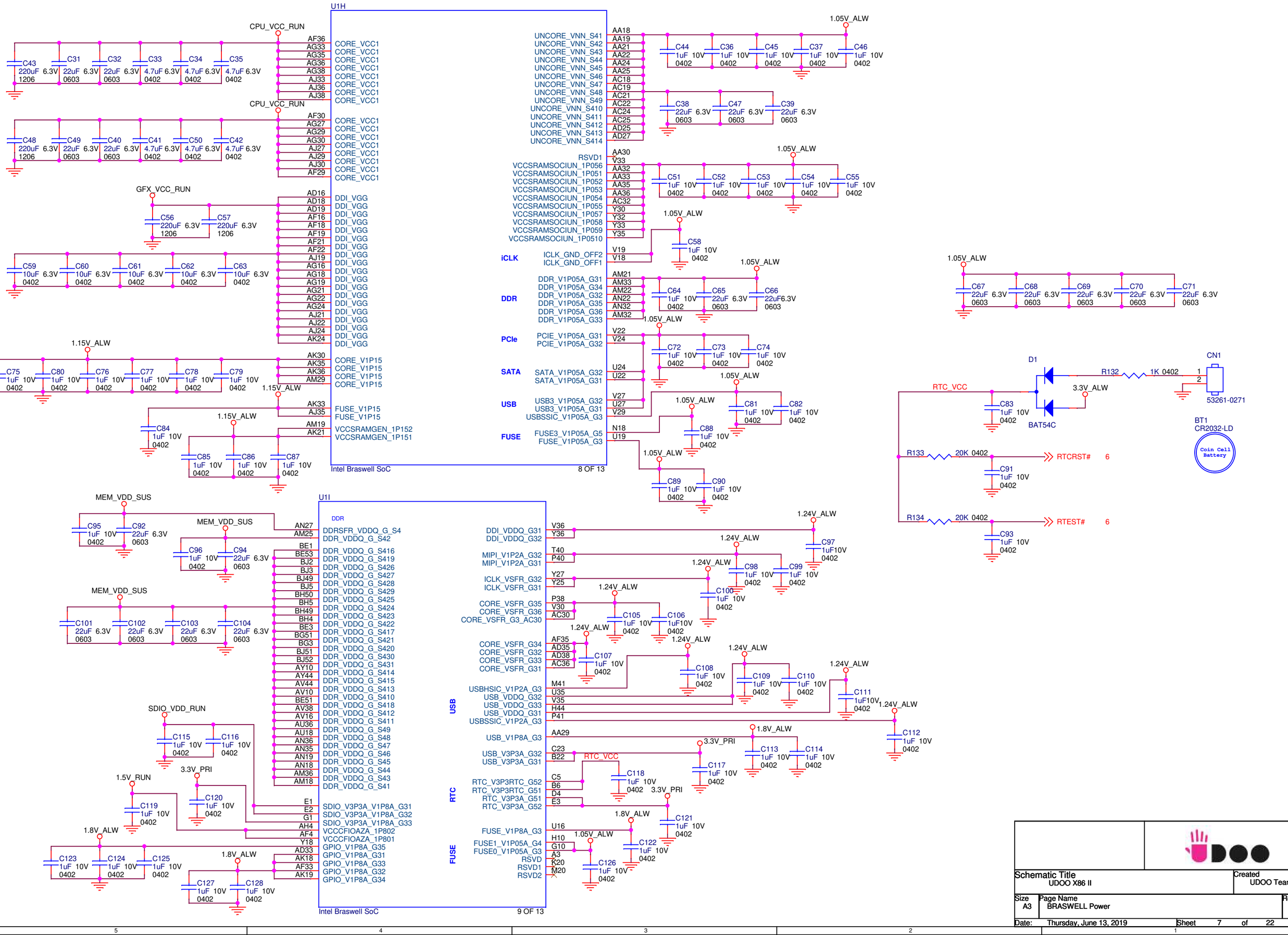
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AF36 AG33 AG35 AG36 AG38 AJ33 AJ36 AJ38
CORE_VCC1
C43 220uF 6.3V 1206
C31 22uF 6.3V 0603
C32 22uF 6.3V 0603
C33 4.7uF 6.3V 0402
C34 4.7uF 6.3V 0402
C35 4.7uF 6.3V 0402
CPU_VCC_RUN
AF30 AG27 AG29 AG30 AJ27 AJ29 AJ30 AF29
C48 220uF 6.3V 1206
C49 22uF 6.3V 0603
C40 22uF 6.3V 0603
C41 4.7uF 6.3V 0402
C50 4.7uF 6.3V 0402
C42 4.7uF 6.3V 0402
GFX_VCC_RUN
AD16 AD18 AD19 AF16 AF18 AF19 AF21 AF22 AJ19 AG16 AG18 AG19 AG21 AG22 AG24 AJ21 AJ22 AJ24 AK24
DDI_VGG
C56 220uF 6.3V 1206
C57 220uF 6.3V 1206
C59 10uF 6.3V 0402
C60 10uF 6.3V 0402
C61 10uF 6.3V 0402
C62 10uF 6.3V 0402
C63 10uF 6.3V 0402
1.15V_ALW
AK30 AK35 AK36 AM29
CORE_V1P15
C75 C80 C76 C77 C78 C79 1uF 10V 0402
1.15V_ALW
AK33 AJ35
FUSE_V1P15
C84 1uF 10V 0402
1.15V_ALW
AM19 AK21
VCCSRAMGEN_1P152 VCCSRAMGEN_1P151
C85 C86 C87 1uF 10V 0402
Intel Braswell SoC
8 OF 13
UNCORE_VNN_S41 UNCORE_VNN_S42 UNCORE_VNN_S43 UNCORE_VNN_S44 UNCORE_VNN_S45 UNCORE_VNN_S46 UNCORE_VNN_S47 UNCORE_VNN_S48 UNCORE_VNN_S49 UNCORE_VNN_S410 UNCORE_VNN_S411 UNCORE_VNN_S412 UNCORE_VNN_S413 UNCORE_VNN_S414
AA18 AA19 AA21 AA22 AA24 AA25 AC18 AC19 AC21 AC22 AC24 AC25 AD25 AD27
1.05V_ALW
C44 C36 C45 C37 C46 1uF 10V 0402
C38 22uF 6.3V 0603
C47 22uF 6.3V 0603
C39 22uF 6.3V 0603
RSVD1
AA30
VCCSRAMSOCIUN_1P056 VCCSRAMSOCIUN_1P051 VCCSRAMSOCIUN_1P052 VCCSRAMSOCIUN_1P053 VCCSRAMSOCIUN_1P054 VCCSRAMSOCIUN_1P055 VCCSRAMSOCIUN_1P057 VCCSRAMSOCIUN_1P058 VCCSRAMSOCIUN_1P059 VCCSRAMSOCIUN_1P0510
Y33 AA32 AA33 AA35 AA36 AC32 Y30 Y32 Y33 Y35
1.05V_ALW
C51 C52 C53 C54 C55 1uF 10V 0402
1.05V_ALW
C58 1uF 10V 0402
iCLK
ICLK_GND_OFF2 ICLK_GND_OFF1
V19 V18
DDR
DDR_V1P05A_G31 DDR_V1P05A_G34 DDR_V1P05A_G32 DDR_V1P05A_G35 DDR_V1P05A_G36 DDR_V1P05A_G33
AM21 AM33 AM22 AN22 AN32 AM32
1.05V_ALW
C64 1uF 10V 0402
C65 22uF 6.3V 0603
C66 22uF6.3V 0603
PCIe
PCIE_V1P05A_G31 PCIE_V1P05A_G32
V22 V24
1.05V_ALW
C72 C73 C74 1uF 10V 0402
SATA
SATA_V1P05A_G32 SATA_V1P05A_G31
U24 U22
1.05V_ALW
C81 C82 1uF 10V 0402
USB
USB3_V1P05A_G32 USB3_V1P05A_G31 USBSSIC_V1P05A_G3
V27 U27 V29
1.05V_ALW
C88 1uF 10V 0402
FUSE
FUSE3_V1P05A_G5 FUSE_V1P05A_G3
N18 U19
1.05V_ALW
C89 C90 1uF 10V 0402
1.05V_ALW
C67 C68 C69 C70 C71 22uF 6.3V 0603
D1
BAT54C
RTC_VCC
C83 1uF 10V 0402
3.3V_ALW
R132 1K 0402
CN1
53261-0271
BT1
CR2032-LD
Coin Cell Battery
R133 20K 0402
RTCRST# 6
C91 1uF 10V 0402
R134 20K 0402
RTEST# 6
C93 1uF 10V 0402
U1I
DDR
MEM_VDD_SUS
C95 1uF 10V 0402
C92 22uF 6.3V 0603
MEM_VDD_SUS
C96 1uF 10V 0402
C94 22uF 6.3V 0603
MEM_VDD_SUS
C101 22uF 6.3V 0603
C102 22uF 6.3V 0603
C103 22uF 6.3V 0603
C104 22uF 6.3V 0603
AN27 AM25 BE1 BE53 BJ2 BJ3 BJ49 BJ5 BH50 BH5 BH49 BH4 BE3 BG51 BG3 BJ51 BJ52 AY10 AY44 AV44 AV10 BE51 AV38 AV16 AU36 AU18 AN36 AN35 AN19 AN18 AM36 AM18
DDRSFR_VDDQ_G_S4 DDR_VDDQ_G_S42 DDR_VDDQ_G_S416 DDR_VDDQ_G_S419 DDR_VDDQ_G_S426 DDR_VDDQ_G_S427 DDR_VDDQ_G_S428 DDR_VDDQ_G_S429 DDR_VDDQ_G_S425 DDR_VDDQ_G_S424 DDR_VDDQ_G_S423 DDR_VDDQ_G_S422 DDR_VDDQ_G_S417 DDR_VDDQ_G_S421 DDR_VDDQ_G_S420 DDR_VDDQ_G_S430 DDR_VDDQ_G_S431 DDR_VDDQ_G_S414 DDR_VDDQ_G_S415 DDR_VDDQ_G_S413 DDR_VDDQ_G_S410 DDR_VDDQ_G_S418 DDR_VDDQ_G_S412 DDR_VDDQ_G_S411 DDR_VDDQ_G_S49 DDR_VDDQ_G_S48 DDR_VDDQ_G_S47 DDR_VDDQ_G_S46 DDR_VDDQ_G_S45 DDR_VDDQ_G_S44 DDR_VDDQ_G_S43 DDR_VDDQ_G_S41
SDIO_VDD_RUN
C115 1uF 10V 0402
C116 1uF 10V 0402
1.5V_RUN
C119 1uF 10V 0402
3.3V_PRI
C120 1uF 10V 0402
E1 E2 G1 AH4 AF4 Y18 AD33 AK18 AF33 AK19
SDIO_V3P3A_V1P8A_G31 SDIO_V3P3A_V1P8A_G32 SDIO_V3P3A_V1P8A_G33 VCCCFIOAZA_1P802 VCCCFIOAZA_1P801 GPIO_V1P8A_G35 GPIO_V1P8A_G31 GPIO_V1P8A_G33 GPIO_V1P8A_G32 GPIO_V1P8A_G34
1.8V_ALW
C123 C124 C125 1uF 10V 0402
1.8V_ALW
C127 C128 1uF 10V 0402
Intel Braswell SoC
9 OF 13
DDI_VDDQ_G31 DDI_VDDQ_G32 MIPI_V1P2A_G32 MIPI_V1P2A_G31 ICLK_VSFR_G32 ICLK_VSFR_G31 CORE_VSFR_G35 CORE_VSFR_G36 CORE_VSFR_G3_AC30 CORE_VSFR_G34 CORE_VSFR_G32 CORE_VSFR_G33 CORE_VSFR_G31 USBHSIC_V1P2A_G3 USB_VDDQ_G32 USB_VDDQ_G33 USB_VDDQ_G31 USBSSIC_V1P2A_G3 USB_V1P8A_G3 USB_V3P3A_G32 USB_V3P3A_G31 RTC_V3P3RTC_G52 RTC_V3P3RTC_G51 RTC_V3P3A_G51 RTC_V3P3A_G52 FUSE_V1P8A_G3 FUSE1_V1P05A_G4 FUSE0_V1P05A_G3 RSVD RSVD1 RSVD2
V36 Y36 T40 P40 Y27 Y25 P38 V30 AC30 AF35 AD35 AD38 AC36 M41 U35 V35 H44 P41 AA29 C23 B22 C5 B6 D4 E3 U16 H10 G10 A3 K20 M20
USB RTC FUSE
1.24V_ALW
C97 1uF10V 0402
C98 1uF 10V 0402
C99 1uF 10V 0402
C100 1uF 10V 0402
C105 1uF 10V 0402
C106 1uF10V 0402
C107 1uF 10V 0402
C108 1uF 10V 0402
C109 1uF 10V 0402
C110 1uF 10V 0402
C111 1uF10V 0402
C112 1uF 10V 0402
1.8V_ALW
C113 C114 1uF 10V 0402
3.3V_PRI
C117 1uF 10V 0402
RTC_VCC
C118 1uF 10V 0402
3.3V_PRI
C121 1uF 10V 0402
1.8V_ALW
C122 1uF 10V 0402
1.05V_ALW
C126 1uF 10V 0402
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UDOO X86 II
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BRASWELL Power
Rev
02
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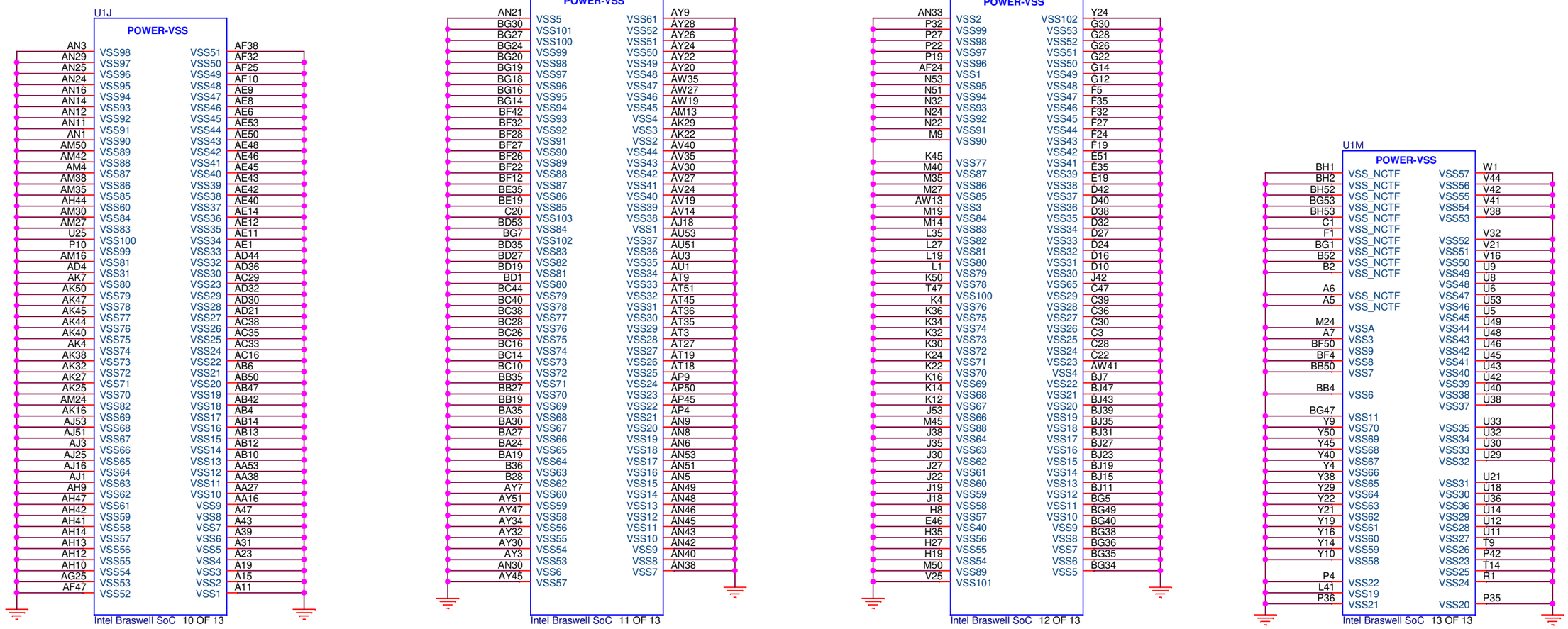

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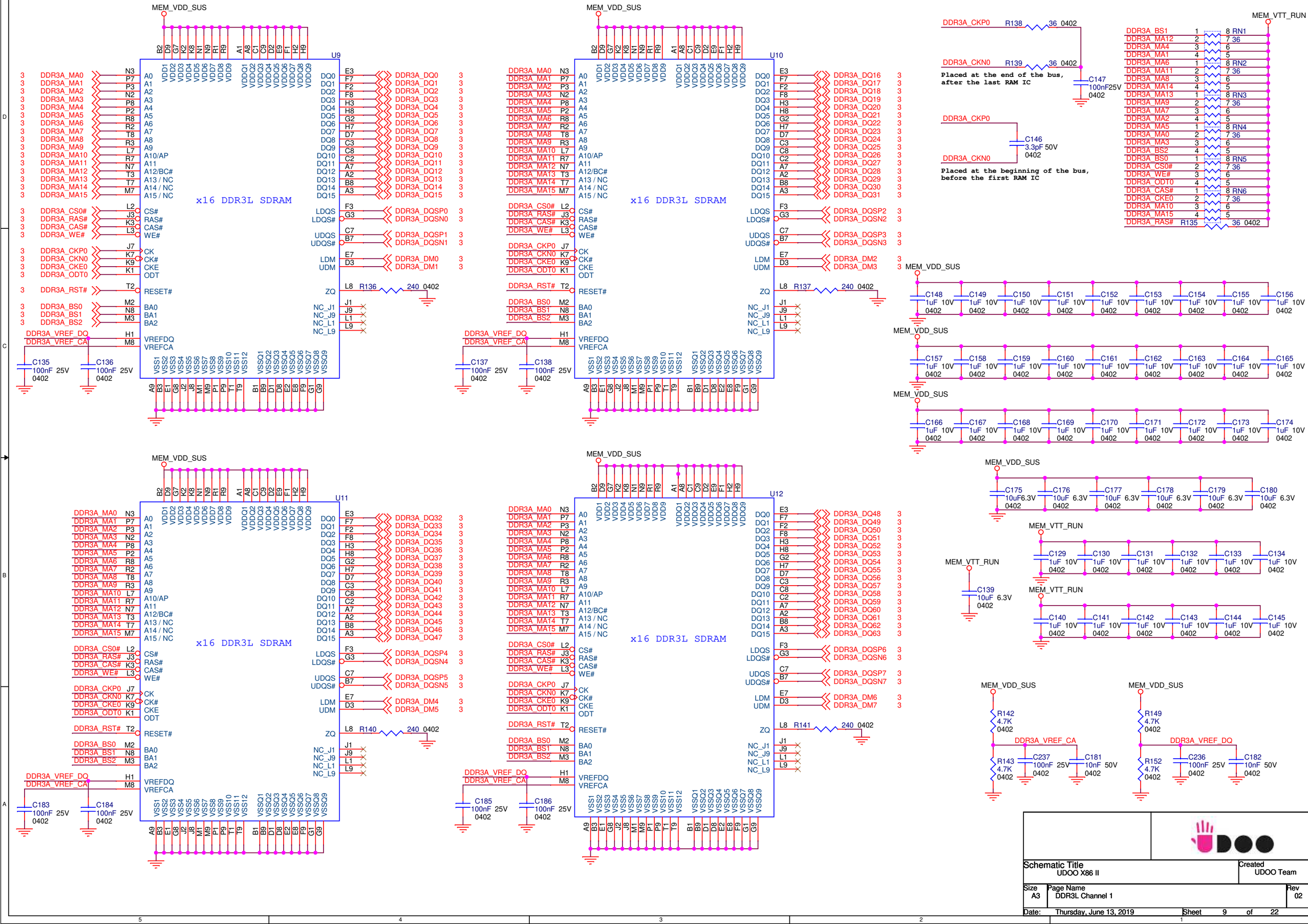
Date: Thursday, June 13, 2019	Sheet 8 of 22



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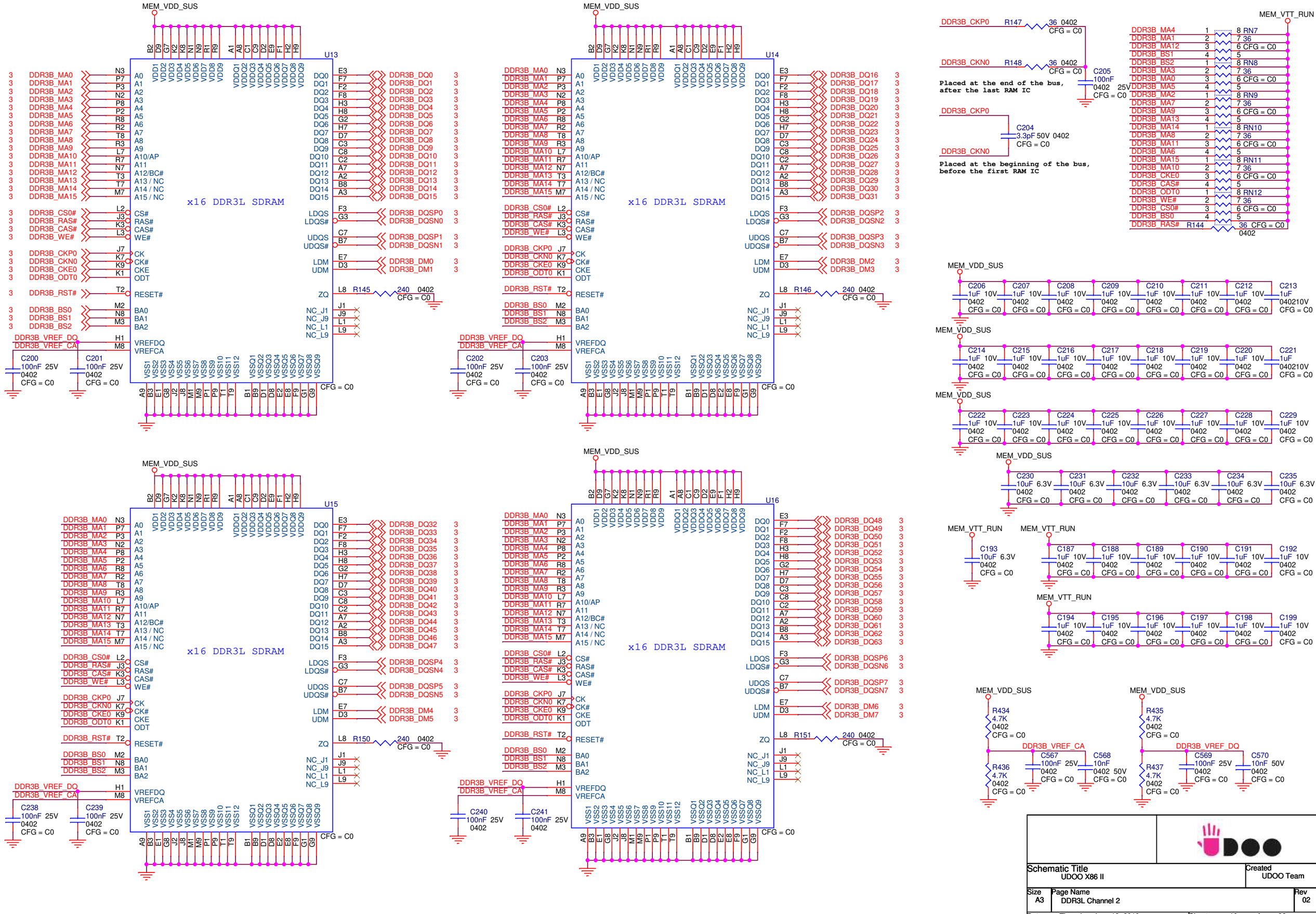
MEM_VDD_SUS
U13
x16 DDR3L SDRAM
DDR3B_MA0 DDR3B_MA1 DDR3B_MA2 DDR3B_MA3 DDR3B_MA4 DDR3B_MA5 DDR3B_MA6 DDR3B_MA7 DDR3B_MA8 DDR3B_MA9 DDR3B_MA10 DDR3B_MA11 DDR3B_MA12 DDR3B_MA13 DDR3B_MA14 DDR3B_MA15
DDR3B_CS0# DDR3B_RAS# DDR3B_CAS# DDR3B_WE#
DDR3B_CKP0 DDR3B_CKN0 DDR3B_CKE0 DDR3B_ODT0
DDR3B_RST#
DDR3B_BS0 DDR3B_BS1 DDR3B_BS2
DDR3B_VREF_DQ DDR3B_VREF_CA
C200 100nF 25V 0402 CFG = C0
C201 100nF 25V 0402 CFG = C0
DDR3B_DQ0 DDR3B_DQ1 DDR3B_DQ2 DDR3B_DQ3 DDR3B_DQ4 DDR3B_DQ5 DDR3B_DQ6 DDR3B_DQ7 DDR3B_DQ8 DDR3B_DQ9 DDR3B_DQ10 DDR3B_DQ11 DDR3B_DQ12 DDR3B_DQ13 DDR3B_DQ14 DDR3B_DQ15
DDR3B_DQSP0 DDR3B_DQSN0
DDR3B_DQSP1 DDR3B_DQSN1
DDR3B_DM0 DDR3B_DM1
L8 R145 240 0402 CFG = C0
CFG = C0
MEM_VDD_SUS
U14
x16 DDR3L SDRAM
DDR3B_DQ16 DDR3B_DQ17 DDR3B_DQ18 DDR3B_DQ19 DDR3B_DQ20 DDR3B_DQ21 DDR3B_DQ22 DDR3B_DQ23 DDR3B_DQ24 DDR3B_DQ25 DDR3B_DQ26 DDR3B_DQ27 DDR3B_DQ28 DDR3B_DQ29 DDR3B_DQ30 DDR3B_DQ31
DDR3B_DQSP2 DDR3B_DQSN2
DDR3B_DQSP3 DDR3B_DQSN3
DDR3B_DM2 DDR3B_DM3
L8 R146 240 0402 CFG = C0
C202 100nF 25V 0402 CFG = C0
C203 100nF 25V 0402 CFG = C0
CFG = C0
DDR3B_CKP0 R147 36 0402 CFG = C0
DDR3B_CKN0 R148 36 0402 CFG = C0
C205 100nF 0402 25V CFG = C0
Placed at the end of the bus, after the last RAM IC
DDR3B_CKP0
C204 3.3pF 50V 0402 CFG = C0
DDR3B_CKN0
Placed at the beginning of the bus, before the first RAM IC
MEM_VTT_RUN
DDR3B_MA4 DDR3B_MA1 DDR3B_MA12 DDR3B_BS1 DDR3B_BS2 DDR3B_MA3 DDR3B_MA0 DDR3B_MA5 DDR3B_MA2 DDR3B_MA7 DDR3B_MA9 DDR3B_MA13 DDR3B_MA14 DDR3B_MA8 DDR3B_MA11 DDR3B_MA6 DDR3B_MA15 DDR3B_MA10 DDR3B_CKE0 DDR3B_CAS# DDR3B_ODT0 DDR3B_WE# DDR3B_CS# DDR3B_BS0 DDR3B_RAS#
RN7 RN8 RN9 RN10 RN11 RN12
R144 36 CFG = C0 0402
MEM_VDD_SUS
C206 C207 C208 C209 C210 C211 C212 C213
C214 C215 C216 C217 C218 C219 C220 C221
C222 C223 C224 C225 C226 C227 C228 C229
1uF 10V 0402 CFG = C0
040210V CFG = C0
MEM_VDD_SUS
U15
x16 DDR3L SDRAM
DDR3B_DQ32 DDR3B_DQ33 DDR3B_DQ34 DDR3B_DQ35 DDR3B_DQ36 DDR3B_DQ37 DDR3B_DQ38 DDR3B_DQ39 DDR3B_DQ40 DDR3B_DQ41 DDR3B_DQ42 DDR3B_DQ43 DDR3B_DQ44 DDR3B_DQ45 DDR3B_DQ46 DDR3B_DQ47
DDR3B_DQSP4 DDR3B_DQSN4
DDR3B_DQSP5 DDR3B_DQSN5
DDR3B_DM4 DDR3B_DM5
L8 R150 240 0402 CFG = C0
C238 100nF 25V 0402 CFG = C0
C239 100nF 25V 0402 CFG = C0
CFG = C0
MEM_VDD_SUS
U16
x16 DDR3L SDRAM
DDR3B_DQ48 DDR3B_DQ49 DDR3B_DQ50 DDR3B_DQ51 DDR3B_DQ52 DDR3B_DQ53 DDR3B_DQ54 DDR3B_DQ55 DDR3B_DQ56 DDR3B_DQ57 DDR3B_DQ58 DDR3B_DQ59 DDR3B_DQ60 DDR3B_DQ61 DDR3B_DQ62 DDR3B_DQ63
DDR3B_DQSP6 DDR3B_DQSN6
DDR3B_DQSP7 DDR3B_DQSN7
DDR3B_DM6 DDR3B_DM7
L8 R151 240 0402 CFG = C0
C240 100nF 25V 0402
C241 100nF 25V 0402
CFG = C0
MEM_VDD_SUS
C230 C231 C232 C233 C234 C235
10uF 6.3V 0402 CFG = C0
MEM_VTT_RUN
C193 10uF 6.3V 0402 CFG = C0
MEM_VTT_RUN
C187 C188 C189 C190 C191 C192
C194 C195 C196 C197 C198 C199
1uF 10V 0402 CFG = C0
MEM_VDD_SUS
R434 4.7K 0402 CFG = C0
R436 4.7K 0402 CFG = C0
DDR3B_VREF_CA
C567 100nF 25V 0402 CFG = C0
C568 10nF 0402 50V CFG = C0
MEM_VDD_SUS
R435 4.7K 0402 CFG = C0
R437 4.7K 0402 CFG = C0
DDR3B_VREF_DQ
C569 100nF 25V 0402 CFG = C0
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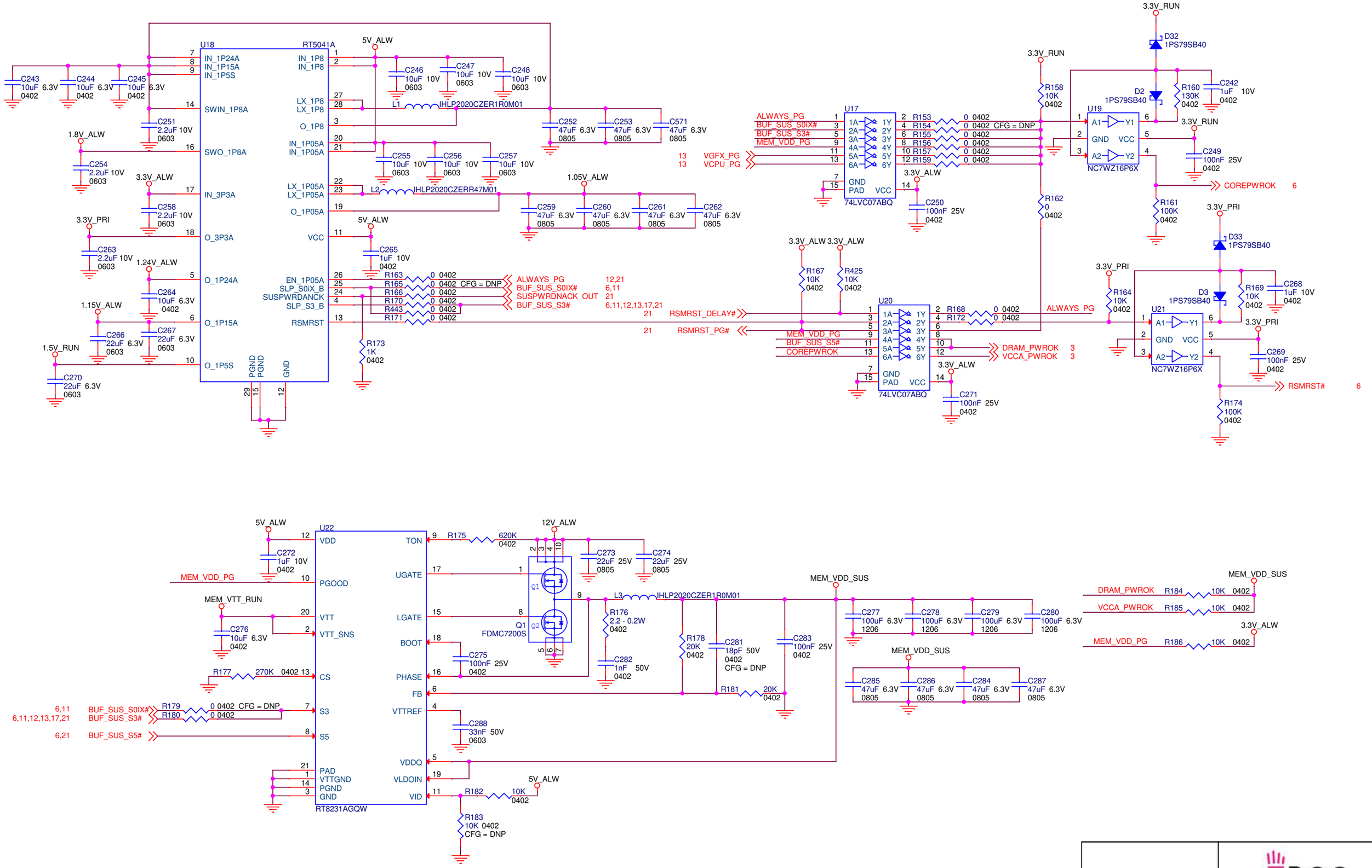

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Size: A3	Page Name: POWER 1	Rev: 02
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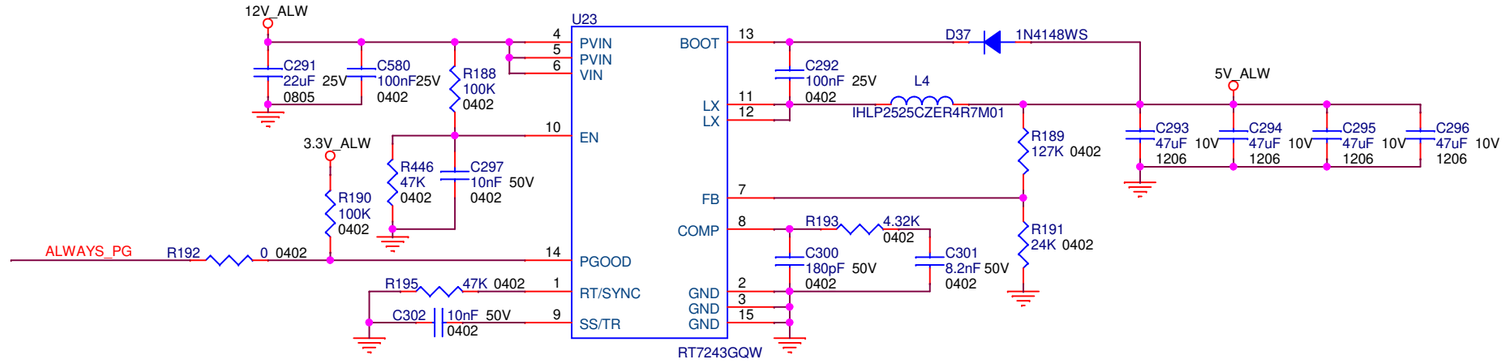

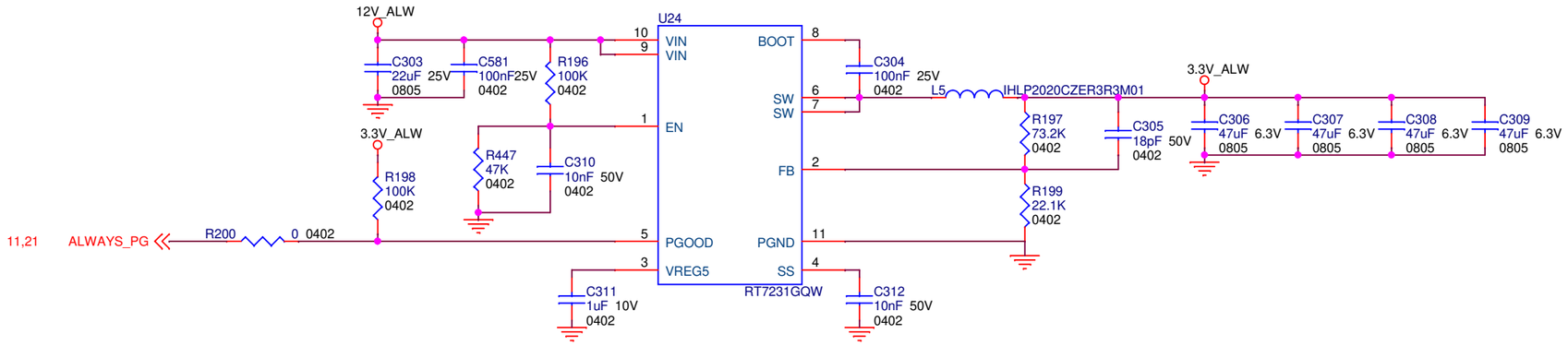

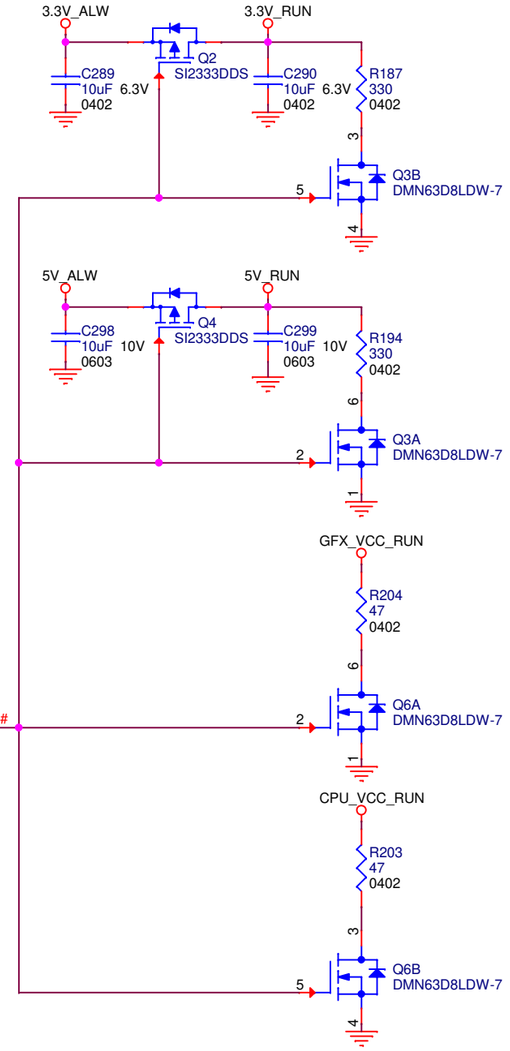

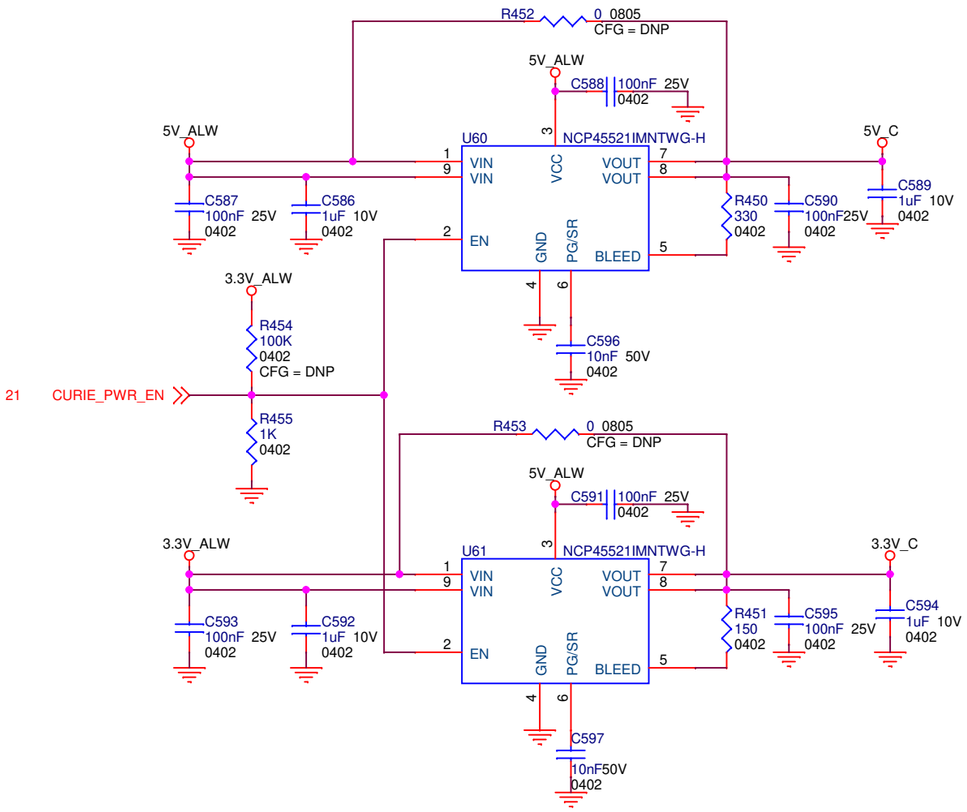

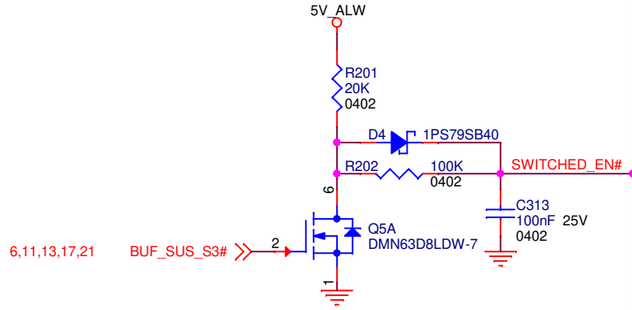

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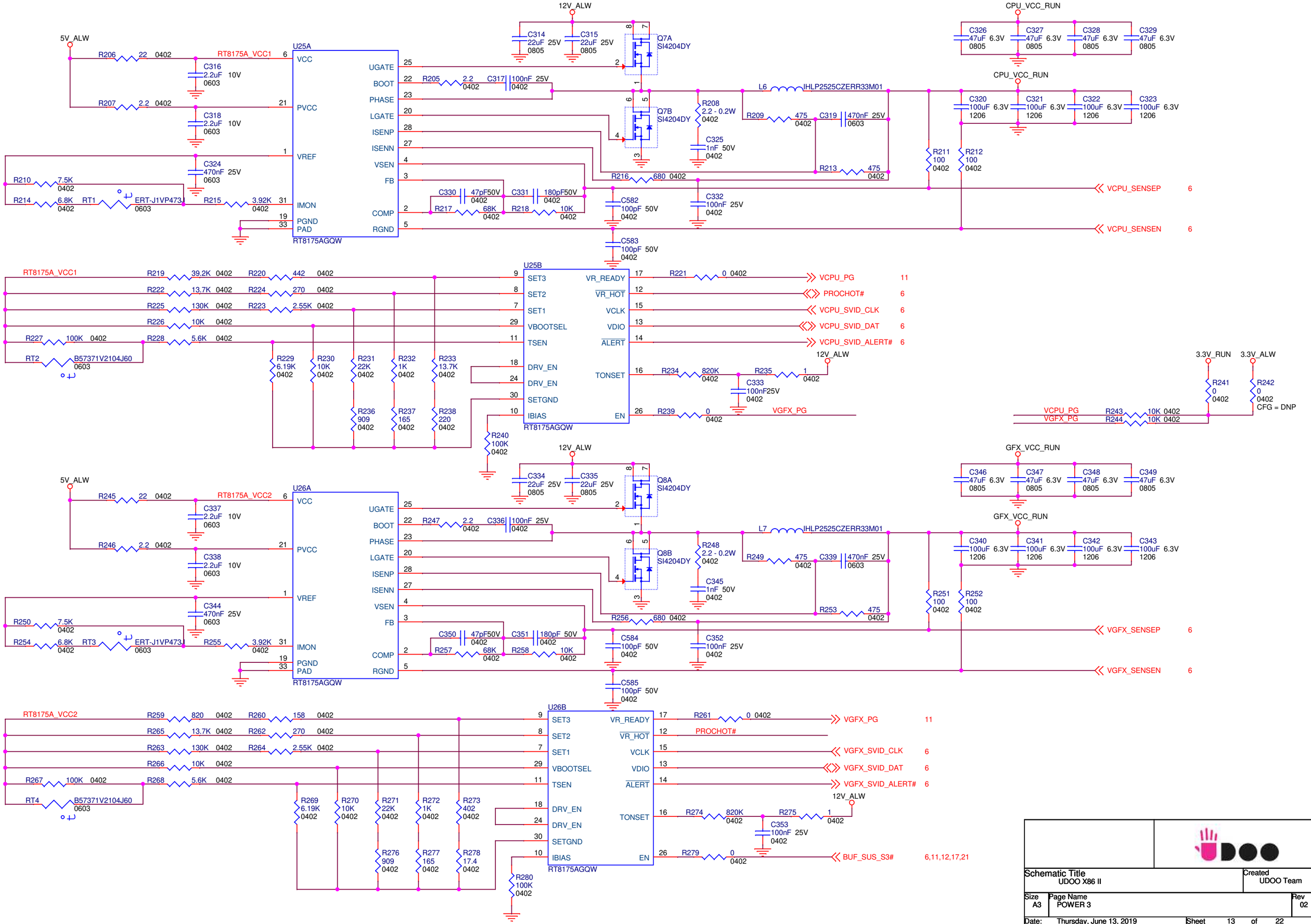
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U25A
RT8175A_VCC1
R206 22 0402
R207 2.2 0402
C316 2.2uF 10V 0603
C318 2.2uF 10V 0603
C324 470nF 25V 0603
R210 7.5K 0402
R214 6.8K 0402
RT1 ERT-J1VP473J 0603
R215 3.92K 0402
VCC
PVCC
VREF
IMON
PGND
PAD
UGATE
BOOT
PHASE
LGATE
ISENP
ISENN
VSEN
FB
COMP
RGND
RT8175AGQW
12V_ALW
C314 22uF 25V 0805
C315 22uF 25V 0805
Q7A SI4204DY
Q7B SI4204DY
R205 2.2 0402
C317 100nF 25V 0402
R208 2.2 - 0.2W 0402
C325 1nF 50V 0402
L6 IHLP2525CZERR33M01
R209 475 0402
C319 470nF 25V 0603
R213 475 0402
R216 680 0402
C330 47pF50V 0402
C331 180pF50V 0402
R217 68K 0402
R218 10K 0402
C582 100pF 50V 0402
C332 100nF 25V 0402
C583 100pF 50V 0402
CPU_VCC_RUN
C326 47uF 6.3V 0805
C327 47uF 6.3V 0805
C328 47uF 6.3V 0805
C329 47uF 6.3V 0805
C320 100uF 6.3V 1206
C321 100uF 6.3V 1206
C322 100uF 6.3V 1206
C323 100uF 6.3V 1206
R211 100 0402
R212 100 0402
VCPU_SENSEP 6
VCPU_SENSEN 6
RT8175A_VCC1
U25B
R219 39.2K 0402
R220 442 0402
R222 13.7K 0402
R224 270 0402
R225 130K 0402
R223 2.55K 0402
R226 10K 0402
R227 100K 0402
R228 5.6K 0402
RT2 B57371V2104J60 0603
R229 6.19K 0402
R230 10K 0402
R231 22K 0402
R232 1K 0402
R233 13.7K 0402
R236 909 0402
R237 165 0402
R238 220 0402
R240 100K 0402
SET3
SET2
SET1
VBOOTSEL
TSEN
DRV_EN
DRV_EN
SETGND
IBIAS
VR_READY
VR_HOT
VCLK
VDIO
ALERT
TONSET
EN
RT8175AGQW
R221 0 0402
VCPU_PG 11
PROCHOT# 6
VCPU_SVID_CLK 6
VCPU_SVID_DAT 6
VCPU_SVID_ALERT# 6
12V_ALW
R234 820K 0402
R235 1 0402
C333 100nF25V 0402
R239 0 0402
VGFX_PG
3.3V_RUN
3.3V_ALW
R241 0 0402
R242 0 0402
CFG = DNP
VCPU_PG
VGFX_PG
R243 10K 0402
R244 10K 0402
5V_ALW
U26A
RT8175A_VCC2
R245 22 0402
R246 2.2 0402
C337 2.2uF 10V 0603
C338 2.2uF 10V 0603
C344 470nF 25V 0603
R250 7.5K 0402
R254 6.8K 0402
RT3 ERT-J1VP473J 0603
R255 3.92K 0402
VCC
PVCC
VREF
IMON
PGND
PAD
UGATE
BOOT
PHASE
LGATE
ISENP
ISENN
VSEN
FB
COMP
RGND
RT8175AGQW
12V_ALW
C334 22uF 25V 0805
C335 22uF 25V 0805
Q8A SI4204DY
Q8B SI4204DY
R247 2.2 0402
C336 100nF 25V 0402
R248 2.2 - 0.2W 0402
C345 1nF 50V 0402
L7 IHLP2525CZERR33M01
R249 475 0402
C339 470nF 25V 0603
R253 475 0402
R256 680 0402
C350 47pF50V 0402
C351 180pF 50V 0402
R257 68K 0402
R258 10K 0402
C584 100pF 50V 0402
C352 100nF 25V 0402
C585 100pF 50V 0402
GFX_VCC_RUN
C346 47uF 6.3V 0805
C347 47uF 6.3V 0805
C348 47uF 6.3V 0805
C349 47uF 6.3V 0805
C340 100uF 6.3V 1206
C341 100uF 6.3V 1206
C342 100uF 6.3V 1206
C343 100uF 6.3V 1206
R251 100 0402
R252 100 0402
VGFX_SENSEP 6
VGFX_SENSEN 6
RT8175A_VCC2
U26B
R259 820 0402
R260 158 0402
R265 13.7K 0402
R262 270 0402
R263 130K 0402
R264 2.55K 0402
R266 10K 0402
R267 100K 0402
R268 5.6K 0402
RT4 B57371V2104J60 0603
R269 6.19K 0402
R270 10K 0402
R271 22K 0402
R272 1K 0402
R273 402 0402
R276 909 0402
R277 165 0402
R278 17.4 0402
R280 100K 0402
SET3
SET2
SET1
VBOOTSEL
TSEN
DRV_EN
DRV_EN
SETGND
IBIAS
VR_READY
VR_HOT
VCLK
VDIO
ALERT
TONSET
EN
RT8175AGQW
R261 0 0402
VGFX_PG 11
PROCHOT#
VGFX_SVID_CLK 6
VGFX_SVID_DAT 6
VGFX_SVID_ALERT# 6
12V_ALW
R274 820K 0402
R275 1 0402
C353 100nF 25V 0402
R279 0 0402
BUF_SUS_S3# 6,11,12,17,21
Schematic Title
UDOO X86 II
Created
UDOO Team
Size
A3
Page Name
POWER 3
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02
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Thursday, June 13, 2019
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22

HDMI REAR PANEL

NIC

ETHERNET CONTROLLER

PCA9306GF

IP4283CZ10

IP4221CZ6-S

WDMI-19F4L1BN5U1

LPJG19801DNL

Schematic Title	UDOO X86 II
Created	UDOO Team
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MINI DP REAR PANEL

MINI DP REAR PANEL

Schematic Title	UDOO X86 II
Created	UDOO Team
Size	A3
Page Name	mini DP++ connectors
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Date:	Thursday, June 13, 2019
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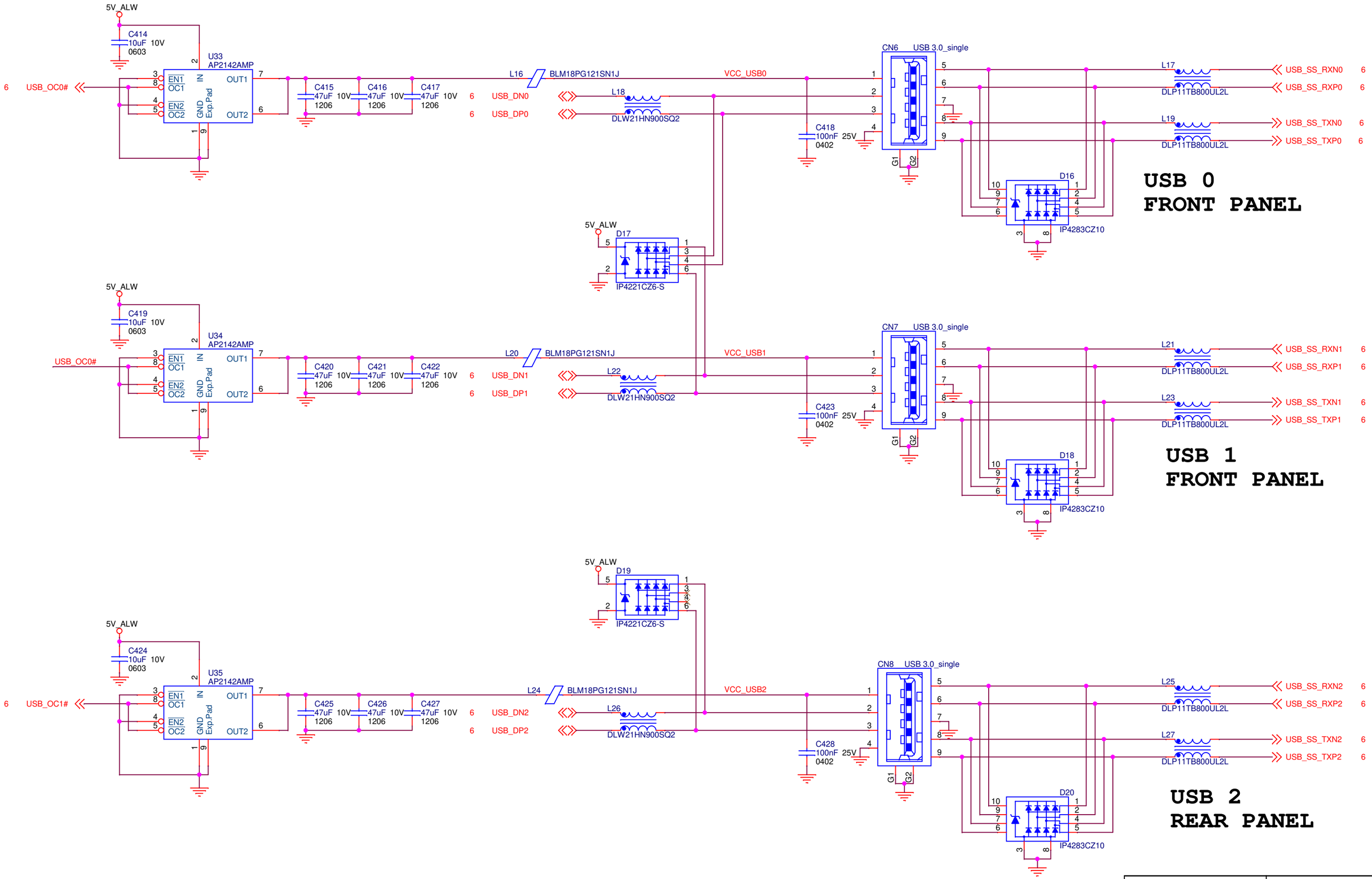


Schematic Title: UDOO X86 II	Created: UDOO Team
Size: A3	Page Name: USB 3.0 connectors
Rev: 02	
Date: Thursday, June 13, 2019	Sheet 16 of 22

AUDIO CODEC

Analog
Digital

HD AUDIO CODEC

LINE1-R C429 4.7uF 6.3V 0402 R327 4.7K 0402 R328 47 0402 L28 BLM18PG121SN1J HPOUT-R
LINE1-L C430 4.7uF 6.3V 0402 R329 4.7K 0402 R330 47 0402 L29 BLM18PG121SN1J HPOUT-L

R331 2.2K 0402
R332 2.2K 0402

C431 4.7uF 6.3V 0402
R333 100K 0402
C435 10uF 6.3V 0402
GND_HDA

C437 2.2uF 10V 0603
C436 10uF 6.3V 0402
3.3V_RUN

C438 2.2uF 10V 0603

5V_RUN
5V_HDA L30 BLM18PG121SN1J
C433 100nF 25V 0402
C434 10uF 10V 0603
GND_HDA

U36

1.5V_RUN L31 BLM18PG121SN1J
GND_HDA
C440 10uF 6.3V 0402
C443 10uF 6.3V 0402

R334 4.7K 0402
R335 4.7K 0402
LINE1-L
LINE1-R

12V_ALW
U37
C439 22uF 25V 0805
C441 2.2uF 25V 0805
VIN BOOT
SW
EN
GND GND PAD PGOOD FB
RT8297B
6,11,12,13,21 BUF_SUS_S3#
C442 100nF 25V 0402
L32 IHLP2020CZER100M01
R336 62K 0402
R337 12K 0402
C444 47uF 10V 1206

5V_RUN
R422 0 0402 CFG = DNP
D21 ESD5B5.0ST1G

L33 BLM18PG121SN1J
C445 100nF 25V 0402
C446 10uF 10V 0603
C447 100nF 25V 0402
C448 10uF 10V 0603
L35 BLM18PG121SN1J
C449 100nF 25V 0402
C450 10uF 10V 0603
C451 100nF 25V 0402
C452 10uF 10V 0603

SPK_OUT_L_P
SPK_OUT_L_N
SPK_OUT_R_N
SPK_OUT_R_P

C579 10uF 6.3V 0402
MIC2-R L34 BLM18PG121SN1J SLEEVE
MIC2-L L36 BLM18PG121SN1J RING2
GND_HDA

R338 20K 0402
GND_HDA
R341 39.2K 0402 FRONT-JD

3.3V_RUN R339 2.2K 0402
R340 2.2K 0402
HDA_RST# 2
Q14A DMN63D8LDW-7
Q14B DMN63D8LDW-7
COMBO_GPI

21 AMP_MUTE# D22 1PS79SB40

3.3V_RUN
C453 100nF 25V 0402
C454 10uF 6.3V 0402

C456 1uF 10V 0402
R344 1K 0402 SPKR 5
R346 1K 0402
C457 100pF 50V 0402

HDA_RST# 5
HDA_SYNC 5

1.5V_RUN
C458 100nF 25V 0402
C459 10uF 6.3V 0402

R349 75 0402 HDA_SDIN 5
C455 10uF 6.3V 0402
HDA_CLK 5
C460 18pF 50V 0402
HDA_SDO 5

3.3V_RUN
R423 2.2K 0402
Q26B DMN63D8LDW-7
FRONT-JD 2
Q26A DMN63D8LDW-7

R342 0 0402 NEAR AVDD1
GND_HDA
R343 0 0402 NEAR AVDD2
GND_HDA
R345 0 0402 NEAR JACK
GND_HDA

18 SPDIF_OUT COMBO_GPI
R348 22K 0402 CFG = DNP

CN9
C461 100pF 50V 0402 SLEEVE
C464 100pF 50V 0402 HPOUT-R
FRONT-JD
C463 100pF 50V 0402 HPOUT-L
C462 100pF 50V 0402 RING2
GND_HDA
2SJ3072-150111F
D23 PESD5V0U5BF
GND_HDA

3.3V_ALW
MIC2-R
R347 100K 0402
Q15B DMN63D8LDW-7
HDA_RST# 2
Q15A DMN63D8LDW-7
GND_HDA

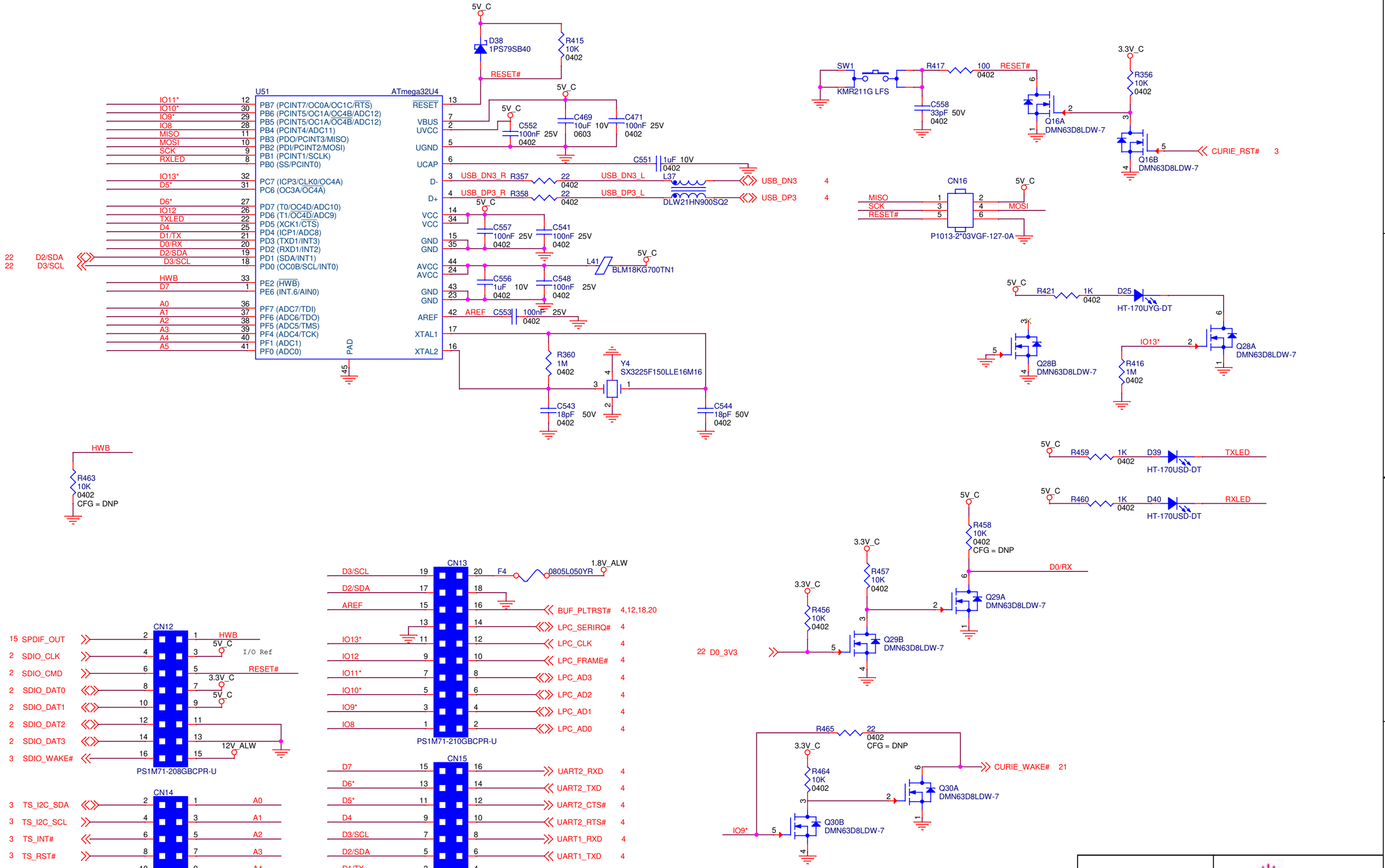
C465 10nF 50V 0402 R350 2.2 - 0.2W 0402 SPK_OUT_R_P 1
C466 10nF 50V 0402 R351 2.2 - 0.2W 0402 SPK_OUT_R_N 2
CN10
A2001WV-S-02PD01

C467 10nF 50V 0402 R352 2.2 - 0.2W 0402 SPK_OUT_L_N 1
C468 10nF 50V 0402 R353 2.2 - 0.2W 0402 SPK_OUT_L_P 2
CN11
A2001WV-S-02PD01

TRRS JACK FRONT PANEL

SPEAKER INTERNAL HEADER

Schematic Title: UDOO X86 II	Created: UDOO Team
Size: A3	Page Name: Audio Codec + connectors
Rev: 02	
Date: Thursday, June 13, 2019	Sheet 17 of 22



Schematic Title: UDOO X86 II			Created: UDOO Team
Size: A3	Page Name: ARDUINO Leonardo + Expansion connectors		Rev: 02
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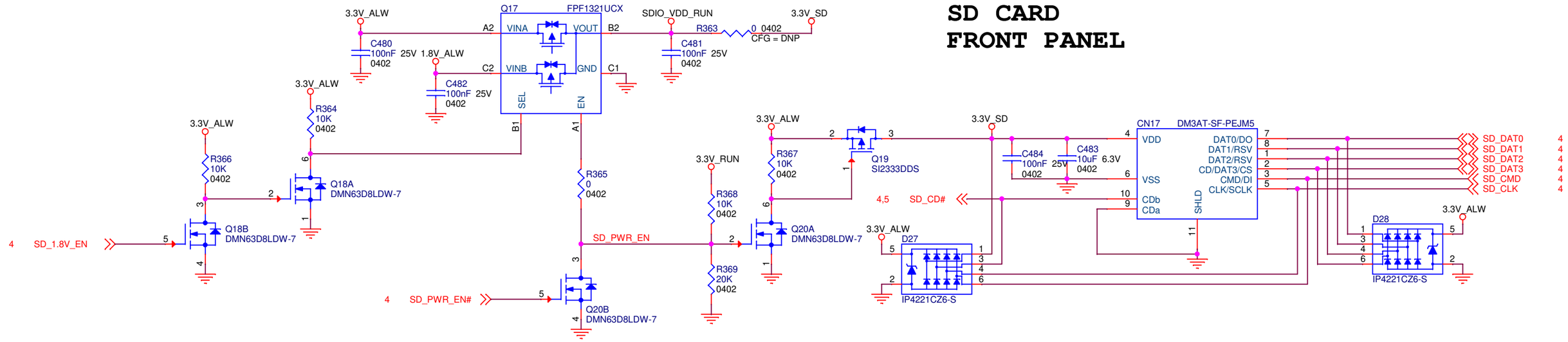
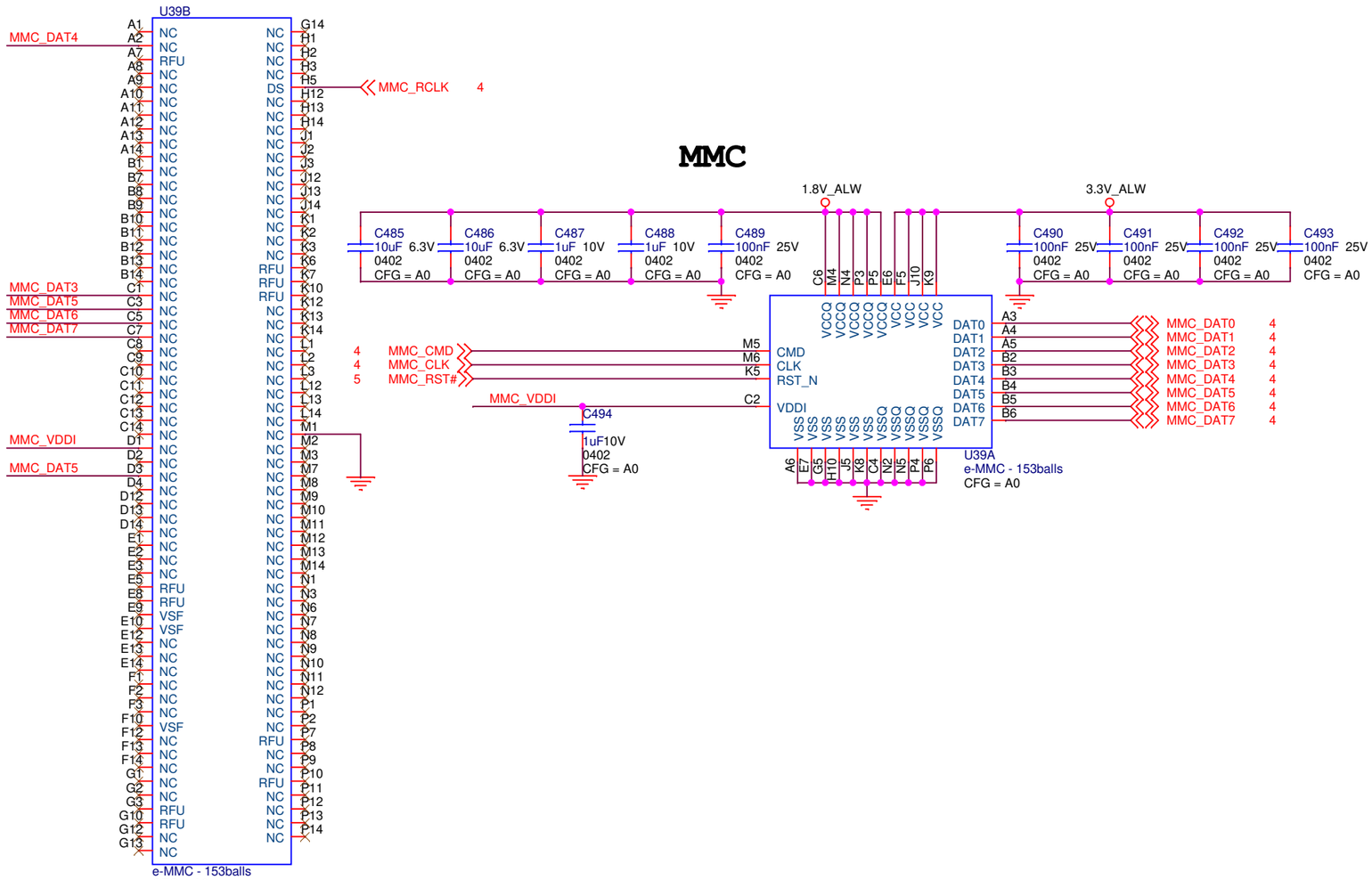
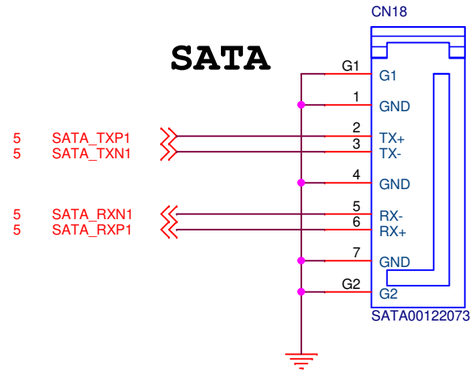
SD CARD FRONT PANEL

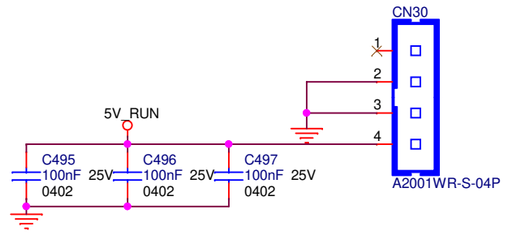


MMC



SATA





Schematic Title: UDOO X86 II		Created: UDOO Team
Size: A3	Page Name: eMMC, microSD Slot, SATA connector	Rev: 02
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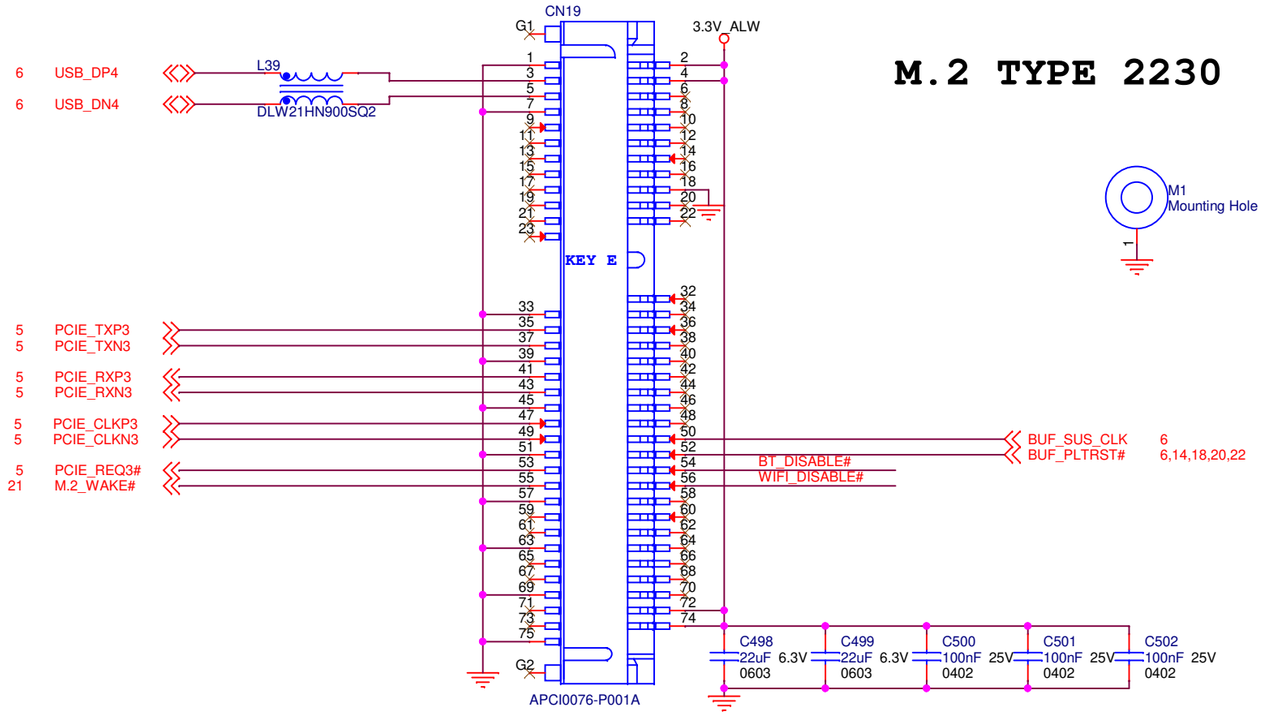
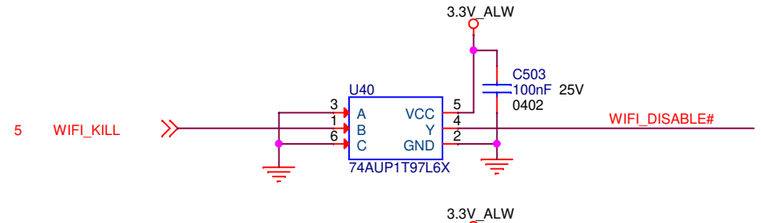
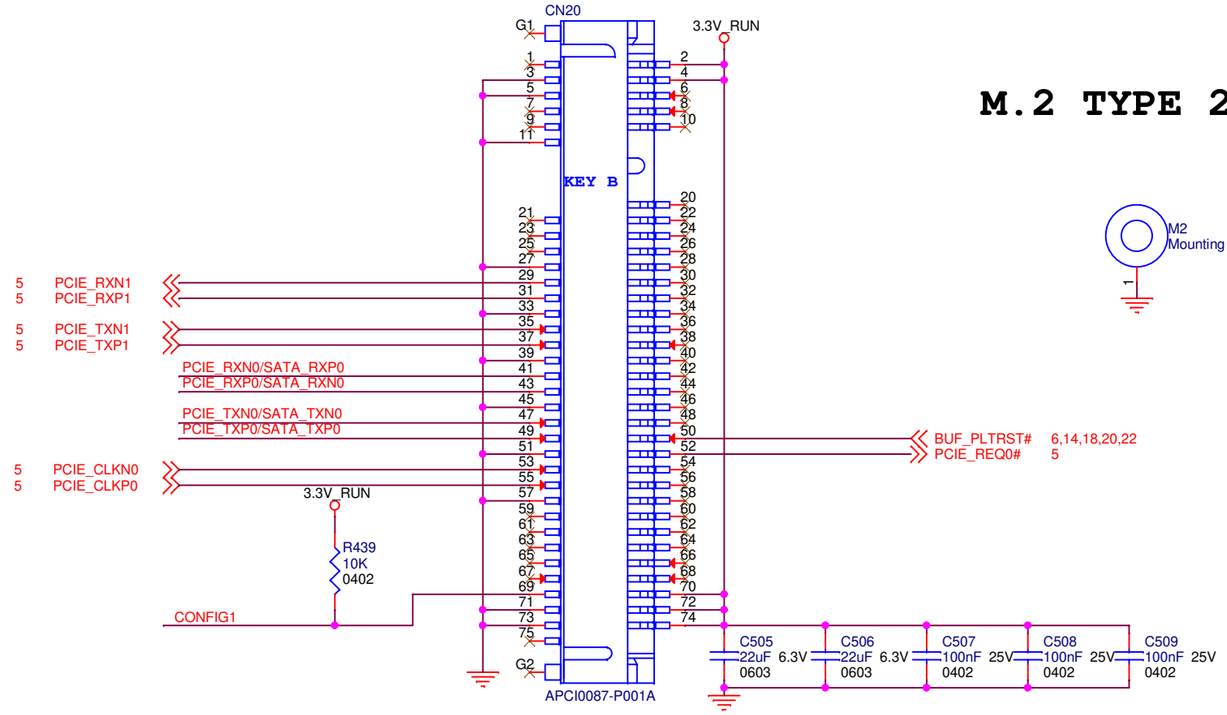
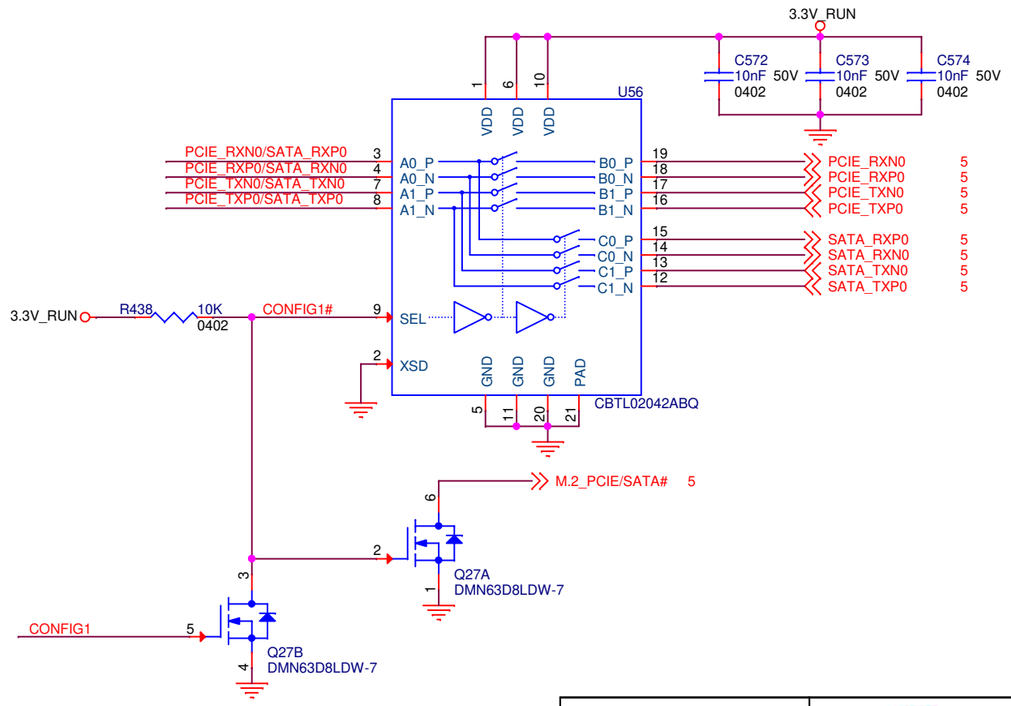
M.2 TYPE 2230



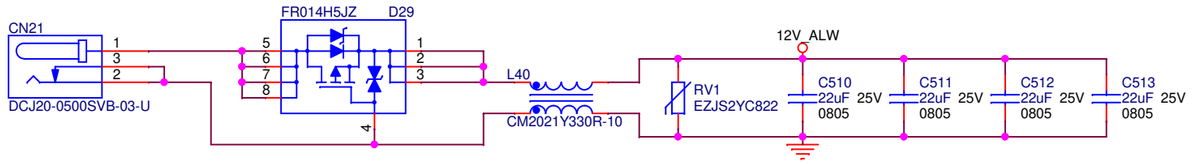


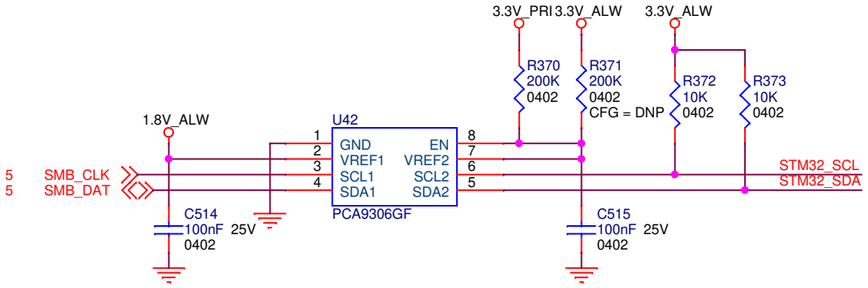
M.2 TYPE 2260

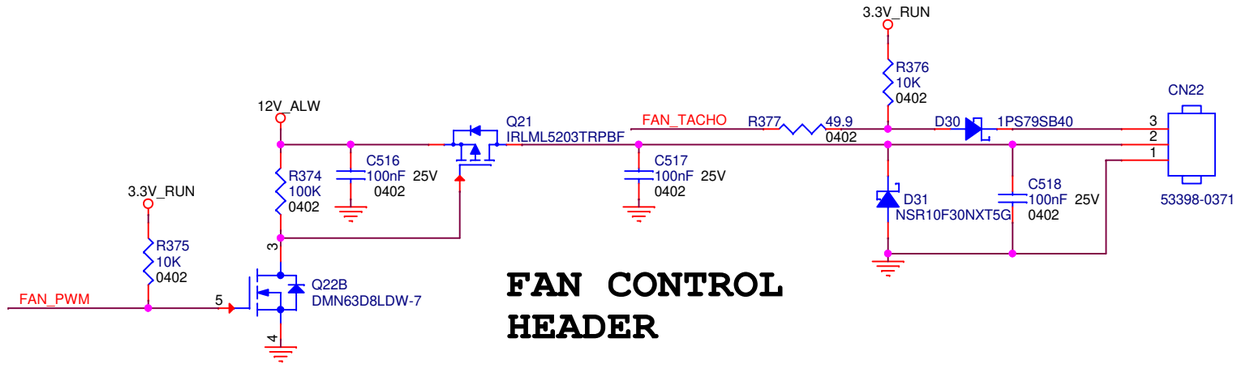


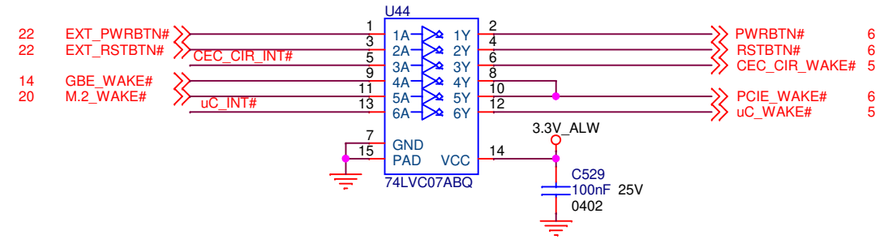


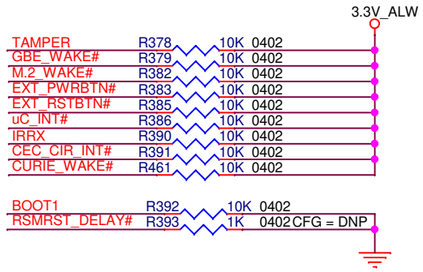
Schematic Title: UDOO X86 II			Created: UDOO Team
Size: A3	Page Name: M.2 Expansion Slots		Rev: 02
Date: Thursday, June 13, 2019		Sheet 20 of 22	

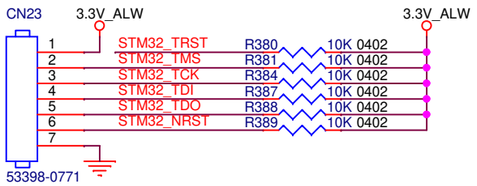


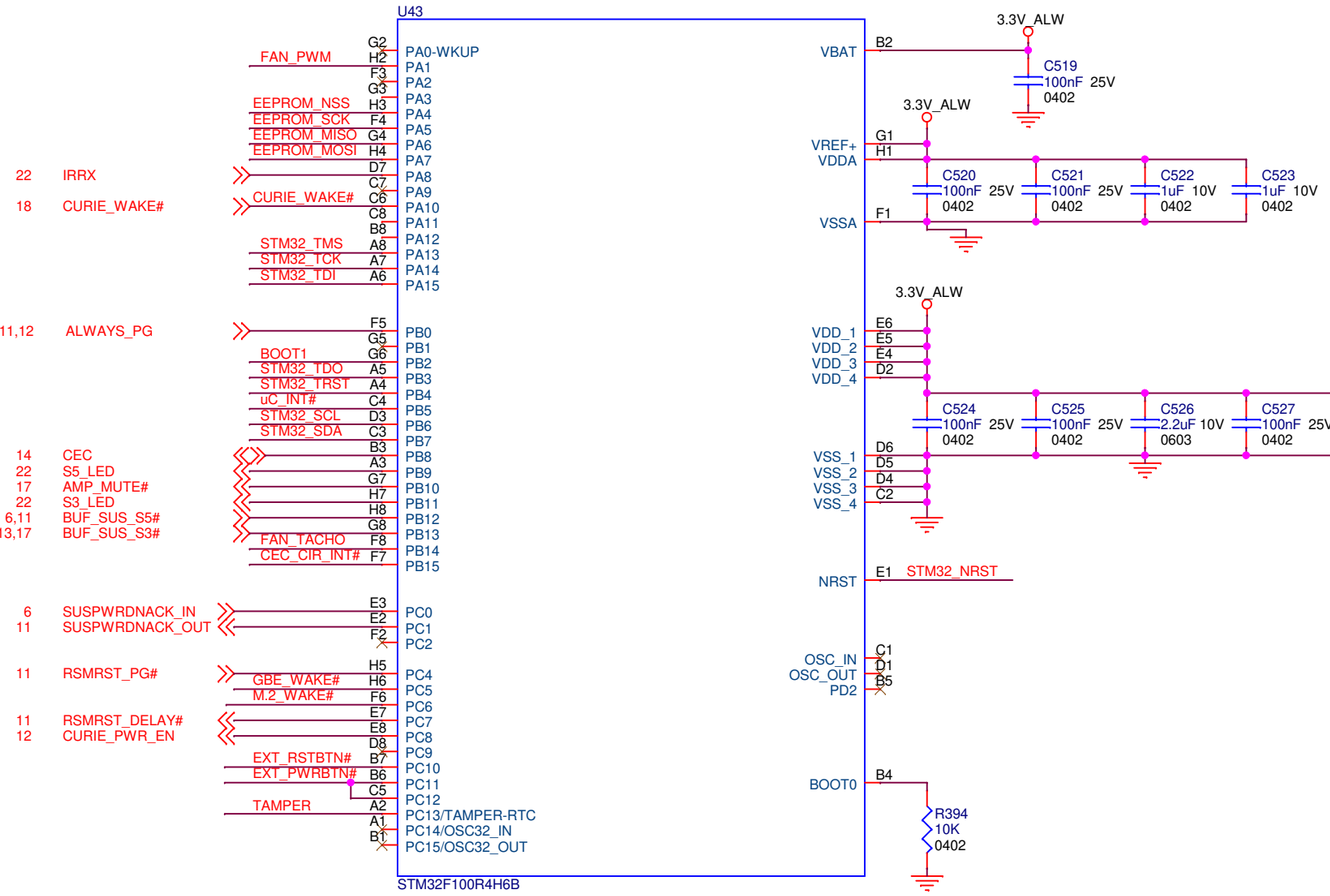


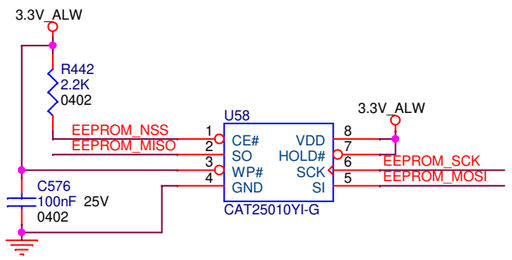












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Size: A3	Page Name: Glue Logic + FAN
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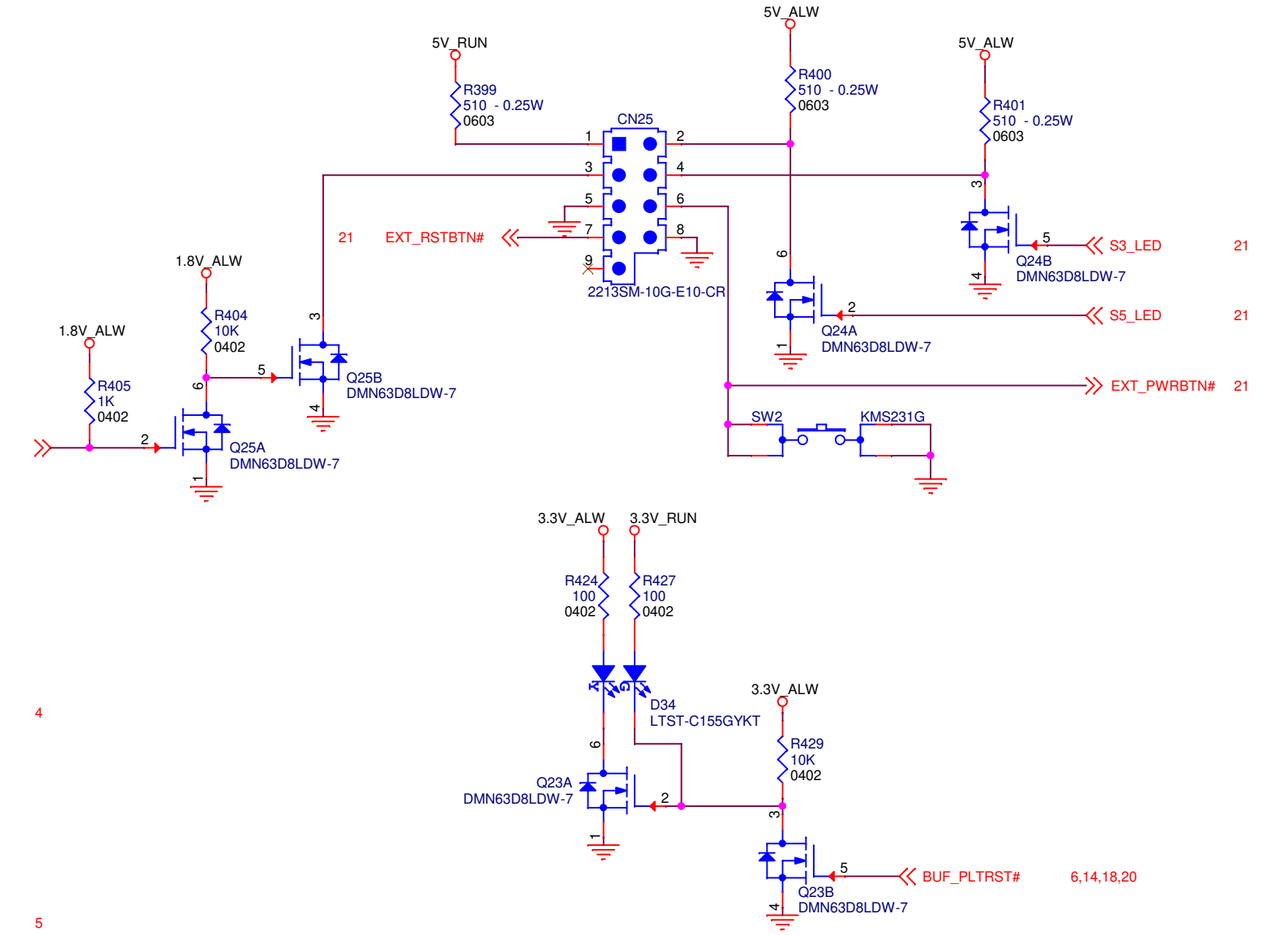
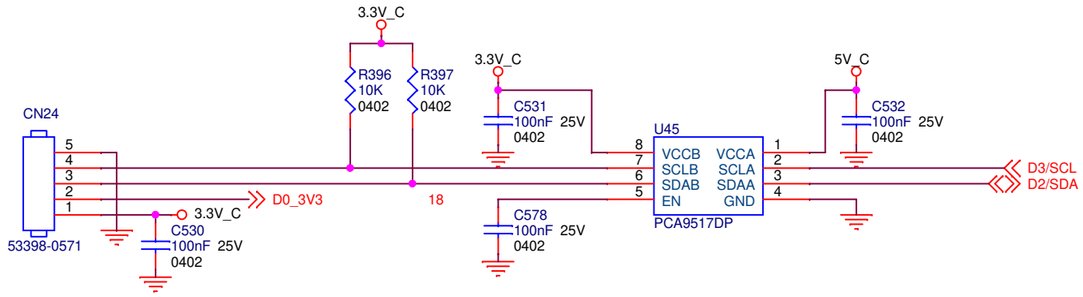
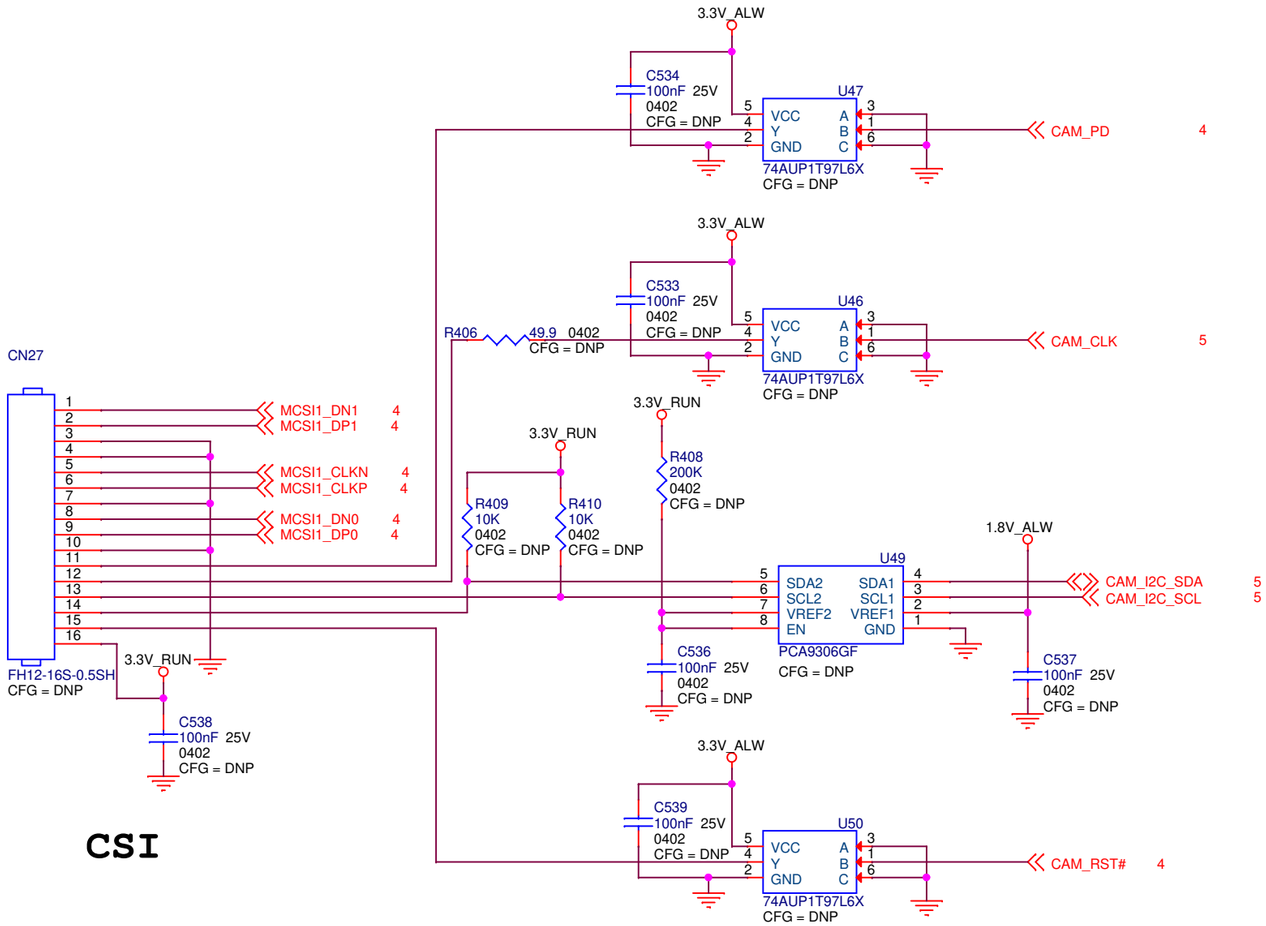
FRONT PANEL INTERNAL HEADER



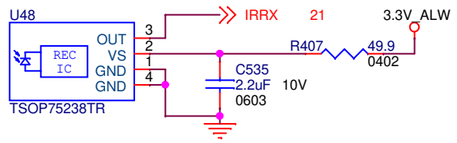
BRICK SUPPORT



CSI



CIR RECEIVER



Schematic Title: UDOO X86 II			Created: UDOO Team
Size: A3	Page Name: Front Panel, Brick, CIR, CSI		Rev: 02
Date: Thursday, June 13, 2019		Sheet 22 of 22	