UDOO X86 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

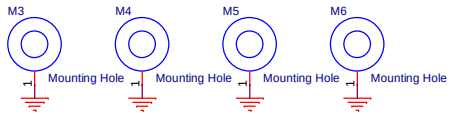
Supply voltage.....12V ± 5%

Contents

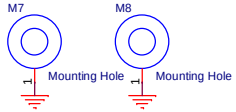
Reference Table

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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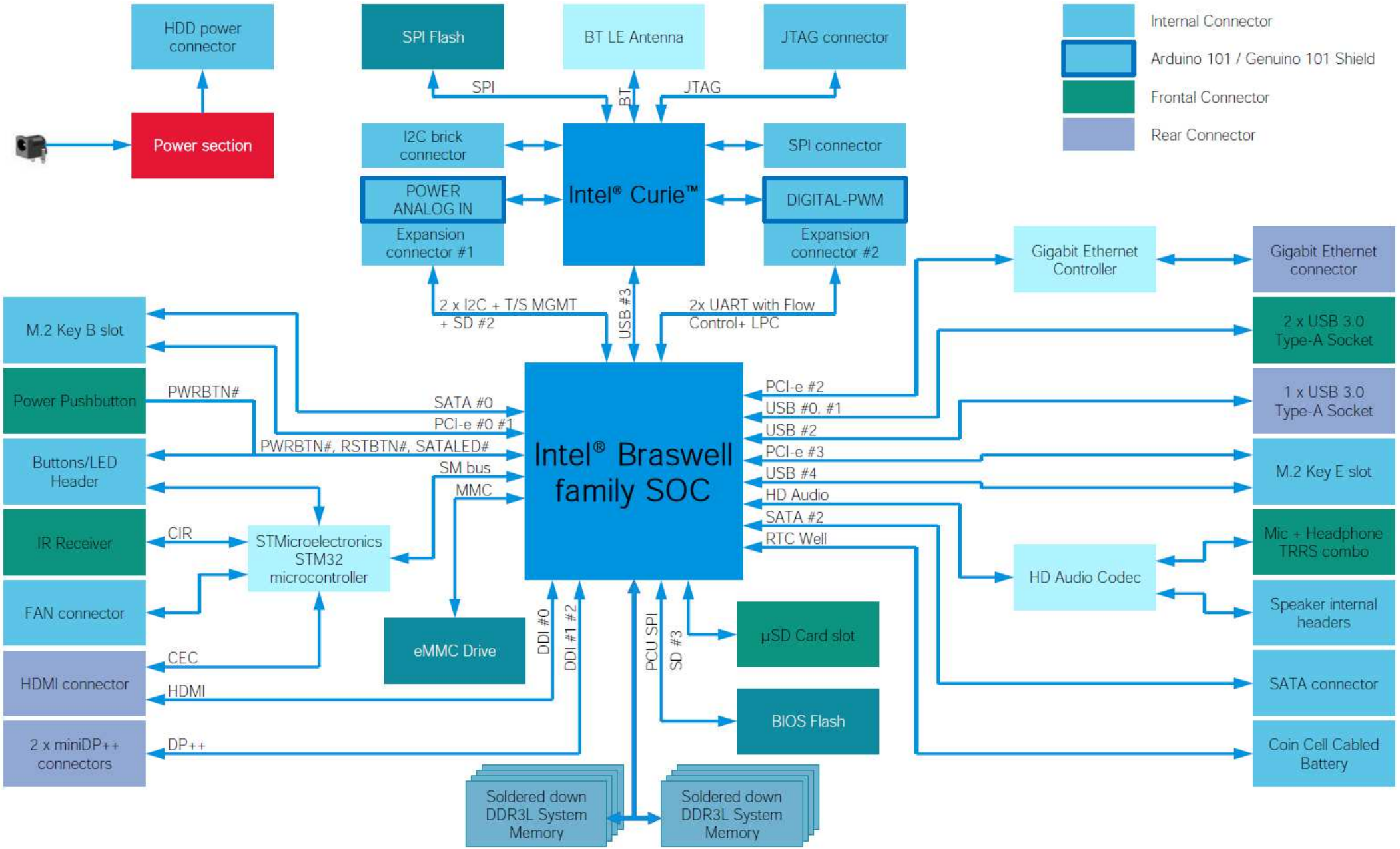

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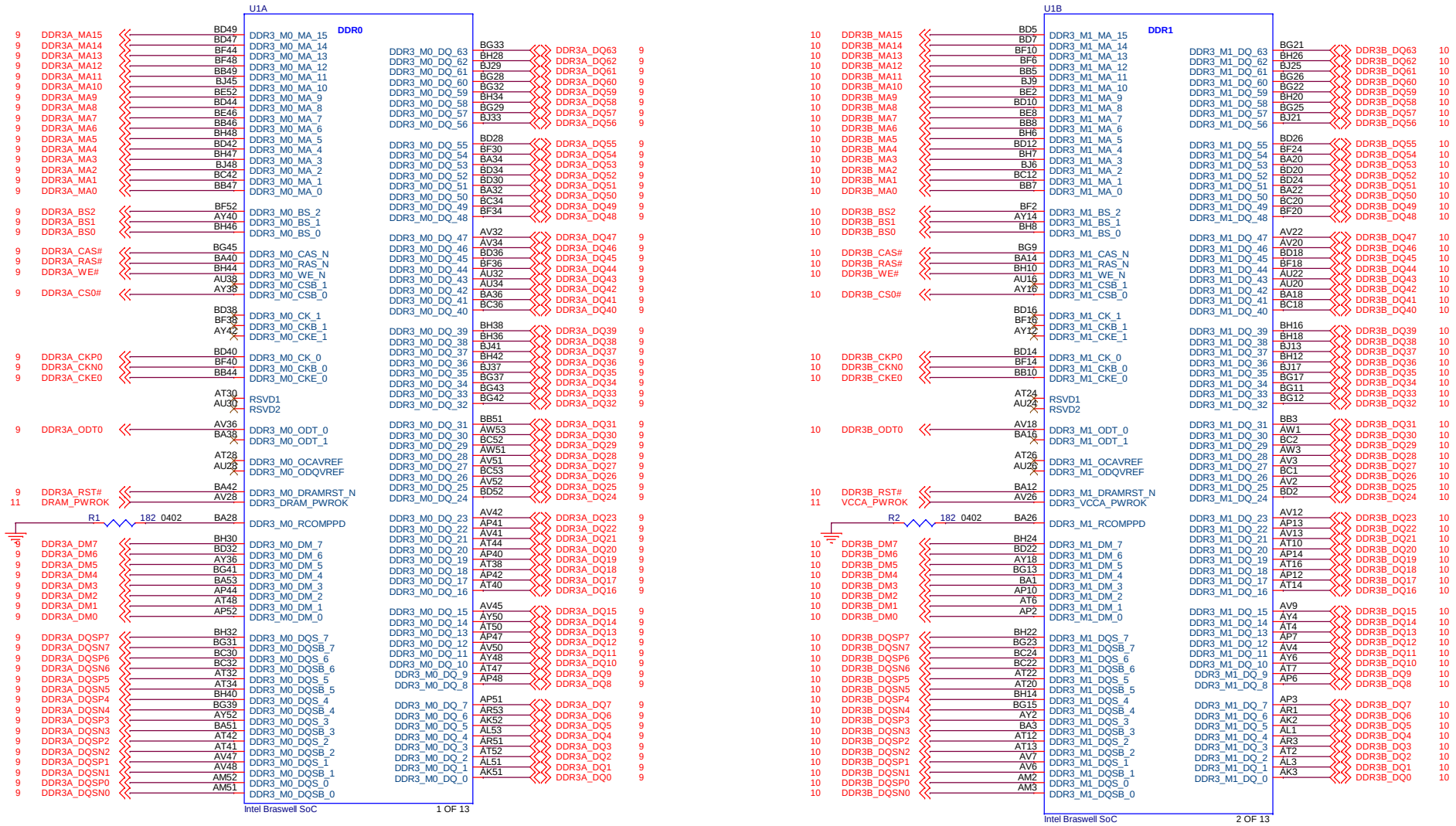

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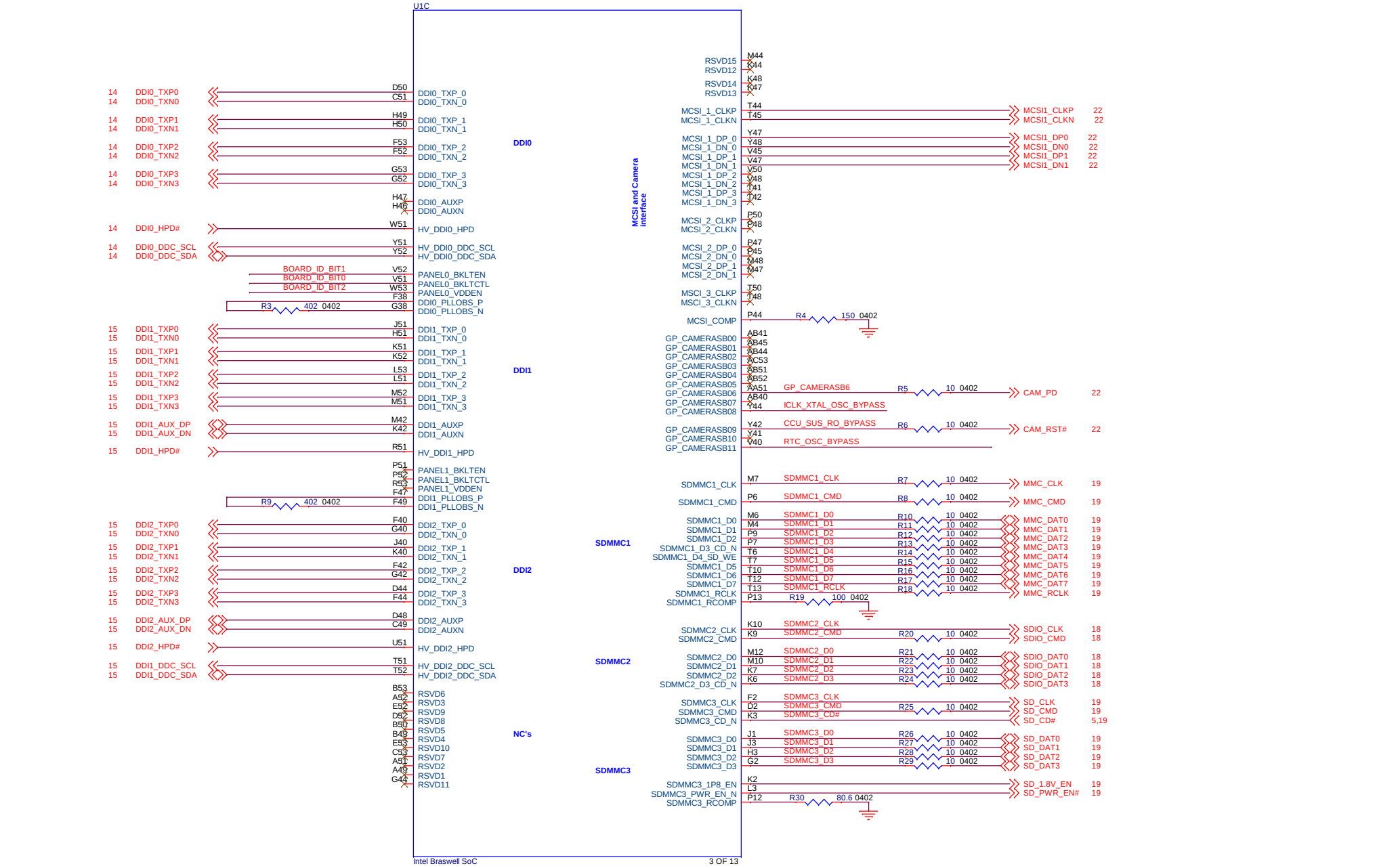

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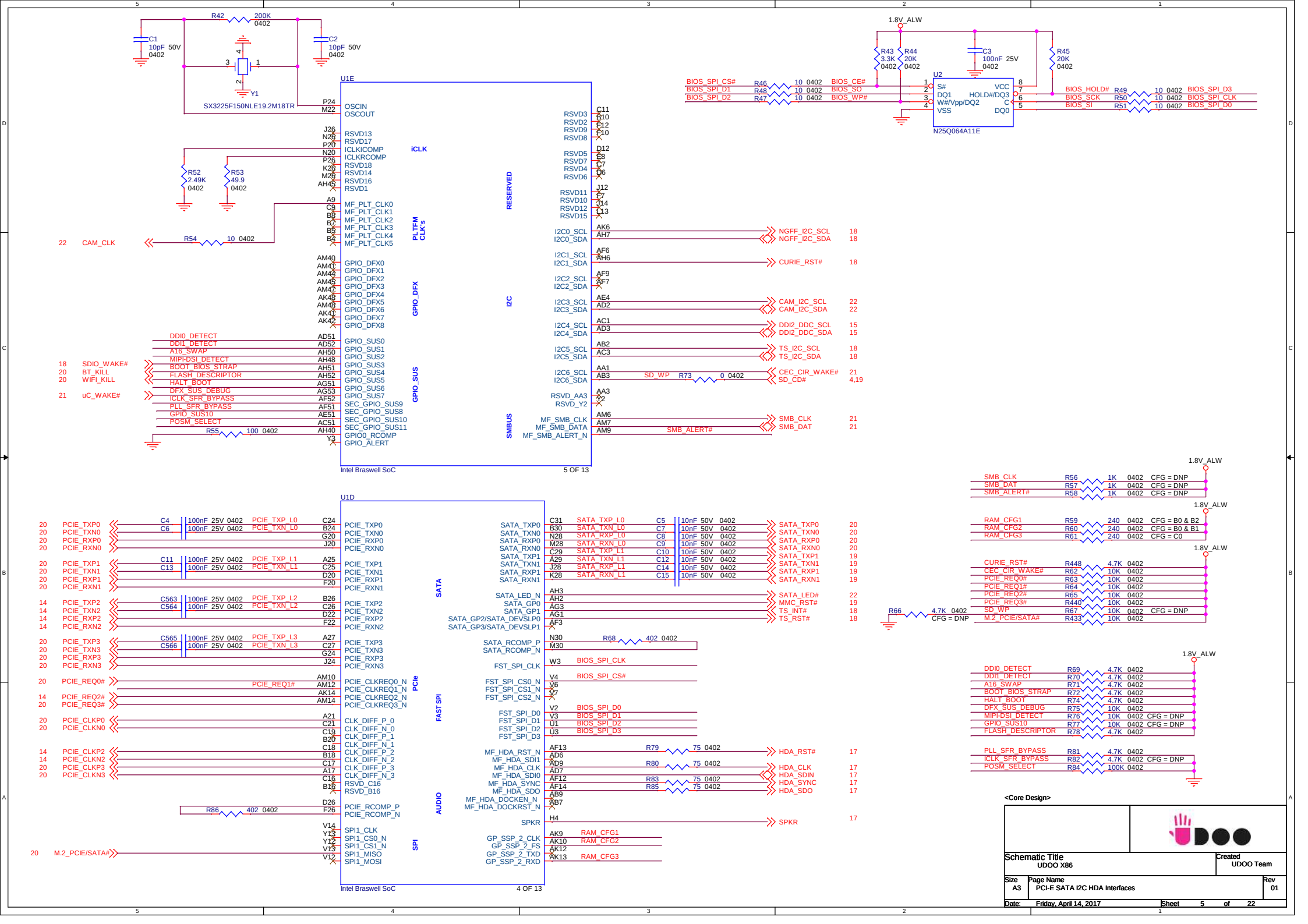
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C2 10pF 50V 0402
Y1
SX3225F150NLE19.2M18TR
U1E
OSCIN
OSCOUT
RSVD13
RSVD17
ICLKICOMP
ICLKRCOMP
RSVD18
RSVD14
RSVD16
RSVD1
iCLK
R52 2.49K 0402
R53 49.9 0402
MF_PLT_CLK0
MF_PLT_CLK1
MF_PLT_CLK2
MF_PLT_CLK3
MF_PLT_CLK4
MF_PLT_CLK5
PLTFM CLK's
22 CAM_CLK
R54 10 0402
GPIO_DFX0
GPIO_DFX1
GPIO_DFX2
GPIO_DFX3
GPIO_DFX4
GPIO_DFX5
GPIO_DFX6
GPIO_DFX7
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
18 SDIO_WAKE#
20 BT_KILL
20 WIFI_KILL
21 uC_WAKE#
R55 100 0402
GPIO_SUS0
GPIO_SUS1
GPIO_SUS2
GPIO_SUS3
GPIO_SUS4
GPIO_SUS5
GPIO_SUS6
GPIO_SUS7
SEC_GPIO_SUS9
SEC_GPIO_SUS8
SEC_GPIO_SUS10
SEC_GPIO_SUS11
GPIO0_RCOMP
GPIO_ALERT
GPIO_SUS
RESERVED
RSVD3
RSVD2
RSVD9
RSVD8
RSVD5
RSVD7
RSVD4
RSVD6
RSVD11
RSVD10
RSVD12
RSVD15
I2C
I2C0_SCL
I2C0_SDA
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NGFF_I2C_SDA 18
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I2C1_SDA
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I2C2_SDA
I2C3_SCL
I2C3_SDA
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CAM_I2C_SDA 22
I2C4_SCL
I2C4_SDA
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DDI2_DDC_SDA 15
I2C5_SCL
I2C5_SDA
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TS_I2C_SDA 18
I2C6_SCL
I2C6_SDA
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MF_SMB_DATA
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SMB_DAT 21
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R44 20K 0402
C3 100nF 25V 0402
R45 20K 0402
U2
S#
DQ1
W#/Vpp/DQ2
VSS
VCC
HOLD#/DQ3
C
DQ0
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BIOS_SPI_D1
BIOS_SPI_D2
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BIOS_SO
BIOS_WP#
BIOS_HOLD#
BIOS_SCK
BIOS_SI
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R50 10 0402
R51 10 0402
BIOS_SPI_D3
BIOS_SPI_CLK
BIOS_SPI_D0
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PCIE_RXN0
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PCIE_TXN1
PCIE_RXP1
PCIE_RXN1
PCIE_TXP2
PCIE_TXN2
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PCIE_RXN2
PCIE_TXP3
PCIE_TXN3
PCIE_RXP3
PCIE_RXN3
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C6 100nF 25V 0402 PCIE_TXN_L0
C11 100nF 25V 0402 PCIE_TXP_L1
C13 100nF 25V 0402 PCIE_TXN_L1
C563 100nF 25V 0402 PCIE_TXP_L2
C564 100nF 25V 0402 PCIE_TXN_L2
C565 100nF 25V 0402 PCIE_TXP_L3
C566 100nF 25V 0402 PCIE_TXN_L3
SATA
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SATA_TXN0
SATA_RXP0
SATA_RXN0
SATA_TXP1
SATA_TXN1
SATA_RXP1
SATA_RXN1
C31 SATA_TXP_L0 C5 10nF 50V 0402
B30 SATA_TXN_L0 C7 10nF 50V 0402
N28 SATA_RXP_L0 C8 10nF 50V 0402
M28 SATA_RXN_L0 C9 10nF 50V 0402
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A29 SATA_TXN_L1 C12 10nF 50V 0402
J28 SATA_RXP_L1 C14 10nF 50V 0402
K28 SATA_RXN_L1 C15 10nF 50V 0402
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SATA_RXP0 20
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SATA_TXP1 19
SATA_TXN1 19
SATA_RXP1 19
SATA_RXN1 19
SATA_LED_N
SATA_GP0
SATA_GP1
SATA_GP2/SATA_DEVSLP0
SATA_GP3/SATA_DEVSLP1
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MMC_RST# 19
TS_INT# 18
TS_RST# 18
SATA_RCOMP_P
SATA_RCOMP_N
N30 R68 402 0402
M30
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PCIE_CLKREQ1_N
PCIE_CLKREQ2_N
PCIE_CLKREQ3_N
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PCIE_REQ1#
PCIE_REQ2#
PCIE_REQ3#
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FST_SPI_CS0_N
FST_SPI_CS1_N
FST_SPI_CS2_N
FST_SPI_D0
FST_SPI_D1
FST_SPI_D2
FST_SPI_D3
W3 BIOS_SPI_CLK
V4 BIOS_SPI_CS#
V6
V7
V2 BIOS_SPI_D0
V3 BIOS_SPI_D1
U1 BIOS_SPI_D2
U3 BIOS_SPI_D3
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CLK_DIFF_N_0
CLK_DIFF_P_1
CLK_DIFF_N_1
CLK_DIFF_P_2
CLK_DIFF_N_2
CLK_DIFF_P_3
CLK_DIFF_N_3
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PCIE_CLKP3
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MF_HDA_DOCKEN_N
MF_HDA_DOCKRST_N
SPKR
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R83 75 0402
R85 75 0402
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SPI1_CS0_N
SPI1_CS1_N
SPI1_MISO
SPI1_MOSI
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GP_SSP_2_TXD
GP_SSP_2_RXD
RAM_CFG1
RAM_CFG2
RAM_CFG3
20 M.2_PCIE/SATA#
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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
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PCIE_REQ1# R64 10K 0402
PCIE_REQ2# R65 10K 0402
PCIE_REQ3# R440 10K 0402
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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
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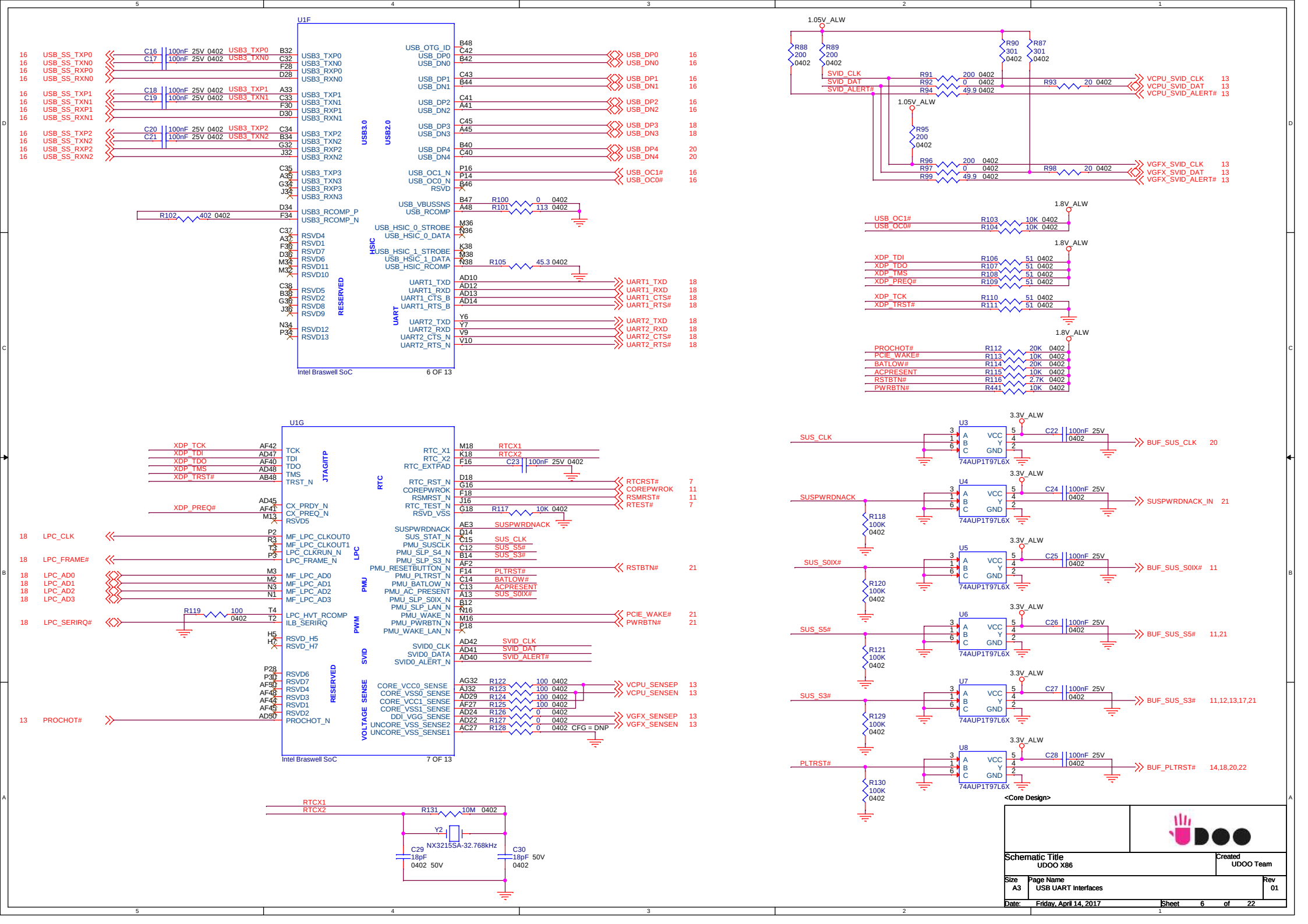
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U1G
JTAG/ITP
RTC
LPC
PMU
PWM
SVID
VOLTAGE SENSE
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3.3V_ALW
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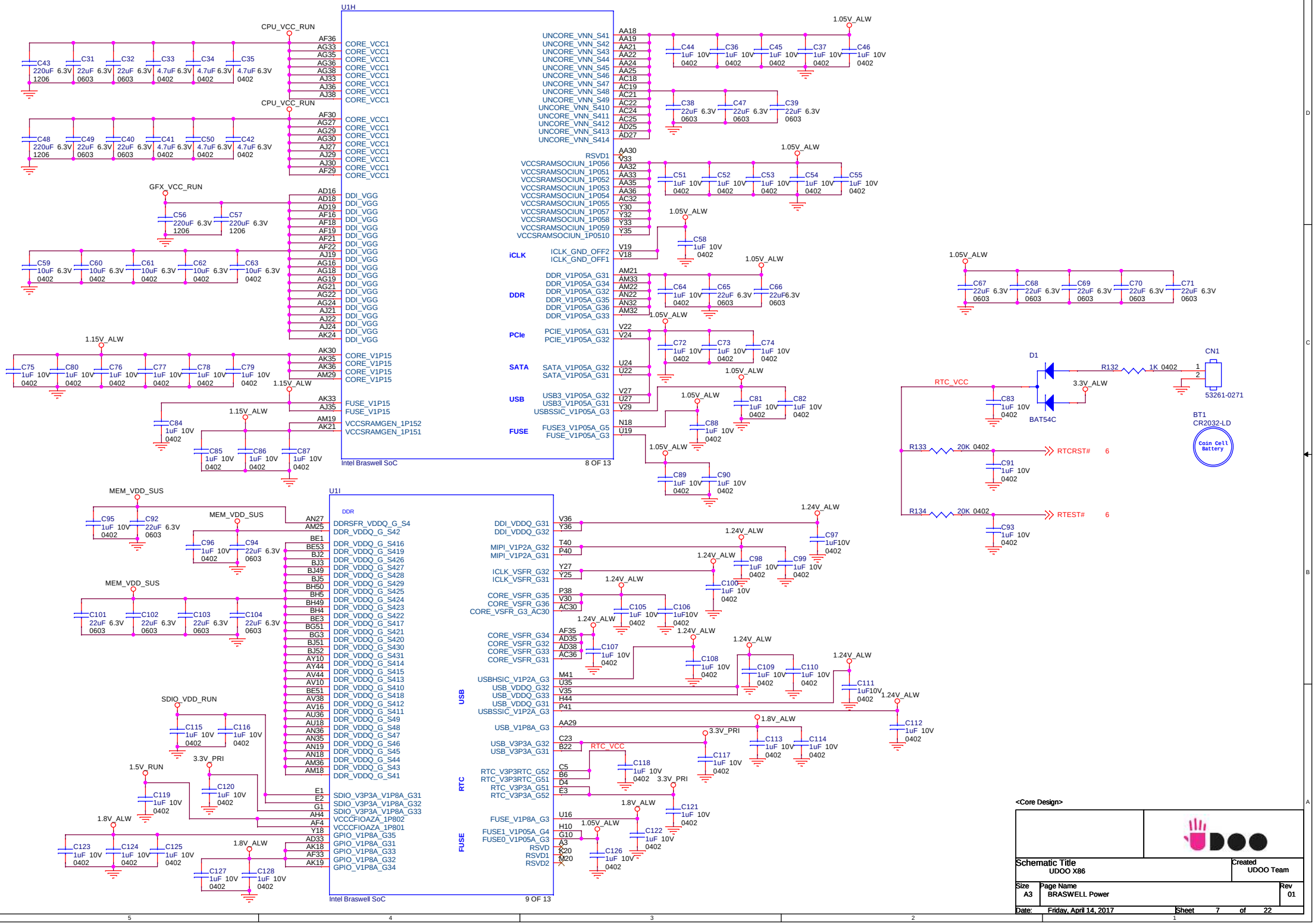
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DDI_VGG
CORE_V1P15
FUSE_V1P15
VCCSRAMGEN_1P152
VCCSRAMGEN_1P151
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UNCORE_VNN_S41
UNCORE_VNN_S42
UNCORE_VNN_S43
UNCORE_VNN_S44
UNCORE_VNN_S45
UNCORE_VNN_S46
UNCORE_VNN_S47
UNCORE_VNN_S48
UNCORE_VNN_S49
UNCORE_VNN_S410
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DDR_V1P05A_G31
DDR_V1P05A_G34
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DDR_V1P05A_G35
DDR_V1P05A_G36
DDR_V1P05A_G33
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FUSE_V1P05A_G3
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MEM_VDD_SUS
MEM_VDD_SUS
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1.8V_ALW
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DDR_VDDQ_G_S42
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DDR_VDDQ_G_S419
DDR_VDDQ_G_S426
DDR_VDDQ_G_S427
DDR_VDDQ_G_S428
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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
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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
USB
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
RTC_V3P3RTC_G52
RTC_V3P3RTC_G51
RTC_V3P3A_G51
RTC_V3P3A_G52
FUSE
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FUSE1_V1P05A_G4
FUSE0_V1P05A_G3
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RSVD2
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1.8V_ALW
3.3V_PRI
RTC_VCC
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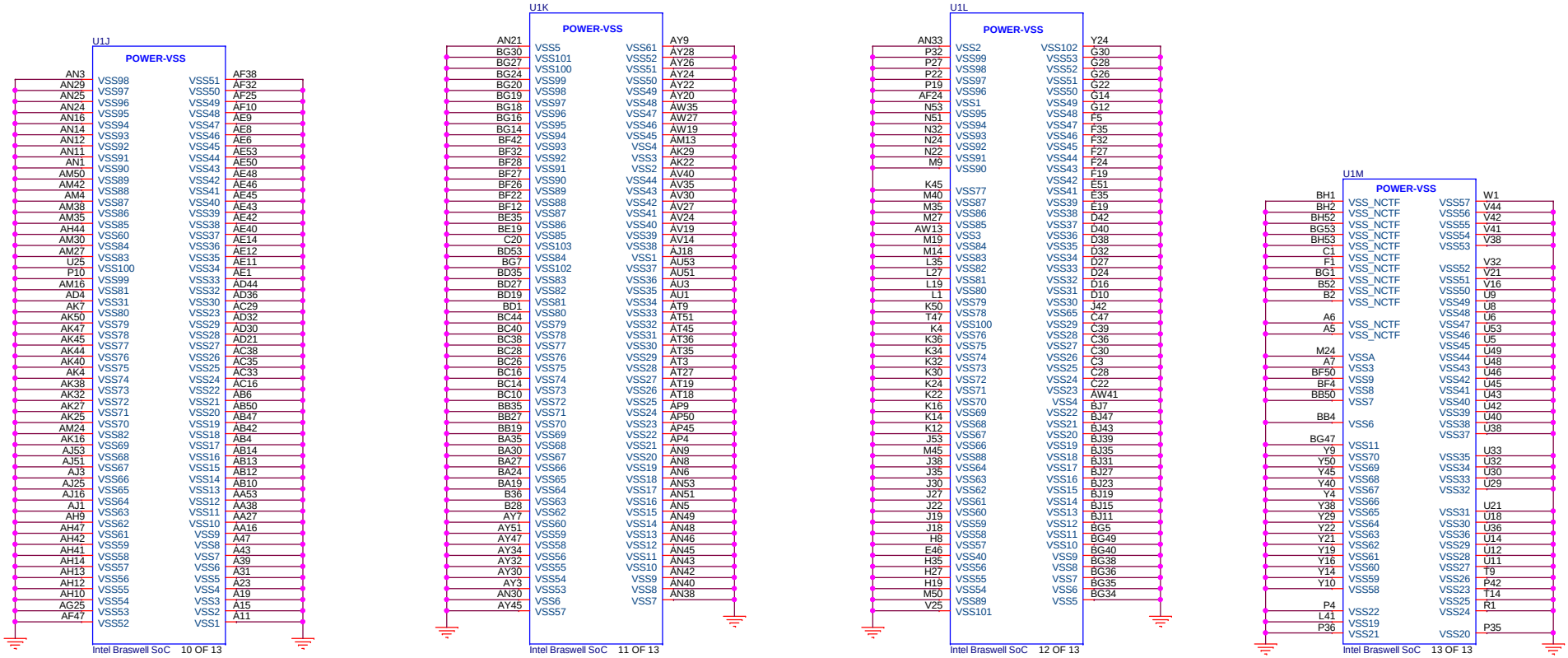

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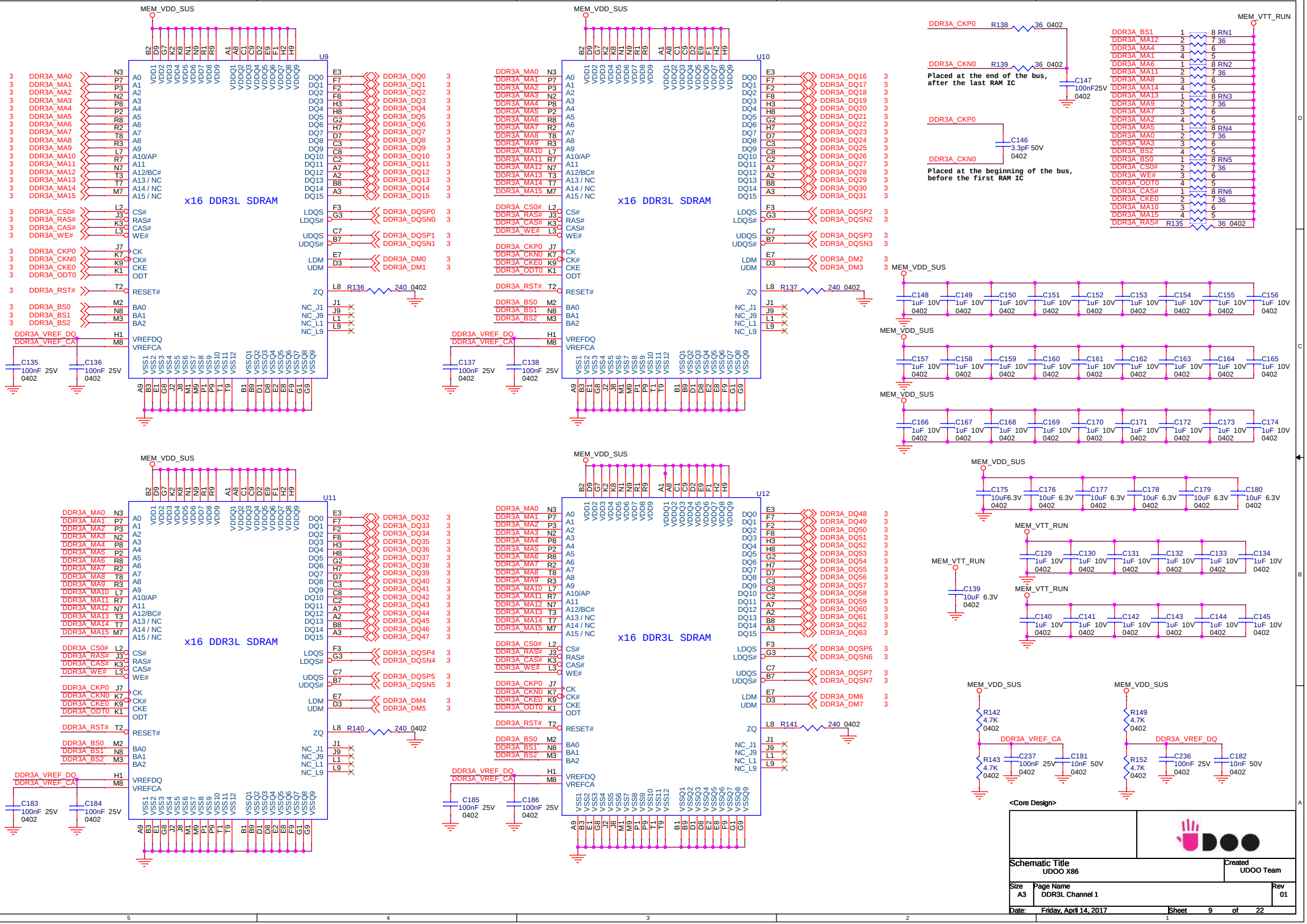
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U11
U12
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DDR3A_DQSP6
DDR3A_DQSN6
DDR3A_DQSP7
DDR3A_DQSN7
DDR3A_DM6
DDR3A_DM7
R136 240 0402
R137 240 0402
R140 240 0402
R141 240 0402
DDR3A_CKP0
DDR3A_CKN0
R138 36 0402
R139 36 0402
C147 100nF 25V 0402
Placed at the end of the bus, after the last RAM IC
C146 3.3pF 50V 0402
Placed at the beginning of the bus, before the first RAM IC
MEM_VTT_RUN
RN1
RN2
RN3
RN4
RN5
RN6
R135 36 0402
C135 100nF 25V 0402
C136 100nF 25V 0402
C137 100nF 25V 0402
C138 100nF 25V 0402
C183 100nF 25V 0402
C184 100nF 25V 0402
C185 100nF 25V 0402
C186 100nF 25V 0402
C148 C149 C150 C151 C152 C153 C154 C155 C156 1uF 10V 0402
C157 C158 C159 C160 C161 C162 C163 C164 C165 1uF 10V 0402
C166 C167 C168 C169 C170 C171 C172 C173 C174 1uF 10V 0402
C175 C176 C177 C178 C179 C180 10uF 6.3V 0402
C129 C130 C131 C132 C133 C134 1uF 10V 0402
C139 10uF 6.3V 0402
C140 C141 C142 C143 C144 C145 1uF 10V 0402
R142 4.7K 0402
R143 4.7K 0402
R149 4.7K 0402
R152 4.7K 0402
C237 100nF 25V 0402
C181 10nF 50V 0402
C236 100nF 25V 0402
C182 10nF 50V 0402
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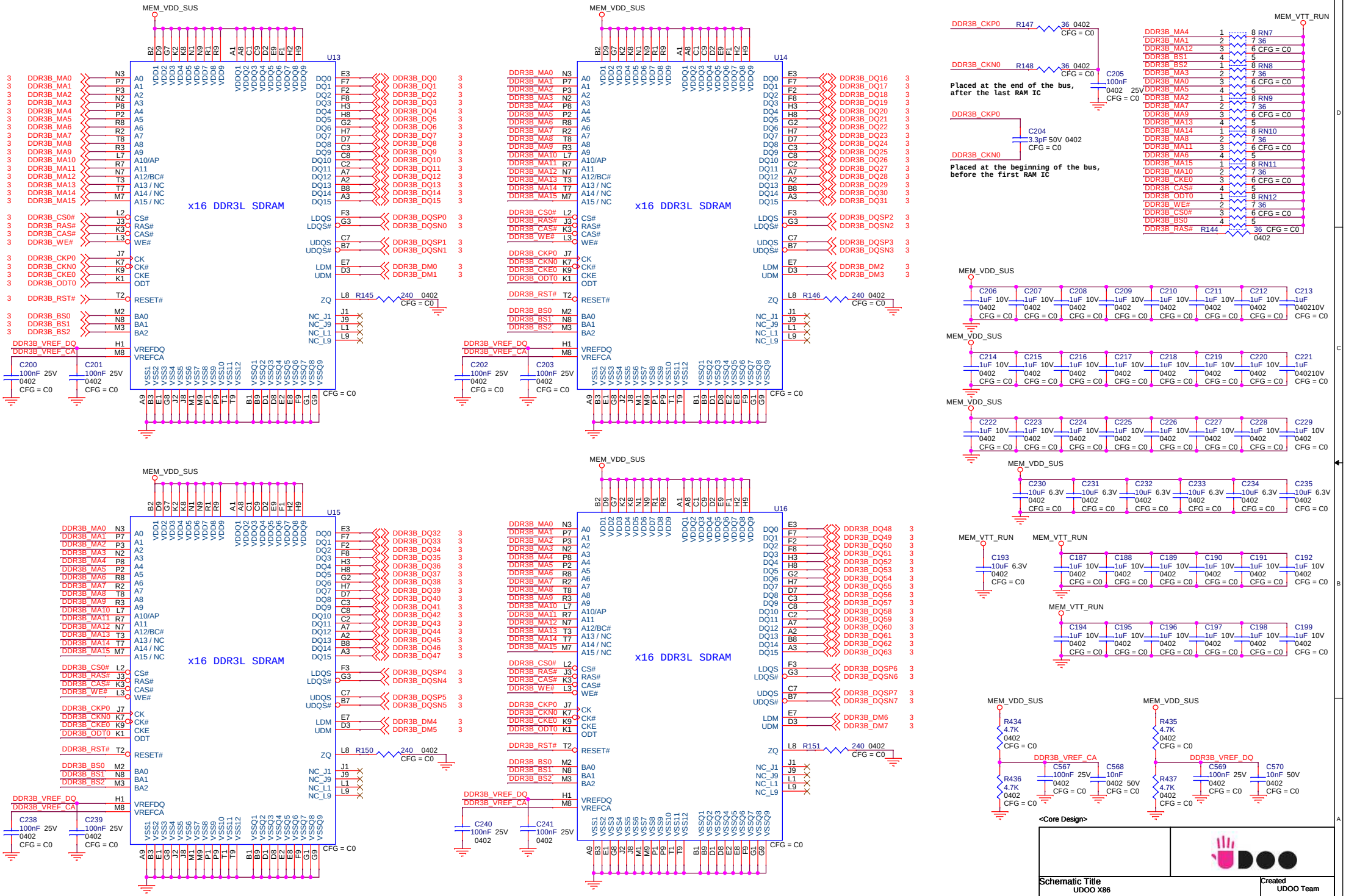
MEM_VDD_SUS
U13
U14
U15
U16
x16 DDR3L SDRAM
DDR3B_CKP0
DDR3B_CKN0
R147 36 0402 CFG = C0
R148 36 0402 CFG = C0
C205 100nF 0402 25V CFG = C0
Placed at the end of the bus, after the last RAM IC
C204 3.3pF 50V 0402 CFG = C0
Placed at the beginning of the bus, before the first RAM IC
MEM_VTT_RUN
RN7
RN8
RN9
RN10
RN11
RN12
R144 36 CFG = C0 0402
C200 100nF 25V 0402 CFG = C0
C201 100nF 25V 0402 CFG = C0
C202 100nF 25V 0402 CFG = C0
C203 100nF 25V 0402 CFG = C0
C238 100nF 25V 0402 CFG = C0
C239 100nF 25V 0402 CFG = C0
C240 100nF 25V 0402
C241 100nF 25V 0402
R145 240 0402 CFG = C0
R146 240 0402 CFG = C0
R150 240 0402 CFG = C0
R151 240 0402 CFG = C0
C206 1uF 10V 0402 CFG = C0
C207 1uF 10V 0402 CFG = C0
C208 1uF 10V 0402 CFG = C0
C209 1uF 10V 0402 CFG = C0
C210 1uF 10V 0402 CFG = C0
C211 1uF 10V 0402 CFG = C0
C212 1uF 10V 0402 CFG = C0
C213 1uF 040210V CFG = C0
C214 1uF 10V 0402 CFG = C0
C215 1uF 10V 0402 CFG = C0
C216 1uF 10V 0402 CFG = C0
C217 1uF 10V 0402 CFG = C0
C218 1uF 10V 0402 CFG = C0
C219 1uF 10V 0402 CFG = C0
C220 1uF 10V 0402 CFG = C0
C221 1uF 040210V CFG = C0
C222 1uF 10V 0402 CFG = C0
C223 1uF 10V 0402 CFG = C0
C224 1uF 10V 0402 CFG = C0
C225 1uF 10V 0402 CFG = C0
C226 1uF 10V 0402 CFG = C0
C227 1uF 10V 0402 CFG = C0
C228 1uF 10V 0402 CFG = C0
C229 1uF 10V 0402 CFG = C0
C230 10uF 6.3V 0402 CFG = C0
C231 10uF 6.3V 0402 CFG = C0
C232 10uF 6.3V 0402 CFG = C0
C233 10uF 6.3V 0402 CFG = C0
C234 10uF 6.3V 0402 CFG = C0
C235 10uF 6.3V 0402 CFG = C0
C193 10uF 6.3V 0402 CFG = C0
C187 1uF 10V 0402 CFG = C0
C188 1uF 10V 0402 CFG = C0
C189 1uF 10V 0402 CFG = C0
C190 1uF 10V 0402 CFG = C0
C191 1uF 10V 0402 CFG = C0
C192 1uF 10V 0402 CFG = C0
C194 1uF 10V 0402 CFG = C0
C195 1uF 10V 0402 CFG = C0
C196 1uF 10V 0402 CFG = C0
C197 1uF 10V 0402 CFG = C0
C198 1uF 10V 0402 CFG = C0
C199 1uF 10V 0402 CFG = C0
R434 4.7K 0402 CFG = C0
R435 4.7K 0402 CFG = C0
R436 4.7K 0402 CFG = C0
R437 4.7K 0402 CFG = C0
C567 100nF 25V 0402 CFG = C0
C568 10nF 50V 0402 CFG = C0
C569 100nF 25V 0402 CFG = C0
C570 10nF 50V 0402 CFG = C0
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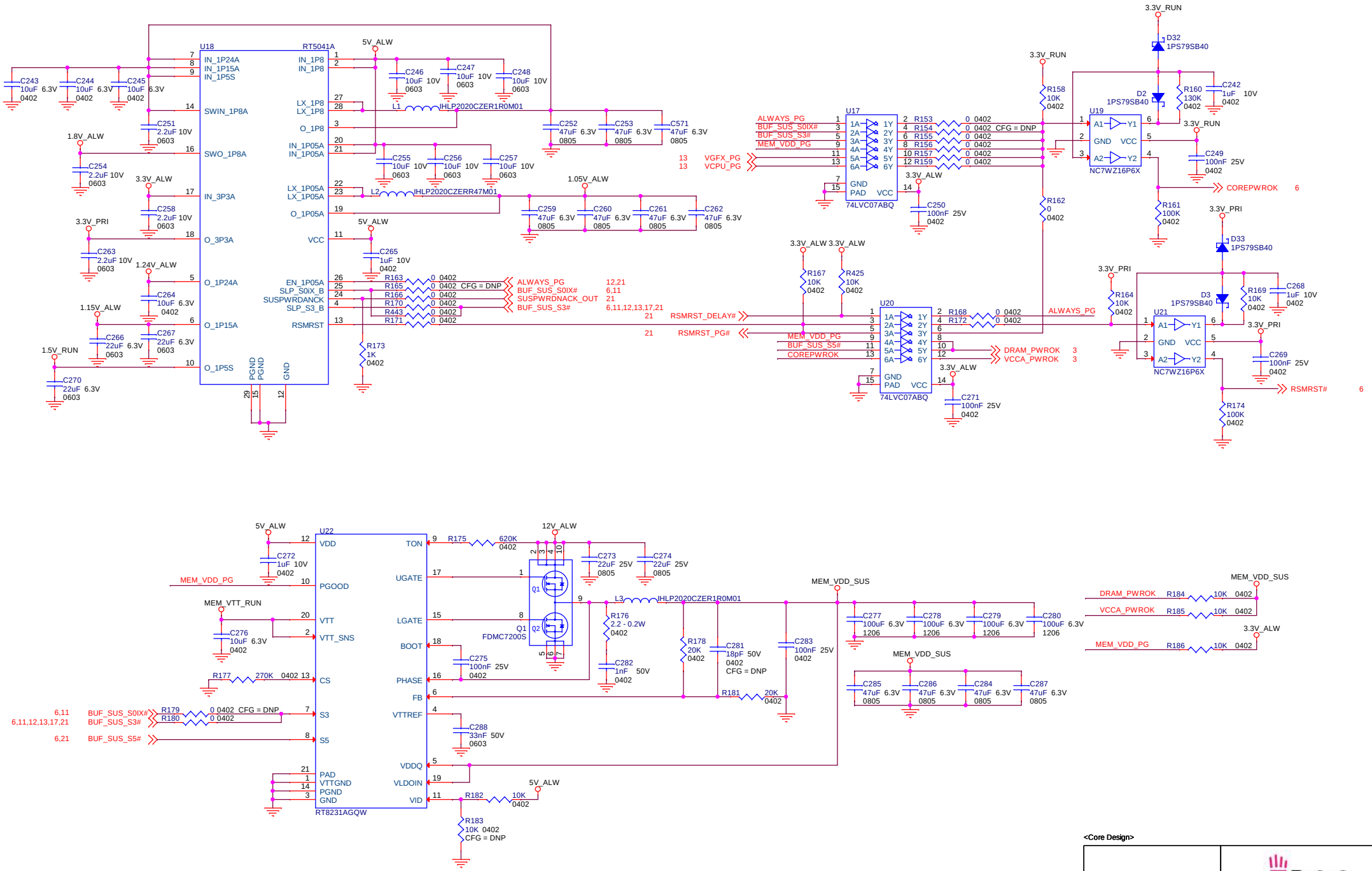

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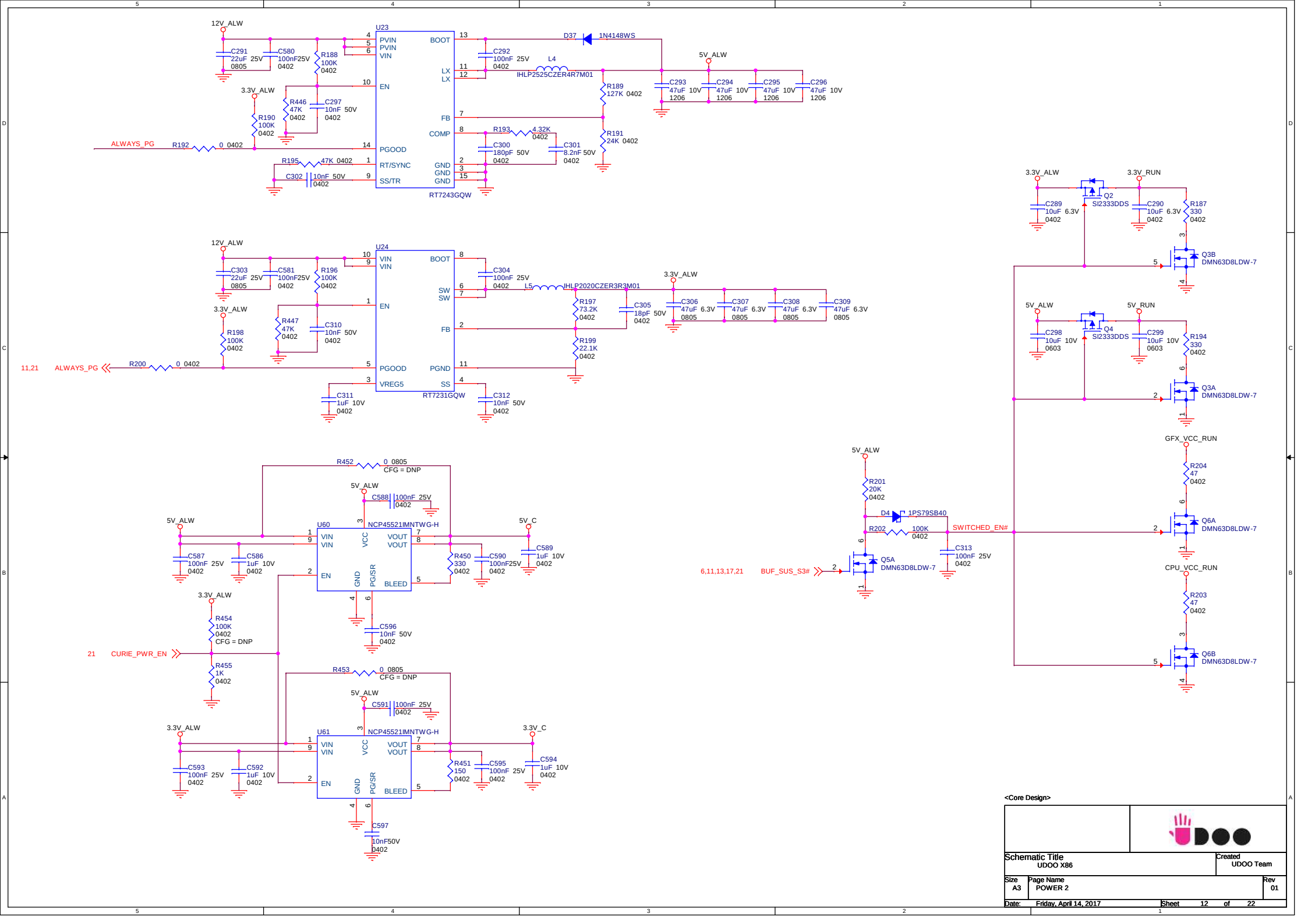

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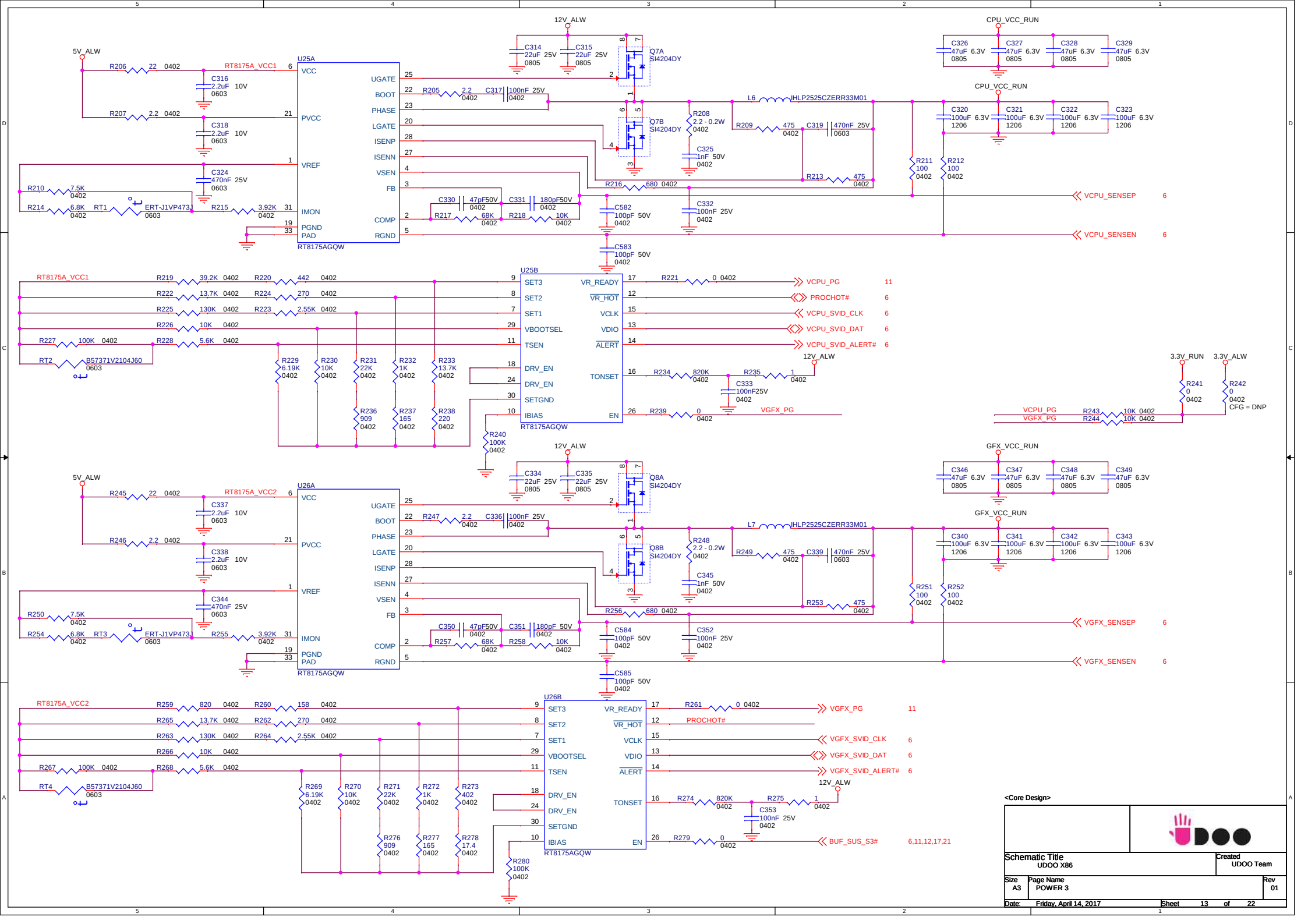
12V_ALW
5V_ALW
CPU_VCC_RUN
U25A
RT8175AGQW
Q7A SI4204DY
Q7B SI4204DY
L6 IHLP2525CZERR33M01
VCPU_SENSEP 6
VCPU_SENSEN 6
U25B
VCPU_PG 11
PROCHOT# 6
VCPU_SVID_CLK 6
VCPU_SVID_DAT 6
VCPU_SVID_ALERT# 6
VGFX_PG
3.3V_RUN
3.3V_ALW
CFG = DNP
GFX_VCC_RUN
U26A
Q8A SI4204DY
Q8B SI4204DY
L7 IHLP2525CZERR33M01
VGFX_SENSEP 6
VGFX_SENSEN 6
U26B
VGFX_SVID_CLK 6
VGFX_SVID_DAT 6
VGFX_SVID_ALERT# 6
BUF_SUS_S3# 6,11,12,17,21
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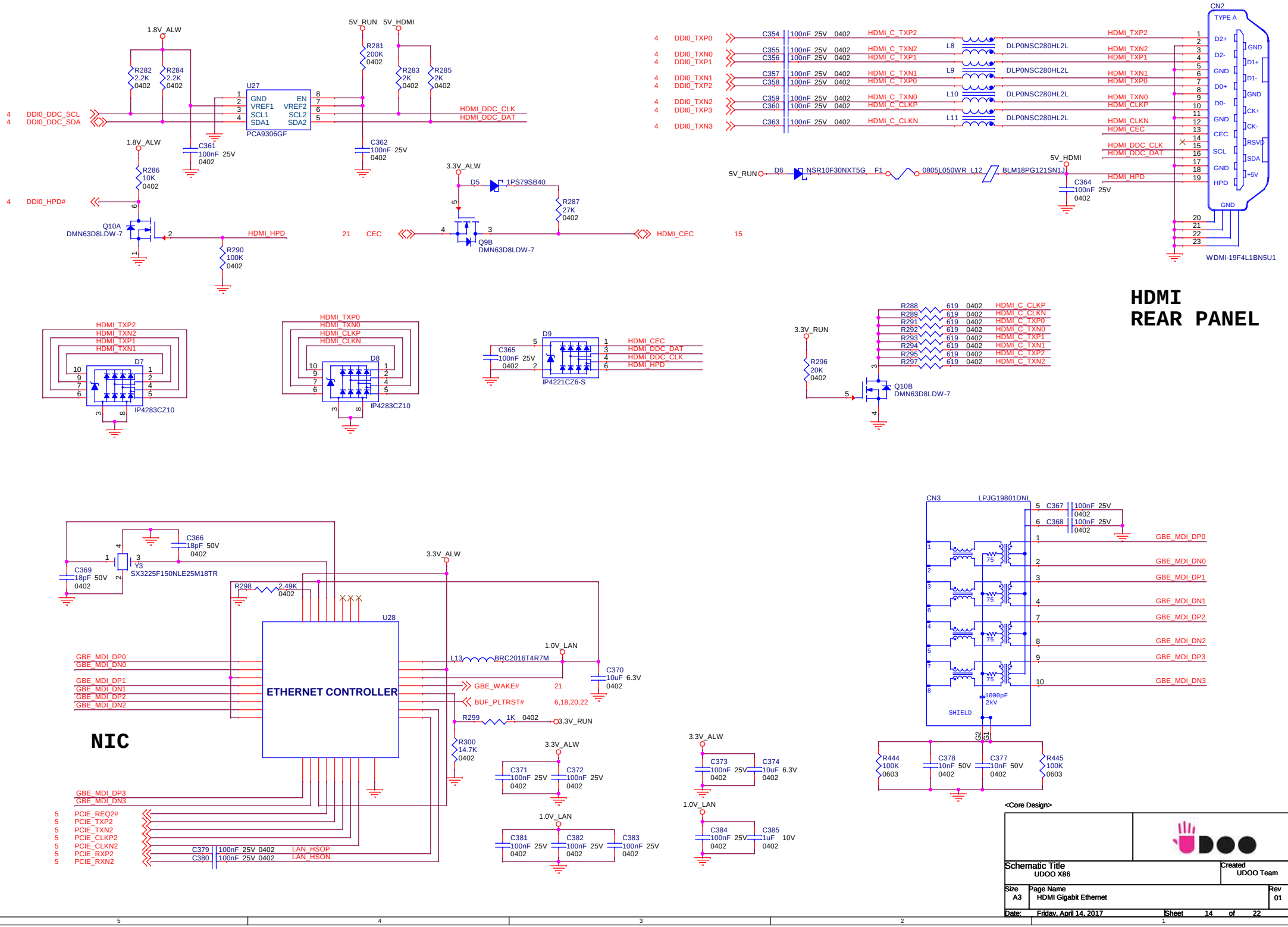
HDMI
REAR PANEL
NIC
ETHERNET CONTROLLER
U27
PCA9306GF
U28
CN2
TYPE A
WDMI-19F4L1BN5U1
CN3
LPJG19801DNL
IP4283CZ10
IP4221CZ6-S
DMN63D8LDW-7
DLP0NSC280HL2L
NSR10F30NXT5G
BLM18PG121SN1J
SX3225F150NLE25M18TR
BRC2016T4R7M
1PS79SB40
0805L050WR
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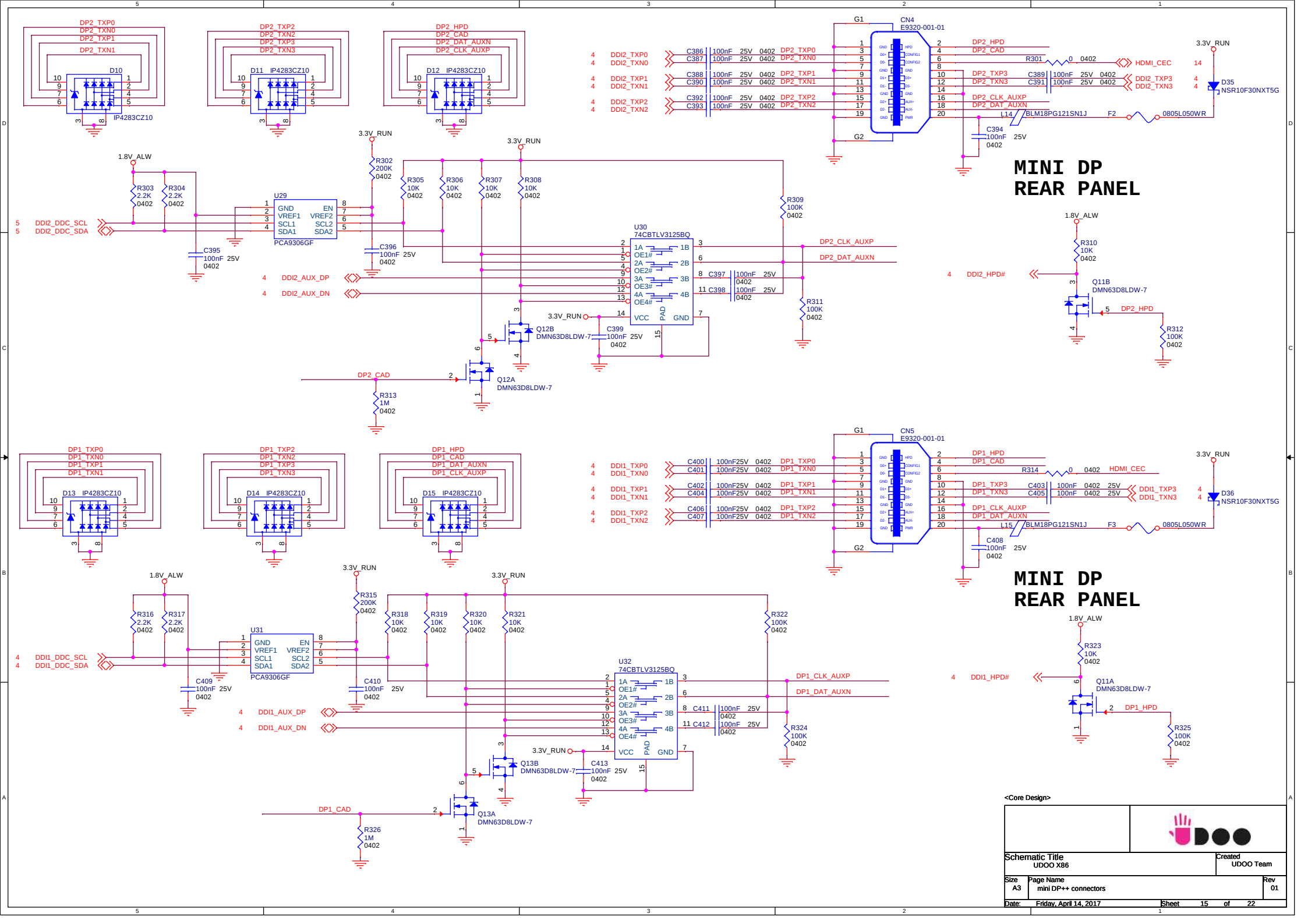
MINI DP
REAR PANEL
MINI DP
REAR PANEL
CN4
E9320-001-01
CN5
E9320-001-01
U29
PCA9306GF
U30
74CBTLV3125BQ
U31
PCA9306GF
U32
74CBTLV3125BQ
D10
IP4283CZ10
D11
IP4283CZ10
D12
IP4283CZ10
D13
IP4283CZ10
D14
IP4283CZ10
D15
IP4283CZ10
D35
NSR10F30NXT5G
D36
NSR10F30NXT5G
Q11A
DMN63D8LDW-7
Q11B
DMN63D8LDW-7
Q12A
DMN63D8LDW-7
Q12B
DMN63D8LDW-7
Q13A
DMN63D8LDW-7
Q13B
DMN63D8LDW-7
3.3V_RUN
1.8V_ALW
HDMI_CEC
BLM18PG121SN1J
0805L050WR
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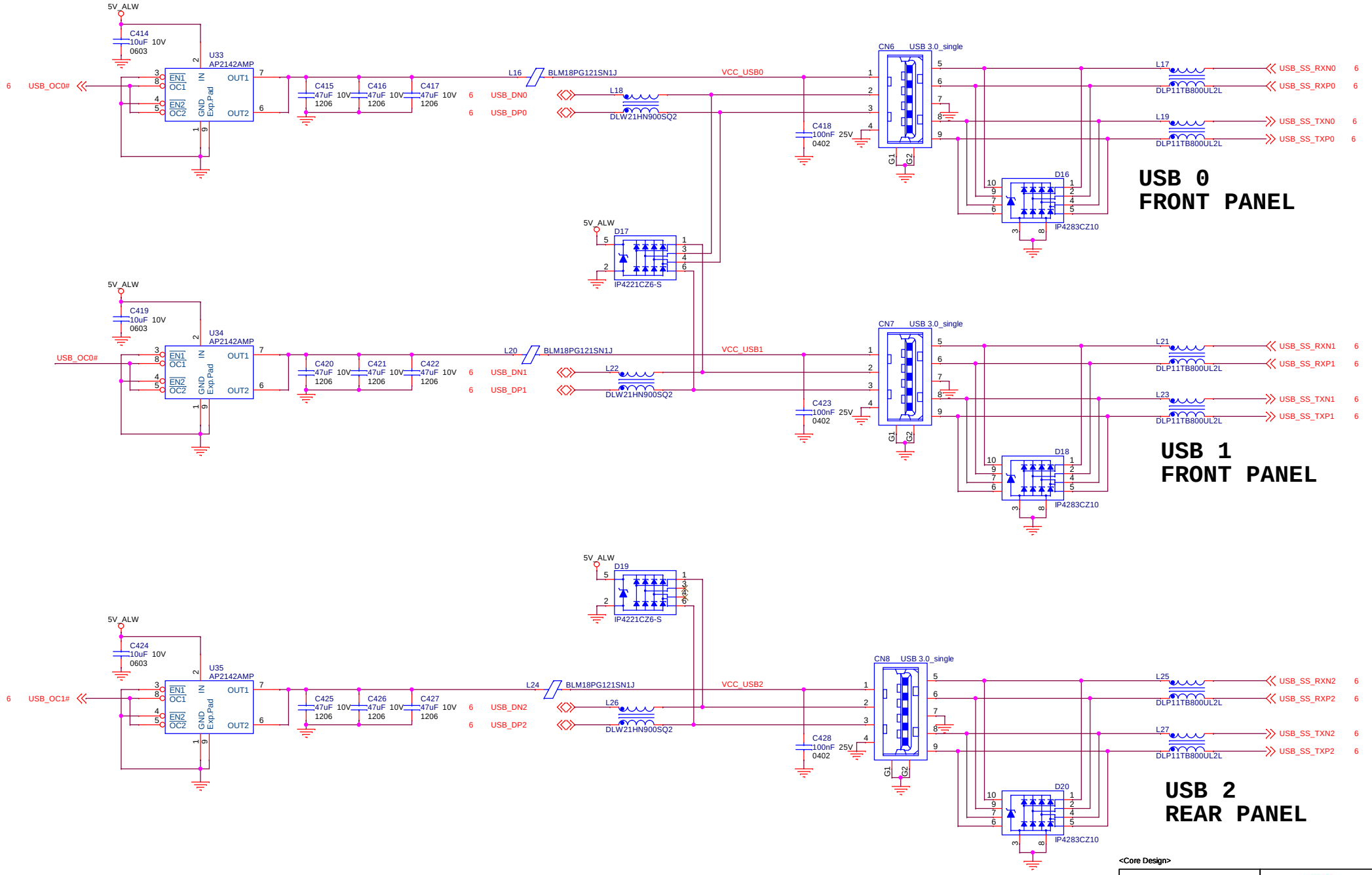

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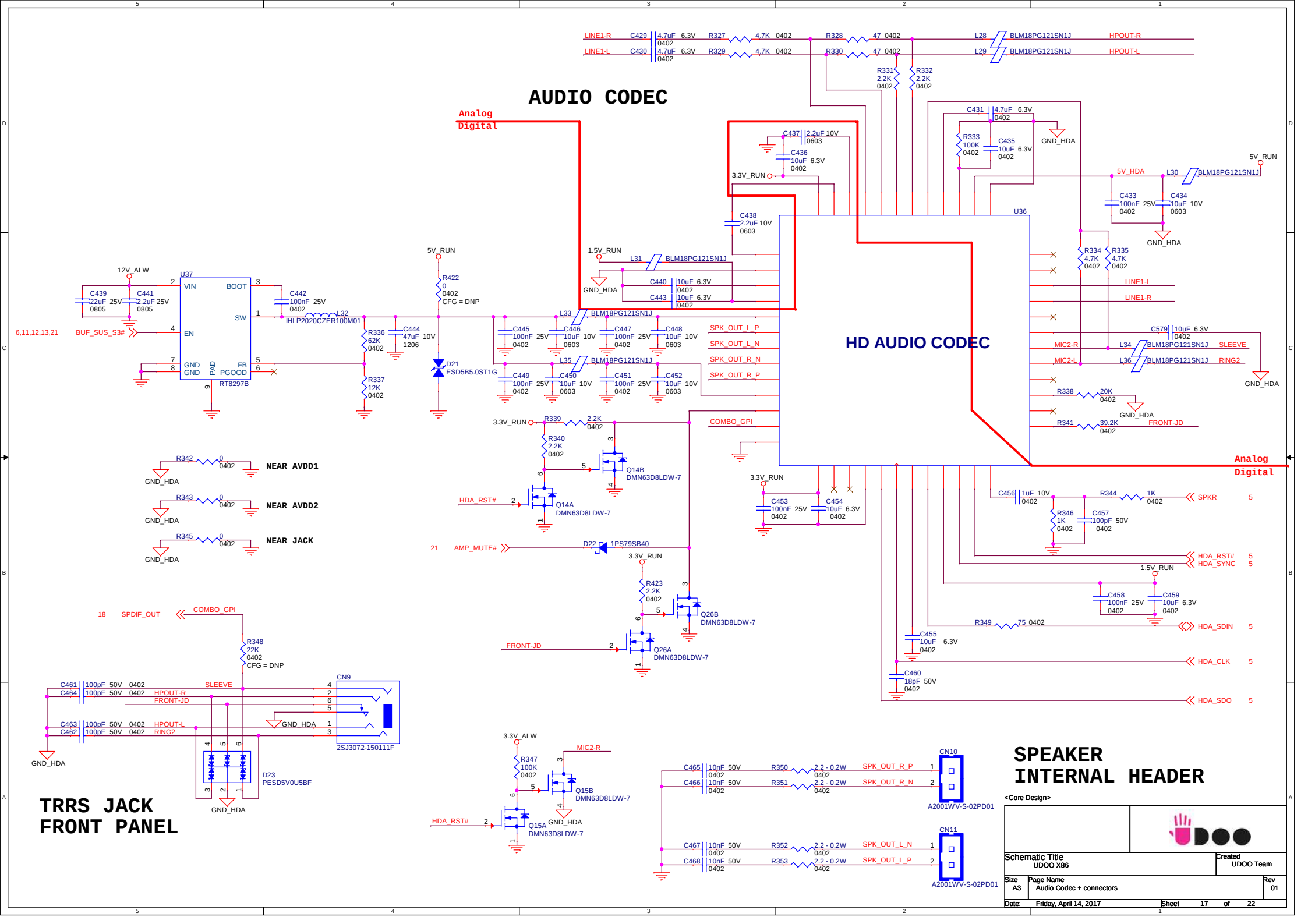
AUDIO CODEC



TRRS JACK FRONT PANEL

SPEAKER INTERNAL HEADER

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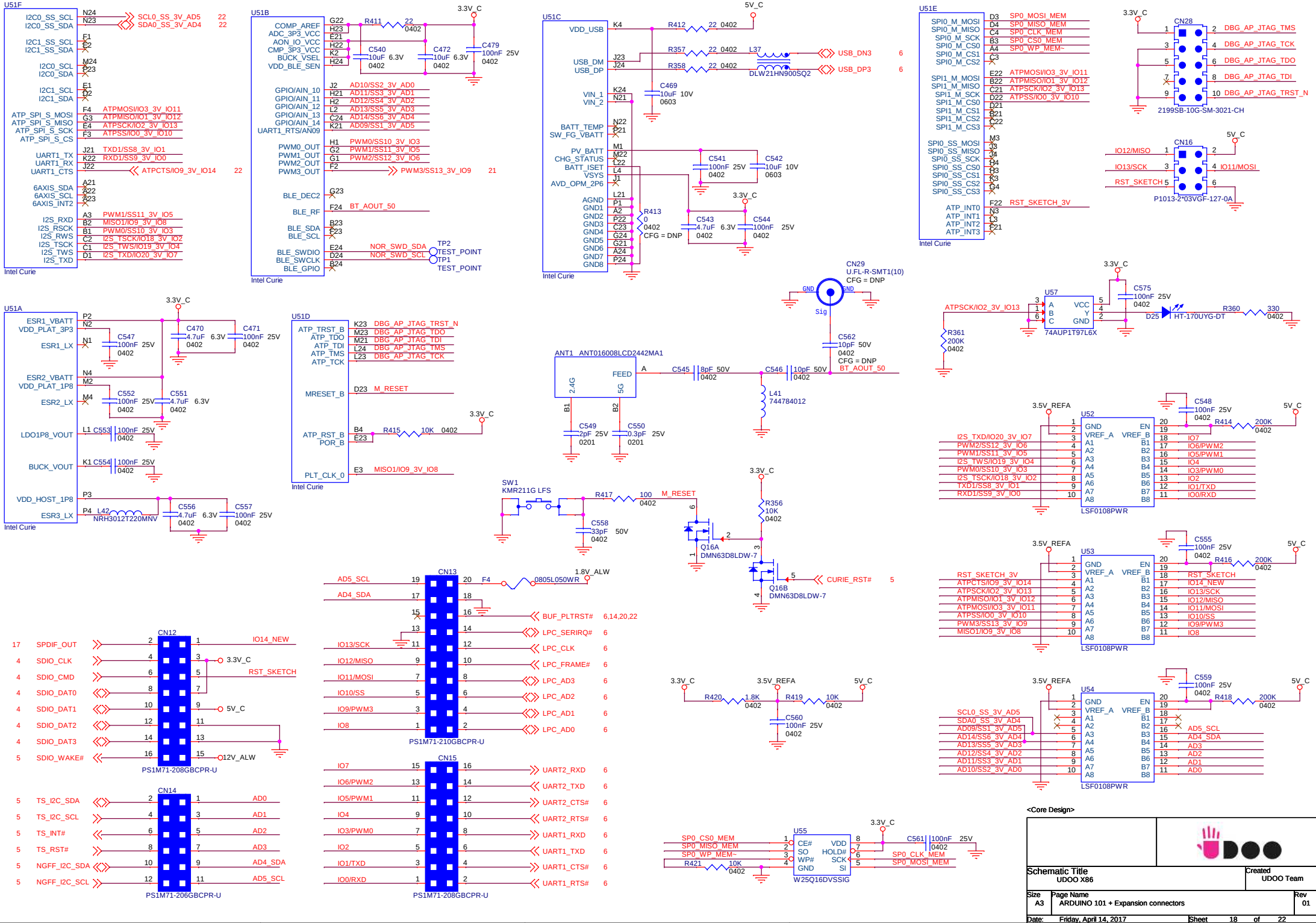
U51F
Intel Curie
U51B
Intel Curie
U51C
Intel Curie
U51E
Intel Curie
U51A
Intel Curie
U51D
Intel Curie
CN29
U.FL-R-SMT1(10)
CFG = DNP
ANT1_ANT016008LCD2442MA1
U57
74AUP1T97L6X
D25
HT-170UYG-DT
U52
LSF0108PWR
U53
LSF0108PWR
U54
LSF0108PWR
CN28
2199SB-10G-SM-3021-CH
CN16
P1013-2*03VGF-127-0A
CN12
PS1M71-208GBCPR-U
CN13
PS1M71-210GBCPR-U
CN14
PS1M71-206GBCPR-U
CN15
PS1M71-208GBCPR-U
SW1
KMR211G LFS
Q16A
DMN63D8LDW-7
Q16B
DMN63D8LDW-7
U55
W25Q16DVSSIG
L41
744784012
DLW21HN900SQ2
3.3V_C
5V_C
1.8V_ALW
3.5V_REFA
I2C0_SS_SCL
I2C0_SS_SDA
SCL0_SS_3V_AD5
SDA0_SS_3V_AD4
ATPMOSI/IO3_3V_IO11
ATPMISO/IO1_3V_IO12
ATPSCK/IO2_3V_IO13
ATPSS/IO0_3V_IO10
ATPCTS/IO9_3V_IO14
PWM3/SS13_3V_IO9
BT_AOUT_50
NOR_SWD_SDA
NOR_SWD_SCL
M_RESET
CURIE_RST#
RST_SKETCH
RST_SKETCH_3V
USB_DN3
USB_DP3
SP0_MOSI_MEM
SP0_MISO_MEM
SP0_CLK_MEM
SP0_CS0_MEM
SP0_WP_MEM~
DBG_AP_JTAG_TMS
DBG_AP_JTAG_TCK
DBG_AP_JTAG_TDO
DBG_AP_JTAG_TDI
DBG_AP_JTAG_TRST_N
BUF_PLTRST#
LPC_SERIRQ#
LPC_CLK
LPC_FRAME#
LPC_AD3
LPC_AD2
LPC_AD1
LPC_AD0
UART2_RXD
UART2_TXD
UART2_CTS#
UART2_RTS#
UART1_RXD
UART1_TXD
UART1_CTS#
UART1_RTS#
IO14_NEW
SPDIF_OUT
SDIO_CLK
SDIO_CMD
SDIO_DAT0
SDIO_DAT1
SDIO_DAT2
SDIO_DAT3
SDIO_WAKE#
TS_I2C_SDA
TS_I2C_SCL
TS_INT#
TS_RST#
NGFF_I2C_SDA
NGFF_I2C_SCL
AD0
AD1
AD2
AD3
AD4_SDA
AD5_SCL
IO12/MISO
IO13/SCK
IO11/MOSI
RST_SKETCH
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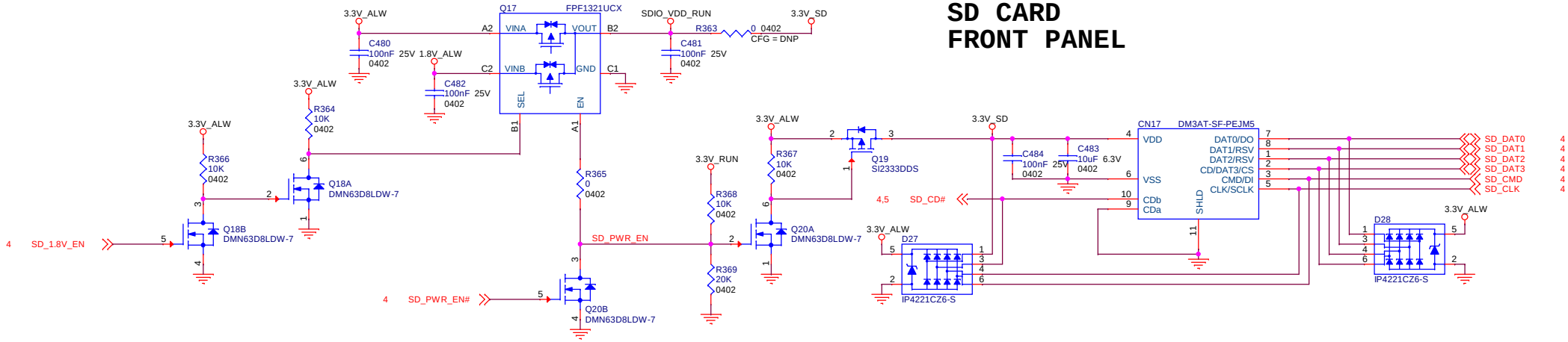
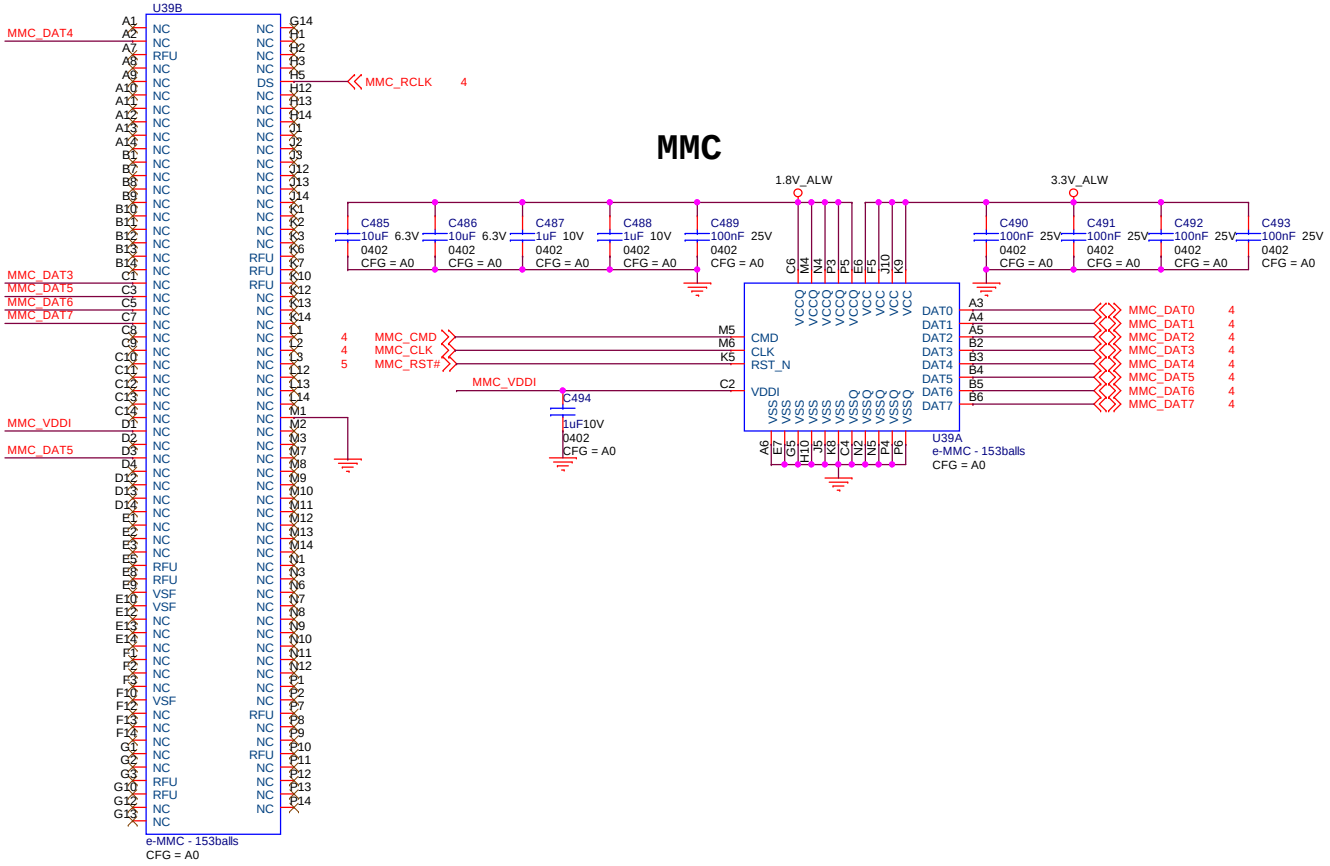
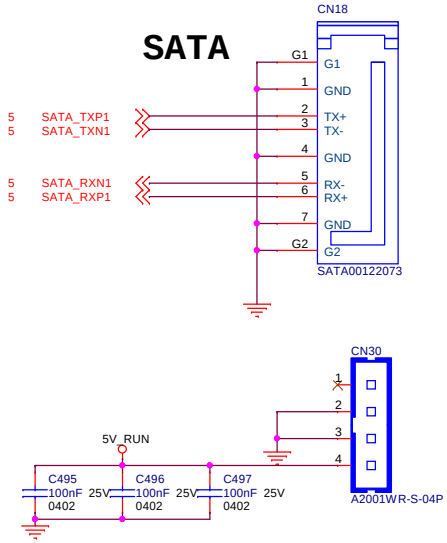
SD CARD FRONT PANEL



MMC



SATA



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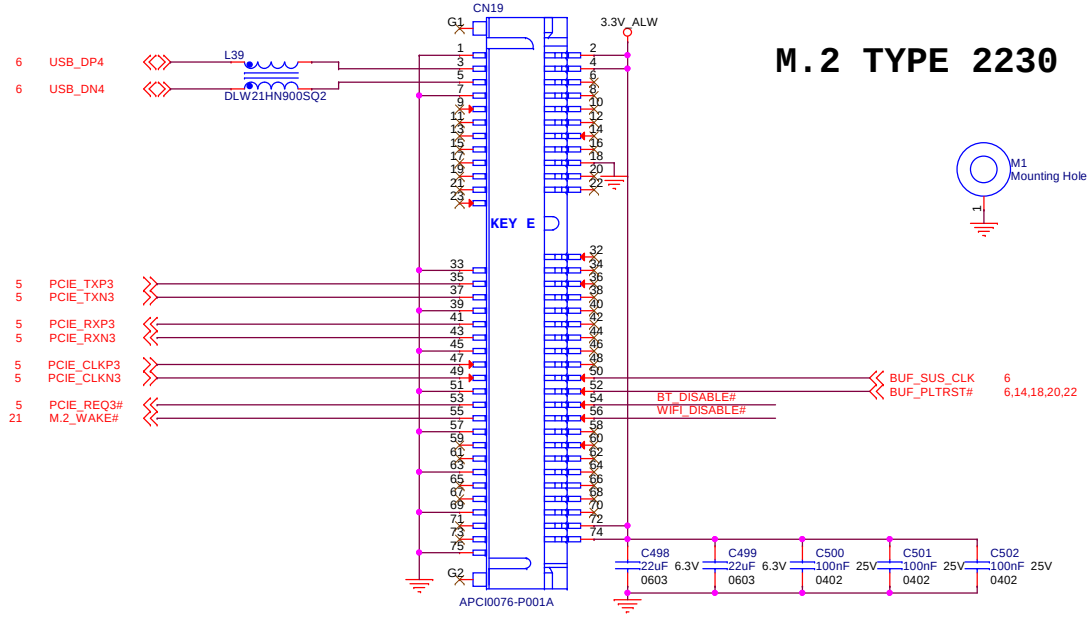

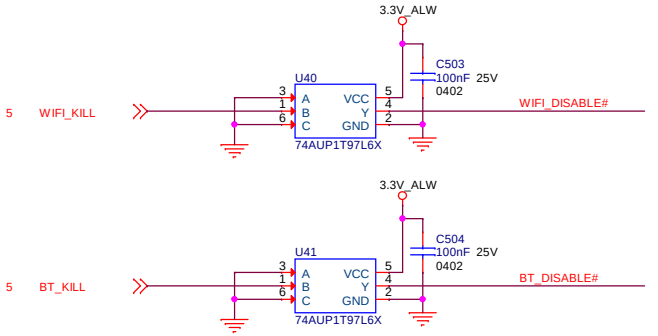

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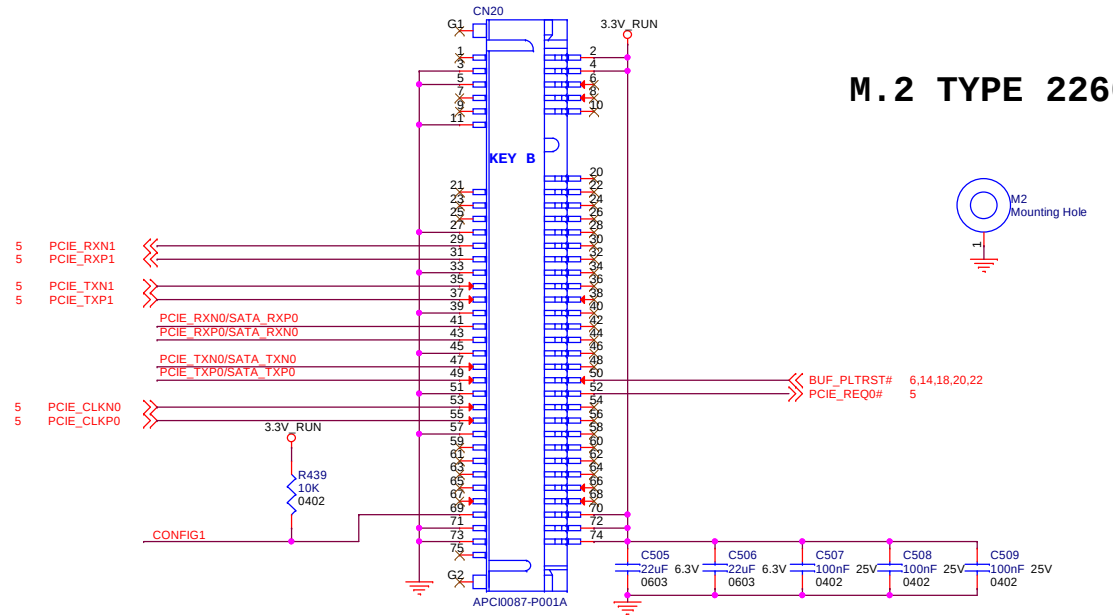

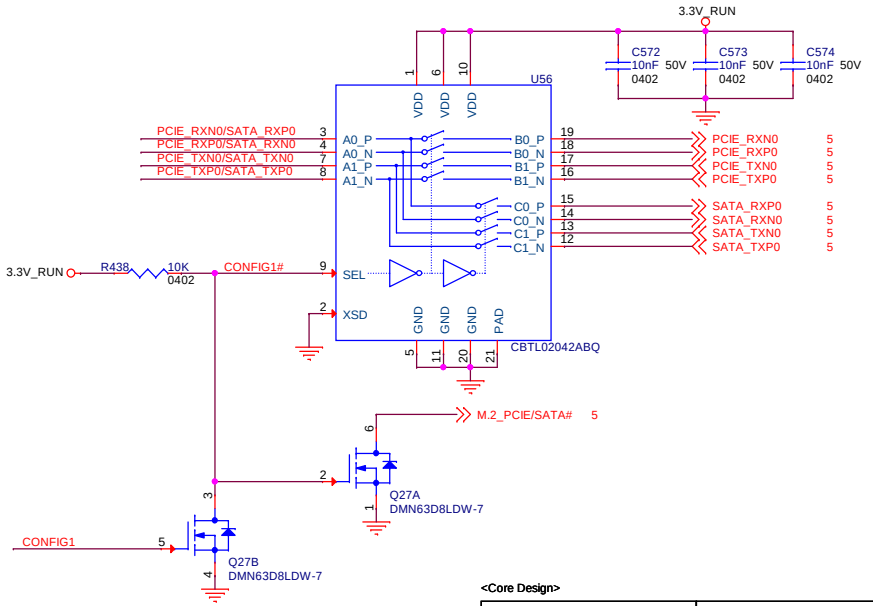

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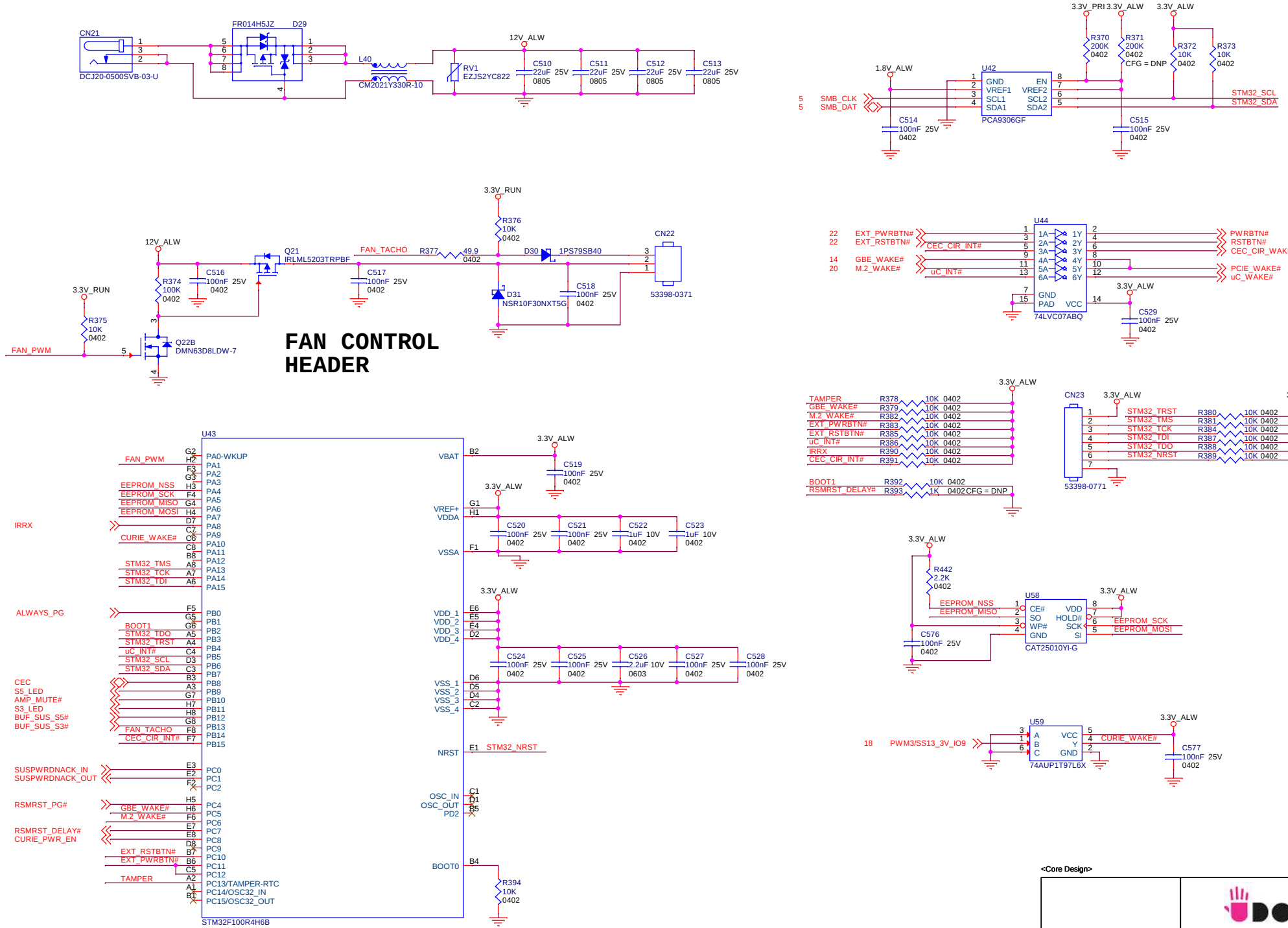

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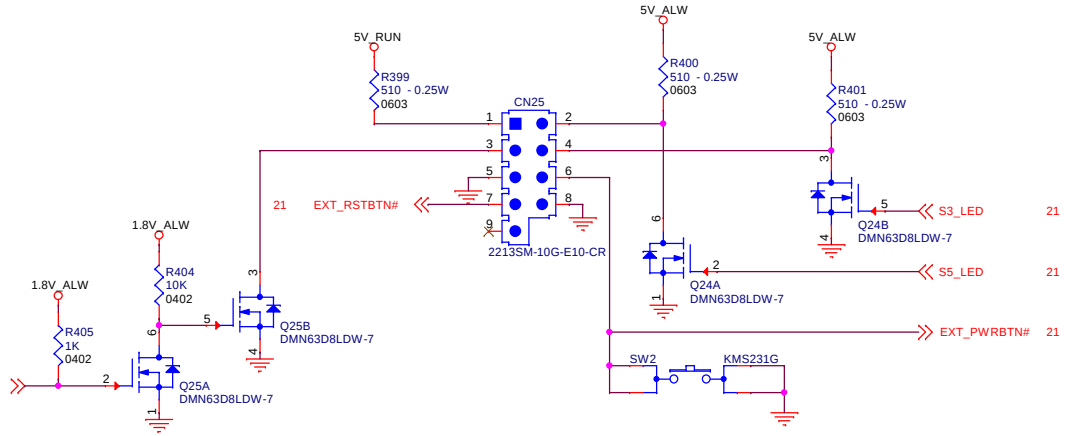
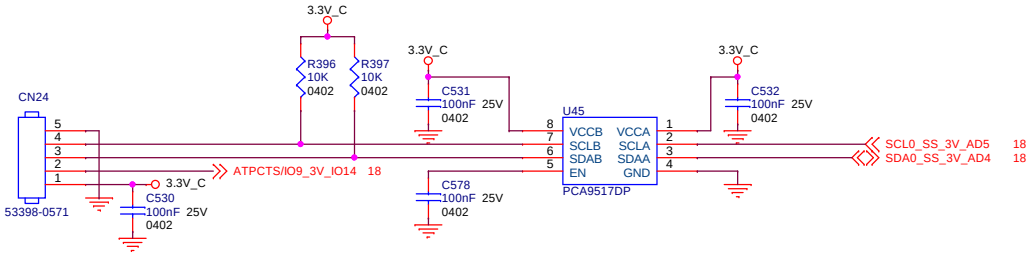
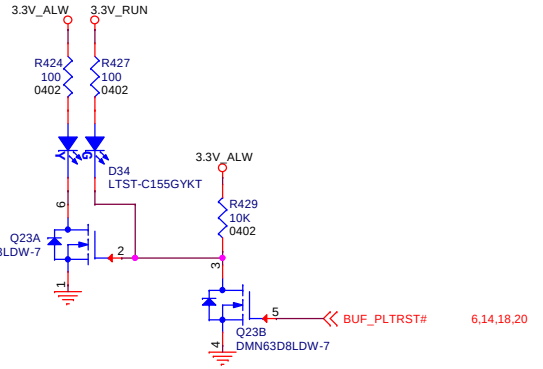
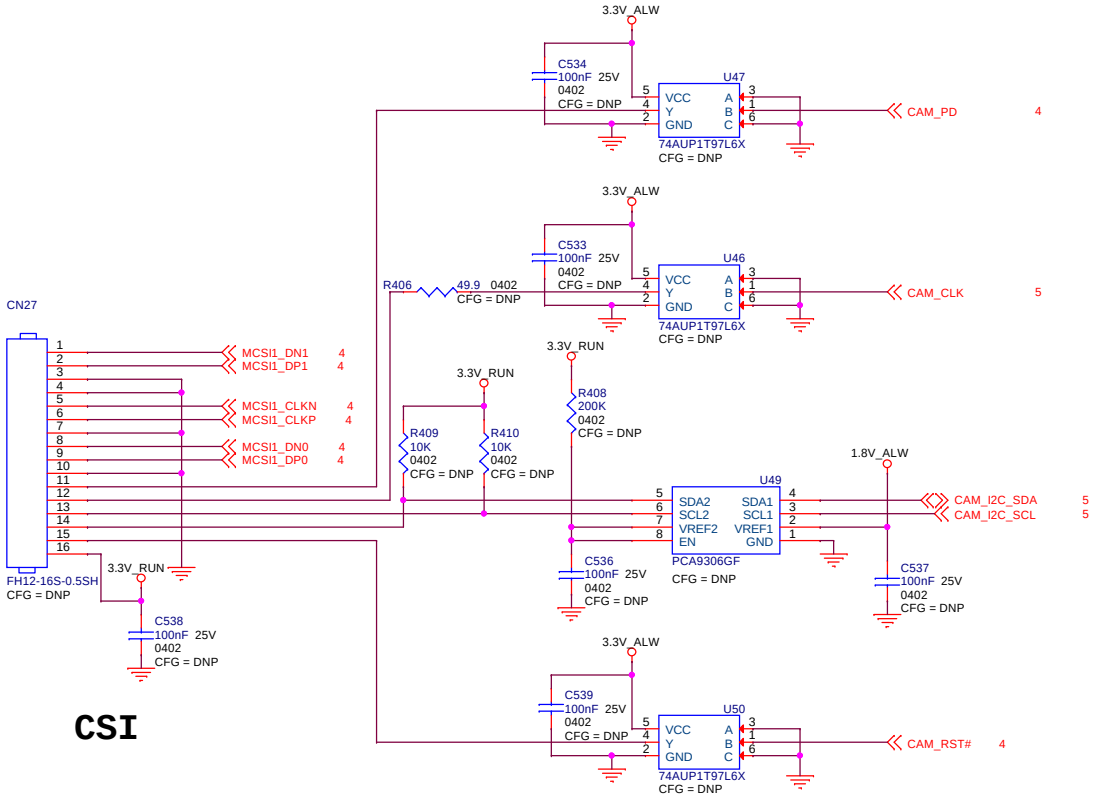
FRONT PANEL INTERNAL HEADER



BRICK SUPPORT

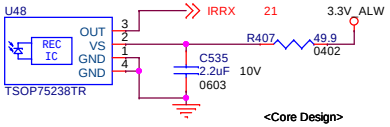






CSI

CIR RECEIVER



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