# MAXWELL CUSTOMER PROCESSOR BOARD

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|---|---|
| REV | E3 |
| VER | 1.0 |

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| | | | |
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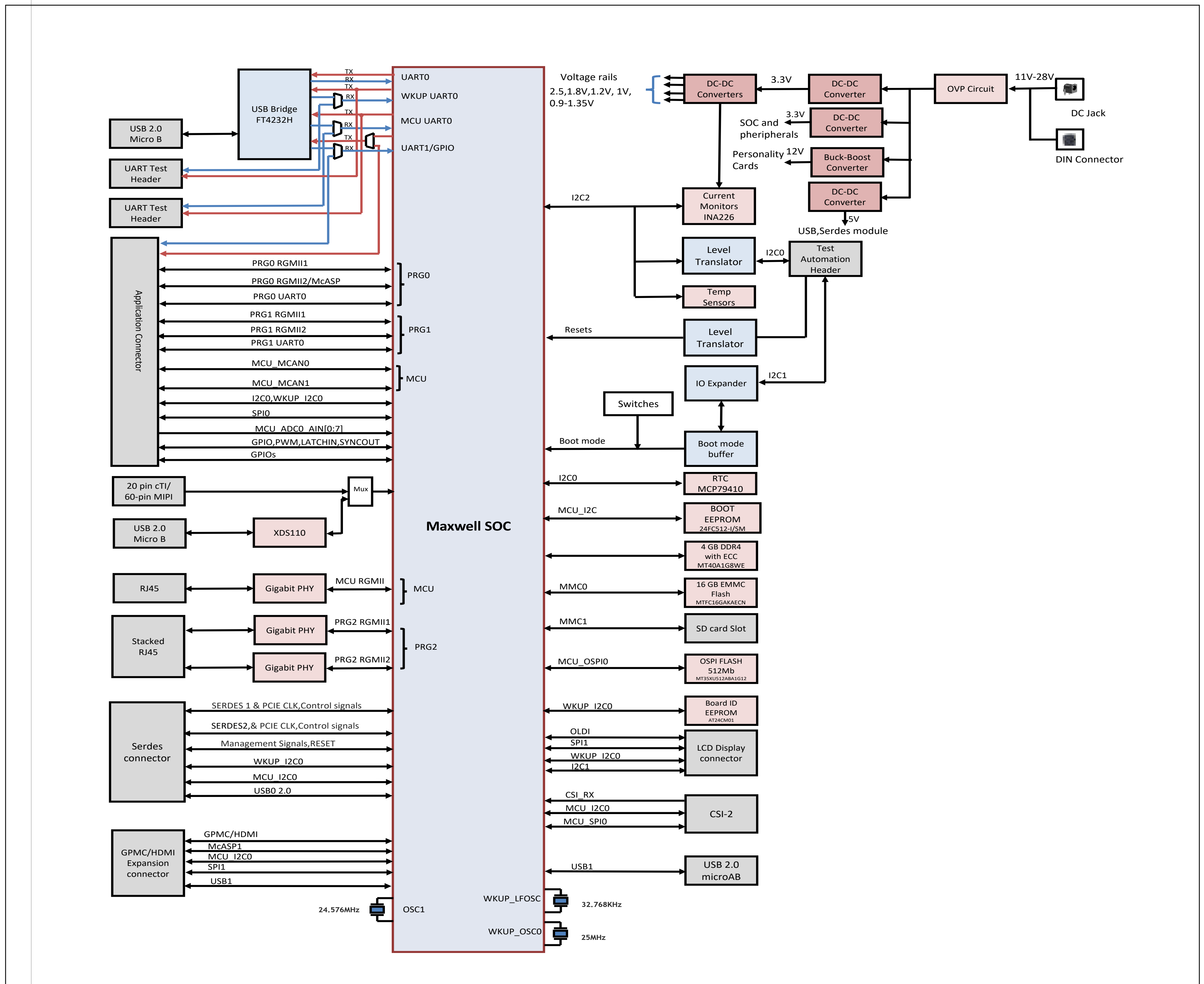
# REVISION HISTORY

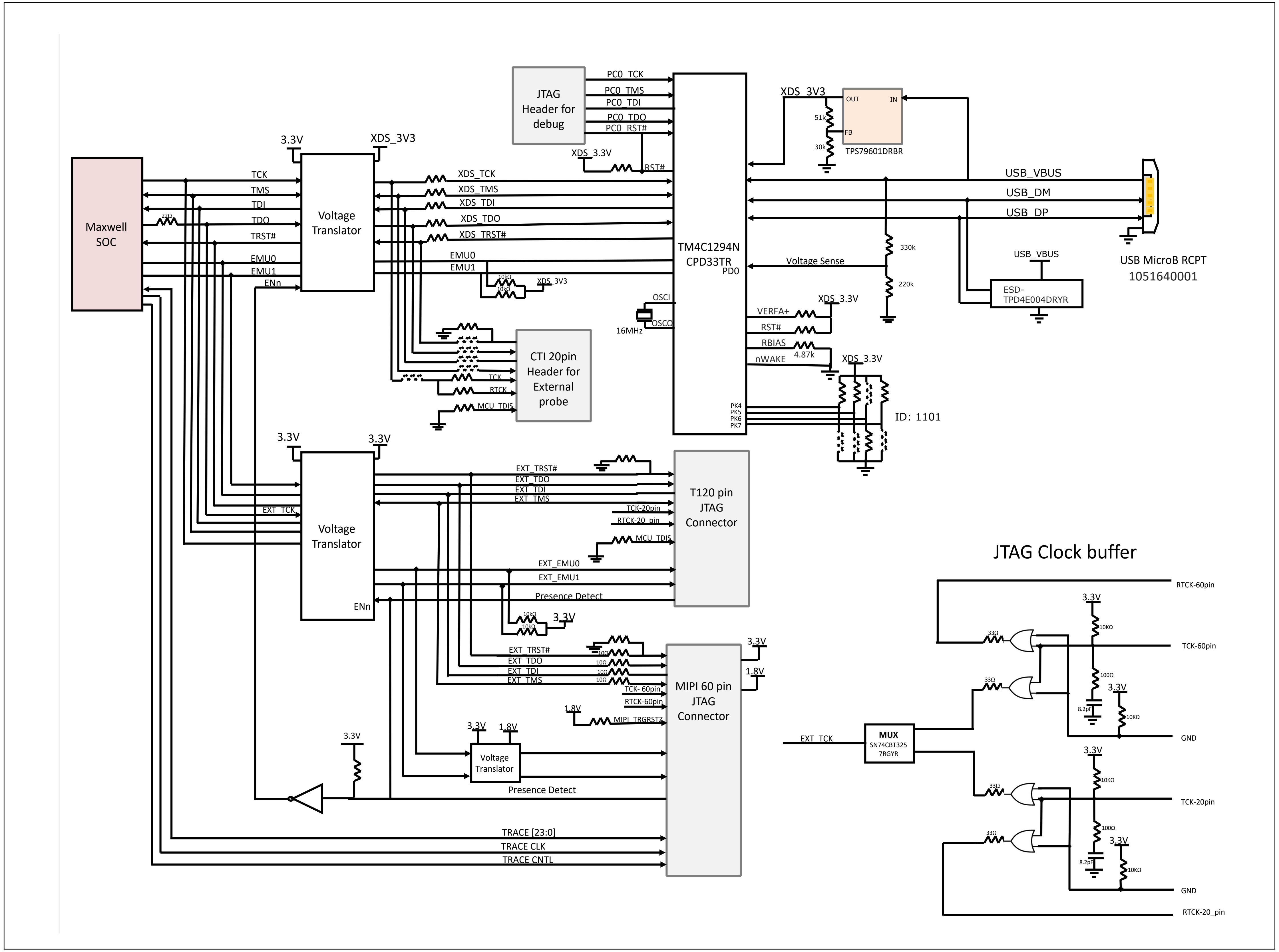
| VER # | DATE | DESCRIPTION OF CHANGES | AUTHOR | REVIEWED BY | APPROVED BY |
|---|---|---|---|---|---|
| 0.1 | 29th MAY 2018 | Drafted from "PROC062_REV E2_SCH" document. | Mistral Design Team | AJIT MB | AJIT MB |
| 0.2 | 13th JUN 2018 | Updated REV E3 schematic as per change list document. | Mistral Design Team | AJIT MB | AJIT MB |
| 1.0 | 04th SEP 2018 | Baselined | Mistral Design Team | AJIT MB | AJIT MB |

# BLOCK DIAGRAM_CP BOARD




| | |
|---|---|
| Designed for TI by Mistral Solutions Pvt Ltd | Title: BLOCK DIAGRAM_CP BOARD |
| | Size: C — Variant Name = PROC062 003 OPN#TMDX654GPEVM — Rev: E3 |
| | Date: Tuesday, July 24, 2018 — Sheet 3 of 44 |

# BLOCK DIAGRAM_XDS110

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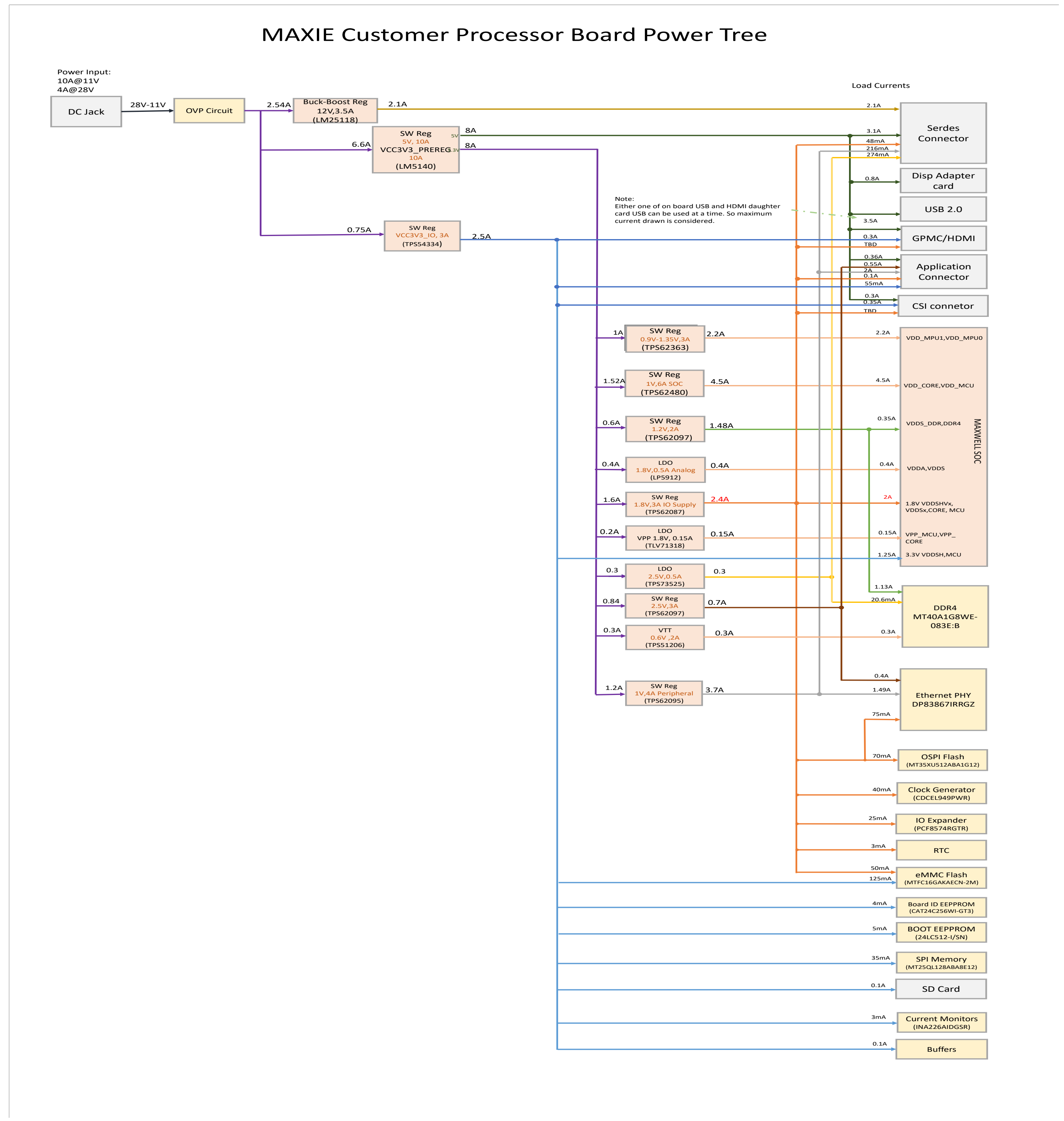
| | |
|---|---|
| Title | BLOCK DIAGRAM_XDS110 |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Tuesday, July 24, 2018 | Sheet 4 of 44 |

# POWER FLOW DIAGRAM

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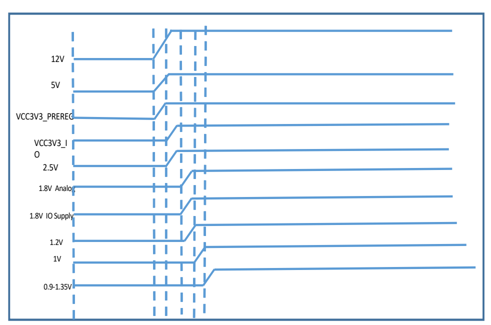
| | | |
|---|---|---|
| Title | POWER FLOW DIAGRAM | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Tuesday, July 24, 2018 | Sheet 5 of 44 | |

# POWER SEQUENCE

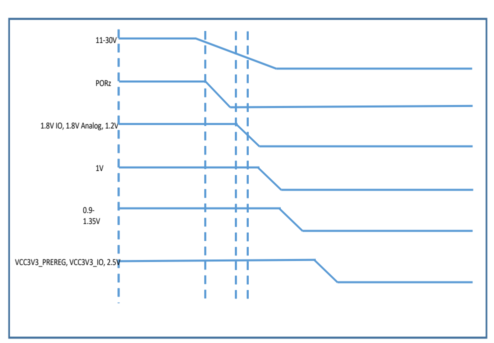
Power up Sequence




Power up Sequence:
12V, 5V,3V3_PREREG --->VCC3V3_IO, 2.5V --->1.8V Analog, 1.8V IO Supply ---> 1V SOC --->0.9-1.35V

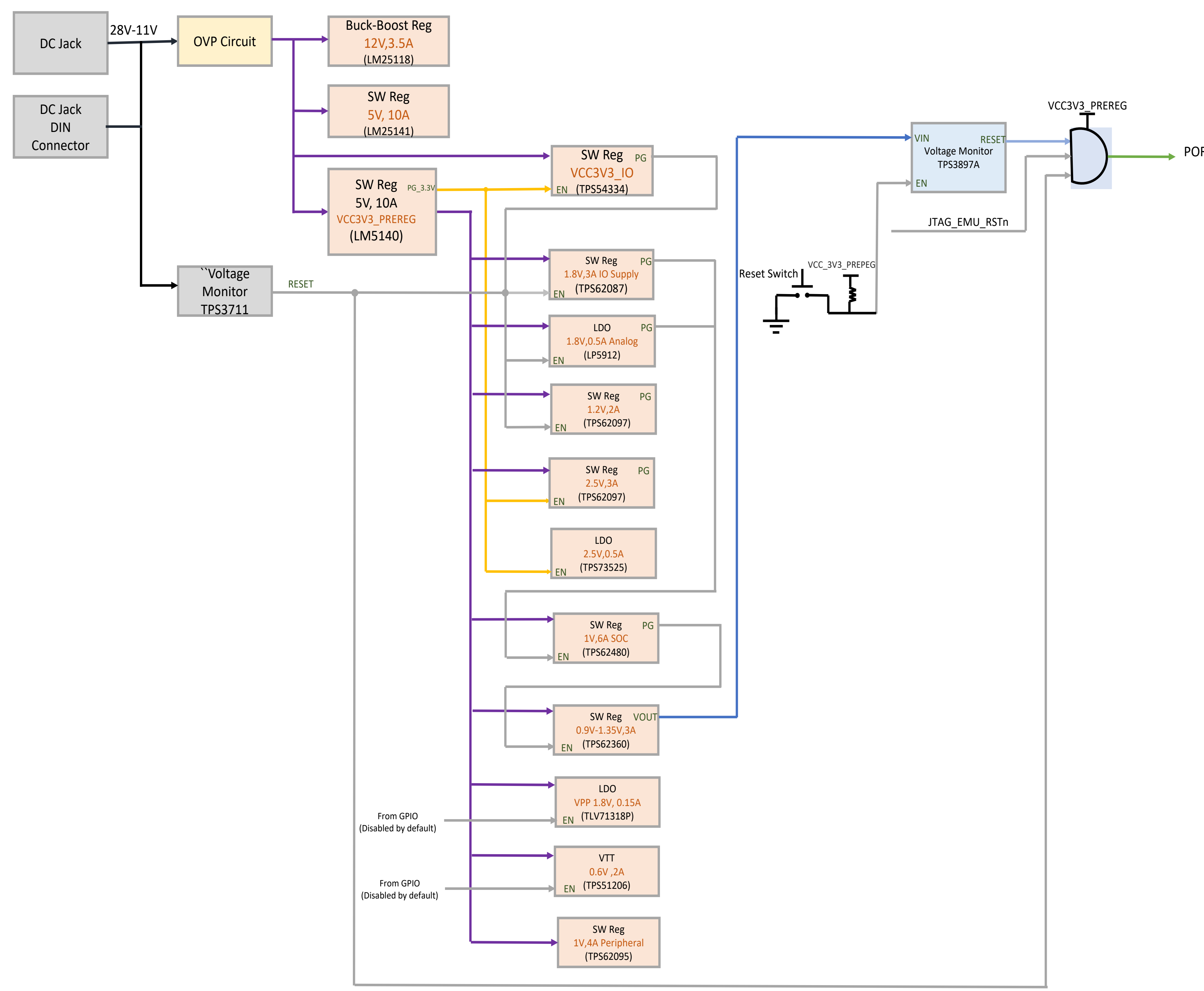
There is no sequencing for 1V Peripheral supply

Power Down Sequence




Power down Sequence:
1.2V, 1.8V Analog, 1.8V IO Supply, 1V SOC, 0.9V-1.35V,---->VCC3V3_PREREG, VCC3V3_IO, 2.5V

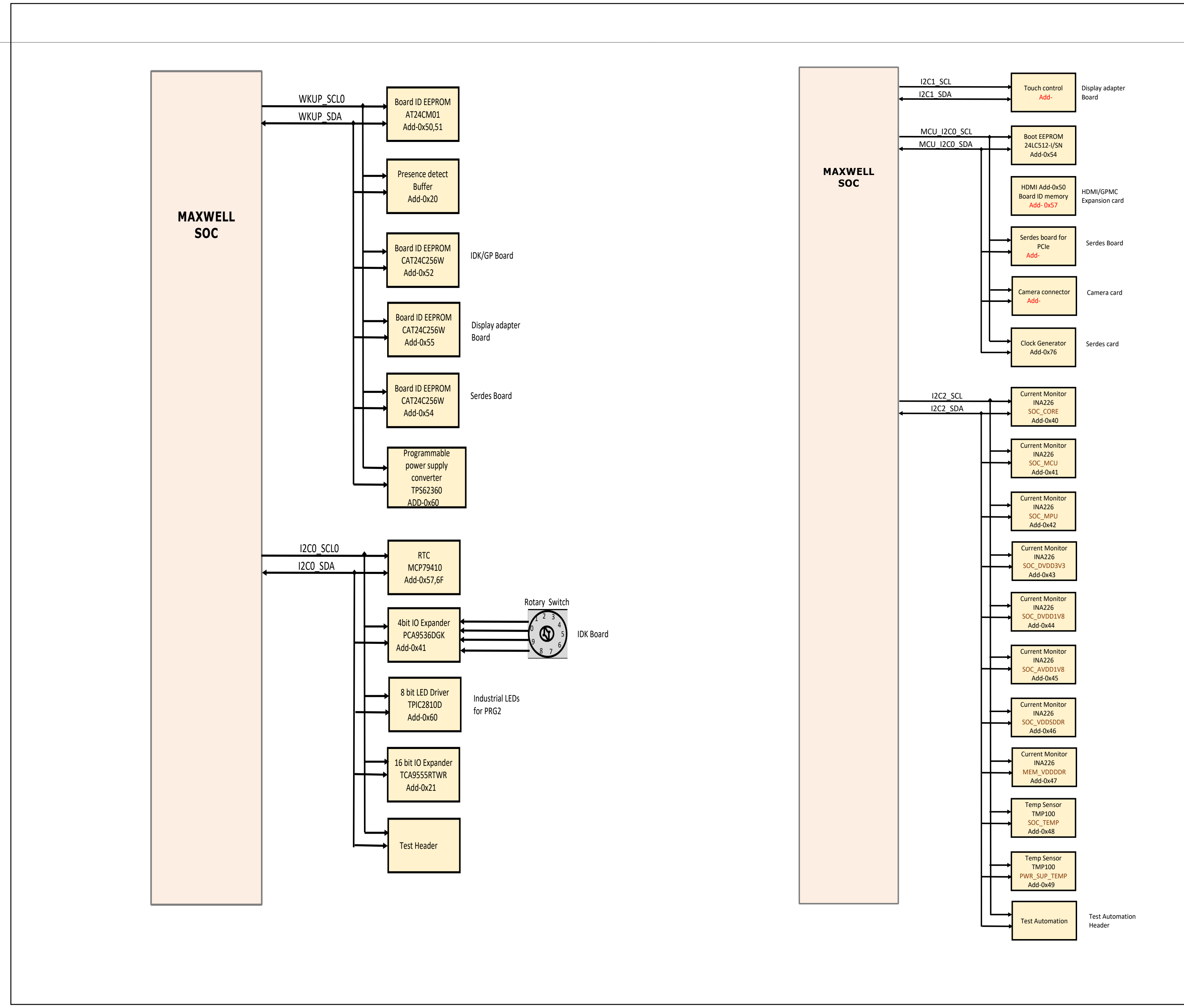
MAXIE Customer Processor Board Power Sequencing



# GPIO MAPPING TABLE

| Sl No | GPIO Description | Required on | FUNCTIONALITY | GPIO Number | SoC Muxed Signal name | Direction WRT CTRL | Default state | Active state |
|---|---|---|---|---|---|---|---|---|
| **Total No of GPIOs Required from Maxwell SoC** | | | | | | | | |
| 1 | Two MCU Domain GPIO for CP board push button1 | Customer Processor Board | Push button | WKUP_GPIO0_24 | MCU_OSPI0_CSN1 | Input | High | Low |
| 2 | Two MCU Domain GPIO for CP board push button1 | Customer Processor Board | Push button | WKUP_GPIO0_27 | MCU_OSPI1_DQS | Input | High | Low |
| 3 | eMMC Reset control GPIO | Customer Processor Board | Reset | I2C GPIO Expander | | Output | High | Low |
| 4 | OSPI flash Reset control GPIO | Customer Processor Board | Reset | I2C GPIO Expander | | Output | High | Low |
| 5 | SPI NOR flash Reset control GPIO | Customer Processor Board | Reset | I2C GPIO Expander | | Output | High | Low |
| 6 | ICSSG_PRG2_Ethernet PHY Reset control GPIO | Customer Processor Board | Reset | I2C GPIO Expander | | Output | High | Low |
| 7 | ICSSG_PRG2_Ethernet PHY Interrupt GPIO | Customer Processor Board | Interrupt | GPIO1_87 | EXT_REFCLK1 | Input/Output | High | Low |
| 8 | ICSSG_Ethernet PHY_1 Link Detection GPIO | Customer Processor Board | Link Detection ( GPIO Input) | GPIO1_13 | MMC0_SDCD | Input | Low | High |
| 9 | ICSSG_Ethernet PHY_2 Link Detection GPIO | Customer Processor Board | Link Detection ( GPIO Input) | GPIO1_14 | MMC0_SDWP | Input | Low | High |
| 10 | MCU domain Ethernet PHY Reset Control GPIO | Customer Processor Board | Reset | I2C GPIO Expander | | Output | High | Low |
| 11 | MCU domain Ethernet PHY Interrupt GPIO | Customer Processor Board | Interrupt | GPIO1_80 | MMC1_SDWP | Input/Output | High | Low |
| 12 | Three GPIO's are required to control the Mux select | | | I2C GPIO Expander | | Output | High | Low |
| 13 | between UART test header RX , Application board & | Customer Processor Board | Mux Selection | I2C GPIO Expander | | Output | High | Low |
| 14 | FT4232_ UART _RX | | | I2C GPIO Expander | | Output | High | Low |
| 15 | VPP LDO enable | Customer Processor Board | VPP_EN | WKUP_GPIO0_26 | MCU_OSPI1_LBCLKO | Output | Low | High |
| 16 | One WKUP_GPIO for VTT Regulator Enable | Customer Processor Board | VTT_EN | WKUP_GPIO0_28 | MCU_OSPI1_D0 | Output | Low | High |
| 17 | GPIO0 to drive PRG2 LED0 | Customer Processor Board | LEDs | WKUP_GPIO0_8 | WKUP_GPIO0_8 | Output | Low | High |
| 18 | GPIO1 to drive PRG2 LED1 | Customer Processor Board | LEDs | WKUP_GPIO0_0 | WKUP_GPIO0_0 | Output | Low | High |
| 19 | GPIO2 to drive PRG2 LED2 | Customer Processor Board | LEDs | WKUP_GPIO0_1 | WKUP_GPIO0_1 | Output | Low | High |
| 20 | GPIO3 to drive PRG2 LED3 | Customer Processor Board | LEDs | WKUP_GPIO0_50 | MCU_SPI0_D1 | Output | Low | High |
| 21 | IDK_ICSSG_PRG0_Ethernet PHY Reset Control GPIO | IDK /GP Application board | Reset | GPIO1_34 | PRG0_PRU0GPO5 | Output | High | Low |
| 22 | IDK_ICSSG_PRG0_Ethernet PHY Interrupt GPIO | IDK /GP Application board | Interrupt | GPIO1_37 | PRG0_PRU0GPO8 | Input/Output | High | Low |
| 23 | IDK_ICSSG_PRG1_Ethernet PHY Reset Control GPIO | IDK /GP Application board | Reset | GPIO0_61 | PRG1_PRU0GPO5 | Output | High | Low |
| 24 | IDK_ICSSG_PRG1_Ethernet PHY Interrupt GPIO | IDK /GP Application board | Interrupt | GPIO0_81 | PRG1_PRU1GPO5 | Output | High | Low |
| 25 | IDK_ICSSG_Ethernet PHY_1 Link Detection GPIO | IDK /GP Application board | Link Detection ( GPIO Input) | GPIO0_84 | PRG1_PRU1GPO8 | Input | Low | High |
| 26 | IDK_ICSSG_Ethernet PHY_2 Link Detection GPIO | IDK /GP Application board | Link Detection ( GPIO Input) | GPIO0_64 | PRG1_PRU0GPO8 | Input | Low | High |
| 27 | IDK_ICSSG_Ethernet PHY_3 Link Detection GPIO | IDK /GP Application board | Link Detection ( GPIO Input) | GPIO1_39 | PRG0_PRU0GPO10 | Input | Low | High |
| 28 | IDK_ICSSG_Ethernet PHY_4 Link Detection GPIO | IDK /GP Application board | Link Detection ( GPIO Input) | GPIO1_57 | PRG0_PRU1GPO8 | Input | Low | High |
| 29 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO0_83 | PRG1_PRU1GPO7 | Output | Low | High |
| 30 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO0_93 | PRG1_PRU1GPO17 | Output | Low | High |
| 31 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO0_95 | PRG1_PRU1GPO19 | Output | Low | High |
| 32 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO0_94 | PRG1_PRU1GPO18 | Output | Low | High |
| 33 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO1_58 | PRG0_PRU1GPO9 | Output | Low | High |
| 34 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO1_54 | PRG0_PRU1GPO5 | Output | Low | High |
| 35 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO1_38 | PRG0_PRU0GPO9 | Output | Low | High |
| 36 | IDK_ICSSG0_Ethernet LED0 | IDK /GP Application board | LEDs | GPIO1_59 | PRG0_PRU1GPO10 | Output | Low | High |
| 37 | Touch Reset Control GPIO | LCD Adapter Board | Reset | I2C GPIO Expander | | Output | High | Low |
| 38 | Touch Interrupt GPIO | LCD Adapter Board | Interrupt | I2C GPIO Expander | | Input | Low | High |
| 39 | LCD Display Enable GPIO | LCD Adapter Board | LCD_EN | I2C GPIO Expander | | Output | High | Low |
| 40 | CSI Camera Module Reset Control GPIO | CSI Connector | Reset | I2C GPIO Expander | | Output | High | Low |
| 41 | Display_ Power_Down GPIO | HDMI / GPMC Daughter Card | Display_PowerDown | I2C GPIO Expander | | Output | High | Low |
| 42 | Touch Event GPIO | HDMI / GPMC Daughter Card | Interrupt | I2C GPIO Expander | | Input | High | Low |
| 43 | SGMII PHY reset control | Serdes Modules | Reset | I2C GPIO Expander | | Output | High | Low |
| 44 | SGMII PHY Interrupt | Serdes Modules | Interrupt | GPIO1_81 | NMIN | Input/Output | High | Low |

# I2C TREE

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| | |
|---|---|
| Title | I2C TREE |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
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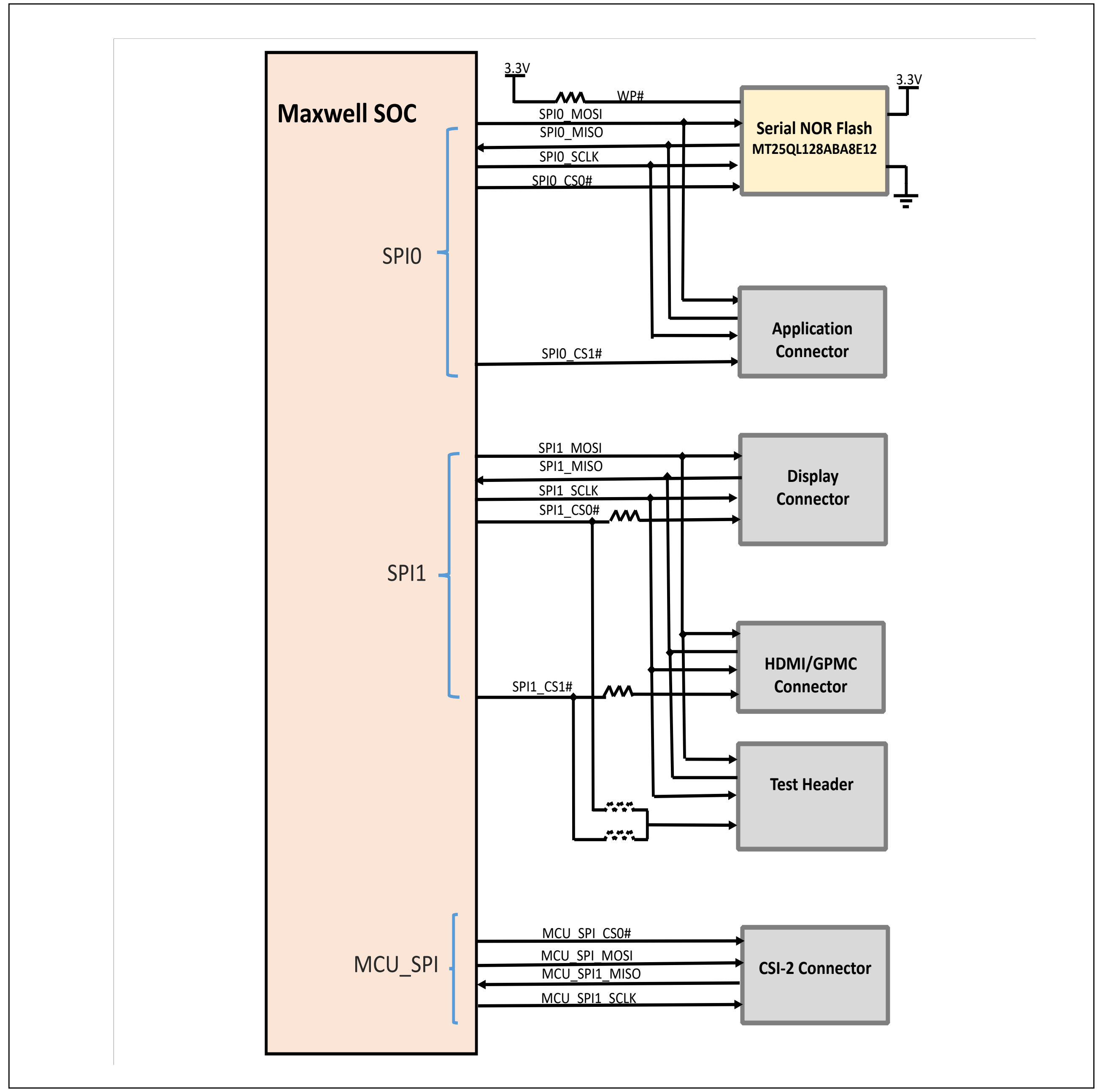
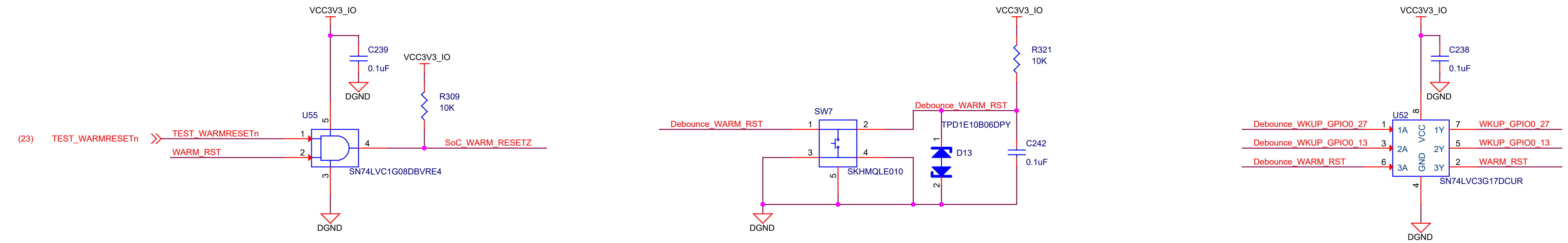
# SPI TREE



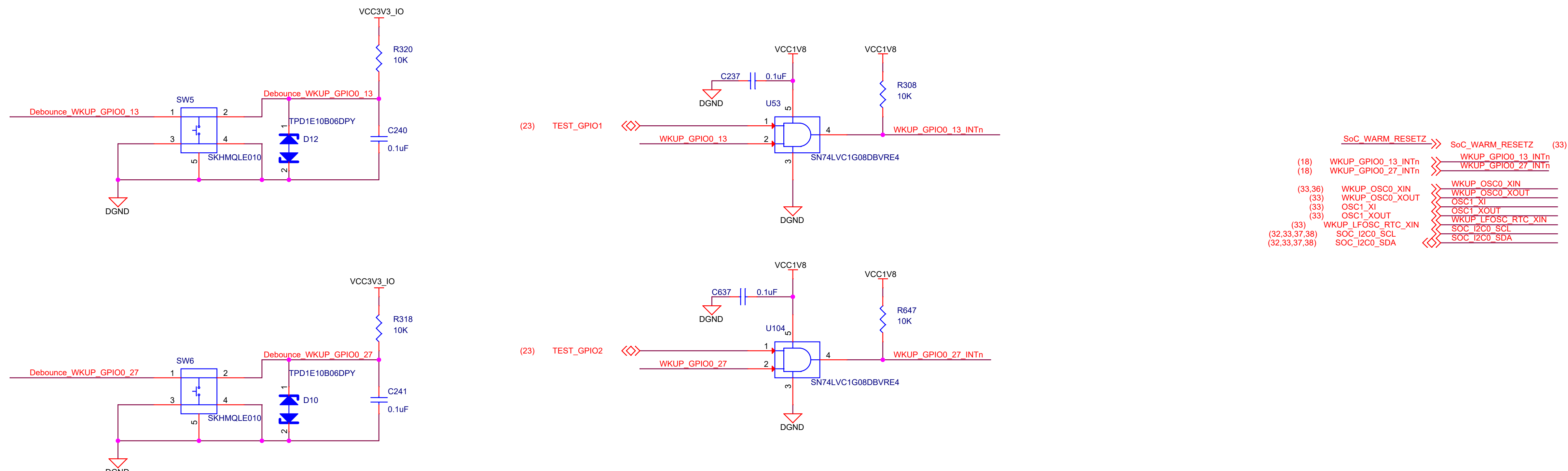

Designed for TI by Mistral Solutions Pvt Ltd

| | | | |
|---|---|---|---|
| Title | SPI TREE | | |
| Size | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | Rev |
| C | | | E3 |
| Date: | Tuesday, July 24, 2018 | Sheet 9 of 44 | |

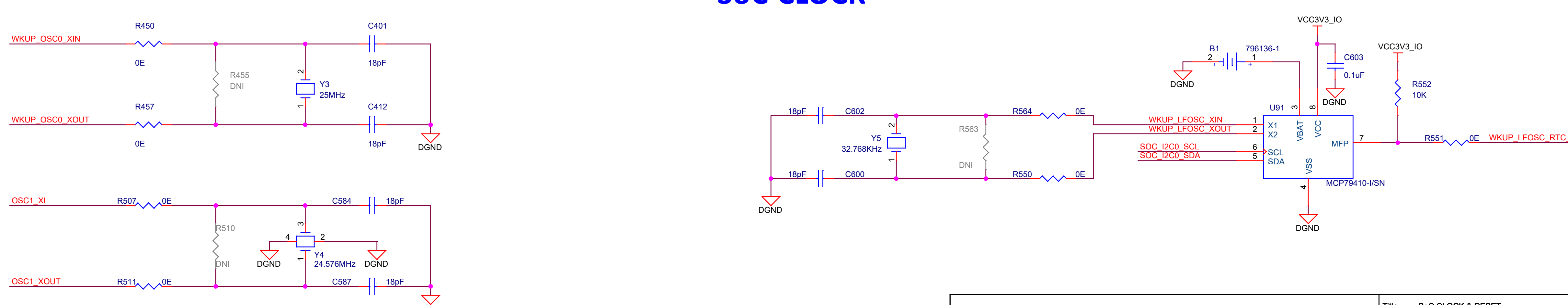
# SoC WARM_RST




# MCU_PUSH BUTTONS




# SoC CLOCK

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| | | | |
|---|---|---|---|
| Title | SoC CLOCK & RESET | | |
| Size | | | Rev |
| C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | E3 |
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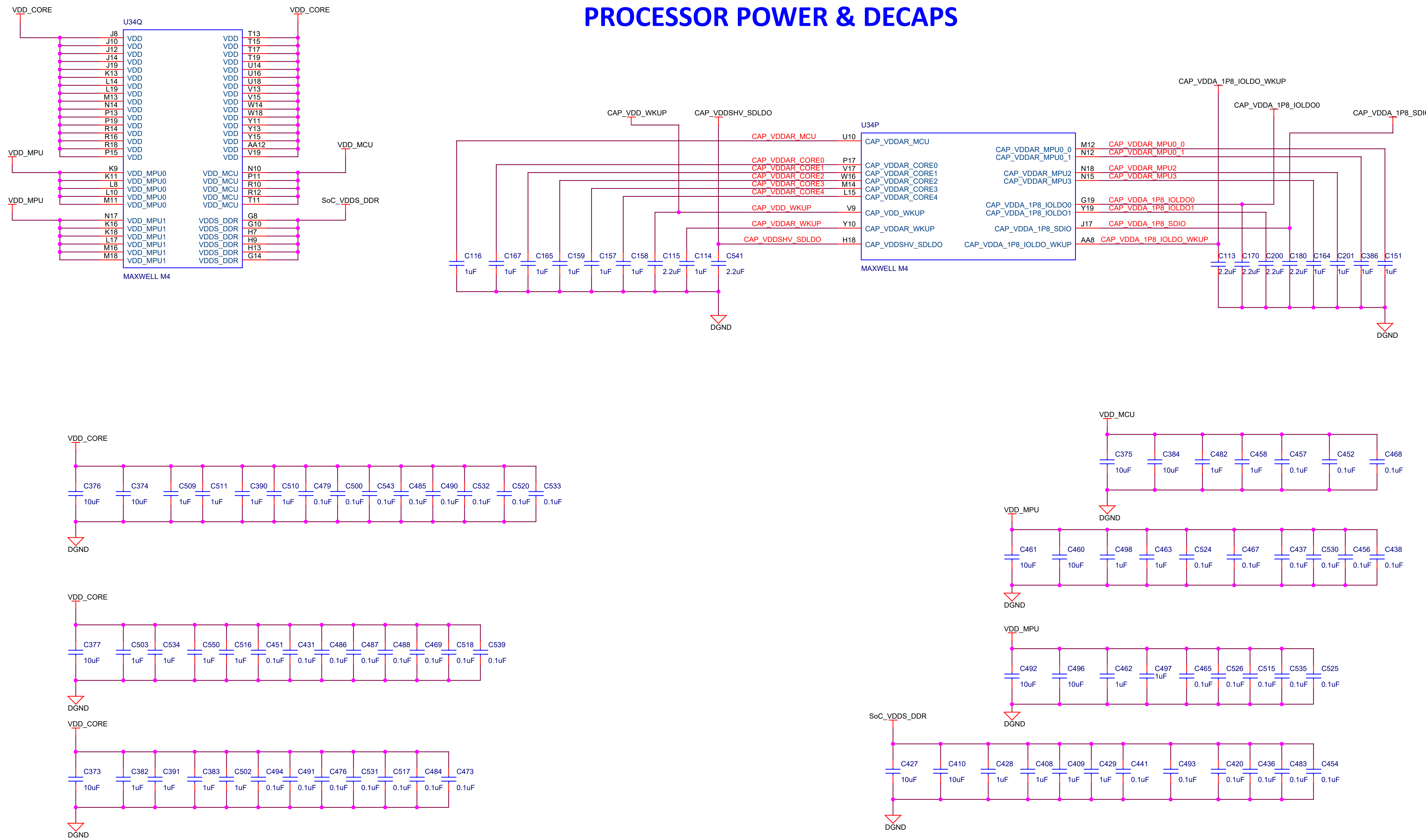
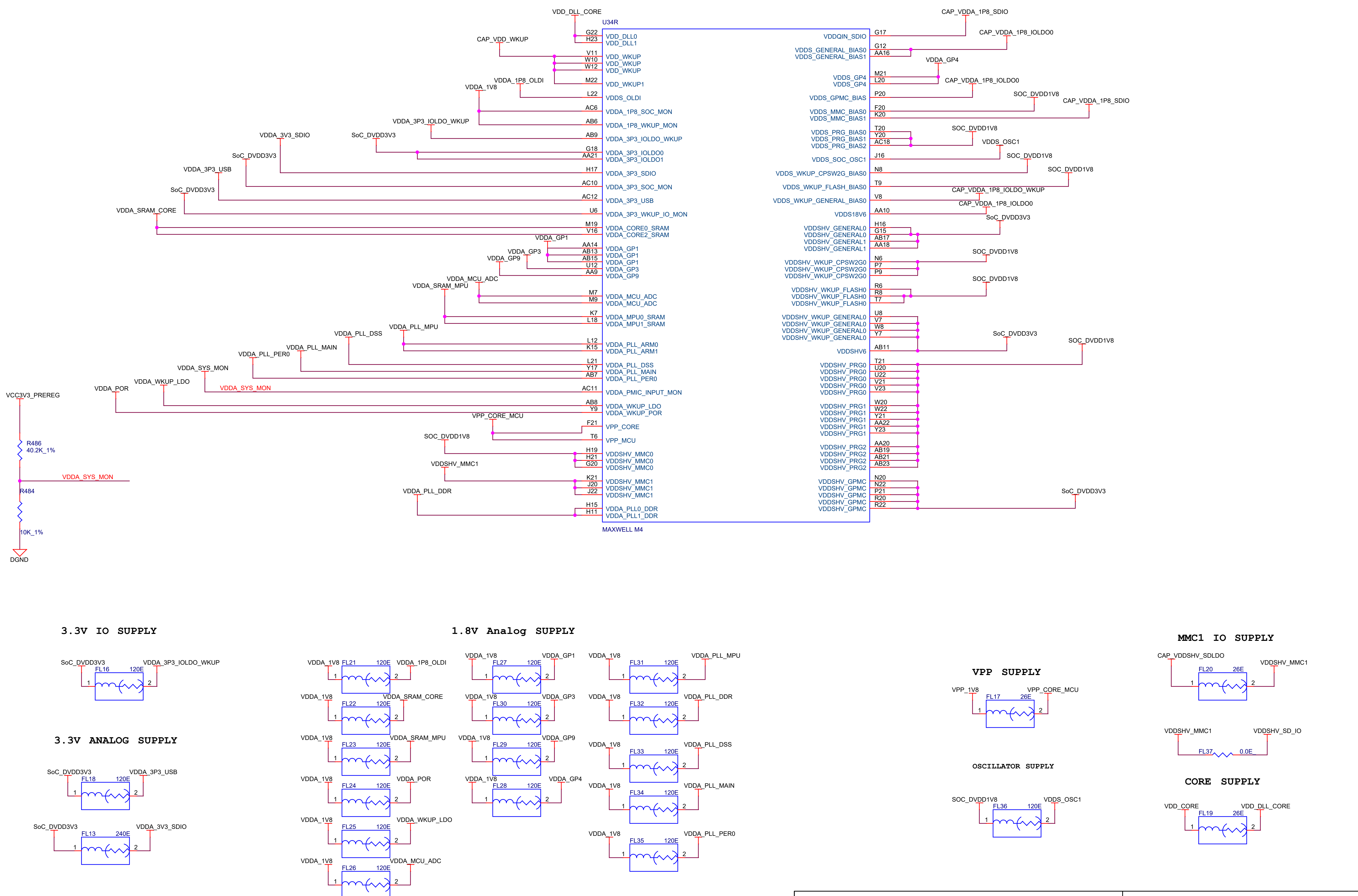
# PROCESSOR POWER & DECAPS




| Designed for TI by Mistral Solutions Pvt Ltd | Title | SoC POWER1 | |
|---|---|---|---|
| | Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| | Date: | Friday, August 31, 2018 | Sheet 11 of 44 |

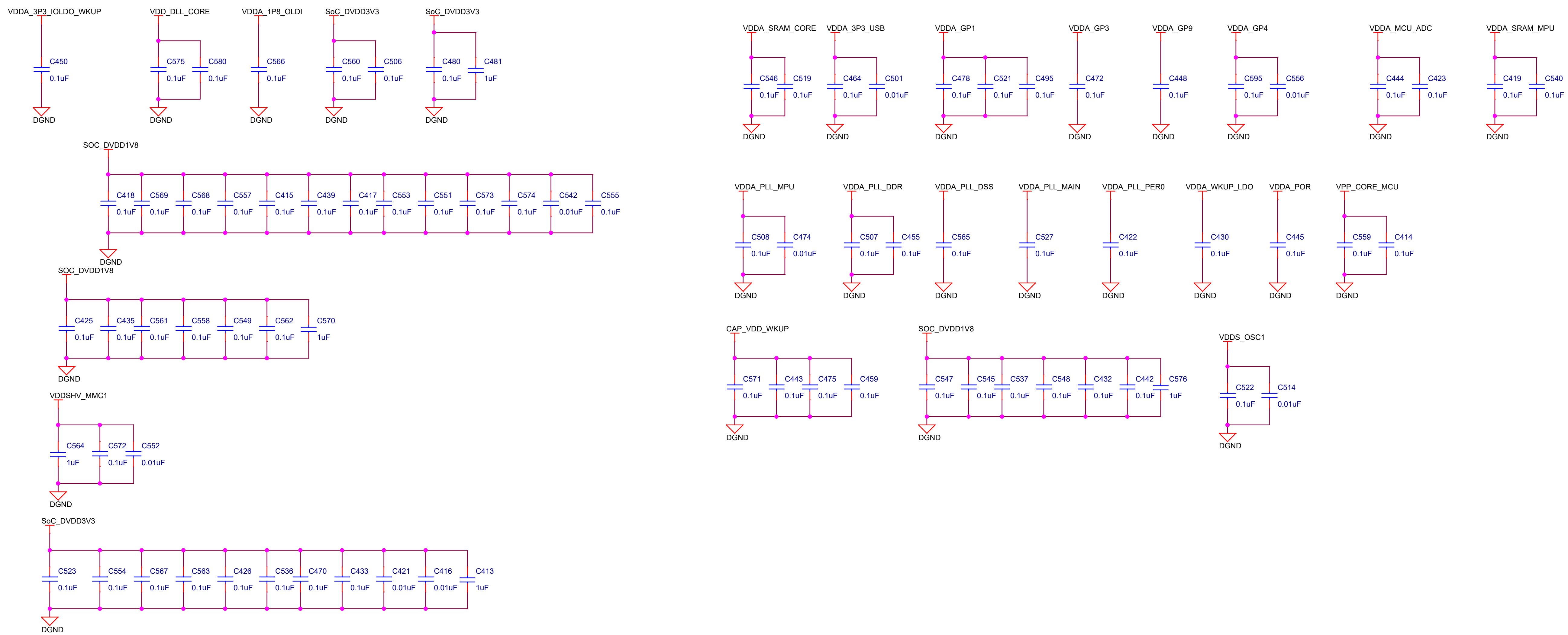
# SoC POWER




Designed for TI by Mistral Solutions Pvt Ltd

| | | | |
|---|---|---|---|
| Title | SoC POWER2 | | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | Rev E3 |
| Date: | Friday, August 31, 2018 | Sheet 12 of 44 | |

# PROCESSOR DECAPS

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Texas Instruments

MISTRAL

| | |
|---|---|
| Title | SoC POWER3 |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | |
| Rev | E3 |
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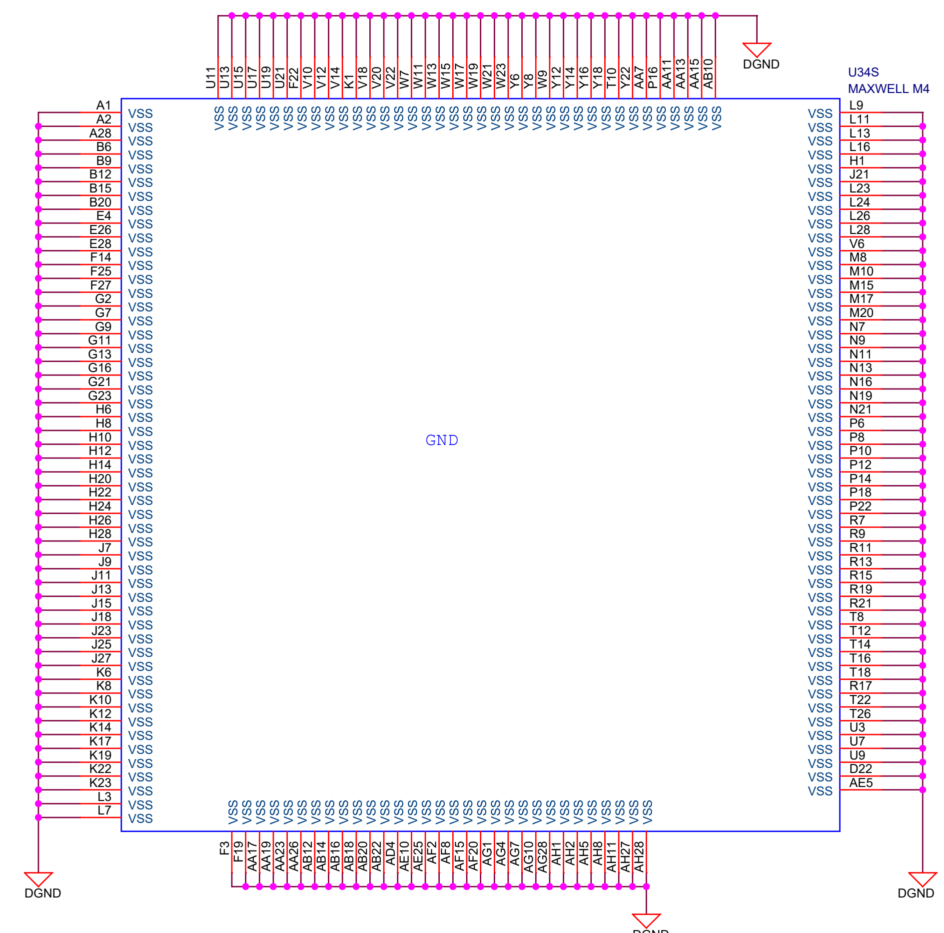
# SoC POWER - VSS

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| | | | |
|---|---|---|---|
| Title | SoC POWER4 | | |
| Size | C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
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| Title | DDR4 DEVICES | | |
|---|---|---|---|
| Size | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | Rev |
| C | | | E3 |
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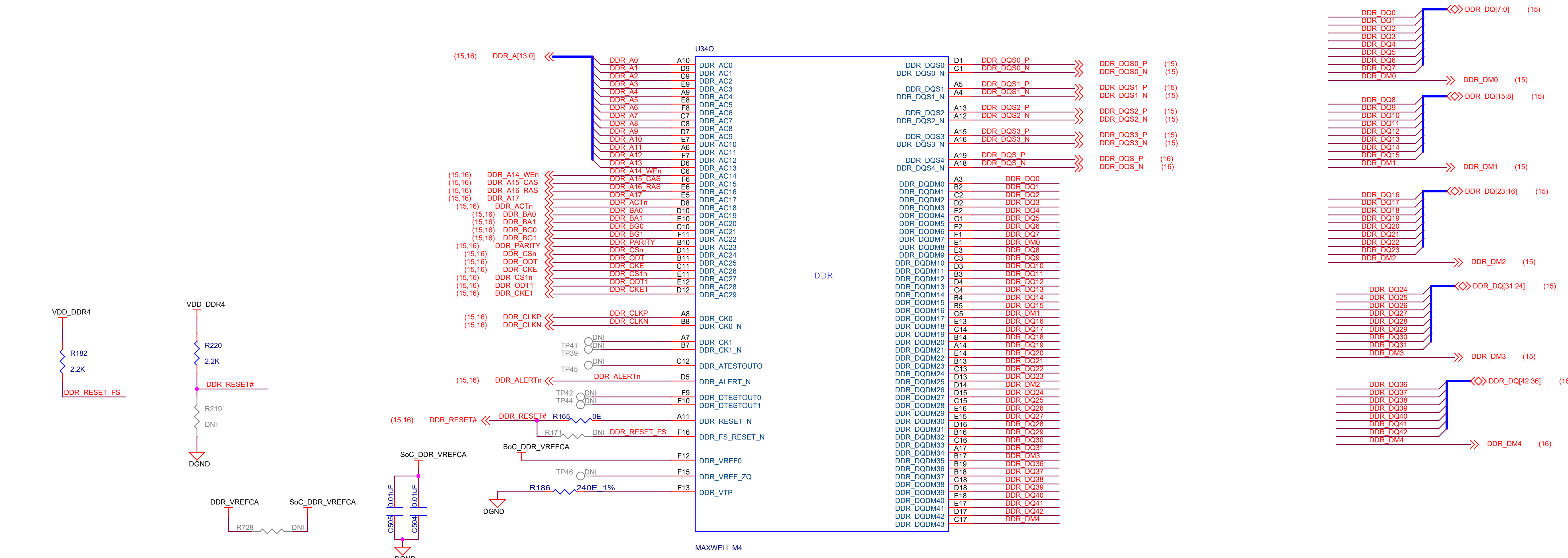
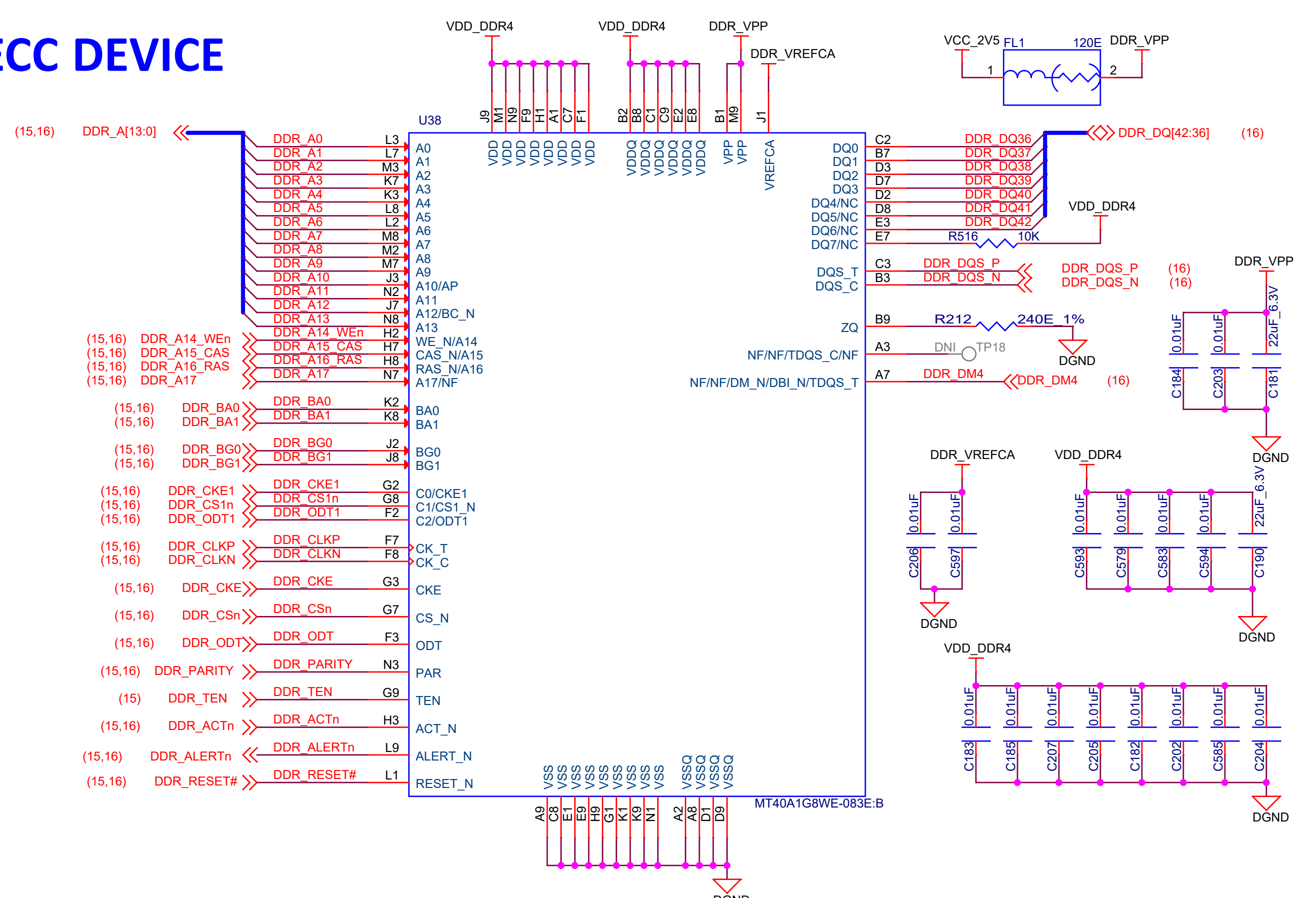
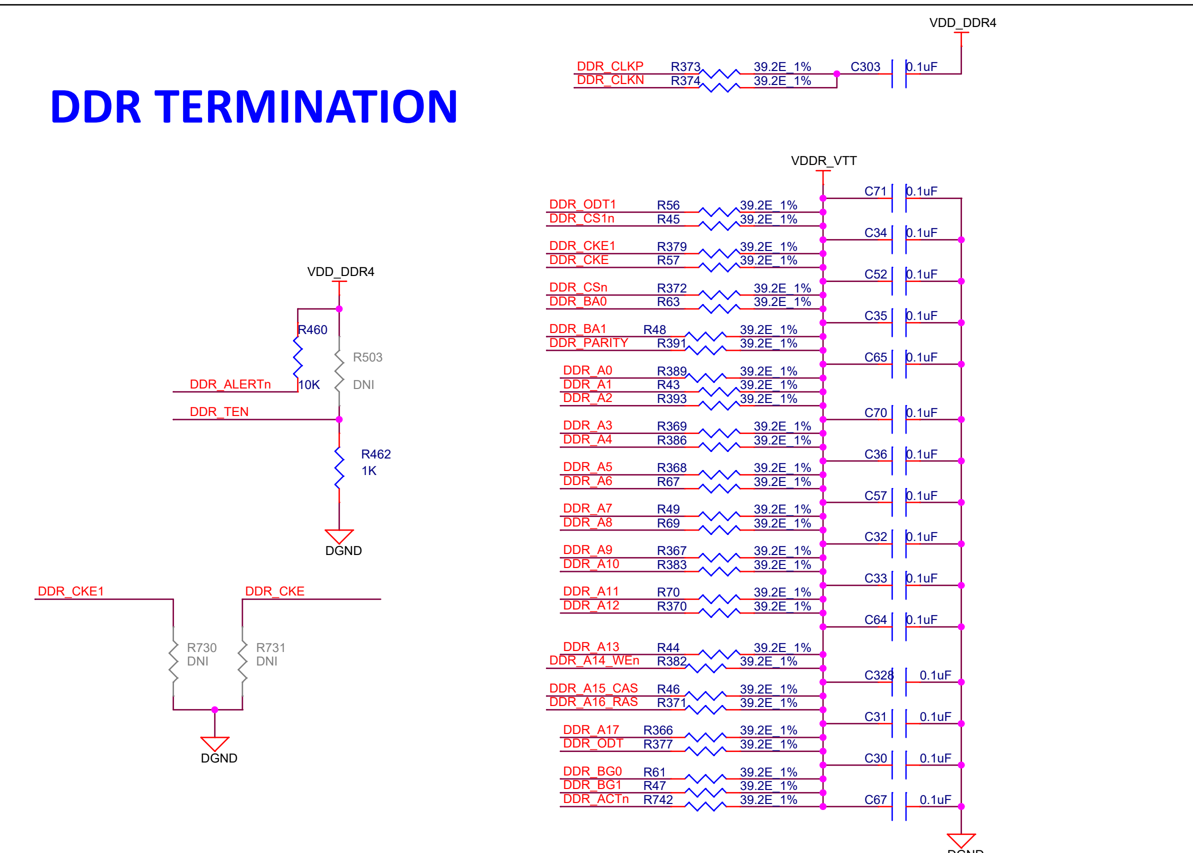
# SoC DDR INTERFACE




# ECC DEVICE




# DDR TERMINATION



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| | | |
|---|---|---|
| Title | DDR4 ECC & TERMINATIONS | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
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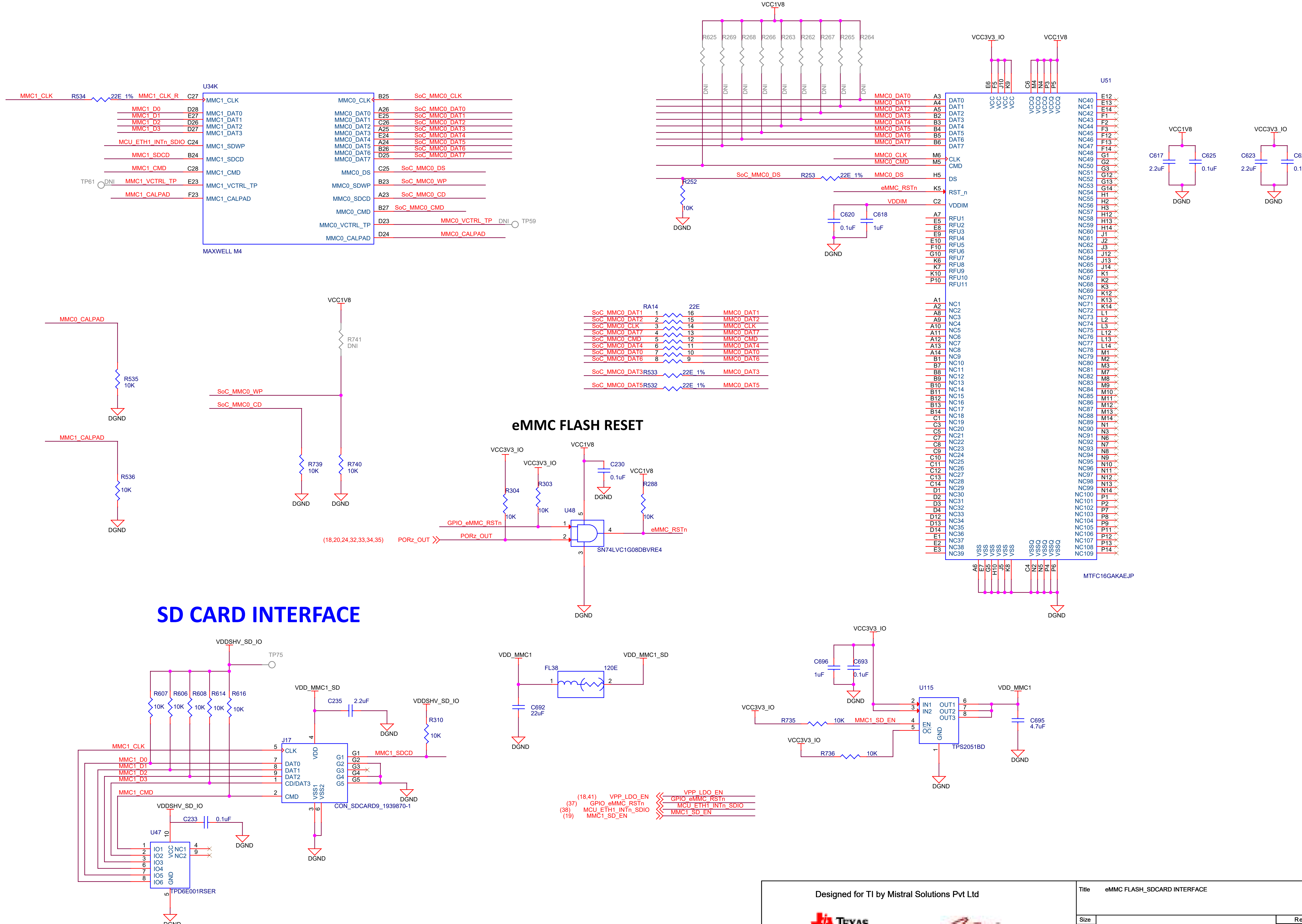
# eMMC FLASH

## eMMC FLASH RESET

## SD CARD INTERFACE

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| | |
|---|---|
| Title | eMMC FLASH_SDCARD INTERFACE |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM |
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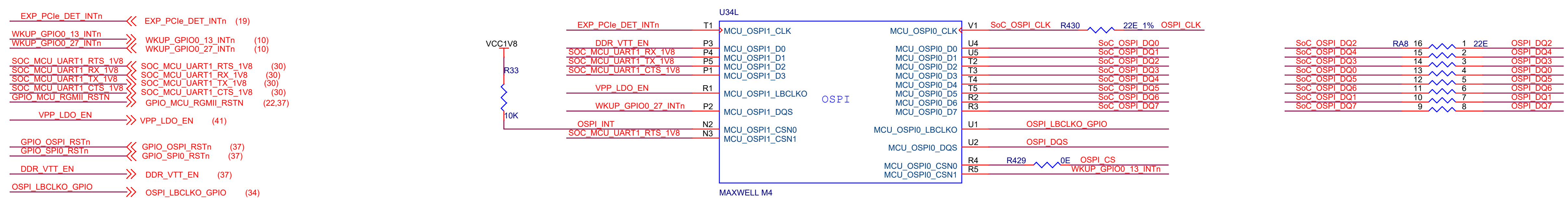
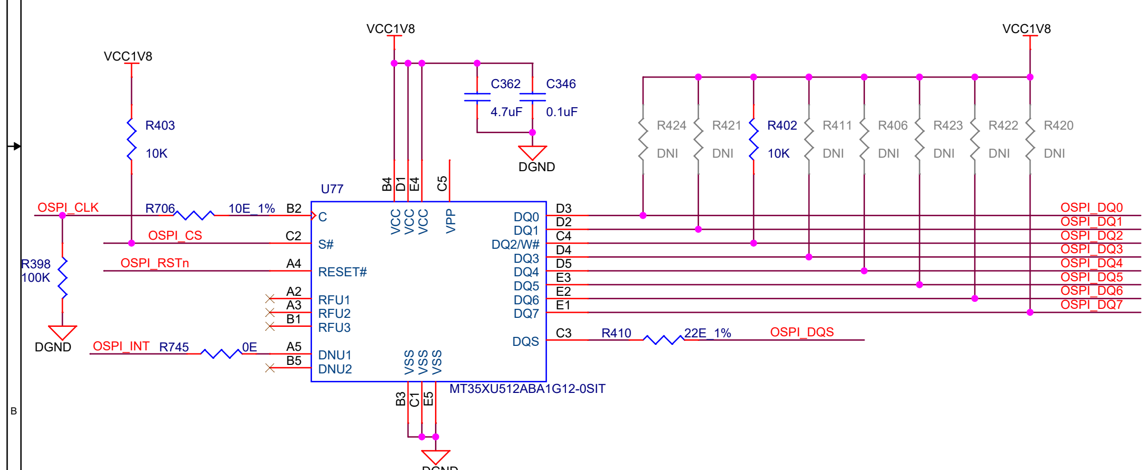
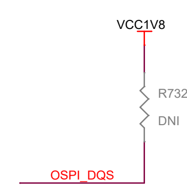
# SOC OSPI INTERFACE

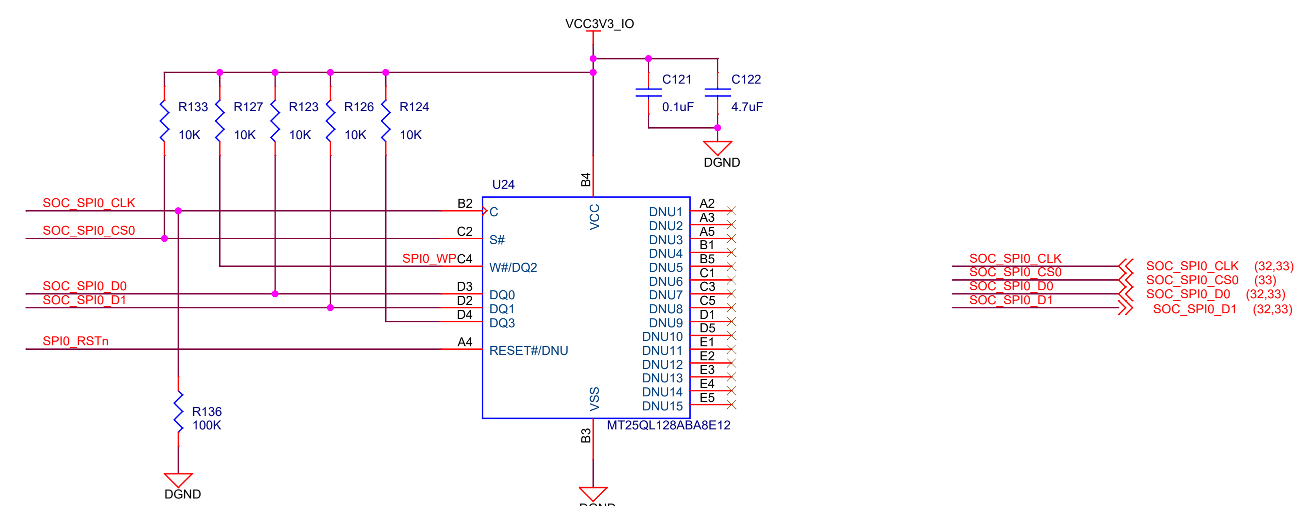



# OSPI FLASH

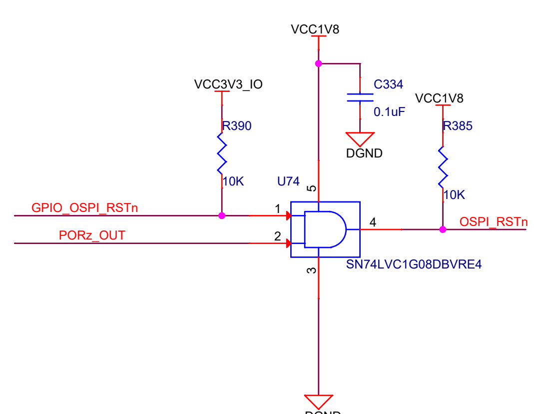


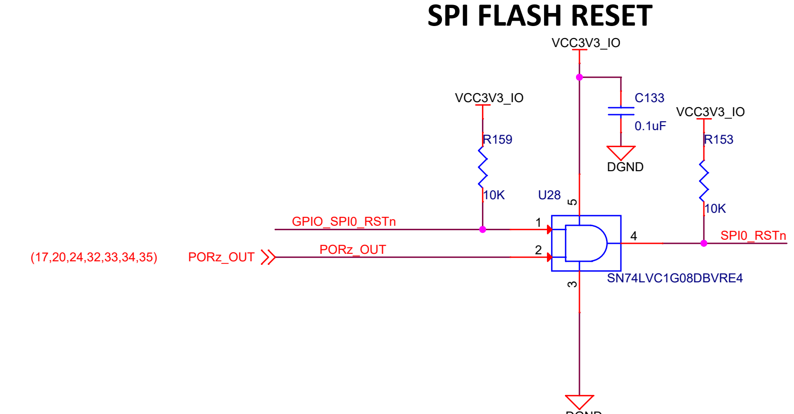

# SPI NOR Flash




# OSPI FLASH RESET




# SPI FLASH RESET

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| | |
|---|---|
| Title | OSPI FLASH & SPI NOR FLASH |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
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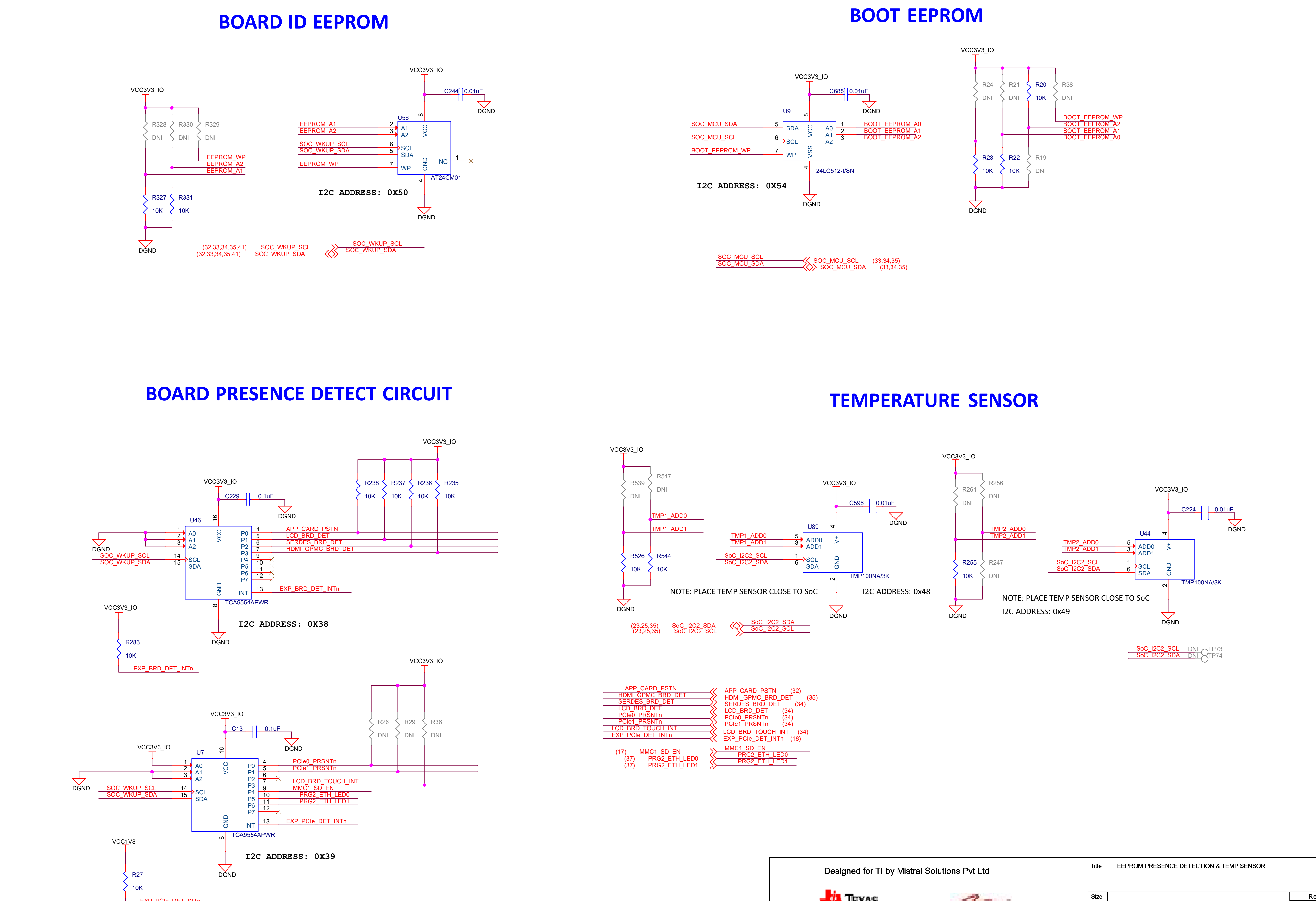


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TEXAS INSTRUMENTS

MISTRAL

| | | |
|---|---|---|
| Title | EEPROM,PRESENCE DETECTION & TEMP SENSOR | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
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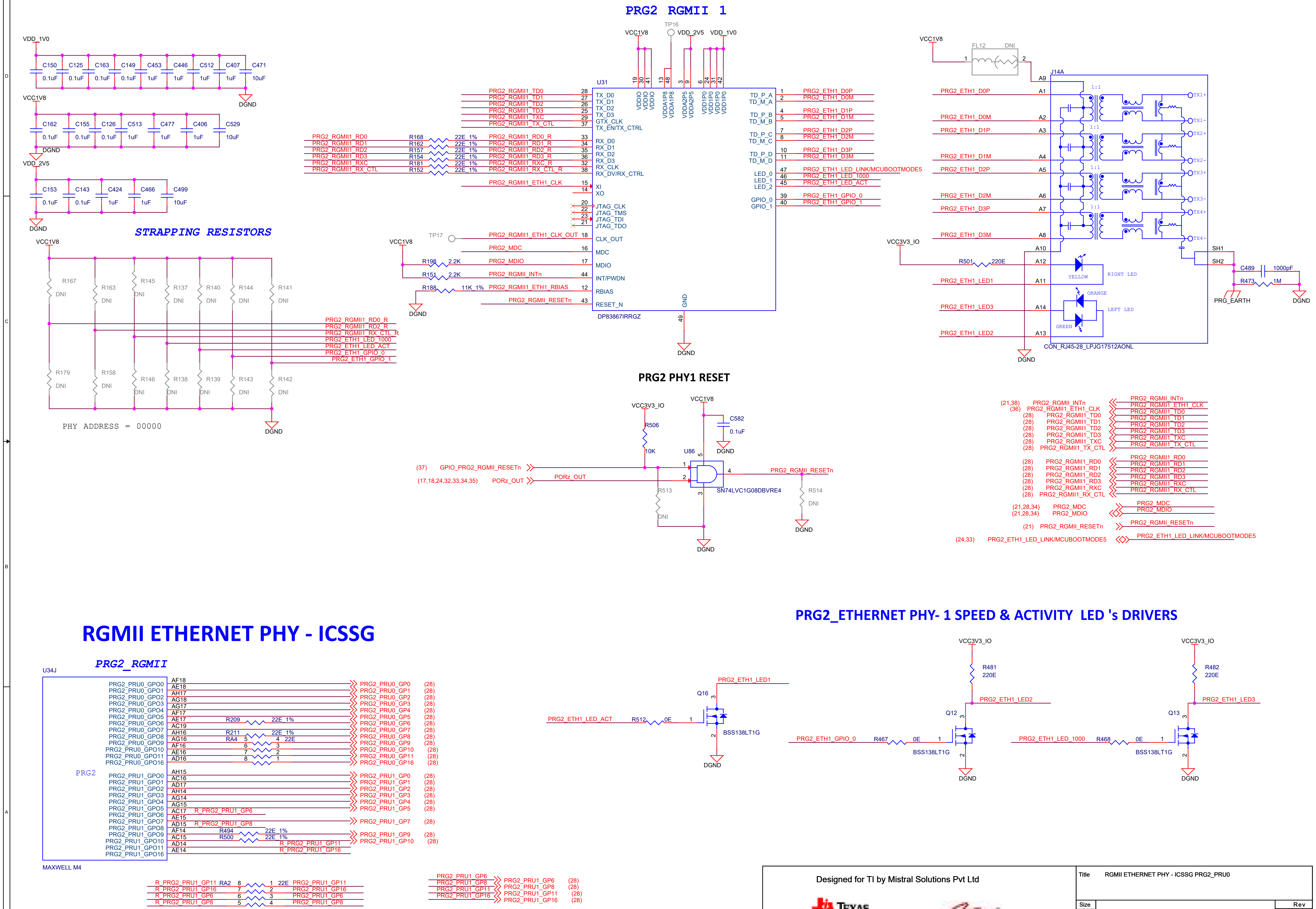


| | |
|---|---|
| Designed for TI by Mistral Solutions Pvt Ltd | Title: RGMII ETHERNET PHY - ICSSG PRG2_PRU0 |
| | Size: C — Variant Name = PROC062 003 OPN#TMDX654GPEVM — Rev: E3 |
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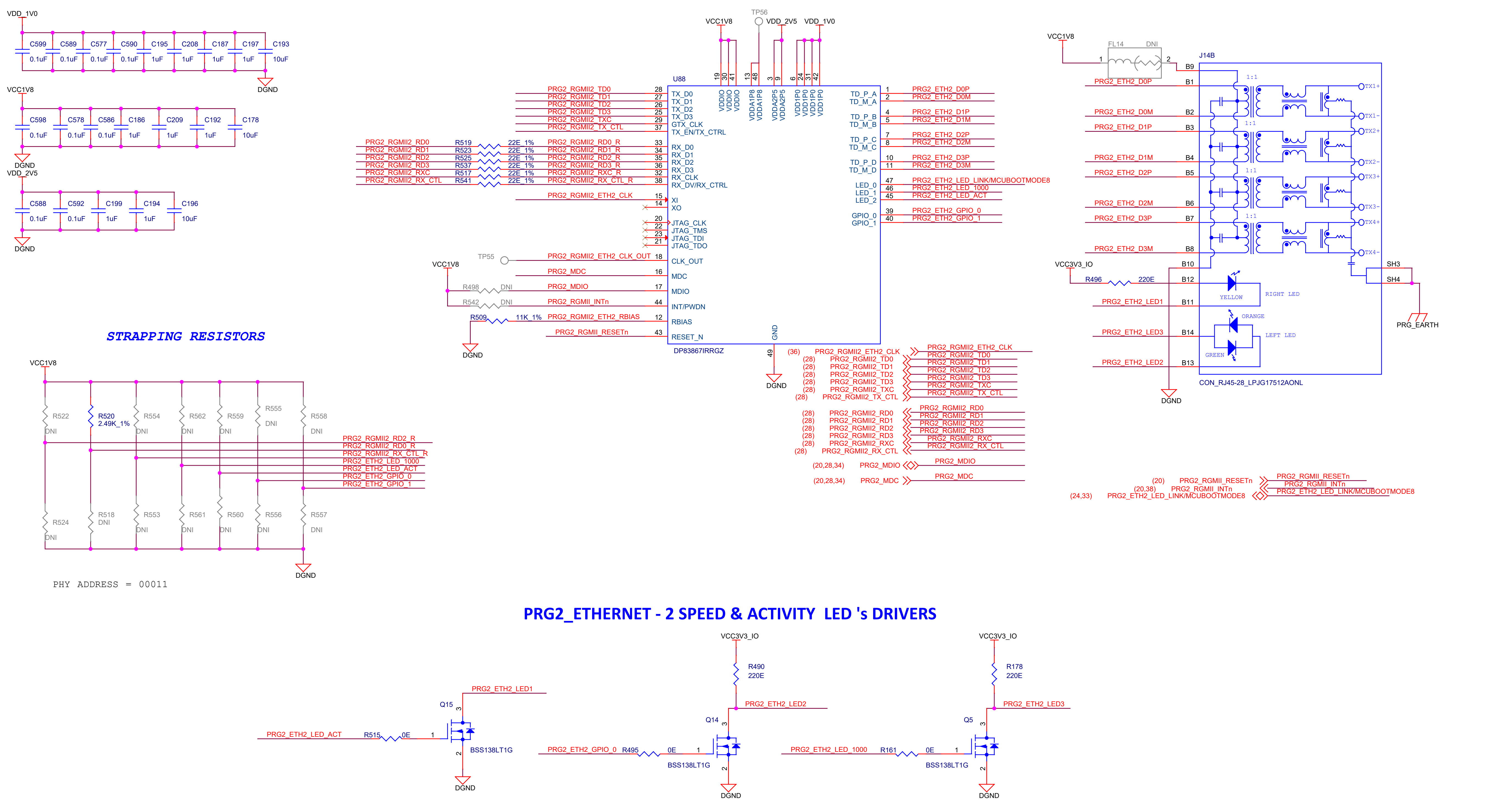
# PRG2 RGMII 2

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| | |
|---|---|
| Title | RGMII ETHERNET PHY - ICSSG PRG2_PRU1 |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
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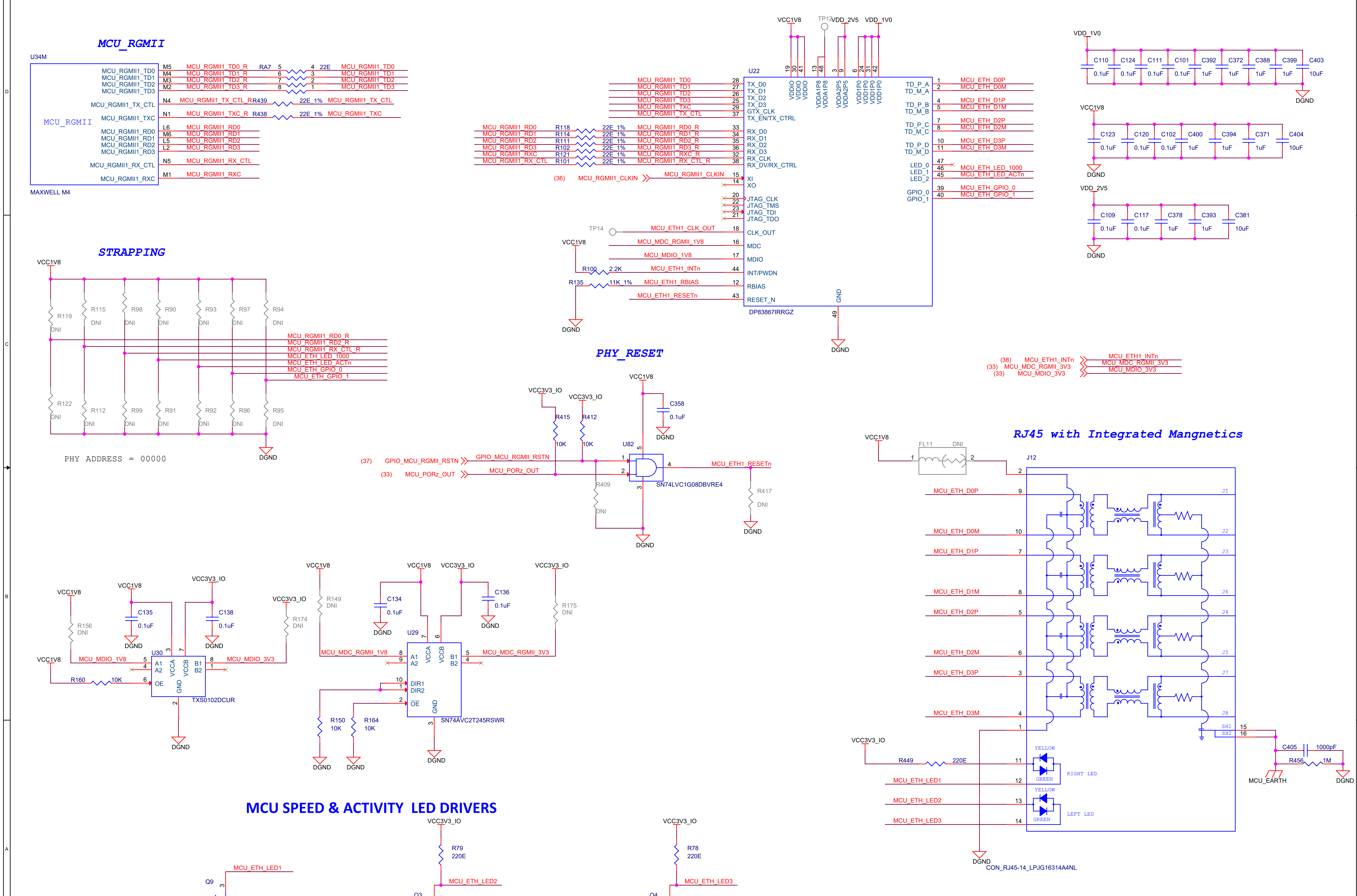
# RGMII ETHERNET PHY - MCU

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Texas Instruments

MISTRAL

| | | |
|---|---|---|
| Title | RGMII ETHERNET PHY - MCU | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
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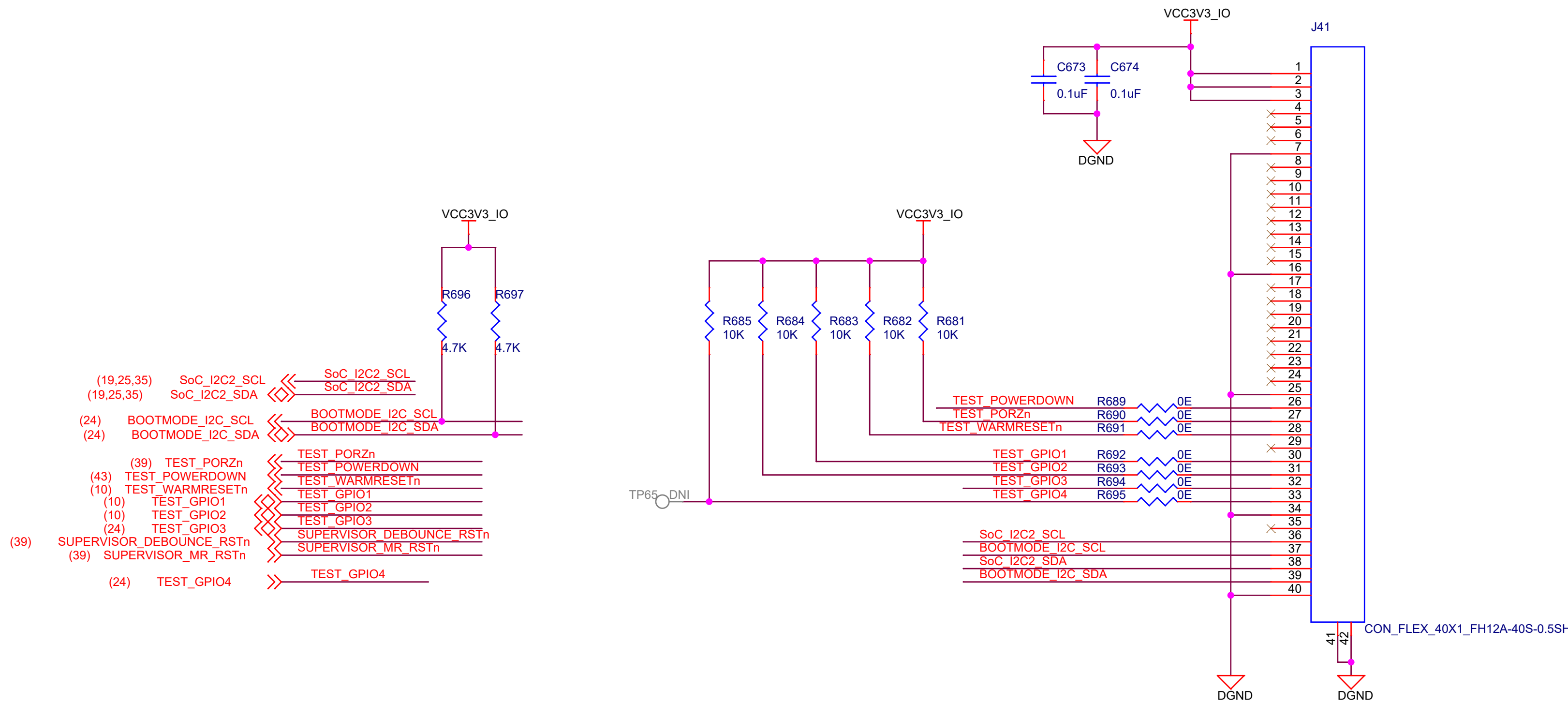
# TEST AUTOMATION

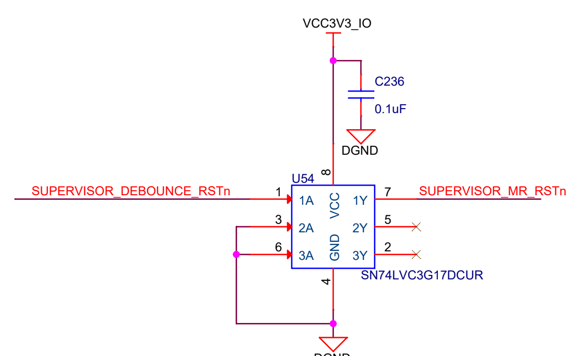
## 40-PIN AUTOMATION HEADER




## TEST AUTOMATION GPIO MAPPING

| SIGNAL NAME | DESCRIPTION | Direction WRT CTRL | Internal/ External PU/PD states |
|---|---|---|---|
| TEST_POWERDOWN | Used to Power down the OVP Circuit | OUTPUT | External Pullup |
| TEST_PORZn | Used to Reset the SoC PORz | OUTPUT | External Pullup |
| TEST_WARMRESETn | Used to Reset the SoC Warmreset | OUTPUT | External Pullup |
| TEST_GPIO1 | Used to Generate the interrupt on WKUP_GPIO0_13_INTn Pin | OUTPUT | External Pullup |
| TEST_GPIO2 | Used to Generate the interrupt on WKUP_GPIO0_27_INTn | OUTPUT | External Pullup |
| TEST_GPIO3 | Used to Enable the BOOTMODE Buffer | OUTPUT | External Pullup |
| TEST_GPIO4 | Used to Reset the Bootmode IO Expander | OUTPUT | External Pullup |

## DEBOUNCE CIRCUIT

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| | |
|---|---|
| Title | TEST AUTOMATION |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | |
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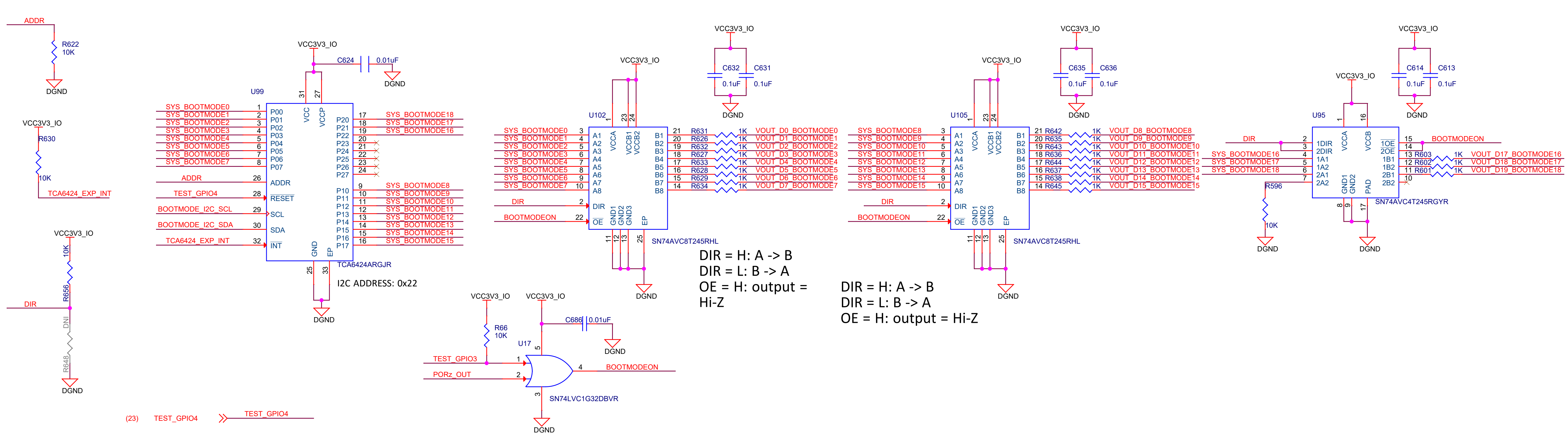
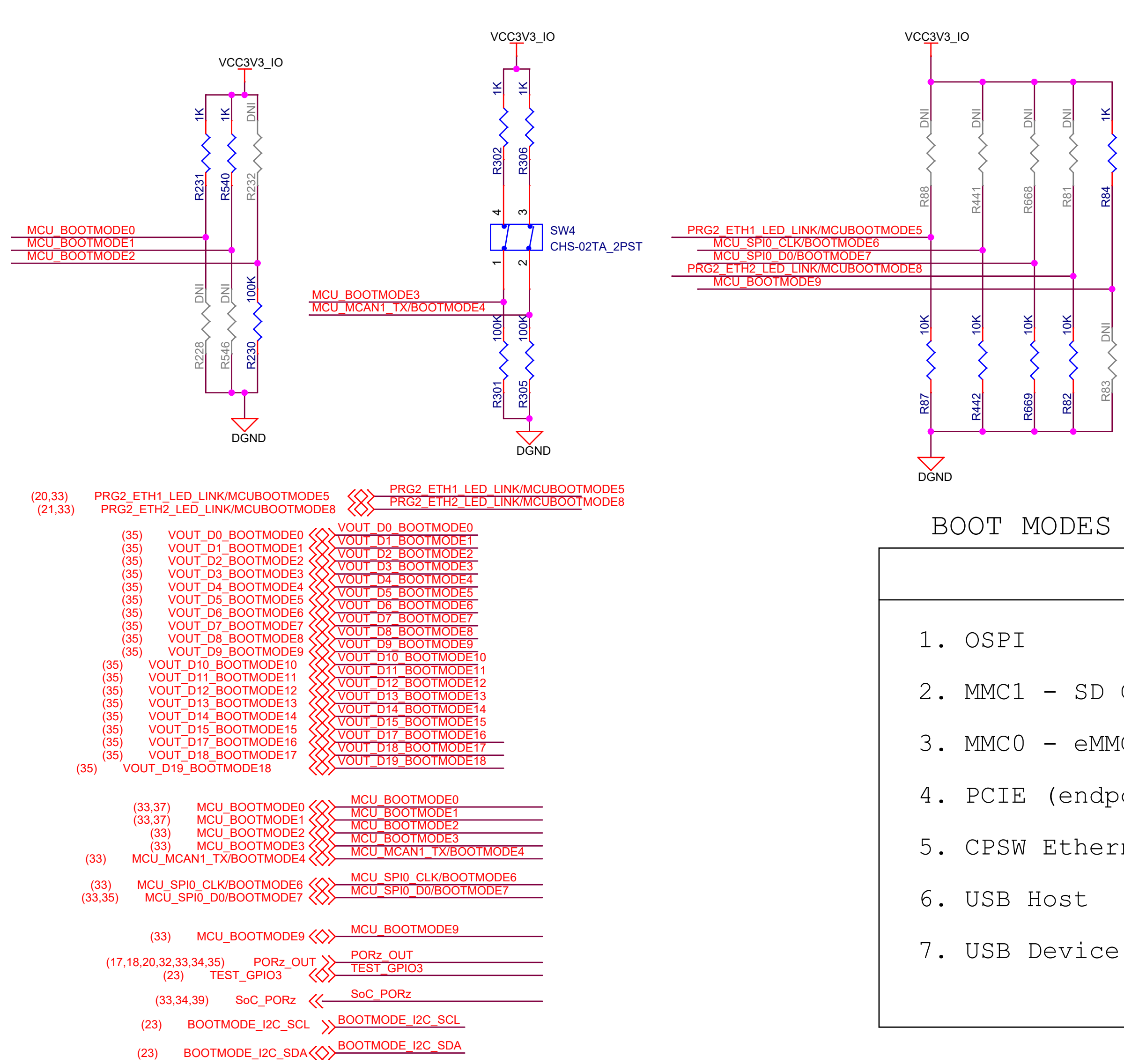
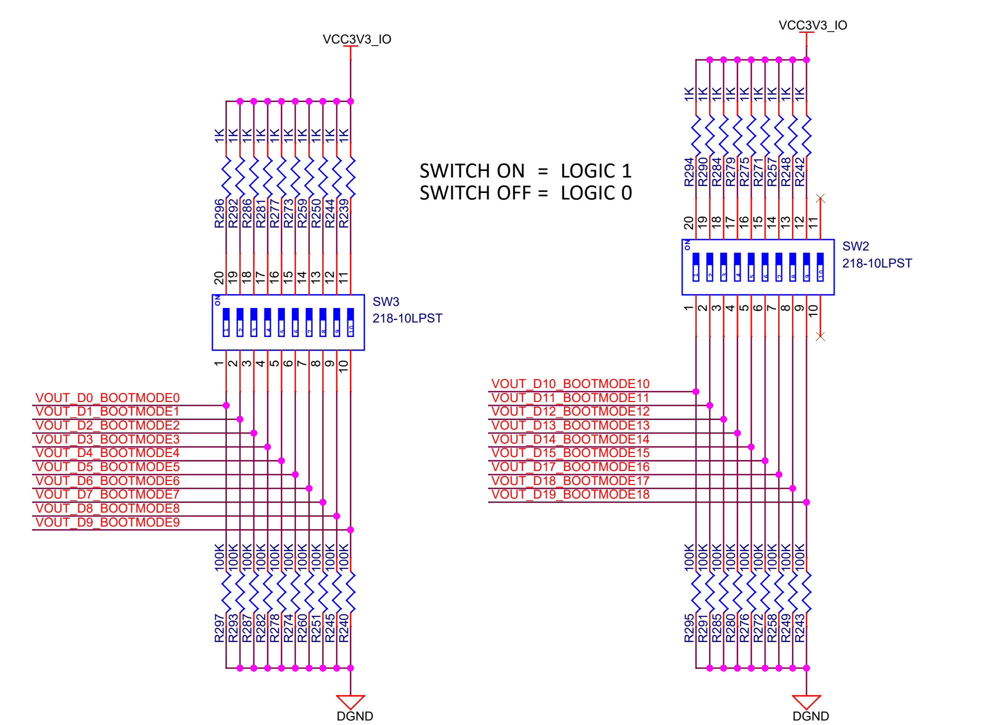
# BOOT MODE BUFFER & SWITCHES




# BOOT CONFIGURATION SETTINGS



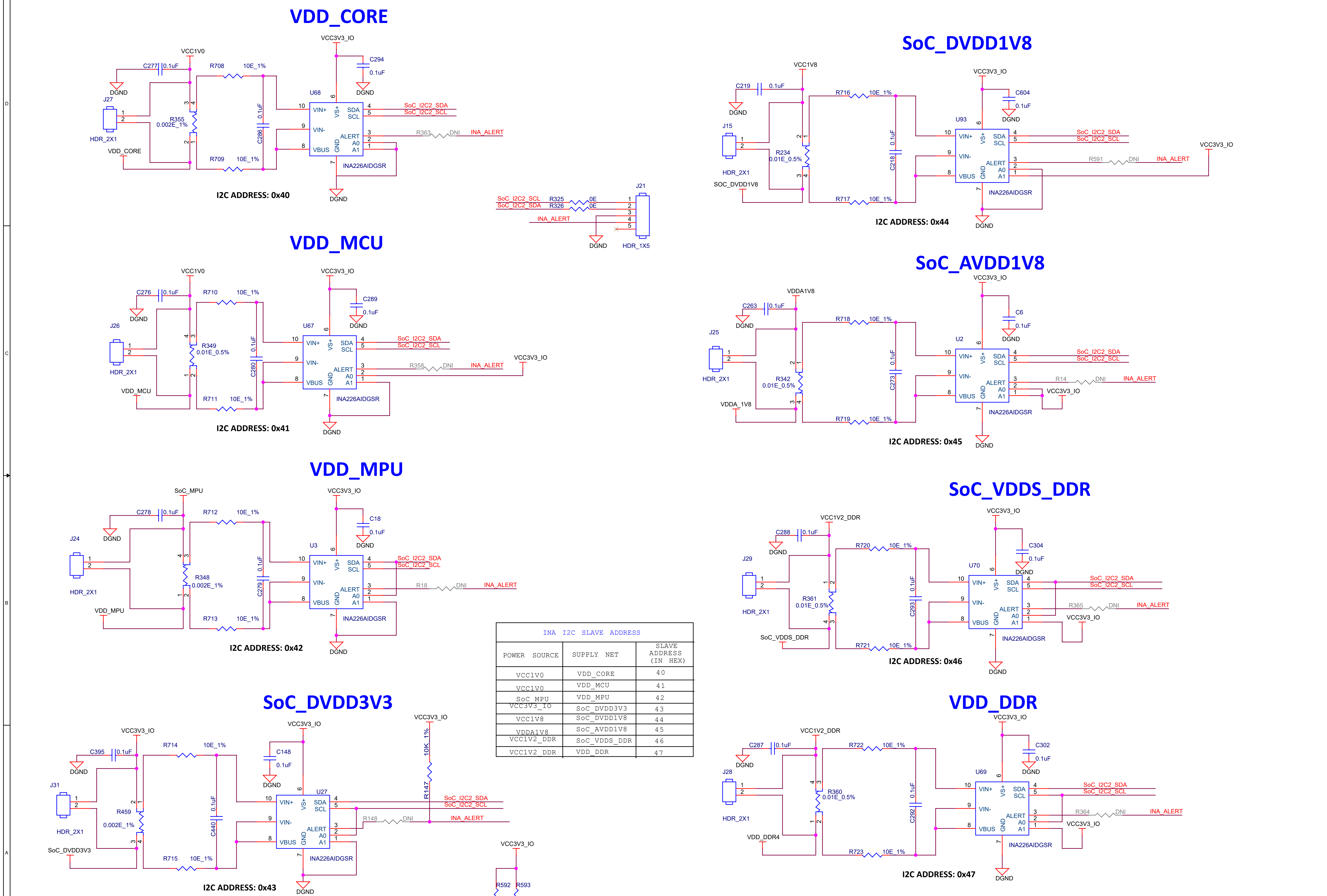

BOOT MODES SUPPORTED

1. OSPI
2. MMC1 - SD CARD
3. MMC0 - eMMC
4. PCIE (endpoint)
5. CPSW Ethernet Slave
6. USB Host
7. USB Device

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | BOOT MODE BUFFER & SWITCHES |
| Size | C |
| Variant Name | Variant Name = PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date: | Tuesday, September 04, 2018 |
| Sheet | 24 of 44 |

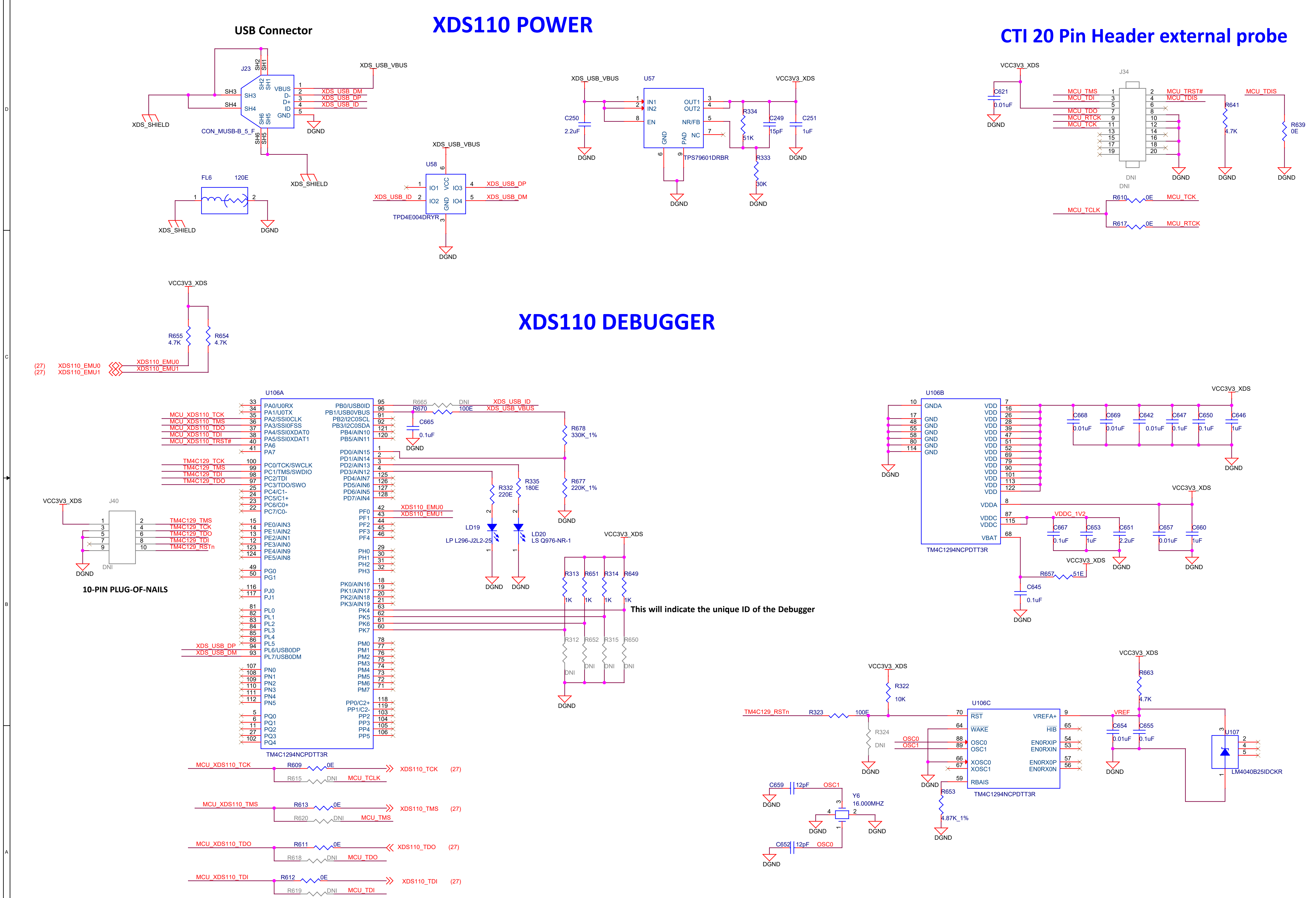
# CURRENT MONITORING DEVICES




| INA I2C SLAVE ADDRESS | | |
|---|---|---|
| POWER SOURCE | SUPPLY NET | SLAVE ADDRESS (IN HEX) |
| VCC1V0 | VDD_CORE | 40 |
| VCC1V0 | VDD_MCU | 41 |
| SoC_MPU | VDD_MPU | 42 |
| VCC3V3_IO | SoC_DVDD3V3 | 43 |
| VCC1V8 | SoC_DVDD1V8 | 44 |
| VDDA1V8 | SoC_AVDD1V8 | 45 |
| VCC1V2_DDR | SoC_VDDS_DDR | 46 |
| VCC1V2_DDR | VDD_DDR | 47 |

Designed for TI by Mistral Solutions Pvt Ltd

Title: CURRENT MONITORING DEVICES
Size: C
Variant Name = PROC062 003 OPN#TMDX654GPEVM
Rev: E3
Date: Tuesday, July 24, 2018

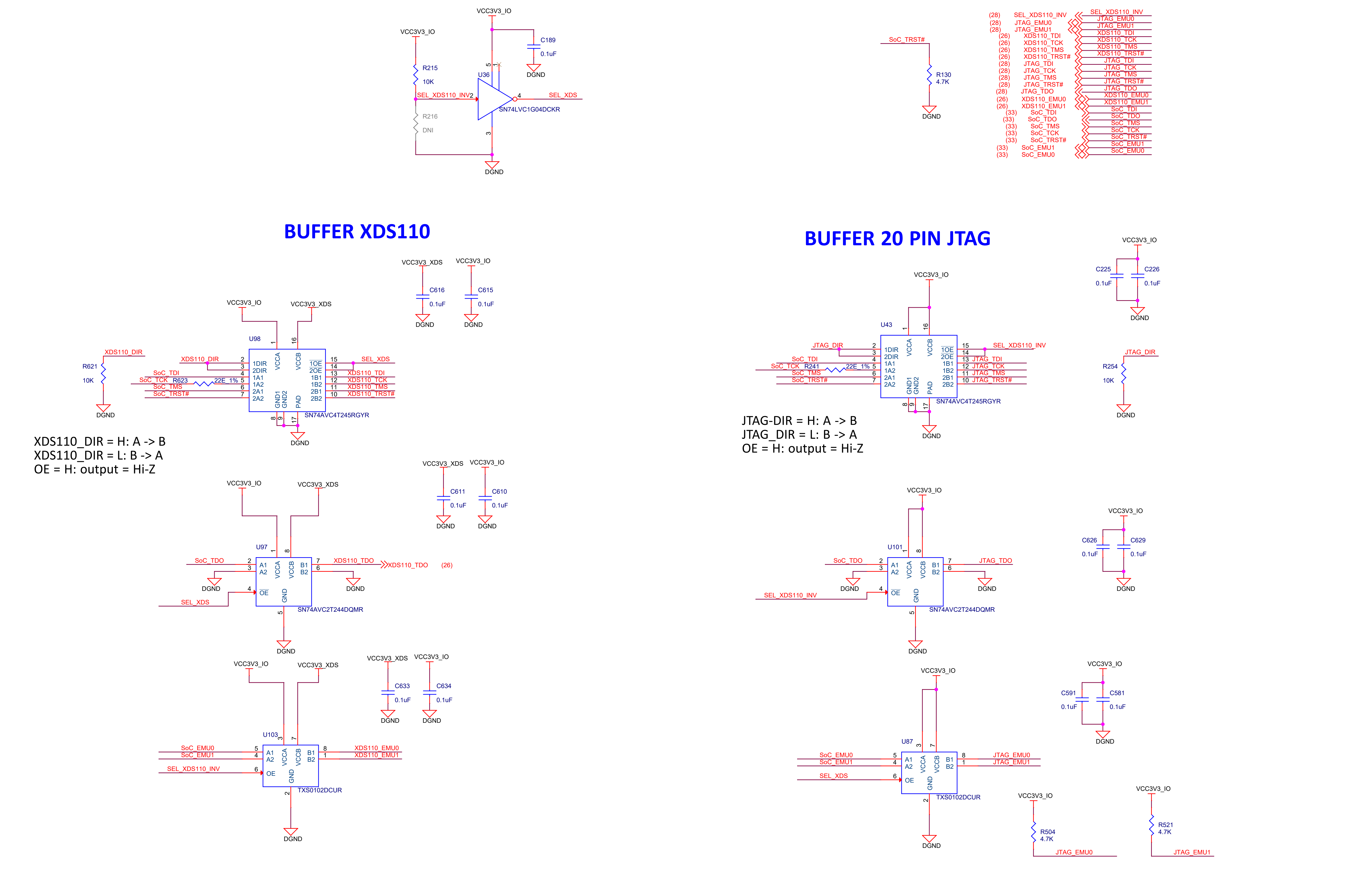



0- Ohm Res MUX between XDS110 JTAG and MCU cTI 20 pin connector.
-For XDS110 JTAG R609,R613,R611,R612 and R646 Should be installed and R615,R620,R618,R619 and R640 Should be DNI'd.
-For MCU cTI 20 pin , R615,R620,R618,R619 and R640 Should be Installed and R609,R613,R611,R612 and R646 Should be DNI'd.

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | XDS110 DEBUGGER |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | |
| Rev | E3 |
| Date: | Friday, August 31, 2018 |
| Sheet | 26 of 44 |

# JTAG BUFFER

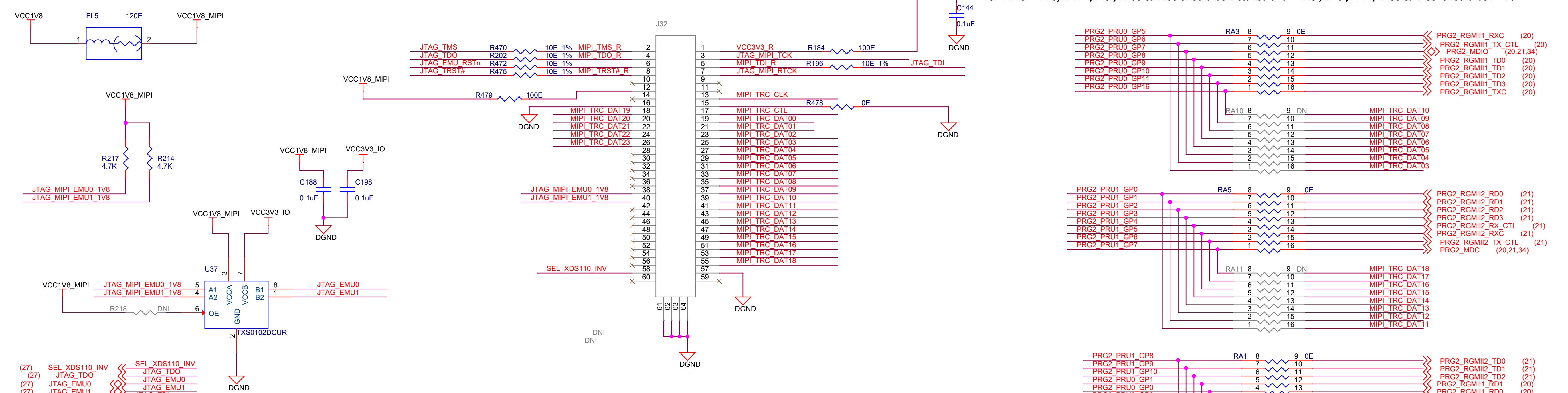



Designed for TI by Mistral Solutions Pvt Ltd

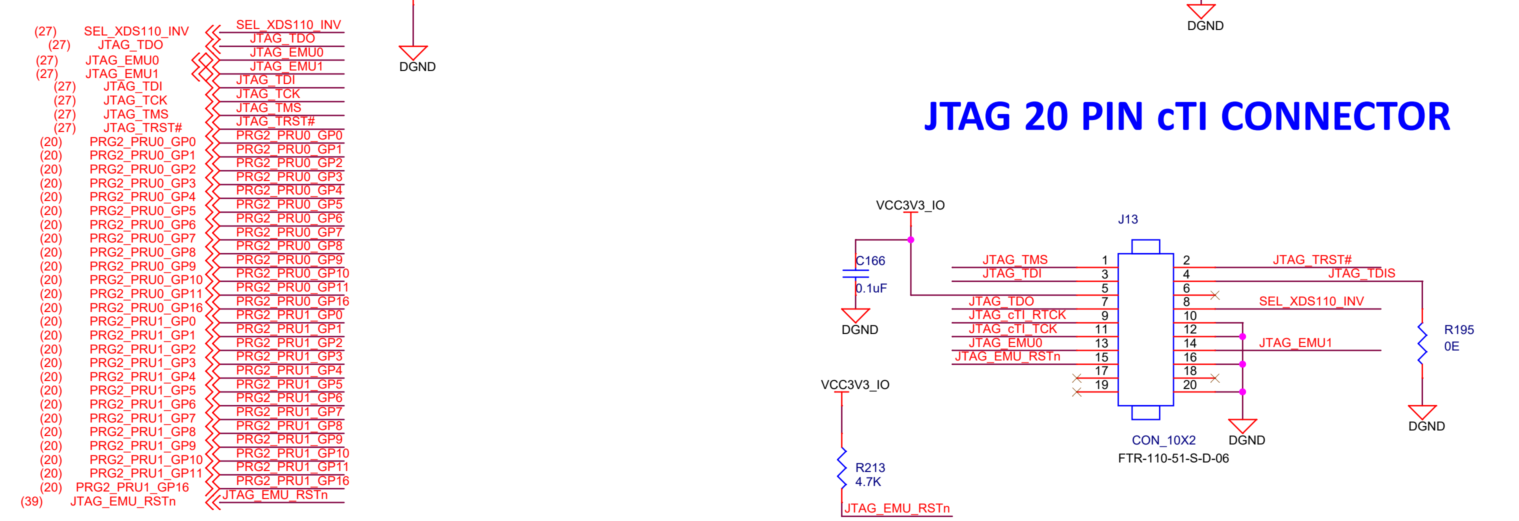
| | |
|---|---|
| Title | JTAG BUFFER |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Friday, August 31, 2018 | Sheet 27 of 44 |

# MIPI 60 PIN CONNECTOR

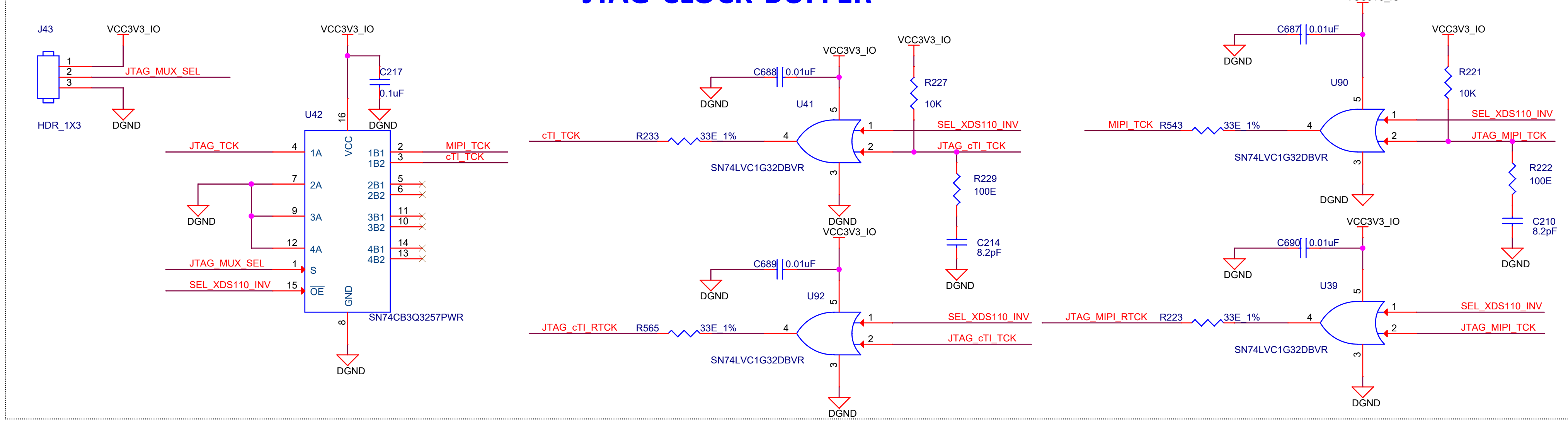
0- Ohm Res MUX between PRG2_Ethernet PHY (CP Board PHY) and JTAG TRACE Funct i onality
-For PRG2_Ethernet PHY RA3 , RA5 , RA1 , R180 & R183 Should be installed and RA10, RA11 ,RA9 , R466 & R463 Should be DNI'd.
-For TRACE RA10, RA11 ,RA9 , R466 & R463 Should be Installed and RA3 , RA5 , RA1 , R180 & R183 Should be DNI'd.




# JTAG 20 PIN cTI CONNECTOR



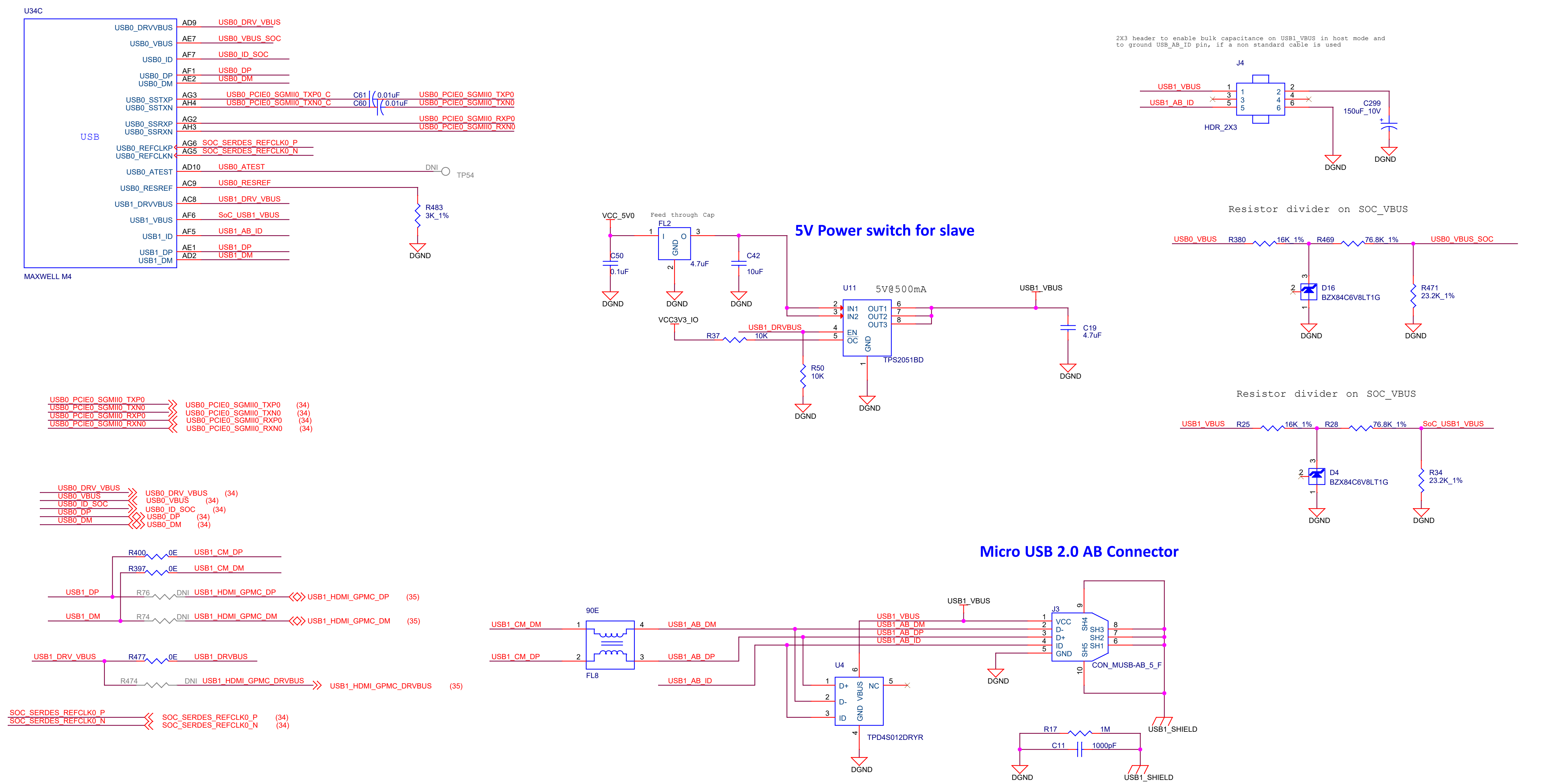

# JTAG CLOCK BUFFER

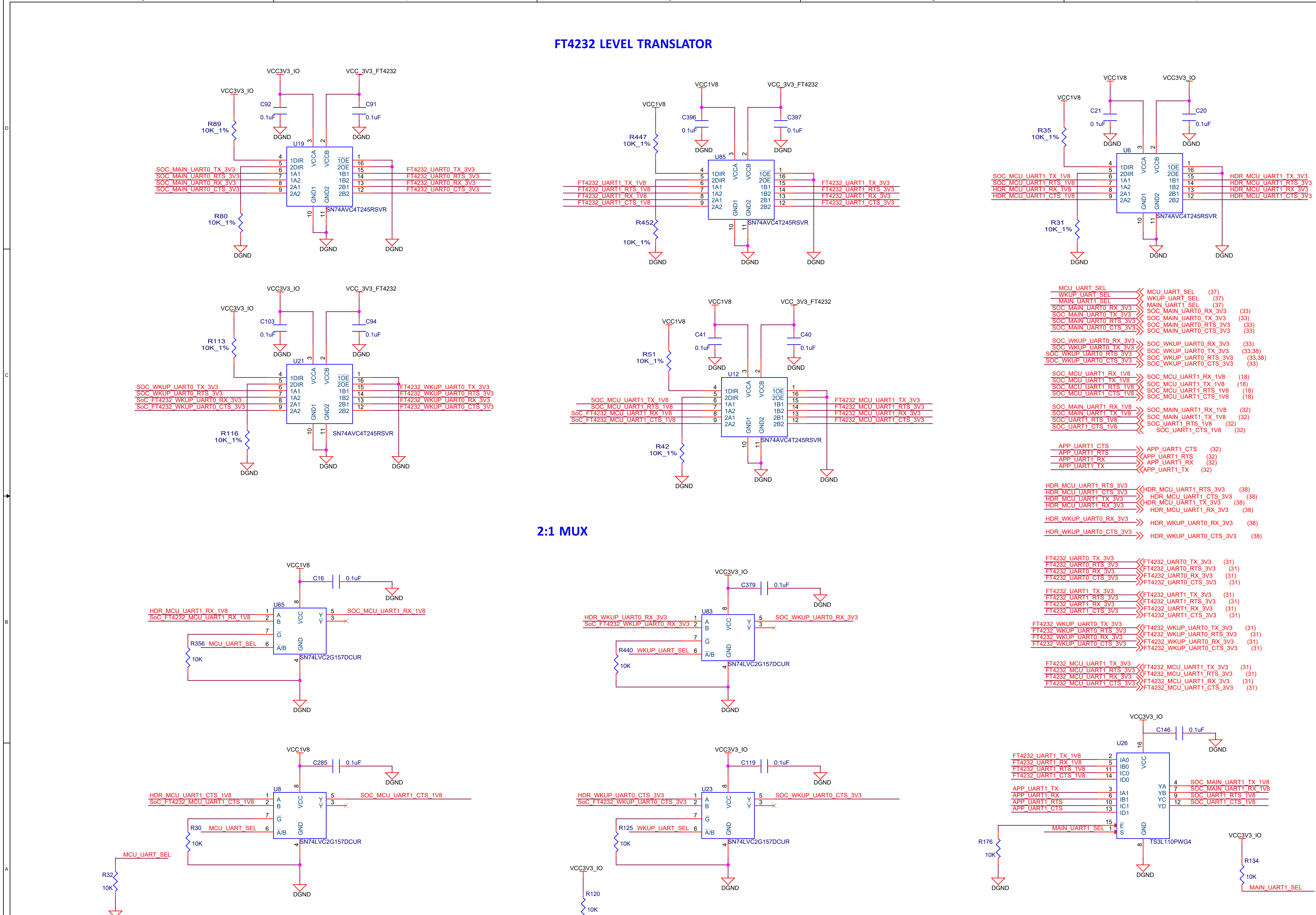



Designed for TI by Mistral Solutions Pvt Ltd

| | | |
|---|---|---|
| Title | MIPI 60 PIN CONNECTOR | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Friday, August 31, 2018 | Sheet 28 of 44 | |

# USB 2.0 INTERFACE

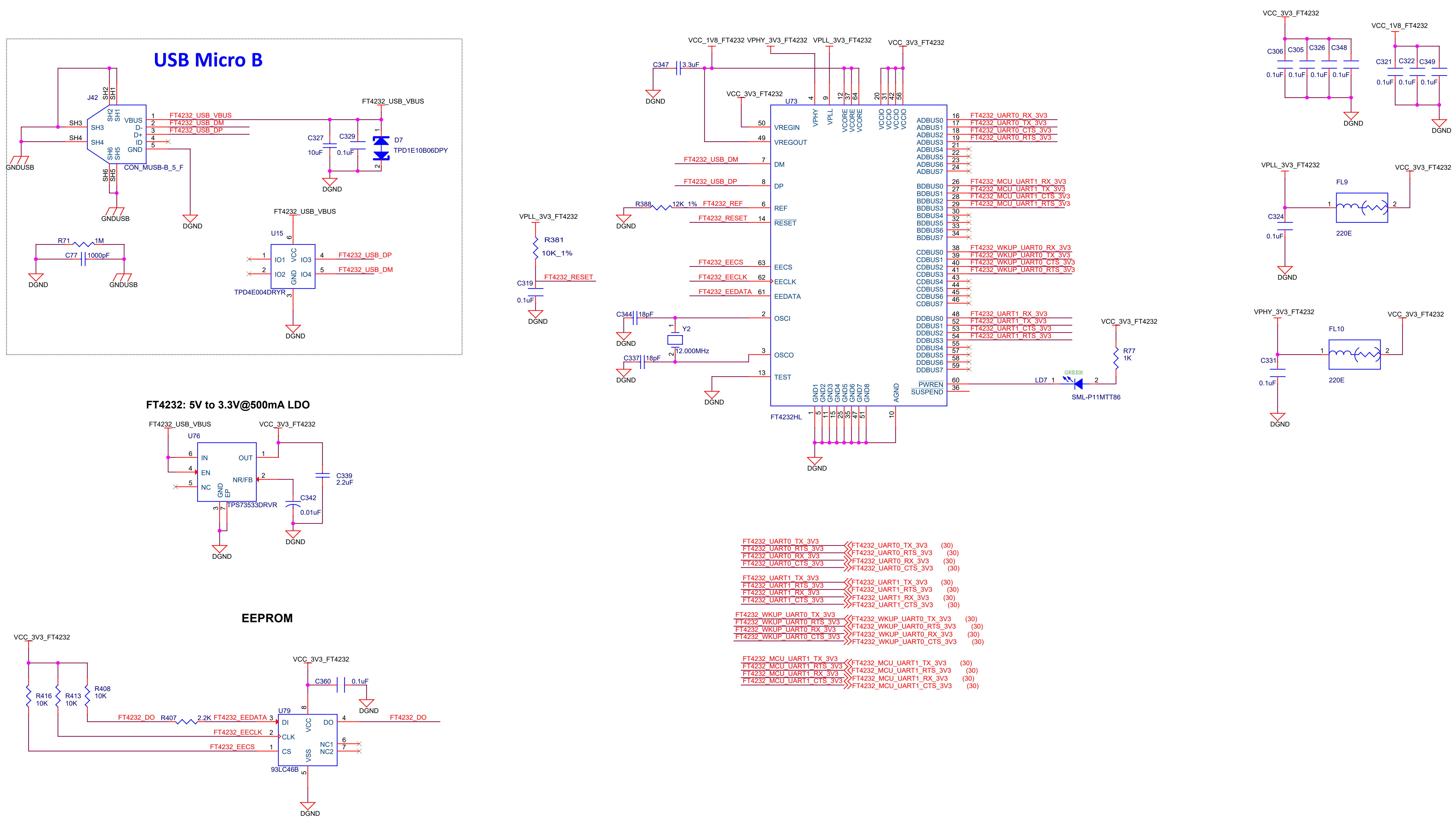





Designed for TI by Mistral Solutions Pvt Ltd

| | | | |
|---|---|---|---|
| Title | FT4232 LEVEL TRANSLATOR | | |
| Size | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | Rev |
| C | | | E3 |
| Date: | Tuesday, September 04, 2018 | Sheet 30 of 44 | |

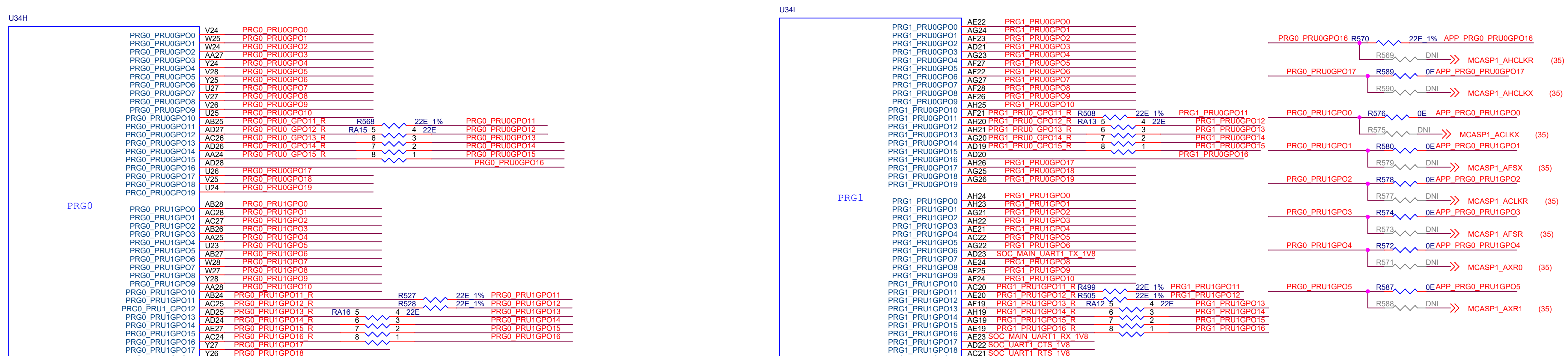
# FT4232 UART




Designed for TI by Mistral Solutions Pvt Ltd

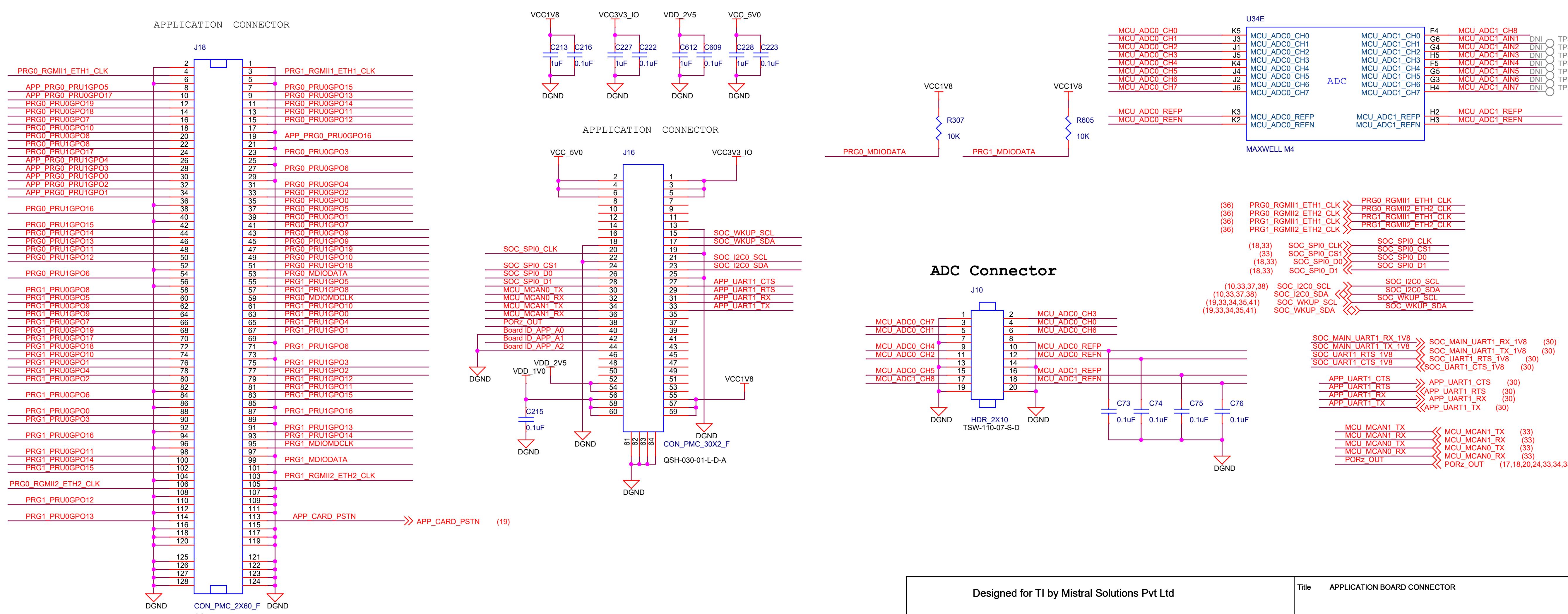
| | |
|---|---|
| Title | FT4232 UART TO USB BRIDGE |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date: | Friday, August 31, 2018 |
| Sheet | 31 of 44 |

# APPLICATION BOARD INTERFACE




**0- Ohm Res MUX between APPLICATION Board connector and HDMI / GPMC Daughter card.**
**-For APPLICATION Board connector R570 , R589 ,R576 ,R580 ,R578, R574 ,R572 & R587 Should be installed and R569, R590, R575, R579 ,R577 , R573, R571 & R588 Should be DNI'd.**
**-For HDMI / GPMC Daughter card R569, R590, R575, R579 ,R577 , R573, R571 & R588 Should be Installed and R570 , R589 ,R576 ,R580 ,R578, R574 ,R572 & R587 Should be DNI'd.**

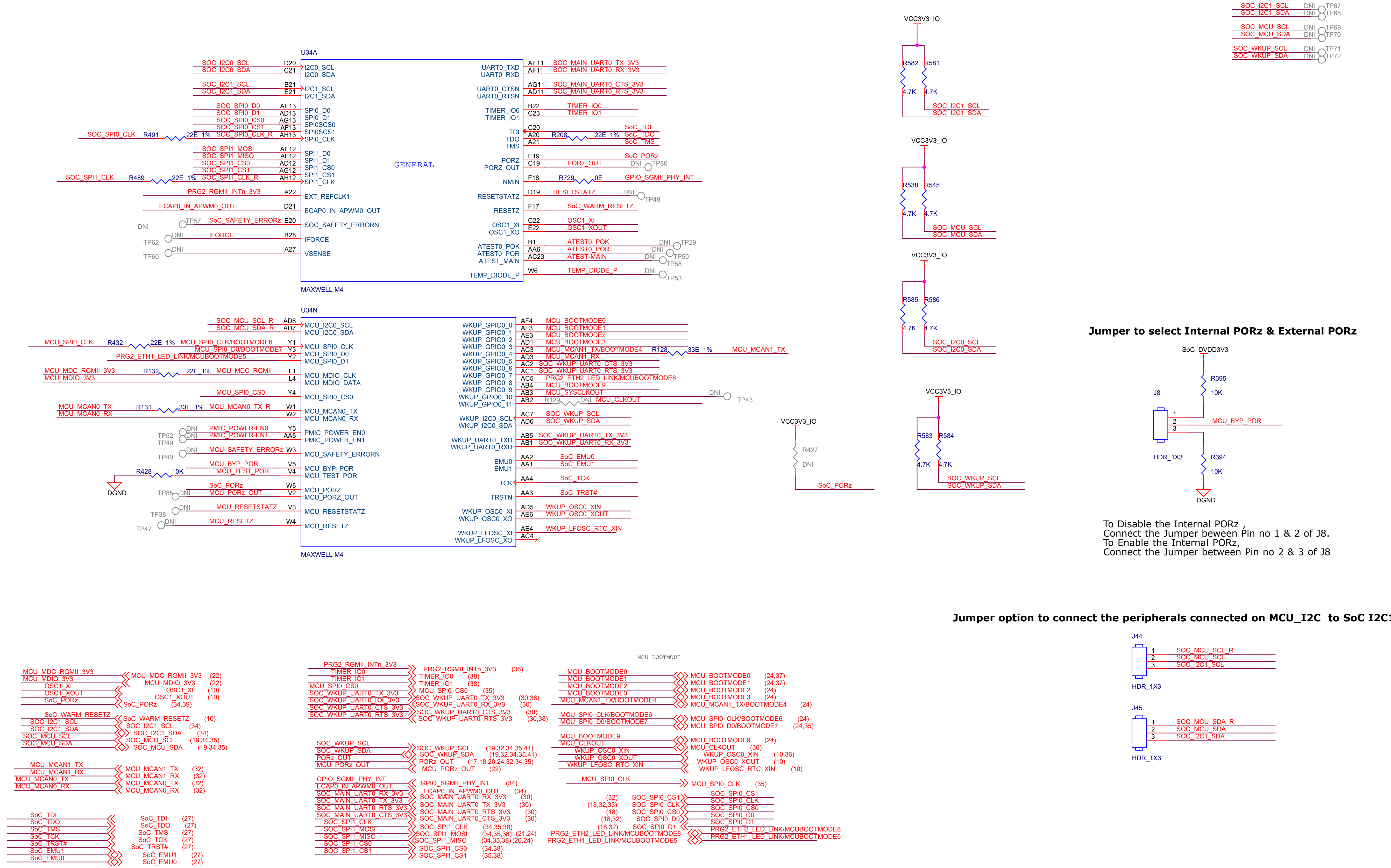
# APPLICATION BOARD CONNECTORS




Designed for TI by Mistral Solutions Pvt Ltd

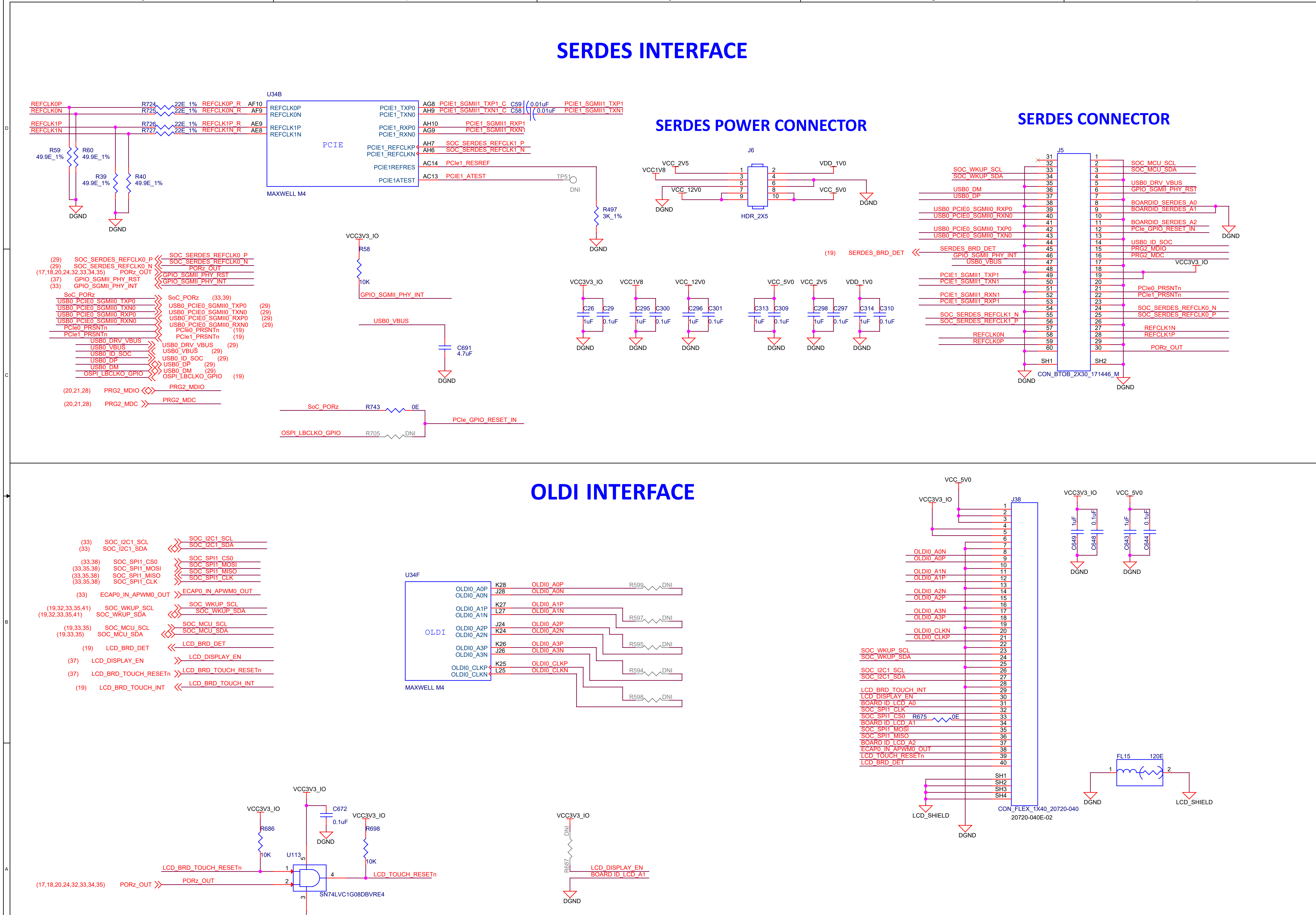
| | |
|---|---|
| Title | APPLICATION BOARD CONNECTOR |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date: | Tuesday, September 04, 2018 |
| Sheet | 32 of 44 |

# GENERAL & MCU_GENERAL



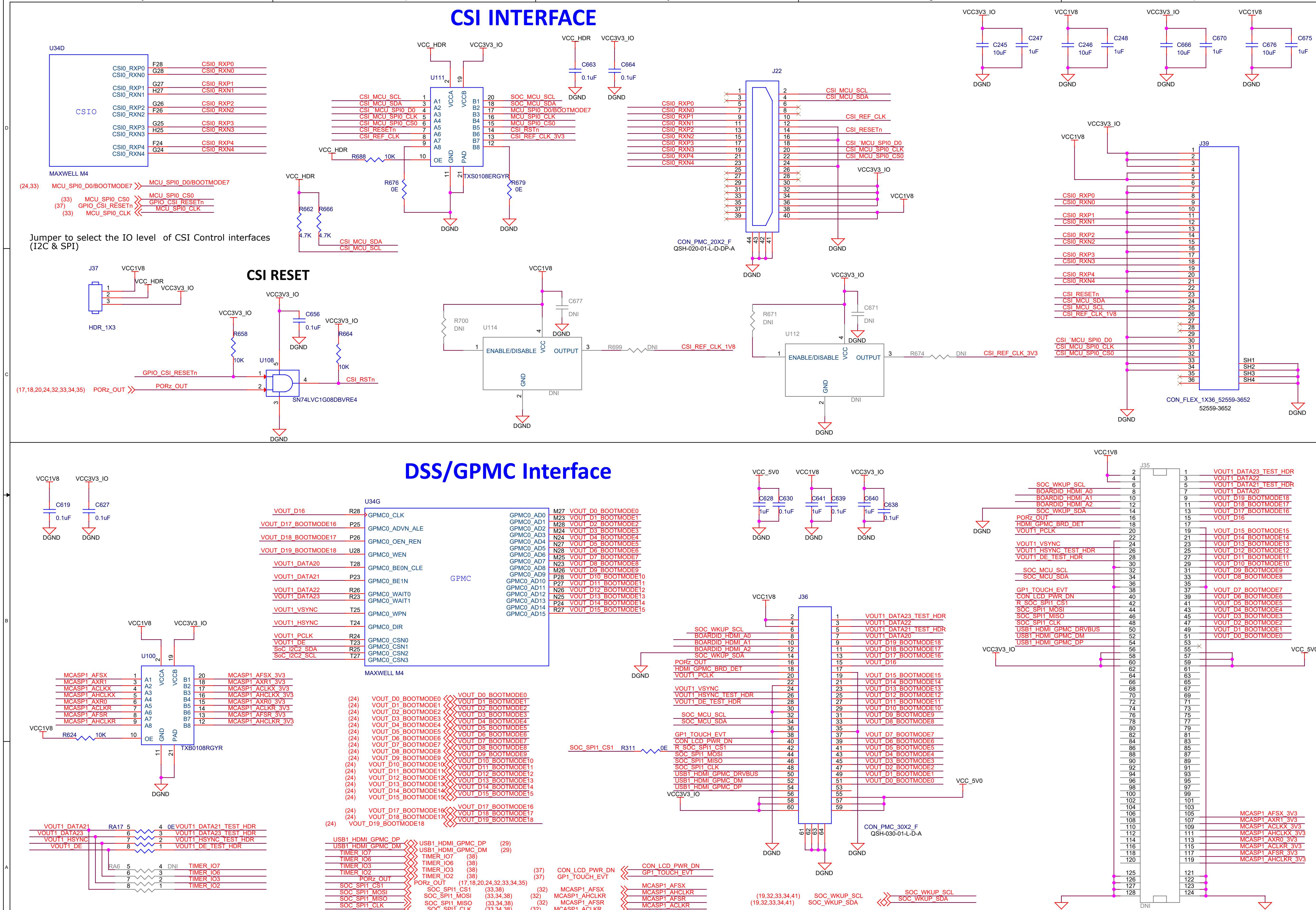

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | SOC_GENERAL & MCU GENERAL |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | |
| Rev | E3 |
| Date: | Tuesday, September 04, 2018 |
| Sheet | 33 of 44 |




Designed for TI by Mistral Solutions Pvt Ltd

| | | | |
|---|---|---|---|
| Title | SERDES & DISPLAY INTERFACE | | |
| Size | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | Rev |
| C | | | E3 |
| Date: | Tuesday, September 04, 2018 | Sheet 34 of 44 | |



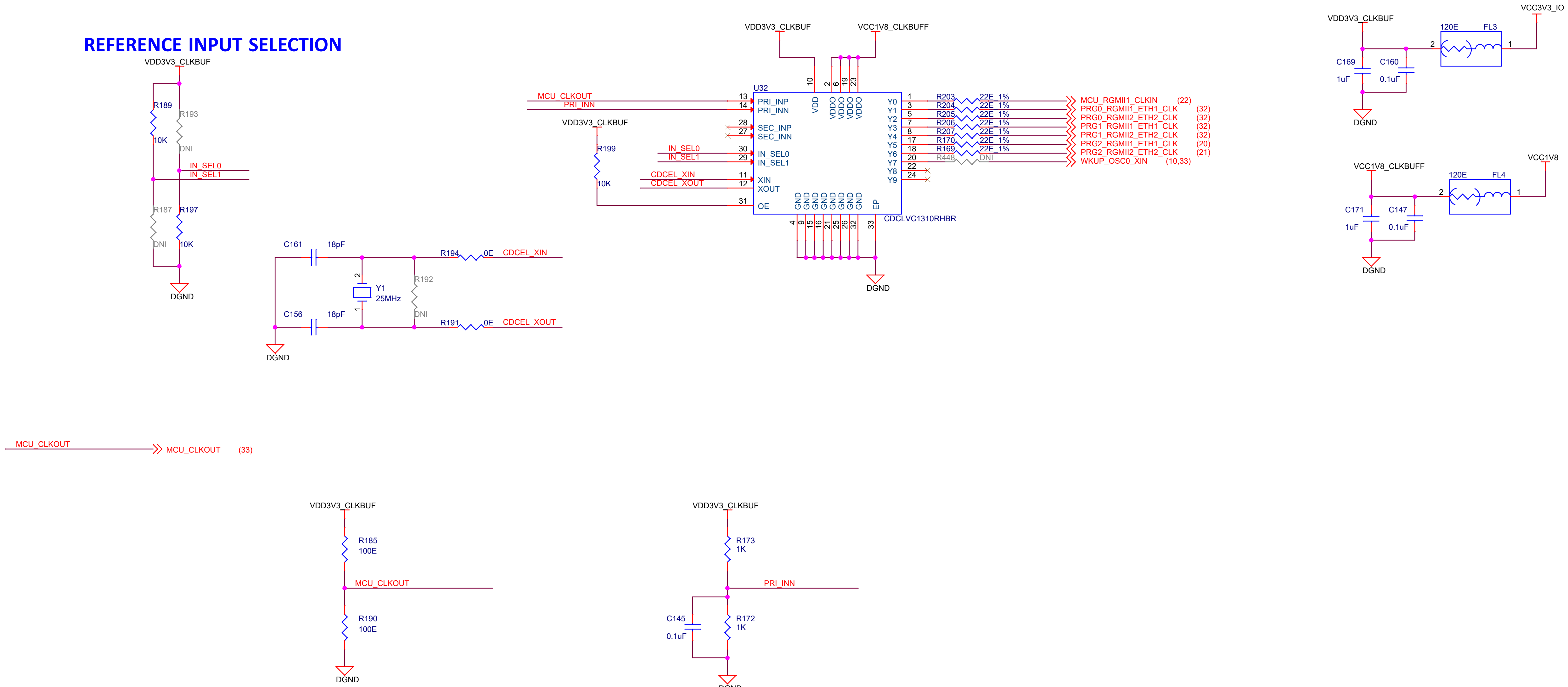

0- Ohm Res MUX between HDMI / GPMC and Test Header Timer signals.
-For HDMI / GPMC , RA17 Should be installed and RA6 Should be DNI'd.
-For test header Timer signals , RA6 Should be Installed and RA17 Should be DNI'd.

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | CSI,GPMC/DSS INTERFACE |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | |
| Rev | E3 |
| Date: | Tuesday, September 04, 2018 |
| Sheet | 35 of 44 |

# ETHERNET PHY CLOCK BUFFER

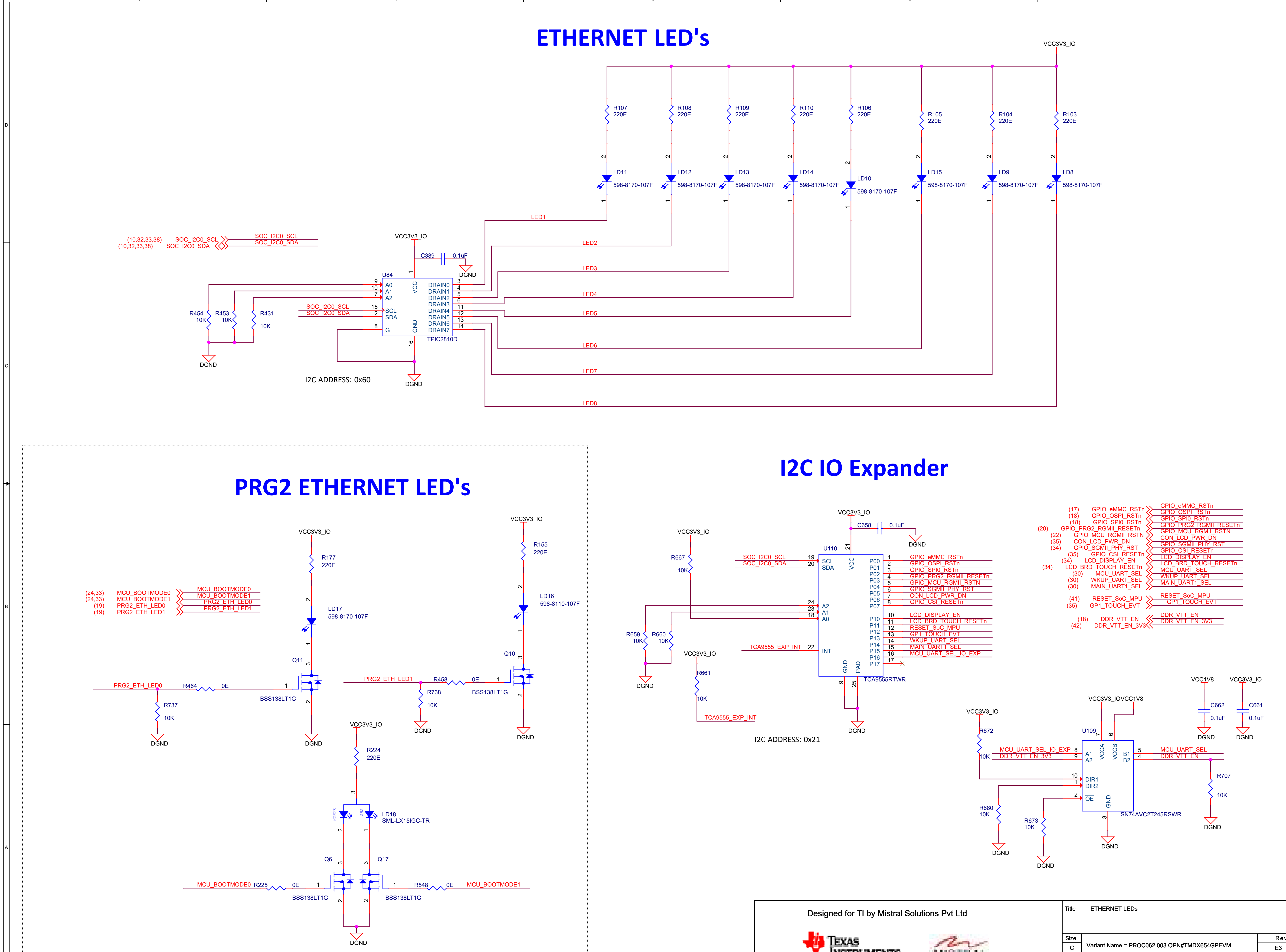
## REFERENCE INPUT SELECTION




Designed for TI by Mistral Solutions Pvt Ltd

TEXAS INSTRUMENTS MISTRAL

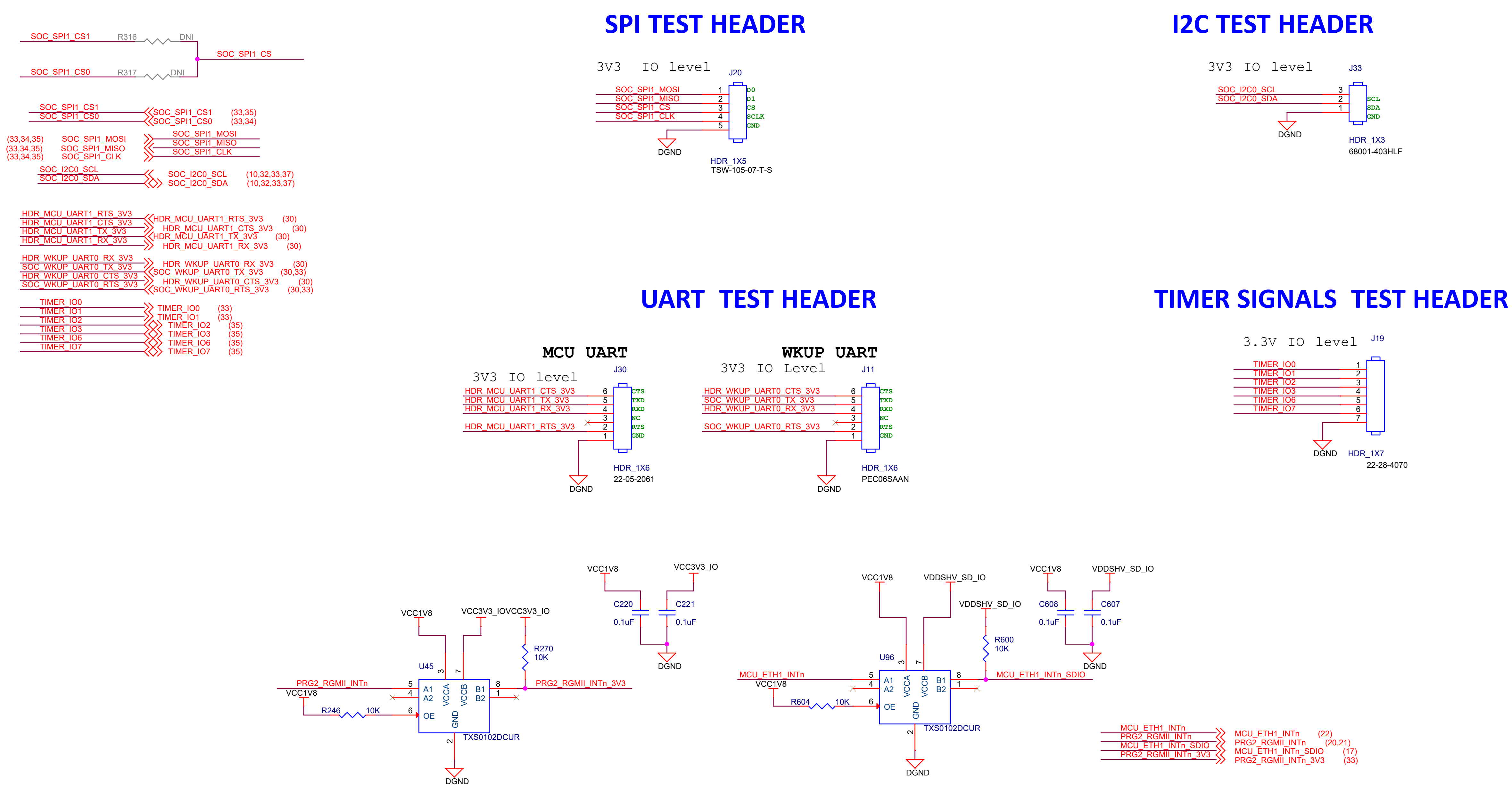
| | | |
|---|---|---|
| Title | ETHERNET PHY CLOCK GENERATOR | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Friday, August 31, 2018 | Sheet 36 of 44 | |




Designed for TI by Mistral Solutions Pvt Ltd

| | | |
|---|---|---|
| Title | ETHERNET LEDs | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Tuesday, July 24, 2018 | Sheet 37 of 44 | |

# TEST HEADER

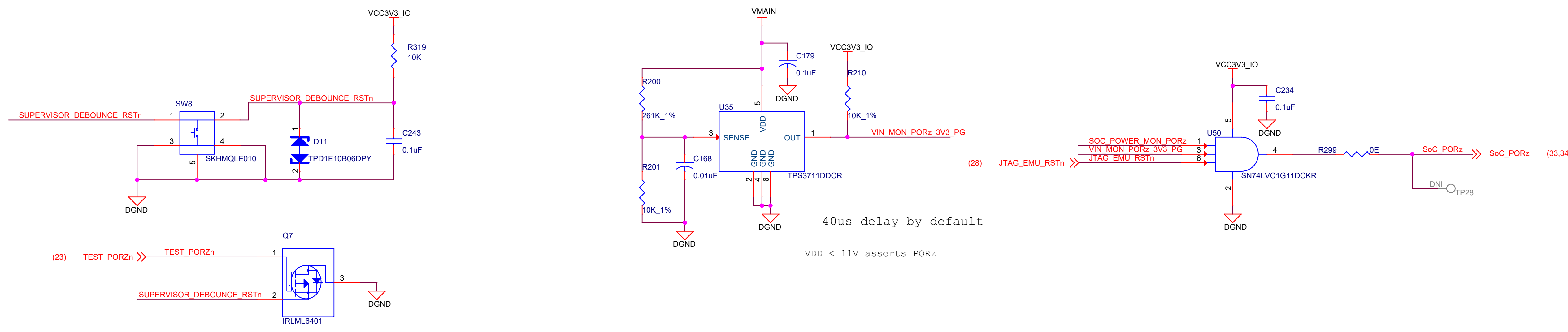



Designed for TI by Mistral Solutions Pvt Ltd

| | | | | |
|---|---|---|---|---|
| Title | TEST HEADER | | | |
| Size | | | | Rev |
| C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | | | E3 |
| Date: | Tuesday, July 24, 2018 | Sheet | 38 of 44 | |

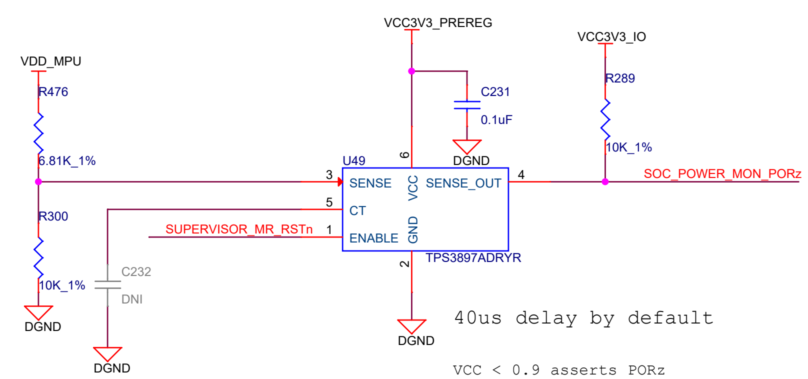
# VOLTAGE SUPERVISOR

## Under Voltage Monitor (VMAIN)





## Under Voltage Monitor (VDD_MPU)

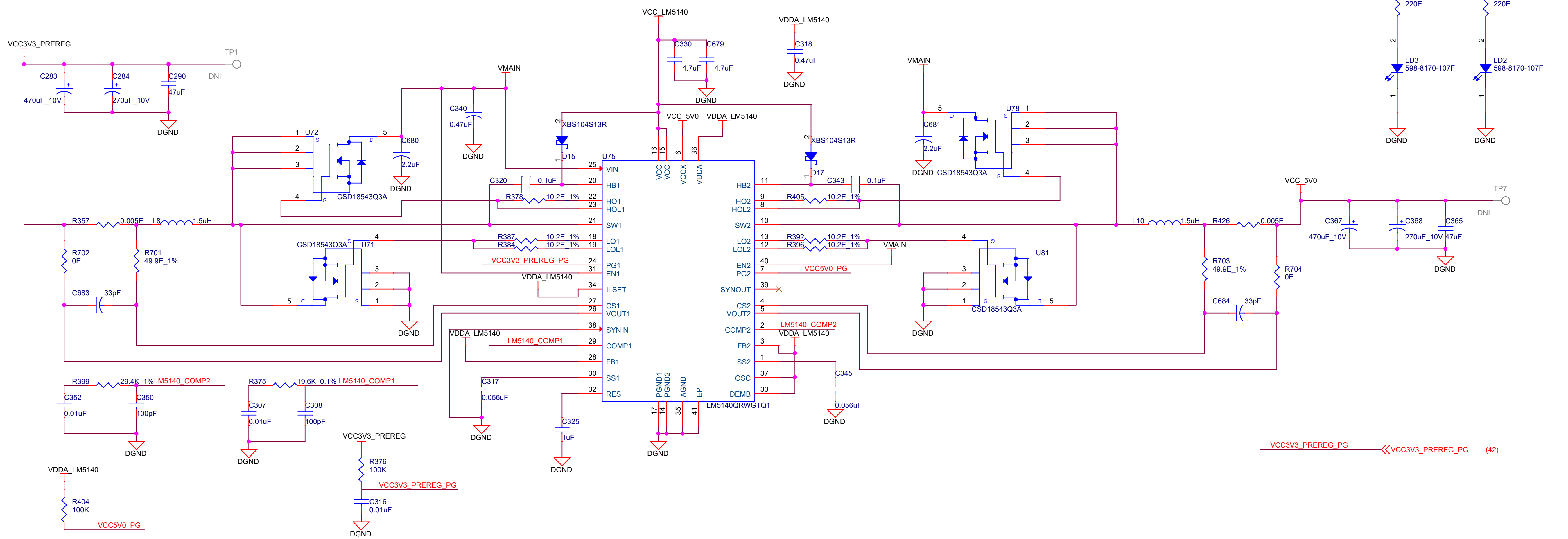



Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | VOLTAGE SUPERVISOR & WKUP LEDs |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date: | Friday, August 31, 2018 |
| Sheet | 39 of 44 |

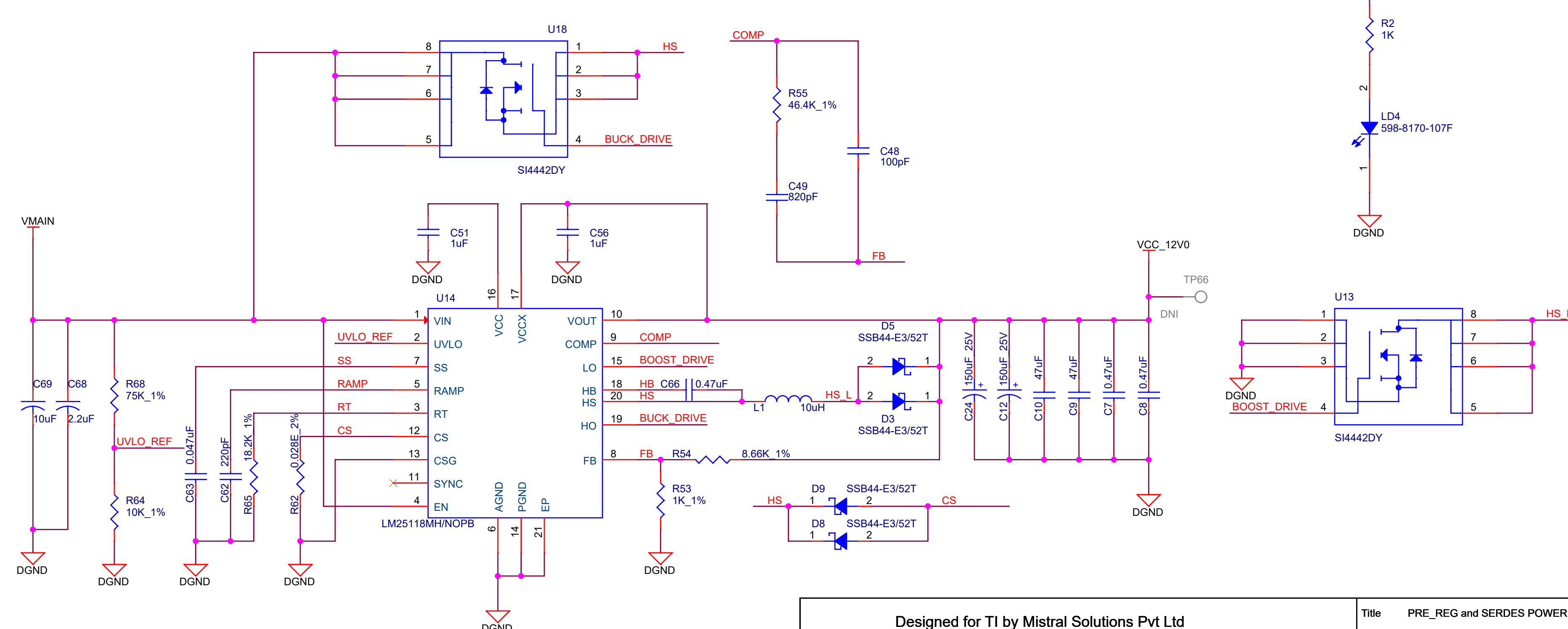
# PRE_REG POWER SUPPLY

## 5V,10A and 3.3V,10A Dual SUPPLY




# SERDES POWER SUPPLY

## 12V,3A SUPPLY



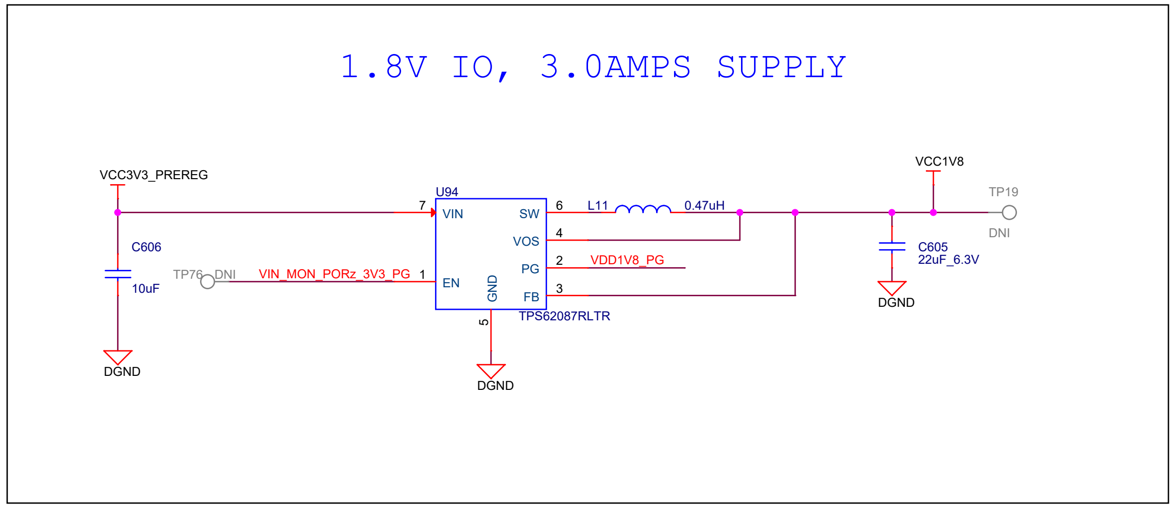

Designed for TI by Mistral Solutions Pvt Ltd

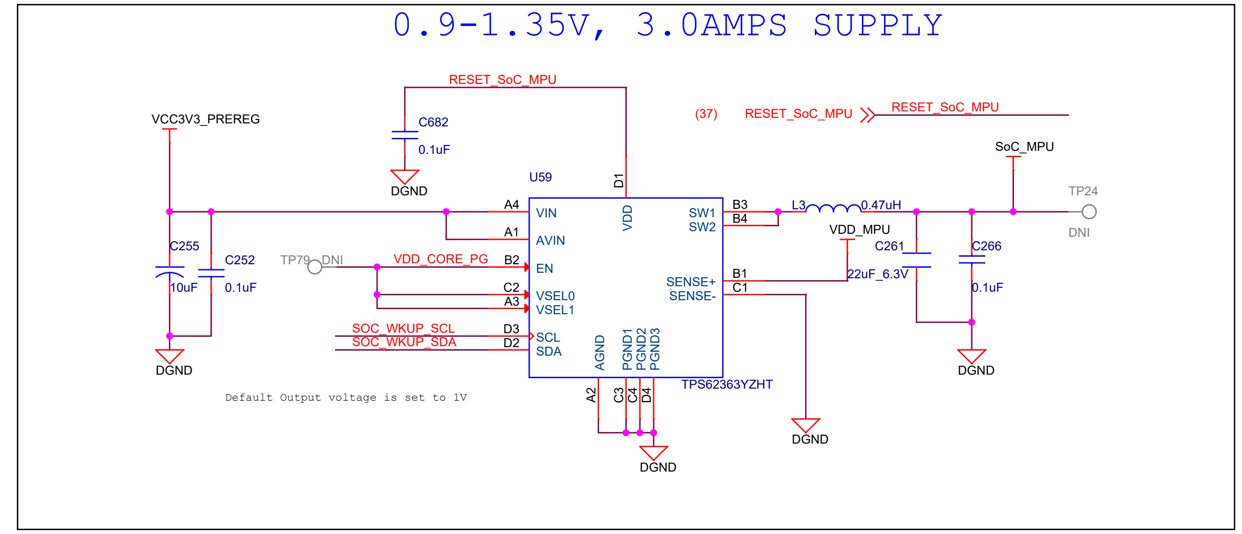
TEXAS INSTRUMENTS

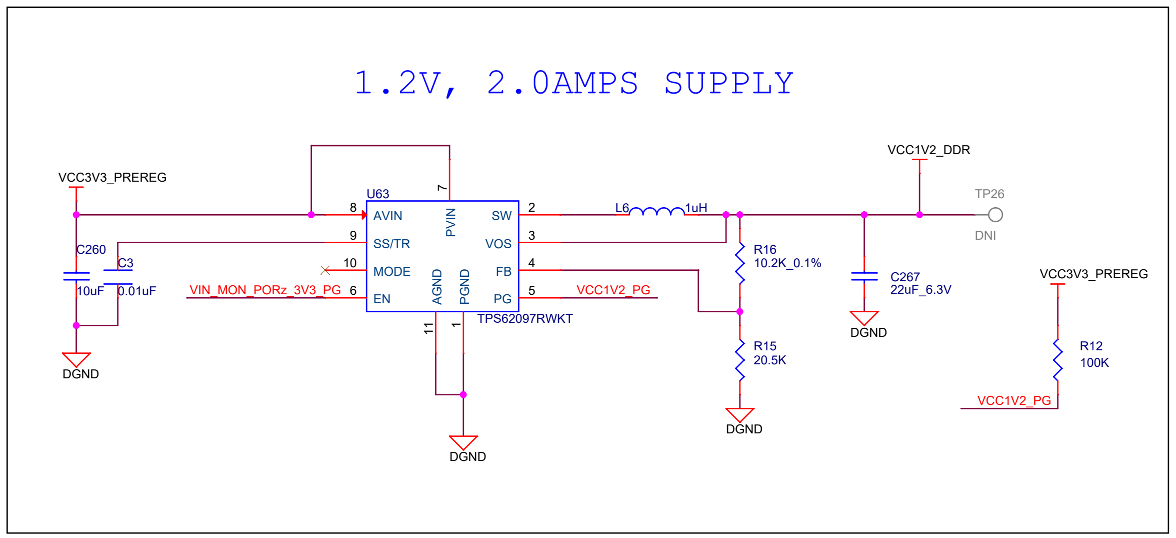
MISTRAL

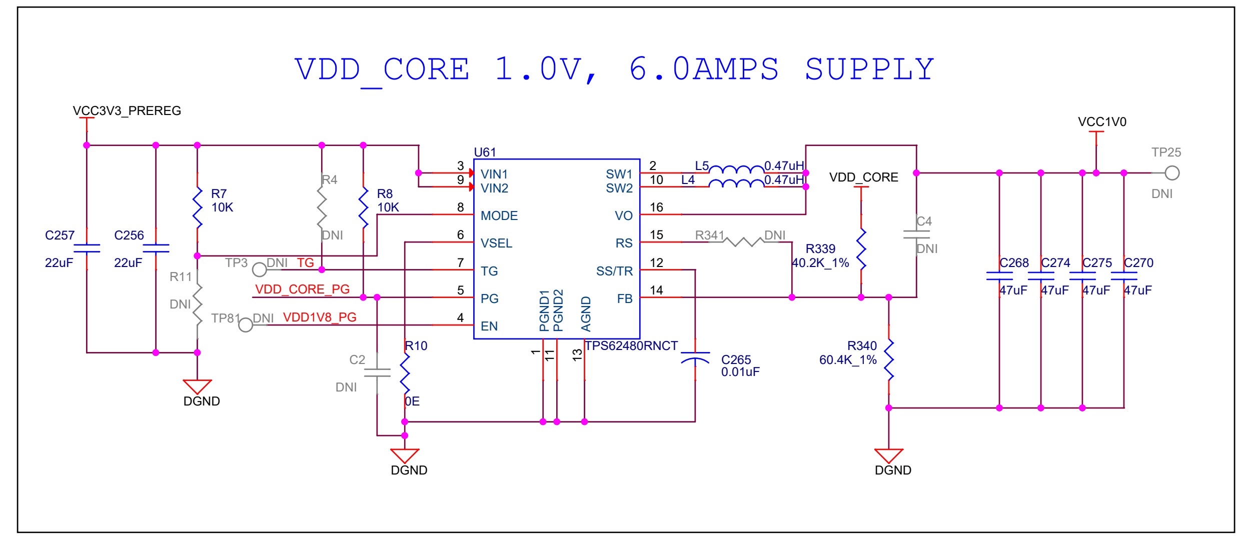
| | | |
|---|---|---|
| Title | PRE_REG and SERDES POWER SUPPLY | |
| Size C | Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: Friday, August 31, 2018 | Sheet 40 of 44 | |

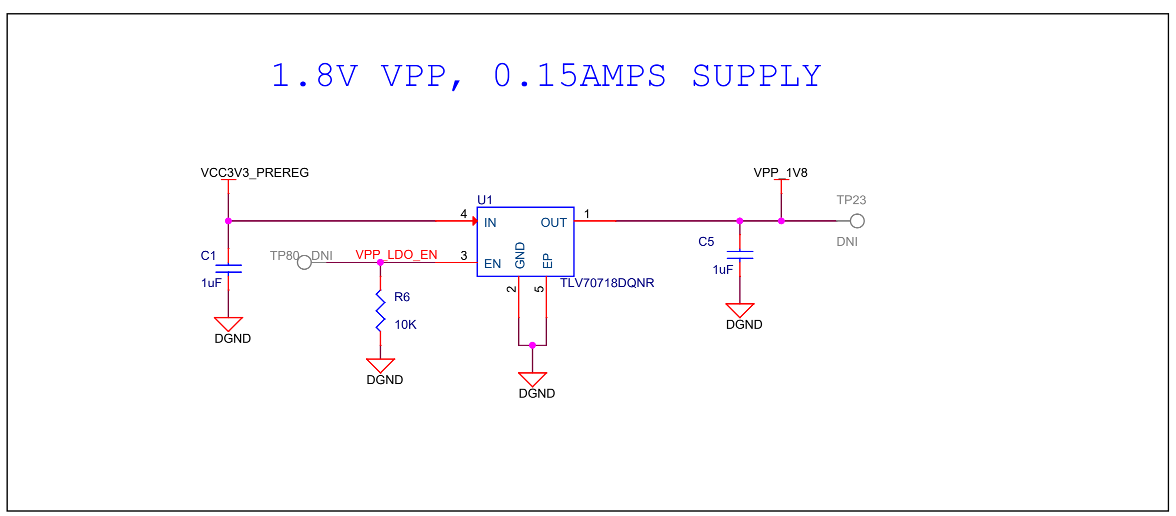
# SoC POWER SUPPLY

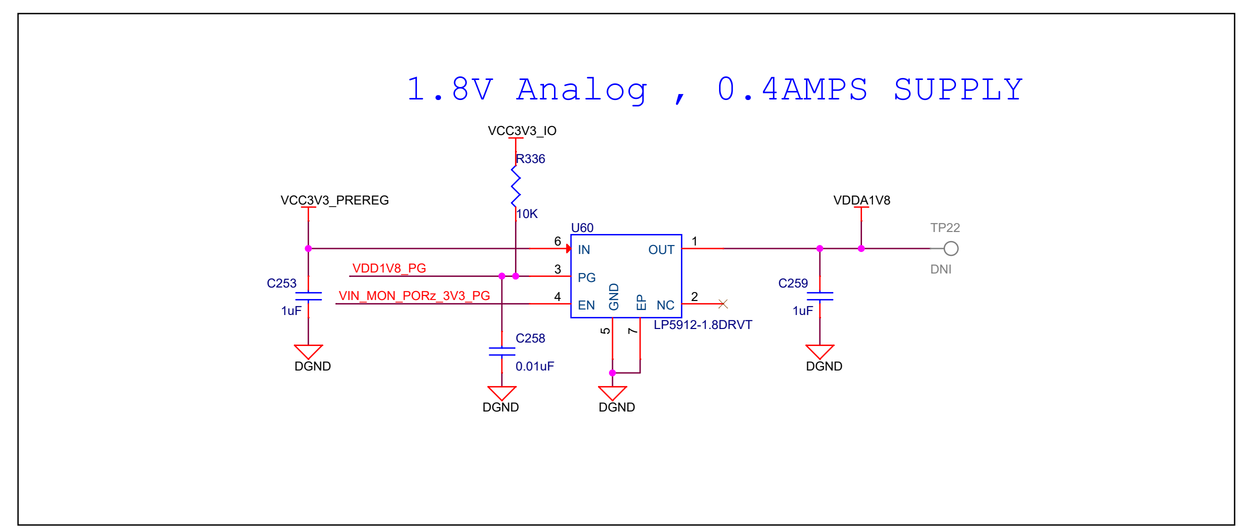



(19,32,33,34,35) SOC_WKUP_SCL — SOC_WKUP_SCL

(19,32,33,34,35) SOC_WKUP_SDA — SOC_WKUP_SDA

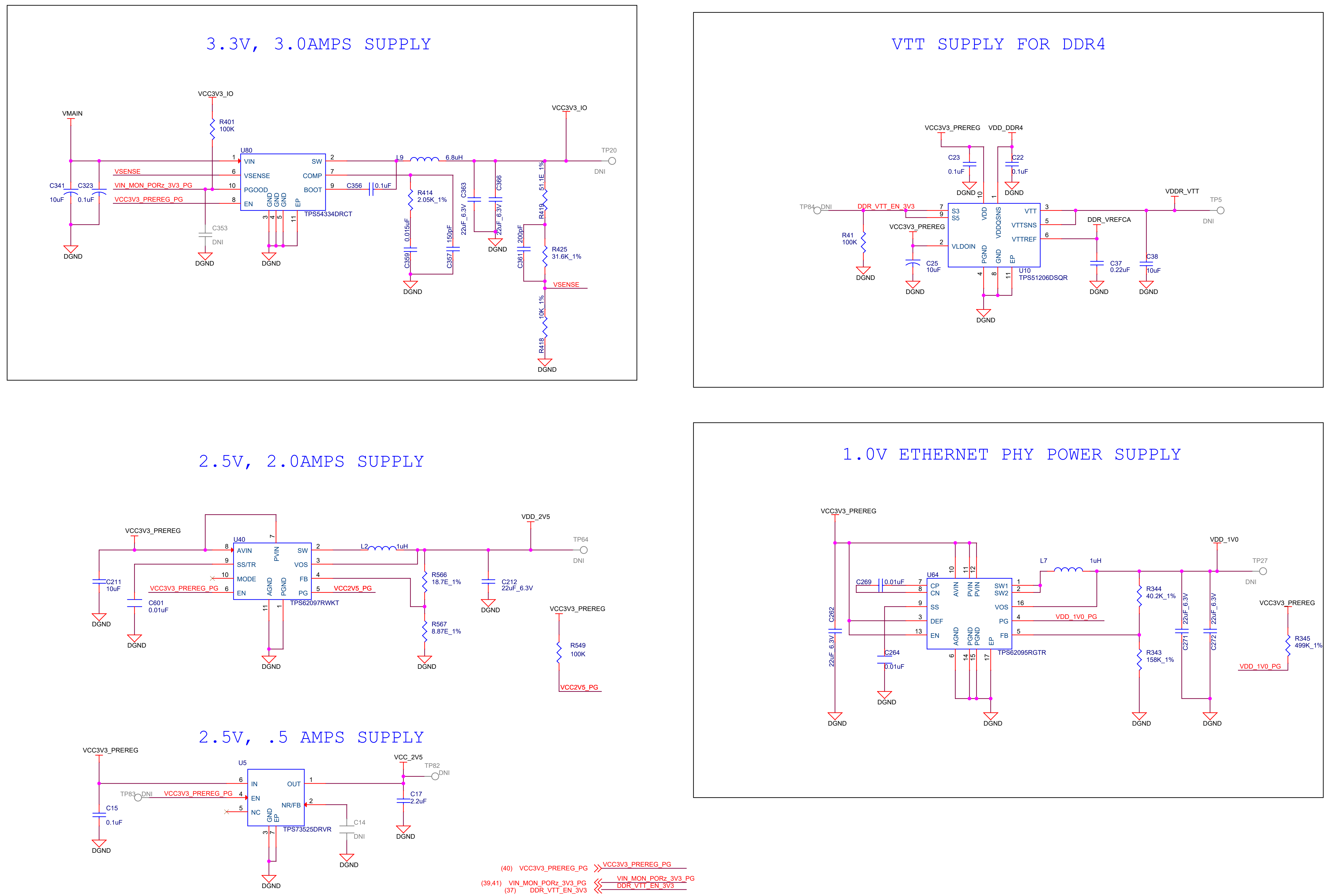
(18) VPP_LDO_EN — VPP_LDO_EN

(39,42) VIN_MON_PORz_3V3_PG — VIN_MON_PORz_3V3_PG

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | SoC POWER SUPPLY |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date: | Tuesday, September 04, 2018 |
| Sheet | 41 of 44 |

# PERIPHERAL POWER SUPPLY

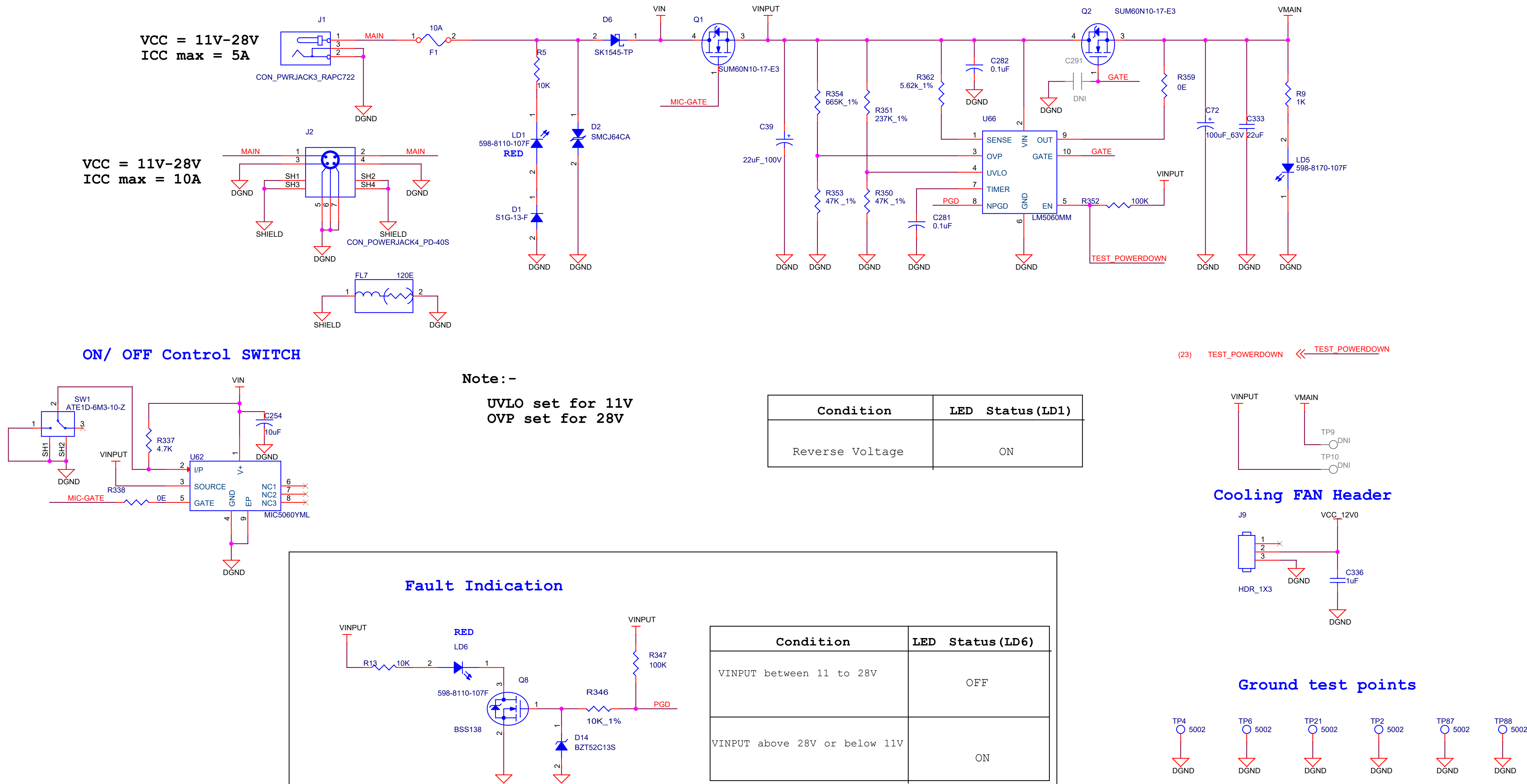



Designed for TI by Mistral Solutions Pvt Ltd

TEXAS INSTRUMENTS — MISTRAL

| | |
|---|---|
| Title | PERIPHERAL POWER SUPPLY |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date | Tuesday, September 04, 2018 |
| Sheet | 42 of 44 |

# OVER VOLTAGE PROTECTION CIRCUIT




Note:-

UVLO set for 11V
OVP set for 28V

| Condition | LED Status(LD1) |
|---|---|
| Reverse Voltage | ON |

| Condition | LED Status(LD6) |
|---|---|
| VINPUT between 11 to 28V | OFF |
| VINPUT above 28V or below 11V | ON |

Note:-

When fault is indicated ,set to proper voltage and power cycle the board.

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | OVER VOLTAGE PROTECTION CKT |
| Size | C |
| Variant Name = PROC062 003 OPN#TMDX654GPEVM | Rev E3 |
| Date: | Friday, August 31, 2018 |
| Sheet | 43 of 44 |

# HARDWARE SCHEMATICS

## ASSEMBLY NOTES

1. All MSL components should be baked as per JEDEC standard.
2. PCB should be baked at 120 degree for 8 hours.
3. Board assembly must comply with workmanship standards. IPC-A-610 Class 2, unless otherwise specified.
4. These assemblies are ESD sensitive, ESD precautions shall be observed.
5. These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.
6. Provide serial numbers to the assembled boards for identification.
7. The assembled board are wrapped in ESD Covers(individual) and
packed securely before shipment.

## STANDOFFs

MH1 MH2 MH3 MH4 MH5 MH6 MH7
970300151 970300151 970300151 970300151 970300151 970300151 970300151

MH8 MH9 MH10 MH11 MH12
970060151 970060151 970060151 970060151 970060151

MH28 MH29 MH30 MH31 MH32 MH33
DNI DNI DNI DNI 971300151 971300151

## SCREWS

MH13 MH14 MH15 MH16 MH17 MH18 MH34 MH35 MH36 MH37
29300 29300 29300 29300 29300 29300 29300 29300 29300 29300

MH19 MH20 MH21 MH22 MH23 MH24 MH25 MH26 MH27
29304 29304 29304 29304 29304 29304 29304 29304 29304

## WASHER's

M10 M11 M12 M13 M14 M15 M16 M17 M18
4692 4692 4692 4692 4692 4692 4692 4692 4692

M19 M20 M21 M22 M23 M24 M25 M26 M27
4692 4692 4692 4692 4692 4692 4692 4692 4692

## RUBBER FEET

M1 M2 M3 M4 M5 M6 M7 M8 M9
728 728 728 728 728 728 728 728 728

## JUMPERs

ACC1 SPC02SYAN
ACC2 SPC02SYAN
ACC3 SPC02SYAN
ACC8 SPC02SYAN
ACC7 SPC02SYAN
ACC4 MNT-103-BK-G

## FIDUCIALS

FID1 DNI
FID2 DNI
FID3 DNI
FID4 DNI
FID5 DNI
FID6 DNI

## Socket & Processor as Accessories

ACC5 DNI
ACC6 DNI Processor

## BARE PCB

PCB1 PROC062

## Assembled PCB's

PCBA1 DNI
PCBA2 PROC066
PCBA3 DNI

## LABELS

**Board Serial No.**

LBL1 PCB LABEL THT-103-423-10

**ORDERABLE PART NO**

LBL2 PCB LABEL THT-103-423-10

| Orderable part number | |
|---|---|
| **Variant** | **Label Text** |
| 001 | TMDX654IDKEVM |
| 002 | TMDX654HSEVM |
| 003 | TMDX654GPEVM |
| 004 | TMDX654IDKEVM-S |
| 005 | TMDX654GPEVM-S |

## LOGOs

PCB LOGO DNI Texas Intruments
PCB LOGO DNI For Evaluation only; not FCC approved for resale
PCB LOGO DNI WEEE Mark
PCB LOGO DNI CE Mark

Designed for TI by Mistral Solutions Pvt Ltd

| | |
|---|---|
| Title | HARDWARE SCHEMATICS |
| Size | C |
| Variant Name | PROC062 003 OPN#TMDX654GPEVM |
| Rev | E3 |
| Date: | Tuesday, September 04, 2018 |
| Sheet | 44 of 44 |