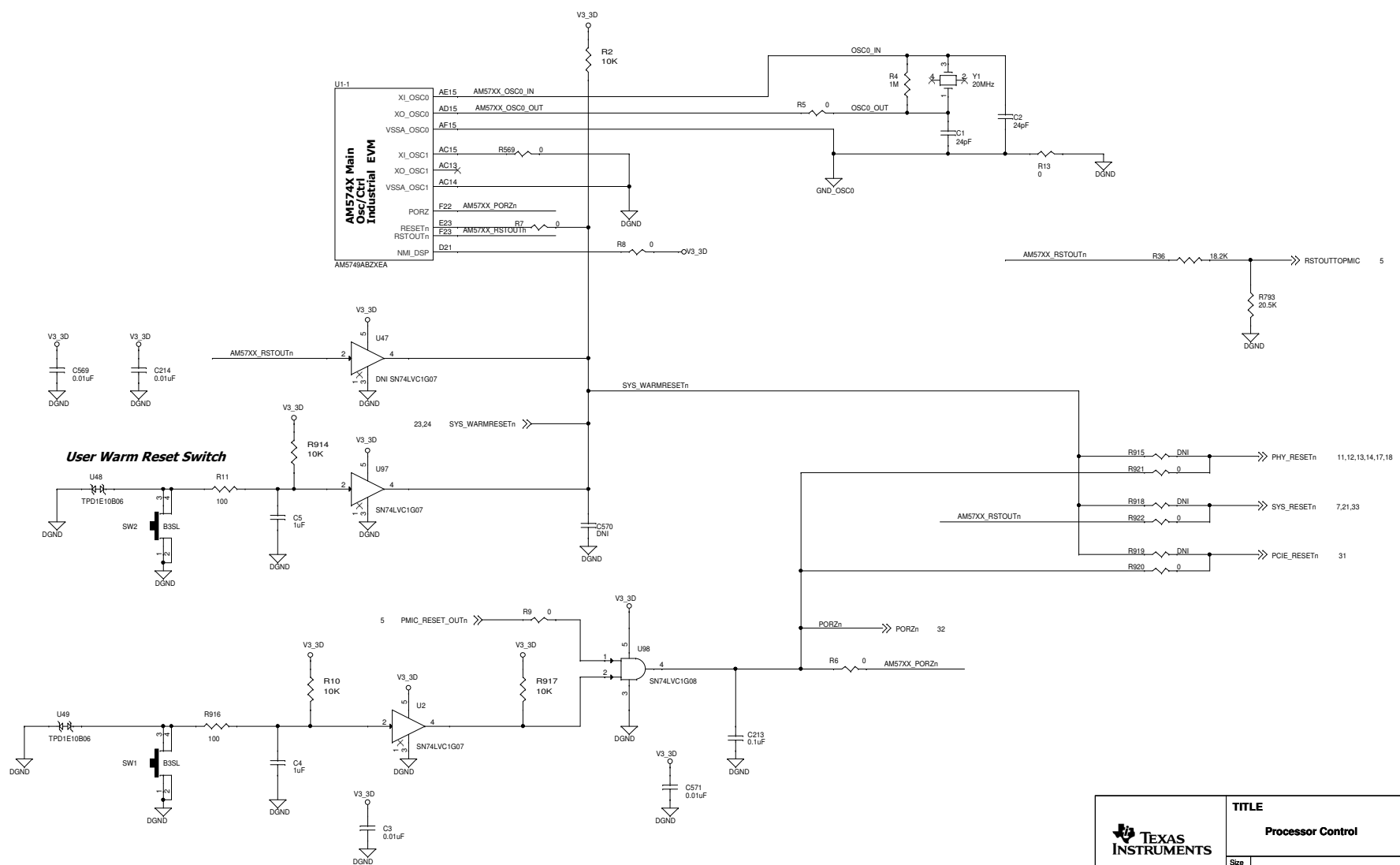



# AM574x Industrial Development Kit



TITLE		
TMDXIDK574X		
Size		
C	Variant Name = Proj PROC053 001 OPNM TMDSIDK574	Rev
Date: Tuesday, March 13, 2018		Sheet: 01 of 34

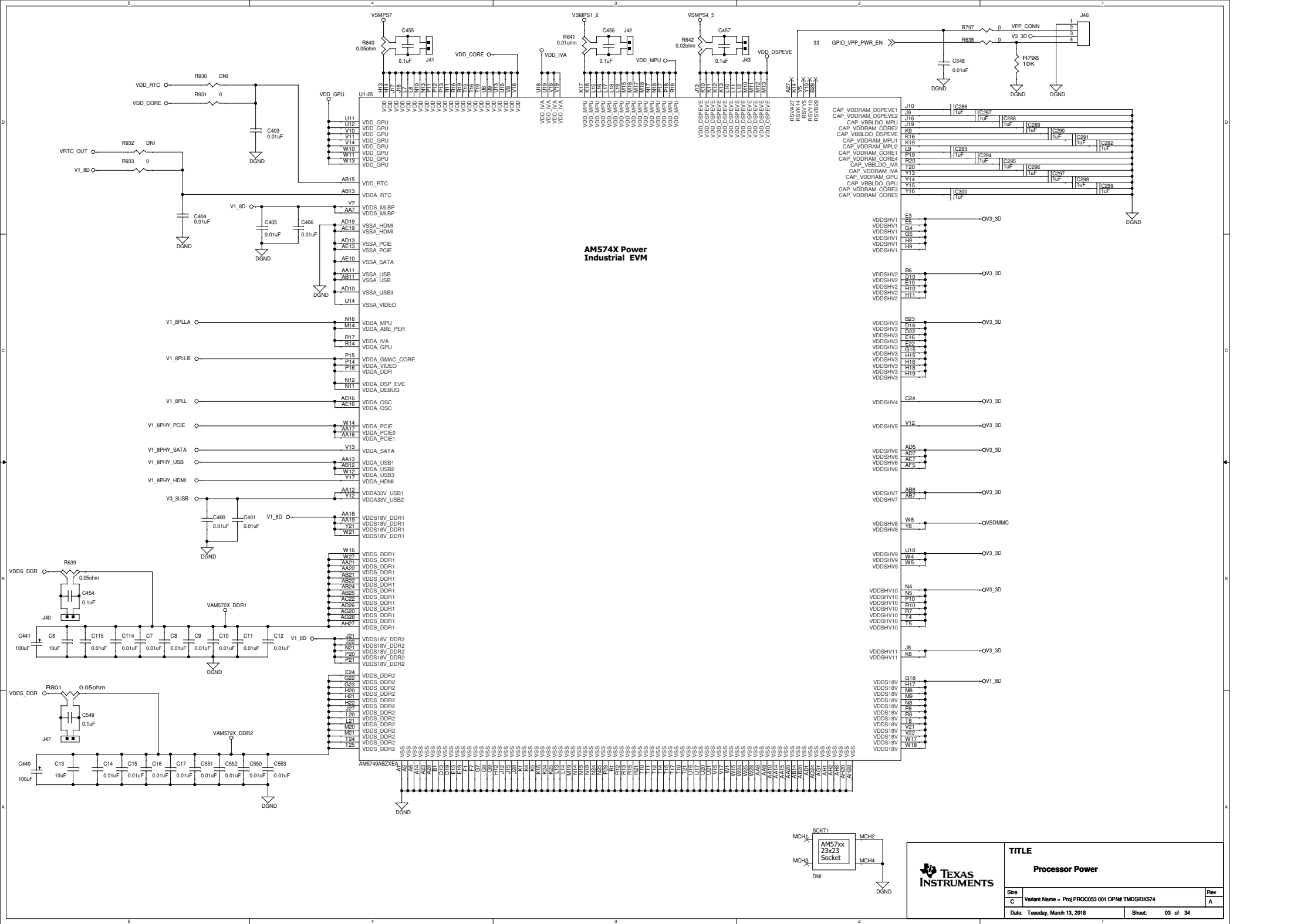


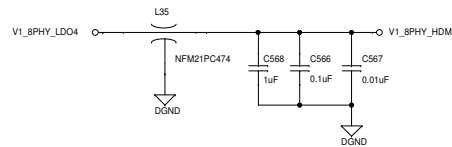
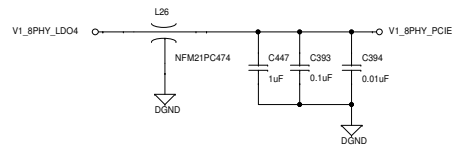
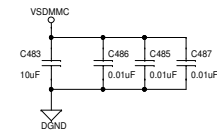
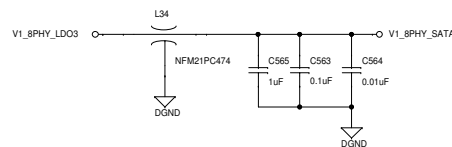
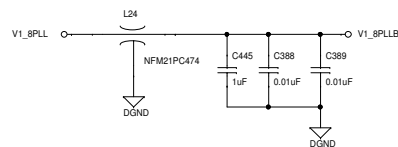
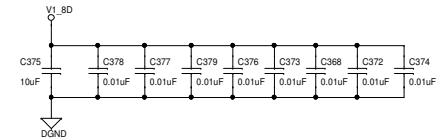
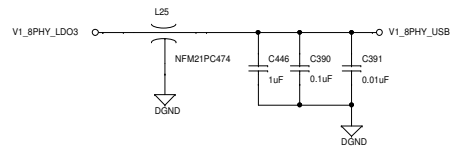
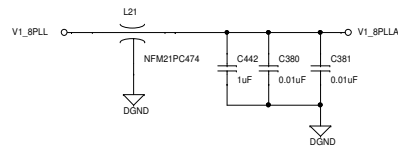
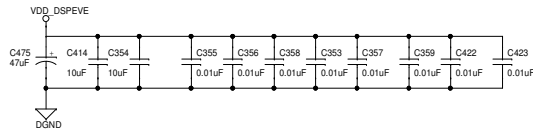
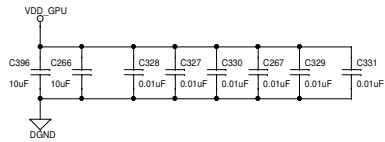
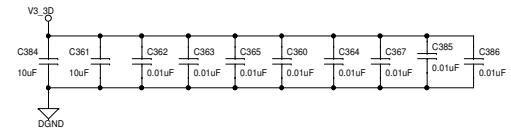
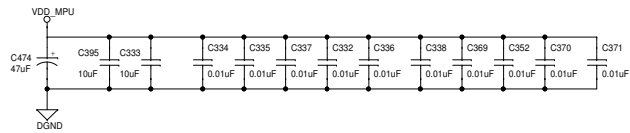
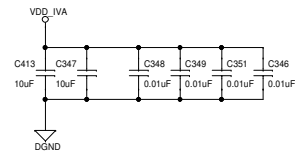
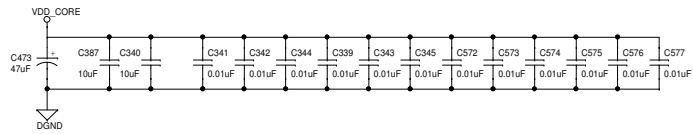



**TITLE**

**Processor Control**

Size	Variant Name = Proj PROC053 001 OPNI TMSIDK574	Rev
C		A
Date: Tuesday, March 13, 2018	Sheet: 02 of 34	

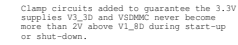




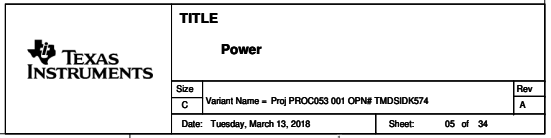
	TITLE	
	Processor Power	
Size	Variant Name = Proj PROC053 001 OPN TMSIDK574	Rev
C		A
Date: Tuesday, March 13, 2018	Sheet: 04 of 34	

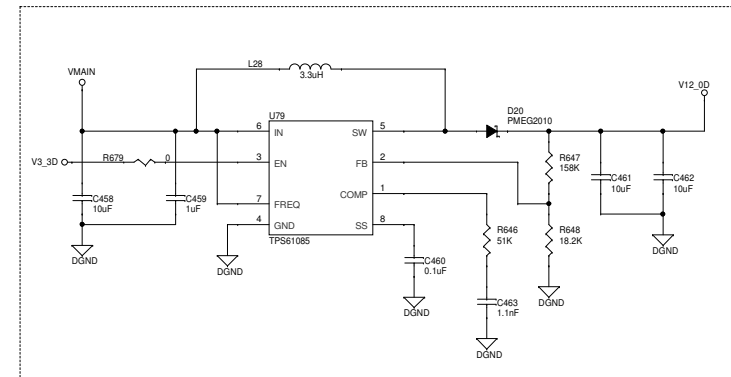
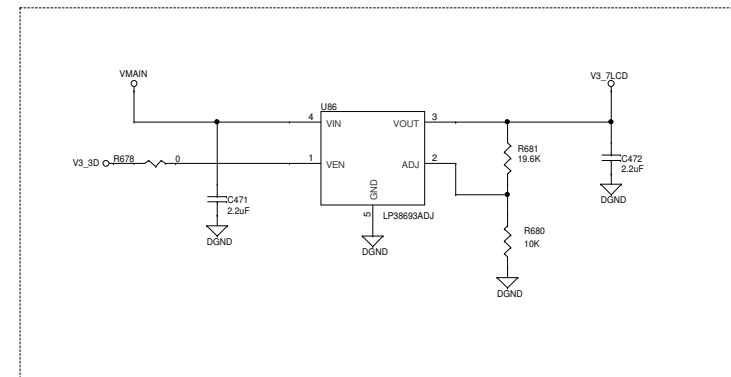
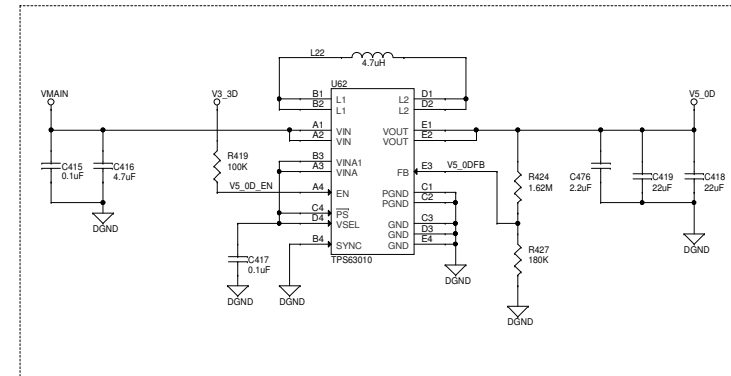
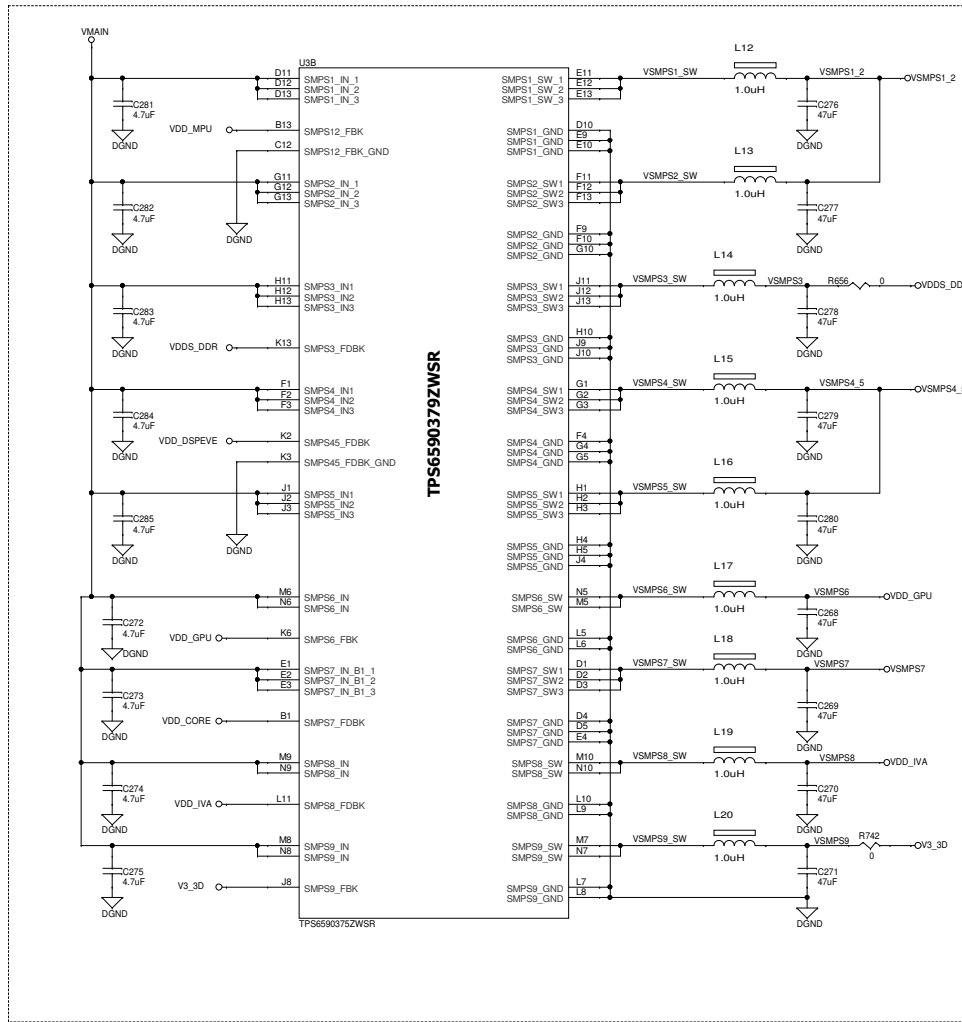
### Main 5VDC Power Input

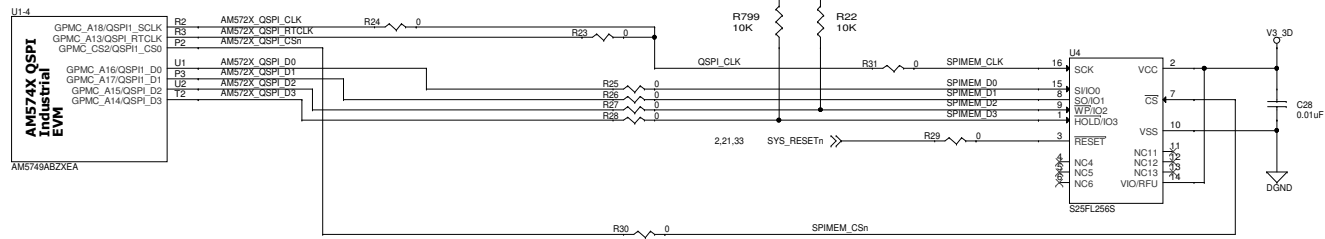
The schematic shows the main 5VDC power input circuit. It starts with a power jack (J1, RAPC712) and a DNI connector (J2, Screwdown). The power from J1 goes through a diode (D1, SK1545) and a fuse (F1, 8A) to a common rail. This rail is connected to the VPWRIN\_PREFUSE pin of the PMIC. The rail also has a test point (TP1) and a diode (D2, SMCJ5.0A) to ground. The rail is then connected to a series of capacitors (C24, C20, C21, C22, C23, C411, C412) to the VMAIN pin of the PMIC. The capacitors are: C24 (100uF), C20 (0.1uF), C21 (0.1uF), C22 (10uF), C23 (1uF), C411 (100uF), and C412 (100uF). The VMAIN pin is connected to the PMIC. A note states: "Sufficient capacitance needed to hold up VMAIN (over 2.7V) for at least 1ms after power supply shut off. AMS7ax device will be in POR reset. This will allow the PMIC to properly execute its power-down sequence."

[illegible]

It has been later determined that the clamp circuit on VSDMMC is not sufficient and the PMIC was enhanced to better control shut-down sequencing. Therefore, the VSDMMC clamp is no longer required, the power-down sequence defined in the Data Manual must be met.



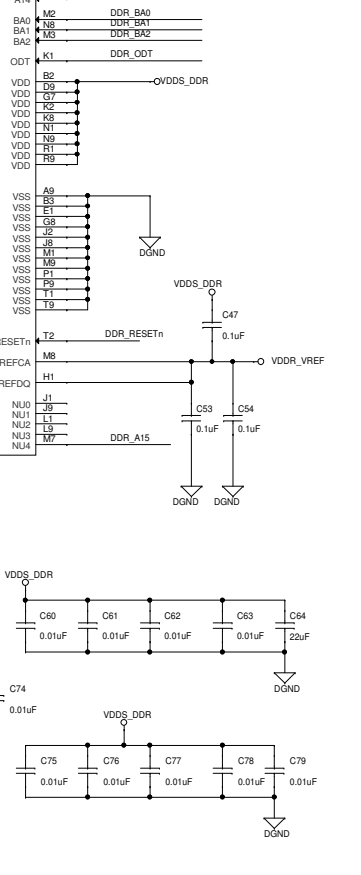
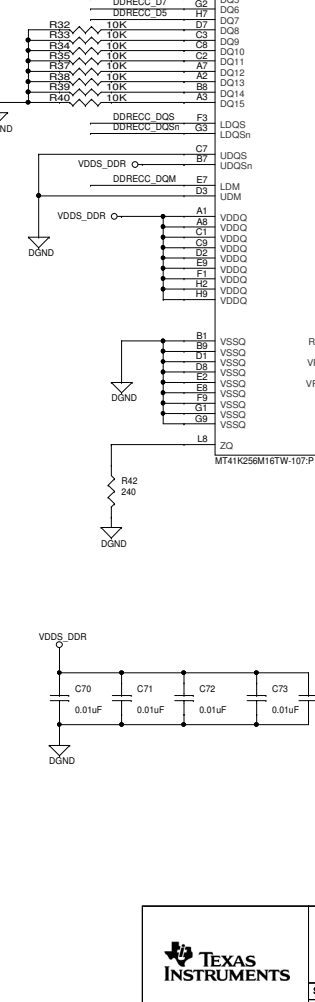
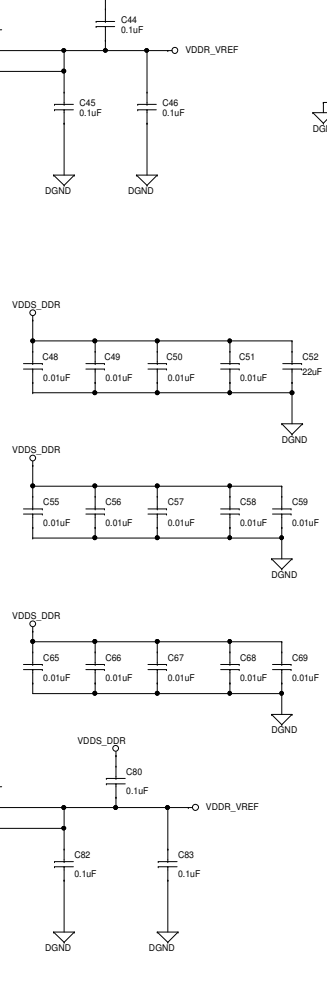
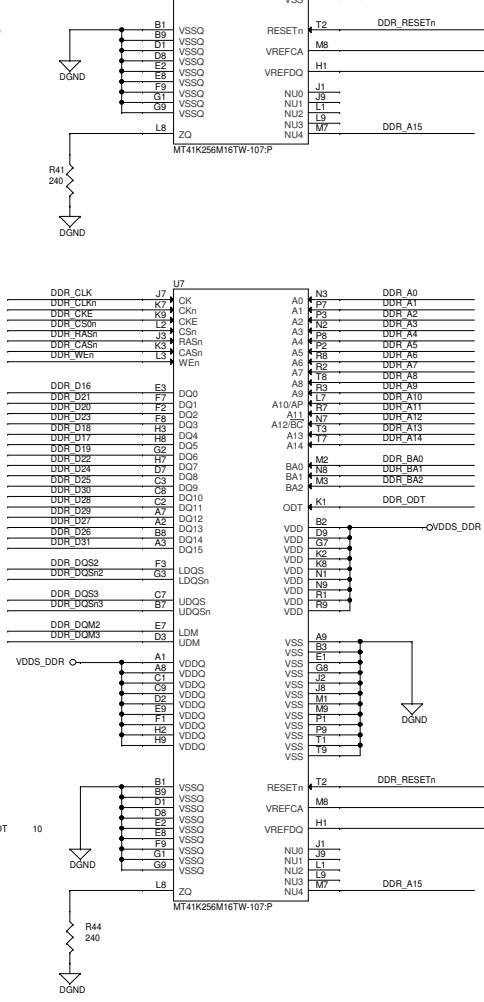
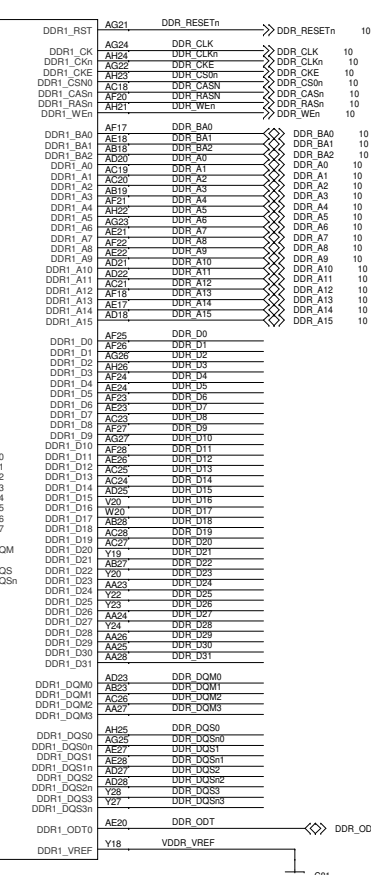





AM574X DDR Industrial EVM

- DDRECC\_D0 W22
- DDRECC\_D1 V23
- DDRECC\_D2 W19
- DDRECC\_D3 W23
- DDRECC\_D4 V25
- DDRECC\_D5 V24
- DDRECC\_D6 V25
- DDRECC\_D7 V26
- DDRECC\_DQM V26
- DDRECC\_DQS V27
- DDRECC\_DQSn V28

AMS748B2XEA





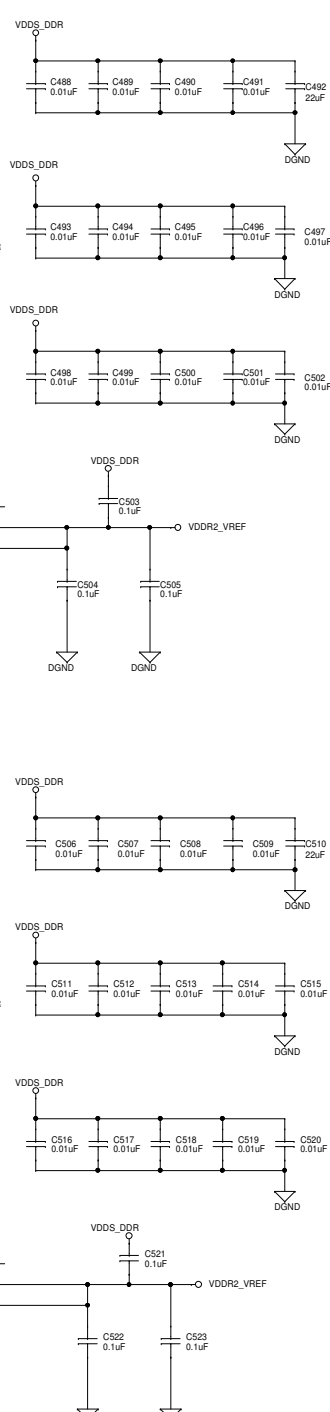
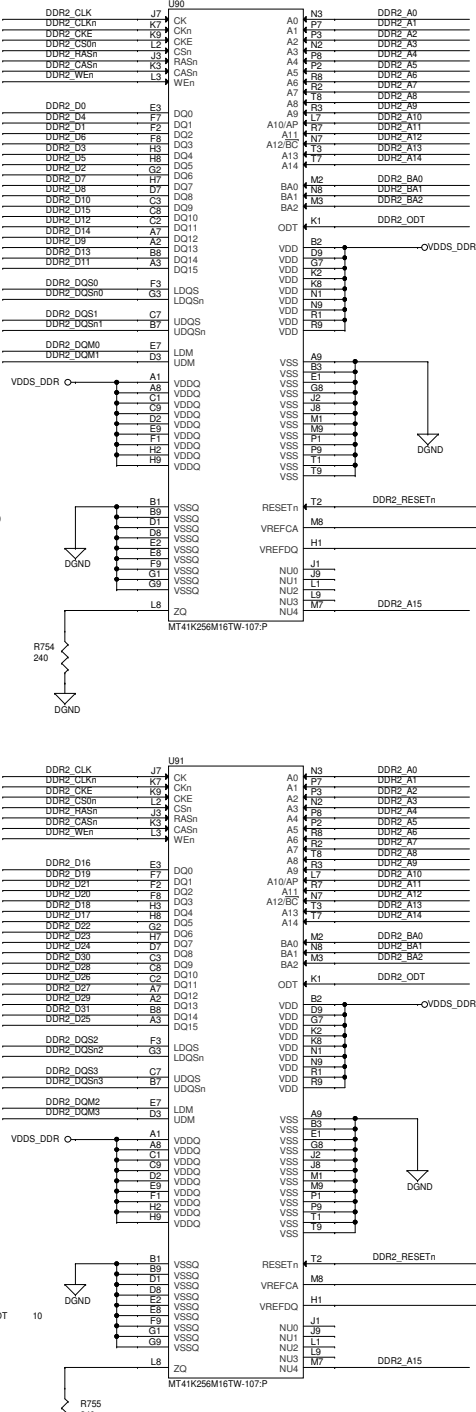
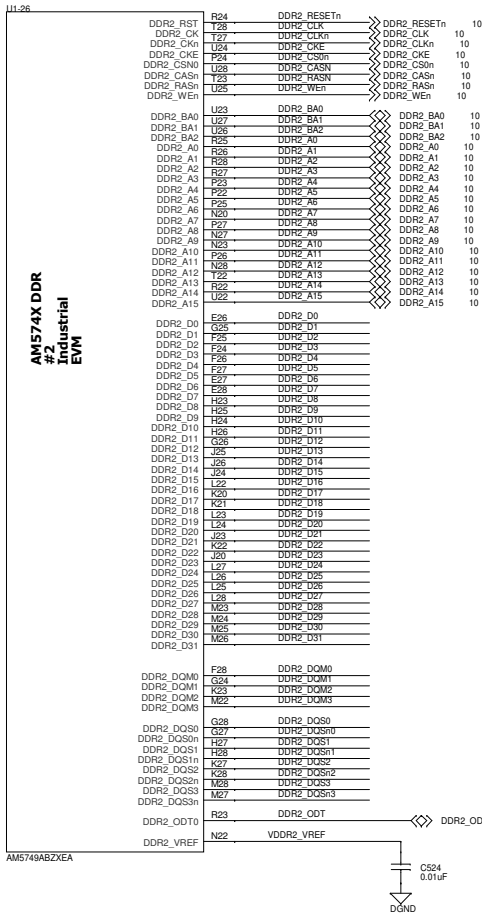
**TITLE**

**DDR3 Memory 1**

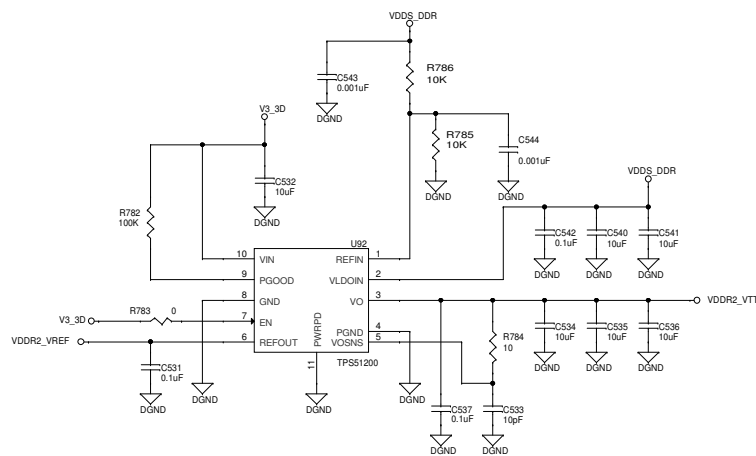
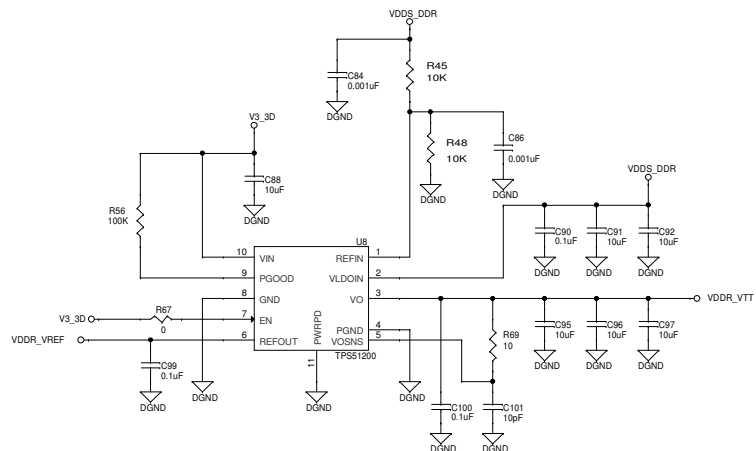
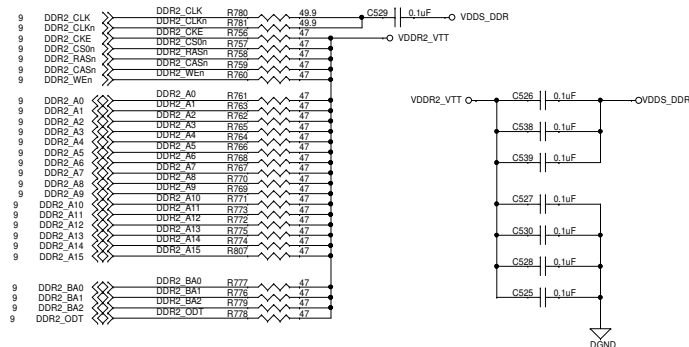
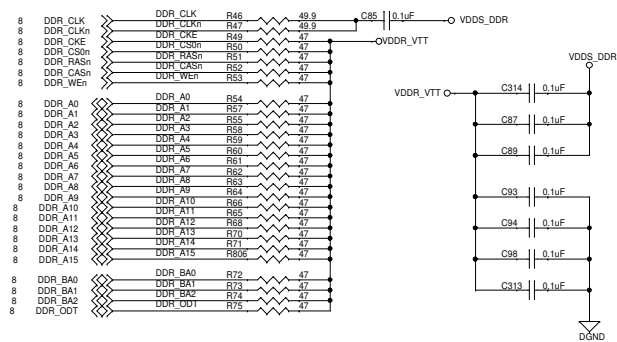
Size	Variant Name = Proj PROC053 001 OPN TMSDK574	Rev
C		A
Date: Monday, April 16, 2018	Sheet: 06 of 34	

Note that ECC use is highly constrained - please refer to the AM72X Errata document for more information





TITLE		
DDR3 Memory 2		
Size	Variant Name = Proj PROC053 001 OPN TMSIDK574	Rev
C		A
Date: Monday, April 16, 2018	Sheet: 09 of 34	

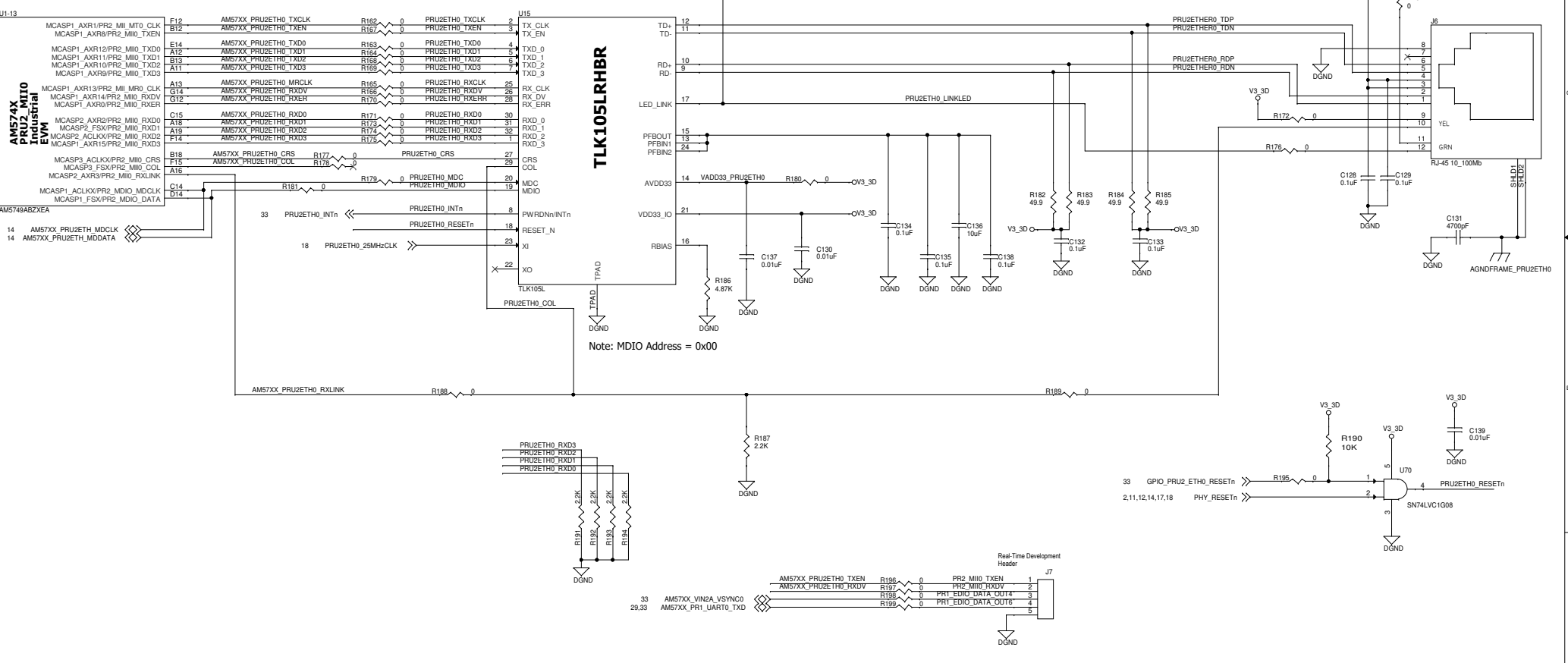


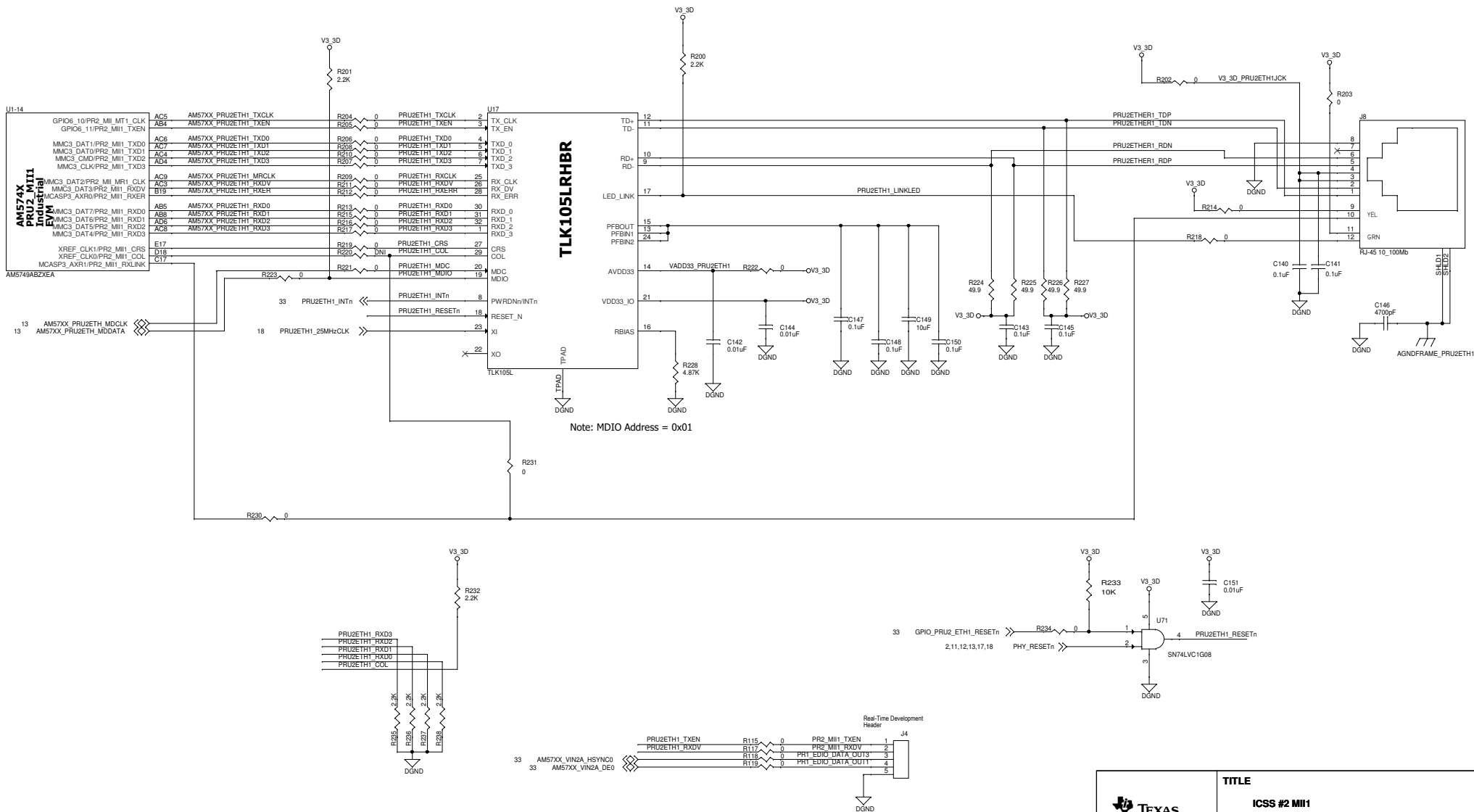
# **TITLE** **DDR3 VTT Termination**

Size	Variant Name	Proj	Rev
C	Variant Name - Proj	PROC053 001	OPN TMSIDK574
Date:	Tuesday, March 13, 2018	Sheet:	10 of 34

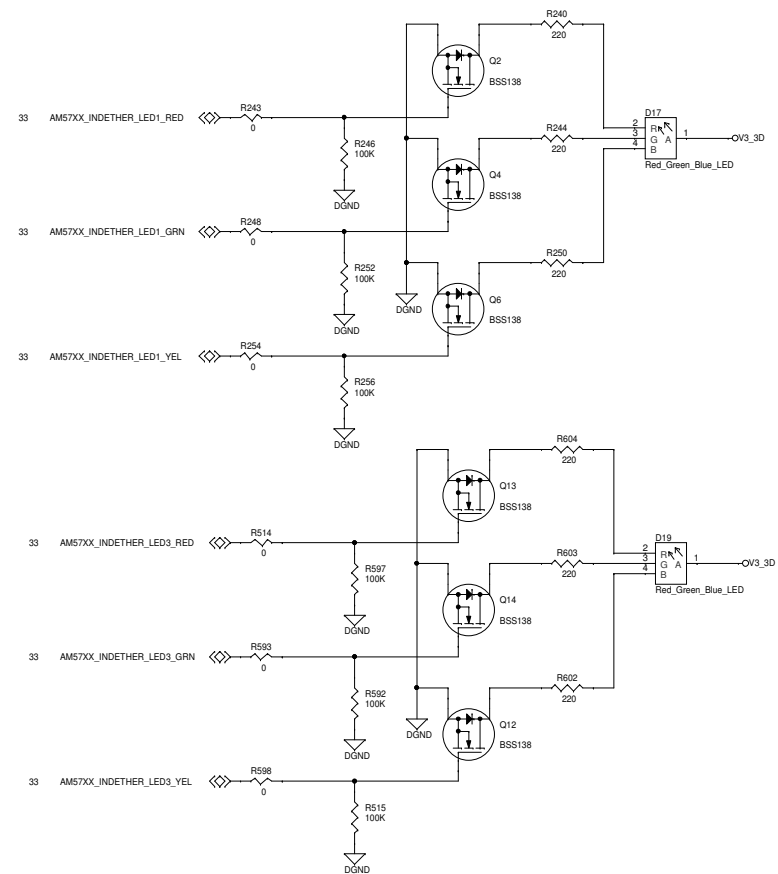
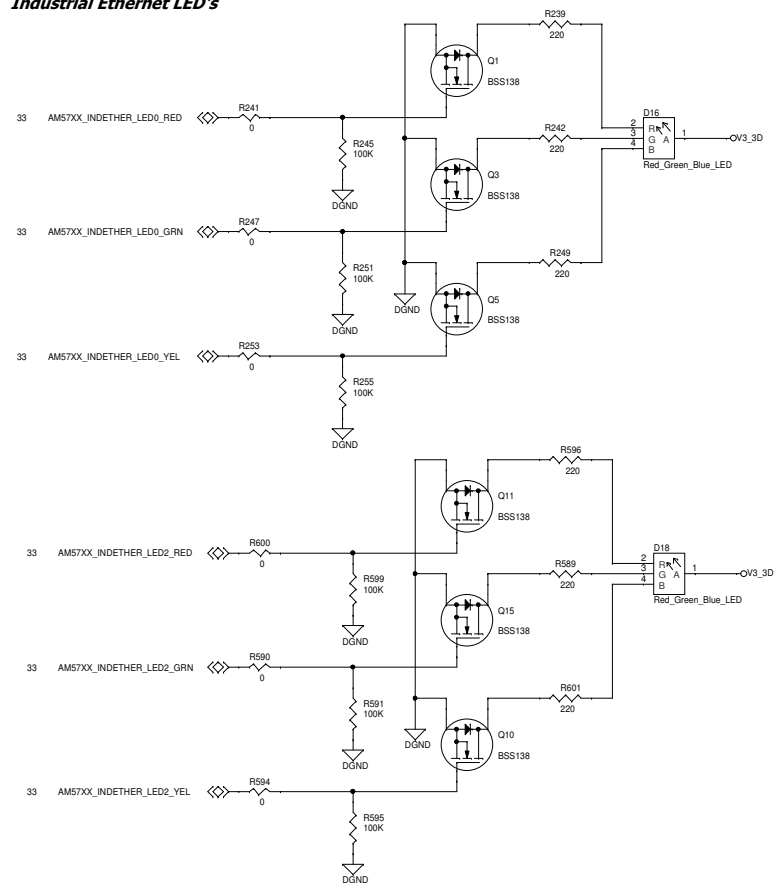




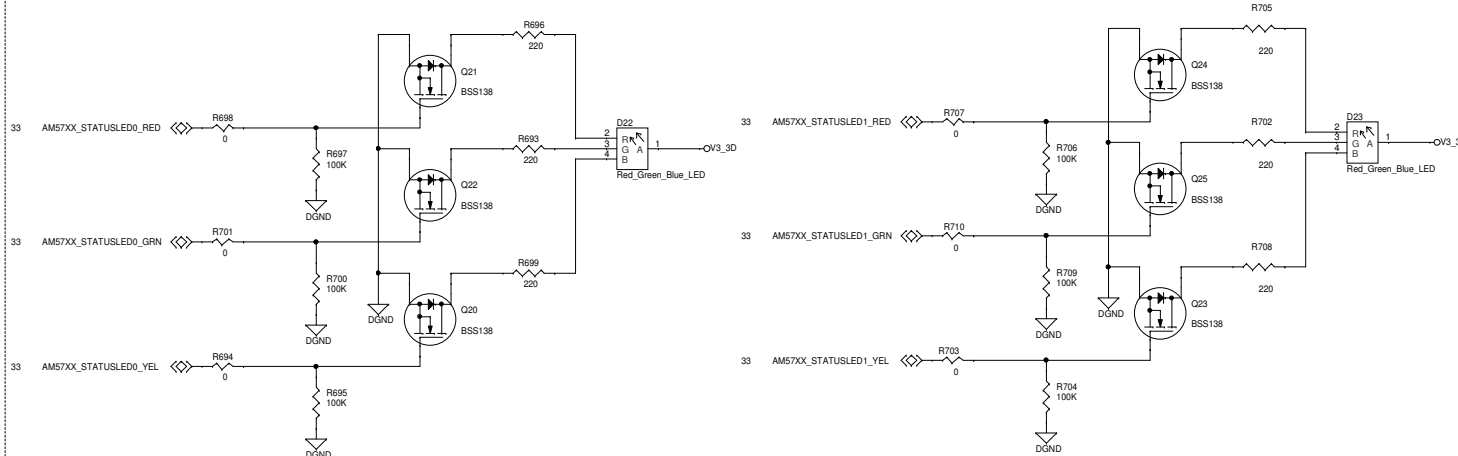




## Industrial Ethernet LED's



## Status LED's



TITLE			
Industrial Ethernet LED's/Status LED's			
Size	Variant Name = Proj PROC053 001 OPN# TMSIDK574		Rev
C			A
Date:	Tuesday, March 13, 2018	Sheet:	15 of 34

U1-24  
**AM574X Camera #1 Industrial EVM**  
 GPMC\_A10/VIN4B\_CLK1  
 GPMC\_A9/VIN4B\_VSYNC1  
 GPMC\_A8/VIN4B\_HSYNC1  
 GPMC\_A11/VIN4B\_DE1  
 GPMC\_A12/VIN4B\_FLD1  
 GPMC\_A0/VIN4B\_D0  
 GPMC\_A1/VIN4B\_D1  
 GPMC\_A2/VIN4B\_D2  
 GPMC\_A3/VIN4B\_D3  
 GPMC\_A4/VIN4B\_D4  
 GPMC\_A5/VIN4B\_D5  
 GPMC\_A6/VIN4B\_D6  
 GPMC\_A7/VIN4B\_D7  
 XREF\_CLK3/CLKOUT3  
 AM5749ABZXE

N9 AM572X\_VIN4B\_PCLK  
 R4 AM572X\_VIN4B\_VSYNC  
 N7 AM572X\_VIN4B\_HSYNC  
 P9 AM572X\_VIN4B\_DE  
 P4 AM572X\_VIN4B\_FLD  
 R6 AM572X\_VIN4B\_DATA0  
 T9 AM572X\_VIN4B\_DATA1  
 T6 AM572X\_VIN4B\_DATA2  
 T7 AM572X\_VIN4B\_DATA3  
 P6 AM572X\_VIN4B\_DATA4  
 R9 AM572X\_VIN4B\_DATA5  
 R5 AM572X\_VIN4B\_DATA6  
 P5 AM572X\_VIN4B\_DATA7

C23 AM57XX\_CLKOUT3

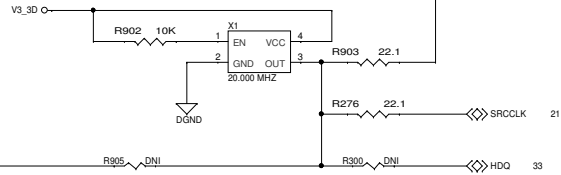
AM572X\_VIN4B\_DATA0 R260 0  
 AM572X\_VIN4B\_DATA1 R261 0  
 AM572X\_VIN4B\_DATA2 R262 0  
 AM572X\_VIN4B\_PCLK R263 0  
 AM572X\_VIN4B\_DATA3 R267 0  
 AM572X\_VIN4B\_DATA4 R268 0  
 AM572X\_VIN4B\_DATA5 R271 0  
 AM572X\_VIN4B\_DATA6 R272 0

CAM1\_DATA0 1  
 CAM1\_DATA1 3  
 CAM1\_DATA2 5  
 CAM1\_PCLK 7  
 CAM1\_DATA3 9  
 CAM1\_DATA4 11  
 CAM1\_DATA5 13  
 CAM1\_DATA6 15  
 CAM1\_DATA7 17  
 CAM1\_WEN 19  
 CAM1\_FIELD 21  
 CAM1\_EN 23

2 CAM1\_VSYNC R257 0  
 4 CAM1\_HSYNC R258 0  
 6 CAM1\_DATA6 R265 0 AM572X\_VIN4B\_DATA6  
 8 CAM1\_DATA7 R266 0 AM572X\_VIN4B\_DATA7  
 10  
 12  
 14  
 16 CAM1\_GIO0  
 18 CAM1\_GIO1  
 20 CAM1\_FIELD R274 0  
 22 CAM1\_FIELD R275 0  
 24 CAM1\_FIELD R277 0

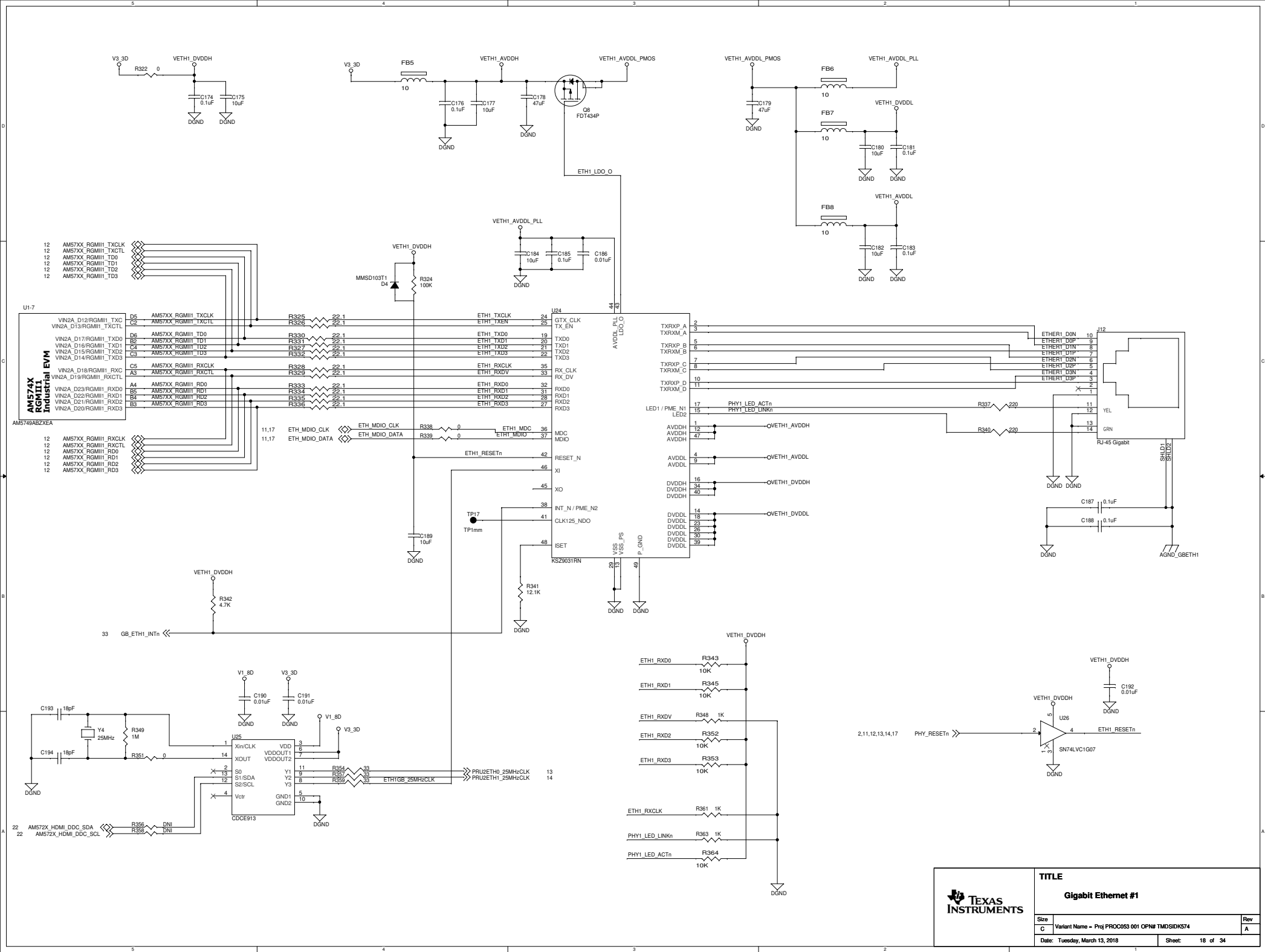
V3\_3D  
 R259 10K

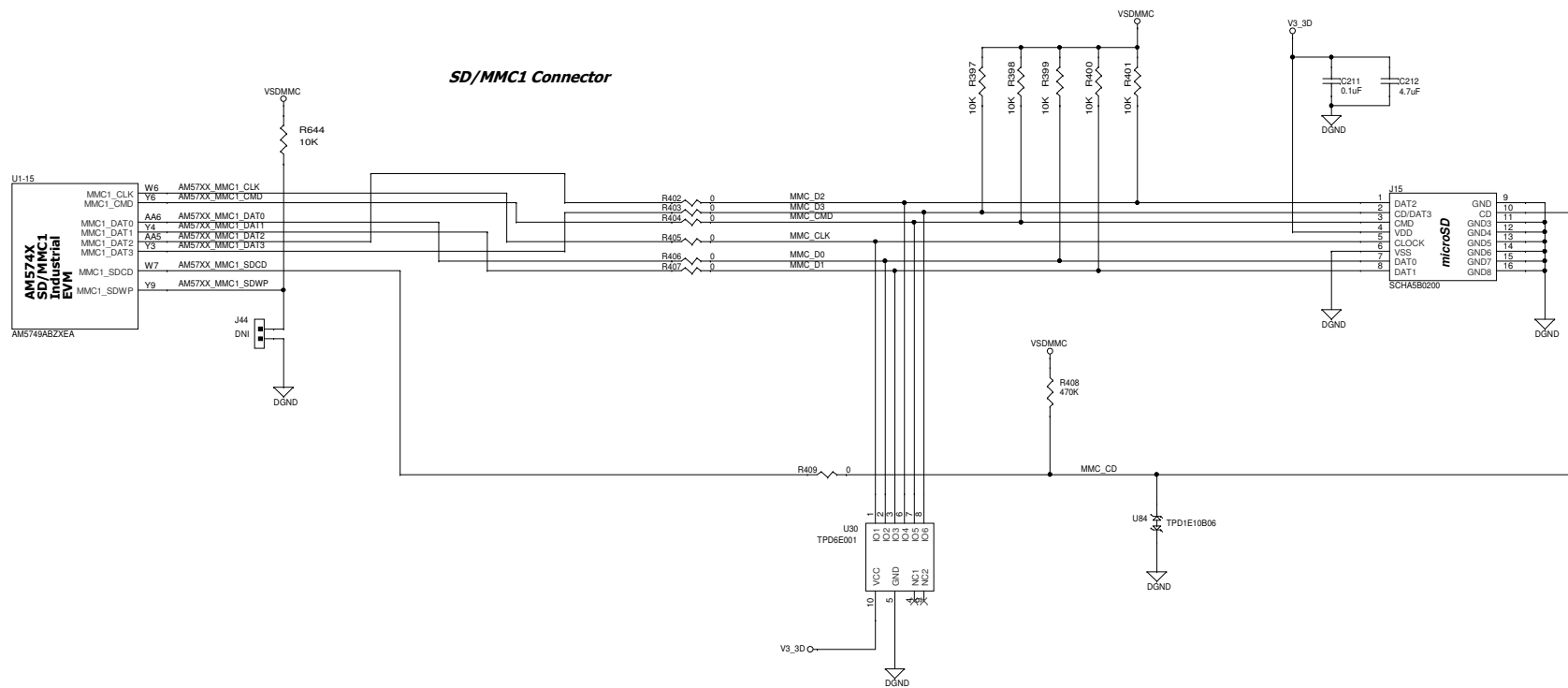
IND\_I2C\_SCL 5,17,20,21,23,31,33  
 IND\_I2C\_SDA 5,17,20,21,23,31,33





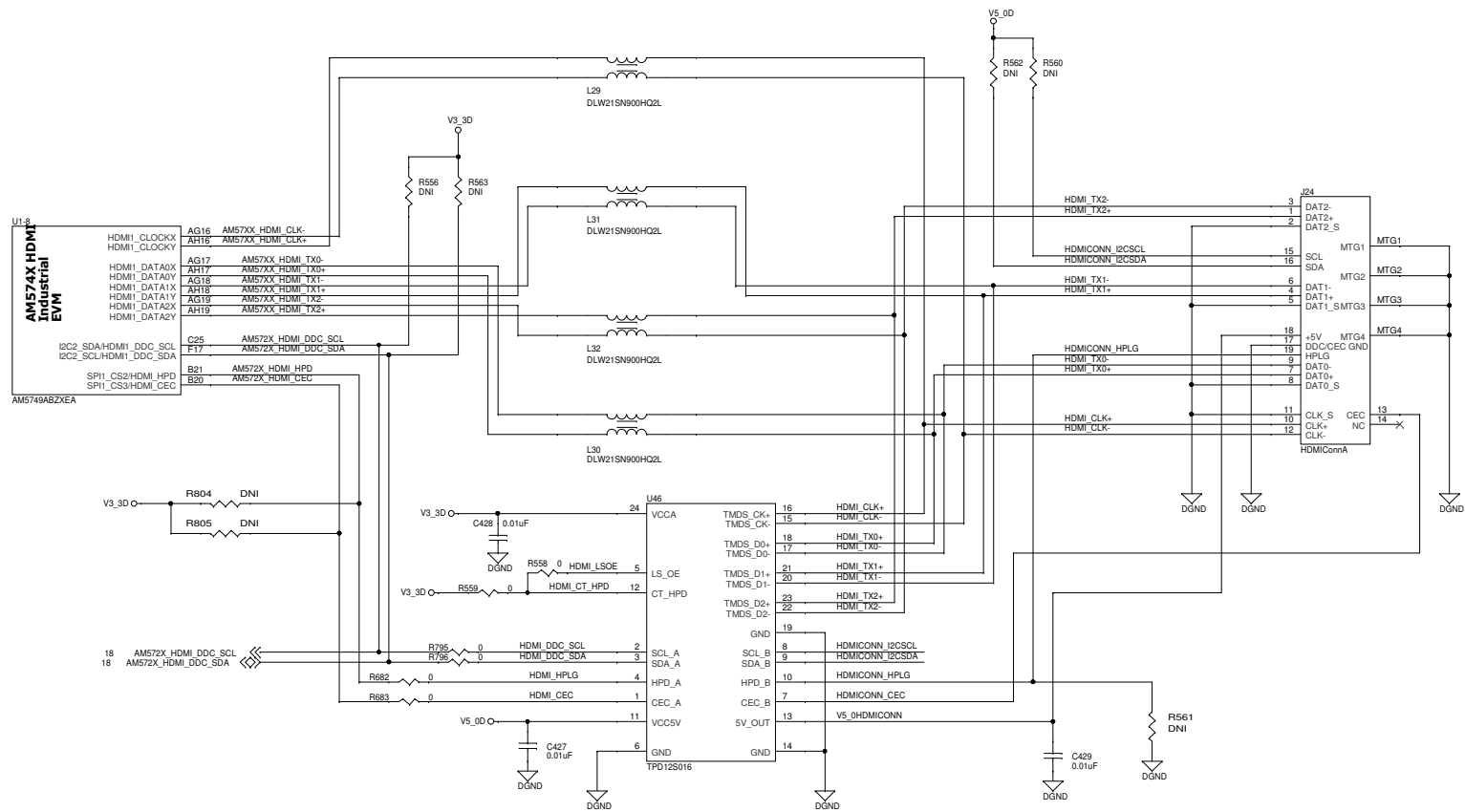


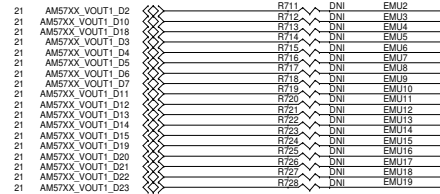
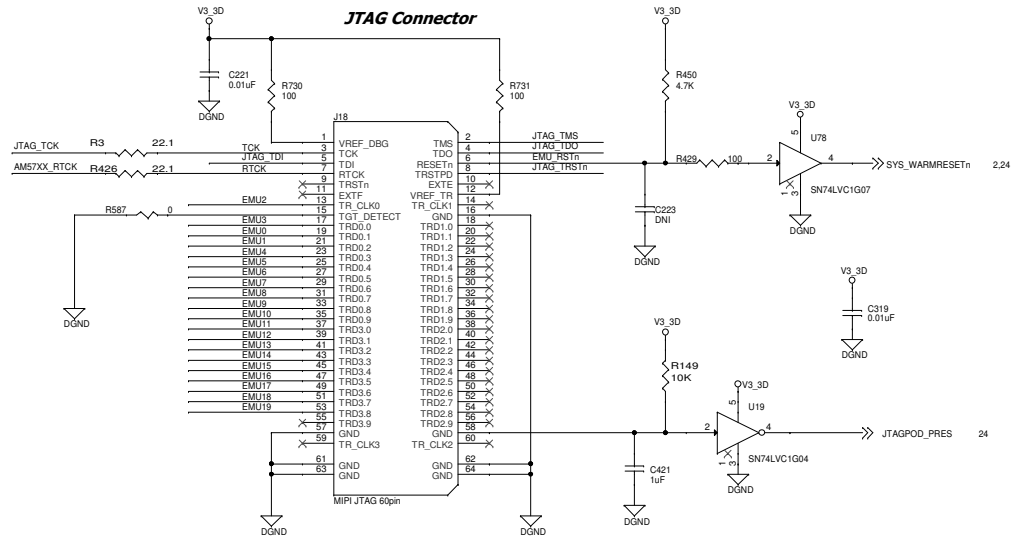
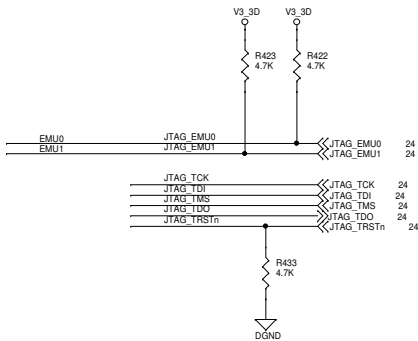
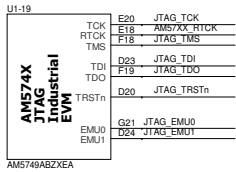
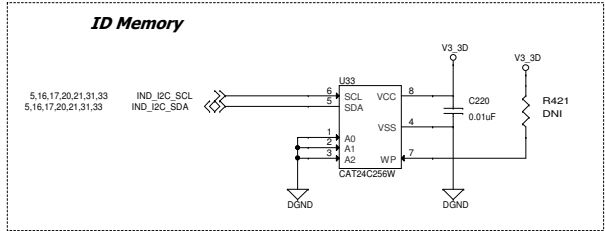




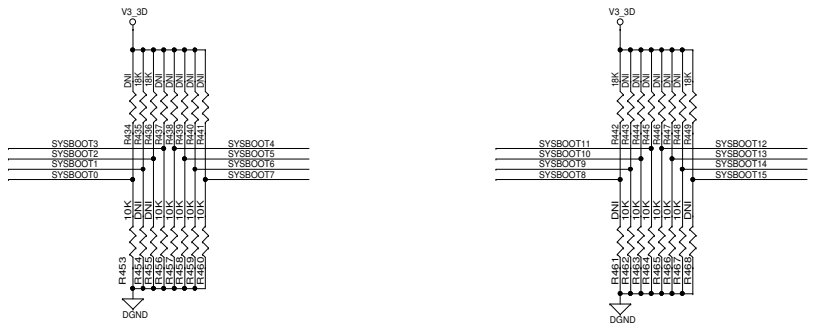
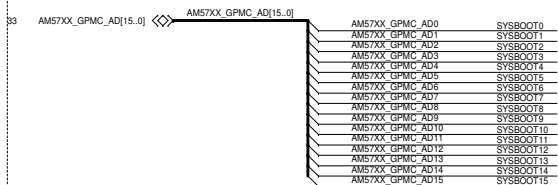


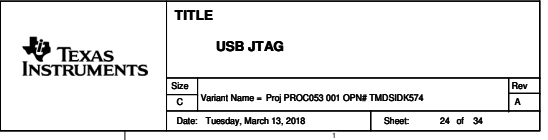




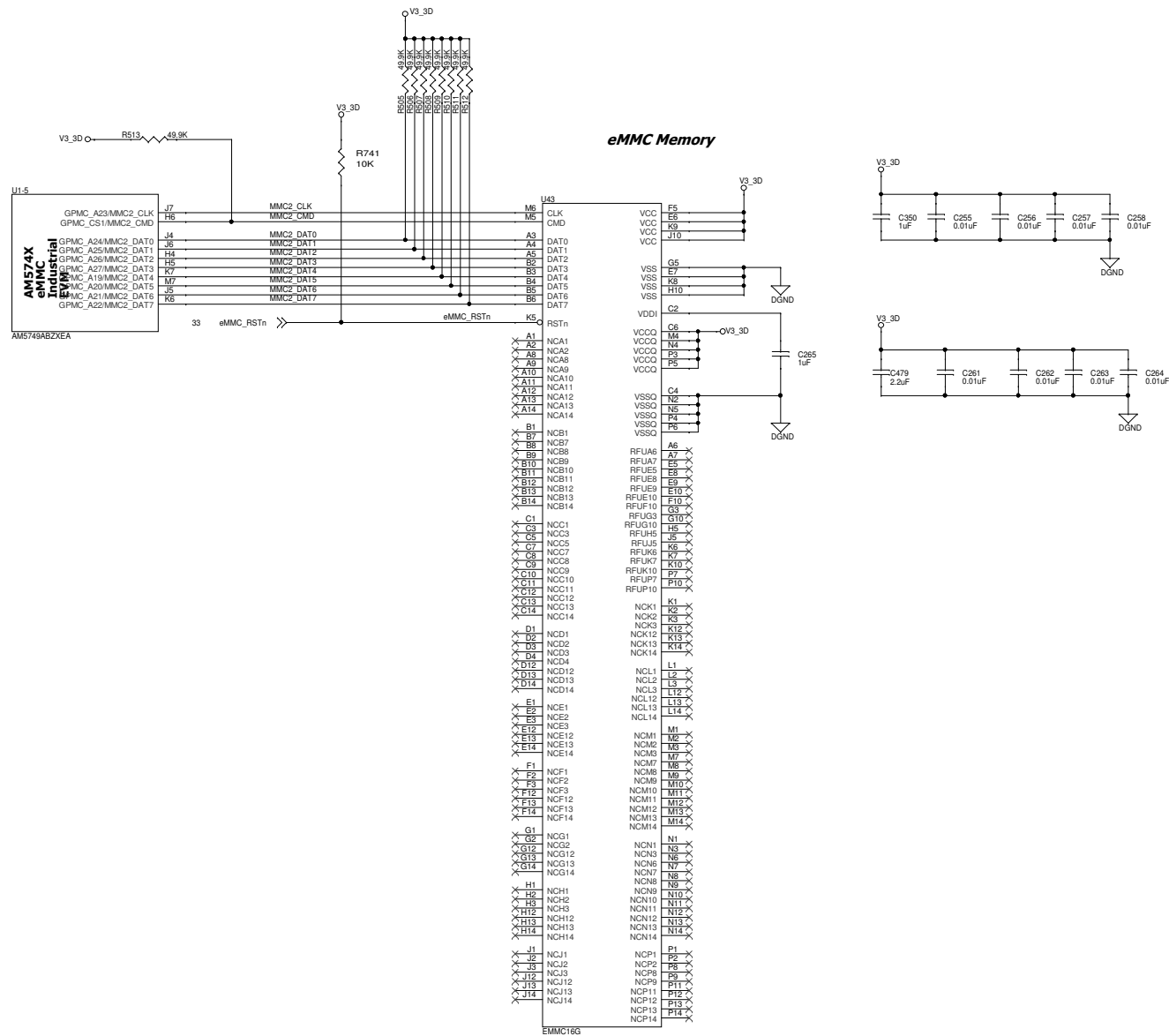


**Boot Configuration**









U1-17  
**AM574X  
USB1  
Industrial  
EVM**  
AM5749AB2XEAE

USB1\_DP  
USB1\_DM  
USB1\_DRVVBUS  
USB\_RXN0  
USB\_RXP0  
USB\_TXN0  
USB\_TXP0

AD12 AM572X\_USB1\_DP  
AC12 AM572X\_USB1\_DM  
AB10 AM572X\_USB1\_DRVVBUS  
AF12  
AE12  
AC11 AM572X\_USB1\_3\_0\_STD\_A\_SSTX-  
AD11 AM572X\_USB1\_3\_0\_STD\_A\_SSTX+

R557 0  
R553 10K  
C554 0.1uF  
C555 0.1uF

U66  
IN  
OUT  
IN  
OUT  
EN  
OC  
GND

TPS2065D  
V5\_0D  
USB1\_VBUS\_EN  
USB1\_OVRCURn  
R551 10K  
OV3\_3D

L11  
ACM2012  
VUSB\_VBUS1  
U64  
D1  
D2  
TPD2EUSB30DRTR

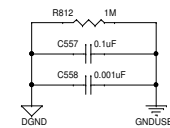
USB1\_3\_0\_STD\_A\_SSRX-  
USB1\_3\_0\_STD\_A\_SSRX+  
USB1\_3\_0\_STD\_A\_SSTX-  
USB1\_3\_0\_STD\_A\_SSTX+

U95  
D1+ NC6  
D1- NC7  
D2+ NC9  
D2- NC10  
GND  
GND  
TPD4E05U06

J23  
VBUS  
DM  
DP  
GND  
STD\_A\_SSRX-  
STD\_A\_SSRX+  
GND\_DRAIN  
STD\_A\_SSTX-  
STD\_A\_SSTX+  
USB3\_0\_SdA

S1  
S2  
GNDUSB1

**USB1 Port**



		TITLE	
		USB1 Port	
Size	Variant Name = Proj PROC053 001 OPN TMD5DK574		Rev
C			A
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U1-29  
**AM574X  
USB2  
Industrial  
EVM**  
AM5749ABZXE4

USB2\_DP  
USB2\_DM  
USB2\_DRVVBUS  
N1A\_D12/GPIO

AE11  
AF11  
AC10  
AF2

AM572X\_USB2\_DP  
AM572X\_USB2\_DM  
AM572X\_USB2\_DRVVBUS  
GPIO\_AM572X\_USB2\_ID

R787 0

R788 100

R791 10K

U94  
TPS2051BD

IN  
IN  
OUT  
OUT  
EN  
GND  
OC

6  
7  
8  
5

USB2\_OVRCURn

R790 10K

OV3\_3D

L33  
ACM2012

V3\_3D

R808 10K

M2  
Shunt0.1n

J50

C545 150uF

C546 4.7uF

USB2\_ID

USB2\_CONN\_DP

USB2\_CONN\_DM

VUSB\_VBUS2

**USB2 Port**

J45

GND  
ID  
DP  
DM  
VBUS

S1  
S2  
S3  
S4

USB\_MicroAB

GNDUSB2

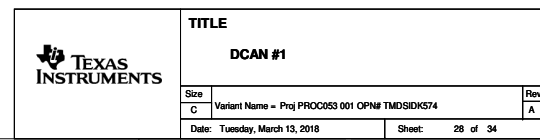
R813 1M

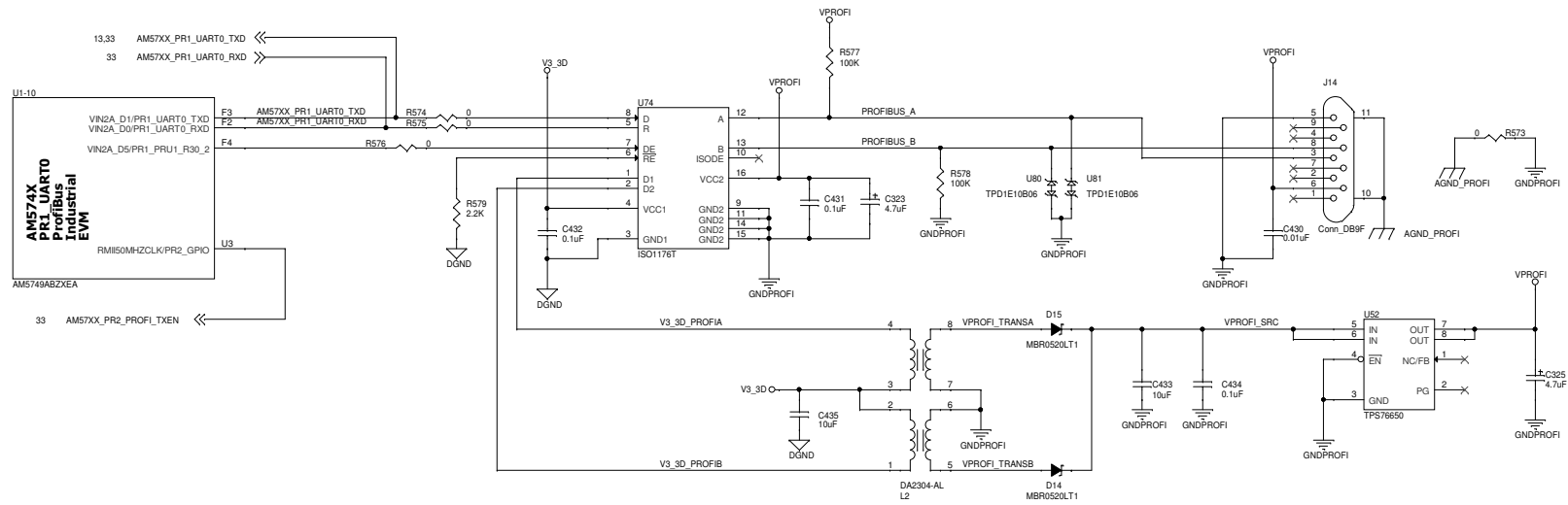
C559 0.1uF

C560 0.001uF



TITLE		
USB2 Port		
Size	Variant Name = Proj PROC053 001 OPN TMSIDK574	Rev
C		A
Date: Tuesday, March 13, 2018	Sheet: 27 of 34	





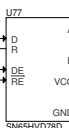
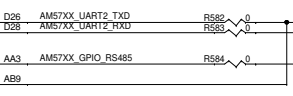
U1-27

AM574X  
RS-485  
Industrial EVM

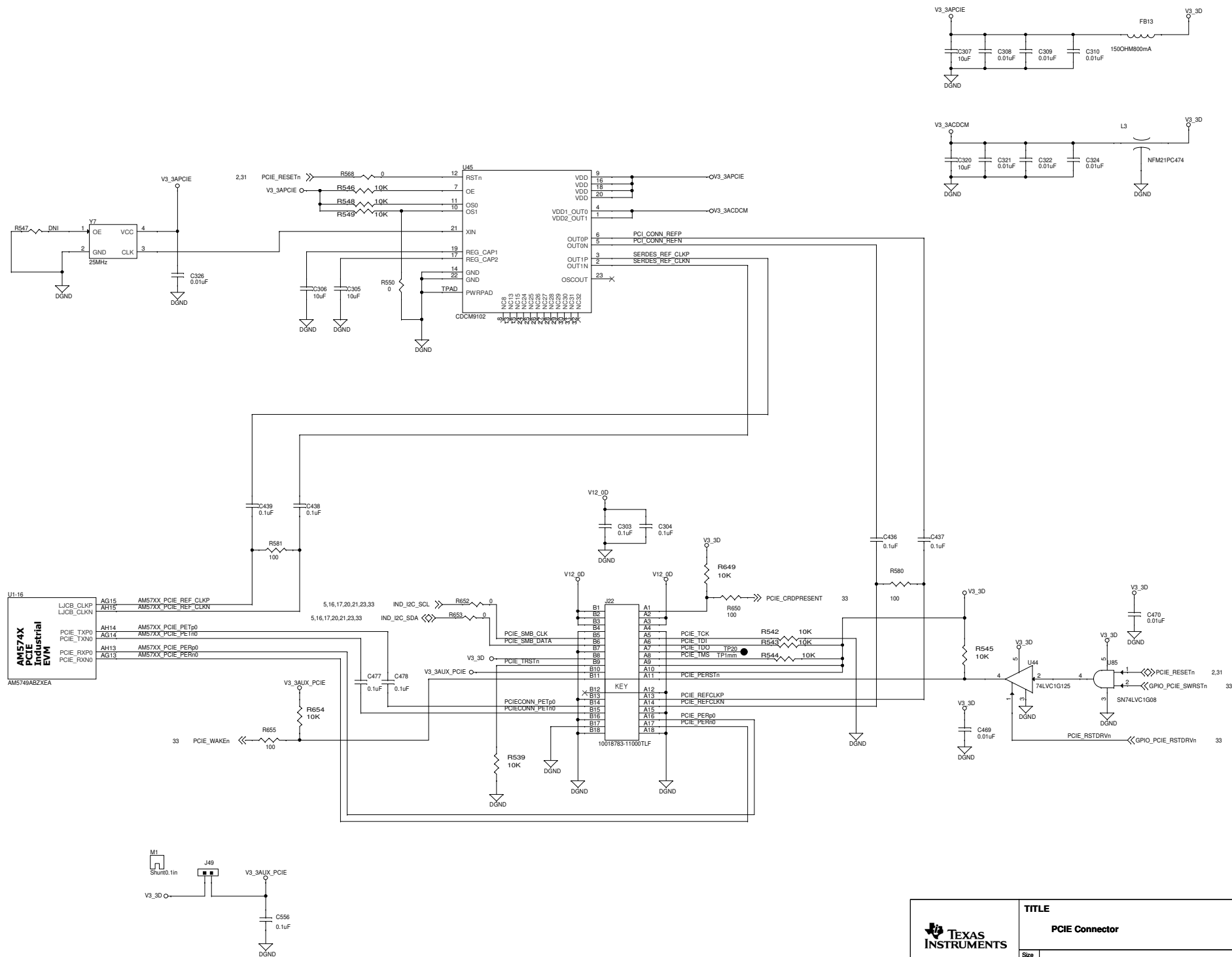
AM5749ABZXE4

MCASP5\_ACLKX/PR2\_PRU1\_R30\_1  
MCASP5\_FSX/PR2\_PRU1\_R31\_2

UART2\_TXD  
UART2\_RXD

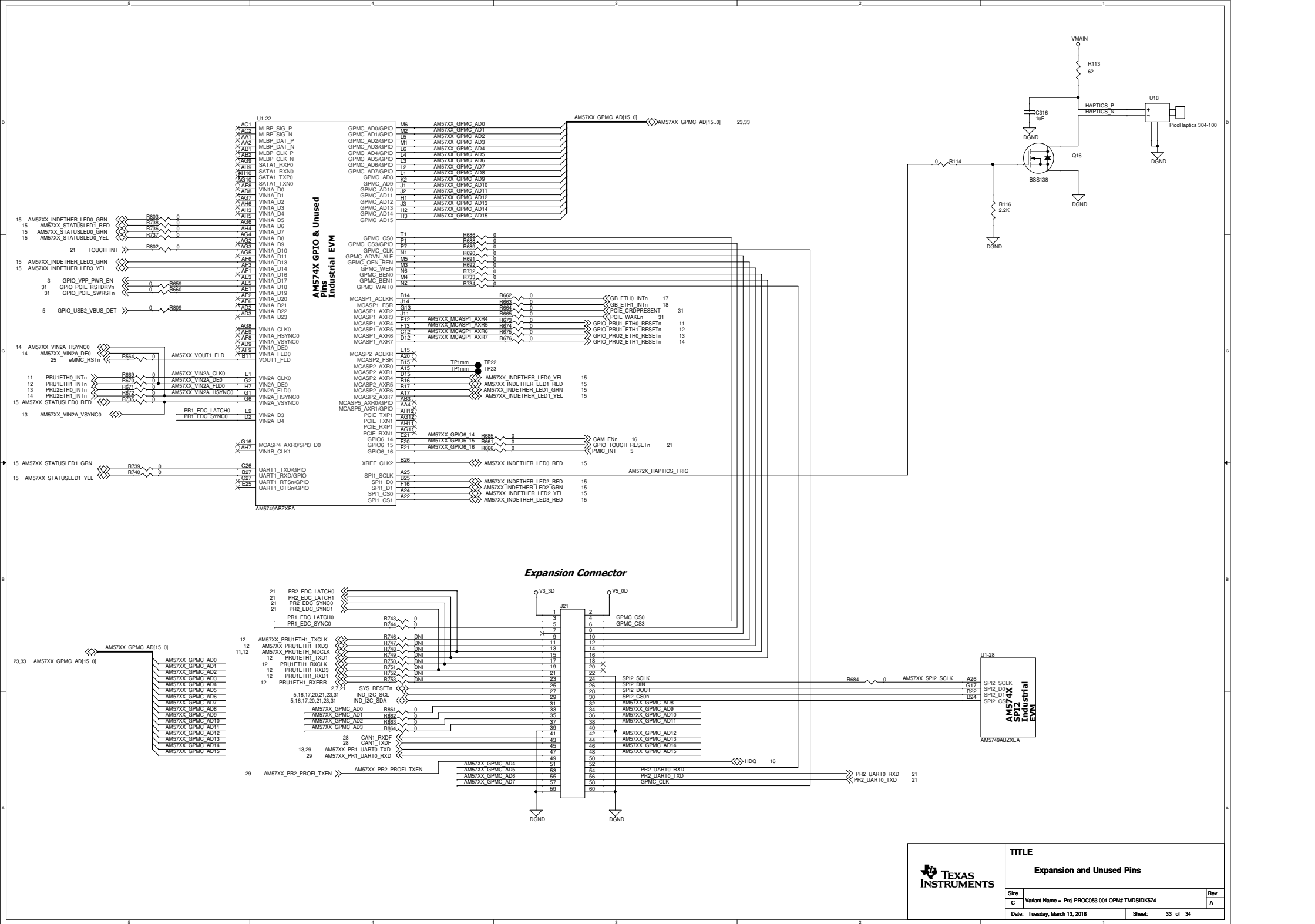


TITLE		
RS-485		
Size	Variant Name = Proj PROC053 001 OPN TMDSIDK574	
C		
Date: Tuesday, March 13, 2018	Sheet: 30 of 34	Rev A









PCB LOGO:  
Texas Instruments



PCB LOGO:  
WEEE and CE



PCB LOGO:  
FCC disclaimer

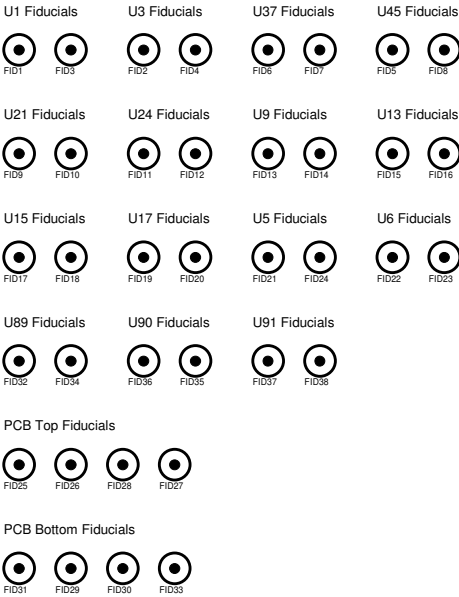
For evaluation only; not  
FCC approved for resale

PCB LOGO:  
Caution Hot Surface



Install label in silkscreened box after final wash.  
Text shall be 8 pt. Text shall be per the label table in the PDF schematics

- Assembly Notes:
- 1. These assemblies are ESD sensitive. ESD precautions shall be observed.
  - 2. These assemblies must be clean and free from flux and all contaminants. Use of 'no clean flux' is not acceptable.
  - 3. These assemblies must comply with workmanship standard IPC-A-610 Class 2, unless otherwise specified.
  - 4. Each finished board will receive a serial number sticker during final testing.
  - 5. Each finished board will receive a MAC Address sticker during final testing.
  - 6. Install header shunt M1 (on J49) and M2 (on J50) during final testing.



PCB1  
PROC053

Variant / Label Table	
Variant	Label Text
001	TMD5DK574
002	TMD5DK574H

LBL1  
PCB LABEL

TITLE	
Hardware	
Size	Rev
C	A
Variant Name = Proj PROC053 001 OPN# TMD5DK574	
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