NOTES, UNLESS OTHERWISE SPECIFIED:

1. The netname "P3P3V" represents connection to the +3.3V digital power plane.
2. The netname "P2P5V" represents connection to the +2.5V digital power plane.
3. The netname "P1P8V" represents connection to the +1.8V digital power plane.
4. The netname "P1P2V" represents connection to the +1.2V digital power plane.
5. The netname "P12V" represents connection to the +12V digital power plane.
6. The symbol represents connection to the digital ground plane.
7. The symbol represents connection to a ground plane isolated from digital ground.
8. A "Z" suffix on a signal name indicates an active low signal.
9. A "HC_X" suffix on a signal name indicates a high current trace.
   The "X" portion is the required current rating in Amps.
10. All components with designators "U", "D", "Y" and "Q" are electrostatic discharge sensitive.
11. All resistor values are in ohms, 1/16W and 5% unless otherwise specified.

Z_PCB1

PCB, DLP HUD Formatter
DLP007
2514133

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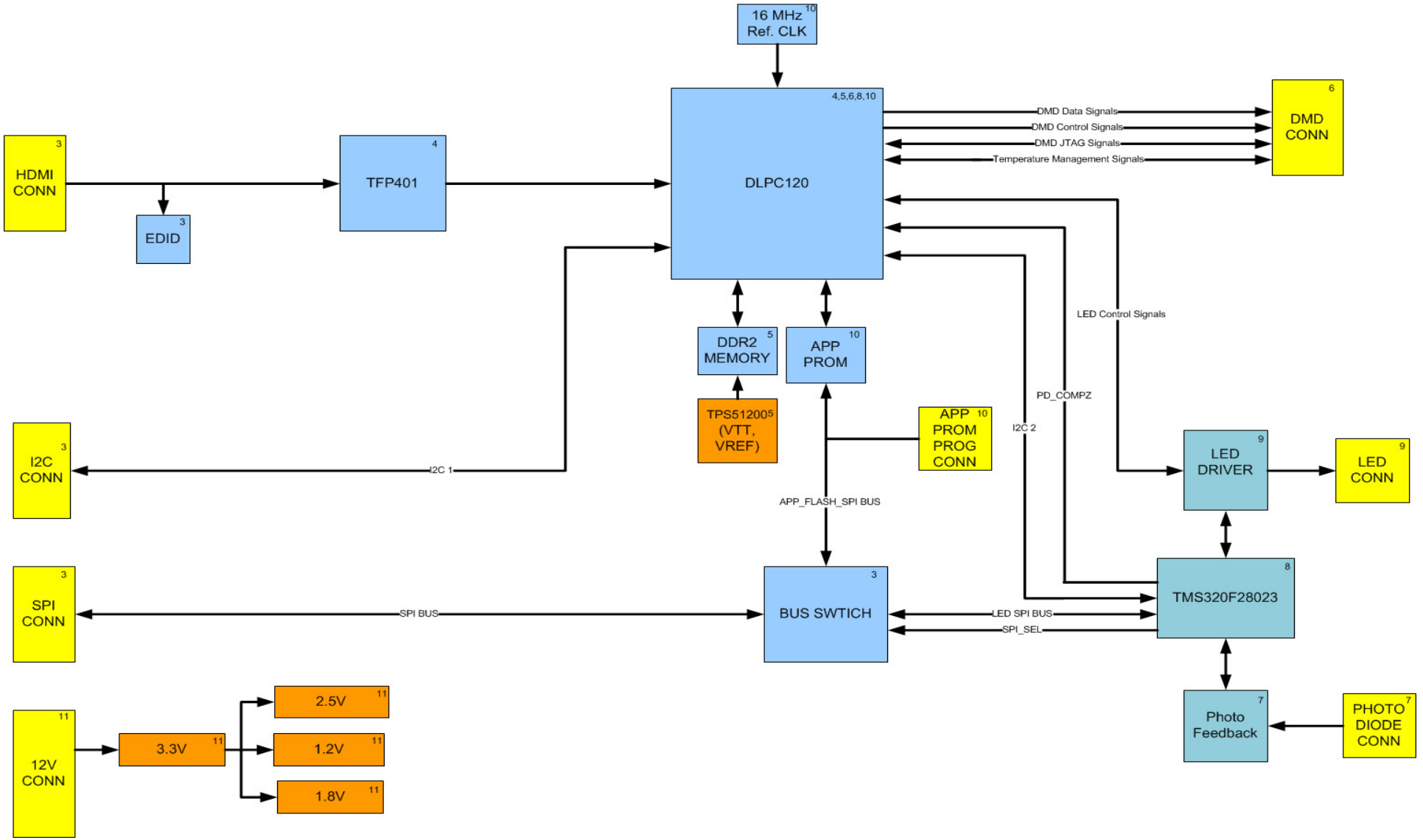
COMPUTER GENERATED DRAWING. DO NOT REVISE MANUALLY

REVISIONS

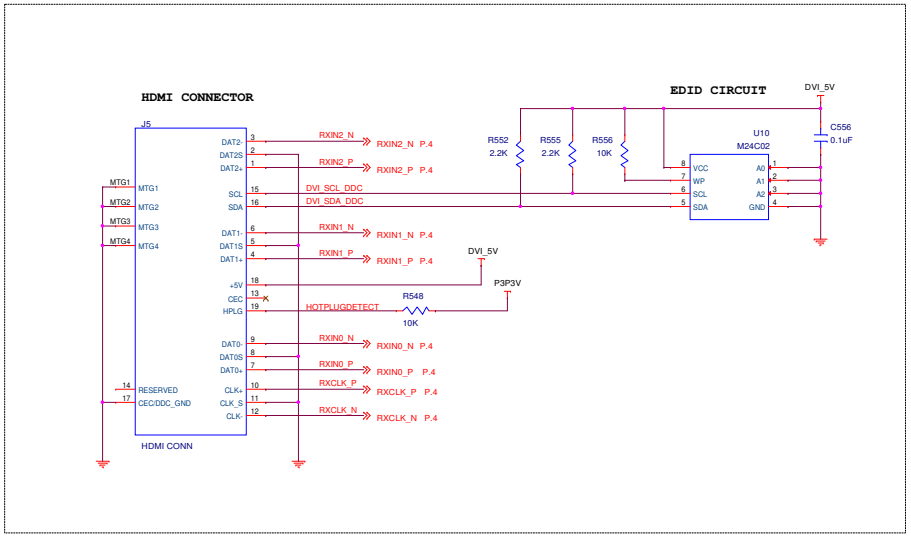
REV	DESCRIPTION	DATE	APPROVED
A	Initial Board Release	08/15/18	

		DWN Jackson Thomas DATE 08/17/18	TEXAS INSTRUMENTS
		ENGR Jackson Thomas	(C) COPYRIGHT 2014 TEXAS INSTRUMENTS ALL RIGHTS RESERVED
		SYST Jeff Farris	
		PRJ Jason Thompson	TITLE: Schematic, Automotive HUD Formatter Board
		QA Scott Croff	TIDA-080004
NEXT ASSY	USED ON		D / DRAWING NO 2516391 / REV A
APPLICATION		SW Cadence Capture 16.6	SCALE / SHEET 1 of 11

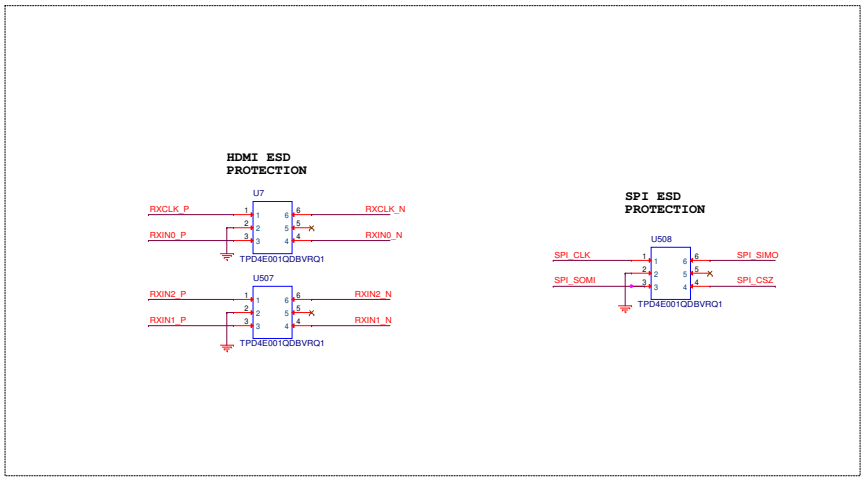


TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
	ISSUE DATE 08/17/18			SCALE	SHEET 2 OF 11

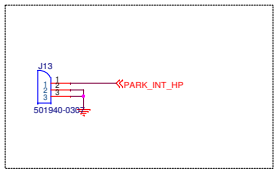
HDMI INPUT BLOCK



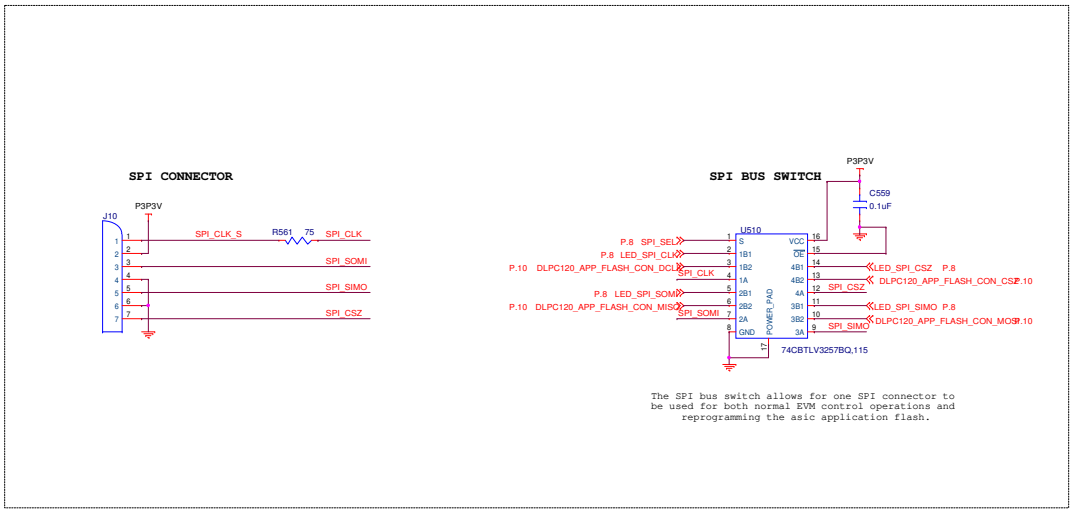
INPUT ESD PROTECTION



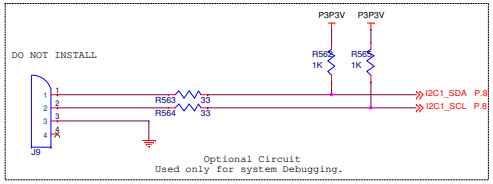
High Priority Park Interrupt Signal



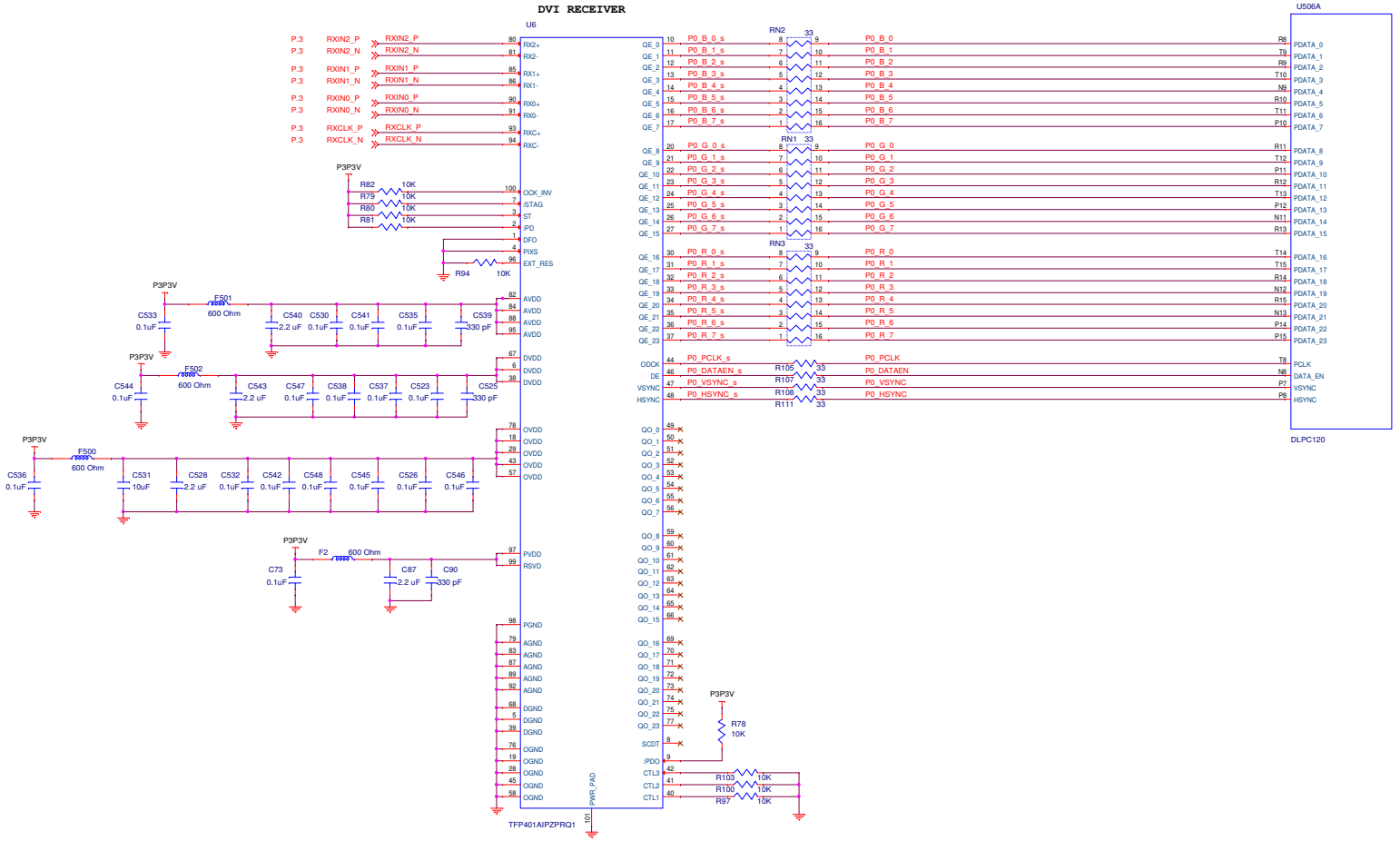
SPI INPUT BLOCK

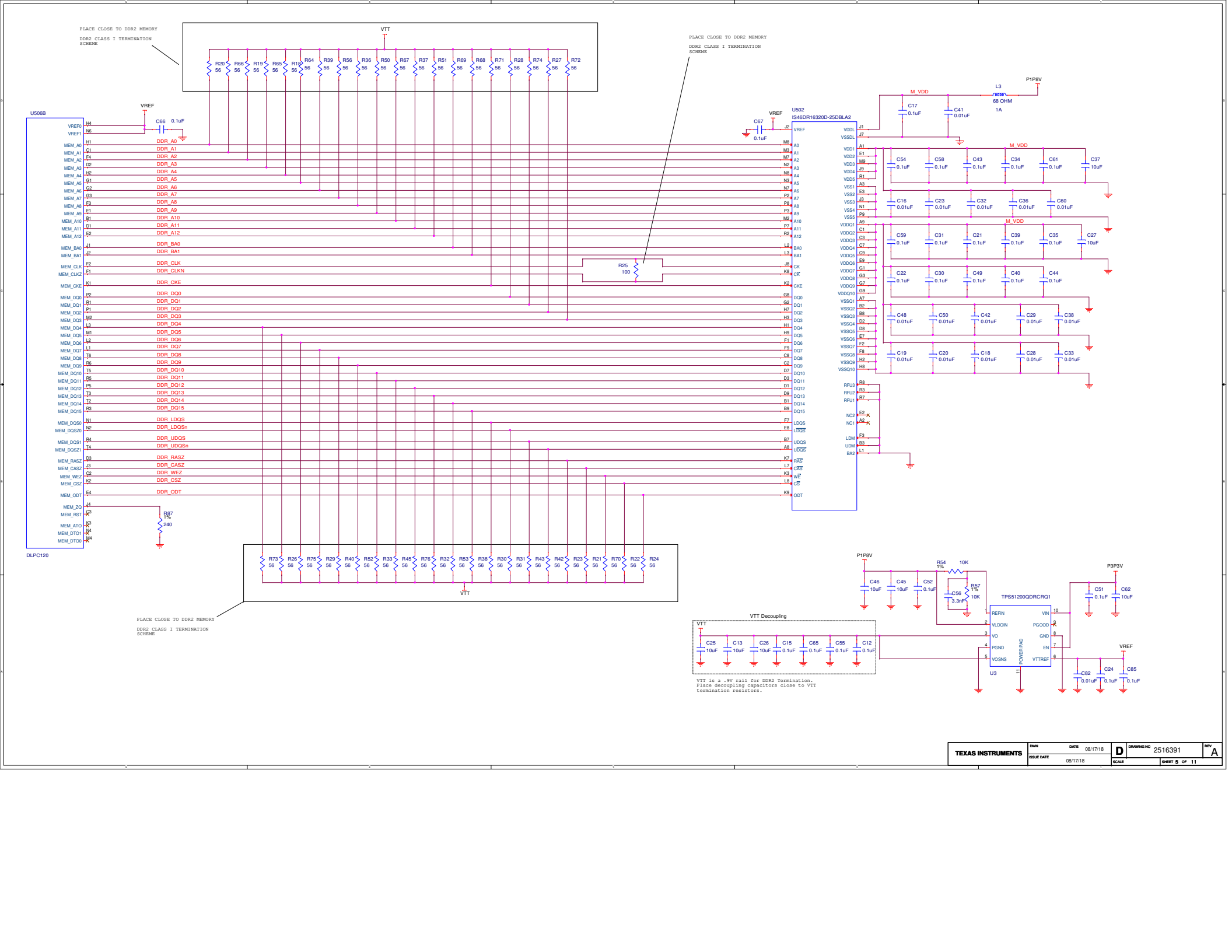


I2C 1 INPUT



TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
	ISSUE DATE 08/17/18			SCALE	SHEET 3 OF 11


DVI RECEIVER
U6
TFP401AIPZPRQ1
U506A
DLPC120
P3P3V
RXIN2_P
RXIN2_N
RXIN1_P
RXIN1_N
RXIN0_P
RXIN0_N
RXCLK_P
RXCLK_N
R82 10K
R79 10K
R80 10K
R81 10K
R94 10K
F501 600 Ohm
F502 600 Ohm
F500 600 Ohm
F2 600 Ohm
RN2 33
RN1 33
RN3 33
R105 33
R107 33
R108 33
R111 33
R78 10K
R103 10K
R100 10K
R97 10K
PWR_PAD
TEXAS INSTRUMENTS
DRAWING NO 2516391
REV A
SHEET 4 OF 11
ISSUE DATE 08/17/18



TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
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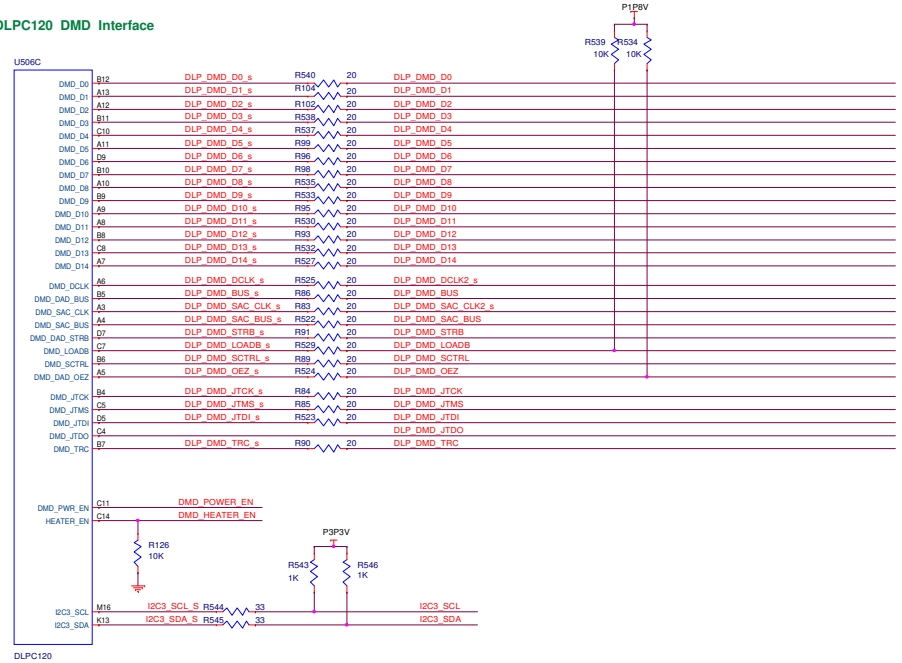
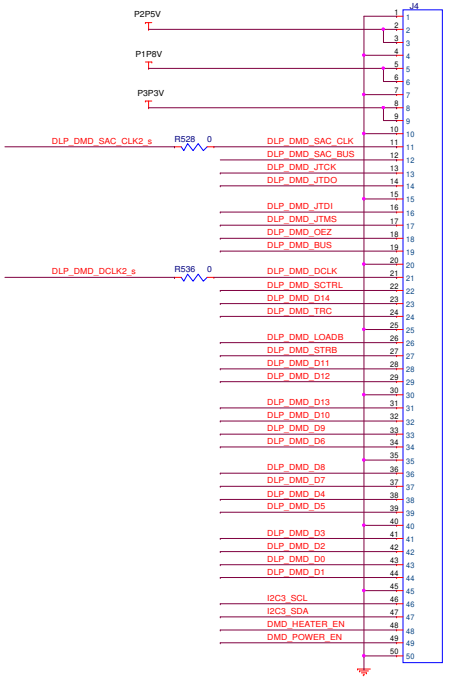
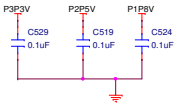
DLPC120 DMD Interface

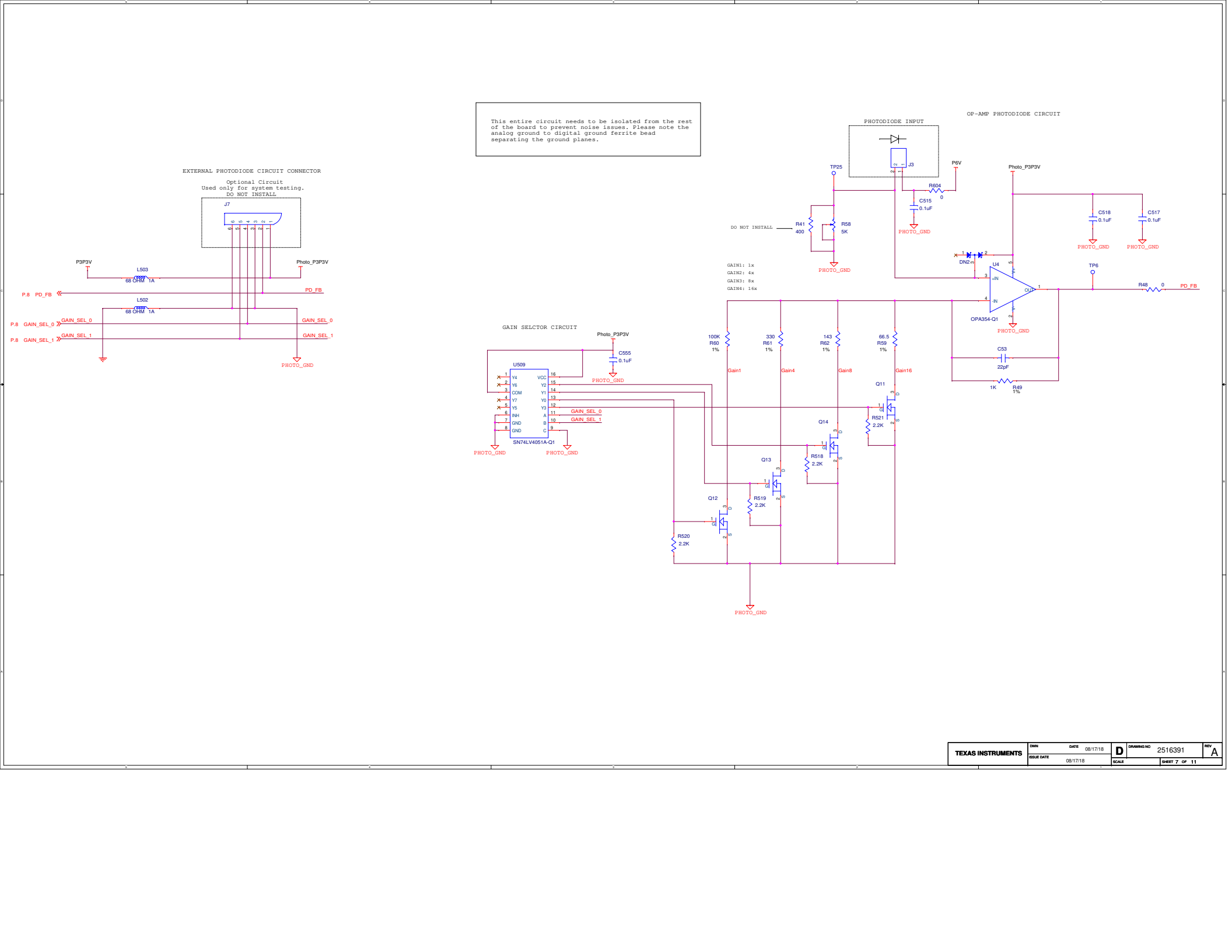


DMD Connector





TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
	ISSUE DATE	08/17/18		SCALE	SHEET 6 OF 11


EXTERNAL PHOTODIODE CIRCUIT CONNECTOR
Optional Circuit
Used only for system testing.
DO NOT INSTALL
J7
P3P3V
L503
68 OHM 1A
Photo_P3P3V
P.8 PD_FB
PD_FB
L502
68 OHM 1A
P.8 GAIN_SEL_0
GAIN_SEL_0
P.8 GAIN_SEL_1
GAIN_SEL_1
PHOTO_GND
This entire circuit needs to be isolated from the rest of the board to prevent noise issues. Please note the analog ground to digital ground ferrite bead separating the ground planes.
PHOTODIODE INPUT
J3
TP25
P6V
R604
0
C515
0.1uF
PHOTO_GND
DO NOT INSTALL
R41
400
R58
5K
PHOTO_GND
OP-AMP PHOTODIODE CIRCUIT
Photo_P3P3V
C518
0.1uF
C517
0.1uF
PHOTO_GND
PHOTO_GND
DN2
U4
TP6
R48
0
PD_FB
OPA354-Q1
PHOTO_GND
C53
22pF
1K
R49
1%
GAIN1: 1x
GAIN2: 4x
GAIN3: 8x
GAIN4: 16x
GAIN SELCTOR CIRCUIT
Photo_P3P3V
C555
0.1uF
PHOTO_GND
U509
SN74LV4051A-Q1
GAIN_SEL_0
GAIN_SEL_1
PHOTO_GND
PHOTO_GND
100K
R60
1%
330
R61
1%
143
R62
1%
66.5
R59
1%
Gain1
Gain4
Gain8
Gain16
Q11
R521
2.2K
Q14
R518
2.2K
Q13
R519
2.2K
Q12
R520
2.2K
PHOTO_GND
TEXAS INSTRUMENTS
DWN
DATE 08/17/18
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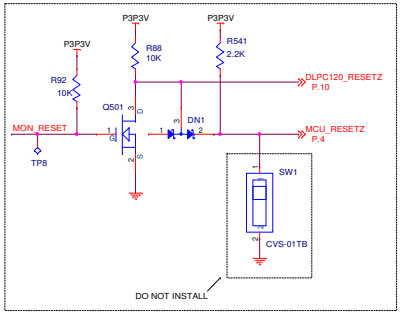
ASIC RESET CONTROLLER



LED DRIVE ENABLE LOGIC

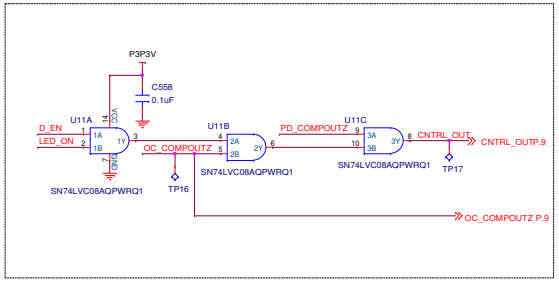
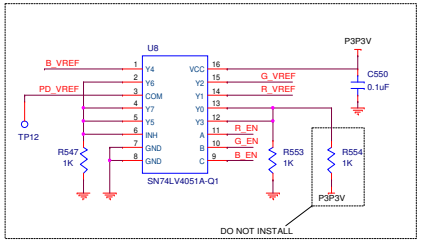
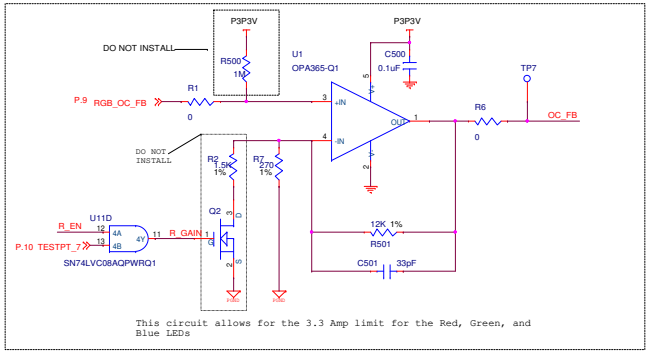


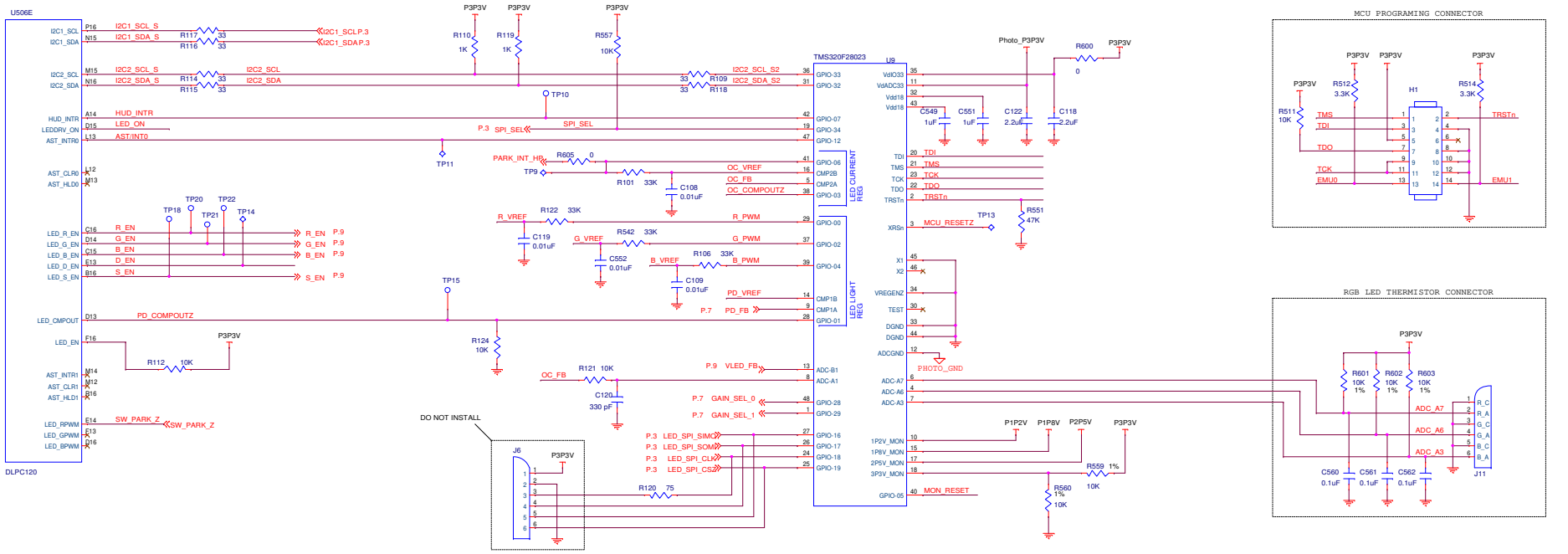
PHOTO DIODE REFERENCE SELECTOR



LED CURRENT FEEDBACK



LED DRIVER CONTROLLER CIRCUIT



MCU PROGRAMING CONNECTOR

RGB LED THERMISTOR CONNECTOR

TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
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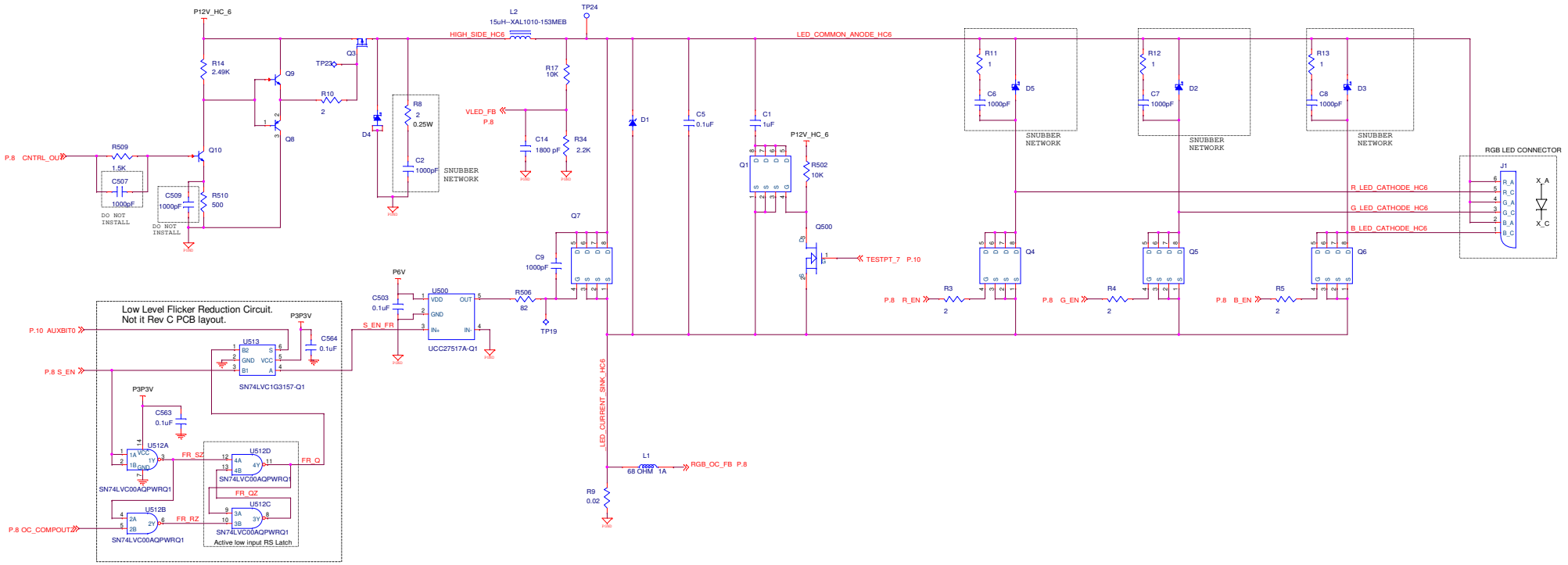

TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
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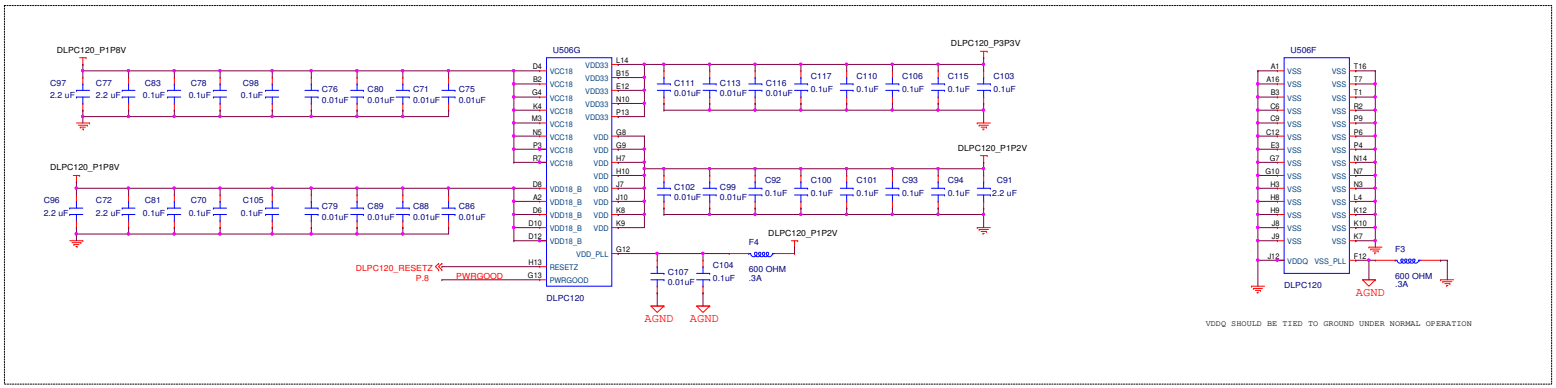
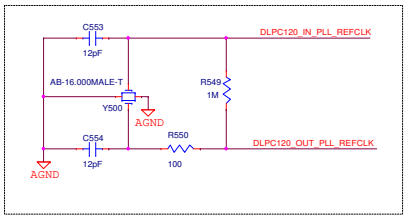
DLPC120 POWER

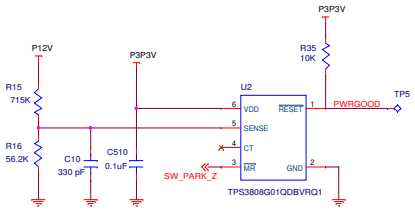


DLPC120 PLL REFERENCE CLOCK CIRCUITS

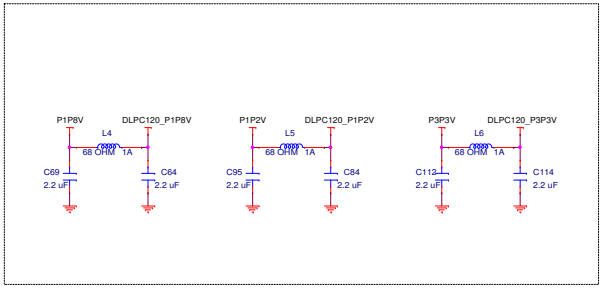


Place Circuit as Close as Possible to the ASIC.

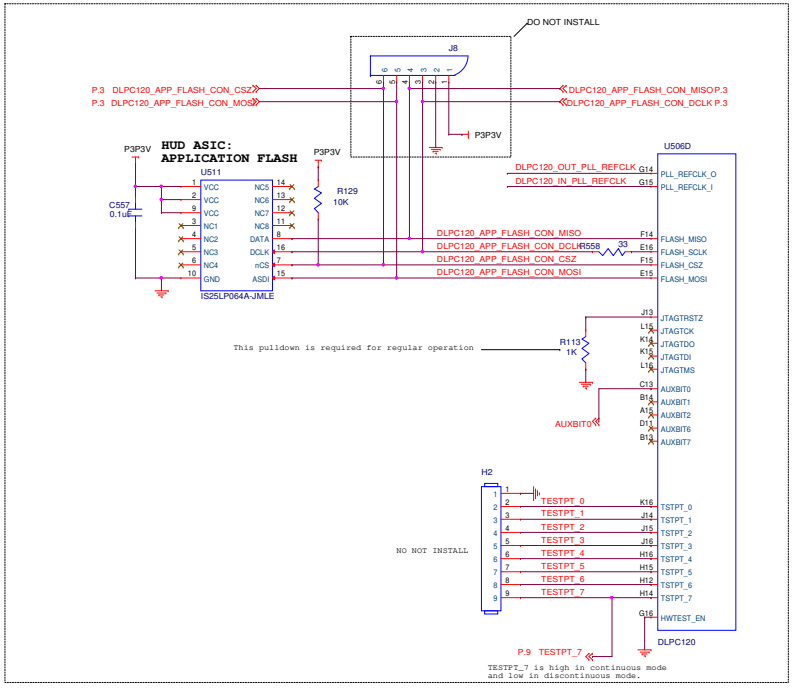
BATTERY VOLTAGE MONITOR



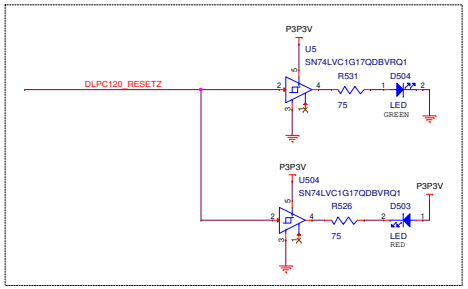
ASIC EMC FILTER



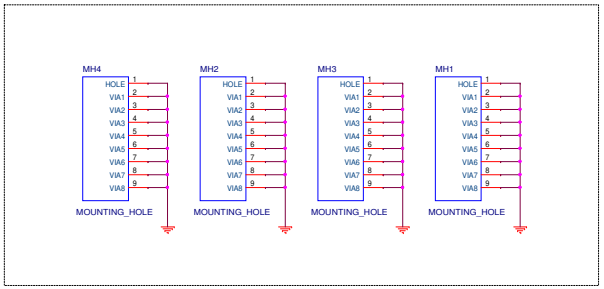
DLPC120 TEST AND CONFIGURATION INTERFACES



SYSTEM POWER/RESET INDICATORS



PBC MOUNTING HOLES



TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
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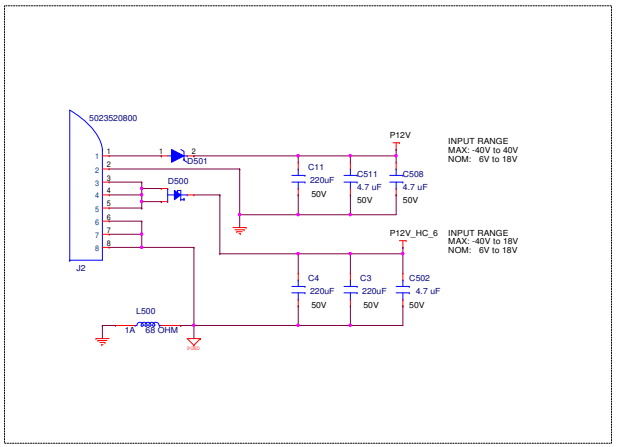
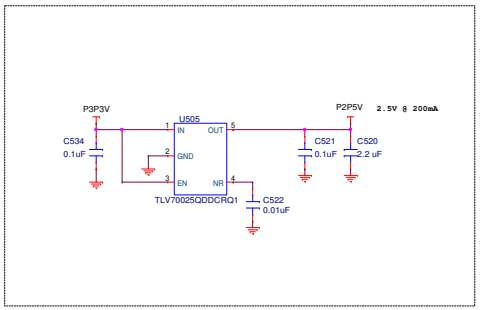
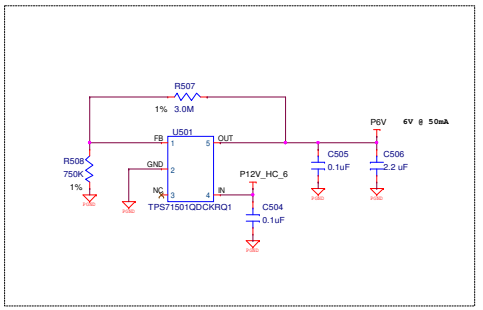
12V POWER INPUT



2.5V REGULATOR

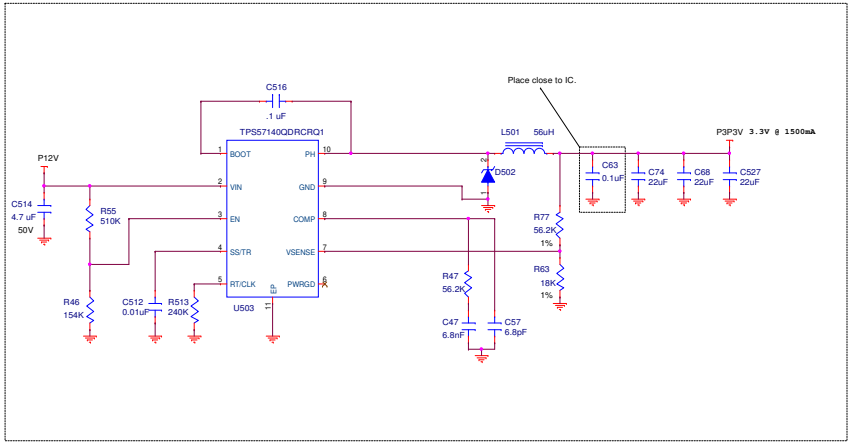


5V REGULATOR

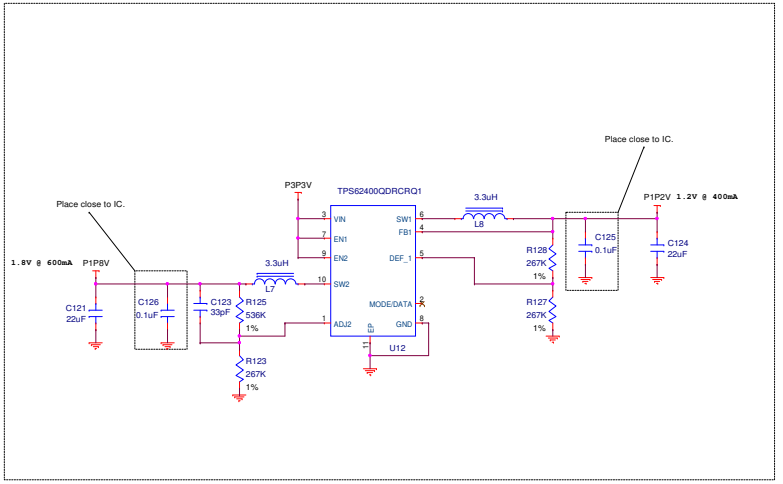


Optional Circuit
Used only for system testing.

3.3V REGULATOR



1.2V AND 1.8V REGULATOR



TEXAS INSTRUMENTS	DWN	DATE 08/17/18	D	DRAWING NO 2516391	REV A
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