

RFC Reader / BSU IO

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Controlled Impedances

RF 50ohm Microstrip



W= 20 mil Top -- 7 mil Layer 3
ISO= 50 mil - 0.050"

USB 90ohm Diff. Pair

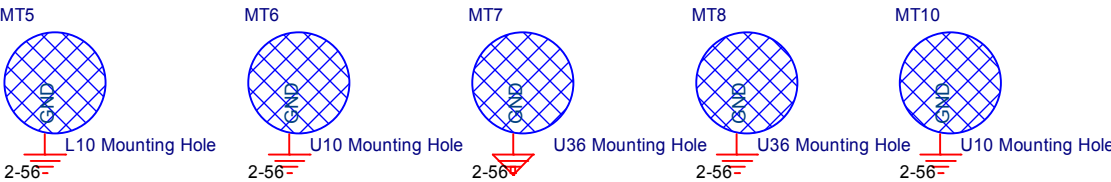
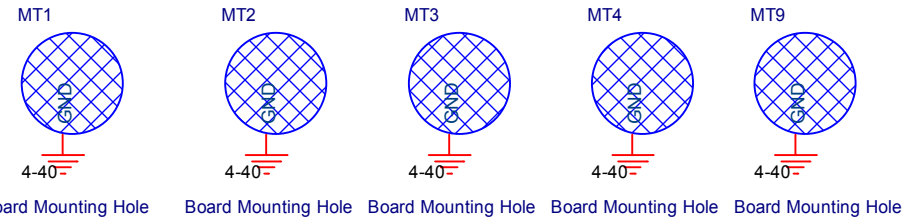
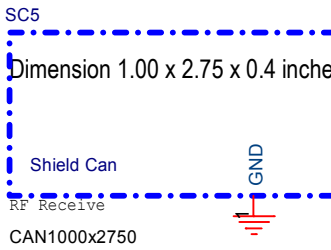
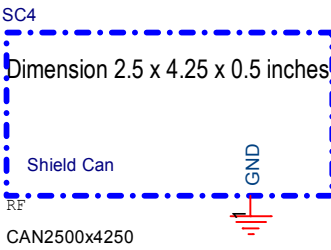
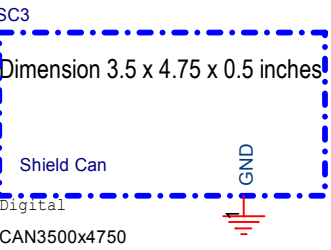
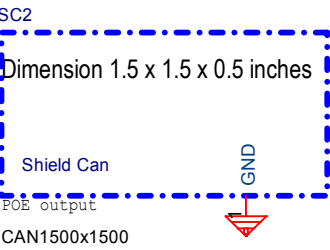
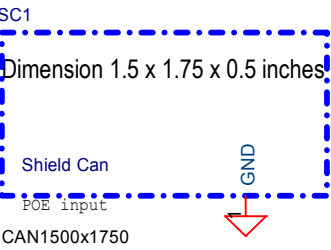


Equal Length
W= 16 mil Top -- 16 mil Bottom
Gap= 10 mil Top -- 10 mil Bottom
ISO= 50 mil - 0.050"

Ethernet 100ohm Diff. Pair



Equal Length
W= 16 mil Top -- 16 mil Bottom
Gap= 16 mil Top -- 16 mil Bottom
ISO= 60 mil - 0.060"



Board Connectors

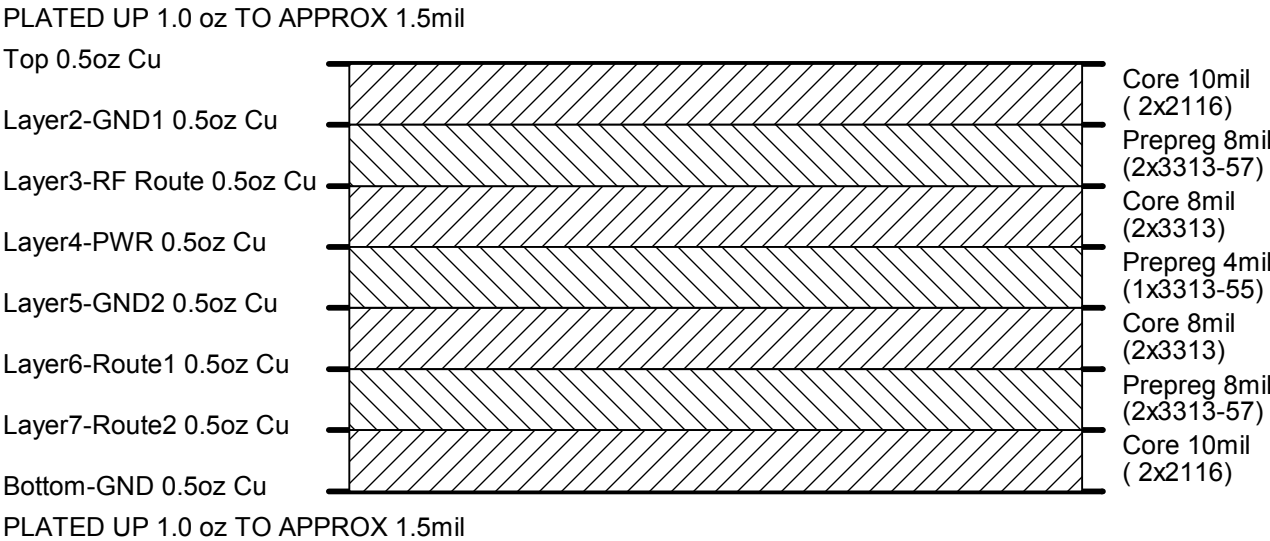
- J1: RJ45 Jack POE- Power and Communication
- J5: SMA RF1_OUT Tx/Rx
- J8: 2.5x5.5mm Barrel Power Jack+12-24VDC @2A
- J10: I/O 20pin 2x10 SAMTEC IPL111001LDRAK
- J9: USB A Receptacle R/A VERT BSU communication
- J12: 9-pin DSUB plug RS232 Communication
- J13: Vert Mini B USB ATMEL SAM3X8C FLASH
- U21: iMX6 SOM Connector
- J22: FFC Label 8 pin Locking
- J23: SD Card for SOM BOOT and Image Load
- J14: RJ45 RA SHIELDED NO LED SPI Interboard
- J15: RJ45 RA SHIELDED NO LED SPI Interboard

Revision History

- 122 Rev 01 Initial Design October 2013 Finished Nov 22, 2013
- 122 Rev 02 Annotated Design January 2013 Finished Mar 25, 2014
- 123 Rev 01 Modify -122 Rev 05 for Four Port Standalone Reader Option Finished August 20, 2014
- 127 Rev 01 Modify -123 Rev 01 (4-Port) for Integrated BSU/Reader Board

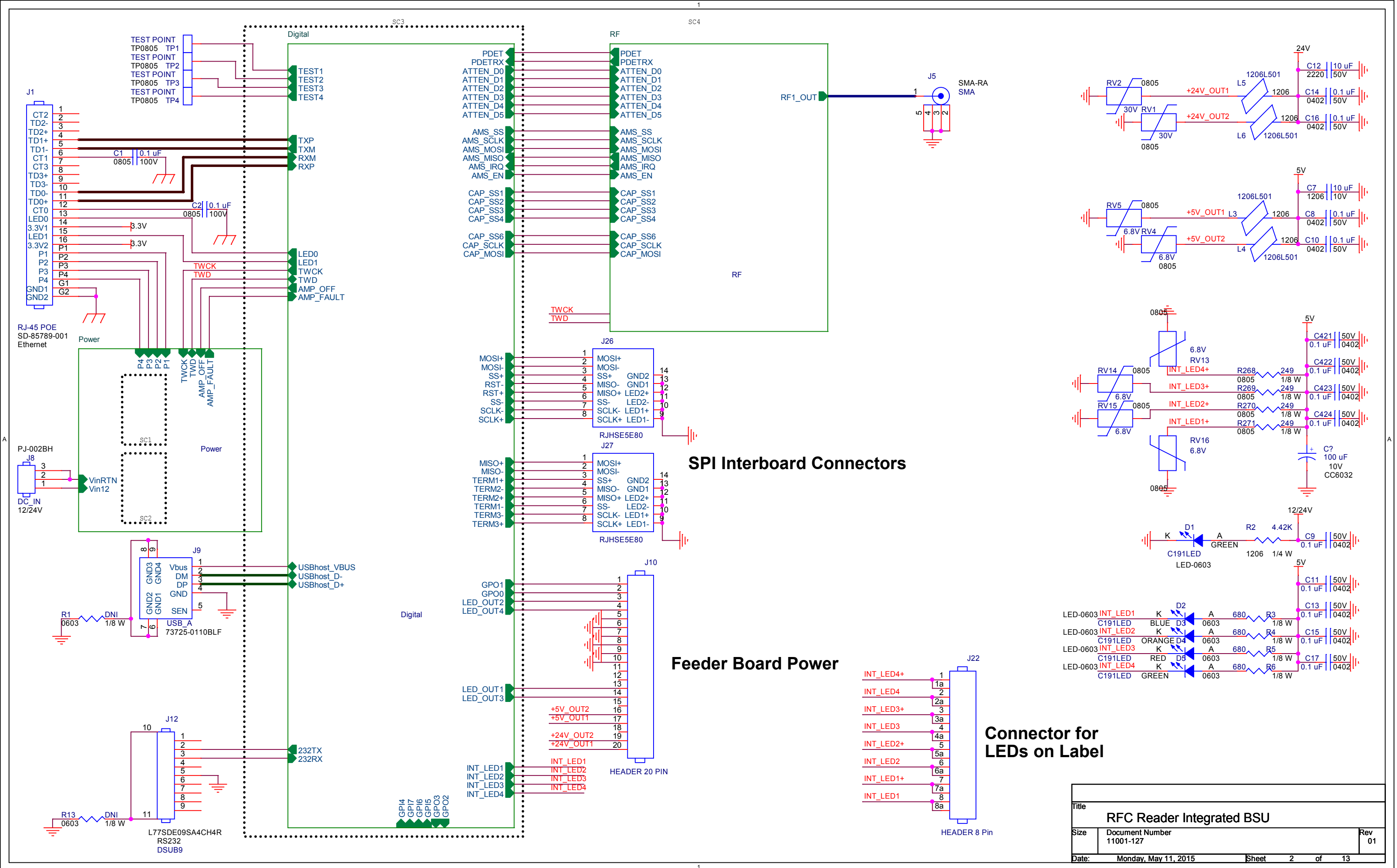
PCB Stackup

FR408HR Dk=3.7 Df=0.009 Total Height 65mil - 0.065"



50 Ohm VIA - 13 mil hole, 20 mil pad top and inner, and bottom, 8 mil isolation from planes

RF-Controls, LLC		
1400 South 3rd Street, Suite 220 St. Louis, MO 63104		
Title RFC Reader Integrated BSU		
Size B	Document Number 11001-127	Rev 01
Date: Monday, May 11, 2015	Sheet 1	of 13

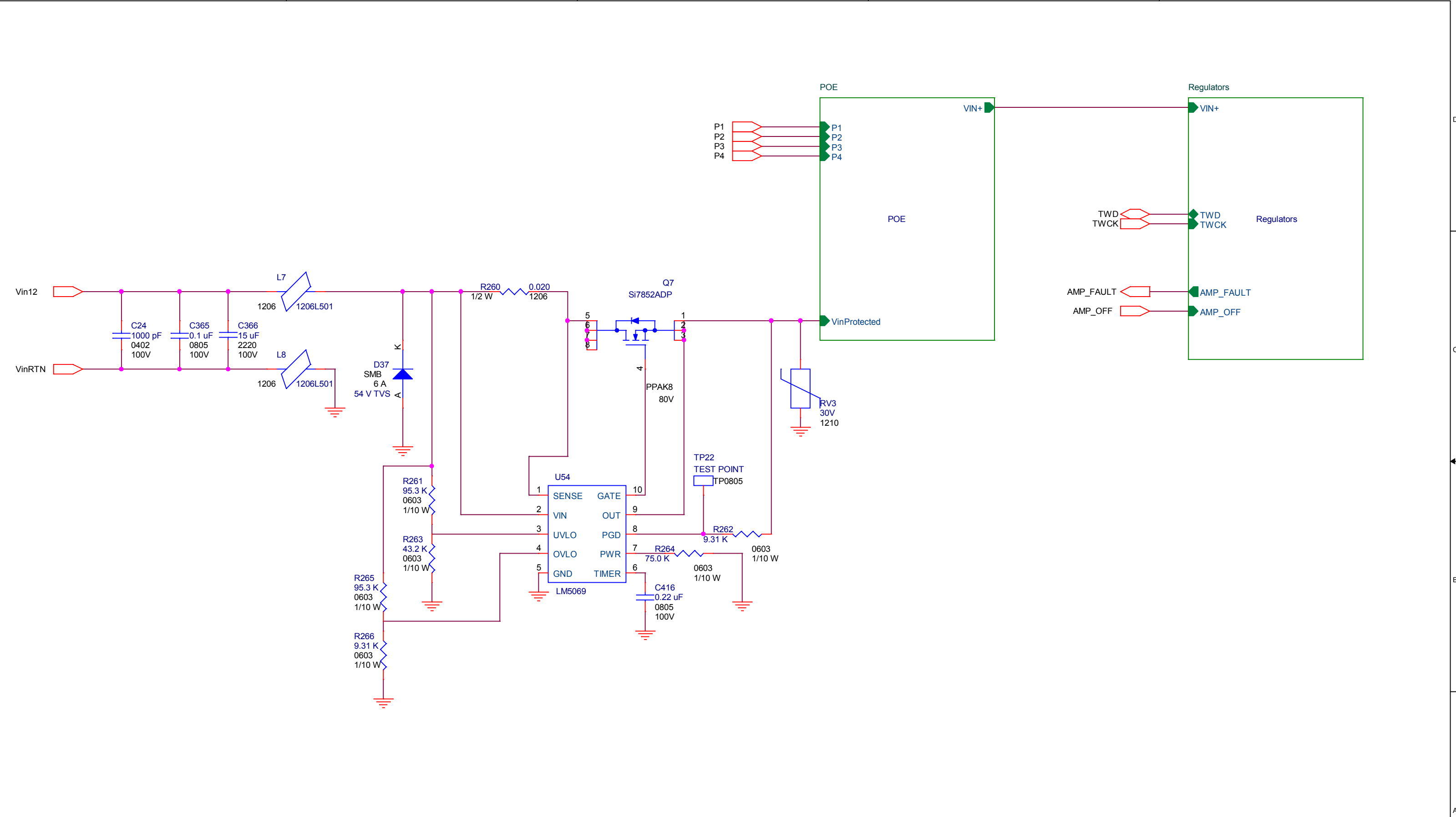


SPI Interboard Connectors

Feeder Board Power

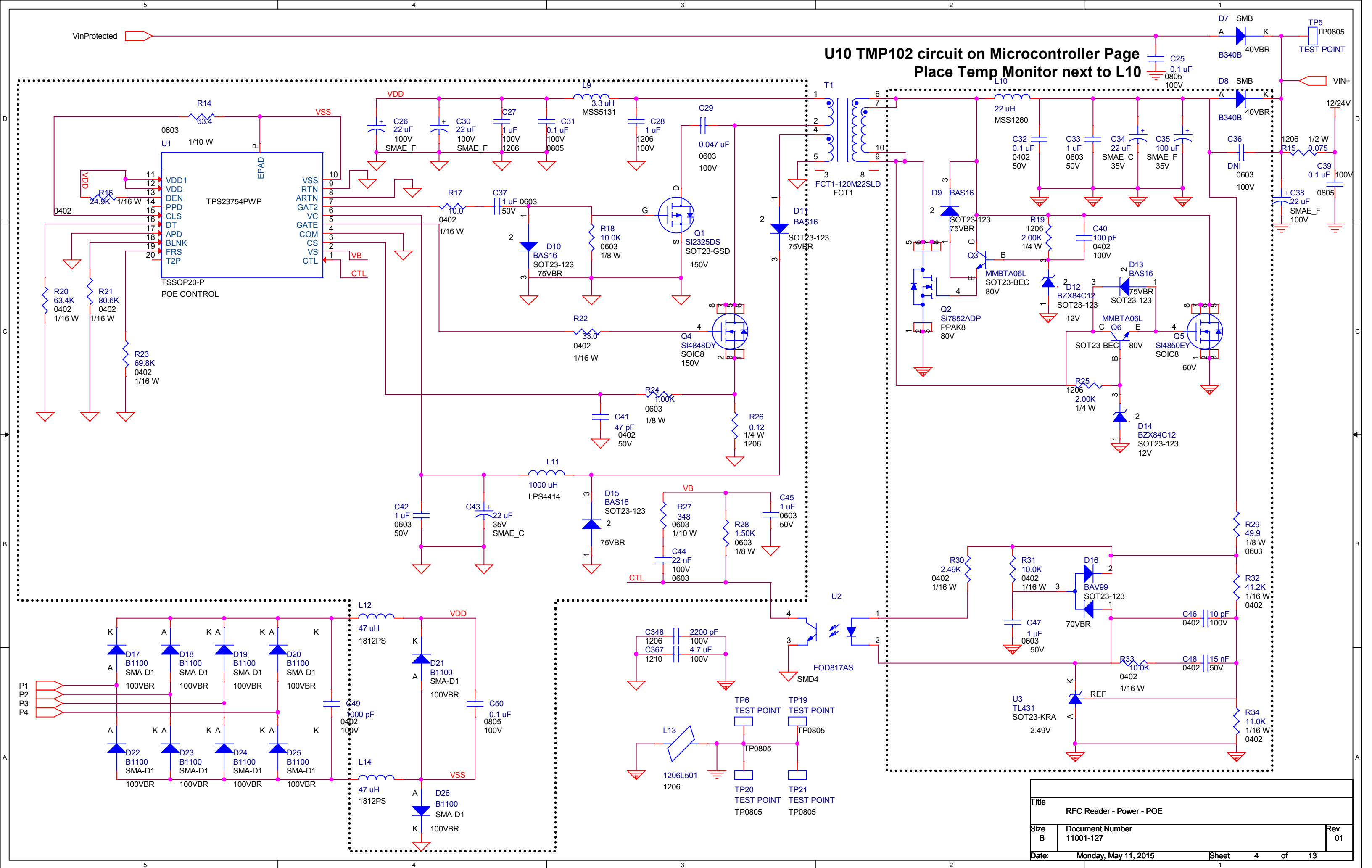
Connector for LEDs on Label

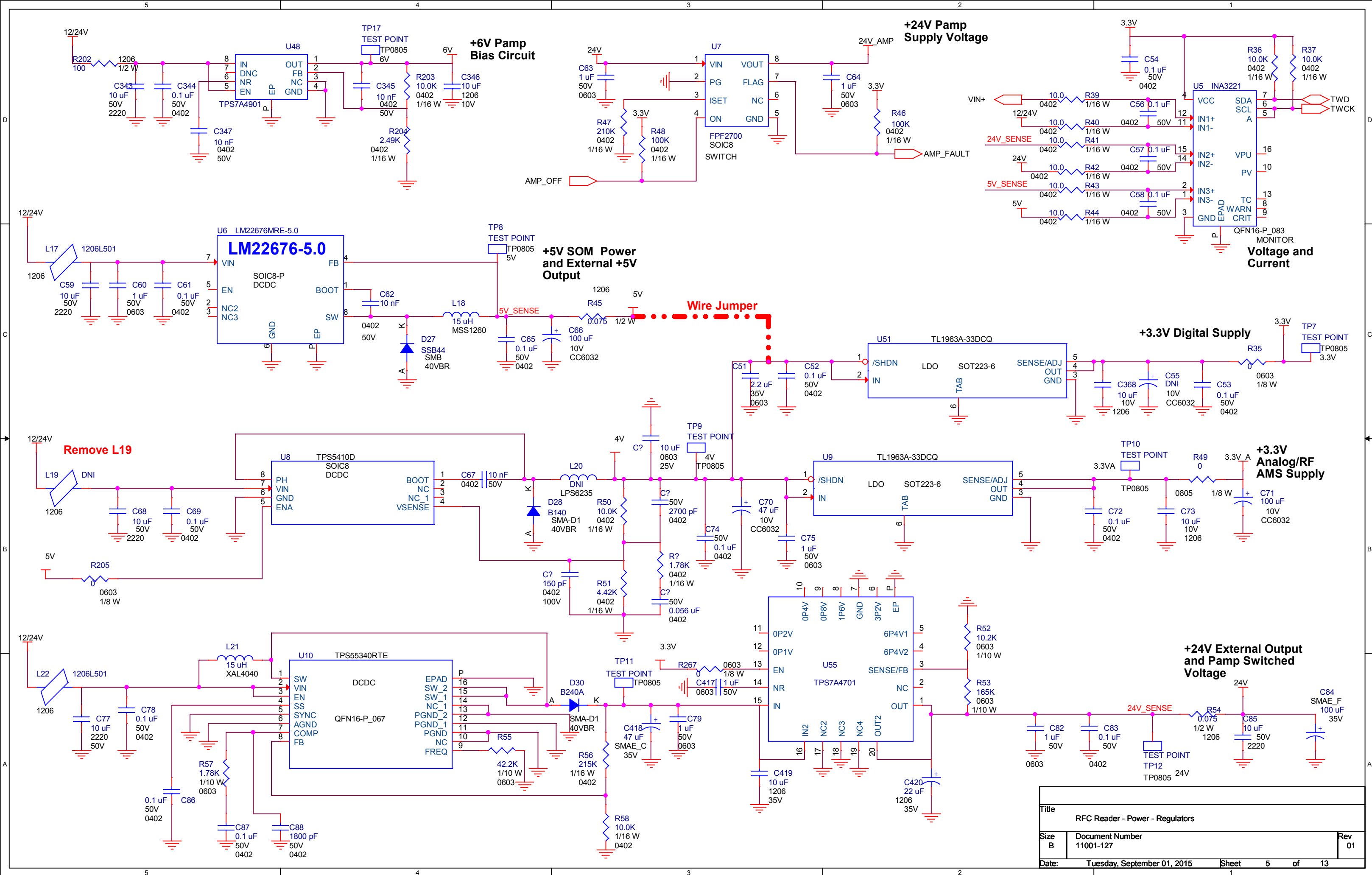
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Size	Document Number	Rev
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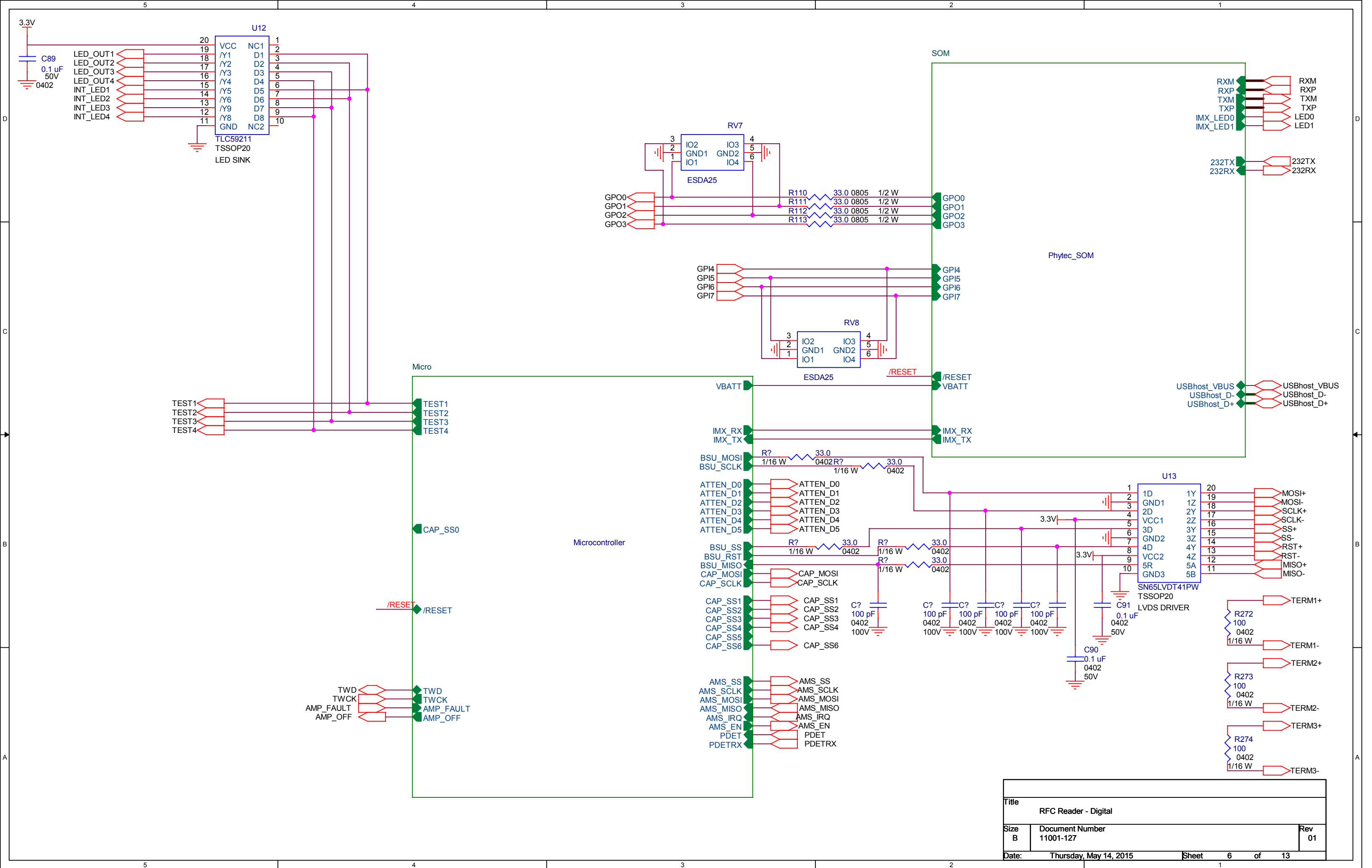


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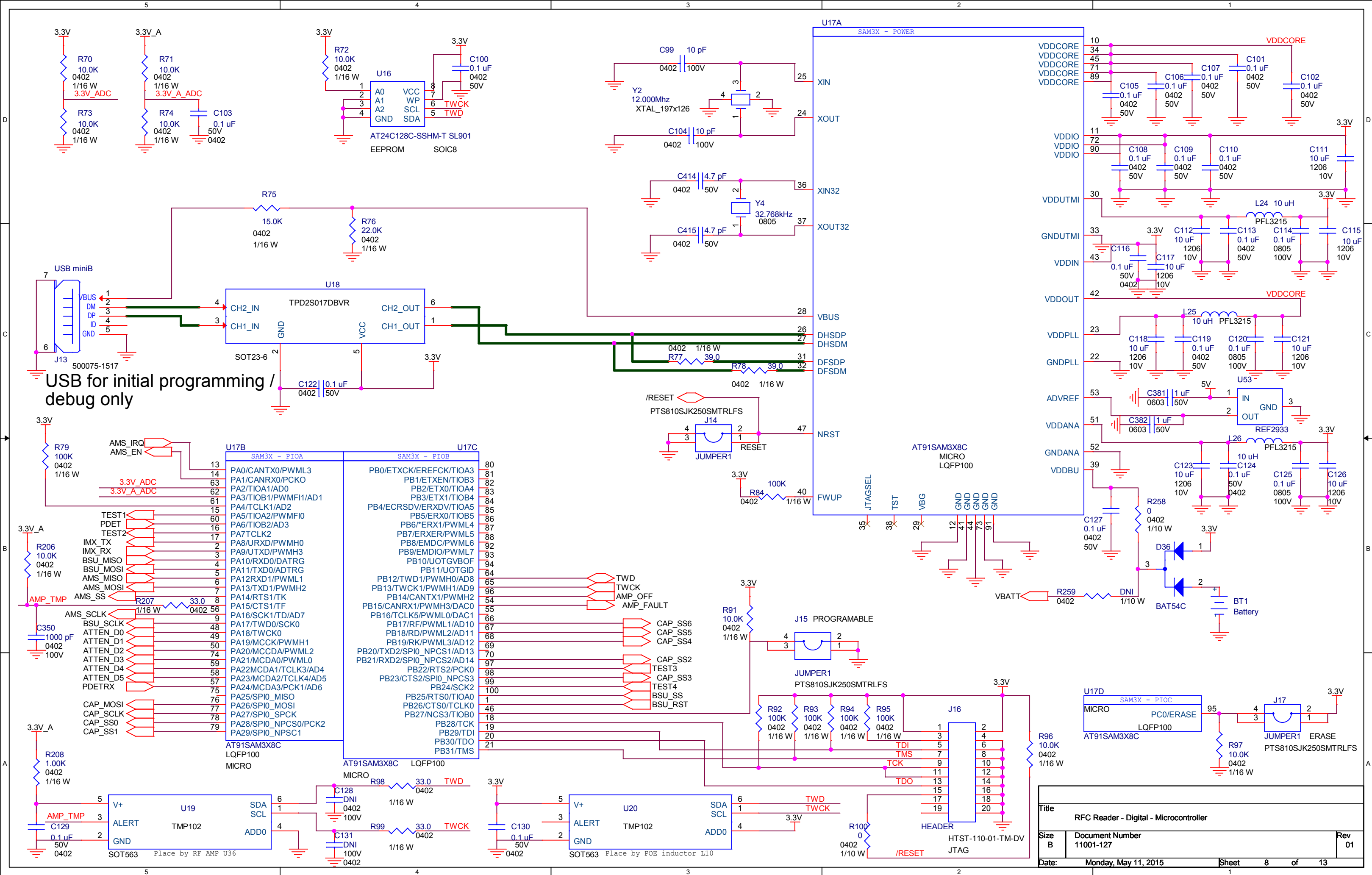
U10 TMP102 circuit on Microcontroller Page
Place Temp Monitor next to L10

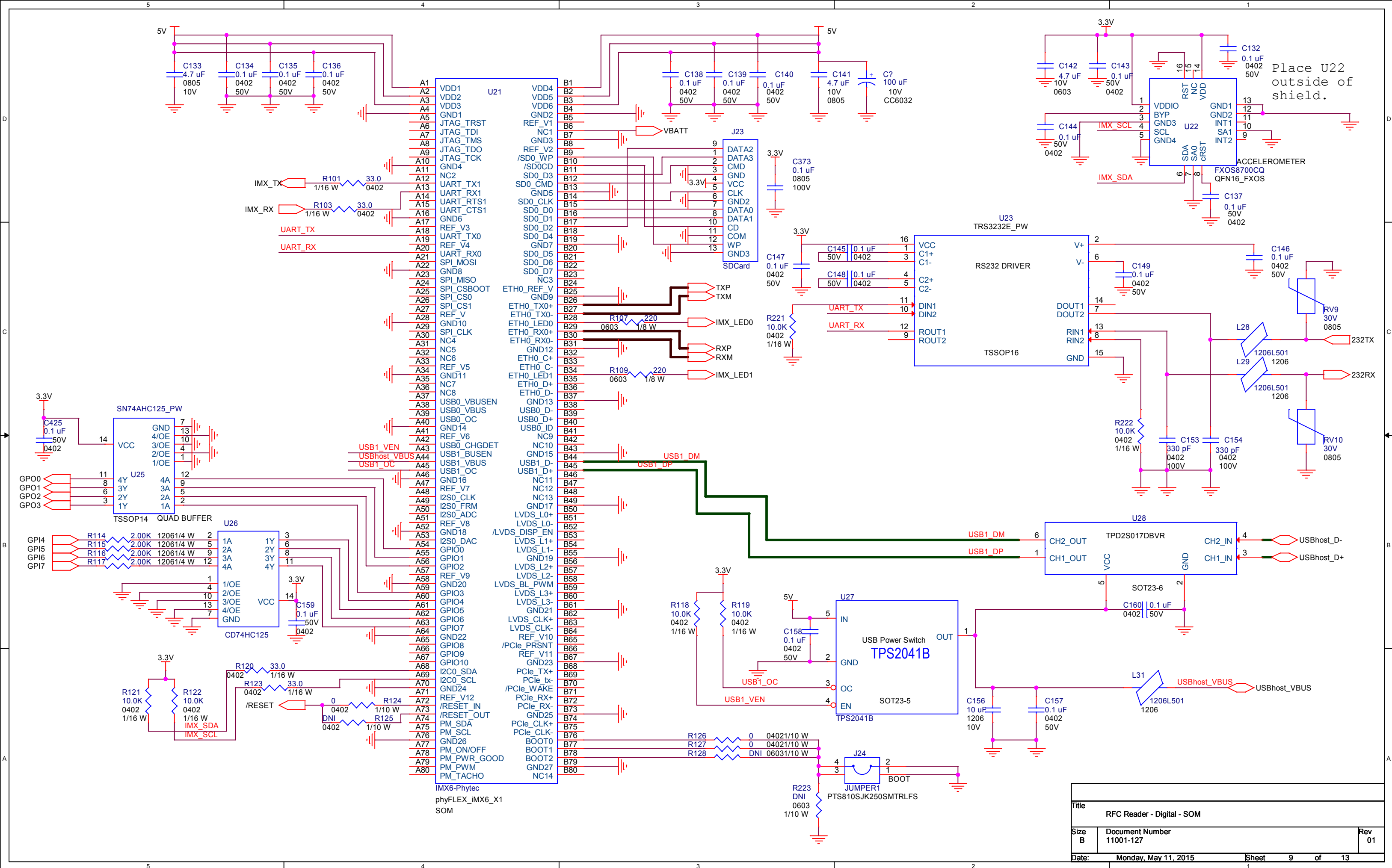


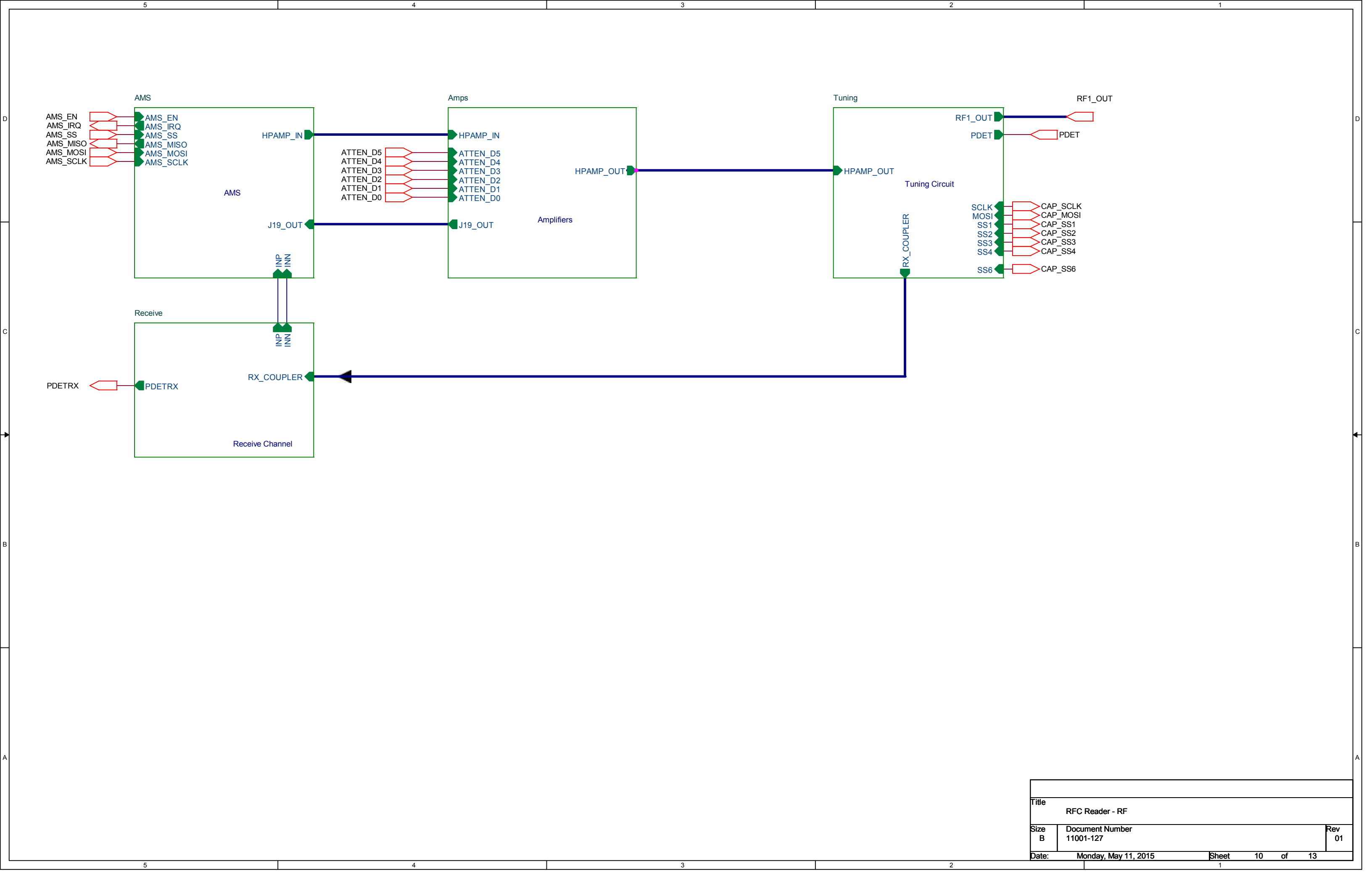




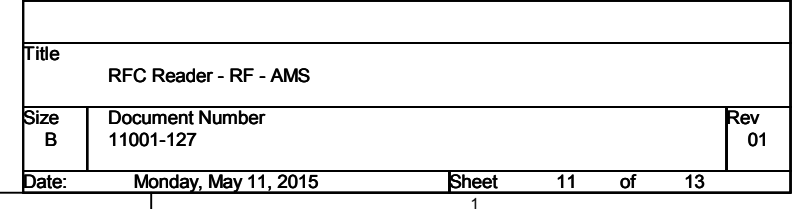
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RFC Reader - Digital		
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Title		
RFC Reader - RF		
Size	Document Number	Rev
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U42-U47 Combine RF-1 RF-2 pads into one large pad and RF+1 RF+2 pads into one large pad is recommended for layout optimization.

