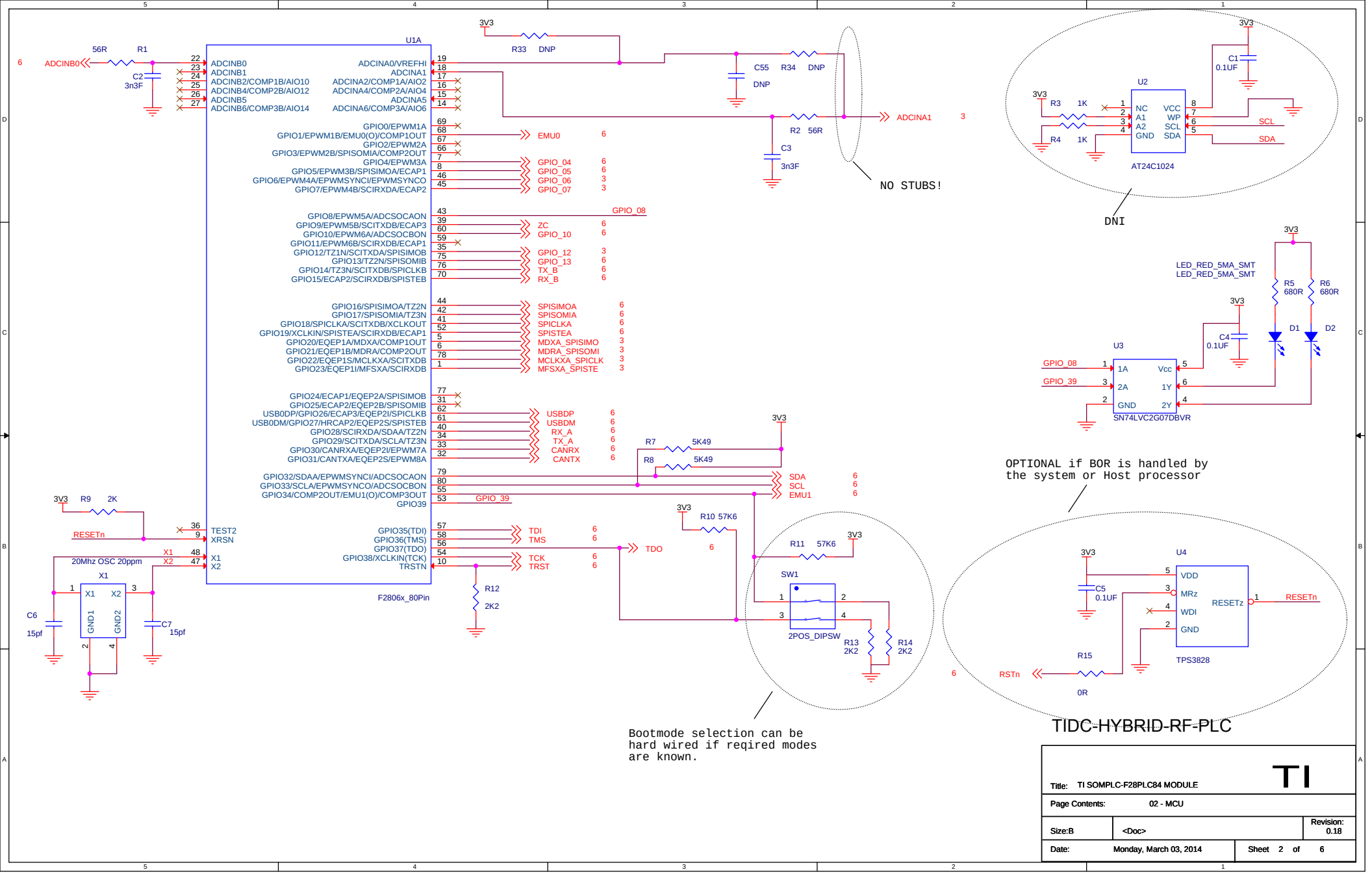
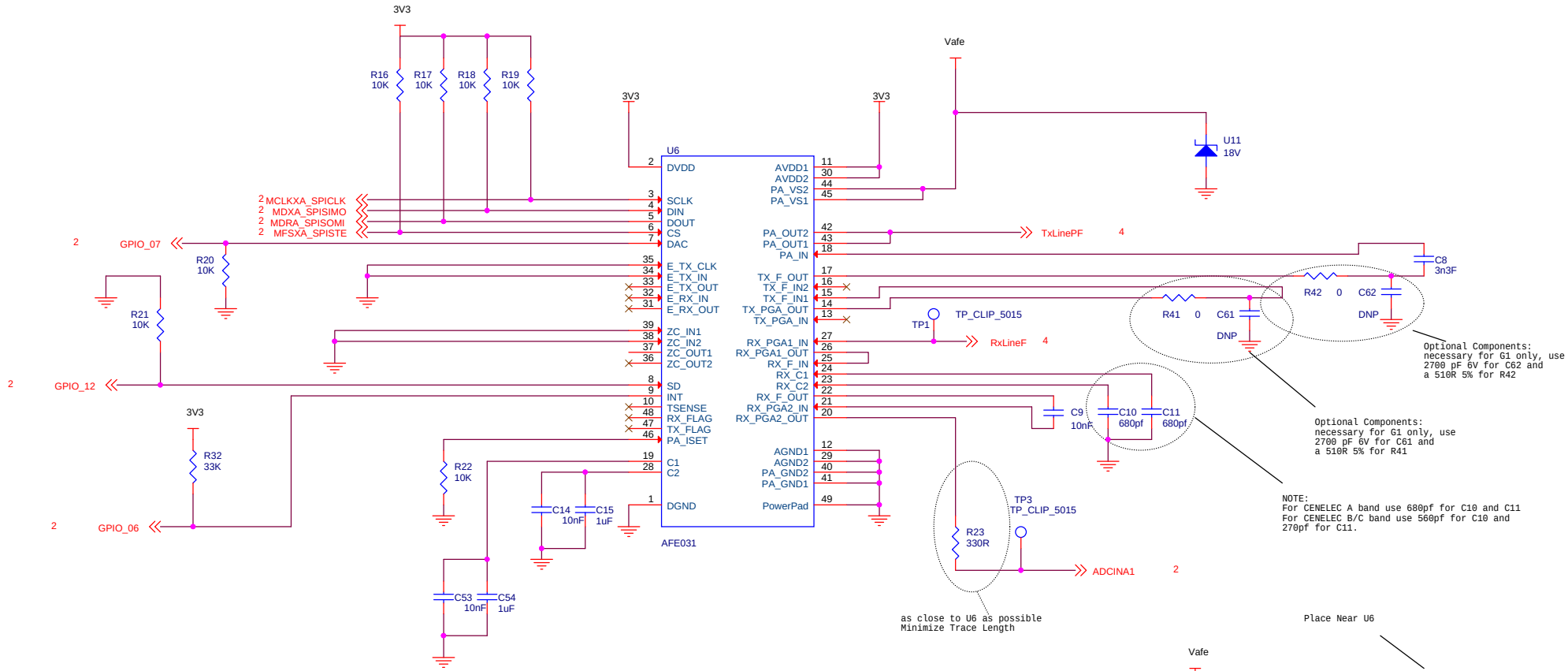
Notes/Revision Information

V0.01 - Initial Release

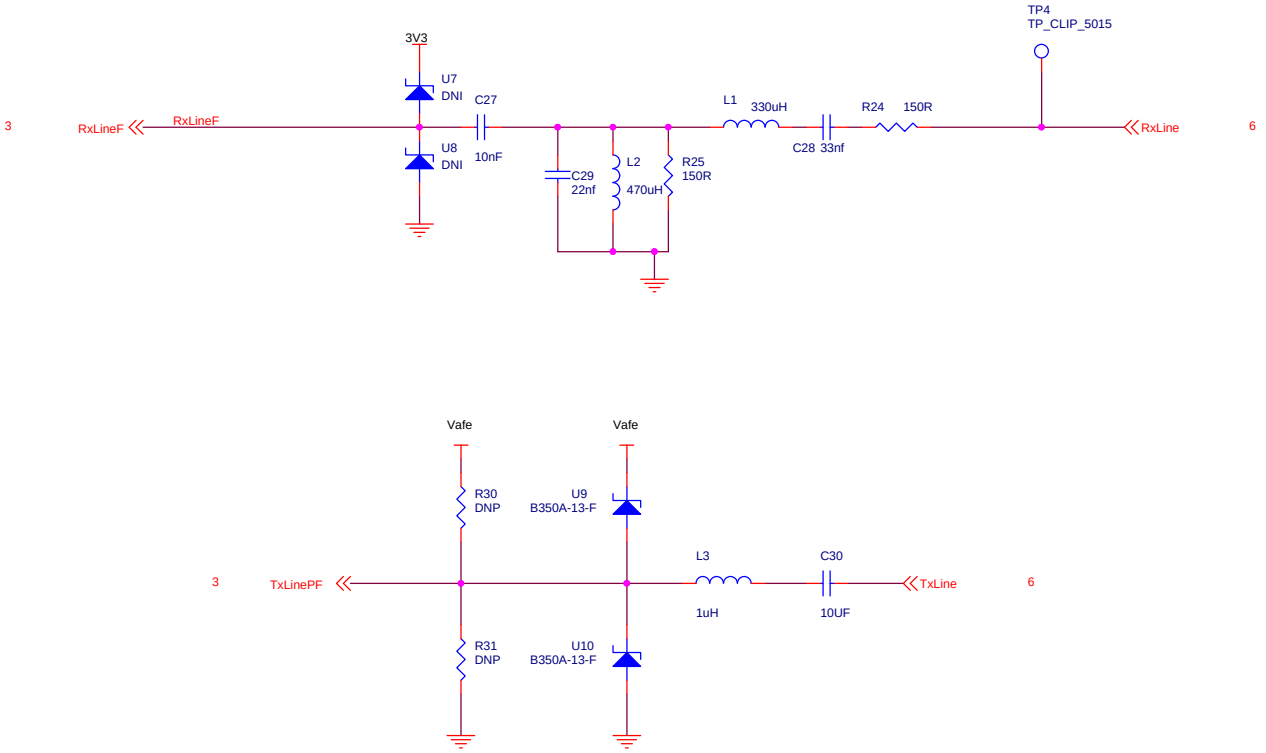
TIDC-HYBRID-RF-PLC


U1A
F2806x_80Pin
ADCINB0
ADCINB1
ADCINB2/COMP1B/AIO10
ADCINB4/COMP2B/AIO12
ADCINB5
ADCINB6/COMP3B/AIO14
ADCINA0/VREFHI
ADCINA1
ADCINA2/COMP1A/AIO2
ADCINA4/COMP2A/AIO4
ADCINA5
ADCINA6/COMP3A/AIO6
GPIO0/EPWM1A
GPIO1/EPWM1B/EMU0(O)/COMP1OUT
GPIO2/EPWM2A
GPIO3/EPWM2B/SPISOMIA/COMP2OUT
GPIO4/EPWM3A
GPIO5/EPWM3B/SPISIMOA/ECAP1
GPIO6/EPWM4A/EPWMSYNCI/EPWMSYNCO
GPIO7/EPWM4B/SCIRXDA/ECAP2
GPIO8/EPWM5A/ADCSOCAON
GPIO9/EPWM5B/SCITXDB/ECAP3
GPIO10/EPWM6A/ADCSOCBON
GPIO11/EPWM6B/SCIRXDB/ECAP1
GPIO12/TZ1N/SCITXDA/SPISIMOB
GPIO13/TZ2N/SPISOMIB
GPIO14/TZ3N/SCITXDB/SPICLKB
GPIO15/ECAP2/SCIRXDB/SPISTEB
GPIO16/SPISIMOA/TZ2N
GPIO17/SPISOMIA/TZ3N
GPIO18/SPICLKA/SCITXDB/XCLKOUT
GPIO19/XCLKIN/SPISTEA/SCIRXDB/ECAP1
GPIO20/EQEP1A/MDXA/COMP1OUT
GPIO21/EQEP1B/MDRA/COMP2OUT
GPIO22/EQEP1S/MCLKXA/SCITXDB
GPIO23/EQEP1I/MFSXA/SCIRXDB
GPIO24/ECAP1/EQEP2A/SPISIMOB
GPIO25/ECAP2/EQEP2B/SPISOMIB
USB0DP/GPIO26/ECAP3/EQEP2I/SPICLKB
USB0DM/GPIO27/HRCAP2/EQEP2S/SPISTEB
GPIO28/SCIRXDA/SDAA/TZ2N
GPIO29/SCITXDA/SCLA/TZ3N
GPIO30/CANRXA/EQEP2I/EPWM7A
GPIO31/CANTXA/EQEP2S/EPWM8A
GPIO32/SDAA/EPWMSYNCI/ADCSOCAON
GPIO33/SCLA/EPWMSYNCO/ADCSOCBON
GPIO34/COMP2OUT/EMU1(O)/COMP3OUT
GPIO39
GPIO35(TDI)
GPIO36(TMS)
GPIO37(TDO)
GPIO38/XCLKIN(TCK)
TRSTN
TEST2
XRSN
X1
X2
3V3
56R
R1
C2
3n3F
R33 DNP
C55 DNP
R34 DNP
R2 56R
C3
3n3F
NO STUBS!
ADCINA1
EMU0
GPIO_04
GPIO_05
GPIO_06
GPIO_07
GPIO_08
ZC
GPIO_10
GPIO_12
GPIO_13
TX_B
RX_B
SPISIMOA
SPISOMIA
SPICLKA
SPISTEA
MDXA_SPISIMO
MDRA_SPISOMI
MCLKXA_SPICLK
MFSXA_SPISTE
USBDP
USBDM
RX_A
TX_A
CANRX
CANTX
SDA
SCL
EMU1
TDI
TMS
TDO
TCK
TRST
R7 5K49
R8 5K49
R9 2K
RESETn
20Mhz OSC 20ppm
C6 15pf
C7 15pf
R10 57K6
R11 57K6
SW1
2POS_DIPSW
R13 2K2
R14 2K2
R12 2K2
Bootmode selection can be hard wired if reqired modes are known.
U2
AT24C1024
NC
A1
A2
GND
VCC
WP
SCL
SDA
R3 1K
R4 1K
C1 0.1UF
DNI
LED_RED_5MA_SMT
LED_RED_5MA_SMT
R5 680R
R6 680R
D1
D2
U3
SN74LVC2G07DBVR
1A
2A
GND
Vcc
1Y
2Y
C4 0.1UF
OPTIONAL if BOR is handled by the system or Host processor
U4
TPS3828
VDD
MRz
WDI
GND
RESETz
C5 0.1UF
R15 0R
RSTn
TIDC-HYBRID-RF-PLC
Title: TI SOMPLC-F28PLC84 MODULE
Page Contents: 02 - MCU
Size:B
<Doc>
Revision: 0.18
Date: Monday, March 03, 2014
Sheet 2 of 6



TIDC-HYBRID-RF-PLC

Title: TI SOMPLC-F28PLC84 MODULE		TI
Page Contents: 03 - AFE031		
Size:B	<Doc>	Revision: 0.18
Date: Thursday, February 27, 2014	Sheet 3 of 6	

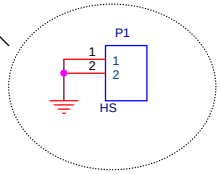


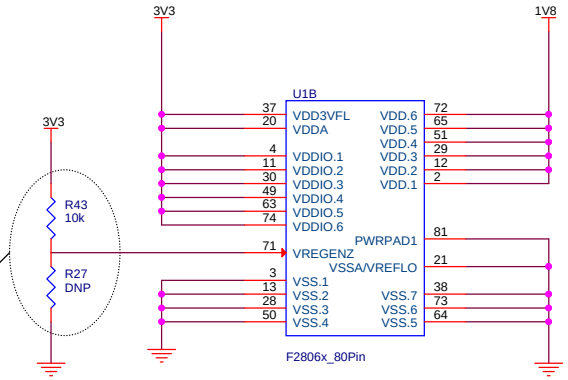
NOTE: Several components on this page have been removed or changed in the BOM.

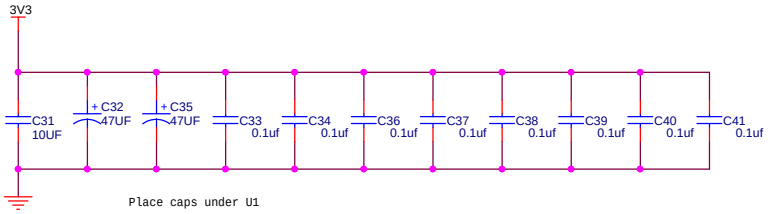
TIDC-HYBRID-RF-PLC

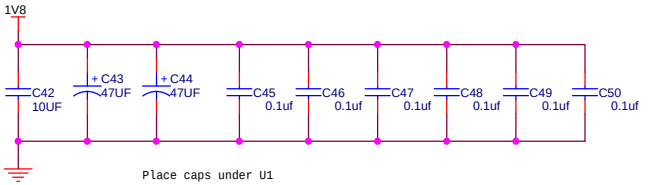
Title: TI SOMPLC-F28PLC84 MODULE		TI
Page Contents: 04 - AFE1 (Passive RX Filter)		
Size:B	<Doc>	Revision: 0.18
Date: Wednesday, February 26, 2014	Sheet 4 of 6	

OPTIONAL: Heatsink is not needed.

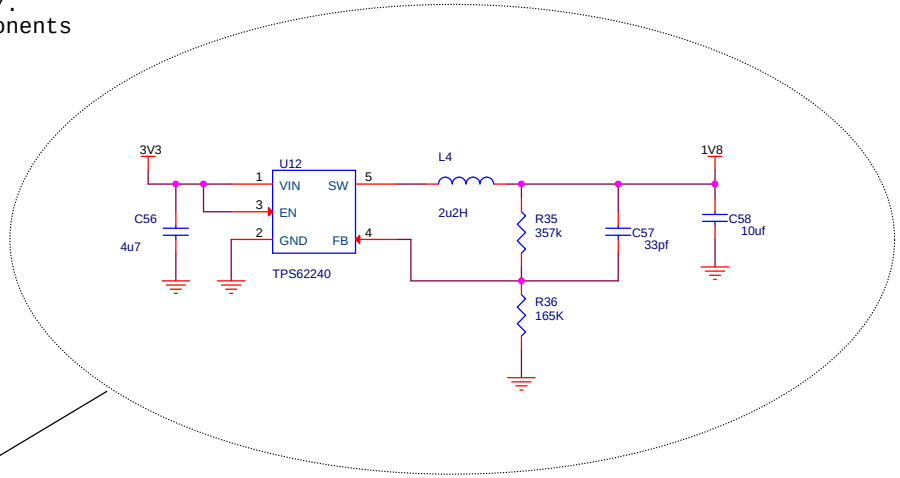








OPTIONAL: to source VDD with the on chip LDO, do not populate R43 and place a 10k resistor on R27. Additionaly, the optional components below are not needed.

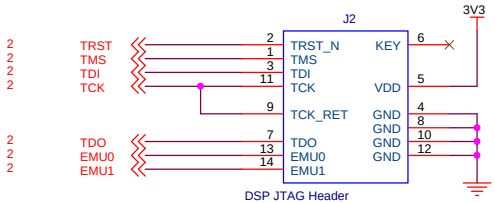


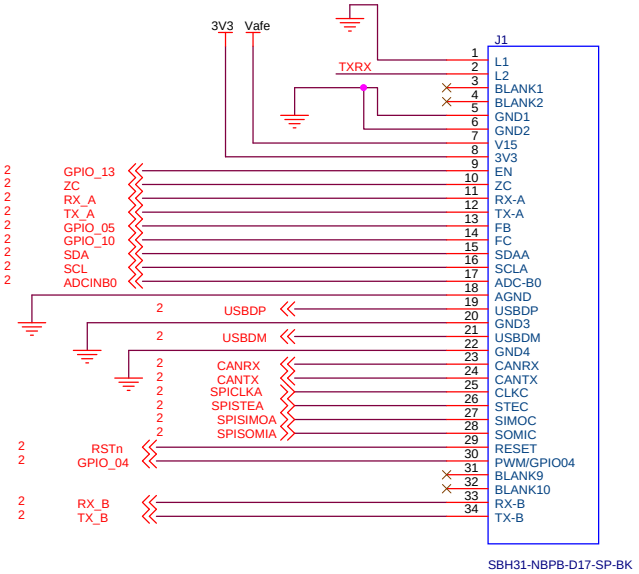
OPTIONAL: For reduced power consumption use a DC/DC converter instead of the On-Chip Linear Supply

Note: Follow Layout Procedures described in TPS62240 Datasheet

TIDC-HYBRID-RF-PLC

Title: TI SOMPLC-F28PLC84 MODULE		TI
Page Contents: 05 - Power		
Size:B	<Doc>	Revision: 0.18
Date: Wednesday, February 26, 2014	Sheet 5 of 6	





TIDC-HYBRID-RF-PLC

Title: TI SOMPLC-F28PLC84 MODULE		TI
Page Contents: 06 - Connector		
Size:B	<Doc>	Revision: 0.18
Date: Monday, March 03, 2014	Sheet 6 of 6	

Notes/Revision Information

V0.01 - Initial Release

V0.02 - 10/10/12
p2
 - Changed C2 value
p3
 - Added C29
 - Removed 5V rail
 - Changed LD1, LD2 to
  D6, D7 and connected to 3V3
p4
 - Removed 5V power supply
 - Changed R35 to 1.87k

V0.03 - 10/18/12
p4
- Changed C23, C24 parts
  (BOM)
- Changed symbol for M1
 added multiple pins

V0.04 - 10/22/12
p3
- Updated part U5 Symbol

V0.05 - 11/12/12
p4
- Added MH1,2,3,4
p5
- Added M2, M3
- Added R36, TP1
- Removed J5, J6 and J7

V0.06 - 12/05/12
p2 - Connected MH1 to
Earth GND
p4 - Removed Ground
from MH4
p5
- Moved TP1 to the other
 side of R36
- Changed M2 Part (BOM)

V0.07 - 12/07/12
p5
- Moved TP1 to the other
 side of R36 (again)

V0.08 - 01/14/13 (R2 Release)
p2
- Updated Part D1 (BOM)

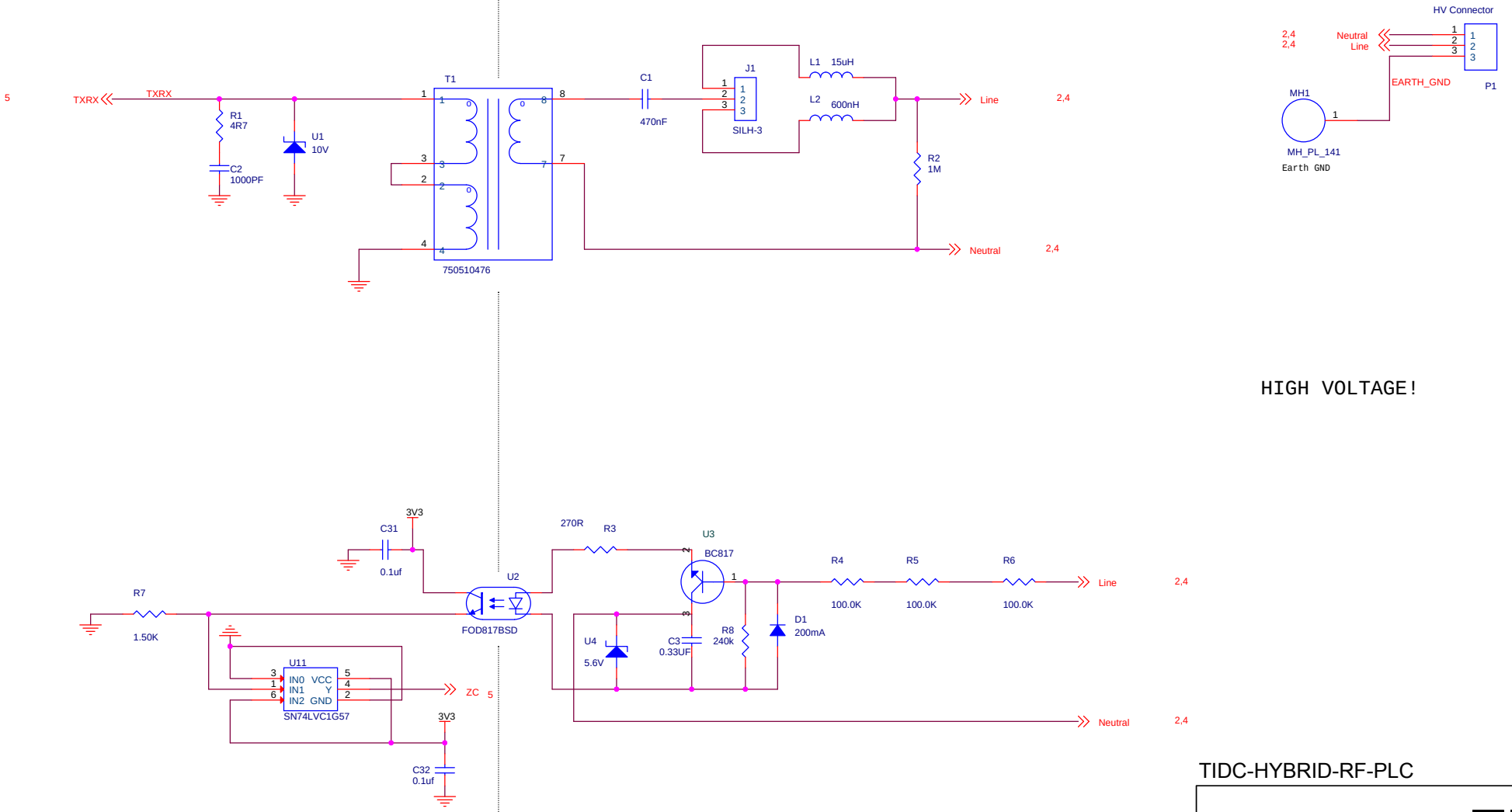
V0.09 - 05/13/13 (R2 Release)
p2
- Changed C22 to DNP
- Added C30

V0.10 - 12/5/13 (R2 Release)
p2
- Changed U1 to 10V

V0.11 - 2/26/14 (R5 Release)
p2
- Added U11
- Added C31, C32

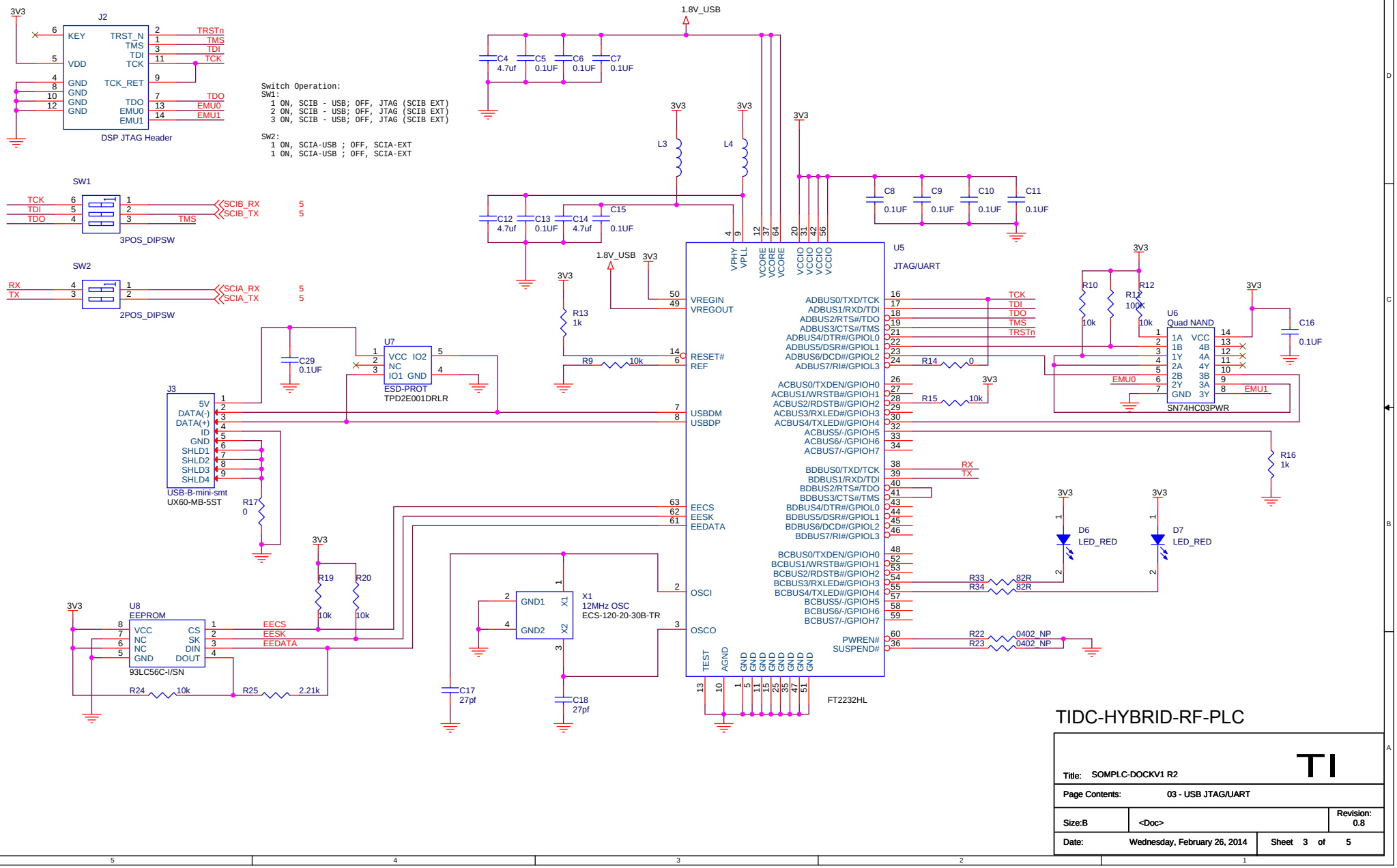
TIDC-HYBRID-RF-PLC

Title: SOMPLC-DOCKV1 R2		TI
Page Contents: 01 - Title / Notes		
Size:B	<Doc>	Revision: 0.8
Date: Wednesday, February 26, 2014	Sheet 1 of 5	



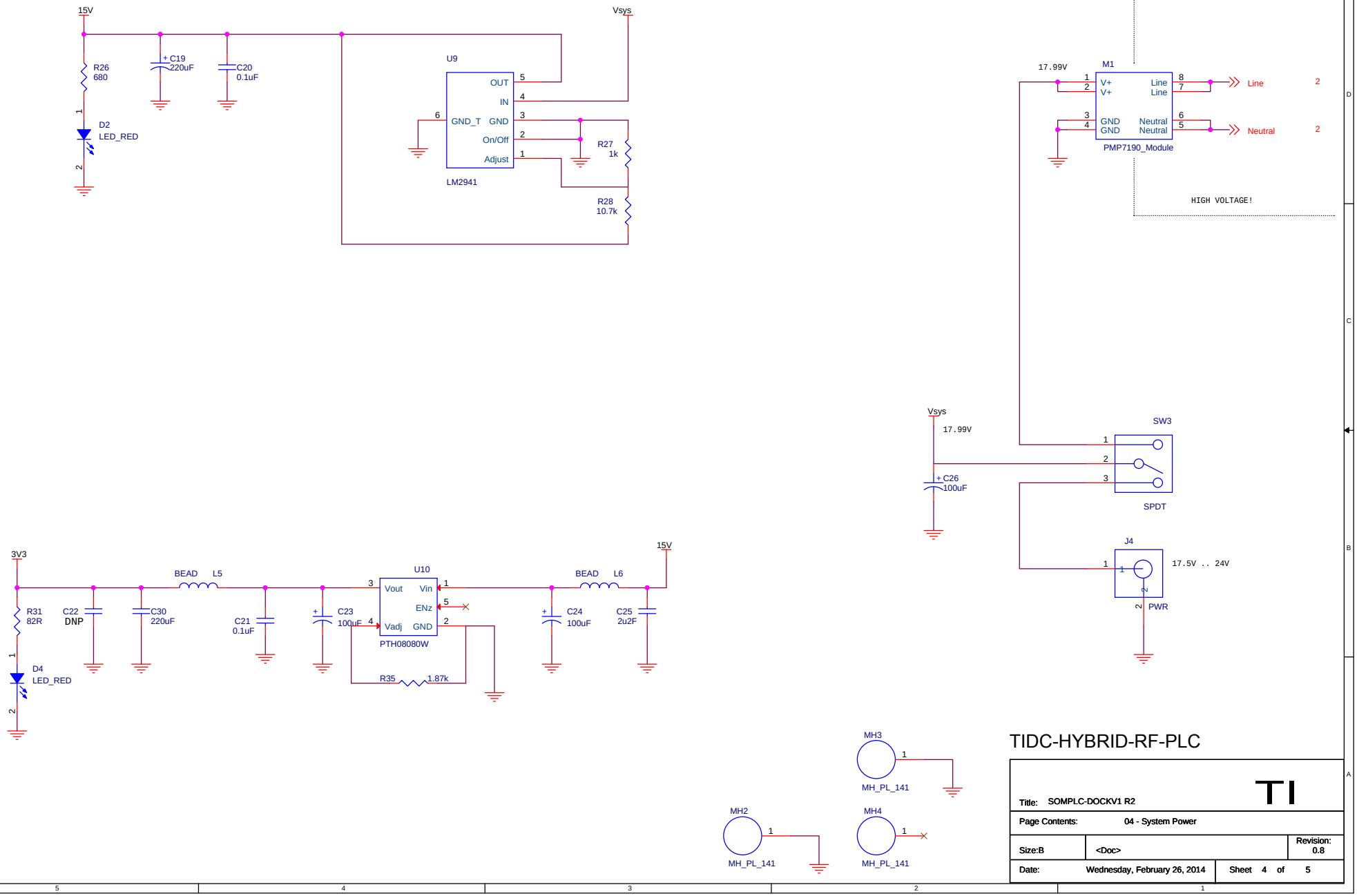
TIDC-HYBRID-RF-PLC

Title: SOMPLC-DOCKV1 R2		TI
Page Contents: 02 - Coupling Circuit		
Size:B	<Doc>	Revision: 0.8
Date: Wednesday, February 26, 2014	Sheet 2 of 5	



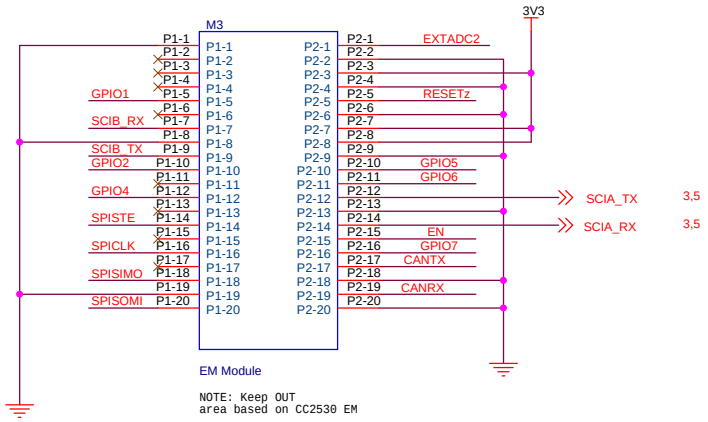
TIDC-HYBRID-RF-PLC

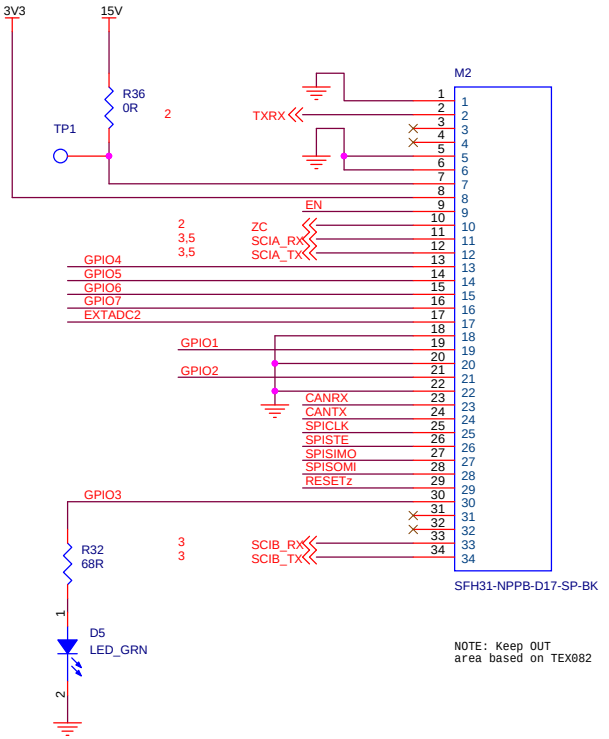
Title: SOMPLC-DOCKV1 R2		TI
Page Contents: 03 - USB JTAG/UART		
Size:B	<Doc>	Revision: 0.8
Date: Wednesday, February 26, 2014	Sheet 3 of 5	



TIDC-HYBRID-RF-PLC

Title: SOMPLC-DOCKV1 R2		TI
Page Contents: 04 - System Power		
Size:B	<Doc>	Revision: 0.8
Date: Wednesday, February 26, 2014	Sheet 4 of 5	



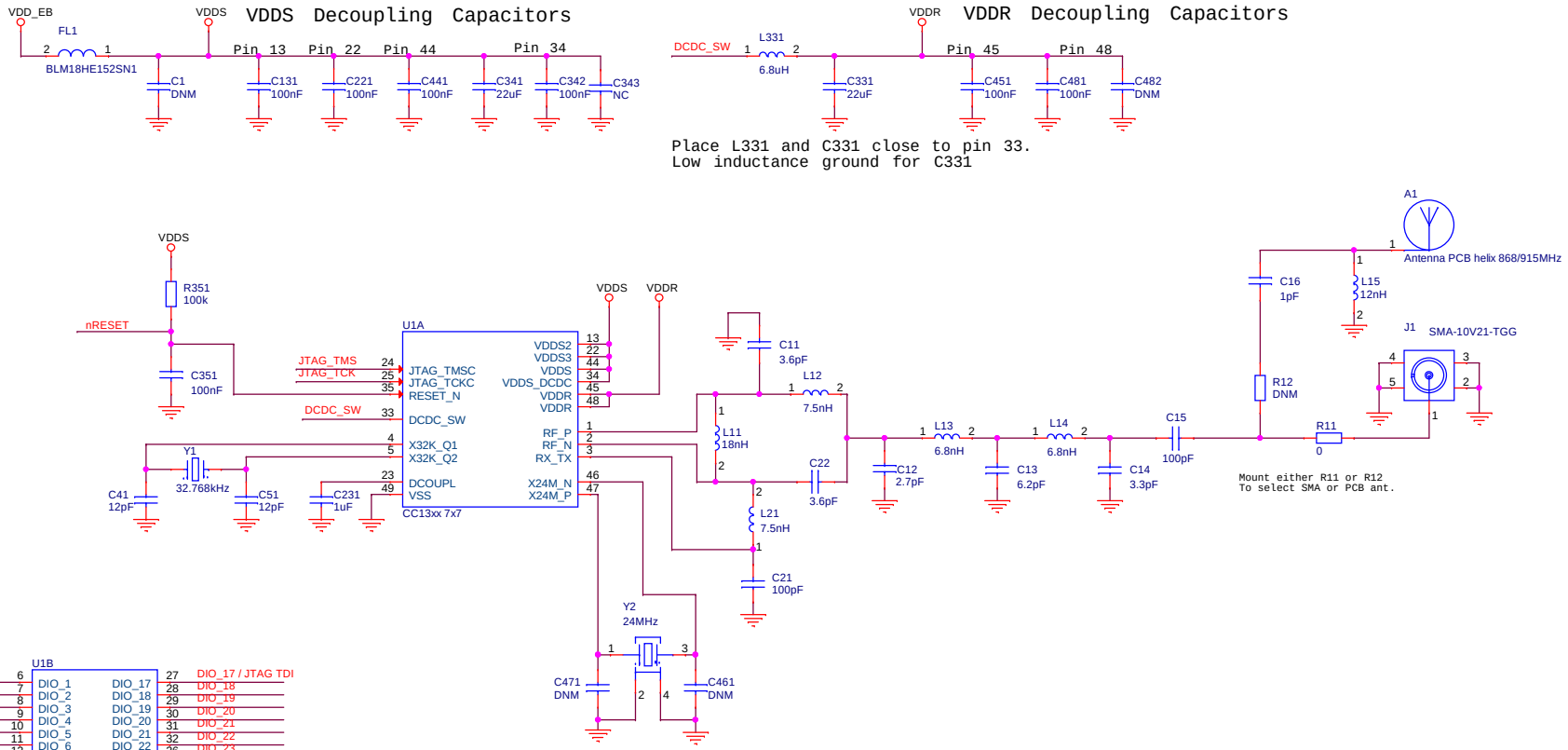


TIDC-HYBRID-RF-PLC

Title: SOMPLC-DOCKV1 R2		TI
Page Contents: 05 - Connectors		
Size:B	<Doc>	Revision: 0.8
Date: Wednesday, February 26, 2014	Sheet 5 of 5	

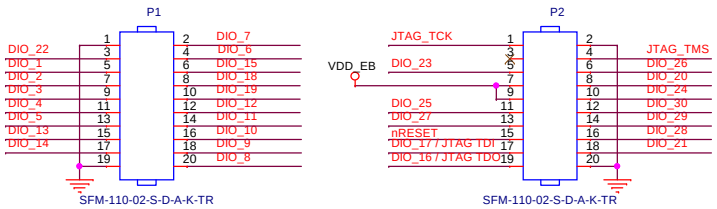
VDDS decoupling capacitors

VDDR decoupling capacitors



EM connector 1

EM connector 2



FIDU3 FIDU2 FIDU1 FIDU4 FIDU5 FIDU6

TIDC-HYBRID-RF-PLC

Title: CC13xxEM-7XD-7793, main	Texas Instruments
Drawn: a0132595	
Checked: <Check name>	
Size: A3 Rev: 1.3.3 Sheet: 1 of 2	
Date: Tuesday, August 25, 2015	

R 1.0.0

-Initial release revision

R1.0.1

L3 -> Changed from LQG to LQW
L4 -> Changed from LQG to LQW

R1.1.0

-New CC13xx symbol with different DIO to pin mapping
-New Crystal (9 pF, from 7 pF. But 9 pF has been assembled on previous EMs).
-New reference numbers on components.

R1.2.0

- Updating RF filter for better harmonic supression.
- Remove test point on RXTX pin.

R1.3.0

- For PG2
- C15 33pF -> 100pF
- L12, L21 8.2nH -> 7.5nH
- C13 4.7nH -> 6.2nH
- C14 2.2nH -> 3.3nH

R1.3.1

L331 10uH -> 6.8uH

R1.3.2

C341 10uF -> 22uF

R1.3.3

C331 10uF -> 22uF

TIDC-HYBRID-RF-PLC

Title: CC13xxEM-7XD-7793, rev history	Texas Instruments
Drawn: a0132595	
Checked: <Check name>	
Size: A4 Rev: 1.3.3 Sheet: 2 of 2	
Date: Tuesday, August 25, 2015	

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