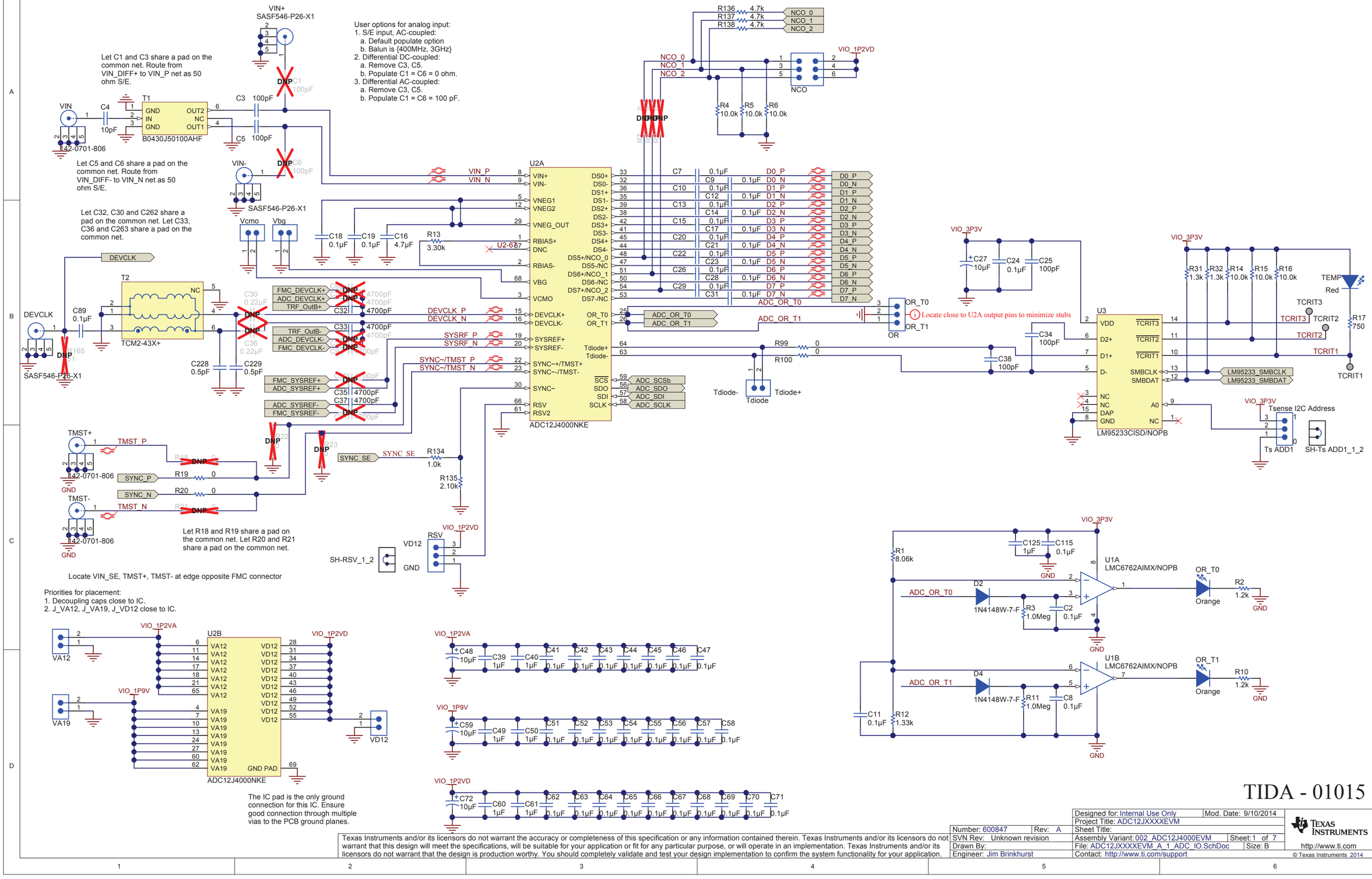
VIN+
SASF546-P26-X1
User options for analog input:
1. S/E input, AC-coupled:
a. Default populate option
b. Balun is {400MHz, 3GHz}
2. Differential DC-coupled:
a. Remove C3, C5.
b. Populate C1 = C6 = 0 ohm.
3. Differential AC-coupled:
a. Remove C3, C5.
b. Populate C1 = C6 = 100 pF.
Let C1 and C3 share a pad on the common net. Route from VIN_DIFF+ to VIN_P net as 50 ohm S/E.
VIN
C4
10pF
T1
GND
IN
GND
OUT2
NC
OUT1
B0430J50100AHF
C3 100pF
C5 100pF
ti42-0701-806
Let C5 and C6 share a pad on the common net. Route from VIN_DIFF- to VIN_N net as 50 ohm S/E.
VIN-
SASF546-P26-X1
Let C32, C30 and C262 share a pad on the common net. Let C33, C36 and C263 share a pad on the common net.
Vcmo
Vbg
C18 0.1µF
C19 0.1µF
C16 4.7µF
R13 3.30k
U2-67
VIN_P
VIN_N
U2A
VIN+
VIN-
VNEG1
VNEG2
VNEG_OUT
RBIAS+
DNC
RBIAS-
VBG
VCMO
DS0+
DS0-
DS1+
DS1-
DS2+
DS2-
DS3+
DS3-
DS4+
DS4-
DS5+/NCO_0
DS5-/NC
DS6+/NCO_1
DS6-/NC
DS7+/NCO_2
DS7-/NC
DEVCLK+
DEVCLK-
SYSREF+
SYSREF-
SYNC~+/TMST+
SYNC~-/TMST-
SYNC~
RSV
RSV2
OR_T0
OR_T1
Tdiode+
Tdiode-
SCS
SDO
SDI
SCLK
ADC12J4000NKE
R136 4.7k
R137 4.7k
R138 4.7k
NCO_0
NCO_1
NCO_2
NCO
VIO_1P2VD
R4 10.0k
R5 10.0k
R6 10.0k
C7 0.1µF
C10 0.1µF
C13 0.1µF
C15 0.1µF
C20 0.1µF
C22 0.1µF
C23 0.1µF
C26 0.1µF
C28 0.1µF
C29 0.1µF
C9 0.1µF
C12 0.1µF
C14 0.1µF
C17 0.1µF
C21 0.1µF
C24 0.1µF
C31 0.1µF
D0_P
D0_N
D1_P
D1_N
D2_P
D2_N
D3_P
D3_N
D4_P
D4_N
D5_P
D5_N
D6_P
D6_N
D7_P
D7_N
ADC_OR_T0
ADC_OR_T1
OR
Locate close to U2A output pins to minimize stubs
VIO_3P3V
C27 10µF
C24 0.1µF
C25 100pF
C34 100pF
C38 100pF
R99 0
R100 0
Tdiode-
Tdiode+
Tdiode
U3
VDD
D2+
D1+
D-
NC
NC
DAP
GND
TCRIT3
TCRIT2
TCRIT1
SMBCLK
SMBDAT
A0
NC
LM95233CISD/NOPB
R31 1.3k
R32 1.3k
R14 10.0k
R15 10.0k
R16 10.0k
TEMP
Red
R17 750
LM95233_SMBCLK
LM95233_SMBDAT
Tsense I2C Address
Ts ADD1
SH-Ts ADD1_1_2
DEVCLK
T2
NC
TCM2-43X+
C89 0.1µF
C30 0.22µF
C36 0.22µF
C228 0.5pF
C229 0.5pF
SASF546-P26-X1
FMC_DEVCLK+
ADC_DEVCLK+
TRF_OutB+
TRF_OutB-
ADC_DEVCLK-
FMC_DEVCLK-
C32 4700pF
C33 4700pF
DEVCLK_P
DEVCLK_N
SYSRF_P
SYSRF_N
SYNC~/TMST_P
SYNC~/TMST_N
FMC_SYSREF+
ADC_SYSREF+
ADC_SYSREF-
FMC_SYSREF-
C35 4700pF
C37 4700pF
ADC_SCSb
ADC_SDO
ADC_SDI
ADC_SCLK
TMST+
TMST_P
TMST-
TMST_N
SYNC_P
SYNC_N
R18 0
R19 0
R20 0
R21 0
SYNC_SE
R134 1.0k
R135 2.10k
Let R18 and R19 share a pad on the common net. Let R20 and R21 share a pad on the common net.
Locate VIN_SE, TMST+, TMST- at edge opposite FMC connector
VIO_1P2VD
RSV
VD12
GND
SH-RSV_1_2
Priorities for placement:
1. Decoupling caps close to IC.
2. J_VA12, J_VA19, J_VD12 close to IC.
VIO_1P2VA
VIO_1P9V
U2B
VA12
VA19
VD12
GND PAD
ADC12J4000NKE
VA12
VA19
VD12
The IC pad is the only ground connection for this IC. Ensure good connection through multiple vias to the PCB ground planes.
C48 10µF
C39 1µF
C40 1µF
C41 0.1µF
C42 0.1µF
C43 0.1µF
C44 0.1µF
C45 0.1µF
C46 0.1µF
C47 0.1µF
C59 10µF
C49 1µF
C50 1µF
C51 0.1µF
C52 0.1µF
C53 0.1µF
C54 0.1µF
C55 0.1µF
C56 0.1µF
C57 0.1µF
C58 0.1µF
C72 10µF
C60 1µF
C61 1µF
C62 0.1µF
C63 0.1µF
C64 0.1µF
C65 0.1µF
C66 0.1µF
C67 0.1µF
C68 0.1µF
C69 0.1µF
C70 0.1µF
C71 0.1µF
C125 1µF
C115 0.1µF
R1 8.06k
U1A
LMC6762AIMX/NOPB
D2
1N4148W-7-F
R3 1.0Meg
C2 0.1µF
R2 1.2k
Orange
U1B
LMC6762AIMX/NOPB
D4
1N4148W-7-F
R11 1.0Meg
C8 0.1µF
R10 1.2k
C11 0.1µF
R12 1.33k
GND
TIDA - 01015
Designed for: Internal Use Only
Mod. Date: 9/10/2014
Project Title: ADC12JXXXXEVM
Sheet Title:
Number: 600847
Rev: A
Assembly Variant: 002_ADC12J4000EVM
Sheet: 1 of 7
SVN Rev: Unknown revision
File: ADC12JXXXXEVM_A_1_ADC_IO.SchDoc
Size: B
Drawn By:
Engineer: Jim Brinkhurst
Contact: http://www.ti.com/support
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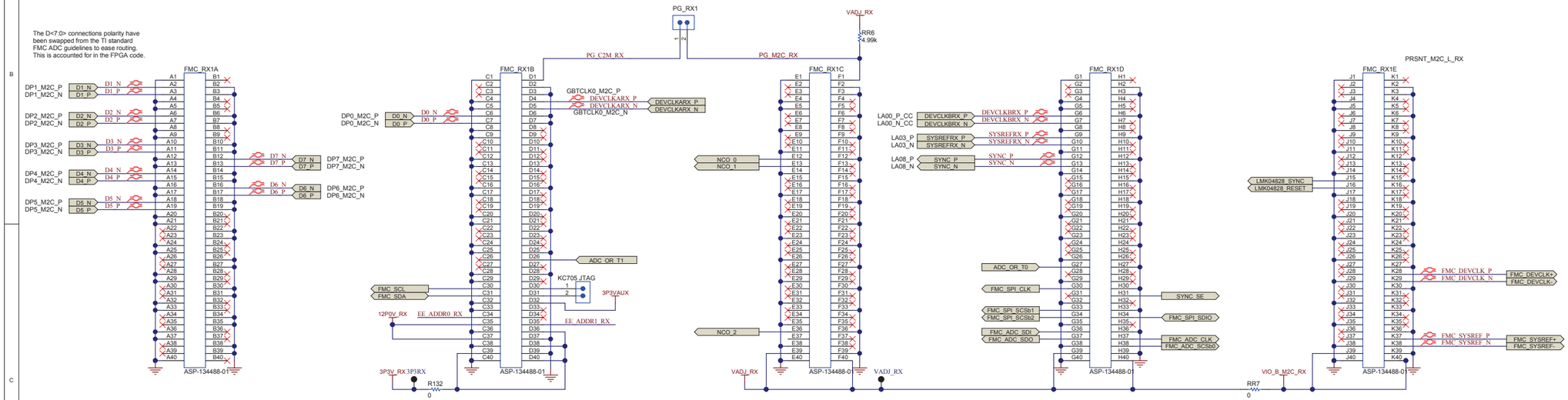
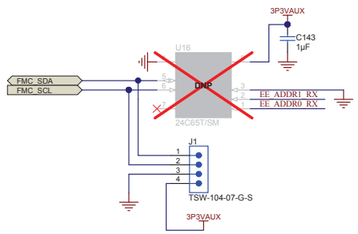
The D<7:0> connections polarity have
been swapped from the TI standard
FMC ADC guidelines to ease routing.
This is accounted for in the FPGA code.





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Number: 600847	Rev: A	Designed for: Internal Use Only	Mod. Date: 9/10/2014
SVN Rev: Unknown revision		Project Title: ADC12JXXXXEVM	
Drawn By:		Sheet Title:	
Engineer: Jim Brinkhurst		Assembly Variant: 002_ADC12J4000EVM	Sheet: 2 of 7
		File: ADC12JXXXXEVM_A_2_FMC.SchDoc	Size: C
		Contact: http://www.ti.com/support	

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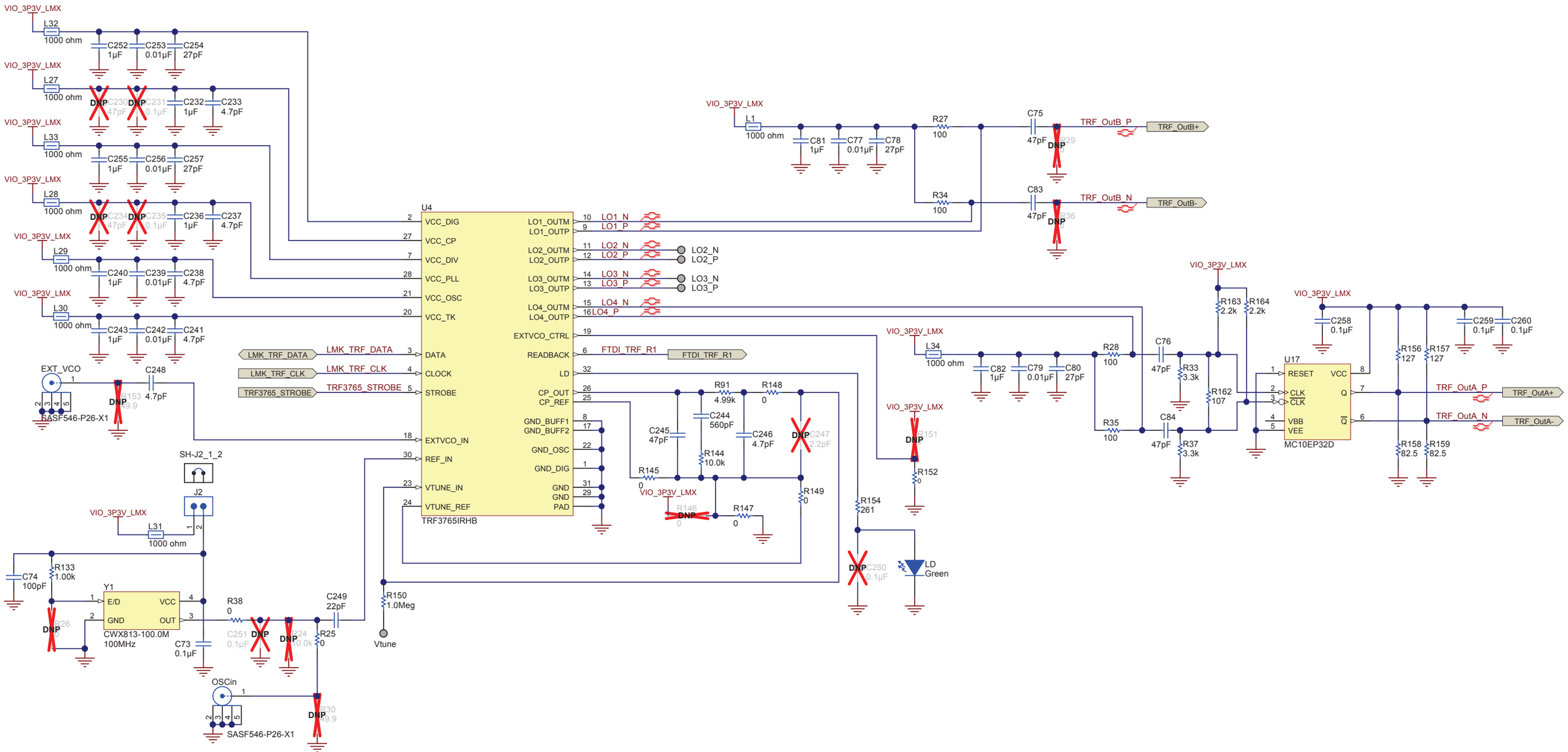

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Number: 600847	Rev: A	Designed for: Internal Use Only	Mod. Date: 9/10/2014
SVN Rev: Unknown revision		Project Title: ADC12JXXXEVM	
Drawn By: Not shown in title block		Sheet Title: TRF3765	
Engineer: Jim Brinkhurst		Assembly Variant: 002_ADC12J4000EVM	Sheet: 3 of 7
		File: ADC12JXXXEVM_A_3_TRF3765.SchDoc	Size: B
		Contact: http://www.ti.com/support	

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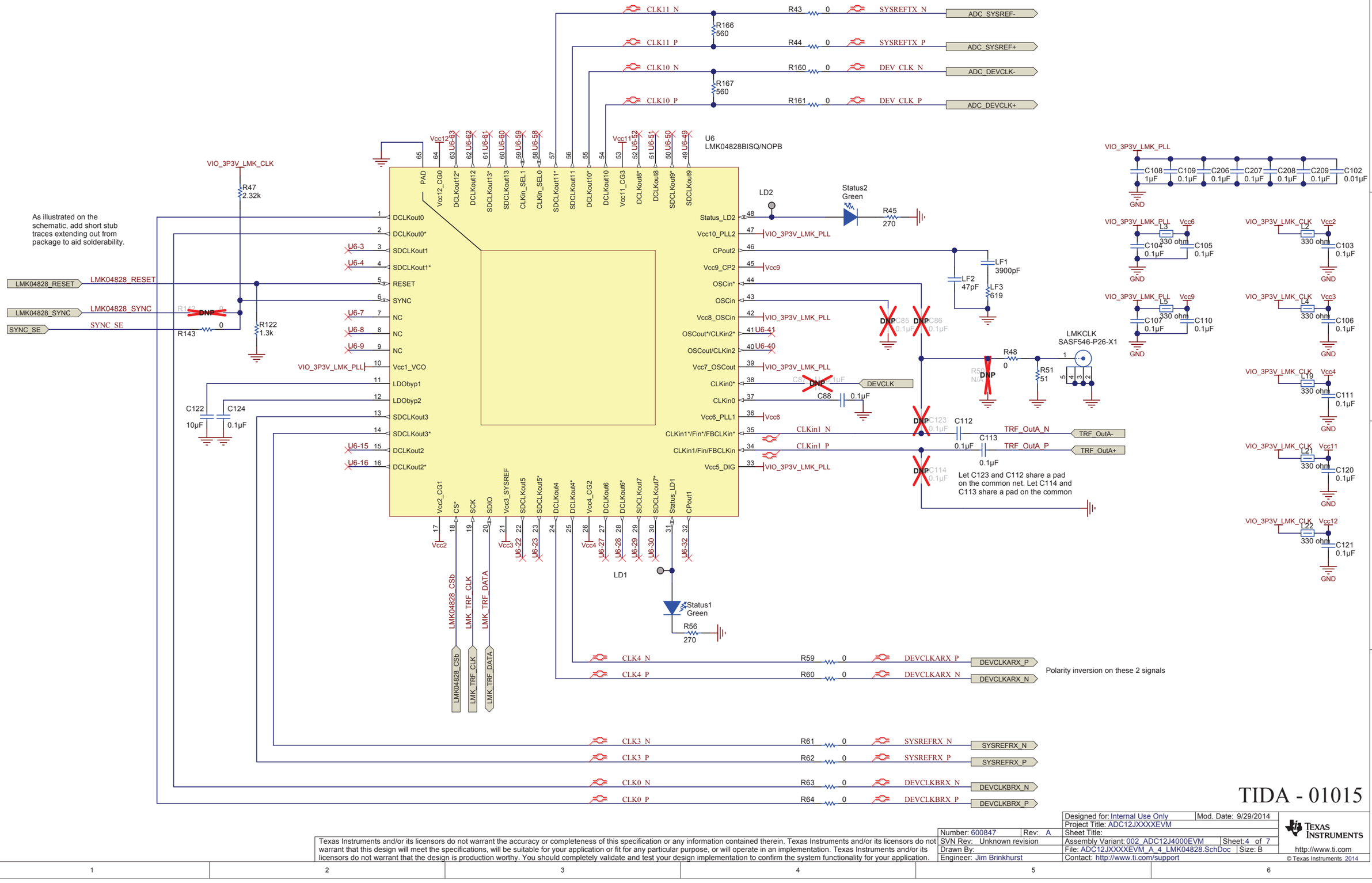

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Number: 600847	Rev: A	Designed for: Internal Use Only	Mod. Date: 9/29/2014
SVN Rev: Unknown revision		Project Title: ADC12JXXXXEVM	
Drawn By:		Sheet Title:	
Engineer: Jim Brinkhurst		Assembly Variant: 002_ADC12J4000EVM	Sheet: 4 of 7
		File: ADC12JXXXXEVM_A_4_LMK04828.SchDoc	Size: B
		Contact: http://www.ti.com/support	

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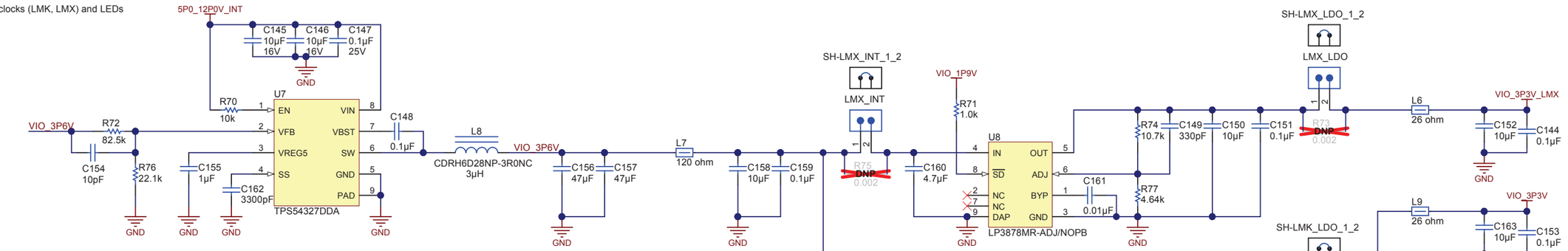
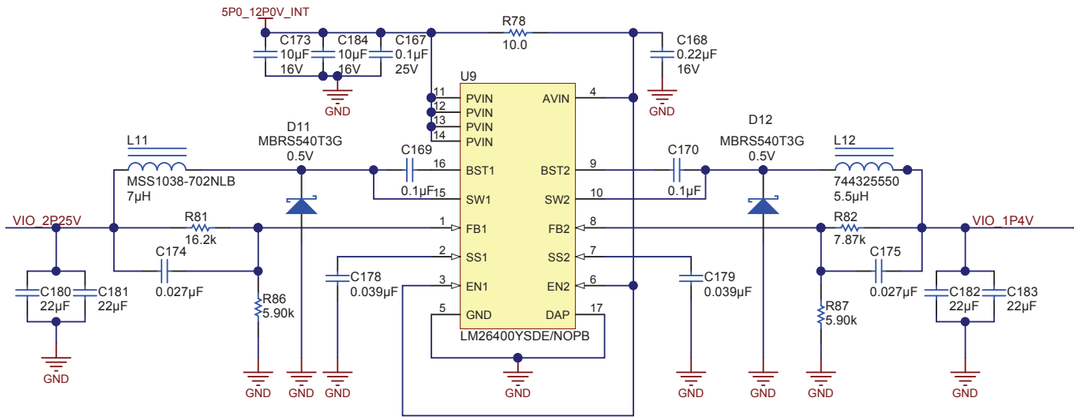
3.3V supply to clocks (LMK, LMX) and LEDs

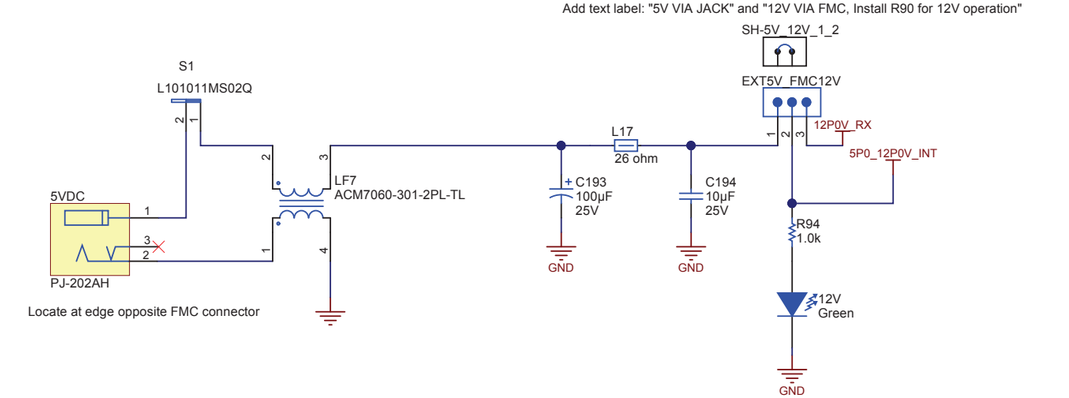


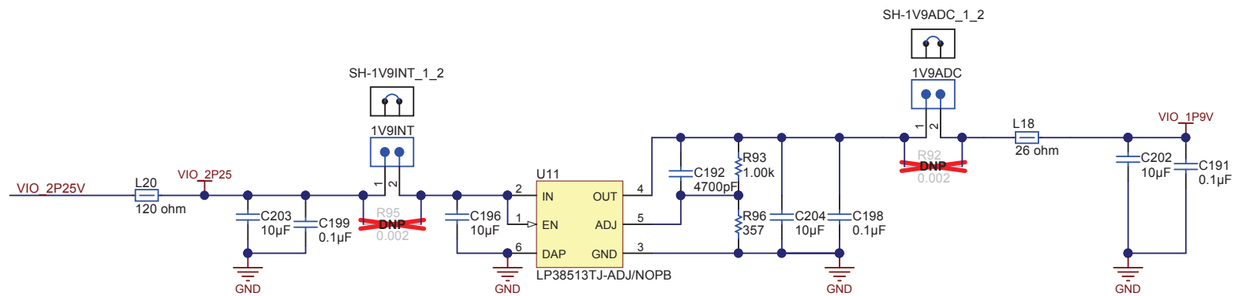
1.9V and 1.2V supply to LM15851 / ADC12JXX00



12V main supply, from jack or via FMC connector to regulators

Add text label: "5V VIA JACKET" and "12V VIA FMC, Install R90 for 12V operation"





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Number: 600847	Rev: A	Designed for: Internal Use Only	Mod. Date: 9/10/2014
SVN Rev: Unknown revision		Project Title: ADC12JXXXEVM	
Drawn By:		Sheet Title:	
Engineer: Jim Brinkhurst		Assembly Variant: 002_ADC12J4000EVM	Sheet: 5 of 7
		File: ADC12JXXXEVM_A_5_Power.SchDoc	Size: B
		Contact: http://www.ti.com/support	

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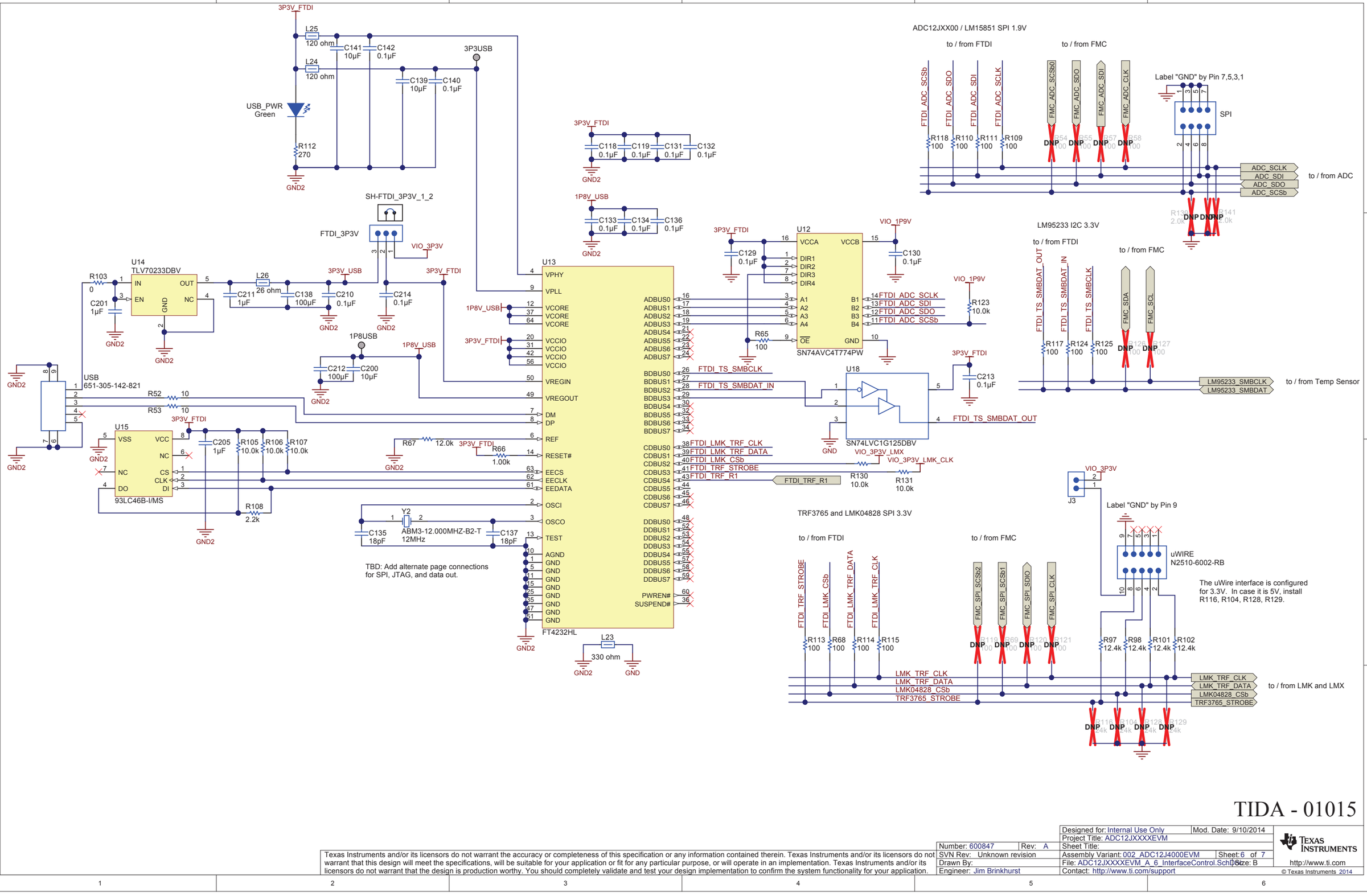
3P3V_FTDI
L25
120 ohm
C141 10µF
C142 0.1µF
3P3USB
L24
120 ohm
C139 10µF
C140 0.1µF
USB_PWR
Green
R112
270
GND2
C118 0.1µF
C119 0.1µF
C131 0.1µF
C132 0.1µF
1P8V_USB
C133 0.1µF
C134 0.1µF
C136 0.1µF
SH-FTDI_3P3V_1_2
FTDI_3P3V
VIO_3P3V
U14
TLV70233DBV
IN
OUT
EN
GND
NC
R103
0
C201
1µF
L26
26 ohm
C211
1µF
C138
100µF
C210
0.1µF
C214
0.1µF
3P3V_USB
1P8USB
C212
100µF
C200
10µF
USB
651-305-142-821
R52
10
R53
10
U15
VSS
VCC
NC
CS
CLK
DI
DO
93LC46B-I/MS
C205
1µF
R105
10.0k
R106
10.0k
R107
10.0k
R108
2.2k
U13
VPHY
VPLL
VCORE
VCCIO
VREGIN
VREGOUT
DM
DP
REF
RESET#
EECS
EECLK
EEDATA
OSCI
OSCO
TEST
AGND
PWREN#
SUSPEND#
ADBUS0
ADBUS1
ADBUS2
ADBUS3
ADBUS4
ADBUS5
ADBUS6
ADBUS7
BDBUS0
BDBUS1
BDBUS2
BDBUS3
BDBUS4
BDBUS5
BDBUS6
BDBUS7
CDBUS0
CDBUS1
CDBUS2
CDBUS3
CDBUS4
CDBUS5
CDBUS6
CDBUS7
DDBUS0
DDBUS1
DDBUS2
DDBUS3
DDBUS4
DDBUS5
DDBUS6
DDBUS7
FT4232HL
R67
12.0k
R66
1.00k
Y2
ABM3-12.000MHZ-B2-T
12MHz
C135
18pF
C137
18pF
L23
330 ohm
FTDI_TS_SMBCLK
FTDI_TS_SMBDAT_IN
FTDI_LMK_TRF_CLK
FTDI_LMK_TRF_DATA
FTDI_LMK_CSb
FTDI_TRF_STROBE
FTDI_TRF_R1
TBD: Add alternate page connections
for SPI, JTAG, and data out.
U12
VCCA
VCCB
DIR1
DIR2
DIR3
DIR4
A1
A2
A3
A4
OE
B1
B2
B3
B4
SN74AVC4T774PW
C129
0.1µF
C130
0.1µF
VIO_1P9V
R65
100
FTDI_ADC_SCLK
FTDI_ADC_SDI
FTDI_ADC_SDO
FTDI_ADC_SCSb
R123
10.0k
U18
SN74LVC1G125DBV
C213
0.1µF
FTDI_TS_SMBDAT_OUT
VIO_3P3V_LMX
VIO_3P3V_LMK_CLK
R130
10.0k
R131
10.0k
ADC12JXX00 / LM15851 SPI 1.9V
to / from FTDI
to / from FMC
FTDI_ADC_SCSb
FTDI_ADC_SDO
FTDI_ADC_SDI
FTDI_ADC_SCLK
FMC_ADC_SCSb0
FMC_ADC_SDO
FMC_ADC_SDI
FMC_ADC_CLK
R118 100
R110 100
R111 100
R109 100
DNP
Label "GND" by Pin 7,5,3,1
SPI
ADC_SCLK
ADC_SDI
ADC_SDO
ADC_SCSb
to / from ADC
R139 2.0k
R140 2.0k
R141 2.0k
LM95233 I2C 3.3V
to / from FTDI
to / from FMC
FTDI_TS_SMBDAT_OUT
FTDI_TS_SMBDAT_IN
FTDI_TS_SMBCLK
FMC_SDA
FMC_SCL
R117 100
R124 100
R125 100
LM95233_SMBCLK
LM95233_SMBDAT
to / from Temp Sensor
TRF3765 and LMK04828 SPI 3.3V
to / from FTDI
to / from FMC
FTDI_TRF_STROBE
FTDI_LMK_CSb
FTDI_LMK_TRF_DATA
FTDI_LMK_TRF_CLK
FMC_SPI_SCSb2
FMC_SPI_SCSb1
FMC_SPI_SDIO
FMC_SPI_CLK
R113 100
R68 100
R114 100
R115 100
LMK_TRF_CLK
LMK_TRF_DATA
LMK04828_CSb
TRF3765_STROBE
J3
VIO_3P3V
Label "GND" by Pin 9
uWIRE
N2510-6002-RB
The uWire interface is configured
for 3.3V. In case it is 5V, install
R116, R104, R128, R129.
R97 12.4k
R98 12.4k
R101 12.4k
R102 12.4k
to / from LMK and LMX
TIDA - 01015
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Number: 600847 Rev: A
SVN Rev: Unknown revision
Drawn By:
Engineer: Jim Brinkhurst
Designed for: Internal Use Only
Mod. Date: 9/10/2014
Project Title: ADC12JXXXEVM
Sheet Title:
Assembly Variant: 002_ADC12J4000EVM
Sheet: 6 of 7
File: ADC12JXXXEVM_A_6_InterfaceControl.SchDoc
Size: B
Contact: http://www.ti.com/support
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DNP
FID1

PCB Number: 600847
PCB Rev: A

PCB
ESD LOGO
ESD Susceptible

PCB
LOGO
Texas Instruments

H4
H6
1648-440-AL
NY PMS 440 0025 PH

H3
H5
1648-440-AL
NY PMS 440 0025 PH

DNP
FID2

DNP
FID3

H9
MECH
FMC - FMC Screw
PMSSS 256 0075 PH

H10
MECH
FMC - FMC Nut

H11
MECH
FMC - FMC Screw
PMSSS 256 0075 PH

H12
MECH
FMC - FMC Nut

GND GND1 GND2 GND3

Place at least two of the GND test points in the power section.

LBL1
PCB Label
Size: 0.65" x 0.20 "

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2., unless otherwise specified.

VIO_3P3V	VIO_3P3V	VIO_3P3V	VIO_3P3V	VIO_1P4	VIO_3P3V	VIO_1P4	5P0_12P0V_INT
C215 0.1µF	C216 0.1µF	C217 0.1µF	C218 0.1µF	C219 0.1µF	C220 0.1µF	C221 0.1µF	C94 0.1µF
GND	VIO_3P3V_LMX	VIO_3P3V_LMX	GND	VIO_3P3V	5P0_12P0V_INT	5P0_12P0V_INT	12P0V_RX

VIO_2P25	VIO_2P25	VIO_1P4	VIO_1P4	VIO_2P25	VIO_2P25	5P0_12P0V_INT	VIO_3P3V	VIO_3P3V
C222 0.1µF	C223 0.1µF	C224 0.1µF	C225 0.1µF	C226 0.1µF	C227 0.1µF	C261 0.1µF	C95 0.1µF	C96 0.1µF
5P0_12P0V_INT	5P0_12P0V_INT	VIO_3P3V	5P0_12P0V_INT	5P0_12P0V_INT	5P0_12P0V_INT	GND	VIO_1P2VD	VIO_1P2VD

TIDA - 01015

Number: 600847	Rev: A	Designed for: Internal Use Only	Mod. Date: 9/10/2014
SVN Rev: Unknown revision		Project Title: ADC12JXXXEVM	
Drawn By:		Sheet Title:	
Engineer: Jim Brinkhurst		Assembly Variant: 002_ADC12J4000EVM	Sheet: 7 of 7
		File: ADC12JXXXEVM_A_7_Hardware.SchDoc	Size: B
		Contact: http://www.ti.com/support	

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265