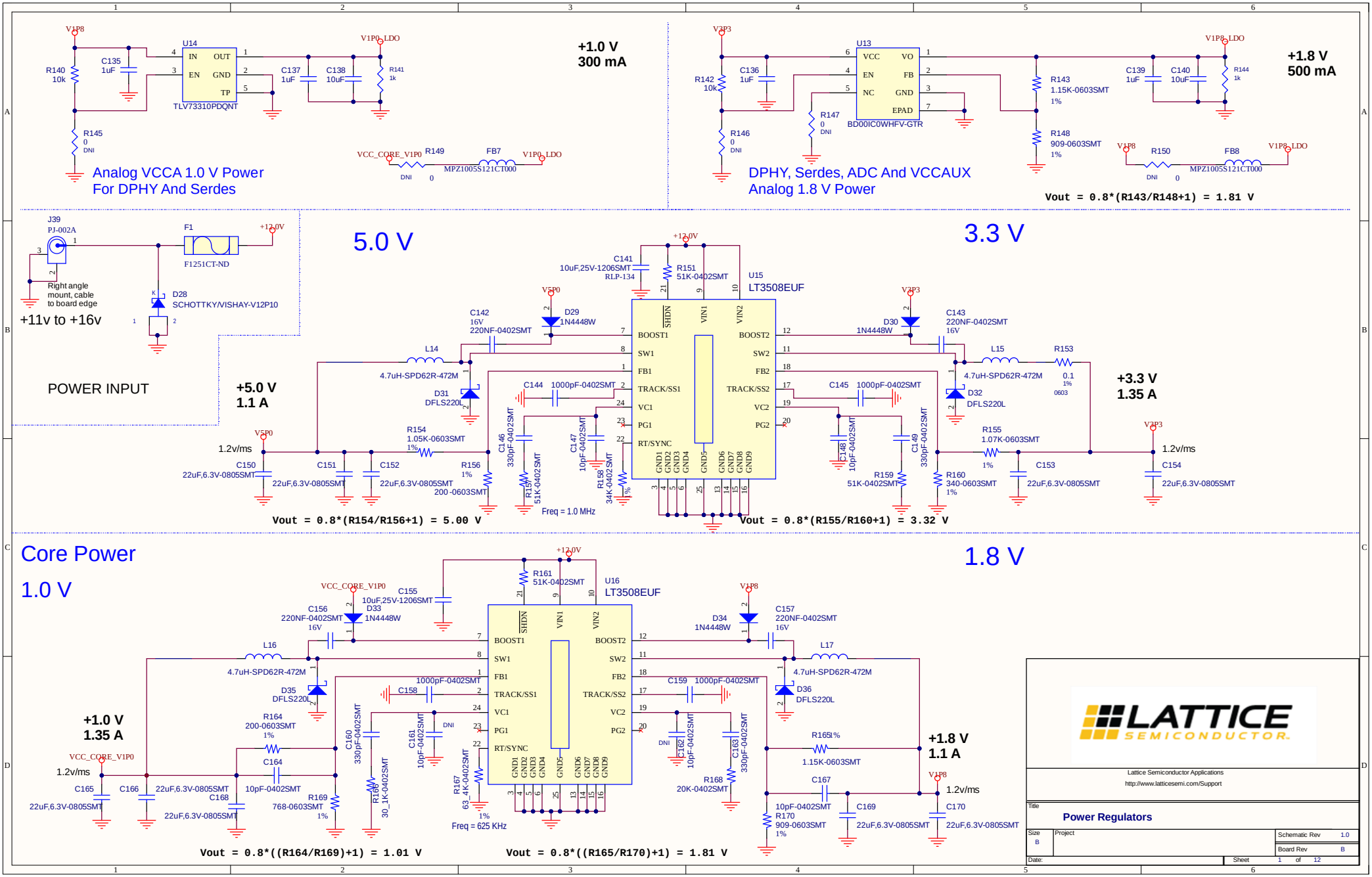
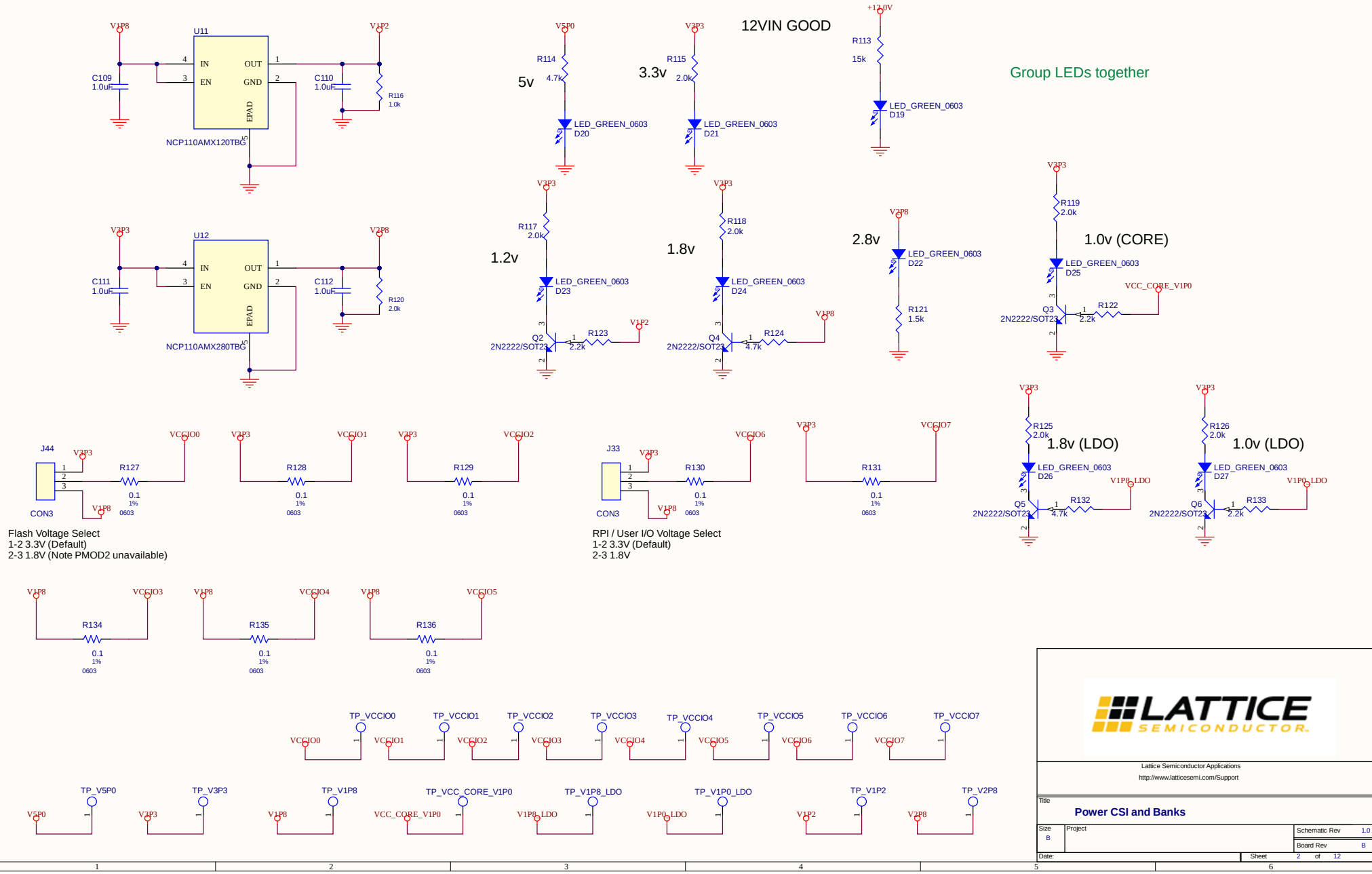
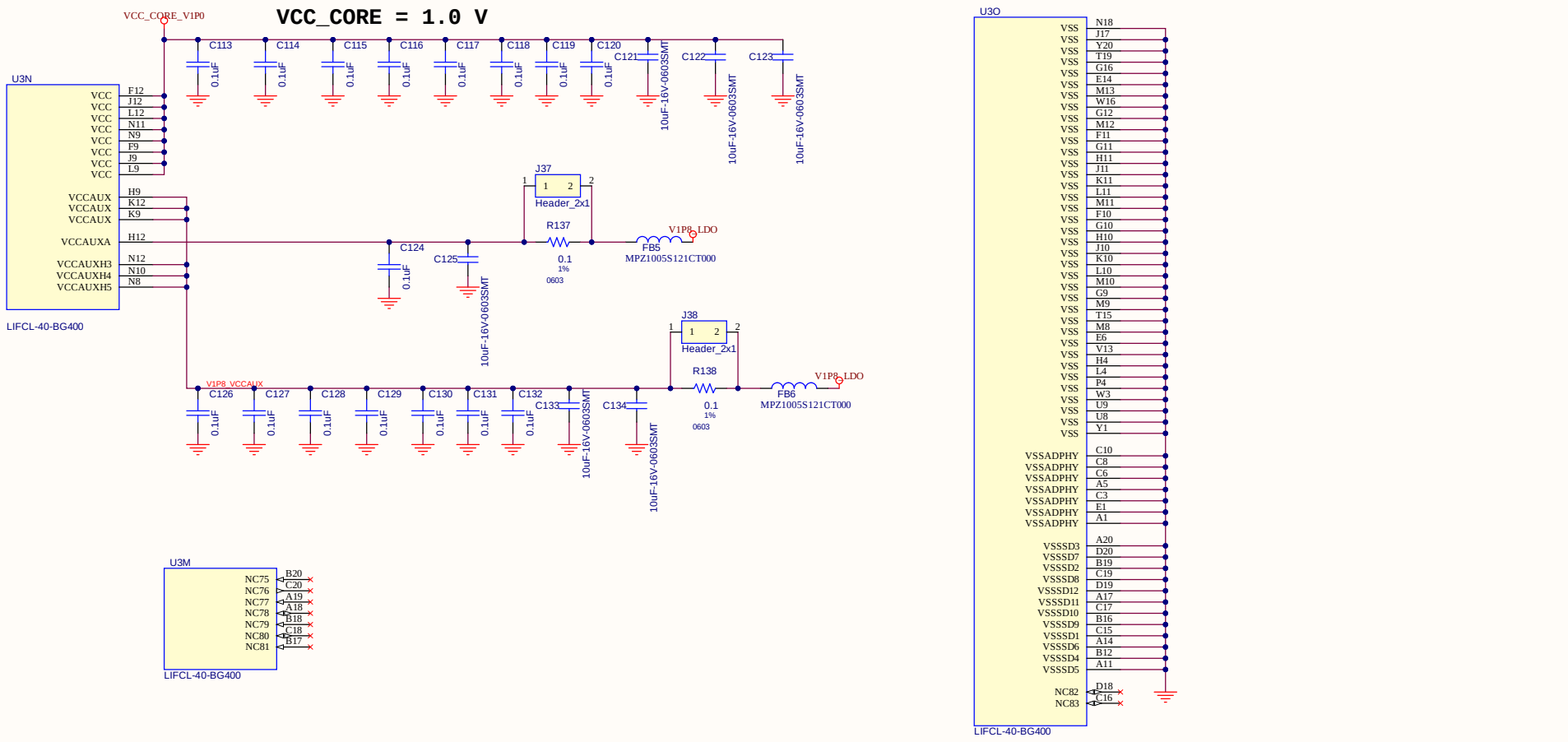

Analog VCCA 1.0 V Power
For DPHY And Serdes
+1.0 V
300 mA
TLV73310PDQNT
DPHY, Serdes, ADC And VCCAUX
Analog 1.8 V Power
+1.8 V
500 mA
BD00IC0WHFV-GTR
Vout = 0.8*(R143/R148+1) = 1.81 V
POWER INPUT
+11v to +16v
F1251CT-ND
SCHOTTKY/VISHAY-V12P10
5.0 V
+5.0 V
1.1 A
LT3508EUF
Vout = 0.8*(R154/R156+1) = 5.00 V
Freq = 1.0 MHz
3.3 V
+3.3 V
1.35 A
Vout = 0.8*(R155/R160+1) = 3.32 V
Core Power
1.0 V
+1.0 V
1.35 A
Vout = 0.8*((R164/R169)+1) = 1.01 V
Freq = 625 KHz
1.8 V
+1.8 V
1.1 A
Vout = 0.8*((R165/R170)+1) = 1.81 V
LATTICE SEMICONDUCTOR
Lattice Semiconductor Applications
http://www.latticesemi.com/Support
Power Regulators
Schematic Rev 1.0
Board Rev B
Sheet 1 of 12


U11
NCP110AMX120TBG
C109 1.0uF
C110 1.0uF
R116 1.0k
U12
NCP110AMX280TBG
C111 1.0uF
C112 1.0uF
R120 2.0k
12VIN GOOD
5v
R114 4.7k
LED_GREEN_0603 D20
3.3v
R115 2.0k
LED_GREEN_0603 D21
R113 15k
LED_GREEN_0603 D19
1.2v
R117 2.0k
LED_GREEN_0603 D23
Q2 2N2222/SOT23
R123 2.2k
1.8v
R118 2.0k
LED_GREEN_0603 D24
Q4 2N2222/SOT23
R124 4.7k
2.8v
LED_GREEN_0603 D22
R121 1.5k
Group LEDs together
R119 2.0k
1.0v (CORE)
LED_GREEN_0603 D25
VCC_CORE_V1P0
Q3 2N2222/SOT23
R122 2.2k
J44
CON3
R127
R128
R129
Flash Voltage Select
1-2 3.3V (Default)
2-3 1.8V (Note PMOD2 unavailable)
J33
CON3
R130
R131
RPI / User I/O Voltage Select
1-2 3.3V (Default)
2-3 1.8V
R125 2.0k
1.8v (LDO)
LED_GREEN_0603 D26
Q5 2N2222/SOT23
R132 4.7k
R126 2.0k
1.0v (LDO)
LED_GREEN_0603 D27
Q6 2N2222/SOT23
R133 2.2k
R134
R135
R136
TP_VCCIO0
TP_VCCIO1
TP_VCCIO2
TP_VCCIO3
TP_VCCIO4
TP_VCCIO5
TP_VCCIO6
TP_VCCIO7
TP_V5P0
TP_V3P3
TP_V1P8
TP_VCC_CORE_V1P0
TP_V1P8_LDO
TP_V1P0_LDO
TP_V1P2
TP_V2P8
Lattice Semiconductor Applications
http://www.latticesemi.com/Support
Title
Power CSI and Banks
Size B
Project
Schematic Rev 1.0
Board Rev B
Date:
Sheet 2 of 12

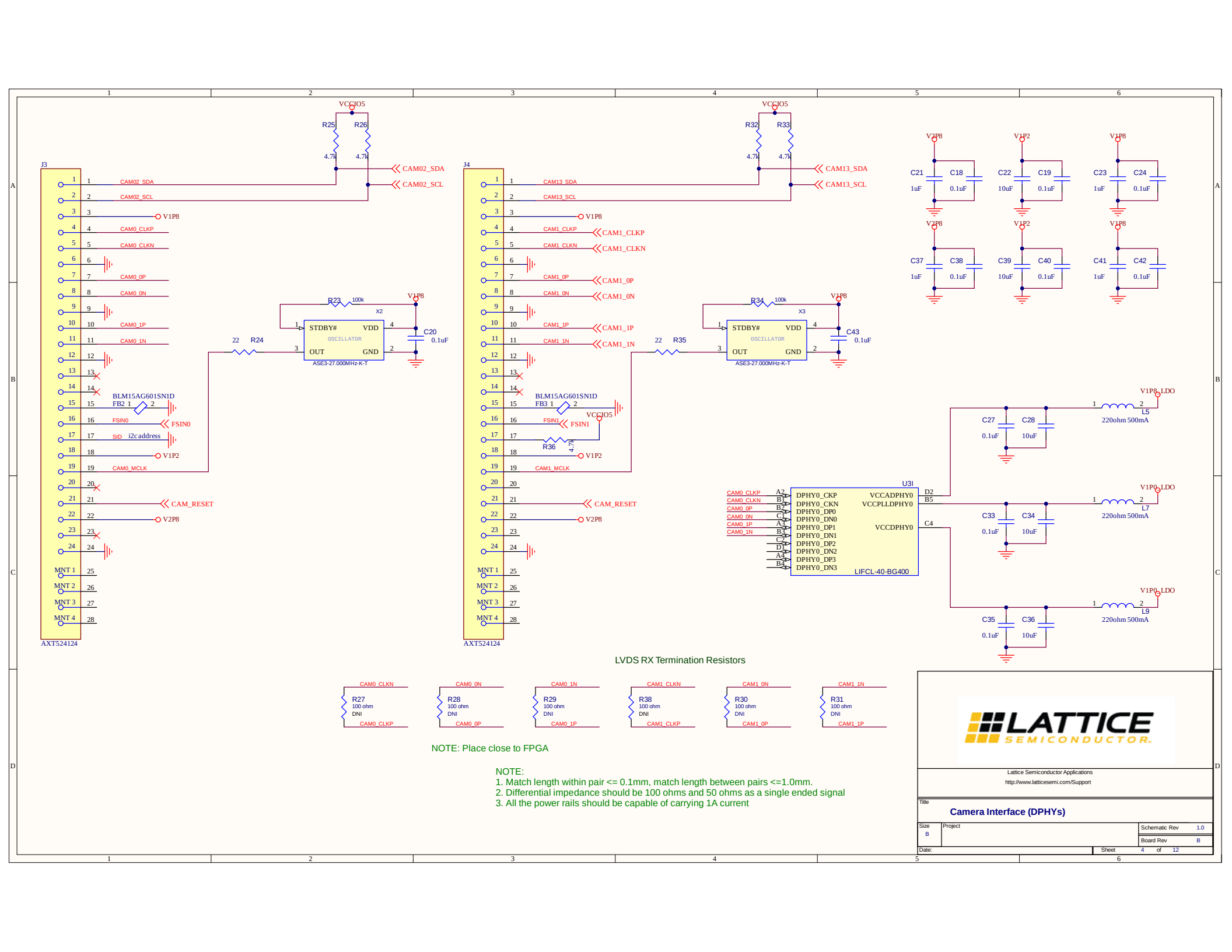


LATTICE SEMICONDUCTOR

Lattice Semiconductor Applications
http://www.latticesemi.com/Support

Title: **Power Decoupling**

Size	Project	Schematic Rev
B		1.0
		Board Rev B
Date:	Sheet 3 of 12	



LVDS RX Termination Resistors

NOTE: Place close to FPGA

NOTE:
1. Match length within pair <= 0.1mm, match length between pairs <=1.0mm.
2. Differential impedance should be 100 ohms and 50 ohms as a single ended signal
3. All the power rails should be capable of carrying 1A current

LATTICE SEMICONDUCTOR

Lattice Semiconductor Applications
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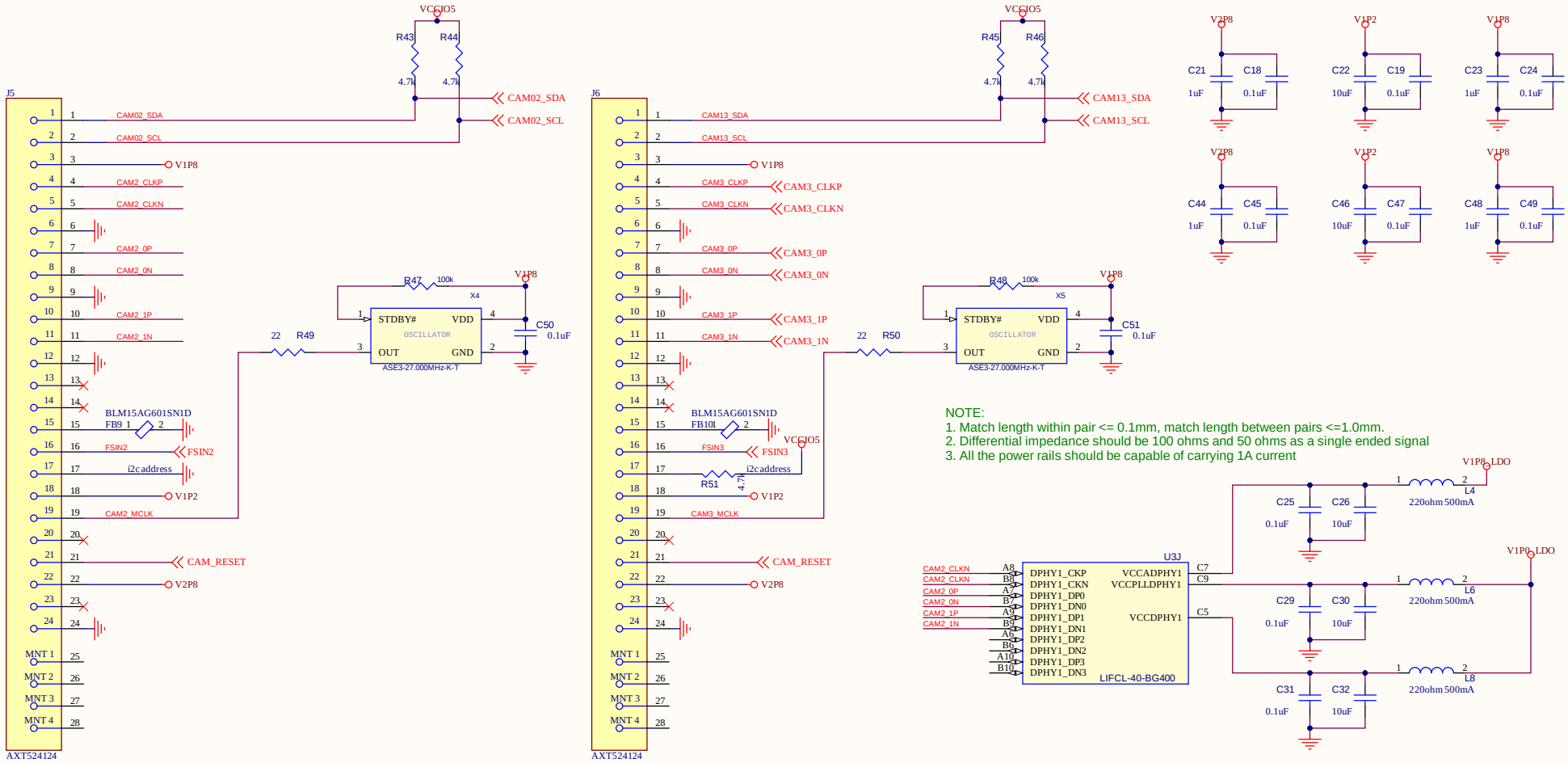
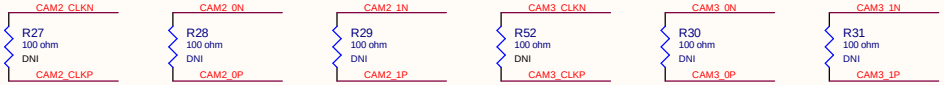
Title: **Camera Interface (DPHYs)**

Size	Project	Schematic Rev	1.0
B		Board Rev	B
Date:		Sheet	4 of 12



LVDS RX Termination Resistors



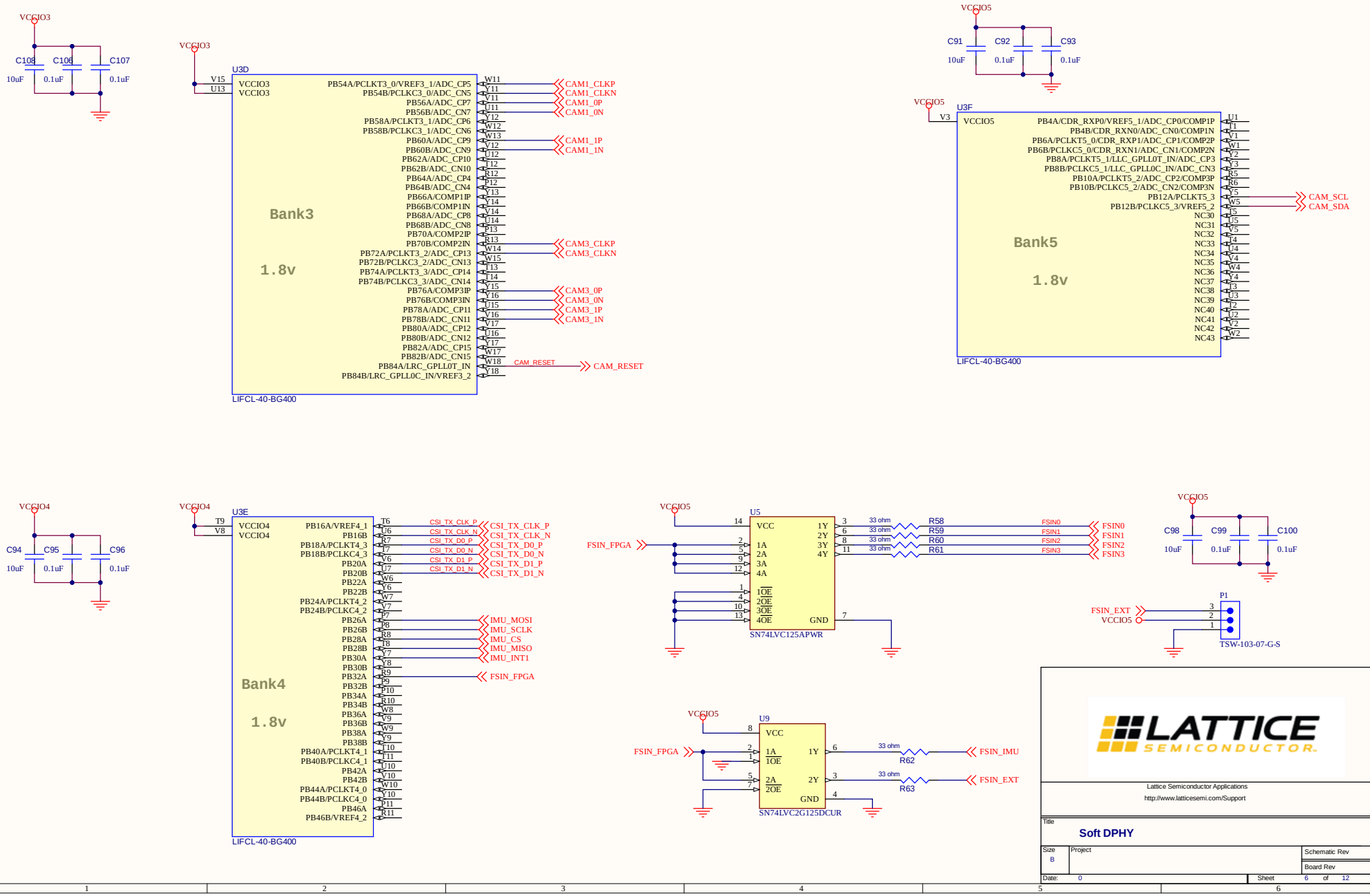
NOTE: Place close to FPGA

Keep LEDs away from Camera

Lattice Semiconductor Applications
http://www.latticesemi.com/Support

Title: Camera Interface (DPHYs)

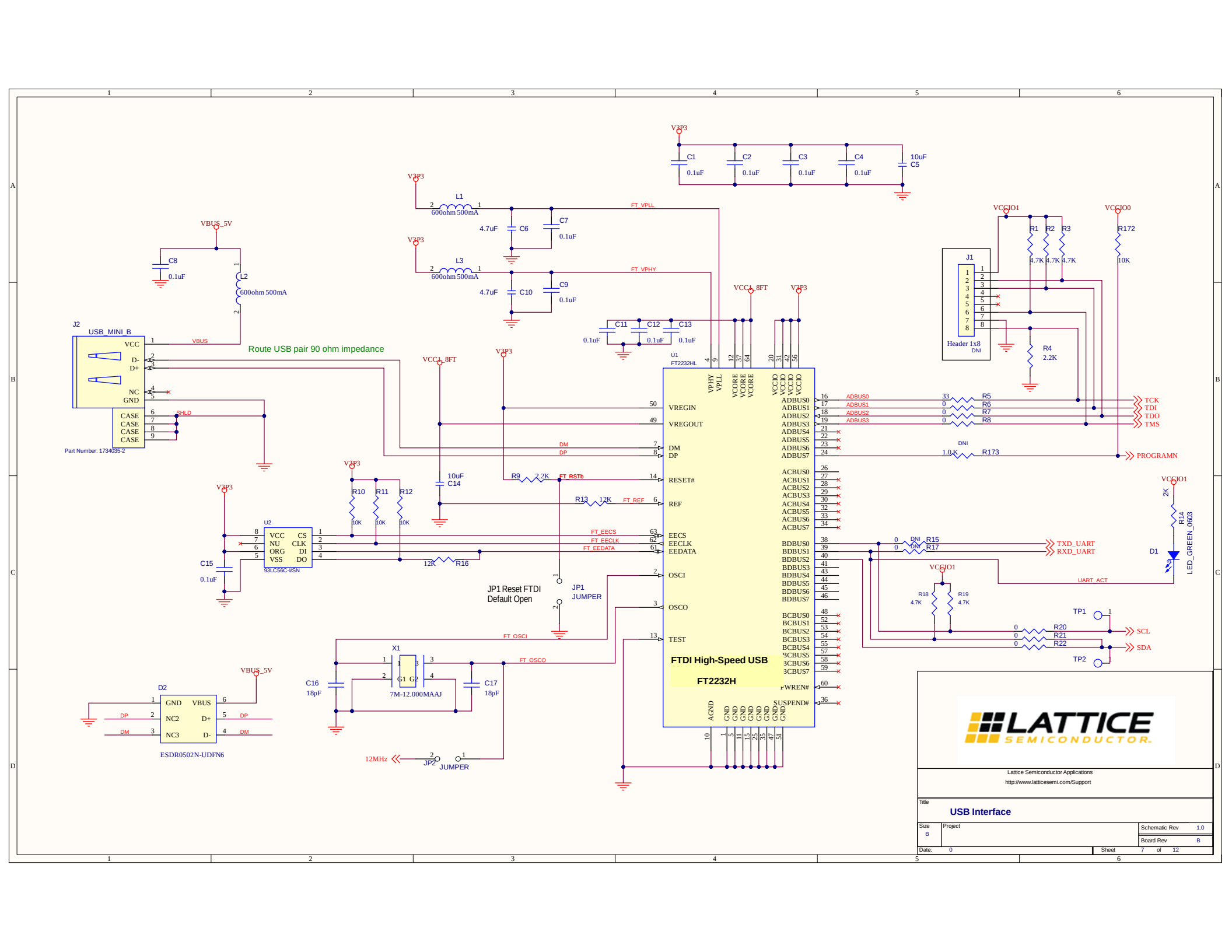
Size	Project	Schematic Rev	1.0
B		Board Rev	B
Date:		Sheet	5 of 12

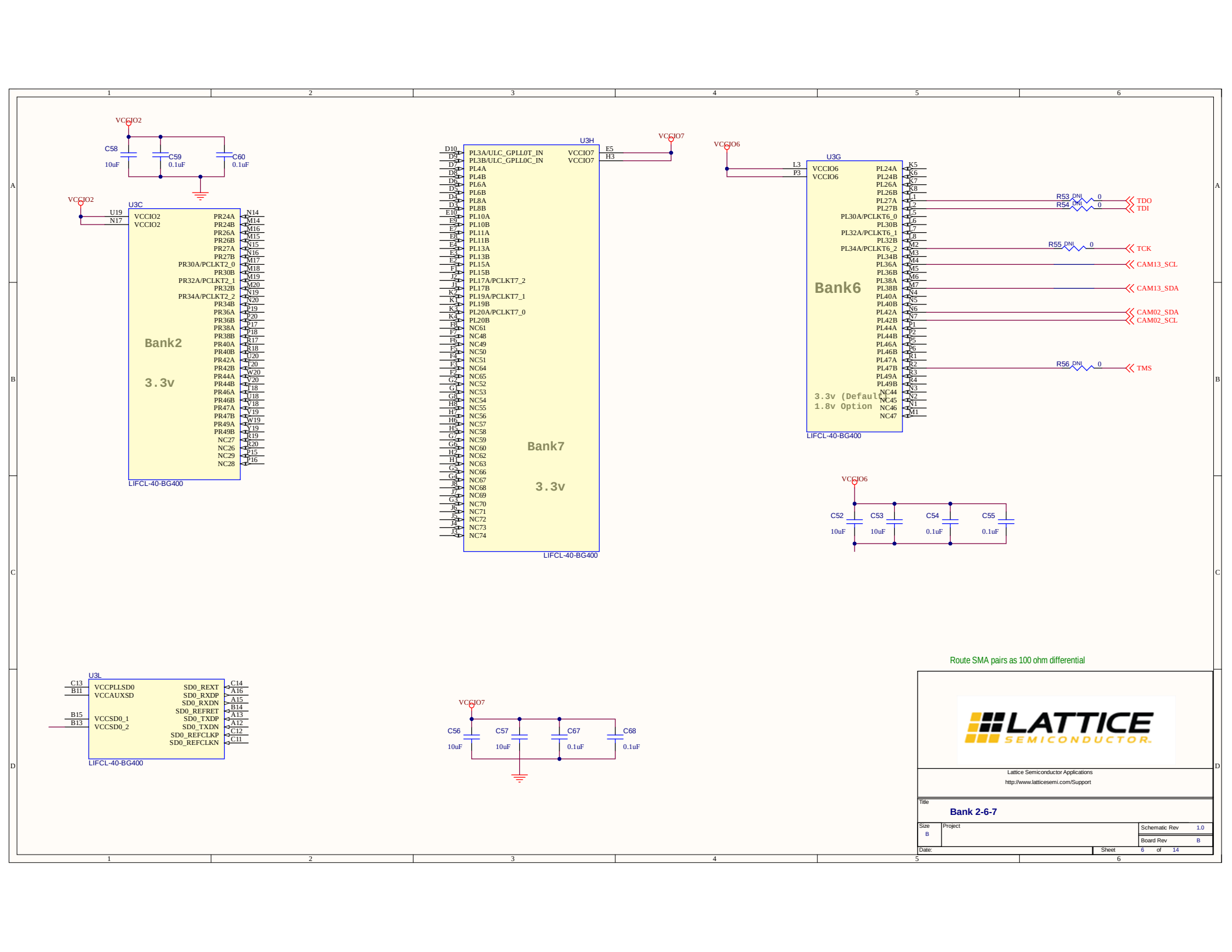


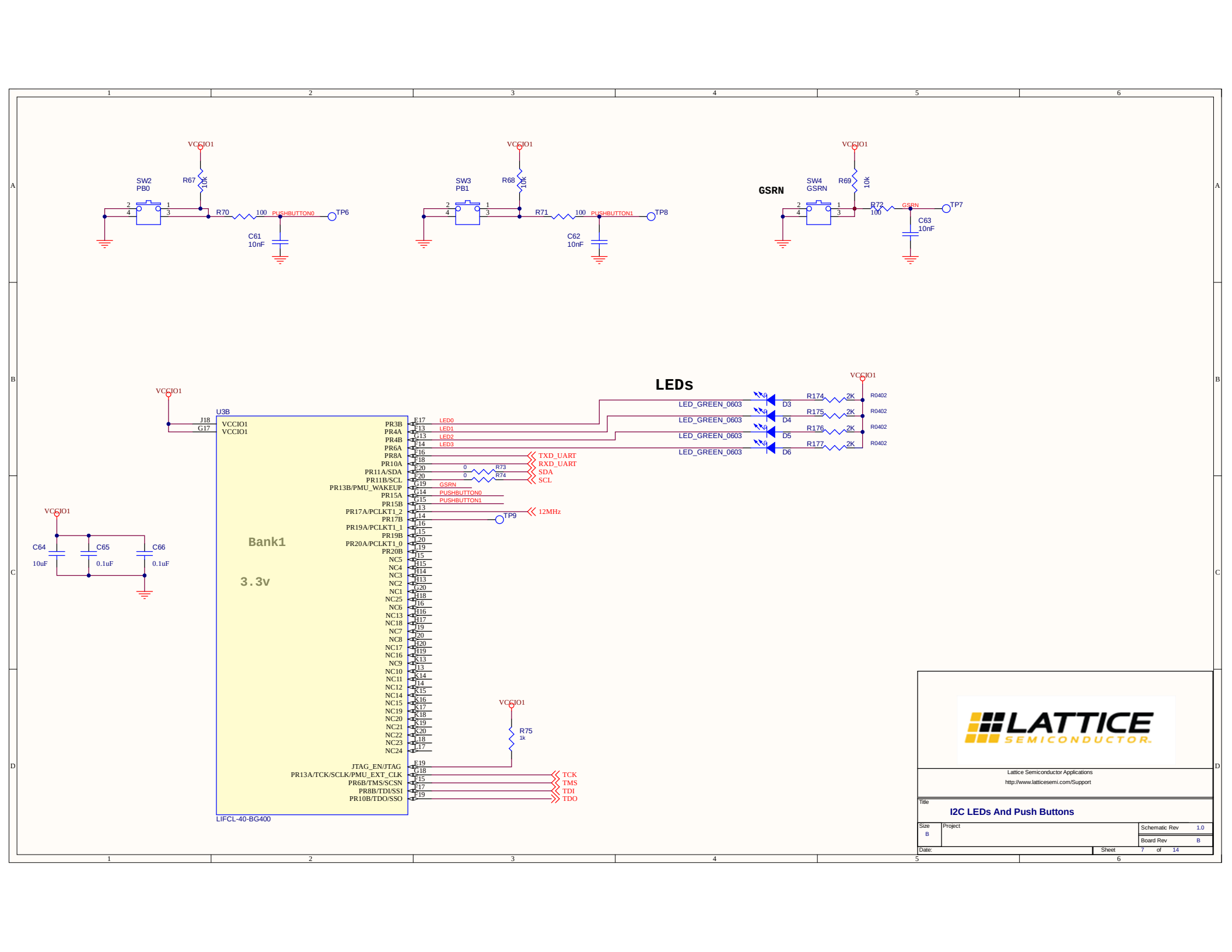
Lattice Semiconductor Applications
http://www.latticesemi.com/Support

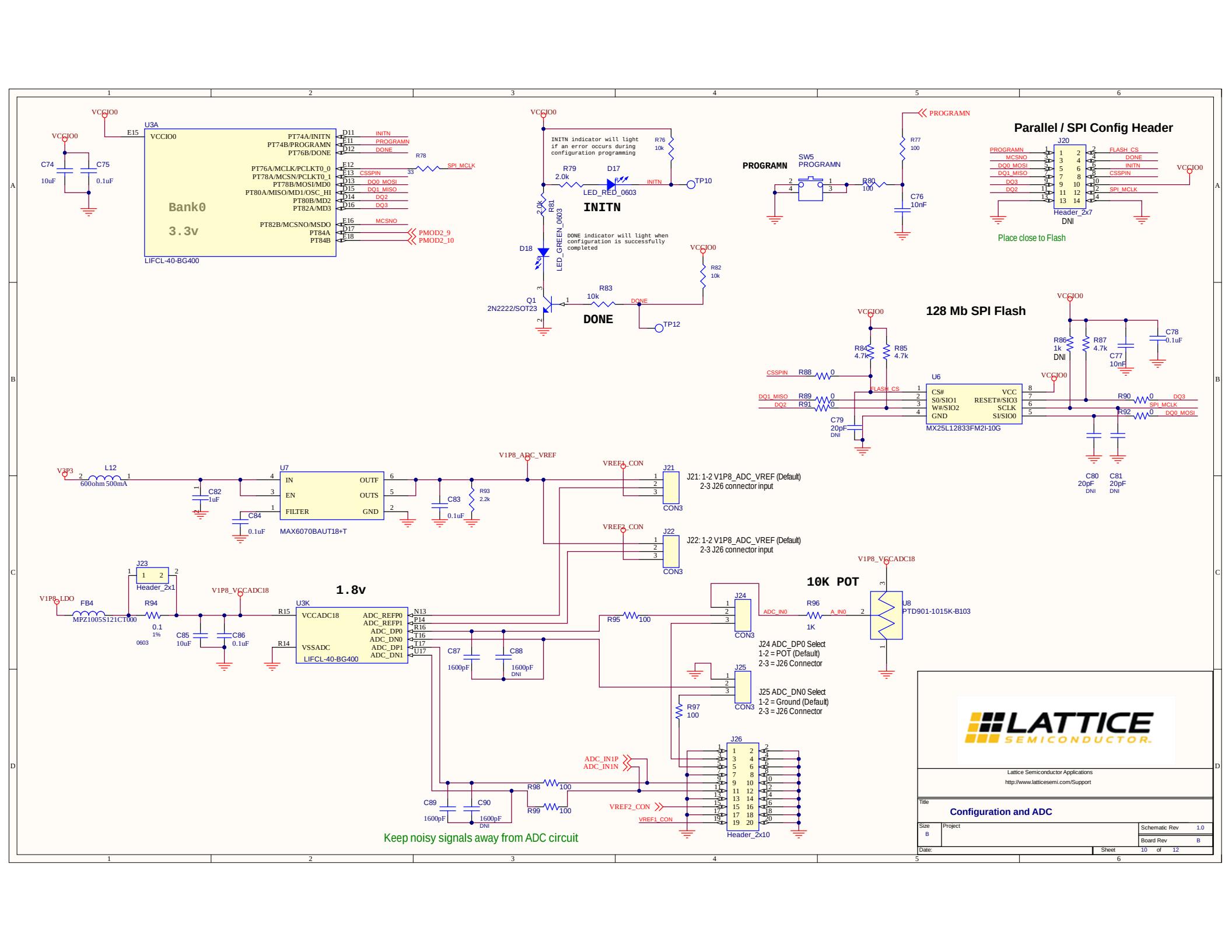
Title: **Soft DPHY**

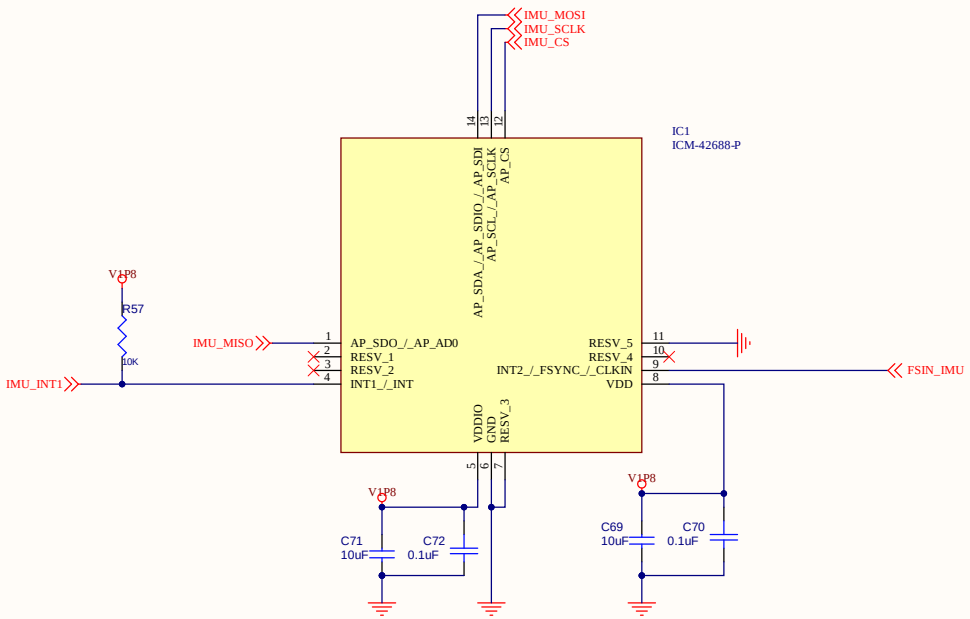
Size	Project	Schematic Rev	1.0
B		Board Rev	B
Date: 0		Sheet 6 of 12	


V3P3
C1
0.1uF
C2
0.1uF
C3
0.1uF
C4
0.1uF
10uF
C5
L1
600ohm 500mA
FT_VPLL
4.7uF
C6
C7
0.1uF
L3
600ohm 500mA
FT_VPHY
4.7uF
C10
C9
0.1uF
VBUS_5V
C8
0.1uF
L2
600ohm 500mA
J2
USB_MINI_B
VCC
D-
D+
NC
GND
CASE
CASE
CASE
CASE
VBUS
SHLD
Part Number: 1734035-2
Route USB pair 90 ohm impedance
VCC1_8FT
C11
0.1uF
C12
0.1uF
C13
0.1uF
U1
FT2232HL
VPHY
VPLL
VCORE
VCORE
VCORE
VCCIO
VCCIO
VCCIO
VCCIO
VREGIN
VREGOUT
DM
DP
RESET#
REF
EECS
EECLK
EEDATA
OSCI
OSCO
TEST
AGND
GND
SUSPEND#
PWREN#
ADBUS0
ADBUS1
ADBUS2
ADBUS3
ADBUS4
ADBUS5
ADBUS6
ADBUS7
ACBUS0
ACBUS1
ACBUS2
ACBUS3
ACBUS4
ACBUS5
ACBUS6
ACBUS7
BDBUS0
BDBUS1
BDBUS2
BDBUS3
BDBUS4
BDBUS5
BDBUS6
BDBUS7
BCBUS0
BCBUS1
BCBUS2
BCBUS3
BCBUS4
BCBUS5
BCBUS6
BCBUS7
FTDI High-Speed USB
FT2232H
VCCIO1
VCCIO0
R1
4.7K
R2
4.7K
R3
4.7K
R172
10K
J1
Header 1x8
DNI
R4
2.2K
ADBUS0
ADBUS1
ADBUS2
ADBUS3
R5
33
R6
0
R7
0
R8
0
TCK
TDI
TDO
TMS
DNI
1.0K
R173
PROGRAMN
R9
2.2K
FT_RSTb
R13
12K
FT_REF
U2
93LC56C-I/SN
VCC
NU
ORG
VSS
CS
CLK
DI
DO
R10
10K
R11
10K
R12
10K
C14
10uF
C15
0.1uF
12K
R16
FT_EECS
FT_EECLK
FT_EEDATA
JP1 Reset FTDI
Default Open
JP1
JUMPER
FT_OSCI
FT_OSCO
X1
7M-12.000MAAJ
C16
18pF
C17
18pF
12MHz
JP2
JUMPER
D2
ESDR0502N-UDFN6
GND
VBUS
NC2
D+
NC3
D-
DP
DM
R15
0
DNI
R17
0
TXD_UART
RXD_UART
UART_ACT
R18
4.7K
R19
4.7K
R20
0
R21
0
R22
0
SCL
SDA
TP1
TP2
D1
LED_GREEN_0603
R14
2K
LATTICE SEMICONDUCTOR
Lattice Semiconductor Applications
http://www.latticesemi.com/Support
Title
USB Interface
Size
B
Project
Schematic Rev
1.0
Board Rev
B
Date:
0
Sheet
7
of
12


VCCIO2
C58
10uF
C59
0.1uF
C60
0.1uF
U3C
U19
N17
VCCIO2
VCCIO2
PR24A N14
PR24B M14
PR26A M16
PR26B M15
PR27A N15
PR27B N16
PR30A/PCLKT2_0 M17
PR30B M18
PR32A/PCLKT2_1 M19
PR32B M20
PR34A/PCLKT2_2 N19
PR34B N20
PR36A P19
PR36B P20
PR38A P17
PR38B P18
PR40A R17
PR40B R18
PR42A U20
PR42B T20
PR44A W20
PR44B V20
PR46A T18
PR46B U18
PR47A V18
PR47B V19
PR49A W19
PR49B Y19
NC27 R19
NC26 R20
NC29 P15
NC28 P16
Bank2
3.3v
LIFCL-40-BG400
U3H
VCCIO7
E5
H3
D10 PL3A/ULC_GPLL0T_IN
D9 PL3B/ULC_GPLL0C_IN
D7 PL4A
D8 PL4B
D6 PL6A
D5 PL6B
D4 PL8A
D3 PL8B
E10 PL10A
E9 PL10B
E7 PL11A
E8 PL11B
E4 PL13A
E3 PL13B
E2 PL15A
F1 PL15B
J2 PL17A/PCLKT7_2
J1 PL17B
K2 PL19A/PCLKT7_1
K1 PL19B
K3 PL20A/PCLKT7_0
K4 PL20B
F8 NC61
F7 NC48
F6 NC49
F5 NC50
F4 NC51
F3 NC64
F2 NC65
G2 NC52
G1 NC53
G8 NC54
H8 NC55
H7 NC56
H6 NC57
H5 NC58
G7 NC59
G6 NC60
H2 NC62
H1 NC63
G5 NC66
G4 NC67
J8 NC68
J7 NC69
G3 NC70
J6 NC71
J5 NC72
J4 NC73
J3 NC74
Bank7
3.3v
LIFCL-40-BG400
VCCIO6
U3G
L3
P3
VCCIO6
VCCIO6
PL24A K5
PL24B K6
PL26A K7
PL26B K8
PL27A L1
PL27B L2
PL30A/PCLKT6_0 L5
PL30B L6
PL32A/PCLKT6_1 L7
PL32B L8
PL34A/PCLKT6_2 M2
PL34B M3
PL36A M4
PL36B M5
PL38A M6
PL38B M7
PL40A N4
PL40B N5
PL42A N6
PL42B N7
PL44A P1
PL44B P2
PL46A P5
PL46B P6
PL47A R1
PL47B R2
PL49A R3
PL49B R4
NC44 N3
NC45 N2
NC46 N1
NC47 M1
3.3v (Default)
1.8v Option
Bank6
LIFCL-40-BG400
R53 DNI 0
R54 DNI 0
R55 DNI 0
R56 DNI 0
TDO
TDI
TCK
CAM13_SCL
CAM13_SDA
CAM02_SDA
CAM02_SCL
TMS
VCCIO6
C52
10uF
C53
10uF
C54
0.1uF
C55
0.1uF
U3L
C13
B11
B15
B13
VCCPLLSD0
VCCAUXSD
VCCSD0_1
VCCSD0_2
SD0_REXT C14
SD0_RXDP A16
SD0_RXDN A15
SD0_REFRET B14
SD0_TXDP A13
SD0_TXDN A12
SD0_REFCLKP C12
SD0_REFCLKN C11
LIFCL-40-BG400
VCCIO7
C56
10uF
C57
10uF
C67
0.1uF
C68
0.1uF
Route SMA pairs as 100 ohm differential
LATTICE SEMICONDUCTOR
Lattice Semiconductor Applications
http://www.latticesemi.com/Support
Title
Bank 2-6-7
Size B
Project
Schematic Rev 1.0
Board Rev B
Date:
Sheet 6 of 14

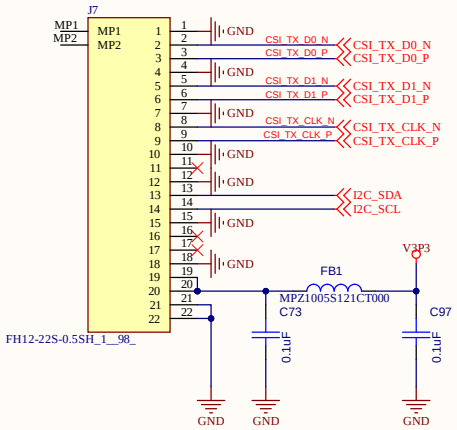

SW2
PB0
R67
10k
R70
100
PUSHBUTTON0
TP6
C61
10nF
SW3
PB1
R68
10k
R71
100
PUSHBUTTON1
TP8
C62
10nF
GSRN
SW4
GSRN
R69
10k
R72
100
GSRN
TP7
C63
10nF
LEDs
LED_GREEN_0603
D3
D4
D5
D6
R174
R175
R176
R177
2K
R0402
U3B
J18
G17
VCCIO1
Bank1
3.3v
LIFCL-40-BG400
PR3B
PR4A
PR4B
PR6A
PR8A
PR10A
PR11A/SDA
PR11B/SCL
PR13B/PMU_WAKEUP
PR15A
PR15B
PR17A/PCLKT1_2
PR17B
PR19A/PCLKT1_1
PR19B
PR20A/PCLKT1_0
PR20B
LED0
LED1
LED2
LED3
TXD_UART
RXD_UART
SDA
SCL
R73
R74
GSRN
PUSHBUTTON0
PUSHBUTTON1
TP9
12MHz
C64
C65
C66
10uF
0.1uF
0.1uF
R75
1k
JTAG_EN/JTAG
PR13A/TCK/SCLK/PMU_EXT_CLK
PR6B/TMS/SCSN
PR8B/TDI/SSI
PR10B/TDO/SSO
TCK
TMS
TDI
TDO
Lattice Semiconductor Applications
http://www.latticesemi.com/Support
Title
I2C LEDs And Push Buttons
Size
B
Project
Schematic Rev
1.0
Board Rev
B
Date:
Sheet
7
of
14


U3A
LIFCL-40-BG400
Bank0
3.3v
INITN
PROGRAMN
DONE
CSSPIN
DQ0_MOSI
DQ1_MISO
DQ2
DQ3
MCSNO
PMOD2_9
PMOD2_10
SPI_MCLK
INITN indicator will light if an error occurs during configuration programming
LED_RED_0603
DONE indicator will light when configuration is successfully completed
LED_GREEN_0603
Q1
2N2222/SOT23
TP10
TP12
SW5
PROGRAMN
Parallel / SPI Config Header
J20
Header_2x7
DNI
Place close to Flash
128 Mb SPI Flash
U6
MX25L12833FM2I-10G
CS#
S0/SIO1
W#/SIO2
GND
VCC
RESET#/SIO3
SCLK
SI/SIO0
U7
MAX6070BAUT18+T
IN
EN
FILTER
OUTF
OUTS
GND
V1P8_ADC_VREF
VREF1_CON
VREF2_CON
J21: 1-2 V1P8_ADC_VREF (Default)
2-3 J26 connector input
J22: 1-2 V1P8_ADC_VREF (Default)
2-3 J26 connector input
1.8v
U3K
LIFCL-40-BG400
VCCADC18
VSSADC
ADC_REFP0
ADC_REFP1
ADC_DP0
ADC_DN0
ADC_DP1
ADC_DN1
V1P8_LDO
V1P8_VCCADC18
MPZ1005S121CT000
10K POT
U8
PTD901-1015K-B103
J24 ADC_DP0 Select
1-2 = POT (Default)
2-3 = J26 Connector
J25 ADC_DN0 Select
1-2 = Ground (Default)
2-3 = J26 Connector
ADC_IN1P
ADC_IN1N
Header_2x10
Keep noisy signals away from ADC circuit
Lattice Semiconductor Applications
http://www.latticesemi.com/Support
Configuration and ADC
Schematic Rev 1.0
Board Rev B
Sheet 10 of 12



Lattice Semiconductor Applications
http://www.latticesemi.com/Support

Title	IMU		
Size B	Project	Schematic Rev	1.0
		Board Rev	B
Date:		Sheet	11 of 12



Lattice Semiconductor Applications
http://www.latticesemi.com/Support

Title
JETSON-CON

Size	Project	Schematic Rev
		Board Rev
Date:	Sheet	of