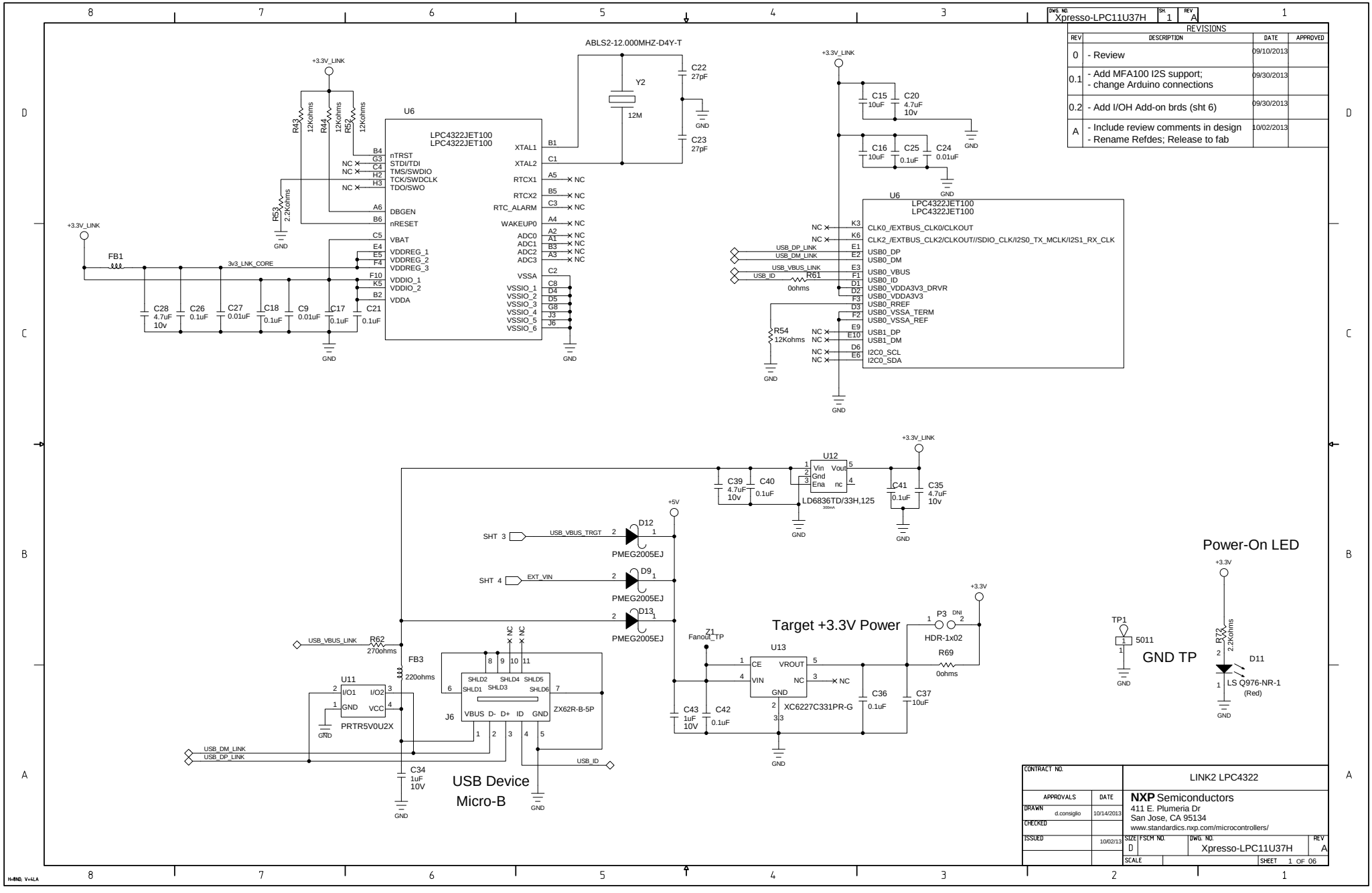
DWG. NO. Xpresso-LPC11U37H
SH. 1
REV. A
REVISIONS
REV | DESCRIPTION | DATE | APPROVED
0 - Review 09/10/2013
0.1 - Add MFA100 I2S support; - change Arduino connections 09/30/2013
0.2 - Add I/OH Add-on brds (sht 6) 09/30/2013
A - Include review comments in design - Rename Refdes; Release to fab 10/02/2013
ABLS2-12.000MHZ-D4Y-T
U6
LPC4322JET100
LPC4322JET100
Y2
12M
C22 27pF
C23 27pF
R43 12Kohms
R44 12Kohms
R52 12Kohms
R53 2.2Kohms
FB1
3v3_LNK_CORE
C28 4.7uF 10v
C26 0.1uF
C27 0.01uF
C18 0.1uF
C9 0.01uF
C17 0.1uF
C21 0.1uF
C15 10uF
C20 4.7uF 10v
C16 10uF
C25 0.1uF
C24 0.01uF
R61 0ohms
R54 12Kohms
USB_DP_LINK
USB_DM_LINK
USB_VBUS_LINK
USB_ID
U12
LD6836TD/33H,125
C39 4.7uF 10v
C40 0.1uF
C41 0.1uF
C35 4.7uF 10v
D12 PMEG2005EJ
D9 PMEG2005EJ
D13 PMEG2005EJ
SHT 3
SHT 4
USB_VBUS_TRGT
EXT_VIN
R62 270ohms
FB3 220ohms
U11 PRTR5V0U2X
J6 ZX62R-B-5P
C34 1uF 10V
USB Device Micro-B
Z1 Fanout_TP
U13 XC6227C331PR-G
C43 1uF 10V
C42 0.1uF
C36 0.1uF
C37 10uF
P3 HDR-1x02
R69 0ohms
Target +3.3V Power
TP1 5011
GND TP
R72 2.2Kohms
D11 LS Q976-NR-1 (Red)
Power-On LED
CONTRACT NO.
LINK2 LPC4322
APPROVALS DATE
DRAWN d.consiglio 10/14/2013
CHECKED
ISSUED 10/02/13
NXP Semiconductors
411 E. Plumeria Dr
San Jose, CA 95134
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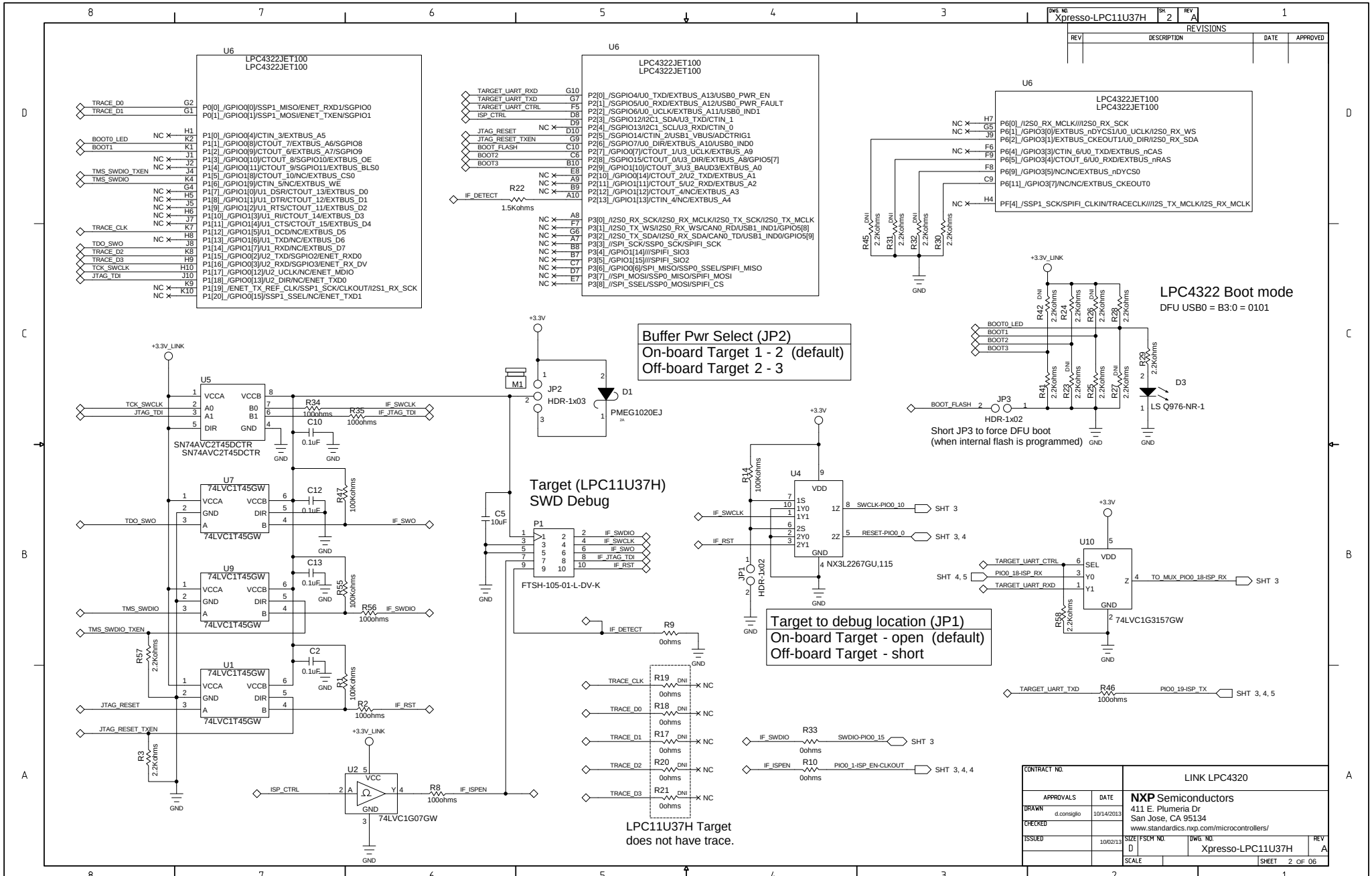
SIZE D FSCM NO. DWG. NO. Xpresso-LPC11U37H REV A
SCALE SHEET 1 OF 06


DWG. NO. Xpresso-LPC11U37H
SH. 2
REV. A
REVISIONS
REV | DESCRIPTION | DATE | APPROVED
U6
LPC4322JET100
LPC4322JET100
TRACE_D0 G2
TRACE_D1 G1
P0[0]_/GPIO0[0]/SSP1_MISO/ENET_RXD1/SGPIO0
P0[1]_/GPIO0[1]/SSP1_MOSI/ENET_TXEN/SGPIO1
BOOT0_LED NC H1
BOOT1 K2
K1
NC J1
NC J2
TMS_SWDIO_TXEN J4
TMS_SWDIO K4
G4
NC H5
NC J5
NC H6
NC J7
TRACE_CLK K7
H8
NC J8
TDO_SWO K8
TRACE_D2 H9
TCK_SWCLK J10
JTAG_TDI K9
NC K10
NC
P1[0]_/GPIO0[4]/CTIN_3/EXTBUS_A5
P1[1]_/GPIO0[8]/CTOUT_7/EXTBUS_A6/SGPIO8
P1[2]_/GPIO0[9]/CTOUT_6/EXTBUS_A7/SGPIO9
P1[3]_/GPIO0[10]/CTOUT_8/SGPIO10/EXTBUS_OE
P1[4]_/GPIO0[11]/CTOUT_9/SGPIO11/EXTBUS_BLS0
P1[5]_/GPIO1[8]/CTOUT_10/NC/EXTBUS_CS0
P1[6]_/GPIO1[9]/CTIN_5/NC/EXTBUS_WE
P1[7]_/GPIO1[0]/U1_DSR/CTOUT_13/EXTBUS_D0
P1[8]_/GPIO1[1]/U1_DTR/CTOUT_12/EXTBUS_D1
P1[9]_/GPIO1[2]/U1_RTS/CTOUT_11/EXTBUS_D2
P1[10]_/GPIO1[3]/U1_RI/CTOUT_14/EXTBUS_D3
P1[11]_/GPIO1[4]/U1_CTS/CTOUT_15/EXTBUS_D4
P1[12]_/GPIO1[5]/U1_DCD/NC/EXTBUS_D5
P1[13]_/GPIO1[6]/U1_TXD/NC/EXTBUS_D6
P1[14]_/GPIO1[7]/U1_RXD/NC/EXTBUS_D7
P1[15]_/GPIO0[2]/U2_TXD/SGPIO2/ENET_RXD0
P1[16]_/GPIO0[3]/U2_RXD/SGPIO3/ENET_RX_DV
P1[17]_/GPIO0[12]/U2_UCLK/NC/ENET_MDIO
P1[18]_/GPIO0[13]/U2_DIR/NC/ENET_TXD0
P1[19]_/ENET_TX_REF_CLK/SSP1_SCK/CLKOUT/I2S1_RX_SCK
P1[20]_/GPIO0[15]/SSP1_SSEL/NC/ENET_TXD1
U6
LPC4322JET100
LPC4322JET100
TARGET_UART_RXD G10
TARGET_UART_TXD G7
TARGET_UART_CTRL F5
ISP_CTRL D8
D9
NC D10
JTAG_RESET
JTAG_RESET_TXEN G9
BOOT_FLASH C10
BOOT2 C6
BOOT3 B10
E8
NC A9
NC B9
IF_DETECT R22 NC A10
1.5Kohms
A8
NC F7
NC G6
NC A7
NC B8
NC B7
NC C7
NC D7
NC E7
NC
P2[0]_/SGPIO4/U0_TXD/EXTBUS_A13/USB0_PWR_EN
P2[1]_/SGPIO5/U0_RXD/EXTBUS_A12/USB0_PWR_FAULT
P2[2]_/SGPIO6/U0_UCLK/EXTBUS_A11/USB0_IND1
P2[3]_/SGPIO12/I2C1_SDA/U3_TXD/CTIN_1
P2[4]_/SGPIO13/I2C1_SCL/U3_RXD/CTIN_0
P2[5]_/SGPIO14/CTIN_2/USB1_VBUS/ADCTRIG1
P2[6]_/SGPIO7/U0_DIR/EXTBUS_A10/USB0_IND0
P2[7]_/GPIO0[7]/CTOUT_1/U3_UCLK/EXTBUS_A9
P2[8]_/SGPIO15/CTOUT_0/U3_DIR/EXTBUS_A8/GPIO5[7]
P2[9]_/GPIO1[10]/CTOUT_3/U3_BAUD3/EXTBUS_A0
P2[10]_/GPIO0[14]/CTOUT_2/U2_TXD/EXTBUS_A1
P2[11]_/GPIO1[11]/CTOUT_5/U2_RXD/EXTBUS_A2
P2[12]_/GPIO1[12]/CTOUT_4/NC/EXTBUS_A3
P2[13]_/GPIO1[13]/CTIN_4/NC/EXTBUS_A4
P3[0]_/I2S0_RX_SCK/I2S0_RX_MCLK/I2S0_TX_SCK/I2S0_TX_MCLK
P3[1]_/I2S0_TX_WS/I2S0_RX_WS/CAN0_RD/USB1_IND1/GPIO5[8]
P3[2]_/I2S0_TX_SDA/I2S0_RX_SDA/CAN0_TD/USB1_IND0/GPIO5[9]
P3[3]_//SPI_SCK/SSP0_SCK/SPIFI_SCK
P3[4]_/GPIO1[14]///SPIFI_SIO3
P3[5]_/GPIO1[15]///SPIFI_SIO2
P3[6]_/GPIO0[6]/SPI_MISO/SSP0_SSEL/SPIFI_MISO
P3[7]_//SPI_MOSI/SSP0_MISO/SPIFI_MOSI
P3[8]_//SPI_SSEL/SSP0_MOSI/SPIFI_CS
U6
LPC4322JET100
LPC4322JET100
NC H7
NC G5
NC J9
NC F6
F9
F8
C9
NC H4
P6[0]_/I2S0_RX_MCLK///I2S0_RX_SCK
P6[1]_/GPIO3[0]/EXTBUS_nDYCS1/U0_UCLK/I2S0_RX_WS
P6[2]_/GPIO3[1]/EXTBUS_CKEOUT1/U0_DIR/I2S0_RX_SDA
P6[4]_/GPIO3[3]/CTIN_6/U0_TXD/EXTBUS_nCAS
P6[5]_/GPIO3[4]/CTOUT_6/U0_RXD/EXTBUS_nRAS
P6[9]_/GPIO3[5]/NC/NC/EXTBUS_nDYCS0
P6[11]_/GPIO3[7]/NC/NC/EXTBUS_CKEOUT0
PF[4]_/SSP1_SCK/SPIFI_CLKIN/TRACECLK///I2S_TX_MCLK/I2S_RX_MCLK
R45 DNI 2.2Kohms
R31 DNI 2.2Kohms
R32 DNI 2.2Kohms
R30 2.2Kohms
GND
+3.3V_LINK
R42 DNI 2.2Kohms
R24 2.2Kohms
R26 DNI 2.2Kohms
R28 2.2Kohms
R29 2.2Kohms
BOOT0_LED
BOOT1
BOOT2
BOOT3
R41 DNI 2.2Kohms
R23 DNI 2.2Kohms
R25 DNI 2.2Kohms
R27 DNI 2.2Kohms
BOOT_FLASH
JP3
HDR-1x02
D3
LS Q976-NR-1
LPC4322 Boot mode
DFU USB0 = B3:0 = 0101
Short JP3 to force DFU boot
(when internal flash is programmed)
+3.3V_LINK
U5
TCK_SWCLK
JTAG_TDI
VCCA VCCB
A0 B0
A1 B1
DIR GND
SN74AVC2T45DCTR
SN74AVC2T45DCTR
R34 100ohms IF_SWCLK
R35 100ohms IF_JTAG_TDI
C10 0.1uF
GND
M1
+3.3V
JP2
HDR-1x03
D1
PMEG1020EJ
Buffer Pwr Select (JP2)
On-board Target 1 - 2 (default)
Off-board Target 2 - 3
U7
74LVC1T45GW
TDO_SWO
C12 0.1uF
R47 100Kohms
IF_SWO
U9
74LVC1T45GW
TMS_SWDIO
C13 0.1uF
R55 100Kohms
R56 100ohms IF_SWDIO
TMS_SWDIO_TXEN
R57 2.2Kohms
U1
74LVC1T45GW
JTAG_RESET
C2 0.1uF
R1 100Kohms
R2 100ohms IF_RST
JTAG_RESET_TXEN
R3 2.2Kohms
Target (LPC11U37H)
SWD Debug
C5 10uF
P1
IF_SWDIO
IF_SWCLK
IF_SWO
IF_JTAG_TDI
IF_RST
FTSH-105-01-L-DV-K
IF_DETECT R9 0ohms
TRACE_CLK R19 DNI 0ohms NC
TRACE_D0 R18 DNI 0ohms NC
TRACE_D1 R17 DNI 0ohms NC
TRACE_D2 R20 DNI 0ohms NC
TRACE_D3 R21 DNI 0ohms NC
LPC11U37H Target
does not have trace.
U2
74LVC1G07GW
ISP_CTRL
R8 100ohms IF_ISPEN
R14 100Kohms
U4
NX3L2267GU,115
IF_SWCLK
IF_RST
SWCLK-PIO0_10
RESET-PIO0_0
SHT 3
SHT 3, 4
JP1
HDR-1x02
Target to debug location (JP1)
On-board Target - open (default)
Off-board Target - short
U10
74LVC1G3157GW
TARGET_UART_CTRL
PIO0_18-ISP_RX
TARGET_UART_RXD
TO_MUX_PIO0_18-ISP_RX
SHT 4, 5
SHT 3
R50 2.2Kohms
TARGET_UART_TXD R46 100ohms PIO0_19-ISP_TX SHT 3, 4, 5
IF_SWDIO R33 0ohms SWDIO-PIO0_15 SHT 3
IF_ISPEN R10 0ohms PIO0_1-ISP_EN-CLKOUT SHT 3, 4, 4
CONTRACT NO.
LINK LPC4320
APPROVALS | DATE
DRAWN d.consiglio 10/14/2013
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ISSUED 10/02/13
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SIZE D | FSCM NO. | DWG. NO. Xpresso-LPC11U37H | REV A
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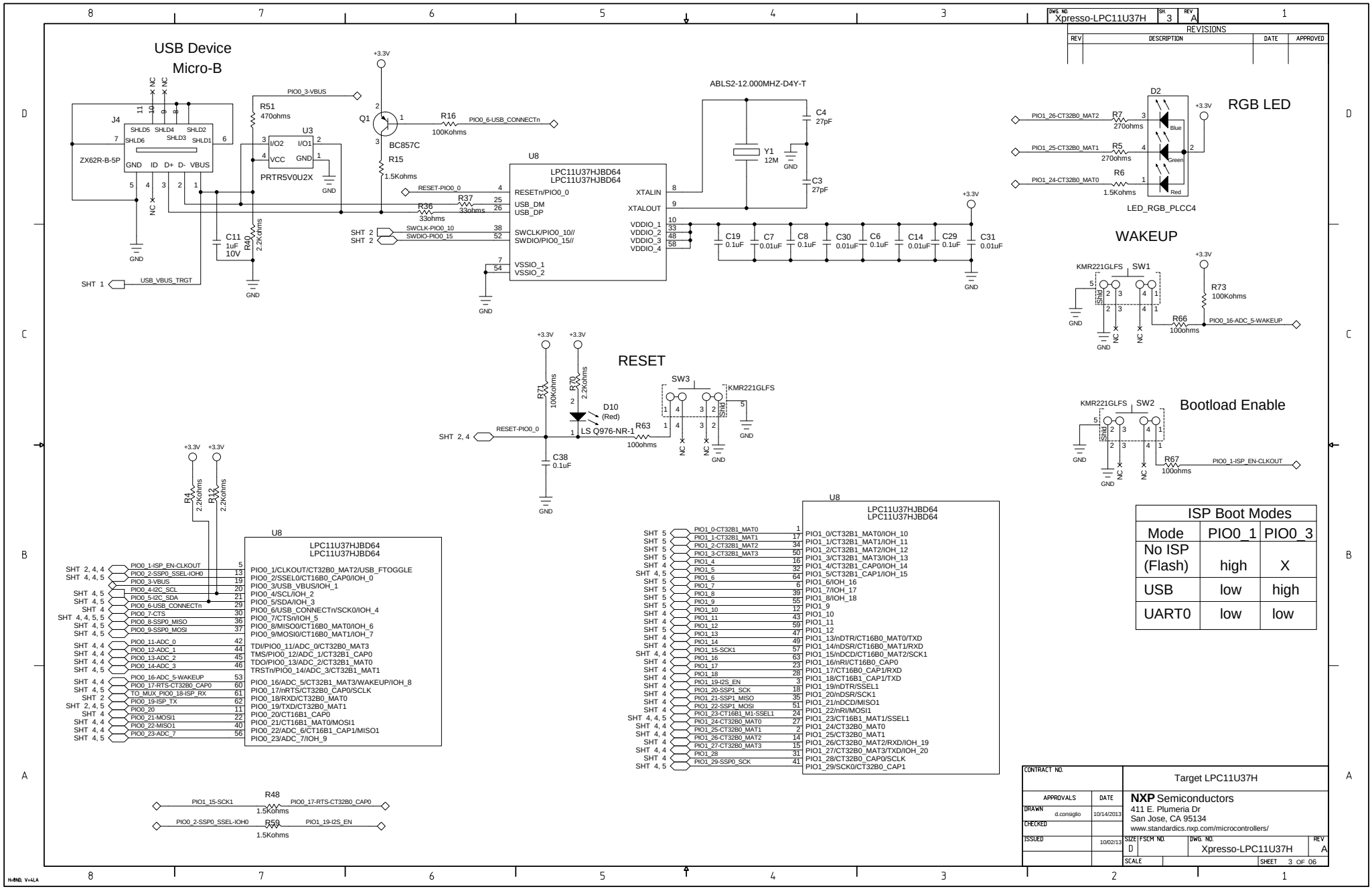
USB Device
Micro-B
J4
ZX62R-B-5P
PRTR5V0U2X
U3
Q1
BC857C
R51
470ohms
R16
100Kohms
R15
1.5Kohms
C11
1uF
10V
R40
2.2Kohms
R36
33ohms
R37
33ohms
ABLS2-12.000MHZ-D4Y-T
Y1
12M
C4
27pF
C3
27pF
U8
LPC11U37HJBD64
LPC11U37HJBD64
C19
0.1uF
C7
0.01uF
C8
0.1uF
C30
0.01uF
C6
0.1uF
C14
0.01uF
C29
0.1uF
C31
0.01uF
RGB LED
D2
R7
270ohms
R5
270ohms
R6
1.5Kohms
LED_RGB_PLCC4
WAKEUP
KMR221GLFS
SW1
R73
100Kohms
R66
100ohms
RESET
SW3
R71
100Kohms
R70
2.2Kohms
D10
(Red)
LS Q976-NR-1
R63
100ohms
C38
0.1uF
Bootload Enable
SW2
R67
100ohms
R4
2.2Kohms
R12
2.2Kohms
R48
1.5Kohms
R59
1.5Kohms
ISP Boot Modes
Mode | PIO0_1 | PIO0_3
No ISP (Flash) | high | X
USB | low | high
UART0 | low | low
REVISIONS
REV | DESCRIPTION | DATE | APPROVED
DWG NO. Xpresso-LPC11U37H
SH. 3
REV. A
CONTRACT NO.
Target LPC11U37H
APPROVALS | DATE
DRAWN d.consiglio 10/14/2013
CHECKED
ISSUED 10/02/13
NXP Semiconductors
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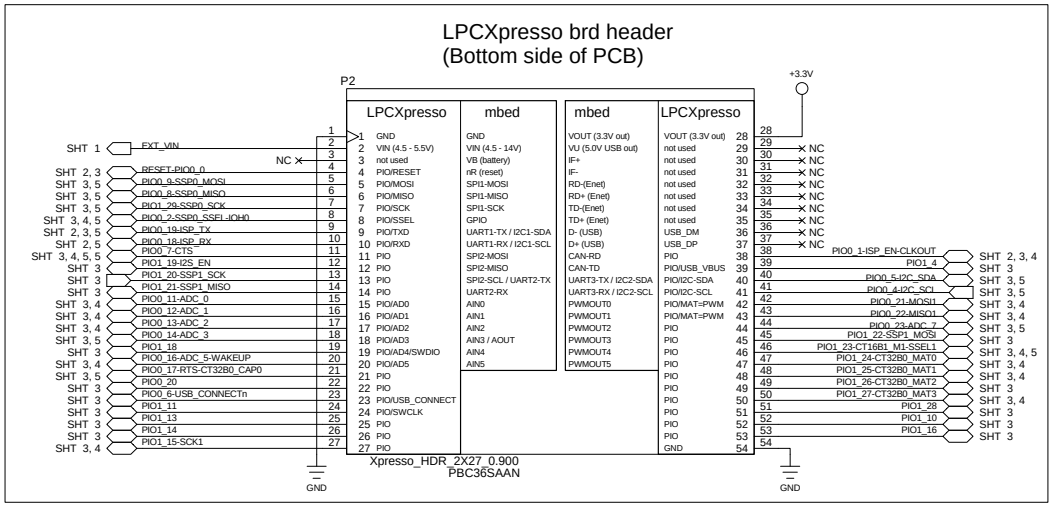
SIZE D | FSCM NO. | DWG. NO. Xpresso-LPC11U37H | REV A
SCALE
SHEET 3 OF 06

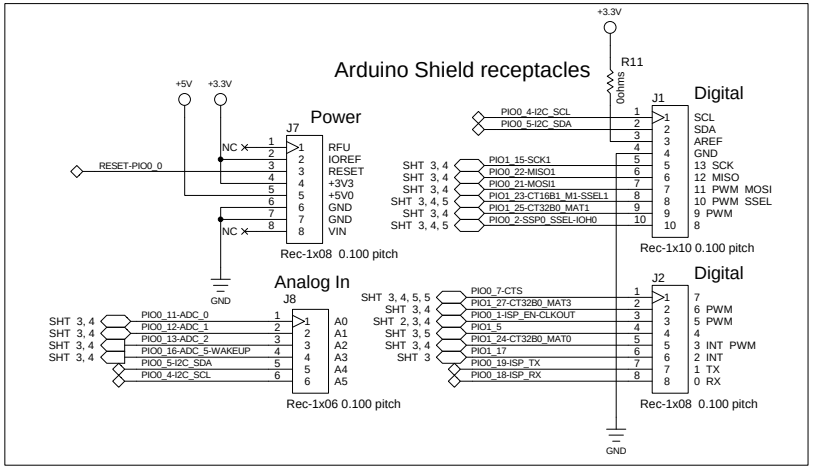
REVISIONS

REV	DESCRIPTION	DATE	APPROVED

LPCXpresso brd header (Bottom side of PCB)



Arduino Shield receptacles



CONTRACT NO.		Xpresso MC/Arduino headers
APPROVALS	DATE	**NXP** Semiconductors
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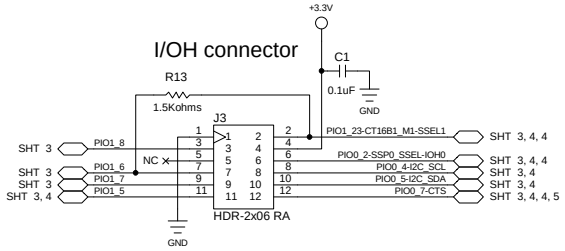
		SCALE | SHEET 4 OF 06

REVISIONS

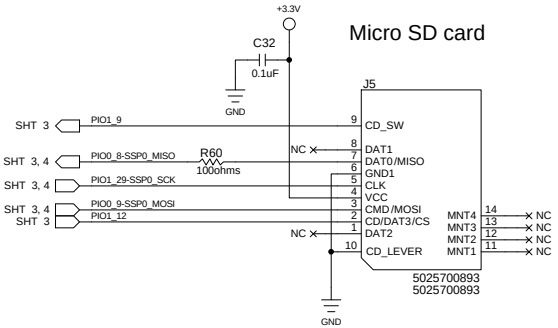
REV	DESCRIPTION	DATE	APPROVED

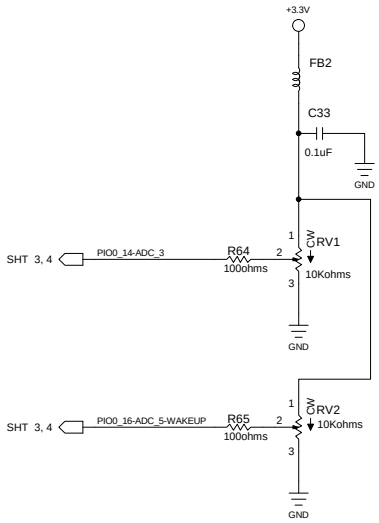
I/OH connector

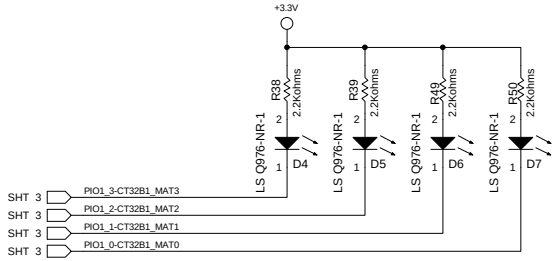


I/OH connector				
Pin	Signal	UART	I2C	DALI
1	GND			
3	PIO1_8	RTS		
5	N/C			
7	PIO1_6	RxD	SDA	RxD
9	PIO1_7	TxD	SCL	TxD
11	PIO1_5	CTS		
2	PIO1_23			
4	+3.3V			
6	PIO0_2			
8	PIO0_4			
10	PIO0_5			
12	PIO0_7-CTS			

Micro SD card

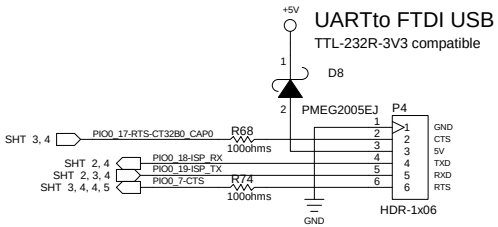






UARTto FTDI USB

TTL-232R-3V3 compatible



CONTRACT NO.		IO/H, FTDI	
APPROVALS	DATE	**NXP** Semiconductors	
DRAWN d.consiglio	10/15/2013	411 E. Plumeria Dr San Jose, CA 95134 www.standardics.nxp.com/microcontrollers/	
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ISSUED	10/02/13	SIZE D / FSCM NO. / DWG. NO. Xpresso-LPC11U37H / REV A	
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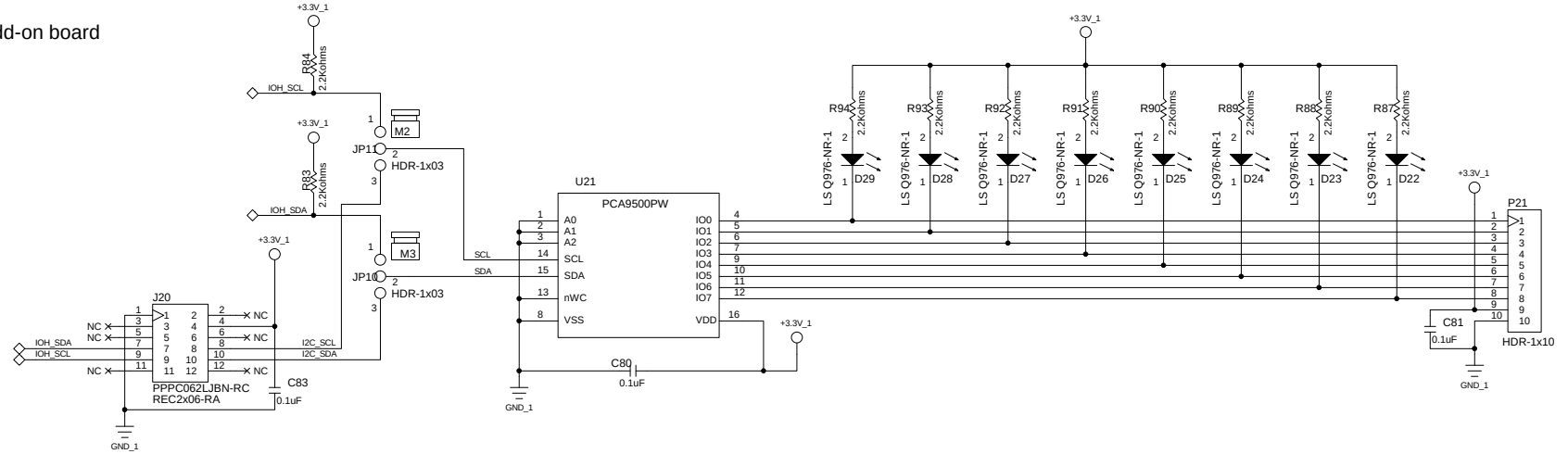
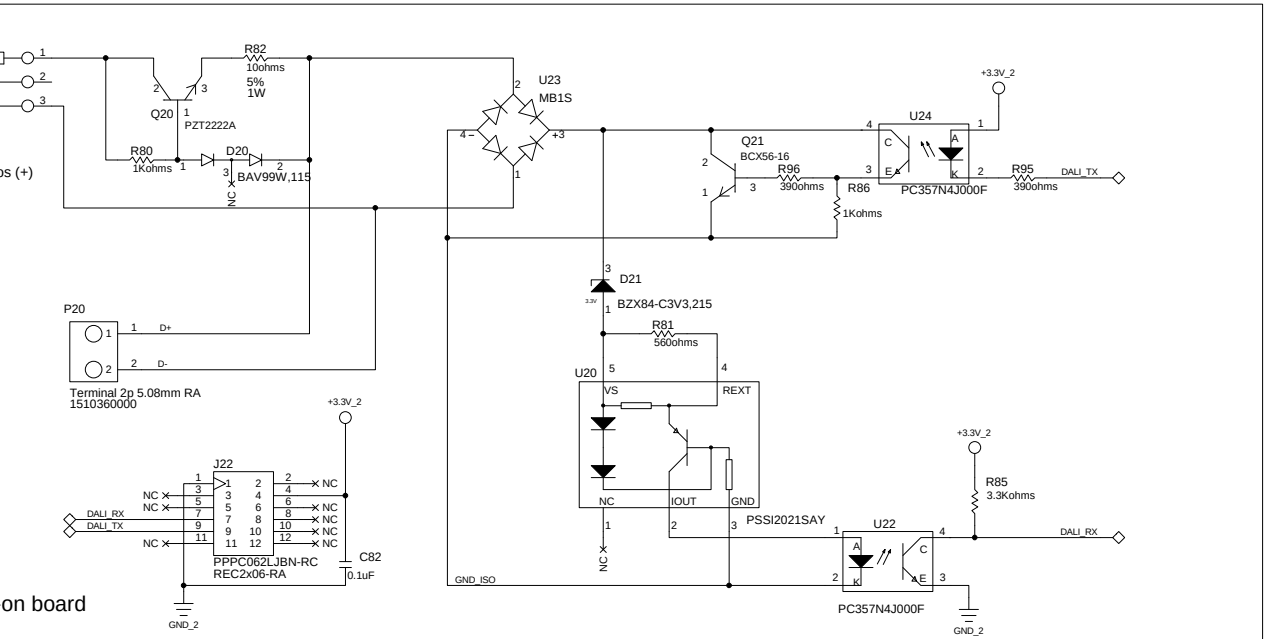
REVISIONS

REV	DESCRIPTION	DATE	APPROVED

I2C Add-on board



DALI Add-on board



CONTRACT NO.		IO/H Add-on boards
APPROVALS	DATE	**NXP** Semiconductors
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ISSUED	10/02/13	SIZE D | FSCM NO. | DWG. NO. Xpresso-LPC11U37H | REV A
		SCALE | SHEET 6 OF 06