Page 2

LPC3154 Powering and Unused parts

Page 3

LPC3154 Digital I/O

Page 4

JTAG Interface

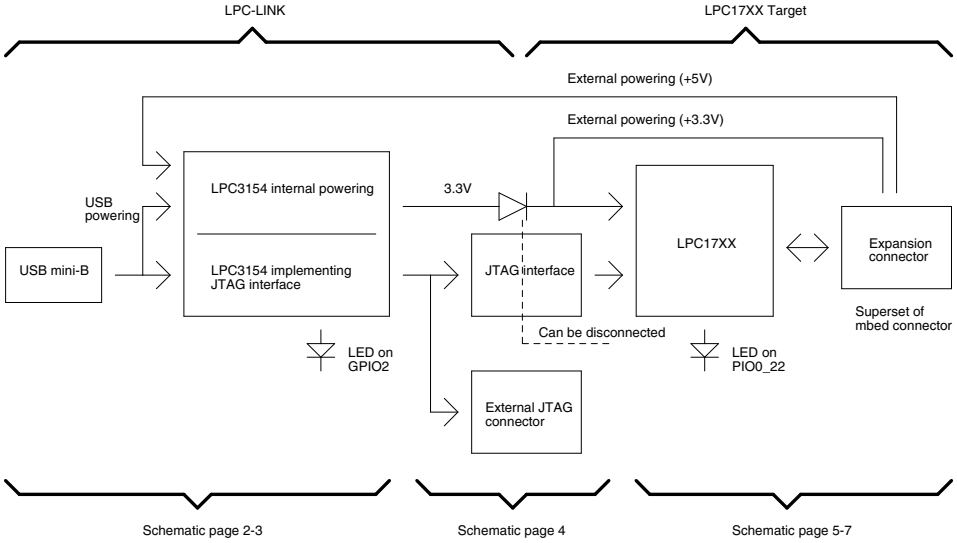
Page 5

LPC17XX with Expansion connector

Page 6

LPC17XX

Design Overview



UL = UnLoaded = normally not mounted component.

Default jumper settings are indicated in the schematic.
However, always check jumper positions on actual boards since there is no guarantee that all jumpers are in default place.

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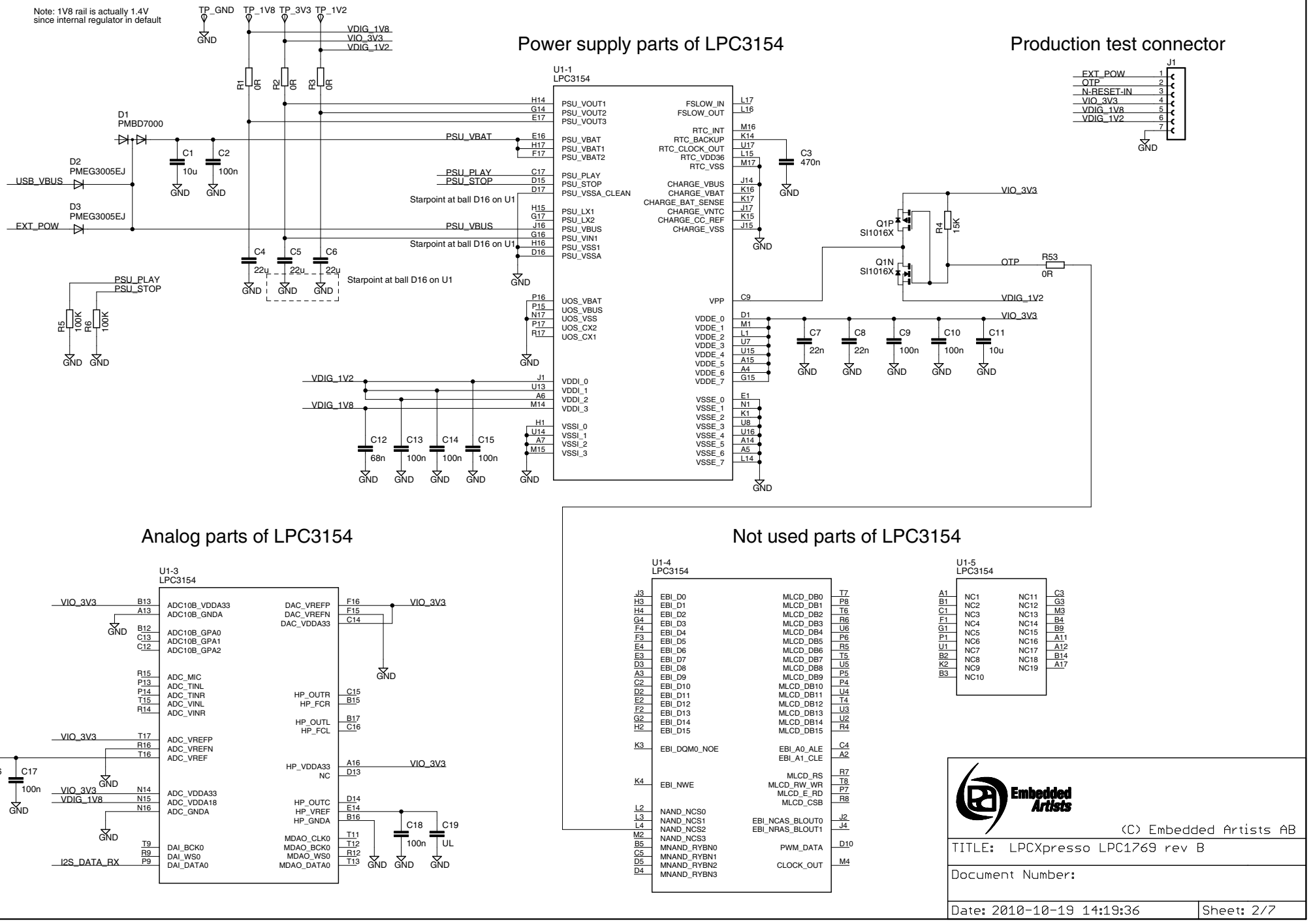

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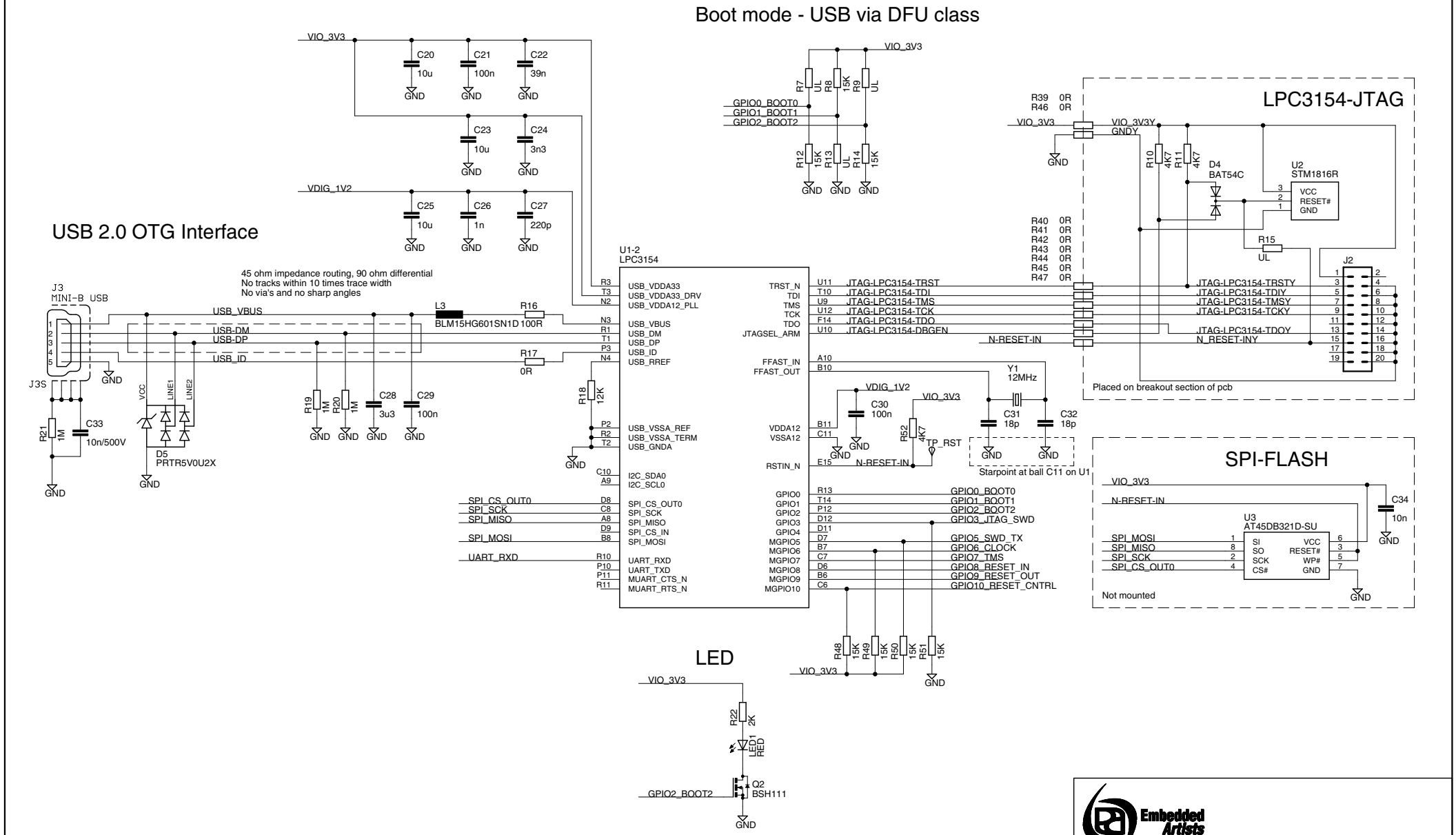
Boot mode - USB via DFU class
USB 2.0 OTG Interface
LPC3154-JTAG
SPI-FLASH
LED
U1-2
LPC3154
J3
MINI-B USB
45 ohm impedance routing, 90 ohm differential
No tracks within 10 times trace width
No via's and no sharp angles
Placed on breakout section of pcb
Starpoint at ball C11 on U1
Not mounted
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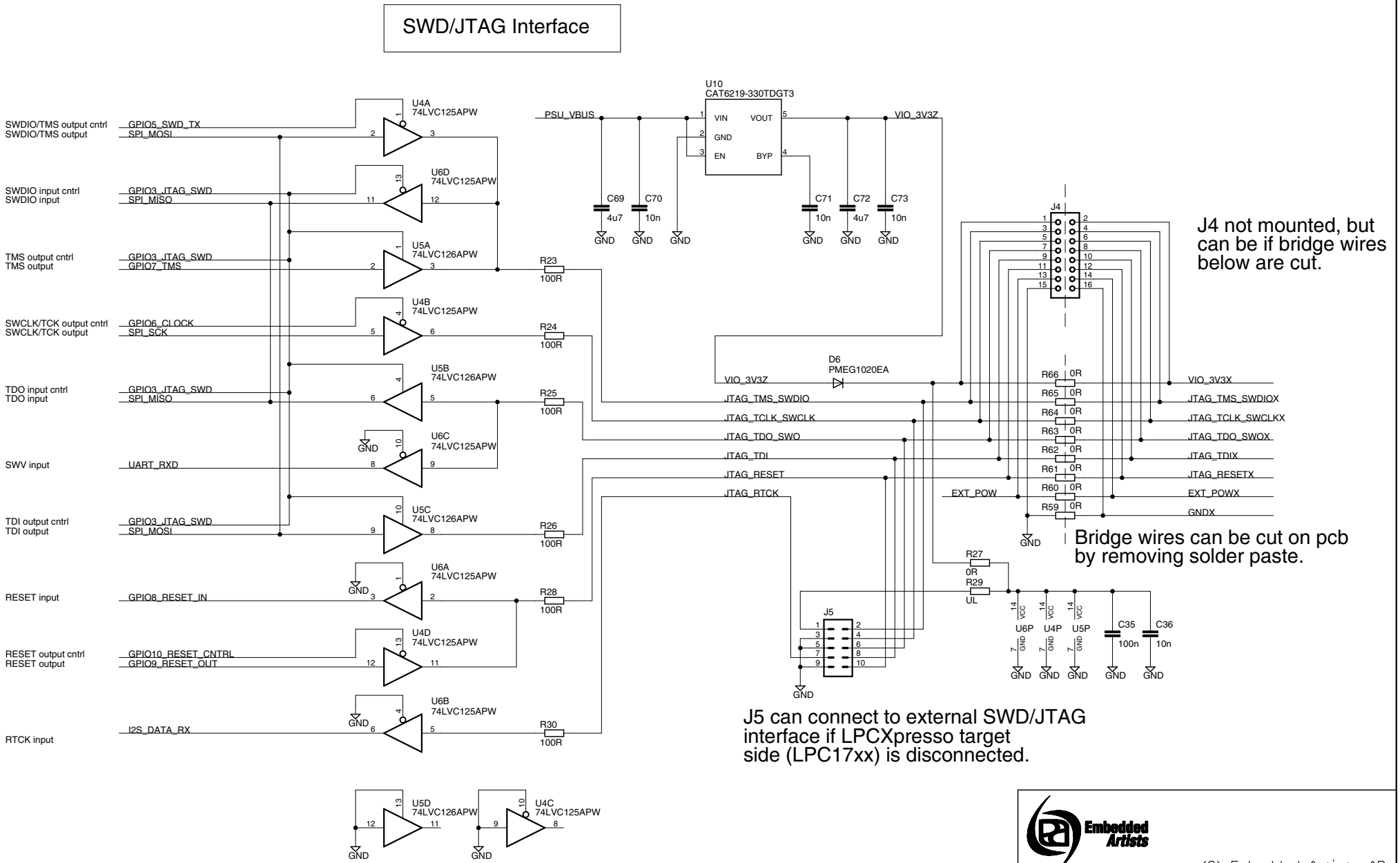
SWD/JTAG Interface



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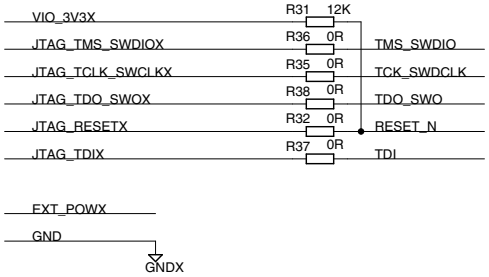
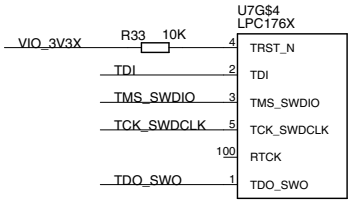
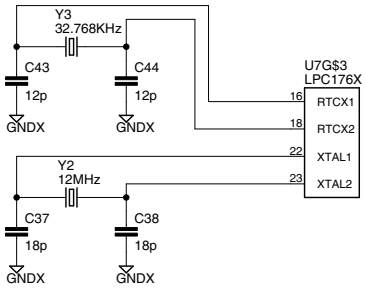
From LPC-LINK Side

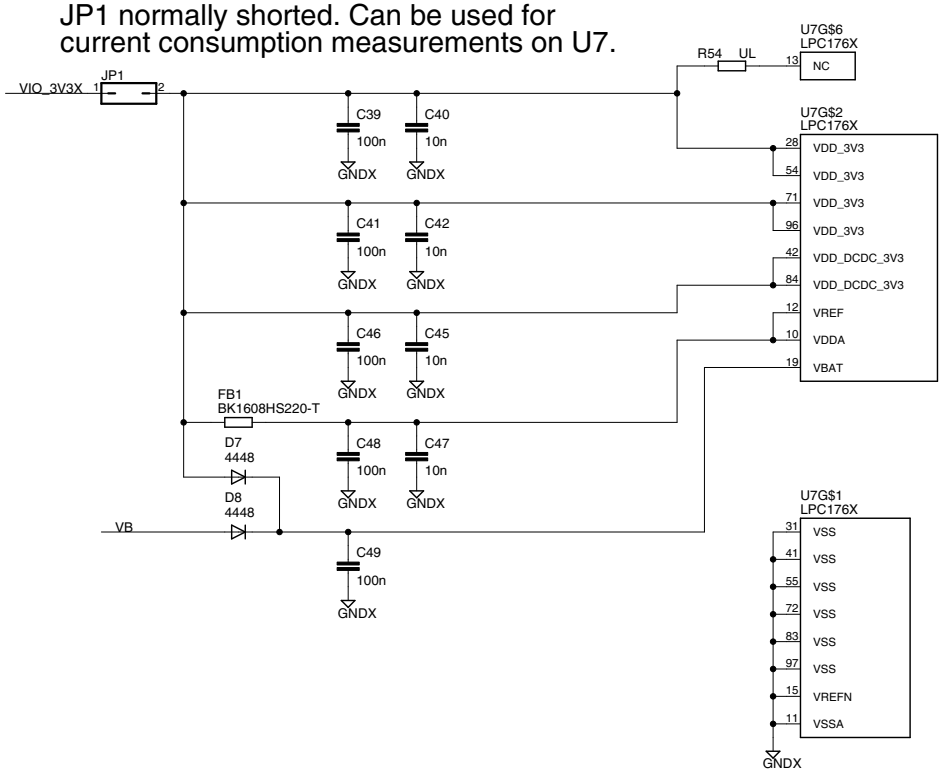


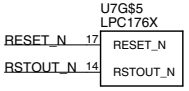
LPC176X Target Side



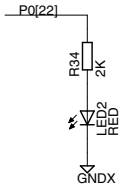


JP1 normally shorted. Can be used for current consumption measurements on U7.





LED



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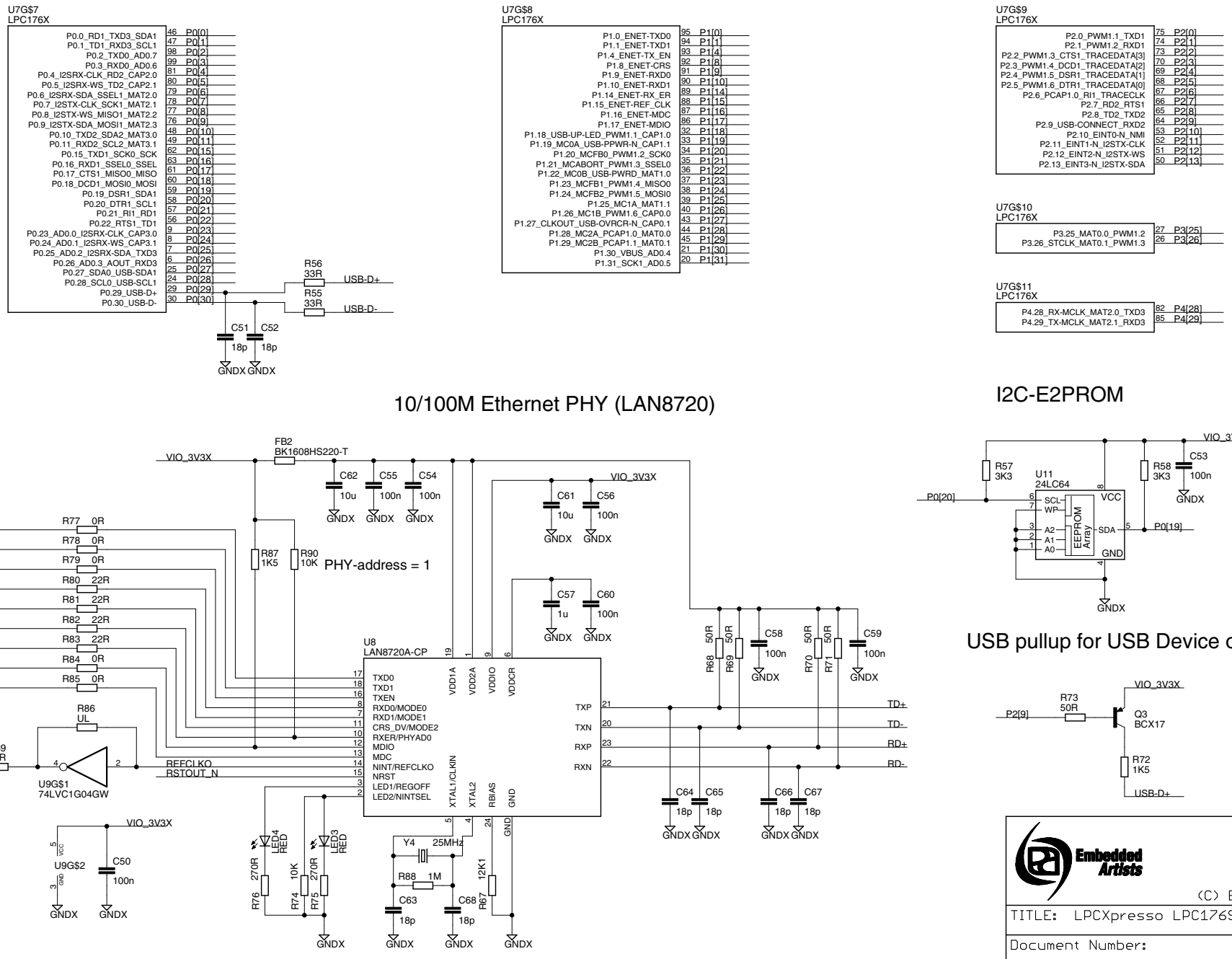
U7G$7
LPC176X
P0.0_RD1_TXD3_SDA1
P0.1_TD1_RXD3_SCL1
P0.2_TXD0_AD0.7
P0.3_RXD0_AD0.6
P0.4_I2SRX-CLK_RD2_CAP2.0
P0.5_I2SRX-WS_TD2_CAP2.1
P0.6_I2SRX-SDA_SSEL1_MAT2.0
P0.7_I2STX-CLK_SCK1_MAT2.1
P0.8_I2STX-WS_MISO1_MAT2.2
P0.9_I2STX-SDA_MOSI1_MAT2.3
P0.10_TXD2_SDA2_MAT3.0
P0.11_RXD2_SCL2_MAT3.1
P0.15_TXD1_SCK0_SCK
P0.16_RXD1_SSEL0_SSEL
P0.17_CTS1_MISO0_MISO
P0.18_DCD1_MOSI0_MOSI
P0.19_DSR1_SDA1
P0.20_DTR1_SCL1
P0.21_RI1_RD1
P0.22_RTS1_TD1
P0.23_AD0.0_I2SRX-CLK_CAP3.0
P0.24_AD0.1_I2SRX-WS_CAP3.1
P0.25_AD0.2_I2SRX-SDA_TXD3
P0.26_AD0.3_AOUT_RXD3
P0.27_SDA0_USB-SDA1
P0.28_SCL0_USB-SCL1
P0.29_USB-D+
P0.30_USB-D-
46 P0[0]
47 P0[1]
98 P0[2]
99 P0[3]
81 P0[4]
80 P0[5]
79 P0[6]
78 P0[7]
77 P0[8]
76 P0[9]
48 P0[10]
49 P0[11]
62 P0[15]
63 P0[16]
61 P0[17]
60 P0[18]
59 P0[19]
58 P0[20]
57 P0[21]
56 P0[22]
9 P0[23]
8 P0[24]
7 P0[25]
6 P0[26]
25 P0[27]
24 P0[28]
29 P0[29]
30 P0[30]
R56
33R
USB-D+
R55
33R
USB-D-
C51
18p
C52
18p
GNDX GNDX
U7G$8
LPC176X
P1.0_ENET-TXD0
P1.1_ENET-TXD1
P1.4_ENET-TX_EN
P1.8_ENET-CRS
P1.9_ENET-RXD0
P1.10_ENET-RXD1
P1.14_ENET-RX_ER
P1.15_ENET-REF_CLK
P1.16_ENET-MDC
P1.17_ENET-MDIO
P1.18_USB-UP-LED_PWM1.1_CAP1.0
P1.19_MC0A_USB-PPWR-N_CAP1.1
P1.20_MCFB0_PWM1.2_SCK0
P1.21_MCABORT_PWM1.3_SSEL0
P1.22_MC0B_USB-PWRD_MAT1.0
P1.23_MCFB1_PWM1.4_MISO0
P1.24_MCFB2_PWM1.5_MOSI0
P1.25_MC1A_MAT1.1
P1.26_MC1B_PWM1.6_CAP0.0
P1.27_CLKOUT_USB-OVRCR-N_CAP0.1
P1.28_MC2A_PCAP1.0_MAT0.0
P1.29_MC2B_PCAP1.1_MAT0.1
P1.30_VBUS_AD0.4
P1.31_SCK1_AD0.5
95 P1[0]
94 P1[1]
93 P1[4]
92 P1[8]
91 P1[9]
90 P1[10]
89 P1[14]
88 P1[15]
87 P1[16]
86 P1[17]
32 P1[18]
33 P1[19]
34 P1[20]
35 P1[21]
36 P1[22]
37 P1[23]
38 P1[24]
39 P1[25]
40 P1[26]
43 P1[27]
44 P1[28]
45 P1[29]
21 P1[30]
20 P1[31]
U7G$9
LPC176X
P2.0_PWM1.1_TXD1
P2.1_PWM1.2_RXD1
P2.2_PWM1.3_CTS1_TRACEDATA[3]
P2.3_PWM1.4_DCD1_TRACEDATA[2]
P2.4_PWM1.5_DSR1_TRACEDATA[1]
P2.5_PWM1.6_DTR1_TRACEDATA[0]
P2.6_PCAP1.0_RI1_TRACECLK
P2.7_RD2_RTS1
P2.8_TD2_TXD2
P2.9_USB-CONNECT_RXD2
P2.10_EINT0-N_NMI
P2.11_EINT1-N_I2STX-CLK
P2.12_EINT2-N_I2STX-WS
P2.13_EINT3-N_I2STX-SDA
75 P2[0]
74 P2[1]
73 P2[2]
70 P2[3]
69 P2[4]
68 P2[5]
67 P2[6]
66 P2[7]
65 P2[8]
64 P2[9]
53 P2[10]
52 P2[11]
51 P2[12]
50 P2[13]
U7G$10
LPC176X
P3.25_MAT0.0_PWM1.2
P3.26_STCLK_MAT0.1_PWM1.3
27 P3[25]
26 P3[26]
U7G$11
LPC176X
P4.28_RX-MCLK_MAT2.0_TXD3
P4.29_TX-MCLK_MAT2.1_RXD3
82 P4[28]
85 P4[29]
10/100M Ethernet PHY (LAN8720)
I2C-E2PROM
USB pullup for USB Device operation
FB2
BK1608HS220-T
VIO_3V3X
C62 10u
C55 100n
C54 100n
C61 10u
C56 100n
C57 1u
C60 100n
C58 100n
C59 100n
R87 1K5
R90 10K
PHY-address = 1
R77 0R
R78 0R
R79 0R
R80 22R
R81 22R
R82 22R
R83 22R
R84 0R
R85 0R
R86 UL
R89 22R
P1[0]
P1[1]
P1[4]
P1[9]
P1[10]
P1[8]
P1[14]
P1[17]
P1[16]
P1[15]
U8
LAN8720A-CP
TXD0
TXD1
TXEN
RXD0/MODE0
RXD1/MODE1
CRS_DV/MODE2
RXER/PHYAD0
MDIO
MDC
NINT/REFCLKO
NRST
LED1/REGOFF
LED2/NINTSEL
VDD1A
VDD2A
VDDIO
VDDCR
TXP
TXN
RXP
RXN
XTAL1/CLKIN
XTAL2
RBIAS
GND
TD+
TD-
RD+
RD-
REFCLKO
RSTOUT_N
U9G$1
74LVC1G04GW
U9G$2
C50 100n
Y4 25MHz
R88 1M
C63 18p
C68 18p
R67 12K1
R68 50R
R69 50R
R70 50R
R71 50R
C64 18p
C65 18p
C66 18p
C67 18p
LED4 RED
LED3 RED
R76 270R
R74 10K
R75 270R
R57 3K3
R58 3K3
C53 100n
U11
24LC64
SCL
WP
A2
A1
A0
VCC
SDA
GND
EEPROM Array
P0[20]
P0[19]
R73 50R
Q3 BCX17
R72 1K5
P2[9]
USB-D+
GNDX
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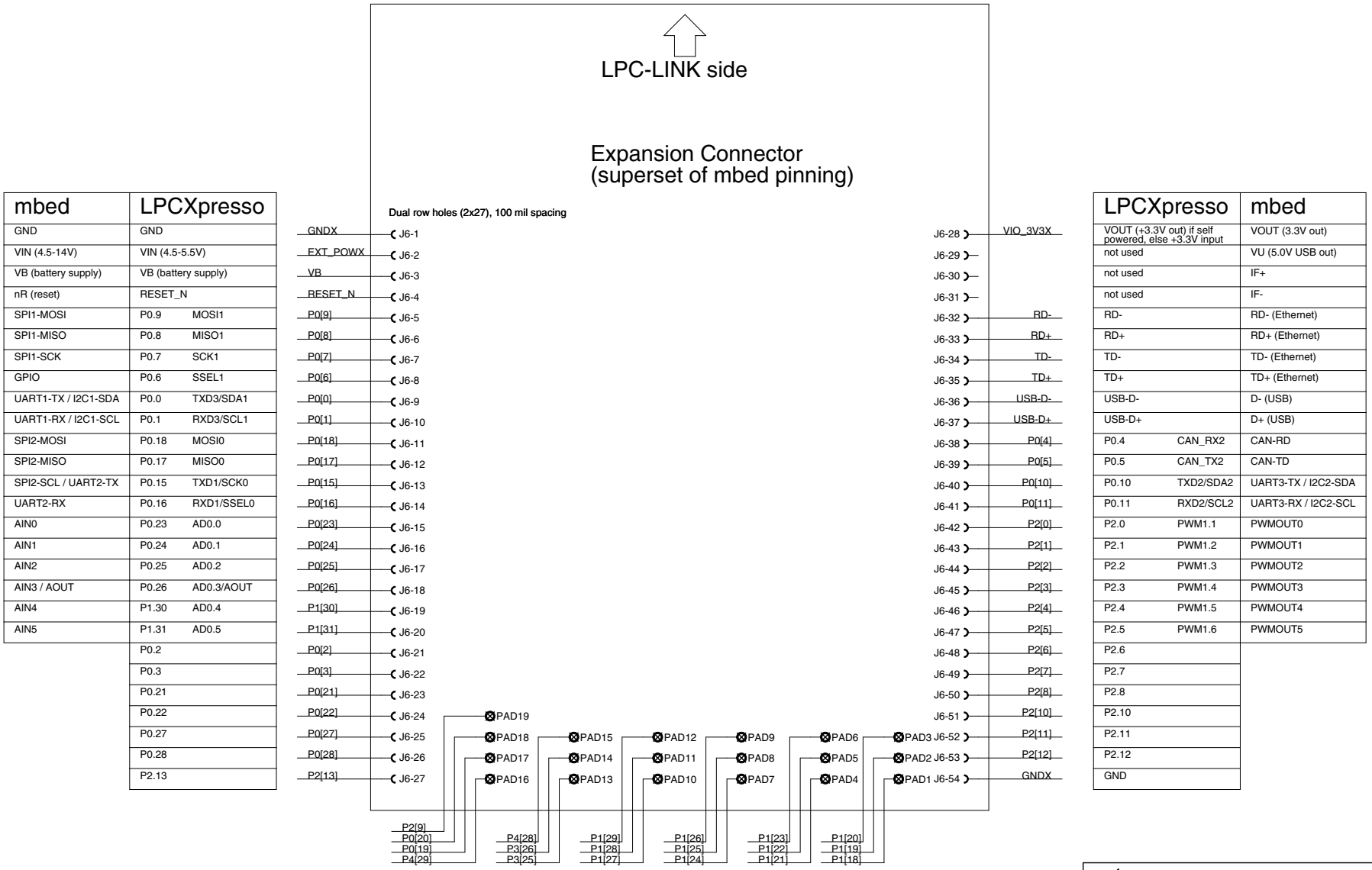

mbed	LPCXpresso	
GND	GND	
VIN (4.5-14V)	VIN (4.5-5.5V)	
VB (battery supply)	VB (battery supply)	
nR (reset)	RESET_N	
SPI1-MOSI	P0.9	MOSI1
SPI1-MISO	P0.8	MISO1
SPI1-SCK	P0.7	SCK1
GPIO	P0.6	SSEL1
UART1-TX / I2C1-SDA	P0.0	TXD3/SDA1
UART1-RX / I2C1-SCL	P0.1	RXD3/SCL1
SPI2-MOSI	P0.18	MOSI0
SPI2-MISO	P0.17	MISO0
SPI2-SCL / UART2-TX	P0.15	TXD1/SCK0
UART2-RX	P0.16	RXD1/SSEL0
AIN0	P0.23	AD0.0
AIN1	P0.24	AD0.1
AIN2	P0.25	AD0.2
AIN3 / AOUT	P0.26	AD0.3/AOUT
AIN4	P1.30	AD0.4
AIN5	P1.31	AD0.5
	P0.2	
	P0.3	
	P0.21	
	P0.22	
	P0.27	
	P0.28	
	P2.13	

LPCXpresso		mbed
VOUT (+3.3V out) if self powered, else +3.3V input		VOUT (3.3V out)
not used		VU (5.0V USB out)
not used		IF+
not used		IF-
RD-		RD- (Ethernet)
RD+		RD+ (Ethernet)
TD-		TD- (Ethernet)
TD+		TD+ (Ethernet)
USB-D-		D- (USB)
USB-D+		D+ (USB)
P0.4	CAN_RX2	CAN-RD
P0.5	CAN_TX2	CAN-TD
P0.10	TXD2/SDA2	UART3-TX / I2C2-SDA
P0.11	RXD2/SCL2	UART3-RX / I2C2-SCL
P2.0	PWM1.1	PWMOUT0
P2.1	PWM1.2	PWMOUT1
P2.2	PWM1.3	PWMOUT2
P2.3	PWM1.4	PWMOUT3
P2.4	PWM1.5	PWMOUT4
P2.5	PWM1.6	PWMOUT5
P2.6		
P2.7		
P2.8		
P2.10		
P2.11		
P2.12		
GND		

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