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XBee module interface + Serial expansion connector

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.

### Rev PA4

Added R63-R67 and D2. Changed R62 to 330R.  
Changed Q1-Q3 to PNP. Deleted Q4-Q6.

### Rev PA3

First public rev



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TITLE: LPCXpresso Experiment Board rev PA4

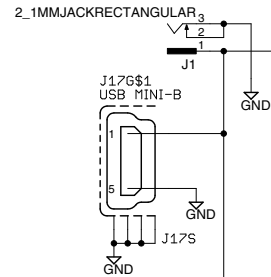
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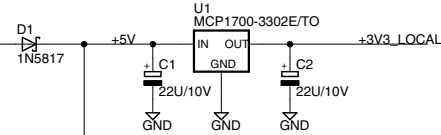
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# LPCXpresso connector

## Alternative +5V inputs

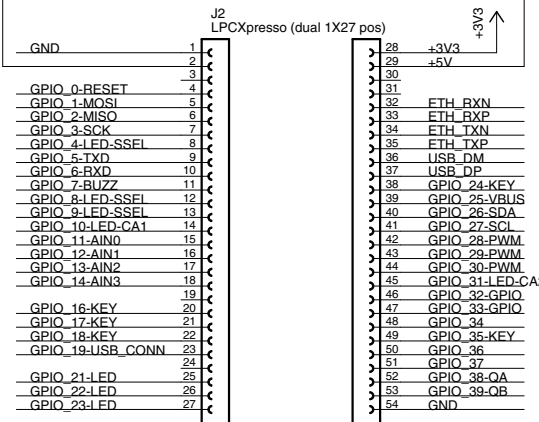


## 3.3V 250mA LDO



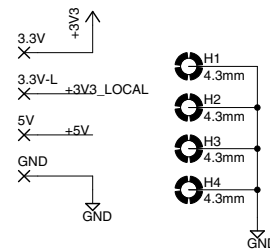
## LPCXpresso and mbed connector (pin naming is generic)

mbed module	LPCXpresso LPC176x	LPCXpresso LPC1343/111x
GND	GND	GND
VIN (4.5-5.5V)	VIN (4.5-5.5V)	VIN (4.5-5.5V)
VB (battery supply)	VB (battery supply)	not used
nR (reset)	RESET_N	Reset / PIO0_0
SPI1-MOSI	P0.9 MOSI1	PIO0_9 / MOSI / CT16B0_MAT1 / SWO
SPI1-MISO	P0.8 MISO1	PIO0_8 / MISO / CT16B0_MAT0
SPI1-SCK	P0.7 SCK1	PIO2_11 / SCK
GPIO	P0.6 SSEL1	PIO0_2 / SSEL / CT16B0_CAP0
UART1-TX / I2C1-SDA	P0.0 TXD3/SDA1	PIO1_7 / TXD / CT32B0_MAT1
UART1-RX / I2C1-SCL	P0.1 RXD3/SCL1	PIO1_6 / RXD / CT32B0_MAT0
SPI2-MOSI	P0.18 MOSI0	PIO0_7 / CTS (LED)
SPI2-MISO	P0.17 MISO0	PIO2_0 / DTR
SPI2-SCL / UART2-TX	P0.15 TXD1/SCK0	PIO2_1 / DSR
UART2-RX	P0.16 RXD1/SSEL0	PIO2_2 / DCD
AIN0	P0.23 AD0.0	TDI / PIO0_11 / AD0 / CT32B0_MAT3
AIN1	P0.24 AD0.1	TMS / PIO1_0 / AD1 / CT32B1_CAP0
AIN2	P0.25 AD0.2	TDO / PIO1_1 / AD2 / CT32B1_MAT0
AIN3 / AOUT	P0.26 AD0.3/AOUT	TRST / PIO1_2 / AD3 / CT32B1_MAT1
AIN4	P1.31 AD0.4	SWDIO / PIO1_3 / AD4 / CT32B1_MAT2
AIN5	P1.31 AD0.5	PIO1_4 / AD5 / CT32B1_MAT3 / WAKEUP
	P0.2	PIO1_5 / RTS / CT32B0_CAP0
	P0.3	PIO1_8 / CT16B1_CAP0
	P0.21	PIO1_6 / USB_CONNECT / SCK
	P0.22	SWCLK / PIO0_10 / SCK / CT16B0_MAT2
	P0.27	PIO3_0
	P0.28	PIO3_1
	P2.13	PIO3_2



LPCXpresso LPC1343/111x	LPCXpresso LPC176x	mbed module
VOUT (+3.3V out) if self powered, else +3.3V input	VOUT (+3.3V out) if self powered, else +3.3V input	VOUT (3.3V out)
not used	not used	VU (5.0V USB out)
not used	not used	IF+
not used	not used	IF-
not used	not used	RD- (Ethernet)
not used	not used	RD+ (Ethernet)
not used	not used	TD- (Ethernet)
not used	not used	TD+ (Ethernet)
not used	not used	D- (USB)
USB_DM PIO2_4 for LPC111x		D+ (USB)
USB_DP PIO2_5 for LPC111x		CAN-RD
PIO0_1/CLKOUT/CT32B0_MAT2	CAN_RX2	CAN-TD
PIO0_3 / USB_VBUS	CAN_TX2	CAN-TX
PIO0_5 / SDA	P0.5 TXD2/SDA2	UART3-TX / I2C2-SDA
PIO0_4 / SCL	P0.10 RXD2/SCL2	UART3-RX / I2C2-SCL
PIO1_9 / CT16B1_MAT0	P0.11 PWM1.1	PWMOUT0
PIO1_10 / AD6 / CT16B1_MAT1	P2.0 PWM1.2	PWMOUT1
PIO1_11 / AD7	P2.1 PWM1.3	PWMOUT2
PIO2_3 / RI	P2.2 PWM1.4	PWMOUT3
PIO2_4 PIO3_4 for LPC111x	P2.3 PWM1.5	PWMOUT4
PIO2_5 PIO3_5 for LPC111x	P2.4 PWM1.6	PWMOUT5
	P2.5	
	P2.6	
	P2.7	
	P2.8	
	P2.10	
	P2.11	
	P2.12	
	GND	

Note: See User's Manual for information about pinning for all different LPCXpresso target boards!



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TITLE: LPCXpresso Experiment Board rev PA4

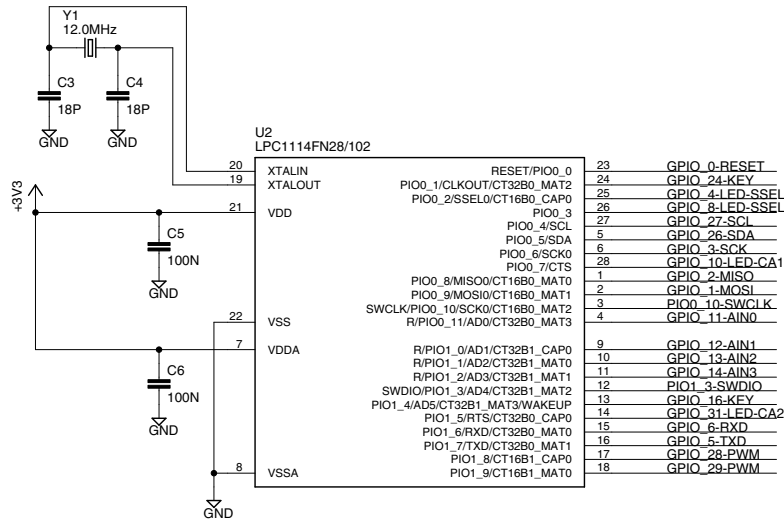
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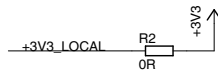
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# LPC1114 in DIL28

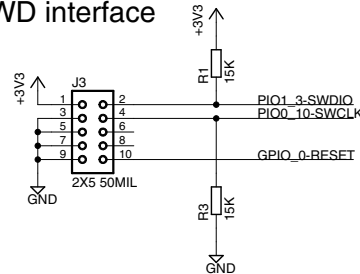
Mount only when working with LPC1114 in DIL28 package



Create +3.3V from local voltage regulator



SWD interface



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TITLE: LPCpresso Experiment Board rev PA4

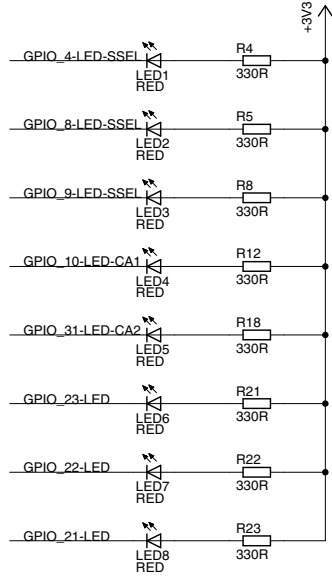
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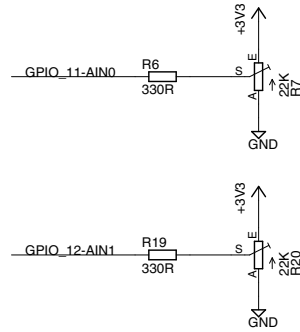
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# Through Hole Components, part 1

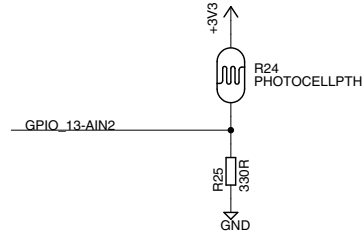
## 8 RED LEDs



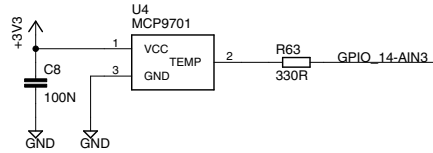
## 2 Analog Inputs



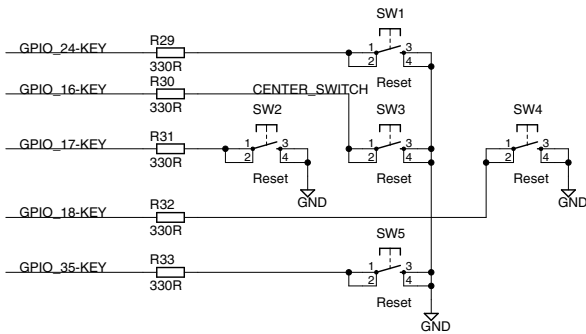
## Light Sensor



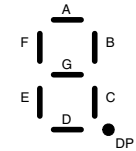
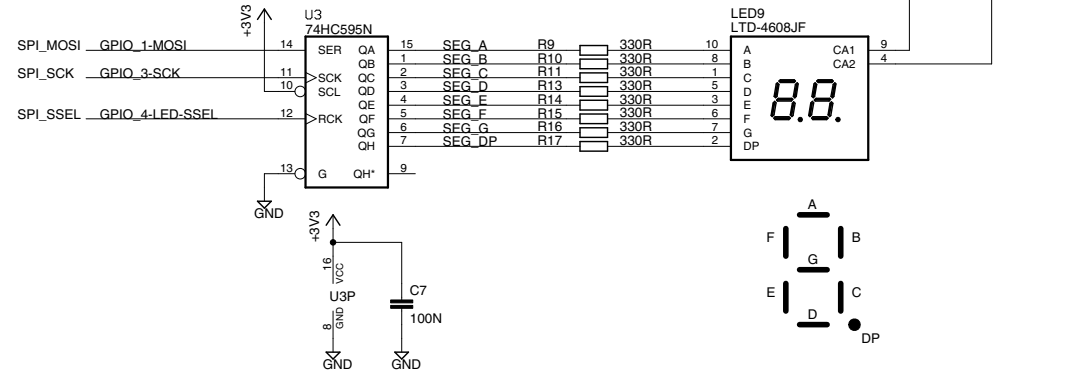
## Temperature Sensor



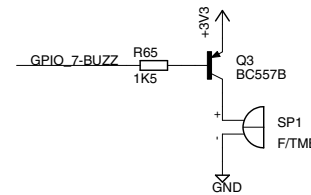
## 5 push-buttons in joystick configuration



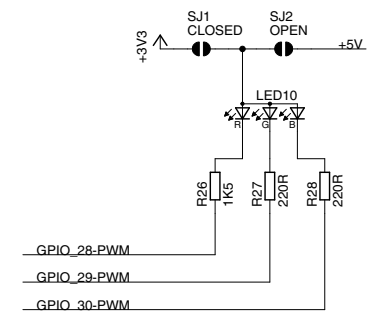
## Shift register to 7-segment LED



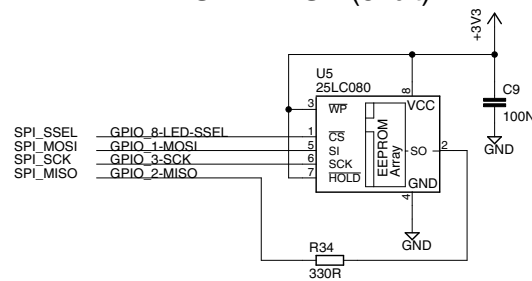
## Buzzer



## RGB-LED



## SPI-FLASH (8kbit)



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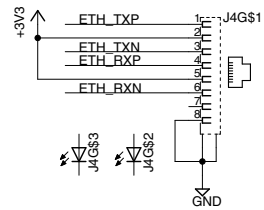
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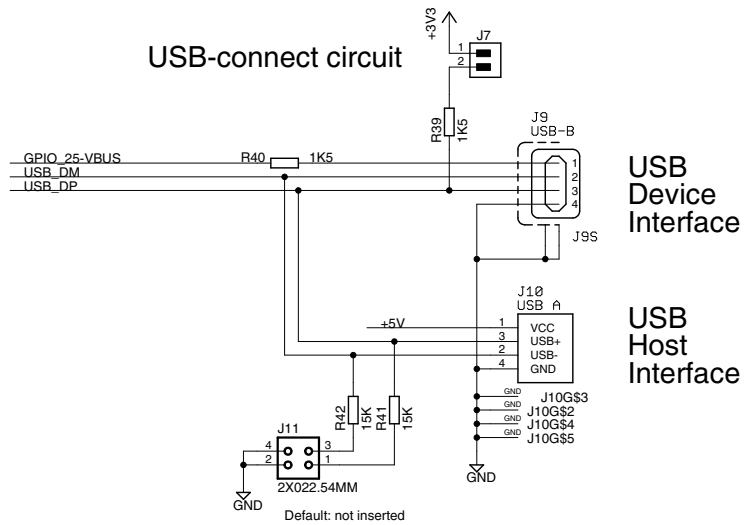
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# Through Hole Components, part 2

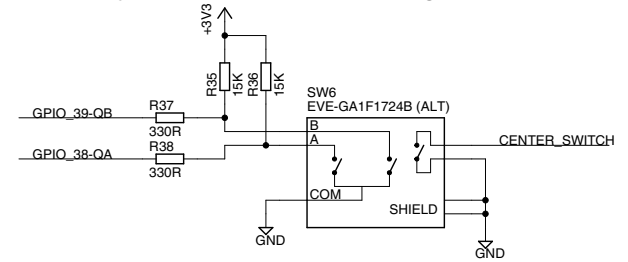
### RJ45 Ethernet Connector



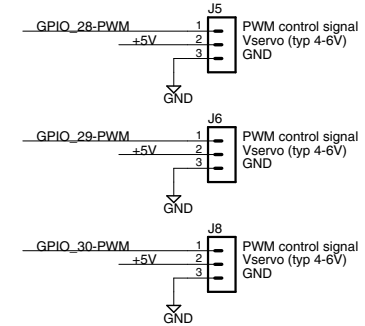
### USB-connect circuit



### Rotary switch - Quadrature signals



### PWM outputs to servos



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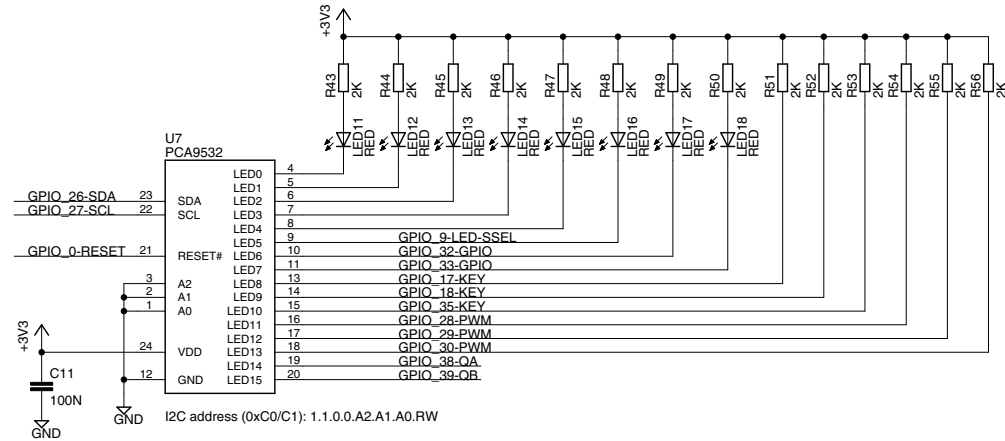
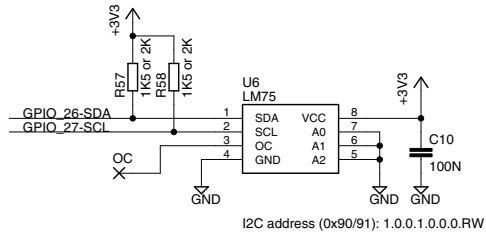
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# Surface Mounted Components

## LM75 I2C Temperature Sensor



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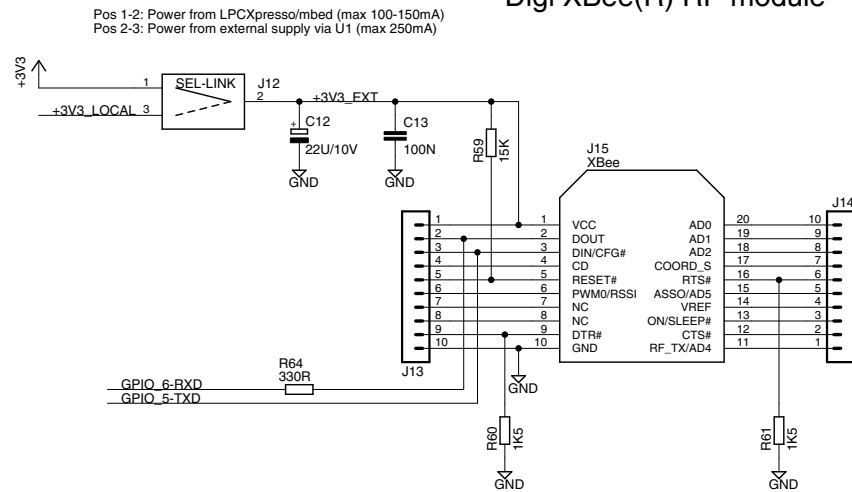
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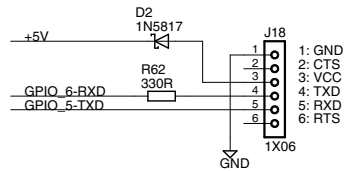
Sheet: 6/7

## XBee module interface and Serial expansion connector

### Digi XBee(R) RF-module



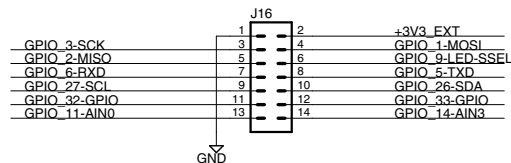
### FTDI UART-to-USB Connector



### Serial Expansion Connector

1: GND
3: SPI-SCK (output)
5: SPI-MISO (input)
7: UART-RX (input)
9: I2C-SCL (output)
11: GPIO (bidirectional)
13: AIN0/GPIO (input)

2: VCC (3.3V, max 250mA)
4: SPI-MOSI (output)
6: SPI-SSEL (output)
8: UART-TX (output)
10: I2C-SDA (bidirectional)
12: GPIO (bidirectional)
14: AIN3/AOUT/GPIO (input)



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