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USB-to-UART bridge, RF-module, power supply

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 B1

Changed to generic pin naming since many different
LPCXpresso target boards exist.

Rev B

Added J60/J61/R216/R217 (page 5) for USB Host i/f.
Added J62 (page 6) to support LPC17xx bootloader.
Added J58 (page 10) to support spi i/f to OLED or mbed.

Rev A

First rev



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TITLE: LPCXpresso Base Board rev B1

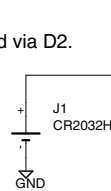
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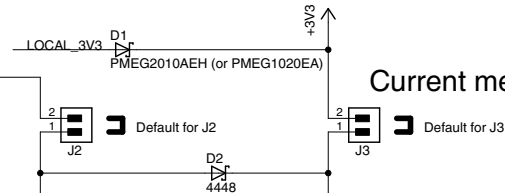
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Battery Holder

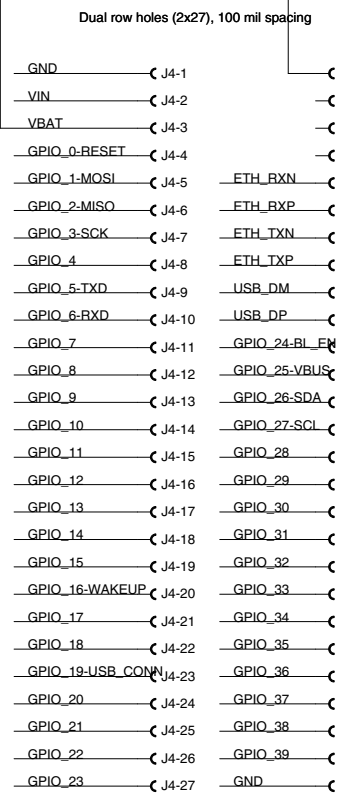
Note: battery not included!
 Note: battery will quickly drain since complete board is powered via D2.
 Battery powering only included for demonstration purpose.



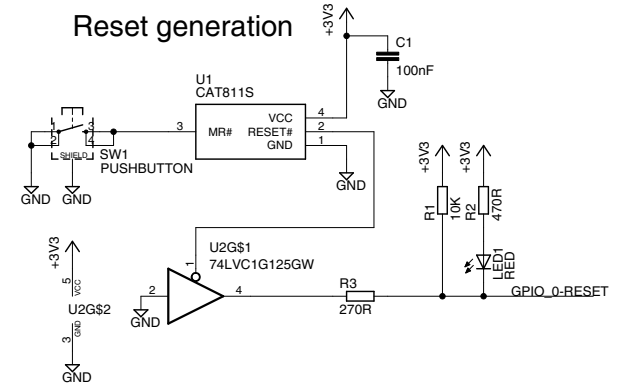
LPCXpresso and mbed connector (pin naming follow LPCXpresso module)



Current measurement



Reset generation



mbed module	LPCXpresso LPC1768	LPCXpresso LPC1343/1114
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/CT16B_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
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	P1.30 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	PIO0_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 LPC1343/1114	LPCXpresso LPC1768	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	RD-	RD- (Ethernet)
not used	RD+	RD+ (Ethernet)
not used	TD-	TD- (Ethernet)
not used	TD+	TD+ (Ethernet)
USB_DM	USB-D-	D- (USB)
USB_DP	USB-D+	D+ (USB)
PIO0_1 / CLKOUT / CT32B0_MAT2 / USB_FTOGGLE	P0.4 CAN_RX2	CAN-RD
PIO0_3 / USB_VBUS	P0.5 CAN_TX2	CAN-TD
PIO0_5 / SDA	P0.10 TXD2/SDA2	UART3-TX / I2C2-SDA
PIO0_4 / SCL	P0.11 RXD2/SCL2	UART3-RX / I2C2-SCL
PIO1_9 / CT16B1_MAT0	P2.0 PWM1.1	PWMOUT0
PIO1_10 / AD6 / CT16B1_MAT1	P2.1 PWM1.2	PWMOUT1
PIO1_11 / AD7	P2.2 PWM1.3	PWMOUT2
PIO2_3 / RI	P2.3 PWM1.4	PWMOUT3
PIO2_4	P2.4 PWM1.5	PWMOUT4
PIO2_5	P2.5 PWM1.6	PWMOUT5
PIO2_6	P2.6	
PIO2_7	P2.7	
PIO2_8	P2.8	
PIO2_9	P2.10	
PIO2_10	P2.11	
PIO3_3	P2.12	
GND	GND	



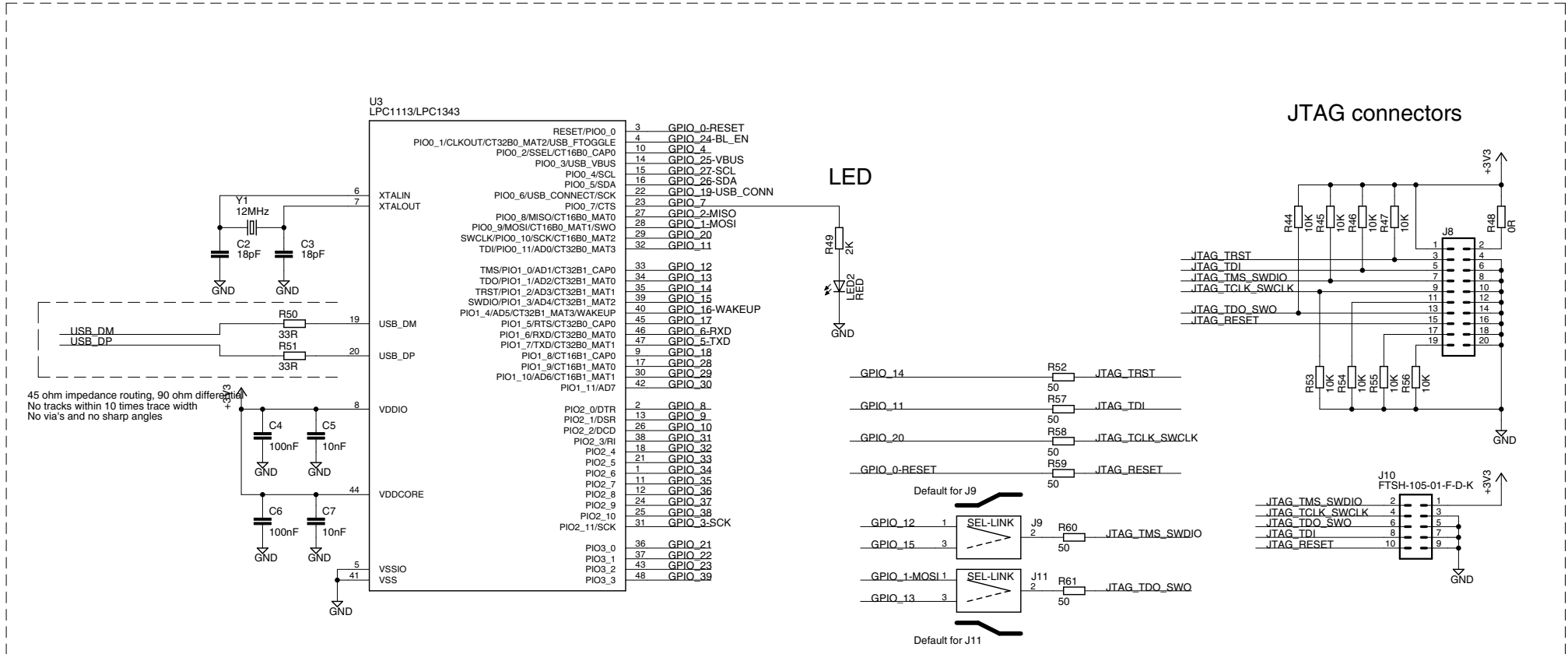
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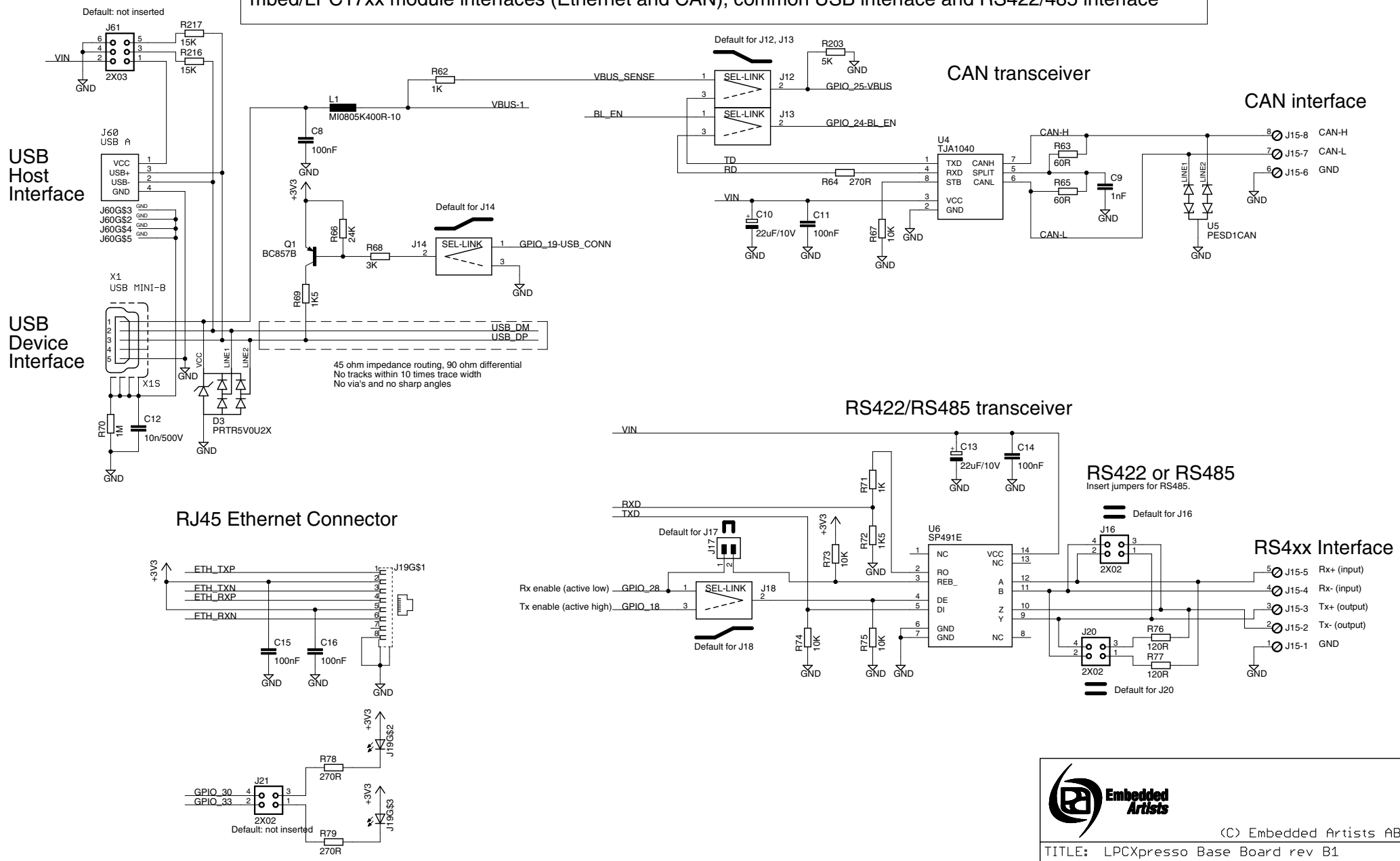
Note: Pins between rows are not connected (for example on LPC176x and LPC1227).

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

Optional LPC1114/LPC1343 for standalone boards
(placed inbetween LPCXpresso/mbed connector)

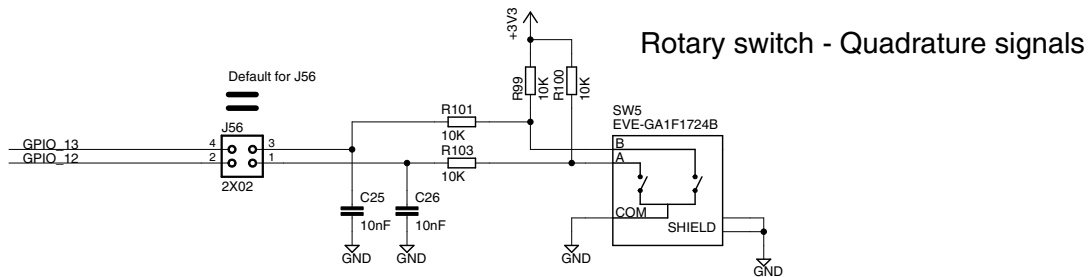
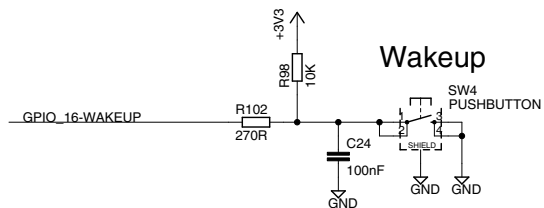
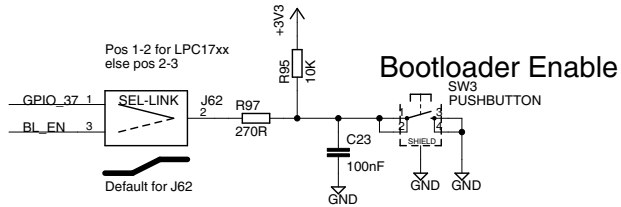
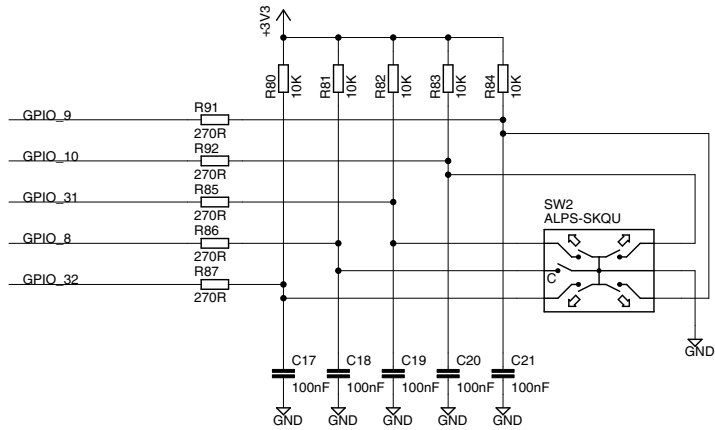


mbed/LPC17xx module interfaces (Ethernet and CAN), common USB interface and RS422/485 interface

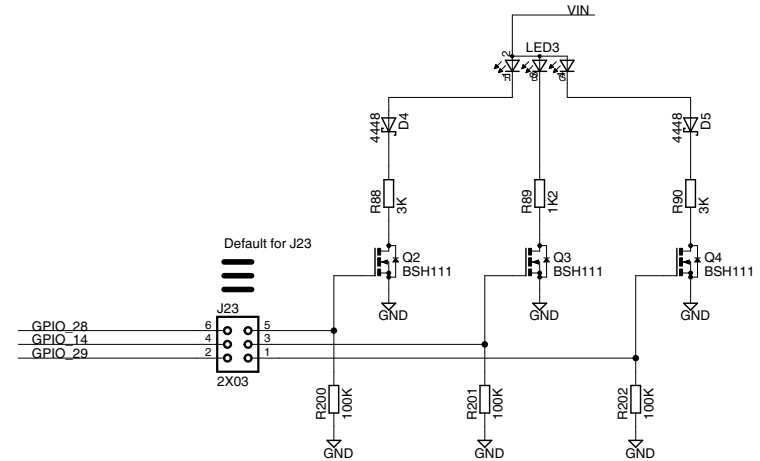


Direct Digital IO peripherals

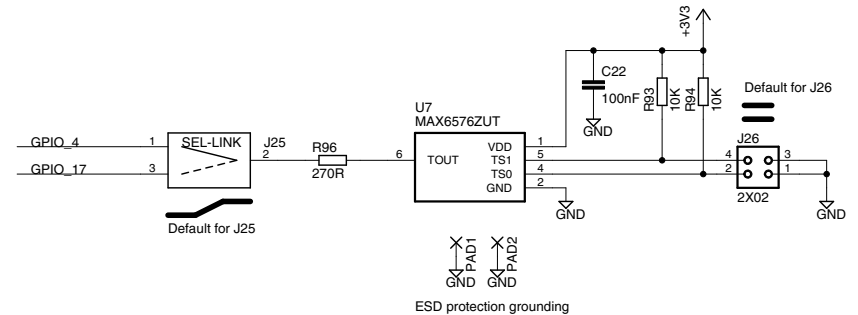
Joystick Switch



RGB-LED



Temp sensor: MAX6576 (temp-to-period)



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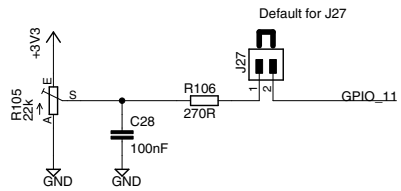
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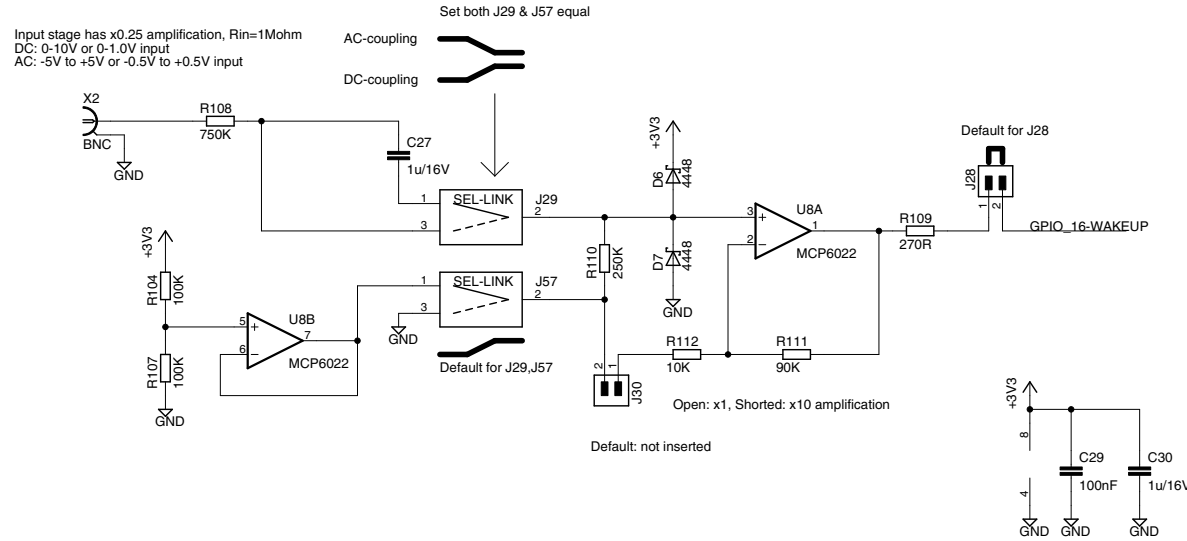
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Analog peripherals

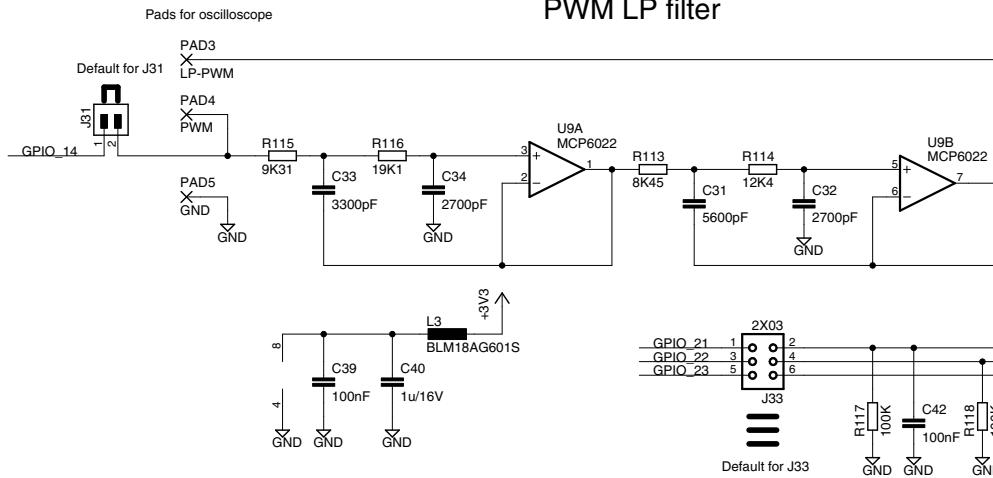
Analog Input



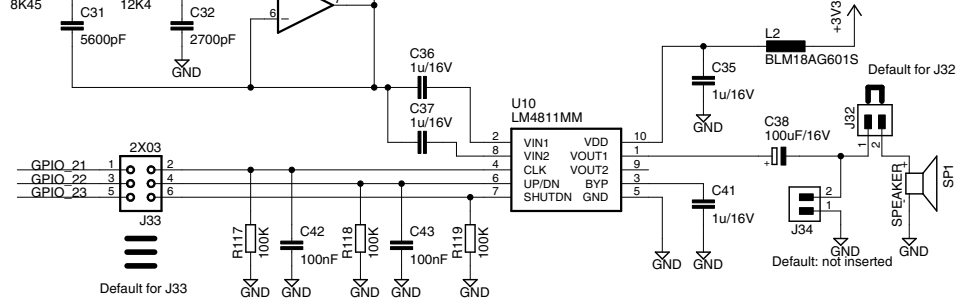
BNC input (oscilloscope probe)



PWM LP filter

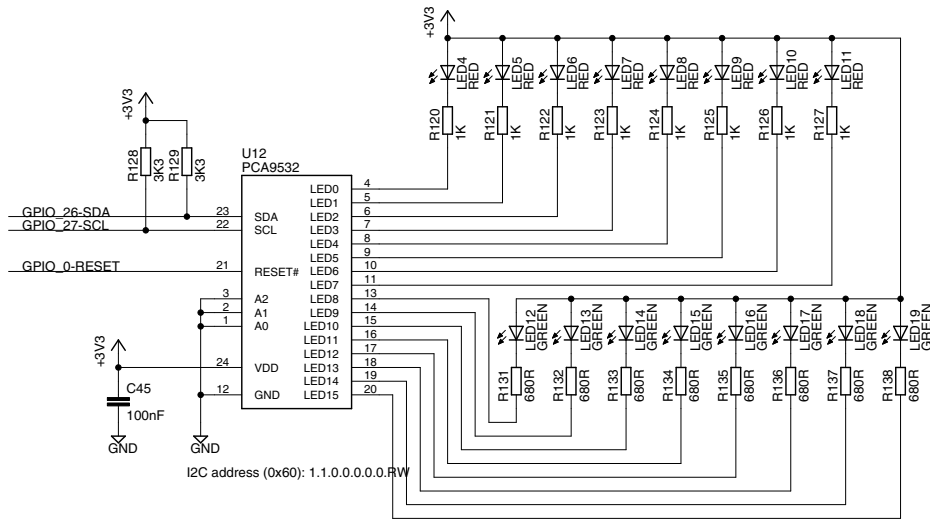


Speaker Amplifier

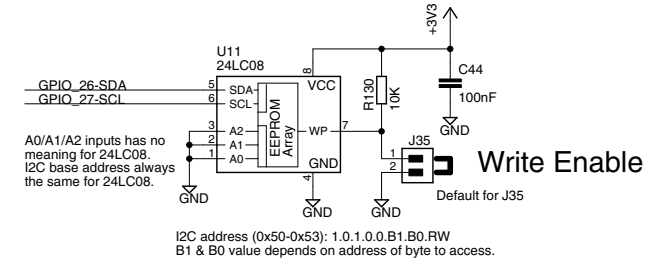


I2C peripherals

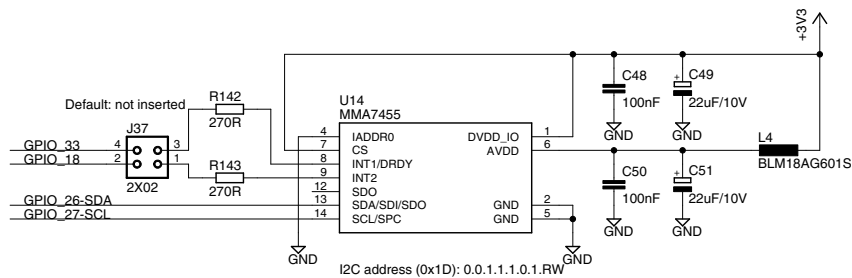
PCA9532 I2C 16-bit Port Expander



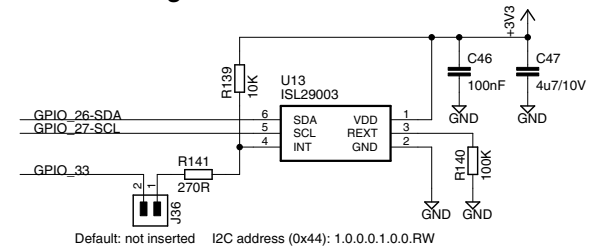
8kbit I2C-E2PROM



MMA7455 Accelerometer with I2C interface

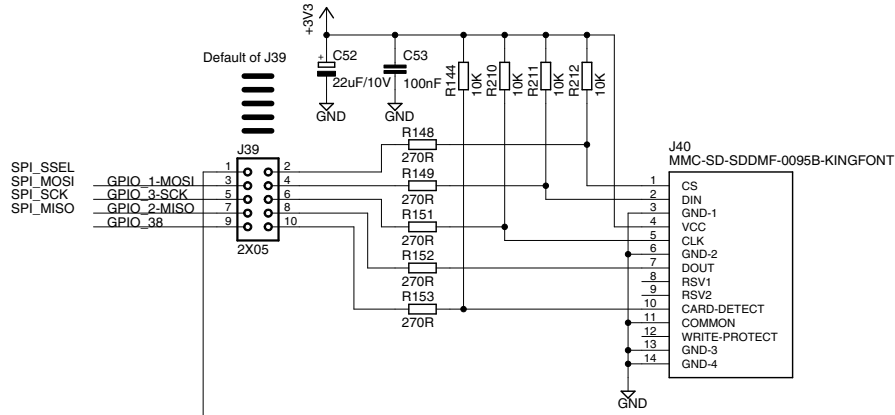


Light Sensor - ISL29003

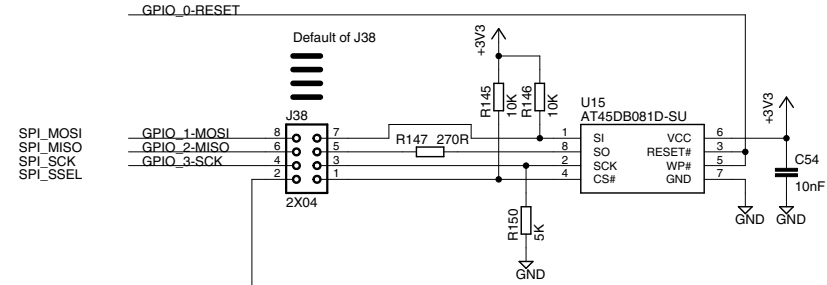


SPI peripherals

MMC/SD Memory Card Interface

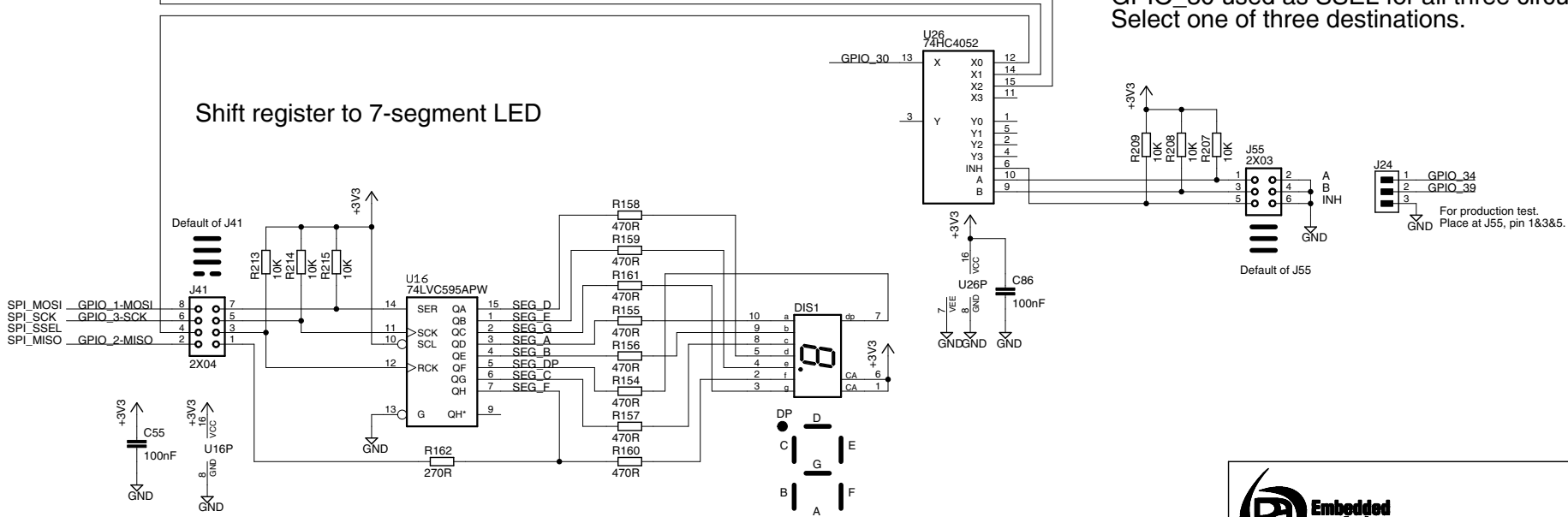


SPI-FLASH



GPIO_30 used as SSEL for all three circuits.
Select one of three destinations.

Shift register to 7-segment LED



How display segments are positioned when looking at board with BNC connector facing towards you.



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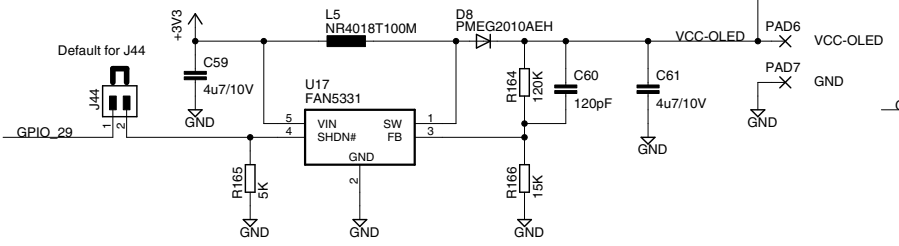
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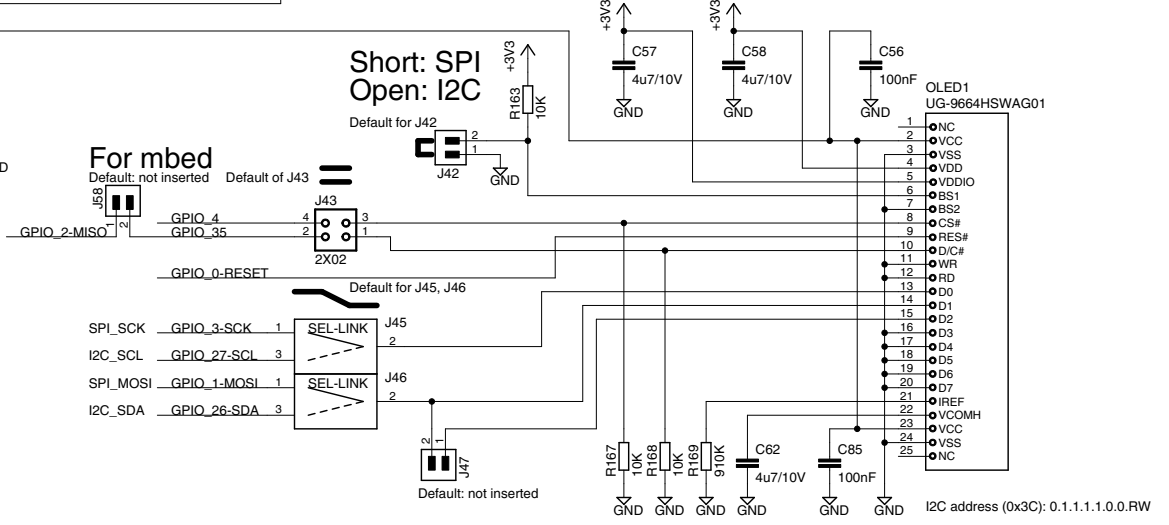
Shared SPI/I2C peripherals

96x64 White OLED with I2C/SPI interface

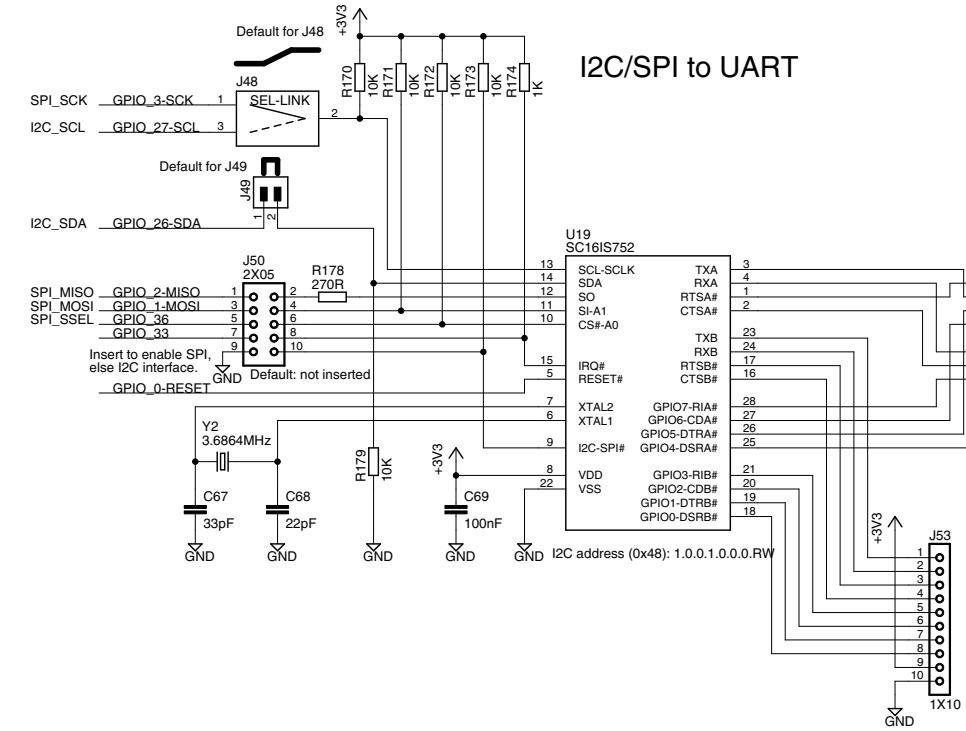
OLED voltage (11V)



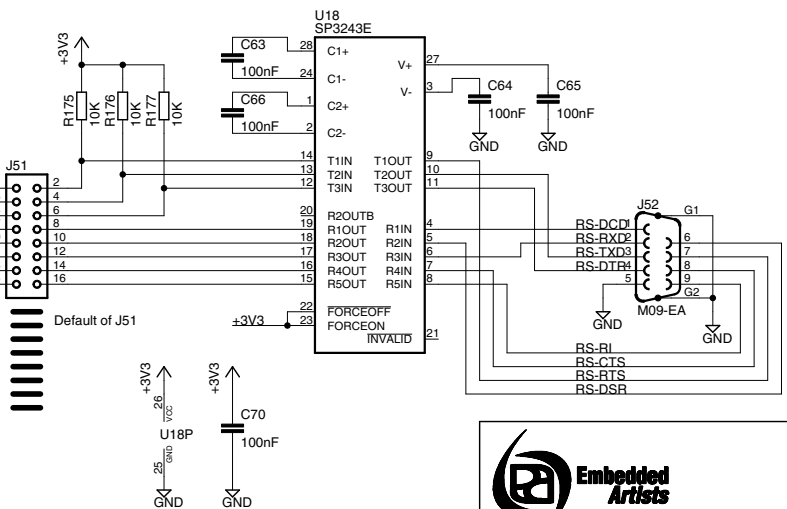
For mbed



I2C/SPI to UART



UART RS232 Full Modem



Expansion connector for second UART



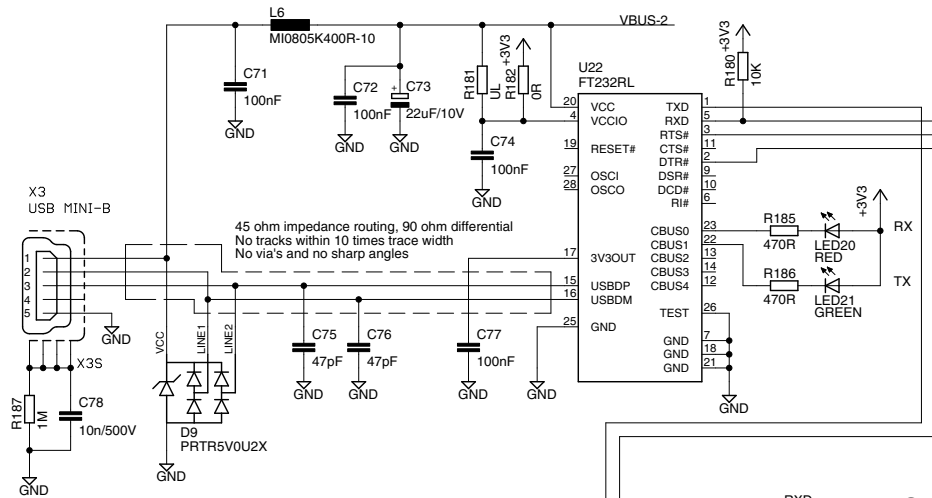
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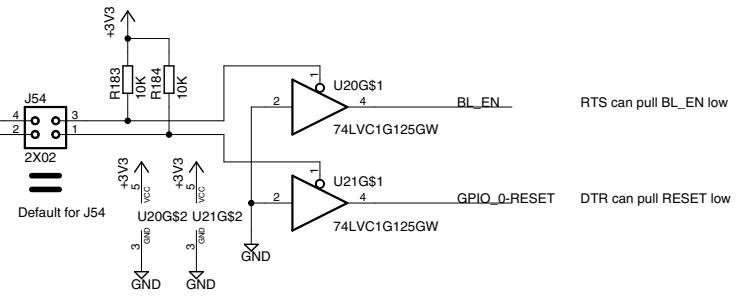
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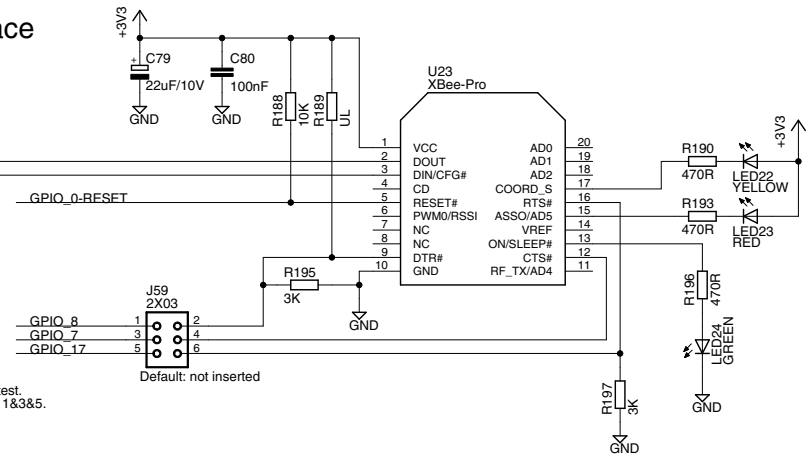
USB-to-UART bridge interface



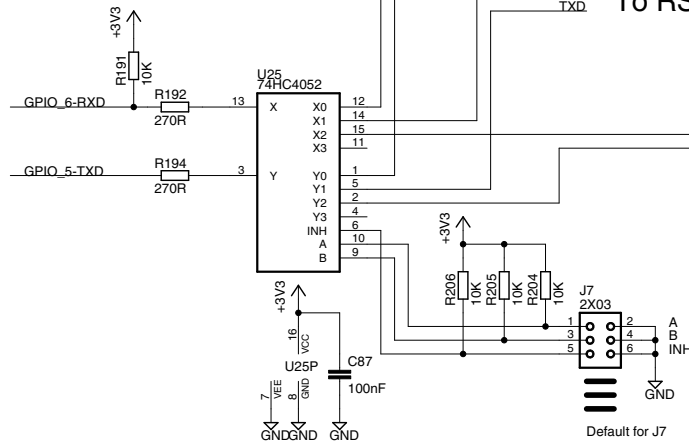
ISP Functionality



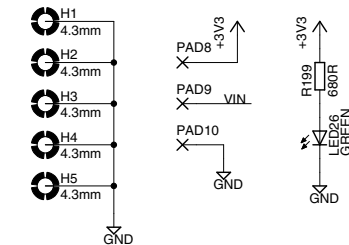
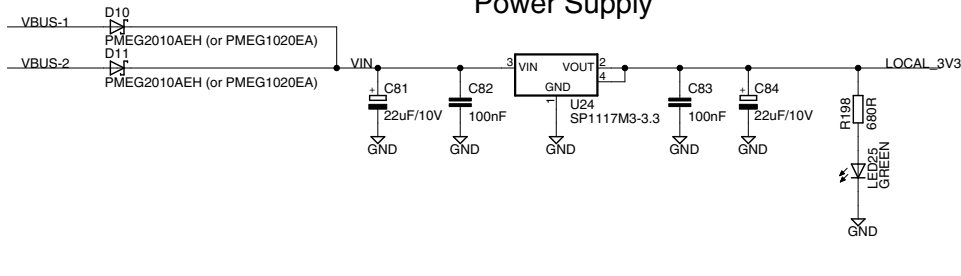
Digi XBee(R) RF-module



To RS422/485 interface



Power Supply



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