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LPC812 Demo Board

LabTool (add-on board to LPC-Link 2)

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 B

Added inrush-current limit.

### Rev A

First public release



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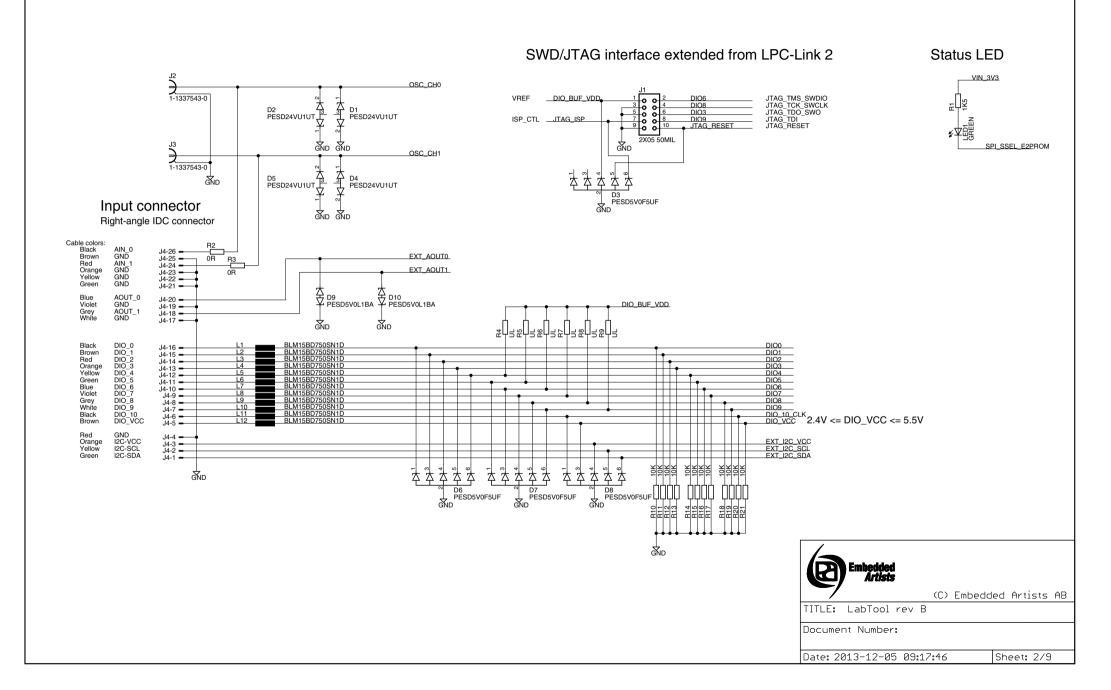
TITLE: LabTool rev B

Document Number:

Date: 2013-12-05 09:17:46

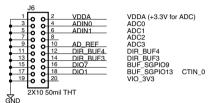
Sheet: 1/9

# External Connectors and ESD protection

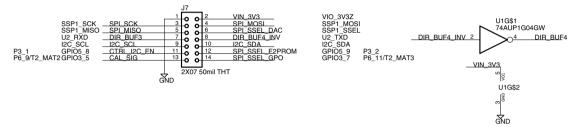


# Connectors (x3) to LPC-Link 2

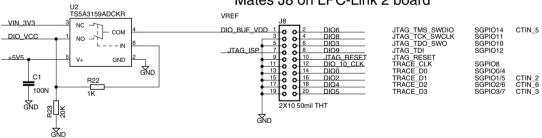
Analog and Digital signals (female connector, 50 mil pitch) Mates J4 on LPC-Link 2 board



Serial Expansion Connector (female connector, 50 mil pitch) Mates J3 on LPC-Link 2 board









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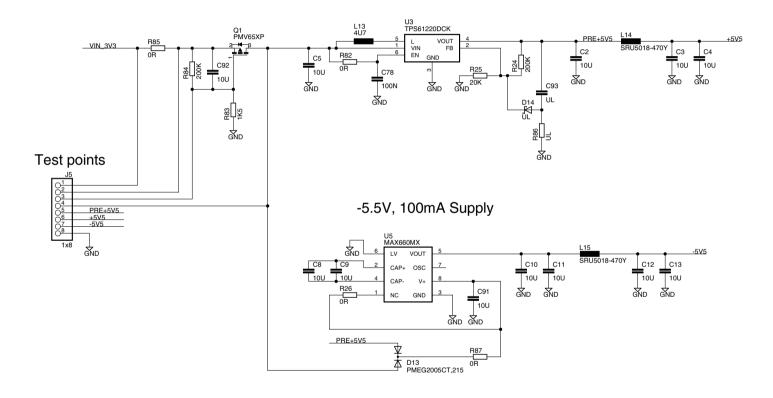
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# Power supplies

# +5.5V, 150mA Supply





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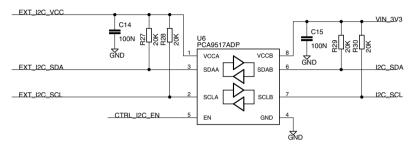
TITLE: LabTool rev B

Document Number:

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I2C buffer

# 0.9-5.5V VCC range Max 400kHz





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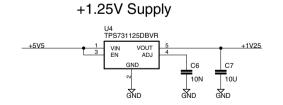
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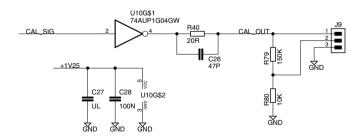
Sheet: 5/9

# Analog Outputs and Calibration Signal

#### Analog outputs Vin = 0-3.3V, Vout = +5 to -5V Fc = (about) 100kHz VDDA C18 100 100N C19 Dual DAC (10-bit) 100N GND GND U8A GND TLV272CDGKR GND GND VDDA EXT\_AOUT0 C20 C21 U9 DAC102S085CIMM \_\_SPI\_SSEL\_DAC \_\_SPI\_SCK \_\_SPI\_MOSI 100N 10U C22 SYNC VREF SCLK VA DIN C23 C24 470P GND GND 100N 10U VOUTA VOUTB GND ĠŇD NC NC GND U8B TLV272CDGKR GND EXT\_AOUT1 C25 470P

# Calibration output







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TITLE: LabTool rev B

Document Number:

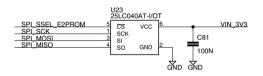
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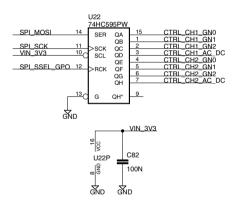
Sheet: 6/9

Oscilloscope inputs +-25V x0.016/0.2, 1M imp. x1/2.5/5/10 +-0.4V AD REF(0.5V)+-0.4V x2/4/8/20 C29 C30 K2 CPC1017N **−**10U 100N VIN 3V3 R105 20R άνρ άΝD CTRL CH1 AC DC C31 47N AD8057ARTZ U14B AD8066ARMZ U13 ADG659YRUZ OSC CHO ADIN0 S1A S2A S3A S4A 2K87 S1 S2 D1 C80 UL R49 1K CTRL\_CH1\_GN2\_6 20P IN1 S1B S2B S3B S4B 10P GND D11 A GND C39 C35 C38 BAV199 C40 άνρ 100N 100N 100N 10U U14A AD8066ARMZ 6-30P CTRL\_CH1\_GN0\_10 CTRL\_CH1\_GN1\_9 GND GND GND GND A0 A1 C41 C42 C43 100N 10U C44 EN GND 1000P, 1% ₫ND ₫ND ₫ND U7 AP7217D +5V5 GND GND C45 C46 C47 VIN 3V3 100N +5V5 100N 10U GND C79 C16 C50 C48 C49 C51 4U7 **4**U7 150 E άνρ GND ₫ND 100N 10U 100N T10U GND GND GND U15 LMV721M5 GND GND ₫ND STAD STAD AD REF BUF GND GND C53 100N GND άΝD C55 K4 CPC1017N C56 άΝD άΝD CTRL CH2 AC DC GND GND U16 AD8057ARTZ TP-AIN1 C57 U19B AD8066ARMZ U18 ADG659YRUZ U17 ADG619BRM OSC\_CH1 ADIN1 S1A S2A S3A S4A S1 S2 D1 C58 C90 +5V5 UL CTRL\_CH2\_GN2 6 20P IN1 S1B S2B S3B S4B GND C60 10P F | 15 D12 A 270R 5 1K07 2 GND C61 C62 C64 C65 BAV199 C66 ďν 68P 100N 100N 10U 100N GND U19A AD8066ARMZ 6-30P +5V5 CTRL\_CH2\_GN0\_10 CTRL\_CH2\_GN1\_9 GND GND GND GND A0 A1 C67 C68 C69 1 100 C70 100N EN GND 1000P, 1% GND άνρ ĠŇD GND GND C71 C72 +5V5 -5V5 100N 10U C73 C74 C75 άνρ άΝD 100N 10U 100N 10U (C) Embedded Artists AB GND GND. ĠΝD GND connector (Keystone 5016K) TITLE: LabTool rev B Document Number: GND Date: 2013-12-05 09:17:46 Sheet: 7/9

# Control signals

### 4kbit EEPROM







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TITLE: LabTool rev B

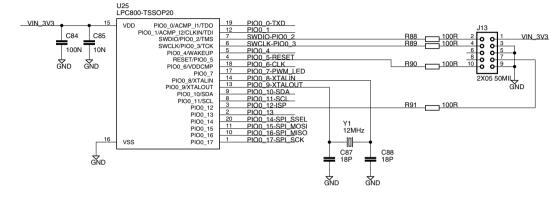
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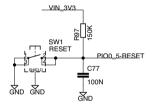
Date: 2013-12-05 09:17:46

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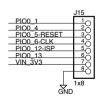
### LPC812 Demo Board

#### SWD interface

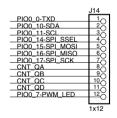




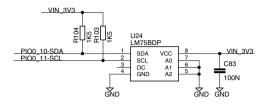
## Internal signals



# Connector for demo signals

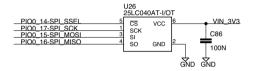


### I2C Temperature Sensor (LM75)



I2C address (0x90/91): 1.0.0.1.0.0.0.RW

#### SPI E2PROM



#### PWM-controlled LED



#### Counter

