

Page 2

External connectors and ESD protection

Page 3

Connectors to LPC-Link 2

Page 4

Power supplies

Page 5

I2C buffer

Page 6

Analog output and Calibration signal

Page 7

2 channel oscilloscope input

Page 8

Control signals

Page 9

LPC812 Demo Board

LabTool add-on board to LPC-Link 2

Rev A

Removed J5 and J12. R4-R9 changed to UL.
Removed current measurement.
Redesigned LPC812 demo signals.

Rev PA3

Corrected package pinning on U13/U18.
Added R103-R108. Changed R36, R39, R92, R94-R96.
Removed C92, C93, U7, C16.

Rev PA2

Redesign of several parts

Rev PA1

First rev



(C) Embedded Artists AB

TITLE: LabTool rev A

Document Number:

Date: 2013-05-23 23:08:06

Sheet: 1/9

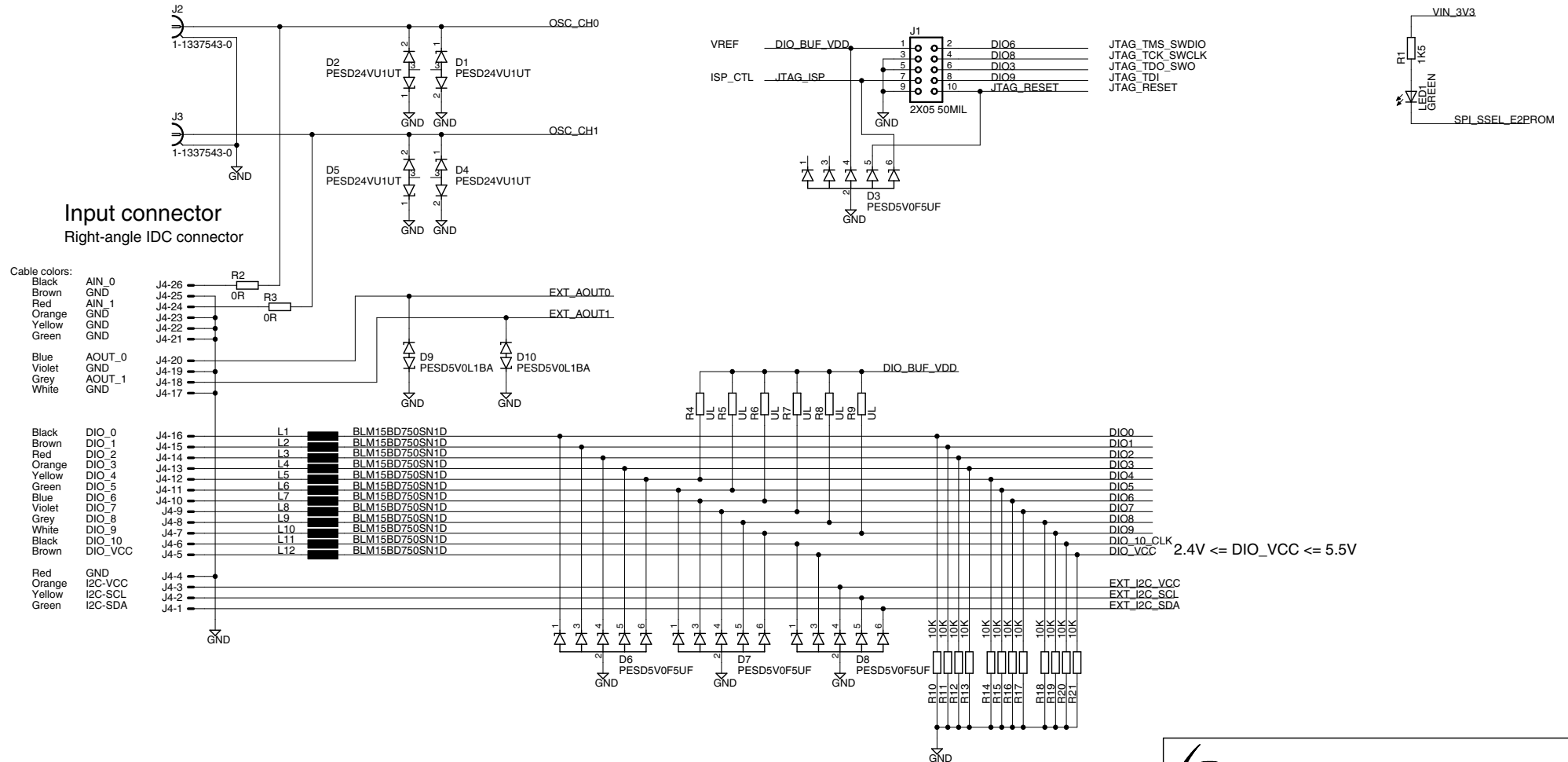
UL = UnLoaded = normally not mounted component.

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.

External Connectors and ESD protection

SWD/JTAG interface extended from LPC-Link 2

Status LED



(C) Embedded Artists AB

TITLE: LabTool rev A

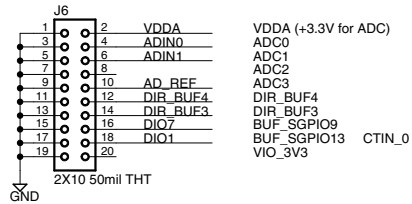
Document Number:

Date: 2013-05-23 23:08:06

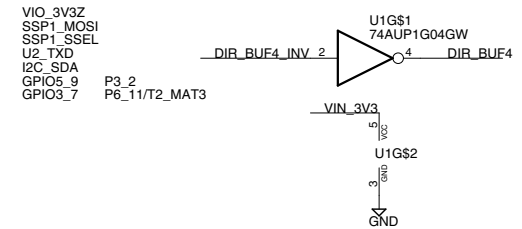
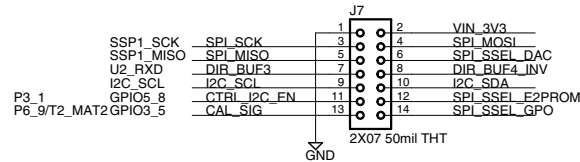
Sheet: 2/9

Connectors (x3) to LPC-Link 2

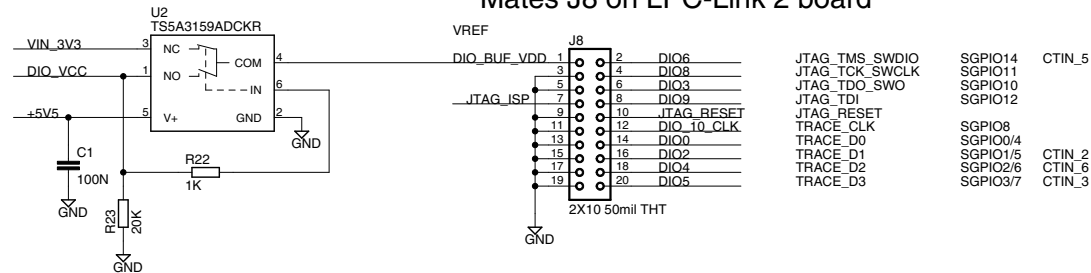
Analog and Digital signals
(female connector, 50 mil pitch)
Mates J4 on LPC-Link 2 board



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



Trace Connector
(female connector, 50 mil pitch)
Mates J8 on LPC-Link 2 board



(C) Embedded Artists AB

TITLE: LabTool rev A

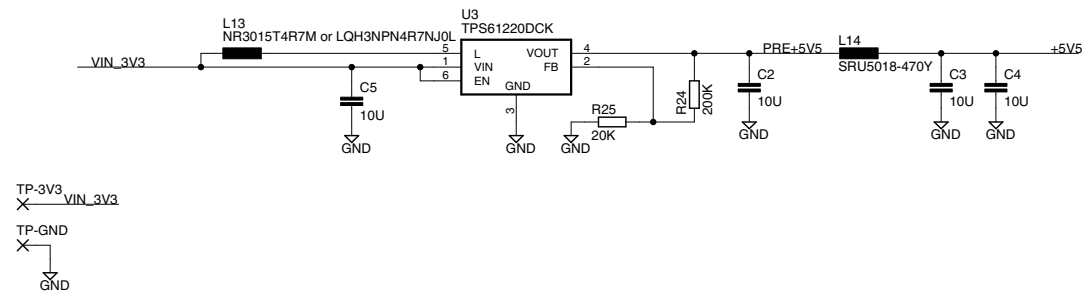
Document Number:

Date: 2013-05-23 23:08:06

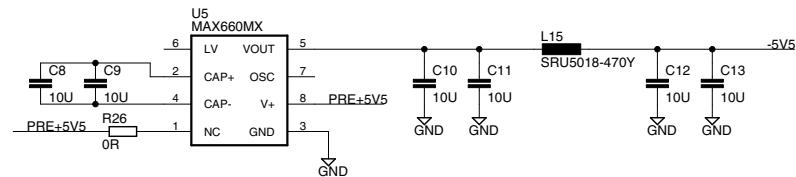
Sheet: 3/9

Power supplies

+5.5V, 150mA Supply



-5.5V, 100mA Supply



(C) Embedded Artists AB

TITLE: LabTool rev A

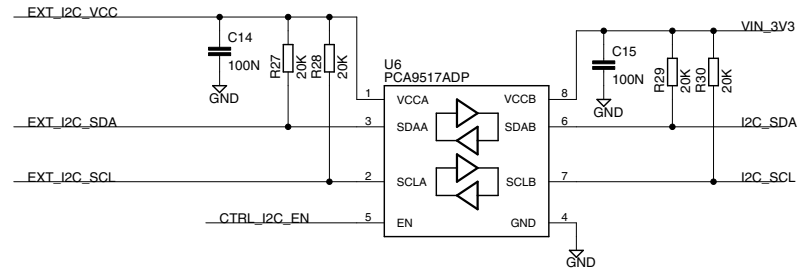
Document Number:

Date: 2013-05-23 23:08:06

Sheet: 4/9

I2C buffer

0.9-5.5V VCC range Max 400kHz



(C) Embedded Artists AB

TITLE: LabTool rev A

Document Number:

Date: 2013-05-23 23:08:06

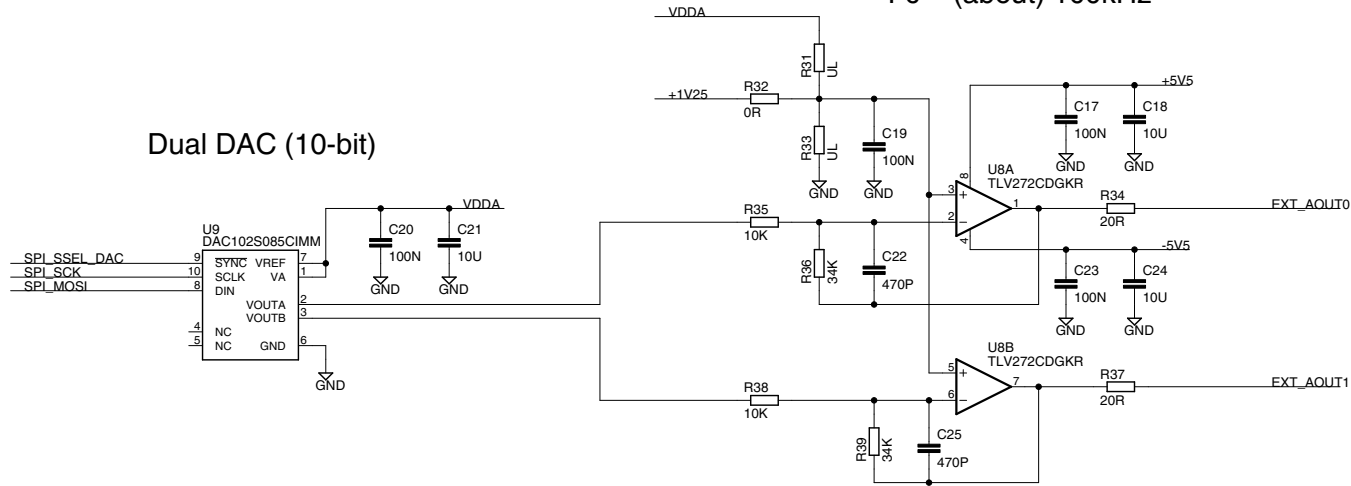
Sheet: 5/9

Analog Outputs and Calibration Signal

Analog outputs

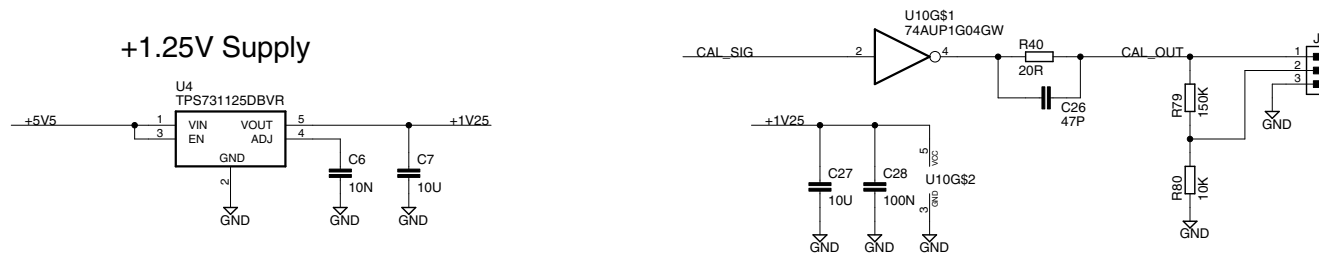
$V_{in} = 0-3.3V$, $V_{out} = +5 \text{ to } -5V$
 $F_c = (\text{about}) 100kHz$

Dual DAC (10-bit)



Calibration output

+1.25V Supply



(C) Embedded Artists AB

TITLE: LabTool rev A

Document Number:

Date: 2013-05-23 23:08:06

Sheet: 6/9

Oscilloscope inputs

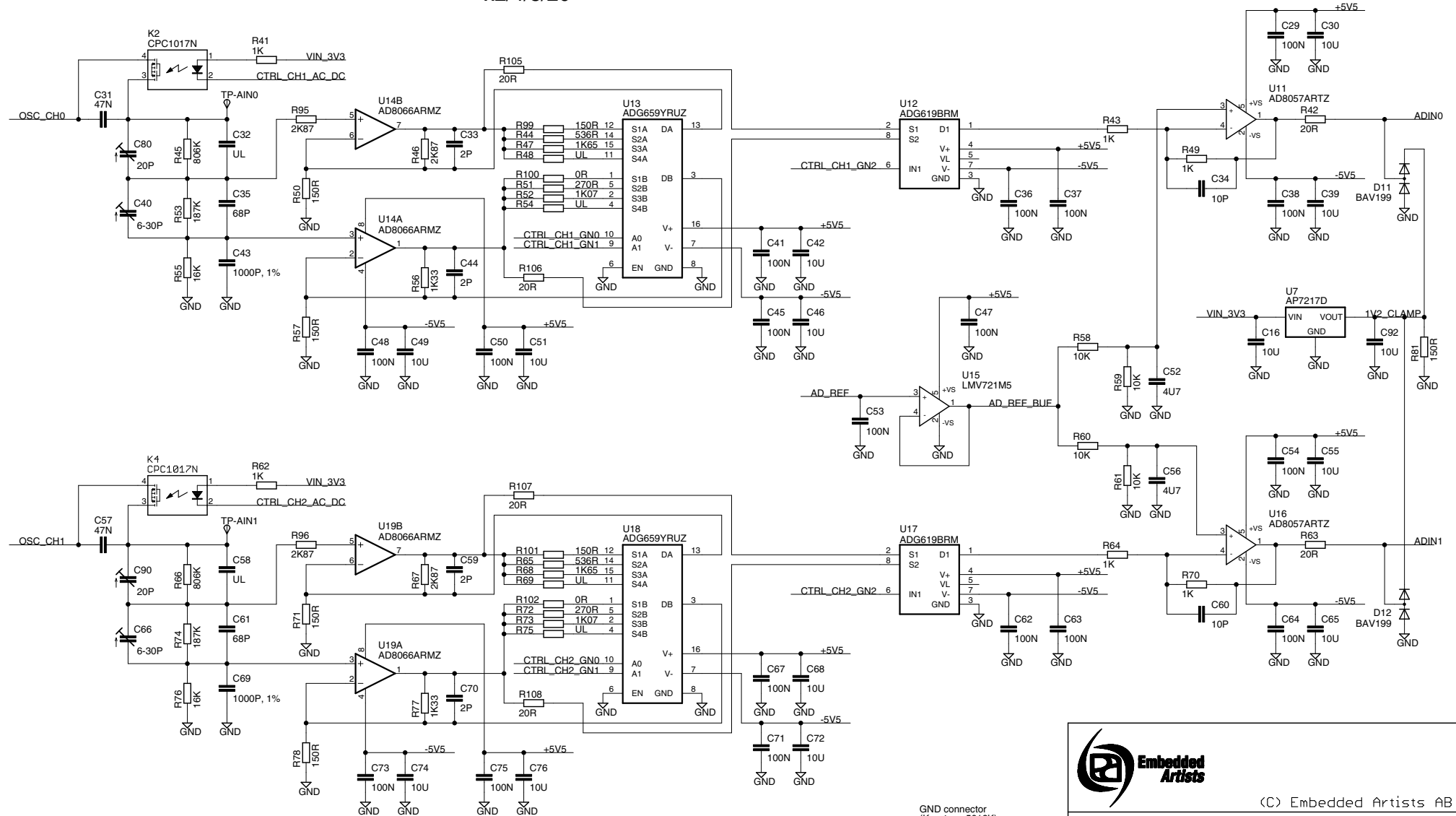
+25V

x0.016/0.2, 1M imp.

x1/2.5/5/10
x2/4/8/20

+0.4V

AD_REF(0.5V)+0.4V



GND connector
(Keystone 5016K)

TP3
GND



(C) Embedded Artists AB

TITLE: LabTool rev A

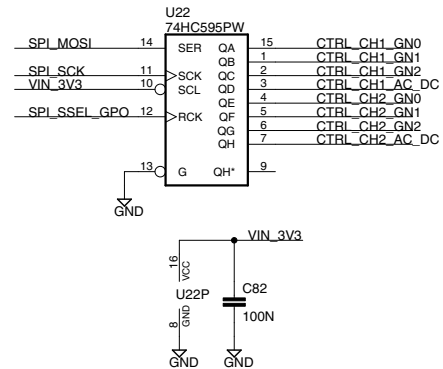
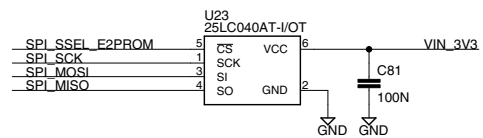
Document Number:

Date: 2013-05-23 23:08:06

Sheet: 7/9

Control signals

4kbit EEPROM



© Embedded Artists AB

TITLE: LabTool rev A

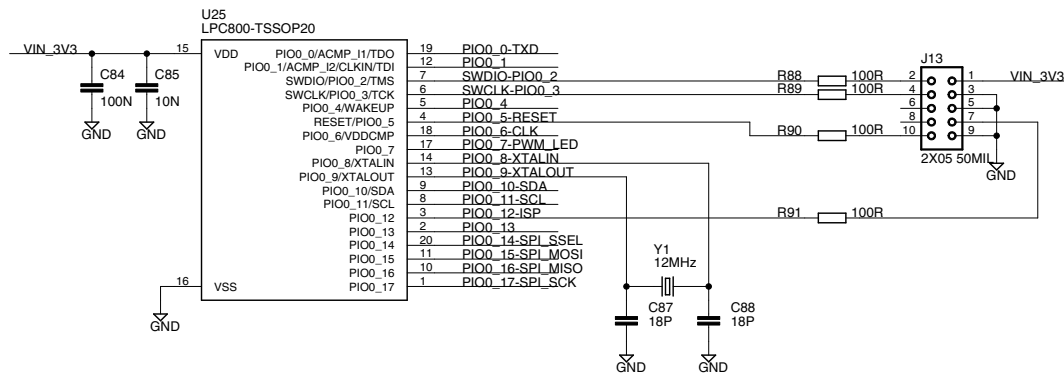
Document Number:

Date: 2013-05-23 23:08:06

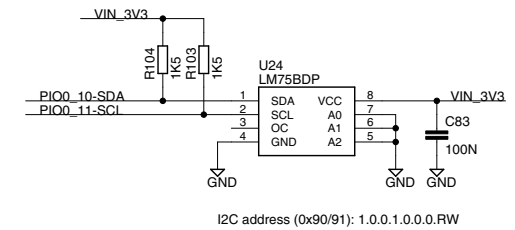
Sheet: 8/9

LPC812 Demo Board

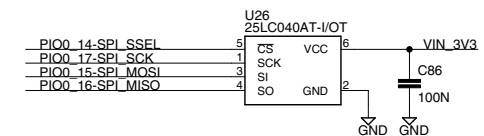
SWD interface



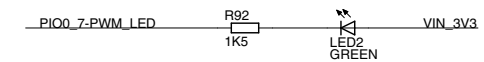
I2C Temperature Sensor (LM75)



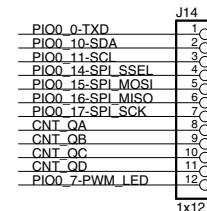
SPI E2PROM



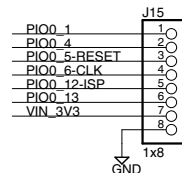
PWM-controlled LED



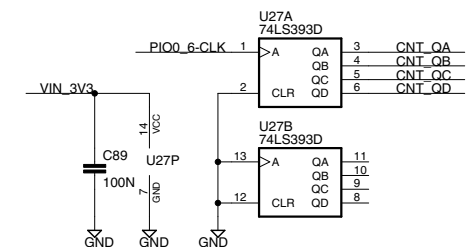
Connector for demo signals



Internal signals



Counter



(C) Embedded Artists AB

TITLE: LabTool rev A

Document Number:

Date: 2013-05-23 23:08:06

Sheet: 9/9