

## PROTO-SHIELD development board

## Users Manual



All boards produced by Olimex are ROHS compliant

Revision Initial, June 2011

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## **INTRODUCTION:**

**PROTO-SHIELD** is prototype board compatible with all of Olimex's ARDUINO compatible boards – like OLIMEXINO-328, OLIMEXINO-STM32 and PIC32-PINGUINO. The board comes without mounted connectors on it, but it is shipped with one 6x1 connector and three 8x1 connectors, which can be mounted by the customer. The prototype area gives user the opportunity to solder different extensions for ARDUINO compatible boards. All this allows you to build a diversity of applications.

## **BOARD FEATURES:**

- one 6x1 connector – not mounted
- three 8x1 connectors – not mounted
- two status leds
- two user buttons
- prototype area
- FR-4, 1.5 mm, soldermask, component print
- Dimensions: 68.58 x 53.34mm (2.71 x 2.11")

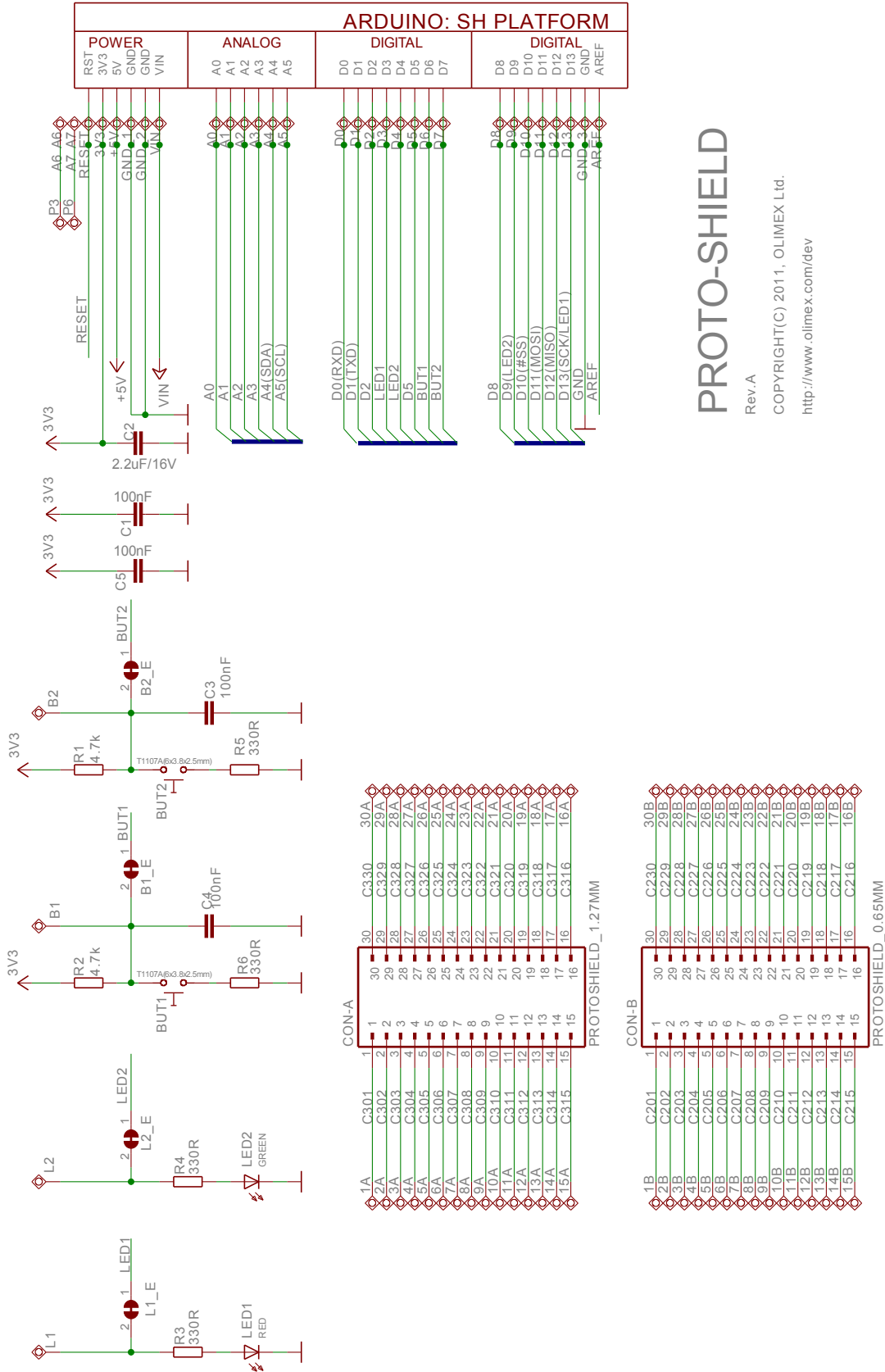
## **ELECTROSTATIC WARNING:**

The **PROTO-SHIELD** board is shipped in protective anti-static packaging. The board must not be subject to high electrostatic potentials. General practice for working with static sensitive devices should be applied when working with this board.

## **BOARD USE REQUIREMENTS:**

**Hardware:** The board can be used with any of our ARDUINO compatible boards: [OLIMEXINO-328](#), [OLIMEXINO-STM32](#), [PIC32-PINGUINO](#), [PIC32-PINGUINO-OTG](#).

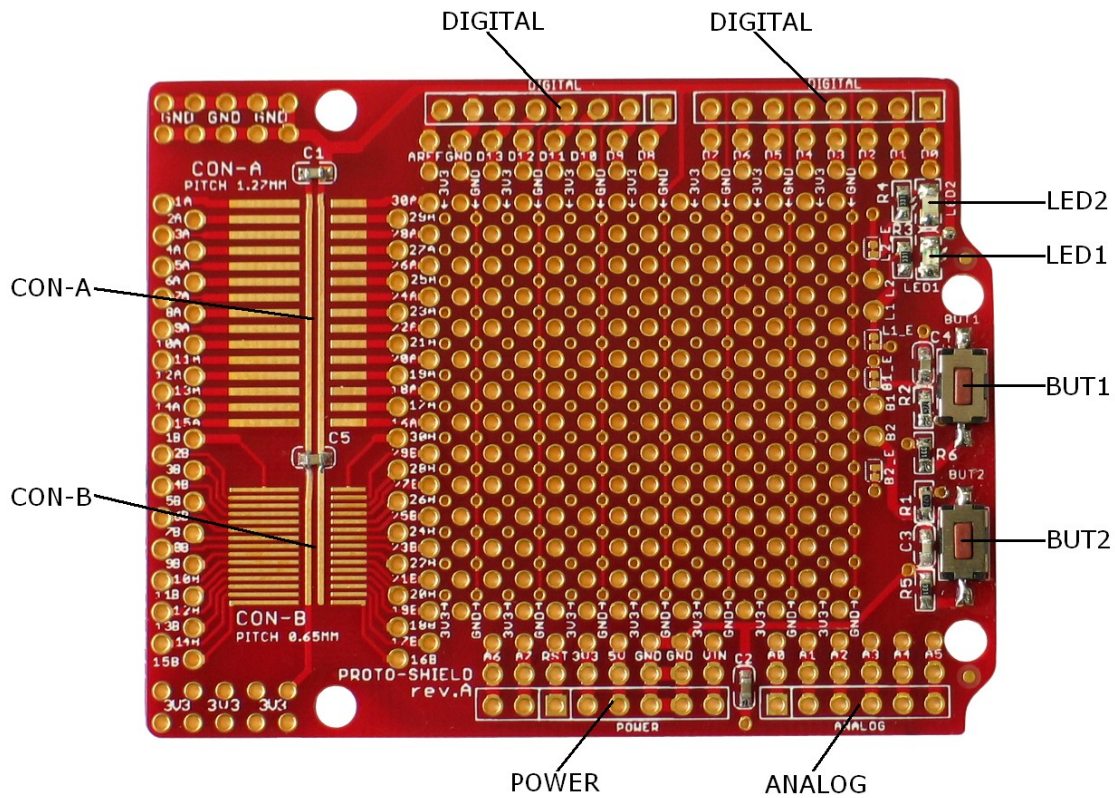
# SCHEMATIC:



# PROTO-SHIELD

Rev. A  
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## BOARD LAYOUT:



## POWER SUPPLY CIRCUIT:

PROTO-SHIELD is power supplied via POWER connector from the ARDUINO compatible board with which is used.

## JUMPER DESCRIPTION:

### L1\_E



This jumper, when closed, LED1 is connected to D3 line.  
This jumper, when opened, LED1 is connected to L1 pad.  
Default state is closed.

### L2\_E



This jumper, when closed, LED2 is connected to D4 line.  
This jumper, when opened, LED2 is connected to L2 pad.  
Default state is closed.

### B1\_E



This jumper, when closed, BUT1 is connected to D6 line.  
This jumper, when opened, BUT1 is connected to B1 pad.  
Default state is closed.

## B2\_E



This jumper, when closed, BUT2 is connected to D7 line.  
This jumper, when opened, BUT2 is connected to B2 pad  
Default state is closed.

## INPUT/OUTPUT:

**Status Led** with name **LED1 (red)** connected via jumper L1\_E to DIGITAL connector pin D3 – signal LED1.

**Status Led** with name **LED2 (green)** connected via jumper L2\_E to DIGITAL connector pin D4 – signal LED2.

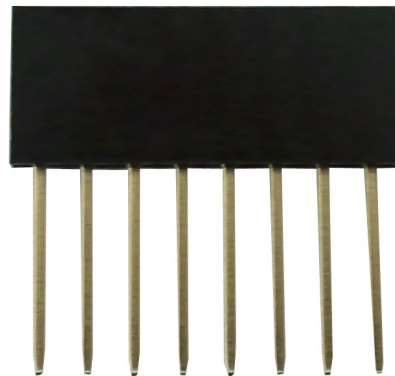
**User button** with name **BUT1** connected via jumper B1\_E to DIGITAL connector pin D6 – signal BUT1.

**User button** with name **BUT2** connected via jumper B2\_E to DIGITAL connector pin D7 – signal BUT2.

## EXTERNAL CONNECTORS DESCRIPTION:

### POWER:

Pin #	Signal Name
1	A6
2	A7
3	RESET
4	VCC
5	+5V
6	GND
7	GND
8	+24V (VIN)

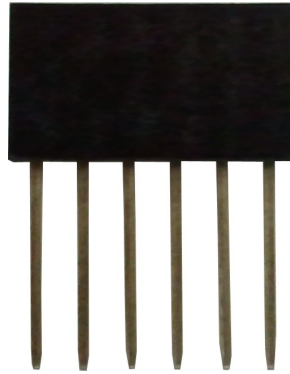


Note: This connector is not mounted on the board.

## ANALOG:

Pin #	Signal Name
1	A0
2	A1
3	A2
4	A3
5	A4(SDA)
6	A5(SCL)

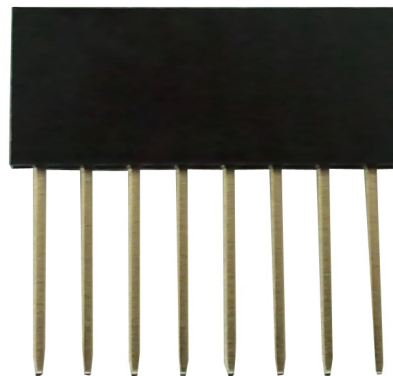
Note: This connector is not mounted on the board.



## DIGITAL:

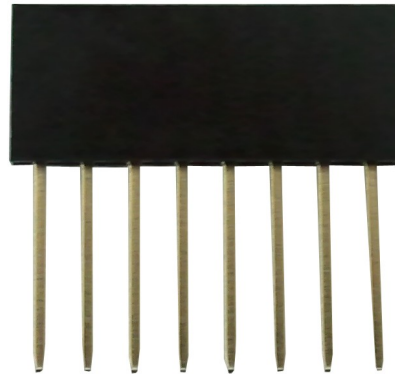
Pin #	Signal Name
1	D0(RXD)
2	D1(TXD)
3	D2
4	LED1
5	LED2
6	D5
7	BUT1
8	BUT2

Note: This connector is not mounted on the board.



## DIGITAL:

Pin #	Signal Name
1	D8
2	D9(LED2)
3	D10(#SS)
4	D11(MOSI)
5	D12(MISO)
6	D13(SCK/LED1)
7	GND
8	AREF



Note: This connector is not mounted on the board.

## CON-A:

Note: This footprint can be used for mounting of SMD IC with 1.27mm pitch. Each of SMD pads is routed to True Hole pad.

SMD Pin #	True Hole pin #	SMD Pin #	True Hole pin #
1	1A	2	2A
3	3A	4	4A
5	5A	6	6A
7	7A	8	8A
9	9A	10	10A
11	11A	12	12A
13	13A	14	14A
15	15A	16	16A
17	17A	18	18A
19	19A	20	20A
21	21A	22	22A
23	23A	24	24A
25	25A	26	26A
27	27A	28	28A
29	29A	30	30A

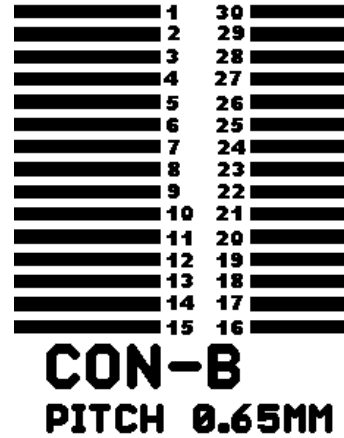
## **CON-A** **PITCH 1.27MM**

1	30
2	29
3	28
4	27
5	26
6	25
7	24
8	23
9	22
10	21
11	20
12	19
13	18
14	17
15	16

## CON-B:

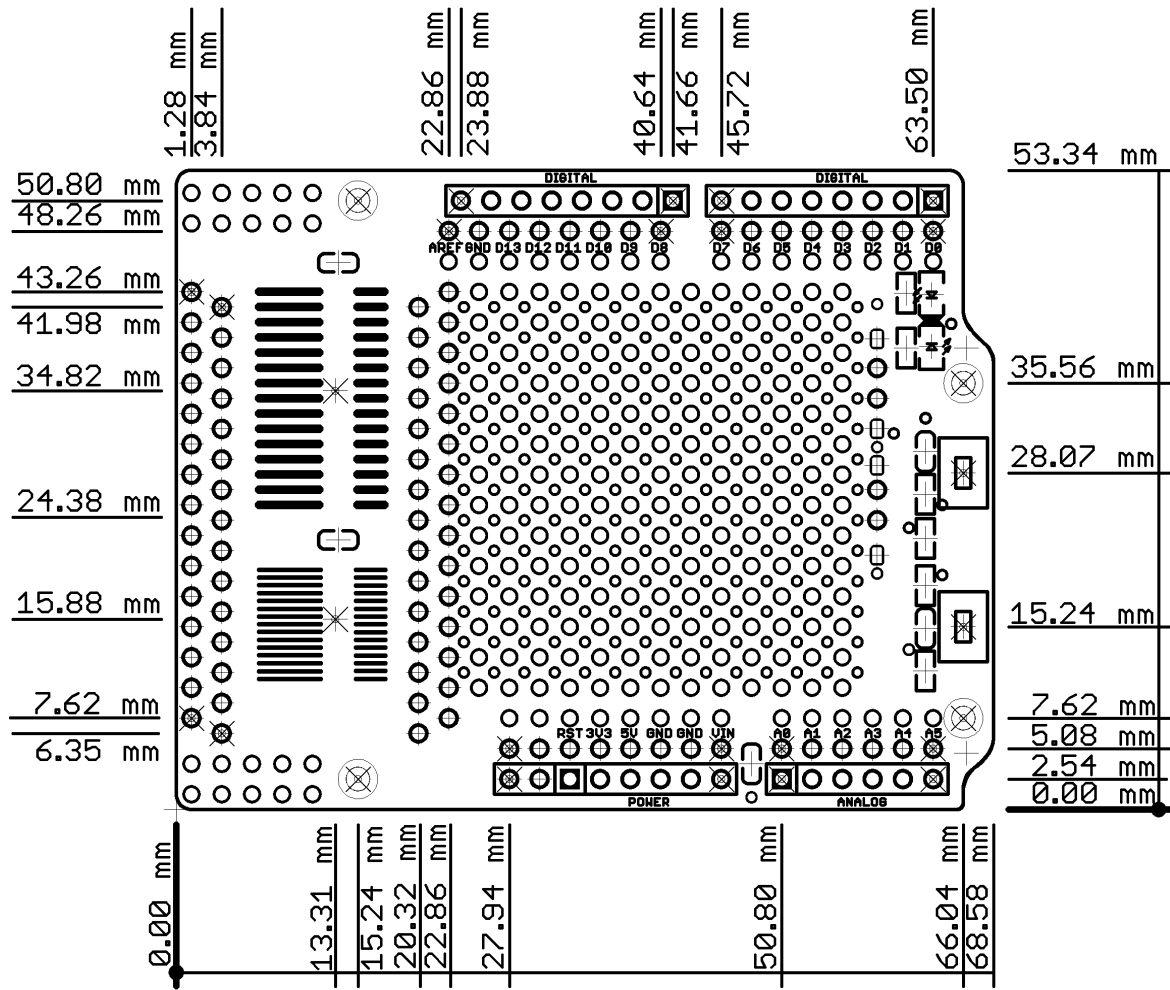
Note: This footprint can be used for mounting of SMD IC with 0.65mm pitch. Each of SMD pads is routed to True Hole pad.

SMD Pin #	True Hole pin #	SMD Pin #	True Hole pin #
1	1B	2	2B
3	3B	4	4B
5	5B	6	6B
7	7B	8	8B
9	9B	10	10B
11	11B	12	12B
13	13B	14	14B
15	15B	16	16B
17	17B	18	18B
19	19B	20	20B
21	21B	22	22B
23	23B	24	24B
25	25B	26	26B
27	27B	28	28B
29	29B	30	30B





# MECHANICAL DIMENSIONS:



## **ORDER CODE:**

**PROTO-SHIELD** - assembled and tested board

### **How to order?**

You can order to us directly or by any of our distributors.  
Check our web [www.olimex.com/dev](http://www.olimex.com/dev) for more info.

## **Revision history:**

Board's revision	Rev. A, May 2011
Manual's revision	Rev. Initial, June 2011

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