

## ADuC-M7020 development board

## Users Manual



All boards produced by Olimex are ROHS compliant

Rev. Initial, June 2011

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## **INTRODUCTION**

**ADuC-M7020** is complementary board for ADuC-H7020 which allow better to be explored ADuC7020 features without the need for additional soldering as this board provide USB-RS232 converter for link with PC, two buttons, potentiometers, status LEDs so you can play with ADuC-H7020 out of the box.

## **BOARD FEATURES**

- DIL socket for ADuC-H7020 plug-in
- JTAG connector for in-circuit programming and debugging with ARM- JTAG
- two buttons
- two potentiometers connected to ADuC-H7020 ADCs
- bi-color LED connected to ADuC-H7020 DACs
- two status LEDs (yellow/green)
- Dallas i-button interface and connector
- USB-RS232 convertor and interface to ADuC7020, can be used for serial download
- PCB: FR-4, 1.5 mm (0,062"), soldermask, white silkscreen component print
- Separate Analog and Digital prototype area
- four mounting holes 3.3 mm (0.13")

## **ELECTROSTATIC WARNING**

The ADuC-M7020 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**

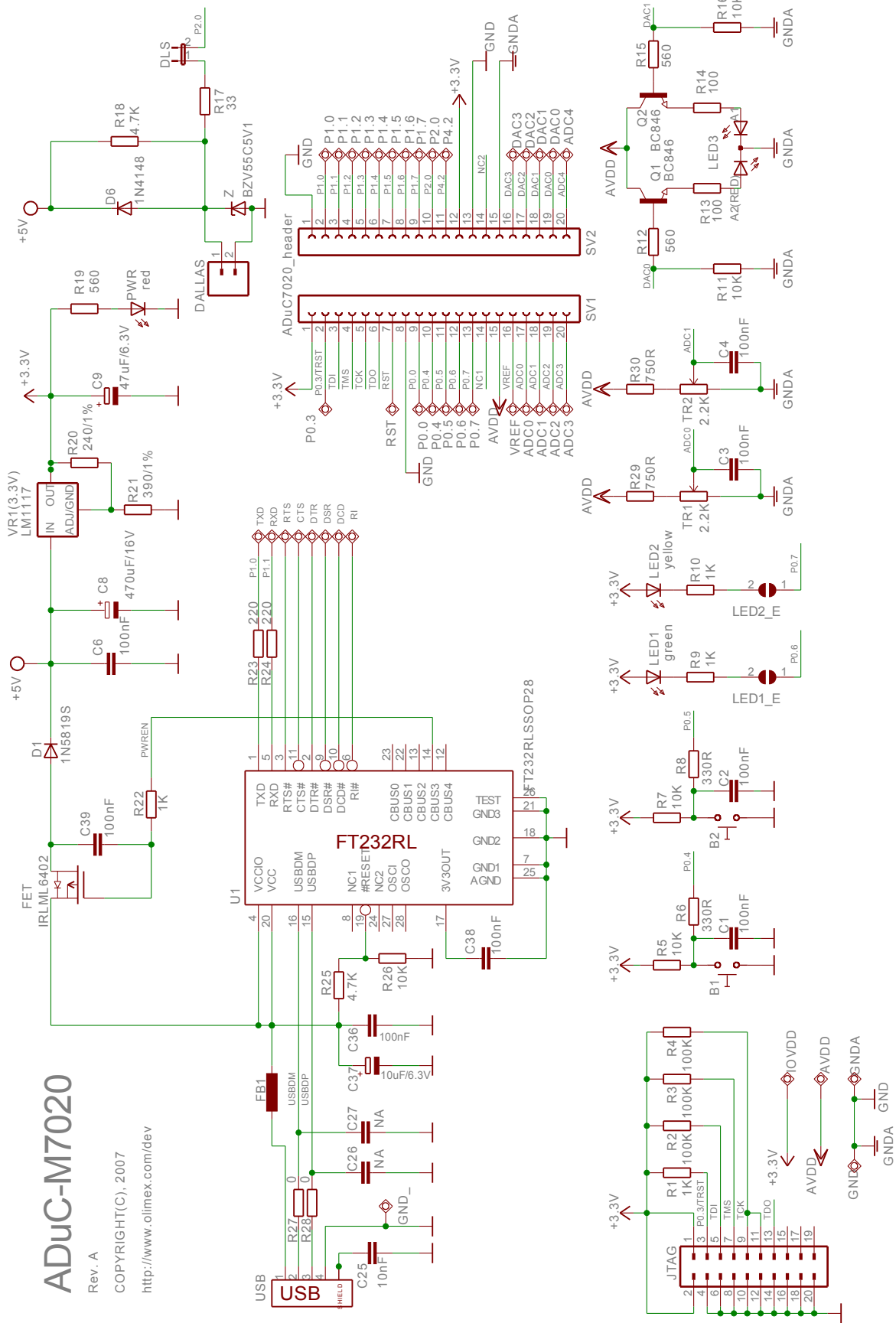
**Cables:** Depends on the used programming/debugging tool. It could be 1.8 meter USB A-B cable to connect ARM-JTAG-EW, ARM-USB-OCD, ARM-USB-OCD-H, ARM-USB-TINY, or ARM-USB-TINY-H to USB host on PC or LPT cable in case of ARM-JTAG or other programming/debugging tools. You will need a serial cable if not for programming, than for configuring the board.

**Hardware:** Programmer/Debugger – some of Olimex programmers are applicable, for example [ARM-JTAG](#), [ARM-JTAG-EW](#), [ARM-USB-OCD](#), [ARM-USB-OCD-H](#), [ARM-USB-TINY](#), [ARM-USB-TINY-H](#) or other compatible programming/debugging tool.

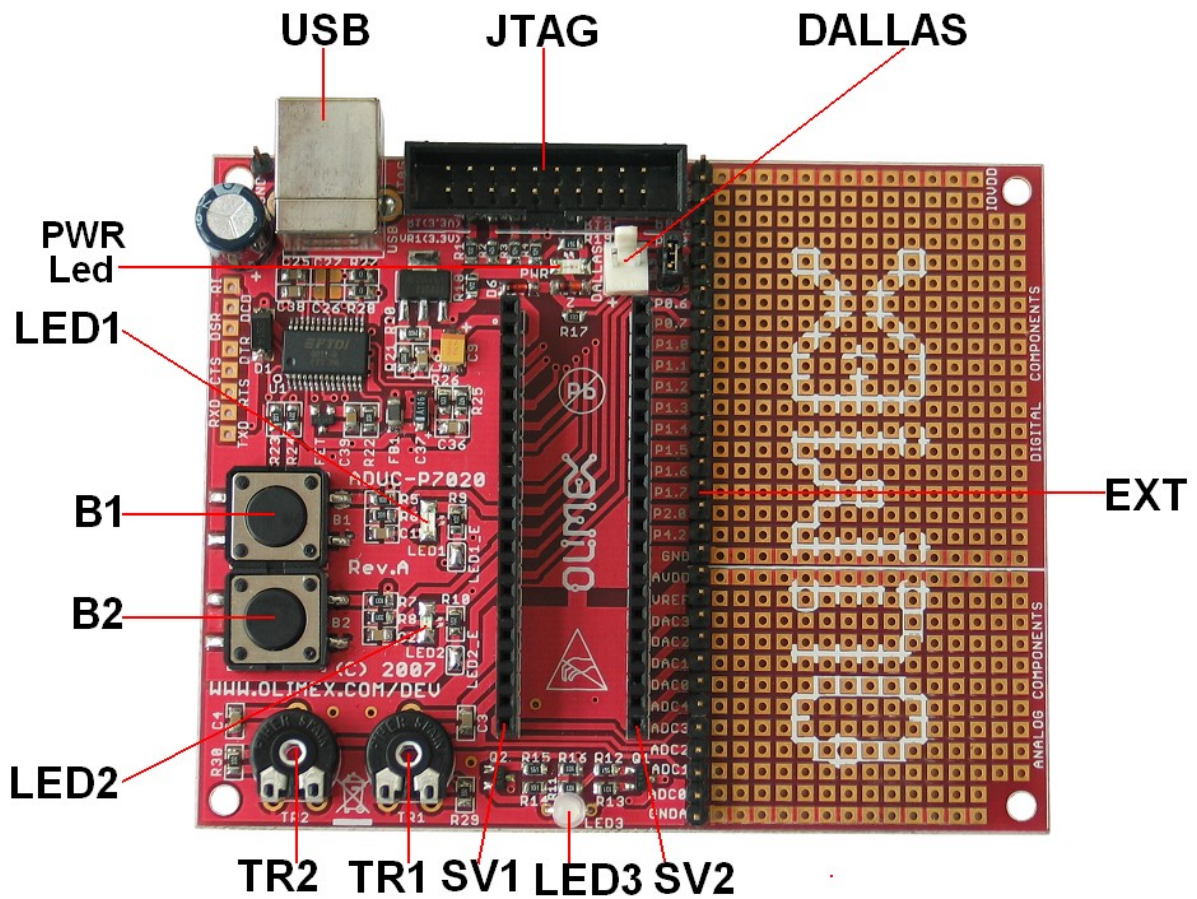
# SCHEMATIC

## ADuC-M7020

Rev. A  
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## BOARD LAYOUT



## POWER CIRCUIT

ADuC-M7020 can take power (+5V) from USB.

## RESET CIRCUIT

ADuC-M7020 does not have reset circuit. It is on AduC-H7020 board

## CLOCK CIRCUIT

ADuC-M7020 does not have clock circuit. It is on AduC-H7020 board

## JUMPER DESCRIPTION

### DLS



Enables Dallas communication.

### LED1\_E



Enables LED1.

### LED2\_E



Enables LED2.

## INPUT/OUTPUT

**User button** with name **B1**, connected to SV1 pin 10 (P0.4).

**User button** with name **B2**, connected to SV1 pin 11 (P0.5).

**Status Led (Green)** with name **LED1**, connected to SV1 pin 12 (P0.6).

**Status Led (Yellow)** with name **LED2**, connected to SV1 pin 13 (P0.7).

**Status Led (two colour)** with name **LED3**, the green is connected to SV2 pin 18 (DAC1) and the red is connected to SV2 pin 19 (DAC0).

**Power-on led** with name **PWR** – shows that +3.3V is supplied to the board.

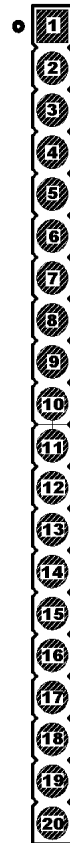
**Trimpot** with name **TR1**, connected to SV1 pin 17 (ADC0).

**Trimpot** with name **TR2**, connected to SV1 pin 18 (ADC1).

# EXTERNAL CONNECTORS DESCRIPTION

## SV1

Pin#	Signal Name	Pin#	Signal Name
1	3.3V	2	P0.3/TRST
3	TDI	4	TMS
5	TCK	6	TDO
7	RST	8	GND
9	P0.0	10	P0.4
11	P0.5	12	P0.6
13	P0.7	14	NC
15	AVDD	16	VREF
17	ADC0	18	ADC1
19	ADC2	20	ADC3

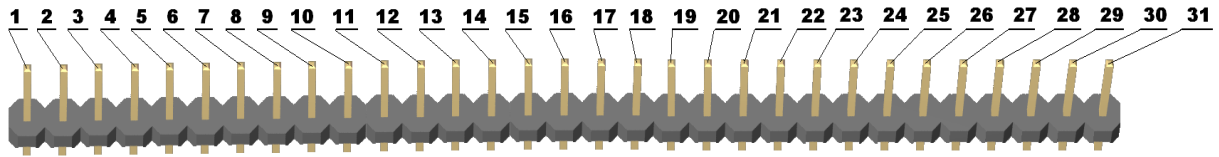


## SV2

Pin#	Signal Name	Pin#	Signal Name
21	ADC4	22	DAC0
23	DAC1	24	DAC2
25	DAC3	26	GND
27	NC	28	GND
29	3.3V	30	P4.2
31	P2.0	32	P1.7
33	P1.6	34	P1.5
35	P1.4	36	P1.3
37	P1.2	38	P1.1
39	P1.0	40	GND



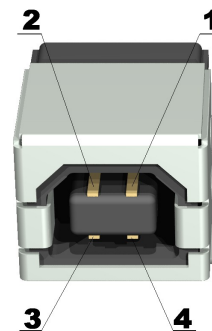
## EXT



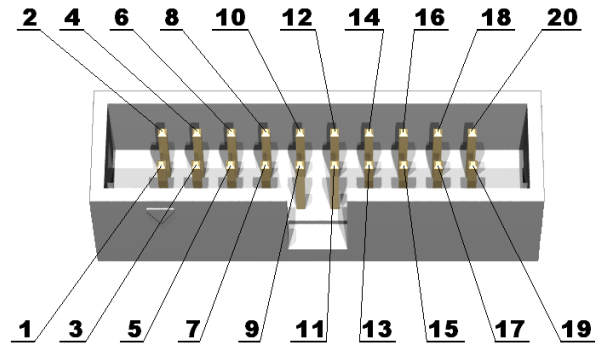
Pin #	Signal Name	Pin #	Signal Name
1	VCC (+3.3V)	2	RST
3	P0.3/TRST	4	P0.0
5	P0.4	6	P0.5
7	P0.6	8	P0.7
9	P1.0	10	P1.1
11	P1.2	12	P1.3
13	P1.4	14	P1.5
15	P1.6	16	P1.7
17	P2.0	18	P4.2
19	GND	20	AVDD
21	VREF	22	DAC3
23	DAC2	24	DAC1
25	DAC0	26	ADC4
27	ADC3	28	ADC2
29	ADC1	30	ADC0
31	GNDA		

## USB

Pin #	Signal Name
1	USB_PWR
2	USBDM
3	USBDP
4	GND



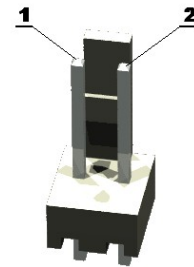
## JTAG



Pin #	Signal Name	Pin #	Signal Name
1	3.3V	2	3.3V
3	P0.3/TRST	4	GND
5	TDI	6	GND
7	TMS	8	GND
9	TCK	10	GND
11	TCK	12	GND
13	TDO	14	GND
15	NC	16	GND
17	NC	18	GND
19	NC	20	GND

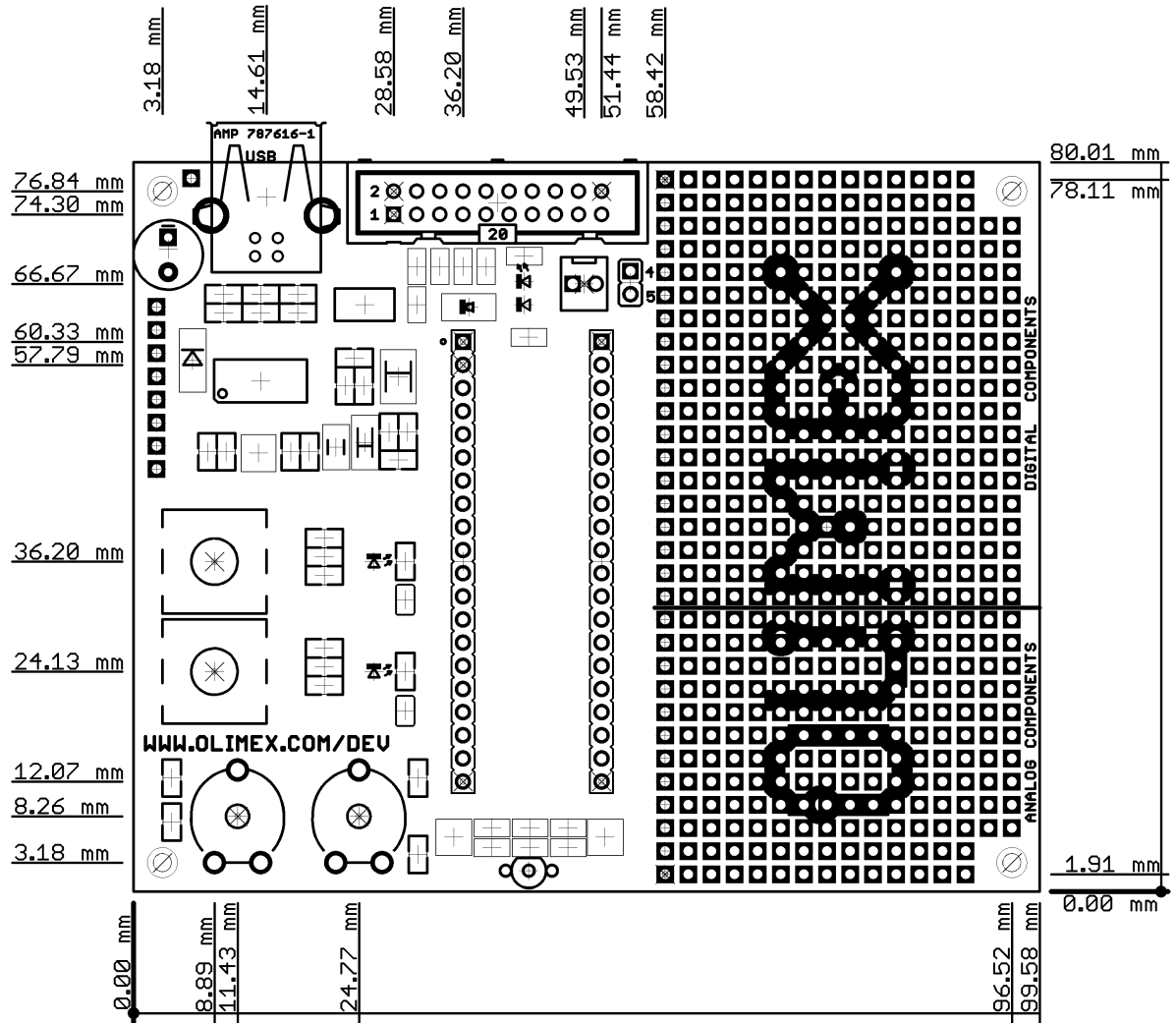
## DALLAS

Pin #	Signal Name
1	P2.0 when jumper DLS is closed
2	GND





# MECHANICAL DIMENSIONS



## AVAILABLE DEMO SOFTWARE

- [RS232 init](#) demo code for EW-ARM
- [buttons read](#) demo code for EW-ARM
- [ADC read DAC write](#) demo code for EW-ARM

## **ORDER CODE**

**ADuC-M7020** - completely assembled and tested.

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, November 2007

Manual's revision: Rev. Initial, June 2011

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