

The Development Board LDM-MP 2.04 is a printed circuit board, size 84x48x15 mm (without prototypical field) with installed using sockets DD1 of the microcontroller ATmega8535 of the company ATMEL in the housing PDIP-40. The board has the 9-contact connector XS2 (DB-9) to connect «direct» cable to the consecutive port RS-232 of the computer. This connector is used for both data transmission and for programming the controller using the free software distribution firmware PonyProg2000. The board has the chip DD3 (ADM202EARN) of interface level converter RS-232. Frequency of the microcontroller is given by the quartz resonator ZQ1 8 MHz. The board power is carried out by an external stabilized voltage supply +5V, which is connected to the connector XS3. SW1 button is used to turn on and turn off the power. Glowing LED VD2 indicates that power is on.

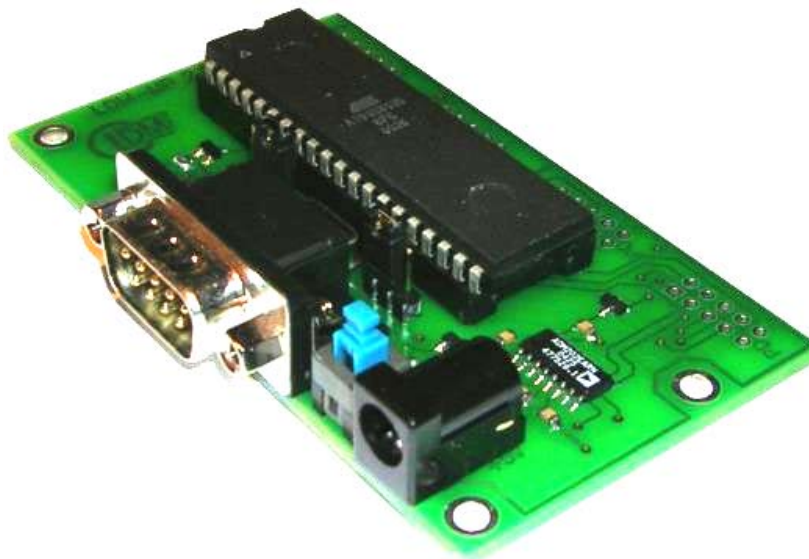


Fig.1. General view of the development board LDM-MP 2.04

The board has two jumpers. XS4 – is used for selecting a reference voltage controller ADC. You can use as the reference voltage the supply voltage controller +5 V, and the voltage from 0 to +5 V on the user's choice.

On default a jumper is set to use the supply voltage of the controller. XS1 – is used to set the mode while sending/receiving data between the computer and the controller via UART. If UART is not used, you can leave the jumper in the initial position and not change the position of it. During the programming a jumper must be returned to its initial position.

The development board is intended for prototyping devices designed on microcontrollers ATmega8535 (ATmega16 or ATmega32).

The absence of the prototypical field allows using additional prototyping boards required dimensions and types, both large and small, as well as without using prototypical boards in the case of surface-mounted components in their small numbers. The absence of the prototypical field significantly reduces the size of the final device that allows placing them in small packages. Use of LDM-MP 2.04 allows minimizing the implementation time of the product on the market.

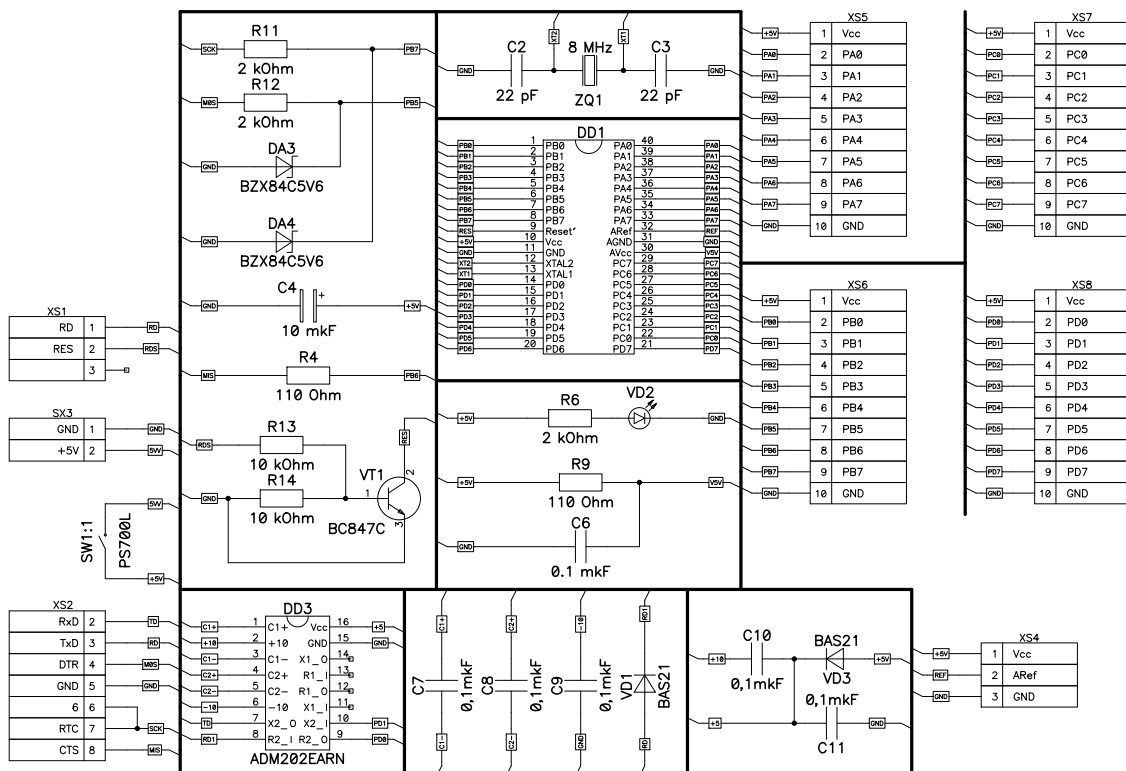


Fig.2. The electrical scheme of LDM-MP 2.04

Microcontroller architecture of Atmel AVR ATmega8535, 16 MHz, FLASH 8K, SRAM 512 bytes, EEPROM 512 bytes, 10-bit unipolar ADC with 8 analog channels in the range of 0...+5 V, 32 programmable pins in/out.

You can install other controllers:

ATmega16 - 16 MHz, FLASH 16K, SRAM 1K, EEPROM 512 bytes;

ATmega32 - 16 MHz, FLASH 32K, SRAM 2K, EEPROM 1K.

Controller pins and bus power are connected to the border of the board and allow setting connectors of the type IDC-10MS:

- XS5 – PortA;
- XS6 – PortB;
- XS7 – PortC;
- XS8 – PortD.

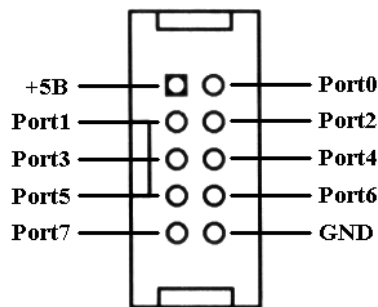


Fig.3. The scheme of pinouts of controller ports

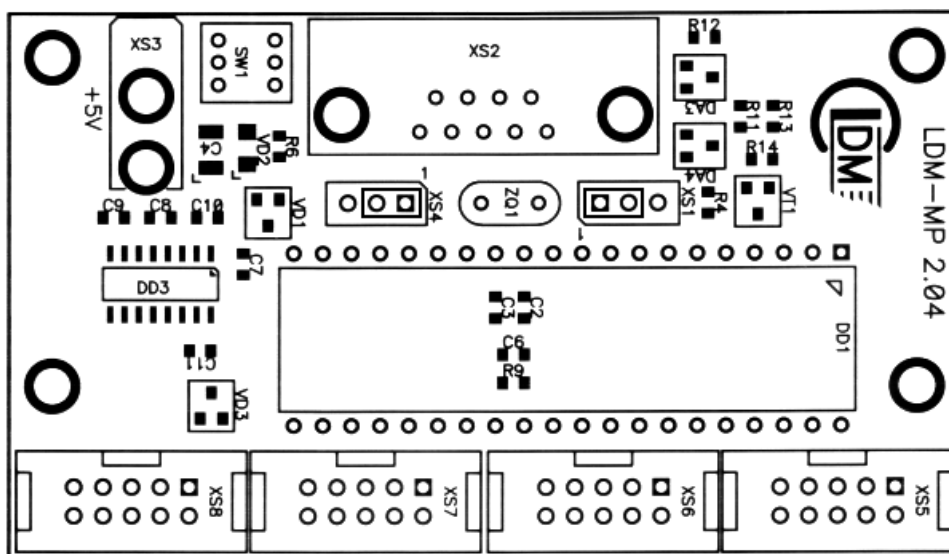


Fig.4. External view of the printing board LDM-MP 2.04

Packaging arrangements:

- The development board;
- Description of the development board;
- The compiler CodeVisionAVR 1017;
- Description of the compiler CodeVisionAVR;
- The program for the controller firmware PonyProg2000;
- Description of the controller;
- Program examples;
- The manual of step-training of the controllers programming.