The Development Board is a printed circuit board, size 130x91x15 mm and prototypical field 91x52 mm (hole pitch 2.54 mm) with installed the 32-bit microcontroller AT91SAM7X128 or AT91SAM7X256 (DD1) of the company ATMEL in the housing LQFP-100 with flash memory and full-speed USB-connection.

AT91SAM7X256, AT91SAM7X128 – are representatives of series of highly integrated microcontrollers ATMEL based on 32-bit processor ARM7. They have 256/128 kbytes of fast-acting, high flash-memory and 64/32 kbytes of static RAM, an extensive set of peripheral devices, including 802.3 Ethernet MAC, controller CAN, the hardware accelerator of encryption AES 128 and the triple encryption data system. A complete set of system functions minimizes the number of external components. The system controller AT91SAM7X includes a reset controller that controls the sequence of actions during energizing. Functioning correctness is controlled by built-in detector of the power supply reduction and watchdog timer clocked integrated RC-generator.

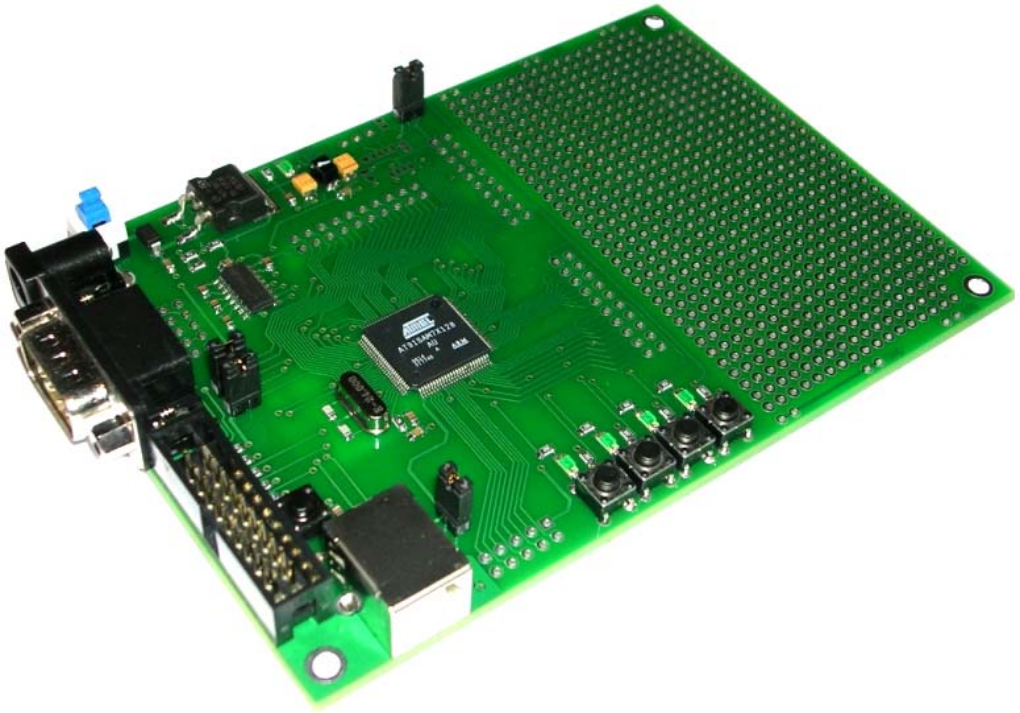


Fig. 1. General view of the development board.

The development board is intended for prototyping devices designed on microcontrollers AT91SAM7X, and also for assembly completed devices by mounting necessary components on the prototypical field of the board. Use of the kit allows minimizing the implementation time of the product on the market.

The board has the 9-contact connector DB-9 (XS3) to connect USART using the «direct» cable to the consecutive port RS-232 and also it is supported attachment pads for connector IDC-10MS (XS4) of interface DUSART. The board has a driver of interface RS232 ADM3202ARN (DD2).

Power is carried out from the external stabilized power supply 9...12 V (XS1).

Frequency of the microcontroller is given by the quartz resonator ZQ1 24 MHz. SW6 button is used to turn on and off the external power supply. LED VD2 indicates power-on state.

SW1 button (RESET) intended for hardware reset to restart the controller.

In-System Programming of the controller is carried out via interface JTAG-ICE with using the programmer J-LINK USB-to-JTAG of the company IAR Systems or analog devices. J-LINK is connected by the loop to the standard connector IDC-20MS (XS2).

The board has a connector for USB interface (XS5).

Jumper JP4 is used to select the level of the ADC reference voltage. With established jumper there is used the power supply of the microcontroller. You can connect to the jumper a reference voltage different from the net of microcontroller instead of a bridge.

The board has a space for the installation of the driver CAN of the interface DD3 (MAX3051ESA) and connector XS11 (WF-3).

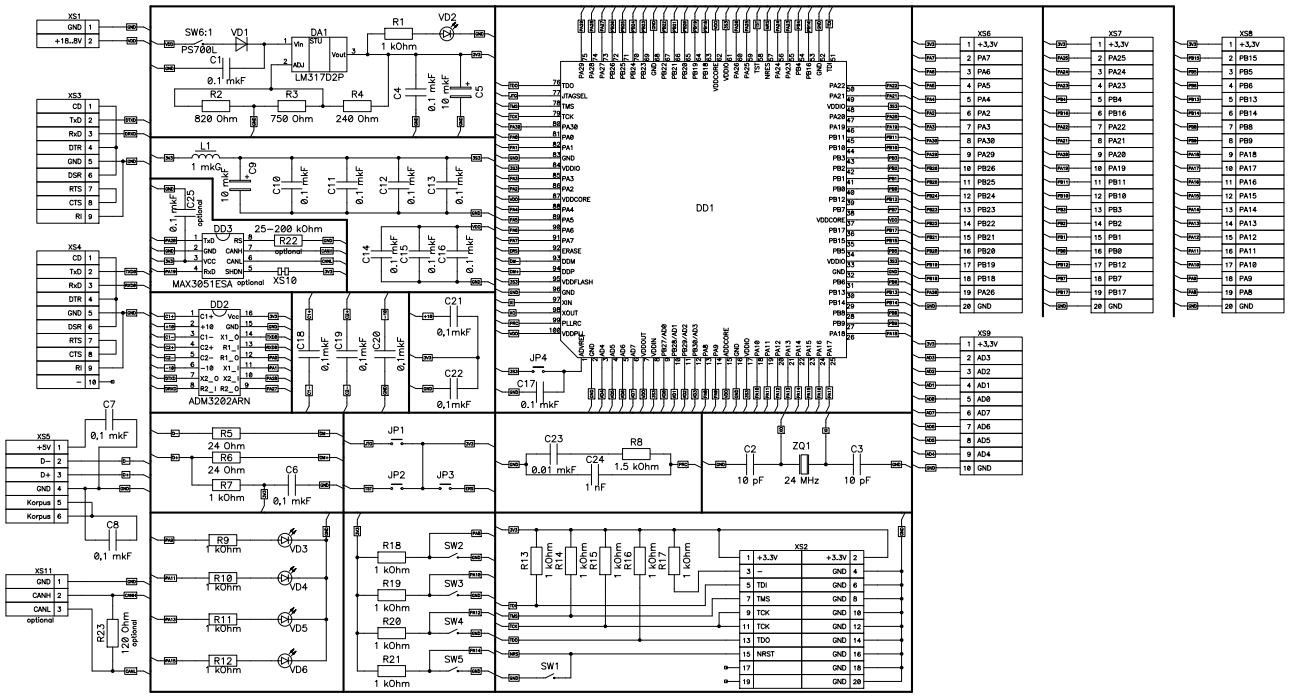
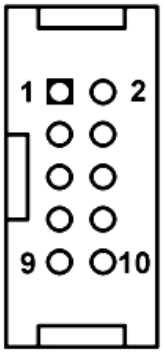
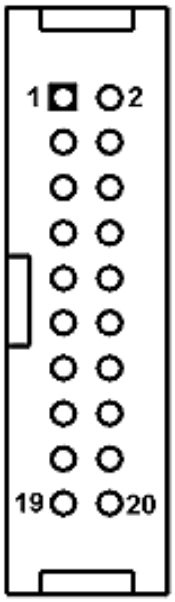


Fig. 2. The electrical scheme.

There are four LEDs VD3-VD6 and four buttons SW2-SW5, on the board which are connected with controller leads. It is intended for simplification of designing and can be useful during the test of project.

Controller leads and bus power are connected to the prototyping field and allow setting connectors of types IDC-20MS and IDC-10MS:

XS9	1 – +3.3B
	2 – AD3
	3 – AD2
	4 – AD1
	5 – AD0
	6 – AD7
	7 – AD6
	8 – AD5
	9 – AD4
	10 – GND

	XS6	XS7	XS8
	1 – +3.3B	1 – +3.3B	1 – +3.3B
	2 – PA7	2 – PA25	2 – PB15
	3 – PA6	3 – PA24	3 – PB5
	4 – PA5	4 – PA23	4 – PB6
	5 – PA4	5 – PB4	5 – PB13
	6 – PA2	6 – PB16	6 – PB14
	7 – PA3	7 – PA22	7 – PB8
	8 – PA30	8 – PA21	8 – PB9
	9 – PA29	9 – PA20	9 – PA18
	10 – PB26	10 – PA19	10 – PA17
	11 – PB25	11 – PB11	11 – PA16
	12 – PB24	12 – PB10	12 – PA15
	13 – PB23	13 – PB3	13 – PA14
	14 – PB22	14 – PB2	14 – PA13
	15 – PB21	15 – PB1	15 – PA12
	16 – PB20	16 – PB0	16 – PA11
	17 – PB19	17 – PB12	17 – PA10
	18 – PB18	18 – PB7	18 – PA9
	19 – PA26	19 – PB17	19 – PA8
	20 – GND	20 – GND	20 – GND

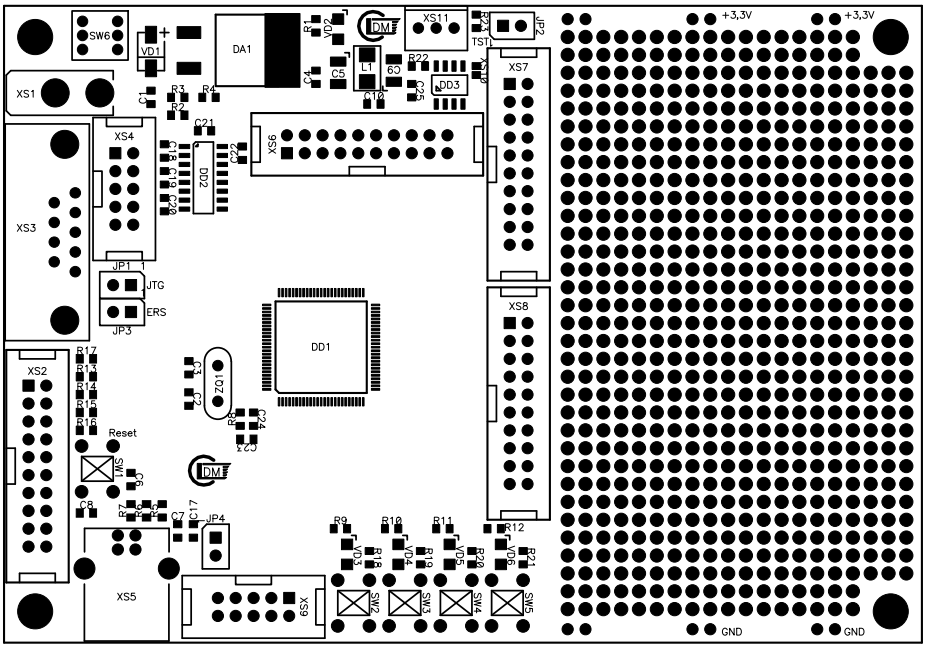


Fig. 3. External view of the printing board.

Packaging arrangements:

- The development board;
- Description of the development board;
- The compiler IAR;
- Description of the controller.