

Product introduction

The BJ8M610A is a single chip 8-bit MCU based on RISC architecture with built-in 4K×16-bit MTP program memory. It is manufactured using an advanced CMOS process with low power consumption characteristics and low operating voltage capability. The chip integrates a multi-channel 12-bit A/D converter, 4-way amplifier/comparator circuit, and 3 timer modules to provide timing, counting, and PWM functions. Internal watchdog, low voltage reset, low voltage detection functions ensure the reliable operation of the system. At the same time, it provides a rich clock options, including internal fast clock, internal slow clock, external crystal clock and external input clock, so that users can use flexibly. In addition, the MCU includes rich IO resources and can be widely used in various products.

Application field

Consumer electronics, small appliances, etc.

CPU characteristics

RISC architecture, 1T kernel.
8 layers of hardware stack.

Store

Program memory: 4K x 16bits.
Data RAM: 256 x 8bits.
EEPROM: 128byte.

Instruction set

68 instructions.

Interrupt

Unique interrupt entry address (08h).
15 interrupt source(T0/T1/T2/INT0.1/LVD/ADC/PWM0.1.2.3/CMP0.1.2.3).

I/O port

There are 18 I/O ports, all of which can be programmed independently.
All pins are input or output ports.
All the pins are built with pull-up and pull-down resistance ports.
Open drain: P1, P2.
Wake up function: P1, P2, P00.
2 external interrupt: P15 and P17, the trigger mode is the level mode. Among them, P15(P13 or P00) is interrupted by the external interrupt of 1 P17(P01).
2 large current drivers: P13,P14 is a high and low level drive capability of 100mA.
All the internal resistance values of all the pins are the same, and you can do 1/2 VDD driving the LCD.

Timer/counter

Timer/counter 0

8-bit basic timer/counter.

Supports the pre-division function.

Timer/counter 1

Automatic loading of 16-bit timer/counter.

4 PWM channels, support complementary output and dead zone can be matched.

Supports the pre-division function.

The counter register is configurable.

Timer/counter 2

Automatic loading of 16-bit timer/counter.

Supports the pre-division function.

16+3 channel 12-bit ADC

16 external input channels.

ADC2(P02), ADC7(P16) supports IO input to the type of the resistance voltage, accuracy 1%.

3 internal channels (internal reference voltage, internal VDD/4, internal GND).

AD Reference voltage: VDD, external reference voltage, internal reference voltage (1V, 2V, 3V, 4V).

Amplifier/comparator

4 amplifier (OPA), support for full guidance.

All 4 amplifiers can be used as comparators (CMP), and the output can be configured to draw the pin.

Watchdog timer

Supports the pre-division function.

Can configure overflow reset or wake up.

Clock system

Internal RC oscillator (master clock)

Frequency: 1MHz, 2MHz, 8MHz, 16MHz, error: $\pm 1\%$.

Internal RC oscillator (WDT clock)

Frequency: 128KHz, error: $\pm 3\%$.

External crystal oscillator can be configured

Supports 32768Hz to 16MHz external crystal oscillator.

Supports crystal and ceramic oscillators.

External RC oscillator

Frequency: 100KHz~10MHz, error: $\pm 5\%$.

External clock source

Operating frequency: 32768Hz~16MHz.

Can work with dual clocks

Oscillator can be divided frequency: 1, 2, 4, 8.

Working mode

Common mode: Both high-speed and low-speed clocks work properly.

Low-speed mode: Only the low-speed clock works properly.

STOP mode: All clocks stop working.

IDLE mode: The CPU stops working and peripherals can work.

Low voltage reset (LVR)

Low voltage reset options: 1.8V, 2.3V, 2.7V, 3.0V, 3.3V, 3.6V, 3.9V.

Reset time: 140us, 6.5ms, 18ms, 72ms, 228ms.

Low Voltage Detection (LVD)

Low voltage detection options: 2.2V, 2.4V, 2.6V, 2.9V, 3.2V, 3.8V, 4.1V.

Can be configured to generate interrupts.

Low power mode

The power consumption in STOP mode is less than 1.2uA.

I/O, level trigger mode for external interrupts, RTC mode for timer 0, and watchdog wakeup.

Operating temperature range

-40°C ~ +85°C.

Voltage operating range

1.8V~5.5V.

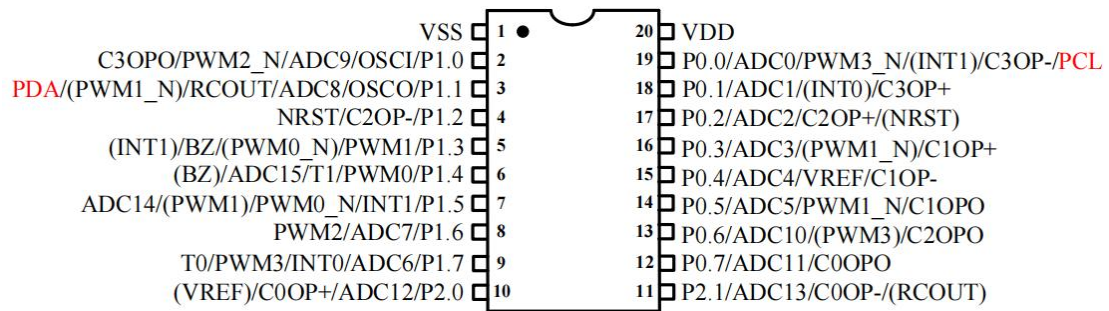
Anti-interference capability

ESD: Better than $\pm 4000V$.

EFT: better than $\pm 4000V$.

Pin assignment diagram

SOP20



SOP16

