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### What is "[Embedded - Microcontrollers](#)"?

"[Embedded - Microcontrollers](#)" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

### Applications of "[Embedded - Microcontrollers](#)"

#### Details

|                            |   |
|----------------------------|---|
| Product Status             | Active  |
| Core Processor             | PIC   |
| Core Size                  | 8-Bit   |
| Speed                      | 4MHz  |
| Connectivity               | -   |
| Peripherals                | POR, WDT  |
| Number of I/O              | 5   |
| Program Memory Size        | 768B (512 x 12)   |
| Program Memory Type        | OTP   |
| EEPROM Size                | -   |
| RAM Size                   | 25 x 8  |
| Voltage - Supply (Vcc/Vdd) | 3V ~ 5.5V   |
| Data Converters            | -   |
| Oscillator Type            | Internal  |
| Operating Temperature      | -40°C ~ 125°C (TA)  |
| Mounting Type              | Through Hole  |
| Package / Case             | 8-DIP (0.300", 7.62mm)  |
| Supplier Device Package    | 8-PDIP  |
| Purchase URL               | <a href="https://www.e-xfl.com/product-detail/microchip-technology/pic12c508a-04e-p">https://www.e-xfl.com/product-detail/microchip-technology/pic12c508a-04e-p</a> |

## Active Errata List

- During UART Reception, Clearing REN May Generate Unexpected IT
- Timer 2 – Baud Rate Generator – Long Start Time
- Stretch MOVX Does Not Work
- Timer0/1 – Extra Interrupt

## Errata History

| Lot Number | Errata List |
|------------|-------------|
| All        | 1, 2, 3, 4  |

## Errata Descriptions

### 1. During UART Reception, Clearing REN May Generate Unexpected IT

During UART reception, if the REN bit is cleared between start bit detection and the end of reception, the UART will not discard the data (RI is set).

#### Workaround

Test REN at the beginning of Interrupt routine just after CLR RI, and run the Interrupt routine code only if REN is set.

### 2. Timer 2 – Baud Rate Generator – Long Start Time

When Timer 2 is used as a baud rate generator, TH2 is not loaded with RCAP2H at the beginning, then UART is not operational before 10,000 machine cycles.

#### Workaround

Add the initialization of TH2 and TL2 in the initialization of Timer 2.

### 3. Stretch MOVX Does Not Work

When setting M0 bit in AUXR SFR (08Eh), the  $\overline{RD}$  or  $\overline{WR}$  pulse on a MOVX instruction on external memory is not 30 XTAL length but always standard 6 XTAL length. Thus slow external peripherals mapping in the XDATA space could not work properly.

#### Workaround

None.

### 4. Timer0/1 – Extra Interrupt

When Timer0 is in X1 mode and Timer1 in X2 mode and vice versa, extra interrupt may randomly occur for Timer0 or Timer1.

#### Workaround

Use the same mode for the two timers..



80C51 MCUs

AT89C51RB2

AT89C51RC2

Errata Sheet





## Active UART Bootloader Errata List

- API program Data Byte - Incorrect Return Value
- API program Data Page - Incorrect Return Value

## UART Bootloader Errata History

| Version Number                | Errata List |
|-------------------------------|-------------|
| 0.1 (1.0.1 displayed by FLIP) | 1,2         |

## UART Bootloader Errata Description

### 1. API program Data Byte - Incorrect Return Value

The PROGRAM DATA BYTE API returns the '0xXX' instead of 0x00 in ACC, but the programmign operation is sucess-fully completed.

### 2. API program Data Page- Incorrect Return Value

The PROGRAM DATA PAGE API returns the '0xXX' instead of 0x00 in ACC, but the programmign operation is sucess-fully completed.



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