

## USART data reception error due to narrowed stop bit

**Questions:**

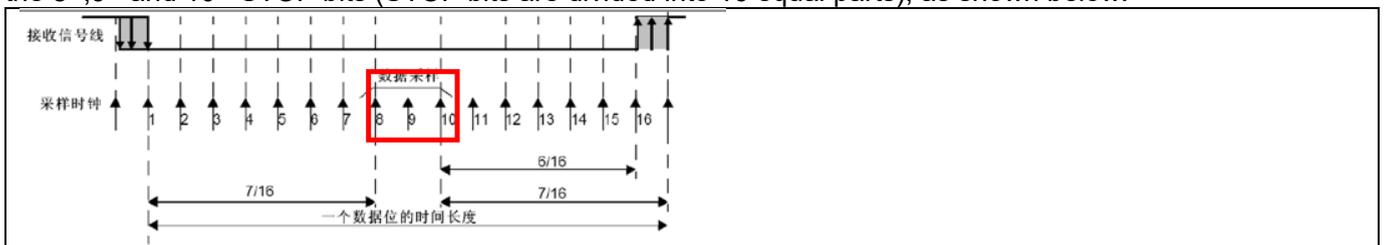
The stop bit sent from other module to MCU is narrowed down, as shown below:



In this case, the received data on USART will be 100,180,100,180,100,1FF,1FF..... (one data is missed: 100), indicating data reception error.

**Answer:**

The reason for this is that the USART judges whether the received stop bit is correct or not by sampling data on the 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> STOP bits (STOP bits are divided into 16 equal parts), as shown below:



Without considering extreme restrictions such as USART frame error or noise error, AT32 MCU is able to receive the start bit of the next frame on the 11<sup>th</sup> stop bit. So if the stop bit is narrowed, the next data will be lost.

**Solution:**

Adjust the USART baud rate to its allowable maximum level so that AT32 MCU can determine the start bit of frame as soon as possible, or eliminate the problem from the transmit side.

**Type:** MCU applications

**Applicable products:** All AT32 MCUs

**Main function:** USART

**Minor function:** None

**Document revision history**

Date	Revision	Changes
2022.2.16	2.0.0	Initial release

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