

Recommendations on reading USB RAM buffer

Questions:

Simultaneous access of USB RAM buffer by hardware and software causes data error (data dropout or disorder)

How does data error occur?

1. Set USB Valid by software
2. Disable main interrupt switch. USB receives data and moves them to RAM Buffer. USB signals NAK
3. USB interrupt cannot be handled or responded. In this case, set USB valid again by software, and enable main interrupt switch.
4. Then USB interrupt is generated. Software reads and receives data in RAM Buffer. But at this point, the USB remains in Valid state, so it still receives data and moves them to RAM Buffer during this period. In this condition, data error (data dropout or disorder) may occur.

Answer:

Software is used to handle data received by USB before setting USB Valid, in order to avoid concurrent access of USB receive buffer by hardware and software.

Type: MCU application

Applicable products: AT32 series with USB

Main function: USB

Minor function: None

Document revision history

Date	Revision	Changes
2022.2.16	2.0.0	Initial release

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