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RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RZ*-A0142A/E	Rev.	1.00
Title	Note on High-speed OUT transfer from the RZ/A2M USB2.0 host module.		Information Category	Technical Notification		
Applicable Product	RZ/A2M Group	Lot No.	Reference Document	RZ/A2M Group User's Manual: Hardware Rev.5.00 (R01UH0746EJ0500)		
		All				

This document is a note on High-speed OUT transfers from the RZ/A2M USB2.0 host module.

1   Note

Wrong data may be transferred when doing High-speed Control OUT, Bulk OUT, and Isochronous OUT transfers.

2   Measures

 2.1   Make any of following settings when doing High-speed Control OUT Transfers.

  2.1.1   Disable Asynchronous Schedule Park Mode.

   (i.e. Set "Asynchronous Schedule Park Mode Enable" bit of USBCMD register to 1'b0)

  2.1.2   Set "Total Bytes to Transfer" field in Queue Element Transfer Descriptor (qTD) to equal or less than the maximum packet size.

 2.2   Make any of following settings when doing High-speed Bulk OUT Transfers.

  2.2.1   Disable Asynchronous Schedule Park Mode.

   (i.e. Set "Asynchronous Schedule Park Mode Enable" bit of USBCMD register to 1'b0)

  2.2.2   Set "Total Bytes to Transfer" field in Queue Element Transfer Descriptor (qTD) to equal or less than the maximum packet size.

  2.2.3   Adjust the Bφ frequency and the number of bus masters competing with USB2.0 host module so that the bus bandwidth of the USB2.0 host module is at least 240 MB/s. (Note.1)

 2.3   Make the following settings when doing Highband Transfers of High-speed Isochronous OUT Transfers. (Note.2)

  2.3.1   Adjust the Bφ frequency and the number of bus masters competing with USB2.0 host module so that the bus bandwidth of the USB2.0 host module is at least 240 MB/s. (Note.1)

(Note.1) If Bφ=132MHz and 4 bus masters including USB2.0 host module, the bus bandwidth of the South main bus 2 that USB2.0 host module can use is 240MB/s or more.

132MHz x 8Byte / 4(masters) = 264MB/s

(Note.2) This measure is not necessary for non-Highband transfers.

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