RENESAS TECHNICAL UPDATE

1753, Shimonumabe, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8668 Japan
Renesas Electronics Corporation

Product Category	MPU/MCU			Document No.	TN-RZ*-A004A/E	Rev.	1.00
Title	RZ/A Series: Notes about LIN interface			Information Category	Technical Notification		
Applicable Product	See following	Lot No.		Reference Document	See following		
		All					

In RZ/A1H Group, RZ/A1M Group, and RZ/A1L Group, there are notes on two issues. A specification discrepancy will be fixed in the next version of User's Manual, and several bugs are found and the countermeasures are recommended for the bugs. According to this update, relevant manuals will be revised.

Applicable products and relevant documents

Applicable products		Relevant documents	Rev.	Document number
Series	Group			
RZ/A	RZ/A1L	RZ/A1L Group User's Manual: Hardware	Rev 1.00	R01UH0437EJ0100
	RZ/A1M(Note), RZ/A1H	RZ/A1H Group User's Manual: Hardware	Rev 1.00	R01UH0403EJ0100

(Note) RZ/A1M is planned to be added in the next revision of User's Manual.

■ Contents of this technical update

1) Specification change in LIN interface (LIN Slave Mode function isn't supported)

2) Restriction of LIN interface usage

2-1) Restriction about LIN self-test mode in LIN Master Mode function

2-2) Restriction about baud rate setting in LIN Master Mode function

2-3) Restriction about frame separate mode in LIN Master Mode function

1) Specification change in LIN interface

LIN Slave Mode function isn't supported.

This is decided as common specification in RZ/A1H Group, RZ/A1M Group and RZ/A1L Group.

RZ/A1H Group User's Manual Rev1.00 has published according to this specification, including RZ/A1M Group.

RZ/A1L Group User's Manual Rev2.00 will be revised according to this specification.

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2)   Restriction of LIN interface usage

2-1) Restriction about LIN self-test mode in LIN Master Mode function

● Bug condition and Phenomenon

   When Response Field Length is set to Zero in LIN self-test mode.

   There is a possibility that the communication terminates abnormally.

● Restrictions

   Response Field Length should be larger than Zero in LIN self-test mode.

2-2) Restriction about baud rate setting in LIN Master Mode function

● Bug condition and Phenomenon

  (1) When RLN3nLBRP0 and/or RLN3nLBRP1 register is set to 00H,

      The setting in LPRS[2:0] bits in RLN3nLWBR register is disregarded, treated as if 3'b000 (1/1) is set.

  (2) When LPRS[2:0] bits in RLN3nLWBR register is set to 3'b010～3'b111,

      There is a possibility that the start bit sampling timing shift from the proper position beyond the tolerance.

  (3) When the division ration of LIN communication clock from LIN system clock (fLIN) is smaller than 9,

      And, timeout error and response transmission/reception start (write 1 to RTS bit in RLN3nLTRC register) occur simultaneously,

      The response transmission terminates normally, but the RTS bit doesn't retain 1 during the transmission.

● Restrictions

   LPRS[2:0] bits in RLN3nLWBR register should be set to 3'b000 or 3'b001,

   And the division ration of LIN communication clock from LIN system clock (fLIN) should be equal or larger than 9.

   The applicable combination is as follows:

RLN3nLWBR LPRS[2:0]	RLN3nLBRP0、RLN3nLBRP1
3'b000	08H to FFH
3'b001	04H to FFH

2-3) Restriction about frame separate mode in LIN Master Mode function

● Bug condition and Phenomenon

   When using frame separate mode,

   And, an error and response transmission/reception start (write 1 to RTS bit in RLN3nLTRC register) occur simultaneously,

   The response transmission/reception bit retains 1, which should be cleared by error occurrence.

   This status causes unexpected start of response transmission/reception, triggered by the next header transmission start operation.

   The response transmission/reception bit consist of two portions: (A) readable/writable RTS bit in RLN3nLTRC register,

   and (B) internal bit which controls LIN sequencer. In this status of a problem, (A) is cleared (0 readable), but (B) isn't cleared.

● Restrictions

   The frame separate mode usage is prohibited.

   There is no effective countermeasures by software, because the status of a problem can't be recognized by software.

   Reset by LIN Reset mode and Restart of LIN interface is mandatory in order to cancel the status of problem.

End of document

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