

# RENESAS TECHNICAL UPDATE

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Product Category	MPU & MCU	Document No.	TN-RL*-A0091A/E	Rev.	1.00
Title	Notes on LIN Self-Test Mode of LIN / UART Module (RLIN3)		Information Category	Technical Notification	
Applicable Product	RL78/F13, RL78/F14, RL78/F15	Lot No.	Reference Document	User's Manual: Hardware for Applicable Products	
		All lot			

Correct the usage condition for LIN self-test mode in the User's Manual: Hardware.

- Explanation of corrections in the LIN self-test mode.  
The corrections are shown in red.

## [After]

### 17.6 LIN Self-Test Mode

In the LIN self-test mode, the LIN/UART module operates at the highest baud rate regardless of the setting of the baud rate generator. The baud rate is <frequency of the LIN communications clock source>/16 bps regardless of the settings of the baud rate related registers (the NSPB bit in the LWBRn register must be set to 0000b or 1111b. **And, the LPRS bit in the LWBRn register must be set to 000b.**)

#### 17.6.2 Transmission in LIN Master Self-Test Mode

- Set registers related to the baud rate, noise filter, and interrupt output.

LWBRn register = 0000**000**x**b**

LBRPn0 register = xxxxxxx**b** <sup>Note 1</sup>

LBRPn1 register = xxxxxxx**b** <sup>Note 1</sup>

LMDn register = 00xxxx**00b** <sup>Note 1,3</sup>

Note 1. The following register settings do not affect the operations in LIN self-test mode. Therefore, setting them is not mandatory.

LBRPn0 register, LBRPn1 register, and LCKS bits in LMDn register

#### 17.6.3 Reception in LIN Master Self-Test Mode

- Set registers related to the baud rate, noise filter, and interrupt output.

LWBRn register = 0000**000**x**b**

LBRPn0 register = xxxxxxx**b** <sup>Note 1</sup>

LBRPn1 register = xxxxxxx**b** <sup>Note 1</sup>

LMDn register = 00xxxx**00b** <sup>Note 1,3</sup>

Note 1. The following register settings do not affect the operations in LIN self-test mode. Therefore, setting them is not mandatory.

LBRPn0 register, LBRPn1 register, LCKS bits in LMDn register, and IBS bits in LSCn register

#### 17.6.4 Transmission in LIN Slave Self-Test Mode

- Set registers related to the baud rate, noise filter, and interrupt output.

LWBRn register = 0000**0000**b

LBRPn0 register = xxxxxxx**b** <sup>Note 1</sup>

LBRPn1 register = xxxxxxx**b** <sup>Note 1</sup>

LMDn register = 00xxxx**11b** <sup>Note 4</sup>

Note 1. The following register settings do not affect the operations in LIN self-test mode. Therefore, setting them is not mandatory.

LBRPn0 register, and LBRPn1 register

**17.6.5 Reception in LIN Slave Self-Test Mode**

- Set registers related to the baud rate, noise filter, and interrupt output.

LWBRn register = 0000000b

LBRPn0 register = xxxxxxxxb <sup>Note 1</sup>

LBRPn1 register = xxxxxxxxb <sup>Note 1</sup>

LMDn register = 00xxxx11b <sup>Note 4</sup>

Note 1. The following register settings do not affect the operations in LIN self-test mode. Therefore, setting them is not mandatory.

LBRPn0 register, LBRPn1 register, and IBS bits in LSCn register

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LBRPn0 register = xxxxxxxxb <sup>Note 1</sup>

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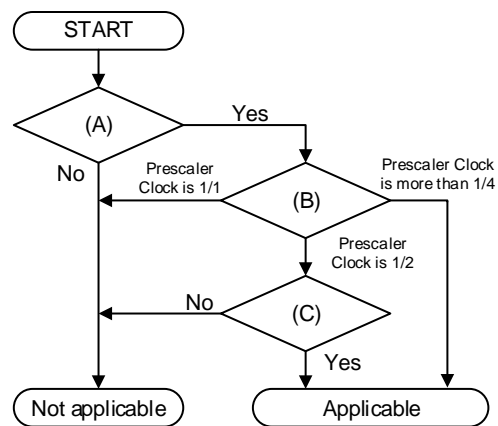
LMDn register = 00xxxx11b <sup>Note 4</sup>

Note 1. The following register settings do not affect the operations in LIN self-test mode. Therefore, setting them is not mandatory.

**LPRS bits in LWBRn register**, LBRPn0 register, LBRPn1 register, and IBS bits in LSCn register

2. Judgment Flow

Judgement	Details
(A)	Using LIN self-test mode function • LSTCn.LSTM = 1
(B)	What is the prescaler clock select in LIN self-test mode? • LWBRn,LPRS = 000B (Prescaler clock is 1/1.) • LWBRn.LPRS = 001B (Prescaler clock is 1/2.) • Other than those above (Prescaler clock is more than 1/4.)
(C)	Using noise filter setting in LIN self-test mode • LMDn.LRDNFS = 0 (The noise filter is enabled.) • LMDn.LRDNFS = 1 (The noise filter is disabled.)



3. Reference Document

Product	Manual
RL78/F13	R01UH0368EJ0210
RL78/F14	R01UH0368EJ0210
RL78/F15	R01UH0559EJ0100

Fin.