

RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-78K-A001A/E	Rev.	1.00
Title	Errata sheet 78K0/Lx3-M		Information Category	Technical Notification		
Applicable Product	78K0/Lx3-M { μ PD78F8052, μ PD78F8053, μ PD78F8054, μ PD78F8055 }		Lot No.	Reference Document	78K0/Lx3-M User's Manual: Hardware Rev.2.00 R01UH0020EJ0200 (Oct. 2010)	

I'll notify following corrections on a user's manual.

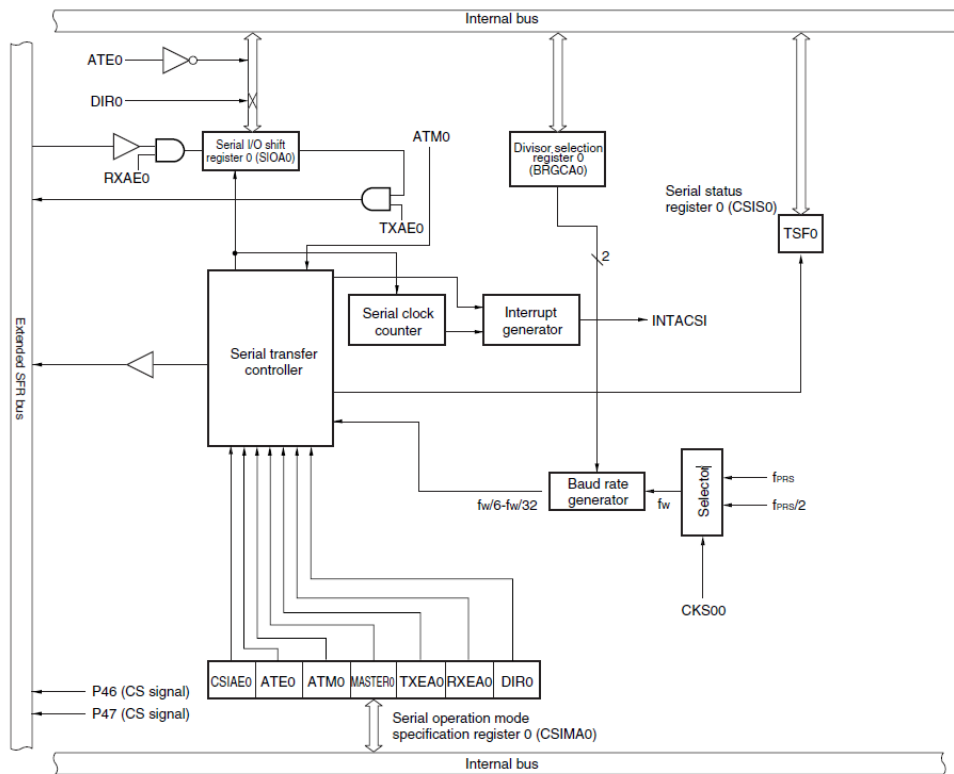
【Location of errors】

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p.441	CHAPTER 17 Figure 17-3.	(2)
p.657	CHAPTER 26 RESET FUNCTION Cautions 4.	(3)
p.740	CHAPTER 33 ELECTRICAL SPECIFICATIONS DC Characteristics(6/6) Notes 4.	(4)

[Description]

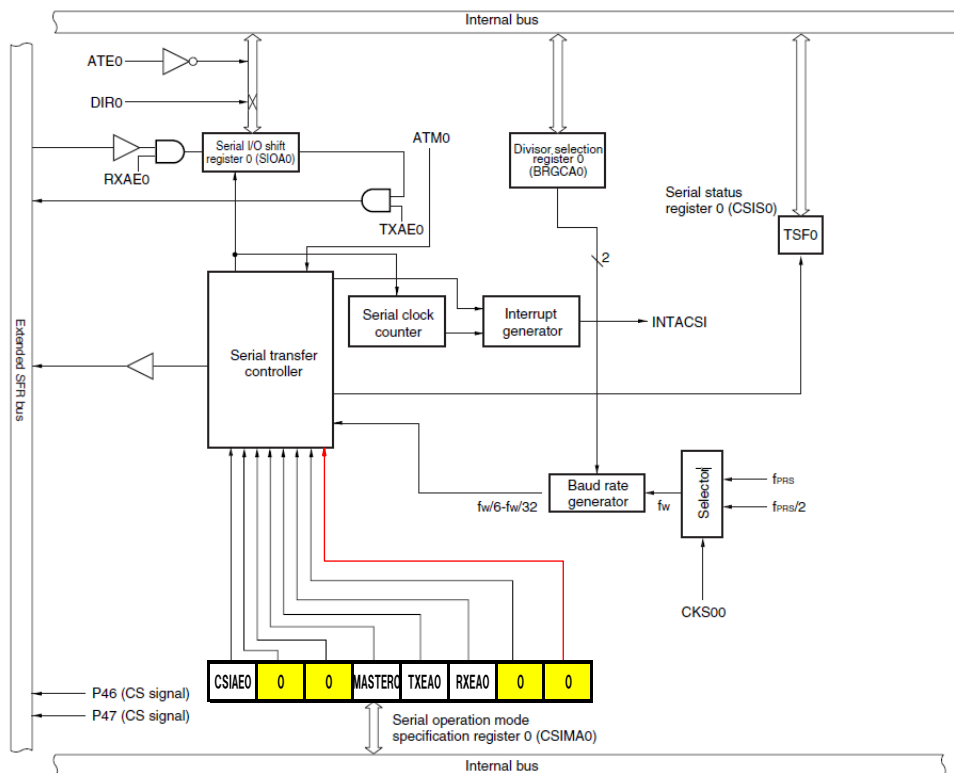
Error (1) CHAPTER 17 Figure 17-1.

Figure 17-1. Block Diagram of Extended SFR Interface



Correct(1)

Figure 17-1. Block Diagram of Extended SFR Interface



Error (2) CHAPTER 17 Figure 17-3.

Figure 17-3. Format of Serial Status Register 0 (CSIS0)

Address: FF91H After reset: 00H R/W^{Note 1}

Symbol	7	6	5	4	3	2	1	0
CSIS0	0	CKS00	0	0	0	0	0	TSF0

CSIAE0	Control of extended SFR interface operation enable/disable ^{Note 2}			
		f _{PRS} = 2 MHz	f _{PRS} = 5 MHz	f _{PRS} = 10 MHz
0	f _{PRS} ^{Note 3}	2 MHz	5 MHz	10 MHz
1	f _{PRS} /2	1 MHz	2.5 MHz	5 MHz

TSF0	Transfer status detection flag	
	0	<ul style="list-style-type: none"> • Bit 7 (CSIAE0) of serial operation mode specification register 0 (CSIMA0) = 0 • At reset input • At the end of the specified transfer
1	During data transfer	

Correct(2)

Figure 17-3. Format of Serial Status Register 0 (CSIS0)

Address: FF91H After reset: 00H R/W^{Note 1}

Symbol	7	6	5	4	3	2	1	0
CSIS0	0	CKS00	0	0	0	0	0	TSF0

CKS00	Control of extended SFR interface operation enable/disable ^{Note 2}			
		f _{PRS} = 2 MHz	f _{PRS} = 5 MHz	f _{PRS} = 10 MHz
0	f _{PRS} ^{Note 3}	2 MHz	5 MHz	10 MHz
1	f _{PRS} /2	1 MHz	2.5 MHz	5 MHz

TSF0	Transfer status detection flag	
	0	<ul style="list-style-type: none"> • Bit 7 (CSIAE0) of serial operation mode specification register 0 (CSIMA0) = 0 • At reset input • At the end of the specified transfer
1	During data transfer	

Error (3) CHAPTER 26 RESET FUNCTION Cautions 4.

- Cautions**
1. For an external reset, input a low level for 10 μs or more to the $\overline{\text{RESET}}$ pin.
 2. During reset input, the X1 clock, XT1 clock, internal high-speed oscillation clock, and internal low-speed oscillation clock stop oscillating. External main system clock input becomes invalid.
 3. When the STOP mode is released by a reset, the STOP mode contents are held during reset input. However, the port pins become high-impedance.
 4. Extended SFRs are not reset by internal resets. To reset an extended SFR, set P17 to 1, clear it to 0, and then set it to 1 again.

Correct(3)

- Cautions**
1. For an external reset, input a low level for 10 μ s or more to the $\overline{\text{RESET}}$ pin.
 2. During reset input, the X1 clock, XT1 clock, internal high-speed oscillation clock, and internal low-speed oscillation clock stop oscillating. External main system clock input becomes invalid.
 3. When the STOP mode is released by a reset, the STOP mode contents are held during reset input. However, the port pins become high-impedance.
 4. Extended SFRs are not reset by internal resets. To reset an extended SFR, clear P17 to 0, set it to 1, and then clear it to 0 again.

Error (4)

- Notes**
1. This includes only the current that flows through the watchdog timer (including the operating current of the 240 kHz internal oscillator). When the watchdog timer is operating, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{WDT} to the supply current (I_{DD1} , I_{DD2} , or I_{DD3}).
 2. This includes only the current that flows through the LVI circuit. When the LVI circuit is operating, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{LVI} to the supply current (I_{DD1} , I_{DD2} , or I_{DD3}).
 3. This includes only the current that flows through the successive approximation type A/D converter ($AV_{\text{REF-}}$ AV_{SS}). When the successive approximation type A/D converter is operating in operation mode or HALT mode, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{ADC1} to the supply current (I_{DD1} or I_{DD2}).
 4. This includes only the current that flows through the $\Delta\Sigma$ -type A/D converter (AV_{DD}). When the $\Delta\Sigma$ -type A/D converter is operating in operation mode or HALT mode, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{ADC2} to the supply current (I_{DD1} or I_{DD2}).
 5. This includes only the current that flows through the LCD controller/driver. Not including the current that flows through the LCD divider resistor. The current value of the 78K0/Lx3-M microcontrollers is obtained by adding the LCD operating current (I_{LCD1} or I_{LCD2}) to the supply current (I_{DD1} , I_{DD2} , or I_{DD3}).

Correct(4)

- Notes**
1. This includes only the current that flows through the watchdog timer (including the operating current of the 240 kHz internal oscillator). When the watchdog timer is operating, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{WDT} to the supply current (I_{DD1} , I_{DD2} , or I_{DD3}).
 2. This includes only the current that flows through the LVI circuit. When the LVI circuit is operating, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{LVI} to the supply current (I_{DD1} , I_{DD2} , or I_{DD3}).
 3. This includes only the current that flows through the successive approximation type A/D converter ($AV_{\text{REF-}}$ AV_{SS}). When the successive approximation type A/D converter is operating in operation mode or HALT mode, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{ADC1} to the supply current (I_{DD1} or I_{DD2}).
 4. This includes only the current that flows through the $\Delta\Sigma$ -type A/D converter ($AV_{\text{DD}}=3.9\text{mA}$, $LV_{\text{DD}}=4.2\text{mA}$). When the $\Delta\Sigma$ -type A/D converter is operating in operation mode or HALT mode, the current value of the 78K0/Lx3-M microcontrollers is obtained by adding I_{ADC2} to the supply current (I_{DD1} or I_{DD2}).
 5. This includes only the current that flows through the LCD controller/driver. Not including the current that flows through the LCD divider resistor. The current value of the 78K0/Lx3-M microcontrollers is obtained by adding the LCD operating current (I_{LCD1} or I_{LCD2}) to the supply current (I_{DD1} , I_{DD2} , or I_{DD3}).