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RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-SY*-A0049A/E	Rev.	1.00
Title	Errata for User's Manual regarding the IIC		Information Category	Technical Notification		
Applicable Product	Renesas Synergy™ S3A6 MCU Group	Lot No. All	Reference Document	S3A6 Microcontroller Group User's Manual Rev.1.20		

The specified Renesas Synergy S3A6 User's Manual has incorrect statements about the IIC.

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Incorrect

In slave mode, when a restart condition is detected (a start condition is detected with ICCR2.BBSY = 1 and ICCR2.MST = 0)

Correct

In slave mode, when a restart condition is detected (a restart condition is detected with ICCR2.BBSY = 1 and ICCR2.MST = 0)

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Incorrect

The NACKE bit specifies whether to continue or discontinue the transfer operation when NACK is received from the slave device in transmit mode. For normal operation, set this bit to 1.

Correct

The NACKE bit specifies whether to continue or discontinue the transfer operation when NACK is received ~~from the slave device~~ in transmit mode. For normal operation, set this bit to 1.

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Incorrect

The IIC can also set the AL flag to indicate the detection of arbitration loss during NACK transmission in master mode or during data transmission in slave mode.

Correct

The IIC can also set the AL flag to indicate the detection of arbitration loss during NACK transmission ~~in master mode~~ or during data transmission ~~in slave mode~~.

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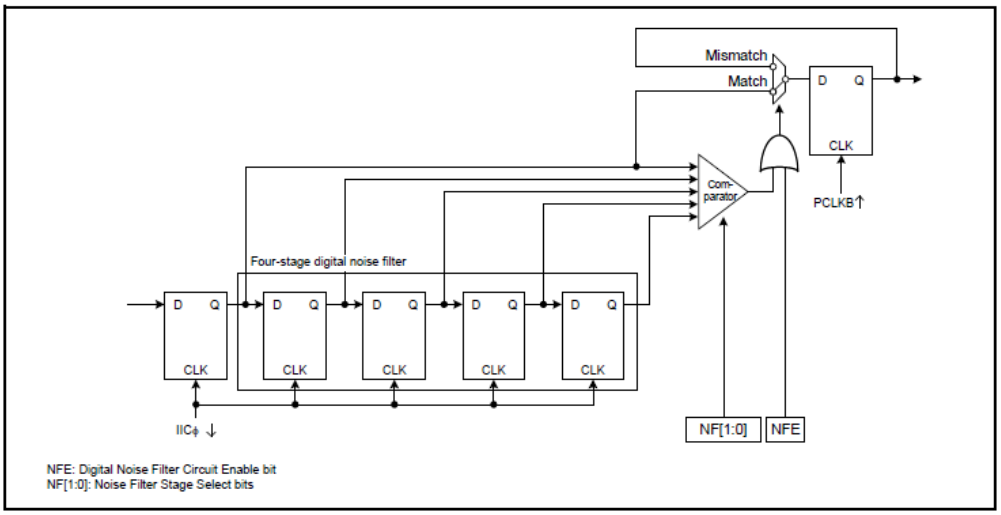
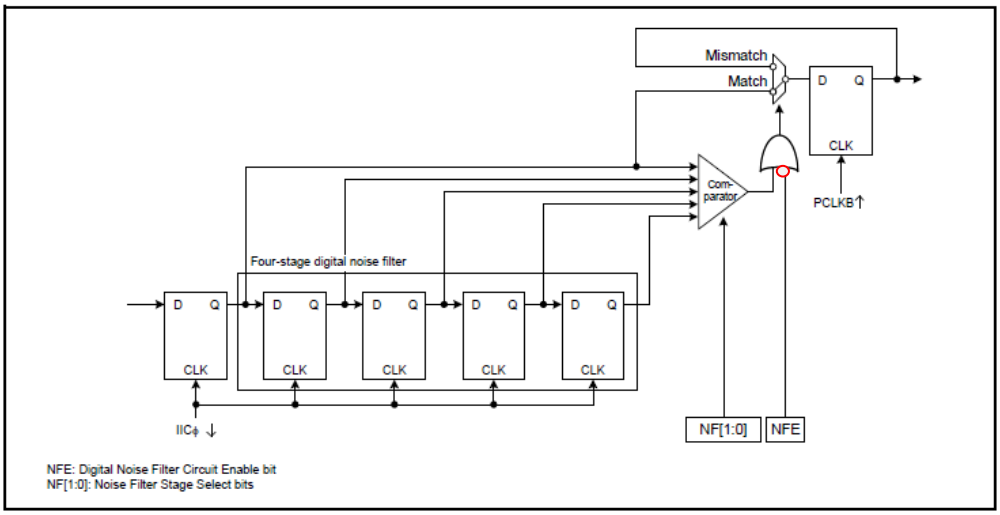
Incorrect Figure



Correct Figure



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Incorrect

The IIC module provides detection of device ID address in conformance with the I2C bus specification, Rev.03. When the IIC receives 1111 100b as the first byte after a start condition or restart condition is issued with the DIDE bit in ICSER set to 1, the IIC recognizes the address as a device ID, sets the DID flag in ICSR1 to 1 on the rising edge of the 8^{tth} SCL clock cycle when the following R/W# bit is 0, then compares the second and subsequent bytes with its own slave address.

Correct

The IIC module provides detection of device ID address in conformance with the I2C bus specification, Rev.03. When the IIC receives 1111 100b as the first byte after a start condition or restart condition is issued with the DIDE bit in ICSER set to 1, the IIC recognizes the address as a device ID, sets the DID flag in ICSR1 to 1 on the rising edge of the 9th SCL clock cycle when the following R/W# bit is 0, then compares the second and subsequent bytes with its own slave address.

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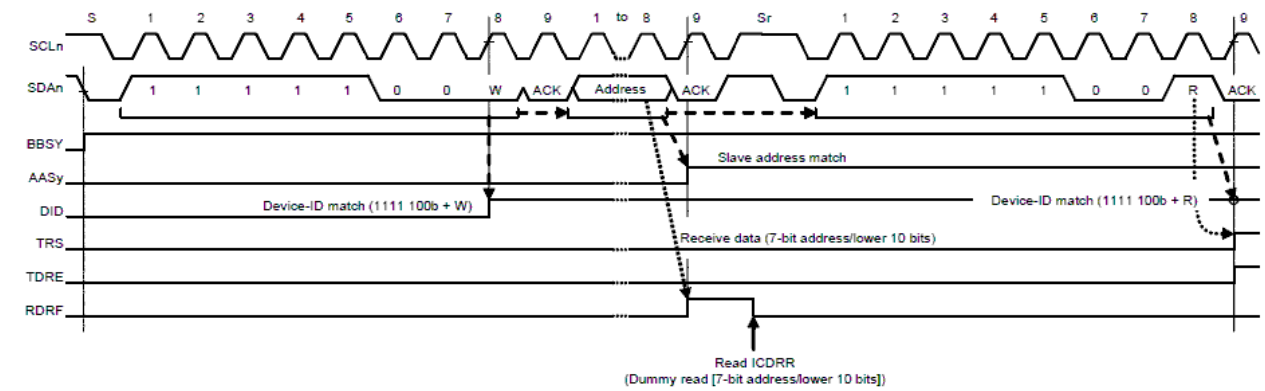
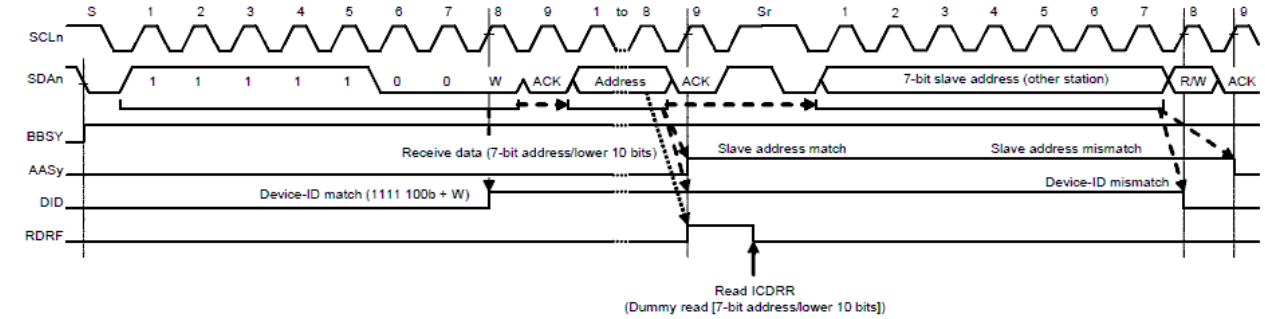
Incorrect Figure

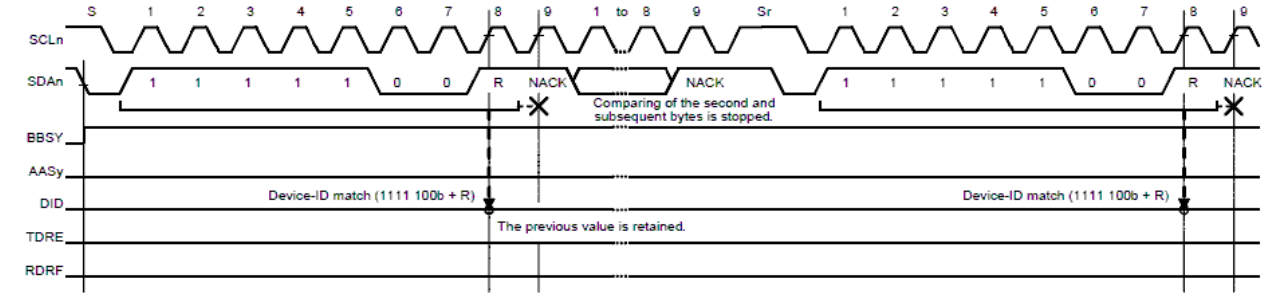
Device-ID reception



When address received after a restart condition is detected does not match thedevice-ID

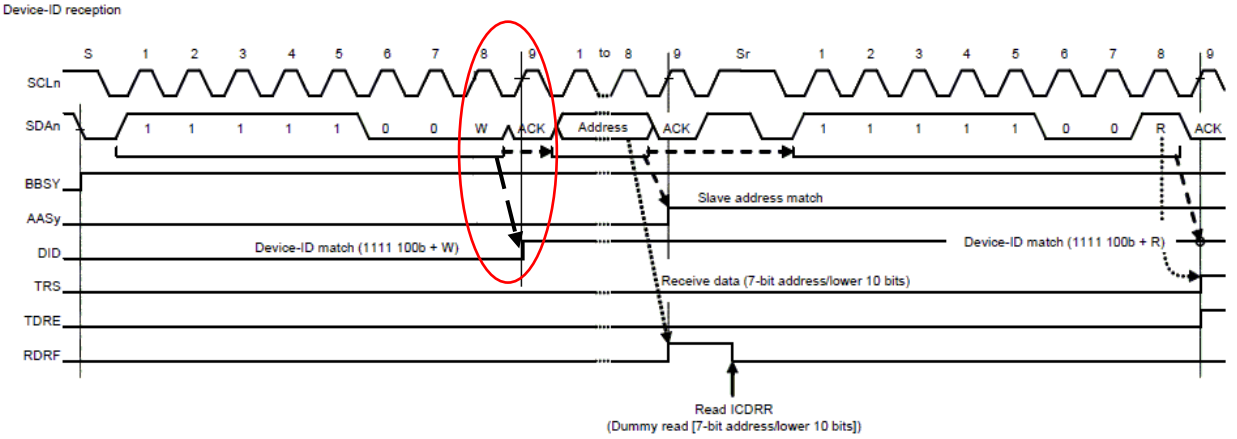


When address before the device-ID + R does not match the slave address

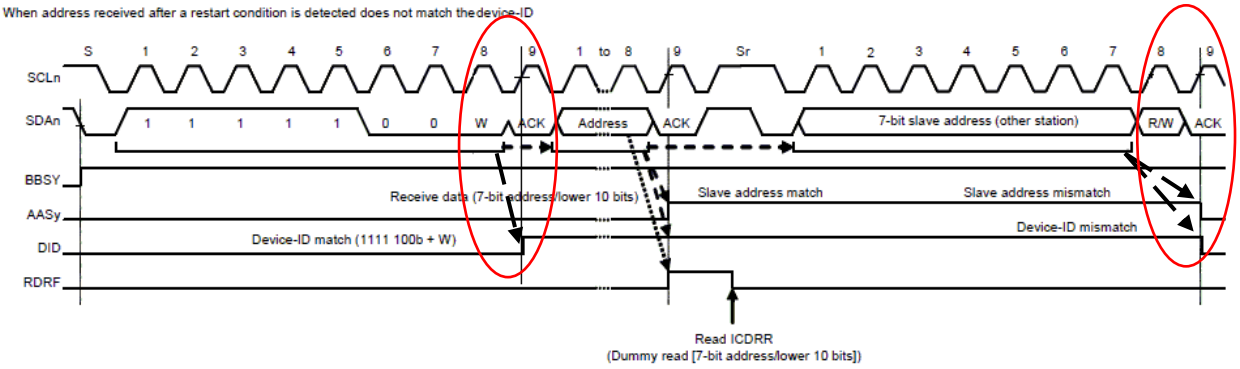


Correct Figure

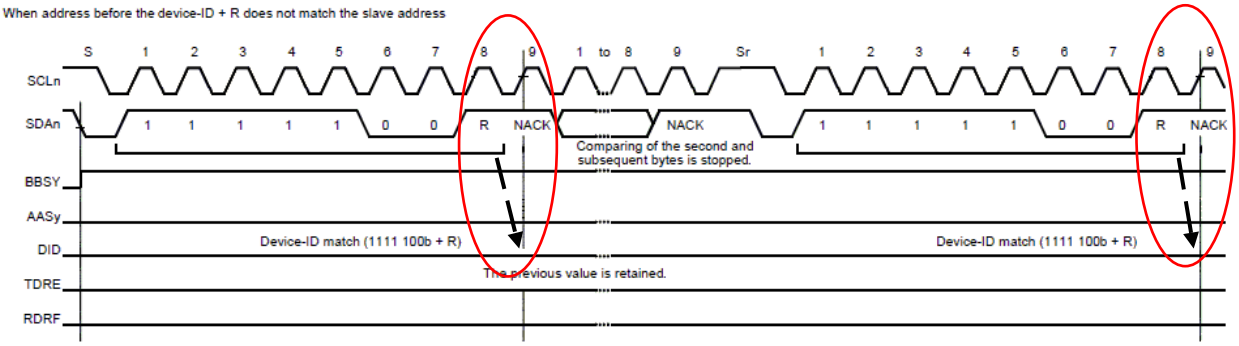
Device-ID reception



When address received after a restart condition is detected does not match the device-ID



When address before the device-ID + R does not match the slave address



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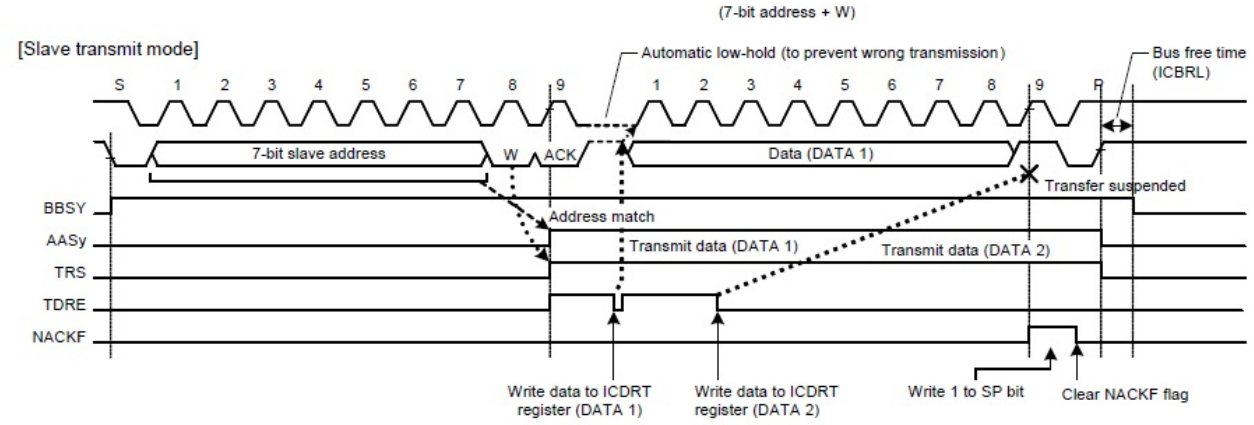
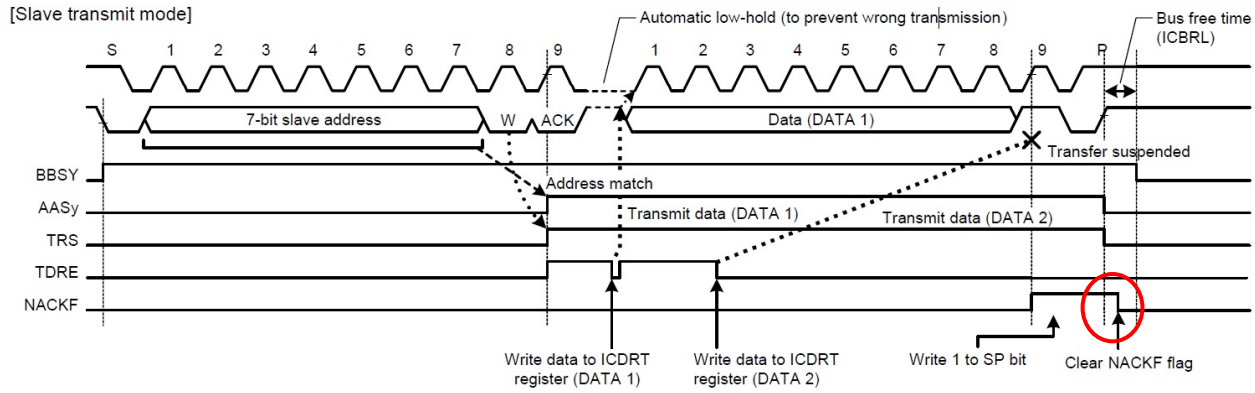
Incorrect Figure



Correct Figure



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Incorrect

Therefore, additional extra clock cycles can be output consecutively by writing 1 to the CLO bit after having read CLO = 0.

Correct

If the BBSY flag is 1, SCL terminal keeps low output, if BBSY flag is 0, SCL terminal keeps high output. Additional clock cycles can be output consecutively by writing 1 to the CLO bit with software after reading the bit as 0.

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Incorrect

Use this function with the MALE bit in the ICFER register set to 0 (master arbitration-lost detection disabled). If the MALE bit is set to 1 (enabled), arbitration is lost when the value of the ICCR1.SDAO bit does not match the state of the SDAn line.

Correct

~~Use this function with the MALE bit in the ICFER register set to 0 (master arbitration-lost detection disabled). If the MALE bit is set to 1 (enabled), arbitration is lost when the value of the ICCR1.SDAO bit does not match the state of the SDAn line.~~

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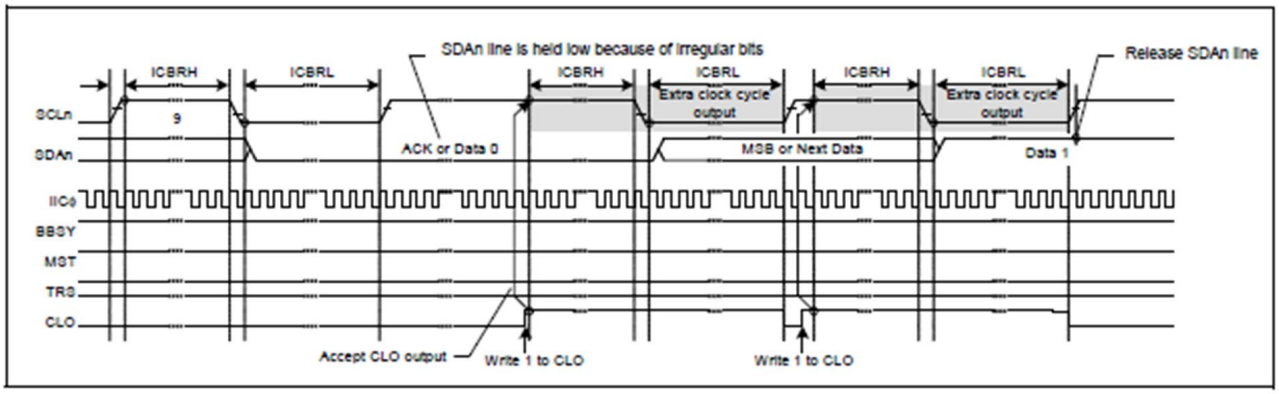
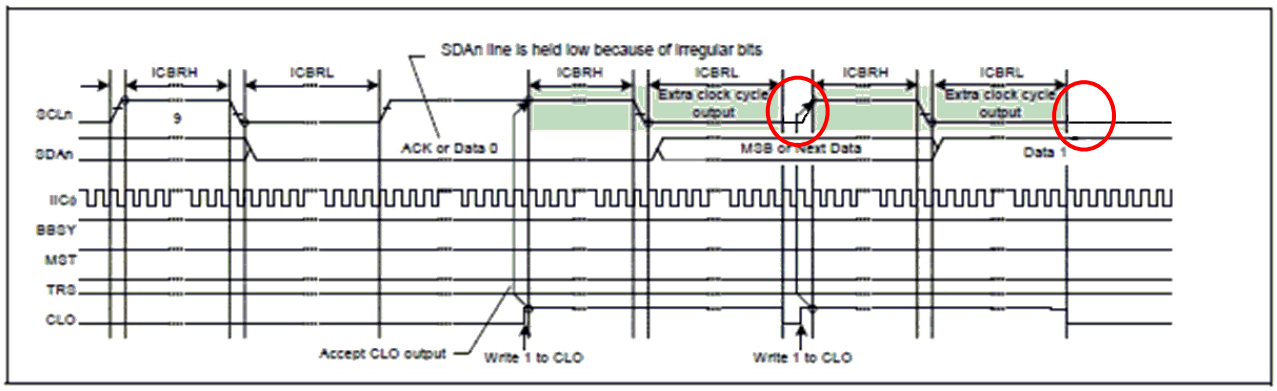
Incorrect Figure



Correct Figure



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Incorrect Table

Registers		Reset	IIC reset (ICE = 0, IICRST = 1)	Internal reset (ICE = 1, IICRST = 1)	Start or restart condition detection	Stop condition detection
ICCR1	ICE, IICRST	Reset	Saved	Saved	Saved	Saved
	SCLO, SDAO		Reset	Reset		
	Others			Saved		
ICCR2	BBSY	Reset	Reset	Saved	Set	Saved
	ST			Reset	Saved	Saved
	TRS,MST				Set or saved	Reset
	Others				Reset	Reset or Saved
ICMR1	BC[2:0]	Reset	Reset	Reset	Reset	Saved
	Others			Saved	Saved	
ICMR2		Reset	Reset	Saved	Saved	Saved
ICMR3		Reset	Reset	Saved	Saved	Saved
ICFER		Reset	Reset	Saved	Saved	Saved
ICSER		Reset	Reset	Saved	Saved	Saved
ICIER		Reset	Reset	Saved	Saved	Saved
ICSR1		Reset	Reset	Reset	Saved	Reset
ICSR2	TDRE, TEND	Reset	Reset	Reset	Saved	Reset
	START				Set	
	STOP				Saved	Set
	Others				Saved	Saved
ICWUR		Reset	Reset	Saved	Saved	Saved
ICWUR2	WUSEN	Reset	Reset	Saved	Saved	Saved
	Others					Saved or Set or Reset
SARL0, SARL1, SARL2 SARU0, SARU1, SARU2		Reset	Reset	Saved	Saved	Saved
ICBRH, ICBRL		Reset	Reset	Saved	Saved	Saved
ICDRT		Reset	Reset	Saved	Saved	Saved
ICDRR		Reset	Reset	Saved	Saved	Saved
ICDRS		Reset	Reset	Reset	Saved	Saved
Timeout function		Reset	Reset	Operation	Operation	Operation
Bus free time measurement		Reset	Reset	Operation	Operation	Operation

Correct Table

Registers		Reset	IIC reset (ICE = 0, IICRST = 1)	Internal reset (ICE = 1, IICRST = 1)	Start or restart condition detection	Stop condition detection
ICCR1	ICE, IICRST	Reset	Saved	Saved	Saved	Saved
	SCLO, SDAO		Reset	Reset		
	Others			Saved		
ICCR2	BBSY	Reset	Reset	Saved	Set	Reset
	ST, RS			Reset	Reset	Saved
	SP					Reset
	TRS				Set or saved	
	MST					
ICMR1	BC[2:0]	Reset	Reset	Reset	Reset	Saved
	Others			Saved	Saved	
ICMR2		Reset	Reset	Saved	Saved	Saved
ICMR3	ACKBIT	Reset	Reset	Saved	Saved	Reset
	Others					Saved
ICFER		Reset	Reset	Saved	Saved	Saved
ICSER		Reset	Reset	Saved	Saved	Saved
ICIER		Reset	Reset	Saved	Saved	Saved
ICSR1		Reset	Reset	Reset	Saved	Reset
ICSR2	TEND	Reset	Reset	Reset	Saved	Reset
	TDRE				Set or saved	
	START				Set	
	STOP				Saved	Set
	Others				Saved	Saved
ICWUR		Reset	Reset	Saved	Saved	Saved
ICWUR2	WUSEN	Reset	Reset	Saved	Saved	Saved
	Others					Saved or Set or Reset
SARL0, SARL1, SARL2 SARU0, SARU1, SARU2		Reset	Reset	Saved	Saved	Saved
ICBRH, ICBRL		Reset	Reset	Saved	Saved	Saved
ICDRT		Reset	Reset	Saved	Saved	Saved
ICDRR		Reset	Reset	Saved	Saved	Saved
ICDRS		Reset	Reset	Reset	Saved	Saved
Timeout function		Reset	Reset	Reset	Operation	Operation
Bus free time measurement		Reset	Reset	Operation	Operation	Operation