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Renesas Electronics Corporation

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78K0R/Kx3 Microcontroller

Sample Program

Operation Manual

(Slave Transmission/Reception (Serial Interface IIC0), C Source)

This software is for reference only and NEC Electronics does not guarantee its operation.
Thoroughly evaluate this software on your set prior to use.

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1. OVERVIEW

This manual explains the sample program functions of a slave operation of serial interface IIC0 for the 78K0R/Kx3.

In this sample program, a slave operation of serial interface IIC0 is performed.

The communication conditions are as follows.

- $f_{CLK} = 20 \text{ MHz}$
- Transmission format
- Transmit data: 3AH
- Receive data: Any
- Local address: A0H
- INTIIC0 (Interrupt of end of IIC0 communication servicing) is used.

When this sample program is actually used, the transmission format must conform to the specifications of the product that is communicating.

2. RESOURCES USED

Resource	Description	Remark
Main clock specification	Internal high-speed oscillator used (8 MHz (TYP.))	Always oscillated
	High-speed system clock used (20 MHz)	Oscillated by initial processing. Supplied to CPU and peripheral hardware
Subclock	XT1 (32.768 kHz)	Oscillated by initial processing
Related hardware	Slave address register 0 (SVA0)	Sets the local address.
	IIC shift register 0 (IIC0)	
	Peripheral enable register 0 (PER0)	
	IIC function expansion register 0 (IICX0)	Selects the transfer clock.
	IIC clock select register 0 (IICCL0)	Selects the transfer clock.
	IIC flag register 0 (IICF0)	Sets IIC operation mode.
	IIC control register 0 (IICC0)	Selects the transfer clock.
	Port mode register 6 (PM6)	
	Port register 6 (P6)	
I/O	Clock input: SCL0 (P60)	
	Data I/O: SDA0 (P61)	
Interrupt	INTIIC0: Interrupt of end of IIC0 communication	
Others	Not used	

3. SOFTWARE CONFIGURATION

Files

File Name	Processing Outline	Remark
K0R_def.h ^{Note}	Definition file	
K0R_init.c ^{Note}	Initialization processing	
K0R_ext.h	External declaration	
K0R_main.c	Main processing	
K0R_sfr_set.c	Serial interface IIC0 (slave operation)	

Note These files are commonly used by the sample programs.

4. FUNCTION EXPLANATIONS

[File name]

K0R_main.c

Function

Function Name	Processing Outline	Argument	Return Value
main	Main routine	None	None

Function explanations

Function name	main
Processing	Main routine
Argument	—
Return value	—
Description	Executes initialization processing and then starts slave operation.
Remark	—

[File name]

K0R_sfr_set.c

Functions

Function Name	Processing Outline	Argument	Return Value
IIC_SLVIN	Initializes serial interface IIC0 (slave operation).	None	None
IIC_SLVCS	Communication processing of serial interface IIC0 (slave operation)	None	None
IIC_SLVIT	Processing during transfer end interrupt of serial interface IIC0 (slave operation)	None	None

Function explanations

Function name	IIC_SLVIN
Processing	Initializes serial interface IIC0 (slave operation).
Argument	–
Return value	–
Description	Executes initialization.
Remark	–

Function name	IIC_SLVCS
Processing	Communication processing of serial interface IIC0 (slave operation)
Argument	–
Return value	–
Description	Executes communication processing.
Remark	–

Function name	IIC_SLVIT
Processing	Processing during transfer end interrupt of serial interface IIC0 (slave operation)
Argument	–
Return value	–
Description	Executes interrupt servicing upon completion of communication.
Remark	–

5. FLOWCHARTS







