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April 1st, 2010
Renesas Electronics Corporation

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78K0R/Kx3 Microcontroller

Sample Program

Operation Manual

(D/A Conversion (Normal Mode)

(D/A Converter), 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.

ZUD-CC-07-0225-E
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1st Product Solution Group, Multipurpose Microcomputer Systems Division,
Microcomputer Operations Unit
NEC Electronics Corporation

CONTENTS

1. OVERVIEW

This manual explains the sample program functions of the D/A converter (normal mode) for the 78K0R/Kx3.

In this sample program, D/A conversion is performed, triggered by a write operation to the DACS0 register.

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	Peripheral enable register 0 (PER0)	Controls supplying and stopping of the input clock supply.
	D/A converter mode register (DAM)	Sets normal mode.
	8-bit D/A conversion value setting register 0 (DACS0)	
	Port mode register 11 (PM11)	
	Port register 11 (P11)	
I/O	Analog output: ANO0 (P110)	
Interrupt	Not used	
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	D/A converter processing (normal output mode)	

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
MMA_STRT	Main routine	None	None

Function explanations

Function name	main
Processing	Main routine
Argument	–
Return value	–
Description	Executes initialization processing and then performs D/A conversion processing.
Remark	–

[File name]

K0R_sfr_set.c

Functions

Function Name	Processing Outline	Argument	Return Value
SDA_NINI	Initializes D/A converter processing.	None	None
SDA_NOUT	Starts D/A converter processing operation.	None	None
SDA_NSTP	Stops D/A converter processing operation.	None	None

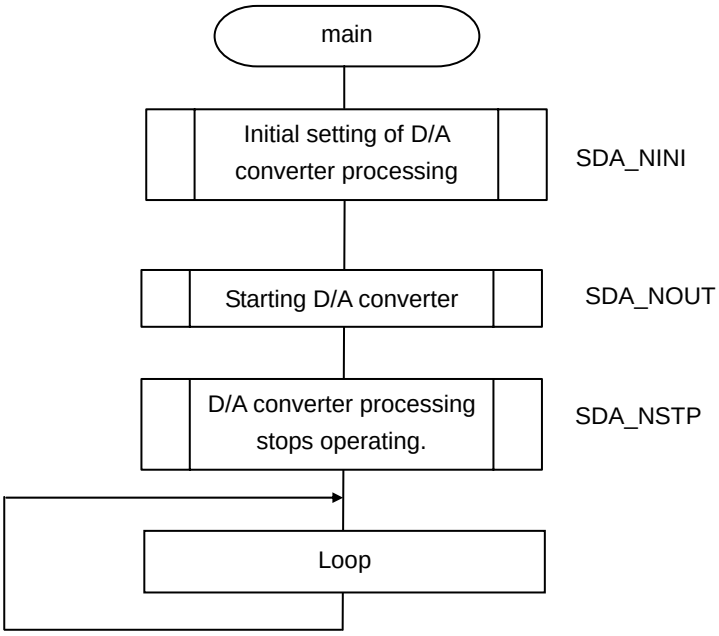
Function explanations

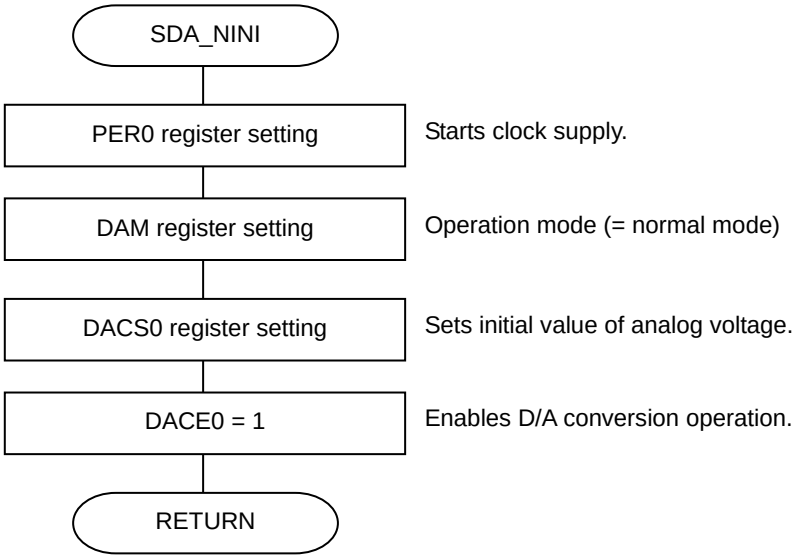
Function name	SDA_NINI
Processing	Initializes D/A converter processing.
Argument	–
Return value	–
Description	Initializes the D/A converter.
Remark	–

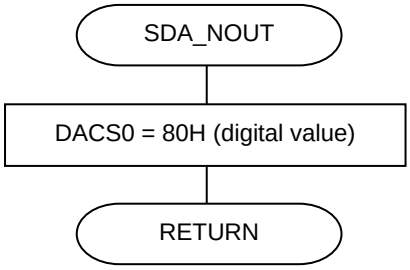
Function name	SDA_NOUT
Processing	D/A converter starts conversion processing.
Argument	–
Return value	–
Description	Performs D/A conversion, triggered by the interrupt request signal (INTTM04) of timer channel 4.
Remark	–

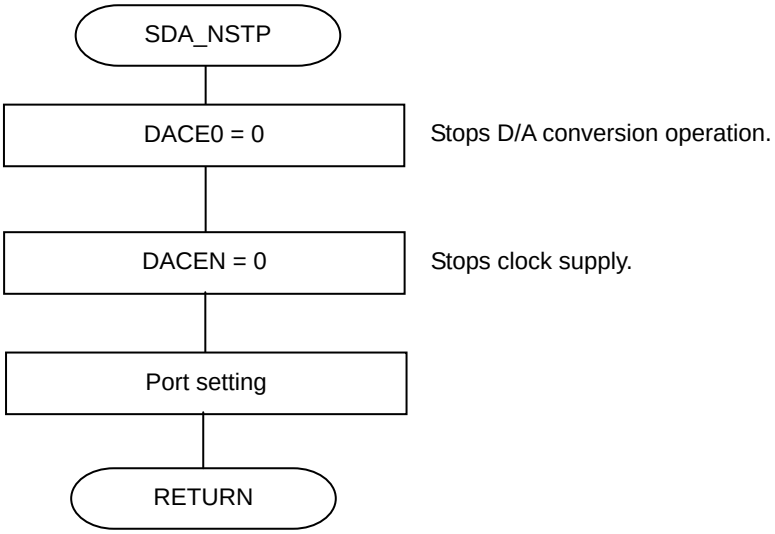
Function name	SDA_NSTP
Processing	Stops D/A converter processing operation.
Argument	–
Return value	–
Description	Stops D/A conversion operation.
Remark	–

5. FLOWCHARTS






SDA_NOUT
DACS0 = 80H (digital value)
Starts D/A conversion.
RETURN


SDA_NSTP
DACE0 = 0
Stops D/A conversion operation.
DACEN = 0
Stops clock supply.
Port setting
RETURN