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April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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H8/300H SLP Series

Power-On Reset Operation Using Internal Circuit

Introduction
The internal reset circuit of the H8/38076 performs power-on resets.

Target Device
H8/38076

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1. Specifications

- The internal reset circuit of the H8/38076 performs power-on resets. Figure 1 shows an example of connecting the microcomputer for a power-on reset with the internal circuit.
- The P93 pin outputs 0 after reset is canceled.

![Connection of Microcomputer when Internal Power-On Reset Circuit Is Used](image)

Figure 1  Connection of Microcomputer when Internal Power-On Reset Circuit Is Used
2. Description of Functions

2.1 Functions

1. This sample task uses the internal reset circuit of the H8/38076 to perform a power-on reset. Figure 2 is a block diagram of the internal power-on reset circuit. The block diagram of the internal power-on reset circuit is described below.

- System clock (φ)
  10-MHz reference clock for operating the CPU and peripheral functions

- Prescalar S (PSS)
  13-bit counter to which φ is input. This counter is incremented for each cycle.

- Port data register 9 (PDR9)
  To confirm reset cancellation, P93 of port 9 is set to 0.

- Port control register 9 (PCR9)
  The P93 pin of port 9 is set as an output pin.

![Block Diagram of Internal Power-On Reset Circuit](image-url)
3. Principles of Operation

Figure 3 shows power-on reset using this sample circuit.

**Figure 3  Principles of Operation**
4. Description of Software

4.1 Module

Table 1 is a list of the module used for this sample task.

<table>
<thead>
<tr>
<th>Module Name</th>
<th>Label Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main routine</td>
<td>main</td>
<td>Outputs 0 from the P93 pin.</td>
</tr>
</tbody>
</table>

4.2 Arguments

No arguments are used for this sample task.

4.3 Internal Registers

The internal registers used for this sample task are described below.

- **PDR9**
  - Port data register 9
  - Address: H'FFDC
  - Bit Bit Name Setting R/W Function
  - 3 P93 0 R/W Port data register 93
    - P93 = 0: Causes the P93 pin to produce low-level output.
    - P93 = 1: Causes the P93 pin to produce high-level output.

- **PCR9**
  - Port control register 9
  - Address: H'FFEC
  - Bit Bit Name Setting R/W Function
  - 3 PCR93 1 R/W Port control register 93
    - PCR93 = 0: Sets the P93 pin as a P93 input pin.
    - PCR93 = 1: Sets the P93 pin as a P93 output pin.

4.4 RAM Usage

This sample task does not cover RAM usage.
5. Flowchart

5.1 Main Routine

```
main

I = 1
Disable interrupts

PCR93 = 1
Set P93 as output pin

P93 = 0
Output 0 from pin P93
```

5.2 Link Address Specification

<table>
<thead>
<tr>
<th>Section Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV1</td>
<td>H'00000000</td>
</tr>
<tr>
<td>P</td>
<td>H'00001000</td>
</tr>
</tbody>
</table>
6. Program Listing

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
main
);

#pragma entry main(sp=0xFF80)
#pragma section

/************************************************************/
/*  Main Program                                          */
/************************************************************/

void main ( void )
{
   PCR93 = 1;
P93 = 0;
   while(1);
}
## Revision Record

<table>
<thead>
<tr>
<th>Rev.</th>
<th>Date</th>
<th>Description</th>
<th>Page</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Sep.16.04</td>
<td>—</td>
<td>—</td>
<td>First edition issued</td>
</tr>
</tbody>
</table>

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H8/300H SLP Series

Power-On Reset Operation Using Internal Circuit

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