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April 1st, 2010
Renesas Electronics Corporation

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H8/300H SLP Series

Power-On Reset Operation Using Reset IC

Introduction
A reset IC performs power-on resets.

Target Device
H8/38076

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1. Specifications

- A reset IC performs power-on resets. Figure 1 shows an example of connecting the reset IC.
- The P93 pin outputs 0 after reset is canceled.

![Connection of Microcomputer when Reset IC Is Used](image)

Figure 1  Connection of Microcomputer when Reset IC Is Used
2. **Description of Functions**

2.1 **Description of LCD Controller/Driver Functions**

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

- **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.

![Figure 2 Block Diagram of Reset IC Circuit and H8/38076](image-url)
3. Principles of Operation

Figure 3 shows a power-on reset using the reset IC.

![Figure 3 Principles of Operation](image)

- **tpwon**: Power-supply rise time
- **RES**: Reset pin
- **RES pin**: Internal reset signal
- **Pin P93**: Hardware processing
  - (a) Start incrementing the 3-bit counter.
  - Software processing
  - None
- **Hardware processing**
  - (a) Cancel reset.
  - Software processing
  - (a) Set P93 to 0.

---

**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
  
<table>
<thead>
<tr>
<th>Bit</th>
<th>Bit Name</th>
<th>Setting</th>
<th>R/W</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>P93</td>
<td>0</td>
<td>R/W</td>
<td>Port data register 93</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P93 = 0: Causes the P93 pin to produce low-level output.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>P93 = 1: Causes the P93 pin to produce high-level output.</td>
</tr>
</tbody>
</table>

- **PCR9**
  Port control register 9
  Address: H′FFEC
  
<table>
<thead>
<tr>
<th>Bit</th>
<th>Bit Name</th>
<th>Setting</th>
<th>R/W</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>PCR93</td>
<td>1</td>
<td>R/W</td>
<td>Port control register 93</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PCR93 = 0: Sets the P93 pin as a P93 input pin.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PCR93 = 1: Sets the P93 pin as a P93 output pin.</td>
</tr>
</tbody>
</table>

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>
#include <machine.h>

void main ( void );

#define PDR9_BIT    (*(volatile struct BIT *)0xFFDC)        /* Port Data Register 9 */
#define P93         PDR9_BIT.b3                             /* Port Data Register 9 bit3 */
#define PCR9_BIT    (*(volatile struct BIT *)0xFFEC)        /* Port Control Register 9 */
#define PCR93       PCR9_BIT.b3                             /* Port Control Register 9 bit3 */

void (*const VEC_TBL1[])(void) = {

```c
int main ( int argc, char *argv[] )
{
    int i;

    for ( i = 0; i < argc; i++ )
        printf("Hello, World!
");

    return 0;
}
```
#pragma entry main(sp=0xFF80)
#pragma section /* P */
/***************
/* 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>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Sep.16.04</td>
<td>First edition issued</td>
</tr>
</tbody>
</table>
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