

S1C17 Family Application Note
S1C17 Core
PSR Read/Write
Application Notes

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1. Abstract

This explanation covers the read/write method of S1C17 core's processor status register (PSR).

The S1C17 core does not have commands for data transfer between PSR and general-purpose registers. Basically, data transfer is carried out between PSR and general-purpose registers through the stack.

As examples, 3 types of function examples are shown.

2. Function Examples

Function name
void write_psr(unsigned char psr)
Argument
psr PSR value for writing
Return value
None
Function and C language usage example
<p>It writes the value specified by psr to the S1C17 core's PSR. When reading the function below, changes of IL=7, IE=1, C=1, V=1, Z=1 and N=1 are made to the S1C17 core's PSR.</p> <pre>write_psr(0xff);</pre>
Function's content
<pre>.global write_psr write_psr: ld.b [%sp+3],%r0 ; Writes the specified value to stack's PSR storage address reti ; reti command returns the PC and PSR values stored in stack</pre>

Function name
unsigned char read_psr1(void)
Argument
None
Return value
PSR value for reading
Function and C language usage example
<p>In models with MISC_PSR (address 0x532c) register, it reads the S1C17 core's PSR value. For the presence of MISC_PSR register, refer to each model's technical manual. When the function below is called, the S1C17 core's PSR value is stored in psr variable.</p> <pre>unsigned char psr ; psr = read_psr1();</pre>
Function's content
<pre>.global read_psr1 read_psr1: xld.ub %r0, [0x532c] ret</pre>

2. Function Examples

Function name
unsigned char read_psr2(void)
Argument
None
Return value
PSR value for reading
Function and C language usage example
<p>It reads the S1C17 core's PSR value. Unlike the read_psr1 function, it can be used for all models with built-in S1C17 core. When the function below is called, the S1C17 core's PSR value is stored in psr variable.</p> <pre>unsigned char psr ; psr = read_psr2() ;</pre>
Function's content
<p>This method has an interrupt vector. Register the read_psr_int as interrupt vector No. 31.</p> <pre>.global read_psr2 read_psr2: int 31 ; Issues software interrupt No. 31 ret .global read_psr_int read_psr_int: ld.uw %r0, [%sp+3] ; Reads the PSR value stored in stack reti</pre>

Revision History

Attachment-1

Code No.	Page	Revision Details (includes old content) and Revision Reason
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AMERICA

EPSON ELECTRONICS AMERICA, INC.

2580 Orchard Parkway,
San Jose, CA 95131, USA
Phone: +1-800-228-3964 FAX: +1-408-922-0238

EUROPE

EPSON EUROPE ELECTRONICS GmbH

Riesstrasse 15, 80992 Munich,
GERMANY
Phone: +49-89-14005-0 FAX: +49-89-14005-110

ASIA

EPSON (CHINA) CO., LTD.

7F, Jinbao Bldg., No.89 Jinbao St.,
Dongcheng District,
Beijing 100005, CHINA
Phone: +86-10-8522-1199 FAX: +86-10-8522-1125

SHANGHAI BRANCH

7F, Block B, Hi-Tech Bldg., 900 Yishan Road,
Shanghai 200233, CHINA
Phone: +86-21-5423-5577 FAX: +86-21-5423-4677

SHENZHEN BRANCH

12F, Dawning Mansion, Keji South 12th Road,
Hi-Tech Park, Shenzhen 518057, CHINA
Phone: +86-755-2699-3828 FAX: +86-755-2699-3838

EPSON HONG KONG LTD.

20/F, Harbour Centre, 25 Harbour Road,
Wanchai, Hong Kong
Phone: +852-2585-4600 FAX: +852-2827-4346
Telex: 65542 EPSCO HX

EPSON TAIWAN TECHNOLOGY & TRADING LTD.

14F, No. 7, Song Ren Road,
Taipei 110, TAIWAN
Phone: +886-2-8786-6688 FAX: +886-2-8786-6660

EPSON SINGAPORE PTE., LTD.

1 HarbourFront Place,
#03-02 HarbourFront Tower One, Singapore 098633
Phone: +65-6586-5500 FAX: +65-6271-3182

SEIKO EPSON CORP.**KOREA OFFICE**

50F, KLI 63 Bldg., 60 Yoido-dong,
Youngdeungpo-Ku, Seoul 150-763, KOREA
Phone: +82-2-784-6027 FAX: +82-2-767-3677

SEIKO EPSON CORP.**SEMICONDUCTOR OPERATIONS DIVISION****IC Sales Dept.****IC International Sales Group**

421-8, Hino, Hino-shi, Tokyo 191-8501, JAPAN
Phone: +81-42-587-5814 FAX: +81-42-587-5117