A. This Errata sheet represents the known bugs, anomalies and work-arounds for the ADuC834 MicroConverter.

B. The Errata listed, apply to all ADuC834 packaged material branded as follows:

   First Line: ADuC834BS or ADuC834BCP
   Fourth Line: F23

C. Analog Devices Inc. is committed, through future silicon revisions to continuously improve silicon functionality. Analog Devices Inc. will use its best endeavors to ensure that these future silicon revisions remain compatible with your present software/systems implementing the recommended work-arounds outlined in this document.

D. ADuC834 Silicon Errata Sheet Revision History:

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Relevance</th>
<th>Silicon Status</th>
<th># of Bugs Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>April 2009</td>
<td>All Silicon branded ADuC834BS or ADuC834BCP Fourth Line: F23</td>
<td>Release</td>
<td>1 Errata</td>
</tr>
</tbody>
</table>
**2 EXTENDED (11-BIT) STACK POINTER – PUSH AND POP OPERATION**

**Background:** The ADuC834 offers an extended (11-bit) stack pointer that allows the stack to extend into the 2 KBytes of internal XRAM. This can be very useful where embedded functions are used.

**Issue:** If the extended stack pointer is enabled (CFG834.7=1) and the stack points to the extended stack space (SPH>=1) then PUSH direct or POP direct instructions will not operate correctly if the direct address is less than 80H (i.e. not an SFR).

**Work-Around:**

**ASSEMBLY Programming:**
A fix for the bug is to PUSH or POP the data through the accumulator. i.e. instead of

```
PUSH 00h
```
Use

```
MOV A, 00H ;(or MOV A, R0 if register bank 0 selected)
PUSH ACC
```

instead of

```
POP 00h
```
use

```
POP ACC
MOV 00H, A ;(or MOV R0, A if register bank 0 selected)
```

**C Programming (KEIL Compiler)**
The Keil Compiler only ever pushes (or pops) an SFR or any of the 32 registers (4 banks of 8 registers) onto the stack. Keil support a compiler directive that disables absolute register addressing (#pragma NOAREGS). Using this directive a PUSH/POP register will be automatically changed as above.

```
#pragma NOAREGS
int increment (int);

void main(void)
{
    int a, b, c;

    a=5;
    b=6;
    c=increment(a) + increment (b);
    while(1);
}

int increment (int a)
{
    return (a+1);
}
```

**Related Issues:** None
## Silicon Errata Sheet

**ADuC834 Silicon Errata Revision History**

<table>
<thead>
<tr>
<th>Errata #</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>er1</td>
<td>WAKEUP FROM POWERDOWN</td>
<td>Fixed</td>
</tr>
<tr>
<td>er2</td>
<td>EXTENDED (11-BIT) STACK POINTER – PUSH AND POP OPERATION</td>
<td>New</td>
</tr>
</tbody>
</table>

©2009 Analog Devices, Inc. All rights reserved. Trademarks and registered trademarks are the property of their respective owners.

502942-0-4/09(F)