

ExampleBootmonSimple - IAR Embedded Workbench IDE - Arm 8.22.1

File Edit View Project Debug Disassembly J-Link Tools Window Help

Call Stack: POWER_SetVoltageForFreq, BM_CPU_Initialize, BM_BOOT_Loader, <Unknown handler>

Workspace: RB_Evalboard_B_LPC54102_A_Debug_iFlash...

Files: ExampleBootmonSimp..., Bootmon, ExampleBootmonSim..., Output

```
BM_CPU_Initialize()
179  ///
180  /// Clock: Configured as defined in BM-Config (internal)
181  /// PINSEL: Configure special function for UART Rxd and Tx
182  /// Power: Switch power on for selected UART.
183  ///-----
184  void BM_CPU_Initialize(void)
185  {
186      // This function modifies some undocumented registers
187      // desired frequency. This function is necessary when
188      // this information is completely missing in the LPC54000
189      // It is only available as a precompiled library file
190      // While using these functions interrupts have to be disabled
191      #if (BM_CPU_FAM == 54100)
192          POWER_SetVoltageForFreq(LPC54XXX_F_CORE);
193      #elif (BM_CPU_FAM == 5100) || (BM_CPU_FAM == 54110)
194          POWER_SetVoltageForFreq(LPC54XXX_F_CORE);
195      #elif (BM_CPU_FAM == 54600)
196          POWER_SetVoltageForFreq(LPC54XXX_F_CORE);
197      #endif
198
199      // Select clock source for sysclk
200      rSYSCON(rMAINCLKSELA) = (LPC54XXX_INPCLK_SEL << 0);
201      rSYSCON(rMAINCLKSELB) = SYSCON_MAINCLKSELB_MAINCLK;
202
203      // -----
204      // PLL off, PDEM_SYS_PLL = 1 = PLL is Powered down
205      // -----
206      #if (BM_CPU_FAM == 54100)
207          rSYSCON(rPDRUNCFGSET) = (SYSCON_PDRUNCFG_PDEM_0);
208      #elif (BM_CPU_FAM == 5100) || (BM_CPU_FAM == 54110)
209          rSYSCON(rPDRUNCFGSET) = (SYSCON_PDRUNCFG_PDEM_0);
210      #endif
211  }
```

Fault exception viewer: ETM SUM

Disassembly: 0xbc0: 0x6008 BM_CPU_ConfigurePorts(), 0xbc2: 0xf000 0xf89 BM_UART_Shutdown(), 0xbc6: 0xf000 0xfad, 0xbca: 0xbd01, void BM_CPU_Initialize(void), BM_CPU_Initialize: 0xbcc: 0xb580 POWER_SetVoltageForFreq, 0xbce: 0x4864, 0xbd0: 0xf000 0xfad rSYSCON(rMAINCLKSELA) = 0xbd4: 0x2000, 0xbd6: 0x495f, 0xbd8: 0x6008, rSYSCON(rMAINCLKSELB) = 0xbda: 0x2000, 0xbdc: 0x495e, 0xbde: 0x6008, rSYSCON(rPDRUNCFGSET) = 0xbe0: 0xf45f 0x008, 0xbe4: 0x495f, 0xbe6: 0x6008, rSYSCON(rSYSPLLCLKSEL)

Debug Log: Log, Mon Feb 11, 2019 07:46:34: 10736 bytes with download suppressed, Mon Feb 11, 2019 07:46:34: Loaded debuggee: C:\MKS\RainbowAll_Test\ExampleBootmonSimple\make\LPC54000\AR8\RB_Evalboard_B_LPC54102_A_Debug_iFlash_JLink\Exe\ExampleBootmonSimple.out, Mon Feb 11, 2019 07:46:34: Reset: Halt core after reset via DEMCR.VC_CORERESET, Mon Feb 11, 2019 07:46:34: Reset: Reset device via AIRCR.VECTRESET, Mon Feb 11, 2019 07:46:34: Software reset was performed, Mon Feb 11, 2019 07:46:34: Target reset, Mon Feb 11, 2019 07:46:39: Breakpoint hit: Code @ BM_CPU.c:192.3, type: default (auto)

Ready | Ln 192, Col 9 | System | CAP NUM OVR.

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File Edit View Project Debug Disassembly J-Link Tools Window Help

Call Stack: <Unknown handler>

Workspace: RB_Evalboard_B_LPC54102_A_Debug_IfFlash...

Files: ExampleBootmonSimp..., Bootmon, ExampleBootmonSim..., Output

BM_CPU_Initialize

```

179 //
180 // Clock: Configured as defined in BM-Config (internal)
181 // PINSEL: Configure special function for UART Rxd and Txd
182 // Power: Switch power on for selected UART.
183 //-----
184 void BM_CPU_Initialize(void)
185 {
186     // This function modifies some undocumented registers to
187     // desired frequency. This function is necessary to
188     // this information is completely missing in the L
189     // It is only available as a precompiled library f
190     // While using these functions interrupts have to
191     #if (BM_CPU_FAM == 54100)
192     POWER_SetVoltageForFreq(LPC54XXX_F_CORE);
193     #elif (BM_CPU_FAM == 5100) || (BM_CPU_FAM == 54110)
194     POWER_SetVoltageForFreq(LPC54XXX_F_CORE);
195     #elif (BM_CPU_FAM == 54600)
196     POWER_SetVoltageForFreq(LPC54XXX_F_CORE);
197     #endif
198
199     // Select clock source for sysclk
200     rSYSCON(rMAINCLKSELA) = (LPC54XXX_INPCLK_SEL << 0);
201     rSYSCON(rMAINCLKSELB) = SYSCON_MAINCLKSELB_MAINCLK;
202
203     //-----
204     // PLL off, PDEN_SYS_PLL = 1 = PLL is Powered down
205     //-----
206     #if (BM_CPU_FAM == 54100)
207     rSYSCON(rPDRUNCFGSET) = (SYSCON_PDRUNCFG_PDEN_
208     #elif (BM_CPU_FAM == 5100) || (BM_CPU_FAM == 54110)

```

Fault exception viewer

HardFault exception.
The processor has escalated a configurable-priority exception to HardFault.
An MPU or Execute Never (XN) default memory map access violation has occurred on an instruction fetch.
The processor has attempted to execute an undefined instruction.
Exception occurred at 0x1bca
See the call stack for more information.

Disassembly

Go to	Memory
0xffffffff5	----
0xffffffff6	----
0xffffffff7	----
0xffffffff8	----
0xffffffff9	----
0xfffff9ea	----
0xfffff9eb	----
0xfffff9ec	----
0xfffff9ed	----
0xfffff9ee	----
0xfffff9ef	----
0xfffff9f0	----
0xfffff9f1	----
0xfffff9f2	----
0xfffff9f3	----
0xfffff9f4	----
0xfffff9f5	----
0xfffff9f6	----
0xfffff9f7	----
0xfffff9f8	----
0xfffff9f9	----
0xfffff9fa	----
0xfffff9fb	----
0xfffff9fc	----
0xfffff9fd	----
0xfffff9fe	----
0xfffff9ff	----

Debug Log

```

Log
Mon Feb 11, 2019 07:47:44: The processor has escalated a configurable-priority exception to HardFault.
Mon Feb 11, 2019 07:47:44: An MPU or Execute Never (XN) default memory map access violation has occurred on an instruction fetch.
Mon Feb 11, 2019 07:47:44: The processor has attempted to execute an undefined instruction.
Mon Feb 11, 2019 07:47:44: Exception occurred at 0x1bca
Mon Feb 11, 2019 07:47:44: See the call stack for more information.

```

Ready

Ln 192, Col 9 System | CAP. NUM. OVR.

The system crashes when stepping over the power lib function call:
 SDK_2.5.0_LPCxpresso54102.zip\devices\LPC54102\iar\iar_lib_power.a:
 POWER_SetVoltageForFreq(LPC54XXX_F_CORE);