Micriµm

Empowering Embedded Systems

µC/CPU

V1.26

Release Notes

Revision History

Version	Date	Description
V1.26	2010 Apr	Improvements
V1.25.01	2010 Apr	Port updates **ONLY**—**NO** changes to core files
V1.25	2010 Jan	Bug fixes & improvements
V1.24	2009 Dec	New features, bug fixes, & improvements
V1.23	2009 Jul	CPU timestamp, timer, & time measurement features First version with release history & user's manual

New Features

Version 1.26
N/A

Version 1.25.01
N/A

Version 1.25
N/A

Version 1.24
V1.24-001
Added `CPU_STK_SIZE` data type definition to each `cpu.h`.

V1.24-002a
Added (optional) CPU timestamp's timer frequency, '`CPU_TS_TmrFreq_Hz`'.

V1.24-002b
Added new CPU timestamp timer functions :

> `CPU_TS_TmrFreqGet()`   gets the CPU timestamp's timer frequency
> `CPU_TS_TmrFreqSet()`   sets the CPU timestamp's timer frequency
>   (in Hertz)

See also 'New Features V1.23-001c'.

Version 1.23
V1.23-001
Added new CPU timestamp, timer, & time measurement features. [Note that an application **MUST** call `CPU_Init()` to initialize CPU timestamp **OR** time measurement features prior to any other calls to CPU time functions.]

V1.23-001a
Added **CPU_CFG_TS_EN** in `cpu_cfg.h` to enable/disable CPU timestamps :

      CPU_TS_Get()   gets the current, real-time value of 64-bit CPU timestamp, returned via two 32-bit values

      CPU_TS_GetLo()   gets only the lower 32-bits of 64-bit timestamp

      CPU_TS_Update()   updates the real-time value of 64-bit CPU timestamp (see 'New Features V1.23-001c **CPU_TS_TmrRd()**')

See also 'Changes V1.25-001a1 & V1.25-001c'.

V1.23-001b
Added **CPU_CFG_INT_DIS_MEAS_EN** & **CPU_CFG_INT_DIS_MEAS_OVRHD_NBR** in `cpu_cfg.h` to enable/disable measuring interrupts disabled times :

      CPU_IntDisMeasMaxGet()   gets the maximum time interrupts are disabled, returned via a 32-bit timestamp value; this maximum value is non-resetable

      CPU_IntDisMeasMaxCurGet()   gets the current maximum time interrupts are disabled, returned via a 32-bit timestamp value; this maximum value is   resetable

      CPU_IntDisMeasMaxCurReset()   resets the current maximum time interrupts are disabled

See also 'Changes V1.25-002'.

V1.23-001c
The following timer functions **MUST** be implemented in an application if either CPU timestamps **OR** interrupts disabled time measurements are enabled :

      CPU_TS_TmrInit()   initializes & starts a hardware (or software) timer to update CPU timestamps & time measurements

      CPU_TS_TmrRd()   gets current hardware (or software) timer value to update CPU timestamps or time measurements

      CPU_TS_to_uSec()   convert (up to) 64 bits of a CPU timestamp value into microseconds, returned via two 32-bit values

See also 'Changes V1.25-001d & V1.25-001e' & 'New Features V1.24-002b'.

Improvements

Version 1.26
V1.26-001
Updated **µC/CPU**'s MISRA-C compliance :

V1.26-001a
Added argument names to function pointer data types.

V1.26-001b
Encapsulated all macros defined as code blocks within `do..while(0)` conditions.

Version 1.25.01
N/A

Version 1.25
V1.25-001a
Improved CPU timestamp API & performance. See also 'Changes V1.25-001'.

V1.25-002a
Refactored `CPU_CntLeadZeros()` to improve performance.

V1.25-002b
Added 64-bit support to `CPU_CntLeadZeros()`.

V1.25-003
Added 64-bit data types to most `cpu.h`'s.

Version 1.24
V1.24-001

Updated **µC/CPU**'s MISRA-C compliance :

V1.24-001a1

Appended unsigned 'u' qualifier to all unsigned integer constants.

V1.24-001a2

Removed redundant 'L' qualifier from all long integer constants.

V1.24-001b

Replaced all calls to unbounded **µC/LIB** string library functions [e.g. `Str_Copy()`] with calls to bounded functions [e.g. `Str_Copy_N()`].

Version 1.23
V1.23-001

Added `CPU_CFG_MODULE_PRESENT` header guard to ensure `cpu_cfg.h` is processed only once, regardless if `#include`'d by multiple source or header files.

Changes

Version 1.26

N/A

Version 1.25.01

V1.25.01-001a

Renamed `\Micrium\Software\uC-CPU\Win32\Microsoft` directory to `\Micrium\Software\uC-CPU\Win32\Visual Studio`.

V1.25.01-001b

Refactored `\Micrium\Software\uC-CPU\Win32\Visual Studio` port files' critical section initialization & implementation.

Version 1.25

V1.25-001

Refactored CPU timestamps configuration, API, & implementation to improve performance (see also '**µC/CPU**'s User's Manual Section 3.03') :

V1.25-001a1

Replaced `cpu_cfg.h` configuration constant `CPU_CFG_TS_EN` with new configuration constants :

> `CPU_CFG_TS_32_EN`   enables 32-bit CPU timestamps
> `CPU_CFG_TS_64_EN`   enables 64-bit CPU timestamps

V1.25-001a2

Added `cpu_cfg.h` configuration constant `CPU_CFG_TS_TMR_SIZE` to configure the word size of the CPU timestamp's hardware (or software) timer.

V1.25-001b1

Replaced `CPU_TS` data type with new CPU timestamp data types :

> `CPU_TS32`   handles 32-bit CPU timestamps
> `CPU_TS64`   handles 64-bit CPU timestamps

V1.25-001b2

Added `CPU_TS_TMR` data type to handle CPU timestamp timer values instead of `CPU_TS`.

V1.25-001c
Replaced **CPU_TS_Get()** & **CPU_TS_GetLo()** with new CPU timestamp functions :

       CPU_TS_Get32()   gets 32-bit CPU timestamp
       CPU_TS_Get64()   gets 64-bit CPU timestamp

V1.25-001d
Modified developer-defined CPU timestamp timer function prototypes :

       void   CPU_TS_TmrInit(void);
       CPU_TS_TMR CPU_TS_TmrRd (void);

V1.25-001e
Replaced (optional) developer-defined **CPU_TS_to_uSec()** with new CPU timestamp functions :

       CPU_TS32_to_uSec()   converts 32-bit CPU timestamp to microseconds
       CPU_TS64_to_uSec()   converts 64-bit CPU timestamp to microseconds

V1.25-002
Modified CPU interrupts disabled time measurement function prototypes :

       CPU_TS_TMR CPU_IntDisMeasMaxCurReset(void);
       CPU_TS_TMR CPU_IntDisMeasMaxCurGet (void);
       CPU_TS_TMR CPU_IntDisMeasMaxGet   (void);

Version 1.24
N/A

Version 1.23
V1.23-001a
Moved **CPU_ERR** data type definition from each **cpu_cfg.h** to **cpu_core.h**.

Corrections

Version 1.26
N/A

Version 1.25.01
N/A

Version 1.25
V1.25-001c

Previous `CPU_TS_Get()` failed to re-entrantly calculate the current CPU timestamp since the current CPU timestamp timer was read [via a call to `CPU_TS_TmrRd()`] with interrupts enabled but saved for the next timestamp calculation with interrupts disabled. Fixed in `CPU_TS_Get32()` & `CPU_TS_Get64()` [see 'Changes V1.25-001c'] by calling `CPU_TS_TmrRd()` with interrupts disabled.

Version 1.24
N/A

Version 1.23
N/A

Known Problems

Version 1.26
N/A

Version 1.25.01
N/A

Version 1.25
N/A

Version 1.24
N/A

Version 1.23
N/A

Limitations

001
Support for 64-bit data **NOT** available for some CPUs

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