CSR Synergy Framework 3.1.0

Time

API Description

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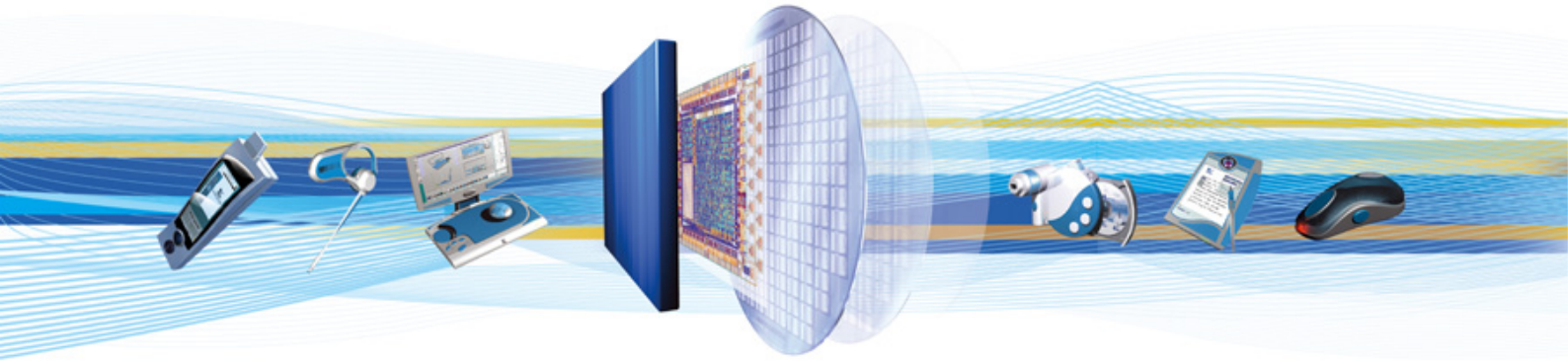

Cambridge Silicon Radio Limited

Churchill House
Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ
United Kingdom

Registered in England and Wales 3665875

Tel: +44 (0)1223 692000
Fax: +44 (0)1223 692001
www.csr.com

Contents

1 Introduction

This document describes the functionality and interface provided by the CSR Synergy Framework Time API.

The Time API provides the following services:

- Retrieval of system time
- Retrieval of UTC time

2 System Time

2.1 System Time Type

The system time type must be defined as an unsigned integer of exactly 32 bit.

Typedef

```
#include "csr_time.h"

typedef CsrUint32 CsrTime;
```

Description

System time in microseconds. Although CsrTime is expressed in microseconds, the actual resolution is platform dependent, and can be less. It is recommended that the resolution is at least 10 milliseconds.

2.2 CsrTimeGet

Prototype

```
#include "csr_time.h"

CsrTime CsrTimeGet(CsrTime *high);
```

Description

Returns the current microseconds system time in two 32bit high/low parts. The microseconds low part is the function return value. The high part is incremented on low part wraps and returned as output parameter high.

Parameters

Type	Argument	Description
`CsrTime*`	`high`	If non-NULL the contents of the high output parameter will be set to the 32bit high part. It increments on 32bit low part wraps. A NULL pointer may be provided as high parameter.

Returns

The 32 bit low part system time in microseconds.

3 UTC Time

3.1 UTC Time Type

The UTC time type must be a structure containing fields for seconds and milliseconds.

Typedef

```
#include "csr_time.h"

typedef struct {
    CsrUint32 sec;
    CsrUint16 msec;
} CsrTimeUtc;
```

Description

UTC time in seconds and milliseconds (fractions of a second) since January 1st 1970. Although CsrTimeUtc is expressed in seconds and milliseconds, the actual resolution is platform dependent, and can be less. It is recommended that the resolution is at least 1 second.

3.2 CsrTimeUtcGet

Prototype

```
#include "csr_time.h"

void CsrTimeUtcGet(CsrTimeUtc *tod, CsrTime *low, CsrTime *high);
```

Description

Get the current system wallclock timestamp in UTC. Specifically, if tod is non-NULL, the contents will be set to the number of seconds (plus any fraction of a second in milliseconds) since January 1st 1970. If low is non-NULL, the contents will be set to the low 32 bit part of the current system time in microseconds, as would have been returned by CsrTimeGet. If high is non-NULL, the contents will be set to the high 32 bit part of the current system time, as would be returned in the high output parameter of CsrTimeGet.

Parameters

Type	Argument	Description
CsrTimeUtc*	tod	Number of seconds and fractions since January 1st , 1970.
CsrTime*	low	If low is non-NULL, the contents will be set to the low 32 bit part of the current system time in microseconds, as would have been returned by CsrTimeGet.
CsrTime*	high	If high is non-NULL, the contents will be set to the high 32 bit part of the current system time, as would be returned in the high output parameter of CsrTimeGet.

Returns

None.

4 Document References

Ref	Title

Terms and Definitions

Abbreviation	Explanation
CSR	Cambridge Silicon Radio

Document History

Revision	Date	History
1	19 OCT 09	First draft version
2	30 NOV 09	Ready for release 2.0.0
3	20 APR 10	Ready for release 2.1.0
4	OCT 10	Ready for release 2.2.0
5	DEC 10	Ready for release 3.0.0
6	Aug 11	Ready for release 3.1.0

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