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Abstract

*This document describes the driver software for the **DS1307 real-time clock** chip used on AVRcard. The driver software is implemented as a Pascal Unit and is originally developed by [ESS Development AG \(www.ess.ch\)](http://www.ess.ch).*

System Requirements

- AVRcard V1.1
- Pascal compiler from [E-Lab \(www.e-lab.de\)](http://www.e-lab.de).

Driver code

The code can be downloaded from the [Resources page at www.avrcard.com](http://www.avrcard.com)
Current release: V1.2

Interface Description

The following data types are exported by the unit:

```
TSqwOut = (off, _1Hz, _4kHz, _8kHz, _32kHz);
```

Data types

```
TTime = record  
    hour    : byte;  
    minute  : byte;  
    second  : byte;  
end;
```

```
TDate = record  
    weekday : byte;  
    day     : byte;  
    month   : byte;  
    year    : byte;  
end;
```

Get functions

The following functions are exported by the unit:

```
function rtcGetTime (time: pointer to TTime): boolean;
```

```
function rtcGetDate (date: pointer to TDate): boolean;
```

Set functions

There are two groups of functions:

- a) set individual date/time parts
- b) set date or time as whole

```
function rtcSetHour (hour: byte): boolean;
```

```
function rtcSetMinute (minute: byte): boolean;
```

```
function rtcSetSecond (second: byte): boolean;
```

```
function rtcSetWeekDay (day: byte): boolean;
```

```
function rtcSetDay (day: byte): boolean;
```

```
function rtcSetMonth (month: byte): boolean;
```

```
function rtcSetYear (year: byte): boolean;
```

```
function rtcSetTime(time : TTime) : boolean;
```

```
function rtcSetDate(date : TDate) : boolean;
```

Conversion functions

Convert time to string. The target string length must be 8.

```
procedure rtcTimeToString(time : TTime; text : pointer to string);
```

Convert date to string. The target string length must be 14.

```
procedure rtcDateToString(date : TDate; text : pointer to string);
```

Get functions with conversion

Get time as string. The target string length must be 8.

```
function rtcGetTimeString(text : pointer to string) : boolean;
```

Get date as string. The target string length must be 14 required.

```
function rtcGetStringDate(text : pointer to string) : boolean;
```

Square wave function

Set function of square wave output

```
function rtcSetSqwOut(sqw : TSqwOut) : boolean;
```

RAM access

Write available ram bytes 0..55

```
function rtcWriteRam(location : byte; content : byte) : boolean;
```

Read available ram bytes 0..55

```
function rtcReadRam(location : byte; content : pointer to byte) : boolean;
```

**Additional
Information**

The datasheet of the DS1307 chip can be downloaded from the [Documents collection of AVRcard.com](#) or from the manufacturer at [Maxim](#).

Contact

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