



### RV-3032-C7 = Temperature Compensated RTC

Module consuming just **160nA @ 3V**.

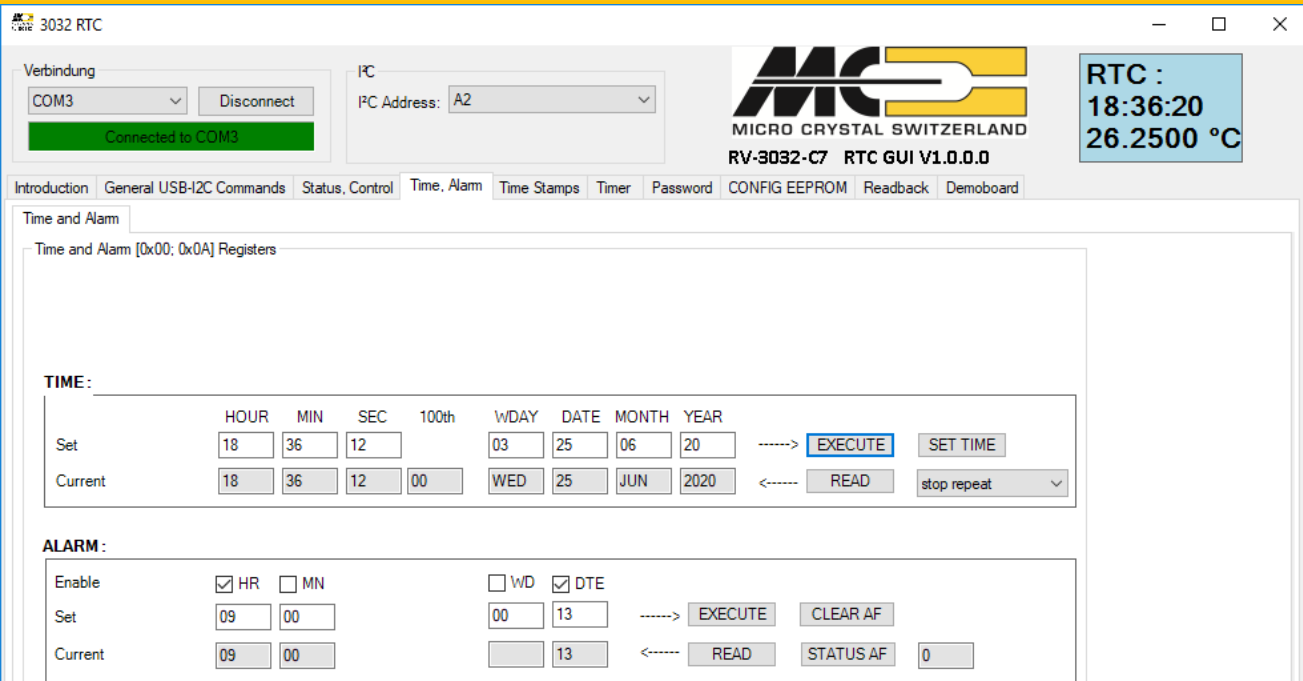
An Industry benchmark :

- Wide operating voltage range: **1.2 V to 5.5 V**
- Time accuracy: **±3 ppm @ -40°C to 85°C**
- Auto Backup Switchover and Trickle Charger
- Time and date from seconds to years
- External event input with timestamp function
- Readable **12 bits temperature sensor**
- Timestamped Temperature threshold detection
- Clock output: 32.768 kHz... 1 Hz
- User **32 bytes EEPROM** memory
- I<sup>2</sup>C-bus interface: 400 kHz

## Description:

The evaluation kit simplifies the system design. The RTC functions can be directly evaluated and tested. The kit has 3 parts:

- Dongle (provided only for large projects) to establish the Interface between the USB-port of the PC and the I<sup>2</sup>C-Bus.  
Order: <https://de.elv.com/elv-usb-ic-interface-usb-i2c-092255>
- The development board RV-3032-C7. All components including the tiny RTC package and a row of pins are preassembled
- The Graphical User Interface (GUI) is ready for download.



# Graphical User Interface:

## Software


The software control via the GUI allows a fast start to communicate with the Real-Time Clock via I<sup>2</sup>C-Bus. Every register is directly decoded and visualized. All the functions, e.g. setting / reading the actual time can be interactively accessed.

Aside from the detailed GUI pages for the Real-Time Clock, a General USB-I<sup>2</sup>C Commands page allows communication with any I<sup>2</sup>C-bus RTC by directly entering the hex codes.

3032 RTC

Verbindung  
COM3  
Disconnect  
Connected to COM3

PC  
PC Address: A2

  
MICRO CRYSTAL SWITZERLAND  
RV-3032-C7 RTC GUI V1.0.0.0

RTC :  
18:36:27  
26.2500 °C

Introduction General USB-I2C Commands Status, Control Time, Alarm Time Stamps Timer Password CONFIG EEPROM Readback Demoboard

Time and Alarm

Time and Alarm [0x00: 0x0A] Registers

TIME:  
Set  
Current

ALARM:  
Enable  
Set  
Current


Received Data  
00 12 36 18 03 25 06 20 00

Reset the dongle  
Reset dongle (Y-Parameters)  
Reset USB-PC  
Status, Firmware, Y-Parameter

3032 RTC

Verbindung  
COM3  
Disconnect  
Connected to COM3

PC  
PC Address: A2

  
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RTC :  
18:40:16  
26.2500 °C

Introduction General USB-I2C Commands Status, Control Time, Alarm Time Stamps Timer Password CONFIG EEPROM Readback Demoboard


RV-3032 Block Diagram

Received Data  
Clear All Clear received Transmitted Data  
Clear transmitted

3032 RTC

Verbindung  
COM3  
Disconnect  
Connected to COM3

PC  
PC Address: A2

  
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RTC :  
18:42:09  
26.3750 °C

Introduction General USB-I2C Commands Status, Control Time, Alarm Time Stamps Timer Password CONFIG EEPROM Readback Demoboard

RAM Overview

Address	Type	Function	Coding	Value	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0x00	RAM	100th_Seconds	BCD	49	0	1	0	0	1	0	0	1
0x01	RAM	Seconds	BCD	02	0	0	0	0	0	0	0	1
0x02	RAM	Minutes	BCD	42	0	1	0	0	0	0	1	0
0x03	RAM	Hours	BCD	18	0	0	0	0	1	1	0	0
0x04	RAM	WeekDay	HEX	03	0	0	0	0	0	0	0	1
0x05	RAM	Date	BCD	25	0	0	1	0	0	1	0	1
0x06	RAM	Month	BCD	06	0	0	0	0	0	1	1	0
0x07	RAM	Year	BCD	20	0	0	1	0	0	0	0	0
0x08	RAM	Minutes_Alarm	BCD	80	1	0	0	0	0	0	0	0
0x09	RAM	Hours_Alarm	BCD	09	0	0	0	0	1	0	0	1
0x0A	RAM	WeekDay_Date_Alarm	BCD	13	0	0	0	1	0	0	1	1
0x0B	RAM	Timer_Value_0	HEX	00	0	0	0	0	0	0	0	0
0x0C	RAM	Timer_Value_1	HEX	00	0	0	0	0	0	0	0	0
0x0D	RAM	Status	HEX	02	0	0	0	0	0	0	0	1
0x0E	RAM	Temperature_LSBs	HEX	60	0	1	1	0	0	0	0	0
0x0F	RAM	Temperature_MSBs	HEX	1A	0	0	0	1	1	0	1	0
0x10	RAM	Control_1	HEX	20	0	0	1	0	0	0	0	0
0x11	RAM	Control_2	HEX	00	0	0	0	0	0	0	0	0

Double-click the line header to edit a register

Received Data  
Clear All Clear received Transmitted Data  
Clear transmitted