



KAmoRPiRTC



Rev. 20241101190228

Źródło: <https://wiki.kamamilabs.com/index.php?title=KAmoRPiRTC>

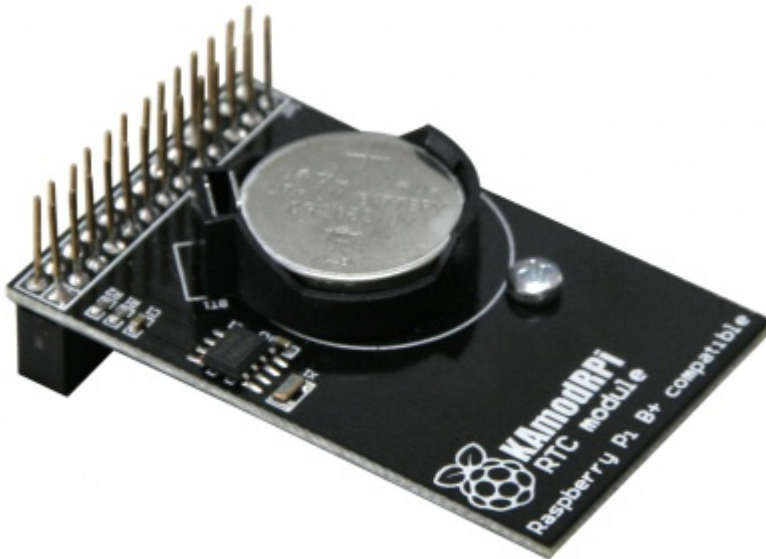
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Description

KAmoRPiRTC is a functional expander for RaspberryPi and Raspberry Pi+ minicomputers, that make possible to equip them with RTC real time clock (M41T00S from STMicroelectronics offer) integrated with the calendar and automatic battery maintaining.



Basic features and parameters

- compatibility with minicomputer RaspberryPi and RaspberryPi+
- Communication with microprocessor systems via I2C interface (channel 0)
- Embedded one-chip RTC from STMicroelectronics (M41T00S)
- Extended I/O connector of RPi minicomputer
- Embedded battery to maintaining of RTC work
- Power supply voltage range 2.7...5.5VDC
- Power consumption <400 μ A

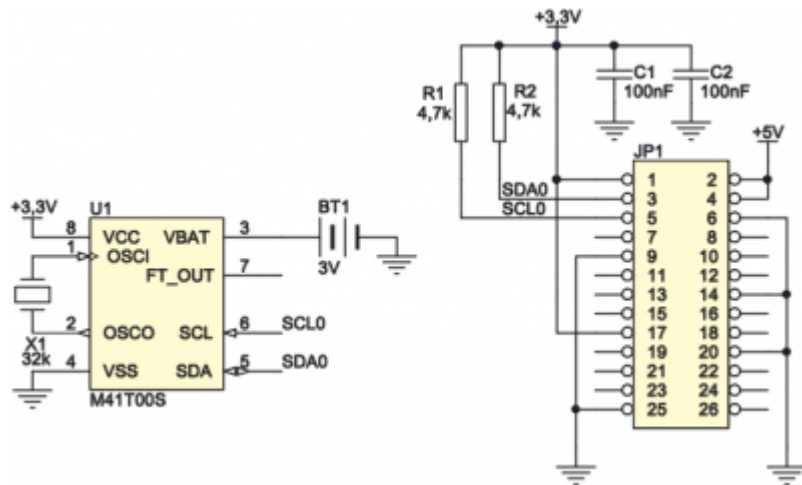


The expander is adapted to cooperate also with RaspberryPi+ minicomputers

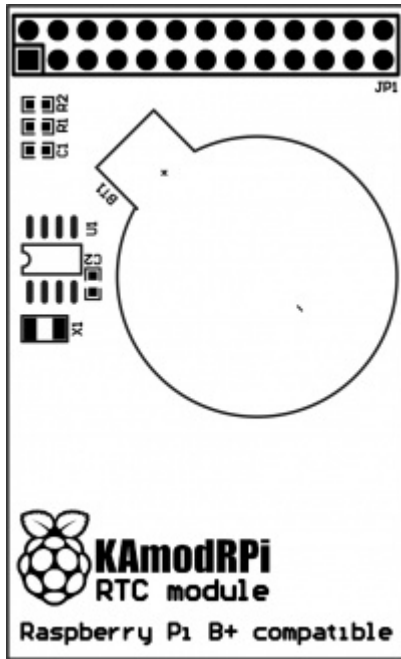
Standard equipment

Code	Description
KAmoRPiRTCr	• Assembled and launched board with battery 3V (CR2032)

Schematic

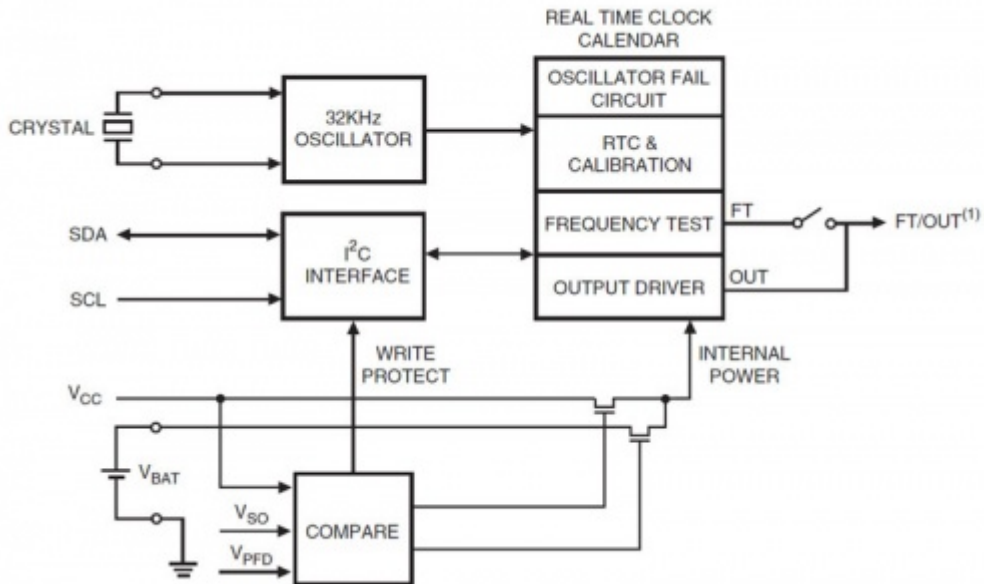


View of board



Embedded RTC

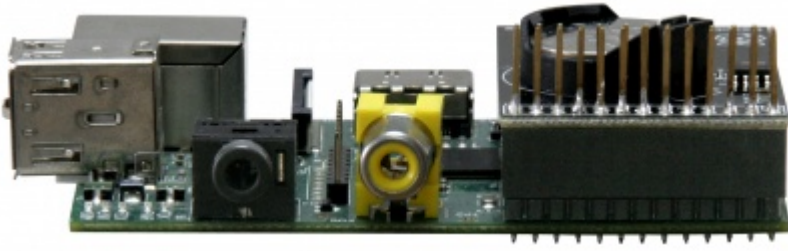
In the expander are used a single-chip RTC M41T00S from STMicroelectronics. The system is a complete calendar, it is also equipped with a monitor of the supply voltage level and an automatic switch connecting the battery supply voltage in the event of a failure of the main supply voltage. The M41T00S chip communicates with the microprocessor of the RPi minicomputer (RPI+) using the I2C interface (channel 0).



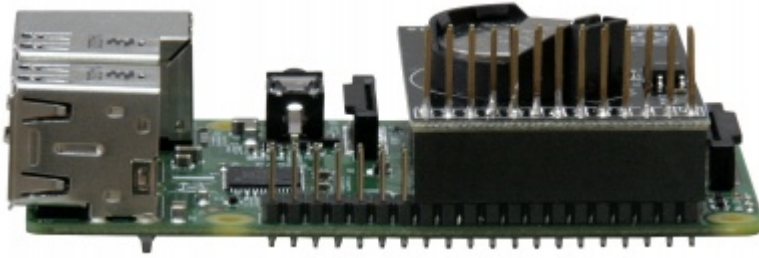
The lines used for RTC communication with the microprocessor are shown in the table below.

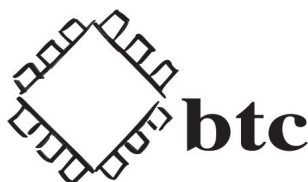
Line	Function	Number of GPIO pin	Comments
GPIO2	SDA	3	Lines pulled up to +3,3 V with 4,7kΩ resistors
GPIO3	SCL	5	Lines pulled up to +3,3 V with 4,7kΩ resistors

Installation of expander on RaspberryPi minicomputer



Installation of expander on RaspberryPi+ minicomputer





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