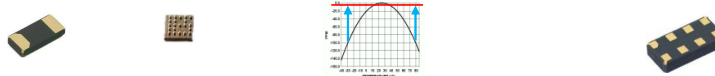


RTC-modules for smoke detectors / smart home

Micro Crystals new RTCs - the RV-3028-C7 and the RV-3032-C7 - combine high accuracy with low power and are especially designed for smart home applications. A low current consumption is required in any smart home. Both can guarantee 10 years lifespan with battery operated conditions and even outdoor applications can be covered as well. In a rough environment the temperature compensation of the RV-3032-C7 guarantees accurate time information under changing conditions outdoor while consuming less current than your typical MCU RTC. This maximized the lifespan of your product or saves cost using a smaller battery.





Crystal + RTC-IC + Calibration → RTC Module



Crystal-only devices struggle to keep the accuracy up. Systematic and external influences like aging, temperature changes or even PCB degradation have a high impact on designs using a crystal only. Taking the typical life cycle of an IoT product of around 10 years into account often crystal only solutions cannot achieve the necessary long term stability and precision. Often parasitic capacitance of the PCB traces are not considered which increase the risk for field failures.

By using a hermetically sealed RTC module, your design is no longer affected by these negative influences!

Product Type	Interface	Features	I_{DD} @ 3 V	Time Accuracy @25°C	Temp Comp -40/85°C	V_{DD} min	V_{DD} max	T_{MAX} [°C]	Temp. Readback	Clock Out	Battery Switch	Battery Charge	Charge Pump	Time Stamp	Alarm	Timer	Offset Comp	RAM [Bytes]	EEPROM [Bytes]
RV-3032-C7	I ² C		160 nA		±3 ppm	1.1	5.5	85	✓	✓	✓	✓	✓	✓	✓	✓	✓	16	32
RV-3028-C7	I ² C		45 nA	±1 ppm		1.1	5.5	85		✓	✓	✓		✓	✓	✓	✓	2	43

Tamper Protection / Data Security

- ◆ External event detection
- ◆ Password protection
- ◆ RTC settings in EEPROM

Power Management

- ◆ Automatic backup switch
- ◆ TDK CeraCharge™ V_{DC-DC} : 1.75 V
- ◆ Versatile charge pump
- ◆ Supercap supported
- ◆ LMR rechargeable
- ◆ Trickle charge $V_{OUT} \approx V_{DD}$

Other Features

- ◆ Interface & interrupts
- ◆ Watch, alarm & timer
- ◆ Temperature limits detection

Performances / Reliability

- ◆ Ultra low power temp. compensation (only for RV-3032-C7)
- ◆ High resolution thermometer
- ◆ Long time reliability
- ◆ Hermetic ceramic package
- ◆ 100% tested