

# Ambiq Micro: Real-Time Clock

## The World's Lowest Power RTC

Ultra-low supply current of:

22nA (calibrated RC clock)

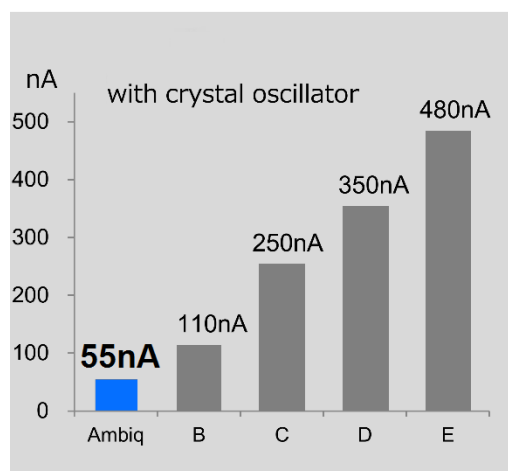
55nA (crystal oscillator)



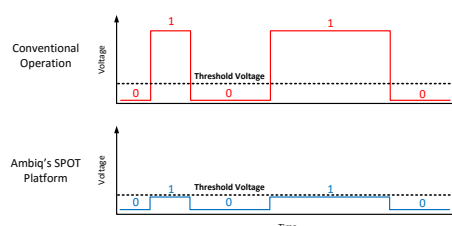
AM08x05, AM18x5\*

\*with Power Management

### Unprecedented Low Power

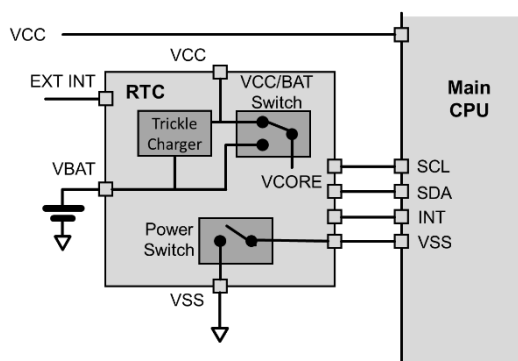


### SPOT™ Ultra-Low Power technology



The Ambiq Micro SPOT™ is the patented **Subthreshold Power Optimized Technology** and reduces the internal operating voltage to below 0.5V. It enables Ambiq RTC to achieve its best-in-class power consumption.

### Power Management Functions



**Power Switch:** The integrated power switch can power off the attached MCU and turns the MCUs power consumption to zero

**Automatic switchover to VBAT:** An integrated comparator checks VCC, so the RTC can switch automatically to backup power.

**Trickle Charger:** Charges a battery or Supercap

**External IRQ:** Controls the power switch and or release sleep mode

Part Number	Interface	Package	Size (mm)	SRAM (byte)	Power Management	Trickle Charger
AM1805AQ	I2C	16-Pin QFN	3x3	256	x	x
AM1815AQ	SPI	16-Pin QFN	3x3	256	x	x
AM0805AQ	I2C	16-Pin QFN	3x3	256		
AM0815AQ	SPI	16-Pin QFN	3x3	256		

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## Applications

- Smart cards
- Medical electronics
- DSC
- DSLR camera
- Audio
- Tablet PC
- Wireless sensors
- Wireless tag
- Smart meters
- Communications



## Digital Calibration

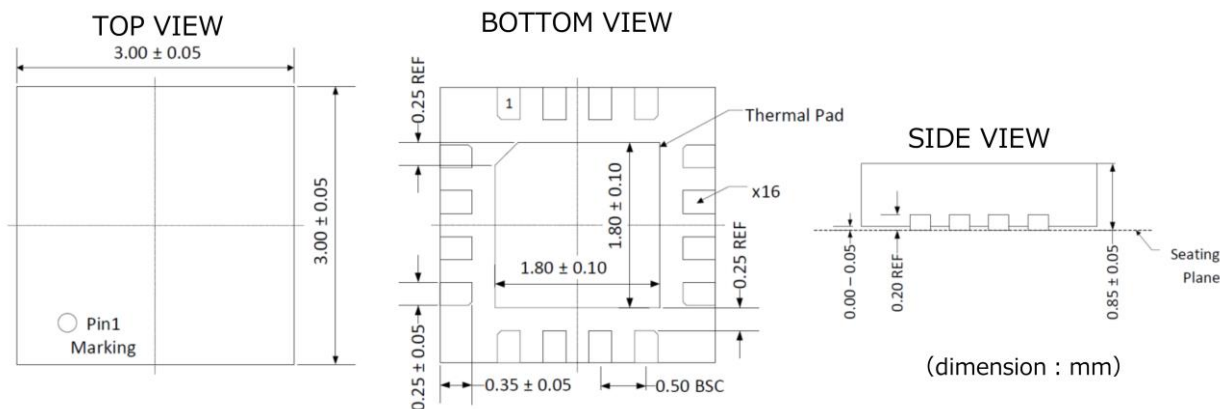
### External crystal calibration

- Correction unit: +/- 2ppm
- Calibration range: -610 - +244ppm
- Algorithm is running on MCU

### Internal RC oscillator autocalibration

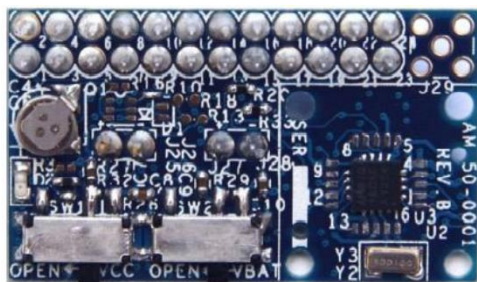
- +/- 3ppm accuracy over 1 year
- Periodically turn on external oscillator for internal RC oscillator calibration
- Unprecedented low power: 22nA with RC oscillator and autocalibration

## Package information



## Evaluation board

AM08x5 and AM18x5 RTC  
Evaluation kits are available



## Documentation

Datasheets, several application notes, EVK user guide are available at:

<http://www.fujitsu.com/feeu>

or at the Ambiq Micro website:

<http://www.ambiqmicro.com>

## Contact:

manuel.schreiner@de.fujitsu.com

Phone: +49 6103 690 613