

## RTC - REAL TIME CLOCK

### Features

- Nano power real time clock
- Integrated oscillator load capacitors and bias
- RC oscillator with 2% variation over temperature and supply
- Crystal oscillator trim to < 0.5 ppm
- 32-bit time counter and alarm
- 32-bit general-purpose register
- Glitch less operation
- Programmable frequency error detection threshold
- Fast start-up time (< 1 s)
- Core area: 0.3 mm<sup>2</sup>

### Applications

- Time keeping applications
- Wireless sensor networks
- Wireless power devices
- Battery powered stand-by devices
- Metering devices

### Applications Diagram

### General Description

SGC22300\_01\_TSMC\_90eFlashMS is a RTC combining the SGC21510 crystal oscillator with the SGC21570 RC oscillator and frequency monitor. The core guarantees ultra-low power consumption and leakage. A general-purpose register option allows to save status bits in an ultra-low leakage always on register and a programmable divided square wave output enables the selection of the appropriate clock to minimize power consumption. The combination of SGC22300\_01\_TSMC\_90eFlashMS and SGC21570 RC oscillator allows operation without the external crystal or, if both oscillators are active, allows to monitor and detect any crystal frequency changes. The core can operate for weeks from the charge of a single super capacitor and it is specified from  $T_j = -40\text{ }^{\circ}\text{C}$  to  $+125\text{ }^{\circ}\text{C}$ .

### Quick Reference

SYMBOL	DESCRIPTION	MIN	TYP	MAX	UNIT
V <sub>AVDD</sub>	Input Sup.	1.60	1.80	3.63	V
V <sub>DD</sub>	Digital Sup.	1.60	1.80	3.63	V
F <sub>XTAL</sub>	XTAL Freq	-	32.768	-	kHz