

q: low quiescent - XTAL: Crystal - LP: low power - co: core transistor - 0x: release

**CHALLENGE - OPTIMIZATION**

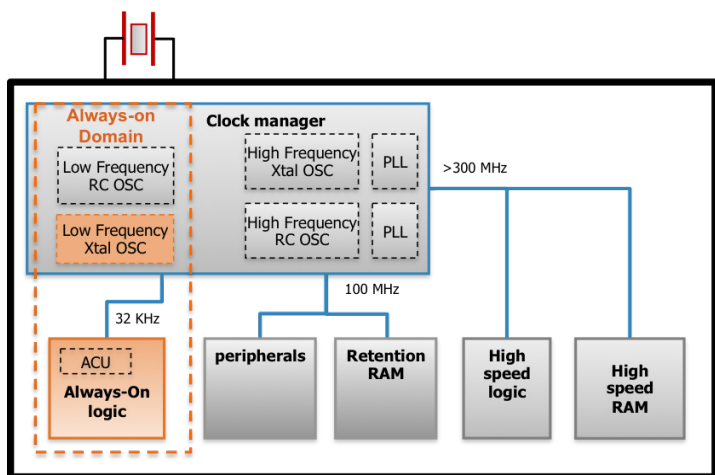
Low power consumption for IoT and wearables implies that logic blocks in the SoC operate at very different optimal frequencies.

A clock network must be controlled to ensure the right timing of operations constrained by BoM cost, silicon area, power consumption, accuracy and stability.

The Always-On domain, over which the power islets emerge, requires a specific panoply of voltage regulators and clocks. The availability of extremely low power oscillators is therefore a must.

In low power modes, low speed clocks are generally used. The qOSCXT-LP-32k-co.01 - low frequency crystal oscillator - is an excellent choice for application combining the needs of high accuracy on the always-on clock and an ultra-low power consumption.

**SYNOPSIS OF A TYPICAL CLOCK NETWORK**



**APPLICATIONS**

- IoT, wearables
- Battery powered systems
- RTC



**KEY BENEFITS**

- Low power consumption
  - ➔ Support of low power and backup modes thanks to its 50 nA of typical power consumption
- High accuracy
  - ➔ Can operate in various environment thanks to its outstanding stability over a large range of temperature
- A cost-efficient solution
  - ➔ No external component is needed (except a quartz) thanks to on-chip integrated capacitors.
  - ➔ Users have the possibility to add capacitors depending on the external crystal selected for a better frequency fitting.
- By-Pass Mode
  - ➔ The oscillator could be by-passed during tests

**BLOCK DIAGRAM**

