3. System Overview

3.1 Introduction

The BGM121/BGM123 product family combines an energy-friendly MCU with a highly integrated radio transceiver. The devices are well suited for any battery operated application, as well as other system requiring high performance and low-energy consumption. This section gives a short introduction to the full radio and MCU system. A detailed functional description can be found in the *EFR32BG1 Blue Gecko Bluetooth® Smart SoC Family Data Sheet* (see general sections and QFN48 2.4 GHz SoC related sections).

A detailed block diagram of the EFR32BG SoC is shown in the figure below which is used in the BGM121/BGM123 Bluetooth Smart module.
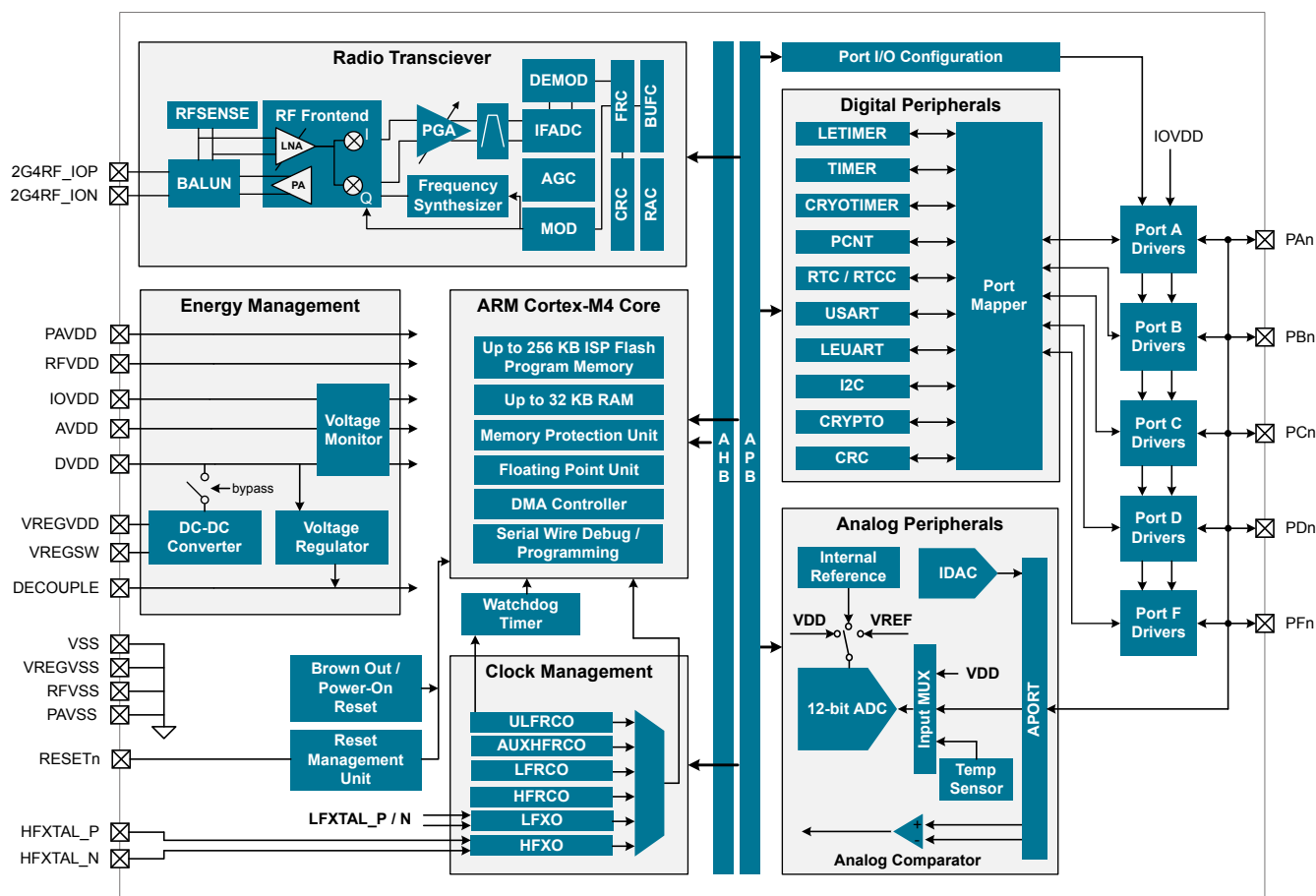

Figure 3.1. Detailed EFR32BG1 Block Diagram

3.2 Radio

The BGM121/BGM123 features a radio transceiver supporting Bluetooth® low energy protocol.

3.2.1 Antenna Interface

BGM121/BGM123 has a built in 2.4GHz ceramic chip antenna or 50 ohm RF pin.

Table 3.1. Antenna Efficiency and Peak Gain

Parameter	With optimal layout	Note
Efficiency	-1 to -2 dB	Efficiency and peak gain depend on the application PCB layout and mechanical design and the used antenna.
Peak gain	1 dBi	