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There is no change to this document as a result of offering the device as a Cypress product. Any changes that have been made are the result of normal document improvements and are noted in the document history page, where supported. Future revisions will occur when appropriate, and changes will be noted in a document history page.

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### **OUR CUSTOMERS**

Cypress is for true innovators – in companies both large and small.

Our customers are smart, aggressive, out-of-the-box thinkers who design and develop game-changing products that revolutionize their industries or create new industries with products and solutions that nobody ever thought of before.

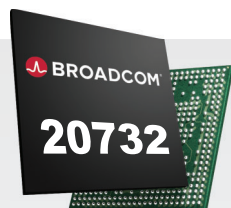
### **ABOUT CYPRESS**

Founded in 1982, Cypress is the leader in advanced embedded system solutions for the world’s most innovative automotive, industrial, home automation and appliances, consumer electronics and medical products. Cypress’s programmable systems-on-chip, general-purpose microcontrollers, analog ICs, wireless and USB-based connectivity solutions and reliable, high-performance memories help engineers design differentiated products and get them to market first.

Cypress is committed to providing customers with the best support and engineering resources on the planet enabling innovators and out-of-the-box thinkers to disrupt markets and create new product categories in record time. To learn more, go to [www.cypress.com](http://www.cypress.com).

# BCM20732

## Single-Chip Bluetooth Low Energy-Only SoC



- BLE-compliant single-mode solution.
- Integrated ARM<sup>®</sup> Cortex<sup>™</sup>-M3 microcontroller unit (MCU), radio frequency and embedded BLE stack all on a single chip.
- Full software support, including GATT, profiles, stack, APIs and application software development kit.
- Power optimized for single-mode coin cell operation and from 1.2V supply.
- On-chip support for two serial peripheral interfaces.
- Onboard 12-bit analog-to-digital converter.
- Onboard wake-up timer

| BCM20732 |                    |
|----------|--------------------|
| ✓        | Medical Devices    |
| ✓        | Sports and Fitness |
| ✓        | Security Systems   |
| ✓        | Remote Controls    |
| ✓        | Set-top Boxes      |

### OVERVIEW

The Broadcom<sup>®</sup> BCM20732 is a Bluetooth Low-Energy (BLE)-only System-on-a-Chip (SoC). The BCM20732 radio has been designed to provide low power, low cost, and robust communications for applications operating in the globally available 2.4 GHz unlicensed Industrial, Scientific, and Medical (ISM) band.

The single-chip BLE SoC is a monolithic component implemented in a standard digital CMOS process and requires minimal external components to make a fully compliant Bluetooth device. The BCM20732 is available in a 32-pin, 5 mm × 5 mm 32-QFN package.

### FEATURES

- BLE-compliant
- Infrared modulator
- IR learning
- Supports Adaptive Frequency Hopping
- Excellent receiver sensitivity
- 10-bit auxiliary ADC with nine analog channels
- On-chip support for serial peripheral interface (master and slave modes)
- Broadcom Serial Control (BSC) interface (compatible with NXP I<sup>2</sup>C slaves)
- Programmable output power control
- Integrated ARM Cortex-M3 based microprocessor core
- On-chip power-on reset (POR)
- Support for EEPROM and serial flash interfaces
- Integrated Low Dropout (LDO) regulator
- On-chip, software controlled power management unit
- RoHS compliant

### APPLICATIONS

The following profiles are supported in ROM:

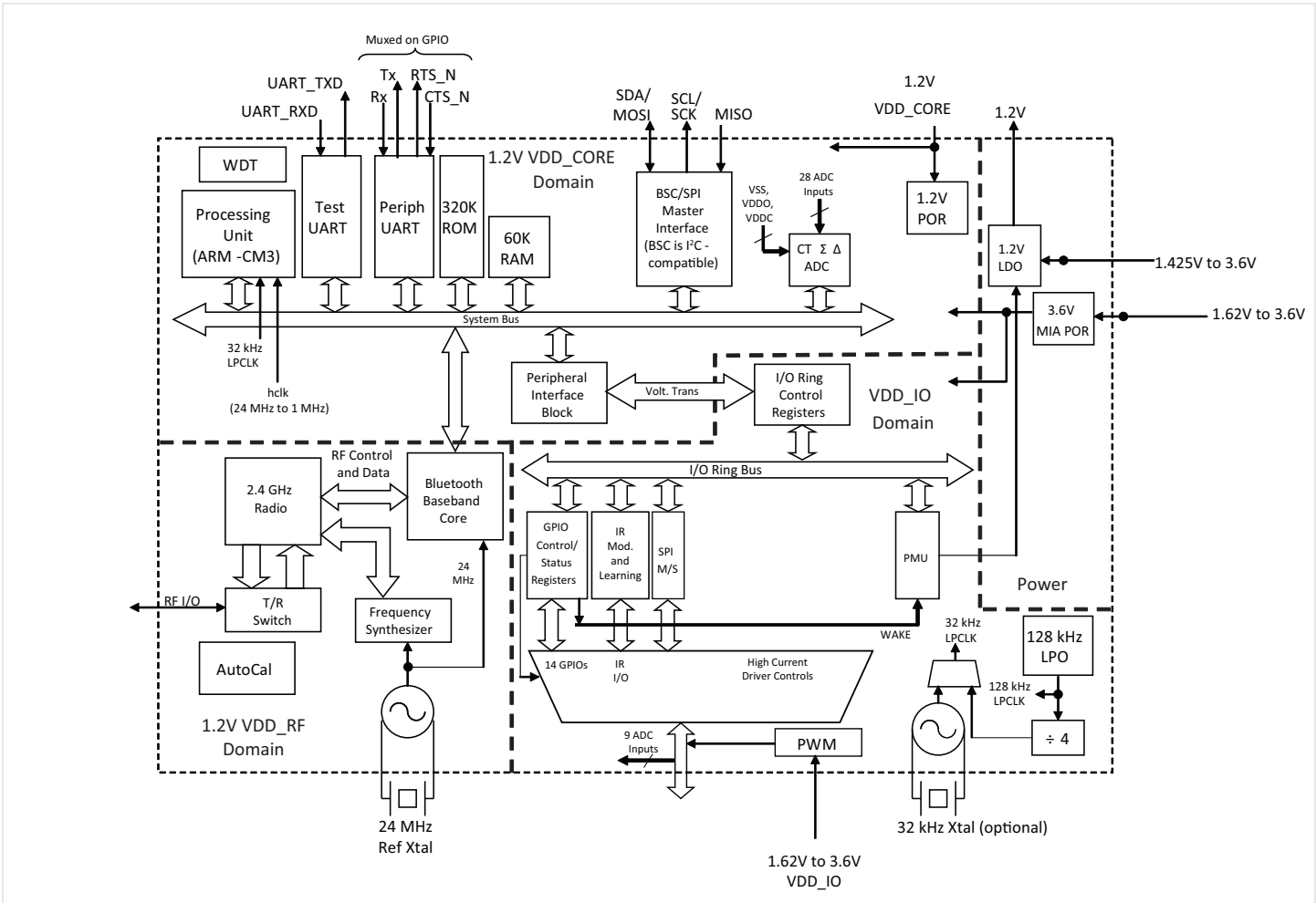
- Battery status
- Blood pressure monitor
- Find me
- Heart rate monitor
- Proximity
- Thermometer
- Weight scale
- Time

Additional profiles that can be supported from RAM include:

- Blood glucose monitor
- Temperature alarm
- Location

### BENEFITS

- Easy-to-use application development environment for rapid application prototyping.
- Open source-based Integrated Development Environment (IDE) and toolchain.
- Fully integrated with the Broadcom Wireless Internet Connectivity for Embedded Devices (WICED) portfolio featuring embedded WiFi and BLE IoT solutions.
- Complies with all of the relevant regulatory and manufacturing standards.



**BCM20732 System Block Diagram**

The BCM20732 provides all the components for an integrated BLE peripheral design (MCU, RF, ADC DAC, timers, stack, and so forth) on a single piece of silicon.

The BCM20732 is also backed by a rich ecosystem of hardware, software, and application partners and leverages Broadcom's world leading connectivity portfolio (Bluetooth, GPS, NFC, and WiFi) to accel-

erate the development of unique products that drive differentiation and increase market share.

## ORDERING INFORMATION

32-pin, 5 mm × 5 mm 32-QFN package

## Part Number

BCM20732A1KML2G

## ABOUT BROADCOM

Broadcom (NASDAQ: AVGO) is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence. Broadcom's extensive product portfolio serves multiple applications within four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & others. Broadcom is changing the world by Connecting everything<sup>®</sup>. For more information, go to [www.broadcom.com](http://www.broadcom.com).

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