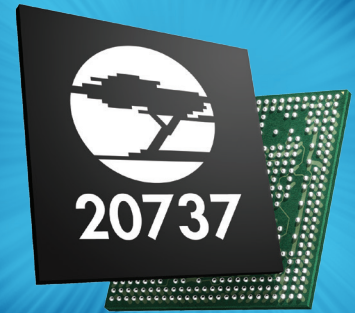


CYPRESS

# CYW20737: SINGLE-CHIP BLUETOOTH LOW ENERGY (BLE) SoC



## PRODUCT OVERVIEW

### OVERVIEW

The Cypress CYW20737 is an advanced, Bluetooth Low Energy (BLE) system-on-a-chip (SoC), includes advanced security features, and introduces new software support for near-field communications (NFC) tap-to-pair. It is designed to support the entire spectrum of BLE use cases for the medical, home automation, accessory, sensor, IoT, and wearable market segments.

The CYW20737 radio has been designed to meet low power demands, 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.

### BLUETOOTH BASEBAND CORE

The Bluetooth Baseband Core (BBC) implements all of the time-critical functions required for high-performance Bluetooth operation.

The BBC manages the buffering, segmentation, and data routing for all connections. It also buffers data that passes through it, handles data flow control, schedules ACL TX/RX transactions, monitors Bluetooth slot usage, optimally segments and packages data into baseband packets, manages connection status indicators, and composes and decodes HCI packets.

In addition to these functions, it independently handles HCI event types and HCI command types.

The following TX/RX functions are implemented in the BBC hardware to increase TX/RX data reliability/security before sending over the air:

- RX Functions: symbol timing recovery, data deframing, forward error correction (FEC), header error control (HEC), cyclic redundancy check (CRC), data decryption/dewhitening
- TX Functions: data framing, FEC generation, HEC generation, CRC generation, link key generation, data encryption/whitening

### KEY FEATURES

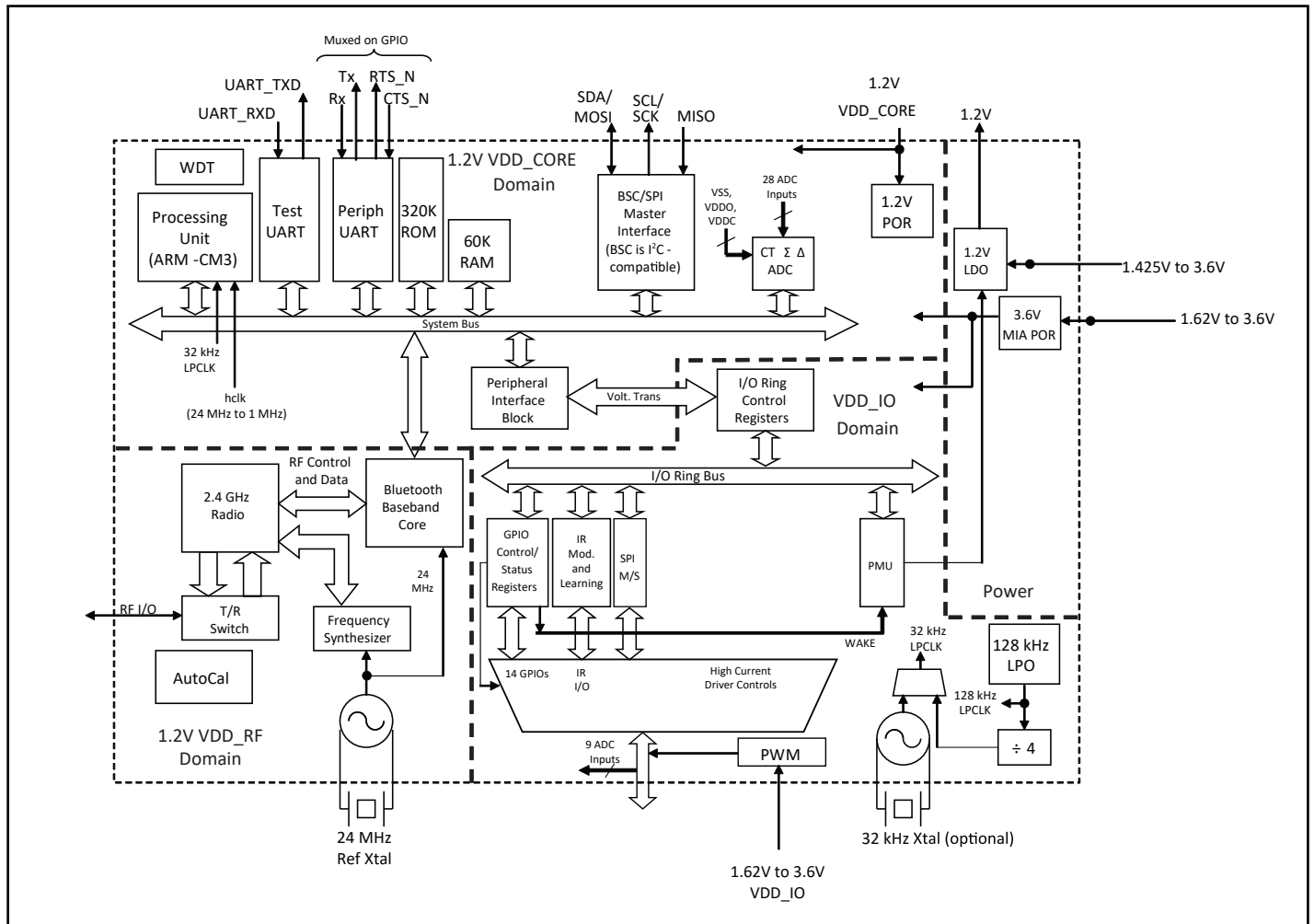
- WICED™ Smart SDK v2.2 ready
- Support for secure over-the-air (OTA) programming
- Support for AirFuel™ Alliance/A4WP Wireless Charging
- Optional support for NFC tag for 'tap to pair' type use cases

CYW20737	
✓	Wireless Charging
✓	NFC pairing
✓	HID and health monitoring
✓	Battery monitors
✓	Proximity profile
✓	Temperature sensors

### FEATURES

- Adds advanced security features and iBeacon technology support for the expanding IoT ecosystem
- Encryption, decryption, certificate signing, verification and various algorithms for increased privacy
- Support for audio over BLE enables voice capabilities for toys, remotes, and more
- Highly integrated ARM® Cortex™-M3 applications processor for reduced solution size and cost
- Superior receiver sensitivity for maximized range and coverage for Bluetooth peripherals
- On-chip, multi-channel ADC for measuring sensor inputs, battery level and more
- On-board stack with multiple embedded profiles, eliminating the need for an external stack
- Support for universal asynchronous receiver/transmitter (UART), serial peripheral interface (SPI) and Cypress Serial Control (CSC) interfaces for communication to external non-volatile memories, peripheral integrated circuits (ICs) and sensors
- The CYW20737 is available in a 32-pin, 5 mm x 5 mm 32-QFN package as well as WLPGA SIP and die packages





CYW20737 Functional Block Diagram

Part number	ORDERING INFORMATION
CYW20737A1KML2G	Commercial 32-pin, 5 mm x 5 mm 32-QFN

**ORDERING INFORMATION**

Contact your local Cypress Representative

For additional information on WICED modules currently in production, go to:

<http://community.cypress.com/community/wicedwifi>

Cypress Semiconductor Corporation  
 198 Champion Court, San Jose CA 95134  
 phone +1 408.943.2600  
 toll free +1 800.858.1810 (U.S. only)

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