

Arm Cordio-C50

Product features

- Bluetooth 5 modem and protocol processing logic
- 802.15.4 modem and protocol processing logic
- MAC and link layer firmware
- Optional AES-128 encryption engine

Operating modes

- Bluetooth 5 only or 802.15.4 only
- Simultaneous operation, supporting dynamic switching between two WPANs

IP implementation

- Full featured link layer firmware and MAC delivered as source code
- Optimized for energy and memory efficiency
- Narrow digital interface to RF front end (RF interface)
- Supports single processor or dual-processor solutions
- Enables flexibility to support geometries and foundries
- Arm AMBA® APB peripheral device

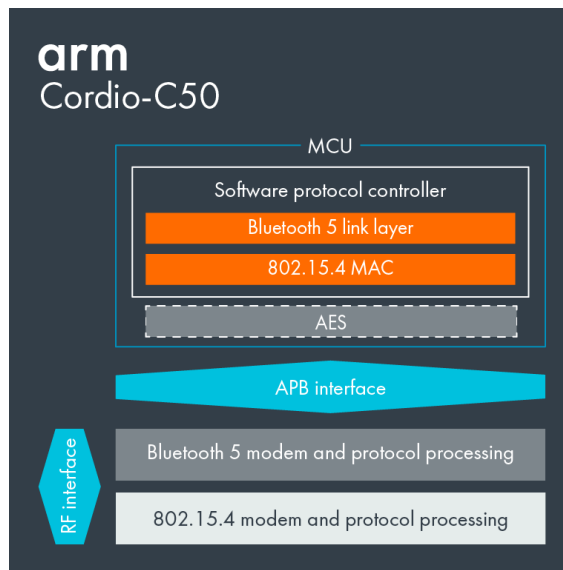
Bluetooth Cordio software

- Bluetooth qualified link-layer firmware up to the HCI and 802.15.4 MAC layer firmware
- Bluetooth qualified software subsystems
- Zigbee/Thread compliant platform through third party stacks
- Separately licensable Cordio stack and profile

Overview

Arm® Cordio®-C50 is a Bluetooth 5 modem, a 802.15.4-2006 modem, protocol processing logic delivered as soft IP, with power intent and implementation IP, associated test-benches and link layer and MAC firmware. Cordio-C50 supports changes for the Bluetooth 5 radio including the 2 Mbps mode, long range, and advertising extensions. The 802.15.4 MAC also has features to support both Thread and Zigbee Pro upper layer stacks.

The design is optimized for low-power with support for Bluetooth 5 and 802.15.4 standards, ideal for designers who want to implement the latest features with a qualified/certified solution for reduced risk and reduced time to market.



Implementation highlights

- RTL for modem and protocol processing logic
- Narrow digital interface to RF front end (RF interface)
- Flexible architecture to support different memories for firmware
- Designed as an AMBA peripheral
- Bluetooth qualified components
- Zigbee/Thread compliant platform through third party stacks

Bluetooth standard features

- 2 Mbps support
- Coded PHY for longer range
- 125 Kbps and 500 Kbps support
- Advertising extensions
- LE channel selection

802.15.4-2006 MAC features

- Baseline features:
 - Scan
 - Data send and receive
 - Data poll
- Features for Zigbee:
 - Association and disassociation
- Features for Thread:
 - MAC security

Design deliverables

- RTL for modem and protocol processing logic
- Link layer and MAC firmware delivered as source code
- Test vectors, timing and physical Abstraction models
- Scripts for simulation and synthesis with Cadence tools
- Integration manual and release notes

Support deliverables

- Evaluation kit: An Arm mbed™-enabled platform with a demonstration chip containing the Cordio-C50 radio IP
- Bluetooth qualified controller sub-system (QDID) to ease Bluetooth listing of OEM products
- Bluetooth/Thread/Zigbee qualification/certification and regulatory guides

| PPA | TSMC 55LP/ULP | TSMC 40LP/ULP |
|---|---------------|---------------|
| Performance/sensitivity (BT/15.4) (dBm) | -95/101 | -95/101 |
| Power active (RX/TX) (mW)* | < 1 | < 1 |
| Power sleep (nW)* | 200 | 200 |
| Area ** (mm ²) | < 0.4/0.35 | < 0.16 |

* Power consumption numbers at 1-volt, preliminary estimates

** Digital gates only, memory requirements would be additional

arm CORDIO

Google search for this product

Search term: Arm Cordio

For more information

Web: www.arm.com/Cordio



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