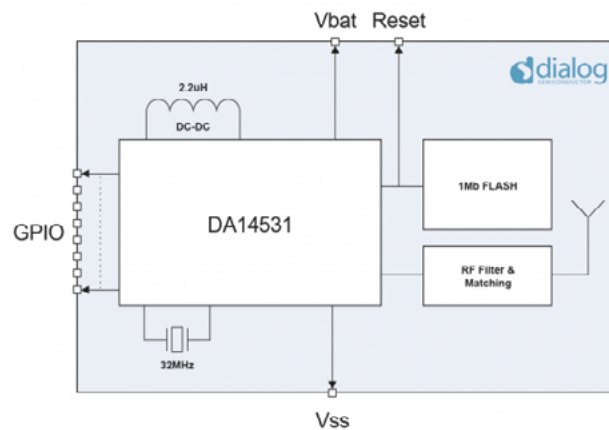


SmartBond TINY™ Module DA14531 - BT 5.1

The world's smallest and lowest power Bluetooth 5.1

The DA14531 SmartBond TINY™ Module, based on the world's smallest and lowest power Bluetooth 5.1 System-on-Chip, brings the DA14531 SoC advantages to an integrated module. It just requires a power supply and a printed circuit board to build a Bluetooth application. The module is targeting broad market use and will be certified across regions providing significant savings in development cost and time-to-market.

It comes with an integrated antenna and easy to use software making Bluetooth low energy development easier than ever before. This awesome combination takes mobile connectivity to applications previously out of reach, enabling of the next billion IoT devices, with SmartBond TINY™ at their core.



Benefits

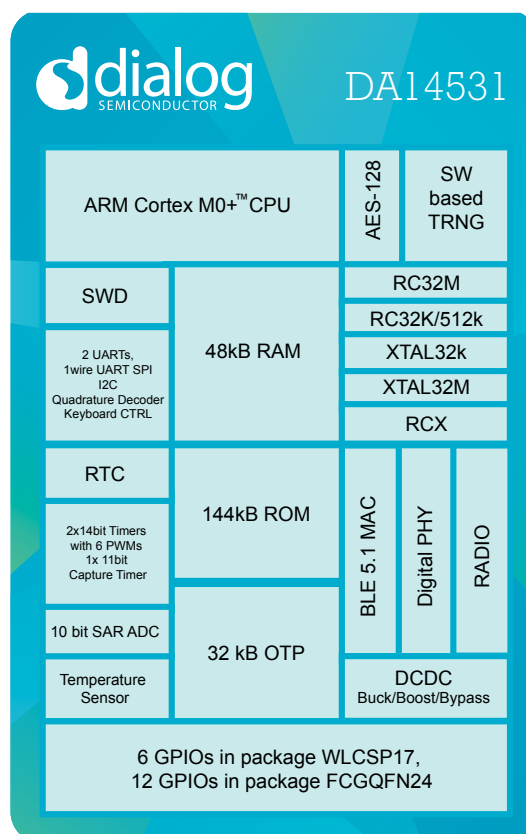
- ◆ **Future proof, compliant with Bluetooth 5.1 (core)**
- ◆ Optimized for disposable products in connected health, connected consumer
 - Designed to work with disposable, even printed batteries
 - Works well with smallest capacity batteries, <<30mAh
 - Supports multiple years of shelf life
 - Inrush current can be limited for disposable batteries with high internal resistance
 - Package design allows for low cost manufacturing with smallest possible footprint
- ◆ **32MHz crystal included**
- ◆ In bypass mode no DC-DC inductor required
- ◆ No boost converter required when working with 1.5V batteries
- ◆ PCB antenna
- ◆ **Worldwide certification**

SmartBond TINY™ DA14531 - BT 5.1 System-on-Chip

Key Features of the SoC

- ◆ **Supports Bluetooth 5.1 core features**
 - Supports up to 3 Bluetooth LE connections
- ◆ **Processing power**
 - 16 MHz 32 bit ARM® Cortex-M0+ with SWD interface
 - Dedicated Link Layer Processor
 - AES-128 encryption Processor
 - Software based certified True Random Number Generator (TRNG)
- ◆ **Memory architecture**
 - 32 kB One-Time-Programmable (OTP)
 - 48 kB Retainable System RAM
 - 144 kB ROM
- ◆ **Integrated Power Management**
 - Integrated Buck/Boost DCDC converter
 - DCDC linear bypass mode
 - Battery supply voltage range: 1.1 to 3.3V
 - Clock-less Hibernation mode of 240nA @ 25°C and 150nA @ 5°C
- ◆ **Selection of digital and analog interfaces**
 - 12 (FCGQFN) or 6 (WL-CSP) general purpose I/Os with programmable voltage levels
 - Two UARTs, SPI interfaces, I2C bus
 - Real Time Clock (RTC)
 - 2 General purpose timers with 6 PWM signals per timer
 - 4-channel 10-bit ADC with averaging capability achieving 11 ENOB
 - Temperature sensor

- ◆ **Radio transceiver**
 - -94 dBm receiver sensitivity
 - Programmable transmit output power power from -20 dBm to +2.5 dBm
 - TX: 3.5 mA at 0 dBm, RX: 2.2 mA at VBAT_HIGH = 3 V with DC-DC on
 - 50 Ω matched single-wire antenna



Development Kit for the DA14531 SmartBond TINY™ Module

Part number	Description
DA14531MOD-00DEVKT-P	Bluetooth Low Energy Development Kit Pro for DA14531 SmartBond TINY™ Module: Includes motherboard, daughterboard and cables; Primary usage is SW application development and power measurements
DA14531MOD-00F1DB-P	DA14531 Module Daughterboard for Pro Development Kit

