

## SmartBond™ DA14580



### Bluetooth® Smart: power, size and system cost without compromise

Power-friendly and easy-to-use, Bluetooth Smart is ideal for connecting portable and battery-powered devices to each other and the cloud. Dialog's SmartBond family is the absolute embodiment of Bluetooth Smart. It's your route to the easiest to use, most power-friendly Bluetooth Smart connected products on the market.

Drawing on Dialog's decades of experience with low power RF connectivity and power management, SmartBond products deliver the industry's lowest power consumption. These highly integrated solutions require fewer external components than any other Bluetooth Smart solution and enable fully hosted applications without the need for an external microcontroller. They come complete with Dialog's SmartSnippets™ software, which includes a fully qualified Bluetooth Smart software stack, an extensive list of SIG-qualified profiles and application design examples for the most popular use cases.

#### Applications

- Human interface devices
  - Keyboards
  - Mice
  - Trackpads
  - Basic remote controls
  - Voice- and gesture-recognition remote controls
- Health and fitness
  - Step counters
  - Activity and sleep monitors
  - Multi-sensor sports computers
- Medical
  - Wearable health monitors e.g. for:
    - Blood pressure
    - Heart rate
    - Glucose levels
  - Medical implants e.g. for:
    - Pacemakers
    - Neuro-stimulators
- Proximity
  - Proximity tags
  - Asset tracking
  - Access control
  - Beacons
  - Indoor navigation
  - Wireless charging
- Smart Home
  - Security
  - HVAC
  - Lighting

Dialog offers reference designs for many of these applications.



# SmartBond™ DA14580

## Breaking barriers with Bluetooth 4.0 and 4.1

Dialog's DA14580 is the world's smallest, lowest power and most integrated Bluetooth Smart solution. It gives you the freedom to develop the Bluetooth 4.0 and 4.1 applications you want to, with no need to compromise.

### Longest battery lifetimes

The DA14580 draws just 4.9 mA at transmission and reception – 50% less than other Bluetooth Smart solutions meaning twice the battery lifetime. Moreover, it can run from voltages as low as 0.9 V: ideal for energy harvesting in completely autonomous systems.

### Smallest form factors

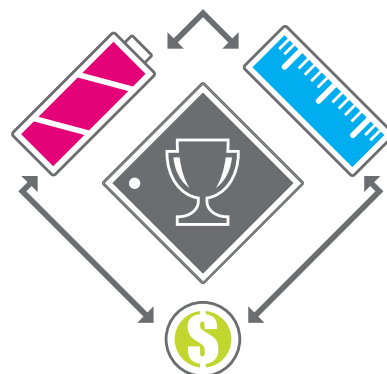
Available in a wafer-level chip scale package measuring just 2.5 x 2.5 x 0.5 mm, the DA14580 minimizes board size. It requires just 5 external components and can operate from a single alkaline, NiMH or coin cell – so you can create the smallest, most attractive products.

### Lowest system cost

The DA14580's high integration levels – including an embedded 32-bit MCU, memories and rich set of peripherals – ensure the lowest external component count. Together with an integrated power management unit and the ability to use smaller batteries, this minimizes your BoM, allowing you to develop low-cost yet highly featured systems.

### Simplified design-in

As part of the SmartBond™ family, the DA14580 is easy to design-in, enables fully hosted applications without an external MCU and is supported by a complete development environment and Dialog's SmartSnippets™ software. It is also available in compact, fully-certified modules for faster time-to-market with no need for extensive RF experience.



### Key features

- Complete single-mode Bluetooth 4.0 and 4.1 SoC
- Powerful 32-bit ARM Cortex-M0 microcontroller
- World-leading power consumption
  - 4.9 mA RX / TX at 3 V and 0 dBm output power
  - Under 600 nA at 3V in deep sleep
- Best-in-class 93 dBm link budget
- 0.9 – 3.3 V operating range
- Hardware AES-128 encryption engine
- Single-pin antenna interface
- Up to 32 GPIOs
- Choice of compact packages
  - WL-CSP34: 2.5 x 2.5 mm
  - QFN40: 5 x 5 mm
  - QFN48: 6 x 6 mm

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