

## SmartBond™ DA1458x Product Family

### Power, Size and System Cost Without Compromise

Bluetooth® low energy is the gateway to personal connectivity and easy access to the cloud. Dialog's SmartBond family is the simplest route to delivering the most power-friendly and flexible Bluetooth low energy connected products to the market.

Highly integrated, SmartBond products deliver the smallest, most power efficient Bluetooth low energy solutions available – and enable the lowest system costs. The family includes generic and application-optimized solutions in various pin-compatible memory options, combining design flexibility with easy cost reduction.

As connected devices evolve, our DA1458x product family ensures designers have the Bluetooth solutions they need, when they need them. It is backed up by our powerful SmartSnippets™ software tooling and extensive applications support, making it easy for designers to get the most out of their system.

In short, SmartBond stands for industry-leading Bluetooth low energy functionality without compromise. So designers can focus on creating new products and applications that consumers will love.



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## SmartBond DA14586 flagship

### Take full advantage of Bluetooth 5

Dialog SmartBond™ DA14586 is the smallest, lowest power and most integrated Bluetooth® solution available. It supports all Bluetooth developments up to and including Bluetooth 5 and Bluetooth low energy Mesh.



### More Bytes for your Bluetooth

With 2 Mb of Flash, 96 kB of RAM and 64 kB of OTP, the DA14586 has plenty of memory for you to take full advantage of Bluetooth 5's advanced features and develop attention-grabbing applications. The onboard Flash also allows for easy over-the-air (OTA) software updates of products in the field. The software upgrade service which is part of the SmartSnippets toolbox ensures you can enable this feature out-of-the-box.

### Simplified design-in

The DA14586 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.

### Greater flexibility for more advanced systems

The DA14586 boasts an extensive feature list, including an integrated microphone interface for voice support. This versatile SoC is ideal for adding Bluetooth low energy to a diverse range of products from remote controls to beacons, and from sensors to connected medical devices and wireless charging.

### Keeping it in the family

As part of the SmartBond family, the DA14586 is fully pin-compatible with DA14580, DA14581 and DA14583, so your existing designs can be quickly upgraded.



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## DA1458x product family – the best fit for your needs

Our flagship DA14586 leads a fleet of Bluetooth low energy solutions.

### DA14580

#### An all-round champion for Bluetooth 4.2

Until we introduced our latest DA14586, the DA14580 wore the crown as the world's smallest, lowest power and most integrated Bluetooth low energy solution. And it still puts most other solutions in the shade – measuring just 2.5 x 2.5 x 0.5 mm, consuming a mere 4.9 mA and requiring only 5 external parts. So you can create small, attractive products with long battery lifetime.

### DA14581

#### Optimized for Air Fuel and HCI applications

A fast-boot power receiver and 8 connections for the power transmitter make the DA14581 perfect for wireless charging (Air Fuel). You can create a pre-programmed HCI device using the optimized code, which fits into the DA14581's OTP memory. For Bluetooth 4.2, this is the world's smallest, lowest power and most integrated solution for Air Fuel and HCI applications.

### DA14583

#### OTA upgrades with Flash flexibility

Take the DA14580, add Flash, and you have our DA14583. This integrated solution offers you even greater flexibility, allowing software upgrades over the air (OTA) to keep your devices up-to-date in the field. Furthermore, the DA14583 is pin-to-pin compatible with the DA14580, offering you an easy cost down path from Flash to OTP.

### DA14585

#### Flexible memory options for Bluetooth 5

The DA14585 delivers the same features, benefits and performance as our flagship DA14586 with added flexibility. With no onboard Flash, it provides a simple cost down path. It also gives designers freedom to include as much or as little external Flash as they need allowing them to optimize system capabilities, size and cost. Moreover, a wafer-level chip-scale packaged version measuring just 2.40 x 2.66 mm supports the most space-constrained applications.



Product	Memory size	General Purpose I/Os	Package	Key features	Applications
DA14580	ROM 84 kB OTP 32 kB RAM 50 kB	12 24 24 32	WL-CSP34, size 2.5x2.5x0.5mm QFN40, size 5x5x0.9mm QFN40, size 6x6x0.9mm QFN48, size 6x6x0.9mm	<ul style="list-style-type: none"> <li>• Bluetooth 4.2</li> <li>• Cortex M0 application processor</li> <li>• Power supply 0.9 - 3.6 V</li> <li>• Single pin RF I/O</li> <li>• Rich set of analog and digital peripherals</li> </ul>	<ul style="list-style-type: none"> <li>• Proximity &amp; Beacons</li> <li>• Health &amp; Fitness</li> <li>• HID</li> <li>• Smart Home</li> </ul>
DA14581	ROM 84 kB OTP 32 kB RAM 50 kB	12 24	WL-CSP34, size 2.5x2.5x0.5mm Thin WL-CSP34, size 2.5x2.5x0.35mm QFN40, size 5x5x0.9mm	<ul style="list-style-type: none"> <li>• Bluetooth 4.2</li> <li>• Cortex M0 application processor</li> <li>• Power supply 0.9 - 3.6 V</li> <li>• Single pin RF I/O</li> <li>• Rich set of analog and digital peripherals</li> <li>• 8 simultaneous connections</li> <li>• Optimized boot time</li> </ul>	<ul style="list-style-type: none"> <li>• Wireless charging (Air Fuel)</li> <li>• HCI</li> <li>• Smart cards</li> </ul>
DA14583	FLASH 1 Mb ROM 84 kB OTP 32 kB RAM 50 kB	24	QFN40, size 5x5x0.9mm	<ul style="list-style-type: none"> <li>• Bluetooth 4.2</li> <li>• Cortex M0 application processor</li> <li>• 1 Mb Flash</li> <li>• Power supply 2.35 - 3.3 V</li> <li>• Single pin RF I/O</li> <li>• Rich set of analog and digital peripherals</li> </ul>	Space-constrained applications requiring software updates Over-The-Air (OTA)
DA14585/6	ROM 128kBytes OTP 64kBytes RAM 96kBytes FLASH 2Mbit (586)	14 25	WL-CSP34 size 2.4x2.6x0.4mm, pitch 0.4mm QFN40 size 5x5x0.9mm, pitch 0.4mm Pin to pin compatibility to DA14580/1/3 in QFN40	<ul style="list-style-type: none"> <li>• Bluetooth 5.0 Core</li> <li>• Cortex M0 application processor</li> <li>• Power supply 0.9-3.6V (585)</li> <li>• Single pin RF I/O</li> <li>• Rich set of analog and digital peripherals</li> <li>• 8 simultaneous connections</li> <li>• Optimized boot time</li> </ul>	<ul style="list-style-type: none"> <li>• Beacon &amp; proximity</li> <li>• Health, Fitness &amp; HID</li> <li>• Smart Home</li> <li>• Smart Cards</li> <li>• Automotive</li> <li>• Voice command RCU</li> <li>• Wireless charging</li> </ul>

**Dialog Semiconductor Worldwide Sales Offices - [www.dialog-semiconductor.com](http://www.dialog-semiconductor.com) - email: [smartbond@diasemi.com](mailto:smartbond@diasemi.com)**

**United Kingdom**  
Phone: +44 1793 757700

**The Netherlands**  
Phone: +31 73 640 88 22

**Japan**  
Phone: +81 3 5425 4567

**Singapore**  
Phone: +65 648 499 29

**Korea**  
Phone: +82 2 3469 8200

**Germany**  
Phone: +49 7021 805-0

**North America**  
Phone: +1 408 845 8500

**Taiwan**  
Phone: +886 281 786 222

**Hong Kong**  
Phone: +852 3769 5200

**China (Shenzhen)**  
Phone: +86 755 2981 3669

**China (Shanghai)**  
Phone: +86 21 5424 9058

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