

BLUETOOTH[®] 4.1 FREQUENTLY ASKED QUESTIONS

TECHNOLOGY:

What is Bluetooth[®] 4.1?

Bluetooth[®] 4.1 is an evolutionary update to the Bluetooth Core Specification. It rolls up adopted Bluetooth Core Specification Addenda (CSA1, 2, 3 & 4) while adding new features and benefits. Bluetooth 4.1 **improves usability** for consumers, **empowers innovation** for product developers and **extends the technology's foundation** as an essential link for the **Internet of Things**.

What are the key features and benefits of Bluetooth 4.1?

Bluetooth 4.1 offers the following key features and benefits which are segmented into three areas:

1) Improving Usability

Feature	Benefits
Mobile Wireless Service Coexistence Signaling	Engineered to work seamlessly with cellular technologies like LTE
Train Nudging and Generalized Interlaced Scanning	
Low Duty Cycle Directed Advertising	Maintain connections with less frequent manual intervention
L2CAP Connection Oriented Channels	Exchange data more efficiently

2) Empowering Developer Innovation

Feature	Benefits
Dual Mode Topology and Link Layer Topology Software Features	Device supports multiple roles simultaneously (Enables a Bluetooth Smart Ready product such as a smartphone, to act as a Bluetooth Smart Ready Hub and Bluetooth Smart peripheral at the same time)

3) Enabling the Internet of Things

Feature	Benefits
L2CAP Dedicated Channels	Devices will be able to setup a dedicated channel for communication (This is a foundational step for future support of IPv6 at the sensor level)

For complete information on Bluetooth 4.1 features and benefits, technical details, tools and more please visit:

<https://www.bluetooth.org/en-us/specification/adopted-specifications>

BLUETOOTH® 4.1 FREQUENTLY ASKED QUESTIONS

TECHNOLOGY Continued:

Is Bluetooth 4.1 replacing Bluetooth 4.0?

No, Bluetooth 4.1 extends the functionality set already provided by Bluetooth 4.0.

What is the benefit of using Bluetooth 4.1?

In addition to the above listed key new features, using Bluetooth 4.1 enables manufacturers to take advantage of important clarifications incorporated into the core specification in the form of errata.

Is Bluetooth Smart (Low Energy) technology a part of Bluetooth 4.1?

Yes. Bluetooth Smart technology introduced in Bluetooth 4.0 is a feature within the Bluetooth 4.1 core specification.

Are there any mandatory features that need to be implemented to claim compliance to Bluetooth 4.1?

No, for the first time since the adoption of Bluetooth 2.0 + EDR, there are no mandatory features that must be claimed to use the specification Bluetooth 4.1. However, manufacturers are required to implement all errata applied to Bluetooth 4.1 in order to comply with the specification.

Will Bluetooth 4.1 devices be backward compatible with current Bluetooth devices in the marketplace?

Devices implementing only the low energy feature (branded Bluetooth Smart) will be backward compatible with Bluetooth 4.0 devices that also implement the low energy feature.

Devices implementing the Basic Rate/Enhanced Data Rate (BR/EDR) Core Configuration will be backward compatible to all adopted Bluetooth Core versions beginning with 1.1 that also implement Bluetooth BR/EDR.

Should I just be using the Bluetooth 4.1 specification moving forward for my devices?

The SIG recommends that manufacturers begin immediately to implement Bluetooth 4.1 in their devices in order to provide an optimal user experience and enjoy the benefits of the new topologies now supported.

QUALIFICATION:

Does Bluetooth 4.1 change the qualification process?

No, the qualification process remains same for all Bluetooth specifications.

Can I still qualify to Bluetooth 2.0, 2.1, 3.0 and 4.0?

Yes, Core Specification versions 2.0 +EDR, 2.1+EDR, 3.0+HS and 4.0 are still available for use and qualification.

What specification name do I use for a 4.0 or earlier Subsystem combined with a 4.1 Subsystem?

With the adoption of 4.1, we updated the [Bluetooth Brand Guide](#) to include simplified naming conventions. The new standard naming convention defaults to the lowest core specification version being used. For example, if combining a 2.1+EDR Controller Subsystem with a 4.1 Host Subsystem the resulting specification name would be 2.1+EDR.

BLUETOOTH® 4.1 FREQUENTLY ASKED QUESTIONS

QUALIFICATION Continued:

If my product is already qualified to an earlier version, do I need to requalify it to 4.1?

No. Products are qualified in perpetuity without requalification. However, if you are updating a previously qualified product to the 4.1 specification, you will need to requalify.

Where can I read the technical details of the updates in Bluetooth 4.1?

You can find all of the technical details at <https://www.bluetooth.org/en-us/specification/adopted-specifications>.

When can I start qualifying my product to the Bluetooth core specification 4.1?

Qualification will be enabled for the new core specification on 10 December 2013, at 7:00a.m. PST.

DEVELOPMENT:

Is there an implementation stack available for the Bluetooth 4.1 core specification?

At this time we are not aware of any release of the 4.1 implementation stack. We are expecting solution providers to update their implementations shortly.

Will my application that's currently running on the Bluetooth 4.0 stack still work on the Bluetooth 4.1 stack?

Yes. All of the Bluetooth 4.0 features are supported in the Bluetooth 4.1 core specification. If the updated stack implementation complies with Bluetooth 4.1, all the Bluetooth 4.0 features will remain unchanged. Please consult with your stack provider for further details.

Is there IPv6 support in 4.1?

Not at this time. L2CAP Dedicated Channels is a foundational feature of Bluetooth 4.1. Currently the Bluetooth SIG is developing the IPv6 specification. In the future, this will enable IPv6 devices at the sensor level to setup a dedicated channel for communication and ensure Bluetooth enabled products are an integral part the Internet of Things (IoT).

BRAND:

Should I brand my product "Bluetooth 4.1"?

No. Branding a Bluetooth enabled product with just the core specification number can be confusing for your customers. The low energy feature is optional in Bluetooth 4.1, therefore specification numbers don't indicate device compatibility going forward.

It's important to use the correct Bluetooth brand to quickly communicate device compatibility to your customers and eliminate "Is Bluetooth 4.1 compatible with my Bluetooth 4.0 device?" type questions. In addition, Bluetooth brands span future Bluetooth core specification versions so you can be confident that using a Bluetooth brand will communicate device compatibility to your customers for the long-term.

BLUETOOTH® 4.1 FREQUENTLY ASKED QUESTIONS

BRAND Continued:

Should I use the Bluetooth Smart brand for my Bluetooth 4.1 enabled device?

Not all Bluetooth 4.1 products are Bluetooth Smart since the low energy feature is optional in Bluetooth 4.1. The correct Bluetooth brand to use for a 4.1 qualified device depends on the Bluetooth 4.1 features you implement in your product.

Knowing which brand to use is simple:

- Brand your product “Bluetooth Smart” if you are using the Low Energy Core Configuration or Basic Rate and Low Energy Combined Core Configuration, along with using the GATT-based architecture to enable particular functionality of the product. Typically, Bluetooth Smart branded products are sensor or data collector devices transmitting data to a ‘hub’ device like a smartphone or tablet.
- Brand your product “Bluetooth Smart Ready” if you are using a Basic Rate and Low Energy Combined Core Configuration, along with using the GATT-based architecture to provide a means by which the end user can choose to update that Smart Ready product with the functionality of a Bluetooth Smart product. Typically, Bluetooth Smart Ready branded products are ‘hub’ devices such as smartphones, tablets or PCs receiving data from a Bluetooth Smart device and turning it into useful information through the use of an application on the device or in the cloud.
- Brand your product “Bluetooth” if you are not using the low energy feature of the core specification and the GATT-based architecture to enable a particular functionality. Common Bluetooth branded products are products such as wireless speakers, headsets or in-vehicle communication devices.

Why did Bluetooth SIG add the Bluetooth Smart and Smart Ready brands?

The Bluetooth SIG introduced Bluetooth Smart and Smart Ready to provide an industry standard for manufacturers to help customers quickly identify device compatibility. Devices using only the Bluetooth low energy core configuration are not compatible with devices using only a Bluetooth basic rate core configuration. When you see Bluetooth Smart and Bluetooth Smart Ready, you know the products work together.

With Bluetooth 4.1, are there any changes to the requirements for using the Bluetooth Smart and Smart Ready brands? What are those requirements?

Yes. Previously Bluetooth Smart branded products referred only to devices with a single-mode Bluetooth low energy radio while Bluetooth Smart Ready branded products required the dual-mode Bluetooth radio. In order to increase flexibility for Bluetooth SIG members, the requirements have been simplified by focusing on the core configuration.

The new requirements are:

Bluetooth Smart refers to qualified products incorporating Bluetooth Core Specification Version 4.0 (or higher) with a Low Energy Core Configuration or Basic Rate and Low Energy Combined Core Configuration and using the GATT-based architecture to enable particular functionality of the product.

Bluetooth Smart Ready refers to qualified products incorporating Bluetooth Core Specification Version 4.0 (or higher) with a Basic Rate and Low Energy Combined Core Configuration, and using the GATT-based architecture to provide a means by which the end user can choose to update the Bluetooth Smart Ready product with the functionality of a Bluetooth Smart product.

BLUETOOTH® 4.1 FREQUENTLY ASKED QUESTIONS

BRAND Continued:

When should I use the Bluetooth Smart branding on my product?

If your product meets the Bluetooth Smart brand requirements above, you should use the Bluetooth Smart brand. Typically, Bluetooth Smart branded products are sensor or data collector devices transmitting data to a 'hub' device. By using the Bluetooth Smart brand, you are telling customers your product is compatible with the universe of Bluetooth Smart Ready smartphones, tablets and other hub devices. The brand helps customers quickly identify device compatibility and reduces returns, customer confusion and support calls.

When should I use the Bluetooth Smart Ready branding on my product?

If your product meets the Bluetooth Smart Ready brand requirements above, you should use the Bluetooth Smart Ready brand. Typically, Bluetooth Smart Ready branded products are 'hub' devices such as smartphones, tablets or PCs receiving data from a Bluetooth Smart device and turning it into actionable information using an application on the device or in the cloud. By using the Bluetooth Smart Ready brand, you are telling customers your product can connect to the universe of Bluetooth products—the ones they own today and the Bluetooth Smart devices they'll own tomorrow.

Does the SIG have tools or programs which can help me with branding and marketing my Bluetooth products?

Yes. The Bluetooth SIG offers a wide range of tools and programs to help with branding and promoting your Bluetooth enabled product including the Bluetooth Smart Marketer Program. This no-cost offering can help generate publicity for your Bluetooth Smart branded product through Bluetooth SIG's brand expertise, public relations, social media and online channels. To learn more about all of the marketing programs you can leverage, visit: <https://www.bluetooth.org/en-us/marketing/marketing-programs-update>

Where can I find the brand usage guidelines and Bluetooth logo art?

All Bluetooth brand usage guidelines and logo art files are available in the Bluetooth SIG Brand Guide. You can download it at: <https://www.bluetooth.org/en-us/bluetooth-brand/bluetooth-brand>