BLUETOOTH® CORE SPECIFICATION 4.2 FREQUENTLY ASKED QUESTIONS

TECHNOLOGY:

What is Bluetooth 4.2?

Bluetooth 4.2 is an important update to the Bluetooth Core Specification delivering exciting new features and benefits for Bluetooth Smart technology. This will create significant advantages for developers and manufacturers, while providing a better user experience for their customers. Bluetooth 4.2 makes Bluetooth Smart even **smarter, faster and the ideal wireless technology for the Internet of Things (IoT).**

What are the key features and benefits associated with Bluetooth 4.2?

1) Enables the IoT

Advantages	Features	End User Examples
Flexible Internet Connectivity Options Extend the reach of power-efficient devices to the Internet	**Low-power IP (IPv6/6LoWPAN)** Available through the Internet Protocol Support Profile (IPSP)	A Bluetooth Smart sensor can access the Internet (send and receive messages) through a gateway device
	Bluetooth Smart Internet gateways (GATT) Available early 2015 through the HTTP Proxy Service (HPS) & RESTful API white papers	

2) Makes Bluetooth Smart Even Smarter

Advantages	Features	End User Examples
Industry-leading Privacy Keeps Bluetooth Smart devices from being tracked	**LE Privacy 1.2**	A Bluetooth Smart location tracker can only be followed by the owner or trusted group all while consuming less power
More Power Efficient Introduces refinements that help Bluetooth Smart devices save even more energy		
Highly Secure Features FIPS-compliant encryption ensuring confidential data stays that way	**LE Secure Connections**	A Bluetooth Smart lock or other smart home device provides industry standard security for added user confidence during device pairing

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3) Makes Bluetooth Smart Even Faster

Advantage	Feature	End User Example
Data Throughput Increase Up to 2.5x faster with a packet capacity increase of 10x vs. previous versions	**LE Data Length Extension**	Over-the-air firmware updates for a Bluetooth Smart device are up to 250% faster and more reliable

For complete information on Bluetooth 4.2 features and benefits, technical details, tools and more please visit:
https://www.bluetooth.org/en-us/specification/adopted-specifications

Is Bluetooth 4.2 replacing Bluetooth 4.1 or 4.0?
No, Bluetooth 4.2 extends the functionality set already provided by previous core specifications.

What is the benefit of using Bluetooth 4.2?
In addition to the new features, using Bluetooth 4.2 allows manufacturers to take advantage of important clarifications incorporated into the core specification in the form of bug fixes or 'errata'.

Is Bluetooth Smart (Low Energy) technology a part of Bluetooth 4.2?
Yes, Bluetooth Smart technology introduced in Bluetooth 4.0 is a feature within the Bluetooth 4.2 core specification. In fact, the new features and benefits of Bluetooth 4.2 are designed specifically for Bluetooth Smart technology.

Are there any mandatory features that need to be implemented to claim compliance to Bluetooth 4.2?
No, as was the case with Bluetooth 4.1, there are no mandatory features that must be claimed to use the Bluetooth 4.2 specification. However, manufacturers are required to implement all errata applied to Bluetooth 4.2 in order to comply with the specification.

Will Bluetooth 4.2 devices be backward compatible with current Bluetooth devices in the marketplace?
Devices implementing only the low energy feature (branded Bluetooth Smart) in Bluetooth 4.2 will be backward compatible with Bluetooth 4.0 or 4.1 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 4.2 specification moving forward for my devices?
The SIG recommends that manufacturers begin immediately implementing Bluetooth 4.2 in their devices in order to provide an optimal user experience and enjoy the benefits incorporated into the new core specification.

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QUALIFICATION

Does Bluetooth 4.2 change the qualification process?
No, the qualification process remains the same for all Bluetooth specifications.

Can I still qualify to Bluetooth 2.0, 2.1, 3.0, 4.0 and 4.1?
Yes, Core Specification versions 2.0 +EDR, 2.1+EDR, 3.0+HS, 4.0 and 4.1 are still available for use and qualification.

What specification name do I use for a 4.1 or earlier subsystem combined with a 4.2 subsystem?
The new standard naming convention introduced in Bluetooth 4.1 defaults to the lowest core specification version being used. For example, if combining a 2.1+EDR controller subsystem with a 4.2 host subsystem the resulting specification name would be 2.1+EDR. For additional details, please see the 'Product Naming Conventions' section in the Bluetooth brand guide at https://www.bluetooth.org/en-us/bluetooth-brand/bluetooth-brand

If my product is already qualified to an earlier version, do I need to requalify it to 4.2?
No, products are qualified in perpetuity without requalification. However, if you are updating a previously qualified product to the 4.2 specification, you will need to requalify.

Where can I read the technical details of the updates in Bluetooth 4.2?
You can find all of the technical details by reviewing the Bluetooth 4.2 core specification posted on this page: https://www.bluetooth.org/en-us/specification/adopted-specifications

When can I start qualifying my product to the Bluetooth core specification 4.2?
Qualification will be enabled for the new core specification on 9 December 2014, at 3:00 p.m. PST.

DEVELOPMENT:

Will my application that's currently running on the Bluetooth 4.1 stack still work on the Bluetooth 4.2 stack?
Yes. All of the Bluetooth 4.1 features are supported in the Bluetooth 4.2 core specification. If the updated stack implementation complies with Bluetooth 4.2, all the Bluetooth 4.1 features will remain unchanged. Please consult with your stack provider for further details.

Is there Internet connectivity with Bluetooth 4.2?
Yes, last year with 4.1, Bluetooth SIG launched L2CAP dedicated channels, a foundational step for IPv6 support. In conjunction with Bluetooth 4.2, developers and manufacturers have flexible Internet connectivity options for Bluetooth Smart through new profiles and services. There are two paths for internet connectivity:

• Low power IP (IPv6/6LoWPAN)

• Bluetooth Smart Internet Gateways (maintain the GATT-based architecture of Bluetooth Smart) available early 2015

Additional information will be listed in the "Adopted Bluetooth Profiles, Services, Protocols and Transports" section of this page: https://www.bluetooth.org/en-us/specification/adopted-specifications

BRAND:

Should I brand my product "Bluetooth 4.2"?

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 4.2, 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 4.2 compatible with my Bluetooth 4.0 device?" type questions. In addition, the Bluetooth brand spans future Bluetooth core specification versions so you can be confident that you are communicating device compatibility to your customers for the long term.

Should I use the Bluetooth Smart brand for my Bluetooth 4.2 enabled device?

Not all Bluetooth 4.2 products are Bluetooth Smart since the low-energy feature is optional in Bluetooth 4.2. The correct Bluetooth brand to use for a 4.2 qualified device depends on the Bluetooth 4.2 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. For more information visit the "Bluetooth Smart Marks" section in the Bluetooth SIG brand guide at https://www.bluetooth.org/en-us/bluetooth-brand/bluetooth-brand

- *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. For more information visit the "Bluetooth Smart Marks" section in the Bluetooth SIG brand guide at https://www.bluetooth.org/en-us/bluetooth-brand/bluetooth-brand

- 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 low energy feature introduced in Bluetooth 4.0 enabled entirely new use cases for Bluetooth wireless technology. For the first time, devices powered by tiny batteries were able to wirelessly connect. This advancement in technology caused a dramatic increase of Bluetooth Smart devices in the marketplace. Devices using only the Bluetooth low-energy core configuration are not compatible with devices using only a Bluetooth basic rate core configuration. As a result, Bluetooth SIG introduced Bluetooth Smart and Smart Ready brand extensions so consumers can quickly identify which products work together.

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With Bluetooth 4.2, are there any changes to the requirements for using the Bluetooth Smart and Smart Ready brands? What are those requirements?

There are no changes to the requirements for using the brands in Bluetooth 4.2. In order to increase flexibility for Bluetooth SIG members, the requirements were simplified with the Bluetooth 4.1 release by focusing on the core configuration. The 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.

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