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Differences Between Bluetooth 5 Vs 4.2

📅 September 20, 2020

Bluetooth is wireless Technology used everywhere. Bluetooth comes with many version of every year which fulfills the demands of users of that year. But with the growing demand for IoT based devices, User also want to some new and advanced features for Bluetooth. The new version has changes and more support than the previous ones. Now Bluetooth 5 has released which promises to deliver the best quality connectivity to its users. Bluetooth 5 has come with dramatically improved performance and functionality.

The Article compares between Bluetooth 5 vs Bluetooth 4.2 and declares a comparison between **Bluetooth 5.0 and Bluetooth 4.2 version**. It disclosure basic characteristic of Bluetooth 5 which has made it famous for IoT(Internet of Things) and Bluetooth Beacon markets. Bluetooth 5 is the latest version of Bluetooth specifications which is the successor to Bluetooth 4.2 version.

What's new with Bluetooth LE in 2020?

Firstly, Bluetooth 5.0 is now enabling revolution using Beacon by creating new market opportunities such as Smart Building, Smart Industry, Smart Homes and Smart Cities using mesh connections. Mesh topology already available in Bluetooth 5 enables large scale device networks and many to many Bluetooth Beacon communications.

Secondly, Bluetooth audio will takeover in 2020 by launching products supporting next-generation Bluetooth audio architecture called it **Bluetooth LE Audio**. Bluetooth has always used the Bluetooth Classic (BR/EDR) audio signal which will replace by a new audio signal. Which will allow users high-quality audio and convert stream audio to multi-streaming audio, It will also allow people to transmit signals in a public place within the range.

Bluetooth 5.0

Bluetooth 5 is announced on 16 June 2016 to come in late 2016 or early 2017. Bluetooth 5 is here and with its release, developers to meet all the advanced standard of wireless world with more privacy and security.It is setting the stage for the future. Bluetooth is revolutionizing how people experience the IoT. Its specification includes the low power consumption, inexpensive hardware and, small size implementations.

Bluetooth 5.0 is the continuation of Low Energy LE. Its speed is 48MBps (double than the last version). It can be connected up to the distance of 300 meters or 985 feet (4 times last version). The ISM band ranges from 2.4-2.485 GHz. One little disappointing thing for users is that it doesn't have any backward compatibility with its old or previous versions. It requires new hardware which should be latest and advanced so that those devices meet the requirements of Bluetooth v5.0 to run it smoothly.

Journey of Bluetooth

Bluetooth History

Bluetooth Wireless Technology - Go Faster. Go Further. Go Smarter.

1999

Bluetooth 1.0 Release
awarded "Best of Show Technology Award"

2004

2001

Bluetooth 2.0 Release
Installed in 250 million devices
First Ble stereo headphones

First Thing with Ble
First Bluetooth printer
First Bluetooth laptop
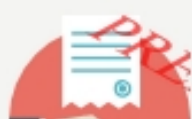First Free car kit etc..

2008 - 2010

Bluetooth 3.0 Release
SIG 10th anniversary
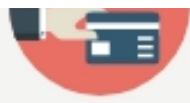SIG hits 13,000 companies
Bluetooth 4.0 version accept

2011 - 2014

Bluetooth 4.2 Release
SIG hits 24,000 companies
Sets the stage for IoT
shipments surpass 2.5 billion*

2016 - 2018

Bluetooth 5.0 Release
SIG hits 33,000 companies

Introduces new developer **kits** for the IoT
Bluetooth shipments surpass **3.6 billion***
Major smartphone include **Bluetooth 5 support**

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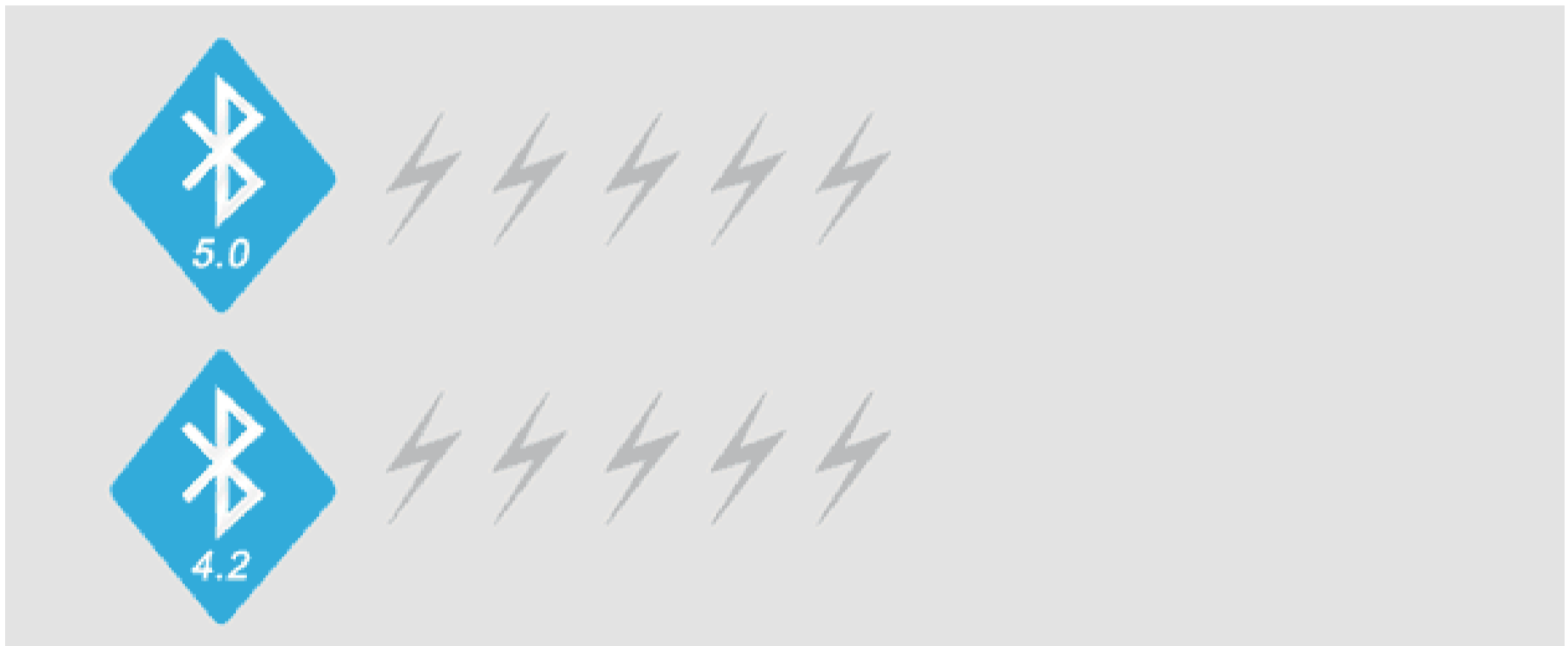IOT Development

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Resource Strength

Here are 7 comparisons to help you decide what work best for your device:
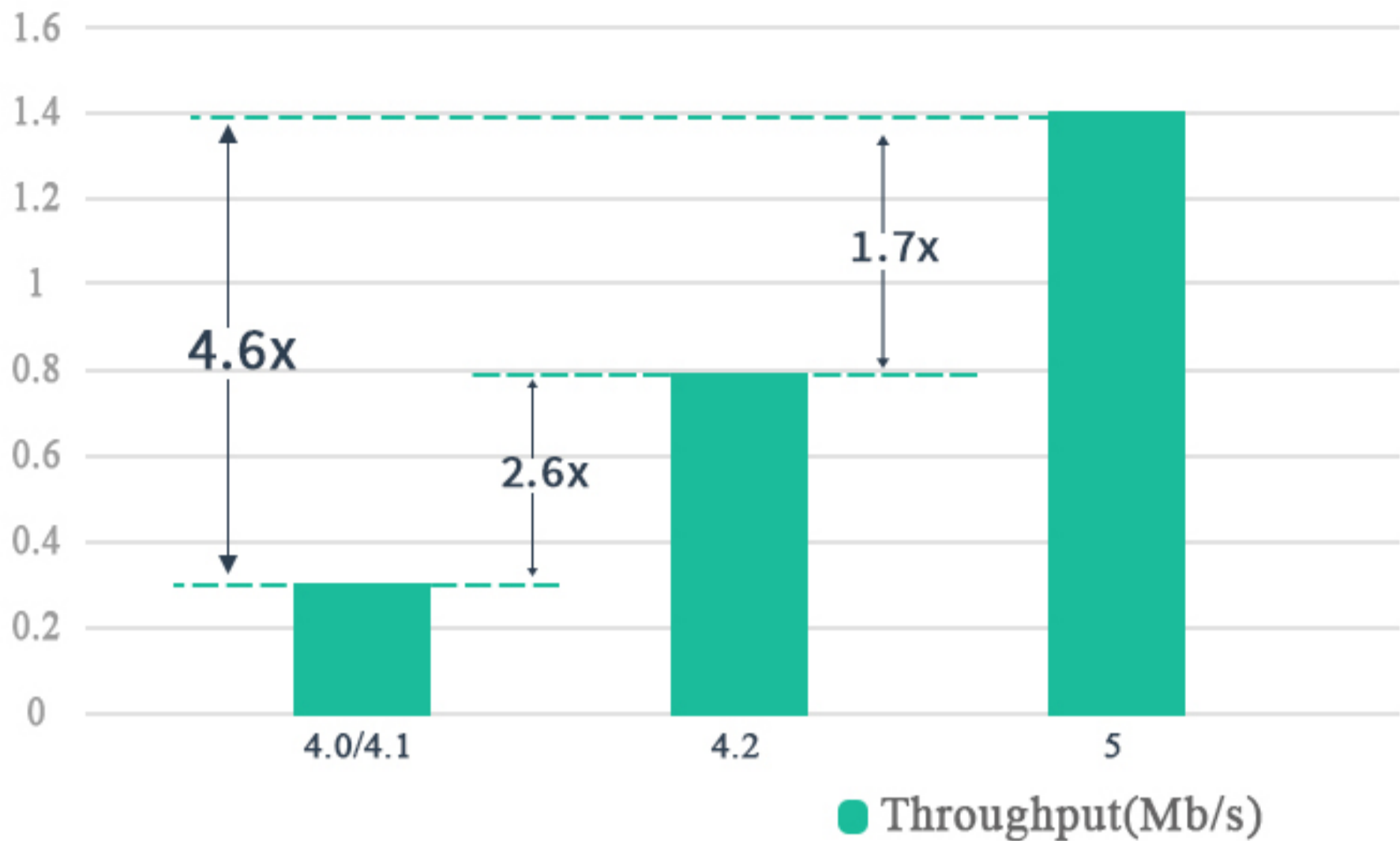
Speed

Bluetooth 5 is faster than Bluetooth 4 with the format having 2Mbps, twice the speed of Bluetooth 4 about 1 Mbps making the Bluetooth 5 able to meet one of IoT requirements. This is thanks to the 5Mbps bandwidth of the Bluetooth 5 in comparison to 2.1 Mbps of the Bluetooth 4.

Bluetooth 4.0 Range vs 4.2 Range vs 5.0 Range

Bluetooth 4 supports 50m in outdoor range and 10m in indoor range making it low whilst Bluetooth 5 supports 200m in Line of Sight path in the outdoor environment and 40m in the indoor environment.

Throughput(Mb/s)

Power requirement

The Bluetooth 5 has been formulated to use less power on your device compared to the Bluetooth 4. That means you can keep your Bluetooth switched on for a longer period of time and so much more compared to Bluetooth 4 which consumes more power than its newer counterpart.

Message Capacity

Bluetooth 5 has large Massage capacity about 255 bytes gives more bytes for actual data payload while the Bluetooth 4 has small message capacity of about 31 bytes which gives just 17 to 20 bytes for actual data payload.

Bluetooth beacon

Bluetooth 5 beacon has become more popular increase range and speed while with Bluetooth 4 beacons were less popular due to less speed and range as well as low Message capacity of 31 bytes.

Speed

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Support for IoT devices

Bluetooth 5 easily meets the requirements for IoT devices with its good range and increase in speed while Bluetooth 4 does not due to its low speed and start working range. That means IoT devices will work well with Bluetooth 5 and utilize all its features properly.

Compatibility

Bluetooth 4 works best with devices that are compatible with version 4 series but will not work with devices that have Bluetooth 5 while Bluetooth 5 backword compile with v1, v2, v3, v4, v4.1, and version 4.2 but will not utilize all the features of Bluetooth 5.

The Comparison Table shows how much Bluetooth 5 better from Bluetooth 4.2.

Specifications or features	Bluetooth 5	Bluetooth 4.2
Speed	2x the data rate, Supports and 2 Mbps	Supports about 1 Mbps
Range	4x the range, Supports 40 meters in indoor enviroment	Supports 10 meters in indoor
Power Requirement	Low	High
Message Capacity	Large message capacity, About 255 bytes	Small message capacity, About 31 bytes
Robustness to operate in congested environment	More	Less
Battery Life	Longer	Less
Security Control	Better	Less Secure
Theoretical Data Throughput	2 Mbps, gives about 1.6 Mbps with overhead	1 Mbps
Reliability	High	Low
Digital Life	Better	Less better compare to Bluetooth 5
Support for IoT devices	Yes	No
Bluetooth Beacon	Beacons have become more popular due to increased range and speed	Beacons were less popular due to less speed/range.

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People also ask (Frequently asked questions – FAQ):

1. What is the range of Bluetooth 5?

The latest Bluetooth version, Bluetooth 5 allows low-energy transmissions offering data range for more range. The theoretically proven range for Bluetooth 5 for a maximum of around 800 feet which is up to four times the range of Bluetooth 4.2 LE.

2. Is Bluetooth 5.0 backwards compatible?

Yes, Bluetooth 5.0 is totally backwards-compatible with previously introduced Bluetooth smart technology such as Bluetooth 4.0, Bluetooth 4.1 and Bluetooth 4.2 devices. However, you can continue using your existing Bluetooth 4.2 and older devices.

3. Is wireless the same as Bluetooth?

Not all wireless products are Bluetooth, However both wireless technology and Bluetooth control over the radio frequency. The main difference between these technologies are Bluetooth have short distance range while Wi-Fi provides high-speed access for large distance range.

4. Can I upgrade my Bluetooth version?

Here's what you have to do. You can check what version of Bluetooth your smartphone or device support. If your device does not support the latest Bluetooth technology. You need to search a Bluetooth Adapter with current Bluetooth 5.0 version in the Bluetooth SIG website. By Plugging into USB Port, you can actually upgrade your device with the latest version.

5. How to check Bluetooth version on Android?

You need to first enable Bluetooth on your Android Phone. Go to Settings > Applications > and Select Running Applications. Now you can find Bluetooth icon with Bluetooth Share and click on it. In the first service option, you will get your Bluetooth version.

6. Does Bluetooth 5.0 work with 4.2?

Bluetooth 5.0 hardware is fully backward compatible with Bluetooth 4. 2. Bluetooth 5 enabled phone works with the Bluetooth speakers, headphones, speakers, automobiles, fitness trackers, etc.

7. Does Bluetooth 5.0 have latency?

With any major wireless design, latency is an issue, especially with Bluetooth headphones, video or gaming, latency plays a key role in your general experience. Bluetooth 5.0 offers two times the latency speed according to Bluetooth marketing materials from known Bluetooth standards organization.

Conclusion:

Everybody wants to move with the new trends that keep coming, Bluetooth 5.0 is much better than the previous Bluetooth versions which include increased data rate, faster range, and more broadcast capacity. In this case, Bluetooth 5.0 become popular in IoT(Internet of Things), smartphones, Bluetooth beacons, and various tech devices.

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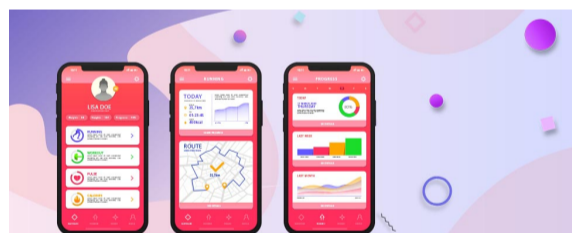(22,179)

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