

BlueRange USB Dongle

Datasheet

IoT USB Dongle to connect a BlueRange Bluetooth Low Energy (BLE) mesh infrastructure with an Edge Computing Device to create a BlueRange Mesh Gateway device.

Item number: BR-USBD-2020-00001-1 (for S)
BR-USBD-2020-00001-2 (for M)
BR-USBD-2020-00001-3 (for L)



BlueRange USB Dongle

Overview

- Plug-In device between BLE infrastructure and Edge Computing Device to create a BlueRange Mesh Gateway device
- Optimized for devices with BlueRange software
- Addition of BlueRange / BLE communication to an Edge Computing Device
- Power via plug-in USB type A connector

Specification, Characteristics

Type	USB Dongle
Item number	BR-USBD-2020-00001-1
Protocol	Bluetooth 5.0, BLE, BlueRange
Power supply	Plug-In USB type A connector
Chipset	Nordic nRF52840, BL654
Core	Cortex-M4F (1MB Flash, 256 KB RAM)
Operating Supply Voltage	1.7 – 3.6 V
Input Supply Power	4.6 mA
Output Supply Power	14.8 mA
Signal Power	8 dBm
Sensitivity	-92 dBm
Frequency Range	2.402 – 2.48 GHz
Geometry (L/W/H)	15 / 10 / 2.2 mm
Weight	ca. 40 g
Operating and storage temperature	-40 - 85 °C

Specification, Characteristics

The BlueRange USB Dongle comes in different connection packages, able to connect to different numbers of nodes:

Package	Number of nodes
S	12
M	28
L	64

Connection

The USB dongle is connected via USB type A plug into an Edge Computing Device and also powered via this connection with an input supply power of 4.6 mA and an output supply power of 14.8 mA at an operating supply Voltage of 1.7 to 3.6 V.

The dongle is connecting to a BlueRange BLE mesh network via Bluetooth Low Energy (BLE) transmitting in BlueRange standard.

The connection to a BLE mesh infrastructure is determined by the enrollment.

Functional Description

The BlueRange USB Dongle is used for various types of IoT installations that use a Bluetooth Low Energy communication on the one side and connect to the internet via a connected Edge Computing Device on the other.

The number of nodes the dongle is able to connect depends on the volume size package. However, it is also possible to connect and manage more devices. The more devices there are in a single closed BLE mesh, the higher the latency for a complete penetration of the mesh with information, depending on the number of hops between the BLE nodes or devices.

Depending on the type of different use cases applied simultaneously, the data traffic adapts accordingly within the mesh and from the dongle/gateway into the connected cloud systems or server cluster. Since the dongle itself is also a mesh participant, it must be within the communication range of at least one mesh node to be able to connect with the mesh.

Order Information

BlueRange USB Dongle



Item number: BR-USBD-2020-00001-1 (for S)
 BR-USBD-2020-00001-2 (for M)
 BR-USBD-2020-00001-3 (for L)

In standard application used for BlueRange installations of BLE mesh infrastructure and comes with BlueRange Software.

One year legal warranty.

No cables included.

Signs and certificates

	<p>WEEE directive 2012/19/EU Do not dispose of with household waste!</p>
	<p>CE certification – Conformité Européenne Declaration in accordance with EU Regulation 765/2008 that the product complies with the applicable requirements laid down in the Community harmonisation legislation on its affixing.</p>
	<p>FCC certification – Federal Communications Commission The product conforms to the required conditions of the FCC for operation and sale.</p>
	<p>Industry Canada Certification and Engineering Bureau of Industry Canada certified for radio equipment.</p>
	<p>MIC certification Granted on the basis of the Japanese Radio Law as well as the Japanese Telecommunication Business Law of the state authority Ministry of Internal Affairs and Communications.</p>
	<p>RCM certification Declaration of compliancy to Australian Communications and Media Authority (ACMA) requirements.</p>

Related Components

BlueRange Mesh Gateway (PoE), CE

Item number: BR-MGW-2020-00002-1

Mesh Gateway with PoE power supply and CE certification.

BlueRange Mesh Gateway (non-PoE), non-CE

Item number: BR-MGW-2019-00001-2

Mesh Gateway without PoE power supply and without CE certification.

BlueRange Mesh Gateway (PoE), non-CE

Item number: BR-MGW-2019-00001-1

Mesh Gateway with PoE power supply and without CE certification.

BlueRange Mesh Beacon E2

Item number: BR-MB-2019-00001-1

Mesh Beacon – BLE mesh infrastructure node

BlueRange Asset Beacon R1

Item number: BR-AB-2019-00001-1

Asset Beacon – BLE mesh infrastructure asset tag.

Further information and tools

Please find our documentation on how to setup and enroll a BlueRange BLE mesh infrastructure at bluerange.io/developer.

Link to the BlueRange Provisioning App:



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General information on BlueRange

www.bluerange.io

Disclaimer

Subject to change without notice. All data without guarantee.

The data sheet refers to the current factory setting.

The function in installations with other devices must be checked in advance for compatibility.