connectBlue™

The strongest connection in a wireless world

Ready-to-use Wireless Products

Driving technology

With reliable and highly robust communication

Wireless communication isn't solely about being free from constraining and limiting cables. No, to see the true potential of "Wireless" you have to look for other incentives than just freedom. connectBlue offer solutions that help customers maximize output. When your business operates in a rough environment under extreme conditions the value of reliable devices, machines and processes is priceless.

Based on Bluetooth technology, Wireless LAN and IEEE 802.15.4 / ZigBee, connectBlue provides ready-to-use wireless products and modules as well as custom design solutions in both hardware and software. The connectBlue product program is renowned for the following:

- **Reliable and robust.** The products are provoked and put under stress - tested over and over again. They are in operation under the harshest of conditions non-stop 24-7.
- **Ready-to-use & future proof.** All the products are fully certified with Radio Type Approval for Europe, US and Canada; and some products are Typed Approved in even more countries. The products are compliant with EMC, Safety and Medical standards.
- **Compatible over generations & technologies.** The wireless products share form factor and fitting, connectors, antenna solutions as well as configuration and control software tools making them sustainable over time.
- **High performing.** The products deliver superior performance in regards to latency, throughput, range, low power and more.
- **Co-existence.** Thanks to the Low Emission Mode™, the products can easily co-exist in the increasing number of plants that uses several different wireless technologies with varying characteristics.

Replacing the wired serial cables

SERIAL PORT ADAPTERS

Developed to meet tough demands, the connectBlue Serial Port Adapters handle robust RS232/422/485 communication with point-to-point cable replacement or multi drop functionality. The complete wireless replacement devices are available with different casing options (IP20/IP65), antennas (external/internal), and technologies (Wireless LAN 802.11b/g, Bluetooth, IEEE 802.15.4 / ZigBee).

The following are the key advantages when you aim to choose the wireless technology best suited for your application:

- **Wireless LAN 802.11b/g.** If you have an existing LAN / Wireless LAN infrastructure that you want to connect to, or create ad-hoc networks, Wireless LAN is your choice.
- **Bluetooth.** If you have strong demands on robust communication in rough environments, Bluetooth should be your choice. Bluetooth also allows for high system density, i.e. you can install a high number of "links" in the same "radio room".

- **IEEE 802.15.4 / ZigBee.** This provides long range even with low output power and also very fast connection times.

Replacing the wired Ethernet

ETHERNET PORT ADAPTERS

The connectBlue Rugged Ethernet Port Adapters are especially well-suited for all Ethernet based devices and systems in need of wireless connectivity. Applications include mobile, rotating and temporary installations where you need to replace the Ethernet cable with a robust and maintenance-free wireless connection.

The built-in antenna has a unique radiation pattern which lowers installation costs. Thanks to the SMART configuration mode, you can simply just push a button during configuration and initiate automatic configuration. In addition, there is a web browser configuration tool. Also important to note is that the product supports roaming. The following are the key advantages when you aim to choose the wireless technology best suited for your application:

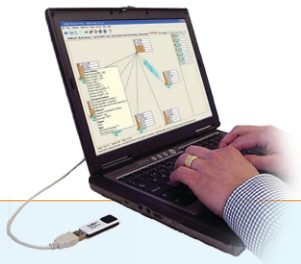
- **Wireless LAN 802.11 b/g.** This gives you high data throughput, fast roaming and a connection to the infrastructure.
- **Bluetooth.** You will experience robust data transfer in rough environments, high system density and roaming with a latency in the range of 1-2 s.

WIRELESS NETWORK PLATFORM

The industrial Wireless Network Platform enables a robust and reliable Bluetooth connection between the Ethernet based infrastructure and industrial equipment such as medical devices, machines, machine parts, barcode readers, mobile human machine interface (HMI) devices, sensors, programmable logic controllers (PLC) and more.

The industrial Wireless Network Platform can be used for a wide range of use cases; Bluetooth Web Enabler, Bluetooth LAN Access Point, Ethernet Cable Replacement, Terminal Server, Serial Port Adapter and Custom Design Platform.

	 Boxed SPA SPA312i	 Rugged SPA RSPA333s	 Wireless Network Platform BTWNP331s	 Rugged EPA RBEPA
WIRELESS STANDARD	Bluetooth	Bluetooth	Bluetooth	Bluetooth
STANDARD SPECIFICATION				
Bluetooth qualification	2.0	2.0	2.0	2.0
Bluetooth profiles	SPP DUN FTP OPP	SPP DUN FTP OPP	SPP PAN LAP	PAN
Wireless LAN version	-	-	-	-
RADIO				
Antenna	Internal	External	External	Internal
Output power	7 dBm	20 dBm	17 dBm	17 dBm
Range [Note 1]	150 m	400 m	300 m	300 m
TYPE APPROVALS				
R&TTE (Europe)	Yes	Yes	Yes	Yes
FCC (US)	Yes	Yes	Yes	Yes
IC (Canada)	Yes	Yes	Yes	Yes
INTERFACE				
RS232	Yes	Yes	Yes	-
RS422/485	-	Yes	Yes	-
Max baudrate	921.6 k	921.6 k	921.6 k	-
Flow control on/off	Yes	Yes	Yes	-
Ethernet	-	-	Yes	Yes
SOFTWARE FEATURES				
AT command support	Yes	Yes	-	-
Max number of slaves	1/3/7 [Note 2]	7	7	1
ECI protocol	-	Yes	-	-
Security	Yes [Note 3]	Yes [Note 3]	Yes [Note 3]	Yes [Note 3]
Quality of Service (QoS)	Yes	Yes	Yes	Yes
Software features	Point-to-point Point-to-multipoint Repeater OBEX (FTP/OPP)	Point-to-point Point-to-multipoint	Bluetooth WEB enabler, Bluetooth Access Point (NAP/ PANU), Wireless Ethernet Bridge, Terminal Server, Bluetooth Serial Port Adapter, Platform for custom applications	Wireless Ethernet Bridge, Personal Area Network User (PANU)
POWER				
Power supply voltage	5 VDC	8 - 30 VDC	9-30 VDC	9-30 VDC
Current cons. (min)	10 mA	28 mA @9V	-	-
Current cons. (average Tx)	29 mA	47 mA @9V	130 mA @9V (full TX)	116 mA @9V (full TX)
CONNECTORS				
9-pin D-SUB	Yes	Yes	Yes	-
RJ45	-	-	Yes	-
M12	-	-	-	Yes
MECHANICAL				
Temperature range	-30 to +85° C	-30 to +85° C	-30 to +85° C	-30 to +85° C
Mounting holes	Yes	Yes	Yes	Yes
Housing	Plastic, IP 20	Metal, IP 65	Plastic, IP20	Plastic, IP65
Dimensions (mm)	63x80x26	76x85x35	63x80x26	91x66x36.2



Boxed SPA WSPA311gi	Rugged SPA RWSPA311gs	Rugged EPA RWEPA	Rugged SPA RZS311s
Wireless LAN	Wireless LAN	Wireless LAN	802.15.4
-	-	-	-
-	-	-	-
802.11b+g (54 Mbit/s)	802.11b+g (54 Mbit/s)	802.11b+g (54 Mbit/s)	-
Internal	External	Internal	External
20 dBm	20 dBm	20 dBm	4 dBm
400 m	400 m	400 m	200 m
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes	Yes	-	Yes
-	Yes	-	-
921.6 k	921.6 k	-	57.6 k
Yes	Yes	-	Yes
-	-	Yes	-
Yes	Yes	Yes	Yes
7	7	1	1
-	-	-	-
WEP WPA WPA2	WEP WPA WPA2	WEP WPA WPA2	Yes
-	-	-	-
Point-to-point Point-to-multipoint	Point-to-point Point-to-multipoint	Wireless Ethernet Bridge, Wireless LAN Client	Point-to-point
6 VDC	8 - 30 VDC	9 - 30 VDC	8 - 30 VDC
16 mA	15 mA @9V	-	24 mA @9V
20 mA	19 mA @9V	187 mA @9V (full TX)	29 mA @9V
Yes	Yes	-	Yes
-	-	-	-
-	-	Yes	-
-30 to +85° C	-30 to +85° C	-30 to +85° C	-40 to +85° C
Yes	Yes	Yes	Yes
Plastic, IP 20	Metal, IP 65	Plastic, IP 65	Metal, IP 65
63x80x26	76x85x35	91x66x36.2	76 x 85 x 35

Explanations on Table Notes
1 Approximate range measures in line-of-sight
2 Special multipoint firmware for 3 or 7 slaves available
3 Encryption and link level authentication on/off
* In progress

WIRELESS SNIFFERS & PROTOCOL ANALYZERS

connectBlue offers Wireless Sniffers & Analyzers by Frontline Test Equipment. The Bluetooth sniffer is a Multi-mode Bluetooth Protocol Analyzer that sniffs both radio traffic and high speed UART HCI packages. It is the only product on the market to handle Bluetooth up to v2.1+EDR.

connectBlue also offers the MeshDecoder which is a real-time debugging, verification and network display analyzer, that simplifies the understanding of IEEE 802.15.4 / ZigBee networks by simultaneously capturing, decoding, displaying and filtering data, and also detecting errors. The product range of Sniffers and Protocol Analyzers also includes Wireless LAN solutions.

With these tools, you get faster commissioning and development times, and thus also reduced engineering costs. The sniffers and analyzers can be used in combination with the following:

- Industrial communication network analyzer
- Serial, async-only protocol analyzer
- Serial, sync/async protocol analyzer

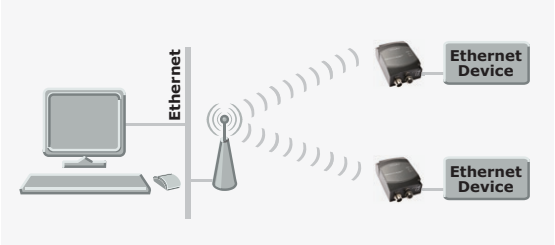
WHY USE WIRELESS?

- You gain greater mobility and freedom of movement
- You can bypass long distances and “cable problematic territory“
- You get fast and easy installations as well as commissioning
- You can use it in temporary installations
- You get high flexibility when modifying the installation
- You increase the personal safety
- You gain easy integration of devices into the network

Ready-to-use solutions

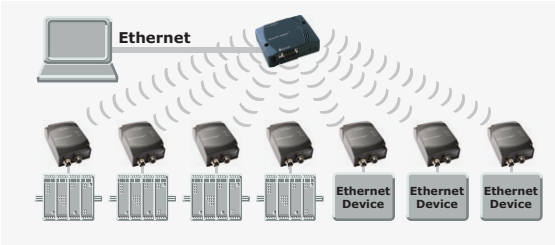
Products that improve production, economy and safety

Serial Port Adapters (SPA) replacing the serial cables with wireless connections in point-to-point and multidrop setups.

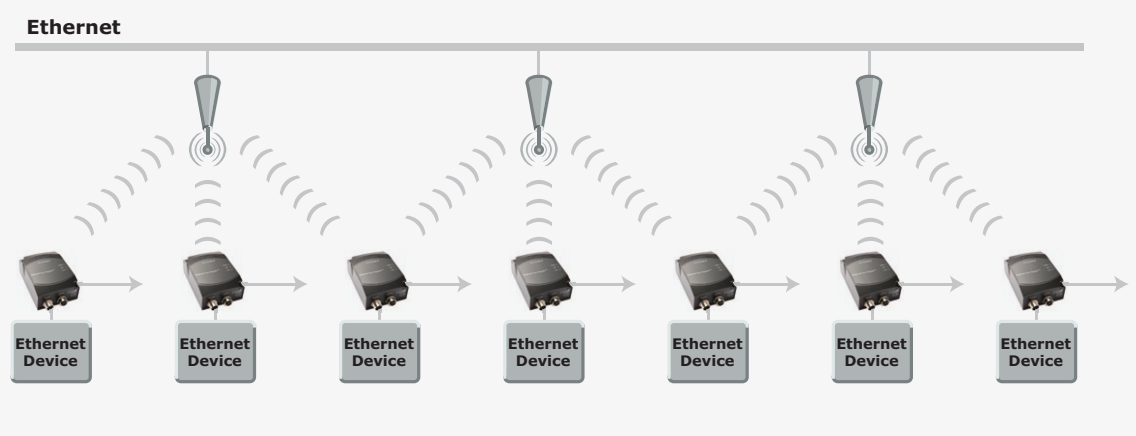


Wireless LAN Ethernet Port Adapters (EPA) for connecting ethernet devices to an ethernet infrastructure via a Wireless LAN Access Point.

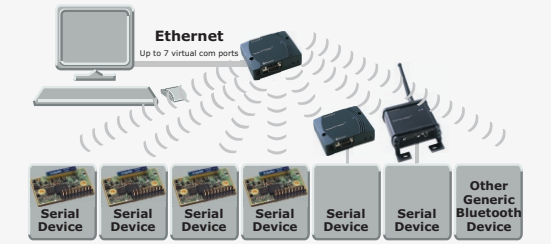
Ethernet Port Adapters (EPA) replacing the ethernet cable with wireless connection.



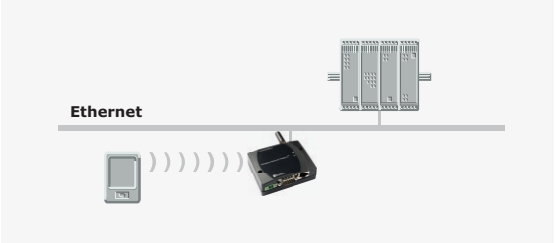
Bluetooth Ethernet Port Adapters (EPA) for connecting ethernet devices to an ethernet infrastructure via the Wireless Network Platform (WNP) in Access Point mode.



Wireless LAN Ethernet Port Adapter (EPA) or Bluetooth Ethernet Port Adapter connecting to an ethernet infrastructure via multiple Access Points. The Ethernet Port Adapter supports several modes of superior roaming between available Access Points.



Wireless Network Platform (WNP) in Terminal Server mode. Serial devices are wirelessly connected to an ethernet infrastructure. The serial devices are accessed via virtual com-ports presented on the ethernet network.



Wireless Network Platform (WNP) as Access Point and web enabler. Wireless Bluetooth devices (for example a PDA) can access devices on the ethernet infrastructure via the Wireless Network Platform. The Wireless Network Platform can also save data and present on a web page, that can be wirelessly accessed.

Maximum throughput and robustness ready to use

For nearly a decade, connectBlue has helped some of the world's most demanding brands to exploit new possibilities of wireless technologies. The wireless products are aimed at those demanding applications that require compatibility over generations and technologies as well as reliable and highly robust communication. By applying a connectBlue wireless mindset, and by taking advantage of the fully certified ready-to-use solutions, companies achieve improved productivity, logistics and safety. All products presented in this folder comply with connectBlue quality standards with outstanding performance in latency, throughput, range, low power and field proven robustness.

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