



Few words about the μ WiFi technology

μ WiFi technology is a solution dedicated to data transmission in a harsh environment developed by the BleBox R & D team. Based on a combination of elements from three known communication standards: Bluetooth low energy, WiFi and Zigbee. A simple in use technology was created including the use of broadcasting mode and ad-hoc connections (as in Bluetooth 4.1), resistance to interferences (and in the future node mesh - derivative of Zigbee), high bandwidth and the ability to connect to existing infrastructure networks based on a standard Access Point WiFi (has been preserved compatibility with the WiFi standard). The technology was officially presented by the authors at the Chengdu International Exhibition of New Technologies and Inventions (China) in October 2015 where it was appreciated by a manufacturers and a scientific community.

μ WiFi technology allows you both a direct connection with each device (p2p) and by using the existing WiFi network (e.g. home, company). In addition, the cloud architecture provided by BleBox allows you to control your devices from anywhere in the World via the Internet - only is necessary a WiFi network with access to the Internet to which the modules will be connected. No additional configuration, fixed IP address or tunneling.



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Feature / Technology	Bluetooth Low Energy 4.1	WiFi	Zigbee	μ WiFi
Range in ideal conditions (line-of-sight range)	50 m	100 m	100 m	150 m
Real range (building with concrete structure)	7 - 12 m	20 – 25 m	30 - 40 m	40 - 50 m
Possibility of the Internet access without edge devices	NO	YES	NO	YES
Ability to direct access with the consumer device (tablet / smartphone)	YES	YES	NO	YES
Access from anywhere in the world without additional devices	NO	Possible (usually requires a fixed IP address and port forwarding)	NO	YES (native)
Cooperation with existing systems (e.g. intelligent building)	Possible, mainly through an intermediary device	YES (if open API is available)	Only if the system supports Zigbee	YES (open API)
Network mesh	Soon	NO	YES	Soon
Resistance to interference	Very low	Mean	High	High
Adaptive Frequency-hopping spread spectrum	TAK	NO	NO	YES





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Frequency (MHz)	2.4 GHz
Range (m)	100 m in open terrain
Speed (kb/s)	6750 (54Mbps)
Framesize (byte)	Dynamic
Device type	Independent nodes, the ability to connect with each (point-to-point) or with everyone
Reliability	Failure of one node does not affect the work of others, the lack of a central unit eliminates the risk of network failure
Safety	AES 512 bit
Memory type	32M (redundant, 2 x 16M) with OTA firmware updates
Identifiers	IP address – as in TCP/IP model

