

BLUETOOTH® LOW ENERGY-TECHNICAL FACTS

Bluetooth low energy wireless technology is a new extension of *Bluetooth* technology that paves the way to a vast new market for watches, remote controls, Healthcare and sports sensors. It has a potential to communicate with the hundreds of millions of *Bluetooth* enabled mobile phones, PCs and PDAs that are shipped each year. Consuming minimal power it offers long-lasting connectivity, dramatically extending the range of potential applications and opening the door to brand new web services. *Bluetooth* low energy technology is essentially the missing link between small sensor type devices and mobile devices.

Bluetooth low energy technology is designed with two equally important implementation alternatives: stand-alone and dual-mode. Small devices like watches and sports sensors are based on a stand-alone *Bluetooth* low energy implementation and will enjoy the low-power consumption advantages. Dual-mode implementations uses parts of the existing *Bluetooth* hardware, sharing one physical radio and antenna and will basically keep the same power consumption as classic *Bluetooth* technology.

Technical Specification	Classic <i>Bluetooth</i> technology	<i>BlueRadios Bluetooth</i> low energy technology
Backwards Compatible to Legacy BT	Yes	No – for BLE Single Mode
Radio frequency	2.4 GHz	2.4 GHz
Distance/Range	+10 meters, +100 meters	+150 meters, +500 meters
Over the air data rate	1-3M bps	1Mbps
Data mode	Stream data over SPP	Ideal for 22 bytes or less packet size
Application throughput	0.7-2.1 Mbps	<5Kbps (data payload) single mode BlueRadios Serial Port (BRSP)
Nodes/Active slaves	7- 16,777,184	Unlimited
Security	64b/128b and application layer user defined	128bit AES and application layer user defined
Robustness	Adaptive fast frequency hopping, FEC, fast ACK	Adaptive fast frequency hopping
Time to initially connect	2 sec	100 ms
Total time to send data	50 ms	6 ms
Government regulation	Worldwide	Worldwide
Certification body	<i>Bluetooth</i> SIG	<i>Bluetooth</i> SIG
Voice capable	Yes	No
Network topology	Scatternet	Star-bus
Power consumption	1 as the reference	0.01 to 0.5 (depending on use case)
Peak current consumption 10 meters 100 meters	< 30 mA < 75 mA	< 15 mA (max15mA to run on coin cell battery) < 25 mA (max)
Service discovery	Yes	Yes
Profile concept	Yes	Yes
Primary use cases	Mobile phones, gaming, headsets, stereo audio streaming, automotive, PCs,	Mobile phones, gaming, PCs, watches, sports & fitness, healthcare, automotive, home electronics, automation, Industrial, etc.