



Bluetooth® Advanced Bluetooth Low Energy Over-the-Air Measurement Solution

The Bluetooth Advanced Measurement Solution is optimized for both engineering and manufacturing and works with all Bluetooth Low Energy peripheral and beacon devices, regardless of chipset.

Bluetooth Low Energy has become one of the most widely deployed low-energy wireless technologies for IoT devices such as wearables, fitness and wellness sensors, home and industrial automation, and location services. To succeed in the marketplace, these devices must provide reliable and consistent performance. Even for the lowest cost devices, RF testing is a vital part of device engineering and manufacturing that can ensure your product works in consumer hands, the way you designed it in the lab. LitePoint's Bluetooth Advanced, a breakthrough over-the-air measurement solution is designed specifically for Bluetooth Low Energy peripheral and beacon devices.

Bluetooth Advanced Measurement Solution

LitePoint's Bluetooth Advanced measurement solution is a major advancement in the speed and efficiency for performing over-the-air testing of Bluetooth Low Energy peripheral and beacon devices. Using LitePoint's unique measurement solution, testing Bluetooth devices has been made simple and the system performs comprehensive transmitter and receiver measurements in a matter of seconds. The solution is optimized for both engineering and manufacturing and works with all Bluetooth Low Energy peripheral and beacon devices, regardless of chipset.



Bluetooth Advanced Key Benefits



Get results quickly with any Bluetooth Low Energy device

- No need to install special software on the DUT
- No DUT communication port needed
- No need for special chipset drivers
- RF can be radiated or conducted



Complete RF parametric test coverage

- Transmitter Power, Modulation quality
- Receiver Sensitivity
- Results for Low, Mid, and High channels



Simplify test setup with IQfact+ software automation

- Quickly build custom test flows
- Controls both the DUT and the Tester
- Provides easy Pass/Fail checking
- Logs test results in .txt and .csv

Testing Bluetooth Low Energy devices quickly, with accuracy and repeatability can be a challenge. Many devices, due to their small form factor, have no RF or digital connections, so over-the-air testing is the only method available. With the Bluetooth Advanced measurement solution, you can quickly and accurately perform parametric measurements and verify results against pass/fail limits, providing you with confidence knowing that your product will work in the real world...every time.

Advanced Measurement Methodology

Bluetooth Low Energy devices use dedicated advertising channels to transmit beacon signals or to establish a connection with a controller. These advertising channels are distributed across the 2.4 GHz band, providing an excellent method to characterize a device at multiple frequencies. Bluetooth Advanced uses these advertising channels to perform transmitter and receiver measurements, providing excellent coverage and confidence in the parametric performance of the device. The device is tested using its commercial firmware, not test firmware, so results are correlated with the actual performance of real devices.

Key Features

- Provides comprehensive Transmitter test coverage: transmitter power, transmitter quality (FM Deviation, Frequency Offset, Frequency Drift), adjacent channel power and receiver test coverage: receiver sensitivity sweep, Packet Error Rate (PER)
- High accuracy and repeatability with results reported on all advertising channels, giving confidence in the RF performance across the 2.4 GHz band
- Complete and fast test coverage for manufacturing with typical transmitter and receiver test performed in under 5 seconds for all three advertising channels



Turnkey Test System

The application software provided with Bluetooth Advanced is built on LitePoint's proven IQfact+ automation software. IQfact+ is a test manager that provides fast and easy setup to perform testing in either a benchtop or fully automated manufacturing environments. IQfact+ allows engineers to configure the measurement parameters such as number of packets and test limits, and during operation IQfact+ manages the test flow, provides a pass/fail indication, and automatically logs measurement results.

Bluetooth Advanced support in the IQxel Product Family

The Bluetooth Advanced software license is supported across LitePoint's IQxel platform family. With industry-leading performance, the IQxel test platforms are widely used today in manufacturing and engineering applications for RF PHY validation of Wi-Fi, Bluetooth as well as complementary IoT connectivity technologies such as ZigBee, Z-Wave, and GPS. These technologies can be added to any test system through simple software licenses. As technologies evolve, you can be confident that your measurement system can grow with you.



	IQxel-M4W 6G	IQxel-MW 7G	IQxel-MX
RF Frequency Range	400 to 6000 MHz	400 to 7300 MHz	400 to 7300 MHz
Wi-Fi	Wi-Fi Legacy (802.11a/b/g/n/ac) Wi-Fi 6 (802.11ax)	Wi-Fi Legacy (802.11a/b/g/n/ac) Wi-Fi 6/6E (802.11ax) Wi-Fi 7 (802.11be EHT160 MHz)	Wi-Fi Legacy (802.11a/b/g/n/ac) Wi-Fi 6/6E (802.11ax) Wi-Fi 7 (802.11be EHT320 MHz)
Bluetooth 1.0-4.2 Direct Test Mode (DTM)	✓	✓	✓
Bluetooth 5.x (5.0, 5.1, 5.2, 5.3) Direct Test Mode (DTM)	✓	✓	✓
Bluetooth Advanced (Bluetooth Low Energy 4.0-4.2)	✓	✓	✓