

FiRa™ Consortium Ultra-Wideband (UWB) PHY Conformance Test Solution with IQgig-UWB™ and IQfact+™

Seamless operation of UWB devices is key to ensuring a thriving ecosystem with diverse devices and providing end-users with a better and safer experience.

The FiRa™ Consortium promotes the development and adoption of UWB secured fine ranging and positioning capabilities of UWB devices. A key component of this mission is ensured by the development of test specifications and a certification program for UWB based on IEEE 802.15.4 standards.

RF PHY Conformance Testing

The FiRa Consortium PHY Technical Requirements are based on the High Rate Pulse (HRP) portion of the IEEE 802.15.4 specifications and 802.15.4z amendment for fine-ranging UWB technology, including improvements to existing modulations to increase the integrity and accuracy of ranging measurements and additional information element definitions to facilitate ranging information exchange. The FiRa Consortium PHY Technical Requirements are used as the foundation for the PHY Conformance Certification designed to ensure operational compatibility among chipsets, devices, and solutions. Accessible to FiRa members, FiRa PHY Conformance is tested by an Authorized Test Lab (ATL) following the FiRa PHY Conformance Test Specification.

Complete FiRa PHY Conformance Test Solution

LitePoint's RF PHY conformance test platform has been developed based on the PHY Conformance Test Specification and validated by the FiRa Consortium. This test platform can be selected by ATLs for PHY Conformance Certification testing or by FiRa members as part of pre-certification testing. This complete solution includes both the hardware platform as well as test programs to control the tester and Device Under Test (DUT) using the UWB Command Interface (UCI).

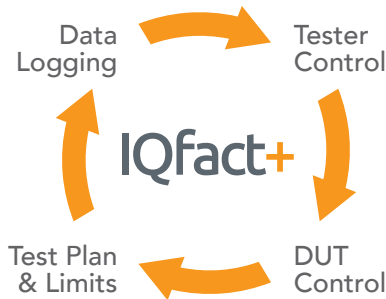


IQgig-UWB™

The IQgig-UWB is a complete UWB test solution with all signal generation, analysis, and processing contained in a single, robust instrument. The integrated VSG and VSA enable comprehensive transmitter and receiver testing with 1.9 GHz instantaneous signal bandwidth and frequency range coverage from 5 to 19 GHz.

IQ5631™

Combined with the IQ5631 Power and Delay Control Module (PDCM), the IQgig-UWB enables per-antenna receiver sensitivity testing/PER testing for modulated signals down to -110 dBm as well as Angle of Arrival (AoA) calibration/validation with 1 ps step size relative delay between ports with up to 80 ps total delay.



IQfact+™

Turnkey IQfact+ application software provides complete automation for PHY conformance testing including tester control, DUT control, and data collection. Device Under Test (DUT) is controlled using the UWB Command Interface (UCI).

UWB Test Coverage

- BPRF, HPRF
- TX packet format verification: SYNC, SFD, STS, PHR, DATA, CRC
- TX PSD mask verification
- Baseband impulse response
- Carrier frequency tolerance
- Pulse timing verification
- TX signal quality
- NRMSE
- RX sensitivity
- RX first path dynamic range
- RX packet format verification: SYNC, SFD, STS, PHR, DATA, CRC
- RX Dirty packet test

Order Codes

Code	Product
0100-IUWB-001	IQgig-UWB Test System. Includes UWBP measurement suite and graphical user interface (GUI).
0150-5631-002	IQ5631 Power and Delay Control Module (PDCM). It provides per-port, programmable amplitude and timing control of VSG signals, and switches the VSA to the bidirectional user RF ports. Includes 1 GPIO control and power cable.
0300-PLUS-212	IQfact+ License for PHY Conformance Test. Controls IQgig-UWB and DUT using UCI.