

# LitePoint IQgig-RF and IQgig-IF Test Systems



## Introduction

802.11ad/ay, also known as WiGig, is a break-through wireless technology, optimizing multi-gigabit transmission speeds in the 60 GHz unlicensed band. The 60 GHz unlicensed band has many advantages, such as its uncongested spectrum when compared to traditional Wi-Fi's 2.4 and 5 GHz, and the availability of up to 10 GHz contiguous spectrum. With its wide instantaneous bandwidth, WiGig allows multi-Gbps transmission speeds, making it an ideal standard for ultra-high-speed content distributions with low latency.

Applications such as virtual reality headsets and UHD video streaming via TVs and smartphones can take advantage of 802.11ad's massive content distribution capability. In addition, WiGig usage, along with other 5G technologies, includes backhaul applications, extending the reach of high-speed internet farther and with better economics than optical fiber cables in the past.

Bringing millimeter wave products into commercial reality is a challenge. With IQgig, LitePoint brings expertise and confidence in wireless device testing to the new frontier of volume production.

## The Smart WiGig Test Systems for the R&D Lab and Manufacturing Floor

IQgig is a scalable physical-layer test solution, tailored to verify the performance of 802.11ad and ay devices. IQgig-RF is an easy-to-use Over-the-Air (OTA) test system, targeted for characterizing WiGig RF modules and end-products. Combining millimeter wave equipment and accessories to perform 802.11ad measurements can be time-consuming and costly. Instead, IQgig-RF's fully-calibrated one-box tester, enables a simple and fast bring-up. IQgig-RF's direct baseband-to-60 GHz design minimizes spurs and provides high-quality low-noise performance. And its flexible, remote test heads are specifically designed for OTA testing. Millimeter wave test chamber integration can pose a challenge in bringing WiGig products into volume production testing, but IQgig's small test head simplifies the design complexity and keeps dissipated heat to a minimum.

IQgig-RF Model B is available in four configurations to meet varying test volume needs, from R&D to high-volume manufacturing.



### Single-Module Configuration with One Test Head

Highly efficient in a lab environment or on a small volume production floor, the Single-Module version of IQgig-RF provides full functionality of IQgig-RF with one vector test head.



### Single-Module Configuration with Two Test Heads

Ideal for a small volume production floor, the Single-Module with Two Test Heads supports ping-pong measurements with two vector test heads for higher efficiency.



### Dual-Module Configuration with Two Test Heads

Dual-module IQgig-RF enables completely independent parallel testing between the top and bottom modules, essentially providing two testers in one box.



### Dual-Module Configuration with Four Test Heads

The highest throughput version of IQgig-RF, Dual-Module with Four Test Heads IQgig-RF, enables parallel testing between the top and bottom modules, while supporting ping-pong measurements between the two test heads within a module. Ideal for high-volume manufacturing floors.

IQgig-IF is a compact test system, which supports the same WiGig measurements as the IQgig-RF, but uses conducted testing in the baseband module frequency bands. It is designed for 4.9 to 19.4 GHz, covering the wide ranges of major chipset companies' proprietary IF frequency ranges. By sharing the same test platform—an intuitive GUI and automated test solution—IQgig-RF and IQgig-IF are complementary WiGig test solutions that provide a simple data correlation and ensure high quality in all of your WiGig testing needs.



IQgig-RF Test System<sup>1</sup>



IQgig-IF Test System

## Key Capabilities and Features

### IQgig-RF: Reliable Over-the-Air WiGig test system

- Comprehensive physical layer test coverage of 802.11ad/ay standards
- Frequency coverage: 55 GHz to 70 GHz
- Unique zero-IF tester architecture delivers better than -30 dB EVM and low noise floor

### IQgig-IF: Purpose-built WiGig test system for IF frequency range

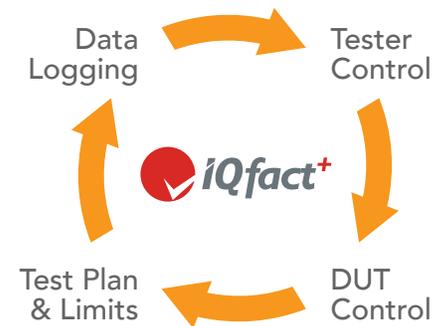
- Optimally designed for the complete frequency coverage for commercial IF interfaces
- Provides better than -35 dB EVM for high performance measurements
- Eases the correlation between IF and RF measurements with a standardized test platform

### Superior test throughput for manufacturing

- LitePoint's patented Packet Engine™ technology delivers industry-leading test speed
- Dual-module option enables true x2 throughput with efficient multi-DUT parallel testing
- LitePoint's patented phase shift measurement technique thoroughly validates beamforming capability in a fraction of standard test time

### IQfact+ automated test software solution streamlines test sequence

- Turnkey automated test software, which includes built-in chipset support and automatic data logging, dramatically reduces software development time
- Provides reliable and accurate test measurements with optimized tester and chipset control
- Offered as a stand-alone program or as easy-to-integrate API



<sup>1</sup> Horn antenna and stand not included

## IQgig-RF Order Codes

Code	Product
0100-IGIG-004	IQgig-RF Model B Test System. Includes 1 Vector Test Head with controller cable.
0100-IGIG-005	IQgig-RF Model B Test System. Includes 2 Vector Test Heads with controller cables.
0100-IGIG-006	IQgig-RF Model B Test System with 2 modules. Includes 2 Vector Test Heads with controller cables.
0100-IGIG-007	IQgig-RF Model B Test System with 2 modules. Includes 4 Vector Test Heads with controller cables.
0300-IGIG-005	WiGig 11ad software license
0300-IGIG-007	WiGig 11ay software measurement suite. Supports MCS 0 to 16, MCS 17-20 (64QAM). Requires WiGig 11ad SW license as a prerequisite.
0150-IGIG-100	60 GHz Reference Horn Antenna with a UG-385 flange for WR-15 waveguide. Supports frequency range 50 - 75 GHz with a nominal 23 dBi gain.

## IQgig-IF Order Codes

Code	Product
0100-IGIG-002	IQgig-IF Test System for WiGig. Includes WiGig 11ad software license.
0300-IGIG-007	WiGig 11ay software measurement suite. Supports MCS 0 to 16, MCS 17-20 (64QAM). Requires WiGig 11ad SW license as a prerequisite.
0300-IGIG-009	Verizon 5G Tech Forum software license
0300-IGIG-011	5G 3GPP software license