



IQgig-UWB™ Ultra Wide Band (UWB) Test System

Ultra Wide Band (UWB) employs short pulses with ultra-low power for communication and ranging. Its combination of low emitted power ($< -41.3\text{ dBm/MHz}$) and large bandwidth ($> 500\text{ MHz}$) makes it ideal for a variety of applications, such as:

- Short range wireless transmission alternative to wired connections
- Indoor positioning with centimeter-level accuracy for location and tracking applications
- Secure connection applications. Operates below the noise floor making UWB signals difficult to intercept and are largely immune to interference

Testing From R&D to the Manufacturing Floor

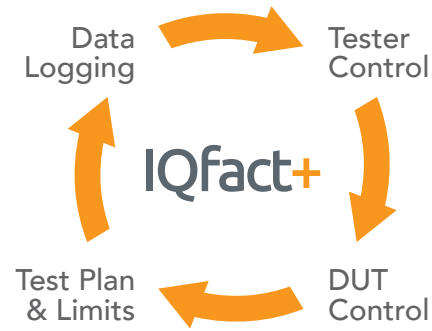
IQgig-UWB is the first fully-integrated, one-box test solution for physical-layer testing of devices enabled with UWB technology. It is ideal for both R&D characterization and high-volume production, making it the perfect platform to enable a cost-effective, seamless transition from the lab to production. The fully-integrated test solution, with intuitive GUI and programming interface, replaces traditional rack-and-stack bench equipment, simplifying test setups. Turnkey IQfact+™ application software provides quick and reliable results for both calibration and verification.

High Performance for a New Generation of UWB Devices

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 over 1 GHz instantaneous signal bandwidth. IQgig-UWB has a precision trigger and response mechanism to enable accurate Time-of-Flight (ToF) measurements with picosecond level precision.

Validate Device Sensitivity with Wide Dynamic Range

Combined with the IQ5631 Power and Delay Control Module (PDCM), IQgig-UWB enables per-antenna receiver sensitivity testing for modulated signals below -100 dBm .

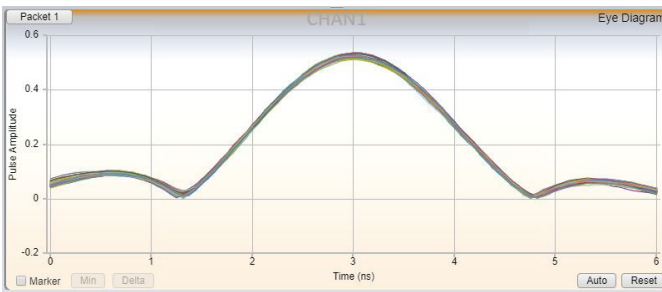
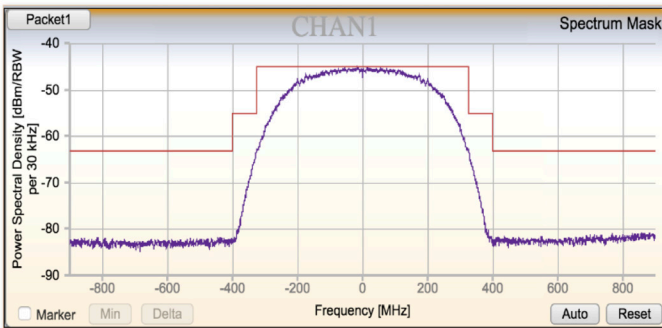


Key Features for UWB Testing

- > 1 GHz single-shot VSA / VSG bandwidth
- High-accuracy trigger mechanism for Time-of-Flight (ToF) testing
- Extended VSG dynamic range for stringent sensitivity test (with IQ5631 PDCM)

Available Turnkey Test Software Solutions

- IQfact+ software solutions for customized testing of UWB chipsets
- Ideal for characterization and production, automates tester control, DUT control, and data collection



Measurement	Value	Unit
Carrier Frequency Offset	-6.21	Hz
Chip Clock Error	-0.04	ppm
Chip Frequency Error	-0.49	Hz
Symbol Modulation Accuracy	99.56	%
Pulse Main Lobe Width	1.184	ns
Pulse Side Lobe Power	18.96	%
Data Rate	0.85	Mbps
PSDU Length	20	Bytes
Analysed Symbols	229	
Preamble Power	-21.01	dBm
Preamble Peak Power	-9.93	dBm
Data Power	-20.8	dBm
Data Peak Power	-8.27	dBm
PHR CRC	Pass	
Pulse Jitter	0.09	ps
Pulse NMSE	7.08	ppm
PSDU CRC	Pass	

Key Specifications

- Frequency Range: 5 to 19 GHz
- Modulation Bandwidth: > 1 GHz
- Maximum Input Power: +20 dBm
- Output Power Range: +5 to -60 dBm, -15 to -110 dBm (with IQ5631 PDCM)

UWB Test Coverage

- TX Mask Testing
- TX Modulation Quality
 - Symbol Modulation Accuracy
 - Carrier Frequency Offset
 - Chip Clock Error / Frequency Error
 - Pulse Main Lobe width / Side Lobe Power
 - Data /Preamble power
 - Pulse Jitter
- RX Packet Error Rate (PER)
- Includes support for UWB technology standard 802.15.4z