



WIRELESS DESIGN SERVICES

Digi International®

# Critical Design Considerations



## HOW DO YOU ELIMINATE PROJECT RISK?

Teaming with Digi WDS, you get a predictable engineering timeline and budget. We have world-class engineers and program managers who successfully design products for people every day.



## HOW WILL YOU ARCHITECT YOUR SYSTEM?

Digi WDS will ensure all features, functions, and requirements are met with performance second to none. We are experts at identifying elusive requirements to ensure the end product matches your expectations. Digi WDS has years of experience working with hundreds of clients. It's what we do.



## HOW DO YOU DESIGN FOR SECURITY?

Security for connected products is a must. Digi WDS will lead you through a security focused design process to eliminate vulnerability in your product.



## DO YOU UNDERSTAND GOVERNMENT AND INDUSTRY CERTIFICATIONS?

With our state-of-the-art lab, RF engineering expertise and our proficiency in government and industry certifications like FCC/IC, EN, PTCRB, AT&T, and Verizon, we can guarantee certification.



## WHAT IS YOUR TIMELINE?

Are you short on time and resources? Digi WDS has a dedicated multi-discipline team just for you. Over the years we have invested in a library of hardware & software building blocks which accelerate your product development beyond traditional ground up design. Our project management organization understands how to balance world class quality development with an ultra-lean development timeline.



## HOW WILL YOU TRANSITION TO MANUFACTURING?

Testing RF capabilities at the end of the manufacturing line requires expertise in RF engineering. Digi WDS is experienced in creating custom test fixtures and software to verify end-of-line RF performance.

# Get to Market Faster.

Having the right partner on your side makes all the difference.

80% of all new cellular designs fail certification.

Product development is a complex process. Adding cellular connectivity adds additional layers of complexity and requires a specific type of expertise. Cellular products are required to pass an additional level of certification before they are allowed on the carriers' networks. Failure to successfully navigate the certification process will result in costly product redesign and missed revenue opportunities.

Having the right partner on your side can make all the difference. With Digi WDS, we guarantee any product we design from start to finish using our proprietary methodology will pass FCC and carrier certifications. If it doesn't pass the first time, we'll pay to make it right. With a state-of-the-art RF lab, a dedicated team of engineers and a library of proven IP we have the tools and resources to pass certifications and get your product to market faster.

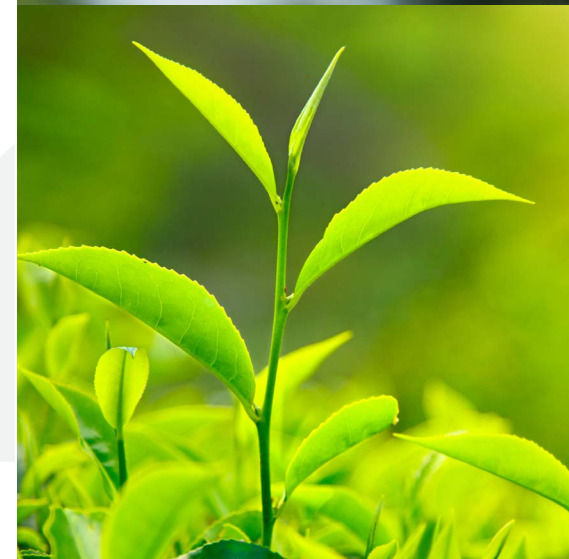
# Digi WDS

Internet of Things (IoT). Connected devices. Embedded systems. No matter what you call it, wireless technology and connected machines are becoming the eyes and ears of the home and enterprise.

Our proven methodology takes you through a process where we first, actively listen to your business and technical requirements. Then, based on these findings we design a solution that is tailored to your specific needs.

Digi WDS helps companies solve business problems by embedding wireless technologies to create innovative M2M products. By partnering with Digi WDS to bring your product to market you:

- Decrease costs
- Increase revenues
- Generate new revenue streams



DELIVERING  
CUSTOMER  
SUCCESS →



VALUE  
DELIVERED }

# Digi WDS Enhances Quality of Life for Diabetes Patients and Their Families

## PROBLEM

18.8 million people live with diabetes and many do not have the freedom to leave their home and effectively monitor their blood glucose levels.

## SOLUTION

Digi WDS developed a solution giving patients back their freedom and providing peace of mind for their loved ones. By using monitors embedded with wireless technology, families can now stay informed with automated updates communicating the status of a loved one's health.





A photograph of a tea plantation on a hillside, showing rows of green tea bushes. The image is used as a background for the top half of the slide.

VALUE  
DELIVERED }

# Monitoring Plant Health Drives Higher Production Yields

## PROBLEM

Weather and soil conditions can impact the stress on the plant, which can adversely impact crops and reduce yields. The outcome is less quality food and lower revenues.

## SOLUTION

Digi WDS built a wireless network of predictive smart sensors, leveraging an algorithm developed by the USDA to more effectively monitor plant health. This data helps farmers proactively manage the health of the plant, thus maximizing crop yields and profits.





VALUE  
DELIVERED }

# Predictive Monitoring Turns an Old Problem into a New Revenue Stream

## PROBLEM

It's not a question of "if" a hydraulic hose will go bad, but a question of "when." When hoses fail, companies spend millions of dollars on hydraulic fluid cleanup, fines and medical costs for injuries.

## SOLUTION

Digi WDS designed a wireless monitoring system to predict hose failure before an issue occurs. We helped a century-old Fortune 200 company turn this big problem into a new revenue stream.

VALUE  
DELIVERED }

# Embedded Cellular Radios Enable Smart Waste and Recycling Collection

## PROBLEM

Lack of visibility into waste and recycling stations results in late or inefficient truck rolls, which negatively impacts operational costs and customer service.

## SOLUTION

Digi WDS embedded custom cellular radios into solar powered trash and recycling compactor units to help BigBelly Solar monitor trash from any computer or smart phone in real-time. The company now monitors their entire portfolio of waste and recycling stations and can determine when collection is needed. This knowledge empowers just-in-time collection, saving time and fuel while eliminating overflow issues.







VALUE  
DELIVERED }

# Multi-Sensor Body Monitor Improves Individual Health and Wellness

## PROBLEM

Individuals seeking to make more informed health and wellness decisions were limited in their ability to make actionable decisions.

## SOLUTION

Our team integrated Bluetooth Smart Ready technology into a wearable body monitor, enabling real-time data to be sent to an individual's smart phone or tablet. With access to actionable information via mobile or online applications, consumers can now make better on-the-go diet and exercise decisions.



# Our Capabilities

Whether you are upgrading an existing device or designing a new product from the ground up, Digi WDS can bring your device to market quickly and cost effectively. Our engineers are experts in cellular (all generations and technologies), GPS, Wi-Fi, ZigBee, Bluetooth and a wide variety of proprietary protocols.

With hundreds of successful M2M designs delivered, our team understands the full complexities as well as the subtle nuances of designing and building a great wireless solution. Our rigorous design process is structured to successfully take your product from concept to production, but flexible enough to allow you to leverage any of our services on a standalone basis.

**WE ARE FOCUSED ON ONE GOAL – YOUR SUCCESS.**



# Our Experience

## 250+ custom projects

Our world-class engineers, RF lab, and library of proven IP make Digi WDS your trusted partner.

## 100+ rescues

Digi WDS is the go-to source to rescue an RF design from certification failure or suboptimal performance. We help you successfully pass specifications and certifications.

## 100% compliance

Digi WDS can guarantee your product will comply with FCC/IC, cellular, and other requirements, speeding your product plans.

## 100 million devices

We help connect products in highly regulated industries around the globe.

# Our Development Cycle



## Ideation, Definition and Planning

### Digi WDS Jolt Workshop

Capture product requirements and define high-level architecture

### Creative Product Architecture

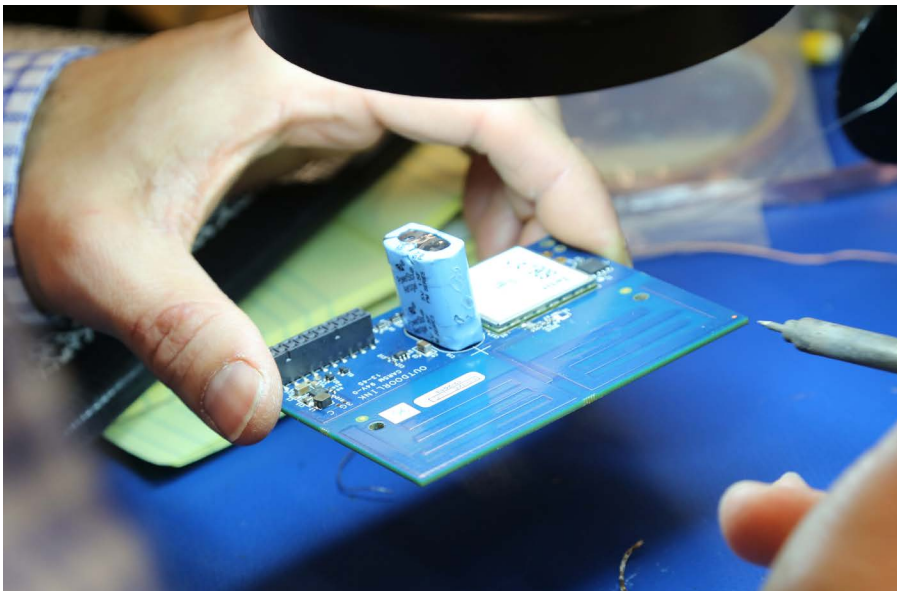
Create electrical, RF, software architectures and critical component selection

### Rapid Proof of Concept Prototype

Quickly create a prototype of your product

### Complete Project Planning

Plan your product development with Digi WDS to ensure success



## Development and Test

### Product Design

Our savvy wireless experts can help you reduce design risk

### Antenna Design

Take the guesswork out of antenna design

### Software and Embedded

**Firmware** – Design, develop, and customize software and firmware

### RF and Electrical Circuit Design

RF designs built for performance

### Circuit Board Layout

Digi WDS specializes in optimizing PCBs for wireless applications

### Digi Product Integration

Proven Digi product integration for faster development

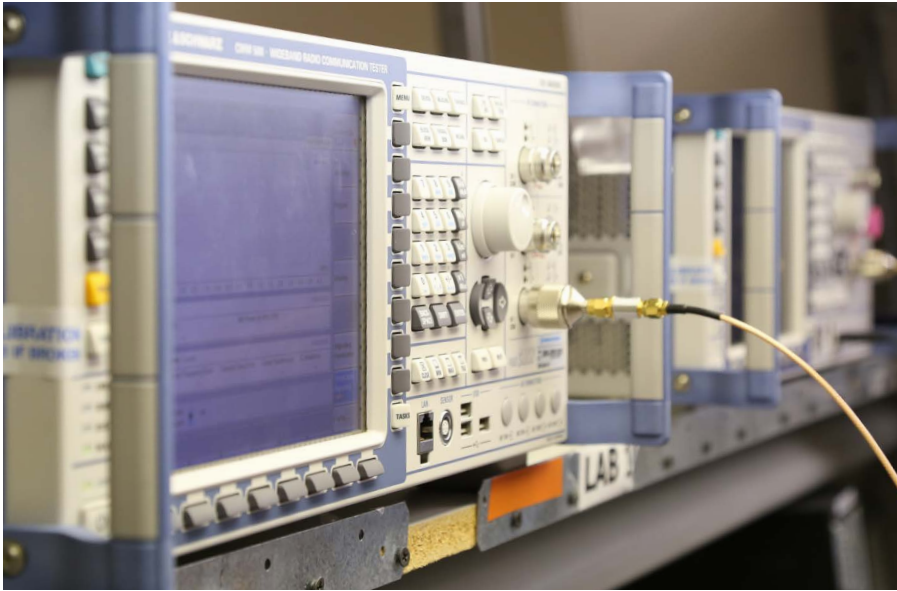
### Design Review

Our expert technical analysis validates your designs

### Mechanical Design

Optimized for RF performance





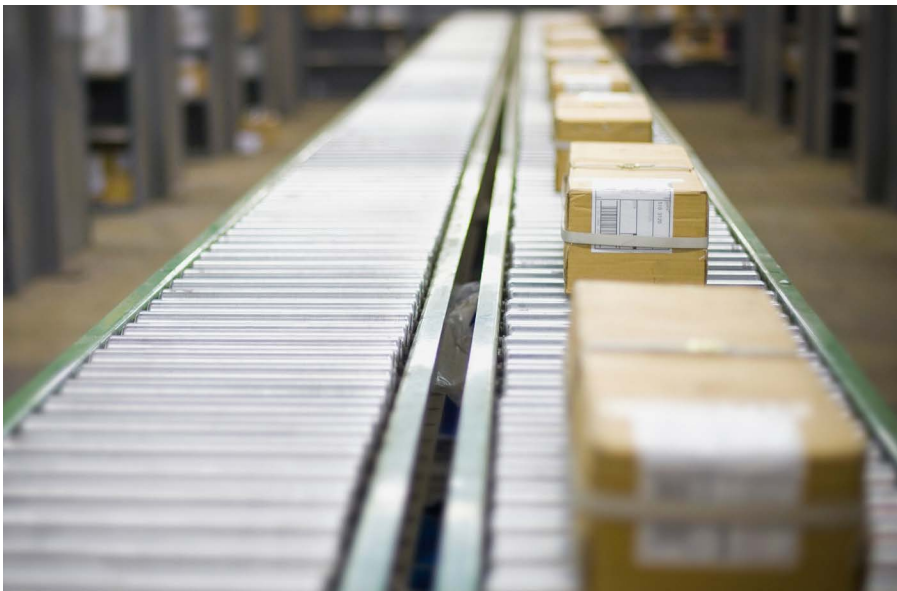
## Certification

### **Certification Assistance**

Avoid costs and rework with the Digi WDS 100% certification guarantee

### **Certification Failure Analysis**

Expedited RF and EMI/EMC debugging and mitigation



## Manufacturing Deployment

### **Manufacturing Test**

Digi WDS develops complete manufacturing RF test systems and will transition your product to manufacturing



# Innovate.

To introduce something new or improve anything established.

We understand that product launches and upgrades are critical to your organization's growth. You must get to market faster. Your deadlines are tight. More than ever, you need a trusted partner with the expertise, experience and proven methodology to bring your product to market today, not tomorrow.

With hundreds of projects under our belt, a world-class RF lab, experienced engineers and a library of proven IP, we have the experience to take your product to market. Whatever your challenge, you can turn to Digi WDS. We are experts in solving business problems with M2M technology, and we have the capabilities to provide you with a comprehensive wireless design solution for any product. Contact us today to bring your idea to market.





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a world-class RF lab,  
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Digi WDS is your trusted  
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product to market, fast.

# Contact us to realize your vision today

US: 1-877-912-3444

Learn more about Digi WDS  
[www.digi.com/wds](http://www.digi.com/wds)

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