

# Digi Connect® Wi-Wave

802.11b/g Radio Card for Embedded Systems

Highly integrated 802.11b/g WLAN card with USB interface for embedded applications offers secure wireless network connectivity and long-term product availability.



## Overview

Built using Digi's own 802.11b/g wireless LAN technology, the Digi Connect Wi-Wave offers the industry's first off-the-shelf 802.11b/g USB radio card meeting the long-term product availability and specific operating temperature requirements of embedded designs and their extended product life cycles.

The Digi Connect Wi-Wave delivers a pre-certified, flexible and secure WLAN radio solution for a wide variety of sophisticated embedded applications. These include medical devices, retail systems, transportation, security/access control, building and industrial automation, networked displays, warehousing, gaming and more.

Combined with complete out-of-the-box Linux and Microsoft Windows CE 5.0/6.0 target platform support and easy hardware integration through the ubiquitous USB 2.0 interface, the Digi Connect Wi-Wave provides the ideal long-term WLAN connectivity solution for embedded systems.

### Platforms and Services



Design Services



Accessory Kits

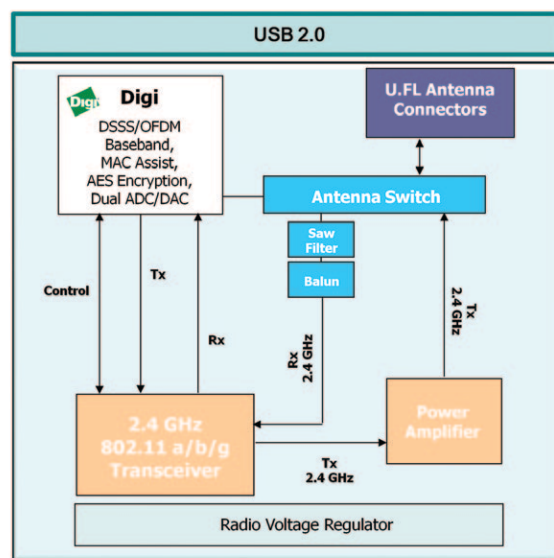


Support



Supported Software Platforms

## Block Diagram



## Features/Benefits

- Highly integrated PCI Express Mini Card form factor
- Simple USB based hardware integration
- Strong WPA2/802.11i security support
- Industrial operating temperature range
- Fully-certified radio reduces design risk and accelerates time-to-market
- Digi's own WLAN technology for true long-term product availability in embedded designs
- Driver support for Linux and Microsoft® Windows® Embedded CE 5.0/6.0 (ARM, MIPS, x86)



## Development Kits

### Development Kit Overview

#### Development Kit for Linux and Microsoft Windows Embedded CE



The Digi Connect Wi-Wave card offers complete out-of-the box support of Linux (2.6.29 or greater), Microsoft Windows CE 5.0 and Microsoft Windows CE 6.0 platforms on ARM®, MIPS, and x86 target platforms. This allows customers to leverage the feature-complete selection of high-level software components and applications in Microsoft Windows Embedded CE or the readily available library of Linux software and community support on a broad range of new and existing target platforms.

The development and evaluation kit contains everything required to immediately start the development/evaluation process. This includes documentation, a development board for easy connection to the target host system through a standard USB interface cable, out-of-the-box antenna options, the Digi software platform support CD, and other accessories.

- Complete development kit for evaluation and prototyping
- Driver support for Microsoft Windows Embedded CE 5.0/6.0 and Linux
- Seamless software and hardware integration
- Digi Board Support Package (BSP) source code included

### Development Kit Contents

Software Platforms	Linux and Microsoft Windows Embedded CE 5.0/6.0 (ARM, x86, MIPS)
Module	Digi Connect Wi-Wave 802.11b/g
Development Board	Development board with socket with retaining clip, 2 x U.FL connectors, 2 x RP-SMA connectors, USB type B connector, signal headers, status LEDs, power connector
CD/DVD	Digi software platform support CD with drivers, tools and documentation
Documentation	Quick start guide, installation and user's guide, hardware reference manual
Power Supplies and Accessories	2 x U.FL cables, Antennas, USB cable, Power supply with country/region specific plugs
Kit Part Numbers	DC-WWV-EKIT

### Specifications

#### Digi Connect® Wi-Wave

Hardware	
Form Factor	Compliant with PCI Express Mini Card form factor and electrical specification
Host Interface	USB 2.0 device full-/ high-speed
Baseband Processor	Digi DSSS/OFDM baseband processor technology with MAC assist and AES hardware encryption
Dimensions	L x W x H: 2.006 in (50.95 mm) x 1.181 in (30.00 mm) x 0.187 in (4.75 mm) Top: 0.095 in (2.40 mm); Bottom: 0.053 in (1.35 mm)
Network Interface - Wireless	
Standard	IEEE 802.11b/g
Frequency	2.4 GHz
Data Rate	Up to 54 Mbps with automatic rate fallback
Modulation	DBPSK (1 Mbps), DQPSK (2 Mbps), CCK (11,5.5 Mbps), BPSK (6,9 Mbps), QPSK (12,18 Mbps), 16-QAM (24,36 Mbps), 64-QAM (48, 54 Mbps)
Transmit Power	15dBm (~32mW) @ 1,2,5.5 and 11Mbps; 12dBm (~16mW) @ 6,12,18,24,36,48 and 54Mbps
Receive Sensitivity (Typical)	-68 dBm @ 54 Mbps, -85 dBm @ 11 Mbps, -85 dBm @ 6 Mbps, -87 dBm @ 1 Mbps
Antenna Connectors	2 x U.FL
Dual-Diversity (Receive)	•
Infrastructure Mode (BSS)	•
Ad Hoc Mode (IBSS)	•
Power Saving Mode	•

- Module Feature

# Specifications

# Digi Connect® Wi-Wave

## WLAN Security

WEP (Wired Equivalent Privacy)	64/128-bit encryption (RC4)
WPA/WPA2/802.11i*	128-bit TKIP/CCMP (AES) encryption Enterprise mode (802.1X): LEAP (WEP only), PEAP, TTLS, TLS; GTC, MD5, OTP, PAP, CHAP, MSCHAP, MSCHAPv2, TTLS-MSCHAPv2 Pre-shared key mode (PSK)

## Power Requirements

Voltage	3.3 V DC $\pm$ 9% (3.00 to 3.60V)
Current	Transmit: 600 mA max, 430 mA typical Receive: 350 mA max, 235 mA typical Suspend: 150 mA typical

## Environmental

Operating Temperature	-40° C to +85° C (-40° F to +185° F)
Storage Temperature	-40° C to +125° C (-40° F to +257° F)
Relative Humidity	5% to 95% (non-condensing)
Altitude	12,000 feet (3,658 meters)

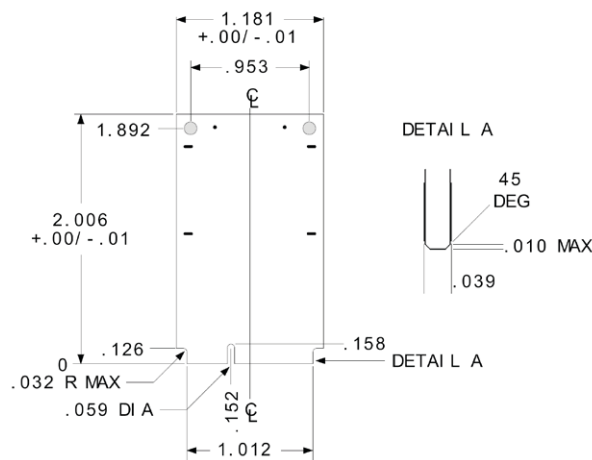
## Regulatory Approvals

FCC Part 15 Class B, EN 55022 Class B	•
EN 61000-3-2 and EN 61000-3-3	•
ICES-003 Class B, VCCI Class II, AS 3548	•
FCC Part 15 Sub C Section 15.247	•
IC RSS-210 Issue 5 Section 6.2.2(o)	•
EN 300 328, EN 301 489-17	•
UL 60950-1, EN 60950 (EU)	•
CSA C22.2, No. 60950	•
EN 55024	•

• Module Feature

\* WPA2/802.11i supplicant features depending on target operating system

## Digi Connect® Wi-Wave



Visit [www.digiembedded.com](http://www.digiembedded.com) for part numbers.



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