



Bluegiga Wi-Fi
Modules



Embedded Wi-Fi modules
for affordable connectivity

Bluegiga WF111 Wi-Fi® Module

WF111 provides a low cost and simple Wi-Fi solution for devices that run Linux operating system and a TCP/IP stack, offering all the benefits of a module – small form factor, easy integration and certifications.



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WF111

Wi-Fi Module™



Key Features

- IEEE 802.11 b/g/n radio
 - Single 2.4 GHz band
 - Symbol rate up to 72.2Mbps
- Integrated antenna or U.FL connector
- Support for WEP, WPA and WPA2 encryption
- Software Access Point mode
- Advanced *Bluetooth* coexistence support
- Temperature range: -40°C - +85°C
- SDIO host interface
- Fully CE, FCC and IC qualified
- Linux operating system drivers for ARM and X86 processors.
- Low power solution designed for mobile and battery power applications
- Small size: 12.0 x 19.0 x 2.1 mm

Description

A fully integrated single 2.4GHz band 802.11 b/g/n module for portable and battery powered applications. WF111 integrates an IEEE 802.11 b/g/n radio, antenna or U.FL antenna connector and SDIO host interface.

WF111 provides a low cost and simple Wi-Fi solution for devices that run an operating system and a TCP/IP stack, still offering the benefits of a module – compact size, easy integration, Linux drivers for ARM and X86, and certifications. WF111 has support for Wi-Fi encryption protocols and for various co-existence schemes enabling exceptional performance during simultaneous use of IEEE 802.11 and *Bluetooth* with a single antenna.

Benefits

- Small, fully integrated 802.11 b/g/n module with radio and antenna
- Compact size, low power solution designed for mobile and battery power applications
- Industrial specifications, long life time and future proof solution
- Regulatory qualifications reducing R&D risk and time-to-market

Applications

For professional applications requiring reliable, small size, long range Wi-Fi connectivity for Linux with SDIO. Applications include: Point of Sale, automotive aftermarket, eHealth/medical, audio and many others.

Choosing Bluegiga will save your resources, time and money.



1. State-of-the-art and reliable hardware.

2. Professional and agile technical support and design review services.

Radio and Modem

Symbol rates	IEEE 802.11n : 72.2, 65, 58.5, 57.8, 52, 43.3, 39, 28.9, 26, 21.7, 19.5, 14.4, 13, 7.2, 6.5Mbps IEEE 802.11g : 54, 48, 36, 24, 18, 12, 9, 6Mbps IEEE 802.11b : 11, 5.5, 2, 1Mbps
Modulation	CCK, DSSS, OFDM with BPSK, QPSK, 16-QAM and 64-QAM
Frequency	2.4GHz to 2.497GHz
Channels	N. America: 11 channels, Rest of the world: 13 channels
QoS	WMM, WMM Power Save (WMM-PS)

Security

Encryption	WPA / WPA2, WEP, CCMP (AES), TKIP WPS
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Hardware

Host interfaces	SDIO 4-bit, SDIO 1-bit, CSPI
Power supply	Two voltages required: 3.3V, 1.8V <ul style="list-style-type: none">• Core voltage: 1,45–2,0 V• Front end power supply: 2.7–4.8V• Digital I/O lines: 1,7–3,6V
Antenna	Internal, U.FL connector
Dimensions	12.0 x 19.0 x 2.1 mm
Package	Surface mount

Software

OS drivers	SDIO drivers for Linux 2.6 and 3.x kernels
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Wi-Fi Modules comparison chart

WF111



WF121



Radio performance

Typical TX power	+17 dBm	+17 dBm
Typical RX sensitivity	-91 dBm	-91 dBm
Line of sight range	300-500m	300-500m

Host Interfaces

SDIO	Yes	No
CSPI	Yes	No
UART	No	Yes
USB	No	Yes *

Peripheral Interfaces

SPI	-	up to 2*
UART	-	up to 4*
USB	-	1xOTG*
Ethernet MAC	-	1*
I2C	-	up to 2*
GPIO	6	up to 38
AIO	-	up to 10*

Microcontroller

Architecture	-	MIPS 4K
MHz	-	80 Mhz
RAM	-	128 kB (64 kB free)
Flash	-	512 kB (256 kB free)

Operating voltage

Operating voltage	1.8V and 3.3V	2.7V - 3.6V
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Bluegiga APIs

Bluegiga BGAPI binary protocol	-	Yes
Bluegiga BGLib host library	-	Yes

OS drivers

Linux	Yes	Not needed
Windows	-	Not needed

Software development

On-board applications	-	Yes
Bluegiga BGScript support	-	Yes
Firmware development service	-	Yes
SDK	Linux wireless tools	Bluegiga SDK

Dimensions

Dimensions (W x L x H)	12.0 x 19.0 x 2.1 mm	15.4 x 26.2 x 2.1 mm
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* check availability schedule for software support

For more detailed information please refer to a separate Bluegiga Wi-Fi modules comparison chart.

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