



Bluegiga *Bluetooth*[®]
Smart Ready Modules



Customizable *Bluetooth* Smart
Modules for Any Application

BT111 - *Bluetooth* Smart Ready HCI Module

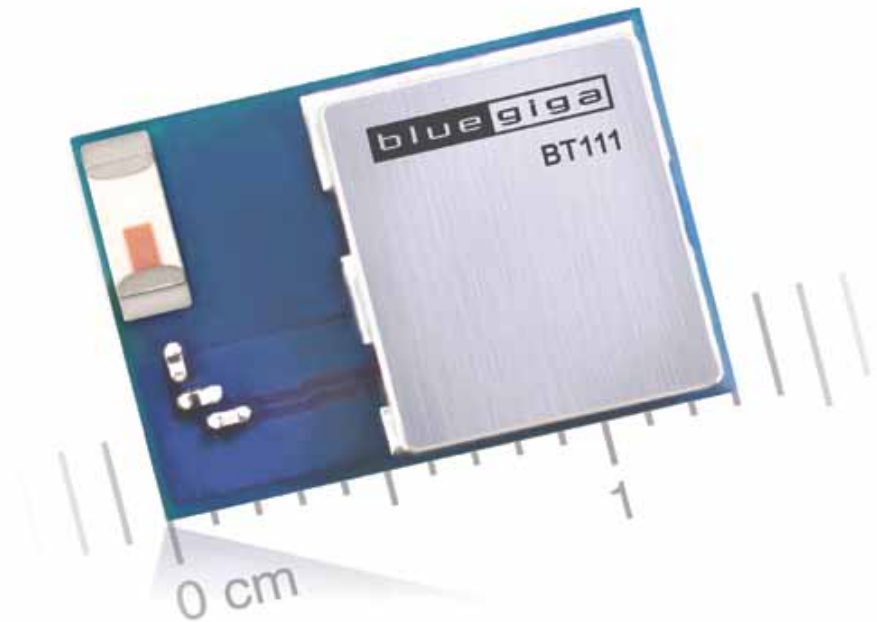
BT111 provides a low cost and simple *Bluetooth* Smart Ready HCI solution for devices that run operating system, offering all the benefits of a module - small size, easy integration and certifications.



www.bluegiga.com/bt111

BT111

Bluetooth Smart Ready HCI Module



Key Features

- *Bluetooth* v.4.0, dual mode compliant
 - Supports *Bluetooth* classic
 - Supports *Bluetooth* low energy master mode
- Radio capabilities
 - Transmit power: +8dBm
 - Receiver sensitivity: -89dBm
 - Line-of-sight range: ~100 meters
 - Integrated antenna
- Interfaces
 - HCI over USB host interface
 - 802.11 co-existence interface
 - Software programmable GPIO
 - PCM or I2S audio interfaces
- Supply voltage: 2.3V to 5.7V
- Temperature range: -30°C to +85°C
- Ultra compact size: 13.05mm x 9.30mm x 2.3mm
- *Bluetooth*, CE, FCC, IC and South-Korea qualified

Description

BT111 is a low cost and ultra small *Bluetooth* Smart Ready HCI module, targeted at applications where both *Bluetooth* classic and *Bluetooth* low energy connectivity is needed. BT111 integrates a *Bluetooth* 4.0 dual mode radio, HCI software stack, and USB interface and an antenna. BT111 is compatible for example with Windows and Linux operating systems and offers the OEMs fast and risk free way to integrate *Bluetooth* 4.0 connectivity into their applications.

Benefits

- Highly integrated *Bluetooth* Smart Ready solution
 - Fast time to market
 - Low development risks
- Good radio performance
 - Long range and robust connections
- *Bluetooth*, CE, FCC, IC and South Korea qualified
 - Proven interoperability
 - Minimal qualification costs
 - Reduced time to market and R&D risks
- Co-existence with Bluegiga Wi-Fi products
- Long life time and future proof solution

Applications

Applications include: health and fitness gateways, point of sale, M2M connectivity, automotive aftermarket, personal navigation devices, consumer electronics and industrial and home automation gateways and many others.

Choosing Bluegiga will save your resources, time and money



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

2. Agile tech support and design review services.

Bluetooth

Version	4.0 (Smart Ready)
Security	Secure Simple Pairing, Safer+ and AES-128
BR/EDR connections	7
LE connections	5

Radio

Frequency	2.402GHz to 2480GHz
Transmit power	+8dBm
Receiver sensitivity	-89dBm
Typical line-of-sight range	100 meters
Antenna	Integrated ceramic chip

Dimensions

Dimensions (W x L x H)	13.05mm x 9.30mm x 2.3mm
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Hardware

Host interfaces	USB 2.0 device
GPIO	8 software configurable
Audio interfaces	PCM or I2S
802.11 co-ex	Unity-3, Unity-3e, Unity+
Power supply	2.3V to 5.7V

Operating system support

Windows 7	Microsoft or Toshiba Bluetooth stacks
Windows 8	Microsoft or Toshiba Bluetooth stacks
Linux	BlueZ Bluetooth stack
Windows CE/EC	Microsoft Bluetooth stack
Embedded devices	3rd party embedded Bluetooth stacks

Certifications

CE	EN300328, EN301489
FCC	FCC part 15 modular qualification
IC	Industry Canada modular qualification
South Korea	KCC
Japan	ARIB STD-66

Current consumption

TX peak current	70 mA
RX peak current	52 mA
Deep sleep	370 uA

Classic Bluetooth vs. Bluetooth Smart

Technical specification	Classic Bluetooth technology	Bluetooth Smart technology
Radio frequency	2.4GHz	2.4GHz
Typical distance/range	~10-100 meters	~10-100 meters
Symbol rate	1-3Mbps	1Mbps
Application throughput	up to 2.1 Mbps	up to 250 kbps
Nodes/Active slaves	7	Unlimited
Security	56 to 128 bit	128-bit AES
Robustness	FHSS	FHSS
Latency (from not connected state to send data)	100+ ms	<6ms
Government regulation	Worldwide	Worldwide
Certification body	Bluetooth SIG	Bluetooth SIG
Voice capable	Yes	No
Network topology	Point-to-point, scatternet	Point-to-point, star
Power consumption	1 (reference value)	0.01 to 0.5 (use case dependent)
Service discover	Yes	Yes
Profile concept	Yes	Yes
Primary use cases	Mobile phones, headsets, stereo audio, automotive, PCs etc.	Mobile phones, gaming, PCs, sport & fitness, medical, automotive, industrial, automation, home electronics etc.
Profiles	Serial Port, hands-free, OBEX, A2DP etc.	Proximity profile, Battery status, Weight scale, Heart rate monitor, Humidity etc.

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