

802.11b/g/n IOT Module

WSDB-102GN



Industry's First Highly Customized IOT Module with Broadcom BCM43362 Solution, 1T1R

Feature

- Standard: 802.11b/g/n
- CPU: ARM STM32F411X
- Chipset: Broadcom BCM43362
- Host Interface: UART
- Peripheral Interface: I2C, SPI
- Form Factor: Stamp Hole
- Antenna: Integrated antenna or U.FL connector for external antenna, 1T1R
- Output Power up to 15dBm
- Enhanced wireless security: WEP, WPA, WPA2

Order information

- Evaluation Board (WSDB-102GN-EVB)

Small-Sized and Power-Efficient

SparkLAN WSDB-102GN is an extremely cost and power efficient IOT solution, pack with Broadcom BCM43362 chipset, and powerful ARM Cortex-M4 microcontroller processor, capable to deliver the most advance technology 802.11b/g/n, and produce an output power up to 15dBm. WSDB-102GN is designed and approval by FCC and CE authorities.

Rich I/O interface & Antenna for Design Flexibility

WSDB-102GN supports multiple interfaces, includes host interface through UART, and 2 peripheral interface through I2C and SPI. WSDB-102GN carries multiple GPIO, capable to integrate the solution into wide range of hardware platforms, and interact seamlessly with any access point. WSDB-102GN includes an integrated antenna, but also offers option for external antenna, giving developers a wide range of possibilities for product development.

Small size with Big application capability

Apart from the size advantage, WSDB-102GN is a driver-free design, programed by Real-time OS(RTOS), with TCP/IP stacks included, vastly reduce the hardware / software integration effort. With a rich function command-list library, it makes WSDB-102GN a perfect solution for many IOT applications, such as remote monitoring system, asset tracking, security and industrial equipment and so much more.

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Specification

■ Standard

802.11b/g/n + MCU

■ Chipset

CPU STM32F411X

Mac/BB/RF Broadcom BCM43362

■ Host Interface

UART

■ Operating Voltage

DC 3.3V ± 5%

■ Data Rates

802.11b: 1Mbps~11Mbps / 802.11g: 6Mbps~54Mbps / 802.11n (HT20): 7.2Mbps~72.2Mbps

■ Radio

Antenna Integrated antenna or U.FL connector for external antenna, 1T1R

Operating Frequency b/g/n ISM Band: 2.400~2.4835GHz

Modulation
802.11b: DBPSK, DQPSK, CCK
802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)

Output Power (1T)
802.11b: 15dBm ± 2dBm@11Mbps
802.11g: 13dBm ± 2dBm@54Mbps
802.11gn HT20: 12dBm: ±2dBm @MCS7

Receive Sensitivity (1R)
802.11b: ≤ -85dBm@11Mbps
802.11g: ≤ -72dBm@54Mbps
802.11n HT20: ≤ -69dBm@MCS7

■ Power consumption

MCU

MCU(SLEEP) 30mA(Max.)

Wi-Fi

Continue TX 330 mA(Max.)

Continue RX 120 mA(Max.)

■ Environmental

Temperature Range -20 ~ 70°C (Operating) / -40~85°C (Storing)

Humidity (Non-Condensing) 10% ~ 95% (Operating) / 5% ~ 90% (Storage)

■ Physical Specification

Dimensions

Weight ≤ 2g

■ Software

Security

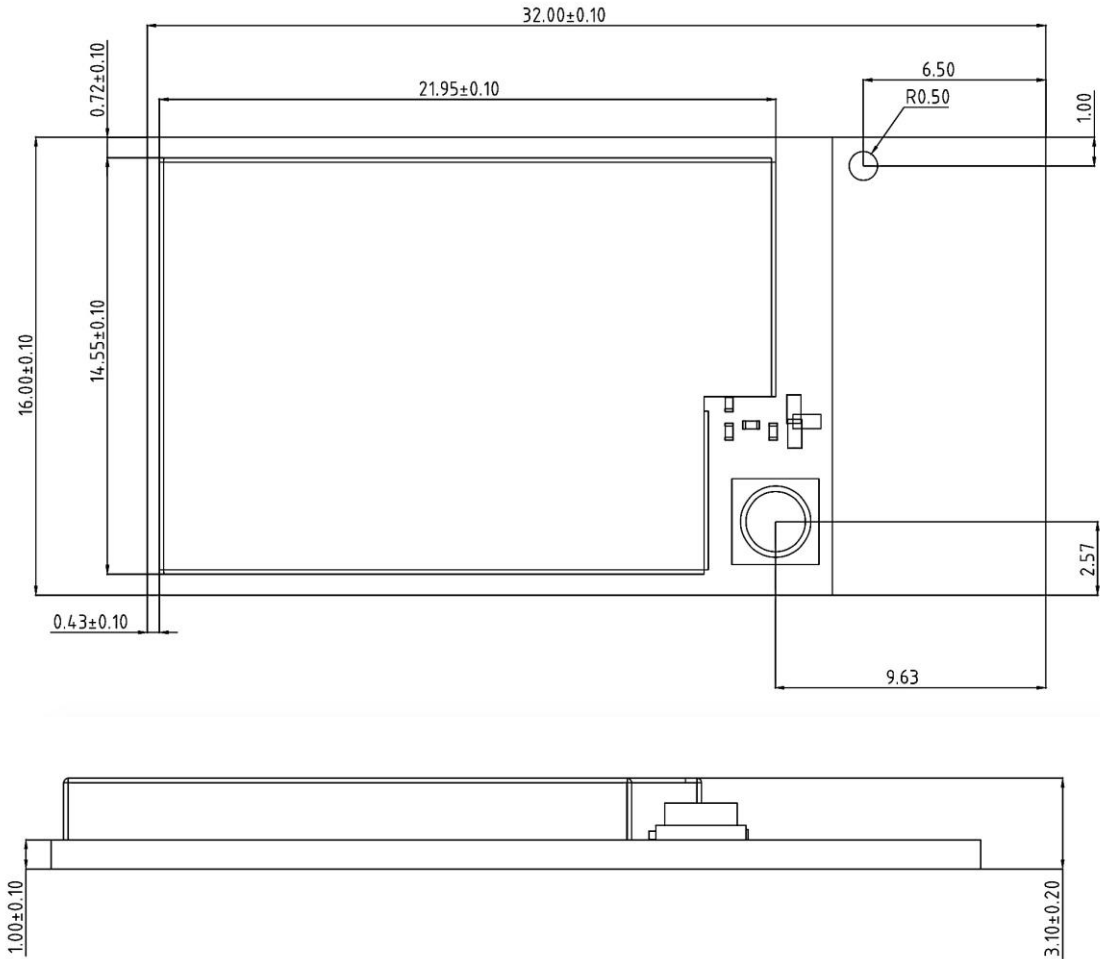
Software SparkLAN Firmwave

Security WEP, WPA, WPA2

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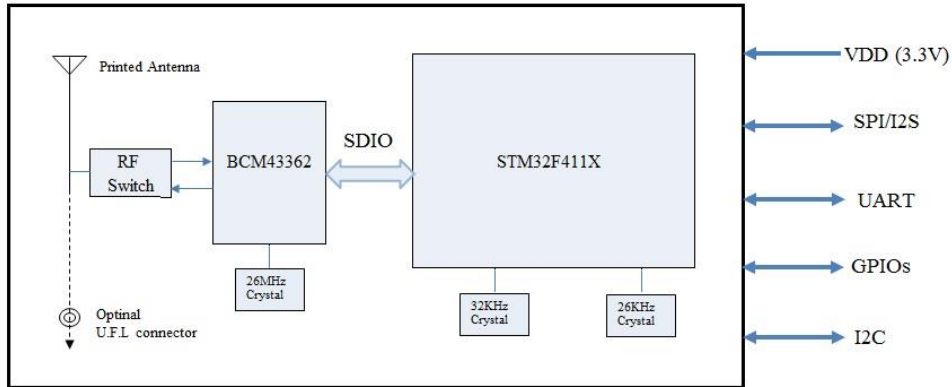
Mechanical Dimension (mm)



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Block Diagram



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Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
1	No Connection	-	21	GND	GND
2	GPIO_PB2	Reserved for GPIO pin use	22	JTAG_TDO	JTAG_TDO signal
3	No Connection	-	23	JTAG_TDI	JTAG_TDI signal
4	GPIO_PA7	Reserved for GPIO pin use	24	JTAG_TRST_L	JTAG_TRST_L signal
5	No Connection	-	25	JTAG_TCK	JTAG_TCK signal
6	I2C2_SDA	I2C_SDA signal	26	JTAG_TMS	JTAG_TMS signal
7	GPIO_PB4	Reserved for GPIO pin use	27	SPI5_MISO	SPI_MISO signal
8	USART2_TX	HCI UART transmit output	28	No Connection	-
9	USART2_RTS	HCI UART request to send	29	SPI5_MOSI	SPI_MOSI signal
10	VBAT	MCU operation voltage input power supply for RTC, external clock, 32kHz oscillator and backup registers(Through power switch) when VDD is not present.)	30	GPIO_PB6	Reserved for GPIO pin use
11	No Connection	-	31	GPIO_PB8	Reserved for GPIO pin use
12	USART2_RX	HCI UART receive input	32	No Connection	-
13	MICRO_RST_N	MCU reset	33	GPIO_PB13	Reserved for GPIO pin use
14	WAKE_UP	Wake up	34	GPIO_PA5	Reserved for GPIO pin use
15	No Connection	-	35	GPIO_PA11	Reserved for GPIO pin use
16	GPIO_PC13	Reserved for GPIO pin use	36	SPI5_NSS	SPI_NSS signal
17	I2C2_SCL	I2C_SCL signal	37	SPI5_SCK	SPI_SCK signal
18	GPIO_PB9	Reserved for GPIO pin use	38	USART2_CTS	HCI USART clear to send
19	I2C2_SMBA	I2C_SMBA signal	39	+3.3V	+3.3V
20	GND	GND	40	+3.3V	+3.3V
			41	ANT	RF Output(OPT)

*Specifications are subject to change without notice