

Product Name: BLE module

Model No.: ZEN-BD98

Overview

ZEN-BD98 is a BLE module. By this module, the communication between mobile phone and user's device can be easily build up, Android™ and IOS™ supported.

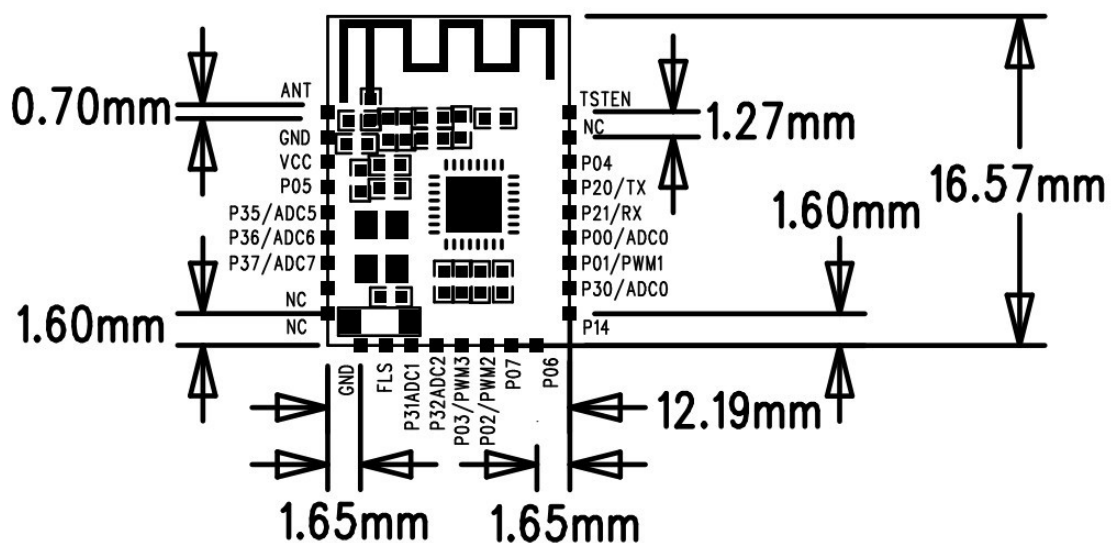
Applications

- Sports and fitness
- Healthcare and medical
- Remote control
- Smartphone accessories
- PC peripherals (Mouse, Keyboard)
- Wireless sensor networks

Features

- UART interface's baud rate is from 9600 to 115200, the default is 9600, 8, N, 1
- Provides many AT command, such as module reset, MAC address inquiry, baud rate selection, module name change,
- The default connection interval is 20ms.
- One data pack can be 20 bytes long.
- Sleep mode power consumption lower than 2μA

Pin assignment



Pin Description

<i>No.</i>	<i>Pin</i>	<i>I/O</i>	<i>Description</i>
1	ANT	-	The input of RF
2	GND	-	Ground
3	VDD	-	Supply voltage 2.0-3.6V
4	P0.5	I/O	General I/O, or MOSI for SPI, SO_FL A
5	P3.5	I/O	General I/O, or input of ADC1
6	P3.6	I/O	General I/O, or input of ADC1
7	P3.7	I/O	General I/O, or input of ADC1
8	NC	-	No connection
9	NC	-	No connection
10	GND	-	Ground
11	FLS	I/O	The output of boost
12	P3.1	I/O	General I/O, or input of ADC1
13	P3.2	I/O	General I/O, or input of ADC2
14	P0.3	I/O	General I/O, or 3DS_PWM[3], I2C1.SDA, WP_FL A
15	P0.2	I/O	General I/O, or 3DS_PWM[2], I2C1.SCL, HOLD_FL A
16	P0.7	I/O	General I/O, or SPI_NSS, CSN_FL A
17	P0.6	I/O	General I/O, or MISO for SPI, SCK_FL A
18	P1.4	I/O	General I/O, or enable for PWM4
19	P3.0	I/O	General I/O, or input of ADC0
20	P0.1	I/O	General I/O, or UART enable input, low active
21	P0.0	I/O	General I/O, or module enable input, low active
22	P2.1	I/O	General I/O, or UART RX
23	P2.0	I/O	General I/O, or UART TX
24	P0.4	I/O	General I/O, or SPI_SCK, SI_FL A
25	NC	-	
26	TSTEN	-	Enable the testing function of memory

Parameters

<i>Model Name</i>	<i>ZEN-BD98</i>
Bluetooth™ Specification	Bluetooth™ v4.0
Bluetooth™ Protocol stack	ATT, GATT, SMP, L2CAP, GAP
Supply Voltage	DC 2.0-3.6V
Operation current	≤10mA
Sleep mode current	≤2μA
Operation temperatures	-20°C-85°C
Radio TX power	-5.66dBm Max.
Radio RX sensitivity	-93dBm
Radio frequency	2.40GHz-2.480GHz
Module size	16.57mm * 12.19 * 1.8mm

AT command

	Command	Function description
Module Command	AT+RSET\CR\LF	Restore factory default
	AT+CONB\CR\LF	Disconnect
	AT+REST\CR\LF	Reset module
Inquiry Command	AT+GCTO\CR\LF	Return connection timeout value
	AT+VERS\CR\LF	Return firmware version
	AT+GADD\CR\LF	Return module address
	AT+GNAM\CR\LF	Return module name
	AT+GCMA\CR\LF	Return connection interval Max.
	AT+GPWR\CR\LF	Return radio TX power
	AT+GSLA\CR\LF	Return latency value
	AT+GCM\CR\LF	Return connection interval Min.
	AT+GURT\CR\LF	Return baud rate
	AT+GAV\CR\LF	Return broadcast interval
	AT+GPAC\CR\LF	Return pin code
	AT+GPAE\CR\LF	Return pin code enabled or not
	Setting Command	AT+UART+(baud rate)
AT+SNAM+(module name)		Set module name
AT+SCMA+(8-1600)		Set connection interval Max.
AT+SPWR+(0, 1, or 6)		Set radio TX power
AT+SCMI+(8-1600)		Set connection interval Min.
AT+SPAC+(six numbers of pin code)		Set pin code
AT+SPAЕ+(1 or 0)		1 Enable and 0 disable pin code
AT+SSLA+(latency value)		Set latency, do not change if you don't understand it
AT+SCTO+(timeout value)		Set connection timeout value
AT+SAVI+		Set broadcast interval
AT+ ENLP		Low power enable
AT+ NOLP		Low power disable
AT+ ELED		LED indication output enable
AT+ DLED		LED indication output disable
AT+ ESLP(see note)		Enable deep sleep mode
AT+ DSLP(see note)		Disable deep sleep mode

Note: If deep sleep mode enabled, P0.0 and P0.1 must be at low level to operate the module.

Customized services

The module's default firmware version is only for transparent transmission, if you want any other function, such as I/O or ADC specialized, we provide firmware customization.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

Note 1: This module certified that complies with RF exposure requirement under mobile or fixed condition, this module is to be installed only in mobile or fixed applications.

A mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

A fixed device is defined as a device is physically secured at one location and is not able to be easily moved to another location.

Note 2: Any modifications made to the module will void the Grant of Certification, this module is limited to OEM installation only and must not be sold to end-users, end-user has no manual instructions to remove or install the device, only software or operating procedure shall be placed in the end-user operating manual of final products.

Note 3: Additional testing and certification may be necessary when multiple modules are used.

Note 4: The module may be operated only with the antenna with which it is authorized. Any antenna that is of the same type and of equal or less directional gain as an antenna that is authorized with the intentional radiator may be marketed with, and used with, that intentional radiator.

Note 5: To ensure compliance with all non-transmitter functions the host manufacturer is responsible for ensuring compliance with the module(s) installed and fully operational. For example, if a host was previously authorized as an unintentional radiator under the Declaration of Conformity procedure without a transmitter certified module and a module is added, the host manufacturer is responsible for ensuring that the after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements. Since this may depend on the details of how the module is integrated with the host, Shanghai Yancan Electronic Technology Co., Ltd. shall provide guidance to the host manufacturer for compliance with the Part 15B requirements.

Note 6: FCC ID label on the final system must be labeled with “Contains FCC ID: 2ANMB-BD98” or “Contains transmitter module FCC ID: 2ANMB-BD98”.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.