
EXBT01 Module

DATA SHEET

ONE, Overview

EXBT01 is designed and manufactured by SHENZHEN ELET Technology Company for UBTECH Technology Company, it complies BT2.1+EDR/3.0/4.2 (4.2-BR/EDR/BLE) core specification.

EXBT01 uses CYPRESS BT4.2 LE/BR/EDR Dual-Mode Bluetooth single-chip, with and integrated ARM® Cortex™-M3, stand-alone Bluetooth stack, 2.4G RF transceiver, and high-gain PCB printed antenna, manufactured using the industry's advanced technology, half-hole pin design, ROHS process. It has good RF performance, low power and small size for IOT applications.

The integrated MCU has 48MHz operating frequency, rich interface resources, like UART, I2C, SPI, PWM, ADC, I2S and PCM audio interfaces.

TWO, Specifications

- ✧ Support UART/DATA transmission (GATT/GAP, Customized UUID), BLE HID, iBeacon Protocols.
- ✧ Hardware interfaces: UART, SPI, I2C, I2S/PCM, ADC, PWM and GPIOs.
- ✧ It supports OTA upgrade,
- ✧ Integrates Wechat API and Support AirSync protocol.
- ✧ Low consumption, sleep current is only about 50μA.
- ✧ Support Host/Device mode simultaneously.
- ✧ Multi-Host(Connect many different BT devices at same time.)

Three, Application Filed

The EXBT01 module is mainly used in the field of short-distance wireless data transmission. It can be easily connected with PC, smart phone and other wireless terminal Bluetooth devices. It can also realize data interchange between the two modules, avoid complicated cable connection and space restrictions, and can directly replace serial port lines.

- ✧ Bluetooth joystick and Bluetooth game handle.

✧ Bluetooth remote control, remote control toys

Four, Physical Characteristics

Operating Frequency Band	2.4GHz-2.48GHz unlicensed ISM band			
BT Specification	V2.1+EDR, BT3.0, BT4.2 (BLE)			
Output Power	Class 1.5, Class 2, MAX 5dBm			
RX Sensitivity	LE GFSK	30.8% PER	1 Mbps	-93dBm
	GFSK	0.1% BER	1 Mbps	-91dBm
	$\pi/4$ -DQPS	0.01% BER	2 Mbps	-88dBm
	K			
8-DPSK	0.01% BER	3 Mbps	-86dBm	
Operating Voltage	5V			
SIZE	27mm(L) x 21.5mm(W) x 3.5mm(H)			

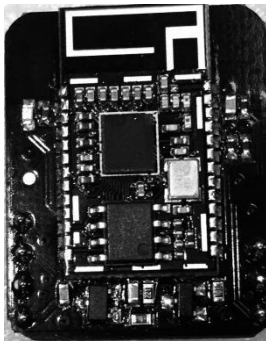
Five ,DC Characteristics

Absolute Maximum Ratings		
Rating	Min	Max
Storage Temperature	-40°C	+80°C
Operating Temperature	-20°C	+70°C
Supply Voltage: VDD	4.5V	5.5V
Other Terminal Voltages	VSS-0.3V	VDD+0.3V

Six ,Interface Specification

Power	Voltage: +5V, +5.5V Average Current: $I < 20\text{mA}$
Host I/F	UART

Seven, Typical Schematic and Pin Descriptions



(1) Module front

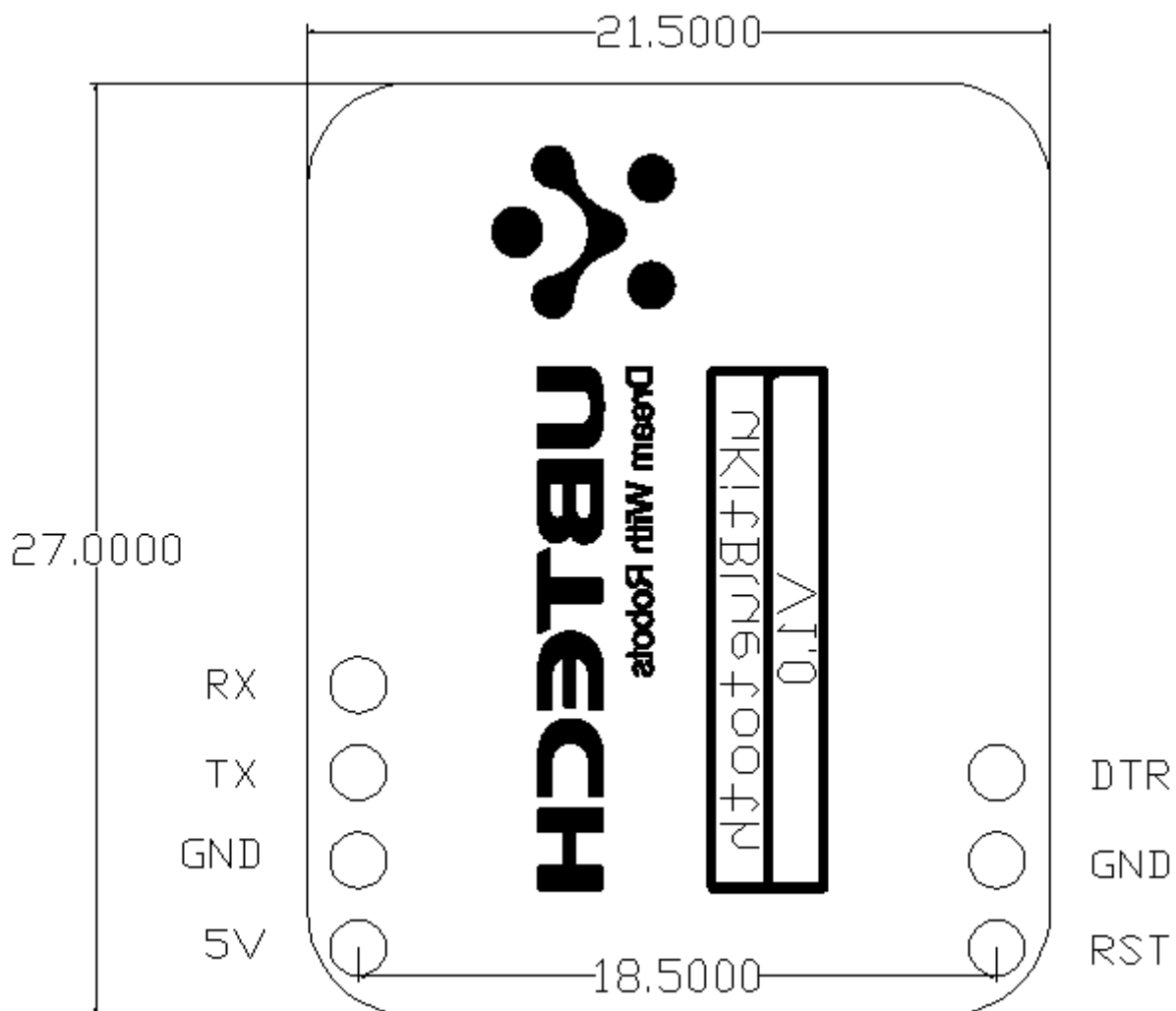


(2) Back of module

Pin.No	Name	Type	Description
Left side pin of module			
1	RX	I/O	Data receiver input pin for UART.
2	TX	I/O	Data transmitter output pin for UART.
3	GND	Ground	GND
4	5V	Power	5V VCC
Right side pin of module			
1	DTR	I	DTR output
2	GND	Ground	GND
3	RST	I	External reset signal, active low, has internal pull-up

※If any GPIO is not used, just leave it floating.

Eight,PCB Footprint Size(Unit: mm)



※The top area without pin/pad is 2.4G PCB printed antenna, in customer's mainboard, the PCB under/around the antenna must be cut or can not put copper, and also leave the module antenna far away from metal. We strongly recommend to place the module/antenna at the edge of mainboard.

Bluetooth Module EXBP01

FCC Note:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product which integrates this module. 20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied. Antenna used should be limited to same type with equal or lesser antenna gain.

According to FCC Part 15 Subpart C Section 15.212, the radio elements of the modular transmitter must have their own power supply. However, due to there is no power supply for this Bluetooth Module, this module is granted as a Limited Modular Approval. When this Bluetooth Module is installed into the end product, a Class II Permissive Change or a New FCC ID submission is required to ensure the full compliance of FCC relevant requirements.

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

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.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. 15.105 Information to the user. (b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

1.This LMA does not have RF shielding and is tested and approved as standalone configuration, additional evaluation may be required for any system integrated this radio module.

2.The modular transmitter doesn't have its own power supply regulation, it's provided by host.

Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user. The final end product must be labelled in a visible area with the following: "Contains Transmitter Module 2AHJX-EXBT01"

IC Caution:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference,

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.