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› PDDAXLQUE DX-BT26 BLE 5.0 Multi-Connection Bluetooth Module User Manual

PDDAXLQUE DX-BT26

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Model: DX-BT26

1. INTRODUCTION

The PDDAXLQUE DX-BT26 Bluetooth module is designed for multi-connection applications, utilizing the DIALOG 14585 chip and adhering to the Bluetooth BLE 5.0 specification. This module facilitates simultaneous connection and data transmission with up to 8 host devices, supporting dual UART communication. It integrates AT command support for flexible parameter configuration, including serial port baud rate and device name. The DX-BT26 offers low power consumption and high reception sensitivity, making it suitable for various embedded projects, including Arduino.

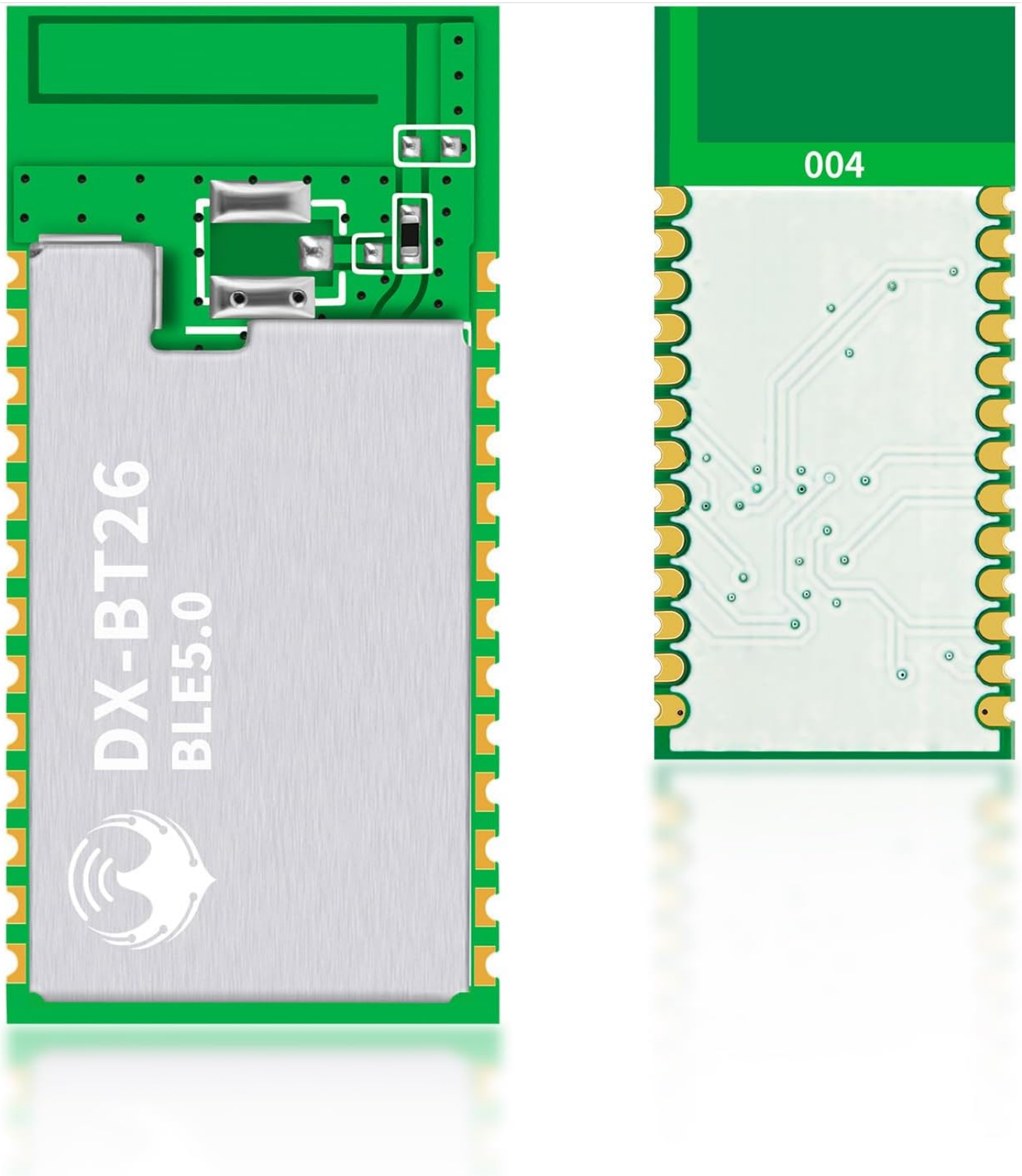


Figure 1: Front view of the DX-BT26 Bluetooth Module, showing the integrated shield and branding.

2. KEY FEATURES

- **Multi-link Capability:** Connects to up to 8 mobile phones simultaneously.
- **Chipset:** Renesas DA14585, compliant with BLE 5.0.
- **Communication Distance:** Up to 85 meters.
- **Dual Channel UART:** Supports two-way serial communication.
- **AT Command Support:** Extensive AT command set for configuration.
- **Transmission Rate:** Up to 11 KB/s.
- **Low Power Consumption:** As low as 2.30 μ A.

- **Antenna Options:** Optional on-board or external antenna.
- **Module Dimensions:** 26.6(L) x 12.8(W) x 2.3(H) mm.
- **Transmit Power:** -20 ~ +0 dBm.
- **Operating Temperature:** -40°C to +85°C.
- **Certifications:** BQB, CE, FCC certified.
- **Compatibility:** Supports PC, iOS, and Android transmission.

BT26 Key Features

- Multilink module (Can be linked by 8 mobile phones)
- Renesas DA14585 & BLE 5.0
- Communication Distance 85m
- Dual channel Uart serial communication
- Abundant AT commands
- Transmission rate 11K Byte/s
- Power consumption can be as low as 2.30 μ A
- Optional on-board antenna or external antenna
- Module Size: 26.6(L) x 12.8 (W) x 2.3(H) mm
- Transmit Power -20 ~ +0 dBm
- Working temperature -40~ +85°C
- Complete developer profile
- Shield Protection Antistatic & Dustproof
- Support PC, IOS, Android transmission
- BQB,CE,FCC certification

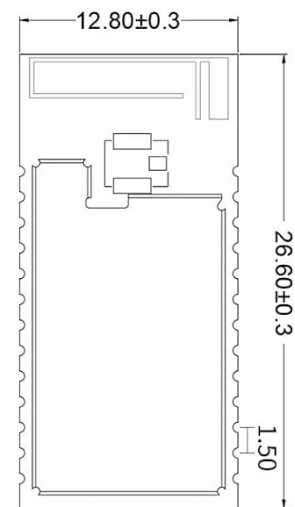


Figure 2: Detailed list of key features and physical dimensions of the DX-BT26 module.

3. SPECIFICATIONS

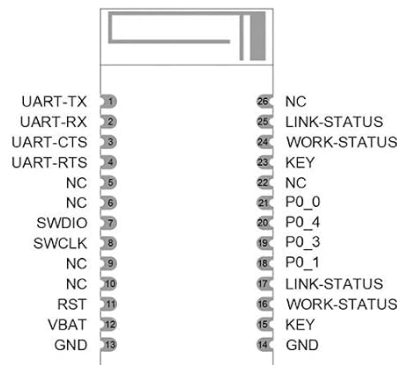
Parameter	Value
Module Model	DX-BT26-A

Parameter	Value
Chip Model	DA14585
Bluetooth Specification	BLE 5.0
Operating Voltage	3.3V / 5V
MTU Value	244 bytes
Operating Temperature	-40°C to +85°C
Default Serial Port Parameters	9600bps / 8 / n / 1 (Baud rate / Data bit / No parity / Stop bit)
Hardware Interface	Bluetooth
Compatible Devices	Android, iPhone
Data Link Protocol	Bluetooth
Data Transfer Rate	9600 Megabits Per Second

4. PIN DEFINITIONS

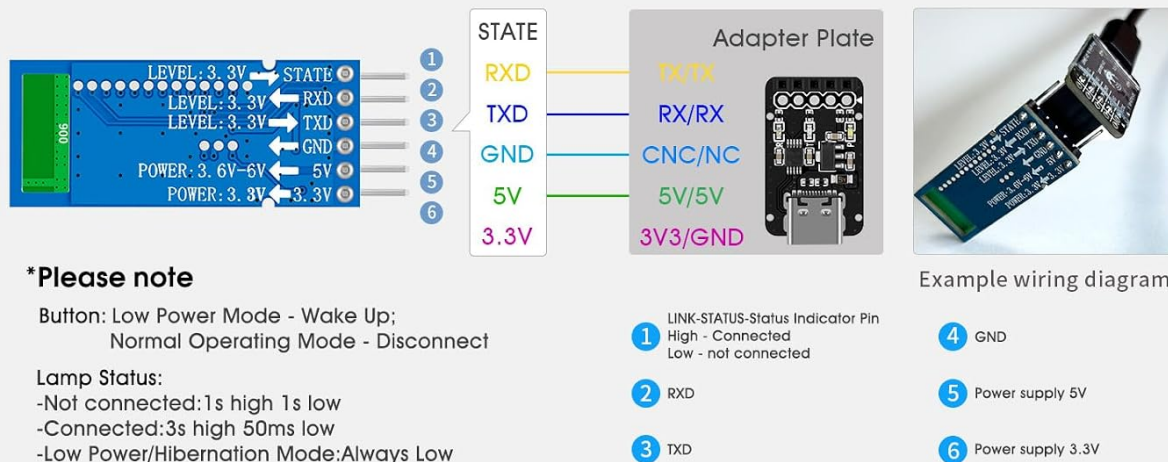
Understanding the pin definitions is crucial for proper integration and operation of the DX-BT26 module. The module features various pins for power, UART communication, control, and status indication.

Module Pin Definitions



Pin number	Pin name	Pin function	illustrate
1	UART1-TX	Serial 1 data Output	—
2	UART1-RX	Serial 1 data input	—
3	UART-CTS	UART clear to send, active low	—
4	UART-RTS	UART Request to Send, active Low	—
5,6	P0_1,P0_2	—	Programmable input/output line, ADC
7,8	P1_4,P1_5	SWCLK, SWDIO	Debug port
9,10	P0_4,P0_5	DLTX, DLRX	—
11	RST	Reset	—
12	VBAT	Wake up from hibernation mode	Reference Technical Manual
13,14,21,33	GND	Power Input Pin	3.3V (typical value)
15,22,26,27,28,29,30	P3_0,P0_7,P1_0,P2_4,P1_1,P1_2,P1_3	—	Programmable input/output line
16	NC	—	—
17,18,19,20	P0_5,P0_6,P0_3,P0_0	NC	Can only be left floating
23	KEY	Disconnect pin Low power mode wake up Enter pairing mode	Reference Technical Manual
24	WORK-STATUS	Module working status output pin	Not connected: 1s high 1s low Connection Status: 3s high 50ms low Always low in low power consumption and hibernation mode
25	LINK-STATUS	Bluetooth connection status pin	Not connected: Output low level Connection Status: 200ms high level 200ms low level, output 1s low level after N times of high and low level change (N is the number of Bluetooth connections) Connect 8 output high levels
31	UART2-TX	Serial 2 data output	—
32	UART2-RX	Serial 2 data input	—
34	ANT	External antenna pin	Adjust the module on-board antenna selection resistor when connecting external antenna pin

BT26 development kit demonstration



It is recommended that you purchase the developer kit for the first time to facilitate quick product validation & testing.

Figure 3: Detailed pin definitions for the DX-BT26 module, including pin number, function, and an illustrative diagram. An example wiring diagram for a development kit is also shown.

5. SETUP AND CONNECTION

5.1 Dual UART Communication

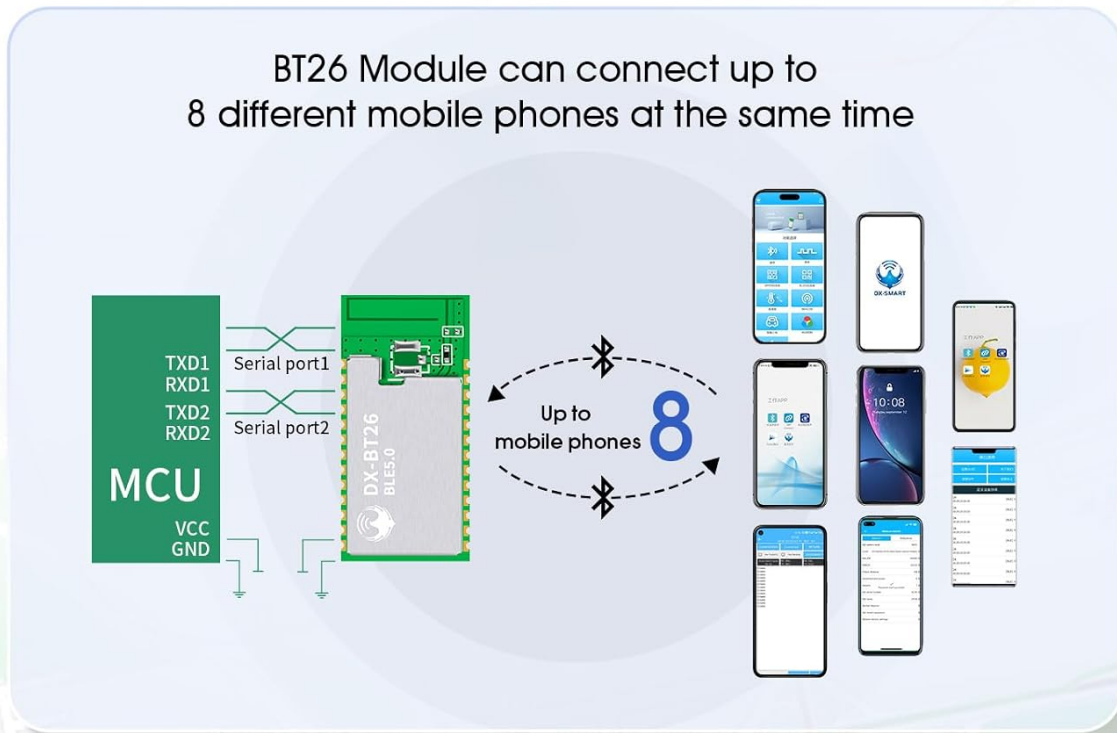
The DX-BT26-A module provides two sets of UART signal pins (Serial Port 1 and Serial Port 2). Both sets can transmit data between the module and another digital device. Additionally, the module includes UART_CTS and UART_RTS signal pins for RS232 hardware flow control on both UART interfaces. These pins are active at low levels, allowing data transmission when low and stopping transmission when high.

5.2 Multi-Connection Diagram

The DX-BT26 module can establish connections with multiple mobile phones simultaneously, acting as a central hub for data exchange.

BLE 5.0 Multi-connect Dual channel Uart serial Module

- ▶ Renesas DA14585
- ▶ The chip has 11KB/s high speed transmission.



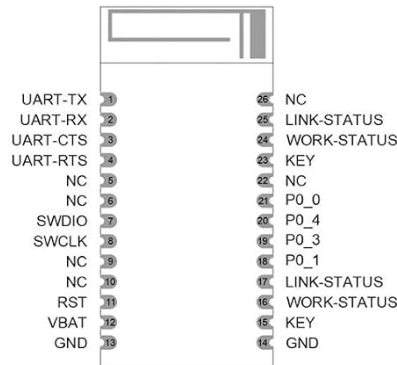
Mobile phone & slave module: 85m

Figure 4: Diagram illustrating the DX-BT26 module's capability to connect to an MCU and simultaneously communicate with up to 8 mobile phones.

5.3 Development Kit Connection

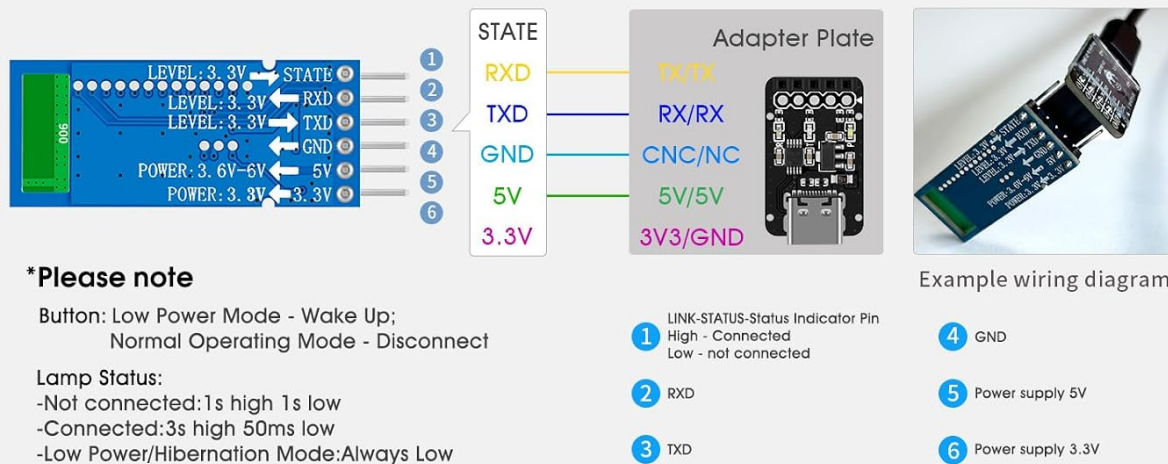
For initial verification and accelerated product development, connecting the DX-BT26 module to a development kit is recommended. Ensure correct pin connections for power, data transmission, and control signals.

Module Pin Definitions



Pin number	Pin name	Pin function	illustrate
1	UART1-TX	Serial 1 data Output	—
2	UART1-RX	Serial 1 data input	—
3	UART-CTS	UART clear to send, active low	—
4	UART-RTS	UART Request to Send, active Low	—
5,6	P0_1,P0_2	—	Programmable input/output line, ADC
7,8	P1_4,P1_5	SWCLK, SWDIO	Debug port
9,10	P0_4,P0_5	DLTX, DLRX	—
11	RST	Reset	—
12	VBAT	Wake up from hibernation mode	Reference Technical Manual
13,14,21,33	GND	Power Input Pin	3.3V (typical value)
15,22,26,27,28,29,30	P3_0,P0_7,P1_0,P2_4,P1_1,P1_2,P1_3	—	Programmable input/output line
16	NC	—	—
17,18,19,20	P0_5,P0_6,P0_3,P0_0	NC	Can only be left floating
23	KEY	Disconnect pin Low power mode wake up Enter pairing mode	Reference Technical Manual
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31	UART2-TX	Serial 2 data output	—
32	UART2-RX	Serial 2 data input	—
34	ANT	External antenna pin	Adjust the module on-board antenna selection resistor when connecting external antenna pin

BT26 development kit demonstration



It is recommended that you purchase the developer kit for the first time to facilitate quick product validation & testing.

Figure 5: Example wiring diagram for connecting the DX-BT26 module to a development kit, showing power and UART signal connections.

6. OPERATION

6.1 AT Command Set

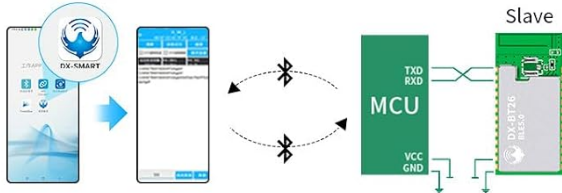
The DX-BT26 module supports a comprehensive set of AT commands for configuration and control. These commands allow users to modify parameters such as serial port baud rate, device name, and other Bluetooth settings.

Application of direct serial communication

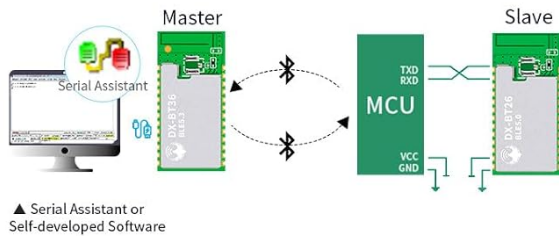
- BT26 module can be connected to communicate with phone, computers, devices.

1. The phone APP communicates with each other and the device through the Bluetooth module:

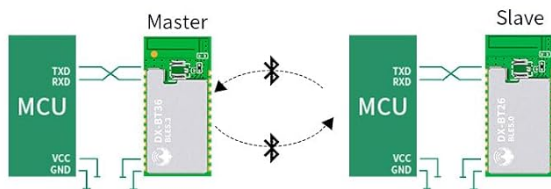
▼ DX-SMART APP or self-developed APP



2. The computer software communicates with the device through the Bluetooth module:



3. Devices communicate with each other via Bluetooth module:

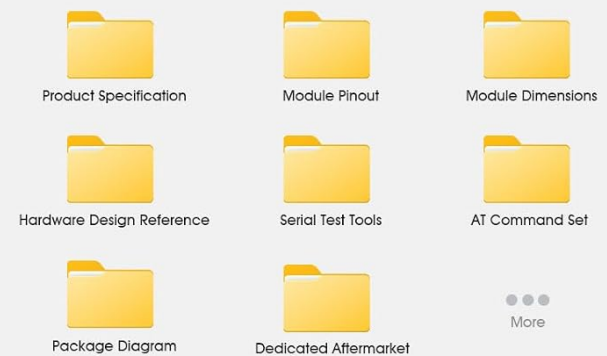


AT command set

AT command	Command description
AT+VERSION	Query Version Number
AT+LADDR	Query MAC Address
AT+NAME	Query Bluetooth Name
AT+NAME<name>	Setting Bluetooth Name
AT+NAMAC	Query Bluetooth Parameters
AT+NAMAC<param>	Setting Bluetooth Parameters
AT+STOP	Query Serial Stop Bit
AT+STOP<param>	Setting the Serial Stop Bit
AT+PARI	Query Serial Port Parity Bit
⚠ For more AT commands, please consult the product information packages.	

Professional technical documentation

Professional documentation can help you use the module more easily and conveniently.



💡 If you need more details, please feel free to contact us.

Figure 6: A table listing common AT commands and their descriptions for configuring the DX-BT26 module.

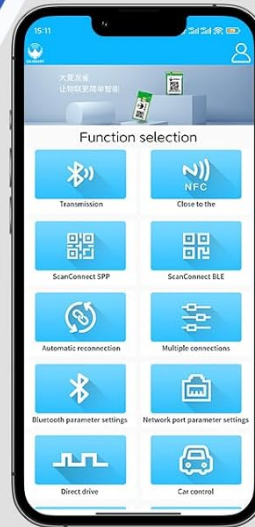
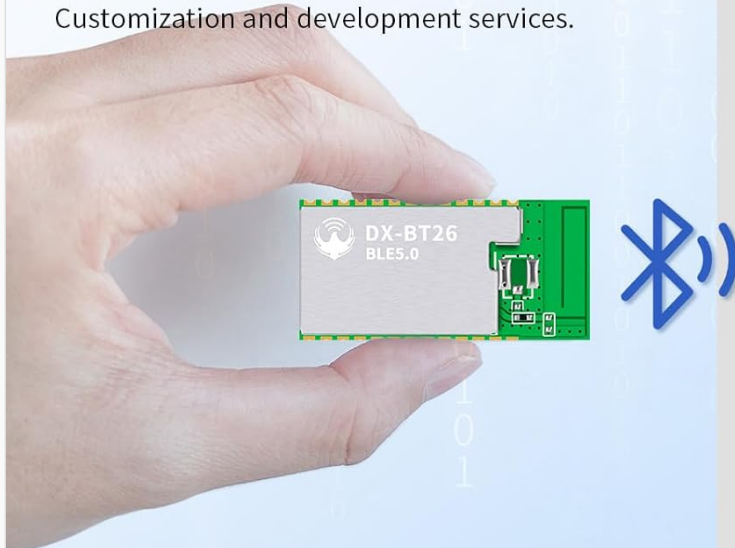
6.2 Application Operation

The DX-BT26 module can communicate with phones, computers, and other devices through direct serial communication. The DX-SMART application is available for searching connections, modifying parameters, searching BLE devices, and sending/receiving data.

1. **Phone APP Communication:** The phone application communicates with the module via Bluetooth.
2. **Computer Software Communication:** Computer software can communicate with the module via Bluetooth.
3. **Device-to-Device Communication:** Other devices can communicate with each other via the module's Bluetooth interface.

Free APP and SDK

- ▶ BT26 supports Air upgrade. If there are any updates, please follow the DX-SMART app for IOT.
- ▶ The DX-SMART APP supports searching for connection modules. This app supports changing parameters, searching BLE, sending and receiving data, help you use and verify products faster.
- ▶ Note: The protocol of the DX-BT26 Bluetooth module is BLE and cannot be directly searched and connected through the built-in Bluetooth of a mobile phone or computer. To connect, you need to purchase our company's host module or CP11 adapter and use serial software to connect with the module.
- ▶ Free Android and iOS SDK provide, Supporting Customization and development services.



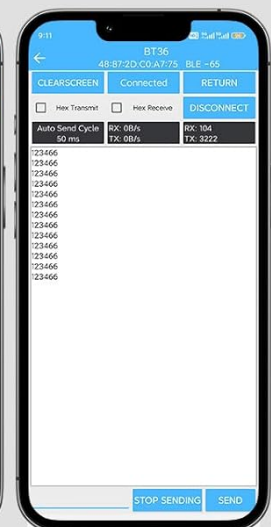
Home page



Set parameters



SEARCH BLE



Transparent transmission

Figure 7: Screenshots of the DX-SMART application demonstrating function selection, parameter settings, Bluetooth device search, and transparent data transmission.

Note:

The DX-BT26 Bluetooth module is BLE and cannot be directly searched and connected through the built-in Bluetooth of a mobile phone or computer. To connect, you need to use a host module or CP11 adapter and use serial software to communicate with the module.

Free Android and iOS SDKs are available to support customization and development.

7. OTA (OVER THE AIR) UPGRADE

The DX-BT26-A Bluetooth module supports Over The Air (OTA) upgrades, allowing for quick updates to the Bluetooth program. This feature ensures the module can be easily updated with new functionalities or bug fixes.

7.1 Requirements for OTA Upgrade:

1. An Android phone.

2. The program files to be upgraded.
3. The OTA upgrade software, such as "SUOTA-3.190.18.apk".
4. The DX-BT26 module to be upgraded.

8. TECHNICAL SUPPORT AND DOCUMENTATION

Comprehensive technical support and documentation are available to assist users with the DX-BT26 module. This includes:

- Technical documentation
- AT command sets
- Module footprints
- Reference design schematics
- Development and test tools

For detailed information, please refer to the product guide and documentation links provided with the module. If you encounter any problems, please contact our service support team for assistance.



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Model: DX-BT26