

FEITIAN

bR301 User Manual



Revision History:

Date	Revision	Description
Aug. 2013	V1.0	Release of the first version

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Important Statements

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio and 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 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.

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Chapter 1. Overview

This chapter describes how to develop bR301 reader applications, including the development interfaces supported by the product (bR301) and how to develop applications based on these interfaces.

FEITIAN bR301 is specially engineered to accommodate a range of smart card applications. Developers use it as a platform to generate and deploy related products and services. Moreover, FEITIAN bR301 is a terminal unit which is seamlessly integrated to all major systems of operation. Additional features such as the built-in inclusive support for different smart card interfaces has facilitated the wide scale and cross industry adoption of bR301.

bR301 suits customers where security concerns are the most salient and satisfies the demand for a flexible solution for ID authentication, e-commerce, e-payment, information security and access control.

bR301 and the rest of FEITIAN's line of smart card readers offer each customer a complete solution for all manner of utilizations.

Chapter 2. Specification

Working Voltage	3.7V
Working Current	< 60mA (without card)
Communication Rate	10753~344086bps
Supported Card Type	T0,T1,CLASSB,CLASSC,CLASSBC
Communication Rate with iOS	115200bps
Working Temperature	0°C to 50°C (32 to 122°F)
Storage Temperature	- 20°C to 70°C (-4 to 158°F)
Operating Humidity	60 to 90%RH non-condensing
Storage Humidity	60 to 90%RH non-condensing
Port	Bluetooth/Micro USB
Device Type smart card	Contact (smart card)
Enclosure Type	External
External	15
Expansion Slot(s)	1 x Smart Card
Battery	890mAh
Charging Port	Micro USB
Dimension	64mm(2.51in)wide*85mm(3.35in)high*13.5mm(0.53in)thick
Material	PC+ABS
Card Deck	8 contact points (ISO7816 standard) 100000 plugging and unplugging times
Supported OS	iOS/Android/Blackberry/Windows/Linux/Mac OS X
Certification	MFI/RoHS

Wireless Communications

Communications protocol	2.4GHz frequency ISM band. IEEE 802.15.1(Bluetooth) with full security enabled
RF Transmissions Range	Less than half a meter
Data Throughput	750kb/s to 1MB/s

Communications
data encryption AES-128

Customizable items Logo/case color/ Shell surface treatment process

Chapter 3. Features

- Support USB 1.1/2.0/3.0
- Compliant with PC/SC, CCID Standards
- Support ISO-7816-1/2/3 T=0 and T=1 Protocol
- Support ISO-7816 Class A,B and C Cards
- Compliant with EMV Level 1
- Provide third party development library
- MFI specification
- Support auto-PPS
- Support iOS/Android/Linux/Mac OS X/Windows
- DUKPT(encryption functions) in firmware, support iOS
- Support firmware upgrade through USB port on PC
- Support UID(User ID) management
- The reader support wireless port with Bluetooth 2.1+ (included 2.1/3.0/4.0)
- Anti-static, seismic
- Lights to inform reader's status
- Add low power, fully speed can work at least 18 hours. Standby time at least 100 hours.
- Can save battery less than 90 days in -10°C- 35°C.
- The firmware can't be read, Support Anti-reverse engineering, Self-protection.
- Support short-circuit protection and over-current protection card
- Can work with iOS(Bluetooth) and Mac OS x(usb port, bluetooth port is developing, will release end of September in 2013)

Chapter 4. System requirements

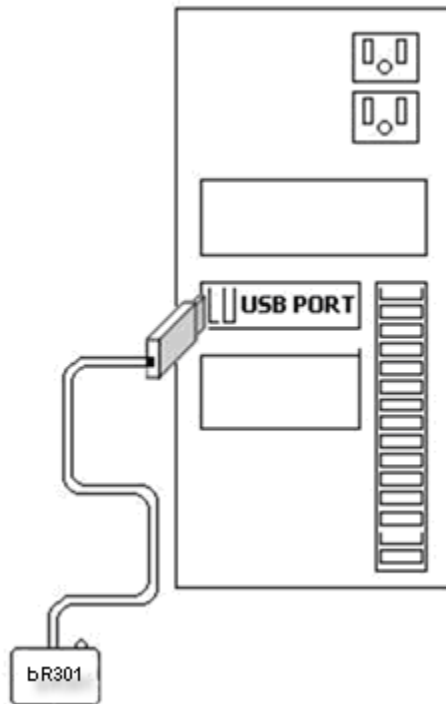
Computer with USB2.0/1.1 port *1

PC platforms: Windows 7+/MAC OS X 10.5+/ LINUX kernel 2.4+

Mobile platforms: iOS 4.3+/Android 4.0+

Chapter 5. Installation

BR301 usage:



For Windows PC platform:

Plug in the reader to PC and insert the SMART card to the card reader(the driver will automatic download from Microsoft website).

The test steps is below:

Customer can through WINS CARD API to commutate with bR301.

For LINUX and MAC OS X platform:

1. Please install CCID driver at first, the install steps please follow below website:

<http://pcslite.alieth.debian.org/ccid.html>

2. Use lsusb command in terminal to list usb reader PID and VID, edit Info.plist file to add VID and PID in it.

```
<key>ifdVendorID</key>
```

```
<string>0x096e</string>
```

```
<key>ifdProductID</key>
```

```
<string>0x061A</string>
```

```
<key>ifdFriendlyName</key>
```

```
<string>FEITIAN bR301 smart card reader</string>
```

The test steps is below:

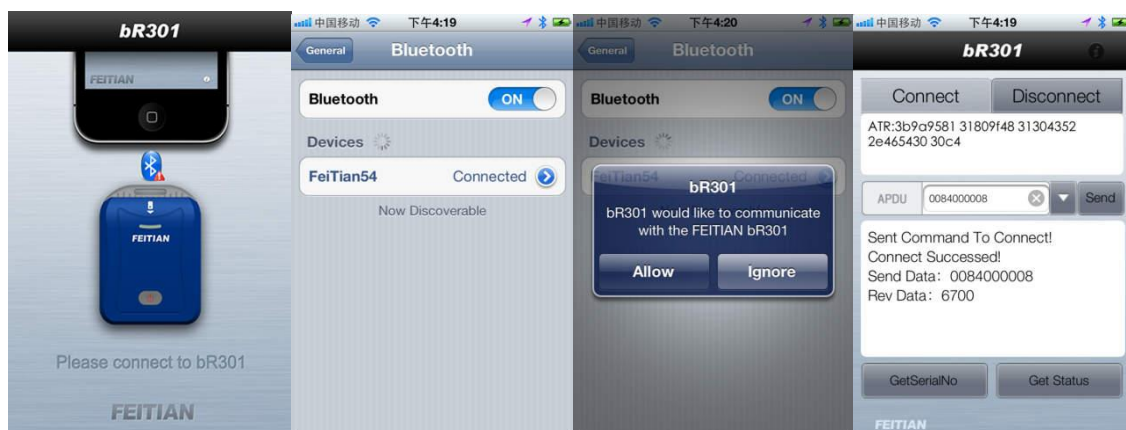
1. run pcscd in terminal
2. Plug in reader and card then run pcscstest

For mobile platform:

1. Power on bR301 and open mobile device Bluetooth port for pair.
2. Download bR301 test app from Appstore and test it:

<https://itunes.apple.com/us/app/br301/id564122073?mt=8>

The test steps is below:



Chapter 6. Hardware configuration

To help customer to know how use bR301, we have use lights to inform different status of card and reader.

We apply four lights to inform reader and card status, included Bluetooth connection/card status/charge battery/low life battery/transaction status.

We provide four lights which is red/blue/yellow/white, each means charge battery/Bluetooth connection/low battery/card status.

Bluetooth connection status light – blue color light

Number	Progress	Status
1	The Bluetooth back to the stage	Three flashing
2	Bluetooth standby stage	One flashing
3	Bluetooth connection	Two flashing

Card status light – white color light

Number	Progress	Status
1	No card	Light OFF
2	Card detected	Light ON
3	Data transfer	Light flashing

Low battery light – yellow color light

Number	Progress	Status
1	Full battery	Light OFF
2	Low battery	Light ON

Charge battery light – red color light

Number	Progress	Status
1	Charging completed	Light OFF
2	Charging	Light ON