# Bluetooth LE Bridge Module FAQ

Version 1.0

(for tBLE-720/BLE-USB)

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### Q01 : Does tBLE-720 and BLE-USB support Bluetooth classic device?

A01 : The tBLE-720 and BLE-USB didn't support Bluetooth classic device. The tBLE-720 and BLE-USB only support for Bluetooth 4.0 device.

## Q02 : How can I check whether the tBLE-720 or BLE-USB is connected to other devices in the connection mode?

A02 : The RF link LED will show the connection status. The RF Link LED would blink each 200 ms when the device didn't connect to other device. If the Slave connected to the Master, the RF Link LED would blink in the different pattern as show in following table:

Slave		
LED Indicator	Status	Description
	Steady Lit	RF signal is good (RSSI is greater than -60 dBm)
	Blink (1 s)	RF signal is normal (RSSI is between -61 and -80 dBm)
RF Link	Blink (2 s)	RF signal is bad (RSSI is between t-81 and -100 dBm)
	Blink (200 ms)	Not connect to master

If the Master connected to the Slave, the RF Link LED would blink in the different pattern as show in following table:

Master		
LED Indicator	Status	Description
	Steady Lit	Connect to all salves
RF Link	Blink (1 s)	Connect to slave, but not connect to all slaves
	Blink (200 ms)	Not connect to slave

You also can use the AT command (AT+CL?<CR> or AT+CN?<CR>) to check the connection status.

## Q03 : How does the tBLE-720 or BLE-USB connect to the specified module in the connection mode?

A03 : You can set the module to the same group ID (e.g. group ID :99). If the group ID is "0", the module will connect to all group ( $0^{99}$ ). If the group ID isn't 0, the tBLE-720 or BLE-USB could connect to the module when the group was same.

The group ID can modify by utility or AT command (AT+GID=XX<CR>).

1. Open the utility, and click Setting => Basic Parameter Setting.

🎏 tBLE-720/BLE-USB Utility	×
Setting Test Firmware Upgrade About	
Basic Parameter Setting Recovery Factory Setting	Device Information
COM Port COM1 🗸 😳 Open Port	Pinnware Version: - Bluetooth LE Version: -
Baud Rate: 115200 🗸 Close Port	Model Name: -
	Device Address: -

2. You can change the group ID in the step3.

🌮 Basic Parameter Se	tting	_	×
Step 1 Step 2 St	ep 3 Step 4	Step 5	Step 6
_Set Connection Paramete	r		
Connection Role:	Slave	$\sim$	
Peer Amount:	3	~	
Slave Device Number:	720	(0~999)	_
Group ID:	0	(0~99)	
	Previous		Next
Open COM success			

### Q04 : How do I confirm that the device is sending broadcast packets in the broadcast mode?

A04 : You must be setting the broadcast packet before sending broadcast packet. If the broadcast packet is setting, then you can enable broadcast function.

Then, after the broadcast transmission function is enabled, the module starts transmitting broadcast packets.

1. Setting broadcast packet:

Send the command +ADV:XXX<CR> to the tBLE-720/BLE-USB. The "XXX" is broadcast packet. The maximal length of broadcast packet is 21 Byte. If the command is correct, the module will response OK<CR><LF>.

 Enable broadcast function: Send command +ADS<CR> to the tBLE-720/BLE-USB. The module starts transmitting broadcast packets.

P.S. The module must be setting to the broadcast mode. The Observer role only can receive broadcast packet.

#### Q05 : Can the tBLE-720/BLE-USB send the iBeacon packet in the broadcast mode?

A05 : The iBeacon packet is define by the Apple. The tBLE-720/BLE-USB didn't support iBeacon packet.

## Q06 : Can tBLE-720/BLE-USB receive packets from other device (non tBLE-720/BLE-USB) in the broadcast mode?

A06 : No. The tBLE-720/BLE-USB didn't receive the packet from device (non tBLE-720/BLE-USB). Because of the format of packet is different.

### Q07 : How do the tLBE-720/BLE-USB avoid connect to other device (non tBLE-720/BLE-USB)?

A07 : You can enable the master identification mechanism. When the master identification mechanism is enabling, the identification key must be same. If the identification key isn't same in the Slave and Master, the connection will fail.

The master identification mechanism (AT+EKEY=1<CR>) and identification key (AT+SKET=XXXXXX<CR>) can enable by the utility and AT command.

#### 1. Open the utility · click Setting =>Basic Parameter Setting

🗯 tBLE-720/BLE-USB Utility		×
Setting Test Firmware Upgrade Abo	out	
Basic Parameter Setting Recovery Factory Setting		Device Information
COM Port: COM1 🗸 🔅	Open Port	Firmware Version: - Bluetooth LE Version: -
Baud Rate: 115200 🗸	Close Port	Model Name: - Device Address: -

2. You can set the master identification mechanism in the step 4.

🌃 Basio	c Paramete	er Setting		-		$\times$
Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	
Set Mas	ster Identify I	Mechanism				
Enable	e Master Ider	ntify mechar	uism: 🗹			
		Identify :	Key: ICPDA (6 Byte	LS ; 0~9; A~	Z; a~z)	
			Previous		Next	
Open CON	l success					

### Q08 : BLE payload architecture

A08 : The length of tBLE-720/BLE-USB are 20 Bytes. No 0 to 18 is data payload. The no 19 is Header.

Data payload	Header
Byte 0~18	Byte 19
/	

The Header is composed of two elements. The one is length of data payload. The other is packet index. If the payload isn't the last one, the packet index is "0". If the payload is the last one, the packet index is "0x80".

**Case1:** When the transmitted data is "0123456789". The length of transmitted data is 10 Bytes. It cans send the data by one payload so that the packet index is "0x8A" (Length is "0xA" + Last payload is "0x80"). The following picture shown as payload architecture:

0x30	0x31	0x32	0x33	0x34	0x35	0x36	0x37	0x38	0x39	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x8A
/																			
	→ Data payload													Header					

**Case2:** When the transmitted data is "01234567890123456789". The length of transmitted data is 20 Bytes. It cans send the data by two payloads. The following picture shown as payload architecture:

The length of first payload is 19 Bytes. It's not last payload so that the packet index is "0x13".

0x30	0x31	0x32	0x33	0x34	0x35	0x36	0x37	0x38	0x39	0x30	0x31	0x32	0x33	0x34	0x35	0x36	0x37	0x38	0x13
<u> </u>								Data	a payloa	d								$\rightarrow$	Header
' Tha	longt	له م		and	n av d	aad	ia 1	D. +		1+ <sup>7</sup> c	o+	n n u l n		- +k		ho i	ممماده	.+ :	dov

The length of second payload is 1 Bytes. It's last payload so that the packet index is "0x81"(0x1+0x80).

0x30	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x81							
←								Data	a payload	1								$\rightarrow$	← → Header

### Q09: How to test the tBLE-720/BLE-USB with Android phone?

A09 : Please follow the following step for testing:

- Install Android APP Serial Bluetooth Terminal APP: https://play.google.com/store/apps/details?id=de.kai\_morich.serial\_bluetooth\_terminal
- 2. Setting of Send/Receive



3. Scan the Bluetooth LE device and connect with the tBLE-720/BLE-USB

M1 M2 M3 M4 M5 M6

2





#### 5. Send data to tBLE-720/BLE-USB

### Q10 : How to disable the prompt message?

A10: The new firmware (V1.10) has new AT command. The prompt can disable by AT+ERP. The other way can use utility. The detail message can refer to the user manual (Chapter 3.1.17).  $\leq 100 \times 10^{-10} \times 10^{-10}$ 

Setting Test Firmware Upgrade A	bout								
Basic Parameter Setting Recovery Factory Setting		Device Information							
COM Port: COM77 🗸 🔅	Open Port	Firmware Version:	1.1	🌮 Basi	ic Paramete	er Setting		_	- ×
Baud Rate: 115200 🗸	Close Port	Model Name: 1	BLE-720	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
		Device Address: (	000DE06D0002	-Other P	'arameter Baudrate	e: 115200		~	
Broadcast Parameter	Connection Parameter				Send Mode	e: connecti	on mode	~	
Broadcast Role: Observer/Scanner	Connection Role: Slave	Slave Identify F	ley: ICPDAS	R	F Power leve	1: 4		~	
Broadcast Interval: 1000ms	Peer Amount: 3	Master Identify mecha	nism: Disable	Respon	se Error Cod	•	2	_	
Broadcast Channel: 37,38,39	Slave Number: 720	Group	ID: 0				Previous		Next
				Open COI	M success				
Other									
RF Power Level: 4 dBm Baud	Rate: 115200 Sen	d Mode: connection mo	Refresh Parameter						
Response Error Code: enable									
المتعاقبة ومتراثبة والمتعار									