

# TD05A Bluetooth Gateway With PoE Datasheet

## Document Information

**Title** TD05A Bluetooth Gateway With PoE Datasheet

**Document type** Datasheet

**Document number** SL-18020032

**Revision and date** V1.03 04-Mar -2019

**Disclosure restriction** Public

## Reversion History

Revision	Description	Approved	Date
V1.01	Initial Release	George He	20171116
V1.02	Remove POE powered content	George He	20190220
V1.03	Added instructions for POE power supply	George He	20190304

This document applicable to the following products:

Product name	Type number	Product status
TD05A	TD05A (09296)	Mass Production

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### Bill of Materiel

Name	Mdel	Quantity	Remark
Bluetooth Gateway	TD05A	1	TD05A
AC-DC Adapter	BSF-137F	1	IN:AC100-240V/OUTPUT: 5.0V ± 10%

## 1 General Description

TD05A is a Bluetooth Gateway with POE or DC power supply. It can be used in various scenarios flexibly. For example, the remote control BLE device, receives the data sent by the BLE device and sends it to servers. The WiFi data rate of TD05A can be up to 100Mbps and BLE data rate can be up to 1Mbps. TD05A also supports the POE switch power supply and 5.0V adapter power supply.



Figure1: TD05A

### 1.1 Application Block Diagram

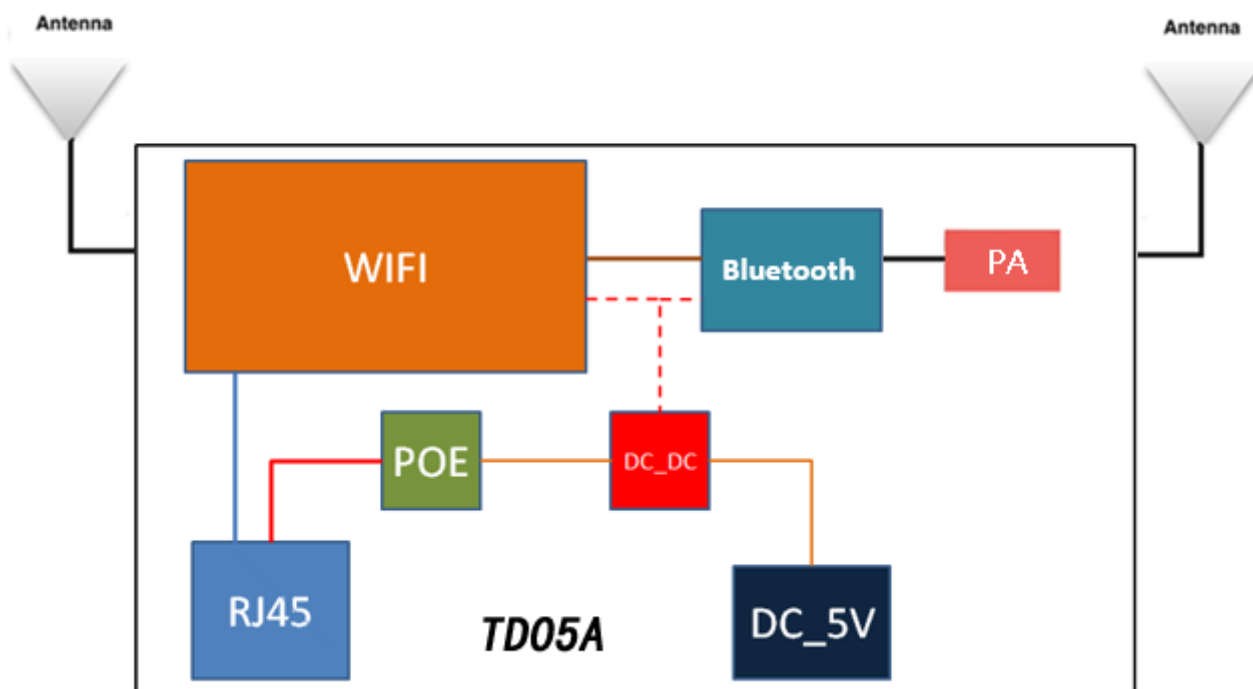


Figure 2: TD05A Block Diagram

## 1.2 Features

Supports the POE switch power supply and 4.5~12V adapter power supply.

Support IEEE802.3-2012 Type 1 , the IEEE802.3-2012 Type 1 requires a power supply device (PSE) to provide 44 to 57 V, and the power of the powered device (PD) must not exceed 12.95 W and the current does not exceed 350 mA

Support IEEE 802.11n, IEEE 802.11g, IEEE 802.11b Protocol

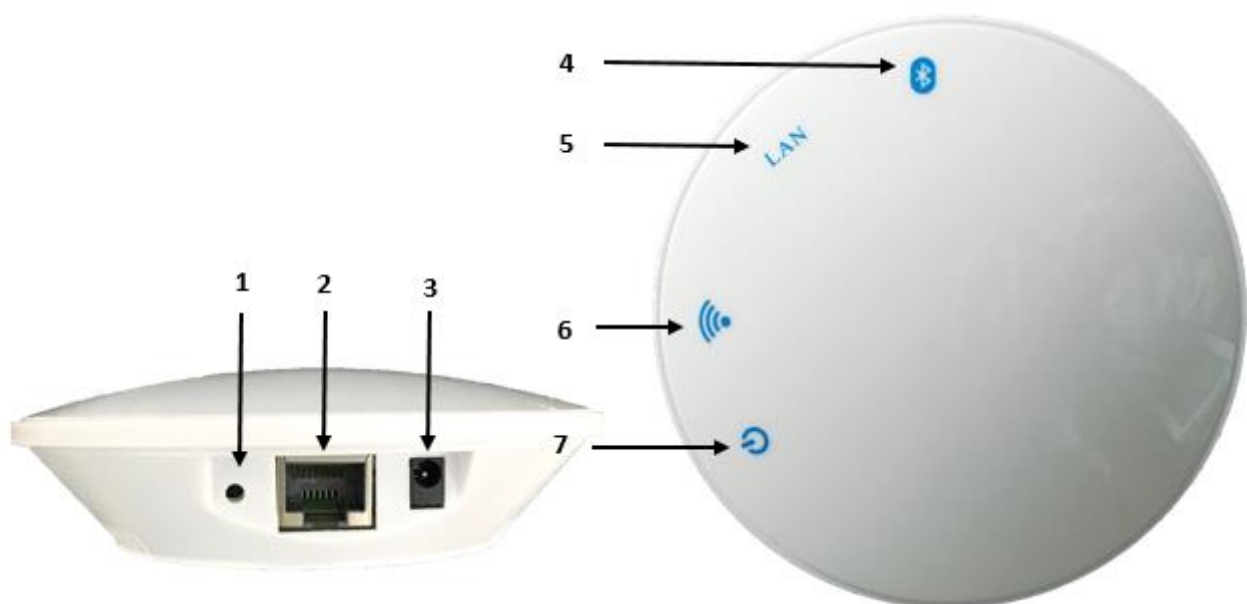
Support Bluetooth ® 4.2

One WAN/LAN variable network port

RoHS compliance (Lead-free)

FCC,CE compliance

## 1.3 Interface



- 1: Reset
- 2: Network Interface
- 3: Power Interface
- 4: Bluetooth LED
- 5: Network LED
- 6: WiFi LED

7: Power LED

### 1.3.1 WAN/LAN

The TD05A network interface supports CAT-5/CAT-5E to transmit data and POE Power Supply(voltage range is 44~ 57V). It is WAN/LAN variable.

Working Mode	Network Interface
AP Client	LAN
Getway	WAN

### 1.3.2 Power Supply Port

The TD05A power interface supports DC\_4.5~12V input, and the current is greater than 1000mA.The voltage interface adopts the DC-005 power socket, and power seat aperture is 5.5mm. The needle diameter is 2.1 mm and is positive.

**Remark:** The input voltage of the 5V power adaptor is AC 100-240V and 50/60Hz, output voltage is 5V 2A.The power connector is positive inside and negative outside.

### 1.3.3 Reset

The TD05A WiFi part will resume factory setting after pressing the reset button for more then 5 seconds.

### 1.3.4 LED

Power LED normally on when powered on

Network LED normally on when connected

WiFi LED normally on after connecting to WiFi for 1-2sec

Bluetooth LED flashing once power on

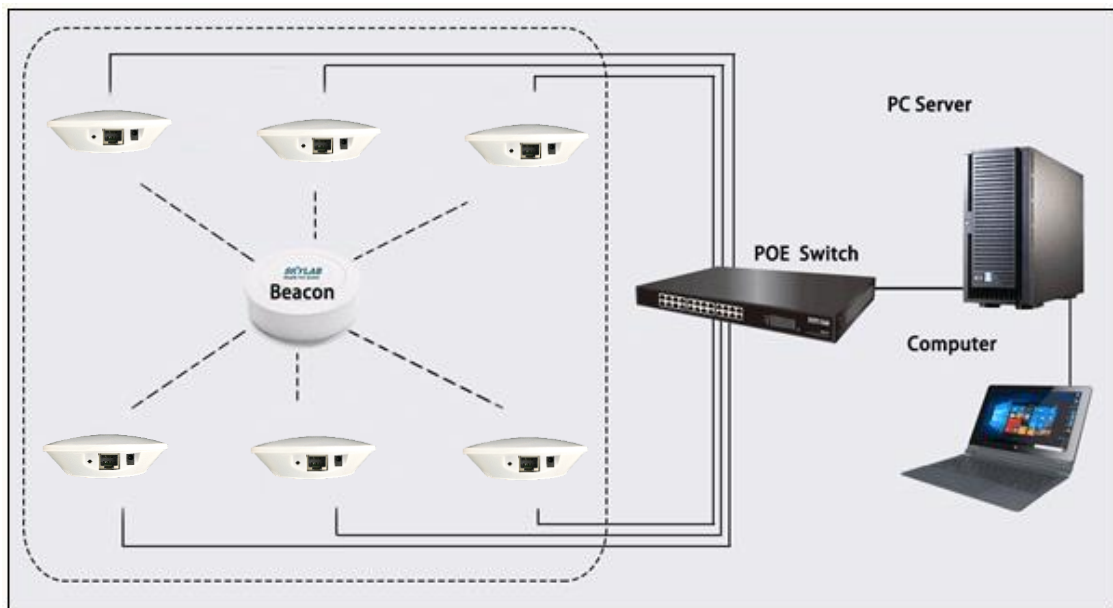
## 1.4 Applications

### 1.4.1 Indoor Positioning

- 1)TD05A Bluetooth module collects information about Beacon nearby, including RSSI, MAC, etc., once per second.
- 2)Bluetooth module send the Beacon information to WiFi module through UART serial port, once per second.
- 3)WiFi module transfers the Beacon information to the specified UDP server, and accepts the information returned by the server.

4) Beacon locations can be displayed on the front page after the UDP server analyze and calculate the beacon information. An order can also be delivered to the WiFi module, then sent to the bluetooth module to develop different functions (such as: Lighting lamps and lanterns etc.).

**Schematic of Positioning:**



**Remark:** TD05A can be connected to the Internet via the POE switch or the wireless router.

**2 Module Specification**

Dimension	Diameter: 110mm; Height: 35mm
Power Supply	DC4.5~12V、 POE Switch up to 57V
Currents	200mA@5V
Operating Temperature	-20°C~70°C
Interface	WAN Port and Power Supply Port
<b>WiFi</b>	
WiFi Protocol	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
Data Rate	IEEE 802.11 b Standard Mode: 1,2,5.5,11Mbps
	IEEE 802.11g Standard Mode: 6,9,12,18,24,36,48,54Mbps
	IEEE 802.11n : 72Mbps @ HT20 150Mbps @ HT40
Sensitivity	HT40 MCS7 : -67dBm@10% PER(MCS7)


	HT20 MCS7 : -73dBm@10% PER(MCS7)
	54M: -76dBm@10% PER
	11M: -91dBm@ 8% PER
Transmit Power	IEEE 802.11n: 15dBm @HT40 MCS7 15dBm@HT20 MCS7
	IEEE 802.11g: 16dBm
	IEEE 802.11b: 18dBm
Wireless Security	WPA/WPA2, WEP, TKIP, and AES
Working mode	Bridge、Gateway、AP Client
<b>Bluetooth</b>	
Bluetooth Protocol	Bluetooth ® 4.2
Data Rate	1Mbps
Wireless Security	AES HW Encryption
Connection Distance	100m
Transmit Power	0~+20dBm

## 3 Configuration

### 3.1 Gateway

3.1.1 Connect to TD05A by WLAN

3.1.2 Enter to the page <http://10.10.10.254>

 <http://10.10.10.254/>

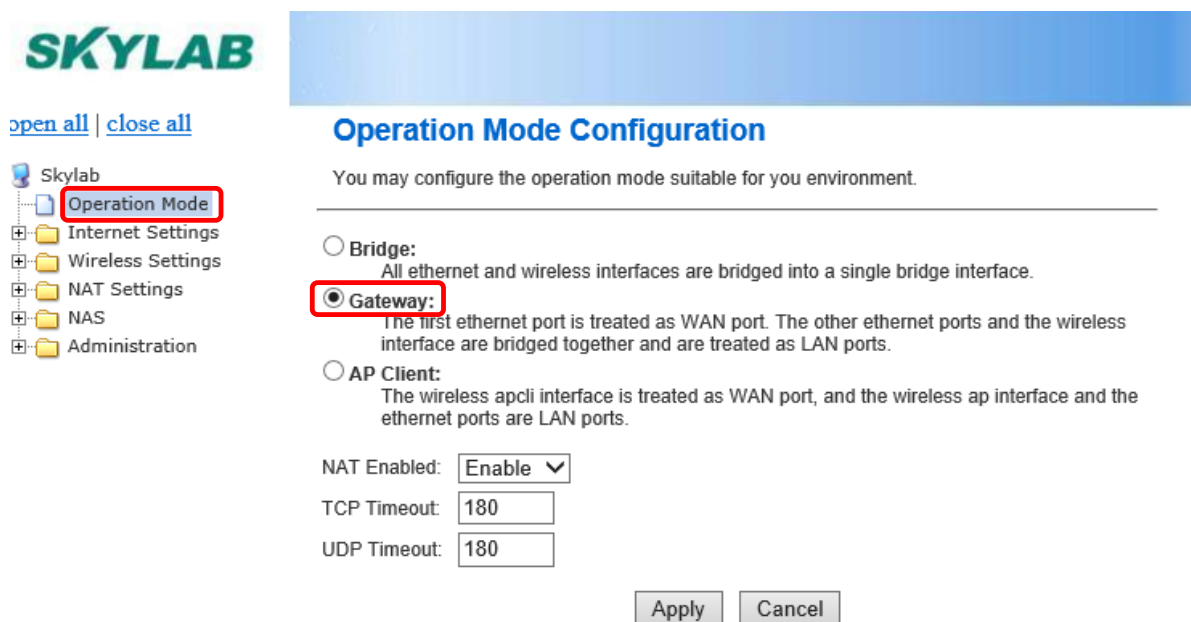
3.1.3 Input Account and Password <admin/admin>

3.1.4 Select Language





3.1.5 Click the Operation Mode and choose Gateway



3.1.6 Click **Administration->Settings Management**, then input the UDP Server address in **UDP Server Init IP Setting**, **UDP Server Init Port Setting** default is 3333.

3.1.7 Click **Administration ->Status** to check the Access Point Status.

System Info	
SDK Version	W0099.1.1
System Up Time	14 mins, 48 secs
System Platform	RT2880 embedded switch
Operation Mode	AP Client Mode
Internet Configurations	
Connected Type	DHCP
WAN IP Address	192.168.5.102
Subnet Mask	255.255.255.0
Default Gateway	192.168.5.1
Primary Domain Name Server	192.168.5.1
Secondary Domain Name Server	0.0.0.0
MAC Address	2A:A1:EB:02:2F:0A
Local Network	
Local IP Address	10.10.10.254
Local Netmask	255.255.255.0
MAC Address	28:A1:EB:F2:2F:0A

## 3.2 AP Client

3.2.1 Click the **Operation Mode** and choose **AP Client**.

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- Skylab
  - Operation Mode**
  - Internet Settings
  - Wireless Settings
  - NAT Settings
  - NAS
  - Administration

### Operation Mode Configuration

You may configure the operation mode suitable for you environment.

**Bridge:**  
All ethernet and wireless interfaces are bridged into a single bridge interface.

**Gateway:**  
The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports.

**AP Client:**  
The wireless apcli interface is treated as WAN port, and the wireless ap interface and the ethernet ports are LAN ports.

NAT Enabled:

TCP Timeout:

UDP Timeout:

3.2.2 AP Client Parameters Setting

**SKYLAB**

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- Skylab
  - Operation Mode
  - Internet Settings
  - Wireless Settings**
    - Basic
    - Advanced
    - Security
    - WPS
    - AP Client**
    - Station List
    - Statistics
  - NAT Settings
  - NAS
  - Administration

### AP Client Feature

You could configure AP Client parameters here.

AP Client Parameters	
SSID	<input type="text" value="SKYLAB91"/>
MAC Address (Optional)	<input type="text"/>
Security Mode	<input type="text" value="WPA2PSK"/>
Encryption Type	<input type="text" value="AES"/>
Pass Phrase	<input type="text" value="Skylab20026"/>

Site Survey							
Ch	SSID	BSSID	Security	Signal(%)	W-Moe	ExtCh	NT
1	ChinaNet-5gAf	40:f4:20:95:a1:ba	WPA1PSKWPA2PSKTKIPAES	23	11b/g/h	NONE	In
11	skylab03	88:25:93:5c:27:83	WPA1PSKWPA2PSKIAES	63	11b/g/h	BELOW	In

3.2.3 Click **Administration->Settings Management**, then input the UDP Server address in **UDP Server Init IP Setting**, **UDP Server Init Port Setting** default is 3333.

3.2.4 Click **Administration ->Status** to check the Access Point Status.

Let's take a look at the status of Ralink SoC Platform.

System Info	
SDK Version	W0099.1.1
System Up Time	14 mins, 48 secs
System Platform	RT2880 embedded switch
Operation Mode	AP Client Mode
Internet Configurations	
Connected Type	DHCP
WAN IP Address	192.168.5.102
Subnet Mask	255.255.255.0
Default Gateway	192.168.5.1
Primary Domain Name Server	192.168.5.1
Secondary Domain Name Server	0.0.0.0
MAC Address	2A:A1:EB:02:2F:0A
Local Network	
Local IP Address	10.10.10.254
Local Netmask	255.255.255.0
MAC Address	28:A1:EB:F2:2F:0A

## 4 Reversion History

Revision	Description	Approved	Date
V1.01	Initial Release	George He	20171116

## 5 Contact Information

**Skylab M&C Technology Co., Ltd.**

深圳市天工测控技术有限公司

**Address:** 6 Floor, No.9 Building, Lijincheng Scientific & Technical park, Gongye East Road,

Longhua District, Shenzhen, Guangdong, China

**Phone:** 86-755 8340 8210 (Sales Support)

**Phone:** 86-755 8340 8510 (Technical Support)

**Fax:** 86-755-8340 8560

**E-Mail:** technicalsupport@skylab.com.cn

**Website:** www.skylab.com.cn    www.skylabmodule.com