AT Command Examples of WT32-ETH01 Wired Module

Version 1.1

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Wired Network

1.TCP Client Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=1 //Serial to Ethernet mode (default mode) Response: OK

Set up DHCP
 AT+CWDHCP_DEF=3,0
 Response:
 OK

3. Set IP address AT+CIPETH_DEF="192.168.0.7","192.168.0.1","255.255.255.0" Response: OK

Note:

When setting to static IP , please write IP , gateway and subnet mask at the same time (the default static IP: 192.168.0.7).

When setting to DHCP/ Dynamic IP, it will automatically obtain IP and other related information. When the module is directly connected to the computer, it cannot be set to DHCP/ Dynamic IP. Generally, the computer does not have the ability to assign IP address. If the module is set to DHCP directly connected to the computer, the module will be in a state of waiting for the IP address to be assigned, which will cause the module to fail to perform normal transparent transmission.

4. Query the device's IP address
AT+CIPETH_DEF?
Response:
+CIPETH_DEF:"192.168.0.7","192.168.0.1","255.255.255.0"
OK

5. Connect the module directly to the computer via Ethernet to establish a TCP server. For example: IP:192.168.0.201; port: 8080

 6. The module is connected to the server as a TCP client.
 AT+CIPSTART="TCPC","192.168.0.201",8080//protocol, server IP and port Response:
 OK 7. The module sends data to the server.
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes >test // enter the data, no CR
Response:
Recv 4 bytes
SEND OK

8. Receive the server data
Response:
+IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

9. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

10. Start sending data AT+CIPSEND

>

11. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

12. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

13. Close the TCP connectionAT+CIPCLOSEResponse:CLOSEDOK

2.TCP Server Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=1 //Serial to Ethernet mode (default mode) Response: OK

2. Set up DHCPAT+CWDHCP_DEF=3,0Response:OK

3. Set the IP address
AT+CIPETH_DEF="192.168.0.7","192.168.0.1","255.255.255.0"
Response:
OK
Note:
When setting to static IP , please write IP , gateway and subnet mask at the same time (the default static IP: 192.168.0.7).

When setting to DHCP/ Dynamic IP, it will automatically obtain IP and other related information.

When the module is directly connected to a computer, it cannot be set to DHCP/dynamic IP. Generally, computers do not have the ability to assign IP addresses.

If the module is set to DHCP directly connected to the computer, it will cause the module to be in a state of waiting for the IP address to be assigned, which will cause the module to fail to perform normal transparent transmission.

4. Query the device's IP address
AT+CIPETH_DEF?
Response:
+CIPETH_DEF:"192.168.0.7","192.168.0.1","255.255.255.0"
OK

5. Create a TCP server AT+CIPSTART="TCPS","192.168.0.201",8080,3333//local port 3333

6. The module sends data to the client
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes
>test // enter the data, no CR
Response:
Recv 4 bytes
SEND OK

7. Receive the client data Response:

+IPD,n:xxxxxxxxx // received n bytes, data=xxxxxxxxxx

8. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

9. Start sending data AT+CIPSEND

>

10. Exit sending data:

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

11. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

12. Close the connection AT+CIPCLOSE Response: CLOSED OK

3.UDP Client Connection

 Configure the pass-through channel of the module AT+PASSCHANNEL=1 //Serial to Ethernet mode (default mode) Response: OK

2. Set up DHCPAT+CWDHCP_DEF=3,0Response:OK

3. Set the IP address
AT+CIPETH_DEF="192.168.0.7","192.168.0.1","255.255.255.0"
Response:
OK
Note:
When setting to static IP , please write IP , gateway and subnet mask at the same time (the default static IP: 192.168.0.7).

When setting to DHCP/ Dynamic IP, it will automatically obtain IP and other related information.

When the module is directly connected to a computer, it cannot be set to DHCP/dynamic IP. Generally, computers do not have the ability to assign IP addresses.

If the module is set to DHCP directly connected to the computer, it will cause the module to be in a state of waiting for the IP address to be assigned, which will cause the module to fail to perform normal transparent transmission.

4. Query the device's IP address
AT+CIPETH_DEF?
Response:
+CIPETH_DEF:"192.168.0.7","192.168.0.1","255.255.255.0"
OK

5. The module is directly connected to the PC via Ethernet to create a UDP server For example: IP: 192.168.0.201; port: 8080

6. Connect the module to the server as a UDP client AT+CIPSTART="UDPC","192.168.0.201",8080,3333 Response: OK

7. The module sends data to the server
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes
>test // enter the data, no CR

Response: Recv 4 bytes SEND OK

8. Receive the server data
Response:
+IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

9. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

10. Start sending data AT+CIPSEND

>

11. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

12. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

13. Close the TCP connection AT+CIPCLOSE Response: CLOSED OK

4.UDP Server Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=1 //Serial to Ethernet mode (default mode) Response: OK

2. Set up DHCP AT+CWDHCP_DEF=3,0 Response: OK

3. Set the IP address
AT+CIPETH_DEF="192.168.0.7","192.168.0.1","255.255.255.0"
Response:
OK
Note:
When setting to static IP , please write IP , gateway and subnet mask at the same time (the default static IP: 192.168.0.7).

When setting to DHCP/ Dynamic IP, it will automatically obtain IP and other related information.

When the module is directly connected to a computer, it cannot be set to DHCP/dynamic IP. Generally, computers do not have the ability to assign IP addresses. If the module is set to DHCP and directly connected to the computer, it will cause the module to be in a state of waiting for the IP address to be assigned, which will cause the module to fail to perform normal transparent transmission.

4. Query the device's IP address
AT+CIPETH_DEF?
Response:
+CIPETH_DEF:"192.168.0.7","192.168.0.1","255.255.255.0"
OK

5. The module is directly connected to the PC through Ethernet to establish UDP. For example: IP: 192.168.0.201; port: 8080

6. The module establishes a UDP connection as a UDP server. AT+CIPSTART="UDPS","192.168.0.201",8080,3333 Response: OK

7. The module sends data to the client.
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes >test // enter the data, no CR
Response:
Recv 4 bytes

SEND OK

8. Receive the server dataResponse:+IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

9. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

10.Start sending data AT+CIPSEND

>

11. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

12. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

13. Close the TCP connection AT+CIPCLOSE Response: CLOSED OK

WiFi Connection

1.TCP Client Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=2 //Serial to WiFi mode Response: OK

 Connect to a router AT+CWJAP="SSID","password" Response: OK

3. Query the module's IP address
AT+CIFSR
Response:
+CIFSR:STA,"192.168.1.103"
+CIFSR:STAMAC,"24:0a:c4:2a:25:8c"
+CIFSR:ETHIP,"0.0.0.0"
+CIFSR:ETHMAC,"24:0a:c4:2a:25:8f"
OK

4. Connect the computer and the module to the same router, and use a network debugging tool on the PC to create a TCP server.

For example: IP:192.168.1.101; port:8888

 The module is connected to the server as a TCP client.
 AT+CIPSTART="TCPC","192.168.1.101",8888//protocol, server IP and port Response:
 OK

6. The module sends data to the server.
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes
>test // enter the data, no CR
Response:
Recv 4 bytes
SEND OK

7. Receive the server data
Response:
+IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

8. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

9. Start sending data AT+CIPSEND

>

Exit sending data
 In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

11. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

12. Close the TCP connectionAT+CIPCLOSEResponse:CLOSEDOK

2.TCP Server Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=2 //Serial to WiFi mode Response: OK

2. Connect to a router AT+CWJAP="SSID","password" Response: OK

3. Query the module's IP address AT+CIFSR Response: +CIFSR:STA,"192.168.1.103" +CIFSR:STAMAC,"24:0a:c4:2a:25:8c" +CIFSR:ETHIP,"0.0.0.0" +CIFSR:ETHMAC,"24:0a:c4:2a:25:8f" OK

4. Create a TCP server AT+CIPSTART="TCPS","192.168.0.201",8080,3333//Local port3333

5. Connect the computer and the module to the same router, and use a network debugging tool on PC to establish a TCP connection.

6. The module sends data to the client.
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes >test // enter the data, no CR
Response:
Recv 4 bytes
SEND OK

7. Receive the client data
Response:
+IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

8. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

9.Start sending data

AT+CIPSEND

>

10. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

11. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

12. Close the connection AT+CIPCLOSE Response: CLOSED OK

3.UDP Client Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=2 //Serial to WiFi mode Response: OK

2. Connect to a router AT+CWJAP="SSID","password" Response: OK

3. Query the module's IP address AT+CIFSR Response: +CIFSR:STA,"192.168.1.103" +CIFSR:STAMAC,"24:0a:c4:2a:25:8c" +CIFSR:ETHIP,"0.0.0.0" +CIFSR:ETHMAC,"24:0a:c4:2a:25:8f" OK

4. Connect the computer and the module to the same router, and use a network debugging tool on PC to establish a UDP connection.

For example: IP: 192.168.1.101; port: 8080

5. The module is connected to the server as a UDP client. AT+CIPSTART="UDPC","192.168.1.101",8080,3333 Response: OK

6. The module sends data to the server.
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes >test // enter the data, no CR
Response:
Recv 4 bytes
SEND OK

7. Receive the server data
Response:
+IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

8.Enable the transparent transmission mode AT+CIPMODE=1//

Response: OK

9. Start sending data AT+CIPSEND

>

10. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

11. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

12. Close the TCP connection AT+CIPCLOSE Response: CLOSED OK

4.UDP Server Connection

1. Configure the pass-through channel of the module AT+PASSCHANNEL=2 //Serial to WiFi mode Response: OK

2. Connect to a router AT+CWJAP="SSID","password" Response: OK

3. Query the module's IP address AT+CIFSR Response: +CIFSR:STA,"192.168.1.103" +CIFSR:STAMAC,"24:0a:c4:2a:25:8c" +CIFSR:ETHIP,"0.0.0.0" +CIFSR:ETHMAC,"24:0a:c4:2a:25:8f" OK

4. Connect the computer and the module to the same router, and use a network debugging tool on PC to establish a UDP connection.

For example: IP:192.168.1.101; port: 8080

5. The module establishes a UDP connection as a UDP server AT+CIPSTART="UDPS","192.168.1.101",8080,3333 Response: OK

7. The module sends data to the client.
AT+CIPSEND=4 // set date length which will be sent, such as 4 bytes
>test // enter the data, no CR
Response:
Recv 4 bytes
SEND OK

8. Receive the server data Response: +IPD,n:xxxxxxxx // received n bytes, data=xxxxxxxxxx

9. Enable the transparent transmission mode AT+CIPMODE=1// Response: 10.Start sending data AT+CIPSEND

>

11. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

12. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

13. Close the TCP connection AT+CIPCLOSE Response: CLOSED OK

OK

HTTP Request

1. Configure the pass-through channel of the module AT+PASSCHANNEL=2 //Serial to WiFi mode Response: OK

2. Connect to a router AT+CWJAP="SSID","password" Response: OK

3. Query the module's IP address
AT+CIFSR
Response:
+CIFSR:STA,"192.168.1.103"
+CIFSR:STAMAC,"24:0a:c4:2a:25:8c"
+CIFSR:ETHIP,"0.0.0.0"
+CIFSR:ETHMAC,"24:0a:c4:2a:25:8f"
OK

4. Connect the computer and the module to the same router.

5. Set up a HTTP server on the PC

🚾 C:\WINDOWS\system32\cmd.exe - python -m SimpleHTTPServer 8000		×
C:\Users\Administrator> C:\Users\Administrator> C:\Users\Administrator>python -m SimpleHTTPServer 8000 Serving HTTP on 0.0.0.0 port 8000		

6. Test an HTTP request on Web page

此电脑	Nextcloud	test.txt
Google Chro me		



helloworld



7. The module sends an HTTP request. AT+CIPSTART="HTPC","http://192.168.1.101:8000/Desktop/test.txt"

Response:

OK

+IPD,12:helloworld



Serial to Bluetooth Transparent Data Transmission

1. Configure the pass-through channel of the module AT+PASSCHANNEL=3 //Serial to Bluetooth mode Response: OK

2. Restart the module to enter the serial to Bluetooth transparent transmission mode AT+RST

Response: OK

3. Establish a Bluetooth connection

Establish a Bluetooth connection using a mobile Bluetooth tool app

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Info	蓝牙助手	Ç	〈 蓝牙助手	服务	Log
[-81db], 不可连接, 0	r∱service	>	[-67db] Smart-0 UUID: 376864C8-6A2	00 66-04AE-2DFB-B3EE7E	51E39F
[-70db], 不可连接, 0)∱service	>	426F7567-6854-65	63-2D57-65694C69	FFF0
。 [-50db], 不可连接, 0	Y∱service	>	属性:可读 可写 通知, 1 426F7567-6854 属性:可读, hello	-6563-2D57-6569	94C69FFF2
[-69db], 不可连接, C	0∱service	>	DEVICE INFOR	(i)	
SMART-00 [-71db], Tx:-21db, 9	可连接, 2个service	>	Model Num 属性:可读I可写 设备	: Smart-00连接/	成功
[-77db], Tx:12db, 可	连接, 0个service	>	Firmware Revisio 属性:可读问写[通知,	n String : 2A26	
[-88db], 可连接, 1个	service	×	属性:可读[可写]通知,	536T0140	
[-95db], Tx:7db, 司)	连接, O个service	>			
[-93db], 不可连接, 0	ו∕∱service	×			
[-89db], 不可连接, C	0∱service	>			

4. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

5.Start sending data AT+CIPSEND

>

6. The App sends Bluetooth data.

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< 蓝牙助手	服务	Log		101	OTI-O LOG
[-67db] Smart-0 UUID: 376864C8-6A2	0 6-04AE-2DFB-B3EE7E5	1E39F (j)	426F7567-6 属性: 可读 可	854-6563-2D57-65694C69FFF 写 通知	i
SERVICE UUID :			426F7567-	6854-6563-2D57-65694C69	FFF1:写
426F7567-6854-65	63-2D57-65694C69FI	FFO			写数据
426F7567-6854 属性: 可读 可写 通知, 1	-6563-2D57-65694 nello	4C69FFF1 >	40:03.794	test	
426F7567-6854-6563-2D57-65694C69FFF2 属性: 可读, hello FF01 : <68656c6c 6f>		4C69FFF2	426F7567-	6854-6563-2D57-65694C69	FFF1:可读&通知
		Ś	读取数据		订阅通知
DEVICE INFORMATIO	ON : 180A		39:54.157	68 65 6C 6C 6F	
Model Number S 属性:可读 可写 通知.1	tring : 2A24 86536	>			
Firmware Revisio 属性: 可读 可写 通知,	n String : 2A26 16101401	>			
Software Revision 属性: 可读 可写 通知,	n String : 2A28 536T0140	>			

7. Receive Bluetooth data

Response:

+BLED,4:test

8. Exit sending data

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

9. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK

Bluetooth to WiFi Transparent Data Transmission

1. Configure the pass-through channel of the module AT+PASSCHANNEL=5 //Bluetooth to WiFi transparent transmission mode Response: OK

 Restart the module to enter Bluetooth to WiFi transparent transmission mode AT+RST Response: OK

2. Connect to a router
AT+CWJAP="SSID","password"
Response:
OK

3. Query the module's IP address
AT+CIFSR
Response:
+CIFSR:STA,"192.168.1.103"
+CIFSR:STAMAC,"24:0a:c4:2a:25:8c"
+CIFSR:ETHIP,"0.0.0.0"
+CIFSR:ETHMAC,"24:0a:c4:2a:25:8f"
OK

4. Connect the computer and the module to the same router, and use a network debugging tool on PC to establish a TCP server

For example: IP: 192.168.1.101; port: 8888

 The module is connected to the server as a TCP client.
 AT+CIPSTART="TCPC","192.168.1.101",8888//protocol, server IP and port Response:
 OK

6. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

7. Start sending data AT+CIPSEND 8. Bluetooth and TCP transparent data transmission

Bluetooth data \rightarrow TCP server



TCP server data \rightarrow Bluetooth

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网络设置	数据日志	NetAssist V4.3.13	< 服务	行力1匹	Hex Log
(1) 协议类型 TCP Server 文 (2) 本地主机地址 192.168.1.101 文	[2019-10-31 20:57:42.398]# EECV ASCII FROM 192.168.1.103 :63196> test		426F7567 属性: 可读 F	6854-6563-2D57-65694C69FFF1 可写 通知	(i)
(3) 本地主机端口	[2019-10-31 20:57:48.754]# SEND HE 68 74 74 70 3A 2F 2F 77 77 72 2E 6	X TO ALL) 3 6D 73 6F 66 74 2E 63 6E	426F7567	7-6854-6563-2D57-65694C69FFF1	1:写
8888 (美)	[2019-10-31 20:57:48.774]# RECV AS recv_ok	CII FROM 192.168.1.103 :63196>			写数据
接收设置			57:42.420	test	
⊙ASCII ○HEX			426F7567	7-6854-6563-2D57-65694C69FFF1	1:可读&通知
 ● 投口芯模式並示 ✓ 接收完自动换行 厂 接收转向至文件 	<		读取数据		订阅通知
管 暫停接收区显示 其他決项 直除接收			58:56.044	55 02 01 2E 63 6E AA	
发送设置 C ASCII			58:54.995	55 02 00 68 74 74 70 3A 2F 2F 77 77 6F 66 74 AA	77 2E 63 6D 73
□ 自动解析转义符 □ AT指令自动回车		ф.	57:49.968		
□ 自动发送校验位 □ 打开文件数据源	数据发送 客户端: All Connec	tions (1) ▼ ◆断开 ↓ 清除 1 清除	57:48.919		
循环周期 1000 ms <u>快捷定义</u> 历史发送		发送	57:30.544	68 65 6C 6C 6F	
⊌ 就绪!	139/78	NX:1678 TX:1560 夏位计数 //			

9. Exit sending data

(Bluetooth sending +++)

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

10. Exit the transparent transmission mode AT+CIPMODE=0

>

Response: OK

Note: Bluetooth to Ethernet transparent transmission is similar to Bluetooth to wifi transparent transmission

WiFi to Ethernet Transparent Data Transmission

1. Configure the pass-through channel of the module AT+PASSCHANNEL=4 //WiFi to Ethernet transparent transmission mode Response: OK

 Restart the module to enter WiFi to Ethernet transparent transmission mode AT+RST Response: OK

```
3. Query the module's IP address
AT+CIFSR
Response:
+CIFSR:APIP,"192.168.4.1"
+CIFSR:APMAC,"24:0a:c4:2a:25:8d"
+CIFSR:ETHIP,"192.168.1.102"
+CIFSR:ETHMAC,"24:0a:c4:2a:25:8f"
OK
```

4. Connect the module to the same router, and use a network debugging tool on PC to create a TCP server.

For example: IP: 192.168.1.101; port: 8888

 The module is connected to the server as a TCP client.
 AT+CIPSTART="TCPC","192.168.1.101",8888//protocol, server IP and port Response:
 OK

6. Enable the transparent transmission mode AT+CIPMODE=1// Response: OK

 Start sending data AT+CIPSEND

>

8. The mobile phone is connected to the hot spot issued by the module ssid: WT32-ETH01; password: 12345678

Create a UDP connection to the module using a mobile network debugging assistant Module IP:192.168.4.1; Port number:3333



9. Exit sending data

(Send by phone+++)

In the process of transparent transmitting, if a single packet of data "+++" is recognized, the transparent transmission will be exited.

10. Exit the transparent transmission mode AT+CIPMODE=0 Response: OK