



# Model: UT-9061A

### (Product Name: WIFI to RS-232/485/422 converter)

Datasheet



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### 1. Overview

UT-9061A is a wireless WIFI converter that can achieve the conversion between user RS-232, RS-485, RS-422, and wireless network (WIFI) interfaces. Data conversion adopts isolation technology, effectively ensuring the reliability of the product. There are multiple conversion modes to choose from and support AT command + WEB interface settings, making it easy for user devices to connect wired and wireless networks. The product has a certain level of surge protection and is widely used in data communication and industrial automation fields.

### 2. Technical Parameters

- Operating voltage: DC 12-36V
- Operating current: 200mA @ 12V max
- Operating humidity: 5% ~ 95% (non-condensing)
- Operating temperature: -40 ~ 85°C
- Storage temperature: -40 ~ 85 °C
- Storage humidity: 5% ~ 95% (non-condensing)
- Surge protection: Power supply, differential mode 1KV, common mode 2KV (1.2/50us) Signal, RS-485/422: differential mode 1KV, common mode 2KV (10/700us) RS-232: 600W ESD protection: Contact 6kV, air 8kV
- Communication interface: RS-232/RS-485/RS-422
- Communication rate: 300-921600bps
- Operation modes: full-duplex asynchronous, half-duplex asynchronous
- Antenna impedance: 50Ω (rubber rod antenna)
- Dimensions: 97x65x22mm±1 (excluding antenna)
- Supports 802.11b/g/n wireless standards
- Supports wireless operating in STA/AP/AP+STA modes
- Supports heartbeat signals and WIFI connection indicators
- Provides Web configuration page + AT command.

# 3. Indicator definitions

Name	Color	Function
PWR	Red	Always on when power supply is normal.
nLink	Green	Wireless connection indicator (always on when a device is connected).
nReady	Green	Working status indicator (always on means startup success).
TXD	Green	Serial port transmission indicator (flashing when data is being sent).
RXD	Yellow	Serial port receiving indicator (flashing when data is being received).

### 4. Button

1. Reset: Restart button

Reload: Restore factory settings button (hold for 3 seconds, then release)



# 5. Terminal pin

### 1. RS-232 pin definition

#### DB9 male



No.	Signal	Description
2	RXD	RS-232 Receive
3	TXD	RS-232 Send
5	GND	Signal Ground
7	RTS	Request to Send (RTS)
8	CTS	Clear to Send (CTS)
1、4、6、9	NC	Unconnected (Floating)

#### 2. RS-485/422 Pin map:



No.	Signal	Description
1	T/R+	485+、422 Send+
2	T/R-	485-、422 Send-
3	RXD+	422 Receive+
4	RXD-	422 Receive-

#### 2. 5.08-5P terminal: RS-485 output signal and coaxial cable terminal pin assignment

5 position binding posts	RS-485 signal and coax signal
1	B (1 port 485B)
2	A (1 port 485A)
3	GND (RS-485)
4	S+
5	S-





# 6. Communication connection diagram

1. RS-485 point-to-point/two-wire half-duplex



#### 2. RS-485 point-to-multipoint/two-wire half-duplex





#### 3. RS-422 point-to-point/four-wire full-duplex



4. RS-422 point-to-multipoint/four-wire full-duplex



#### 5. UT-9061A RS-232 interface communication





# 7. Wireless specification parameters

Functional items	Functional description
Wireless standard	802.11 b/g/n
Frequency range	2412~2484MHz
Output power	72.2Mbps PA output power: 15dBm (Max) PA output power in 11b mode: 20.5dBm (Max)
Sensitivity	DSSS, 1Mbps: -98 dBm
	CCK, 11Mbps: -91 dBm
	DFDM, 6Mbps: -93 dBm
	DFDM, 54Mbps: -75 dBm
	HT20, MCS0: -93 dBm
	HT20, MCS7: -73 dBm
	HT40, MCS0: -90 dBm
	HT40, MCS7: -70 dBm
	MCS32: -89 dBm

## 8. Settings and usage

By default, the AP interface SSID of UT-9061A is UT-9061A, and the IP address, username, and password are as follows:

UT-9061A Network Default Settings Table

Parameters	Default settings
SSID	UT-9061A
IP address	192. 168. 0. 125
Subnet mask	255. 255. 255. 0
Username	admi n
Password	admi n

### 9. Quick Start Guide

(1) Turn on the power supply, and the red power indicator lights up to indicate that the device is powered normally.

(2) After powering on, wait for one minute for the system to initialize. The WiFi nReady green light will turn on, and you can use a wireless network card computer or mobile phone to search for nearby wireless networks. Find the network named UT-9061A and connect to it via wireless network. When connected, the nLink LED will



#### be constantly on.

(3) Enter 192.168.0.125 in your web browser and press enter. In the pop-up login window, enter admin, as

#### shown in Figure 1.

Image: Second state         Image: Second state		- 0 > \$	<
	Sign in       http://192.168.0.125       Your connection to this site is not private       Username     admin       Password        Sign in     Cancel		



(4) The interface after logging in is shown in Figure 2.

M2M Web Server × +						– 🛛 ×
← → C ▲ Not secure   192.168.0.	125/home.html					or ★ 😩 :
Â					(English 🗸)	
	Mode Selection	AP Settings	Wireless Terminal	SerialPort And	Module Manage	
	• Set the module working • Set the module working mod • AP Mode WIFI as access pr mobile phones, n page • Station Mode WIFI as a termini before setting the please enter the "	mode setting le settings, including WIFI operation wint mode (AP): the module otebooks, and tablets. For re- al mode (STA): the module ja module to STA mode, pleas Wireless Terminal Settings"	on mode, data transmission mode creates a WIFI network for access solated settings, please go to the "Wi ioins the WIFI network created by se set the wireless terminal parame page py Cancel	by other WIFI devices such as ireless Access Point Settings" the WIFI router. Note that ters first. For relevant settings,		

Figure 2. Configuration interface

© Station mode: The device joins the WiFi network created by the WiFi router. If you need to use this mode, you need to set the wireless terminal parameters before setting the STA mode on the device.

(5) Wireless access point settings. UT-9061A supports the AP interface, which makes it easy to manage the module and form a self-organizing network. In this option, you can configure the wireless network parameters of the device, such as network mode, network name, wireless channel, WiFi key, and IP address, as shown in Figure 3.



lode Selection	AP Settings	Wireless Terminal	SerialPort And	Module Manage
Wireless Access P	oint Settings			
<ul> <li>Wireless access point interface</li> </ul>	e settings, including: SSID, encry	ption, etc.		2
Wireless Access Point	Paramter Settings			
Network Mode	[11b/c	/n mixed mode 🗸		
Network Name(SSID)	UT-9	061A Hidden 🗆		
Module MAC Address	90:7e	:ba:96:0e:bd		
Wireless Channel Selectio	n [2412	MHz(channel 1) 🗸		
Apply Cancel				
UT-9061A				
Encryption Mode	No E	ncryption 🗸		
Apply Cancel				
LAN Parameter Setting	g			
IP(DHCP Gateway)	192.1	68.0.125		
Netmask	255.2	55.255.0		
DHCP Type	Enab	le 🗸		
Apply Cancel				

#### Figure 3. Wireless access point settings

(6) Wireless terminal settings. The wireless terminal interface, also known as the STA interface, allows UT-9061A to connect to other wireless networks through the STA interface. This option is used to set the parameters and access mode of the wireless device to be connected, including the network name and corresponding password to be accessed, as shown in Figure 4.



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lode Selection	AP Settings	Wireless Terminal	SerialPort And	Module Manag
• Wireless Terminal Set	AP parameters to be con	nected (SSID, encryption) and access mode	e (DHCP, static connection), etc.	
Wireless Terminal Paramet	er Setting			
Module Access Network Name(	SSID) UTER	Search		
MAC Address(Optional)	94:B	5:55:F5 <mark>:11:4</mark> 5		
Encryption Mode	WPA	WPA2 PSK 🗸		
Password				
Apply Cancel				
Module IP Address Setting		Dynamic(Auto	0) 🗸	
DHCP Mode				
Host Name(Optional)				
Apply Cancel				

#### Figure 4. Wireless terminal settings

(7) Serial port and communication protocol. In this option, the parameters of the WiFi-to-serial port can be

	set,	as shown	in	Figure 5.
--	------	----------	----	-----------

Set the serial port parameters	and network protocol parameter	s of the module application program.	
Serial Port Parameter	Setting		
Baudrate	1152	00 🗸	
Custom Baudrate	1152	00 (50-921600)	
Data Bit	8 🗸		
Check Digit	None	•	
Stop Bit	1 🗸		
Hardware Flow Control	(CTSRTS) Disal	ole 🗸	
Apply Cancel			
Serial Port Auto Frami	ng Setting		
2 2 2 2 2 4 1 2 4 2 4 2 4 2	44.00	Disable x	

Figure 5. Serial port and communication protocol

(9) Module management. This option includes administrator settings, module restart, restore factory



settings, and software upgrade functions, as shown in Figure 6.

Mode Selection	AP Settings	Wireless Terminal	SerialPort And	Module Manage
Module Manage				
v230413_202	store factory settings and updat	e software.		
Management Settings				
Account	admi	n		
Password	admi	n		
Apply Cancel				
Restart Module				
Restart Module	C	Restart		
Reset				
Reset Button		Reset		
Software Upgrade				
Software Location	Sele	ct File No File Selected		
Apply				

#### Figure 6 Module Management

- Manager Settings: You can set the account and password for the login interface here.
- Restart Module: You can restart the device here.
- Restore Factory Settings: You can restore the device to its factory settings here.
- Software Upgrade: You can upgrade the device's firmware here.

#### 10. AT Command Instructions

UT-9061A module has two operating modes. By default (when powered on), the device operates in transparent mode, and users can switch the module to command mode through serial port commands.

In AT command mode, users can use AT commands via the serial port to configure the module. To switch from transparent mode to command mode, there are two steps:

(1) Enter "+++" into the device's serial port using a debugging tool. The module will respond with a confirmation code "a".

(2) Upon receiving the confirmation code "a" from the device, immediately send "a" back to the device. When the module receives the confirmation code, it will respond with "+ok", indicating that the device has entered command mode. Note: Entering "+++" and "a" must be completed within a certain time frame to prevent accidentally entering command mode during normal operation. Specific requirements are as follows:





Echo "a" In command mode, users can use AT commands via the serial port to configure or query the device, restart it, and return to transparent mode.

AT Command

Set AT commands can be inputted through serial debugging tools such as Hyper Terminal or through programming. As shown in the figure below, AT+H is a help command that lists all available commands and their descriptions when entered in a serial debugging tool.

T+H ok= AT+ENTM: Goto Through MDde. AT+:NONE command, reply "+ok". O AT+:NONE command, reply "+ok". O AT+NETP: Set/Get the WART Parameters. O AT+UART: Set/Get the WART Parameters. O AT+UARTF: Enable/disable UART AutoFrame function. O AT+UARTFT: Set/Get time of UART AutoFrame. O AT+UARTFT: Set/Get frame length of UART AutoFrame. O AT+UARTFT: Set/Get frame length of UART AutoFrame. O AT+UARTFT: Set/Get the WIFI Operation Mode (AF or STA). O AT+WSKEY: Set/Get the Security Parameters of WIFI STA Mode. O AT+WSSSID: Set/Get the AF's SSID of WIFI STA Mode. O AT+WSSID: Set/Get the Login Parameters of WEB page. O AT+WAREY: Set/Get the Parameters of WIFI AP Mode. O AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode. O AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode. O AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode. O AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode. O AT+WSCAN: Get The AF site Survey.	
<pre>ok= AT+ENTM: Goto Through MDde. AT+:NONE command, reply "+ok". AT+NONE command, reply "+ok". AT+NETP: Set/Get the Wet Protocol Parameters. AT+UART: Set/Get the VART Parameters. AT+UARTF: Enable/disable UART AutoFrame function. AT+UARTFT: Set/Get time of UART AutoFrame. AT+UARTFT: Set/Get frame length of UART AutoFrame. AT+UARTFL: Set/Get the WIFI Operation Mode (AP or STA). AT+WSKEY: Set/Get the Security Parameters of WIFI STA Mode AT+WSSSID: Set/Get the AP's SSID of WIFI STA Mode. AT+WEEU: Set/Get the Login Parameters of WEB page. AT+WAREY: Set/Get the Security Parameters of WIFI AP Mode.] AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.] AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.] AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.] AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.] AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.] AT+WSCAN: Get The AP site Survey. </pre>	
AT+ENTM: Goto Through MOde. AT+:NONE command, reply "+ok". AT+NETP: Set/Get the Wet Protocol Parameters. AT+UART: Set/Get the VART Parameters. AT+UARTF: Enable/disable UART AutoFrame function. AT+UARTFI: Set/Get time of UART AutoFrame. AT+UARTFI: Set/Get frame length of UART AutoFrame. AT+UARTFI: Set/Get frame length of UART AutoFrame. AT+UARTFI: Set/Get the WIFI Operation Mode (AF or STA). AT+WMEDE: Set/Get the Security Parameters of WIFI STA Mode AT+WSSSID: Set/Get the AF's SSID of WIFI STA Mode. AT+WEEV: Set/Get the Login Parameters of WEB page. AT+WAF: Set/Get the Parameters of WIFI AP Mode. AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.	
<ul> <li>AT+:NONE command, reply "+ok".</li> <li>AT+WETF: Set/Get the Wet Protocol Parameters.</li> <li>AT+UART: Set/Get the VART Parameters.</li> <li>AT+UARTF: Enable/disable UART AutoFrame function.</li> <li>AT+UARTFI: Set/Get time of VART AutoFrame.</li> <li>AT+UARTFI: Set/Get frame length of UART AutoFrame.</li> <li>AT+WARTFL: Set/Get the WIFI Operation Mode (AP or STA).</li> <li>AT+WESKEY: Set/Get the Security Parameters of WIFI STA Mode</li> <li>AT+WESSID: Set/Get the AP's SSID of WIFI STA Mode.</li> <li>AT+WEEU: Set/Get the Login Parameters of WEE page.</li> <li>AT+WARY: Set/Get the Parameters of WIFI AP Mode.</li> <li>AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> </ul>	
<ul> <li>AT+WETP: Set/Get the VART Parameters.</li> <li>AT+UART: Set/Get the VART Parameters.</li> <li>AT+UARTF: Enable/disable UART AutoFrame function.</li> <li>AT+UARTFI: Set/Get time of UART AutoFrame.</li> <li>AT+UARTFL: Set/Get frame length of UART AutoFrame.</li> <li>AT+WARDE: Set/Get the WIFI Operation Mode (AP or STA).</li> <li>AT+WRDE: Set/Get the Security Parameters of WIFI STA Mode</li> <li>AT+WEEU: Set/Get the AP's SSID of WIFI STA Mode</li> <li>AT+WEEU: Set/Get the Login Parameters of WEE page.</li> <li>AT+WARY: Set/Get the Parameters of WIFI AP Mode</li> <li>AT+WARY: Set/Get the Security Parameters of WIFI AP Mode</li> <li>AT+WARY: Set/Get the Security Parameters of WIFI AP Mode</li> <li>AT+WARY: Set/Get the Security Parameters of WIFI AP Mode</li> <li>AT+WARY: Set/Get the Security Parameters of WIFI AP Mode</li> <li>AT+WARY: Set/Get the Security Parameters of WIFI AP Mode</li> </ul>	
<ul> <li>AI+UARTF: Set/Get the UART Parameters.</li> <li>AI+UARTF: Enable/disable UART AutoFrame function.</li> <li>AI+UARTFI: Set/Get time of UART AutoFrame.</li> <li>AI+UARTFI: Set/Get frame length of UART AutoFrame.</li> <li>AI+WARTFL: Set/Get the WIFI Operation Mode (AP or STA).</li> <li>AI+WSKEY: Set/Get the Security Parameters of WIFI STA Mode.</li> <li>AI+WSSSID: Set/Get the AP's SSID of WIFI STA Mode.</li> <li>AI+WEBU: Set/Get the Login Parameters of WIFI AP Mode.</li> <li>AI+WAREY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WESKID: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAREY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAREY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAREY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WSCAN: Get The AP site Survey.</li> <li>AI+WSCAN: Get The AP site Survey.</li> </ul>	
<ul> <li>AI+UAKIF: Enable/disable UAKI AutoFrame function.</li> <li>AI+UAKIF: Set/Get time of UAKI AutoFrame.</li> <li>AI+UAKIFL: Set/Get frame length of UAKI AutoFrame.</li> <li>AI+WMODE: Set/Get the WIFI Operation Mode (AP or STA).</li> <li>AI+WSKEY: Set/Get the Security Parameters of WIFI STA Mode.</li> <li>AI+WSSSID: Set/Get the Login Parameters of WEB page.</li> <li>AI+WAKEY: Set/Get the Parameters of WIFI AP Mode.</li> <li>AI+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WSCAN: Get The AP site Survey.</li> <li>AI+WSCAN: Get The AP site Survey.</li> </ul>	
<ul> <li>AI+UAKIFI: Set/Get time of UAKI AutoFrame.</li> <li>AI+UAKIFI: Set/Get frame length of UART AutoFrame.</li> <li>AI+WMODE: Set/Get the WIFI Operation Mode (AP or STA).</li> <li>AI+WSKEY: Set/Get the Security Parameters of WIFI STA Mode.</li> <li>AI+WSSSID: Set/Get the AP's SSID of WIFI STA Mode.</li> <li>AI+WEBU: Set/Get the Login Parameters of WEB page.</li> <li>AI+WAKEY: Set/Get the Parameters of WIFI AP Mode.</li> <li>AI+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AI+WSCAN: Get The AP site Survey.</li> <li>AI+WSCAN: Get The AP site Survey.</li> </ul>	
<ul> <li>AT+WARIEL: Set/Get trame length of UARI AutoFrame.</li> <li>AT+WMODE: Set/Get the WIFI Operation Mode (AP or STA).</li> <li>AT+WSKEY: Set/Get the Security Parameters of WIFI STA Mode.</li> <li>AT+WSSID: Set/Get the Login Parameters of WEB page.</li> <li>AT+WARE: Set/Get the Parameters of WIFI AP Mode.</li> <li>AT+WARE: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AT+WARE: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>AT+WSCAN: Get The AP site Survey.</li> <li>AT+WSCAN: Get The AP site Survey.</li> </ul>	
<ul> <li>Al*WMUDE: Set/Get the Security Parameters of WIFI STA Mode</li> <li>Al*WSSEY: Set/Get the Security Parameters of WIFI STA Mode.</li> <li>Al*WSSSID: Set/Get the Login Parameters of WEB page.</li> <li>Al*WAREY: Set/Get the Parameters of WIFI AP Mode.</li> <li>Al*WAREY: Set/Get the Security Parameters of WIFI AP Mode.</li> <li>Al*WSCAN: Get The AP site Survey.</li> <li>Al*WSCAN: Get The AP site Survey.</li> </ul>	
AT WESSII. Set/Get the Security Farameters of WIFI SIX Mode. AT WESSID: Set/Get the Login Farameters of WEB page. AT WARED: Set/Get the Parameters of WIFI AP Mode. AT WAREY: Set/Get the Security Parameters of WIFI AP Mode. AT WAREY: Set/Get the Security Parameters of WIFI AP Mode. AT WESSIN: Get The AP site Survey.	
AT+WEBU: Set/Get the Login Parameters of WEB page. AT+WEBU: Set/Get the Parameters of WIFI AP Mode. AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode. AT+WSCAN: Get The AP site Survey. AT+WSCAN: Get The AP site Survey.	
AT +WAP: Set/Get the Parameters of WIFI AP Mode. AT +WAKEY: Set/Get the Parameters of WIFI AP Mode. AT +WAKEY: Set/Get the Security Parameters of WIFI AP Mode. AT +WCRAN: Get The AP site Survey. AT +WCPIK: Get The AP site Survey.	
AT+WAKEY: Set/Get the Security Parameters of WIFI AP Mode.  0 AT+WSKEN: Get The AP site Survey. 0 AT+WSCH: Get The AP site Survey.	
D AT+#SCAN: Get The AP site Survey.	
AT ATCRINE Cat The state of TCP link	
J AIPICIER, WELTHE STATE OF ICI IIIN.	
0 AT+TCPTO: Set/Get TCP time out.	
O AT+MAXSK: Set/Get MAX num of TCP socket (1~16).	
O AT+WANN: Set/Get The WAN setting if in STA mode.	
O AT+LANN: Set/Get The LAN setting if in AP mode.	
0 AT+HIDESSID: Enable and Disable Hide Ap ssid.	
O AT+Z: ReBoot the Module.	
O AT+RELD: Reload the default setting and reboot.	
J	
	_
ClearData OpenFile Stop ClearS	Sen
N COND MCN BCT Research CERTA' - C annual of the LT Research IT. File C of her	
ommun Comp with fill Express SERIA   AEAShow SaveData   Received office Sendre	IA I
More Settings Show Time and Packe OverTime 20 ms Nol1 Byte	sTo
AT+H	

**Command Format** 

AT+ commands use ASCII-based command lines, and the format of the command is as follows: Format

Explanation:

< >: Represents a required section.



[]: Represents an optional section.

Command Message

AT+<CMD>[OP][para-1, para-2, para-3, ..., para-n]<CR>

AT+: Command message prefix. CMD: Instruction string.

[OP]: Instruction operator, specifying whether it is a parameter setting or a query.

"=": Indicates parameter setting.

"none": Indicates query.

[para-n]: Input during parameter setting. Not needed for queries.

<CR>: End symbol; carriage return, ASCII code 0x0a or 0x0d.

<Explanation>:

During echo, the end symbol is automatically converted to 0x0a0d. When entering the command, the

"AT+<CMD>" characters are automatically echoed in uppercase, while the parameter part remains unchanged.

Response Message: +<RSP>[OP][para-1, para-2, para-3, ..., para-n]<CR><LF><CR><LF>

+: Response message prefix.

RSP: Response string, including:

Ok: Indicates success.

ERR: Indicates failure.

[op]: =

[para-n]: Returns parameters when querying or error codes when there are errors.

<CR>: ASCII code 0x0d.

<LF>: ASCII code 0x0a.

Error Code

Error Code List		
Error Code	Description	
-1	Invalid query command	
-2	Invalid setting command	
-4	Parameter error	





Instruction	Description
AT+	Empty instruction
AT+ENTM	Enter transparent mode
AT+NETP	Set/query network protocol parameters
AT+UART	Set/query serial port parameters
AT+UARTF	Enable/disable automatic framing function
AT+UARTFT	Set/query automatic framing trigger time
AT+UARTFL	Set/query automatic framing trigger length
AT+WMODE	Query/set WIFI operation mode (AP or STA)
AT+WSKEY	Query/set encryption parameters in WIFI STA mode
AT+WSSSID	Query/set AP SSID in WIFI STA mode
AT+WEBU	Query/set login parameters for WEB page (username, password)
AT+WAP	Query/set parameters in WIFI AP mode
AT+WAKEY	Query/set encryption parameters in WIFI AP mode
AT+TCPLK	Check if TCP connection is established
AT+TCPTO	Query/set TCP timeout period
AT+MAXSK	Query/set maximum TCP connection count
AT+WANN	Query/set WAN settings (only valid in STA mode)
AT+LANN	Query/set LAN settings (only valid in AP mode)
AT+HIDESSID	Query/set whether to hide device AP's SSID
AT+Z	Restart device
AT+RELD	Restore factory settings
AT+H	Help command

Instruction Description

(1) AT+ENTM

Function: Enter transparent mode.

Format: AT+ENTM<CR> +ok<CR><LF><CR><LF>

After executing this command successfully, the module switches from command mode to transparent mode. To return to command mode, you can enter "+++" and the confirmation code.

(2) AT+NETP

Function: Set/query network protocol parameters.

Format:

Query: AT+NETP<CR> +ok=<protocol, cs, port, IP><CR><LF> Set: AT+NETP=<protocol, cs,

port, IP><CR> +ok<CR><LF><CR><LF>



Parameters: Protocol: Protocol type, including TCP UDP CS: Server side or client side, including SERVER CLIENT. Port: Port number of the protocol, a decimal number less than 65535. IP: When the module is a TCP client or UDP, it represents the address of the server (you can enter the IP address of the server or the server domain name). After restarting the module, the parameters set will take effect. (3) AT+UART Function: Set/query serial port parameters. Format: Query: AT+UART<CR> +ok=<baudrate, data\_bits, stop\_bit, parity, flowctrl><CR><LF><CR><LF> Set: AT+UART=<baudrate, data\_bits, stop\_bit, parity><CR> +ok<CR><LF><CR><LF> Parameters:

Baudrate: Baud rate, 300-921600. Data\_bits: Data bits, 5,6,7,8. Stop\_bit: Stop bit, 1 or 2. Parity: Parity bit, NONE for no parity; EVEN for even parity; ODD for odd parity. Flowctrl: Hardware flow control, NFC for no flow control; FC for flow control.

(4) AT+UARTF
Function: Enable/disable automatic framing function.
Format:
Query: AT+UARTF<CR>
+ok=<para><CR><LF><CR><LF>
Set: AT+UARTF=<para><CR>



+ok<CR><LF><CR><LF>

Parameters:

Para: Can be disabled or enabled, indicating whether to disable or enable automatic framing function.

(5) AT+UARTFT

Function: Set/query automatic framing trigger time.

Format:

Query: AT+UARTFT<CR>

+ok=<time><CR><LF><CR><LF>

Set: AT+UARTF=<time><CR>

+ok<CR><LF><CR><LF>

Parameters:

Time: Automatic framing trigger time in milliseconds. Valid range: 100-10000.

(6) AT+UARTFL

Function: Set/query automatic framing trigger length.

Format:

Query: AT+UARTFL<CR>

+ok=<len><CR><LF><CR><LF>

Set: AT+UARTF=<Ien><CR>

+ok<CR><LF><CR><LF>

Parameters:

Len: Automatic framing trigger length, measured in bytes. Valid range: 16-4096.

(7) AT+WMODEFunction: Set/query WIFI operation mode (AP or STA).Format:Query: AT+WMODE<CR>



+ok=<mode><CR><LF><CR><LF> Set: AT+WMODE=<mode><CR> +ok<CR><LF><CR><LF>

Parameters:

Mode: WIFI operating mode, including AP and STA.

After restarting the module, the parameters set will take effect.

```
(8) AT+WSKEY
Function: Set/query authentication mode and encryption password in WIFI STA mode.
Format:
Query: AT+WSKEY<CR>
+ok=<auth, key><CR><LF><CR><LF>
Set: AT+WSKEY=<auth, key><CR>
+ok<CR><LF><CR><LF>
```

Parameters:

```
Auth: Authentication mode, including OPEN, WPAPSK, WPA2PSK, WPA_WPA2_PSK.
Key: Password.
```

This parameter is only valid in STA mode, and the parameters set will take effect after restarting the device. However, these parameters can also be set in AP mode.

(9) AT+WSSSID
Function: Set/query AP SSID in WIFI STA mode.
Format:
Query: AT+WSSSID<CR>
+ok=<ap, s ssid><CR><LF><CR><LF>
Set: AT+WSSSID=<ap, s ssid><CR>
+ok<CR><LF><CR><LF>



Parameters:

Ap, s ssid: The SSID of the AP.

This parameter is only valid in STA mode, and the parameters set will take effect after restarting the module. However, these parameters can also be set in AP mode.

(10) AT+WEBU

Function: Set/query login parameters (username, password) for the WEB page.

Format:

Query: AT+WEBU<CR>

+ok=<usr, password><CR><LF><CR><LF>

Set: AT+WEBU=<usr, password><CR>

+ok<CR><LF><CR><LF>

Parameters:

Usr: Username when accessing the WEB page.

Password: Password when accessing the WEB page.

(11) AT+WAP
Function: Set/query parameters in WIFI AP mode.
Format:
Query: AT+WAP<CR>
+ok=<wifi\_mode, ssid, channel><CR><LF><CR><LF>
Set: AT+WAP=<wifi\_mode, ssid, channel><CR>
+ok<CR><LF><CR><LF>

Parameters: Wifi\_mode: WIFI mode, including 11bg, 11b, 11g, 11bgn, and 11n. Ssid: SSID in AP mode. Channel: WIFI channel selection, AUTO or CH1-CH11.



This parameter is only valid in AP mode, and the parameters set will take effect after restarting the device.

(12) AT+WAKEY

Function: Set/query authentication mode and encryption password in WIFI AP mode.

Format:

Query: AT+WAKEY<CR> +ok=<auth, key><CR><LF><CR><LF> Set: AT+WAKEY=<auth, key><CR> +ok<CR><LF><CR><LF>

Parameters:

Auth: Authentication mode, including OPEN, WPAPSK, WPA2PSK, WPA\_WPA2\_PSK. Key: Password.

This parameter is only valid in AP mode, and the parameters set will take effect after restarting the device. However, these parameters can also be set in STA mode.

(13) AT+TCPLK
Function: Check if TCP connection is established.
Format:
Query: AT+TCPLK<CR>
+ok=<sta><CR><LF><CR><LF>

Parameters:

Sta: Return whether a TCP connection has been established, on indicating that a connection has been established, off indicating that no connection has been established.

(14) AT+TCPTO Function: Set/query TCP timeout period. Format:



Query: AT+TCPTO<CR> +ok=<time><CR><LF><CR><LF> Set: AT+TCPTO=<time><CR> +ok<CR><LF><CR><LF>

Parameters: Time: TCP timeout period,  $0 \le \text{Time} \le 600$ , default value is 300. (15) AT+MAXSK Function: Set/query maximum number of TCP connections. Format: Query: AT+MAXSK<CR> +ok=<num><CR><LF><CR><LF> Set: AT+MAXSK=<num><CR> +ok<<CR><LF><CR><LF>

Parameters:

Num: Maximum number of TCP connections, ranging from 1 to 32. The default value is 32. When set as a TCP server, the module can support up to 32 TCP connections.

(16) AT+WANN
Function: Set/query WAN settings, only valid in STA mode.
Format:
Query: AT+WANN<CR>
+ok=<mode, address, mask, gateway><CR><LF><CR><LF>
Set: AT+WANN=<mode, address, mask, gateway><CR>
+ok<CR><LF><CR><LF>

Parameters:

Mode: WAN IP mode, such as Static for static IP and DHCP for dynamic IP.

Address: WAN IP address.

Mask: WAN subnet mask.



Gateway: WAN gateway address.

(17) AT+LANN Function: Set/query LAN settings, only valid in AP mode. Format: Query: AT+LANN<CR> +ok=<address, mask><CR><LF><CR><LF> Set: AT+LANN=<address, mask><CR> +ok<CR><LF><CR><LF> Parameters: Address: LAN IP address. Mask: LAN subnet mask. (18) AT+HIDESSID Function: Set/query whether to hide the device's AP SSID. Format: Query: AT+HIDESSID<CR> +ok=<sta><CR><LF><CR><LF> Set: AT+HIDESSID=<sta><CR> +ok<CR><LF><CR><LF>

Parameters:

In query mode, sta can return whether the device's AP SSID is hidden or not, such as ON for not hiding the SSID and OFF for hiding the SSID.

In set mode, OFF is used to unhide the SSID and ON is used to hide the SSID.

(19) AT+Z
Function: Restart the device.
Format:
AT+Z<CR>
The device will restart.



(20) AT+RELD
Function: Restore factory settings.
Format:
AT+RELD<CR>
+ok=rebooting...<CR><LF><CR><LF>

This command restores the factory settings and then automatically restarts.

(21) AT+H

Function: Help command.

Format:

AT+H<CR>

```
+ok=<commod help><CR><LF><CR><LF>
```

Parameters:

Commod help: Command line description.

### 11. FAQ

Common Issues:	Solutions
Power indicator is not on.	1. Check if the power input is reversed.
	2. Check if the input voltage is within the working range of
	the device.
Serial communication failure.	Check whether the wiring is correct or reversed, and
	whether the baud rate and other parameters are correct.
Forgot username and password.	Use the Reload button on the device, hold down for more
	than 3 seconds and release, and restore the factory
	settings.
Unable to log in through the	Check if the computer or phone is connected to the
Web page.	H9061A wireless network.
	Try logging in after restoring the factory settings.
Unable to obtain IP address.	Check whether the local system has enabled the DHCP
	server (enabled by default).
	Try restoring the factory settings using the Reload button
	on the device
	Set the PC or phone to use static IP.