

Espressif AT

Instruction Set

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1 Introduction

This article provides Espressif AT instruction set.

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2 , AT Instruction Category

Classification	Instruction format	Command functions
Test Command	AT + <x> =?	This command is used to query the set command or the internal procedures set Parameters and their ranges.
Query command	AT + <x> ?	This command returns the current value of the parameter.
Set command	AT + <x> = <...>	This command is used to set the value of user-defined parameters.
Run	AT + <x>	Variable parameters used to perform under the command module's internal control procedures Number of immutable functions.

Note:

- 1) Not every AT commands are equipped with the above four categories command.
- 2) later instruction [] the data to the default value, do not have to fill out, or may not appear.
- 3) 57600 baud.

3 Basis AT Instruction

Command	Description
AT + RST	Restart module

3.1. AT + RST

AT + RST: Restart module	
Instruction:	Response OK
AT + RST	Description None

4 , Wifi Function AT Instruction

Command	Description
AT + CWMODE	Select WIFI application mode
AT + CWJAP	Join AP
AT + CWLAP	Lists currently available AP
AT + CWQAP	Exit connection with the AP
AT + CWSAP	AP mode setting parameters

4.1. AT + CWMODE

AT + CWMODE: Select WIFI application mode	
	+ CWMODE: (<mode> value list)
Test command:	Response
AT + CWMODE =?	OK
	Description
	What response returns the current mode can support?
	+ CWMODE: <mode>
Query command:	Response
AT + CWMODE?	OK
	Description
	Response Response is currently in which mode?
	Response
	OK
	This instruction should be restarted after the entry into force (AT + RST).
Set command:	
AT + CWMODE = <mode>	Description
	Command parameter <mode>:
	1 - Station mode;
	2 - AP mode;
	3 - AP and Station mode.

4.2. AT + CWJAP

	AT + CWJAP: Join AP
	+ CWJAP: <ssid>
Query command:	Response
AT + CWJAP?	OK
	Description Response returns the currently selected AP
	Response OK or ERROR
Set command:	Command parameters:
AT + CWJAP = <ssid>, <pwd>	Description <Ssid> string parameter, the access point name
	<Pwd> string parameter, passwords up to 64 bytes
	ASCII

4.3. AT + CWLAP

	AT + CWLAP: lists currently available AP
	Successful return AP list
	+ CWLAP: <ecn>, <ssid>, <rsi> [, <mode>]
	Response OK
	Or
	Fails, the return
Instruction:	ERROR
AT + CWLAP	
	Response parameters:
	<Ecn> 0 OPEN
	1 WEP
Description	2 WPA_PSK
	3 WPA2_PSK
	4 WPA_WPA2_PSK
	<Ssid> string parameter, the access point name
	<Rssi> signal strength
	<Mode> 0 manually connect
	An automatic connection

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4.4. AT + CWQAP

	AT + CWQAP: Exit connection with AP
Test command:	Response OK
AT + CWQAP =?	Description None
Instruction:	Response OK
AT + CWQAP	Description None

4.5. AT + CWSAP

	AT + CWSAP: AP mode setting parameters	
Test instructions	Response	
	Description	
Query command:	Response	Returns the current AP parameter
AT + CWSAP?		+ CWSAP: <ssid>, <pwd>, <chl>, <ecn>
	Description	None
		OK
	Response	Or
Set command:		ERROR
AT + CWSAP =		Command parameters:
<Ssid>, <pwd>, <chl>,		<Ssid> string parameter, the access point name
<Ecn>		<Pwd> string parameter, passwords up to 64-byte ASCII
		<Chl> channel number
	Description	<Ecn> Encryption
		0 OPEN
		1 WEP
		2 WPA_PSK
		3 WPA2_PSK
		4 WPA_WPA2_PSK
Description		The set of instructions only after the AP mode on effective

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5 , TCP / IP Toolbox AT Instruction

Command	Description
AT + CIPSTATUS	Get the connection status
AT + CIPSTART	Establish a TCP connection or UDP port numbers registered
AT + CIPSEND	Send Data
AT + CIPCLOSE	Close TCP or UDP
AT + CIPSR	Get Local IP Address
AT + CIPMUX	Start multiple connections
AT + CIPSERVER	Configured as a server

5.1. AT + CIPSTATUS

	AT + CIPSTATUS: get the connection status	
Test instructions	Response	OK
	Description	None
		Returns connection status and connection parameters of the current module.
	Response	STATUS: <stat>
		+ CIPSTATUS: <id>, <type>, <addr>, <port>

Instruction:
AT + CIPSTATUS

OK

Response Value Description:

<Id> id number of the connection 0-4

Description <Type> string parameter, type TCP or UDP

<Addr> string parameter, IP address

<Port> port number

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5.2. AT + CIPSTART

AT + CIPSTART: establish a TCP connection or UDP port numbers registered

Test instructions	Response	+ CIPSTART: (<type> value list), (<IP address> range), (<port> range)
AT + CIPSTART =?		OK
	Description	None
		OK - the format is correct and the connection is successful
		Or
Set command	Response	ERROR - Failed
1) Single Connection		Or
(+ CIPMUX = 0)		ALREAY CONNECT - connection already exists
AT + CIPSTART =		Command parameters:
<Type>, <addr>, <port>	Description	<Id> 0-4 id number of the connection
2) multi-chanel connection		<Type> string parameter indicates the connection type
(+ CIPMUX = 1)		Type. "TCP" established tcp connection; "udp" establish UDP
AT + CIPSTART =		Connection
<Id> <type>, <addr>,		<Addr> string parameter, the remote server IP address
<Port>		<Port> remote server port number
Description		No. 0 client or server connection can be connected to other id can only be used
		Connect to a remote server

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5.3. AT + CIPSEND

		AT + CIPSEND: sending data
Test command:	Response	OK
AT + CIPSEND =?	Description	None
Set command:		Response Returns the specified length of data.
1) Single Connection		After receiving the instruction to wrap return ">", and then start
(+ CIPMUX = 0)		Receive serial data, when the data length when full length
AT + CIPSEND = <length>	Response	Sending data.
		If you do not establish a connection or connection is disconnected, the return
		ERROR
2) multi-way connector		If the data is sent successfully, the return SEND OK
(+ CIPMUX = 1)		
AT + CIPSEND =	Description	Command parameters:
<Id>, <length>		<Id> id number needed for transport connection
		<Length> numeric parameter, indicating that long to send data
		Degree

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5.4. AT + CIPCLOSE

			AT + CIPCLOSE: Close TCP or UDP
Test command:	Response		OK
AT + CIPCLOSE =?	Description		None
			If the input is correct, return OK
Set command:			If the connection is not, returns
When multiple connections	Response		Link is not
AT + CIPCLOSE = <id>			If you turn off No. 0 connection, and the connection is used server returns Cant close (Close 0 No server connection requires heavy Kai)
	Description		Command parameters: <Id> id need to close the connection If the input is correct, return OK
Instruction:			
When single connection	Response		If no connection is to return ERROR
AT + CIPCLOSE			If you want to turn off the server to return we must restart (connection requires restart)
	Description		None
Description			After the state closed for unlink

5.5. AT + CIFS

	AT + CIFSR: Get Local IP Address	
Test command:	Response	OK
AT + CIFSR =?	Description	None
		+ CIFSR: <IP address>
	Response	
Execute the command:		OK
AT + CIFSR		Or
		ERROR
	Description	Response Returns:
		<IP address> - the IP address of the machine currently (Station)

5.6. AT + CIPMUX

	AT + CIPMUX: start multiple connections	
	Response	+ CIPMUX: <mode>
Query command:		
AT + CIPMUX?		OK
	Description	None
		OK
	Response	If already in the connected state, the return
Set command:		Link is builded
AT + CIPMUX = <mode>		Command parameters:
	Description	<Mode>
		0 single connection mode
		More than one-way connection mode
Instruction	Response	None
	Description	None

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5.7. AT + CIPSERVER

	AT + CIPSERVER: configured as a server	
		Automatically create a server monitor server after opening
Instruction:	Response	OK
AT + CIPSERVER =		If the number 0 connection is occupied, return
<Mode> [, <port>]		Link is builded
		Close need to restart the server
		Command parameters:

Description <Mode>
 0 off server mode
 An open server mode
 <Port> port number, the default value is 333

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6 , + IPD Receiving network data

Reference	+ IPD: receiving network data
1) Single Connection (+ CIPMUX = 0) + IPD, <len>: <data>	Description When this command is issued instruction module, when the module is receiving network data + IPD and the serial port to send data
1) connected to the multiplexer (+ CIPMUX = 1) + IPD, <id>, <len>: <data>	<Id> id number received connection <Len> Data Length <Data> data received

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