

WizFi360

AT Instruction Set

Version 1.0.1



<http://www.wiznet.io/>

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1 Document Revision History

Version	Date	Descriptions
Ver. 1.0.0	1AUG2019	Initial Release
Ver. 1.0.1	14AUG2019	Add AT+CWCOUNTRY_CUR, AT+CWCOUNTRY_DEF, AT+SYSIOSETCFG, AT+SYSIOGETCFG, AT+SYSGPIODIR, AT+SYSGPIOWRITE, AT+SYSGPIOREAD, Pin List, AT+CIPSERVERMAXCONN, AT+CWSTARTSMART, AT+CWSTOPSMART, NOTE of UART_CUR(for PA1), Modify return value of AT+CIFSR, description of AT+SAVETRANSLINK, option of AT+CWLAP and AT+CWLAPOPT(adding wps parameter), AT Command Overview, description of AT+RESOTRE, description of CIPAPMAC(not change the value)

2 AT Command Overview

2.1 AT Command Format

AT command is of the following type. Not all AT commands support all four variations.

Command Type	Command Format	Functional Description
Test Command	AT\r\n	Query to see if the module is in AT command mode
Set Command	AT+<command>=<para>... \r\n	Set the value of a particular parameter
Query Command	AT+<command>? \r\n	Query the current setting of a particular parameter value
Execute Command	AT+<command>\r\n	Performs a specific function

Note:

1. *AT command must be capitalized, start with AT and end with <CR><LF>(=\r\n).*
2. *AT command can have several parameters, separated by a comma.*
3. *Optional parameters are indicated in square brackets []. It may be either not required or not appear, and set to the default value if it is not set.*
4. *String values have to set in double quotation mark.*

2.2 AT command returns a list of values

Return values for AT Command are as follows.

Return Type	Return value	Description
Error Messages	\r\n ERROR\r\n	AT command input error or execution error
	\r\n ALREADY CONNECTED\r\n	The TCP, UDP or SSL connection is already established.
	\r\n SEND FAIL\r\n	The network data transmission is failed.
Success Message	\r\n OK \r\n	Set command is executed correctly.
	+<Command>: <para1>,<para2> .. \r\n \r\n OK\r\n	Query or Execute command is executed correctly and return the parameter value.
	\r\n SEND OK\r\n	The network data transmission is success.
	... \r\n \r\n OK\r\n	Query or Execute command is executed correctly and return the specific value.

2.3 List of Messages

In addition to the return value for command, the following message is returned.

Tips	Explanation
ready	The AT firmware is ready.
WIFI CONNECTED	WizFi360 station connected to the AP
WIFI GOT IP	WizFi360 station got IP address from the AP
WIFI DISCONNECTED	WizFi360 station disconnected from the AP
busy s ...	It means busy sending. WizFi360 is sending for previous input, cannot response to the new input.
busy p ...	It means busy processing. WizFi360 is processing for previous input, cannot response to the new input.
<Link ID>, CONNECT	A network connection of which <Link ID>
<Link ID>, CLOSED	A network close of which <Link ID>
+IPD	Received network data.
+STA_CONNECTED: <mac>	A station connects to the WizFi360 softAP
+DIST_STA_IP: <mac>, <ip addr>	WizFi360 softAP distributes an IP address to the station connected.
+STA_DISCONNECTED: <smac>	A station disconnects to the WizFi360 softAP.

2.4 Enter AT command mode

There are AT Command mode and transparent mode in WizFi360.

In case WizFi360 is AT Command mode, WizFi360 executes AT command. Confirm AT Command mode by inputting AT\r\n and returning \r\nOK\r\n.

In case transparent mode, WizFi360 doesn't execute AT command. Only transmit and receive data with peer. If input is "+++", switch to AT command mode.

Note:

- 1. In case that TCP connection is established and WizFi360 is transparent mode, don't switch to AT command to keep TCP connection.*
- 2. "+++" input rule: three "+" must be continuously transmitted by serial. After at least 1s, WizFi360 can be respond for AT Command.*
- 3. Factory default mode of WizFi360 is AT command mode*

3 AT Command Description

3.1 AT Command list

Command Type	Command Name	Features
System control commands	AT	TEST AT Command
	ATE	Set AT Command echo
	AT+RST	Restart Module
	AT+RESTORE	Restore factory settings
	AT+UART_CUR	Set the UART Configuration, Not saved to Flash
	AT+UART_DEF	Set the UART Configuration, Saved to Flash
	AT+SYSIOSETCFG	Set IO Working Mode
	AT+SYSIOGETCFG	Get IO Working Mode
	AT+SYSGPIODIR	Set the GPIO Direction
	AT+SYSGPIOWRITE	Set the GPIO Output Level
	AT+SYSGPIOREAD	Read the GPIO Input Level
WiFi command	AT+CWMODE_CUR	Set the operation mode, Not saved to Flash
	AT+CWMODE_DEF	Set the operation mode, Saved to Flash
	AT+CWDHCP_CUR	Set the DHCP function, Not saved to Flash
	AT+CWDHCP_DEF	Set the DHCP function, Save to Flash
	AT+CIPDNS_CUR	Set the DNS server, Not saved to Flash
	AT+CIPDNS_DEF	Set the DNS server, Saved to Flash
	AT+CIPSTA_CUR	Set the static IP of WizFi360 Station, Not saved to Flash
	AT+CIPSTA_DEF	Set the static IP of WizFi360 Station, Saved to Flash
	AT+CIPSTAMAC_CUR	Set the MAC address of WizFi360 Station, Not saved to Flash
	AT+CIPSTAMAC_DEF	Set the MAC address of WizFi360, Saved to Flash
	AT+CIPAPMAC_CUR	Set the MAC address of WizFi360 SoftAP, Not saved to Flash
	AT+CIPAPMAC_DEF	Set the MAC address of WizFi360 SoftAP, Saved to Flash
	AT+CWLAP	Check the available AP List
	AT+CWLAPOPT	Set the option of AP List

	AT+CWJAP_CUR	Connect to the AP, Not saved to Flash
	AT+CWJAP_DEF	Connect to the AP, Saved to Flash
	AT+CWAUTOCONN	Set auto connection to the AP
	AT+CWQAP	Set disconnection from the AP
	AT+CIPAP_CUR	Set the static IP Address of WizFi360 SoftAP, Not saved to Flash
	AT+CIPAP_DEF	Set the static IP Address of WizFi360 SoftAP, Saved to Flash
	AT+CWDHCPS_CUR	Set the IP Address allocated by WizFi360 SoftAP DHCP, Not saved to Flash
	AT+CWDHCPS_DEF	Set the IP Address allocated by WizFi360 SoftAP DHCP, Saved to Flash
	AT+CWSAP_CUR	Set WizFi360 SoftAP mode, Not saved to Flash
	AT+CWSAP_DEF	Set WizFi360 SoftAP mode, Saved to Flash
	AT+CWLIF	Check station list connected to WizFi360 SoftAP
	AT+CWSTARTSMART	Start Smart Config
	AT+CWSTOPSMART	Stop Smart Config
	AT+CWHOSTNAME	Set the Name of WizFi360 Station
	AT+CWCOUNTRY_CUR	Set Wifi Country Code, Not saved to Flash
	AT+CWCOUNTRY_DEF	Set Wifi Country Code, Save to Flash
TCP / IP command	AT+CIPMODE	Set the transmission mode
	AT+SAVETRANSLINK	Save Transparent Transmission Link to Flash
	AT+CIPMUX	Set the connection mode
	AT+CIPSERVER	Establish TCP Server Connection
	AT+CIPSERVERMAXCONN	Set the Maximum Connection Number of Client
	AT+CIPSTART	Establish Network Connection (TCP Client, UDP or SSL)
	AT+CIPSSLSIZE	Set the SSL buffer size
	AT+CIPSTATUS	Get the Connection status
	AT+CIPSEND	Send data
	AT+CIPSENDEX	Send data
	AT+CIPSENDERBUF	Write data in send buffer

	AT+CIPBUFRESET	Reset the Segment ID
	AT+CIPBUFSTATUS	Check status of TCP send buffer
	AT+CIPCHECKSEQ	Check status of specified segment ID
	AT+CIPDINFO	Set received data format
	AT+CIPCLOSE	Close TCP/UDP Connection
	AT+CIFSR	Check IP and MAC address
	AT+CIPSTO	Set the TCP Server Timeout
Management Command	AT+GMR	Check the Firmware version
	AT+CIUPDATE	Update the Firmware
	AT+CIPDOMAIN	Use DNS Function
	AT+PING	Send Ping packet
	AT+CIPSNTPCFG	Set time zone and SNTP Server
	AT+CIPSNTPTIME	Check the SNTP Time

3.1.1 System Control Commands

3.1.1.1 AT : TEST AT Command

Command string		Function Description
AT		Test AT Command
Return Values and descriptions	\r\n OK\r\n	

3.1.1.2 ATE : Set AT Command echo

Command string		Function Description
ATE<enable>		Switches echo on/off
Parameters and description	<enable>: Switches echo - 0: Switches echo off. - 1: Switches echo on.	
Return Values and descriptions	\r\n OK\r\n	
Examples	Command: ATE1\r\n Reply:\r\n OK\r\n	

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.1.3 AT+RST : Restart module

Command string		Function Description
AT+RST		Restart module
Parameters and description	no	
Return Values and descriptions	\r\n OK\r\n	

3.1.1.4 AT+RESTORE : Restore factory settings

Command string		Function Description
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AT+RESTORE[=<type>]		Restore factory setting
Parameters and description	<type>: -0: Restore factory setting of only station mac address (factory default) -1: Restore all factory setting	
Return Values and descriptions	\r\n OK\r\n	
Example1	Command: AT+RESTORE\r\n Reply: \r\n OK\r\n	
Example2	Command: AT+RESTORE=1\r\n Reply: \r\n OK\r\n	

Command Description: The execution of this command will restore the factory default settings and restart the WizFi360.

3.1.1.5 AT+UART_CUR: Set the UART Configuration, Not saved to Flash

Command string		Function Description
AT+UART_CUR=<baudrate>,<databits>,<stopbits>,<parity>,<flow control>		Set UART Configuration
Parameters and description	<baudrate>: baud rate parameter sets the baud rate support 16 common baud rate: 2000000,1500000,1000000,921600,406800,230400, 115200 (factory default), 57600,38400,19200, 14400, 9600,4800,2400,1800,1200,600 <databits>: data bits - 5: 5-bit data - 6: 6-bit data - 7: 7-bit data - 8: 8-bit data (factory default) <stopbits>: Stop Bits - 1: 1 bit stop bit (factory default) - 2: 2 bit stop bit <parity>: parity - 0: None (factory default) - 1: Odd	

	- 2: Even <flow control>: flow control - 0: Off flow control (factory default) - 1: ON RTS / CTS hardware flow control
Return Values and descriptions	\r\n OK\r\n
Examples	Command: AT+UART_CUR=115200,8,1,0,0\r\n Reply:\r\n OK\r\n
Command string	
AT+UART_CUR?	
Function Description	
Query UART Configuration	
Return Values and descriptions	Return Value: +UART_CUR:<baudrate>,<databits>,<stopbits>,<parity>,<flow control>\r\n OK\r\n Description: Parameter above
Examples	Command: AT+UART_CUR?\r\n Reply: +UART_CUR:115200,8,1,0,0\r\n OK\r\n

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

NOTE:

- If using WizFi360 hardware flow control, the user needs to access the flow control device of pin WizFi360, refer to the specific connection WizFi360 User Manual.
- If you set PA1 to low level for 3sec, the factory setting of uart is restored. In case that you don't know uart setting and can't use WizFi360, Use it method. This setting is not saved to the Flash

3.1.1.6 AT+UART_DEF: Set the UART Configuration, Saved to Flash

Command string	
AT+UART_DEF=<baudrate>,<databits>,<stopbits>,<parity>,<flow control>	
Function Description	
Set UART Configuration	
Parameters and description	<baudrate>: baud rate parameter sets the baud rate support 16 common baud rate: 2000000,1500000,1000000,921600,406800,230400, 115200 (factory default), 57600,38400,19200,14400,9600,4800,2400,1800,1200,600

	<p><databits>: data bit parameter</p> <ul style="list-style-type: none"> - 5: 5-bit data - 6: 6-bit data - 7: 7-bit data - 8: 8-bit data (factory default) <p><stopbits>: Stop Bit Parameter</p> <ul style="list-style-type: none"> - 1: 1 bit stop bit (factory default) - 2: 2 bit stop bit <p><parity>: parity parameter</p> <ul style="list-style-type: none"> - 0: None (factory default) - 1: Odd - 2: Even <p><flow control>: flow control parameter</p> <ul style="list-style-type: none"> - 0: Off flow control (factory default) - 1: ON RTS / CTS hardware flow control 	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p>	
Examples	<p>Command: AT+UART_DEF=115200,8,1,0,0\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Command string		Function Description
AT+UART_DEF?		Query UART Configuration
Return Values and descriptions	<p>Return Value:</p> <p>+UART_DEF:<baudrate>,<databits>,<stopbits>,<parity>,<flow control>\r\n</p> <p>OK\r\n</p> <p>Description: Parameter above</p>	
Examples	<p>Command: AT+UART_DEF?\r\n</p> <p>Reply: +UART_DEF:115200,8,1,0,0\r\n</p> <p>OK\r\n</p>	

Command Description: This setting will be saved to Flash, after the next reboot / power still valid.

NOTE: If using WizFi360 hardware flow control, the user needs to access the flow control device of pin WizFi360, refer to the specific connection WizFi360 User Manual.

3.1.1.7 AT+SYSIOSETCFG : Set IO Working Mode

Command String		Function Description
AT+SYSIOSETCFG=<pin>,<mode>,<pull-up>		Set IO Working Mode
Parameters and description	<p><pin>: IO pin number</p> <p><mode>: refer to Pin List</p> <p><pull-up>:</p> <ul style="list-style-type: none">- 0: Disable pull-up- 1: Enable pull-up	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+SYSIOSETCFG=12,1,0\r\n Reply: \r\n OK\r\n	

3.1.1.8 AT+SYSIOGETCFG : Get IO Working Mode

Command String		Function Description
AT+SYSIOGETCFG=<pin>		Get IO Working Mode
Parameters and description	<pin>: IO pin number	
Return Values and descriptions	<p>Return Value:</p> <p>+SYSIOGETCFG:<pin>,<mode>,<pull-up>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Description:</p> <p><pin>: IO pin number</p>	

	<p><mode>:</p> <ul style="list-style-type: none"> - 0: default mode - 1: GPIO mode <p><pull-up>:</p> <ul style="list-style-type: none"> - 0: Disable pull-up - 1: Enable pull-up
Predecessors	no
Examples	<p>Command: AT+SYSIOGETCFG=12\r\n</p> <p>Reply: +SYSIOGETCFG:12,1,0\r\n</p> <p>\r\n</p> <p>OK\r\n</p>

3.1.1.9 AT+SYSGPIODIR : Set the GPIO Direction

Command String		Function Description
AT+SYSGPIODIR=<pin>,<dir>		Set GPIO Direction
Parameters and description	<p><pin>: IO pin number</p> <p><dir>:</p> <ul style="list-style-type: none"> - 0: Set the pin to input mode (If GPIO Direction is input, set to pull-up automatically) - 1: Set the pin to output mode 	
Return Values and descriptions	<p>Return Value:</p> <p>\r\n</p> <p>OK\r\n</p> <p>or</p> <p>\r\n</p> <p>NOT GPIO MODE!\r\n</p> <p>ERROR\r\n</p> <p>Description:</p> <p>If IO pin mode is not GPIO mode, the command will return "NOT GPIO MODE!"</p>	
Predecessors	no	

Examples	Command: AT+SYSIOSETCFG=12,1,1
	Reply: \r\n
	OK\r\n
	Command: AT+SYSGPIODIR=12,0
	Reply: \r\n
	OK\r\n

3.1.1.10 AT+SYSGPIOWRITE : Set the GPIO Output Level

Command String		Function Description
AT+SYSGPIOWRITE=<pin>,<level>		Set GPIO Output Level
Parameters and description	<pin>: IO pin number <level>: - 0: Set the pin to low level - 1: Set the pin to high level	
Return Values and descriptions	Return Value: \r\n OK\r\n or \r\n NOT OUTPUT!\r\n ERROR\r\n Description: If IO pin mode is not output mode, the command will return "NOT OUTPUT MODE!"	
Predecessors	no	
Examples	Command: AT+SYSIOSETCFG=12,1,1 Reply: \r\n OK\r\n Command: AT+SYSGPIODIR=12,0 Reply: \r\n	

	OK\r\n
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3.1.1.11 AT+SYSGPIOREAD : Read the GPIO Input Level

Command String		Function Description
AT+SYSGPIOREAD=<pin>		Read GPIO Input Level
Parameters and description	<pin>: IO pin number	
Return Values and descriptions	<p>Return Value:</p> <p>+SYSGPIOREAD:<pin>,<dir>,<level>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>or</p> <p>\r\n</p> <p>NOT GPIO MODE!\r\n</p> <p>ERROR\r\n</p> <p>Description:</p> <p>If IO pin mode is not GPIO mode, the command will return "NOT GPIO MODE!"</p> <p><pin>: IO pin number</p> <p><dir>:</p> <ul style="list-style-type: none"> - 0: input mode - 1: output mode <p><level>:</p> <ul style="list-style-type: none"> - 0: low level - 1: high level 	
Predecessors	no	
Examples	<p>Command: AT+SYSIOSETCFG=12,1,1</p> <p>Reply: \r\n</p> <p>OK\r\n</p>	

Command: AT+SYSGPIODIR=12,0

Reply: \r\n

OK\r\n

Command: AT+SYSGPIOREAD=12

Reply: +SYSGPIOREAD:12,0,1\r\n

\r\n

OK\r\n

3.1.2 WiFi command

3.1.2.1 AT+CWMODE_CUR : Set the operating mode, Not saved to Flash

Command string		Function Description
AT+CWMODE_CUR=<mode>		Set the operation mode
Parameters and description	<p><mode>:</p> <ul style="list-style-type: none">- 1: Station mode (factory default)- 2: SoftAP mode- 3: Station + SoftAP mode	
Return Values and descriptions	\r\nOK\r\n	
Predecessors	no	
Examples	Command: AT+CWMODE_CUR=1\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CWMODE_CUR?		Query the operation mode
Return Values and descriptions	Return Value: +CWMODE_CUR:<mode>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CWMODE_CUR?\r\n Reply: +CWMODE_CUR:1\r\n \r\n OK\r\n	

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.2.2 AT+CWMODE_DEF : Set the operation mode, Save to Flash

Command string		Function Description
AT+CWMODE_DEF=<mode>		Set the operation mode

Parameters and description	<mode>: - 1: Station mode (factory default) - 2: SoftAP mode - 3: Station + SoftAP mode	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CWMODE_DEF=1\r\n Reply: OK\r\n	
Command string		Function Description
AT+CWMODE_DEF?		Query the operation mode
Return Values and descriptions	Return Value: +CWMODE_DEF:<mode>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CWMODE_DEF?\r\n Reply: +CWMODE_DEF:1\r\n \r\n OK\r\n	

Command Description: This setting will be saved to Flash, after the next reboot / power still valid.

3.1.2.3 AT+CWDHCP_CUR : Set the DHCP function, Not saved to Flash

Command string		Function Description
AT+CWDHCP_CUR=<mode>,<en>		Set DHCP function
Parameters and description	<mode>: - 0: Set softAP DHCP - 1: Set Station DHCP - 2: Set both SoftAP DHCP and Station DHCP <en>: - 0: Disable DHCP	

	- 1: Enable DHCP	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CWDHCP_CUR=1,1\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CWDHCP_CUR?		Query DHCP function
Return Values and descriptions	Return Value: +CWDHCP_CUR:<mode>\r\n \r\n OK\r\n Description: <mode>: the current setting value of the DHCP function - 0: Disable softAP DHCP and Station DHCP. - 1: Enable softAP DHCP and disable station DHCP. - 2: Disable softAP DHCP and enable station DHCP. - 3: Enable softAP DHCP and station DHCP. (factory default)	
Examples	Command: AT+CWDHCP_CUR?\r\n Reply: +CWDHCP_CUR:1\r\n \r\n OK\r\n	

Command Description:

- The setting is not saved to the Flash, the next reboot / after power is invalid;
- This Set Command interacts with commands related static IP. For example, if DHCP is enabled, static IP will be disabled and if static IP is enabled, DHCP will be disabled. The last configured command is set.

3.1.2.4 AT+CWDHCP_DEF : Set the DHCP function, Saved to Flash

Command string	Function Description
AT+CWDHCP_DEF=<mode>,<en>	Set DHCP function

Parameters and description	<mode>: - 0: Set softAP DHCP - 1: Set Station DHCP - 2: Set both SoftAP DHCP and Station DHCP <en>: - 0: Disable DHCP - 1: Enable DHCP	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CWDHCP_DEF=1,1\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CWDHCP_DEF?		Query DHCP function
Return Values and descriptions	Return Value: +CWDHCP_CUR:<mode>\r\n \r\n OK\r\n Description: <mode>: the current setting value of the DHCP function - 0: Disable softAP DHCP and Station DHCP. - 1: Enable softAP DHCP and disable station DHCP. - 2: Disable softAP DHCP and enable station DHCP. - 3: Enable softAP DHCP and station DHCP. (factory default)	
Examples	Command: AT+CWDHCP_DEF?\r\n Reply: +CWDHCP_DEF: 1\r\n \r\n OK\r\n	

Command Description:

- the settings are saved to Flash, after the next reboot / power-up is still valid;
- This Set Command interacts with commands related static IP. For example, if DHCP is enabled, static IP will be disabled and if static IP is enabled, DHCP will be disabled. The last configured command is set.

3.1.2.5 AT+CIPDNS_CUR : Set the DNS server, Not saved to Flash

Command string		Function Description
AT+CIPDNS_CUR=<enable>[,<DNS server0>,<DNS server1>]		Set DNS server
Parameters and description	<p><enable>:</p> <ul style="list-style-type: none"> - 0: Disable customize DNS server (factory default) - 1: Enable customize DNS server <p><DNS server0>: First DNS server address</p> <p><DNS server1>: Second DNS server address</p> <p>Note: In case <enable> is 0, <DNS server0> and <DNS server1> have to not fill, otherwise an error. DNS server will be used "208.67.222.222". - If <enable> is 1 and <DNS server0> and <DNS server1> are not fill, DNS server will be used "208.67.222.222".</p> <ul style="list-style-type: none"> - The DNS server may change according to the router. - <DNS server0> and <DNS server1> cannot be set to the same. 	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p>	
Predecessors	no	
Example 1	<p>Command: AT+CIPDNS_CUR=1,"114.114.114.114","8.8.8.8"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Example 2	<p>Command: AT+CIPDNS_CUR=0\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Command string		Function Description
AT+CIPDNS_CUR?		Query DNS server
Return Values and descriptions	<p>Return value:</p> <p>+CIPDNS_CUR:<DNS server0>\r\n</p> <p>\r\n</p>	

	OK\r\n or: +CIPDNS_CUR: <DNS server0>\r\n +CIPDNS_CUR: <DNS server1>\r\n \r\n OK\r\n Description: Parameter above
Examples	Command: AT+CIPDNS_CUR?\r\n Reply: +CIPDNS_CUR: 114.114.114.114\r\n +CIPDNS_CUR: 8.8.8.8\r\n \r\n OK\r\n

3.1.2.6 AT+CIPDNS_DEF : Set the DNS server, Saved to Flash

Command string		Function Description
AT+CIPDNS_DEF=<enable>[,<DNS server0>,<DNS server1>]		Set DNS server
Parameters and description	<enable>: - 0: Disable customize DNS server (factory default) - 1: Enable customize DNS server <DNS server0>: First DNS server address <DNS server1>: Second DNS server address Note: In case <enable> is 0, <DNS server0> and <DNS server1> have to not fill, otherwise an error. DNS server will be used "208.67.222.222". - If <enable> is 1 and <DNS server0> and <DNS server1> are not fill, DNS server will be used "208.67.222.222". - The DNS server may change according to the router. - <DNS server0> and <DNS server1> cannot be set to the same.	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	

Example 1	Command: AT+CIPDNS_DEF=1,"114.114.114.114","8.8.8.8"\r\n	
	Reply:\r\n	
	OK\r\n	
Example 2	Command: AT+CIPDNS_DEF=0\r\n	
	Reply:\r\n	
	OK\r\n	
Command string		Function Description
AT+CIPDNS_DEF?		Query DNS server
Return Values and descriptions	Return value:	
	+CIPDNS_DEF:<DNS server0>\r\n\r\nOK\r\nor: +CIPDNS_DEF:<DNS server0>\r\n+CIPDNS_DEF:<DNS server1>\r\n\r\nOK\r\n	
	Description: Parameter above	
Examples	Command: AT+CIPDNS_DEF?\r\n	
	Reply: +CIPDNS_DEF: 114.114.114.114\r\n+CIPDNS_DEF: 8.8.8.8\r\n\r\nOK\r\n	

3.1.2.7 AT+CIPSTA_CUR : Set the static IP of WizFi360 Station, Not saved to Flash

Command string	Function Description
AT+CIPSTA_CUR=<ip> [,<gateway>,<netmask>]	Set the static IP

Parameters and description	<ip>: static IP address of WizFi360 station <gateway>: Gateway <netmask>: Subnet Mask	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Example 1	Command: AT+CIPSTA_CUR="192.168.1.88","192.168.1.1","255.255.255.0"\r\n Reply:\r\n OK\r\n	
Example 2	Command: AT+CIPSTA_CUR="192.168.1.88"\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPSTA_CUR?		Query the static IP
Return Values and descriptions	Return Value: +CIPSTA_CUR:ip:<ip>\r\n +CIPSTA_CUR:gateway:<gateway>\r\n +CIPSTA_CUR:netmask:<netmask>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CIPSTA_CUR?\r\n Reply: +CIPSTA_CUR:ip:"192.168.1.88"\r\n +CIPSTA_CUR:gateway:"192.168.1.1"\r\n +CIPSTA_CUR:netmask:"255.255.255.0"\r\n \r\n OK\r\n Description: Parameter above	

Command Description:

- The setting is not saved to the Flash, the next reboot / after power is invalid;
- This Set Command interacts with commands related DHCP. For example, if DHCP is enabled, static IP will be disabled and if static IP is enabled, DHCP will be disabled. The last configured command is set.

3.1.2.8 AT+CIPSTA_DEF : Set the static IP of WizFi360 Station, Saved to Flash

Command string		Function Description
AT+CIPSTA_DEF=<ip>[,<gateway>,<netmask>]		Set the static IP
Parameters and description	<ip>: static IP address of WizFi360 station <gateway>: Gateway <netmask>: Subnet Mask	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Example 1	Command: AT+CIPSTA_DEF="192.168.1.88","192.168.1.1","255.255.255.0"\r\n Reply:\r\n OK\r\n	
Example 2	Command: AT+CIPSTA_DEF="192.168.1.88"\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPSTA_DEF?		Query the static IP
Return Values and descriptions	Return Value: +CIPSTA_DEF:ip:<ip>\r\n +CIPSTA_DEF:gateway:<gateway>\r\n +CIPSTA_DEF:netmask:<netmask>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CIPSTA_DEF?\r\n Reply:	

	+ CIPSTA_DEF:ip:"192.168.1.88"\r\n + CIPSTA_DEF:gateway:"192.168.1.1"\r\n + CIPSTA_DEF:netmask:"255.255.255.0"\r\n \r\n OK\r\n
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Command Description:

- the settings are saved to Flash, after the next reboot / power-up is still valid;
- This Set Command interacts with commands related DHCP. For example, if DHCP is enabled, static IP will be disabled and if static IP is enabled, DHCP will be disabled. The last configured command is set.

3.1.2.9 AT+CIPSTAMAC_CUR : Set the MAC address of WizFi360 Station, Not saved to Flash

Command string		Function Description
AT+CIPSTAMAC_CUR=<mac>		Set the station MAC address
Parameters and description	<mac>: MAC address of WizFi360 Station. Note: - Bit 0 of WizFi360 Mac address byte cannot be 01. For example, MAC address cannot be "01:08:DC:11:12:13" and can be "00:08:dc:11:12:13".	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CIPSTAMAC_CUR="00:08:DC:11:12:13"\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPSTAMAC_CUR?		Query the station MAC address
Return Values and descriptions	Return Value: + CIPSTAMAC_CUR:<mac>\r\n \r\n OK\r\n Description: Parameter above	

Examples	Command: AT+CIPSTAMAC_CUR?\r\n Reply: +CIPSTAMAC_CUR:"00:08:dc:11:12:13"\r\n \r\n OK\r\n
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Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid;

3.1.2.10 AT+CIPSTAMAC_DEF : Set the MAC address of WizFi360 Station, to save Flash

Command string		Function Description
AT+CIPSTAMAC_DEF=<mac>		Set the station MAC address
Parameters and description	<mac>: MAC address of WizFi360 Station. Note: - Bit 0 of WizFi360 Mac address byte cannot be 1. For example, MAC address cannot be "01:08:DC:11:12:13" and can be "00:08:dc:11:12:13".	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CIPSTAMAC_DEF="00:08:DC:11:12:13"\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPSTAMAC_DEF?		Query the station MAC address
Return Values and descriptions	Return Value: +CIPSTAMAC_DEF:<mac>\r\n\r\nOK\r\n Description: Parameter above	
Examples	Command: AT+CIPSTAMAC_DEF?\r\n Reply: +CIPSTAMAC_DEF:"00:08:dc:11:12:13"\r\n \r\n OK\r\n	

Command Description: This setting will be saved to Flash, after the next reboot / power-up is still valid

3.1.2.11 AT+CIPAPMAC_CUR : Set the MAC address of WizFi360 SoftAP, Not saved to Flash

Command string		Function Description
AT+CIPAPMAC_CUR=<mac>		Set the SoftAP MAC address
Parameters and description	<p><mac>: MAC address of WizFi360 softAP.</p> <p>Note:</p> <p>This value doesn't change even if it is set. It only depends on station mac address at boot time.</p>	
Return Values and descriptions	\r\n OK\r\n	
Command string		Function Description
AT+CIPAPMAC_CUR?		Query the SoftAP MAC address
Return Values and descriptions	<p>Return Value: +CIPAPMAC_CUR:<mac>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Description: Parameter above</p>	
Examples	<p>Command: AT+CIPAPMAC_CUR?\r\n</p> <p>Reply: +CIPAPMAC_CUR:"00:08:dc:11:12:13"\r\n</p> <p>\r\n</p> <p>OK\r\n</p>	

3.1.2.12 AT+CIPAPMAC_DEF : Set the MAC address of WizFi360 SoftAP, Saved to Flash

Command string		Function Description
AT+CIPAPMAC_DEF=<mac>		Set the SoftAP MAC address
Parameters and description	<p><mac>: MAC address of WizFi360 SoftAP.</p> <p>Note:</p> <p>This value doesn't change even if it is set. It only depends on station mac address at boot time.</p>	
Return Values and descriptions	\r\n OK\r\n	
Command string		Function Description

AT+CIPSTAMAC_DEF?		Query the SoftAP MAC address
Return Values and descriptions	Return Value: +CIPAPMAC_DEF:<mac>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CIPAPMAC_DEF?\r\n Reply: +CIPAPMAC_DEF:"00:08:dc:11:12:13"\r\n \r\n OK\r\n	

3.1.2.13 AT+CWLAP : Check the available AP List

Command string		Function Description
AT+CWLAP		Check the available AP List
Parameters and description	no	
Return Values and descriptions	Return value: +CWLAP:([<ecn>,<ssid>,<rssi>,<mac>,<channel>,<wps>])\r\n +CWLAP:([<ecn>,<ssid>,<rssi>,<mac>,<channel>,<wps>])\r\n ... +CWLAP:([<ecn>,<ssid>,<rssi>,<mac>,<channel>,<wps>])\r\n \r\n OK\r\n Description: The parameters displayed change according to the setting of CWLAPOPT command. <ecn>: encryption of the AP - 0: OPEN - 1: WEP - 2: WPA_PSK - 3: WPA2_PSK	

	- 4: WPA_WPA2_PSK <ssid>: AP's SSID <rssi>: AP signal strength RSSI <mac>: AP MAC address <channel>: AP channel <wps>: - 0: Disable the wps - 1: Enable the wps	
Predecessors	no	
Examples	Command: AT+CWLAP\r\n Reply: +CWLAP: (4,"WIZnet",-57,"00:08:dc:6a:46:2e",1,1)\r\n +CWLAP: (3,"WIZNETSZ",-75,"00:08:dc:9c:ef:b6",12,1)\r\n \r\n OK\r\n	
Command string		Function Description
AT+CWLAP[=<ssid>,<mac>,<channel>]		Check the specified AP List
Parameters and description	Parameter above	
Return Values and descriptions	+CWLAP: ([<ecn>,<ssid>,<rssi>,<mac>,<channel>,<wps>])\r\n \r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CWLAP="WIZNETSZ"\r\n Reply: +CWLAP:(3,"WIZNETSZ",-75,"00:08:dc:9c:ef:b6",12,1)\r\n \r\n OK\r\n	
Example2	Command: AT+CWLAP="WIZNETSZ","00:08:dc:9c:ef:b6",12\r\n Reply: +CWLAP:(3,"WIZNETSZ",-75,"00:08:dc:9c:ef:b6",12,1)\r\n	

	\r\n
	OK\r\n

3.1.2.14 AT+CWLAPOPT : Set the option of AP List

Command string								Function Description			
AT+CWLAPOPT=<sort_enable>,<mask>								Set the option of AP List			
Parameters and description	<sort_enable>: It sets whether the result of AT+CWLAP command is sorted according to RSSI.										
	- 0: Do not sort according to RSSI (factory default)										
	- 1: Sort according to RSSI										
	<mask>: Set parameters to show in AT+CWLAP result.										
	If Bit is 0 : Don't showing										
	If Bit is 1 : Showing (factory default)										
	Bit10	Bit9	Bit8	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
	WPS	-	-	-	-	-	CH	MAC	RSSI	SSID	ECN
Return Values and descriptions	\r\n OK\r\n										
Predecessors	no										
Examples	Command: AT+CWLAPOPT=1,31\r\n Reply:\r\n OK\r\n										

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.2.15 AT+CWJAP_CUR : Connect to the AP, Not saved to Flash

Command string		Function Description
AT+CWJAP_CUR=<ssid>,<pwd>[,<bssid>]		Set the connection to AP
Parameters and description	<p><ssid>: the SSID of the target AP.</p> <p><pwd>: the password of the target AP</p> <p>(If the SSID or Password contains special characters such as ", \ and , you need an escape character)</p> <p><bssid>: optional parameter, the target AP's MAC address, used when multiple APs have the same SSID.</p>	

Return Values and descriptions	<p>Return Value:</p> <p>\r\n</p> <p>OK\r\n</p> <p>or</p> <p>+CWJAP_CUR:<error code>\r\n</p> <p>\r\n</p> <p>Fail\r\n</p> <p>Description:</p> <p><error code>:</p> <p>-1: Connection timed out</p> <p>-2: Wrong password</p> <p>-3: Cannot find the target AP</p> <p>-4: Connection Failed</p>	
Predecessors	AT+CWMODE_CUR=1\r\n	
Examples	<p>Eg, AP's SSID is "ab\\,c", the password is "12345678\\" and MAC address is "00:08:DC:11:12:13",the command is as follows:</p> <p>Command: AT+CWMODE_CUR=1\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWJAP_CUR="ab\\\\,c","12345678 \\", "00:08:DC:11:12:13"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Command string		Function Description
AT+CWJAP_CUR?		Query the information of AP connected
Return Values and descriptions	<p>Return Value:</p> <p>+CWJAP_CUR:<ssid>,<bssid>,<channel>,<rssi>\r\n\r\nOK\r\n</p> <p>Description:</p> <p><ssid>: SSID of AP connected</p>	

	<bssid>: MAC address of AP connected <channel>: Channel of AP connected <rsssi>: RSSI MAC address of AP connected
Examples	Command: AT+CWJAP_CUR?\r\n Reply: +CWJAP_CUR="WIZNETSZ","00:08:dc:9c:ef:b6",12,-75\r\n \r\n OK\r\n

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.2.16 AT+CWJAP_DEF : Connect to the AP, Saved to Flash

Command string		Function Description
AT+CWJAP_DEF=<ssid>,<pwd>[,<bssid>]		Set the connection to AP
Parameters and description	<ssid>: the SSID of the target AP. <pwd>: the password of the target AP (If the SSID or Password contains special characters such as ", \ and , you need an escape character) <bssid>: optional parameter, the target AP's MAC address, used when multiple APs have the same SSID.	
Return Values and descriptions	Return Value: \r\n OK\r\n or +CWJAP_DEF:<error code>\r\n \r\n Fail\r\n Description: <error code>: -1: Connection timed out -2: Wrong password -3: Can not find the target AP -4: Connection Failed	

Predecessors	AT+CWMODE_DEF=1\r\n	
Examples	<p>Eg, AP's SSID is "ab\c", the password is "12345678\" and MAC address is "00:08:DC:11:12:13",the command is as follows:</p> <p>Command: AT+CWMODE_DEF=1\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWJAP_DEF="ab\\c","12345678 \\", "00:08:DC:11:12:13"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Command string		Function Description
AT+CWJAP_DEF?		Query the information of AP connected
Return Values and descriptions	<p>Return Value:</p> <p>+CWJAP_DEF:<ssid>,<bssid>,<channel>,<rssi>\r\n\r\nOK\r\n</p> <p>Description:</p> <p><ssid>: SSID of AP connected</p> <p><bssid>: MAC address of AP connected</p> <p><channel>: Channel of AP connected</p> <p><rssi>: RSSI MAC address of AP connected</p>	
Examples	<p>Command: AT+CWJAP_DEF?\r\n</p> <p>Reply: +CWJAP_CUR="WIZNETSZ","00:08:dc:9c:ef:b6",12,-75\r\n</p> <p>\r\n</p> <p>OK\r\n</p>	

Command Description: This setting will be saved to Flash, after the next reboot / power still valid.

3.1.2.17 AT+CWAUTOCONN : Set auto connection to the AP

Command string		Function Description
AT+CWAUTOCONN=<enable>		Set the Auto connection to AP
Parameters and description	<p><enable>:</p> <p>- 0: Do not automatically connect to AP on power-up</p>	

	- 1: Automatically connect to AP on power-up (factory default)
Return Values and descriptions	\r\n OK\r\n
Predecessors	AT+CWMODE_DEF=1\r\n AT+CWJAP_DEF="WIZNETSZ","12345678"\r\n
Examples	Command: AT+CWMODE_DEF=1\r\n Reply:\r\n OK\r\n Command: AT+CWJAP_DEF="WIZNETSZ","12345678"\r\n Reply:\r\n OK\r\n Command: AT+CWAUTOCONN=1\r\n Reply:\r\n OK\r\n

Command Description: - The settings are saved to Flash, after the next reboot / power-up is still valid;

3.1.2.18 AT+CWQAP : Set disconnection from the AP

Command string		Function Description
AT+CWQAP		Disconnecting the connection with the AP
Parameters and description	no	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	AT+CWMODE_DEF=1\r\n AT+CWJAP_DEF="WIZNETSZ","12345678"\r\n	
Examples	Command: AT+CWMODE_DEF=1\r\n Reply:\r\n OK\r\n Command: AT+CWJAP_DEF="WIZNETSZ","12345678"\r\n	

	Reply:\r\n OK\r\n Command: AT+CWQAP\r\n Reply:\r\n OK\r\n
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3.1.2.19 AT+CIPAP_CUR : Set the static IP Address of WizFi360 SoftAP, Not saved to Flash

Command string		Function Description
AT+CIPAP_CUR=<ip>[,<gateway>,<netmask>]		Set the static IP of SoftAP
Parameters and description	<ip>: IP address, currently supports only Class C IP address <gateway>: Gateway <netmask>: Subnet Mask	
Return Values and descriptions	\r\nOK\r\n	
Predecessors	no	
Example 1	Command: AT+CIPAP_CUR="192.168.0.1","192.168.0.1","255.255.255.0"\r\n Reply:\r\nOK\r\n	
Example 2	Command: AT+CIPAP_CUR="192.168.0.1"\r\n Reply:\r\nOK\r\n	
Command string		Function Description
AT+CIPAP_CUR?		Query the static IP of SoftAP
Return Values and descriptions	return value: +CIPAP_CUR:ip:<ip>\r\n +CIPAP_CUR:gateway:<gateway>\r\n +CIPAP_CUR:netmask:<netmask>\r\n\r\nOK\r\n	
Examples	Command: AT+CIPAP_CUR?\r\n Reply: +CIPAP_CUR:ip:"192.168.0.1"\r\n +CIPAP_CUR:gateway:"192.168.0.1"\r\n +CIPAP_CUR:netmask:"255.255.255.0"\r\n\r\nOK\r\n	

Command Description:

- The setting is not saved to the Flash, the next reboot / after power is invalid;
- This Set Command interacts with commands related DHCP. For example, if DHCP is enabled, static IP will be disabled and if static IP is enabled, DHCP will be disabled. The last configured command is set.

3.1.2.20 AT+CIPAP_DEF : Set the static IP Address of WizFi360 SoftAP, Saved to Flash

Command string		Function Description
AT+CIPAP_CUR=<ip> [<gateway>,<netmask>]		Set the static IP of SoftAP
Parameters and description	<ip>: IP address, currently supports only Class C IP address <gateway>: Gateway <netmask>: Subnet Mask	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Example 1	Command: AT+CIPAP_DEF="192.168.0.1","192.168.0.1","255.255.255.0"\r\n Reply:\r\n OK\r\n	
Example 2	Command: AT+CIPAP_DEF="192.168.0.1"\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPAP_CUR?		Query the static IP of SoftAP
Return Values and descriptions	return value: +CIPAP_DEF:ip:<ip>\r\n +CIPAP_DEF:gateway:<gateway>\r\n +CIPAP_DEF:netmask:<netmask>\r\n \r\n OK\r\n	
Examples	Command: AT+CIPAP_CUR?\r\n Reply: +CIPAP_DEF:ip:"192.168.0.1"\r\n	

	+CIPAP_DEF:gateway:"192.168.0.1"\r\n +CIPAP_DEF:netmask:"255.255.255.0"\r\n \r\n OK\r\n
--	--

Command Description:

- The settings are saved to Flash, after the next reboot / power-up is still valid;
- This Set Command interacts with commands related DHCP. For example, if DHCP is enabled, static IP will be disabled and if static IP is enabled, DHCP will be disabled. The last configured command is set.

3.1.2.21 AT+CWDHCP_CUR : Set the IP Address allocated by WizFi360 DHCP, Not saved to Flash

Command string		Function Description
AT+CWDHCP_CUR=<enable>,<lease time>,<start IP>,<end IP>		Set the IP allocated by WizFi360 DHCP(softAP)
Parameters and description	<enable>: - 0: using the default IP address pool (xxx.xxx.xxx.2 ~ xxx.xxx.xxx.101) - 1: Enable setting the IP address range. The following parameters have to be set. <lease time>: lease time of the WizFi360 softAP. It is in the range of 1 to 2880, unit is minutes, and the default is 120 minutes. <start IP>: start IP of the WizFi360 softAP IP arrange. <end IP>: end IP of the WizFi360 softAP IP arrange. NOTE: WizFi360 IP address arrange can accommodate up to 101 IP addresses	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	No	
Examples	Command: AT+CWMODE_CUR=2\r\n Reply:\r\n OK\r\n Command: AT+CWDHCP_CUR=0,1 r \ n Reply:\r\n OK\r\n	

	<p>Command: AT+CIPAP_CUR="192.168.0.1","192.168.0.1","255.255.255.0"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWDHCPS_CUR=1,120,"192.168.0.100","192.168.0.200"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>
Command string	Function Description
AT+CWDHCPS_CUR?	Query the IP allocated by WizFi360 DHCP(softAP)
Return Values and descriptions	<p>Return Value: +CWDHCPS_CUR: <lease time>,<start IP>,<end IP>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Description: Parameter above</p>
Examples	<p>Command: AT+CWDHCPS_CUR?\r\n</p> <p>Reply: +CWDHCPS_CUR: 120,"192.168.0.2","192.168.0.101"\r\n</p> <p>\r\n</p> <p>OK\r\n</p>

Command Description:

- The setting is not saved to the Flash, the next reboot / after power is invalid;
- This AT command is enabled when WizFi360 runs as SoftAP, and when DHCP is enabled.
- - <start IP> and <end IP> must be the same network segment.

3.1.2.22 AT+CWDHCPS_DEF : Set the IP Address allocated by WizFi360 DHCP, Saved to Flash

Command string	Function Description
AT+CWDHCPS_DEF=<enable>,<lease time>,<start IP>,<end IP>	Set the IP allocated by WizFi360 DHCP(softAP)
Parameters and description	<p><enable>:</p> <ul style="list-style-type: none"> - 0: using the default IP address pool (xxx.xxx.xxx.2 ~ xxx.xxx.xxx.101) - 1: Enable setting the IP address range. The following parameters have to be set.

	<p><lease time>: lease time of the WizFi360 softAP. It is in the range of 1 to 2880, unit is minutes, and the default is 120 minutes.</p> <p><start IP>: start IP of the WizFi360 softAP IP arrange.</p> <p><end IP>: end IP of the WizFi360 softAP IP arrange.</p> <p>NOTE: WizFi360 IP address arrange can accommodate up to 101 IP addresses</p>	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p>	
Predecessors		
Examples	<p>Command: AT+CWMODE_DEF=2\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWDHCP_DEF=0,1\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CIPAP_DEF="192.168.0.1","192.168.0.1","255.255.255.0"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWDHCPS_DEF=1,120,"192.168.0.100","192.168.0.200"\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Command string		Function Description
AT+CWDHCPS_DEF?		Query the IP allocated by WizFi360 DHCP(softAP)
Return Values and descriptions	<p>Return Value: +CWDHCPS_DEF:<lease time>,<start IP>,<end IP>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Description: Parameter above</p>	
Examples	<p>Command: AT+CWDHCPS_DEF?\r\n</p> <p>Reply: +CWDHCPS_DEF: 120,"192.168.0.2","192.168.0.102"\r\n</p> <p>\r\n</p>	

	OK\r\n
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Command Description:

- The settings are saved to Flash, after the next reboot / power-up is still valid;
- This AT command is enabled when WizFi360 runs as SoftAP, and when DHCP is enabled.
- - <start IP> and <end IP> must be the same network segment.

3.1.2.23 AT+CWSAP_CUR : Set the WizFi360 SoftAP mode, Not saved to Flash

Command string		Function Description
AT+CWSAP_CUR=<ssid>,<pwd>,<chl>,<ecn>[,<max conn>,<ssid hidden>]		Set the WizFi360 SoftAP mode
Parameters and description	<p><ssid>: SSID of WizFi360 SoftAP. A length of ssid is 1~32 byte.</p> <p><pwd>: Password of WizFi360 SoftAP. A length of password is 8~64 byte.</p> <p><ch>: channel number. optionally having 1 to channel 13</p> <p><ecn>: password encryption method</p> <ul style="list-style-type: none"> - 0: OPEN - 2: WPA_PSK - 3: WPA2_PSK <p><max conn>: The maximum number of stations that can be connected to WizFi360. It can be set from 1 to 4, and the default value is set to 4.</p> <p><ssid hidden>: enable or disable the information broadcast</p> <ul style="list-style-type: none"> - 0: Enable broadcast (factory default) - 1: Disable broadcast 	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p>	
Predecessors	AT+CWMODE_CUR=2\r\n	
Example 1	<p>Command: AT+CWMODE_CUR=2\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWSAP_CUR="WizFi360","12345678",5,3,4,0\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	

Example 2	Command: AT+CWMODE_CUR=2\r\n Reply:\r\n OK\r\n Command: AT+CWSAP_CUR="WizFi360","12345678",5,3\r\n Reply:\r\n OK\r\n
Command string	Function Description
AT+CWSAP_CUR?	Query the WizFi360 softAP mode
Return Values and descriptions	+CWSAP_CUR:<ssid>,<pwd>,<chl>,<ecn>,<max conn>,<ssid hidden>\r\n \r\n OK\r\n Description: Parameter above
Examples	Command: AT+CWSAP_CUR?\r\n Reply: +CWSAP_CUR="WizFi360","12345678",5,3,4,0\r\n \r\n OK\r\n

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.2.24 AT+CWSAP_DEF : Set the WizFi360 SoftAP mode, Saved to Flash

Command string	Function Description
AT+CWSAP_DEF=<ssid>,<pwd>,<ch>,<ecn>[,max conn>,<ssid hidden>]	Set the WizFi360 SoftAP mode
Parameters and description	<ssid>: SSID of WizFi360 SoftAP. A length of ssid is 1~32 byte. <pwd>: Password of WizFi360 SoftAP. A length of password is 8~64 byte. <ch>: channel number. optionally having 1 to channel 13 <ecn>: password encryption method - 0: OPEN - 2: WPA_PSK - 3: WPA2_PSK <max conn>: The maximum number of stations that can be connected to WizFi360. It can be set from 1 to 4, and the default value is set to 4.

	<ssid hidden>: enable or disable broadcast - 0: Enable broadcast (factory default) - 1: Disable broadcast	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	AT+CWMODE_DEF=2\r\n	
Example 1	Command: AT+CWMODE_DEF=2\r\n Reply:\r\n OK\r\n Command: AT+CWSAP_DEF="WizFi360","12345678",5,3,4,0\r\n Reply:\r\n OK\r\n	
Example 2	Command: AT+CWMODE_DEF=2\r\n Reply:\r\n OK\r\n Command: AT+CWSAP_DEF="WizFi360","12345678",5,3\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CWSAP_DEF?		Query the WizFi360 SoftAP mode
Return Values and descriptions	+CWSAP_DEF:<ssid>,<pwd>,<chl>,<ecn>,<max conn>,<ssid hidden>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CWSAP_DEF?\r\n Reply: +CWSAP_DEF="WizFi360","12345678",5,3,4,0\r\n \r\n OK\r\n	

Command Description: This setting will be saved to Flash, after the next reboot / power still valid.

3.1.2.25 AT+CWLIF : Check station list connected to WizFi360 SoftAP

Command string		Function Description
AT+CWLIF		Query the list of connected station
Parameters and description	no	
Return Values and descriptions	<p>Return Value:</p> <p><ip>,<mac>\r\n\r\nOK\r\n</p> <p>Description:</p> <p><ip>: IP address of Station connected WizFi360</p> <p><mac>: MAC address of Station connected WizFi360</p>	
Predecessors	AT+CWMODE_DEF=2\r\n AT+CWSAP_DEF="WIZNETSZ","12345678",1,2\r\n	
Examples	<p>Command: AT+CWMODE_DEF=2\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWSAP_DEF="WizFi360","12345678",1,2\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p> <p>Command: AT+CWLIF\r\n</p> <p>Reply: "192.168.4.2","18:cf:5e:c5:ce:76"\r\n</p> <p>\r\n</p> <p>OK\r\n</p>	

Command Description:

- This command can not query a static IP address;
- This command is only valid when both DHCPs of the SoftAP, and of the Station to which WizFi360 is connected, are enabled.

3.1.2.26 AT+CWSTARTSMART : Start Smart Config

Command String	Function Description
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AT+CWSTARTSMART[=<type>]	Start Smart Config
Parameters and description	<p><type>: Start the Smart Config to a configured type</p> <ul style="list-style-type: none"> - 1: ESP-TOUCH - 2: AirKiss - 3: ESP-TOUCH + AirKiss <p>If No <type> is specified, ESP-TOUCH + Airkiss is set.</p>
Return Values and descriptions	<p>Return Value:</p> <p>\r\n</p> <p>OK\r\n</p> <p>If WizFi360 is successfully connected to the the AP using smartconfig, return the following:</p> <p>smartconfig type:<type>\r\n</p> <p>smart get wifi info\r\n</p> <p>ssid:<ssid>\r\n</p> <p>password:<password>\r\n</p> <p>WIFI CONNECTED\r\n</p> <p>WIFI GOT IP\r\n</p> <p>smartconfig connected wifi\r\n</p> <p>Description:</p> <p><type>: AIRKISS or ESPTOUCH</p> <p><ssid>: AP's ssid</p> <p><password>: AP's password</p> <ul style="list-style-type: none"> - SmartConfig is only available in the Station mode. (AT+CWMODE_CUR=1) - If WizFi360 is successfully connected to the AP, execute AT+CWSTOPSMART to stop Smart Config. Don't execute other commands while running smart config. - SmartConfig operation process is such as following: <ol style="list-style-type: none"> 1. Set the WizFi360 to station mode and start smartconfig. 2. Connect to the AP on smartphone 3. Open the ESP-TOUCH APP or AirKiss on WeChat APP.

	4. Set the AP's ssid and password on the APP and check connection to the AP on WizFi360.
Predecessors	AT+CWMODE_CUR=1
Examples	<p>Command: AT+CWMODE_CUR=1\r\n</p> <p>Reply: \r\n</p> <p>OK\r\n</p> <p>Command: AT+CWSTARTSMART\r\n</p> <p>Reply: \r\n</p> <p>OK\r\n</p> <p>After Executing the on smartphone return the following:</p> <p>Smartconfig type:ESPTOUCH\r\n</p> <p>smart get wifi info\r\n</p> <p>ssid:wizms1\r\n</p> <p>password:maker0701\r\n</p> <p>WIFI CONNECTED\r\n</p> <p>WIFI GOT IP\r\n</p> <p>smartconfig connected wifi\r\n</p>

3.1.2.27 AT+CWSTOPSMART : Stop Smart Config

Command String		Function Description
AT+CWSTOPSMART		Stop Smart Config
Parameters and description	<p>Description:</p> <p>No matter what of whether smartconfig succeeded, execute this command before executing other commands.</p>	
Return Values and descriptions	<p>Return Value:</p> <p>\r\n</p> <p>OK\r\n</p>	
Predecessors	AT+CWMODE_CUR=1	
Examples	Command: AT+CWSTOPSMART\r\n	

	Reply: \r\n OK\r\n
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3.1.2.28 AT+CWHOSTNAME : Set the Name of WizFi360 Station

Command string		Function Description
AT+CWHOSTNAME=<hostname>		Set the name of WizFi360 station
Parameters and description	<hostname>: Set the host name of WizFi360 Station(The maximum length is 32 bytes.)	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	AT+CWMODE_CUR=1\r\n	
Example 1	Command: AT+CWMODE_CUR=1\r\n Reply:\r\n OK\r\n Command: AT+CWHOSTNAME="WizFi360_1234"\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CWHOSTNAME?		Query the name of WizFi360 station
Return Values and descriptions	+CWHOSTNAME:<host name>\r\n \r\n OK\r\n If the Station mode is not enabled, the command will return: +CWHOSTNAME:<NULL>\r\n \r\n OK\r\n	
Examples	Command: AT+CWHOSTNAME?\r\n	

	Reply: +CWHOSTNAME:"WizFi360_FF6179"\r\n \r\n OK\r\n
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Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.2.29 AT+CWCOUNTRY_CUR : Set Wifi Country Code, Not saved to Flash

Command String		Function Description
AT+CWCOUNTRY_CUR=<policy>,<country_code>,<channel_option>		Set the WiFi country code
Parameters and description	<p><policy>: Configure policy of country code</p> <ul style="list-style-type: none">- 0: Set the country code to be same as the AP that WizFi360 is connected- 1: Set the country code by command <p><country_code>: country code</p> <p><channel_option>:</p> <ul style="list-style-type: none">- 0: select the channel to 1~11- 1: select the channel to 1~13- 2: select the channel to 10~11- 3: select the channel to 10~13- 4: select the channel to 14- 5: select the channel to 1~14- 6: select the channel to 3~9- 7: select the channel to 5~13	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	<p>Command: AT+CWMODE=3</p> <p>Reply: \r\n</p> <p>OK\r\n</p> <p>Command: AT+CWCOUNTRY_CUR=1,"KR",1</p>	

	Reply: \r\n OK\r\n
Command String	Function Description
AT+CWCOUNTRY_CUR?	Get the WiFi country code
Return Values and descriptions	Return Value: +CWCOUNTRY_CUR:<policy>,<country_code>,<channel_option>\r\n \r\n OK\r\n Description: Parameter above
Examples	Command: AT+CWCOUNTRY_CUR? Reply: +CWCOUNTRY_CUR=1,"KR",1\r\n \r\n OK\r\n

Command Description: This setting is not saved to the Flash, the next reboot / after power is invalid.

3.1.2.30 AT+CWCOUNTRY_DEF : Set Wifi Country Code, save to Flash

Command String	Function Description
AT+CWCOUNTRY_DEF=<policy>,<country_code>,<channel_option>	Set the WiFi country code
Parameters and description	<policy>: Configure policy of country code - 0: Set the country code to be same as the AP that WizFi360 is connected - 1: Set the country code by command <country_code>: country code <channel_option>: - 0: select the channel to 1~11 - 1: select the channel to 1~13 - 2: select the channel to 10~11 - 3: select the channel to 10~13 - 4: select the channel to 14

	- 5: select the channel to 1~14 - 6: select the channel to 3~9 - 7: select the channel to 5~13	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CWMODE=3 Reply: \r\n OK\r\n Command: AT+CWCOUNTRY_DEF=1,"KR",1 Reply: \r\n OK\r\n	
Command String		Function Description
AT+CWCOUNTRY_DEF?		Get the WiFi country code
Return Values and descriptions	Return Value: +CWCOUNTRY_DEF:<policy>,<country_code>,<channel_option>\r\n \r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CWCOUNTRY_DEF? Reply: +CWCOUNTRY_DEF=1,"KR",1\r\n \r\n OK\r\n	

Command Description: The settings are saved to Flash, after the next reboot / power-up is still valid;

3.1.3 TCP / IP command

3.1.3.1 AT+CIPMODE : Set the transmission mode

Command string		Function Description
AT+CIPMODE=<mode>		Set the transmission mode
Parameters and description	<mode>: data transmission - 0: AT command transmission mode (factory default) - 1: transparent transmission mode. It is only valid in single connection mode(AT+CIPMUX=0)	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CIPMODE=1\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPMODE?		Query the transmission mode
Return Values and descriptions	+CIPMODE:<mode>\r\nOK\r\n	
Examples	Command: AT+CIPMODE=1\r\n Reply: +CIPMODE:1\r\n OK\r\n	

Command Description:

- This setting is not saved to Flash, after the next reboot / power-invalid;
- In the transparent mode the data, and when WizFi360 as TCP Client.
- If the TCP connection is disconnected, WizFi360 continually tries to reconnect; as a TCP Sever.
- If the TCP connection is disconnected, WizFi360 reestablished listening, waiting for a client connection.
- If +++ is input to exit the transmission, AT command can send from UART to WizFi360.

3.1.3.2 AT+SAVETRANSLINK : Save the Transparent Transmission Link to Flash

a. Configure the SAVETRANSLINK command in TCP communication

Command string	Function Description
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AT+SAVETRANSLINK=<mode>,<remote IP>,<remote port>[,<type>,<TCP keep alive>]		Configure SAVETRANSLINK command in TCP
Parameters and description	<p><mode>: If Enable the SAVETRANSLINK command, the transparent transmission mode is set and WizFi360 try to TCP connection with <remote IP> and <remote port> on boot.</p> <p>-0: Disable the SAVETRANSLINK command (factory default)</p> <p>-1: Enable the SAVETRANSLINK command.</p> <p><remote IP>: Destination IP address or domain name</p> <p><remote Port>: Destination port number</p> <p><type>: TCP(default) or UDP</p> <p><TCP Keep alive>: TCP Keep-alive function</p> <p>- 0: Disable the TCP Keep-alive function (factory default)</p> <p>- 1~ 7200: Enable the TCP Keep-alive function, and set the Keep-alive packet transmission time interval, unit is second.</p>	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p>	
Predecessors	no	
Examples	<p>Command: AT+SAVETRANSLINK=1,"192.168.2.2",5000,"TCP",5\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	

b. Configure the SAVETRANSLINK command in UDP communication

Command string		Function Description
AT+SAVETRANSLINK=<mode>,<remote IP>,<remote port>[,<type>,<UDP Local port>]		Configure SAVETRANSLINK command in UDP
Parameters and description	<p><mode>: If Enable the SAVETRANSLINK command, the transparent transmission mode is set and WizFi360 try to UDP connection with <remote IP> and <remote port> on boot.</p> <p>-0: Disable the SAVETRANSLINK command (factory default)</p> <p>-1: Enable the SAVETRANSLINK command.</p> <p><remote IP>: Destination IP address or domain address</p> <p><remote port>: Destination port number</p> <p><type>: TCP(default) or UDP</p> <p><UDP Local port>: local port number</p>	

Return Values and descriptions	\r\n OK\r\n
Predecessors	
Examples	Command: AT+SAVETRANSLINK=1,"192.168.2.2",5000,"UDP",6000\r\n Reply:\r\n OK\r\n

3.1.3.3 AT+CIPMUX : Set the connection mode

Command string		Function Description
AT+CIPMUX=<mode>		Select single/multi connection mode
Parameters and description	<mode>: connection mode - 0: single connection mode (the default value) - 1: Multi-connection mode	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CIPMUX=1\r\n Reply:\r\n OK\r\n	
Command string		Function Description
AT+CIPMUX?		Confirm single/multi connection mode
Return Values and descriptions	+CIPMUX:<mode>\r\n \r\n OK\r\n	
Examples	Command: AT+CIPMUX?\r\n Reply: +CIPMUX:1\r\n \r\n OK\r\n	

Command Description:

- Only in the AT command mode data transmission (AT+CIPMODE=0), can be set to a multi-connection mode;
- This mode can only be changed after all connections are disconnected
- If the TCP server is running, it must be deleted (AT+CIPSERVER=0) before the single connection mode is activated.

3.1.3.4 AT+CIPSERVER : Establish TCP Server Connection

Command string		Function Description
AT+CIPSERVER=<mode>[,<port>]		Delete/Create TCP Server
Parameters and description	<mode>: Create or Delete TCP server -0: Delete TCP server -1: Create TCP server <port>: local port, in the range of 1 ~ 65535 (The default local port number is 333, the registered local port numbers should be avoided, see Appendix 1.)	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	AT+CIPMUX=1	
Examples	Command: AT+CIPMUX=1\r\n Reply:\r\n OK\r\n Command: AT+CIPSERVER=1,5000\r\n Reply:\r\n OK\r\n	

Command Description:

- TCP Server only can be opened in Multi-connection mode (AT+CIPMUX=1).
- When a TCP client access, it automatically assigned a network connection ID.

3.1.3.5 AT+CIPSERVERMAXCONN : Set the Maximum Connection Number of Client

Command String		Function Description
AT+CIPSERVERMAXCONN=<num>		Set Maximum Connection Number of Client
Parameters and description	<num>: the maximum number(1~4) of clients allowed to connect to the TCP or SSL server.	

Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Examples	Command: AT+CIPMUX=1\r\n Reply: \r\n OK\r\n Command: AT+CIPSERVERMAXCONN=3\r\n Reply: \r\n OK\r\n Command: AT+CIPSERVER=1,5000\r\n Reply: \r\n OK\r\n	
Command String		Function Description
AT+CIPSERVERMAXCONN?		Get Maximum Connection Number of Client
Return Values and descriptions	Return Value: +CIPSERVERMAXCONN:<num>\r\n OK\r\n Description: Parameter above	
Examples	Command: AT+CIPSERVERMAXCONN? Reply: +CIPSERVERMAXCONN=4\r\n OK\r\n	

3.1.3.6 AT+CIPSTART : Establish Network Connection (TCP Client, UDP or SSL)

a. establish a TCP Client connection

Command string	Function Description
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AT+CIPSTART=[<ID>,<type>,<remote IP>,<remote port>[,<TCP keep alive>]		TCP Client Open
Parameters and description	<p><ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1)</p> <p><type>: connection type, it should select the "TCP", "UDP" or "SSL", if select TCP, it establish the TCP Client</p> <p><remote IP>: destination IP address or domain name</p> <p><remote port>: Destination port number, in the range of 1 ~ 65535 (The default local port number is 333, the registered local port numbers should be avoided, see Appendix 1)</p> <p><TCP Keep alive>: it only operates <type> is "TCP"</p> <p>-0: Disable Keep Alive function (factory default)</p> <p>-1 to 7200: Enable Keep Alive function and set to interval time. (units : 1s)</p>	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p> <p>or</p> <p>\r\n</p> <p>ERROR\r\n</p> <p>or</p> <p>\r\n</p> <p>ALREADY CONNECTED\r\n</p> <p>(If the TCP connection is already established.)</p>	
Predecessors	-	
Example 1	<p>Command: AT+CIPSTART="TCP","192.168.1.99",5000\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Example 2	<p>Command: AT+CIPSTART=1,"TCP","www.iwiznet.cn",5000,10\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	

b. Establish communication UDP

Command string		Function Description
AT+CIPSTART=[<ID>,<type>,<remote IP>,<remote port>[,<UDP local port>,<UDP mode>]		UDP Open
Parameters and description	<p><ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1)</p> <p><type>: connection type, it should select the "TCP", "UDP" or "SSL",</p> <p><remote IP>: destination IP address or domain name</p> <p><remote Port>: Destination port number, in the range of 1 ~ 65535 (The default local port number is 333, the registered local port numbers should be avoided, see Appendix 1)</p> <p><UDP Local port>: Local port number, in the range of 1 ~ 65535 (The default local port number is 333, the registered local port numbers should be avoided, see Appendix 1)</p> <p><UDP mode>: UDP transparent transmission, if the data transparent mode, then this parameter must be 0</p> <ul style="list-style-type: none"> - 0: the destination peer entity of UDP will not change; this is the default setting. – - 1: the destination peer entity of UDP can change once. - 2: the destination peer entity of UDP is allowed to change. <p>Note: The use of <UDP mode> Parameter must configure <UDP Local port> Parameter</p>	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p> <p>or</p> <p>\r\n</p> <p>ERROR\r\n</p> <p>or</p> <p>\r\n</p> <p>ALREADY CONNECTED\r\n</p> <p>(If the UDP communication is established)</p>	
Predecessors	no	
Example 1	<p>Command: AT+CIPSTART="UDP","192.168.1.99",5000\r\n</p> <p>Reply:\r\n</p> <p>OK\r\n</p>	
Example 2	Command: AT+CIPSTART=1,"UDP","www.iwiznet.cn",5000,6000,2\r\n	

	Reply:\r\n OK\r\n
Command string	Function Description

c. establish an SSL connection

Command string	Function Description
AT+CIPSTART=[<ID>,<type>,<remote IP>,<remote port>[,<Keep alive>]	SSL Connection
Parameters and description	<p><ID>: Network connection ID (0 ~ 4), for the case of multiple connections</p> <p><type>: connection type, it should select the "TCP", "UDP" or "SSL",</p> <p><remote IP>: destination IP address or domain name</p> <p><remote port>: Destination port number, in the range of 1 ~ 65535 (The default local port number is 333, the registered local port numbers should be avoided, see Appendix 1)</p> <p><TCP Keep alive>: about Keep Alive packet, it only operates <type> is "TCP"</p> <p>-0: Don't use Keep Alive packet (factory default)</p> <p>-1 to 7200: Keep alive packet transmission time interval in 1s</p>
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p> <p>or</p> <p>\r\n</p> <p>ERROR\r\n</p> <p>If the SSL connection is already established, the response is:</p> <p>\r\n</p> <p>ALREADY CONNECTED\r\n</p>
Predecessors	no
Examples	<p>Command: AT+CIPSTART="SSL","www.iwiznet.cn",5000\r\n</p> <p>Reply: OK\r\n</p>

Command Description:

- WizFi360 only support to establish an SSL connection, if SSL connection operate, it doesn't support data transparent mode;
- SSL will occupy more cache, if the cache size exceeds, it can cause restart. Users can increase the memory size by AT+CIPSSLSIZE command.

3.1.3.7 AT+CIPSSLSIZE : Set the SSL Size

Command string		Function Description
AT+CIPSSLSIZE=<size>		SSL size
Parameters and description	<size>: Set SSL cache size, in the range: 2048 - 4096	
Return Values and descriptions	\r\nOK\r\n	
Predecessors	no	
Examples	Command: AT+CIPSSLSIZE=4096\r\n Reply:\r\nOK\r\n	

3.1.3.8 AT+CIPSTATUS : Get the Connection Status

Command string		Function Description
AT+CIPSTATUS		Get the Connection Status
Parameters and description	no	
Return Values and descriptions	<p>Return Value:</p> <p>STATUS:<state>\r\n</p> <p>+CIPSTATUS:<ID>,<type>,<remote IP>,<remote port>,<local port>,<tcp type>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Description:</p> <p><state>: WizFi360 as a network in the connection information mode Station</p> <ul style="list-style-type: none"> - 2: WizFi360 Station is connected to the AP and is assigned IP - 3: TCP or UDP Communication is connected. - 4: TCP or UDP Communication is disconnected. - 5: WizFi360 Station is not connected to the AP. <p><ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1)</p> <p><type>: connection type, "TCP" or "UDP"</p>	

	<remote IP>: destination IP address <remote Port>: Destination port number <local port>: local port number <tcp type>: - 0: Client mode - 1: Server mode
Predecessors	no
Example1	Command: AT+CIPSTATUS\r\n Reply: STATUS:2\r\n
Example2	Command: AT+CIPSTATUS\r\n Reply: STATUS:3\r\n +CIPSTATUS:1,"TCP","192.168.4.2",5000,6000,1\r\n \r\n OK\r\n

3.1.3.9 AT+CIPSEND : Send data

a. transparent mode

Command string		Function Description
AT+CIPSEND		Enter transparent mode
Return Values and descriptions	Return Value: > Description: Enter transparent transmission, with a 20-ms interval between each packet, and a maximum of 2048 bytes per packet. When a single packet containing +++ is received, WizFi360 returns to AT command mode. Please wait for at least one second before sending the next AT command. Connection mode must be set to single connection mode(AT+CIPMUX=0). <UDP mode> of AT+CIPSTART must be set to 0 in UDP communication.	
Predecessors	no	

Examples	Command: AT+CIPSEND\r\n Reply:>
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b. AT Command mode

Command string	Function Description
AT+CIPSEND=[<ID>,<length>[,<remote IP>,<remote Port>]	Set the data size and transmit the data
Parameters and description	<ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1) <length>: data length (1 ~ 2048) <remote IP>: destination IP address (It can be set in UDP mode) <remote Port>: destination port number (It can be set in UDP mode)
Return Values and descriptions	If this command is set successfully, return the following. And WizFi360 waits for the data to be transmitted. When data input is completed by the length set in <length>, WizFi360 starts data transmission. \r\n OK\r\n > If the connection is disconnected or the connection is not established, return the following: \r\n ERROR\r\n If the data is sent successfully, return the following: \r\n SEND OK\r\n If it failed, return the following: \r\n SEND FAIL\r\n
Predecessors	
Example 1	Command: AT+CIPSEND=1220\r\n Reply: \r\n

	OK\r\n >
Example 2	Command: AT+CIPSEND=0,1220,"192.168.0.10",50000\r\n Reply: \r\n OK\r\n >

3.1.3.10 AT+CIPSENDEX : Send data

Command string		Function Description
AT+CIPSENDEX=[<ID>,<length>,<remote IP>,<remote Port>]		Set the data size and transmit the data
Parameters and description	<ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1) <length>: data length (1 ~ 2048) <remote IP>: destination IP address (It can be set in UDP mode) <remote Port>: destination port number (It can be set in UDP mode)	
Return Values and descriptions	If this command is set successfully, return the following. And WizFi360 waits for the data to be transmitted. When data input is completed by the length set in <length> or \0 is input in data, WizFi360 starts data transmission. \r\n OK\r\n > If the connection is disconnected or the connection is not established, return the following: \r\n ERROR\r\n If the data is sent successfully, return the following: \r\n SEND OK\r\n If it failed, return the following: \r\n SEND FAIL\r\n	

Predecessors	no
Example 1	Command: AT+CIPSENDEX=1220\r\n Reply: \r\n OK\r\n >
Example 2	Command: AT+CIPSENDEX=0,1220,"192.168.0.10",50000\r\n Reply: \r\n OK\r\n >

3.1.3.11 AT+CIPSENDERBUF : Write data in send buffer

Command string	Function Description
AT+CIPSENDERBUF=[<ID>,<length>	Set the data size and transmit the data
Parameters and description	<ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1) <length>: to write TCP transmission data length, the length of the discarded data exceeds
Return Values and descriptions	If this command is set successfully, return the following. And WizFi360 waits for the data to be transmitted. When data input is completed by the length set in <length>, WizFi360 starts data transmission. The segment ID assigned to each data packet, starting from 1 and increases by 1 every time a data packet is written into the buffer. <current segment ID>,<segment ID successfully sent>\r\n \r\n OK\r\n > If the data length over the value of <length>, the data will be discarded, and return the following: \r\n busy\r\n If the connection is disconnected, or the connection is not established, the buffer is full, error occurs, return the following:

	\r\n ERROR\r\n In single connection mode (AT+CIPMUX=0), if the data is sent successfully, return the following: \r\n <segment ID>,SEND OK\r\n In multi-connection mode (AT+CIPMUX=1), if the data is sent successfully, return the following: \r\n <ID>,<segment ID>,SEND OK\r\n If it failed, return the following: \r\n SEND FAIL\r\n
Predecessors	no
Example1	Command: AT+CIPSEND=1024\r\n Reply:0\r\n \r\n OK\r\n >
Example2	Command: AT+CIPSEND=0,1024 Reply:0,0\r\n \r\n OK\r\n >

Command Description:

- This command can not be used for SSL connections.

3.1.3.12 AT+CIPBUFRESET : Reset the Segment ID

Command string	Function Description
AT+CIPBUFRESET[=<ID>]	Reset the segment ID

Parameters and description	<ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1)
Return Values and descriptions	Return Value: \r\n OK\r\n Description: Reset the segment ID used by AT+CIPSENDERBUF.
Predecessors	no
Example1	Command: AT+CIPBUFRESET\r\n Reply:\r\n OK\r\n
Example2	Command: AT+CIPBUFRESET=1\r\n Reply:\r\n OK\r\n

3.1.3.13 AT+CIPBUFSTATUS : Check status of TCP send buffer

Command string	Function Description
AT+CIPBUFSTATUS[=<ID>]	Check status TCP Send buffer
Parameters and description	<ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1)
Return Values and descriptions	Return Value: <next segment ID>,<segment ID sent>,< segment ID successfully sent>,<remain buffer size>,<queue>\r\n OK\r\n Description: <next segment ID>: the next segment ID obtains by AT+CIPSENDERBUF <segment ID sent>: TCP segment ID of last sent when <next segment ID> - <segment ID sent>=1 , AT+CIPBUFRESET is executed. <segment ID successfully sent>: TCP segment ID of last successfully sent <remain buffer size>: remain size of TCP send buffer <queue>: Available TCP queue number. But it is not reliable and only used for reference.

Predecessors	no
Examples	<p>Command: AT+CIPBUFSTATUS\r\n</p> <p>Reply: \r\n</p> <p>20,15,10,200,7\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Reply Description:</p> <ul style="list-style-type: none"> • 20: means that the latest segment ID is 19 <p>when AT+CIPSENDERBUF command use the next time, the segment ID returned is 20</p> <ul style="list-style-type: none"> • 15: means that the TCP segment ID 15 is the last segment sent, but this segment may not be successfully sent • 10: means that the TCP segment ID 10 was sent successfully • 200: means that the remaining size of the TCP-send-buffer is 200 bytes • 7: the available TCP queue number; it is not reliable and should be used as a reference only. when the queue number is 0, no TCP data can be sent.

Command Description:

- This command does not support SSL connection;
- TCP buffer size is 21900 byte.

3.1.3.14 AT+CIPCHECKSEQ : Check status of specified segment ID

Command string	Function Description
AT+CIPCHECKSEQ=[<ID>,<segment ID>	Check transmission of specific segment
Parameters and description	<p><ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1)</p> <p><segment ID>: segment ID when CIPSENDERBUF command use.</p>
Return Values and descriptions	<p>Return Value in single connection mode:</p> <p><segment ID>,<status>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Return Value in multi-connection mode:</p>

	<ID>,<segment ID>,<status>\r\n \r\n OK\r\n Description: <status>: Send Status -FALSE: Failed to send -TRUE: Send success
Predecessors	no
Example1	Command: AT+CIPCHECKSEQ=20\r\n Reply: 20,TRUE\r\n \r\n OK\r\n
Example2	Command: AT+CIPCHECKSEQ=1,20\r\n Reply: 1,20,TRUE\r\n \r\n OK\r\n

3.1.3.15 AT+CIPDINFO : Set received data format

Command string	Function Description
AT+CIPDINFO=<mode>	Information of Received data
Parameters and description	<mode>: -0: Don't display the Destination IP address and port number for received data -1: Display the Destination IP address and port number for received data (factory default) Note: When the module receives network data, format of received data is determined by AT+CIPDINFO and as follows. +IPD[,<ID>],<len>[,<remote IP>,<remote port>]:<data>\r\n <ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection (AT+CIPMUX=1)

	<len>: data length <remote IP>: destination IP for received data. (Only AT+CIPDINFO=1) <remote port>: destination port for received data (Only AT+CIPDINFO=1) <data>: received data.
Return Values and descriptions	\r\n OK\r\n
Predecessors	no
Examples	Command: AT+CIPDINFO=1\r\n Reply:\r\n OK\r\n

3.1.3.16 AT+CIPCLOSE : Close TCP / UDP connection

Command string		Function Description
AT+CIPCLOSE[=<ID>]		Close TCP/UDP connection
Parameters and description	<ID>: Network connection ID (0 ~ 4), it is used in case of multiple connection(AT+CIPMUX=1). When the ID is 5, close all connections. (In TCP Server mode, ID 5 is invalid)	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	no	
Example1	Command: AT+CIPCLOSE\r\n Reply:\r\n OK\r\n	
Example 2	Command: AT+CIPCLOSE=0\r\n Reply:\r\n OK\r\n	

3.1.3.17 AT+CIFSR : Check IP and MAC address

Command string	Function Description
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AT+CIFSR		Check IP and MAC address information
Return Values and descriptions	<p>Return value:</p> <p>If WizFi360 is station mode(AT+CWMODE=1), return the following:</p> <pre>+CIFSR:STAIP,<station IP address>\r\n +CIFSR:STAMAC,<station MAC address>\r\n \r\n OK\r\n</pre> <p>If WizFi360 is AP mode(AT+CWMODE=2), return the following:</p> <pre>+CIFSR:APIP,<softAP IP address>\r\n +CIFSR:APMAC,<softAP MAC address>\r\n \r\n OK\r\n</pre> <p>If WizFi360 is station+AP mode(AT+CWMODE=3), return the following:</p> <pre>+CIFSR:APIP,<softAP IP address>\r\n +CIFSR:APMAC,<softAP MAC address>\r\n +CIFSR:STAIP,<station IP address>\r\n +CIFSR:STAMAC,<station MAC address>\r\n\r\nOK\r\n</pre> <p>Description:</p> <p><softAP IP address>: The SoftAP IP address of WizFi360</p> <p><softAP MAC address>: The SoftAP MAC address of WizFi360</p> <p><station IP address>: The Station IP address of WizFi360</p> <p><station MAC address>: The Station MAC address of WizFi360</p>	
	Predecessors	no
Examples	<p>Command: AT+CIFSR\r\n</p> <p>Reply:</p> <pre>+CIFSR:APIP, 192.168.4.1\r\n</pre>	

	+CIFSR:APMAC,"02:08:dc:11:1213"\r\n
	+CIFSR:STAIP,"192.168.1.88"\r\n
	+CIFSR:STAMAC,"00:08:dc:11:12:13"\r\n
	\r\n
	OK\r\n

3.1.3.18 AT+CIPSTO : Set the TCP Server Timeout

Command string		Function Description
AT+CIPSTO=<time>		Set the TCP server Timeout
Parameters and description	<time>: TCP server timeout period in the range of 0 ~ 7200s	
Return Values and descriptions	\r\n OK\r\n	
Predecessors	AT+CIPMUX=1\r\n AT+CIPSERVER=1,1001\r\n	
Examples	Command: AT+CIPMUX=1\r\n Reply: \r\n OK\r\n Command: AT+CIPSERVER=1,1001\r\n Reply: \r\n OK\r\n Command: AT+CIPSTO=10\r\n Reply: \r\n OK\r\n	
Command string		Function Description
AT+CIPSTO?		Query the TCP server Timeout
Return Values and descriptions	+CIPSTO:<time>\r\n \r\n OK\r\n	

Examples	Command: AT+CIPSTO? Reply: +CIPSTO:180 OK
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3.1.4 Management Command

3.1.4.1 AT+GMR : Check the Firmware version

Command string		Function Description
AT+GMR		Firmware Version
Return Values and descriptions	<p>Return Value:</p> <p><AT Version>\r\n</p> <p><SDK Version>\r\n</p> <p><Compile time>\r\n</p> <p>\r\n</p> <p>OK\r\n</p> <p>Description:</p> <p><AT Version>: AT command version number in the format "AT version: xxxx (Month Date Year Hour: Minute: Second)"</p> <p><SDK Version>: SDK version number in the format "SDK version: xxx (Checksum)"</p> <p><Compile time>: compile time, the format is "compile time: (Month Date Year Hour: Minute: Second)"</p>	
Examples	<p>Command: AT+GMR\r\n</p> <p>Reply:</p> <p>AT version: 1.0.1.0 (Jun 6 2019 17:49:31)\r\n</p> <p>SDK version: 3.0.0 (a0ffff9f)\r\n</p> <p>compile time: Jun 6 2019 17:49:31\r\n</p> <p>\r\n</p> <p>OK\r\n</p>	

3.1.4.2 AT+CIUPDATE : Update the Firmware

Command string		Function Description
AT+CIUPDATE		Update the Firmware
Parameters and description	NO	

Return Values and descriptions	Return Value: +CIUPDATE: <n>\r\n \r\n OK Description: <n> : update status - 1: find the server. - 2: connect to server. - 3: get the software version. - 4: start updating.
Predecessors	no
Examples	Command: AT+CIUPDATE\r\n Reply: +CIUPDATE:<1>\r\n \r\n OK\r\n

3.1.4.3 AT+CIDOMAIN : Use DNS Function

Command string	Function Description
AT+CIDOMAIN=<domain name>	DNS Function
Parameters and description	<domain name>: The domain name, to support the length of less than 64
Return Values and descriptions	Return Value: +CIDOMAIN:<ip address>\r\n \r\n OK\r\n or DNS Fail\r\n \r\n ERROR\r\n

	Description: <ip address>: IP address corresponding to the domain name
Predecessors	no
Examples	Command: AT+CIPDOMAIN="www.iwiznet.cn"\r\n Reply: +CIPDOMAIN:"104.24.105.177"\r\n \r\n OK\r\n

3.1.4.4 AT+PING : Send Ping packet

Command string		Function Description
AT+PING=<IP address>		Send Ping packet
Parameters and description	<IP address>: IP address or domain name	
Return Values and descriptions	Return Value: +<Time>\r\n \r\n OK\r\n or \r\n ERROR\r\n Description: <Time>: response time of ping	
Predecessors	no	
Examples	Command: AT+PING="www.google.com"\r\n Reply: +46\r\n \r\n OK\r\n	

3.1.4.5 AT+CIPSNTPCFG : Set time zone and SNTP Server

Command string	Function Description
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AT+CIPSNTPCFG=<enable>[,<timezone>,<SNTP server0>,<SNTP server1>,<SNTP server2>]		SNTP and Time zone setting
Parameters and description	<p><enable>:</p> <ul style="list-style-type: none"> -0: Disable SNTP function (factory default) -1: Enable SNTP function <p><timezone>: time zone, in the range of -11 to 13; If SNTP is enabled, the <timezone> has to be set</p> <p><SNTP server0>: The first a SNTP server</p> <p><SNTP server1>: The second SNTP server</p> <p><SNTP server2>: The third SNTP server</p> <p>If you set enable and <SNTP server> parameter are not set, servers "cn.ntp.org.cn", "ntp.sjtu.edu.cn", "us.pool.ntp.org" will be used by default</p>	
Return Values and descriptions	<p>\r\n</p> <p>OK\r\n</p>	
Predecessors	no	
Examples	<p>Command: AT+CIPSNTPCFG=1,8,"cn.ntp.org.cn","ntp.sjtu.edu.cn","us.pool.ntp.org"\r\n</p> <p>Reply: OK\r\n</p>	
Command string		Function Description
AT+CIPSNTPCFG?		Query SNTP and time zone information
Return Values and descriptions	<p>+CIPSNTPCFG:<enable>,<timezone>,<SNTP server1>[,<SNTPserver2>,<SNTP server3>]\r\n</p> <p>OK\r\n</p>	
Examples	<p>Command: AT+CIPSNTPCFG?\r\n</p> <p>Reply: +CIPSNTPCFG:1,8,"cn.ntp.org.cn"\r\n</p> <p>OK\r\n</p>	

3.1.4.6 AT+CIPSNTPTIME : Check the SNTP Time

Command string		Function Description
AT+CIPSNTPTIME?		Query the SNTPTIME
Return Values and descriptions	<p>Return Value:</p> <p>+CIPSNTPTIME:<time>\r\n</p>	

	OK\r\n Description: <time>: format "Week Month Date Hour: Minute: Second Year"
Predecessors	no
Examples	Command: AT+CIPSNTPTIME?\r\n Reply: +CIPSNTPTIME: Thu Jan 01 00:00:00 1970\r\n

4 Appendix

TCP / IP protocol in the default list of ports that are already occupied

Protocol	Port
Retention	0
TCP port multi-channel server	1
Retention	2
ECHO	7
Retention	9
Retention	11
Retention	13
network status	15
FTP	20
FTP	21
TELNET	23
SMTP	25
Printer	35
Time Server	37
Name Server	42
Retention	43
Log host protocol	49
DNS	53
DHCP	67
DHCP	68
TETP	69
Gopler	70
Finger	79
HTTP	80
Remotely TELNET	107
SUN	111

NNTP	119
NTP	123
SNMP	161
SNMP	162
IPX	213
Retention	160-223

5 Pin List

Pin	Mode0	Mode1
3	RESERVED	GPIOPA_0
6	RESERVED	GPIOPB_6
7	UART1_CTS	GPIOPB_9
9	RESERVED	GPIOPB_15
10	RESERVED	GPIOPB_18
11	RESERVED	GPIOPB_13
12	RESERVED	GPIOPB_14
13	RESERVED	GPIOPB_17
14	RESERVED	GPIOPB_16
16	UART1_RTS	GPIOPB_10
19	RESERVED	GPIOPB_7
20	RESERVED	GPIOPB_8

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