USR-K3 AT Command Set

(Firmware 3014)

File version: 1.0.3

Content

1. What is the AT command.

AT command is used for controlling module. You can use AT command to configure and query the settings.

2. How to use the AT command

For USR device is in transparent mode normally, you must enter AT command mode at first. Then you can send AT command to configure or query the settings. After you configure the USR device, you should restart the USR device to make the settings take effect. Every time module restart will work in work mode rather AT command mode.
Every AT command must add character carriage return <CR> and line feed <LF>. In Hex, <CR> is 0x0D <LF> is 0x0A.

2.1. How to enter AT command mode

Please read this FAQ about entering AT command mode.
http://www.usriot.com/enter-serial-command-mode/

3. AT command set

Command	Function
Management Command	
ENTM	Exit serial AT command mode and enter work mode
Z	Reset the module
RELD	Restore default settings
E	Query/Set AT command echo function enable/disable
System Command	
VER	Query firmware version
MID	Query/Set module name
MAC	Query module MAC address
USERMAC	Set user editable MAC address
PDTIME	Query production data
WANN	Query/Set module WAN interface parameters
DNS	Query/Set DNS address
SEARCH	Query/Set searching port and keyword in LAN
RSTIM	Query/Set timeout reset time
CFGTF	Saving current settings as default settings

PING1	Set PING IP address and perform a PING action
Web Server command	
WEBU	Query/Set Web Server username and password
WEBPORT	Query/Set Web Server port number
PLANG	Query/Set default language of Web Server
Serial port and socket command	
UART1	Query/Set serial port parameters
UARTTL1	Query/Set serial package time and length
SOCKA1	Query/Set socket A parameters
SOCKLKA1	Query/Set socket A connection status
WEBSOCKPORT1	Query/Set websocket port number
RFCEN1	Query/Set baud rate synchronization function enable/disable
SOCKSL1	Query/Set non-persistent connection function enable/disable
SHORTO1	Query/Set non-persistent connection function time
SOCKTON1	Query/Set timeout reconnecting time
NETPR1	Query/Set network printing function enable/disable
UDPON1	Query/Set not judging remote IP address and port in UDP Client mode function enable/disable
UARTCLBUF	Query/Set clearing serial port cache before module establishing connection enable/disable
Modbus command	
MODTCP1	Query/Set Modbus RTU<->Modbus TCP function enable/disable
MODPOLL1	Query/Set Modbus polling enable/disable
MODTO1	Query/Set Modbus polling time
Identity packet command	
REGEN1	Query/Set status of identity packet
REGTCP1	Query/Set sending method of identity packet
REGUSR1	Query/Set user editable identity packet data, only support ASCII
REGUSER1	Query/Set user editable identity packet data, support ASCII and HEX
REGCLOUD1	Query/Set USR Cloud ID and password
Heartbeat packet command	
HEARTEN1	Query/Set heartbeat packet enable/disable
HEARTTP1	Query/Set type of heartbeat packet
HEARTTM1	Query/Set heartbeat packet interval
HEARTDT1	Query/Set user editable heartbeat packet data, only support ASCII
HEARTUSER1	Query/Set user editable heartbeat packet data, support ASCII and HEX
HTTP command	
HTPTP1	Query/Set HTTP requesting method in HTTPD Client mode
HTPURL1	Query/Set URL in HTTPD Client mode

HTPHEAD1	Query/Set HTTP header in HTTPD Client mode
HTPCHD1	Query/Set filtering HTTP header of response data enabled/disabled in HTTPD Client mode

4. AT command details

Special Characters		
Character	Note	Hex
<CR>	Carriage Return	0x0D
<LF>	Line Feed	0x0A

4.1. AT+ENTM

Format	
Set	AT+ENTM<CR>
Return	<CR><LF>+OK<CR><LF>

4.2. AT+Z

Format	
Set	AT+Z<CR>
Return	<CR><LF>+OK<CR><LF>

4.3. AT+RELD

Format	
Set	AT+RELD<CR>
Return	<CR><LF>+OK<CR><LF>

4.4. AT+E

Parameter	Description	Default Value	Range
<Status>	Status of AT command Echo function	ON	ON/OFF

Format	
Query	AT+E<CR>
Return	<CR><LF>+OK=<Status><CR><LF>
Set	AT+E=<Status><CR>
Return	<CR><LF>+OK<CR><LF>

4.5.AT+VER

Parameter	Description
<VER>	Firmware version of the module
Format	
Query	AT+VER<CR>
Return	<CR><LF>+OK=<VER><CR><LF>

4.6.AT+MID

Parameter	Description	Default Value	Range
<Name>	Module name	USR-K3	1~15 Bytes
Format			
Query	AT+MID<CR>		
Return	<CR><LF>+OK=<Name><CR><LF>		
Set	AT+MID=<Name><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.7.AT+MAC

Parameter	Description	Range
<MAC>	MAC address of the module.	USR MAC start with D8B04C
Format		
Query	AT+MAC<CR>	
Return	<CR><LF>+OK=<MAC><CR><LF>	

4.8.AT+USERMAC

Parameter	Description	Range
<MAC>	MAC address	USR MAC start with D8B04C

Format	
Set	AT+USERMAC=<MAC><CR>
Return	<CR><LF>+OK<CR><LF>

4.9. AT+PDTIME

Parameter	Description
<Data>	Production data of module.
Format	
Query	AT+PDTIME<CR>
Return	<CR><LF>+OK=<Data><CR><LF>

4.10. AT+WANN

Parameter	Description	Default Value	Range
<Mode>	Method of getting IP	STATIC	STATIC: Get the IP address manually
			DHCP: Get the IP address automatically
<IP address>	IP address	192.168.0.7	0.0.0.0~255.255.255.255
<Mask>	Subnet mask	255.255.255.0	0.0.0.0~255.255.255.255
<Gateway>	Gateway address	192.168.0.1	0.0.0.0~255.255.255.255
Format			
Query	AT+WANN<CR>		
Return	<CR><LF>+OK=<Mode>,<IP address>,<Mask>,<Gateway><CR><LF>		
Set	AT+WANN=<Mode>,<IP address>,<Mask>,<Gateway><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.11. AT+DNS

Parameter	Description	Default Value	Range
<Address>	DNS server address	192.168.0.1	0.0.0.0~255.255.255.255
Format			
Query	AT+DNS<CR>		
Return	<CR><LF>+OK=<Address><CR><LF>		
Set	AT+DNS=<Address><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.12. AT+SEARCH

Parameter	Description	Default Value	Range
<Port>	UDP port for searching	48899	1~65535
<Keyword>	Searching keyword	WWW.USR.CN	1~20 bytes
Format			
Query	AT+SEARCH<CR>		
Return	<CR><LF>+OK=<Port>,<Keyword><CR><LF>		
Set	AT+SEARCH=<Port>,<Keyword><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.13. AT+RSTIM

Parameter	Description	Default Value	Range
<Time>	Timeout reset time	3600s	0, 60-65535s
Format			
Query	AT+RSTIM<CR>		
Return	<CR><LF>+OK=<Time><CR><LF>		
Set	AT+RSTIM=<Time><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.14. AT+CFGTF

Parameter	Range
<Status>	Saved: Saving current setting as default settings.
Format	
Set	AT+CFGTF<CR>
Return	<CR><LF>+OK=<Status><CR><LF>

4.15. AT+PING1

Parameter	Description	Range
<Address>	IP address or domain name	IP address: 0.0.0.0~255.255.255.255
		Domain name: 1-30 bytes

Format	
Set	AT+PING1=<Address><CR>
Return	<CR><LF>+OK=SUCCESS<CR><LF>

4.16. AT+WEBU

Parameter	Description	Default Value	Range
<Username>	Web Server username	admin	1~6 bytes
<Password>	Web Server password	admin	1~6 bytes
Format			
Query	AT+WEBU<CR>		
Return	<CR><LF>+OK=<Username>,<Password><CR><LF>		
Set	AT+WEBU=<Username>,<Password><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.17. AT+WEBPORT

Parameter	Description	Default Value	Range
<Port>	Web Server Port	80	1~65535
Format			
Query	AT+WEBPORT<CR>		
Return	<CR><LF>+OK=<Port><CR><LF>		
Set	AT+WEBPORT=<Port><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.18. AT+PLANG

Parameter	Description	Default Value	Range
<Language>	Language of Web Server	EN	EN: English
			CH: Chinese
Format			
Query	AT+PLANG<CR>		
Return	<CR><LF>+OK=<Language><CR><LF>		
Set	AT+PLANG=<Language><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.19. AT+UART1

Parameter	Description	Default Value	Range
<Baud rate>	Baud rate	115200	600~1024000
<Data bits>	Data bits	8	5,6,7,8
<Stop bits>	Stop bits	1	1,2
<Parity>	Parity	NONE	NONE,EVEN,ODD,MASK,SPACE
<Flow Control>	Flow control	NFC	NFC: No flow control
			FC: Hardware flow control(RTS/CTS)
Format			
Query	AT+UART1<CR>		
Return	<CR><LF>+OK=<Baud rate>,<Data bits>,<Stop bits>,<Parity><Flow Control><CR><LF>		
Set	AT+UART1=<Baud rate>,<Data bits>,<Stop bits>,<Parity><Flow Control><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.20. AT+UARTTL1

Parameter	Description	Default Value	Range
<Time>	Serial package time	0	0~255 ms
<Length>	Serial package length	0	0~1460 bytes
Format			
Query	AT+UARTTL1<CR>		
Return	<CR><LF>+OK=<Time>,<Length><CR><LF>		
Set	AT+UARTTL1=<Time>,<Length><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.21. AT+SOCKA1

Parameter	Description	Default Value	Range
<Protocol>	Network protocol	TCPS	TCPS: TCP Server mode
			TCPC: TCP Client mode
			UDPS: UDP Server mode
			UDPC: UDP Client mode
			HTPC: HTTP Client mode

<IP address>	Remote server IP address (in client mode)	192.168.0.7	0.0.0.0~255.255.255.255
<Port>	Port number	23	1~65535 Local port in Server mode Remote port in Client mode
Format			
Query	AT+SOCKA1<CR>		
Return	<CR><LF>+OK=<Protocol>,<IP address>,<Port><CR><LF>		
Set	AT+SOCKA1=<Protocol>,<IP address>,<Port><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.22. AT+SOCKLKA1

Parameter	Description	Default Value	Range
<Status>	Status of socket	LISTEN	IDLE: Module is booting or disable Keep-alive
			LISTEN: Waiting client (Module is in TCP Server mode)
			CONNECTING: Module is connecting to TCP Server (Module is in TCP Client mode)
			CONNECTED: TCP connection is established
			CONNECTED(n): n is the number of TCP clients which connect to module (Module is in TCP server mode)
			ERROR: Connection Error
Format			
Query	AT+SOCKLKA1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+SOCKLKA1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.23. AT+WEBSOCKPORT1

Parameter	Description	Default Value	Range
<Port>	Port of websocket	6432	1~65535
Format			
Query	AT+WEBSOCKPORT1<CR>		
Return	<CR><LF>+OK=<Port><CR><LF>		
Set	AT+WEBSOCKPORT1=<Port><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.24. AT+RFCEN1

Parameter	Description	Default Value	Range
<Status>	Status of baud rate synchronization function	ON	ON/OFF
Format			
Query	AT+RFCEN1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+RFCEN1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.25. AT+SOCKSL1

Parameter	Description	Default Value	Range
<Status>	Status of non-persistent connection function	OFF	ON/OFF
Format			
Query	AT+SOCKSL1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+SOCKSL1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.26. AT+SHORTO1

Parameter	Description	Default Value	Range
<Time>	Non-persistent connection function time	3s	2-255s

Format	
Query	AT+SHORTO1<CR>
Return	<CR><LF>+OK=<Time><CR><LF>
Set	AT+SHORTO1=<Time><CR>
Return	<CR><LF>+OK<CR><LF>

4.27. AT+SOCKTON1

Parameter	Description	Default Value	Range
<Time>	Timeout reconnecting time	86400s	1-99999s
Format			
Query	AT+SOCKTON1<CR>		
Return	<CR><LF>+OK=<Time><CR><LF>		
Set	AT+SOCKTON1=<Time><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.28. AT+NETPR1

Parameter	Description	Default Value	Range
<Status>	Status of network printing function	OFF	ON/OFF
Format			
Query	AT+NETPR1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+NETPR1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.29. AT+UDPON1

Parameter	Description	Default Value	Range
<Status>	Status of not judging remote IP address and port in UDP Client mode function	OFF	ON/OFF
Format			
Query	AT+UDPON1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+UDPON1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.30. AT+UARTCLBUF

Parameter	Description	Default Value	Range
<Status>	Status of clearing serial port cache before module establishing connection function	OFF	ON/OFF
Format			
Query	AT+UARTCLBUF<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+UARTCLBUF=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.31. AT+MODTCP1

Parameter	Description	Default Value	Range
<Status>	Status of Modbus RTU<->Modbus TCP function	OFF	ON/OFF
Format			
Query	AT+MODTCP1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+MODTCP1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.32. AT+MODPOLL1

Parameter	Description	Default Value	Range
<Status>	Status of Modbus polling function	OFF	ON/OFF
Format			
Query	AT+MODPOLL1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+MODPOLL1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.33. AT+MODTO1

Parameter	Description	Default Value	Range
<Time>	Modbus polling time	200s	200-9999s

Format	
Query	AT+MODTO1<CR>
Return	<CR><LF>+OK=<Time><CR><LF>
Set	AT+MODTO1=<Time><CR>
Return	<CR><LF>+OK<CR><LF>

4.34. AT+REGEN1

Parameter	Description	Default Value	Range
<Status>	Status of identity packet	OFF	OFF: Disabling the identity packet
			MAC: Using MAC address as identity packet
			CLOUD: Using USR Cloud ID as Identity packet
			USR：Using user editable identity packet
Format			
Query	AT+REGEN1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+REGEN1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.35. AT+REGTCP1

Parameter	Description	Default Value	Range
<Method>	Sending method of identity packet	First	First: Sending identity packet before first package after establishing connection
			Every: Sending identity packet in every package.
			ALL: Sending identity packet with both methods.
Format			
Query	AT+REGTCP1<CR>		
Return	<CR><LF>+OK=<Method><CR><LF>		
Set	AT+REGTCP1=<Method><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.36. AT+REGUSR1

Parameter	Description	Default Value	Range
<Data>	User editable identity packet data	www.usr.cn	Length: 1~40 bytes
Format			
Query	AT+REGUSR1<CR>		
Return	<CR><LF>+OK=<Data><CR><LF>		
Set	AT+REGUSR1=<Data><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.37. AT+REGUSER1

Parameter	Description	Default Value	Range
<Data>	User editable identity packet data	www.usr.cn	ASCII: Less than 40 bytes
			HEX: Less than 80 bytes
<Type>	Type of user editable identity packet	ASCII	ASCII/HEX
Format			
Query	AT+REGUSER1<CR>		
Return	<C+R><LF>+OK=<Data>,<Type><CR><LF>		
Set	AT+REGUSER1=<Data>,<Type><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.38. AT+REGCLOUD1

Parameter	Description	Range
<ID>	USR Cloud ID	Length: 20 bytes
<Password>	USR Cloud password	Length: 8 bytes
Format		
Query	AT+REGCLOUD1<CR>	
Return	<C+R><LF>+OK=<ID>,<Password><CR><LF>	
Set	AT+REGCLOUD1=<ID>,<Password><CR>	
Return	<CR><LF>+OK<CR><LF>	

4.39. AT+HEARTEN1

Parameter	Description	Default Value	Range
<Status>	Status of heartbeat packet	OFF	ON/OFF
Format			
Query	AT+HEARTEN1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+HEARTEN1=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.40. AT+HEARTTP1

Parameter	Description	Default Value	Range
<Type>	Type of heartbeat packet	NONE	NONE: Disabling the heartbeat packet
			NET: Sending heartbeat packet to network
			COM: Sending heartbeat packet to serial port
Format			
Query	AT+HEARTTP1<CR>		
Return	<CR><LF>+OK=<Type><CR><LF>		
Set	AT+HEARTTP1=<Type><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.41. AT+HEARTTM1

Parameter	Description	Default Value	Range
<Time>	Heartbeat packet interval	30 seconds	1~65535 seconds
Format			
Query	AT+HEARTTM1<CR>		
Return	<CR><LF>+OK=<Time><CR><LF>		
Set	AT+HEARTTM1=<Time><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.42. AT+HEARTDT1

Parameter	Description	Default Value	Range
<Data>	Heartbeat packet data	www.usr.cn	Length: 1~40 bytes
Format			
Query	AT+HEARTDT1<CR>		
Return	<CR><LF>+OK=<Data><CR><LF>		
Set	AT+HEARTDT1=<Data><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.43. AT+HEARTUSER1

Parameter	Description	Default Value	Range
<Data>	User editable heartbeat packet data	www.usr.cn	ASCII: Less than 40 bytes HEX: Less than 80 bytes
<Type>	Type of user editable heartbeat packet	ASCII	ASCII/HEX
Format			
Query	AT+HEARTUSER1<CR>		
Return	<C+R><LF>+OK=<Data>,<Type><CR><LF>		
Set	AT+HEARTUSER1=<Data>,<Type><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.44. AT+HTPTP1

Parameter	Description	Default Value	Range
<Method>	HTTP requesting method in HTTPD Client mode	GET	GET/POST
Format			
Query	AT+HTPTP1<CR>		
Return	<CR><LF>+OK=<Method><CR><LF>		
Set	AT+HTPTP1=<Method><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.45. AT+HTPURL1

Parameter	Description	Default Value	Range
<URL>	HTTP URL in HTTPD Client mode	/1.php?	Length: 1~100 bytes
Format			
Query	AT+HTPURL1<CR>		
Return	<CR><LF>+OK=<URL><CR><LF>		
Set	AT+HTPURL1=<URL><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.46. AT+HTPHEAD1

Parameter	Description	Default Value	Range
<Header>	HTTP header in HTTPD Client mode	User_Agent: Mozilla/4.0	Length: 0~180 bytes, <<CRLF>> is Carriage return and line feed.
Format			
Query	AT+HTPHEAD1<CR>		
Return	<CR><LF>+OK=<Header><CR><LF>		
Set	AT+HTPHEAD1=<Header><CR>		
Return	<CR><LF>+OK<CR><LF>		

4.47. AT+HTPCHD1

Parameter	Description	Default Value	Range
<Status>	Status of filtering HTTP header of response data in HTTPD Client mode	OFF	ON/OFF
Format			
Query	AT+HTPCHD1<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+HTPCHD1=<Status><CR>		
Return:	<CR><LF>+OK<CR><LF>		

5. Contact

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7. Update History

2016-12-30 V1.0.0 created. Based on firmware version 3013.
2017-06-12 V1.0.1 updated. Based on firmware version 3013. Modifying some words.
2017-06-16 V1.0.2 updated. Based on firmware version 3014. Adding 17 new AT commands.
2017-10-19 V1.0.3 updated. Based on firmware version 3014. Modifying some specific words to standard terms, adding more details in **3. AT command set**(function description about commands) and **4. AT command details**(instructions for commands) to become more understandable and formatting the whole command set arrangement.