

# USR-M0 series AT Command Set

(Firmware 4016)

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## 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
<b>Management Command</b>	
<b>ENTM</b>	Exit serial AT command mode and enter work mode
<b>Z</b>	Restart the USR device
<b>RELD</b>	Reset to factory settings
<b>E</b>	Query/Set AT command echo
<b>System Command</b>	
<b>VER</b>	Query firmware version
<b>MID</b>	Query/Set module name
<b>MAC</b>	Query MAC address
<b>USERMAC</b>	Set user MAC address
<b>WANN</b>	Query/Set device DHCP or Static IP, IP address and Mask and gateway address.
<b>DNS</b>	Query/Set DNS address
<b>Settings webpage command</b>	
<b>WEBU</b>	Query settings webpage username and password
<b>WEBPORT</b>	Query/Set settings webpage port number

UART and socket command	
<b>UART</b>	Query/Set UART parameters
<b>SOCK</b>	Query/Set socket networking protocol
<b>SOCKLK</b>	Query socket connection status
<b>SOCKPORT</b>	Query/Set websocket port number
<b>TCPSE</b>	Query/Set TCP connection kick-off method
Identity header command	
<b>REGEN</b>	Query/Set identity header enabled/disabled
<b>REGTCP</b>	Query/Set identity header method
<b>REGUSR</b>	Query/Set identity header data
<b>REGCLOUD</b>	Query/Set USR Cloud ID and password
Heartbeat package command	
<b>HEARTEN</b>	Query/Set heartbeat package enabled/disabled
<b>HEARTTP</b>	Query/Set heartbeat package method
<b>HEARTTM</b>	Query/Set heartbeat time interval
<b>HEARTDT</b>	Query/Set heartbeat package data
HTTP command	
<b>HTPTP</b>	Query/Set HTTP method
<b>HTPURL</b>	Query/Set URL
<b>HTPHEAD</b>	Query/Set HTTP header
<b>HTPCHD</b>	Query/Set filter HTTP header of response data

## 4. AT command details

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

### 4.1. AT+ENTM

Format	
Query	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=rebooting...<CR><LF>

## 4.4.AT+E

Parameter	Description	Default Value	Range
<Status>	Echo of AT command	ON	ON: Enable the echo
			OFF: Disable the echo
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
<b>Format</b>			
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
<b>Format</b>		
Query	AT+MAC<CR>	
Return	<CR><LF>+OK=<MAC><CR><LF>	

## 4.8. AT+USERMAC

Parameter	Description	Range
<USERMAC>	Customer's MAC address	6 bytes HEX data
<b>Format</b>		
Query:	AT+MAC<CR>	
Return:	<CR><LF>+OK=<MAC><CR><LF>	
Set:	AT+USERMAC=<MAC><CR>	
Return:	<CR><LF>+OK<CR><LF>	

## 4.9. AT+WANN

Parameter	Description	Default Value	Range
<Mode>	Method of how to get IP address	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>		

## 4.10. AT+DNS

Parameter	Description	Default Value	Range
<Address>	DNS server address	208.67.222.222	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>		

## 4.11. AT+WEBU

Parameter	Description	Default Value	Range
<Username>	Username of module	admin	1~5 bytes
<Password>	Password of module	admin	1~5 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>		

## 4.12. AT+WEBPORT

Parameter	Description	Default Value	Range
<Port>	Port of settings webpage	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>		

## 4.13. AT+UART

Parameter	Description	Default Value	Range
<Baudrate>	Baudrate	115200	600~460800
<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)
			485: 485_EN output RS485 chip DE signal



Format	
Query	AT+UART<CR>
Return	<CR><LF>+OK=<Baudrate>,<Data bits>,<Stop bits>,<Parity><Flow Control><CR><LF>
Set	AT+UART=<Baudrate>,<Data bits>,<Stop bits>,<Parity><Flow Control><CR>
Return	<CR><LF>+OK<CR><LF>

## 4.14. AT+SOCK

Parameter	Description	Default Value	Range
<Protocol>	Network protocol	TCPC	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)	192.168.0.201	0.0.0.0~255.255.255.255
<Port>	Port number	8234	1~65535 Local port in Server mode Remote port in Client mode
Format			
Query	AT+SOCK<CR>		
Return	<CR><LF>+OK=<Protocol>,<IP address>,<Port><CR><LF>		
Set	AT+SOCK=<Protocol>,<IP address>,<Port><CR>		
Return	<CR><LF>+OK<CR><LF>		

### 4.15. AT+SOCKLK

Parameter	Description	Default Value	Range
<Status>	Status of socket	Disconnected	Connected: TCP connection has established
			Disconnected: TCP connection doesn't establish.
<b>Format</b>			
Query:	AT+SOCKLK<CR>		
Return:	<CR><LF>+OK=<Status><CR><LF>		
Set:	AT+SOCKLK=<Status><CR>		
Return:	<CR><LF>+OK<CR><LF>		

### 4.16. AT+SOCKPORT

Parameter	Description	Default Value	Range
<Port>	Local port	0	0~65535,0 is to use a random port
<b>Format</b>			
Query	AT+SOCKPORT<CR>		
Return	<CR><LF>+OK=<Port><CR><LF>		
Set	AT+SOCKPORT=<Port><CR>		
Return	<CR><LF>+OK<CR><LF>		

### 4.17. AT+TCPSE

Parameter	Description	Default Value	Range
<Method>	Method of TCP server handle TCP clients	Keep	Keep: If up to maximum clients, new connection can not be established.
			Kick: If up to maximum clients, the first client will be kicked off.
Format			
Query:	AT+TCPSE<CR>		
Return:	<CR><LF>+OK=<Method><CR><LF>		
Set:	AT+TCPSE=<Method><CR>		
Return:	<CR><LF>+OK<CR><LF>		

### 4.18. AT+REGEN

Parameter	Description	Default Value	Range
<Content>	Content of identity header	OFF	OFF: Disable the identity header
			MAC: Use MAC address as identity header
			USR: Use the header which you appointed
Format			
Query	AT+REGEN<CR>		
Return	<CR><LF>+OK=<Content><CR><LF>		
Set	AT+REGEN=<Content><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.19. AT+REGTCP

Parameter	Description	Default Value	Range
<Method>	Method of identity header	First	First: Send Identity header before first packet after the connected
			Every: Send Identity header in every packet.
			ALL: Sending identity header with both methods.
Format			
Query	AT+REGTCP<CR>		
Return	<CR><LF>+OK=<Method><CR><LF>		
Set	AT+REGTCP=<Method><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.20. AT+REGUSR

Parameter	Description	Default Value	Range
<Data>	Identity header you appointed	www.usr.cn	Length: 1~40 bytes
Format			
Query	AT+REGUSR<CR>		
Return	<CR><LF>+OK=<Data><CR><LF>		
Set	AT+REGUSR=<Data><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.21. AT+HEARTEN

Parameter	Description	Default Value	Range
<Status>	Status of heartbeat packet	OFF	ON: Enable the heartbeat packet
			OFF: Disable the heartbeat packet
Format			
Query	AT+HEARTEN<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+HEARTEN=<Status><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.22. AT+HEARTTP

Parameter	Description	Default Value	Range
<Type>	Type of heartbeat packet	NET	NET: Send heartbeat packet to network
			COM: Send heartbeat to UART
Format			
Query	AT+HEARTTP<CR>		
Return	<CR><LF>+OK=<Type><CR><LF>		
Set	AT+HEARTTP=<Type><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.23. AT+HEARTTM

Parameter	Description	Default Value	Range
<Time>	Heartbeat time interval	30	1~65535 seconds
Format			
Query	AT+HEARTTM1<CR>		
Return	<CR><LF>+OK=<Time><CR><LF>		
Set	AT+HEARTTM11=<Time><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.24. AT+HEARTDT

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

## 4.25. HTPTP

Parameter	Description	Default Value	Range
<Method>	HTTP method	GET	GET: HTTP GET
			POST: HTTP POST
<b>Format</b>			
Query	AT+HTPTP1<CR>		
Return	<CR><LF>+OK=<Method><CR><LF>		
Set	AT+H=HTPTP1=<Method><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.26. HTPURL

Parameter	Description	Default Value	Range
<URL>	Set URL	/1.php?	1~100 bytes
<b>Format</b>			
Query	AT+HTPURL<CR>		
Return	<CR><LF>+OK=<URL><CR><LF>		
Set	AT+HTPURL=<URL><CR>		
Return	<CR><LF>+OK<CR><LF>		

## 4.27. HTPHEAD

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

## 4.28. HTPCHD

Parameter	Description	Default Value	Range
<Status>	Filter header in response	OFF	ON: Enable the filter of HTTP header
			OFF: Disable the filter of HTTP header
Format			
Query	AT+HTPCHD<CR>		
Return	<CR><LF>+OK=<Status><CR><LF>		
Set	AT+HTPCHD=<Status><CR>		
Return:	<CR><LF>+OK<CR><LF>		

## 5. Contact

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## 7. Update History

2017-12-30 V1.0.0 created. Based on firmware version 4016