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Info@Atrinelec.com



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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
Management Command	
ENTM	Exit serial AT command mode and enter work mode
Z	Restart the USR device
RELD	Restore factory settings
E	Query/Set AT command echo
System Command	
VER	Query firmware version
MID	Query/Set module name
MAC	Query MAC address
USERMAC	Set Customer's self-defined MAC address
WANN	Query/Set device DHCP or Static IP, IP address and Mask and gateway address.
DNS	Query/Set DNS address
Settings webpage command	
WEBU	Query settings webpage username and password
WEBPORT	Query/Set settings webpage port number

UART and socket command	
UART	Query/Set UART parameters
SOCK	Query/Set socket Network protocol parameter
SOCKLK	Query socket TCP connection connected/disconnected
SOCKPORT	Query/Set Local port number
TCPSE	Query/Set TCP connection kick-off method
Identity header command	
REGEN	Query/Set content of identity header
REGTCP	Query/Set Sending Method of identity header
REGUSR	Query/Set Customer's Self-defined identity header data
REGCLOUD	Query/Set USR Cloud ID and password
Heartbeat package command	
HEARTEN	Query/Set heartbeat package enabled/disabled
HEARTTP	Query/Set type of heartbeat package
HEARTTM	Query/Set heartbeat time interval
HEARTDT	Query/Set heartbeat package data
HTTP command	
HTPTP	Query/Set HTTP method
HTPURL	Query/Set URL
HTPHEAD	Query/Set HTTP header
HTPCHD	Query/Set filtering HTTP header of response data enabled/disabled

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	Module name (Not certain)	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
<USERMAC>	Customer's self-defined MAC address	6 bytes HEX data and the first byte must be a double
Format		
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.
Format			
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
Format			
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 Customer's Self-defined identity header
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 Sending 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>	Customer's Self-defined identity header data	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>
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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>	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. AT+HTPTP

Parameter	Description	Default Value	Range
<Method>	HTTP method	GET	GET: HTTP GET
			POST: HTTP POST
Format			
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. AT+HTPURL

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

4.27. AT+HTPHEAD

Parameter	Description	Default Value	Range
<Header>	HTTP Header	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>		

4.28. AT+HTPCHD

Parameter	Description	Default Value	Range
<Status>	Status of filtering HTTP header of response data	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

Company: Jinan USR IOT Technology Limited

Address: Floor 11, Building No.1, No.1166, Xinluo Street, Gaoxin District, Jinan city, Shandong province, 250101 China

Tel: 86-531-88826739

Web: www.usriot.com

Support: h.usriot.com

Email: sales@usr.cn

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7. Update History

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