

USR-BLE100,101 AT Command Set

(Firmware BLE101-V1.0.5)

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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
Common command	
NAME	Query/Set module name
MODE	Query/Set module work mode
MAC	Query MAC address
CIVER	Query firmware version
TPL	Query/Set Transmit Power
SHOW	Query module information
PASS	Query/Set module password
PASSEN	Query/Set connection authentication ON/OFF
UART	Query/Set UART parameters
UARTTM	Query/Set serial package time
AUTOSLEEP	Query/Set Autosleep Function
DEEPSLEEP	Set entering Deepsleep Mode
HIBERNATE	Set entering Hibernate Mode
HELLO	Query/Set Welcome Words
ENTM	Exit serial AT command mode

RELOAD	Restore factory default settings
Z	Restart the module
Connection command	
LINK	Query module connection status
SCAN	Query surrounding slave device
CONN	Connecting to device by setting Index Number
CONNADD	Query/Set default connection device's MAC address
DISCONN	Set disconnecting current connection
ADP	Query/Set Broadcast ON/OFF
ADPTM	Query/Set Broadcasting Speed
ADPTIM	Query/Set Self-defined Broadcasting Speed
Special function command	
BATEN	Query/Set Battery Test ON/OFF
MAXPUT	Query/Set Max Output ON/OFF
TRENC	Query/Set PC1 Encryption Transmission ON/OFF
IBEAON	Query/Set iBeacon Function
UUID	Query/Set Broadcast data

4. AT command details

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

4.1. AT+NAME

Parameter	Description	Default Value	Range
<Name>	Module name	USR-BLE100/101 1	Less than 10 bytes
Format			
Query	AT+NAME?<CR>		
Return	<CR><LF>+NAME:<Name><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+NAME=<Name><CR>		
Return	<CR><LF>+NAME:<Name><CR><LF><CR><LF>OK<CR><LF>		

4.2. AT+MODE

Parameter	Description	Default Value	Range
<Mode>	Module work mode	Slave	M/Master: Master device mode
			S/Slave: Slave device mode
			B/iBeacon: iBeacon mode
			F/Mesh: Mesh Network mode
Format			
Query	AT+MODE?<CR>		
Return	<CR><LF>+MODE:<Mode><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+MODE=<Mode><CR>		
Return	<CR><LF>+MODE:<Mode><CR><LF><CR><LF>OK<CR><LF>		

Note: In Mesh mode. Data must begin with ::. For example, if user want to send 1234, need send ::1234.

4.3. AT+MAC

Parameter	Description
<MAC>	Module MAC address
Format	
Query	AT+MAC?<CR>
Return	<CR><LF>+MAC:<MAC><CR><LF><CR><LF>OK<CR><LF>

4.4. AT+CIVER

Parameter	Description
<Version>	Module firmware version
Format	
Query	AT+CIVER?<CR>
Return	<CR><LF>+VER:<Version><CR><LF><CR><LF>OK<CR><LF>

4.5. AT+TPL

Parameter	Description	Default Value	Range
<Size>	Module transmitting power	7->0dbm	1/2/3/4/5/6/7/8:-18/-12/-6/-3/-2/-1/0/+3dbm

Format	
Query	AT+TPL?<CR>
Return	<CR><LF>+TPL:<Size><CR><LF><CR><LF>OK<CR><LF>
Set	AT+TPL=<Size><CR>
Return	<CR><LF>+TPL:<Size><CR><LF><CR><LF>OK<CR><LF>

4.6. AT+SHOW

Format	
Query	AT+SHOW?<CR>
Return	<CR><LF>+SHOW:<CR><LF>NAME :name<CR><LF>MODE :mode<CR><LF>MAC:mac<CR><LF>PASS :pass<CR><LF>ADP :size<CR><LF>ADPTM:time<CR><LF>LINK :status<CR><LF>Battery: num<CR><LF>OK<CR><LF>

4.7. AT+PASS

Parameter	Description	Default Value	Range
<Password>	Module password	000000	6 bytes
Format			
Query	AT+PASS?<CR>		
Return	<CR><LF>+PASS:<Password><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+PASS=<Password><CR>		
Return	<CR><LF>+PASS:<Password><CR><LF><CR><LF>OK<CR><LF>		

4.8. AT+PASSEN

Parameter	Description	Default Value	Range
<Status>	Status of connection authentication function	OFF	ON/OFF
Format			
Query	AT+PASSEN?<CR>		
Return	<CR><LF>+PASSEN:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+PASSEN=<Status><CR>		
Return	<CR><LF>+PASSEN:<Status><CR><LF><CR><LF>OK<CR><LF>		

4.9. AT+UART

Parameter	Description	Default Value	Range
<Baudrate>	Baudrate	57600	2400-115200
<Data bits>	Data bits	8	5,6,7,8
<Parity>	Parity	0	0:No parity
			1:Odd parity
			2:Even parity
<Stop bits>	Stop bits	0	0:1 stop bit
			1:1.5 stop bits
			2:2 stop bits
Format			
Query	AT+UART?<CR>		
Return	<CR><LF>+UART:<Baudrate>,<Data bits>,<Parity>,<Stop bits><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+UART=<Baudrate>,<Data bits>,<Parity>,<Stop bits><CR>		
Return	<CR><LF>+UART:<Baudrate>,<Data bits>,<Parity>,<Stop bits><CR><LF><CR><LF>OK<CR><LF>		

4.10. AT+UARTTM

Parameter	Description	Default Value	Range
<Time>	Serial package time	100ms	0-300ms
Format			
Query	AT+UARTTM?<CR>		
Return	<CR><LF>+UARTTM:<Time><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+UARTTM=<Time><CR>		
Return	<CR><LF>+UARTTM:<Time><CR><LF><CR><LF>OK<CR><LF>		

4.11. AT+AUTOSLEEP

Parameter	Description	Default Value	Range
<Status>	Status of Autosleep function	OFF	ON/OFF
<Time>	Waiting Time to enter Autosleep mode	<Time>=4,Waiting Time=4*5s	Waiting Time =<Time>*5s,1*5s-99*5s

Format	
Query	AT+AUTOSLEEP?<CR>
Return	<CR><LF>+AUTOSLEEP:<Status>,<Time><CR><LF><CR><LF>OK<CR><LF>
Set	AT+AUTOSLEEP=<Status>,<Time><CR>
Return	<CR><LF>+AUTOSLEEP:<Status>,<Time><CR><LF><CR><LF>OK<CR><LF>

4.12. AT+DEEPSLEEP

Format	
Set	AT+DEEPSLEEP<CR>
Return	<CR><LF>+DEEPSLEEP:<CR><LF><CR><LF>OK<CR><LF>

4.13. AT+HIBERNATE

Format	
Set	AT+HIBERNATE<CR>
Return	<CR><LF>+HIBERNATE:<CR><LF><CR><LF>OK<CR><LF>

4.14. AT+HELLO

Parameter	Description	Default Value	Range
<String>	Welcome words	USR-BLE101 V1.0.5(Firmware Version)	Less than 10 bytes
Format			
Query	AT+HELLO?<CR>		
Return	<CR><LF>+HELLO:<String><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+HELLO=<String><CR>		
Return	<CR><LF>+HELLO:<String><CR><LF><CR><LF>OK<CR><LF>		

4.15. AT+ENTM

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

4.16. AT+RELOAD

Format	
Set	AT+RELOAD<CR>
Return	<CR><LF>+RELOAD:OK<CR><LF><CR><LF>OK<CR><LF>

4.17. AT+Z

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

4.18. AT+LINK

Parameter	Description	Range
<MAC>	MAC address of connected device	
<RSSI>	RSSI of connected device	
<Status>	Connection status of module	ON/OFF
Format		
Query	AT+LINK?<CR>	
Return	<CR><LF>PeerAddr:<MAC><CR><LF><CR><LF>Rssi:<Rssi><CR><LF><CR><LF>+ LINK: <status> <CR><LF><CR><LF>OK<CR><LF>	

4.19. AT+SCAN

Parameter	Description
<NUM>	Index number of slave device
<MAC>	MAC address of slave device
<Size>	RSSI of slave device
<Data>	Response data from slave device
Format	
Query	AT+SCAN<CR>
Return	<CR><LF>+SCAN:ON<CR><LF><CR><LF>OK<CR><LF><LF><LF>No:<NUM> M> Addr:<MAC>Rssi:<Size><CR><LF><CR><LF> Scan response:<CR><LF><Data><CR><LF>

4.20. AT+CONN

Parameter	Description
<NUM>	Index number of slave device
Format	
Set	AT+CONN=<NUM><CR>
Return	<CR><LF>+CONN:<NUM><CR><LF><CR><LF>OK<CR><LF>

4.21. AT+CONNADD

Parameter	Description	Default Value
<MAC>	MAC address of default connected device after module starting	000000000000
Format		
Query	AT+CONNADD?<CR>	
Return	<CR><LF>+CONNADD:<MAC><CR><LF><CR><LF>OK<CR><LF>	
Set	AT+CONNADD=<MAC>><CR>	
Return	<CR><LF>+CONNADD:<MAC><CR><LF><CR><LF>OK<CR><LF>	

4.22. AT+DISCONN

Format	
Set	AT+DISCONN<CR>
Return	<CR><LF>+DISCONN:OK<CR><LF><CR><LF>OK<CR><LF>

4.23. AT+ADP

Parameter	Description	Default Value	Range
<Status>	Status of Broadcasting	ON	ON/OFF
Format			
Query	AT+ADP?<CR>		
Return	<CR><LF>+ADP:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+ADP=<Status><CR>		
Return	<CR><LF>+ADP:<Status><CR><LF><CR><LF>OK<CR><LF>		

4.24. AT+ADPTM

Parameter	Description	Default Value	Range
<Time>	Broadcast speed	FAST	FAST:50ms
			SLOW:5000ms
Format			
Query	AT+ADPTM?<CR>		
Return	<CR><LF>+ADPTM:<Time><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+ADPTM=<Time><CR>		
Return	<CR><LF>+ADPTM:<Time><CR><LF><CR><LF>OK<CR><LF>		

4.25. AT+ADPTIM

Parameter	Description	Default Value	Range
<Time>	Self-defined broadcast speed	1*50ms	<Time>*50ms(FAST in AT+ADPTM)
			<Time>*5000ms(SLOW in AT+ADPTM)
Format			
Query	AT+ADPTIM?<CR>		
Return	<CR><LF>+ADPTIM:<Time><CR><LF><CR><LF>OK<CR><LF>		

Set	AT+ADPTIM=<Time><CR>
Return	<CR><LF>+ADPTIM:<Time><CR><LF><CR><LF>OK<CR><LF>

4.26. AT+BATEN

Parameter	Description	Default Value	Range
<Status>	Status of Battery testing	OFF	ON/OFF
Format			
Query	AT+BATEN?<CR>		
Return	<CR><LF>+BATEN:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+BATEN=<Status><CR>		
Return	<CR><LF>+BATEN:<Status><CR><LF><CR><LF>OK<CR><LF>		

4.27. AT+MAXPUT

Parameter	Description	Default Value	Range
<Status>	Status of MAX output	OFF	ON/OFF
Format			
Query	AT+MAXPUT?<CR>		
Return	<CR><LF>+MAXPUT:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+MAXPUT=<Status><CR>		
Return	<CR><LF>+MAXPUT:<Status><CR><LF><CR><LF>OK<CR><LF>		

4.28. AT+TRENC

Parameter	Description	Default Value	Range
<Status>	Status of Encryption Transmission	OFF	ON/OFF
Format			
Query	AT+TRENC?<CR>		
Return	<CR><LF>+TRENC:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+TRENC=<Status><CR>		
Return	<CR><LF>+TRENC:<Status><CR><LF><CR><LF>OK<CR><LF>		

4.29. AT+IBEACON

Parameter	Description	Default Value
<UUID>	iBeacon device identifier	B9407F30-F5F8-466E-AFF9-25556B57FE6D
<Major>	Major code	12
<Minor>	Minor code	6
<RSSI>	RSSI of one meter distance	56
Format		
Query	AT+IBEACON?<CR>	
Return	<CR><LF>+IBEACON:<UUID>,<Major>,<Minor>,<RSSI><CR><LF><CR><LF>OK<CR><LF>	
Set	AT+IBEACON=<UUID>,<Major>,<Minor>,<RSSI><CR>	
Return	<CR><LF>+IBEACON:<UUID>,<Major>,<Minor>,<RSSI><CR><LF><CR><LF>OK<CR><LF>	

4.30. AT+UUID

Parameter	Description	RANGE
<UUID>	Universally Unique Identifier	
<NUM>	Type of service	AA: bleUart_Server_Uuid
		BB: bleUart_Server_Tx_Uuid
		CC: bleUart_Server_Rx_Uuid
Format		
Query	AT+UUID?<CR>	
Return	<CR><LF>+bleUart_Server_Uuid:<CR><LF><CR><LF>DATA:<UUID><CR><LF><CR><LF>+bleUart_Server_Tx_Uuid:<CR><LF><CR><LF>DATA:<UUID><CR><LF><CR><LF>+bleUart_Server_Rx_Uuid:<CR><LF><CR><LF>DATA:<UUID><CR><LF><CR><LF>OK<CR><LF><CR><LF>	
Set	AT+ UUID =<NUM>+<UUID><CR>	
Return	<CR><LF>+bleUart_Server_Uuid:<CR><LF><CR><LF>DATA:<UUID><CR><LF><CR><LF>+bleUart_Server_Tx_Uuid:<CR><LF><CR><LF>DATA:<UUID><CR><LF><CR><LF>+bleUart_Server_Rx_Uuid:<CR><LF><CR><LF>DATA:<UUID><CR><LF><CR><LF>OK<CR><LF><CR><LF>	

5. Contact

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7. Update History

2017-06-28 V1.0.0 created. Based on firmware version BLE101-V1.0.5

2017-08-10 V1.0.1 created. Add **Note** about mesh mode in 4.2.AT+MODE.