WH-L101-P AT Command Set

This AT Command Set is for WH-L101-P module(Include ***-L*** and ***-H*** frequency band).

File version: 1.0.0

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:
https://www.usriot.com/support/faq/enter-serial-command-mode.html

3. AT command set

Number	Command	Function
Basic command		
1	ENTM	Exit AT command mode.
2	E	Query/Set AT command echo function enable/disable.
3	Z	Restart LG206.
4	CFGTF	Save current settings as default settings.
5	RELD	Reset to default settings.
6	NID	Query node ID
7	VER	Query firmware version
8	WMODE	Query/Set work mode.
9	UART	Query/Set serial port parameters.
10	PMODE	Query/Set power consumption mode.
11	ITM	Query/Set idle time
12	WTM	Query/Set wake up interval.
LoRa command		
13	SPD	Query/Set rate level.
14	ADDR	Query/Set destination address.
15	CH	Query/Set channel.
16	FEC	Query/Set forward error correction enable/disable.

17	PWR	Query/Set transmitting power.
18	RTO	Query/Set receiving timeout time in LR/LSR mode
19	SQT	Display RSSI/Transmit test data automatically
20	KEY	Set data encryption word.

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><LF>
Return	<CR><LF><CR><LF>OK<CR><LF>

4.2. AT+E

Parameter	Description	Default Value	Range
<Status>	Status of AT command Echo function	ON	ON/OFF
Format			
Query	AT+E<CR><LF>		
Return	<CR><LF>OK=<Status><CR><LF>		
Set	AT+E=<Status><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

4.3. AT+Z

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

4.4. AT+CFGTF

Format	
Set	AT+CFGTF<CR><LF>
Return	<CR><LF>+CFGTF:SAVED<CR><LF><CR><LF>OK<CR><LF>

4.5. AT+RELD

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

4.6. AT+NID

Parameter	Description
<NID>	4 bytes HEX format character string
Format	
Query	AT+NID<CR><LF>
Return	<CR><LF>+NID:<NID><CR><LF><CR><LF>OK<CR><LF>

4.7. AT+VER

Parameter	Description
<VER>	Firmware version
Format	
Query	AT+VER<CR><LF>
Return	<CR><LF>+VER:<VER><CR><LF><CR><LF>OK<CR><LF>

4.8. AT+WMODE

Parameter	Description	Default Value	Range
<Mode>	Work mode	TRANS	TRANS: Transparent transmission mode
			FP: Fixed-point transmitting mode
Format			
Query	AT+WMODE<CR><LF>		
Return	<CR><LF>+WMODE:<Mode><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+WMODE=<Mode><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

4.9. AT+UART

Parameter	Description	Default Value	Range
<Baud rate>	Baud rate	115200	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
<Data bits>	Data bits	8	8
<Stop bits>	Stop bits	1	1, 2
<Parity>	Parity	NONE	NONE, EVEN, ODD
<Flow Control>	Flow Control	NFC	NFC: No flow control
			485: Enable RS485

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

4.10. AT+PMODE

Parameter	Description	Default Value	Range
<Mode>	Power consumption mode	RUN	RUN: Run mode
			WU: Wake up mode
			LR: Low-power receive mode
			LSR: Low-power transmit/receive mode
Format			
Query	AT+PMODE<CR><LF>		
Return	<CR><LF>+PMODE:<Mode><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+PMODE=<Mode><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

4.11. AT+ITM

Parameter	Description	Default Value	Range
<Time>	In LR/LSR mode, power module and no data transmission during the <Time>, module will enter sleep mode	20s	3~240s
Format			
Query	AT+ITM<CR><LF>		
Return	<CR><LF>+ITM:<Time><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+ITM=<Time><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

4.12. AT+WTM

Parameter	Description	Default Value	Range
<Time>	Waking up interval	2000ms	500, 1000, 1500, 2000, 2500, 3000, 3500, 4000ms
Format			
Query	AT+WTM<CR><LF>		
Return	<CR><LF>+WTM:<Time><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+WTM=<Time><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

Note: This parameter is invalid in RUN,LSR mode. In WU mode, the waking up code that corresponds to waking up interval will be added into data before transmitting data. In LR mode, this parameter is waking up interval after module entering sleep mode.

4.13. AT+SPD

Parameter	Description	Default Value	Range
<Class>	LoRa air rate level	10	1: 268bps
			2: 488bps
			3: 537bps
			4: 878bps
			5: 977bps
			6: 1758bps
			7: 3125bps
			8: 6250bps
			9: 10937bps
			10: 21875bps
Format			
Query	AT+SPD<CR><LF>		
Return	<CR><LF>+SPD:<Class><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+SPD=<Class><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

4.14. AT+ADDR

Parameter	Description	Default Value	Range
<Address>	Destination address	0	0~65535
Format			
Query	AT+ADDR<CR><LF>		
Return	<CR><LF>+ADDR:<Address><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+ADDR=<Address><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

Note: 65535 is broadcast address and all LG206-P with same channel and same rate can receive the data.

4.15. AT+CH

Parameter	Description	Range
<Channel>	Channel	-L: 0~127(Default is 72, frequency band 470Mhz) -H: 0~127(Default is 65, frequency band 868Mhz)
Format		
Query	AT+CH<CR><LF>	
Return	<CR><LF>+CH:<Channel><CR><LF><CR><LF>OK<CR><LF>	
Set	AT+CH=<Channel><CR><LF>	
Return	<CR><LF><CR><LF>OK<CR><LF>	

Note: -L: Working frequency band=(398+ch)MHz; -H: Working frequency band=(803+ch)MHz

4.16. AT+FEC

Parameter	Description	Default Value	Range
<Status>	Status of forward error correction function	OFF	ON/OFF
Format			
Query	AT+FEC<CR><LF>		
Return	<CR><LF>+FEC:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+FEC=<Status><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

Note: Enable this function can make data transmission more stable but lower communication rate.

4.17. AT+PWR

Parameter	Description	Default Value	Range
<Status>	Transmitting power	20dbm	10dBm~20dBm
Format			
Query	AT+PWR<CR><LF>		
Return	<CR><LF>+PWR:<Status><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+PWR=<Status><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

4.18. AT+RTO

Parameter	Description	Default Value	Range
<Time>	Receiving timeout time	500ms	0~15000ms
Format			
Query	AT+RTO<CR><LF>		
Return	<CR><LF>+RTO:<Time><CR><LF><CR><LF>OK<CR><LF>		
Set	AT+RTO=<Time><CR><LF>		
Return	<CR><LF><CR><LF>OK<CR><LF>		

Note: This parameter will only take effect in LR/LSR mode and it means the maximum time to enter receive status. In LSR mode, if user configures this parameter to 0, module won't enable receiving after transmitting data.

4.19. AT+SQT

Parameter	Description	Range
<Time>	Data transmission interval	100~60000ms
Format		
Query	AT+SQT<CR><LF> Display RSSI	
Return	ADDR: 0 SNR: 8 RSSI: -15.742600 ADDR: 0 SNR: 8 RSSI: -15.742600 ADDR: 0 SNR: 8 RSSI: -16.809200 ADDR: 0 SNR: 8 RSSI: -16.809200 ADDR: 0 SNR: 8 RSSI: -15.742600 ADDR: 0 SNR: 8 RSSI: -15.742600	
Set	AT+SQT=<Time><CR><LF> Transmit test data automatically	
Return	<CR><LF><CR><LF>OK<CR><LF>	

4.20. AT+KEY

Parameter	Description
<Key>	16 bytes HEX format character string
Format	
Set	AT+KEY=<Key><CR><LF>
Return	<CR><LF><CR><LF>OK<CR><LF>

Note: To ensure data security, this data encryption word can only be set but not be queried.

5. Contact

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7. Update History

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