

USR-G761w Guide Line

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1. Configuring methods

For configuring this devices, you can use AT commands to configure it. There are 3 methods to send AT commands.

- Serial AT command
- SMS AT command
- Transparent AT command

Specific AT command set and format is in the last of this documents

To configure and test the module, we provide some software:

Setup software:

<http://www.usriot.com/usr-g76x-setup-software/>

Test Software:

<http://www.usriot.com/usr-tcp-test-v1-3/>

1.1. Serial AT command

When in transparent mode, SMS mode or HTTPD mode, you can enter AT command mode. Then you can send AT command to module to configure or query the parameters. Setup software is based on this function. Your settings will take effect after restarting.

For entering AT command mode, the steps are as follow.

1. Power up the USR-G761w, connect the antenna and serial cable.
2. Sending the “+++” to your USR-G761w with your serial, The USR-G761w will return an “a” if it receives your “+++”.
3. Send an “a” to the USR-G761w within 3 seconds after you receive the “a”. The USR-G761w will return “+ok” if it receives the “a”
4. Then you can send AT commands to USR-G761w. USR_G761w will return “+ok” or “+ERR”. Your command is right and you succeed to configure the USR-G761w. You fail to configure the USR-G761w if it returns “ERR”.
5. The settings will take effect after restarting, you can send AT+Z to restart the module. After restarting, USR-G761w will work in one of the three working modes(Transparent mode, SMS mode or HTTPD client mode).
6. FAQ about Serial AT command:

<http://www.usriot.com/enter-serial-command-mode/>

In serial AT command mode, you can send AT command to configure and query parameters and status. Every Serial AT command is end by ENTER (in HEX format that should be 0x0D 0x0A). To query the serial parameters, you should send this command.

AT+UART

1.2. SMS AT command

If your USR-G761w is in fields or you don't know the serial parameters, you can use SMS AT command to configure the USR-G761w. The SMS AT command format is as follow. Your settings will take effect after restarting.

Passwords#AT command

For example, you can send the command below to query the serial parameters of the USR-G761w

www.usr.cn#AT+UART

www.usr.cn are default passwords, you can modify it to your own password. AT+UART is the AT command for query the serial parameters. There should be '#' between the password and command.

To modify the passwords, you can use AT+CMDFPW.

1.3. Transparent AT command

When module is in transparent mode, you can you transparent AT command to configure or query parameters via network or serial. The format is as follow. Your settings will take effect after restarting.

Passwords#AT command

For example, if you want to query serial parameters via network or serial, you can use the command below.

www.usr.cn#AT+UART

www.usr.cn are default passwords, you can modify it to your own password. AT+UART is the AT command for query the serial parameters. There should be '#' between the password and command.

To modify the command passwords, you can use AT+CMDFPW.

2. Function settings

Every time USR-G761w power on, it will work in work mode (Transparent mode, SMS mode or HTTPD client mode). Then you can AT command mode and use AT command to configure it. Your new parameters will take effect after restarting.

If your command have no reply, please check whether you add an ENTER after every command.

2.1. APN

Different operator have different APN(access point name), If you use the SIM card from the operator. You must know the APN. You can ask your SIM card operator for APN.

There are three parameters about APN. Those are APN, username and password. Sometimes only configure APN is enough.

Example:

If we got the APN from China mobile, they only tell me APN. So we don't set anything with username and password. Set USR-G761w as follow.

AT+APN=3gnet,,

2.2. Work mode

2.2.1. Transparent mode

In this work mode, USR-G761w will make a bidirectional connection. This connection is transparent transmission. The data is send to serial will be received in network, and vice versa.

The network connection is based on socket. There are 2 socket, socket A and socket B. Socket A and socket B are independent. Your serial data can be sent to 2 different servers. You can configure the socket as TCP client or UDP client.

Command Name	Command Functions	Default Parameters
AT+WKMOD	Query/Set work mode	NET

AT+SOCKA	Query/Set socket A parameters	TCP,test.usr.cn,2317
AT+SOCKB	Query/Set socket B parameters	TCP,test.usr.cn,2317
AT+SOCKAEN	Query/Set whether enable socket A	ON
AT+SOCKBEN	Query/Set whether enable socket B	OFF
AT+SOCKASL	Query/Set whether enable socket A short connection	LONG
AT+SOCKBSL	Query/Set whether enable socket B short connection	LONG
AT+SOCKALK	Query Connection Status of socket A	NONE
AT+SOCKBLK	Query Connection Status of socket B	NONE
AT+SOCKIDEN	Query /Set if it shows socket ID function	OFF

Figure 1 AT command set

Example:

1. Set the work mode as transparent mode

AT+WKMOD=NET

2. Enable the socket A

AT+SOCKAEN=ON

3. Set socket A as TCP Client

AT+SOCKA=TCP,test.usr.cn,2317

4. Set socket A as persistent connection

AT+SOCKASL=LONG

5. Restart:

AT+Z

5.1.1. HTTPD Client mode

In this work mode, you can configure the HTTP Header, HTTP Server address and port number of HTTP server. Your serial data will be package as HTTP format and send to HTTP server.

The buffer of serial receiving is 1KB. Your packages can not over 1KB.

Command Name	Command Function	Default Parameters
AT+WKMOD	Query/Set Work Mode	NET
AT+ HTPPTP	Query/Set HTTP Work Mode	GET
AT+ HTPURL	Query/Set URL	/1.php[3F]
AT+ HTPSV	Query/Set Address and Port of Target Server	test.usr.cn,80
AT+ HTPHD	Query/Set HTTP Protocol HEAD Information	Connection: close[0D][0A]
AT+ HTPFLT	Query/Set whether open filtering capability of HEAD	OFF
AT+HTPTO	Query/Set timeout time	10

Figure 2 AT command set

Example:

1. Set as HTTPD client mode:

```
AT+WKMOD=HTTPD
```

2. Set as HTTP GET:

```
AT+HTPPTP=GET
```

2. Set URL of HTTP request:

```
AT+HTPURL=/1.php[3F]
```

3. Set server of HTTP request:

```
AT+HTPSV=test.usr.cn,80
```

4. Set HTTP header:

```
AT+HTPHD=Connection:  
close[0D][0A]
```

5. Set HTTP request out time:

```
AT+HTPTO=10
```

6. Whether cut off the HTTP header of response data:

```
AT+HTPFLT=ON
```

7. Restart the USR-G761w

AT+Z

7.1.1. SMS mode

This work mode is used to transfer your serial data to SMS which is sent to target mobile.

Command Name	Command Functions	Default Parameters
AT+WKMOD	Query/Set Work Mode	NET
AT+DSTNUM	Query/Set Target Telephone Number	4000255652
AT+SMSFLT	Query/Set whether filter source telephone number	ON
AT+SMSPH	Query/Set whether send SMS in transparent mode	OFF

Figure 3 AT command set

Example:

1. Set work mode is SMS mode

AT+WKMOD=SMS

2. Set the target mobile number

AT+DSTNUM=15866668888

3. Whether only receive the message from target number

AT+SMSFLT=ON

4. Restart the USR-G761w

AT+Z

7.2. Serial Port

7.2.1. Basic Parameters

Name	Parameter range
Baud rate	1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200, 128000, 230400, 460800
Data bits	7,8
Stop bits	1,2
Parity	NONE EVEN ODD SPACE
Flow control	NFC: No flow control 485:Enable RS485 (terminal)

Figure 4 Serial Parameters

7.2.2. Serial package methods

For serial is slow and WCDMA network is fast, USR-G761w will receive serial data and put them in buffer. Then it will send serial data by package. There are some methods to separate the data to packages.

7.2.2.1. Time-triggered package

Then USR-G761w receive the serial data, if there is no data for a certain period, it will make the package and send it to

network. The default time interval is 200ms. Range is from 10ms to 60000ms. If the serial keep receiving data, this package will be 1KB. Other data will be put in next package.

You can use AT command to modify the time interval.

AT+UARTFT=200

7.2.2.2. Length-triggered package

If your serial data over this length, it will make the package and send it to network. Other data will be put in next package. The default length is 1024 Byte. The range is from 1 to 1024 bytes.

You can configure it via AT command

AT+UARTFL=1024

7.2.3. RS485

If you want to use RS485 (terminal) as serial port, you should enable RS485.

Whether you enable or disable this function, RS232 is available for serial.

Switch time from sending status to receiving status: 5ms

Example: Enable the RS485

AT+UART=115200,8,1,NONE,RS485

Disable the RS485:

AT+UART=115200,8,1,NONE,NFC

7.2.4. Baud rate synchronization

Protocol is 8 bytes, please refer to the form below.

Name	Header	Baud rate	Function Bits	Checksum
Bytes number	3	3	1	1
State	Fixed Header	Baud rate Big end	Please refer to next form	Sum of Baud rate(3 bytes) and Function

				bits
Example (115200,N,8,1)	55 AA 55	01 C2 00	83	46
Example (9600,N,8,1)	55 AA 55	00 25 80	83	28

Figure 5 Protocol Format

Bits	Stats	Value	Description
1:0	Data bits	00	5
		01	6
		10	7
		11	8
2	Stop bits	0	1
		1	2
3	Parity	0	Disable
		1	Enable
5:4	Parity methods	00	ODD
		01	EVEN
		10	Mark
7:6	Undefined	00	0

Figure 6 Function Bits

7.3. Other Function

7.3.1. Identity Package

Command Name	Command Function	Default Parameter
AT+ REGEN	Set/Query enable or disable the identity package	OFF
AT+ REGTP	Set/Query the identity package type	USER
AT+ REGDT	Set/Query the user-defined identity package data	7777772E7573722E636E
AT+ REGSND	Set/Query the send methods	DATA

Figure 7 AT command set

1. Enable the identity package:

```
AT+ REGEN=ON
```

2. Set identity package as user-defined:

```
AT+ REGTP=USER
```

3. Set your identity package data:

```
AT+REGDT=7777772E7573722E636E
```

4. Set identity package is in the front of every package:

```
AT+ REGSND=DATA
```

5. Restart:

```
AT+ Z
```

7.3.2. Heartbeat package

The AT command is as follow

Command	Command function	Default parameters
AT+ HEARTEN	Set/Query enable or disable the heartbeat package	OFF
AT+ HEARTDT	Set/Query heartbeat data	7777772E7573722E636E

AT+ HEARTTP	Set/Query heartbeat package is sent to net or serial	NET
AT+ HEARTTM	Set/Query heartbeat interval	30

Figure 8 AT command set

Example:

1. Enable heartbeat package function

AT+ HEARTEN=ON

2. Set heartbeat package data

AT+ HEARTDT=7777772E7573722E636E

3. Set the heartbeat package is sent to network.

AT+ HEARTTP=NET

4. Set the heartbeat package time interval

AT+ HEARTTM=30

5. Restart

AT+ Z

7.3.3. Upgrade firmware:

Please refer to FAQ about upgrade firmware for USR-G761w.

7.4. Setup software

Setup software download Link: <http://www.usriot.com/usr-g76x-setup-software/>

7.4.1. Interface

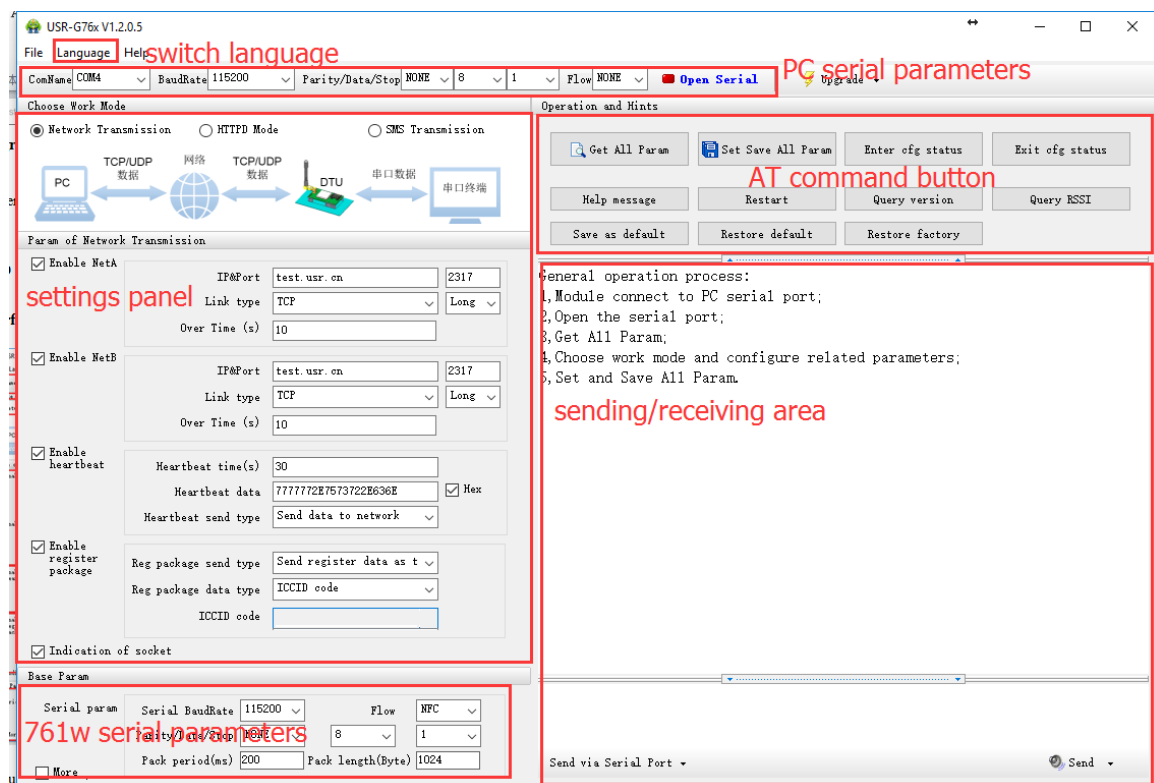


Figure 9 Setup Software

Setup step:

1. Choose your PC serial parameters, open the serial.
2. Click enter AT command mode button to enter serial AT command mode.
3. You can query all parameters with Get All param button.
4. You can configure the parameters on the panel
5. Click Set Save All param to save your parameters
6. Restart the USR-G761w make new parameters take effect.

8. AT Command Set

Every AT Command will have a response from USR-G761w.

8.1.1.1. Character

Character	Meaning	Hex
<AT+>	AT Command Header	41 54 2B
<CR>	Carriage Return, 0x0D in Hex	0D

<LF>	Line Feed, 0x0A in Hex	0A
,	Separator of multi parameters	2C
=	Separator between the command and parameters	3D
:	Between the [CMD] and [PARA]	3A
[CMD]	Command Name	ASCII
[PARA]	Parameter	ASCII

Figure 10 Character

8.1.1.2. Querying Format

```
<AT+>[CMD] <CR><LF>
```

8.1.1.3. Response format of querying

Disable the echo:

```
<CR><LF>+[CMD]:[PARA]
<CR><LF><CR><LF>
```

Enable the echo:

```
<AT+>[CMD]<CR><LF>+[CMD]:[PARA]
<CR><LF><CR><LF>
```

8.1.1.4. Setting Format

Single parameter:

```
<AT+>[CMD]=[PARA] <CR><LF>
```

Multi Parameters:

```
<AT+>[CMD]=[PARA0,PARA1,PARA2]
<CR><LF>
```

8.1.1.5. Response format of setting

Disable the echo:

```
<CR><LF>+OK<CR><LF><CR><LF>
```

Enable the echo:

```
<AT+>[CMD]<CR><LF>+OK
<CR><LF><CR><LF>
```

8.1.2. AT Command Set

[CMD]	Function
Management Command	
AT	Test command
H	Help information
Z	Restart the device
E	Query/Set whether enable the echo
ENTM	Exit the serial AT command mode
WKMOD	Query/Set work mode
CMDPW	Query/Set command passwords
STMSG	Query/Set start message
CSQ	Query RSSI
Settings Command	
RELD	Reload to user default settings
CLEAR	Reload to factory settings
CFGTF	Save current settings as user default settings
Query Command	
VER	Query firmware version
SN	Query SN code
ICCID	Query ICCID
IMEI	Query IMEI
Serial Parameter Command	
UART	Query/Set serial Parameter
UARTFT	Query/Set serial package time
UARTFL	Query/Set serial package length
RFCEN	Query/Set whether enable the baud rate synchronization
Network Command	
APN	Query/Set APN
SOCKA	Query/Set socket A
SOCKB	Query/Set socket B
SOCKAEN	Query/Set whether enable socket A
SOCKBEN	Query/Set whether enable socket B
SOCKASL	Query/Set socket A persistent connection
SOCKBSL	Query/Set socket B persistent connection
SOCKALK	Query/Set socket A connection status
SOCKBLK	Query/Set socket B connection status
SOCKATO	Query/Set socket A timeout when you don't use persistent connection
SOCKBTO	Query/Set socket B timeout when you don't use persistent connection

SOCKIND	Query/Set whether show source from socket A/B
Identity Package Command	
REGEN	Query/Set whether enable the identity package
REGTP	Query/Set identity package type
REGDT	Query/Set user-defined package
REGSND	Query/Set the identity methods
CLOUD	Query/Set USR Cloud ID
Heartbeat Package Command	
HEARTEN	Query/Set whether enable the heartbeat package
HEARTDT	Query/Set heartbeat package data
HEARTSND	Query/Set sending to network or serial
HEARTTM	Query/Set heartbeat time interval
HTTPD Client Mode Command	
HTPTP	Query/Set HTTP request method
HTPURL	Query/Set URL
HTPSV	Query/Set HTTP server address and port
HTPHD	Query/Set HTTP Header
HTPTO	Query/Set time out
HTPFLT	Query/Set whether filter the HTTP header of response
SMS Command	
DSTNUM	Query/Set destination number
SMSSEND	Send message
CISMSEND	Send message
SMSFLT	Query/Set whether filter the source number
SMSPH	Query/Set whether show the source number

Figure 11 AT command set

8.1.2.1. AT

- Function: Test command
- Format:
 - ◆ Query:


```
AT{CR}
{CR}{LF}OK{CR}{LF}{CR}{LF}OK{CR}{LF}
```

8.1.2.2. AT+H

- Function: Help command
- Format:
 - ◆ Query:


```
AT+H{CR}
```

```
{CR}{LF}help message{CR}{LF}{CR}{LF}OK{CR}{LF}
```

- Parameters:
 - ◆ help message: help instructions

8.1.2.3. AT+Z

- Function: Restart the USR-G761w
- Format:

```
AT+Z{CR}
{CR}{LF}OK{CR}{LF}
```

8.1.2.4. AT+E

- Function: Query/Set the echo status of device AT command
- Format:
 - ◆ Query current parameters:

```
AT+E{CR} or AT+E?{CR}
{CR}{LF}+E:status{CR}{LF}{CR}{LF}OK{CR}{LF}
```
 - ◆ Set:

```
AT+E=status{CR}
{CR}{LF}OK{CR}{LF}
```
- Parameters:
 - ◆ Status: echo status, including:
 - ◇ ON: open
 - ◇ OFF: close
- Example: AT+E=ON

8.1.2.5. AT+ENTM

- Function: Set device back to work mode
- Function:
 - ◆ Execute specified functions:

```
AT+ENTM{CR}
{CR}{LF}OK{CR}{LF}
```

8.1.2.6. AT+WKMOD

- Function: Query/Set device work mode
- Format:
 - ◆ Query current parameters:

```
AT+WKMOD{CR} or AT+WKMOD?{CR}
{CR}{LF}+WKMOD: mode{CR}{LF}{CR}{LF}OK{CR}{LF}
```

- ◆ Set:
AT+WKMOD=mode{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Mode: work mode, including:
 - ◇ SMS: SMS transparent transmission mode
 - ◇ NET: Network transparent transmission mode
 - ◇ HTTPD: HTTPD client mode
- Example: AT+WKMOD=NET

8.1.2.7. AT+CMDPW

- Function: Query/Set command password
- Format:
 - ◆ Query current parameters:
AT+CMDPW{CR} or AT+CMDPW?{CR}
{CR}{LF}+CMDPW: password{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+CMDPW=password{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Password: command password, ASCII code which in 1~10 bytes.
- Example: AT+CMDPW=www.usr.cn#

8.1.2.8. AT+STMSG

- Function: Query/Set start information of the device
- Format:
 - ◆ Query current parameters:
AT+STMSG{CR} or AT+STMSG?{CR}
{CR}{LF}+STMSG: message{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+STMSG=message{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Message: start information, the information which will be output automatically after power on. ASCII which in 1~20 bytes.
- Example: AT+STMSG=www.usr.cn

8.1.2.9. AT+CSQ

- Function: Query Received Signal Strength Indicator of USR-G761w

- Format:
 - ◆ Query current parameters
AT+CSQ{CR} or AT+CSQ?{CR}
{CR}{LF}+CSQ:RSSI,BER {CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ RSSI: received signal strength indicator
 - ◇ 0, equal to or less than -125 dBm
 - ◇ 1~30, round numbers $(31 \times (125 - |\text{rssi}|) / 50)$ dBm
 - ◇ 31, equal to or greater than -75 dBm
 - ◇ 99, unknown or unpredictable
 - ◆ BER: (bit error rate percentage) : Doesn't support BER query at present, will respond 99 in execution command and test command.

8.1.2.10. AT+RELD

- Function: reload to user default setting, USR-G761w will restart
- Format:
 - ◆ Execute specified function:
AT+RELD{CR}
{CR}{LF}OK{CR}{LF}

8.1.2.11. AT+CLEAR

- Function: reload to factory defaults, USR-G761w will restart.
- Format:
 - ◆ Execute specified function:
AT+CLEAR{CR}
{CR}{LF}OK{CR}{LF}

8.1.2.12. AT+CFGTF

- Function: Save current settings to be user-default setting.
- Format:
 - ◆ Execute specified function:
AT+CFGTF{CR}
{CR}{LF}OK{CR}{LF}

8.1.2.13. AT+VER

- Function: Query firmware version
- Format:
 - ◆ Query current parameters:

AT+VER{CR} or AT+VER?{CR}
{CR}{LF}+VER: version{CR}{LF}{CR}{LF}OK{CR}{LF}

- Parameters:
 - ◆ Version: number of firmware version

8.1.2.14. AT+SN

- Function: Query SN code
- Format:
 - ◆ Query current parameters:
AT+SN{CR} or AT+SN?{CR}
{CR}{LF}+SN: code{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Code: SN code

8.1.2.15. AT+ICCID

- Function: Query ICCID code of USR-G761w
- Format:
 - ◆ Query current parameters:
AT+ICCID{CR} or AT+ICCID?{CR}
{CR}{LF}+ICCID: code{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Code: ICCID code

8.1.2.16. AT+IMEI

- Function: Query IMEI code
- Format:
 - ◆ Query current parameters:
AT+IMEI{CR} or AT+IMEI?{CR}
{CR}{LF}+IMEI: code{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Code: IMEI code

8.1.2.17. AT+UART

- Function: Query/Set UART Parameters
- Format:
 - AT+UART{CR} or AT+UART?{CR}
{CR}{LF}+UART: baud, data bits, stop bits, parity, flow control{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:

AT+UART=baud, data bit, stop bit, parity, flow control{CR}
{CR}{LF}OK{CR}{LF}

- Parameters:
 - ◆ Baud: baud rate, continuous value range from 1200~460800
 - ◆ data bits: including:
 - ◇ 7
 - ◇ 8
 - ◆ stop bit: including:
 - ◇ 1
 - ◇ 2
 - ◆ Parity: verification mode, including:
 - ◇ NONE
 - ◇ ODD
 - ◇ EVEN
 - ◆ flow control: including:
 - ◇ NFC: NONE
 - ◇ RS485: enable RS485
- Example: AT+UART=115200,8,1,NONE,NFC

8.1.2.18. AT+UARTFT

- Function: Query/Set serial package interval time
- Format:
 - AT+UARTFT{CR} or AT+UARTFT?{CR}
 - {CR}{LF}+UARTFT: time{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Format:
 - AT+UARTFT=time{CR}
 - {CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Time: package interval time, range from 50~60000ms
- Example: AT+UARTFT=200

8.1.2.19. AT+UARTFL

- Function: Query/Set serial package length
- Format:
 - AT+UARTFL{CR} or AT+UARTFL?{CR}
 - {CR}{LF}+UARTFL: length{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
 - AT+UARTFL=length{CR}
 - {CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Length: package length, range from 1~1000 bytes

- Example: AT+UARTFL=1000

8.1.2.20. AT+RFCEN

- Function: Query/Set whether enable Automatic Baud Rate Synchronization
- Format:
 - ◆ Query current parameters:
AT+RFCEN{CR} or AT+RFCEN?{CR}
{CR}{LF}+RFCEN: status{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+RFCEN=status{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: enable status of Automatic Baud Rate Synchronization, including:
 - ✧ ON: enable
 - ✧ OFF: disable
- Example: AT+RFCEN=ON

8.1.2.21. AT+APN

- Function: Query/Set APN
- Format:
 - ◆ Query current parameters:
AT+APN{CR} or AT+APN?{CR}
{CR}{LF}+APN: code, username, password{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+APN=code, username, password{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Code: APN
 - ◆ username: user name
 - ◆ password: password
- example: AT+APN=3gnet

8.1.2.22. AT+SOCKA

- Function: Query/Set parameters of socket A
- Format:
 - ◆ Query current parameters:
AT+SOCKA{CR} or AT+SOCKA?{CR}
{CR}{LF}+SOCKA: protocol, address, port{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKA=protocol, address, port{CR}

{CR}{LF}OK{CR}{LF}

- Parameters:
 - ◆ Communication protocol, including:
 - ◇ TCP
 - ◇ UDP
 - ◆ Address: destination server address, this address can be domain or IP address
 - ◆ Port: destination server port, range from 1~65535
- Example: AT+SOCKA=TCP,test.usr.cn,8899

8.1.2.23. AT+SOCKB

- Function: Query/Set parameters of socket B
- Format:
 - ◆ Query current parameters:
AT+SOCKB{CR} or AT+SOCKB?{CR}
{CR}{LF}+SOCKB: protocol, address, port{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKB=protocol, address, port{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Protocol, including:
 - ◇ TCP
 - ◇ UDP
 - ◆ Address: destination server address, the address can be domain or IP address.
 - ◆ Port: destination server port, range from 1~65535
- Example: AT+SOCKB=TCP,test.usr.cn,8899

8.1.2.24. AT+SOCKAEN

- Function: Query/Set whether enable socket A
- Format:
 - ◆ Query current parameters:
AT+SOCKAEN{CR} or AT+SOCKAEN?{CR}
{CR}{LF}+SOCKAEN: status{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKAEN=status{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: status of socket A, including:
 - ◇ ON: enable
 - ◇ OFF: disable

8.1.2.25. AT+SOCKBEN

- Function: Query/Set whether enable socket B
- Format:
 - ◆ Query current parameters:
AT+SOCKBEN{CR} or AT+SOCKBEN?{CR}
{CR}{LF}+SOCKBEN: status{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKBEN=status{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: status of socket B, including:
 - ✧ ON: enable
 - ✧ OFF: disable

8.1.2.26. AT+SOCKASL

- Function: Query/Set the TCP persistent connection of socket A
- Format:
 - ◆ Query current parameters:
AT+SOCKASL{CR} or AT+SOCKASL?{CR}
{CR}{LF}+SOCKASL: type{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKASL=type{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Type: connection type, including:
 - ✧ SHORT: not persist, will disconnect the connection after sending data
 - ✧ LONG: persistent connection, keep persistent connection
- Example: AT+SOCKASL=LONG

8.1.2.27. AT+SOCKBSL

- Function: Query/Set the TCP persistent connection of socket B
- Format:
 - ◆ Query current parameters:
AT+SOCKBSL{CR} or AT+SOCKBSL?{CR}
{CR}{LF}+SOCKBSL: type{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKBSL=type{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Type: link type, including:

- ◇ SHORT: not persist, will disconnect the connection after sending data
- ◇ LONG: keep persistent connection

➤ Example: AT+SOCKBSL=LONG

8.1.2.28. AT+SOCKALK

- Function: Query whether socket A status
- Format:
 - ◆ Query current parameters:
AT+SOCKALK{CR} or AT+SOCKALK?{CR}
{CR}{LF}+SOCKALK: status{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: link status of socket A, including:
 - ◇ ON: connect
 - ◇ OFF: disconnect

8.1.2.29. AT+SOCKBLK

- Function: Query whether socket B status
- Format:
 - ◆ Query current parameters:
AT+SOCKBLK{CR} or AT+SOCKBLK?{CR}
{CR}{LF}+SOCKBLK: status{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: the link status of socket B, including
 - ◇ ON: connect
 - ◇ OFF: disconnect

8.1.2.30. AT+SOCKATO

- Function: Query/Set timeout of socket A when you don't use persistent connection
- Format:
 - ◆ Query current parameters:
AT+SOCKATO{CR} or AT+SOCKATO?{CR}
{CR}{LF}+SOCKATO: time{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Time: timeout time of socket A short link, range from 1~100S
- Example: AT+SOCKATO=10

8.1.2.31. AT+SOCKBTO

- Function: Query/Set the timeout of socket B when you don't use persistent connection
- Format:
 - ◆ Query current parameters
AT+SOCKBTO{CR} or AT+SOCKBTO?{CR}
{CR}{LF}+SOCKBTO: time{CR}{LF}{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Time: timeout of socket B when you don't use persistent connection, range from 1~100S.

8.1.2.32. AT+SOCKIND

- Function: Query/Set whether enable indicate the data source socket
- Format:
 - ◆ Query current parameters:
AT+SOCKIND{CR} or AT+SOCKIND?{CR}
{CR}{LF}+SOCKIND: status{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+SOCKIND=status{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: function of indicating the data source socket:
 - ✧ ON: open
 - ✧ OFF: close

8.1.2.33. AT+REGEN

- Function: Query/Set whether enable identity package function
- Format:
 - ◆ Query current parameters:
AT+REGEN{CR} or AT+REGEN?{CR}
{CR}{LF}+REGEN: status{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+REGEN=status{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: status of identity package:
 - ✧ ON: open
 - ✧ OFF: close

8.1.2.34. AT+REGTP

- Function: Query/Set content type of identity package:
- Format:
 - ◆ Query current parameters:
AT+REGTP{CR} or AT+REGTP?{CR}
{CR}{LF}+REGTP: type{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+REGTP=type{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Type: type of registration package, including:
 - ✧ ICCID: ICCID
 - ✧ IMEI: IMEI
 - ✧ D2DID: D2D system ID
 - ✧ CLOUD: USR Cloud ID
 - ✧ USER: user customize
- Example: AT+ REGTP = ICCID

8.1.2.35. AT+REGDT

- Function: Query/Set user-defined identity package data
- Format:
 - ◆ Query current parameters:
AT+REGDT{CR} or AT+REGDT?{CR}
{CR}{LF}+REGDT: data{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+REGDT=data{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Data: customized identity package data by user, hex character string, max. 80 bytes, such as parameter 7777772E7573722E636E, in ASCII code is www.usr.cn
- Example: AT+ REGDT = 7777772E7573722E636E

8.1.2.36. AT+REGSND

- Function: Query/Set sending method of identity package
- Format:
 - ◆ Query current parameters:
AT+REGSND{CR} or AT+REGSND?{CR}
{CR}{LF}+REGSND: type{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+REGSND=type{CR}

{CR}{LF}OK{CR}{LF}

- Parameters:
 - ◆ Type: send type, including:
 - ◇ LINK: send when link established
 - ◇ DATA: identity package as the header of each data package
- Example: AT+ REGSND = DATA

8.1.2.37. AT+CLOUD

- Function: Query/Set registration parameters of USR cloud function
- Format:
 - ◆ Query current parameters:
AT+CLOUD{CR} or AT+CLOUD?{CR}
{CR}{LF}+CLOUD: id, password{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+CLOUD=id, password{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Id: ID of USR cloud, length is 20 bytes
 - ◆ Password: password of USR cloud, length 8 bytes
- Example: AT+ CLOUD = 12345678901234567890,12345678

8.1.2.38. AT+HEARTEN

- Function: Query/Set whether enable heartbeat package function
- Format:
 - ◆ Query current parameters:
AT+HEARTEN{CR} or AT+HEARTEN?{CR}
{CR}{LF}+HEARTEN: status{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+HEARTEN=status{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Status: status of heartbeat package, including:
 - ◇ ON: open
 - ◇ OFF: close

8.1.2.39. AT+HEARTDT

- Function: Query/Set heartbeat package data
- Format:
 - ◆ Query current parameters:
AT+HEARTDT{CR} or AT+HEARTDT?{CR}

{CR}{LF}+HEARTDT: data{CR}{LF}{CR}{LF}OK{CR}{LF}

◆ Set:

AT+HEARTDT=data{CR}

{CR}{LF}OK{CR}{LF}

➤ Parameters:

- ◆ Data: heartbeat package data, in hex, 1~40 bytes, example: parameter 7777772E7573722E636E in ASCII is www.usr.cn

➤ Example: AT+ HEARTDT = 7777772E7573722E636E

8.1.2.40. AT+HEARTSND

➤ Function: Query/Set send type of heartbeat package

➤ Format:

- ◆ Query current parameters:

AT+HEARTSND{CR} or AT+HEARTSND?{CR}

{CR}{LF}+HEARTSND: type{CR}{LF}{CR}{LF}OK{CR}{LF}

- ◆ Set:

AT+HEARTSND=type{CR}

{CR}{LF}OK{CR}{LF}

➤ Parameters:

- ◆ Type: send type, including:

✧ COM: send heartbeat package to serial

✧ NET: send heartbeat package to network

➤ Example: AT+ HEARTSND = COM

8.1.2.41. AT+HEARTTM

➤ Function: Query/Set interval time of sending heartbeat package

➤ Format:

- ◆ Query current parameters:

AT+HEARTTM{CR} or AT+HEARTTM?{CR}

{CR}{LF}+HEARTTM: time{CR}{LF}{CR}{LF}OK{CR}{LF}

- ◆ Set:

AT+HEARTTM=time{CR}

{CR}{LF}OK{CR}{LF}

➤ Parameters:

- ◆ Time: time interval of sending, range from 1~6000 seconds

➤ Example: AT+ HEARTTM = 30

8.1.2.42. AT+HTPTP

➤ Function: Query/Set method of HTTP request

➤ Format:

- ◆ Query current parameters:
AT+HTPTP{CR} or AT+HTPTP?{CR}
{CR}{LF}+HTPTP: type{CR}{LF}{CR}{LF}OK{CR}{LF}
- ◆ Set:
AT+HTPTP=type{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Type: method of HTTP request, including:
 - ◇ GET
 - ◇ POST
- Example: AT+ HTPTP = POST

8.1.2.43. AT+HTPURL

- Function: Query/Set URL of HTTP request
- Format:
 - ◆ Query current parameters:
AT+HTPURL{CR} or AT+HTPURL?{CR}
{CR}{LF}+HTPURL:URL{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+HTPURL=URL{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ URL: URL of HTTP request, example /1.php[3F]
- Example: AT+ HTPURL = /1.php[3F]

8.1.2.44. AT+HTPSV

- Function: Query/Set server address and port of HTTP request
- Format:
 - ◆ Query current parameters:
AT+HTPSV{CR} or AT+HTPSV?{CR}
{CR}{LF}+HTPSV: address, port{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+HTPSV=address, port{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Address: server address, can be domain name or IP address
 - ◆ Port: server port, range from 1~65535
- Example: AT+ HTPSV = test.usr.cn,80

8.1.2.45. AT+HTPHD

Function: Query/Set Header of HTTP request

Format:

- ◆ Query current parameters:
AT+HTPHD{CR} or AT+HTPHD?{CR}
{CR}{LF}+HTPHD: header{CR}{LF}{CR}{LF}OK{CR}{LF}
- ◆ Set:
AT+HTPHD=header{CR}
{CR}{LF}OK{CR}{LF}

Parameters:

- ◆ Header: header of HTTP request, example Connection: close[0D][0A], must end in [0D][0A]
- Example: AT+ HTPHD = Connection: close[0D][0A]

8.1.2.46. AT+HTPPTO

Function: Query/Set timeout of HTTP request

Format:

- ◆ Query current parameters:
AT+HTPPTO{CR} or AT+HTPPTO?{CR}
{CR}{LF}+HTPPTO: time{CR}{LF}{CR}{LF}OK{CR}{LF}
- ◆ Set:
AT+HTPPTO=time{CR}
{CR}{LF}OK{CR}{LF}

Parameters:

- ◆ Head: timeout of HTTP request, range from 1~600 seconds
- Example: AT+ HTPPTO = 10

8.1.2.47. AT+HTPFLT

Function: Query/Set whether filter the header of HTTP information from your HTTP server.

Format:

- ◆ Query current parameters:
AT+HTPFLT{CR} or AT+HTPFLT?{CR}
{CR}{LF}+HTPFLT: status{CR}{LF}{CR}{LF}OK{CR}{LF}
- ◆ Set:
AT+HTPFLT=status{CR}
{CR}{LF}OK{CR}{LF}

Parameters:

- ◇ Status: whether filter the header of HTTP information from your HTTP server.
- ◇ ON: open
- ◇ OFF: close

8.1.2.48. AT+DSTNUM

- Function: Query/Set the destination phone number of SMS
- Format:
 - ◆ Query current parameters:
AT+DSTNUM{CR} or AT+DSTNUM?{CR}
{CR}{LF}+DSTNUM: number{CR}{LF}{CR}{LF}OK{CR}{LF}
 - ◆ Set:
AT+DSTNUM=number{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Number: destination phone number in SMS mode
- Example: AT+ DSTNUM = 13066666666

8.1.2.49. AT+SMSSEND

- Function: Send SMS
- Format:
 - ◆ Set:
AT+SMSSEND=number, type, data{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Number: destination phone number of SMS
 - ◆ type: encode methods, including:
 - ✧ 1: 7Bits code(ASCII code)
 - ✧ 3: UCS2, both English and Chinese methods
 - ◆ Data: content of SMS
- Example: AT+ SMSSEND = 3, 你好

8.1.2.50. AT+CISMSSSEND

- Function: send SMS
- Format:
 - ◆ Set:
AT+CISMSSSEND=number ,type, data{CR}
{CR}{LF}OK{CR}{LF}
- Parameters:
 - ◆ Number: destination phone number of SMS
 - ◆ type: encode type, including:
 - ✧ 1: 7Bits code(ASCII code)
 - ✧ 3: UCS8, both Chinese and English methods
 - ◆ Data: content of SMS

➤ Example: AT+ CISMSEND = 3, 你好

8.1.2.51. AT+SMSFLT

Function: Query/Set whether filter SMS source phone number

Format:

- ◆ Query current parameters
AT+SMSFLT{CR} or AT+SMSFLT?{CR}
{CR}{LF}+SMSFLT: status{CR}{LF}{CR}{LF}OK{CR}{LF}
- ◆ Set
AT+SMSFLT=status{CR}
{CR}{LF}OK{CR}{LF}

Parameters:

- ◆ Status: whether filter SMS source phone number
 - ◇ ON: open
 - ◇ OFF: close

8.1.2.52. AT+SMSPH

Function: Query/Set whether display SMS source phone number

Format:

- ◆ Query current parameters:
AT+SMSPH{CR} or AT+SMSPH?{CR}
{CR}{LF}+SMSPH: status{CR}{LF}{CR}{LF}OK{CR}{LF}
- ◆ Set
AT+SMSPH=status{CR}
{CR}{LF}OK{CR}{LF}

Parameters:

- ◆ Status: whether display SMS source phone number
 - ◇ ON: open
 - ◇ OFF: close

9. Contact Us

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11. Update History

2016-08-05	V1.0.1 Established
2016-08-19	V1.0.2 Audited by testing team, modify basic parameter registration package function
2016-08-19	V1.0.3 Audited by FAE, modify some wrong name, add samples of AT command
2016-08-25	V1.0.4 Audited by technical manager, modify some wrong pictures
2016-11-07	V1.0.4.1 First English version
2016-11-07	V1.0.4.2 Add APN description.