Readme.md

Since the microcontroller only recognizes the string type in the JSON format, the following parameters, even if the parameter type is INT, will be converted to a string and sent

WIFI Related

Parameter name	Type	Necessity	Default	Description	Possible value
ssid	string	yes	" "	2G WiFi SSID	A string of up to 32 characters
up	string	yes	"0"	Indicates whether 2G WIFI is enabled. If it is not enabled, the LCD will not display the 2G WIFI page.	0 or 1
key	string	no	" "	2G WiFi password, if it is empty, it means	A string of up to 64 characters

Parameter name	Type	Necessity	Default	Description	Possible value
				no encryption, LCD shows OPEN	
ssid_5g	string	yes	" "	5G WiFi SSID	A string of up to 32 characters
up_5g	string	yes	"0"	Indicates whether 5G WIFI is enabled. If it is not enabled, the LCD will not display the 5G WIFI page.	0 or 1
key_5g	string	no	" "	5G WiFi password, if it is empty, it means no encryption, LCD shows OPEN	A string of up to 64 characters
hide_psk	string	no	"0"	Whether to hide the wifi password on the LCD	0 or 1

Modem related

Parameter name	Type	Necessity	Default	Description	Possible value
SIM	string	no	"NO_SIM"	SIM card status, there is no SIM parameter normally, if there is SIM parameter, other parameters will not be transferred	NO_SIM (No SIM card detected), PIN_SIM (PIN code required), NO_REG (No service)

Parameter name	Type	Necessity	Default	Description	Possible value
carrier	string	no	"0"	Carrier name	A string of up to 16 characters
sms	string	no	"0"	/Number of text messages. If this parameter is greater than 0, the LCD displays the text message icon.	Numbers greater than 0
signal	string	no	"0"	Signal strength	0~4
modem_mode	string	no	" "	Network mode	2G，3G, 4G, 4G+
modem_up	string	no	"0"	Whether the modem data is enabled	0 or 1

Network Related

Parameter name	Type	Necessity	Default	Description	Possible v
work_mode	string	yes	" "	Router network mode	Router,AP,WDS,Exte
lan_ip	string	yes	" "	Router gateway address, or the IP address of the router under	Legal IP address

Parameter name	Type	Necessity	Default	Description	Possible va
				bridge mode	
method_nw	string	yes	" "	Router's current Internet access	cable,repeater,mod if there is extra info "|" to separate then example, repeater| 081

VPN related

Parameter name	Type	Necessity	Default	Description	Possible value
vpn_type	string	yes	" "	VPN protocol	openvpn,wireguar
vpn_status	string	yes	" "	VPN connection status	connected，connecting，off
vpn_server	string	yes	" "	VPN configuration name	A string of up to 128 characters

Client related

Parameter name	Type	Necessity	Default	Description	Possible value
clients	string	yes	"0"	Number of clients	Numbers greater than or equal to 0

customization related

Parameter name	Type	Necessity	Default	Description	Possible value
display_mask	string	no	"1f"	This value indicates whether the 1-5	0x0-0x1f

Parameter name	Type	Necessity	Default	Description	Possible value
				screen is displayed. You need to convert this value to the corresponding binary when setting. For example, 0x03 converted to binary is 00011, which means that only the first screen and the second screen are displayed; the default 1f, that is, 11111, displays 5 screen contents	
custom_en	string	no	"0"	This value indicates whether the user is using a custom page, 0 means not use, 1 means use	0 or 1
content	string	no	" "	Display content	A string of up to 64 characters
msg	string	no	" "	Display content on the screen for 20 seconds	A string of up to 64 characters

system related

Parameter name	Type	Necessity	Default	Description	Possible value
button	string	no	"0"	The time the reset button was pressed	Numbers greater than or equal to 0
system	string	no	"boot"	Show system status on screen	reboot (reboot), reft (restore factory settings), adding (system upgrade), gouboot (enter uboot mode), boot (boot), Calibrate stage (calibration stage), Flash stage (waiting to upgrade standard firmware stage), Test stage 1 (Test Phase 1), Test stage 2 （Test Phase 2）
disk	string	no	"0"	Is there a disk	0 or 1
tor	string	no	"0"	Is it the Tor firmware	0 or 1
debug	string	no	"0"	Whether to print debug information in logread	0 or 1

MCU status related

Parameter name	Type	Necessity	Default	Description	Possible value
mcu_status	string	no	NO	Get the status of the microcomputer, send	

Parameter name	Type	Necessity	Default	Description	Possible value
				the command within 1 second, the microcomputer will return the relevant data through the serial port, which are the percentage of power, the temperature of the coulometer, the state of charge, the number of battery charging cycles, and the battery voltage	

screen test

Parameter name	Type	Necessity	Default	Description	Possible value
lcd_test	string	no	NO	Test the screen for bad pixels	1 (light up all pixels) or 0 (off screen)

coulometer parameter query

Parameter name	Type	Necessity	Default	Description	Possible value
QEN	string	no	NO	Check if the coulometer algorithm is enabled	
chemid	string	no	NO	Check coulometer file version	
high_temp	string	no	72	Set high temperature shutdown value, don't set too low	

MCU firmware version query

Parameter name	Type	Necessity	Default	Description	Possible value
version	string	no	NO	Check MCU firmware version	

example1: How to control the OLED display

Use the echo command directly to send data in json format to the system serial port. This example contains basic WIFI information, SIM card information, VPN status, client status, time, etc. The MCU_status parameter is included in the example, which indicates that the microcontroller is required to return status

```
echo '{ "ssid_5g": "GL-E750-719", "up_5g": "1", "key_5g": "goodlife",
"ssid": "GL-E750-719", "up": "1", "key": "goodlife", "SIM": "NO_SIM",
"work_mode": "Router", "lan_ip": "192.168.82.1",  "vpn_status": "off",
"clients": "1", "clock": "02:30", "mcu_status": "1" }' >/dev/ttyS0
```

After the command is executed, the serial port will return the status within 1 second. The return value is as follows. Each parameter is separated by a comma, where {OK} indicates successful execution, 99 indicates that 99% of the current power is left, and 42.4 indicates that the current coulometer Temperature, 1 means charging, 2 means the battery has two charge and discharge cycles

```
{OK},99,42.4,1,2
```

example2: How to check the information

If you want to check the MCU firmware version, please following these steps.

1. Open the first terminal useing SSH protocol
2. In the terminal, execute the ***uci set mcu.global.debug=1 && uci commit*** command to open the debug mode
3. Execute the ***/etc/init.d/e750_mcu restart*** command to restart the mcu process
4. Execute the ***logread -f*** command to monitor the system log
5. Open the second terminal useing SSH protocol, and then execute the ***echo {\"version\": \"1\"} > /tmp/mcu_message && killall -17 e750-mcu*** command

6. In the first terminal, you will see the **e750-mcu recived:xxx** message

Compile .ipk

1. Compile on the glinet openwrt source

```
$cd openwrt_root          #go to your openwrt source root
$./scripts/feeds update -f -a
$./scripts/feeds install -f -a
$make menuconfig
  GL.iNet packages choice shortcut  --->
    Select MCU  --->
      <*> Support GL_E750_MCU
$make package/feeds/gli_pub/gl-e750-mcu/{clean,compile} V=s
$ls bin/packages/mips_24kc/gli_pub/gl-e750-mcu_2020-06-08-f8c77bdb-
1_mips_24kc.ipk
```

2. Compile on the other openwrt source

```
$cd openwrt_root          #go to your openwrt source root
$cd package
$git clone https://github.com/gl-inet/GL-E750-MCU-instruction.git
$cd ..
$make menuconfig
  gl-inet  --->
    <*> gl-e750-mcu..................................... GL iNet mcu
interface
$make package/GL-E750-MCU-instruction/{clean,compile} V=s
$ls bin/packages/mips_24kc/base/gl-e750-mcu_2020-06-08-f8c77bdb-
1_mips_24kc.ipk
```

How to upgrade the mcu firmware

1. Get the mcu firmware from GL sales or compile the firmware by youself use the source code

2. Use the TFTP or SCP protocol to upload the MCU firmware to a directory on E750 file system. For example, my firmware name is **e750-mcu-V1.0.5.bin** and I chose the directory is **/tmp**, so the firmware path is **/tmp/e750-mcu-V1.0.5.bin**

3. Open the first terminal useing SSH protocol, execute the ***ubus call service delete '{"name":"e750_mcu"}'*** command to stop the mcu process, don't care the rerurn message

4. Execute the ***mcu_update /tmp/e750-mcu-V1.0.5.bin*** command to upgrade the MCU firmware

Releases

No releases published

Packages

No packages published

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Languages

C 93.0% **Makefile** 3.5% **Lua** 2.0% **Shell** 1.5%