

Update Method for G1100 Gateway Firmware

V1.0



WirelessHART

Update Method for G1100 Gateway Firmware

G1100 gateway with the present software version doesn't support on-line firmware update function. Therefore, if the user would like to update the firmware, the user shall update manually. The update method is shown as following.

Caution

The documentation is about how to update WirelessHART gateway firmware. Please contact Microcyber's wireless experts for technical support if there is any problem. The contact email is specialists.wireless@microcyber.cn

1. Preparasion

Hardware:

- PC or laptop
- RS-232 serial line
- G1100 WirelessHART gateway
- MICRO SD card (1GB or plus)

Software:

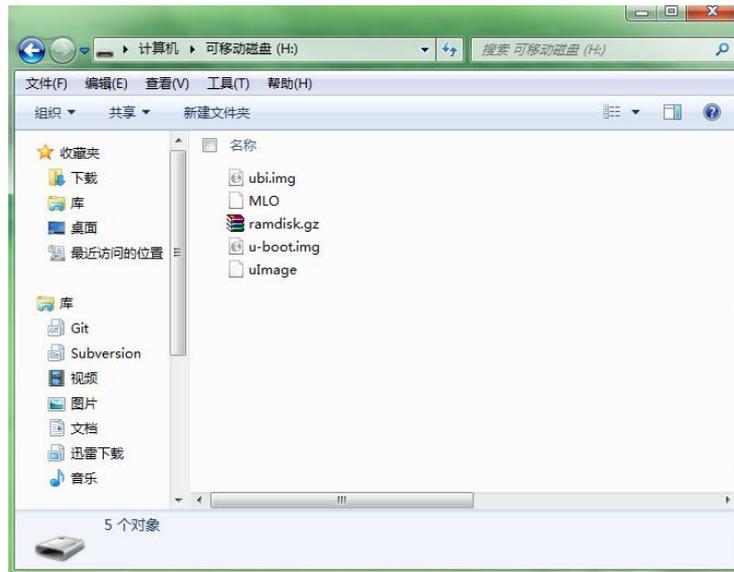
- SecureCRT super terminal or similar serial port terminal software
- MD5 check tool
- Gateway firmware program

2. Burn-in Procedure

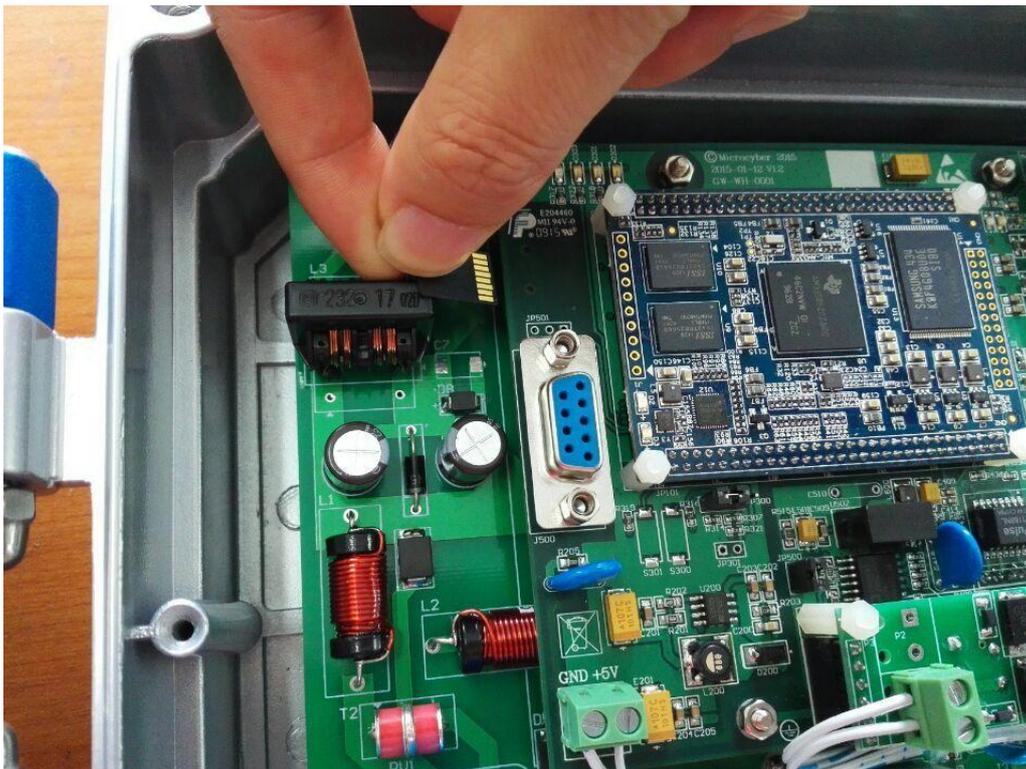
- (1) Format SD card to FAT32.
- (2) Check gateway's related software program with MD5, after the check, copy related software program to root directory of MICRO SD card.

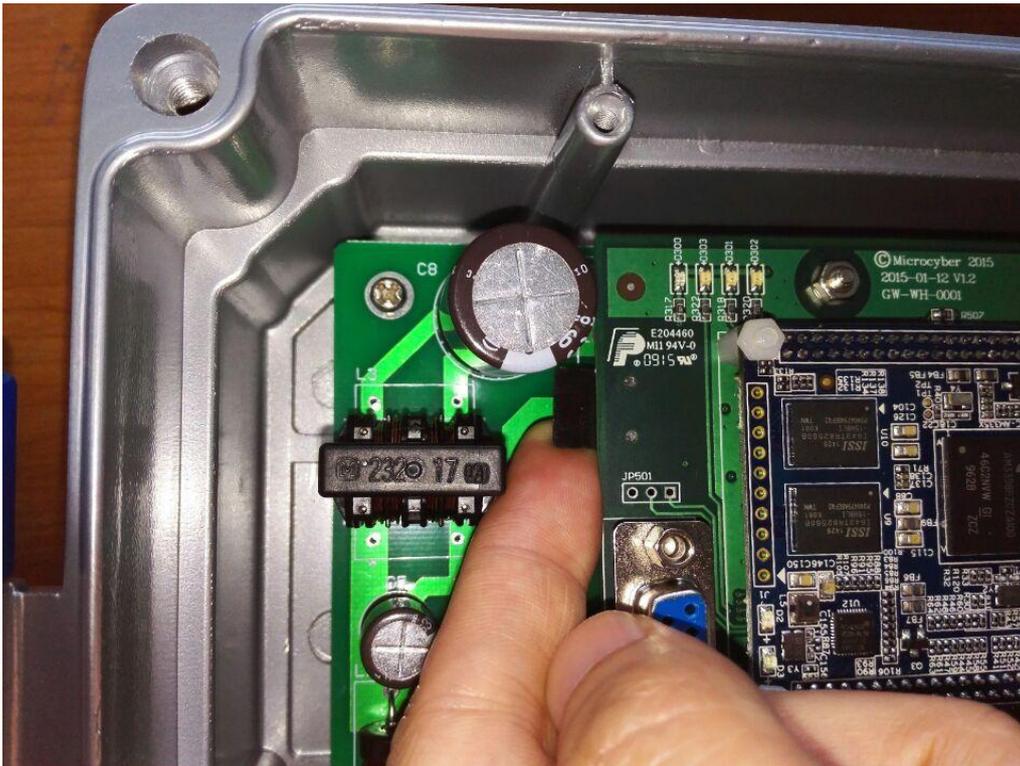
Caution

Make all the firmware programs in the root directory of MICRO SD card, rather than folder. And there should not be any other files. It is shown as following.



- (3) Put MICRO SD card to the slot. At the left side bottom of gateway PCB, there is a socket for MICRO SD card. (Because MICRO SD card is designed at the back of PCB, taken a smaller space, the tweezers or something like that are necessary.)

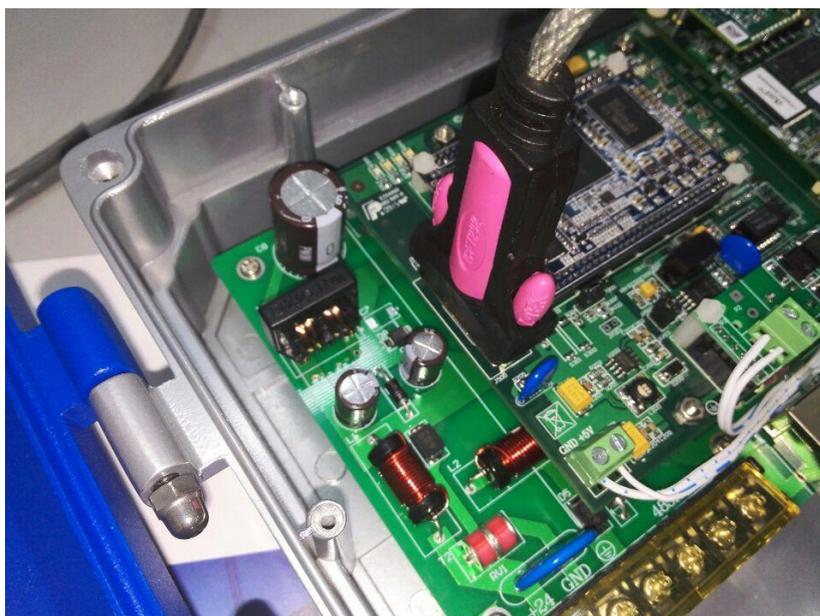




Caution

- The card slot place is pretty small, so the user may try several times or use tweezers to insert the card.
- Please pay attention to MICRO SD card's direction and front-back. It won't insert if the direction and front-back are wrong.

(4) Connect serial line. Connect gateway's RS-232 serial port with PC, shown as following.

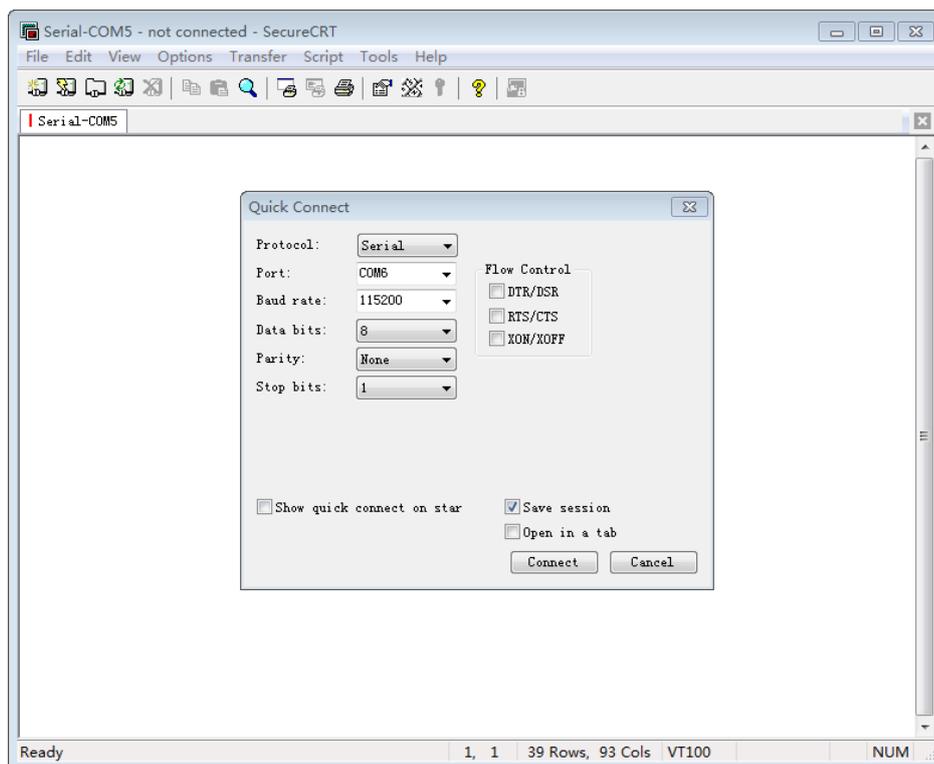


(5) PC operation

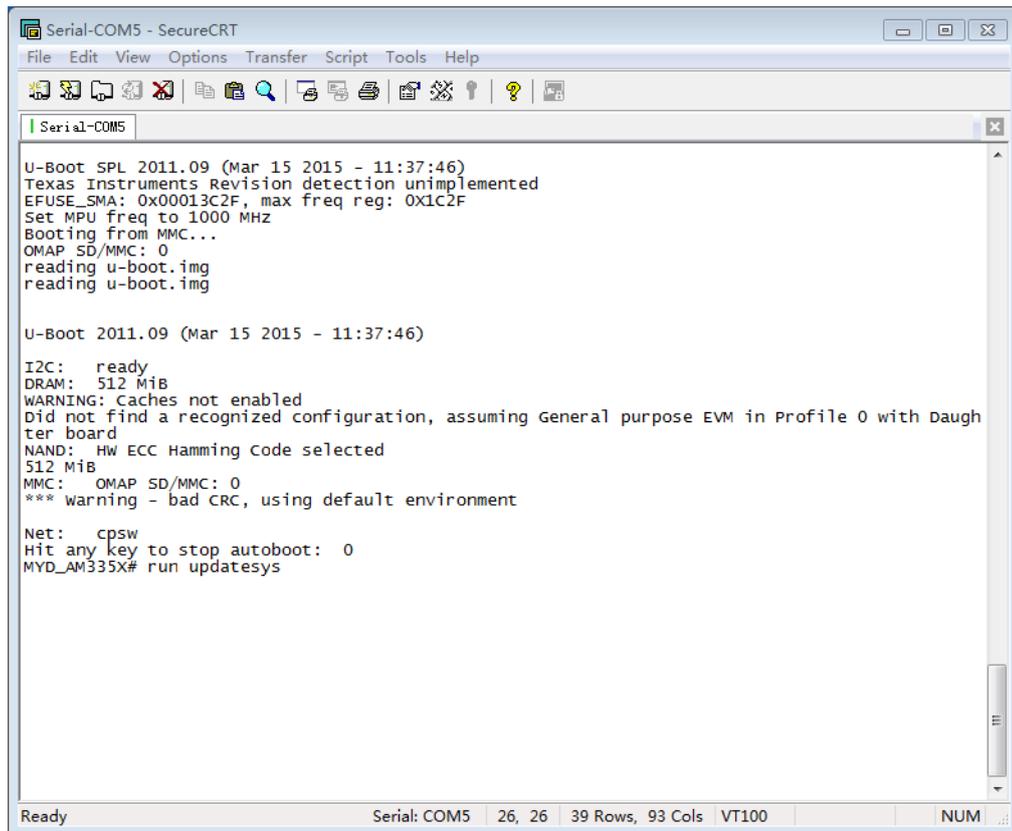
Turn on SecureCRT super terminal via PC, click Quick Connect in the File menu, to get the following dialogue box, and then click Protocol place to choose serial port, to get the serial port setting interface shown as following. The serial setting is shown as following:

- Port: PC designed serial port
- Baud Rate: 115200
- Data bit: 8
- Parity: None
- Stop bits: 1

Please pay attention to crossing out RTS/CTS at the right side, and click Connect at the right bottom. Now the terminal setting is finished, power on the circuit board.



(6) After the device is powered on, it will print out the following setup information, and before Hit any key to stop autoboot indicating is 0s, the user shall press space key (or Enter) of PC, to enter uboot setup, input **run updatesys**, and then press Enter of PC. Then the command shall start to burn-in firmware program in MICRO SD card.



```
Serial-COMS - SecureCRT
File Edit View Options Transfer Script Tools Help
Serial-COMS
U-Boot SPL 2011.09 (Mar 15 2015 - 11:37:46)
Texas Instruments Revision detection unimplemented
EFUSE_SMA: 0x00013C2F, max freq reg: 0x1C2F
Set MPU freq to 1000 MHz
Booting from MMC...
OMAP SD/MMC: 0
reading u-boot.img
reading u-boot.img

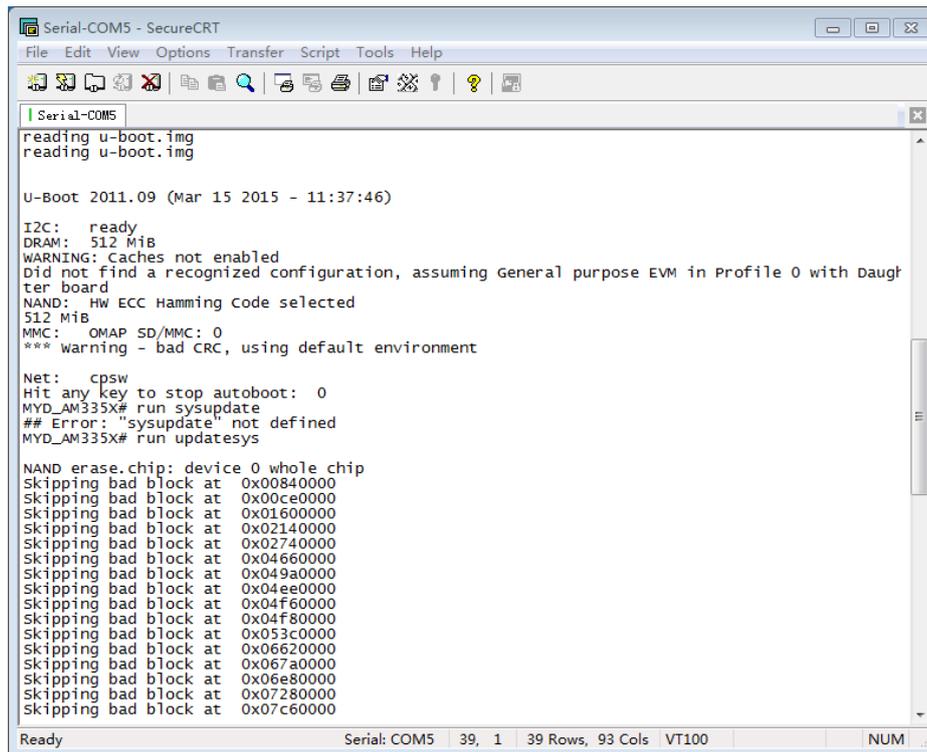
U-Boot 2011.09 (Mar 15 2015 - 11:37:46)

I2C: ready
DRAM: 512 MiB
WARNING: Caches not enabled
Did not find a recognized configuration, assuming General purpose EVM in Profile 0 with Daughter board
NAND: Hw ECC Hamming Code selected
512 MiB
MMC: OMAP SD/MMC: 0
*** warning - bad CRC, using default environment

Net: cpsw
Hit any key to stop autoboot: 0
MYD_AM335X# run updatesys

Ready Serial: COM5 26, 26 39 Rows, 93 Cols VT100 NUM
```

- (7) Burn-in procedure is shown as following. When the firmware burn-in firmware starts, there shall probably be bad blocks in the flash, and different device testing may point out different number of bad blocks, which doesn't affect firmware burn-in, and the system shall test automatically and skip bad blocks.



```
Serial-COMS - SecureCRT
File Edit View Options Transfer Script Tools Help
Serial-COMS
reading u-boot.img
reading u-boot.img

U-Boot 2011.09 (Mar 15 2015 - 11:37:46)

I2C: ready
DRAM: 512 MiB
WARNING: Caches not enabled
Did not find a recognized configuration, assuming General purpose EVM in Profile 0 with Daughter board
NAND: HW ECC Hamming Code selected
512 MiB
MMC: OMAP SD/MMC: 0
*** warning - bad CRC, using default environment

Net: cpsw
Hit any key to stop autoboot: 0
MYD_AM335X# run sysupdate
## Error: "sysupdate" not defined
MYD_AM335X# run updatesys

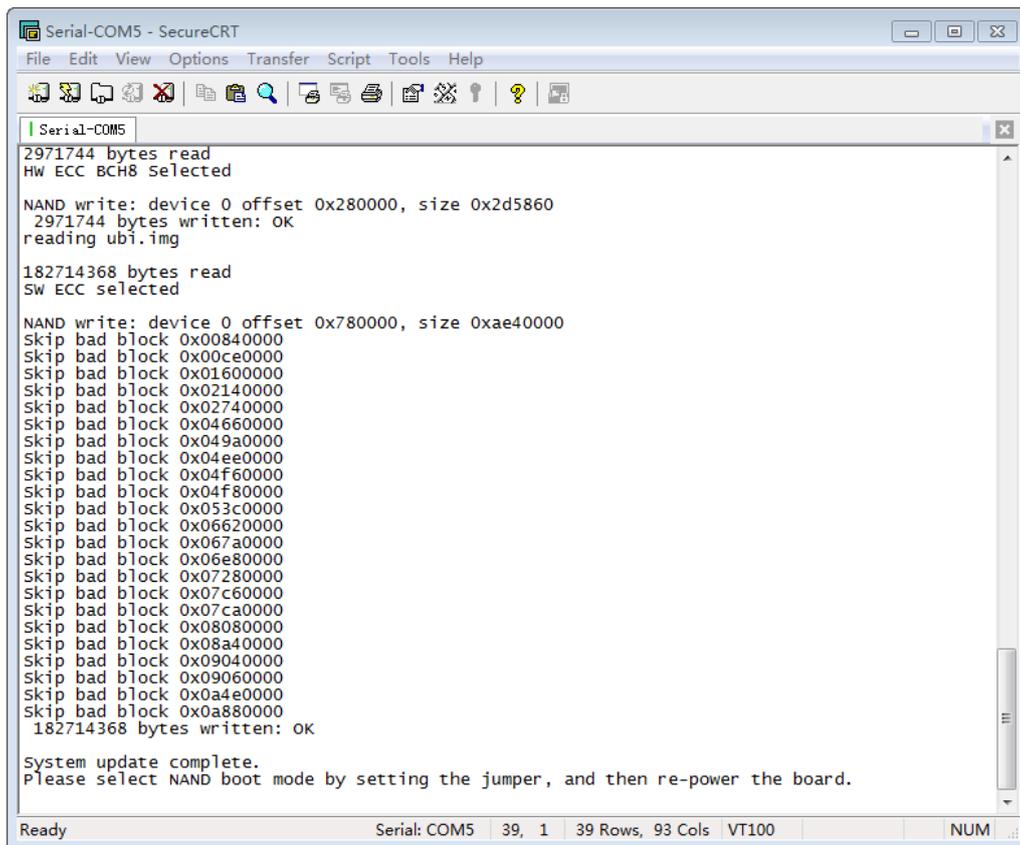
NAND erase.chip: device 0 whole chip
skipping bad block at 0x00840000
skipping bad block at 0x00ce0000
skipping bad block at 0x01600000
skipping bad block at 0x02140000
skipping bad block at 0x02740000
skipping bad block at 0x04660000
skipping bad block at 0x049a0000
skipping bad block at 0x04ee0000
skipping bad block at 0x04f60000
skipping bad block at 0x04f80000
skipping bad block at 0x053c0000
skipping bad block at 0x06620000
skipping bad block at 0x067a0000
skipping bad block at 0x06e80000
skipping bad block at 0x07280000
skipping bad block at 0x07c60000

Ready Serial: COM5 39, 1 39 Rows, 93 Cols VT100 NUM
```

(8) When the system burn-in is finished, there will be the interface as following, and it will point out System Update Complete. Then the firmware burn-in is successful.

Caution

- The firmware burn-in shall last for 5-10 minutes, please wait patiently. And please notice that don't cut the electricity off and do hardware operation.



```
Serial-COM5 - SecureCRT
File Edit View Options Transfer Script Tools Help
Serial-COM5
2971744 bytes read
HW ECC BCH8 Selected

NAND write: device 0 offset 0x280000, size 0x2d5860
2971744 bytes written: OK
reading ubi.img

182714368 bytes read
SW ECC selected

NAND write: device 0 offset 0x780000, size 0xae40000
Skip bad block 0x00840000
Skip bad block 0x00ce0000
Skip bad block 0x01600000
Skip bad block 0x02140000
Skip bad block 0x02740000
Skip bad block 0x04660000
Skip bad block 0x049a0000
Skip bad block 0x04ee0000
Skip bad block 0x04f60000
Skip bad block 0x04f80000
Skip bad block 0x053c0000
Skip bad block 0x06620000
Skip bad block 0x067a0000
Skip bad block 0x06e80000
Skip bad block 0x07280000
Skip bad block 0x07c60000
Skip bad block 0x07ca0000
Skip bad block 0x08080000
Skip bad block 0x08a40000
Skip bad block 0x09040000
Skip bad block 0x09060000
Skip bad block 0x0a4e0000
Skip bad block 0x0a880000
182714368 bytes written: OK

System update complete.
Please select NAND boot mode by setting the jumper, and then re-power the board.

Ready Serial: COM5 39, 1 39 Rows, 93 Cols VT100 NUM
```

(9) After the firmware burn-in, take off MICRO SD card, power on the gateway again and access to the gateway webpage.

Default IP: <https://192.168.2.253/>

Username: admin

Password: 123456

The firmware burn-in is successful when the user can access to the gateway webpage normally.

Caution

- Use HTTPS rather than HTTP.
- After the device is powered on again, please wait for 1-2 minutes for gateway setup, and then access the webpage.
- If the device is powered on for the first time, the user shall wait for more time.