

AM Burner User Manual

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This manual is designed to help you correctly use this burner ,It Contains the description of the characteristics and configuration. Please read this manual carefully before operating.

1 Overview

1.1 Description

This burner is a portable product specially used to burn, query, updating. The entire product contains a burner box, PC client software and mobile phone APP client software. Usage scenarios as shown in the figure below:

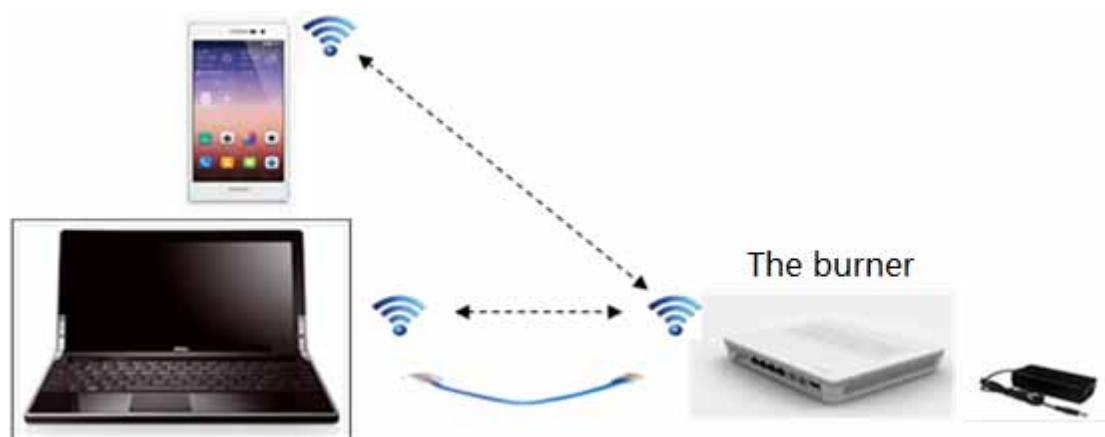


Figure 1.1.1 Usage scenarios

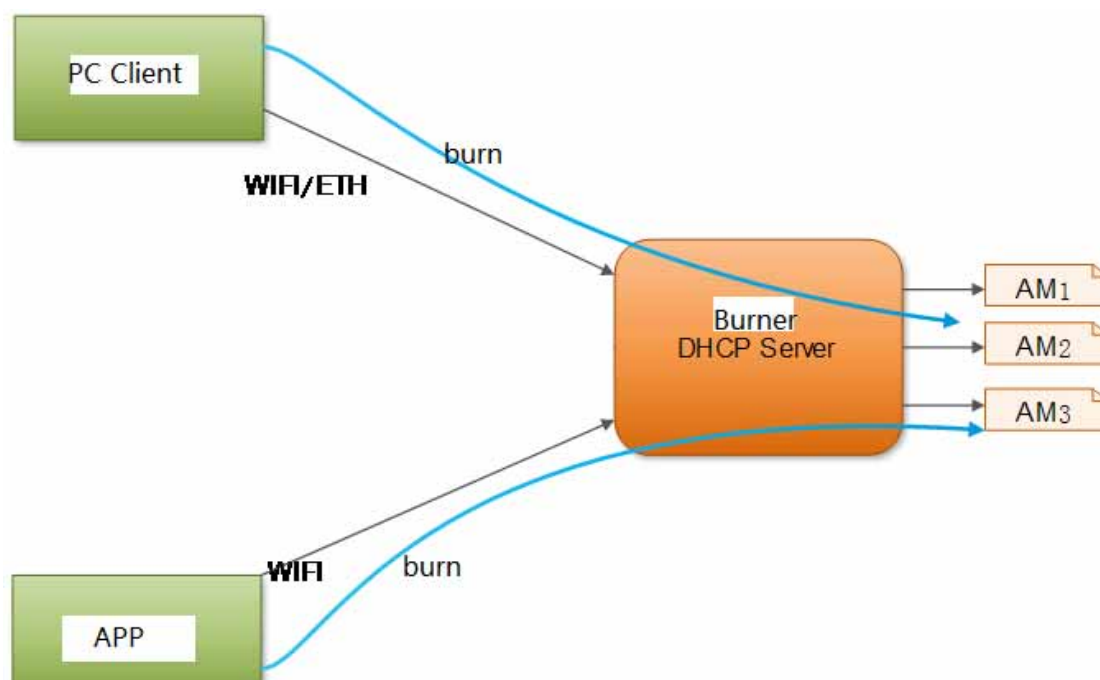


Figure 1.1.2 connection diagram

1.2 Characteristics

1.2.1 Hardware Characteristic:

- Cortex-A8 ARM core of the microprocessor, the highest can work at the speed of 600Mhz.
- DDR3 high speed memory with a capacity of 1G.
- Flash with capacity of Byte 256M.
- WIFI supports 802.11 b/g/n.
- 10/100/1000M adaptive Ethernet port.
- 2 SFP,1 XFP port.
- fanless design, natural cooling.

1.2.2 Characteristics:

- two kinds of connection mode:WIFI and cable.
- DHCP server function.
- XFP (10GE) LAN/WAN Mode switch.
- Support 2 SFP/SFP+ and 1 XFP.
- single AM burn and query .
- batch AM burn.
- Support the configuration of the burner.
- Support AM restore factory settings.
- Support software upgrade.
- Support AM upgrade.

1.3 Introduction

1.3.1 size and weight

- Size:110 (width) x 90 (depth) x 25 (height) mm;
- Weight:260 grams (no light module);

1.3.2 Front panel



No.	Name	Description
1	Power	Power interface,connect the power adapter 12V.
2	Recovery &Serial port	System recovery button, recover system to factory configuration.
3	Configure port	Configure the burner's setting and communicate with PC client.
4	XFP port	10GE burn port.
5	SFP port	GE burn port.

1.3.3 LED



Name	State	Description
WIFI	Power on	Indicate WIFI has been established.
	Power off	WIFI is not enabled.
SFP/SFP+	Power on	Indicate the gigabit optical module has access and linked.
	Power off	Indicate the gigabit optical module is not connected, there is no link state.
XFP	Power on	Indicate the 10GE optical module has access and linked.
	Power off	Indicate the 10GE optical module is not connected, there is no link state.
Ethernet	Power on	Indicate port has access to the Internet.
	Power off	Port is not connected to the Internet.
Power	Yellow	Indicate the boot is not connected.
	Green	Indicate the client can access.
	Power off	Unpowered.

1.3.4 Consumption

- Rated voltage: Input 100V AC/240V AC, 50Hz/60Hz, 0.5A;

Output 12V, 1.5A

- Maximum voltage range: 90V AC~264V AC, 47Hz~63Hz;
- Maximum power consumption (full matching, high temperature) 10W;

1.3.5 Working Environment Parameter

- Operating environment temperature: 0° C~55° C;
- Storage environment temperature: -40° C~+70° C;

2 Hardware Installation And Upgrade

2.1 Select The Appropriate Installation Location

Please put the device in a stable, ventilation, and no light irradiation environment. If you use the device's WIFI connection function, in order to better connect WIFI, you should select the install location and pay attention to the following:

(1) Choose open space, so that there is no barrier between the computer and equipment, such as cement wall, wall and other barriers will affect WIFI signal transmission effect.

(2) Make sure that the equipment and computer are far away from electrical appliances, such as microwave ovens, with a strong magnetic field or electric field.

2.2 Connect Power Supply

Please plug the big end of the power adapter into the 220v power socket, the small end plug into the burner's power port. and then the power supply can be switched on the burner.



When the burner is power on, the led will be light.you can check whether the led is on. please check whether the power line is connected correctly when the led not light.

 Note: please use the original power cable. please install the power outlet at the convenient location near the burner and facilitate to operate.

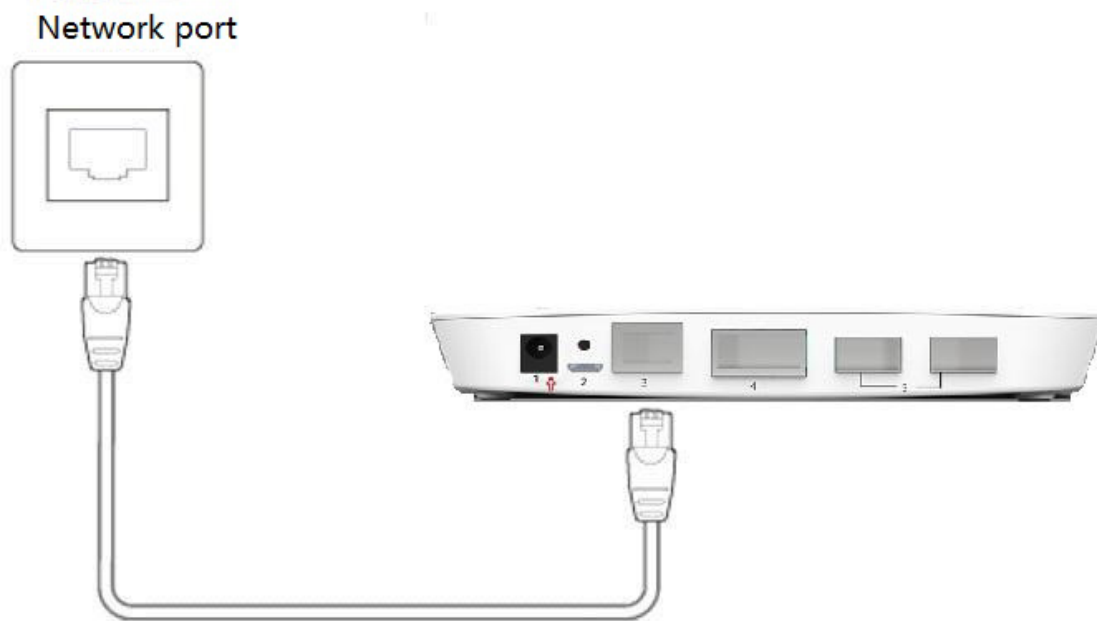
2.3 Establish Network Connection

Burner provide two kind of connect type :WIFI & cable.

 Note: When multiple clients and Apps want to connect the burner, only the first connected one can connect, the other one is forbidden to connect.

2.3.1 Cable Connection

Cable connect type only support PC client to use. Please insert one end of the cable into the computer, the other end into the burner's ethernet port. as shown in figure.



2.3.2 Wifi Connection

Burner can support both of PC client and cell phone establish connection through WIFI. The WIFI is enabled as default. Burner provide DHCP server function, terminal equipment can get a IP address assigned. The burner is enabled by default for WIFI. The built-in DHCP burner server function, Terminal equipment automatically connect to the IP address.

The default configuration of WIFI is :

SSID: Burner_XXX

Password: 12345678

2.4 Insert Atom Router

Make sure the burner's power and network connection can work. You can insert the AM to the burner's 3 \4\5 port to burn.

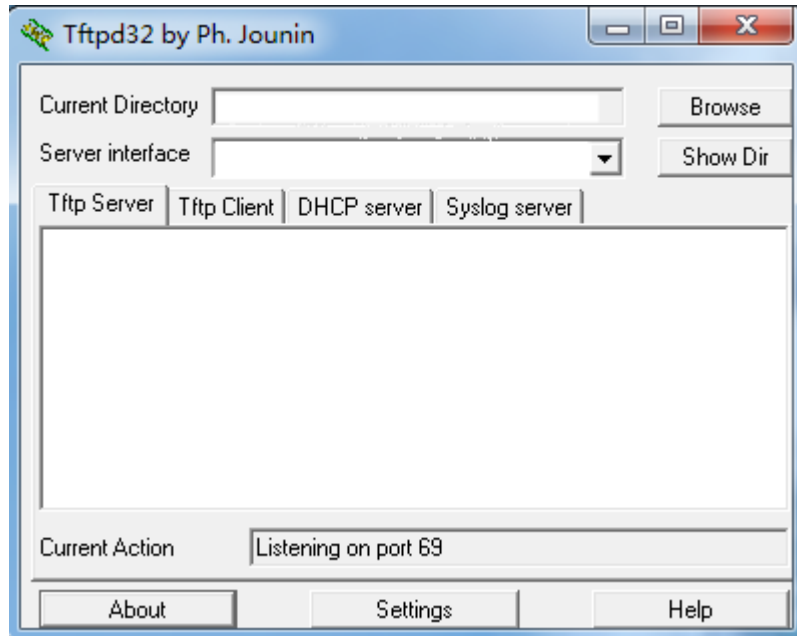
2.5 Operating System Upgrade

Note: Please don't power off while upgrading.

The IP address of PC is set 192.168.1.2;

The steps of building the environment before the system upgrade:

1. Windows build Tftpd server;
2. Online download the Tftpd32;

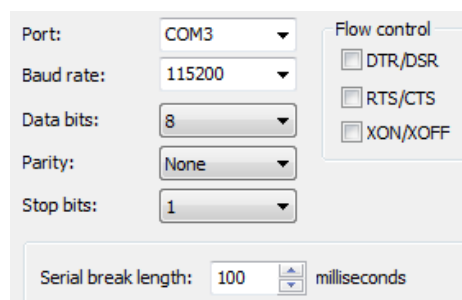


Current Directory: Point to the directory to download, as the Tftpd directory.

Server interface: Pointing to the PC machine and the board directly connected to the network port IP address 192.168.1.2

Put the upgrade file into the Tftpd directory; For example: u-boot.img MLO uImage ubifs.img, Among uboot upgrade file is u-boot.img MLO; kernel upgrade file is uImage; rootfs upgrade file is ubifs.img; Upgrade that part of this section, please put it in this directory.

3. port Set as shown below:



4. Connect port line, on the power;

5. Press any key to enter the u-boot, as shown below:

Hit any key to stop autoboot: 0

U-Boot#

uboot ip Address setting:

U-Boot#setenv ipaddr 192.168.1.1

U-Boot#setenv serverip 192.168.1.2

U-Boot#saveenv

6. Print the following message set successfully.

Saving Environment to NAND...

Erasing Nand...

Erasing at 0x260000 -- 100% complete.

Writing to Nand... Done

Upgrade classification is as follows:

(1) U-Boot Upgrade:

Enter the following message

```
#Tftp 0x82000000 MLO;nand erase.part SPL;nand write 0x82000000 0
$filesize;Tftp 0x82000000 u-boot.img;nand erase.part u-boot;nand write 0x82000000
80000 $filesize
```

Print the information shown in Appendix 1: indicates the success of the u-boot upgrade.

(2) kernel Upgrade:

Enter the following message

```
U-Boot#Tftp 0x82000000 uImage;nand erase 280000 500000;nand write
0x82000000 280000 $filesize
```

Print the information shown in Appendix 2: indicates the success of the kernel upgrade.

(3) rootfs Upgrade:

Enter the following message

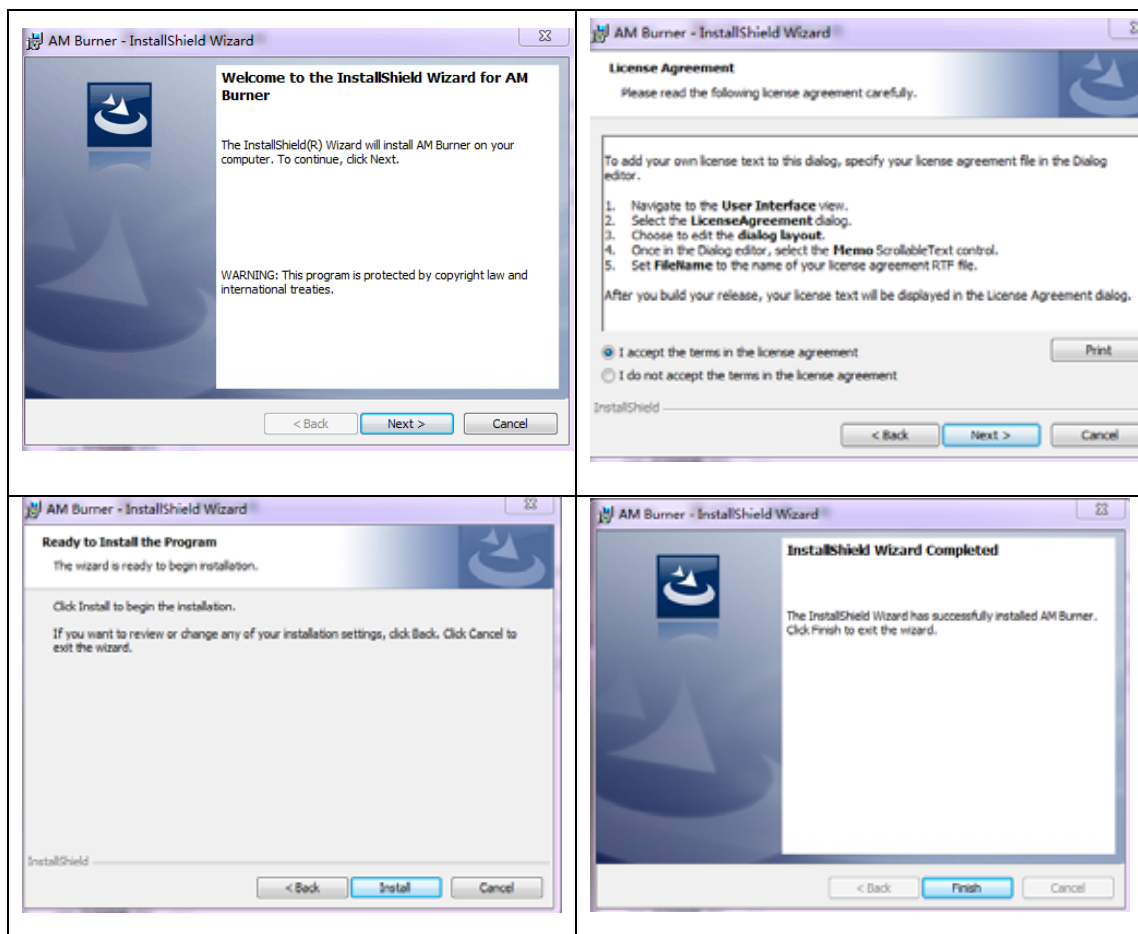
```
U-Boot#mtdparts default;nand erase.part rootfs;ubi part rootfs 2048;ubi create
rootfs;Tftp 0x82000000 ubifs.img;ubi write 0x82000000 rootfs $filesize
```

Print the information shown in Appendix 3: indicates the success of the kernel upgrade.

3 PC Client Software Operation

3.1 Install PC Client Software

You can get the installation package for PC client from CD disk attached, or get it from our website. Double click the installation package. In process of installing can be directly click on the next step; Install interface as shown below:



3.2 Computer configuration

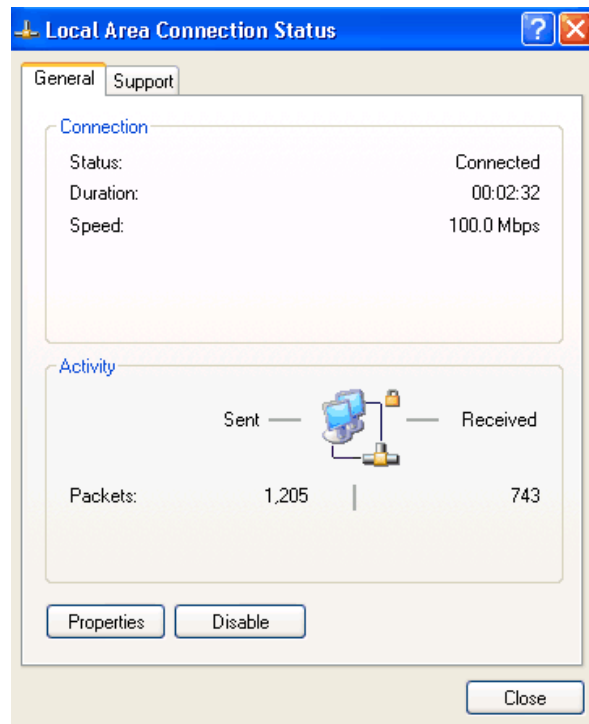
You need to the IP address of the computer, in order to ensure that you can access the burner.

Take Windows XP as an example:

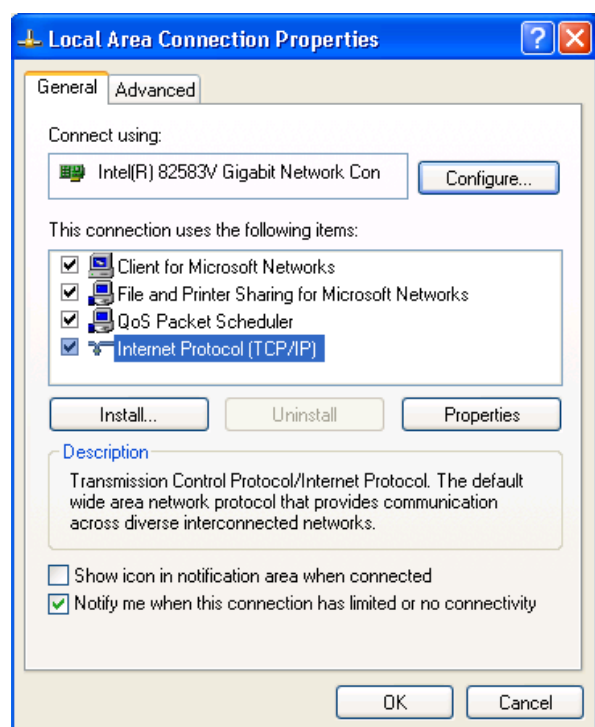
1. click the network icon in the lower right corner.



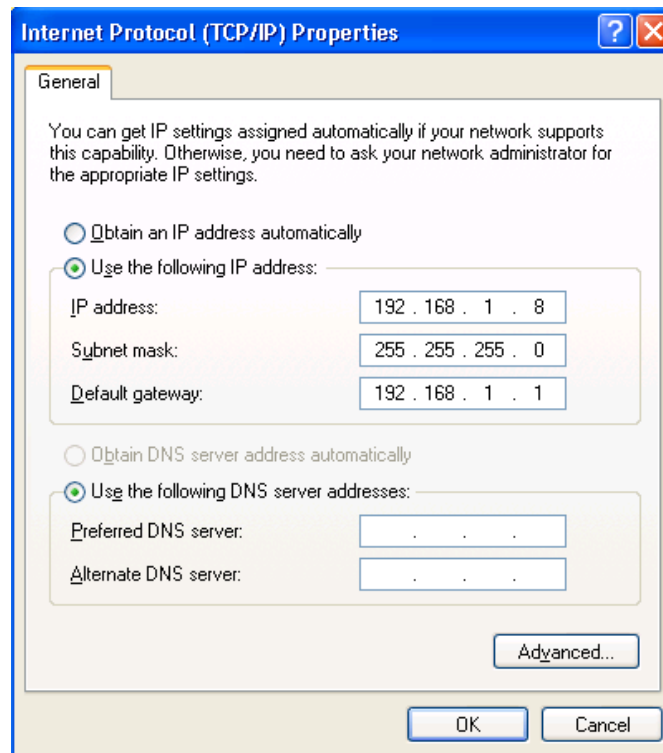
2.in the pop-up dialog box, click properties.



3.Double click the Internet protocol (TCP/IP).



4. Gateway selection using 1 segment and 1 segment of the IP address, click OK.



 Note: Burner assigned a default IP address to Ethernet port.

3.3 Log In

Take the Windows version as an example; after the installation, double click on the desktop client icon. Appear on the login window, as shown in figure 4.1;

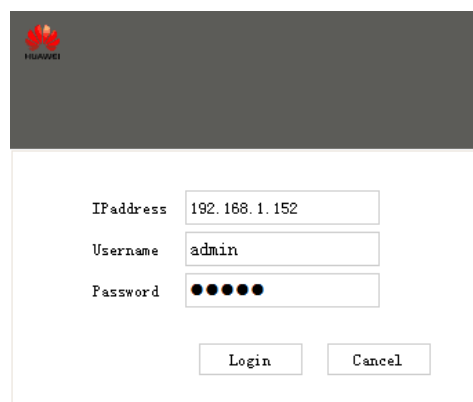


Figure 4.1 login interface

After configuring the correct IP address, user name and password, click 'login' button. Click login to enter the main interface. System default user name: admin, the default password: admin.

3.4 Basic Information

MAC AM address, electronic tags and other basic information can be viewed in 'BasicInfo' page. As shown in Figure 4.2 below:

Operation steps:

1. Click the "select Port" drop-down box on the left side to select the AM you want to operate;

2. Selected AM's basic information will be display in the interface;

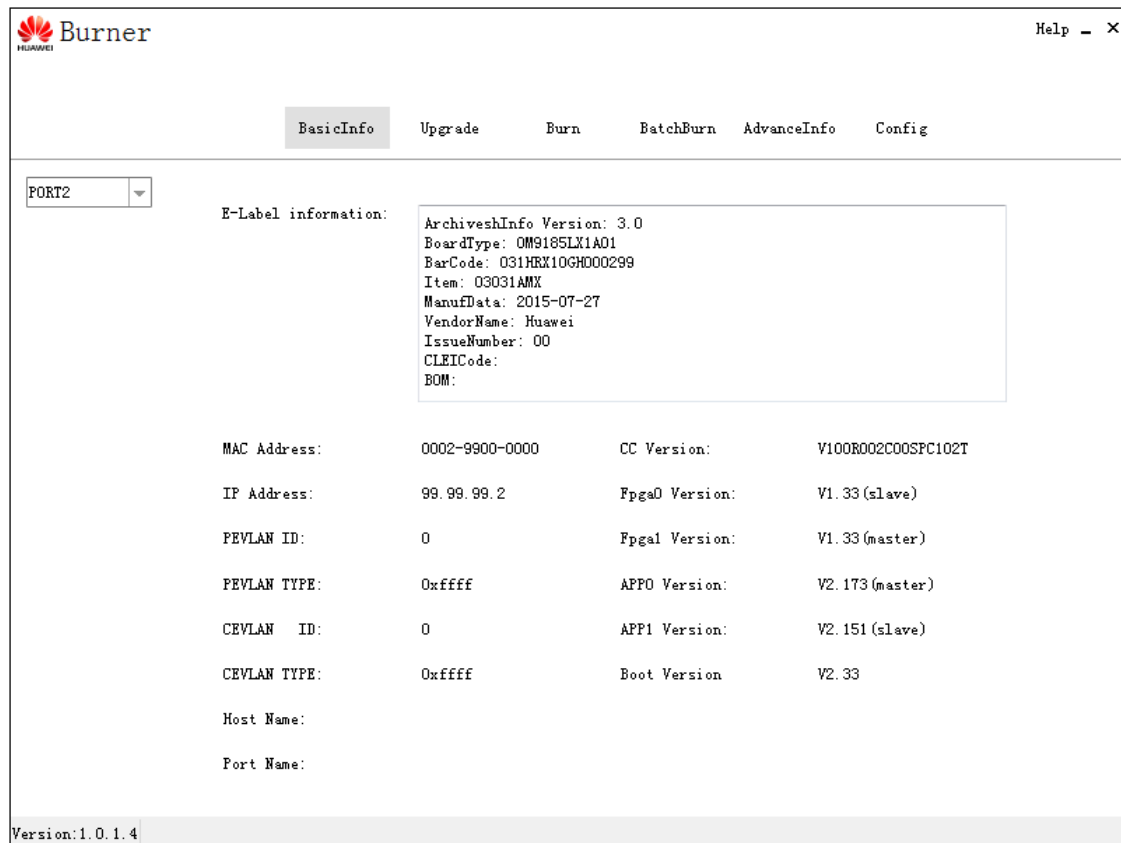


Figure 4.2 basic information interface

Display information include: MAC address, electronic tags, IP Address, ID VLAN, Vlan Type, Host device name, Port name and Version information.

Query the relevant information in the basic information interface,After upgrading, burning and configuration.

AM without a stable and begin to query will be prompted for AM is busy, meet the phenomenon, please wait a moment, after being stable AM link, and then to query.

3.5 AM Software Upgrade

Support for AM software to upgrade through the PC client, as shown in Figure 4.3 below:

Operation steps:

- 1.Choose the AM.
- 2.Select the Upgrade package to upgrade.
- 3.Click the "start" button to begin the upgrade.

When the upgrade starting, it will show the upgrade progress of the selected AM.

Software check upgrade version before upgrading.if the old version is same to the new version. It will have tips to notice whether to upgrade,have the option to prompt, by the user to choose whether to upgrade.Three port can upgrade simultaneously.After the upgrade is complete the progress bar will back to 0%; Don't remove AM or power off while upgrading.

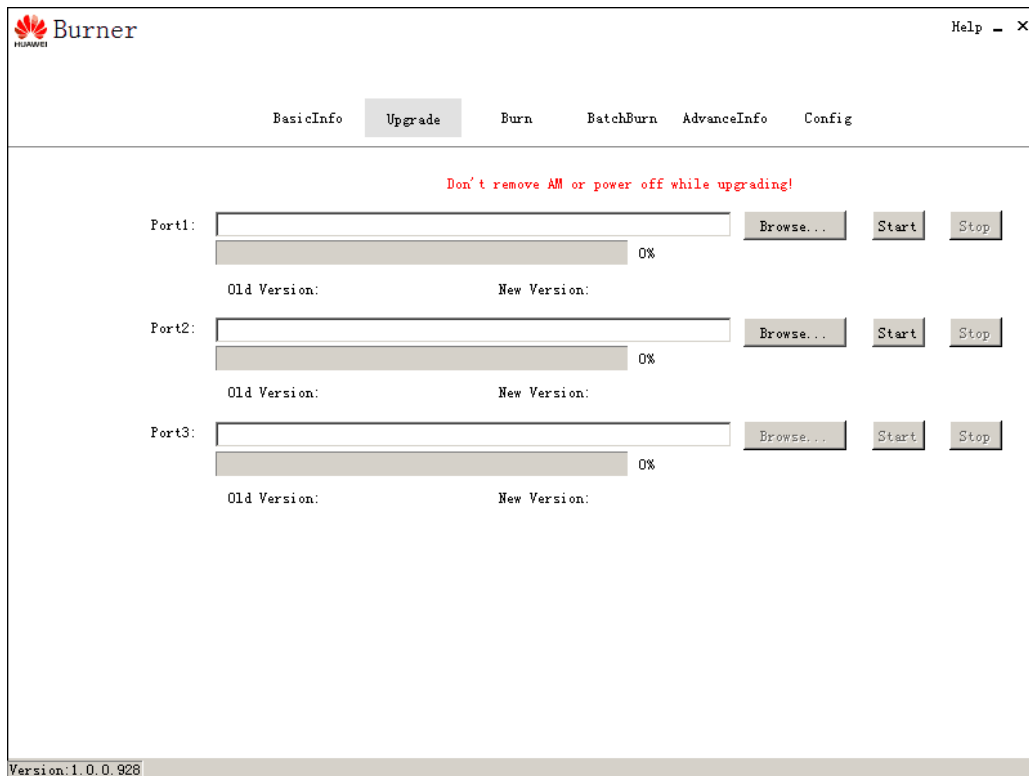


Figure 4.3 upgrade interface

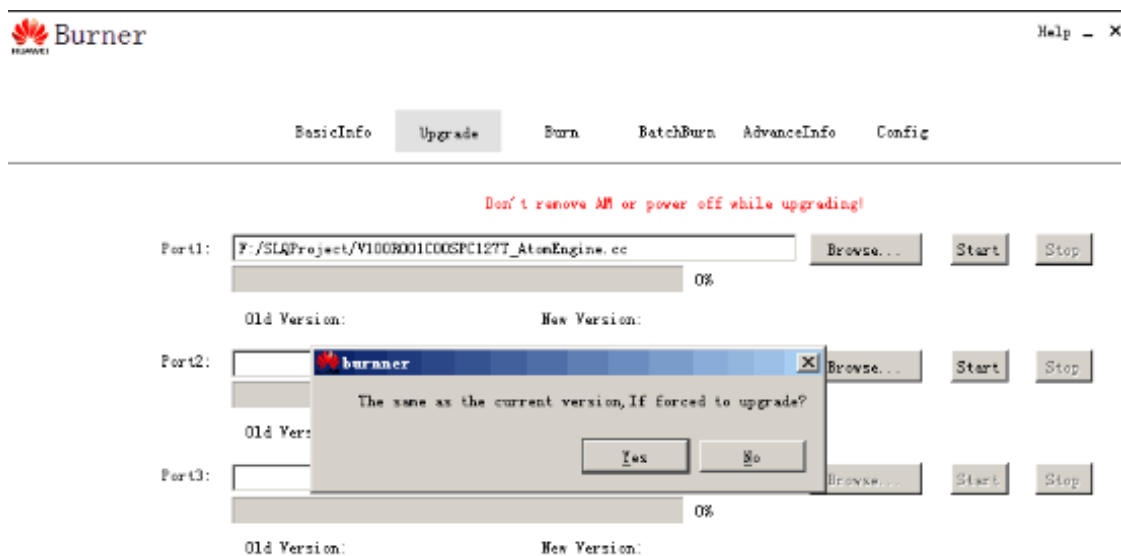


Figure 4.4 Notice information

3.6 Burn

Burn function provide single AM burn and batch AM burn. Burn the operation interface as shown below:

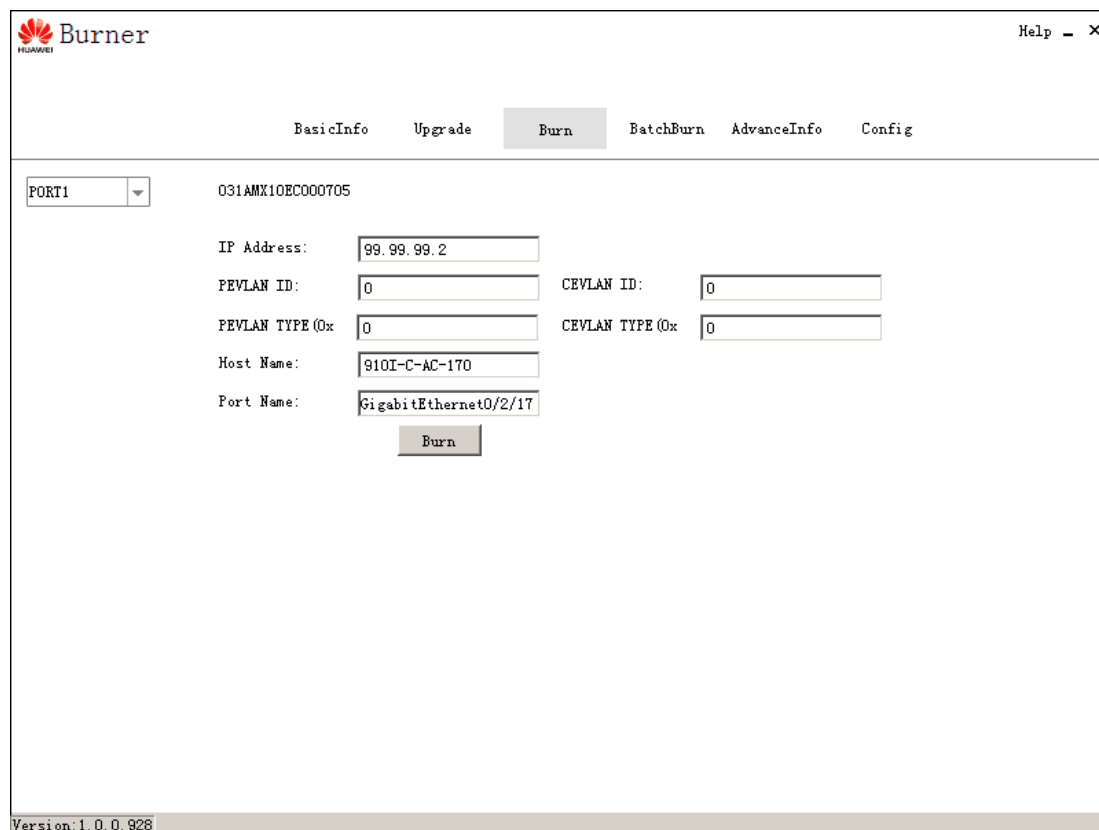


Figure 4.4 burn interface

Single burn step

1. choose AM to burn.
 2. The interface displays the current AM basic information. Including: IP address, VLANID, VLAN Type, host device name and port name.
 3. Modify or fill in new information.
 4. Click the "burn" button to burn. Progress bar show the entire burning progress.
- Notice: Don't support to input chinese information.

Batch burn step

1. Choose AM.
2. Click the "import" button to select the file to import.
3. Click "start" to burn. The different port's progress bar show the burn progress of itself.

4. There's a burn status info below the progresses.

5. During the burning, user can plug and remove AM according the AM's burn status. Until the whole AM burn complete.

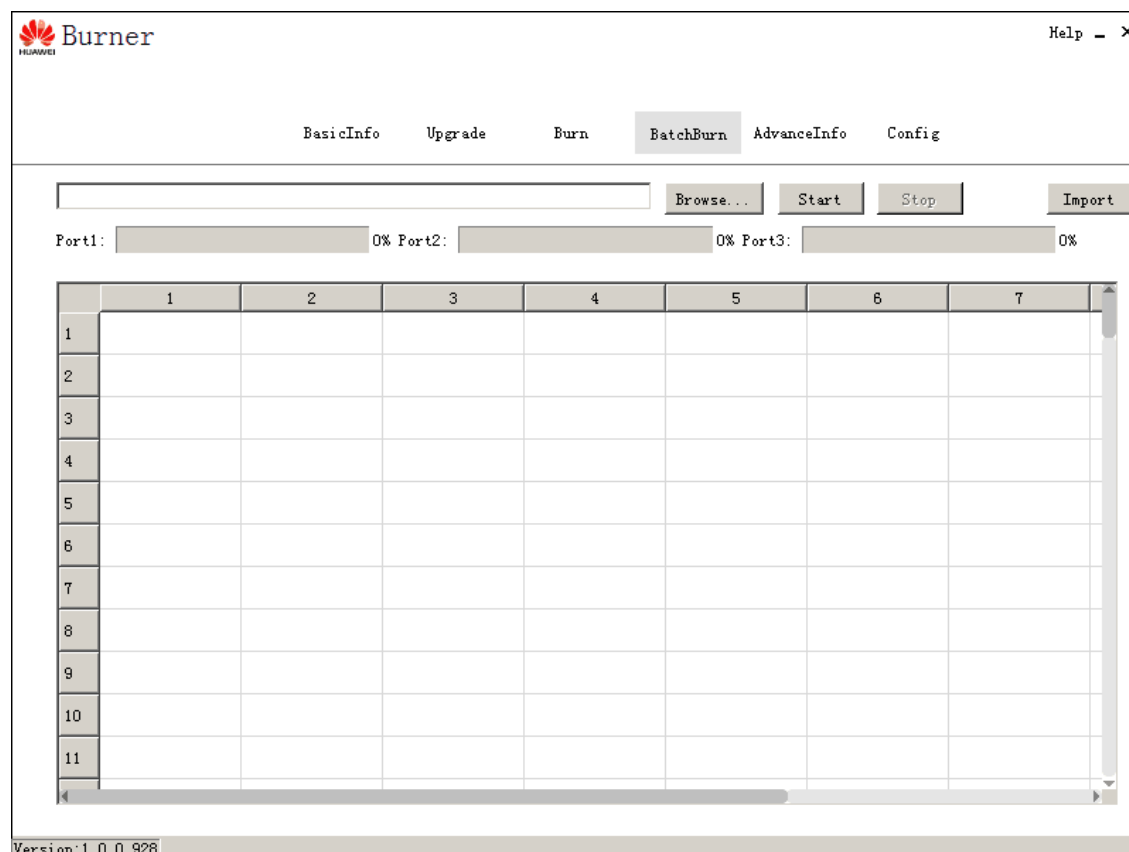


Figure 4.5 Batch burning interface

After burning, pull out and insert AM module automatically to burn.

Router planning table:

AE ESN	Device Name	Dummy Device IP	Port	SNC Device Name	Layer	DP1	DP2	VPN	PE VLAN	CE VLAN	PE VLAN TYPE	CE VLAN TYPE	Atom Meter Type
031AMX10EC000427	910I-C-AC-170		GigabitEthernet0/2/17	CX600-X8_RSG1	IP	99.99.99.2							Bypass
031CUH10F1000046	CX600-X1-24		GigabitEthernet1/0/8	CX600-X8_RSG1	IP	99.99.99.9							Bypass
031CUH10F1000014	Maipu	2.2.2.3	GigabitEthernet4/2/2	CX600-X8_RSG1	IP	134.191.10.2							Bypass
031HRX10FA000036	Maipu	2.2.2.3	GigabitEthernet4/2/2	CX600-X8_RSG1	IP	134.191.10.2							Bypass
031HRX10GH000299	aaa		aaa			134.191.10.2							
031AMX10EC000705	910I-C-AC-170		GigabitEthernet0/2/17	CX600-X8_RSG1	IP	99.99.99.2							Bypass
	CX600-X1-24		GigabitEthernet1/0/8	CX600-X8_RSG1	IP	99.99.99.9							Bypass
	Maipu	2.2.2.3	GigabitEthernet4/2/2	CX600-X8_RSG1	IP	134.191.10.2							Bypass
	Maipu	2.2.2.3	GigabitEthernet4/2/2	CX600-X8_RSG1	IP	134.191.10.2							Bypass

AE ESN:Batch burning device ENS;

Device Name:Batch burning device Name;

Dummy Device IP:When Batch burning, Don't pay attention;

Port:Batch burning device port;

SNC Device Name: When Batch burning, Don't pay attention;

Layer:When Batch burning, Don't pay attention;

DIP1:Batch burning device IP;

VPN:When Batch burning, Don't pay attention;

CE VLAN:burn inner layer of two VLAN, when only one layer of VLAN ,need to fill to the J column "PE VLAN" column;

PE/CE VLAN:When the VLAN type is not 8100\9100\88a8, need to burn the corresponding type;

*Atom Meter Type: According to the actual situation of the burning type,Fill in the atomic routers . In the drop-down list,select "Bypass" or "In-line" (straight), only bypass the atomic routers will burn IP address, IP address take G column "the destination IP address".

Status/Burning Time: Complete burning,automatic back fill burning state, burning time,Do not need to pay attention before burning.

Note: when it is bypass atomic router,Need to burning IP address,Straight atomic routers do not need,All other fields are optional fields.

3.7 Advance Information

Advanced information interface provides MCU upgrade, read arbitrary registers, backup the AM's internal parameters, restore the factory key, restore factory settings and query diagnostic logs, and other functions. As shown below:

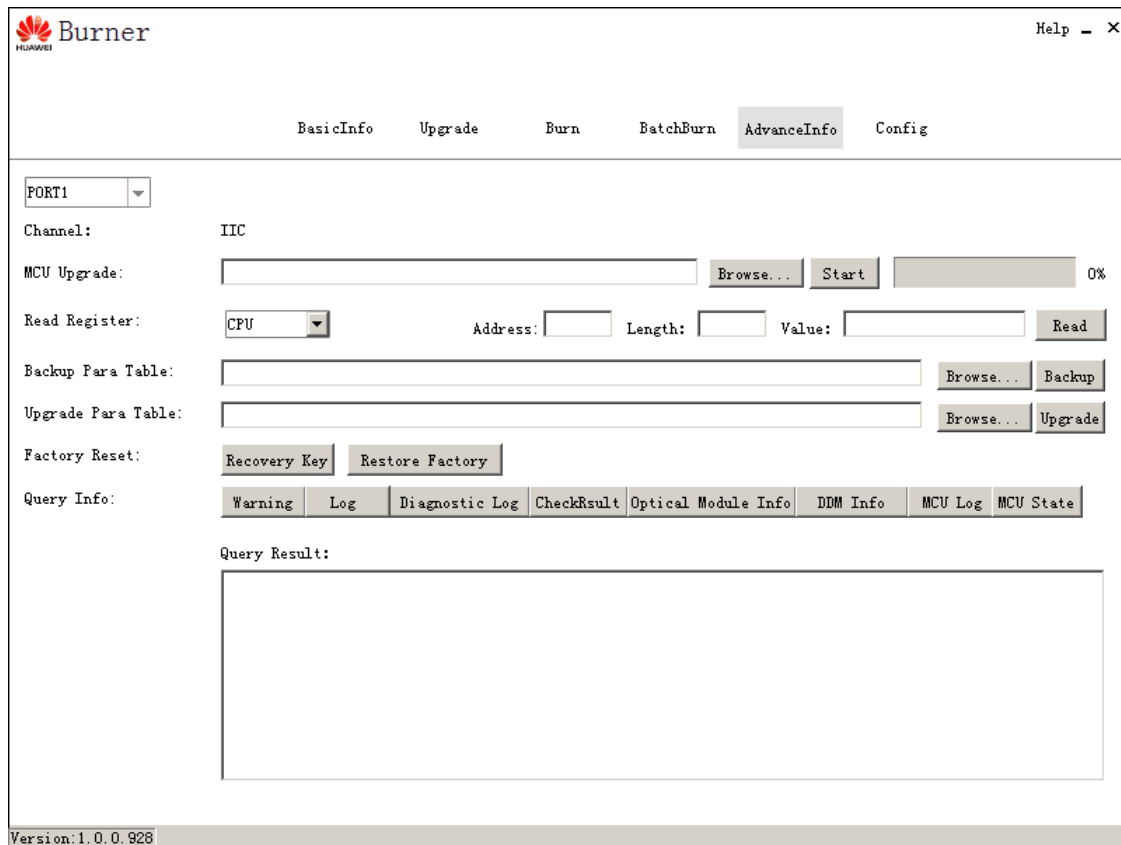


Figure 4.6 advanced information interface

Channel

Burner can adapt AM's connect interface automatically, including GE/10GE and IIC. Choosed AM,Software show what the channel is used.

MCU upgrade:

Software support the MCU upgrade of AM.

Operation steps:

1. Choice AM.
2. Select the upgrade file.
3. Click the MCU upgrade button to start the upgrade.
4. In the process of upgrading ,it will prompt the progress of the upgrade.

Read register:

Support for reading the address, length and value of any register.

CPU、Flash、 Logic Memory:Support read length is Any multiple of 4 bytes;

MCU-A0、 MCU-A1:MCU Page must between 0-255;

MCU Address must between 0-255;

MCU Length must be between 0-65535。

Reading A0 register: page setting description

A0H address 0 page show Interface ID;

A0H address 1 page show equipment interface;

A0H address 2 page show log interface;

A0H address 3 page show Dump interface。

Back up internal parameters:

Supports the internal parameters of the backup: directly input the path address of the backup, or select the path to be backed up by browsing.After selecting the path, click the backup.

Factory Reset:

Support to restore the factory secret key, restore factory settings;

Query information:

Support to query :warning,Log,Diagnostic Log,Check Result,Optical Module information ,DDM information ,MCU Log,MCU State.

Query information is displayed in the query result textbox. Each query will clear the last query result at first.

3.8 System Configuration

The system configuration interface provides WIFI configuration, account configuration and so on. As shown below.

Figure 4.7 system configuration interface

WIFI configuration steps

1. Configure the correct SSID;
2. Enter the correct password;
3. Click Modify.

DHCP configuration

The address configuration can modify the burner default IP address and DHCP server configuration.

Modify account

Enter the correct old and new user name and password, click Modify.

Temperature

Query current temperature and set the upper limit of temperature.

Version

Display current version information.

Server Upgrade

Click the button “Browse” to select the upgrade file, and then upgrade.

Warning Info

Display some configuration information in the configuration process.

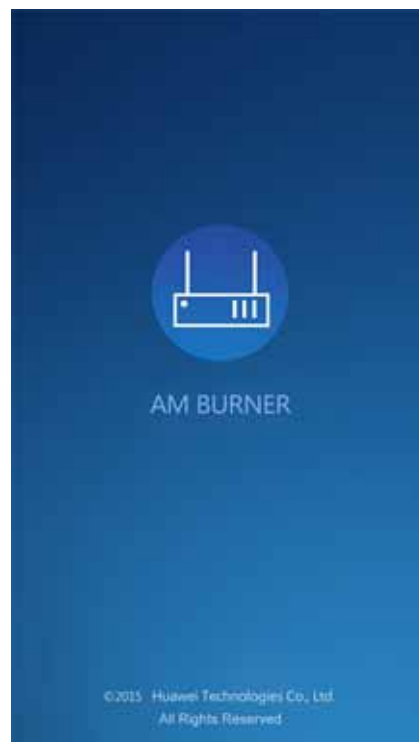
3.9 Help

If you have any question, you can get and search the help document by click the ‘help’ button.

4 Mobile Phone APP Client Operation (iOS)

4.1 Launch

After your mobile phone connects to the burner’s Wi-Fi system, you can open the APP. Appear on the launch screen.



4.2 AM State

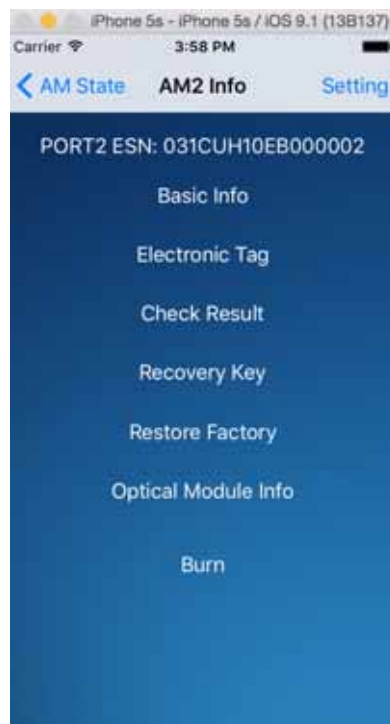
After the APP connects to the burner, the AM state screen shows. On the AM state screen you can see the states of three ports. If an AM inserted into a port is online, its ESN will be shown; otherwise, shows that the AM is offline. The states of three ports will be updated every one second.

If an AM that is online has not ESN, the screen only shows it is online.



4.3 Basic Information

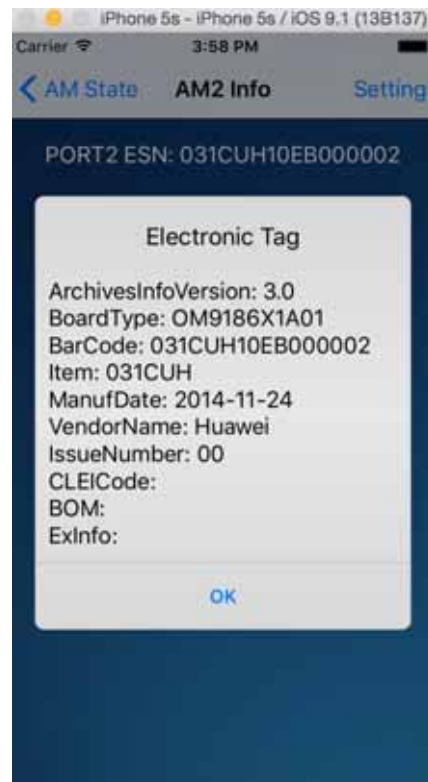
On the AM state screen, you can touch a button which shows an ESN, then the basic information of the corresponding AM screen is shown.



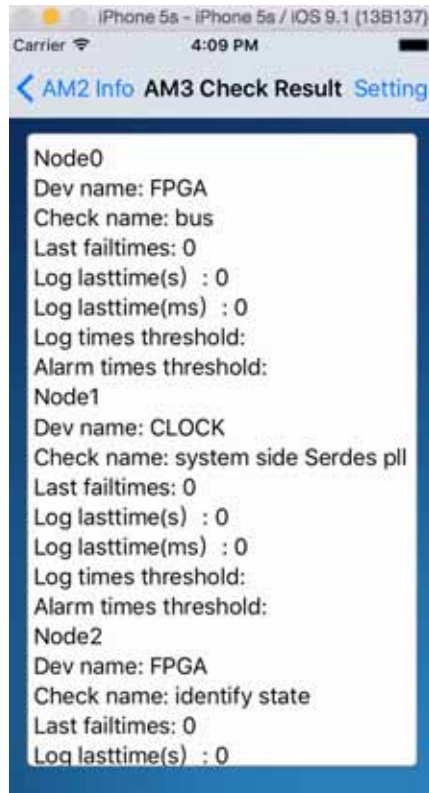
Touch the 'Basic Info' button on the screen to get the basic information of the AM.



Touch the 'Electronic Tag' button on the screen to get the electronic tag of the AM.

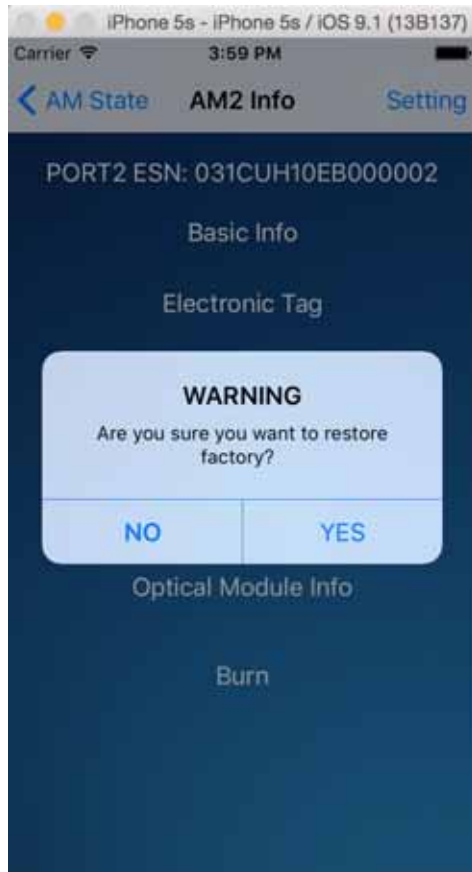


Touch the 'Check Result' button on the screen to get the check result of the AM. You can drag the screen to see the following result.



Touch the 'Recovery Key' button on the screen to recovery the default encrypt key of the AM.

Touch the 'Restore Factory' button on the screen to restore the factory setting of the AM. Notice that a popup will appear stating that you need to confirm this operation.



Touch the 'Optical Module Info' button on the screen to get the optical module information of the AM.



4.4 Burn

On the basic information screen, you can touch the 'Burn' button, then the burn screen of the AM is shown.



The screenshot shows an iPhone 5s screen with the status bar at the top displaying 'Carrier', signal strength, '4:01 PM', and battery level. The app's navigation bar has a back arrow, 'AM2 Info', a 'Burn' button, and a 'Setting' link. The main content area has a dark blue background. It starts with 'PORT2 ESN: 031CUH10EB000002'. Below this are seven white input fields with labels: 'IP Address', 'TPID1', 'TPID2', 'Pevlan', 'Cevlan', 'Host name', and 'Port name'. At the bottom of the screen is a large blue button labeled 'Burn'.

The APP currently can burn the information of a single AM.

Single burn step

1. The burn screen displays the basic information of the current AM. Including: IP address, TPID, VLANID, host device name and port name.
2. Modify or fill in new information.
3. Touch the 'Burn' button to start to burn. The screen displays recording progress bar.



If all burned items are null, a popup will appear. Touch the 'YES' button to continue to burn. Touch the 'NO' button to cancel the burn operation.



5 Common Questions Q&A

Q: Cannot connect burner.

A: Please check the network connection status, check the host address and the IP address of the burner device whether or not they are in a network, then check whether there is other devices connected burner or MAC address and the device conflict.

Q: Click the button without a response.

A: Please check for AM.

Q: After the program starts, the GE channel is blocked.

A: If you wait for 10S to 20S, it also shows that the channel is not available, the system automatically uses IIC channel.

6 Follow standard

6.1 Wifi standard:

- Operate at ISM frequency bands (2.4GHz).
- IEEE standards support: 802.11b, 802.11g, 802.11n.
- When A and B conflict, A is the standard.

6.2 Comply with safety standards \EMC standards:

- Provide ETL or UL certification report (North American Security compliance certification);
- Provide CE-SDOC certification report (European Security compliance /EMC/REACH/ROHS certification);
- Provide FCC certification report (North American EA/EB EMC certification);
- Provide C-Tick certification report (Australia & New Zealand EMC certification);
- Provide VCCI certification report (Japan Security compliance /EMC/REACH/ROHS certification);
- The above involved in EMC certification in accordance with the B Class criteria for certification;

- Criteria can be referred to in the supplementary provisions of the 20141205.xlsx.

6.3 Follow environmental standards:

Provide REACH&RoHS testing report.

6.4 FCC ID Warning:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT.SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. To comply with FCC RF exposure compliance requirements, this grant is applicable to only Mobile

Configurations. The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Complies with the Canadian ICES-003 Class B specifications.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Appendix:

1. U-boot upgrade successfully print information:

link up on port 0, speed 1000, full duplex

Using cpsw device

Tftp from server 192.168.9.1; our IP address is 192.168.9.2

Filename 'MLO'.

Load address: 0x82000000

Loading: #####

451.2 KiB/s

done

Bytes transferred = 84261 (14925 hex)

NAND erase.part: device 0 offset 0x0, size 0x20000

Erasing at 0x0 -- 100% complete.

OK

NAND write: device 0 offset 0x0, size 0x14925

84261 bytes written: OK

link up on port 0, speed 1000, full duplex

Using cpsw device

Tftp from server 192.168.9.1; our IP address is 192.168.9.2

Filename 'u-boot.img'.

Load address: 0x82000000

Loading: #####

473.6 KiB/s

done

Bytes transferred = 483300 (75fe4 hex)

NAND erase.part: device 0 offset 0x80000, size 0x1e0000

Erasing at 0x240000 -- 100% complete.

OK

NAND write: device 0 offset 0x80000, size 0x75fe4

483300 bytes written: OK

2. Kernel upgrade successfully print information:

link up on port 0, speed 1000, full duplex

Using cpsw device

Tftp from server 192.168.9.1; our IP address is 192.168.9.2

Filename 'uImage'.

Load address: 0x82000000

Loading: #####

477.5 KiB/s

done

Bytes transferred = 3531712 (35e3c0 hex)

NAND erase: device 0 offset 0x280000, size 0x500000

Erasing at 0x760000 -- 100% complete.

OK

NAND write: device 0 offset 0x280000, size 0x35e3c0

3531712 bytes written: OK。

3. Rootfs upgrade successfully print information:

NAND erase.part: device 0 offset 0x780000, size 0xf880000

Erasing at 0xffe0000 -- 100% complete.

OK

UBI: mtd1 is detached from ubi0

Creating 1 MTD partitions on "nand0":

0x000000780000-0x000010000000 : "mtd=7"

UBI: attaching mtd1 to ubi0

UBI: physical eraseblock size: 131072 bytes (128 KiB)

UBI: logical eraseblock size: 126976 bytes

UBI: smallest flash I/O unit: 2048

UBI: sub-page size: 512

UBI: VID header offset: 2048 (aligned 2048)

UBI: data offset: 4096

UBI: empty MTD device detected

UBI: create volume table (copy #1)

UBI: create volume table (copy #2)

UBI: attached mtd1 to ubi0

UBI: MTD device name: "mtd=7"

UBI: MTD device size: 248 MiB

UBI: number of good PEBs: 1988

UBI: number of bad PEBs: 0

UBI: max. allowed volumes: 128

```

UBI: wear-leveling threshold:      4096
UBI: number of internal volumes: 1
UBI: number of user volumes:      0
UBI: available PEBs:              1965
UBI: total number of reserved PEBs: 23
UBI: number of PEBs reserved for bad PEB handling: 19
UBI: max/mean erase counter: 1/0
No size specified -> Using max size (249507840)
Creating dynamic volume rootfs of size 249507840
link up on port 0, speed 1000, full duplex
Using cpsw device
Tftp from server 192.168.9.1; our IP address is 192.168.9.2
Filename 'ubifs.img'.
Load address: 0x82000000

```

```
#####  
#####  
#####
```

478.5 KiB/s

done

Bytes transferred = 30601216 (1d2f000 hex)

30601216 bytes written to volume rootfs