WIFI · HIFI

WiFi Multi-Room HiFi Audio System

Instruction for users

Thanks for choosing WiFi-HiFi system!

Before operating this unit, please read these instructions completely and save them for future use.

Visit our website **WWW.VASTINT.COM** for more information.

Rev 1.8

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Product Outline

WiFi-HiFi system is developed by VAST Electronics., It is a Multi-Room Music system based on WiFi wireless transmission. This WiFi-HiFi system supports 802.11b/g/n WLAN Standard, and can work under wireless AP/AP client/ STA mode. This audio is compatible with AirPlay from The United States Apple Inc, the DLNA standard and the Qplay from QQ music. It can display the music stored in your iPhone/iPad/iPod touch through AirPlay function. It can also play the music in your PC or Andriod device via the other player which meet DLNA standard protocol.

Transferred via standard WiFi protocol, WiFi-HiFi system realize to display what on your mobile, computer, iPad, iPhone, and also can be controlled.

This product is compatible with DLNA and Airplay protocol, digital WiFi network, without compression, with HiFi high fidelity digital quality!

VAST-WiFi audio technology makes HiFi music transported to your home like air (kitchen, bathroom, bedroom, study, living room, garage, patio, porch ...), Music with you everywhere.

No matter you are using Mobile, Ipad, Notebook, Tablet or PC, it will work if there has WiFi!!

There will be no data traffic while listening to the music stored in your mobile!. Your cell phone can also surf the internet while listening to music!

After the initial configuration, it will automatically connected and permanently online. It can be switched and controlled between several mobiles and PCs.

Product Features

- Support 802.11 B/G/N standards; this product has the WiFi relay, broadening the coverage router, to eliminate the dead angle from WiFi signal.
- Wireless frequency 2.412GHz-2.484GHz.
- When iPhone, iPad, PC connected to the system, it will not influence surfing the internet/chat while listening to music.
- Support online audio streaming media protocols: AirPlay, DLNA, Qplay Protocols, support for all built-in music player software for this Protocol.

For example QQ music, iTunes Player and so on.

- Support MP3/WMA/AAC/AAC+/ALAC/FLAC/APE/WAV…
- Support TCP/IP/UDP/HTTP/UPNP networking protocol.
- Support to set up the system via built-in WEB page server.
- Support WiFi UART, the user can extend the control, for example (lighting, curtains, switches, sockets, and so on) .
- Support remote configuration of the system from outside network.
- 12-20V DC power supply.
- TI digital d-class audio amplifier, Hi-Fi high efficiency, can drive any 4Ω, 6Ω, 8Ω speaker.
- Under STA/AP/AP Client mode, WiFi supporting to achieve one-to-one connection with mobile phones, PC and this product or coexist in router network.
- Support UART, USB, GPIO and Ethernet...expansion interface (Optional)
- Using professional DAC decoder chip to decode, pursuing HiFi quality to satisfy your picky ears.
- When using mobile phones or PC, you do not need to install any drivers, without connecting any transmitter. You can use WiFi to send digital music to the system's receiver decoder playback.
- User can adjust the volume/pause/previous/next via the player on your PC or mobile. It will not change the users' habits.
- This WiFi-HiFi system has been tested with mobile/ computer/ ipad from different famous brands such as Apple/ Samsung/ Huawei/ HTC/ LG/ SONY.
- No matter you are user for an Android/ Windows/ iOS/iPhone/iPad and iMac systems intelligent terminal device, as long as there is WiFi, it will be compatible.
- Up to 150mbps transmission bandwidth and advanced audio decoding technology to make sure there is lossless audio for uncompromised quality sound during HiFi music transfer.
- Aluminum waterproof shell, good heat dissipation, to guarantee product stability, premium quality.

Typical Applications

- Family, Apartment, Villa（Kitchen, Bathroom, Bedroom, Saloon, Study, Sauna room, Balcony, Garden…）
- Supermarket, shopping mall.
- Motor home, Coach, sleeper carriage from high-speed rail, sleeper carriage of train, car, ATV, Yacht, cruise ship.
- Guest room in tourist areas（Mongolian Yurt, apartment）.
- Massage, Coffee, Relaxation Area.
- More other areas to be explored.

General Specification

1. Packing and accessory

1PC WiFi-HiFi system.

1PC powder adapter (AC100-245V / DC19V4.74A.).

2. Essential Parameter

	Item	Indicators
Parameters for wireless	Certificates	FCC/CE
	Standard for WLAN	802.11 b/g/n, 1T1R
	Frequency Range	2.412GHz-2.484GHz
	Transmitting Power	802.11b: +20dBm (Max.)
		802.11g: +18dBm (Max.)
		802.11n: +15dBm (Max.)
	Receive sensitivity	802.11b: -89dBm
		802.11g: -81dBm
		802.11n: -71dBm
	Antenna	External: SMA-F connectors
Parameters for Hardware	Power supply	DC12-20V, ＞5A
	Standby current	200mA

	Working Temperature	0℃ - 60℃
	Storage temperature	-25℃ - 60℃
	Status Indicator Lamp	power
	DAC	SNR 96 dB
	WiFi transmission distance	Around 110 Meters（in open space）
	Expansion interface	Ethernet, USB, UART, GPIO (Optional)
	Audio output powder	2CH*45W（RMS）
	Speaker output interface	Gold-plated pure copper standard speaker terminal
	speaker impedance	4Ω, 6Ω, 8Ω
	Size	148*103.6*24mm (L*W*H)
	Type of WLAN	AP Client mode
	Security	WEP/WPA-PSK/WPA2-PSK/WAPI
	Encryption type	WEP64/WEP128/TKIP/AES
	Setting up	Web server
	User updating	Web server
Parameters For Software	Update on line	support
	APP	iOS, Android, Windows 7/8
	Audio Protocol	AirPlay, DLNA, QPlay

WiFi-HiFi system hardware and software parameters

Explanation for hardware

1. Definition for hardware interface

Definition and explanation for WiFi-HiFi system interface

Size:148*103.6*24mm (L*W*H)

Interface definition and explanation:

1. Power input: DC19V, 4.74A.
2. RST key: press more than 5 seconds and restored to factory setting.
3. Antenna interface: SMA-F, standard WiFi antenna connector.
4. Left channel speaker output: Black terminal-Negative ⊖, red terminal-Positive ⊕.
5. Right channel speaker output: Black terminal-Negative ⊖, red terminal-Positive ⊕.

2. Antenna Parameter

An external antenna, WiFi-HiFi system 2.4GHz antenna need to be connected to 802.11b/g/n. Specific parameters of the antenna requirements shown in the table below:

Items	Data
Frequency Range	2.4~2.5GHz
Impedance	50 Ohm
VSWR	2 (Max)
Return loss	-10dB (Max)
Type of connector	SMA-M

Antenna parameter for WiFi-HiFi system

Explanation for software

WiFi-HiFi system support Airplay, standard DLNA and QQ Music Qplay.

Items	Specification
iOS version	iOS 4.2 and above iPhone, iPad, iPod Touch, iPad Mini
Android version	Android 2.3 and above
iTunes version	iTunes 10.2 and above PC, iMac
Network setting	Working under the wireless access point client mode (AP Client)
Support Airplay operating	Play, pause, fast backward, fast forward, volume control, Previous, next
Support Airplay program	Apple music (local) QQ music and so on iTunes Any third party audio program
Support DLNA operating	Play, pause, fast backward, fast forward, volume control, Previous, next
Support DLNA program	compatible for any third-party player certified by DLNA such as: Skifta, BubbleUPnP, QQ music
Audio format	MP3, WMA, WAV, Apple Lossless (ALAC), AAC-LC, AAC, AAC+, APE, FLAC etc.

Support browser	PC: IE9/10, Chrome, Firefox iOS/MAC OS: Safari
Language for Web server	English, Chinese
Web server operation	Set up WiFi-HiFi network Name the device and add password protection Update WiFi-HiFi hardware and back to factory setting Update on-line Set up the device network

Introduction for WiFi-HiFi system software

Introduction for Airplay:

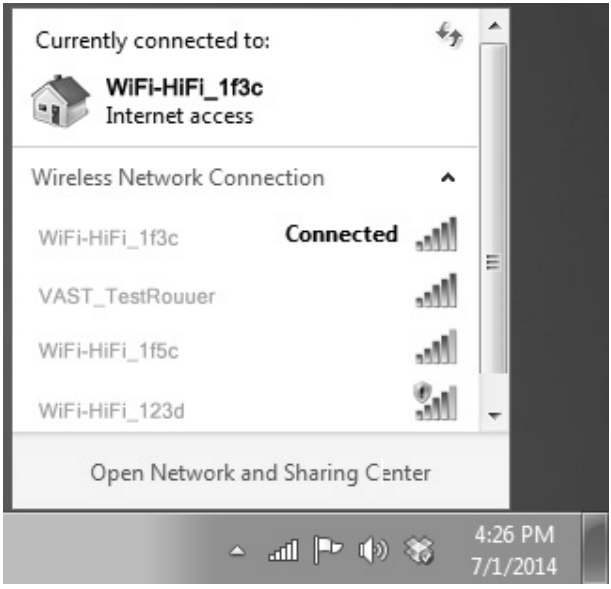
AirPlay is a playing technique, which was added on Apple iOS4.2 and OS x include Mountain Lion. You can transfer the music from your iPhone, iPod touch, iPad and Mac(requires OS x Mountain Lion) to audio device that supports airplay to play. Use Airplay iOS4.2 equipment or Mac version iTunes10.1 or higher on your computer.

When the user's device (Mac, PC, iPod touch, iPhone, iPad) is on the same wireless LAN(WiFi) with the speaker box which supported by the Airplay, opening iTunes on the Mac or PC version 10 or higher, will be next to the iTunes bar (iTunes 10 in the lower right corner of the window) to see an Airplay button. Click on the Airplay button, and then select the equipment needs to be synchronized, you can choose to play music WiFi sync to devices. IPod touch, iPhone and iPad users can find the Airplay button in the corresponding "music" interface.The same procedure as Mac and PC.

AirPlay button

AirPlay application on PC

1. When want to use the Airplay on your PC, you need to install iTunes Player software
2. As shown in the following figure to connect the PC WiFi to WiFi-HiFi system or log on the PC and WiFi-HiFi system with the same wireless WLAN.



Connect the PC WiFi to WiFi-HiFi system

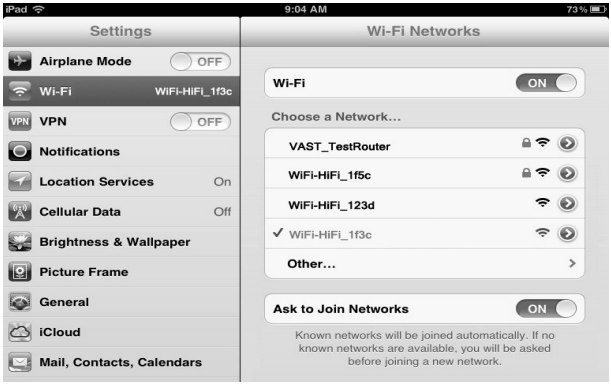
3. Choose WiFi-HiFi play in iTunes software interface device as a playback device.

iTunes displayed to WiFi-HiFi system

AirPlay on iOS devices

iOS device need to support AirPlay.

1. As shown in the following figure on the iOS device's WiFi login to WiFi-HiFi system. Or to log on iOS devices and WiFi-HiFi system to the same wireless LAN.



Connect the iOS to WiFi-HiFi system

2. Open the music application, select WiFi-HiFi play interface device as a playback device.

iOS device displayed to WiFi-HiFi system

After this setting, WiFi-HiFi system support for third-party music players play through the AirPlay to this device.

Introduction for DLNA:

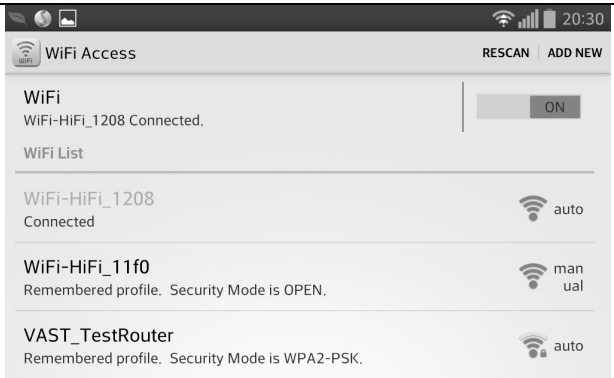
DLNA, (Digital Living Network Alliance) is an organization made up of consumer electronics, mobile phones, and computer manufacturers Alliance. The organization's goal is to create an industry standards enabling the manufacturer's product are interconnected, mutually adapted, thus contributing to consumers ' digital lives. DLNA provisions be applied in its entirety into 5 functional components. From bottom to top as follows: Internetworking, network protocols, media delivery, device discovery control and management, and media formats.

In brief, DLNA is not to create technology, but to find out a solution which everybody can comply with specification, then all the devices can be connected conveniently after pass the DLNA dlna approve.

DLNA application on Android device

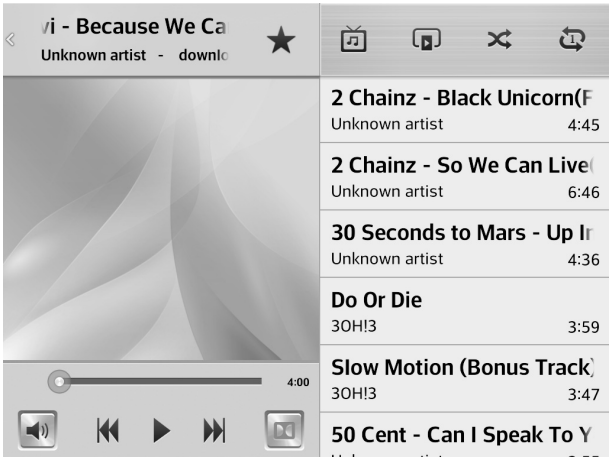
There are a large number of Third-party supported DLNA standard players. Here we take the Android player(LG mobile phone) for example.

1. As shown in the following figure, connect the Android device's WiFi to WiFi-HiFi on the device, Or connect Android devices and WiFi-HiFi system to the same wireless LAN.



Android device connected to WiFi-HiFi system

2. Open Android music application, choose to play songs.



Player page

3. Clicking the button on Player page .

Select player page

4. Select the WiFi-HiFi system as output, WiFi-HiFi system to start playing.
To operate the other players which supported by DLNA is the same.

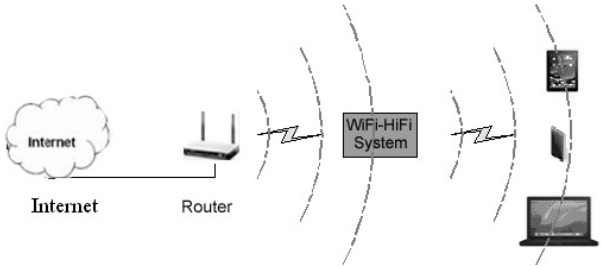
WiFi mode

Working under the WiFi AP Client mode, please refer to WiFi setup page.

AP Client mode

Client-wireless AP Client mode, also commonly known as the "master-slave mode". Itself as an AP, you can build a wireless LAN support on the other wireless devices to log on to the wireless local area network. Meanwhile, as a client, it can also log on to a wireless router. AP Client are the main AP as a wireless client is, their status and the wireless adapter is equivalent. WiFi-HiFi system under AP Client mode, log on to WiFi-HiFi system on the user's device,

you can play audio via AirPlay on WiFi-HiFi system. WiFi-HiFi system can also log on to the wireless router at the same time, if the primary wireless routers have the ability to access the Internet, connect to the WiFi-HiFi system on the user's device can access the Internet.



WiFi-HiFi system AP client mode

Set up for WEB server

WiFi-HiFi system has the function to act as server, it support the user to set up via brower.

In the factory-default, Device name WiFi-HiFi system AP interface as WiFi-HiFi xxxx, where xxxx is the 4-digit.

Items	Default setting
Device Name	WiFi-HiFi _xxxx
IP address	**10.10.10.254**
Subnet mask	255.255.255.0

WiFi-HiFi system AP default setting

Connect the PC to WiFi-HiFi system AP interface set up the page configuration.

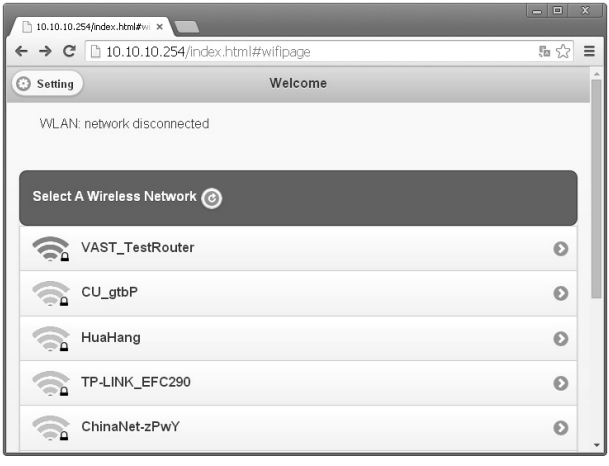
Log in WEB server

When the user equipment and the WiFi-HiFi system in the same wireless LAN, users can use the IE browser to access the "**10.10.10.254**", you can enter the

Web services page. Web Server page language, it supports Chinese and English. Here we take English language as an example. If the WiFi-HiFi system has not set up the wireless router, and Web services page, first go to the WiFi setting menu, if the device is already configured your wireless router, Use Web service page to enter the Setup menu.

WiFi setting up page

This page displays the current wireless network and list of wireless routers device searched for.

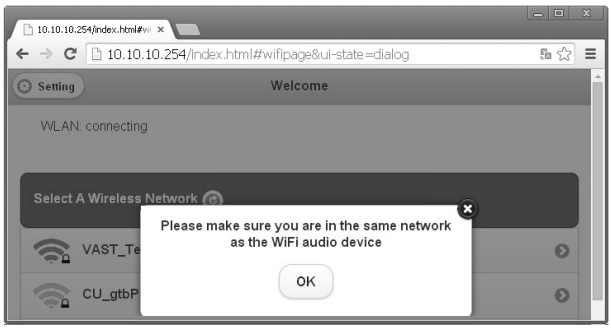


WiFi setting page

Click the router from list you wish to connect to , enter the router access password when the password dialog box appears.

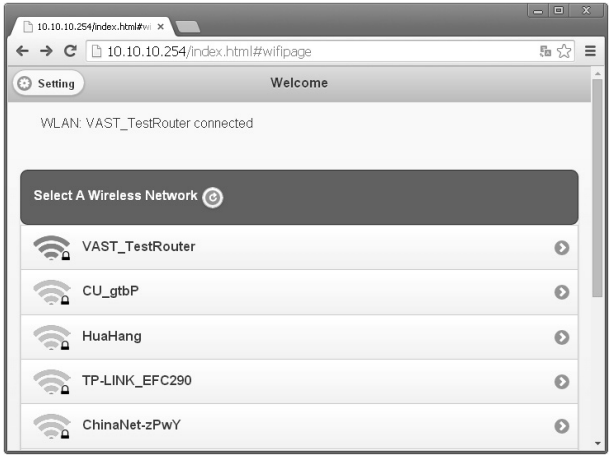
WiFi password setting page

During the process of connecting to a wireless router, because of changes in wireless network, you might need to reconnect the device.



Prompt page

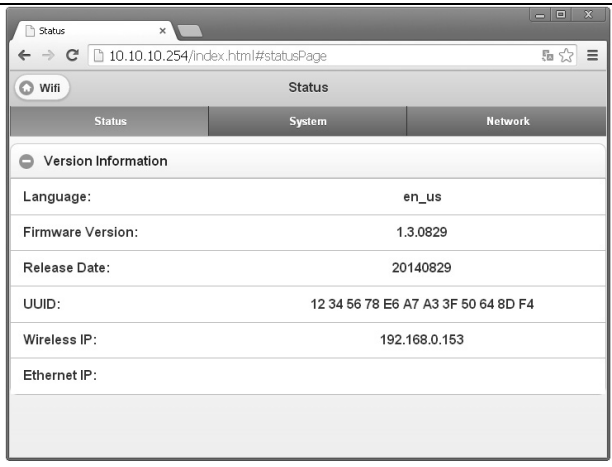
Click on the exit button on prompt page, if the page back to the WiFi setting page, means the router is connected.



WiFi setting page

Advanced Setting page

On "WiFi setting page" click on the upper left corner of the "Setting" button, go to "Advanced Setting Page". The page has three configuration items, named "Status", "System", "Network ".



Status page

System page

This system page is for users to upgrade, restore factory setting, as well as setting the language.

Language setting

In the "language" section bar, you can set the language of the Web page, currently supports Chinese and English.

To select the desired language, press the "Save" button on the upper right corner of the page the button to save it.

Language setting page

Restore factory setting

In the "Restore Factory Settings " bar and clicked on "Restore Factory Settings" to discard the user's previous setting and restore the device to factory State.

Restore factory settings page

Firmware Updating

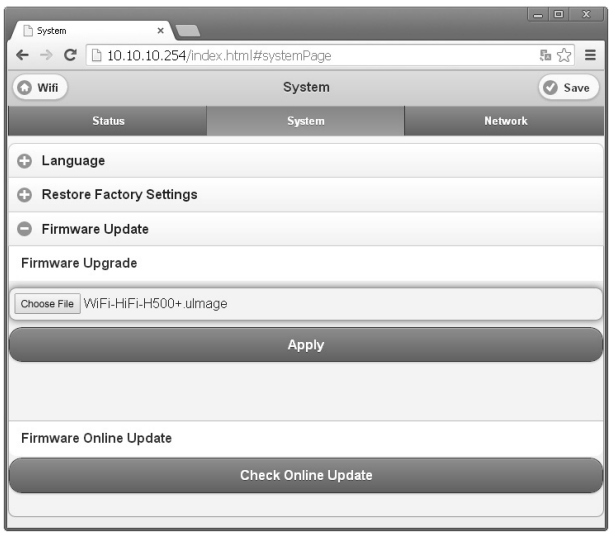
Warning: Firmware updating is a critical operation. Please be careful.

Please do not play music or do other operation. Please make sure not to cut off the power before the operation is finished or restarted.

When the device leave factory, we already upgrade the firmware of the WiFi-HiFi system to the latest version. If has special needs, when you need to update the firmware to other version, please upgrade the firmware manually. (Please do not download other unknown firmware; otherwise it will cause permanent damage)

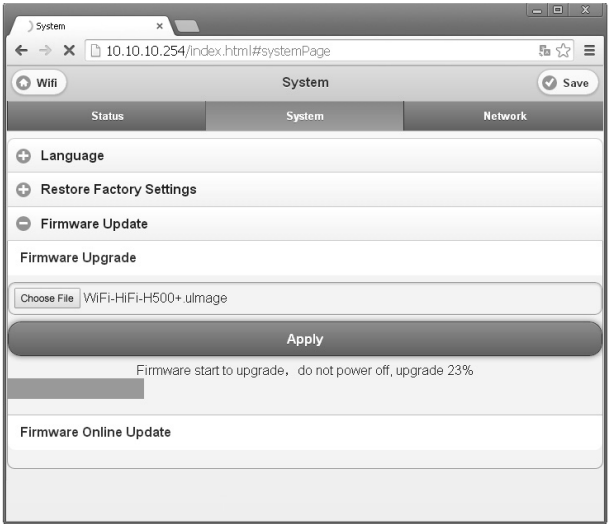
Local update

In the "Firmware Upgrade" Browser to enter the local location of the update package.



Firmware upgrade page

Click on the "Apply" button to begin the upgrade.

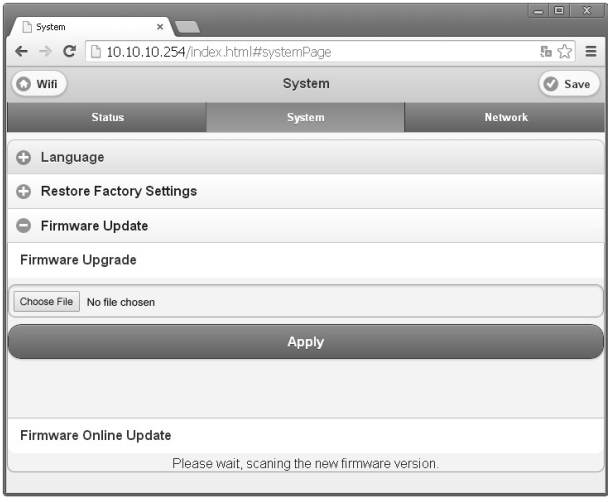


Updating page

Warning: Please make sure not to cut off the power before the operation is finished, till listened restart sound.

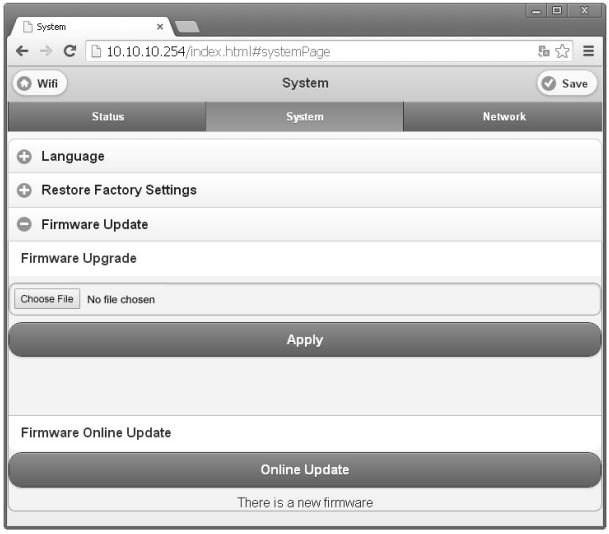
On-line updating:

Make sure the device is already connected to the internet on the wireless router, click on the "Check Online Update" button; distal end of the device checks the update server for content, to check the update software for this device.



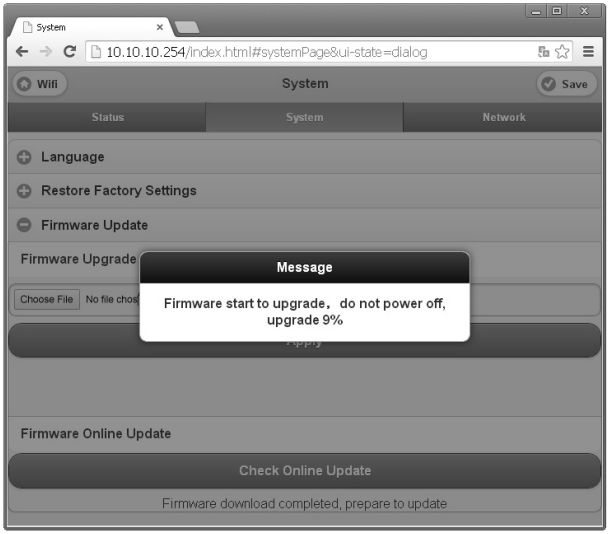
On-line updating page

Device display update package is found.



Update new version online page

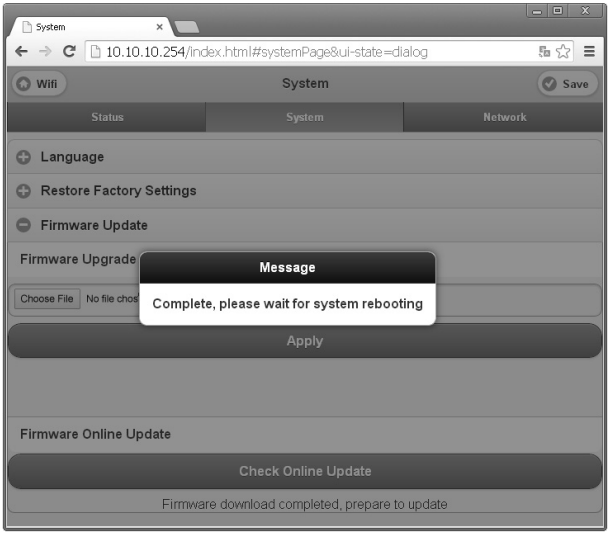
Click the "Update" button to start the upgrade.



Writing firmware page

When the updating finish, the equipment will restart.

Warning: Please make sure not to cut off the power before the operation is finished or restarted.



Writing firmware Updating page

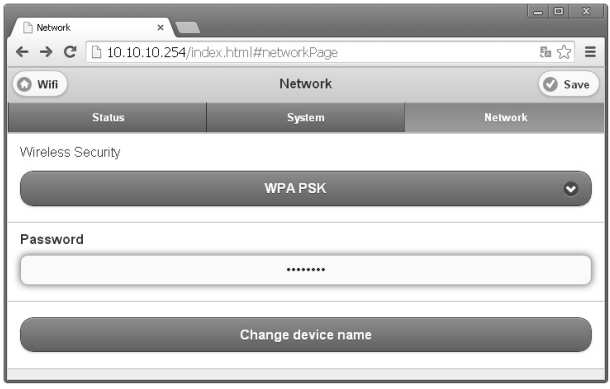
Network Page

Networks page allows you to change the device name, and set the device access password.

Password setting

Click the "Wireless Security" column of buttons, select the encryption method, the "Open" password is not set, the "WPAPSK" set a password. In the "Password" box fill in the password, and click on the upper right corner of the page the "Save" button to save it.

Wireless security page



Password setting page

Change Device Name

Click the "Change device name" button allows you to change the device's name In the pop-up dialog box, enter the desired device name.

Page for changing device name

Appendix

WiFi function

The WiFi Performance has been tested and adjusted before leaving factory, and their indicators are:

Parameters	Conditions	Min	Typ	Max	Unit
RF Frequency Range		2400		2500	MHz
RX Sensitivity	CCK1M		-93		dBm
	CCK11M		-88		
	FDM6M		-90		
	OFDM54M		-75		
	HT20,MCS7		-72		
	HT40,MCS7		-68		
Adjacent Channel Rejection	OFDM6M		34		dB
	OFDM54M		22		
	CCK		37		
Output Power (Measured at antenna port)	CCK 1M		+17		dBm
	OFDM 6M		+15		
	OFDM 54M		+15		
	HT40,MCS7		+13		
LO Leakage	Pout=+18dBm		-50		dBm
Carrier Suppression			25		dBc
Single-Sideband Suppression		33	40		dBc

WiFi-HiFi system WiFi indicator

VAST INTERNATIONAL (HONGKONG) LIMITED

VAST ELECTRONIC TECHNOLOGY (ZHUHAI) CO.,LTD.

Address: No. 2161, 6 floor of Doumen Building, Mid. Yuehai road of Gongbei, Zhuhai City, Guangdong province, China.

www.vastint.com

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