iSurf 1000 Multi-Service Home Gateway

User Operation Manual

Version 1.1

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CONFIDENTIAL INFORMATION
Information contained herein is proprietary to KZ Tech for whose benefit
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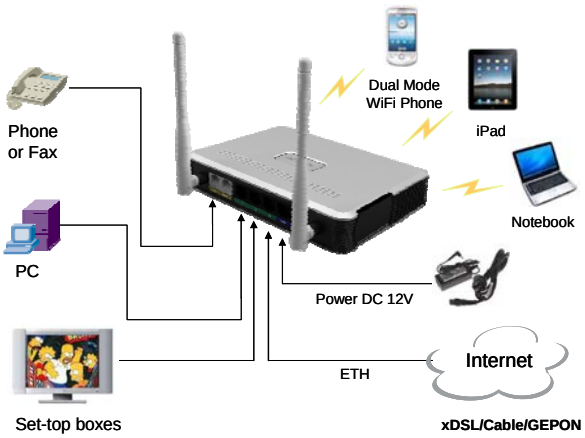
1. Packing List

The product is shipped with the following standard accessory and parts. The user should contact the local distributor if there is any part missing.

Content	Quantity
Main System Unit	1
12V DC Power Adapter	1
RJ45 Ethernet Cable	1
Quick User Manual	1
Product Warranty Card	1

2. Introduction

The iSurf™ 1000 multi-service home gateway is a state of art home gateway product specially designed to provide integrated broadband services to residential or SOHO customers. It allows broadband service provider to offer triple play services (data, VoIP, WiFi) to its residential customers at extremely affordable cost. The product offers a variety of user networking interfaces including LAN Ethernet ports, analog phone line ports, master USB port and 802.11n/g/b WiFi interfaces. User can easily connect multiple PC or LAN devices to the unit via Ethernet or WiFi interfaces while having reliable VoIP phone service at same time. The USB port provides addition flexibility to connect USB devices such as camera, sensor or 3G modem to further expand the service offering.



The iSurf™ 1000 is developed using single SoC silicon solution and most advanced soft DSP processing technologies to maintain the best performance and cost in home gateway design. It also provides extensive feature and service capabilities in data, SIP VoIP and Wi-Fi networking. Its unique hardware NAT acceleration technique allows the product to achieve extremely fast data throughputs even in router operation mode. In addition to the advanced networking capabilities, iSurf™ 1000 also provides rich management interfaces to allow local and remote device management. Its user friendly WEB management interface is well designed to provide quick installation and setup for user as well as advanced configuration for the device administrator.

The product detail specification is provided by the below section.

3. Product Specification

PHYSICAL

Dimensions	135mm (L) x 105mm (W) x 30mm (H)
Weight	< 300g
Power	< 10 Watts
Power Supply	12V DC

ENVIRONMENTAL

Temperature	-10 ℃ - 50 ℃
Humidity	90% maximum Non-condensing
Storage	-20℃- 65℃

SYSTEM

Interface	1 10/100M Ethernet WAN Port (RJ45)
	802.11n/g/b WiFi (2.4GHz)
	3 10/100M Ethernet LAN Ports (RJ45)
	2 Analog Phone Ports (RJ11)
	1 USB OTG Port (2.0)
System LEDs	Power, WAN, WLAN, LAN1-3,
	Phone, Voice Mail
Line Distance	> 1 km

WIRELESS

Standards	IEEE 802.11n, IEEE 802.11g&b
Radio	2.4-2.497GHz (2x2 MIMO)
	20dBm ± 1dB per antenna
Antenna	Two 3dBi dipole external antennas
Security	64/128 bit WEP encryption
	WPA/WPA2/WAPI authentication
	WPS (WiFi Protected Setup)
QoS Support	WMM, WMM Power Save
Networking	Private home networking
	Virtual public networking

VOIP PROCESSING

Compression	G.711 a
	G.711 u
	G.729
	G.721
Comfort Noise	Comfort noise generation and control
Echo Cancellation	G.165/G.168-2000 echo cancellation
Silence Suppression	Silence detection and suppression
Fax Support	T.30 and T.38
Delay/Jitter/Loss	Delay, jitter, packet loss compensation
DTMF Relay	In-band DTMF, RFC 2833, SIP signal
Call Duration	> 48 hours Uninterrupted Call

VOICE SERVICE

Basic Voices

- Local and domestic and international long distance calls
- Flexible dial plan configuration support
- Tone customization for different countries

Complementary Services

- Caller ID, Caller ID suppression, Call Screening, Speed dial, Call Tracing, Hotline, Unconditional call forwarding, Call Forwarding No Answer, Call Forwarding on Busy, Call Waiting, Call Back, Call Blocking, No Disturbance, Alarm, Network and Local 3-way Call, Data Call, and etc.

Billing Service Support

- Z interface polarity reversal

NETWORKING CAPABILITIES

Data Networking

- Router and Bridge operation mode support
- WAN DHCP or static IP address assignment
- L2TP, PPTP and PPPoE client support
- DHCP and NAT service for LAN and WiFi devices
- SPI Firewall and DMZ support
- VPN Pass-through support (PPTP / L2TP / IPSec)
- Support for DNS, NTP, TFTP, FTP services
- QoS and VLAN management support (coming release)

VoIP Networking

- Soft switch based network configuration
- Device peer to peer networking support

INDUSTRY STANDARDS

IEEE

IEEE 802.3	10Base Ethernet
IEEE 802.3u	Fast Ethernet
IEEE 802.1p	CoS Priority Protocol
IEEE 802.1Q	VLAN Tagging

IETF

IP voice	SIP v2.0

MANAGEMENT

User Management	Telnet, Web, Console (debug)
Others	FTP Auto Firmware Upgrade

4. Front Panel Description

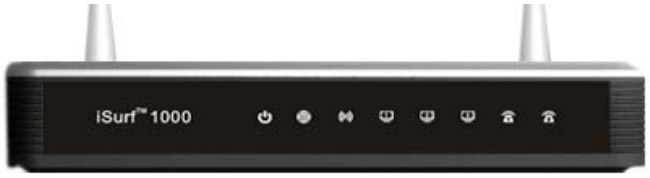
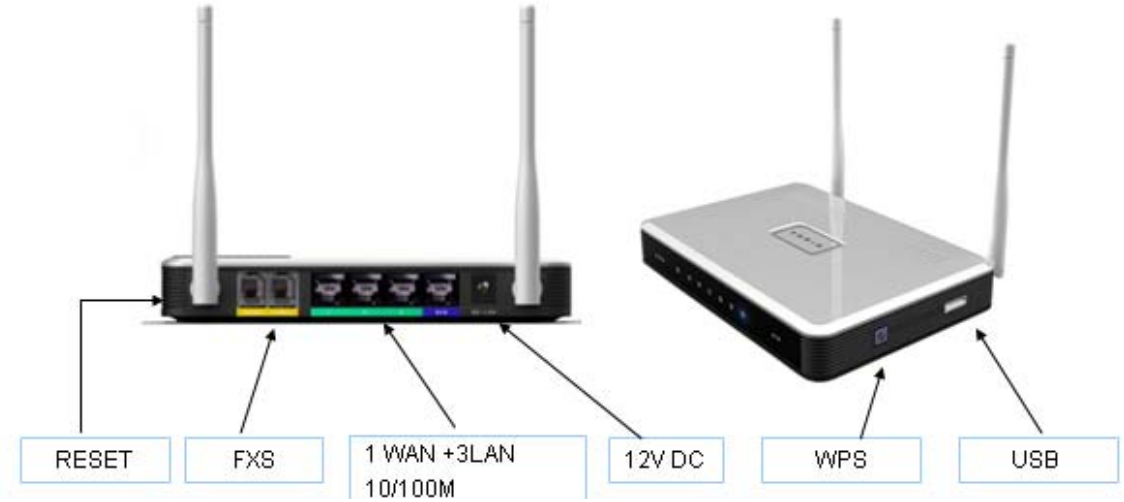


Table 1 Front Panel LED Specification

LED	Function	Description
PWR	Power supply indicator, dual color LED	Orange Color – Device is booting up Green Color – Device in normal operation
WAN	WAN port status LED (dual color)	Orange Color – Device WAN port is not yet ready for normal operation. Solid Green – Device WAN port is up and ready. Blinking Green – WAN port data transmission in progress.
WiFi	WiFi status indicator	Green Color – WiFi is enabled and working
LAN 1-3	LAN port status	Solid Green – The LAN port is up Blinking Green – LAN data transmission in progress
PHONE	POTS line status indicator (dual color)	Orange Color – Line hardware problem Green Blinking – Voice Call in progress Green Color – The line is ready and registered OFF – Line is not registered or provisioned.
Voice Mail	Indication of the existence of new voice mail	Green – New voice mail available
WPS (Left Side)	WPS Service Access	Orange Blinking – WPS access is enabled. The procedure can be triggered by pressing the WPS button.

5. Rear Panel Description



Interface	Function	Description
12V DC	Power connector	DC Power Supply with harmonic suppression: 12V 1.5A.
Reset	Device Restart and Factory Default Reset	Press and immediate release: reboot the device. Press and hold (10 seconds): Reset the device to factory default settings. User configuration data will be deleted.
WPS	Wi-Fi Protected Service Access	Press the WPS button to begin automatic user access process. The LED will be blinking during the negotiation and login process.
WAN	WAN ETH Port (RJ45)	Connect to ADSL modem or IP network for Internet access
LAN 1-3	LAN ETH Port (RJ4)	Connect to PC, LAN Switch or Ethernet networking equipment.
FXS Ports 1-2	Analog Phone jack (RJ11)	Two independent voice line to connect to analog phone or fax machines.
USB	USB 2.0 OTG Networking Interface	Used for connection 3G or 4G USB devices. Support plug and play for instant networking.
WiFi	WiFi Antenna (2x2 MIMO)	Support 2x2 MIMO 802.11b/g/n, Up to 300Mbps maximum speed.

6. Installing Device

Before installing the device, please make sure you have applied and activated the internet service from your service provider. To install the device, the user should follow the steps below. For safety, please keep your hand dry when operating the device.

【1】 Open the packing box and take out the device. Place the device on table and rotate the WiFi antenna upwards.

【2】 Check the product label carefully and make sure the device S/N and MAC is clearly visible.

【3】 Connect your PC to the one of the LAN port using regular Ethernet cable.

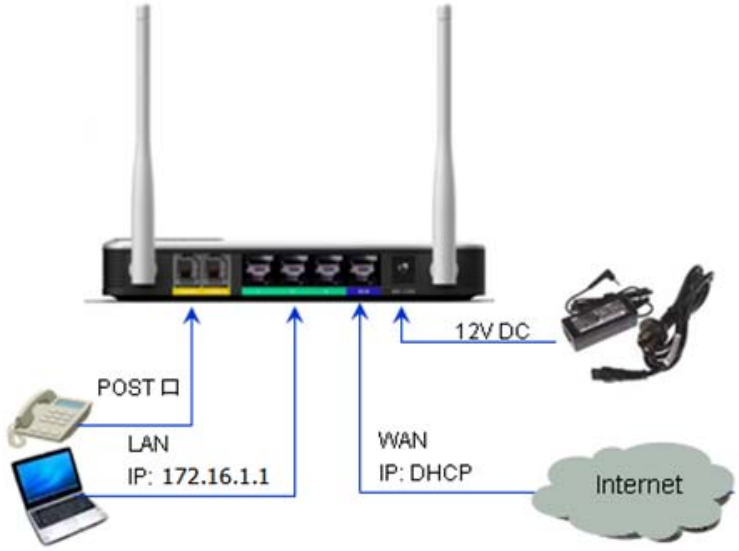
【4】 Connect the device WAN port to the ADSL modem or other uplink networking devices via Ethernet networking cable.

【5】 Connector analog phone cables to the RJ11 ports of the device.

【6】 As a last step, connect the DC power supply and plug the DC power adapter into AC power source. Make sure the AC supply is compliant to the power supply specification of the device.

【7】 When the above is done, the device will start to boot up. Please wait until the PWR LED becomes green before proceeding to the device configuration stage.

【8】 A typical networking diagram is shown below for illustration.



Note: LAN Management IP Address: 172.16.1.1 , PC Networking Setup Requirement: DHCP Client WEB configuration can be access via http://172.16.1.1

7. Device Configuration

The device provides simple and easy user configuration via WEB GUI interface. User can use common Internet Explorer software for configuration of the device. If you are first time user, please access the WEB management interface via the LAN port. iSurf 1000 supports DHCP server and NAT function by default so the user only need to configure the PC network setting to use DHCP. The LAN PC can easily acquire its IP address from the device once the network setting is configured properly.

The device default WEB management access IP is 172.16.1.1. Once the user PC acquires the IP, open the Internet browser and enter the URL of http://172.16.1.1 to login into the WEB GUI. If enter correctly, the login window will pop up. The user can enter “user” as the login ID and the password to gain access.

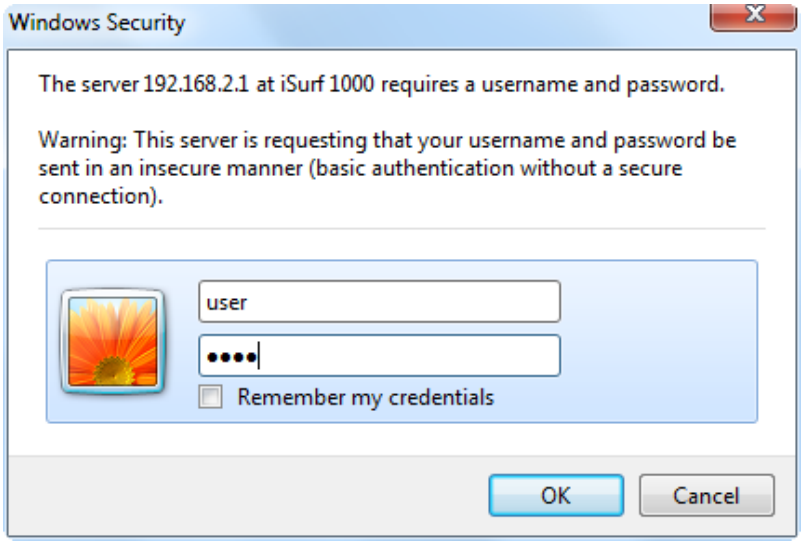
The user WEB GUI provides simple Setup Wizard to guide ordinary user to complete the device setup quickly. The

user also has the option to navigate the configuration menu to complete the setup.

For advanced user or system operator, the admin level WEB GUI management interface is available. It requires special admin password to gain full access of the device and configure the devices. Note admin level management function is not described in this manual.

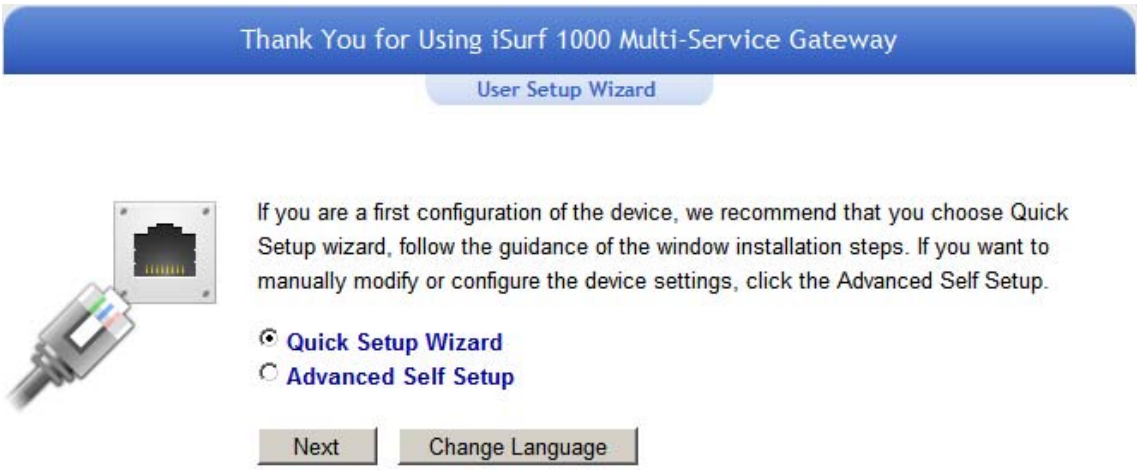
■ Login

Once the user enters the correct URL (http://172.16.1.1), the following login window will be prompted. The user can type “user” and “user” as Login ID and password to begin login process. The user management GUI allows user to configure essential setting required for device operation.



■ Selection of Configuration Method

Once the user is logged in, the following window will be prompted for selecting the method to configure the device. For regular user, please select and use the setup Wizard to complete the device setup. The setup Wizard will guide the user to quickly finish the setup configuration alone with the online help. If the user is familiar with the configuration, he can choose self setup approach to configure the device.



■ Setup Wizard

Select the “Setup Wizard” and click on the “Next” to enter Wizard welcome page as shown below.

The quick Wizard setup is divided into four steps:

- Step 1: Configure WAN Networking
- Step 2: Configure WiFi Network
- Step 3: Configure VoIP Accounts
- Step 4: Save and Restart the Device

Step 1: Click on the “Next” to enter WAN Networking Setup Window

In the Internet Connection selection, the user can select one of the three common used ways (Static IP, DHCP,

PPPoE) to connect to Internet based on his access network type. If the user is not sure about the type of access type he should use, please consult with the service provider.

For PPPoE dial up Internet access, the user will be required to configure the User name and Password for PPPoE dial up access. The user can also select the appropriate operation mode he needs.

Step 2: After completing the WAN configuration, click "Next" to enter WiFi configuration

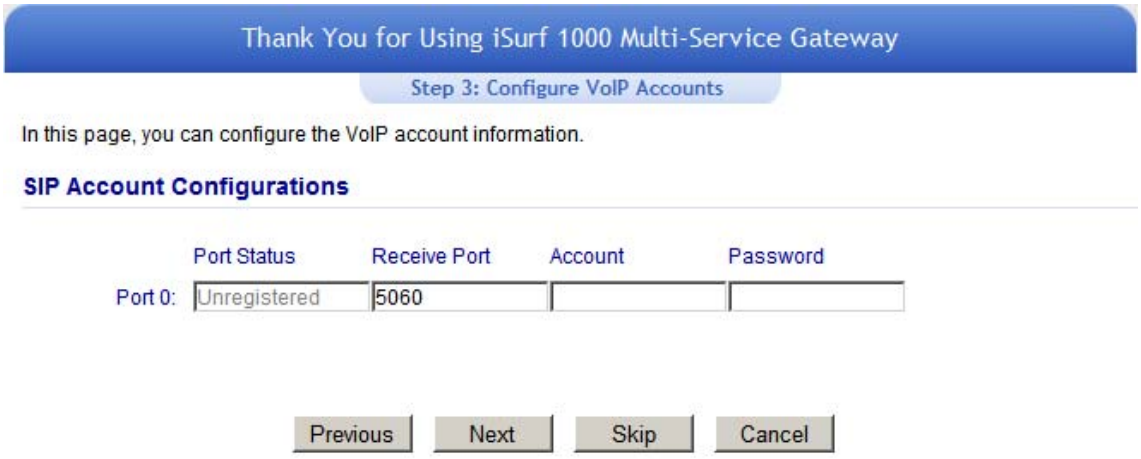
In WiFi configuration, the user can modify the default SSID and select the desired Security Policy to protect device WiFi access. For easy configuration, the user can use one of the following three common security policies for setup.

Disable Open access to every device. It is typically used for temporally use only.

EZCON Use KZ TECH innovative security protection for easy WiFi access protection. When the WPS button is pushed, the WiFi access will become open to all devices for 60 seconds. The open access times out, a white list access control will be enforced.

WPA2-PSK The most commonly used standard WiFi Security policy.

Step 3: Click "Next Step" to enter VoIP account configuration menu

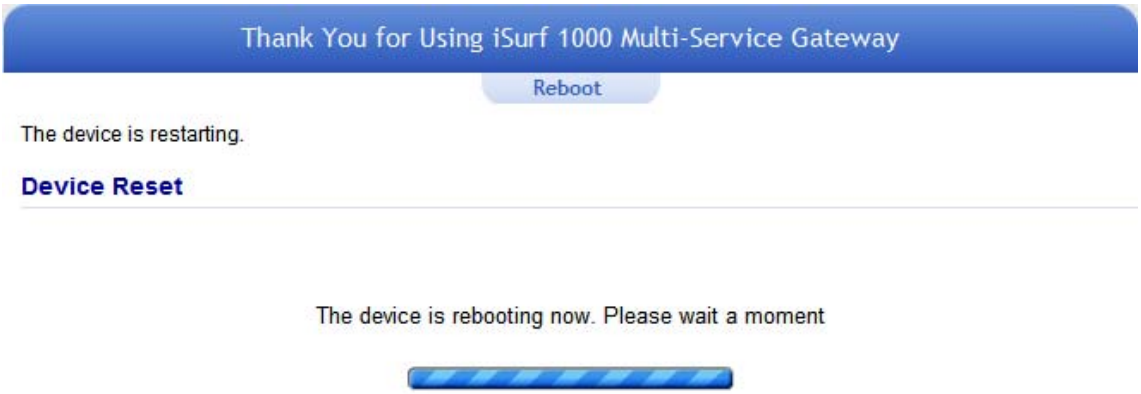


In this configuration page, the user requires to enter the SIP account and password information if he desires to configure the VoIP networking. The SIP server configuration will be performed by the network operator via admin management. The SIP account status is displayed for user information. When the SIP line is registered and ready, the LINE LED in the front panel will be light up.

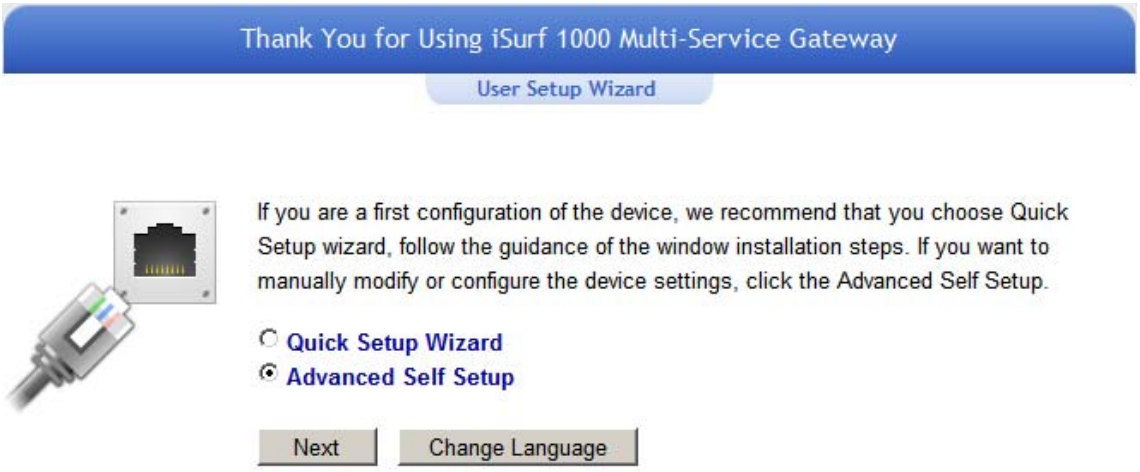
If the device VoIP function is not working properly, the user is advised to contact the network operator for assistance.

Step 4： Click "Next" to complete the VoIP account setup and enter Save & Restart menu

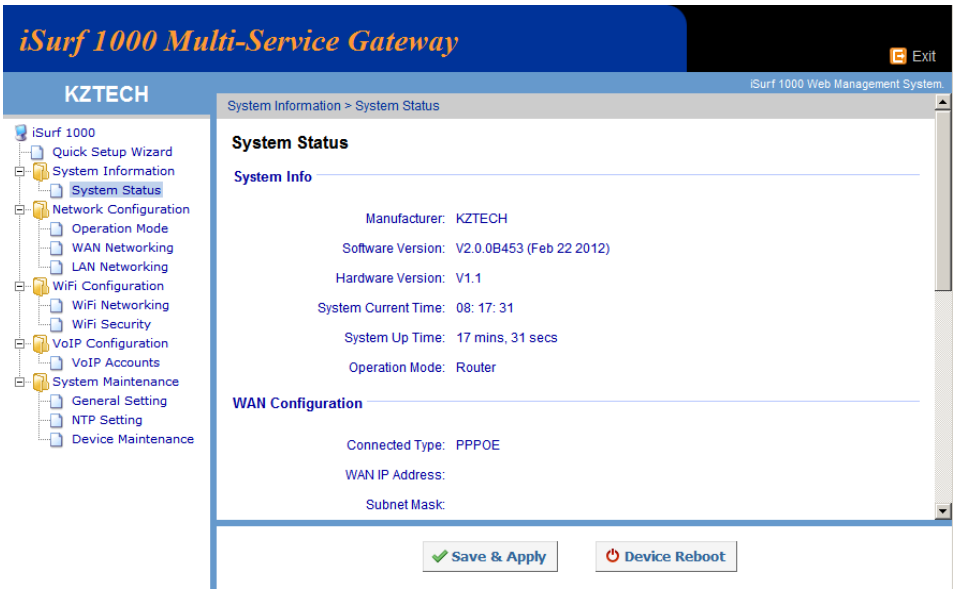
For all the configuration changes to take effect, the user is required to save the configuration and perform a device restart. Click on the "Save and Restart" button to complete the Wizard setup and begin to use the device.



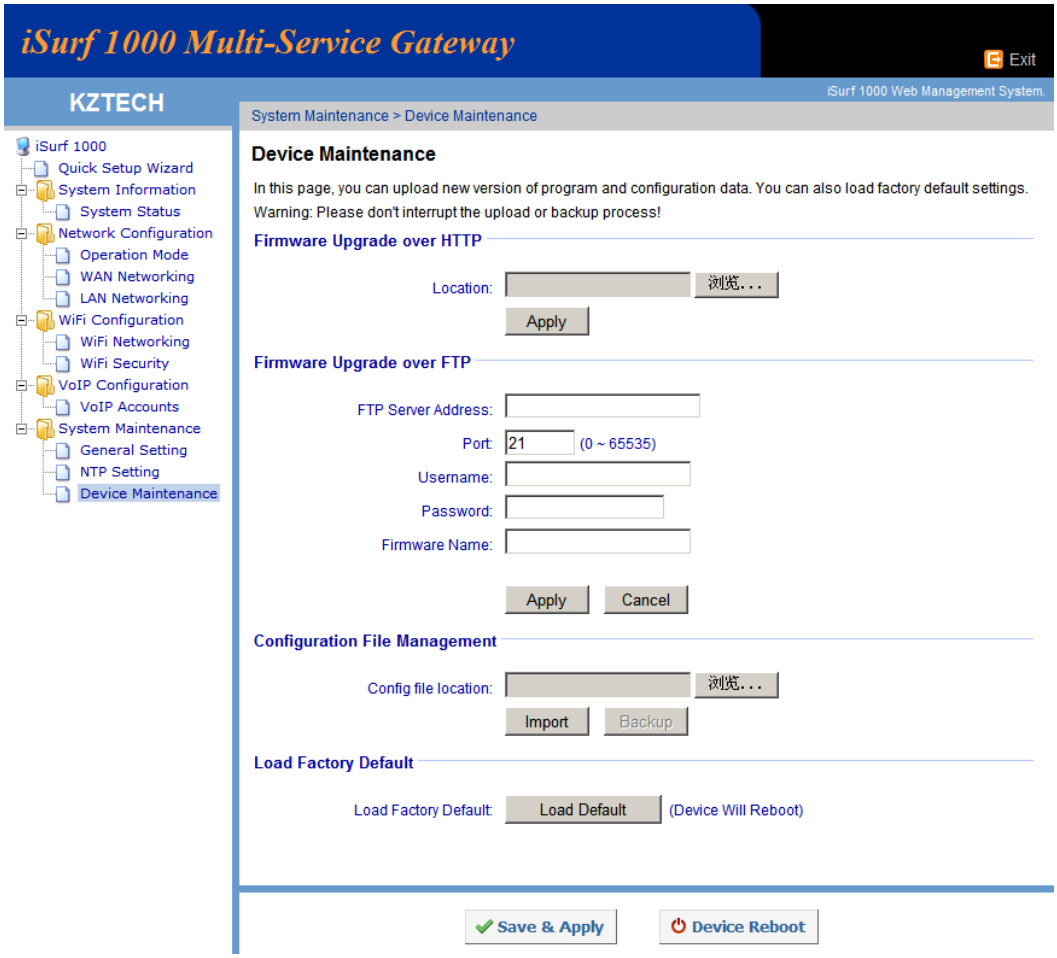
Once the device restarts, please wait for a few minutes until the following windows appear again.



The user may select “Advanced Self Setup” to quickly review and confirm the all setup. Click “Next” to proceed and enter the Self Setup menu as below.



For device maintenance operation, the user can use Device Maintenance menu to perform the operation required. There are three type maintenance operations are supported by user level management: 1) Update Device Firmware 2) Import Device Configuration File 3) Reset Device Configuration to Operator or Factory Default.



8. General Information

- RF exposure information: The Maximum Permissible Exposure (MPE) level has been calculated based on a distance of d=20 cm between the device and the human body. To maintain compliance with RF exposure requirement, use product that maintain a 20cm distance between the device and human body.
- The adapter shall be installed near the equipment and shall be easily accessible.
- EU Regulatory Conformance

Hereby, KZ Broadband Technologies, Ltd. declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
For the declaration of conformity, visit the Web site www.kztech.cn .

CE 0700

Notice: Observe the national local regulations in the location where the device is to be used. This device may be restricted for use in some or all member states of the European Union (EU)

➢ FCC Notice to user

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.

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