SCOUT®

Professional Marine Antennas Made In Italy

Advanced User Manual

Sea-Hub

WiFi/3G/USB Mobile Router

TABLE OF CONTENTS

INTRODUCTION

The Sea-Hub is a WiFi/3G/USB mobile router that supports routing from an Internet Service Provider (ISP) connection (DSL or cable modem) to a local network. It is simple to configure and can be up and running in few minutes.

KEY HARDWARE FEATURES

The following table describes the main hardware features of the Sea-Hub.

Description

WAN Port: One 100BASE-TX RJ-45 port for connecting to the Internet.

LAN Port: One 100BASE-TX RJ-45 port for local network connections.

USB Port: One USB slot for a 3G or 3.5G modem and USB Wireless Card

WPS Button: To set up a secure connection to a wireless device.

Reset Button: For resetting the unit and restoring factory defaults.

LEDs: Provides LED indicators for Power, WAN port, LAN port, and WLAN status.

Mounting Options: Can be mounted on any horizontal surface such as a desktop or shelf, or on a wall using two screws.

DESCRIPTION OF CAPABILITIES

- Internet connection through an RJ-45 WAN port.
- Local network connection through one 10/100 Mbps Ethernet port.
- DHCP for dynamic IP configuration.
- Firewall with Stateful Packet Inspection, client privileges, and NAT.
- NAT also enables multi-user Internet access via a single user account, and virtual server functionality (providing protected access to Internet services such as Web, FTP, e-mail, and Telnet).
- VPN passthrough (IPsec, PPTP, or L2TP).
- User-definable application sensing tunnel supports applications requiring multiple connections.
- Easy setup and management through an easy-to-use web browser interface on any operating system that supports TCP/IP.
- Compatible with all popular Internet applications.

APPLICATIONS Many advanced networking features are provided by the Sea-Hub:

- Wired LAN — The Sea-Hub provides connectivity to wired Ethernet devices, making it easy to create a network in small offices or homes.
- Internet Access — The Sea-Hub supports Internet access through a WAN connection. Since many DSL providers use PPPoE, PPTP, or L2TP to establish communications with end users, the Sea-Hub includes built-in clients for these protocols, eliminating the need to install these services on your computer.
- Shared IP Address — The Sea-Hub provides Internet access for up to 253 users using a single shared IP address account.
- Virtual Server — If you have a fixed IP address, you can set the Sea-Hub to act as a virtual host for network address translation. Remote users access various services at your site using a static IP address. Then, depending on the requested service (or port number), the Sea-Hub can route the request to the appropriate server (at another internal IP address). This secures your network from direct attack by hackers, and provides more flexible management by allowing you to change internal IP addresses without affecting outside access to your network.
- DMZ Host Support — Allows a networked computer to be fully exposed to the Internet. This function is used when NAT and firewall security prevent an Internet application from functioning correctly.
- Security — The Sea-Hub supports security features that deny Internet access to specified users, or filter all requests for specific services. WPA (Wi-Fi Protected Access) and MAC filtering provide security over the wireless network.
- Virtual Private Network (VPN) Passthrough — The Sea-Hub supports the passthrough of three of the most commonly used VPN protocols – IPsec, PPTP, and L2TP. These protocols allow remote users to establish a secure connection to another network. If your service provider supports VPNs, then these protocols can be used to create an authenticated and encrypted tunnel for passing secure data over the Internet (that is, a traditionally shared data network).

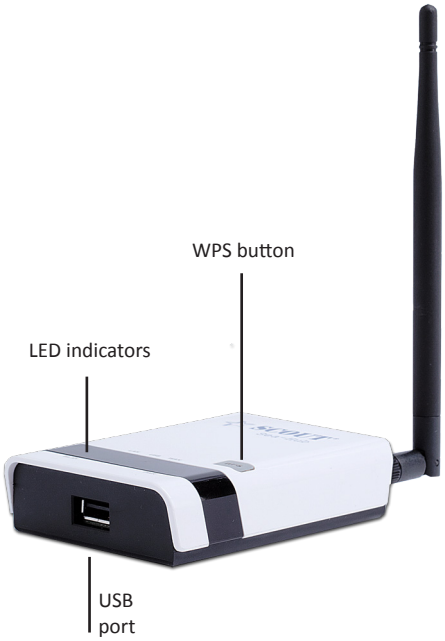
  IPsec (Internet Protocol Security) — Encrypts and authenticates entire IP packets and encapsulates them into new IP packets for secure communications between networks.

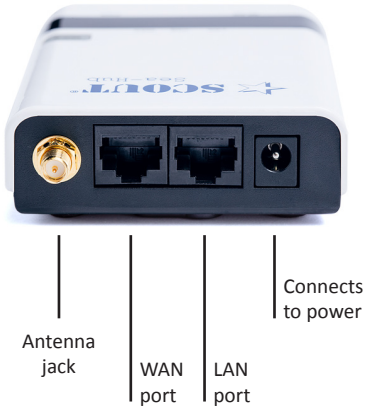
  PPTP (Point-to-Point Tunneling Protocol) — Provides a secure tunnel for remote client access to a PPTP security gateway. PPTP includes provisions for call origination and flow control required by ISPs.

  L2TP (Layer 2 Tunneling Protocol) — Merges the best features of PPTP and the Layer 2 Forwarding (L2F) protocol. Like PPTP, L2TP requires that the ISP's routers support the protocol.

HARDWARE DESCRIPTION

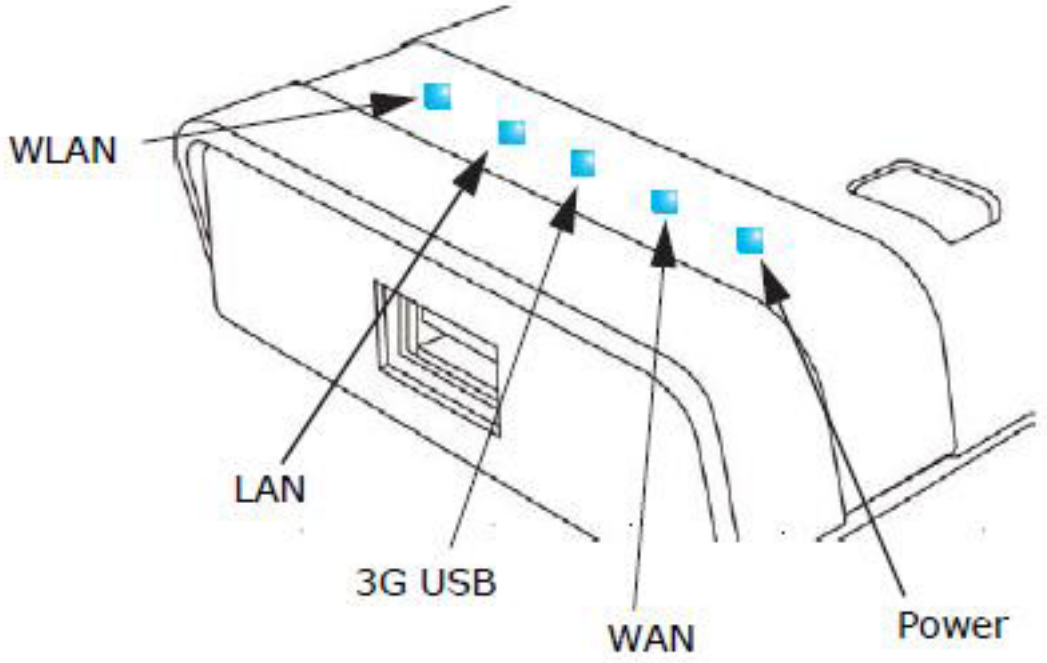
The Sea-Hub connects to the Internet through its RJ-45 WAN port. It connects directly to your PC or to a local area network using its RJ-45 Fast Ethernet LAN port.
The 3G Mobile Wireless Router includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting





LED INDICATORS

The Sea-Hub includes four status LED indicators, as described in the following figure and table.



LED	Status	Description
Power	On Blue	The unit is receiving power and is operating normally.
	Off	There is no power currently being supplied to the unit.
WLAN	On/Blinking Blue	The 802.11n radio is enabled and transmitting or receiving data through wireless links.
	Off	The 802.11n radio is disabled.
WAN	On Blue	The Ethernet WAN port is aquiring an IP address.
	Blinking	The Ethernet WAN port is connected and is transmitting/receiving data.
	Off	The Ethernet WAN port is disconnected or has malfunctioned.
LAN	On Blue	The Ethernet LAN port is connected to a PC or server.
	Blinking	The Ethernet port is connected and is transmitting or receiving data.
	Off	The Ethernet port is disconnected or has malfunctioned.
3G USB	On Blue	A 3G connection has been established.
	Slow Blinking	A 3G connection is in progress.
	Fast Blinking	The wrong 3G PIN code has been entered, or the 3G budget limit has been reached.
	5 Blinks Cycle	The 3G pre-limit budget has been reached.
	Off	There is no modem connected to the 3G USB port, or the device has failed.

ETHERNET WAN PORT A 100BASE-TX RJ-45 port that can be attached to an Internet access device, such as a DSL or Cable modem.

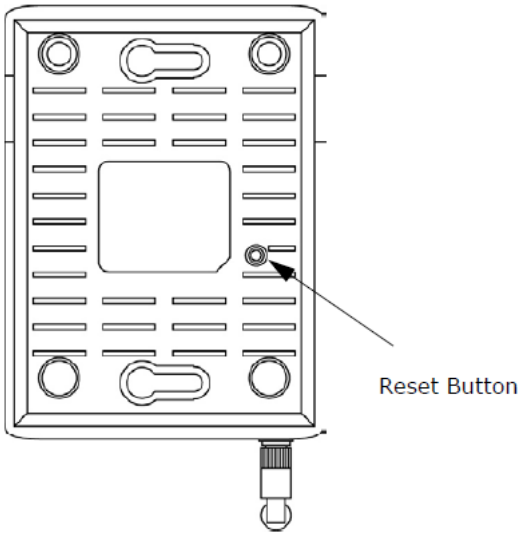
ETHERNET LAN PORT The Sea-Hub has one 100BASE-TX RJ-45 port that can be attached directly to a PC or 10BASE-T/100BASE-TX LAN segments.
This port supports automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs, switches, or hubs.

3G & USB Wireless Card USB PORT Supports connection to a wireless cellular 3G or USB Wireless Card for broadband Internet access.

POWER CONNECTOR The Sea-Hub must be powered with its supplied power adapter. Failure to do so results in voiding of any warrantly supplied with the product. The power adapter automatically adjusts to any voltage between 100~240 volts at 50 or 60 Hz, and supplies 12 volts DC power to the unit. No voltage range settings are required.

WPS BUTTON Press the WPS button to automatically configure the Sea-Hub with other WPS devices in the WLAN.

RESET BUTTON The Reset button is used to restore the factory default configuration. If you hold down the button for 5 seconds or more, any configuration changes you may have made are removed, and the factory default configuration is restored to the Sea-Hub.



INITIAL CONFIGURATION

The Sea-Hub offers a user-friendly web-based management interface for the configuration of all the unit's features. Any PC directly attached to the unit can access the management interface using a web browser, such as Internet Explorer (version 6.0 or above).

CONNECTING TO THE LOGIN PAGE

It is recommended to make initial configuration changes by connecting a PC directly to the Sea-Hub's LAN port. The Sea-Hub has a default IP address of **192.168.2.1** and a subnet mask of 255.255.255.0. You must set your PC IP address to be on the same subnet as the Sea-Hub (that is, the PC and the Sea-Hub addresses must both start 192.168.2.x). To access the Sea-Hub's management interface, follow these steps:

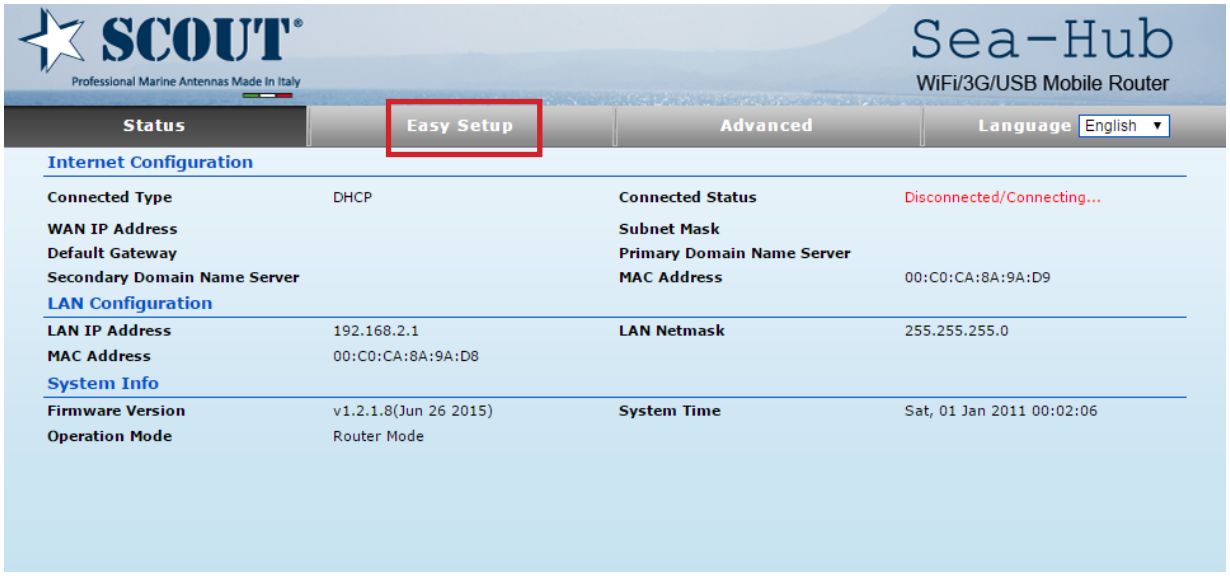
1. Use your web browser to connect to the management interface using the default IP address of 192.168.2.1.

2. Log into the interface by entering the default username "**admin**" and password "**admin**" then click OK.

The Sea-Hub can be alslo easily configured with a wireless device such as smartphones or tablets (or through the WiFi connectivity of your laptop). You just need to scan for available networks, select Scout Sea-Hub from the list, open your browser and type the IP address 192.168.2.1.

HOME PAGE AND MAIN MENU

After logging in to the web interface, the Status page displays. The Home page shows the main menu and the method to access the Setup Wizard.



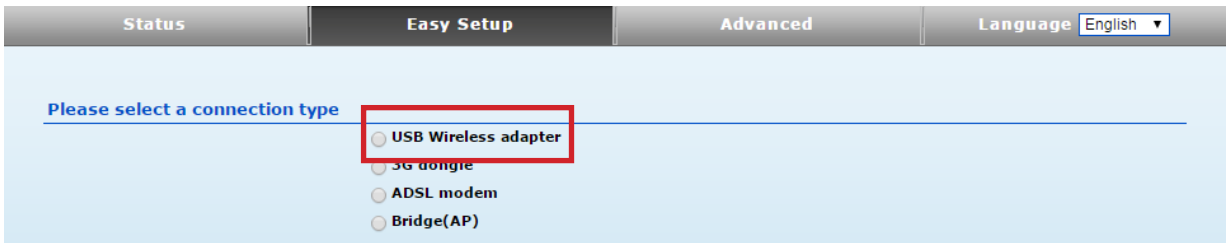
SETUP WIZARD

The Wizard is designed to help you configure the basic settings required to get the Sea-Hub up and running. There are only a few basic steps you need to set up the Sea-Hub and provide a connection.

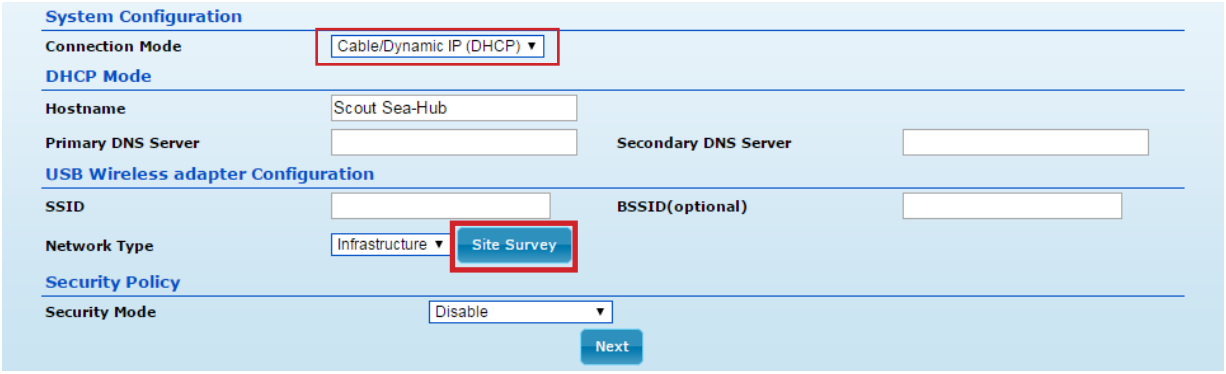
Click on Easy Setup to bring up the wizard

1 Connection type: USB Wireless adapter

By selecting the connection type “USB Wireless adapter” you’ll set up the Sea-Hub to wirelessly re-broadcast a remote WiFi/ Internet signal locally to multiple wireless-enabled devices. To connect to the remote WiFi Internet signal you need to plug the Scout WiFi antenna model **KS-60 2.0** into the USB port of the Sea-Hub.

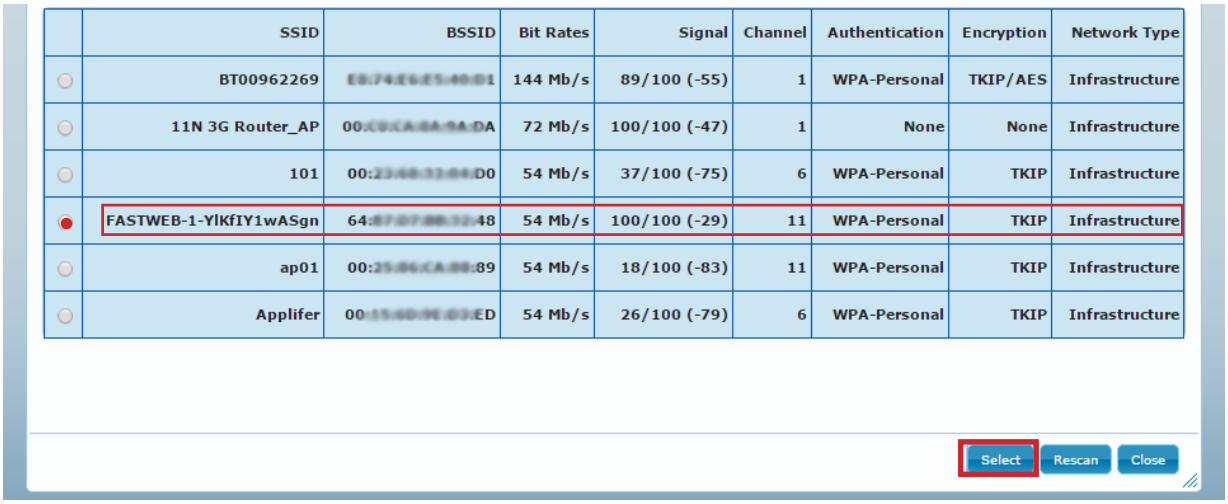


On the following screen we configure the USB WiFi network. Leave Connection Mode set as **Cable/Dynamic IP (DHCP)** and select Site Survey to see the wireless networks available to connect to.



Take a note of the **Authentication** and **Encryption** information for the network you are trying to connect to, this will be required later - unless security is disabled.

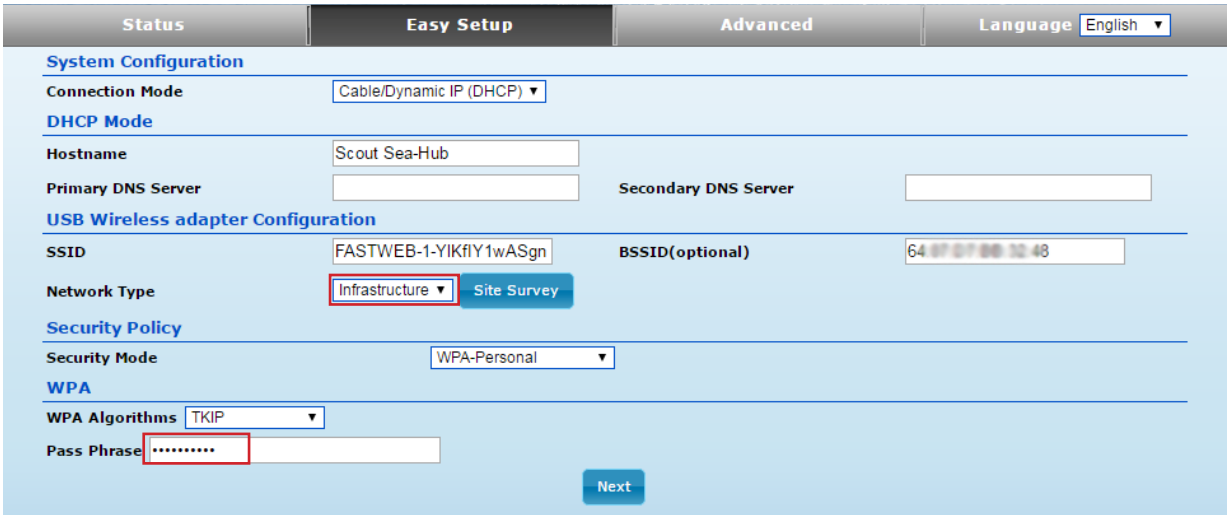
Click on the button for the network you wish to connect to and press **Select**.



In the next screen you will now see that the details for the connection you selected have been added.

If the **Network Type** reads **802.11Ad Hoc**, change to **Infrastructure** using the dropdown arrow.

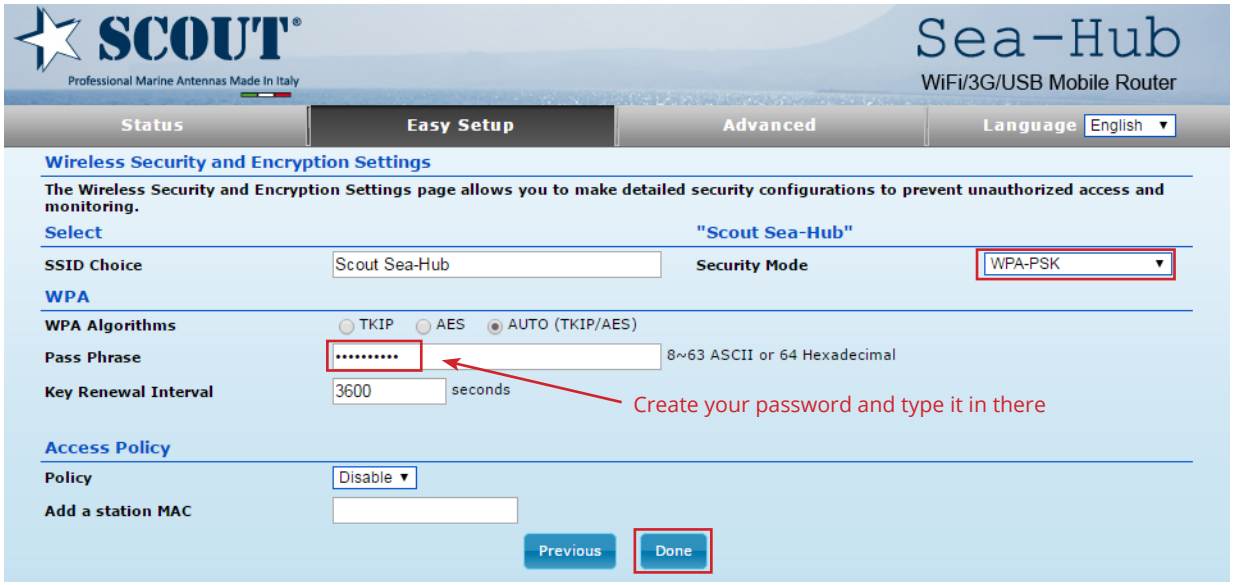
If the WiFi network you are connecting to has security enabled you will need to enter the Mode (Authentication and Encryption information you took a note earlier) and passphrase on this screen before selecting **Next**.



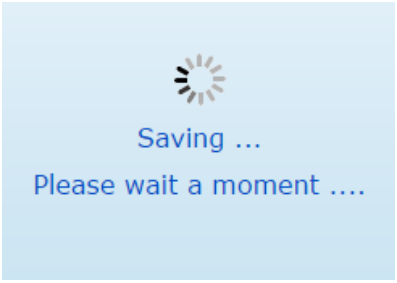
The next screen shows the settings for the wireless LAN - this is what you will be connecting your wireless device to locally in order to access the Internet.

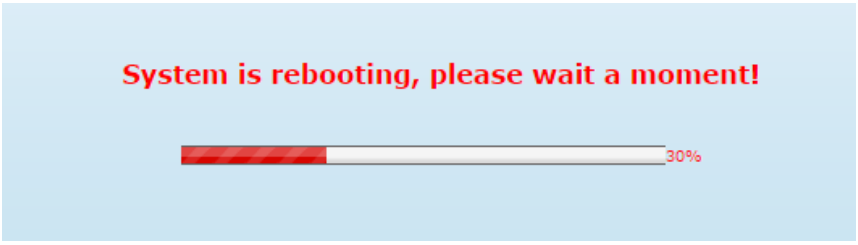
The **SSID** is the name you will see when scanning for available WiFi networks: the default name is Scout Sea-Hub, you can change it to something more meaningful if you wish.

We strongly advise adding some security to this connection in order to stop unauthorized connections, next screen shows example settings. Once you're happy with your settings press **Done**.

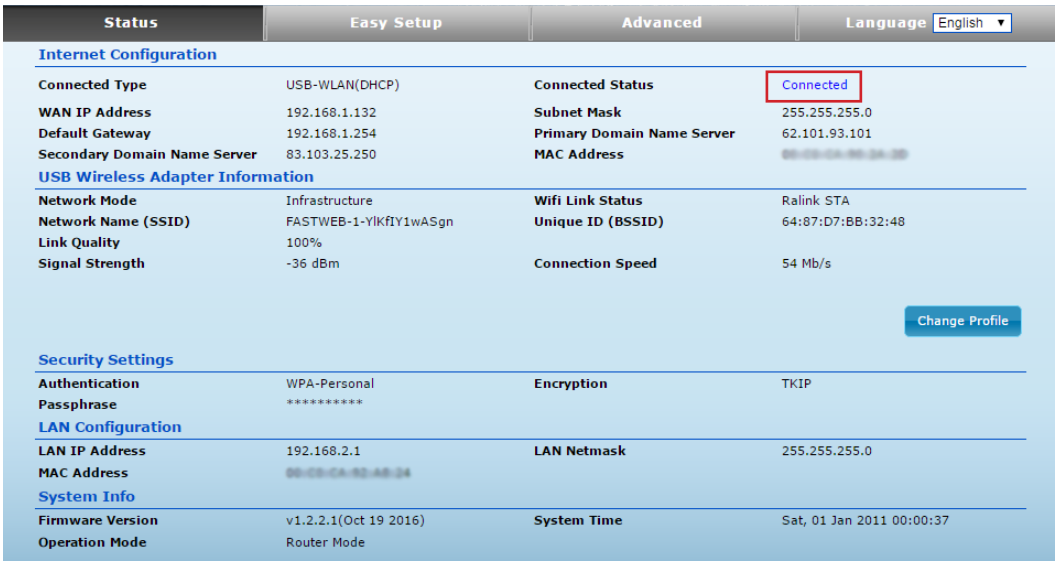


At this point you will be disconnected from the Sea-Hub as it reconfigures. Give it a few moments to sort itself out.





The screen should now look like the following one, Connected Status is now **Connected**.

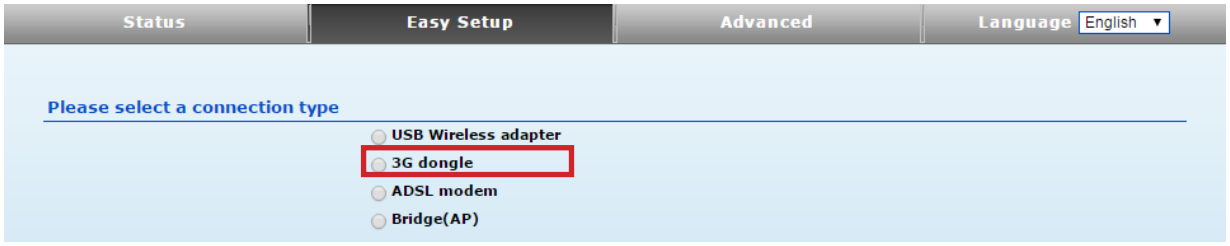


Congratulations! You now have access to the remote network.

Scan for available networks with your WiFi devices and connect to your own new network, type in the passphrase you chose before and enjoy!

2 Connection type: 3G dongle

By selecting the connection type "3G dongle" you'll set up the Sea-Hub to wirelessly re-broadcast the Internet connection from a USB 3G Dongle locally to multiple wireless-enabled devices. The list of the 3G USB dongles that are compatible with the Sea-Hub is printed at the end of this manual.

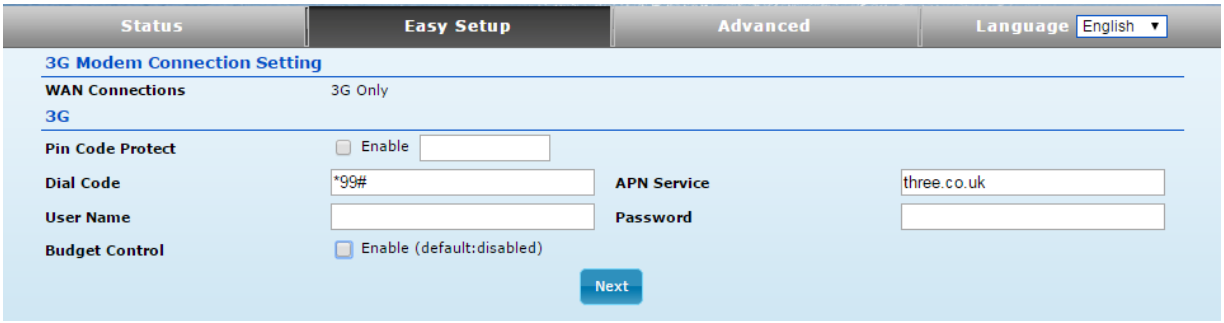


Note: ensure the USB 3G Dongle is plugged into the USB port (see datasheet on our website for a list of campatible devices) and the Sea-Hub has its antenna attached before switching power on.

Select the "3G dongle" button to begin the wizard to connect to a 3G Broadband source.

On the following screen we configure the settings for your 3G Dongle. These vary between each service provider so you may need to consult the documentation which came with your device, or your service provider.

Below is an example of a particular device from 3 networks.



- Pin Code Protect - Enables the use of a PIN code (personal identification number) to encrypt access to the 3G modem connection. Some service providers do not require PIN code authentication. If a PIN code is not required just disable this function. (Default: Disabled)

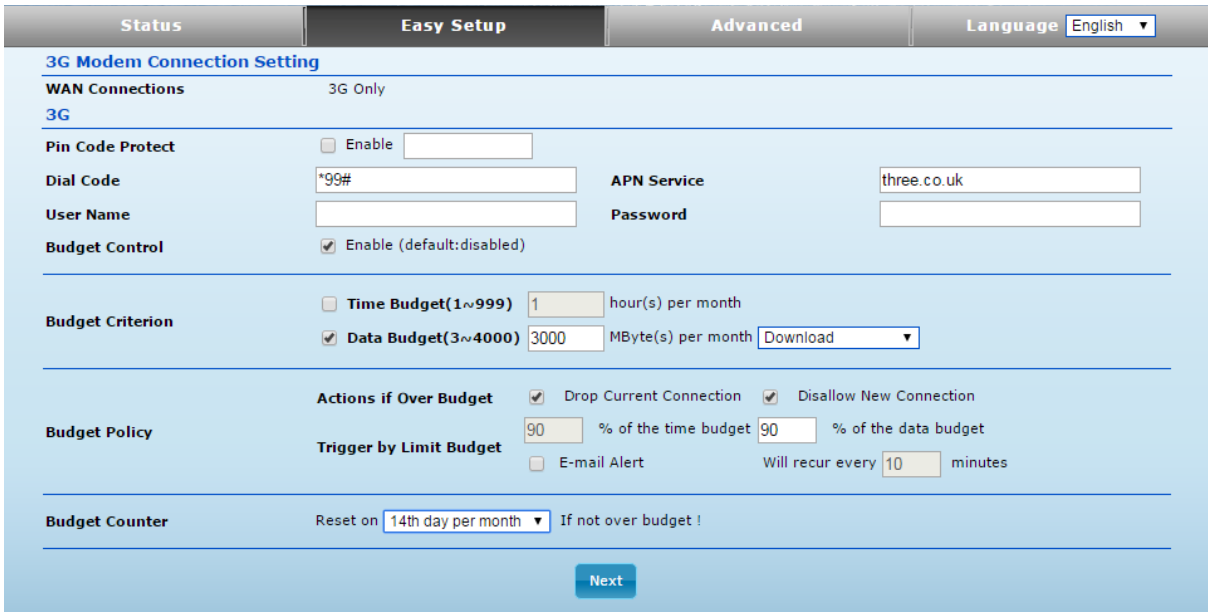
- Dial Code - A dialled access code that connects the USB device to the service provider.

- APN Service - The access point name (APN) that uniquely identifies the 3G service provider.

- User Name - The user name of the account registered with the 3G service provider.

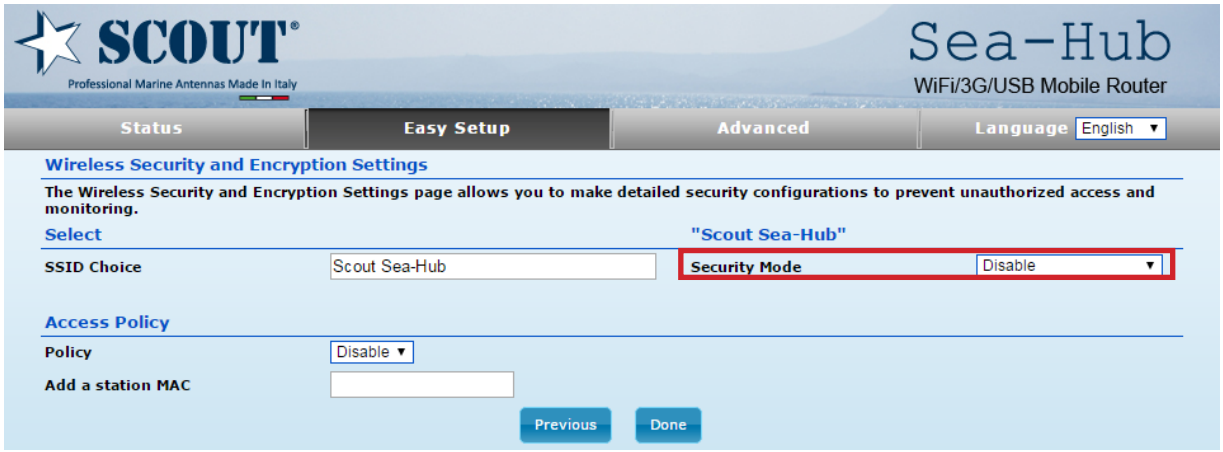
- Password - The password of the account registered with the 3G service provider.

There is a check box on screen market **Budget Control**, this is a useful feature which helps prevent you from exceeding your data allowance if you have a limit on your tariff. The next screen shows some example settings.



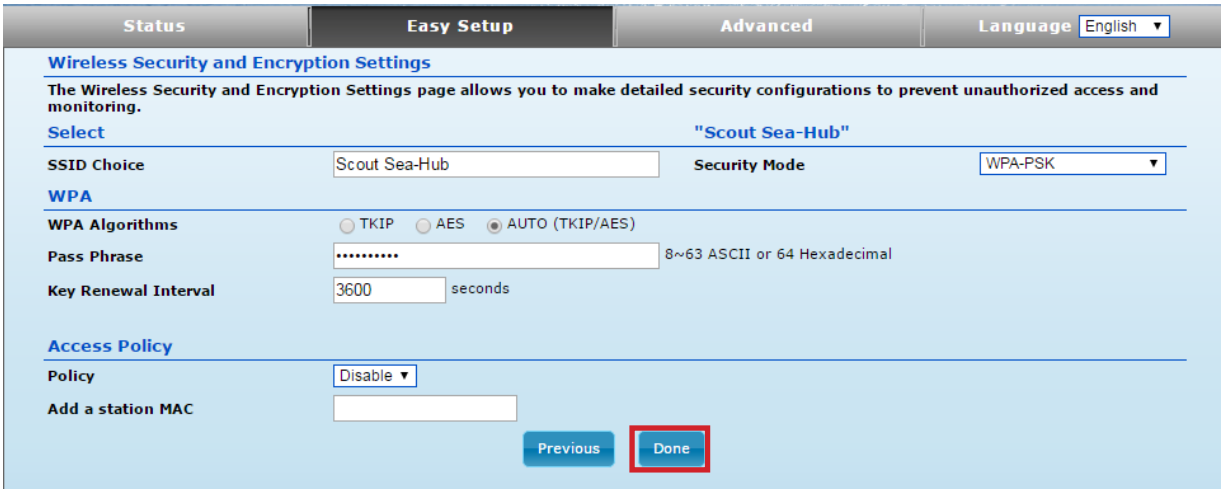
Press **Next** to complete this page.

The screen below shows settings for the wireless LAN - this is what you will be connecting your wireless device to in order to access the Internet.



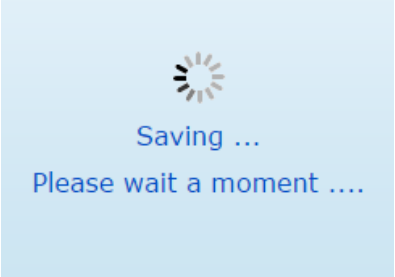
The **SSID Choice** is the name you will see when scanning for available WiFi networks: the default name is Scout Sea-Hub, you can change it to something more meaningful if you wish.

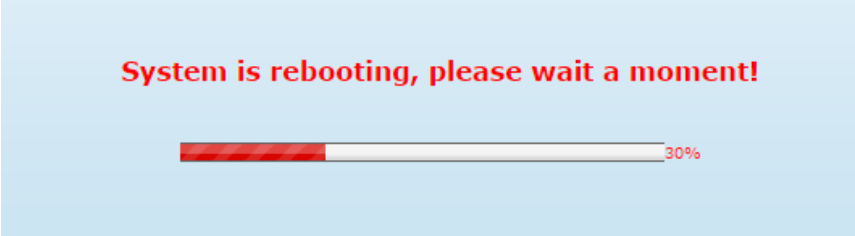
We strongly advise adding some security to this connection in order to stop unauthorized connections, next screen shows example settings.



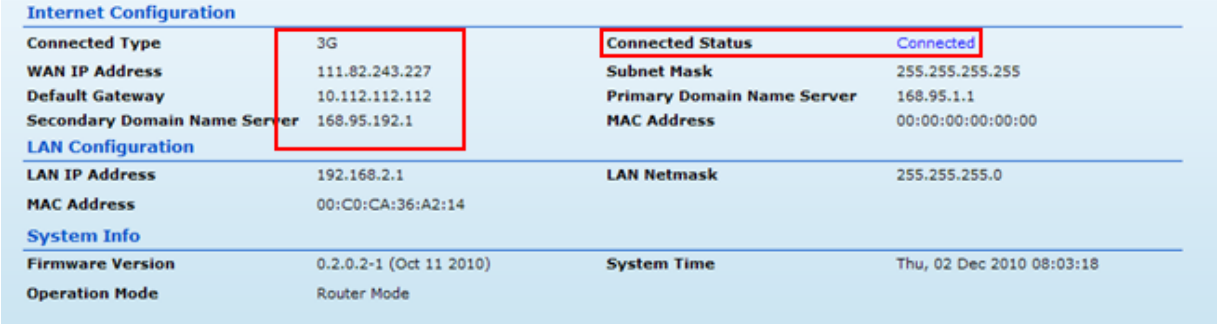
Once you're happy with your settings press **Done**.

At this point you will be disconnected from the Sea-Hub as it reconfigures. Give it a few moments to sort itself out.





The screen should now look like the following one, Connected Status is now **Connected**.



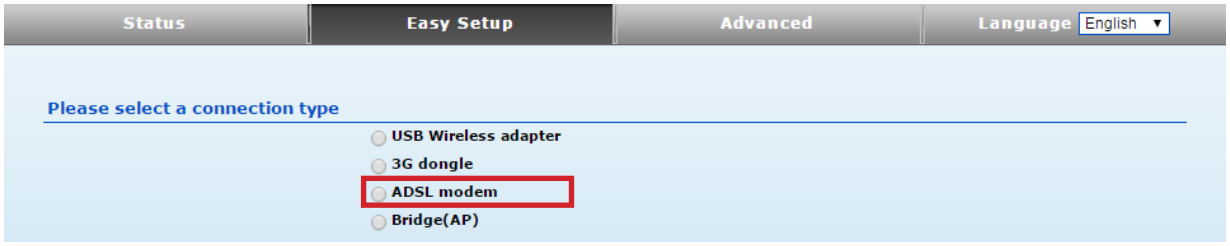
Congratulations! You now have access to the Internet.

Scan for available networks with your WiFi devices and connect to your own new network, type in the passphrase you chose before and enjoy!

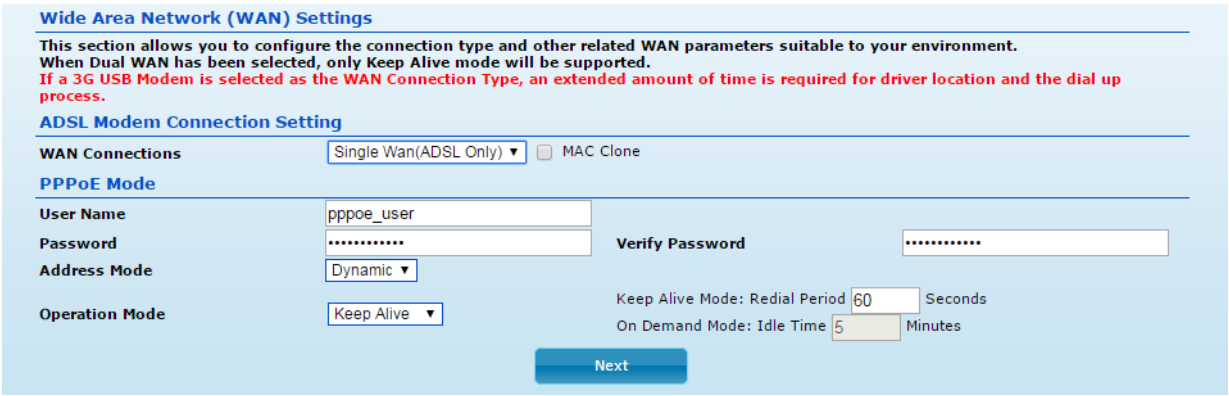
3 Connection type: ADSL modem

Mode: Single WAN (ADSL only)

Select ADSL Modem to enable the Sea-Hub IP address to be assigned automatically from an Internet service provider (ISP) through a DSL modem using Point-to-Point Protocol over Ethernet (PPPoE).



On the following screen we configure the settings for connecting the Sea-Hub to the DSL modem.



- **WAN Connection** - Select **Single WAN (ADSL only)** for the WAN port connection from the drop-down list.

- **Enable MAC Clone** - Some ISPs limit Internet connections to a specified MAC address. This setting allows you to manually change the MAC address of the Sea-Hub's WAN interface to match the PC's MAC address provided to your ISP for registration. You can enter the registered MAC address manually by typing it in the boxes provided. Otherwise, connect only the PC with the registered MAC address to the Sea-Hub, then click the Clone your PC's MAC Address (default: Disable).

- **User Name** - Sets the PPPoE user name for the WAN port (default: pppoe_user; Range: 1~32 characters).

- **Password** - Sets a PPPoE password for the WAN port (default: pppoe_password; Range: 1~32 characters).

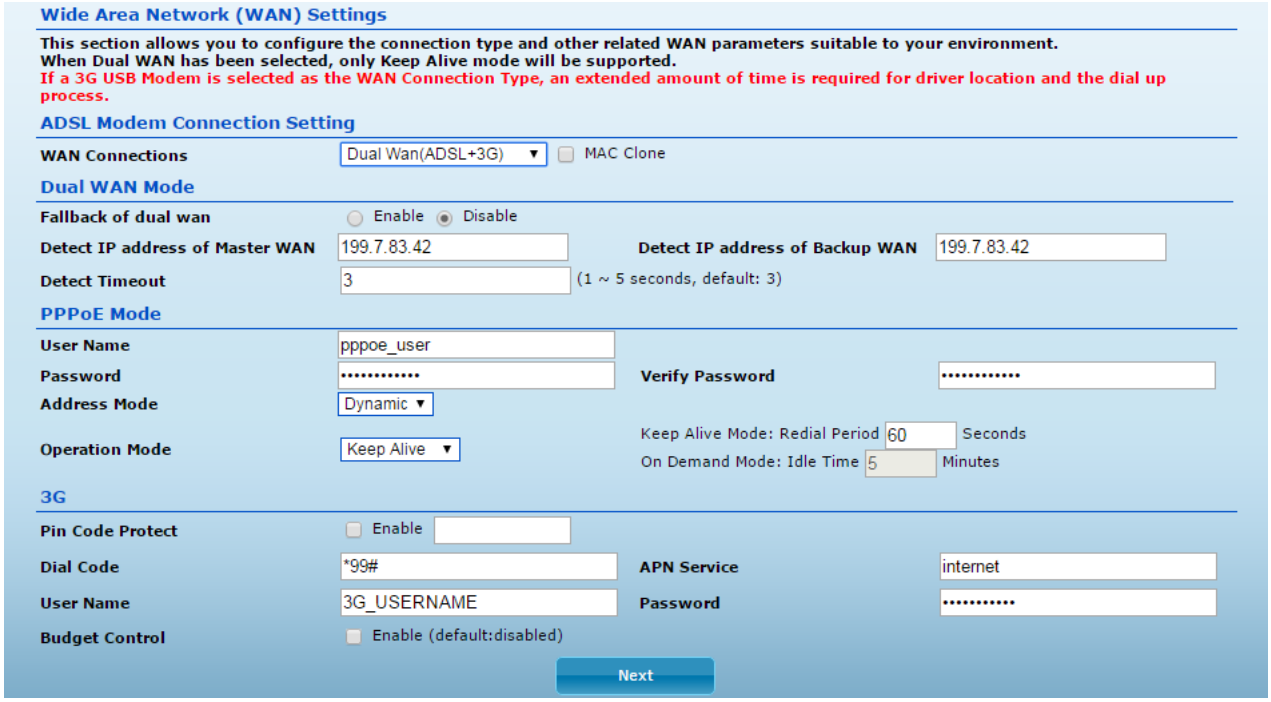
- **Verify Password** - Prompts you to re-enter your chosen password.

- **Operation Mode** - Enables and configures the keep alive time and configures the on-demand idle time.

Note: If static IP is required for your DSL modem then you need to click Advanced tag followed by WAN to bring up Static IP Configuration

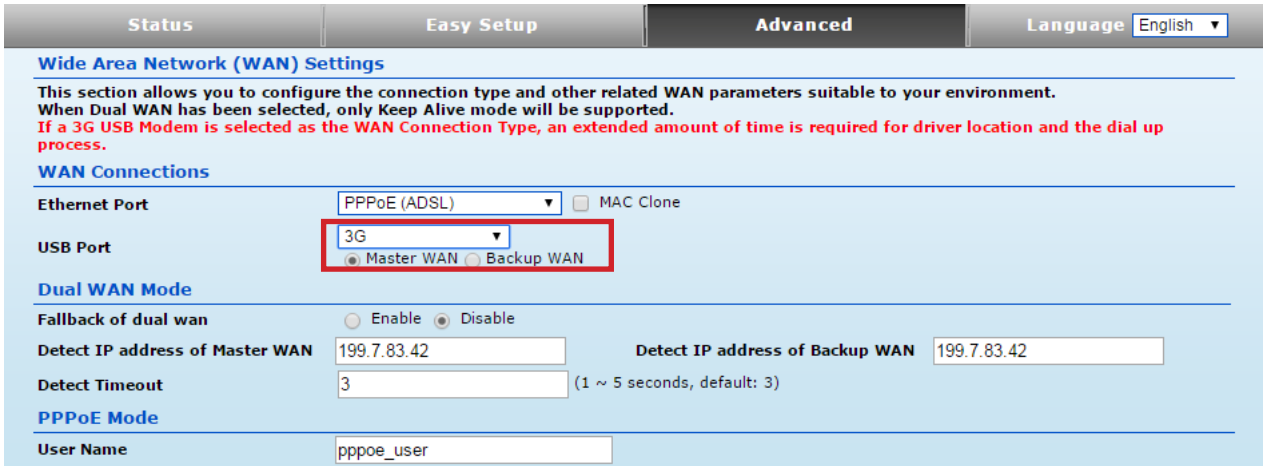
Mode: Dual WAN (ADSL + 3G)

You may enable 3G USB as backup WAN connection when DSL is not functioning.



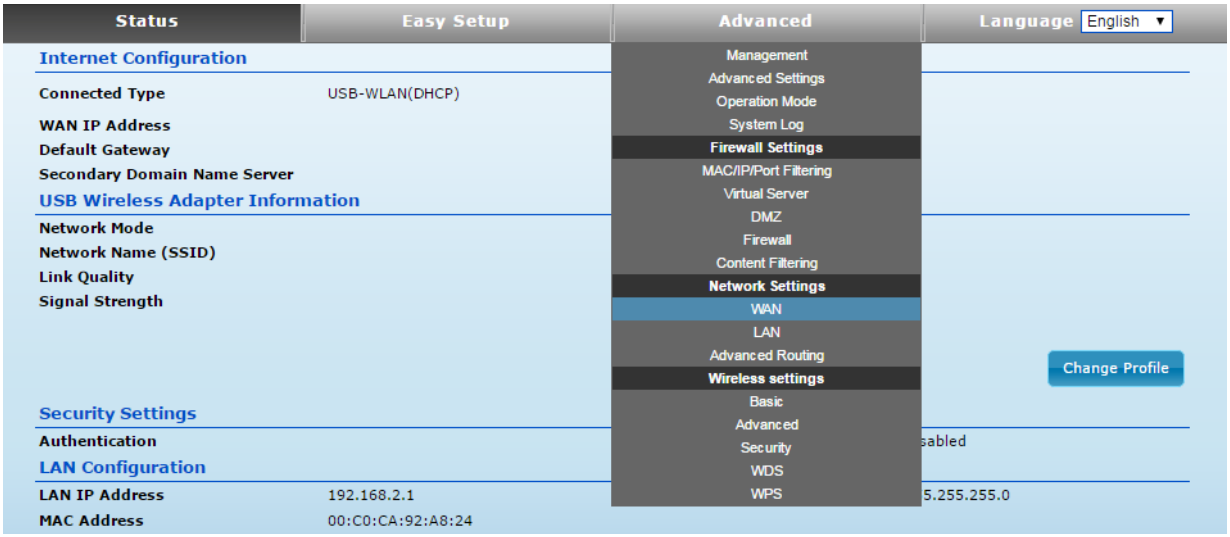
Please refer to Connection type: 3G dongle for setup detail on 3G modem.

Note: you may reverse the primary & backup WAN connection by click Advanced tag followed by WAN (see screen below).

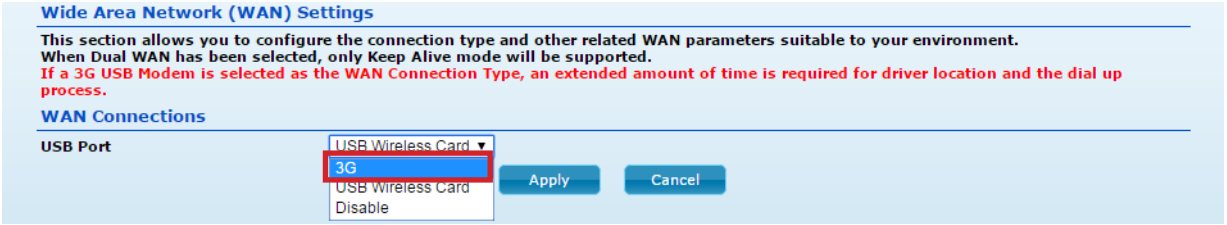


In case you want to set the WAN port to work linked to the Scout **Rocket** and use the 3G USB connection as a backup (that activates automatically when the internet signal provided by the Rocket is no longer available) please follow these steps:

Click Advanced tag followed by WAN (see screen below).

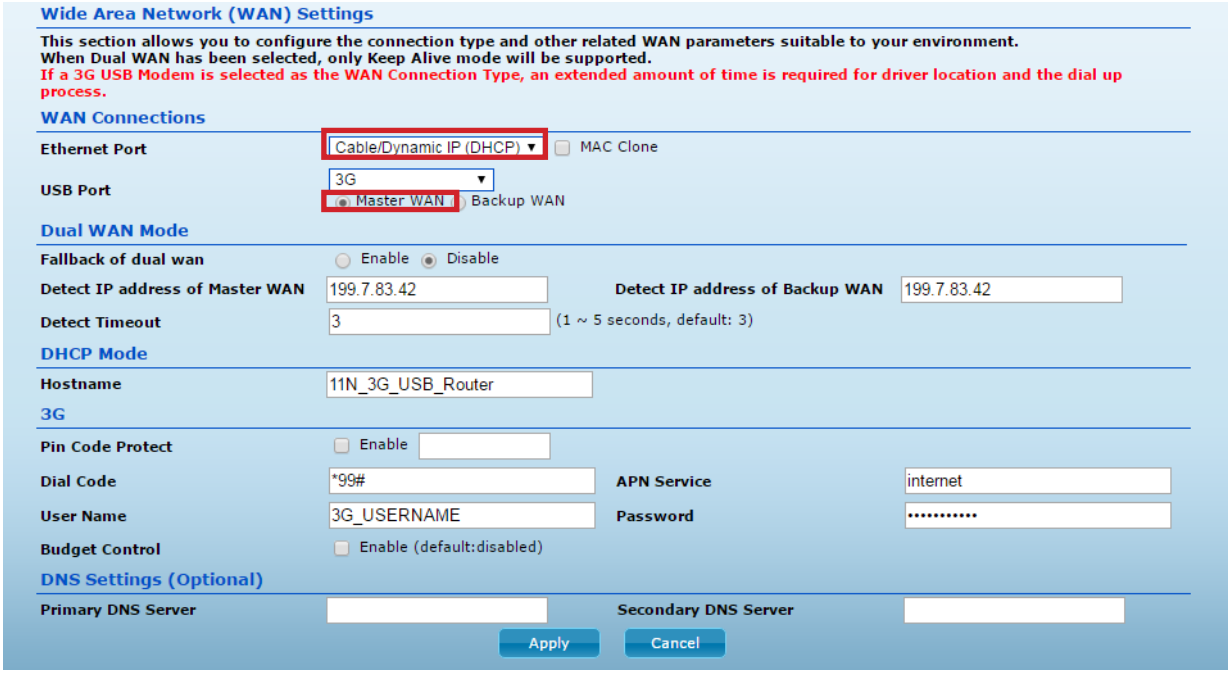


Select 3G from the drop-down list.



Select Cable/Dynamic IP (DHCP) from the drop-down list and flag Master WAN, then refer to Connection type: 3G dongle for setup detail on 3G modem.

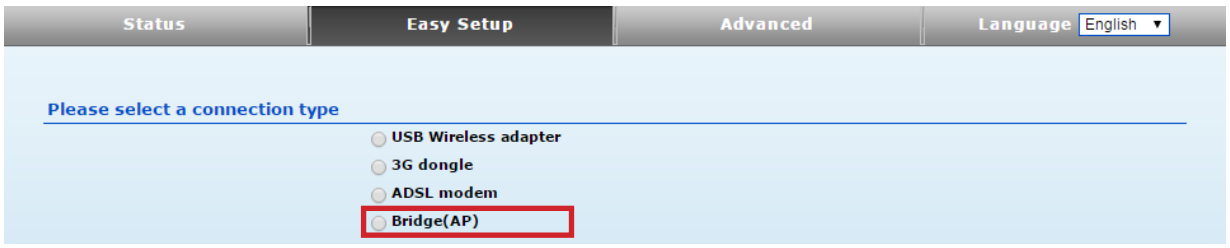
Click Apply and let the system restart. You're now ready to use Rocket as primary WAN connection and 3G dongle as backup.



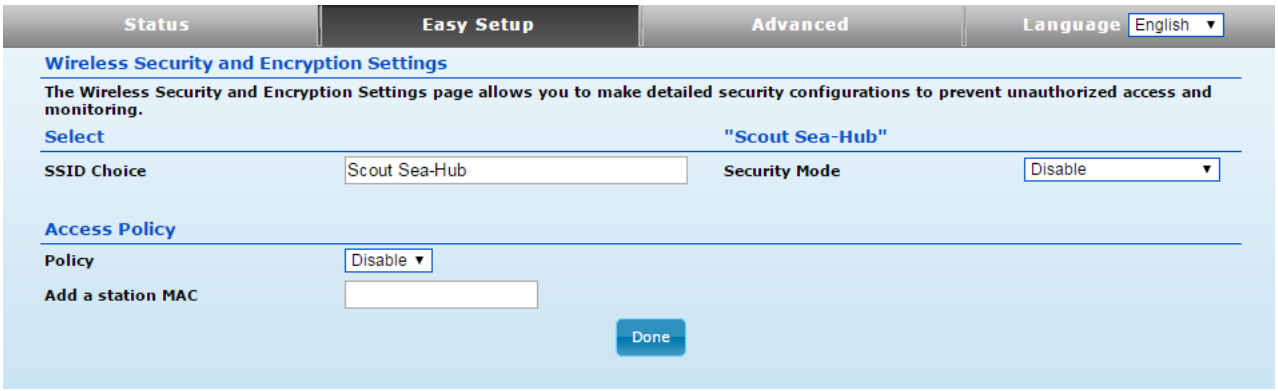
4 Connection type: Bridge (AP)

Can the Sea-Hub be used as a wireless router? Yes it can - in Bridge mode. Bridge mode works just like a wireless Ethernet link between an existing ADSL modem and wireless devices (such as smarphones and tablets) that wants to connect.

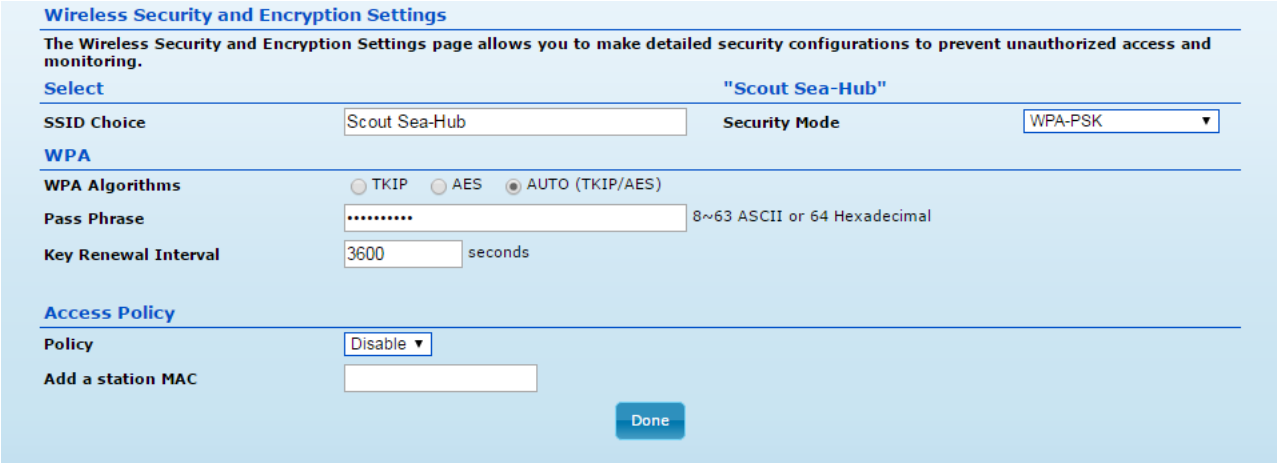
Note: this is the connection type you need to activate when you want to couple the Scout **Rocket** (that acts as a modem) to the Sea-Hub.



The **SSID Choice** is the name you will see when scanning for available WiFi networks: the default name is Scout Sea-Hub, you can change it to something more meaningful if you wish.

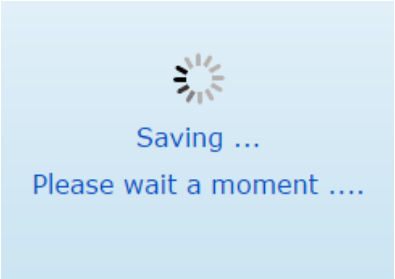


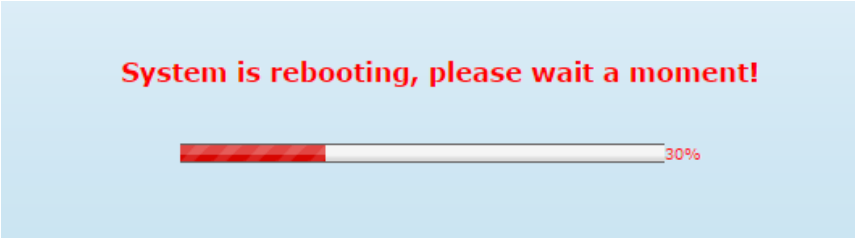
We strongly advise adding some security to this connection in order to stop unauthorized connections, next screen shows example settings.



Once you're happy with your settings press **Done**.

At this point you will be disconnected from the Sea-Hub as it reconfigures. Give it a few moments to sort itself out.





Connect an Ethernet cable from one of your DSL modem's Ethernet ports to the Sea-Hub WAN port. The Sea-Hub LAN and USB ports will now have nothing connected to them.

Congratulations! The Sea-Hub is now ready to use in Bridge mode.

Scan for available networks with your WiFi devices and connect to your own new network, type in the passphrase you chose before and enjoy!

Note: In this mode you can no longer access the Sea-Hub status page via browser. You cannot even access the Sea-Hub status page through Ethernet to the Sea-Hub LAN port! The only way you can now access the Sea-Hub is by activating the reset button on the bottom of the Sea-Hub and then doing the setup all over again.

TECHNICAL SPECIFICATIONS

Operating Frequency	FCC: 2412~2462MHz (Ch1~Ch11) ETSI: 2412~2472MHz (Ch1~Ch13) Japan: 2412~2484MHz (Ch1~Ch14)
Wireless Mode	WISP Bridge Router
Data Rate	802.11n (40MHz): up to 150Mbps 802.11n (20MHz): up to 72Mbps 802.11g: 54,48,36,24,18,12,9,6Mbps 802.11b: 11,5.5,2,1Mbps
Standards	Wired: IEEE 802.3 (10Base-T) IEEE 802.3u (100Base-TX) Wireless: IEEE 802.11, IEEE 802.11g, IEEE 802.11n
Physical	1 x 10/100Mbps WAN Port 1 x 10/100Mbps LAN Port 1 x detachable external 5dBi antenna 1 x Reset button 1 x WPS Security Key 1 x USB Port
Output power	802.11b: 27dBm ± 2dBm 802.11g: 25dBm ± 2dBm 802.11n: 25dBm ± 2dBm
Security	SSID Broadcast disable MAC filter WEP Encryption WPA-/W PA2-PSK (Pre-shared Key) WPA/W PA2 Enterprise mode (802.1x) WiFi Protected Setup (WPS)
Router functions	Static Routing VPN Pass through NAT 802.11e WMM IGMP Proxy Dual SSIDs
Power Input	12V/1A
Size	93 x 70 x 26mm
Weight	74 g

COMPATIBLE 3G USB MODEM

ALFA Onyx3G
ALFA Fly3G
Huawei E220
Huawei
E169/169G/169U
Huawei E219
Huawei D02
Huawei D21
Huawei D22
Huawei D23
Huawei D31
Huawei ET128
Huawei D12HW
Huawei D12LC
Huawei D21LC
Huawei E1762
Huawei E1552
Huawei E1782
Huawei E1552
Huawei E1782
Huawei E156G
Huawei E177
Huawei E353
Asus T500
SonyEricsson MD300
Qisda H21(single)
ZTE MF626
ZTE MF627
ZTE MF628
ZTE AC2726
ZTE MF636
ZTE MF637
ZTE AC2736
ZTE MF631
ZTE MF180
PROLINK PHS100
PROLINK PHS300
PROLINK PHS101
DoCoMo A2502
SoftBank C01LC
Sierra 598U
C-MOTECH U300
Qisda H21(dual)
EpiValley 8089
i-mobile U3300
BandLuxe C180
Option Icon 225
Dlink DWM-156
NOKIA CS-15
Royaltek Q110
CSL U1-TF