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User Guide



### **Preface**

The purpose of this manual is to provide you with detailed information on the installation, operation and application of your HSPA WiFi Router with Voice

#### Important Notice and Safety Precaution

- Before servicing or disassembling this equipment, always disconnect power from the device.
- Use an appropriate power supply, preferably the supplied power adapter, with an output of DC 12V 1.5A.
- Do not operate the device near flammable gas or fumes. Turn off the device when you are near a petrol station, fuel depot or chemical plant/depot. Operation of such equipment in potentially explosive atmospheres can represent a safety hazard.
- The device and antenna shall be used only with a minimum of 20 cm from the human body.
- The operation of this device may affect medical electronic devices, such as hearing aids and pacemakers.
- The Antennas must be connected to this product prior to connecting the telephone cord.
- The telephone cord must be disconnected prior to disconnecting the Antennas.

Thank You

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With the increasing popularity of the 3G standard worldwide, the Etisalat HSPA WiFi Router with Voice provides you with triple-band coverage through expanding cellular networks throughout the world.

Integrating a Sierra Wireless HSPA module, this Router is capable of performing at typical downlink speeds of 550Kbps to 3Mbps, bursting up to 6Mbps and typical uplink speeds of 300Kbps to 1Mbps, bursting to 1.3Mbps in most places in the CBD, metro and other areas.

The Router also provides state-of-the-art security features such as WiFi Protected Access (WPA) data encryption, Firewall and Virtual Private Networks (VPN) pass through.



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# Introduction

Introduction

Chapter-1

## 1.1 Features

- The Etisalat HSPA WiFi Router with Voice allows you to share your Etisalat connection with multiple wireless or wired devices
- Provides you with worldwide coverage through triple-band HSUPA/HSDPA/UMTS (850/ 1900 / 2100MHz), quad-band EDGE/GSM (850/ 900 / 1800 MHz)
- Embedded multi-mode HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM module
- 1 x RJ11 port for voice calling over the Etisalat network via a connected standard Analogue Telephone (not included).
- Built-in USB 2.0 Print Server functionality
- Support for USB 2.0 Mass Storage device (NTFS, FAT 32)
- Integrated 802.11g/54Mbps AP (backward compatible with 802.11b)
- WiFi Protected Access (WPA)/ WiFi Protected Access 2 (WPA2) and 802.1x wireless encryption
- Static route/ Routing Information Protocol (RIP)/RIP v2 routing functions
- Media Access Control (MAC) address and IP filtering
- Network Address Translation (NAT) / Port Address Translation (PAT)
- Supports Universal Plug and Play (UPnP) and Internet Group Management Protocol (IGMP) snooping
- Supports Virtual Private Network (VPN) Pass-Through
- Dynamic Host Configuration Protocol (DHCP) Server/Relay/Client
- Domain Name System (DNS) Proxy and Dynamic Domain Name System (DDNS)
- Web-based Management
- Command Line Interface (CLI) via Telnet
- Configuration backup and restoration
- Remote configuration
- Router and Etisalat module firmware upgrade
- Supports half-bridging mode
- Supports Simple Network Management Protocol (SNMP)

## 1.2 Package Contents

Your package contains the following:

- Etisalat HSPA WiFi Router with Voice
- Printed Quick Start Guide
- CD (Containing User Guide)
- Ethernet Cable
- Security Card
- 2 x 3G Antennas
- 1 x WiFi Antenna
- Power Supply

### 1.3 LED Indicators

The LED indicators are shown in this illustration and followed by detailed explanations in the table below.



LED	Color	Mode	Description
POWER	Green	On	Power on
		Off	Power off
Phone	Green	On	Phone line active
		Off	Phone line inactive or not connected
LAN 1~2	Green	On	Powered device connected to the associated port (includes devices with wake-on-LAN capability where a slight voltage is supplied to an Ethernet connection)
		Off	No activity, modem powered off, no cable or no powered device connected to the associated port
		Blink	LAN activity present (traffic in either direction)
WiFi	Green	On	Local WiFi access to the Router is enabled and working
		Off	Local WiFi access to the Router is disabled
		Blink	Data being transmitted or received over WiFi.
Internet	Green	Blink	Data is transmitted through Internet connection
		Off	No connection to the internet or Router powered off
		On	Internet connection established
3G	Green	On	Connection established with 3G network
		Blink	Connecting with 3G network
		Off	No connection with UMTS cellular station, no activity, Router powered off.
2G	Green	On	Connection established with 2G network
		Blink	Connecting to an EDGE, GPRS or GSM cellular station
		Off	No connection with EDGE, GPRS or GSM cellular station, no activity or Router powered off.
Low	Green	On	Low signal strength
		Off	No activity, Router powered off or on other signal strength
Med	Green	On	Medium signal strength
		Off	No activity, Router powered off or on other signal strength
High	Green	On	High signal strength
		Off	No activity, Router powered off or on other signal strength

**NOTE:** The six LEDs on the left side of the top panel display (Low, Med, High, Internet, 3G, 2G) will cycle on and off if PIN code protection is activated. In this case, you should consult section 3.2.1 PIN Code Protection (page 16) for further instructions.

### 1.4 Rear Panel

The rear panel contains the ports for data and power connections.



- (1) Power jack for DC power input (12VDC / 1.5A)/Power button
- (2) USIM card slot
- (3) USB Port (For connecting a USB Printer or USB Storage Device)
- (4) Reset button
- (5) Phone Port (for Voice calls over the Etisalat Network)
- (6) 2 RJ-45 Ethernet LAN ports



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# Interface

This section describes how to access the device via the web user interface using a web browser such as Microsoft Internet Explorer (version 5.0 or later), Mozilla Firefox or Safari.

## Chapter-2



## 2.1 Default Settings

The following are the default settings for the Router

- Local (LAN) access (username: admin, password: admin)
- Remote (WAN) access (username: support, password: support)
- User access (username: user, password: user)
- LAN IP address: 192.168.1.1
- Remote WAN access: disabled
- NAT and firewall: enabled
- Dynamic Host Configuration Protocol (DHCP) server on LAN interface: enabled

### Technical Note:

During power on, the device initializes all settings to default values. It will then read the configuration profile from the permanent storage section of flash memory. The default attributes are overwritten when identical attributes with different values are configured. The configuration profile in permanent storage can be created via the web user interface or telnet user interface, or other management protocols. The factory default configuration can be restored either by pushing the reset button for more than five seconds until the power LED blinks or by clicking the Restore Default Configuration option in the Restore Default Settings screen (see section 5.1.3).

## 2.2 TCP/IP Settings

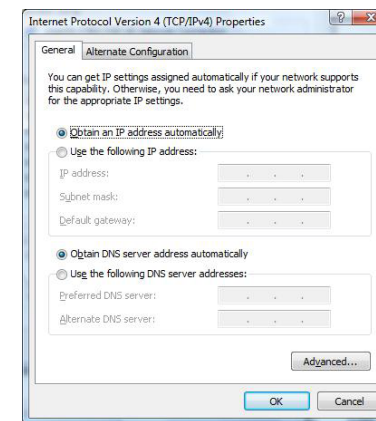
It is likely that your computer will automatically obtain an IP Address and join the network. This is because the Dynamic Host Configuration Protocol (DHCP) server (on the device) will start automatically when your Router powers up.

This automatic assignment requires that DHCP is configured on your computers. It is likely that this is already the case, but should you be required to configure this, please see the instructions below.

### Windows XP

#### DHCP Mode

To set your PC for DHCP mode, check the Internet Protocol properties of your Local Area Connection. You can set your PC to DHCP mode by selecting Obtain an IP address automatically in the dialog box shown below.



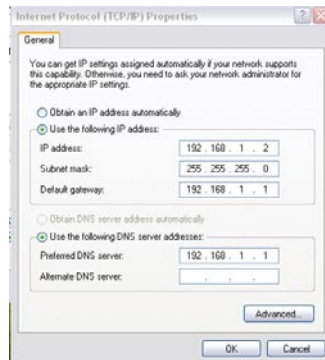
# Web User Interface

## STATIC IP Mode

The following steps show how to configure your PC IP address using subnet 192.168.1.x. The following assumes you are running Windows XP.

- 1: From the Network Connections window, open Local Area Connection (You may also access this screen by double-clicking the Local Area Connection icon on your taskbar). Click the Properties button.
- 2: Select Internet Protocol (TCP/IP) and click the Properties button. The screen should now display as below. Change the IP address to the domain of 192.168.1.x. (1<x<254) with subnet mask of 255.255.255.0. Set the default Router and DNS server to the Router's IP address.

**NOTE:** The IP address of the Router is 192.168.1.1. (default), so the PC must be set with a different IP. In the case below, the PC's IP address is set as 192.168.1.2



- 3: Click OK to submit the settings.

## MAC OSX 10.4

### DHCP Mode

To set your Apple Mac for DHCP mode, browse to the Apple menu and select System Preferences. In the System Preferences menu, click on the Network icon and select Ethernet. Next select Using DHCP from the Configure drop down list. After clicking Apply, your Mac's IP Address will now be automatically assigned from the Router.

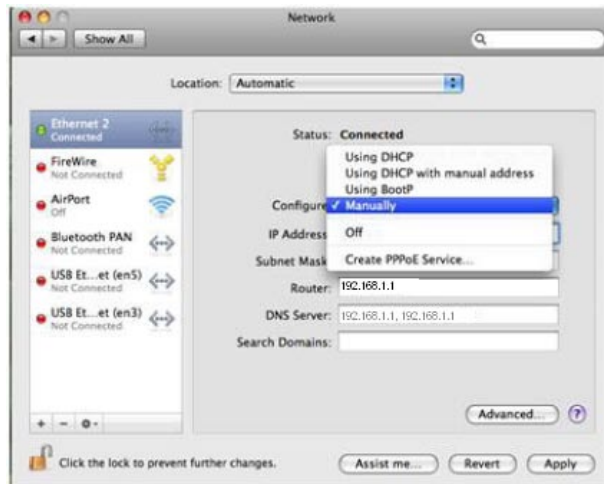


# Web User Interface

## STATIC Mode

If you do not wish to use automatic assignment of IP Addresses and wish to configure your Router manually, your computer must have a static IP address within the Router's subnet. The following steps show how to configure your computer's IP address within the subnet 192.168.1.x

1. Browse to the Apple menu and select System Preferences. From the System Preferences, click the Network icon and select the Ethernet connection.
2. From the Configure drop down list, you can set your computer to Static IP mode by selecting the Manually option.



3. Choose an IP address between 192.168.1.2 – 192.168.1.254 (Do not choose the Router IP of 192.168.1.1). Enter this IP address into the field marked IP Address, and enter a Subnet Mask of 255.255.255.0
4. Set the Router and DNS server field to 192.168.1.1 (The Router's IP address).

**NOTE:** The IP address of the Router is 192.168.1.1. (default), so the computer must be set with a different IP to the Router. In the case below, the PC's IP address is set as 192.168.1.2

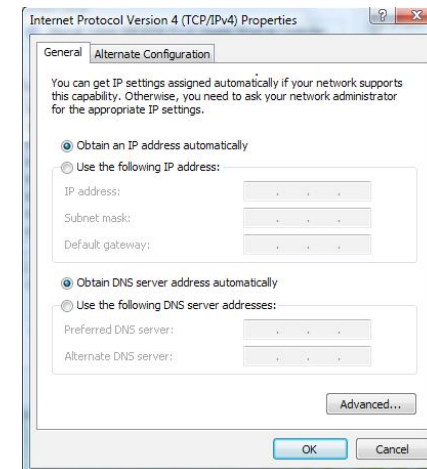


5. Click Apply to submit the settings.

## Windows Vista

### DHCP Mode

To set your PC for DHCP mode, click properties of your Local Area Connection. You can set your PC to DHCP mode by selecting Obtain an IP address automatically in the dialog box shown below.



# Web User Interface

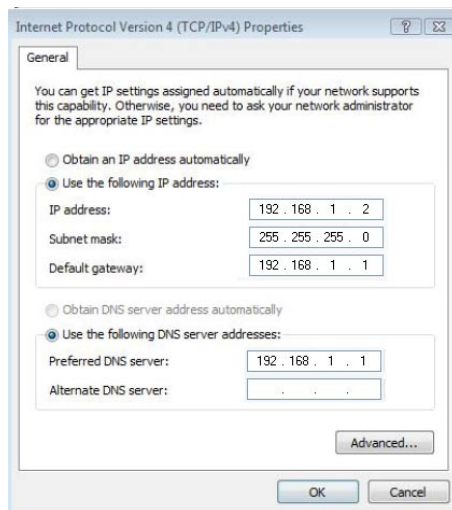
## STATIC IP Mode

To configure your Router manually, your PC must have a static IP address within the Router's subnet. The following steps show how to configure your PC IP address using subnet 192.168.1.x. The following assumes you are running Windows Vista.

- 1: From Control panel select the Network and sharing center, open Local Area Connection (You may also access this screen by double-clicking the Local Area Connection icon on your taskbar). Click the Properties button.
- 2: Select Internet Protocol (TCP/IPv4) and click the Properties button. The screen should now display as below. Choose an IP address between 192.168.1.2 – 192.168.1.254

**NOTE:** The IP address of the Router is 192.168.1.1. (default), so the PC must be set with a different IP. In the case below, the PC's IP address is set as 192.168.1.2

- 3: Set the Router and DNS server field to 192.168.1.1 (The Router's IP address).



3. Click OK to apply the settings.

## 2.3 Login Procedure

To login to the web interface, follow the steps below:

**NOTE:** The default settings can be found in 3.1 Default Settings.

- 1: Open a web browser and enter the default IP address for the Router in the Web address field. In this case http://192.168.1.1
- NOTE:** For remote access, use the WAN IP address shown on the WUI Homepage screen and login with remote username and password.
- 2: A dialog box will appear, as illustrated below. Enter the default username and password, as defined in section 2.1 Default Settings.

Click OK to continue.



**NOTE:** The login password can be changed later (see 6.2.3 Passwords)

- 3: After successfully logging in for the first time, you will reach this screen.



# Web User Interface

## 2.4 Web User Interface Homepage

The web user interface (WUI) is divided into two window panels, the main menu (on the top) and the display screen (on the bottom). The main menu has the following options: Basic, HSPA/3G Settings, WIFI, Management, Advanced Settings and Status.

Selecting one of these options will open a submenu with more options. Basic is discussed below while subsequent chapters introduce the other main menu selections.

**NOTE:** The menu options available within the web user interface are based upon the device configuration and user privileges (i.e. local or remote).

### BASIC

The Basic screen is the WUI homepage and the first selection on the main menu. It provides information regarding the firmware, 3G, and IP configuration.

The screenshot shows the 'Basic' page with the following information:

Basic > Home	
Hardware Version:	96359G-122VB
Software Version:	H0G10VV-L101-S306HCM-T01_R02
Bootloader (CFE) Version:	4.0.37.4.8
Wireless Driver Version:	3.131.35.4.epe2.0

Device Info for 3G

Network:	
Link:	WAN : Connected
Mode:	HSDPA/HSUPA
Signal Strength:	
SIM Info:	SIM inserted

This information reflects the current status of your connection.

LAN IP Address:	192.168.1.1
WAN IP Address:	WAN :120.16.82.38
Default Gateway:	10.64.64.64
Primary DNS Server:	202.81.67.122
Secondary DNS Server:	202.2.192.87
Date/Time:	Tue Nov 17 14:58:32 2009

The following table provides further details.

Fields	Description
Software version	The software version of the device.
Hardware version	The Hardware version of the device
Bootloader version	The bootloader version of the device.
Wireless driver version	The wireless driver version of the wireless module.
Network Link	The name of or other reference to the mobile network operator. Shows the connection status of the current Etisalat connection.
Mode	The radio access technique currently used to enable internet access. It can be HSUPA, HSDPA, UMTS, EDGE, GPRS or Disconnected.
Signal strength	The mobile network (UMTS or GSM) signal quality available at the device location. This signal quality affects the performance of the unit. If two or more bars are green, the connection is usually acceptable.
SIM info	Shows the SIM card status on the device.
LAN IP Address	Shows the IP address for LAN interface.
WAN IP Address	Shows the IP address for WAN interface.
Default Router	Shows the IP address of the default Router for the WAN interface.
Primary DNS Server	Shows the IP address of the primary DNS server.
Secondary DNS server	Shows the IP address of the secondary DNS server.
Date/Time	The time according to the device's internal clock

# Web User Interface



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# Settings

This menu includes HSPA/3G  
Settings and PIN Configuration.

## Chapter-3

**NOTE:** Sections 8.3 and 8.4.2 also provide information about the Etisalat service.

### 3.1 HSPA/3G Settings

Select your HSPA/3G settings according to predefined or custom profiles. Setup instructions are provided in the following sections for your assistance.

3G Settings > Setup > Data APN

Profile: Custom APN

Authentication Method: AUTO

APN: etisalat.ae

Username:

Password:

IP Compression: Off

Data Compression: Off

All Bands/Automatic  3G-2100 only  3G-2100/2G-900/1800  3G-ALL  2G-ALL

Save Connect Disconnect

#### 3.1.1 Profile Setup

Etisalat will provide the information required to complete the first time setup instructions below. Only complete those steps for which you have information and skip the others.

1. If your SIM card is not inserted into the Router, please turn the Router off. Then insert the SIM and turn the Router on.
2. To connect to Etisalat's 3G network, please select the Etisalat profile with Etisalat's APN as **etisalat.ae**. Authentication Method should be provided by Etisalat; or just leave it AUTO if not acquired. If you have not received the username and password, leave these fields empty.

3G Settings > Setup > Data APN

Profile: Custom APN

Authentication Method: AUTO

APN: etisalat.ae

Username:

Password:

IP Compression: Off

Data Compression: Off

All Bands/Automatic  3G-2100 only  3G-2100/2G-900/1800  3G-ALL  2G-ALL

Save Connect Disconnect

3. Select IP compression and Data compression to be ON or Off. By default they are set to off.
4. Click the Save button to save the new settings.
5. Press the Connect button to connect to Internet. The Device Info for 3G network box in the WUI Basic screen should indicate an active connection, as shown below. The 3G and Internet LEDs on the front panel of the Router should also be blinking.

Basic > Home

Hardware Version: 3636C-K120

Software Version: 100.0017.4.16N-2386C1A17H\_002

Hardware EPD Version: 3.8.17.0

Hardware Power Version: 3.8.17.0.4.0000.0

Service Info for 3G

Network: 3G

Link: (3G) - Connected

Signal Strength: [Signal strength indicator]

Service Status: [Service status indicator]

This information reflects the current status of your connection

WAN IP Address: 192.168.1.1

WAN IP Address: 192.168.1.1

Default Gateway: 192.168.1.1

Primary DNS Server: 192.168.1.1

Secondary DNS Server: 192.168.1.1

View Error: [View Error button]

If the LEDs are off, then either your profile settings are incorrect, the SIM card is not working or the service network is unavailable. In either case, contact Technical Support for further instructions.

**NOTE:** If the LEDs light in an on/off pattern moving from left to right this indicates that your SIM is PIN Locked, please see PIN Lock Off on page 16 for instruction on how to fix this

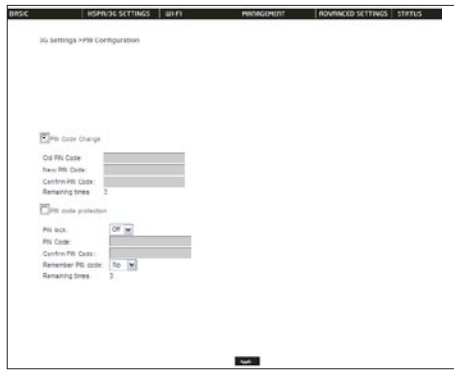
## 3.2 PIN Configuration

This screen allows for changes to the 3G SIM card PIN code protection settings.

**NOTE:** If you have entered the incorrect PIN 3 times, your SIM card will be locked for your security. Please call Etisalat for assistance.

### 3.2.1 PIN Code Protection

PIN code protection prevents the use of a SIM card by unauthorized persons. To use the 3G internet service with this Router however, the PIN code protection must be disabled. If the SIM card inserted into the Router is locked with a PIN code, the web user interface will display the following screen after login.



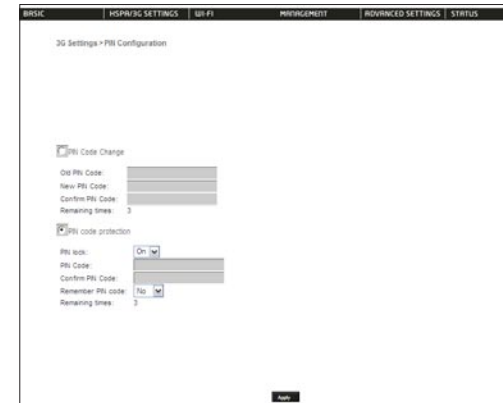
#### PIN Lock Off

If you wish to connect to the Internet using a PIN locked SIM card, you must first turn PIN code protection Off. Select PIN lock Off, enter the PIN Code twice. Please keep in mind you only have 3 attempts before your SIM card is locked. The remaining attempts' number shows how many attempts left. Contact Etisalat if you require assistance. You can select Remember PIN Code to ON so you don't need to input the PIN code every time when the Router turns on. Afterwards, click Apply. The following dialog box should now appear.

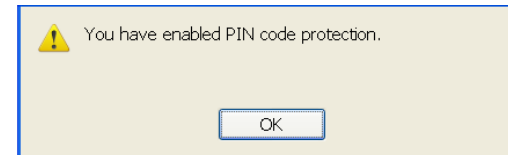


#### PIN Lock On

After you are finished using your SIM card for Internet service, you may wish to lock it again. In this case, first go to the 3G Settings - PIN Configuration screen, as shown below. Select PIN lock ON, enter the PIN code twice. You can select Remember PIN code to Yes so you don't need to input the PIN code every time when the Router turns on. Then click Apply.



After you do so, the following dialog box should appear.



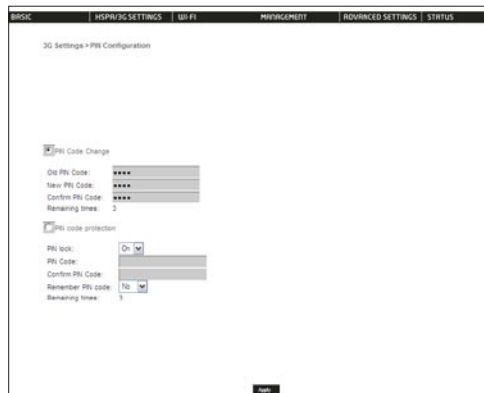
You can now return your SIM card to your cellular phone or other mobile device.



### 3.2.2 PIN Code Change

If you wish to change your PIN code for greater security, enable the PIN Code protection. Go to the previous section and follow the procedure listed under PIN Lock On.

After locking the SIM card, select PIN Code Change and enter your Old and New PIN codes in the fields provided. Keep in mind you only have 3 attempts before your SIM card is locked. The remaining attempts' number shows how many attempts left. Contact Etisalat if you require assistance. Afterwards, click Apply to activate the change.



**NOTE:** If you forget to change the PIN Code without first turning on PIN lock protection, you will see this dialog box as a helpful reminder.



**NOTE:** If your PIN Code change request was successful the following dialog box will display.





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# Wireless

The WIFI submenu provides access to Wireless Local Area Network (LAN) configuration settings

## Chapter-4

## 4.1 Setup

This screen allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on country requirements. The Wireless Guest Network function adds extra networking security when connecting to remote hosts.



Option	Description
Enable Wireless	A checkbox that enables (default) or disables the wireless LAN interface. When selected, the Web UI displays Hide Access point, SSID, BSSID and Country settings.
Hide Access Point	Select Hide Access Point to protect the access point from detection by wireless active scans. To check AP status in Windows XP, open Network Connections from the start Menu and select View Available Network Connections. If the access point is hidden, it will not be listed there. To connect a client to a hidden access point, the station must add the access point manually to its wireless configuration.
SSID [1-32 characters]	Sets the wireless network name. SSID stands for Service Set Identifier. All stations must be configured with the correct SSID to access the WLAN. If the SSID does not match, that user will not be granted access.
BSSID	The BSSID is a 48bit identity used to identify a particular BSS (Basic Service Set) within an area. In Infrastructure BSS networks, the BSSID is the MAC (Media Access Control) address of the AP (Access Point) and in Independent BSS or ad hoc networks, the BSSID is generated randomly.
Country	A drop-down menu that permits worldwide and specific national settings.
Wireless Guest Network	The Guest SSID (Virtual Access Point) can be enabled by selecting the Enable Wireless Guest Network checkbox. Rename the Wireless Guest Network as you wish. <b>NOTE:</b> Remote wireless hosts cannot scan Guest SSIDs.

## 4.2 Security

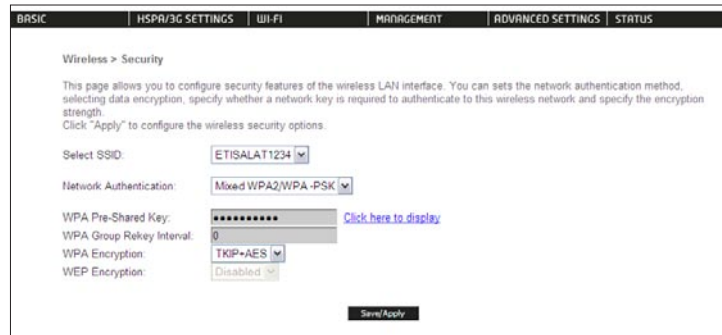
This Router includes a number of options to help provide a secure connection to the Etisalat Network.

Security features include:

- WEP / WPA / WPA2 data encryption
- SPI Firewall
- VPN Pass-Through
- MAC address IP filtering
- Authentication protocols – PAP / CHAP

You can authenticate or encrypt your service on the WiFi Protected Access algorithm, which provides protection against unauthorized access such as eavesdropping.

The following screen appears when Security is selected. The Security page allows you to configure security features of your Router's wireless LAN interface. You can set the network authentication method, select data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.



Click Save/Apply to configure the wireless security options.

Option	Description
Select SSID	Your Service Set Identifier (SSID), sets your Wireless Network Name. You can connect multiple devices including Laptops, Desktop PCs and PDAs to your HSPA WiFi Router with Voice. To get additional devices connected, scan for a network, and locate the SSID shown on your Wireless Security Card. If the SSID does not match, access is denied.
Network Authentication	This option is used for authentication to the wireless network. Each authentication type has its own settings as illustrated below. For example, selecting 802.1X authentication will reveal the RADIUS Server IP address, Port and Key fields.  WEP Encryption will also be enabled.    The settings for WPA authentication are shown below.  
WPA-Pre-Shared Key	It is useful for small places without authentication servers such as the network at home. It allows the use of manually-entered keys or passwords and is designed to be easily set up for home users.

**WPA****Encryption:**

Select the data encryption method for the WPA mode. There are three types that you can choose, TKIP, AES, TKIP+AES.

TKIP (Temporary Key Integrity Protocol) takes the original master key only as a starting point and derives its encryption keys mathematically from this master key. Then it regularly changes and rotates the encryption keys so that the same encryption key will never be used twice.

AES (Advanced Encryption Standard) provides security between client workstations operating in ad hoc mode. It uses a mathematical ciphering algorithm that employs variable key sizes of 128, 192 or 256 bits.

TKIP+AES combine the features and functions of TKIP and AES.

**4.3 Configuration**

The following screen appears when you select Configuration. This screen allows you to control the following advanced features of the Wireless Local Area Network (WLAN) interface:

- Select the channel which you wish to operate from
- Force the transmission rate to a particular speed
- Set the fragmentation threshold
- Set the RTS threshold
- Set the wake-up interval for clients in power-save mode
- Set the beacon interval for the access point
- Set Xpress mode
- Program short or long preambles

Click Save/Apply to set the advanced wireless configuration.

BASIC	HSPA/3G SETTINGS	WI-FI	MANAGEMENT	ADVANCED SETTINGS	STATUS
<b>Wireless &gt; Configuration</b>					
This page allows you to configure advanced features of the wireless LAN interface. You can select a particular channel on which to operate, force the transmission rate to a particular speed, set the fragmentation threshold, set the RTS threshold, set the wakeup interval for clients in power-save mode, set the beacon interval for the access point, set XPress mode and set whether short or long preambles are used. Click "Apply" to configure the advanced wireless options.					
AP Isolation:	Off				
Band:	2.4GHz				
Channel:	Auto <span style="float: right;">Current: 6</span>				
Auto Channel Timer(min)	0				
54g™ Rate:	Auto				
Multicast Rate:	Auto				
Basic Rate:	Default				
Fragmentation Threshold:	2346				
RTS Threshold:	2347				
DTIM Interval:	1				
Beacon Interval:	100				
XPress™ Technology:	Disabled				
54g™ Mode:	54g Auto				
54g™ Protection:	Auto				
Preamble Type:	long				
Transmit Power:	100%				
<b>Save/Apply</b>					

Option	Description
AP Isolation	Select On or Off. By enabling this feature, wireless clients associated with the Access Point can be linked.
Band	The new amendment allows IEEE 802.11g units to fall back to speeds of 11 Mbps, so IEEE 802.11b and IEEE 802.11g devices can coexist in the same network. The two standards apply to the 2.4 GHz frequency band. IEEE 802.11g creates data-rate parity at 2.4 GHz with the IEEE 802.11a standard, which has a 54 Mbps rate at 5 GHz. (IEEE 802.11a has other differences compared to IEEE 802.11b or g, such as offering more channels.)
Channel	Allows selection of a specific channel (1-14) or Auto mode.
Auto Channel Timer (min)	The Auto Channel times the length it takes to scan in minutes.
54g Rate	In Auto (default) mode, your Router uses the maximum data rate and lowers the data rate dependent on the signal strength. The appropriate setting is dependent on signal strength. Other rates are discrete values between 1 to 54 Mbps.
Multicast Rate	Setting for multicast packet transmission rate. (1-54 Mbps)
Basic Rate	Sets basic transmission rate.
Fragmentation Threshold	A threshold (in bytes) determines whether packets will be fragmented and at what size. Packets that exceed the fragmentation threshold of an 802.11 WLAN will be split into smaller units suitable for the circuit size. Packets smaller than the specified fragmentation threshold value however are not fragmented.  Values between 256 and 2346 can be entered but should remain at a default setting of 2346. Setting the Fragmentation Threshold too low may result in poor performance.
RTS Threshold	Request To Send (RTS) specifies the packet size that exceeds the specified RTS threshold, which then triggers the RTS/CTS mechanism. Smaller packets are sent without using RTS/CTS. The default setting of 2347 (max length) will disable the RTS Threshold.
DTIM Interval	Delivery Traffic Indication Message (DTIM) is also known as Beacon Rate. The entry range is a value between 1 and 65535. A DTIM is a countdown variable that informs clients of the next window for listening to broadcast and multicast messages. When the AP has buffered broadcast or multicast messages for associated clients, it sends the next DTIM with a DTIM Interval value. AP Clients hear the beacons and awaken to receive the broadcast and multicast messages. The default is 1.

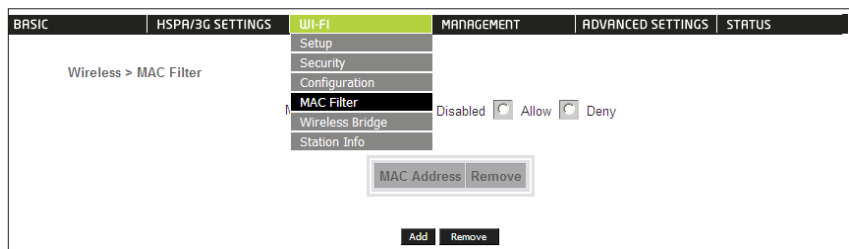
Option	Description
Beacon Interval	The amount of time between beacon transmissions in milliseconds. The default is 100 ms and the acceptable range is 1 – 65535. The beacon transmissions identify the presence of an access point. By default, network devices passively scan all RF channels listening for beacons coming from access points. Before a station enters power save mode, the station needs the beacon interval to know when to wake up to receive the beacon.
Xpress Technology	Broadcom's Xpress Technology is compliant with draft specifications of two planned wireless industry standards. It has been designed to improve wireless network efficiency. Default is disabled.
54g Mode	Select Auto mode for greatest compatibility. Select Performance mode for the fastest performance among 54g certified equipment. Select LRS mode if you are experiencing difficulty with legacy 802.11b equipment. If this does not work, you may also try 802.11b only mode.
54g Protection	In Auto mode, the Router will use RTS/CTS to improve 802.11g performance in mixed 802.11g/802.11b networks. Turning protection Off will maximize 802.11g throughput under most conditions.
Preamble Type	Short preamble is intended for applications where maximum throughput is desired but it does not work with legacy equipment. Long preamble works with the current 1 and 2 Mbit/s DSSS specification as described in IEEE Std 802.11-1999
Transmit Power	Set the power output (by percentage) as desired.

### 4.4 MAC Filter

This screen appears when Media Access Control (MAC) Filter is selected. This option allows access to be restricted based upon the unique 48-bit MAC address.

To add a MAC Address filter, click the Add button shown below.

To delete a filter, select it from the table below and click the Remove button.



Option	Description
MAC Restrict Mode	<p>Disabled – Disables MAC filtering</p> <p>Allow – Permits access for the specified MAC addresses.</p> <p><b>NOTE:</b> Add a wireless device's MAC address before clicking the Allow radio button or else you will need to connect to the Router's web user interface using the supplied yellow Ethernet cable and add the wireless device's MAC address.</p> <p>Deny – Rejects access for the specified MAC addresses</p>
MAC Address	<p>Lists the MAC addresses subject to the MAC Restrict Mode. The Add button prompts an entry field that requires you type in a MAC address in a two-character, 6-byte convention: xx:xx:xx:xx:xx:xx where xx are hexadecimal numbers. A maximum of 60 MAC addresses can be added.</p>

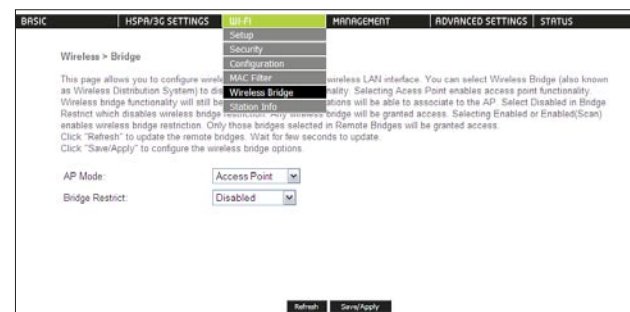
Enter the MAC address on the screen below and click Save/Apply.



### 4.5 Wireless Bridge

The following screen appears when selecting Wireless Bridge, and goes into a detailed explanation of how to configure wireless bridge features of the wireless LAN interface.

Click Save/Apply to implement new configuration settings.

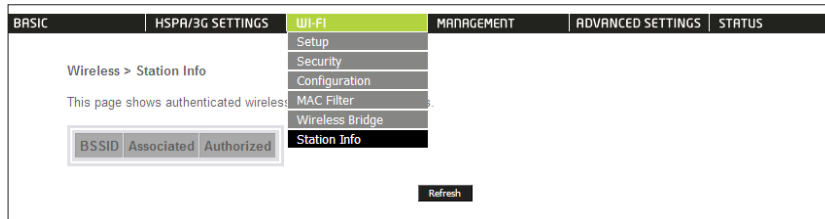


Feature	Options
AP Mode	<p>Selecting Wireless Bridge (Wireless Distribution System) disables Access Point (AP) functionality while selecting Access Point enables AP functionality. In Access Point mode, wireless bridge functionality will still be available and wireless stations will be able to associate to the AP.</p>
Bridge Restrict	<p>Selecting Disabled in Bridge Restrict disables Wireless Bridge restriction, which means that any wireless bridge will be granted access. Selecting Enabled or Enabled (Scan) allows wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access. Click Refresh to update the station list when Bridge Restrict is enabled.</p>

## 4.6 Station Info

The following screen appears when you select Station Info, and shows authenticated wireless stations and their status.

Click the Refresh button to update the list of stations in the WLAN.



BSSID	The BSSID is a 48-bit identity used to identify a particular BSS (Basic Service Set) within an area. In Infrastructure BSS networks, the BSSID is the MAC (Media Access Control) address of the AP (Access Point); and in Independent BSS or ad hoc networks, the BSSID is generated randomly.
Associated	Lists all the stations that are associated with the Access Point, along with the amount of time since packets were transferred to and from each station. If a station is idle for too long, it is removed from this list.
Authorized	Lists those devices with authorized access.





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# Management

The management menu controls the maintenance functions of your router

The Management menu has the following maintenance functions and processes:

- 5.1 Device Settings
- 5.2 Access Control
- 5.3 Simple Network Management Protocol (SNMP)
- 5.4 Simple Network Time Protocol (SNTP)
- 5.5 Save and Reboot

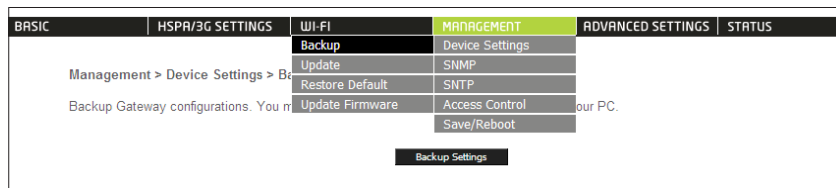
## 5.1 Device Settings

The Device Settings screens allow you to backup, retrieve and restore the default settings of your Router. It also provides a function for you to update your Router's settings.

### 5.1.1 Backup Settings

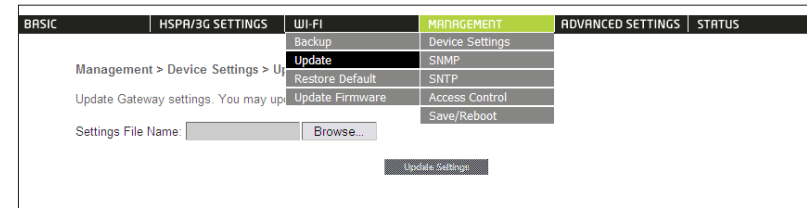
The following screen appears when Backup is selected. Click the Backup Settings button to save the current configuration settings.

You will be prompted to define the location of a backup file to save to your PC.



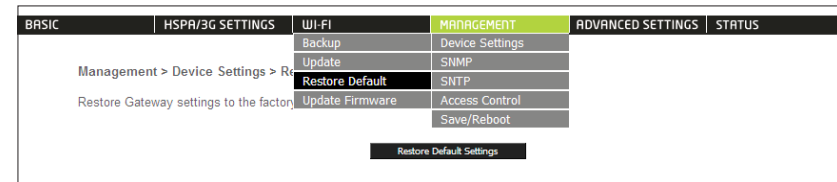
### 5.1.2 Update Settings

The following screen appears when selecting Update from the submenu. By clicking on the Browse button, you can locate a previously saved filename as the configuration backup file. Click on the Update settings to load it.



### 5.1.3 Restore Default

The following screen appears when selecting Restore Default. By clicking on the Restore Default Settings button, you can restore your Gateways default firmware settings. To restore system settings, reboot your Router.



**NOTE:** The default settings can be found in section 2.1 Default Settings.

Once you have selected the Restore Default Settings button, the following screen will appear. Close the window and wait 2 minutes before reopening your browser. If required, reconfigure your computer's IP address to match your new configuration (see section 2.2 TCP/IP Settings for details).

#### Gateway Restore

The Gateway configuration has been restored to default settings and the Gateway is rebooting.

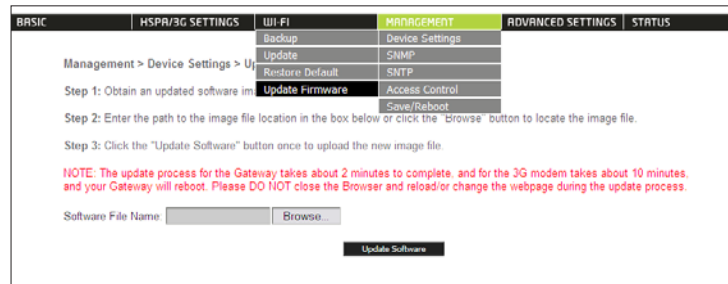
Close the Gateway Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

After a successful reboot, the browser will return to the Device Info screen. If the browser does not refresh to the default screen, close and restart the browser.

**NOTE:** The Restore Default function has the same effect as the reset button. If the reset button is continuously pushed for more than 5 seconds (and not more than 12 seconds), the boot loader will erase the configuration settings saved on flash memory.

## 5.1.4 Update Firmware

The following screen appears when selecting Update Firmware. By following the steps on this screen, you can update your Router's firmware. Manual device upgrades from a locally stored file can also be performed using the following screen.



- 1: Obtain an updated software image file
- 2: Enter the path and filename of the firmware image file in the Software File Name field or click the Browse button to locate the image file.
- 3: Click the Update Software button once to upload and install the file.

**NOTE:** The update process will take about 2 minutes to complete. The Router will reboot and the browser window will refresh to the default screen upon successful installation. It is recommended that you compare the Software Version at the top of the Basic screen (WUI homepage) with the firmware version installed, to confirm the installation was successful.

## 5.2 Access Control

The Access Control option found in the Management drop down menu configures access related parameters in the following three areas:

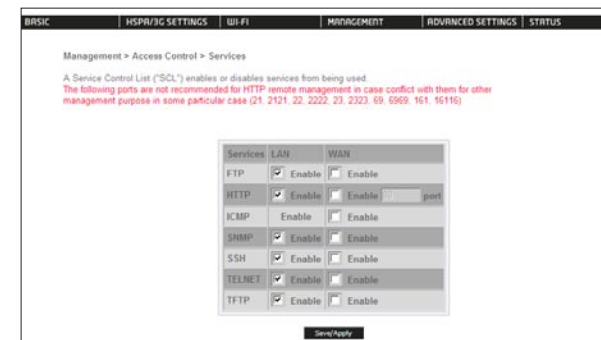
- Services
- IP Addresses
- Passwords

Access Control is used to control local and remote management settings for your Router.



### 5.2.1 Services

The Service Control List (SCL) allows you to enable or disable your Local Area Network (LAN) or Wide Area Network (WAN) services by ticking the checkbox as illustrated below. These access services are available: FTP, HTTP, ICMP, SSH, TELNET, and TFTP. Click Save/Apply to continue.



## 5.2.2 IP Address

The IP Address option limits local access by IP address. When the Access Control Mode is enabled, only the IP addresses listed here can access the device. Before enabling Access Control Mode, add IP addresses with the Add button.

The screenshot shows the 'IP Address' configuration page under 'Management > Access Control'. It includes a navigation bar with 'BASIC', 'HSPA/3G SETTINGS', 'WI-FI', 'MANAGEMENT', 'ADVANCED SETTINGS', and 'STATUS'. The page title is 'Management > Access Control > IP Address'. A descriptive paragraph explains that the IP Address Access Control mode, when enabled, restricts access to local management services to IP addresses in the Access Control List. Below this, there are radio buttons for 'Access Control Mode' with 'Disable' selected and 'Enable' unselected. At the bottom, there are input fields for 'IP Address', 'Subnet Mask', and 'Interface', along with 'Add' and 'Remove' buttons.

On this screen, enter the IP address Subnet Mask and the different interface for which you wish to allow permission. Click Save/Apply to continue.

The screenshot shows the 'Access Control' configuration page. It has the same navigation bar as the previous screenshot. The page title is 'Access Control'. A text prompt says 'Enter the IP address of the management station permitted to access the local management services, and click 'Save/Apply.''. Below this, there are input fields for 'IP Address', 'Subnet Mask', and 'Interface' (with a dropdown menu showing 'none'). A 'Save/Apply' button is at the bottom.

## 5.2.3 Passwords

The Passwords option configures your account access password for your Router. Access to the device is limited to the following three user accounts:

- admin is to be used for local unrestricted access control
- support is to be used for remote maintenance of the device
- user is to be used to view information and update device firmware

Use the fields illustrated in the screen below to change or create your password. Passwords must be 16 characters or less with no spaces. Click Save/Apply to continue.

The screenshot shows the 'Passwords' configuration page under 'Management > Access Control'. It has the same navigation bar. The page title is 'Management > Access Control > Passwords'. A table lists navigation options: 'Device Settings', 'SNMP', 'SNTP', 'Services', 'Access Control', 'IP Addresses', 'Save/Reboot', and 'Passwords'. Below the table, there are three paragraphs explaining the user accounts: 'admin' (unrestricted), 'support' (ISP technician), and 'user' (view settings and update firmware). A note states that passwords must be up to 16 characters and cannot contain spaces. At the bottom, there are input fields for 'Username' (with a dropdown), 'Old Password', 'New Password', and 'Confirm Password', along with a 'Save/Apply' button.

### 5.3 Configure SNMP agent on the 3G10WVE

The Simple Network Management Protocol (SNMP) allows a network administrator to monitor a network by retrieving settings on remote network devices. To do this, the administrator typically runs an SNMP management station program such as MIB browser on a local host to obtain information from the SNMP agent, in this case the 3G10WVE (if SNMP enabled). An SNMP 'community' performs the function of authenticating SNMP traffic. A 'community name' acts as a password that is typically shared among SNMP agents and managers.

By default, SNMP agent is enabled on the Router.

#### Setting up SNMP agent

- Open a web browser (IE/Firefox/Safari), type in LAN address of the Router (http://192.168.1.1 by default) to log into the web interface.
- The login username and password by default is admin/admin.
- Go to Advanced Settings > SNMP. Enable SNMP agent and set up all options according to the screenshot below.
- Click Save/Apply to activate these settings.

**BASIC** | **HSPA/3G SETTINGS** | **WI-FI** | **MANAGEMENT** | **ADVANCED SETTINGS** | **STATUS**

Management > Access Control > Passwords

Access to your Gateway is controlled by Passwords.

The user name "admin" has unrestricted access to the configuration of your Gateway.

The user name "support" is used to allow an ISP technician to access your Gateway for maintenance and to run diagnostics.

The user name "user" can access the Gateway, view configuration settings and statistics, as well as, update the Gateway's software.

Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.

Username:

Old Password:

New Password:

Confirm Password:

**Save/Apply**

### 5.4 Simple Network Time Protocol (SNTP)

This screen allows you to configure the time settings of your Router. To automatically synchronize with Internet time servers, tick the box as illustrated below.

**BASIC** | **HSPA/3G SETTINGS** | **WI-FI** | **MANAGEMENT** | **ADVANCED SETTINGS** | **STATUS**

Management > SNTP

This page allows you to the modem's time configuration.

Automatically synchronize with Internet time servers

First NTP time server:  Other  0.netcomm.pool.ntp.org

Second NTP time server:  Other  1.netcomm.pool.ntp.org

Time zone offset:  (GMT+04:00) Abu Dhabi, Muscat

**Save/Apply**

The following options should now appear (see screenshot below):

First NTP time server:	Select the required server.
Second NTP time server:	Select second time server, if required.
Time zone offset:	Select the local time zone.

Configure these options and then click Save/Apply to activate.

**Management > SNTP**

This page allows you to the modem's time configuration.

Automatically synchronize with Internet time servers

First NTP time server:  Other  0.netcomm.pool.ntp.org

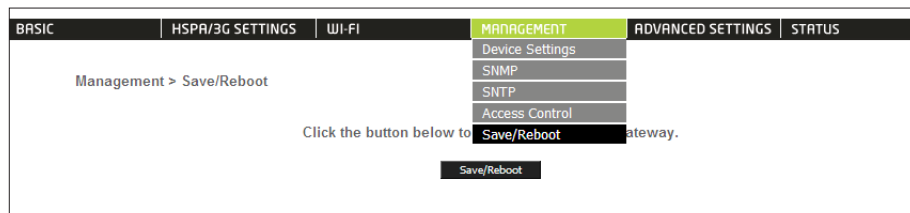
Second NTP time server:  Other  1.netcomm.pool.ntp.org

Time zone offset:  (GMT+04:00) Abu Dhabi, Muscat

**Save/Apply**

## 5.5 Save and Reboot

This function saves the current configuration settings and reboots your Router.



**NOTE1:** It may be necessary to reconfigure your TCP/IP settings to adjust for the new configuration. For example, if you disable the Dynamic Host Configuration Protocol (DHCP) server you will need to apply Static IP settings.

**NOTE2:** If you lose all access to your web user interface, simply press the reset button on the rear panel for 5-7 seconds to restore default settings.

# Advanced

This chapter explains advanced setting for your Router:

## 6.1 Local Area Network (LAN)

This screen allows you to configure the Local Area Network (LAN) interface on your Router.

See the field descriptions below for more details.

Note: If you change your Router's IP address (first option on the chart), the installation software/connection manager may not be able to communicate with the Router. Please reset the Router's IP address to 192.168.1.1 if this occurs.

Option	Description
IP Address	Enter the IP address for the LAN interface
Subnet Mask	Enter the subnet mask for the LAN interface
Enable UPnP	Tick the box to enable Universal Plug and Play
Enable Half-Bridge	The Etisalat HSPA WiFi Router with Voice can be set up as a half-transparent bridge to cope with some special applications such as VPN pass-through. By default half-bridge is off. Please refer to Appendix B for more information.
Enable Internet Group Management Protocol (IGMP) Snooping	Enable by ticking the box Standard Mode: In standard mode, multicast traffic will flood to all bridge ports when no client subscribes to a multicast group. Blocking Mode: In blocking mode, the multicast data traffic will be blocked. When there are no client subscriptions to a multicast group, it will not flood to the bridge ports.
Dynamic Host Configuration Protocol (DHCP) Server	Select Enable DHCP server and enter your starting and ending IP addresses and the lease time. This setting configures the Router to automatically assign IP, default Router and DNS server addresses to every DHCP client on your LAN
Enable NAT	To enable/disable Network Address Translation (NAT, please refer to 7.2 for NAT setting). By default NAT is enabled.
Option 42, 66,150,160	These options are used for special DHCP set up.
Static IP Lease List	To specify the IP address assigned through DHCP according to the MAC address of the hosts connected to the Router.
Enable DHCP Server Relay	To relay DHCP requests from the subnet with no DHCP server on it to a DHCP server on other subnets. DHCP Server Relay is disabled by default. To access enable DHCP relay, please un-tick NAT enable first, that means to disable NAT first, and then press save button. The Enable DHCP server Relay option will then show up on the same page as below:

Enable DHCP Server Relay

DHCP Server IP Address:



Configure a second IP address by ticking the checkbox shown below and enter the following information:

IP Address:	Enter the secondary IP address for the LAN interface.
Subnet Mask:	Enter the secondary subnet mask for the LAN interface.

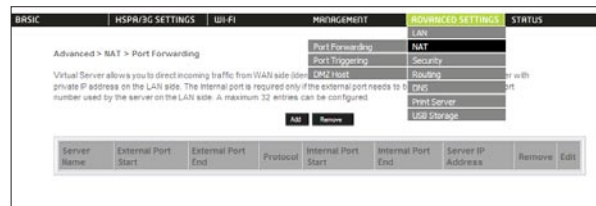
Configure the second IP Address and Subnet Mask for LAN interface

IP Address:

Subnet Mask:

**NOTE:** The Save button saves new settings to allow continued configuration, while the Save/Reboot button not only saves new settings but also reboots the device to apply the new configuration (i.e. all new settings).

## 6.2 Network Address Translation (NAT)

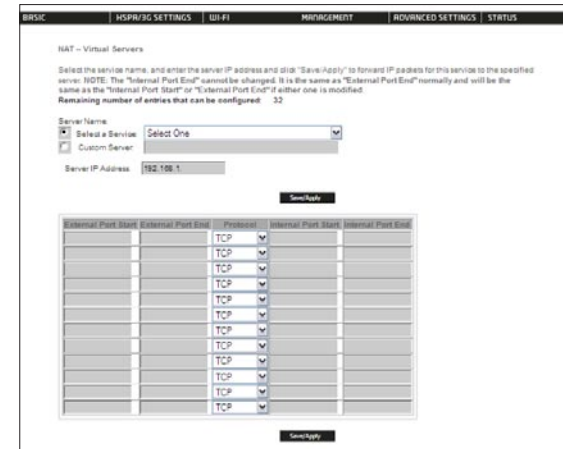


### 6.2.1 Port Forwarding

Port Forwarding allows you to direct incoming traffic from the Internet side (identified by Protocol and External port) to the internal server with a private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum of 32 entries can be configured.



To add a Virtual Server, click the Add button. The following screen will display.



Options	Description
Select a Service	User should select the service from the list.
Or	Or
Custom Server	Create a custom server and enter a name for the server
Server IP Address	Enter the IP address for the server.
External Port Start	Enter the starting external port number (when you select Custom Server). When a service is selected the port ranges are automatically configured.
External Port End	Enter the ending external port number (when you select Custom Server). When a service is selected the port ranges are automatically configured.
Protocol	User can select from: TCP, TCP/UDP or UDP.
Internal Port Start	Enter the internal port starting number (when you select Custom Server). When a service is selected the port ranges are automatically configured
Internal Port End	Enter the internal port ending number (when you select Custom Server). When a service is selected the port ranges are automatically configured.

## 6.2.2 Port Triggering

Some applications require specific ports in the Router's firewall to be open for access by remote parties. Port Triggering opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 'Triggering Ports'. The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 'Open Ports'. A maximum 32 entries can be configured.

Application Name	Trigger Protocol	Trigger Port Range	Open Protocol	Open Port Range

To add a Trigger Port, simply click the Add button. The following will be displayed.

Trigger Port Start	Trigger Port End	Trigger Protocol	Open Port Start	Open Port End	Open Protocol
		TCP			TCP
		TCP			TCP
		TCP			TCP
		TCP			TCP
		TCP			TCP
		TCP			TCP
		TCP			TCP

Options	Description
Select an Application or Custom Application	User should select the application from the list. or User can enter the name of their choice.
Trigger Port Start	Enter the starting trigger port number (when you select custom application). When an application is selected, the port ranges are automatically configured.
Trigger Port End	Enter the ending trigger port number (when you select custom application). When an application is selected, the port ranges are automatically configured.
Trigger Protocol	TCP, TCP/UDP or UDP.
Open Port Start	Enter the starting open port number (when you select custom application). When an application is selected, the port ranges are automatically configured.
Open Port End	Enter the ending open port number (when you select custom application). When an application is selected, the port ranges are automatically configured.
Open Protocol	TCP, TCP/UDP or UDP.

## 7.2.3 Demilitarized (DMZ) Host

Your Router will forward IP packets from the Wide Area Network (WAN) that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.

Enter the computer's IP address and click Save/Apply to activate the DMZ host.

Clear the IP address field and click Save/Apply to deactivate the DMZ host.

DMZ Host IP Address:

**Save/Apply**

## 6.3 Security

Your Router can be secured with IP Filtering or Parental Control functions.

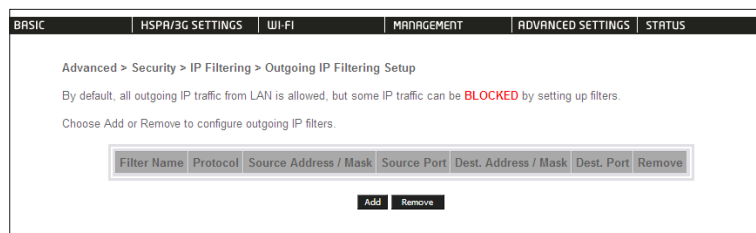


### 6.3.1 IP Filtering

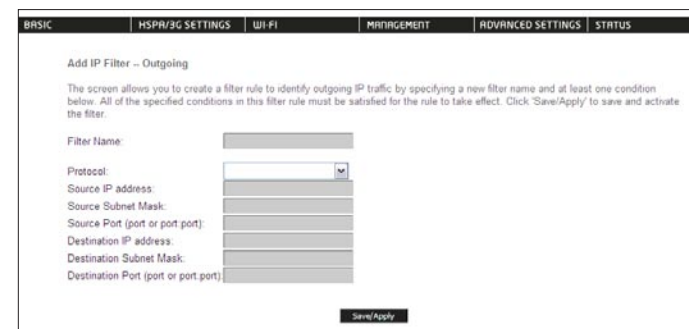
The IP Filtering screen sets filter rules that limit incoming and outgoing IP traffic. Multiple filter rules can be set with at least one limiting condition. All conditions must be fulfilled to allow individual IP packets to pass through the filter.

#### Outgoing IP Filter

The default setting for Outgoing traffic is ACCEPTED. Under this condition, all outgoing IP packets that match the filter rules will be BLOCKED.



To add a filtering rule, click the Add button. The following screen will display.



Options	Description
Filter Name	The filter rule label
Protocol	TCP, TCP/UDP, UDP or ICMP
Source IP address	Enter source IP address
Source Subnet Mask	Enter source subnet mask
Source Port (port or port:port)	Enter source port number or port range
Destination IP address	Enter destination IP address
Destination Subnet Mask	Enter destination subnet mask
Destination port (port or port:port)	Enter destination port number or range

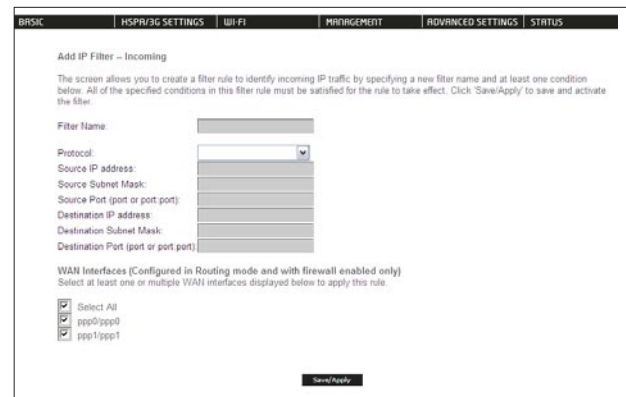
Click Save/Apply to save and activate the filter.

## Incoming IP Filter

The default setting for all Incoming traffic is **BLOCKED**. Under this condition only those incoming IP packets that match the filter rules will be **ACCEPTED**.



To add a filtering rule, click the **Add** button. The following screen will display.



Please refer to the Outgoing IP Filter table for field descriptions.

Click **Save/Apply** to save and activate the filter.

## 6.4 Routing

Default Router, Static Route and Dynamic Route settings can be found in the Routing link as illustrated below.



### 6.4.1 Default Router

If the **Enable Automatic Assigned Default Router** checkbox is selected, this device will accept a default Router assignment. If the checkbox is not selected, a field will appear allowing you to enter the static default Router and/or WAN interface, then click **Save/Apply**.



**NOTE:** After enabling the Automatic Assigned Default Router, you must re-boot the Router to activate the assigned default Router.

## 6.4.2 Static Route

The Static Route screen displays the configured static routes.

Click the Add or Remove buttons to change settings.



Click the Add button to display the following screen.

Enter Destination Network Address, Subnet Mask, Router IP Address and/or WAN Interface. Then click Save/Apply to add the entry to the routing table.

## 6.4.3 Dynamic Route

To activate this option, select the Enabled radio button for Global RIP Mode.

To configure an individual interface, select the desired RIP version and operation, followed by placing a check in the Enabled checkbox for that interface. Click Save/Apply to save the configuration and to start or stop dynamic routing.

Interface	Version	Operation	Enabled
br0	2	Active	<input type="checkbox"/>
ppp0	2	Passive	<input type="checkbox"/>
ppp1	2	Passive	<input type="checkbox"/>

At the bottom right is a 'Save/Apply' button.

## 6.5 Domain Name Servers (DNS)

### 6.5.1 DNS Server Configuration

If the Enable Automatic Assigned DNS checkbox is selected, this device will accept the first received DNS assignment from the Wide Area Network (WAN) interface during the connection process. If the checkbox is not selected, a field will appear allowing you to enter the primary and optional secondary DNS server IP addresses. Click on Save to apply.

**NOTE:** Click the Save button to save the new configuration. To make the new configuration effective, reboot your Router.

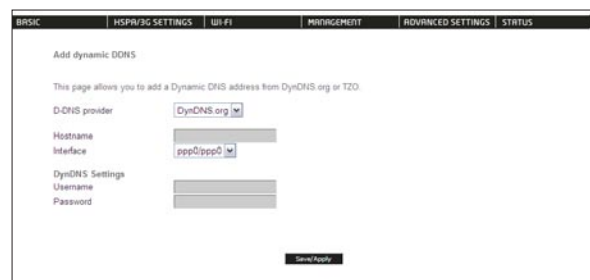
## 6.5.2 Dynamic DNS

The Dynamic DNS service allows a dynamic IP address to be aliased to a static hostname in any of a selection of domains, allowing the Router to be more easily accessed from various locations on the internet.



**Note:** The Add/Remove buttons will be displayed only if the Router has been assigned an IP address from the remote server.

To add a dynamic DNS service, click the Add button and this screen will display.



Options	Descriptions
D-DNS provider	Select a dynamic DNS provider from the list.
Hostname	Enter the name for the dynamic DNS server.
Interface	Select the interface from the list.
Username	Enter the username for the dynamic DNS server.
Password	Enter the password for the dynamic DNS server.



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# Voice

Using a standard telephone, you can make calls using your router over the 3G Network

The 3G10WVE Etisalat HSPA WiFi Router with Voice allows you to make telephone calls over the 3G Mobile/ Cellular Telephone network using a standard Analogue Telephone via the built in RJ-11 Phone port.

Please refer to the documentation provided by the manufacturer for operating your Analogue Telephone.

Note that your SIM card and Mobile service needs to be provisioned for Voice Calling. Please consult with your Network Provider for verification.

Note that any telephone calls placed using the may incur call usage charges determined by your Network Provider. Please consult with your Network Provider for verification.

### **7.1 Configuring your 3G10WVE for placing Voice Calls**

Once your has been correctly configured to access the mobile networ you can make and receive telephone calls after connecting your Analogue Telephone to the socket labeled Voice on the back of your HSPA WiFi Router with Voice.





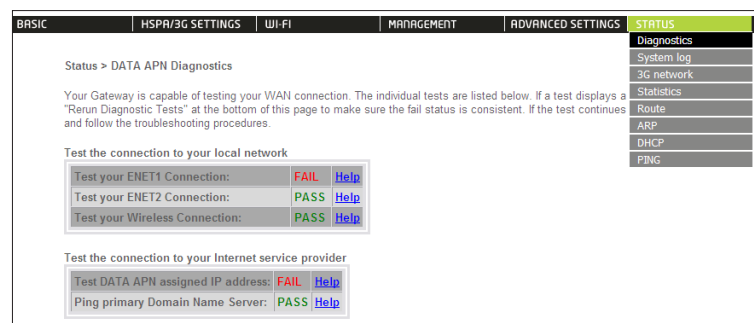
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# Status

The status menu allows you to monitor your connection and diagnose common issues

The Status menu has the following submenus:

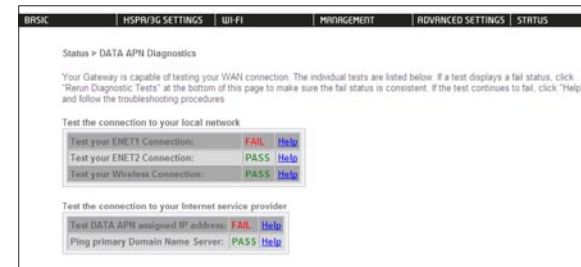
- Diagnostics
- System Log
- 3G network
- Statistics
- Route
- ARP
- DHCP
- PING



## 8.1 Diagnostics

The Diagnostics menu provides feedback on the connection status of the device. The individual tests are listed below. If a test displays a fail status:

- 1: Click on the Help link
- 2: Now click Re-run Diagnostic Tests at the bottom of the screen to re-test and confirm the error
- 3: If the test continues to fail, follow the troubleshooting procedures in the Help screen.

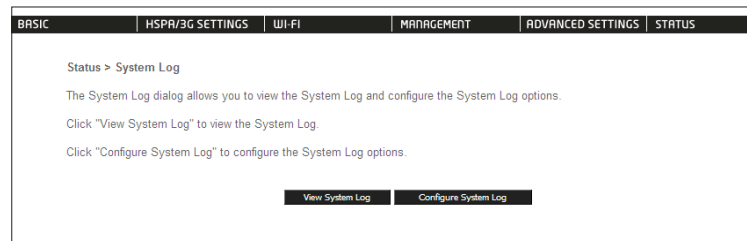


Test	Description
ENET Connection	<p><b>Pass:</b> Indicates that the Ethernet interface from your computer is connected to the LAN port of this Router.</p> <p><b>Fail:</b> Indicates that the Router does not detect the Ethernet interface on your computer.</p>
Wireless connection	<p><b>Pass:</b> Indicates that the wireless card is ON.</p> <p><b>Down:</b> Indicates that the wireless card is OFF.</p>
Ping Default Router	<p><b>Pass:</b> Indicates that the Router can communicate with the first entry point to the network. It is usually the IP address of the ISP's local Router.</p> <p><b>Fail:</b> Indicates that the Router was unable to communicate with the first entry point on the network. It may not have an effect on your Internet connectivity. Therefore if this test fails but you are still able to access the Internet, there is no need to troubleshoot this issue.</p>
Ping Primary Domain Name Server	<p><b>Pass:</b> Indicates that the Router can communicate with the primary Domain Name Server (DNS).</p> <p><b>Fail:</b> Indicates that the Router was unable to communicate with the primary Domain Name Server (DNS). It may not have an effect on your Internet connectivity. Therefore if this test fails but you are still able to access the Internet, there is no need to troubleshoot this issue.</p>

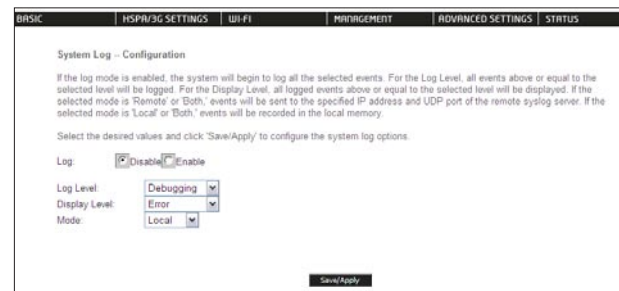
## 8.2 System Log

This function allows you to view system events and configure related options. Follow the steps below to enable and view the System Log.

- 1: Click Configure System Log to continue.



- 2: Select the system log options (see table below) and click Save/Apply.



Option	Description
Log	Indicates whether the system is currently recording events. You can enable or disable event logging. By default, it is disabled.
Log level	<p>Allows you to configure the event level and filter out unwanted events below this level. The events ranging from the highest critical level "Emergency" down to this configured level will be recorded to the log buffer on the Router's SDRAM. When the log buffer is full, the newest event will wrap up to the top of the log buffer and overwrite the oldest event. By default, the log level is "Debugging", which is the lowest critical level. The log levels are defined as follows:</p> <p>Emergency is the most serious event level, whereas Debugging is the least important. For instance, if the log level is set to Debugging, all the events from the lowest Debugging level to the most critical level Emergency level will be recorded. If the log level is set to Error, only Error and the level above will be logged.</p>
Display Level	Allows you to select the logged events and displays on the View System Log window for events of this level and above to the highest Emergency level.
Mode	<p>Allows you to specify whether events should be stored in the local memory, be sent to a remote syslog server, or to both simultaneously.</p> <p>If remote mode is selected, the view system log will not be able to display events saved in the remote syslog server. When either Remote mode or Both mode is configured, the WEB UI will prompt the you to enter the Server IP address and Server UDP port.</p>

3: Click View System Log. The results are displayed as follows.

System Log			
Date/Time	Facility	Severity	Message
Jan 1 01:23:09	syslog	emerg	BCM96345 started: BusyBox v1.00 (2009.01.06-09:43+0000)

### 8.3 Etisalat Status

Select this option for detailed status information on your Gateways 3G connection.

BASIC		HSPA/3G SETTINGS		WIFI		MANAGEMENT		ADVANCED SETTINGS		STATUS	
Status > 3G											
Manufacturer:	Etisat Wireless, Inc.										
Model:	MCE790V										
FW Rev.:	K2_5_7_18AP										
IMEI:	3641200008007										
IMN:	005100002310										
IMEI:	8860700927181										
HW Rev.:	1.0										
Temperature:	81										
System mode:	WCDMA										
WCDMA band:	WCDMA										
Q RM band:	Q 8M900										
WCDMA channel:	10512										
Q RM channel:	102										
QMM (P S) state:	REGISTERED NORMAL SERVICE										
MM (C S) state:	IDLE NORMAL SERVICE										
Signal Strength:	-73 dBm (High)										
Signal level (RSSI):	18										
Quality (Ec/Io):	-6.6 dB										
Network Registration Status:	registered										
Network Name:											
Country Code:	806										
Network Code:	05										
Cell ID:											
Primary Scrambling Code (PSC):	000E (REF)										
Data Session Status:	WAN 1: Disconnected/Disconnected										
HSDPA Category:	6										
HSDPA Category:	6										
Received Signal Code Power(RSCP):	-73 dBm										
Battery Connection Status(BC S):	MT is powered by the battery.										
Battery Charge Level(BC L):	100										

Consult the table on the next page for detailed field descriptions.

Status	Description
Manufacturer	The manufacturer of the embedded 3G module.
Model	The model name of the embedded 3G module.
FW Rev.	The firmware version of the 3G module.
IMEI	The IMEI (International Mobile Equipment Identity) is a 15 digit number that is used to identify a mobile device on a network.
FSN	Factory Serial Number of the 3G module.
IMSI	The IMSI (International Mobile Subscriber Identity) is a unique 15-digit number used to identify an individual user on a GSM or UMTS network.
HW Rev.	The hardware version of the 3G module.
Temperature	The temperature of the 3G module in degrees Celsius.
System Mode	WCDMA/Europe CDMA 2000 / America
WCDMA band	The 3G radio frequency band which supports tri-band UTMS/HSDPA/HSUPA frequencies (850/1900/2100 MHz), IMT2000 is 2100 MHz, WCDMA800 is 850 MHz, WCDMA1900 is 1900 MHz.
GSM band	The 2G radio frequency band which supports Quad-band GSM/GRPS frequencies, including GSM850, GSM900, DCS1800, PCS1900 with each number representing the respective frequency in MHz.
WCDMA channel	The 3G channel.
GSM channel	The 2G channel.
GSM (PS) state	Packet Switching state
MM (CS) state	Circuit Switching state

Status	Description														
Signal Strength	<p>The 3G/2G service signal strength in dBm.</p> <table border="1"> <tr> <td>Signal level in dBm</td> <td>-109 ~ -103</td> <td>-101 ~ -93</td> <td>-91 ~ -87</td> <td>-85 ~ -79</td> <td>-77 ~ -52</td> </tr> </table> <p>5 Signal bars</p> <p>LED Low Medium High</p>	Signal level in dBm	-109 ~ -103	-101 ~ -93	-91 ~ -87	-85 ~ -79	-77 ~ -52								
Signal level in dBm	-109 ~ -103	-101 ~ -93	-91 ~ -87	-85 ~ -79	-77 ~ -52										
Signal Level (RSSI)	<p>3G Radio Signal Strength Index</p> <table border="1"> <tr> <td>Value</td> <td>2 ~ 5</td> <td>6 ~ 10</td> <td>11 ~ 13</td> <td>14 ~ 17</td> <td>18 ~ 31</td> <td>99</td> </tr> </table> <table border="1"> <tr> <td>Signal level in dBm</td> <td>-109 ~ -103</td> <td>-101 ~ -93</td> <td>-91 ~ -87</td> <td>-85 ~ -79</td> <td>-77 ~ -52</td> <td>unknown</td> </tr> </table> <p>5 Signal bars</p> <p>LED Low Medium High</p>	Value	2 ~ 5	6 ~ 10	11 ~ 13	14 ~ 17	18 ~ 31	99	Signal level in dBm	-109 ~ -103	-101 ~ -93	-91 ~ -87	-85 ~ -79	-77 ~ -52	unknown
Value	2 ~ 5	6 ~ 10	11 ~ 13	14 ~ 17	18 ~ 31	99									
Signal level in dBm	-109 ~ -103	-101 ~ -93	-91 ~ -87	-85 ~ -79	-77 ~ -52	unknown									
Quality (Ec/Io)	The total energy per chip per power density (Ec/Io) value of the active set's three strongest cells.														

Status	Description
Network	Should display as registered with a valid unlocked SIM card.
Registration Status	
Network Name	The 3G internet Service Provider.
Country & Network Codes	Each country and network has a unique code.
Cell ID	The network information for the "serving" cell ID.
Primary Scrambling Code (PSC)	The PSC of the reference WCDMA cell
Data Session Status	Connected or Disconnected
HSUPA/HSDPA Categories	The HSUPA/HSDPA categories correspond to different data transmission rates with higher numbers generally indicating faster rates
Received Signal Code Power (RSCP)	The RSCP of the active set's three strongest cells
Battery Connection Status (BCS)	BCS of the MT (Mobile Termination)
Battery Charge Level (BCL)	BCL of the MT (Mobile Termination)

## 8.4 Statistics

These screens provide detailed information for:

- Local Area Network (LAN) and Wireless Local Area Network (WLAN)
- 3G Interfaces

**NOTE:** These statistics page refresh every 15 seconds.

### 8.4.1 LAN Statistics

This screen displays statistics for the Ethernet and Wireless LAN interfaces.

Interface	Shows connection interfaces	
Received/Transmitted	Bytes	Rx/TX (receive/transmit) packet in bytes
	Pkts	Rx/TX (receive/transmit) packets
	Errs	Rx/TX (receive/transmit) packets with errors
	Drops	Rx/TX (receive/transmit) packets dropped

## 8.4.2 Etisalat Statistics

Click Etisalat network in the Statistics submenu to display the screen below.

Statistics of WAN	Inbound	Outbound
Octects		
Packets		
Drops		
Error		

Service	Shows the service type	
Inbound	Octects	Number of received octets over the interface.
	Packets	Number of received packets over the interface.
	Drops	Received packets which are dropped.
	Error	Received packets which are errors.
Outbound	Octects	Number of Transmitted octets over the interface.
	Packets	Number of Transmitted packets over the interface.
	Drops	Transmitted packets which are dropped
	Error	Transmitted packets which are errors.

## 8.5 Route

Select Route to display the paths the Router has found.

Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0

Field	Description
Destination	Destination network or destination host
Router	Next hop IP address
Subnet Mask	Subnet Mask of Destination
Flag	U: route is up !: reject route G: use Router H: target is a host R: reinstate route for dynamic routing D: dynamically installed by daemon or redirect M: modified from routing daemon or redirect
Metric	The 'distance' to the target (usually counted in hops). It is not used by recent kernels, but may be needed by routing daemons.
Service	Shows the name for WAN connection
Interface	Shows connection interfaces

## 8.6 ARP

Click ARP to display the ARP information.

IP address	Flags	HW Address	Device
192.168.1.2	Complete	00:1E:68:AC:0E:94	br0

Field	Description
IP address	Shows IP address of host pc
Flags	Complete Incomplete Permanent Publish
HW Address	Shows the MAC address of host pc
Device	Shows the connection interface

## 8.7 Dynamic Host Configuration Protocol (DHCP)

Click DHCP to display the DHCP information.

Hostname	MAC Address	IP Address	Expires In
POGO	00:1E:68:AC:0E:94	192.168.1.2	23 hours, 28 minutes, 44 seconds

Field	Description
Hostname	Shows the device/host/PC network name
MAC Address	Shows the Ethernet MAC address of the device/host/PC
IP address	Shows IP address of device/host/PC
Expires In	Shows how much time is left for each DHCP Lease

## 8.8 PING

The PING menu provides feedback of connection test to an IP address or a host name.

Input an IP address or a host name, e.g www.google.com and press Submit. The connection test result will be shown as below.

```

PING www.google.com (74.125.127.103): 56 data bytes
56 bytes from 74.125.127.103: icmp_seq=0 ttl=41 time=270.1 ms
56 bytes from 74.125.127.103: icmp_seq=1 ttl=41 time=272.0 ms
56 bytes from 74.125.127.103: icmp_seq=2 ttl=41 time=256.8 ms
56 bytes from 74.125.127.103: icmp_seq=3 ttl=41 time=272.1 ms

--- www.google.com ping statistics ---
4 packets transmitted: 4 packets received, 0% packet loss
round-trip min/avg/max = 256.8/267.7/272.1 ms
  
```

The above screen is not showing successful ping result





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# Appendix

A: Print Server

These steps explain the procedure for enabling the Print Server.

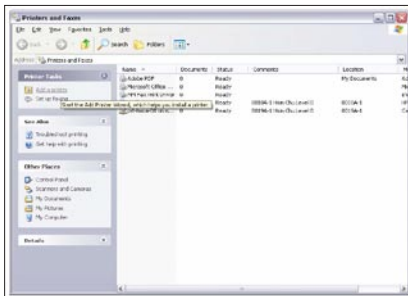
1: Enable Print Server from the Advanced menu in the Web User Interface.

Select Enable on-board print server checkbox and enter Printer name and Make and model

**NOTE:** The Printer name can be any text string up to 40 characters. The Make and model can be any text string up to 128 characters.

### For Windows XP:

2: Go to the Printers application in the Control Panel and select the Add a printer function (as located on the side menu below).



3: Click Next to continue, when you see the dialog box below.



4: Select Network Printer and click Next.

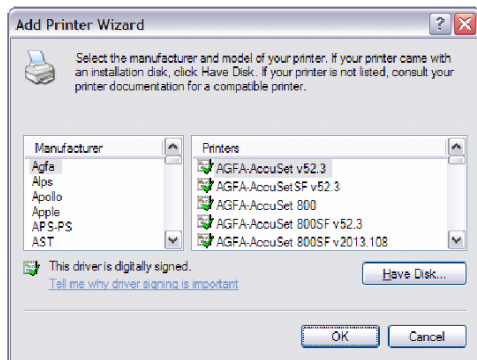


5: Select Connect to a printer on the Internet and enter your printer link. (e.g. <http://192.168.1.1:631/printers/printername>) and click Next.

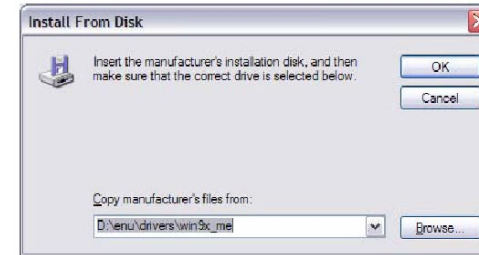
**NOTE:** The printer name must be the same name entered in the web user interface "printer server setting" as in step 1.



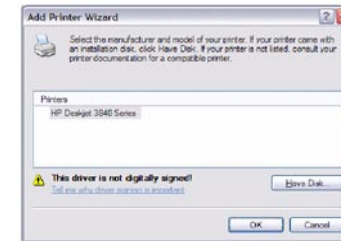
6: Click Have Disk and insert the printer driver CD.



7: Select driver file directory on CD-ROM and click OK.



8: Once the printer name appears, click OK.



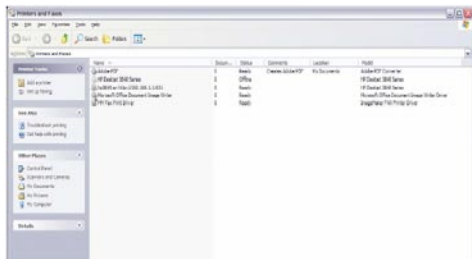
9: Choose Yes or No for default printer setting and click Next.



10: Click "Finish".



11: Check the status of printer from Windows Control Panel, printer window. Status should show as Ready.

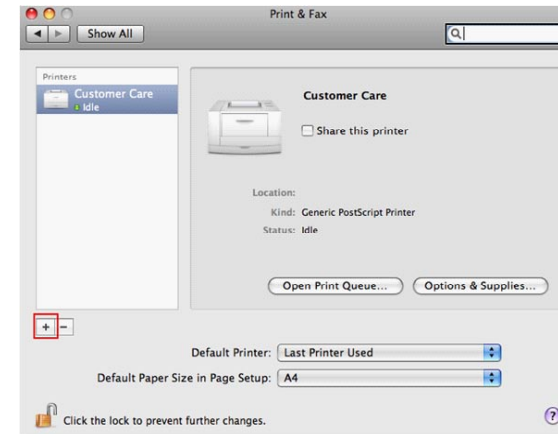


**For Mac OSX:**

2. Browse to the Apple menu and select System Preferences. In the System Preferences menu click on Print .
3. With your Printer driver installed, please add your printer from the Printer menu.

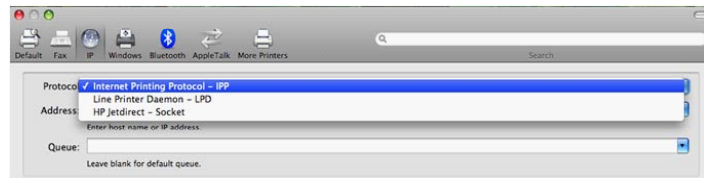


4. Click + to add your printer from the Print menu.



# Appendix: A

5. Select Internet Printing Protocol – IPP from the Protocol drop down list.



6. Type into the Address field "GatewayIPAddress:631" where GatewayIPAddress is the IP address of your Router (default: 192.168.1.1). See screenshot below for an example. Also enter into the Queue field "/printers/PrinterName", where PrinterName is the name you gave your printer in the initial step above.



7. Select your printer from the Print Using drop down list.



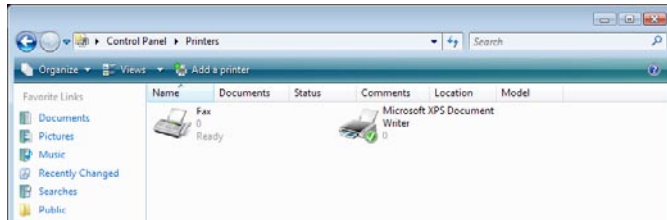
8. Click Add and check the printer status.



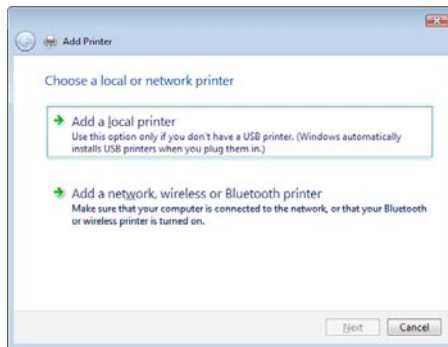
Print Server set up is now complete. You will now be able to print from common applications by selecting this printer from the Print dialogue box.

## For Windows Vista

- Go to the control panel, and select Printers. Once in the Printers page, click the Add a printer button as shown below.



- Select Add a network, wireless or bluetooth printer.

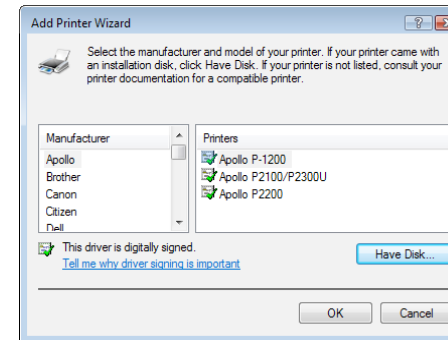


- Click on the radio-button labelled Select a shared printer by name, and type "http://192.168.1.1:631/printers/PrinterName" in the box below. Click Next.

**NOTE:** The PrinterName must be the same as the printer name entered in the Web User Interface above.

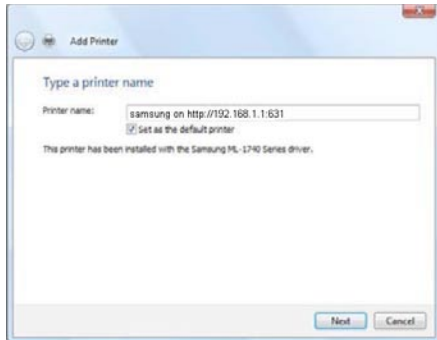


- Next, select the driver that came with your printer. Browse through the list to select your printer driver, or click 'Have Disk' if you have your printer driver installation media.



- Choose whether you want this printer to be the default printer, and then click Next.

# Appendix: A



7. Click Finish. Your device is now configured and ready for use.





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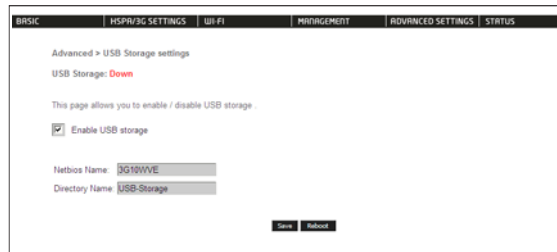
# Appendix

B: USB Storage



These steps explain the procedure for enabling the USB Storage.

- 1: Enable Samba Server from Web User Interface.
  - Select Enable Samba checkbox and enter Netbios name and Directory Name

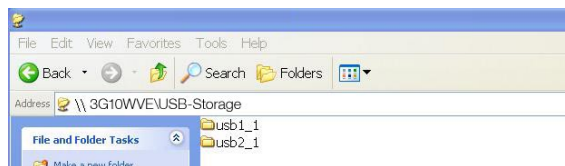


Field	Description
Netbios Name	It is the hostname of the PC The default name is "3G10WVE"
Directory Name	The folder name of "root" directory. The default name is "USB-Storage"

### For Windows XP:

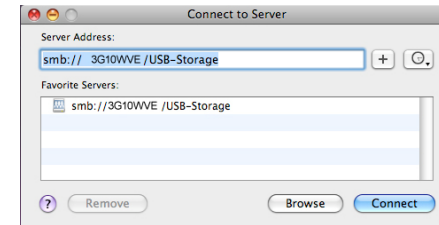
- 2: Open a web-browser (such as Internet Explorer, Firefox or Safari) and type in the address. \\ "NetbiosName" \ "DirectoryName" (eg. \\3G10WVE\USB-Storage)

**Note:** There is no username and password required to access the USB drive, the user will be able to read/write the folder/files in the USB drive.

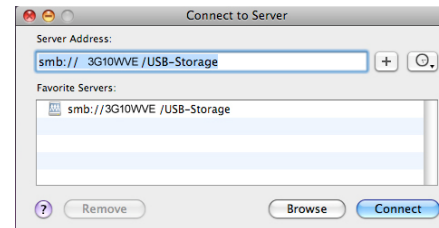


### For Mac OSX:

2. From the Finder, select the Go and then click Connect to Server
3. In the address field of the Connect to Server dialog, type in the address: smb:// "NetbiosName"/ "DirectoryName" (eg smb://3G10WVE/USB-Storage)



4. Click the + button to add this server to the list of Favourites and then click Connect

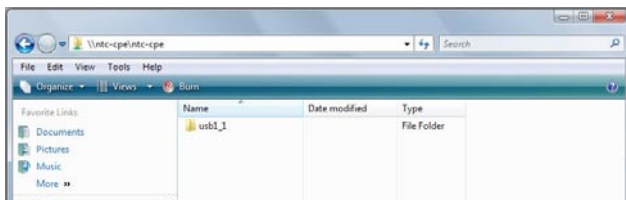


5. Select the Guest radio button and then click Connect



### For Windows Vista

- 1. Open a web-browser (such as Internet Explorer, Firefox or Safari)
- 2. Type in the address "\\NetbiosName\DirectoryName" (eg \\ntc-cpe\ntc-cpe)



Note: There is no username and password required to access the USB drive. Any network user will be able to read/write the folder/files in the USB drive.