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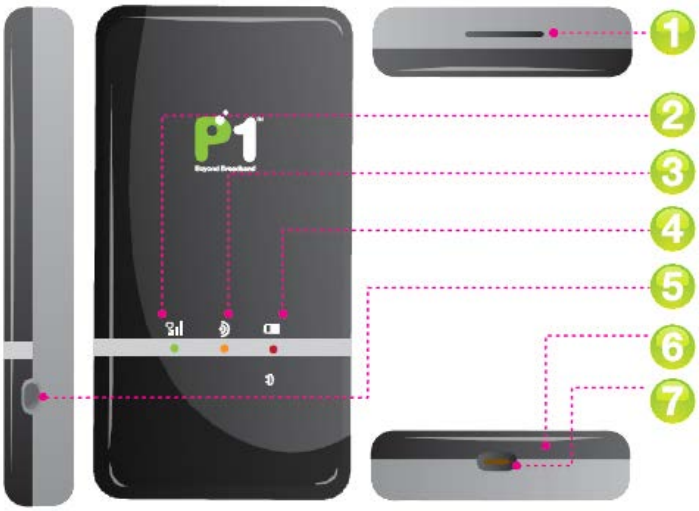
1) P1 4G Portable WiFi Router (MF-230)

A) Box Contents

B) Router Overview



No.	Device Component	Description
1	Strap holder	To insert strap.
2	WiMAX LED	This light turns on when WiMAX signal is available. The following light colors indicate different levels of signal strength: Green : Excellent Reception Orange: Good Reception Red: Weak Reception
3	WiFi LED	Green/Static: WiFi enabled Green /Blinking: data transmission Green /off: WiFi disabled
4	Power/Charging LED	Red/on: Charging Red/Blinking: Low Battery Blue/Static Battery Capacity > 25% Blue/Blinking Battery Capacity < 25%
5	Power Button	Press for 5 seconds to turn device on/off
6	Reset Button	Resets the device to factory default settings.
7	USB/ charging connector	Fix the accompanying USB cable to this device and PC to charge or connect to the PC.

C) Router Minimum System Requirements

Operating System	: Windows XP, Vista, 7, MAC
Hardware	: Computer with at least one USB port.
Software	: IE, Mozilla, opera or any web browser.
Device	: USB Cable, P1 4G Portable WiMAX WiFi Router

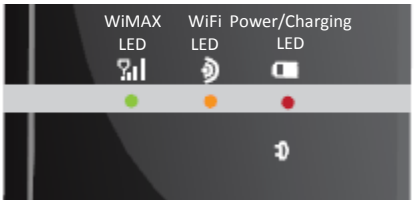
D) Router Specifications

This information can be found at the bottom of your P1 4G Router (MF-230). The default WiFi network name SSID and password WEP key are also printed there.

2) P1 4G Portable WiFi Router (MF-230) Troubleshooting Guide

a) Router Setup

I. Switch on the power by pressing and holding the Power Button for 5 seconds. All LED lights will light up for 3 seconds and go off. The Power/Charging LED will then light up first followed by WiFi LED light and then WiMAX LED light.



If All the LED lights do not light up, these are the possible problems and solutions:

1) The battery is flat. Connect MF-230 with micro USB cable to the USB port of your computer.
2) The battery is flat and the micro USB cable is faulty, replace your micro USB cable.

Should the problem persist, please contact P1 Care Line at 1 300 03 1300 for assistance.

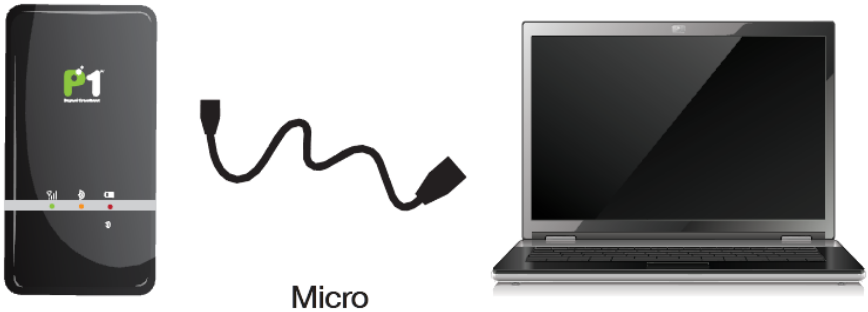
If the WiMAX LED does not light up, please reposition your router near a window.
If problem still persist, please contact P1 Care Line.

Router position guide:

Condominiums/Apartments: Router must be near window
Houses: Router must be on top floor, near window

P1 4G WiMAX WiFi Modem (MF 230) | Window | Communication Tower

II. Plug micro connector of the USB cable into MF-230 and the other end to the USB port of your computer.

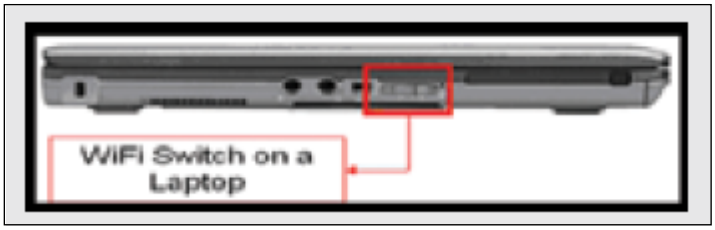


(MF 230) | Micro USB Cable | Laptop

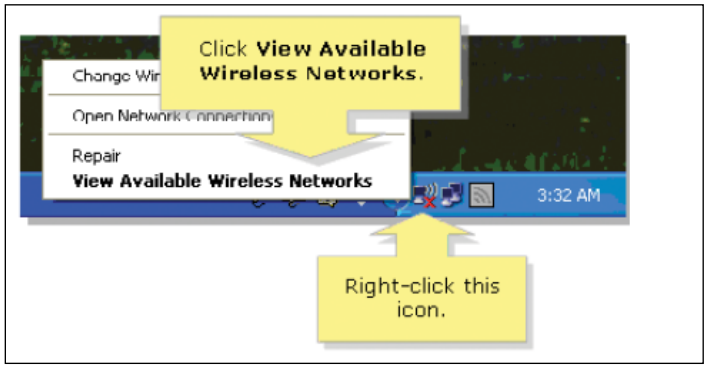
III. To enter the hibernate mode, press the power button for 1 second, user will see blue LED blinking. User will not be able to surf the internet while the router is in hibernate mode. To return to operation mode, press the power button for 1 second. At the GUI, user can set the timer for the router to enter hibernate mode automatically after a certain period of time.

b) WiFi Connection Setup

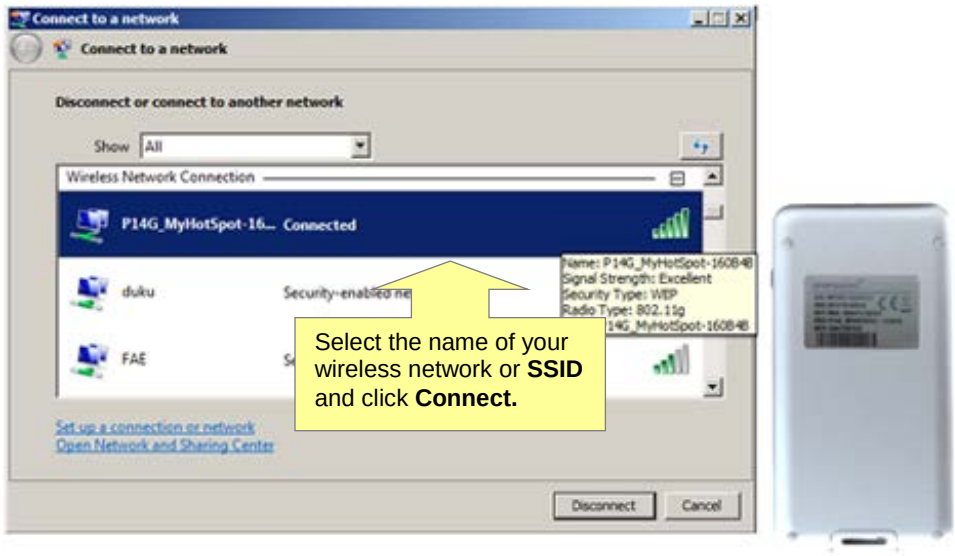
1. The WiFi function in P1 4G router (MF-230) is enabled by default when you power it up.
2. Switch on the WiFi adapter on your laptop.



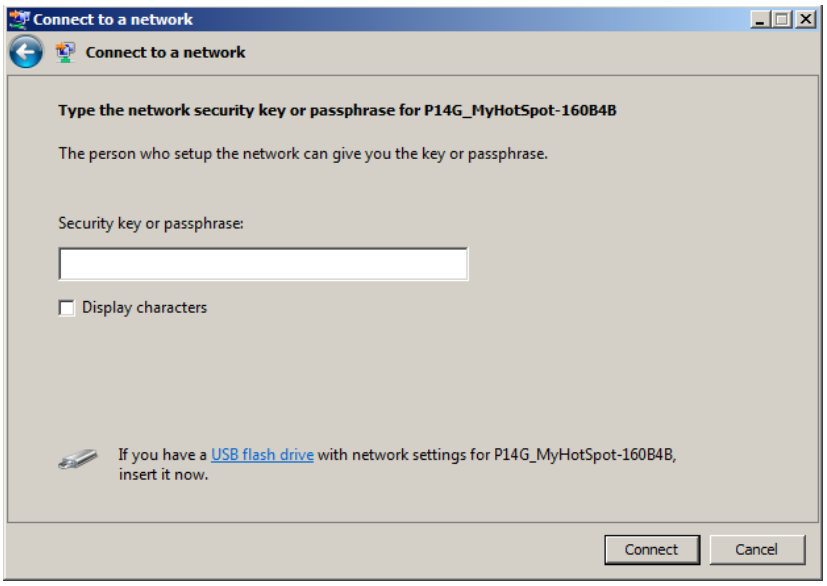
3. Right-click the Wireless Network Connection icon at the bottom-right of the screen and select *View Available Wireless Networks*.



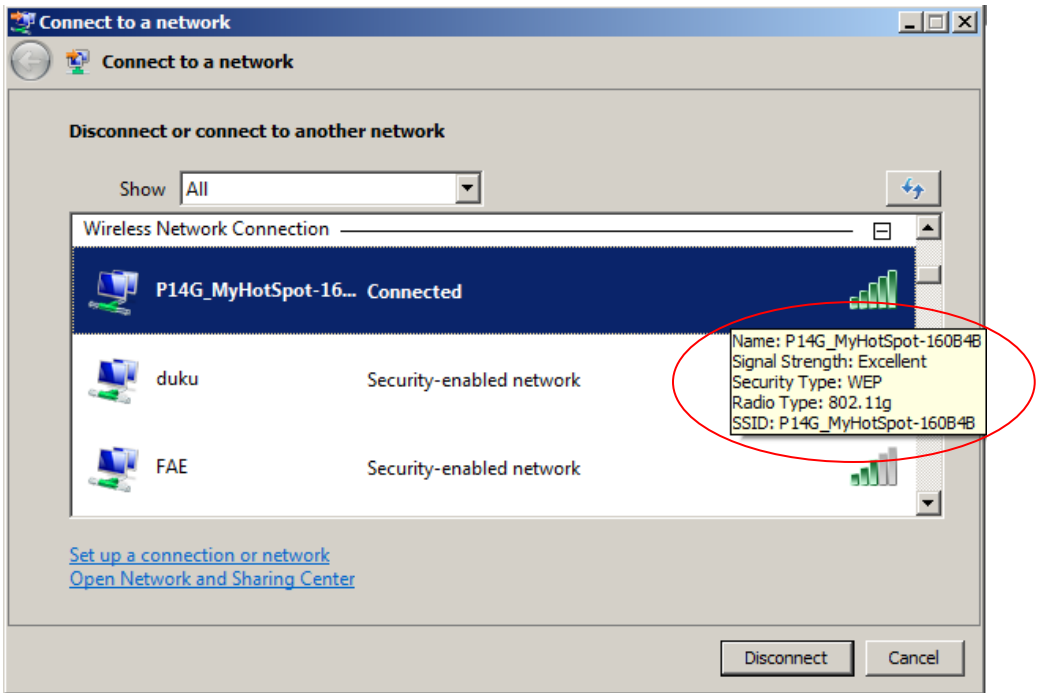
4. Select the "SSID" that is printed under your MF-230. Click *Connect*.



5. You will be prompted to key in the WEP security key or passphrase. The WEP security key or passphrase is printed under your MF-230.


Connect to a network
Connect to a network
Type the network security key or passphrase for P14G_MyHotSpot-160B4B
The person who setup the network can give you the key or passphrase.
Security key or passphrase:
Display characters
If you have a USB flash drive with network settings for P14G_MyHotSpot-160B4B, insert it now.
Connect
Cancel

6. Once connected, ensure that your laptop has obtained the correct DHCP IP and SSID. Check for signal quality and readjust the position of your router accordingly.



7. Note: This step is optional. If you want to change the default SSID or WEP key, open any Internet browser and type in the URL address for Customer Web GUIDE at http://10.1.1.254

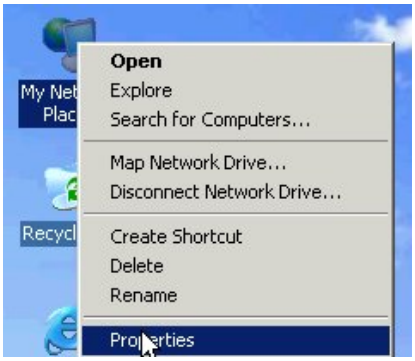
   Username: admin
   Password: admin123

c) Computer/Laptop Setup Information

By default, all Operating Systems (Windows/Linux/Mac) will set the DHCP option to *Obtain an IP address automatically*.

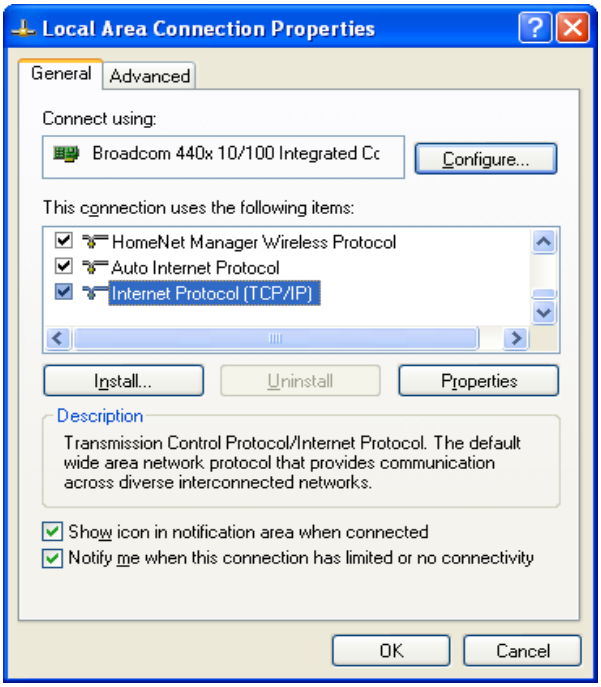
WINDOWS XP

1. Right-click on the *My Network Places* icon on your desktop and select "Properties" from the menu that appears.



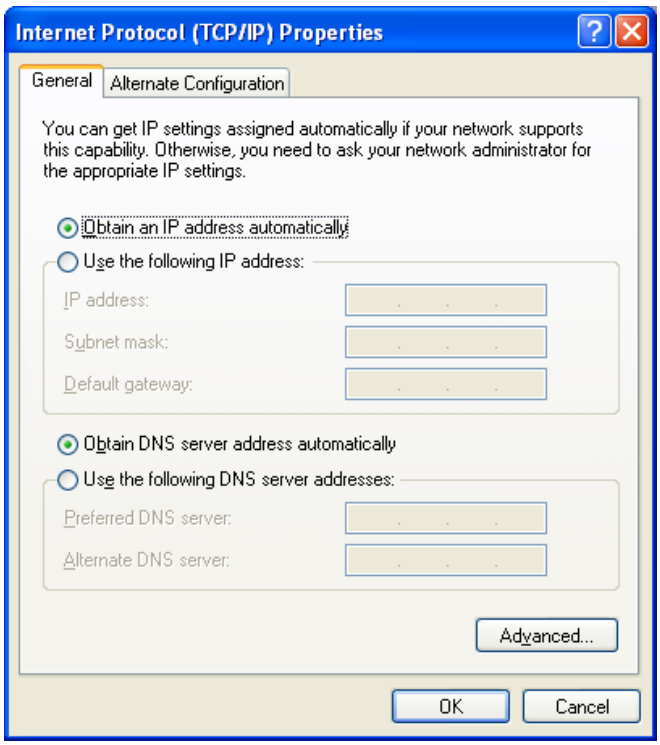
2. In the window that appears, (labeled *Network and Dial-up Connections*) right-click on the icon titled *Local Area Connection* and select the item *Properties* from the menu that appears.

A window titled *Local Area Connection Properties* will now appear. In the list below, select the item called *Internet Protocol (TCP/IP)* and click on the button labeled *Properties*.



3. A window titled *Internet Protocol (TCP/IP) Properties* will now appear. In this window, click on the radio button to the left of *Obtain an IP address automatically*.

4. In the same window near the bottom, make sure the radio button to the left of *Obtain DNS server address automatically* is filled.

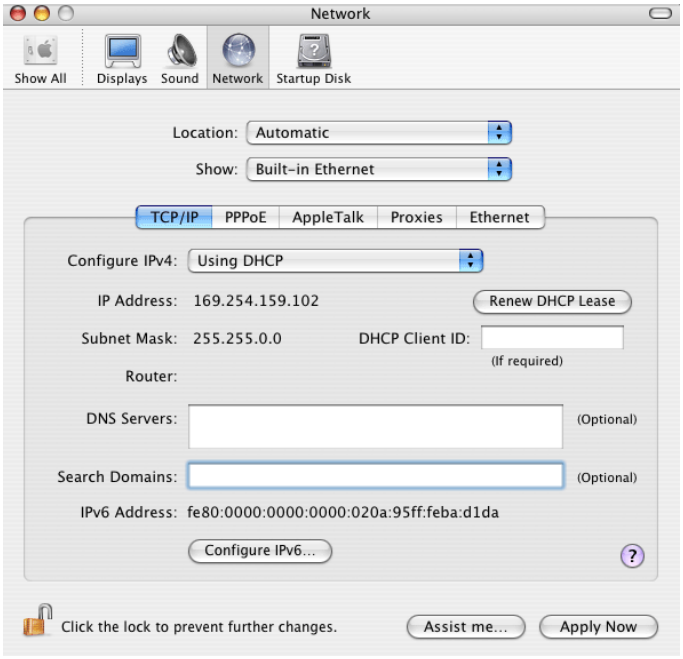


Mac OS X

This guide assumes that your computer has the network adapter and TCP/IP already installed. All Mac computers certified by Apple to run Mac OS X will have built-in Ethernet adapter hardware and the necessary networking software as part of OS X's default installation.

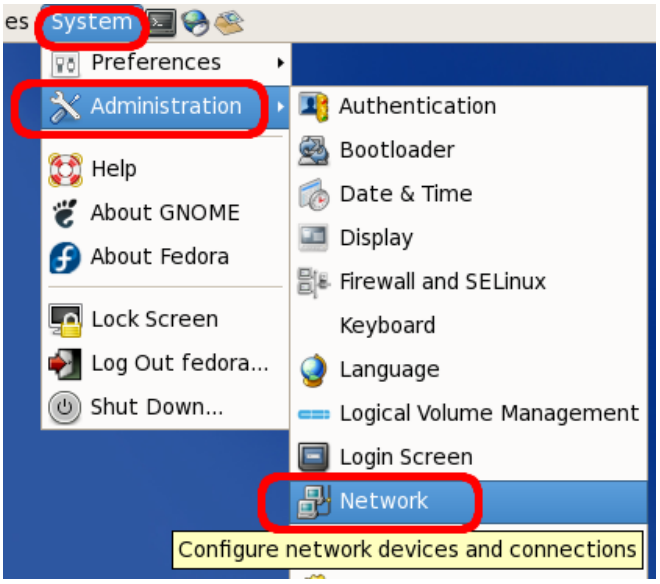
1. Click on the Apple Menu Icon in the upper left corner of your screen.
2. Select System Preferences

3. Click on the Network icon.
4. Select the TCP/IP tab.
5. From the Configure IPv4 menu, select Using DHCP.
6. Click the Apply Now or Save button.

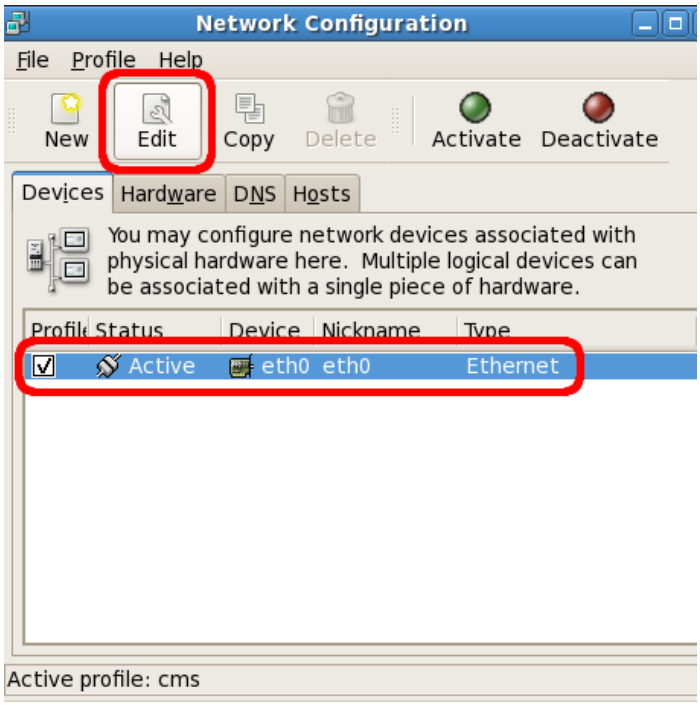


Linux (Fedora)

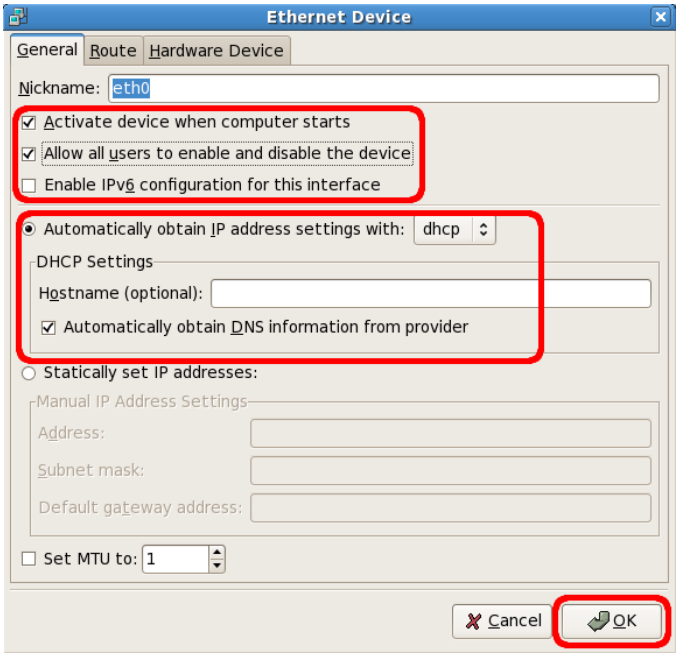
1. Go to the *System Administration* and select the *Network* menu item. This will launch the *Network Config* tool, which will prompt *Configure Network Devices and Connections.*

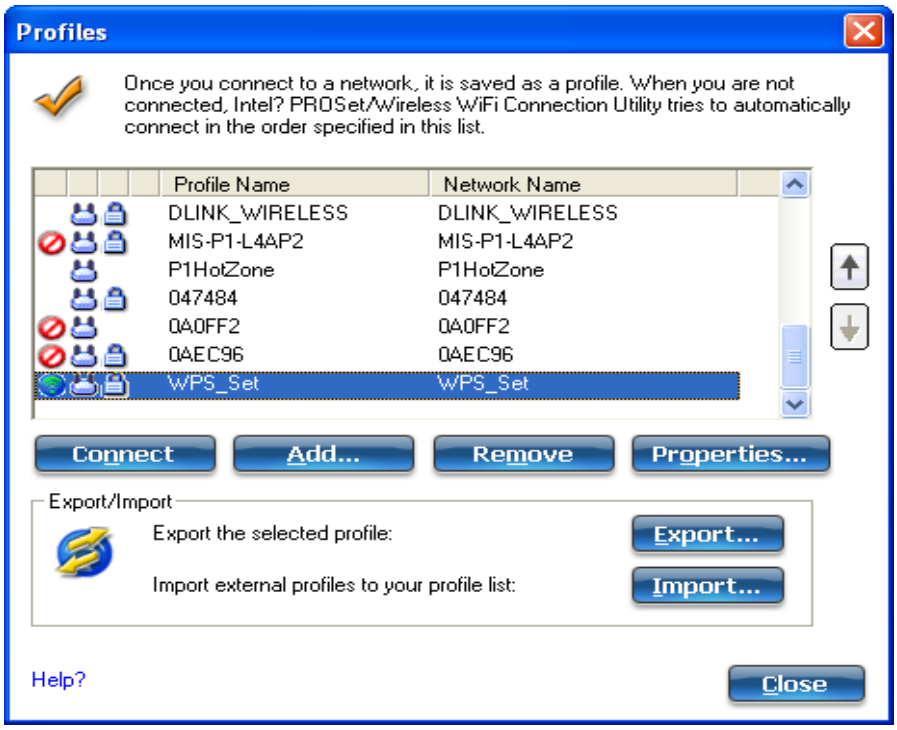


2. Select the appropriate network interface and click on *Edit*.



3. Check on the "*Activate device when computer starts*" and "*Allow all users to enable and disable the device*". Check the "*Automatically obtain IP address settings* and choose DHCP (these are default settings)". Click on the *OK* button.





e) Laptop's Power Saving Schemes when running on Battery

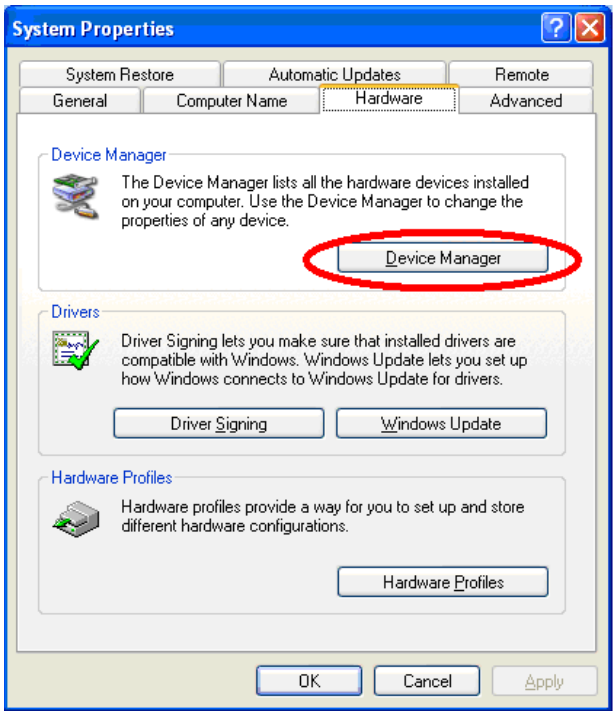
Background:

Laptops tend to have those power saving schemes so that the laptop can last longer when running on battery only. The laptop will dim down the brightness of the laptop display screen, lower down the laptop's WiFi transmitting power and shutting down or lowering down power of other functions.

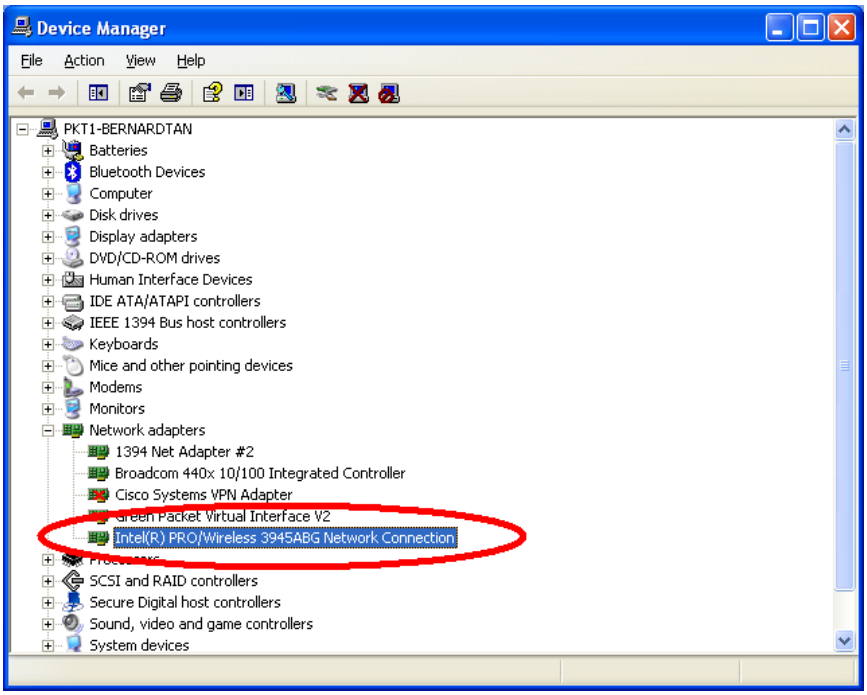
Troubleshooting steps:

1) In order to isolate the issue that it's not our MF-230 product issue or WiMAX issue, it is advisable to ask the customer when experiencing slow, intermittent or bad internet browsing experience, are they using a laptop and if yes, are they running on battery.

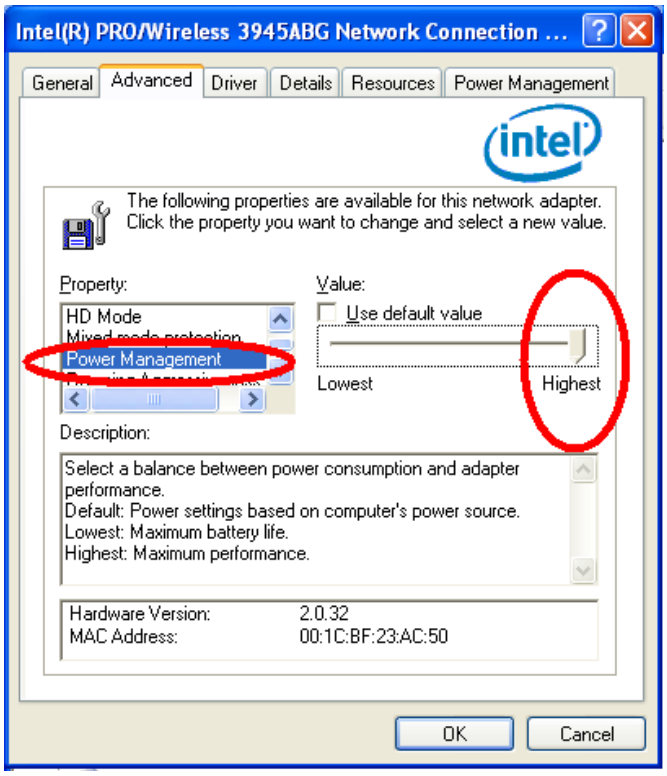
2) If the above are all yes, ask the customer to go to "Start -> Control Panel -> System -> Hardware" Click "Device Manager"



3) Go to “Network Adapters” and look for the laptop’s WiFi driver and double click on it.



4) Go to “Advanced” and scroll down to look for “power management” and set it to the “highest” setting.



f) Connectivity Issues

No	Description	Suggested Solution
1.	Your laptop/desktop cannot detect the router's WiFi Signal/SSID.	I. Ensure that the router is switched on and in operation mode. II. Make sure that user "start" the WiFi at "networking -> WiFi" at Web GUI. In addition, *Disable* the *Hide SSID* option. III. Check that your laptop/desktop has its WiFi function turned on. Ensure that it can detect WiFi 11 frequencies and is able to support B, G and B/G mix mode. IV. To ensure that it is not an issue of weak service signals, position your laptop/desktop near to the router. V. Make sure that the SSID you are searching for through the *WiFi search network menu* matches the SSID that has been set in MF-230.
2.	Your laptop/desktop can detect the router's WiFi signal	I. Ensure that you are connected to the correct SSID.

	and SSID but unable to connect to it.	II. Check your WiFi Security Mode as some security modes may require Radius Server Authentication. III. Ensure you key in the correct and matching security key/mode in the laptop/desktop and router. IV. Disable *Access Control* at the P1 4G router (MF-230) WiFi tab on the web GUI.
3.	You are connected to the router's WiFi SSID but unable to get an IP or have limited connection.	I. Check that you have keyed in the correct and matching security key mode in the laptop/desktop and router II. Check that the router's DHCP server is enabled at *Networking -> DHCP Server*. Ensure that the DHCP IP range is bigger than the amount of desktop/laptop connected to it via wired or wireless to MF-230. III. Disable *Access Control* at the P1 4G router (MF-230) WiFi tab on the web GUI.
4.	You are connected to the router's WiFi SSID and can obtain IP but cannot browse the Internet.	I. Set your laptop's/desktop's *Network Wireless Connection* to *Obtain IP automatically* and *Obtain DNS server address automatically*. II. Ensure that your router is in operation mode by checking your router's LED lights. III. Ensure that your router is connected to W1MAX service by checking your router's LED lights. IV. Check for proxy settings that disables your connection in your Web browser. V. User may have to click *Repair* on their *WiFi Network Connection* for Windows OS or a similar function for other operating systems. VI. Check whether you can ping to the router. The gateway for your laptop/desktop should have the same IP as the LAN IP for your router. VII. Disable *Access Control* at the P1 4G router (MF-230) WiFi tab on the web GUI.
5.	You experience irregular or slow browsing when connected through WiFi.	I. Check whether you can ping to the router. The gateway for your laptop/desktop should have the same IP as the LAN IP for your router.

		II. To ensure that it is not an issue of weak service signals, position your laptop/desktop near to the router. III. Try changing the WiFi Channel to a different channel as it may be due to WiFi Interference. IV. Do a ping and speed test check via wired to the router to determine if it is a WiMAX network congestion issue.

3) MF-230 Web Based Configuration Troubleshooting Guide

a) Login settings

After getting a DHCP IP address from your P1 4G Router MF-230, open any Internet browser and type in the URL address: http://10.1.1.254

Username : admin
Password : admin123

Troubleshooting:

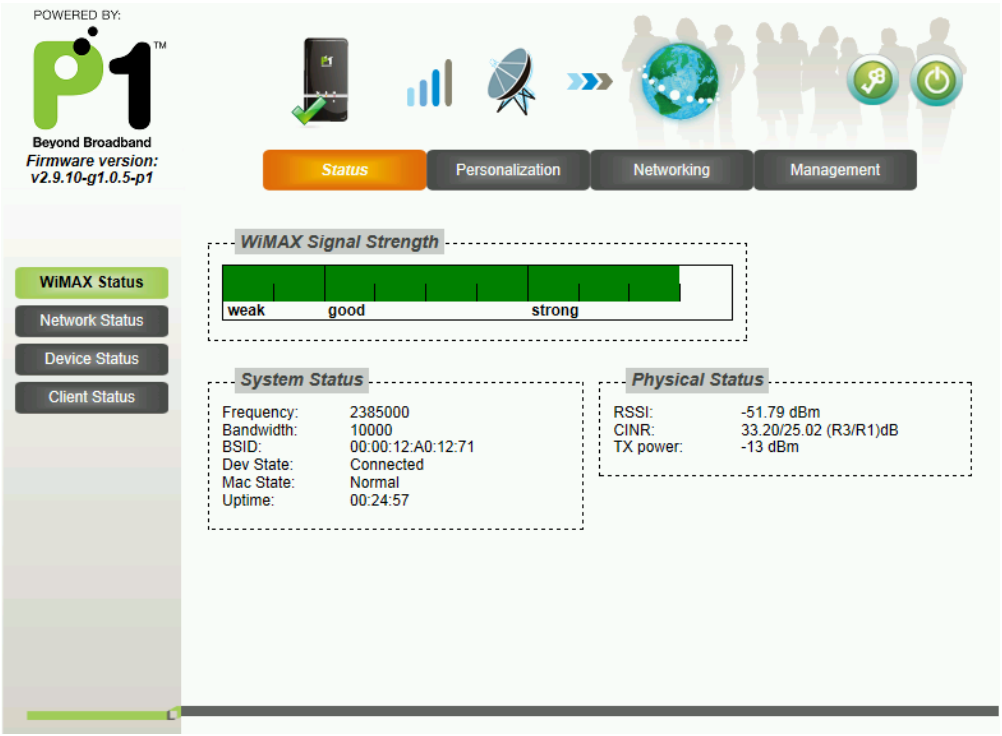
You cannot access the Customer Web GUI page

- Ensure you receive a DHCP IP from your router in the range of 10.1.1.x (excluding 10.1.1.254), subnet mask 255.255.255.0
- Check if you are able to ping to 10.1.1.254
- Go to START > RUN (Type: cmd) > COMMAND PROMPT (Type: ping 10.1.1.254)
- Check if your web browser has blocked the URL http://10.1.1.254 or if this URL is under the Restricted List.

b) Status Guides

WiMAX Status

The following is the meaning of each status in the WiMAX Status Page:



WiMAX Signal Strength	Signal strength Bar of WiMAX Signal in relation to RSSI and CINR
Frequency	The WiMAX Radio Frequency channel that the router is connected to.
Bandwidth	The width of the WiMAX Radio Frequency channel.
BSID	The WiMAX Base station ID that the router is connected to.
Dev State	Status of the router.
Mac State	Status of Wimax
Uptime	The length of time that the router is powered up, starting when the power is turned ON.
RSSI	The signal strength of the WiMAX Radio Frequency channel that the router is connected to.
CINR	The signal quality of the WiMAX Radio Frequency channel that the router is connected to.
TX Power	The WiMAX Radio Frequency power that is transmitted from the router to the Base station.

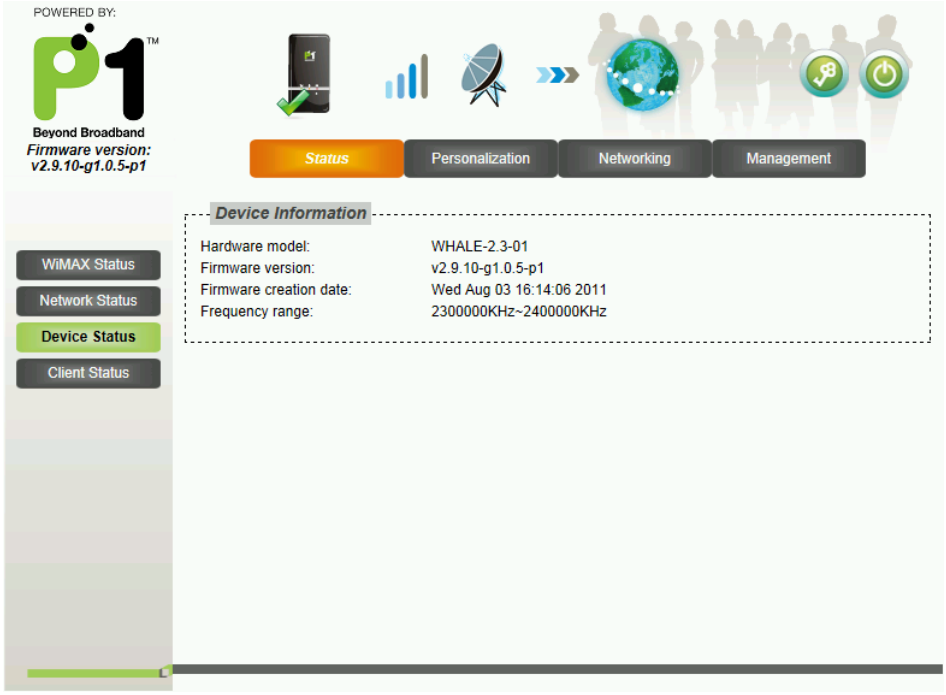
Network Status

The following is the meaning of each status in the Network Status Page:

LAN Box	Network information on the router's LAN side (connected from USB Port to user's PC/Laptop).
WAN Box	ISP Network information on the router's WiMAX side. The IP is a Public IP.

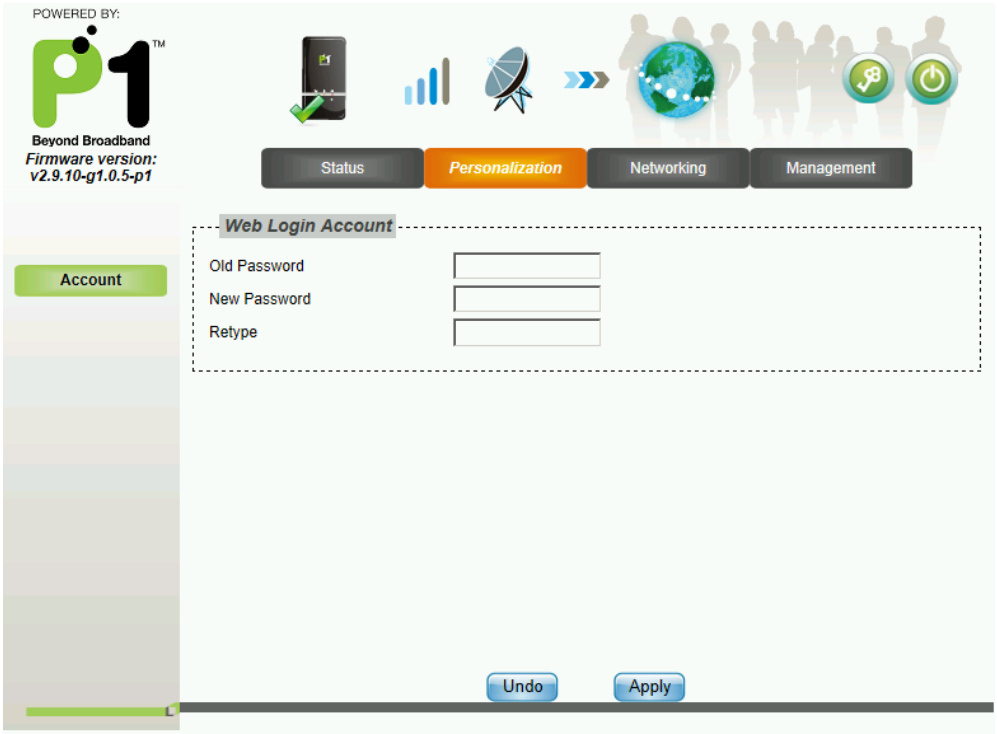
Device Status

The Device Status shows the Firmware Version, Hardware Model and WiMAX Frequency Range of the router.



c) Personalization for Account & Date

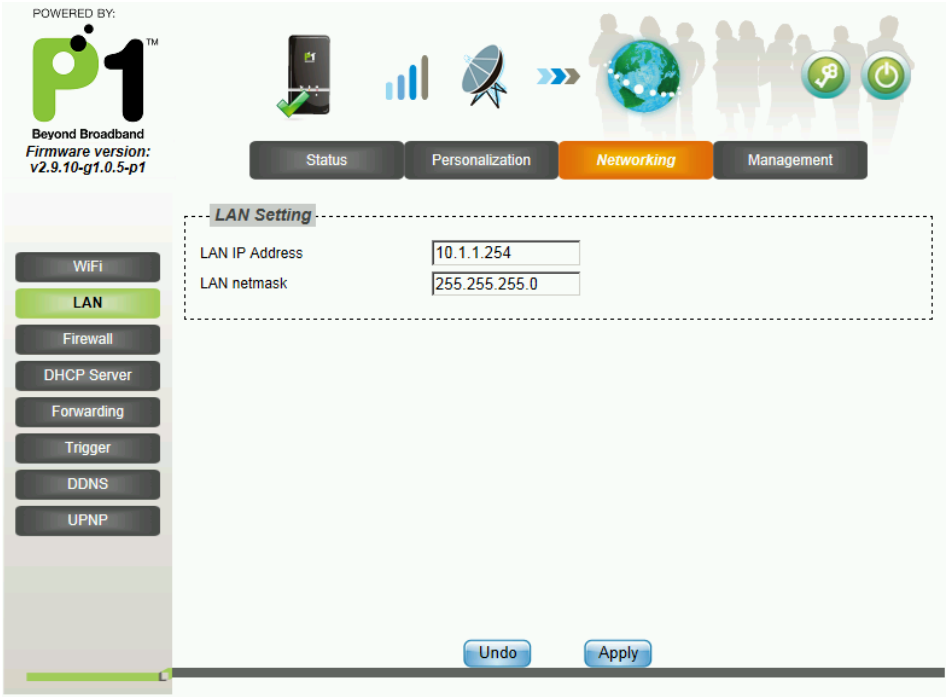
In the Account section, you can change their Password for their Web Login.



d) Networking

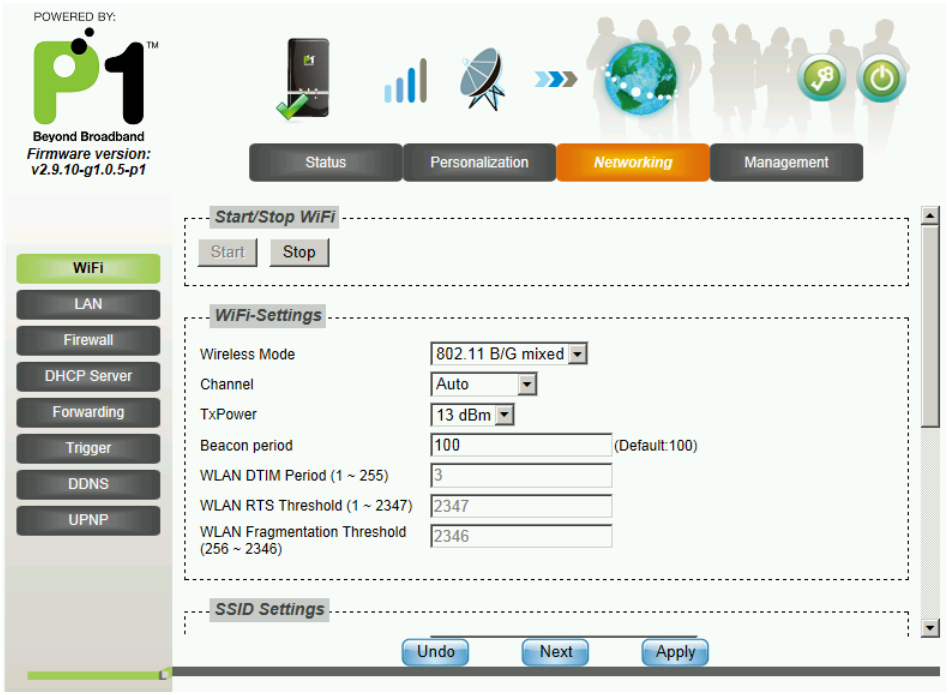
Networking - LAN

On this page, you can change the settings of the router's LAN IP Address and Subnet Mask according to the requirements of each individual user.



Networking – WiFi

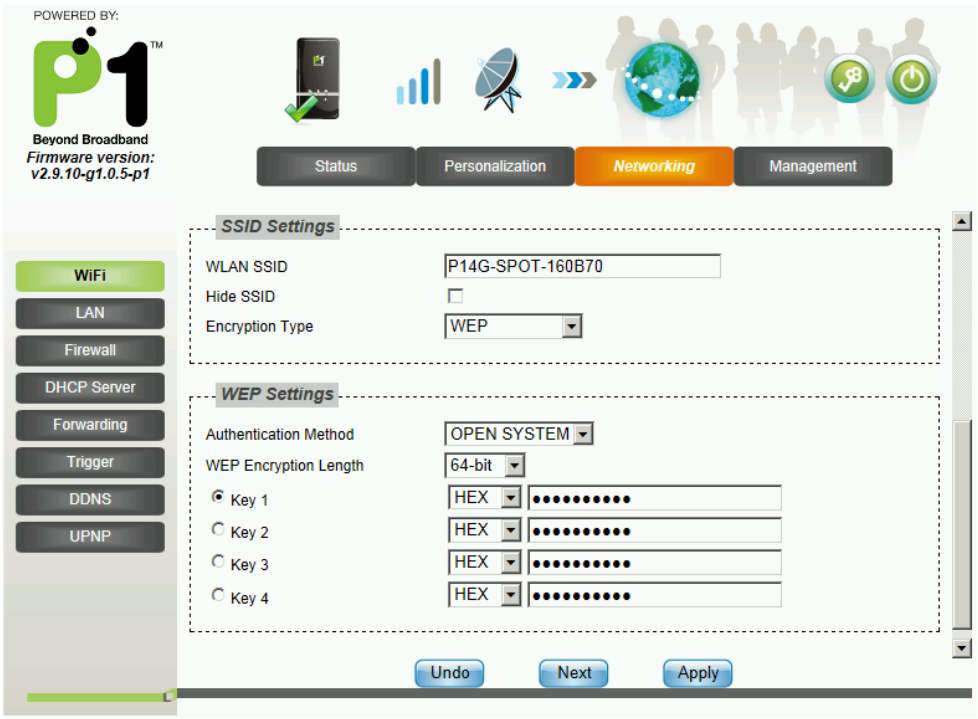
This page allows some basic configuration such as start/stop WiFi and WiFi settings.



This page allows customized security settings to prevent unauthorized access to your WiFi connectivity. Example: Change his/her SSID and WEP Key. After all configurations are completed, press *Apply*.

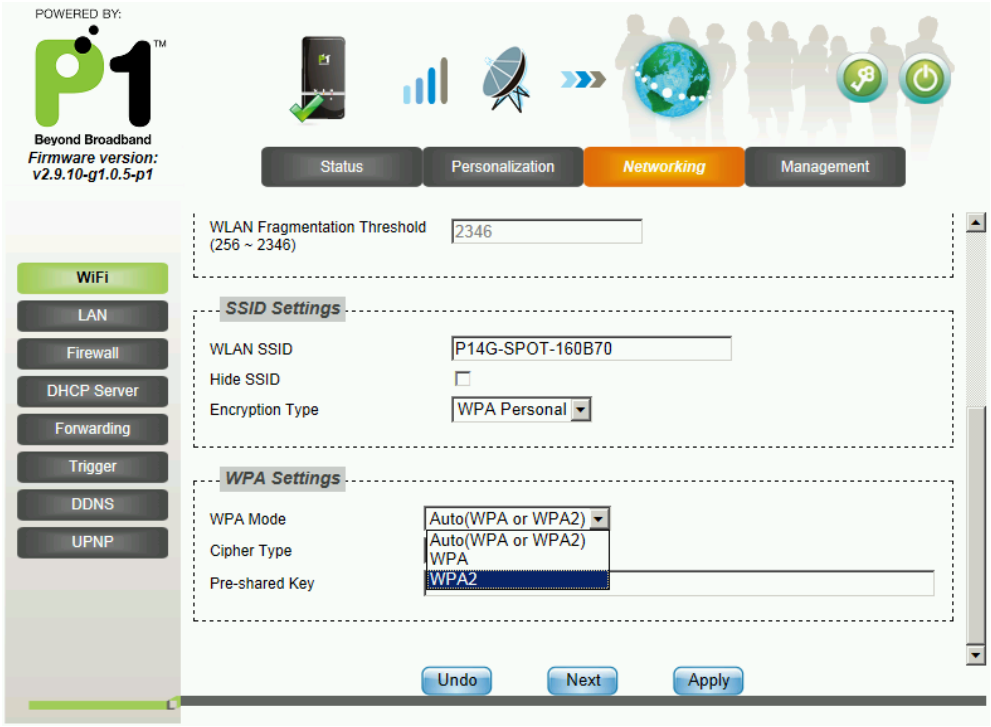
WiFi WEP security type setting:

I. Access the WiFi security page by clicking at Networking, followed by WiFi.
II. Key in SSID in the WLAN SSID field if users would like to change it.
III. Select **WEP** in Encryption Type drop down list in SSID Settings palette.
IV. In the WEP Settings palette, key in your password in the Key 1 text box. It can be 8-63 characters or 64 Hexadecimal values long.
V. After all configurations are completed, press *Apply*.



WiFi WPA/WPA2 security type setting:

I. Access the WiFi security page by clicking at Networking, followed by WiFi.
II. Key in SSID in the WLAN SSID field if users would like to change it.
III. Select **WPA Personal** in Encryption Type drop down list in SSID Settings palette.
IV. In the WPA Settings palette, select **WPA-PSK** from WPA Mode drop down list.
V. For Cipher Type, choose either one of the three list offered in the drop down box, which is **TKIP**, **AES** or **TKIP and AES**.
VI. Next, key in your password in the Pre-shared key text box. It can be 8-63 characters or 64 Hexadecimal values long.
VII. After all configurations are completed, press *Apply*.

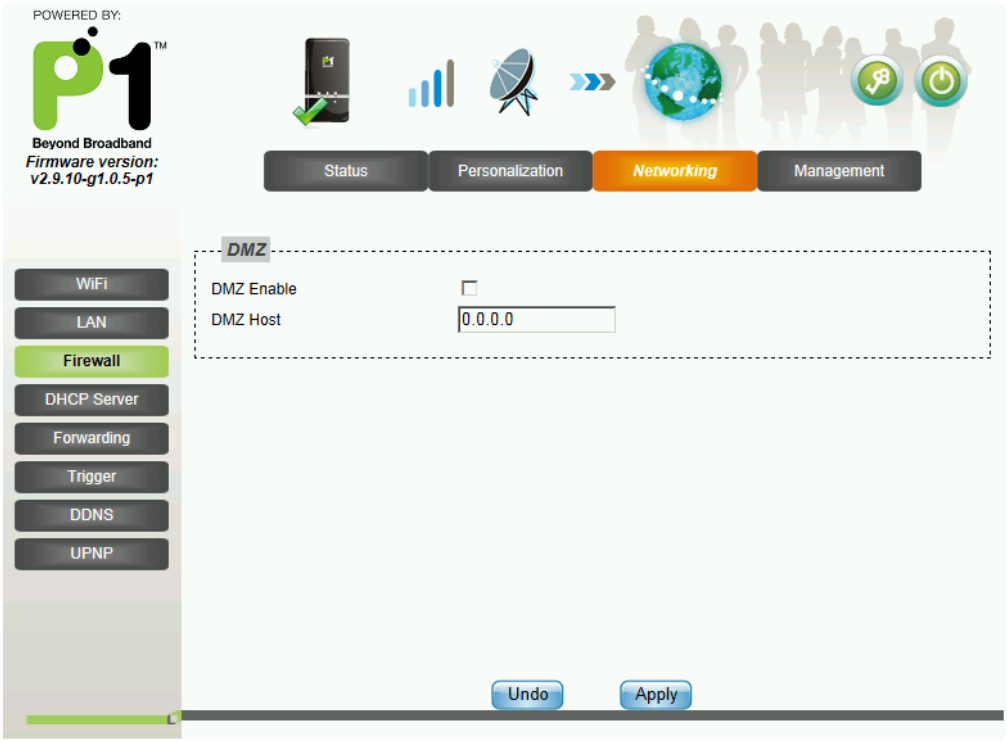


Field	Objective	Remark
Start/Stop WiFi	Enable and disable WiFi Connectivity	Default value is enable
Wireless Mode	Allows B,G or B/G mixed	Default value is B/G mixed
Channel	Channel 9, 10, 11 and Auto	Default value is Auto
Tx Power	Transmitted power from WiFi in percentage value	Select 100% for maximum transmit power if WiFi is weak
Beacon Period	Defines how often DX230 will send out wireless beacon	Default value is 100
SSID	Insert SSID name	Accepts a maximum of 29 alphanumeric characters. (Symbols may cause error when trying to connect or doing settings to the SSID. Confirmed symbols that causes error are #, &, “)
Hide SSID	Hide/Unhide broadcast of SSID name	
Encryption Type	Enable security to prevent unauthorized access	3 modes – None, WEP and WPA Personal

WEP	Enter key string in hexadecimal or ASCII format	**64 bit** -5 ASCII characters (A-Z or a mixture of A-Z and 0-9) -10 Hexadecimal characters (0-9, A-F or mixture of both 0-9 & A-F only) **128 bit** -13 ASCII characters (A-Z or a mixture of A-Z and 0-9) -26 Hexadecimal characters (0-9,A-F or mixture of both 0-9 & A-F only)
WPA/WPA2	Uses external Radius Server in conjunction with TKIP and AES for authentication	8-63 ASCII Characters (Can be mixture of A-Z & 0-9) 8-64 Hexadecimal (Can be mixture of 0-9 & A-F only)
Authentication Mode	OPEN SYSTEM or SHARED KEY for WEP	
Encryption Type	TKIP, AES, TKIPAES for WPA mode	
Access control	Prevent user from accessing WiFi by filtering MAC address	

Networking – Firewall

Enabling DMZ on a host (in the range of 10.1.1.x as the default LAN IP subnet), will enable that host direct access to the internet without having to go through NAT, firewall and port forwarding. By enabling DMZ, you're exposing your host to security attacks, hacking, viruses, Trojans etc. Please ensure that you and the customer know what you are doing.



Networking - DHCP server

In this section, you can set the router's LAN DHCP Server settings.

The settings for the DHCP Server are as below:

- By default the DHCP Server settings are enabled and the default DHCP IP range is from 10.1.1.1 to 10.1.1.5.
- You can either *Enable* or *Disable* the router's DHCP Server.
- You can also change the DHCP Start IP address, DHCP End IP address and Max lease time.
- To allow more WiFi-enabled devices to connect to MF-230, user should change the DHCHP end IP address to a value for example, 10.1.1.10.
- Users can also have a permanent DHCP IP bind to a PC/Laptop Network Interface Card MAC address under *Permanent Host Configuration*.
- User will have to key in the Physical/MAC Address of the LAN or WiFi NIC. You can check it by typing "ipconfig/all" at Windows command prompt.
- The format should be XX:XX:XX:XX:XX:XX
- After keying the settings, you have to click *Apply* and reboot for the new settings to take effect.

Troubleshooting:

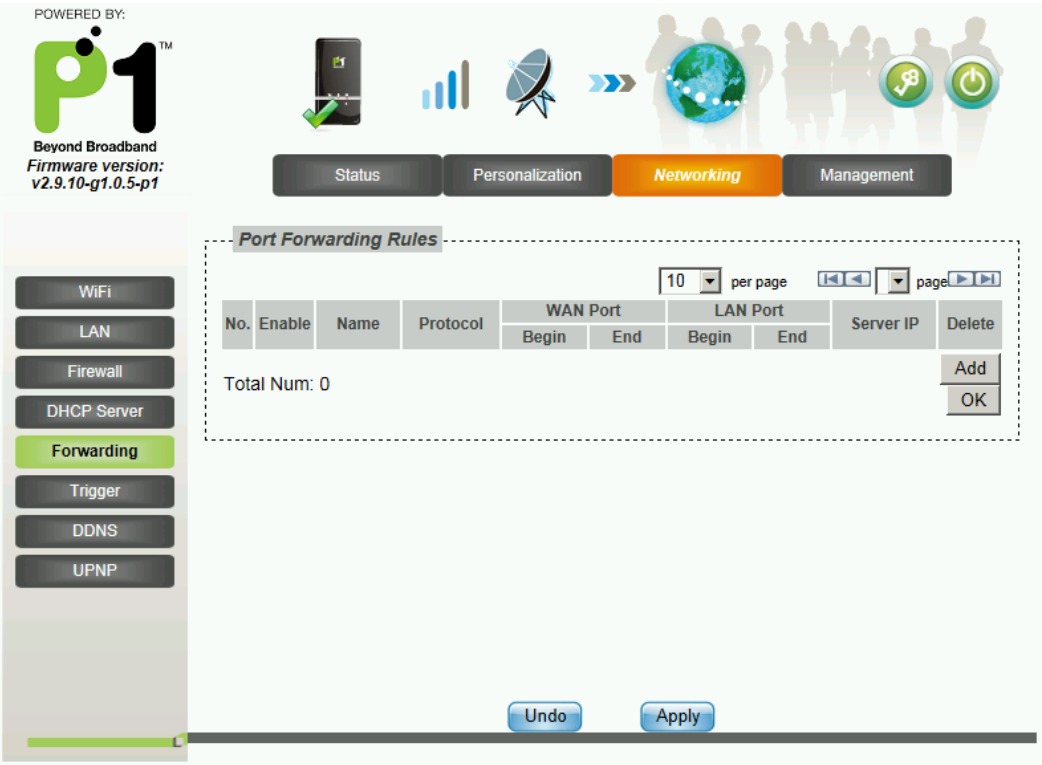
- If your PC/Laptop cannot get an IP from the router, please check whether the router's DHCP Server has been *Enabled*.
- If you cannot bind the PC/Laptop NIC MAC, check whether it is bind to

the correct MAC Address by typing *ipconfig/all* in the Command Prompt for Windows OS. The MAC Address should be in the format of 00:11:22:33:44:55

Note: If you change the range of the Default LAN IP from 10.1.1.254 to 192.168.1.254, the DHCP Server will change the DHCP Start IP address to 192.168.1.1 and DHCP End IP address to 192.168.1.5 accordingly.

Networking - Forwarding

Port Forwarding helps you to open up a *Port* in the MF-230 so that support certain Online Games, Host a Web Server or FTP Server, and etc.



WAN Port	It shows the range of Ports for incoming data from the router's Public IP; should it be Open for the Port Forwarding rule.
Server IP	It shows which computer is connected to the router's Server IP Address for Port Forwarding.
LAN Port	This is the range of Ports that the incoming data should be forwarded to on the LAN Side.
Protocol	The Internet Protocol that is allowed to be Port Forwarded in the Incoming data of the WAN Side.
Enable	Tick this if you want to Enable this Port Forwarding Rule
Delete	Click on this if you want to Delete this Port Forwarding Rule
Insert	Insert another row of Port Forwarding Rules

Apply	To Save the Port Forwarding Rule or to Save the changes that has been done. After this, you will need to reboot the router.

Troubleshooting:

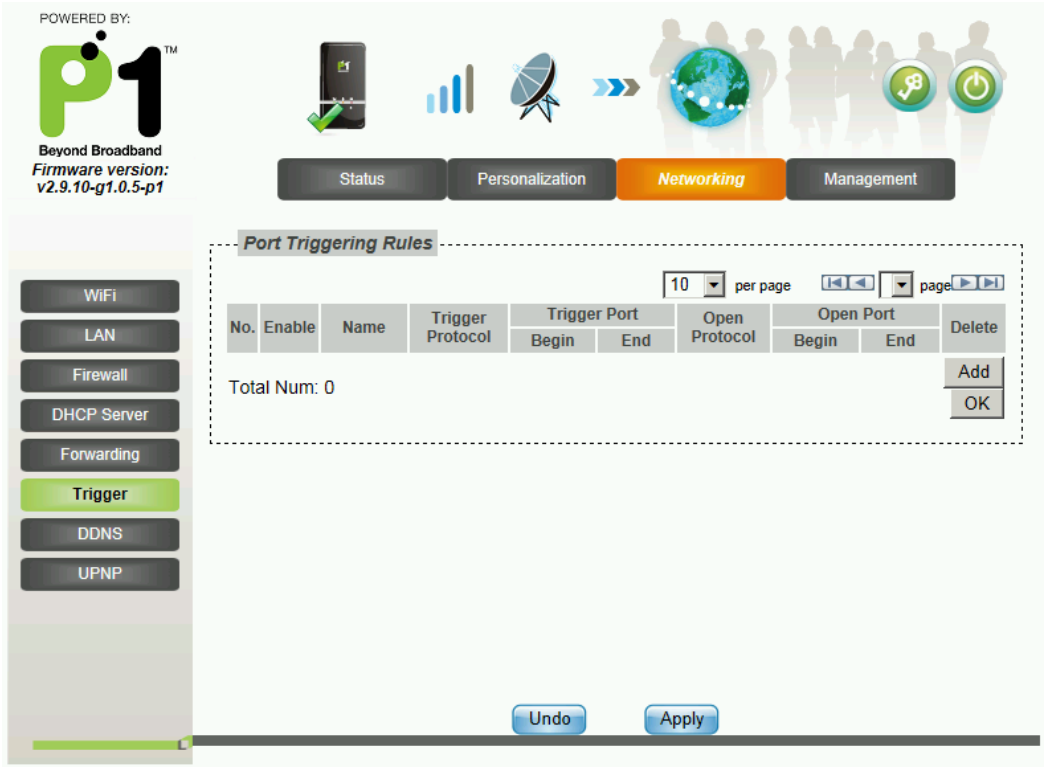
If you are not able to set Port Forwarding or make it works:

- Make sure the Port Forwarding range in both “WAN” and “LAN” is not more or equal to 900. For example the range must be 30000 to 30899, and not 30000 to 30900.
- Make sure the intended computer IP for the Port Forwarding on the LAN Side is the same IP as you set in the Web GUI *Server IP Address*
- Make sure that the intended computer has turned off any Firewall programs and allow the Ports that have been set in the router Port Forwarding rule.
- A Port can only be used by ONE program at a time. This means that you can only use Port 500 on ONE computer on the router at a time. Using Port 500 on two computers at the same time would violate the ONE program rule, and your data would get messed up.
- Make sure you know and set the correct Ports for “WAN” and “LAN” in your Port Forwarding rules as this is always the common mistake.

Networking – Trigger

Port Triggering is Port Forwarding with an ON/OFF switch for the Ports that have been forwarded. This ON/OFF switch is turned ON or OFF by data flowing out of a Trigger Port.

Port Triggering is a little more secured than Port Forwarding because the incoming Ports are not open all the time. They are only open when a program is actively using the Trigger Port.



Note: Most Port Triggering setups DO NOT require you to enter a LAN IP Address to forward the incoming Ports to. This means that any computer on the network can use your Port Triggering setup. If two computers try to use the Port Triggering setup at the same time you will run into problems.

Name	It is an Identifier of the Port Triggering rule.
Trigger Port	It is the range of Ports that will be triggered ON/OFF when there is outgoing data that uses that range of Ports from your router's Public IP side.
Open Port	It is the range of Ports that incoming data will be forwarded to when outgoing data triggers the Port Triggering rule in the router.
Trigger Protocol	It is the Internet Protocol that is allowed to be Port Forwarded in the Incoming data of the WAN Side.

Open Protocol	It is the Internet Protocol that is allowed to be Port Forwarded in the Incoming data of the LAN Side.
Enable	Tick this if you want to Enable this Port Forwarding Rule
Delete	Click on this if you want to Delete this Port Forwarding Rule
Insert	Insert another row of Port Forwarding Rules
Apply	To Save the Port Forwarding Rule or to Save the changes that has been done. After this, you will need to reboot your router.

Troubleshooting:

- Make sure that the intended computer has turned OFF any Firewall programs and allow the Ports that have been set in the router's Port Triggering rule.
- A Port can only be used by one program at a time. This means that you can only use Port 500 on one computer with the router at a time. Using Port 500 on two computers at the same time would violate the one program rule, and your data would get messed up.
- Make sure you know and set the correct Ports for "Triggering Port" and "Forwarding Port" in your Port Triggering rule as this is always the common mistake.
- The Port that you set for Port Triggering is constantly sending data out to WAN. The length of time that the router keeps those Ports open needs to be taken into account. If the router times out between the gaps of outgoing data to WAN, the Port Forwarding connection will be severed.

EXAMPLE: What happens when you are trying to download a very large file? The router that you have set up with Port Triggering may not keep sending data out of the trigger Port. When that happens, the router closes the incoming Ports, and your download is interrupted.

Networking - DDNS

Dynamic Domain Name Server (DDNS) allows you to create a host name that points to your Dynamic Public IP or Static Public IP address or URL.

Settings:

- Tick on the “Enable DDNS” to enable this feature.
- On the “Service Provider” column, select the DDNS Service Provider Name that you sign up for in this service.
- Create an account with any service provider from the drop down list.
- Create and customize your own host name and select the domain name of your choice from the service provider.
- The correct setting at MF-230 is as the screenshot below

- Host Name setting should be the customize name like “testing” or “johnnie” or “June”. It should be followed by a “.” (dot) like “webhop” or “dyndns” or “homelinux” that have to be chosen from the service providers.
- Domain Name setting is the end of chosen domain from the website like “com” or “net” or “org” or “cc”
- You will also have to key in the username and password of your account on the service provider at the MF-230 username and password field.
- Click “Apply” and reboot your router to save the changes.

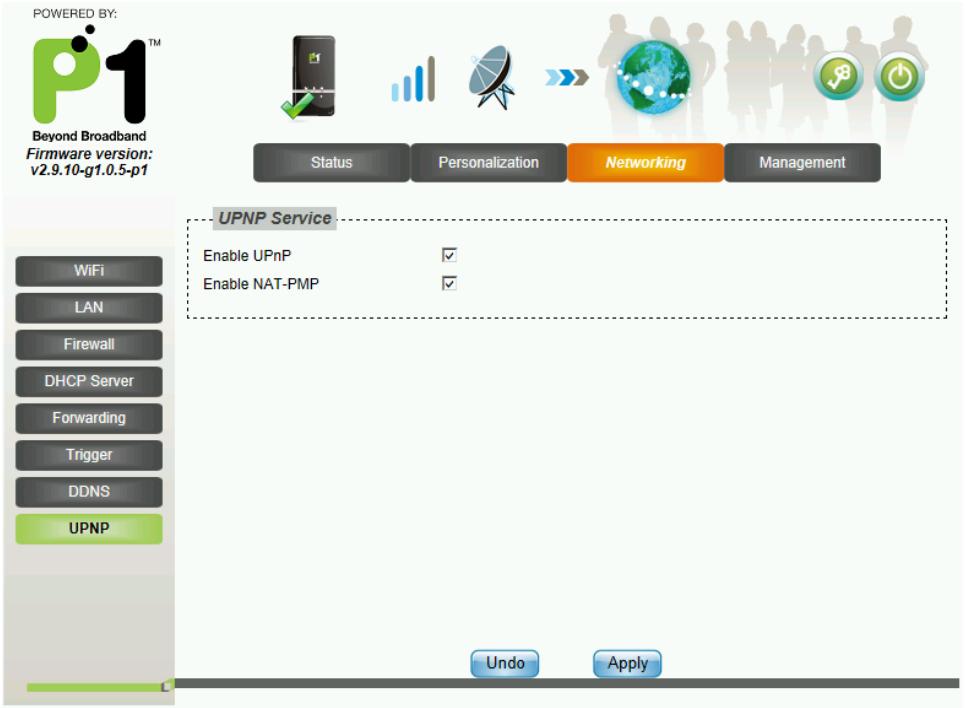
- Once everything is complete, MF-230 will update the IP of your created hostname every time the MF-230 is connected to the internet or the MF-230 obtains a new public IP.

Troubleshooting:

- Make sure that your Username, Password & Host Name is correct and is the same as the account that you have created with the DDNS Service Provider.
- Certain DDNS Service Providers do not instantly link the Host Name that you have created in the router, it would take between 5 minutes to 30 minutes for the DDNS Service Provider to update.
- The router will automatically update the DDNS Service Provider when the DDNS configurations have been set, on every Reboot, when you connect to the Internet or if there is a change of Public IP assigned to it.

Networking - UPNP

There are 2 options that are enabled by default under this setting tab which are *UPNP* and *NAT-PMP.*



UPNP

Explanation:

Universal Plug and Play (**UPnP**) is a set of networking protocols promulgated by the UPnP Forum. The goals of UPnP are to allow devices to connect seamlessly and to

simplify the implementation of networks in the home (data sharing, communications, and entertainment) and in corporate environments for simplified installation of computer components. UPnP supports zero-configuration networking.

How it works:

UPnP devices are "plug-and-play" in that when connected to a network they automatically join a network, obtain an IP address, announcing their network address and supported device and services types, enabling clients that recognize those types to immediately begin using the device. Devices can leave the network automatically without leaving any unwanted state information behind.

Usage:

Just tick the box under “Enable UPnP” to enable it. Devices which support UPnP are printers, scanners, WLAN access points, media servers and many more.

NAT-PMP

Explanation:

NAT Port Mapping Protocol (NAT-PMP) is introduced by Apple Computer in June 2005. NAT-PMP allows a computer in a private network (behind a NAT router) to automatically configure the router to allow parties outside the private network to contact itself. NAT-PMP runs over UDP. It essentially automates the process of port forwarding.

How it works:

In NAT-PMP is a method for retrieving the public IP address of a NAT gateway, thus allowing a client to make this public IP address and port number known to peers that may wish to communicate with it.

Usage:

Just tick the box under “Enable NAT-PMP” to enable it. Products that support this protocol include Mac OS X, Limewire, uTorrent, Nicecast and many more.

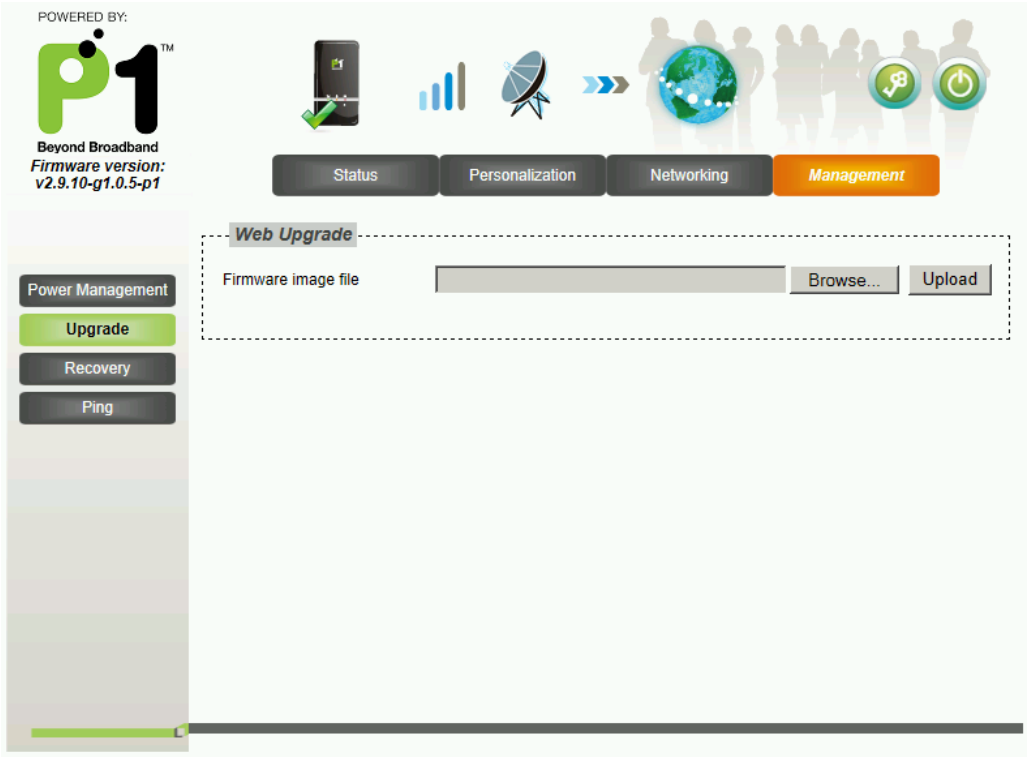
e) Management

Power Management

This is the page to enable/disable the auto power saving on MF-230. It is enabled by default and both the default value for Auto Enter Standby and Auto Enter Hibernate is 180 seconds.

Management - Upgrade

This is the page to manually upgrade the firmware of the MF-230. Select the file and click “Upload”. After the file is uploaded into the MF-230, a pop up window will prompt you to “apply”. Click “apply” and wait for 2-3 minutes for the upgrading process. It will reboot the MF-230 when the upgrade process finishes.



Management – Recovery

This is the web interface to manually factory default the settings of the MF-230.

Management – Ping

User can ping to the internet via the WAN interface if users suspect the network issue is due to the LAN or computer. By Pinging on this interface, there is NAT or Firewall involve.

- End -